REQUEST FOR QUOTATION

EDGEWOOD ELEMENTARY SCHOOL -CAFETERIA HVAC 2015

C.I.P. NO. 420.248.032

EUGENE PUBLIC SCHOOLS

LANE COUNTY SCHOOL DISTRICT 4J

EUGENE, OREGON

Return By: Monday, June 8, 2015
11:00am PDT
No faxed or electronic quotes will be accepted

Mailing Address: Facilities Management
715 West 4th Avenue
Eugene, Oregon 97402

Phone: (541)-790-7417

Donald F. Philpot
Project Manager

Date Issued:
May 27, 2015

ROOD HANSEN ARCHITECT L.L.C.

PROJECT TITLE:	EDGEWOOD ELEMENTARY SCHOOL – CAFETERIA HVAC 2015
C.I.P. No.:	420.248.032
OWNER:	EUGENE SCHOOL DISTRICT 4J 715 West 4th Street, Eugene, Oregon 97402 Tele: (541) 790-7430 Fax: (541)-790 7420 Contact: Don Philpot, Project Manager
ARCHITECT:	RODD HANSEN, ARCHITECT, LLC 1551 Oak Street, Suite A, Eugene, Oregon 97401 Tele: (541)-687-7800 Fax: (541)-687-1200 Contact: Rodd Hansen, AIA
MECHANICAL ENGINEER:	Moulds Mechanical Engineering 2190 W. 11th Avenue, Eugene, Oregon 97402 Tele: (541)-484-0241 Contact: Chris Moulds, PE
ELECTRICAL ENGINEER:	Paradigm Engineering 88193 Appletree Drive, Eugene, Oregon 97405 Tele: (541)-285-1680 Contact: Jim Krumsick, PE
DATE:	May 27, 2015

END OF SECTION 00 01 01

The following is a list of all Divisions, Sections, and Drawings which are included in the Request for Quotation

Sealed Quotes will be received by Kathi Hernandez, Purchasing Services, for Edgewood Elementary School – Cafeteria HVAC 2015 until Monday, June 8, 2015 at 11:00 a.m. at the Eugene School District Facilities Management Office, 715 West Fourth, Eugene, Oregon 97402.

Briefly, the work is described as removal of two existing HVAC units and the installation of one new HVAC system.

All quotations must be submitted on the form provided and enclosed in a sealed envelope marked:

Edgewood Elementary School – Cafeteria HVAC 2015

No faxed or electronic quotes will be accepted.

Quote Documents may be obtained at the following hyperlink: http://www.4j.lane.edu/bids/

A **MANDATORY** pre-quote conference will be held on Friday, May 29, 2015 at 10:00 am

at Edgewood Elementary School, 577 E. 46th Avenue, Eugene, Oregon 97405.

No Quote for a construction contract will be received or considered unless the Contractor is registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board at the time of the bid as required by ORS 671.530. A license to work with asbestos-containing materials under ORS 468A.720 is not required for this Project.

Each Quote shall contain a statement indicating whether the Quoter is a "resident quoter", as defined in ORS 279A.120.

Each Quote shall contain a statement that the "Contractor agrees to be bound by and comply with the provisions of ORS 279C.800 to 279C.870 regarding payment of Prevailing Wages.

Contractor shall certify nondiscrimination in obtaining required subcontractors, in accordance with ORS 279A.110(4).

The successful Quoter will be required to furnish a Performance Bond and Labor and Materials Payment Bond each in the full amount of the contract price. Certificates of Insurance as described in the Terms and Conditions will be required.

Each Quote must be submitted on the prescribed form. Each Quote shall be accompanied by a surety bond, cashiers check, or certified check, executed in favor of Eugene School District 4J, in the amount not less than ten percent (10%) of the total Quote, based upon the total Quote amount for those items Quoted upon. Should the Quoter refuse to enter into such Contract or fail to furnish Certificates of Insurance as required by the Supplementary Conditions within ten (10) working days after contract forms are provided to the Quoter, the amount of the Quote Security shall be forfeited to the Owner as liquidated damages, not as a penalty.

School District 4J reserves the right to reject any and all proposals received as a result of this request for Quotations and select the Quote which appears to be in the best interest of the District.

Date: May 27, 2015

By: Donald F. Philpot
Project Manager

PART 1 GENERAL

1.1. GENERAL INFORMATION

A. The term “quoter” shall refer to the firm or individual submitting a quote or quotation.

B. Quoters are encouraged to visit the site(s) to become familiar with existing conditions. The Owner is not responsible and shall not bear financial burden for oversights made by the Quoter for failure to inspect sites prior to submitting a quote.

C. In all cases, persons wishing to examine the area of work must sign in at the school office prior to visiting the work area. Prior to leaving the school, sign-out at the office is required.

D. If access is required at times when the school office is not staffed, contact the Facilities Office, 541-790-7417, for assistance.

E. The Owner is excise tax exempt. "Goods used hereon are for the exclusive use of this School District." Excise exemption No. 93 740074 F.

1.2. QUOTE PROCEDURES

A. Quotes are to be submitted in one copy on the forms provided.

B. Quoters shall certify to non-collusion practices on the form included as part of the Quote Form, to be submitted with the Quote Form.

1. A Non-Collusion Affidavit is required for any contract awarded pursuant to the quote. According to the Oregon Public Contracts and Purchasing Laws, a public contracting agency may reject any or all quotes upon a finding of the agency that it is in the public interest to do so (ORS 279C.395). This agency finds that it is in the public interest to require the completion of this affidavit by potential contractors.

2. The Non-Collusion Affidavit must be executed by the member, officer or employee of the quoter who makes the final decision on prices and the amount quoted in the quote.

3. Quote rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of quotes are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the quoter with responsibilities for the preparation, approval or submission of the quote.

4. In the case of a quote submitted by a joint venture, each party to the venture must be identified in the quote documents, and an Affidavit must be submitted separately on behalf of each party.

5. The term "complementary quote" as used in the Affidavit has the meaning commonly associated with the term in the quoting process, and includes the knowing submission of quotes higher than the quote of another firm, any intentionally high or noncompetitive quote, and any other form of quote submitted for the purpose of giving a false appearance of competition.

6. Failure to file an Affidavit in compliance with these instructions will result in disqualification of the quote.

C. Quoters shall certify to non-discrimination in employment practices on the form, included as part of the Quote Form, to be submitted with the Quote Form. By submitting its quote, the Quoter certifies conformance to the applicable federal acts, executive orders, and Oregon statutes and regulations concerning affirmative action toward equal employment opportunities. All information and reports required by the federal or Oregon state governments having responsibility for the enforcement of such laws shall be supplied to the Owner in compliance with such acts, regulation, and orders.

D. Quoter shall indicate, on the Quote Form where provided, the quoter status as a "resident" or "non-resident" in accordance with ORS 279A.120 and ORS 279C.365.

E. A Quote may not be withdrawn or canceled by the Quoter following the time and date designated for the receipt of quotes to the expiration of a 60 day period. The Quote for that sixty days is irrevocable and each Quoter so agrees in submitting a Quote.

1.3. QUOTE SECURITY

A. Each Quote shall be accompanied by a surety bond, cashiers check, or certified check, executed in favor of Eugene School District 4J, in the amount not less than ten percent (10%) of the total Quote, based upon the total Quote amount for those items Quote upon. Should the Quoter refuse to enter into such Contract or fail to furnish Performance and Labor and Materials Payment Bonds and Certificates of Insurance as required by the Supplementary Conditions within ten (10) working days after contract forms are provided to the Quoter, the amount of the Quote Security may be forfeited to the Owner as liquidated damages, not as a penalty.

1 The Surety Bond shall be written by a Bonding Company authorized and licensed by the Oregon Insurance Commissioner. The bonding company must be listed on the most current US Government Treasury List, Department Circular 570, or approved PRIOR TO QUOTE SUBMISSION by the Eugene School District 4J's Risk Manager. The Bond shall be on a AIA Document A310, most current edition. The Attorney-in-Fact who executes the Bond on behalf of the Surety shall affix to the Bond, a certified copy of a power of attorney.

2. The Owner will have the right to retain the Quote Security of Quoters until either; a) the Contract has been executed and Bonds have been furnished, or b) the specified time has elapsed so that Quotes may be withdrawn, or c) all Quotes have been rejected.

1.4. PERFORMANCE BOND AND PAYMENT BOND

A. Unless otherwise stated in the solicitation document, the successful Quoter shall be required to provide the Owner with a Performance Bond and Labor and Material Payment Bond each in an amount equal to one hundred (100%) of the contract sum. The Surety Company shall meet requirements as specified in the Supplementary Conditions.

B. The Labor and Material Payment Bond shall contain a clause specifically guaranteeing payment of all sums of money withheld from employees and payable to the Internal Revenue Service; and all contributions or amounts due to the State of Oregon from the General Contractor or subcontractor incurred in the performance of this contract.

C. The Bond shall be fully executed, payable to the Owner.

D. The cost of these bonds shall be included in the Quote.

E. The successful Quoter will be provided with contract forms through the Architect. These forms shall be executed and delivered to the Owner, along with Performance Bond and Labor and Material Payment Bond, within ten (10) days after receiving forms.

1.5. SUBSTITUTION REQUESTS

A. Submit request for substitution for review and approval by Owner, for entire system as specified. A Memorandum will be issued min 1 day before Quote opening if any Substitution Requests are accepted. Submittal of substitution requests shall include manufacturers product data and brochures as back up information for review. All systems components must be included in Submittal for approval. Submit requests on form included in this Request for Quotes.

1.6. ADMINISTRATIVE RULES

A. All quoters are required to comply with the provisions of Oregon Revised Statutes and 4J Board Policy. Attention is directed to ORS 244, Government Ethics; ORS 279A and 279C, Public Contracting Code; Oregon Administrative Rules, Chapter 137, Divisions 46, 48 and 49; and 4J Board Policy DJC.

1.7. PROTEST OF QUOTE

A. Protests of quote specifications or contract terms shall be presented to the Owner in writing five (5) calendar days prior to quote opening. Such protest or request for change shall include the reason for protest or request, and any proposed changes to specifications or terms. No protest against award because of the content of quote specifications or contract terms shall be considered after the deadline established for submitting such protest.

1.8. PROTEST OF AWARD

A. Any actual quoter or proposer who is adversely affected by the Owner's notice of award of the contract to another quoter or proposer on the same solicitation shall have seventy two (72) hours from the notice of award to submit to the Owner, a written protest of the notice of award. In order to be an adversely affected or aggrieved quoter or proposer with a right to submit a written protest, a quoter or proposer must itself claim to be eligible for award of the contract as the lowest responsible quoter or best proposer and must be next in line for award.

1.9. FINAL AWARD

A. The written notice of award of the contract shall constitute a final decision of the Owner to award the contract if no written protest of the notice of award is filed with the Owner within the designated time.

END OF SECTION 00 21 13

Proposal for: Edgewood Elementary School – Cafeteria HVAC 2015
CIP No. 420.248.032

Submitted to: Facilities Management Office
Eugene School District No. 4J
715 West Fourth Avenue
Eugene, Oregon 97402

Due Date: June 8, 2015
Time: 11:00 am

From: _____
(Company Name)

The undersigned proposes to furnish all material, equipment, and labor required for the complete project, and to perform all work in strict accordance with the Contract Documents for the lump sum price indicated below.

BASE QUOTE: Cafeteria HVAC

Quote Amount: _____ $_____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all Base Quote work on or before the dates specified in Section 01 11 00.

The undersigned agrees, if awarded the contract, to comply with the provisions of Oregon Revised Statutes 279C.800 through 279C.870 pertaining to the payment of prevailing rates of wage.

The undersigned agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) working days after receiving contract forms, an Agreement and a satisfactory Performance Bond and a Labor and Material Payment Bond, if required elsewhere in the solicitation, each in an amount equal to 100 percent (100%) of the Contract Sum.

The undersigned has received addenda numbers_____to_____inclusive and has included their provisions in the above Quote amount.

By submitting this Quote, the Quoter certifies that the Quoter:

a) has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities; b) has a satisfactory record of past performance; c) has a satisfactory record of integrity, and is not disqualified under ORS 279C.440; d) is qualified legally to contract with the Owner; and e) will promptly supply all necessary information in connection with any inquiry the Owner may make concerning the responsibility of the Quoter. Prior to award of a Contract, the Quoter shall submit appropriate documentation to allow the Owner to determine whether or not the Quoter is "responsible" according to the above criteria.

Contractor warrants that Contractor has a Qualifying Employee Drug-Testing program and will require each subcontractor providing labor for the project to do the same.

The undersigned has visited the site to become familiar with conditions under which the Work is to be performed and has correlated the Quoter's personal observations with the requirements of the proposed Contract Documents.

The undersigned certifies that the Quoter is a_____Quoter under ORS. ("Resident" or "Non-resident", to be filled in by Quoter).

Names of Firm: _____

Street Address: _____
(City) (State) (Zip)

Telephone Number:_____Fax Number:_____E-Mail: _____

Signed By:_____Printed Name: _____
(Signature of Authorized Official. If Firm is a partnership, one of the partners must sign quote).

Official Capacity: _____

If corporation, attest: _____Date:
_____(Secretary of Corporation)

SEAL (If Corporation)

_____ Corporation
_____ Partnership
_____ Individual

NON-DISCRIMINATION REQUIREMENT

Contractor certifies that the Contractor has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontracts.

The Contractor agrees not to discriminate against any client, employee or applicant for employment or for services, because of race, color, religion, sex, national origin, physical or mental handicap, sexual orientation or age unless based upon bona fide occupational qualifications, and that they are otherwise in compliance with all federal, state and local laws prohibiting discrimination, with regard to, but not limited to, the following: Employment upgrading, demotion or transfer; Recruitment or recruitment advertising; Layoffs or termination; Rates of pay or other forms of compensation; Selection for training; Rendition of services. It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase order from the School District, unless a satisfactory showing is made that discriminatory practices have terminated and that a recurrence of such acts is unlikely.

BY_____ _____
(Company or Firm Officer) (Type or Print Name)

NON-COLLUSION AFFIDAVIT

STATE OF _____

County of _____

I state that I am _____ (Title) of _____ (Name of Firm) and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this Quote.

I state that:

(1) The price(s) and amount of this Quote have been arrived at independently and without consultation, communication or agreement with any other contractor, Quoter or potential Quoter, except as disclosed on the attached appendix.

(2) That neither the price(s) nor the amount of this Quote, and neither the approximate price(s) nor approximate amount of this Quote, have been disclosed to any other firm or person who is a Quoter or potential Quoter, and they will not be disclosed before Quote opening.

(3) No attempt has been made or will be made to induce any firm or person to refrain from Quoting on this contract, or to submit a Quote higher than this Quote, or to submit any intentionally high or noncompetitive Quote or other form of complementary Quote.

(4) The Quote of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or noncompetitive Quote.

(5) _____ (Name of my Firm), its affiliates, subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to Quoting on any public contract, except as described on the attached appendix.

I state that _____ (Name of my Firm) understands and acknowledges that the above representations are material and important, and will be relied on by School District No. 4J in awarding the contract(s) for which this Quote is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from School District No. 4J of the true facts relating to the submission of Quotes for this contract.

_____
(Authorized Signature)

Sworn to and subscribed before me this

_____ day of _____, 2015

_____
(Notary Public for Oregon)

My Commission Expires: _____

END OF SECTION 00 30 00

CONSTRUCTION CONTRACTOR AGREEMENT
(Sample Form)
LANE COUNTY SCHOOL DISTRICT 4J
715 West Fourth Avenue
Eugene, Oregon 97402

This Agreement is hereby made between the Lane County School District 4J, hereinafter DISTRICT, and CONTRACTOR, according to the following terms, conditions and provisions:

1. CONTRACTOR is identified as follows:

   Firm Name: _____

   Contractor's Representative _____

   Address: _____

   City/State/ZIP: _____ Email: _____

   Business Telephone: _____ FAX: _____

   Social Security Number: _____ or Federal Employer ID: _____

   Type of Entity: [ ] Sole Proprietorship [ ] Partnership [ ] Corporation

2. SERVICES TO BE PROVIDED (Include scope of work, schedule and other provisions including supplies, materials, equipment or services, as applicable):

   _____

   _____

3. DISTRICT'S REPRESENTATIVE: _____

4. FINGERPRINTING REQUIREMENTS: Do services to be provided include potential for direct, unsupervised contact with students? [ ] Yes [ ] No

   If yes, has CONTRACTOR been fingerprinted? [ ] Yes [ ] No

5. DATE AND DURATION: This agreement shall be effective commencing on _____ and extending through _____, unless otherwise terminated or extended.

6. PAYMENT: The DISTRICT shall pay the CONTRACTOR the agreed sum of $_____

   _____ for work described herein.

   Purchase Order or Account Number to be charged: _____

7. CONTRACTOR REQUIREMENTS: The CONTRACTOR agrees to perform the work or services as described in this Agreement in accordance with the Terms and Conditions of this Agreement (ATTACHMENT A) and Drawings and Specifications listed below:

   _____

   _____

8. CONTRACTOR is an Independent Contractor within the meaning of ORS 670.600 and is not an employee of the DISTRICT.

9. SIGNATURES: It is so agreed this _____ day of _____, _____

   _____ _____
   CONTRACTOR Date

   _____ _____
   DISTRICT Date

CONSTRUCTION CONTRACTOR AGREEMENT TERMS & CONDITIONS with PERFORMANCE BOND AND PREVAILING WAGES

May 27, 2015

This Construction Contractor Agreement between the DISTRICT and the CONTRACTOR includes the following terms, conditions, and provisions:

1. DECLARATION OF INDEPENDENT CONTRACTOR: CONTRACTOR declares that CONTRACTOR has complied with all federal, state, and local laws regarding business permits, registrations, certificates, and licenses that may be required to carry out the work to be performed under this agreement. The CONTRACTOR represents that the CONTRACTOR qualifies as an independent CONTRACTOR as evidenced by agreement to the conditions of this contract. The CONTRACTOR represents that all the information in the agreement is true and the DISTRICT may contact individuals and corporations to verify this information. The DISTRICT relies upon the representation of the CONTRACTOR. In the event the CONTRACTOR is determined not to be an independent CONTRACTOR for the purpose of providing these services to the DISTRICT, then the CONTRACTOR will reimburse the DISTRICT's full costs and damages associated with or in any way related to this determination.

2. CONTRACTORS' REGISTRATION: The CONTRACTOR and each Subcontractor shall be registered, prior to the commencement of the Work, and maintain, for the duration of the Project, a registration with the Oregon State Construction CONTRACTORS' Board.

