SET NO:_____

PROJECT MANUAL

Project:

LONGVIEW SCHOOL DISTRICT
MARK MORRIS SHOP CLASSROOM REMODEL

PROJECT NO. 2021-12

June 23, 2021

COLLINS
ARCHITECTURAL GROUP, P.S.

950 12TH AVE., SUITE 200, LONGVIEW, WA 98632
PHONE (360) 425 0000

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Project Title:	Longview School District Mark Morris Shop Classroom Remodel
Date:	June 23, 2021
Client Agency:	Longview School District No. 122
Architect:	Collins Architectural Group, p.s. 950 12th Avenue, Suite 200 Longview, WA 98632 (360) 425-0000 Contact: Jared Bradshaw-Vinson e-mail: jaredb@collinsarchgroup.com
Electrical Engineer:	Athay & Associates 411 NE 83rd Street Vancouver, WA 98665-8118 (360) 574 0199 Contact: Ron Athay e-mail: rathay@athayeng.com
Mechanical Engineer:	MKE & Associates 6915 S. Macadam Avenue, Suite 200 Portland, OR 97219 (503) 892-1188 Contact: Zachary Sichley zachs@MKE-Inc.com

LONGVIEW SCHOOL DISTRICT NO. 122

ALL THOSE PROVIDING BIDS
– PLEASE READ THIS NOTICE

The Longview School District occasionally experiences problems with contractors who, after being awarded a bid, indicated they have made an error or have some other difficulty and do not intend to honor their bid. For this reason we want all contractors to be fully aware of the district's position with regard to the bidding process and the honoring of bids submitted.

State of Washington statutes require the Longview School District to go through a prescribed bidding process on all purchases over defined dollar limits. The district takes the bidding process seriously and its intent is to solicit bids that are accurate and that each contractor intends to honor. bidding contractor you are expected to submit bids that are accurate, complete, and contain all terms and conditions which you feel are necessary. If you find changes to your bid are necessary after you have submitted it to the district, the following guidelines will control.

I. Bids may be changed in any way or withdrawn any time up to the time and date of bid submittal.

II. AFTER THE TIME AND DATE OF THE BID SUBMITTAL, Bids cannot be changed. If accepted, the bid is considered to be a binding contract that you as the contractor will be expected to honor.

III. A recap of the bids will be sent to all bidders after official acceptance by the School Board.

ADVERTISEMENT FOR BID

Bids will be accepted for the following project:

PROJECT NO.:	2021-12
TITLE:	Longview School District Mark Morris Shop Classroom Remodel
AGENCY:	Longview School District No. 122
ESTIMATED BASE QUOTE COST RANGE:	$320,000 to $370,000
ABBREVIATED PROJECT DESCRIPTION:	Renovate existing shop classroom.
SUBMITTAL TIME/DATE/LOCATION:	**Prior to 2:00 P.M., July 28th, 2021** at The Longview School District MOTF Office 2080 38th Avenue Longview, WA 98632 Bids will be opened at approximately 2:31 p.m.
BY:	Longview School District No. 122

PRE-PROPOSAL WALK-THROUGH: **3:30 P.M, July 14th, 2021** starting at Mark Morris Shop Building , (Behind and to the south of Mark Morris High School) 1602 Mark Morris Court, Longview, WA. 98632.

The School district will make the plans available for contractors to view online without charge at:

https://longviewschools.com/business-and-finance/bids-and-requests-for-proposals

Please direct questions regarding this project to the office of the Consultant, Collins Architectural Group, P.S., 950 12th Avenue, Suite 200, Longview, WA 98632-2508, telephone (360) 425-0000.

No contractor may withdraw his bid after the hour and date set for the submittal thereof, or thereafter, before award of the Contract, unless award is delayed for a period exceeding thirty (30) days from the proposal submittal date.

The Owner reserves the right to accept or reject any or all proposals and to waive informalities.

INSTRUCTIONS TO BIDDERS

1.01 DEFINITIONS

A. All definitions set forth in the General Conditions of the Contract for Construction or in other Contract Documents are applicable to the Bidding Documents.

B. "**Addenda**" are written or graphic instruments issued by the Architect or the Longview School District prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections. The contents of Addenda are issued in no particular order and therefore should be carefully and completely reviewed. Addenda relating to administrative matters, such as, for example, the date or time of meetings or Bid receipt, may be issued in writing by fax, mail or other delivery.

C. An "**Alternate Bid**" (or "**Alternate**") is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

D. "**Award**" means the formal decision by the Longview School District notifying a Bidder with the lowest Responsive Bid of the Longview School District's acceptance of the Bid and intent to enter into a contract with the Bidder.

E. The "**Award Requirements**" include the following statutory requirements as a condition precedent to Award. The lowest Responsive Bidder shall:

(1) have a certificate of registration in compliance with RCW 18.27;

(2) have a current state unified business identifier number;

(3) if applicable, have industrial insurance coverage for the Bidder's employees working in Washington as required in Title 51 RCW;

(4) have an employment security department number as required in Title 50 RCW;

(5) have a state excise tax registration number as required in Title 82 RCW;

(6) not be disqualified from bidding on any public works contract under RCW 39.06.010 (unregistered or unlicensed contractors) or RCW 39.12.065(3) (prevailing wage violations); and

(7) If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under RCW 49.04 for the one-year period immediately preceding the date of the Bid solicitation.

F. The "**Base Bid**" is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base to which work may be added or from which work may be deleted for sums stated in Alternate Bids.

G. A "**Bid**" is a complete and properly signed proposal to do the Work or designated portion thereof, submitted in accordance with the Bidding Documents, for the sums therein stipulated and supported by any data called for by the Bidding Documents.

H. A "**Bidder**" is a person or entity who submits a Bid for a prime contract with the Longview School District for the Work described in the proposed Contract Documents.

I. The "**Bidding Documents**" include the Advertisement or Invitation to Bid, Instructions to Bidders, the Bid form, any other sample bidding and contract forms, the Bid Bond, and the proposed Contract Documents, including any Addenda issued prior to receipt of Bids.

J. The "**Contract Documents**" proposed for the Work consist of the Agreement Between Owner and Contractor, the General Conditions of the Contract (as well as any Supplemental, Special or other Conditions included in the Project Manual), the Drawings, the Specifications, and all Addenda issued prior to, and all modifications issued after, execution of the Contract.

K. To be considered "**Responsible**" or meet "**Responsibility**" requirements, a Bidder must meet the following supplemental criteria applicable to this Project to the satisfaction of the Architect and the Longview School District:

(1) The ability, capacity, and skill to perform the Contract;

(2) The character, integrity, reputation, judgment, experience, and efficiency of the Bidder;

(3) Whether the Bidder can perform the Contract within the time specified;

(4) The previous and existing compliance by the Bidder with laws relating to the Contract;

(5) The quality of performance of previous contracts, including demonstration of successful completion of similar projects in the last three (3) years;

(6) The designated Project Manager shall have a minimum of three (3) years of successful experience in project management and scheduling of projects of similar scope and complexity;

(7) The designated Superintendent shall have a minimum of five (5) years of successful supervision of projects of similar scope and complexity;

(8) Any other qualifications required by the Contract Documents or Bidding Documents; and

(9) Such other information as may be secured having a bearing on the decision to aware the contract.

L. A "**Sub-bidder**" is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

M. A "**Unit Price**" is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services as described in the Bidding Documents or in the proposed Contract Documents. The Longview School District reserves the right to reject at any time, without impairing the balance of the proposal, any or all such predetermined unit prices.

1.02 BIDDER'S REPRESENTATIONS

By making its Bid, each Bidder represents that:

A. BIDDING DOCUMENTS. The Bidder has read and understands the Bidding Documents, and its Bid is made in accordance with them.

B. POSSIBLE SELF-PERFORMED WORK REQUIREMENT. The Bidder will perform *with its own forces* at least that percentage (if any) of the Work required by the Bidding Documents or the Contract Documents.

C. PRE-BID MEETING. The Bidder has attended the pre-bid meeting(s) required by the Bidding Documents. The Project site is available for inspection for prospective bidders at a mandatory pre-bid site meeting and walk-through, as indicated in the Advertisement for Bids, and existing conditions should be examined. NOTE: THE INDIVIDUAL REPRESENTING THE GENERAL CONTRACTOR AT THE MANDATORY PRE-BID MEETING SHALL BE AN OFFICER OR OWNER OF THE COMPANY AND HAVE THE OFFICIAL CAPACITY TO BE A DULY AUTHORIZED REPRESENTATIVE OF THE COMPANY.

D. BASIS. Its Bid is based upon the materials, systems, services, and equipment required by the Bidding Documents, without exception.

E. EXAMINATION. The Bidder has carefully examined and understands the Bidding Documents, the Contract Documents (including, without limitation, any liquidated damages and insurance provisions), and the Project site, including any existing buildings, it has familiarized itself with the local conditions under which the Work is to be performed and has correlated its observations with the requirements of the proposed Contract Documents and it has satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished, and all other requirements of the Contract Documents. The Bidder has also satisfied itself as to the conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof, including but not limited to those conditions and matters affecting: transportation, access, disposal, handling and storage of materials, equipment and other items; availability and quality of labor, water, electric power and utilities; availability and condition of roads; climatic conditions and seasons; physical conditions at the Project site and the surrounding locality; topography and ground surface conditions; and equipment and facilities needed preliminary to and at all times during the performance of the Work. The failure of the Bidder fully to acquaint itself with any applicable condition or matter shall not in any way relieve the Bidder from the responsibility for performing the Work in accordance with, and for the Contract Sum and within the Contract Time provided for in, the Contract Documents.

F. PROJECT MANUAL. The Bidder has checked its copies of the Project Manual with the Table of Contents bound therein to ensure the Project Manual is complete.

G. SEPARATE WORK. The Bidder has examined and coordinated all Drawings, Contract Documents, and Specifications for any other contracts to be awarded separately from, but in connection with, the Work being bid upon, so that the Bidder is fully informed as to conditions affecting the Work under the contract being bid upon.

H. LICENSE REQUIREMENTS. Bidders and their proposed Subcontractors shall be registered and shall hold such licenses as may be required by the laws of Washington, including RCW 18.27, for the performance of the Work specified in the Contract Documents.

I. NO EXCEPTIONS. Bids must be based upon the materials, systems and equipment described and required by the Bidding Documents, without exception.

1.03 BIDDING DOCUMENTS

A. COPIES

1. **Deposit.** Bidders may obtain complete sets of the Bidding Documents from the issuing office and other locations designated in the Advertisement or Invitation to Bid in the number and for the deposit amount, if any, stated. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten (10) days after receipt of Bids. The cost of replacement of any missing or damaged documents will be deducted from the deposit. A Bidder awarded a Contract may retain the Bidding Documents, and its deposit will be refunded.

2. **Sub-bidders.** Bidding Documents will not be issued directly to Sub-bidders or others unless specifically offered in the Advertisement or Invitation to Bid.

3. **Complete sets.** Bidders shall use complete sets of Bidding Documents in preparing Bids and are solely responsible for utilizing established plan holder identification processes to obtain updated bid information; neither the Longview School District nor the Architect assumes any responsibility for errors or misinterpretations resulting from the use of incomplete and/or superseded sets of Bidding Documents. Printed copies of plans take precedence over any on-line images.

4. **Conditions.** The Longview School District and/or the Architect make copies of the Bidding Documents available on the above terms only for the purpose of obtaining Bids on the Work and do not confer a license or grant permission for any other use.

5. **Legible Documents.** To the extent any drawings, specifications, or other Bidding documents are not legible, it is the Bidder's responsibility to notify the Longview School District and to obtain legible documents from the plan center.

B. INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

1. **Format.** The Contract Documents may be divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the Specification sections into Work performed by the various building trades, any Work by separate contractors, or any Work required for separate facilities in or phases of the Project.

2. **Notify Owner and Architect.** Bidders and Sub-bidders shall promptly notify the Longview School District and the Architect in writing of any ambiguity, inconsistency, or error that they may discover upon examination of the Bidding Documents or of the site and local conditions. All Bidders and Sub-bidders shall thoroughly familiarize themselves with specified products and installation procedures and submit to the Longview School District and the Architect any objections (in writing) no later than seven (7) calendar days prior to the Bid Date. The submittal of the Bid constitutes acceptance of products and procedures specified as sufficient, adequate, and satisfactory for completion of the Contract.

3. **Written request.** Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven (7) calendar days prior to the date for receipt of Bids.

4. **Addenda.** Any interpretation, correction or change of the Bidding Documents will be made by written Addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections and changes.

5. **Singular references.** Reference in the singular to an article, device, or piece of equipment shall include as many of such articles, devices, or pieces as are indicated in the Contract Documents or as are required to complete the installation.

6. **Utilities and runs.** The Bidder should assume that the exact locations of any underground or hidden utilities, underground fuel tanks, and any plumbing and electrical runs may be somewhat different from any location indicated in the surveys or Contract Documents.

7. **Division of Contract Documents.** The Contract Documents may be divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the Specification sections into Work performed by the various building trades, any Work by separate contractors, or any Work required for separate facilities in of phases of the Project.

C. SUBSTITUTIONS

1. **Standard.** The materials, products, procedures and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality that must be met by any proposed substitution.

2. **Substitution procedure.** No substitution will be considered prior to receipt of Bids unless the Architect receives a written request for approval on the Longview School District's Substitution Request form for the Project, with all data requested on the form completed, at least seven (7) days prior to the date for receipt of Bids. Each such request shall be submitted with a Request for Substitution form identical to or equivalent in content to the form found in the Project Manual, and shall include the name of the material or equipment proposed to be replaced and a complete description of the proposed substitute, including drawings, cuts, performance and test data, warranty information, and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included. The proposer has the burden to prove the merit of the proposed substitute; by proposing the substitution, the Bidder represents that it has personally investigated the proposed material or product and determined that it is equal or better in all respects to that specified, that the same or better warranty will be provided for the substitution, that complete cost data, including all direct and indirect costs of any kind, has been presented, that the Contract Time will not be increased, and that it will coordinate the installation of the substitute if accepted and make all associated changes in the Work. The Architect's decision to approve or disapprove a proposed substitution shall be final. Written requests for approval shall constitute a guarantee by the Bidder that the articles or materials are in all respects, including warranty and installation, equal or superior to those specified, unless otherwise noted. To the extent the proposed substitution will require additional services by the Architect or its consultants after Bid award, the Bidder, if successful, will be required to pay the Architect or its consultants for these services at their customary hourly rates.

3. **Addendum.** If the Architect approves a proposed substitution prior to receipt of Bids, the approval will be set forth in a written Addendum. Bidders shall not rely upon approvals made in any other manner. Substitution request forms returned by the Architect are a courtesy only, and Bidders/Sub-bidders shall rely solely on substitution approvals listed in an Addenda.

4. **Post-Bid substitutions.** After the Contract has been executed, the Longview School District and the Architect may consider a written request for the substitution of material or products in place of those specified in the Contract Documents only under exceptional circumstances as specified therein.

D. ADDENDA

1. **Written.** All Addenda will be written. They will be mailed, emailed, faxed, delivered, and/or posted electronically with notice to those the Architect knows to have received a complete set of Bidding Documents.

2. **Copies.** Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3. **Verification and acknowledgment of receipt.** Prior to bidding, each Bidder shall ascertain that it has received all Addenda issued. Each Bidder shall acknowledge its receipt of all Addenda in its Bid.

1.04 BIDDING PROCEDURE

A. FORM AND STYLE OF BIDS

1. **Form.** Bids (including any required attachments) shall be submitted on forms identical to the form included with the Bidding Documents. No oral, email, or telephonic responses or modifications will be considered to be Bids.

2. **Entries on the Bid form.** All blanks on the Bid form shall be filled in by typewriter or manually in ink.

3. **Words and figures.** Where so indicated by the makeup of the Bid form, sums shall be expressed in both words and figures; in case of discrepancy between the two, *the amount written in figures shall govern and the words shall be used to determine any ambiguities in the figures*. Portions of the Bid form may require the addition of component bids to a total or the identification of component amounts within a total. In case of discrepancy between component amounts listed and their sum(s), the component amounts listed shall govern.

4. **Initial changes.** Any interlineation, alteration or erasure must be initialed by an authorized representative of the Bidder.

5. **Alternates and Unit Prices.** All requested Alternates and unit prices should be bid. The Longview School District reserves the right, but is not obligated, to reject any Bid on which all requested Alternates or unit prices are not bid. If no change in the Base Bid is required for an Alternate, enter "*No Change*." If there is no entry, it will be presumed that the Bidder has made no offer to accomplish this Alternate. If it is not otherwise clear from the Bid or nature of the Alternate, it will be presumed that the amount listed for an Alternate is an add rather than a deduct.

6. **No conditions.** The Bidder shall make no conditions or stipulations on the Bid form nor qualify its Bid in any other manner.

7. **Identity of Bidder.** The Bidder shall include in the specified location on the Bid form the legal name of the Bidder and, if requested, a description of the Bidder as a sole proprietor, a partnership, a joint venture, a corporation (including the state of incorporation), or another described form of legal entity. The Bid shall be signed by the person or persons legally

authorized to bind the Bidder to a contract. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder, and provide other information requested.

8. **Bid amounts do not include sales tax.** The Bid shall include in the sum stated all taxes imposed by law, EXCEPT STATE AND LOCAL SALES TAX ON THE CONTRACT SUM.

9. **Bid breakdown.** The Bid form may contain, for the Longview School District's accounting purposes only, a breakdown of some or all of the components included in the Base Bid.

B. POTENTIAL LISTING OF SUBCONTRACTORS

1. **Procedure.** On certain projects of the Longview School District, the Bid form includes a requirement that certain Subcontractors be listed, and the list must be submitted to the Longview School District. In these circumstances, the Bidder must name the Subcontractor with whom the Bidder, if awarded the Contract, will subcontract ***directly*** (i.e., not lower-tier Subcontractors) for performance of the work of:

(a) HVAC (heating, ventilation and air conditioning),

(b) plumbing as described in RCW 18.106,

(c) electrical work as described in RCW 19.28, and

(d) any other categories of Work listed on the Subcontractor listing form.

SELF-PERFORMANCE: If the Bidder intends to self-perform any of these categories of Work, it must name itself for each such category of Work.

IF NO SUBCONTRACTORS: If there is no work to be performed by a HVAC, plumbing, electrical, or other subcontractor category identified on the Bid form, the Bidder should insert "None" or "N/A" on the Bid form. If a category is left blank, that shall indicate that the Bidder believes that there is no work to be performed by that trade.

MULTIPLE ENTRIES: The Bidder shall not list more than one (1) entity for a particular category of Work identified, unless a Subcontractor varies with an Alternate Bid, in which case the Bidder shall identify the Subcontractor to be used for the Alternate and the affected portion of the Work and otherwise make its Bid clear as to which subcontractor shall be utilized depending upon the selection of alternates.

MULTIPLE SUBMITTAL TIMES. In the event the Bidding Documents call for a second submittal time for receipt of alternate bids, and no additional Subcontractors are listed with such alternate bids, the Longview School District will consider that there is no change in the Subcontractors from those listed with the base Bid.

2. **Failure to Submit.** In accordance with RCW 39.30.060, failure of a Bidder to submit as part of the Bid the names of such proposed heating, ventilation and air conditioning, plumbing, and electrical Subcontractors or to name itself to perform such Work or the naming of two or more Subcontractors to perform the same Work shall render the Bidder's Bid nonresponsive and, therefore, void.

3. **Requirement to Subcontract.** The Bidder, if awarded the Contract, will subcontract with the listed Subcontractor for performance of the portion of the Work designated on the Form

of Proposal, subject to the provisions of the Contract for Construction and RCW 39.30.060. The Bidder shall not substitute a listed Subcontractor in furtherance of bid shopping or bid peddling.

4. **Replacement.** If a listed Subcontractor is unable to comply with any bondability, qualification, or other requirements of the Contract or Bidding Documents (including without limitation a finding of Subcontractor non-Responsibility), the Longview School District may require the Bidder to replace the Subcontractor with a Subcontractor acceptable to the Longview School District at no change in the Contract Sum or Contract Time.

5. **Subcontractor Standards.** Subcontractors shall meet contractual and technical qualifications standards, and provide specialized certification, licensing, and/or payment and performance bonding where specified.

C. BID SECURITY

1. **Purpose and procedure.** Each Bid shall be accompanied by a bid security payable to the Longview School District in the form required in the Bidding Documents and equal to five percent (5%) of the Base Bid. The bid security constitutes a pledge that the Bidder will enter into the Contract with the Longview School District in the form provided, in a timely manner, and on the terms stated in its Bid and will furnish in a timely manner the payment and performance bonds, certificates of insurance, Contractor's Construction Schedule, and all other documents required in the Contract Documents. Should the Bidder fail or refuse to enter into the Contract or fail to furnish such documents, the amount of the bid security shall be forfeited to the Longview School District as liquidated damages, not as a penalty. By submitting its Bid and bid security, the Bidder agrees that any forfeiture is a reasonable prediction at the time of Bid submittal of future damages to the Longview School District.

2. **Form.** The bid security shall be in the form of a certified or bank cashier's check payable to the Longview School District or a bid bond executed by a bonding company acceptable to the Longview School District and licensed in the State of Washington on the form included with the Bidding Documents or on an acceptable and equivalent form. The Attorney-in-Fact who executes the bond on behalf of the surety shall be licensed to do business in the State of Washington and shall affix to the bond a certified and current copy of his/her Power of Attorney.

3. **Retaining Bid Security.** The Longview School District will have the right to retain the Bid Security of Bidders to whom an award is being considered until the earliest of either (a) the Contract has been executed, and payment and performance bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

4. **Return of Bid Security.** Within forty-five (45) days after the Bid Date, the Longview School District will release or return Bid securities to Bidders whose Bids are not to be further considered in awarding the Contract. Bid securities of the three apparent low Bidders will be held until the Contract has been finally executed, after which all unforfeited Bid securities will be returned.

D. SUBMISSION OF BIDS

1. **Procedure.** The Bid, the Bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party specified in the Advertisement or Invitation to Bidders and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated

portion of the Work for which the Bid is submitted. If the Bid is sent by mail the sealed envelope shall be enclosed in a separate mailing envelope with the notation "*SEALED BID ENCLOSED*" on the face thereof.

2. **Deposit.** Bids shall be deposited at the designated location prior to the time and date for receipt of Bids indicated in the Advertisement or Invitation to Bid, or any extension thereof made by Addendum. Bids received after the time and date for receipt of Bids may be returned unopened at the discretion of the Longview School District.

3. **Responsibility.** The Bidder assumes full responsibility for timely delivery at the location designated for receipt of Bids.

4. **Form.** Oral, fax, telephonic, email, electronic, or telegraphic Bids are invalid and will not be considered.

E. MODIFICATION OR WITHDRAWAL OF BID

1. **After receipt time.** A Bid may not be modified, withdrawn or canceled by the Bidder during a forty-five (45) day period following the time and date designated for the receipt of Bids, and each Bidder so agrees by virtue of submitting its Bid.

2. **Before receipt time.** Prior to the time and date designated for receipt of Bids, any Bid submitted may be modified or withdrawn only by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder or by telegram or fax; if by telegram or fax, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids. The notice shall be worded so as not to reveal the amount of the original Bid. E-Mail notice will not be considered. It shall be the Bidder's sole responsibility to verify that the notice has been received by the Longview School District in time to be withdrawn before the Bid opening.

3. **Resubmittal.** Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

4. **Bid security with resubmission.** Bid security shall be in an amount sufficient for the Bid as modified or resubmitted.

F. NOTICE

1. Notice or a request from a Bidder under these Instructions to Bidders must be in writing over the signature of the Bidder and delivered in person or by mail, express delivery, telegram or fax. If the notice is by telegram or fax, written confirmation over the signature of the Bidder must be mailed and postmarked on or before the date and time set for the notice.

1.05 CONSIDERATION OF BIDS

A. OPENING OF BIDS: Unless stated otherwise in the Advertisement or Invitation to Bid or any Addendum, the properly identified Bids received on time will be opened publicly and will be read aloud. An abstract of the Base Bids and Alternate Bids, if any, will be made available to Bidders and other interested parties.

B. REJECTION OF BIDS: The Longview School District shall have the right but not the obligation to reject any or all Bids for any reason or for no reason, to reject a Bid not accompanied by required Bid security or by other material or data required by the Bidding Documents, or to reject a Bid which is in any way incomplete or irregular.

C. ACCEPTANCE OF BID (AWARD)

1. **Owner.** The Longview School District intends (but is not bound) to award a Contract to the lowest Responsible and Responsive Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Longview School District has the right to waive any informality or irregularity in any Bid(s) received and to accept the Bid which, in its judgment, is in its own best interests.

2. **Alternates.** The Longview School District shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Contract Documents or Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and the Alternates (if any) accepted. The Longview School District retains the right to accept Alternate Bid items at the price bid within 45 days after the Agreement is executed.

3. **Requirements for Award**. Before the Award, the lowest Responsive Bidder shall meet the Award Requirements.

D. BID PROTEST PROCEDURES

1. **Procedure.** A Bidder protesting for any reason the Bidding Documents, a bidding procedure, the Longview School District's objection to the Bidder or a person or entity proposed by the Bidder, including but not limited to a finding of non-Responsibility, the award of the Contract or any other aspect arising from or relating in any way to the bidding shall cause a written protest to be filed with the Longview School District within two (2) business days of the event giving rise to the protest and, in any event, no later than two (2) business days after the date upon which Bids are opened. (Intermediate Saturdays, Sundays, and legal holidays are not counted.) The written protest shall include the name of the protesting Bidder, a detailed description of the specific factual and legal grounds for the protest, copies of all supporting documents, and the specific relief requested. The written protest shall be delivered to:

Patti Bowen
Executive Director of Business Services
Longview School District
2715 Lilac Street
Longview, WA 98632

2. **Consideration.** Upon receipt of the written protest, the Longview School District will consider the protest. The Longview School District may, within three (3) business days of the Longview School District's receipt of the protest, provide any other affected Bidder(s) the opportunity to respond in writing to the protest. If the protest is not resolved by mutual agreement of the protesting Bidder and the Longview School District, the Superintendent of the Longview School District or his or her designee will review the issues and promptly furnish a final and binding written decision to the protesting Bidder and any other affected Bidder(s) within six (6) business days of the Longview School District's receipt of the protest. (If more than one (1) protest is filed, the Longview School District's decision will be provided within six (6) business days of the Longview School District's receipt of the last protest.) If no reply is received from the Longview School District during the six (6) business-day period, the protest shall be deemed rejected.

3. **Waiver.** Failure to comply with these protest procedures will render a protest waived.

4. **Condition precedent.** Timely and proper compliance with and exhaustion of these protest procedures shall be a condition precedent to any otherwise permissible judicial consideration of a protest.

1.06 POST BID INFORMATION

A. INFORMATION FROM APPARENT LOW BIDDER

1. **Submittal.** Within twenty-four (24) hours of the Architect's request, the apparent low Bidder and any other Bidders so requested shall submit to the Architect and Longview School District:

(a) submit additional information regarding the use of their own forces and the use of subcontractors and suppliers;

(b) a properly executed Contractor's Qualification Statement on the form provided (unless otherwise required to be submitted at the time of the Bid);

(c) a letter or form from the Bidder's insurance company stating that the insurance required by the Contract Documents will become effective upon execution of the Contract;

(d) a letter or form from the Bidder's surety stating that the bond(s) required by the Contract Documents will become effective upon execution of the Contract;

(e) if requested by the Longview School District, a detailed breakdown of the Bid in a form acceptable to the Longview School District;

(f) the names of the persons or entities (including a designation of the Work to be performed with the Contractor's own forces, and the names of those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work;

(g) the proprietary names and the suppliers of the principal items or systems of materials and equipment proposed for the Work; and

(h) a State Board of Education Form D-9, if requested.

Failure to provide any of the above information in a timely manner may constitute an event of breach permitting forfeiture of the Bid security.

2. **Responsibility.** The Bidder will be required to establish to the satisfaction of the Architect and the Longview School District the reliability and Responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents as well as qualifications set forth in the Sections of the Project Manual pertaining to such proposed Subcontractor's respective trades. The Responsibility of the Bidder may be judged in part by the Responsibility of these proposed entities. The following will be considered:

- The ability, capacity, and skill to perform the contract;
- The character, integrity, reputation, judgment, experience, and efficiency of the Bidder;
- Whether the Bidder can perform the contract within the time specified;
- The quality of performance of previous contracts;

- The previous and existing compliance by the Bidder with laws relating to the contract; and
- Such other information as may be secured having a bearing on the decision to award the contract.

CONSIDERATION. In considering a Bidder's Responsibility, a Bidder shall be deemed to be unqualified to perform the Contract if, after review and verification of the representations included upon the Contractor's Qualification Statement submitted by the Bidder, conditions such as, but not limited to, the following appear:

(a) The Bidder does not have sufficient prior experience (or an acceptable substitute thereof, as described below) with projects of a similar nature in technical, managerial, and financial requirements to that in the present Contract being bid. In addition to such established contractors, a newly established contractor may be considered qualified if it has shown on the Contractor's Qualification Statement that it is staffed with sufficient technical, managerial, and financial personnel with prior experience in the nature of construction for which the Bids are invited.

(b) The Bidder does not have sufficient capability to undertake the obligations of the Contract. A determination will be made when the Longview School District's review of the probable cash flow needs of the Bidder for this Project (including payroll, cost of material and supplies, equipment rental costs, and any other direct or incidental costs of the Contract), concludes that the Bidder does not have sufficient financial resources to enable it to satisfy its financial obligations under the Contract.

(c) The Bidder has submitted unrealistic unit prices as determined by other Bidders' unit prices for this Project.

(d) The Bidder does not have sufficient staff, equipment, or plant available to perform the Contract. The Longview School District's determination in this matter will be based upon that represented by Bidder in the Contractor's Qualification Statement.

(e) The Bidder has a history of unsatisfactory performance of contracts of this or similar nature, regardless of whether such contracts existed between the Longview School District and the Bidder, or other parties and the Contractor.

- A determination of this nature will be made if the Longview School District, after review of the Bidder previous work experience, determines that the Bidder's unsatisfactory performance has resulted predominantly from the Bidder's failure rather than a failure to perform by another party. The School District will give the Contractor an opportunity to explain such nonperformance's before any final determination is reached.
- A determination of failure to perform will be made if the Longview School District is satisfied after review of the Bidder's prior experience, that the Bidder has repeatedly failed to satisfy its obligations under past contracts and the School District cannot safely assume satisfactory performance of the Contract by the Bidder.
- In reaching its determination, the Longview School District may consider statements of other parties to the prior unperformed contracts, as well as the representations of the Bidder on its Contractor's Qualification Statement.

3. **Subcontractors.** The Responsibility of the Bidder may be judged in part by the Responsibility of its Subcontractors. Bidders must verify Responsibility criteria for each first-tier Subcontractor. A Subcontractor of any tier that hires other Subcontractors must verify Responsibility criteria for each of its lower-tier Subcontractors. Verification shall include that each Subcontractor, at the time of subcontract execution, is Responsible and

possesses an electrical contractor license, if required by RCW 19.28, or an elevator contractor license, if required by RCW 70.87, and can obtain any payment and performance bonds required of the Bidding or Contract Documents.

4. **Request to Modify Criteria**. No later than ten (10) days prior to the Bid Date, a potential Bidder may request in writing that the Longview School District modify the Responsibility criteria listed in clause (2) above or elsewhere in the Contract Documents or the Bidding Documents. The Longview School District will evaluate the information submitted by the potential Bidder and respond before the Bid Date. If the evaluation results in a change of the criteria, the Longview School District will issue an Addendum identifying the new criteria.

5. **Objection.** Prior to the Award of the Contract, the Architect will notify the Bidder in writing if either the Longview School District or the Architect, after due investigation, has reasonable objection to the Bidder or a person or entity proposed by the Bidder, and the Longview School District will provide the reasons for the determination. The Bidder may appeal the determination within two (2) business days of its receipt of the objection by presenting additional information to the Longview School District, and the Longview School District will consider the additional information before issuing its final determination. The Bidder may, after the Longview School District's objection or determination, and at Bidder's option, (1) withdraw the Bid, (2) submit an acceptable substitute person or entity with no change in the Contract Time and no adjustment in the Base Bid or any Alternate Bid, even if there is a cost to the Bidder occasioned by the substitution, or (3) appeal by filing a protest in accordance with paragraph 5(D). In the event of withdrawal, Bid security will not be forfeited.

6. **Change.** Persons and entities proposed by the Bidder and to whom the Longview School District or the Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Longview School District and the Architect.

7. **Right to Terminate.** The Bidder's representations concerning its qualifications will be construed as a covenant under the Contract. Should it appear that the Bidder has made a material misrepresentation on its Contractor's Qualification Statement, the Longview School District shall have the right to terminate the Contract for Contractor's breach, and the School District may then pursue such remedies as exist elsewhere under this Contract, or as otherwise are provided at law or equity.

B. INFORMATION FROM OTHER BIDDERS: All other Bidders designated by the Architect as under consideration for award of a Contract shall also provide a properly executed Contractor's Qualification Statement, if so requested by the Longview School District.

C. BIDDING MISTAKES: The Longview School District will not be obligated to consider notice of claimed bidding mistakes received more than three (3) business days after the Bid opening. In accordance with Washington law, a low Bidder that claims error and fails to enter into the Contract is prohibited from bidding on the Project if a subsequent call for Bids is made for the Project.

1.07 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

A. BOND REQUIREMENTS: Within seven (7) days after the issuance of the Longview School District's notice of intent to award the Contract, and prior to the date of execution of the Contract, the Bidder shall furnish evidence satisfactory to the Longview School District of its ability to obtain statutory bonds pursuant to RCW 39.08 covering the faithful performance of the Contract

and the payment of all obligations arising thereunder in the form and amount prescribed in the Contract Documents. The cost of such bond shall be included in the Base Bid.

B. SUBCONTRACTOR BONDS. The Longview School District reserves the right to require certain Subcontractors to furnish performance and labor and material payment bonds in form as set forth herein and as set forth under the Bidding Documents or Contract Documents. The School District shall not, however, be responsible for any costs for any Subcontractor bonds unless the Longview School District, prior to the execution of the Owner-Contractor Agreement, requires the Bidder, in writing, to furnish such bonds from designated Subcontractors. Should any bonds be furnished by subcontract bidders, or be required by any Bidder to be furnished by any subcontract bidder or Subcontractor, without the written request of the Longview School District prior to the execution of the Owner-Contractor Agreement, the costs for any such bonds shall be at the expense of the Bidder and shall not be added to the Contract Sum.

C. TIME OF DELIVERY AND FORM OF BONDS. The Bidder shall deliver the bonds and other documents required by the Contract Documents to the Longview School District pursuant to the Contract Documents and in no event any later than seven (7) days after the date of execution of the Contract and prior to commencing operations at the site. The bonds shall be written in the form approved by the Longview School District for public work, as required by RCW 39.08. The bonds shall be written by a surety firm licensed to do business in the State of Washington, with an A.M. Best rating of at least A-/VIII. The Bidder 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 his/her Power of Attorney.

1.08 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

A. FORM TO BE USED: The Agreement for the Work will be written on the form(s) contained in the Bidding Documents, including any General, Supplemental or Special Conditions, and the other Contract Documents included with the Project Manual. In the event no form is enclosed, an AIA Document A101-2007, “Standard Form of Agreement Between Owner and Contractor, where the basis of payment is a Stipulated Sum,” along with the General Conditions (AIA Document A201-2007), as both are revised, modified and supplemented by the Longview School District, will be used.

B. CONFLICTS: In case of conflict between the provisions of these Instructions and any other Bidding Document, these Instructions shall govern. In case of conflict between the provisions of the Bidding Documents and the Contract Documents, the Contract Documents shall govern.

1.09 CONTRACT DOCUMENTS

This paragraph contains descriptions of some but not all of the provisions of the Contract Documents.

A. RETAINAGE: The Contract Documents specify the statutory retainage requirements of RCW 60.28 for this Project.

B. CONTRACT TIME: The Contract Documents specify the Contract Time. Timely completion of this Project is essential to the Longview School District.

C. PREVAILING WAGES: The Contract Documents contain requirements regarding the payment of prevailing wages pursuant to RCW 39.12.

D. WRITTEN CLAIMS AND NOTICE: The Contract Documents contain a number of provisions that require the Contractor to provide notice of Claims and to make and support Claims, in

writing, within a specified time in order to maintain the Claim. The School District is under no obligation to consider Claims that fail, in any respect, to meet these requirements.

E. CHANGES IN CONTRACT SUM: The Contract Documents contain provisions specifying requirements for and pricing of changes in the Contract Sum.

F. DISPUTE RESOLUTION: The Contract Documents contain provisions replacing the arbitration provisions of the form General Conditions with an alternative dispute resolution procedure which, among other things, requires non-binding mediation of all disputes.

G. CONTRACTOR REGISTRATION: Pursuant to RCW 39.06, the Bidder shall be registered or licensed as required by the laws of the State of Washington, including but not limited to, RCW 18.27.

H. COMMISSIONING OF OPERATIONAL SYSTEMS: Certain systems may be designated in the Contract Documents as “Selected” or “Critical” or “Operational” Systems. If so, after the Contractor notifies the Longview School District as specified prior to the Date of Substantial Completion that the Systems are up and running and ready for normal operation, the Longview School District will schedule a pre-commissioning inspection of these Systems.

I. TAXES. The Contractor shall include in its Bid and pay for all applicable taxes except State Sales Tax and Local Sales Tax, which shall be excluded in the preparation of its Bid. Such State and Local Sales Taxes shall be added to the Contract Sum, paid by the Longview School District to the Contractor, and then paid by the Contractor over the course of the Project. Refer to general, supplementary or other conditions regarding further information.

J. OTHER PROVISIONS: The above paragraphs contain descriptions of some but not all of the provisions of the Contract Documents. Bidders should review in detail the Contract Documents themselves and not rely upon the above paragraphs in this article as complete or inclusive.

1.10 POSSIBLE TRENCH EXCAVATION SAFETY PROVISIONS

A. To ensure that the Bidder agrees to comply with relevant trenching safety requirements of RCW 39.04.180 and RCW 49.17, the Base Bid must include the cost of any required trench safety provisions. The Bidder shall enter in the blank provided on the Bid form the dollar amount the Bidder has included in its Base Bid for any trench safety provisions for trenching that will exceed a depth of four feet. If trench excavation safety provisions do not pertain to the Project, the Bidder should enter “N.A.” or “Not Applicable” in the blank on the Bid form.

END OF SECTION

PROPOSAL: Longview School District
Mark Morris Shop Classroom Remodel
Project No. 2021-12

TO: Longview School District No. 122
2080 38th Avenue
Longview, WA 98632

FROM: _____

DATE: **Wednesday, July 28th, 2021**
TIME: **2:00 p.m.**
PLACE: **Longview School District MOTF Office**
2080 38th Avenue
Longview, WA 98632

The undersigned contractor declares that he has carefully examined the drawings and specifications, that he has made an examination of the site of the proposed work and has made such investigations necessary to determine the character of material and the conditions to be encountered. The undersigned hereby proposes to furnish all material and labor and perform all work to complete the **Mark Morris Shop Classroom Remodel** project in accordance with the drawings and specifications provided by the firm Collins Architectural Group, PS., Longview, WA 98632, and to be bound by the following documents:

Instructions to Bidders
Proposal Form
General Conditions of the Contract for Construction
Prevailing Wage Rates
Specifications
Drawings

SCOPE OF WORK:

The project includes the following items of work and those items of work indicated on the drawings:

- **Remodel of existing shop classroom. Project includes electrical, HVAC, Window replacements, window infills, new finishes.**

The undersigned contractor hereby proposes to furnish all material and complete the work as shown on the drawings and specifications for the sum of:

BASE BID: MARK MORRIS SHOP CLASSROOM REMODEL

Perform work identified in the documents.

_____Dollars ($_____)
(Does not include State and Local Sales Tax)

ALTERNATE BID NO. 1: New mechanical system and related work.

Perform work identified in the documents.

_____Dollars ($_____)
(Does not include State and Local Sales Tax)

ALTERNATE BID NO. 2: Removal and replacement of existing windows and related work (Including but not limited to: new vinyl windows, new exterior finishes, and metal framed window infills at exterior walls excluding interior side wall furring).
Perform work identified in the documents.

_____Dollars ($_____)
(Does not include State and Local Sales Tax)

ACCEPTANCE OF BIDS:
The Owner reserves the right to reject any or all bids and waive all informalities and to accept only such bids as may be in the Owner's best interests. The separation of project costs into base bid and alternate bids is for owner's accounting purposes. It is the intent to award all alternate bids.

TIME:
The undersigned contractor agrees that it will substantially complete the project by **September 24th, 2021.** The undersigned contractor agrees to hold this proposal open for twenty (20) days following the opening of bids and to execute the Agreement within five (5) days of the Notice of Intent to Award Contract

Time is of the essence of the contract. Delay in substantial completion will cause the Owner additional general expenses in ways including but not limited to: delay or interruption of the ability to use the facility as required for school functions, and the costs of employees devoting attention to the project.

For each day after the substantial completion date that the Contractor has not achieved substantial completion, the Contractor shall pay as general liquidated damages the sum of Two Hundred Dollars ($200.00).

The Contractor, by submitting his bid, represents that he has reviewed the above-referenced costs and damages and agrees with The Longview School District that the above stated liquidated sums are reasonable estimates of both the direct costs and damages to The Longview School District which would be incurred in the event of a failure by the Contractor to achieve substantial completion on or before the date provided in the contract documents for substantial completion.

LABOR RATES:
The State of Washington prevailing wage rates and Federal Davis Bacon Wage Rates are both applicable for this public works project located in Cowlitz County. Bidders are responsible to verify and use the most recent prevailing wage rates. The "Effective Date" for this project is the Bid Form due date above. The applicable state of Washington prevailing wage rates may be found on the Department of Labor & Industries website located at: https://secure.lni.wa.gov/wagelookup/. Federal Davis Bacon Wage Rates may be found at: https://wdol.gov/dba.aspx. The contractor shall pay the higher of the State of Washington prevailing wage rates or the Davis Bacon Wage Rates as applicable for each trade.

CORRECTION PERIOD:
The undersigned contractor understands and agrees that he shall be held responsible for a period of (12) twelve months after the Date of Substantial Completion, guaranteeing to replace at its own expense any defective work due to poor material or poor workmanship. This right shall be in addition to any other right the Owner may have.

The Owner reserves the right to reject any or all bids and waive all informalities and to accept only such bids as may be in the Owner's best interests.

The contractor states below whether it is doing business as an individual, a co-partnership, or as a corporation. If a co-partnership, all partners are named and the person signing on behalf of the co-partnership states his position with the co-partnership. If a corporation, the contractor gives the state of incorporation, whether it is licensed to do business in the State of Washington, and the position of the person signing on behalf of the corporation.

The undersigned contractor hereby represents that his bid is made without connection with any person, firm or corporation making a bid on the same material, and is in all respects fair and without collusion or fraud.

FIRM_____

BUSINESS AS _____

STATE OF INCORPORATION_____

WASHINGTON CONTRACTOR LICENSE NO. _____

PARTNERS_____

_____

BY_____
Signature and Title

ADDRESS_____

ZIP CODE_____

TELEPHONE_____

DATE:_____

I have received Addenda Nos. _____

END OF SECTION

Project Name:_____

The undersigned attests, under penalty of perjury, that the bidder has no final and binding citation or notice of assessment from Labor & Industries for:

- Minimum wage requirements and labor standards (RCW 49.46)
- Wages – payment – collection (RCW 49.48)
- And, only for contracts awarded between Sept. 1, 2010, and Dec. 31, 2013, not been found in violation of requirements to submit of information to L & I about certain “off-site, prefabricated, nonstandard, project specific items” (RCW 39.04.370)

_____ _____

Authorized Signature Printed Name

_____

Title

_____

Date

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)
Longview School District No. 122
2715 Lilac Street
Longview, Washington 98632

THE ARCHITECT:
(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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User Notes:

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Owner or Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements. In the event of a conflict or discrepancy among or in the Contract Documents, interpretation shall be governed in the following priority, with an Addendum or a revision to a Contract Document having precedence over the original document and later Addenda having precedence over earlier:

- .1 Agreement (revised A101-2007) (written amendments having precedence)
- .2 Any Supplementary Conditions
- .3 These revised General Conditions (A201-2007)
- .4 Any Special Conditions
- .5 Specifications
- .6 Drawings (large-scale having precedence over small-scale, and written or computed dimensions having precedence over scaled dimensions)
- .7 Material and systems schedules.

In the event that Work is shown on Drawings but not contained in Specifications, the Work as shown shall be provided at no change in the Contract Sum or Contract Time, according to specifications to be issued by the Architect that are consistent with and reasonably inferable from the Work shown on the Drawings.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a ~~Sub-subcontractor,~~ Sub-subcontractor (although the Owner does not waive any third-party beneficiary rights it may otherwise have as to Subcontractors of any tier), (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the ~~construction and services~~ construction, services, and administrative procedures required by the Contract Documents, whether completed or partially ~~completed,~~ completed and whether new construction or modification of existing structures, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project. Where the Work requires construction that modifies or interfaces with existing structures, the Contractor shall ensure that the Work is compatible and interfaces with the as-built conditions of the existing structures.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

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§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, the Project Manual, studies, surveys, models, sketches, drawings, specifications, and other similar ~~materials.~~materials through which the Work to be executed by the Contractor is described.

§ 1.1.8 ~~INITIAL DECISION MAKER~~PROJECT MANUAL

The ~~Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.~~ Project Manual is a volume or volumes usually assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract, Specifications, and other related materials such as construction details and schedules.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any ~~trade.~~trade, nor shall it remove the obligation to complete all of the Work when coordination between the specifications and the drawings or coordination between subcontracts is required.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words not defined in the Contract Documents that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 If there is any inconsistency in the Contract Drawings, or between the Contract Drawings and the Specifications, unless otherwise ordered in writing by the Architect or the Owner, the Contractor shall provide the better quality of, or the greater quantity of, work or materials as reasonably interpreted by the Architect or the Owner.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (I) specifically defined, (2) the titles of numbered articles and identified references to Sections in this document or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. Reference in the singular to an article, device, item or piece of equipment shall include the larger of the number of such articles indicated in the Contract Documents or the number required to complete the installation.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants ~~shall~~ shall, subject to any right of the Owner, be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and ~~will~~ will, subject to any right of the Owner, retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

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§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the ~~Work.~~ Work under the Contract Documents and with respect to the Project. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. All copies of the Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Contractor may retain one record set. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

~~If the parties intend to transmit Instruments of Service~~ Contractor acknowledges that drawings, specifications, Instruments of Service, or any other information or documentation ~~in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.~~ that Contractor receives in digital form may contain transmission or translation errors and are issued for convenience only, and thus Contractor may only rely upon hard copy documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the ~~Owner or the Owner's authorized representative.~~ School District Board of Directors or the Owner's authorized representative. The "Owner" does not include teachers, district administrators, the school principal, staff, custodians, maintenance or safety workers, or others at the school. WAIVERS OF PROVISIONS OF THIS CONTRACT CAN ONLY BE MADE IN WRITING AND BY THE OWNER'S BOARD OF DIRECTORS. No other person is authorized to grant such waivers on behalf of the Owner. No officer, agent, representative, or employee of the Owner shall be personally responsible for any liability arising under this Agreement.

~~**§ 2.1.2** The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.~~

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 ~~Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable~~ The Contractor may only request evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the ~~Contract. Thereafter, the Contractor may only request such evidence if (1)~~ Contract if the Owner fails to make payments of undisputed amounts to the Contractor as the Contract Documents ~~require; (2) a change in the Work materially changes the Contract Sum; or (3)~~ require or if the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when ~~due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change.~~ due and the Owner agrees. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary environmental approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. The Contractor is responsible to secure and pay for licenses and all other permits, subject to Section 3.7.1.

§ 2.2.3 The Owner ~~shall~~ may furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. The Contractor should assume that the locations of any underground or hidden utilities, underground tanks,

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plumbing or electrical runs indicated in the surveys or Contract Documents are shown in approximate locations, but the Contractor is responsible for making all utility location checks. The Contractor is responsible for performing all utilities investigation and location work to determine the precise locations thereof. The Contractor shall not damage or interrupt utilities or utilities services of any kind. The Contractor shall bear the risk of loss arising out of its Work which directly or indirectly damages or interrupts any utilities or utilities services, or causes or contributes to damages of any nature, except in the case where the loss resulted because the utility location information provided by Owner or Utility Provider was inaccurate.

