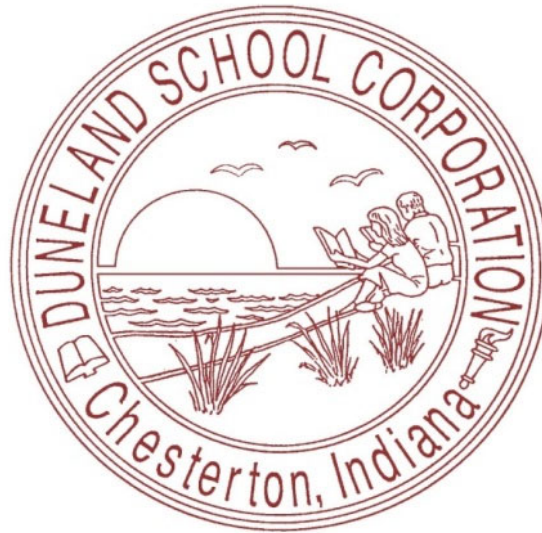


**Project Manual**  
Project Number: 19-063

**Duneland School Corporation  
2020 Hot Water Tank Upgrades at:  
Chesterton Middle School  
651 West Morgan Avenue, Chesterton, Indiana 46304**



For  
**Board of School Trustees  
Duneland School Corporation**  
601 West Morgan Avenue  
Chesterton, Indiana 46304

**Issued for Proposal: March 9, 2020**



**West Suburban Office:** 901 McClintock Drive, Suite 100, Burr Ridge, Illinois 60527  
**South Suburban Office:** 1820 Ridge Road, Suite 209, Homewood, Illinois 60430  
**Indiana Office:** 436 Sand Creek Drive N, Suite 105, Chesterton, Indiana 46304  
Company Main: 630.455.4500 Fax: 630.455.4040  
[www.TriaArchitecture.com](http://www.TriaArchitecture.com)



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## SECTION 00100

### INSTRUCTIONS TO PROPOSERS

#### PART 1 – GENERAL

##### 1.1 PROPOSAL

- A. The Board of School Trustees of the Duneland School Corporation will receive sealed proposals for the 2020 Hot Water Tank Upgrades at: Chesterton Middle School.
- B. To receive full consideration proposals must contain the following documents properly completed and signed:
  - 1. Proposal Form.
  - 2. Addendum to Contract for Construction.
  - 3. Certification Regarding Investment Activities in Iran.
  - 4. Fully completed AIA document A305 providing the Contractor's qualifications and references.

##### 1.2 PREPARATION FOR PROPOSALS

- A. Proposals to be entitled for consideration must be made in accordance with the following instructions.
  - 1. Submit one copy of proposal on forms provided by the Architect with all blank spaces for proposal prices filled in, in ink, or typewritten.
  - 2. Submit one reproduction of proposal forms and associated documents.
  - 3. Submit proposal in an opaque, sealed envelope, addressed to: Mr. Greg Lindy, Director of Support Services, 601 West Morgan Avenue, Chesterton, Indiana 46304.
    - a. Mark the envelope ATTENTION: 2020 Hot Water Tank Upgrades at: Chesterton Middle School - PROPOSAL.
  - 4. Sealed Proposals will be received until 10:30 a.m. CST (local time), on March 23, 2020 for all specified work at Duneland School Corporation Administration Office, 601 West Morgan Avenue, Chesterton Indiana 46304.
  - 5. Proposals received after this time shall be returned unopened.
  - 6. Erasures or written memorandum on the Proposal Form are prohibited. Include additional explanations, statements, or qualifications in a separate sheet attached to the Proposal Form.
  - 7. The Base Proposal shall appear only where called for in the Proposal Form and shall not appear elsewhere in the proposal. Any Alternate prices (other than those set forth in the Proposal Form) shall be listed on the Substitution Sheet.
  - 8. Fill in all blank spaces for the proposal items with prices, or if not applicable, the words "No Proposal."
- B. The Owner reserves the right to reject any or all proposals or parts thereof at its sole discretion.
- C. The Owner reserves the right to waive any or all irregularities or informalities.
- D. The Owner reserves the right to terminate this request for proposals at any time in the proposal process.
- E. All costs associated with developing or submitting a proposal in response to this request, or to obtain oral or written clarification of its content shall be borne by the respondent. The Owner and Architect, and their agents, assume no responsibility for these costs. This request for proposal does not commit the Owner or Architect, or any of their agents, to pay any costs incurred in the preparation or submission of a proposal.
- F. Do not detach Proposal Forms from the Project Manual for use in submission of proposals; use separate forms furnished by the Architect.
- G. Telegraphic proposals will not be accepted, but modifications by telegram of proposals already submitted will be considered if received prior to the scheduled closing time for receiving proposals.

##### 1.3 DEFINITIONS

- A. All definitions set forth in the General Conditions of the Contract for Construction as printed in AIA Document A201 as modified and included herewith are applicable to these Instructions to Proposers.

## SECTION 00100

### INSTRUCTIONS TO PROPOSERS

- B. Proposal Documents include the Instructions to Proposers, the Proposal Form and required attachments, AIA Document A101 Standard Form of Agreement Between Owner and Contractor where the Basis of Payment is a Stipulated Sum, 2007 edition, including General Conditions as modified for this project, AIA Document A305, and the proposed Contract Documents including any addendum issued prior to receipt of proposals.
- C. Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the proposal documents, including Drawings and Specifications, by additions, clarifications, or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
  - 1. Addenda will be issued by Email, FAX transmittal, direct mail or United Parcel delivery. Proposers are to consider all addenda, regardless of method of transmittal, as a binding modification to the contract documents.
  - 2. It is the proposer's responsibility to ascertain from the Architect that they have received all addenda issued to the proposal documents prior to submitting their proposal.

#### 1.4 DOCUMENTS

- A. The Proposal Documents are on file and may be examined at Gill Reprographics, Inc. (GRI), 17W715 Butterfield Road, Suite B, Oak Brook Terrace, IL 60181, (630) 652-0800, [www.gillrepro.com](http://www.gillrepro.com).
- B. Contractors may obtain additional sets of plans and specifications directly from the Printer. Contractor shall be responsible for the reproduction costs. Amounts paid for additional sets are not refundable.

#### 1.5 EXAMINATION OF DOCUMENTS AND SITE

- A. Proposers are responsible for examining all documents on file at the office of the Printer or Owner and must make a mandatory site visit to examine the site to become familiar with and make allowance for any conditions which may affect the work. Contractors will not be given extra payments for conditions which can be determined by examining the site and documents.
- B. A non-mandatory Pre-Proposal Conference will be held on March 17, 2020, 10:30 a.m. District Administration Center, 601 West Morgan Avenue, Indiana 46304. All Proposers are required to attend and sign in at the conference which will also be attended by the Owner, the Architect, and the Engineer. There will be a walk-through immediately following the pre-proposal meeting at the school. The Architect will transmit to prospective proposers of record any Addenda the Architect considers necessary in response to questions arising at the conference.

#### 1.6 POST-PROPOSAL QUALIFICATION

- A. Any proposer may be required to submit supporting data to substantiate that such proposer is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

#### 1.7 PROPOSAL WITHDRAWAL

- A. Any proposer may withdraw their proposal prior to the scheduled closing time for receiving proposals. All proposers shall hold their Proposals open for a period of sixty calendar days from the date of Proposal Opening. The Owner and Proposers may agree to extend the period of irrevocability beyond the sixty-day period.

#### 1.8 INTERPRETATION OF PROPOSAL DOCUMENTS

- A. Submit all questions regarding the Proposal Documents to the Architect. Replies will be issued to all proposers of record in the form of an Addendum. Questions received less than five days before the proposal opening date cannot be answered.

#### 1.9 NON-SPECIFIED ITEMS

- A. Approved Equal Items:
  - 1. To obtain approval to use non-specified items, submit written request at least five days prior to the opening date; requests received after this time will NOT be considered.

## SECTION 00100

### INSTRUCTIONS TO PROPOSERS

2. Requests shall clearly describe the items for which approval is asked including all data necessary to demonstrate acceptability.
  3. If an item is acceptable, the Architect will approve same in an Addendum issued to all proposers of record.
- B. Substitutions:
1. Substitutions for the items specified may be made by the Contractor only by submitting proposed substitutions on the Substitution Sheet provided.
  2. Requests received after proposal opening will not be considered except for the following conditions:
    - a. Product discontinued.
    - b. Insufficient quantity. Except the following will not establish cause for substitution:
      - 1) Failure to award subcontract in sufficient time, or failure to place orders for products so as to ensure delivery without delaying work.
    - c. Delays beyond control, such as strikes, lockouts, storms, fires, or acts of God, which may preclude the procurement and delivery of products for purposes of the Project.
- C. No consideration will be given to substitutions after the Contractor submits the Schedule of Values.

#### 1.10 METHOD OF AWARD

- A. If the Owner should award a Contract, the Owner will award it to the lowest responsible bona fide Proposer with full consideration given to Contractor's Completion Schedule.
- B. In determining the lowest responsible bona fide Proposer and in awarding a contract, the Owner may take into consideration skill, facilities, capacity, experience, ability, responsibility, previous work, financial standing of proposer, amount of work being carried on by proposer, quality and efficiency of construction equipment proposed to be furnished, period of time within which proposed equipment is furnished and delivered, and necessity of prompt and efficient completion of work herein described.

#### 1.11 PROPOSAL REQUIREMENTS

- A. Proposer's proposals shall be expressly based on the following items:
  1. Instructions to Proposers.
  2. Proposal Form.
  3. General Conditions.
  4. Plans and Specifications.
  5. Addenda
- B. Any Contract resulting from the Proposal Documents will incorporate the terms and provisions of said documents. It is intended that these Proposal Documents shall prevail over conflicting terms and conditions of Contractor's proposal. Proposer's printed terms and conditions are NOT considered as exceptions to the Contract.

#### 1.12 OTHER CERTIFICATIONS AND SUBMITTALS

- A. All proposers must complete and sign the following certifications and submit them with their proposals. FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF PROPOSER.
  1. Addendum to Contract for Construction.
  2. Certification Regarding Investment Activities in Iran.
  3. Fully completed AIA document A305 providing the Contractor's qualifications and references.

#### 1.13 POWER OF ATTORNEY

- A. Attorneys-in-Fact who sign bonds, Agreements or proposals must file with each such document a certified and effectively-dated copy of their Power of Attorney.

**SECTION 00100**

**INSTRUCTIONS TO PROPOSERS**

**1.14 EMPLOYMENT AND LABOR PROVISIONS**

- A. Vendors/Contractors must conform to all federal, state, local and OSHA Regulations now in effect.
- B. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin.

**END OF SECTION**



SECTION 00300

PROPOSAL FORM

THE PROJECT AND THE PARTIES

1.1 NAME OF PROPOSER: \_\_\_\_\_

1.2 TO: **MR. GREG LINDY, DIRECTOR OF SUPPORT SERVICES**  
**DUNELAND SCHOOL CORPORATION**  
**601 WEST MORGAN AVENUE**  
**CHESTERTON, INDIANA 46304**

A. We as contractor having familiarized ourselves with local conditions affecting the work and with the proposed Contract Documents on file at the office of the Owner, hereby propose to perform everything required to be performed and to provide all of the labor, materials, necessary equipment and all utilities and transportation and services necessary to perform and complete in a workmanlike manner all work required to complete the proposed work indicated in the proposal documents for the construction of the 2020 Hot Water Tank Upgrades at: Chesterton Middle School, all in accordance with the Drawings and Specifications prepared by the office of Tria Architecture, Inc. including Addenda No. \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ issued thereto for the sum of:

1. Base Proposal for all Work:

\_\_\_\_\_  
\_\_\_\_\_  
(\$ \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ . \_\_\_\_\_ )

2. The base proposal consists of all Work specified and required by the proposed Contract Documents.

B. In signing and submitting this Proposal, the undersigned certifies that all materials and construction to be provided are as indicated in the proposed Contract Documents.

C. Time of Completion: If awarded the Contract, the proposer agrees to complete all Construction Work and achieve Substantial Completion by August 3, 2020, 5:00 p.m. NOTE: Substantial Completion for this project refers to all work being a minimum of 99% complete. Final Completion for this project refers to all scheduled work, punch-list and closeout items being 100% complete.

D. The space below of the desired Substantial Completion Date has been left blank for insertion of Contractor's own desired Substantial Completion Date, if he feels that the desired date as stated in the specifications cannot be met. Insertion of a date by the proposer does not change the specified Substantial Completion Date unless the Owner chooses to accept the proposer's date when awarding the contract.

1. Specified Substantial Completion Date: August 3, 2020, 5:00 p.m.

2. Contractor's Desired Substantial Completion Date: \_\_\_\_\_.

E. Base Proposal Breakdown: For the purpose of logical comparison of orders of magnitude in the proposals, the Owner requires a global breakdown of the components of the base proposal. Contractors are required to provide this breakdown. Failure to do so will subject the proposal to rejection. The sum of the following items must equal the Lump Sum Base Proposal.

**SECTION 00300**

**PROPOSAL FORM**

**BREAKDOWN:**

Division 01:	General Requirements – Allowances:	\$
Division 01:	General Requirements – O&P:	\$
Division 01:	General Requirements – Remaining Items:	\$
Division 07:	Thermal and Moisture Protection:	\$
	Subcontractor (Legal Name, Address):	
Division 15:	Mechanical - Plumbing:	\$
	Subcontractor (Legal Name, Address):	
Division 16:	Electrical:	\$
	Subcontractor (Legal Name, Address):	
Miscellaneous	Any items not identified above:	\$
	Subcontractor (Legal Name, Address):	
TOTAL (Should equal base proposal): \$		

**SECTION 00300**  
**PROPOSAL FORM**

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

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

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed/Typed Name and Title)

Where the Proposer is a corporation, add Attest

\_\_\_\_\_  
Secretary (signature) Date (SEAL)

**END OF PROPOSAL FORM**



**SECTION 00440**

**SUBSTITUTION SHEET**

**1.1 SUBSTITUTION INFORMATION**

- A. All proposals shall be based upon the provisions of the proposed Contract Documents.
- B. Proposers desiring to make substitutions for "proprietary brands" specified shall list such proposed substitutions below, together with the amount to be added or deducted from the amounts of their base proposals.
- C. The Owner reserves the right to reject all such substitutions, and such substitutions will not be used to determine the low proposal.
- D. Complete descriptions and technical data shall accompany all proposed substitutions.
- E. NOTE: Manufacturer's names and material approved by the Architect during the proposal time, but not shown in Addenda, must be listed below if said material is to be considered.

F.	BRAND/MAKE SPECIFIED	PROPOSED	ADD	DEDUCT
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____

NAME OF PROPOSER: \_\_\_\_\_

DATE: \_\_\_\_\_.

**END OF SECTION**



**SECTION 00495**

**ADDENDUM TO CONTRACT FOR CONSTRUCTION**

This following Addendum to THE Contract for Construction is made by \_\_\_\_\_ ("contractor") and the Duneland School Corporation ("School Corporation") this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_..

The contractor is party to a Contract for Construction with the School Corporation ("Agreement").

The contractor states that it is in compliance with the requirements of Indiana Code 22-5-1.7-11 in that it uses the E-Verify program, as such is defined by Ind. Code 22-5-1.7-3, as such may be amended from time to time, or that it is no longer required to verify the work eligibility status of all newly hired employees if the E-Verify program no longer exists.

Attached to this Addendum is an Affidavit signed on behalf of the contractor and executed in accordance with Ind. Code 22-5-1.7-11(b).

This Addendum is intended to supplement the Agreement between the School Corporation and the contractor, whether oral or in writing.

**CONTRACTOR**

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

Its: \_\_\_\_\_

SECTION 00495

ADDENDUM TO CONTRACT FOR CONSTRUCTION

STATE OF INDIANA            )  
  )  
COUNTY OF \_\_\_\_\_ )

**AFFIDAVIT**

The undersigned, being duly sworn upon his oath, does state as follows:

1.     He/she is \_\_\_\_\_ (specify position) of \_\_\_\_\_  
      ("contractor") and has personal knowledge of the facts set forth in this Affidavit.
2.     The contractor provides services to the Duneland School Corporation.
3.     The contractor does not knowingly employ any unauthorized aliens, as such term is defined by  
      Indiana Code 22-5-1.7-9.
4.     This Affidavit is made for the purpose of complying with the requirements of Indiana Code 22-5-  
      1.7 et seq.

Dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Further Affiant sayeth not.

\_\_\_\_\_

I affirm, under the penalties for perjury, that the foregoing representations are true to the best of  
my knowledge and belief.

\_\_\_\_\_



**SECTION 00496**

**CERTIFICATION REGARDING INVESTMENT ACTIVITIES IN IRAN**

The CONTRACTOR certifies to the Duneland School Corporation ("OWNER"), as a condition of its contract with the School Corporation that CONTRACTOR is not engaged in investment activities in Iran. Pursuant to Ind. Code §5-22-16.5-8, a firm is considered to be engaging in investment activities with Iran if: (1) it has provided goods or services of Twenty Million Dollars (\$20,000,000.00) or more in value in the energy section of Iran, including oil or liquefied natural gas; or (2) has extended Twenty Million Dollars (\$20,000,000.00) or more in credit to another party, for 45 days or more, if that other party will use the credit to provide goods or services in the energy section in Iran and is, at the time credit is extended, identified on the list developed by the State of Indiana of parties it has determined to be engaged in investment activities in Iran. Be advised that the CONTRACTOR is not listed on the list published and/or endorsed by the State of Indiana pursuant to Ind. Code §5-22-16.5-9 as a company engaged in investment activities with Iran.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

CONTRACTOR:

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

Its: \_\_\_\_\_



## **SECTION 00700**

### **GENERAL CONDITIONS**

#### **FORM OF GENERAL CONDITIONS**

- 1.1 AIA Document A201, General Conditions of the Contract for Construction, 2017 Edition, attached, is the General Conditions between the Owner and Contractor.**
- 1.2 AIA Document A101-Exhibit A, Insurance and Bonds, 2017 Edition, attached, is the Insurance and Bonds requirements, for the Owner and Contractor, for the project.**
- 1.3 A Letter of Intent to Award a Construction Contract will be issued to the approved contractor upon approval of the Owner. This Letter of Intent shall serve as the Notice to proceed and the Contract for Construction, with all the terms and conditions referenced in the contract documents, until the contract, referenced above, has been fully executed. The awarded contractor shall begin all construction services as specified upon receipt of this Letter of Intent.**

**END OF SECTION**

# DRAFT AIA® Document A201™ – 2017

## General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

[Duneland School Corporation - General »](#)

« »

THE OWNER:

(Name, legal status and address)

[«Duneland School Corporation »« »](#)

[«601 West Morgan Avenue](#)

[Chesterton, Indiana 46304 »](#)

THE ARCHITECT:

(Name, legal status and address)

[« «Tria Architecture, Inc.»« »](#)

[«901 McClintock Drive, Suite 100](#)

[Burr Ridge, Illinois 60527»](#)

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**ADDITIONS AND DELETIONS:** The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

#### § 1.1.1 The Contract Documents

The Contract Documents ~~are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, consist of the Invitation to Bid, Instruction to Bidders, Bid Form, Agreement between Owner and Contractor (hereinafter the Agreement),~~ Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Schedules, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment ~~to of~~ the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, ~~or (4) (4) an Architect's Supplemental Instruction, or (5)~~ a written order for a minor change in the Work issued by the Architect. ~~Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.~~

#### § 1.1.2 The Contract

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

#### § 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### § 1.1.4 The Project

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

#### § 1.1.5 The Drawings

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

#### § 1.1.6 The Specifications

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

#### § 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### § 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### § 1.1.2 THE OWNER

The term "Owner" shall refer to the Duneland School Corporation, which shall also be referred to as the "School Corporation."

### **§ 1.1.3 The Contract**

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The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams. Figured dimensions shall be followed in preference to measurements by scale. All dimensions shall be checked against field measurements of existing conditions to be taken by the Contractor.

### **§ 1.1.7 The Specifications**

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

### **§ 1.1.8 Instruments of Service**

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The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

**§ 1.1.10** The term "Contractor" as used herein shall refer to the Contractor or Construction Manager at Risk.

### **1.1.10. MISCELLANEOUS DEFINITIONS**

**1.1.10.1** The term "Fabricated" as used throughout the Contract Documents is hereby defined to mean items specifically assembled or made of selected materials or components to meet individual design requirements.

**1.1.10.2** The term "Furnish" as used throughout the Contract Documents is hereby defined to mean materials or items to be furnished.

**1.1.10.3** The term "Install" as used throughout the Contract Documents is hereby defined to mean materials or items furnished by other trades shall be installed only. Such materials or items shall be received at the site, unloaded, stored, protected, and installed in place, including connections, auxiliary items, and other work required for a complete and functioning installation, unless any such work is specifically excluded.

**1.1.10.4** The term "Provide" as used throughout the Contract Documents is hereby defined to mean "furnish and install."

1.1.10.5 The phrase "Shop Fabricated" or "Shop Made" as used throughout the Contract Documents is hereby defined as items made by a contractor or subcontractor in their own Shop.

1.1.10.6 The words "Contractor shall" are implied and shall be so understood wherever a direction or instruction is stated in the imperative sense.

## **§ 1.2 Correlation and Intent of the Contract Documents**

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

**§ 1.2.1.1** The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

**§ 1.2.1.1** Where conflicts exist within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the more stringent, or higher quality or greater quantity requirements shall apply. Large-scale drawings take precedence over small-scale drawings, figured dimensions over scaled dimensions and noted materials over graphic representations.

**§ 1.2.1.2** The specifications are of the abbreviated type and may include incomplete sentences. Omissions of phrases such as "The Contractor shall" or "conforming to the requirements of" is intentional; omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the drawings. Words in singular shall include a plural whenever applicable, or the context so indicates.

**§ 1.2.1.3** Large-scale drawings take precedence over small-scale drawings, figured dimensions over scaled dimensions and noted materials over graphic representations.

**§ 1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**§ 1.2.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

**§ 1.2.3.1** In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities: 1) The Agreement, 2) Addenda, with those of later date having precedence over those of earlier date, 3) The General Conditions of the Contract for Construction, 4) Drawings and Specifications.

**§ 1.2.3.2** In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation.

## **§ 1.3 Capitalization**

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

## **§ 1.4 Interpretation**

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. The descriptive headings of this Agreement are inserted for convenience only and shall not control or affect the meaning or construction of any provisions following them.



## **§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service**

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

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

## **§ 1.6 Notice**

**§ 1.6.1** Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

**§ 1.6.2** Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

## **§ 1.7 Digital Data Use and Transmission**

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

## **§ 1.8 Building Information Models Use and Reliance**

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## **ARTICLE 2 OWNER**

### **§ 2.1 General**

**§ 2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

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

### **§ 2.2 Evidence of the Owner's Financial Arrangements Information and Services Required of Owner**

~~**§ 2.2.1** Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations~~

under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately. All other permits and fees shall be obtained and paid for by the Contractor under the Contract Documents. The Contractor shall be responsible to obtain all temporary permits including, but not limited to, demolition and canopy permits required to execute the Work

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start up, plus interest as provided in Permits and fees are the responsibility of the Contractor under the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### § 2.3 Information and Services Required of the Owner

§ 2.2.2.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.2.2.3 If the employment of the Architect terminates, the Owner shall employ a successor whose status under the Contract Documents shall be that of the Architect.

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. **Surveys.** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect. Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.



~~§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.~~

~~§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.~~

~~§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.~~

## **§ 2.4 Owner's Right to Stop the Work**

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or ~~repeatedly~~ fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3. This right shall be in addition to and not in restriction or derogation of Owner's rights under Article 14 hereof.

## **§ 2.5 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ~~ten-day~~ seven-day (7) period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner ~~may, may immediately,~~ without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor, the cost of correcting such deficiencies, including Owner's expenses and but not limited to, attorney's fees, compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments and expenses incurred in connection with such default, neglect or failure. Said Change Order shall be deemed signed by the Contractor for the purposes stated in Section 7.2.1 even if the Contractor fails to physically sign such Change Order. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15 at the Owner's option, the excess shall be deducted from any payment thereafter due or shall be paid by the Contractor immediately upon demand of the Owner. This right shall be in addition to and not in restriction or derogation of the Owner's rights under Article 14 hereof.

## **§ 2.6 ADDITIONAL RIGHTS**

The rights stated in Article 2 shall be in addition and not in limitation of any other rights of the Owner granted in the Contract Documents or at law or in equity.

## **ARTICLE 3 CONTRACTOR**

### **§ 3.1 General**

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

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

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

**§ 3.2 Review of Contract Documents and Field Conditions by Contractor**

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, ~~become generally familiar with~~ has inspected the local conditions under which the Work is to be performed, and has reviewed the Contract Documents, and correlated personal observations and inspections, and the bid, with all of the requirements of the Contract Documents.

§ 3.2.1.1 It shall be the duty of the Contractor to verify all dimensions given on the Drawings, and to report any error or inconsistency to the Architect before commencing Work.

§ 3.2.1.2 If the Contractor finds any details, construction procedures or materials shown on the Drawings or called for in the Specifications which the Contractor believes may not be satisfactory for the use shown, the Contractor shall so notify the Architect at least five (5) days before bids are due. Signing of the Agreement and starting the Work by the Contractor shall indicate the Contractor agreement with all details, construction procedures, and materials so shown and/or specified and shall indicate the Contractor's willingness to construct the Project in strict accordance with the Contract Documents and to guarantee the Project in full compliance with the warranty provisions of the Contract Documents. By executing this Agreement, the Contractor further acknowledges that it has satisfied itself as to the nature and location of the Work, the general and local conditions under which the Work is to be performed, including those bearing upon transportation, disposal, handling and storage of materials availability of labor, water, electric power, roads and uncertainties of weather, ground water table or similar physical conditions of the ground, the character, quality and quantity of surface and subsurface materials to be encountered, the character of equipment and facilities needed prior to and during the prosecution of the Work, and all other matters which can in any way affect the Work or the cost thereof. Any failure by the Contractor to become acquainted with all the available information concerning these conditions will not relieve the Contractor from any obligations with respect to the Contract Documents.

§ 3.2.1.3 If Work is required in a manner that makes it impossible to produce the quality required by the Contract Documents, or should discrepancies appear among the Contract Documents, the Contractor shall request in writing an interpretation from the Architect before proceeding with the Work. The Contractor shall perform the work at no additional cost to the Owner in accordance with the Architect's determination.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. ~~These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering~~ The Contractor shall promptly report to the Owner and the Architect any errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. ~~Documents.~~ The Contractor shall not be liable to the Owner or Architect for damage resulting from errors, inconsistencies, or omissions in the Contract Documents unless the Contractor recognized or should have recognized such error, inconsistency, or omission, and failed to report it to the Architect, in which case the Contractor shall not be entitled to an increase in the Contract Sum or Contract Time and the Contractor shall bear all attributable costs for correction. The Contractor agrees to release and hold harmless the Owner for errors, inconsistencies or omissions in the Contract Document which should have been discovered by the Contractor.

§ 3.2.3 ~~The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.~~

§ 3.2.2.1 The exactness of grades, elevations, dimensions, existing conditions, or locations given on any drawings issued by the Architect or the work installed by other contractors, is not guaranteed by the Architect or Owner.

§ 3.2.2.2 The Contractor shall, therefore, satisfy himself as to the accuracy of all grades, elevations, existing conditions, dimensions and locations. In all cases of interconnection of the Contractor's work with existing or other work, the Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, existing conditions, locations or dimensions shall be promptly rectified by him without extra cost to the Owner.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, 3.2.2, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs ~~those obligations, the obligations in Sections 3.2.2,~~ the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, ~~inconsistencies inconsistencies,~~ or omissions in the Contract ~~Documents, Documents or~~ for differences between field measurements or conditions and the Contract Documents, ~~or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities unless the Contractor recognized or should have recognized the error, inconsistency, omission, or difference and failed to report it.~~

### **§ 3.3 Supervision and Construction Procedures**

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures. The Contractor shall review any construction or installation procedure (including those recommended by any product manufacturer). The Contractor shall provide written notice to the Architect:

- (a) If a specified product deviates from good construction practices.
- (b) If following the Specifications will affect any warranties.
- (c) Any objections which the Contractor may have to the Specifications.

The responsibilities imposed on the Contractor by this Section shall be in addition to, and not be limited by, any and all other provisions of these Contract Documents.

§ 3.3.2 The Contractor shall ~~engage workmen who are skilled in performing the Work and all Work shall be performed with care and skill and in a good workmanlike manner under the full-time supervision of the approved superintendent described in Section 3.9.3. The Contractor shall be liable for all property damage including repairs or replacement of the Work and economic losses which proximately result from the breach of this duty. The Contractor shall be~~ responsible to the Owner for ~~the~~ acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and ~~any~~ other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its ~~Subcontractors.~~ Subcontractors or claiming by, through or under the Contractor, and for any damages, losses, costs, and expenses resulting from such acts or omissions.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

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

§ 3.3.5 The Contractor shall coordinate all portions of the work with separate Owner-employed contractors, if any.

§ 3.3.6 The Contractor shall assign a competent, technically-trained office project manager to the Project who shall perform all office functions including checking, approving and coordinating shop drawings and approving purchasing and disbursement pay-out requests and correspondence, and responding to Owner inquiries.

#### **§ 3.4 Labor and Materials**

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

**§ 3.4.2** Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the written consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. By making requests for substitutions hereunder, the Contractor:

- .1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
- .3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
- .4 will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall be responsible for any damages to property or injuries to persons, or to any other harm, caused by the Contractor's employees.

**§ 3.4.4** After the Agreement has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in Section 7.5.

#### **§ 3.5 Warranty**

**§ 3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and ~~new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. new, unless otherwise required or permitted by the Contract Documents and that the Work will be free from faults and defects and in conformance with the Contract Documents. The warranty will not be affected by the specification of any product or procedure, unless the Contractor objects promptly to such product or procedure and advises the Architect of possible substitute products or procedures which will not affect the warranty. This warranty shall not be restricted by the limitations of any manufacturer's warranty. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective in the Owner's sole discretion. Inability or refusal of the Subcontractor or supplier responsible for the defective work to correct such work shall not excuse the Contractor from performing under the warranty.~~ If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 Unless an alternative guaranty is specified in a particular division of the Specifications that is longer in duration than one (1) year, the Work shall be guaranteed by the Contractor against defect in material and workmanship for a period of one (1) year from the date of final completion (date of issuance of final payment to the contractor).

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

### **§ 3.6 Taxes**

~~The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.~~

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

~~§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies. The Contractor shall secure all permits, licenses and inspections necessary for proper execution and completion of the Work that which are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded which are legally required when bids are received.~~

§ 3.7.1.1 All cash deposits, bonds, fees, inspections, licenses, or permit fees shall be paid for by the Contractor.

§ 3.7.1.2 Prior to submission of all applications for permits, licenses or inspections the Contractor shall submit a copy of the application or written notice to the Owner for approval.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

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

### **§ 3.7.4 Concealed or Unknown Conditions**

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are ~~disturbed and in no event later than 14 days after first observance of the conditions-disturbed.~~ The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15. The site conditions contemplated by this Section include, but are not limited to, materials containing asbestos, polychlorinated biphenyl (PCB), or hazardous materials as defined in the Contract Documents.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall



continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a ~~competent~~ competent, English speaking superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

Important communications by the superintendent shall be confirmed in writing. Other communications by the superintendent shall be similarly confirmed on written request in each case. Failure of the superintendent to supervise the job properly shall be deemed as a default by the Contractor under the Contract Documents as determined by the Owner with the advice of the Architect.

~~§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14 day period shall constitute notice of no reasonable objection.~~

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's ~~consent,~~ which shall not unreasonably be withheld or delayed and Architect's written consent.

§ 3.9.4 The Contractor's superintendent must be dedicated solely to the Project and must be at the Project site each day and at all times that Work is being performed at the site, whether the Work is performed by the Contractor's own forces or by any subcontractors. The superintendent must be at the Project site from the first day of on-site activities until a minimum of fourteen (14) days after the date of Substantial Completion. Failure by the Contractor to provide full-time on-site supervision shall constitute grounds for termination of the Contract Documents by the Owner with seven days written notice.

### § 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the ~~Contract, shall Project, shall prepare and~~ submit for the Owner's and Architect's ~~information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised~~ review its Construction Schedule for the Work of the Contractor. Such Construction Schedule shall not exceed the completion dates, delivery dates or time limits required in the Contract Documents. The Construction Schedule

shall be revised by the Contractor at appropriate intervals as required by the conditions of the Work and Project and Project, and shall provide for expeditious execution of the Work.

**§ 3.10.2** The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals. Contractor shall prepare and keep current, for the Architect's record only, a schedule of submittals (the "Submittal Schedule") which is coordinated with the Contractor's Construction Schedule and allows the Architect reasonable time, as indicated in the Contract Documents, to review submittals. Neither the Contractor's preparation of the Submittal Schedule nor the Architect's receipt or review shall modify the Contractor's responsibility to make required submittals or to do so in a timely manner to provide for review in accordance with Section 4.2.7 as modified herein.

**§ 3.10.3** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect. The Owner's or Architect's failure to object to a submitted schedule that exceeds time limits current under the Contract Documents shall not relieve the Contractor of its obligations to meet those limits, nor shall it make the Owner or Architect liable for any of the Contractor's damages incurred as a result of increased construction time or not meeting those time limits. Similarly, the Architect's or Owner's failure to object to a Contractor's schedule showing performance in advance of such time limits shall not create or infer any rights in favor of the Contractor for performance in advance of such time limits.

**§ 3.10.4** At the time of each Application for Payment, the Contractor shall provide to the Owner and the Architect an update on the Project schedule and a written status report, which includes a description of the progress of the Work and if progress is behind schedule, the Contractor's plan to recover the Work to meet the approved Construction Schedule. The report shall also include a summary of the Contractor's meetings with subcontractors.

**§ 3.10.5** The Contractor shall hold meetings at least weekly (or at such intervals as are otherwise acceptable to the Owner and Architect) at the site. The Contractor shall provide the subcontractors, Architect and the Owner with a meeting schedule. The Contractor shall require subcontractors currently working at the site(s) to have a representative present for such meetings.

**§ 3.10.6** Within twenty-one (21) days of the award of the Project, the Contractor shall provide a written report to the Architect and the Owner that includes a list of the Contractor's suppliers, a list of materials and equipment to be purchased from suppliers and fabricators, the time required for fabrication, and the scheduled delivery dates for materials and equipment. Copies of the Contractor's purchase orders shall be delivered to the Architect and the Owner as soon as possible after receipt by the Contractor.

### **§ 3.11 Documents and Samples at the Site**

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These, along with all operating manuals for all equipment, shall be available to the Architect at all times and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed after completion of the Work but before the final Application for Payment.

**§ 3.11.1** The Contractor shall maintain at the site(s) one set of record drawings for the Owner and Architect of the as built plans and specifications for concealed work, particularly concealed piping and conduit. Any deviations from conditions shown on the Contract Drawings shall be shown and dimensioned on these record drawings. The Contractor shall develop layout drawings for concealed work that is schematically indicated on Contract Drawings in

order to have dimensioned layouts of such concealed work. This requirement does not authorize any deviations without approval of the Architect.

§ 3.11.1.1 The field information in the record drawings to be so marked shall include at a minimum:

- (1) Significant deviations of any nature made during construction;
- (2) Location of underground mechanical and electrical services, utilities, and appurtenances, referenced to permanent surface improvements.
- (3) Location of mechanical and electrical services, utilities, and appurtenances that are concealed in the building, referenced to accessible features of the building.

§ 3.11.2 The Contractor and their Subcontractors shall maintain at the site(s) an accurate record of deviations and changes from the Contract Documents which occur in the work; shall indicate all such deviations and changes on reproducible transparencies of the Contract Documents; and shall turn over to the Architect upon completion of the work all such documents and information, such as final shop drawings and sketches, marked prints and similar data indicating the as-built conditions. Plumbing, HVAC and Electrical Contractors shall record all changes or deviations in their work from what appears on the Contract Documents. The electronic AutoCAD base plan backgrounds shall be furnished by the Architect. The cost of recording and transferring the changes or deviations to the transparencies shall be included in the contract price for the respective work. The as-built transparencies shall be delivered by the Contractor to the Architect prior to the final acceptance of the Project and issuance of final payment.

