

PROJECT MANUAL

**Hot Water Reheat Coils – River Hill High School  
BID #079.23.B3**

HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Clarksville Pike  
Ellicott City, Maryland 21042

ISSUE DATE: Wednesday, February 15, 2023

SEALED BID FOR: Hot Water Reheat Coils – River Hill High School

BID NUMBER: Bid #079.23.B3

PRE-BID DATE: Tuesday, February 21, 2023 at 10:00 AM

PRE-BID ACCESS: **Join on your computer or mobile app**  
[Click here to join the meeting](#)  
**Or call in (audio only)**  
**+1 301-960-8312,,102487867# United States, Silver Spring**  
**Phone Conference ID: 102 487 867#**

SITE VISIT: Tuesday, February 21, 2023 at 12:00 PM  
River Hill High School  
12101 Clarksville Pike, Clarksville, MD

LAST DATE & TIME FOR QUESTIONS: Monday, February 27, 2023 at 12:00 PM in writing  
Submit To: Kristal Burgess at [Kristal\\_Burgess@hcpss.org](mailto:Kristal_Burgess@hcpss.org)

BID OPENING DATE: Wednesday, March 8, 2023 to [BidsandProposals@hcpss.org](mailto:BidsandProposals@hcpss.org)

BID OPENING TIME: 1:00 P.M.

PURCHASING SPECIALIST: Ms. Kristal Burgess  
phone: 410-313-6723  
fax: 410-313-6789  
email: [Kristal\\_Burgess@hcpss.org](mailto:Kristal_Burgess@hcpss.org)

Engineer/Architect:  
Building Dynamics  
8600 Foundry St., Ste 306  
Mill Box 2054  
Savage, MD 20763

SECTION 00020

**NOTICE TO BIDDERS - INVITATION TO BID #079.23.B3**

**Hot Water Reheat Coils – River Hill High School**

THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 CLARKSVILLE PIKE  
ELLCOTT CITY, MD 21042

The Howard County Public School System requests your bid to: Provide two, duct-mounted hot water reheat coils for air-handling unit AHU-5 which serves the auditorium. Also included are ductwork modifications as required, heating water piping and accessories, 2-way control valves, ATC wiring from the control valves to the ATC panel, and waterside testing, adjusting, and balancing. See included contract documents (drawings and specifications) prepared by Building Dynamics, LLC dated February 3, 2023. This project is Federally funded and will require bidders to utilize Davis-Bacon Act prevailing wage rates provided by the Federal Government when determining the total cost of the project.

Bid documents may be obtained on **Wednesday, February 15, 2023** at the Howard County Department of Education, Purchasing Office website <https://purchasing.hcpss.org/business-opportunities>. It is the responsibility of the bidder to print documents/drawings to scale.

**A site visit will be offered at River Hill High School, 12101 Clarksville Pike, Clarksville, MD 21029 on Tuesday, February 21, 2023 at 12:00 PM.** The Engineer and HCPSS Project Manager will explain the scope of the project and answer questions about the bidding documents that will assist in the preparations of bids. Attendance is not mandatory but strongly recommended and will assist the Owner in evaluating bids to determine if the bid can be considered responsive and/or responsible. **All interested bidders should meet outside the front entrance of the school prior to 12:00 PM and then will be escorted by school HVAC staff to the boiler site.**

**A Pre-bid teleconference to be attended by all bidders will be held on Tuesday, February 21, 2023 at 10:00 AM,** Directions to join conference are as follows; **Join on your computer or mobile app [Click here to join the meeting](#) Or call in (audio only) +1 301-960-8312,, 102487867#** United States, Silver Spring Phone Conference ID: 102 487 867# Howard County Public School System staff will explain the scope of work and answer any questions about the bidding specifications that will assist in the preparation of bids. Attendance is not mandatory, however, it is highly recommended.

**All questions shall be directed, in writing, no later than 12:00 PM, Monday, February 27, 2023 to Kristal Burgess, Procurement Specialist, [Kristal\\_Burgess@hcpss.org](mailto:Kristal_Burgess@hcpss.org).** The Howard County Public School System is under no obligation to respond to any questions that are received after the cutoff date and time. Only answers provided via addenda issued by the HCPSS will be binding. Under no circumstances are bidders, including third party vendors or their staff, to contact any other HCPSS Staff, employees or any related constituency for purposes associated with this solicitation, including but not limited to, obtaining or providing information. Bidders failing to comply with this requirement may be disqualified.

**Bids shall be submitted electronically via email in their entirety (all pages) in PDF format no later than Wednesday, March 8, 2023 at 1:00 P.M. to [BidsandProposals@hcpss.org](mailto:BidsandProposals@hcpss.org).** Bids that contain either more than one file, or files larger than 75MB, shall be inserted into an e-folder and compressed in a zip file. To ensure delivery, if file size cumulatively exceed 75MB, it is recommended that bidders submit separate emails labeled No.1, No.2, etc.

**Email subject lines, Folder names and File names shall include: “Bid Number, 079.23.B3 and Company Name”.** In the body of the email please include Bidder’s contact person’s email and cell phone number for contacting purposes if/when necessary.

Due to the current HCPSS COVID-19 safety measures in place, the bid opening will not be open to the public. Sealed bids will be opened electronically by the Purchasing Officer after the due date and time. The Purchasing Officer shall provide the bid results via a bid tab to be posted on the school system website within a reasonable time after the bid opening for all bidders to review.

It is the bidders sole responsibility to regularly visit the HCPSS Purchasing web site listed above to download and acknowledge receipt of all Addenda. It is highly recommended that bidders ascertain if they have received all the addenda issued prior to submitting their proposal. Failure of any bidder to receive any such Addenda or interpretation may not relieve such bidder from obligation under his/her proposal as submitted.

The Board reserves the right to waive any informalities in, or to reject any or all bids.

Howard County Public School System shall not be responsible for errors or omissions made by the printer or advertising houses which prepare bid documents, addenda, or advertising services.

Instructions pertaining to the Bid Bond, Surety Checks, Performance and Materials Payment Bond requirements are contained in the bid documents.

Certified Minority Business Enterprises are encouraged to respond to this solicitation notice.

There are no Minority Business Enterprise (MBE) goals for this procurement.

Contractors are required to register on eMaryland Marketplace Advantage at [eMaryland Marketplace Advantage \(eMMA\)](#) within five days following notice of award. Maryland law requires local and state agencies to post award notices on eMaryland Marketplace Advantage This cannot be done without the contractor’s self-registration in the system. Registration is free. Failure to comply with this requirement may be considered grounds for default. It is recommended that any interested bidder register with eMaryland Marketplace Advantage regardless of the award outcome for this procurement as it is a valuable resource for bid notification for municipalities throughout Maryland.

Kristal Burgess  
Procurement Specialist

THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Clarksville Pike  
Ellicott City, Maryland 21042

**NO BID REPLY FORM**

Sealed Bid for: **Hot Water Reheat Coils – River Hill High School**

Bid Number: **Bid #079.23.B3** \_\_\_\_\_

Bidder: \_\_\_\_\_

To assist us in obtaining good competition on our request for bids, we ask that each firm that has received an invitation, but does not wish to bid, state their reason(s) below.

Unfortunately, we must offer a "No Bid" at this time because:

- \_\_\_\_\_ 1. We do not wish to bid under the terms and conditions of the Bid document. Our objections are:  
\_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_ 2. We do not feel we can be competitive.
- \_\_\_\_\_ 3. We cannot submit a bid because of the marketing or franchising policies of the manufacturing company.
- \_\_\_\_\_ 4. We do not wish to sell to The Howard County Public School System. Our objections are:  
\_\_\_\_\_
- \_\_\_\_\_ 5. We do not sell the item(s)/service(s) requested in the specific specifications.
- \_\_\_\_\_ 6. Other: \_\_\_\_\_  
\_\_\_\_\_



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BID #079.23.B3

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**END OF SECTION**

# AIA<sup>®</sup> Document A701™ – 2018

## **Instructions to Bidders**

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

**THE OWNER:**  
*(Name, legal status, address, and other information)*

**THE ARCHITECT:**  
*(Name, legal status, address, and other information)*

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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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™-2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

## **ARTICLE 1 DEFINITIONS**

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201-2007 Edition and as modified by Howard county Public School System or other Contract Documents as applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

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

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

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

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

## **ARTICLE 2 BIDDER'S REPRESENTATIONS**

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

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

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

## **ARTICLE 3 BIDDING DOCUMENTS**

### **§ 3.1 COPIES**

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein.

*(Paragraphs deleted)*

The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

*(Paragraph deleted)*

### § 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Construction Manager and Architect at least seven business days prior to the date for receipt of Bids.

*(Paragraphs deleted)*

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

### § 3.3 SUBSTITUTIONS

*(Paragraph deleted)*

§3.3.1 Bids shall be based upon the materials, systems and equipment required by the bidding documents without exception. Proposed substitute products or manufacturers shall be submitted in accordance with the following provisions:

- a. No substitutions will be considered prior to receipt of bids. The Contract award will be made solely on the basis of Base bid, Alternate Bids with regard to proposed substitutions and deducts when requested.
- b. Bidders may propose substitutions for the materials, systems and equipment specified or whom by listing them in the space provided on the Form of Proposal, along with any stipulated cost adjustment (add. deduct or no change) in the Base Bid or Alternate bids. Proposed substitutions may be accepted with the award of the contract or later by the Owner.
- c. Provide all necessary backup data for proposed substitutions at time of bid for review by Owner.
- d. The Architect will evaluate all substitutions based on compliance with the environmental goals stated in the specifications. All proposed substitutions shall document and demonstrate meeting or exceeding LEED certification requirements through product data, MSDS sheets and other supporting literature that highlight conformance. Any substitution that does not have this information highlighted will be rejected.

§ 3.3.2 It is the responsibility of the bidder to provide documentation with the bid at the date and time set forth for submission. The burden of proof that proposed substitutes are in fact equal or better falls on the bidder and proof must be to the satisfaction of HCPSS. The HCPSS shall be the sole authority as to whether proposed substitute items meet specifications or are an approved equal. The HCPSS decision of approving or disapproving of a proposed equal shall be final.

*(Paragraphs deleted)*

§ 3.3.3 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

*(Paragraphs deleted)*

**§ 3.4 ADDENDA**

**§ 3.4.1** Addenda will be

*(Paragraphs deleted)*

posted on the school system website.

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

**§ 3.4.3** Addenda will be issued no later than two days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

**§ 3.4.4** Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

**ARTICLE 4 BIDDING PROCEDURES**

**§ 4.1 PREPARATION OF BIDS**

**§ 4.1.1** Bids shall be submitted on the forms included with the Bidding Documents. Submit Form of Proposal (Bids) in triplicate.

**§ 4.1.2** All blanks on the bid form shall be legibly executed in a non-erasable medium. If blanks do not apply insert " O " in spaces.

**§ 4.1.3** Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

**§ 4.1.4** All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

**§ 4.1.5** Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

*(Paragraphs deleted)*

**§4.1.6** All addenda shall be acknowledged on the Form of Proposal

**§ 4.2 BID SECURITY**

**§ 4.2.1** Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

**4.2.2** Bonds shall be written by a bonding company that must be licensed with Maryland Insurance Administration to do business in the state of Maryland and otherwise acceptable to the Howard County Public School System. The Contractor shall use Bond Form provided by the Owner AIA 310 Bid Bond, in order to satisfy the Bond requirements referenced in this Article and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney in an amount not less than required.

**4.2.3** The bonding company furnishing the Bid Bond shall provide upon request to the Purchasing Department, the following statement, signed by an authorized representative for the bonding company: **As surety for (Name of**

Contractor), (Name of Bonding Company), hereby agrees to furnish the 100% Performance, Labor and Materials Bonds, as required by the specifications for the (Name of Project), on behalf of the Contractor, in the event that such firm be the successful bidder for this project. Failure to provide this statement may be cause to reject submitted bid.

§ 4.2.4 Bid Bond shall be in the amount of 5% of the Base Bid.

*(Paragraph deleted)*

§ 4.2.5 The apparent low bidder, upon notification, shall provide to the Owner/ Purchasing Office within 24 hours three (3) references of successfully completed projects from General Contractors and/or Construction Managers and/or Owners. Failure to provide these references will be cause to reject the submitted bid.

*(Paragraphs deleted)*

§ 4.2.6 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either

- (a) the Contract has been executed and bonds, if required, have been furnished, or
- (b) the specified time has elapsed so that Bids may be withdrawn or
- (c) all Bids have been rejected.

§ 4.2.7 To protect the public interest the Owner may request a D & B (Dun & Bradstreet ®) report on the apparent low bidder. D & B rating less than A shall be cause for rejection of bid by Owner.

§ 4.2.8 Owner reserves the right to request from apparent low bidder financial statements for the firm for up to 3 fiscal years..

#### § 4.3 SUBMISSION OF BIDS

##### § 4.3.1

*(Paragraphs deleted)*

All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

*(Paragraph deleted)*

#### § 4.4 MODIFICATION OR WITHDRAWAL OF BID

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date and time stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for

*(Paragraphs deleted)*

the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

## ARTICLE 5 CONSIDERATION OF BIDS

### § 5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

### § 5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

### § 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid, Alternate Bids, and proposed Substitutions which, in the Owner's judgment, is in the Owner's own best interests.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

## ARTICLE 6 POST-BID INFORMATION

*(Paragraphs deleted)*

### § 6.3 SUBMITTALS

§ 6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

.1

*(Paragraphs deleted)*

names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

*(Paragraphs deleted)*

§ 6.3.3 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

## ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

*(Paragraph deleted)*

### §7.1 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1.1 The Contractor shall furnish a Performance Bond and Labor and Materials Payment Bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder and complying with the requirements of

Maryland Law. Both bonds shall be in the amount of one hundred percent (100%) of the Contract amount and shall name the Howard County Board of Education as Obligee.

§ 7.1.2 Bonds shall be written by a bonding company that must be licensed with MD Insurance Administration to do business in the State of Maryland and otherwise acceptable to the Howard County Public School System. The Contractor shall use Bond Forms provided by the Owner AIA Document A312 - 2010 Performance Bond and AIA Document A312 - 2010 Labor and Material Payment Bond, in order to satisfy the Bond requirements referenced in this Article.

§ 7.1.3 Owner reserves the right to request from Contractor financial statements for the firm for up to prior 3 fiscal years.

§ 7.1.4 To protect the public interest the Owner may request a D & B report on the Contractor. Should the D & B rating fall below the awarded rating, Contractor shall advise Owner of his corrective measures.

§ 7.1.5 Firms issuing said bonds must be licensed to write bonds in the State of Maryland. The Contractor shall pay the premiums for required bonds. Obtainage of the required bonds by Contractor shall be a condition precedent to effectuation of the Contract between Owner and Contractor. If additional work is authorized, the amounts of the bonds shall be increased to cover the value of the increased Contract sum. All bonds shall conform to the requirements of the Maryland Little Miller Act. All bonds shall be subject to Owner's approval.

*(Paragraphs deleted)*

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

§ 7.1.7 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

## § 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner with the executed contract and dated with the date of contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312-2010, Performance Bond and Labor and Material Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

*(Paragraph deleted)*

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney effective as of the date of execution of the contract..

## ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101-2007 edition as modified by Howard County Public School System, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

*(Table deleted)(Paragraphs deleted)(Paragraphs deleted)*



SECTION 003000  
FORM OF PROPOSAL

**HOT WATER REHEAT COILS – RIVER HILL HIGH SCHOOL  
BID #079.23.B3**

Date: \_\_\_\_\_ Owner:

Board of Education  
of Howard County Maryland  
10910 Clarksville Pike  
Ellicott City, MD 21042  
Tel (410) 313-6723

Contractor: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Engineer/Architect: Building Dynamics  
8600 Foundry St., Ste 306  
Mill Box 2054  
Savage, MD 20763

The undersigned, having carefully examined the Bid Announcement and Bid Documents proposes to furnish all specified materials and specified equipment in strict accordance with the aforesaid documents for the Lump Sums as follows:

**BASE BID**

1. Complete installed cost for the Hot Water Reheat Coils at River Hill HS and all appurtenances, as indicated on the drawings, specifications and addenda.

**TOTAL PROJECT COST – Hot Water Reheat Coils**

**River Hill High School** \$ \_\_\_\_\_

Please indicate below your Total Base Bid amount in words:

\_\_\_\_\_ and ---- /100 Dollars.

NOTE: Bid Form shall reflect bids for the project as shown in the Contract Specifications and addenda. Substitutions shall be included in the section "Proposed Substitutions."

\* Note: References to Architect will also include Engineer in all bid documents.

**SUBCONTRACTORS:** Bidders are hereby required to name the subcontractors as part of their bid package.

Name of Company	Type of Work
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**REFERENCES**

Bidders are hereby required to list three references for whom similar work has previously been performed within the last three years:

Name: \_\_\_\_\_

Address of Site: \_\_\_\_\_

Nature of Job: \_\_\_\_\_

Person to contact: \_\_\_\_\_

Telephone: \_\_\_\_\_

Name: \_\_\_\_\_

Address of Site: \_\_\_\_\_

Nature of Job: \_\_\_\_\_

Person to contact: \_\_\_\_\_

Telephone: \_\_\_\_\_

Name: \_\_\_\_\_

Address of Site: \_\_\_\_\_

Nature of Job: \_\_\_\_\_

Person to contact: \_\_\_\_\_

Telephone: \_\_\_\_\_

**COMPANY INFORMATION**

\_\_\_\_\_  
Name of company \_\_\_\_\_ years in business

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Telephone # Fax #

**CONTRACT ADMINISTRATOR**

Name \_\_\_\_\_ Title \_\_\_\_\_

Address \_\_\_\_\_ Phone \_\_\_\_\_

\_\_\_\_\_  
Cell phone \_\_\_\_\_ e-mail \_\_\_\_\_

**ADDENDA**

Receipt of the following addenda is acknowledged:

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

**WARRANTY TO THE LUMP SUM**

The undersigned affirms that the above base bid and alternates represents the entire cost of the project in accordance with the bid documents and that no claim will be made on account of any increase in wage, scales, material prices, taxes, fasts, cost indexes or any other rate affecting the construction industry and/or this project.

If the undersigned received written notice of the acceptance, at his designated address, within sixty (60) days after bid opening (or later if bid has not been withdrawn), the undersigned agrees to execute and deliver a contract and bonds in accordance with the bid as accepted, within seven (7) days after receiving notice, or forfeit the amount of the bid bond.