3. RESPONSIBILITY TEST: CONTRACTOR certifies that the contractor: a) has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities; b) has a satisfactory record of past performance; c) has a satisfactory record of integrity, is not disqualified under ORS 279C.440; and d) is qualified legally to contract with the Owner.

4. PERMITS, FEES AND NOTICES: The OWNER will pay the plan check fee, building permit fee, and systems development charges directly to the authority having jurisdiction. The CONTRACTOR shall pay for all other permits, fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded. The Contractor shall pick up permits and call for inspections through final inspection, as required by the City Building Department.

5. USE OF SITE: Check in daily with the school or facility office personnel and the building custodian to coordinate construction activities with the ongoing activities at the building.

6. SMOKING, DRUG AND ALCOHOL POLICIES: Smoking and the other use of tobacco products is prohibited on all school district property pursuant to OAR 581-021-0110. District Policy prohibits the possession, use or distribution of illicit drugs and alcohol on school premises. Anyone under the treatment of a physician who must bring prescription medications to the workplace shall carry the medicines in the original container bearing the name of the drug, the name of the physician and the prescribed dosage. The CONTRACTOR is required to demonstrate that an employee drug testing program is in place.

7. POTENTIALLY HAZARDOUS PRODUCTS: The District attempts to maintain a safe and healthy environment for students and staff. The Contractor is therefore required to follow District guidelines controlling the use of potentially hazardous products and to use these products in a safe manner.

MSDS information is required for all potentially hazardous products. The Project Manager and a District Safety Specialist will review these and determine what, if any, mitigation procedures will be required. Contractor is to maintain and post copies of all MSDS information at the project site and adhere to the required controls.

Contractor is to ensure that work area access by students and teachers is restricted. The District will provide signage appropriate for this purpose. The contractor is to construct and maintain appropriate barriers.

8. ASBESTOS CONTAINING MATERIALS: Prior to commencing work on-site, the CONTRACTOR shall contact the District Asbestos Specialist, to review the Asbestos Management Plan for the site where the work will be performed. The CONTRACTOR shall not, in any way, disturb materials which are known to contain asbestos, assumed to contain asbestos, or otherwise have not been tested and confirmed to be asbestos free. The DISTRICT will investigate and test for asbestos containing materials and, if required, remove such materials as required for the Work. CONTRACTOR is required to sign an Asbestos Containing Materials Notification Statement as supplied by DISTRICT prior to commencing Work. The CONTRACTOR shall use no asbestos-containing materials in the Work and shall so certify.

9. SAFETY REQUIREMENTS: Safety must not be sacrificed for the sake of productivity or expedience. Safety of students, staff, and the public is critical. All CONTRACTORS who perform work on District property, and their employees, are expected to know the DISTRICT's expectations for safe work and to adhere to those expectations. CONTRACTOR shall adhere to the regulations of Oregon OSHA for all projects within the School District.

10. ELECTRICAL REQUIREMEMTS:

LOCKOUT/TAGOUT: Contractor shall implement a Lockout/Tagout program for employees who take equipment out of service or place equipment back into service after repair. Contractor shall review the District's Energy Control Program prior

to commencing work. Rules applying to this procedure are Oregon Occupational Safety and Health Code OAR 437-002-0140, General Environmental Controls Lockout/Tagout (1919.147), or latest version.

ARC FLASH – ELECTRICAL SAFETY: Contractor shall comply with NFPA 70E (Electrical Safety in the Workplace), current edition. Contractor shall comply with Oregon OSHA 1910.137 (Personal Protective Equipment). The Contractor shall review with the School District Project Manager the 'Eugene School District Electrical Safety Program' before any work commences. The Contractor shall comply with all 'Arc Flash' and 'Electrical Safety' protocols referenced in any and all NFPA, OSHA, OROSHA, NEC, NESC, UL, IBC, IFC and ANSI documents (current editions).

11. CONFINED SPACE REQUIREMENTS: If work requires entering underground fuel storage tanks, utility tunnels, sewer vaults (where septic systems are located) or fireboxes on boilers, a permit and special training is required, when necessary under OAR 437-002-0140.

12. HOLD HARMLESS AND INDEMNIFICATION: To the fullest extent of the law, the Contractor will defend, indemnify, hold harmless and reimburse the Eugene School District 4J (including its officers, board members, agents, and employees) from all claims, demands, suits, actions, penalties, and damage expenses, for liability of any kind including attorney's fees. To the extent that death or bodily injury to persons or damage to property arises out of the fault of the Contractor, the Contractor's indemnity obligation exists only to the extent that the death or bodily injury to persons or damage to property arises out of the fault of the Contractor, or the fault of the Contractor's agents, representatives or subcontractors, contributed to or caused such damage, whether or not such incidents are contributed to or caused in any part by Eugene School District 4J.

13. INSURANCE: The Contractor shall maintain in force for the duration of this agreement, the following:

General Insurance: The Contractor shall maintain in force for the duration of this agreement a Umbrella Insurance Policy with the limits not less than $5,000,000, a Commercial General Liability, Automobile Liability (owned, non-owned and hired) Insurance policy(s) written on an occurrence basis with limits not less than $1,000,000 per occurrence and $2,000,000 in the aggregated naming the District, its employees, officials and agents as an additional insured as respects to work or services performed under this agreement. This insurance will be primary to any insurance the District may carry on its own. If the District requires Professional Liability coverage, the terms, conditions, and limits must be approved by the District's Risk Manager.

Workers' Compensation: The CONTRACTOR shall provide and maintain workers' compensation coverage for its employees, officers, agents, or partners as required by applicable workers' compensation laws.

Equipment and Material: The CONTRACTOR shall be responsible for any loss, damage, or destruction of its own property, equipment, and materials used in connection with the work.

Course of Construction: The CONTRACTOR shall maintain an all-risk policy covering the replacement cost of the Work during the course of construction. The policy shall include the interests of the Owner and the Architect. The amount of insurance shall equal the completed value of the contract.

Property Insurance: The CONTRACTOR shall purchase from and maintain in a company or companies authorized to do business in the jurisdiction in which the Project is located, property insurance on an "all risk" policy form, including builder's risk/installation floater, whichever is appropriate, in the amount of the initial Contract Sum, plus the value of subsequent modifications and the cost of materials supplied by others, comprising the total value of the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in The Contract Documents or until no person or entity other than the Owner has an insurable interest in the property required by this paragraph to be covered, whichever is later. The insurance shall include interests of the Owner, Architect and CONTRACTOR, Subcontractors, and sub-subcontractors in the Project.

Evidence of Coverage: Evidence of the above coverage's issued by a company satisfactory to the District shall be provided to the District by way of a certificate of insurance before any work or services commence. A 30-day notice of cancellation or material change in coverage clause shall be included. It is the Contractor's obligation to provide the 30 days notice if not done so by the Contractor's insurance company(s). Failure to maintain the proper insurance shall be grounds for immediate termination of this Agreement.

Subcontractors: The CONTRACTOR shall require all Subcontractors to provide and maintain general liability, auto liability, professional liability (as applicable), and workers' compensation insurance with coverage equivalent to those required of the general CONTRACTOR in this contract. The CONTRACTOR shall require certificates of insurance from all subcontractors as evidence of coverage.

Exception or Waivers: Any exception or waiver of these requirements shall be subject to review and approval from the DISTRICT's Risk Manager.

14. PERFORMANCE BOND AND PAYMENT BOND: The Contractor shall furnish a Performance bond and a Labor and Materials Payment bond covering faithful performance of the Contract and payment of obligations arising there under. Bonds are to be obtained through a company that is on the US Government Treasury list for approved sureties and/or approved by School District 4J's Risk Manager. The cost of the Bond shall be included in the Contract Sum. The amount of each bond shall be equal to 100 percent of the Contract Sum. Submit on AIA Document A312, latest edition.

The Contractor shall deliver the required bonds to the Owner with the executed Agreement. The Contractor shall require the Attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of their power of attorney.

15. LIQUIDATED DAMAGES: The Owner will suffer financial loss if the Work is not Substantially Complete, on the date specified for work to be substantially complete. The contractor and the Contractor's surety shall be liable for and shall pay the Owner the sum hereinafter stipulated as fixed, agreed, and liquidated damages for each calendar day of delay until the date established in the Certificate of Substantial Completion.

The agreed amount of liquidated damages is $500.00 per each calendar day. The amount of liquidated damages may be reduced in cases of partial occupancy, at the sole discretion of the Owner.

16. OWNERSHIP OF WORK PRODUCT: All work products of the CONTRACTOR, which result from this contract, shall be the exclusive property of the DISTRICT and shall be delivered to the DISTRICT upon completion of the work or termination of this contract, except as otherwise agreed in writing.

17. EQUIPMENT, TOOLS, MATERIALS, OR SUPPLIES: CONTRACTOR shall supply, at CONTRACTOR's sole expense, all equipment, tools, materials and/or supplies to accomplish the services agreed upon. The CONTRACTOR shall be responsible for any loss, damage, or destruction of its own property, equipment, and materials used in conjunction with the work.

18. REIMBURSEMENT OF EXPENSES: The DISTRICT shall not be liable to CONTRACTOR for any expenses paid or incurred by the CONTRACTOR unless previously agreed to in writing.

19. FRINGE BENEFITS: Because CONTRACTOR is engaged in CONTRACTOR's own independently established business, CONTRACTOR is not eligible for, and shall not participate in, any employee pension, health, or other fringe benefit plan, of the DISTRICT.

20. HOURS OF LABOR: No person shall be employed for more than ten hours in any one day, or 40 hours in any one week, except in the cases of necessity, emergency, or where the public policy absolutely requires it, and in such cases the person so employed shall be paid at least time and a half of the regular pay for all time worked.

a. For all overtime in excess of eight hours a day or 40 hours in any one week when the work week is five consecutive days, Monday through Friday; or
b. For all overtime in excess of 10 hours a day or 40 hours in any one week when the work week is four consecutive days, Monday through Friday; and
c. For all work performed on Saturday and on any legal holiday specified in ORS 279C.540.

The Contractor shall give notice to employees who work on a public contract in writing, either at the time of hire or before commencement of work on the contract, or by posting a notice in a location frequented by employees of the number of hours per day and days per week the employees may be required to work.

21. PAYMENT OF LABORERS AND MATERIALMEN, CONTRIBUTIONS TO INDUSTRIAL ACCIDENT FUND, LIENS AND WITHHOLDING TAXES: The Contractor shall: (1) Make payment promptly, as due, to all persons supplying to such contractor labor or material for the prosecution of the Work provided for in such contract. (2) Pay all contributions or amounts due the Industrial Accident Fund from such contractor or subcontractor incurred in the performance of the contract. (3) Not permit any lien or claim to be filed or prosecuted against the state, county, school district, municipality, municipal corporation or subdivision thereof, on account of any labor or material furnished. (4) Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

22. PAYMENT FOR MEDICAL CARE AND PROVIDING WORKERS' COMPENSATION: The CONTRACTOR shall promptly, as due, make payment to any person, co-partnership, association or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such CONTRACTOR, of all sums which the CONTRACTOR agrees to pay for such services and all moneys and sums which the CONTRACTOR collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service. All employers working under this contract are subject employers and must comply with ORS 656.017.

23. PAYMENT OF CLAIMS BY PUBLIC OFFICERS: If the CONTRACTOR fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the CONTRACTOR or a Subcontractor by any person in connection with the public contract as such claim becomes due, the proper officer or officers representing the DISTRICT may pay such claim to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due the CONTRACTOR by reason of such contract. The payment of a claim in this manner shall not relieve the CONTRACTOR or the CONTRACTOR's surety from obligation with respect to any unpaid claims.

24. FEDERAL, STATE, AND LOCAL PAYROLL TAXES: Neither federal, nor state, nor local income tax nor payroll tax of any kind shall be collected, withheld or paid by the DISTRICT on behalf of the CONTRACTOR or of employees of the CONTRACTOR. CONTRACTOR shall not be treated as an employee with respect to the services performed hereunder for federal or state tax purposes.

25. PREVAILING WAGE RATES: Note: Each worker in each trade or occupation employed in the performance of this Contract either by the contractor, subcontractor or other person doing or contracting to do contracting for the whole or any part of the Work on the Contract shall be paid not less than the applicable prevailing rate of wage.

a. The existing BOLI prevailing rates of wage in effect at the time the specifications are first advertised for bid solicitations

is the applicable rate.

b. The Owner will pay the public works fee to Oregon Bureau of Labor and Industries.

c. Certification of rate or wage by Contractor or Subcontractor (ORS 279C.845):

.1 The contractor or the contractor's surety and every subcontractor or the subcontractor's surety shall file certified statements with the public agency in writing, on a form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of wage paid each worker whom the contractor or the subcontractor has employed upon the public works, and further certifying that no worker employed upon the public works has been paid less than the higher of the applicable state or federal prevailing rate of wage or less than the minimum hourly rate of wage specified in the contract. The certificate and statement shall be verified by the oath of the contractor or the contractor's surety or subcontractor or the subcontractor's surety that the contractor or subcontractor has read the statement and certificate and knows the contents thereof and that the same is true to the contractor or subcontractor's knowledge. The certified statements shall set out accurately and completely the payroll records for the prior week, including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid.

.2 If the Contractor does not file certified payroll as required (at least once per month) the Owner will withhold 25% of the amounts due the Contractor, in addition to any other required retainage.

.3 If a first-tier Subcontractor does not file certified payroll reports as required, the prime Contractor shall

.4 Each certified statement required by subsection (1) of this section shall be delivered or mailed by the contractor or subcontractor to the public contracting agency. Certified statements shall be submitted to the public contracting agency once a month by the fifth business day of the following month, for each week workers are employed. Information submitted on certified statements may be used only to ensure compliance with the provisions of ORS 279C.800 to 279C.870.

.5 Each contractor or subcontractor shall preserve the certified statements for a period of three years from the date of completion of the contract.

.6 Certified statements received by a public agency are public records subject to the provisions of ORS 192.410 to 192.505. As such, they must be made available upon request.

26. **SUBCONTRACTORS**: The CONTRACTOR shall include in any subcontract for property or services entered into by the CONTRACTOR and Subcontractor, including a material supplier, for the purpose of performing a construction contract:

a. A payment clause that obligates the CONTRACTOR to pay the Subcontractor for satisfactory performance under its subcontract within 10 days out of such amounts as are paid to the CONTRACTOR by the DISTRICT under such contract; and

b. An interest penalty clause that obligates the CONTRACTOR to pay to the Subcontractor an interest penalty on amounts due in the case of each payment not made in accordance with the payment clause included in the subcontract pursuant to the above paragraph for the period beginning on the day after the required Payment date and ending on the date on which payment of the amount due is made; computed at the rate specified in ORS 279C.580.

27. **PROJECT CLOSEOUT**: When the Work is determined to be complete:

a. AIA Document G706 Contractor’s Affidavit of Payment of Debts and Claims.
b. AIA Document G706A Contractor’s Affidavit of Release of Liens.
c. AIA Document G707 Consent of Surety Company to Final Payment.
d. Operation and Maintenance Manuals
e. Warranties and Bonds. Submit original documents, including Contractor’s General Warranty,
f. Submit as-built drawings or other as-built documentation.
g. Keys.
h. Testing and Start-Up records.
i. Affidavit of Prevailing Wages paid (sample will be furnished at completion of work).
j. Complete list of Contractor and all Subcontractors with address, phone numbers, and work
k. Asbestos-Containing Materials Statement (Form 01100B).
l. Proof of final acceptance and compliance from governing authorities having jurisdiction.
m. Certificate of insurance evidencing continuation of liability coverage including coverage for completed operations until the expiration of the specified warranty periods.
n. Final payment will be authorized after all project closeout tasks have been completed and the work is determined to be acceptable by the District Project Manager.

28. **NON-DISCRIMINATION:** The CONTRACTOR, by signing this agreement certifies that the CONTRACTOR has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontracts.

The CONTRACTOR agrees not to discriminate against any client, employee or applicant for employment or for services, because of race, color, religion, sex, national origin, physical or mental handicap, sexual orientation or age unless based upon bona fide occupational qualifications, and that they are otherwise in compliance with all federal, state and local laws prohibiting discrimination, with regard to, but not limited to, the following: Employment upgrading, demotion or transfer; Recruitment or recruitment advertising; Layoffs or termination; Rates of pay or other forms of compensation; Selection for training; Rendition of services. It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase order from the School District, unless a satisfactory showing is made that discriminatory practices have terminated and that a recurrence of such acts is unlikely.

29. FOREIGN CONTRACTORS: In the event this Contract is awarded to a contractor not domiciled in or registered to do business in the State of Oregon and the contract price exceeds $10,000.00, the CONTRACTOR shall promptly report to the Department of Revenue the total price, terms of payment, length of contract, and such other information as the Department of Revenue may require before final payment can be received on the public contract. The DISTRICT will satisfy itself that the requirement of this subsection has been complied with before it issues a Final Payment.

30. TERMINATION WITH CAUSE: With reasonable cause, either party may terminate this agreement effective immediately upon the giving of written notice of termination for cause. Reasonable cause shall include:

a. Material violation of this agreement.
b. Any act exposing the other party to liability to others for personal injury or property damage.

31. REMEDIES: In the event of a termination of this contract by the DISTRICT, because of a breach by CONTRACTOR, the DISTRICT may complete the work either by itself or by contract with other persons, or any combination thereof. CONTRACTOR shall be liable to the DISTRICT for any costs or losses incurred by the DISTRICT arising out of or related to the breach, including costs incurred in selecting other CONTRACTORS, time delay losses, attorney fees, and the like, less the remaining unpaid balance of the consideration until DISTRICT's costs and losses have been determined, at which time the DISTRICT may offset any such amount due CONTRACTOR against costs and losses incurred by DISTRICT.

32. TERMINATION OR SUSPENSION OF CONTRACT FOR CONVENIENCE: Any contract may be terminated, or temporarily suspended, by the DISTRICT in the event that the project is permanently abandoned, or deferred, as determined in the sole discretion of the DISTRICT. The DISTRICT may terminate, or suspend, any contract in whole or in part whenever the DISTRICT determines, in its sole discretion, that such action is in the DISTRICT's best interest. Whenever any contract is terminated, or suspended in accordance with this paragraph, the CONTRACTOR shall be entitled to payment for actual work performed at contract prices for completed items of work. An equitable adjustment in any contract price for partially completed items of work will be made, but such adjustment shall not include provisions for loss of anticipated profit on deleted or uncompleted work. For suspended work, the CONTRACTOR will be entitled to five percent (5%) per year of the value of the work suspended, only if ultimately completed and reasonable re-mobilization costs, if applicable. Termination or suspension of any contract by the DISTRICT at any time during the term for convenience shall not constitute a breach of any contract by the DISTRICT.

