LSW ARCHITECTS

PROJECT MANUAL

for

Longview Public Schools
Mint Valley ES
Fire-Smoke Alarm Updates

Bid Set

April 11, 2025
LSW Project No. 20250006

TABLE OF CONTENTS

END OF TABLE OF CONTENTS

SECTION 00 01 03
PROJECT DIRECTORY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Identification of project team members and their contact information.

1.02 OWNER:

A. Name: Longview Public Schools
   1. 2715 Lilac Street.
   2. Longview, Washington 98632.
   3. Telephone: 360-575-7991.
   4. Contact: Jason Reetz, jreetz@longview.k12.wa.us.

1.03 CONSULTANTS:

A. Architect: Design Professional of Record. All correspondence from the Contractor regarding construction documents authored by Architect's consultants will be through this party, unless alternate arrangements are mutually agreed upon at preconstruction meeting.
   1. LSW Architects, PC.
      a. 610 Esther Street, Suite 200.
      b. Vancouver, WA 98660.
      c. Telephone: 360-694-8571.
   2. Primary Contact:
      a. Project Architect: Chris Spurgin, chris@lsw-architects.com.

B. Fire Alarm Consultant:
   1. MKE & Associates, Inc.
      a. 6915 SW Macadam Ave, Suite 200.
      b. Portland, OR 97219.
      c. Telephone: 503-892-1188.
   2. Primary Contact:
      a. Mark Garand, markg@mke-inc.com.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

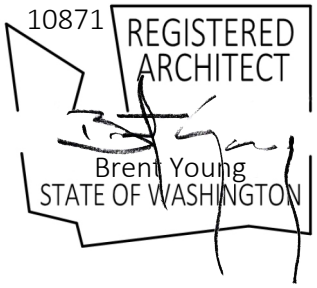
SECTION 00 01 07
SEALS PAGE - ARCHITECT

ARCHITECT

1.01 ARCHITECT

LSW Architects
610 Esther Street, Suite 200
Vancouver, Washington 98660
360-694-8571

SEAL:



END OF SECTION

ADVERTISEMENT FOR BIDS

Bids will be accepted for the following project:

PROJECT NO.:	20250006
TITLE:	Mint Valley ES Fire-Smoke Alarm Updates
AGENCY:	Longview School District No. 122
ESTIMATED BASE BID COST RANGE:	$133,000 - $190,000
ABBREVIATED PROJECT DESCRIPTION:	Replace existing fire and smoke alarm system at existing elementary school.
SUBMITTAL TIME/DATE/LOCATION: Bids will be accepted @ **Longview School District MOTF Office 2080 38th Avenue Longview, WA 98632**	**Prior to 2:00 P.M., Wednesday, May 14, 2025**
BY:	Longview School District No. 122
PRE-BID WALK-THROUGH:	**3:30 P.M. Wednesday, April 30, 2025** (or immediately following the walk-through for Columbia Heights ES Fire-Smoke Alarm Update)

Mint Valley Elementary School, 2745 38th Avenue, Longview, WA 98632.
Attendance at the Pre-Bid Walk-through is Mandatory for bidders.

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

https://www.longviewschools.com/departments/business-services/bids-proposals

Please direct questions regarding this project to the office of the project representative, Chris Spurgin at LSW Architects, 610 Esther Street, Suite 200, Vancouver, WA 98660; telephone (360) 694-8571.

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 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 Adve1tisement 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 Longview School District:

(1) The ability, capacity, and skill to pe1form 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 award 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.

1.2 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.

1.3 BIDDING DOCUMENTS

A. COPIES

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

https://longviewschools.comfbusiness-and-finance/bids-and-requests-for-proposal.

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; the Longview School District does not assume 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 makes 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.** Bidders and Sub-bidders shall promptly notify the Longview School District 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 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 Owner 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 Owner 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 Owner'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 Owner or its consultants after Bid award, the Bidder, if successful, will be required to pay the Owner or its consultants for these services at their customary hourly rates.

3. **Addendum.** If the Owner 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 Owner 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 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 Owner 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.

1.4 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, ce1tificates 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.

1.5 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
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.

1.6 POST BID INFORMATION

A. INFORMATION FROM APPARENT LOW BIDDER

1. **Submittal.** Within twenty-four (24) hours of the Owner's request, the apparent low Bidder and any other Bidders so requested shall submit to the 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 proprieta1y 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 Owner 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 fo1th 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 dete1mination 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 dete1mination 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 Owner will notify the Bidder in writing if either the Longview School District, 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 dete1mination. The Bidder may appeal the dete1mination 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 dete1mination. 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 has 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.

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 Owner 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 e1rnr 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.

1.7 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 ce1tain Subcontractors to furnish performance and labor and material payment bonds in form as set forth herein and as set f01th 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 film 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 AlOl-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

SECTION 00 31 00
AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 EXISTING CONDITIONS

A. Certain information relating to existing systems and structures is available to bidders but will not be part of Contract Documents, as follows:

B. As-Built Drawings: Entitled Fire Alarm Notes & Operations by Advanced Services Corporation, dated 03/02/99.
   1. See Attachment A - For Reference Only.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

BID FORM

To be submitted no later than 2:00 p.m. on the bid submittal date indicated in Section 00 11 13.

TO: Longview School District No. 122
MOTF Office
2080 38th Avenue
Longview, Washington 98632

The undersigned Bidder acknowledges receipt of and familiarization with the Bidding Documents, the Project Manual, the Drawings, the Specifications, the Contract Documents, and the following Addenda:

Addendum No.:	Date	Pages	Initials of Bidder Representative
1			
2			
3			
4			

BASE BID:

Pursuant to and in compliance with the Contract Documents, including the Advertisement for Bids and Instructions to Bidders, the Bidder hereby certifies that it has carefully examined the Bidding Documents, the Contract Documents, and the conditions affecting the Work, and being familiar with the site, and having made the necessary examinations, proposes to furnish all labor, materials, equipment, and services necessary to complete the Work in strict accordance with the Contract Documents for the above-named Project for the following sum, which is hereby designated as the Base Bid:

_____ Dollars ($ _____).

(Show amount in words and figures. This amount does <u>not</u> include state/local sales tax.)

SALES TAX:

None of the sums stated in the foregoing includes Washington State or local sales tax.

TIME OF COMPLETION AND LIQUIDATED DAMAGES:

The undersigned Bidder agrees, if awarded the Contract, to achieve Substantial Completion of the Work of the Contract within the period specified in AIA Document A101-2017, as modified by Owner, and also agrees to the amounts specified in the Contract Documents for Liquidated Damages. It is further agreed that the time for completion of the Work described herein is a reasonable time considering the average climatic range and usual industrial conditions prevailing in the locality.

TRENCH EXCAVATION SAFETY PROVISIONS:

If the Contract Documents contain any work that requires trenching exceeding a depth of four (4) feet, all costs for adequate trench safety systems must be identified as a separate bid item in compliance with Chapter 39.04 RCW and WAC 296-155-650. The purpose of this provision is to

ensure that the Bidder agrees to comply with all the relevant trench safety requirements of Chapter 49.17 RCW. This bid amount will be considered as part of the Base Bid set forth above. Bidder must include a lump-sum dollar amount in the blank below (even if the value is $0.00) to be responsive.

Trench Excavation Safety Provisions Only: _____ Dollars ($_____).

CONTRACT AND BONDS:

If the Owner awards a contract based on this Bid within forty-five (45) days of the bid submittal deadline, the Bidder agrees to execute a contract for the above work, for compensation computed from the above-stated sums, on the form of contract provided in the Bidding Documents, and to furnish Payment and Performance Bonds and acceptable evidence of insurance as required by the Contract Documents.

BID GUARANTEE:

Pursuant to the Instruction to Bidders, Section 00 21 13, Bidder hereby certifies that it has furnished a bid guarantee for no less than five (5) percent of the Base Bid, and that such guarantee accompanies this Bid Form.

Within twenty-four (24) hours after the issuance of the Owner's notice of intent to award the Contract, the successful bidder must furnish evidence satisfactory to the Owner of its ability to obtain statutory bonds pursuant to Chapter 39.08 RCW. Additionally, the successful bidder must submit the Payment and Performance Bonds and other documents required by the Contract Documents (including, but not limited to, certificates of insurance) to the Owner no later than seven (7) days after the date of execution of the Contract. The successful bidder must also submit within forty-eight (48) hours of the Owner's request a complete Apprenticeship Utilization Plan and such other information as specified in Paragraph 1.06 ("Post-Bid Information") of the Instructions to Bidders, Section 00 21 13.

If the successful bidder, upon award of the Contract by the Owner, fails to execute the Contract or submit the Payment and Performance Bonds or other information required by the Instructions to Bidders as required within the time specified, the Owner may revoke the award. Should the successful bidder fail to enter into the Contract with Owner, the bid guarantee may be retained by Owner as liquidated damages, not as a penalty.

If a contract is not awarded within forty-five (45) days after the bid submittal deadline, or if the Bidder delivers an executed Contract, executed Payment and Performance Bonds, and such other information required by the Instructions to Bidders, Section 00 21 13, then the certified or bank cashier's check submitted as the bid guarantee will be returned to the bidder, or the Bid Bond will become void.

RESPONSIBILITY CRITERIA:

The undersigned hereby verifies under penalty of perjury, in accordance with RCW 9A.72.085, that Bidder is in compliance with the responsible bidder criteria requirements of RCW 39.04.350(1)(g).

BIDDER'S INFORMATION:

Bidder's Business Name:		
Type of Business: ☐ Sole Proprietorship ☐ Partnership ☐ Corporation (State of Incorporation:___) ☐ Other		
Physical Business Address (Must not be a P.O. Box):		
City:	State:	Zip Code:
Business Telephone Number:	Business Fax Number:	Business Email Address:
State of Washington numbers for the following:		
Contractor Registration No.:	UBI No.:	Employment Security Dept. No.:

OFFICIAL AUTHORIZED TO SIGN FOR BIDDER:

"I certify (or declare) under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct":	
Signature:	Date:
Print Name and Title	Location or Place Executed: (City, State)

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

LONGVIEW SCHOOL DISTRICT CONTRACTOR AGREEMENT

THIS AGREEMENT (the "Agreement") is made and entered into this __ day of _____, 2025, by and between the Longview School District No. 122, a Washington quasi-municipal corporation (the "District"), and _____ (the "Contractor").

WITNESSETH:

WHEREAS, the District desires to have certain work, services, and/or tasks performed as set forth below requiring specialized skills and other supportive capabilities; and

WHEREAS, the Contractor represents that the Contractor is qualified and possesses sufficient skills and the necessary capabilities, including technical and professional expertise, where required, to perform the work, services, and/or tasks set forth in this Agreement.

NOW, THEREFORE, in consideration of the terms, conditions, covenants, and performance contained herein, the parties hereto agree as follows:

1. **Scope of Work.** The Contractor will perform such work and accomplish such tasks, including obtaining permits and furnishing of all materials and equipment necessary for full performance thereof, as are identified and designated as Contractor responsibilities throughout this Agreement and as detailed in Exhibit "A" attached hereto and incorporated herein (the "Project").

2. **Term.** The Project will begin no earlier than June 16, 2021 and will be completed no later than August 22, 2025, unless sooner terminated according to the provisions herein.

3. **Compensation and Method of Payment.**

3.1 Payments for work provided hereunder will be made following the performance of such work, unless otherwise permitted by law and approved in writing by the District.

3.2 No payment will be made for any work rendered by the Contractor except for work identified and set forth in this Agreement.

3.3 The District will pay the Contractor for work performed under this Agreement pursuant to the accepted bid/proposal attached hereto as Exhibit "B" and by this reference incorporated herein.

3.4 The Contractor will submit to the District, using forms approved by the District, a voucher or invoice for services rendered during the pay period. The District will initiate authorization for payment after receipt of said approved voucher or invoice and will make payment to the Contractor within thirty (30) days of confirmation that such work has been completed in accordance with this Agreement.

4. Maintenance and Inspection of Records.

4.1 Upon award of contract, the District will provide the contractor with the most recent copy of the building inspection report for the building that they will be working in/on. Work may not commence until that report has been provided to the contractor.

4.2 The Contractor will maintain books, records, and documents that sufficiently and properly reflect all direct and indirect costs related to the performance of this Agreement and will maintain such accounting procedures and practices as may be necessary to assure proper accounting of all funds paid pursuant to this Agreement. These records will be subject at all reasonable times to inspection, review, or audit by the District, its authorized representative, the State Auditor, or other governmental officials authorized by law to monitor this Agreement.

4.3 The Contractor, at such times and in such forms as the District may require, will furnish to the District such statements, records, reports, data, and information as the District may request pertaining to matters covered by this Agreement.

4.4 The Contractor will at any time during normal business hours and as often as the District or State Auditor may deem necessary make available for examination all of its records and data with respect to all matters covered, directly or indirectly, by this Agreement, including without limitation those records and data described in Section 4.1, and will permit the District or its designated authorized representative to audit and inspect such records and data. The District will receive a copy of all audit reports made by the State Auditor or a third-party firm as to the Contractor's activities related to this Agreement. The District may, at its discretion, conduct an audit at its expense, using its own or outside auditors, of the Contractor's activities that relate, directly or indirectly, to this Agreement.

4.5 The Contractor will retain all books, records, documents, and other material relevant to this Agreement for six (6) years after its expiration. The Contractor agrees that the District or its designee will have full access to and the right to examine any of said materials at all reasonable times during said period.

5. Independent Contractor Relationship.

5.1 The parties intend that an independent contractor relationship will be created by this Agreement. The District is interested primarily in the results to be achieved; subject to the terms of this Agreement, the implementation of Project work and/or services will lie solely with the discretion of the Contractor. No agent, employee, servant, or representative of the Contractor will be deemed to be an employee, agent, servant, or representative of the District for any purpose, and the employees of the Contractor are not entitled to any of the benefits the District provides for its employees. The Contractor will be solely and entirely responsible for its acts and for the acts of its agents, employees, servants, subcontractors, or representatives during the performance of this Agreement.

5.2 In the performance of the work herein contemplated, the Contractor is an independent contractor with the authority to control and direct the performance of the details of the work; however, the results of the work contemplated herein must meet the approval of the District and will be subject to the District's general rights of inspection and review to secure the satisfactory completion thereof.

6. Contractor Employees/Agents. The District may in its sole discretion require the Contractor to remove an employee(s), agent(s), or servant(s) from employment on this Project. The Contractor may, however, employ such individual(s) on other projects not related to the District.

7. Hold Harmless/Indemnification.

7.1 The Contractor will indemnify and hold harmless the District and its agents, employees, and/or officers, from and will process and defend at its own expense any and all claims, demands, suits at law or equity, actions, penalties, losses, damages, or costs ("Claims"), of whatever kind or nature, brought against the District arising out of, in connection with, or incident to the execution of this Agreement and/or the Contractor's performance or failure to perform any aspect of this Agreement; provided, however, that if such Claims are caused by or result from the concurrent negligence of the District, its agents, employees, and/or officers, this indemnity provision will be valid and enforceable only to the extent of the negligence of the Contractor; and provided further, that nothing herein will require the Contractor to hold harmless or defend the District, its agents, employees, and/or officers from any Claims arising from the sole negligence of the District, its agents, employees, and/or officers. The Contractor expressly agrees that the indemnification provided herein constitutes the Contractor's waiver of immunity under Title 51 RCW for the purposes of this Agreement. This waiver has been mutually negotiated by the parties. The provisions of this section will survive the expiration or termination of this Agreement.

7.2 No liability will attach to the District by reason of entering into this Agreement except as expressly provided herein.

8. Insurance.

8.1 The Contractor will procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damage to property that may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees, or subcontractors.

8.2 The Contractor will provide a Certificate of Insurance evidencing:

8.2.1 Automobile Liability insurance with limits no less than $1,000,000 combined single limit per accident for bodily injury and property damage.

8.2.2 Commercial General Liability insurance written on an occurrence basis with limits no less than $2,000,000 combined single limit per occurrence

for personal injury, bodily injury, and property damage. Coverage will include but not be limited to: blanket contractual; products/completed operations; broad form property damage, explosion, collapse and underground, if applicable; and employer's liability.

8.3 The District will be named as an additional insured on the insurance policy with regard to work performed by or on behalf of the Contractor. A copy of the endorsement naming the District as additional insured will be attached to the Certificate of Insurance. The District reserves the right to request certified copies of any required policies. The Contractor's insurance will contain a clause stating that coverage will apply separately to each insured against whom claim is made or suit is brought, except with regard to the limits of the insurer's liability. Any payment of deductible or self-insured retention will be the sole responsibility of the Contractor.

8.4 The Contractor's insurance will be primary insurance with regard to the District and the District will be given thirty (30) days' prior written notice of any cancellation, suspension, or material change in coverage.

9. **Treatment of Assets.** Title to all property furnished by the District will remain in the name of the District. The District will become the owner of any improvements completed by the Contractor as part of the Project in addition to any work product and other documents, if any, prepared by the Contractor pursuant to this Agreement.

10. **Compliance with Laws.**

10.1 The Contractor will, at its own expense, apply for, obtain, and maintain in full force and effect all permits and approvals required for the Project before commencing work. Further, the Contractor will apply for and obtain any inspections or approvals required prior to completing the Project.

10.2 The Contractor will comply with all federal, state, and local laws, ordinances, and regulations that affect performance of the Project, including without limitation: any applicable state public works or bonding requirements; regulations for licensing, certification, and operation of facilities, programs, and accreditation; and licensing of individuals.

10.3 The Contractor will be responsible for the safety of all workers on the Project and will comply with all appropriate state safety and health standards, codes, rules, and regulations, including, but not limited to, those promulgated under the Washington Industrial Safety and Health Act, Chapter 49.17 RCW ("WISHA"), and as set forth in Title 296 WAC (Department of Labor and Industries). The Contractor will likewise be obligated to comply with all federal safety and health standards, codes, rules, and regulations applicable to the Project.

10.4 The Contractor will immediately report to the District any failure to comply with laws, regulations, or ordinances related to environmental compliance, including but

not limited to: spills, unauthorized fill in waters of the State (including wetlands), water quality standards, noise, and air quality.

10.5 The Contractor specifically agrees to pay any applicable business and occupation (B&O) taxes which may be due on account of this Agreement.

10.6 The Contractor will fully satisfy, and will require any subcontractors to fully satisfy, any obligation to make industrial insurance premium payments related to the Project and required under RCW 51.12.050 and/or RCW 51.12.070. Specified retainage relating to the Project will be withheld until receipt by the District of evidence that Contractor and all of its subcontractors have fully satisfied any obligation to make industrial insurance premium payments related to the Project and required under RCW 51.12.050 and/or RCW 51.12.070.

11. Nondiscrimination.

11.1 The District is an equal opportunity employer.

11.2 Nondiscrimination in Employment. In the performance of this Agreement, the Contractor will not discriminate against any employee or applicant for employment on the grounds of sex, race, creed, religion, color, national origin, age, veteran or military status, sexual orientation, gender expression or identity, disability, or the use of a trained dog guide or service animal; however, the prohibition against discrimination in employment because of disability will not apply if the particular disability prevents the proper performance of the particular worker involved. The Contractor will ensure that applicants are employed, and that employees are treated during employment, without discrimination because of their sex, race, creed, religion, color, national origin, age, veteran or military status, sexual orientation, gender expression or identity, disability, or the use of a trained dog guide or service animal. Such action will include, but not be limited to: employment, upgrading, demotion or transfers, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and programs for training including apprenticeships. The Contractor will take such action with respect to this Agreement as may be required to ensure full compliance with local, state, and federal laws prohibiting discrimination in employment.

11.3 Nondiscrimination in Services. The Contractor will not discriminate against any recipient of any services or benefits provided for in this Agreement on the grounds of sex, race, creed, religion, color, national origin, age, veteran or military status, sexual orientation, gender expression or identity, disability, or the use of a trained dog guide or service animal.

11.4 If any assignment and/or subcontracting has been authorized by the District, said assignment or subcontract will include appropriate safeguards against discrimination. The Contractor will take such action as may be required to ensure full compliance with the provisions of this Section 11 of the Agreement.

12. Assignment/Subcontracting.

12.1 The Contractor will not assign its performance under this Agreement or any portion of this Agreement without the written consent of the District, and it is further agreed that said consent must be sought in writing by the Contractor not less than thirty (30) days prior to the date of any proposed assignment. The District reserves the right in its sole discretion to reject any such requested assignment.

12.2 Any work or services assigned hereunder will be subject to each provision of this Agreement and proper bidding procedures where applicable as set forth in local, state, and/or federal statutes, ordinances, and guidelines.

12.3 Any technical/professional service subcontract not listed in this Agreement must have express advance approval by the District.

13. Changes.

13.1 Either party may request changes to the scope of services and performance to be provided hereunder; however, no change or addition to this Agreement will be valid or binding upon the District unless such change or addition is written and signed by both parties. Such amendments will be attached to and made part of this Agreement. Only Jason Reetz, Facilities Manager, can approve changes to the scope or methods used to achieve the scope.

13.2 The District will have the right to make changes to the work provided for hereunder, within its general scope, and the contract time and for contract amount will be equitably adjusted to reflect the change. The Contractor will promptly commence and continue to perform the work as changed notwithstanding disagreement over the equitable adjustment owing therefore. However, no change in scope or the methods used to achieve the scope may proceed without written notice from Jason Reetz, Facilities Manager.

14. Political Activity Prohibited. None of the funds, materials, property, or services provided directly or indirectly under this Agreement will be used for any partisan political activity or to further the election or defeat of any candidate for public office.

15. Prohibited Interest. No director, officer, or employee of the District will have any interest, directly or indirectly, in this Agreement or the proceeds thereof prohibited by Chapter 42.23 RCW.

16. Retainage. Notwithstanding any other provision of this Agreement, and in accordance with Chapter 60.28 RCW, the District will retain from the monies earned by the Contractor hereunder five (5) percent as a trust fund for the protection and payment of any person or persons, mechanic, subcontractor, or materialman who will perform any labor or furnish any supplies related to the Project and the State with respect to taxes imposed pursuant to titles 50, 51, and 82 RCW which may be due from Contractor. Said retainage will be reserved in a District fund until thirty (30) days following final acceptance of the Project as completed and will not be released to Contractor until the District has received

certification from the Washington State Department of Revenue that all taxes, increases, and penalties due from Contractor, and all taxes due and to become due with respect to the Project, have been paid in full or are readily collectible without recourse to the State's lien on the retainage, and until the requirements of Sections 10.6 and 18 of this Agreement have been satisfied.

17. Performance Bond. In accordance with Chapter 39.08 RCW, Contractor will furnish to the District a bond, with a surety company licensed as a surety in Washington as surety, conditioned that Contractor will faithfully perform all provisions of this Agreement, pay all laborers, mechanics, subcontractors, and materialmen, and all persons who supply such person, persons, or subcontractors, with provisions and supplies for carrying out the Project, and pay the taxes, increases, and penalties incurred on the project under state law. Said bond will be in the amount of the total amount of this Agreement. If the total contract amount is $35,000.00 or less, Contractor may opt to have the District retain fifty (50) percent of the contract amount in lieu of the bond for a period of thirty (30) days after the date of final acceptance, or until receipt of all necessary releases from the Department of Revenue, the Employment Security Department, and the Department of Labor and Industries and settlement of any liens filed under Chapter 60.28 RCW, whichever is later.

18. Prevailing Wage.

18.1 Contractor will pay all laborers, workers, or mechanics performing work under this Agreement prevailing wages as required by Chapter 39.12 RCW and will satisfy all other requirements of that chapter, including without limitation requiring that all subcontractors performing work related to the project comply with the requirements of that chapter. The hourly minimum rates of wage which may be paid to laborers, workers, or mechanics for work related to the Project are shown on the Department of Labor and Industries website at the following locations (use effective date of June 30, 2021 for Cowlitz County):

- **Journey:** fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx.
- **Apprentice:** fortress.wa.gov/lni/wagelookup/ApprenticeWagelookup.aspx.

A copy of the applicable wage rates is also available for viewing in the District's offices and will be mailed to Contractor upon request.

18.2 Prior to the District making any payment to the Contractor under this Agreement, Contractor and each subcontractor will submit to the District a Statement of Intent to Pay Prevailing Wages approved by the industrial statistician of the Washington State Department of Labor and Industries and complying with the requirements of RCW 39.12.040. Prior to release of the sums retained pursuant to Section 16 of this Agreement ("Retainage"), Contractor and each subcontractor will submit to the District an Affidavit of Wages Paid approved by the industrial statistician of the Washington State Department of Labor and Industries and complying with the requirements of RCW 39.12.040.

19. Records Check/Crimes Against Children.

19.1 In the event Contractor or any of Contractor's agents, employees, or applicants for employment will have regularly scheduled unsupervised access to children and/or hire employees who will have regularly scheduled unsupervised access to children, Contractor will require a record check through the Washington State Patrol criminal investigation system under RCW 43.43.830-.834, RCW 10.97.030, and RCW 10.97.050, and through the Federal Bureau of Investigation, before hiring the employee or allowing such employee onto the Project site. The record check will include a fingerprint check using a complete Washington State criminal identification fingerprint card. The Contractor will provide a copy of the record to the person applying for employment to the District. If the Contractor or applicant has a record check within previous two (2) years, the Contractor may waive the requirement. The Contractor will pay for the requirements set forth in this paragraph.

19.2 In accordance with RCW 28A.400.330, Contractor will prohibit any employee of the Contractor from working at a public school who has or may have contact with children at a public school during the course of his or her employment and who has pleaded guilty to or been convicted of any crime enumerated in RCW 28A.400.322, as now or hereafter amended. Any failure to comply with this Section 19.2 will be grounds for the District to immediately terminate the Agreement.

19.3 Contractor will require any subcontractor(s) to fully comply with the requirements of this Section 19.

20. Apprentice Utilization Requirement. The Contractor will comply with the apprentice utilization requirement of RCW 39.04.320, as now enacted or hereafter be amended, and as such requirement may be adjusted by the District for this Agreement pursuant to RCW 39.04.320(2).

21. Termination.

21.1 Termination for Convenience. The District may terminate this Agreement, in whole or in part, at any time, by written notice to the Contractor. In the event of termination for the convenience of the District, the Contractor will be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor will promptly submit a termination claim to the District. If the Contractor has any property in its possession belonging to the District, the Contractor will account for the same and dispose of it in the manner directed by the District.

21.2 Termination for Cause. Failure to comply with any of the provisions stated herein will constitute material breach of contract and cause for termination. If the Contractor fails to perform in the manner called for in this Agreement, or if the Contractor fails to comply with any other provisions of the Agreement and fails to correct such noncompliance within five (5) days written notice thereof, the District may terminate this Agreement for cause. Termination will be effected by serving a

notice of termination on the Contractor setting forth the manner in which the Contractor is in default. The Contractor will only be paid for services performed in accordance with the manner of performance set forth in this Agreement.

22. **Notice.** Notice provided for in this Agreement will be sent by certified mail to the addresses designated for the parties on the last page of this Agreement.

23. **Attorney's Fees and Costs.** If any legal proceeding is brought for the enforcement of this Agreement, or because of a dispute, breach, default, or misrepresentation in connection with any of the provisions of this Agreement, the prevailing party will be entitled to recover from the other party, in addition to any other relief to which such party may be entitled, reasonable attorney's fees and other costs incurred in that action or proceeding.

24. **Jurisdiction and Venue.**

24.1 This Agreement has been and will be construed as having been made and delivered with the State of Washington, and it is agreed by each party hereto that this Agreement will be governed by laws of the State of Washington, both as to interpretation and performance, with the exception of Washington's choice-of-law rules.

24.2 Any action of law, suit in equity, or judicial proceeding for the enforcement of this Agreement or any provisions thereof will be instituted and maintained only in any of the courts of competent jurisdiction in Cowlitz County, Washington.

25. **Severability.**

25.1 If, for any reason, any part, term or provision of this Agreement is held by a court of the United States to be illegal, void or unenforceable, the validity of the remaining provisions will not be affected, and the rights and obligations of the parties will be construed and enforced as if the Agreement did not contain the particular provision held to be invalid.

25.2 If it should appear that any provision hereof is in conflict with any statutory provision of the State of Washington, said provision which may conflict therewith will be deemed inoperative and null and void insofar as it may be in conflict therewith, and will be deemed modified to conform to such statutory provisions.

26. **General Provisions.**

26.1 Entire Agreement. This Agreement constitutes the entire agreement between the parties and supersedes any and all prior oral or written agreements, commitments, or understandings concerning the matters provided for in this Agreement. No other understandings, oral or otherwise, regarding the subject matter of this Agreement will be deemed to exist or to bind any of the parties hereto.

26.2 Modification. The parties may modify this Agreement only by a subsequent written agreement executed by the authorized representatives of the parties.

26.3 No Waiver. A failure by either party to exercise its rights under this Agreement will not preclude that party from subsequent exercise of such rights and will not constitute a waiver of any other rights under this Agreement unless stated as such in a writing signed by an authorized representative of the party and attached to this Agreement.

26.4 Time of the Essence. Both parties recognize time is of the essence in the performance of the provisions of this Agreement.

26.5 Headings. Headings in this Agreement are included only for convenience and will not control or affect the meaning or construction of this Agreement.

IN WITNESS WHEREOF the District and the Contractor have executed this Agreement for the amount of $106,955.00 (One hundred six thousand, nine hundred fifty-five and 00/100 dollars) as of the date first above written.

FOR THE DISTRICT:

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

_____

Patti Bowen
Executive Director of Business Services

_____

Name:
President, Board of Directors

FOR THE CONTRACTOR:

_____

Name:
Title:

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS: That we, _____

_____ (herein "Principal"),

as Principal, and _____ (herein "Surety"),

as Surety, are held firmly bound unto Longview School District No. 122, Cowlitz County, Washington, in the full sum of _____ Dollars ($_____) lawful money of the United States of America for the payment of which sum of money, well and truly to be made, said Principal and Surety bind themselves and each and every of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the above-named Principal has submitted a bid for the **Mint Valley ES Fire-Smoke Alarm Updates Project** in accordance with the Advertisement for Bids and Instructions to Bidders prepared by Longview School District No. 122 and is desirous of accompanying said bid with a bid bond in the penalty of five (5) percent of said bid in lieu of certified or bank cashier's check.

NOW THEREFORE, if said Principal, upon receipt of written notice of the acceptance of such bid, shall within forty-five (45) days after the Bid Date enter into a written contract with Longview School District No. 122 upon the form of contract included in the Bidding Documents for the completion of such contract in accordance with the terms and conditions of said bid, provide payment and performance bonds with good and sufficient sureties for the faithful and proper fulfillment of such contract, and provide all insurances as required by the contract, then this obligation will be null and void; otherwise to remain in full force and effect.

SIGNED AND SEALED this _____ day of _____, 20____.

Principal:	**Surety:**
_____	_____
_____ Signature of Representative	_____ Signature of Representative
_____ Printed Name	_____ Printed Name
_____ Title	_____ Title
_____ Address	_____ Address
_____ Telephone No.	_____ Telephone No.
_____ Witness	_____ Witness

END OF SECTION

PART 1 – GENERAL PROVISIONS

1.01 DEFINITIONS

A. "Application for Payment" means a written request submitted by Contractor to the Owner (or A/E, if applicable) for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner or A/E may require.

B. "Architect," "Engineer," or "A/E" means a person or entity lawfully entitled to practice architecture or engineering, representing Owner within the limits of its delegated authority, if applicable to the Project. Owner may choose not to contract with an A/E for certain projects, in which event all references to the A/E shall be construed to reference the Owner.

C. "Change Order" means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.

D. "Claim" means Contractor's exclusive remedy for resolving disputes with Owner regarding the terms of a Change Order or a request for equitable adjustment, as more fully set forth in Part 8.

E. "Contract Award Amount" is the sum of the Base Bid and any accepted Alternates.

F. "Contract Documents" means the Advertisement for Bids, Instructions for Bidders, completed Bid Form, General Conditions, Supplemental Conditions, Public Works Contract, other Special Forms, Drawings, and Specifications, and all addenda and modifications thereof.

G. "Contract Sum" is the total amount payable by Owner to Contractor, for performance of the Work in accordance with the Contract Documents, including all taxes imposed by law and properly chargeable to the Work, except Washington State sales tax.

H. "Contract Time" is the number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.

I. "Contractor" means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.

J. "Day" means a calendar day, unless otherwise specified.

K. "Drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.

L. "Final Acceptance" means the written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents, as more fully set forth in Section 6.09 B.

M. "Final Completion" means that the Work is fully and finally complete in accordance with the Contract Documents, as more fully set forth in Section 6.09A.