**AFFIDAVIT**

**Special Instructions:** An authorized representative of the bidder shall complete the following affidavit in accordance with these bid documents and insert answer to paragraphs 1 and 3.

Statutory Affidavit and Non-Collusion Certification

I, \_\_\_\_\_, being duly sworn, depose and state:

1. I am the \_\_\_\_\_ (officer) and duly authorized Representative of the firm named \_\_\_\_\_ whose address is \_\_\_\_\_ and that I possess the authority to make this affidavit and certification on behalf of myself and the firm for which I am acting.

2. Except as described in Paragraph 3 below, neither I, nor to the best of my knowledge, the above firm, nor any of its officers, directors, or partners, employees, agents, or employees of agents who are directly involved in obtaining or performing contracts with any public bodies has:

- (a.) Been convicted of bribery, attempted bribery, or conspiracy to bribe, under the laws of any state of the federal government;
- (b.) Been convicted under the laws of the state, another state, or the United States of: a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract; or fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property;
- (c.) Been convicted of a criminal violation of an antitrust statute of the State of Maryland, another state, or the United States;
- (d.) Been convicted of a violation of the Racketeer Influenced and Corrupt Organization Act, or the Mail Fraud Act, for acts in connection with the submission of bids or proposals for a public or private contract;
- (e.) Been convicted of any felony offenses connected with obtaining, holding, or maintaining a minority business enterprise certification, as prohibited by Section 14-308 of the State Finance and Procurement Article;
- (f.) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction under any of the laws or statutes described in Paragraph (a) through (e) above; or
- (g.) Been found civilly liable under an antitrust statute of this State, another state, or the United States for acts or omissions in connection with the submission of bids or proposals for a public or private contract.

3. **The only conviction, plea, or admission by any officer, director, partner, or employee of this firm to involvement in any of the conduct described in Paragraph 2 above is as follows:**

*If none, write "None" below. If involvement, list the date, count, or charge, official or administrative body, the individuals, their position with the firm and the sentence or disposition of the charge.*

\_\_\_\_\_

\_\_\_\_\_ (you may attach an explanation as necessary)

4. I affirm that this firm will not knowingly enter into a contract with a public body under which a

person or business debarred or suspended under Maryland State Finance and Procurement Title 16, subtitle 3, Annotated Code of Maryland, as amended, will provide, directly or indirectly, supplies, services, architectural services, construction-related services, leases of real property, or construction.

5. I affirm that this proposal or bid to the Board of Education of Howard County Maryland is genuine and not collusive or a sham; that said bidder has not colluded, conspired, connived and agreed, directly or indirectly, with any bidder or person to put in a sham bid or to refrain from bidding and is not in any manner, directly or indirectly, sought by agreement of collusion or communication or conference, with any person to fix the bid prices of the affidavit or any other bidder, or to fix any overhead, profit or cost element of said bid price, or that if any bidder, or to secure an advantage against the Board of Education of Howard County Maryland or any other person interested in the proposed contract; and that all statements in the proposal or bid are true. I acknowledge that, if the representations set forth in this affidavit are not true and correct, the Board of Education of Howard County Maryland may terminate any contract awarded and take any other appropriate action.
6. I affirm that this firm will not knowingly employ an individual to work at a school if the individual is a Registered Sexual Offender, pursuant to section 11-722 ( C ) of the Criminal Procedure Article of the Annotate Code of Maryland. A firm or person who violates this section is guilty of a misdemeanor and on conviction is subject to imprisonment not exceeding 5 years or a fine not exceeding \$5,000 or both.

**The statements contained in this affidavit shall be incorporated into the awarded contract as material provisions and shall be effective throughout the life of the contract. The firm has a continuing obligation through the life of the contract to submit a revised affidavit should the firm discover information, or events occur, which render the contents of this affidavit erroneous or incomplete or which would result in the firm providing a different response. The firm's failure to submit a revised affidavit within three (3) working days of either its awareness of any error, change of circumstances, incompleteness, etc., or request by the owner shall constitute breach of contract. Upon submission of a revised affidavit, the owner has the right to take such actions as may be necessary, in the judgment of the owner, to maintain and enforce the provisions of the affidavit, including termination of the contract.**

**I DO SOLEMNLY DECLARE AND AFFIRM** under the penalties of penalties that the contents of these affidavits (Statutory and Non-Collusion) are true and correct, that I am executing this Affidavit in compliance with Section 16-311 of the State Finance and Procurement Article, Annotated Code of Maryland, and the Non-Collusion Certification in compliance with requirements of the Board of Education of Howard County Maryland, and that I am executing and submitting this Form of Proposal on behalf of and with full authority by the bidder named below.

\_\_\_\_\_  
(Signature of Bidder)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Print Name of Bidder)

\_\_\_\_\_  
(Title of Bidder)

SUBSCRIBED AND SWORN to before me on this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

NOTARY PUBLIC

Name \_\_\_\_\_

Seal:

My Commission Expires \_\_\_\_\_

\_\_\_\_\_  
(Legal Name of Company)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City) (State) (Zip)

\_\_\_\_\_  
(Telephone) (Fax)

\_\_\_\_\_  
(E-mail address)

Contractor's License Number # \_\_\_\_\_

We are/I am licensed to do business in the State of Maryland as a:

Corporation       Partnership       Individual       Other

\_\_\_\_\_  
eMaryland Marketplace Advantage (eMMA) Vendor No.

# AIA<sup>®</sup> Document A310™ – 2010

## **Bid Bond**

**CONTRACTOR:**

*(Name, legal status and address)*

*(Row deleted)*

As Principal, hereinafter called the Principal, and a corporation duly organized under the laws of the State of as Surety, hereinafter called the Surety, are held and firmly bound unto

As Oblige, hereinafter called the Oblige, in the sum of Dollars (\$ )  
\$....., for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, or heirs, executors, administrators, successors and assigns jointly and severally firmly by these presents.

OWNER  
Howard County Public School System  
10910 Clarksville Pike  
Ellicott City, MD, 21042

WHEREAS the Principal has submitted a bid for

**PROJECT:**

*(Name, location or address, and Project number, if any)*

NOW, Therefore, if the Oblige shall accept the bid of Principal and the Principal shall enter into a Contract with the Oblige in accordance with the term of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to Oblige the difference not to exceed the penalty thereof between the amount specified in said bid and such larger amount for which the Oblige may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

*(Paragraph deleted)*

**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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.





# AIA<sup>®</sup> Document A101<sup>®</sup> – 2017

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

AGREEMENT made as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year 2021  
*(In words, indicate day, month and year)*

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

\_\_\_\_\_ and the Contractor:  
*(Name, address and other information)*

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

The Architect:  
*(Name, address and other information)*

The Owner and Contractor agree as follows.  
**TABLE OF ARTICLES**

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS
- 10 INSURANCE AND BONDS

### **ARTICLE 1 THE CONTRACT DOCUMENTS**

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications

### **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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

The parties should complete A101@-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201@-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

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

**ARTICLE 2 THE WORK OF THIS CONTRACT**

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

Contract Package:

Alternate No.:

**ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**

§ 3.1 The date of commencement of the Work shall

*(Paragraphs deleted)*

be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

*(Paragraphs deleted)*

§ 3.2 The Contract Time shall be measured from the date of commencement, that shown on the Progress Schedule.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ..... The respective dates applicable to this Contract as indicated on the Progress Schedule. The fully developed Progress Schedule issued by Architect/Owner, and hereby fully incorporated into this Agreement, contains

**Portion of Work**  
100 % Complete

, subject to adjustments of this Contract Time as provided in the Contract Documents.  
. Liquidated Damages in the sum of one thousand (\$1000.00) for each calendar day shall be assessed for any delays in achieving Substantial Completion, except as noted in Article 8 of the General Conditions of the Contract for Construction. "Substantial Completion" as defined in Article 9.8 of the General Conditions of the Contract for Construction. In addition to Liquidated Damages for delay, as provided above, the Owner shall be entitled to such other damages for breach of contract as more fully provided in the General Conditions for Contract for Construction.

*(Paragraph deleted)*

*(Table deleted)*

*(Paragraphs deleted)*

**ARTICLE 4 CONTRACT SUM**

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract including Alternates and Substitutions the Contract Sum shall be:

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

subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

Alternate Numbers:

N/A

init.

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

(Table deleted)  
(Paragraphs deleted)  
(Table deleted)  
(Paragraph deleted)

§ 4.3 Unit prices, if any:  
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

**Item**  
As listed in the Form of Proposal;

(Paragraphs deleted)  
(Table deleted)  
(Paragraphs deleted)

**ARTICLE 5 PAYMENTS**

**§ 5.1 PROGRESS PAYMENTS**

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

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

Contractor shall submit to the Architect on the last day of each month a draft of a Standard Monthly Contractors Requisition for Payment, on AIA Document G702 – 1992 and AIA Document G703 – 1992

(Paragraphs deleted)

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

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

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent ( 10 % )
- .2 Portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent ( 10 % );

(Paragraphs deleted)

**§ 5.1.7 Deleted**

(Paragraphs deleted)

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:  
As described in the General Conditions for the Contract of Construction.

Init.

§ 5.1.9 Deleted

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor in accordance with Paragraph 9.10 of the General Conditions for Contract.

§ 5.2.2 Deleted

*(Paragraphs deleted)*

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1

*(Paragraphs deleted)*

As specified in Contract Documents

*(Paragraphs deleted)*

§ 6.2 Deleted

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007 and modifications made by Howard County Public School System.

*(Paragraphs deleted)*

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-2007 and modifications made by Howard County Public School System.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201-2007 and modifications made by Howard County Public School System or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

*(Paragraphs deleted)*

§ 8.4 The Contractor's representative:

*(Name, address and other information)*

§ 8.5 The Contractor's representative shall not be changed without ten days' written notice to the Owner

*(Paragraphs deleted)*

§ 8.6 Delete:

Init.

*(Paragraphs deleted)*

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

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

§ 9.1.1 The Agreement is the executed Standard Form of Agreement Between Owner and Contractor, AIA Document A101-1997 and modifications made by Howard County Public School System.

§ 9.1.2 The General Conditions are the 2007 edition of the General Conditions of the Contract for Construction, AIA Document A201-2007 and modifications made by Howard County Public School System.

§ 9.1.3 Delete

§ 9.1.4 The Specifications:

*(Paragraph deleted)*

The Specifications are those contained in the Project Manual, and are as follows:

Title of Specifications exhibit: As listed in Table of Contents of Project Manual dated:

§ 9.1.5 The Drawings:

The Drawings are as follows, and are dated \_\_\_\_\_ unless a different date is shown below:

*(Table deleted)*

Title of Drawings exhibit: As listed in the Schedule of Drawings of the Contract Title of Drawings exhibit:

*(Table deleted)*

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
--------	------	-------

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

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

*(Paragraph deleted)*

As listed in the Project Manual.

**ARTICLE 10 INSURANCE AND BONDS**

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

**Type of insurance or bond**

As listed in the Project Manual

*(Paragraphs deleted)*

Init.

This Agreement is entered into as of the day and year first written above and is executed in at least four original copies of which one is to be delivered to the Contractor, one each to the Construction Manager and Architect for use in the administration of the Contract, and the remainder to the Owner.

**OWNER**

Board of Education of Howard County

(A Body Politic and Corporate)

**CONTRACTOR**

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Signature)*

Chao Wu, Chair (SEAL) \_\_\_\_\_

\_\_\_\_\_  
(SEAL)

*(Printed name and title)*

Approved by:

\_\_\_\_\_  
Michael J. Martirano, Ed. D., Superintendent of Schools

Init.

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User Notes:

(1416974200)

**SECTION 00601**  
**INSURANCE REQUIREMENTS**

**1 - General Insurance Requirements:**

1.1 - The Contractor shall not commence Work until he has obtained at his own expense all of the insurance as required hereunder and such insurance has been approved by the Board of Education of Howard County Maryland; nor shall the Contractor allow any Subcontractor to commence Work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved by the Contractor. Approval of insurance required of the Contractor will be granted only after submission to the Board of Education of Howard County Maryland of original, signed certificates of insurance or, alternately, at the Board of Education of Howard County Maryland's request, certified copies of the required insurance policies.

1.2 - The Contractor shall require all Subcontractors to maintain during the term of this agreement, commercial general liability insurance, business automobile liability insurance, and Workers' Compensation and employers' liability insurance, in the same manner as specified for the Contractor. The Contractor shall furnish Subcontractors' certificates of insurance to the Board of Education of Howard County Maryland immediately upon request.

1.3 - All insurance required hereunder shall include the following provision: "It is agreed that this policy is not subject to cancellation, non-renewal, material change, or reduction in coverage until sixty (60) days prior written notice has been given to the Board of Education of Howard County Maryland."

The phrases "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" are to be eliminated from the cancellation provision of standard ACORD certificates of insurance.

1.4 - No acceptance and/or approval of any insurance by the Board of Education of Howard County Maryland shall be construed as relieving or excusing the Contractor, or the Surety, or his bonds, from any liability or obligation imposed upon either or both of them by the provisions of the Contract Documents.

1.5 - The Board of Education of Howard County Maryland and its elected or appointed officials, agents and employees are to be named as an additional insured under all coverages except Workers compensation and business automobile liability, and the certificate of insurance, or the certified policy, if requested, must so state this. Coverage afforded under this paragraph shall be primary as respects the Board of Education of Howard County Maryland, its agents and employees.

1.6 - The Contractor shall be responsible for the Work performed under the Contract Documents and every part thereof, and for all materials, tools, equipment, appliances, and property of any and all description used in connection with the Work. The Contractor assumes all risk for direct and indirect damage or injury to the property or persons used or employed on or in connection with the Work contracted for, and of all damage or injury to any person or property wherever located, resulting from the action, omission, commission or operation under the contract, or in connection in any way whatsoever with the contracted Work, until final acceptance of the Work by the Board of Education of Howard County Maryland.

1.7 - Insurance coverage required in these specifications shall be in force throughout the contract term. Should the Contractor fail to provide acceptable evidence of current insurance within seven days of written notice at any time during the contract term, the Board of Education of Howard County Maryland shall have the absolute right to terminate the contract without any further obligation to the Contractor, and the Contractor shall be liable to the Board of Education of Howard County Maryland for the entire additional cost of procuring performance and the cost of performing the incomplete portion of the contract at time of termination.

1.8 - Contractual and other liability insurance provided under this contract shall not contain a supervision, inspection or engineering services exclusion that would preclude the Board of Education of Howard County Maryland from supervising or inspecting the project as to the end result. The Contractor shall assume all

on-the-job responsibilities as to the control of persons directly employed by it and of the Subcontractors and any persons employed by the Subcontractor.

1.9 - Nothing contained in the specifications shall be construed as creating any contractual relationship between any Subcontractor and the Board of Education of Howard County Maryland. The Contractor shall be fully responsible to the Board of Education of Howard County Maryland for the acts and omissions of the Subcontractors and of persons employed by them as it is for acts and omissions of persons directly employed by it.

1.10 - Precaution shall be exercised by the Contractor at all times for the protection of persons, (including employees) and property. All existing structures, utilities, roads, services, trees and shrubbery shall be protected against damage or interruption of service at all times by the Contractor and its Subcontractors during the term of the contract, and the Contractor shall be held responsible for any damage to property occurring by reason of its operation on the property.

1.11 - If the Contractor does not meet the insurance requirements of the specifications, alternate insurance coverage, satisfactory to the Board of Education of Howard County Maryland, may be considered. Written requests for consideration of alternate coverages must be received by the Board of Education of Howard County Maryland at least ten Working days prior to the date set for receipt of bids or proposals. If the Board of Education of Howard County Maryland denies the request for alternate coverages, the specified coverages will be required to be submitted.

1.12 - All required insurance coverages must be acquired from insurers allowed to do business in the State of Maryland and acceptable to the Board of Education of Howard County Maryland. The insurers must also have a policyholders' rating of "A-" or better, and a financial size of "Class VII" or better in the latest edition of Best's Insurance Reports, unless the Board of Education of Howard County Maryland grants specific approval for an exception.

1.13 - The Board of Education of Howard County Maryland will consider any deductible amounts as part of its review of the financial stability the Contractor. Any deductibles shall be disclosed by the Contractor, and deductible amounts are the responsibility of the Contractor.

## **2 - Contractor's Liability Insurance - "Occurrence" Basis:**

2.1 - The Contractor shall purchase the following insurance coverages:

2.1.1 - Commercial general liability with a minimum limit of \$1,000,000 per occurrence, \$1,000,000 annual aggregate including all of the following:

- i. General aggregate limit is to apply per project;
- ii. Premises/operations;
- iii. Actions of independent Contractors;
- iv. Products/completed operations to be maintained for two years after completion of the Work;
- v. Contractual liability including protection for the Contractor from claims arising out of liability assumed under this contract;
- vi. Personal injury liability including coverage for offenses related to employment;
- vii. Explosion, collapse, or underground (XCU) hazards (confirmation of underground hazard coverage must be confirmed by either certificate of insurance or in writing by Contractor's agent, broker or insurer);



2.1.2 - Business automobile liability including coverage for any owned, hired, or non-owned motor vehicles and automobile contractual liability with a limit of \$1,000,000 per accident; uninsured motorist coverage at minimum statutory limits.

2.1.3 - Workers compensation with statutory benefits as required by Maryland law or the U. S. Longshoremen's and Harbor Workers' Compensation Act, or other laws as required by labor union agreements, including standard other states coverage; employers' liability coverage with limits of \$100,000 per accident, \$100,000 per employee for disease, and a \$500,000 disease policy limit.

2.1.4 - Total limit requirements of 2.1.1, 2.1.2 and 2.1.3 may be met by a combination of primary and umbrella excess liability coverage.

### **3 - Commercial General or Other Required Liability Insurance - "Claims Made" Basis**

3.1 - If commercial general or other liability insurance purchased by the Contractor has been issued on a "claims made" basis, the Contractor must comply with the following additional conditions:

- i. Agree to provide certificates of insurance evidencing the above coverages for a period of two years after final payment for the contract. Such certificates shall evidence a retroactive date, no later than the beginning of the Contractors' or Subcontractors' Work under this contract, or
- ii. Purchase an extended (minimum two years) reporting period endorsement for the policy or policies in force during the term of this contract and evidence the purchase of this extended reporting period endorsement by means of a certificate of insurance or a copy of the endorsement itself.