## **§ 3.12 Shop Drawings, Product Data and Samples**

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

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

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

**§ 3.12.4** Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

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



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

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

~~§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.~~

§ 3.12.10.1. When professional certification or performance criteria of materials, systems or equipment is required by the Contract Documents, the Contractor shall provide the person or party providing the certification with full information of the relevant performance requirements and on the conditions under which the materials, systems, or equipment will be expected to operate at the Project site. The certification shall be based on performance under the operating conditions at the Project site. The Architect shall be entitled to rely on the accuracy and completeness of such certifications.

~~§ 3.12.10.2 If~~ When the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

### § 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.1 Only material and equipment which is to be used directly in the construction of this Project shall be brought to and stored on the job site by the Contractor. After equipment is no longer needed on this Project, it shall be promptly removed from the job site. Protection of all construction materials and equipment stored at the Job Site is the sole responsibility of the Contractor.

§ 3.13.2 The Contractor and its Subcontractors, and their respective employees, agents, and consultants, shall not enter any part or portion of the building work sites when students are present without the Owner's written authorization.

### **§ 3.14 Cutting and Patching**

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

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with prior written consent of the Owner and of the Separate ~~Contractor. Consent Contractor~~ such consent shall not be unreasonably withheld. The ~~Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.~~ Contractor's consent shall not be required.

§ 3.14.3 Only tradespersons skilled and experienced in cutting and patching shall perform such work.

### **§ 3.15 Cleaning Up**

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project. The Contractor shall remove and clean up hazardous materials in accordance with these General Conditions.

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

§ 3.15.3 All exterior and interior Work shall be cleaned using specific materials as recommended for surfaces to be cleaned. Damage to any surfaces due to improper cleaning methods of materials shall be repaired to the satisfaction of the Architect and Owner, by the Contractor, at no cost to the Owner.

### **§ 3.16 Access to Work**

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

### **§ 3.17 Royalties, Patents and Copyrights**

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

### **§ 3.18 Indemnification**

§ 3.18.1 To the fullest extent permitted by law, the Contractor ~~shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, waives any right of contribution against and shall defend, indemnify and hold harmless Owner, any Owner's Representative, the Architect and each of their officers, directors, board members, officials, agents, consultants and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from or in connection with the performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor,~~

~~any such claim, damage, loss or expense (these are collectively referred to as "claims") is caused by or alleged to be caused by an act or omission of Contractor, any Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense any of them or anyone for whose acts any of them may be liable in the performance of the Agreement, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a otherwise reduce any other right or obligation of indemnity or contribution which would otherwise exist as to any party or person described in this Section 3.18-Contract. The obligations of the Contractor under this Section 3.18.1 shall be construed to include, but not be limited to, injury or damage consequent upon failure to use or misuse by the Contractor, his agents, Sub-Contractors, and employees of any scaffold, hoist, crane, stay, ladder, support, or other mechanical contrivance erected or constructed by any person, or any or all other kinds of equipment, whether or not owned or furnished by the Owner.~~

**§ 3.18.2** ~~In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts. The Contractor shall, and hereby covenants and agrees to indemnify, defend, save and hold harmless the following indemnitees: The Owner, its Architects, Board Members, Officers, Agents, and Employees, individually and collectively, from all claims, demands, actions and the like, of every nature and description, made or instituted, by Third Parties, arising or alleged to arise out of the work under this contract, as a result of any act or omission of either the Contractor or any Subcontractor, or any of their employees or agents. Contractor and Subcontractor shall name the Owner, its Architects, Board Members, Officers, Agents and Employees, individually and collectively, as additional insured as primary coverage without limitation on their general liability policies. Contractor and Subcontractor/s shall furnish Owner with copies of such policies prior to beginning any work.~~

**§ 3.18.3** ~~"Claims, damages, losses and expenses" as these words are used in this Contract shall be construed to include, but not be limited to (1) injury or damage consequent upon the failure of or use or misuse by Contractor, its Subcontractors, agents, servants or employees, of any hoist, rigging, blocking, scaffolding, or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by Owner; (2) all attorneys' fees and costs incurred in defense of the claim or in bringing an action to enforce the provision of this Indemnity or any other indemnity contained in the Contract Documents; and (3) all costs, expenses, lost time, opportunity costs, etc. incurred by the party being indemnified or its employees, agents or consultants.~~

**§ 3.18.4** ~~In the event that any party is requested but refuses to honor the indemnity obligations hereunder, then the party indemnifying shall, in addition to all other obligations, pay the cost of bringing any such action, including attorneys' fees, time expended by the party being indemnified and their employees in the defense of any litigation covered by this indemnity provision at their usual rates plus cost of travel, long distance telephone calls and reproduction of documents to the party requesting indemnity.~~

**§ 3.18.5** ~~In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts. The Contractor hereby knowingly and intentionally waives the right to assert that Contractor's liability may be limited to the amount of its statutory liability under the Workers' Compensation Act, and agrees that Contractor's liability to indemnify and defend the Owner and Architect is not so limited. The Contractor shall include this provision in each of its Subcontract agreements and shall require its Subcontractors to be so bound.~~

**§ 3.18.6** ~~Contractor shall include in each and every contract with any and all subcontractors and/or material suppliers performing Work and require each and every subcontractor and/or material supplier performing Work to agree to be bound by all of the provisions 3.18.1 through 3.18.9 under the Contract Documents.~~

**§ 3.18.7** ~~Contractor's indemnity obligations hereunder shall, but not by way of limitation, specifically include all claims and judgments which may be made against the indemnitees under federal or state law or the law of the other~~

governmental bodies having jurisdiction, and further, against claims and judgments arising from violation of public ordinances and requirements of governing authorities due to Contractor's or Contractor's employees method of execution of the Work.

§ 3.18.9 The Contractor shall indemnify and hold harmless the Owner in the event of labor or trade union conflicts or disputes between the Contractor and subcontractors and their respective employees. The Contractor shall endeavor to adjust and resolve such conflicts and disputes which affect the timely completion of the Work. Such conflicts or disputes shall not be a basis or excuse for the violation of the Contract Documents by the Contractor or its subcontractors, and shall not provide the Contractor with relief from meeting all time limits for Substantial Completion or Final Completion. Labor or trade union disputes that effect production or delivery of materials or equipment, or their installation, shall be at no cost to the Owner. The Contractor shall notify the Architect and the Owner in writing as soon as possible as to any labor or trade disputes which may affect the Work and its timely completion. In such event, the Contractor shall provide a written proposal to the Architect and the Owner which includes any comparable substitution(s) necessary to complete the Work.

§ 3.18.10 None of the foregoing provisions shall deprive the Owner or the Architect of any action, right or remedy otherwise available to them or either of them at law.

§ 3.19 If the work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner, the Architect or the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the work of any particular trade. In case the progress of the work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of the conflict involving any such agreement or regulation, the Architect may require that other material or equipment of equal kind and quality be provided at no additional cost to the Owner.

## **ARTICLE 4 ARCHITECT**

### **§ 4.1 General**

**§ 4.1.1** The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

**§ 4.1.3** If the employment of the Architect is terminated, the Owner shall employ a successor architect whose status under the Contract Documents shall be that of the Architect.

**§ 4.1.4** The Architect's and its consultants' services will terminate sixty (60) days after (1) the date of Substantial Completion of the Work or (2) the anticipated date of Substantial Completion identified in the Contract Documents, whichever is earlier. Any services required of the Architect and its consultants after this date will be back-charged to the Contractor by the Owner.

### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Architect will visit the site at intervals ~~appropriate to the stage of construction, or as otherwise agreed with the Owner, as agreed to by Owner and Architect~~ to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully Work to endeavor to determine that the Work, when completed, will be in accordance with the Contract Documents. Documents, and to endeavor to guard the Owner against defects and deficiencies in the Work. However, the Architect will not be required to make exhaustive or continuous on-site

inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the ~~portion of the~~ Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols. However, this Section shall not be deemed to prohibit direct communication between the Owner and the Architect.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts. The Contractor shall provide to the Architect (1) mechanics lien waivers, (2) certified payroll statements and documentation as may be requested and (3) sworn statements listing subcontractors and materialmen before issuing Payment Certificates, and if such sworn statement or waivers are not provided, the Architect's Certificates shall be conditioned upon and subject to the receipt of such waivers.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Any Work rejected by the Architect shall be reported promptly to the Owner in writing Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. The Contractor shall give submittals to the Architect in a manner to allow for the Architect's reasonable prompt review and to allow for timely ordering of components of the Work to affect no delay in the Work.

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



§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to ~~Section 9.10.~~Section 9.10; however, the issuance of such final Certificate of Payment shall not bind the Owner to any payment unless it accepts such final Certificate for Payment. The Owner's acceptance shall not be unreasonably withheld. Additionally, the Architect shall review all warranties and related documents and provide a recommendation to the Owner as to whether the warranties comply with the Contract Documents.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will initially interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If the Contractor submits such written request to the Architect, the Contractor will simultaneously provide a copy of such request to the Owner. The Architect will consult with the Owner regarding any request by the Contractor before responding to the Contractor.

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

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

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

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

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

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

### § 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

~~§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect. Prior to executing the Contract, the Contractor shall furnish in writing to notify the Owner through the Architect the names~~ of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. ~~Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.~~

§ 5.2.1.1 In addition to the information which may be required prior to the award of the Project, not later than twenty-one (21) days after Notice of Award of the Project, the Contractor shall furnish to the Owner through the

Architect the names of persons or entities proposed as manufacturers for each of the products identified in the General Requirements and, where applicable, the name of the installing Subcontractor.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection. All contracts between the Contractor and subcontractors shall be made in writing, shall be assignable to the Owner, and shall contain the following sentence, 'The Owner is an intended third-party beneficiary of this Subcontract.'

§ 5.2.3 If the Owner or Architect has ~~reasonable~~ objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no ~~reasonable~~ objection. ~~If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.~~ No additional costs shall be allowed for a change required due to an objection by the Owner, Contractor, or Architect

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected ~~if the Owner or Architect makes reasonable objection to such substitution without written approval of the Owner.~~ The Contractor further acknowledges and agrees that after award of the Project to the Contractor, any savings on changes to contracts with subcontractors or substitute subcontractors will be for the benefit of the Owner and will not be used for the benefit of the Contractor or to increase the Contractor's profit on the Project. The foregoing benefit to the Owner shall include any adjustment in the amount of the price of a contract to less than the quoted price of the subcontractor upon which the Contractor's fixed bid price or Contract Sum was based. Further, if a manufacturer or supplier of any machinery or equipment, including, but not limited to, heating and air conditioning units or systems, changes specifications or offers incentives, discounts or lower prices after award of the Contract to the Contractor, those savings will inure to the benefit of the Owner and not the Contractor, subcontractor, manufacturer or supplier.

### § 5.3 Subcontractual Relations

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

§ 5.3.1 The Contractor shall be responsible for any and all Subcontractors working under him and shall carry insurance for all Subcontractors or ensure that they are carrying it for themselves so as to relieve the Owner, Architect and Architect's Consultants of any and all liability.

§ 5.3.2 The Owner and Architect assume no responsibility for overlapping or omission of parts of the Work by various Subcontractors in their Contracts with the Contractor.

### § 5.4 Contingent Assignment of Subcontracts

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

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

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

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

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

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation-

subrogation, without altering the Owner's Agreement with the Contractor.

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

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

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

### § 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.



**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. ~~The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.~~

**§ 6.2.4** The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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

### **§ 6.3 Owner's Right to Clean Up**

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 General**

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

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

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

**§ 7.1.4** For any changes in the Work requested by the Contractor involving more than a three (3) calendar day extension of time, the Contractor shall submit critical path schedule showing the original schedule and impact of the proposed change justifying the requested extension of time. The Owner may at its option refuse the extension of time and have the Contractor perform the Work within the original schedule provided all reasonable costs for completing the Work including overtime and acceleration costs are included in the Change Order.

**§ 7.1.5** If a proposal for additional work is requested by the Owner from the Contractor which involves additional time, at the Owner's option, the Owner may extend the completion date for that portion of the Work included in the change, without extending the Contract Time for the remainder of the Work.

**§ 7.1.6** Changes which involve credits to the Contract Sum shall include overhead, profit, general conditions, and bond and insurance costs.

**§ 7.1.7** For any adjustments to the Contract Sum based on other than the unit price method, overhead, profit, and General Conditions combined shall be calculated at the following percentages of the cost attributable to the change in the Work:

- .1 For the Contractor for Work performed by the Contractor's own forces, ten percent of the Cost.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractors five percent of the amount due the Subcontractor.
- .3 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, ten percent of the Cost.
- .4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, five percent of the amount due the Sub-subcontractor.
- .5 Costs to which overhead, profit, and general conditions is to be applied shall be determined in accordance with Sub-Sections 7.3.7.1 through 7.3.7.5.

.6 When both additions and credits are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any;

§ 7.1.8 In order to facilitate checking of quotations for extras or credits, all proposals shall be accompanied by:

- .1 A complete itemization of costs including labor, material.
- .2 Subcontractor's, Sub-subcontractor's and material suppliers for their portions of the work itemized to include labor, material.
- .3 Labor costs shall be indicated hourly wage and fringe benefits. Labor hours shall be provided for each phase of the work.
- .4 Material costs shall include unit costs and units required where applicable.

§ 7.1.9 The Contractor understands that Change Orders to the Contract which increase or decrease the Cost by \$10,000 or more, or the time of completion by 30 days or more, will require written documentation by the Owner that the changes:

- .1 were not reasonably foreseeable at the time the Contract was signed;
- .2 were not within the contemplation of the Contract as signed; and
- .3 are in the best interest of the Owner or region and authorized by law.

§ 7.1.10 The Contractor shall provide written notice to the Architect and the Owner if overtime labor rates are included in the computation of the cost of a proposed Change Order or Construction Change Directive.

§ 7.1.11 In the event that the Contractor and the Owner do not reach agreement on a Change Order or a Construction Change Directive, the Owner may, in its discretion, delete the labor, materials and equipment that are the subject of the Change Order or the Construction Change Directive from the Work to be performed under the Contract Documents. The Owner shall receive credit from the Contractor for the labor, materials, and equipment, including Contractor overhead and profit attributable to the deleted work. The Owner may complete the deleted work through another contractor or subcontractor.

## **§ 7.2 Change Orders**

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

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

## **§ 7.3 Construction Change Directives**

**§ 7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

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

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;**
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;**
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or**
- .4 As provided in Section 7.3.4.**

**§ 7.3.4** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and

profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 ~~Costs~~ Actual costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 ~~Costs~~ Actual costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 ~~Rental~~ Actual rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 ~~Costs~~ Actual costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 ~~Costs~~ Actual costs of supervision and field office personnel directly attributable to the change. Cost of supervision, unless directly attributable to change, will not be allowable as an itemized cost for any additions (or credited for deletions) unless a change in the Contract Time is made.

Overtime when specifically authorized by the Owner shall be paid for by the Owner on the basis of a premium payment only, plus the cost of insurance and taxes based on the premium payment. Overhead and profit will not be paid by the Owner for overtime. Field tickets must be signed by the Owner or Architect for verification of overtime hours.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order. Upon resolution of exact scope, Contract Sum change, and Contract Time change, a Change Order shall be prepared incorporating the Construction Change Directive.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be computed in accordance with Section 7.3.4 shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, increase or decrease, if any, with respect to that change. Also, if the amount of either the credit or the addition is in dispute, the amount of the other, non-disputed item may not be included in Applications for Payment. Overhead and profit will be included in credits to the same extent they are included in additive Change Orders.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

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

§ 7.3.11 Change Orders that result in a net decrease in or credit to the Contract Sum must include a credit to the Owner for the Contractor's overhead and profit as described in Section 7.1.7.

#### **§ 7.4 Minor Changes in the Work**

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall promptly notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

#### **§ 7.5 SUBSTITUTIONS**

After the award of the Project, a request by the Contractor for a substitution of materials or equipment in place of those specified in the Contract Documents will be considered only under one or more of the following conditions:

- (a) Required for compliance with interpretation of code requirements or insurance regulations then existing.
- (b) Unavailability of specified products, through no fault of the Contractor.
- (c) Subsequent information discloses inability of specified products to perform properly or to fit in designated space.
- (d) Manufacturer/fabricator refuses to certify or guarantee performance of specified product as required.
- (e) When it is clearly seen, in the judgment of the Architect and with the Owner's approval, that a substitution would be substantially to the Owner's best interests, in terms of cost, time, or other considerations.

Substitution requests shall be written, timely, and accompanied by adequate technical and cost data. Requests shall include a complete description of the proposed substitution, name of the material or equipment for which it is to be substituted, drawings, cuts, performance and test data, and any other data or information necessary for a complete evaluation by the Architect.

### **ARTICLE 8 TIME**

#### **§ 8.1 Definitions**

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

**§ 8.1.2** The date of commencement of the Work is the date established in the Agreement.

**§ 8.1.3** The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

**§ 8.1.4** The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined working day, excluding weekends and legal holidays.

#### **§ 8.2 Progress and Completion**

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

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. The Contractor shall bear all additional costs incurred to meet the Contract Time, which may require working overtime without additional compensation.

§ 8.2.4 The Contractor shall reimburse the Owner for all fees or expenses, including without limitation, the Architect, engineers and legal expenses, for additional services necessitated by Contractor's failure to obtain Substantial Completion within the time established in the agreement, for more than two (2) inspections for Substantial Completion, or final inspection.

### **§ 8.3 Delays and Extensions of Time**

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner ~~pending mediation and binding dispute resolution; or by other causes which the Architect and Owner determine, in their sole discretion,~~ or (5) by other causes that the Contractor asserts, and the Owner Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect and Owner may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15. The Contractor shall not be entitled to recover from the Owner, and hereby waives all rights that it or its Subcontractors or any other person may otherwise have to recovery, any costs, expenses and damages of any nature that it or its Subcontractors or any other person may suffer by reason of delay in the performance of the Work or any portion thereof, the extension of Contract Time granted herein being the Contractor's sole and exclusive remedy.

§ 8.3.3 This Section 8.3. The Contractor shall not be entitled to any increase in the Contract Sum as a result of any delays in the progress of the Work. The Contractor's sole remedy for delay shall be an extension of time. This Section 8.3 does not preclude recovery of damages ~~for or~~ delay by ~~either party~~ the Owner under other provisions of the Contract Documents.

§ 8.3.4 Notwithstanding other provisions in this Contract, Contractor shall not be entitled to any recovery of damages arising out of any event or delay caused within Contractor's control and/or for "Acts of God", including without limitation adverse weather conditions (which shall include typical rain events that can be reasonably predicted through historical data) which prevents such early completion of the Work.

§ 8.3.5 Where a delay occurs that is beyond the Contractor's control and when the delay is not reasonably unacceptable, the Contractor has an affirmative duty to mitigate the effect of that delay on the progress of the Work. An extension of the Substantial Completion date will not be granted to the extent that the Contractor breaches said duty to mitigate.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the At the pre-construction meeting, the Contractor shall submit to the Owner and the Architect a detailed schedule of values allocated various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.



### § 9.3 Applications for Payment

§ 9.3.1 At least ~~ten days~~ twenty (20) days before the Owner's submission date for the School Board's review and approval of such payment at the next School Board meeting or, if the Owner's School Board approves otherwise, before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents. The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay. However, this Section will not apply to routine retainage the Contractor intends to withhold from the Subcontractor pursuant to the Subcontract.

§ 9.3.1.3 No interest will be paid upon retainage.

§ 9.3.1.4 Contractor shall submit all payment requests to the Architect for all work completed during the previous time period. Requests submitted late will not be processed until the following month. Contractor shall include the Contractor's waiver of lien for the full amount and partial subcontractor waivers of lien in the amounts of the previous payment request.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site. The Contractor shall submit requisitions from suppliers and Subcontractors to substantiate the amounts requested on the Application for Payment for materials or equipment stored on or off site. The Owner shall have no responsibility or liability to the Contractor for the safekeeping of materials and equipment stored at the site or off the site.

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

§ 9.3.4 The Contractor shall submit his application for payment as outlined in Section 9.3 on the first of the month, and the Owner will make payment accordingly promptly after receipt of the Architect's Certificate. Each partial payment request shall be made monthly and Contractor shall request payment of ninety percent (90%) of the portion of the Contract Sum properly allocable to labor, materials and equipment incorporated in the work less the aggregate of previous payments in each case. The Owner reserves the right to reduce retainage prior to substantial completion. Retainage shall not be reduced below 5% until all closeout documents as required in the Instruments of Service have been received and reviewed by the Architect.

§ 9.3.5 Before each certificate for payment is issued, the Contractor shall furnish to the Architect a complete statement of the amounts due to Subcontractors, parties supplying material, and for his own materials and labor, on AIA Document G702 and G702A "Application and Certificate for Payment."

§ 9.3.6 A Sworn "Contractor's Affidavit" shall be submitted with each payment request in sufficient form for the Owner to determine Contractor's right to payment. Each payment request shall include executed waivers of lien in conformity with information set forth on a properly completed Contractor's Affidavit. In the event that the Owner is satisfied with Contractor's payment procedures, the Owner may accept partial waivers of lien of Subcontractors and suppliers who were included in the immediate preceding payment. The Contractor shall submit waivers on a current basis, but the Owner may allow Subcontractors and suppliers to be not more than one payment late with their partial waivers.

§ 9.3.7 Upon giving ten (10) days' notice in writing to the Contractor, the full contract retainage may be reinstated, and the retention restored to the basis established in Section 9.3.4 if the manner of completion of the work and its progress do not remain satisfactory to the Owner, or if any surety of Contractor withholds its consent.

§ 9.3.8 All material necessary for the construction of this Project, delivered upon the premises, shall not be removed from the premises without written consent of the Architect.

§ 9.3.9 The Contractor's request for final payment shall include: (1) the Contractor's Final Lien Waiver in the full amount of the contract; and (2) final lien waivers in the full amount of their contracts from all subcontractors and suppliers for which final lien waivers have not previously been submitted.

#### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

#### **§ 9.5 Decisions to Withhold Certification**

**§ 9.5.1** The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;

- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.5.5 The Owner shall not be required to make payment unless in its own independent judgment it accepts the Architect's Certificate.

## § 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner. In the event that the Owner elects to utilize an escrow agent, the Owner and the escrow agent may elect to make payments due the Contractor to the Contractor and its subcontractors.

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

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

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4. Intentionally Deleted.

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

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both,



under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

**§ 9.6.8** Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

### **§ 9.7 Failure of Payment**

~~If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start up, plus interest as provided for in the Contract Documents.~~Intentionally Deleted.

### **§ 9.8 Substantial Completion**

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

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. With respect to Work enumerated on the list accompanying the Certificate of Substantial Completion, the guarantee or warranty period shall start at the time of subsequent acceptance of this Work in writing by Owner.

**§ 9.8.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. The payment shall be sufficient to increase the total payments to 95 percent of the contract sum, less such amounts as the Architect shall determine for incomplete work and unsettled claims.

## **§ 9.9 Partial Occupancy or Use**

~~§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.~~

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

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

## **§ 9.10 Final Completion and Final Payment**

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

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

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

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

- ~~.1 —liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;~~
- ~~.2 —failure of the Work to comply with the requirements of the Contract Documents;~~
- ~~.3 —terms of special warranties required by the Contract Documents; or~~
- ~~.4 —audits performed by the Owner, if permitted by the Contract Documents, after final payment.~~

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

#### § 9.11 LIQUIDATED DAMAGES

The Contractor is solely responsible for substantially completing the Work by the scheduled Substantial Completion Date for each Phase of the Work. This responsibility includes all work of the Contractor and that of its Subcontractors and suppliers. The Contractor acknowledges that the Owner will suffer significant financial loss, and there will be disruption to the School Corporation community, if the Project is not complete on or before the Substantial Completion Date for the work set forth in the Contract Documents. The Contractor further acknowledges that the measure of such loss and the disruption to the School Corporation community would not be susceptible to precise calculation. To protect the Owner against said loss and disruption to the School Corporation community and not as a penalty, the Owner and the Contractor hereby agree that the Contractor and the Contractor's Surety, if any, shall be liable for and shall pay to the Owner, Liquidated Damages as per the Liquidated Damages Sliding Scale below for each calendar day of delay, per each School campus, per Phase in Substantial Completion. Substantial Completion for the Project refers to all scheduled work being a minimum 99% complete.

#### LIQUIDATED DAMAGES SLIDING SCALE

<u>Original Awarded Bid Cost</u>	<u>Liquidated Damages per Calendar Day</u>
<u>\$0 - \$499,999.99</u>	<u>\$500</u>
<u>\$500,000.00 - \$999,999.99</u>	<u>\$600</u>
<u>\$1,000,000.00 - \$3,999,999.99</u>	<u>\$700</u>
<u>\$4,000,000.00 - \$7,999,999.99</u>	<u>\$800</u>
<u>\$8,000,000.00 - \$11,999,999.99</u>	<u>\$900</u>
<u>\$12,000,000.00 - \$19,999,999.99</u>	<u>\$1,000</u>
<u>\$20,000,000.00 - Above</u>	<u>\$1,500</u>

§ 9.11.2 Payments of Liquidated Damages are in addition to other direct damages that may be incurred by the Owner and not a penalty. All such Liquidated Damages may be set-off against any monies that may be due the Contractor. The Owner's approval or making of progress payments or final payment, with or without knowledge that the Work was untimely, shall not constitute or be deemed a waiver of the Owner's rights or claims, or of the Owner's ability to receive Liquidated Damages under the Contract or common law.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 Safety Precautions and Programs**

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

### **§ 10.2 Safety of Persons and Property**

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

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

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

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

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

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

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

#### § 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21-twenty-one (21) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 The Contractor, prior to commencing the work, shall submit to the Architect, in writing, a statement certifying that he is familiar with the Manual of Accident Prevention in Construction by the Associated General Contractors of America, current edition, and further that the Contractor will maintain at the project a copy of said publication and will strictly enforce the applicable requirements of same. Contractor will also state the name of the Contractor's Safety Engineer who will be responsible for enforcing all safety requirements.

§ 10.2.10 All Construction documents pertaining to this Work, and the joint and several phases of construction hereby contemplated, are to be governed, at all times, by applicable provisions of the Federal Law, including but not limited to the latest amendments of the following:

.1 Williams Steiger Occupational Safety & Health Act of 1970 Public Law 91 596;

.2 Part 1910 — Occupational Safety & Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;

.3 Part 1518 — Safety & Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

#### § 10.3 Hazardous Materials and Substances

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

§ 10.3.1.1 The Contractor shall not cause or permit any "Hazardous Materials" (as defined herein) to be brought upon, kept or used in or about the Projects site(s) except to the extent such Hazardous Materials: (1) are necessary for the prosecution of the Work; and (2) have been approved in writing by the Owner. Any Hazardous Materials allowed to be used on the Project site(s) shall be used, stored, and disposed of in writing as directed in writing by the Owner. Any Hazardous Materials allowed to be used in the Project site(s) shall be used, stored, and disposed of in compliance with all applicable laws relating to such Hazardous Materials. Any unused or surplus hazardous Materials, as well as, any other Hazardous Materials that have been placed, released, or discharged on the Project site(s) by the Contractor or any of its employees, agents, suppliers, or subcontractors, shall be removed from the Project site(s) at the earlier of (1) completion of the Work requiring the use of such Hazardous Materials; (2) the completion of the Work as a whole; or (3) within twenty-four (24) hours following the Owner's demand for such removal. Such removal shall be undertaken by the Contractor at its sole cost and expense and shall be performed in accordance with all applicable laws. The Contractor shall immediately notify the Owner of any release or discharge of any Hazardous Materials on the Project site(s). The Contractor shall provide the Owner with copies of all warning labels on products that the Contractor or any of its subcontractors will be using in connection with the Work, and the Contractor shall be responsible for making any and all disclosures required under applicable "Community Right to Know" or similar laws. The Contractor shall not clean or service any tools, equipment, vehicles, materials, or other items in such a manner as to cause a violation of any laws or regulations relating to Hazardous Materials. All residue and waste materials resulting from any such cleaning or servicing shall be collected and removed from the Project site(s) in accordance with all applicable laws and regulations. The Contractor shall immediately notify the Owner of any citations, orders, or warnings issued to or received by the Contractor, or of which the Contractor otherwise becomes aware, that relate to any Hazardous Materials on the Project site(s). Without limiting any other indemnification provisions pursuant to law or specified in this Agreement, the Contractor shall indemnify, defend (at the Contractor's sole cost, and with legal counsel approved by the Owner), and hold the Owner and Architect harmless from any and all claims, demands, losses, damages, disbursements, liabilities, obligations, fines, penalties, costs, and expenses for removing and remedying the effect of any Hazardous Materials on, under, from, or about the Project site(s), arising out of or relating to, directly or indirectly, the Contractor's or its subcontractor's failures to comply with any of the requirements herein. As used herein, the term "Hazardous Materials" means any hazardous or toxic substances, materials, and wastes listed in the United States Department of transportation Materials Table, or listed by the Environmental Protection Agency as hazardous substances, and all substances, materials, or wastes that are or become regulated under federal, state, or local law.

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

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

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. site. The



Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

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

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

#### **§ 10.4 Emergencies**

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

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 Contractor's Insurance and Bonds**

**§ 11.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's ~~commercial general liability policy or as otherwise described liability policies as required~~ in the Contract Documents.

~~**§ 11.1.2** The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.~~

~~**§ 11.1.2.** The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.~~

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

**§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

#### **§ 11.2 Owner's Insurance**

~~**§ 11.2.1** The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.~~

~~**§ 11.2.1.** The Contractor shall purchase and maintain insurance covering the Owner's contingent liability for claims which may arise from operations under the contract and that will protect the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees and all other defense costs whether in legal or administrative actions.~~

**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto. In any and all claims against the Owner or the Architect or any of their agents or employees by any employee of the contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the contractor or any subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.

**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance. The Contractor shall give the Owner the original policy and shall furnish the Architect memorandum copies of said policy. The Owner and Architect shall be the named insureds in this Protective Liability Policy. The Contractor shall protect the Owner and the Architect and their agents and employees from expenses, including attorney's fees, arising out of or resulting from the performance sickness, disease, or death, or injury to, or destruction of any tangible property (other than the Work itself) including the loss of use therefrom that is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether it is caused in whole or in part by a party to whom insurance is afforded pursuant to this Section.

### **§ 11.3 PROPERTY INSURANCE**

**§ 11.3.1 Builder's Risk Insurance** is required and shall be purchased and maintained by the Owner until Substantial Completion.

**§ 11.3.1.1** The policy required by this Section shall be a Completed Value All Risk Builder's Risk policy and shall cover all work (including that of all contractors) in the course of construction excluding temporary structures and materials used in the construction process stored on or within one hundred feet of the construction site and while awaiting installation. The policy shall be written in an amount equal to 100% of the total sum of all contracts. However, the policy is based on a \$5,000 deductible, applicable to all losses for each occurrence. Therefore, the Contractor shall be solely responsible for any and all losses up to \$5,000. Losses are adjustable with and payable to the Owner for his own account.

**§ 11.3.1.2** Coverage under the policy required by this Section shall include, but not be limited to:

- A. All Risk of Direct Physical Loss, including Fire and Extended Coverage (Lightning, wind storm, hail, explosion, riot, civil commotion, aircraft, vehicle and smoke).
- B. Vandalism and Malicious Mischief.

**§ 11.3.1.3** Coverage under the policy required by this Section shall not extend to:

- A. The Contractors', Subcontractors', or the Architect's/Engineer's Tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring and other similar items commonly referred to as construction equipment, which may be on the site and the capital value of which is not included in the Work.
- B. Property owned by employees of any of the foregoing.
- C. Vehicles of any kind.
- D. Trees and shrubs.
- E. Drawings and specifications.

§ 11.3.1.5 The policy required by this Section by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the project by the Owner.

§ 11.3.1.6 The prompt repair or reconstruction of the Work as a result of any insured loss or damage shall be the Contractor's responsibility and shall be accomplished at no additional cost to the Owner or Architect. The contractor shall furnish the proper assistance in the adjustment and settlement of any loss. Loss will be adjustable with and payable to the party purchasing the Builder's Risk Insurance who shall be responsible for apportioning the loss proceeds to each and every entity involved in the loss to the extent of his interest. The policy shall contain a provision that the policy will not be canceled, changed or altered until at least 30 calendar days prior written notice has been given to the named insured.

### **§ 11.3 Waivers of Subrogation**

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

### **§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance**

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

### **§11.5 Adjustment and Settlement of Insured Loss**

§ 11.5.1 A loss insured under the Owner's property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors Contractor shall pay the Subcontractors, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.



**§ 11.5.2** Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work. The Owner as fiduciary shall have the power to adjust and settle a loss with insurers.

## **ARTICLE 12 UNCOVERING AND CORRECTION OF WORK**

### **§ 12.1 Uncovering of Work**

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

**§ 12.1.2** If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

### **§ 12.2 Correction of Work**

#### **§ 12.2.1 Before Substantial Completion**

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

#### **§ 12.2.2 After ~~Substantial~~ Final Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of ~~Substantial~~ Final Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor ~~shall~~ shall, at Contractor's sole cost and expense, correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

**§ 12.2.2.3** ~~The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.~~ In the case of any Work performed in correcting defects pursuant to guarantees or warranties provided or referred to by this Article 12, the warranty or guarantee period shall begin anew from the date of the completion or correction of such Work.

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

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents. Documents and pay all attorney's fees and expenses related thereto immediately upon demand.

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

### § 12.3 Acceptance of Nonconforming Work

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

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.  
State of Indiana.

### § 13.2 Successors and Assigns

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

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

### § 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

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

§ 13.3.3 The Owner and the Architect reserve the right to accept or reject any substitutions bid upon. If substitutions are not specifically accepted in writing, materials specified as "standard" shall be used in construction of this project.

§ 13.3.4 Any material specified by reference to the number, symbol or title of specific standards, such as Commercial Standards, Federal Specifications, trade association standards, or similar standards, shall comply with requirements in the latest revision thereof and any amendment of supplement thereto in effect on the date of the Instruments of Service, except as limited to type, class or grade, or modified in such reference by a given date. The standards related to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.

## § 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, ~~except as provided in Section 13.4.3,~~ shall be at the ~~Owner's~~ Contractor's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense. Notwithstanding any other term or provision in this Article 13 to the contrary, in the event that any testing or inspection of the Work or any part thereof reveals defects in materials or workmanship, then the Contractor shall remedy such defects and shall bear all costs and expenses associated with such testing which is related to determining whether such defects have been properly remedied.

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

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

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

## § 13.5 Interest

~~Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. Any references in this Agreement to interest being assessed against the Owner are hereby deleted.~~

## § 13.7 REGULATIONS

§ 13.7.1 The Contractor and/or Subcontractor warrant/s that s/he is familiar with and s/he shall comply with Federal, State and local laws, statutes, ordinances, rules and regulations, School Board Rules and Policies, and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the contract including without limitation Workmen's Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours, and, without limitation, such other laws and regulations as are specifically described below. Additionally, Contractor and subcontractor warrant that s/he shall comply with any amendments to such Federal, State and local laws, statutes, ordinances, rules and regulations that are enacted thereafter during the performance of the Work and under this Contract. To the extent that there are any violations of any of the applicable laws, rules, regulations and/or court orders/decrees mentioned herein, Contractor and Subcontractor shall be responsible for indemnifying and holding both the Owner and Architect free and harmless from all costs, fees and expenses incurred, directly or indirectly and including without limitation attorneys' fees, by the Owner or the Architect in responding to and complying with demands made by any of the governmental departments/agencies and/or the courts, or an aggrieved employee or person and such amounts may be withheld from the payments to be made on the project. It is the intention that the Owner and Architect shall suffer no time loss or other additional expenses in complying with any inquiry made with

regard to any compliance with the applicable laws, rules and regulations referenced herein. No plea of misunderstanding or ignorance thereof will be considered.

§ 13.7.1.1 Whenever required or upon the request of the Architect or Owner, the Contractor or subcontractor shall furnish the Architect and the Owner with satisfactory proof of compliance with said Federal, State and local laws, statutes, ordinances, rules, regulations, orders, and decrees.

§ 13.7.2 The Contractor and Subcontractors shall carefully examine the Occupational Safety and Health Act of 1970, published in May 1971, as issued by the Federal Register (OSHA), and the specific regulations governing procedures, techniques, safety precautions, equipment design, and the configuration of the same as required under this Act and the Contractor agrees as evidenced by his submission of a bid to comply with all terms of the Act and to perform and complete in a workmanlike manner all work required in full compliance with said Act. The Contractor is responsible to comply with OSHA and its regulations as amended in performing any work under the Contract Documents.