§ 2.2.4 The ~~Owner~~ Owner, upon written request, shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such reasonable information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor ~~one copy~~ up to twenty (20) electronic "CD" copies of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly or materially fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order signed personally or by an agent specifically so empowered by the Owner to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of itself or the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ~~ten-day~~ seven (7) day period after receipt of written notice from the Owner to commence and continue to make reasonable progress toward the correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services and expenses made necessary by such default, neglect or failure. ~~Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect.~~ The right of the Owner to correct the Work pursuant to this Section 2.4 shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of itself or others. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, ~~if required~~ bonded, and insured in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract ~~Documents.~~ Documents and submittals accepted pursuant to Section 3.12. The Contractor shall comply with any requirements of the Office of the Superintendent of Public Instruction.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.1.4 The Contractor shall be and operate as an independent contractor in the performance of the Work and shall have complete control over and responsibility for all personnel performing the Work. The Contractor is not authorized

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to enter into any agreements or undertakings for or on behalf of the Owner or to act as or be an agent or employee of the Owner.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. By executing this Contract, the Contractor represents and acknowledges that the Contract Sum is reasonable compensation for all the Work, that it is performing with its own forces any percentage of Work specified in the Contract Documents or the Bidding Documents (not including general conditions Work), that the Contract Time is adequate for the performance of the Work, and that it has carefully examined the Contract Documents and the Project site, including any existing structures and access thereto, and any drawings of the existing conditions available from the Owner, and that it has satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface conditions and other foreseeable matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof, including but not limited to those conditions and matters affecting: transportation, access, local regulations, disposal, handling and storage of materials, equipment and other items; availability and quality of labor, water, electric power, utilities, drainage; availability and condition of roads; normal climatic conditions and seasons; physical conditions at the Project site and the surrounding locality; topography and ground surface conditions; and equipment and facilities needed preliminary to and at all times during the performance of the Work. The failure of the Contractor to fully acquaint itself with any such condition or matter shall not in any way relieve the Contractor from the responsibility for performing the Work in accordance with the Contract Documents and within the Contract Time and the Contract Sum.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Drawings, Specifications, and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of ~~any existing conditions~~ and verify any existing conditions, including all general reference points and any interfering existing conditions, related to that portion of the Work, and shall observe any conditions at the site affecting ~~it.~~ it and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing such activities. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect and the Owner any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Owner or Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Owner and Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require. The Contractor shall comply with all applicable Federal, State, County and City laws, ordinances and regulations, including, but not limited to, the latest applicable versions of:

1. International Building Code as adopted by the State of Washington;
2. Uniform Plumbing Code;
3. Uniform Mechanical Code;
4. International Fire Code
5. National Electrical Code;
6. Washington State Energy Code;
7. Washington State Rules and Regulations for Barrier-Free Design;
8. Americans with Disabilities Act (ADA);
9. Federal and State Safety Codes as adapted and/or modified by State and Local Ordinances;
10. Washington Sustainable Schools Protocol (WSSP) to the extent that this Project receives any State of Washington funds; and
11. Any applicable Municipal Code.

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§ 3.2.4 If the Contractor believes that additional cost or time is involved because of ~~clarifications or instructions the Architect issues~~ any design errors or omissions or inconsistencies noted by the Contractor, or clarifications or instructions issued by the Owner or the Architect in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make any Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public ~~authorities.~~authorities unless the Contractor recognized or reasonably should have recognized such error, inconsistency, omission or difference and failed to report it to the Owner and the Architect. If the Contractor performs any construction activity it knows or reasonably should have known involves an error, inconsistency or omission in the Contract Documents or reports referenced therein without such notice to the Owner and the Architect, the Contractor shall be responsible for such performance and shall bear the attributable costs for correction.

§ 3.2.5 Any investigations of hidden or subsurface conditions have been made for design purposes. The results of these investigations may be bound into the Project Manual or otherwise available for the convenience of the Bidders and the Sub-bidders but are not a part of the Contract Documents unless specifically so indicated. While the Contractor may reasonably rely upon such investigation results, there is no guarantee, express or implied, that the conditions indicated are representative of those existing throughout the site or that unforeseen developments may not occur. The Contractor is solely responsible for reasonably interpreting the information and extrapolating beyond the testing location, including each individual boring, test pit or other location.

§ 3.2.6 The Contractor shall do no Work without applicable Drawings, Specifications, or written modifications or, where required, Shop Drawings, Product Data, or Samples, unless instructed to do so in writing by the Architect and the Owner.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, ~~sequences~~ sequences, assembly details and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. ~~If the Contract Documents give~~ The Contractor shall review any such specific instructions concerning construction means, methods, techniques, assembly details, sequences or procedures, the Contractor shall evaluate the jobsite safety ~~thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required~~ thereof, and shall advise the Owner and Architect (a) if the specified instruction or procedure deviates from what the Contractor considers to be good construction practice or jeopardizes jobsite safety, (b) if following the instruction or procedure will negatively affect any warranties, or (c) if the Contractor objects to the instruction or procedure. The Contractor shall propose alternative instructions or procedures acceptable to the Contractor, for which no increase in the Contract Sum or Time will be made. The Contractor shall not proceed with such alternative instruction or procedure without the written acceptance of the Owner and the Architect and the Contractor shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's principals, agents, employees, Subcontractors of any tier and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its ~~Subcontractors.~~Subcontractors of any tier.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work. Under no condition shall a section of Work proceed prior to preparatory work having been completed, cured, dried and otherwise made satisfactory to receive the related

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work. Responsibility for timely installation of all materials and equipment rests solely with the Contractor, who shall maintain coordination control at all times. The Contractor shall require its Subcontractors of any tier to be familiar with all aspects of the Contract Documents related to their Work. The Contractor shall ensure that the responsible Subcontractor has carefully examined all preparatory work that has been executed to receive its work and has notified the Contractor (who shall notify the Owner and Architect in writing) of any defects or imperfections in preparatory work that will, in any way, affect satisfactory completion of the Work. The lack of such notification or the failure of the Contractor to inspect such portions of the Work shall constitute an acceptance of preparatory work and a waiver of any later claim of defect therein.

§ 3.3.4 The Contractor shall perform such detailed examination, inspection and quality surveillance of the Work as will ensure that the Work is progressing and is being completed in strict accordance with the Contract Documents, including the then current issue of the Drawings, Specifications, and accepted shop drawings. The Contractor shall be responsible for examination, inspection and quality surveillance of all Work performed by any Subcontractor of any tier. The Contractor shall determine when it is necessary to perform, and shall perform, tests (in addition to those requested by the Owner or required by the Specifications or any other provision of the Contract Documents) to verify its inspections or to ensure that the Work is being completed in strict accordance with the Contract Documents. Any inspections performed by or on behalf of the Owner shall not be deemed an approval of the Work.

§ 3.3.5 The Contractor shall plan and lay out all Work in advance of installation so as to coordinate all Work without delay or revision. The Contractor shall establish and maintain existing lot lines, restrictions, existing survey markers of any kind, and bench marks. The Contractor shall establish and maintain all other lines, levels and bench marks necessary for the execution of the Work and take necessary steps to prevent their dislocation or destruction. The Contractor shall employ a professional land surveyor registered in the State of Washington to initially lay out and be responsible for the accuracy of the Work. The Contractor shall provide an as-built surveyed site plan noting all site improvements, including but not limited to building corners, storm, sewer, drains, grade and invert elevations.

§ 3.3.6 The Contractor's superintendent shall provide a Daily Report to the Owner for each work day during the Contract Time, whether or not any Work is performed, and for each non-work day in which Work is performed on the site. The Daily Report shall be completed on a form approved by the Owner and Architect, and submitted to the Owner and the Architect on the work day following the day covered in the Report. Some of the required report forms are included in the Specifications.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. The Contractor shall install temporary meters to quantify the Contractor's required reimbursement for utilities.

§ 3.4.2 ~~Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the~~ After the Contract has been executed, the Owner and the Architect may consider a written request for the substitution of material or products in place of those specified in the Contract Documents only as described in the Specifications and following the procedures of the Contract Documents. The written request must include the specifications for the material or product and any proposed change in the Contract Sum or Contract Time. The Contractor may make substitutions only with the explicit written consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. By requesting a substitution, the Contractor represents that it has personally investigated the proposed material or product and determined that it is equal or better in all respects to that specified (or if not equal or better in all respects, the Contractor shall identify such deficiencies), that the same or better warranty will be provided for the substitution, that complete cost data, including all direct and indirect costs of any kind, has been presented, that it waives any other known or unknown Claim for an increase in the Contract Sum or Contract Time, that it has coordinated with affected Subcontractors and will not impact other parts of the Work, and that it will coordinate the installation of the substitute if accepted and make all associated changes in the Work.

~~**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.~~

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§ 3.4.3.1 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work, including observance of drug testing and all smoking, tobacco, alcohol, parking, safety, weapons, background checks, sexual harassment, and other rules governing the conduct of personnel at the Owner's property and the Project site. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall ensure that all persons performing the Work comply with the Owner's tobacco-free policy, and will not and do not engage in inappropriate conduct or inappropriate contact with students or staff. Neither the Contractor nor any of its Subcontractors of any tier shall utilize any employee at the site or permit any contact between children at a public school and any employee who has pled guilty to or been convicted of any felony crime involving the physical neglect of a child under Chapter 9A.42 RCW, the physical injury or death of a child under Chapter 9A.32 RCW or Chapter 9A.36 RCW (except motor vehicle violations under Chapter 46.61 RCW), sexual exploitation of a child under Chapter 9A.68A RCW, sexual offenses under Chapter 9A.44 RCW where a minor is a victim, promoting prostitution of a minor under Chapter 9A.88 RCW, the sale or purchase of a minor child under Chapter 9A.64.030 RCW, or violation of similar laws of another jurisdiction. The Contractor shall remove from the Work and Work site any employee or other person who has engaged in such actions or who the Owner reasonably considers objectionable without change in the Contract Sum or Contract Time. Without limiting the generality of the foregoing, the Contractor shall ensure by appropriate provisions in each subcontract agreement that the Contractor may remove from the Work and Work site any Subcontractor or Subcontractor's employee who has engaged in such action. At no change to the Contract Sum or Contract Time, the Contractor shall remove from the Work and Work site any employee or other person pursuant to this Section 3.4.3. Failure to comply with these requirements is grounds for immediate termination of the Agreement for cause.

§ 3.4.4 Prevailing Wages.

§ 3.4.4.1 Pursuant to RCW 39.12, "Prevailing Wages on Public Works," no worker, laborer, or mechanic employed in the performance of any part of the Work shall be paid less than the "prevailing rate of wage" (in effect as of the date that bids are due) as determined by the Industrial Statistician of the Department of Labor and Industries. The schedule of the prevailing wage rates for the locality or localities where this contract will be performed is attached to the executed contract and made a part of the Contract Documents by reference as though fully set forth herein; if not attached, then the applicable prevailing wages are determined as of the Bid Date for the county in which the Project is located and are available at http://www.lni.wa.gov/TradesLicensing/PrevWage/WageRates/default.asp. A copy is available for viewing at the Owner's office, and a hard copy will be mailed upon request. To the extent that there is any discrepancy between the attached or provided schedule of prevailing wage rates and the published rates applicable under WAC 296-127-011, or if no schedule is attached, the applicable published rates shall apply with no increase in the Contract Sum. It is the Contractor's responsibility to ensure that the correct prevailing wage rates are paid. The Contractor shall provide the respective Subcontractors with a schedule of the applicable prevailing wage rates. Questions relating to prevailing wage data should be addressed to the Industrial Statistician upon request.

Mailing Address:	Department of Labor and Industries Prevailing Wage Office PO Box 44540 Olympia, WA 98504
Telephone:	(360) 902-5335
Facsimile:	(360) 902-5300

§ 3.4.4.2 Pursuant to RCW 39.12.060, in case any dispute arises as to what are the prevailing rates of wages for work of a similar nature, and such dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the director of the Department of Labor and Industries of the state, and his or her decision therein shall be final and conclusive and binding on all parties involved in the dispute.

§ 3.4.4.3 The Contractor shall defend, indemnify and hold the Owner harmless, including attorneys' fees, from any violation or alleged violation by the Contractor or any Subcontractor of any tier of RCW 39.12 ("Prevailing Wages on Public Works") and Chapter 51 RCW ("Industrial Insurance"), including without limitation RCW 51.12.050.

§ 3.4.5 The Contractor shall comply with all applicable provisions of RCW 49.28 ("Hours of Labor").

§ 3.4.6 Pursuant to RCW 49.70, "Worker and Community Right to Know Act," and WAC 296-307-560 et seq., the Contractor shall provide the Owner copies of and have available at the Project Site a workplace survey or material

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safety data sheets for all "hazardous" chemicals under the control or use of Contractor or any Subcontractor of any tier at the Project Site. The Contractor shall not be entitled to an increase in the Contract Time or Contract Sum arising from its failure or alleged failure to comply with this statute or regulation.

§ 3.4.7 Certified Asbestos-Free and Lead-Free Products: All products and materials incorporated into the Project as part of the Work shall be certified as "asbestos-free" and "lead-free" by United States standards. At the completion of the Project the Contractor shall submit Certifications of Asbestos-Free and of Lead-Free Materials certifying that all materials and products incorporated into the Work meet the requirements of this section.

§ 3.4.8 The Contractor sball be responsible for labor peace on the Project and shall at all times use its best efforts and exercise its best judgment as an experienced contractor to adopt and implement policies and practices designed to avoid work stoppages, slowdowns, disputes or strikes where reasonably possible and practical under the circumstances, and sball at all times maintain Project-wide labor harmony.

§ 3.4.9 Materials shall conform to the manufacturer's standards in effect at the date of execution of the Contract Documents and shall be installed in strict accordance with the manufacturer's instructions, specifications and directions. Tbe Contractor sball, if required in writing by the Owner or Architect, furnish satisfactory evidence regarding the kind and quality of any materials identifying thereon the source, and warranting their quality and compliance with the Contract Documents.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or explicitly pcrmit otherwise. The Contractor further warrants that the Work will be performed in a skillful and workmanlike manner, will conform to the requirements of the Contract ~~Documents~~ Documents, and will be free from defects, except for those inherent in the quality of the Work the Contract Documents ~~require or permit.~~ require. Work, materials, or equipment not conforming to these ~~requirements may be~~ requirements, including substitutions not properly approved and authorized, is considered defective. The Contractor's warranty excludes remedy for damage or defect caused ~~by abuse,~~ by abuse by the Owner, alterations to the Work not executed or supervised by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Owner or Architect, the Contractor shall furnisb satisfactory evidence as to the kind and quality of materials and equipment. The Contractor is not relieved of its general warranty obligations by the specification of a particular product or procedure in the Contract Documents. Warranties in the Contract Documents shall survive completion, acceptance and final payment. The Contractor shall collect, assign, and deliver to the Owner any specific written warranties given by others. Warranty language shall comply with the Contract Documents and shall be submitted to the Owner and Architect at least thirty (30) days prior to ordering the warranted material or equipment.

§ 3.6 TAXES

The Contractor shall pay ~~sales, consumer, use~~ all taxes, including but not limited to sales, consumer, use, B & O, income, and similar taxes for the Work provided by the Contractor that are legally enacted when bids are ~~received or negotiations concluded,~~ received, whether or not yet effective or merely scheduled to go into effect. The only taxes excluded from the Contract Sum and separately reimbursable are state and local sales taxes on the Contract Sum.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otberwise provided in the Contract Documents, the Owner will secure and pay for only the permits and governmental fees listed in the Special Conditions as its responsibility, and the Contractor shall secure and pay for all other pcrmits, fees, and licenses necessary for the execution of the Work, including without limitation all utility connection fees, Subcontractor permits and fees including plan check fees for deferred submittals, the application fees and review fees for any and all shop drawings or bidder designed systems, any inspection fees not covered by the initial building permit fee, including reinspection fees, Department of Labor and Industries fecs, renewals and penalties, miscellaneous, ancillary and governmental fees, as well as for other permits, fecs, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are ~~customarily secured after execution of the Contract and~~ legally required at the time bids are received or negotiations ~~concluded.~~ concluded, other than those that the Specifications explicitly indicate the Owner is providing. The Contractor will pay for all license fees, renewals and penalties.

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§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. The Contractor shall coordinate and schedule all Work with permitting agencies, utility companies, and other such agencies determined to have jurisdictional authority necessary for completion of the Work. The Contractor shall keep the Owner informed of communications from these authorities and utilities. The Owner will assist the Contractor with such coordination and scheduling, but the Owner is not responsible for any delays caused by such permitting agencies, utility companies, and other such agencies determined to have jurisdictional authority. The Contractor shall be responsible for providing all information, documents, and fees to the permitting agencies, utility companies, and other such agencies determined to have jurisdictional authority within 30 days after issuance of the Notice to Proceed as necessary to obtain and coordinate permits, utility and other such connections. The Contractor shall obtain all permit renewals during the course of the Work at the Contractor's expense. The Contractor will be responsible for providing information and fees to the Department of Labor and Industries.

§ 3.7.3 If the Contractor observes that portions of the Contract Documents are at variance with applicable laws, statutes, ordinances, building codes, rules and regulations, or lawful orders of public authorities, the Contractor shall promptly notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate Modification. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume ~~appropriate~~ responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in any soils reports made available by the Owner to the Contractor or in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide written notice to the Owner and the Architect before conditions are disturbed and in no event later than ~~21~~ seven (7) days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or ~~both.~~ both, consistent with the requirements of the Contract Documents. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in ~~writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.~~ writing. Any Claim of the Contractor arising from the Architect's determination or recommendation shall be made in accordance with the dispute resolution procedure in Article 15. No increase to the Contract Sum or the Contract Time shall be allowed if the Contractor knew or reasonably should have known of the concealed conditions prior to its executing the Contract.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall ~~notify the Owner and Architect. Upon receipt of such~~ immediately notify the Owner and Architect by telephone call and also in writing. Upon receipt of such written notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations that may affect the human remains, burial markers, archaeological sites or wetlands until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract ~~Time~~ Time, if any, arising from the existence of such remains or features ~~may~~ shall be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has made reasonable and timely written objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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.1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required ~~taxes,~~ taxes except sales tax, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between ~~actual~~ actual, reasonable costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section ~~3.8.2.2.~~3.8.2.2, except where the allowance is based upon a unit price specified in the Agreement.

Allowances are defined in the Contract Documents due to the uncertainty in the scope, price and quantity of the Allowance items at the time the Contract was executed. Whenever actual costs are more or less than the allowance, the Contract Sum will be adjusted accordingly by Change Order. The Contractor must provide the Owner with written notice of its intent to exceed an allowance amount, with estimates and justification (providing the Owner with the opportunity to approve or reject the excess costs) before exceeding an allowance amount.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner ~~with reasonable promptness.~~in sufficient time to avoid delay in the Work.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a ~~competent~~ competent, experienced project manager, project engineer, superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

§ 3.9.2 The ~~Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.~~ Contractor shall use an experienced superintendent, who shall be an employee of the Contractor and shall remain on the Project site whenever Subcontractors of any tier are present and not less than eight hours per day, five days per week, unless the job is closed down due to a legal holiday, a general strike, conditions beyond the control of the Contractor, termination of the Contract in accordance with the Contract Documents or unless Final Completion is attained. The project manager and project engineer shall also be employees of the Contractor. The superintendent shall not be employed on any other project during the course of the Work. The Contractor shall also have available for work on site experienced, skilled employees, such as carpenters, laborers, erection specialists, etc., to perform work as needed.

§ 3.9.3 The ~~Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.~~ Contractor, within ten (10) days after being awarded award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent, project manager, and project engineer. The Owner or Architect may reply within a reasonable time to the Contractor stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent, project manager, or project enginecr or (2) that the Architect or Owner requires additional time to review. Failure of the Owner or Architect to reply within a reasonable time shall constitute notice of no reasonable objection. Within ten (10) days after issuance of the Notice to Proceed, the Contractor shall also furnish to the Architect and Owner:

.1 A chain-of-command organizational chart which includes all supervisory personnel, including the project manager, the project engineer and the superintendent, assistant superintendent and lead foreman, that the Contractor intends to use on the Work. The chart shall specify any limits of authority for each person, including any limitation on his or her ability to speak for and bind the Contractor, as well as any limits on decision-making authority with respect to specific dollar values, contract time, and issues affecting quality of the Work.

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.2 Complete resumes, including all past and current projects, for the project manager, the project engineer and the superintendent. The Owner intends to review the resumes and verify references, and it reserves the right to reject personnel reasonably believed to be unsuitable or incompatible for the Project. The Contractor shall replace any rejected personnel with an agreeable replacement at no increase in the Contract Sum or Contract Time.

.3 A list of telephone numbers for all key personnel of the Contractor and its principal subcontractors for purposes of contacting personnel after hours in the event of an emergency. The list shall be periodically updated as necessary to ensure the Owner has the most current information.

§ 3.9.4 The Contractor shall not employ a proposed superintendent, project manager, or project engineer to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent, project manager, or project engineer without the Owner's consent.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly ~~after being awarded the Contract,~~ and within ten (10) days after issuance of the Notice to Proceed, shall prepare and submit for the Owner's and Architect's information a ~~Contractor's construction schedule for the Work.~~ preliminary Contractor's construction schedule for the Work consistent with the requirements of the Contract Documents. Prior to submitting its first Application for Payment, the Contractor, after consultation with its Subcontractors, shall submit two (2) hard color copies and an electronic copy of the Contractor's construction schedule consistent with the requirements of the Contract Documents. The Owner may withhold up to ten percent of any progress payment until a satisfactory schedule is submitted. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at ~~appropriate intervals~~ least monthly and as required by the conditions of the Work and Project, shall be related to the entire ~~Project to the extent required by the Contract Documents,~~ Project, and shall provide for expeditious and practicable execution of the Work. The Contractor shall allocate in the schedule of values a separate line item in the amount of at least one-half of one percent (.5%) of the Contract Sum for scheduling, which shall cover both the initial schedule and all monthly updates. The Contractor shall request payment for this line item with each Payment Application, based upon the percentage completion of the Project. For any month that the Contractor fails to submit an updated schedule, the Contractor shall not be entitled to any payment for scheduling for that month, and the percentage of the scheduling line item represented by that month's percentage of completion of the Work shall be permanently deducted from the Contract Sum by Change Order.

§ 3.10.1.1 Contractor shall promptly notify the Owner and the Architect in writing of any proposed changes in the Project Schedule or the Contract Time or of any event which could delay performance of any item of the Work, stating the cause of the delay, expected duration of the delay, the anticipated effect of the delay on the Project Schedule and the action being taken to correct the delay. Notification of potential delay does not constitute a change in the Contract Time; only a Change Order signed by the Owner can amend the Contract Time. The Contractor shall comply with Article 15 with regard to any delays that it believes are the responsibility of the Owner or are otherwise the subject of a Claim for additional Contract Time.

§ 3.10.1.2 If any Project Schedule submitted sets forth a date for Substantial Completion for the Work or any phase of the Work beyond the Dates of Substantial Completion established in the Contract Documents (as the same may be extended as provided in the Contract Documents), the Contractor shall submit to the Architect and the Owner for their review and approval a narrative description of the means and methods which the Contractor proposes to use to expedite the progress of the Work to ensure timely completion of the various phases of the Work and the Work as a whole. Regardless of the cause of any delay, the Contractor shall exercise reasonable efforts to bring the Project back into compliance with the Project Schedule.

§ 3.10.1.3 To the extent that the Contractor or any Subcontractor or material supplier of any tier is responsible for the delay, the Contractor shall take all necessary action to bring the Project back into compliance with the Project Schedule, including without limitation increasing the number of personnel on the Project and implementing overtime and double shifts.

§ 3.10.2 The Contractor shall prepare and keep current a submittal schedule, promptly after being awarded the Contract and ~~thereafter as necessary~~ update it thereafter at least monthly to maintain a current submittal schedule, and shall submit the schedule(s) for the ~~Architect's approval. The~~ Owner and Architect's review. The Owner and Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect and Owner reasonable time to review

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submittals in accordance with the Specifications and submittal procedures. The Contractor should expect a response time of at least fourteen (14) days for the Architect's review and at least twenty-one (21) days for review by the Architect's consultants. Complex, inter-related or multiple submittals will often take longer. Neither the Owner nor the Architect can guarantee response times from governmental authorities, such as permitting agencies or review of any required deferred submittals. If the Contractor fails to submit ~~a~~ an acceptable submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in ~~general~~ accordance with the most recent schedules submitted to the Owner ~~and Architect.~~ and Architect and shall promptly notify the Owner of any substantial deviations from those schedules.

§ 3.10.4 The Contractor shall attend and participate in and ensure applicable Subcontractors of any tier attend and participate in:

- **.1** A preconstruction meeting;
- **.2** Regular weekly on-site Project status meetings scheduled by the Owner or by the Architect to review progress of the Work, to discuss the Contractor's progress reports, to obtain necessary Owner's or Architect's approvals, and generally to keep the Owner and Architect informed and involved in the progress of the Project; and
- **.3** Other meetings scheduled from time to time by the Owner or by the Architect to review progress of the Work and other pertinent matters.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner and update at least weekly one record copy of the Drawings, Specifications, Addenda, ~~Change Orders~~ Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one record copy of ~~approved~~ accepted Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and the Owner and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed. The location of all existing or new hidden piping, valves, conduit, cabling and utilities, as located during the course of construction, shall be appropriately marked until the actual field location dimensions and coordinates are incorporated on the as-built drawings, and mechanical and electrical deviations and changes shall be included. The documents shall include all Architectural, Mechanical, Electrical, Structural, Landscape, and Civil as-built drawings, whether changes occur or not, using Owner-approved CAD software (AutoCad version 14.1 or newer). These documents, as well as the approved permit set of plans, shall be available to the Architect and Owner at the site and reviewed with them on a monthly basis. Upon Final Completion of the Work, the Contractor shall transfer all as-built information in a clear and legible manner as described in the Contract Documents and in compliance with all requirements of local governmental entities, shall certify in writing that these documents reflect complete and accurate "as-built" conditions and shall deliver the following in a clear, clean and legible manner and in compliance with all requirements of local governmental authorities: (i) complete, integrated copies of the documents in both paper form in good condition and in electronic form in the same format as originally created by the Architect, (ii) the approved permit set of plans, and (iii) the full-size record documents, Shop Drawings, Specifications, Addenda, maintenance manuals and warranties to the Architect for submittal to the Owner in accordance with the provisions of the Contract Documents. Satisfactory maintenance of up-to-date as-built drawings on a monthly basis will be a requirement for approval of progress payments.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples and/or assemblies or mock-ups that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

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§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is for the Contractor to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review and approval of such submittals by the Owner or the Architect is subject to the limitations of Section ~~4.2.7. Informational submittals upon which~~ 4.2.7 and shall not constitute an approval or acceptance of the Contractor's means and methods or a waiver or modification of any requirement of the Contract Documents. Informational submittals upon which the Owner or the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be ~~returned by the~~ (but are not required to be) returned by the Owner or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, note any deviations from the Contract Documents, approve in writing, and submit to the ~~Architect~~ Architect, Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule ~~approved~~ accepted by the Owner and Architect or, in the absence of an ~~approved~~ accepted submittal schedule, with reasonable promptness and frequency and in such sequence and uniform flow rate as to cause no delay in the Work or in the activities of the Owner or of separate ~~contractors.~~contractors, and shall notify the Owner and Architect of any expedited review required. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect without action, which will not constitute an Owner-caused delay to the Contractor. At the time of submission, the Contractor shall inform the Architect in writing if expedited review is requested or if there is any deviation in the Shop Drawings, Product Data, or Samples from the requirements of the Contract Documents. So far as practicable, each Shop Drawing or Product Data submittal shall bear a cross reference note referring to Drawing or detail numbers on the Drawings showing the same Work in order to facilitate checking of Shop Drawing or Product Data and their prompt return to the Contractor. Shop Drawings for interrelated Work shall be submitted at approximately the same time. Unless otherwise directed in writing, the Contractor shall submit one reproducible copy and five black line print copies to the Architect for its use and distribution. The Architect will retain the reproducible copy. The Contractor shall keep accurate records of the receipt, review and delivery of all Submittals and shall submit to the Owner reports every other week on the status of their review, identifying the location and the causes of any failure to promptly receive such submissions and suggesting responsibility.

§ 3.12.6 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

.1 Each submittal shall bear a stamp or specific written indication that the Contractor has satisfied its responsibilities under the Contract Documents with respect to the review of the submission. The Contractor's superintendent must initial each submittal. Submittals that are simply passed through by the Contractor's clerical staff are not sufficient to meet these requirements.

.2 Each submittal shall be accompanied by a completed Submittal Cover Sheet, as included in the Project Manual or provided by the Architect, which shall clearly identify applicable Specification Section and paragraph number(s), material, supplier, pertinent data such as catalog numbers and the use for which it is intended.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been ~~approved~~ reviewed and no exceptions taken by the Architect.

§ 3.12.8 The Work shall be in accordance with ~~approved~~ accepted submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's ~~approval~~ approval, review or acceptance of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's ~~approval thereof.~~approval, review or acceptance thereof. Any corrections or modifications to Shop Drawings made by the Architect shall be deemed accepted by the Contractor, without change in Contract Sum or Contract Time, unless the

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Contractor provides the Architect with written notice at least three (3) working days before commencing any Work from such Shop Drawings and complies with change procedures. The Contractor shall make all corrections requested by the Architect and, when requested by the Architect, provide a corrected Submittal without change in the Contract Sum or Contract Time.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval or acceptance of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, ~~approve~~ accept or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.12.11 Any mechanical systems shown in the Drawings are diagrammatic. (Other Drawings may also be diagrammatic.) The Contractor shall provide dimensioned Shop Drawings and details for all plumbing piping, ductwork, heating system piping, underground hot water piping, hot water boilers, and accessories to indicate complete systems. Shop Drawings shall be to 1/4" = 1'-0" minimum scale in all mechanical rooms, boiler rooms, as well as where accuracy or location is necessary for coordination or installation purposes. Ductwork Shop Drawings shall include a separate drawing to not less than 1/4" = 1'-0" scale showing all duct penetrations through structure (floors, roof, and walls) dimensioned, and all equipment locations, weights and pad details for all HVAC equipment. Critical dimensions of all equipment pad, and pipe or duct penetrations through structure shall be included.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, permits, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. Materials and equipment on site shall be used directly in the Work and not stored on site after their use is complete. There shall be no use of existing on-site facilities (parking, toilets, etc.) without the Owner's prior approval. Portions of the site may be occupied and in use during construction. The Contractor is responsible to coordinate its Work with any such occupation or use at no increase to the Contract Sum or Contract Time and at no disruption to the occupancy or use.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to access or complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably

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withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.14.3 Existing structures and facilities, including but not limited to buildings, landscaping, utilities, topography, streets, curbs, and walks, that are damaged or removed due to excavations or other construction work of the Contractor, shall be patched, repaired or replaced by the Contractor to the satisfaction of the Architect, the owner of such structures and facilities, and governmental authorities having jurisdiction. In the event the governmental authorities require that the repairing and patching be done with their own labor and/or materials, the Contractor shall abide by such regulations and it shall pay for such work at no additional cost to the Owner.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding ~~area~~ area, including roads, free from accumulation of waste materials or rubbish caused by operations under the Contract. The Contractor shall furnish portable containers on site for use by all trades. At the Owner's request and, in any event, at the completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the ~~Contractor.~~ Contractor for any clean-up costs.

§ 3.15.3 The Contractor shall only use waste receptacles provided by the Contractor and shall appropriately dispose of any waste material off site.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect keyed access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law and subject to the following conditions, the Contractor shall defend, indemnify and hold harmless the Owner, ~~Architect, Architect's consultants, and agents and employees of any of them~~ its board members, officials, employees, consultants, students, and volunteers, the Architect, Architect's consultants, and agents and employees, successors and assigns of any of them ("Indemnified Parties") from and against claims, damages, losses and expenses, ~~including but not limited to attorneys' fees,~~ direct and indirect, or consequential, including but not limited to costs, design professional and consultant fees, and attorneys' fees incurred on such claims and in proving the right to indemnification, arising out of or resulting from ~~performance of~~ the ~~Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent~~ acts or omissions of the Contractor, a ~~Subcontractor,~~ Subcontractor of any tier, their agents and anyone directly or indirectly employed by any of them or anyone for whose acts they may be ~~liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.~~ liable ("Indemnitor"). Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.1.1 The Contractor shall fully defend, indemnify, and hold harmless the Indemnified Parties for the sole negligence of the Indemnitor.

§ 3.18.1.2 To the extent of the Indemnitor's negligence, the Contractor shall defend, indemnify, and hold harmless the Indemnified Parties for the concurrent negligence of the Indemnitor.

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§ 3.18.1.3 The Contractor agrees to being added by the Owner or the Architect as a party to any arbitration or litigation with third parties in which the Owner or Architect alleges indemnification or contribution from the Contractor, any of its Subcontractors of any tier, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable. The Contractor agrees that all of its Subcontractors of any tier shall, in their subcontracts, similarly stipulate; in the event any does not, the Contractor shall be liable in place of such Subcontractor(s) of any tier. To the extent any portion of this Section 3.18 is stricken by a court or arbitrator for any reason, all remaining provisions shall retain their vitality and effect.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a ~~Subcontractor,~~ Subcontractor of any tier, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor of any tier under workers' compensation acts, disability benefit acts or other employee benefit acts. After mutual negotiation of the parties, the Contractor waives immunity as to the Owner, the Architect and their respective consultants only under Title 51 RCW, "Industrial Insurance." IF THE CONTRACTOR DOES NOT AGREE WITH THIS WAIVER, IT MUST PROVIDE A WRITTEN NOTICE TO THE OWNER PRIOR TO THE DATE FOR THE RECEIPT OF BIDS, OR THE CONTRACTOR WILL BE DEEMED TO HAVE NEGOTIATED AND WAIVED THIS IMMUNITY.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture or engineering in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative and does not include any employees of the Owner.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the ~~Owner, Contractor and Architect. Consent shall not be unreasonably withheld.~~ Owner and Architect.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect ~~as to whom the Contractor has no reasonable objection and~~ whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative but not the Owner's agent during construction until the date the Architect issues the final Certificate for ~~Payment.~~ Payment and from time to time during the one (1) year period for correction of Work. The Architect will have authority to act on behalf of the Owner only to the extent provided ~~in the Contract Documents.~~ in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract. The Architect is not the agent of the Owner and is not authorized to agree on behalf of the Owner to changes in the Contract Sum or Contract Time, nor to waive provisions of the Contract Documents, nor to direct the Contractor to take actions that change the Contract Sum or Contract Time.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with and to keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ~~The Architect will not~~ Neither the Architect nor the Owner will have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1. The presence of the Architect or the Owner at the site shall not in any manner be construed as assurance that the Work is being completed in compliance with the Contract Documents, nor as evidence that any requirement of the Contract Documents of any kind, including notice, has been met or waived. The Contractor shall reimburse the Owner for any amounts paid to the Architect for site visits made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

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§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. ~~The Architect will not~~ Neither the Architect nor the Owner will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. ~~The Architect will not~~ Neither the Architect nor the Owner will have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work. Neither the Architect nor the Owner will be responsible for defining the extent of any subcontract or dealing with disputes between the Contractor and third parties.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. The Contractor shall simultaneously provide the Owner with a direct copy of all written communications to the Architect, including all notices, requests, transmittals, Claims, and potential changes in the Contract Sum or Contract Time but not including Shop Drawings, Product Data or Samples. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the ~~Contractor.~~ Contractor except as provided in the Contract Documents. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's observations and evaluations of the Work and the Contractor's Applications for Payment, the Architect will ~~review and certify~~ make recommendations to and otherwise assist the Owner to determine the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 ~~The Architect has~~ Both the Architect and the Owner have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect or the Owner considers it necessary or advisable, the Architect or the Owner will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect or the Owner nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Owner or their representatives to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and ~~approve,~~ accept, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product ~~Data and Samples,~~ Data, Samples, and other submittals required by the Contract Documents, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken with reasonable promptness in accordance with the submittal schedule ~~approved~~ accepted by the Architect or, in the absence of an ~~approved~~ accepted submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, weights or gauges, fabrication processes, coordination with the work of other trades, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval or acceptance of a specific item shall not indicate approval of an assembly of which the item is a component. The Contractor shall clearly note, and the Architect shall not be required to search out for, any deviations from the Contract Documents not clearly identified by the Contractor, nor shall the Architect be required to review partial submissions of those for which submission for correlated items have not been received. Regardless of how a submittal is marked, the Contractor should not presume that the Architect has reviewed a submittal in every aspect.

§ 4.2.8 The Architect or Owner will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

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§ 4.2.9 The Architect will ~~conduct inspections~~ make observations, make recommendations and otherwise assist the Owner to determine the date or dates of Substantial Completion and the date of ~~final completion;~~ Final Completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents and pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. ~~The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.~~

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the ~~Contract Documents~~ Drawings and Specifications on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Section 4.2.11, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until fifteen (15) days after written request is made for them.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Architect will endeavor to secure faithful performance of the Contract by both Owner and Contractor, will not show partiality to either and will not be liable to the Contractor for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract ~~Documents.~~Documents and agreeable to the Owner.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within a reasonable time and any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the ~~site.~~ site or to supply materials or equipment. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the ~~site.~~ site or to supply materials or equipment. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.1.3 A Subcontractor of any tier is a Subcontractor or a Sub-subcontractor.

§ 5.1.4 The designation of terms in this article is not meant to change or alter the definitions contained in RCW 60.28, "Lien for Labor, Materials, Taxes on Public Works," RCW 39.12, "Prevailing Wages on Public Works," or other statutory definitions of a subcontractor for the purposes of such statutes.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 ~~Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract,~~ Within ten (10) days after the Owner's request the Contractor shall furnish in writing to the Owner ~~through~~ and the Architect the names of all persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the ~~Work. The Architect may reply within 14 days~~ Work (i.e., at least 2% of the Contract Sum), as well as the proprietary names and the

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suppliers of the principal items or systems of materials and equipment proposed for the Work. The Contractor shall organize this list of Subcontractors in the same sequence as the Index of Specification Sheets, and state the Work category followed by the name of the Subcontractor and/or fabricator (or "Contractor" where the portion of the Work is by the Contractor's own forces), including the address, telephone number, individual name of the project contact, and his or her email address. The list shall be accompanied by evidence of any qualifications required within the technical sections of the Project Manual and satisfactory to the Architect and Owner. The list shall be updated promptly as part of the payment process if additional Subcontractors of any tier are engaged. If the Agreement is executed, no progress payment will become due until this information is so furnished. No action or inaction of the Owner or Architect in response to receipt of the names of the proposed Subcontractors of any tier shall constitute approval of any Subcontractor of any tier or of its performance. The Architect may reply promptly to the Contractor in writing stating (1) whether or not the Owner or the ~~Architect~~ Architect, after due investigation, has reasonable objection to any such proposed person or entity or (2) that the Owner or Architect requires additional time for review. "Reasonable objection" shall include without limitation lack of "responsibility" of the proposed Subcontractor, as defined in RCW 39.26.160(2), the Contract Documents, the bidding documents, or lack of qualification as required within the bidding documents or the technical sections of the Project Manual. Failure of the Owner or Architect to reply ~~within the 14-day period~~ promptly shall constitute notice of no reasonable objection. If the Owner makes a reasonable objection, the Contractor shall replace the Subcontractor with no increase to the Contract Sum or Contract Time. Such a replacement shall not relieve the Contractor of its responsibility for the performance of the Work and compliance with all of the requirements of the Contract within the Contract Sum and Contract Time.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made a timely and reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was qualified, "responsible" and reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be ~~issued before commencement of the substitute Subcontractor's Work.~~ issued. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting ~~names as required.~~ qualified names as required, and no increase in the Contract Sum or Contract Time shall be allowed for such change if the Owner reasonably concludes that (1) a proposed Subcontractor is not "responsible" as defined in RCW 39.26.160(2), the Contract Documents, the bidding documents, or the technical sections of the Project Manual, or if the proposed Subcontractor has materially failed to perform satisfactorily (such as causing a material delay) on one or more projects for the Owner within three years of the bidding date, (2) the proposed Subcontractor is not qualified as required within the technical sections of the Project Manual, or (3) the proposed Subcontractor is different from the entity listed with the Bid. Such a replacement shall not relieve the Contractor of its responsibility for the performance of the Work or compliance with all of the requirements of the Contract within the Contract Sum and Contract Time. The Contractor's listing or use of any Subcontractor that is not "responsible" shall be sufficient cause for the Owner to declare that the Contractor is not a responsible bidder, unless the Contractor agrees to substitute a responsible Subcontractor at no change to the Contract Sum or Contract Time.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution. If the Owner reasonably concludes that any portion of the Work subcontracted by the Contractor is not being prosecuted in accordance with the Contract Documents, the Contractor shall, upon request of the Owner, remove the Subcontractor performing such work. This removal shall not relieve the Contractor of its responsibility for the performance of the Work or complying with all of the requirements of the Contract within the Contract Sum and Contract Time, nor shall the Owner be obligated to so request.

§ 5.2.5 The Contractor shall perform with its own organization and under its immediate supervision a portion of the Work not including general conditions amounting to not less than the percentage (if any) of the total Contract Sum specified in the Contract Documents or in the Bidding Documents.

§ 5.2.6 The Contractor shall verify responsibility criteria for each first-tier Subcontractor. A Subcontractor of any tier that engages other Subcontractors must verify responsibility criteria for each of its lower-tier Subcontractors.

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Verification shall include that each Subcontractor, at the time of subcontract execution, meets the responsibility criteria listed in the Instructions to Bidders.

§ 5.3 SUBCONTRACTUAL RELATIONS

~~By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.~~ **§ 5.3.1** By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors. The Contractor shall provide to the Owner copies of the written agreements between the Contractor and any Subcontractor on request. The Owner will endeavor to keep these agreements confidential subject to its obligations under Chapter 42.56 RCW.

§ 5.3.2 The Contractor shall schedule, supervise and coordinate the operations of all Subcontractors of any tier, including any suppliers of early procurement items and any Assigned Subcontractors. No subcontracting of any of the Work shall relieve the Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or from its responsibility for the performance of any other of its obligations under the Contract Documents. The Contractor is responsible for the timely, accurate and appropriate Subcontractor coordination of the Work of lower tier Subcontractors in accordance with the overall Work, including communications, meetings, drawings, illustrations, and other necessary associated activities required for the successful coordination of all trades, schedules, materials and workmanship. The Owner shall provide to the Contractor copies of any written Owner-Supplier agreements to any early procurement contracts, to the extent that such agreements are identified in the Specifications.

§ 5.3.3 The Contractor agrees to diligently, and using its best efforts, cause each Subcontractor of any tier to correct, at that Subcontractor's own expense, all work performed by the Subcontractor of any tier that is defective in material or workmanship or otherwise fails to conform to the Contract Documents, including all necessary removal, replacement and/or repair of any other portion of the Project which may be damaged in removing, replacing or repairing any portion of the Project. If any Subcontractor of any tier defaults in its obligation promptly to correct any such deficiency, the Contractor shall be responsible for correcting the deficiency.

§ 5.3.4 The Contractor shall give, and shall cause its Subcontractors of any tier to give, all required notices and comply with all applicable health and safety laws, rules, regulations, codes and lawful orders of public authorities and of quasi-governmental authorities relating to the Work, including without limitation all OSHA and WISHA

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requirements, and the Contractor shall, and shall cause applicable Subcontractors of any tier to, indemnify, defend and hold harmless the Owner from and against any and all claims, liabilities, fines and attorneys' fees arising from any failure of the Contractor or a Subcontractor of any tier to have complied with any such requirements in any respect.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner ~~for cause~~ pursuant to Section 14.2 or 14.4 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the ~~subcontract.~~subcontract, but only for events and payment obligations that arise after the date of the assignment.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than ~~30~~ sixty (60) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. ~~If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~

§ 5.5 LIENS

§ 5.5.1 The Contractor shall promptly pay (and secure the discharge of any liens asserted by) all persons properly furnishing labor, equipment, materials or other items in connection with the performance of the Work (including, but not limited to, any Subcontractors of any tier) to the extent that the Owner has paid the Contractor for such. The Contractor shall furnish to the Owner such releases of liens and claims and other documents monthly with its payment applications to evidence such payment (and discharge). The Owner may, at its option, withhold payment, in whole or in part, to the Contractor until such documents are furnished. The Contractor may provide other security acceptable to the Owner, such as a bond, in lieu of paying disputed liens or claims.

§ 5.5.2 The Contractor shall defend, indemnify, and hold harmless the Owner from any liens, including all expenses and Architects' and attorneys' fees, except to the extent a lien has been filed because of the failure of the Owner to make a contractually required payment.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article ~~15.~~15, except that the Contractor shall have no claim for such construction or operations to the extent disclosed in the Bidding Documents or Contract Documents. The Contractor is also responsible to coordinate its Work with any other entities performing work on or adjacent to the site, such as work in the right of way and work by utility companies, and the Contractor shall incorporate such work into its project schedule.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction ~~schedules.~~ schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual

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~~agreement.~~ agreement with the Owner. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents. If the Contractor receives items from a separate contractor or from the Owner for storage, erection or installation, the Contractor shall acknowledge receipt for items delivered, and thereafter will be held responsible for the care, storage and any necessary replacement of items received.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect and Owner apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse and indemnify the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective ~~construction.~~construction of the separate contractor. If such a separate contractor sues or initiates any proceeding against the Owner on account of any damages or delays alleged to have been caused by the Contractor, the Owner shall notify the Contractor. The Contractor shall defend all such proceedings at its own expense, and shall defend, indemnify, and hold the Owner harmless from any damages awarded on such claims, including all attorneys' fees and other costs incurred by the Owner.

§ 6.2.4 The Contractor shall promptly remedy damage caused by the Contractor ~~wrongfully causes~~ to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.2.6 Should the Contractor or any of its Subcontractors of any tier cause damage of any kind, including but not limited to delay, to any other contractor or subcontractor on the Project, the Contractor shall, upon due notice, promptly attempt to settle with such other contractor or subcontractor by agreement or otherwise to resolve the dispute.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and ~~the Architect will~~ allocate the cost among those ~~responsible.~~responsible plus a ten percent (10%) markup on such costs.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, solely by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

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§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect or Owner alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 Before effectuating a change in the Work or in the Contract Documents, the Owner may request the Contractor to propose the amount of change in the Contract Sum, if any, and the extent of change in the Contract Time, if any, arising from the proposed change in the Work. The Contractor shall submit its responsive proposal as soon as possible and within fourteen (14) days, and shall in good faith specify the components and amounts by which the Contract Sum and/or Contract Time would change. Labor, materials and equipment shall be limited to and itemized in the manner described in Section 7.5 for the Contractor and major Subcontractors. If the Contractor fails to respond within this time, the Owner may withhold some or all of a progress payment otherwise due until the tardy proposal is received. If the Owner explicitly accepts the proposal in writing, the Owner and the Contractor will be immediately bound to the terms of the proposal, the change will be included promptly in a future Change Order, and the change in the Work described in the proposal shall commence expeditiously. The Owner may reject the proposal, in which case the Owner may either not effectuate the change in the Work or may order the change through a Construction Change Directive or supplemental instruction or an order for a minor change in the Work. The Owner and Architect may confer directly with Subcontractors of any tier concerning any item proposed to the Owner under this Article.