# AIA<sup>®</sup> Document A312™ – 2010

## Performance Bond

**CONTRACTOR:**  
*(Name, legal status and address)*

**SURETY:**  
*(Name, legal status and principal place of business)*

---

**OWNER:**  
*(Name, legal status and address)*

**CONSTRUCTION CONTRACT**

**Date:**  
**Amount: \$**  
**Description:**  
*(Name and location)*

**BOND**  
**Date:**  
*(Not earlier than Construction Contract Date)*

**Amount: \$**  
**Modifications to this Bond:**  **NONE**  **SEE SECTION 16**

<b>CONTRACTOR AS PRINCIPAL</b>	<b>SURETY</b>
<b>COMPAN (CORPORATE SEAL)</b>	<b>COMPAN (CORPORATE SEAL)</b>
<b>Y:</b>	<b>Y:</b>
<b>SIGNATU</b>	<b>SIGNATU</b>
<b>RE:</b>	<b>RE:</b>
<b>NAME AND TITLE:</b>	<b>NAME AND TITLE:</b>

**IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS PREPARED BY:**  
*(HERE INSERT FULL NAME AND ADDRESS OR LEGAL TITLE OF ARCHITECT)*

*(Table deleted)*

**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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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User Notes:

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

Which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

PERFORMANCE BOND

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The surety hereby waives notice of any alteration of extension of time made by the Owner.

Whenever Contractor shall be, and declare by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly

1. Complete the contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for competing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this day of

\_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Principal)

(Seal)

\_\_\_\_\_  
(Witness)

(Title)

*(Table deleted)(Paragraphs deleted)*

Init.

 **AIA**® Document A312™ – 2010

**Payment Bond**

**CONTRACTOR:**  
*(Name, legal status and address)*

**SURETY:**  
*(Name, legal status and principal place of business)*

**OWNER:**  
*(Name, legal status and address)*

**CONSTRUCTION CONTRACT**  
Date:

Amount: \$

Description:  
*(Name and location)*

**BOND**  
Date:  
*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:  None  See Section 18

**CONTRACTOR AS PRINCIPAL**  
Company *(Corporate Seal)*

Signature  
: \_\_\_\_\_  
Name  
and Title:  
*(Any additional signatures appear on the last page of this Payment Bond.)*

**SURETY**  
Company *(Corporate Seal)*

*(Row deleted)*  
Signature  
: \_\_\_\_\_  
Name  
and Title:

**ADDITIONS AND DELETIONS:**  
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User Notes:

(1748452473)

Drawings and Specifications prepared by:  
(Architect name and address)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

Which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

#### **LABOR AND MATERIAL PAYMENT BOND**

Now therefore, the condition of this obligation is such that, if Principal shall promptly make payment to all claimants as hereinafter defined. For all labor and material used or presumably required for use in the performance of the Contract, then this obligation shall be void: otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, prosecute the suit for final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
  - a) Unless claimant, other than on having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety(90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
  - b) After the expiration of one (1) year following the date on which Principal ceased Work on seaside Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
  - c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United

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User Notes:

(1748452473)

States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens with may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_  
(Corporate Seal)

**SURETY**

Company: \_\_\_\_\_  
(Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_

Address:

Address:

*(Table deleted)(Paragraphs deleted)*

Init.

# AIA® Document A201® – 2007

## General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

[REDACTED]

THE OWNER:

(Name and address)

[REDACTED]

THE ARCHITECT:

(Name and address)

[REDACTED]

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 BASIC DEFINITIONS**

#### **§ 1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the 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 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 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 and certify termination of the Agreement under Section 14.2.2.

### **§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

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

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§ 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. Wherever in the Specifications there appears a reference to a "Contractor" or the "Subcontractor" or a reference to a Contractor, installer or supplier of a particular trade, or for a particular type of Work, such reference, regardless of the language hereof shall be deemed a reference to the Contractor and shall not be construed as relieving the Contractor from the duty to perform all of the Work and other obligations provided under the Contract.

§ 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.

### § 1.3 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.

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

§ 1.5.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings.. Unless otherwise indicated, the Architect shall be deemed the author of the Specifications and other documents prepared by the Architect. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owners copyrights or other reserved rights. The Drawings, Specifications, and other documents are and shall always be the property of the Owner, and the Owner shall retain all common law, statutory, and other reserved rights in addition to copyright.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. 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 material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

### § 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

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**ARTICLE 2 OWNER**

**§ 2.1 GENERAL**

**§ 2.1.1** The Owner is the Board of Education of Howard County Maryland 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 Contractor understands that the Board of Education of Howard County, Maryland, is a public agency, and no mechanics' liens are permitted against its property.

**§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

**§ 2.2.1** Deleted

**§ 2.2.2** Except for permits and fees, including those required under Section 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction,

**§ 2.2.3** 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 to the extent reasonably required for execution of the Work and requested by the Contractor in writing within one (1) month of the date of Contract. The Owner does not warrant or undertake responsibility for the location of utilities or the accuracy of tests concerning the soil, surface, and subsurface conditions.

**§ 2.2.4** Information or services under the Owner's control shall, be furnished by the Owner after receipt from the Contractor of a written request for such information or services..

*(Paragraph deleted)*

**§ 2.2.5** Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, Three (3) sets of copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

**§ 2.3 OWNER'S RIGHT TO STOP THE WORK**

**§2.3.1** 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 an not in restriction or derogation of the Owners' rights under Section 4.3.4 and under Article 14 of the General Conditions.

**§2.3.2** If unforeseen conditions occur or are encountered which may substantially impair the quality of the Work unless the Work is suspended, the Owner may suspend the Work by notice in writing to the Contractor. In the event of such a suspension, Contractor shall be entitled only to payment for work actually completed up to and including the date on which the work was suspended by the Owner. In any event where the Contractor reasonably determines that a suspension is required in such circumstances, the Contractor shall promptly notify in writing the Owner and Architect of such determination. In the event the Owner agrees to suspend the work, the Contractor shall only be entitled to payment for work actually completed up to and including the date on which the work was suspended.

**§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK**

**§ 2.4.1** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, upon written notice to the Contractor at the

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conclusion of the above referenced seven day period without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. , upon written notice to the Contractor at the conclusion of the above referenced seven-day period, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Architect's and their respective consultants' additional services and expenses made necessary by such default, neglect or failure. At the election of the Owner, the first written notice to the Contractor to correct defective work may also contain written notice that if the defective work or other specified cause for termination is not corrected, cured, or remedied to Owner's satisfaction, then Owner may issue a written notice to Contractor at the end of the above reference seven (7) day period terminating the Contractor's employment under the Contract pursuant to Article 14 of these General Conditions. In the event the Owner elects to terminate the Contractor's employment under this Contract, the Contractor shall only be entitled to payment for work under the Agreement actually completed by the Contractor up to the date of Contractor's termination, less deductions for: (1) the cost of correcting any deficient or defective work, including compensation for the Architect and their respective consultant's additional services and expenses made necessary by the Contractor's defective work, default, neglect, or failure to perform under this Contract; (2) damages incurred by the Owner as a result of the Contractor's breach, including but not limited to costs to finish the work and damages for delay, if any, in completing the work under the Contract; and (3) actual reasonable attorney's fees incurred by the Owner in obtaining legal advice, counsel, and/or representation relating to the issues of Contractor's breach of contract, defective work, default neglect, or failure to perform and Owner's legal options relating thereto as well as any other reasonable attorney's fees due to Owner under other provisions of this Contract; and (4) such other amounts due and owing to Owner under the terms and conditions of the Contract documents. In the event the Contractor is terminated pursuant to Article 14.2, the Contractor shall not be entitled to any remaining funds under the Contract after the date of termination except as specifically provided above, and subject to the availability of funds after all work is completed. All remaining unpaid funds in the Contract as of the Contractor's termination date shall be the sole and exclusive property of the Owner, and the Contractor shall be paid by the Owner at the conclusion of all work under the Contract as provided above, but only to the extent that there are funds remaining after all payments have been made to complete the work under the Contract and to compensate the Owner as provided above in the four (4) enumerated deductions in this Article 2.4.1. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 GENERAL**

**§ 3.1.1** .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 term "Contractor" means the Contractor or the Contractor's authorized representative. When separate contracts are awarded for different portions of the Project or other work on the site, the term Contractor in the Contract Documents in each case shall mean the contractor who executes each separate Contractor Agreement.

**§ 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 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** The Contractor warrants that it has made itself familiar with the Project site and obtained all information required by the Contractor concerning the conditions of the Project site including but not limited to soil, surface, and subsurface conditions, legal descriptions and surveys of the Project site, and the location of utilities and the improvements to be constructed. The Contractor shall continue to carefully study and compare the Contract Documents with each other and with information obtained by Contractor by his own investigation and tests and shall at once report to the Owner and Architect errors, inconsistencies, or omissions discovered. These obligations are for

the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Architect as a request for information in such form as the Architect may require. If the Contractor performs any construction activity with either actual knowledge or constructive knowledge that it involves an error, inconsistency, or omission in the Contract Documents, the Contractor shall assume liability for such performance and costs for correction.

§ 3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but 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. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect. If the Contractor performs any construction activity with either actual knowledge or constructive knowledge that it involves an error, inconsistency, or omission in the Contract Documents, the Contractor shall assume liability for such performance and costs for correction.

§ 3.2.3 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but 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. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect. If the Contractor performs any construction activity with either actual knowledge or constructive knowledge that it involves an error, inconsistency, or omission in the Contract Documents, the Contractor shall assume liability for such performance and costs for correction.

§ 3.2.4 Delete.

### § 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, . The Contractor shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.

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

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

§ 3.3.4 All inspections required by law shall be obtained by the Contractor, including but not limited to those required by law to be obtained by the Owner, and no failure of the Owner to obtain such inspection shall constitute a waiver of Contractor's obligation hereunder. The Contractor shall notify the Owner of any application for inspection required to be executed by the Owner.

### § 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, 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 Delete

§ 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.

§3.4.4 By law, all school sites are drug, alcohol, and tobacco free, and Contractor shall ensure that all workers on the job site comply with the said law.

### § 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of excellent quality and new unless otherwise required or permitted by the Contract Documents, that the Work shall be performed in an excellent manner and shall be free from defects, and that the Work shall conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective. The Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### § 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, 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 and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received. The Owner will not reimburse the Contractor for the cost of elective permits, which the Contractor chooses to secure in conjunction with its means and methods of executing the work, or for any offsite permits.

§ 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 The Contractor shall review the Contract Documents to ascertain that the Contract Documents are to the best of the Contractor's knowledge in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. The Contractor shall promptly notify the Architect and Owner in writing, of any variance therewith, and necessary changes shall be accomplished by appropriate Modification.

§ 3.7.4 If the Contractor performs Work contrary to laws, statutes, ordinances, building codes, and rules and regulations, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

*(Paragraph deleted)*

### § 3.8 Deleted

*(Paragraphs deleted)*

### § 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent 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. Project conference meeting minutes shall constitute Owner's request in writing. The Owner shall have the right to require the Contractor

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to replace any superintendent whose performance the Owner deems to be unsatisfactory, and the Contractor's failure to do so within seven (7) days of having received written notice from the Owner as to the Superintendent's unsatisfactory performance shall constitute a breach of Article 14.2.1, thereby giving the Owner the right to terminate the Contractor's employment under this Contract.

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent.

**§ 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.

### **§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall promptly prepare and submit for the Owner's and Architect's approval a proposed Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, but shall not extend the original completion date and shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

**§ 3.10.2** The Contractor shall prepare and keep current, for the Architect's/Owners review, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review submittals.

*(Paragraph deleted)*

### **§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE**

The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner in good condition upon completion of the Work and before final payment is made and shall be executed by the Contractor certifying that they have been kept in accordance with the provisions of this subparagraph and accurately reflect the construction of the Work as built.

### **§ 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. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect without action.

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

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

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

### § 3.13 USE OF SITE

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

### § 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.

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

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except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### **§ 3.15 CLEANING UP**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

*(Paragraph deleted)*

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

### **§ 3.16 ACCESS TO WORK**

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

### **§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS**

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

### **§ 3.18 INDEMNIFICATION**

**§ 3.18.1** To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor. 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 and expenses, including but not limited to reasonable attorneys' fees and litigation expenses incurred by the Owner, and arising out of or resulting from performance of the Work, defective work, default, neglect, and or failure to perform under the Contract. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18.

**§ 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.

## **ARTICLE 4 ARCHITECT**

### **§ 4.1 GENERAL**

**§ 4.1.1** The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Engineer or the Architect's or Engineer's authorized representative.

**§ 4.1.2** Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted

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

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## § 4.2 ADMINISTRATION OF THE CONTRACT

*(Paragraph deleted)*

§ 4.2.1. The Architect will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one or two year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not 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 FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's/Owner'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.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. 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 13.5.2 and 13.5.3, whether or not such 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, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, 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, and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

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

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive, review for completeness and forward to the Owner, records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

**§ 4.2.10 Delete**

§ 4.2.11 The Architect will 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 with reasonable promptness

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Architect will endeavor to secure faithful performance by the Contractor

§ 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.

**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 subcontractors of a separate contractor. . Under no circumstances shall the Contractor subcontract any portion of the work under the Contract Documents to any person or entity in which the Contractor (including any officer and/or stockholder of the Contractor) has an ownership interest. Under no circumstances shall the Contractor assign or otherwise contract with another person or entity to assume the Contractor's obligations and duties as Contractor under these Contract Documents

§ 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 Within thirty (30) days of the award of the Contract, the Contractor shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection. Subcontractors, required to be named on the Bidding Documents, shall be used on the Work for which they are proposed, unless reasonable objection is indicated by the Owner, or the Architect.

§ 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.

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§ 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 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 shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected without approval of the Owner.

### § 5.3 SUBCONTRACTUAL RELATIONS

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

### § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

- 1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2, or stoppage of the Work pursuant to Article 2.3, and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing;

*(Paragraphs deleted)*

### §5.5 PAYMENTS TO SUBCONTRACTORS

§5.5.1 The Contractor shall pay each subcontractor upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of each Subcontractor's work less the percentage retained for payments to the Contractor. The Contractor shall also require each Subcontractor to make similar payments to its Sub-subcontractors.

§5.5.2 If the Owner fails to approve a Requisition for Payment for a cause which the Owner determines is the fault of the Contractor and not the fault of a particular Subcontractor, or if the Contractor fails to make a payment which is properly due to a particular Subcontractor, the Owner may pay each Subcontractor directly less the amount to be retained under the Subcontract. Any amount so paid by the Owner shall be repaid to the Owner by the Contractor in the manner set forth in Subparagraph 2.4

§5.5.3 The Owner shall have no obligation to pay or see to the payment of any monies to any Subcontractor. Nothing contained in Article 5.5 shall be deemed to create any rights in any Subcontractor against the Owner.

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

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

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the 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.

*(Paragraph deleted)*

## § 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 report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor.

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

*(Paragraph deleted)*

## § 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 not relieve the Contractor of obligations under the contract.

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

## § 7.2 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 an amount of the adjustment, if any, in the Contract Sum; and
- .3 the extent of an adjustment, if any, in the Contract Time.

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

## § 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

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect 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.

*(Paragraphs deleted)*

§ 7.3.9 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.

## § 7.4 CHANGE ORDERS

§ 7.4.1 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 change in the Work; and/ or
- .2 an amount of the adjustment, if any, in the Contract Sum; and/or
- .3 the extent of an adjustment, if any, in the Contract Time.

§ 7.4.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

## § 7.5 MINOR CHANGES IN THE WORK

§ 7.5.1 The Architect with concurrence from the Owner will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the purposes of the building and the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

## ARTICLE 8 TIME

### § 8.1 DEFINITIONS

§ 8.1.1 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.

§ 8.1.2 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.

### § 8.2 PROGRESS AND COMPLETION

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work. .

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.4 Should the progress of the Work be delayed by any fault, neglect, act or omission of the Contractor or any person or firm employed by him or should it be necessary to complete the Work within the time permitted for the Contractor's work, the Contractor shall, at its own cost and expense, work such overtime as may be necessary to make up for all time lost and to avoid delay in completion of the Work. The Contractor shall compensate the Owner for and hold him harmless against any and all costs, expenses, reasonable attorney's fees, losses, liability, and damages that the Owner may sustain or incur by reason of such delay.

### § 8.3 DELAYS AND EXTENSIONS OF TIME

*(Paragraph deleted)*

§ 8.3.1. Requests for extension of completion time due to conditions over which the Contractor has no control, will be reviewed by the Owner after written application is made to the Architect for a time extension. Any request for any extension of time is to be made within 21 days of occurrence of conditions which, in the opinion of the Contractor

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warrant such an extension, with reasons clearly stated and detailed proof given for all delays beyond the Contractor's control. No time extension will be allowed except by written and specific approval of the Owner. Delays beyond the Contractor's control may include: an act or neglect of the Owner's own forces, Architect, any of the other Contractors, or an employee of any of them, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes beyond the Contractor's control, or by delay authorized by the Owner.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

*(Paragraph deleted)*

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

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

### § 9.2 SCHEDULE OF VALUES

§ 9.2.1 Before the first Requisition for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Requisitions for Payment.

### § 9.3 REQUISITION FOR PAYMENT

§ 9.3.1 The Contractor shall prepare and submit three original copies to the Architect on the 25<sup>th</sup> day of each month itemized "Requisition for Payment" (IAC PSCP Form 306.4 Standard Contractor's Requisition for Payment and such other forms as may be designated by Owner) for operations completed in accordance with the Schedule of Values for the value of the work completed or anticipated to be completed through the last day of such month, including the value of material suitably stored at the Project Site or other approved locations as provided in Subparagraph 9.3.2, less the aggregate of any previous payments and retainages and less retainages required by the Contract Documents. No change in the Contract Sum shall be made by Contractor on any Requisition for Payment without an approved Change Order. Faxed Requisitions for payment will NOT be accepted.

At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

*(Paragraphs deleted)*

§ 9.3.2 As provided in Section 7.3.8, such Requisitions may include requests for payment on account of changes in the Work which have been properly authorized by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.3 Such Requisitions may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

9.3.4 Upon completion of fifty percent (50%) of the work and provided that the Contract work is on schedule and the Contractor's performance is deemed by the Owner to be satisfactory, the Owner may at his discretion decline to withhold further retainage on the remainder of the work to be billed. If Project schedules are not pursued diligently, or if the Contractor's work is at any time deemed by the Owner to be unsatisfactory, the withholding of the further retainage up to ten percent (10%) of the Contract value may be reinstated by the Owner at its discretion. If the Contractor intends to request a reduction of retainage as stated above, the Contractor must submit a request 30 days prior to invoicing the Owner for a reduction. A consent of surety to a reduction of retention along with a justification of the progress on the job in relation to the overall Project must be submitted. A complete labor and material schedule of values for all aspects of the work must also be submitted with the request for approval.