N. "Force Majeure" means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in Section 3.05A.

O. "Notice" means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.

P. "Notice to Proceed" means a notice from Owner to Contractor that defines the date on which the Contract Time begins to run.

Q. "Owner" means the Longview School District or its authorized representative with the authority to enter into, administer, and/or terminate the Work in accordance with the Contract Documents and make related determinations and findings.

R. "Person" means a corporation, partnership, business association of any kind, trust, company, or individual.

S. "Prior Occupancy" means Owner's use of all or parts of the Project before Substantial Completion, as more fully set forth in Section 6.08A.

T. "Progress Schedule" means a schedule of the Work, in a form satisfactory to Owner, as further set forth in Section 3.02.

U. "Project" means the total construction of which the Work performed in accordance with the Contract Documents, which may be the whole or a part and which may include construction by Owner or by separate contractors.

V. "Project Record" means the separate set of Drawings and Specifications as further set forth in Section 4.02A.

W. "Schedule of Values" means a written breakdown allocating the total Contract Sum to each principal category of Work, in such detail as requested by Owner.

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

Y. "Subcontract" means a contract entered into by Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for or in connection with the Work.

Z. "Subcontractor" means any person, other than Contractor, who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.

AA. "Substantial Completion" means that stage in the progress of the Work when the construction is sufficiently complete, as more fully set forth in Section 6.07.

AB. "Work" means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.

1.02 ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents shall be resolved by giving the documentsprecedence in the following order:

A. Signed Public Works Contract, including any Change Orders.

B. Supplemental Conditions.

C. General Conditions.

D. Specifications.

E. Drawings. In case of conflict within the Drawings, large-scale drawings shall take precedenceover small-scale drawings.

F. Signed and Completed Bid Form.

G. Instructions to Bidders.

H. Advertisement for Bids.

1.03 EXECUTION AND INTENT

Contractor makes the following representations to Owner:

A. Contract Sum reasonable: The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;

B. Contractor familiar with Project: Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and 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 and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof;

C. Contractor financially capable: Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents; and

D. Contractor can complete Work: Contractor is able to furnish the plant, tools, materials, supplies, equipment, and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.

PART 2 – INSURANCE AND BONDS

2.01 CONTRACTOR'S LIABILITY INSURNACE

A. Prior to commencement of the Work, the Contractor shall obtain all the insurance required by the Contract Documents and provide evidence satisfactory to Owner that such insurance has been procured. Review of the Contractor's insurance by Owner or the 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. The Contractor shall include in its bid the cost of all insurance and bonds required to complete the Base Bid Work and accepted alternates.

B. The Contractor shall purchase and maintain in full force and effect the following insurance coverage without interruption from the date of commencement of the Work through the date of Final Acceptance and termination of any coverage required to be maintained after final payment, including, but not limited to, during the performance of any corrective Work required by Section 5.16. Completed Operations coverage shall remain in force for three (3) years after Final Acceptance. All coverages shall be written on an occurrence basis, reasonably acceptable to the Owner, and written for at least the minimum limits specified in this Section 2.01 or required by law, whichever coverage is greater.

1. Commercial General Liability (CGL):

a. The Contractor shall procure an occurrence-based Commercial General Liability (CGL) insurance policy, written on an ISO-based occurrence form or its equivalent. Such insurance shall provide coverage for personal injury, bodily injury, and property damage liability arising from the Contractor's operations in connection with the Work, whether such operations are by the Contractor or Subcontractors and suppliers of any tier; owned, non-owned, and hired vehicles; work the Contractor may subcontract or sublet to others; and the indemnity provisions of this Contract. Without limiting the foregoing, such insurance shall protect the Contractor and additional insureds required by this Section 2.01 from claims set forth below that may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor or the additional insureds may be legally liable, whether such operations are by the Contractor, a Subcontractor, or 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 (industrial insurance), disability benefit, and other similar employee benefit acts that are applicable to the Work to be performed in the form of Stop Gap Liability Insurance (Employer's Contingent Liability Insurance);

(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 bodily injury or property damage arising out of completed operations;

(7) Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 5.22 ("Indemnification"); and

(8) Claims for bodily injury and property damage resulting from mold and fungus.

b. Without limiting the foregoing, this CGL insurance shall be on a comprehensive basis and include all major divisions of coverage, including, but not limited to:

(1) Premises and Operations;

(2) Products and Completed Operations;

(3) Explosion, Collapse, and Underground (XCU);

(4) The Owners and Contractors Protective;

(5) Personal and Advertising Injury, with employment exclusion deleted;

(6) Blanket contractual, including specific provision for Contractor's obligation under the indemnity provisions of this Contract; and

(7) Broad Form Property Damage.

2. Automobile Liability: Such insurance shall provide coverage for all owned, non-owned, and hired automobiles. It shall cover 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 (including loss of use thereof arising out of operation of automobiles), including Comprehensive Automobile Liability, Bodily Injury, and Property Damage Combined Single Limit.

3. Umbrella Policy: For projects with a Contract Sum of $1 million or more, the Contractor shall procedure a true umbrella policy that provides excess limits over the primary layer.

4. Employer's Liability: The Contractor shall provide an employer's liability policy providing coverage for liability to employees for work-related bodily injury or disease, other than liability imposed by workers' compensation law.

5. Workers' Compensation: The Contractor shall provide, and require Subcontractors of any tier to provide, workers' compensation insurance as required by the industrial insurance laws of the State of Washington.

C. The Contractor's insurance obtained under this Section 2.01 will:

1. Name the Owner, the Owner's consultants, as well as their directors, officers, employees, and agents, as additional insureds under CG 2010 and CG 2037 or their equivalent.

2. Include a severability of interest (cross-liability clause) in favor of the Owner for Work performed under this Contract.

3. Be designated and endorsed as primary coverage for both defense and indemnity, and any Owner's policies shall be excess and non-contributory.

4. Provide a waiver of any rights of subrogation against the Owner.

5. Have per-project general aggregate provisions in accordance with the limits set forth in Section 2.01J, which provisions may be modified in the Special Conditions. The insurance shall be endorsed to have the general aggregate apply to this Project only.

6. Without limiting the foregoing, the insurance described above shall include coverage for underground collapse and explosion exposures.

D. Any company writing the insurance to be obtained pursuant to this Section 2.01 shall be authorized to do business in the State of Washington. Insurance carriers providing insurance in accordance with the Contract Documents must be acceptable to Owner and shall possess an A.B. Best's policyholder's rating of "A" or better and a financial rating of no less than "VIII."

E. Losses up to the deductible amount of any insurance under this part shall be the responsibility of the Contractor.

F. The Contract Sum includes an amount to pay the premium for insurance required under the Contract Documents and to name the Owner and others listed in the Contract Documents as additional insureds on all insurance policies required by Section 2.01.

G. There shall be no self-insured retention without the prior written approval of the Owner.

H. If the Owner is damaged by the failure of the Contractor to maintain any of the insurance in this Section 2.01 or to so notify the Owner, 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.

I. The Contractor shall comply with the Washington State Industrial Insurance Act and, if applicable, the Federal Longshoremen's and Harbor Workers' Act and the Jones Act.

J. Coverage Limits: The minimum coverage limits for Contractor's liability insurance shall be as follows:

1. Commercial General Liability (CGL):

   a. At least $2,000,000 General Aggregate Limit (Other than Products-Completed Operations).

   b. At least $1,000,000 Each Occurrence Limit.

   c. At least $1,000,000 Products-Completed Operations Aggregate Limit.

   d. At least $1,000,000 Personal Injury and Advertising Liability Limit, each occurrence.

2. Automobile Liability: At least $1,000,000 Combined Single Limit for Automobile Bodily Injury and Property Damage Liability, each accident or loss.

3. Umbrella Policy: Where applicable, the umbrella policy will have excess limits over the primary layer in an amount not less than $2,000,000.

4. Employer's Liability: At least $1,000,000 each occurrence limit.

5. Workers' Compensation: The Contractor shall provide workers' compensation insurance in the amounts required by the industrial insurance laws of the State of Washington. For any employees not subject to the Washington State workers' compensation statute, the Contractor shall provide, and cause each Subcontractor to provide workers' compensation insurance with a private company in an amount equivalent to that provided by the workers' compensation statute, but no less than a $1,000,000 limit of liability for the protection of its employees not otherwise protected. Stop Gap Liability Insurance (Employer's Contingent Liability Insurance) shall be at least $1,000,000 Each Occurrence.

K. Proof of Insurance:

1. Prior to commencement of the Work, any presence on the site, or exposure to loss can occur, and in any event within seven (7) Days after the Owner has issued its Notice to Proceed, the Contractor shall furnish the Owner with the following:

   a. Two (2) copies of Certificates of Insurance evidencing all insurance required by the Contract Documents;

   b. A written statement of the actual costs (expressed as a percentage) of the Contractors' liability insurance under 2.01;

   c. Endorsements for additional insureds as listed in Section 2.01C.1;

   d. Two (2) copies of Department of Labor & Industries statements for state workers' compensation coverage.

2. All insurance policies and certificates must be signed copies. Edition dates of endorsements on policies obtained under this Section 2.01 shall be consistent.

3. All policies shall include the premium percentage to be paid by the Contractor for increases in the Contract Sum.

4. The Contractor shall furnish to the Owner copies of any subsequently issued endorsements amending, modifying, altering, or restricting coverage or limits.

5. Policies or certificates obtained under this part shall verify that the policy contains coverage for blanket contractual liability, including both oral and written contracts, and acknowledge the indemnification provisions and liability coverages called for by this Contract.

6. Upon written request, the Contractor shall provide a copy of its policies obtained under this part to the Owner within five (5) business days.

7. All insurance certificates obtained pursuant to this part will:

   a. Name Owner's Project number and Project title.

   b. State the insurance carrier's A.B. Best rating.

   c. Evidence full compliance with the requirements of Section 2.01.

d. Specifically require written notice by certified mail must be provided to the Owner at least forty-five (45) Days before the policies expire, are cancelled, or are reduced; the limits are decreased; or the additional insureds removed, except that thirty (30) Days' notice shall be required for surplus line insurance.

8. 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.

9. 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 general 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, as an additional insured for claims caused in whole or in part by the Subcontractor's negligent acts or omissions during the Subcontractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Subcontractor's negligent acts or omissions during the Subcontractor's completed operations.

10. The Owner may withhold payment pending receipt of all certificates of insurance meeting the requirements of Section 2.01K. Failure to withhold payment shall not constitute a waiver of any provision of the Contract.

2.02 PAYMENT AND PERFORMANCE BONDS

A. In accordance with Chapter 39.08 RCW ("Contractor's Bond"), the Contractor will furnish to the Owner bonds, with a surety company admitted and licensed in the State of Washington and acceptable to the Owner, conditioned that the Contractor will: (1) faithfully perform all provisions of this Contract (the "Performance Bond"); and (2) pay all laborers, mechanics, Subcontractors, and materialmen, and all persons who supply such person, persons, or Subcontractors, with provisions and supplies for carrying out the Project and pay the taxes, increases, and penalties incurred on the Project under state law (the "Payment Bond"). Each of the Performance Bond and Payment Bond will be in the full amount of the Contract Sum. Such surety company will possess an A.M. Best rating of "A" or better and a financial rating of no less than "IX."

B. Bond forms must be deemed acceptable and approved by Owner. Owner shall deem acceptable and approve payment and performance bonds that use the Payment Bond and Performance Bond form published by and available from the American Institute of Architects (AIA) – form A312. Separate bonds for payment and performance must be provided to Owner. Provision of payment and performance bonds by Contractor to Owner is a condition precedent to performance by Owner.

C. Prior to execution of a Change Order that, cumulatively with previous Change Orders, increases the Contract Award Amount by ten (10) percent or more, the Contractor shall provide either new payment and performance bonds for the revised Contract Sum, or riders to the existing payment and performance bonds increasing the amount of the bonds. The Contractor shall likewise provide additional bonds or riders when subsequent Change Orders increase the Contract Sum by ten (10) percent or more.

D. No payment or performance bonds are required if the Contract Sum is $150,000 or less and Owner and Contractor agree that Owner may, in lieu of the bond, retain 10 percent of the Contract Sum for the period allowed by RCW 39.08.010.

E. All reinsurers that may be called upon to support or share in a surety's obligations specified in connection with the performance and payment bond obligations required of the Contractor by this Contract must also have an A.M. Best rating of "A" or better and financial rating of not less than "IX."

F. Within seven (7) days of the issuance of Owner's Notice of Intent to Award the Contract, the Contractor will deliver evidence of its bondability to the Owner. Within seven (7) days after its execution of the Contract, the Contractor will deliver copies of the bonds to the Owner.

G. THE OWNER MAY DECLINE TO ENTER INTO THE CONTRACT IF THE REQUESTED EVIDENCE OF BONDABILITY IS NOT RECEIVED. THE CONTRACTOR WILL NOT PROCEED WITH THE WORK UNTIL SUCH SURETY BOND IS RECEIVED. Evidence of bondability shall include the percentage to be paid by the Contractor for increases in the Contract Sum.

H. Upon request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor will promptly furnish a copy of the bond(s) or will authorize a copy to be furnished.

I. Additional Bond Security: The Contractor will promptly furnish additional security required to protect Owner and persons supplying labor or materials required by this Contract if: (1) Owner has a reasonable objection to the surety; or (2) any surety fails to furnish reports on its financial condition if required by Owner.

J. Potential Subcontractors' Payment and Performance Bonds: Within ten (10) days after the issuance of the Notice to Proceed, any Subcontractors so required in the Bidding or Contract Documents or Special Conditions shall deliver evidence of their payment and performance bondability to the Owner through the Contractor. The evidence shall include a letter from the bonding company that includes the price of payment and performance bonds to be issued during the thirty (30) day period after the Notice to Proceed. The surety company must be acceptable to the Owner and admitted and licensed in the State of Washington, with an A.M. Best rating of "A" or better and a financial rating of no less than "VIII." The bonds 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 payment and performance bonds from one or more of the Subcontractors, it will so notify the Contractor in writing within fourteen (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 shall not be responsible for the costs of any Subcontractor bonds it requires until the Owner receives a copy of the bond. 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 RECEIVED. THE OWNER MAY WITHHOLD PAYMENT TO THE CONTRACTOR UNTIL SUCH SURETY BONDS ARE RECEIVED. 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 permit a copy to be made. The Subcontractors responsible to the Contractor for the work listed in the Instructions to Bidders must comply with this paragraph to the extent directed by the Owner.

K. If the Owner is damaged by the failure of the Contractor to maintain any of the bonds or insurance in this Section 2.02 or elsewhere in the Contract Documents or to so notify the Owner, then the Contractor will bear all costs attributable thereto. The Owner may withhold payment pending receipt of all certificates of insurance and bonds. Failure to withhold payment will not constitute a waiver.

2.03 ALTERNATIVE SURETY

A. When alternative surety required: Contractor shall promptly furnish payment and performance bonds from an alternative surety as required to protect Owner and persons supplying labor or materials required by the Contract Documents if:

1. Owner has a reasonable objection to the surety; or

2. Any surety fails to furnish reports on its financial condition if required by Owner.

2.04 BUILDER'S RISK

A. Contractor to buy Property Insurance: Contractor shall purchase and maintain property insurancein the amount of the Contract Sum, including all Change Orders for the Work, on a replacement-cost basis until Substantial Completion. For projects not involving New Building Construction, "Installation Floater" is an acceptable substitute for the Builder's Risk Insurance. The insurance shall cover the interest of Owner, Contractor, and any Subcontractors, as their interests may appear.

B. Losses covered: Contractor property insurance shall be placed on an "all risk" basis and insure against the perils of fire and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, temporary buildings, and debris removal (including demolition occasioned by enforcement of any applicable legal requirements), and shall cover reasonable compensation for A/E's services and expenses required as a result of an insured loss.

C. Waiver of subrogation rights: Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/E's subconsultants, separate contractors described herein, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Owner as fiduciary. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective 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.

PART 3 – TIME AND SCHEDULE

3.01 PROGRESS AND COMPLETION

Contractor to meet schedule: Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within a reasonable period thereafter.

3.02 CONSTRUCTION SCHEDULE

A. Preliminary Progress Schedule: Contractor shall, within 14 Days after issuance of the Notice to Proceed, submit a preliminary Progress Schedule. The Progress Schedule shall show the sequence in which Contractor proposes to perform the Work and the dates on which Contractor plans to start and finish major portions of the Work, including dates for Shop Drawings and other submittals, and for acquiring materials and equipment.

B. Form of Progress Schedule: The Progress Schedule shall be in the form of a bar chart, or a critical path method analysis, as specified by Owner. The preliminary Progress Schedule may be general, showing the major portions of the Work, with a more detailed Progress Schedule submitted as directed by Owner.

C. Owner comments on Progress Schedule: Owner shall return comments on the preliminary Progress Schedule to Contractor within 14 Days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of progress payments until a Progress Schedule has been submitted which meets the requirements of this section.

D. Monthly updates and compliance with Progress Schedule: Contractor shall utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Progress Schedule at its own expense to Owner indicating actual progress. If, in the opinion of Owner, Contractor is not in conformance with the ProgressSchedule for reasons other than acts of Force Majeure as identified in Section 3.05, Contractor shall take such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Progress Schedule, and if directed by Owner, Contractor shall submit acorrective action plan or revise the Progress Schedule to reconcile with the actual progress of theWork.

E. Contractor to notify Owner of delays: Contractor shall promptly notify Owner in writing of any actual or anticipated event which is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor shall indicate the expected duration of the delay, the anticipated effect of the delay on the Progress Schedule, and the action being or to be taken to correct the problem. Provision of such notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

3.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

A. Owner may suspend Work: Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 Days, or for such longer period as mutually agreed.

B. Compliance with suspension; Owner's options: Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 Days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:

1. Cancel the written notice suspending the Work; or

2. Terminate the Work covered by the notice as provided in the termination

provisions of Part 9.

C. Resumption of Work: If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.

D. Equitable adjustment for suspensions: Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in Part 7.

3.04 OWNER'S RIGHT TO STOP THE WORK FOR CAUSE

A. Owner may stop Work for Contractor's failure to perform: If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.

B. No equitable adjustment for Contractor's failure to perform: Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

3.05 DELAY

A. Force Majeure actions not a default; Force Majeure defined: Any delay in or failure of performance by Owner or Contractor, other than the payment of money, shall not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party ("Force Majeure"). Acts of Force Majeure include, but are not limited to:

1. Acts of God or the public enemy;
2. Acts or omissions of any government entity;
3. Fire or other casualty for which Contractor is not responsible;
4. Quarantine or epidemic;
5. Strike or defensive lockout;
6. Unusually severe weather conditions which could not have been reasonably anticipated; and
7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available. The pandemic of the disease COVID-19 and the consequences thereof do not constitute a Force Majeure Event.

B. Contract Time adjustment for Force Majeure: Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment according to Section 7.03. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.

C. Contract Time or Contract Sum adjustment if Owner at fault: Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment

in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request according to Sections 7.02 and 7.03.

D. No Contract Time or Contract Sum adjustment if Contractor at fault: Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.

E. Contract Time adjustment only for concurrent fault: To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to Section 7.03, but shall not be entitled to an adjustment in Contract Sum.

F. Contractor to mitigate delay impacts: Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

3.06 NOTICE TO OWNER OF LABOR DISPUTES

A. Contractor to notify Owner of labor disputes: If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with theContract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.

B. Pass through notification provisions to Subcontractors: Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tierSubcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

A. Liquidated Damages

1. Reason for Liquidated Damages: Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence. 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 exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.

2. Calculation of Liquidated Damages amount: The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages forbreach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from periodic payments to the Contractor.

3. Contractor responsible even if Liquidated Damages assessed: Assessment of liquidated damages shall not release Contractor from any further obligations or liabilities pursuant tothe Contract Documents.

B. Actual Damages

Calculation of Actual Damages: Actual damages will be assessed for failure to achieve Final Completion within the time provided. Actual damages will be calculated on the basis of direct architectural, administrative, and other related costs attributable to the Project from the date when Final Completion should have been achieved, based on the date Substantial Completion is actually achieved, to the date Final Completion is actually achieved. Owner may offset these costs against any payment due Contractor.

C. Waiver of 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 Owner for rental expenses, for 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, for losses on other projects, for interest or financing costs, and for loss of profit, except as explicitly allowed under the Contract Documents.

PART 4 – SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

4.01 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

A. Specifications and Drawings are basis of the Work: The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.

B. Parts of the Contract Documents are complementary: The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shownor mentioned in both.

C. Contractor to report discrepancies in Contract Documents: Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to the Owner (and A/E, if applicable) in writing.

D. Contractor knowledge of discrepancy in documents – responsibility: Contractor shall do no Work without applicable Drawings, Specifications, or written modifications, or Shop Drawings where required, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or reasonably should have known that any

of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for theperformance and shall bear the cost for its correction.

E. Contractor to perform Work implied by Contract Documents: Contractor shall provide any work ormaterials the provision of which is clearly implied and is within the scope of the ContractDocuments even if the Contract Documents do not mention them specifically.

F. Interpretation questions: Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the Owner (and A/E, if applicable).

4.02 PROJECT RECORD

A. Contractor to maintain Project Record Drawings and Specifications: Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities, and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals (COP). This separate set of Drawings and Specifications shall be the "Project Record."

B. Update Project Record weekly and keep on site: The Project Record shall be maintained on the project site throughout the construction and shall be clearly labeled "PROJECT RECORD." The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.

C. Final Project Record before Final Acceptance: Contractor shall submit the completed and finalized Project Record to the Owner (and A/E, if applicable) prior to Final Acceptance.

4.03 SHOP DRAWINGS

A. Definition of Shop Drawings: "Shop Drawings" means documents and other information required to be submitted to the Owner (or A/E, if applicable) by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural elements; and the installation (i.e., form, fit, and attachment details) of materials and equipment. Shop Drawings include, but are not limited to, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal shall include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor shall submit all samples at its own expense. Owner may duplicate, use, and disclose Shop Drawings provided in accordance with the Contract Documents.

B. Approval of Shop Drawings: Contractor shall coordinate all Shop Drawings, and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Shop Drawings shall be stamped by an appropriate professional licensed by the state of Washington. Shop Drawings submitted to the Owner (or A/E, if applicable) without evidence of Contractor's approval shall be returned for resubmission. Contractor shall review, approve, and submit Shop Drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor's submittal schedule shall allow a reasonable time for the Owner

(or A/E, if applicable) to review. The Owner (or A/E, if applicable) will review, approve, or take other appropriate action on the Shop Drawings. Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings until the respective submittal has been reviewed and the A/E, if applicable, or Owner has approved or taken other appropriate action. The A/E and/or Owner, as applicable, shall respond to Shop Drawing submittals with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Shop Drawings. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.

C. Contractor not relieved of responsibility when Shop Drawings approved: Approval, or other appropriate action with regard to Shop Drawings, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Shop Drawings, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor's means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.

D. Variations between Shop Drawings and Contract Documents: If Shop Drawings show variations from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Shop Drawings, at the time it submits the Shop Drawings containing such variations. If the Owner (or A/E, if applicable) approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be recorded upon the Project Record.

E. Contractor to submit copies of Shop Drawings: Contractor shall submit to A/E and Owner for approval five (5) copies of all Shop Drawings. Unless otherwise indicated, three (3) sets of all Shop Drawings shall be retained by A/E, if applicable, or the Owner and two (2) sets shall be returned to Contractor.

4.04 ORGANIZATION OF SPECIFICATIONS

Specification organization by trade: Specifications may be prepared in sections which conform generally with trade practices. These sections are for Owner and Contractor convenience and shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

4.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

A. A/E, not Contractor, owns Copyright of Drawings and Specifications: The Drawings, Specifications, and other documents prepared by A/E, if any, are instruments of A/E's service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, if any, and A/E shall be deemed the author of them and will, along with anyrights of Owner, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor's set, shall be returned or suitably accounted for to A/E, on request, upon completion of the Work.

B. Drawings and Specifications to be used only for this Project: The Drawings, Specifications, and other documents prepared by the A/E, if any, and copies thereof furnished to

Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor onother projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner (and A/E, if applicable). Contractor and Subcontractors are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by A/E, if any, appropriate to and for use in the execution of their Work.

C. Shop Drawing license granted to Owner: Contractor and all Subcontractors grant a non-exclusivelicense to Owner, without additional cost or royalty, to use for its own purposes (including reproduction) all Shop Drawings, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing Shop Drawings, Contractor and all Subcontractors warrant that they have authority to grant to Owner a license to use the Shop Drawings, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in Section 5.03 and 5.22 from any violations of copyright or other intellectual property rights arising out of Owner's use of the Shop Drawings hereunder, or to secure for Owner, at Contractor's own cost, licenses in conformity with this section.

D. Shop Drawings to be used only for this Project: The Shop Drawings and other submittals prepared by Contractor, Subcontractors of any tier, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor of any tier, or material or equipment supplier, on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Shop Drawings and other submittals appropriate to and for use in the execution of their Work under the Contract Documents.

PART 5 – PERFORMANCE

5.01 CONTRACTOR CONTROL AND SUPERVISION

A. Contractor responsible for means and methods of construction: Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.

B. Compliance with laws: The Contractor shall abide by the provisions of all applicable Washington statutes and regulations and all those provisions of the county and city municipal codes that apply in the jurisdiction where the Project is located. 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.

C. WSSP compliance: The Parties acknowledge and agree that to the extent this Project receives Washington State funds for school construction, design and construction of the Project must meet at least the Washington Sustainable Schools Protocol (WSSP) requirements in accordance with Chapter 39.35D RCW. The Contractor will provide all services, including, but not limited to, labor and materials, required to construct the Project such that it fully meets all WSSP requirements in effect at the time the Project, or any portion thereof, is completed. The Contractor will fully participate in any and all activities

required by state law or regulations or the WSSP to achieve WSSP compliance and approval, including, but not limited to, providing all applications, documentation, and reports (annual or otherwise) requested by Owner or mandated by the WSSP. The Contractor will manage environmental issues and implement and document the Project's WSSP requirements, including but not limited to: monitoring the submittal process to ensure WSSP compliance, training Subcontractors in WSSP requirements, reviewing design changes during construction for WSSP impacts and informing the Owner of said impacts, ensuring installed products are WSSP compliant, and assembling, maintaining, and submitting all records to document WSSP compliance, including but not limited to annual reports.

D. Competent superintendent required: Performance of the Work shall be directly supervised by a competent superintendent who has authority to act for Contractor. The superintendent must be satisfactory to the Owner and shall not be changed without the prior written consent of Owner. Owner may require Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition.

E. Contractor responsible for acts and omissions of self and agents: Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.

F. Unemployment Compensation: Pursuant to Chapter 50.24 RCW ("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 of the ESD.

G. Contractor to employ competent and disciplined workforce: Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work, including observance of badging, drug testing, and all smoking, tobacco, drug, alcohol, parking, safety, weapons, background checks, sexual harassment, and other rules governing the conduct of personnel at Owner's property and at the Project site.

1. Copies of the Owner's policies and procedures applicable to the Project are available at https://www.longviewschools.com/about/policies-procedures .

2. Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

3. No employees of either Contractor or any of its Subcontractors of any tier shall harass, intimidate, have physical contact with, or engage in other verbal or physical conduct or communication of a sexual, intimidating, or harassing nature with students, parents, volunteers, or Owner's directors, officers, or employees, nor create an intimidating, hostile, or offensive environment.

4. Without limiting the foregoing, Contractor shall remove from the Work and Project site any employee, agent, or other person who has violated Owner's policies and/or procedures or otherwise engaged in actions that Owner reasonably considers objectionable without change in the Contract Sum or Contract Time.

5. Contractor shall also ensure by appropriate provisions in each subcontract agreement that Contractor may remove from the Work and Work site any Subcontractor or Subcontractor's employee who has violated District

policies/procedures or engaged in such action without change in the Contract Sum or Contract Time.

G. 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 maintaining a 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.

H. Tobacco-Free Environment: Pursuant to RCW 28A.210.310, smoking or use of any kind of lighted pipe, cigar, cigarette, vaping device, or any other lighted smoking equipment, tobacco material, or smokeless tobacco product is prohibited on all District property.

I. 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 termination of this Contract for cause at the Owner's discretion.

J. Background checks: All employees of Contractor and Subcontractors of any tier who may have unsupervised access to students shall undergo a record check through the Washington State Patrol criminal investigation system under RCW 43.43.830-.834, RCW 10.97.030, and RCW 10.97.050, and through the Federal Bureau of Investigation, before working at the Project site. The record check will include a fingerprint check using a complete Washington State criminal identification fingerprint card. Contractor will provide the results of the record check to the subject of the records and to Owner. Contractor will pay all costs of the requirements set forth in this provision. When necessary, applicants may be employed on a conditional basis pending completion of the background check. In addition, any agreements between the Contractor and Subcontractors of any tier who will perform services for Owner will include this provision requiring the Subcontractor to comply with RCW 28A.400.303.

K. Crimes Against Children: The Contractor will prohibit any employee of the Contractor from working at the Project site who has pleaded guilty to or been convicted of any crime enumerated in RCW 28A.400.322, as now or hereafter amended. Any failure to comply with this Section 5.01K will be grounds for the Owner to immediately terminate the Contract. In addition, any agreements between the Contractor and Subcontractors of any tier who will perform services for the Owner will include this provision requiring the Subcontractor to prohibit any employee of said Subcontractor from working at a public school or the Project site who has pleaded guilty to or been convicted of any crime enumerated in RCW 28A.400.322.

L. Contractor to keep Project documents on site: Contractor shall keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Shop Drawings, and permits and permit drawings.

M. Work during off hours: When work is to be performed during other than normal working hours or on Longview School District holidays, Contractor shall give Owner prior notice. Any construction activity between the hours of 10:00 p.m. to 6:00 a.m. is subject to approval of Owner.

N. Without limiting Section 9.01, failure to comply with these requirements in Section 5.01 is grounds for immediate termination of the Contract for cause.

5.02 PERMITS, FEES, AND NOTICES

A. Contractor to obtain and pay for permits: Unless otherwise provided in the Contract Documents, Contractor shall pay for and obtain all permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits shall be delivered to Owner.

B. Allowances for permit fees: If allowances for permits or utility fees are called for in the Contract Documents and set forth in Contractor's bid, and the actual costs of those permits or fees differ from the allowances in the Contract Documents, the difference shall be adjusted by Change Order.

C. Contractor to comply with all applicable laws: Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

5.03 PATENTS AND ROYALTIES

Payment, indemnification, and notice: Contractor is responsible for, and shall pay, all royalties and license fees. Contractor shall defend, indemnify, and hold Owner harmless from any costs, expenses, and liabilities arising out of the infringement by Contractor of any patent, copyright, or other intellectual property right used in the Work; however, provided that Contractor gives prompt notice, Contractor shall not be responsible for such defense or indemnity when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents. If Contractor has reason to believe that use of the required design, process, or product constitutes an infringement of a patent or copyright, it shall promptly notify Owner of such potential infringement.

5.04 PREVAILING WAGES

A. Contractor to Pay Prevailing Wages: Contractor shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with Chapter 39.12 RCW and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work, is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate.

B. Statement of Intent to Pay Prevailing Wages: Before payment is made by the Owner to the Contractor for any work performed by the Contractor and Subcontractors whose work is included in the application for payment, the Contractor shall submit, or shall have previously submitted to the Owner for the Project, a Statement of Intent to Pay Prevailing Wages, approved by the Department of Labor and Industries, certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage shall not be less than the prevailing wage rate.

C. Affidavit of Wages Paid: Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, approved by the Department of Labor and Industries, for the Contractor and every Subcontractor, of any tier, that performed work on the Project.

D. Disputes: Disputes regarding prevailing wage rates shall be referred for arbitration to the Directorof the Department of Labor and Industries. The arbitration decision shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW

39.12.060.

E. Statement with Pay Application; Post Statements of Intent at Jobsite: Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the pre-filed statement(s) of intent, as approved. Copies of the approved intent statement(s) shall be posted on the job site with the address and telephone number of the Industrial Statistician of the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.

F. Contractor to Pay for Statements of Intent and Affidavits: In compliance with Chapter 296-127 WAC, Contractor shall pay to the Department of Labor and Industries the currently established fee(s) for each statement of intent and/or affidavit of wages paid submitted to the Department of Labor and Industries for certification.

G. Certified Payrolls: Consistent with WAC 296-127-320, the Contractor and any Subcontractor shallsubmit a certified copy of payroll records if requested.

5.05 HOURS OF LABOR

A. Overtime: Contractor shall comply with all applicable provisions of Chapter 49.28 RCW, which are incorporated herein by reference. Pursuant to that statute, no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work, shall be permitted or required to work more than eight (8) hours in any one calendar day, provided, that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of eight (8) hours of each calendar day shall be not less than one and one-half (1.5) times the rate allowed for this same amount of time during eight (8) hours of service.