§ 7.1.5 If the Contractor adds a reservation of rights that has not been initialed by the Owner to any Change Order, Construction Change Directive, Change Order proposal, Application for Payment or any other document, all amounts therein shall be considered disputed and not due or payable unless and until costs are re-negotiated or the reservation is withdrawn or changed in a manner satisfactory to and, in all cases, initialed by the Owner. If the Owner makes payment for a Change Order or an Application for Payment that contains a reservation of rights not initialed by the Owner to indicate agreement with the reservation, and if the Contractor negotiates the check for such payment, then the reservation of rights sball be deemed waived, withdrawn and of no effect.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Contract Documents, including any change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly. The Owner's use of a Construction Change Directive does not constitute agreement that the directive constitutes a change in the Work, the Contract Sum, or the Contract Time. For any change in the Work, whether initiated by a Construction Change Directive or a Change Order Proposal, the Contractor must submit its proposed price and any proposed extension of the Contract Time to the Owner within ten (10) days of the date of the Construction Change Directive or Change Order Proposal. If the Contractor fails to submit a proposed price and time within this time period, the Owner may establish what it believes to be the fair price of the changed work, and any additional Contract Time, and this price and time submitted by the Owner shall be final and binding upon the parties, as if they had signed a Change Order in this amount, without recourse to submitting any claims or litigation. Payment for any Changes to the Work shall not exceed the labor and equipment indicated on the daily work logs.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

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§ **7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following ~~methods:~~methods or as mutually agreed by the Owner and Contractor:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon;

.3 Cost to be proposed by the Owner and determined in a manner agreed upon by the parties (accompanied by the Contractor's itemized estimate of probable cost) and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.7.

§ **7.3.4** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed (e.g., more than fifty percent) in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices but not the Contract Time or any other portion of the Contract Sum shall be equitably adjusted.

§ **7.3.5** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work ~~involved and advise the Architect~~ involved. As soon as possible, and within seven (7) days of receipt, the Contractor shall advise the Architect in writing of the Contractor's agreement or disagreement with the proposed adjustment or the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time. The Contractor's response shall reasonably specify the reasons for its disagreement and the adjustment or other terms that it proposes. Without such timely written response, the Contractor shall conclusively be deemed to have accepted the Owner's adjustment. The Contractor's disagreement shall not relieve the Contractor of its obligation to comply promptly with any written notice issued by the Owner or the Architect. The adjustment shall then be determined by the Architect in accordance with the provisions of the Contract Documents. The ultimate adjustment shall not exceed the larger amount submitted.

§ **7.3.6** A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including any adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be ~~recorded as~~ incorporated into a Change Order.

§ **7.3.7** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, ~~the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present,~~ or if cost is to be determined under Section 7.3.3.3, the Contractor shall provide a not-to-exceed price for the Construction Change Directive Work within fourteen (14) days of receipt of the Construction Change Directive, and the Contractor shall keep and present, itemized in the categories of Section 7.5 and in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. ~~Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:~~

~~.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;~~

~~.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;~~

~~.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;~~

~~.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and~~

~~.5 Additional costs of supervision and field office personnel directly attributable to the change.~~In order to facilitate checking of such quotations, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by complete itemization of costs, including labor, equipment, material and subcontract costs. When major cost items arise from Subcontractors of any tier, these items shall also be similarly itemized. Approval may not be given without such itemization. Failure to provide data within twenty-one (21) days of the Owner's or Architect's request shall constitute waiver of any Claim for changes in the Contract Time or Contract Sum. The total cost of any change, including a Claim under Article 15, shall be limited to the reasonable value, as determined by the Owner (subject to appeal through the dispute resolution procedure of Article 15), of the items in

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Section 7.5. Unless otherwise agreed in writing by the Owner, the cost shall not exceed the lower of the prevailing cost for the work in the locality of the Project or the cost of the work in the current edition of R.S. Means Company, Inc., Building Construction Cost Data as adjusted to local costs and conditions. The Architect and the Owner may communicate directly with Subcontractors of any tier concerning costs of any Work included in a Construction Change Directive. If the Contractor disagrees with the method or the adjustment in the Contract Time, the adjustment or method shall be referred to the Architect for determination, and any adjustment shall be limited to the change in the actual critical path of the Contractor's Construction Schedule directly caused thereby.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be the largest of (i) the reasonable and prevailing value of the deletion or change, (ii) the line item value in the Schedule of Values, or (iii) the actual net cost as confirmed by the ~~Architect.~~ Owner. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, ~~the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.~~ and provided that any reservations of rights regarding the Construction Change Directive have been initialed by the Owner, amounts not in dispute for such changes in the Work may be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and ~~the Architect will prepare a~~ will be recorded by preparation and execution of an appropriate Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect ~~has~~ and the Owner have authority to order minor changes in the Work (sometimes called a Design Clarification) not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect such as a Field Instruction or an Architect's Supplemental Instruction and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that such order causes an increase in the Contract Sum or Time, the Contractor must properly submit a notice and Claim pursuant to Article 15.

§ 7.5 PRICING COMPONENTS

§ 7.5 The total cost of any Change in the Work or of any other increase or decrease in the Contract Sum, including a Claim, shall be limited to the following components:

§ 7.5.1 Direct labor costs: These are the labor costs determined by the number of additional craft hours and the hourly costs necessary to perform the change in the Work. The hourly cost shall be based upon the following:

.1 Basic wages and fringe benefits: The hourly wage (without markup or labor burden) and fringe benefits paid by the Contractor as established by the Washington Department of Labor and Industries or contributed to labor trust funds as itemized fringe benefits, whichever is applicable, not to exceed that specified in the applicable "Intent to Pay Prevailing Wage" for the laborers, apprentices, journeymen, and foremen performing and/or directly supervising the Change in the Work on the site. The premium portion of overtime wages is not included unless pre-approved in writing by the Owner. Costs paid or incurred by the Contractor for vacations, per diem, subsistence, housing, travel, bonuses, stock options, or discretionary payments to employees are not separately reimbursable. The Contractor shall provide copies of certified payrolls for itself and Subcontractors of any tier upon the Owner's request.

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.2 Workers' insurances: Direct contributions to the State of Washington as industrial insurance; medical aid; and supplemental pension by class and rates established by the Washington Department of Labor and Industries.

.3 Federal insurances: Direct contributions required by the Federal Insurance Compensation Act (FICA); Federal Unemployment Tax Act (FUTA); and State Unemployment Compensation Act (SUCA).

Upon the Owner's request, the Contractor shall substantiate all claimed wage rates and shall provide a breakdown of the various components of the labor costs in a form provided or approved by the Owner.

§ 7.5.2 Direct material costs: This is an itemization, including material invoice, of the quantity and cost of additional materials reasonable and necessary to perform the change in the Work. The unit cost shall be based upon the net cost after all discounts or rebates, freight costs, express charges, or special delivery costs, when applicable. No lump sum costs will be allowed except when approved in advance by the Architect and the Owner. If the Contractor is offered discounts and/or rebates based upon prompt payment, the Contractor shall offer the Owner the opportunity to take advantage of such discount and/or rebate, and if the Owner makes such a prompt payment then the Owner shall only be charged the price as reduced by the discount and/or rebate. If the Owner declines the opportunity the Contractor may keep any such discounts and/or rebates it achieves through its own prompt payment. If the Contractor does not provide the Owner the opportunity to participate then the Contractor may only charge the net costs after consideration of discounts and rebates.

§ 7.5.3 Construction equipment usage costs: This is an itemization of the actual length of time that construction equipment appropriate for the Work will be used solely on the change in the Work at the site times the applicable rental cost as established by the lower of the local prevailing rate published in The Rental Rate Blue Book by Data Quest, San Jose, California, as modified by the AGC/WSDOT agreement or the actual, reasonable rate paid to unrelated third parties as evidenced by rental receipts. Rates and quantities of equipment rented that exceed the local fair market rental costs sball be subject to the Owner's prior approval. Total rental charges for equipment or tools shall not exceed 75% of the fair market purchase value of the equipment or the tool. Actual, reasonable mobilization costs are permitted if the equipment is brought to the Site solely for the change in the Work. If more than one rate is applicable, the best available rate will be utilized. The rates in effect at the time of the performance of the changed Work are the maximum rates allowable for equipment of modern design and in good working condition and include full compensation for furnishing all fuel, oil, lubrication, repairs, maintenance, and insurance to the same extent as the comparable Blue Book or fair market rate. Equipment not of modern design and/or not in good working condition will have lower rates. Hourly, weekly, and/or monthly rates, as appropriate, will be applied to yield the lowest total cost. When rental rates payable do not include fuel, lubrication, maintenance, and servicing, as defined as operating costs in the reference, such operating costs shall be reimbursed based on actual costs. The rate for equipment necessarily standing by for future use on the changed Work shall be no more than 50% of the rate established above. If equipment is required for which a rental rate is not established by Blue Book, an agreed rental rate shall be established for that equipment, which rate and use must be approved by the Owner prior to performing the Work.

§ 7.5.4 Cost of change in insurance or bond premium. This is defined as:

.1 Contractors' liability insurance: The actual cost (expressed as a percentage submitted with the certificate of insurance provided under Section 11.1.3, and subject to audit) of any changes in the Contractor's liability insurance arising directly from the changed Work; and

.2 Public works bond: The actual cost (expressed as a percentage submitted with evidence of bondability under Section 11.4.1, and subject to audit) of the change in the Contractor's premium for the Contractor's statutorily required performance and payment bond arising directly from the changed Work, and any such premiums for the Changed Work on Subcontractor bonds that have been contractually required by the Owner. The Contractor is not entitled to any increased premium on any retainage bond.

Upon request, the Contractor shall provide the Owner with supporting documentation from its insurer or surety of any associated cost incurred.

§ 7.5.5 Subcontractor costs: These are payments the Contractor makes to Subcontractors for changed Work performed by such Subcontractors. The Subcontractors' cost of changed Work shall be determined in the same manner as prescribed in this Section 7.5 and, among other things, shall not include consultant costs, attorneys' fees, or claim preparation expenses.

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§ 7.5.6 Fee: This is the allowance for all combined overhead, profit and other costs, including all office, home office and site overhead (including facilities, purchasing, clerical, project manager, project engineer, other engineers, project foreman, estimator, superintendent and their vehicles and assistants), taxes (except for sales tax), employee per diem, subsistence and travel costs, warranty, safety costs, printing and copying, quality control/assurance, purchasing, small or hand tool (a tool that costs $500 or less and is normally furnished by the performing contractor) or expendable charges, preparation of as-built drawings, impact on unchanged Work, Change Order and Claim preparation, and delay and impact costs of any kind (cumulative, ripple, or otherwise). No such costs may be added to the total cost to the Owner of any Change Order, Construction Change Directive, Claim or any other claim of any kind on this Project. No Fee shall be due, however, for direct settlements after Substantial Completion by the Owner of Subcontractor claims. The Fee shall be limited in all cases to the following schedule:

.1 The Contractor shall receive 15% of the cost of any materials supplied or work properly performed by the Contractor's own forces.

.2 The Contractor shall receive 8% of the amount owed (less fee) directly to a Subcontractor or supplier for materials supplied or for work properly performed by that Subcontractor or supplier.

.3 Each Subcontractor of any tier shall receive 12% of the cost of any materials properly supplied or work performed by its own forces.

.4 Each Subcontractor of any tier shall receive 5% of the amount (less fee) it properly incurs for materials supplied or work properly performed by its suppliers or subcontractors of any lower tier.

.5 The Contractor and its Subcontractors of any tier shall receive no more than 5% of any amounts owed to any remote, sub-tier subcontractors which are within the lines of contractual responsibility but not in privity of contract with such Contractor or Subcontractors, for work performed by that remote, sub-tier subcontractor.

.6 The cost to which this Fee is to be applied shall be determined in accordance with Section 7.5.1 through 7.5.4.

.7 The total summed Fee of the Contractor and all Subcontractors of any tier shall not exceed 25% of any amounts owed to any remote, lower-tier Subcontractors that are within the lines of contractual responsibility but not in privity of contract with such Contractor or Subcontractor(s), for Work performed by that remove, lower-tier Subcontractor. If the Fee would otherwise exceed 25%, the Contractor shall proportionately reduce the Fee percentage for the Contractor and all Subcontractors except for the Subcontractor supplying material or performing work with its own forces. None of the fee percentages authorized in this Section 7.5.6 may be compounded with any other fee percentage or percentages authorized in this Section.

If a change in the Work involves both additive and deductive items, the appropriate Fee allowed will be added to the net difference of the items. If the net difference is negative, no Fee will be added to the negative figure as a further deduction. The parties acknowledge that the fees listed in this Section 7.5.6 are substantially greater than the fees and overhead normally included in determining the Contract Sum bid; that these higher percentages are a sufficient amount to compensate the Contractor for all effects and impacts of Changes in the Work; and that the resultant overcompensation of the Contractor for some Changes compensates the Contractor for any Changes for which the Contractor believes the percentage is otherwise insufficient.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 Within ten (10) days after issuance of the Owner's notice of award the Contract, the Contractor shall submit evidence of bondability, evidence of insurability, and all other documents required by that time by the Contract Documents. The date of commencement of the Work is the date established ~~in the Agreement.~~by the Owner in its conditional notice to proceed, which the Owner does not intend to issue until the Contractor has complied with the terms of the notice of award. Work on the site may begin when the Contractor complies with any requirements of the notice to proceed and submits the bonds, certificates of insurance and all other documents required by the Contract Documents.

§ 8.1.3 The date of Substantial Completion (or a designated portion thereof) is the date certified by the Architect and set by the Owner in accordance with Section 9.8.

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§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract ~~Time.~~Time and shall achieve Final Completion within thirty (30) days thereafter (or such other period of time for specific phases as is specified in the Contract Documents).

§ 8.2.4 THE TIMELY COMPLETION OF THIS PROJECT IS ESSENTIAL TO THE OWNER. The Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time; however, it would be difficult if not impossible to determine the amount of such damages, which could include, for example, personnel and overtime costs, transportation costs, governmental fees, storage costs, portable rental costs, loss of use, and lost opportunities. Consequently, provisions for liquidated damages as a reasonable estimate of loss may be included in the Contract Documents. The Owner's right to liquidated damages is not affected by partial completion, occupancy, or beneficial occupancy. The Contractor shall furnish sufficient forces, construction plant and equipment, and shall work such hours, including night shifts, overtime operations and weekend and holiday work as may be necessary to insure the completion of the Work in accordance with the date of Substantial Completion and the accepted Contractor's Construction Schedule. If the Contractor fails to perform in a timely manner in accordance with the Contract Documents and, through the fault of the Contractor or Subcontractor(s) of any tier fails to meet the Contractor's Construction Schedule, the Contractor shall take such steps as may be necessary to immediately improve its progress by increasing the number of workers, shifts, overtime operations or days of work or other means and methods, all without additional cost to the Owner.

§ 8.2.5 If the Work is to be performed in phases, with separate dates set forth for Substantial Completion elsewhere in the Contract Documents, then the specified liquidated damages shall apply separately to each such phase unless otherwise specified.

§ 8.2.6 Any provisions in the Contract for liquidated damages are intended to be in lieu of the liability of the Contractor for special, incidental and consequential damages (such as cost of capital and loss of profits, use and revenue) sustained by the Owner but shall not relieve or release the Contractor from liability for any and all damage or damages suffered by the Owner due to other breaches of the Contract or suffered by separate contractors.

§ 8.2.7 It is the Contractor's option, but not its right, to attempt to complete the Project earlier than the dates specified in the Contract Documents. Thus any claim based upon delay shall be evaluated based upon the dates specified in the Contract Documents, not an earlier projected completion that the Contractor may propose.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work ~~by~~ (1) by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or ~~by changes ordered in the Work; or by~~ (2) by changes ordered in the Work only to the extent reflected in approved Change Orders providing for specific extensions of the Contract Time; or (3) by unanticipated, abnormal weather (see Section 15.1.5.2); or (4) by unexpected industry-wide labor disputes, fire, unusual delay in deliveries, governmental delays (including unanticipated permit delays not caused by the Contractor); delays caused by a local jurisdictions' scheduled days off shall not be considered an excusable delay), unavoidable casualties or other causes beyond the Contractor's control; or ~~by~~ (5) by delay authorized by the Owner pending mediation and ~~arbitration; or by~~ litigation; or (6) by other causes that the ~~Architect~~ Owner determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable ~~time as the Architect may determine.~~ time, limited to the change in the actual critical path of the Contractor's Construction Schedule directly caused thereby, as the Owner may determine consistent with the provisions of the Contract Documents. In no event, however, shall the Contractor be entitled to any

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extension of time absent proof of (1) delay to an activity on the critical path of the Contract Schedule, so as to actually delay the Project completion beyond the date of Substantial Completion, or (2) delay transforming an activity into the critical path of the Contract Schedule, so as to actually delay the Project completion beyond the date of Substantial Completion.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article ~~15.~~ 15 and shall include any proposed changes in the Contractor's Construction Schedule or the Contract Time, a description of any event that could delay performance or supplying of any item of the Work, the expected duration of the delay, the anticipated effect of the delay on the Contractor's Construction Schedule, and the action being taken to correct the delay situation. That the Owner or Architect may be aware of the occurrence or existence of a delay through means other than the Contractor's written notification shall not constitute a waiver of a timely or written notice or Claim. The Contractor has an obligation to minimize and mitigate schedule impacts.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

.1 If the delay was not caused by the Owner, the Contractor, a Subcontractor of any tier, or the Architect, or anyone acting on behalf of any of them, the Contractor is entitled only to an increase in the Contract Time in accordance with the Contract Documents but not an increase in the Contract Sum. If the delay was caused by the Contractor, a Subcontractor of any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum. The Contractor shall not recover damages, an equitable adjustment or an increase in the Contract Sum or Contract Time from the Owner where the Contractor could have reasonably avoided the delay by the exercise of due diligence. The Contractor shall be able to recover an increase in the Contract Sum, provided it is consistent with the terms of the Contract Documents, only if the delay directly impacts the critical path, could not have reasonably been anticipated or avoided, was unreasonable and was caused by the Owner or anyone acting on its behalf as permitted under the Contract Documents. The Owner is not obligated directly or indirectly for damages, an equitable adjustment, or an increase in the Contract Sum for any delay suffered by a Subcontractor of any tier that does not increase the Contract Time.

.2 In the event the Contractor (including any Subcontractors of any tier) is held to be entitled to damages from the Owner for delay beyond the payment permitted in Section 7.5.6, it is agreed that the total combined damages to the Contractor and any Subcontractors of any tier for each day of delay shall be limited to the same daily liquidated damage rate specified in the Contract Documents due the Owner for the Contractor's delay in achieving Substantial Completion. By submitting its bid on the Work, the Contractor represents that it would be difficult if not impossible to determine the amount of any delay damages due it, that it has taken this provision for liquidated damages into consideration in its bid, and that these liquidated damages are a reasonable estimate of its loss. No damages will be allowed for any time prior to fourteen (14) days before receipt of written notice of the Claim of the delay pursuant to Article 15.

.3 The Contractor shall not in any event be entitled to damages arising out of actual or alleged loss of efficiency; morale, fatigue, attitude, or labor rhythm; constructive acceleration; home office overhead; expectant underrun; trade stacking; reassignment of workers; rescheduling of work, schedule compression, concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended overhead; profit upon damages for delay; impact damages; cumulative impacts; or similar damages. Any effect that such alleged costs may have upon the Contractor or its Subcontractors of any tier is fully compensated through the percentage Fee on Change Orders paid through Section 7.5.6 and any liquidated damages paid hereunder.

.4 The Contractor shall not be entitled to any adjustment in the Contract Time or the Contract Sum, or to any additional payment of any sort, by reason of the loss or the use of any float time, including time not on the critical path or time between the Contractor's anticipated completion date and the end of the Contract Time, whether or not the float time is described as such on the Contractor's Construction Schedule.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

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§ 9.2 SCHEDULE OF VALUES

~~Where the Contract is based on a stipulated sum or Guaranteed Maximum Price,~~ At least fourteen (14) days before the first Application for Payment, the Contractor shall submit to the ~~Architect, before the first Application for Payment,~~ Architect a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect or Owner may require. This schedule, unless objected to by ~~the Architect,~~ the Architect or the Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

.1 Mobilization shall be a maximum of one-half of one percent (0.5%) of the Contract Sum, and shall be paid only if supported by an itemized breakdown of costs acceptable to the Owner.

.2 Payment applicable to the expenses of Contractor's bond and/or builder's risk insurance will be made only upon receipt of paid invoices from surety and/or insurance carrier.

.3 No payment will be made for shop drawings or submittals until on-site receipt of materials, except for structural steel, fire sprinkler, automatic temperature control, and fire alarm shop drawings that have been reviewed and accepted by the Architect.

.4 The schedule of values shall allocate at least one percent (1%) of the Contract Sum to Commissioning, as defined in Section 9.8.1.2.

.5 The schedule of values shall also allocate at least two percent (2%) of the Contract Sum as a separate line item for that portion of the Work between Substantial Completion and Final Completion, including without limitation punchlist completion and furnishing of deliverables (including but not limited to approved operations and maintenance data, approved record documents, warranties and bonds, delivery of extra stock, and all other documentation or items of the Work required for Final Completion final payment), which will be earned and paid as part of the final payment. This line item shall be entitled "Final Documentation and Punchlist Completion." This percentage is not the statutory retainage described in Section 9.3.4 or any other retainage but rather requires the Contractor to recognize that the Contractor and its Subcontractors will expend significant costs in advancing the Work from Substantial Completion to Final Completion, and that this amount is not earned until Final Completion of the Work is accomplished. At its sole discretion, the Owner may release portions of this amount progressively as items are completed.

.6 Itemize separately line item costs for permits, bonds, insurance, layout and supervision, scheduling, and temporary facilities.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 ~~At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.~~ Progress payments will be made monthly for work duly certified, approved, and performed during the calendar month preceding the application. These amounts are paid in trust to the Contractor for distribution to Subcontractors to the extent and in accordance with the approved Application for Payment.

§ 9.3.1.1 ~~As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.~~ **Draft Application.** Within the first ten (10) days of each month, the Contractor shall submit to the Architect a report on the current progress of the Work as compared to the Contractor's Construction Schedule, an updated Construction Schedule, and a draft, itemized application for payment for Work performed during the prior calendar month on a State of Washington Application for Payment on Contract form approved by the Owner. This shall not constitute a payment request. The Contractor, the Architect and the Owner shall meet within the next ten (10) days and confer regarding the current progress of the Work and the amount of payment to which the Contractor is entitled. The Architect or the Owner may request the Contractor to provide data substantiating the Contractor's right to payment as the Owner or the Architect may require, such as copies of requisitions from Subcontractors of any tier, lien releases, and certified payroll records, and reflecting retainage as provided elsewhere in the Contract Documents. The Contractor shall not be entitled to make a payment request, nor is any payment due the Contractor, until such data is furnished.

§ 9.3.1.2 **Payment Request.** Within ten (10) days after the Contractor, the Owner and the Architect have met and conferred regarding the updated draft application, and the Contractor has furnished all progress information required

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and all data requested by the Owner or Architect under Section 9.3.1.1 above, the Contractor has submitted current meeting minutes, daily reports, as-built drawings and commissioning logs (if requested) and an updated (bar chart) construction schedule, the Contractor may submit a payment request by the 10th day of the following month in the agreed-upon amount, in the form of a notarized, itemized Application for Payment, in triplicate, for Work properly performed during the prior calendar month on a form supplied or approved by the Owner, along with a lien release on a form approved by the Owner from each Subcontractor for whose Work the Owner paid the Contractor for the prior month. The Application shall also state that prevailing wages have been paid in accordance with the prefiled statements of intent to pay prevailing wages on file with the Owner and that all payments due Subcontractors of any tier from the Owner's payment the prior month have been made. The submission of this Application constitutes a certification that the Work is current on the Contractor's Construction Schedule, unless otherwise noted on the application. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay. A payment request shall not be valid unless it complies with the requirements of the Contract Documents.

§ 9.3.1.3 Disputed Amounts. If the Contractor believes it is entitled to payment for Work performed during the prior calendar month in addition to the agreed-upon amount, the Contractor may, also within ten (10) days after the meeting in Section 9.3.1.1, submit to the Owner and the Architect along with the approved payment request a separate written payment request specifying the exact additional amount due, the category in the Schedule of Values in which the payment is due, the specific Work for which the additional amount is due, and why the additional payment is due. Furthermore, for the submittal to be considered, pursuant to WAC 296-127-320, the Contractor and all Subcontractors shall file with the Owner by the same date certified copies of all payroll records relating to the additional amount due.

§ 9.3.1.4 Validity of Payment Requests. A payment request shall not be valid unless it complies with the requirements of the Contract Documents. If a separate payment request concerning a disputed amount does not comply with the requirements of the Contract, the Owner will provide a written statement to the Contractor stating why the disputed amount is not owed and/or why the separate payment request does not comply with the requirements of the Contract.

§ 9.3.1.5 Payments to Subcontractors. No payment request shall include amounts the Contractor does not intend to pay to a Subcontractor because of a dispute or other reason. If, after making a request for payment but before paying a Subcontractor for its performance covered by the payment request, the Contractor discovers that part or all of the payment otherwise due to the Subcontractor is subject to withholding from the Subcontractor under the subcontract (such as for unsatisfactory performance or non-payment of sub-subcontractors), the Contractor may withhold the amount as allowed under the subcontract, but it shall give the Subcontractor, the Owner and the Architect written notice of the remedial actions that must be taken as soon as practicable after determining the cause for the withholding but before the due date for the Subcontractor payment, and pay the Subcontractor within eight (8) working days after the Subcontractor satisfactorily completes the remedial action identified in the notice.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of project specific materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in writing and in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

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§ 9.3.4 Retainage.

§ 9.3.4.1 In accordance with RCW 60.28, a sum equal to five percent (5%) of each approved Application for Payment shall be retained. After award of a Contract for public improvements, or work for which retained percentages are required to be reserved under the provision of RCW 60.28, the Owner shall require the Contractor to exercise, in writing, one of the options listed below:

.1 Retained percentages will be retained in a fund by the Owner not subject to release until sixty (60) days following the Final Acceptance of the Work as completed and as provided in Section 9.10.4; or

.2 Deposited by the Owner in an interest-bearing account in a bank, mutual savings bank or savings and loan association and not subject to release until sixty (60) days following Final Acceptance of the Work as completed and as provided in Section 9.10.4; or

.3 Placed in escrow with a bank or trust company and not subject to release until sixty (60) days following the Final Acceptance of the Work as completed and as provided in Section 9.10.4.

.4 If the Contractor provides a bond in place of retainage, it shall be in an amount equal to 5% of the Contract Sum plus change orders. The minimum requirements for the bond are that it must be on a form acceptable to the Owner, with an A.M. Best rating of "A-" or better and a financial rating of no less than "VIII," signed by a surety registered by the Washington State Insurance Commissioner and on the currently authorized insurance list published by the Washington State Insurance Commissioner; additional requirements as established by the Owner may be applied.

§ 9.3.4.2 The Contractor or a Subcontractor may withhold payment of not more than five percent (5%) as retainage from the monies earned by any Subcontractor or Sub-subcontractor, provided that the Contractor pays interest to the Subcontractor at the same interest rate it receives from its reserved funds. If requested by the Owner, the Contractor shall specify the amount of retainage and interest due a Subcontractor.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven (7) days after receipt of the Contractor's approved Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial and Final Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Owner may, with or without the Architect's concurrence, withhold payment, and the Architect may also withhold a Certificate for Payment or, because of subsequently discovered ~~evidence,~~ evidence or subsequent observations, it may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;

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.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

.5 damage to the Owner or a separate contractor;

.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; ~~or~~

.7 ~~repeated~~ unsatisfactory prosecution of the Work by the Contractor, including but not limited to failure to carry out the Work in accordance with the Contract ~~Documents.~~ Documents;

.8 delay by the Contractor and/or its Subcontractor(s) of any tier, or failure to comply with the Contractor's Construction Schedule requirements;

.9 failure to submit affidavits pertaining to wages paid as required by statute;

.10 failure to submit a properly updated Construction Schedule;

.11 failure to comply with a requirement of the Contract Documents in which the Owner has reserved the right to withhold payment;

.12 liquidated damages;

.13 failure to properly maintain as-builts;

.14 failure to properly submit daily construction records; or

.15 failure to properly submit certified payrolls.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 ~~If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.~~ Pursuant to RCW 39.12, "Prevailing Wages on Public Works," the Contractor will not receive any payment until the Contractor and all Subcontractors of any tier for whom payment is sought have submitted state-approved "Statements of Intent to Pay Prevailing Wage" to the Owner. The statement must have the approval of the Industrial Statistician of the Department of Labor and Industries before it is submitted to the Owner. The statement must include the Contractor's registration number, the number of workers in each trade classification, and the applicable wage rate for each trade listed. The Contractor agrees to provide each Subcontractor of any tier with a schedule of applicable prevailing wage rates. The Contractor and the respective Subcontractors of any tier shall pay all fees required by the Department of Labor and Industries, including fees for the approval of the "Statement of Intent to Pay Prevailing Wages." Approved copies of the "Statement of Intent to Pay Prevailing Wages" must be posted where workers can easily read them.

§ 9.5.4 The Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, and it has been approved by the Owner, the Owner shall make payment in the manner and within the time provided in the Contract ~~Documents, and shall so notify the Architect.~~ Documents. The Owner will make a progress payment within thirty (30) days of its receipt and approval of the Architect's Certificate for Payment; any payments made by or through the Office of the Superintendent of Public Instruction shall be made in accordance with the policies, procedures, and forms required by that office. The Owner shall be entitled to withhold payment to the extent provided by the Contract Documents, notwithstanding the issuance of a Certificate for Payment.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven (7) days after receipt of payment from ~~the Owner~~ the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement

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with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner. If the Contractor does not receive payment for any cause which is not the fault of a particular Subcontractor but does receive payment for materials supplied or work performed by that Subcontractor, the Contractor shall pay that Subcontractor in accordance with its subcontract for its satisfactorily completed work, less the retained percentage.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the ~~Contractor~~ Contractor, satisfactory to the Owner, that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted ~~Work. If the Contractor fails to furnish such evidence within seven days,~~ Work and the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of ~~Work not in accordance with the Contract Documents.~~ Work.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect ~~does not~~ improperly fails to issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's ~~Application for Payment,~~ timely and complete Application for Payment under Section 9.3.1.2 (subject to the approved payment schedule), or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount ~~certified by the Architect or awarded by binding dispute resolution,~~ due and owing to the Contractor, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and ~~start-up, plus interest~~ start-up as provided for in Section 7.5 of these General Conditions of the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION AND OCCUPANCY

~~**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.~~

§ 9.8.1.1 Substantial Completion is the stage in the progress of the Work, or portion thereof designated and approved by the Architect and Owner, when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can fully occupy or utilize the Work, or the designated portion thereof, for its intended use, including FF&E and student, teacher, and staff occupancy. The fact that the Owner may occupy the Work or a designated portion thereof does not indicate that the Work is acceptable in whole or in part. All Work other than incidental corrective or punch list work shall be completed, including but not limited to the following:

(1) Obtain applicable occupancy permits, including fire/life safety systems and health department approval, pressure vessel permits, elevator permits, and similar approvals or certificates by governing authorities and franchised services, assuring the Owner's full access and use of completed Work.

(2) Submit the Contractor's punch list of items to be completed or corrected and written request for inspection.

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(3) Complete final start-up, testing, and commence instruction and training sessions on all major building systems including HVAC and controls, intercom, data communications, fire alarm, telephone, fire sprinkler, security and clocks, and establish a Date of Commissioning.
(4) Make final changeover of locks and transmit new keys to the Owner, and advise the Owner of the changeover in security provisions.
(5) Discontinue or change over and remove unnecessary temporary facilities and services from the project site.
(6) Advise the Owner on coordination of shifting insurance coverages, including proof of extended coverages as required.
(7) Complete final cleaning.

The Work is not Substantially Complete unless the Architect reasonably judges that the Work can achieve Final Completion within thirty (30) days (or such other period of time as is specified in the Contract Documents), appropriate cleaning has occurred, all designated systems and parts are commissioned and usable, including balancing of the HVAC system, utilities are connected and operating normally and training sessions have occurred, all required temporary occupancy permits, pressure vessel permits, elevator permits, and similar approvals or certificates by governing authorities and franchised services, assuring the Owner's full access to the Work have been issued, O & M manuals have been submitted for review, and the Work is accessible by normal vehicular and pedestrian traffic routes. The fact that the Owner may occupy the Work or a designated portion thereof does not indicate that the Work is Substantially Complete or is acceptable in whole or in part, nor does such occupation toll or change any liquidated damages due the Owner.

§ 9.8.1.2 Date of Commissioning of Selected Equipment and Systems. The equipment and systems so designated in the Contract Documents are considered "Selected Equipment and Systems." When the Contractor considers that all Selected Equipment and Systems are complete, fully functional, ready for normal operation and functional performance testing, and all pre-commissioning checklists are completed, the Contractor shall so notify the Architect in writing a minimum of 40 days prior to the Date of Substantial Completion (or such other date as may be established in the Contract Documents). A reasonable period shall be allowed for the Architect and commissioning agent to schedule and observe the functional performance tests identified in the Contract Documents. If the inspection discloses that the Selected Equipment and Systems are not Substantially Complete or that any item is not in accordance with the requirements of the Contract Documents, the Contractor shall expeditiously, and before the Date of Commissioning, complete or correct such item upon notification by the Architect or commissioning agent. The Contractor shall then submit a request for another inspection to determine completion of those Selected Equipment and Systems and pay the costs associated with the reinspection, including fees of the Architect, commissioning agent and their consultants. When all the Selected Equipment and Systems are complete, the Owner's commissioning agent will notify the Owner in writing, which shall establish the Date of Commissioning. Training of Owner personnel shall begin immediately after the Date of Commissioning and shall be conducted by appropriate Subcontractor personnel on site who are knowledgeable with the construction and operation of each system prior to departure of the installing entity from the site. Warranties on any Selected Equipment and Systems required by the Contract Documents shall commence on the Date of Commissioning, unless otherwise provided, but the Contractor shall retain the responsibility to maintain the system until Final Acceptance.

§ 9.8.1.3 Indemnification. The Contractor shall defend, indemnify, and hold harmless the Owner and the Architect and their agents, employees, and consultants, successors and assigns from and against all claims, damages, losses and expenses of third parties, direct and indirect, or consequential, including costs, design professional fees, and attorneys' fees incurred by the Owner related to such claims and in proving the right to indemnification, arising out of or resulting from the failure of the Contractor to attain the Date of Commissioning less than thirty (30) days prior to the Date of Substantial Completion fixed by the Contract Documents. In particular, the Contractor acknowledges that a 30-day period after the Date of Commissioning and prior to occupancy is specified during which all HVAC, mechanical, electrical, control and environmental management systems are fully operational under procedures and loads intended to provide unoccupied space with positive performance for pre-occupancy environmental documentation, and the systems are scheduled to operate under a procedure intended to dissipate out-gassing that may occur from interior and other materials.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. The Contractor shall proceed promptly to complete and

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correct items on the list. The Contractor shall immediately clean-up any dust or debris created through punchlist work activities. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, and upon verification by the Architect that all permits, approvals, testing, training and other submittals and administrative actions required under the Contract Documents for obtaining Substantial Completion have been satisfied, the Architect and, at its option, the Owner will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion. If the Owner or Architect determines that the Work or designated portion is not substantially complete, the Contractor shall expeditiously complete the Work or designated portion, and again request an inspection. The Contractor shall pay the costs associated with this third and any further reinspections.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion ~~that~~ which, upon approval of the Owner, shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial ~~Completion.~~Completion, except that warranties for HVAC equipment shall commence with acceptance of the Commissioning Report by the Owner's Board of Directors. The Contractor shall attach and submit with the executed Certificate of Substantial Completion, the Certificate of Occupancy, as well as a written list of each outstanding and unresolved Claim; any Claim not so submitted and identified, other than retainage and the undisputed balance of the Contract Sum, shall be deemed waived and abandoned. If the Owner or Architect determines that the Work or designated portion is not Substantially Complete, the Contractor shall expeditiously complete the Work or designated portion, again request an inspection, and pay the costs associated with the re-inspection, including Architect and consultant fees.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. ~~Upon such acceptance and~~ Any items not included by the Architect but required or necessary for Final Completion of the Contract shall be supplied and installed by the Contractor as a part of the Contract Sum, notwithstanding their not being recorded by the Architect. Upon written acceptance of the Certificate of Substantial Completion by the Owner and the Contractor, and upon the Contractor's Application for Payment and consent of surety, if any, the Owner shall make payment ~~of retainage applying to such Work or designated portion thereof.~~ as provided in the Contract Documents. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. No further payment will be due or owing until the payment following Final Completion.

§ 9.8.6 The Contractor shall prepare, continue to monitor with the Architect, and cause to be completed, all punchlists with respect to the activity of each Subcontractor and report weekly to the Owner on outstanding punchlist items. Beginning thirty (30) days before the scheduled date of Substantial Completion, the Contractor shall prepare reports weekly, identifying items to be completed in order to obtain required certificates of occupancy and make recommendations to the Owner with respect to effectuating the earliest possible completion. The Contractor shall include this report as a schedule item on its CPM schedule.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner ~~may~~ may, upon written notice to the Contractor, take possession of, operate, occupy or use any completed or partially completed portion of the Work at any ~~stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project.~~ stage. Such partial occupancy or use may commence whether or not the portion is substantially ~~complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the~~

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~~period for correction of the Work and commencement of warranties required by the Contract Documents.~~ complete. Unless otherwise agreed in writing, such possession, use or operation shall not be deemed an acceptance of any portion of the Work, nor accelerate the time for any payment to the Contractor under the Contract, nor prejudice any rights of the Owner under the Contract or under any insurance, bond, guaranty or other requirement of the Contract, nor relieve the Contractor of the risk of loss or any of its obligations under the Contract, nor establish a Date of Substantial or Final Completion, nor establish a date for termination or partial termination of the running of liquidated damages, nor constitute a waiver of any Owner claims. If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, or fails to achieve Final Completion of the Work within thirty (30) days of Substantial Completion (or such other period of time as is specified in the Contract Documents), the Owner may take possession of, use or operate all or any part of the Work without an increase in the Contract Sum or the Contract Time on account of such possession or use. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. ~~The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.~~

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 ~~Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.~~ **Final Completion.**

§ 9.10.1.1 The Contractor shall cause punch list items to be completed within thirty (30) days of Substantial Completion (or such other period of time as is specified in the Contract Documents) or within such reasonable period as may be required to correct the item (in the event that the punch list items are, because of their nature, incapable of correction during that period) provided that the Contractor commences to correct the item within that period and thereafter diligently and in good faith pursues the corrective action to completion. If, at fifteen (15) days after the Date of Substantial Completion, the Owner considers that the punch list items are unlikely to be completed within thirty (30) days of the Date of Substantial Completion (or such other period of time as is specified in the Contract Documents), the Owner may, upon seven (7) days' written notice to the Contractor, take over and perform some or all of the punch list items. If the Contractor fails to correct the deficiencies within the time period specified, the Owner may deduct the actual cost of performing this punch list work, including any design costs, plus 15% to account for the Owner's transaction costs from the Contract Sum.

§ 9.10.1.2 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance, the Architect will promptly make such inspection accompanied by the Contractor (if requested by the Architect or Owner). If the Architect or Owner determines that some or all of the punch list items are not accomplished, the Contractor shall be responsible to the Owner for all costs, including re-inspection fees, for any subsequent Architect's inspection to determine compliance with the punch list. When the Architect finds all punch list items complete and the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly notify the Owner and the Contractor in writing that, to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.3 The Contractor is liable for, and the Owner may deduct from any amounts due the Contractor, all Architect, engineer or other design consultant fees and all Commissioning Agent and Construction Manager fees incurred by the

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Owner for services performed more than thirty (30) days after Substantial Completion of all the Work (or such other period of time as is specified in the Contract Documents), whether or not those services would have been performed prior to that date had Final Completion been achieved in a timely manner.

§ 9.10.1.4 When the Architect finds that the Work has been concluded, a final occupancy permit has been issued, any commissioning process and validation process have been successfully concluded and the Commissioning Report has been accepted by the Owner's Board of Directors, and the Contractor has submitted all the items identified in Section 9.10.1.5 to the Architect, the Contractor may submit a final Application for Payment. The Architect will then promptly issue a final Certificate for Payment stating that the entire balance found to be due the Contractor and noted in said final Certificate is due and payable. The Architect's final Certificate for Payment shall establish the date of Final Completion upon its execution by the Owner.

§ 9.10.1.5 "Final Completion" will be attained when the Contractor has accomplished the following:

(1) Complete all requirements listed in Section 9.8 for Substantial Completion.
(2) Complete all remaining punch list items and remaining Work, and obtain approval by Architect and Owner that all Work is complete.
(3) Obtain permanent occupancy permits (if only a temporary occupancy permit was issued at Substantial Completion).
(4) Submit final change order and final Application for Payment.
(5) Submit record documents, any final property survey, and operation and maintenance manuals required by the Contract Documents.
(6) Deliver tools, spare parts, extra stock of material and similar physical items to the Owner as required by the Contract Documents.
(7) Complete final cleaning after punchlist work (in addition to the final cleaning that was required to obtain Substantial Completion).
(8) Complete instruction and training sessions on all major building systems including HVAC, intercom, data communications, fire alarm, telephone, fire sprinkler, emergency power, security and clocks.
(9) Submit executed warrantics.
(10) Make final changeover of locks and transmit new keys to the Owner, and advise the Owner of the changeover in security provisions.
(11) Discontinue or change over and remove temporary facilities and services from the project site.
(12) Advise the Owner on coordination of shifting insurance coverages, including proof of extended coverages as required.
(13) Acceptance of the final Commissioning Report by the Owner's Board of Directors.

§ 9.10.2 ~~Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that~~ **Final Acceptance and Payment.**

§ 9.10.2.1 Neither final payment nor any retained percentage shall become due until after the Owner's Board of Directors has formally accepted the Project ("Final Acceptance"). To achieve Final Acceptance, the Architect must have issued a final Certificatc for Payment under Section 9.10.1.4, an occupancy permit must have been issued, Final Completion must have occurred, and the Contractor must have submitted to the Architect and the Owner the following:

(1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, except for any claims that are specifically identified on the affidavit (Affidavit of Payment of Debts and Claims, AIA form G706 or equivalent),
(2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least ~~30~~ thirty (30) days' prior written notice has been given to the Owner,
(3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents,
(4) consent of surety, if any, to final payment ~~and (5), if required by the Owner,~~ (AIA form G707 or equivalent),
(5) other data establishing payment or satisfaction of or protection against obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the ~~Owner.~~ Owner (Contractor's Affidavit of

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Release of Liens, AIA form G706A or equivalent). If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' ~~fees.~~fees,

(6) pursuant to RCW 39.12.040, an "Affidavit of Wages Paid" from the Contractor and from each Subcontractor of any tier certified by the Industrial Statistician of the Washington State Department of Labor and Industries, with the fees paid by the Contractor or Subcontractor,

(7) a letter from the Architect indicating that the Work is complete and recommending Final Acceptance of the Project by the Owner,

(8) certification that the materials in the Work are "lead-free" and "asbestos-free,"

(9) a certified statement that the Contractor has closed all necessary permits or otherwise met the requirements of all governing jurisdictions related to this project, including but not limited to all city or county departments, health districts and utility districts, provided to Owner with a copy of all closed or signed off permits,

(10) record documents; and

(11) all warranties, guarantees, training, manuals, operation instructions, certificates, spare parts, maintenance manuals and stock, specified excess material, as-built drawings and other documents, training or items required by the Contract Documents or local governmental entities.

§ 9.10.2.2 Pursuant to RCW 60.28, "Lien for Labor, Materials, Taxes on Public Works," completion of the Contract Work shall occur upon Final Acceptance.

§ 9.10.3 If, after Substantial Completion of the Work, ~~final completion thereof~~ Final Completion is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner ~~shall,~~ may, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. ~~If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.~~

§ 9.10.4 ~~The making of final payment shall constitute a waiver of Claims by the Owner except those arising from~~

~~.1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;~~

~~.2 failure of the Work to comply with the requirements of the Contract Documents; or~~

~~.3 terms of special warranties required by the Contract Documents.~~**Release of Retainage:** The retainage will be held and applied by the Owner as a trust fund in a manner required by RCW 60.28. Release of the retainage will be processed in ordinary course of business upon the expiration of sixty (60) days following Final Acceptance of the Work by the Owner provided that no notice of lien shall have been given as provided in RCW 60.28, that no claims have been brought to the attention of the Owner and that the Owner has no claims under this Contract; and provided further that, for state-funded projects, release of retention has been duly authorized by the State. The following items also must be obtained prior to release of retainage: pursuant to RCW 60.28, a certificate from the Department of Revenue; pursuant to RCW 50.24, a certificate from the Department of Employment Security; and appropriate information from the Department of Labor and Industries.

§ 9.10.5 ~~Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.~~**Waiver of Claims**

§ 9.10.5.1 Final Payment by Owner. The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, statutory retainage, Claims, security interests or encumbrances arising out of the Contract and unsettled;

.2 failure of the Work to comply with the requirements of the Contract Documents; or

.3 terms of special warranties required by the Contract Documents.

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§ 9.10.5.2 Final Payment to Contractor. Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled and attached to the Contractor's final Application for Payment.

§ 9.10.5.3 The execution of a Change Order shall constitute a waiver of Claims by the Contractor arising out of the Work to be performed or deleted pursuant to the Change Order, except as specifically described in the Change Order. Reservations of rights will be deemed waived and are void unless the reserved rights are specifically described in detail to the satisfaction of the Owner and are initialed by the Owner. If the Contractor adds a reservation of rights that has not been initialed by the Owner to any Change Order, Construction Change Directive, Change Order proposal, Application for Payment or any other document, all amounts therein shall be considered disputed and not due or payable unless and until costs are re-negotiated or the reservation is withdrawn or changed in a manner satisfactory to and in all cases initialed by the Owner. If the Owner makes payment for a Change Order or an Application for Payment that contains a reservation of rights not initialed by the Owner to indicate agreement with the reservation, and if the Contractor negotiates the check for such payment, then the reservation of rights shall be deemed waived, withdrawn, and of no effect.

§ 9.10.6 If a Subcontractor of any tier refuses to furnish a release or waiver required by the Owner, the Owner may (a) retain in the fund, account, or escrow funds in such amount as to defray the cost of foreclosing the liens of such claims and to pay attorneys' fees, the total of which shall be no less than 150% of the claimed amount, or (b) accept a bond from the Contractor, satisfactory to the Owner, to indemnify the Owner against such lien. If any such lien remains unsatisfied after all payments from the retainage are made, the Contractor shall refund to the Owner all moneys that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.7 The Contractor and all Subcontractors of any tier shall maintain books, ledgers, records, documents, estimates, bids, correspondence, logs, schedules, emails, facsimiles, and other tangible and electronic data and other evidence relating or pertaining to the costs and/or performance of the Contract ("records") to such extent and in such detail as will properly reflect and fully support compliance with the requirements of the Contract Documents and with all costs, charges and other amounts of whatever nature. The Contractor shall preserve such records for a period of three (3) years following the date of Final Acceptance under the Contract and for such longer period as may be required by any other provision of the Contract. Within seven (7) days of the Owner's request, the Contractor agrees to make available at the office of the Contractor during normal business hours all records for inspection, audit and reproduction (including electronic reproduction) by the Owner or its representatives. These requirements shall also be applicable to each Subcontractor of any tier and included in each Subcontract and purchase order issued with respect to the Work, except fixed-price Subcontracts where the price is $25,000 or less. The Contractor agrees, on behalf of itself and Subcontractors of any tier, that any rights under RCW 42.56 will commence at Final Acceptance, and that the invocation of such rights at any time by the Contractor or a Subcontractor of any tier, or their respective representatives, shall initiate an equivalent right to disclosures from the Contractor and Subcontractors of any tier for the benefit of the Owner. Failure to fully comply with any requirements of this Section shall constitute a material breach of contract and shall constitute a waiver of all claims by the Contractor and any Subcontractor that does not fully comply.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

~~The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.~~ **§ 10.1.1** The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall have the right to control and shall be solely and completely responsible for conditions of the work site, including safety of all persons and property, during performance of the Work. The Contractor shall maintain the Work site and perform the Work in a manner that meets statutory and common-law requirements for the provision of a safe place to work. This requirement shall apply continuously and not be limited to working hours. Any review by the Owner or the Architect of the Contractor's performance shall not be construed to include a review of the adequacy of the Contractor's safety measures in, on or near the site of the Work.