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§ 9.3.5 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. . When the Requisition for Payment includes material or equipment stored off the Project site, the Contractor shall include with the requisition a certified statement including

1. Description of items,
2. Bill of Sale,
3. Location of storage facility and delivery receipt,
4. Items are currently covered by all contractual requirements, including liability and fire insurance,
5. Items, or any part thereof will not be installed in other construction projects other than work under this Contract.

§ 9.3.6 The Contractor warrants that title to all Work covered by a Requisition for Payment shall pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of a Requisition for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. Contractor shall indemnify and hold Owner harmless from any liens, claims, security interests, or encumbrances claimed by Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and/or equipment relating to the Work and from all costs and expenses, including reasonable attorney's fees, incurred by Owner in connection therewith.

§ 9.3.7 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

#### § 9.3.8 Deleted

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

### § 9.4 CERTIFICATES FOR PAYMENT

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

§ 9.4.2 The Architect shall endeavor to obtain approval by the Owner, and Contractor of the draft Requisition for Payment. If approval is obtained, the Architect shall notify the Owner, and Contractor, and shall issue a Project Certificate of Payment. The Contractor shall then submit five (5) copies of the agreed upon Requisition for Payment to the Architect which shall be signed by the Contractor, Owner, and Architect, and shall be notarized. If approval is not obtained of the draft Requisition for Payment, the Architect shall notify the Contractor of non-approval. The Architect shall issue a Project Certificate for Payment to the Owner with a copy to the Contractor for such amounts as the Architect, and Owner determine are properly due.. The Contractor shall then submit a Requisition for Payment pursuant to such Project Certificate for Payment, if any, in five (5) copies based on the Architect's determination. The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner,

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based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has

- (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work,
- (2) reviewed construction means, methods, techniques, sequences or procedures,
- (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or
- (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.4.3 In any event, where the Owner, and Architect do not certify payment or withhold certification to any extent, the Contractor shall nonetheless continue to perform the Work fully.

## § 9.5 DECISIONS TO WITHHOLD CERTIFICATION

*(Paragraphs deleted)*

§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 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 another 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 persistent failure to carry out the Work in accordance with the Contract Documents.

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

*(Paragraph deleted)*

## § 9.6 PROGRESS PAYMENTS

*(Paragraphs deleted)*

§ 9.6.1 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.

§ 9.6.2 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.

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

§ 9.6.4 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.1, 9.6.2 and 9.6.3.

§ 9.6.5 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.

§ 9.6.6 Under no circumstances shall the Contractor assign to any person or entity the Contractor's right to receive payment under the Contract Documents, unless the Contractor has received express, prior written consent of the Owner, which consent specifically identifies the identity of such assignee. Nothing contained in these Contract Documents shall require the Owner to approve such an assignment of payments by the Contractor to a third party.

§ 9.6.7 Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

#### § 9.7 FAILURE OF PAYMENT

§ 9.7.1. If the Architect should fail to issue notice of approval or disapproval within fourteen (14) days of Owner's receipt of the Contractor's draft Requisition for Payment, or if, through no fault of the Contractor, the Architect does not issue a Project Certificate for Payment within seven (14) days after receipt of the Owner's approval or disapproval of the draft Requisition for Payment, the Contractor may file a claim against the Owner for payment as provided in Article 15.

#### § 9.8 SUBSTANTIAL COMPLETION

*(Paragraph deleted)*

§ 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 the Owner can occupy or utilize the Work for its intended use; i.e., when the Owner is granted a "Use and Occupancy Permit" by Howard County and other Authorities having jurisdiction.

§ 9.8.2 When the Architect, and Owner agree that the project has reached "Substantial Completion" as set forth in Paragraph 9.8.1 and is on schedule, and it appears that there are no complications or problems in completing the job, the retainage may be reduced to five percent (5%) at the Owner's discretion.

9.8.3 Except as stated in Paragraph 9.8.2 after the payment due the Contractor at Substantial Completion has been made by the Owner, no other payment shall be made until the Project has been fully completed and the Contract fully performed.

*(Paragraph deleted)*

§ 9.8.4 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.

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§ 9.8.5 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.

§ 9.8.6 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, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.7 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such 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.

#### § 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.

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

§ 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 and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner,
- (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents,
- (4) consent of surety, if any, to final payment with AIA Form; and
- (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner and release of liens on the "Contractor's Affidavit of Release of Liens and Payment of Debts and Claims" AIA Form;

(6) all records, Drawings and Specifications, Addenda, Change Orders, and other modifications maintained at the site under the Subparagraph 3.11 all warranties, instructions, and maintenance manuals required.

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 or claim. If such lien or claim remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien or claim, including all costs and reasonable attorneys' fees incurred by Owner. Final payment to the Contractor shall not become due until all close-out documents have been properly submitted to and received by the Architect through the Construction Manager and certified to the Architect and delivered by the Architect to the Owner and all warranty work has been fully completed.

**§ 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 and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**§ 9.10.4**

*(Paragraphs deleted)*

**Deleted**

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

The making of final payment shall, after the Date of Substantial Completion of the Project, constitute a waiver of all claims by the Owner except those arising from:

1. Unsettled claims,
2. Faulty or defective work appearing after Substantial Completion of work,
3. Failure of the work to comply with the requirements of the Contract Documents,
4. Terms of any special warranties required by the Contract Documents; and
5. Reasonable attorney's fees, court costs, and litigation expenses incurred by the Owner in prosecuting any such claims against the Contractor or in defending against any claims against the Owner arising out of the Contract and the work thereunder.

**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, INJURY OR DAMAGE TO PERSON OR 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 or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

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

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

§ 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 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., except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

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

§ 10.2.7 The Contractor shall not load or permit any part of the construction site to be loaded so as to endanger its safety or the safety of persons or property. The Contractor shall protect adjoining properties, streets, walkways, sidewalks, and paths.

10.2.8 The Contract shall protect excavation and structures from damage by rain, water, ground water, or water from any other source. The Contract shall use tarpaulins, pumps, or other temporary protection to afford protection.

10.2.9 The Contractor shall provide constant protection to maintain work, materials, apparatus, and fixtures free from injury and damage by rain, snow, wind, storms, frost, or heat and shall cover work likely to be damaged at the end of each day's work.

10.2.10 The Contractor shall remove work damaged due to failure to provide specified protection and replace such removed work at no additional cost to the Owner.

10.2.11 Material Safety Data Sheets: Contractor shall provide Material and Data Safety Sheets on all items prior to commencement of Work. The Contractor shall designate a common location on the construction site where all independent contractors or employers shall have a chemical information list before the commencement of work.

#### § 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

*(Paragraph deleted)*

#### § 10.3 HAZARDOUS MATERIALS

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

§ 10.3.2 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 verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately.

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

*(Paragraphs deleted)*

#### § 10.4 EMERGENCIES

*(Paragraph deleted)*

§ 10.4.1 In any case of an emergency, the Contractor shall immediately notify the Architect and the Owner by the most expeditious means available, followed by a Fax, or written notice, explaining the situation and actions taken.

§ 10.4.2 Additional compensation or extension of time will not be considered or permitted for emergencies arising from delay, damage, or loss as stipulated in 8.2.4 and 10.2.5 or other applicable provisions.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.2 GENERAL INSURANCE REQUIREMENTS

§11.2.1 The Contractor shall not commence Work until the Contractor has obtained at the Contractor's own expense all of the insurance as required under this Contract and until such insurance has been approved by the Owner. The Contractor shall not allow any Subcontractor to commence work on any subcontract until all insurance required of the Subcontractor has been so obtained and approved by the Contractor. Approval of insurance required of the Contractor will be granted only after submission to the Owner of original certificates of insurance signed by authorized representatives of the insurers or, at the Owners request, certified copies of the required insurance policies. **Additionally, the Contractor must submit with the original certificates or certified policies, the enclosed Contractor's Insurance Checklist form (See Construction Insurance Check List attached to and incorporated into this Contract as Exhibit A.) completed by the Contractor and each of the Contractor's Insurance Agents or Contractor's Insurers (one form for each agent or insurer if multiple agents or insurers write the Contractor's coverages).**

§11.2.2 Insurance as required under this Contract shall be in force throughout the term of this Contract and for two years after final acceptance of the Project by Owner. Original certificated signed by authorized representatives of the insurers or, at the Owner's request, certificated copies of insurance policies, evidencing that the required insurance is in effect, shall be maintained with the Owner throughout the term of the Contract and for two years after final acceptance of the Project by Owner.

§11.2.3 The Contractor shall require all Subcontractors to maintain during the term of the Contract commercial general liability insurance, business auto liability insurance, and workers compensation and employers liability insurance and umbrella excess or excess liability insurance to the same extent required of Contractor in Sections 11.3.1.1 through 11.3.1.4 of this Contract unless any such requirement is expressly waived or amended by the Owner in writing. The Contractor shall furnish Subcontractor's certificates of insurance to the Owner immediately upon request.

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**§11.2.4** All insurance policies required under this Contract shall be endorsed to provide that the policy is not subject to cancellation, non-renewal, or material reduction in coverage until sixty (60) days prior written notice has been given to the Owner. Therefore, the phrases "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" are to be eliminated from the cancellation provision of standard ACORD certificates of insurance.

**§11.2.5** Acceptance and/or approval of any insurance by the Owner shall not be construed as relieving or excusing the Contractor or the Contractor's Surety from any liability or obligation imposed upon either or both of them by the provisions of this Contract or the Contract documents.

**§11.2.6** If the contractor does not meet the insurance requirements of this Contract, the Contractor shall be in default under this Contract, and all default remedies shall be available to the Owner; moreover, no Work shall commence without such insurance, and, if Work has commenced, it shall cease immediately until the insurance requirements have been met or unless the Owner orders in writing that Work shall commence with specified alternate insurance as determined in the sole and absolute discretion of the Owner and set forth in the written order to commence or return to work signed by the Owner. The Contractor may forward a written request to the Owner for a waiver in writing of the insurance requirement(s) not met or for approval in writing of alternate insurance coverage, self-insurance, or group self-insurance arrangements. If the Owner denies the request, the Contractor shall comply with the insurance requirements as specified in this Contract or be held in default under this Contract. The Owner shall have the sole and absolute discretion to grant or deny such a request for a waiver, and the Owner's decision shall be final and binding upon all parties and shall not be subject to appeal or review.

**§11.2.7** All required insurance coverages must be underwritten by insurers licensed to do business in the State of Maryland and acceptable to the Owner. The insurers must also have a policyholders' rating of "A" or better, and a financial size of "Class VII" or better in the latest evaluation by A.M. Best company, unless Owner grants specific written approval for an exception. The Owner hereby grants specific approval for the acquisition of workers compensation and employers liability insurance from the Injured Workers Insurance Fund of Maryland.

**§11.2.8** Any deductibles or retentions in excess of \$10,000 shall be disclosed by the Contractor and shall be subject to Owner's written approval. Any deductible or retention amounts elected by the Contractor or imposed by the Contractor's insurer(s) shall be the sole responsibility of the Contractor.

**§11.2.9** Any and all return premiums and/or dividends for insurance or coverage directly charged to the Owner by the Contractor in connection with this Contract shall belong to and be payable to the Owner.

**§11.2.10** If the Owner is damaged by the failure or neglect of the Contractor to purchase and maintain insurance as described and required in this Contract, then the Contractor shall be in default under this Contract, shall bear all liability for all damages incurred, and shall be subject to the remedies under Article 14.

### **§ 11.2.11 Owner's Liability Insurance**

**§11.2.11.1** Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance, or solely at the Owner's option, the Owner may self-insure the Owner's liability exposures.

### **§11. 3 Contractor's Liability Insurance**

**§ 11.3.1** The Contractor shall purchase and maintain the following insurance coverages which will insure against claims which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone, directly or indirectly, employed by any of them, or by anyone for whose acts any of them may be liable. Insurance shall be written for not less than the limits specified below or required by law, whichever is greater.

**§11.3.2** Commercial general liability insurance or its equivalent for bodily injury, personal injury and property damage including loss of use, with minimum limits of:

- \$ 1,000,000 each occurrence;
- \$ 1,000,000 personal and advertising injury;
- \$ 2,000,000 general aggregate; and

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\$ 2,000,000 products/completed operations  
aggregate.

This insurance shall include coverage for all of the following:

- i. General aggregate limit applying on a per project basis;
- ii. Liability arising from premises and operations;
- iii. Liability arising from the actions of independent contractors;
- iv. Liability arising from products and completed operations with such coverage to be maintained for two years after final acceptance of the project by the Owner;
- v. Contractual liability including protection for the Contractor from bodily injury and property damage claims arising out of liability assumed under this Contract; and
- vi. Liability arising from the explosion, collapse, or underground (XCU) hazards.

*(Paragraph deleted)*

**§11.3.3** Business auto liability insurance or its equivalent with a minimum limit of \$1,000,000 per accident and including coverage for all of the following:

- i. Liability arising out of the ownership, maintenance, or use of any auto; and
- ii. Automobile contractual liability.

**§11.3.4** Workers compensation insurance or its equivalent with statutory benefits as required by any state or Federal law, including standard "other states" coverage; employers liability insurance or its equivalent with minimum limits of:

- \$ 100,000 each accident for bodily injury by accident
- \$ 100,000 each employee for bodily injury by disease; and
- \$ 500,000 policy limit for bodily injury by disease.

*(Paragraphs deleted)*

**§11.3.5** Contractor's pollution liability insurance or its equivalent for bodily injury, property damage, including loss of use, and clean-up costs on and off the Project site, with minimum limits of:

- \$ 1,000,000 each pollution incident; and
- \$ 1,000,000 annual aggregate.

The insurance shall include coverage for all of the following:

- i. Liability arising from activities of the Contractor or of others for whom the Contractor is legally obligated whether on or off the Project site; and
- ii. Contractual liability including protection for the Contractor from claims for bodily injury, property damage, and clean-up costs arising out of liability assumed under this Contract.

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**11.3.6** Umbrella excess liability or excess liability insurance or its equivalent with minimum limits of:

- \$ 5,000,000 occurrence;
- \$ 5,000,000 aggregate for other than products/completed operations and auto liability; and
- \$ 5,000,000 products/completed operations aggregate

and including all of the following coverages on the applicable schedule of underlying insurance:

- i. Commercial general liability;
- ii. Business auto liability; and
- iii. Employer's liability.

**§11.3.7** Owner and Owner's elected and appointed officials, officers, consultants, agents and employees shall be named as additional insureds on the Contractor's commercial general liability insurance and umbrella excess or excess liability insurance policies with respect to liability arising out of the Contractor's products, installation, and/or services provided under this Contract. Such coverage shall extend to cover the additional insured(s) for liability arising out of the following:

- i. On-going operations;
- ii. Owner's general supervision of installation and/or services as provided by the Contractor and/or its agents and subcontractors pursuant to this Contract; and
- iii. Products and completed operations.

The commercial general liability policy and the umbrella excess liability or excess liability policies must include additional insured language, which shall afford liability coverage for all of the exposures listed above in i., ii., and iii., as follows:

"This policy is amended to include as insureds Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees, but only for liability arising out of "your product" and "your work" for Owner by or for you."

**Special Note: ISO forms CG 2009 and CG 2010 entitled "Additional Insured – Owners, Lessees or Contractors – Scheduled Person or Organization" (previously Forms A and B respectively) and CG 2033 entitled "Additional Insured – Owners, Lessees or Contractors – Automatic Status When Required in Construction Agreement with You" are NOT ACCEPTABLE. A manuscript endorsement with the above wording is required.**

*(Paragraph deleted)*

**§ 11.3.8** Insurance or self-insurance provided to the Owner and Owner's elected and appointed officials, officers, consultants, agents and employees under the Contractor's liability insurance or self-insurance required in this Contract, including, but not limited to, umbrella and excess liability or excess liability policies, shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of insurance or self-insurance. (Any cross suits or cross liability exclusion shall be deleted from Contractor's liability insurance policies required herein.)

**§11.3.9** Any insurance or self-insurance required to be provided by the Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees shall be primary, and any other insurance, self-insurance, coverage or indemnity available to the Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees shall be excess of and non-contributory with insurance or self-insurance provided to the Owner and Owner's elected and appointed officials, officers, consultants, agents, and employees.

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*(Paragraph deleted)*

**§11.3.10** If any liability insurance purchased by the Contractor has been issued on a "claims made" basis, the Contractor shall comply with the following additional conditions:

- i. The Contractor shall agree to provide certificates of insurance evidencing the above coverages for a period of two years after final payment for the Contract. Such certificates shall evidence a retroactive date no later than the beginning of the Work under this Contract; or
- ii. The Contractor shall purchase an extended (minimum two years) reporting period endorsement for each such "claims made" policy in force as of the date of final acceptance of the project by the Owner and evidence the purchase of this extended reporting period endorsement by means of a certificate of insurance or a copy of the endorsement itself. Such certificate or copy of the endorsement shall evidence a retroactive date no later than the beginning of the Work under this Contract.

*(Paragraph deleted)*

**§ 11.4 Builders Risk Insurance (Owner to Purchase)**

**§ 11.4.1** The Owner shall purchase and maintain builders risk insurance on a replacement cost basis with a limit at least equal to the initial Contract Sum. This insurance shall be maintained until final acceptance of the Project by the Owner or until no person or entity other than the Owner has an insurable interest in the covered property, whichever is earlier. This builders risk insurance shall include the interests of the Owner, Subcontractors and Sub-subcontractors in the Project.

*(Paragraphs deleted)*

**§11.4.2** Insurance shall be on an "all-risk" or equivalent policy form and shall insure against the perils of fire, extended coverage, theft, vandalism, malicious mischief, collapse and windstorm. Coverage is to apply for debris removal, including demolition occasioned by a covered loss. This insurance shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such covered loss. Coverage for other perils such as flood and earthquake or for loss caused by the enforcement of any applicable ordinance or law shall not be required unless otherwise provided in the Contract.