B. 4-10 Agreements: Notwithstanding the preceding paragraph, Chapter 49.28 RCW permits the Contractor or a Subcontractor subject to those provisions to enter into an agreement with its employees in which the employees work up to ten (10) hours in a calendar day. No such agreement may provide that the employees work ten (10) hour days for more than four (4) calendar days a week. Any such agreement is subject to approval by the employees. The overtime provisions of Chapter 49.28 RCW shall not apply to the hours, up to forty (40) hours per week, worked pursuant to any such agreement.

5.06 NONDISCRIMINATION

A. Discrimination prohibited by applicable laws: Discrimination in all phases of employment is prohibited by, among other laws and regulations, Title VII of the Civil Rights Act of 1964, the Vietnam Era Veterans Readjustment Act of 1974, Sections 503 and 504 of the Vocational Rehabilitation Act of 1973, the Equal Employment Act of 1972, the Age Discrimination Act of 1967, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, Presidential Executive Order 11246, Executive Order 11375, the Washington State Law Against Discrimination, RCW 49.60, and Gubernatorial Executive Order 85-09. These laws and regulations establish minimum requirements for affirmative action and fair employment practices which Contractor must meet.

B. During performance of the Work:

1. Protected Classes: Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability, Vietnam

era veteran status, ordisabled veteran status, nor commit any other unfair practices as defined in Chapter 49.60 RCW.

2. Advertisements to state nondiscrimination: Contractor shall, in all solicitations or advertisements for employees placed by or for it, state that all qualified applicants will be considered for employment, without regard to race, creed, color, national origin, sex, age,marital status, or the presence of any physical, sensory, or mental disability.

3. Contractor to notify unions and others of nondiscrimination: Contractor shall send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice advising the labor union, employment agency, or workers' representative of Contractor's obligations according to the Contract Documents and Chapter 49.60 RCW.

4. Owner and State access to Contractor records: Contractor shall permit access to its books, records, and accounts, and to its premises by Owner, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.

5. Passthrough provisions to Subcontractors: Contractor shall include the provisions of thissection in every Subcontract.

C. Provisions for Aged and Handicapped Persons: The Contractor shall comply with applicable statutory provisions relating to public works of Chapter 70.92 RCW ("Provisions in Buildings for Aged and Handicapped Persons") and the federal Americans with Disabilities Act (ADA) and federal implementing regulations.

5.07 SAFETY PRECAUTIONS

A. Contractor responsible for safety: Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. The Contractor shall comply with pertinent provisions of Chapter 49.17 RCW ("Washington Industrial Safety and Health Act") and Chapter 296-155 WAC ("Safety Standards for Construction Work").

B. Contractor safety responsibilities: In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protectthem from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.

C. Contractor to maintain safety records: Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease,or damage to property, materials, supplies, or equipment. Contractor shall immediately report any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.

D. Contractor to provide HazMat training: Contractor shall provide all persons working on the

Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

1. Information. At a minimum, Contractor shall inform persons working on the Project site of:

    a. WAC: The requirements of Chapter 296-62 WAC, General Occupational Health Standards;

    b. Presence of hazardous chemicals: Any operations in their work area where hazardous chemicals are present; and

    c. Hazard communications program: The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by Chapter 296-62 WAC.

2. Training. At a minimum, Contractor shall provide training for persons working on the Project site which includes:

    a. Detecting hazardous chemicals: Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (suchas monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

    b. Hazards of chemicals: The physical and health hazards of the chemicals in the work area;

    c. Protection from hazards: The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work practices,emergency procedures, and personal protective equipment to be used; and

    d. Hazard communications program: The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanationof the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

E. Hazardous, toxic, or harmful substances: Contractor's responsibility for hazardous, toxic, or harmful substances shall include the following duties:

1. Illegal use of dangerous substances: Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state, or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances"), in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored more than 90 Days on the Project site.

2. Contractor notifications of spills, failures, inspections, and fines: Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any

federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.

F. Public safety and traffic: All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.

G. Contractor to act in an emergency: In an emergency affecting the safety of life, the Work, or adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened lossor injury, and Contractor shall so act if so authorized or instructed.

H. No duty of safety by Owner or A/E: Nothing provided in this section shall be construed as imposing any duty upon Owner (or A/E if applicable) with regard to, or as constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.

I. In order to receive a Notice to Proceed, the Contractor must submit the following to Owner:

1. A copy of its company Safety Program. The Safety Program shall contain, at a minimum, the following:

   a. Organization, including names of individuals who will perform safety duties, titles, work assignments, authority and reporting relationships.

   b. Training Program. Who, how and when training is provided; method of employee training concerning safety rules and procedures; training in use of protective equipment.

   c. Protective Equipment. List of personal protective equipment to be provided to employees.

   d. Accident Prevention and Loss Control Plan. Work site inspection and hazard correction procedures; disciplinary procedures for safety infractions; accident response, investigation and reporting procedures.

   e. Regular Safety Meetings. On-site weekly or other frequency as appropriate, safety meetings mandatory for all employees.

J. Prior to commencing any Work onsite, Contractor shall submit an appropriate site specific safety plan for Owner's acceptance. The plan must be tailored to the needs of the particular project and to the types of hazards involved, and be in compliance with WISHA requirements. Contractor shall not begin any on-site Work until the site-specific safety plan has been accepted by Owner.

K. COVID-19 Safety Compliance: Contractor shall comply with Owner's COVID-19 safety and mitigation protocols, as they may be revised from time to time and ensure that its owner(s) and employees, and those of its Subcontractors, comply with such mitigation protocols. Contractor shall also comply with and ensure its owner(s) and employees, and those of its Subcontractors, comply with Proclamation 21-14.1 *et seq*.

5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

A. Limited storage areas: Contractor shall confine all operations, including storage of materials, to Owner-approved areas.

B. Temporary buildings and utilities at Contractor expense: Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall be removed by Contractor at its expense upon completion of the Work.

C. Roads and vehicle loads: Contractor shall use only established roadways or temporary roadwaysauthorized by Owner. When materials are transported in prosecuting the Work, vehicles shall notbe loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.

D. Ownership and reporting by Contractor of demolished materials: Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility orseverance of the material from the Project site. Contractor shall be responsible for compliance with all laws governing the storage and ultimate disposal. Contractor shall provide Owner with a copy of all manifests and receipts evidencing proper disposal when required by Owner or applicable law.

E. Contractor responsible for care of materials and equipment on-site: Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.

F. Contractor responsible for loss of materials and equipment: Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and shall repair or replace without cost to Owner any damage or loss that may occur, except damages or loss caused by the acts or omissions of Owner. Contractor shall also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and shall repair or replace without cost to Owner any such damage or loss that might occur, to the extent such damages or loss are causedby the acts or omissions of Contractor, or any Subcontractor.

5.09 PRIOR NOTICE OF EXCAVATION

A. Excavation defined; Use of locator services: “Excavation” means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12 inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor shall provide notice of the scheduled commencement of excavation toall owners of underground facilities or utilities, through locator services.

5.10 UNFORESEEN PHYSICAL CONDITIONS

A. Notice requirement for concealed or unknown conditions: If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical

conditions of an unusual nature which 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, then Contractor shall give written notice to Owner promptly and in no event later than seven (7) Days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.

B. Adjustment in Contract Time and Contract Sum: If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in Part 7.

C. Mold: If Contractor encounters mold in the course of its work, it shall notify Owner to evaluate what action might be necessary. Contractor shall ensure that all building materials used during the work are dry prior to incorporation into the Work. If Contractor encounters water intrusion from any source it shall take immediate steps to ensure that any effected material is dry according to generally accepted industry standards

5.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES AND IMPROVEMENTS

A. Contractor to protect and repair property: Contractor shall protect from damage all existing structures, equipment, improvements, utilities, and vegetation: at or near the Project site; and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Owner may have the necessary work performed and charge the cost to Contractor.

B. Tree and vegetation protection: Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.

5.12 LAYOUT OF WORK

A. Advanced planning of the Work: Contractor shall plan and lay out the Work in advance ofoperations so as to coordinate all work without delay or revision.

B. Layout responsibilities: Contractor shall lay out the Work from any Owner-established baselines and benchmarks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines and grades that may be established. Contractor shall be responsible for maintaining or restoring all stakes and other marks established.

5.13 MATERIAL AND EQUIPMENT

A. Contractor to provide new and equivalent equipment and materials: All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by tradename, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Owner (or A/E if

applicable), is equal to that named in the specifications, unless otherwise specifically provided in the Contract Documents. Contractor shall ensure that all equipment, materials, and articles incorporated into the Work shall be free of asbestos.

B. Contractor responsible for fitting parts together: Contractor shall do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner.

C. Owner may reject defective Work: Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Owner.

5.14 AVAILABILITY AND USE OF UTILITY SERVICES

A. Owner to provide and charge for utilities: Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.

B. Contractor to install temporary connections and meters: Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.15 TESTS AND INSPECTIONS

A. Contractor to provide for all testing and inspection of Work: Contractor shall maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. Contractor shall give Owner timely notice of when and where tests and inspections are to be made. Contractor shall maintain complete inspection records and make them available to Owner.

B. Owner may conduct tests and inspections: Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:

1. Constitute or imply acceptance;

2. Relieve Contractor of responsibility for providing adequate quality control measures;

3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;

4. Relieve Contractor of its responsibility to comply with the requirements of the ContractDocuments; or

5. Impair Owner's right to reject defective or nonconforming items, or to avail itself of anyother remedy to which it may be entitled.

C. Inspections or inspectors do not modify Contract Documents: Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.

D. Contractor responsibilities on inspections: Contractor shall promptly furnish, without additional charge, all facilities, labor, material, and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may chargeContractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes reinspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

5.16 CORRECTION OF NONCONFORMING WORK

A. Work covered by Contractor without inspection: If a portion of the Work is covered contrary to the requirements in the Contract Documents, it must, if required in writing by Owner, be uncovered for Owner's observation and be replaced at the Contractor's expense and without change in the Contract Time.

B. Payment provisions for uncovering covered Work: If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes such a request as provided in Part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.

C. Contractor to correct and pay for non-conforming Work: Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming Work, includingadditional testing and inspections.

D. Contractor's compliance with warranty provisions: If, within one (1) year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under Section 6.08, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found by the Owner to be not in accordance with the requirements of the Contract Documents, Contractor shall correct itpromptly after receipt of written notice from Owner to do so. Owner shall give such notice promptly after discovery of the condition. This 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. Contractor's duty to correct withrespect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this paragraph shall survive Final Acceptance.

E. Contractor to remove non-conforming Work: Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.

F. Owner may charge Contractor for non-conforming Work: If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.

G. Contractor to pay for damaged Work during correction: Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

H. No Period of limitation on other requirements: Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one year as described in Section 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.

I. Owner may accept non-conforming Work and charge Contractor: If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

5.17 CLEAN UP

Contractor to keep site clean and leave it clean: Contractor shall at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor shall remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor shall leave the Project site in a clean, neat, and orderly condition satisfactory to Owner. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be charged to Contractor.

5.18 ACCESS TO WORK

Owner and A/E access to Work site: Contractor shall provide Owner (and A/E if applicable) access to the Work in progress wherever located.

5.19 OTHER CONTRACTS

Owner may award other contracts; Contractor to cooperate: Owner may undertake or award other contracts for additional work at or near the Project site. Contractor shall reasonably cooperate with the other contractors and with Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with these Contract Documents to reasonably accommodate the other work.

5.20 SUBCONTRACTORS AND SUPPLIERS

A. Subcontractor Responsibility: The Contractor shall include the language of this paragraph in each of its first-tier subcontracts and shall require each of its Subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms usedfor the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the Subcontractor meets the subcontractor responsibility criteria below. The requirements of this paragraph apply to all Subcontractors regardless of tier. At the time of subcontract execution, the Contractor shall verify that each of its first-tier Subcontractors meets the following bidder responsibility criteria:

1. Have a current certificate of registration as a contractor in compliance with Chapter 18.27 RCW, which must have been in effect at the time of Subcontract bid submittal;

2. Have a current Washington Unified Business Identifier (UBI) number;

3. If applicable, have:

   a. Industrial Insurance (workers' compensation) coverage for the Subcontractor'semployees working in Washington, as required in Title 51 RCW;

   b. A Washington Employment Security Department number, as required in Title 50 RCW;

   c. A Washington Department of Revenue state excise tax registration number, asrequired in Title 82 RCW;

   d. An electrical contractor license, if required by Chapter 19.28 RCW;

   e. An elevator contractor license, if required by Chapter 70.87 RCW.

4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or RCW 39.12.065(3).

5. On a 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 Chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner's first advertisement of the project.

B. Provide names of Subcontractors and use qualified firms: Before submitting the first Application for Payment, Contractor shall furnish in writing to Owner the names, addresses, and telephone numbers of all Subcontractors, as well as suppliers providing materials in excess of $2,500. Contractor shall utilize Subcontractors and suppliers which are experienced and qualified and meet the requirements of the Contract Documents, if any. Contractor shall not utilize anySubcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions.

C. Subcontracts in writing and passthrough provision: All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract

Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with Sub-Subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.

D. Coordination of Subcontractors; Contractor responsible for Work: Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.

E. Automatic assignment of subcontracts: Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:

1. Effective only after termination and Owner approval: The assignment is effective only after termination by Owner for cause pursuant to Section 9.01 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and

2. Owner assumes Contractor's responsibilities: After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.

3. Impact of bond: The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.21 WARRANTY OF CONSTRUCTION

A. Contractor warranty of Work: In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed by Contractor.

B. Contractor responsibilities: With respect to all warranties, express or implied, for Work performedor materials furnished according to the Contract Documents, Contractor shall:

1. Obtain warranties: Obtain all warranties that would be given in normal commercial practice;

2. Warranties for benefit of Owner: Require all warranties to be executed, in writing, for the benefit of Owner;

3. Enforcement of warranties: Enforce all warranties for the benefit of Owner, if directed by Owner; and

4. Contractor responsibility for subcontractor warranties: Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranties should they extend beyond the period specified in the Contract Documents.

C. Warranties beyond Final Acceptance: The obligations under this section shall survive Final Acceptance.

5.22 INDEMNIFICATION

A. To the fullest extent permitted by law and subject to the conditions of this Section 5.22, the Contractor shall defend, indemnify, and hold harmless the Owner, its directors, officers, employees, consultants, project manager, students, and volunteers, the A/E, the A/E's consultants, agents and employees of any of them, and the successors and assigns of any of them ("Indemnified Parties") from and against all claims, damages, losses, and expenses, 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 ("Claims"), arising out of or resulting from performance of the Work, provided that such Claim 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 of any tier, their agents, or anyone directly or indirectly employed by them, or anyone for whose acts they may be liable ("Indemnitor"), regardless of whether or not such Claim is caused in part by a party indemnified hereunder.

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

2. If such claims are caused by or are resulting from the sole negligence of the Indemnified Parties or their agents or employees, then the Contractor shall have no duty to defend, indemnify, and hold harmless the Indemnified Parties.

3. If such claims are caused by or are resulting from the concurrent negligence of (a) the Indemnified Parties or the Indemnified Parties' agents or employees, and (b) the Contractor or the Contractor's agents or employees, then the Contractor shall be obligated to defend, indemnify, and hold harmless the Indemnified Parties only to the extent of the Indemnitor's negligence.

B. The Contractor agrees to being added by the Owner as a party to any arbitration or litigation with third parties in which the Owner 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.

C. To the extent any portion of this 5.22 is stricken by a court of competent jurisdiction for any reason, all remaining provisions shall retain their vitality and effect.

D. The obligations of the Contractor under this Section 5.22 shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity which would otherwise exist as to any party or person described in this Section 5.22. To the extent the wording of this Section 5.22 would reduce or eliminate an available insurance coverage of the Contractor or the Owner, this Section 5.22 shall be considered modified to the extent that such insurance coverage is not affected.

E. In claims against any person or entity indemnified under this Section 5.22 by an employee of the Contractor, a 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 5.22 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 and its 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.

F. Contractor will immediately report to the Owner any failure by the Contractor, a Subcontractor of any tier, or any third party observed by the Contractor to comply with applicable laws, regulations, or ordinances while performing the Work or upon the Project, including, but not limited to, those related to environmental compliance, spills, unauthorized fill in waters of the State (including wetlands), water quality standards, noise, and air quality.

PART 6 – PAYMENTS AND COMPLETION

6.01 CONTRACT SUM

Owner shall pay Contract Sum: Owner shall pay Contractor the Contract Sum plus state sales tax for performance of the Work, in accordance with the Contract Documents.

6.02 SCHEDULE OF VALUES

Contractor to submit Schedule of Values: Before submitting its first Application for Payment, Contractor shall submit to Owner for approval a breakdown allocating the total Contract Sum to each principal category of work, in such detail as requested by Owner ("Schedule of Values"). The approved Schedule of Values shall include appropriate amounts for demobilization, record drawings, O&M manuals, and any other requirements for Project closeout, and shall be used by Owner as the basis for progress payments. Payment for Work shall be made only for and in accordance with those items included in the Schedule of Values.

6.03 APPLICATION FOR PAYMENT

A. Monthly Application for Payment with substantiation: At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.

B. Contractor certifies Subcontractors paid: By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with RCW 60.28.011, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in Section 1.03, are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.

C. Reconciliation of Work with Progress Schedule: At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule.

D. Payment for material delivered to site or stored off-site: If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:

1. Suitable facility or location: The material will be placed in a facility or location that is structurally sound, dry, lighted and suitable for the materials to be stored;

2. Facility or location within 10 miles of Project: The facility or location is located within

a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;

3. Facility or location exclusive to Project's materials: Only materials for the Project are stored within the facility or location (or a secure portion of a facility or location set asidefor the Project);

4. Insurance provided on materials in facility or location: Contractor furnishes Owner a certificate of insurance extending Contractor's insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;

5. Facility or location locked and secure: The facility or location (or secure portion thereof) is continuously under lock and key, and only Contractor's authorized personnel shall have access;

6. Owner right of access to facility or location: Owner shall at all times have the right of access in company of Contractor;

7. Contractor assumes total responsibility for stored materials: Contractor and its surety assume total responsibility for the stored materials; and

8. Contractor provides documentation and Notice when materials moved to site: Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish Notice to Owner when materials are moved from storage to the Project site.

6.04 PROGRESS PAYMENTS

A. Owner to pay within 30 Days: Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 Days after receipt of a properly executed Application for Payment. Owner shall notify Contractor in accordance with Chapter 39.76 RCW if the Application for Payment does not comply with the requirements of the Contract Documents.

B. Withholding retainage; Options for retainage: Owner shall retain five (5) percent of the amount of each progress payment until forty-five (45) Days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including, at Owner's request, consent of surety to release of the retainage. In accordance with Chapter 60.28 RCW, Contractor may request that monies reserved be retained in a fund by Owner, deposited by Owner in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Owner may authorize in writing Contractor to provide an appropriate bond in lieu of the retained funds.

C. Title passes to Owner upon payment: Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents.

D. Interest on unpaid balances: Payments due and unpaid in accordance with the Contract Documents shall bear interest as specified in Chapter 39.76 RCW.

6.05 PAYMENTS WITHHELD

A. Owner's right to withhold payment: Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:

1. Non-compliant Work: Work not in accordance with the Contract Documents;

2. Remaining Work to cost more than unpaid balance: Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;

3. Owner correction or completion Work: Work by Owner to correct defective Work or complete the Work in accordance with Section 5.16;

4. Contractor's failure to perform: Contractor's failure to perform in accordance with the Contract Documents; or

5. Contractor's negligent acts or omissions: Cost or liability that may occur to Owner as the result of Contractor's fault or negligent acts or omissions.

B. Owner to notify Contractor of withholding for unsatisfactory performance: In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor in accordance with Chapter 39.76 RCW.

6.06 RETAINAGE AND BOND CLAIM RIGHTS

Chapters 39.08 RCW and 60.28 RCW incorporated by reference: Chapters 39.08 RCW and 60.28 RCW, concerning the rights and responsibilities of Contractor and Owner with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.

6.07 SUBSTANTIAL COMPLETION

Substantial Completion defined: Substantial Completion is the stage in the progress of the Work (or portion thereof designated and approved by Owner) when the construction is sufficiently complete, in accordance with the Contract Documents, so Owner has full and unrestricted use and benefit of the facilities (or portion thereof designated and approved by Owner) for the use for which it is intended. All Work other than incidental corrective and incidental punch list work shall be completed. Substantial Completion shall not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required occupancy permits have not been issued, or if the Work is not accessible by normal vehicular and pedestrian traffic routes. The date Substantial Completion is achieved shall be established in writing by Owner. Contractor may request an early date of Substantial Completion which must be approved by Change Order. Owner's occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

6.08 PRIOR OCCUPANCY

A. Prior Occupancy defined; Restrictions: Owner may, upon written notice thereof to Contractor, take possession of or use any completed or partially completed portion of the Work ("Prior Occupancy") at any time prior to Substantial Completion. Unless otherwise agreed in writing, Prior Occupancy shall not: be deemed an acceptance of any portion of the Work; accelerate the time for any payment to Contractor; prejudice any rights of Owner provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor of the risk of loss or any of the obligations established by the Contract Documents; establish a date for termination or partial termination of the assessment of liquidated damages; or

constitute a waiver of claims.

B. Damage; Duty to repair and warranties: Notwithstanding anything in the preceding paragraph, Owner shall be responsible for loss of or damage to the Work resulting from Prior Occupancy. Contractor's one (1) year duty to repair any system warranties shall begin on building systems activated and used by Owner as agreed in writing by Owner and Contractor.

6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

A. Final Completion defined: Final Completion shall be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved shall be established by Owner in writing, but in no case shall Final Completion constitute Final Acceptance, which is a subsequent, separate, and distinct action.

B. Final Acceptance defined: Final Acceptance shall be achieved when the Contractor has completed the requirements of the Contract Documents. The date Final Acceptance is achieved shall be established by Owner in writing. Prior to Final Acceptance, Contractor shall, in addition to all other requirements in the Contract Documents, submit to Owner a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance, nor final payment, shall release Contractor or its sureties from any obligations of these Contract Documents or the payment and performance bonds, or constitute a waiver of any claims by Owner arising from Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Final payment waives Claim rights: Acceptance of final payment by Contractor, or any Subcontractor, shall constitute a waiver and release to Owner of all claims by Contractor, or any such Subcontractor, for an increase in the Contract Sum or the Contract Time, and for every actor omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in Part 8.

PART 7 – CHANGES

7.01 CHANGE IN THE WORK

A. Changes in Work, Contract Sum, and Contract Time by Change Order: Owner may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes inthe Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Owner causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided in Section 7.02 or 7.03, respectively, and such adjustment(s) shall be incorporated into a Change Order.

B. Owner may request COP from Contractor: If Owner desires to order a change in the Work, it mayrequest a written Change Order Proposal (COP) from Contractor. Contractor shall submit a Change Order Proposal within fourteen (14) Days of the request from Owner, or within such other period as mutually agreed. Contractor's Change Order Proposal shall be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.

C. COP negotiations: Upon receipt of the Change Order Proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in Sections 7.02 and 7.03,Owner may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Owner may direct Contractor to proceed immediately with the Change Order Work. Contractor shall not proceed with any change in the Work until it has obtained Owner's approval. All Work done pursuant to any Owner-directed change in the Work shall be executed in accordance with the Contract Documents.

D. Change Order as full payment and final settlement: If Owner and Contractor reach agreement onthe terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.

E. Failure to agree upon terms of Change Order; Final offer and Claims: If Owner and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time in writing, request a final offer from Owner. Owner shall provide Contractor with its written response within thirty (30) Days of Contractor's request. Owner may also provide Contractor with a final offer at any time. If Contractor rejects Owner's final offer, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file a Claim as provided in Part 8.

F. Field Authorizations: The Owner may direct the Contractor to proceed with a change in the work through a written Field Authorization (also referred to as a Field Order) when the time required to price and execute a Change Order would impact the Project.

The Field Authorization shall describe and include the following:

1. The scope of work;

2. An agreed upon maximum not-to-exceed amount;

3. Any estimated change to the Contract Time;

4. The method of final cost determination in accordance with the requirements of Part 7 ofthe General Conditions;

5. The supporting cost data to be submitted in accordance with the requirements of Part 7of the General Conditions;

Upon satisfactory submittal by the Contractor and approval by the Owner of supporting cost data,a Change Order will be executed. The Owner will not make payment to the Contractor for Field Authorization work until that work has been incorporated into an executed Change Order.

7.02 CHANGE IN THE CONTRACT SUM

A. General Application

1. Contract Sum changes only by Change Order: The Contract Sum shall only be

changed by a Change Order. Contractor shall include any request for a change in the Contract Sum in its Change Order Proposal.

2. Owner fault or negligence as basis for change in Contract Sum: If the cost of Contractor's performance is changed due to the fault or negligence of Owner, or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request foran equitable adjustment in the Contract Sum in accordance with the following procedure. No change in the Contract Sum shall be allowed to the extent: Contractor's changed cost of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Owner;or the change is caused by an act of Force Majeure as defined in Section 3.05.

   a. Notice and record keeping for equitable adjustment: A request for an equitable adjustment in the Contract Sum shall be based on written notice delivered to Owner within seven (7) Days of the occurrence of the event giving rise to the request. For purposesof this part, "occurrence" means when Contractor knew, or in its diligent prosecution of the Work should have known, of the event giving rise to the request. If Contractorbelieves it is entitled to an adjustment in the Contract Sum, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such records and, if requested shall promptly furnish copies of such records to Owner.

   b. Content of notice for equitable adjustment; Failure to comply: Contractor shall not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than seven (7) Days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Sum; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Sum requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

   c. Contractor to provide supplemental information: Within thirty (30) Days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with Subsection (a), above, with additional supporting data. Such additional data shall include, at a minimum: the amount of compensation requested, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of and that the Contract Documents provide entitlement to an equitable adjustment to Contractor for suchact, event, or condition; and documentation sufficiently detailed to permit an informed analysis of the request by Owner. When the request for compensation relates to a delay, or other change in Contract Time, Contractor shall demonstrate the impact on the critical path, in accordance with Section 7.03C. Failure to provide such additional information and

documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

d. Contractor to proceed with Work as directed: Pending final resolution of any request made in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.

e. Contractor to combine requests for same event together: Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) shall be submitted together.

3. Methods for calculating Change Order amount: The value of any Work covered by a ChangeOrder, or of any request for an equitable adjustment in the Contract Sum, shall be determinedby one of the following methods:

a. Fixed Price: On the basis of a fixed price as determined in Section 7.02B.

b. Unit Prices: By application of unit prices to the quantities of the items involved asdetermined in Section 7.02C.

c. Time and Materials: On the basis of time and material as determined in Section7.02D.

d. Fixed price method is default; Owner may direct otherwise: When Owner has requested Contractor to submit a Change Order Proposal, Owner may direct Contractor as to which method in the paragraph immediately above to use when submitting its proposal. Otherwise, Contractor shall determine the value of the Work, or of a request for an equitable adjustment, on the basis of the fixed price method.

B. Change Order Pricing – Fixed Price

Procedures: When the fixed price method is used to determine the value of any Work covered by a Change Order, or of a request for an equitable adjustment in the Contract Sum, the following procedures shall apply:

1. Breakdown and itemization of details on COP: Contractor's COP, or request for adjustment in the Contract Sum, shall be accompanied by a complete itemization of the costs, including labor, material, Subcontractor costs, and overhead and profit. The costs shall be itemized in the manner set forth below, and shall be submitted on breakdown sheets in a form approved by Owner.

2. Use of industry standards in calculating costs: All costs shall be calculated based upon appropriate industry standard methods of calculating labor, material quantities, and equipment costs.

3. Costs contingent on Owner's actions: If any of Contractor's pricing assumptions are contingent upon anticipated actions of Owner, Contractor shall clearly state them in the proposal or request for an equitable adjustment.

4. Markups on additive and deductive Work: The cost of any additive or deductive changes in the Work shall be calculated as set forth below, except that overhead and profit shall not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by the same Contractor or

Subcontractor, small tools, overhead, profit, bond, and insurance markups will apply to the net difference.

5. Breakdown not required if change less than $1,000: If the total cost of the change in the Work or request for equitable adjustment does not exceed $1,000, Contractor shall not be required to submit a breakdown if the description of the change in the Work or request for equitable adjustment is sufficiently definitive for Owner to determine fair value.

6. Breakdown required if change between $1,000 and $2,500: If the total cost of the change in the Work or request for equitable adjustment is between $1,000 and $2,500, Contractor may submit a breakdown in the following level of detail if the description of the change in the Work or if the request for equitable adjustment is sufficiently definitive to permit the Owner to determine fair value:

   a. Lump sum labor;

   b. Lump sum material;

   c. Lump sum equipment usage;

   d. Overhead and profit as set forth below; and

   e. Insurance and bond costs as set forth below.

7. Components of increased cost: Any request for adjustment of Contract Sum based upon the fixed price method shall include only the following items:

   a. Craft labor costs: These are the labor costs determined by multiplying the estimated or actual additional number of craft hours needed to perform the change in the Work by the hourly labor costs. Craft hours should cover direct labor, as well as indirect labor due to trade inefficiencies. When estimating labor hours for electrical work, such hours shall be no greater than the Labor Units for specific items included in the “Normal” project conditions column of the NECA Manual of Labor Units, most recent edition. When estimating labor hours for mechanical work, such hours shall be no greater than 75% of the Labor Units for specific items included in the MCAA Web-Based Estimating Manual (WebLEM), subject to the assumptions and notes in the WebLEM, except that the Labor Units for “Hangers, Sleeves, & Inserts” shall be no greater than 50% of the WebLEM Labor Units. Special exceptions for electrical and mechanical work may be made for work having to be performed under extraordinary conditions. Such exceptions shall be identified and explained in any applicable pricing proposals and shall be subject to approval by Owner. The hourly costs shall be based on the following:

      (1) Basic wages and benefits: Hourly rates and benefits as stated on the Department of Labor and Industries approved “statement of intent to pay prevailing wages” or a higher amount if approved by the Owner. Direct supervision shall be a reasonable percentage not to exceed fifteen (15) percent of the cost of direct labor. No supervision markup shall be allowed in a Change Order that contains direct labor costs for a working supervisor’s hours (including any category of foreman).

(2) Worker's insurance: Direct contributions to the State of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.

(3) Federal insurance: Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.

(4) Travel allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.

(5) Safety: Cost incurred due to the Washington Industrial Safety and HealthAct, which shall be a reasonable percentage not to exceed two (2) of the sum of the amounts calculated in (1), (2), and (3) above.

b. Material costs: This is an itemization of the quantity and cost of materials needed to perform the change in the Work. Material costs shall be developed first from actual known costs, including, but not limited to, Contractor's supplier(s)' actual cost(s) available from the standard industry pricing guide "Trade Service." If those are not available, material costs shall be developed second from supplier quotations. If those are not available, material costs shall be developed third from other standard industry pricing guides. Material costs shall include all available discounts. Freight costs, express charges, or special delivery charges shall be itemized.

c. Equipment costs: This is an itemization of the type of equipment and the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for construction equipment only if used solely for the changed Work, or for additional rental costs actually incurred by the Contractor. The Contractor's cost for utility vehicles and other items such as pickup trucks, vans, flatbed trucks, storage trailers, containers, etc., that are already in use or planned for use on the Project will not be compensated in Change Order work except for the time that, in the opinion of the Owner, such items: (1) are directly and necessarily used for the performance of the change work; and (2) the cost of using such items has not been included within the Contractor's total project overhead costs. Equipment charges shall be computed on the basis of actual invoice costs or if owned, from the current edition of one of the following sources:

(1) Associated General Contractors Washington State Department of Transportation (AGC-WSDOT) Equipment Rental Agreement current edition, on the Contract execution date.

(2) The National Electrical Contractors Association for equipment used on electrical work. Equipment pricing shall be no greater than seventy-five (75) percent of NECA monthly rates.

(3) The Mechanical Contractors Association of America for equipment used on mechanical work.

The EquipmentWatch Rental Rate Blue Book shall be used as a basis for

establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment shall not exceed that shown in the AGC-WSDOT Equipment Rental Agreement, current edition on the Contract execution date.

d. Allowance for small tools, expendables & consumable supplies: Small tools consist of tools which cost $1,000 or less and are normally furnished by the performing Contractor. The maximum rate for small tools shall not exceed the following:

(1) For Contractor: three (3) percent of direct labor costs.

(2) For Subcontractors: five (5) percent of direct labor costs.