33. ASSIGNMENT: CONTRACTOR shall not assign this contract, in whole or in part, or any right or obligation hereunder, without the DISTRICT's prior written approval.

34. NO AUTHORITY TO BIND CLIENT: CONTRACTOR has no authority to bind or obligate the other or to enter into contracts or agreements on behalf of the DISTRICT. This agreement does not create a partnership, joint venture or agency between the parties.

35. NON-WAIVER: The failure of either party to exercise any of its rights under this agreement for a breach thereof, shall not be deemed to be a waiver of such rights or a waiver of any subsequent breach.

36. NOTICES: Any notice given in connection with this agreement shall be given in writing and shall be delivered either by hand to the signing party or by regular and certified mail to the party at the party's address stated herein.

37. CHOICE OF LAW: Any dispute under this agreement or related to this agreement shall be decided in accordance with the laws of the State of Oregon.

38. ATTORNEY'S FEES: In the event of any action to enforce or interpret this contract, the prevailing party shall be entitled to recover from the losing party reasonable attorney fees incurred in the proceeding, as set by the court, at trial, upon appeal, or upon review.

39. ENTIRE AGREEMENT: This is the entire agreement of the parties, and supersedes any prior agreement.

40. SEVERABILITY: If any part of this agreement shall be held unenforceable, the rest of this agreement will nevertheless remain in full force and effect.

41. AMENDMENTS: This agreement may be supplemented, amended, or revised only in writing by agreement of the parties.

42. DEBARMENT CERTIFICATION: The contractor/Vendor certifies that the Contractor is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in this Contract by any Federal department or agency. If requested by the Eugene 4J School District, the Contractor shall complete a Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion form. Any such form completed by the Contractor for this Contract shall be incorporated into this Contract by reference.

43. CONTRACTOR'S MARK UP FOR CHANGE ORDER WORK: The allowance for the combined overhead and profit included in the total net cost to the Owner shall be based as follows:

a. For the Contractor, for Work performed by the Contractor's own forces, 15 percent of the cost.

b. For the Contractor, for Work performed by the Contractor's Subcontractor, 10 percent of the amount due the Subcontractor.

c. For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, 10 percent of the cost.

d. Total overhead and profit shall not exceed 25% of the base cost of the work (base cost being defined as the cost of the work without markups.)

e. Itemize costs to include breakdown for materials and labor, overhead and profit.

f. A change to the work providing a net CREDIT to the Owner shall include a credit for overhead and profit based on the following schedule:

1. For the Contractor, 5 percent of the Cost to be credited.

2. For each Subcontractor, 5 percent of the Cost to be credited.

3. For each Sub-subcontractor, 5 percent of the Cost to be credited.

4. In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including Subcontractor and Contractor overhead and profit as applicable.

5. The maximum allowable hourly wage rate for Changes to the Work shall be the appropriate Base Wage Rate plus Fringe Rate as listed for each occupation in the Prevailing Wage Rate for Public Works Contracts in Oregon manual issued by the Oregon Bureau of Industries; multiplied by 1.20. An amount for Overhead and Profit may be added as outlined above.

44. Application for Payment: Submit on invoice customarily used by Contractor. Identify 5% retainage to be carried until the project is determined to be complete.

End of Terms and Conditions

PART 1 GENERAL

The Prevailing Wage Rates dated January 1, 2015, including any subsequent corrections or amendments issued by the Oregon Bureau of Labor and Industries, are included as a portion of the Contract Documents by reference. Copies are available for review at the office of Facilities Management, School District 4J, and can be viewed on line at www.boli.state.or.us. Click on Prevailing Wages, then PWR Rate Publications, and then Prevailing Wage Rates for Public Works Contracts in Oregon (subject only to state law).

END OF SECTION 00 73 43

1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract and other Division 1 Specification Sections apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS
- A. Project Identification: Briefly, the is describes as the removal of two existing HVAC units and the installation of one new HVAC system.
  1. Project Location: Edgewood Elementary School, 577 E. 46th Avenue, Eugene, Oregon 97405
  2. Owner: Eugene School District 4J, 715 West Fourth Avenue, Eugene, OR 97402.
- B. Architect Identification: The Contract Documents, dated May 5, 2015 were prepared for Project by:
  Rodd Hansen, Architect, LLC
  1551 Oak Street, Suite A
  Eugene, Oregon 97401
- C. Owners Representatives: Donald F. Philpot

1.3 CONTRACT
- A. Project will be constructed under a general construction contract.
  1. Edgewood Elementary School – Cafeteria HVAC 2015, Eugene Public School District 4J, CIP No. 420.248.032

1.4 WORK SEQUENCE
- A. Do not commence Work until execution of Agreement and receipt of Notice-to-Proceed from Owner.
- B. Perform work in order to achieve **Substantial Completion by August 14, 2015**.
- C. Achieve Final Completion within seven (7) days following the date of Substantial Completion.

1.5 USE OF PREMISES
- A. Work Area Access: Buildings may be occupied during work. Access to the work area will be available on a week-day basis from approximately 7:00 am to 5:00 pm. Coordinate all other work hour schedules with Owner so as not to interfere with Owner's use of the building.
- B. Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public, subject to approval by a District Safety Specialist.
- C. Site Access: Maintain drives and building entrances and exits clear and protected at all times to Owner's, employees, and public access and for use by emergency personnel. Do not use these areas for parking or storage. Schedule deliveries to minimize space and time requirements for storage of materials at site.
- D. Parking: Contractor may use existing parking areas.
- E. Contractor Staging Areas: Limit staging to areas adjacent to work.
- F. Construction Operations: Limited to areas adjacent to work.

1.6 WORK UNDER SEPERATE CONTRACTS
- A. Separate Contract: Owner has awarded a separate contract for performance of certain construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract. This work includes the following:
  1. The District has contracted with separate contractors to complete some floor tile removal and replacement in the kitchen. Tile abatement to be completed under full enclosure negative pressure containment envelope, with abatement and new tile installation scheduled to begin 6/17/2015 and will be Substantially Complete by 6/30/2015. Kitchen equipment will be stored along the west wall of the Cafeteria during that time.
- B. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.7 FUTURE WORK
1. None Listed

1.8 PRODUCTS ORDERED IN ADVANCE
1. None Listed

1.9 OWNER-FURNISHED PRODUCTS
1. None Listed

1.10 MISCELLANEOUS PROVISIONS
- A. DRUG AND ALCOHOL POLICY

1. The possession, use, or distribution of illicit drugs and alcohol on school premises is prohibited. Prescription medications brought to the project site shall be in the original container bearing the name of the drug, the name of the physician and the prescribed dosage.

B. USE OF TOBACCO PRODUCTS
1. Smoking and the other use of tobacco products is prohibited on all school district property pursuant to OAR 581-021-0110.

C. SAFETY REQUIREMENTS
1. Safety must not be sacrificed for the sake of productivity or expedience. Safety of students, staff, and the public is critical. Take all reasonable precautions to prevent endangerment or injury. Advise and coordinate operations with the school office.
2. All contractors who perform work on District property, and their employees, are expected to know the District's expectations for safe work and to adhere to those expectations.
3. Contractor's are to adhere to the regulations of Oregon OSHA for all projects within the School District.

D. GENERAL SAFE WORK PRACTICES
1. Students, public and school staff shall not be put at risk by the activities of contractors or their employees.
2. Safe vehicle operation rules are to be followed at all times. These include positioning vehicles to minimize the necessity of backing and providing a "spotter", someone who will make sure that people do not run into the path of a vehicle when driving on a playground or field that is occupied by students.
3. Tools shall never be left out when an unsecured work area is vacated.
4. Ladders and scaffolding will be taken down when an unsecured work area is vacated.
5. Open holes and other tripping hazards shall be fenced or barricaded when an unsecured work area is vacated.
6. Operations resulting in vapors, emissions or flying objects shall be conducted in such a way as to prevent exposure to any unprotected parties or property.
7. "Secured Work Area" is defined as an area having a perimeter cyclone fence at least 6 feet in height, with gates which close and lock so that no casual entrance is possible by unauthorized adults or children.
8. Contractor to follow all OR-OSHA rules for Confined Spaces, where applicable.

E. COMMUNICATIONS REGARDING UNSAFE PRACTICES
1. Upon perceiving a problem, the District will immediately communicate the concern to the Contractor or Contractor's representative on the work site.
2. If agreement on correction of unsafe conditions cannot be reached, the concerns of the District shall prevail and safety concerns shall be addressed in accordance with the District requirements.

F. ELECTRICAL PANELS - LOCKOUT/TAGOUT
1. Contractor shall implement a Lockout/Tag-out program for his employees who take equipment out of service or place equipment back into service. Contractor shall review the District’s Energy Control Program prior to commencing work. Rules applying to this procedure art Oregon Occupational Safety and Health Code OAR 437, Division 2, Subdivision J, General Environmental Controls Lockout/Tag-out (1919.147), or latest edition.

G. ARC FLASH – ELECTRICAL SAFETY
1. Contractor shall comply with NFPA 70E (Electrical Safety in the Workplace), current edition. Contractor shall comply with Oregon OSHA 1910.137 (Personal Protective Equipment). The Contractor shall review with the School District Project Manager the 'Eugene School District Electrical Safety Program' before any work commences. The Contractor shall comply with all 'Arc Flash' and 'Electrical Safety' protocols referenced in any and all NFPA, OSHA, OROSHA, NEC, NESC, UL, IBC, IFC and ANSI documents (current editions).

H. POTENTIALLY HAZARDOUS PRODUCTS
1. The District attempts to maintain a safe and healthy environment for students and staff. The Contractor is therefore required to follow District guidelines controlling the use of potentially hazardous products and to use these products in a safe manner. Guidelines include the use of materials (adhesives, coatings, carpeting, etc.) which are known to emit little or no airborne pollutants.

2. MSDS information is required for all potentially hazardous products. The Project Manager and a District Safety Specialist will review these and determine what, if any, mitigation procedures will be required.
3. Contractor is to maintain and post copies of all MSDS information at the project site and adhere to the required controls.
4. Contractor is to ensure that work area by students and teachers is restricted. The District will provide signage appropriate for this purpose. The Contractor is to construct and maintain appropriate barriers. This shall include provision of physical separation barriers between "construction" and "occupied" spaces.
5. Contractor to adopt means of maintaining the construction space in negative air pressure in relation to occupied spaces.
6. Where there is a new or existing ventilation system in an affected space, the system shall be adjusted to provide the maximum amount of outside air possible with the system.
7. Efforts shall be made to install and operate new ventilation systems as soon in the construction process as practical.

I. ASBESTOS CONTAINING MATERIALS

1. Asbestos containing materials are known to exist in areas of the Work. The Contractor shall not, in any way, disturb materials which are known to contain asbestos, assumed to contain asbestos, or otherwise have not been tested and confirmed to be asbestos free.
2. Where access to concealed spaces is required, or it is necessary to disturb building materials such as for drilling of holes, cutting, etc., notify the Owner so that proper investigation and/or removal procedures are followed.
3. Prior to commencing Work, the Contractor shall meet with the District Safety Specialist and review the Owner's Asbestos Management Plan for the locations of asbestos-containing materials and/or materials assumed to contain asbestos. After reviewing the Owner's Asbestos Management Plan, the Contractor is required to sign Form 01 11 00A, Asbestos-containing Materials Notification Statement, provided at the end of this Section.
4. Contractor must not install any asbestos-containing materials when performing the Work of this project. At the completion of the Work, Contractor will be required to furnish a statement stating that no asbestos-containing materials were installed during the course of the Work. Refer to Sample Form 01 11 00B at the end of this Section

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)
PART 4 - SCHEDULE OF PRODUCTS ORDERED IN ADVANCE (None)
PART 5 - ASBESTOS FORMS 01 11 00 A and 01 11 00B

Form 01 11 00A

ASBESTOS-CONTAINING MATERIALS NOTIFICATION STATEMENT FOR CONTRACTORS

This form must be completed and signed by the Contractor prior to beginning work in any Eugene School District 4J building.

The presence of known and assumed asbestos containing materials is documented in the AHERA Management Plan for each building. Copies of the AHERA Management Plan are available in the main office of each building and in the Facilities Management Office at 715 West Fourth Avenue, Eugene, Oregon. The District Asbestos Specialist must be informed of the Contractor's activities in each building prior to the start of work so that the Contractor can be informed on how to use the AHERA Management Plan and to determine if any asbestos-containing materials are likely to be impacted by the work of the Contractor.

The Contractor is responsible for notifying all employees and subcontractors of the presence of asbestos in the building. The Contractor shall not disturb known or assumed asbestos-containing materials. If the Contractor discovers suspected asbestos-containing materials that have not been identified, the Contractor must stop any work impacting the suspected materials and notify the District Asbestos Specialist so that the material can be sampled. Any asbestos-containing materials that must be removed to allow the Contractor to complete the Contractor's work will be removed by the District under separate contract. If the Contractor disturbs asbestos-containing materials, the Contractor will be responsible for the cost of the cleanup and decontamination..

I_____, Representing _____,
(Print Name of Representative) (Business Name)

have been notified of the location of the AHERA Management Plan and agree to avoid impacting all known or assumed asbestos-containing materials in the performance of the Work.

_____ _____
Signature of Representative Date

_____ _____
Work Site CIP #

Form 01 11 00B

The Environmental Protection Agency (AHERA) rules require the School District obtain a signed statement from the Site Superintendent that, to the best of his/her knowledge, no asbestos-containing building materials were installed during the Work. Therefore, the following statement must be submitted on the Contractors letterhead prior to Project Closeout.

SAMPLE FORM
(To be submitted on the Contractor's letterhead)

ASBESTOS-CONTAINING MATERIALS STATEMENT

EUGENE SCHOOL DISTRICT 4J

_____
(Name of Project and CIP Number)

We the undersigned, (Name of Company), hereby warrant that to the best of our knowledge all materials furnished for the above referenced project contain 0% asbestos.

_____
(Name of Construction Company)

_____
(Signature and Date)

_____
(Printed Name)

_____
(Job Title)

END OF SECTION 01 11 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, Information Submittals, Delegated Design and other submittals.

B. Related Sections include the following:

1. Division 1 Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 1 Section 01 31 00 "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 1 Section 01 32 00 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 1 Section 01 40 00 "Quality Requirements" for submitting test and inspection reports and for mockup requirements, if any.
5. Division 1 Section 01 77 00 "Closeout Procedures" for submitting warranties.
6. Division 1 Section 01 78 23 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
7. Division 1 Section 01 78 39 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
8. Divisions 2 through 49 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

B. Submittals Schedule: Comply with requirements in Division 1 Section 01 32 00 "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 14 calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.

E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, if received from sources other than Contractor without prior consent.

1. Transmittal Form: Provide locations on form for the following information:

a. Project name.
b. Date.
c. Destination (To:).
d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Specification Section number and title.
i. Drawing number and detail references, as appropriate.
j. Submittal and transmittal distribution record.
k. Remarks.
l. Signature of transmitter.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Approved."

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Use only final submittals with mark indicating "Approved" taken by Architect.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Compliance with specified referenced standards.
j. Testing by recognized testing agency.
k. Application of testing agency labels and seals.
l. Notation of coordination requirements.
m. MSDS information, where applicable.

4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit the number required by the Contractor plus four (4) copies of Product Data, unless otherwise indicated. Architect will return two copies to Contractor and one to Owner. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
d. Schedules.

e. Design calculations.
f. Compliance with specified standards.
g. Notation of coordination requirements.
h. Notation of dimensions established by field measurement.
i. Relationship to adjoining construction clearly indicated.
j. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
3. Number of Copies: Submit four opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit five copies where copies are required for operation and maintenance manuals. Architect will retain two **c**opies, including one for the Owner's Project Manager; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor..

c. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be

signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section 01 40 00 "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section 01 31 00 "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section 01 32 00 "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section 01 40 00 "Quality Requirements."

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed

before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section 01 78 23 "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

T. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.

2.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Approved; Approved As Noted; Rejected – Re-Submit.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Substitution Requests: Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period, in compliance with this Section.

B. After execution of Agreement, the Owner may, at the Owner’s option, consider formal requests from the Contractor for substitution of products for those specified. One or more of the following conditions must be documented:
1. Compliance with final interpretation of code requirements or insurance regulations which require that the use of a substituted Product.
2. Unavailability of a specified Product through no fault of the Contractor.
3. Inability of specified Product to perform properly of fit in designated place.
4. Manufacturer’s or Fabricator’s refusal or inability of certify or guarantee performance of a specified Product in the application intended.

C. A Substitution Request constitutes a representation that the Quoter/Contractor:

1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified Product.
2. Will provide the same warranty for the Substituted Product as for the specified Product.
3. Will coordinate installation and make changes to the Work which may be required for the Work to be completed with no additional cost to the Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse the Owner for review or redesign services associated with re-approval by authorities.

D. Substitutions will not be considered when they are indicated or implied on Shop Drawings or Product Data Submittals, without separate request on the form provided, or when acceptance will require revision to the Contract Documents.

E. Submit three copies of each request for consideration. Limit each request to one proposed Substitution. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at end of Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

    a. Statement indicating why specified material or product cannot be provided.
    b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
    d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    e. Provide MSDS information to confirm that the product is no more harmful than the products specified.
    f. Samples, where applicable or requested.
    g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    i. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    j. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
    k. Cost information, including a proposal of change, if any, in the Contract Sum.
    l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
    m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

    a. Form of Acceptance: Change Request/Proceed Order
    b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weather-tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.
9. Provide bonded and insured off-site storage and protection when site does not permit on-site storage and protection.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Submittal Time: Comply with requirements in Division 0 Section 00 21 13 "Quotation Requirements."

PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

SUBSTITUTION REQUEST FORM

TO: _____
Architect

_____
Street Address

_____
City, State Zip Code

PROJECT: Edgewood Elementary School – Cafeteria HVAC 2015
Eugene School District 4J
CIP # 420.248.032

ITEM: _____ _____ _____ _____
Section No. Page No. Paragraph Description

The Undersigned requests consideration of the following substitution:

_____

The Undersigned states that the following paragraphs are true, except where noted otherwise:

1. The function, appearance and quality of the proposed substitution are equivalent or superior to the specified item;

2. The proposed substitution does not affect dimensions shown on the Drawings;

3. The Undersigned will pay for changes to the building design, including engineering and design services, detailing and construction costs caused by the requested substitution;

4. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements;

5. Maintenance and service parts will be locally available for the proposed substitution;

6. The Undersigned has attached data concerning the proposed substitution, including: Manufacturers product description, specifications, drawings, photographs, performance and test data, adequate for evaluation of the request, with applicable portions of the data clearly indicated. Attachments also includes description of changes to Contract Documents which the proposed substitution will require for its proper installation.

Submitted by: _____ Signature: _____

Firm: _____

Address: _____

Telephone: _____ Fax: _____

Date: _____

END OF SECTION 01 60 00

GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Sections include the following:
1. Division 2 Section "Selective Demolition" for demolition of selected portions of the building.
2. Divisions 2 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a written request describing procedures prior to the time cutting and patching will be performed, requesting approval to proceed, for cutting or alteration which affects:
1. Structural integrity of any element of Project.
2. Integrity of weather-exposed or moisture-resistant element.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of site-exposed elements.
5. Work of Owner or separate contractor.

B. Include the following information:
1. Identification of Project and CIP number
2. Location and description of the affected Work.
3. Necessity for cutting or alteration.
4. Description of proposed Work and Products to be used.
5. Alternatives to cutting and patching.
6. Effect on work of Owner or separate contractor.
7. Written permission of affected separate contractor, if any.
8. Date and time work will be executed.

1.5 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

1. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
2. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety**.**

B. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.6 WARRANTY

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

PRODUCTS

1.7 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

EXECUTION

1.8 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

1.9 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

1.10 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather-tight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Project Record Documents.
2. Operation and Maintenance Data.
3. Warranties and Bonds.

B. Related Sections include the following:

1. Section 01 33 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
2. Individual Product Sections: Specific requirements for operation and maintenance data.
3. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
3. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

2.1 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   2. Field changes of dimension and detail.
   3. Details not on original Contract drawings.

2.2 OPERATION AND MAINTENANCE DATA

A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

2.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

2.4 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

E. Provide servicing and lubrication schedule, and list of lubricants required.

F. Include manufacturer's printed operation and maintenance instructions.

G. Include sequence of operation by controls manufacturer.

H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

I. Additional Requirements: As specified in individual product specification sections.

2.5 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

F. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

G. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION 01 78 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A This section includes the following:

1. Demolition and removal of selected portions of the building and finishes.
2. Salvage of existing items to be reused or recycled.

1.3 SALVAGE

A. None. Remove and dispose of all material from site as noted on Drawings.

1.4 SUBMITTALS

A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 PROTECTION

A. General:
Protect portions of existing facilities which are to remain against damage and discoloration. Allow no leaks, even temporary, in existing building.

B. Barriers, Safety Guards, and Warning Lights. Provide where necessary for public protection.

C. Utilities
Keep active utilities intact and in continuous operation.

1.6 SCHEDULE

A. Provide a proposed schedule of demolition Work to the Owner for review within 5 days of receiving the written Notice to Proceed. Contractor shall coordinate with Owners asbestos abatement contractor.

1.7 QUALITY STANDARDS

A. Provide experienced, well-trained workers competent to complete the work as specified.

B. Unless approved by the Architect, provide all related products and accessories from one manufacturer.

C. Use materials from manufacturers and suppliers specified or approved by the Architect.

D. All work shall comply with governing building and safety codes.

1.8 MATERIALS HANDLING

A. Provide all materials required to complete the work as shown on the Drawings and specified herein.

B. Deliver, store, and transport materials to avoid damage to the materials or to any other work.

1.9 PROJECT CONDITIONS

A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.

B. Notify Architect when work is scheduled to be started and completed.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

1.10 ALTERNATES

A. None.

PART 2 - PRODUCTS

2.1 PROTECTIVE BARRIERS AND COVERS

A. Provide demolition materials, barriers, protective covers, etc. to complete the work as specified.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not start work until conditions are satisfactory.

3.2 SITEWORK PREPARATION

A. Obtain all required permits and approvals and obey all restrictions, deadlines, and notification requirements of governing agencies.

B. Notify owners and tenants of adjacent properties of impending work.

C. Identify and clearly mark underground utility lines, pipe, cable, and conduits.

3.3 DUST-PROOF PARTITIONS

A. Build where necessary to prevent dust-spread.

B. Face with plywood attached solidly to studs and cross blocking.

C. Cover joints with reinforced Kraft paper cemented in place.

D. Maintain dust-proof; remove only when directed.

E. Provide access and egress doors as required to maintain fire escape routes.

3.4 CLEANING AND REPAIRING

A. Allow no debris to accumulate in buildings, or on grounds, streets, or walks.

B. Haul away from site as soon as removed.

C. Dispose of at Contractor’s expense.

D. Clean, repair and touch, or replace when directed, adjacent property and surfaces which have been soiled, discolored, or damaged by work of this Section.

END OF SECTION 02 41 19

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Provide rough carpentry work:
1. Wood framing.
2. Sheathing.
3. Subflooring.
4. Underlayment.
5. Backing panels for utilities.
6. Nailers, blocking, furring, metal connectors at all post/beam/footing joints, and sleepers.
7. Glue-laminated beams, girders, and headers specified under 06 19 00

1.3 SUBMITTALS

A. Submit for approval product data.

1.4 QUALITY STANDARDS

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber, finished 4 sides, 19% maximum moisture content:
1. Light framing: Construction grade Douglas Fir or Southern Pine, appearance grade where exposed.
2. Structural framing and timbers: No. 1 grade Douglas fir or southern pine, appearance grade where exposed.
3. Boards: Construction grade.

B. Wood for nailers, blocking, furring and sleepers: Construction grade, finished 4 sides, 19% maximum moisture content. Pressure preservative treat items in contact with roofing, flashing, waterproofing, masonry, concrete or the ground. Provide blocking for all mounted items, including:

1. Casework and shelving.
2. Handrails and railings.
3. Toilet accessories.
4. Window treatment.
5. Nailers for roof crickets

C. Plywood, APA rated for use and exposure & Cementitious Underlayment:

1. Cementitious underlayment for single-ply roofing: 1/4" Dens-deck as manufactured by Georgia Pacific, or approved cementitious underlayment board as required to meet UL Class A requirement for roofing assembly.
2. Subflooring: APA sheathing, 1-1/8" thick 2:4:1, 48/24 Douglas Fir Plywood
3. Wall sheathing: APA sheathing, ½" C-D plugged, Exterior.
4. Roof sheathing: APA sheathing, 5/8", 32/16 Douglas Fir Plywood Exterior.
5. Backing panels: APA C-D plugged interior with exterior glue, 3/4" thick.

D. Building paper: Asphalt saturated felt, non-perforated, ASTM D 226, Type 1.

E. Air infiltration barrier @ Interior face of Exterior Studs typical: 6 mil Visqueen or approved equal.

F. Wood treatment:

1. Preservative treatment: Pressure-treated with waterborne preservatives, to comply with AWPB LP-2 for above-ground items LP-22 for ground contact items. Kiln dry after treatment to 19% max. moisture content for lumber and 15% for plywood. Treat above-ground wood exposed to deterioration by moisture and all wood in contact with the ground or fresh water.
2. Fire-retardant treatment: Pressure impregnated, to comply with AWPA C20 for lumber and AWPA C27 for plywood; provide where indicated and where required by code. Do not use fire-retardant treatment containing ammonium phosphates.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Wood framing: Comply with recommendations of NFPA Manual for House Framing, NFPA Recommended Nailing Schedule, and NFPA National Design Specifications for Wood Construction.

B. Plywood: Comply with recommendations of APA Design and Construction Guide - Residential and Commercial.

1. Minimum Nailing Standards for Wall Sheathing: 8d nails @ 6" o.c. at all edges, 12" o.c. at all intermediate supports.
2. Minimum Attachment Standards for Floor Sheathing: #10 x 2-1/2" screws @ 6" o.c. at all edges, 12" o.c. at all intermediate supports.

3. Minimum Attachment Standards for Roof Sheathing: 8d nails @ 6" o.c. at all edges, 12" o.c. at all intermediate supports. Decrease nail spacing to 4" o.c. at all edges and 8" o.c. at intermediate supports within 10 feet of roof edges and at roofs over third floor areas.

C. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut. Provide 2 inch nominal solid fire blocking between studs and other framing at a maximum spacing of 10' centers and at all floor and fire rated ceiling lines.

D. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.

E. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials. Provide STAINLESS STEEL OR DOUBLE GALVANIZED FASTENERS for attachments of all Pressure Treated Materials.

F. Restore damaged components. Protect work from damage.

TABLE 2304.9.1 FASTENING SCHEDULE

CONNECTION	FASTENING[a, m]	LOCATION
1. Joist to sill or girder	3 - 8d common ($2^1/_2$″ × 0.131″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	toenail
2. Bridging to joist	2 - 8d common ($2^1/_2$″ × 0.131″) 2 - 3″ × 0.131″ nails 2 - 3″ 14 gage staples	toenail each end
3. 1″ × 6″ subfloor or less to each joist	2 - 8d common ($2^1/_2$″ × 0.131″)	face nail
4. Wider than 1″ × 6″ subfloor to each joist	3 - 8d common ($2^1/_2$″ × 0.131″)	face nail
5. 2″ subfloor to joist or girder	2 - 16d common ($3^1/_2$″ × 0.162″)	blind and face nail
6. Sole plate to joist or blocking	16d ($3^1/_2$″ × 0.135 ″) at 16″ o.c. 3″ × 0.131″ nails at 8″ o.c. 3″ 14 gage staples at 12″ o.c.	typical face nail
Sole plate to joist or blocking at braced wall panel	3- 16d ($3^1/_2$″ × 0.135″) at 16″ o.c. 4 - 3″ × 0.131″ nails at 16″ o.c. 4 - 3″ 14 gage staples at 16″ o.c.	braced wall panels
7. Top plate to stud	2 - 16d common ($3^1/_2$″ × 0.162″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	end nail
8. Stud to sole plate	4 - 8d common ($2^1/_2$″ × 0.131″) 4 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	toenail
	2 - 16d common ($3^1/_2$″ × 0.162″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	end nail
9. Double studs	16d ($3^1/_2$″ × 0.135″) at 24″ o.c. 3″ × 0.131″ nail at 8″ o.c. 3″ 14 gage staple at 8″ o.c.	face nail
10. Double top plates	16d ($3^1/_2$″ × 0.135″) at 16″ o.c. 3″ × 0.131″ nail at 12″ o.c. 3″ 14 gage staple at 12″ o.c.	typical face nail
Double top plates	8 - 16d common ($3^1/_2$″ × 0.162″) 12 - 3″ × 0.131″ nails 12 - 3″ 14 gage staples	lap splice
11. Blocking between joists or rafters to top plate	3 - 8d common ($2^1/_2$″ × 0.131″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	toenail
12. Rim joist to top plate	8d ($2^1/_2$″ × 0.131″) at 6″ o.c. 3″ × 0.131″ nail at 6″ o.c. 3″ 14 gage staple at 6″ o.c.	toenail
13. Top plates, laps and intersections	2 - 16d common ($3^1/_2$″ × 0.162″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	face nail
14. Continuous header, two pieces	16d common ($3^1/_2$″ × 0.162″)	16″ o.c. along edge
15. Ceiling joists to plate	3 - 8d common ($2^1/_2$″ × 0.131″) 5 - 3″ × 0.131″ nails 5 - 3″ 14 gage staples	toenail
16. Continuous header to stud	4 - 8d common ($2^1/_2$″ × 0.131″)	toenail

TABLE 2304.9.1—continued FASTENING SCHEDULE

CONNECTION	FASTENING[a, m]	LOCATION
17. Ceiling joists, laps over partitions (see Section 2308.10.4.1, Table 2308.10.4.1)	3 - 16d common ($3^1/_2$″ × 0.162″) minimum, Table 2308.10.4.1 4 - 3″ × 0.131″ nails 4 - 3″ 14 gage staples	face nail
18. Ceiling joists to parallel rafters (see Section 2308.10.4.1, Table 2308.10.4.1)	3 - 16d common ($3^1/_2$″ × 0.162″) minimum, Table 2308.10.4.1 4 - 3″ × 0.131″ nails 4 - 3″ 14 gage staples	face nail
19. Rafter to plate (see Section 2308.10.1, Table 2308.10.1)	3 - 8d common ($2^1/_2$″ × 0.131″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	toenail
20. 1″ diagonal brace to each stud and plate	2 - 8d common ($2^1/_2$″ × 0.131″) 2 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	face nail
21. 1″ × 8″ sheathing to each bearing	3 - 8d common ($2^1/_2$″ × 0.131″)	face nail
22. Wider than 1″ × 8″ sheathing to each bearing	3 - 8d common ($2^1/_2$″ × 0.131″)	face nail
23. Built-up corner studs	16d common ($3^1/_2$″ × 0.162″) 3″ × 0.131″ nails 3″ 14 gage staples	24″ o.c. 16″ o.c. 16″ o.c.
24. Built-up girder and beams	20d common (4″ × 0.192″) 32″ o.c. 3″ × 0.131″ nail at 24″ o.c. 3″ 14 gage staple at 24″ o.c.	face nail at top and bottom staggered on opposite sides
	2 - 20d common (4″ × 0.192″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	face nail at ends and at each splice
25. 2″ planks	16d common ($3^1/_2$″ × 0.162″)	at each bearing
26. Collar tie to rafter	3 - 10d common (3″ × 0.148″) 4 - 3″ × 0.131″ nails 4 - 3″ 14 gage staples	face nail
27. Jack rafter to hip	3 - 10d common (3″ × 0.148″) 4 - 3″ × 0.131″ nails 4 - 3″ 14 gage staples	toenail
	2 - 16d common ($3^1/_2$″ × 0.162″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	face nail
28. Roof rafter to 2-by ridge beam	2 - 16d common ($3^1/_2$″ × 0.162″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	toenail
	2 -16d common ($3^1/_2$″ × 0.162″) 3 - 3″ × 0.131″ nails 3 - 3″ 14 gage staples	face nail
29. Joist to band joist	3 - 16d common ($3^1/_2$″ × 0.162″) 4 - 3″ × 0.131″ nails 4 - 3″ 14 gage staples	face nail

TABLE 2304.9.1—continued FASTENING SCHEDULE

CONNECTION	FASTENING[a, m]	LOCATION
30. Ledger strip	3 - 16d common ($3^1/_2$″ × 0.162″) 4 - 3″ × 0.131″ nails 4 - 3″ 14 gage staples	face nail at each joist
31. Wood structural panels and particleboard[b] Subfloor, roof and wall sheathing (to framing)	$^1/_2$″ and less: 6d[c, l] $2^3/_8$″ × 0.113″ nail[n] $^{19}/_{32}$″ to $^3/_4$″: $1^3/_4$″ 16 gage[o] 8d[d] or 6d[e] $2^3/_8$″ × 0.113″ nail[p] 2″ 16 gage staple[p] $^7/_8$″ to 1″: 8d[c] $1^1/_8$″ to $1^1/_4$″: 10d[d] or 8d[e]	
Single floor (combination subfloor-underlayment to framing)	$^3/_4$″ and less: 6d[e] $^7/_8$″ to 1″: 8d[e] $1^1/_8$″ to $1^1/_4$″: 10d[d] or 8d[e]	
32. Panel siding (to framing)	$^1/_2$″ or less: 6d[f] $^5/_8$″: 8d[f]	
33. Fiberboard sheathing[g]	$^1/_2$″: No. 11 gage roofing nail[h] 6d common nail (2″ × 0.113″) No. 16 gage staple[i] $^{25}/_{32}$″: No. 11 gage roofing nail[h] 8d common nail ($2^1/_2$″ × 0.131″) No. 16 gage staple[i]	
34. Interior paneling	$^1/_4$″: 4d[j] $^3/_8$″: 6d[k]	

For SI: 1 inch = 25.4 mm.

a. Common or box nails are permitted to be used except where otherwise stated.

b. Nails spaced at 6 inches on center at edges, 12 inches at intermediate supports except 6 inches at supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.

c. Common or deformed shank (6d - 2″ × 0.113″; 8d - $2^1/_2$″ × 0.131″; 10d - 3″ × 0.148″).

d. Common (6d - 2″ × 0.113″; 8d - $2^1/_2$″ × 0.131″; 10d - 3″ × 0.148″).

e. Deformed shank (6d - 2″ × 0.113″; 8d - $2^1/_2$″ × 0.13 1″; 10d - 3″ × 0.148″).

f. Corrosion-resistant siding (6d - $1^7/_8$″ × 0.106″; 8d - $2^3/_8$″ × 0.128″) or casing (6d - 2″ × 0.099″; 8d - $2^1/_2$″ × 0.113″) nail.

g. Fasteners spaced 3 inches on center at exterior edges and 6 inches on center at intermediate supports, when used as structural sheathing. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.

h. Corrosion-resistant roofing nails with $^7/_{16}$-inch-diameter head and $1^1/_2$-inch length for $^1/_2$-inch sheathing and 13/4-inch length for $^{25}/_{32}$-inch sheathing.

i. Corrosion-resistant staples with nominal $^7/_{16}$-inch crown or 1-inch crown and $1^1/_4$-inch length for $^1/_2$-inch sheathing and 1-inch length for $^{25}/_{32}$-inch sheathing. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

j. Casing ($1^1/_2$″ × 0.080″) or finish ($1^1/_2$″ × 0.072″) nails spaced 6 inches on panel edges, 12 inches at intermediate supports.

k. Panel supports at 24 inches. Casing or finish nails spaced 6 inches on panel edges, 12 inches at intermediate supports.

l. For roof sheathing applications, 8d nails ($2^1/_2$″ × 0.113″) are the minimum required for wood structural panels.

m. Staples shall have a minimum crown width of $^7/_{16}$ inch.

n. For roof sheathing applications, fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.

o. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.

p. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.

END OF SECTION 06 10 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Provide everything required to complete the Work as shown on the Drawings and specified herein. Provide patching of surfaces where impacted by this project.

1.3 QUALITY ASSURANCES

A. Source Limitations: Obtain gypsum wallboard products, including gypsum wallboard, joint reinforcing tape, and embedding material, from a single manufacturer.

B. Mockups: Provide a full-thickness mockup for each type and finish of gypsum wallboard and substrate to demonstrate aesthetic effects and set quality standards for materials and execution.