§ 13.7.3 The Contractor shall comply with all federal, state and local non-discrimination laws:

§ 13.7.3.2.1 Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, creed, sex, marital status, national origin or ancestry, age, citizenship, physical or mental handicap or disability, military status, unfavorable discharge from military service or arrest record status; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

§ 13.7.3.2.2 Contractor, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental handicap unrelated to ability, or an unfavorable discharge from military service.

§ 13.7.15 No Smoking. In accordance with the Owner's Policy, smoking is prohibited on all School Corporation property.

7§ 13.7.17 The Contractor understands and acknowledges that its work, in whole or in part, will be performed on public school property where there may be direct, daily contact with school students. The Contractor further understands and acknowledges that the State of Indiana requires that all employees of vendors, licensees, contractors or others having direct, daily contact with students are subject to a criminal background check and may not be listed on the State Sex Offender Registry. Prior to allowing any of its employees who will be performing the scope of work access to school property, the Contractor agrees to provide the Owner, at the sole cost of the Contractor with the following:

- (1) Evidence that each employee, agent, contractor or other person performing work on school property under this Agreement was subjected to a criminal background check in conformity with I.C. 20-26-5-10; that said persons are not listed on said Registry; and said persons have no criminal convictions for the offenses listed under I.C. 20-26-5-11(6);
- (2) The Contractor will provide the Owner, upon request, a copy of the criminal background check conducted on each such person.

In the event the Contractor plans to subcontract with or use the services of another person or firm that may have direct, daily contact with students on school property, in order to fulfill its obligations under its Agreement with the Owner then in that event the Contractor will require all such persons or firms to comply with the provisions of this paragraph and I.C. 20-26-5-10.

In the event the Contractor fails to comply with the provisions of this paragraph and I.C. 20-26-5-10, and as a result a suit or claim is instituted by a student for harm caused by an employee of the Contractor, or caused by an employee of a subcontractor to the Contractor, then in that event the Contractor agrees to fully defend and indemnify, including reimbursement of attorney's fees and costs, the Owner against any such claims.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

#### Intentionally Deleted. .3.

~~§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:~~

- ~~1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;~~
- ~~2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;~~
- ~~3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or~~
- ~~4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.~~

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

~~§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.~~

~~§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.~~

### § 14.2 Termination by the Owner for Cause

#### ~~§ 14.2.1 The Owner may terminate the Contract if the Contractor~~

- ~~1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;~~
  - ~~2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;~~
  - ~~3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or~~
  - ~~4 otherwise is guilty of substantial breach of a provision of the Contract Documents.~~
- ~~If the Contractor shall institute proceedings or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Act or any similar or applicable federal or state law, or if a petition under any federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days after the date of said filing, or if the Contractor admits in writing his inability to pay his debts generally as they become due, or if he makes a general assignment for the benefit of his creditors, or if a receiver, liquidator, trustee or assignee is appointed on account of his bankruptcy or insolvency; or if a receiver of all or any substantial portion of the Contractor's properties is appointed; or if the Contractor abandons the Work; or if he fails, except in cases for which extension of time is provided, to prosecute promptly and diligently the Work or to supply enough properly skilled workmen or proper materials for the Work; or if he submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified; or if he fails to make prompt payment to Subcontractors or for materials or labor or otherwise breaches his obligations under any subcontract with a Subcontractor; or if a mechanic's or material man's lien or notice of lien is filed against any part of the Work or the site of the Project and not promptly bonded or insured over by the Contractor in a manner satisfactory to the Owner; or if the Contractor disregards any laws, statutes, ordinances, rules, regulations or orders of any governmental body or public or quasi-public authority having jurisdiction of the Work or the site of the Project; or if he otherwise violates any provision of the Contract Documents; then the Owner, without prejudice to any right or remedy available to the Owner under the Contract Documents or at law or in equity, the Owner may, after giving the Contractor and the surety under the Performance~~



Bond and under the Labor and Material Payment Bond described in Section 11.5, seven (7) days' written notice, terminate the employment of the Contractor. If requested by the Owner, the Contractor shall remove any part or all of his equipment, machinery and supplies from the site of the Project within seven (7) days after the date of such request, and in the event of the Contractor's failure to do so, the Owner shall have the right to remove or store such equipment, machinery and supplies at the Contractor's expense. In case of such termination, the Contractor shall not be entitled to receive any further payment for Work performed by the Contractor through the date of termination. The Owner's right to terminate the Owner-Contractor Agreement pursuant to this Section 14.2.1 shall be in addition to and not in limitation of any rights or remedies existing hereunder or pursuant hereto or at law or in equity.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds ~~costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the all costs to the Owner of completing the Work, then the Contractor shall be paid for all Work performed by the Contractor to the date of termination. If such costs to the Owner of completing the Work exceed such~~ unpaid balance, the Contractor shall pay the difference to the Owner. ~~The amount~~ Owner immediately upon the Owner's demand. ~~The costs to the Owner of completing the Work shall include, but not be limited to, the cost of any additional architectural, managerial and administrative services required thereby, any costs incurred in retaining another contractor or other subcontracts, any additional interest or fees which the Owner must pay by reason of a delay in the completion of the Work, attorneys' fees and expenses, and any other damages, costs, and expenses the Owner may incur by reason of completing the Work or any delay thereof. . The amount, if any, to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, shall be certified by the Architect, upon application, in the manner provided in Section 9.4,~~ and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 The Owner may, upon seven (7) days written notice to the Contractor, terminate the Agreement between the Owner and Contractor without cause. Upon written request and submittal of the appropriate documentation as required by the Owner, the Owner shall pay the Contractor for all work performed by the Contractor to the date of termination that has been approved by the Owner. The Owner may, upon the Contractor executing such a confirmatory assignments as the Owner shall request, accept and assume all of the Contractor's obligations under all subcontracts executed in accordance with the terms of the Contract Documents that may accrue after the date of such termination and that the Contractor has incurred in good faith in connection with the Work. Upon receipt of notice of termination, the Contractor shall cease all operations on the date specified by the Owner, terminate subcontracts not assumed by the Owner, make no further orders of materials or equipment, complete work not terminated (if any), and provide such reports as may be requested by the Owner and the Architect as to the status of the Work and the Work remaining to be completed. The Owner's right to terminate the Contract under this Section shall be in addition to, and not in limitation of, its rights to stop the Work without terminating the Contract.

### § 14.3 Suspension by the Owner for Convenience

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

**§ 14.3.2** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### **§ 14.4 Termination by the Owner for Convenience**

**§ 14.4.1** The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

### **ARTICLE 15 CLAIMS AND DISPUTES**

#### **§ 15.1 Claims**

##### **§ 15.1.1 Definition**

A Claim is a demand or assertion by one of the parties [to the Contract](#) seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

##### **§ 15.1.2 Time Limits on Claims**

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

##### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

**§ 15.1.3.2** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

##### **§ 15.1.4 Continuing Contract Performance**

**§ 15.1.4.1** Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

#### § 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### § 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in ~~Section 15.1.3 shall be given. The Contractor's Claim herein shall be given within seven (7) calendar days after the event giving rise to the claim. The Contractor's claim~~ shall include an estimate of cost and of probable effect of ~~the~~ delay on ~~the~~ progress of the Work. In the case of a continuing delay, only one ~~Claim-claim~~ is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

#### § 15.1.7 Waiver of Claims for Consequential Damages

The Contractor ~~and Owner waive Claims against each other waives Claims against the Owner and Architect~~ for consequential damages arising out of or relating to this Contract. This ~~mutual~~ waiver includes

- ~~1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and~~
- ~~2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.~~

This ~~mutual~~ waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

#### § 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. ~~Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered.~~ Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. ~~The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.~~



§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties ~~but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution subject to litigation.~~

§ 15.2.6 ~~Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.~~ **Intentionally Deleted.**

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

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

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

### **§ 15.3 Mediation**

~~§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.~~

~~§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

~~§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.~~

~~§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.~~

## **§ 15.4 Arbitration**

**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

**§ 15.4.1.1** A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

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

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

## **§ 15.4.4 Consolidation or Joinder**

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

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

## **ARTICLE 16 LIMIT TO AVOID INCORPORATION OF RESPONSIBILITY BY REFERENCE**

**§ 16.1** Where any specification which is incorporated herein by reference, through the words "and/or as directed by the Architect," or phrases having a similar effect appear to give the Architect the right to direct something other than that specified, the Architect has in fact no such right to except as it may be established in specific instances in portions of this Instruments of Service other than in said specifications.

## **ARTICLE 17 INCORPORATION OF CONTRACT TERMS WITH SUBCONTRACTORS**

**§ 17.1** Contractor agrees that s/he will be responsible to incorporate all of the terms and conditions herein, including all amendments to this Contract, with any and all of the Subcontractors as well as any Subcontractors retained by Subcontractors. Contractor acknowledges that it is the Owner's intent that all of the terms and conditions herein, including all amendments to this Contract, will be adhered to by the Contractor and all Subcontractors performing any Work in this project.

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

# DRAFT AIA® Document A101™ – 2017

## Exhibit A

### Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the « » day of « » in the year « »  
(In words, indicate day, month and year.)

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

« Duneland School Corporation - General »  
« »

THE OWNER:  
(Name, legal status and address)

« Duneland School Corporation »« »  
«601 West Morgan Avenue  
Chesterton, Indiana 46304 »

THE CONTRACTOR:  
(Name, legal status and address)

« »« »  
« »

#### TABLE OF ARTICLES

- A.1 GENERAL
- A.2 OWNER'S INSURANCE
- A.3 CONTRACTOR'S INSURANCE AND BONDS
- A.4 SPECIAL TERMS AND CONDITIONS

#### ARTICLE A.1 GENERAL

The ~~Owner and~~ Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this ~~Exhibit. Exhibit from companies lawfully authorized to do business in the jurisdiction in which the Project is located.~~ As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

#### ARTICLE A.2 OWNER'S INSURANCE

##### § A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

##### § A.2.2 Liability Insurance

**ADDITIONS AND DELETIONS:** The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

This document is intended to be used in conjunction with AIA Document A201™–2017, General Conditions of the Contract for Construction. Article 11 of A201™–2017 contains additional insurance provisions.

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

### § A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees. The policy shall be based on a \$5,000 deductible, applicable to all losses for each occurrence. The Contractor shall be solely responsible for any and all losses up to \$5,000 per loss. Losses are payable to the Owner for Owner's own account.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm and debris removal including demolition occasioned by enforcement of any legal requirements, or windstorm and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of an insured loss. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:  
(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss

Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:  
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage

Sub-Limit

#### § A.2.3.1.2.1 Coverage shall not extend to:

- A. The Contractors', Subcontractors', or the Architect's/Engineer's Tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring and other similar items commonly referred to as construction equipment, which may be on the site and the capital value of which is not included in the Work.
- B. Property owned by employees of any of the foregoing.
- C. Vehicles of any kind.
- D. Trees and shrubs.
- E. Drawings and specifications.

§ A.2.3.1.2.2 The policy by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the project by the Owner.

§ A.2.3.1.2.3 The prompt repair or reconstruction of the Work as a result of any insured loss or damage shall be the Contractor's responsibility and shall be accomplished at no additional cost to the Owner or Architect. The contractor shall furnish the proper assistance in the adjustment and settlement of any loss. Loss will be adjustable with and payable to the party purchasing the Builder's Risk Insurance who shall be responsible for apportioning the loss proceeds to each and every entity involved in the loss to the extent of his interest. The policy shall contain a provision

that the policy will not be canceled, changed or altered until at least 30 calendar days prior written notice has been given to the named insured.

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 ~~Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.~~ Retentions.. The policy shall be based on a \$5,000 deductible, applicable to all losses for each occurrence. The Contractor shall be solely responsible for any and all losses up to \$5,000 per loss. Losses are payable to the Owner for Owner's own account.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing. policy by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the Project by the Owner.

#### § A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

#### § A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

*(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)*

[ ☐ ] § A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

☐

[ ☐ ] § A.2.4.2 Ordinance or Law Insurance, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

☐

[ ☐ ] § A.2.4.3 Expediting Cost Insurance, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

☐

- [ ☐ ] § A.2.4.4 Extra Expense Insurance, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

☐

- [ ☐ ] § A.2.4.5 Civil Authority Insurance, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

☐

- [ ☐ ] § A.2.4.6 Ingress/Egress Insurance, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

☐

- [ ☐ ] § A.2.4.7 Soft Costs Insurance, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

☐

#### § A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

*(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)*

- [ ☐ ] § A.2.5.1 Cyber Security Insurance for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.  
*(Indicate applicable limits of coverage or other conditions in the fill point below.)*

☐

- [ ☐ ] § A.2.5.2 Other Insurance  
*(List below any other insurance coverage to be provided by the Owner and any applicable limits.)*

Coverage

Limits

### ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

#### § A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.



§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04. The Contractor shall also cause the automobile liability policy to include the Owner, the Architect and the Architect's consultants as additional insureds.

### § A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

*(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)*

«Coverages shall be maintained without interruption from date of commencement of the Work until 60 days after the date of Final Completion or for such other period for maintenance of completed operations coverage as specified in the Contract Documents. With respect to the Contractor's completed operations coverage, until expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents »

### § A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than «One Million Dollars » (\$ «1,000,000 ») each occurrence, «Two Million Dollars » (\$ «2,000,000 ») general aggregate, and «One Million Dollars » (\$ «1,000,000 ») aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

.6 Liability insurance should be written on the comprehensive general liability basis, and shall include, but not be limited to the following sub-lines:

- A. Premises and Operations including X, C, U coverages (explosion, collapse, underground).
- B. Products and Completed Operations to be maintained for two (2) years after Final Completion.
- C. Independent Contractor's Protective.
- D. Broad Form Comprehensive General Liability Endorsement:
  1. Contractual Liability, including contractors' obligation under Section 3.18.
  2. Personal Injury & Advertising Injury Liability
  3. Premises Medical Payments
  4. Fire Legal Liability - Real Property
  5. Broad Form Property Damage Liability (including Completed Operations)
  6. Incidental Medical Malpractice Liability

7. Additional Persons Insured, including employees for personal and advertising injury.  
8. Extended Bodily Injury Liability
- .10 If liability insurance is written under the new simplified form - Commercial General Liability, the above listed coverages should be included.
- .11 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or retroactive date shall predate the contract; the termination date of the policy shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Section 9.10.2, and an extended period endorsement "Supplemental Tail," must be purchased.
- .12 In any and all claims against the Owner or the Architect, or any of their officers, directors, board members, officials, agents or employees, by any employee or Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or subcontractor under the Worker's Compensation Act, disability benefit acts or other employees benefits acts.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- .1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- .2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- .3 Claims for bodily injury other than to employees of the insured.
- .4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
- .5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- .6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- .7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the Work involves such hazards.
- .11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than «One Million Dollars» (\$ «1,000,000» ) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers. Umbrella Excess Liability insurance in the amount of Two Million Dollars (\$2,000,000) over commercial general liability insurance, automobile liability insurance and Employer's Liability insurance.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than «One Million Dollars» (\$ «1,000,000» ) each accident, «One Million Dollars» (\$ «1,000,000» ) each employee, and «One Million Dollars» (\$ «1,000,000» ) policy limit.



§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than «One Million Dollars» (\$ «1,000,000 ») per claim and «One Million Dollars» (\$ «1,000,000 ») in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than «One Million Dollars» (\$ «1,000,000 ») per claim and «One Million Dollars» (\$ «1,000,000 ») in the aggregate.

~~§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than \$ ( ) per claim and \$ ( ) in the aggregate.~~

~~§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than \$ ( ) per claim and \$ ( ) in the aggregate.~~

~~§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than \$ ( ) per claim and \$ ( ) in the aggregate.~~

### § A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

*(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)*

~~« The Contractor shall purchase and maintain insurance covering the Owner's contingent liability for claims which may arise from operations under the Agreement and that will protect the Owner and the Architect and their respective officers, directors, board members, its agents and employees from and against all claims, damages, losses and expenses including attorney's fees and all other defense costs whether in legal or administrative actions arising (a) out of or resulting from the performance of the work provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (b) out of any claim made by any employee of the contractor or any subcontractor or by the Illinois Department of Labor for the amount of any wages or salaries which should have been paid to such employees and interest thereon, fines or other assessments relating to such violation, pursuant to provisions of the Prevailing Wage Act, 820 ILCS 130/0.01 et seq., regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this department. »~~

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

*(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)*

[ ☒ ] § A.3.3.2.1 Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall

adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:  
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

« »

[ « » ] § A.3.3.2.2 Railroad Protective Liability Insurance, with policy limits of not less than « » (\$ « ») per claim and « » (\$ « ») in the aggregate, for Work within fifty (50) feet of railroad property.

[ « » ] § A.3.3.2.3 Asbestos Abatement Liability Insurance, with policy limits of not less than « » (\$ « ») per claim and « » (\$ « ») in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[ « » ] § A.3.3.2.4 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[ « » ] § A.3.3.2.5 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[ « » ] § A.3.3.2.6 Other Insurance

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

Limits

### § A.3.3.3 Other Insurance Requirements

§ A.3.3.3.1 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required of the Contractor by this Exhibit A shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.102 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by this Exhibit A. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness. On the Certificate of Insurance, delete in the cancellation provision the following words, 'Endeavor to' and 'but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.'

§ A.3.3.3.2 The insurance company issuing the comprehensive general liability insurance coverage required for the performance of this contract shall be licensed to do business in Illinois with Best's Insurance Guide (current edition) rating of "A" or better and satisfactory to the Owner.

§ A.3.3.3.3 The Contractor shall name the Owner and the Architect and each of their respective officers, directors, officials, board members, agents and employees as additional insureds on the Contractor's general liability policy for claims arising from the Contractor's operations, the automobile liability policy and the excess/ umbrella liability policy. The foregoing policies shall be endorsed to be primary over any other insurance which the additional insureds may have and shall contain a severability of interests clause. The Contractor shall require each of its subcontractors to comply with the requirements of this Section A3.3.3.3.

#### § A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is ~~located,~~ located with a A.M. Best rating of "A" and with a surety company for which the Owner has no objection. The Contractor's performance bond and labor and materials payment bond shall be in the amount of one hundred percent (100%) of the Contract Sum, as follows:

(Specify type and penal sum of bonds.)

Type	Penal Sum (\$0.00)
Payment Bond	<a href="#">See above.</a>
Performance Bond	<a href="#">See above.</a>

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

§ A3.4.1 The Contractor shall deliver the required bonds to the Owner not later than ten days following the date of notification of the Award of Contract or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

§ A3.4.2 The Contractor shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney. Such bonds shall be in the form of American Institute of Architect's Document A-311 or a similar form worded exactly the same as Doc. A-311 and shall bear the same date as, or a date subsequent to, the date of the Contract. The bonds shall be issued by a bonding company licensed to operate in the State of Illinois and approved by the Owner.

§ A3.4.3 The failure of the Contractor to supply the required bonds within 10 days after the prescribed Agreement forms are presented for signature, or if the bonding company finds that the Contractor is NOT bondable, shall constitute a default, and the Owner may award the Contract to the next responsible low bidder.

§ 3.4.5 If at any time the Owner becomes dissatisfied with any Surety or Sureties then upon the Bonds, or for any other reason such Bonds shall cease to be adequate security for the Owner, the Contractor shall, within five (5) days after notice to do so, substitute acceptable Bonds in such forms and sum and signed by such other Sureties as may be satisfactory to the Owner. No further payments shall be deemed due nor shall be made until the new Sureties shall have qualified.

§ A3.4.6 Whenever the Contractor shall be and is declared by the Owner to be in default under the Contract, the Surety and Contractor are each responsible to make full payment to the Owner for any and all additional services of the Architect as which are required as a result of the Contractor's default and in protecting the Owner's right under the Agreement with the Contractor.

§ A3.4.7 The Contractor must within ten (10) days after the execution of this Agreement furnish a Performance Bond agreeing to pay not less than the prevailing wage for work to be performed in accordance with the Contract and the laws of the State of Illinois, and agreeing to pay all sums of money due for labor, materials, apparatus, fixtures or machinery and transportation with respect thereto, as in said Payment Bond provided, each dated the same day as the Agreement, in the forms prescribed by the Owner and each in an amount equal to the Contract Sum with a corporate Surety or Sureties acceptable to the Owner authorized to do business in the State of Illinois. These Bonds shall be maintained by the Contractor and shall remain in full force and effect until final acceptance of the work by the Owner or sixty (60) days following the date of Final Payment, whichever occurs later. The Contractor shall agree and shall cause the Surety to agree to be bound by each and every provision of the Contract Documents.

§ A3.4.8 In the event the Surety will make any assignment for the benefit of creditors or commit any act of bankruptcy, or if it shall be declared bankrupt or if it shall file a voluntary petition in bankruptcy or shall in the opinion of the Owner be insolvent, the Contractor shall agree forthwith upon request of the Owner to furnish and maintain other corporate Surety with respect to such bonds satisfactory to the Owner.

#### ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

§ A.4.1 The Contractor is responsible for determining that subcontractors are adequately insured against claims arising out of or relating to the Work. The premium cost and charges for such insurance shall be paid by each Subcontractor.

»

## SECTION 01100

### SUMMARY

#### PART 1 – GENERAL

##### 1.1 PROJECT

- A. Project Name: 2020 Hot Water Tank Upgrades at: Chesterton Middle School
- B. Owner's Name: Duneland School Corporation.
- C. The Project consists of the replacement of hot water tanks, heater, pump, thermal mixing valves and piping.

##### 1.2 CONTRACT DESCRIPTION

- A. Work covered by Contract Documents: As defined in contract documents.
- B. Definitions. The following terms are used throughout the Contract Documents. The work will be governed in accord with the definitions.
  - 1. Fabricated: Fabricated pertains to items specifically assembled or made of selected materials or components to meet individual design requirements.
  - 2. Manufactured: Manufactured means standard units, usually mass produced by an established manufacturer of the respective item.
  - 3. Provide: Provide means furnish and install.
  - 4. Shop fabricated or shop made: Shop fabricated or shop made refers to items made by a Contractor or Subcontractor in their own Shop.
- C. Insurance
  - 1. Designated Purchaser:
    - a. Owner shall purchase and maintain Builder's Risk Insurance in accord with the General Conditions.
    - b. The Owner's insurance will be subject to a deductible of \$5,000 per occurrence.
- D. Contracts
  - 1. The Owner will award a single construction contract for all work specified in the Contract Documents.
  - 2. Upon award of the construction contract, the owner will issue a Letter of Intent to award a Construction Contract to the approved contractor. This Letter of Intent shall serve as a notice to proceed with the project according to the terms and conditions set forth in the Contract Documents, until the work under Contract Documents is completed. . The contractor shall commence all construction services as specified in the contract documents upon receipt of the Letter of Intent.

##### 1.3 DUTIES OF CONTRACTOR

- A. The contractor shall be responsible for providing and paying for:
  - 1. Labor, materials and equipment.
  - 2. Tools, construction equipment and machinery.
  - 3. Temporary water, heat and other utilities required for construction.
  - 4. Other facilities and services necessary for proper execution and completion of work.
- B. The contractor shall be responsible for paying and securing all permits, governmental fees and licenses other than primary building permit necessary for the proper execution and completion of the Project.
- C. The contractor shall comply with all codes, ordinances, rules, regulations, orders and other legal requirements of the public authorities which govern the performance of the work under the Contract Documents.
- D. The contractor shall coordinate and have completed all inspections required by public authorities relating to the performance of the work under the Contract Documents including, but not limited to:
  - 1. Rough-in and final inspections of plumbing, as required.
  - 2. All inspections required in Section 01400 to be performed by a Testing and Inspection Agency.

## SECTION 01100

### SUMMARY

- E. The contractor shall have duty to promptly submit written notice to the Architect of any known or observed variances of the Contract Documents from legal requirements that may govern the work. Upon notice to the Architect, appropriate modifications will be made to the Contract Documents to account for the legal requirements. In the event the contractor fails to provide notice of any variances, he shall assume responsibility for any work known to be contrary to those legal requirements.
  - 1. The contractor shall enforce strict discipline and maintain good order among employees and subcontractors. Contractor shall not employ unfit person of those not skilled in the assigned task
- F. The contractor acknowledges that the Project is exempt from all State and Local use taxes. It shall be the duty of the contractor to: 1) obtain a sales tax exemption certificate number from the Owner; 2) place exemption certificate number on invoices for materials incorporated in work; 3) furnish copies of invoices to Owner upon request 4) file a notarized statement that all purchases made under exemption certificate were entitled to be exempt with Owner upon completion of work; and 5) pay any penalties assessed for the improper use of exemption certificate number.

#### 1.4 OWNER OCCUPANCY

- A. The date of Substantial Completion shall be no later than August 3, 2020, 5:00 p.m. Note: Substantial Completion for this project refers to all scheduled work being a minimum 99% complete.
- B. The date of Final Completion shall be no later than September 3, 2020, 5:00 p.m. Note: Final Completion for this project refers to all scheduled work, punch list and closeout items being 100% complete.
- C. The Architect's and their consultants' services will terminate sixty (60) days after (1) the date of Substantial Completion of the Work or (2) the anticipated date of Substantial Completion identified in Specifications, whichever is earlier. Any work required of the Architect and their consultants after this date will be back-charged to the contractor by the Owner.
- D. Refer to General Conditions for Liquidated Damages.

#### 1.5 JOB OPERATIONS

- A. Project Security:
  - 1. The contractor shall provide necessary precautions such as fences or barriers to protect Owner's personnel or members of the general public in the areas in which construction activity is on-going.
  - 2. The contractor shall securely close-off all areas of construction after working hours to prevent entry by unauthorized persons.
- B. Project Hours:
  - 1. No time restrictions will be implemented. However, at any time, the Owner may choose to restrict work hours if the Owner/District feels the contractor is causing disruption to the learning environment, etc.
  - 2. Note: Village/Town noise ordinance – Verify times with Village Town.

#### 1.6 WORK LIMITATIONS

- A. All spaces around where work will be done may be occupied by Owner's personnel. Contractor shall limit the scope of its work during times of owner occupancy to prevent disturbing Owner.
- B. Contractor shall schedule work in such a manner as to not disrupt mechanical or electrical systems for the existing adjacent buildings during times of Owner occupancy.
- C. Contractor shall give Owner a minimum of three (3) days' notice before commencing work in Owner occupied area.

#### 1.7 CONTRACTOR USE OF SITE AND PREMISES

- A. Contractor shall confine work at the Project site as permitted by: 1) Law; 2) Permits; 3) the Contract Documents; 4) As instructed by Owner or Owner's representative; and 5) As required for Owner's use of adjacent facilities.

## SECTION 01100

### SUMMARY

- B. Confer with Owner's representative and obtain full knowledge of all Project site rules and regulations affecting work.
- C. Contractor shall conform to the Project Site rules and regulations while engaged in its work.
- D. Contractor acknowledges that the Project Site rules and regulations take precedence over other rules and regulations that may exist outside such jurisdiction.
- E. Contractor shall be obligated to permit the Owner's representative to examine the contractor's list of employees, including those of his subcontractors and their agents, working on the Project Site. Contractor shall
  - 1. Keep all vehicles, mechanized or motorized equipment locked and secured at all times when parked and unattended on Owner's premises.
  - 2. Contractor shall not, under any circumstance, leave any vehicle unattended with its motor or engine running, or with its ignition key in place.
  - 3. All traffic control subject to Owner's representative's approval.
- F. Do not unreasonably encumber site with materials or equipment.
- G. Contractor shall assume full responsibility for protection safety and safekeeping of products stored on premises.
- H. Contractor shall move all stored products or equipment which interferes with operations of Owner or other subcontractors.
- I. Contractor shall obtain and pay for the use of additional storage or work areas needed for operations.
- J. Contractor shall limit use of the Project Site for work and storage to areas depicted in the drawing or area approved in advance by Owner.
- K. The contractor acknowledges that adjacent sites may be used by the Owner or members of the general public requiring contractor to maintain appropriate safety measures.
- L. The contractor shall provide access to and from the Project Site as required by law and by Owner:
- M. 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.

#### 1.8 SUBSTANCE ABUSE PREVENTION POLICY

- A. Pursuant to the Substance Abuse Prevention on Public Works Act (820 IL CS 265/1, et seq.), employees of the contractor and employees of the contractor and employees of any subcontractor are prohibited from the use of drugs or alcohol , as defined in the Act, while performing on any public works project.
- B. The contractor and any subcontractor shall file with the public body engaged in the construction of the public works: a copy of the substance abuse prevention program along with a cover letter certifying that their program meets the requirements of the Act or a letter certifying that the contractor or subcontractor has a collective bargaining agreement in effect dealing with the subject matter of this Act. A certification form is attached and must be completed by the contractor and each subcontractor to this contract.

#### 1.9 WORK SEQUENCE

- A. Construction services as specified herein shall commence upon issuance of the Letter of Intent to Award a Construction Contract.
- B. Certificate of Insurance and all Bonds to be submitted to the Architect within 3 business days upon issuance of the Letter of Intent.
- C. All Shop Drawings to be submitted to the Architect within 21 calendar days upon issuance of the Letter of Intent.

### PART 2 – PRODUCTS – NOT USED

### PART 3 – EXECUTION – NOT USED

### END OF SECTION





## SECTION 01200

### PRICE AND PAYMENT PROCEDURES

#### PART 1 – GENERAL

##### 1.1 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Change order procedures.

##### 1.2 RELATED SECTIONS

- A. Section 01210 - Allowances: Payment procedures relating to allowances.
- B. Section 01780 - Closeout Submittals.

##### 1.3 SCHEDULE OF VALUES

- A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet or Architect approved similar.
- B. Submit Schedule of Values in duplicate within 15 days after of the Letter of Intent.
- C. Include in each line item, the amount of Allowances specified. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- D. Submit separate quantities and amounts for material and labor for each respective line item.
- E. Revise schedule to list approved Change Orders, with each Application For Payment.
- F. Support values given with data to substantiate their correctness.
- G. Submit quantities of designated materials.
- H. List quantities of materials specified under unit prices.
- I. Include in the line items a total amount of Contractor's overhead and profit.
- J. Payment for materials stored on or off site will be limited to those materials listed separately in Schedule of Values.
- K. Form of Submittal
  - 1. Submit typewritten Schedule of Values on 8-1/2 x 11 paper format.
  - 2. Utilize the Table of Contents of this Project Manual.
  - 3. Identify each line item with number and title of the specification Section.
  - 4. Separate costs under the various phases.
- L. Preparation
  - 1. Itemize separate line cost for each of following cost items:
    - a. Overhead and profit.
    - b. Bonds.
    - c. Insurance.
    - d. General Requirements.
    - e. Site mobilization.
  - 2. Itemize separate line item cost for work specified in each section of the specifications. Identify work of:
    - a. Contractor's own labor forces.
    - b. All subcontractors.
    - c. All major suppliers of products or equipment.
  - 3. Break down installed costs into:
    - a. Delivered cost of product, with taxes paid.
    - b. Labor cost.
  - 4. For each line item which has an installed value of more than \$10,000.00 break down costs to list amount of labor and amount of materials under each item.
    - a. Contractor, subcontractor or supplier.
    - b. Specification section number.
    - c. Description of work or material.
    - d. Quantity.
    - e. Unit Price.
    - f. Scheduled value.
    - g. % of Contract.
  - 5. Round off figures to nearest ten dollars.

## SECTION 01200

### PRICE AND PAYMENT PROCEDURES

6. Make sum of total costs of all items listed in Schedule equal to total contract sum.
- M. Review and Resubmittal
  1. After review by Architect, revise and resubmit Schedule as directed by Architect.
  2. Follow original submittal procedure.
- N. Update
  1. Update Schedule of Values when:
    - a. Change in cost occurs.
    - b. Change of subcontractor or supplier occurs.
    - c. Change of product or equipment occurs.
  2. Provide written justification for any changes requested by contractor.

#### 1.4 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Present required information in typewritten form.
- C. Form: AIA G702 Application and Certificate for Payment and AIA G703 - Continuation Sheet including continuation sheets when required or Architect approved equal.
- D. 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.
- E. Each item on the application for payment shall include retainage in the amount of 10% of the total work completed and stored to date of application. Upon reaching Substantial Completion, and with prior authorization of the Owner and the Architect, the retainage may be reduced to 5% for each item that is deemed substantially complete on the subsequent application for payment.
- F. Execute certification by signature of authorized officer.
- G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored Products
- H. List each authorized Change Order as a separate line item, for each respective subcontractor or material supplier listing Change Order number and dollar amount as for an original item of Work.
- I. Submit three pencil copies of each Application for Payment for review and approval by Architect and Owner.
- J. Revise Application and Certificate of payment as directed by Architect.
- K. Once pencil copy has been approved by Architect, send three copies along with supporting documentation to the corporate office of the Architect.
- L. Include the following with the application:
  1. Transmittal letter as specified for Submittals in Section 01300.
  2. Construction progress schedule, revised and current as specified in Section 01300.
  3. Current construction photographs specified in Section 01300.
  4. Partial release of liens from Contractor for current period.
    - a. Release of liens to be provided on forms approved by the Architect prior to the first payment being submitted.
  5. Partial release of liens from all Subcontractors and vendors from prior period.
    - a. Release of liens to be provided on forms approved by the Architect prior to the first payment being submitted.
  6. Affidavits attesting to off-site stored products, with original invoices. Statement of transfer of title upon payment and insurance coverage specifically identifying stored items.

## SECTION 01200

### PRICE AND PAYMENT PROCEDURES

- M. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

#### 1.5 CERTIFIED PAYROLL FOR PUBLIC WORKS PROJECTS

- A. Effective August 10, 2005 the Public Act 94-0515 amended the Prevailing Wage Act., all contractors and their subcontractors who are engaged in public works projects must provide a certified monthly payroll report either in person, by mail or electrically for the Owner's records.
- B. Each Contractor or Subcontractor performing Work on this Project shall comply in all respects with all laws governing the employment of Labor, Social Security, and Unemployment Insurance of both the State and Federal government. There shall be paid to each employee engaged in Work under this Contract at the site of the Project, no less than the minimum wage for the classifications of labor employed in compliance with 820 ILCS 130/1 et seq. as now existing or hereafter amended.
- C. In accordance with 820 ILCS 130/5, the Contractor and each subcontractor shall make and keep, for a period of not less than 3 years, records of all laborers, mechanics, and other workers employed by them on the Project; the records shall include each worker's name, address, telephone number, social security number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, and the starting and ending times of each work day.
- D. The Contractor and each subcontractor shall submit monthly, in person, by mail, or electronically a certified payroll to the District. The certified payroll shall consist of a complete copy of the records. The certified payroll shall be accompanied by a statement signed by the contractor or subcontractor which avers that:
  - 1. such records are true and accurate;
  - 2. the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and
  - 3. the contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a class B misdemeanor.
- E. Upon 2 business days notice, the contractor and each subcontractor shall make available for inspection for the records to the District, its officers and agents, and to the Director of Labor and his deputies and agents at all reasonable hours at a location within the State. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor.

#### 1.6 CHANGE ORDER PROCEDURES

- A. Promptly implement Change Order procedures.
  - 1. Provide full written data required to evaluate changes.
  - 2. Maintain detailed records of work done on time-and-material/force account basis.
  - 3. Provide full documentation to Architect.
- B. Designate in writing the member of Contractor's organization:
  - 1. Who is authorized to accept changes in Work.
  - 2. Who is responsible for informing others in Contractor's employ of authorization of changes in Work.
  - 3. If other than the Owner, the Owner will designate in writing the person(s) authorized to execute Change Orders.
- C. Initiation of Contract Changes:
  - 1. Requests for change by the Contractor shall be initiated in writing.
  - 2. Subcontractors initiating a request for change shall direct their requests to the Contractor.
  - 3. The Architect will review and direct the Contractor's requests for change to the Owner or Owner's Representative with recommendations.
  - 4. Requests for change affecting contract sum or contract completion shall be made prior to starting any changes to the construction work or purchasing of materials. Failure to make appropriate written requests will invalidate any claims for additional costs or time for said work.