Expendables and consumables supplies directly associated with the change in Work must be itemized.

e. Subcontractor costs: This is defined as payments Contractor makes to Subcontractors for change Work performed by Subcontractors of any tier. The Subcontractors' cost of Work shall be calculated and itemized in the same manner as prescribed herein for Contractor.

f. Allowance for overhead: This is defined as costs of any kind attributable to direct and indirect delay, acceleration, or impact, added to the total cost to Owner of any change in the Contract Sum. If the Contractor is compensated under Section 7.03D, the amount of such compensation shall be reduced by the amount Contractor is otherwise entitled to under this Subsection (f). This allowance shall compensate Contractor for all non-craft labor, temporary construction facilities, field engineering, schedule updating, as-built drawings, home office cost, B&O taxes, office engineering, estimating costs, additional overhead because of extended time, and any other cost incidental to the change in the Work. It shall be strictly limited in all cases to a reasonable amount, mutually acceptable,or if none can be agreed upon to an amount not to exceed the rates below:

(1) Projects less than $3 million: For projects where the Contract Award Amount is under $3 million, the following shall apply:

(a) Contractor markup on Contractor Work: For Contractor, for any Work actually performed by Contractor's own forces, sixteen (16) percent of the first $50,000 of the cost, and four (4) percent of the remaining cost, if any.

(b) Subcontractor markup for Subcontractor Work: For each Subcontractor (including lower-tier Subcontractors), for any Work actually performed by its own forces, sixteen (16) percent of the first $50,000 of the cost, and four (4) percent of the remaining cost, if any.

(c) Contractor markup for Subcontractor Work: For Contractor, for any work performed by its Subcontractor(s), six (6) percent of the first $50,000 of the amount due each Subcontractor, and four (4) percent of the remaining amount, if any.

(d) Subcontractor markup for lower-tier Subcontractor Work: For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, four (4) percent of the first $50,000 of the amount due the Sub-Subcontractor, and two (2) percent of the remaining amount, if any.

(e) Basis of cost applicable for markup: The cost to which overhead is to be applied shall be developed in accordance with Sections 7.02B.7.a-.e.

(2) Projects more than $3 million: For projects where the Contract Award Amount isequal to or exceeds $3 million, the following shall apply:

(f) Contractor markup on Contractor Work: For Contractor, for any Work actually performed by Contractor's own forces, twelve (12) percent of the first $50,000 of the cost, and four (4) percent of the remaining cost, if any.

(g) Subcontractor markup for Subcontractor Work: For each Subcontractor (including lower-tier Subcontractors), for any Work actually performed by its own forces, twelve (12) percent of the first $50,000 of the cost, and four (4) percent of the remaining cost, if any.

(h) Contractor markup for Subcontractor Work: For Contractor, for any Work performed by its Subcontractor(s), four (4) percent of the first $50,000 of the amount due each Subcontractor, and two (2) percent of the remaining amount, if any.

(i) Subcontractor markup for lower tier Subcontractor Work: For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, four (4) percent of the first $50,000 of the amount due the Sub-Subcontractor, and two (2) percent of the remaining amount, if any.

(j) Basis of cost applicable for markup: The cost to which overhead is to be applied shall be developed in accordance with Section 7.02B.7.a-.e.

g. Allowance for profit: Allowance for profit is an amount to be added to the cost of any change in Contract Sum, but not to the cost of change in Contract Time for whichContractor has been compensated pursuant to the conditions set forth in Section 7.03. It shall be limited to a reasonable amount, mutually acceptable, or if none can be agreed upon, to an amount not to exceed the rates below:

(1) Contractor / Subcontractor markup for self-performed Work: For Contractor or Subcontractor of any tier for work performed by their forces, six (6) percent of the cost developed in accordance with Sections 7.02B.7.a-.e.

(2) Contractor / Subcontractor markup for Work performed at lower tier:

For Contractor or Subcontractor of any tier for work performed by a Subcontractor of a lower tier, four (4) percent of the subcontract cost developed in accordance with Section 7.02B.7.a-.h.

h. Insurance and bond premiums: Cost of change in insurance or bond premium: This is defined as:

(1) Contractor's liability insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the Change Order; and

(2) Payment and Performance Bond: The cost of the additional premium for Contractor's bond arising directly from the changed Work.

The cost of any change in insurance or bond premium shall be added after overhead and allowance for profit are calculated in accordance with Subsections f.-.g, above.

C. Change Order Pricing – Unit Prices

1. Content of Owner authorization: Whenever Owner authorizes Contractor to perform Work on a unit-price basis, Owner's authorization shall clearly state:

a. Scope: Scope of work to be performed;

b. Reimbursement basis: Type of reimbursement including pre-agreed rates for material quantities; and

c. Reimbursement limit: Cost limit of reimbursement.

2. Contractor responsibilities: Contractor shall:

a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, Contractor shall identify workers assigned to the Change Order Work and areas in which they are working;

b. Leave access as appropriate for quantity measurement; and

c. Not exceed any cost limit(s) without Owner's prior written approval.

3. Cost breakdown consistent with Fixed Price requirements: Contractor shall submit costs in accordance with Section 7.02B and satisfy the following requirements:

a. Unit prices must include overhead, profit, bond, and insurance premiums: Unit prices shall include reimbursement for all direct and indirect costs of the Work, including overhead, profit, bond, and insurance costs; and

b. Owner verification of quantities: Quantities must be supported by field measurement statements signed by Owner.

D. Change Order Pricing – Time-and-Material Prices

1. Content of Owner authorization: Whenever Owner authorizes Contractor to perform Work on a time-and-material basis, Owner's authorization shall clearly state:

a. Scope: Scope of Work to be performed;

b. Reimbursement basis: Type of reimbursement, including pre-agreed rates, if any,for material quantities or labor; and

c. Reimbursement limit: Cost limit of reimbursement.

2. Contractor responsibilities: Contractor shall:

a. Identify workers assigned: Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, identify workers assigned to the Change Order Work and areas in which they are working;

b. Provide daily timesheets: Identify on daily time sheets all labor performed in accordance with this authorization. Submit copies of daily time sheets within two (2) working days for Owner's review.

c. Allow Owner to measure quantities: Leave access as appropriate for quantity measurement;

d. Perform Work efficiently: Perform all Work in accordance with this section as efficiently as possible; and

e. Not exceed Owner's cost limit: Not exceed any cost limit(s) without Owner's prior written approval.

3. Cost breakdown consistent with Fixed Price requirements: Contractor shall submit costs in accordance with Section 7.02B and additional verification supported by:

a. Timesheets: Labor detailed on daily time sheets; and

b. Invoices: Invoices for material.

7.03 CHANGE IN THE CONTRACT TIME

A. COP requests for Contract Time: The Contract Time shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Time in its Change Order Proposal.

B. Time extension permitted if not Contractor's fault: If the time of Contractor's performance is changed due to an act of Force Majeure, or due to the fault or negligence of Owner or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Time in accordance with the following procedure. No adjustment in the Contract Time shall be allowed to the extent Contractor's changed time of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible.

1. Notice and record keeping for Contract Time request: A request for an equitable adjustment in the Contract Time shall be based on written notice delivered within seven (7) Days of the occurrence of the event giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such record and if requested, shall promptly furnish copies of such record to Owner.

2. Timing and content of Contractor's Notice: Contractor shall not be entitled to an adjustment in the Contract Time for any events that occurred more than seven (7)

Days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Time; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Time requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

3. Contractor to provide supplemental information: Within thirty (30) Days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with Section 7.03B.2 with additional supporting data. Such additional data shall include, at a minimum: the amount of delay claimed, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the delay claimed, but that the delay claimed was actually a result of the act, event, or condition complained of, and that the Contract Documents provide entitlement to an equitable adjustment in Contract Time for such act, event, or condition; and supporting documentation sufficiently detailed to permit an informed analysis of the request by Owner. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

4. Contractor to proceed with Work as directed: Pending final resolution of any request in accordance with this Section 7.03C unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.

C. Contractor to demonstrate impact on critical path of schedule: Any change in the Contract Time covered by a Change Order, or based on a request for an equitable adjustment in the Contract Time, shall be limited to the change in the critical path of Contractor's schedule attributable to the change of Work or event(s) giving rise to the request for equitable adjustment. Any Change Order Proposal or request for an adjustment in the Contract Time shall demonstrate the impact on the critical path of the schedule. Contractor shall be responsible for showing clearly on the Progress Schedule that the change or event: had a specific impact on the critical path, and except in case of concurrent delay, was the sole cause of such impact; and could not have been avoided by resequencing of the Work or other reasonable alternatives.

D. Cost of change in Contract Time: Contractor may request compensation for the cost of a change in Contract Time in accordance with this Section 7.03D, subject to the following conditions:

1. Must be solely fault of Owner or A/E: The change in Contract Time shall solely be caused by the fault or negligence of Owner (or A/E, if applicable);

2. Procedures: Contractor shall follow the procedure set forth in Section 7.03B;

3. Demonstrate impact on critical path: Contractor shall establish the extent of the change in Contract Time in accordance with Section 7.03C; and

4. Limitations on daily costs: The daily cost of any change in Contract Time shall be limited to the items below, less the amount of any change in the Contract Sum the Contractor may otherwise be entitled to pursuant to Section 7.02B.7.f for any

change in the Work that contributed to this change in Contract Time:

a. Non-productive supervision or labor: cost of nonproductive field supervision or labor extended because of delay;

b. Weekly meetings and indirect activities: cost of weekly meetings or similar indirect activities extended because of the delay;

c. Temporary facilities or equipment rental: cost of temporary facilities or equipment rental extended because of the delay;

d. Insurance premiums: cost of insurance extended because of the delay;

e. Overhead: general and administrative overhead in an amount to be agreed upon, but not to exceed three (3) percent of the Contract Award Amount divided by the originally specified Contract Time for each Day of the delay.

PART 8 – CLAIMS AND DISPUTE RESOLUTION

8.01 CLAIMS PROCEDURE

A. Claim is Contractor's remedy: If the parties fail to reach agreement on the terms of any Change Order for Owner-directed Work as provided in Section 7.01, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in Section 7.02 or the Contract Time as provided in Section 7.03, Contractor's only remedy shall be to file a Claim with Owner as provided in this section.

B. Claim filing deadline for Contractor: Contractor shall file its Claim within sixty (60) Days from Owner's final offer made in accordance with Section 7.01E, or by the date of Final Acceptance,whichever occurs first.

C. Claim must cover all costs and be documented: The Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may beentitled. It shall be fully substantiated and documented. At a minimum, the Claim shall contain the following information:

1. Factual statement of Claim: A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim;

2. Dates: The date on which facts arose which gave rise to the Claim;

3. Owner and A/E employee's knowledgeable about Claim: The name of each employee of Owner (or A/E, if applicable) knowledgeable about the Claim;

4. Support from Contract Documents: The specific provisions of the Contract Documents which support the Claim;

5. Identification of other supporting information: The identification of any documents and the substance of any oral communications that support the Claim;

6. Copies of supporting documentation: Copies of any identified documents, other than the Contract Documents, that support the Claim;

7. Details on Claim for Contract Time: If an adjustment in the Contract Time is sought:

the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted; and Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time;

8. Details on Claim for adjustment of Contract Sum: If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail as required by Section 7.02; and

9. Statement certifying Claim: A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is liable.

D. Owner's response to Claim filed: After Contractor has submitted a fully documented Claim that complies with all applicable provisions of Parts 7 and 8, Owner shall respond, in writing, to Contractor as follows:

1. Response time for Claim less than $50,000: If the Claim amount is less than $50,000, with a decision within sixty (60) Days from the date the Claim is received; or

2. Response time for Claim of $50,000 or more: If the Claim amount is $50,000 or more, with a decision within sixty (60) Days from the date the Claim is received, or with notice to Contractor of the date by which it will render its decision. Owner will then respond with a written decision in such additional time.

E. Owner's review of Claim and finality of decision: To assist in the review of Contractor's Claim, Owner may visit the Project site, or request additional information, in order to fully evaluate the issues raised by the Claim. Contractor shall proceed with performance of the Work pending final resolution of any Claim. Owner's written decision as set forth above shall be final and conclusive as to all matters set forth in the Claim, unless Contractor follows the procedure set forth in Section 8.02.

F. Continuing Contract performance: Pending final resolution of a Claim, and except as otherwise agreed in writing, Contractor shall proceed diligently with performance of the Contract and maintain Contractor's Construction Schedule, and the Owner shall continue to make payments in accordance with the Contract Documents.

G. Waiver of Contractor rights for failure to comply with this Section: Any Claim of the Contractor against the Owner for damages, additional compensation, or additional time, shall be conclusively deemed to have been waived by the Contractor unless made in accordance with the requirements of this Section.

8.02 LITIGATION

A. If Contractor disagrees with Owner's decision rendered in accordance with Section 8.01D, Contractor shall serve and file a lawsuit in an appropriate court within one-hundred and twenty (120) Days of Owner's decision. This requirement cannot be waived except by an explicit waiver signed by Owner. The failure to file a lawsuit within said one-hundred and twenty (120) Day period shall result in Owner's decision rendered in accordance with Section 8.01D being final and binding on Contractor and all of its Subcontractors.

B. At any time, either before or after a lawsuit has been commenced by Contractor in accordance with Section 8.02A, Owner may require Contractor to participate in further mediation or arbitration, or both, in any forum or format as determined by Owner.

C. Claims between Owner and Contractor, Contractor and its Subcontractors, Contractor (and A/E, if applicable), and Owner (and A/E, if applicable) shall, upon demand by Owner, be submitted in a single forum, or Owner may consolidate such Claims or join any of the above-named parties in the same forum.

8.03 CLAIMS AUDITS

A. Owner may audit Claims: All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim or to permit Owner access to the books and records of Contractor, or Subcontractors of any tier, shall constitute a waiver of the Claim and shall bar any recovery.

B. Contractor to make documents available: In support of Owner audit of any Claim, Contractor shall, upon request, promptly make available to Owner the following documents:

1. Daily time sheets and supervisor's daily reports;
2. Collective bargaining agreements;
3. Insurance, welfare, and benefits records;
4. Payroll registers;
5. Earnings records;
6. Payroll tax forms;
7. Material invoices, requisitions, and delivery confirmations;
8. Material cost distribution worksheet;
9. Equipment records (list of company equipment, rates, etc.);
10. Vendors', rental agencies', Subcontractors', and agents' invoices;
11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts;
12. Subcontractors' and agents' payment certificates;
13. Cancelled checks (payroll and vendors);
14. Job cost report, including monthly totals;
15. Job payroll ledger;
16. Planned resource loading schedules and summaries;
17. General ledger;
18. Cash disbursements journal;

19. Financial statements for all years reflecting the operations on the Work. In addition, the Owner may require, if it deems it appropriate, additional financial statements for three (3) years preceding execution of the Work;

20. Depreciation records on all company equipment, whether these records are maintained bythe company involved, its accountant, or others;

21. If a source other than depreciation records is used to develop costs for Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;

22. All nonprivileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in Contract Sum or Contract Time sought by each Claim;

23. Work sheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, all documents that establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals; and

24. Work sheets, software, and all other documents used by Contractor to prepare its bid.

C. Contractor to provide facilities for audit and shall cooperate: The audit may be performed by employees of Owner or a representative of Owner. Contractor, and its Subcontractors, shall provide adequate facilities acceptable to Owner, for the audit during normal business hours. Contractor, and all Subcontractors, shall make a good faith effort to cooperate with Owner's auditors.

PART 9 – TERMINATION OF THE WORK

9.01 TERMINATION BY OWNER FOR CAUSE

A. Notice to Terminate for Cause: Owner may, upon seven (7) Days' written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:

1. Contractor fails to prosecute Work: Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;

2. Contractor bankrupt: Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency;

3. Contractor fails to correct Work: Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;

4. Contractor fails to supply workers or materials: Contractor repeatedly fails to supply skilled workers or proper materials or equipment;

5. Contractor failure to pay Subcontractors or labor: Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;

6. Contractor violates laws: Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having

jurisdiction; or

7. Contractor in material breach of Contract: Contractor is otherwise in material breach of any provision of the Contract Documents.

B. Owner's actions upon termination: Upon termination, Owner may at its option:

1. Take possession of Project site: Take possession of the Project site and take possessionof or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;

2. Accept assignment of Subcontracts: Accept assignment of subcontracts pursuant to Section 5.20; and

3. Finish the Work: Finish the Work by whatever other reasonable method it deems expedient.

C. Surety's role: Owner's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

D. Contractor's required actions: When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in Section 9.02B and shall not be entitled to receive further payment until the Work is accepted.

E. Contractor to pay for unfinished Work: If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work (including compensation for A/E's services, if applicable) and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of Contractor's actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.

F. Contractor and Surety still responsible for Work performed: Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.

G. Conversion of "Termination for Cause" to "Termination for Convenience": If Owner terminates Contractor for cause and it is later determined that none of the circumstances set forth in Section 9.01A exist, then such termination shall be deemed a termination for convenience pursuant to Section 9.02.

9.02 TERMINATION BY OWNER FOR CONVENIENCE

A. Owner Notice of Termination for Convenience: Owner may, upon written notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.

B. Contractor response to termination Notice: Unless Owner directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor shall promptly:

1. Cease Work: Stop performing Work on the date and as specified in the notice of termination;

2. No further orders or Subcontracts: Place no further orders or Subcontracts for

materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;

3. Cancel orders and Subcontracts: Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;

4. Assign orders and Subcontracts to Owner: Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;

5. Take action to protect the Work: Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property relatedto this Project in the possession of Contractor in which Owner has an interest; and

6. Continue performance not terminated: Continue performance only to the extent not terminated.

C. Terms of adjustment in Contract Sum if Contract terminated: If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of Part 7.

D. Owner to determine whether to adjust Contract Time: If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

PART 10 – MISCELLANEOUS PROVISIONS

10.01 GOVERNING LAW

Applicable law and venue: The Contract Documents and the rights of the parties herein shall be governed by the laws of the State of Washington. Venue shall be in the county in which Owner's administrative office is located, unless otherwise specified.

10.02 SUCCESSORS AND ASSIGNS

Bound to successors; Assignment of Contract: 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. Neither party shall assign the Work without written consent of the other, except that Contractor may assign the Work for security purposes, to a bank or lending institution authorized to do business in the State of Washington. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations set forth in the Contract Documents.

10.03 MEANING OF WORDS

Meaning of words used in Specifications: Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract

Documents in accordance with such recognized meanings. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall be to the latest standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in these Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference shall apply to as many such articles as are shown on the Drawings or required to complete the installation.

10.04 RIGHTS AND REMEDIES

No waiver of rights: No action or failure to act by Owner (or A/E, if applicable) shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall action or failure to act constitute approval or an acquiescence in a breach therein, except as may be specifically agreed in writing.

10.05 CONTRACTOR REGISTRATION

Contractor must be registered or licensed: Pursuant to Chapter 39.06 RCW, Contractor shall be registered or licensed as required by the laws of the State of Washington, including but not limited to Chapter 18.27 RCW.

10.06 TIME COMPUTATIONS

Computing time: When computing any period of time, the day of the event from which the period of time begins shall not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than seven (7) days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

10.07 RECORDS RETENTION

Six-year records retention period: The wage, payroll, and cost records of Contractor, and its Subcontractors, and all records subject to audit in accordance with Section 8.03, shall be retained for a period of not less than six (6) years after the date of Final Acceptance.

10.08 THIRD-PARTY AGREEMENTS

No third-party relationships created: The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons other than Owner and Contractor.

10.09 ANTITRUST ASSIGNMENT

Contractor assigns overcharge amounts to Owner: Owner and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Owner any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges which result from antitrust violations commencing after the Contract Sum is established and which are not passed on to Owner under a Change Order. Contractor shall put a similar clause in its Subcontracts, and require a similar clause in its Sub-Subcontracts, such that all claims for such overcharges on the Work are passed to Owner by Contractor.

10.10 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the designated

representative as identified in the Contract Documents, or to an officer of the corporation for which it was intended if the designated representative no longer works for that party; or if delivered at, or sent by facsimile, email, registered or certified mail, or 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 email, or three (3) calendar days after the date of postmark.

10.11 PUBLIC RECORDS ACT COMPLIANCE

The Contractor understands that the Owner is bound by the Washington Public Records Act, Chapter 42.56 RCW. The Contractor agrees to fully cooperate with the Owner in responding to public records requests. The Contractor shall promptly provide such records to the Owner as requested by the Owner or required by law for the Owner to fulfill its obligations in responding to public records requests. Such records shall be provided at no cost to the Owner. The Contractor shall cause any subcontract to contain this provision. This section shall survive expiration or termination of this Contract for any reason.

10.12 SUBSTITUTION OF PERSONNEL

The Contractor and the Owner have no present intention to substitute personnel, and the parties shall endeavor to minimize substitutions and maintain continuity of personnel, but each reserves the right to substitute its personnel for the purpose of carrying out its responsibilities under this Contract. Such substitution by the Contractor shall be subject to the approval of the Owner, which approval shall not be unreasonably withheld. If the Contractor substitutes personnel, it shall not charge the Owner for any extra costs incurred thereby, including, without limitation, costs incurred to familiarize new personnel with the Project. If requested by the Owner, the Contractor shall remove from performing the Work, without cost to the Owner or delay to the Work, any person whose removal the Owner reasonably requests. Nothing in this provision shall be construed to alter the independent contractor status of the Contractor.

10.13 SEVERABILITY

If, for any reason, any part, term or provision of this Agreement is held by a court of competent jurisdiction to be illegal, void, or unenforceable, the validity of the remaining provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular provision held to be invalid; provided, however, that if it should appear that any provision of the Contract Documents is in conflict with any statutory provision of the State of Washington, the provision shall be deemed modified to conform to such statutory provision.»

10.14 HEADINGS AND CAPTIONS

Headings for convenience only: All headings and captions used in these General Conditions are only for convenience of reference, and shall not be used in any way in connection with the meaning, effect, interpretation, construction, or enforcement of the General Conditions, and do not define the limit or describe the scope or intent of any provision of these General Conditions.

- END OF GENERAL CONDITIONS –

Last Revised: April 8, 2022.

SECTION 00 73 43
WAGE RATES REQUIREMENTS

PART 1 GENERAL

1.01 DESCRIPTION

A. Washington State prevailing wage rates apply to this project. Access the wage rate information as follows:
   1. URL to the Department of Labor & Industries Prevailing Wage Rates: https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx for current rates.
   2. Select Cowlitz County for location of public works project.

B. The Effective Date of wage rates used for this project will be based on the bid date found on the Bid Form, or as modified by addenda.

END OF SECTION

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Mint Valley ES Fire-Smoke Alarm Upgrades

B. Owner's Name: Longview Public Schools.

C. The Project consists of the replacement of the existing fire and smoke alarm system at Mint Valley Elementary School.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of demolition, removal, and alterations work is indicated in the Specifications and as follows:

B. Design build services, permitting, demolition work, programming, facility systems upgrading services, construction materials, installation services, internal quality control services, AHJ testing and related internal management services (collectively the "Work") for the replacement of the existing Digital, Addressable Fire Alarm System and its applicable devices.

1. The completed Project will provide the Owner a working, nonproprietary, digital, addressable fire alarm, detection, and reporting system.
2. The Project requires the design to comply with State of Washington ("State") standards relevant to building performance for construction, wiring, fire code and technical specifications requirements. The Project must comply with applicable federal, state, and local codes and regulations. Under these requirements, Owner must employ cost saving, space saving, energy saving, and other sustainable design and construction features. Therefore, Owner is striving to continually improve its acquisition and Project delivery approaches.
3. Contractor shall return facility to pre-work condition. Contractor shall be responsible for wall patching, painting or other facility repairs needed as a result of Project work.
4. Contractor shall provide products, supplies, materials, and tools required for work related to the Project.
5. Project related demolition materials will become the property of the Contractor to dispose of, or recycle, in accordance with City, State and Federal Laws.
6. Upon completion of Project work, contractor shall provide initial point tests to ensure the installed fire alarm system is working as intended. Contractor shall conduct a secondary test between thirty (30) and forty-five (45) calendar days after completion of installation to ensure continued proper functioning of the system.
7. See attachment "A" for As-Built conditions. Contractor to verify existing conditions in the field and report varying findings to the school district prior to the commencement of work. Contractor to provide an existing device points list prior to the commencement of work and verify that existing devices not replaced are in operation.
8. Contractor to verify existing communication to the district alarm monitoring service. Provide a nonproprietary cellular communication dialer that is compatible with the FACP which will conform to the requirements of the school district's remote monitoring service.
9. Provide systems manufacturer's warranty of 2 years with 1 year parts and labor by contractor.

1.04 WORK BY OWNER

A. General: Cooperate fully with Owner so Work may be carried out smoothly, without interfering with or delaying Work under this Contract or Work by Owner. Coordinate Work of this Contract

with Work performed by Owner.

1.05 WORK UNDER OTHER CONTRACTS

A. Coordinate Work sequencing, schedules, etc., of all separate Contracts and cooperate fully with separate Contractors so Work under those Contracts may be carried out smoothly without interfering with or delaying Work under this Contract.

1.06 OWNER OCCUPANCY

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

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

C. Complete and exclusive use of the construction areas except as outlined above will be permitted from Notice to Proceed until Substantial Completion.

D. Partial Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the work. Such placing of equipment and partial occupancy does not constitute acceptance of the total Work.
   1. The Architect will prepare a Certificate of Substantial Completion for each portion of the Work to be occupied.
   2. Contractor will obtain a Certificate of Occupancy from local building officials prior to occupancy.
   3. Prior to partial occupancy, mechanical, electrical, and life safety systems to be fully operational. Upon occupancy, the Owner will operate and maintain mechanical, electrical, and life safety systems serving occupied portions of the building.
   4. Upon partial occupancy the Owner will be responsible for maintenance and custodial services for occupied portions of the building.

1.07 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Do not disturb portions of the site beyond the areas in which the work is indicated. In the case of any damage to property adjacent to Owner's property, restore area damaged to the satisfaction of respective property owners.

B. Removal of equipment and materials: Clear the site and surrounding street areas of all equipment, apparatus, appliances, tools, unused materials, and similar items as rapidly as they cease to be needed in carrying out the Work.

C. Clean, repair, resurface, or restore existing surfaces to their original condition; or completely replace such surfaces to match existing, where damaged by construction operations.

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

E. 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.
   3. Keep driveways and entrances clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements.

F. Time Restrictions:
   1. Limit conduct of especially noisy exterior work to comply with local ordinances and with Owner.

G. Utility Outages and Shutdown:

1. 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.
2. Prevent accidental disruption of utility services to other facilities.
3. Do not interrupt electric, gas, water or other services to existing Owner occupied structures without prior notice to the Owner. Notice will only be approved by the Owner if submitted as a definite start time and a definite duration of down time.
4. Contractor to schedule demolition, remodel, and new construction to accommodate Owner' s continued use of existing and/or new mechanical, plumbing, and electrical services as required for Owner's continued occupancy and beneficial use of designated areas.
5. Consult with public and private utility companies for location and extent of all utilities before commencing Work.
6. Provide all services required. Protect and maintain existing utilities, active electrical conductors, sewers, pipes, and other active lines on the project property or in street excavations.
7. Arrange for and pay cost of disconnecting, removing, relocating, capping, replacing, or abandoning of public and private utilities in the way of construction operation in accordance with serving utilities, local regulations, and governing codes. Cap utilities, electrical conductors and the like to be abandoned in accordance with instructions of governing authority or as directed.

H. Parking:
   1. Coordinate with Owner for use of existing on-site parking areas.

1.08 WORK SEQUENCE AND SCHEDULE

A. Coordinate construction schedule and operations with Owner.

B. Substantial Completion Date: On or before August 22, 2025.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 20 00
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 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Submit a draft copy of Schedule of Values and Applications for Progress Payments for Architect and Owner review and comment prior to formal submittal. The length of the review period will be determined by Owner, Architect, and Contractor during pre-construction meeting.

C. Submit four (4) originals of Schedule of Values and Applications for Progress Payments.

1.03 SCHEDULE OF VALUES

A. Form to be used: AIA G703.

B. The schedule of values will be used as the basis for the Contractor' s application for payment.

C. Submit Schedule of Values within 10 days after date of Owner-Contractor Agreement.

D. Format: Beginning with the administrative requirements of the General Conditions, utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.

E. For each line item list sub-values of major products or operations of that section, if more than one in a particular section.

F. Include within each line item, a direct proportional amount of Contractor's overhead and profit.

G. For items on which progress payments will be requested for stored materials, break down the value into:
   1. The cost of materials delivered and unloaded.
   2. The total installed value.

H. The sum of all values listed in the schedule to equal the total contract sum.

I. List retainage(s) as required per General Conditions.

J. List allocations for "Achieving Final Completion" and as required per General Conditions.

K. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Monthly basis and per Owner's payment procedures.

B. Form to be used: AIA G702 and G703.

C. 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.

D. After draft copy is reviewed and accepted, execute certification by signature of authorized officer.

E. 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.

F. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.

G. Include the following with the application:
1. Construction progress schedule, revised and current as specified in Section 01 32 16.
2. Copies of invoices and requisitions as may be requested by Architect or Owner.
3. Confirmation of Payment to Suppliers/Subcontractors for the prior invoice period. Identify contract amount; invoice amount and date; and amount paid and date for each.
4. Project record documents as specified in Section 01 78 00, for review by Owner which will be returned to the Contractor.
5. Affidavits attesting to off-site stored products.
6. Materials and equipment stored off-site, furnish proof that Ownership of equipment or materials has been transferred to Owner, with certification of insurance coverage to be furnished by Contractor until incorporated into the Work.
7. Lien, claim releases from each subcontractor and material supplier for whose work, material, or equipment the Owner paid the Contractor for the prior period invoice.

H. When Architect or Owner 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.

I. Include a final Schedule of Values, zeroing out Retainage.

1.05 MODIFICATION PROCEDURES

A. In accordance with the General Conditions, no work to be done resulting in a change to the Contract Sum or the Contract Time without written consent of the Owner in the form of a Change Order or a Construction Change Directive, prior to commencement of the work.

B. Minor Changes in the Work: The Architect may issue supplemental instructions authorizing minor changes in the work that do not involve adjustment to the Contract Sum nor the Contract Time.

C. Proposal Request:
1. Owner-Initiated Proposal Request:
a. Architect will issue a detailed description of proposed changes in the work that may require adjustment to the Contract Sum or Contract Time.
b. Architect will sequentially number Proposal Requests and maintain log.
c. Proposal requests issued by Architect are for information only, and not to be considered instructions to stop work or to execute the proposed change.
d. Within 10 working days after receipt of proposal request, submit a Change Order Proposal with cost adjustments to the Contract Sum and Contract Time necessary to execute the change.
2. Contractor-Initiated Proposal Request: Submit in the form of a Change Order Proposal.

D. Change Order Proposal:
1. Contractor will sequentially number all Change Order Proposals and all revisions.
2. Provide a complete description of the proposed change, indicating the effect of the proposed change on the Contract Sum and on the Contract Time with full documentation

and a statement describing the effect on Work by separate or other contractors.

3. Include itemized breakdown of cost including quantities of materials, labor costs with breakdown by trade, costs of rental equipment, transportation, storage, etc.
4. Include updated Construction Schedule that indicates the effect of the change including, but not limited to, changes in activity duration, start and finish dates, and activity relationships. Use available total float before requesting an extension of Contract Time.

E. Construction Change Directive:
1. Architect and Owner may issue a Construction Change Directive using AIA Document G714.
   a. Construction Change Directive to contain a complete description of the change in the work, and designate the method to be followed to determine changes in the Contract Sum or Contract Time.
2. Documentation: Maintain detailed records on a time and material basis of work required.
   a. Upon completion of the change in the work, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract for preparation of a Change Order by the Architect.
3. Payments to the Contractor will not be made on basis of a Construction Change Directive until it is made into a Change Order approved by Owner, Contractor, and Architect.
4. Portions of a Construction Change Directive will not be eligible to be made into a Change Order for partial payment.

F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.

G. Substantiation of Costs: Provide full information required for evaluation.
1. Provide 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. 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.

H. Change Orders:
1. Architect will sequentially number Change Orders.
2. Change Orders will be issued as a result of Change Order Proposals (COP) or Construction Change Directives (CCD), or a combination of COP' s and CCD' s and may be multiples of either.
3. Owner and Architect will review the changes to the Contract Sum and/or the Contract Time and may request the Contractor to provide additional information or to modify his proposal prior to inclusion in a Change Order.
4. Upon acceptance of the change in Contract Sum and/or Contract Time by the Owner, Contractor, and Architect, the Architect will prepare the Change Order on AIA Document G701 for signatures by all parties.

I. 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.

J. 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.

K. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments and per the General Conditions, 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 70 00.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 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.