PART 2 - PRODUCTS

2.1 GYPSUM WALLBOARD

A. Hi-Impact, abuse resistant gypsum wallboard shall be manufactured by U.S. Gypsum, or approved.
   1. Provide boards in 8 foot or other lengths to minimize construction joints.

B. Gypsum wallboard shall be as per Federal Specification SS-L-30D, in 48" widths.

C. Use types and thicknesses specified below except where shown otherwise in the Drawings.
   1. Water-resistant wallboard: Type VII, Grade W or X as required, Class 2, 5/8" thick.
   2. Provide seals for sound and thermal insulation at: floor plates, top plates, connection to adjacent walls/pilasters/columns, and all cutouts.

2.2 TRIM ACCESSORIES

A. Standard Trim: ASTM C 1047, provided or approved by manufacturer for use in gypsum wallboard applications indicated.

B. Metal Trim: Zinc-coated steel 26 gauge min., as per Federal Specification QQ-S-775, Class d or e.

C. Casing beads: Channel-shapes with exposed wing, and concealed wing not less than 7/8"

wide.

D. Corner beads: Angle shapes with wings not less than 7/8" wide: Perforated for nailing and joint treatment. Or use paper/metal combination bead suitable for joint treatment.

E. Edge beads at ceiling perimeter: Angle shapes with wings 3/4" wide minimum. Concealed wing perforated for nailing, exposed wing edge folded flat.

2.3 JOINT REINFORCING MATERIALS

A. General: Comply with joint strength requirements in ASTM C 1597M and with gypsum wallboard manufacturer's written recommendations for each application indicated.

B. Jointing system with reinforcing tape and compound as supplied or recommended by the gypsum wallboard manufacturer.

2.4 FASTENINGS

A. For gypsum wallboard attached to metal framing and channels: Flat-head screws, 1" long minimum. Self-tapping threads and self-drilling points. Specifically designed for use with power-driven tools.

B. For gypsum wallboard attached to wood: 1-1/4" type W bugle-head screws.
1. Alternate: Annular ring nails complying with ASTM C514.
2. Nail sizes as required by governing building code.

PART 3 - EXECUTION

3.1 PREPARATION

A. Preparation and coordination: Install blocking and backups to support all edges of wallboard. Verify that wood framing to receive wallboard is dry and not subject to shrinkage.

B. Keep wallboard materials dry and protected from moisture. Store wallboard materials so they are protected from damage to surfaces and edges. Maintain interior work environment closed in, not exposed to weather, clean, dry, well-ventilated, well-lighted, and comfortable in temperature.

C. Keep work of trades such as conduit, pipe, and ducts clear of the inside faces of wall panels.

3.2 INSTALLING PANELS

A. Install as per manufacturer's instructions, trade association standards, and governing building code.

B. If there is a conflict between instructions, standards, code, etc., install as instructed by

the Architect.

C. For walls and ceilings: Hold wallboard 3/8 inch to 1/2 inch up from floor. Install wall panels horizontally unless otherwise required. Stagger panel joints vertically.

D. Nailing and screw attachment as per manufacturer's instructions. Do not position conduit and piping where it can be damaged by nailing. Do not proceed with nailing into wood framing that has over 19% of moisture content.

E. Taping and spackling must follow applicable trade standards and manufacturer's instructions throughout. Keep temperature above specified minimum (usually 55 degrees). Do not track gypsum and spackle dust to clean areas.

F. Joint treatment must follow applicable trade standards and manufacturer's instructions throughout. Gypsum wallboard must fit completely snuggly against supporting framework. Joint work shall be at a minimum of 55 degrees F. for 24 hours prior to work.

G. Finish: Light spray texture. Where textured finish on gypsum board walls are perpendicular to walls finished with other finishes, mask adjacent wall prior to spraying new wall. Match texture with that of approved sample.

3.3 TRIM ACCESSORIES

A. Provide all metal trim as required to complete the work. Securely nail corner beads with required type and size nails starting 2 inches from each end. Space and stagger as required by wallboard system manufacturer.

3.4 CLEANING AND REPAIR

A. Don't allow tracking of gypsum and finishing compounds onto floor surfaces. At completion of each segment of work in a room, clean thoroughly and remove all debris. Frequently remove all debris from site. Make a final check to determine that there are no penetrations through fire-rated walls.

B. Recheck work for necessary repairs that may be required before painting or other added work. Complete repairs as directed by the Architect.

END OF SECTION 09 26 13

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Provide surface preparation and painting for ALL remodeled areas. Extend preparation and painting on All affected surfaces to the nearest wall corner.

B. Painting includes all exposed bare and covered pipes, ducts, exposed steel supports and surfaces of mechanical and electrical equipment that do not have a factory applied final finish.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1. Prefinished items include the following factory-finished components:
   a. Toilet enclosures.
   b. Factory finished mechanical and electrical equipment.
   c. Light fixtures.

2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
   a. Furred areas.
   b. Ceiling plenums.
   c. Pipe spaces.
   d. Duct shafts.

3. Finished metal surfaces include the following:
   a. Anodized aluminum.
   b. Stainless steel.
   c. Chromium plate.
   d. Copper and copper alloys.
   e. Bronze and brass.

4. Operating parts include moving parts of operating equipment and the following:
   a. Valve and damper operators.
   b. Linkages.
   c. Sensing devices.
   d. Motor and fan shafts.

5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment

name, identification, performance rating, or nomenclature plates.

6. Do not paint previously unpainted masonry.

7. Do not paint previously unpainted concrete.

1.3 SUBMITTALS

A. Product Data: For each paint system indicated. Include primers.

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.

B. Samples for Initial Selection: For each type of finish-coat material indicated. After color selection, Architect will furnish color chips for surfaces to be coated.

C. Qualification Data: For Applicator.

1.4 QUALITY ASSURANCE

A. Paints shall be applied in accordance with manufacturer's printed directions.

B. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

C. Source Limitations: Obtain primers for each coating system from the same manufacturer as the finish coats.

D. Mockups: Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.

1. Architect will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
   a. Wall Surfaces: Provide samples on at least 10 sq. ft..
   b. Small Areas and Items: Architect will designate items or areas required.

2. Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface.
   a. After finishes are accepted, Architect will use the room or surface to evaluate coating systems of a similar nature.

3. Final approval of colors will be from benchmark samples.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
   1. Product name or title of material.
   2. Product description (generic classification or binder type).
   3. Manufacturer's stock number and date of manufacture.
   4. Contents by volume, for pigment and vehicle constituents.
   5. Thinning instructions.
   6. Application instructions.
   7. Color name and number.
   8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
   1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.6 EXTRA STOCK

A. One gallon of each color used. Label for identification and store where directed.

1.7 PROJECT CONDITIONS

A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.

B. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS- PAINT

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

B. Manufacturers' Names: Shortened versions (shown m parentheses) of the following manufacturers' names are used in other Part 2 articles:
   1. ICI Dulux Paint Centers (ICI Dulux Paints).
   2. PPG Industries, Inc. (Pittsburgh Paints).
   3. Sherwin-Williams Co. (Sherwin-Williams).
   4. Rodda.
   5. Substitutions by approval.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 INTERIOR PRIMERS

A. Interior Gypsum Board and Veneer Plaster Primer (new work): Factory-formulated latex-based primer for interior application.

1. ICI Dulux Paints; 1000-1200 Dulux Ultra Basecoat Interior Latex Wall Primer: Applied at a dry film thickness of not less than 1.2 mils.
2. ICI Dulux Paints; 1030-1200 Ultra-Hide PVA Interior Primer Sealer General Purpose Wall Primer: Applied at a dry film thickness of not less than 1.9 mils.
3. Pittsburgh Paints; 6-2 SpeedHide Interior Quick-Drying Latex Sealer: Applied at a dry film thickness of not less than 1 .0 mil.
4. Sherwin-Williams; PrepRite 200 Latex Wall Primer B28W200 Series: Applied at a dry film thickness of not less than 1.6 mils.

B. Interior Gypsum Board and Veneer Plaster Primer (Existing Work): Factory formulated s alven-based primer for interior application.

1. ICI Dulux Paints; 1120 -1200, wall and woodwork penetrating solvent-based prime sealer
2. Sherwin Williams; B79WOOOIO, PrepRite ProBlock interior alkyd primer sealer.
3. Kelly Moore; 935 stain lock.

C. Interior Wood Primer for Acrylic-Enamel: Factory-formulated acrylic-latex-based interior wood primer.

1. ICI Dulux Paints; 1010-1200 Ultra-Hide Aquacrylic Stain Killer Primer Sealer: Applied at a dry film thickness of not less than 1.8 mils.
2. Pittsburgh Paints; 6-855 SpeedHide Latex Enamel Undercoater: Applied at a dry film thickness of not less than 1 .0 mil.

3. Sherwin-Williams; PrepRite Wall and Wood Primer B49W200 Series: Applied at a dry film thickness of not less than 1.6 mils.
4. Sherwin-Williams; PrepRite Classic Interior Primer B28Wl01 Series: Applied at a dry film thickness of not less than 1 .6 mils.

E. Interior Ferrous-Metal Primer: Factory-formulated quick-drying rust-inhibitive alkyd-based metal primer.
1. ICI Dulux Paints; 4030-xxxx True-Glaze-WB: Applied at a dry film thickness of not less than 2.0 mils.

F. Interior Glazed CMU: Urethane modified acrylic bonding primer.
1. X-1-M Products, Inc.; X-1-M UMA: Applied per manufacturer's instructions.

2.4 INTERIOR FINISH COATS

A. Interior Low-Luster Acrylic Enamel: Factory-formulated eggshell acrylic-latex interior enamel.
1. ICI Dulux Paints; 1402-XXXX Dulux Professional Acrylic Eggshell Interior Wall & Trim Enamel: Applied at a dry film thickness of not less than 1.4 mils.
2. Kelly-Moore; 1686 Dura-Poxy Eggshell Acrylic Enamel: Applied at a dry film thickness of not less than 1 .6 mils.
3. Pittsburgh Paints; 6-400 Series SpeedHide Eggshell Acrylic Latex Enamel: Applied at a dry film thickness of not less than 1.25 mils.
4. Sherwin-Williams; ProMar 200 Interior Latex Egg-Shell Enamel B20W200 Series: Applied at a dry film thickness of not less than 1.6 mils.

B. Interior Semi-gloss Acrylic Enamel: Factory-formulated semi-gloss acrylic-latex enamel for interior application.
1. ICI Dulux Paints; 1406-XXXX Dulux Professional Acrylic Semi-Gloss Interior Wall & Trim Enamel: Applied at a dry film thickness of not less than 1.5 mils.
2. Pittsburgh Paints; 6-500 Series SpeedHide Interior Semi-Gloss Latex: Applied at a dry film thickness of not less than 1.0 mil.
3. Sherwin-Williams; ProMar 200 Interior Latex Semi-Gloss Enamel B31W200 Series: Applied at a dry film thickness of not less than 1.3 mils.

C. Interior Full-Gloss Acrylic Enamel: Factory-formulated full-gloss acrylic-latex interior enamel.
1. ICI Dulux Paints; 3028-XXXX Dulux Interior/Exterior Acrylic Gloss Finish: Applied at a dry film thickness of not less than 1.6 mils.
2. Pittsburgh Paints; 6-8534 SpeedHide Interior Latex 100 Percent Acrylic Gloss Enamels: Applied at a dry film thickness of not less than 1.0 mil.
3. Pittsburgh Paints; 90-374 Pitt-Tech One Pack Interior/Exterior High Performance Waterborne High Gloss DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils.
4. Sherwin-Williams; ProMar 200 Interior Latex Gloss Enamel B21W201: Applied at a dry film thickness of not less than 1.5 mils.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.

1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.

1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation

1. Existing painted surfaces have numerous paint layers and bottom layers may contain lead based paint. Should suspect layers be encountered, adhere to the following paragraph, 3.2D for additional precautions for preparation of surfaces containing lead paint. Review procedure with District before proceeding.
2. Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contaminations such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence and sealers must be removed to assure sound bonding to the tightly adhered old paint. In addition, glossy surfaces of old paint films must be clean and dull before repainting (thorough washing with an abrasive kitchen cleanser will clean and dull in one operation, or wash thoroughly and dull by sanding. Remove sanding dust.) Spot prime all bare areas with appropriate primer,\. Feather all edges. Fill depressions left by removed paint. Always check for compatibility of the previously painted surface with the new coating by applying a test patch of 2-3 square feet. Allow to dry thoroughly and check adhesion.
3. Remove loose paint by hand scraping and/or wire brushing.
4. Do not sand or scrape cement plaster or stucco.
5. Surfaces: Correct defects and clean surfaces which affect work of this section.
6. Mold or mildew must be removed by scrubbing with a mixture of one quart of

household bleach to three quarts of water. CAUTION: DO NOT ADD HOUSEHOLD DETERGENTS OR AMMONIA TO THE BLEACH SOLUTION. Wear protective glasses or goggles, waterproof gloves and protective clothing and quickly wash off any of the solutions that touches the skin. Scrub well with brush and allow solution to remain on the surface for ten minutes before rinsing thoroughly with clean water. Allow to dry.

7. Surfaces may be solvent cleaned, if required, only with approval of the Owner's representative and the Architect.
8. Acid washing, water blasting or sand blasting is generally not acceptable. Exceptions need prior written approval by the Owner' representative and the Architect unless called for in the contract documents.
9. Glossy surfaces shall be dulled.
10. Treat areas where factory applied coating has been damaged as unfinished material. Sand edges of blemishes to achieve a smooth transition.
11. Marks: Seal with appropriate sealer those marks which may bleed through surface finishes.
12. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
13. Doors, Frames: Finish door edges and protect hardware from damage. Remove as may be required to apply specified finish.
14. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
15. Concrete, Masonry, Plaster, Stucco: Repair surface defects. Remove grease, oil and other contaminants by solvent cleaning. Scrape carefully to remove deteriorated coatings. Glossy or very hard coatings should be sanded lightly to promote maximum adhesion of the subsequent coating. Surface must be thoroughly dry before coating.
16. Galvanized Surfaces: Remove surface contamination and oils and thoroughly clean with surface conditioner in accordance with manufacturer's instructions.
17. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
18. Bare, Sandblasted or Pickled Metal: Treat with a metal treatment before applying primer.
19. Aluminum: Remove surface oxidation on aluminum scheduled to be painted. Apply etching primer immediately after cleaning.
20. Interior Wood Items Scheduled to Receive Paint Finish: Remove tape residue and wire staples. Wipe off dust and grit prior to priming. Seal knots, knot holes, pitch streaks and resinous sapwood sections with sealer. Fill nail and screw holes. Rough areas and cracks after primer has dried, sand between coats.
21. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, knot holes, pitch streaks and resinous sapwood sections with sealer. Set nails (nail pops) and fill nail holes with tinted exterior caulking compound after prime coat has been applied. Sand smooth as required. Clean and allow surface to be thoroughly dry before coating.
22. Plastic: Sand lightly and wipe with solvent appropriate for material.
23. At completion of preparation, remove all evidence of paint chips, dust, and debris as

a result sanding, scraping; and caulk and window putty removal. District dumpsters not available for disposal of waste generated by this project.

D. Surface Preparation - Existing Lead Based Paint

1 . Prepare surfaces with the additional following precautions.

2. Some paint in this project is assumed to be lead containing and where identified shall be prepared and painted according to the following guidelines. Contractor is solely responsible for protection of workers and the public. Safety precautions shall include, but not be limited to, the following:

a. Follow all regulatory agency requirements in the handling, collecting and disposal of lead containing paint.

b. Maintain the safety of workers through the usage of respirators and other measures deemed appropriate by the contractor or as required by governmental agencies.

c. No power sanding, drilling, grinding, or sawing of lead based paint surfaces is permitted unless area is isolated and under negative air containment.

d. Cover areas with plastic sheeting to collect debris. Bag up and dispose of lead based material with rest of debris.

e. Avoid unnecessary scraping or sanding of lead based paint surfaces.

f. Surfaces are to be minimally hand sanded only. All visible dust created shall be promptly collected with a HEPA vacuum, and cleaned from building surfaces with a damp cloth or sponge.

g. All debris from surface preparation shall be collected for safe disposal before the next school day. No one is to be able to walk through, breath, or otherwise be able to ingest potentially lead laden debris material.

h. Torches and heat guns are prohibited.

1. Dry abrasive blasting is prohibited.

J. Use of paint strippers is prohibited.

k. Surfaces proven to not contain lead may be prepared without these additional preparation precautions. Testing swabs are available from District for contractor's use.

E. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint m a clean condition, free of foreign materials and residue.

2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

3. Use only thinners approved by paint manufacturer and only within recommended limits.

F. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.

2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

3. Provide finish coats that are compatible with primers used.
4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
7. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
8. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
9. Sand lightly between each succeeding enamel or varnish coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
2. Omit primer over metal surfaces that have been shop primed and touchup painted.
3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1 . Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

F. Mechanical items to be painted include, but are not limited to, the following:
   1. Un-insulated metal piping.

2. Uninsu1ated plastic piping.
3. Pipe hangers and supports.
4. Tanks that do not have factory-applied final finishes.
5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.

7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

G. Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
2. Panelboards.
3. Electrical equipment that is indicated to have a factory-primed finish for field painting.

H. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no bum-through or other defects due to insufficient sealing.

I. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

J. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

K. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 FIELD QUALITY CONTROL

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when paint is being applied:
1. Owner will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.
2. Owner may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove noncomplying paint from Project site, pay for testing, and repaint surfaces previously coated with the noncomplying paint. If necessary, Contractor may be required to remove noncomplying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

3.5 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered

paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.6 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage from painting.
Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
I. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA Pl.

3.7 INTERIOR PAINT SCHEDULE

A. Refer to drawings for schedule of lusters.

B. Primer may be omitted at previously painted surfaces that remain intact.

C. Previously painted wall and ceiling surfaces: Provide the following finish systems:
1. Acrylic-Enamel Finish: Two finish coats over a primer. (Full alkyd prime coat at walls.)

D. Gypsum Board: Provide the following finish systems over interior gypsum board and veneer plaster surfaces:
1. Acrylic-Enamel Finish: Two finish coats over a primer.

E. Wood and Hardboard: Provide the following paint finish systems over interior wood surfaces:
1. Acrylic-Enamel Finish: Two finish coats over a wood under-coater.
a. Primer: Interior wood primer for acrylic-enamel and semi-gloss alkyd-enamel finishes.
b. Finish Coats: Interior acrylic enamel.