## SECTION 01200

### PRICE AND PAYMENT PROCEDURES

- D. Owner Authorizes:
  - 1. The Owner or Owner's Representative, having considered the necessity of the requested change and availability of funds will authorize the Architect to prepare a request for proposal (RFP).
- E. Architect Prepares Request for Proposal:
  - 1. The Architect, following consultation with the Contractor regarding subcontracts which will be affected by the proposed change, will prepare a RFP for Contractor response.
  - 2. Two sets of the RFP and Supplemental Drawings and Specifications for each proposed change are transmitted to the Contractor.
- F. Contractors Prepare Proposals:
  - 1. Detailed Breakdown of Material Equipment and Labor:
    - a. The Contractor or Subcontractor whose work is affected by a proposed change shall prepare a proposal for change.
    - b. The detailed breakdown shall be prepared in accordance with the Contract Documents.
    - c. If a change affects work covered by agreed on prices, such prices shall be used as the basis for adjustments to the contract sum.
    - d. In all other cases, adjustments to the contract sum shall be based on the Contractor's direct cost, including costs of material, labor, equipment, bonds and taxes as applicable.
    - e. Labor rates shall be itemized on the detailed breakdown indicating the trade base wage rate, total union fringe benefits, FICA, unemployment compensation insurance and workmen's compensation insurance. Labor charges shall not include costs for inefficiencies of construction supervision or labor.
    - f. Change order adjustments to the contract developed above shall include amounts for overhead and profit which do not exceed average amounts indicated in the Schedule of Values, or an amount of 15%, whichever is less, and that no overhead and profit shall be deducted from the total price for changes reducing the cost of the contract. If the changed work is performed by a subcontractor, no more than 10% may be added to the subcontractor's costs for overhead and profit. An additional not to exceed 5% may be included for the Contractor's overhead and profit on all work provided directly by a subcontractor employed on the project.
- G. Contractor Reviews:
  - 1. Reviews: The Contractor shall review all proposals for:
    - a. Conformance with the RFP to ensure that all items and only those items of work affected by the proposed change are included.
    - b. Assurance that the proposals are submitted in conformance with the Contract Documents.
  - 2. Transmittal: The Contractor shall forward to the Architect three complete sets of proposals with its recommendation regarding the proposal.
    - a. In making recommendations, the Contractor shall certify that the price is appropriate and if it is not appropriate, shall state the reasons for not certifying the price.
    - b. Proposals, complete with all required information, shall be submitted to the Architect within three weeks of the date of the RFP in order to receive further consideration.
- H. Architect Reviews:
  - 1. The Architect reviews the Contractor's proposals for completeness and conformance with the RFP and Contract Documents. Proposals which are incomplete or have inadequate detailed breakdowns will be returned to the Contractors for resubmission.
  - 2. The Architect will review and, when appropriate, approve all price proposals recommending Owner approve issuance of a change order.
  - 3. When the Architect considers the costs or quantities to be inappropriate to the work requested, the Architect will notify the Contractor in writing of the concerns and the Contractor will provide the necessary backup materials to justify the submittal or modify the submittal.

## **SECTION 01200**

### **PRICE AND PAYMENT PROCEDURES**

4. Submittals not properly justified will not be forwarded to the Owner and written notice as to the reasons will be forwarded to the Contractor. After 30 days of said written notification and no further response by the Contractor, the request will be considered inappropriate and will receive no further consideration.
- I. Architect Issues Change Order:
  1. The Architect, having received what is believed to be an appropriate and acceptable Contractor proposal for the proposed change and having received Owner's approval to issue a change order, the Architect will issue a Change Order.
  2. The Change Order package prepared by the Architect for submittal to the Owner shall contain the following items:
    - a. Three originals of the Change Order form with appropriate original signatures, along with supporting documentation including, but not limited to:
      - 1) Request for Proposal with signatures.
      - 2) Pristine copy of drawings and specifications.
      - 3) On changes initiated by the Architect, a letter explaining the circumstances related to the need for the change.
      - 4) On Owner requested Change Orders, a letter of request signed by the Owner's Representative.
      - 5) Change Order Authorization Form for Owner's Signature and permanent record in accord with Public Act 85-1295. When required on public work--for changes greater than \$10,000.00 or 30 Days.
- J. Owner Approves or disapproves Change Order: For change in Contract Sum and/or Contract Time.
- K. One copy of approved Change Order with original signatures will be returned to the Contractor, or notice and explanation as to why it has been rejected will be forwarded to the Contractor.

#### **1.7 APPLICATION FOR FINAL PAYMENT**

- A. Submit all closeout documents and comply with all requirements as put forth in Section 01780 - Closeout Submittals.
- B. Once closeout submittal have been approved by Architect, prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due; including properly executed Consent of Surety.
- C. Application for Final Payment will not be considered until the following have been accomplished:
  1. All closeout procedures specified in Section 01780.

#### **PART 2 – PRODUCTS – NOT USED**

#### **PART 3 – EXECUTION – NOT USED**

### **END OF SECTION**





## **SECTION 01210**

### **ALLOWANCES**

#### **PART 1 – GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Cash allowances.
- B. Payment and modification procedures relating to allowances.

##### **1.2 RELATED SECTIONS**

- A. Section 01200 - Price and Payment Procedures: Additional payment and modification procedures.

##### **1.3 SELECTION AND PURCHASE**

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.
- D. Any unused allowance funds will be credited back to Owner by Change Order prior to close out.

##### **1.4 SUBMITTALS**

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

##### **1.5 COORDINATION**

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.
- B. Architect Responsibilities:
  - 1. Consult with Contractor for consideration and selection of products, suppliers, and installers.
  - 2. Select products in consultation with Owner and transmit decision to Contractor.
  - 3. Prepare Allowance Authorization.
- C. Contractor Responsibilities:
  - 1. Assist Architect in selection of products, suppliers, and installers.
  - 2. Obtain proposals from suppliers and installers and offer recommendations.
  - 3. On notification of which products have been selected, execute purchase agreement with designated supplier and installer.
  - 4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
  - 5. labor to assist the testing agency shall be included in the Contract Sum.

#### **PART 2 – PRODUCTS – NOT USED**

## **SECTION 01210**

### **ALLOWANCES**

#### **PART 3 – EXECUTION**

##### **3.1 EXAMINATION**

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

##### **3.2 PREPARATION**

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

##### **3.3 SCHEDULE OF ALLOWANCES**

- A. Allowance No. 1: Cash Allowance: Include contingency allowance of \$5,000.00 for use according to owner's instructions

**END OF SECTION**

## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

#### PART 1 – GENERAL

##### 1.1 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Site mobilization meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Progress photographs.
- F. Coordination drawings.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Submittal procedures.

##### 1.2 RELATED SECTIONS

- A. Document 00700 - General Conditions: Dates for applications for payment.
- B. Section 01100 - Summary: Stages of the Work, Work covered by each contract, occupancy.
- C. Section 01200 - Price and Payment Procedures:
- D. Section 01325 - Construction Progress Schedule: Form, content, and administration of schedules.
- E. Section 01700 - Execution Requirements: Additional coordination requirements.
- F. Section 01780 - Closeout Submittals: Project record documents.

##### 1.3 PROJECT COORDINATION

- A. Project Coordinator: Contractor.
- B. Cooperate with the Contractor in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Contractor.
- D. Comply with procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Contractor for use of temporary utilities and construction facilities.
  - 1. Direct and check-out of utilities, operational systems and equipment.
  - 2. Record dates of start of operation of systems and equipment.
- F. Coordinate field engineering and layout work under instructions of the Contractor.
- G. Develop and implement procedure for review and processing of applications for progress and final payments: Submit recommendation to Architect for Certification to Owner for Payment.
- H. Establish on-site lines of authority and communication; schedule and conduct project meetings among:
  - 1. Owner's Representative.
  - 2. Architect.
  - 3. Subcontractors.
- I. Cost Control:
  - 1. Maintain cost accounting records for authorized work performed under Unit Costs.
  - 2. Develop and implement procedure for review and processing of applications for progress and final payments: Submit recommendation to Architect for Certification to Owner for Payment.
- J. Administer processing of:
  - 1. Shop drawings, product data and samples.
  - 2. Field drawings.
  - 3. Coordination drawings.
  - 4. Closeout submittals.
- K. Maintain Reports and Records at Job Site:
  - 1. Daily log of progress of work, available to Architect and Owner.
  - 2. Verify that all subcontractors maintain record documents on a current basis.

## **SECTION 01300**

### **ADMINISTRATIVE REQUIREMENTS**

3. At completion of Project, assemble record documents from all subcontractors and deliver to the Architect in accordance with Section 01780.
4. Assemble documentation for handling of claims and disputes.
- L. Contractor to verify that specified cleaning is done during progress of work and at the completion of each subcontractor's work.
- M. Make the following types of submittals to Architect through the Project Coordinator:
  1. Requests for interpretation.
  2. Requests for substitution.
  3. Shop drawings, product data, and samples.
  4. Submittals for information.
  5. Test and inspection reports.
  6. Design data.
  7. Manufacturer's instructions and field reports.
  8. Applications for payment and change order requests.
  9. Progress schedules.
  10. Coordination drawings.
  11. Closeout submittals.
- N. Upon contractor's determination of Substantial Completion of work or portion thereof, notify Architect in writing as to project status and request inspection and compilation of punch list of incomplete or unsatisfactory items.
- O. Upon Architect's Certification of Date of Substantial Completion, supervise correction and completion of work within specified period.
- P. Upon Contractor's determination that Work is finally complete:
  1. Submit written notice to Architect and Owner, that Work is ready for final inspection.
  2. Secure and transmit to Architect required closeout submittals as put forth in Section 01780.
- Q. Contractor to turn over to Architect for approval all items for closeout as put forth in Section 01780.

## **PART 2 – PRODUCTS - NOT USED**

## **PART 3 – EXECUTION**

### **3.1 PRECONSTRUCTION MEETING**

- A. Architect will schedule a meeting within 10 days of date of Letter of Intent.
- B. Attendance Required:
  1. Owner.
  2. Architect.
  3. Contractor:
  4. Field Superintendent
  5. Project Manager
  6. Safety Representative.
  7. Contractor's Major Subcontractors.
- C. Minimum Agenda:
  1. Items required to be submitted by Contractor at Preconstruction Meeting:
    - a. Fully executed bonds and Insurance Certificates
    - b. List of major Subcontractors and suppliers.
    - c. Tentative construction schedule.
    - d. Letter from Project Safety Representative certifying that he/she will be empowered as the Contractor's Safety Engineer, is responsible for enforcing all safety requirements and is familiar with the Manual of Accident Prevention in Construction by the Associated General Contractors of America, current edition, and further that the Contractor will maintain at the project a copy of said publication and will strictly enforce the applicable requirements of same.

## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

2. Distribute and discuss documents required to be submitted by Contractor at Preconstruction meeting.
3. Execution of Owner-Contractor Agreement.
4. Identify critical work sequencing.
5. Discussion of schedule of values, and progress schedule.
6. Discussion of list of Subcontractors, list of Products, schedule of values, and progress schedule.
7. Designation of responsible personnel representing the parties to Contract; Owner, Architect and Contractor.
8. Establish chain of Authority.
9. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
10. Scheduling.
  - a. Discuss major equipment deliveries and priorities.
11. Review of use of premises:
  - a. Office and storage areas.
  - b. Access to site and facilities.
12. Owner's requirements.
13. Security procedures.
14. Review requirements of and procedures for maintaining record documents.
15. Architect will record minutes and distribute copies within five days after meeting to participants, with copies to Contractor, Owner, participants, and those directly affected by decisions made.

#### 3.2 SITE MOBILIZATION MEETING

- A. Contractor will schedule a meeting at the Project site prior to Contractor occupancy.
- B. Attendance Required:
  1. Contractor.
  2. Owner.
  3. Architect.
  4. Special Consultants.
  5. Contractor's Superintendent.
  6. Major Subcontractors.
  7. Safety Representative.
- C. Agenda:
  1. Use of premises by Owner and Contractor.
  2. Owner's requirements and occupancy prior to completion.
  3. Construction facilities and controls provided by Owner.
  4. Temporary utilities provided by Owner.
  5. Survey and building layout.
  6. Security and housekeeping procedures.
  7. Schedules.
  8. Application for payment procedures.
  9. Procedures for testing.
  10. Procedures for maintaining record documents.
  11. Requirements for start-up of equipment.
  12. Inspection and acceptance of equipment put into service during construction period.
  13. Establish safety and first aid procedures.
  14. Procedures and reviews of mock-up panels.
- D. Contractor will record minutes and distribute copies within five (5) days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

#### 3.3 PROGRESS MEETINGS

- A. Contractor will schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.
- B. Contractor will make arrangements for meetings, prepare agenda with copies for participants 5 business days in advance of meeting date, preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- D. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems which impede planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Review of off-site fabrication and delivery schedules.
  - 7. Maintenance of progress schedule.
  - 8. Corrective measures to regain projected schedules.
  - 9. Planned progress during succeeding work period.
  - 10. Coordination of projected progress.
  - 11. Maintenance of quality and work standards.
  - 12. Effect of proposed changes on progress schedule and coordination.
  - 13. Other business relating to Work.
  - 14. Process Payment Requests Monthly.
- E. Contractor shall record minutes and distribute copies within Five (5) calendar days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

#### 3.4 CONSTRUCTION PROGRESS SCHEDULE - See Section 01325

#### 3.5 PROGRESS PHOTOGRAPHS

- A. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect.
- B. Submit samples of Photographer's work on similar projects if required by Architects.
- C. Take photographs on the first day of each month and as follows:
  - 1. Site clearing.
  - 2. Excavations.
  - 3. Foundations.
  - 4. Structural framing.
  - 5. Enclosure of building.
  - 6. Final completion.
- D. Take photographs as evidence of existing project conditions.
- E. Views:
  - 1. Provide aerial photographs from four cardinal views at each specified time, until structure is enclosed.
  - 2. Provide non-aerial photographs from four cardinal views at each specified time, until Date of Substantial Completion.
  - 3. Consult with Architect for instructions on views required.
  - 4. Provide factual presentation.
  - 5. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
- F. Prints: Full color; three prints of each view.
  - 1. Matte; smooth texture; white tint; single weight; contrast grade 4, extra hard.
  - 2. Size: 8 x 10 inch; mounted for binder and tabs.
  - 3. Identify each print on back. Identify name of Project, contract number, phase, orientation of view, date and time of view, name and address of photographer, and photographer's numbered identification of exposure.

## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

- G. Deliver prints with each Application for Payment with transmittal letter specified in this Section.
- H. Deliver one set of prints each to Architect and Project record documents file.
- I. Negatives remain property of photographer. Require that photographer maintain negatives for 5 years from Date of Substantial Completion.

#### 3.6 COORDINATION DRAWINGS

- A. Conduct coordination meetings in accordance with each respective section as work progresses. Contractor shall coordinate with Architect for such meetings.
- B. Provide information required by Contractor for preparation of coordination drawings.
- C. Review drawings prior to submission to Architect.

#### 3.7 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 conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01780 - CLOSEOUT SUBMITTALS.

#### 3.8 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

#### 3.9 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified in individual sections, submit them at project closeout:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Bonds.
  - 5. Lien Waivers.
  - 6. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

#### 3.10 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review or for information:
  - 1. The Contractor has the option of providing Submittals for review or for information either as a hard copy or electronically as outlined below.
  - 2. If Submittal is provided as a hard copy:
    - a. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Architect.



## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

3. If Submittal is provided electronically:
  - a. Deliver one copy of submittal to Architect via email or Compact Disc in PDF file format.
  - b. At Architect's discretion, the reviewed submittal, with any corrections, will be returned as one electronic copy in PDF format, or as one hard copy delivered to the Contractor.
- B. Documents for Project Closeout: Shall be submitted as hard copies only. Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- C. 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.

#### 3.11 SUBMITTAL PROCEDURES

- A. Sequentially number the transmittal form and clearly indicate the respective specification section number for reference. Revise submittals with original number and a sequential alphabetic suffix.
- B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- C. 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.
- D. Deliver submittals to Architect at business address or via email.
- E. Schedule submittals to expedite the Project, and coordinate submission of related items.
- F. For each submittal for review, allow 10 days excluding delivery time to and from the Contractor.
- G. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Architect review stamps.
- I. Shop drawings which incorporate, in part or in whole, direct reproductions of the contract documents, are not acceptable and will be returned, without review, to the contractor, for resubmittal.
- J. All shop drawings which are poorly prepared or hand written will be returned, without review, to the contractor for resubmittal. Architect's determination of properly prepared shop drawings is final.
- K. Electronic Media/Files
  1. Construction drawings for this project have been prepared by the Architect and Engineer utilizing the following Computer Aided Drawing (CAD) System: Auto Cad Release 2015.
  2. Contractors and Subcontractors may purchase electronic media files of the Contract Documents. Selected sheets will cost \$300 all sheets within a single discipline.
  3. Upon request to purchase electronic media or files, the Contractor shall complete the "Request for Electronic Drawing Files" issued by the Architect and issue the appropriate fee to the Architect.
  4. Sheets can be formatted to provide background information only, background plus various layers of equipment; or of complete sheets as issued for construction.
  5. The Contractor may utilize these CAD Drawings in the preparation of their Shop Drawings and as built drawings only.
  6. The information issued is provided in a good faith effort to expedite the Project and simplify the efforts of the Contractor with no guarantee by the issuer as to the accuracy or correctness of the information provided. The Architect accepts no responsibility or liability for the Contractor's or subcontractor's use of these CAD documents.
  7. The use of these CAD documents by the Contractor(s) does not relieve them of their responsibility to field measure existing conditions and to properly fit the work to the Project.
  8. These documents will be provided when purchased for the convenience of the Contractor and this Project. Ownership and use of the issued documents are governed by the terms of the General Conditions.

## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

#### L. Submittals

1. **Submit all submittals within 21 calendar days after date of Letter of Intent.** Failure to do so may cause scheduled contractor payments to be withheld.
2. **Submit all manufacturer's letter's confirming prompt ordering of all material and equipment within 21 calendar days after date of Letter of Intent.** Failure to do so may cause scheduled contractor payments to be withheld. Confirmation Letters are to include the following:
  - a. Order date.
  - b. Manufacturing date.
  - c. Delivery date.
  - d. Confirmation that no factors will deter delivery on schedule.
  - e. Any other pertinent information.
3. Submit four prints of shop drawings, and number of copies of product data and samples which Contractor requires for distribution and future submission under Section 01700 plus one copy which will be retained by Architect.
4. Submit number of samples specified in each of specification sections.
5. Accompany submittals with transmittal letter, in duplicate, containing:
  - a. Date.
  - b. Project title and number.
  - c. Contractor's name and address.
  - d. Relevant Specification section number.
  - e. The number of shop drawings, product data and samples submitted.
  - f. Notification of any deviations from Contract Documents.
  - g. Other pertinent data.
6. Submittals shall include:
  - a. Date and revision dates.
  - b. Project title and number.
  - c. Names of:
    - 1) Architect
    - 2) Architect's consultant(s)
    - 3) Subcontractor
    - 4) Sub-subcontractor.
    - 5) Supplier.
    - 6) Manufacturer.
    - 7) Separate detailer when pertinent.
  - d. Identification of product or material.
  - e. Relation to adjacent structure or material.
  - f. Field dimensions, clearly identified as such.
  - g. Specification section and page number.
  - h. Specified standards, such as ASTM number or Federal Specification.
  - i. A blank space, 4" x 6" for Architect's stamp.
  - j. Identification of previously approved deviation(s) from Contract Documents.
  - k. Identification of color selections required and color selection charts.
7. All shop drawing submittals received by the Architect which do not bear the contractor's approval stamp and initials or signatures will be returned, without review, to the contractor, for resubmittal.
8. All shop drawing submittals which do not contain a reproducible transparency set of the submittal will be returned without review, to the contractor, for resubmittal.

#### M. Resubmission Requirements

1. Shop Drawings:
  - a. Definition: Shop Drawings are original drawings prepared by Contractor, subcontractor, sub-subcontractor, supplier or distributor, which illustrates some portion of the work, showing fabrication, layout, setting or erection details.
  - b. Revise initial drawings as directed and resubmit in accordance with submittal procedures.

## SECTION 01300

### ADMINISTRATIVE REQUIREMENTS

- c. Indicate on drawings all changes which have been made in addition to those requested by Architect.
  - d. Clearly indicate by revision number and date, each resubmittal of each shop drawing.
  - e. When revised for resubmission, identify all changes made since previous submission.
  - f. Shop drawings which incorporate, in part or in whole, direct reproductions of the contract documents, will NOT be accepted and will be returned without review.
- 2. Product data and samples: Submit new data and samples as specified for initial submittal.
- 3. Make all resubmittals within 10 business days after date of Architect's previous review.
- N. Distribution of Submittals After Review
  - 1. Contractor will distribute copies of shop drawings and product data which carry Architect's stamp to:
    - a. Contractor's file.
    - b. Job site file.
    - c. Record documents file.
    - d. Subcontractors.
    - e. Suppliers.
    - f. Fabricators.
    - g. Other contractors as required.
  - 2. Distribute samples as directed in accordance with Contract Documents.
  - 3. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- O. Contractor Responsibilities
  - 1. Review shop drawings, product data and samples prior to submission to the next level of authority.
  - 2. Verify:
    - a. Field dimensions and drawing dimensions.
    - b. Field construction criteria.
    - c. Catalog numbers and similar data.
    - d. Compliance of items submitted with Contract Documents.
    - e. Dimensions and elevations requirements necessary to properly install product.
  - 3. Coordinate each submittal with requirements of:
    - a. The Work.
    - b. The Contract Documents.
    - c. The work of other subcontractors.
  - 4. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect/Engineer's review of submittals.
  - 5. Notify Architect in writing prior to submission and specifically on the submittal, of proposed deviations in submittals from contract requirements.
  - 6. Contractor's responsibility for notifying Architect of deviations and for correcting deviations not properly identified in submittals is not relieved by Architect's review of improperly documented submittals.
  - 7. Do not begin any work which requires submittals without having Architect's stamp and initials or signature indicating review.
  - 8. After Architect's review, make response required by Architect's stamp and distribute copies. Indicate by transmittal that copy of approved data has been distributed.
  - 9. Subcontractors:
    - a. Subcontractors send their submittals to the Contractor.
    - b. Contractor reviews and initials submittals for compliance with scope, coordination and integration with the work of all other subcontractors.
    - c. Contractor transmits his reviewed copies of subcontractor's submittals to Architect.
    - d. Contractor retains copy of submittals after review by Architect and distributes copies to submitting subcontractor and to other subcontractors for coordination and integration.
    - e. Contractor: Enforce resubmission requirements.

## **SECTION 01300**

### **ADMINISTRATIVE REQUIREMENTS**

- P. Architect's Duties
  1. Review submittals within 10 business days.
  2. Review for compliance to design concept of project.
  3. Review all requests for proposed deviations. Obtain Owner's concurrence and respond to Contractor's request.
  4. Review of separate item does not constitute review of an assembly in which item functions.
  5. Affix stamp, date, and initials or signature certifying to review of submittal, and with instructions for contractor response.
  6. Return submittals to Contractor for response or distribution.
  7. Select product colors upon receipt of all shop drawings and submittals requiring color selections.
- Q. Submittals not requested will not be recognized or processed.

**END OF SECTION**



## **SECTION 01325**

### **CONSTRUCTION PROGRESS SCHEDULE**

#### **PART 1 – GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

##### **1.2 RELATED SECTIONS**

- A. Section 01100 - Summary: Work sequence.

##### **1.3 REFERENCES**

- A. AGC (CPM) - The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry; Associated General Contractors of America; 1976.

##### **1.4 PRECONSTRUCTION MEETING**

- A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 90 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.
  - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
    - a. Within 10 days after joint review, submit complete schedule.
- D. Submit updated schedule every 30 days or as requested by Architect.
- E. Submit the number of opaque reproductions that Contractor requires, plus one copy which will be retained by Architect and Owner. Furnish additional copies when directed.
- F. Submit under transmittal letter form specified in Section 01300.

##### **1.5 QUALITY ASSURANCE**

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with five 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.

##### **1.6 SCHEDULE FORMAT**

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 11x17 inches or width required.
- C. Sheet Size: Minimum of 8-1/2 x 11 inches, Maximum of 24" x 36".
- D. Scale and Spacing: To allow for notations and revisions.

##### **1.7 START OF CONSTRUCTION SERVICES**

- A. Construction services as specified herein shall commence upon issuance of the Letter of Intent to Award a Construction Contract.

#### **PART 2 – PRODUCTS - NOT USED**

## SECTION 01325

### CONSTRUCTION PROGRESS SCHEDULE

#### PART 3 – EXECUTION

##### 3.1 PRELIMINARY SCHEDULE

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

##### 3.2 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Provide sub-schedules for each stage of Work identified in Section 01100.
- E. Provide sub-schedules to define critical portions of the entire schedule.
- F. Include conferences and meetings in schedule.
- G. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- H. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, Products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.
- I. Indicate delivery dates for owner-furnished products.
- J. Coordinate content with schedule of values specified in Section 01200.
- K. Provide legend for symbols and abbreviations used.

##### 3.3 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

##### 3.4 NETWORK ANALYSIS

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
  - 1. Preceding and following event numbers.
  - 2. Activity description.
  - 3. Estimated duration of activity, in maximum 15 day intervals.
  - 4. Earliest start date.
  - 5. Earliest finish date.
  - 6. Actual start date.
  - 7. Actual finish date.
  - 8. Latest start date.
  - 9. Latest finish date.
  - 10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
  - 11. Monetary value of activity, keyed to Schedule of Values.
  - 12. Percentage of activity completed.
  - 13. Responsibility.
- D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and re-computation of all dates and float.
- E. Required Reports: List activities in sorts or groups:
  - 1. By preceding work item or event number from lowest to highest.
  - 2. By amount of float, then in order of early start.
  - 3. By responsibility in order of earliest possible start date.
  - 4. In order of latest allowable start dates.
  - 5. In order of latest allowable finish dates.



## **SECTION 01325**

### **CONSTRUCTION PROGRESS SCHEDULE**

6. Contractor's periodic payment request sorted by Schedule of Values listings.
7. Listing of basic input data which generates the report.
8. Listing of activities on the critical path.

#### **3.5 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 5 days.

#### **3.6 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.

#### **3.7 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 shown in schedules.

**END OF SECTION**



## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 – GENERAL

##### 1.1 SECTION INCLUDES

- A. References and standards.
- B. Quality assurance submittals.
- C. Mock-ups.
- D. Control of installation.
- E. Tolerances.
- F. Testing and Inspection Agencies.
- G. Manufacturers' field services.

##### 1.2 RELATED SECTIONS

- A. Section 01210 - Allowances: Allowance for payment of testing services.
- B. Section 01300 - Administrative Requirements: Submittal procedures.
- C. Section 01600 - Product Requirements: Requirements for material and product quality.

##### 1.3 SUBMITTALS

- A. Design Data: Submit for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- B. Test Reports: After each test/inspection, promptly submit five copies of report to Architect and to Contractor.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Testing laboratory name and address.
    - d. Name and signature of inspector.
    - e. Date and time of sampling or inspection.
    - f. Record of temperature and weather.
    - g. Identification of product and specifications section.
    - h. Location in the Project.
    - i. Type of test/inspection.
    - j. Date of test/inspection.
    - k. Results of test/inspection.
    - l. Conformance with Contract Documents.
    - m. When requested by Architect, provide interpretation of results.
  - 2. Test reports are submitted for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- 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 conforms to 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. Submit report in duplicate within 30 days of observation to Architect for information.
  - 2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

## **SECTION 01400**

### **QUALITY REQUIREMENTS**

- F. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
  - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
  - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

#### **1.4 REFERENCES AND STANDARDS - See Section 01425**

#### **1.5 TESTING AND INSPECTION AGENCIES**

- A. Contractor will employ and pay for services, from Testing Allowances, of an independent testing agency to perform specified testing and inspection.
- B. Testing Agency of record: The Testing Agency of Record shall be identified by the Owner within 15 days of the Letter of Intent.
- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- D. Additional services as requested by Architect
- E. Testing Agency:
  - 1. Testing agency: Comply with requirements of ASTM E 329, ASTM E 548, ASTM E 543, ASTM C 1021, ASTM C 1077, ASTM C 1093, and ASTM C 1021.
  - 2. Inspection agency: Comply with requirements of ASTM D290.
  - 3. Laboratory: Authorized to operate in State in which Project is located.
  - 4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
  - 5. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

## **PART 2 – PRODUCTS – NOT USED**

## **PART 3 – EXECUTION**

### **3.1 CONTRACTOR 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.

### **3.2 MOCK-UPS**

- A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, accessories and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

## SECTION 01400

### QUALITY REQUIREMENTS

#### 3.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturer's tolerances. Should manufacturer's tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Where specified tolerances within individual sections exceed those accepted by the Manufacturer, comply with the more stringent tolerances specified.
- D. Adjust products to appropriate dimensions; position before securing products in place.

#### 3.4 TESTING AND INSPECTION

- A. See individual specification sections for testing and inspection required.
- B. Testing Agency Duties:
  - 1. Test samples of mixes submitted by Contractor.
  - 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
  - 3. Acquaint Architect's personnel with testing procedures and with all special conditions encountered at the site.
  - 4. Perform specified inspections, sampling and testing of products in accordance with specified standards.
  - 5. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 6. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
  - 7. Perform additional tests and inspections required by Architect.
  - 8. Attend preconstruction meetings and progress meetings as directed by Architect.
  - 9. Submit reports of all tests/inspections specified.
  - 10. Obtain written acknowledgement of each inspection, sampling and test made from subcontractor whose work is being tested.
- C. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
  - 1. Provide to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
    - a. Monitor or direct superintendent to monitor each inspection, sampling and test.
    - b. Provide laboratory with written acknowledgement of each inspection, sampling or test.
    - c. Within 24 hours notify Architect in writing of reasons for not acknowledging laboratory field procedures.
  - 3. Furnish copies of mill test reports.
  - 4. Furnish verification of compliance with contract requirements for materials and equipment
  - 5. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  - 6. Notify Architect and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
  - 7. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  - 8. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

## **SECTION 01400**

### **QUALITY REQUIREMENTS**

9. Correct work which is defective or which fails to conform to the Contract Documents in accordance with the General conditions. Corrective work shall not delay the project schedule or the work of other subcontractors.
10. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect. Payment for re testing will be charged to the Contractor by deducting testing charges from the Contract Price.

#### **3.5 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 of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect 30 days in advance of required observations.
  1. Observer subject to approval of Architect.
  2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

#### **3.6 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

## **SECTION 01425**

### **REFERENCE STANDARDS**

#### **PART 1 – GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Requirements relating to referenced standards.
- B. Reference standards full title and edition date.

##### **1.2 RELATED SECTIONS**

- A. Document 00700 - General Conditions: Reference standards.

##### **1.3 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. Conform to reference standard of date of issue specified in this section, except where a specific date is established by applicable code.
- C. Obtain copies of standards when required by the Contract Documents.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.
- F. Neither the contractual relationships, duties or responsibilities of the parties in Contract nor those of the Architect shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

#### **PART 2 – CONSTRUCTION INDUSTRY ORGANIZATION DOCUMENTS**

##### **2.1 AA – ALUMINUM ASSOCIATION, INC.**

- A. AA ADM-1 - Aluminum Design Manual; 2000.
- B. AA DAF-45 - Designation System for Aluminum Finishes; 2003.
- C. AA SAAA-46 - Standards for Anodized Architectural Aluminum; 1978.
- D. AA BDAS-516161 - Behavior and Design of Aluminum Structures; 1992.

##### **2.2 AABC -- ASSOCIATED AIR BALANCE COUNCIL**

- A. AABC MN-1 - AABC National Standards for Total System Balance; 2002.

##### **2.3 AAMA -- AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION**

- A. AAMA/NWWDA 101/I.S.2 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; 1997 with revisions contained in "reprinting" of 12/99.
- B. AAMA 303 - Voluntary Specification for Poly (Vinyl Chloride) (PVC) Exterior Profile Extrusions; 2000.
- C. AAMA 501 - Methods of Test for Exterior Walls; 1994.
- D. AAMA 501.1 - Standard Test Method for Exterior Windows, Curtain Walls and Doors for Water Penetration Using Dynamic Pressure; 1994 (part of AAMA 501).
- E. AAMA 501.2 - Field Check of Metal Storefronts, Curtain Walls, and Sloped Glazing Systems for Water Leakage; 1994 (part of AAMA 501).
- F. AAMA 501.3 - Field Check of Water Penetration Through Installed Exterior Windows, Curtain Walls, and Doors by Uniform Air Pressure Difference (part of AAMA 501); 1994.
- G. AAMA 603.8 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum; 1998.
- H. AAMA 605.2 - Voluntary Specification for High Performance Organic Coatings on Architectural Aluminum Extrusions and Panels; 1998.
- I. AAMA 606.1 - Voluntary Guide Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum; 1976.



## **SECTION 01425**

### **REFERENCE STANDARDS**

- J. AAMA 607.1 - Voluntary Guide Specification and Inspection Methods for Clear Anodic Finishes For Architectural Aluminum; 1977.
- K. AAMA 608.1 - Voluntary Guide Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum; 1977.
- L. AAMA 609 - Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum; 2002.
- M. AAMA 610.1 - Voluntary Guide Specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Curtain Wall Panels; 1979.
- N. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 1998.
- O. AAMA 701/702 - Combined Voluntary Specifications for Pile Weatherstrip and Replaceable Fenestration Weatherseals; 2000.
- P. AAMA 800 - Voluntary Specifications and Test Methods for Sealants; 1992, Addendums 1994, 2000.
- Q. AAMA 802.3 - Compound (Part of AAMA 800); 1992.
- R. AAMA 803.3 - Voluntary Specifications and Test Methods for Narrow Joint Seam Sealer (Part of AAMA 800); 1992.
- S. AAMA 804.3 - Sealants: Back Bedding Mastic Type Glazing Tapes (Part of AAMA 800); 1992.
- T. AAMA 806.3 - Tape (Part of AAMA 800); 1992.
- U. AAMA 807.3 - Glazing Tape (Part of AAMA 800); 1992.
- V. AAMA 809.2 - Sealants: Non-Drying Sealant (Part of AAMA 800); 1992.

### **PART 3 – EXECUTION – NOT USED**

**END OF SECTION**

## **SECTION 01600**

### **PRODUCT REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.1 SECTION INCLUDES**

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations and procedures.
- E. Procedures for Owner-supplied products.
- F. Spare parts and maintenance materials.

##### **1.2 RELATED SECTIONS**

- A. Document 00100 - Instructions to Proposers: Product options and substitution procedures prior to proposal date.
- B. Section 01400 - Quality Requirements: Product quality monitoring.

##### **1.3 REFERENCES**

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2002.

##### **1.4 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; submit 3 copies to Architect.
  - 1. Submit within 20 days after date of Letter of Intent.
  - 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.
- 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.
- E. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- F. Provide name and address of similar projects on which product was used and date of installation.
- G. Provide detailed description and drawings illustrating construction methods.
- H. Provide itemized comparison and accurate cost data of proposed substitution in comparison with product or method specified.
- I. Provide data relating to changes in contracts, coordination issues, and construction schedules.
- J. Manufacturer's Instructions: When Contract Documents specify that installation shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to all parties involved in the installation, including three copies to the Architect.

#### **PART 2 – PRODUCTS**

##### **2.1 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Motors: Refer to Section 15065, NEMA MG 1 Type. Specific motor type is specified in individual specification sections.
- C. Materials and Equipment Incorporated Into The Work
  - 1. NO MATERIAL OR PRODUCT SHALL BE DELIVERED TO, PROVIDED FOR OR INSTALLED ON PROJECT WHICH CONTAINS ANY ASBESTOS OR ASBESTOS-CONTAINING MATERIAL.
  - 2. Conform to project specifications and standards.
  - 3. Comply with size, make, type and quality specified.

## **SECTION 01600**

### **PRODUCT REQUIREMENTS**

4. Manufactured and fabricated products:
  - a. Design, fabricate and assemble in accord with best engineering and shop practices.
  - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
  - c. Two or more items of the same kind shall be identical from the same manufacturer.
  - d. All parts of systems shall be from the same manufacturer to the greatest extent practicable.
  - e. Adhere to equipment capacities, sizes and dimensions shown or specified unless variations are specifically approved by Change Order.