**§ 11.4.3** This builders risk insurance shall cover all of the following types of property:

- i. All structures to be constructed, under construction, and/or already constructed;
- ii. All materials, equipment, machinery and supplies which are to be incorporated into the Project;
- iii. Temporary structures of any nature whatsoever; and
- iv. Underground property, including but not limited to, foundations, pump stations, pumps, pipes, drains, tanks and connections.

*(Paragraph deleted)*

**§11.4.4** The Contractor shall be responsible for payment of any deductibles applicable under this builders risk insurance, boiler and machinery insurance, or other property insurance applicable to the Project.

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§ 11.4.5 Unless otherwise provided in the Contract Documents, this builders risk insurance shall cover materials to be incorporated into the Project, which are either on or off the site, and also such materials in transit.

*(Paragraph deleted)*

§ 11.4.6 This builders risk insurance shall insure (or shall be amended to insure) against loss or damage caused by the boiler and machinery perils with limits and scope of coverage that are deemed by the Owner to be satisfactory. This insurance shall also include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project.

*(Paragraph deleted)*

§ 11.4.7 The Owner and Contractor waive all rights against each other and against the Construction Manager, Owner's other Contractors and own forces described in Article 6, if any, and the subcontractors, sub-subcontractors, (elected and appointed officials, officers, directors, trustees, agents, employees and consultants) of any of them for property damage to or loss of use of the Work to the extent that such property damage or loss of use is covered by this builders risk insurance, boiler and machinery insurance, or other property insurance applicable to the Work. The policies shall provide such waivers of subrogation by endorsement or otherwise.

*(Paragraph deleted)*

§ 11.4.8 Any loss covered under this builders risk insurance, boiler and machinery insurance, or other property insurance applicable to the Work shall be payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to any mortgagee clause. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

*(Paragraph deleted)*

§ 11.4.9 Owner, as fiduciary, shall have the power to adjust and settle a loss with insurers.

*(Paragraphs deleted)*

§ 11.4.10 Partial occupancy or use in accordance with the provisions of the Contract that pertain to partial occupancy or use shall not commence until the builders risk insurer has granted permission by endorsement or otherwise for the Owner to partially occupy or use any completed or partially completed portion of the Work at any stage of construction. The Owner and Contractor shall take reasonable steps to obtain such permission.

*(Paragraphs deleted)*

§ 11.4.11 The insurance required by this Paragraph 11.4 is not intended to cover machinery, tools, or equipment owned or rented by the Contractor or its Subcontractors, which are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor and its Subcontractors shall, at their own expense, purchase and maintain property insurance coverage for owned, leased, or rented machinery, tools or equipment. The Contractor and its Subcontractors hereby waive all rights against the Owner and its elected and appointed

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officials, officers, agents, employees, and consultants for property damage to or loss of use of such machinery, tools, or equipment. The policies shall provide such waivers of subrogation by endorsement or otherwise.

### **§11.5 Miscellaneous Insurance**

**§11.5.1** The Contractor shall comply with the provisions of Federal law governing Social Security and with State and/or Federal laws regarding Unemployment Insurance, and all other State and/or Federal laws regarding insurance, as may be now and hereafter in force. The Contractor shall bear exclusive and sole liability for and will hold the Owner harmless against any and all demands for any required payments, taxes, or withholdings (including any interest or penalties assessed thereon) for the Contractor's (or any of its Subcontractor's) failure or refusal to comply with any such laws. Failure to comply shall be deemed a default subject to the remedies of Article 14.2.

### **§ 11.6 PERFORMANCE BOND AND PAYMENT BOND**

**§ 11.6.1** The Contractor shall furnish a Performance Bond and Labor and Materials Payment Bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder and complying with the requirements of Maryland Law. Both bonds shall be in the amount of one hundred percent (100%) of the Contract amount and shall name the Howard County Board of Education as Obligee.

#### **§ 11.6.2**

Bonds shall be written by a bonding company that must be licensed with the Maryland Insurance Administration to do business in the State of Maryland and otherwise acceptable to the Howard County Public School System. The Contractor shall use Bond Forms provided by the Owner AIA 312 Performance Bond and AIA 312 Labor and Material Payment Bond, in order to satisfy the Bond requirements referenced in this Article.

**§ 11.6.3** Firms issuing said bonds must be licensed to write bonds in the State of Maryland. The Contractor shall pay the premiums for required bonds. Obtainage of the required bonds by Contractor shall be a condition precedent to effectuation of the Contract between Owner and Contractor. If additional work is authorized, the amounts of the bonds shall be increased to cover the value of the increased Contract sum. All bonds shall conform to the requirements of the Maryland Little Miller Act. All bonds shall be subject to Owner's approval.

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

*(Paragraphs deleted)*

**§ 11.3.5** Owner reserves the right to request from Contractor financial statements for the Contractor for up to 3 prior fiscal years.

**§ 11.3.6** To protect the public interest the Owner will request a D & B report on the Contractor at any time during the term of the project. Should the D & B rating fall below the awarded rating, Contractor shall advise Owner of their corrective measures.

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

### **§ 12.1 UNCOVERING OF WORK**

**§ 12.1.1** If any portion of the Work is covered contrary to the request of the Architect, or the requirements specifically expressed in the Contract Documents, it must, if required in writing by either, the Owner or any other government agency, be uncovered for their observation and shall be replaced at the Contractor's expense without change in the Contract Time If a portion of the Work is covered contrary to the Architect's request or to requirements specifically

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expressed in the Contract Documents, it must, if required 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, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense.

## § 12.2 CORRECTION OF WORK

§12.2.1 Defective work shall include but not be limited to Work which may be caused by deterioration or failure to perform due to premature wear (not occasioned by abuse) or inherent defects in materials, workmanship of manufacturer or fabrication or improper execution of work

§12.2.2 Cost of correcting such rejected work also includes all contingent damages arising there from including damages to other work (whether installed by the Contractor or another) and to other property of the Owner.

§12.2.3 Such warranties as provided herein do not deprive the Owner of the Owner's right to prosecute any claim for breach of contract and/or any other claim for appropriate relief and damages.

§12.2.4 Any defective or nonconforming work during this period causing a hazard to life, safety, property, or use causing the Owner a financial loss shall be corrected immediately without regard to normal working hours. The Owner will immediately endeavor to provide telephone notice to the Contractor on the next normal working day.

§ 12.2.5 The Owner shall direct, if endeavors to contact the Contractor fail, certain telephone notification to Subcontractors in order to expedite emergency repairs. The Contractor shall not be relieved of responsibility by the procedure, and the Contractor shall supervise and direct correction of defects as required by the Contract Documents.

§12.2.6 The manufacturer of a product may be specifically mentioned as a party to a warranty. Then in such cases, it shall be the Contractor's obligation to produce the required warranty of the manufacturer and submit it to the Architect for examination and approval. Inclusion of a manufacturer as a party to a warranty does not relieve the Contractor from the requirements of the Contract Documents.

§12.2.7 Warranties on operating systems, equipment, or components placed in operation prior to Substantial Completion or acceptance shall begin on the date of Substantial Completion.

## § 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

## § 12.2.2 AFTER SUBSTANTIAL 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 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 an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition.

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During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

*(Paragraphs deleted)*

§ 12.2.2.4 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.

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

§ 12.2.2.6 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 laws of the State of Maryland and shall be construed in accordance with such laws.

#### § 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 such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

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

#### § 13.3 WRITTEN NOTICE

§13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

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§13.3.2 All Contractor proposals, approvals, instruction, requests, claims, demands, and other notices shall be made in writing on Contractor's stationery; meeting minutes and FAX transmissions will not be considered written notice from Contractor.

## § 13.4 RIGHTS AND REMEDIES

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

*(Paragraph deleted)*

§13.4.2 In any claim and/or litigation filed by the Owner against the Contractor to enforce any provision of this Contract, the Owner shall be entitled to all reasonable attorney's fees, expenses, damages, litigation expenses, and court costs incurred in and/or resulting from any such claim and/or litigation. In any claim and/or litigation brought by the Contractor against the Owner and/or its agents, the Contractor shall bear the Owner's court costs, expenses, and reasonable attorney's fees incurred, unless the Court specifically determines as a matter of fact and law that the Owner, knowingly, willfully, and intentionally breached a provision of this Contract giving rise to Contractor's claim and resulting damages

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

## § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 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.

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

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

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

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

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

**§ 13.6 INTEREST**

**§ 13.6.1** No interest shall be paid by the Owner to the Contractor.

**§ 13.7 TIME LIMITS ON CLAIMS, COMMENCEMENT OF STATUTORY LIMITATION PERIOD**

**§ 13.7.1** Contractor recognized and agrees that Owner is a governmental agency and that the statute of limitations is not applicable to claims and/or litigation filed by the Owner. Limitations as to time for filing of any claims, disputes, and/or litigation by the Contractor, or any person or entity claiming by, through, or on behalf of the Contractor, shall be as specified in Article 15.

**13.8 BUY AMERICAN STEEL**

**§13.8.1** Contractor shall comply with the Buy American Steel Act Sections 17-301 to 17-306 of the Finance and Procurement Article of the Annotated Code of Maryland.

**§13.8.2** Contractor shall be required to use or supply the domestic steel products unless the cost is unreasonable or inconsistent with the public interest.

**ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT**

**§ 14.1 TERMINATION BY THE CONTRACTOR**

**§ 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 or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

*(Paragraphs deleted)*

**§ 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' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed.

*(Paragraph deleted)*

**§ 14.2 TERMINATION BY THE OWNER FOR CAUSE**

**§ 14.2.1** The Owner may terminate the Contractor's employment under this Contract if the Contractor:

- .1 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents such as, but not limited to:
  - (1) Failure to maintain progress in accordance with project schedule;
  - (2) Prevents other Contractors from meeting their scheduled progress;
  - (3) Performs work in a negligent or defective manner or in a manner contrary to the Contractor Documents;
  - (4) Failure to provide and maintain the required insurance coverage and the required bonds;
  - (5) Filing of bankruptcy proceedings by or against the Contractor and/or the filing of an assignment for the benefit of Contractor's creditors; and/or
  - (6) Breach of any provision of the Contract Documents.

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§ 14.2.2 When any of the above reasons exist, 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' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and 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.

.4 When the Owner terminated the Contractor for one of the reasons stated in Subparagraph 14.2.1 and invokes the Performance Bond to complete the Work, the surety shall not without the written consent of the Owner, retain the Contractor for the Work, and the Contractor shall not without written consent of the Owner perform any of 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. In the event the Owner elects to terminate the Contractor's employment under this Contract, the Contractor shall only be entitled to be paid for work under the Contract actually completed by the Contractor up to the date of Contractor's termination less deductions for

(1) the cost of correcting any deficient or defective work, including compensation for the Construction Manager and Architect and their respective consultants' additional services and expenses made necessary by the Contractor's defective work, default, neglect, or failure to perform under this Contract;

(2) damages incurred by the Owner as a result of the Contractor's breach, including but not limited to the costs to finish the work and damages for delay, if any, in completing the work under the Contract;

(3) actual reasonable attorney's fees incurred by the Owner in obtaining legal advice, counsel, and/or representation relating to the issues of Contractor's breach of contract, defective work, default, neglect, or failure to perform and Owner's legal options relating thereto as well as any other reasonable attorney's fees due to Owner under other provisions of this Contract; and

(4) such other amounts due and owing to Owner under the terms and conditions of the Contract documents. In the event the Contractor is terminated pursuant to Article 14.2, the Contractor shall not be entitled to any remaining funds under the Contract, except as specifically provided above and subject to the availability of funds after all work is completed.

All remaining unpaid funds in the Contract as of the date of Contractor's termination shall be the sole and exclusive property of the Owner, and the Contractor shall be paid by the Owner at the conclusion of all work under the Contract as provided above, but only to the extent that there are funds remaining after all payments have been made first to complete the work under the Contract and to compensate the Owner as provided above in the (4) enumerated deductions in this Article 14.2.3. Any funds still remaining after payment for all work and after payment of the Contractor as provided above shall be the sole and exclusive property of the Owner.

§ 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 payment of the four (4) enumerated deductions in Article 14.2.3 other damages incurred by the Owner and not expressly waived, such excess shall be the sole and exclusive property of the Owner. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor if any, for work completed by the Contractor less the deductibles provided in Paragraph 14.2.3) shall be determined by the Owner, and this obligation for payment shall survive termination of 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.

*(Paragraphs deleted)*

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

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

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

### ARTICLE 15 CLAIMS AND DISPUTES

#### § 15.1 CLAIMS

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of 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 (and any person or entity claiming by, through, or on behalf of Contractor) arising out of or relating to the Contract. Claims must be initiated by written notice, on Contractor's stationary, Meeting minutes and Fax transmissions from the Contractor will not be considered written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 Decision of Architect. Any claim, dispute, or other matter in question between the Contractor and the Owner shall be made in writing to the Architect except those relating to artistic effect as provided in Subparagraph 4.2.13 and those which have been waived by the making or acceptance of final payment as provided in Article 9. The Architect shall provide each party with ample opportunity to present its evidence with respect to the claim made, and the Architect shall render his decision on the claim not less than ten (10) days after the close of evidence before the Architect. The decision of the Architect may be appealed by litigation in the Circuit Court of Howard County as provided below. However, no litigation of any such claim, dispute or other matter may be made until the earlier of (1) the date on which the Architect has rendered a written decision, or (2) the eleventh day after the parties have presented their evidence to the Architect or have been given a reasonable opportunity to do so, if the Architect has not rendered a written decision by that date. With respect to all claims and/or disputes, the final written decision of the Architect shall be final and binding on the parties and on those claiming by, through, and/or on behalf of any such party, person, or entity who had the right to do so, and failed to do so, unless the final written decision of the Architect as to any such claim and/or dispute is appealed to the Circuit Court for Howard County by a party within thirty (30) days after having received the Architect's final written decision. In any such appeal of the Architect's final written decision, it shall be presumed that the Architect's decision is correct, and the Architect's decision shall be treated and regarded in the same manner in which an arbitrator's award would be treated and regarded by a Maryland court under Maryland's Uniform Arbitration Act, subject, however, to the procedural requirements specified in the Contract documents. The failure to appeal the Architect's final written decision within the aforementioned thirty (30) day period shall result in the said decision becoming final and binding on all parties as provided above. The Circuit Court for Howard County, Maryland, shall be the sole and exclusive jurisdiction for appealing any final written decision of the Architect. If the Architect renders a decision after litigation proceedings have been filed, such decision may be entered as evidence but will not supersede any litigation proceedings unless the decision is acceptable to all parties concerned.

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§ 15.1.3 Time Limits on Claims. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Architect and the other party.

§ 15.1.4 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. Except the Owner may withhold payment to the extent reasonably necessary to secure or compensate for a claim. This Article 15.1.4 shall not apply if the Owner has terminated the Contractor's employment pursuant to

§ 15.1.5 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. 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 so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Section 4.4.

*(Paragraphs deleted)*

§ 15.1.6

*(Paragraphs deleted)*

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

§ 15.1.7 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Section 15.1

§ 15.1.8 Claims for Additional Time

§ 15.1.8.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice shall be made in writing to the Architect not more than twenty-one (21) days after the commencement of the delay, otherwise it shall be waived.

§ 15.1.8.2 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. . In establishing the time of construction completion, the weather conditions as recorded by the National Oceanic Atmospheric Administration (NOAA) at the National Climatic Data Center, Ashville, North Carolina over the past five (5) years will be taken into consideration. No extension of time, due to weather conditions, will be considered unless accompanied by NOAA documentary evidence showing by comparison that such weather is abnormal to the statistical mean of the past five (5) years and that such abnormality caused the delay.

§ 15.1.8.3 Injury or Damage to Person or Property. If either party to the Contract 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,

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written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

## § 15.2 RESOLUTION OF CLAIMS AND DISPUTES

### § 15.2.1 Litigation

§ 15.2.1 Any Claim arising out of or related to the Contract. Any controversy or Claim arising out of or related to the Contract, or the breach thereof, shall be resolved finally by litigation in the Circuit Court of Howard County, Maryland, provided, however, that the provisions of this Article 15.2.1 authorizing litigation in court shall not be exercised by any party until the provisions of Article 15.1.2 shall have been complied with and exhausted. No party shall be entitled to litigate any dispute and/or claim unless and until that party has fully complied with the provisions of Article 15.1.1. The failure of any party to adhere to and comply with the provisions of Article 15.1.1 shall serve as a bar to that party's litigating a claim and/or dispute in court.

§ 15.2.2 Claims and Timely Assertion of Claims. Since the Owner is a public body, politic and corporate, its claims shall not be barred by any contractual period of limitations or by any statute of limitations. Claims by the Contractor shall be filed as provided in Article 15 (Claims and Disputes), and the time limits prescribed in Article 15 shall serve as a limitation upon filing of any and all claims and/or litigation by the Contractor and/or any person or entity claiming by, through, or on behalf of the C§15.2 Policies of Employment.

### 15.3 Policies of Employment.

*(Paragraphs deleted)*

#### §15.3.1 The Contractor shall maintain policies on employment as follows:

1. The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, religion, sex, national origin, or age. Such action shall include but not be limited to the following:

Employment, upgrading demotion or transfer, recruitment or recruitment advertising layoff or termination rates or pay or other forms of compensation and selection for training including apprenticeship.

The Contractor shall post in conspicuous places available to employees and applicants for employment notices setting forth the policies of non-discrimination.

§15.3.2 The Contractor and all Subcontractors shall in all solicitations or advertisements for employees placed by them or on their behalf state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin, or age.

§15.3.3 Minority Business Enterprise (MBE) Requirements are a part of the Conditions of the Contract, including Exhibits A, B, and C included with Form of Proposal.

## ARTICLE 16 CONTRACTOR PERFORMANCE EVALUATION SCORECARD

Upon completion of a project or at any time during the project, the awarded contractor shall receive a performance evaluation scorecard rating the contractor's performance on the project. The evaluation scorecard will become part of the contractor's permanent file. A sample Contractor Performance/Evaluation Scorecard is included with the bid documents.