§ 10.1.2 No action or inaction of the Owner or the Architect relating to safety or property protection or a violation thereof shall in any way: (1) relieve the Contractor of sole and complete responsibility for the violation and the correction thereof, or of sole liability for the consequences of said violation; (2) impose any obligation upon the Owner or Architect to inspect or review the Contractor's safety program or precautions or to enforce the Contractor's

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compliance with the requirements of this Article 10; (3) impose any continuing obligation upon the Owner or Architect to ensure the Contractor performs the Work safely or to provide such notice to the Contractor or any other person or entity; (4) affect the Contractor's sole and complete responsibility for performing the Work safely or the Contractor's responsibility for the safety and welfare of its employees and the employees of Subcontractors of any tier; or (5) affect the Contractor's responsibility for the protection of property, students, staff and the general public.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- **.1** employees on or involved in the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss. The Contractor shall comply with all notices and comply with all requests from the Owner regarding the safety and protection of the Owner's students and staff. The Contractor shall comply with the safety regulations set forth in "Safety Standards for Construction" and "General Safety Standards" and any other requirements published by the Washington State Department of Labor and Industries. The Contractor shall comply with the Federal Occupational Safety and Health Act of 1970 (OSHA), including all revisions, amendments and regulations issued thereunder, and the provisions of the Washington Industrial Safety Act of 1973 (WISHA), including all revisions, amendments and regulations issued thereunder by the Washington State Department of Labor and Industries. The WISHA regulations shall apply to all excavation, trenching and ditching operations. In case of conflict between any such requirements, the more stringent applicable regulation or requirement shall apply.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities. The Contractor shall maintain at the work site office or other well-known place at the work site all materials (e.g., a first aid kit) necessary for giving first aid to the injured, and shall establish, publish and make known to all employees procedures for ensuring immediate removal to a hospital or a doctor's care, persons, including employees, who may have been injured on the site. Employees shall not be permitted to work on the site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care. The Contractor's and/or any Subcontractors shall ensure that at least one of such employees has a valid, effective first aid card.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the ~~Work,~~ Work and explicitly permitted by the Contract Documents, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

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§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 ~~INJURY OR DAMAGE TO PERSON OR PROPERTY~~At all times until the Owner's occupancy of the Work or a designated portion of the Work, the Contractor shall protect from damage, weather, deterioration, theft, vandalism and malicious mischief and shall bear the risk of any uninsured loss or destruction of, or injury or damage to, all materials, equipment, tools, and other items incorporated or to be incorporated in the Work or designated portion, or consumed or used in the performance of the Work or designated portion, and all Work in process and completed Work or designated portion. The Contractor is responsible for any deductible amounts related to any insurance coverage.

§ 10.2.9 Any notice given to the Contractor by the Owner or the Architect of a safety or property protection violation will not: (1) relieve the Contractor of sole and complete responsibility for the violation and the correction thereof, or for sole liability for the consequences of said violation; (2) impose any obligation upon the Owner or Architect to inspect or review the Contractor's safety program or precautions or to enforce the Contractor's compliance with the requirements of this Article 10; or (3) impose any continuing obligation upon the Owner or Architect to provide such notice to the Contractor or any other persons or entity.

§ 10.2.10 INJURY OR DAMAGE TO PERSON OR PROPERTY

If ~~either party~~ the Contractor suffers injury or damage to person or property because of an alleged act or omission of the ~~other party,~~ Owner, or of others for whose acts ~~such party is~~ the Owner may be legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the ~~other party~~ Owner within a reasonable time not exceeding ~~21~~ twenty-one (21) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter. This Section does not apply to Claims, damages for additional costs or time, acceleration, or delay.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl ~~(PCB),~~ (PCB) or soil contaminated with petroleum products, encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing. The Contractor shall proceed with the Work in areas not affected.

§ 10.3.2 Upon receipt of the Contractor's written notice, and with the Owner's agreement, the Owner shall obtain the services of a licensed laboratory to reasonably verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to ~~cause it to be~~ verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable ~~objection.~~ objection, but the Owner shall not be responsible for any delay resulting from the Contractor's objection to such person or entity. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time ~~shall~~ may be extended appropriately and the Contract Sum ~~shall~~ may be increased in the amount of the Contractor's demonstrated and reasonable additional costs of shut-down, delay ~~and start-up.~~ and start-up, which adjustments shall be accomplished as provided in Articles 7, 8 and 15.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property

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(other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking ~~indemnity.~~indemnity or if the removal of such material or substance was a part of the Contractor's Work.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's ~~fault~~ fault, misuse, or negligence in the use and handling of such materials or substances. The Contractor shall store all hazardous materials safely, whether or not required by Contract Documents. The Contractor shall not install hazardous materials, including without limitation asbestos, lead, mercury, or polychlorinated biphenyl (PCB), in the Work.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without fault or negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.5 PUBLIC SAFETY AND CONVENIENCE

§ 10.5.1 The Contractor shall conduct its Work so as to ensure the least possible obstruction to vehicular traffic and inconvenience to the general public and others in the vicinity of the Work and to ensure the protection of persons, property and natural resources. No road or street shall be closed to the public except with the permission of the Owner and the proper governmental authority. Fire hydrants on or adjacent to the Work shall be accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the Contractor to ensure the use of sidewalks, fire lanes, private and public driveways and proper functioning of gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses, if any, on the Work site.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located ~~such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:~~

~~.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;~~

~~.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;~~

~~.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;~~

~~.4 Claims for damages insured by usual personal injury liability coverage;~~

~~.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;~~

~~.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;~~possessing a Best's policyholder's rating of A- or better and a financial rating of no less than VIII and reasonably acceptable to the Owner, an occurrence-based Commercial General Liability Insurance Policy, which shall provide personal injury, bodily injury and property damage liability to cover the Contractor's operations, including Subcontractors and suppliers of any tier; owned, non-owned and hired vehicles; on

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work the Contractor may subcontract or sublet to others; and on the indemnity provisions of this Contract, including but not limited to premises, products/completed operations, personal injury, blanket contractual liability, explosion, collapse or underground (XCU), and stopgap employer's liability. The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect, their consultants and employees, any required governmental agencies and others designated in the Contract Documents as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations, and this insurance shall include a severability of interest (cross liability clause) for Work performed under this Contract. The Contractor's policy shall be designated primary coverage for both defense and indemnity, and any Owner's policies excess. Such limits of liability insurance shall have per project general aggregate provisions and shall not be less than the following:

.1 Comprehensive General Liability, Bodily Injury and Property Damage Liability, including Premise and Operations, Independent Contractors, Protective Liability, Completed Operations and Products, Contractual, Combined Single Limit of at least $1,000,000 per occurrence, with a per-project aggregate limit of at least $2,000,000; and

~~.7 Claims for bodily injury or property damage arising out of completed operations;~~ .2 Comprehensive Automobile Liability, Bodily Injury and Property Damage Combined Single Limit of at least $1,000,000; and

~~.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.~~.3 In addition, the Contractor shall maintain a true umbrella policy which provides excess limits over the primary layer, in an amount not less than $2,000,000.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. ~~Coverages, whether~~ Coverages shall be written on an occurrence ~~or claims-made~~ basis, shall be maintained without interruption from the date of commencement of the Work until the date of ~~final payment~~ Final Acceptance and termination of any coverage required to be maintained after final ~~payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.~~payment. Completed operations coverage shall remain in force for three (3) years after Final Acceptance. The insurance described above shall include coverage for underground, collapse and explosion exposures. In addition, the Contractor shall purchase and maintain insurance for claims under workers' compensation (industrial insurance), disability benefit and other similar employee benefit acts in the State statutory amount and Stop Gap Liability Insurance (Employer's Contingent Liability Insurance) with coverage of at least $1,000,000 each occurrence/each accident. All policies and certificates must be signed copies and the Contractor shall provide written notice by certified mail to the Owner and Architect 45 days before the policies expire or are cancelled or any coverages afforded under the policies are reduced, limits decreased, or the additional insureds removed. The Contractor shall furnish to the Owner and Architect copies of any subsequently issued endorsements amending, modifying, altering or restricting coverage or limits. Furthermore, such policies or certificates shall contain a clause verifying that the policy contains coverage for blanket contractual liability including both oral and written contracts and that liability coverages include protection for underground, collapse and explosion and that the indemnification provisions of Section 3.18 are acknowledged. Losses up to the deductible amount or otherwise not covered by insurance shall be the responsibility of the Contractor.

§ 11.1.3 ~~**Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.**~~PROOF OF INSURANCE

§ 11.1.3.1 Before any presence on site, commencing Work or exposure to loss can occur, or, in any event, within ten (10) days after the Owner has issued its Conditional Notice to Proceed, the Contractor shall furnish the Owner with four copies of Certificates of Insurance on AIA Document G705 or ACORD Certificate of Liability Insurance as evidence of all insurance required by the Contract Documents, including an endorsement to the insurance policies

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naming the Owner, the Architect, their consultants and employees, any required governmental agencies and others designated in the Contract Documents as additional insureds. If the Agreement is executed, no Progress Payment will be due until all such Certificates are furnished. The Contractor shall furnish to the Owner and Architect copies of any subsequently issued endorsements amending, modifying, altering or restricting coverage limits. Furthermore, such policies or certificates shall contain a clause verifying that the policy contains coverage for blanket contractual liability including both oral and written contracts and that liability coverages include protection for underground, collapse and explosion and that the indemnification provisions of Section 3.18 are acknowledged. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness. Upon written request, the Contractor will provide a copy of its policies to the Owner.

§ 11.1.3.2 The Owner's specification or approval of the insurance in this Contract or of its coverage or amount shall not relieve or decrease the liability of the Contractor under the Contract Documents or otherwise. Coverages are the minimum to be provided and are not limitations of liability under the Contract, indemnification, or applicable law provisions. The Contractor may, at its expense, purchase larger coverage amounts. Notwithstanding anything herein to the contrary, the Contractor shall provide all bonding, insurance, and permit documentation as required by governmental entities for all portions of the Project.

§ 11.1.4 The Contractor shall ensure and require that Subcontractors of any tier have insurance coverage to cover bodily injury and property damage on all operations and all vehicles owned or operated by Subcontractors of all tiers in the minimum amount of $1,000,000 per occurrence with a $2,000,000 aggregate limit. Also, the Subcontractors shall name the Contractor and the Owner and cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 If the Owner is damaged by the failure of the Contractor to maintain any of the insurance in this Article 11 or to so notify the Owner, then the Contractor shall bear all costs attributable thereto. The Owner may withhold payment pending receipt of all certificates of insurance. Failure to withhold payment shall not constitute a waiver.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 ~~Unless otherwise provided, the Owner~~ The Contractor shall purchase and ~~maintain,~~ maintain until Final Acceptance, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form to cover the course of construction upon the entire Work at the site and all materials or equipment furnished or installed by the Owner on the Project in the amount of the initial Contract ~~Sum,~~ Sum less costs of clearing, preparation and excavation of the site under this Agreement, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for 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 Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project. This insurance shall insure against the perils of fire and extended coverage and physical loss or damage, including earthquake, and shall provide "all risk" coverage for the interests of the Owner, the Contractor and Subcontractors as named insured, as their respective interests appear. Upon written request, the Contractor will provide a copy of its policy to the Owner. Each loss may be subject to a deductible of not more than $5,000, except that the deductible for earthquake losses shall be no greater than 5% of the loss. This insurance shall include as loss payee the Owner, the Contractor and Subcontractors of any tier as named insureds, as their respective interests appear. The policy shall be endorsed to allow complete or partial occupancy by the Owner before or after Substantial Completion without the insurer's approval. Except for losses

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caused by the Owner, losses up to the deductible amount or otherwise not covered by insurance shall be the Contractor's responsibility.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

~~**§ 11.3.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.~~

~~**§ 11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.~~

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit. All tools and equipment of the Contractor and Subcontractors of any tier not intended as part of the construction or installation of the Work will be the sole responsibility of the Contractor.

~~**§ 11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.~~

~~**§ 11.3.2 BOILER AND MACHINERY INSURANCE**~~
~~The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.~~

~~**§ 11.3.3 LOSS OF USE INSURANCE**~~
~~The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.~~

~~**§ 11.3.4** If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.~~

~~**§ 11.3.5** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.~~

§ 11.3.6 Before an exposure to loss may occur, the ~~Owner~~ Contractor shall file with the ~~Contractor~~ Owner a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally

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applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the ~~Contractor.~~Owner.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner does not waive the subrogation rights to the extent of its property insurance on structures or portions of structures that do not comprise the Work. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 ~~A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10.~~ **Adjustment.** Upon the occurrence of a loss insured under the property insurance, the Owner shall participate in and approve the adjustment and settlement of any loss with the insurers. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. Any inconsistent policy provisions will supersede the provisions of this Section.

~~**§ 11.3.9** If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.~~

~~**§ 11.3.10** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.~~

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The ~~Owner shall have the right to require the Contractor to furnish bonds covering~~ Contractor shall secure from a surety company acceptable to the Owner, admitted and licensed in the State of Washington, possessing an A.M. Best rating of "A-" or better and a financial rating of no less than "VIII," and shall pay for bonds covering the faithful performance of the Contract and payment of obligations arising ~~thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.~~under the Contract Documents, each in the full amount of the Contract Sum plus sales tax, pursuant to RCW 39.08, "Contractor's Bond." Within ten (10) days after the Owner's issuance of the notice of intent to award the Contract, the Contractor shall deliver evidence of its bondability to the Owner. Within ten (10) days of its execution of the Contract, the Contractor shall (1) submit a letter from its surety specifying the percentage to be paid by the Contractor for increases in the Contract Sum, and (2) deliver two copies of the bonds to the Owner and one copy to the Architect. THE OWNER

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MAY DECLINE TO ENTER INTO THE CONTRACT IF EVIDENCE OF BONDABILITY IS NOT RECEIVED. THE OWNER MAY WITHHOLD PAYMENT TO THE CONTRACTOR UNTIL SUCH SURETY BONDS ARE RECEIVED. The Contractor shall be responsible for any delay in the Contract Time because of failure to submit acceptable bonds.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.4.3 Subcontractor Bondability and Potential Subcontractors' Bonds. Within seven (7) days after the issuance of the notice of intent to award the Contract, any Subcontractors so required in the Bidding or Contract Documents or Special Conditions shall deliver evidence of their bondability to the Owner through the Contractor. The evidence shall include a letter from each such subcontractor's bonding company that contains the price of a payment and performance bond to be issued during the 30-day period after conditional notice to proceed. The bonding company must be acceptable to the Owner and admitted and licensed in the State of Washington. The bond(s) shall be in an amount equal to the full contract sum of the subcontract between the Subcontractor and the Contractor but shall not include sales tax. The bonds shall be conditioned that the Subcontractor shall faithfully perform all the provisions of its subcontract, payment of all obligations arising thereunder, and for one year's maintenance for correction of defective work. If the Owner elects to require a payment and performance bond from one or more of these Subcontractors, it will so notify the Contractor in writing within 14 days of receipt of the evidence of bondability from the respective Subcontractor, in which case the Contract Sum shall be increased by a Change Order in the amount specified in the letter, unless otherwise agreed by the parties. THE OWNER MAY DECLINE TO ENTER INTO THE CONTRACT OR MAY REQUIRE A CHANGE OF SUBCONTRACTOR AT NO INCREASE IN THE CONTRACT SUM OR CONTRACT TIME IF THIS EVIDENCE OF BONDABILITY IS NOT TIMELY RECEIVED. THE OWNER MAY WITHHOLD PAYMENT TO THE CONTRACTOR UNTIL SUCH SURETY BONDS ARE RECEIVED.

§ 11.5 If the Owner is damaged by the failure of the Contractor to maintain any of the bonds or insurance in this Article 11 or to so notify the Owner, then the Contractor shall bear all costs attributable thereto. The Owner may withhold payment pending receipt of all certificates of insurance and bonds. Failure to withhold payment shall not constitute a waiver.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's or the Owner's request or to requirements of a governmental authority or as otherwise specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, Owner or governmental authority, be uncovered for the ~~Architect's~~ requesting party's examination and be replaced at the Contractor's expense without change in the Contract ~~Time.~~ Time or Contract Sum.

§ 12.1.2 If a portion of the Work has been covered that the ~~Architect~~ Architect, Owner or governmental authority has not specifically requested to examine prior to its being ~~covered, the Architect~~ covered and for which the Contract Documents did not require inspection, the Architect, Owner or governmental authority may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor ~~in which event the Owner~~ employed by the Owner, and in that event the Owner or the separate contractor shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or Owner or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

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§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one (1) year after the later of the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under ~~Section 9.9.1,~~ the Contract Documents, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it according to the requirements of this Section 12.2.2 with no change in the Cost of the Work promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. ~~The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.~~ If the Contractor does not promptly in accordance with the provisions of this Section 12.2.2 initiate work to correct the Work designated in the notice, the Owner may proceed to correct the Work, the Owner may without further notice dispose of materials and equipment as it sees fit, and the Contractor will be liable for all costs. This correction period of one year shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. This obligation shall survive acceptance of the Work under the Contract and termination of the Contract, is in addition to other warranties provided by contract or law, and does not establish a time limit for damages.

.1 If, in the Owner's opinion, the nonconforming Work either prevents the use of a portion of the facility and/or immediate response is required to prevent further damage or to restore security to prevent external entrance, and/or is a safety hazard (e.g., break in the waterline, sprinkler system failure, failure of the heating system, inability to close or lock exterior door, etc.), the Contractor shall initiate corrective work on site the same day if the Contractor is notified prior to noon, or by noon the following day if notified after noon, and shall complete corrective action within 48 hours.

.2 If, in the Owner's opinion, the nonconforming Work has the potential of becoming a safety hazard, of affecting internal security, or of limiting the use of the facility (e.g., potential loss of heat in a single classroom, failure of one or more plumbing fixtures, loose carpet seam in corridor, interior door lock not working, etc.), the Contractor shall initiate corrective work on site within two (2) working days and shall complete corrective action within five (5) working days.

.3 If, in the Owner's opinion, the nonconforming Work does not have an impact on the use of the building, but must be fixed, (e.g., interior door closer broken, window cracked, wall covering seam coming loose, etc.), the Contractor shall initiate corrective work on site within fourteen (14) days and shall complete corrective action within twenty-eight (28) days.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall ~~not~~ be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

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§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced ~~as appropriate and equitable.~~ by the greater of the (1) cost of correction or (2) diminution of value of the Work that is not in accordance with the requirements of the Contract Documents. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the internal law of the place where the Project is ~~located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~ located, without regard to its choice of law provisions.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.2.3 If a majority of the ownership or the control of Contractor is acquired by a third party, and such acquisition reasonably imperils performance or creates a conflict of interest that the Owner, in its sole discretion, cannot reasonably reconcile, then the Owner may terminate this Contract at any time pursuant to Section 14.2, except that the Owner shall give the Contractor thirty (30) days written notice of termination and the opportunity for the Contractor to cure prior to termination.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to ~~a member of the firm or entity,~~ the designated representative as identified in Sections 8.3 and 8.4 of the A101, or to an officer of the corporation for which it was intended; or if delivered at, or sent by facsimile, registered or certified ~~mail~~ mail, or by courier service providing proof of delivery to, the last business address known to the party giving notice. The date of written notice shall be the earlier of the date of personal delivery, actual receipt by facsimile, or three (3) calendar days after the date of postmark.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law. The Contractor's sole remedy for claims, disputes and other matters in question of the Contractor, direct or indirect, arising out of, or relating to, the Contract Documents or breach thereof, except claims which have been waived under the terms of the Contract Documents, however, is the dispute resolution procedure of Article 15.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.4.3 If any portion of this Contract is held to be void or unenforceable, the remainder of the Contract shall be enforceable without such portion.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made at an appropriate time and as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public ~~authorities.~~ authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided,

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the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to or provided by the Owner, or with the appropriate public authority, and the Owner shall bear all related costs of ~~tests, inspections and approvals.~~ necessary tests, inspections and approvals, except that the Contractor will be responsible for any costs of retesting and any extra costs caused by the Contractor. The Contractor shall give the Architect and Owner timely notice of when and where tests and inspections are to be made so that the Architect and Owner may be present for such procedures. The independent testing agency shall prepare the test reports, logs and certificates applicable to the specific inspections and tests and promptly and simultaneously deliver the specified number of copies of them to the designated parties. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner and the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall provide the Owner and Architect forty-eight (48) hours' notice prior to all tests and inspections.

§ 13.5.7 If the Owner is responsible under the Contract Documents, law or regulation to pay only for an inspection of any inspector, consultant or Architect, the Owner shall be required to pay only for the first actual inspection. If the Contractor arranges for an inspection and an extra cost is incurred because the inspector is required to wait, to leave without inspecting, to perform a partial inspection, to return to complete or reinspect, or otherwise to expend time other than for the primary inspection, the Contractor shall be responsible for all such costs to the extent caused by the Contractor. If the Contractor does not pay the charges for which it is responsible within thirty (30) days of billing, the Owner has the option to pay the charges directly and backcharge the Contractor on the next progress payment for the amount paid plus a 10% handling fee.

§ 13.5.8 No acceptance by the Owner of any Work shall be construed to result from any inspections, tests or failures to inspect or test by the Owner, the Owner's representatives, the Architect or any other person. No inspection, test, failure to inspect or test, or failure to discover any defect or nonconformity by the Owner, the Owner's representatives, the Architect or any other person shall relieve the Contractor of its responsibility for meeting the requirements of the Contract Documents or impair the Owner's right to reject defective or nonconforming items or right to avail itself of any other remedy to which the Owner may be entitled, notwithstanding the Owner's knowledge of the defect or nonconformity, its substantiality or the ease of its discovery. Entities performing inspections and/or testing do not have the authority to direct the Contractor's means and methods and are not agents or representatives of the Owner or Architect. Inspections which meet the requirements of code shall not override the requirements of the Contract Documents, which may be more stringent.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest ~~from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the~~

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~~place where the Project is located.~~as specificd by RCW 39.76, not to exceed the Bank of Amcrica prime rate plus 2%.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the ~~Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work.~~ Agreement, and within the shorter of the time period specified by applicable law and the time limits identified in this Agreement. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

§ 13.8 STATUTES AND OTHER REQUIREMENTS

The Contractor shall abide by the provisions of all applicable Washington statutes and regulations. Although a number of statutes are referenced in the Contract Documents, these references are not meant to be a complete list and should not be relied upon as such.

§ 13.8.1 Contractor Registration and Related Requirements. Pursuant to RCW 39.06, "Registration, Licensing of Contractors," the Contractor shall be registered and licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27, "Registration of Contractors." The Contractor shall: have a currcnt state unified business identifier number; have industrial insurance coverage for the Contractor's employees working in Washington as required in Title 51 RCW; have an employmcnt security department number as required in Title 50 RCW; have a state excise tax registration number as required in Title 82 RCW, and; not be disqualified from bidding on any public works contract under RCW 39.06.010 (unregistered or unlicensed contractors) or RCW 39.12.065(3) (prevailing wage violations).

§ 13.8.2 Law against Discrimination. The Contractor shall comply with pertinent statutory provisions relating to public works of RCW 49.60, "Discrimination."

§ 13.8.3 Provisions for Aged and Handicapped Persons. Contractor shall comply with pertinent statutory provisions relating to public works of RCW 70.92, "Provisions in Buildings for Aged and Handicapped Persons," and the Americans with Disabilities Act.

§ 13.8.4 Safety Standards. The Contractor shall comply with pertinent provisions of RCW 49.17, "Washington Industrial Safety and Health Act," and Chapter 296-155 WAC, "Safety Standards for Construction Work."

§ 13.8.5 Unemployment Compensation. Pursuant to RCW 50.24, "Contributions by Employers," in general and RCW 50.24.130 in particular, the Contractor shall pay contributions for wages for personal services performed under this Contract or arrange for a bond acceptable to the commissioner.

§ 13.8.6 Drug-Free Workplace. The Contractor and all Subcontractors of any tier shall fully comply with all applicable federal, state, and local laws and regulations regarding drug-free workplace, including the Drug-Free Workplace Act of 1988. Any person not fit for duty for any reason, including the use of alcohol, controlled substances, or drugs, shall immediately be removed from the Work.

§ 13.8.7 Tobacco-Free Environment. Pursuant to RCW 28A.210.310, smoking or use of any kind of lighted pipe, cigar, cigarette or any other lighted smoking equipment, material or smokeless tobacco products is prohibited on all school district property.

§ 13.8.8 Weapons-Free Environment. The Contractor and its employees, agents, and Subcontractors of any tier shall not bring onto the Project site or onto any Owner property any firearm or any other type of weapon described in either RCW 9.41.280(1) or RCW 9.41.250. Any person violating this Section shall immediately be removed from the Work, and such a violation shall be grounds for a termination of this Agreement for cause at the Owner's discretion.

§ 13.8.9 Asbestos Removal. To the extent this Project involves asbestos rcmoval, the Contractor shall comply with Chapter 49.26 RCW, "Health and Safety--Asbestos," and any provisions of the Washington Administrative Code promulgated thereunder, and the applicable section of the Specifications should be viewed for possible insurance required for the applicable Subcontractor.

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ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 ~~The~~ Except as provided by RCW 60.28.080, the Contractor may terminate the Contract if the Work is stopped for a period of ~~30~~ sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has improperly not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven (7) days' written notice to the Owner and ~~Architect,~~ Architect (during which period the Owner has the opportunity to cure), terminate the Contract and recover from the Owner payment for Work ~~executed, including reasonable overhead and profit,~~ properly executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit on Work executed, direct costs incurred by reason of such termination, and ~~damages.~~ direct damages. The total recovery of the Contractor shall not exceed the unpaid balance of the Contract Sum.

§ 14.1.4 If the Work is stopped for a period of ~~60~~ sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven (7) additional days' written notice to the Owner and the Architect, (during which period the Owner has the opportunity to cure), terminate the Contract and recover from the Owner as provided in Section 14.1.3. The total recovery of the Contractor shall not exceed the unpaid balance of the Contract Sum.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner ~~may terminate the Contract if the Contractor~~ may, upon seven (7) days' written notice to the Contractor, terminate (without prejudice to any right or remedy of the Owner) the whole or any portion of the Work or the Contract for cause if the Contractor:

- **.1** ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make prompt payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- **.3** ~~repeatedly~~ materially disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public ~~authority;~~ authority having jurisdiction; or
- **.4** fails to prosecute the Work or any portion thereof with sufficient diligence to ensure the Substantial Completion of the Work within the Contract Time; or
- **.5** is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its insolvency; or
- **.6** fails to comply with the provisions of RCW 28A.400.330 by permitting a worker on the Project having contact with children who has been convicted of or pled guilty to a felony crime involving children as described in Section 3.4.3; or
- **.7** otherwise is guilty of a material or substantial breach of or default under a provision of the Contract Documents.

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§ 14.2.2 When any of the above reasons exist, the ~~Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action,~~ Owner may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven (7) days' written notice, terminate employment of the Contractor on all or a portion of the Work and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; ~~and~~

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing ~~the Work.~~the Work; and

.4 Take or direct any or all of the actions in Section 14.5.1.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall ~~be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.~~survive termination of the Contract.

§ 14.2.5 If the Owner terminates a portion of the Work, the Contractor shall continue the performance of the remainder of the Work in accordance with the Contract Documents to the extent not terminated.

§ 14.2.6 If, after the Contractor has been terminated pursuant to this Section 14.2 or otherwise for cause, it is determined that none of the circumstances set forth in Section 14.2.1 exists, then such termination shall be considered a termination for convenience pursuant to Section 14.4.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for ~~increases~~ changes in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall ~~include profit.~~ be consistent with the terms of the Contract Documents. No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate (without prejudice to any right or remedy of the Owner) the whole or any portion of the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment ~~for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.~~consistent with the Contract Documents for Work properly executed, and costs necessarily incurred by reason of such termination (such as the cost of settling and paying claims arising out of the termination of

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Work under subcontracts or orders), along with reasonable profit on the Work not executed, not to exceed two and a half percent (2.5%) of the Cost of the Work not performed. The total sum to be paid to the Contractor under this Section 14.4 shall not exceed the Contract Sum as reduced by the amount of payments otherwise made, by the larger of (1) the actual value or (2) the scheduled value of Work not terminated, and as otherwise permitted by this Contract. The amounts payable to the Contractor shall exclude the fair value of property which is destroyed, lost, stolen or damaged so as to become undeliverable to the Owner or to a buyer pursuant to Sections 14.5.1.6 or 14.5.1.7.

§ 14.5 EFFECTS OF TERMINATION BY OWNER

§ 14.5.1 Unless the Owner directs otherwise, after receipt of a Notice of Termination from the Owner pursuant to Section 14.2 or 14.4, the Contractor shall promptly:

- **.1** stop Work under the Contract on the date and as specified in the Notice of Termination;
- **.2** place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of any portion of the Work that is not terminated;
- **.3** procure cancellation of all orders and subcontracts, upon terms acceptable to the Owner, to the extent that they relate to the performance of Work terminated;
- **.4** assign to the Owner all of the right, title and interest of the Contractor under all orders and subcontracts, as directed by the Owner, in which case the Owner shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
- **.5** with the Owner's approval, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts not assigned to the Owner;
- **.6** transfer title and deliver to the entity or entities designated by the Owner the fabricated or unfabricated parts, Work in process, partially completed supplies and equipment, materials, parts, tools, dies, jigs and other fixtures, completed Work, supplies and other material produced as part of, or acquired in connection with the performance of, the Work terminated, and the completed or partially completed plans, drawings, information and other property related to the Work;
- **.7** use its best efforts to sell any property of the types referred to in Section 14.5.1.6. The Contractor shall not be required to extend credit to any buyer, and may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner, and the proceeds of any such transfer or disposition may be applied in reduction of any payments to be made by the Owner to the Contractor;
- **.8** take such action as may be necessary or as directed by the Owner to preserve and protect the Work and property related to this Project in the possession of the Contractor in which the Owner has an interest; and
- **.9** continue performance only to the extent not terminated.

§ 14.5.2 In arriving at any amount due the Contractor after termination, the following deductions shall be made:

- **.1** all unliquidated advance or other prior payments on account made to the Contractor applicable to the terminated portion of the Contract;
- **.2** any claim the Owner may have against the Contractor;
- **.3** an amount necessary to protect the Owner against outstanding or potential liens or claims; and
- **.4** the agreed price for or the proceeds of sale of any materials, suppliers or other things acquired by the Contractor or sold, pursuant to the provisions of Section 14.5.1.7, and not otherwise recovered by or credited to the Owner.

§ 14.5.3 If (and only if) the termination pursuant to Section 14.4 is partial, the Contractor may file a Claim for an equitable adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract. Any claim by the Contractor for an equitable adjustment under this Section must be asserted within sixty (60) days from the effective date of the partial Termination.

§ 14.5.4 The Contractor shall refund to the Owner any amounts paid by the Owner to the Contractor in excess of costs reimbursable under the Contract Documents.

§ 14.5.5 The Contractor shall, from the effective Date of Termination until the expiration of three (3) years after final settlement under this Contract, preserve and make available to the Owner, at all reasonable times at the office of the Contractor, and without charge to the Owner, all books, records, documents, photographs and other evidence bearing on the costs and expenses of the Contractor under this Contract and relating to the terminated Work. The Owner may have costs reimbursable under this Article 14 audited and certified by independent certified public accountants selected by the Owner, who shall have full access to all the books and records of the Contractor.

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§ 14.5.6 The damages and relief from termination by the Owner specifically provided in Article 14 shall be the Contractor's sole entitlement in the event of termination.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of the Contract terms, payment of money, extension of time or other relief with respect to the terms of the ~~Contract.~~ Contract Documents. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the ~~Contract.~~ Contract Documents. The responsibility to substantiate Claims shall rest with the party making the Claim. Claims must be initiated in writing and include the information and substantiation required by the Contract Documents. Neither a Request for Information, nor a Construction Change Directive, nor a Change Order, nor a reservation of rights, nor minutes of a meeting, nor a Daily Report, nor any log entry, nor an Owner's request for or the Contractor's response to a Change Order proposal or a Proposal Request, nor a notice of a potential or future Claim shall constitute a Claim.

~~§ 15.1.2 NOTICE OF CLAIMS~~

~~Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.~~

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, including the dispute resolution process and except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and maintain the Contractor's Construction Schedule, and the Owner shall continue to make payments in accordance with the Contract Documents. ~~The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.~~

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the ~~Work.~~ Work, and a written notice and written Claim must be made in accordance with this Article 15, or it will be waived. If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, a Claim shall be filed in accordance with this Article 15. The Contractor shall not be entitled to an increase in the Contract Sum or Contract Time arising out of an error or conflict in or among the Contract Documents where the Contractor failed adequately to review the Contract Documents or failed to report the error or conflict to the Owner and Architect in a timely manner consistent with the requirements of the Contract Documents. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be ~~given.~~ given, and a written Claim must be made in accordance with Article 15, or it will be waived. The Contractor's Claim shall include an estimate of any cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary. Any adjustment in the Contract Time arising from a Change or a Claim shall be limited to the change in the actual critical path of the Project directly caused thereby. If the delay was not caused by the Owner, the Contractor, a Subcontractor of any tier, or the Architect, or anyone acting on behalf of any of them, the Contractor is entitled only to an increase in the Contract Time in accordance with the Contract Documents but not a change in the Contract Sum. If the delay was caused by the Contractor, a Subcontractor of any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably

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anticipated and had an adverse effect on the scheduled ~~construction.~~construction, and that the Work was on schedule (or not behind schedule through the fault of the Contractor) at the time the adverse weather conditions occurred. Neither the Contract Time nor the Contract Sum will be adjusted for normal inclement weather. The Contractor shall be entitled to a change in the Contract Time only (but not a change in the Contract Sum) if the Contractor can substantiate to the reasonable satisfaction of the Owner and Architect that there was materially greater than normal inclement weather considering the full term of the Contract Time and using a ten-year average of accumulated record mean values from climatological data compiled by the U.S. Department of Commerce National Oceanic and Atmospheric Administration for the locale closest to the Project, and that the alleged abnormal inclement weather actually extended the critical path of the Work. The change in Contract Time shall be provisional until Substantial Completion has been achieved, at which time the change in the Contract Time shall be the extent to which the total net accumulated number of calendar days lost due to inclement weather from commencement of the Work until Substantial Completion exceeds the total net accumulated number to be expected for the same period from the aforesaid data.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes without limitation:

.1 damages incurred by the Owner for rental expenses, ~~for losses of use,~~ income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal and home office overhead and expenses including without limitation the compensation of personnel stationed there, for losses of financing, business and reputation, ~~and for loss of profit except anticipated profit arising directly from the Work.~~for losses on other projects, for loss of profit, and for interest or financing costs.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of damages specified in the A101 Agreement or liquidated damages, when applicable, in accordance with the requirements of the Contract ~~Documents.~~Documents, or to preclude an obligation of the Contractor to indemnify the Owner for direct, indirect or consequential damages alleged by a third party.

§ 15.2 ~~INITIAL DECISION~~RESOLUTION OF CLAIMS AND DISPUTES

§ 15.2.1 ~~Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.~~In an effort to reduce the incidence and costs to all parties of extended disputes, all Claims, direct or indirect, arising out of, or relating to, the Contract Documents or the breach thereof, except claims which have been waived under the terms of the Contract Documents, shall be decided exclusively by the following alternative dispute resolution procedure unless the parties mutually agree in writing otherwise. To the extent that the Owner and Contractor agree to any partnering process to help resolve disputes, such processes shall be in addition to, and not in place of, the mandatory dispute resolution procedures in the Contract Documents.

§ 15.2.2 ~~The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.~~ Except for Claims requiring notice before proceeding with the affected Work as otherwise described in the Contract Documents, the Contractor shall submit a written notice of any Claim to the Owner and the Architect within fourteen (14) days of the occurrence of the event giving rise to such Claim and shall include a clear description of the event leading to or causing the Claim. For all Claims, the Contractor shall submit a written Claim as provided herein within thirty (30) days of submitting the notice. Claims shall include a clear description of the Claim and any proposed

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change in the Contract Sum (showing all components and calculations) and/or Contract Time (showing cause and analysis of the resultant delay in the critical path and other information referenced in Section 8.3.2) and shall provide data fully supporting the Claim, including without limitation a complete explanation as to why the relief sought is not within the scope of the Contract Documents. The Contractor may delay submitting data by an additional fourteen (14) days if it notifies the Owner in its Claim that substantial data must be assembled. Failure to properly submit the notice or Claim shall constitute waiver of the Claim. The Claim shall be deemed to include all changes, direct and indirect, in cost and in time to which the Contractor (and Subcontractors of any tier) is entitled and may not contain reservations of rights without the Owner's written approval; any such unapproved reservations of rights shall be without effect. Any claim of a Subcontractor of any tier may be brought only through, and after review by, the Contractor. For the purposes of calculating such time periods, an "event giving rise to a Claim" is not a Request for Information but rather is a response that the Contractor believes would change the Contract Sum and/or Contract Time. The fact that the Owner and the Contractor may consider, discuss or negotiate an untimely or waived Claim shall in no way be deemed to constitute a waiver of any notice or other provisions of the Contract Documents.

§ 15.2.3 ~~In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.~~**Notice and Claims.** All notices and Claims shall be made in writing as required by the Contract. Any notice of a Claim of the Contractor against the Owner and any Claim of the Contractor, whether under the Contract or otherwise, must be made pursuant to and in strict accordance with the applicable provisions of the Contract. No act, omission, or knowledge, actual or constructive, of the Owner or the Architect shall in any way be deemed to be a waiver of the requirement for timely written notice and a timely written Claim unless the Owner and the Contractor sign an explicit, unequivocal written waiver approved by the Owner's Board of Directors. The fact that the Owner and the Contractor may consider, discuss, or negotiate a Claim that has or may have been defective or untimely under the Contract shall not constitute a waiver of the provisions of the Contract Documents unless the Owner and Contractor sign an explicit, unequivocal waiver approved by the Owner's Board of Directors. The Contractor expressly acknowledges and agrees that the Contractor's failure to timely submit required notices and/or timely submit Claims has a substantial impact upon and prejudices the Owner, including but not limited to the inability to fully investigate or verify the Claim, mitigate damages, choose alternative options, adjust the budget, delete or modify the impacted Work, and/or monitor time, cost and quantities. For these and other reasons, the parties stipulate that the Owner is prejudiced by the Contractor's failure to timely submit notices and/or Claims as required by the Contract Documents, and that the Owner shall not be required to establish any actual prejudice in order to enforce the notice and Claim provisions of the Contract Documents.

§ 15.2.4 ~~If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.~~Upon receipt of a Claim against the Contractor or at any time thereafter, the Architect or the Owner may, but are not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Architect or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.5 ~~The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.~~If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the Claim by the Architect, by mediation or by litigation.

§ 15.2.6 ~~Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.~~ At any time following the Owner's receipt of the written Claim, the Owner may require that an officer of the Contractor, a principal of the Architect, and the Owner's Superintendent or designee (all with authority to settle) meet, confer, and attempt to resolve the Claim. If the Claim is not resolved during such meeting, the Contractor may bring

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no litigation against the Owner unless the Claim is first subject to nonbinding mediation as described in this Article 15. This mediation requirement cannot be waived except by an explicit written waiver by both parties.

~~§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.~~

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived ~~as provided for in Sections 9.10.4, 9.10.5, and 15.1.6~~ shall be subject to mediation as a condition precedent to the initiation of binding dispute resolution. This requirement cannot be waived except by an explicit written waiver signed by the Owner and the Contractor.

§ 15.3.2 The parties shall endeavor to resolve their Claims by ~~mediation which, unless the parties mutually agree otherwise,~~ mediation. A request for mediation shall be filed in writing with the other party to the Contract, and the parties shall promptly attempt to mutually agree upon a mediator. If the parties have not reached agreement on a mediator within thirty (30) days of the request, either party may file the request with the American Arbitration Association or such other alternative dispute resolution service to which the parties mutually agree, with a copy to the other party, and the mediation shall be administered by the American Arbitration Association (or other agreed service) in accordance with its Construction Industry Mediation Procedures ~~in effect on the date of the Agreement.~~ currently in effect. A request for mediation shall be made in ~~writing,~~ writing and delivered to the other party to the ~~Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation~~ Contract. Mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending ~~mediation for a period of 60 days from the date of filing,~~ mediation, unless stayed for a longer period by agreement of the parties or court order. ~~If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

§ 15.3.3 The parties to the mediation shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.3.4 An officer of the Contractor and the Owner's Superintendent or designee must attend the mediation session with authority to settle the Claim. To the extent there are other parties in interest, such as the Architect or Subcontractors, their representatives, also with authority to settle the Claim, shall also attend the mediation session. Unless the Owner and the Contractor mutually agree in writing otherwise, all unresolved Claims shall be considered at a single mediation session that shall occur after Substantial Completion but prior to Final Acceptance by the Owner.

§ 15.4 ~~ARBITRATION~~LITIGATION

§ 15.4.1 ~~If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.~~ **Litigation.** The Contractor may bring no litigation on Claims unless such Claims have been properly raised and considered in the procedures of this Article 15. The Contractor shall have the burden to demonstrate in any litigation that it has complied with all requirements of this Article 15. All unresolved Claims of the Contractor shall be waived and released unless the Contractor has complied with the time limits of the

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Contract Documents, and litigation is served and filed within the earlier of (a) 120 days after the Date of Substantial Completion approved in writing by the Owner or (b) ninety (90) days after Final Acceptance. This requirement cannot be waived except by an explicit written waiver signed by the Owner and the Contractor. The pendency of a mediation (the time period between the written mediation request and the date of mediation) shall toll these deadlines until the earlier of the mediator providing written notice to the parties of impasse or thirty (30) days after the date of the mediation session. Neither the Contractor nor a Subcontractor of any tier, whether claiming under a bond or lien statute or otherwise, shall be entitled to attorneys' fees directly or indirectly from the Owner (but may recover attorneys' fees from the bond or statutory retainage fund itself to the extent allowable under law).

§ 15.4.1.1 ~~A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.~~The Owner may join the Contractor as a party to any litigation or arbitration involving the alleged fault, responsibility, or breach of contract of the Contractor or Subcontractor of any tier.

~~**§ 15.4.2** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.~~

~~**§ 15.4.3** The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.~~

~~**§ 15.4.4 CONSOLIDATION OR JOINDER**~~

~~**§ 15.4.4.1** Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).~~

~~**§ 15.4.4.2** Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.~~

~~**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.~~

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Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the ___day of _____in the year 2021
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Longview School District No. 122
2715 Lilac Street
Longview, Washington 98632

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

The Architect:
(Name, legal status, address and other information)

The Owner and Contractor agree as follows.

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10 INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the entire Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date ~~of this Agreement unless a different date is stated below or provision is made for the date to be fixed~~ established in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

The notice to proceed is expected to be issued on or before _____, with on-site work commencing on _____.

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

N/A

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ~~( ) days from the date of commencement, or as~~ follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Init. /

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Portion of Work	Substantial Completion Date
All of the Work	

, subject to adjustments of this Contract Time as provided in the Contract ~~Documents.~~Documents, and shall achieve Final Completion no later than thirty (30) days after achieving Substantial Completion.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

If the Contractor does not Substantially Complete the Work by the date noted above, the Owner will be forced to incur substantial expenses for extended costs and to coordinate the Project work with school activities. For that reason, liquidated damages shall be assessed for each calendar day after the Contract Time that Substantial Completion is not timely achieved, in the amount of $_____ per calendar day. Liquidated Damages shall be assessed for each day that Final Completion is not timely achieved at $_____ per calendar day. These amounts are cumulative and shall both be assessed for any day that any one of these dates are not met.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ~~($),~~ _____ Dollars ($ _____) plus sales tax, subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 4.3 Unit prices, if ~~any:~~any; these descriptions are summary in nature, and the scope of this work is described in the Contract Documents:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit ($0.00)

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

See the Contract Documents.

§ 5.1.3 ~~Provided that an Application for Payment is received by the Architect not later than the day of a month, the~~ The Owner shall make payment of the certified amount to the Contractor ~~not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by~~

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~~the Owner not later than ( ) days after the Architect receives the Application for Payment.~~as provided in the Contract Documents.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent approved schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of Five percent (5.00 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored and insured off the site at a location agreed upon in writing), less retainage of Five percent (5.00 %);

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Architect or the Owner has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to ~~the full amount of the Contract Sum,~~ ninety-eight percent (98%) of the Contract Sum (see Section 9.2.5 of the A201 regarding the final two percent (2%) of the Contract Sum to be paid after Substantial Completion), less such amounts as the Architect shall determine for incomplete Work, ~~retainage applicable to such work and unsettled claims;~~ statutory retainage applicable to such work, unsettled claims, and other amounts specified in the Contract Documents; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

Per statute and the Contract Documents.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

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.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; ~~and~~

.2 a final Certificate for Payment has been issued by the ~~Architect.~~Architect; and

.3 Final Acceptance has occurred.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than ~~30 days after the issuance of the Architect's final Certificate for Payment, or as follows:~~thirty (30) days after completion of all requirements listed in the revised A201-2007 General Conditions.

§ 5.2.3 Retainage shall be paid according to statute and the Contract Documents.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

~~The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.~~

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

None.

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

~~[ ] Arbitration pursuant to Section 15.4 of AIA Document A201–2007~~

[X] Litigation in a court of competent jurisdiction

~~[ ] Other *(Specify)*~~

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

Payments due and unpaid under the Contract Documents shall bear interest as specified by RCW 39.76, not to exceed the Bank of America prime plus two percent per annum.

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§ 8.3 The Owner's representative:
(Name, address and other information)

§ 8.4 The Contractor's representative:
(Name, address and other information)

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

N/A

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and ~~Contractor.~~Contractor, as revised.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for ~~Construction.~~ Construction, as revised.

§ 9.1.3 ~~The Supplementary and other Conditions of the Contract:~~Any other Supplementary or other Conditions of the Contract are contained in the Project Manual dated _____:

~~Document~~	~~Title~~	~~Date~~	~~Pages~~

§ 9.1.4 The ~~Specifications:~~Specifications are those contained in the Project Manual and are as follows:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)
See the Attached Project Manual Sections

~~Section~~	~~Title~~	~~Date~~	~~Pages~~

§ 9.1.5 The ~~Drawings:~~Drawings are those referenced in the Project Manual and are as follows:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
See the Attached Index of Drawings

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~~Number~~	~~Title~~	~~Date~~

§ **9.1.6** The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ **9.1.7** Additional documents, if any, forming part of the Contract Documents:

~~.1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:~~

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

See Revised General Conditions.
Department of Labor & Industries Prevailing Wage Rates.

ARTICLE 10 INSURANCE AND BONDS
The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.
(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond	Limit of liability or bond amount ($0.00)
See Revised General Conditions	See Revised General Conditions

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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SECTION 01 1000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: MARK MORRIS SHOP CLASSROOM

B. Owner's Name: Kelso School District No. 458.

C. The Project consists of the renovation of the existing computer and stem lab updating the fniishes, building envelope, electrical, and mechanical systems..

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of demolition and removal work is indicated on drawings and specified in Section 02 4100.

B. Scope of alterations work is indicated on drawings.

C. Owner will remove the following items before start of work:
   1. All existing shop equipment, funriture, technology equipment, and tool storage..

D. Contractor shall remove and store the following prior to start of work, for later reinstallation by Contractor:
   1. Existing whiteboards and electrical equipment as stated on electrical drawings..

1.04 WORK BY OWNER

A. Owner will remove the following from the work space prior to construction:
   1. Movable desks, chairs, tables.
   2. Equipment and printers.
   3. Video projector.

B.

1.05 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building for limited summer activities.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.
   1. Locate and conduct construction activities in ways that will limit disturbance to site.

B. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Work by Others.

C. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

D. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
   3. Prevent accidental disruption of utility services to other facilities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Change procedures.

D. Correlation of Contractor submittals based on changes.

E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

A. General Conditions: Additional requirements for progress payments, final payment, changes in the Work.

1.03 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.

C. Forms filled out by hand will not be accepted.

D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

E. Include within each line item, a direct proportional amount of Contractor's overhead and profit.

F. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Not more frequently than once per month.

B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.

C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.

D. Forms filled out by hand will not be accepted.

E. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Percentage of Completion.
   9. Balance to Finish.
   10. Retainage.

F. Execute certification by signature of authorized officer.

G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.

I. Submit an electronic copy of each Application for Payment.

J. Include the following with the application:
   1. Transmittal letter as specified for submittals in Section 01 3000.
   2. Construction progress schedule, revised and current as specified in Section 01 3000.

K. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.

B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 5 days.

D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.

E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation as approved by the Architect.
   2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
   3. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.

F. Substantiation of Costs: Provide full information required for evaluation.
   1. On request, provide the following data:
      a. Quantities of products, labor, and equipment.
      b. Taxes, insurance, and bonds.
      c. Overhead and profit.
      d. Justification for any change in Contract Time.
      e. Credit for deletions from Contract, similarly documented.
   2. Support each claim for additional costs with additional information:
      a. Origin and date of claim.
      b. Dates and times work was performed, and by whom.
      c. Time records and wage rates paid.
      d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
   3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

I. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

1.06 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified in Section 01 7000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.

B. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
   4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   5. Waives claims for additional costs or time extension that may subsequently become apparent.
   6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Forms included in the Project Manual are adequate for this purpose, and must be used.

D. Limit each request to a single proposed substitution item.
   1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:

B. Instructions to Bidders specifies time restrictions for submitting requests for substitutions during the bidding period, and the documents required.

C. Submittal Form (before award of contract):
   1. Submit substitution requests by completing the form attached to this section. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

B. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
   1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
   2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
   3. Bear the costs engendered by proposed substitution of:
      a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.

C. Substitutions will not be considered under one or more of the following circumstances:
   1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
   2. Without a separate written request.
   3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.
   1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 ATTACHMENTS

A. A Substitution Request form follows this Section.

END OF SECTION

SUBSTITUTION REQUEST FORM

SRF #:____

ARCHITECT: Collins Architectural Group,p.s.
950 12th Avenue, Suite 200
Longview, WA 98632

CONTRACTOR/MANUFACTURER: _____
_____
_____

PROJECT NAME: Longview School District
Mark Morris Shop Classroom Remodel

DATE OF REQUEST:_____

PROJECT #: 2021-12

The undersigned requests consideration of the following

SPECIFIED ITEM:_____

_____	_____	_____	_____
Section	Page	Paragraph	Description

PROPOSED SUBSTITUTION:_____

Attach complete technical data, including laboratory tests, if applicable.

Include complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installations.

Fill in Blanks Below:

1. Does the substitution affect dimensions shown on drawings? _____
2. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution? _____
3. What affect does substitution have on other trades? _____
4. Differences between proposed substitution and specified item? _____
5. Manufacturer's guarantees of the proposed and specified items are:
   ☐ SAME ☐ DIFFERENT (explain on attachment)

The undersigned further states that the function, appearance and quality of the Proposed Substitution are equivalent or superior to the Specified Item.

Signature_____

Firm_____

Address_____

_____

Date_____

Telephone_____

Attachments:

For use by Design Consultant:

☐ Accepted ☐ Accepted as noted

☐ Not Accepted ☐ Received too late

By_____

Date_____

Remarks_____

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.
B. Preconstruction meeting.
C. Construction progress schedule.
D. Submittals for review, information, and project closeout.
E. Number of copies of submittals.
F. Requests for Interpretation (RFI) procedures.
G. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: occupancy.
B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
C. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

3.01 PRECONSTRUCTION MEETING

A. Architect will schedule a meeting after Notice of Award.
B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.
C. Agenda:
   1. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   2. Designation of personnel representing the parties to Contract, and Architect.
   3. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   4. Scheduling.
   5. Safety orientation
   6. Public works requirements
D. Architect will record minutes and distribute copies electronically within two days after meeting to participants.

3.02 PROGRESS MEETINGS

A. Architect will schedule and administer meetings throughout progress of the Work at bi-weekly intervals.

B. Architect will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Job superintendent, major Subcontractors, Owner, Architect, as appropriate to agenda topics for each meeting.
   1. Contractor.
   2. Owner.
   3. Architect.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Coordination of projected progress.
   11. Maintenance of quality and work standards.
   12. Effect of proposed changes on progress schedule and coordination.
   13. Other business relating to work.

E. Architect will record minutes and distribute copies electronically to Contractor, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit schedule.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

3.04 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in the Contract Documents.

B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of the Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.

C. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.

D. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
   1. Official Project name and number, and any additional required identifiers established in Contract Documents.
   2. Discrete and consecutive RFI number, and descriptive subject/title.
   3. Issue date, and requested reply date.
   4. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).

E. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

F. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
   1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
   2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.

3.05 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.06 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Other types as indicated.

B. Submit for Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.

2. Retained samples will not be returned to Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
   3. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.

B. Shop Drawing Procedures:
   1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
   2. Do not reproduce the Contract Documents to create shop drawings.
   3. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.

C. Transmit each submittal with Letter of Transmittal Form.

D. Sequentially number each submittal. Submit revised submittals with original number and a sequential alphabetic suffix.

E. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

F. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

G. Deliver submittals to Architect at business address.

H. Schedule submittals to expedite the Project, and coordinate submission of related items.

I. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.

J. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

K. Provide space for Contractor and Architect review stamps.

L. When revised for resubmission, identify all changes made since previous submission.

M. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

N. Submittals not requested will not be recognized or processed.

3.10 SUBMITTAL REVIEW

A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.

D. Architect's and consultants' actions on items submitted for review:
   1. Authorizing purchasing, fabrication, delivery, and installation:
      a. "Approved", or language with same legal meaning.
      b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
         1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.

c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.

2. Not Authorizing fabrication, delivery, and installation:

E. Architect's and consultants' actions on items submitted for information:

1. Items for which no action was taken:
   a. "Received" - to notify the Contractor that the submittal has been received for record only.
2. Items for which action was taken:
   a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. References and standards.

C. Control of installation.

D. Tolerances.

E. Defect Assessment.

1.02 REFERENCE STANDARDS

1.03 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Designer's Qualification Statement: Submit for Architect's knowledge as contract administrator, or for Owner's information.
   1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
      a. Full name.
      b. Professional licensure information.
      c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.

C. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
   1. Include required product data and shop drawings.
   2. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
   3. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.

D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.05 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary sanitary facilities.

B. Temporary Controls: Barriers, enclosures, and fencing.

C. Security requirements.

D. Vehicular access and parking.

E. Waste removal facilities and services.

1.02 TEMPORARY UTILITIES

A. Owner will provide the following:
   1. Electrical power and metering, consisting of connection to existing facilities.
   2. Water supply, consisting of connection to existing facilities.

1.03 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Use of existing facilities in the building is not permitted.

C. Maintain daily in clean and sanitary condition.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 FENCING

A. Construction: Contractor's option.

1.06 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.07 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. Coordinate with Owner's security program.

1.08 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Designated existing on-site roads may be used for construction traffic.

E. Existing parking areas located at the west side of the work area may be used for construction parking.

1.09 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Re-use of existing products.

C. Transportation, handling, storage and protection.

D. Product option requirements.

E. Substitution limitations.

F. Procedures for Owner-supplied products.

G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: Lists of products to be removed from existing building.

B. Section 01 1000 - Summary: Identification of Owner-supplied products.

C. Section 01 2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

D. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

C. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is required.

1. See Section 01 1000 for list of items required to be salvaged for reuse and relocation.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Use of products having any of the following characteristics is not permitted:
   1. Containing lead, cadmium, or asbestos.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named. See form after Section 01 2500

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 01 2500 - Substitution Procedures.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Provide protection of stored materials and products against theft, casualty, or deterioration.

B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.

C. Store and protect products in accordance with manufacturers' instructions.

D. Store with seals and labels intact and legible.

E. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities, amounts, and unit counts.

F. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

G. For exterior storage of fabricated products, place on sloped supports above ground.

H. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

I. Comply with manufacturer's warranty conditions, if any.

J. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

K. Prevent contact with material that may cause corrosion, discoloration, or staining.

L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Cutting and patching.

D. Cleaning and protection.

E. Starting of systems and equipment.

F. Demonstration and instruction of Owner personnel.

G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.

C. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

1.03 PROJECT CONDITIONS

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

1.04 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.04 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.

3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.

C. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.
   3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
   1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
   2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

H. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

I. Clean existing systems and equipment.

J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

K. Do not begin new construction in alterations areas before demolition is complete.

L. Comply with all other applicable requirements of this section.

3.05 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.06 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.07 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.08 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.09 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

3.10 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

B. Testing, adjusting, and balancing HVAC systems: See Section 23 0593 - Testing, Adjusting, and Balancing for HVAC.

3.11 FINAL CLEANING

A. Execute final cleaning prior to Substantial Completion.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Clean filters of operating equipment.

G. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.12 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect.

B. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

C. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

D. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

E. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

F. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

G. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

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

B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. 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.
   4. Submit one set of revised final documents in final form within 10 days after final inspection. Include a PDF version.

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

3.01 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 depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Field changes of dimension and detail.
   4. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: 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.

3.03 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. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

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 trouble shooting; 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.

3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Operation and maintenance data.
      c. Field quality control data.
      d. Photocopies of warranties and bonds.

3.05 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 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.

END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

B. Abandonment and removal of existing utilities.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01 1000 - Summary: Sequencing and staging requirements.

C. Section 01 1000 - Summary: Description of items to be removed by Owner.

D. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

E. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

F. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

G. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SCOPE

A. Remove paving and curbs as required to accomplish new work.

B.

C. Remove other items indicated, for salvage and relocation.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Protect existing elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

B. Minimize production of dust due to demolition operations.

C. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

D. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 EXISTING UTILITIES

A. Protect existing utilities to remain from damage.

B. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

C. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

D. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

E. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.

C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

D. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Floors and slabs on grade.

B. Concrete curing.

1.02 REFERENCE STANDARDS

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

B. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

C. ACI 305R - Guide to Hot Weather Concreting; 2010.

D. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2018.

E. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2017a.

F. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2013.

G. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2011 (Reapproved 2017).

H. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Mix Design: Submit proposed concrete mix design.

C. Samples: Submit samples of underslab vapor retarder to be used.

1.04 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

B. Follow recommendations of ACI 305R when concreting during hot weather.

PART 2 PRODUCTS

2.01 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

2.02 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:

1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single ply polyethylene is prohibited.

2.03 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.

2.04 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

C. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 pounds per square inch.
   2. Water-Cement Ratio: Maximum 40 percent by weight.
   3. Maximum Aggregate Size: 5/8 inch.

2.05 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Coordinate placement of embedded conduit in new slab.

B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use latex bonding agent only for non-load-bearing applications.

C. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

3.04 CONCRETE FINISHING

3.05 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.06 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

END OF SECTION

SECTION 06 4100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Plastic Laminate window sills and aprons.

1.02 RELATED REQUIREMENTS

A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

A. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.

C. Product Data: Provide data for hardware accessories.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.07 FIELD CONDITIONS

A. During and after installation of window sills, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Window sills and aprons:
   1. Sill Thickness: 1-1/4 inch.
   2. Apron Thickness: 1/2 inch.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood, certified or labeled; see Section 01 6000.

C. Provide wood harvested within a 500 mile radius of the project site.

2.03 LAMINATE MATERIALS

A. Manufacturers:
   1. Formica Corporation: www.formica.com/#sle.

2. Panolam Industries International, Inc; Nevamar: www.nevamar.com/#sle.
3. Wilsonart LLC: www.wilsonart.com/#sle.
4. Substitutions: See Section 01 6000 - Product Requirements.

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

C. Provide specific types as indicated.
1. Horizontal Surfaces: HGS, nominal thickness, color as selected, finish as indicated.
2. Vertical Surfaces: VGS, nominal thickness, color as selected, finish as indicated.
3. Cabinet Liner: CLS, 0.020 inch nominal thickness, through color, finish as indicated.
4. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.04 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish of width to match component thickness.
1. Color: To match selected laminate.

2.05 FABRICATION

A. Assembly: Shop assemble sill pieces for delivery to site in units easily handled and to permit passage through building openings.

B. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises.
1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

END OF SECTION

SECTION 07 2100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation at exterior wall behind Fiber-Cement Siding wall finish.

B. Batt insulation and vapor retarder in exterior wall construction.

C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers: Separate air barrier and vapor retarder materials.

B. Section 09 2116 - Gypsum Board Assemblies: Metal Stud framing.

1.03 REFERENCE STANDARDS

A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.

B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

D. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies; 2017.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation Over Metal Stud Framed Walls, Continuous: Polyisocyanurate board.

B. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

2.02 FOAM BOARD INSULATION MATERIALS

A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
   1. Classifications:
      a. Type II: Faced with either organic felt facers or glass fiber mat facers on both major surfaces of the core foam.
         1) Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of core foam.
         2) Compressive Strength: Classes 1-2-3, Grade 1 - 16 psi (110 kPa), minimum.
         3) Thermal Resistance, R-value: At 1-1/2 inch thick; Class 1, Grades 1-2-3 - 8.4 (1.48), minimum, at 75 degrees F.
   2. Board Size: 48 inch by 96 inch.
   3. Board Thickness: 2.0 inch.
   4. Board Edges: Square.
   5. Products:

a. Atlas Roofing Corporation; ACFoam-II Polyiso Roof Insulation: www.atlasroofing.com/#sle.
b. GAF; EnergyGuard Polyiso Insulation: www.gaf.com/#sle.
c. GAF; EnergyGuard HD PLUS Polyiso Insulation: www.gaf.com/#sle.
d. Rmax Inc; ECOMAXci FR: www.rmax.com/#sle.
e. Substitutions: See Section 01 6000 - Product Requirements.

2.03 BATT INSULATION MATERIALS

A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.

B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
4. Formaldehyde Content: Zero.
5. Thermal Resistance: R-value of 15.
6. Facing: Asphalt treated Kraft paper, one side.
7. Products:
a. CertainTeed Corporation: www.certainteed.com/#sle.
b. Johns Manville: www.jm.com/#sle.
c. Owens Corning Corporation; EcoTouch PINK FIBERGLAS Insulation: www.ocbuildingspec.com/#sle.
d. Substitutions: See Section 01 6000 - Product Requirements.

2.04 ACCESSORIES

A. Sheet Vapor Retarder: See Section 07 2500.

B. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
1. Application: Sealing of interior circular penetrations, such as pipes or cables.
2. Width: Are required for application.

C. Tape: Polyester self-adhering type, 2 inch wide.

D. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT EXTERIOR WALLS

A. Install rigid insulation directly to exterior grade sheathing at 16 inches on center with manufacturer recommended mechanical fasteners into metal framing, and tape joints with manufacturer's minimum 4 inch wide sealant tape; comply with ASTM E2357.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.

B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. Tape insulation batts in place.

F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

G. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member

H. Tape seal tears or cuts in vapor retarder.

I. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

3.04 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water-Resistive Barrier: Under exterior wall cladding, over sheathing or other substrate; not air tight or vapor retardant.

B. Vapor Retarders: Materials to make exterior walls and joints around frames of openings in exterior walls water vapor resistant and air tight.

C. Air Barriers: Materials that form a system to stop passage of air through exterior walls and joints around frames of openings in exterior walls.

1.02 RELATED REQUIREMENTS

A. Section 07 2100 - Thermal Insulation: Vapor retarder installed in conjunction with batt insulation.

1.03 DEFINITIONS

A. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.

B. Air Barrier: Air tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces. Note: For the purposes of this specification, vapor impermeable air barriers are classified as vapor retarders.

C. Vapor Retarder: Air tight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.

1. Water Vapor Permeance: For purposes of conversion, 57.2 ng/(Pa s sq m) = 1 perm.

1.04 REFERENCE STANDARDS

A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2017.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.

D. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.

E. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials; 2013.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on material characteristics.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

2.02 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

A. Air Barrier Sheet, Mechanically Fastened:

1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.

2. Water Vapor Permeance: 5 perms, minimum, when tested in accordance with ASTM E96/E96M Procedure A (Desiccant Method) at 73.4 degrees F.
3. Ultraviolet (UV) and Weathering Resistance: Approved in writing by manufacturer for up to 180 days of weather exposure.
4. Surface Burning Characteristics: Flame spread index of 25 or less, and smoke developed index of 50 or less, when tested in accordance with ASTM E84.
5. Seam and Perimeter Tape: Polyethylene self adhering type, mesh reinforced, 2 inches wide, compatible with sheet material; unless otherwise specified.
6. Manufacturers:
   a. DuPont Building Innovations; Tyvek Commercial Wrap with Tyvek Tape: www.dupont.com/#sle.
   b. Fiberweb, Inc; Typar MetroWrap: www.typar.com/#sle.
   c. Fortifiber Building Systems Group; WeatherSmart: www.fortifiber.com/#sle.
   d. Substitutions: See Section 01 6000 - Product Requirements.

2.03 VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

A. Vapor Retarder Sheet: Multi-layer, fabric-, cord-, grid-, or aluminum-reinforced polyethylene or equivalent, complying with ASTM E1745, Class A; stated by manufacturer as suitable for application indicated. Single ply polyethylene is prohibited.
   1. Water Vapor Permeance: 0.3 perm, maximum, when tested in accordance with ASTM E96/E96M.
   2. Seam and Perimeter Tape: Polyethylene self adhering type, mesh reinforced, 2 inches wide, compatible with sheet material.

2.04 ACCESSORIES

A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.

B. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.

C. Vapor Retarder Tape: Coated polyester film with acrylic adhesive backing; pressure sensitive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

3.03 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. Water-Resistive Barriers: Install continuous barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.

C. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

D. Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

E. Mechanically Fastened Sheets - On Exterior:
   1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
   2. Overlap seams as recommended by manufacturer but at least 6 inches.

3. Overlap at outside and inside corners as recommended by manufacturer but at least 12 inches.
4. For applications specified to be air tight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners recommended by the manufacturer.
5. Install air barrier and vapor retarder underneath the jamb flashings.
6. Install head flashings under weather barrier.
7. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.

F. Mechanically Fastened Sheets - Vapor Retarder On Interior:
1. When insulation is to be installed in assembly, install vapor retarder over insulation.
2. Anchor to wood framing using large-headed nails or staples at 12 to 18 inches on center along each framing member covered; cover fasteners with seam tape.
3. Seal seams, laps, perimeter edges, penetrations, tears, and cuts with self-adhesive tape, making air tight seal.
4. Locate laps at a framing member; at laps fasten one sheet to framing member then tape overlapping sheet to first sheet.
5. Seal entire perimeter to structure, window and door frames, and other penetrations.
6. Where conduit, pipes, wires, ducts, outlet boxes, and other items are installed in insulation cavity, pass vapor retarder sheet behind item but over insulation and maintain air tight seal.

G. Openings and Penetrations in Exterior Weather Barriers:
1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

END OF SECTION

SECTION 07 4646
FIBER-CEMENT SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiber-cement siding panels.

B. Metal Furring Channels

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers: Weather barrier under siding.

B. Section 07 9200 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

C. Section 09 9113 - Exterior Painting: Field painting.

1.03 REFERENCE STANDARDS

A. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets; 2008 (Reapproved 2016).

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store products under waterproof cover and elevated above grade, on a flat surface.

PART 2 PRODUCTS

2.01 FIBER-CEMENT SIDING

A. Panel Siding: Vertically oriented panels made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186, Type A, Grade II; with machined edges, for nail attachment.
   1. Texture: Smooth.
   2. Length (Height): []s required.
   3. Width: 48 inches.
   4. Thickness: 5/16 inch, nominal.
   5. Finish: Unfinished.
   6. Warranty: 50 year limited; transferable.
   7. Manufacturers:
      a. Allura, a division of Plycem USA, Inc: www.allurausa.com/#sle.
      b. James Hardie Building Products, Inc: www.jameshardie.com/#sle.
      c. Nichiha USA, Inc: www.nichiha.com/#sle.
      d. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

A. Furring Strips: Galvanized metal hat channels.

B. Fasteners: Galvanized or corrosion resistant; length as required to penetrate minimum 1-1/4 inch.

C. Sealant: Elastomeric, polyurethane or silyl-terminated polyether/polyurethane, and capable of being painted.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrate, clean and repair as required to eliminate conditions that would be detrimental to proper installation.

B. Verify that weather barrier has been installed over substrate completely and correctly.

C. Do not begin until unacceptable conditions have been corrected.

D. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions and recommendations.
   1. Read warranty and comply with terms necessary to maintain warranty coverage.
   2. Touch up field cut edges before installing.
   3. Pre-drill nail holes if necessary to prevent breakage.

B. Over Foam Sheathing: Read and comply with sheathing manufacturer's recommendations.
   1. For sheathing greater than 1 inch thickness, install vertical furring strips over studs and fasten siding through furring and into studs.

C. Over Steel Studs: Use hot-dipped galvanized self-tapping screws, with the points of at least three screws penetrating each stud the panel crosses and at panel ends.

D. Allow space for thermal movement between both ends of siding panels that butt against trim; seal joint between panel and trim with specified sealant.

E. Do not install siding less than 6 inches from surface of ground nor closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.

F. After installation, seal joints around penetrations, and paint exposed cut edges.

G. Finish Painting: Refer to Section 09 9113.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings.

B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007, with Editorial Revision (2012).

E. CDA A4050 - Copper in Architecture - Handbook; current edition.

F. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge, (0.0239) inch thick base metal, shop pre-coated with PVDF coating.
   1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
   2. Color: As selected by Architect from manufacturer's standard colors.

2.02 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate cleats of Pre-finished galvanized steel type sheet metal, minimum 6 inches wide, interlocking with sheet.

C. Form pieces in longest possible lengths.

D. Hem exposed edges on underside 1/4 inch; miter and seam corners.

E. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

F. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.

2.03 ACCESSORIES

A. Fasteners: Galvanized steel, with soft neoprene washers.

B. Primer: Zinc chromate type.

C. Concealed Sealants: Non-curing butyl sealant.

D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.

E. Plastic Cement: ASTM D4586/D4586M, Type I.

PART 3 EXECUTION

3.01 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Install surface mounted reglets true to lines and levels, and seal top of reglets with sealant.

3.02 INSTALLATION

A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..

B. Apply plastic cement compound between metal flashings and felt flashings.

C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

D. Seal metal joints watertight.

END OF SECTION

SECTION 07 9200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers: Sealants required in conjunction with air barriers and vapor retarders.

B. Section 08 8000 - Glazing: Glazing sealants and accessories.

1.03 REFERENCE STANDARDS

A. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

PART 2 PRODUCTS

2.01 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

SECTION 08 0671
DOOR HARDWARE SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preliminary schedule of door hardware sets for swinging doors as indicated on drawings.

1.02 RELATED REQUIREMENTS

A. Section 08 7100 - Door Hardware: Requirements to comply with in coordination with this section.

1.03 REFERENCE STANDARDS

A. BHMA A156.18 - American National Standard for Materials and Finishes; 2016.

B. DHI (H&S) - Sequence and Format for the Hardware Schedule; 1996.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Comply with submittal requirements as indicated in Section 08 7100.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Only manufacturers listed in Door Hardware Schedule or Section 08 7100 are considered acceptable, unless noted otherwise.

B. Obtain each type of door hardware as indicated from a single manufacturer and single supplier.

C. Manufacturer's Abbreviations: Coordinate with manufacturers listed in Section 08 7100.
   1. BAS - Best Access Systems.
   2. DMA - Dorma.
   3. DKB - Dormakaba
   4. IVE - Ives.
   5. LCN - LCN.
   6. NGP - National Guard Products.
   7. PEM - Pemko.
   8. SCH - Schlage.
   9. ZRO - Zero Industries, Inc.

2.02 FINISHES

A. Finishes: Complying with BHMA A156.18.
   1. Code 626: Satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D).

PART 3 EXECUTION

3.01 DOOR HARDWARE SCHEDULE

A. Organize listing of door hardware components within each hardware set in compliance with 10-Part scheduling sequence indicated in DHI (H&S), unless otherwise indicated.

3.02 HARDWARE SET # 1:

A. For use on the door between Stem Lab and Adjacent Welding Shop.

B. Provide for each Single (SGL) door(s).

UNITS	ITEM	DESCRIPTION	FINISH	MFR
3	Hinges	IVES 5BB1HW 4.5 x 4.5 (Verify existing size)	626	IVE
1	Entrance/Office lock	9K37AB15DS3626	626	BAS/DKB
1	Closer	4111 CUSH	689	LCN
1	Kickplate	8400 10" x 2" LDW B-CS	630	IVE
1	Gasketing (for sound)	488S-BK-3070	BLK	ZRO

3.03 HARDWARE SET # [2]:

A. For use on each of the doors to Office and Storage

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
1		Entrance/Office Lock	9K37AB15DS3626	626	BAS/DKB

3.04 HARDWARE SET # 3:

A. For use on each of the doors to the exterior.

B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR
1		Intruder	9K37IN15DS3626	626	BAS/DKB
1		Closer with Stop Arm	4111 SCUSH	689	LCN

END OF SECTION

SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and borrowed lite frames.

B. Sound-rated hollow metal doors and frames.

1.02 RELATED REQUIREMENTS

A. Section 08 7100 - Door Hardware.

B. Section 08 8000 - Glazing: Glass for borrowed lites.

C. Section 09 9123 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

A. HMMA: Hollow Metal Manufacturers Association.

B. SDI: Steel Door Institute.

1.04 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.

D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.

E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.

G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2017.

H. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

I. ASTM E413 - Classification for Rating Sound Insulation; 2016.

J. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2016.

K. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

L. NAAMM HMMA 805 - Recommended Selection and Usage Guide for Hollow Metal Doors and Frames; 2012.

M. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.

N. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.

O. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2007.

P. NAAMM HMMA 860 - Guide Specifications for Hollow Metal Doors and Frames; 2018.

Q. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.

R. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2013.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Maintain at project site copies of reference standards relating to installation of products specified.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
   2. Accessibility: Comply with ICC A117.1 and ADA Standards.
   3. Door Edge Profile: Manufacturers standard for application indicated.
   4. Typical Door Face Sheets: Flush.
   5. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements. Match existing hardware prep at frame.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.02 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.

B. Sound-Rated Interior Doors:
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 2 - Heavy-duty.
      b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.

c. Model 1 - Full Flush.
d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.

2. Sound Transmission Class (STC) Rating of Door and Frame Assembly: STC of 39, minimum, calculated in accordance with ASTM E413, and tested in accordance with ASTM E90.
3. Door Core Material: Manufacturer's standard construction as required to meet acoustic requirements indicated.
4. Door Thickness: 1-3/4 inch.
5. Sound Seals: Refer to Section 08 7100.

2.03 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Frame Finish: Factory primed and field finished.

C. Interior Borrowed Lite Frames, Non-Fire Rated: Face welded type.
1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.

2.04 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.05 ACCESSORIES

A. Glazing: As specified in Section 08 8000, factory installed.

B. Removable Stops: Formed sheet steel, shape as indicated on drawings, mitered or butted corners; prepared for countersink style tamper proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Coordinate frame anchor placement with wall construction.

C. Install door hardware as specified in Section 08 7100.

D. Comply with glazing installation requirements of Section 08 8000.

3.03 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.04 ADJUSTING

A. Adjust for smooth and balanced door movement.

B. Adjust sound control doors so that seals are fully engaged when door is closed.

C. Test sound control doors for force to close, latch, and unlatch; adjust as necessary in compliance with requirements.

END OF SECTION

SECTION 08 3100
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall mounted access units.

1.02 RELATED REQUIREMENTS

A. Section 09 2116 Gypsum Board Assemblies: Openings in partitions.

B. Section 09 9123 - Interior Painting: Field paint finish.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

B. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

A. Wall-Mounted Units:
   1. Location: As required to provide access to valves and electrical LB's where concealed behind new wall surfaces. .
   2. Size: Provide (4) 12 by 12 inches in size, (2) 24" x 24" in size.
   3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   4. Wall Mounting Criteria: Provide surface-mounted face frame and door surface flush with frame surface.

2.02 WALL MOUNTED ACCESS UNITS

A. Manufacturers:
   1. Activar Construction Products Group, Inc. - JL Industries: www.activarcpg.com/#sle.
      a. Multipurpose Access Panel: Activar/JL Industries TM.
   2. ACUDOR Products Inc: www.acudor.com/#sle.
      a. Wall Mounted Units: ACUDOR.
   3. Best Access Doors: www.bestaccessdoors.com/#sle.
      a. Universal Access Panel Drywall: Best Access Doors; Universal Flush Design.
   4. Karp Associates, Inc: www.karpinc.com/#sle.
   5. Milcor, Inc: www.milcorinc.com/#sle.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. Wall Mounted Units: Factory fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
   1. Material: Steel.
   2. Style: Exposed frame with door surface flush with frame surface.
   3. Door Style: Single thickness with rolled or turned in edges.

4. Frames: 16 gauge, 0.0598 inch, minimum thickness.
5. Double-Skinned Hollow Steel Sheet Door Panels: 16 gauge, 0.059 inch, minimum thickness, on both sides and along each edge.
6. Insulation: Non-combustible mineral wool or glass fiber.
7. Steel Finish: Primed.
8. Hardware:
    a. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
    b. Handle: No handle.
    c. Latch/Lock: Screw driver slot for quarter turn cam latch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.

B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to proceeding with this work.

B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install frames plumb and level in openings, and secure units rigidly in place.

C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

SECTION 08 3613
SECTIONAL DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Overhead sectional door manually operated.

B. Operating hardware and supports.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

1.03 REFERENCE STANDARDS

A. DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors; 2011.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

C. Product Data: Show component construction, anchorage method, and hardware.

D. Manufacturer's Installation Instructions: Include any special procedures required by project conditions.

E. Operation Data: Include normal operation, troubleshooting, and adjusting.

F. Maintenance Data: Include data for motor and transmission, shaft and gearing, lubrication frequency, spare part sources.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals for warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for electric motor and transmission.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Therma Series, Insulated manufactured by Northwest Door Company.

B. Other Acceptable Manufacturers - Sectional Doors:
   1. C.H.I. Overhead Doors: www.chiohd.com/#sle.
   2. Clopay Building Products: www.clopaydoor.com/#sle.
   3. Wayne-Dalton, a Division of Overhead Door Corporation: www.wayne-dalton.com/#sle.
   4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 STEEL DOORS

A. Steel Doors: Flush steel, insulated; standard lift operating style with track and hardware; complying with DASMA 102, Commercial application.
   1. Door Nominal Thickness: 2 inches thick.
   2. Thermal Resistance: Minimum R10.4
   3. Exterior Finish: Factory finished with acrylic baked enamel; color as selected by Architect.
   4. Interior Finish: Factory finished with acrylic baked enamel; color as selected from manufacturers standard line.
   5. Manual Operation: Pull rope.

B. Door Panels: Steel construction; outer steel sheet of 26 gauge, 0.0217 inch minimum thickness, flush profile; inner steel sheet of 26 gauge, 0.0217 inch minimum thickness, flat profile; core reinforcement sheet steel roll formed to channel shape, rabbeted weather joints at meeting rails; polyurethane insulation.

2.03 COMPONENTS

A. Track: Rolled galvanized steel, 0.090 inch minimum thickness; 2 inch wide, continuous one piece per side; galvanized steel mounting brackets 1/4 inch thick.

B. Sill Weatherstripping: Resilient hollow rubber strip, one piece; fitted to bottom of door panel, full length contact.

C. Jamb Weatherstripping: Roll formed steel section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.

D. Head Weatherstripping: EPDM rubber seal, one piece full length.

E. Panel Joint Weatherstripping: Neoprene foam seal, one piece full length.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

3.02 PREPARATION

A. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

B. Apply primer to wood frame.

3.03 INSTALLATION

A. Install door unit assembly in accordance with manufacturer's instructions.

B. Anchor assembly to wall construction and building framing without distortion or stress.

C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

D. Fit and align door assembly including hardware.

3.04 TOLERANCES

A. Maximum Variation from Plumb: 1/16 inch.

B. Maximum Variation from Level: 1/16 inch.

C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 ft straight edge.

D. Maintain dimensional tolerances and alignment with adjacent work.

3.05 ADJUSTING

A. Adjust door assembly for smooth operation and full contact with weatherstripping.

3.06 CLEANING

A. Clean doors and frames and glazing.

B. Remove temporary labels and visible markings.

END OF SECTION

SECTION 08 5313
VINYL WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Vinyl-framed, factory-glazed windows.

B. Operating hardware.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers: Sealing frames to weather barrier installed on adjacent construction.

B. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

1.03 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights; 2017.

B. AAMA 701/702 - Combined Voluntary Specifications for Pile Weatherstrip and Replaceable Fenestration Weatherseals; 2011.

C. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights; 2007 (Reapproved 2016).

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide component dimensions, anchors, fasteners, glass, and internal drainage.

C. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, and installation requirements.

D. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
   1. Evidence of AAMA Certification.
   2. Evidence of WDMA Certification.
   3. Evidence of CSA Certification.
   4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

B. Jig, brace, and box the window frame assemblies for transport to minimize flexing of members or joints.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Provide five year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same. Include coverage for degradation of color finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Vinyl Windows:
   1. Alside, Inc: www.alside.com/#sle.
   2. Milgard: www.milgard.com/#sle.
   3. Certainteed: www.certainteed.com/#sle

2.02 DESCRIPTION

A. Vinyl Windows: Factory fabricated frame and sash members of extruded, hollow, ultra-violet-resistant, polyvinyl chloride (PVC) with integral color; with factory-installed glazing, hardware, related flashings, anchorage and attachment devices.
   1. Configuration: As indicated on drawings.
      a. Product Type: H - Hung window, vertically sliding in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
   2. Color: White.
   3. Size to fit openings with minimum clearance around perimeter of assembly providing necessary space for perimeter seals.
   4. Operable Units: Double weatherstripped.
   5. Framing Members: Fusion welded corners and joints, with internal reinforcement where required for structural rigidity; concealed fasteners.
   6. System Internal Drainage: Drain to exterior side by means of weep drainage network any water entering joints, condensation within glazing channel, or other migrating moisture within system.
   7. Glazing Stops, Trim, Flashings, and Accessory Pieces: Formed of rigid PVC, fitting tightly into frame assembly.
   8. Mounting Flange: Integral to frame assembly, providing weather stop at entire perimeter of frame.

2.03 PERFORMANCE REQUIREMENTS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
   1. Performance Class (PC): Heavy Commercial.

B. Design Pressure: In accordance with applicable codes.

C. Overall Thermal Transmittance (U-value): 0.40, maximum, including glazing, measured on window sizes required for this project.

2.04 COMPONENTS

A. Glazing: Insulated double pane, annealed glass, clear, low-E coated, argon filled, with glass thicknesses as recommended by manufacturer for specified wind conditions.

B. Frame Depth: 2-11/16 inches.

C. Operable Sash Weatherstripping: Wool pile; permanently resilient, profiled to maintain weather seal in accordance with AAMA 701/702.

D. Exterior Window Sills: Refer to drawings.

E. Sealants for Setting Window Sill Pan Flashing: Provide butyl tape, non-hardening butyl, polyurethane, or silicone sealant; in compliance with ASTM E2112 installation practices.

2.05 HARDWARE

A. Vertical Sliding Sash: Metal and nylon spiral friction slide cylinder, provide two for each sash and jamb.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify wall openings and adjoining air and vapor seal materials are ready to receive this work.

3.02 INSTALLATION

A. Install window unit assemblies in accordance with manufacturers instructions and applicable building codes.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities as necessary.

C. Align window plumb and level, free of warp or twist, and maintain dimensional tolerances and alignment with adjacent work.

D. Set sill members and sill flashing in continuous bead of sealant.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.

3.04 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.05 CLEANING

A. Remove protective material from pre-finished surfaces.

B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

C. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer and appropriate for application indicated.

END OF SECTION

SECTION 08 7100
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for hollow metal doors.

B. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

A. Section 08 0671 - Door Hardware Schedule: Schedule of door hardware sets.

B. Section 08 1113 - Hollow Metal Doors and Frames.

1.03 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

B. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; 2017.

C. BHMA A156.4 - American National Standard for Door Controls - Closers; 2013.

D. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Keying:
   1. Coordinate with Owner for keying of doors tied to the school district's masterkey system.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
   1. Applicable provisions of federal, state, and local codes.
   2. Accessibility: ADA Standards and ICC A117.1.

D. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. Provide locksets with full size interchangeable cores. Ship keyed cores directly to Owner. Refer to Section 08 0671 for listing of hardware sets.

2.02 CYLINDRICAL LOCKS

A. Manufacturers:
   1. Schlage, an Allegion brand: www.allegion.com/us/#sle.

B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch diameter.
   2. Latchbolt Throw: 1/2 inch, minimum.
   3. Backset: 2-3/4 inch unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.
   5. Provide lock function as noted in Section 08 0671 Door Hardware Schedule.

2.03 CLOSERS

A. Manufacturers; Surface Mounted:
   1. DORMA USA, Inc; 7400 Series, 8600 Series, 8900 Series, and TS93: www.dorma.com/#sle.
   2. LCN, an Allegion brand: www.allegion.com/us/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: Surface mounted to door.
   2. Provide door closer where scheduled.

2.04 FINISHES

A. Finishes: Identified in Section 08 0671 - Door Hardware Schedule.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work, doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

3.03 ADJUSTING

A. Adjust work under provisions of Section 01 7000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.04 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

END OF SECTION

SECTION 08 8000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Glazing units.

B. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 08 1113 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

B. Section 08 5113 - Aluminum Windows: Glazing provided by window manufacturer.

C. Section 08 5313 - Vinyl Windows: Glazing provided by window manufacturer.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015.

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2015).

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM C1036 - Standard Specification for Flat Glass; 2016.

F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

G. GANA (GM) - GANA Glazing Manual; 2008.

H. GANA (SM) - GANA Sealant Manual; 2008.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM) for glazing installation methods.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

PART 2 PRODUCTS

2.01 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
   2. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
   3. Thicknesses: 1/4 inch.

2.02 GLAZING COMPOUNDS

A. Type GC-2 - Butyl Sealant: Single component; ASTM C920, Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

2.03 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape: Closed cell polyvinyl chloride (PVC) foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to effect an air barrier and vapor retarder seal.

D. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.

F. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.

G. Carefully trim protruding tape with knife.

3.05 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.06 PROTECTION

A. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal stud wall framing.

B. Gypsum sheathing.

C. Gypsum wallboard.

D. Joint treatment and accessories.

E. Acoustic (sound-dampening) accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers: Water-resistive barrier over sheathing.

B. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016, with Supplement (2018).

B. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014, with Editorial Revision (2015).

E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.

F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2017a.

G. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.

H. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.

I. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.

J. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing; 2013a.

K. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

L. GA-216 - Application and Finishing of Gypsum Panel Products; 2016.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

PART 2 PRODUCTS

2.01 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. ClarkDietrich: www.clarkdietrich.com/#sle.
   2. Jaimes Industries: www.jaimesind.com/#sle.
   3. Marino: www.marinoware.com/#sle.
   4. SCAFCO Corporation: www.scafco.com/#sle.
   5. Steel Construction Systems: www.steelconsystems.com/#sle.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
   1. Studs: C-shaped with knurled or embossed faces.
   2. Runners: U shaped, sized to match studs.
   3. Furring Members: Zee-shaped sections, minimum depth of 2 inch.

C. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws, and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
   1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100.
   2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot-dipped galvanized coating.

2.02 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. American Gypsum Company: www.americangypsum.com/#sle.
   2. CertainTeed Corporation: www.certainteed.com/#sle.
   3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
   4. National Gypsum Company: www.nationalgypsum.com/#sle.
   5. USG Corporation: www.usg.com/#sle.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
   1. Application: Exterior sheathing, unless otherwise indicated.
   2. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
   3. Core Type: Regular.
   4. Type X Thickness: 5/8 inch.
   5. Edges: Square.

2.03 Gypsum Wallboard ACCESSORIES

A. Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
   1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
   2. Tape Thickness: 1/4 inch.
   3. Products:
      a. Armacell LLC; ArmaSound MTD: www.armacell.us/#sle.
      b. JCW Acoustic Supplies: Acoustic Isolation Stirp.
      c. Substitutions: See Section 01 6000 - Product Requirements.

B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.

C. Water-Resistive Barrier: As specified in Section 07 2500.

D. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
   1. Corner Beads: Low profile, for 90 degree outside corners.
   2. L-Trim[]: Sized to fit 5/8 inch thick gypsum wallboard.

E. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Studs: Space studs at 16 inches on center.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

C. Standard Wall Furring: Install at masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
   1. Orientation: Vertical.
   2. Spacing: As indicated.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Sound Isolation Tape: Apply to vertical studs and top and bottom tracks/runners in accordance with manufacturer's instructions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Place continuous bead at perimeter of each layer of gypsum board.
   2. Seal around all penetrations.

3.04 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.

C. Double-Layer, Nonrated: Use gypsum board for first layer, placed [] to framing or furring members, with ends and edges occurring over firm bearing. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
   1. Paper-Faced Sheathing: Immediately after installation, protect from weather by application of water-resistive barrier.

E. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double-layer assemblies, which may be installed by means of adhesive lamination.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Corner Beads: Install at external corners, using longest practical lengths.

B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

C. Sound Isolation Tape: Install Acoustic Isolation tape between the new furring and existing CMU at the wall between this project area and the adjacent welding shop.

3.06 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 6519
RESILIENT TILE FLOORING - METROFLOR

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring.

B. Installation accessories:
   1. Adhesives.

1.02 REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 2016a.

B. ASTM E989 - Standard Classification for Determination of Impact Insulation Class (IIC); 2006 (Reapproved 2012).

C. ASTM F137 - Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus; 2008 (Reapproved 2013).

D. ASTM F410 - Standard Test Method for Wear Layer Thickness of Resilient Floor Coverings by Optical Measurement; 2008 (Reapproved 2013).

E. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2017.

F. ASTM F1514 - Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change; 2003 (Reapproved 2013).

G. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile; 2013a.

H. ASTM F1914 - Standard Test Method for Short-Term Indentation and Residual Indentation of Resilient Floor Covering; 2007 (Reapproved 2011).

I. ASTM F2199 - Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat; 2009 (Reapproved 2014).

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and that the material is of the correct style, color, quantity and run number(s).

B. Store all materials flat and off of the floor in an acclimatized, weather-tight space between 65 to 85 degrees F.

1.05 FIELD CONDITIONS

A. Acclimate material at jobsite between 65 to 85 degrees F and 35 percent to 85 percent relative humidity for 48 hours prior to installation. Temperature and relative humidity should also be maintained at the same levels during installation, and after installation.

B. Spread unopened cartons no more than 6 cartons high and at least 4 inches apart.

C. If permanent HVAC is not operational, temporary means should be used to maintain the recommended temperature and relative humidity levels.

D. Close areas to traffic during installation of flooring and accessories.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Resilient Flooring: Submit a written warraty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.

C. Limited Warranty Period: 20 years.

1.08 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extration materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.
   1. Quantity: Furnish quantity of flooring units equal to 5% of amount installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Armstrong Natural Creations Classics: www.armstrongflooring.com/#sle.

B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 RESILIENT TILE FLOORING

A. Luxury Vinyl Plank and Tile: Armstrong Flooring: Natural Creations Classics
   1. Description: A layered construction consisting of a tough, clear, vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a UV-cured polyurethane finish. Colors are insoluble in water and resistant to cleaning agents and light.
   2. Pattern and Color: color selected from the range currently available from Armstrong Flooring, Inc.
   3. Size: 6 inch x 36 inch; or 8 inch x 36 inch; or 6 inch x 48 inch depending upon selected tile.
   4. Physical Properties:
      a. Wear Layer Thickness: [].020 inch.
      b. Total Thickness (Gauge): [].125 inch.

2.03 ACCESSORIES

A. Resilitent Base: []STM F 1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove..
   1. Height: 4 inch.
   2. Finish: Satin
   3. Length: Roll
   4. Color: As selected from manufacturer's standard colors.

B. Adhesives:
   1. VOC Content Limits: As specified in Section 01 6116.

PART 3 EXECUTION

3.01 EXAMINATION .

A. Install flooring and accessories after other operations (including painting) have been completed.

B. Acceptance of Conditions: Carefully examine all installation areas with installer/applicator present, for compliance with requirements affecting work performance.
   1. Verify that field measurements, product, adhesives, substrates, surfaces, structural support, tolerances, levelness, temperature, humidity, moisture content level, pH, cleanliness and other conditions are as required by the manufacturer, and ready to receive work.

C. Test substrates as required by manufacturer to verify proper conditions exist.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Flooring installation should not begin until all site conditions have been assessed, testing has been completed and subfloor conditions have been approved.

B. Prepare per manufacturer's written instructions and as follows:
   1. Prepare substrates to ensure proper adhesion of Luxury Vinyl Plank & Tile.
   2. Concrete Substrates: Prepare substrate per ASTM F710.
      a. Verify that subfloor is clean, flat, smooth, free of dirt, rust, paint, oil, wax or any contaminant that will interfere with adhesive bonding.
      b. Mechanically remove substrate coatings that are not compatible with adhesives, such as sealers, curing, hardening or parting compounds, soap, wax, oil, etc.
         1) Do not use solvents or adhesive removers.
      c. Expansion joints, isolation joints, or other moving joints must be honored and must not be filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covering systems should be detailed by the architect or engineer, and based upon intended usage and aesthetic considerations.
      d. Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities shall be filled or smoothed with high-quality Portland cement or calcium aluminate based patching or underlayment compound for filling or smoothing, or both.
         1) Do not skim-coat large areas with patching compound, especially slick power-troweled surfaces.
         2) Sand smooth per manufacturer's instructions.
      e. Slick surfaces such as power-troweled concrete shall be profiled as needed to allow for a mechanical bond between the adhesive and subfloor.
      f. Do not use gypsum-based underlayment products and do not skim coat concrete subfloors.
      g. Self-Leveling Underlayments: Provide a dry and smoothly-sanded underlayment substrate ready for installation of Luxury Vinyl Plank & Tile. Underlayment compound shall be moisture-resistant, mildew-resistant, and alkali-resistant and must have a minimum of 3,000 psi compressive strength per ASTM C109/C109M.
      h. Lightweight concrete shall have a compressive strength greater than 90 pounds per cubic foot with minimum compression strength of 2,500 psi or greater.

3.03 INSTALLATION

A. Installation per manufacturer's written instructions, Section 01 7000, and as follows:
   1. Layout shall be specified by Architect, Designer or End User.
   2. Follow layout and ensure installation reference lines are square.
   3. Field tiles shall be installed with directional arrows on back aligned in the same direction, or may be installed in quarter-turned fashion.
   4. Check cartons for and do not mix dye lots.
   5. Adhesives: Adhere flooring to substrate using the full spread method resulting in a completed installation without gaps, voids, raised edges, bubbles or any other surface imperfections.

a. Select appropriate adhesive, trowel and follow manufacturer's instructions.
b. Periodically spot-check transfer of adhesive to back of tile during installation.
c. Roll floor with a 100 pound roller to ensure proper transfer of adhesive and bonding.
d. Protect floor from traffic per manufacturer's instructions.
e. Do not wet mop floor until the adhesive has properly set per written instructions.

3.04 FIELD QUALTITY CONTROL

A. Site tests and inspections:
   1. Inspect flooring installation for non-conforming work including (but not limited to) the following:
      a. Lack of adhesion.
      b. Bubbles, loose tiles or raised edges.
      c. Dirt and debris underneath flooring.
      d. Excessive gaps.
      e. Improper substrate preparation (as indicated by telegraphing).
      f. Damage to tiles, including: dents/indentations, cuts, cracks, burns or punctures.

B. Non-conforming work per General Conditions and as follows:
   1. Repair or replace damaged material if not acceptable to the Architect.

3.05 CLEANING

A. Waste Management per Section 01 7000 and Section 01 7419, and as follows:
   1. Coordinate material reclamation program with manufacturer, if applicable.
      a. Store and return cartons and pallets to manufacturer or recycler for reuse or recycling.

B. Provide progress cleaning per manufacturer's written instructions, Section 01 7000, and as follows:
   1. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the work.
      a. Clean and protect completed construction until Date of Substantial Completion.
      b. During installation, remove wet adhesive from surface of flooring per manufacturer's instructions.
   2. Site: Maintain project site free of waste materials and debris.

C. Provide final cleaning immediately prior to Date of Substantial Completion inspection per manufacturer's written instructions and Section 01 7000.
   1. Protection: Remove manufacturer's and other installed protection immediately prior to Date of Substantial Completion inspection, unless required otherwise.
   2. Clean floor with a neutral 6-8 pH cleaner.