1.03 REFERENCE STANDARDS

A. CSI/CSC Form 1.5C - Substitution Request (During the Bidding/Negotiating Stage).

B. CSI/CSC Form 13.1A - Substitution Request (After the Bidding/Negotiating Phase).

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 coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Forms indicated 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:
   1. Section 00 21 13 - Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
   2. If the Bid Date is changed, the deadline date for substitution requests is not changed, unless specificallly stated by Addendum.

B. Submittal Form (before award of contract):
   1. Submit substitution requests by completing CSI/CSC Form 1.5C - Substitution Request. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

C. Architect will consider written requests from prime Bidders for substitutions.

D. If a request for substitution is sent directly to a consultant of the Architect, a detailed transmittal of the request shall be delivered simultaneously to the Architect.

3.03 ACCEPTANCE DURING PROCUREMENT

A. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

B. If the Architect approves a proposed substitution prior to receipt of Bids, the approval will be set forth in a written Addendum. Only approvals documented in a written Addendum will be binding.

3.04 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submittal Form (after award of contract):
   1. Submit substitution requests by completing CSI/CSC Form 13.1A - Substitution Request (After Bidding/Negotiating). See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

B. Submit request for Substitution for Cause immediately upon 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.

C. 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.
      b. Other construction by Owner.
      c. Other unanticipated project considerations.

D. 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.

3.05 ACCEPTANCE DURING CONSTRUCTION

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 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.

B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

3.07 ATTACHMENTS

A. The required Substitution Request Forms (During the Bidding/Negotiating Stage) and (After the Bidding/Negotiating Phase) are included after this section.

END OF SECTION

SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

Form Version: September 2013
CSI Form 1.5C

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

_____

_____

☐ Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item: _____

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

_____

Savings to Owner for accepting substitution: _____ ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐Drawings ☐Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

Form Version: September 2013
CSI Form 13.1A

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase — Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: ☐

A/E's REVIEW AND RECOMMENDATION

☐ Approve Substitution - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Approve Substitution as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Reject Substitution - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

OWNER'S REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution rejected - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐Contractor ☐Subcontractor ☐Supplier ☐Manufacturer ☐A/E

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Preconstruction meeting.

C. Progress meetings.

D. Construction progress schedule.

E. Construction progress documentation.

F. Submittals for review, information, and project closeout.

G. Deferred submittals for jurisdictional approval.

H. Number of copies of submittals.

I. Requests for Interpretation (RFI) procedures.

J. Submittal procedures.

1.02 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

A. Schedule meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Designation of personnel representing the parties to Contract.
   5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   6. Scheduling:
      a. Construction progress schedule including critical scheduling requirements and determination of date of publication of Critical Path Method (CPM).
      b. Contractor's three-week "look ahead" schedule.
      c. Long-lead items.
   7. Alternates.
   8. Procedures for maintaining project record documents, security, deliveries, safety, housekeeping, and first aid.
   9. Testing and inspections.
   10. Procedures for working relations with Owner’s staff.
   11. Use of site for parking and storage of materials.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum weekly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect.
   4. Contractor's superintendent.
   5. Major subcontractors.

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 RFIs log and status of responses.
   7. Review of off-site fabrication and delivery schedules.
   8. Maintenance of progress schedule.
   9. Corrective measures to regain projected schedules.
   10. Planned progress during succeeding work period, including 3-week "look-ahead" schedule.
   11. Coordination of projected progress.
   12. Maintenance of quality and work standards.
   13. Effect of proposed changes on progress schedule and coordination.
   14. Review Change Order Proposals.
   15. Other business relating to work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 32 16

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

F. Submit a 3-week "look-ahead" schedule at each progress meeting.

3.04 CONSTRUCTION PROGRESS DOCUMENTATION

A. Record Documents: Thoroughly coordinate all changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to properly show the change. Accuracy of records to be such that future searches for items shown in the Contract Documents may reasonably rely on information obtained from the approved Record Documents. Notation of an RFI # or COP # is not sufficient to document a change without noting the actual change on the Documents.

1. Status of maintenance of Record Documents may be a prerequisite for approval of progress payments. If redline Record Documents are not kept current, Owner may withhold monthly payments.
2. Prior to submitting request for final payment, submit the final Record Documents to the Architect and secure his approval.

B. Signed Permits: Maintain a notebook on site with copies of all permits and inspection reports made by the local building department. Signed copies of these permits and inspection reports are to be included in the project O&M manuals as required.

3.05 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 Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of 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.
   a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
   b. Do not forward requests which solely require internal coordination between subcontractors.
2. Prepare in a format and with content acceptable to Architect.
   a. Provide form for Architect review and revise as required prior to first RFI submittal.
3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.

D. 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.
1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
   a. Approval of submittals (use procedures specified elsewhere in this section).
   b. Approval of substitutions (see Section - 01 60 00 - Product Requirements).
   c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
   d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
   a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

E. 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. Owner's, Architect's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date, and requested reply date.
5. 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).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Highlight items requiring priority or expedited response.
4. Highlight items for which a timely response has not been received to date.
5. Identify and include improper or frivolous RFIs.

H. Review Time: Architect will respond and return RFIs to Contractor within fourteen (14) calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 5:00 pm will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Submit RFI's in a manner to not unreasonably encumber the Architect's ability to review and comment in the allowed time frame. Excessive and/or frivolous RFI's will result in extended review periods.

J. 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. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.06 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
1. Submit at the same time as the preliminary schedule.
2. Coordinate with Contractor's construction schedule and schedule of values.

3. Format schedule to allow tracking of status of submittals throughout duration of construction.
4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
    a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.07 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.
4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
1. Submittals to be identified by Specification section number with sequential submittal number under each section (example: 03 21 14-1, 03 21 14-2,...). Identification to be indicated on transmittals and on Contractor’s review stamp on each submittal copy. Resubmittals to be indicated on each transmittal and on each submittal.
2. Contractor to identify all long-lead items critical to the schedule.

C. Samples will be reviewed only for aesthetic, color, or finish selection. Contractor to notify Architect of any colors or items that will be discontinued in the near future.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

3.08 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.

C. Material Safety Data Sheets (MSDS) and Safety Data Sheets (SDS): MSDS and SDS are for the Contractor's use in maintaining safe project conditions and are not required submittals. As such, they are not reviewed by the Architect and will be returned without review if submitted.

3.09 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:
1. Project record documents.
2. Operation and maintenance data.

3. Warranties.
4. Bonds.
5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.10 DEFERRED SUBMITTALS

A. Definition: Vendor or Contractor designed portion of the Contract documents that has not been included in the original Contract documents and are required to be reviewed and approved by appropriate jurisdictional authority prior to incorporating into the Work. These submittals may include shop drawings, calculations by a professional engineer, or additional design data, and submitted for permitting as a separate item. Professional Engineers are required to be experienced in design of this work and licensed in the State in which the Project is located.

B. Refer to Drawings for list of deferred submittals.

C. Verify with Building Department, additional items that will be required to be submitted.

D. Process:
1. Submit deferred submittal information to Architect for review prior to submitting for permitting.
2. Submit Architect-reviewed submittal to jurisdiction having authority for required building permitting.

3.11 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.

3.12 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. Transmit using approved form.
   a. Use Contractor's form, subject to prior approval by Architect.
4. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
6. 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.
   a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
7. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
   a. Deliver submittals to Architect at business address.
8. Schedule submittals to expedite the Project, and coordinate submission of related items.
   a. For each submittal for review, allow 14 days excluding delivery time to and from the Contractor.

b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
c. Multiple submittals will require additional time for review as determined by the Architect upon a prioritization determined by the construction.
d. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.

9. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
10. Provide space for Contractor and Architect review stamps.
11. When revised for resubmission, identify all changes made since previous submission.
12. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
13. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
14. Submittals not requested will not be recognized or processed.

B. Product Data Procedures:
1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:
1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

3.13 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, but will take no other action.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

END OF SECTION

SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preliminary schedule.

B. Construction progress schedule, bar chart type.

1.02 GENERAL REQUIREMENTS

A. Purpose of Construction Schedule:
   1. Assure adequate planning, scheduling and reporting during the execution of the contract.
   2. Assure coordination of the work of the Contractor and the various subcontractors and suppliers.
   3. Assist the Contractor in monitoring the progress of the work and evaluating proposed changes to the contract and the project schedule.
   4. Assist the Contractor to show how sequence of work is affected by requirements for phased completion.
   5. Assist the Contractor in the preparation and evaluation of the Contractor’s monthly progress payments.
   6. Document and report to the Owner and Architect the construction progress for the project.

B. Construction schedule to allow for Architect's review of shop drawings, submittals, etc. Allow for Architects review of re-submittals of shop drawings, etc.

C. In some stages of the project a high volume of shop drawings may appear within a short time period; it is the Contractor's responsibility to set priorities and inform the Architect of the most time-sensitive shop drawings to be processed and returned.

D. Construction schedule to allow for Architect's review and agency review of deferred submittals.

E. Construction schedule to show dates for mandatory pre-installation conferences in accordance with, and any other pre-installation conferences the Contractor deems appropriate.

F. The construction schedule will begin with the issuance of Notice to Award the Contract and conclude with the date of final completion of the project.

G. Float or slack time within the construction schedule is not for the exclusive use or benefit of either the Owner or the Contractor; but is a jointly owned, expiring project resource available to both parties as needed to meet Contract milestones and Contract completion date.

H. Seasonal weather conditions, utility coordination, no-work periods, and other foreseeable delays to activities to be considered and included in the planning and scheduling of all work. Seasonal weather conditions based upon the historic weather records published for the locality.

I. No time extensions will be granted nor delay damages paid until a delay occurs that impacts the project's critical path, consumes all available float time or contingency time, and extends the work beyond the Contract completion date.

J. Contractor to update monthly schedule immediately (printed and electronic format) whenever a change occurs in the scope of work that impacts the project's critical path, consumes float time or contingency time, or extends the work beyond the Contract completion date, and be submitted within thirty (30) days of the change. Update of schedule isa condition precedent to monthly progress payments.

K. Submit a separate report with each schedule update specifically identifying each change made to the schedule since the last update.

1.03 SUBMITTALS

A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

F. Submit a (3) week '' look-ahead'' schedule at the progress meetings.

1.04 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with 3 years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.05 SCHEDULE FORMAT

A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify work of separate stages and other logically grouped activities.

C. Provide sub-schedules to define critical portions of the entire schedule.

D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

E. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

F. Indicate delivery dates for owner-furnished products.

G. Coordinate content with schedule of values specified in Section 01 20 00 - Price and Payment Procedures.

H. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.

B. Identify the first work day of each week.

3.04 LOOK-AHEAD SCHEDULE

A. The Contractor's Job Superintendent to prepare and present a three (3) week look-ahead schedule at the weekly job-site meetings to the subcontractors, Owner, and Architect.

3.05 REVIEW AND EVALUATION OF SCHEDULE

A. Participate in joint review and evaluation of schedule with Architect at each submittal.

B. Evaluate project status to determine work behind schedule and work ahead of schedule.

C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.06 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Annotate diagrams to graphically depict current status of Work.

D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit reports required to support recommended changes.

G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect including the effects of changes on schedules of separate contractors.

3.07 DISTRIBUTION OF SCHEDULE

A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. References and standards.

D. Testing and inspection agencies and services.

E. Contractor's construction-related professional design services.

F. Contractor's design-related professional design services.

G. Control of installation.

H. Mock-ups.

I. Tolerances.

J. Manufacturers' field services.

K. Defect Assessment.

1.02 REFERENCE STANDARDS

A. IAS AC89 - Accreditation Criteria for Testing Laboratories.

1.03 DEFINITIONS

A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
   1. Design Services Types Required:
      a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor’s sole responsibilities for construction means, methods, techniques, sequences, and procedures.
      b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.

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 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations.

1.05 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Base design on performance and/or design criteria indicated in individual specification sections.
   1. Submit a Request for Interpretation to Architect if the criteria indicated are not sufficient to perform required design services.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Owner.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Compliance with Contract Documents.
      k. When requested by Architect, provide interpretation of results.
   2. Test report submittals are 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.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
   1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

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.

E. Manufacturer's Field Reports: Submit reports for Architect's benefit as Contract administrator or for Owner.

1.07 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of Work and licensed in the State in which the Project is located.

1.08 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. Maintain copy at project site during submittals, planning, and progress of the specific Work, until Substantial Completion.

C. Neither the Contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect will be altered from the 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 MOCK-UPS

A. Before installing portions of the Work where mock-ups are required,construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and Workmanship. Additional mock-up requirements are defined in individual technical sections.

B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.

C. Notify Architect fifteen (15) working days in advance of dates and times when mock-ups will be constructed.

D. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.

E. Perform tests under provisions identified in this section and identified in the respective product specification sections.

F. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

G. Obtain Architect's approval of mock-ups before starting Work, fabrication, or construction.

H. Architect will use accepted mock-ups as a comparison standard for the remaining Work.

I. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

J. Where possible salvage and recycle the demolished mock-up materials.

3.03 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.

3.04 TESTING AND INSPECTION - ROLES AND RESPONSIBILITIES

A. See individual specification sections for testing and inspection required.

B. Re-testing required because of non-conformance to specified requirements will be paid for by Contractor.

3.05 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of Workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 REFERENCE TO BUILDING CODE:

A. Wherever the term "building code" is used in the Specifications, said term shall be construed to mean the edition of the governing building code as adopted and amended by local agencies under which this project was reviewed and approved.

1.02 STANDARDS

A. Any material specified by reference to the number, symbol, or title of a specific standard, such as a Commercial Standard, a Federal Specification, a Trade Association Standard, or other similar standards shall comply with the requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the executed Contract, except as limited to type, class or grade, or modified in such reference.

B. The standards referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications. These standards are not furnished to Bidders for the reason that the manufacturers and trades involved are assumed to be familiar with their requirements. The Architect will furnish, upon request, information as to how copies of the standards referred to, may be obtained.

C. Comply with Federal, State, and Regional requirements for hazardous substances. This project has established a Hazardous Substance Communication Program. The purpose of the program is to ensure that employees are aware of the substances that they may come in contact with and the associated hazards in dealing with such substances. The program explains training, labeling requirements, documentation, accessing information, accountability, and auditing responsibilities. The program recognizes that Contractors and their employees are subjected to special hazardous substances as part of existing structures or in use at the project site. In addition, the Hazardous Communication Program requires:
   1. Prior to commencing Work on this project. Contractor and/or employees must sign an agreement that they acknowledge the Hazard Communication Program and have communicated it to their employees.
   2. Contractors shall provide a list of potentially hazardous substances to the Owner prior to Working on or bringing substances onto the project site.
   3. The Owner may not authorize the Work or continued Work of a Contractor who fails to comply with the Hazardous Communication Program.

D. General Contractor is responsible for compliance with all applicable codes, regulations, and directives of duly constituted authorities having jurisdiction, insofar as the performance of the Work and completed improvements are concerned, for all Work performed.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 41 23
PERMITS AND FEES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Permits and fees.

1.02 PERMITS AND FEES

A. Owner Responsibilities:
   1. Permits:
      a. Building Permit: Owner will submit application, Drawings, and Specifications. Contractor will secure Permit from the Building Department.
   2. Fees:
      a. Plan Review Fee (Building Department).
      b. Building (General) Permit Fee.

B. Contractor Responsibilities:
   1. Permits and Fees: The Contractor shall be responsible for procuring and paying for the permits listed, including but not limited to:
      a. Building Permit (secure from the issuing agency, Owner will pay fee).
      b. Electrical Permit.
      c. Fire Alarm Permit.
      d. Demolition Permit.
      e. All permits and fees for plan reviews, permits and inspections required by Fire Marshal (including deferred submittals).
      f. All other permits required during the construction phase to secure the final occupancy permit.
      g. Any permits/fees required by individual specification sections.

1.03 PAYMENTS

A. The Contractor shall be responsible for securing and paying for all permits and fees in a timely manner so not to impede the progress of the Work.

B. Prior to Substantial Completion of the Work, Contractor shall verify that all fees have been paid so not to impede issuance of Occupancy Permit.

END OF SECTION

SECTION 01 42 16
DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

A. This section supplements the definitions contained in the General Conditions.

B. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

A. Basis of Design (BOD): Product or system used to establish a particular quality, performance requirement, aesthetic, or other specific attribute for a product or system for the evaluation of any comparable products by other listed acceptable manufacturers as included in this Specification or in an approved Substitution Request as judged by the Design Professional.
   1. If substitutions and/or equivalent equipment/products are being proposed, it is the responsibility of the parties involved in and furnishing the substitutes to verify and compare the characteristics, performance, and requirements of the furnished products or systems to that specified and/or shown.
   2. Drawings are intended to be diagrammatic and reflect the Basis of Design manufacturer's product/equipment. They are not intended to show every item in its exact dimensions, or details of equipment or proposed system's layout. Verify actual dimensions of proposed approved comparable products/equipment to assure that they will fit in available space the same as the Basis of Design products/equipment.

B. Furnish: To supply, deliver, unload, and inspect for damage.

C. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.

D. OFCI: Owner Furnished, Contractor Installed.

E. OFOI: Owner Furnished, Owner Installed.

F. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.

G. Provide: To furnish and install.

H. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 42 19
REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements relating to referenced standards.

1.02 QUALITY ASSURANCE

A. For products or 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. Obtain copies of standards when required by Contract Documents.

C. Maintain copy at project site during submittals, planning, and progress of the specific work, until Date of Substantial Completion.

D. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.

E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect shall be altered by Contract Documents by mention or inference otherwise in any reference document.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Security requirements.

E. Vehicular access and parking.

F. Waste removal facilities and services.

G. Project identification sign.

1.02 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

1.03 TEMPORARY UTILITIES

A. Owner will provide the following:
   1. Electrical power and metering, consisting of connection to existing facilities.

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.05 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.

1.06 FENCING

A. Construction: Contractor's option.

B. Provide 6 foot high minimum fence around construction site; equip with vehicular and pedestrian gates with locks.
   1. STC rating of 35 in accordance with ASTM E90.
   2. Maximum flame spread rating of 75 in accordance with ASTM E84.

C. Paint surfaces exposed to view from Owner-occupied areas.

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. Provide and maintain access to fire hydrants, free of obstructions.

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.

1.10 PROJECT IDENTIFICATION

A. Provide project identification sign of design, construction, and location approved by Owner.

B. No other signs are allowed without Owner permission except those required by law.

1.11 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Remove underground installations to a minimum depth of 2 feet.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing facilities used during construction to original condition.

E. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 60 00
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.

H. Product warranties.

1.02 REFERENCE STANDARDS

A. 16 CFR 260.13 - Guides for the Use of Environmental Marketing Claims; Federal Trade Commission; Recycled Content.

B. C2C (DIR) - C2C Certified Products Registry; Cradle to Cradle Products Innovation Institute.

C. EN 15804 - Sustainability of Construction Works - Environmental Product Declarations - Core Rules for the Product Category of Construction Products.

D. ISO 14025 - Environmental Labels and Declarations - Type III Environmental Declarations - Principles and Procedures.

E. ISO 14040 - Environmental Management - Life Cycle Assessment - Principles and Framework.

F. ISO 14044 - Environmental Management - Life Cycle Assessment - Requirements and Guidelines.

G. ISO 21930 - Sustainability in Buildings and Civil Engineering Works — Core Rules for Environmental Product Declarations of Construction Products and Services.

1.03 SUBMITTALS

A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
   1. Submit within 30 days after date of Agreement.
   2. For products specified only by reference standards, list applicable reference standards.

B. 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.

C. 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.

D. 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.

1.04 QUALITY ASSURANCE DEFINITIONS

A. Cradle-to-Cradle Certified: End use product certified Cradle-to-Cradle v2 Basic or Cradle-to-Cradle v3 Bronze, minimum, as evidenced by C2C (DIR).

B. Environmental Product Declaration (EPD): Publicly available, critically reviewed life cycle analysis having at least a cradle-to-gate scope.
   1. Good: Product-specific; compliant with ISO 14044.
   2. Better: Industry-wide, generic; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
   3. Best: Commercial-product-specific; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
   4. Where demonstration of impact reduction below industry average is required, submit both industry-wide and commercial-product-specific declarations; or submit at least 5 declarations for products of the same type by other manufacturers in the same industry.

C. Health Product Declarations (HPD): Complete, published declaration with full disclosure of known hazards, prepared using one of the HPDC (HPD-OLT) online tools.

D. Recycled Content: Determine percentage of post-consumer and pre-consumer (post-industrial) content separately, using the guidelines contained in 16 CFR 260.13.
   1. Previously used, reused, refurbished, and salvaged products are not considered recycled.
   2. Wood fabricated from timber abandoned in transit to original mill is considered reused, not recycled.
   3. Determine percentage of recycled content of any item by dividing the weight of recycled content in the item by the total weight of materials in the item.
   4. Determine value of recycled content of each item separately, by multiplying the content percentage by the value of the item.
   5. Acceptable Evidence:
      a. For percentage of recycled content, information from manufacturer.
      b. For cost, Contractor's cost data.

E. Regional Materials: Materials that are extracted, harvested, recovered, and manufactured within a radius of 100 miles from the Project site.

F. Source Location: Location of harvest, extraction, recovery, or manufacture; where information about source location is required to be submitted, give the postal address:
   1. In every case, indicate the location of final assembly.
   2. For harvested products, indicate location of harvest.
   3. For extracted (i.e. mined) products, indicate location of extraction.
   4. For recovered products, indicate location of recovery.
   5. For products involving multiple manufacturing steps, provide a description of the process at each step, with location.
   6. Acceptable Evidence:
      a. Manufacturer's certification.
      b. Life cycle analysis (LCA) performed by third-party.

1.05 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of Contract Documents.
   1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by Contract Documents to provide specific rights for Owner.
   3. The Contractor is not relieved from delivering to the Owner warranties of longer duration if these are industry-accepted standards,

B. Special Warranties: Prepare written document that contains appropriate terms and identification, ready for execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Specified Form: When specified forms are included with Specifications, prepare written document using indicated form properly executed.
   3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 70 00 - Execution and Closeout Requirements and individual technical sections of the Specifications.

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. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

C. 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.

D. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is required.
   1. See Section 01 10 00 for list of items required to be salvaged for reuse and relocation.
   2. If reuse of other existing materials or equipment is desired, submit substitution request.

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. Made using or containing CFC's, HFC's, or HCFC's.
   2. Made of wood from newly cut old growth timber.
   3. Containing lead, cadmium, asbestos, or any other listed hazardous materials.

C. Where other criteria are met, Contractor shall give preference to products that:
   1. If used on interior, have lower emissions, as defined in Section 01 61 16.
   2. If wet-applied, have lower VOC content, as defined in Section 01 61 16.
   3. Are extracted, harvested, and/or manufactured closer to the location of the project.
   4. Have longer documented life span under normal use.
   5. Result in less construction waste.
   6. Are made of vegetable materials that are rapidly renewable.
   7. Are made of recycled materials.
   8. Are Cradle-to-Cradle Certified.
   9. Have a published Environmental Product Declaration (EPD).
   10. Have a published Health Product Declaration (HPD).

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: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

D. Products Specified as Basis-of-Design: Submit substitution requests for unnamed products to Architect for evaluation.

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 25 00 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

A. Owner's Responsibilities:
   1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
   2. Arrange and pay for product delivery to site.
   3. On delivery, inspect products jointly with Contractor.
   4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
   5. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:
   1. Review Owner reviewed shop drawings, product data, and samples.
   2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
   3. Handle, store, install and finish products.
   4. Repair or replace items damaged after receipt.

3.03 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.

3.04 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 74 19.

1. Structural Loading Limitations: Handle and store products and materials so as not to exceed static and dynamic load-bearing capacities of project floor areas.

C. Store and protect products in accordance with manufacturers' instructions.

D. Store with seals and labels intact and legible.

E. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

F. For exterior storage of fabricated products, place on sloped supports above ground.

G. Provide off-site storage and protection when site does not permit on-site storage or protection.
1. Execute a formal supplemental agreement between Owner and Contractor allowing off-site storage.

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. Do not store products directly on the ground.

K. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

L. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

M. Prevent contact with material that may cause corrosion, discoloration, or staining.

N. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

O. 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 70 00
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. Substantial Completion.

D. Pre-installation meetings.

E. Cutting and patching.

F. Cleaning and protection.

G. Starting of systems and equipment.

H. Demonstration and instruction of Owner personnel.

I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. See Section 01 78 00 - Closeout Submittals for closeout submittal requirements.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 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.

C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

1.05 COORDINATION

A. See Section 01 10 00, Summary of Work for occupancy-related requirements.

B. 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.

C. Notify affected utility companies and comply with their requirements.

D. 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.

E. 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.

F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

G. Coordinate completion and clean-up of Work of separate sections.

H. 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.

1.06 QUALITY ASSURANCE

A. Prior to requesting an inspection by the Architect, the Contractor shall use adequate means to assure that the Work is completed by every Subcontractor in accordance with the specified requirements and is ready for the requested inspection. If the quality of the completed Work is obviously below acceptable standards, the Architect may refuse the inspection until the Subcontractors complete their own inspection and correct the Work.

1.07 SUBSTANTIAL COMPLETION

A. See General Conditions of the Contract for Contsruction.

B. Prior to requesting determination of completion, Contractor shall submit comprehensive list of items to be completed or corrected.

C. Notify the Architect in writing when the project is ready for Substantial Completion Inspection.

D. Contractor shall be responsible to secure the occupancy permit or final approval from the building department.

E. Complete final start-up and testing and commence instruction/training on all building systems including fire alarm.

F. The Architect will inspect to determine status of completion. The Architect may, if noting an inordinate number of deficiencies, postpone the inspection until further effort improves the quality of the Work.

G. Should the Architect determine that the Work is not substantially complete:
   1. The Architect will promptly notify the Contractor in writing, giving the reasons thereof.
   2. The Contractor will remedy the deficiencies, and notify the Architect when ready for re-inspection.

H. When the Architect concurs that the Work is substantially complete:
   1. The Architect will prepare a “punch list” noting deficiencies in the quality of the Work.
   2. The Architect will prepare a “Certificate of Substantial Completion”, accompanied by the punch list.
   3. The Architect will submit the Certificate to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

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 60 00 - 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 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing Work of the section.

B. Require attendance of parties directly affecting, or affected by, Work of the specific section.

C. Notify Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related Work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

B. 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.

C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 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.

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 Fire Protection and Electrical): 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, 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. Perform cutting to accomplish removals neatly and as specified for cutting new Work.
   2. 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.
   3. Where a change of plane of 1/4 inch or more occurs in existing Work, submit recommendation for providing a smooth transition for Architect review and request instructions.

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.

3.06 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 84 00, 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.

3.07 CLEANING - GENERAL

A. Materials:

1. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
2. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.
4. Submit a list of all cleaning products proposed to be used on site for review by Architect prior to commencing cleaning operations.

3.08 PROGRESS CLEANING

A. Execute periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

B. Provide on-site containers for the collection of waste materials, debris and rubbish.

C. Remove waste materials, debris and rubbish from the site regularly and dispose of at legal disposal areas away from the site.

D. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

E. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

F. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

G. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 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, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Protect Work from spilled liquids. If Work is exposed to spilled liquids, immediately remove protective coverings, dry out Work, and replace protective coverings.

G. 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.

H. Prohibit traffic from landscaped areas.

I. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect and Owner seven days prior to start-up of each item.

C. 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.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

A. See Section 01 79 00 - Demonstration and Training.

3.12 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Employ skilled Workers for final cleaning.

C. Use cleaning materials that are nonhazardous.

D. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

E. 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.

F. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

G. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

H. Clean filters of operating equipment.

I. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.

J. Clean site; sweep paved areas, rake clean landscaped surfaces.

K. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

L. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all Work areas, to verify that the entire Work is clean.

M. Should the Owner occupy the Work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interior and final cleaning of the occupied spaces shall be as determined by the Architect in accordance with the General Conditions of the Contract.

3.14 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect and Owner.

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.

3.15 WARRANTY

A. Reference: The General Conditions of the Contract for Construction.

B. Provide all required warranties as outlined in the General Conditions of the Contract for Construction, Division 01 Administrative Requirements and individual technical spec sections.

C. Prior to expiration of the one year warranty on all Work, the Architect and Owner will conduct an inspection and survey to notify the Contractor of any items for corrective action.

3.16 FINAL COMPLETION

A. Contractor to submit final closeout documentation.

B. Submit a final statement of accounting to the Architect, showing all adjustments to the Contract sum. If so required, the Architect will prepare a final Change Order showing adjustments to the Contract sum, which were not made previously by Change Order.

C. Contractor will notify Architect of final completion.

D. The Architect will inspect to verify status of completion.

E. Should the Architect determine that the Work is incomplete or defective:
   1. The Architect will notify the Contractor, in writing, listing the incomplete or defective Work.
   2. The Contractor will remedy the deficiencies promptly, and notify the Architect when ready for re-inspection.

F. When the Architect determines the project is complete, Architect will prepare letter of final completion.

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.02 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 two sets of revised final documents in final form within 10 days after final inspection.

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

D. Occupancy Certificates / Approvals:
   1. Building Department.
   2. Fire Marshal.
   3. Electrical (Labor and Industry).

E. WSEC Compliance Documentation: Completed energy code compliance forms and calculations.

F. Certificate of Substantial Completion.

G. Certificate of Final Completion.

H. Final Change Order.

I. Extra materials and spare parts delivered to Owner in boxes that are substantial and in good condition. Mark boxes with building name and number and room number. Obtain a receipt when delivered to Owner.

J. Building keys returned with key schedule and receipt of delivery to Owner.

K. Affidavits:
   1. Consent of Surety to Final Payment.
   2. Affidavit of Payment of Debts and Claims.
   3. Affidavit of Prevailing Wages Paid.
   4. Affidavit of Release of Liens.

L. Final Payment Application.

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. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. 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 MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

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

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. 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.

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

D. Include color coded wiring diagrams as installed.

E. 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.

F. 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.

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

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

I. Include sequence of operation by controls manufacturer.

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

K. Provide control diagrams by controls manufacturer as installed.

L. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

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

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS - ELECTRONIC FORMAT

A. Provide all operation and maintenance data in electronic PDF file format. Provide files on a flash drive or other physical device for use by Owner's personnel.

B. Arrange data in the same sequence as, and identified by, the specifications sections.

C. Where systems involve more than one specification section, provide separate folders for each system.

D. Project Directory: Title and address of Project; names, addresses and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

E. Tables of Contents: List every item separated by folder, using the same identification as the folder name.

F. Create a file structure for electronic files with each individual folder and file labeled and bookmarked for ease of use.
   1. See example file structure at the end of this section.

G. 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. Product data, shop drawings, and other submittals.
      c. Operation and maintenance data.
      d. Field quality control data.
      e. Copies of warranties and bonds.

3.06 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS - HARD COPY FORMAT

A. In addition to electronic PDF files, provide two hard copies of all operation and maintenance data. 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. Product data, shop drawings, and other submittals.
      c. Operation and maintenance data.
      d. Field quality control data.
      e. Original warranties and bonds.

3.07 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.

E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

SECTION 01 79 00
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems to be commissioned and where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. All software-operated systems.
   2. Electrical systems and equipment.
   3. Items specified in individual product Sections.

C. Training of Owner personnel in care, cleaning, maintenance, and repair is required for:
   1. Items specified in individual product Sections.

1.02 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit not less than two weeks prior to start of training.
   2. Revise and resubmit until acceptable.
   3. Provide an overall schedule showing all training sessions.
   4. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
   1. Identification of each training session, date, time, and duration.
   2. Sign-in sheet showing names and job titles of attendees.
   3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

E. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
   1. Begin each video with a standard introduction of date, project name, title of training being performed and name/company/contact information of person performing training.
   2. Format: DVD Disc.
   3. Label each disc and container with session identification and date.

1.03 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Provide as instructors the most qualified trainer of those Contractors and/or installers who actually supplied and installed the systems and equipment.
   2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site unless otherwise indicated.

B. Owner will provide classroom and seating at no cost to Contractor.

C. The Contractor will instruct the Owner' s personnel in proper operation and maintenance of systems, equipment, and similar items which were provided as part of the Work.

D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Authority.

E. Provide training in minimum two hour segments.

F. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

G. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

H. General Operating and Maintenance Instructions: Arrange for each installer of operating equipment and other Work that requires regular or continuing maintenance, to meet at the site with the Owner’s personnel to provide necessary basic instruction in the proper operation and maintenance of the entire Work. Where installers are not experience in the required procedures, include instruction by the manufacturer’s representatives. Training sessions to be

scheduled within seven days notice with submittal of proposed agenda. All participants sign in. No more than four hours in one day.