The evaluation scorecard shall include the following performance indicators; Quality of Work, Responsiveness, Professionalism, Resources, Schedule Management, Quality Control, Deficiency Resolution, Submittal Management, Training, Appearance, Security, Safety, Utility Conservation, Disruptions, Quality of Materials, Emergency

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Contractual Liability	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per accident or claim		

**3. Workers Compensation and Employers Liability**

Insurer (precise name as per policy, not group name)		
Best's Rating and Financial Size		
Statutory benefits as required by state or Federal law	yes	no
"Other States" coverage	yes	no
Employers liability	yes	no
Each accident limit		
Each employee limit-disease		
Policy limit-disease		
60 days notice of cancellation, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per accident or claim		

**4. Contractors Pollution Liability**

Insurer (precise name as per policy, not group name)		
Best's Rating and Financial Size		
Each Pollution Incident Limit		
Annual Aggregate Limit		
Other Limit(s)		
Coverage Form:	Claims Made	Occurrence
Covers Operations of Both Contractor and Subcontractors	yes	no
Contractual Liability	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention or Deductible		
Specify if Retention or Deductible applies per occurrence or claim		

**5. Umbrella Excess or Excess Liability**

Insurer (precise name as per policy, not group name)		
Best's Rating and Financial Size		
Coverage Form:	Umbrella and Excess	Straight Excess
Each Occurrence Limit		
General Aggregate Limit (for other than products/completed operations and auto liability)		
Products/Completed Operations Aggregate Limit		
Underlying Schedule of Insurance includes:		
Commercial General Liability	yes	no
Business Auto Liability	yes	no
Employers Liability	yes	no

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Owner included as an additional insured	yes	no
Individuals related to Owner included as additional insureds	yes	no
Manuscript additional insured wording per insurance requirements	yes	no
If no, additional insured coverage extends to cover liability arising out of:		
Owner's general supervision	yes	no
Products and completed operations	yes	no
Specimen of additional insured wording attached if other than manuscript wording in the insurance requirements	yes	no
No cross suits or cross liability exclusion	yes	no
Coverage for additional insureds is primary to Owner's coverage	yes	no
60 days notice of cancellation, nonrenewal, etc.	yes	no
Amount of Retention		
Retention applies per occurrence	yes	no

**INSURANCE AGENT'S OR INSURER'S STATEMENT**

I have reviewed the Contract's insurance requirements with the contractor named below. I hereby verify the above responses.

Name of Agent or Insurer:

Agency or Insurer Name:

Authorized Signature and Date:

Phone #:

Fax #:

E-mail:

**CONTRACTOR'S STATEMENT**

If awarded the contract, I will comply with the Contract's insurance requirements. I further agree to maintain property insurance on the machinery, tools and equipment which are owned, rented or leased by my firm and which are utilized in the performance of the services rendered under this Contract.

Contractor's Name:

Authorized Signature and Date:

Phone #:

Fax #:

E-mail:

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EXHIBIT A  
CHANGE ORDER REQUEST FORMAT

PROJECT NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

GENERAL CONTRACTOR: \_\_\_\_\_

SUBCONTRACTOR: \_\_\_\_\_

SUB-SUBCONTRACTOR: \_\_\_\_\_

C.O.R. ITEM OR WORK: \_\_\_\_\_

- I. DIRECT PAYROLL LESS FRINGES, INSURANCE, TAXES\*: \_\_\_\_\_
- II. FRINGES, TAX, INSURANCE BURDEN \_\_\_ % OF PAYROLL: \_\_\_\_\_
- III. TOTAL MATERIAL COSTS\*\*:
- IV. MATERIAL SALES TAX:
- V. EQUIPMENT RENTALS (ATTACH COPY OF INVOICE):
- VI. CONTRACTOR-OWNED EQUIPMENT\*\*:
- VII. PROFIT AND OVERHEARD 20% OF LINES I & III:
- VIII. 8% OF LINE V (ONLY WITH INVOICE COPY):
- IX. TOTAL ALL LINES:
- X. SUBCONTRACTORS COSTS (ATTACH BREAKDOWN):
- XI. 8% PROFIT & OVERHEAD ON SUBCONTRACTORS:
- XII. TOTAL LINES IX, X, & XI:
- XIII. BOND \_\_\_ % OF LINE XII:
- XIV. TOTAL COST OF WORK:

\*Provide Itemization of Labor Hours and Worker Classification

\*\*Provide Itemization.

Change Order Request Format is Required for each Portion of Change Order Request Submission.

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## EXHIBIT A

### DESCRIPTION

All change orders shall be submitted in the change order request format (see Exhibit A) as set forth below:

1. Attach an itemization of labor hours. A certified payroll affidavit may be required to substantiate labor rates. The cost of foreman and superintendents may be added only when the change order makes necessary the hiring of additional supervisory personnel or makes their employment for time in addition to that required by the basic contract.
2. Labor burden percentage costs shall include all fringes, taxes, insurance, liabilities, workmen's compensation, unemployment, and any additional cost associated as labor burdens. Labor burden percentage rates are subject to approval of the Owner and is not subject to profit and overhead.
3. Attach an itemization of all materials used listing unit prices and extended prices.
4. Attach an itemization of equipment used and rental rates. If equipment is a rental, attach copy of the rental invoice. Rental equipment and contractor-owned equipment costs shall include all costs associated with the equipment, i.e. transportation, set-up, gas, and oil. Rental rates shall not exceed rates established by local rental companies and "MEANS DATA" rates.
5. Profit and overhead shall be considered full reimbursement for any additional expenses caused by the change order work. The Contractor shall agree to 20% profit and overhead markup on work by his own forces and 8% profit and overhead mark up on Subcontractors work. Allowances for overhead shall include but not limited to the costs for use of, small tools and consumables; trucks and trucking costs; maintenance and/or operations of Contractor's regular established office, branch office, and other facilities; resident and/or non-actively engaged supervision; time keepers; clerk; stenographer; watchmen; cost of correspondence; increased item of warranty under the change.
6. Profit and overhead at 8% may be added to equipment which is rented.
7. Only the actual added costs of the bond may be added to the change order amount. No further markup shall be allowed.
8. Change order requests shall not be considered unless they are submitted in proper format with all required and requested supporting documentation. All portions of the change shall use the change order request format.
9. For all work to be performed by a Subcontractor/Subcontractors, the Contractor shall furnish the Subcontractors itemized proposal which shall contain original signatures by an authorized representative of the Subcontracting firm. If requested by the Owner or Architect, proposals from suppliers or other supporting data to substantiate the Contractor's or Subcontractor's cost shall be furnished.
10. On changes resulting in a credit to the Owner, the credit shall be the net cost without profit overhead and profit.
11. Change order costs shall not exceed unit pricing as provided if applicable by Contract Documents.

Init.

Upon completion of a project or at any time during the project, the awarded contractor shall receive a performance evaluation scorecard rating the contractor's performance on the project. The evaluation scorecard will become part of the contractor's permanent file. A sample Contractor Performance/Evaluation Scorecard is included with the bid documents.

The evaluation scorecard shall include the following performance indicators; Quality of Work, Responsiveness, Professionalism, Resources, Schedule Management, Quality Control, Deficiency Resolution, Submittal Management, Training, Appearance, Security, Safety, Utility Conservation, Disruptions, Quality of Materials, Emergency Response, Hazardous Materials, Innovation, Teamwork, Cost Management, Billing, Compliance.

A contractor shall have up to 3 weeks after notification to appeal, challenge or otherwise dispute the scorecard results. After the 3-week period, the scorecard shall be considered final and accepted by the contractor.

A contractor receiving a 70% or less overall evaluation scorecard rating for a project may be disqualified for bidding on any future projects with the HCPSS for a period of three (3) years and/or for the remaining contract term including renewal options.

**Name of Contractor:** \_\_\_\_\_

**Name of Project:** \_\_\_\_\_ **Contract/Bid Number:** \_\_\_\_\_

**Reviewed by:** \_\_\_\_\_ **Department:** \_\_\_\_\_

Please take a moment to tell us about this contractor's performance. We will summarize all the information we obtain about each contractor and provide it to them. Supporting documentation shall be required to support any scores noted on the performance evaluation scorecard.

**HOW SATISFIED.** Please tell us **how satisfied** you are with the **performance** of the contractor named above. Circle a 10 if you are highly satisfied with their performance on a measure. Circle a 1 if you are highly dissatisfied with their performance on a measure. Circle a number in between to show different degrees of satisfaction. Circle **N/A** for any performance indicators that do not apply to the project. There are no right or wrong answers; just tell us how you feel.

**A contractor receiving a 70% or less overall evaluation scorecard rating for a project may be disqualified for bidding on any future projects with the HCPSS for a period of three (3) years and/or for the remaining contract term including renewal options. The contractor shall be notified of their performance status after each project.**

Satisfaction with the contractor's performance:	<b>Highly Dissatisfied</b>	<b>Highly Satisfied</b>
1. <b>Quality of Work.</b> The contractor's ability to do the job right the first time.	1 2 3 4 5 6 7 8 9 10	N/A
2. <b>Responsiveness.</b> The contractor's ability to adapt to changes and meet unusual needs.	1 2 3 4 5 6 7 8 9 10	N/A
3. <b>Professionalism.</b> The courtesy and standards of conduct maintained by the contractor and his or her employees.	1 2 3 4 5 6 7 8 9 10	N/A
4. <b>Resources.</b> The contractor's ability to provide his or her employees with the tools, parts, and supplies needed to do the job.	1 2 3 4 5 6 7 8 9 10	N/A
5. <b>Schedule Management.</b> The contractor's ability to show up when scheduled and complete the work on time.	1 2 3 4 5 6 7 8 9 10	N/A
6. <b>Quality Control.</b> The contractor's ability to identify problems and deficiencies before you do.	1 2 3 4 5 6 7 8 9 10	N/A

7. <b>Deficiency Resolution.</b> The contractor's ability to rapidly correct deficiencies in his or her work.	1	2	3	4	5	6	7	8	9	10	N/A
8. <b>Submittal Management.</b> The contractor's ability to provide submittals In a timely and efficient manner.	1	2	3	4	5	6	7	8	9	10	N/A
9. <b>Training.</b> The contractor's ability to provide employees well-trained in all aspects of their jobs.	1	2	3	4	5	6	7	8	9	10	N/A
10. <b>Appearance.</b> The contractor's ability to keep uniforms, tools, and vehicles clean so as to portray a positive image.	1	2	3	4	5	6	7	8	9	10	N/A
11. <b>Security.</b> The contractor's ability to safeguard your facilities and assets.	1	2	3	4	5	6	7	8	9	10	N/A
12. <b>Safety.</b> The contractor's ability to keep the workplace safe and comply with OSHA requirements.	1	2	3	4	5	6	7	8	9	10	N/A
13. <b>Utility Conservation.</b> The contractor's ability to use only the water, gas, electricity, and air conditioning needed to do the job.	1	2	3	4	5	6	7	8	9	10	N/A
14. <b>Disruptions.</b> The contractor's ability to keep interruptions to the operations of your firm or agency to a minimum.	1	2	3	4	5	6	7	8	9	10	N/A
16. <b>Quality of Materials.</b> The contractor's ability to use high quality parts and supplies.	1	2	3	4	5	6	7	8	9	10	N/A
17. <b>Emergency Response.</b> The contractor's ability to rapidly restore normal operations after an emergency, power outage, or severe weather.	1	2	3	4	5	6	7	8	9	10	N/A
18. <b>Hazardous Materials.</b> The contractor's ability to properly handle hazardous materials.	1	2	3	4	5	6	7	8	9	10	N/A
19. <b>Innovation.</b> The contractor's ability to use new materials and adopt new methods to increase effectiveness.	1	2	3	4	5	6	7	8	9	10	N/A
20. <b>Teamwork.</b> The contractor's ability to be a team player in order to assist in accomplishing the objectives of your firm or agency.	1	2	3	4	5	6	7	8	9	10	N/A
21. <b>Cost Management.</b> The reasonableness of the contractor's costs, especially for contract changes.	1	2	3	4	5	6	7	8	9	10	N/A
22. <b>Billing.</b> The contractor's ability to present correct and properly documented invoices.	1	2	3	4	5	6	7	8	9	10	N/A
23. <b>Compliance.</b> The contractor complied with all rules, requests, regulations And requirements. This includes compliance with instructions Regarding interactions with students, staff and others.	1	2	3	4	5	6	7	8	9	10	N/A



"General Decision Number: MD20230035 02/03/2023

Superseded General Decision Number: MD20220035

State: Maryland

Construction Type: Building

County: Howard County in Maryland.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 14026 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.</li> </ul>
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 13658 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.</li> </ul>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023

2

02/03/2023

ASBE0024-007 04/01/2021

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 39.27	18.67+a

Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems

a. PAID HOLIDAYS: New Year's Day, Martin Luther King Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day provided the employee works the regular work day before and after the paid holiday.

-----  
BRMD0001-011 05/01/2022

	Rates	Fringes
BRICKLAYER (Excluding Pointing, Caulking and Cleaning).....	\$ 35.20	12.85

-----  
CARP0197-006 05/01/2022

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Form Work, Metal Stud Installation and Scaffold Building, Excluding Acoustical).....	\$ 31.40	13.86

-----  
CARP0219-002 05/01/2022

	Rates	Fringes
MILLWRIGHT.....	\$ 34.90	16.71

-----  
CARP0474-002 05/01/2022

	Rates	Fringes
PILEDRIVERMAN.....	\$ 34.62	16.36

-----  
ELEC0024-012 05/29/2022

	Rates	Fringes
ELECTRICIAN (Including low voltage wiring for and installation of alarms; HVAC controls).....	\$ 42.75	5.25%+16.94

-----  
ELEC0024-013 05/29/2022

	Rates	Fringes
ELECTRICIAN (Communication and Sound Equipment).....	\$ 30.90	4.75%+14.45

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day

-----  
 ENGI0037-028 04/01/2021

	Rates	Fringes
OPERATOR: Bobcat/Skid		
Steer/Skid Loader.....	\$ 29.78	13.15+a
OPERATOR: Bulldozer.....	\$ 33.79	13.15+a
OPERATOR: Forklift.....	\$ 33.79	13.15+a
OPERATOR: Gradall.....	\$ 33.79	13.15+a
OPERATOR: Loader (Front End)		
1 1/4 yards and over.....	\$ 33.79	13.15+a
1 Yard and Under.....	\$ 29.78	13.15+a
OPERATOR: Roller excluding		
Asphalt.....	\$ 26.15	13.15+a

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day.

-----  
 IRON0005-020 06/01/2021

	Rates	Fringes
GLAZIER.....	\$ 31.17	24.16
IRONWORKER (Fence		
Erection-Chain Link/Cyclone).....	\$ 31.17	24.16
IRONWORKER, ORNAMENTAL,		
REINFORCING AND STRUCTURAL.....	\$ 31.17	24.16
IRONWORKER, SHEETING.....	\$ 31.17	24.16

-----  
 LABO0710-004 04/01/2022

	Rates	Fringes
LABORER: Mason Tender -		
Cement/Concrete.....	\$ 21.06	6.06

-----  
 PAIN0051-024 06/01/2022

	Rates	Fringes
PAINTER		
Brush, Roller, Spray,		
Drywall Finisher/Taper and		
Paperhanger.....	\$ 26.61	11.41
Industrial.....	\$ 33.05	12.48

-----  
 PLAS0891-005 07/01/2021

	Rates	Fringes
PLASTERER (Including		
Fireproofing).....	\$ 30.53	7.93

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 PLAS0891-006 02/01/2020

	Rates	Fringes
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CEMENT MASON/CONCRETE FINISHER...\$ 28.82 11.68

\* PLUM0486-014 12/16/2022

Rates Fringes

PIPEFITTER (Including HVAC Pipe Installation).....\$ 44.66 23.38

ROOF0030-033 07/01/2022

Rates Fringes

ROOFER, Excludes Installation of Metal Roofs.....\$ 28.45 13.71

SFMD0669-001 01/01/2023

Rates Fringes

SPRINKLER FITTER (Fire Sprinklers).....\$ 38.67 25.22

SHEE0100-026 05/01/2022

Rates Fringes

SHEET METAL WORKER, Includes HVAC Duct Installation (Excludes Metal Roof Installation).....\$ 36.58 22.31

\* SUMD2010-083 04/30/2010

Rates Fringes

ABATEMENT WORKER: ASBESTOS (Removal from Mechanical Systems).....\$ 12.60 \*\* 3.91

CARPENTER (Acoustical Ceiling Installation Only).....\$ 16.00 \*\* 2.60

ELEVATOR MECHANIC.....\$ 29.66 9.34

LABORER: Common or General.....\$ 11.63 \*\* 1.41

LABORER: Grade Checker.....\$ 16.00 \*\* 2.90

LABORER: Landscape.....\$ 10.00 \*\* 0.00

LABORER: Mason Tender - Brick...\$ 14.76 \*\* 7.73

LABORER: Mason Tender - Stone...\$ 14.03 \*\* 0.00

LABORER: Mortar Mixer.....\$ 16.61 9.08

LABORER: Pipelayer.....\$ 13.70 \*\* 4.11

LABORER: Mason Tender (For Pointing, Caulking and Cleaning).....\$ 12.93 \*\* 0.00

MASON - STONE.....\$ 29.82 10.05



OPERATOR: Asphalt Roller.....	\$ 21.35	5.38
OPERATOR: Backhoe.....	\$ 22.78	5.94
OPERATOR: Boom.....	\$ 21.44	8.29
OPERATOR: Crane.....	\$ 20.75	3.11
OPERATOR: Excavator.....	\$ 16.95	5.69
OPERATOR: Grader/Blade.....	\$ 14.50 **	4.35
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 16.73	5.02
PLUMBER.....	\$ 28.22	11.12
POINTER, CAULKER, CLEANER, Includes pointing, caulking, cleaning of existing masonry, brick, stone and cement structures (restoration work); excludes pointing, caulking, cleaning of new or replacement masonry, brick, stone or cement.....	\$ 19.75	0.00
SHEET METAL WORKER (Metal Roofs Installation).....	\$ 17.00	2.55
TILE FINISHER.....	\$ 17.32	0.00
TILE SETTER.....	\$ 21.38	4.65
TRUCK DRIVER: Dump Truck.....	\$ 15.40 **	1.96
TRUCK DRIVER: Tractor Haul Truck.....	\$ 17.87	9.98

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence.

violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

**PROJECT MANUAL**

for the

**HOT WATER REHEAT COILS**

at

**RIVER HILL HIGH SCHOOL**

**(HCPSS BID #079.23.B3)**

Prepared for:

HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
9020 Mendenhall Court  
Columbia, Maryland 21045

**ISSUED FOR BIDS**

FEBRUARY 3, 2023

Prepared by:



8600 Foundry Street, Suite 306  
Mill Box 2054  
Savage, MD 20763  
(410) 696-4512  
[www.building-dynamics.com](http://www.building-dynamics.com)

(BDL Project # 202219)

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## **SECTION 010000 - GENERAL REQUIREMENTS**

### **PART 1 - GENERAL (Not Used)**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings, and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to all mechanical and electrical work

#### **1.2 SCOPE**

- A. All work shall be complete and ready for satisfactory service.
- B. The contract drawings are diagrammatic and are intended to convey the general arrangement of the work.
- C. The contractor is responsible for the means, methods, and work scheduling associated with the installation of the mechanical and electrical systems.