F. Ferrous Metal: Provide the following finish systems over ferrous metal:
1. Acrylic-Enamel Finish: Two finish coats over a primer.
a. Primer: Interior ferrous-metal primer. b. Finish Coats: Interior acrylic enamel.

G. Clear Finish Wood (doors, cabinets and other clear finish wood): Provide the following:
1. Interior Semi-Gloss Spar Urethane: Two coats minimum.

H. Clear finish wood to receive a painted finish: Provide the following:
1. Primer: One coat oil based primer.
2. Finish Coats: Two coats acrylic Latex Enamel.

End of Section 09 90 00

SECTION 23 05 00

COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK INCLUDED

A. Provide all materials, labor, equipment together with all incidental items not shown or specified, which are required by code and good practice to provide complete systems. Refer to Division 1, 01 10 00 Summary of Work.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Refer to Division 26 related electrical work.

B. Refer to Division 1, 01 10 00 Summary of Work.

1.4 SITE VISIT

A. Examine site of proposed work and become familiar with job conditions affecting work. No additional allowance will be granted due to lack of information of existing conditions.

1.5 COORDINATION

A. Coordinate all work in Division 23 with work specified in other Divisions to provide a complete installation. Expense of changes required because of lack of supervision or coordination shall be borne by the Contractor. Such changes shall be to the satisfaction of and directly supervised by the Architect.

1.6 CONTRACT DRAWINGS

A. Location of lighting, ductwork, piping, and equipment on Drawings is approximate. Plan exact location with respect to measurements on the job and work of other trades prior to work. If measurements differ slightly, modify work. If measurements differ substantially, notify Contractor prior to fabrication.

1.7 SUBSTITUTIONS

A. Manufacturer's names and model numbers shown on drawings or in specifications form the basis of design and indicate quality of equipment or materials. Manufacturers not listed require prior approval. Substitution requests must be made in writing to the Architect prior to bid in accordance with Division 1, 01 60 00 Product Requirements. Provide sufficient information indicating compliance with these Specifications.

1.8 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Provide shop drawings in accordance with Division 1, 01 33 00 Submittal Procedures. Submittals shall include all information necessary as required for complete check including any changes or modifications to the drawings necessary. Include fan curves.

1.9 RECORD DRAWINGS

A. Provide record "as-built" drawings in accordance with Division 1, 01 78 39 Project Record Drawings. Show all deviations from Contract Drawings, including addenda and change order items.

1.10 PERMITS, CODES, AND INSPECTIONS

A. Permits: Obtain all permits and pay fees required by governing agencies having jurisdiction over this work.

B. Codes, Standards: Applicable codes and standards contained therein shall determine minimum requirements for materials, methods, and labor practices not otherwise stated herein.

C. Inspections: Arrange and pay for inspections and tests required by codes or ordinances.

1.11 CUTTING AND PATCHING

A. Not permitted unless shown on the drawings or approved by the Architect. Refer to Division 1, 01 73 29 Cutting and Patching.

1.12 TEMPORARY SERVICES

A. Provide in accordance with Division 1, 01 50 00 Temporary Facilities and Controls as required for completion of Work. Permanent heating system shall not be used for heating during construction without prior approval by the Architect. Provide separate portable heaters as required.

1.13 OPERATING AND MAINTENANCE DATA

A. Submit in accordance with Division 1, 01 78 23 Operation and Maintenance Data. Include information only on the exact equipment installed. Include the following information where applicable:
1. Manufacturer's printed operating, maintenance, and service information.
2. Approved shop drawings.
3. Manufacturer's parts list.
4. Balance report.

1.14 INSTRUCTION

A. After all equipment and systems are operating, instruct Owner's operating personnel in the operation and maintenance of all systems. Training shall be by individuals who are familiar and have minimum three years experience with the systems. Provide the following minimum instruction:
1. HVAC systems – 2 hours

1.15 START UP

A. The Mechanical Contractor shall be responsible for proper operation of all systems and shall coordinate start up procedures, calibration and system checkup with subcontractors present. System operational problems shall be diagnosed and corrected as required for system operation.

1.16 COMPLETION

A. General: When installation is complete, cleaned and adjustments specified herein made, operate system to demonstrate to Architect that system is complete and operating in conformance with these Specifications.

B. Substantial Completion: Work hereunder will not be reviewed for Substantial Completion until operating and maintenance data, record drawings and directories specified herein have been approved.

C. Final Completion: Entire installation turned over to the Owner in finished and satisfactory working condition.

1.17 WARRANTY

A. Provide a written warranty covering Work of the Division for a period of one year in accordance with Division 1, 01 77 00 Closeout Procedures. Include manufacturer's written warranties for material and equipment.

PART 2 - PRODUCTS

2.1 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.

2.2 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.

2.3 ELECTRICAL EQUIPMENT

A. All electrical equipment UL and NEMA labeled or acceptable to electrical inspection authorities having jurisdiction. All equipment which requires electrical service of 50 amps or more shall have lugs suitable for either copper or aluminum supply conductors.

B. Provide any interlocking devices as required for automatic control. All wiring (and electrical Work pertaining to mechanical system) by Mechanical Contractor unless specified in Division 26.

C. Motors: Motors 1/2 HP or over voltage and phase as shown on Drawings. Motors rated less than 1/2 HP wound for 120 volt 60 cycle, single phase, 1750 rpm, unless otherwise specified. Provide manual switch with overload protection when required. All motors protected by thermal overload protection. Motor starters and fused disconnects shall be provided by the Mechanical Contractor unless specified in Division 26.

2.4 VARIATIONS IN EQUIPMENT

A. Manufacturer’s names and model numbers shown on drawings or in specifications form the basis of design. If approved mechanical equipment of other manufacturer requires modification or additions to any Work as shown on the drawings, Mechanical Contractor shall arrange for and pay costs of such changes as part of this Work.

2.5 EQUIPMENT SPECIALTIES

A. Machinery Guards: All moving parts of machinery, such as shaft couplings and belt drives, shall be adequately covered with removable metal guards to protect personnel from possible injury.

B. V-Belt Motor Drives: Rated at 150% of motor capacity with adjustable cast iron drive sheave and enclosed with protective belt guard secured to equipment.

PART 3 - EXECUTION

3.1 CLEANING SYSTEMS

A. After all equipment, pipes, and duct systems are installed, system shall be thoroughly cleaned per Division 1. Remove all stickers and tags from equipment and fixtures. Clean all piping systems prior to installation of insulation or painting. Repair or replace any discoloration or damage to system, building finish, or furnishing resulting from failure to properly clean systems.

3.2 ACCESS TO EQUIPMENT AND ACCESSORIES

A. Install equipment with adequate access for service. Provide access doors where shown or required for proper access to valves, dampers, motors, and all other mechanical equipment requiring maintenance where area is not accessible by other means.

B. Access doors shall be minimum size of 12 X 12 inches. Access doors in public areas shall be lockable. Filter rack access shall have handles. Access doors shall have same fire rating as the surface they are installed in. Type, size, and exact location of access doors shall be coordinated with Architect prior to Work.

3.3 SEISMIC REQUIREMENTS

A. All ductwork and equipment shall be provided with attachments, hangers, transverse bracing, longitudinal bracing, bolts, and connection types per OSSC and SMACNA Seismic Restraint Manual Guidelines for Mechanical Systems. Seismic calculations shall be provided by the Contractor.

3.4 COMPONENT IDENTIFICATION

A. Equipment: Identify all equipment with nameplate attached to the equipment or adjacent to it. Use equipment designation per schedule on drawings, where possible. Nameplate shall be black bakelit or phenolic resin with 1/2" high white letters.

B. Controls: Identify all controls, switches, and indicating lights with nameplate securely attached to the device or adjacent to it. Nameplate shall be attached on the inside face of thermostats. Phenolic labels or approved.

3.5 PAINTING

A. Inside ducts visible through face of grilles or diffusers, paint one coat flat black.

B. All pipe hangers, ferrous piping, supports, and equipment without factory finish and where exposed below finished ceilings or on the exterior of the building shall be painted flat black.

C. Except as noted herein, prepare all mechanical equipment, piping, and ductwork for painting if painting is shown in finish schedule.

D. All outside equipment without factory finish and outside duct work shall be painted. Provide necessary protection of work installed by other trades. Prepare surfaces to receive paint using a cleaning solution as recommended by paint manufacturer. Paint with one coat of primer followed by two coats Rustoleum enamel, and one coat enamel color as selected by Architect.

3.6 PIPE AND DUCTWORK PENETRATION

A. Where ducts and pipes pass through walls, ceilings, or floors, seal off void between opening and duct, or pipe and sleeve. Provide escutcheon in exposed locations.

B. Where ducts, pipes, conduit, equipment, or other material passes through or penetrates any fire-resistant wall, ceiling, or floor use UL listed fire stop systems and completely seal voids the full thickness of material being penetrated. STI, Metacaulk, or equal.

3.7 FLASHING

A. All pipe and duct penetrations through roof shall be manufactured piping penetration packages or flashing cones compatible with roofing material and acceptable to Roofing Contractor. Coordinate with General Contractor and Roofing Manufacturer. Stormtite Multiflash or equal.

3.8 VIBRATION ISOLATION AND EQUIPMENT BASES

A. Provide complete vibration isolation supports for all equipment where required to prevent transmission of vibration to the building. Size springs in accordance with manufacturer's recommendations. Where fan and motor are mounted separately, provide integral steel fan and motor base. Maximum of 10% transmissibility. Provide minimum 3" high concrete equipment bases for pumps, boilers, tanks, etc., as required.

END OF SECTION 23 05 00

SECTION 23 05 93

TESTING, ADJUSTING, AND BALANCING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION

A. The work performed by the Testing, Adjusting, and Balancing Contractor under this Section shall be performed by a firm experienced in this work and as approved by the Architect. The work includes testing, adjusting, and balancing of the installed mechanical systems. The Mechanical Contractor shall be responsible for the coordination of the work of the Balancing Contractor and other Contractors involved in the installation of the systems being balanced.

B. The Balancing Contractor shall be a current member of AABC and/or NEBB, have at least three years experience in projects similar to this project, and maintain an office within 100 miles of the job site. The Balancing Contractor shall be independent of the installer of the systems being tested.

C. Balancing Contractors: Air Balance Specialties, Southern Oregon Air Balance, AIR Incorporated, Northwest Engineering, or approved.

1.3 SUBMITTALS

A. System Performance Report: All test results shall be recorded on forms which have been approved by the Architect. Reference to system points shall be designated by Architectural Room No. and points per room. Include in report drawings which relate all reference points in report to Contract Drawings. Report shall be bound in a 3-ring binder completely indexed. Submit 3 copies to Architect at completion of the work.

PART 2 - PRODUCTS

2.1 BALANCING EQUIPMENT

A. The Balancing firm shall supply all instruments, tools, and equipment necessary to perform the work specified herein. All instruments shall have been calibrated within the preceding six months. Provide proof of calibration to the Engineer. Mechanical Contractor shall make changes in motor sheaves where required and provide any scaffolding, ceiling tile removal and replacement necessary to provide access to balancing dampers or to take required readings.

PART 3 - EXECUTION

3.1 FINISHED SURFACES

A. Protection: Use all means necessary to protect the installed work and materials of all other trades and existing surfaces.

B. Replacements: In the event of damage, immediately make all repairs and replacement necessary to the approval of the Architect at no additional cost to the Owner.

3.2 ADJUSTMENT AND BALANCING OF AIR SYSTEMS

A. Make the following observations and make corrections where necessary to report to Mechanical Contractor:
   1. Check for drafts, noise and vibration.
   2. Check building pressure under normal operating conditions.
   3. Establish equal pressure within the building from one room to another except special areas requiring positive or negative conditions.

B. Make the following measurements and adjustments to all mechanical equipment and systems. Record results in System Performance Report.
   1. Identify and list size, type and manufacturer of all air terminals, fans, and heat transfer equipment.
   2. Record nameplate data for all motors, and record the actual running amperes for each fan motor.
   3. Test, adjust, and record supply air fan rpm to deliver not less than 90% or more than 110% of total volume specified.
   4. Test and record outside air quantities and adjust until volume is with 10 % of air quantity specified.
   5. Test and record initial velocities and cfm at all supply, return and exhaust air terminals. Adjust and record until volumes are within 10% of air quantity specified. Adjust air flow pattern to minimize drafts to the extent design and equipment permits.
   6. Test and record entering and leaving dry bulb and wet bulb temperature for the heating and cooling cycle of each supply fan.
   7. Test and record static pressure at the inlet and outlet of all supply air fans.
   8. After all air flow adjustments have been made, mark final position of balancing dampers.
   9. Check and record room thermostat settings and room temperature after all air flow adjustments have been made. Coordinate with Owner to check operation and setting of all controls.

3.3 CLEANING UP

A. Prior to acceptance of the Work, thoroughly clean all exposed portions of the installation. Remove all labels and all traces of foreign substance, using only a cleaning solution approved by the manufacturer of the equipment and being careful to avoid all damage to finished spaces. Remove all debris accumulated by this Work.

END OF SECTION 23 05 93

SECTION 23 07 00

HVAC INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUBMITTALS

A. Provide Shop Drawings for all insulation products to be used on this project.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All glass fiber coverings and liners shall have a composite fire and smoke hazard rating as tested by procedure ASTM-E-84, NFPA 255 and UL-723, not exceeding 25 flame spread, 50 smoke developed. All insulation products shall be PBDE free per State of Oregon requirements. All accessories, such as adhesive, mastic cements, tape, and fabric cloths for fitting shall have the same component ratings as listed above. Materials and insulating characteristics shall meet OMSC and OEESC, latest edition.

2.2 DUCT INSULATION

A. Inside Duct Liner: Duct liner with reinforced acrylic polymer coating, edge seals, thermal resistance of 4.3 BTU per inch per square foot per deg. F. per hour at a mean temperature of 75F, 1-1/2 pound per cubic foot density. Liner shall be a fire, mildew, and damage resistant surface meeting ASTM G21/C1338 for fungi resistance and ASTM G22 for bacteria resistance. Liner shall have no detectable fiber loss at maximum rated velocity using UL 181. Johns Manville Linacoustic RC, Johns Manville Spiracoustic Plus Round Liner, Owens Corning QuietR Rotary Duct Liner, Certainteed, Knauf, Casco, or equal.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection:
   1. Prior to all Work of this section, carefully inspect the installed Work of other trades and verify that all such Work is complete to the point where installation may properly commence.
   2. Verify that the Work of this section may be installed in accordance with all pertinent codes and regulations and the approved Shop Drawings.

B. Discrepancies:
   1. In the event of discrepancy, immediately notify the Architect.
   2. Do not proceed with installation in the areas of discrepancy until all such discrepancies have been fully resolved.

3.2 APPLICATION

A. Duct Insulation:
   1. Provide duct insulation as required by code. See Section 23 3100 for additional requirements.
   2. Use internal liner to meet insulation requirements for exposed ducts, where exterior insulation would be subject to damage such as mechanical rooms, storage areas, etc., or where acoustical isolation is required.

3.3 INSTALLATION

A. General:
   1. Insulation shall be applied on clean, dry surfaces, after inspection and release for insulation.
   2. All insulation shall be continuous through wall and ceiling openings and sleeves.
   3. Insulate and cover all fittings, valve bodies, etc., as specified herein.

B. Duct Insulation:
   1. Inside Duct Liner - Attenuation: Apply to flat sheet metal before fabrication with minimum 90% adhesive coverage using a water based adhesive, DuroDyne SSG or equal. On ducts over 16" in height or width, the liner shall be additionally secured with impact driven or weld secured fasteners on 15" centers. All joints shall be tightly butted together.
   2. Inside Duct Liner Round Ducts: Slip straight sections into ductwork for tight fit. Adjacent sections shall be tightly butted together. Any loose sections shall be secured with pins and adhesives. Fitting insulation shall be cut to minimize gaps and voids, and shall be secured with pins and adhesives. Seal large voids with suitable patches, sealed on all sides before and after placement.
   3. All joints, exposed edges, leading edge of all cross joints, and shop fabrication cuts of duct liner shall be coated with Manufacturer's sealing material. All rips and tears on the air stream surface shall be repaired by Manufacturer's sealing material. Channel metal nosings shall be securely installed over traverse edges facing the air stream at fan discharge and at any lined duct preceded by unlined duct.

3.4 CLOSING IN UNINSPECTED WORK

A. Do not cover up or enclose work until it is complete and has passed all required inspections.

B. Should any of the Work be covered up or enclosed prior to all required inspections and approvals, uncover the Work as required; and, after it has been completely inspected and approved, make all repairs and replacements with such materials as are necessary to the approval of the Architect and at no additional cost to the Owner.

3.5 CLEANING UP

A. Prior to acceptance of the Work, thoroughly clean all exposed portions of the insulation installation, removing all labels and all traces of foreign substance. Remove all debris accumulated by this Work.

END OF SECTION 23 07 00

SECTION 23 31 00

HVAC DUCTS AND ACCESSORIES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SHOP DRAWINGS

A. Provide Shop Drawings for the following equipment:
   1. Ductwork
   2. Air System Specialties
   3. Diffusers, Grilles

PART 2 PRODUCTS

2.1 GENERAL

A. All ductwork and accessories shall have a composite fire and smoke hazard rating as tested by procedure ASTM-E-84, NFPA 255 and UL-723, not exceeding 25 flame spread, 50 smoke developed ratings.

2.2 DUCTWORK

A. Metal ducts and plenums: Low pressure duct work (not exceeding 2000 FPM) – G60 galvanized steel ductwork per ASTM A653 complying with Oregon Mechanical Specialty Code, ASHRAE Equipment Volume and SMACNA Low Velocity Duct Construction Manual, latest editions.
   1. Supply ducts - 2" WG positive pressure.
   2. Return ducts - 2" negative pressure.

B. Maximum support spacing shall be 25% less than SMACNA requirements. Exposed duct supports shall be located in the center of joist or structural member. Provide shop drawings showing support details including lag screw diameter and length, pilot hole size, strapping, and rod for Architect review and approval prior to work.

2.3 AIR SYSTEMS SPECIALTIES

A. Volume Dampers: Smaller than 14 x 14 use butterfly type with locking quadrants, adjustable handle. Two gauges heavier than duct, minimum of 18 gauge galvanized sheet metal. Larger than 12 x 12 use manually adjustable opposed blade type with maximum 48" sections, controlled by an outside lockable arm. DuroDyne Stampline/Quadline. In non-accessible areas, use DuroDyne AD-38 rod and gear assembly with 8009 concealed regulator. DuroDyne, Young, Ventfabrics, or equal.