1. As part of this instruction provide a detailed review of the following items:
    a. Maintenance manuals.
    b. Record documents.
    c. Spare parts and materials.
    d. Tools.
    e. Lubricants.
    f. Fuels.
    g. Identification systems.
    h. Control sequences.
    i. Trouble shooting.
    j. Hazards.
    k. Cleaning.
    l. Warranties bonds, maintenance agreements, and similar continuing commitments.
2. As part of this instruction for operating equipment demonstrate the following procedures:
    a. Start-up.
    b. Shut-down.
    c. Emergency operations.
    d. Noise and vibration adjustments.
    e. Safety procedures.
    f. Economy and efficiency adjustments.
    g. Effective energy utilization.

I. Product- and System-Specific Training:
1. Review the applicable O&M manuals.
2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
4. Provide hands-on training on all operational modes possible and preventive maintenance.
5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
6. Discuss common troubleshooting problems and solutions.
7. Discuss any peculiarities of equipment installation or operation.
8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
9. Review recommended tools and spare parts inventory suggestions of manufacturers.
10. Review spare parts and tools required to be furnished by Contractor.
11. Review spare parts suppliers and sources and procurement procedures.

J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

SECTION 26 00 01
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.01 DESCRIPTION

A. Perform work in accordance with regulations of National Electrical Code, National Electrical Safety Code, National Fire Codes, International Building Code, and other applicable codes.

B. Whenever the requirements of the Electrical Specifications or Drawings exceed those of the applicable code or standard, the requirements of the Specifications and Drawings shall govern.

C. This Contractor is bound by the General Conditions, Supplementary Conditions, Special Conditions, and Division 1 bound herewith in addition to this Specification and accompanying Drawings.

D. Bidders shall view the site and shall include costs incurred by existing conditions in the bid proposal.

1.02 QUALITY ASSURANCE

A. Materials shall be new, of manufacturer's latest design and of the best quality. The materials shall be manufactured in accordance with applicable standards of NEMA, ANSI, or UL and shall be UL listed.

B. Complete each system as shown and place in operation except where only rough-in or partial systems are called for. Each system shall be tested and left in proper operation free of faults, shorts, or unintentional grounds.

C. Protect electrical work, wire and cable, materials and equipment installed under this Division against damage by other trades, weather conditions, or any other causes. Equipment found damaged or in other than new condition will be rejected as defective.

1.03 FEES

A. Secure and pay for necessary permits and fees. Arrange for required inspections.

PART 2 PRODUCTS

2.01 MATERIALS AND METHODS

A. Equipment and materials shall be new and free from defects. Material and equipment of the same or a similar type shall match that of the manufacturer and model number predominantly existing on the project. Standard production materials shall be used wherever possible.

B. Work under this division shall be conducted in a manner to cooperate with other trades and contracts involved with this project.

C. Verify connection requirements for equipment specified or shown and provide materials and labor required to connect the equipment.

D. Provide painting of electrical items as required by the Architect.

E. Provide painting in accordance with Division 9 of these specifications.

2.02 INSTALLATION REQUIREMENTS

A. Electrical plans are diagrammatic. Verify exact equipment locations for equipment. Coordinate with architectural drawings and installations to avoid conflicts. Equipment size and location of equipment is shown wherever possible. Make use of the data in the contract documents and verify this information against actual field conditions. As applicable to the work to be performed, the materials and installation shall conform to the available space, avoid obstruction, preserve headroom, maintain required accessibility, and satisfy the requirements of the governing codes and the standards of good practice. Coordinate with other divisions' drawings and installation to avoid conflicts.

B. Work shall be installed in a neat, inconspicuous, professional manner. Conduit runs shall parallel structural lines where exposed. Conduit shall run parallel to structural lines whenever

possible and specifically when exposed. Whenever possible conduits shall be either concealed in the room ceiling, walls, floor, or exposed ceiling areas tight under the tip chord of the ceiling bar joist, or running parallel to the roof wide flange beams, mounted tight to the vertical webs. No conduit shall be run perpendicular to the ceiling roof beams under the bottom chords. No exposed conduit is allowed without prior approval of the Architect. Flexible conduit is allowed only with prior approval of the Architect or Engineer of record.

C. Existing raceways which are empty may be used whenever possible.

D. The site shall be left clean and free of dirt arid debris. Panels, fixtures, outlets and equipment shall be left clean and free of foreign materials and dirt.

2.03 COORDINATION

A. Work under this division shall be conducted in a manner to cooperate with other trades and contracts involved with this project.

B. Consult drawings and specifications for this project and verify the requirements of equipment by other divisions, the Owner, or by other contracts prior to installation and connection.

C. Consult drawings of other divisions to avoid conflicts with cabinets, counters, equipment, structural members, etc. Resolve any conflicts with the Architect prior to rough-in.

PART 3 EXECUTION

3.01 GUARANTEE

A. Guarantee the electrical installation against defects in materials, equipment, and workmanship for one year after the date of acceptance of the work. Defects shall be properly remedied to the satisfaction of the Architect at no cost to the Owner.

END OF SECTION 26 00 01

SECTION 26 05 01
ELECTRICAL DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical demolition.

1.02 RELATED REQUIREMENTS

A. Section 01 70 00 - Execution and Closeout Requirements: Additional requirements for alterations work.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify field measurements and circuiting arrangements are as indicated.

B. Verify that abandoned wiring and equipment serve only abandoned facilities.

C. Information given on drawings in reference to existing features has been obtained from recent field observation and existing record documents, but cannot be guaranteed to be completely accurate in all respects. Verify all information before proceeding with any work.

D. Report discrepancies to Architect before disturbing existing installation.

E. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

A. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

B. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Minimize outage duration.
   1. Notify Owner before partially or completely disabling system.
   2. Notify local fire service.
   3. Make notifications at least 7 hours in advance.
   4. Make temporary connections to maintain service in areas adjacent to work area.

C. The Contractor shall carefully review the project construction phase plan and schedule and coordinate all work within those limitations.

D. The Contractor shall visit the site and become thoroughly familiar with the existing conditions prior to bidding.

E. All existing electrical systems, including, but not limited to, light fixtures, conduit, and wiring which are not to be demolished shall be protected from damage during the demolition and construction phases. Systems shall be operational in a manner consistent with the phasing plan and construction schedule.

3.03 DEMOLITION AND EXTENSION OF EXISTING FIRE ALARM WORK

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

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

E. Disconnect and remove abandoned fire alarm system control panel(s) and associated equipment.

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

G. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

H. All labor and materials required to change the existing fire alarm installation as indicated shall be provided.

I. If abandoned or demolished outlets serve as feed through boxes for other existing electrical equipment, which is being retained, new conduit and wire shall be provided to bypass the abandoned outlets at no additional cost to the Owner. If existing conduits pass through partitions, which are being removed or remodeled, new conduit and wire shall be provided to route around the wall and maintain service to the existing load at no additional cost to the Owner.

J. The Contractor shall have the option to reuse existing raceways as far as practical, provided it remains code accessible, concealed by new work, and not in conflict with demolition.

K. All abandoned Class 2, Class 3, and PLTC cables are to be removed in accordance with Article 725 of NEC.

3.04 CLEANING AND REPAIR

A. See Section 01 74 19 - Construction Waste Management and Disposal for additional requirements.

B. Clean and repair existing materials and equipment that remain or that are to be reused.

C. Owner shall have first right of salvage of any and all fire alarmmaterials and equipment intended for demolition. Items not salvaged by the Owner shall become the property of the Contractor and shall be removed from the site.

END OF SECTION 26 05 01

SECTION 26 05 05
ELECTRICAL DESIGN-BUILD REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Design requirements for design/build electrical and low voltage systems specified in Divisions 26 and 28.

B. Design build requirements for installation and connection of equipment specified in other divisions of specification.

1.02 RELATED SECTIONS

A. Section 00 21 13 - Instructions to Bidders.

B. Section 01 42 19 - Reference Standards.

1.03 REFERENCES

A. NECA 1 - Standard for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2015.

B. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association; 2017.

C. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

D. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. IESNA - Illuminating Engineering Society of North America; 2000(R2005).

1.04 SUBMITTALS

A. Design Drawings and Product Submittals:
   1. Submit four (4) sets in accordance with Section 01 30 00 - Administrative Requirements on proposed materials and equipment. In addition, provide design drawings as outlined in Design Approach and Requirements below.
   2. Verify that submitted equipment can be delivered and installed within the time constraints of the construction period.
   3. Include conduit sleeving, wire run, and connection diagram for signal and low voltage systems.
   4. Call to the attention of the Architect any deviations, discrepancies or conflicts between the design drawings, specifications and contract documents when data is submitted.
   5. Design drawing submittals processed by the Architect are not change orders. The submittal process is a means to determine quality control and to demonstrate to the Architect that the Contractor understands the design concept.
   6. These drawings will be reviewed by the Owners electrical engineer for conformance to specifications.

B. Samples: Submit samples as requested by the Architect.

1.05 PROJECT RECORD DOCUMENTS

A. Provide record project documents in accordance with Section 01 70 00 of these specifications.

B. Maintain one "work" set on project site. Work set is subject to inspection by the Architect.

C. Show variation from the contract documents and exact routing of service conduits, feeders and location of conduit stubbed out for future use.

1.06 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Work and materials to conform to applicable local and state codes, and federal, state and other applicable laws and regulations.

C. Provide equipment and materials labeled or listed by the Underwriters Laboratory, Inc. (U.L.) or other accepted qualified testing laboratories.

D. Whenever the requirements of the specifications or drawings exceed those of the applicable code or standard, the requirements of the specifications or drawings to govern.

PART 2 PRODUCTS

2.01 PROJECT REQUIREMENTS

A. The project includes:
1. Design, furnishing, and installation of new code compliant fire alarm system to completely replace the existing system.
2. Provide branch circuit wiring for connection to new equipment as necessary..
3. Grounding.
4. Provide necessary drawings, calculations, and backup materials required to obtain permits as described herein.

2.02 DESIGN APPROACH AND REQUIREMENTS

A. Use this specification and the record drawings as a guide for workmanship and materials for construction. Utilize the design/build concept throughout the project.

B. Visit the site of proposed construction prior to submitting proposal. Verify and inspect the existing site to determine conditions that affect this work.

C. The bidders to ascertain the requirements of the fire alarm system replacement including power, and be apprised of the applicable code, rules, and regulations as enforced by authorities having jurisdiction prior to bid.

D. The fire alarm system to be designed per minimum requirements of the Authority Having Jurisdiction.

E. Provide fire alarm and power wiring for civil related equipment, including but not limited to, double check valve vault(s).

F. Provide conduit sleeving across corridors with hard lid ceilings for all low voltage systems.

G. Provide rough-in and 120-volt power connections for fire alarm system. Existing power may be reused if feasible.

2.03 CONSTRUCTION DRAWINGS

A. Provide complete 1/8-inch scale drawings showing fire alarm equipment, devices and connections with legend of symbols. Drawings shall include circuiting.

B. Prepare drawings using AutoCAD 2021 or later version.

2.04 MANUFACTURERS

A. Like items to be from one manufacturer.

B. Material to be new and bear manufacturer's name, model number, electrical characteristics, UL label and other standard manufacturer identification.

C. Indicated brand names and catalog numbers are used to establish standards of performance and quality. The description of materials listed in this division and on the drawings govern in the event that catalog numbers do not correspond to the described materials.

2.05 ACCESSORIES

A. Include special features, finishes, description, or requirements indicated in the contract documents for particular items or equipment, but not included by or in the item's listed catalog number.

B. Provide and install as part of the contract work incidentals, not specifically mentioned herein or noted on the drawings, but required to complete the system or systems, in a safe and satisfactory working condition, provided and installed as part of the contract work.

PART 3 EXECUTION

3.01 VERIFICATION

A. Visit the construction site prior to bidding to determine the conditions that affect the work. Failure to visit the site does not relieve responsibility of performing work to provide a complete and operable facility.

B. Include costs to complete the work described in the specifications based on the actual existing conditions.

3.02 CLARIFICATION

A. Call to the attention of the Architect any conflicts or discrepancies in the drawings or specifications prior to bid date. These items will be clarified by the Architect in Addendum form.

B. Verify the physical dimensions of electrical equipment supplied to the project to insure that adequate mounting space is available. Notify the Architect of any conflicts prior to rough-in.

3.03 INSTALLATION

A. Provide raceways and conduits for electrical and fire alarm system wiring unless otherwise noted. Open wiring is permitted for low voltage systems as permitted by local codes, raceways are required in walls and other inaccessible areas. Low voltage wiring installed in return air plenum spaces to utilize plenum rated cable.

B. Raceways and wiring to be concealed unless otherwise noted.

C. Fire alarm equipment and devices to be installed level and plumb and parallel with structural building lines. Equipment to be suitable for the environmental conditions in which they will operate.

END OF SECTION 26 05 05

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Single conductor building wire.

B. Metal-clad cable.

C. Wiring connectors.

D. Oxide inhibiting compound.

E. Wire pulling lubricant.

F. Cable ties.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 26 05 01 - Electrical Demolition: Disconnection, removal, and/or extension of existing electrical conductors and cables.

C. Section 26 05 26 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.

D. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

E. Section 28 46 00 - Fire Detection and Alarm: Fire alarm system conductors and cables.

1.03 REFERENCE STANDARDS

A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013 (Reapproved 2018).

B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2023.

C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010, with Editorial Revision (2020).

D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2020).

E. FS A-A-59544 - Cable and Wire, Electrical (Power, Fixed Installation); 2008a (Validated 2019).

F. NEC 210.4(B) - Multiwire Branch Circuits - Disconnection Means; National Electrical Code; 2008.

G. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

H. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable; 2018.

I. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2021.

J. NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment And Systems; 2025.

K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.

M. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.

N. UL 267 - Outline of Investigation for Wire-Pulling Compounds; Current Edition, Including All Revisions.

O. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.

P. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.

Q. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.

R. UL 1569 - Metal-Clad Cables; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

C. Design Data: Indicate voltage drop and ampacity calculations for aluminum conductors substituted for copper conductors. Include proposed modifications to raceways, boxes, wiring gutters, enclosures, etc. to accommodate substituted conductors.

D. Field Quality Control Test Reports.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

F. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.

B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

C. Metal-clad cable is permitted only as follows:
   1. Where not otherwise restricted, may be used:
      a. For branch circuit wiring within a room or space when branch circuits originate from a conduit and wire system in that room or space.
      b. Where concealed in hollow stud walls, above accessible ceilings and non-accessible ceilings, and under raised floors for branch circuits up to 20 A.
   2. In addition to other applicable restrictions, may not be used:
      a. Where not approved for use by the authority having jurisdiction.
      b. Where exposed to view, except in dedicated electrical, communications, and mechanical rooms where not subject to damage.
      c. Where exposed to damage.
      d. In walls with insulation.
      e. For damp, wet, or corrosive locations, unless provided with a PVC jacket listed as suitable for those locations.
      f. For isolated ground circuits, unless provided with an additional isolated/insulated grounding conductor.
      g. For patient care areas of health care facilities requiring redundant grounding. Unless hospital grade rated and provided with a redundant ground path.

2.02 CONDUCTOR AND CABLE MANUFACTURERS

A. Cerro Wire LLC: www.cerrowire.com.

B. Encore Wire Corporation: www.encorewire.com.

C. American Insulated Wire: www.leviton.com.

D. Southwire Company: www.southwire.com.

E. General Cable: www.generalcable.com.

F. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products that comply with requirements of NFPA 70.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Provide new conductors and cables manufactured not more than one year prior to installation.

D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.

E. Comply with NEMA WC 70.

F. Comply with FS A-A-59544 where applicable.

G. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.

H. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.

I. Conductors for Grounding and Bonding: Also comply with Section 26 05 26.

J. Conductors and Cables Installed in Cable Tray: Listed and labeled as suitable for cable tray use.

K. Conductors and Cables Installed Where Exposed to Direct Rays of Sun: Listed and labeled as sunlight resistant.

L. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum rated, listed and labeled as suitable for use in return air plenums.

M. Conductor Material:

1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
3. Tinned Copper Conductors: Comply with ASTM B33.

N. Minimum Conductor Size:
1. Branch Circuits: 12 AWG.
a. Exceptions:
1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
2. Control Circuits: 14 AWG.

O. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

P. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
3. Color Code:
a. 480Y/277 V, 3 Phase, 4 Wire System:
1) Phase A: Brown.
2) Phase B: Orange.
3) Phase C: Yellow.
4) Neutral/Grounded: Gray.
b. 208Y/120 V, 3 Phase, 4 Wire System:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral/Grounded: White.
c. Equipment Ground, All Systems: Green.
d. Isolated Ground, All Systems: Green with yellow stripe.
e. For control circuits, comply with manufacturer's recommended color code.

2.04 SINGLE CONDUCTOR BUILDING WIRE

A. Manufacturers:
1. Copper Building Wire:
a. Cerro Wire LLC: www.cerrowire.com/#sle.
b. Encore Wire Corporation: www.encorewire.com/#sle.
c. Southwire Company: www.southwire.com/#sle.
d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Description: Single conductor insulated wire.

C. Conductor Stranding:
1. Feeders and Branch Circuits:
a. Size 10 AWG and Smaller: Solid or stranded.
b. Size 8 AWG and Larger: Stranded.
2. Control Circuits: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation:

1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
   a. Size 4 AWG and Larger: Type XHHW-2, THHN/THWN, or THHN/THWN-2.
   b. Installed Underground: Type XHHW-2, THHN/THWN, or THHN/THWN-2.

2.05 METAL-CLAD CABLE

A. Manufacturers:
   1. AFC Cable Systems Inc: www.afcweb.com/#sle.
   2. Encore Wire Corporation: www.encorewire.com/#sle.
   3. Southwire Company: www.southwire.com/#sle.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.

C. Conductor Stranding:
   1. Size 10 AWG and Smaller: Solid or stranded.
   2. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation: Type THHN/THWN or THHN/THWN-2.

F. Provide dedicated neutral conductor for each phase conductor where indicated or required.

G. Grounding: Full-size integral equipment grounding conductor.

H. Armor: Aluminum or steel, interlocked tape.

I. Provide PVC jacket applied over cable armor where indicated or required for environment of installed location.

2.06 WIRING CONNECTORS

A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

B. Connectors for Grounding and Bonding: Comply with Section 26 05 26.

C. Wiring Connectors for Splices and Taps:
   1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors or compression connectors.
   2. Copper Conductors Size 6 AWG and Larger: Use compression connectors.

D. Wiring Connectors for Terminations:
   1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
   2. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
   3. Provide motor pigtail connectors for connecting motor leads in order to facilitate disconnection.
   4. Copper Conductors Size 8 AWG and Larger: Use compression connectors for all connections.
   5. Aluminum Conductors: Use compression connectors for all connections.
   6. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.
   7. Conductors for Control Circuits: Use crimped terminals where connectors are required.

E. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.

F. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.

G. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
   1. Manufacturers:
      a. 3M: www.3m.com/#sle.
      b. Ideal Industries, Inc: www.idealindustries.com/#sle.
      c. NSI Industries LLC: www.nsiindustries.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

H. Mechanical Connectors: Provide bolted type or set-screw type.
   1. Manufacturers:
      a. Burndy LLC: www.burndy.com/#sle.
      b. Ilsco: www.ilsco.com/#sle.
      c. Thomas & Betts Corporation: www.tnb.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

I. Compression Connectors: Provide circumferential type or hex type crimp configuration.
   1. Manufacturers:
      a. Burndy LLC: www.burndy.com/#sle.
      b. Ilsco: www.ilsco.com/#sle.
      c. Thomas & Betts Corporation: www.tnb.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

J. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.
   1. Manufacturers:
      a. Burndy LLC: www.burndy.com/#sle.
      b. Ilsco: www.ilsco.com/#sle.
      c. Thomas & Betts Corporation: www.tnb.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

2.07 ACCESSORIES

A. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
   1. Manufacturers:
      a. Burndy LLC: www.burndy.com/#sle.
      b. Ideal Industries, Inc: www.idealindustries.com/#sle.
      c. Ilsco: www.ilsco.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Wire Pulling Lubricant:
   1. Manufacturers:
      a. 3M: www.3m.com/#sle.
      b. American Polywater Corporation: www.polywater.com/#sle.
      c. Ideal Industries, Inc: www.idealindustries.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.
   2. Listed and labeled as complying with UL 267.
   3. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
   4. Suitable for use at installation temperature.

C. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that interior of building has been protected from weather.

B. Verify that work likely to damage wire and cable has been completed.

C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

D. Verify that field measurements are as indicated.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

A. Circuiting Requirements:
   1. Unless dimensioned, circuit routing indicated is diagrammatic.
   2. When circuit destination is indicated without specific routing, determine exact routing required.
   3. Arrange circuiting to minimize splices.
   4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
   5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
   6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
   7. Circuiting Adjustments: Unless otherwise indicated, when branch circuits that originate in the same panelboard are shown as separate, combining them together in a single raceway is permitted, under the following conditions:
      a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
      b. Increase size of conductors as required to account for ampacity derating.
      c. Size raceways, boxes, etc. to accommodate conductors.
   8. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.

B. Install products in accordance with manufacturer's instructions.

C. Perform work in accordance with NECA 1 (general workmanship).

D. Install metal-clad cable (Type MC) in accordance with NECA 120.

E. Installation in Raceway:
   1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
   2. Pull all conductors and cables together into raceway at same time.
   3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
   4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.

F. Exposed Cable Installation (only where specifically permitted):
   1. Route cables parallel or perpendicular to building structural members and surfaces.
   2. Protect cables from physical damage.

G. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.

H. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
2. Installation in Vertical Raceways: Provide supports where vertical rise exceeds permissible limits.

I. Terminate cables using suitable fittings.
   1. Metal-Clad Cable (Type MC):
      a. Use listed fittings.
      b. Use steel or malleable iron. Do not use die-cast zinc.
      c. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
      d. Do not use direct-bearing set-screw type fittings for cables with aluminum armor.

J. Install conductors with a minimum of 6 inches of slack at each outlet.

K. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.

L. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.

M. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

N. Make wiring connections using specified wiring connectors.
   1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies.
   2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
   3. Do not remove conductor strands to facilitate insertion into connector.
   4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
   5. Connections for Aluminum Conductors: Fill connectors with oxide inhibiting compound where not pre-filled by manufacturer.
   6. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
   7. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

O. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
   1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
      a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
      b. For taped connections likely to require re-entering, including motor leads, first apply varnished cambric electrical tape, followed by adequate amount of rubber splicing electrical tape, followed by outer covering of vinyl insulating electrical tape.
   2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
      a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
      b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
   3. Wet Locations: Use heat shrink tubing.

P. Insulate ends of spare conductors using vinyl insulating electrical tape.

Q. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.

R. Identify conductors and cables in accordance with Section 26 05 53.

S. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

T. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

U. Install wire and cable securely, in a neat and workmanlike manner, as specified in NECA 1. Contractor shall comply with NEC 210.4(B) by providing a separate neutral conductor for each circuit in a multi-wire branch circuit.

V. Support cables above accessible ceiling, using spring metal clips or plastic cable ties to support cables from structure or ceiling suspension system. Do not rest cable on ceiling panels. Do not attach cables to slack wires. Plastic cable ties shall be plenum rated in plenum spaces.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is only required for services and feeders.

1. Disconnect surge protective devices (SPDs) prior to performing any high potential testing. Replace SPDs damaged by performing high potential testing with SPDs connected.

D. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION 26 05 19

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Grounding and bonding requirements.

B. Conductors for grounding and bonding.

C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
   1. Includes oxide inhibiting compound.

B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

A. BICSI TDMM - Telecommunications Distribution Methods Manual, 14th Edition; 2020.

B. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System; 2012.

C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittals procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.

C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity

are verified, and where acceptable to the authority having jurisdiction.

B. Do not use products for applications other than as permitted by NFPA 70 and product listing.

C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

E. Grounding System Resistance:
   1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Architect. Precipitation within the previous 48 hours does not constitute normally dry conditions.
   2. Grounding Electrode System: Existing to remain.
   3. Between Grounding Electrode System and Major Electrical Equipment Frames, System Neutral, and Derived Neutral Points: Not greater than 0.5 ohms, when tested using "point-to-point" methods.

F. Bonding and Equipment Grounding:
   1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
   2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
   3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
   4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
   5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
   6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
   1. Provide products listed, classified, and labeled as suitable for the purpose intended.
   2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
   1. Use insulated copper conductors unless otherwise indicated.
      a. Exceptions:
         1) Use bare copper conductors where installed underground in direct contact with earth.
         2) Use bare copper conductors where directly encased in concrete (not in raceway).

C. Connectors for Grounding and Bonding:
   1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
   2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
      a. Exceptions:
         1) Use mechanical connectors for connections to electrodes at ground access wells.

3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
    a. Exceptions:
        1) Use exothermic welded connections for connections to metal building frame.
4. Manufacturers - Mechanical and Compression Connectors:
    a. Burndy LLC: www.burndy.com/#sle.
    b. Harger Lightning & Grounding: www.harger.com/#sle.
    c. Thomas & Betts Corporation: www.tnb.com/#sle.
    d. Substitutions: See Section 01 60 00 - Product Requirements.
5. Manufacturers - Exothermic Welded Connections:
    a. Burndy LLC: www.burndy.com/#sle.
    b. Cadweld, a brand of Erico International Corporation: www.erico.com/#sle.
    c. thermOweld, subsidiary of Continental Industries; division of Burndy LLC: www.thermoweld.com/#sle.
    d. Substitutions: See Section 01 60 00 - Product Requirements.

D. Oxide Inhibiting Compound: Comply with Section 26 05 19.

PART 3 EXECUTION

3.01 PREPARATION

A. Remove paint, rust, mill oils, and surface contaminants at connection points.

3.02 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.

B. Verify that field measurements are as indicated.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.03 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Make grounding and bonding connections using specified connectors.
1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.

D. Identify grounding and bonding system components in accordance with Section 26 05 53.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Perform inspection, testing, and adjusting in accordance with Section 01 40 00.

C. Inspect and test in accordance with NETA ATS except Section 4.

D. Perform inspections and tests listed in NETA ATS, Section 7.13.

E. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

F. Submit detailed reports indicating inspection and testing results and corrective actions taken.

END OF SECTION 26 05 26

SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete equipment pads.

B. Section 05 50 00 - Metal Fabrications: Materials and requirements for fabricated metal supports.

C. Section 26 05 34 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.

D. Section 26 05 37 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

1.03 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2023.

D. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2018, with Editorial Revision (2020).

E. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry; 2018, with Editorial Revision (2020).

F. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2017, with Editorial Revision (2020).

G. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2023.

H. MFMA-4 - Metal Framing Standards Publication; 2004.

I. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

J. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

K. UL 5B - Strut-Type Channel Raceways and Fittings; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
   2. Coordinate work with other trades to provide additional framing and materials required for installation.
   3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
   4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
   5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not install products on or provide attachment to concrete surfaces until concrete has cured; see Section 03 30 00.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for metal channel/strut framing systems, nonpenetrating rooftop supports, and post-installed concrete/masonry anchors.

C. Shop Drawings: Include details for fabricated hangers and supports where materials or methods other than those indicated are proposed for substitution.

D. Evaluation Reports: For products specified as requiring evaluation and recognition by ICC Evaluation Service, LLC (ICC-ES), provide current ICC-ES evaluation reports upon request.

E. Product Data: Provide manufacturer's catalog data for fastening systems.

F. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.06 QUALITY ASSURANCE

A. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

B. Maintain at project site one copy of each referenced document that prescribes execution requirements.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Comply with the following. Where requirements differ, comply with most stringent.
      a. NFPA 70.
      b. Applicable building code.
      c. Requirements of authorities having jurisdiction.
   2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
   3. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or Interek (ETL) as suitable for purpose intended, where applicable.
   4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported with minimum safety factor of 5. Include consideration for vibration, equipment operation, and shock loads where applicable.
   5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
   6. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
   7. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
      a. Indoor Dry Locations: Use zinc-plated steel unless otherwise indicated.
      b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel or stainless steel unless otherwise indicated.
      c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
      d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Materials for Metal Fabricated Supports: See Section 05 50 00.

C. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
   1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
   2. Conduit Clamps: Bolted type unless otherwise indicated.
   3. Manufacturers:
      a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
      b. Erico International Corporation: www.erico.com/#sle.
      c. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
      d. Thomas & Betts Corporation: www.tnb.com/#sle.
      e. Substitutions: See Section 01 60 00 - Product Requirements.

D. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
   1. Manufacturers:
      a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
      b. Erico International Corporation: www.erico.com/#sle.
      c. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
      d. Thomas & Betts Corporation: www.tnb.com/#sle.
      e. Substitutions: See Section 01 60 00 - Product Requirements.

E. Metal Channel/Strut Framing Systems:
   1. Manufacturers:
      a. Cooper Crouse-Hinds, a division of Eaton Corporation[<>]: www.cooperindustries.com/#sle.
      b. Thomas & Betts Corporation[<>]: www.tnb.com/#sle.
      c. Unistrut, Atkore International Inc; Unistrut: www.unistrut.us/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.
   2. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
   3. Comply with MFMA-4.
   4. Channel/Strut Used as Raceway, Where Indicated: Listed and labeled as complying with UL 5B.
   5. Channel Material:
      a. Indoor Dry Locations: Use zinc-plated steel or galvanized steel.
      b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel or stainless steel.
   6. Minimum Channel Thickness: Steel sheet, 12 gauge, 0.1046 inch.
   7. Minimum Channel Dimensions: 1-5/8 inch wide by 13/16 inch high.

F. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
   1. Minimum Size, Unless Otherwise Indicated or Required:
      a. Equipment Supports: 1/2-inch diameter.
      b. Single Conduit up to 1-inch (27 mm) Trade Size: 1/4-inch diameter.
      c. Single Conduit Larger than 1-inch (27 mm) Trade Size: 3/8-inch diameter.
      d. Trapeze Support for Multiple Conduits: 3/8-inch diameter.
      e. Outlet Boxes: 1/4-inch diameter.

G. Nonpenetrating Rooftop Supports for Low-Slope Roofs:
   1. Manufacturers:
      a. Cooper B-Line, a division of Cooper Industries: www.cooperindustries.com.
      b. Atkore International Inc; Unistrut: www.unistrut.us/#sle.
      c. PHP Systems/Design: www.phpsd.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.
   2. Description: Steel pedestals with thermoplastic or rubber bases that rest on top of roofing membrane, not requiring attachment to roof structure and not penetrating roofing

assembly, with support fixtures as specified.

3. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
4. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
5. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports.
6. Mounting Height: Provide minimum clearance of 6 inches under supported component to top of roofing.

H. Anchors and Fasteners:

1. Manufacturers - Mechanical Anchors:
   a. Hilti, Inc: www.hilti.com/#sle.
   b. Power Fasteners, Inc: www.powers.com.
   c. ITW Red Head, a division of Illinois Tool Works, Inc: www.itwredhead.com/#sle.
   d. Simpson Strong-Tie Company Inc: www.strongtie.com/#sle.
   e. Substitutions: See Section 01 60 00 - Product Requirements.
2. Manufacturers - Powder-Actuated Fastening Systems:
   a. Hilti, Inc: www.hilti.com/#sle.
   b. Power Fasteners, Inc: www.powers.com.
   c. ITW Ramset, a division of Illinois Tool Works, Inc: www.ramset.com/#sle.
   d. Simpson Strong-Tie Company Inc: www.strongtie.com/#sle.
   e. Substitutions: See Section 01 60 00 - Product Requirements.
3. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
4. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
5. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
6. Hollow Masonry: Use toggle bolts.
7. Hollow Stud Walls: Use toggle bolts.
8. Steel: Use beam clamps, machine bolts, or welded threaded studs.
9. Sheet Metal: Use sheet metal screws.
10. Wood: Use wood screws.
11. Plastic and lead anchors are not permitted.
12. Powder-actuated fasteners are permitted only as follows:
    a. Where approved by Architect.
    b. Use only threaded studs; do not use pins.
13. Hammer-driven anchors and fasteners are permitted only as follows:
    a. Nails are permitted for attachment of nonmetallic boxes to wood frame construction (when specified).
    b. Staples are permitted for attachment of nonmetallic-sheathed cable to wood frame construction (when specified).
14. Preset Concrete Inserts: Continuous metal channel/strut and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
    a. Manufacturer: Same as manufacturer of metal channel/strut framing system.
    b. Comply with MFMA-4.
    c. Channel Material: Use galvanized steel.
    d. Minimum Channel Thickness: Steel sheet, 12 gauge, 0.1046 inch minimum base metal thickness.
15. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.