3.06 PROTECTION

A. Protect materials from construction operations until Date of Substantial Completion or Owner occupancy, whichever occurs first.
   1. Protect finished floor from abuse and damage by using heavy non-staining kraft paper, drop cloths or equivalent. Use additional, non-damaging protective materials as needed.
   2. Light foot traffic on a newly installed floor can be permitted after 24 hours.
   3. Keep heavy traffic and rolling loads off the newly installed LVT flooring for 48 hours.
   4. Protect the floor from rolling loads by covering with protective boards.

END OF SECTION

SECTION 09 9113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated as "existing painted surface".
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting.

1.03 REFERENCE STANDARDS

A. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.

B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

C. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

D. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Paints:
   1. Behr Process Corporation: www.behr.com/#sle.
   2. Cloverdale Paint, Brand Products of Rodda Paint Company: www.cloverdalepaint.com/#sle.
   3. Miller Paint Company: www.millerpaint.com/#sle
   4. Rodda Paint Company: www.roddapaint.com/#sle.
   5. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   6. Valspar Corporation: www.valsparpaint.com/#sle.

C. Primer Sealers: Same manufacturer as top coats.

D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
   1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
   2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   4. Supply each paint material in quantity required to complete entire project's work from a single production run.
   5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Colors: As indicated in Color Schedule.
   1. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.

2.03 PAINT SYSTEMS - EXTERIOR

A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including fiber cement siding.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Exterior Latex, flat finish; MPI#10.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
   1. Alkali Resistant Water Based Primer; MPI #3.
   2. Anti-Corrosive Alkyd Primer for Metal; MPI #79.
   3. Alkyd Primer for Galvanized Metal.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Fiber Cement Siding: Remove dirt, dust and other foreign matter with a stiff fiber brush. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

G. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 09 9123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, and unless otherwise indicated.
   1. Mechanical and Electrical:
      a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
   2. Paint pre-finished wall access panels to match adjacent wall surface.

D. Do Not Paint or Finish the Following Items:
   1. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   2. Fire alarm devices, speakers, wi-fi WAP.
   3. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 09 9113 - Exterior Painting.

1.03 REFERENCE STANDARDS

A. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.

B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

C. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

D. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
   2. MPI product number (e.g., MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Paints:
   1. Behr Process Corporation: www.behr.com/#sle.
   2. Miller Paint Co: www.millerpaint.com/#sle
   3. Rodda Paint Co: www.roddapaint.com/#sle.
   4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   5. Valspar Corporation: www.valsparpaint.com/#sle.

C. Primer Sealers: Same manufacturer as top coats.

D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
   1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
   2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   3. Supply each paint material in quantity required to complete entire project's work from a single production run.
   4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.
   2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.

2.03 PAINT SYSTEMS - INTERIOR

A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, shop primed steel, and previously painted steel and tectum surfaces.
   1. Two top coats and one coat primer.
   2. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, or 141. Egshell finish.

B. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals:
   1. Medium duty applications include doors and door frames.
   2. Two top coats and one coat primer.

3. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, or 141. Semi-gloss finish.

C. Overhead: Including shop primed steel, galvanized steel, and tecturm and previously painted surfaces. .
1. Top Coat(s): Dryfall Latex; MPI#118, MPI#155. flat

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior Latex Primer Sealer; MPI #50.
2. Interior Water Based Primer for Galvanized Metal; MPI #134.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
1. Gypsum Wallboard: 12 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

F. Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

G. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed 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. Re-prime entire shop-primed item.
3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

F. Sand metal surfaces lightly between coats to achieve required finish.

G. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 12 2400
WINDOW SHADES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Window shades and accessories.

1.02 RELATED REQUIREMENTS

A. Section 09 2116 - Gypsum Board Assemblies: Substrate for window shade systems.

1.03 REFERENCE STANDARDS

A. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2015.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Sequencing:
   1. Do not fabricate shades until field dimensions for each opening have been taken.
   2. Do not install shades until final surface finishes and painting are complete.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.

C. Shop Drawings: Include shade schedule indicating size, location and keys to details.

D. Selection Samples: Include fabric samples in full range of available colors and patterns.

E. Verification Samples: Minimum size 6 inches square, representing actual materials, color and pattern.

F. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.

G. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.

B. Handle and store shades in accordance with manufacturer's recommendations.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:
   1. Shade Hardware: 25 years.
   2. Fabric: 25 years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manually Operated Roller Shades:
   1. Draper, Inc; Clutch Operated FlexShade: www.draperinc.com/#sle.
   2. Hunter Douglas Architectural; RB500 Manual Roller Shades: www.hunterdouglasarchitectural.com/#sle.
   3. MechoShade Systems, Inc. www.mechoshade.com
   4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 WINDOW SHADE APPLICATIONS

A. Interior Roller Shades: .
   1. Type: Roll down, closed position is at window sill.
   2. Fabric: Visally Transparent Single Fabric Shadecloth.
   3. Fabric Performance Requirements:
      a. Openness Factor: 1%.
      b. Solar Transmittance (Ts): 15.
      c. UV Blockage: 99%
      d. Visible Light Transmittance (Tv): 9.
      e. Solar Absorption (As): 20.
      f. Solar Reflectance (Rs): 60.
   4. Color: As selected by Architect from manufacturer's full range of colors.
   5. Mounting: Inside (between jambs).
   6. Operation: Manual.

2.03 ROLLER SHADES

A. Roller Shades: Fabric roller shades complete with mounting brackets, roller tubes, hembars, hardware and accessories.
   1. Drop: Regular roll.
   2. Size: Size for window opening size.

B. Fabric: Non-flammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
   1. Privacy Shades: Soften the light yet still reveal some details to the outside; moderate privacy; Openness Factor approximately equal to 1 percent.
   2. Flammability: Pass NFPA 701 large and small tests.

C. Roller Tubes: As required for type of operation.
   1. Material: Extruded aluminum or galvanized steel; as required for shade location.
   2. Size: Approximately 3 inch heavy duty diameter tube.
   3. Finish: Clear anodized.

D. Hembars: Designed for weight requirements and adaptation to uneven surfaces, to maintain bottom of shade straight and flat.
   1. Style: Full wrap fabric covered bottom bar, flat profile with closed ends.

E. Manual Operation for Interior Shades: Clutch operated continuous loop; beaded ball chain.

2.04 ACCESSORIES

A. Fascias: Size as required to conceal shade mounting.
   1. Material and Color: To match shade.

B. Brackets and Mounting Hardware: As recommended by manufacturer for mounting configuration and span indicated.

C. Fasteners: Non-corrosive, and as recommended by shade manufacturer.

2.05 FABRICATION

A. Fabricate shades to fit openings within specified tolerances.
   1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch space between bottom bar and window sill.
   2. Horizontal Dimensions - Inside Mounting: Fill openings from jamb to jamb.

B. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine finished openings for deficiencies that may preclude satisfactory installation.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.

B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.

B. Installation Tolerances:
   1. Maximum Offset From Level: 1/16 inch.

C. Adjust level, projection and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 CLEANING

A. Clean soiled shades and exposed components as recommended by manufacturer.

B. Replace shades that cannot be cleaned to "like new" condition.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

3.06 PROTECTION

A. Touch-up, repair or replace damaged products before Substantial Completion.

3.07 SCHEDULE

A. Provide individual shade for each new window.
   1. (6) approximately 3 ft - 8 inch wide x 5 foot tall.
   2. (3) approximately 3 ft - 4 inch wide x 5 foot tall.

END OF SECTION

06/23/2021

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LONGVIEW SD – MARK MORRIS SHOP COMPUTER LAB

Longview, WA

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SECTION 22 0000

BASIC PLUMBING REQUIREMENTS

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. This Section specifies the basic requirements for all Contractor installed equipment. It applies to all sections included in Division 22. The requirements herein are an expansion upon the requirements of Division 1.

B. Provide all materials, labor and equipment required to install complete and fully operational plumbing systems as indicated by the contract drawings and this specification.

C. Obtain and pay for all permits, licenses, fees and taxes applicable to this project as required by law.

D. Cooperate with other trades in furnishing material and information required for installation and operation of mechanical items.

E. Requirements for the following are included:
   1. Related work (other Contract Documents and specification sections) that must be combined with the requirements of this Section.
   2. Design performance.
   3. Delivery, storage, and handling.
   4. Quality assurance and standards.
   5. Submittals.
   6. Product quality, basic type, and finishes.
   7. Installation.
   8. Inspection.
   9. Safety considerations.
   10. Cleaning, startup, and adjustments.

1.02 RELATED WORK

A. This general section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for the project equipment and systems:
   1. Division 1 sections included in this Project specifications.
   2. The Contract.
   3. General and specific mechanical specifications and drawings included in the project.

1.03 DEFINITIONS

A. “Indicated”: Refers to graphic representations, notes or schedules in the Drawings; or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents.
   1. Terms such as “shown”, “noted”, “scheduled”, and “specified”, are used to notify or help the user to locate reference. Location is not limited.

B. “Directed”: Terms such as “directed”, Requested”, “authorized”, “selected”, “approved”, “required”, and “permitted” mean directed by Architect/Engineer, approved by Architect/Engineer and similar phrases.

C. “Approved”: When used in conjunction with Architect/Engineer's action on contract submittals, applications, requests, is limited to Architect/Engineer's duties and responsibilities as stated in the Conditions of the Contract.

D. “Regulations”: Includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of Work.

E. "Furnish": Means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation and similar operations.

F. "Install": Describes operations at Project site including actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, supporting, isolating, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.

G. "Provide": Means to furnish and install.

H. "Installer": A contractor, or another entity engaged by the contractor, either as an employee, subcontractor, or contractor of a lower tier, to perform a particular construction activity including installation, erection, application or similar operations.
   1. Installers are required to be experienced in operations they are engaged to perform.
   2. The term "experience" means having successfully completed a minimum of three previous projects similar in scope and size to this Project and within the time frame indicated in the "Quality Assurance" section of the Specifications. In addition, in means being familiar with special requirements indicated and having complied with requirements of authorities having jurisdiction.

I. "Project Site": Is defined as the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project.

1.04 DESIGN PERFORMANCE

A. Compliance by the Contractor and/or Vendor with the provisions of this Specification does not relieve him of the responsibilities of furnishing equipment and materials of proper design, mechanically suited to meet operating guarantees at the specified service conditions.

1.05 SUBMITTALS

A. Product Data: Submit complete sets of manufacturer's product data in .PDF format for approval. All submittals are to be received in no more than (3) three packages. See Division 1 for further information regarding submittal requirements. Literature submitted shall clearly indicate the model number, capacity, rated operating conditions, size, weight, support requirements, rough-in data and dimensions, and options furnished. Submittals shall include, but are not necessarily limited to the following;
   1. Plumbing: Piping and insulation; Plumbing fixtures, including trim; insulation; valves; hangers and supports; equipment bases; isolators.

B. Operation and Maintenance Data: Submit three complete sets of manufacturer's literature in .PDF format for approval. Data shall include installation, maintenance instructions, and parts lists. Include all material on a CD-ROM or USB device.

C. Substitutions: System design was based upon the equipment and materials listed on the drawings and specifications herein. At contractor's option, another manufacturer's equipment of similar quality, capacity and features may be submitted for prior approval per Section 01 60 00. Prior permission to substitute does not relieve the contractor of the responsibility of including this information in the bound submittal packages.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Comply with the provisions of the following codes, standards and specifications, except where more stringent requirements are shown or specified:
   1. State of Washington "IBC".
   2. State of Washington "IMC".
   3. State of Washington "UPC".
   4. State of Washington "IFC".
   5. ANSI/ASHRAE 90 - "Energy Efficient Design of New Buildings…."
   6. ANSI B31.9 "Building Service Piping".
   7. NFPA - 54 and 90B.

B. Drawings: All drawings are diagrammatic and show general design, arrangement, and extent of the systems. Do not scale drawings for rough-in dimensions, nor use as shop drawings.

C. Installer Qualifications: Company specializing in performing the work required with a minimum of five years documented experience.

D. Contractor shall furnish and install all work in accordance with manufacturers' recommendations and instructions.

1.07 DELIVERY, STORAGE AND PROTECTION

A. Delivery: Deliver to site with manufacturer's labels intact and legible.

B. Preparation for shipment:
   1. Each unit shall be suitably prepared for the shipment specified and for storage in accordance with manufacturer's instructions in a manner requiring no disassembly prior to operation.
   2. The Contractor shall be solely responsible for the adequacy of the Preparation for Shipment provisions employed with respect to materials and application.
   3. One complete set of Installations, Operating and Maintenance Instructions shall be packed and shipped with the equipment. This set is in addition to the sets that are to be sent directly to the Owner.

C. Handling: Avoid damage. Comply with manufacturer's installation instruction requirements for rigging, unloading and transporting units.

D. Storage: Inside protected from weather, dirt and construction dust. Where necessary to store outside, elevate well above grade and enclose with durable, waterproof wrapping. Cap all pipe ends. Taping pipe ends is not adequate or allowable.

1.08 PROJECT CONDITIONS

A. General: Provide products which are compatible with other portions of the work and provide products with the proper power characteristics and similar adaptations for the project.

B. Arrangement: Arrange piping parallel with primary lines of the building construction and with a minimum 9 feet overhead clearance in unfinished equipment rooms where possible. Conceal all piping where possible unless indicated otherwise. Locate operating and control equipment properly to provide easy access for operation and maintenance. Give right-of-way to piping which must be sloped for drainage. Set all equipment level or as recommended by manufacturer.

C. Coordination: Where several elements of the work must be sequenced and positioned in order to fit the available space, prepare shop drawings showing the actual physical dimensions (at accurate scale) required for installation and submit prior to purchase/fabrication/installation of any of the elements involved in the coordination.

1.09 STANDARDS

A. General: Provide all new materials and equipment, identical to apparatus or equipment in successful operation for a minimum of five years. Provide materials of comparable quality omitted here but necessary to complete the work. Maximum allowable variation from stated capacities, minus 5% to plus 10% as approved in each case.

B. Governing Standards: The following are typical standards generally referenced in these specifications and identified by their acronym. Federal Specifications (FS), American Society for Testing Materials (ASTM), American National Standards Institute (ANSI), Manufacturer's Standardization Society of the Valve and Fitting Industry, Standard Practice (MSS SP-69), Cast Iron Soil Pipe Institute (CISPI), Underwriters Laboratory (UL) numbers are given.

1.10 WARRANTIES

A. Contractor shall provide a 1 year warranty on all equipment, materials and workmanship for a period of one year from the date of owner's acceptance.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 LAYOUT AND COORDINATION

A. Site Examination: Before starting work, carefully examine site and all Contract Drawings. Become thoroughly familiar with conditions governing work on this project. Verify all indicated elevations, building measurements, rough-in dimensions and equipment locations before proceeding with any work.

B. Utility Locations: The location of all utilities, wires, conduits, pipes, ducts, or other service facilities are shown in a general way only on the drawings and in some instances are taken from existing drawings. Ascertain whether any additional facilities other than those shown on the plans may be present and determine the exact location and elevations of all utilities prior to commencing installation.

C. Discrepancies: Any error, conflict or discrepancy in Drawings, Specifications and/or existing conditions shall be reported immediately. Do not proceed with any questionable items of work until clarification of same has been made. Should rearrangement or re-routing of piping or ductwork be necessary, provide for approval the simplest layout possible for that particular portion of the work. Under no circumstances shall beams, girders, footings or columns be cut for mechanical items. Casting of pipes into concrete is prohibited unless so shown on Drawings.

D. The Contractor shall cooperate with others to avoid interferences and delays in the construction work.

E. Interference as a result of poor coordination or lack of cooperation with other trades shall be corrected at the Contractor's expense.

3.02 CONTINUITY OF EXISTING SERVICES

A. Existing water, power, heat, ventilation, air conditioning and other services shall remain in service during new construction work. Coordinate any interruption in service during new construction work. Coordinate any interruption of these services with the Owner's representative a minimum of twenty-four (24) hours in advance.

B. Protect from damage active utilities existing and evident by reasonable inspection of the site whether shown or not on the Drawings. Protect, relocate or abandon utilities encountered in the work which were not shown on the Drawings or evident by inspection of the work as directed by the Architect. Maintain continuity of all utility services to existing buildings.

3.03 CUTTING AND PATCHING

A. General: Perform cutting and patching in accordance with Division 1.

B. Protection: During cutting and patching, protect adjacent installations. Provide temporary barriers to prevent the spread of dust and dirt outside of the immediate work area.

C. Repair: Patch finished surfaces and building components using new materials to match the existing.

D. Inspection: Upon written direction from the Architect, uncover and restore work to provide for observation of concealed work.

3.04 EQUIPMENT REMOVAL

A. All removed equipment is the property of the Contractor unless indicated otherwise. Disconnect and remove all such equipment from the property. Cap all piping in walls, below floors, and/or above ceilings in finished rooms.

B. Where equipment is to be reused, reconnect piping, wiring and/or controls to allow this equipment to function as it had prior to this renovation unless indicated otherwise.

3.05 MECHANICAL EQUIPMENT WIRING

A. Provide all motor starters, control devices, and wiring complete from power source indicated on Drawings.

B. Equipment and systems shown on the Drawings and/or specifications, are based upon requirements of specific manufacturers which are intended as somewhat typical of several makes which may be approved. Provide all field wiring and/or devices necessary for a complete and operable system controls for the actual selected equipment/system.

3.06 INSTALLATION

A. Locating and Positioning Equipment: Observe all Codes and Regulations and good common practice in locating and installing mechanical equipment and material so that completed installation presents the least possible hazard. Maintain recommended clearances for repair and service to all equipment.

B. Anchorage: Anchor and/or brace all mechanical equipment, piping to resist displacement due to seismic action, include snubbers on equipment mounted on spring isolators.

C. Where mounting heights or locations are not identified, install systems, equipment and materials to provide maximum headroom.

D. Provide clearance for installation of insulation and access to valves, fittings, damper actuators, etc. on pipe and duct systems.

E. Install systems, materials and equipment giving right of way to systems required to be installed at a specific slope or operation by gravity.

F. Flush clean and disinfect domestic water system.

G. Provide chrome plated rigid or flexible supplies to fixtures with stops, reducers, and escutcheons.

H. Provide trap primers and piping for floor drains and floor sinks.

I. Installation shall be in accordance with the requirements of the equipment manufacturer, including special requirements for seismic restraints.

3.07 MOUNTING AND SHIMMING

A. Mount equipment as shown on the Drawings. Provisions for mounting special equipment on spring isolators, snubbers, and inertia bases are specified in Section 22 05 48, Vibration Isolation and Sound and Seismic Controls for Plumbing Piping and Equipment.

B. Level the equipment by means of 304 stainless steel wedges (stainless steel plates and stainless steel shims). Wedge taper shall not be greater than 1/4 inch per foot. Use double wedges to provide a level bearing surface for the equipment. Wedging shall be executed in a manner that will prevent a change in level or springing of the Baseplate when the anchor bolts are tightened.

3.08 INSPECTION

A. The Contractor shall inspect his work to ensure the installation and workmanship is in accordance with these specifications and acceptable industry standards for the work being done.

B. All materials, equipment, and workmanship shall be subject to inspection at any time by the Owner. Contractor shall correct any work, materials, or equipment not in accordance with the Contract Documents.

3.09 SAFETY CONSIDERATIONS

A. All equipment shall be installed with suitable access clearances that satisfy OSHA and code requirements for maintenance or removal of replaceable parts and components, and with necessary inions or flanges to perform the maintenance or removal without removing the connecting appurtenances.

3.10 CLEANING, START-UP, AND ADJUSTING

A. The Contractors shall be responsible for proper operation of all systems, minor subsystems, and services provided under this section. He shall coordinate start-up procedures, calibration, and system checkout with all project managers. Any system operational problems shall be diagnosed; all correctional procedures shall be initiated as required to bring out the system into compliance with the design, and the problem then shall be rechecked to verify that the system operates normally.

B. Thoroughly clean all parts of the installation at the completion of the work. The Contractor shall clean up and remove from the premises all refuse material, crates, and rubbish arising from his work. Remove, clean, and reinstall all filters. Belt-drive tensions and alignments shall be checked. All motors and bearings shall be lubricated in accordance with the manufacturer's service manuals prior to equipment start-up. Provide a lubrication schedule for every item of equipment furnished under this section. The schedule shall include the type of lubricant and the application frequency.

END OF SECTION

SECTION 22 0529

HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe hangers and supports.

B. Hanger rods.

C. Flashing.

D. Sleeves.

E. Formed steel channel.

1.02 RELATED SECTIONS

A. Section 07 9005 - Joint Sealers: Product requirements for sealant materials for placement by this section.

B. Section 09 9000 - Painting and Coating: Product and execution requirements for painting specified by this section.

1.03 REFERENCES

A. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers.

1.04 SUBMITTALS

A. Section 01 3000 - Administrative Requirements: Submittal procedures.

B. Shop Drawings: Indicate system layout with location including critical dimensions, sizes, and pipe hanger and support locations and detail of trapeze hangers.

C. Product Data:
   1. Hangers and Supports: Submit manufacturers catalog data including load capacity.

D. Design Data: Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers. Indicate calculations used to determine load carrying capacity of trapeze, multiple pipe, and riser support hangers. Submit sizing methods and calculations sealed by a registered professional engineer.

E. Manufacturer's Installation Instructions:
   1. Hangers and Supports: Submit special procedures and assembly of components.

F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

G. Engineering Judgements: For conditions not covered by UL or WH listed designs, submit judgements by licensed professional engineer suitable for presentation to authority having jurisdiction for acceptance as meeting code fire protection requirements.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with State of Washington Building Code and Manufacturer's recommendations.

1.06 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.07 PRE-INSTALLATION MEETINGS

A. Section 01 3000 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Section 01 6000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Section 01 6000 - Product Requirements: Environmental conditions affecting products on site.

B. Do not apply firestopping materials when temperature of substrate material and ambient air is below 60 degrees F.

C. Maintain this minimum temperature before, during, and for minimum 3 days after installation of firestopping materials.

D. Provide ventilation in areas to receive solvent cured materials.

1.10 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.11 WARRANTY

A. Section 01 7000 - Execution and Closeout Requirements: Product warranties and product bonds.

PART 2 PRODUCTS

2.01 PIPE HANGERS AND SUPPORTS

A. Manufacturers:
   1. Tolco Inc.
   2. Anvil.
   3. Michigan Hanger Company, Inc.
   4. PHD Manufacturing Co.
   5. Superstrut.
   6. Unistrut.
   7. Substitutions: Section 01 6000 - Product Requirements.

B. Plumbing Piping - DWV:
   1. Conform to ASME B31.9.
   2. Hangers for Pipe Sizes 1/2 to 2-1/2 inches: Carbon steel, adjustable swivel, split ring.
   3. Hangers for Pipe Sizes 3 inches and Larger: Carbon steel, adjustable, clevis.
   4. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
   5. Copper Pipe Support: Copper-plated, carbon-steel adjustable, ring.

C. Plumbing Piping - Water:
   1. Conform to ASME B31.9.
   2. Hangers for Pipe Sizes 1/2 to 2-1/2 inches (unless other noted): Carbon steel, adjustable swivel, split ring.

3. Copper Pipe Support: Copper-plated, Carbon-steel ring.

2.02 ACCESSORIES

A. Hanger Rods: Mild steel threaded both ends, threaded on one end, or continuous threaded.

2.03 FLASHING

A. Metal Flashing: 26 gage thick galvanized steel.

B. Metal Counterflashing: 22 gage thick galvanized steel.

C. Lead Flashing:
   1. Waterproofing: 5 lb./sq. ft. sheet lead

D. Flexible Flashing: 1.85 inches thick sheet butyl; compatible with roofing.

E. Caps: Steel, 22 gage minimum; 16 gage at fire resistant elements.

2.04 SLEEVES

A. Sleeves for Pipes Through Non-fire Rated Beams Walls, Footings, and Potentially Wet Floors: Steel pipe or 18 gage thick galvanized steel.

B. Sealant: Acrylic; refer to Section 07 9005 - Joint Sealers.

2.05 FORMED STEEL CHANNEL

A. Manufacturers:
   1. Unistrut Model Series P1000.
   2. Superstrut Model Series 1200.
   3. Michigan Hanger “O-Strut” Model A-12.
   4. Substitutions: Section 01 6000 - Product Requirements.

B. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

PART 3 EXECUTION

3.01 EXAMINATION

A. Section 01 3000 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify openings are ready to receive sleeves.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material.

B. Remove incompatible materials affecting bond.

C. Install backing or damming materials to arrest liquid material leakage.

D. Obtain permission from Architect/Engineer before using powder-actuated anchors.

E. Do not drill or cut structural members.

3.03 INSTALLATION - PIPE HANGERS AND SUPPORTS

A. Install in accordance with ASME 31.9.

B. Support horizontal piping as scheduled.

C. Install hangers with minimum 1/2 inch space between finished covering and adjacent work.

D. Place hangers within 12 inches of each horizontal elbow.

E. Use hangers with 1-1/2 inches minimum vertical adjustment.

F. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.

G. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.

H. Support riser piping independently of connected horizontal piping.

I. Provide copper plated hangers and supports for copper piping.

J. Design hangers for pipe movement without disengagement of supported pipe.

K. Prime coat exposed steel hangers and supports. Refer to Section 09 9000 - Painting and Coating. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

L. Provide clearance in hangers and from structure and other equipment for installation of insulation. Refer to Section 22 0716 - Plumbing Equipment Insulation.

3.04 INSTALLATION - FLASHING

A. Provide flexible flashing and metal counterflashing where piping penetrate weather or waterproofed walls, floors, and roofs.

B. Flash vent and soil pipes projecting 3 inches minimum above finished roof surface with lead worked 1 inch minimum into hub, 8 inches minimum clear on sides with 24 x 24 inches sheet size. For pipes through outside walls, turn flanges back into wall and caulk, metal counter-flash, and seal.

3.05 INSTALLATION - SLEEVES

A. Exterior watertight entries: Seal with mechanical sleeve seals.

B. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.

C. Install chrome plated steel escutcheons at finished surfaces.

3.06 CLEANING

A. Section 01 7000 - Execution and Closeout Requirements: Requirements for cleaning.

B. Clean adjacent surfaces of firestopping materials.

3.07 PROTECTION OF FINISHED WORK

A. Section 01 7000 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Protect adjacent surfaces from damage by material installation.

3.08 SCHEDULES

Pipe Size (inches)	Maximum Hanger Spacing (feet)	Hanger Rod Diameter (inches)
1/2 to 1-1/4	6.5	3/8
1-1/2 to 2	10	3/8
2-1/2 to 3	10	1/2
4 to 6	10	5/8
PVC (All Sizes)	6	3/8
C.I. Bell and Spigot (or No Hub) and at Joint	5	3/8

END OF SECTION

SECTION 22 0553

IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nameplates.
B. Tags.
C. Pipe markers.
D. Labels.
E. Lockout devices.

1.02 RELATED REQUIREMENTS

A. Section 09 9000 - Painting and Coating: Identification painting.

1.03 REFERENCE STANDARDS

A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2015.
B. ASME A13.1 - Scheme for the Identification of Piping Systems; 2015.
C. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2017.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
C. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
D. Product Data: Provide manufacturers catalog literature for each product required.
E. Manufacturer's Installation Instructions: Indicate special procedures, and installation.
F. Project Record Documents: Record actual locations of tagged valves.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Brady Corporation: www.bradycorp.com.
B. Safety Sign Company: www.safetysignco.com.
C. Seton Identification Products: www.seton.com/aec.
D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 NAMEPLATES

A. Description: Laminated three-layer plastic with engraved letters.
   1. Letter Color: Black.
   2. Letter Height: 1/2 inch.
   3. Background Color: Yellow.
   4. Plastic: Comply with ASTM D709.

2.03 TAGS

A. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch diameter.

B. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

C. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.

2.04 PIPE MARKERS

A. Comply with ASME A13.1.

B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

D. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

2.05 LABELS

A. Description: Aluminum, size 1.9 x 0.75 inches, adhesive backed with printed identification.

2.06 LOCKOUT DEVICES

A. Lockout Hasps:
   1. Manufacturers:
      a. Anodized aluminum or reinforced nylon hasp with erasable label surface; size minimum 7-1/4 x 3 inches.

B. Valve Lockout Devices:
   1. Steel device preventing access to valve operator, accepting lock shackle.

PART 3 EXECUTION

3.01 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.02 INSTALLATION

A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install tags with corrosion resistant chain.

C. Install plastic pipe markers in accordance with manufacturer's instructions.

D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.

F. Identify pumps, heat transfer equipment, tanks, and water treatment devices with 8 x 4 inch plastic nameplates. Small devices, such as in-line pumps, may be identified with tags.

G. Identify control panels and major control components outside panels with plastic nameplates.

H. Identify valves in main and branch piping with tags.

I. Identify piping, concealed or exposed, with plastic pipe markers. Use tags on piping 3/4 inch diameter and smaller. Identify service, flow direction. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION

SECTION 22 0719

PLUMBING PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Piping insulation.

1.02 RELATED REQUIREMENTS

A. Section 07 8400 - Firestopping.

B. Section 09 9000 - Painting and Coating: Painting insulation jacket.

C. Section 22 1005 - Plumbing Piping: Placement of hangers and hanger inserts.

1.03 REFERENCE STANDARDS

A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2013.

B. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement; 2007 (Reapproved 2013).

C. ASTM C449 - Standard Specification for Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement; 2007 (Reapproved 2013).

D. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2017.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018b.

F. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

C. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.07 FIELD CONDITIONS

A. Maintain ambient conditions required by manufacturers of each product.

B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.

B. Materials shall not contain pentabrominated diphenyl ethers (PBDEs) in amounts greater than allowed by Oregon law.

2.02 GLASS FIBER

A. Manufacturers:
   1. Knauf Insulation; Pipe Insulation ASJ-SSL: www.knaufusa.com.
   2. Johns Manville; SSL II: www.jm.com.
   3. Owens Corning Corp: www.owenscorning.com.
   4. CertainTeed Corporation: www.certainteed.com.
   5. Knauf Insulation: www.knaufusa.com.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. Insulation: ASTM C547 ; rigid molded, noncombustible.
   1. 'K' value: ASTM C177, 0.24 at 75 degrees F.
   2. Maximum service temperature: 850 degrees F.
   3. Maximum moisture absorption: 0.2 percent by volume.

C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.

D. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.

E. Vapor Barrier Lap Adhesive: Compatible with insulation.
   1. Compatible with insulation.

F. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.
   1. ASTM C195; hydraulic setting on mineral wool.

G. Indoor Vapor Barrier Finish:
   1. Cloth: Untreated; 9 oz/sq yd weight.
   2. Vinyl emulsion type acrylic, compatible with insulation, black color.

H. Outdoor Vapor Barrier Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
   1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

I. Outdoor Breather Mastic: Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.
   1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

J. Insulating Cement: ASTM C449.
   1. ASTM C449/C449M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that piping has been tested before applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.

C. Exposed Piping: Locate insulation and cover seams in least visible locations.

D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.

E. Glass fiber insulated pipes conveying fluids below ambient temperature:
   1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
   2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.

F. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.

G. For hot piping conveying fluids over 140 degrees F, insulate flanges and unions at equipment.

H. Glass fiber insulated pipes conveying fluids above ambient temperature:
   1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.
   2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.

I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 07 8400.

3.03 SCHEDULES

A. Plumbing Systems:
   1. Domestic Hot Water Supply:
      a. Glass Fiber, Rigid, Insulation:
         1) Pipe Size Range: Under 2 inch.
         2) Thickness: 1 inch.
         3) Pipe Size Range: Over 2 inch.
         4) Thickness: 1-1/2 inch.
   2. Domestic Hot Water Recirculation:
      a. Glass Fiber Insulation:
         1) Pipe Size Range: All sizes.
         2) Thickness: 1 inch.
   3. Domestic Cold Water:
      a. Glass Fiber, Rigid, Insulation:
         1) Pipe Size Range: 1 inch and under.
         2) Thickness: 1/2 inch.
         3) Pipe Size Range: Over 1 inch.
         4) Thickness: 1 inch.

END OF SECTION

SECTION 22 1005
PLUMBING PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe, pipe fittings, specialties, and connections for piping systems.
   1. Sanitary sewer.
   2. Domestic water.
   3. Ball valves.

1.02 RELATED REQUIREMENTS

A. Section 00 0553 - Plumbing Hangers and Supports.

B. Section 22 0553 - Identification for Plumbing Piping and Equipment.

1.03 REFERENCE STANDARDS

A. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2012.

B. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2018.

C. ASME B31.9 - Building Services Piping; 2014.

D. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).

E. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2016.

F. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings; 2004 (Reapproved 2016).

G. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2012 (Reapproved 2018).

H. ASTM D2661 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings; 2014.

I. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2014.

J. ASTM D2855 - Standard Practice for the Two-Step (Primer & Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets; 2015.

K. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications; 2009 (Revised 2012).

L. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2011 (Revised 2012).

M. NSF 61 - Drinking Water System Components - Health Effects; 2017.

N. NSF 372 - Drinking Water System Components - Lead Content; 2016.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with all applicable local codes and standards.

B. Valves: Manufacturer's name and pressure rating marked on valve body.

C. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

1.06 REGULATORY REQUIREMENTS

A. Perform work in accordance with applicable plumbing code.

B. Conform to applicable code for installation of backflow prevention devices.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

C. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system. Store pipe on sleepers, a minimum of 4 inches above surrounding grade, at all times.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 SANITARY SEWER PIPING, ABOVE GRADE

A. Cast Iron Pipe: CISPI 301, hubless, service weight.
   1. Fittings: Cast iron.
   2. Joints: CISPI 310, ASTM 1277, neoprene gaskets and stainless steel clamp-and-shield assemblies.

B. ABS Pipe: ASTM D2661 or ASTM D2751 (Solid Wall).
   1. Fittings: ABS.
   2. Joints: Solvent welded with ASTM D2235 cement.

C. PVC Pipe: ASTM D2665 (Solid Wall).
   1. Fittings: PVC.
   2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.03 DOMESTIC WATER PIPING, ABOVE GRADE

A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
   1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
   2. Joints: ASTM B32, alloy Sn95 solder.

2.04 BALL VALVES

A. Manufacturers:
   1. Hammond Valve Co.; Model 8501/8901: www.hammondvalve.com.
   2. NIBCO, Inc.; T/S-FP-600A / T/S-585-80-LF: www.nibco.com.
   3. Watts; Model FBV-1/B-6000: www.watts.com.
   4. Stockham; Model S216-BR-R-T: www.stockham.com.
   5. Apollo; Model 77CLF: www.apollovalves.com.
   6. Milwaukee Valve Company; Model BA-125/BA-100: www.milwaukeevalve.com.
   7. Substitutions: See Section 01 6000 - Product Requirements.

B. Up to and including 3 inches:
   1. MSS SP 110, 600 PSI-CWP, bronze, two piece body, lead free brass ball, full port, teflon seats and stuffing box ring, blow-out proof stem, lever handle solder or threaded ends.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom, conserve space, and not interfere with use of space.

E. Group piping whenever practical at common elevations.

F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

G. Provide access where valves and fittings are not exposed.

H. Excavate in accordance with specifications.

I. Install valves with stems upright or horizontal, not inverted. Refer to Section 22 0523.

J. Install water piping to ASME B31.9.

K. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

L. Sleeve pipes passing through partitions, walls, and floors.

M. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9.
   2. Support horizontal piping as indicated.
   3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
   4. Place hangers within 12 inches of each horizontal elbow.
   5. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   6. Provide copper plated hangers and supports for copper piping or sheet lead packing between hanger or support and piping.
   7. Support cast iron drainage piping at every joint.
   8. Support of pipe tubing and equipment is to be accomplished by means of engineered products specific to each application. Makeshift field devised methods will not be allowed.

3.04 APPLICATION

A. Install unions downstream of valves and at equipment or apparatus connections.

B. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.

3.05 TOLERANCES

A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope.

B. Water Piping: Slope at minimum of 1/32 inch per foot and arrange to drain at low points.

3.06 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Prior to starting work, verify system is complete, flushed, and clean.

B. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

END OF SECTION

SECTION 23 0000

BASIC HVAC REQUIREMENTS

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. This Section specifies the basic requirements for all Contractor installed equipment. It applies to all sections included in Division 23. The requirements herein are an expansion upon the requirements of Division 1.

B. Provide all materials, labor and equipment required to install complete and fully operational HVAC systems as indicated by the contract drawings and this specification.

C. Obtain and pay for all permits, licenses, fees and taxes applicable to this project as required by law.

D. Cooperate with other trades in furnishing material and information required for installation and operation of mechanical items.

E. Requirements for the following are included:
   1. Related work (other Contract Documents and specification sections) that must be combined with the requirements of this Section.
   2. Design performance.
   3. Delivery, storage, and handling.
   4. Quality assurance and standards.
   5. Submittals.
   6. Product quality, basic type, and finishes.
   7. Equipment identification.
   8. Installation.
   9. Inspection.
   10. Safety considerations.
   11. Cleaning, startup, and adjustments.

1.02 RELATED WORK

A. This general section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for the project equipment and systems:
   1. Division 1 sections included in this Project specifications.
   2. The Contract.
   3. General and specific mechanical specifications and drawings included in the project.

1.03 DEFINITIONS

A. “Indicated”: Refers to graphic representations, notes or schedules in the Drawings; or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents.
   1. Terms such as “shown”, “noted”, “scheduled”, and “specified”, are used to notify or help the user to locate reference. Location is not limited.

B. “Directed”: Terms such as “directed”, Requested”, “authorized”, “selected”, “approved”, “required”, and “permitted” mean directed by Architect/Engineer, approved by Architect/Engineer and similar phrases.

C. “Approved”: When used in conjunction with Architect/Engineer's action on contract submittals, applications, requests, is limited to Architect/Engineer's duties and responsibilities as stated in the Conditions of the Contract.

D. “Regulations”: Includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of Work.

E. “Furnish”: Means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation and similar operations.

F. “Install”: Describes operations at Project site including actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, supporting, isolating, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.

G. “Provide”: Means to furnish and install.

H. “Installer”: A contractor, or another entity engaged by the contractor, either as an employee, subcontractor, or contractor of a lower tier, to perform a particular construction activity including installation, erection, application or similar operations.
   1. Installers are required to be experienced in operations they are engaged to perform.
   2. The term “experience” means having successfully completed a minimum of three previous projects similar in scope and size to this Project and within the time frame indicated in the “Quality Assurance” section of the Specifications. In addition, in means being familiar with special requirements indicated and having complied with requirements of authorities having jurisdiction.

I. “Project Site”: Is defined as the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project.

1.04 DESIGN PERFORMANCE

A. Compliance by the Contractor and/or Vendor with the provisions of this Specification does not relieve him of the responsibilities of furnishing equipment and materials of proper design, mechanically suited to meet operating guarantees at the specified service conditions.

1.05 SUBMITTALS

A. Product Data: Submit complete sets of manufacturer's product data in .PDF format for approval. All submittals are to be received in no more than (3) three packages. See Division 1 for further information regarding submittal requirements. Literature submitted shall clearly indicate the model number, capacity, rated operating conditions, noise levels, size, weight, support requirements, rough-in data and dimensions, electrical power requirements, wiring diagrams, utility (fuel, air, cooling water, etc.) requirements, and options furnished. Submittals shall include, but are not necessarily limited to the following;
   1. HVAC: Air handling units; fans; supports and anchors; louvers; grilles; diffusers; controls and the like.
   2. Calculations: Provide for factory selection and sizing of all noise attenuation; vibration; isolation; thermal expansion and seismic restraints; with good engineering practice. Include design criteria used and assumptions made.

B. Operation and Maintenance Data: Submit three complete sets of manufacturer's literature bound in a three ring binder for approval. Data shall include installation, start-up, and maintenance instructions, parts lists, and wiring diagrams. Include all material on a CD-ROM or USB device.

C. Substitutions: System design was based upon the equipment and materials listed on the drawings and specifications herein. At contractor's option, another manufacturer's equipment of similar quality, capacity and features may be submitted for prior approval per Section 01 60 00. Prior permission to substitute does not relieve the contractor of the responsibility of including this information in the bound submittal packages.

D. When specified, prepare and submit shop drawings and prints of plans, sections, details and diagrams to minimum scale (1/4" = 1'-0"). Mechanical and pump rooms shall be 1/2" = 1'-0" minimum scale. Drawings shall be coordinated, dimensioned and indicate equipment, recommended clearances, pipe, duct, fire protection and electrical in relation to architectural and structural features. Include minor piping, drains, valves and the like. Indicate exact locations and elevations of valves, piping specialties, access doors, dampers and the like.

E. Shop drawings shall be created and submitted on AutoCAD release 2017 or later.

F. Air Balancing Report: Provide .PDF reports stating the design air and hydronic flow requirements per, air inlet and air outlet and the final adjusted airflow volume for the same.

1.06 QUALITY ASSURANCE

A. Codes and Standards: Comply with the provisions of the following codes, standards and specifications, except where more stringent requirements are shown or specified:
   1. State of Washington "IBC".
   2. State of Washington "IMC".
   3. State of Washington "UPC".
   4. State of Washington "IFC".
   5. ANSI/ASHRAE 90 - “Energy Efficient Design of New Buildings….”
   6. ANSI/ASHRAE 62 - “Ventilation for Acceptable Indoor Air Quality.”
   7. NEBB - “Procedural Standard for Testing, Adjusting and Balancing of Environmental Systems.”
   8. ANSI B31.9 "Building Service Piping".
   9. SMACNA - "HVAC Duct Construction Standards".
   10. NFPA - Section 90B.

B. Wherever the specification call for or describe materials or construction of better quality or larger sizes than are required by the above rules and regulations, these specifications shall govern. Should there be any direct conflict between the above rules and regulations and the specifications the rules shall govern.

C. Drawings: All drawings are diagrammatic and show general design, arrangement, and extent of the systems. Do not scale drawings for rough-in dimensions, nor use as shop drawings.

D. Installer Qualifications: Company specializing in performing the work required with a minimum of five years documented experience.

E. Contractor shall furnish and install all work in accordance with manufacturers' recommendations and instructions.

F. Equipment shall have U.L. label listing.

1.07 MATERIALS AND SUBSTITUTIONS

A. Shop drawings of proposed material and equipment that differ from the specified basis of design materials and equipment shall be accompanied by shop drawings that define changes physical layout and performance. These drawings shall show modifications of architectural, plumbing, electrical and mechanical work required by the proposed materials and equipment such as relocation of flues, drains, piping, ducts, revised electrical circuits, relocation of roof or wall penetrations, revised foundations and the like.

1.08 DELIVERY, STORAGE AND PROTECTION

A. Delivery: Deliver to site with manufacturer's labels intact and legible.

B. Preparation for shipment:
   1. Each unit shall be suitably prepared for the shipment specified and for storage in accordance with manufacturer's instructions in a manner requiring no disassembly prior to operation.
   2. The Contractor shall be solely responsible for the adequacy of the Preparation for Shipment provisions employed with respect to materials and application.
   3. One complete set of Installations, Operating and Maintenance Instructions shall be packed and shipped with the equipment. This set is in addition to the sets that are to be sent directly to the Owner.

C. Handling: Avoid damage. Comply with manufacturer's installation instruction requirements for rigging, unloading and transporting units.

D. Storage: Inside protected from weather, dirt and construction dust. Where necessary to store outside, elevate well above grade and enclose with durable, waterproof wrapping. Cap all pipe ends. Taping pipe ends is not adequate or allowable.

1.09 PROJECT CONDITIONS

A. General: Provide products which are compatible with other portions of the work and provide products with the proper power characteristics and similar adaptations for the project.

B. Arrangement: Arrange ductwork and piping parallel with primary lines of the building construction and with a minimum 7 feet overhead clearance in unfinished equipment rooms where possible. Conceal all piping and ductwork where possible unless indicated otherwise. Locate operating and control equipment properly to provide easy access for operation and maintenance. Give right-of-way to piping which must be sloped for drainage. Set all equipment level or as recommended by manufacturer.

C. Coordination: Where several elements of the work must be sequenced and positioned in order to fit the available space, prepare shop drawings showing the actual physical dimensions (at accurate scale) required for installation and submit prior to purchase/fabrication/installation of any of the elements involved in the coordination.

1.10 STANDARDS

A. General: Provide all new materials and equipment, identical to apparatus or equipment in successful operation for a minimum of five years. Provide materials of comparable quality omitted here but necessary to complete the work. Maximum allowable variation from stated capacities, minus 5% to plus 10% as approved in each case.

B. Governing Standards: The following are typical standards generally referenced in these specifications and identified by their acronym. Federal Specifications (FS), American Society for Testing Materials (ASTM), American National Standards Institute (ANSI), Manufacturer's Standardization Society of the Valve and Fitting Industry, Standard Practice (MSS SP-69), Cast Iron Soil Pipe Institute (CISPI), Underwriters Laboratory (UL) numbers are given.

C. Wherever the specifications call for or describe materials or construction of better quality or larger sizes than are required by the above standards or code, these specifications shall govern. For any direct conflict between the specifications and the above standards or codes, the standards and codes shall govern.

1.11 WARRANTIES

A. Comply with Division 01 section - Project Closeout.

B. Equipment under this section of the specifications shall be guaranteed for a period of one year from date of acceptance against defective materials, design, and workmanship.

C. Contractor shall leave entire installation in complete working order and free from defects in material, workmanship, or finish.

D. The HVAC contractor, by accepting these specifications and by signing the sub-contract, shall guarantee the following:
   1. All equipment, material, and workmanship against defects in material and workmanship for a period of one (1) year from date of final acceptance by the Owner. The HVAC contractor shall furnish written guarantee to replace defective work and materials furnished under this section, at no cost to the Owner, for this one (1) year period.
   2. That equipment and material will produce the results specified.

E. The Owner reserves the right to make temporary repairs as necessary to keep equipment in operating condition without voiding the guarantees or relieving responsibility during the guarantee period.

F. Provide, at no cost to the Owner, one qualified service technician for an 8-hour period after a period of 90 calendar days from date of acceptance of systems by Owner to repair, replace any latent deficiency.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 LAYOUT AND COORDINATION

A. Site Examination: Before starting work, carefully examine site and all Contract Drawings. Become thoroughly familiar with conditions governing work on this project. Verify all indicated elevations, building measurements, rough-in dimensions and equipment locations before proceeding with any work.

B. Utility Locations: The location of all utilities, wires, conduits, pipes, ducts, or other service facilities are shown in a general way only on the drawings and in some instances are taken from existing drawings. Ascertain whether any additional facilities other than those shown on the plans may be present and determine the exact location and elevations of all utilities prior to commencing installation.

C. The inclusion and proper location of supports, pads, sleepers, openings, anchoring and the like provided by others is the responsibility of the contractor under this section. Cutting and/or boring shall be permitted under this section only with the written approval or the Architect.

D. It shall be the contractor's responsibility to coordinate and have provided by other trades where not covered by the Contractor's work scope of work all electrical wiring and power to equipment, controls and devices, all plumbing and any other work from other trades as required to provide fully functional HVAC systems per contract documents.

E. Discrepancies: Any error, conflict or discrepancy in Drawings, Specifications and/or existing conditions shall be reported immediately. Do not proceed with any questionable items of work until clarification of same has been made. Should rearrangement or re-routing of piping or ductwork be necessary, provide for approval the simplest layout possible for that particular portion of the work. Under no circumstances shall beams, girders, footings or columns be cut for mechanical items. Casting of pipes into concrete is prohibited unless so shown on Drawings.

F. The Contractor shall cooperate with others to avoid interferences and delays in the construction work.

G. Interference as a result of poor coordination or lack of cooperation with other trades shall be corrected at the Contractor's expense.

3.02 CONTINUITY OF EXISTING SERVICES

A. Existing water, power, heat, ventilation, air conditioning and other services shall remain in service during new construction work. Coordinate any interruption in service during new construction work. Coordinate any interruption of these services with the Owner's representative a minimum of twenty-four (24) hours in advance.

B. Protect from damage active utilities existing and evident by reasonable inspection of the site whether shown or not on the Drawings. Protect, relocate or abandon utilities encountered in the work which were not shown on the Drawings or evident by inspection of the work as directed by the Architect. Maintain continuity of all utility services to existing buildings.