#### **1.3 CODES AND STANDARDS**

- A. All work shall be performed in accordance with the edition of the following codes and standards that have been adopted by the authority having jurisdiction:
  - 1. American Society of Testing and Materials (ASTM)
  - 2. American National Standards Institute (ANSI)
  - 3. National Electric Code (NEC)
  - 4. Underwriters Laboratories (UL)
- B. In the event the contract documents are in conflict with the applicable codes, the requirements of the applicable codes shall apply.

#### **1.4 PERFORMANCE AND PAYMENT BOND**

- A. Provide a performance and payment bond for the project.

#### **1.5 PERMITS**

- A. The contractor shall obtain all permits and certificates of inspection required by the authority having jurisdiction. There is no permit charge for the Howard County Public School System.
- B. Prior to submitting the permit application, the contractor shall print the required number of sets of permit drawings and deliver them to the engineer to sign and seal. The

engineer will return the signed and sealed permit sets to the contractor for his use in submitting the permit application.

#### 1.6 SITE EXAMINATION

- A. The contractor shall examine the site and observe the conditions under which the work will be installed. No allowances will be made for errors or omissions resulting from the contractor's failure to completely examine the site.

#### 1.7 SUBCONTRACTOR AND MANUFACTURER LIST

- A. Subcontractors and equipment manufacturers shall be listed on the Form of Proposal (Section 00300).

#### 1.8 FIRE PREVENTION

- A. Each contractor shall:
  - 1. Avoid accumulation of flammable debris and waste within the building and vicinity. Avoid large and unnecessary accumulations of combustible forms and form lumber.
  - 2. Store flammable or volatile liquids in the open or in small detached structure or trailers. Handle liquids with low flash points that are to be used within the building in approved safety cans. Supervise closely the storage of paint materials and other combustible finishing and cleaning products. Do not permit oily rags to be stored in closets or other tight permanent spaces.
  - 3. Tobacco use is prohibited on the school property.
  - 4. Closely supervise welding and torch cutting operations near combustible materials.
  - 5. Use only fire-resistant building paper, plastic sheet, and tarpaulins for temporary protection.
  - 6. Do not store combustible material outdoors within 10 feet of a building or structure.
  - 7. Do not use gasoline for cleaning within the building under any circumstances.
  - 8. Do not burn any trash or other material on site.
  - 9. Take other precautions suitable for hazardous conditions at the site to prevent fire.

#### 1.9 ACCIDENT PREVENTION AND SAFETY

- A. Each contractor shall:
  - 1. Comply with all applicable laws, ordinances, rules, regulations, and orders of governing authorities having jurisdiction for the safety of persons and property to protect them from damage, injury, or loss.



2. Erect and maintain, as required by conditions and progress of the work, all necessary safeguards for safety and protection, including fences, railings, barricades, lighting, posting of danger signs and other warnings against hazards.

#### 1.10 PROJECT SCHEDULE

- A. Major construction milestones shall be as scheduled below. Should the contractor fail to complete major milestones as scheduled, the owner may issue a cure notice or take any action deemed necessary to return the delayed major milestones and any related successor functions back on schedule, as soon as possible, at the contractor's expense.
- B. The contractor shall develop a detailed project schedule, approximately sequencing all required work, including shop drawing submittals, equipment fabrication periods, etc.
- C. Major Construction Milestones shall be as follows:
  1. Site Visit February 21, 2023, 12:00 P.M. at RHHS
  2. Pre-Bid Meeting February 21, 2023, 10:00 A.M. (Virtual)
  3. Bids Due March 8, 2023, 1:00 P.M.
  4. Contract Award April 13, 2023
  5. Begin Construction June 20, 2023
  6. Substantial Completion August 11, 2023
  7. Punchlist Complete August 18, 2023
  8. Closeout Documents August 25, 2023

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 010000

## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Contractor's use of site and premises.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and Drawing conventions.
7. Miscellaneous provisions.

- B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. Section 017300 "Execution" for coordination of Owner-installed products.

#### 1.3 DEFINITIONS

#### 1.4 PROJECT INFORMATION

- A. Project Identification: Engineer's Project Number: 202218.

1. Project Location: 6101 Old Dobbin Lane, Columbia, Maryland, 21045, United States.

- B. Owner: HCPSS, United States.

1. Owner's Representative: Larsen Angel.

- C. Mechanical Engineer (Engineer): Building Dynamics LLC, 8600 Foundry Street, Suite 306, Savage, Maryland, 20763.

1. Engineer's Representative: Robert Lowe, P.E., (410-703-3282), [rlowe@building-dynamics.com](mailto:rlowe@building-dynamics.com)

## 1.5 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:
  - 1. Replacement of two duct-mounted hot water reheat coils for air-handling unit AHU-5 which serves the Auditorium. Also included are ductwork modifications as required, heater water piping and accessories, 2-way control valves, ATC wiring from control valves to the ATC panel, and testing, adjusting and balancing.
- B. Type of Contract:
  - 1. Project will be constructed under a single prime contract.

## 1.6 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- C. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.
- D. Sufficient provisions shall be made to protect occupied areas from all dirt and debris resulting from the work.
- E. Where mechanical and electrical systems pass through renovated areas to serve other portions of the building, they shall remain or be suitably relocated and the system restored to normal operation.

## 1.7 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
  - 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

## 1.8 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work to between 6:00 a.m. to 4:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.
  - 1. Weekend Hours: To be determined as required .
  - 2. Early Morning Hours: Exact requirements to be determined at Pr-Construction Meeting, but in general do not perform noisy exterior work prior to 9:00 a.m. that would disrupt adjacent neighbors .
  - 3. Work in Existing Building: Any restrictions on work inside the Building will be defined by the Owner at the Pre-Bid Meeting, if any .
  - 4. Hours for Utility Shutdowns: To be determined based on utility and Owner's requirements .
  - 5. Hours for Core Drilling and other interior noisy activities shall be determined by the Owner : .
- C. On-Site Work Day Restrictions: Do not perform work resulting in utility shutdowns or resulting in noisy activity on-site during work black-out days indicated at the Pre-Construction Meeting.
- D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:
  - 1. All proposed utility outages of the mechanical, plumbing, gas, ATC/BAS, sprinkler, fire alarm, security and electrical systems that are required for the proper execution and completion of the work by the contractor shall be requested by the contractor in writing at least one week in advance.
  - 2. The Contractor shall inform the Owner of all systems that will be affected by the outages and also the duration of each outage.
  - 3. The Owner will determine the date and time of each outage in order to minimize the disruption to the operation of the facility. In most cases, outages will be scheduled to occur outside of normal business hours. Additional compensation to the contractor shall not be made for any work associated with the outages.
  - 4. The Owner will be responsible to notify all affected personnel and to ensure that all affected systems are prepared for the outages.
  - 5. The Contractor shall be responsible for all work associated with the shutting down and starting up the affected systems. The Contractor shall coordinate any required access to rooms, equipment, panels, valves,...etc. with the Owner.
  - 6. The Contractor may, at his option, pay to have the Owner's personnel to be on-site during an outage to assist the Contractor in coordinating the shutting down and starting up of the affected systems.
  - 7. Where the duration of the proposed outages cannot be tolerated by the Owner, the Contractor shall provide temporary services / connections as required to maintain service.

- E. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.
  - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
  - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- F. Smoking and Controlled Substance Restrictions: Use of tobacco products , alcoholic beverages, and other controlled substances on Owner's property is not permitted.
- G. Employee Identification: Provide identification tags or company shirts / uniforms for Contractor personnel working on Project site. Require personnel to use identification tags and company shirts / uniforms at all times.
- H. Employee Screening: Comply with Owner's requirements for background screening of Contractor personnel working on Project site.
  - 1. Maintain list of approved screened personnel with Owner's representative.

#### 1.9 MISCELLANEOUS PROVISIONS

##### A. CLEAN-UP

- 1. Throughout the course of the work, the Contractor shall keep the premises free from the accumulation of dirt and debris.
- 2. Upon completion of the work, the Contractor shall clean the premises to the satisfaction of the Owner.

##### B. EXISTING SERVICES

- 1. The Contractor shall verify the size and location of all existing services. The Contractor shall notify the Engineer of all discrepancies that exist between the contract documents and the existing services before making any connections to the existing services.

##### C. DEMOLITION

- 1. Demolition shall be performed as neatly as practical and with the minimum disruption to the building activities and occupants.
- 2. Remove all existing hangers and supports associated with the demolition work.
- 3. All equipment and materials being removed, and not indicated to be given to the Owner, shall be disposed of by the Contractor in accordance with all federal, state, and local laws, ordinances, rules, and regulations.
- 4. All equipment and materials indicated to be reused or given to the Owner shall be carefully removed so as not to damage the equipment or material, or affect its reuse. Any such equipment and materials damaged by the Contractor shall be replaced new by the Contractor at no expense to the Owner.
- 5. Should the Contractor encounter any known or suspected asbestos containing materials at any time during the course of the work, all workers shall be removed

- from the affected area and the Owner shall be notified immediately and await instructions from the Owner.
6. Should the Contractor encounter any known or suspected lead paint at any time during the course of the work, it shall not be disturbed. The Contractor shall immediately notify the Owner who will then take samples to have analyzed by a laboratory. Do not disturb suspected lead paint until the results of the paint samples have been obtained and further direction given to the Contractor.
  7. If hazardous materials removal is required, the Contractor shall utilize the on-call abatement contractor for HCPSS: Asbestos Specialist, Inc., PO Box 368, Linthicum Heights, MD 21090. POC: Sam Chairs III, 410-796-5379.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:
  - 1. General coordination procedures.
  - 2. Coordination drawings.
  - 3. RFIs.
  - 4. Digital project management procedures.
  - 5. Project meetings.
- B. Related Requirements:
  - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 2. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

#### 1.3 DEFINITIONS

- A. RFI: Request for Information. Request from Owner, Construction Manager, Architect, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.
- B. Architect / Engineer: For the purposes of the contract documents, the terms Architect and Engineer shall be used interchangeably.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.

3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and in prominent location in each built facility. Keep list current at all times.

#### 1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

D. CONSTRUCTION SUPERINTENDENT



1. The Contractor shall provide a construction superintendent at the site at all times to oversee the mechanical and electrical work and be responsible for its accuracy.

E. COORDINATION OF UTILITIES

1. The Contractor shall coordinate all activities associated with the local utility companies, such as gas, electric, phone/data/internet/cable TV, security, sanitary, storm water and water.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
  - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
  - b. Coordinate the addition of trade-specific information to coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
  - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
  - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
  - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
  - f. Indicate required installation sequences.
  - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

- B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Mechanical Rooms: Provide coordination drawings for mechanical rooms, showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
2. Review: Engineer will review coordination drawings to confirm that, in general, the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Engineer determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient,

Engineer will so inform Contractor, who shall make suitable modifications and resubmit.

- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format:
    - a. Same digital data software program, version, and operating system as original Drawings.
  2. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format or PDF format.
  3. Engineer will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
    - a. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    - b. Digital Data Software Program: Drawings are available in .
    - c. Contractor shall execute a data licensing agreement in a form acceptable to the Engineer.

#### 1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Engineer will return without response those RFIs submitted to Engineer by other entities controlled by Contractor.
  2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
  2. Owner name.
  3. Date.
  4. Name of Contractor.
  5. RFI number, numbered sequentially.
  6. RFI subject.
  7. Specification Section number and title and related paragraphs, as appropriate.
  8. Drawing number and detail references, as appropriate.
  9. Field dimensions and conditions, as appropriate.
  10. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  11. Contractor's signature.
  12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to the Engineer.
1. Attachments shall be electronic files in PDF format.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of Engineer's actions on submittals.
    - g. Incomplete RFIs or inaccurately prepared RFIs.
  2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt by Architect of additional information.
  3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager in writing within 5 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log on request by the Engineer. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. RFI number, including RFIs that were returned without action or withdrawn.
  4. RFI description.
  5. Date the RFI was submitted.
  6. Date Engineer's response was received.
  7. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within three days if Contractor disagrees with response.

## 1.8 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Engineer's Digital Data Files: Digital data files of Engineer's CAD drawings will be provided by Engineer for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project Record Drawings.
2. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in Autodesk AutoCAD LT 2021.
4. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.
  - a. Subcontractors and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement acceptable to Owner and Architect.
5. The following digital data files will be furnished upon request for each appropriate discipline:
  - a. Floor plans.
  - b. Reflected ceiling plans.
  - c. Automatic Temperature Controls Sequences and Diagrams.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

## 1.9 PROJECT MEETINGS

A. General: Engineer will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Contractor shall inform necessary sub-contractors and individuals whose presence is required, of date and time of each meeting.

B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
  - a. Responsibilities and personnel assignments.
  - b. Tentative construction schedule.
  - c. Phasing.

- d. Critical work sequencing and long lead items.
  - e. Designation of key personnel and their duties.
  - f. Lines of communications.
  - g. Use of web-based Project software.
  - h. Procedures for processing field decisions and Change Orders.
  - i. Procedures for RFIs.
  - j. Procedures for testing and inspecting.
  - k. Procedures for processing Applications for Payment.
  - l. Distribution of the Contract Documents.
  - m. Submittal procedures.
  - n. Sustainable design requirements.
  - o. Preparation of Record Documents.
  - p. Use of the premises and existing building.
  - q. Work restrictions.
  - r. Working hours.
  - s. Owner's occupancy requirements.
  - t. Responsibility for temporary facilities and controls.
  - u. Procedures for moisture and mold control.
  - v. Procedures for disruptions and shutdowns.
  - w. Construction waste management and recycling.
  - x. Parking availability.
  - y. Office, work, and storage areas.
  - z. Equipment deliveries and priorities.
  - aa. First aid.
  - bb. Security.
  - cc. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Progress Meetings: Engineer will conduct progress meetings at biweekly intervals.

- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
- 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - 1) Review schedule for next period.
  - b. Review present and future needs of each entity present, including the following:
    - 1) Interface requirements.
    - 2) Sequence of operations.

- 3) Status of submittals.
  - 4) Deliveries.
  - 5) Off-site fabrication.
  - 6) Access.
  - 7) Site use.
  - 8) Temporary facilities and controls.
  - 9) Progress cleaning.
  - 10) Quality and work standards.
  - 11) Status of correction of deficient items.
  - 12) Field observations.
  - 13) Status of RFIs.
  - 14) Status of Proposal Requests.
  - 15) Pending changes.
  - 16) Status of Change Orders.
  - 17) Pending claims and disputes.
  - 18) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

## **SECTION 013300 - SUBMITTAL PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. Section Includes:

- 1. Submittal schedule requirements.
- 2. Administrative and procedural requirements for submittals.

- B. Related Requirements:

- 1. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
- 2. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
- 3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
- 4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
- 5. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

#### **1.3 DEFINITIONS**

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

#### **1.4 SUBMITTAL SCHEDULE**

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required

for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
3. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal Category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Engineer's final release or approval.

#### 1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Engineer.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
8. Submittal purpose and description.
9. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
10. Drawing number and detail references, as appropriate.
11. Indication of full or partial submittal.
12. Location(s) where product is to be installed, as appropriate.
13. Other necessary identification.
14. Remarks.
15. Signature of transmitter.

B. Options: Identify options requiring selection by Engineer.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.



- D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

## 1.6 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

- 1. Within no more than fourteen (14) calendar days after the award of the contract, the Contractor shall provide submittals to the Engineer for approval for all equipment and materials proposed for the work. Equipment and materials for which submittals are not provided within fourteen (14) calendar days shall be provided as specified. Other products will not be allowed.
- 2. Email: Prepare submittals as PDF package and transmit to Engineer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Engineer.
  - a. Engineer will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

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

- 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
- 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
- 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
- 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.
  - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

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

- 1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
- 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
- 3. Resubmittal Review: Allow 10 days for review of each resubmittal.
- 4. Sequential Review: Where sequential review of submittals by Engineer's consultants, Owner, or other parties is indicated, allow 10 days for initial review of each submittal.

- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

#### 1.7 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams that show factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  - 5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Engineer's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Compliance with specified standards.
    - c. Notation of coordination requirements.
    - d. Notation of dimensions established by field measurement.
    - e. Relationship and attachment to adjoining construction clearly indicated.
  2. Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11-inches, but no larger than 30 by 42-inches .
    - a. One PDF copy of each submittal. Engineer will return one copy with review comments.
- C. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
  2. Manufacturer and product name, and model number if applicable.
  3. Number and name of room or space.
  4. Location within room or space.
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- E. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- F. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
  2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  3. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
  4. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

G. Test and Research Reports:

1. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
2. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  1. Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ENGINEER'S REVIEW

- A. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required, and return.
  1. PDF Submittals: Engineer will indicate, via markup on each submittal, the appropriate action.
- B. Informational Submittals: Engineer will review each submittal and will not return it or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Engineer will return without review submittals received from sources other than Contractor.

- F. Submittals not required by the Contract Documents will be returned by Engineer without action.
- G. No work shall be fabricated or equipment ordered until the Engineer's approval has been given on the submittal.
- H. Approval of submittals by the Engineer does not relieve the Contractor of their responsibility to provide the equipment and materials specified in the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

## SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

#### 1.2 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities to be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
  - 1. Locations of dust-control partitions at each phase of work.
  - 2. HVAC system isolation schematic drawing.
  - 3. Location of proposed air-filtration system discharge.
  - 4. Waste-handling procedures.
  - 5. Other dust-control measures.

#### 1.4 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats, minimum 36 by 60 inches.
- B. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

### 2.2 TEMPORARY FACILITIES

- A. Field Offices:
  - 1. Owner will provide conditioned interior space for field offices for duration of Project .
- B. Storage Containers and Fabrication Sheds: Provide sheds sized, furnished, secured and equipped to accommodate materials and equipment for construction operations.
  - 1. Store combustible materials apart from building.
  - 2. Locations of storage containers will be determined at the Pre-Construction Meeting.