#### **2.2 PRODUCT OPTIONS**

- A. Base all proposals on providing all products exactly as specified.
- B. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- C. 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.
- D. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

#### **2.3 SPARE PARTS AND MAINTENANCE PRODUCTS**

- A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

### **PART 3 – EXECUTION**

#### **3.1 SUBSTITUTION PROCEDURES**

- A. Instructions to Proposers specify time restrictions for submitting requests for substitutions during the proposal period. Comply with requirements specified in this section.
- B. Architect will consider requests for substitutions only within 20 days after date of Letter of Intent.
- C. Substitutions may be considered at a later date only when a product becomes unavailable through no fault of the Contractor.
- D. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- E. For products specified only by reference or performance standards, select any product which meets or exceeds standards, by any manufacturers, subject to the Architect's approval.
- F. For products specified by naming several products or manufacturers, select any product and manufacturer named which conforms to the intent of the documents.
- G. Substitutions, Proposer/Contractor Options
  1. Prior to Proposal Opening: The Architect will consider written requests to amend the proposal documents to add products not specified provided such requests are received at least 10 calendar days prior to proposal opening date. Requests received after that time will not be considered. When a request is approved, the Architect will issue an appropriate addendum not less than three calendar days prior to the proposal opening.
  2. With Proposal: A proposer may propose substitutions with his proposal by completing the Substitution Sheet with the Proposal Form, subject to the provisions stated thereon. Architect will review Substitution Sheet of low proposer and recommend approval or rejection by Owner prior to award of Contract.
  3. After Award of Contract: No substitutions will be considered after Notice of Award except under one or more of the following conditions:
    - a. Substitutions required for compliance with final interpretations of code requirements or insurance regulations.
    - b. Unavailability of specified products, through no fault of Contractor or subcontractor.

## SECTION 01600

### PRODUCT REQUIREMENTS

- c. Subsequent information discloses inability of all specified products to perform properly or to fit in designated space.
  - d. Manufacturer/fabricator refusal to certify or guarantee performance of specified product as specified.
  - e. When a substitution would be substantially beneficial to the Owner.
- H. A request for substitution 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.
  - 2. Will provide the same warranty for the substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
  - 5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- I. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- J. Substitution Submittal Procedure:
  - 1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  - 3. The Architect will notify Contractor in writing of decision to accept or reject request.
  - 4. Complete data substantiating compliance of proposed substitution with Contract Documents.
  - 5. For products:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature:
      - 1) Product description.
      - 2) Performance and test data.
      - 3) Reference standards.
    - c. Samples.
    - d. Name and address of similar projects on which product was used and date of installation.
  - 6. For construction methods:
    - a. Detailed description of proposed method.
    - b. Drawings illustrating methods.
  - 7. Itemized comparison of proposed substitutions with product or method specified.
  - 8. Data relating to changes in construction schedules.
  - 9. Identify:
    - a. Other contract affected.
    - b. Changes or coordination required.
  - 10. Accurate cost data on proposed substitution in comparison with product or method specified.
- K. Provide cost data that is complete and includes all related costs under Proposer/Contractor contract, but excludes:
  - 1. Costs under separate contracts.
  - 2. Architect's redesign.
  - 3. Administrative costs of Architect.

### 3.2 OWNER-SUPPLIED PRODUCTS

- A. See Section 01100 - Summary for identification of Owner-supplied products.
- B. 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.

## SECTION 01600

### PRODUCT REQUIREMENTS

4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
5. Arrange for manufacturer's warranties, inspections, and service.
- C. 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.

#### 3.3 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Arrange for transportation and deliveries of materials and equipment in accordance with approved current construction schedules and in ample time to facilitate inspection prior to installation.
- E. Coordinate deliveries to avoid conflict with work and condition at site.
- F. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible. Clearly mark partial deliveries of component parts of assemblies or equipment to permit easy identification of parts and to facilitate assembly.
- G. Lift packages, equipment, or components only at designated lift points.
- H. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- I. Provide equipment and personnel, including those furnished by Owner, to handle products by methods to prevent soiling, disfigurement, or damage.
- J. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

#### 3.4 STORAGE AND PROTECTION

- A. 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.
- B. Store and protect products in accordance with manufacturer's instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product. Materials may be new or used at Contractor's option, but shall be non-staining, non-hazardous, and of sufficient strength and durability for proposed use.
- E. Submittals
  1. Request for allocation of storage space.
  2. List of materials and equipment to be stored.
  3. Proposed location for storage.
  4. Special storage requirements.
  5. Schedule of anticipated storage dates.
- F. For exterior storage of fabricated products, place on sloped supports above ground.
- G. Provide bonded off-site storage and protection when site does not permit on-site storage or protection. Off-site storage will be permitted only on Owner's prior written authorization in accordance with General Conditions.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- J. Prevent contact with material that may cause corrosion, discoloration, or staining.
- K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

## **SECTION 01600**

### **PRODUCT REQUIREMENTS**

- M. Locate storage areas where authorized by Architect, Contractor will resolve conflicts in storage requirements of all subcontractors. Do not inhibit use of:
  - 1. Fire exits.
  - 2. Fire lanes.
  - 3. Parking.
  - 4. Work of other contractors.
  - 5. Owner.
- N. Provide separate storage for combustible and non-combustible products. Store combustible materials in accordance with Fire Protection Agency's regulations.
- O. Remove all temporary storage, contents and utilities at completion of construction activities or when requested by the Architect.

**END OF SECTION**





## SECTION 01700

### EXECUTION REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, except payment procedures.

##### 1.2 RELATED SECTIONS

- A. Section 01300 - Administrative Requirements: Submittals procedures.
- B. Section 01400 - Quality Requirements: Testing and inspection procedures.
- C. Section 01500 - Temporary Facilities and Controls: Temporary exterior enclosures.
- D. Section 01780 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.
- E. Section 07840 - Firestopping
- F. Section 7900 - Joint Sealers

##### 1.3 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
  - 1. On request, submit documentation verifying accuracy of survey work.
  - 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in conformance with Contract Documents. Include the following data:
  - 3. Architect may at any time require written verifications of grades, lines and levels by a licensed surveyor as work progresses.
  - 4. All areas found to be non-conforming to the Contract Documents shall be corrected by the responsible Contractor.
  - 5. Submit surveys and survey logs for the project record.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration which affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.
  - 6. Include in request:
    - a. Identification of Project.
    - b. Location and description of affected work.
    - c. Necessity for cutting or alteration.
    - d. Contractor and crafts to execute the work.
    - e. Description of proposed work and products to be used.
    - f. Extent of refinishing.
    - g. Alternatives to cutting and patching.
    - h. Effect on work of Owner or separate Contractor.
    - i. Written permission of affected separate Contractor.
    - j. Date and time work will be executed.
- D. Designation of party responsible for cost of cutting and patching.
- E. When conditions of work, or schedule, indicate change of materials or methods, submit recommendation to Architect, including:
  - 1. Condition indicating change.

## SECTION 01700

### EXECUTION REQUIREMENTS

2. Recommendation for alternative materials or methods.
3. Submittals specified for substitutions.
- F. Submit written notice to Architect, designating time work will be uncovered, to provide for observation.
- G. Payment for Costs:
  1. Costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Architect - party responsible for ill timed, rejected or non-conforming work.
  2. Work done by change order, other than defective or non-conforming work - Owner.

#### 1.4 GRADES, LINES AND LEVELS

- A. Contractor lay out all of the work under this contract.
  1. Establish all working lines, levels, elevations and measurements.
- B. Owner will furnish:
  1. A certified topographic survey of existing site, giving all grades and lines of streets, alleys, pavements and adjoining property, rights-of-way, encroachments, boundaries and contours of building site.
  2. Locations, dimensions and data pertaining to existing:
    - a. Buildings.
    - b. Underground obstructions.
    - c. Trees and landscaping.
    - d. Other improvements.
  3. Information as to available service and utility lines, both public and private.
- C. Location of survey's baseline control points.
  1. Benchmark and temporary benchmark location and elevation of each.
- D. Quality Assurance
  1. All layout work which establishes site layout dimensions or elevations or exterior building dimensions, angles or grade floor elevations shall be done by a qualified engineer or surveyor.
  2. Qualifications of Contractor's Engineer/Surveyor:
    - a. Experienced in layout work of similar complexity.
    - b. Licensed by State of Illinois.
- E. Submittals. Architect may at any time require written verification of grades, lines and levels by a licensed surveyor as work progresses.
- F. Laying Out The Work
  1. Prior to the beginning of the actual work, perform the following:
    - a. Each subcontractor shall lay out their portion of the work.
    - b. Establish all required bench marks and reference lines.
    - c. Verify all building dimensions.
    - d. Verify conformance of all actual general dimensions with those indicated on the Architect's plan.
    - e. Notify the Architect immediately if any conflict whatsoever exists.
- G. Survey Upon Completion
  1. Upon completion, Owner may provide a survey performed by a licensed surveyor indicating the location of the Work of this Contract and including the following data:
    - a. Building location and dimensions of all walls.
    - b. Elevations of finished floor at all exterior exits.
    - c. Spot elevations, storm, sanitary and watermain manholes, and all invert elevations.
    - d. Spot elevations of corners of all new pavement and on a 50' grid within paved areas.
  2. All areas found to be non-conforming to the Contract Documents shall be corrected by the responsible Contractor.

## SECTION 01700

### EXECUTION REQUIREMENTS

#### 1.5 QUALIFICATIONS

- A. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.
- B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located.

#### 1.6 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. 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.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
  - 1. Minimize amount of bare soil exposed at one time.
  - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
  - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
  - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- G. Pest Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- H. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

#### 1.7 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **SECTION 01700**

### **EXECUTION REQUIREMENTS**

#### **PART 2 – PRODUCTS**

##### **2.1 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 01600.

#### **PART 3 – EXECUTION**

##### **3.1 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 demolition is complete in alterations areas and areas are ready for installation of new work.
- C. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- D. Examine and verify specific conditions described in individual specification sections.
- E. Verify in field all measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
- F. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- G. 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.

##### **3.2 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.

##### **3.3 PREINSTALLATION MEETINGS**

- A. When required in individual specification sections, convene a pre-installation 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.

##### **3.4 LAYING OUT THE WORK**

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that established by Owner provided survey.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

## SECTION 01700

### EXECUTION REQUIREMENTS

- F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- H. Utilize recognized engineering survey practices.
- I. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
- J. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
  - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
  - 2. Grid or axis for structures.
  - 3. Building foundation, column locations, and ground floor elevations.
- K. Periodically verify layouts by same means.
- L. Maintain a complete and accurate log of control and survey work as it progresses.
- M. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

### 3.5 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### 3.6 CUTTING AND PATCHING

- A. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.
- B. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- C. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- E. Restore work with new products in accordance with requirements of Contract Documents.
- F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07840, to full thickness of the penetrated element.
- H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- I. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
- J. In addition to contract requirements, upon written instructions of Architect.
  - 1. Uncover work to provide for observation of covered work.
  - 2. Remove samples of installed materials for testing.
- K. Do not endanger work by cutting or altering work or any part of it.
- L. Do not cut or alter work without written consent of Architect.

## SECTION 01700

### EXECUTION REQUIREMENTS

- M. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

#### 3.7 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

#### 3.8 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. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

#### 3.9 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems with Architect and Owner's Representative..
- B. Notify Architect and owner two 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 which 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 and/or equipment supplier 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.

#### 3.10 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

## SECTION 01700

### EXECUTION REQUIREMENTS

- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.
- H. Air and Water Testing, Adjusting and Balancing
  - 1. Testing, adjusting and balancing will be part of the mechanical contract.
  - 2. The mechanical subcontractor will perform services specified in Division 15.
  - 3. Reports will be submitted by the Mechanical subcontractor to the Architect indicating observation and results of test and indicating compliance or non-compliance with the specified requirements and with the requirements of the Contract Documents.

#### 3.11 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Testing, adjusting, and balancing HVAC systems: See Section 01400.

#### 3.12 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. Use cleaning materials that are non-hazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.
- I. Contractor provide final cleaning at completion of work, or at such other times as directed by the Architect, remove all waste, debris, rubbish, tools, equipment, machinery and surplus materials. Clean all sight exposed surfaces; leave work clean and ready for occupancy.
- J. Safety Requirements
  - 1. Standards: Maintain project in accord with following safety and insurance standards:
    - a. Federal and state regulations.
    - b. National Fire Protection Association (NFPA).
  - 2. Hazards Control:
    - a. Store volatile wastes in covered metal containers and remove from premises daily.
    - b. Prevent accumulation of wastes which create hazardous conditions.
    - c. Provide adequate ventilation during use of volatile or noxious substances.
  - 3. Conduct cleaning and disposal operations to comply with Federal and State anti-pollution laws.
    - a. Do not burn or bury rubbish and waste materials on project site.
    - b. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
    - c. Do not dispose of wastes into streams or waterways.
- K. Submittals
  - 1. Manufacturer's recommendations for cleaning specified products.
  - 2. Proposed cleaning products for products where manufacturer's recommendations are not specified.

## SECTION 01700

### EXECUTION REQUIREMENTS

- L. Materials
  - 1. Select and use all cleaning materials and equipment with care to avoid scratching, marring, defacing, staining or discoloring surfaces cleaned.
  - 2. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
  - 3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.
- M. Final Cleaning
  - 1. Employ experienced workers or professional cleaners for final cleaning.
  - 2. Remove grease, dust, dirt, stains, labels, fingerprints, protection and other foreign materials from sight-exposed finished surfaces.
    - a. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed surfaces, and of concealed spaces to insure performance.
  - 3. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
  - 4. Soft broom clean all exposed concrete surfaces clean; other paved areas with soft or stiff broom as directed. Rake clean other surfaces on grounds.
  - 5. Sweep and mop clean all resilient, quarry and ceramic flooring.
  - 6. Vacuum all carpeting.
  - 7. Remove ice and snow from access to buildings.
  - 8. Replace air handling and conditioning filters if units were operated during construction.
  - 9. Clean all ductwork used for temporary heating.
  - 10. Clean windows and mirrors to be free from labels, dust, fingerprints and other foreign materials.
  - 11. Maintain finally cleaned areas until project, or designated portion thereof, is accepted by Owner.

### 3.13 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Architect and Owner.
- B. Contractor to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Substantial Completion.
- D. Submit written certification 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 review.
- E. Substantial Completion Meeting will be scheduled by Architect. Architect will issue notice of meeting.
  - 1. Agenda will consist of the inspection, discussion of the punch list, determination of final completion dates, and the date and time the Owner will take occupancy. Architect will also review the requirements for contractor closeout in accord with the contract documents.
  - 2. Upon completion of this meeting, the Architect shall prepare the Certificate of Substantial Completion with the completed punch list and forward the package to the Contractor.
- F. Owner will occupy all of the building as specified in Section 01100.
- G. Contractor will correct items of work listed in punch list and comply with requirements for access to Owner-occupied areas.
- H. Notify Architect when work is considered finally complete.
- I. Accompany Architect on final inspection.
- J. Complete items of work determined by Architect's final inspection.

**END OF SECTION**



## SECTION 01780

### CLOSEOUT SUBMITTALS

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

##### 1.2 RELATED SECTIONS

- A. Conditions of the Contract: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01300 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01700 - Execution Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

##### 1.3 SUBMITTALS

- A. Substantial Completion
  - 1. When Contractor considers work substantially complete, submit written declaration to Architect that work, or designated portion thereof, is substantially complete. Include list of items to be completed or corrected.
  - 2. Architect will make a preliminary inspection within seven business days after receipt of Contractor's declaration.
  - 3. Upon determining that work is substantially complete, Architect will:
    - a. Prepare a punch list of items to be completed or corrected, as determined by the inspection.
    - b. Prepare and process a certificate of substantial completion, containing:
      - 1) Date of substantial completion.
      - 2) Punch list of items to be completed or corrected.
      - 3) The time within which punch list items shall be completed or corrected.
      - 4) Date and time Owner will take occupancy of project or designated portion thereof.
      - 5) Responsibilities of Owner and Contractor for:
        - a) Insurance
        - b) Utilities.
        - c) Operation and maintenance of mechanical, electrical and other systems.
        - d) Maintenance and cleaning.
        - e) Security
      - 6) Signatures of:
        - a) Architect
        - b) Contractor.
        - c) Owner.
  - 4. Contractor:
    - a. Complete all work listed for completion or correction within designated time.
    - b. Perform final cleaning in accordance with 01700.
  - 5. At time of inspection, should substantial completion not be certified, complete the work and resubmit declaration in accord with Paragraph A.1 above.
- B. Final Completion
  - 1. Contractor:
    - a. Submit written declaration to Architect that:
      - 1) Work complies with all aspects of Contract Documents.
      - 2) All items on substantial completion punch list have been completed or corrected.
      - 3) All tools, construction equipment and surplus materials have been removed from site.
      - 4) Required surveys have been completed and verified.
  - 2. Architect will make final inspection with Contractor to ensure completion of all contract requirements.

## SECTION 01780

### CLOSEOUT SUBMITTALS

3. When Architect considers that all work is finally complete in accordance with contract document requirements, he will prepare and process closeout documents.
- C. Application for Final Payment
  1. Contractor submit duly executed:
    - a. Final Affidavit and Sworn Statement.
    - b. Contractor's Final Waiver of Lien.
    - c. Separate releases of waivers of liens for all subcontractors, suppliers and others with lien rights against property of Owner, together with complete list of those parties.
    - d. Final accounting statement, reflecting all adjustments to contract sum.
      - 1) Original contract sum.
      - 2) Additions and deductions resulting from:
        - a) All change orders.
        - b) Deductions for uncorrected work.
        - c) Deductions for liquidated damages.
    - e. Total contract sum, as adjusted.
    - f. Previous payments.
    - g. Sum remaining due.
  2. Architect will process final statement in accordance with Conditions of the Contract.
- D. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
  1. Accompany submittal with transmittal letter, in duplicate, containing:
    - a. Date.
    - b. Project title and number.
    - c. Contractor's name and address.
    - d. Title and number of each record document.
  2. Certification that each document submitted is complete and accurate.
    - a. Signature of contractor, or his authorized representative.
  3. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  4. Submit one hard copy set and two Compact Disc containing electronic copies (in PDF file format) of revised final documents in final form within 10 days after final inspection.
- E. Operation and Maintenance Data:
  1. The contractor shall cause each mechanical and electrical subcontractor to provide the Contractor with two hard copies and one electronic copy of all operating manuals at the time of delivery of each major piece of equipment.
  2. 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.
  3. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  4. Submit 1 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.
  5. Submit two hard copy sets and two Compact Disc containing electronic copies (in PDF file format) of revised final documents in final form within 10 days after final inspection.
- F. Warranties and Bonds:
  1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
  2. Make other submittals within ten 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 ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

## **SECTION 01780**

### **CLOSEOUT SUBMITTALS**

4. Because the warranty period begins with the issuance of the final payment from The District to the general contractor, all warranties should include the verbiage "...for a period of (X) year(s) after the date The District issues the final payment to the General Contractor..."

### **PART 2 – PRODUCTS – NOT USED**

### **PART 3 – EXECUTION**

#### **3.1 PROJECT RECORD DOCUMENTS**

- A. Contractor and all subcontractors shall maintain an accurate record of deviations and changes from the Contract Documents which occur in the work.
- B. Indicate all such deviations and changes on a record set of the Contract Documents and turn same over to the Architect and Owner upon completion of the Work all such documents and information such as final shop drawings and sketches, marked prints and similar data indicating the as-built conditions.
- C. Create an electronic copy of all approved Project Record Documents in PDF file format and deliver to Architect and Owner on Compact Disc.
- D. Compact Discs: High quality CD-R format Compact Disc formatted for use by Microsoft Windows based computers. Rewriteable Compact Discs will not be accepted. Provide labels on all Compact Discs listing the Owner's name, Project name, Contractor's name, Date of Submittal, and the title "Project Record Documents".
- E. Maintain on site one set of the following record documents; record actual revisions to the Work:
  1. Drawings.
  2. Project Manual.
  3. Interpretations and supplemental instructions.
  4. Specifications.
  5. Addenda.
  6. Change Orders and other modifications to the Contract.
  7. Reviewed shop drawings, product data, and samples.
  8. Manufacturer's instruction for assembly, installation, and adjusting.
  9. Other modifications to contract.
  10. Field test records.
  11. All schedules.
  12. Correspondence file.
- F. Ensure entries are complete and accurate, enabling future reference by Owner.
- G. Store record documents separate from documents used for construction.
- H. Record information concurrent with construction progress.
- I. File documents in format in accord with Project Manual Table of Contents.
- J. Do not use record documents for field construction purposes.
- K. Make documents available at all times for inspection by Architect and Owner.
- L. Plans and sections of all concealed work, particularly concealed piping and conduit, and deviations from conditions shown on the contract drawings, shall be shown and dimensioned on the "as-built" drawings.
- M. Contractor shall develop layout drawings for all concealed work that is schematically indicated on contract drawings.
- N. Provide red colored pencils or felt marking pens for marking devices.
- O. Do not permanently conceal any work until specified information has been recorded.
- P. 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 Change Order or Field Order.
  4. Other matters not originally specified.

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### CLOSEOUT SUBMITTALS

- Q. Label each record document "PROJECT RECORD DOCUMENTS" in large print. Keep record documents current.
- R. 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. Changes made by change order.
  - 6. Details not on original Contract drawings.
- S. Shop Drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.
- T. Completed Work Survey: Requirements specified in Section 01700 - Execution Requirements.

### 3.2 OPERATION AND MAINTENANCE DATA

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products and equipment provided under the Contract.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Coordinate drawings with information in Product Record Documents to assure correct illustration of completed installation. Do not use Project Record Documents as maintenance drawings.
- E. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- F. Warranty, Bond, and Service Contract: Provide information sheet for Owner's personnel with proper procedures in event of failure and instances which might affect validity of warranties of bonds.

### 3.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. Submit two hard copies and two Compact Discs with electronic copies (in PDF file format) of complete manual in final form.
- B. 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.
- C. 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.
- D. 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.
- E. Additional information as specified in individual product specification sections.
- F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

### 3.4 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. Submit two hard copies and two Compact Discs with electronic copies (in PDF file format) of complete manual in final form.
- B. 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.

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### CLOSEOUT SUBMITTALS

3. Include performance curves, with engineering data and tests.
4. Complete nomenclature and model number of replaceable parts.
- 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 Contractor's coordination drawings, with color coded piping diagrams as installed.
- M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports.
- P. Additional Requirements: As specified in individual product specification sections.

### 3.5 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.
- C. Submit one copy of completed instruction manual 15 business days prior to final inspection or acceptance.
  1. Copy will be returned after final inspection or acceptance, with comments.
- D. Binders: Commercial quality, 8-1/2 x 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.
- E. Compact Discs: High quality CD-R format Compact Disc formatted for use by Microsoft Windows based computers. Rewriteable Compact Discs will not be accepted. Provide labels on all Compact Discs listing the Owner's name, Project name, Contractor's name, Date of Submittal, and the title "Operation and Maintenance Manuals".
- F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- G. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- K. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
  1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
  2. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:

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### CLOSEOUT SUBMITTALS

- a. Significant design criteria.
  - b. List of equipment.
  - c. Parts list for each component.
  - d. Operating instructions.
  - e. Maintenance instructions for equipment and systems.
  - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
3. Part 3: Project documents and certificates, including the following:
- a. Shop drawings and product data.
  - b. Air and water balance reports.
  - c. Certificates.
  - d. Photocopies of warranties and bonds.
- L. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.
- M. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

### 3.6 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers and provide electronic copies of all warranties and bonds in PDF file format on two Compact Discs.
- F. Compact Discs: High quality CD-R format Compact Disc formatted for use by Microsoft Windows based computers. Rewriteable Compact Discs will not be accepted. Provide labels on all Compact Discs listing the Owner's name, Project name, Contractor's name, Date of Submittal, and the title "Warranties and Bonds".
- G. Binder Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

**END OF SECTION**

## **SECTION 07840**

### **FIRESTOPPING**

#### **PART 1 – GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Firestopping materials.
- B. Firestopping of all penetrations and interruptions to fire rated assemblies, whether indicated on drawings or not, and other openings indicated.

##### **1.2 REFERENCES**

- A. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

##### **1.3 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics and fire rating.
- C. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

##### **1.4 QUALITY ASSURANCE**

- A. Fire Testing: Provide firestopping assemblies of designs which provide the specified fire ratings when tested in accordance with methods indicated.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
  - 1. Approved by Factory Mutual Research under FM Standard 4991, Approval of Firestop Contractors, or meeting any two of the following requirements:
    - a. With minimum 3 years documented experience installing work of this type.
    - b. Able to show at least 5 satisfactorily completed projects of comparable size and type.
    - c. Licensed by authority having jurisdiction.
    - d. Approved by firestopping manufacturer.

##### **1.5 MOCK-UP**

- A. Install one firestopping assembly representative of each fire rating design required on project.
  - 1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.
  - 2. Where firestopping is intended to fill a linear opening, install minimum of 1 linear ft.
- B. If accepted, mock-up will represent minimum standard for the Work.
- C. If accepted, mock-up may remain as part of the Work. Remove and replace mock-ups not accepted.

##### **1.6 ENVIRONMENTAL REQUIREMENTS**

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

#### **PART 2 – PRODUCTS**

##### **2.1 FIRESTOPPING ASSEMBLIES**

- A. Firestopping at Control and Expansion Joints (without Penetrations), of widths 2 inches or less: Any material meeting requirements.
  - 1. Floor-to-Floor:
    - a. UL Design No. FF-DD-0002, FF-D-0005, F Rating 1 & 2 hour.
    - b. UL Design No. FF-D-0011, FF-D-0001, F Rating 3 hour.

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### FIRESTOPPING

2. Floor-to-Wall:
  - a. UL Design No. FW-D-0004, FW-D-0005, FW-D-0002, F Rating 1 & 2 hour.
  - b. UL Design No. FFW-D-0007, FW-D-0002, F Rating 3 hour.
3. Wall-to-Wall:
  - a. UL Design No. WW-D-0013, WW-D-0004, WW-D-0017, F Rating 1 & 2 hour.
  - b. UL Design No. WW-D-0013, WW-D-0001, F Rating 3 hour.
4. Head-of-Wall:
  - a. UL Design No. HW-D-0020, HW-D-0043, HW-D-0034, F Rating 1 & 2 hour.
  - b. UL Design No. HW-D-0060, HW-D-0061, F Rating 3 hour.
- B. Firestopping at Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for single penetrations: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-1014, C-AJ-1240, C-AJ-1149, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1058, C-AJ-1198, C-AJ-1155, F Rating 3 hour.
  2. Concrete Floors 5 inches in thickness or greater:
    - a. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 3 & 4 hour.
  3. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-1014, C-AJ-1240, C-AJ-1149, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1058, C-AJ-1198, C-AJ-1155, F Rating 3 hour.
  4. Roof Slabs 5 inches in thickness or greater:
    - a. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 3 & 4 hour.
  5. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-1014, C-AJ-1240, C-AJ-1149, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1058, C-AJ-1198, C-AJ-1155, F Rating 3 hour.
  6. Concrete/Masonry Walls 8 inches in thickness or greater:
    - a. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 3 & 4 hour.
  7. Framed Floors:
    - a. UL Design No. F-C-1002, F-C-1010, F-C-1059, F Rating 1 & 2 hour.
  8. Framed Walls:
    - a. UL Design No. W-L-1001, W-L-1049, W-L-1054, F Rating 1 & 2 hour.
    - b. UL Design No. W-L-1001, W-L-1172, F Rating 3 hour.
- C. Firestopping at Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for multiple penetrations: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-1092, C-AJ-1047, C-AJ-1140, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1234, F Rating 3 hour.
  2. Concrete Floors 5 inches in thickness or greater:
    - a. UL Design No. C-AJ-1003, F Rating 1 & 2 hour.
  3. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-1092, C-AJ-1047, C-AJ-1140, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1234, F Rating 3 hour.
  4. Roof Slabs 5 inches in thickness or greater:
    - a. UL Design No. C-AJ-1003, F Rating 1 & 2 hour.
  5. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-1092, C-AJ-1047, C-AJ-1140, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-1234, F Rating 3 hour.
  6. Concrete/Masonry Walls 8 inches in thickness or greater:
    - a. UL Design No. C-AJ-1003, F Rating 1 & 2 hour.
  7. Framed Floors:
    - a. UL Design No. F-C-1065, F-C-1066, F Rating 1 & 2 hour.



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### FIRESTOPPING

8. Framed Walls:
  - a. UL Design No. W-L-1001, W-L-1049, W-L-54, F Rating 1 & 2 hour.
  - b. UL Design No. W-L-1001, W-L-1172, F Rating 3 & 4 hour.
- D. Firestopping at Non-Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for single penetrations: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-2143, C-AJ-2063, C-AJ-2271, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2117, C-AJ-2038, C-AJ-2271, F Rating 3 hour.
  2. Concrete Floors 5 inches in thickness or greater:
    - a. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 3 & 4 hour.
  3. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-2143, C-AJ-2063, C-AJ-2271, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2117, C-AJ-2038, C-AJ-2271, F Rating 3 hour.
  4. Roof Slabs 5 inches in thickness or greater:
    - a. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 3 & 4 hour.
  5. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-2143, C-AJ-2063, C-AJ-2271, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2117, C-AJ-2038, C-AJ-2271, F Rating 3 hour.
  6. Concrete/Masonry Walls 8 inches in thickness or greater:
    - a. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 3 & 4 hour.
  7. Framed Floors:
    - a. UL Design No. F-C-2024, F-C-2020, F-C-2025, F Rating 1 & 2 hour.
  8. Framed Walls:
    - a. UL Design No. W-L-2162, W-L-2047, W-L-2075, F Rating 1 & 2 hour.
    - b. UL Design No. W-L-2162, W-L-2195, F Rating 3 hour.
- E. Firestopping at Non-Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for multiple penetrations: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-2093, C-AL-2140, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2092, F Rating 3 hour.
  2. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-2093, C-AL-2140, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2092, F Rating 3 hour.
  3. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-2093, C-AL-2140, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-2092, F Rating 3 hour.
  4. Framed Floors:
    - a. UL Design No. F-C-2115, F-C-2129, F-C-2158, F Rating 1 & 2 hour.
  5. Framed Walls:
    - a. UL Design No. C-AJ-2021, W-L-2032, F Rating 1 & 2 hour.
- F. Firestopping at Cable Tray Penetrations: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 3 hour.
  2. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 3 hour.
  3. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 3 hour.
  4. Framed Walls:
    - a. UL Design No. W-L-4004, W-L-4005, W-L-4011, F Rating 1 & 2 hour.

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- G. Firestopping at Cable Penetrations, not in Conduit or Cable Tray: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-3030, C-AJ-3133, C-AJ-3072, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-3030, C-AJ-3023, C-AJ-3072, F Rating 3 hour.
  2. Concrete Floors 5 inches in thickness or greater:
    - a. UL Design No. C-BK-3001, C-BK-3002, F Rating 1 & 2 hour.
    - b. UL Design No. C-BK-3001, C-BK-3002, F Rating 3 hour.
  3. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-3030, C-AJ-3133, C-AJ-3072, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-3030, C-AJ-3023, C-AJ-3072, F Rating 3 hour.
  4. Roof Slabs 5 inches in thickness or greater:
    - a. UL Design No. C-BK-3001, C-BK-3002, F Rating 1 & 2 hour.
    - b. UL Design No. C-BK-3001, C-BK-3002, F Rating 3 hour.
  5. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-3030, C-AJ-3133, C-AJ-3072, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-3030, C-AJ-3023, C-AJ-3072, F Rating 3 hour.
  6. Concrete/Masonry Walls 8 inches in thickness or greater:
    - a. UL Design No. C-BK-3001, C-BK-3002, F Rating 1 & 2 hour.
    - b. UL Design No. C-BK-3001, C-BK-3002, F Rating 3 hour.
  7. Framed Floors:
    - a. UL Design No. F-C-3002, F-C-3045, F-C-3012, F Rating 1 & 2 hour.
  8. Framed Walls:
    - a. UL Design No. W-L-3110, W-L-3076, W-L-3065, F Rating 1 & 2 hour.
    - b. UL Design No. W-L-3139, F Rating 3 hour.
- H. Firestopping at Insulated Piping: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
  2. Concrete Floors 5 inches in thickness or greater:
    - a. UL Design No. C-BK-5001, C-BK-5002, F Rating 1 & 2 hour.
    - b. UL Design No. C-BK-5001, C-BK-5002, F Rating 3 hour.
  3. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
  4. Roof Slabs 5 inches in thickness or greater:
    - a. UL Design No. C-BK-5001, C-BK-5002, F Rating 1 & 2 hour.
    - b. UL Design No. C-BK-5001, C-BK-5002, F Rating 3 hour.
  5. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
  6. Concrete/Masonry Walls 8 inches in thickness or greater:
    - a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
  7. Framed Floors:
    - a. UL Design No. F-C-5038, F-C-5055, F-C-5029, F Rating 1 & 2 hour.
  8. Framed Walls:
    - a. UL Design No. W-L-5011, W-L-5014, W-L-5029, F Rating 1 & 2 hour.
    - b. UL Design No. W-L-5101, W-L-5023, W-L-5085, F Rating 3 hour.
- I. Firestopping at Miscellaneous Electrical Penetrants such as Busducts: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 3 hour.

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2. Roof Slabs 5 inches in thickness or less:
  - a. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 1 & 2 hour.
  - b. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 3 hour.
3. Concrete/Masonry Walls 8 inches in thickness or less:
  - a. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 1 & 2 hour.
  - b. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 3 hour.
4. Framed Walls:
  - a. UL Design No. W-L-6002, W-L-6001, W-L-6004, F Rating 1 & 2 hour.
- J. Firestopping at Miscellaneous Mechanical Penetrants such as Air Ducts: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-7013, C-AJ-7047, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-7003, C-AJ-7046, F Rating 3 hour.
  2. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-7013, C-AJ-7047, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-7003, C-AJ-7046, F Rating 3 hour.
  3. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-7013, C-AJ-7047, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-7003, C-AJ-7046, F Rating 3 hour.
  4. Framed Floors:
    - a. UL Design No. F-C-7001, F-C-7002, F-C-7013, F Rating 1 & 2 hour.
  5. Framed Walls:
    - a. UL Design No. W-L-7041, W-L-7025, W-L-7040, F Rating 1 & 2 hour.
- K. Firestopping at Groupings of penetrations including any combination of items above: Any material meeting requirements.
  1. Concrete Floors 5 inches in thickness or less:
    - a. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 3 hour.
  2. Roof Slabs 5 inches in thickness or less:
    - a. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 3 hour.
  3. Concrete/Masonry Walls 8 inches in thickness or less:
    - a. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 1 & 2 hour.
    - b. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 3 hour.
  4. Framed Walls:
    - a. UL Design No. W-L-8013, W-L-8016, F Rating 1 & 2 hour.
    - b. UL Design No. W-L-8014, W-L-8015, F Rating 3 hour.
- L. Firestopping between Edge of Floor Slab and Curtain Wall (without Penetrations): Glass fiber or mineral fiber safing insulation; UL Design No. F-C-7001, F Rating 1 hour.
- M. Temporary Firestopping: Intumescent pillows; UL Design No. C-AJ-2020, F Rating 1-1/2 hour; provide at locations indicated on drawings.

## 2.2 MATERIALS

- A. Manufacturers:
  1. 3M Fire Protection Products.
  2. Firestop Systems, Inc.
  3. Hilti Construction Chemicals, Inc.
  4. Isolatek International.
  5. Johns Mansville International, Inc.
  6. Specified Technologies, Inc.
  7. Tremco.
  8. Substitutions: See Section 01600 - Product Requirements.
- B. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant. Type required for tested assembly design.
  1. Color: Dark grey.

## **SECTION 07840**

### **FIRESTOPPING**

- C. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers. Type required for tested assembly design.
  - 1. Color: Dark grey.
- D. Fiber Packing Material: Mineral fiber packing insulation. Type required for tested assembly design.
- E. Foil Tape: Nominal 3 mil. thick pressure sensitive aluminum foil tape. Type required for tested assembly design.
- F. Firestop Devices: Mechanical device with incombustible filler and galvanized steel jacket, collar, and flanged stops. Type required for tested assembly design.
- G. Intumescent Composite Sheet: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet. Type required for tested assembly design.
- H. Hangers: Minimum 1 inch wide strips of minimum 0.034 inch (20 gauge) galvanized steel sheet. Type required for tested assembly design.
- I. Fire Spray: Sprayable, flexible, water-based coating that is water-resistant. Type required for tested assembly design.
- J. Caulks: Single component, water-based, non-flammable, paintable coating with non-sag and low shrinkage characteristics. Type required for tested assembly design.
- K. Mortars: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar. Type required for tested assembly design.
- L. Primers, Sleeves, Forms, and Accessories: Type required for tested assembly design.

## **PART 3 – EXECUTION**

### **3.1 EXAMINATION**

- A. Verify openings are ready to receive the work of this section.