3.03 CUTTING AND PATCHING

A. General: Perform cutting and patching in accordance with Division 1.

B. Protection: During cutting and patching, protect adjacent installations. Provide temporary barriers to prevent the spread of dust and dirt outside of the immediate work area.

C. Repair: Patch finished surfaces and building components using new materials to match the existing.

D. Inspection: Upon written direction from the Architect, uncover and restore work to provide for observation of concealed work.

3.04 EQUIPMENT REMOVAL

A. All removed equipment is the property of the Contractor unless indicated otherwise. Disconnect and remove all such equipment from the property. Cap all piping in walls, below floors, and/or above ceilings in finished rooms.

B. Where equipment is to be reused, reconnect piping, wiring and/or controls to allow this equipment to function as it had prior to this renovation unless indicated otherwise.

3.05 MECHANICAL EQUIPMENT WIRING

A. Provide all motor starters, control devices, and wiring complete from power source indicated on Drawings.

B. Equipment and systems shown on the Drawings and/or specifications, are based upon requirements of specific manufacturers which are intended as somewhat typical of several makes which may be approved. Provide all field wiring and/or devices necessary for a complete and operable system controls for the actual selected equipment/system.

3.06 INSTALLATION

A. Manufacturer's directions shall be followed in cases where the manufacturers of materials and equipment used in this contract furnish directions covering points not shown in the drawings and specifications.

B. Locating and Positioning Equipment: Observe all Codes and Regulations and good common practice in locating and installing mechanical equipment and material so that completed installation presents the least possible hazard. Maintain recommended clearances for repair and service to all equipment.

C. Anchorage: Anchor and/or brace all mechanical equipment, piping and ductwork to resist displacement due to seismic action, include snubbers on equipment mounted on spring isolators.

D. Where mounting heights or locations are not identified, install systems, equipment and materials to provide maximum headroom.

E. Provide clearance for installation of insulation and access to valves, fittings, damper actuators, etc. on pipe and duct systems.

F. Install systems, materials and equipment giving right of way to systems required to be installed at a specific slope or operation by gravity.

G. Provide condensate drain piping to over nearest floor or roof drain for all coils, and the like.

H. Provide all sheaves required for final air balance. Contractor shall not make assumptions or exceptions concerning the number of sheave replacements or adjustments necessary to meet the design requirements. Balance all HVAC systems to provide the amount of air indicated at each diffuser, grille or register.

I. Do not operate fans for any purpose until ductwork is clean, filters in place, bearings lubricated, and the fan has been test run under observation. Fans shall not be used during construction unless specifically authorized by the Owner and reviewed by the Engineer.

J. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

K. Installation shall be in accordance with the requirements of the equipment manufacturer, including special requirements for seismic restraints.

L. Equipment Manufacturer's Responsibility and Services:
   1. A manufacturer's representative for major equipment and operating systems shall be provided as necessary to assist the Contractor during installation, and to provide written certification that the equipment has been installed as specified and in accordance with the manufacturer's representative.
   2. The manufacturer's representative shall provide the initial startup of equipment in the presence of the Owner.
      a. Provide a pre-start check of all piping, valves, control devices, control panels, and equipment.
      b. Calibrate and adjust equipment and controls for operation at the specified design and conditions.
      c. Provide a record of all startup events noting problems and their resolution.
      d. Provide a record of all set points for operational controls and devices.
   3. Upon the completion of the equipment startup, provide instructional time with the Owner's personnel to review the operations and maintenance manuals and perform each step necessary for startup, shutdown, troubleshooting, and routine maintenance. The instructional time shall be scheduled through the Owner.
   4. Upon completion of the inspections, startup, testing, and checkout procedures, the equipment manufacturer shall submit written notice to the Owner that the units are ready for use by the Owner. Provide a certificate of calibration for all equipment.

3.07 INSPECTION

A. The Contractor shall inspect his work to ensure the installation and workmanship is in accordance with these specifications and acceptable industry standards for the work being done.

B. All materials, equipment, and workmanship shall be subject to inspection at any time by the Owner. Contractor shall correct any work, materials, or equipment not in accordance with the Contract Documents.

C. Any work enclosed or covered up prior to inspection and testing shall be uncovered. After the work has been tested, inspected and accepted, repair as necessary to return disturbed work to its original and proper condition at no cost to the Owner.

3.08 SAFETY CONSIDERATIONS

A. All equipment shall be installed with suitable access clearances that satisfy OSHA and code requirements for maintenance or removal of replaceable parts and components, and with necessary unions or flanges to perform the maintenance or removal without removing the connecting appurtenances.

3.09 CLEANING, START-UP, AND ADJUSTING

A. The Contractors shall be responsible for proper operation of all systems, minor subsystems, and services provided under this section. He shall coordinate start-up procedures, calibration, and system checkout with all project managers. Any system operational problems shall be diagnosed; all correctional procedures shall be initiated as required to bring out the system into compliance with the design, and the problem then shall be rechecked to verify that the system operates normally.

B. Thoroughly clean all parts of the installation at the completion of the work. The Contractor shall clean up and remove from the premises all refuse material, crates, and rubbish arising from his work. Remove, clean, and reinstall all filters. Belt-drive tensions and alignments shall be checked. All motors and bearings shall be lubricated in accordance with the manufacturer's service manuals prior to equipment start-up. Provide a lubrication schedule for every item of equipment furnished under this section. The schedule shall include the type of lubricant and the application frequency.

END OF SECTION

SECTION 23 0549
HVAC SEISMIC RESTRAINT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Seismic restraint of equipment, piping and ductwork.

1.02 RELATED SECTIONS

A. Section 23 00 00 - Basic HVAC Requirements.

B. Section 23 31 00 - HVAC Ducts and Casings.

C. Section 23 74 12 - Packaged Outdoor Rooftop Units - Small Capacity.

1.03 QUALITY ASSURANCE

A. Seismic Restraints:
   1. The Anchorage and/or seismic restraint of permanent equipment and associated systems listed below shall be designed to resist the total design seismic forces prescribed in the latest edition of the International Building Code.
      a. All floor or roof-mounted equipment weighing 400 lbs. or greater.
      b. All suspended or wall-mounted equipment weighing 20 lbs. or greater.
      c. All vibration-isolated equipment weighing 20 lbs. or greater.
      d. All piping 1 1/4 inches nominal diameter and larger located in boiler, mechanical equipment and refrigeration mechanical rooms.
      e. All piping 2 1/2" inches nominal diameter and larger.
      f. All ductwork 6 square feet and larger in cross sectional area.
      g. All round ductwork 28 inches in diameter and larger.
      h. Pipes, electrical conduit and ducts supported by a trapeze where none of those elements would individually require bracing, require bracing when the combined operating weight of all elements supported by the trapeze is 10 lbs/ft or greater.

B. All calculations shall be in accordance with Chapter 16 of the latest edition of the International Building Code.

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 3000:
   1. All anchorage and seismic restraints shall be designed and stamped by a professional engineer licensed in the state of the project location. Design shall include:
      a. Number, size and location of anchors for floor or roof-mounted equipment. For curb-mounted equipment, provide design of attachment of both the unit to the curb and the curb to the structure. In addition, provide calculations or test data verifying the curb can accept the seismic loads.
      b. Number, size and location of seismic restraint devices and anchors for vibration-isolated and suspended equipment. Provide calculations or test data verifying the horizontal and vertical ratings of the seismic restraint devices.
      c. Number, size and location of braces and anchors for suspended piping and ductwork on shop drawings. In addition:
         1) The contractor must select a single seismic restraint system pre-designed to meet the requirements of the latest edition of the International Building Code such as the 2011 Mason Industries Seismic Restraint Guidelines for Suspended Piping, Ductwork, Electrical Systems and floor and roof mounted equipment.
         2) Details or designs from separate seismic restraint guidelines are not acceptable. Installations not addressed by the selected system must be designed, detailed and submitted along with the shop drawings.

3) Maximum seismic loads shall be indicated on drawings at each brace location. Drawings shall bear the stamp and signature of the registered professional engineer licensed in the state of the project location who designed the layout of the braces.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Amber Booth.

B. Mason Industries, Inc.

C. Kinetics Corporation.

D. Vibrex.

E. Substitutions: Under provisions of Section 01 60 00.

2.02 SEISMIC RESTRAINTS

A. General Requirements:
   1. Seismic restraints shall be provided for all equipment, both supported and suspended, piping and ductwork as listed above.
   2. Bracing of piping and ductwork shall be in accordance with provisions set forth in SMACNA seismic restraint manual.
   3. Structural requirements for restraints, including their attachment to building structure, shall be reviewed and approved by the structural engineer.
   4. Attachments to supported or suspended equipment must be coordinated with the equipment manufacturer.

B. Supported Equipment Products:
   1. Seismic restraints shall consist of interlocking steel members restrained by shock absorbent neoprene materials compounded to bridge bearing specifications as previously noted in paragraph 1.3. Elastomeric materials shall be replaceable and be a minimum 3/4-inch thick. Snubbers shall be manufactured with an air gap between hard and resilient material of not less than 1/8-inch, nor more than 1/4-inch. Type 1 - Seismic Snubbers: All-directional seismic snubbers shall consist of interlocking steel members restrained by a one-piece molded neoprene bushing of bridge bearing neoprene. Bushing shall be replaceable and a minimum of 1/4 inch thick. A minimum air gap of 1/8 inch shall be incorporated in the snubber design in all directions before contact is made between the rigid and resilient surfaces. Snubber end caps shall be removable to allow inspection of internal clearances. The snubber shall be designed to accept horizontal and vertical seismic loads as defined in Section 1.03.B. Mason Type Z-1225 or Z-1011.
   2. Each snubber shall be capable of restraint in all three mutually orthogonal directions. Type 2 - Seismic Sway Braces - Seismic sway braces shall consist of galvanized steel aircraft cables or steel angles/channels. Cables braces shall be designed to resist seismic tension loads and steel braces shall be designed to resist both tension and compression loads with a minimum safety factor of 2. Brace end connections shall be steel assemblies that swivel to the final installation angle. Do not mix cable and steel braces to brace the same system or equipment. Steel angles, when required, shall be clamped to the threaded hanger rods at the seismic sway brace locations utilizing a minimum of two ductile iron clamps. Sway braces shall be designed to accept horizontal and vertical seismic loads as defined in Section 1.03.B. Mason Type SCB, SSB, SRC and UC.
   3. Submittals shall include load versus deflection curves up to 1/2-inch on the x, y and z planes.
   4. Mason Model Z-1011

C. Bracing of Pipes:

1. Provide seismic bracing of all piping as detailed below. (Exception: Piping suspended by individual hangers 12 inches or less in length, as measured from the top of the pipe to the bottom of the support where the hanger is attached, need not be braced).
   a. Brace all gas piping.
   b. Brace all piping located in boiler rooms, mechanical equipment rooms, and refrigeration mechanical rooms that is 1-1/4-inch nominal diameter and larger.
   c. Brace all pipes 2-1/2-inch nominal diameter and larger.
2. For all gas piping, as specified in 1(a) the bracing details, schedules, and notes may be used, except that transverse bracing shall be at 20 feet maximum, and longitudinal bracing shall be at 40 feet maximum.
3. Seismic braces for pipes on trapeze hangers may be used.
4. Provide flexibility in joints where pipes pass through building seismic joints or expansion joints or where rigidly supported pipes connect to equipment with vibration isolators. For threaded piping, the flexibility may be provided by the installation of swing joints.
5. Cast iron pipe of all types, glass pipe, and any other pipe jointed with a shield and clamp assembly, where the top of the pipe is 12 inches or more from the supporting structure, shall be braced on each side of a change in direction of 90 degrees or more. Riser joints shall be braced or stabilized between floors.
6. Vertical risers shall be laterally supported with a riser clamp at each floor. For buildings greater than six stories high, all risers shall be engineered individually.

D. Bracing of Ductwork:
1. Brace rectangular ducts with cross sectional areas of 6 square feet and larger. Brace flat oval ducts in the same manner as rectangular ducts. Brace round ducts with diameters of 28 inches and larger. Brace flat oval ducts the same as rectangular ducts of the same nominal size (Exception: No bracing is required if the duct is suspended by hangers 12 inches or less in length, as measured from the top of the duct to the bottom of the support where the hanger is attached).
2. Transverse bracing shall occur at the interval specified in the SMACNA tables or at both ends if the duct run is less than the specified interval. Transverse bracing shall be installed at each duct turn and at each end of a duct run, with a minimum of one brace at each end.
3. Longitudinal bracing shall occur at the interval specified in the SMACNA tables with at least one brace per duct run. Transverse bracing for one duct section may also act as longitudinal bracing for a duct section connected perpendicular to it if the bracing is installed within four feet of the intersection of the ducts and if the bracing is sized for the larger duct. Duct joints shall conform to SMACNA duct construction standards.

E. Suspended Equipment and Piping and Ductwork:
1. Cable Method: The seismic restraint shall consist of a combination of stranded steel aircraft cable and the specified vibration isolation hanger with an added nut and neoprene and steel washer. The cable resists lateral and downward motion. The modified vibration hanger resists upward motion.
2. Cable attachment details, cable size, and the neoprene and steel washers shall be sized by the manufacturer and are to be indicated in the Shop Drawings.
3. Provide detailed Shop Drawings for approval in sufficient time to allow structural attachment work to be incorporated into the normal work sequence.

PART 3 EXECUTION

3.01 <u>SEISMIC RESTRAINTS</u>

A. General:
1. Install and adjust seismic restraints so that the equipment, piping, and ductwork supports are not degraded by the restraints.
2. Restraints must not short circuit vibration isolation systems or transmit objectionable vibration or noise.

B. Supported Equipment:
   1. Each vibration isolation frame for supported equipment shall have a minimum of four seismic snubbers mounted as close as possible to the vibration isolators and/or the frame extremities.
   2. Care must be taken so that a minimum 1/8-inch air gap in the seismic restraint snubber is preserved on all sides in order that the vibration isolation potential of the isolator is not compromised. This requires that the final snubber adjustment be completed after the vibration isolators are properly installed and the installation approved.

C. Bracing of Pipes:
   1. Branch lines may not be used to brace main lines.
   2. Transverse bracing shall be at 40 feet maximum except where a lesser spacing is indicated in the SMACNA tables for bracing of pipes.
   3. Longitudinal bracing shall be at 80 feet maximum except where a lesser spacing is indicated in the tables. In pipes where thermal expansion is a consideration, an anchor point may be used as the specified longitudinal brace provided that it has a capacity equal to or greater than a longitudinal brace. The longitudinal braces and connections must be capable of resisting the additional force induced by expansion and contraction.
   4. A rigid piping system shall not be braced to dissimilar parts of the building or to two dissimilar building systems that may respond differently during an earthquake.
   5. Transverse bracing for one pipe section may also act as longitudinal bracing for a pipe section of the same size connected perpendicular to it if the bracing is installed within 24 inches of the elbow or tee.

D. Bracing of Ductwork:
   1. Hangers must be positively attached to the duct within 2 inches of the top of the duct with a minimum of two #10 sheet metal screws.
   2. Group of ducts may be combined in larger frame so that the combined weights and dimensions of the ducts are less than or equal to the maximum weight and dimensions of the duct for which bracing details are selected.
   3. Walls, including gypsum board nonbearing partitions, which have ducts running through them, may replace a typical transverse brace. Provide solid blocking around duct penetrations at stud wall construction.
   4. Unbraced ducts shall be installed with a 6-inch minimum clearance to vertical ceiling hanger wires.

E. Suspended Equipment, Piping, and Ductwork Cable Method:
   1. Cables shall be adjusted to a degree of slackness approved by the Structural Engineer.
   2. Uplift and downward restraint nuts and washers for the Type HST hangers shall be adjusted so that there is a minimum 1/4-inch clearance.

END OF SECTION

SECTION 23 0553

IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nameplates.
B. Tags.
C. Pipe markers.
D. Labels.
E. Lockout devices.

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting: Identification painting.

1.03 REFERENCE STANDARDS

A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2015.
B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2017.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
C. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
D. Product Data: Provide manufacturers catalog literature for each product required.
E. Manufacturer's Installation Instructions: Indicate special procedures, and installation.
F. Project Record Documents: Record actual locations of tagged valves.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Brady Corporation: www.bradycorp.com.
B. Safety Sign Company: www.safetysignco.com.
C. Seton Identification Products: www.seton.com/aec.
D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 NAMEPLATES

A. Description: Laminated three-layer plastic with engraved letters.
   1. Letter Color: Black.
   2. Letter Height: 1/2 inch.
   3. Background Color: Yellow.
   4. Plastic: Comply with ASTM D709.

2.03 TAGS

A. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch diameter.
B. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

C. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.

2.04 PIPE MARKERS

A. Color: Comply with ASME A13.1.

B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

2.05 LABELS

A. Description: Aluminum, size 1.9 x 0.75 inches, adhesive backed with printed identification.

2.06 LOCKOUT DEVICES

A. Lockout Hasps:
   1. Manufacturers:
      a. Anodized aluminum or Reinforced nylon hasp with erasable label surface; size minimum 7-1/4 x 3 inches.

B. Valve Lockout Devices:
   1. Steel device preventing access to valve operator, accepting lock shackle.

PART 3 EXECUTION

3.01 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

B. Prepare surfaces in accordance with Section 09 9123 for stencil painting.

3.02 INSTALLATION

A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install tags with corrosion resistant chain.

C. Install plastic pipe markers in accordance with manufacturer's instructions.

D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.

F. Identify air handling units, with 8 x 4 inch plastic nameplates.

G. Identify control panels and major control components outside panels with plastic nameplates.

H. Tag automatic controls, instruments, and relays. Key to control schematic.

I. Identify piping, concealed or exposed, with plastic pipe markers, plastic tape pipe markers. Use tags on piping 3/4 inch diameter and smaller. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

J. Install ductwork with plastic nameplates. Identify with air handling unit identification number and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION

SECTION 23 0593

TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Testing, adjustment, and balancing of air systems.

B. Measurement of final operating condition of HVAC systems.

1.02 RELATED REQUIREMENTS

A. Section 01 2100 - Allowances: Inspection and testing allowances.

B. Section 01 4000 - Quality Requirements: Employment of testing agency and payment for services.

C. Section 01 9113 - General Commissioning Requirements: Commissioning requirements that apply to all types of work.

1.03 PRICE AND PAYMENT PROCEDURES

A. Cash Allowance: See Section 01 2100 for additional requirements.

B. Allowance includes testing, adjusting, and balancing of mechanical systems.

1.04 REFERENCE STANDARDS

A. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition; 2016.

B. AABC MN-1 - AABC National Standards for Total System Balance; 2002.

C. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems; 2008.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract.

C. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
   1. Submit to Architect.
   2. Submit to the Commissioning Authority, Construction Manager, and HVAC controls contractor.
   3. Submit six weeks prior to starting the testing, adjusting, and balancing work.
   4. Include certification that the plan developer has reviewed Contract Documents, the equipment and systems, and the control system with the Architect and other installers to sufficiently understand the design intent for each system.

D. Field Logs: Submit at least once a week to Commissioning Authority and Construction Manager.

E. Control System Coordination Reports: Communicate in writing to the controls installer all setpoint and parameter changes made or problems and discrepancies identified during TAB that affect, or could affect, the control system setup and operation.

F. Progress Reports.

G. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
   1. Submit to the the Commissioning Authority within two weeks after completion of testing, adjusting, and balancing.
   2. Revise TAB plan to reflect actual procedures and submit as part of final report.

3. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
4. Provide reports in 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.
5. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
6. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
7. Units of Measure: Report data in I-P (inch-pound) units only.
8. Include the following on the title page of each report:
   a. Name of Testing, Adjusting, and Balancing Agency.
   b. Address of Testing, Adjusting, and Balancing Agency.
   c. Telephone number of Testing, Adjusting, and Balancing Agency.
   d. Project name.
   e. Project location.
   f. Project Architect.
   g. Project Engineer.
   h. Project Contractor.
   i. Project altitude.
   j. Report date.

H. Project Record Documents: Record actual locations of flow measuring stations and balancing valves and rough setting.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 <u>GENERAL REQUIREMENTS</u>

A. Perform total system balance in accordance with one of the following:
   1. AABC (NSTSB), AABC National Standards for Total System Balance.
   2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.

B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.

C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.

D. TAB Agency Qualifications:
   1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.
   2. Having minimum of three years documented experience.

E. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

F. TAB Supervisor Qualifications: Professional Engineer licensed in Washington.

G. Pre-Qualified TAB Agencies:
   1. Northwest Engineering Service, Inc.
   2. Air Balancing Specialty.
   3. Neudorfer Engineers.
   4. Substitutions: See Section 01 6000 - Product Requirements.

3.02 EXAMINATION

A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
   1. Systems are started and operating in a safe and normal condition.
   2. Temperature control systems are installed complete and operable.
   3. Proper thermal overload protection is in place for electrical equipment.
   4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
   5. Duct systems are clean of debris.
   6. Fans are rotating correctly.
   7. Air coil fins are cleaned and combed.
   8. Access doors are closed and duct end caps are in place.
   9. Air outlets are installed and connected.
   10. Duct system leakage is minimized.

B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.

C. Beginning of work means acceptance of existing conditions.

3.03 PREPARATION

A. Hold a pre-balancing meeting at least one week prior to starting TAB work.
   1. Require attendance by all installers whose work will be tested, adjusted, or balanced.

B. Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to Architect to facilitate spot checks during testing.

C. Provide additional balancing devices as required.

3.04 ADJUSTMENT TOLERANCES

A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.

B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

3.05 RECORDING AND ADJUSTING

A. Field Logs: Maintain written logs including:
   1. Running log of events and issues.
   2. Discrepancies, deficient or uncompleted work by others.
   3. Contract interpretation requests.
   4. Lists of completed tests.

B. Ensure recorded data represents actual measured or observed conditions.

C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

D. Mark on drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.

E. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.

F. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

G. At final inspection, recheck random selections of data recorded in report. Recheck points or areas as selected and witnessed by the Owner.

H. Check and adjust systems approximately six months after final acceptance and submit report.

3.06 AIR SYSTEM PROCEDURE

A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.

B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.

C. Measure air quantities at air inlets and outlets.

D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.

F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.

G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.

H. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.

3.07 SCOPE

A. Test, adjust, and balance the following:
   1. Packaged Roof Top Heating/Cooling Units.
   2. Energy Recovery Dedicated Outside Air Supply (DOAS).
   3. Air Inlets and Outlets.

3.08 MINIMUM DATA TO BE REPORTED

A. Electric Motors:
   1. Manufacturer.
   2. Model/Frame.
   3. HP/BHP.
   4. Phase, voltage, amperage; nameplate, actual, no load.
   5. RPM.
   6. Service factor.
   7. Starter size, rating, heater elements.
   8. Sheave Make/Size/Bore.

B. V-Belt Drives:
   1. Identification/location.
   2. Required driven RPM.
   3. Driven sheave, diameter and RPM.
   4. Belt, size and quantity.
   5. Motor sheave diameter and RPM.
   6. Center to center distance, maximum, minimum, and actual.

C. Electric Duct Heaters:
   1. Manufacturer.
   2. Identification/number.
   3. Location.
   4. Model number.
   5. Design kW.

6. Number of stages.
7. Phase, voltage, amperage.
8. Test voltage (each phase).
9. Test amperage (each phase).
10. Air flow, specified and actual.
11. Temperature rise, specified and actual.

D. Air Moving Equipment:
1. Location.
2. Manufacturer.
3. Model number.
4. Serial number.
5. Arrangement/Class/Discharge.
6. Air flow, specified and actual.
7. Return air flow, specified and actual.
8. Outside air flow, specified and actual.
9. Total static pressure (total external), specified and actual.
10. Inlet pressure.
11. Discharge pressure.
12. Sheave Make/Size/Bore.
13. Number of Belts/Make/Size.
14. Fan RPM.

E. Return Air/Outside Air:
1. Identification/location.
2. Design air flow.
3. Actual air flow.
4. Design return air flow.
5. Actual return air flow.
6. Design outside air flow.
7. Actual outside air flow.
8. Return air temperature.
9. Outside air temperature.
10. Required mixed air temperature.
11. Actual mixed air temperature.
12. Design outside/return air ratio.
13. Actual outside/return air ratio.

F. Exhaust Fans:
1. Location.
2. Manufacturer.
3. Model number.
4. Serial number.
5. Air flow, specified and actual.
6. Total static pressure (total external), specified and actual.
7. Inlet pressure.
8. Discharge pressure.
9. Sheave Make/Size/Bore.
10. Number of Belts/Make/Size.
11. Fan RPM.

END OF SECTION

SECTION 23 0713
DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Duct insulation.

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting: Painting insulation jackets.

B. Section 22 0553 - Identification for Plumbing Piping and Equipment.

C. Section 23 0553 - Identification for HVAC Piping and Equipment.

D. Section 23 3100 - HVAC Ducts and Casings: Glass mineral wool ducts.

1.03 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2017.

B. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2013.

C. ASTM C916 - Standard Specification for Adhesives for Duct Thermal Insulation; 2014.

D. ASTM C1071 - Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material); 2016.

E. ASTM C 1338 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010.

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018b.

G. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.

H. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015.

I. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005 (Revised 2009).

J. American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE).

K. North American Insulation Manufacturers Association (NAIMA).

L. National Fire Protection Association (NFPA).

M. Underwriter's Laboratories (UL Environment).

N. Underwriter's Laboratories Environmental (UL Environment).

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

C. Manufacturer's Instructions: Indicate installation procedures necessary to ensure acceptable workmanship and that installation standards will be achieved.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section with not less than three years of documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified in this section.

C. Surface-Burning Characteristics: For insulation and related materials, UL/ULC Classified per UL 723 or meeting ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

D. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

E. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

F. Formaldehyde Free: Third party certified with UL Environment Validation.

G. Biosoluble: As determined by research conducted by the International Agency for Research on Cancer (IARC) and supported by revised reports from the National Toxicology Program (NTP) and the California Office of Environmental Health Hazard Assessment. Certified by European Certification Board for Mineral Wool Products (EUCEB).

1.06 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.

B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.07 FIELD CONDITIONS

A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.

B. Maintain temperature during and after installation for minimum period of 24 hours.

1.08 DEFINITIONS

A. Thermal Conductivity (K value): Units of Btu-inch/hour per square foot per degree F.

B. ASJ+: All Service Jacket composed of aluminum foil reinforced with glass scrim bonded to a kraft paper interleaving with an outer film layer leaving no paper exposed.

C. ASJ: All Service Jacket (no outer film).

D. SSL+: Self-Sealing Lap with Advanced Closure System.

E. SSL: Self-Sealing Lap.

F. FSK: Foil Scrim Kraft; jacketing.

G. PSK: Poly Scrim Kraft; jacketing.

H. PVC: PolyVinyl Chloride.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 DUCT WRAP, FLEXIBLE

A. Manufacturer:
   1. Knauf Insulation; Atmosphere Duct Wrap with Ecose Technology: www.knaufusa.com.
   2. Johns Manville; "Microlite FSK": www.jm.com.
   3. Owens Corning Corporation; "SOFTR" or "EcoTouch": www.ocbuildingspec.com/#sle.

4. CertainTeed Corporation; "Soft Touch": www.certainteed.com/#sle.
5. Substitutions: See Section 01 6000 - Product Requirements.

B. Insulation: ASTM C553; flexible, noncombustible blanket.
1. 'K' value: 0.29 at 75 degrees F, when tested in accordance with ASTM C177.
2. Maximum Service Temperature: 250 degrees F.
3. Maximum Water Vapor Sorption: <5.0 percent by weight per ASTM C1104.

C. Vapor Barrier Jacket:
1. Kraft paper with glass fiber yarn and bonded to aluminized film (FSK).
2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E96/E96M.
3. Secure with pressure sensitive tape.

D. Vapor Barrier Tape:
1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.

E. Outdoor Vapor Barrier Mastic:
1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

F. Tie Wire: Annealed steel, 16 gage.

2.03 DUCT LINER

A. Manufacturers:
1. Knauf Insulation: www.knaufinsulation.com.
2. Johns Manville: www.jm.com.
3. Owens Corning Corp: www.owenscorning.com.
4. CertainTeed Corporation; Model "ToughGard® Duct Liner": www.certainteed.com.
5. Substitutions: See Section 01 60 00 - Product Requirements.

B. Insulation: Non-corrosive, incombustible glass mineral wool complying with ASTM C 1071; mat faced air stream surface and edges coated with acrylic polymer.
1. Fungi Resistance: ASTM G 21.
2. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
3. Service Temperature: Up to 250 degrees F.
4. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
5. Minimum Noise Reduction Coefficients:
   a. 1/2 inch Thickness: 0.45.
   b. 1 inch Thickness: 0.70.
   c. 1-1/2 inches Thickness: 0.80.
   d. 2 inch Thickness: 0.85.

C. Liner Fasteners: Galvanized steel, spot welded.

PART 3 EXECUTION

3.01 EXAMINATION

A. Test ductwork for design pressure prior to applying insulation materials.

B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with NAIMA National Insulation Standards.

C. Insulated Ducts Conveying Air Below Ambient Temperature:
1. Provide insulation with integral vapor barrier jackets.

2. Finish with tape and vapor barrier jacket.
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
4. Insulate entire system, including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

D. Insulated Ducts Conveying Air Above Ambient Temperature:
1. Provide with standard vapor barrier jacket.
2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.

E. Duct and Plenum Liner Application:
1. Adhere insulation with adhesive for 100 percent coverage.
2. Secure insulation with mechanical spot welded liner fasteners. Refer to SMACNA (DCS) for spacing.
3. Seal and smooth joints. Seal and coat transverse joints.
4. Seal liner surface penetrations with adhesive.
5. Duct dimensions indicated are net inside dimensions required for air-flow. Increase duct size to allow for insulation thickness.
6. Refer to SMACNA publication for transverse edges for velocities over 2500 fpm.

END OF SECTION

SECTION 23 1005
FUEL PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe, pipe fittings, valves, and connections for piping systems.
B. Natural gas piping above grade.
C. Flexible pipe/connectors.
D. Unions and flanges.
E. Strainers.
F. Natural gas pressure regulators.

1.02 RELATED REQUIREMENTS

A. Section 09 90 00 - Painting and Coating.
B. Section 23 05 49 - HVAC Seismic Restraint.
C. Section 23 05 53 - Identification for HVAC Piping and Equipment.
D. Section 26: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

A. ASME B16.3 - Malleable Iron Threaded Fittings; The American Society of Mechanical Engineers; 2013.
B. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers; 2013 (ANSI/ASME B31.9).
C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2013.
D. MSS SP-89 - Pipe Hangers and Supports - Fabrication and Installation Practices; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 2003.
E. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2012.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with all applicable local codes and standards.
B. Welder Qualifications: Certified in accordance with ASME (BPV IX).
C. Identify pipe with marking including size, ASTM material classification, ASTM specification, water pressure rating.

1.06 REGULATORY REQUIREMENTS

A. Perform Work in accordance with applicable plumbing code.
B. Conform to applicable code for installation of backflow prevention devices.
C. Provide certificate of compliance from authority having jurisdiction indicating approval of installation of backflow prevention devices.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary protective coating on cast iron and steel valves.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system. Store pipe on sleepers, a minimum of 4 inches above surrounding grade, at all times.

PART 2 PRODUCTS

2.01 NATURAL GAS PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A 53/A 53M Schedule 40 black.
   1. Fittings: ASME B16.3, malleable iron, or ASTM A 234/A 234M, wrought steel welding type.
   2. Joints: NFPA 54, threaded or welded to ASME B31.1.

2.02 REGULATOR VENT PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A 53/53A, Schedule 40, black.
   1. Fittings: ASME B 16.3 malleable iron.

2.03 STAINLESS STEEL GAS CONNECTORS

A. Manufacturers:
   1. Dormont, or approved equal.

B. Features and Specifications:
   1. Tubing: Annealed, 304 stainless steel (ASTM A240).
   2. Flare Nuts: Brass or plated steel.
   3. Adaptors: Brass or plated steel.
   4. Coating: Heavy-duty, antimicrobial, hot-dipped gray PVC (for 1⁄2" OD (21 series) and 5⁄8" OD (31 series only). Coating will not hold a flame.
   5. Approved for indoor/outdoor use with stationary gas appliances/equipment.
   6. Temperature rating of connector with adapters: -40°F to 150°F.
   7. Temperature rating with valves: -40°F to 125°F.
   8. 100% factory leak tested
   9. When installing a new appliance or when an existing appliance is moved to a new location a NEW gas connector must be used per manufacturer's installation instructions and per product standards ANSI Z21.24/CSA 6.10 and ANSI Z21.75/CSA 6.27
   10. Designed for occasional movement after installation. Repeated bending, flexing or extreme vibration must be avoided. Normal operation of a clothes dryer, rooftop HVAC unit or SIMILAR OUTDOOR APPLIANCE DOES NOT constitute extreme vibration or movement

C. Design Certifications and Approvals:
   1. ANSI Z21.24/CSA 6.10 - Connectors for Gas Appliances
   2. ANSI Z21.75/CSA 6.27 - Connectors for Outdoor Appliances and Manufactured Homes

2.04 STRAINERS

A. Manufacturers:
   1. Muller Steam Specialty.
   2. O.C. Keckley Company.
   3. Spirax Sarco, Inc.

B. 2 inch and Smaller: Screwed brass or iron body for 175 psig working pressure, Y pattern with 1/32 inch stainless steel perforated screen.

2.05 PRESSURE REGULATORS

A. Manufacturers:
   1. Equimeter.
   2. American.
   3. Maxitrol.
   4. Sensus.

B. Product Description: Spring loaded, general purpose, self-operating service regulator including internal relief type diaphragm assembly and vent valve. Diaphragm case can be rotated 360 degrees in relation to body.
   1. Comply with ANSI Z21.80.
   2. Temperatures: Minus 20 degrees F to 150 degrees F.
   3. Body: Cast iron with neoprene gasket.
   4. Spring case, lowered diaphragm casing, union ring, seat ring and disk holder: Aluminum.
   5. Disk, Diaphragm, and O-Ring: Nitrile.
   6. Minimum Inlet Pressure: 5 psi.
   7. Furnish sizes 2 inches and smaller with threaded ends. Furnish sizes 2-1/2 inches and larger with flanged ends.

2.06 GAS VENT TERMINALS

A. 3/4 inch and one (1) inch aluminum threaded vent terminal with 16 x 16 mesh 0.018 gauge stainless steel screen.

B. 1-1/4 inch to 4 inch standard pipe threaded elbow with 12 x 12 mesh stainless steel screen.
   1. Equal to Upsco Inc.

C. Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.
   1. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.
   2. Wrought-Steel Welding Fittings: ASTM A 234/A 234M for butt welding and socket welding.
   3. Unions: ASME B16.39, Class 150, malleable iron with brass-to-iron seat, ground joint, and threaded ends.

2.07 VALVES

A. Ball Valves
   1. Manufacturer:
      a. Contromatics.
      b. Conbraco
      c. NIBCO

B. Two-Piece, Full-Port, Bronze Ball Valves with Bronze Trim: MSS SP-110.
   1. Body: Bronze, complying with ASTM B 584.
   2. Ball: Chrome-plated bronze.
   3. Stem: Bronze; blowout proof.
   4. Seats: Reinforced TFE; blowout proof.
   5. Packing: Threaded-body packnut design with adjustable-stem packing.
   6. Ends: Threaded, flared, or socket.
   7. CWP Rating: 600 psig.
   8. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
   9. Service: Suitable for natural-gas service with "WOG" indicated on valve body.

C. Bronze Plug Valves: MSS SP-78.
   1. Manufacturers:
      a. Hammond.
      b. Lee Brass Company.
      c. NIBCO.
   2. Body: Bronze, complying with ASTM B 584.
   3. Plug: Bronze.
   4. Ends: Threaded, socket, or flanged.
   5. Operator: Square head or lug type with tamperproof feature where indicated.
   6. Pressure Class: 125 psig.
   7. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction, AGA approved.
   8. Service: Suitable for natural-gas service with "WOG" indicated on valve body.

D. Cast-Iron, Non-lubricated Plug Valves: MSS SP-78.
   1. Manufacturers:
      a. McDonald.
      b. Mueller Co.
      c. Xomox Corporation.
   2. Body: Cast iron, complying with ASTM A126, Class B.
   3. Plug: Bronze or nickel-plated cast iron.
   4. Seat: Coated with thermoplastic.
   5. Stem Seal: Compatible with natural gas.
   6. Ends: Threaded or flanged as indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
   7. Operator: Square head or lug type with tamperproof feature where indicated.
   8. Pressure Class: 125 psig.
   9. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
   10. Service: Suitable for natural-gas service with "WOG" indicated on valve body.

2.08 FLANGES, UNIONS, AND COUPLINGS

A. Unions for Pipe Sizes 3 Inches and Under:
   1. Ferrous pipe: Class 150 malleable iron threaded unions.
   2. Copper tube and pipe: Class 150 bronze unions with soldered joints.

B. Flanges for Pipe Size Over 1 Inch:
   1. Ferrous pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
   2. Copper tube and pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.

C. Dielectric Connections: Bronze threaded nipple, minimum 3 inches long, with impervious isolation liner. Victaulic "Clearflow".

2.09 PIPE HANGERS AND SUPPORTS

A. Manufacturers:
   1. Tolco Inc.
   2. Anvil.
   3. Hubbard Enterprises/Holdrite.
   4. Michigan Hanger Company, Inc.
   5. PHD Manufacturing Co.
   6. Superstrut.
   7. Unistrut.
   8. Substitutions: See Section 01 6000 - Product Requirements.

B. Fuel Piping:

1. Conform to ASME B31.9.

PART 3 EXECUTION

3.01 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

C. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 90 00.

D. Install valves with stems upright or horizontal, not inverted.

E. Pipe vents from gas pressure reducing valves to outdoors and terminate in weather proof hood or gooseneck.

F. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9 and MSS SP-89.
   2. Install support for horizontal steel piping with the following maximum spacing and minimum rod sizes:
      a. NPS 1 (DN 25) and Smaller: Maximum span, 96 inches (2438 mm).
      b. NPS 1-1/4 (DN 32): Maximum span, 108 inches (2743).
      c. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): Maximum span, 10 feet (3 m).
   3. Provide support adjacent to motor driven equipment with vibration isolation; refer to Section 23 05 48.

3.03 APPLICATION

A. Install unions downstream of valves and at equipment or apparatus connections.

B. Install ball valves for shut-off and to isolate equipment.

END OF SECTION

SECTION 23 3100
HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal ductwork.

B. Duct cleaning.

C. Duct systems have been designed for metal duct.

1.02 RELATED REQUIREMENTS

A. Section 23 05 49 - HVAC Seismic Restraint.

B. Section 23 0593 - Testing, Adjusting, and Balancing for HVAC.

C. Section 23 0713 - Duct Insulation: External insulation and duct liner.

D. Section 23 3300 - Air Duct Accessories.

E. Section 23 3700 - Air Outlets and Inlets.

1.03 REFERENCE STANDARDS

A. ASHRAE (FUND) - ASHRAE Handbook - Fundamentals; Most Recent Edition Cited by Referring Code or Reference Standard.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018b.

1.04 COORDINATION

A. The Drawings do not attempt to show exact details of all ductwork. No extra payment will be allowed for obstruction by work of other trades or local obstructions to the work which require offsets. Where diagrams have been made to show duct connections, the Contractor is cautioned that these diagrams must not be used for obtaining material quantities.

B. Changes in location of equipment or ductwork, advisable in the opinion of the Contractor, shall be submitted to the Engineer for review before proceeding with the work. All measurements and dimensions shall be verified at the site.

C. Duct sizes shown on the Drawings represent the nominal free area required for that service. Where changes in duct dimensions are necessary to coordinate the installation, the contractor is allowed, with prior permission from the project engineer, to use alternative equivalent sized ducts.

D. Coordination with Existing Conditions and with other Trades:
   1. Coordinate the installation of ductwork with existing conditions and the work of other trades to allow the installation of ductwork and the proper operation of dampers and operators.
   2. Where existing thread rod, strut material, miscellaneous supports, conduit, or piping under 1-inch diameter obstructs the passage of the ductwork, they shall be relocated by the Contractor at no additional cost to the Owner. Coordinate the work with other trades.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for duct materials, duct liner, duct connections, and duct fittings.

C. Shop Drawings: Submit duct fabrication drawings, drawn to scale not smaller than 1/4 inch equals 1 foot, on drawing sheets same size as Contract Documents, indicating:
   1. Fabrication, assembly, and installation details, including plans, elevations, sections, details of components, and attachments to other work.
   2. Fittings.
   3. Hangers and supports, including methods for building attachment, vibration isolation, and duct attachment.

D. Manufacturer's Installation Instructions: Indicate special procedures for glass fiber ducts.

E. Manufacturer's Certificate: Certify that installation of glass fiber ductwork meet or exceed recommended fabrication and installation requirements.

F. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years of documented experience.

1.07 REGULATORY REQUIREMENTS

A. Construct ductwork to SMACNA standards.

1.08 FIELD CONDITIONS

A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.

B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

2.01 MATERIALS

A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G90/Z275 coating.

B. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
   1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
   2. VOC Content: Not more than 250 g/L, excluding water.
   3. Surface Burning Characteristics: Flame spread of zero, smoke developed of zero, when tested in accordance with ASTM E84.
   4. For Use With Flexible Ducts: UL labeled.
   5. Manufacturers:
      a. Duro-Dyne; Model DSW: www.durodyne.com.
      b. Hard Cast; Model RTA 50: www.hardcast.com.
      c. Hard Cast; Model "Versa-Grip" 102: www.hardcast.com.
      d. Sika; Model "Sikaflex": www.sika.com.
      e. Substitutions: See Section 01 6000 - Product Requirements.

C. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

D. All Ducts: G90 Galvanized steel, unless otherwise indicated. Provide SMACNA pressure class as indicated or at a minimum meet or exceed the pressure rating of the connected fan. In no case less that 1.0 inch w.g. permitted.

2.02 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.

B. No variation of duct configuration or size permitted except by written permission. Size round duct installed in place of rectangular ducts in accordance with ASHRAE (FUND) Handbook - Fundamentals.

C. Duct systems have been designed for metal duct.

D. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

E. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.

F. Provide turning vanes of perforated metal with glass fiber insulation when acoustical lining is indicated.

G. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

H. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

I. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.

J. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.

2.03 DUCT MANUFACTURERS

A. Streimer Sheet Metal: www.streimer.com.

B. General Sheet Metal: www.gsmw.com.

C. Arctic Sheet Metal: www.arcticsheetmetal.com.

D. CoolSys Sheet Metal: www.coolsys.com.

E. Robert Lloyd Sheet Metal: www.rlsm.net.

F. Just Right Heating and Cooling: www.justrightheat.com.

2.04 ROUND AND FLAT OVAL SPIRAL SEAM DUCT

A. Manufacture: Machine made from round spiral lock seam duct in accordance with SMACNA (DCS).

B. Fittings: Manufacture at least two gages heavier metal than duct.
   1. All fittings shall have rolled edges for added strength and rigidity.
   2. All takeoffs to be completely separate fitting; direct tabs are not allowed. Saddle fittings are not allowed except for retrofit installations when approved by project engineer.
   3. Branch takeoffs are to be 45 degree laterals or conical tees, 90 and 45 degree.
   4. Elbows shall be radiused at 1.5 times the diameter. 15, 30 and 60 degree elbows shall be 1.0 times the diameter.
   5. Joints are to be couplings with centering beads and double-lipped, U-profile EPDM rubber gasket. Use flange joints from 26 inch diameter and large. Crimped ends are prohibited except 8 inches and smaller.

2.05 RECTANGULAR HVAC DUCTWORK

A. Manufacture: Equal or exceed the minimum wall thickness and reinforcing as scheduled in the SMACNA rectangular duct construction schedule to comply with duct pressure classifications specified. Cross break or bead all duct widths over 14 inches and horizontal surfaces to prevent ballooning or breathing.

B. Fittings: Fabricate for easiest airflow.
   1. Branch tabs are to be 45 degrees entry with L = 1/4 W inches.

C. Joints:
   1. Longitudinal: Pittsburg lock flooded with mastic. Snaplock is not allowed.
   2. Traverse: Demountable joint such as Ductmate for 36 inch width and above. Seal corners prior to assembly.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install, support, and seal ducts in accordance with SMACNA (DCS).

B. Install in accordance with manufacturer's instructions.

C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

D. Flexible Ducts: Connect to metal ducts with adhesive and draw bands

E. Use sealant on all lapped round duct joint connections. Seal all ducts in accordance with State Energy Code.

F. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.

G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

H. Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.

I. Install duct hangers and supports in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

J. Use double nuts and lock washers on threaded rod supports.

K. Do not hang ductwork from roof decks without prior approval from project engineer regardless of what is indicated on the drawings.

L. Connect diffusers to low pressure ducts with 5 feet maximum length of flexible duct held in place with strap or clamp.

3.02 CLEANING

A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment that could be harmed by excessive dirt with temporary filters, or bypass during cleaning.

B. Clean duct systems with high power vacuum machines. Protect equipment that could be harmed by excessive dirt with filters, or bypass during cleaning. Provide adequate access into ductwork for cleaning purposes.

END OF SECTION

SECTION 23 3700
AIR OUTLETS AND INLETS

PART 1 GENERAL

1.01 SECTION INCLUDES

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting: Painting of ducts visible behind outlets and inlets.

1.03 REFERENCE STANDARDS

A. AMCA 500-L - Laboratory Methods of Testing Louvers for Rating; 2015.

B. ARI 890 - Standard for Air Diffusers and Air Diffuser Assemblies; Air-Conditioning and Refrigeration Institute; 2008.

C. ASHRAE Std 70 - Method of Testing the Performance of Air Outlets and Inlets; 2006 (Reaffirmed 2011).

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

C. Project Record Documents: Record actual locations of air outlets and inlets.

1.05 QUALITY ASSURANCE

A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.

B. Test and rate louver performance in accordance with AMCA 500-L.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Carnes, a division of Carnes Company Inc.: www.carnes.com.

B. Krueger: www.krueger-hvac.com.

C. Price Industries: www.price-hvac.com.

D. Titus: www.titus-hvac.com.

E. Nailor; www.nailor.com.

F. Metalaire www.metalaire.com

G. Shoemaker; www.shoemakermfg.com.

H. Substitutions: See Section 01 6000 - Product Requirements.

2.02 WALL SUPPLY REGISTERS/GRILLES

A. Manufacturers:
   1. Carnes Model Series RTDB.
   2. Price Model Series 520.
   3. Krueger Model 880.
   4. Titus Model 300RL.

5. Nailor; Model 6145H.
6. Metalaire Model H4004S.
7. Substitutions: See Section 01 6000 - Product Requirements.

B. Type: Streamlined and individually adjustable blades, 3/4 inch minimum depth, 3/4 inch maximum spacing with spring or other device to set blades, vertical face, single deflection.

C. Frame: 1-1/4 inch margin with countersunk screw mounting and gasket.

D. Fabrication: Steel with 20 gage, 0.0359 inch minimum frames and 22 gage, 0.0299 inch minimum blades, steel and aluminum with 20 gage, 0.0359 inch minimum frame, or aluminum extrusions, with factory baked enamel finish.

E. Damper: Integral, gang-operated opposed blade type with removable key operator, operable from face.

F. Gymnasiums: Provide front pivoted or welded in place blades, securely fastened to be immobile.

2.03 CEILING EGG CRATE EXHAUST AND RETURN GRILLES

A. Manufacturers:
1. Carnes Model Series RATB.
2. Price Model Series 81.
3. Krueger Model EGC5.
4. Titus Model 50F.
5. Nailor; Model 61DH.
6. Metalaire Model CC5
7. Substitutions: See Section 01 6000 - Product Requirements.

B. Type: Egg crate style face consisting of 1/2 by 1/2 by 1/2 inch grid core.

C. Fabrication: Grid core consists of aluminum with mill aluminum finish.

D. Frame: Channel lay-in frame for suspended grid ceilings.

E. Accessories: Provide integral, gang & face operated opposed blade damper with removable key operator, operable from face.

2.04 WALL EXHAUST AND RETURN REGISTERS/GRILLES

A. Manufacturers:
1. Carnes Model Series RSAB.
2. Price Model Series 530.
3. Krueger Model S80.
4. Titus Model 350RL.
5. Nailor; Model 49-241.
6. Metalaire Model SRH.
7. Substitutions: See Section 01 6000 - Product Requirements.

B. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with spring or other device to set blades, vertical face.

C. Frame: 1-1/4 inch margin with countersunk screw mounting.

D. Fabrication: Steel frames and blades, with factory baked enamel finish.

E. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Check location of outlets and inlets and make necessary adjustments in position to comply with architectural features, symmetry, and lighting arrangement.

C. Install diffusers to ductwork with air tight connection.

D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

E. Paint ductwork visible behind air outlets and inlets matte black. Refer to Section 09 9123.

END OF SECTION

SECTION 23 7412

PACKAGED OUTDOOR ROOFTOP UNITS - SMALL CAPACITY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Packaged roof top unit.

B. Roof mounting curb.

C. Maintenance service.

1.02 RELATED REQUIREMENTS

A. Division 26: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

A. ANSI/AMCA Standard 500-D-07, "Laboratory Methods of Testing Dampers for Rating"; 2007.

B. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; American Society for Testing and Materials.

C. NFPA 54 - National Fuel Gas Code; National Fire Protection Association.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.

C. Shop Drawings: Indicate capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.

D. Manufacturer's Instructions: Indicate assembly, support details, connection requirements, and include start-up instructions.

E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.

F. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Filters: One set for each unit.
   3. Fan Belts: One set for each unit, as applicable.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum 10 years of documented experience.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide a five year warranty to include coverage for refrigeration compressors and heat exchangers.

PART 2 PRODUCTS

2.01 ROOFTOP AIR CONDITIONING UNITS

A. Manufacturers:
   1. Aaon Incorporated.
   2. Carrier Corp.
   3. Rheem Manufacturing.
   4. The Trane Company.
   5. York International.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. Product Description: Self-contained, packaged, factory assembled and wired, consisting of roof curb, cabinet, supply fan, refrigerant cooling coil, compressor, refrigeration circuit, condenser, gas-fired heating section, electric or hot water heating coil, air filters, mixed air casing, controls, and accessories.

C. Configuration: As indicated on Drawings.

D. Roof Mounting Curb: Custom adaptor, galvanized steel, channel frame with gaskets, nailer strips. Full perimeter type for mounting under entire unit.

E. Cabinet:
   1. Designed for outdoor installation with weatherproof construction.
   2. Panels: Constructed of galvanized steel with baked enamel finish meeting salt spray test in accordance with ASTM B117. Furnish access doors or removable access panels.
   3. Insulation: Factory applied to exposed vertical and horizontal panels, 1/2-inch thick aluminum foil faced foam or glass fiber with edges protected from erosion.

F. Supply Fan: Forward curved centrifugal type, resiliently mounted with direct drive (under 3 tons) and V-belt drive or adjustable variable pitch motor pulley (3 tons and over) and high efficiency motor. Motor permanently lubricated with built-in thermal overload protection.

G. Evaporator Coil: Constructed of copper tubes expanded onto aluminum fins. Galvanized drain pan with piping connection. Factory leak tested under water.

H. Compressor: Hermetically sealed, resiliently mounted with positive lubrication, and internal motor overload protection. Furnish vibration isolators and short cycle protection.

I. Refrigeration circuit: Furnish the following for each circuit: fixed orifice control (under 3 tons) or thermal expansion valve (3 tons and over), filter-drier, suction, discharge, and liquid line service valves with gauge ports, high and low pressure safety controls. Dehydrate and factory charge each circuit with oil and refrigerant.

J. Condenser:
   1. Coil: Copper tube with aluminum or copper fin coil assembly. Factory leak tested under water.
   2. Condenser Fan: Direct drive propeller fans statically and dynamically balanced. Wired to operate with compressor. Motor permanently lubricated with built-in thermal overload protection. Furnish high efficiency fan motors.

K. Gas-Fired Heating Section:
   1. Fuel: Natural gas.
   2. Heat Exchangers: Aluminized Steel.

3. Gas Burner: Induced draft type burner with adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition and flame sensing device. Require unit fan operation before allowing gas valve to open.

L. Air Filters: 2 thick glass fiber disposable media in metal frames. 30 percent efficiency based on ASHRAE 52 (MERV 8 based on ASHRAE 52.2).

M. Mixed Air Casing:
1. Damper Leakage: Furnish Class I motorized dampers with maximum leakage rate of 4 cfm per square foot at 1-inch water column pressure differential when tested in accordance with AMCA 500D.
2. Economizer: Factory installed fully modulating motorized outside air and return air dampers controlled by dry bulb or enthalpy controller with minimum position setting. Outside air damper normally closed and return air damper normally open. Furnish barometric relief damper capable of closing by gravity (3 tons and under) and barometric relief damper with powered exhaust (above 3 tons). Furnish rain hood with screen.

N. Controls:
1. Terminal strip.

O. Accessories:
1. Convenience Outlet: Factory installed, 115 volt, 15 amp, GFCI type, internally mounted.
2. Roof Curb Adaptor Package: Furnish duct support hardware to adapt unit to existing roof curb.

P. Capacity:
1. Refer to Drawing schedules.

2.02 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics: In accordance with Division 26.

B. Disconnect Switch: Factory mounted, non-fused type, interlocked with access door, accessible from outside unit, with power lockout capability.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that roof is ready to receive work and opening dimensions are as indicated on shop drawings.

B. Verify that proper power supply is available.

3.02 INSTALLATION

A. Roof Curb:
1. Assemble roof curb.
2. Install roof curb level.
3. Coordinate curb installation and flashing with Architect.
4. Install units on roof curb providing watertight enclosure to protect ductwork and utility services.
5. Install gasket material between unit base and roof curb.

B. Install units on vibration isolators. Refer to Section 23 0548.

C. Connect units to supply and return ductwork with flexible connections. Refer to Section 23 3300.

D. Install condensate piping with trap and route from drain pan to splash block on roof.

E. Install components furnished loose for field mounting.

F. Install electrical devices furnished loose for field mounting.

G. Install control wiring between unit and field installed accessories.

H. Remove from roof and dispose off-site panels removed from units during installation of economizer and dampers.

I. Locate remote panels as indicated on Drawings.

J. Provide fixed sheaves required for final air balance.

3.03 INSTALLATION - NATURAL GAS HEATING SECTION

A. Connect natural gas piping in accordance with NFPA 54.

B. Connect natural gas piping to unit, full size of unit gas train inlet. Arrange piping with clearances for burner service.

C. Install the following piping accessories on natural gas piping connections. Refer to Section 23 1113.
   1. Strainer.
   2. Pressure gage.
   3. Shutoff valve.
   4. Pressure reducing valve.

D. Install natural gas piping accessories above roof, within unit casing, or below roof.

3.04 MANUFACTURER'S FIELD SERVICES

A. Section 01 4000 - Quality Requirements: Requirements for manufacturer's field services.

B. Furnish initial start-up and shutdown during first year of operation, including routine servicing and checkout.

C. Furnish services of factory trained representative for minimum of one day to leak test, refrigerant pressure test, evacuate, dehydrate, charge, start-up, calibrate controls, and instruct Owner on operation and maintenance.

3.05 CLEANING

A. Section 01 7000 - Execution Requirements: Requirements for cleaning.

B. Vacuum clean coils and inside of unit cabinet.

C. Install temporary filters during construction period. Replace with permanent filters at Substantial Completion.

3.06 DEMONSTRATION

A. Section 01 7000 - Execution Requirements: Requirements for demonstration and training.

B. Demonstrate unit operation and maintenance.

C. Furnish services of manufacturer's technical representative for three (3) hours to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7 days notice to Architect/Engineer of training date.

END OF SECTION

SECTION 23 7433
DEDICATED OUTDOOR AIR UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cooling coil section and compressor-condenser unit.

B. Service platform.

C. Controls.

1.02 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data with dimensions, duct and service connections, accessories, controls, electrical nameplate data, and wiring diagrams.

C. Sustainable Design Documentation: Submit manufacturer's product data on refrigerant used, showing compliance with specified requirements.

D. Shop Drawings: Indicate dimensions, duct and service connections, accessories, controls, electrical nameplate data, and wiring diagrams.

E. Manufacturer's Instructions: Indicate rigging, assembly, and installation instructions.

F. Project Record Documents: Record actual locations of components.

G. Operation And Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.

H. Warranty: Submit manufacturers warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Filters: One set of each type and size.

1.04 QUALITY ASSURANCE

1.05 REGULATORY REQUIREMENTS

A. Conform to NFPA 70.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year manufacturers warranty for compressor/condenser unit.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Greenheck.

B. I.C.E. (Industrial Commercial Equipment Manufacturing Ltd.).

C. Applied Air/Mestek Technology, Inc.

D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FABRICATION

A. Casing and Components: Steel panels, 18 gage, 0.0478 reinforced with structural angles and channels to ensure rigidity; access panels to burner and blower motor assemblies from either side of unit.

B. Observation Port: On burner section for observing main and pilot flames.

C. Insulation: Neoprene faced glass fiber insulation 1 inch thick on inlet components to burner profile plate.

D. Finish: Heat resistant baked enamel.

E. Suspended Installations: Service platforms complete with handrails and access ladder.

F. Outdoor Installation: Weatherproofed casing, with intake louver or hood.

2.03 FILTERS

A. Filter: Removable 1 inch thick high velocity permanent filters in metal frames.

B. Filter: Removable 2 inches thick high velocity permanent filters in metal frames.

2.04 FAN

A. Fan: Statically and dynamically balanced centrifugal fan mounted on solid steel shaft with heavy duty self-aligning pre-lubricated ball bearings and V-belt drive with matching motor sheaves and belts.

2.05 CONTROLS

A. Controls: Pre-wire unit for connection of power supply. Field wiring from unit to remote control panel makes unit operative.

B. Remote Control Panel: On-off-auto switch, summer-winter switch, heat-off-cool switch, indicating lights for supply fan, exhaust fan, pilot operation, burner operation, lockout indication, and clogged filter indication.

2.06 REFRIGERATION PACKAGE

A. Disconnect Switch: Factory mount disconnect switch in control panel.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 MAINTENANCE

A. See Section 01 7000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide service and maintenance of units for one year from Date of Substantial Completion.

END OF SECTION

LONGVIEW SCHOOL DISTRICT
MARK MORRIS SHOP CLASSROOM

COLLINS ARCHITECTURAL GROUP, P.S.

June 22, 2021

ELECTRICAL SPECIFICATIONS

Prepared by:

EXPIRES APRIL 5, 2022

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ELECTRICAL SPECIFICATIONS

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SECTION 26 0501

GENERAL PROVISIONS

PART 1 GENERAL

1.01 CONTRACT DOCUMENTS:

A. The General Conditions and General Requirements listed in Index to Specifications apply to the work of Division 26.

1.02 SCOPE:

A. Provide all labor, materials, equipment, transportation, and services necessary to supply, install, complete, adjust, make operable and balance systems indicated on Division 26 contract documents.

B. Review all contract documents for reference to work to be provided by Section 26. Include all such work in base bid.

C. Coordinate (convey) the electrical connection requirements as shown on the contract documents for the HVAC units with the mechanical contractor. Notify the architect in writing of any proposed discrepancies for resolution prior to HVAC equipment purchase.

1.03 DRAWINGS:

A. Electrical Drawings: Drawings are diagrammatic, home runs may be regrouped or rerouted for a more economical installation if desired. Do not alter circuit functions or switching arrangements. The Architect reserves the right to make minor changes in the locations of equipment without additional charge provided such request is made prior to rough-in. (Plus or minus 6'-0".)

B. Architectural and Mechanical Drawings: Check Architectural Drawings to coordinate location of outlets and switches with cabinets or other requirements. Check Architecture for door swings. Locate switches on the lock side of doors. Locate outlets in or above back-splash above countertops. Before submitting his bid, the Contractor shall familiarize himself with the Architectural and Mechanical plans. Locations of equipment shown on those plans govern. Coordinate the installation of the electrical systems including (but not limited to) panels, disconnects, boxes, conduits, lights, and devices, so as to prevent space use conflicts.

C. Uncompleted Items: Outlets or equipment shown on the plans with no supply conductors or conduit indicated shall be completed as required.

D. Items not Understood or Omitted: Prior to bidding, refer to the Architect all items in the plans and/or specifications that are in conflict, not understood or incomplete so that addenda may be issued to make corrections or clarifications. Equipment shown on the plans or listed in the specifications shall be included as if called for on both.

1.04 SPECIFICATIONS:

A. Materials:

1. The specifications describe the quality of materials desired by written description and catalog number. Materials listed are those desired and shall be used unless written permission has been granted to use equal or better quality materials by other manufacturers.
2. Approval to use materials of other manufacturers shall in no way reduce the standards of quality set by the specifications. If materials installed do not meet the standards set by the specifications, they shall be removed and replaced with specified materials without additional cost to the Owner.

B. Installation: The specifications list the method of installation to be followed and types of materials to be used. The type of materials used shall fit the application. Materials improperly installed or of a type not suitable for the application shall be removed and replaced with suitable materials without additional cost to the Owner.

1.05 "AS BUILT" DRAWINGS:

A. Electrical Contractor shall provide to the Owner two red line drawing reflecting all deviations from original electrical design. Drafting shall be neat, readable and complete.

B. Permit approved drawings shall be turned over to the Owner at the completion of the project.

1.06 AS EQUAL SUBMITTALS:

A. Provide the Electrical Engineer and Architect each with one copy of CSI Substitution Request Form and one set of catalog cuts of the submittal equipment. Faxed submittals shall not be accepted. "Approved for bidding" does not constitute an unqualified approval of the product. All conditions of quality, function, size, safety, style and appearance shall be as specified.

1.07 APPROVAL OF SHOP DRAWINGS:

A. Approval of shop drawings does not remove the Contractor's requirements to comply with the intent of the Contract Documents. For shop drawing submittals that alter design conditions, electrical requirements, dimensions, functions, manufacturer, model, type, style, installation requirements, etc., it shall remain the responsibility of the Contractor to make all necessary adjustments, alterations, supply changes, trade coordination, etc., required to provide complete and operable systems. Any deviations from Contract Specifications shall be clearly noted in bold letters as such.

1.08 SUBMITTAL DATA:

A. Provide the Architect with one electronic file with brochures of catalog cuts or shop drawings of all items that are to be provided for the project. The file shall include a cover sheet indicating Project name, Architect, Engineer, and Contractor's name, address, telephone and fax numbers. Each brochure shall contain a complete set of all types of material to be provided under this Contract. Partial submittals will not be accepted and will be returned as disapproved. Make corrections and alterations as noted on returned drawings without additional charge where proposed materials do not conform to specifications or project requirements.

B. Submittals should include at a minimum the following (Plus any product that differs from specified product):

- Conduits and Fittings
- Conductors
- Outlets & Plates
- Switches & Plates and Dimmers
- Occupancy Sensors and lighting controls
- Disconnects
- Fuses
- Panelboards (With Shop Drawings)
- Circuit Breakers
- Contactors
- Lighting Fixtures, and Associated Control Equipment
- Emergency/Lighting/Packs
- Telephone/data distribution system

1.09 TEMPORARY FACILITIES:

A. Provide temporary electrical power for construction purposes as outlined in Division 1. General Requirements, Section 01500, "Temporary Construction and Facilities". (Supplementary General Requirements.)

1.10 WORKMEN:

A. Employ a sufficient number of journeymen electricians and supervisors to insure orderly completion of the work.

1.11 INSPECTIONS AND TESTS:

A. All electrical work shall be inspected before concealment. Uncover work concealed and not inspected if directed to do so by jurisdiction having authority or Project Engineer.

B. All systems shall be tested, adjusted and balanced for proper operation. The Owner and/or his official representative shall be instructed in their use and shown all controls and operating procedures. The operation of the systems shall be demonstrated in the presence of the Owner and Architect.

C. Provide the Owner with five (5) sets of all operating and maintenance manuals and instructions necessary to properly operate and maintain the systems.

D. Test all mechanical equipment connected to insure proper rotation and phasing.

E. Check the horsepower of all motors connected against the size of heater elements in the starters. If they do not match, notify the motor supplier to provide the correct size and type.

1.12 DEFINITIONS AND ABBREVIATIONS:

A. NEC: National Electrical Code.

B. EMT: Electrical Metallic Tubing.

C. WP: Weatherproof.

D. AWG : American Wire Gauge.

E. CONTRACTOR: In this Division of the Specifications refers to the Electrical Contractor.

F. FURNISH: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

G. INSTALL: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

H. PROVIDE: Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

END OF SECTION

SECTION 26 0502

ELECTRICAL SYSTEMS SCHEDULE

PART 1 GENERAL

1.01 SYSTEMS INCLUDED UNDER THIS DIVISION:

A. Work includes but is not necessarily limited to the following outlined systems as well as the general wiring to the project.

1.02 BASE BID: Shall include the general wiring to the building and the following systems:

A. Secondary Distribution System Modifications

B. Power wiring to equipment provided in other Divisions of the Contract. Power connections shall be made under this Division.

C. General Wiring and Illumination System

D. Signal and Communications Systems:
   1. Public Telephone/Data Distribution System
   2. Fire Detection and Alarm System Modification

E. Other Work as Indicated in the Contract Documents.

1.03 SYSTEMS NOT INCLUDED UNDER THIS DIVISION:

A. Low voltage wiring (less than 100 volts) associated with the functional control of heating and ventilating, air conditioning or water heating control or refrigeration controls.

END OF SECTION

SECTION 26 0503

CODES AND STANDARDS

PART 1 GENERAL

1.01 MATERIALS:

A. All materials shall be listed by the Underwriters Laboratory and bear the seal wherever standards of approval have been established and such service is normally provided by them. Adhere to all local requirements for materials approval.

1.02 UTILITY REQUIREMENTS:

A. No utility company work is anticipated in this project.

1.03 PROJECT SITE:

A. Visit the project site and determine local conditions that affect this portion of the contract.

1.04 CODES AND REGULATIONS:

A. Install electrical work in strict conformance to the rules and regulations of legally constituted bodies having jurisdiction over the construction and use of the facility and the National Electrical Code latest edition.

1.05 PERMITS:

A. Arrange and pay for all permits and inspections of the work done. Work shall not be concealed until inspections have been made. Turn over certificates of inspections to the Architect.

1.06 WARRANTY:

A. The Contractor shall and hereby, does warrant that all materials (except specified otherwise) are new, free from defect, of current standard manufacture and design, of the quality, rating and type as shown or specified; and that any defect existing within the warranty period, due to improper or defective materials or workmanship, shall be corrected and resulting damage repaired without additional cost to the Owner.

1.07 WARRANTY PERIOD:

A. One (1) year after substantial completion and/or occupancy.

END OF SECTION

SECTION 26 0504

DEMOLITION

PART 1 GENERAL

1.01 GENERAL:

A. Existing devices and hardware shall not be removed unless called for removal on the Drawings, except abandoned conduit and wiring shall be removed. Verify demolition work on site prior to bid.

B. Provide cutting and patching of existing surfaces where required for electrical work. Patch and finish surfaces to match adjacent surfaces.

1.02 CONDITION OF EXISTING SYSTEMS:

A. Existing electrical systems are assumed functionally and operationally complete and working except as noted in Contract Documents. Notify Architect in writing of any discrepancy or malfunction prior to commencing on-site work. Commencement of on-site work shall constitute acceptance of existing systems as functionally and operationally complete and working except as prior noted.

PART 2 PRODUCTS

2.01 PRODUCTS USED:

A. Devices or hardware being replaced shall be as specified for new devices or, if not specified, of equal quality to hardware generally used in the existing area.

PART 3 EXECUTION

3.01 EXAMINATION:

A. All relocations, reconnections, and removals are not necessarily indicated on Drawings. All such work shall be included without additional cost to Owner. Verify requirements on site prior to bid.

3.02 REMAINING HARDWARE:

A. Unless specifically indicated to be removed either by note or symbol, all devices or hardware shown as existing shall remain in place and in service, except abandoned wires shall be removed. Verify requirements on site prior to bid.

3.03 MAINTAINING CONTINUITY:

A. Where a device or hardware is indicated to be removed, and device(s) which are to remain are fed through this device or hardware, the feed to these devices to remain shall be maintained. Extend raceways or provide a new feed as required.

3.04 REPAIR OF DAMAGE:

A. If, in the course of demolition, a device, hardware, building portion, or line of service (i.e. electrical branch circuit or feeder) required to remain is damaged, the Contractor shall repair the damage or replace with new material to restore the original condition or provide a better condition.

3.05 EXTENSION OF FEEDERS:

A. All existing branch circuits which are in or pass through the work area which are to remain shall be relocated and/or extended as required to maintain service from the panelboard they are served from. Some existing branch circuits may not be indicated on Drawings. Verify requirements on project site prior to bid.

3.06 DISPOSAL OF PCB CONTAMINATED ELECTRICAL EQUIPMENT:

A. Dispose of PCB contaminated electrical equipment in a manner in compliance with applicable national, state, and local codes. Provide proof of incineration of PCB contaminated ballasts to the owner

3.07 DISPOSAL OF FLUORESCENT LAMPS:

A. Dispose of fluorescent lamps in a manner in compliance with applicable national, state, and local codes. Provide written proof of proper disposal to the owner.

END OF SECTION

SECTION 26 0520

BASIC MATERIALS AND METHODS

PART 1 GENERAL

1.01 GENERAL:

A. Materials listed set type and quality standards for the project. Materials listed are those desired. Materials approved as "equal" shall not change quality or intent of Contract Documents. If "approved" materials are not found equal to specified items upon visual inspection or test, they shall be removed and replaced with specified materials without additional cost. Sole decision as to "as equal" acceptability shall reside with the Engineer.

1.02 MATERIALS IDENTIFIED:

A. All materials shall be new, of current standard manufacture and design, and U.L. listed for intended application.

1.03 MATERIALS NOT LISTED:

A. Provide all items such as relays, control transformers, signal transformers, etc., that are necessarily part of the finished system and required for logical functioning of the system.

1.04 UNAPPROVED MATERIALS:

A. Remove and replace with specified materials if directed by Architect, without additional cost to Owner.

1.05 WORKMANSHIP:

A. Shall be best standards of industry and shall conform to specification methods. Un-workman-like work shall be removed and replaced at no additional cost.

1.06 COORDINATION OF WORK:

A. Coordination with plumbing lines, heating and ventilating duct work, etc., to eliminate space use conflicts.

PART 2 PRODUCTS

2.01 CONDUITS: All wiring shall be in conduit or approved McCable.

A. Rigid Metal Conduit: Hot dipped galvanized steel. General Electric, Republic, U.S. Steel, National or equal.

B. Electrical Metallic Tubing: Seamless, sheradized or hot dipped galvanized steel.

C. Rigid Plastic Conduit: (PVC) Polyvinylchloride. UL approved. Baldwin, Corlon or approved equal. For underground use only. Use only where code allows.

D. Flexible Metallic Conduits: Shall contain separate grounding conductor, galvanized steel armour. Maximum length 72". Not approved for general wiring.
   1. Dry Locations: Columbia, Triangle or equal.
   2. Wet Locations or Exposed to Weather: Liquid tight, neoprene or vinyl jacket. Anaconda Sealtite, Type UA or equal.

E. "MC" type cable:
   1. Approved only for 20 or 30 amp branch circuits where allowed by code.
   2. Galvanized steel armour.
   3. Insulated green ground conductor, minimum size #12 AWG.
   4. Manufacture: AFC Cable System, Inc., Type MC.

F. Non-metallic Sheath Cable: Not approved

G. Fittings:
   1. Rigid Conduits:
      a) Bushings - Insulating type with grounding lugs where required.
   2. EMT and Flexible Conduit: Fittings - All steel set screw type, pre-insulated. Fittings with die cast aluminum or pot metal components are not acceptable. Steel City or approved substitution.

2.02 <u>CONDUCTORS</u>:

A. Copper: Solid #12 AWG minimum size up to #10 AWG. Stranded for sizes #8 and larger. Fire alarm and signal circuits to be stranded.

B. Aluminum: Minimum size #1 AWG, stranded. Where substituted for copper shall have equivalent ampacity and voltage drop. Resize conduits as required. ALCAN Stabiloy XHHW Alloy AA-8030, or Southwire XHHW Alloy #AA-8178 only.

C. Insulation:
   1. General: Type THWN, THHN, XHHW.
   2. Recessed Fixtures, baseboard heaters or other high ambient temperature locations. Type THHN.
   3. Aluminum: XHHW.

2.03 <u>OUTLET BOXES</u>:

A. Steel, as best suited for the job intended. 4 inch square by 1-1/2 inches or more deep for general use. Device covers shall match finish to be applied to walls. For concrete block use square shouldered device covers so that box can fit into block cavity. Steel City, RACO or approved substitution.

B. Outlet boxes supporting ceiling fans shall be UL approved for this application typical.

2.04 <u>PULL AND JUNCTION BOXES</u>:

A. General Use: Steel, with baked enamel finish and screw covers. NEMA 1 enclosures. Alwalt or approved substitution.

B. Exterior Use: Cast aluminum with threaded conduit hubs and water tight screw covers.

C. Installation:
   1. Junction boxes and pull boxes shall be installed so that they are accessible at all times. The Contractor shall be required to provide sufficient pull boxes to conform to Code requirements whether shown or not. If a box is required in inaccessible place, provide access panel.

2.05 SWITCHES AND RECEPTACLES:

A. Switches and receptacles shall all be of the same manufacture, style and type.

B. Switches: 20 ampere, 120/277 volt, mechanically quiet type, ivory handle. Specification grade. Federal Spec. #W-S-896d.

Manufacture	SPST	3 Way
Hubbell	CS1221-I	CS1223-I
P & S	20AC-1-I	20AC-3-I
AH	1991-I	1993-I
Leviton	1221-2-I	1223-2-I

C. Receptacles:
   1. Duplex Convenience Outlets: 15 ampere, 120 volt, 2 wire with U-slot ground. Ivory. Shall be of same manufacture as switches. Reference Hubbell #CR5252-I. 20 ampere, 120 volt where noted Reference Hubbell CR5352-I. Provide 20 amp receptacle on all dedicated circuit receptacles.
   2. Provide GFIC type receptacle where shown on drawings or required by NEC or UBC. "Feed through" protection not allowed. Reference Hubbell GF5262-I.
   3. Specialized Outlets: As indicated on Drawings.
   4. Occupancy sensor controlled receptacles: Duplex, un-controlled receptacle ivory, controlled receptacle: Labeled as “controlled”; Quad outlet: Un-controlled duplex receptacle ivory, controlled duplex receptacle labeled as controlled.

D. Keyed Switches: Arrow Hart #AH1191NOF, Leviton #1221-2KL.

E. Wall Dimmer Switch: Refer to lighting drawing.

F. Occupancy Sensors: Refer to lighting drawing.

G. Trim:
   1. General: Single piece stainless steel in all areas. Non-magnetic chrome-nickel alloy #302 in kitchens, toilets and on brick or masonry walls. Type #430 for standard use.
   2. Weatherproof: Hubbell #WP26M (horizontal #WP26MH) (cast aluminum).
   3. Use standard sizes in all locations except on masonry or block walls. Use Type SO plates.

2.07 SAFETY SWITCHES:

A. Horsepower dual rated, type heavy duty non-fusible for general use. Provide with compression lugs where connecting aluminum conductors. General use NEMA 1. Exterior use rain tight NEMA 3R. Provide fusible disconnect switches where indicated or specified. Fusible safety switches shall incorporate factory installed rejection clips for use with Class "RK1" and "RK5" fuses. Switch doors shall be interlocked with handle to prevent opening when switch handle is in the "on" position. Identify all disconnects with permanent lamicoid label indicating load (equipment) served. 3/8" minimum letter height.

2.08 FUSES:

A. Motor circuits, U.L. Class "RK5" time delay. Non-motor circuits U.L. Class "RK1". Gould-Shawmut, Bussman, Economy, Littelfuse or as approved. Provide one spare set for each size and class supplied.

2.09 SINGLE PHASE MOTOR DISCONNECTS:

A. Provide manual motor starting switches with melting alloy type thermal overload relay protection for all fractional horsepower, single phase motors.

2.10 CONTACTORS:

A. For control of branch circuits. 30 ampere, multiple pole, mechanically latched, with coil clearing contacts. Number of poles as shown on the drawings. Square D Class 8903, LXG series, or equal in ASCO, G.E., Siemens, or as approved.

2.11 SHUNT TRIP CONTROL STATION:

A. Provide an emergency power off pushbutton. Pushbutton shall be push off, pull on maintained contact. Provide with guard to prevent accidental operation. Pushbutton shall be heavy duty, oil tight with red head. Provide permanent engraved label “POWER OFF”. Allen-Bradley #800T-1TZ enclosure with Allen-Bradley #800T-XA contact block with Allen-Bradley #800T-N310 push/pull button ring.

2.12 SUPPORTING DEVICES:

A. Conduits:
   1. Single: Securely support raceway within 3 feet of every 90 degree bend, outlet box, junction box, device box, cabinet, conduit body, and other termination with approved straps, clamps, or hangers. Space supports every 10 feet maximum. Securely mount raceway supports, boxes, and cabinets in an approved manner by:
      a) Expansion shields in concrete or solid masonry.
      b) Toggle bolts on hollow masonry units.
      c) Wood screws on wood.
      d) Metal screws on metal.

   2. Multiple: Kindorf Channels with approved conduit straps or clips. Spaced 10'-0" on centers.

B. Kindorf Channel installed exposed to the weather (any exterior use) shall be galvanized.

2.13 FIRE BARRIER MOLDABLE PUTTY:

A. U.L. listed, 3M Brand fire barrier moldable putty Type MPS or MPP.

2.14 FLOOR OUTLETS

A. Boxes: Power only: For casting in concrete, dual level, adjustable type for flush floor mounting, pressed steel, with carpet insert type black covers. Provide with two 120v, 20amp. duplex

receptacle,. Concrete tight Class 2. Hubbell #3SFBSS/3SFBRP/3SFBB/3SFBCBKA, or as approved prior to bid.

B. Boxes: Power and Data: For casting in concrete, dual level, adjustable type for flush floor mounting, pressed steel, with carpet insert type black covers. Provide with one 120v, 20amp. duplex receptacle, one voice/data plate (two jacks). Concrete tight Class 2. Hubbell #3SFBSS/3SFBRP/3SFBTP/3SFBCBKA, or as approved prior to bid.

C. Boxes: For data systems: For casting in concrete, dual level, adjustable type for flush floor mounting, pressed steel, with carpet insert type black covers. Provide without face plates (interior). Serve with two 1 1.4" conduits. Concrete tight Class 2. Hubbell #3SFBSS/3SFBCBKA, or as approved prior to bid.

2.05(A)<u>FLOOR BOXES: (LARGE INFLOOR</u>)

A. Boxes: For casting in concrete, dual level, adjustable type for flush floor mounting, pressed steel, American Electric Steel City, AFM Series with GAB Preset inserts for use in concrete floors where applicable. Concrete tight Class 2. For wood floor, American Electric Steel City, AFM Series.

B. Large work station (concrete floor) (two duplexes, 4 telephone data jacks). AFM -6/GAB6 with two duplex outlets, four RJ-45 cat 6 modular telephone/data jacks. Tile Insert.

C. Normal Workstations (concrete tile floor) (one duplex, 2 telephone data jacks). AFM-4/GAB4, with one duplex outlets, two RJ-45 cat 6 modular telephone/data jacks. Tile insert.

D. Normal Workstations (wood (carpet) floor) (one duplex, 2 telephone data jacks). AFM-4, with one duplex outlets, two RJ-45 cat 6 modular telephone/data jacks. Carpet insert.

E. Trim: Nylon, color as selected by architect.

F. Carpet Flange: Provide in all areas receiving carpet. Verify with Architectural Plans. Verify color with architect.

G. Installation:
   1. For concrete floors: set flush with finished concrete floor and anchor securely in place prior to pouring concrete.
   2. For wood floors, install flush and level with floor surface.

PART 3 EXECUTION

3.01 <u>MOUNTING HEIGHTS</u>:

A. Devices shall be as follows unless indicated otherwise by specified note on the drawings. Devices shall be located above or below top of wainscoting, adjacent to tackboards or bulletin boards and shall not cut through metal trim or be located in tackboards. Coordinate with Architectural Drawings prior to rough-in. Verify all heights prior to rough-in.

Control switches for lights, fan, etc.	45" to center line
Convenience outlets: Wall mount	18" to center line
over counter	45" to center line
Telephone and intercommunications	
wall mount - desks	18" to center line
wall hung handset	45" to center line
Television outlets	84" to center line
Fire Alarm System Alarm Devices	80"
Lights over lavatory mirror	6'-6"
Panelboards (to top of trim)	6'-6"
Fire Alarm Pull Stations	48" to center line

3.02 <u>RACEWAYS AND CONDUITS</u>:

A. Routing: Run concealed except where detailed as exposed or where surface metal raceways are specified; or by written permission where it is difficult or impractical to conceal.

B. Outlet and Switch Box Placement:
   1. In stud walls back-to-back boxes are not allowed. Separate boxes in adjacent rooms by a minimum of one stud.
   2. Outlet and Switch Box Placement: Provide box extensions as required to bring metallic box flush with final wall surface.

C. Materials: All conduits above grade shall be metal unless indicated otherwise. Size non-metallic conduits to accommodate grounding conductors. Sizes shown on the drawings are for metal conduits unless shown otherwise.

D. Minimum Sizes:
   1. Power: 1/2 inch.
   2. Lighting: Home Runs - 3/4 inch. Switch legs and runs between outlets 1/2 inch.

E. Usage:
   1. Electrical Metallic Tubing: Use where exposed on ceilings, above suspended ceilings, in attics, hollow cavity walls or cavities of block walls. Not approved for burial, exterior areas, or casting in concrete. Maximum size two (2) inches. Conduit in hollow cavity of block walls being filled with concrete shall be rigid steel instead of EMT.
   2. Rigid Galvanized Steel Conduits: Use where raceways are cast into concrete, solid masonry, exposed on walls, exposed to weather or in hazardous areas requiring liquid tight, dust tight or explosion proof wiring.
   3. Flexible Metallic Conduits: Use to connect electrical apparatus subject to vibration, such as motors, fans, etc., and to connect recessed lighting fixtures in suspended ceiling installations. Maximum length 72". Not approved for general wiring.

4. Surface metal raceways may be used only where specified or by prior approval for remodel work where it is not practical to conceal wiring.
5. PVC Conduit: Where code use permits, raceways buried directly in the earth may be rigid Sch. 40 polyvinylchloride (PVC) sized to accommodate grounding conductors. Elbows shall be rigid steel conduit wrapped with Scotch #51 tape.
6. MC Cable: Where code use permits, approved for 20 or 30 amp branch circuits. Home runs shall be EMT and copper conductors in Common Areas.

F. Installation:
1. Cut ends of all conduits square and ream. Make all joints water tight. Fittings shall be compatible with conduit used, secured water tight, and form a smooth transition from conduit to fitting. Make all bends with no flattening or wrinkling with a bender designed for use with the conduit used.
2. Make up conduit installed underground water tight and sealed. Conduit containing water shall be pumped dry and swabbed. If water is infiltrating and cannot be removed, then reroute conduits as directed without additional charge.
3. Conduits encased in concrete shall be securely attached and anchored to prevent movement during pouring, tamping and vibration of the concrete. Ends shall be sealed with factory seals. Replace conduits containing concrete as directed by Architect.
4. Conduits may be run in concrete slabs or floors as listed below with a minimum of 1 inch concrete over conduits. Boxes shall be flush and of sufficient depth to allow connecting conduits without disturbing reinforcing steel.

Slab Thickness	Maximum Conduit Diameter
2"	None
2 1/2"	1/2"
3 1/4"	3/4"
3 1/2 - 5"	1"

5. Conduits run beneath the vapor barrier under concrete floor slabs are classified as underground and shall be PVC.
6. Swab out all conduits clean and dry before conductors are installed.
7. Mark the location of all conduits stubbed out for future use with brass screw in concrete foundation directly above conduit and 12" above finished grade.
8. Run in neat rows with smooth uniform bends. Support multiple runs from Unistrut hangers in all exposed areas, spaces above ceilings or risers. Diagonal, crossed or haphazard, non-supported runs will not be allowed.
9. All conduit penetrations of fire rated walls, ceilings or floors shall be sealed with specified fire barrier putty. The amount of caulking shall be in relation to the rating of the surface being penetrated. Comply with requirements of the Product Manufacturer and local codes. Maintain rating of penetrated item.
10. Sealing of Conduit Penetrations: Seal around conduit penetrations through walls or floors between conditioned (heated) and unconditioned spaces.

3.03 WIRES AND CABLES:

A. Marking and Coding:
1. Wiring shall be color coded to conform to standard practices of the industry.
2. 120/208 volt system shall be solid colors with white neutral.
   A-Phase - Black
   B-Phase - Red
   C-Phase - Blue
3. All control wiring shall be labeled and tagged with each conductor identified.

4. Power feeders using all black insulating wiring shall have phase identified with colored vinyl tape at all terminations and splices.
5. Identify all feeder or branch circuit loads in the same panelboards.

B. Insulation Value:
1. All wire contained in the same raceway shall have an insulation value to match the highest voltage between conductors of all circuits contained therein.

C. Products:
1. Pulling: Use pulling compounds as recommended by the wire manufacturer; do not exceed recommended pulling tensions; leave sufficient pigtails at each j-box or cabinet for make up.
2. Aluminum Conductors: All splices, terminations or connections shall be made with compatible fittings and non-oxide conductive paste.

END OF SECTION

SECTION 26 0526

GROUNDING

PART 1 GENERAL

1.01 GENERAL:

A. General Conditions and General Requirements as listed in Index to Specifications apply to work under this Section.

B. Provide a complete grounding system extension as shown and as required by the NEC and the local enforcing authority with common grounding point at the main distribution center.

PART 2 PRODUCTS

2.01 CONDUCTORS:

A. Main System Ground: Bare stranded copper per N.E.C. (Existing)

B. Bonding Jumpers: Copper minimum size #2 in switchboards and switchboard rooms. (Existing)

C. Bonding Conductors, Equipment: Copper per NEC requirements. Green insulation.

2.02 GROUND CLAMP:

A. Code approved.

PART 3 EXECUTION

3.01 INSTALLATION:

A. The cold water system shall be used as the main system ground. Bond to a minimum size 2 inch metal cold water pipe, 20 feet of which must be in contact with the earth. (Existing)

B. Provide a concrete encased grounding electrode system to conform to Section 250-50c NEC. Bond to main cold water ground. This is in addition to, and not in lieu of, the cold water ground. (Existing)

C. Bond all new drainage, sprinkler system plumbing, communications conduits, and all electrical distribution systems to ground as required by NEC.

D. Provide 2- 10 foot long ground rods, 10 feet apart. Bond to System Ground. (Existing)

END OF SECTION

SECTION 26 0700

COMMUNICATIONS AND SIGNAL SYSTEMS

PART 1 GENERAL

1.01 GENERAL:

A. General Conditions and General Requirements as listed in Index to Specifications apply to work under this Section.

1.02 SYSTEMS INCLUDED UNDER THIS SECTION:

A. Duct and Cable System for Telephone/Data System

B. Fire Alarm and Detection System

PART 2 - PRODUCTS

2.01 DUCT AND CABLE SYSTEM FOR DATA SYSTEMS:

A. Provide a conduit (raceway) system with finish trim and modular jack system on all outlets as indicated on contract documents. Provide CAT 6e cabling from outlet to IDF data rack and terminate cables per Longview School District Standards. Verify requirements with school district prior to bid.

B. Active Equipment shall be provided and installed by others.

C. Products:
   1. Products shall conform to those specified in other sections of the Specifications.
   2. Conduits: Provide conduits (raceway paths) as indicated on drawings. Provide 1" conduit from each new outlet to above accessible ceiling space (larger sizes where indicated or required for the number of cables). See Section 16100. Service entrance and IT equipment - Existing.
   3. Boxes: See Section 16100. Provide mud rings as required for modular jack system installation.
   4. Cables: CAT 6e 4 twisted pair, color and size per district standards. Terminate each end of the cables on 110 keystone jacks per district standards. Provide the number of cables as indicated on each outlet on the contract drawings.
   5. Outlets: Provide data outlets with the number of modular jacks to serve the number of cables indicated on each outlet. Provide cover plate and outlet body to match the number of jacks. Provide manufacture, style, color, and type of modular jack system per district standards.

2.02 FIRE ALARM AND DETECTION:

A. Scope: Existing Fire Alarm and Detection system shall remain in service. Maintain existing devices and system complete and functional.

B. Disconnect, remove and re-install devices where new ceilings or wall surfaces are part of this project. Extend wiring where necessary.

C. Replace existing devices where indicated on contract drawings with devices that match existing system.

END OF SECTION

SECTION 26 2417

SERVICE AND DISTRIBUTION

PART 1 GENERAL

1.01 GENERAL:

A. General Conditions and General Requirements as listed in Index to Specifications apply to work under this Section.

1.02 WORK DIVISION:

A. Utility Company: No work anticipated.

B. Electrical Contractor: Provision, installation, connection and energization of all new systems. Refer to the drawings.

PART 2 PRODUCTS

2.01 CONDUITS:

A. Underground Feeder: Schedule 40 PVC with long sweep rigid steel elbows wrapped with Scotch #51 tape.

B. Above Grade Feeders: Rigid galvanized steel or EMT. Refer to Section 16100 for conduit usage.

2.02 CONDUCTORS:

A. Feeders: Stranded copper sized as shown on the drawings (substituted aluminum shall have equal ampacity).

2.03 PANELBOARDS (NEW):

A. Cabinets: Code gauge galvanized or pickled steel with factory finish of baked enamel or lacquer. For surface or flush mounting as shown. Dead front safety type. Hinged doors with keyed alike locks, with lift latch for opening. Boxes shall be 5-3/4 inches deep by 20 inches wide by length as required. Wireways shall be a minimum of 6 inches wide top and bottom, 5 inches each side.

B. Bus Work: Hard drawn copper for all panelboards. Wire terminals shall be compression type with non-oxide conductive paste for accepting aluminum conductors.

C. Future Provision: Where "space" or provision is called for, provide all necessary hardware so the spare is ready to accept circuit breaker (or switch as applicable) without additional hardware.

D. Circuit Breakers: Common trip, single handle. Minimum AIC ratings shall be U.L. Series Rated at 65,000 amperes at 208 volts.

1. General Use: Molded case, thermal magnetic, bolted to bus, amperage and poles as indicated in Panel Schedules.
2. Ground Fault Circuit Interrupter Type: Provide for exterior building outlets, wet location outlets, hazardous locations, and for all circuits where indicated; and in addition, where required by UBC, OSHA or NEC.
3. HACR Type Circuit Breakers: Provide HACR rated circuit breakers on all heat pump and air conditioner branch circuits.
4. Appliance Circuit Lock-offs: Provide padlock lockable circuit breaker handle lock-offs for all circuits serving permanently installed appliances over 300VA or 1/8 hp per NEC 422-21.

E. Panelboard Types:
1. 225 amperes or less: Square D NQ (250V), or equal.
2. 400 amperes or more: Square D I-Line or equal.

F. Labeling: Label all circuits showing load served in Panelboard Schedule. Typewritten only. Panel Schedules shall reflect final room names, not names shown on plans. Provide permanent lamicoid label on Panel.

G. ManufactureL SD. D., G.E., Cutler-Hammer/Westinghouse, Siemens. Mount panelboards with top up 6'-6" and anchor securely to building structure.

PART 3 EXECUTION

3.01 BRANCH CIRCUIT:

A. All branch circuits shall be run concealed where possible.

B. In general, branch circuits shall contain three phases and a neutral for 120/208 volt, three phase, four wire systems. Branch circuits shall be on opposite phases to balance neutral loads.

C. Home runs shall conform to the following:
1. 120/208 volt circuits where load is more than 1000 watts and run is more than 50 feet, minimum wire size shall be #10 AWG copper.

D. Extend the branch circuit from the panelboard to the disconnect, mount the starter and wire through to the final connection of the apparatus to be connected.

3.02 LOW VOLTAGE CABLES (70 Volts or Less):

A. In inaccessible, concealed spaces run cables in raceway. In accessible, unfinished areas cables may be run exposed without raceway.

B. Run exposed cables parallel to or at right angles to building structure lines. Do not run exposed cables on floors or in such a way that they obstruct access to, operation of, or servicing of equipment. Keep cables 6 inches minimum from hot water pipes.

C: Support cables every 3 feet with permanent clips, straps, staples, or tie wraps approved for application and which will not cause cables to be pinched or deformed.

D. Securely attach clips and straps with nails or screws. Do not use wire or tape to support cables.

E. Bundle only cables of same systems together.

3.03 CONTROL WIRING:

A. Provide all control wiring associated with equipment or systems provided and included as part of this Division. Unless specifically indicated, control wiring associated with the function and control of heating, ventilating, exhaust, hydronic pumping, water heating equipment or operation of dampers or similar is not covered under this Division.

3.04 RECEPTACLES:

A. Provide the correct type and style of receptacle for phase and voltage of device to be plugged in.

3.05 ACCESS PROVISION:

A. Panels: Provide 4 - 3/4" and 2 - 1" spare conduits stubbed up from each flush mounted (recessed in wall) branch circuit panel to accessible ceiling space, or attic space if hard ceiling.

B. Walls: Where required for passage of open wiring provide conduit sleeves through walls, 50% spare capacity minimum.

3.06 EQUIPMENT PROVIDED BY OTHERS:

A. It shall be the responsibility of the Electrical Contractor to verify nameplate data on all Mechanical Equipment prior to rough-in. Where direct connection is to be made to equipment, provide code disconnect as required. Provide all disconnects as indicated on drawings.
   1. Provide fusible disconnects for refrigeration and/or air conditioning compressor motors, motors without overload protection, and as specified or shown on the drawings.
   2. Provide non-fuse disconnects for motors having overload protection, equipment not in site of panelboards, or as required otherwise by code authority.
   3. Starters shall be furnished by others and installed under Division 16 work unless specified otherwise.

END OF SECTION

SECTION 26 5100

LIGHTING FIXTURES

PART 1 GENERAL

1.01 GENERAL:

A. General Conditions and General Requirements as listed in Index to Specifications apply to work under this Section.

B. Provide new lighting fixtures typical in each location of type indicated. Provide with new lamps of wattage as shown. Letter designates fixture type. UL approved.

PART 2 PRODUCTS

2.01 BALLASTS (DRIVERS):

A. Voltage: All ballasts shall be 120 volts for both interior and exterior lighting fixtures unless noted otherwise.

B. LED: As provided with specified fixtures

C. Execution: Factory installed in lighting fixtures where possible. All ballasts shall be easily accessible for service and maintenance.

2.02 LAMPS:

A. LED: As provided with specified fixtures.

2.03 EMERGENCY BATTERY INVERTER UNITS:

A. LED: Provide a 1400 lumens minimum unit mounted inside ballast compartment. Wire to switch protected lamp with normal power lamps. Lithonia, Bodine, or as approved. Provide where shown on drawings.

2.04 LIGHTING FIXTURE SCHEDULE:

Refer to drawings.

PART 3 EXECUTION

3.01 INSTALLATION:

A. Recessed lighting fixtures shall be set parallel to building lines, flush, aligned, with no light leaks. Where they are set in suspended ceilings, plaster or tile rings shall be provided and fixtures shall be connected to junction boxes with 60 inches of flexible conduit. Junction boxes shall be set away from opening to allow fixture to be dropped out. See details on drawings. Coordinate with ceiling diffusers and sprinkler head.

B. Fixtures run in continuous rows shall be mounted at a uniform height unless shown otherwise. Align both horizontally and vertically.

3.02 <u>ANCHORING AND SUSPENDING</u>:

A. Recessed fluorescent fixtures installed in suspended ceilings shall be supported independent of the ceiling system by the Electrical Contractor. Provide and install #12 iron wire from two opposite corners of the fixture to the building structure. Install four seismic clips in addition to the wire supports.

B. Surface mounted fixtures shall be anchored to or supported from outlined members or from bridging between structural members as outlined above. Anchors shall conform to specified types found in other sections of this Specification. Provide ceiling spacers as required.

C. All anchors shall support the weight of the fixture plus 150 lbs.

D. All building bracket type fixtures shall be securely mounted to outlet boxes or secured to buildings with approved anchors.

E. The surfaces of all fixtures and lenses, interior and exterior, shall be wiped free of construction dust at the completion of the project.

END OF SECTION