B. Turn Vanes: Non-adjustable 90 degree air turn, 26 gauge galvanized double wall steel blade, 24 gauge galvanized steel side rails. Vanes 2-1/8" on center. Install in all rectangular elbows, bends and tees. H-E-P High Efficiency Profile as manufactured by Aero Dyne Co., Schuller SuperVane, or equal.

C. Automatic Dampers: Low leakage, modulating damper, spring loaded to fail closed when used for outside air, open when used for return air or exhaust air. Sixteen gage blades, 8" maximum section. Opposed blade in ductwork application, parallel blade in wall mounted application. Maximum leakage of 4 CFM per square foot at 1" water gage per AMCA. Ruskin CD80AF2, Greenheck, or equal.

D. Filters: Two inch pleated, disposable, MERV 7 filters with factory frames and supports. Access doors with hinges, gaskets, and operable handles, not screws. Provide for all air handlers. Maximum velocity of 350 FPM. Provide clean set in units at completion of work and one spare set. Farr 30/30, American Air Filter, or equal.

E. Flexible Connectors: Woven fiberglass fabric connectors, Ventfabrics Co. "Ventglass", Durodyne, Elgen, or equal.

F. Duct Access Doors: Hollow core double construction of same or heavier gauge than ductwork, minimum size 12 X 12 inches. Fire rated as required. Ventlok 100 Series door, hinges, and latches. Ventlok, Cesco, Ruskin, or equal.

2.4 DIFFUSERS, GRILLES

A. Grilles shall have factory applied flat white enamel prime coat on steel or clear anodized aluminum unless otherwise noted. Maximum NC of 25.

B. Manufactured by Carnes, NCA, Ruskin, Cesco, Titus, Price, Krueger, Nailor, Pottorf, Anemostat, or approved. See Schedule on Drawings.

PART 3 EXECUTION

3.1 DUCT CONSTRUCTION

A. Supply and return duct shall be internally lined sheet metal. Construct HP discharge and inlet plenums of minimum 18 gage duct with internal liner. Exposed duct shall be minimum 18 gage, internally lined round spiral lock duct/fittings with joints caulked internally and minimum 18 gage rectangular grille taps.

3.2 INSTALLATION

A. Ducts constructed and installed in accordance with Oregon Mechanical Specialty Code, ASHRAE Equipment Volume, SMACNA Duct Construction manual, and NFPA 90A, latest editions. Duct supports shall be strap, trapeze, or rod hangers, galvanized steel sheet, or threaded steel rod unless otherwise shown on the drawings. Wire supports are prohibited. Refer to Section 23 05 00 for seismic requirements.

B. Install ductwork level and plumb. Allow for access to equipment and accessories. All ducts plugged during construction; kept clean.

C. Provide supports within 24 inches of elbows and 48 inches of branch tees. Locate supports to prevent stresses at duct fittings. Provide appropriate attachments to structure. Coordinate locations with other piping, conduit, and equipment.

D. Provide turn vanes in all elbows, tees and bends.

E. All duct dimensions shown are inside dimensions. Where inside duct insulation is required, duct dimensions are to inside face of insulation. See Insulation Specifications.

F. Seal all longitudinal and transverse joints and seams in sheetmetal ducts within ceiling space and roof curb with water based solvent system Hardcast Versa-grip, 181Hardcast 1402 3" wide tape, or Hardcast DT Tape and with RTA-50 adhesive, or equal. Use tape and adhesive for exposed duct. Coordinate with Architect prior to sealing any ducts exposed to view.

G. Provide escutcheons or collars at duct or vent penetrations through exposed surfaces.

H. Provide flexible connectors at each side of fans and other rotating equipment. 4" fabric, 2" clearance between metal work.

3.3 DIFFUSER, GRILLE, INSTALLATION

A. Install sidewall grilles flush with the wall, secured to the ductwork.

3.4 CLOSING IN UNINSPECTED WORK

A. Do not cover up or enclose work until it has been properly and completely inspected and approved.

B. Should any of the work be covered up or enclosed prior to all required inspections and approvals; uncover the work as required and, after it has been completely inspected and approved, make all repairs and replacements with such materials as are necessary to the approval of the Architect and at no additional cost to the Owner.

3.5 CLEANING UP

A. Prior to acceptance of the Work, thoroughly clean all exposed portions of the installation. Remove all labels and all traces of foreign substance, using only a cleaning solution approved by the manufacturer of the equipment and being careful to avoid all damage to finished spaces. Remove all debris accumulated by this Work.

END OF SECTION 23 31 00

SECTION 23 81 00

HVAC EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SHOP DRAWINGS

A. Provide Shop Drawings for all equipment.

PART 2 - PRODUCTS

2.1 PIPING

A. Drain Piping: Schedule 40 PVC plastic pipe meeting ASTM D1785 and with solvent weld joints meeting ASTM D2564.

2.2 HEAT PUMP UNIT, HP-3

A. Factory assembled and tested, packaged heat pump unit meeting ARI standards, UL listing, and ASHRAE 90.1 efficiency requirements. Cabinet constructed of galvanized steel with crossbroken roof and 1/2 inch thick, 1 pound density interior insulation with sealed edges. Sloped non-corrosive condensate pan. Access doors shall be easily operable without tools. Single point electrical connection through roof curb. Two inch thick filter rack with access panel operable without tools sized for maximum 350 FPM. Outdoor coil hail guard assembly and powered convenience outlet.

B. Belt drive supply fans shall have high efficiency motors. UL listed electric heaters with high temperature limit switches and overcurrent protection. Unit shall be capable of simultaneous heating duty and defrost cycle operation when using accessory electric heaters.

C. Refrigeration system including two hermetic scroll compressors with automatic reset thermal overload, overtemperature and overcurrent protection, and crankcase heater. Compressors mounted on rubber and shear isolators. TXV, suction line accumulator, low pressure protection, high pressure protection, service valves, filter dryer, and sight glass. Defrost system initiated based on coil temperature and timer control. Provide compressor time delay relay.

D. Provide manufacturer’s standard one year warranty with extended 5 year warranty on the compressors.

E. Units shall include microprocessor controls with anti-short cycle timing/compressor time delay relay, shall have through the base utility access, single source power entry, and shall ship DDC ready with terminal strip. All low voltage control work by Owner. Coordinate with Owner for startup.

F. Unit shall fit on existing roof curb MicroMetl AP597-102CI with adaptor and duct transitions as required. Verify that curb is level prior to work.

G. Manufacturer: Carrier, Trane, Lennox, York, Aaon, McQuay, or approved equal. See schedule on drawings for capacities.

2.3 ECONOMIZER, HP-3

A. ETL approved economizer with fully modulating outside air dampers and power exhaust unit. Permanently lubricated ball bearings, thermal protection, single point power connection, and wiring harness. Dampers shall be Class I low leakage dampers per OEESC. Spring return actuators with 100% shut off upon loss of power. Provide Belimo LF24-SR-S-US actuator only with no economizer controls. MicroMetl 1682/4682-0203-B093M, CanFab, or equal.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

B. Verify that the work of this section may be installed in accordance with all pertinent codes and regulations and the approved Shop Drawings.

C. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 INSTALLATION

A. Install all piping, equipment and accessories with adequate access for service and per manufacturer's recommended instructions. Mechanical Contractor shall coordinate startup of all equipment and systems.

B. Condensate drain piping shall be supported off the roof with UV resistant rubber channel supports, Dura-Blok DBM or equal. Provide cleanouts, tees, and traps. Discharge to roof on downslope side of units.

C. Secure units to roof curb per seismic requirements and Manufacturer’s recommendations with corrosion resistant fasteners. Units shall be level.

D. System shall be flushed and cleaned prior to startup. All moving and rotating parts shall be lubricated per Manufacturer's recommendations prior to equipment startup.

3.3 CLOSING IN UNINSPECTED WORK

A. Do not cover up or enclose work until it is complete and has passed all required inspections.

B. Should any of the work be covered up or enclosed prior to all required inspections and approvals; uncover the work as required and, after it has been completely inspected and approved, make all repairs and replacements with such materials as are necessary to the approval of the Architect and at no additional cost to the Owner.

3.4 CLEANING UP

A. Prior to acceptance of the Work, thoroughly clean all exposed portions of the installation. Remove all labels and all traces of foreign substance, using only a cleaning solution approved by the manufacturer of the equipment and being careful to avoid all damage to finished spaces. Remove all debris accumulated by this Work.

END OF SECTION 23 81 00

PART 1 GENERAL

1.1 CONTRACT CONDITIONS

A. Work of this Section is bound by General Conditions, Supplementary Conditions, and Division 1 bound herewith in addition to this Specification and accompanying Drawings.

B. The Drawings and Specifications are complimentary and what is called for by one shall be as binding as if called for by both.

C. The Contractor shall inspect the job site prior to bidding and become familiarized with existing conditions which will affect the work.

D. Prior to start of work, obtain "As built," "Record," or other Drawings showing existing conditions or underground utilities.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Comply with requirements herein where other Divisions call for Work under this Division of Specifications. Electrical Work required by other Divisions not shown on Electrical Drawings or specified in this Division of Specification shall be provided by trade or sub-trade requiring Electrical Work.

1.3 DESCRIPTION OF SYSTEM

A. Electrical Drawings are diagrammatic and do not necessarily show all raceways, wiring, number and types of fittings required.

B. Provide all related Electrical Work specified herein and diagramed or scheduled on Electrical Drawings. All work shall conform to applicable national, state, and local codes. Contractor is responsible for installation of complete and operating electrical systems.

C. Where any device or part of equipment is referred to in these specifications in the singular number (such as "the switch"), such reference shall be deemed to apply to as many such devices as are required to complete the installation as shown on the drawings.

1.4 QUALITY ASSURANCE

A. Qualifications of Installers
   1. For actual fabrication, installation and testing of Work of this Section, use only thoroughly trained and experienced personnel familiar with requirements for this Work and with installation recommendations of Manufacturers of specified items.

B. Design Criteria:
   1. Conform Work with conditions shown and specified.
   2. Where adjustments or modifications of Work are necessary for fabrication and installation of items, or for resolution of conflicts between items, make such adjustments at no added expense to Owner.
   3. Submit adjustments or modifications of Work affecting functional or aesthetic design of Work to Architect for review.
   4. Pay for equipment relocations or modifications necessitated by failure to advise Architect of conflicts or coordinate work.

C. Select equipment to meet design conditions stated. Contractor is responsible for meeting technical data and performance requirements of system.

D. Satisfy requirements of regulatory agencies or codes having jurisdiction over project. Provide U.L. labels for all equipment falling under testing capabilities of U.L.

E. Procure licenses and permits, and pay fees, deposits, assessments and tax charges required for Electrical Work.

F. Arrange for and pay for inspections and tests required by codes and ordinances during construction.

1.5 REFERENCE STANDARDS

A. The following specifications and standards, except as hereinafter modified, are incorporated herein by reference and from a part of this specification to the extent indicated by the references thereto. Except where a specific date is given, the issue in effect (including amendments, addenda, revisions, supplements, and errata) on the date of Invitation for Bids shall be applicable. In text such specifications and standards are referred to by basic designation only.
   1. Underwriters Laboratories (UL).
   2. National Fire Protection Association (NFPA), Specifically:
      a. NFPA 70 - National Electric Code.
      b. NFPA 72 - National Fire Alarm Code.
      c. NFPA 101 - Life Safety Code.
   3. National Electrical Safety Code.
   4. International Building Code (IBC) with State of Oregon Amendments.
   5. National Electrical Manufacturer's Association (NEMA).
   6. American National Standards Institute (ANSI).
   7. National Electrical Testing Associations (NETA).
   8. Occupational Safety and Health Administration (OSHA).
   9. City, County, and State Codes and Ordinances.

1.6 SUBMITTALS

A. Provide shop drawings and product data for the Work of this Division in accordance with Division

1.7 ECORD DRAWINGS

A. Provide in accordance with Division 1.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Make inspection of equipment for possible damage at time of delivery to avoid future delays in construction due to replacement or repair.

B. In event of damage, immediately make all repairs and/or replacements necessary to approval of Architect, at no additional expense to Owner.

1.9 PROTECTION

A. Suitably protect any unfinished Work from potential physical damage.

B. Do not leave unfinished Work unattended, which would pose life safety hazard.

C. Protect other Work against damage and discoloration caused by Work of this Section.

1.10 COORDINATION

A. Provide coordination for the Work of this Division in accordance with Division 1

B. Report any discrepancies discovered between existing job conditions and Work to be installed. Fully resolve such discrepancies prior to continuation of work.

C. Coordinate sequencing of equipment installation and energizing with other trades.

D. Consult Architect prior to installing equipment in area which obviously exceeds, or will exceed, ambient operating requirements such as for temperature and humidity.

1.11 WARRANTY

A. Warrant all Work included in this Specification for period of one year from date of substantial completion, under provisions of Section 01700.

B. During warranty period, remedy without delay or expense to Owner any defects providing, in judgment of Engineer, that such defects are not result of misuse or abuse on part of Owner.

C. Warrant that all equipment and installations are in compliance with OSHA regulations.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Provide new material and equipment items that are standard products of Manufacturers regularly engaged in production of such materials and equipment. Architect reserves right to reject items not in accordance with Specifications.

B. For each type of equipment, use same manufacturer throughout.

C. Provide corrosion protection for ferrous metalwork exposed to weather by hot dip galvanizing, or factory painted finish suitable for outdoor installations.

D. Verify all materials are acceptable to Authority having jurisdiction, as suitable for the use intended.

PART 3 - EXECUTION

3.1 COMPLETION

A. Complete each system as shown or specified herein and place in operation, except where only roughing-in or partial systems are called for.

B. Outlet or equipment shown on the plans, with no supply conduit or conductors indicated, shall be completed in the same methods and manner as similar or like outlets or equipment shown on the drawings.

3.2 SCHEDULING OF WORK

A. Schedule Work with all other Contractors to maintain job progress schedule, and avoid conflicts in installation of Work by various trades.

B. Coordinate with General Contractor to provide adequate access for installing large equipment.

3.3 SLEEVES AND OPENINGS

A. Provide through floors and walls for Electrical Work.

B. Coordinate with General Contractor and other trades involved.

C. Patch and seal around all openings, both sides of material penetrated where possible.

3.4 CUTTING AND PATCHING

A. See Division 1.

B. Inform General Contractor of all openings required in building construction for installation of Work.

C. Where access within or behind existing surfaces is required by the work of this Section, remove, cut, patch reinstall, and refinish surfaces and assemblies as required to restore them to their previous and/or scheduled finish condition.

D. Coordinate with General Contractor.

3.5 MANUFACTURER'S INSTALLATION DETAILS

A. Follow exactly, where available.

B. Provide special wiring or fittings as required.

3.6 ACCESSIBILITY OF EQUIPMENT

A. Install equipment accessible for operation, maintenance or repair as required by NEC.

B. Inaccessible Equipment:
1. Where the Owner's representative determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, equipment shall be removed and reinstalled as directed, at no additional cost to the Owner.
2. "Conveniently accessible" is defined as being capable of being reached without the use of ladders, or without climbing or crawling under or over obstacles such as motors, pumps, belt guards, transformers, piping and ductwork.

3.7 COORDINATION

A. Coordinate all light fixture and device locations with other trades to avoid possible conflicts with ducts, sprinkler piping, and other obstacles affecting installation.

B. Coordinate conduit, junction boxes, supporting equipment, etc. Affecting normal operating and maintenance activities related to mechanical equipment, piping, valves, accessories, etc.

3.8 TESTS

A. Fully test and adjust equipment installed under this specifications prior to Owner's personnel instruction. Each system shall be left in proper operation free of faults, shorts or unintentional grounds.

B. Do not test or operate for any other purpose, such as checking motor rotation, any item of equipment until fully checked in accordance with Manufacturer's instructions.

3.13 CLEANING OF ELECTRICAL INSTALLATION

A. See Division 1.

B. Prior to acceptance of building, thoroughly clean all exposed portions of electrical installation.

C. Remove all nonessential labels and traces of foreign substances.

D. Use only cleaning solution approved by Manufacturer.

E. Avoid any damage to finished surfaces.

3.15 EQUIPMENT CONNECTIONS

A. Provide a complete electrical connection for all items of equipment including incidental wiring, materials, devices and labor necessary for a complete operating system. The location and method for connecting to each item of equipment shall be verified prior to rough-in. The voltage and phase of each item of equipment shall be checked before connecting. Motor rotations shall be made in the proper direction. Pump motors are not to be test run until liquid is in the system and proper lubrication to all bearings in unit is checked.

B. Conduit, wire and circuit breaker sizes for mechanical and similar equipment are based on the equipment ratings of one manufacturer. The equipment actually furnished may have entirely different electrical characteristics. Conduit, wire and circuit breakers shall not be ordered or installed until exact electrical requirements are obtained. Responsibility for this coordination rests with the Contractor.

END OF SECTION 26 01 00

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical demolition.

PART 2 - PRODUCTS

2.2 MATERIALS AND EQUIPMENT

A. Materials and Equipment for Patching and Extending Work: As specified in individual sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify field measurements and circuiting arrangements are as shown on Drawings. Report discrepancies to Architect before proceeding with demolition work.

B. Verify that abandoned wiring and equipment serve only abandoned facilities. Report discrepancies to Architect before disturbing existing installation.

3.2 PREPARATION

A. Disconnect electrical installations in walls, floors, and ceilings scheduled for removal. Report discrepancies to Architect before disturbing existing installation.

B. Verify that abandoned wiring and equipment serve only abandoned facilities. Report discrepancies to Architect before disturbing existing installation.

C. Interrupt power only to make connections or switchovers.
   1. Obtain permission from Owner before scheduling partial or complete outages.
   2. Schedule each outage at least 24 hours in advance.
   3. Keep outages as short duration as possible and make temporary connections if required to maintain service to areas adjacent to work area.
   4. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations as required to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit.

D. Disconnect abandoned outlets and remove devices. Provide blank cover for abandoned outlets where conduit system is not removed.

E. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.

F. Disconnect and remove abandoned luminaires.

G. Repair adjacent construction and finishes damaged during demolition and extension work.

H. Maintain access to existing electrical installations which remain active.
   1. Modify installation or provide access panel as appropriate.

I. Extend existing installations using materials and methods compatible with existing electrical installations.

J. Check branch circuit wiring disturbed in execution of this Work which is to remain for continuity, overloads and grounds. Repair any deficiencies.