### **3.2 PREPARATION**

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
- B. Remove incompatible materials which may affect bond.
- C. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

### **3.3 INSTALLATION**

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

### **3.4 CLEANING AND PROTECTION**

- A. Clean adjacent surfaces of firestopping materials.
- B. Protect adjacent surfaces from damage by material installation.

**END OF SECTION**

## **SECTION 07900**

### **JOINT SEALERS**

#### **PART 1 – GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Sealants and joint backing.

##### **1.2 REFERENCES**

- A. ASTM C 834 - Standard Specification for Latex Sealants; 2000.
- B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 2002.
- C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2002.
- D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2000.
- E. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); 1997.

##### **1.3 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

##### **1.4 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum 3 years experience and approved by manufacturer.

##### **1.5 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

##### **1.6 WARRANTY**

- A. See section 01780 – Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after the Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

#### **PART 2 – PRODUCTS**

##### **2.1 MANUFACTURERS**

- A. Silicone Sealants:
  - 1. Bostik Findley; [www.bostikfindley-us.com](http://www.bostikfindley-us.com).
  - 2. GE Plastics; [www.geplastics.com](http://www.geplastics.com).
  - 3. Pecora Corporation; [www.pecora.com](http://www.pecora.com).
  - 4. Sonneborn, ChemRex, Inc; [www.chemrex.com](http://www.chemrex.com).
  - 5. Dow Corning; [www.dowcorning.com](http://www.dowcorning.com)
  - 6. Tremco, Inc; [www.tremcosealants.com](http://www.tremcosealants.com).
  - 7. Substitutions: See Section 01600 - Product Requirements.
- B. Polyurethane Sealants:
  - 1. Bostik Findley; [www.bostikfindley-us.com](http://www.bostikfindley-us.com).
  - 2. Pecora Corporation; [www.pecora.com](http://www.pecora.com).
  - 3. Sonneborn, ChemRex, Inc; [www.chemrex.com](http://www.chemrex.com).
  - 4. Tremco, Inc; [www.tremcosealants.com](http://www.tremcosealants.com).
  - 5. Substitutions: See Section 01600 - Product Requirements.
- C. Butyl Sealants:
  - 1. Bostik Findley; [www.bostikfindley-us.com](http://www.bostikfindley-us.com).
  - 2. Pecora Corporation; [www.pecora.com](http://www.pecora.com).
  - 3. TEC Specialty Products Inc.
  - 4. Tremco, Inc; [www.tremcosealants.com](http://www.tremcosealants.com).

## SECTION 07900

### JOINT SEALERS

5. Substitutions: See Section 01600 - Product Requirements.
- D. Preformed Compressible Foam Sealers:
  1. Emseal Joint Systems, Ltd: [www.emseal.com](http://www.emseal.com).
  2. Sandell Manufacturing Company, Inc: [www.sandellmfg.com](http://www.sandellmfg.com).
  3. Polytite Manufacturing Corporation: [www.polytite.com](http://www.polytite.com).
  4. Substitutions: See Section 01600 - Product Requirements.

### 2.2 SEALANTS

- A. Type S1 - General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component.
  1. Color: As selected by Architect from Manufacturer's full line of colors.
  2. Applications:
    - a. Control, expansion and soft joints in masonry.
    - b. Joints between concrete and other materials.
    - c. Joints between metal frames and other materials.
    - d. Other exterior joints for which no other sealant is indicated.
- B. Type S2 - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
  1. Color: As selected by Architect from Manufacturer's full line of colors.
  2. Applications:
    - a. Interior wall and ceiling control joints.
    - b. Joints between door and window frames and wall surfaces.
    - c. Other interior joints for which no other sealant is indicated.
- C. Type S3 - Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
  1. Color: N/A.
  2. Applications:
    - a. For concealed locations only.
    - b. Sealant bead between top stud runner and structure; and between bottom stud track and floor.
- D. Type S4 - Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
  1. Color: As selected by Architect from Manufacturer's full line of colors.
  2. Applications:
    - a. Approved by manufacturer for wide joints up to 1-1/2 inches.
    - b. Expansion joints in floors.
- E. Type S5 - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 25, Uses T, I, M and A; single component.
  1. Color: As selected by Architect from Manufacturer's full line of colors.
  2. Applications:
    - a. Joints in sidewalks and vehicular paving.
    - b. Compressible filler joints adjacent to foundations.

### 2.3 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

## **SECTION 07900**

### **JOINT SEALERS**

#### **PART 3 – EXECUTION**

##### **3.1 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

##### **3.2 PREPARATION**

- A. Remove loose materials and foreign matter which might impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

##### **3.3 INSTALLATION**

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C 1193.
- C. Perform acoustical sealant application work in accordance with ASTM C 919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker where joint backing is not used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- H. Tool joints concave.

##### **3.4 CLEANING**

- A. Clean adjacent soiled surfaces.

##### **3.5 PROTECTION OF FINISHED WORK**

- A. Protect sealants until cured.

##### **3.6 SCHEDULE**

- A. Exterior Joints for Which No Other Sealant Type is Indicated: Type S1; colors as selected.
- B. Control and Expansion Joints in Paving: Type S5.
- C. Exterior Wall Expansion Joints: Type S1.
- D. Joints Between Exterior Metal Frames and Adjacent Work (except masonry): Type S1.
- E. Interior Joints for Which No Other Sealant is Indicated: Type S2.
- F. Control and Expansion Joints in Interior Concrete Slabs and Floors: Type S4.
- G. In STC-Rated Walls, Between Metal Stud Track/Runner and Adjacent Construction: Type S3.
- H. Joints Between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls: Type S2.

**END OF SECTION**





## SECTION 15121

### PIPING EXPANSION COMPENSATION

#### PART 1 – GENERAL

##### 1.1 WORK INCLUDED

- A. Flexible pipe connectors.
- B. Pipe loops, offsets and swing joints.
- C. Steel and copper pipe guides and anchors.

##### 1.2 RELATED SECTIONS

- A. Section 15140 - Supports and Anchors.
- B. Section 15540 – Plumbing Piping.

##### 1.3 REFERENCES

- A. Conform to Standards of Expansion Joint Manufacturers Association Selection Guide.
- B. ASHRAE Chapter 23, Pipes Tubes and Fittings.

##### 1.4 PERFORMANCE REQUIREMENTS

- A. Provide structural work and equipment required to control expansion and contraction of piping. Verify that anchors, guides, and expansion joints provided, adequately protect system.
- B. Expansion Calculations:
  - 1. Installation Temperature: 40 degrees F.
  - 2. Domestic Hot Water: 140 degrees F.
  - 3. Safety Factor: 30 percent.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Division 1 General Requirements.
- B. Product Data:
  - 1. Flexible Pipe Connectors: Indicate maximum temperature and pressure rating, face to face length, live length, hose wall thickness, hose convolutions per foot (meter) and per assembly, fundamental frequency of assembly, braid structure, and total number of wires in braid.
  - 2. Expansion Joints: Indicate maximum temperature and pressure rating, and maximum expansion compensation.
- C. Design Data: Indicate selection calculations.
- D. Manufacturer's Installation Instructions: Indicate special procedures, and external controls.

##### 1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1 General Requirements.
- B. Record actual locations of flexible pipe connectors, expansion joints, anchors, and guides.

##### 1.7 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Division 1 General Requirements.
- B. Maintenance Data: Include adjustment instructions.

##### 1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

##### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Division 1 General Requirements.
- B. Accept expansion joints on site in factory packing with shipping bars and positioning devices intact. Inspect for damage.
- C. Protect equipment from exposure by leaving factory coverings, pipe end protection, and packaging in place until installation.

## **SECTION 15121**

### **PIPING EXPANSION COMPENSATION**

#### **1.10 WARRANTY**

- A. Contractor shall provide a one (1) year manufacturer's warranty on parts on furnished equipment. Equipment parts warranty shall start at time of substantial completion. Contractor will provide a one (1) year warranty on all labor associated with the equipment and its' installation. Warranty shall start at date of final payment. See General Requirements for additional requirements.
- B. Warranty: Include coverage for leak free performance of packed expansion joints.

#### **PART 2 – PRODUCTS**

##### **2.1 FLEXIBLE PIPE CONNECTORS**

- A. Manufacturers:
  - 1. Mason Industries - Model BSS.
  - 2. MetraFlex - Model Mini.
  - 3. Hyspan Precision - Model 4500.
  - 4. Victaulic Engineered Assemblies.
- B. Inner Hose: Stainless Steel.
- C. Exterior Sleeve: Double braided, bronze.
- D. Pressure Rating: 200 psi WOG and 250 degrees F maximum temperature.
- E. Joint: Flanged.
- F. Maximum offset: 1 inch on each side of installed center line.

#### **PART 3 – EXECUTION**

##### **3.1 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Construct spool pieces to exact size of flexible connection for future insertion.
- C. Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation. Provide line size flexible connectors.
- D. Install flexible connectors at right angles to displacement. Install one end immediately adjacent to isolated equipment and anchor other end. Install in horizontal plane unless indicated otherwise.
- E. Provide support and equipment required to control expansion and contraction of piping. Provide loops, pipe offsets or expansion joints where required.
- F. Provide expansion loops as required on drawings or as required by field conditions. Engineered expansion compensators shall be used in lieu of expansion loops if clearance is limited.
- G. Rigidly anchor pipe to building structure where necessary.

**END OF SECTION**

## SECTION 15140

### SUPPORTS AND ANCHORS

#### PART 1 – GENERAL

##### 1.1 WORK INCLUDED

- A. Pipe and equipment hangers and supports.
- B. Sleeves and seals.
- C. Flashing and sealing equipment and pipe stacks.

##### 1.2 RELATED SECTIONS

- A. Section 15242 - Vibration Isolation.
- B. Section 15260 - Piping Insulation.
- C. Section 15410 - Plumbing Piping.

##### 1.3 REFERENCES

- A. American Society of Mechanical Engineers:
  - 1. ASME B31.2 – Fuel Gas Piping.
  - 2. ASME B31.9 – Building Services Piping.
- B. ASTM International:
  - 1. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.
  - 2. ASTM E814 – Standard Test Method for Fire Tests of Through Penetration Fire Stops.
  - 3. ASTM F708 – Standard Practice for Design and Installation of Rigid Pipe Hangers.
  - 4. ASTM E1966 – Standard Test Method for Fire-Resistive Joint Systems.
- C. American Welding Society:
  - 1. AWS D1.1 – Structural Welding Code – Steel.
- D. FM Global:
  - 1. FM – Approved Guide, A Guide to Equipment, Materials & Services Approved by Factory Mutual Research for Property Conservation.
- E. Underwriters Laboratories, Inc.
  - 1. UL 263 – Fire Tests of Building Construction and Materials.
  - 2. UL 723 – Tests for Surface Building Characteristics of Building Materials.
  - 3. UL 1479 – Fire Tests of Through-Penetration Firestops.
  - 4. UL 2079 – Tests for Fire Resistance of Building Joint Systems.
  - 5. UL – Fire Resistance Directory.

##### 1.4 DEFINITIONS

- A. Firestopping (Through-Penetration Protection System): Sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire rated construction.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Division 1 General Requirements.
- B. Shop Drawings: Indicate system layout with location and detail of trapeze hangers.
- C. Product Data: Provide manufacturers catalog data including load capacity.
- D. Design Data: Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers.
- E. Manufacturer's Installation Instructions: Indicate special procedures and assembly of components.

##### 1.6 REGULATORY REQUIREMENTS

- A. Conform to 2015 International Mechanical Code for support of plumbing or hydronic piping.

## SECTION 15140

### SUPPORTS AND ANCHORS

#### PART 2 – PRODUCTS

##### 2.1 PIPE HANGERS AND SUPPORTS

- A. Plumbing Piping - DWV:
  - 1. Conform to ASME B31.9, ASTM F708.
  - 2. Hangers for Pipe Sizes 2 to 1½-inch: Malleable iron, adjustable swivel, split ring.
  - 3. Hangers for Pipe Sizes 2 -inches and Over: Carbon steel, adjustable, clevis.
  - 4. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
  - 5. Wall Support for Pipe Sizes to 3-inches: Cast iron hook.
  - 6. Wall Support for Pipe Sizes 4-inches and Over: Welded steel bracket and wrought steel clamp.
  - 7. Vertical Support: Steel riser clamp.
  - 8. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  - 9. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- B. Plumbing Piping - Water:
  - 1. Conform to ASME B31.9, ASTM F708.
  - 2. Hangers for Pipe Sizes 2 to 1½-inch: Malleable iron, adjustable swivel, split ring.
  - 3. Hangers for Cold Pipe Sizes 2-inches and Over: Carbon steel, adjustable, clevis.
  - 4. Hangers for Hot Pipe Sizes 2 to 4-inches: Carbon steel, adjustable, clevis.
  - 5. Hangers for Hot Pipe Sizes 6-inches and Over: Adjustable steel yoke, cast iron roll, double hanger.
  - 6. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
  - 7. Multiple or Trapeze Hangers for Hot Pipe Sizes 6-inches and Over: Steel channels with welded spacers and hanger rods, cast iron roll.
  - 8. Wall Support for Pipe Sizes to 3-inches: Cast iron hook.
  - 9. Wall Support for Pipe Sizes 4-inches and Over: Welded steel bracket and wrought steel clamp.
  - 10. Vertical Support: Steel riser clamp.
  - 11. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  - 12. Floor Support for Hot Pipe Sizes to 4-inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  - 13. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

##### 2.2 ACCESSORIES

- A. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.

##### 2.3 FLASHING

- A. Metal Flashing: 26-gauge stainless steel.
- B. Metal Counterflashing: 22-gauge stainless steel.
- C. Lead Flashing:
  - 1. Waterproofing: 5 lb./sq. ft. sheet lead.
  - 2. Soundproofing: 1 lb./sq. ft. sheet lead.
- D. Flexible Flashing: 47 mil thick sheet compatible with roofing.
- E. Caps: Stainless steel, 22-gauge minimum; 16-gauge at fire resistant elements.

##### 2.4 SLEEVES

- A. Sleeves for Pipes through Non-Fire Rated Floors: 18-gauge galvanized steel.
- B. Sleeves for Pipes through Non-Fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe or 18-gauge galvanized steel.
- C. Sleeves for Pipes through Fire Rated and Fire Resistive Floors and Walls, and Fire Proofing: Prefabricated fire rated sleeves including seals, UL listed.

## SECTION 15140

### SUPPORTS AND ANCHORS

- D. Sleeves for Round Ductwork: Galvanized steel.
- E. Sleeves for Rectangular Ductwork: Galvanized steel.
- F. Firestopping Insulation: Glass fiber type, non-combustible.
- G. Sealant: Acrylic.

### PART 3 – EXECUTION

#### 3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

#### 3.2 PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as scheduled.
- B. Install hangers to provide minimum 2-inch space between finished covering and adjacent work.
- C. Place hangers within 12-inches of each horizontal elbow.
- D. Use hangers with 1½-inch minimum vertical adjustment.
- E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- F. Support vertical piping at every floor. Support vertical cast iron pipe at each floor at hub.
- G. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- H. Support riser piping independently of connected horizontal piping.
- I. Provide copper plated hangers and supports for copper piping.
- J. Design hangers for pipe movement without disengagement of supported pipe.

#### 3.3 FLASHING

- A. Provide flexible flashing and metal counterflashing where piping and ductwork penetrate weather or waterproofed walls, floors, and roofs.
- B. Flash vent and soil pipes projecting 3-inches minimum above finished roof surface with lead worked one -inch minimum into hub, 8-inches minimum clear on sides with 24 x 24-inches sheet size. For pipes through outside walls, turn flanges back into wall and calk, metal counter flash, and seal.
- C. Flash floor drains in floors with topping over finished areas with lead, 10 -inches clear on sides with minimum 36 x 36-inch sheet size. Fasten flashing to drain clamp device.
- D. Seal floor, shower and mop sink drains watertight to adjacent materials.
- E. Provide curbs for mechanical roof installations 18-inches minimum high above roofing surface. Flash and counter flash with sheet metal; seal watertight. Attach counterflashing mechanical equipment and lap base flashing on roof curbs. Flatten and solder joints. Roof curbs shall match roof pitch.
- F. Adjust storm collars tight to pipe with bolts; caulk around top edge. Use storm collars above roof jacks. Screw vertical flange section to face of curb.

#### 3.4 SLEEVES

- A. Set sleeves in position in wall.
- B. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- C. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent work with fire stopping insulation and calk air tight. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
- D. Install chrome plated steel escutcheons at finished surfaces.

## SECTION 15140

### SUPPORTS AND ANCHORS

#### 3.5 SCHEDULES

A. Copper and Steel Pipe Hanger Spacing:

PIPE SIZE - inches	COPPER TUBING MAXIMUM HANGER SPACING Feet	STEEL PIPE MAXIMUM HANGER SPACING Feet	COPPER TUBING HANGER ROD DIAMETER - inches	STEEL PIPE HANGER ROD DIAMETER - inches
1/2	5	7	3/8	3/8
3/4	5	7	3/8	3/8
1	6	7	3/8	3/8
1-1/4	7	7	3/8	3/8
1-1/2	8	9	3/8	3/8
2	8	10	3/8	3/8

END OF SECTION

## SECTION 15190

### MECHANICAL IDENTIFICATION

#### PART 1 – GENERAL

##### 1.1 WORK INCLUDED

- A. Nameplates.
- B. Tags.
- C. Stencils.
- D. Pipe Markers.

##### 1.2 RELATED SECTIONS

- A. Section 15260 - Piping Insulation.
- B. Section 15410 - Plumbing Piping.
- C. Section 15535 – Refrigerant Piping and Specialties.

##### 1.3 REFERENCES

- A. ASME A13.1 - Scheme for the Identification of Piping Systems.

##### 1.4 SUBMITTALS

- A. Submit under provisions of Division 1 General Requirements.
- B. Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Product Data: Provide manufacturers catalog literature for each product required.

##### 1.5 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1 General Requirements.
- B. Record actual locations of tagged valves.

#### PART 2 – PRODUCTS

##### 2.1 NAMEPLATES

- A. Manufacturers:
  - 1. Laco.
  - 2. Seton.
  - 3. Brady.
- B. Description: Laminated three-layer plastic with engraved black letters on light contrasting background color.

##### 2.2 TAGS

- A. Manufacturers:
  - 1. Laco.
  - 2. Seton.
  - 3. Brady.
- B. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1½-inch diameter.
- C. Chart: Typewritten letter size list in anodized aluminum frame.

##### 2.3 STENCILS

- A. Stencil: Paint for labeling will not be accepted. All labeling will be with manufacturers labels and letters.

##### 2.4 PIPE MARKERS

- A. Color: Conform to ASME A13.1.
- B. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

## **SECTION 15190**

### **MECHANICAL IDENTIFICATION**

#### **PART 3 – EXECUTION**

##### **3.1 PREPARATION**

- A. Degrease and clean surfaces to receive adhesive for identification materials.

##### **3.2 INSTALLATION**

- A. Install plastic nameplates with corrosive resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant stainless-steel chain.
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Identify air handling units, pumps, heat transfer equipment, tanks, and water treatment devices with plastic nameplates. Small devices, such as in line pumps, may be identified with tags. Do not identify cabinet/suspended unit heaters, unit ventilators, etc.
- E. Identify control panels and major control components outside panels with plastic nameplates.
- F. Identify valves in main and branch piping with tags (i.e.: HWS, HWR, BWS, BWR, HW, CW, etc.).
- G. Identify air terminal units with numbered tags.
- H. Tag automatic controls, instruments, and relays. Key to control schematic.
- I. Identify piping, concealed or exposed, with plastic pipe markers. Use tags on piping  $\frac{3}{4}$ -inch diameter and smaller. Identify service, flow direction. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.
- J. Identify calibrated balancing valves with tags indicating model number, flow rate, service and setting.

##### **3.3 VALVE CHART AND SCHEDULE**

- A. Provide valve chart and schedule in aluminum frame with clear plastic shield. Install in location directed by Owner.

**END OF SECTION**



## SECTION 15242

### VIBRATION ISOLATION

#### PART 1 – GENERAL

##### 1.1 WORK INCLUDED

- A. Vibration isolation for piping and equipment.
- B. Piping flexible connections.

##### 1.2 RELATED EQUIPMENT SECTIONS

- A. Section 15450 – Plumbing Equipment.

##### 1.3 QUALITY ASSURANCE

- A. Maintain ASHRAE criteria for average noise criteria curves for all equipment at full load condition.
- B. Provide all vibration isolators and equipment bases for Division 15 work from the product line of a single manufacturer, unless otherwise accepted by the Acoustics Consultant.
- C. Provide all vibration isolators and equipment bases for Division 16 work from the product line of a single manufacturer, unless otherwise accepted by the Acoustics Consultant.
- D. Select isolators to provide uniform deflections within acceptable tolerances when supporting the equipment approved for this project. Coordinate as required with the equipment manufacturers to accomplish this.
- E. Provide engineering, isolator selection, site supervision, and inspection by manufacturer's personnel who shall perform these services directly. Alert the Engineer of isolator selections that may result in resonances with the equipment and structural systems they are intended to isolate. Replace isolators that upon installation are found to resonate with the supported equipment.
- F. Provide complete isolation systems that include all elements recommended by the manufacturer for compliance with project requirements and applicable codes, ordinances, and regulations. Include all incidental products and materials required for a complete installation even if not explicitly described in the Construction Documents.
- G. Install vibration isolation systems using skilled workers trained and licensed, as applicable, by the manufacturer for installations of the types used on this project. Upon completion of the Work, provide final inspection by the manufacturer's representative and submit to the Architect and Engineer a written report authored by the manufacturer's representative certifying the correctness of installation and compliance with the approved submittal data. Include tabulation of the static deflection expected under design and operating loads in comparison with the actual static deflection measured in the completed installations.

##### 1.4 UNACCEPTABLE TYPES

- A. Do not use housed spring mounts on this project. Mason models C, CI, and CS; Amber-Booth models XI and XK; Kinetics SL and SM; and similar mounts are not acceptable.
- B. Do not use captive spring mounts on this project. Provide seismic restraint by means of resilient snubbers at the perimeter of the equipment or equipment base and not by mounts that combine isolation and snubbing functions. Mason model SSLFH, Amber-Booth model SWPQ, and similar mounts are not acceptable.
- C. Do not use cork as an isolation material.
- D. Do not use braided metallic hose for vibration isolation in piping unless fluid temperatures and pressures are beyond the service range of spherical elastomeric isolators.

##### 1.5 SUBMITTALS

- A. Submit manufacturer's data, shop drawings, and product performance certifications in accordance with Division 1.
- B. Manufacturer's Data: Submit technical product data confirming that products comply with specified requirements:
  - 1. Illustrations and descriptions of components including, but not limited to isolators, equipment bases, thrust and seismic restraints, anchors, and accessories.
  - 2. Operation and maintenance instructions.

## SECTION 15242

### VIBRATION ISOLATION

- C. Shop Drawings
  - 1. Full-size details of isolation systems, including plan and section drawings indicating isolator and flexible connection locations and types, isolator and connector schedules, and installation details.
  - 2. Indicate substrate construction required of other subcontractors.
- D. Color code legend for spring and elastomer capacities.
- E. Samples: provide a sample of each type of isolator assembly used in the project. It is not necessary to submit samples of each spring capacity and pad hardness.
- F. Calculations: submit manufacturer's engineer's calculations of loads, deflections, and natural frequencies for record only.
- G. General Requirements for Vibration Isolation Mounts and Hangers: Provide catalog cut sheets, shop drawings, and other documents as necessary to describe the installation and its components.
  - 1. Springs:
    - a. Equipment name and number
    - b. Operating Weight of Equipment
    - c. Lowest reciprocating or rotating speed
    - d. Isolator type
    - e. Weight supported by isolator
    - f. Scheduled deflection
    - g. Proposed deflection under operating load
    - h. Natural Frequency
    - i. Spring free height
    - j. Spring operating height
    - k. Spring solid height at coil bind
    - l. Spring diameter
  - 2. Elastomeric Pads:
    - a. Equipment name and number
    - b. Operating Weight of Equipment
    - c. Isolator type
    - d. Weight supported by isolator
    - e. Pad bearing area
    - f. Pad free height
    - g. Pad operating height
    - h. Scheduled deflection
    - i. Proposed deflection under operating load
    - j. Percent deflection
    - k. Natural Frequency
    - l. Hardness and compliance with AASHTO Bridge Bearing Neoprene quality standard

#### 1.6 REGULATORY REQUIREMENTS

- A. Conform to 2015 International Mechanical Code.

#### 1.7 MANUFACTURER RESPONSIBILITIES

- A. Manufacturer of vibration isolation equipment shall have the following responsibilities:
  - 1. Determine vibration isolation sizes and locations.
  - 2. Provide piping and equipment isolation systems as scheduled or specified.
  - 3. Guarantee specified isolation system deflection.
  - 4. Provide installation instruction, drawings and field supervision to assure proper installation and performance.

## SECTION 15242

### VIBRATION ISOLATION

#### PART 2 – PRODUCTS

##### 2.1 MANUFACTURERS

- A. Manufacturers listed below have demonstrated an ability to comply with specifications for vibration isolation products similar to those required for this project. However, specific products made by the listed manufacturers do not all comply with the requirements of this specification. Subject to the requirement for a single manufacturer and the restrictions regarding unacceptable types of isolators, the products of the following manufacturers are acceptable sources for this project:
1. Mason Industries, Inc.
  2. Kinetics Noise Control.
  3. Amber-Booth Company, Inc.
  4. E.A.R.
  5. PSI-Thunderline/Link-Seal.
  6. Ductmate Industries, Inc.
  7. Unger Technologies.

##### 2.2 SPRING REQUIREMENTS

- A. Provide steel springs with static deflections equal to or greater than those shown on the Construction Documents. Submittals based on rated deflections will be rejected.
- B. Unless otherwise noted, size springs to provide a natural frequency of not more than 3 Hertz. Where spring deflections called out in the Construction Documents exceed those required to achieve a natural frequency of 3 Hz or less, the greater deflection will govern.
- C. Size springs to provide not less than 50 percent additional travel to solid, coil-bind condition beyond the deflection under operating load.
- D. Size springs so that diameter is not less than 80 percent of the height of the spring at operating load.
- E. Provide springs that do not permanently deflect after loading to a solid, coil-bind condition.
- F. Do not weld springs to other components of the isolator assembly unless specifically noted in the Submittals and accepted by the Acoustics Consultant.
- G. Color code springs to allow positive identification after installation. Match color coding to the color code legend provided with the submittals.

##### 2.3 ELASTOMER REQUIREMENTS

- A. Provide elastomeric elements with static deflections equal to or greater than those shown on the Construction Documents. Submittals based on rated deflections will be rejected.
- B. Provide neoprene elements with a maximum hardness of 40 durometer, Shore A rating, where possible, but in no case exceeding 50 durometer. Where deflections called out in the construction documents exceed those required to achieve the specified natural frequencies, the greater deflection will govern.
- C. Meet AASHTO Highway Bridge Specifications for all neoprene products installed in irretrievable locations and as required elsewhere in the Construction Documents.

##### 2.4 ACCEPTABLE PRODUCTS

- A. (Type A) Elastomeric Pads: 5/16-inch minimum thickness, waffled or ribbed neoprene. Where multiple layers are required to provide the specified deflections, interleave pads with 16-gauge steel shim plates. Size pads for deflection equal to 10 to 15 percent of unloaded height and provide pads of sufficient thickness to achieve the specified deflection. Provide load-distributing top plates if required for uniform loading. Acceptable products include
1. Individual pads
    - a. Mason W, SW, and Super W
    - b. Kinetics NP
    - c. Amber-Booth NR

## SECTION 15242

### VIBRATION ISOLATION

2. Neoprene/Steel composite pads:
  - a. Mason WSW
  - b. Amber-Booth SP-NR Style E
- B. (Type B) Neoprene-In-Shear Base-Mounted Isolators: Provide double-deflection isolators with steel bottom plates with pre-drilled bolt holes for attachment to floor or base, a threaded steel insert at the top of the isolator for attaching the equipment, and friction surfaces at both top and bottom. Coat all metal surfaces with neoprene. Design isolators for 0.25 to 0.35 inches of deflection. Acceptable products include:
  1. Neoprene-In-Shear Isolators:
    - a. Mason ND
    - b. Kinetics RD
    - c. Amber-Booth RVD
- C. (Type D) Restrained Open Spring Base-Mounted Isolators: Provide built-in adjustable spring restraints for equipment with operating weight greater than weight upon installation to prevent equipment from deflecting (or rising) when the additional weight is applied (or removed in the future). Provide isolators as specified for Type C but with restraint studs and adjustable nuts. Provide ½ inch minimum clearance around the restraint studs. Use bridge-bearing quality neoprene for elastomeric friction pads at chillers and cooling towers. Acceptable products include:
  1. Restrained Base Mounted Isolators:
    - a. Mason SLR
    - b. Kinetics FLS
    - c. Amber-Booth CT
- D. (Type F) Spring Hangers: Provide spring of the general characteristics specified in Paragraph 2.2, above in a rigid steel hanger box. Seat spring in a molded neoprene cup with steel washer reinforcing. Mold neoprene element with a rod isolation bushing that prevents rigid contact between hanger rod and housing from vertical through an angular deflection of not less than 15 degrees in any direction. For ductwork hung by straps, provide hangers with eyes on the top and bottom to allow for bolting to the straps. Acceptable products include:
  1. Spring hangers:
    - a. Mason types 30 and W30
- E. (Type G) Spring/Elastomer-in-Series Hangers: Provide neoprene-in-shear element of 1¼-inch minimum thickness and a spring of the general characteristics specified in Paragraph 2.2, above. Seat spring in a molded neoprene cup with steel washer reinforcing. Mold neoprene element with a rod isolation bushing that prevents rigid contact between hanger rod and housing from vertical through an angular deflection of not less than 15 degrees in any direction. Design neoprene for .25 to .35-inch minimum static deflection at rated load. Do not directly stack the spring and neoprene isolator elements. For ductwork hung by straps, provide hangers with eyes on the top and bottom to allow for bolting to the straps. Acceptable products include:
  1. Spring/Elastomer-in-Series Hangers:
    - a. Mason 30N
    - b. Kinetics SRH
    - c. Amber-Booth BSRA
- F. (Type H) Pre-compressed Spring/Elastomer-in-Series Hangers: Provide built-in adjustable spring restraints for equipment with operating weight greater than weight upon installation to prevent equipment from deflecting (or rising) when the additional weight is applied (or removed in the future). Provide isolators as specified in Subparagraph G but pre-compressed with restraint mechanisms that can be released to free the spring when subjected to its operational load. Provide an integral scale to indicate amount of deflection. For ductwork hung by straps, provide hangers with eyes on the top and bottom to allow for bolting to the straps. Acceptable products include:
  1. Pre-compressed Spring/Elastomer-in-Series Hangers:
    - a. Mason PC30N
    - b. Amber-Booth PBSRA

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### VIBRATION ISOLATION

- G. (Type P) Flexible Neoprene Piping Connectors: Provide flanged twin-sphere or threaded single-sphere isolators with Kevlar cord and peroxide-cured EPDM body with steel rings embedded in flanges to prevent pull-out. Connectors must accept elongation, compression, axial, and transverse motion. Select materials to suit system temperature, pressure, and fluid type. Do not use control rods or cables to limit extension of the isolator. Use twin-sphere isolators for pipes 2 inches to 14 inches in diameter. Single-sphere isolators may be used for pipes less than 2 inches and greater than 14 inches in diameter. Straight-wall flexible connectors are not acceptable except for sewage ejector pumps. Acceptable products include:
  - 1. Flexible Neoprene Piping Connectors:
    - a. Mason types SFDEJ, SFDCR, and SFU
- H. (Type Q) Flexible Duct Connections: Provide Hypalon-coated, woven fiberglass, flameproof fabric (24 oz per square yard), serviceable from -40°F to 250°F. Acceptable products include:
  - 1. Ductmate Pro-Flex
- I. (Type S) Elastomeric Isolators for Mounting Bolts: Provide neoprene grommets, bushings, and washers for all bolts used to secure isolators to floors and housekeeping slabs and for all snubbers. Size bolt holes and washers to accommodate grommets, sleeves, and bushings and to preclude contact between rigid components that would cause bridging between isolated elements and the building structure. Baseplates for neoprene pads may be rigidly bolted to the floor or housekeeping slab if the bolts secure the baseplates only and do not continue through the neoprene to meet any other rigid material. Do not exceed 40 durometer, Shore A hardness. Acceptable products include:
  - 1. Grommets (Washer Bushings):
    - a. Mason HG
    - b. E.A.R. Isodamp and C-1000
  - 2. Bushings:
    - a. Mason HLB
  - 3. Washers:
    - a. Mason HLW

## PART 3 – EXECUTION

### 3.1 INSTALLATION

- A. General:
  - 1. Install in accordance with manufacturer's written instructions. Vibration isolators must not cause any change of position of equipment or piping resulting in piping stresses or misalignment.
  - 2. Mechanical equipment shall be isolated from the building structure by means of noise and vibration isolators as scheduled on the drawings.
  - 3. All piping and vertical risers shall be isolated from the building structure by means of noise and vibration isolation guides and supports.
  - 4. All piping and ductwork to be isolated shall freely pass through walls and floors without rigid connections. Penetration points shall be sleeved or otherwise formed to allow passage of piping or ductwork and maintain 3/4" to 1 1/4" clearance around the outside surfaces. This clearance space shall be tightly packed with fiberglass and caulked airtight after installation of piping or ductwork.
  - 5. No rigid connections between equipment and building structure shall be made that degrades the noise and vibration isolation system herein specified.
  - 6. Electrical circuit connections to isolated equipment shall be looped to allow free motion of isolated equipment.
  - 7. The Contractor shall not install any equipment, piping or conduit which makes rigid contact with the "building" unless permitted in the Specification. Building includes, but is not limited to slabs, beams, columns, studs and walls.

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### VIBRATION ISOLATION

8. Coordinate work with other trades to avoid rigid contact with the building. Inform other trades following work, such as plastering or electrical, to avoid any contact which would reduce the vibration isolation.
9. Bring to the Architect's attention prior to installation any conflicts with other trades which will result in unavoidable rigid contact with equipment or piping as described herein, due to inadequate space or other unforeseen conditions. Corrective work necessitated by conflicts after installation shall be at the responsible contractor's expense.
10. Bring to the Architect's attention any discrepancies between the specifications and field conditions or changes required due to specific equipment selection, prior to installation. Corrective work necessitated by discrepancies after installation shall be at the contractor's expense.
11. Obtain inspection and approval of any installation to be covered or enclosed, prior to such closure.
12. Correct, at no additional cost, all installation which are deemed defective in workmanship or materials.
13. For all isolated equipment, make connections of piping, ductwork, and conduit using flexible connections specified in this section. Make no connections to isolated equipment in a manner that would compromise the performance of the isolation systems.

#### 3.2 MOUNTS AND HANGERS

- A. Align mounts and hangers squarely above or below the equipment mounting holes to avoid introducing lateral loads and deflection.
- B. Deflection requirements:
  1. Verify installed isolators have deflections equal to or greater than deflections specified on the submittals.
  2. Where multiple deflections apply to a single isolator (where a single isolator supports multiple isolated elements), the largest deflection governs.
  3. Vary the size and/or hardness of isolators as required to yield equal deflection for all isolators supporting a single piece of equipment or length of pipe or ductwork. Consult manufacturer for direction when specified isolators do not yield required deflection and correct non-compliant isolators at no cost to the Owner.
- C. Support equipment, ductwork, conduit and piping independently. Do not hang equipment, ductwork, piping, or conduit from other isolated equipment, ductwork, piping, or conduit.
- D. Maintain 2 inches of clearance between isolated elements and walls, ceilings, and other non-isolated building components.
- E. Isolate drain piping attached to vibration isolated equipment from rigid components of the building.
- F. Limit stops must be inactive and out of contact with the isolator during equipment operation.
- G. Adjust leveling bolts and hanger rod lengths so that equipment is level and in alignment with connecting ductwork and piping.
- H. Restrained isolators may be substituted for unrestrained isolators at installer's option to simplify installation.

#### 3.3 PIPING AND CONDUIT

- A. Isolate all piping 1½ inches and larger in diameter that is connected to rotating or reciprocating equipment. Waste, vent, rainwater, and fire protection piping do not require isolation unless noted otherwise.
- B. Select and install isolators in a manner that does not induce stresses in piping connections and does not result in misalignment of shafts and bearings. Maintain equipment and piping in rigid condition during installation. Do not transfer loads to the isolators until the installation is complete and under full operational load.