2.02 MATERIALS

A. Hangers, Supports, Anchors, and Fastners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.

B. Supports: Fabricated of structural steel or framed steel memebers; galvanized.

C. Anchors and Fasteners:
   1. Obtain permission from Architect before using powder-actuated anchors.
   2. Concrete Structural Elements: Use precast inserts, expansion anchors, or preset inserts.
   3. Steel Structural Elements: Use beam clamps, steel spring clips, steel ramset fasteners, or welded fasteners.
   4. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
   5. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
   6. Solid Masonry Walls: Use expansion anchors or preset inserts.
   7. Sheet Metal: Use sheet metal screws.
   8. Wood Elements: Use wood screws.

D. Fastener Types:
   1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
   2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
   3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
   4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.

E. Concrete Adhesive Type Anchors: Complying with ICC-ES AC308.
   1. Other Types: As required.
   2. Manufacturers:
      a. Powers Fasteners, Inc.: www.powers.com.
      b. Substitutions: See Section 01 60 00 - Product Requirements.
      c. Substitutions:
   3. Formed Steel Channel:
      a. Manufacturer: Kindorf, Unistrut, B-Line, or approved.
      b. Substitutions: See Section 01 60 00 - Product Requirements.
   4. Steel Spring Clips:
      a. Manufacturer: Caddy, Raco, T&B, B-Line.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
   1. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
   2. Obtain permission from Architect before drilling or cutting structural members.

C. Rigidly weld support members or use hexagon-head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

D. Install surface-mounted cabinets and panelboards with minimum of four anchors.

E. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1 inch off wall.

F. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

G. Perform work in accordance with NECA 1 (general workmanship).

H. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.

I. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

J. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

K. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

L. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

M. Field Welding, Where Approved by Architect: See Section 05 50 00.

N. Equipment Support and Attachment:
   1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
   2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
   3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
   4. Unless otherwise indicated, mount floor-mounted equipment on properly sized concrete pad 3 inches in height; see Section 03 30 00.
   5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

O. Conduit Support and Attachment: See Section 26 05 34 for additional requirements.

P. Box Support and Attachment: See Section 26 05 37 for additional requirements.

Q. Interior Luminaire Support and Attachment: See Section 26 51 00 for additional requirements.

R. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.

S. Secure fasteners in accordance with manufacturer's recommended torque settings.

T. Remove temporary supports.

U. Identify independent electrical component support wires above accessible ceilings, where permitted, with color distinguishable from ceiling support wires in accordance with NFPA 70.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Inspect support and attachment components for damage and defects.

C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION 26 05 29

SECTION 26 05 34
CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Galvanized steel rigid metal conduit (RMC).

B. Aluminum rigid metal conduit (RMC).

C. Galvanized steel intermediate metal conduit (IMC).

D. PVC-coated galvanized steel rigid metal conduit (RMC).

E. Flexible metal conduit (FMC).

F. Liquidtight flexible metal conduit (LFMC).

G. Galvanized steel electrical metallic tubing (EMT).

H. Rigid polyvinyl chloride (PVC) conduit.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete encasement of conduits.

B. Section 07 84 00 - Firestopping.

C. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Cable assemblies consisting of conductors protected by integral metal armor.

D. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
   1. Includes additional requirements for fittings for grounding and bonding.

E. Section 26 05 29 - Hangers and Supports for Electrical Systems.

F. Section 26 05 37 - Boxes for Electrical Systems.

G. Section 26 05 35 - Surface Raceways for Electrical Systems.

H. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

I. Section 27 05 28 - Pathways for low Voltage Systems Cabling: Additional requirements for communications systems conduits.

J. Section 31 23 16 - Excavation.

K. Section 31 23 16.13 - Trenching: Excavating, bedding, and backfilling.

L. Section 31 23 23 - Fill: Bedding and backfilling.

1.03 REFERENCE STANDARDS

A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2020.

B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.

C. ANSI C80.5 - American National Standard for Electrical Rigid Metal Conduit -- Aluminum (ERMC-A); 2020.

D. ANSI C80.6 - American National Standard for Electrical Intermediate Metal Conduit; 2018.

E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

F. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2020.

G. NECA 102 - Standard for Installing Aluminum Rigid Metal Conduit; 2004.

H. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2017.

I. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.

J. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Metal Conduit and Intermediate Metal Conduit; 2018.

K. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2020.

L. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.

M. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

N. UL 1 - Flexible Metal Conduit; Current Edition, Including All Revisions.

O. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.

P. UL 6A - Electrical Rigid Metal Conduit-Aluminum, Red Brass, and Stainless Steel; Current Edition, Including All Revisions.

Q. UL 360 - Liquid-Tight Flexible Metal Conduit; Current Edition, Including All Revisions.

R. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

S. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.

T. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.

U. UL 797 - Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.

V. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations; Current Edition, Including All Revisions.

W. UL 1242 - Electrical Intermediate Metal Conduit-Steel; Current Edition, Including All Revisions.

X. UL 2419 - Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts installed under other sections or by other.
3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed in other sections or by others.
4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.
2. For projects with Post Tension (PT) slab construction, submit dimensioned plan showing all conduit sleeves & block out locations to Architect for review.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittals procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

C. Shop Drawings:
1. Indicate proposed arrangement for conduits to be installed within structural concrete slabs, where permitted.
2. Include proposed locations of roof penetrations and proposed methods for sealing.

D. Project Record Documents: Record actual routing for conduits installed underground, conduits embedded within concrete slabs, and conduits 2-inch (53 mm) trade size and larger.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Documents at Project Site: Maintain at project site one copy of manufacturer's instructions, shop drawings, and reference standard documents containing execution requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.

B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.

C. Underground:
1. Under Slab on Grade: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit (RMC), or rigid PVC conduit.
2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.
3. Where rigid polyvinyl chloride (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC) or galvanized steel intermediate metal conduit (IMC) where emerging from underground.
4. Where rigid polyvinyl (PVC) conduit larger than 2-inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit (RMC) elbows, galvanized steel intermediate metal conduit (IMC) elbows, or fiberglass for bends in runs over 100 feet. For shorter runs, factory formed Schedule 40 PVC may be used.
5. 1.5 Inches Diameter and Smaller: For total conduit lengths between pull points over 100 ft., use rigid steel elbows. For shorter overall lengths, rigid steel or Schedule 40 PVC may be used.
6. Where galvanized steel rigid metal conduit (RMC) or galvanized steel intermediate metal conduit (IMC) is installed in direct contact with earth where soil has resistivity of less than 2000 ohm-centimeters or is characterized as severely corrosive based on soils report or local experience, use corrosion protection tape, factory-applied corrosion protection coating, or field-applied corrosion protection compound acceptable to authorities having jurisdiction to provide supplementary corrosion protection.

D. Embedded Within Concrete:
1. Within Slab on Grade (within structural slabs only where approved by Structural Engineer): Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit (RMC), or rigid PVC conduit.
2. Within Slab Above Ground (within structural slabs only where approved by Structural Engineer): Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit (RMC), or rigid PVC conduit.

3. Within Concrete Walls Above Ground: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit (RMC), or rigid PVC conduit.
4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC) where emerging from concrete.
5. Where galvanized steel electrical metallic tubing (EMT) emerges from concrete into salt air, use corrosion protection tape acceptable to authorities having jurisdiction to provide supplementary corrosion protection for minimum of 4 inches on either side of where conduit emerges, or use PVC-coated galvanized steel rigid metal conduit.

E. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).

F. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).

G. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).

H. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit (RMC).

I. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).

J. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC) or galvanized steel intermediate metal conduit (IMC).
1. Locations subject to physical damage include, but are not limited to:
a. Where exposed below 8 feet, except within electrical and communication rooms or closets.
b. Where exposed below 20 feet in warehouse and manufacturing areas.

K. Exposed, Exterior: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or PVC-coated galvanized steel rigid metal conduit (RMC).

L. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit (RMC) or galvanized steel intermediate metal conduit (IMC).

M. Corrosive Locations Above Ground: Use aluminum rigid metal conduit (RMC) or PVC-coated galvanized steel rigid metal conduit (RMC).
1. Corrosive locations include, but are not limited to:
a. Cooling towers.
b. Swimming pools and associated equipment areas.

N. Hazardous/Classified Locations: Use galvanized steel rigid metal conduit (RMC) or galvanized steel intermediate metal conduit (IMC).

O. Flexible Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit (FMC).
1. Maximum Length: 6 feet.

P. Flexible Connections to Vibrating Equipment:
1. Dry Locations: Use flexible metal conduit (FMC).
2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit (LFMC).
3. Maximum Length: 6 feet unless otherwise indicated.
4. Vibrating equipment includes, but is not limited to:
a. Transformers.

Q. Fished in Existing Walls, Where Necessary: Use flexible metal conduit (FMC) or MC cable.

2.02 CONDUIT - GENERAL REQUIREMENTS

A. Comply with NFPA 70.

B. Electrical Service Conduits.

C. Communications Systems Conduits: Also comply with Section 27 10 00 or 27 13 43.

D. Fittings for Grounding and Bonding: See Section 26 05 26 for additional requirements.

E. Provide conduit, fittings, supports, and accessories required for complete raceway system.

F. Provide products listed, classified, and labeled as suitable for purpose intended.

G. Minimum Conduit Size, Unless Otherwise Indicated:
   1. Branch Circuits: 1/2-inch trade size.
   2. Branch Circuit Homeruns: 3/4-inch trade size.
   3. Control Circuits: 1/2-inch trade size.
   4. Flexible Connections to Luminaires: 1/2-inch trade size.
   5. Underground, Interior: 3/4-inch trade size.
   6. Underground, Exterior: 3/4-inch trade size.

H. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Manufacturers:
   1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
   2. Republic Conduit: www.republic-conduit.com.
   3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.

B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.

C. Fittings:
   1. Manufacturers:
      a. Bridgeport Fittings Inc: www.bptfittings.com/#sle.
      b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
      c. Thomas & Betts Corporation: www.tnb.com.
   2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
   3. Hazardous/Classified Locations: Use fittings listed and labeled as complying with UL 1203 for classification of installed location.
   4. Material: Use steel or malleable iron.
      a. Do not use die cast zinc fittings.
   5. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.04 ALUMINUM RIGID METAL CONDUIT (RMC)

A. Manufacturers:
   1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
   2. Nucor Tubular Products: www.nucortubular.com/#sle.
   3. Western Tube, a division of Zekelman Industries: www.westerntube.com/#sle.
   4. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.

B. Description: NFPA 70, Type RMC aluminum rigid metal conduit complying with ANSI C80.5 and listed and labeled as complying with UL 6A.

C. Fittings:
   1. Manufacturers:
      a. ABB; T&B: www.electrification.us.abb.com/#sle.
      b. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.us/#sle.

c. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
d. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.

2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6A
3. Material: Use aluminum.
4. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.05 GALVANIZED STEEL INTERMEDIATE METAL CONDUIT (IMC)

A. Manufacturers:
1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
2. Republic Conduit: www.republic-conduit.com.
3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.

B. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.

C. Fittings:
1. Manufacturers:
a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
c. Thomas & Betts Corporation: www.tnb.com.
2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 1242.
3. Hazardous/Classified Locations: Use fittings listed and labeled as complying with UL 1203 for classification of installed location.
4. Material: Use steel or malleable iron.
a. Do not use die cast zinc fittings.
5. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.06 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Manufacturers:
1. ABB; Ocal: www.electrification.us.abb.com/#sle.
2. Calbond, a division of Atkore International www.calbond.com/#sle
3. Robroy Industries: www.robroy.com/#sle.

B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.

C. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil, 0.040 inch.

D. PVC-Coated Boxes and Fittings:
1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
2. Nonhazardous Locations: Use boxes and fittings listed and labeled as complying with UL 514A, UL 514B, or UL 6.
3. Hazardous/Classified Locations: Use fittings listed and labeled as complying with UL 1203 for classification of installed location.
4. Material: Use steel or malleable iron.
5. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil, 0.040 inch.

E. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil, 0.015 inch.

2.07 FLEXIBLE METAL CONDUIT (FMC)

A. Manufacturers:
1. AFC Cable Systems, a division of Atkore International: www.afcweb.com/#sle.

2. Electri-Flex Company: www.electriflex.com/#sle.
3. International Metal Hose: www.metalhose.com/#sle.

B. Description: NFPA 70, Type FMC standard-wall steel or standard-wall aluminum flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems.

C. Fittings:
1. Manufacturers:
a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
c. Thomas & Betts Corporation: www.tnb.com.
2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel, malleable iron, or aluminum.
a. Do not use die cast zinc fittings.

2.08 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

A. Manufacturers:
1. AFC Cable Systems, a division of Atkore International: www.afcweb.com/#sle.
2. Electri-Flex Company: www.electriflex.com/#sle.
3. International Metal Hose: www.metalhose.com/#sle.

B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel or aluminum flexible metal conduit listed and labeled as complying with UL 360.

C. Fittings:
1. Manufacturers:
a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
c. Thomas & Betts Corporation: www.tnb.com.
2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel, malleable iron, or aluminum.
a. Do not use die cast zinc fittings.

2.09 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:
1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
2. Republic Conduit: www.republic-conduit.com.
3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.

B. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.

C. Fittings:
1. Manufacturers:
a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
c. Thomas & Betts Corporation: www.tnb.com.
2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel.
4. Connectors and Couplings: Use set-screw except when embedded in concrete. Use concrete right compression (gland) type in concrete.
a. Do not use indenter type connectors and couplings.

2.10 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Manufacturers:
   1. ABB; Carlon: www.carlon.com/#sle.
   2. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
   3. Cantex Inc: www.cantexinc.com/#sle.
   4. JM Eagle: www.jmeagle.com/#sle.

B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.

C. Fittings:
   1. Manufacturer: Same as manufacturer of conduit to be connected.
   2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

D. Elbows:
   1. Use only factory formed Schedule 40 elbows. Field bends are not acceptable.
   2. 1.5 Inches Diameter and Smaller: For total conduit lengths between pull points over 100 ft., use rigid steel elbows. For shorter overall lengths, rigid steel or Schedule 40 PVC may be used.
   3. 2 Inches Diameter and Larger: For total conduit lengths between pull points over 100 ft., use long sweep rigid steel or fiberglass elbows. For shorter overall lengths, rigid steel, fiberglass, or Schedule 40 PVC elbows may be used.

2.11 ACCESSORIES

A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil, 0.020 inch.

B. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.

C. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.

D. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf.

E. Sealing Compound for Hazardous/Classified Location Sealing Fittings: Listed for use with particular fittings to be installed.

F. Sealing Systems for Concrete Penetrations:
   1. Sleeves: Provide water stop ring or cement coating that bonds to concrete to prevent water infiltration.
   2. Rate for minimum of 40 psig; suitable for sealing around conduits to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive conduits.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install conduit in accordance with NECA 1.

C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.

D. Install aluminum rigid metal conduit (RMC) in accordance with NECA 102.

E. Install intermediate metal conduit (IMC) in accordance with NECA 101.

F. Install PVC-coated galvanized steel rigid metal conduit (RMC) using only tools approved by manufacturer.

G. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.

H. Conduit Routing:
   1. Unless dimensioned, conduit routing indicated is diagrammatic.
   2. When conduit destination is indicated without specific routing, determine exact routing required.
   3. Conceal conduits unless specifically indicated to be exposed.
   4. Conduits in the following areas may be exposed, unless otherwise indicated:
      a. Electrical rooms.
      b. Mechanical equipment rooms.
      c. Within joists in areas with no ceiling.
   5. Unless otherwise approved, do not route exposed conduits:
      a. Across floors.
      b. Across roofs.
      c. Across top of parapet walls.
      d. Across building exterior surfaces.
   6. Conduits installed underground or embedded in concrete may be routed in shortest possible manner unless otherwise indicated. Route other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
   7. Arrange conduit to maintain adequate headroom, clearances, and access.
   8. Arrange conduit to provide no more than equivalent of three 90-degree bends between pull points.
   9. Arrange conduit to provide no more than 150 feet between pull points.
   10. Route conduits above water and drain piping where possible.
   11. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
   12. Maintain minimum clearance of 12 inches between conduits and hot surfaces.
   13. Group parallel conduits in same area on common rack.

I. Conduit Support:
   1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 05 29.
   2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
   3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
   4. Use conduit strap to support single surface-mounted conduit.
      a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
   5. Use metal channel/strut with accessory conduit clamps to support multiple parallel surface-mounted conduits.
   6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
   7. Use trapeze hangers assembled from threaded rods and metal channel/strut with accessory conduit clamps to support multiple parallel suspended conduits.
   8. Use nonpenetrating rooftop supports to support conduits routed across rooftops, where approved.
   9. Use of spring steel conduit clips for support of conduits is not permitted.
   10. Use of wire for support of conduits is not permitted.
   11. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with most stringent requirements.

J. Connections and Terminations:
   1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
   2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
   3. Use suitable adapters where required to transition from one type of conduit to another.
   4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
   5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
   6. Where spare conduits stub up through concrete floors and are not terminated in box or enclosure, provide threaded couplings equipped with threaded plugs set flush with finished floor.
   7. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
   8. Secure joints and connections to provide mechanical strength and electrical continuity.

K. Penetrations:
   1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
   2. Make penetrations perpendicular to surfaces unless otherwise indicated.
   3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
   4. Conceal bends for conduit risers emerging above ground.
   5. Provide suitable sealing system where conduits penetrate exterior wall below grade.
   6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
   7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
   8. Provide metal escutcheon plates for conduit penetrations exposed to public view.
   9. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 84 00.

L. Underground Installation:
   1. Provide trenching and backfilling; see Section 31 23 16 and Section 31 23 23.
   2. Minimum Cover, Unless Otherwise Indicated or Required:
      a. Underground, Exterior: 24 inches.
      b. Under Slab on Grade: 12 inches to bottom of slab.
   3. Provide underground warning tape along entire conduit length for service entrance where not concrete-encased; see Section 26 05 53.

M. Embedment Within Structural Concrete Slabs (only where approved by Structural Engineer):
   1. Include proposed conduit arrangement with submittals.
   2. Maximum Conduit Size: 1-inch trade size unless otherwise approved.
   3. Minimum Conduit Spacing: Shall be as directed by Structural Engineer.
   4. Install conduits within middle one third of slab thickness.
   5. Secure conduits to prevent floating or movement during pouring of concrete.

N. Concrete Encasement: Where conduits not otherwise embedded within concrete are indicated to be concrete-encased, provide minimum concrete cover of 3 inches on all sides unless otherwise indicated; see Section 03 30 00.

O. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:

1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
3. Where conduits are subject to earth movement by settlement or frost.

P. Conduit Sealing:
   1. Use seal fitting or approved sealing compound to prevent entry of moisture and gases. This includes, but is not limited to:
      a. Where conduits enter building from outside.
      b. Where service conduits enter building from underground distribution system.
      c. Where conduits enter building from underground.
      d. Where conduits may transport moisture to contact live parts.
   2. Where conduits cross barriers between areas of potential substantial temperature differential, use seal fitting or approved sealing compound at accessible point near penetration to prevent condensation. This includes, but is not limited to:
      a. Where conduits pass from outdoors into conditioned interior spaces.
      b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
      c. Where conduits penetrate coolers or freezers.
   3. Where conduits cross boundaries of hazardous/classified locations, provide identified/listed sealing fittings located as indicated or in accordance with NFPA 70.

Q. Provide pull string in each empty conduit and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.

R. Do not cross conduits in slab.

S. Cut conduit square using saw or pipecutter; de-burr cut ends.

T. Bring conduit to shoulder of fittings; fasten securely.

U. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes minimum.

V. Use suitable caps to protect installed conduit against entrance of dirt and moisture.

W. All elbows installed in primary and secondary power conduit runs shall be minimum 36-inch radius.

X. Where conduit is shown stubbed into a telephone, computer or communication terminal area, conduit shall be stubbed up 6 inches below ceiling and terminated with insulating bushings.

Y. Where the contractor elects to utilize PVC in lieu of GRC, the contractor shall provide supplemental ground bus in terminating switch and panelboards, and green ground wire as per code rules.

Z. Conduit runs shall not exceed 100 feet without an accessible pull box installed in line.

AA. Communications system conduit run above the ceiling shall not be installed within 12 inches of a parallel run of current carrying conductors, transformers, feeder cables, or motors.

BB. Conduit connections between outlet boxes less than 24 inches apart on opposite sides of a wall shall be made with a loop of flexible conduit to limit sound transmission.

CC. Penetrations of Masonry and Concrete Constructions:
   1. Ensure that the sound control performance of structures be maintained in accordance with the drawings and specifications. All penetrations shall be installed in a manner that results in complete air tightness through structure. If a condition occurs where penetration of the structure by a conduit is not shown clearly on the drawings (or described in the specifications), the Contractor shall ask immediately for clarification of the method necessary to install the particular item.

DD. Penetrations of Drywall Constructions:

1. Ensure that the sound control performance of structures be maintained in accordance with the drawings and specifications. All penetrations shall be installed in a manner that results in complete air tightness through structure. If a condition occurs where penetration of the structure by a conduit is not shown clearly on the drawings (or described in the specifications), the Contractor shall ask immediately for clarification of the method necessary to install the particular item.

EE. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

FF. To attenuate objectionable EMI and RFI signals, the audio and video system raceway groups shall maintain a specified minimum distance separation whenever possible within the constraints of the building's architecture. System conduit groups that run parallel with each other shall adhere to the following table of minimum distance separation:

Audio/Video Sub-System	Microphone	Line	Speaker	Video
Microphone	Adjacent	6 inches	12 inches	12 inches
Line	6 inches	Adjacent	12 inches	6 inches
Speaker	12 inches	6 inches	Adjacent	6 inches
Video	12 inches	6 inches	6 inches	Adjacent

GG. Audio and video system conduit that runs parallel with AC power conduit shall be separated by at least 3 feet minimum.

HH. Audio and video system conduit that runs across or perpendicular to AC power conduit shall be separated by at least 1 foot minimum.

II. To attenuate objectionable EMI and RFI signals, the telecommunications system raceway and cable shall maintain a specified minimum distance separation whenever possible within the constraints of the building's architecture.

Condition	Minimum Separation Distance
Unshielded power lines or electrical equipment in proximity to open or nonmetal telecommunication pathways	24 inches
Unshielded power lines or electrical equipment in proximity to a grounded metal telecommunication conduit pathway	12 inches
Power lines enclosed in a grounded metal conduit (or equivalent shielding) in proximity to a grounded metal telecommunication conduit pathway	12 inches
Electrical motors, transformers, generators, frequency converters, and UPS systems	47 inches

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Where coating of PVC-coated galvanized steel rigid metal conduit (RMC) contains cuts or abrasions, repair in accordance with manufacturer's instructions.

C. Correct deficiencies and replace damaged or defective conduits.

3.04 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.05 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION 26 05 34

SECTION 26 05 35
SURFACE RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface raceway systems.

B. Wireways.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

B. Section 26 05 29 - Hangers and Supports for Electrical Systems.

C. Section 26 05 34 - Conduit for Electrical Systems.

D. Section 26 05 37 - Boxes for Electrical Systems.

E. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

F. Section 26 27 26 - Wiring Devices: Receptacles.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

D. UL 5 - Surface Metal Raceways and Fittings; Current Edition, Including All Revisions.

E. UL 870 - Wireways, Auxiliary Gutters, and Associated Fittings; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the placement of raceways with millwork, furniture, equipment, etc. installed under other sections or by others.
   2. Coordinate rough-in locations of outlet boxes provided under Section 26 05 37 and conduit provided under Section 26 05 34 as required for installation of raceways provided under this section.
   3. Verify minimum sizes of raceways with the actual conductors and components to be installed.
   4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not install raceways until final surface finishes and painting are complete.
   2. Do not begin installation of conductors and cables until installation of raceways is complete between outlet, junction and splicing points.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including dimensions, knockout sizes and locations, materials, fabrication details, finishes, service condition requirements, and accessories.
   1. Surface Raceway Systems: Include information on fill capacities for conductors and cables.

C. Shop Drawings:

1. Wireways: Provide dimensioned plan and elevation views including adjacent equipment with all required clearances indicated.

D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 RACEWAY REQUIREMENTS

A. Provide all components, fittings, supports, and accessories required for a complete raceway system.

B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc (UL) or Intertek (ETL) as suitable for the purpose intended.

C. Do not use raceways for applications other than as permitted by NFPA 70 and product listing.

2.02 SURFACE RACEWAY SYSTEMS

A. Manufacturers:
1. Hubbell Incorporated: www.hubbell.com/#sle.
2. MonoSystems, Inc: www.monosystems.com/#sle.
3. Wiremold, a brand of Legrand North America, Inc: www.legrand.us/#sle.
4. Paduit: www.panduit.com.

B. Surface Metal Raceways: Listed and labeled as complying with UL 5.
1. Type Metallic - Surface Raceway System:
   a. Raceway Type: Single, Two, or Three channel, painted steel.
   b. Size: As indicated on drawings.
   c. Color: To be selected by Architect.
   d. Accessory Device Boxes: Suitable for the devices to be installed; color to match raceway.

C. Applications:
1. Surface ways may only be used as indicated on the drawings or elsewhere in the specifications.

2.03 WIREWAYS

A. Manufacturers:
1. Cooper B-Line, a division of Cooper Industries: www.cooperindustries.com/#sle.
2. Hoffman, a brand of Pentair Technical Products: www.hoffmanonline.com/#sle.
3. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.
4. Siemens: www.usa.siemens.com.
5. GE: www.ge.com.

B. Description: Lay-in wireways and wiring troughs with removable covers; listed and labeled as complying with UL 870.

C. Wireway Type, Unless Otherwise Indicated:

1. Indoor Clean, Dry Locations: NEMA 250, Type 1, painted steel or Type 12, painted steel with screw cover, hinged cover, or secured with screws.
2. Outdoor Locations: NEMA 250, Type 3R, painted steel with screw cover, hinged cover, or secured with screws.

D. Finish for Painted Steel Wireways: Manufacturer's standard grey unless otherwise indicated.

E. Minimum Wireway Size: 4 by 4 inches unless otherwise indicated.

F. Where wireway size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.04 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Factory test each production unit for pre-wired surface raceway systems to verify proper wiring.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes and conduit terminations are installed in proper locations and are properly sized in accordance with NFPA 70 to accommodate raceways.

C. Verify that mounting surfaces are ready to receive raceways and that final surface finishes are complete, including painting.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install raceways plumb and level.

D. Arrange wireways and associated raceway connections to comply with NFPA 70, including but not limited to requirements for deflected conductors and wireways used as pullboxes. Increase size of wireway where necessary.

E. Secure and support raceways in accordance with Section 26 05 29 at intervals complying with NFPA 70 and manufacturer's requirements.

F. Close unused raceway openings.

G. Provide grounding and bonding in accordance with Section 26 05 26.

H. Identify raceways in accordance with Section 26 05 53.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect raceways for damage and defects.

C. Correct wiring deficiencies and replace damaged or defective raceways.

3.04 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.05 PROTECTION

A. Protect installed raceways from subsequent construction operations.

END OF SECTION 26 05 35

SECTION 26 05 37
BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.

B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

C. Boxes for hazardous (classified) locations.

D. Underground boxes/enclosures.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 07 84 00 - Firestopping.

C. Section 08 31 00 - Access Doors and Panels: Panels for maintaining access to concealed boxes.

D. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

E. Section 26 05 29 - Hangers and Supports for Electrical Systems.

F. Section 26 05 34 - Conduit for Electrical Systems:
   1. Conduit bodies and other fittings.
   2. Additional requirements for locating boxes to limit conduit length and/or number of bends between pulling points.

G. Section 26 05 35 - Surface Raceways for Electrical Systems:
   1. Lay-in wireways and wiring troughs with removable covers.

H. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

I. Section 26 27 26 - Wiring Devices:
   1. Wall plates.
   2. Additional requirements for locating boxes for wiring devices.

J. Section 27 05 28 - Pathways for Low Voltage Systems Cabling: Additional requirements for communications systems outlet boxes.

K. Section 27 10 00 - Structured Cabling: Additional requirements for communications systems outlet boxes.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.

B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.

E. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013 (Reaffirmed 2020).

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. SCTE 77 - Specifications for Underground Enclosure Integrity; 2023.

H. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

I. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

J. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.

K. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
6. Coordinate the work with other trades to preserve insulation integrity.
7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

C. Project Record Documents: Record actual locations for outlet and device boxes, pull boxes, cabinets and enclosures, and underground boxes/enclosures.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Keys for Lockable Enclosures: Two of each different key.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Provide products listed with Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

C. Electrical boxes shall be sized accordingl to NEC requirements unless otherwise noted in contract documents.

D. Maintain integrity of insulation materials where flush boxes are installed in insulated spaces.

E. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 BOXES

A. General Requirements:

1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
3. Provide products listed, classified, and labeled as suitable for the purpose intended.
4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
3. Use cast iron boxes or cast aluminum boxes where exposed galvanized steel rigid metal conduit or exposed intermediate metal conduit (IMC) is used.
4. Use cast aluminum boxes where aluminum rigid metal conduit is used.
5. Use suitable concrete type boxes where flush-mounted in concrete.
6. Use suitable masonry type boxes where flush-mounted in masonry walls.
7. Use raised covers suitable for the type of wall construction and device configuration where required.
8. Use shallow boxes where required by the type of wall construction.
9. Do not use "through-wall" boxes designed for access from both sides of wall.
10. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
11. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
12. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
13. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
14. Minimum Box Size, Unless Otherwise Indicated:
    a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
    b. Communications Systems Outlets: Comply with Section 27 10 00.
    c. Ceiling Outlets: 4 inch octagonal or square by 1-1/2 inch deep (100 by 38 mm) trade size.
15. Wall Plates: Comply with Section 26 27 26.
16. Manufacturers:
    a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
    b. Hubbell Incorporated; Bell Products: www.hubbell-rtb.com/#sle.
    c. Hubbell Incorporated; RACO Products: www.hubbell-rtb.com/#sle.
    d. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
    e. Thomas & Betts Corporation: www.tnb.com/#sle.
    f. Aplleton Electric: www.emerson.com/en-us/automation/appleton.
    g. Substitutions: See Section 01 60 00 - Product Requirements.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
    a. Indoor Clean, Dry Locations: Type 1, painted steel.

b. Outdoor Locations: Type 3R, painted steel.

3. Junction and Pull Boxes Larger Than 100 cubic inches:
   a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
   b. Boxes 6 square feet and Larger: Provide hinged-cover enclosures.
4. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
   a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
   b. Back Panels: Painted steel, removable(where applicable).
5. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.
6. Manufacturers:
   a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com/#sle.
   b. Hoffman, a brand of Pentair Technical Products: www.hoffmanonline.com/#sle.
   c. Hubbell Incorporated; Wiegmann Products: www.hubbell-wiegmann.com/#sle.
   d. Substitutions: See Section 01 60 00 - Product Requirements.

D. Electrical Outlet Box Pad:
1. Electrical outlet box pads shall be applied where called out on the drawings or specifications. Its function is to seal box openings, increase mass, and provide damping to reduce air-transmitted sound through party walls. It shall consist of polybutene-butyl and inert fillers. Material shall provide good adhesion to metal and plastic. Pads shall be applied to the backs of installed electrical boxes, molded to box, and folded around conduit cable entering the box. Pads shall not be used in areas subject to temperatures above 200 degrees F.
2. The following are acceptable, subject to the above:
   a. FireStop Putty Pad (#CP617) from HILTI: www.hilti.com.
   b. SpecSeal firestop putty pads (fire-rated) from Specified Technologies, Incorporated, Somerville: www.stifirestop.com.
   c. Or approved equal.
3. In-Ground Cast Metal Box: NEMA 250, Type 6, flanged, recessed cover box for flush mounting.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive boxes.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Provide separate boxes for emergency power and normal power systems.

E. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.

F. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.

G. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.

H. Box Locations:
1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 31 00 as required where approved by the Architect.

a. Adjust box locations up to 10 feet if required to accomodate intended purpose, at no additional cost to Owner.

2. Locate boxes as required for devices installed under other sections or by others.
   a. Switches, Receptacles, and Other Wiring Devices: Comply as indicated on drawings.
   b. Communications Systems Outlets: Comply as indicated on drawings.
3. Locate boxes so that wall plates do not span different building finishes.
4. Locate boxes so that wall plates do not cross masonry joints.
5. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 24 inches horizontal separation unless otherwise indicated.
7. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
   a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
   b. Do not install flush-mounted boxes with area larger than 16 square inches or such that the total aggregate area of openings exceeds 100 square inches for any 100 square feet of wall area.
8. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 05 34.
9. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
   a. Concealed above accessible suspended ceilings.
   b. Within joists in areas with no ceiling.
   c. Electrical rooms.
   d. Mechanical equipment rooms.