K. Existing outlets indicated on drawings to be removed or to remain, are shown for general information only and do not indicate exact location or total number of outlets involved.

L. Relocate and reuse existing lighting fixtures as shown on drawings. Repair or replace missing or faulty parts such as reflectors, lens, and ballasts for first class operating condition. Provide new lamps.

M. All salvage materials shall remain property of Owner and shall be stored at location designated by Owner, unless otherwise noted by Architect.

N. Prior to acceptance of the building, thoroughly clean exposed portions of the electrical installation, removing labels and traces of foreign substance, using only a cleaning solution approved by the manufacturer and being careful to avoid damage to finished surfaces.

END OF SECTION 26 01 60

PART 1 GENERAL

1.1 SECTION INCLUDE

A. Building wire.

B. Cable.

C. Wiring connections and terminations.

1.2 SUBMITTALS

A. Submit shop drawings and product data under the provisions of Section 260100.

B. Submit manufacturer's instructions Electrical demolition.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS - WIRE

A. American Insulated Wire Corp.

B. Essex/Paranite/Diamond

C. General Cable/Guardian/Carol

D. Southwire

E. Substitutions: Under provisions of Section 260100.

2.2 BUILDING WIRE

A. Feeders and Branch Circuits Larger than 2 AWG:

B. Copper.
   1. Stranded conductor.
   2. 600 volt insulation.
   3. THHN, THWN, XHHW. Except where adverse conditions require other insulation types.

C. Feeders and Branch Circuits 4 AWG and Smaller:
   1. Copper conductor.
   2. 600 volt insulation.
   3. THHN/THWN.
   4. Not less than 98% conductivity.
   5. Stranded conductor.

D. Color Coding:
   1. 120/208 Volt System:
      a. A phase - black.
      b. B phase - red.
      c. C phase - blue.
      d. Neutral - white.
      e. Travelers - lavender.
      f. Switch leg - orange.
      g. Ground - green.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

A. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 16 AWG for control wiring.

B. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 75 feet, and for 20 ampere.

C. Place an equal number of conductors for each phase of a circuit in same raceway or cable.

D. Splice only in junction or outlet boxes.

E. Neatly train and lace wiring inside boxes, equipment, and panelboards using cable ties.
   1. Manufacturer: T&B Ty-Rap, or approved.

3.2 WIRING INSTALLATION IN RACEWAYS

A. Pull all conductors into a raceway at the same time.

B. Use UL listed wire pulling lubricant for pulling 4 AWG and larger wires.

C. Equipment Grounding Conductors:
   1. Provide a separate, insulated equipment grounding conductor in feeder and receptacle branch circuits.
   2. Terminate each end on a grounding lug, bus, or bushing.
   3. Provide individual ground wire in flexible conduit and non-metallic raceways.

3.3 WIRING CONNECTIONS AND TERMINATIONS

A. Splice only in accessible junction boxes.

B. #8 Copper Wire and Smaller:
   1. Use solderless spring connectors with insulating covers.
   2. Manufacturer: Buchanan, Ideal, Scotch, or approved.
   3. Connection by means of wire binding screws or studs and nuts having upturned lugs or equivalent shall be permitted for No. 10 solid or smaller conductors only.

C. #6 Copper Wire and Larger:
   1. Use pressure lug terminals and splicing connectors or compression lug terminals and connectors rated for the material of the terminals and conductor and properly installed.
   2. Manufacturer: Burndy, Ilsco, OZ/Gedney, or approved.
   3. Cover uninsulated conductors and connectors with an insulating device suitable for the purpose and 150 percent of the insulation value of conductors.

D. Thoroughly clean wires before installing lugs and connectors.

E. Make splices, taps, and terminations to carry full ampacity of conductors without perceptible temperature rise.

3.4 FIELD QUALITY CONTROL

A. Inspect wire and cable for physical damage and proper connection.

B. Torque test conductor connections and terminations to manufacturer's recommended values.

C. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

3.5 WIRE INSTALLATION SCHEDULE

A. Interior and Exterior Locations: Building wire in continuous metallic raceways, as shown on Drawings.

B. Cross marks for power and lighting branch circuits installed in raceways indicate quantity of number 12 copper branch circuit conductors unless otherwise noted. Where no cross marks appear on power or lighting circuits it shall be understood to provide two (2) number 12 conductors for lighting and three number 12 conductors for receptacle circuits.

C. Conductor sizes indicated, such as home run annotations, shall be maintained throughout entire circuit length.

END OF SECTION 26 05 19

PART 1

1.01 SECTION INCLUDES

A. Power system grounding.

B. Communication system grounding.

C. Electrical equipment and raceway grounding and bonding.

1.2 SYSTEM DESCRIPTION

A. Maintain existing system grounding. Raceway currently used for ground conductor will be repulled with new conductors for the new HVAC equipment. Pull in new ground conductor and reconnect existing bond connections.

1.3 SUBMITTALS

A. Indicate the following on record drawings:.
   1. Location of system grounding electrode connections.
   2. Routing of grounding electrode conductor.

PART 2 - PRODUCTS

2.01 MATERIALS

NOT USED

PART 3 - EXECUTION

3.1 INSTALLATION

A. Equipment Grounding Conductors:
   1. Provide a separate, insulated equipment grounding conductor in feeder and receptacle branch circuits.
   2. Terminate each end on a grounding lug, bus, or bushing.
   3. Provide individual ground wire in flexible conduit and non-metallic raceways.

3.2 FIELD QUALITY CONTROL

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

3.3 GROUND CONNECTIONS

A. Make accessible ground connections with mechanical pressure type ground connectors.

END OF SECTION 26 05 26

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Conduit and equipment supports.

B. Fastening hardware.

1.2 COORDINATION

A. Coordinate size, shape, and location of concrete pads with Division 3.

1.3 QUALITY ASSURANCE

A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Support Channel: Zinc plated.

B. Hardware: Corrosion resistant.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Equipment Support From Building Structure:
1. Precast insert system.
2. Expansion anchors.
3. Preset inserts.
4. Beam clamps.
5. Spring steel clips.
6. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit.
7. Do not use powder-actuated anchors.

3.2 SEISMIC REQUIREMENTS

A. Equipment anchorage and supports:
1. All equipment shall be securely anchored to the building and properly supported to resist the forces of a Seismic Zone 3 event at the site.
2. Anchorage for equipment subject to thermal expansion shall be in accordance with recommendations of the manufacturer.
3. Anchors and fasteners shall sized to resist shear and overturning moments caused by the anticipated seismic forces.

END OF SECTION 26 05 29

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rigid metal conduit and fittings.

B. Electrical metallic tubing and fittings.

C. Flexible metal conduit and fittings.

D. Liquidtight flexible metal conduit and fittings.

PART 2 – PRODUCTS

2.1 RIGID STEEL CONDUIT

A. Standard pipe with screwed joints for electrical raceway use.

B. Zinc coated by hot dip galvanizing or sherardizing.

C. Manufacturer: Allied Tube and Conduit, Triangle PWC Inc., Western Tube & Conduit, or approved.

2.2 ELECTRIC METALLIC TUBING (EMT)

A. Zinc coated by hot dip galvanizing or sherardizing.

B. Manufacturer: Allied Tube and Conduit, Triangle PWC Inc., or approved.

2.3 FLEXIBLE CONDUIT

A. Galvanized steel or aluminum, abrasion resistant.

B. Manufacturer: Anamet (Type DE-710), Triangle PWC, Inc. (Type 710), or approved.

2.4 FLEXIBLE CONDUIT, LIQUID TIGHT

A. Hot dipped galvanized steel core with thermoplastic overcoat.

B. Manufacturer: AFC Nortek, Alflex, Anamet (Type "UA"), Electriflex, Thomas & Betts, or approved.

2.5 CONNECTIONS AND FITTINGS

A. Especially for purpose used.

B. Same material and finish as raceway.

2.6 UNION JOINTS FOR RIGID STEEL OR IMC CONDUIT

A. Split coupling.

B. Running threads not allowed.

C. Insulated throat.

D. Manufacturer: O.Z. Gedney type "SSP," or approved.

2.7 COUPLINGS AND CONNECTORS FOR ELECTRICAL METALLIC TUBING (EMT)

A. Exterior[/Interior]: Raintight compression type, employing split corrugated ring and tightening nut.

B. Interior: Set-screw type shall be permitted:
   1. Hex head set screw for 2-1/2" and larger.

C. Manufacturer: Appleton, Raco, Thomas & Betts, or approved.

D. Cast connectors and couplings are not allowed.

2.9 CONDUIT HANGERS AND SUPPORTS

A. One-hole or two-hole push-on straps or one-hole clamps.
   1. Manufacturer: Appleton, Raco, Thomas & Betts, or approved.

B. Use of J-nails limited to 1/2" & 3/4" conduit in wood frame construction.

C. Fastener designed for the purpose may be used in wood or metal stud construction or for support from ceiling tees, ceiling support wires, channel, or beams.
   1. Manufacturer: Caddy, B-Line, or approved.

PART 3 - EXECUTION

3.1 CONDUIT SIZING AND ARRANGEMENT

A. Size conduit for Type THW conductors. Minimum conduit size for home runs and backbone conduit system is 3/4 inch. Individual branch circuits from backbone junction boxes to device or fixture locations may be run in 1/2 inch conduit.

B. Arrange conduit to maintain headroom and present a neat appearance.

C. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.

D. Maintain minimum 6 inch clearance between conduit and mechanical piping if practical. Coordinate installation with other trades. Maintain 12 inch clearance between conduit and heat sources such as flues, steam pipes, and heating appliances.

E. Maintain 12 inch clearance above removable ceiling tiles.

3.2 CONDUIT SUPPORT

A. Arrange conduit supports to prevent distortion of alignment by wire pulling operations.

B. Fasten conduit using galvanized straps, lay-in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers.

C. Group conduit in parallel runs where practical and use conduit rack constructed of steel channel with conduit straps or clamps.
   1. Provide space for 25 percent additional conduit on conduit racks.

D. Do not fasten conduit with wire or perforated pipe straps.

E. Remove all wire used for temporary conduit support during construction, before conductors are pulled.

F. Exposed conduit and tubing attached directly to building surface, use one hole galvanized steel pipe clamps.

G. Wire suspension systems above suspended ceilings:
   1. Support conduits above suspended ceilings from structure.
   2. Provide a dedicated support wire system for conduits.
   3. Use fasteners and support hardware designed for the purpose.
   4. Do not support conduits from ceiling support wires.

H. Hanger Spacing:
   1. Do not exceed 8 foot 0 inches on center.
   2. Provide one hanger adjacent to each outlet box, and one hanger within 12 inches on each side of a change in direction.

I. Conduits not permitted to be supported from ducts, pipes or other systems foreign to electrical installation.

J. Support conduit as close to ceiling structure as practical. Coordinate conduit location with other trades.

K. Attachment of one hole straps on horizontal runs shall be from above.

3.3 CONDUIT INSTALLATION

A. Cut conduit square using a saw; de-burr cut ends.

B. Bring conduit to the shoulder of fittings and couplings and fasten securely.

C. Use conduit hubs or sealing locknuts for fastening conduit to cast boxes, and for fastening conduit to sheet metal boxes in damp or wet locations.

D. Install no more than the equivalent of four 90 degree bends between boxes.

E. Use conduit bodies to make sharp changes in direction, as around beams.

F. Use hydraulic one-shot conduit bender or factory elbows for bends in conduit larger than 1-1/4 inch size.

G. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.

H. Avoid condensation between moist warm locations and cool locations by blocking air flow in conduit with "Duct Seal" or similar material.

I. Thoroughly clean interior of conduits.

J. Provide No. 12 AWG insulated conductor or suitable pull string in empty conduit, except sleeves and nipples.

K. Install expansion joints where conduit crosses building expansion or seismic joints.

3.4 CONDUIT PENETRATIONS

A. Fire-Rated Walls and Floors: Seal conduit penetrations using one of the following methods:
   1. Provide mechanical fire-stop fittings with UL listed fire rating equal to wall or floor rating.
   2. Seal opening around conduit with UL listed foamed silicone elastomer compound.

B. Non Fire-Rated Walls: Silicone RTV foam membrane permitted.

C. Route conduit through roof openings for piping and ductwork where possible: otherwise, route through roof jack with pitch pocket.

3.5 FLEXIBLE CONDUIT

A. Use limited to the following:
   1. Lighting fixture pigtails to remote junction box in accessible ceilings.
   2. Interior motor connections.
   3. At building expansion joints.
   4. Vibrating or movable equipment connections.
   5. Flexible conduit may not be installed in stud walls in new construction.
   6. Flexible conduit may be fished in stud walls.

B. Provide separate ground conductor full length of flexible conduit or outside of conduit.

3.6 FLEXIBLE CONDUIT, LIQUID TIGHT

A. Exterior motor connections for movable or vibrating equipment.

B. Flexible connections in damp or wet locations.

C. Provide separate ground conductor full length of flexible conduit in addition to integral bonding tape.

3.7 RIGID STEEL CONDUIT

A. Exposed indoor runs where subject to damage up to 8 feet above finished floor.

3.8 ELECTRICAL METALLIC TUBING

A. Dry locations where not subject to damage.

B. Concealed in non-masonry/concrete walls or ceiling.

C. Exposed runs above 8 feet in non-protected areas.

3.9 QUALITY ASSURANCE

A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

END OF SECTION 26 05 30

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Wall and ceiling outlet boxes.

B. Pull and junction boxes.

1.2 RELATED SECTIONS

A. Section 26 27 26 - Wiring Devices: Service fittings and fire-rated poke-through fittings for floor boxes.

1.3 PROJECT CONDITIONS

A. Verify Field measurements are as shown on drawings.

1.4 SUBMITTALS

A. Submit product data under provisions of Section 26 01 00.

B. Provide product data showing configurations, finishes, dimensions, and manufacturer's instructions.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS - BOXES

A. Appleton.

B. Bowers.

C. Crouse Hinds.

D. Killark.

E. O Z Gedney.

F. Raco/Bell.

G. Steel City.

H. Thepitt.

I. Substitutions: under provisions in Section 260100.

2.2 OUTLET BOXES

A. Sheet Metal Outlet Boxes: Galvanized steel

B. Cast Boxes: Aluminum or cast feralloy, deep type, gasketed cover, threaded hubs.

2.04 PULL AND JUNCTION BOXES

A. Sheet Metal Boxes: Galvanized steel.

B. Sheet Metal Boxes Larger Than 18 Inches in Any Dimension: Hinged enclosure.

C. Cast Metal Boxes for Outdoor and Wet Location Installations:
   1. UL listed as raintight.
   2. Galvanized cast iron or cast aluminum box and cover.
   3. Ground flange.
   4. Neoprene gasket.
   5. Stainless steel cover screws.

PART 3 - EXECUTION

3.1 COORDINATION OF BOX LOCATIONS

A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance.

B. Electrical box locations shown on Contract Drawings are approximate unless dimensioned. Verify location of floor boxes and outlets in offices and work areas prior to rough-in.

C. Locate and install boxes to allow access. Where installation is inaccessible, coordinate locations and sizes of required access doors with Section 08305.

3.2 OUTLET BOX INSTALLATION

A. Provide knockout closures for unused openings.

B. Support boxes independently of conduit.

C. Support boxes above suspended ceilings from structure. Provide dedicated support wires for boxes as required by NEC 300.

D. Install boxes in walls without damaging wall insulation.

E. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed luminaire, to be accessible through luminaire ceiling opening.

F. Provide cast outlet boxes in exterior locations when exposed to the weather and wet locations.

3.3 PULL AND JUNCTION BOX INSTALLATION

A. Locate pull boxes and junction boxes above accessible ceilings or in unfinished areas.

B. Support pull and junction boxes independent of conduit.

C. Boxes larger than 200 cubic inches or 18 inches in any dimension: Use hinged enclosure.

END OF SECTION 26 05 32

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Nameplates.

B. Wire and cable markers.

C. Pull box and junction box identification.

D. Device plate identification.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Wire and Cable Markers:
   1. Cloth markers split sleeve or tubing type.

B. Labels:
   1. Adhesive Film Labels: Machine printed, in black on clear background, by thermal transfer or equivalent process.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Degrease and clean surfaces to receive nameplates.

B. Install nameplates parallel to equipment lines..

C. Use stick-on characters for identification of individual wall switch and receptacle cover plates.

3.2 WIRE IDENTIFICATION

A. Provide wire markers on each conductor in panelboards pull boxes, and at load connection.

B. Identify with branch circuit or feeder number for power and lighting circuits.

C. Identify control wire number as indicated on equipment manufacturer's shop drawings.

3.3 PULL BOX AND JUNCTION BOX IDENTIFICATION

A. Identify each junction box with complete system description. Examples:

B. Locations:
   1. On outside of box cover where concealed.
   2. In exposed box locations, locate on inside of box cover.
   3. Identify main pull boxes by number and indicate numbers on record drawings.

END OF SECTION 26 05 33

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Distribution Switchboard circuit breakers.

1.2 RELATED SECTIONS

A. Section 260553 - Electrical Identification.

1.3 SUBMITTALS

A. Submit shop drawings for equipment and component devices under provisions of Section 260100.

B. Include:
   1. Outline and support point dimensions.
   2. Voltage.
   3. Integrated short circuit ampere rating.
   4. Circuit breaker arrangement and sizes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Square D QED to match existing.

2.2 MAIN SWITCHBOARD CIRCUIT BREAKER

A. Install Square D circuit breaker in existing switchboard space location.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Revise swithboard and panelboard directory to reflect circuiting changes.

END OF SECTION 26 14 16

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Disconnect switches.

B. Enclosures.

1.2 SUBMITTALS

A. Submit product data under provisions of Section 260100.

B. Include outline drawings with dimensions, and equipment ratings for voltage, capacity, horsepower, and short circuit.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS - DISCONNECT SWITCHES

A. Eaton.

B. General Electric.

C. Siemens.

D. Square D.

E. Substitutions: Under provisions of Section 260100.

2.2 DISCONNECT SWITCHES

A. Nonfusible Switch Assemblies:
1. Quick-make, quick-break, load interrupter enclosed knife switch.
2. Externally operable handle.
3. Interlocked to prevent opening front cover with switch in ON position.
4. Handle lockable in OFF position.

B. Enclosures:
1. Outdoor: NEMA Type 3R.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install disconnect switches where indicated on Drawings.

B. Locate as close to equipment controlled as possible, within sight of equipment, unless otherwise noted.

C. Maintain code clearances.

D. Label switch to indicate equipment served and to indicate power source.

END OF SECTION 26 28 13