## SECTION 15242

### VIBRATION ISOLATION

- C. Isolator Types:
1. For equipment isolated with supports and mounts containing springs, provide Type G or H spring/elastomer-in-series isolators for the first 4 horizontal piping hangers and associated vertical piping. Size these hangers to provide the same static deflection as the isolators for the equipment. For floor-supported piping, use Type D open spring base mount isolators and Type B neoprene-in-shear base mount isolators.
  2. Beyond the 4 hangers nearest the equipment, within the rooms housing the equipment and for a distance of not less than 50 feet from the equipment, provide Type F elastomeric hangers, and provide Type F hangers for all piping of 2-inch and smaller diameter and flow rates of greater than 4 feet per second.
  3. For pipes larger than 2-inch and not greater than 6-inch diameter throughout the building, support entire length on Type F elastomeric hangers, Type B neoprene-in-shear base supports, or Type A elastomeric pads between the piping and all points of contact between piping and non-isolated construction.
  4. For pipes larger than 6-inch diameter, support entire length throughout the building on Type H restrained spring/elastomer-in-series hangers, or Type D restrained spring/elastomer-in-series base mounts if supported from the floor.
- D. Position isolators as high as possible in the hanger rod or strap assembly but not in direct contact with the building structure without manufacturer's written authorization. Provide 1-inch minimum clearance between isolator housing and structure above. Provide side clearance for hangers to allow full 360-degree rotation about the rod axis without contacting any object.
- E. Parallel pipes can be hung together on a trapeze that is isolated from the structure. Isolator deflections must be equal to or greater than the greatest deflection required for the pipes if isolated individually. Do not mix isolated and non-isolated piping on the same trapeze.
- F. Mount flexible connections for piping to equipment on the equipment side of shut-off valves.
- G. Provide isolation of expansion tanks, air separators, and other devices similar to that provided for the attached piping.

#### 3.4 TESTING, EVALUATION AND ACCEPTANCE PROCEDURES

- A. If it is found that the construction fails the acoustic test measurements or performance requirements identified in the Contract Documents, make changes necessary to meet the requirements identified in the Contract Documents and be responsible for the costs associated with performing all additional acoustical tests to verify the acoustic performance of the construction. Costs for additional acoustical testing shall include consulting fees at per hour rates in effect at the time of testing along with related expenses including, but not limited to, travel expenses and test equipment use charges.

**END OF SECTION**





## SECTION 15260

### PIPE INSULATION

#### PART 1 – GENERAL

##### 1.1 WORK INCLUDED

- A. All plumbing and hydronic piping jackets and accessories.
- B. All piping saddles.

##### 1.2 RELATED SECTIONS

- A. Section 15140 - Supports and Anchors: Pipe covering protection shields.
- B. Section 15190 - Mechanical Identification.
- C. Section 15410 - Plumbing Piping.

##### 1.3 REFERENCES

- A. ASTM C335 - Steady-State Heat Transfer Properties of Horizontal Pipe Insulation.
- B. ASTM C449 - Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement.
- C. ASTM C518 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- D. ASTM C534 - Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
- E. ANSI/ASTM C547 - Mineral Fiber Preformed Pipe Insulation.
- F. ASTM C585 - Inner and Outer Diameters and Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
- G. ASTM C921 - Properties of Jacketing Materials for Thermal Insulation.
- H. ASTM D1667 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Closed Cell Foam).
- I. ASTM D2842 - Water Absorption of Rigid Cellular Plastics.
- J. ASTM E84 - Surface Burning Characteristics of Building Materials.
- K. ASTM E96 - Water Vapor Transmission of Materials.

##### 1.4 REGULATORY REQUIREMENTS

- A. Conform to 2015 International Mechanical Code and 2015 International Energy Code.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Division 1 General Requirements.
- B. Product Data: Provide product description, list of materials and thickness for each service and locations.
- C. Submit manufacturer's installation instructions under provisions of Division 1 General Requirements.
- D. Contractor shall review all shop drawings prior to submitting them for Architect/Engineer's review. Contractor shall stamp each shop drawing to certify that he has reviewed it. Engineer will not check any shop drawings that Contractor has not stamped with his review certification.

##### 1.6 QUALITY ASSURANCE

- A. Materials: Flame spread/fuel contributed/smoke developed rating of 25/50 or less in accordance with ASTM E84. Material shall not melt or drip when exposed to flame.

##### 1.7 QUALIFICATIONS

- A. Applicator: Company specializing in performing the work of this Section with minimum five years' experience.

##### 1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site under provisions of Division 1 General Requirements.
- B. Store, protect and handling products under provisions of Division 1 General Requirements.
- C. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

## SECTION 15260

### PIPE INSULATION

#### 1.9 ENVIRONMENTAL REQUIREMENTS

##### A. Insulation Work:

1. Maintain ambient temperatures and conditions for installation of insulation as required by manufacturers of insulation adhesives, mastics and insulation cements.

#### PART 2 – PRODUCTS

#### 2.1 ACCEPTABLE MANUFACTURERS

##### A. Insulation:

1. Manville Corporation.
2. Knauf Fiberglass.
3. CertainTeed Corp.
4. Owens Corning Fiberglass.

##### B. Steel and Wood Insulation Protection Saddles:

1. Acceptable Manufacturers:
  - a. Grinnell.
  - b. B-Line.
  - c. Unistrut.

#### 2.2 FIBER GLASS INSULATION MATERIALS (TYPE A):

##### A. Glass Fiber Insulation

1. Insulation: ASTM C547; rigid molded, noncombustible.
  - a. K Value: 0.23 at 75 degrees F.
  - b. Minimum Service Temperature: 0 degrees F.
  - c. Maximum Service Temperature: 850 degrees F.
  - d. Maximum Moisture Absorption: 0.2 percent by volume.
2. Vapor Barrier Jacket:
  - a. ASTM C921; factory applied vapor retarder composed of a white draft facing out reinforced with glass fiber yarn and bonded to aluminized film (ASJ).
  - b. Moisture Vapor Transmission: ASTM E96; 0.02 perm inches.
  - c. Secure with factory applied self-sealing longitudinal laps and butt strips.
  - d. Jacket Temperature Limit: Minus 20 to 150 degrees F.
3. Vapor Barrier Lap Adhesive:
  - a. Compatible with insulation.
4. Fittings (Concealed and Exposed):
  - a. Insulate all fittings (plumbing and HVAC) with a minimum of two layers of precut blanket insulation.
  - b. Insulation blanket thickness to equal K value of straight sections of insulation.
  - c. Tie wire to be 18-gauge stainless steel with twisted ends.
  - d. Jacket shall be a one-piece pre-molded high impact fitting 25/50 rated, off-white color, 10 mil thick, brush on welding adhesive connections.
5. Insulating Cement/Mastic:
  - a. Acceptable Manufacturers:
    - 1) Fibrex.
    - 2) Pabco.
    - 3) Manville.
  - b. ASTM C195; hydraulic setting on mineral wool.

## SECTION 15260

### PIPE INSULATION

#### PART 3 – EXECUTION

##### 3.1 INSULATION

- A. Examination:
1. Verify that piping has been tested before applying insulation materials.
  2. Verify that surfaces are clean, foreign material removed and dry. Flux to be removed from copper piping.
- B. Installation:
1. Install materials in accordance with manufacturer's instructions.
  2. On exposed piping, locate insulation and cover seams in least visible locations.
  3. All insulation to have a vapor barrier jacket (ASJ) with factory applied self-sealing longitudinal laps and butt strips.
  4. Support all piping with insulation protection saddles.
    - a. Plumbing Piping:
      - 1) 2-Inch Pipe Size: Wood dowel with insulation shields.
      - 2) ¾-Inch and Larger: High density pre-molded type with insulation shields or manufactured wood saddles.
    - b. Hydronic Piping:
      - 1) 2-Inch to 2½-Inch: High density pre-molded type with insulation shields.
      - 2) 3-Inch and Larger: Manufactured steel saddles welded to the pipe.
  5. Run insulation continuous through walls, floors, sleeves, pipe hangers and other pipe penetrations.
  6. Insulate all piping located behind chases.
  7. Insulate all piping installed inside cabinet unit heaters and fan coils.
  8. **Insulate entire system including fittings, valves, unions, flanges, strainers, expansion joints, pump bodies, chemical feeders, rolairtrols, chemical feed piping from pot feeders and separators, including heating piping.**
  9. Finish all insulation at supports, protrusions and interruptions.
  10. Seal all aluminum jackets outdoors air and water tight.
  11. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with aluminum jacket with seams located on bottom side of horizontal piping.

##### 3.2 INSULATION SCHEDULE

PIPING SYSTEMS	INSULATION TYPE	PIPE SIZES/INSULATION THICKNESS			
		<u>½" To 1"</u>	<u>1¼" To 2"</u>	<u>2½" To 4"</u>	<u>5" &amp; Larger</u>
A. Plumbing and Mechanical Systems					
Domestic Hot & Cold Water Supply	A	1"	1"	2"	2"

Note: ALL exposed interior piping shall have a PVC jacket as specified.

END OF SECTION



## SECTION 15410

### PLUMBING PIPING

#### PART 1 – GENERAL

##### 1.1 SECTION INCLUDED

- A. Pipe, pipe fittings, valves, and connections for piping systems.
  - 1. Domestic water.
- B. Testing, adjusting and balancing of domestic hot and domestic tempered water circulating system. Coordinate with Test and Balancing Contractor and Section 17600 and 17800 provided under separate cover.

##### 1.2 RELATED SECTIONS

- A. Section 15140 – Supports and Anchors.
- B. Section 15190 – Mechanical Identification.
- C. Section 15260 – Piping Insulation.
- D. Section 15430 – Plumbing Specialties.
- E. Section 15450 – Plumbing Equipment.
- F. Division 16 Specifications – Equipment Wiring Systems: Electrical characteristics and wiring connections.

##### 1.3 REFERENCES

- A. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250 and 800.
- B. ASME B16.3 - Malleable Iron Threaded Fittings.
- C. ASME B16.4 - Cast Iron Threaded Fittings Class 125 and 250.
- D. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
- E. ASME B16.22 - Wrought Copper and Bronze Solder Joint Pressure Fittings.
- F. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV.
- G. ASME B31.1 - Power Piping.
- H. ASME SEC IX - Welding and Brazing Qualifications.
- I. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
- J. ASTM A74 - Cast Iron Soil Pipe and Fittings.
- K. ASTM B32 - Solder Metal.
- L. ASTM B88 - Seamless Copper Water Tube.
- M. ASTM B306 - Copper Drainage Tube (DWV).
- N. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
- O. ASTM E814 - Fire Tests of Through-Penetration Fire Stops.
- P. ASTM F708 - Design and Installation of Rigid Pipe Hangers.
- Q. AWS A5.8 - Brazing Filler Metal.
- R. AWWA C105 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
- S. AWWA C110 - Ductile - Iron and Gray - Iron Fittings 3 in. through 48 in., for Water and Other Liquids.
- T. AWWA C111 - Rubber-Gasket Joints for Ductile Iron and Gray-Iron Pressure Pipe and Fittings.
- U. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
- V. AWWA C651 - Disinfecting Water Mains.
- W. CISPI 301 - Cast Iron Soil Pipe and Fittings for Hubless Cast Iron Sanitary Systems.
- X. CISPI 310 - Joints for Hubless Cast Iron Sanitary Systems.
- Y. MSS SP58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.
- Z. MSS SP69 - Pipe Hangers and Supports - Selection and Application.
- AA. MSS SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
- BB. MSS SP-71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.

## SECTION 15410

### PLUMBING PIPING

- CC. MSS SP-80 - Bronze Gate, Globe, Angle and Check Valves.
- DD. MSS SP89 - Pipe Hangers and Supports - Fabrication and Installation Practices.
- EE. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
- FF. UL 1479 - Fire Tests of Through-Penetration Firestops.
- GG. ASTM D-1784-11 – Standard Specifications for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

#### 1.4 SUBMITTALS

- A. Submit product data under provisions of Division 1 General Requirements.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Manufacturer's Installation Instructions: Submit installation instructions for pumps, valves and accessories.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Contractor shall review all shop drawings prior to submitting them for Architect/Engineer's review. Contractor shall stamp each shop drawing to certify that he has reviewed it. Engineer will not check any shop drawings that contractor has not stamped with his review certification.

#### 1.5 PROJECT RECORD DOCUMENTS

- A. Submit project record documents under provision of Division 1 General Requirements.
- B. Project Record Documents: Record actual locations of piping, valves, equipment, cleanouts, backflow preventers, drains, wall hydrants, etc. Submit final valve chart. Comply with Section 15190: Mechanical Identification and identification details on the drawings.

#### 1.6 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Division 1 General Requirements.
- B. Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement parts numbers and availability and location and numbers of service depot.
- C. Refer to Part 3. - EXECUTION of this section for Owner training requirements.

#### 1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with State of Indiana Plumbing Code. Maintain one copy on site.
  - 1. Provide reports of inspections by State of Indiana Plumbing inspectors in accordance with Division 1 General Requirements.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.
- C. Welding Materials and Procedures: Conform to ASME SEC IX and applicable state labor regulations.
- D. Welders Certification: In accordance with ASME SEC IX or ANSI/AWS D1.1.
- E. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.
- F. All products to comply with State of Indiana Plumbing Code requirements.
- G. Underwriters Laboratory (UL):
  - 1. Products listed for 25/50 resistive construction.

#### 1.8 REGULATORY REQUIREMENTS

- A. Perform Work in accordance with State of Indiana Plumbing Code, current edition.

#### 1.9 DELIVERY, STORAGE, AND PROTECTION

- A. Delivery products to site under provisions of Division 1 General Requirements.
- B. Store and protect products under provisions of Division 1 General Requirements.
- C. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- D. Provide temporary protective coating on cast iron and steel valves.

## SECTION 15410

### PLUMBING PIPING

- E. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- F. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

#### 1.10 ENVIRONMENTAL REQUIREMENTS

- A. Division 1 Specification Selections – Product Requirements.
- B. Do not install underground piping when bedding is wet or frozen.

#### 1.11 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

#### 1.12 WARRANTY

- A. Division 1 Specification Sections – Execution Requirements: Product warranties and product bonds.
- B. Provide three (3) year manufacturer warranty for domestic water piping.

### PART 2 – PRODUCTS

#### 2.1 WATER PIPING, ABOVE GRADE

- A. Copper Tubing: ASTM B88, Type L, hard drawn (all sizes).
  - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze. Contractor may utilize mechanically formed tee and coupling connections.
  - 2. Joints: ASTM B32, solder, Grade 95TA or AWS5.8, B-Cup silver braze for mechanically formed connections.

#### 2.2 FLANGES, UNIONS, AND COUPLINGS

- A. Pipe Size 3 Inches and Under: 150 psig malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.
- B. Pipe Size Over 3 Inches: 150 psig forged steel slip-on flanges for ferrous piping; bronze flanges for copper piping; neoprene gaskets for gas service; 1/16-inch-thick performed neoprene.
- C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

#### 2.3 BALL VALVES (BV)

- A. Up to and Including 2 Inches:
  - 1. Manufacturers:
    - a. Apollo Valve.
    - b. Hammond Valve.
    - c. Milwaukee Valve.
    - d. Nibco Valve.
    - e. Stockham.
- B. MSS SP-110, 600 psi WOG, bronze, two-piece body, chrome plated ball, full port, Teflon seats and stuffing box ring, blow-out proof stem, lever handle, solder ends.

#### 2.4 BALANCING FITTINGS (BF)

- A. Up to and Including 2 Inches:
  - 1. Manufacturers:
    - a. Armstrong Pump Co - Model CBV-I.
    - b. Tour/Anderson.
    - c. Nibco – Model S-1710.
- B. Construction: 150 psi WOG (minimum), wye bodied bronze globe valve with bronze stem and seat calibrated and readable balance fittings with readout ports fitted with integral check valves to prevent loss of fluid when attaching monitoring kit.
- C. Calibration: Integral indicating degree of valve opening with positive shut-off and memory stop.

## SECTION 15410

### PLUMBING PIPING

#### 2.5 SWING CHECK VALVES (CK)

- A. Up To and Including 2 Inches:
  - 1. Manufacturers:
    - a. Hammond Valve.
    - b. Milwaukee Valve.
    - c. Nibco Valve.
    - d. Stockham.
  - 2. MSS SP-80, Class 125, bronze body and cap, bronze swing disc with rubber seat, solder ends.

#### 2.6 FIRE AND SMOKE PENETRATION SEALANTS

- A. Fire Seal:
  - 1. Seal penetrations of fire-rated walls, floors or ceilings by raceways for compliance with NEC 300-21.
    - a. Acceptable Manufacturers:
      - 1) Dow Corning: Fire Stop.
      - 2) Nelson: Flameseal.
      - 3) T & B: Flameseal.
      - 4) 3M Co.: Fire Barrier.
      - 5) Oatey Co: Flame Barrier.
    - b. Fill void around raceways.
    - c. Sleeves: Heavy wall steel pipe, anchored to building construction and finished plumb with wall, ceiling to floor lines.
- B. Thermal Seal:
  - 1. Seal penetrations of thermally insulated equipment or rooms to prevent heat transfer.
  - 2. Dual exterior of raceway with fiberglass or other material compatible to equipment or room and approved by Architect/Engineer.
  - 3. Seal interior of raceway with duct sealing compound at entry to equipment or room.
- C. Water Seal:
  - 1. Seal penetrations of perimeter walls or floors below grade to prevent entry of water; use materials compatible with wall or floor construction and approved by Architect/Engineer.
  - 2. Seal Penetrations of Room: Sealed with flashings compatible with roof design and approved by roofing system manufacturer and Architect/Engineer.

### PART 3 – EXECUTION

#### 3.1 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

#### 3.2 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.
- D. Contactor to employ the services of a Ground Penetrating Radar Specialist to perform x-ray of areas requiring saw-cutting, prior to actual saw-cutting.

#### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals (i.e. copper to steel/iron pipe.).
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.



## SECTION 15410

### PLUMBING PIPING

- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 15260.
- H. Provide access where valves and fittings are not exposed.
- I. Install vent piping penetrating roofed areas to maintain integrity of roof assembly. Locate vents 12 - 15 ft. away from air intake assemblies. Piping to extend min. 12" above roof.
- J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- K. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting.
- L. Install bell and spigot pipe with bell end upstream.
- M. Install valves with stems upright or horizontal, not inverted.
- N. Install water piping to ASME B31.9.
- O. Slope water piping and arrange to drain at low points. Provide drain valves at low points.
- P. Sizing:
  - 1. Unless otherwise indicated, install all supply piping, including shut-off valves, strainers and accessory fixtures to pumps, fixtures and other equipment at line size with reduction in size being made only at inlet to control valve, fixture or pump.
  - 2. Install supply piping from outlet of control valve at full size connection to equipment served.
- Q. Make reduction in water pipes with eccentric reducing fittings installed to provide drainage and venting.
- R. Branch Take-Offs:
  - 1. Liquids: From top, bottom or side of mains or headers at either 45 degrees or 90 degrees from horizontal plane.
  - 2. Do not project branch pipes inside main pipe.
- S. Pipe Drainage Provision:
  - 1. Slope water piping 1 inch in 40 feet and arrange to drain at low points.
- T. Contractor to clean and flush all faucet aerators and strainers at final completion of project.
- U. Contractor to insulate all cold, hot, tempered, and all recirculation domestic water piping in accordance with Section 15260.

### 3.4 APPLICATION

- A. Install unions downstream of valves and at equipment or apparatus connections.
- B. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- C. Provide balancing fittings flow controls in hot water recirculating systems where indicated.
- D. Provide valve types as designated on drawings without deviation. All valves to be full line size of piping

### 3.5 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Prior to starting work, verify system is complete, flushed and clean.
- B. Ensure Ph of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.
- D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- E. Maintain disinfectant in system for 24 hours.
- F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.
- I. Chlorinate and disinfect to point of new connection. Examine site water valving configuration to determine extent of chlorination. Contact site contractor to verify.
- J. Submit reports in accordance with Division 1 General Requirements.

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### PLUMBING PIPING

#### 3.6 PIPE TESTING

- A. Before final acceptance of piping, test all systems scheduled and prove to be free of leaks.
1. Perform tests under observation of Construction Manager.
  2. Remove, replace or satisfactorily repair defective work revealed by tests
  3. Make piping repairs with new materials; caulking of screwed joints or pin holes not permitted.
  4. Underground systems tested before backfilling.
  5. Furnish test equipment and material for tests.
  6. Owner furnished water for testing and flushing.
- B. Testing Medium:
1. Hydrostatic Testing Medium: Clean pure water
- C. Pressure Testing Gauges: ANSI B40.1, Grade AA; minimum 6-inch diameter dial with scale divisions equal or less than maximum allowable pressure drop.
- D. Domestic Water System:
1. When rough-in is complete and before fixtures are set, test entire hot and cold water piping systems as scheduled and prove tight.
  2. Where portion of water piping system is concealed before completion, test that portion separately as specified for entire system.
- E. Testing Requirements:
1. Hydrostatic tests apply to piping indicated in Schedule in Paragraph G. below.
  2. Raise pressure gradually to given value; then block off source.
  3. Allowable Pressure Drop: Maximum amount scheduled during corresponding minimum time interval.
    - a. Visually examine all joints during test.
  4. Upon successful completion and test approval, relieve piping of pressure, drain, put into normal operation except for potable water to be sterilized before placing in service.
- F. Hydrostatic Testing Schedule:
- | Service           | Normal Work Pressure psi | Hydrostatic Test Pressure psig | Maximum Pressure Drop psi | Minimum Time Hours |
|-------------------|--------------------------|--------------------------------|---------------------------|--------------------|
| 1. Domestic Water |                          |                                |                           |                    |
| Portable Water    | To 125                   | 175                            | 2                         | 2                  |
- G. Submit test reports and certificates in accordance with Division 1 General Requirements.

**END OF SECTION**

## SECTION 15430

### PLUMBING SPECIALTIES

#### PART 1 – GENERAL

##### 1.1 SECTION INCLUDES

- A. Thermostatic mixing valves.
- B. Water hammer arrestors and air chambers.

##### 1.2 RELATED SECTIONS

- A. Section 15410 - Plumbing Piping.
- B. Section 15450 – Plumbing Equipment.
- C. Section 15260 – Pipe Insulation.

##### 1.3 REFERENCES

- A. ANSI/ASSE 1017 – Temperature Actuated Mixing Valves.
- B. ANSI A112.26.1 - Water Hammer Arresters.
- C. PDI WH-201 Water Hammer Arresters.

##### 1.4 REGULATORY REQUIREMENTS

- A. Conform to State of Indiana Plumbing Code.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Division 1 General Requirements.
- B. Shop Drawings: Indicate dimensions, weights and placement of openings and holes.
- C. Product Data: Provide component sizes, rough-in requirements, service sizes and finishes.
- D. Manufacturer's Installation Instructions: Indicate assembly and support requirements.
- E. **CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTING THEM FOR ARCHITECT/ENGINEER'S REVIEW. CONTRACTOR SHALL STAMP EACH SHOP DRAWING TO CERTIFY THAT HE HAS REVIEWED IT. ENGINEER WILL NOT CHECK ANY SHOP DRAWINGS THAT CONTRACTOR HAS NOT STAMPED WITH HIS REVIEW CERTIFICATION.**

##### 1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1 General Requirements.
- B. Record actual locations of equipment, cleanouts, backflow preventers and other devices.

##### 1.7 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Division 1 General Requirements.
- B. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

##### 1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Division 1 General Requirements.
- B. Accept specialties on site in original factory packaging. Inspect for damage.

##### 1.9 EXTRA MATERIALS

- A. Deliver to maintenance department prior to project completion. Submit written verification to Architect/Engineer.

## **SECTION 15430**

### **PLUMBING SPECIALTIES**

#### **PART 2 – PRODUCTS**

##### **2.1 ACCEPTABLE MANUFACTURERS – THERMOSTATIC MIXING VALVES**

- A. Lawler.
- B. No Substitutions.

##### **2.2 THERMOSTATIC MIXING VALVE (TMV)**

- A. Provide a thermostatic mixing valve assembly in locations indicated in Mechanical Rooms indicated as direct replacements for the existing Thermostatic Mixing Valves for the domestic water system. Thermostatic mixing valve shall be complete package with lead-free compression fittings on inlets, check valves, strainer with stainless-steel screen, and thermostat to control mix of hot and cold water. Thermostatic mixing valve to be as Model 805 Part Number 86108-05 as manufactured by Lawler; no substitutions. Piping configuration to match existing piping configuration in Mechanical Rooms. Note: This is to be an exact replacement for the existing Thermostatic Mixing Valves currently used.
- B. Provide new connection kits per TMV Manufactures specific requirements and installation instructions

##### **2.3 WATER HAMMER ARRESTORS AND AIR CHAMBERS**

- A. Fit water supply to each fixture with air chamber; air chamber same size as supply line or  $\frac{3}{4}$ -inch minimum and minimum 18-inches long.
- B. Provide PDI rated, pre-charged bellows type water hammer arrestors as shown on drawings.

#### **PART 3 – EXECUTION**

##### **3.1 PREPARATION**

- A. Coordinate existing TMV removal and new TMV installation in field with existing piping. Provide new connection kits per TMV Manufactures specific requirements and installation instructions.

##### **3.2 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install each fixture, HVAC make-up water connection, and other devices with air chambers (minimum  $\frac{3}{4}$ -inch x 18-inches long) or water hammer arrestor; size in accordance with PDI WH-201 Standards.
- C. Install pre-charged water hammer arrestors complete with accessible isolation ball valve. .
- D. Perform certification of all backflow preventers during substantial completion on accordance with Indiana Plumbing Code.

**END OF SECTION**

## SECTION 15450

### PLUMBING EQUIPMENT

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDED

- A. Domestic gas hot water heaters.
- B. Expansion tanks.
- C. Circulator pumps.

##### 1.2 RELATED SECTIONS

- A. Section 15140 – Supports and Anchors.
- B. Section 15190 - Mechanical Identification.
- C. Section 15260 - Pipe Insulation.
- D. Section 15410 - Plumbing Piping.
- E. Section 16180- Equipment Wiring.

##### 1.3 REFERENCES

- A. Indiana Energy Conservation Code.
- B. ASHRAE 90A - Energy Conservation in New Building Design.
- C. ASME Section 8D - Pressure Vessels.
- D. NFPA 54 - National Fuel Gas Code.
- E. NFPA 70 – National Electric Code.

##### 1.4 SUBMITTALS

- A. Submit under provisions of the General Conditions.
- B. Product Data:
  - 1. Provide dimension drawings of water heaters, pumps, etc. indicating components and connections to other equipment and piping.
  - 2. Indicate equipment's capacity, connection sizes and power requirements.
  - 3. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
  - 4. Provide manufacturer piping diagrams for review and/or modification by the Engineer. Compensate other trades due to system deviations from equipment scheduled.
  - 5. Provide electrical characteristics, connection requirements and wiring diagrams.
- C. Shop Drawings:
  - 1. Indicate location and dimensions of saddles, manways, lining methods, anchors, attachments, lifting points, tapings, and drains.
  - 2. CONTRACTOR SHALL REVIEW ALL SUBMITTALS PRIOR TO SUBMITTING THEM FOR THE ARCHITECT/ENGINEER'S REVIEW. CONTRACTOR SHALL STAMP EACH DRAWING AND EACH PIECE OF PRODUCT DATA TO CERTIFY THAT HE HAS REVIEWED IT. ARCHITECT/ENGINEER WILL NOT REVIEW ANY SUBMITTAL THAT CONTRACTOR HAS NOT STAMPED WITH HIS REVIEW CERTIFICATION.
- D. Submit manufacturer's installation instructions in accordance with the General Conditions.
- E. Submit manufacturer's certificate that pressure vessels meet or exceed specified requirements in accordance with the General Conditions.

##### 1.5 PROJECT RECORD DOCUMENTS

- A. Submit project record documents under provisions of the General Conditions.
- B. Project Record Documents: Record actual locations of components and equipment.
- C. Submit under provisions of the General Conditions - Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.
- D. Submit under provisions of the General Conditions - Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- E. Submit ASME certifications for all pressure vessels completed and registered in Owners name.

## **SECTION 15450**

### **PLUMBING EQUIPMENT**

#### **1.6 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Provide pumps with manufacturer's name, model number, and rating/capacity identified.
- C. Ensure products and installation of specified products are in conformance with recommendations and requirements of the following organizations:
  - 1. American Gas Association (AGA).
  - 2. National Sanitation Foundation (NSF).
  - 3. American Society of Mechanical Engineers (ASME).
  - 4. National Electrical Manufacturers' Association (NEMA).
  - 5. Underwriters Laboratories (UL).
- D. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.
- E. Submit certification of start-up of systems by manufacturer's authorized agent in accordance with the General Conditions.

#### **1.7 REGULATORY REQUIREMENTS**

- A. Conform to AGA and NFPA 54 requirements for water heaters.
- B. Conform to ASME Section 8D for tanks.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

#### **1.8 DELIVERY, STORAGE, AND PROTECTION**

- A. Transport, handle, store and protect products to site under provisions of the General Conditions.
- B. Provide temporary inlet and outlet caps. Maintain caps in place until installation.
- C. Contractor shall store all materials shipped to the site in a protected area. If material is stored outside of the building, it must be stored off the ground a minimum of six inches set on 6 x 6 planks and/or wood pallets. All material must be completely covered with waterproof tarps or visqueen. All piping and duct openings will have the ends closed to keep out dirt and other debris. No equipment will be allowed to be stored on the site unless it is setting on wood planks and is completely protected with weatherproof covers.

#### **1.9 WARRANTY**

- A. Submit under provisions of the General Conditions.
- B. Provide five-year manufacturer warranty against leakage for all ASME constructed domestic water tanks and expansion tanks and five-year parts & labor warranty on the water heater burner.
- C. Provide manufacturer's standard warranty on all other equipment.

### **PART 2 - PRODUCTS**

#### **2.1 DOMESTIC GAS HOT WATER HEATERS**

- A. Acceptable Manufacturer:
  - 1. Aerco; Series AM, Model AMW
  - 2. No Substitutions.
- B. Water heaters shall be
  - 1. GWH-1, GWH-2, and GWH-3: AM 500W
- C. Furnish and install as shown on AERCO International Inc. plans and operation and maintenance manuals, with all applicable codes and authorities having local, state and federal jurisdiction, AM Series Water Heater Model AM 500W.

## SECTION 15450

### PLUMBING EQUIPMENT

- D. Each heater shall be CSD-1 compliant, ASME coded and stamped, and incorporate a gas train designed in accordance with Factory Mutual. Each water heater shall have an input of 500 MBH with a gross output according to the table below (dependent upon entering water temperature) when fired at full fire with natural gas. Electrical service to each unit shall be 120V/1/60Hz 15-amp service. The control panel shall be proprietary in design and incorporate the functions of thermal controller, combustion safeguard control, message annunciation, and fault diagnostic display, on individual field replaceable circuit boards mounted within a single housing. Each water heater shall have a footprint of no more than 24" W, 36" D, and 46" H for 399W-500W. The water heater installed weight shall not exceed the weights shown below. Each water heater module shall have an ASME approved relief valve setting of 50 psig.
1. Model 500W; Input 500 MBTU, Output 440-495 MBTU, Weight Wet = 310 (lbs.)
- E. Construction: Heater modules shall be gas fired (natural gas unit or propane unit), condensing, modular, stainless steel water-tube design with a modulating forced draft power burner and positive pressure vent discharge.
- F. Burner, Modulating Gas Valve, and Variable Speed Fan. The water heater shall consist of the number of thermal modules, and have a total turndown ratio, as shown in the table below, without loss of combustion efficiency. Each module shall have a dedicated isolation valve on the inlet side of the module. Each thermal module's premix burner shall be metal fiber mesh covering a stainless-steel head, with spark ignition and flame rectification. All burner material exposed to the combustion zone shall be of stainless-steel construction. There shall be no moving parts within the burner itself. The burners shall produce <20 ppm of NOx corrected to 3% excess oxygen. A modulating gas valve and variable speed fan shall meter the natural gas and air input, respectively.
1. Model AM500W, Thermal Modules = 2, Turndown Ratio = 10:1
- G. Heat Exchanger: The heat exchanger is constructed of stainless steel and shall be capable of handling return water temperatures down to 40 F without any failure due to thermal shock or fireside condensation. It shall be ASME stamped for a working pressure not less than 160 psig. The water tubes shall have a maximum water volume of 4 gallons per module. The water heater water connections shall be 2" NPT for 399-500. Inspection openings in the pressure vessel shall be in accordance with ASME Section IV pressure vessel code.
- H. The water heater shall be designed so that the thermal efficiency increases as the water heater firing rate decreases. The heat exchanger shall be stainless steel construction. Access to the fireside of the thermal modules is available by burner assembly removal. Minimum access opening shall be no less than 6 1/4" diameter circle per thermal module.
- I. Each module shall have a dedicated water flow meter installed that is capable of detecting water flow rate and displaying through the water heater's display board.
- J. Exhaust Manifold, Condensate Trap, and Condensate Neutralizer: The exhaust manifold shall be of polypropylene with a 4" diameter flue connection for 399-500. The exhaust manifold shall terminate in a condensate trap. The condensate trap shall have a gravity drain for the elimination of the condensation into an integrated condensate neutralizer.
- K. Water heater Controls: The water heater control system shall consist of a master controller to which individual thermal module controllers are linked. Each water heater shall incorporate dual over-temperature protection with manual reset and either a flow switch or low water cut out, both in accordance with ASME Section IV and CSD-1.
- L. The water heater shall have a modulating input with a 100°F. rise and shall be operated on Natural Gas. The water heater shall be capable of full modulation firing down to 20% of rated input with a turn down ratio of 10:1
- M. Water heater model shall be of ASME construction and noted as such.
- N. Direct spark ignition, low NOx, natural gas-fired fully modulating sealed combustion, direct vent, high efficiency (95% efficient) boiler, controls piping and valving, 180 psig maximum working pressure, stainless steel heat exchanger with steel jacket.
- O. Brass water connections and dip tube, drain valve, high-density magnesium anode and ASME rated temperature / pressure relief and vacuum relief valves, integral condensate charcoal acid dilution basin.

## SECTION 15450

### PLUMBING EQUIPMENT

- P. Automatic water thermostat with temperature range adjustable from 120 to 180 degrees F., gas pressure regulator, burner, 100 percent safety shut-off pilot and thermocouple.
- Q. Refer to schedule on drawings for sizes and capacities.

#### 2.2 EXPANSION TANKS

- A. Acceptable Manufacturers:
  - 1. Wessels Co.
  - 2. No Substitutions.
- B. Construction: Welded steel, tested and stamped in accordance with Section 8D of ASME Code; supplied with National Board Form U-1, rated for working pressure of 150 psig, with flexible EPDM diaphragm approved for potable water sealed into tank, and steel base.
- C. Accessories: Air-charging fitting, tank drain; pre-charge to 40 psig.
- D. Size: Refer to Schedule on drawings.

#### 2.3 IN-LINE CIRCULATOR PUMPS

- A. Acceptable Manufacturers:
  - 1. Bell & Gossett/ITT.
  - 2. No Substitutions.
- B. Casing: Bronze, rated for 125 psig working pressure, with stainless steel rotor assembly.
- C. Impeller: Bronze.
- D. Shaft: Alloy steel with integral thrust collar and two oil lubricated bronze sleeve bearings.
- E. Seal: Carbon rotating against a stationary ceramic seat.
- F. Drive: Flexible coupling.
- G. Performance: Refer to Schedule on drawings.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install water heaters in accordance with manufacturer's instructions and to AGA and NFPA 54 requirements.
- B. All aspects of installation of Water heater Plant shall be in strict accordance with manufacturer's instructions. The vent system must conform to all manufacturer's recommendations and shall utilize UL listed stainless steel AL-29-4C, Polypropylene, PVC, or CPVC Positive Pressure venting materials. The vent must be sized in accordance with AERCO's recommendations.
- C. Water heater plant piping shall be field constructed of materials as specified. Each water heater shall have individually isolating shutoff valves by installing contractor for service and maintenance. Each natural gas water heater shall require a minimum gas pressure of 3" W.C. at the gas flows indicated in the table below (full load rated capacity). For applications with gas supply pressure greater than 13" W.C., each water heater shall be provided with an individual supply gas regulator by installing contractor for proper gas regulation.
- D. Model AM 500W Gas Flow 500 scfh.
  - 1. Install on existing concrete equipment pad.
  - 2. Provide manufacturer approved/authorized start-up and certification. Submit start-up report in accordance with the General Conditions.
- E. Coordinate all equipment with plumbing piping and related fuel piping, gas venting and electrical work to achieve proper operating system.
- F. Domestic Hot Water Expansion Tanks:
  - 1. Support on existing concrete equipment pad, or hung off building structural framing members.
  - 2. Clean and flush after installation. Seal until pipe connections are made.
  - 3. Provide manufacturer approved/authorized start-up and certification. Submit start-up report in accordance with the General Conditions.