I. Box Supports:
   1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
   2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
   3. Installation Above Suspended Ceilings: Do not provide support from ceiling grid or ceiling support system.
   4. Use far-side support to secure flush-mounted boxes supported from single stud in hollow stud walls. Repair or replace supports for boxes that permit excessive movement.

J. Install boxes plumb and level.

K. Flush-Mounted Boxes:
   1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
   2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
   3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.

L. Floor-Mounted Cabinets: Mount on properly sized 3 inch high concrete pad constructed in accordance with Section 03 30 00.

M. Install boxes as required to preserve insulation integrity.

N. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

P. Close unused box openings.

Q. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

R. Provide grounding and bonding in accordance with Section 26 05 26.

S. Identify boxes in accordance with Section 26 05 53.
   1. Adjust box locations up to 10 feet if required to accommodate intended purpose, at no additional cost to Owner.

T. Orient boxes to accommodate wiring device orientation as specified in Section 26 27 26.

U. Maintain headroom and present neat mechanical appearance.

V. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

W. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.

X. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.

Y. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan.

Z. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.
   1. Acoustic rated walls.
      a. In a single stud wall, there shall be a separation of 24 inches between centerlines of outlet boxes or receptacles set into opposite sides of the wall. When these boxes are of dimensions exceeding 4 inches wide, this dimension (24 inches) shall be clear between the side walls, providing a full 24-inch separation regardless of the box size. Conduit connecting such boxes shall be flexible and shall provide 6 inches slack per 24 inches of run.
      b. In a double stud wall, boxes in opposite sides of the wall shall be located 24 inches on center, minimum. Effectively, this means that boxes on the same side of the wall will be 48 inches apart if there is a box between them on the other side of the wall. Conduit, in the case of a double wall, shall home run to a point outside of the partition before connecting to cable and conduit connecting boxes on the other side. Conduit, which shall be flexible, may thread through the studs on its own side but shall under no circumstances interface with the stud on the other side of the wall.
      c. The boxes shall be treated to reduce sound transmission. All unused knock-out holes shall be plugged with knock-out caps. The openings or cutouts in the walls to receive the boxes/receptacles shall be made no more than 1-1/4 inches oversize to allow a gap all around of 1-1/8 inches. The flanges shall be perimeter sealed with acoustical caulking, prior to the boxes/receptacles being inserted.
      d. An outlet box pad, which acts to increase mass and provides damping, shall be applied to the backs of back-to-back electrical boxes separated by less than 24 inches, or where the box is installed in acoustical barrier walls. Refer to architectural wall types.

AA. Use stamped steel bridges to fasten flush mounting outlet box between studs.

BB. Use adjustable steel channel fasteners for hung ceiling outlet box.

CC. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12 inches of box.

DD. Locate outlet boxes so that the wall plates do not cross masonry joints or span different building finishes.

3.03 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

B. Clean exposed surfaces and restore finishes.

3.04 PROTECTION

A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

3.05 INTERFACE WITH OTHER PRODUCTS

A. Coordinate installation of outlet box with products furnished under other sections of these specifications.

B. Coordinate locations and sizes of required access doors.

C. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.

D. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes with architectural drawings.

END OF SECTION 26 05 37

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical identification requirements.

B. Identification nameplates and labels.

C. Wire and cable markers.

1.02 RELATED REQUIREMENTS

A. Section 09 91 13 - Exterior Painting.

B. Section 09 91 23 - Interior Painting.

C. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

D. Section 27 05 28 - Pathways for Low Voltage Systems Cabling: Additional requirements for communications systems outlet boxes.

1.03 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. NFPA 70E - Standard for Electrical Safety in the Workplace; 2024.

C. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.

B. Sequencing:
   1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
   2. Do not install identification products until final surface finishes and painting are complete.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.06 FIELD CONDITIONS

A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

A. Existing Work: Unless specifically excluded, identify existing elements to remain whose designations are changed as part of the new work.

B. Identification for Equipment:
   1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
   2. Emergency System Equipment:
      a. Use identification nameplate or voltage marker to identify emergency system equipment in accordance with NFPA 70.
      b. Use identification nameplate at each piece of service equipment to identify type and location of on-site emergency power sources.

c. Use identification nameplate to identify emergency operating instructions for emergency system equipment.

C. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.

Less than 250 Volts Between Phases
Phase A - Black
Phase B - Red
Phase C - Blue
Neutral - White
Ground - Green

2. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
a. At each source and load connection.
b. Within boxes when more than one circuit is present.
c. Within equipment enclosures when conductors and cables enter or leave the enclosure.

D. Identification for Boxes:
1. Use voltage markers or color coded boxes to identify specified systems.
a. Color-Coded Boxes: Field-painted in accordance with Section 09 91 23 and 09 91 13 per the following color code:
1) Fire Alarm System: Red.
b. For exposed boxes in public areas, do not color code.
2. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
a. For exposed boxes in public areas, provide identification on inside face of cover.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Nameplates:
1. Manufacturers:
a. Brimar Industries, Inc: www.brimar.com/#sle.
b. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
c. Seton Identification Products: www.seton.com/#sle.
d. Substitutions: See Section 01 60 00 - Product Requirements.
2. Materials:
a. Indoor Clean, Dry Locations: Use plastic nameplates.
b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
3. Plastic Nameplates: Two-layer or three-layer laminated electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
a. Exception: Provide minimum thickness of 1/8 inch when any dimension is greater than 4 inches.
4. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
5. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
6. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.

B. Identification Labels:
1. Manufacturers:
a. Brady Corporation: www.bradyid.com/#sle.
b. Brother International Corporation: www.brother-usa.com/#sle.

c. Panduit Corp: www.panduit.com/#sle.
d. Substitutions: See Section 01 60 00 - Product Requirements.

2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

2.03 WIRE AND CABLE MARKERS

A. Manufacturers:
1. Brady Corporation: www.bradyid.com/#sle.
2. HellermannTyton: www.hellermanntyton.com/#sle.
3. Substitutions: See Section 01 60 00 - Product Requirements.

B. Markers for Conductors and Cables:
1. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.

C. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.

D. Legend: Power source and circuit number or other designation indicated.

E. Text: Use factory pre-printed or machine-printed text, all capitalized. Do not use hand written text.

F. Minimum Text Height: 1/8 inch.

G. Color: Black text on white background unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
1. Surface-Mounted Equipment: Enclosure front.
2. Flush-Mounted Equipment: Inside of equipment door or enclosure front.
3. Elevated Equipment: Legible from the floor or working platform.
4. Branch Devices: Adjacent to device.
5. Interior Components: Legible from the point of access.
6. Conduits: Legible from the floor.
7. Boxes: Outside face of cover.
8. Conductors and Cables: Legible from the point of access.
9. Devices: Outside face of cover.

C. Install identification products centered, level, and parallel with lines of item being identified.

D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws, rivets, self-adhesive backing, or epoxy cement and to interior surfaces using self-adhesive backing or epoxy cement.
1. Do not use adhesives on exterior surfaces except where substrate cannot be penetrated.

E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.

F. Install underground warning tape above buried lines with one tape per trench at 6 inch(es) below finished grade. For trenches over 18 inches wide, install additional marker tape such that they are not over 10 inches apart (edge to edge) over the entire width of the trench.

G. Secure rigid signs using stainless steel screws.

H. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

END OF SECTION 26 05 53

SECTION 27 05 28
PATHWAYS FOR LOW VOLTAGE SYSTEMS CABLING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Low voltage cabling systems pathways.

B. Pathway Identification.

C. Pathways inside building(s).

D. Pathways connecting building(s).

E. Grounding and bonding the low voltage cabling pathway system.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

C. Section 26 05 34 - Conduit.

D. Section 26 05 53 - Identification for Electrical Systems.

E. Section 33 71 19 - Electrical Underground Ducts and Manholes.

1.03 PRICE AND PAYMENT PROCEDURES

A. See Section 01 23 00 - Alternates, for product alternatives affecting this section.

1.04 REFERENCE STANDARDS

A. EIA/ECA-310 - Cabinets, Racks, Panels, and Associated Equipment; Consumer Electronics Association ; current version, with addenda.

B. TIA-569 - Telecommunications Pathways and Spaces; current version, with addenda.

C. TIA-606 - Administration Standard for Telecommunications Infrastructure, current version with addenda.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep stored products clean and dry.

1.06 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a 1 year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 SYSTEM DESIGN

A. Provide a complete permanent system of cabling pathways for low-voltage system cabling including but not limited to: Data communications, fire alarm and HVAC controls, including conduits and wireways, pull wires, support structures, enclosures and cabinets, and outlet boxes.

B. Drawings may indicate specific raceway requirements for some locations. The contractor is responsible for including the specific raceway requirements indicated in addition to those required of this and related specification sections.

C. Provide conduit as indicated by related system device and/or equipment specification section to facilitate cable installation and as follows:

1. Where cable is not allowed by applicable code to be routed in accessible ceiling spaces or in free-air.
2. Where cable is allowed by applicable code to be routed in accessible ceiling spaces or in free-air.

a. From the Intermediate Distribution Frame, (IDF), Main Distribution Frame (MDF), or Equipment Room (ER) into accessible ceiling space.
b. From low voltage device outlet to an accessible ceiling space.
1) For Fire Alarm outlets:
(a) Provide minimum one 3/4 inch conduit from outlet box to accessible ceiling. See drawings for additional requirements.

3. Where routing cable across inaccessible ceiling spaces longer than 10 feet:
a. Provide sufficient quantity and sized conduit sleeves to not exceed 40% cable fill per conduit provided.

2.02 PATHWAYS

A. Conduit: As specified in Section 26 05 34.

B. Surface Raceway: As specified in Section 26 05 35.

C. Boxes: As specified in Section 26 05 37 and as specified herein.

2.03 IDENTIFICATION PRODUCTS

A. Comply with TIA-606.

B. Comply with Section 26 05 53.

2.04 ENCLOSURES/BACKBOARDS

A. Backboards (where necessary): Interior grade ACX or better plywood without voids, 3/4 inch thick; UL-labeled fire-retardant.
1. Panel Size: 48 inches wide by 96 inches high. Provide minimum of one panel or quantity as necessary to accomplish coverage shown on drawings.
2. Do not paint over UL label.
3. Provide ground bus bar and #6 AWG insulated CU ground conductor to service ground, as specified in Section 26 05 26.
4. Size, Unless Otherwise Indicated: 4 inches square by 2-1/8 inches deep.
5. Wall-Mounted Telephones: 4 inches high by 2 inches wide by 2-1/8 inches deep.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Firestopping: Seal openings around pathway penetrations through fie-related walls, partitions, floors, and ceilings in accordance with Section 07 84 00.

3.02 INSTALLATION OF PATHWAYS

A. Underground: Install conduit at least 24 inches below finish grade.

B. Install with minimum clearances per Section 26 05 34.

C. In addition to as specified in Section 26 05 34, provide pull string in all conduits where there is available conduit fill capacity for future cable installation.
1. Voice and Data Outlets: 18 inches above finished floor.
2. Voice and Data Outlets for Forward and Side-Reach Wall-Mounted: 45 inches above finished floor.

END OF SECTION 27 05 28

SECTION 28 46 00
FIRE DETECTION AND ALARM

PART 1 GENERAL

1.01 DESCRIPTION

A. Use this specification and record drawings as a guide for workmanship and materials for construction. Utilize the design/build concept throughout the design and construction phase of the project.

B. Visit the site of proposed construction prior to starting the design. Verify and inspect the existing site to determine conditions that affect this work.

1.02 SECTION INCLUDES

A. Fire alarm system design and installation, including all components, wiring, and conduit.

B. Transmitters for communication with supervising station.

C. Circuits from protected premises to supervising station, including conduit.

D. Replacement and removal of existing fire alarm system components, wiring, and conduit indicated.

E. Maintenance of fire alarm system under contract for specified warranty period.

1.03 RELATED REQUIREMENTS

A. Section 08 33 23 - Overhead Coiling Doors: Coiling fire doors to be released by fire alarm system.

B. Section 08 71 00 - Door Hardware: Electrically operated locks and door holder devices to be monitored and released by fire alarm system.

C. Section 14 21 00 - Electric Traction Elevators: Elevator systems monitored and controlled by fire alarm system.

D. Section 14 24 00 - Hydraulic Elevators: Elevator systems monitored and controlled by fire alarm system.

E. Section 14 91 00 - Facility Chutes: Sensors and interlocks monitored by fire alarm system.

F. Section 21 13 00 - Fire-Suppression Sprinkler Systems: Supervisory, alarm, and actuating devices installed in sprinkler system.

G. Section 23 33 00 - Air Duct Accessories: Smoke dampers monitored and controlled by fire alarm system.

1.04 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. IEEE C62.41.2 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (Corrigendum 2012).

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NFPA 72 - National Fire Alarm and Signaling Code; Most Recent Edition Cited by Referring Code or Reference Standard.

F. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 864 - Control Units and Accessories for Fire Alarm Systems; Current Edition, Including All Revisions.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Proposal Documents: Submit the following with cost/time proposal:
   1. NFPA 72 "Record of Completion", filled out to the extent known at the time.
   2. Manufacturer's detailed data sheet for each control unit, initiating device, and notification appliance.
   3. Certification by Contractor that the system design will comply with Contract Documents.
   4. Proposed maintenance contract.

C. Drawings must be prepared using AutoCAD Release 2021 or later.
   1. Owner will provide floor plan drawings for Contractor's use; verify all dimensions on Owner-provided drawings.

D. Evidence of designer qualifications.

E. Design Documents: Submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, riser diagrams, and description of operation:
   1. Copy (if any) of list of data required by authority having jurisdiction.
   2. NFPA 72 "Record of Completion", filled out to the extent known at the time.
   3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A-7-5-2.2(9), and complete listing of software required.
   4. System zone boundaries and interfaces to fire safety systems.
   5. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
   6. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
   7. List of all devices on each signaling line circuit, with spare capacity indicated.
   8. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
   9. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
   10. Certification by either the manufacturer of the control unit or by the manufacturer of each other component that the components are compatible with the control unit.
   11. Certification by Contractor that the system design complies with Contract Documents.
   12. Do not show existing components to be removed.
   13. Shop drawings will need to be stamped by a NICET Level III certified fire alarm technician.

F. Evidence of installer qualifications.

G. Evidence of instructor qualifications; training lesson plan outline.

H. Evidence of maintenance contractor qualifications, if different from installer.

I. Inspection and Test Reports:
   1. Submit inspection and test plan prior to closeout demonstration.
   2. Submit documentation of satisfactory inspections and tests.
   3. Submit NFPA 72 "Inspection and Test Form," filled out.

J. Operating and Maintenance Data: See Section 01 78 00 - for additional requirements; have one set available during closeout demonstration:
   1. Complete set of specified design documents, as approved by authority having jurisdiction.
   2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
   3. Contact information for firm that will be providing contract maintenance and trouble call-back service.

4. List of recommended spare parts, tools, and instruments for testing.
5. Replacement parts list with current prices, and source of supply.
6. Detailed troubleshooting guide and large scale input/output matrix.
7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.

K. Project Record Documents: See Section 01 78 00 - for additional requirements, have one set available during closeout demonstration:
1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
2. "As installed" wiring and schematic diagrams, with final terminal identifications.
3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.

L. Closeout Documents:
1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.
3. Certificate of Occupancy.
4. Maintenance contract.
5. Written warranty.
6. Report on training results.

M. Maintenance Materials, Tools, and Software: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Furnish spare parts of same manufacturer and model as those installed; deliver in original packaging, labeled in same manner as in operating and maintenance data and place in spare parts cabinet.
3. In addition to the items in quantities indicated in PART 2, furnish the following:
   a. All tools, software, and documentation necessary to modify the fire alarm system using Owner's personnel; minimum modification capability to include addition and deletion of devices, circuits, and zones, and changes to system description, operation, and evacuation and instructional messages.
   b. Two copies, on CD-ROM, of all software not resident in read-only-memory.
   c. Extra Fuses: Two for each installed fuse; store inside applicable control cabinet.

1.06 QUALITY ASSURANCE

A. Copies of Design Criteria Documents: Maintain at the project site for the duration of the project, bound together, an original copy of NFPA 72, the relevant portions of applicable codes, and instructions and guidelines of authorities having jurisdiction; deliver to Owner upon completion.

B. Designer Qualifications: NICET Level III or IV (3 or 4) certified fire alarm technician or registered fire protection engineer, employed by fire alarm control panel manufacturer, Contractor, or installer , with experience designing fire alarm systems in the jurisdictional area of the authorities having jurisdiction.

C. Installer Qualifications: Firm with minimum 5 years documented experience installing fire alarm systems of the specified type and providing contract maintenance service as a regular part of their business.
1. Authorized representative of control unit manufacturer; submit manufacturer's certification that installer is authorized; include name and title of manufacturer's representative making

certification.

2. Installer Personnel: At least 2 years of experience installing fire alarm systems.
3. Supervisor: NICET level III or IV (3 or 4) certified fire alarm technician; furnish name and address.
4. Contract maintenance office located within 50 miles of project site.
5. Certified in the State in which the Project is located as fire alarm installer.

D. Instructor Qualifications: Experienced in technical instruction, understanding fire alarm theory, and able to provide the required training; trained by fire alarm control unit manufacturer.

E. Each and all items of the Fire Alarm System shall be listed as a product of a SINGLE fire alarm system manufacturer under the appropriate category by Underwriters' Laboratories, Inc. (UL), and shall bear the "UL" label. All control equipment shall be listed under UL category UOJZ as a single control unit. Partial listing shall NOT be acceptable.

F. All control equipment must have transient protection devices to comply with UL864 requirements.

G. In addition to the UL UOJZ requirement mentioned above, the system controls shall be UL listed for Power Limited Applications per NEC 760. All circuits must be marked in accordance with NEC article 760 23.

1.07 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Provide control panel manufacturer's warranty that system components other than wire and conduit are free from defects and will remain so for 1 year after date of Substantial Completion.

C. Provide installer's warranty that the installation is free from defects and will remain so for 1 year after date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Alarm Control Units and Accessories - Basis of Design:
1. Honeywell Security & Fire Solutions/Silent Knight: www.buildings.honeywell.com.
2. Siemens: www.siemens.com.

B. Initiating Devices and Notification Appliances:
1. Same manufacturer as control units, or otherwise listed by approved manufacturer as compatible with controls.
2. Provide all initiating devices and notification appliances made by the same manufacturer.

C. Substitutions: See Section 01 60 00 - Product Requirements.
1. For other acceptable manufacturers of control units specified, submit product data showing equivalent features and compliance with Contract Documents.
2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with Contract Documents.

2.02 FIRE ALARM SYSTEM

A. Fire Alarm System: Provide replacement of the existing automatic fire detection and alarm system:
1. Provide all components necessary, regardless of whether shown in Contract Documents or not, for a complete and operable system.
2. Protected Premises: Entire building
3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
   a. ADA Standards.
   b. The requirements of the State Fire Marshal.
   c. The requirements of the local authority having jurisdiction .

d. Applicable local codes.
e. Contract Documents.
f. NFPA 101.
g. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.

4. Evacuation Alarm: Multiple smoke zones; allow for evacuation notification of any individual zone or combination of zones, in addition to general evacuation of entire premises.
5. Voice Notification: Provide emergency voice/alarm communications with multichannel capability; digital.
6. General Evacuation Zones: Each smoke zone is considered a general evacuation zone unless otherwise indicated, with alarm notification in all zones on the same floor, on the floor above, and the floor below.
7. Staff Response Zones: For each smoke zone where occupants are not ambulatory, program notification zone as directed to notify staff in areas outside the normal notification zone and in other buildings, for response to assist in evacuation.
8. Program notification zones and voice messages as directed by Owner.
9. Hearing Impaired Occupants: Provide visible notification devices in all public areas and in dwelling units.
10. Master Fire Alarm Control Unit (Panel): New.
11. Combined Systems: Do not combine fire alarm system with other non-fire systems.

B. Supervising Stations and Fire Department Connections:
1. Public Fire Department Notification: By on-premises supervising station.
2. Remote Supervising Station: UL-listed central station under contract to facility.
3. Means of Transmission to Remote Supervising Station: Cellular wireless transmitter.

C. Circuits:
1. Initiating Device Circuits (IDC): Class B, Style A.
2. Signaling Line Circuits (SLC) Within Single Building: Class B, Style 4.
3. Signaling Line Circuits (SLC) Between Buildings: Class A, Style 6.
4. Notification Appliance Circuits (NAC) Within Single Building: Class B, Style Y.
5. Notification Appliance Circuits (NAC) Between Buildings: Class A, Style Z.

D. Spare Capacity:
1. Initiating Device Circuits: Minimum 25 percent spare capacity.
2. Notification Appliance Circuits: Minimum 25 percent spare capacity.
3. Speaker Amplifiers: Minimum 25 percent spare capacity.
4. Master Fire Alarm Control Unit: Capable of handling all circuits utilized to capacity without requiring additional components other than plug-in control modules.

E. Power Sources:
1. Primary: Dedicated branch circuits of the facility power distribution system.
2. Secondary: Storage batteries.
3. Capacity: Sufficient to operate entire system for period specified by NFPA 72.
4. Each Computer System: Provide uninterruptible power supply (UPS).

2.03 EXISTING COMPONENTS

A. Existing Fire Alarm System: Remove existing system completely after new system is fully operational and tested.

B. Clearly label components that are "Not In Service."

C. Remove unused existing components and materials from site and dispose of properly.

2.04 FIRE SAFETY SYSTEMS INTERFACES

A. Supervision: Provide supervisory signals in accordance with NFPA 72 for the following:

1. Sprinkler water control valves.
2. Dry-pipe sprinkler system pressure.
3. Dry-pipe sprinkler valve room low temperature.
4. Sprinkler water storage tank low level.
5. Sprinkler water storage tank low temperature.
6. Fire pump(s).
7. Elevator shut-down control circuits.
8. Chute interlocks and controls.

B. Alarm: Provide alarm initiation in accordance with NFPA 72 for the following:
1. Sprinkler water flow.
2. Total flooding suppression system activation.
3. Kitchen hood suppression activation; also disconnect fuel source from cooking equipment.
4. Elevator lobby, elevator hoistway, and elevator machine room smoke detectors.
5. Generator room heat detector.
6. Duct smoke detectors.

C. Elevators (where present):
1. Elevator lobby, hoistway, and machine room smoke detectors: Elevator recall for fire fighters' service.
2. Elevator Machine Room Heat Detector: Shut down elevator power prior to hoistway sprinkler activation.
3. Sprinkler pressure or waterflow: Shut down elevator power prior to hoistway sprinkler activation.

D. HVAC:
1. Duct Smoke Detectors: Close dampers indicated; shut down air handlers indicated.

E. Doors:
1. Smoke Barrier Door Magnetic Holders: Release upon activation of smoke detectors in smoke zone on either side of door, upon alarm from manual pull station on same floor, and upon sprinkler activation on same floor.
2. Electromagnetic Door Locks on Egress Doors: Unlock upon activation of any alarm initiating device or suppression system in smoke zone that doors serve as egress from.
3. Overhead Coiling Fire Doors: Release upon activation of smoke detectors in smoke zone on either side of door, upon alarm from manual pull station on same floor, and upon sprinkler activation on same floor.

2.05 COMPONENTS

A. General:
1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.

B. Fire Alarm Control Units, Initiating Devices, and Notification Appliances: Analog, addressable type; listed, classified, and labeled by Underwriters Laboratories as suitable for the purpose intended.

C. Master Control Unit: As specified for Basis of Design above, or equivalent.
1. Construction shall be modular with solid state, microprocessor based electronics. An 80 character LCD display shall indicate alarms, supervisory service conditions, and any troubles. Panel shall have 250 addressable points with voice evacuation and either an internal cellular dialer or capability to connect to a remote cellular dialer.
a. Honeywell Silent Knight #6820EVS.
2. Expansion Power Supplies: Provide as required for notification appliance circuits. Power supply to provide 8 Amps of power, four signal circuits, and battery standby.

D. Remote Annunciators: Shall be 80 character LCD display and include four programmable control switches, as well as alarm silence, acknowledgment, and system reset switches.
   1. Honewell Silent Knight #6860 or approved equivalent.

E. Cellular Communicator: 5G/LTE Universal Wireless Fire Alarm Communicator. Full Event Reporting, on board inputs/outputs, UL 864 listed.
   1. Include setup, programming, assist owner with establishing cellular plan/contract and monitoring.
   2. Provide extension antenna as necessary.
   3. Include power supply/battery backup as required by code.
   4. Telguard #TG-7F Series, or approved equal.

F. Initiating Devices:
   1. Manual Pull Stations: Manual Pull Stations: Shall be addressable, single or double action, and constructed of high impact, red lexan with raised white lettering and a smooth high gloss finish. Stations which utilize screwdrivers, allen wrenches, or other commonly available tools shall not be accepted. Stations shall be keyed alike with the fire alarm control panel. When the station is operated, the handle shall lock in a protruding manner to facilitate quick visual identification of the activated station.
      a. Silent Knight #SK-PULL.
      b. Provide 1 extra.
   2. Smoke Detectors: Smoke Detectors: Photo electric smoke detectors. Each smoke detector shall have its own unique address, analog, and with selectable sensitivity. Detectors shall be listed to UL standard 268 and shall be documented compatible with the control equipment to which it is connected. Detectors shall be listed for this purpose by Underwriters Laboratories Inc. The detectors shall obtain their operating power from the fire alarm panel supervised detection loop. The operating voltage shall be 24VDC (nominal). Removal of the detector head shall interrupt the supervisory circuit of the fire alarm detection loop and cause a trouble signal to be generated at the control panel. Each detector shall have a flashing status indicating LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady and at full brilliance. The detector may be reset by actuating the control panel reset switch. Remote LED alarm indicators shall be installed where indicated.
      a. Silent Knight #SK-Photo.
      b. Provide 5 extra.
   3. Duct Smoke Detectors: Shall be addressable and of the solid state photoelectric type. The detectors shall operate on the light scattering photodiode principle. Detector design shall provide full solid state construction and compatibility with being separately monitored via a unique address via the twisted shielded pair data loop.
      a. Simplex 4098 Series or approved.
      b. Provide 1 extra.
   4. Heat Detectors: Heat Detectors: Automatic heat detectors shall be combination rate-of-rise and fixed-temperature type. Each heat detector shall have its own unique address.
      a. Simplex 4098 Series or approved.
      b. Provide 1 extra.
   5. Addressable Interface Devices:
      a. Silent Knight #SK-Heat.
      b. Provide 3 extra.

G. Notification Appliances:
   1. Audible/visible units shall provide a common enclosure for fire alarm audible and visual alarm devices. Models shall be available which provide for horizontal or vertical mounting and with high humidity and strobe synchronization options. The audio/visual combination unit shall provide 4 Wire connection to ensure properly supervised in/out system connection and shall be UL listed for its intended purpose. Device candela shall be rated per current NFPA and ADA requirements.

a. System Sensor L-Series or SpecAlert Series.
b. Provide 3 extra audible/visible units.

H. Circuit Conductors: Copper or optical fiber; provide 200 feet extra; color code and label.

I. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.
1. Equipment Connected to Alternating Current Circuits: Maximum let through voltage of 350 V(ac), line-to-neutral, and 350 V(ac), line-to-line; do not use fuses.
2. Initiating Device Circuits, Notification Appliance Circuits, and Communications Circuits: Provide surge protection at each point where circuit exits or enters a building; rated to protect applicable equipment; for 24 V(dc) maximum dc clamping voltage of 36 V(dc), line-to-ground, and 72 V(dc), line-to-line.
3. Signaling Line Circuits: Provide surge protection at each point where circuit exits or enters a building, rated to protect applicable equipment.

J. Locks and Keys: Deliver keys to Owner.
1. Provide the same standard lock and key for each key operated switch and lockable panel and cabinet; provide 5 keys of each type

K. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.
1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
2. Provide one for each control unit where operations are to be performed.
3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
4. Provide extra copy with operation and maintenance data submittal.

L. Storage Cabinet for Spare Parts and Tools: Steel with baked enamel finish, size appropriate to quantity of parts and tools.
1. Padlock eye and hasp for lock furnished by Owner.
2. Locate as directed by Owner.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install the system in accordance with the plans and specifications all applicable codes, NFPA 72, NFPA 70, Contract Documents, and the manufacturer's recommendations. All wiring shall be installed in strict compliance with all the provisions of NEC - Article 760 A and C, Power-Limited Fire Protective Signaling Circuits or if required may be reclassified as non-power limited and wired in accordance with NEC-Article 760 A and B. Upon completion, the contractor shall so certify in writing to the owner and general contractor. All junction boxes shall be sprayed red and labeled "Fire Alarm". Wiring color code shall be maintained throughout the installation.

B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.

C. Obtain Owner's approval of locations of devices, before installation.

D. Install instruction cards and labels.

E. Installation of equipment and devices that pertain to other work in the contract shall be closely coordinated with the appropriate subcontractors.

F. The contractor shall clean all dirt and debris from the inside and the outside of the fire alarm equipment after completion of the installation.

G. The manufacturer's authorized representative shall provide on site supervision of installation.

3.02 INSPECTION AND TESTING FOR COMPLETION

A. Notify Owner 7 days prior to beginning completion inspections and tests.

B. Owner will provide the services of an independent fire alarm engineer or technician to observe all tests.

C. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.

D. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.

E. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.

F. Provide all tools, software, and supplies required to accomplish inspection and testing.

G. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

H. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

I. Diagnostic Period: After successful completion of inspections and tests, Operate system in normal mode for at least 14 days without any system or equipment malfunctions.
   1. Record all system operations and malfunctions.
   2. If a malfunction occurs, start diagnostic period over after correction of malfunction.
   3. Owner will provide attendant operator personnel during diagnostic period; schedule training to allow Owner personnel to perform normal duties.
   4. At end of successful diagnostic period, fill out and submit NFPA 72 "Inspection and Testing Form."

3.03 OWNER PERSONNEL INSTRUCTION

A. Provide the following instruction to designated Owner personnel:
   1. Hands-On Instruction: On-site, using operational system.
   2. Classroom Instruction: Owner furnished classroom, on-site or at other local facility.
   3. Factory Instruction: At control unit manufacturer's training facility, as required

B. Provide a total of 16 hours of initial/refresher training to designated Owner personnel covering issues for the topics below. Duration of individual training sessions as determined by Owner, not to exceed total number of required hours.

C. Administrative: Issues necessary for non-technical administrative staff.

D. Basic / Detailed Operation: Issues necessary for attendant personnel, security officers, and engineering staff.

E. Maintenance Technicians: Issues necessary for electrical technicians, on programming, maintaining, repairing, and modifying.

F. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data available during instruction.

G. Provide means of evaluation of trainees suitable to type of training given; report results to Owner.

3.04 CLOSEOUT

A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.
   1. Be prepared to conduct any of the required tests.
   2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
   3. Have authorized technical representative of control unit manufacturer present during demonstration.
   4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.

5. Repeat demonstration until successful.

B. Occupancy of the project will not occur prior to Substantial Completion.

C. Substantial Completion of the project cannot be achieved until inspection and testing is successful and:
   1. Specified diagnostic period without malfunction has been completed.
   2. Approved operating and maintenance data has been delivered.
   3. Spare parts, extra materials, and tools have been delivered.
   4. All aspects of operation have been demonstrated to Owner.
   5. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.
   6. Occupancy permit has been granted.
   7. Specified pre-closeout instruction is complete.

D. Perform post-occupancy instruction within 3 months after Substantial Completion.

3.05 MAINTENANCE

A. See Section 01 70 00 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide to Owner, at no extra cost, a written maintenance contract for entire manufacturer's warranty period, to include the work described below.

C. Perform routine inspection, testing, and preventive maintenance required by NFPA 72, including:
   1. Maintenance of fire safety interface and supervisory devices connected to fire alarm system.
   2. Repairs required, unless due to improper use, accidents, or negligence beyond the control of the maintenance contractor.
   3. Record keeping required by NFPA 72 and authorities having jurisdiction.

D. Provide trouble call-back service upon notification by Owner:
   1. Provide on-site response within 2 hours of notification.
   2. Include allowance for call-back service during normal working hours at no extra cost to Owner.
   3. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

E. Provide a complete description of preventive maintenance, systematic examination, adjustment, cleaning, inspection, and testing, with a detailed schedule.

F. Maintain a log at each fire alarm control unit, listing the date and time of each inspection and call-back visit, the condition of the system, nature of the trouble, correction performed, and parts replaced. Submit duplicate of each log entry to Owner's representative upon completion of site visit.

G. Comply with Owner's requirements for access to facility and security.

END OF SECTION 28 46 00