## **SECTION 15450**

### **PLUMBING EQUIPMENT**

#### **G. In-Line Circulator Pumps:**

1. Provide line sized isolating valve and strainer on suction and line sized soft seated check valve and globe valve on discharge.
2. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
3. Provide hydronic indicator gauges.
4. Provide manufacturer approved/authorized start-up and certification. Submit start-up report to Construction Manager in accordance with the General Conditions.

### **3.2 OWNER TRAINING BY INSTALLING CONTRACTOR**

- A. At the completion of the project, the Installing Contractor shall provide training for all the plumbing equipment for the Owner's staff. Training shall consist of two parts. Part One is a classroom situation which describes the equipment's operation, maintenance and repair requirements. Part Two will be on-site (hands-on) training which will show the location of all devices and the operation and maintenance of all controls, devices, motors, etc. This training will be in addition to other training specified in the contract. Prior to commencement of training, Contractor shall provide Architect/Engineer with a schedule of dates, times and agenda for each training session. This Contractor shall provide a minimum of eight (8) hours of training for work installed under this section of the contract. Contractor shall furnish a minimum of six (6) equipment manuals, maintenance manuals and repair parts list for all equipment and systems reviewed.
- B. Submit Certification of Completion in accordance with the General Conditions.
- C. Contractor shall provide the services of a local factory authorized representative to supervise all phases of equipment startup. A letter of compliance with all factory recommendations and installation instructions shall be submitted to the engineer with operation and maintenance instructions.

### **3.3 WARRANTY**

- A. The pressure vessel/heat exchanger of the water heater shall carry a non-prorated 7-year warranty against failure due to condensate corrosion, thermal stress, mechanical defects or workmanship. All other components shall carry an 18-month warranty against failure due to defective materials or workmanship. A Warranty Certificate must be issued to the owner from the manufacturer and a copy of warranty must be submitted for engineer's approval.

**END OF SECTION**



## **SECTION 16010**

### **BASIC ELECTRICAL REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.1 WORK INCLUDED**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and the General Requirement Specification, apply to this and the other sections of Division 16.
- B. The Section is hereby made a part of all other sections of Division 16 as fully as if repeated in each therein.

##### **1.2 SECTION INCLUDES**

- A. Descriptions.
- B. Quality assurance.
- C. Codes.
- D. Approvals.
- E. Permits and inspections.
- F. Fees.
- G. Submittals.
- H. Instruction.
- I. Overtime
- J. Alternates
- K. Guarantees.
- L. Warranty.
- M. Products
- N. Execution.

##### **1.3 RELATED SECTIONS**

- A. Substitutions: Refer to the General Requirements and 16 Sections.
- B. Shop Drawings: Refer to the General Requirements and 16 Sections.
- C. Operation and Maintenance Data: Refer to the General Requirements and 16 Sections.
- D. Coordination with Other Trades: Refer to the General Requirements, 15, and 16 Sections.

##### **1.4 DEFINITIONS**

- A. Provide all required products and execution for a complete and fully operational Electrical System. Such work includes, but is not limited to, that which is identified on the contract documents. For the purpose of this specification, the following terms are defined:
  - 1. "Contract documents" include the most current project drawings and specification.
  - 2. "Provide" includes furnishing and installation.
  - 3. "Furnish" includes purchasing and transporting new equipment, as specified, to the job site.
  - 4. "Install" includes mounting or setting equipment in place, in specified location, making all required electrical connections for a working product.
  - 5. "Electrical System" includes all distribution of power, lighting, fire protection, life safety, communications, security, special systems, and any other information, electrical in nature, identified on the Contract Documents, from the point(s) of service to utilization device(s).
  - 6. "Connecting" means providing a power source, overcurrent devices, raceways, conductors, terminations, insulation supports, and other materials and equipment required for the operation and control of the relevant operation.
- B. Provide materials, equipment, installation or testing identified on the drawings but not specified herein; or that which is specified herein, but not identified on the drawings shall be provided at no additional cost to the Owner.
- C. Provide materials or equipment including minor items, accessories, or devices reasonably inferable as necessary for the completion and proper operation of any systems or products identified on the Contract Documents.

## SECTION 16010

### BASIC ELECTRICAL REQUIREMENTS

#### 1.5 QUALITY ASSURANCE

- A. Discovery of any conflicting design information or any design intentions which are not readily interpreted shall be referred to the Architect/Engineer for further description or illustration prior to any product selection or execution of work.
- B. Discovery of any materials or equipment which are damaged, unsuitable, incompatible, or non-compliant with any applicable codes, laws, ordinances, or other regulations shall be brought to the direct attention of the Architect/Engineer.
- C. Generally, the Drawings establish the location, quantity and relationship of the parts of the work, and the specifications define the type and quality of materials and workmanship. Work shown in the drawings and not mentioned in the specifications or required by the specifications and not shown on the drawings, shall be provided as if fully provided for in both. In the case of conflicts between the drawings and specifications, or within either document, the Architect/Engineer shall determine the intent. In such cases, in general, the more stringent requirement concerning greater quantity, quality, and/or resulting in a higher cost shall govern without further cost to the Owner.
- D. The equipment list contained in this specification includes only the major equipment requirements. Verify the completeness and suitability of device to meet the intent of the specifications. Any additional equipment required, even if not specifically mentioned herein, shall be provided without claim for additional payment; it being understood that a complete operating system, satisfactory to the Engineer and the Owner, is required in all cases.

#### 1.6 REGULATORY REQUIREMENTS

- A. Where governing codes indicate the Drawings and Specifications do not comply with the minimum requirements of applicable codes, the Contractor shall either notify the Architect/Engineer in writing during the bidding period identifying the revisions required to meet code requirements or provide an installation which will comply with the code requirements.
- B. All material, equipment, installation and testing should be in accordance with all applicable codes, laws, and ordinances of Federal, State and local governing bodies having jurisdiction.
- C. In case of differences between building codes, Federal and State laws, local ordinances and utility company regulations and the Contract Documents, the most stringent shall govern.
- D. Where any materials, equipment or installation is not in compliance with the more stringent of the applicable codes, laws, ordinances, regulations and contract documents, they shall be entirely removed, replaced, modified or otherwise corrected at no additional cost to the Owner.
- E. Materials, equipment, installation and testing shall conform to the latest editions of the applicable following codes:
  - 1. BOCA - Building Officials and Code Administrators.
  - 2. NEC - National Electrical Code.
  - 3. State of Indiana Building Code.
  - 4. NFPA 72 - National Fire Protection Association.
  - 5. IBC - International Building Code.
- F. All product materials and work shall comply with all local codes, including but not limited to the following codes and standards as applicable, in addition to any codes and standards referenced within individual specification sections. These codes and standards shall apply to all Division 26 Sections as applicable.
  - 1. ANSI - American National Standards Institute.
  - 2. ASTM - American Society for Testing Materials.
  - 3. CBM - Certified Ballast Manufacturers.
  - 4. ETL - Electrical Testing Laboratories.
  - 5. IEEE - Institute of Electrical and Electronic Engineers.
  - 6. NBS - National Bureau of Standards.
  - 7. NEMA - National Electrical Manufacturer's Association.
  - 8. NFPA - National Fire Protection Association.
  - 9. OSHA - Occupation Safety and Health Act.
  - 10. UL - Underwriters Laboratories.

## SECTION 16010

### BASIC ELECTRICAL REQUIREMENTS

11. ADA - Americans with Disabilities Act.
  12. BOCA - National Building Code (1996).
  13. NEC - National Electrical Code.
  14. IBC - International Building Code.
  15. IEC - International Electrical Code.
  16. IFC - International Fire Code.
- G. Where a UL standard is available, the equipment supplied for the project shall be UL listed and shall bear the UL label.
- H. Notify the Architect/Engineer of any materials or apparatus believed to be inadequate, unsuitable, in violation of laws, ordinances, rules or regulations of authorities having jurisdiction.
- I. In every installation where regulations of electric utility, telephone and cable TV companies apply, conformance with their regulations is mandatory and any costs involved shall be included in the Contract, with the exception of extra facility and other charges which are directly paid by the Owner.

#### 1.7 SUBMITTALS

- A. Shop Drawings: As soon as practical and before any material or equipment is purchased, the Contractor shall submit shop drawings. A complete list in one category (example: all fixtures) of all shop drawings catalog cuts, material lists, etc. are to be submitted by this Contractor at one time. No consideration will be given to partial shop drawings submitted from time to time.
1. Extended time for submitting special shop drawings may be requested; however, any extension of time approved does not relieve this Contractor of his responsibility of executing his work in accordance with this contract.
  2. Any listed materials, fixtures, apparatus, or equipment that are not in accordance with specifications requirements can and will be rejected for use in this installation and construction. Substitutions will not be permitted.
  3. Any materials, fixtures, apparatus or equipment installed without stamped or written approval shall be removed by the Contractor and replaced with specified equipment at the direction of the Architect/Engineer and without recourse for additional compensation.
  4. Review of shop drawings does not relieve the Contractor from any responsibility for deviation from the Contract Documents unless the deviation is specifically identified on the shop drawings.
  5. Contractor shall review and coordinate all shop drawings prior to submitting them for Architects/ Engineer's review. Contractor shall stamp each shop drawing to certify that all MEP related contractors have coordinated and reviewed it. Engineer will not check any shop drawings that Contractor has not stamped with his review certification. Shop drawings will be reviewed once. If a second or third review is required, the contractor will pay the engineer \$500.00 per review.
  6. Prior to ordering any switchboard, distribution panels, panelboards, or transformers, the contractor shall submit dimension drawings showing the switchboard will fit in the location shown on the drawings. In the event of conflicts, the contractor shall request a written clarification from the Architect/Engineer.

#### 1.8 WARRANTY

- A. Warranty period shall be one year after final acceptance and payment of the system. Repairs or replacements made under the warranty shall bear an additional 1-year warranty dated from final acceptance of the repair or replacement. The Owner shall receive the benefit of all warranties furnished by manufacturers.

#### 1.9 PROJECT/SITE CONDITIONS

- A. Carefully examine the contract documents, visit the site, and thoroughly become familiar with the local conditions relating to the work prior to bidding. Failure to do so will not relieve the contractor of the obligations of the Contract.

## **SECTION 16010**

### **BASIC ELECTRICAL REQUIREMENTS**

- B. Install Work in locations shown on Drawings, unless prevented by Project conditions.
- C. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Architect/Engineer before proceeding.

## **PART 2 – PRODUCTS**

### **2.1 MATERIALS AND EQUIPMENT**

- A. Proposal shall be based upon the furnishing of all materials and equipment as specified, which in every case shall be new and, where not specifically referred to by manufacturer's name, of the best grade and quality available.
- B. Equipment and material shall be without blemish or defect and shall not be used for temporary light or power purposes, including lamps, without the Architect/ Engineer's written authorization.
- C. Items of equipment of one generic type (such as fuses), except conduit, conduit fittings, outlet boxes, wiring and cable, shall be the product of one manufacturer throughout, unless otherwise indicated or accepted by the Architect/Engineer.
- D. Where two or more makes or kinds of materials or equipment are specified, indicate which of these choices will be used. This information shall be included with the list of manufacturers for equipment and materials to be submitted to the Architect/Engineer.
- E. Manufacturers of equipment shall be firms regularly engaged in manufacturing factory-fabricated systems and equipment whose products have been in satisfactory use in similar service for not less than 5 years.

### **2.2 MANUFACTURERS' NAMEPLATES**

- A. Each major electrical component such as switchgear, transformers, motor control centers, panelboards, circuit breakers, disconnect switches, etc. shall have the manufacturer's name, address, catalog number, model number, rating, and any other required specified markings on a plate or label located inside the cover or otherwise inconspicuously but readily accessible.

## **PART 3 – EXECUTION**

### **3.1 DELIVERY AND STORAGE**

- A. Receive, handle, and store electrical items and materials at the project site. Materials and electrical items shall be so placed that they are protected from damage and deterioration.
- B. Existing equipment which is to be reused shall be cleaned and protected against damage. Equipment which is removed and stored for reuse shall be stacked, boxed or crated in such a manner as to prevent damage. The cost to repair/replace this equipment due to damage incurred during its removal, storage or reinstallation shall be borne by the Contractor.
- C. The Contractor shall bear full responsibility for equipment judged unacceptable due to his failure to comply with these specifications.

### **3.2 INSTALLATION**

- A. The Drawings for work under Division 16 are diagrammatic and are intended to convey the scope of work and indicate the general arrangement of conduit, boxes, equipment, fixtures and other work included in the Contract.
- B. Location of items required by the Drawings or specifications not definitely fixed by dimensions are approximate only and exact locations necessary to secure the best conditions and results shall be determined at the site and shall be subject to the approval of the Architect/Engineer.
- C. Follow Drawings in laying out work, check drawings of other trades to verify spaces in which work will be installed and maintain maximum headroom and space conditions at all points.
  - 1. Where headroom or space conditions appear inadequate, the Architect/Engineer shall be notified before proceeding with installation.
  - 2. Minor conduit rerouting and changes shall be made at no additional cost to the Owner.

## SECTION 16010

### BASIC ELECTRICAL REQUIREMENTS

- D. Perform all work with skilled mechanics of the particular trade involved in a neat and workmanlike manner.
- E. Perform all work in cooperation with other trades and schedule.
- F. Perform all work in accordance with the manufacturer's recommendations.
- G. Furnish other trades advance information on locations and sizes of frames, boxes, sleeves and openings needed for the work, and also furnish information and shop drawings necessary to permit trades affected to install their work properly and without delay.
- H. Where there is evidence that work of one trade will interfere with the work of other trades, all trades shall assist in working out space allocations to make satisfactory adjustments and shall be prepared to submit and revise coordinated shop drawings.
- I. With the approval of the Architect/Engineer and without additional cost to the Owner, make minor modifications in the work as required by structural interferences, by interferences with work of other trades or for proper execution of the work.
- J. Work installed before coordinating with other trades so as to cause interference with the work of such other trades shall be changed to correct such condition without additional cost to the Owner and as directed by the Architect/Engineer.
- K. Architect/Engineer reserves the right to change location of electrical equipment or device within 10'-0" radius before work is installed without extra charge.
- L. Electrical Contractor shall cooperate with other trades and coordinate work so that conflicts with other work are eliminated.
- M. Equipment shall be installed with adequate space allowed for removal, repair or changes to equipment. Ready accessibility to removable parts of equipment and to wiring shall be provided without moving other equipment which is to be installed or which is in place. Electrical Contractor shall verify measurements. Discrepancies shall be brought to the Architect/Engineer's attention for interpretation.
- N. Location of electrical outlets, lighting fixture, lighting panels, cabinets, equipment, etc. is approximate and exact locations shall be determined at the project.
- O. Electrical Contractor shall refer to contract documents for details, reflected ceiling plans, and large-scale drawings.
- P. Verify final locations for rough-ins with field measurements of the actual equipment to be connected. Refer to equipment specifications in Division 1 through 16 for rough-in requirements.
- Q. Equipment specified under other divisions and requiring electrical supply shall be erected, aligned, leveled and prepared for operation. Provide required controls and accessories along with installation instructions, diagrams, dimensions and supervision of installation and start-up. Provide the required electrical rough-ins and connections and confirm the electrical controls and accessories furnished under the specifications for the other divisions. Install those controls and accessories not located in the mechanical piping and ductwork. Provide additional electrical controls, accessories, fittings and devices not specified under the equipment but required for a finished, operating job. Make all final electrical connections. Participate in the start-up and test procedure.
- R. Where surface mounted conduit or surface mounted raceway is installed on new or existing walls, the electrical contractor shall paint the surface mounted conduit or surface mounted raceway to match the new or existing wall.
- S. Contractor shall furnish other trades advance information and/or shop drawings on locations and sizes of conduits, raceways, equipment, frames, boxes, sleeves and openings, etc. needed for their work to install their work properly and without delay.
- T. Contractor shall install all auxiliary supporting steel as required for the supporting of their conduit, fixtures, devices, equipment, etc. All supporting steel for items above a suspended ceiling shall be from new building structure members only. All supports in the existing building shall be from walls. No connection to wood, roof deck or structure is allowed.
- U. This contractor shall be responsible for furnishing all labor and material required to patch all openings in existing floors, walls, ceilings and fire separations created by the removal of this trades material and equipment where these openings are not to be reused.

## SECTION 16010

### BASIC ELECTRICAL REQUIREMENTS

#### 3.3 PROTECTION

- A. Protect conduit and wireway openings against the entrance of foreign matter by means of plugs or caps. Cover fixtures, materials, equipment and devices or otherwise protect against damage from any cause, both before and after installation. Fixtures, materials, equipment, or device damaged prior to final acceptance of the work shall be restored to their original condition or replaced, all at no additional cost to Owner.
- B. Equipment shall be inherently safe and moving parts shall be covered with guards.

#### 3.4 COOPERATION

- A. Where jurisdictional rules require the assistance of electrical mechanics in the moving and setting of electrically power equipment, provide such assistance.
- B. Where work covered by this section connects to equipment furnished under other sections, verify electrical work involved in the field and make proper connection to such equipment.

#### 3.5 CUTTING AND PATCHING

- A. Do drilling, cutting, fitting and patching necessary for the installation of conduits, wireways, and other electrical equipment, and provide supports necessary for same and for bracing and anchorage of work. No cutting of structural work or of fireproofing shall be done without the written consent of the Architect/Engineer.
- B. Conduits passing through roofs or other surfaces exposed to weather shall be properly flashed as specified in roofing and waterproofing sections. This flashing work shall be paid for as part of the electrical work.

#### 3.6 ADJUSTMENTS

- A. The primary adjustments of the system(s) shall be accomplished by the Contractor to the complete satisfaction of the Owner and Architect/Engineer at the time of completion of the installation.

#### 3.7 TESTING

- A. General: Furnish meters, instruments, cable connections, equipment or apparatus necessary for making all tests.
- B. Insulation Tests:
  - 1. After being pulled in place and before being connected, test all service and feeder cables with 1000-volt, 60 Hz insulation tester for one minute to determine that conductor insulation resistance to ground is not less than that recommended by the manufacturer. Test all branch circuit conductors for lighting, receptacle and miscellaneous loads prior to connection of loads. Tests shall not register less than one megaohm to ground during an insulation test as described above for service and feeder cables. Remove, replace and retest all cable failing insulation test.
  - 2. Measure insulation resistance of electrical wiring with a self-contained instrument such as direct-indicating ohmmeter of the generator battery or electronic type.
  - 3. When using any type of d-c voltage source, it is essential that the output voltage is steady to prevent fluctuations in charging current. Where protective resistors are used in test instruments, take into account their effect on the magnitude of the voltage applied to the insulation under test. Properly maintain the instrument used in insulation resistant testing. Make periodic checks to ensure that rated voltage is delivered and that the instrument is in calibration.
  - 4. Unless otherwise specified, the insulation resistance shall be approximately one megaohm for each 1000 volts of operating voltage with a minimum value of one megaohm.
- C. Test all motors under load, with ammeter readings taken in each phase and the RPM of motors recorded at the time. Test all motors for correct direction of rotation.



## **SECTION 16010**

### **BASIC ELECTRICAL REQUIREMENTS**

- D. Documentation: Keep records of all tests, in tabulated, permanent, reproducible form, completely indexed and explained, indicating the specific test performed, environmental conditions such as temperature and humidity, date of performance, results obtained, corrective actions taken (if any), final results, and comments, if required. Copies of all tests shall be delivered to the Architect/Engineer prior to this final project review.

**END OF SECTION**



## **SECTION 16123**

### **BUILDING WIRE AND CABLE**

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. The General Provisions of the Contract, including Conditions of the Contract and Division 1 Specification Sections, apply to the work in this Section.
- B. This Section is hereby made a part of all other sections of Division 16 as fully as if repeated in each therein.

##### **1.2 SECTION INCLUDES**

- A. Building wire and cable.
- B. Wiring connectors and connections.

##### **1.3 RELATED SECTIONS**

- A. Section 16195 - Electrical Identification.
- B. Section 16170 - Grounding and Bonding.

##### **1.4 REFERENCES**

- A. NECA Standard of Installation (National Electrical Contractors Association).
- B. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
- C. NFPA 70 - National Electrical Code.

##### **1.5 SUBMITTALS**

- A. Submit under provisions of the General Requirement Specification Sections and Section 16010.
- B. Product Data: Provide for each cable assembly type.
- C. Test Reports: Indicate procedures and values obtained.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.
- E. Project Record Documents: Record actual locations of components and circuits.

##### **1.6 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' experience.

##### **1.7 REGULATORY REQUIREMENTS**

- A. Conform to requirements of local electrical code, unless otherwise specified.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

##### **1.8 COORDINATION**

- A. Coordinate under provisions of the General Requirement Specification Sections and Section 16010.
- B. Field Measurements: Verify that field measurements are as shown on Drawings.
- C. Where wire and cable routing are shown on Drawings, it is approximate unless dimensioned. Include wire and cable lengths within 10 ft of length where shown.
- D. Where wire and cable destination are indicated and routing is not shown on Drawings, determine exact routing and lengths required.

## SECTION 16123

### BUILDING WIRE AND CABLE

#### PART 2 – PRODUCTS

##### 2.1 BUILDING WIRE

###### A. Manufacturers:

1. American Insulated Wire Corp.
2. Cerro.
3. Collyer.
4. Capitol Wire and Cable.
5. Okonite.
6. Senetor.
7. South Wire.
8. Triangle.

###### B. Description: Single conductor insulated copper wire.

1. AWG No. 12 minimum, unless otherwise specified.
2. AWG No. 10 and smaller may be solid or stranded, unless otherwise specified.
3. AWG No. 8 and larger shall be stranded.
4. AWG No. 14 stranded, for control and signal wire, unless otherwise specified.
5. Provide wire and cable suitable for the temperature, conditions and location where indicated.
6. Conductivity: Copper conductors shall have a conductivity of not less than 98% at 20°C (68°F). Conductor resistance values shall be in accordance with the values in NEMA WC 8.
7. Jackets: Factory-applied nylon or PVC external jacketed wires and cables for pulls in raceways over 100-feet in length, for pulls in raceways with more than three equivalent 90° bends, for pulls in conduits underground or under slabs on grade, and where indicated.

###### C. Insulation: 600 volts NFPA 70 Types as follows:

1	Wire Location	Line/Load terminations on OCP devices rated from 15A thru 600A	Line/Load Terminations on 100% rated OCP devices
	Interior Locations	THHN/THWN XHHW	<45°C ambient XHHW >45°C ambient
	Exposed Exterior	THHN/THWN	XHHW damp locations XHHW-2 wet locations
	Below Grade	XHHW	XHHW-2

## SECTION 16123

### BUILDING WIRE AND CABLE

#### 2.2 WIRING CONNECTORS

- A. Solderless Insulated Mechanical Connectors:
  - 1. Manufacturers:
    - a. Burndy DUC.
    - b. Dossert GTC.
    - c. OZ/Gedney XTPC.
    - d. Thomas & Betts CTC.
  - 2. Provide parallel clamp connector with insulating cover.
  - 3. Connector shall be constructed of an all copper alloy with bolted tangential plates which will receive the clamping pressure and redistribute the pressure uniformly over the entire surface of the clamping mechanism.
  - 4. Insulating cover shall be of the same manufacturer as the connectors and shall have cable openings suitable for the cable insulation being installed. Where insulating covers do not completely seal taps, tape the installation. The insulating cover shall not kink or crimp the cable insulation when cover is completely closed.
- B. Spring Wire Connectors:
  - 1. Manufacturers:
    - a. Thomas & Betts PT.
    - b. 3M Scotchloc.
- C. Compression Connectors:
  - 1. Manufacturers:
    - a. Burndy Hydent.
    - b. Thomas & Betts 54000.
  - 2. One-hole lugs for AWG No. 4/0 and smaller.
  - 3. Two-hole lugs for AWG No. 250 kcmil and larger.
  - 4. Feeders 1200 Amps and larger shall include cable limiter type lugs at each end of each phase conductor.

#### 2.3 ADDITIONAL ACCESSORIES

- A. In the event that conduit and wire sizes increase beyond the motor or equipment manufacturer's normal provisions for conduit and wire terminations, due to voltage-drop or other considerations in motor branch-circuit designs, provide necessary auxiliary termination facilities with adequate boxes, lugs, terminals, and other components as may be required. Consult with the suppliers of motors and other items to ensure that the equipment is furnished with suitable components to accept the required conduits and wires.
- B. Riser cables shall have cable supports as required by code.

### PART 3 – EXECUTION

#### 3.1 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that raceway installation is complete and supported.

#### 3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

#### 3.3 INSTALLATION

- A. Route wire and cable as required to meet Project Conditions.
- B. Install cable in accordance with the NECA "Standard of Installation."
- C. Pull all conductors into raceway at same time.
- D. Use pulling means including fish tape, cable, rope and basket weave wire/cable grips which will not damage cables or raceways.

## SECTION 16123

### BUILDING WIRE AND CABLE

- E. Feeders shall be installed as continuous conductors without splices whenever possible. Where feeder splices are required, the contractor shall submit a request for approval in writing to the engineer indicating the feeder and splice location. Where splices are installed without written approval, the engineer reserves the right to have the contractor replace the spliced conductors with continuous conductors at no additional cost to the Owner.
- F. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
  - 1. Cable lubricants shall be less than 6 percent solid residue after drying for 24 hours at 105°C. Cable lubricants shall not contain any waxes, greases, polyakylene glycol oils, or silicones. Manufacturer: Polywater J by American Polywater Corp.
- G. Protect exposed cable from damage. Install exposed cable, parallel and perpendicular to surfaces, or exposed structural members, and follow surface contours, where possible.
- H. Support signal cables above accessible ceiling, using cable ties to support cables from structure. Do not rest cable on ceiling grid.
- I. Use suitable cable fittings, connectors, and supports.
  - 1. Cable supports shall be as required by Code and shall be compatible with the wire and cable type and the associated conduit size.
    - a. Manufacturer: OZ/Gedney or Thomas & Betts.
- J. Increase conductor size as required due to availability. Minimum feeder conductor sizes are shown on Drawings. If increased, be responsible for associated feeder conduit size and increased ground conductor size per NEC.
- K. Provide conductors of the same size from the protective device to the last load.
- L. Make conductor length identical for parallel feeders.
- M. Support conductors in vertical raceways. One cable support shall be provided at the top or as close to the top as practical, plus a support for each additional interval of spacing per Table 300-19a of the NEC.
- N. Provide slack wire for all future connections with ends of wires taped and blank box covers installed.
- O. Do not bend cables, either permanently or temporarily during installation, to radii less than that recommended by the manufacturer.
- P. Use conductors with 90°C insulation when wiring is within seven feet of, passing over or attached to the following:
  - 1. Boilers.
  - 2. Hot water heaters.
  - 3. Other heat producing equipment.
- Q. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- R. Splices, Taps and Terminations
  - 1. Make splices and taps in wiring #10 AWG and smaller mechanically and electrically secure with mechanical pressure type splicing devices.
  - 2. Make splices and taps of conductors #8 AWG or larger and all splices in motor terminal boxes using compression connectors requiring the use of compression tools for securing the conductors in the connectors. Termination of conductors at all distribution equipment, except transformers, shall be made using mechanical lugs. Connectors shall be of high conductivity, corrosion-resistant material and have actual contact area that shall provide at least the current carrying capacity of the wire or cable. For conductors #1/0 and larger, connector lugs shall be of the two-hole type. Connector lugs shall be bolted to bussing using Belleville washers in combination with flat washers and nuts.
  - 3. Each conductor lug or bus shall be individually made with separate lug and/or bolt as required for the termination.
  - 4. Provide insulated connectors for splices and taps with a self-fusing rubber insulating tape that is non-corrosive to the connector and the conductor. Insulation tape shall have a minimum of 350 volts per mil dielectric strength. Friction or vinyl tape shall be applied directly over rubber insulating tape equal to 3M Scotch 88 type.

## SECTION 16123

### BUILDING WIRE AND CABLE

- S. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connector and terminals to comply with tightening torques specified in UL Standards 486A and B.
- T. Identify and color code wire and cable under provisions of Section 260553. Identify each conductor with its circuit number or other designation indicated. Wire color coding shall be as follows or as required by local codes:

Normal Power

120/208 Volts:	277/480 Volts:
Phase A –	Phase A –
Black	Brown
Phase B – Red	Phase B –
Phase C –	Orange
Blue	Phase C –
Neutral – White	Yellow
Ground –	Neutral – Gray
Green	Ground – Green

#### 3.4 MAXIMUM BRANCH CIRCUIT LENGTHS

- A. The following indicates maximum installed length a circuit can have and still maintain an adequate voltage level at the last point of use for 20-amp circuit. If the 20-amp circuit length exceeds the length listed, use the next larger wire sized. Multiple circuit runs in the same raceway shall have all conductors sized the same based on worst case circuit lengths.

##### BRANCH CIRCUIT LENGTH (IN FEET)

Wire Size	2 Wire 120 V	2 Wire 277 V	1 Phase 208V	1 Phase 480 V	3 Phase 208 V	3 Phase 480 Volt
12	0 to 61'	0 to 141'	0 to 105'	0 to 244'	0 to 122'	0 to 282'
10	62' to 97'	142' to 224'	106' to 168'	245' to 388'	123' to 194'	283' to 449'
8	98' to 154'	225' to 357'	169' to 267'	389' to 618'	195' to 309'	450' to 714'
6	155' to 246'	358' to 567'	268' to 426'	619' to 983'	310' to 491'	715' to 1135'

#### 3.5 FIELD QUALITY CONTROL

- A. Testing: Upon installation of wires and cables and before electrical circuitry has been energized, demonstrate product capability and compliance with requirements.
1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification, Section 7.3.1. Certify compliance with test parameters.
- B. Correct malfunctioning products at site, where possible, and retest to demonstrate compliance; otherwise remove and replace with new units, and retest.
- C. Inspection: Inspect wire and cable for physical damage and proper connection.
- D. Insulation Resistance Test: Prior to energization of circuitry, check installed wires and cables with megohm meter to ensure insulation resistance requirements are fulfilled.

## **SECTION 16123**

### **BUILDING WIRE AND CABLE**

- E. Continuity Test: Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections. Correct if necessary.
- F. Branch Circuits with Receptacles: Branch circuit receptacle wiring shall be tested using a Daniel Woodhead Co. circuit tester Model #1750.
- G. Torque Test: Torque test conductor connections and terminations to manufacturer's recommended

**END OF SECTION**



## SECTION 16170

### GROUNDING AND BONDING

#### PART 1 – GENERAL

##### 1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including Conditions of the Contract and the General Requirement Specification Sections, apply to the work in this Section.
- B. This Section is hereby made a part of all other sections of Division 16 as fully as if repeated in each therein.

##### 1.2 SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

##### 1.3 REFERENCES

- A. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
- B. Local Electrical Code.

##### 1.4 SUBMITTALS

- A. Submit under provisions of the General Requirements and Section 16010.
- B. Product Data: Provide for grounding electrodes and connections.
- C. Test Reports: Indicate overall resistance to ground and resistance of each electrode.
- D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.
- E. Project Record Documents: Record actual locations of components and grounding electrodes.
- F. Certificate of Compliance: Submit detailed drawings including grounding details and material specifications to the authority having jurisdiction. Indicate approval of installation by authority having jurisdiction.

##### 1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

##### 1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of local electrical code.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

##### 1.7 COORDINATION

- A. Coordinate under provisions of the General Requirements and Section 16010.

#### PART 2 – PRODUCTS

##### 2.1 GROUNDING SYSTEM

- A. Description: Complete grounding system of ground ring and rod electrodes, with connections to metal underground water pipe and building frame.
- B. Grounding System Resistance: 1-5 ohms.

##### 2.2 ROD ELECTRODES

- A. Manufacturers:
  - 1. Harger Lightning Protection, Inc.
  - 2. Thompson Lightning Protection, Inc.
  - 3. Independent Protection Co., Inc.

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### GROUNDING AND BONDING

- B. Material: Copper.
- C. Diameter: 3/4 inch.
- D. Length: 10 feet.

#### 2.3 MECHANICAL CONNECTORS

- A. Manufacturers:
  - 1. Appleton.
  - 2. OZ/Gedney.
  - 3. Thomas & Betts.
  - 4. Harger Lightning Protection, Inc.
  - 5. Thompson Lightning Protection, Inc.
  - 6. Independent Protection Co., Inc.
- B. Material: Bronze.

#### 2.4 WIRE

- A. Material: Stranded copper.
- B. Grounding Electrode Conductor: Size to meet local code requirements.
- C. Grounding Conductors: Size to meet electrical code requirements. Green insulated, 600-volt minimum, stranded copper within raceway.

#### 2.5 GROUNDING BUSHINGS

- A. Manufacturers:
  - 1. Appleton GIB-50L.
  - 2. OZ/Gedney IBC-50L.
  - 3. Thomas & Betts 3870.
- B. Material: Malleable iron, threaded, with insulated liner and solderless lug.

### PART 3 – EXECUTION

#### 3.1 EXAMINATION

- A. Verify conditions under provisions of the General Requirement Specification Sections.
- B. Verify that final backfill and compaction has been completed before driving rod electrodes.

#### 3.2 INSTALLATION

- A. Install rod electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground. Drive rod electrodes into permanent moisture where soil conditions permit. Rod spacing shall be minimum two and one-half rod lengths to nearest electrode.
- B. Install bare copper wire in foundation footing where indicated.
- C. Provide bonding to meet Regulatory Requirements.
- D. Bond together metal components including supports, elevator rails, pipes, and ducts not attached to grounded structure.
- E. Provide isolated grounding conductor for circuits as indicated.
- F. Provide a separate ground conductor in each feeder and branch circuit wiring.
  - 1. The Equipotential Grounding System shall consist of grounding and bonding conductors connected to ground bars arranged to minimize potential differences between exposed conductive surfaces of electrical and non-electrical equipment.
  - 2. All bonding and grounding conductors shall be installed in one continuous length, without splice, to ground bar.
  - 3. Minimum size:
    - a) No. 12 AWG to receptacles, light switches, and light fixtures.
- G. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

## **SECTION 16170**

### **GROUNDING AND BONDING**

- H. Flexible Conduit Connections: Provide separate, insulated ground bonding-jumper conductor within each flexible conduit.
- I. Bond together metal sides not attached to grounded structure; bond to ground.

**END OF SECTION**



**SECTION 16180**  
**EQUIPMENT WIRING**

**PART 1 – GENERAL**

**1.1 SECTION INCLUDES**

- A. Electrical connections to equipment.

**1.2 RELATED SECTIONS**

- A. Section 16111 - Conduit.
- B. Section 16123 - Building Wire and Cable.
- C. Section 16130 - Boxes.

**1.3 REFERENCES**

- A. Section 01090 - Reference Standards: Requirements for references and standards.
- B. NEMA WD 1 - General Purpose Wiring Devices.
- C. NEMA WD 6 - Wiring Devices - Dimensional Requirements.
- D. NFPA 70 - National Electrical Code.

**1.4 SUBMITTALS FOR REVIEW**

- A. Submit under provisions of the General Requirements.

**1.5 SUBMITTALS FOR INFORMATION**

- A. Submit under provisions of the General Requirements.

**1.6 REGULATORY REQUIREMENTS**

- A. Conform to requirements of local electrical code.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

**1.7 COORDINATION**

- A. Section 16010 - Basic Electrical Requirements.
- B. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
- C. Determine connection locations and requirements.
- D. Sequence rough-in of electrical connections to coordinate with installation of equipment.
- E. Sequence electrical connections to coordinate with start-up of equipment.

**PART 2 – PRODUCTS**

**Not Used.**

**PART 3 – EXECUTION**

**3.1 EXAMINATION**

- A. Section 16010 - Basic Electrical Requirements: Verification of existing conditions prior to beginning work.
- B. Verify that equipment is ready for electrical connection, wiring, and energization.

**3.2 ELECTRICAL CONNECTIONS**

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquid-tight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to match attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.

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### **EQUIPMENT WIRING**

- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.
- J. Seal roof penetrations properly and as recommended by roofing manufacturer.

**END OF SECTION**