### 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating, Cooling, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
  - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction .
- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

## PART 3 - EXECUTION

### 3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

### 3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
  - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area, using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
  - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
  - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

### 3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.



### 3.4 SUPPORT FACILITIES INSTALLATION

- A. Comply with the following:
1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible in accordance with ASTM E136. Comply with NFPA 241.
  2. Utilize designated area within existing building for temporary field offices.
  3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
  2. Maintain access for fire-fighting equipment and access to fire hydrants.
  3. Maintain access for staff vehicles, delivery and service vehicles and trash vehicles serving the facility.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel. Additional details will be provided at the Pre-Construction Meeting.
- D. Storage and Staging: Use designated areas of Project site for storage and staging needs. Additional details will be provided at the Pre-Construction Meeting.
- E. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas, so no evidence remains of correction work.

### 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- C. Tree and Plant Protection:

1. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- D. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and from fumes and dust.
1. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
  2. Protect air-handling equipment.
  3. Provide walk-off mats at each entrance through temporary partition.
- E. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
  2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
  3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign, stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

### 3.6 MOISTURE AND MOLD CONTROL

- A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
  2. Protect stored and installed material from flowing or standing water.
  3. Keep porous and organic materials from coming into prolonged contact with concrete.
  4. Remove standing water from decks.
  5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
  2. Keep interior spaces reasonably clean and protected from water damage.
  3. Periodically collect and remove waste containing cellulose or other organic matter.
  4. Discard or replace water-damaged material.
  5. Do not install material that is wet.
  6. Discard and replace stored or installed material that begins to grow mold.
  7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
  2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
  3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
    - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
    - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
    - c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

### 3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary

facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

## SECTION 016000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for Contractor requirements related to Owner-furnished products.
  - 2. Section 01770 "Closeout Procedures" for submitting warranties.

#### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
  - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.

1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.
- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
  1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
  2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.
- E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."

#### 1.4 QUALITY ASSURANCE

- A. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
  1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
  2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
    - a. Name of product and manufacturer.
    - b. Model and serial number.
    - c. Capacity.
    - d. Speed.
    - e. Ratings.

3. See individual identification Sections in Divisions 23 for additional equipment identification requirements.

#### 1.5 COORDINATION

- A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.
- B. The contractor shall insure that adequate clearance exists for the installation and maintenance of all work shown on the drawings and described in the specifications.
- C. The contractor shall locate all equipment which must be serviced, operated, or maintained in fully accessible locations.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to determine compliance with the Contract Documents and that products are undamaged and properly protected.
- C. Storage:
  1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
  2. Store products to allow for inspection and measurement of quantity or counting of units.
  3. Store materials in a manner that will not endanger Project structure.
  4. Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.
  5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  7. Protect stored products from damage and liquids from freezing.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.
  3. All equipment and materials shall be new and installed in accordance with the manufacturer's instructions and conditions for warranty. In the event the contract documents are in conflict with the manufacturer's conditions for warranty, the equipment shall be installed in accordance with the manufacturer's instructions so as not to void any manufacturer's warranties.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
  3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Architect will make selection.



5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
  - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
2. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
  - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
  - b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.
3. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
  - a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
4. The contract documents describe systems designed in accordance with the equipment manufacturers specified. The contractor shall bear the cost of all appurtenances required for deviations from the equipment specified. These appurtenances shall include, but are not limited to: architectural, structural, mechanical, and electrical modifications necessary to install the equipment in accordance with the manufacturer's instructions.
5. The contractor shall notify the engineer of any changes in the electrical characteristics of the equipment being installed in contradiction to that described in the contract documents.

## 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are

satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:

1. Any deviation from the specified equipment manufacturers shall constitute a substitution and shall be submitted to the engineer for approval as a request for substitution. The contractor must certify in his request that the proposed substitution complies with the requirements of the contract documents.
  2. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
  3. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
  4. Evidence that proposed product provides specified warranty.
  5. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
  6. Samples, if requested.
- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."
1. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
  2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

## **SECTION 017300 - EXECUTION**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
  - 1. Installation.
  - 2. Cutting and patching.
  - 3. Progress cleaning.
  - 4. Starting and adjusting.
  - 5. Protection of installed construction.
  - 6. Correction of the Work.
  
- B. Related Requirements:
  - 1. Section 011000 "Summary" for coordination of , and limits on use of Project site.
  - 2. Section 013300 "Submittal Procedures" for submitting surveys.

#### **1.2 DEFINITIONS**

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
  
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

#### **1.3 QUALITY ASSURANCE**

- A. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

### **PART 2 - PRODUCTS**

#### **2.1 MATERIALS**

- A. Comply with requirements specified in other Sections.
  
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
  1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are

indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

### 3.3 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb, and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated on Drawings.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of

attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  2. Allow for building movement, including thermal expansion and contraction.
  3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

### 3.4 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
1. The contractor shall repair any damage to the existing building or furnishings resulting from the Work.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
  7. The contractor shall not cut reinforced concrete or structural steel without the Engineer's approval.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.5 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, in accordance with regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces in accordance with written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.



- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.6 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

### 3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

## **SECTION 017700 - CLOSEOUT PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final Completion procedures.
  - 3. List of incomplete items.
  - 4. Submittal of Project warranties.
  - 5. Final cleaning.
  
- B. Related Requirements:
  - 1. Division 00 Sections for Payment Procedures and requirements for Substantial Completion and Final Completion.
  - 2. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
  - 3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 4. Section 017900 "Demonstration and Training" for requirements to train Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

#### **1.2 DEFINITIONS**

- A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Engineer's use prior to Engineer's inspection, to determine if the Work is substantially complete.

#### **1.3 ACTION SUBMITTALS**

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- B. Certified List of Incomplete Items: Final submittal at Final Completion.

#### **1.4 CLOSEOUT SUBMITTALS**

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer . Label with manufacturer's name and model number.
  - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Engineer's signature for receipt of submittals.
5. Submit testing, adjusting, and balancing records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."

6. Advise Owner of changeover in utility services.
  7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  9. Complete final cleaning requirements.
  10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final Completion.

#### 1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
1. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list will state that each item has been completed or otherwise resolved for acceptance.
  2. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.8 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Include the following information at the top of each page:
  - a. Project name.
  - b. Date.
  - c. Name of Engineer.
  - d. Name of Contractor.
  - e. Page number.
2. Submit list of incomplete items in the following format:
  - a. PDF Electronic File: Engineer will return annotated file.

#### 1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Contractor's Warranty:
  1. The contractor shall warranty all work to be free from defects and installation deficiencies for a period of two years after the date of acceptance by the owner.
  2. During the contractor's warranty period, the contractor shall repair all work as required, including all necessary parts and labor, at no cost to the owner.
- C. Manufacturer's Warranty:
  1. The contractor shall deliver to the owner all certificates of manufacturer's warranties which extend beyond the contractor's warranty period.
- D. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- E. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- F. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
  1. Submit on digital media acceptable to Engineer.
- G. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - f. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - g. Clean flooring, removing debris, dirt, and staining; clean in accordance with manufacturer's instructions.
    - h. Vacuum and mop concrete in occupied rooms, sweep clean in unoccupied rooms.
    - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean in accordance with manufacturer's instructions if visible soil or stains remain.
    - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-

obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.

- k. Remove labels that are not permanent.
  - l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - m. Clean strainers.
  - n. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls."

### 3.2 CORRECTION OF THE WORK

- A. Complete repair and restoration operations required by "Correction of the Work" Article in Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700



## **SECTION 017823 - OPERATION AND MAINTENANCE DATA**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory manuals.
  - 2. Systems and equipment operation manuals.
  - 3. Systems and equipment maintenance manuals.
  - 4. Product maintenance manuals.
- B. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

#### **1.3 DEFINITIONS**

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

#### **1.4 CLOSEOUT SUBMITTALS**

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Engineer will comment on whether content of operation and maintenance submittals is acceptable.
  - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
  - 3. Each manual shall include the following:
    - a. Approved submittals.
    - b. As-built mechanical, ATC, electrical and hydronic piping shop drawings.

- c. Equipment start-up, quality control and field reports.
  - d. All manufacturer's technical and product information, rated capacities, accessories, maintenance documentation, maintenance procedures, trouble shooting guide, wiring diagrams, maintenance and service schedules, spare parts lists, source information and manufacturer's warranties.
  - e. Contractor's warranty (2 years from date of acceptance by the Owner).
  - f. Approved testing, adjusting and balancing report.
  - g. Demonstration and Training Video.
  - h. Other pertinent information for each piece of equipment.
- B. Initial Manual Submittal: Submit draft copy of each manual at least 21 days before commencing demonstration and training. Engineer will comment on whether general scope and content of manual are acceptable.
1. Assemble the entire O & M manual into a single Adobe Acrobat PDF file, with dividers identifying each section (approves submittals, as-built ATC shop drawings, etc.), and e-mail to the Engineer for review prior to submitting the final hard copy. This shall not be completed until the Engineer has received, reviewed and approved the testing, adjusting and balancing report.
- C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 7 days before commencing demonstration and training. Engineer will return copy with comments.
1. After receiving and incorporating the Engineer's comments into the O & M manual, send one (1) hard copy and one (1) Adobe Acrobat PDF file on Compact Disc or thumb drive to the Engineer for final review and acceptance.
  2. After all of the Engineer's final review comments have been incorporated, submit to the Engineer one (1) hard copy in 3-ring binders and one (1) Adobe Acrobat PDF file on CD or thumb drive.
- D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.
- 1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS
- A. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.

- b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
4. Supplementary Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
  - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
  - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
- B. Related Requirements:
  - 1. Section 017700 "Closeout Procedures" for general closeout procedures.
  - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
  - 2. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Final Submittal:
      - 1) Submit PDF electronic files of scanned Record Prints and one set(s) of file prints.
      - 2) Print each drawing, whether or not changes and additional information were recorded.

#### 1.4 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  - 1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
  - b. Accurately record information in an acceptable drawing technique.
  - c. Record data as soon as possible after obtaining it.
  - d. Record and check the markup before enclosing concealed installations.
  - e. Cross-reference record prints to corresponding photographic documentation.
2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Revisions to routing of piping and conduits.
    - d. Revisions to electrical circuitry.
    - e. Actual equipment locations.
    - f. Duct size and routing.
    - g. Changes made following Engineer's written orders.
  3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Format: Annotated PDF electronic file with comment function enabled.
  3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  4. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Engineer.
    - e. Name of Contractor.
- 1.5 MAINTENANCE OF RECORD DOCUMENTS
- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and

in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

**017900 – DEMONSTRATION AND TRAINING**

A. DEMONSTRATION

1. Upon completion of the work, the contractor shall demonstrate to the owner's satisfaction that all components of the work are connected, calibrated, and operating in accordance with the intent of the system design.
2. Demonstrate to the owner's satisfaction that all automatic temperature controls for the HVAC systems have been fully integrated into the existing JCI building automation system in the school and at the central maintenance office on Mendenhall Court.

B. TRAINING

1. Thoroughly instruct the owner's representatives for no less than four (4) hours in the proper operation, adjustment, and maintenance of all mechanical and electrical products, equipment, and systems.

C. VIDEOTAPING

1. Demonstration and training sessions shall be professionally videotaped by the contractor. The recording shall be provided to the Owner on a compact disc as part of the closeout documents.
2. Describe scenes on the videotape by audio narration by microphone while videotape is being recorded. Include descriptions of items being viewed.

END OF SECTION 017900

## 230519 – PIPING SPECIALTIES, METERS AND GAUGES FOR HVAC

### A. PIPING SPECIALTIES

#### 1. Strainers:

- a. Provide strainers of the "Y" or basket types as indicated on the drawings or required to suit the field conditions.

#### 1) Strainers 2" and smaller:

- a) Strainers shall have bronze body conforming to ASTM B 62, Grade C or cast-iron body conforming to ASTM A 126, Class B. End connections shall conform to piping system specified. Screens shall be AISI 304 stainless steel with 1/32" diameter perforations.

#### 2. Copper Unions:

- a. ASME B16.22, wrought-copper alloy body, hexagonal stock, with ball-and-socket joint, metal-to-metal seating surfaces, with soldered ends.

### B. METERS AND GAUGES

#### 1. Thermometers:

- a. Stem type, cast aluminum case, nine inch scale, clear acrylic window, red indicating fluid, black lettering against a white background, with a scale range of 30 deg F to 100 deg F with 2 deg F increments. The adjustable angle brass stem shall have a stem of sufficient length so the end of the stem is near the middle of the pipe in which it is installed without reducing the thickness of any insulation.
- b. Provide brass thermometer sockets with threaded connections suitable for thermometer stems and temperature control sensing elements in pipeline.
- c. Furnish with extension necks for insulated piping systems.

#### 2. Pressure Gauges:

- a. Gauges: Cast aluminum case of not less than 4-1/2" diameter, double strength glass window, black lettering on a white background, phosphor bronze bourdon tube with bronze bushings, recalibration from the front of the dial, 99% accuracy over the middle half of the scale, 98.5% accuracy over the remainder of the scale, with scale range of 0 psi to 100 psi.
- b. Valves: 1/4" brass or stainless-steel needle type.
- c. Snubbers: Brass bushing with corrosion-resistant, porous-metal disc of material suitable for system fluid and working pressure.

#### 3. Test Plugs:



- a. Test-station fitting made for insertion in piping tee fitting shall have brass or stainless-steel body with core inserts and gasketed and threaded cap. Include extended stem where units installed in insulated piping.
- b. Thread size shall be NPS 1/4 or NPS 1/2 ASME B1.20.1 pipe thread.
- c. Minimum pressure and temperature rating: 500 psig at 200 degrees F.
- d. Core Inserts: Chlorosulfonated polyethylene synthetic and EDPM self-sealing rubber.

END OF SECTION 230519

## **230523 – GENERAL-DUTY VALVES FOR HVAC PIPING**

### **A. BALL VALVES**

1. 2" and Smaller:
  - a. 150 psi steam working pressure (SWP), 600 psi non-shock water, oil, gas (WOG) pressure, solder-end, two-piece, cast bronze body, chrome plated brass/bronze ball, standard port, tetrafluoroethylene (TFE) seats and seals, separate packnut with adjustable stem packing, anti-blowout stem, and vinyl covered steel handle. Valve ends shall have extended solder connections and be manufactured to comply with MSS SP-110.
2. Ball valves shall be equipped with 2" extended handles of non-thermal conductive material. Also, provide a protective sleeve that allows operation of the valve without breaking the vapor seal or disturbing the insulation.

### **B. CALIBRATED BALANCING VALVES**

1. 2" and Smaller:
  - a. Bronze body, ball type, 125-psig working pressure, 250 deg F maximum operating temperature, and having threaded ends. Valves shall be venturi-type, connections for portable differential pressure meter with integral seals, and be equipped with a memory stop to retain set position.

### **C. CONTROL VALVES**

1. Provide factory fabricated globe valves of pressure class for the scheduled service. Size modulating valves for pressure drop of 3 to 5 psig for water service.
2. Water Service Valves: Equal percentage characteristics with rangeability of 50 to 1, and maximum full flow pressure drop of 5 psig.
3. Single Seated Valves: Cage type trim, providing seating and guiding surfaces for plug on "top and bottom" guided plugs.
4. Valve Trim and Stems: Polished stainless steel.
5. Packing: Spring-loaded Teflon, self-adjusting.
6. Valves shall be constructed with a cast-iron body and screwed ends.

END OF SECTION 230523

## **SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Metal pipe hangers and supports.
  - 2. Thermal-hanger shield inserts.
  - 3. Fastener systems.
  - 4. Pipe stands.

#### **1.3 ACTION SUBMITTALS**

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

### **PART 2 - PRODUCTS**

#### **2.1 PERFORMANCE REQUIREMENTS**

- A. Structural Performance: Hangers and supports for HVAC piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
  - 1. Design supports for multiple pipes, including pipe stands, capable of supporting combined weight of supported systems, system contents, and test water.
  - 2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

#### **2.2 METAL PIPE HANGERS AND SUPPORTS**

- A. Carbon-Steel Pipe Hangers and Supports:
  - 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
  - 2. Galvanized Metallic Coatings: Pre-galvanized, hot-dip galvanized, or electro-galvanized.
  - 3. Nonmetallic Coatings: Plastic coated, or epoxy powder-coated.

4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel .

### 2.3 THERMAL-HANGER SHIELD INSERTS

- A. Insulation-Insert Material for Cold Piping: ASTM C552, Type II cellular glass with 100-psi or ASTM C591, Type VI, Grade 1 polyisocyanurate with 125-psi minimum compressive strength and vapor barrier.
- B. Insulation-Insert Material for Hot Piping: Water-repellent-treated, ASTM C533, Type I calcium silicate with 100-psi minimum compressive strength.
- C. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.
- D. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.
- E. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

### 2.4 FASTENER SYSTEMS

- A. Mechanical-Expansion Anchors: Insert-wedge-type anchors for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
  1. Indoor Applications: Zinc-coated or stainless steel.
  2. Outdoor Applications: Stainless steel.

### 2.5 PIPE STANDS

- A. General Requirements for Pipe Stands: Shop- or field-fabricated assemblies made of manufactured corrosion-resistant components to support roof-mounted piping.
- B. Low-Profile, Single Base, Single-Pipe Stand:
  1. Description: Single base with vertical and horizontal members, and pipe support, for roof installation without membrane protection.
  2. Base: Single, vulcanized rubber, molded polypropylene, or polycarbonate.
  3. Vertical Members: Two, galvanized, continuous-thread 1/2-inch rods.
  4. Horizontal Member: Adjustable horizontal, galvanized pipe support channels.
  5. Pipe Supports: Roller, Strut clamps, Clevis hanger or Swivel hanger.
  6. Hardware: Galvanized steel.
  7. Accessories: Protection pads.
  8. Height: 12 inches.

## 2.6 MATERIALS

- A. Carbon Steel: ASTM A1011/A1011M.
- B. Threaded Rods: Continuously threaded. Zinc-plated or galvanized steel for indoor applications and stainless steel for outdoor applications. Mating nuts and washers of similar materials as rods.

## PART 3 - EXECUTION

### 3.1 APPLICATION

- A. Provide firestopping for penetrations through fire-rated walls, ceilings, and assemblies.
- B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

### 3.2 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-58. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Framing System Installation: Arrange for grouping of parallel runs of piping, and support together on field-assembled strut systems.
- C. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.
- D. Fastener System Installation:
  - 1. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- E. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- F. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- G. Install lateral bracing with pipe hangers and supports to prevent swaying.
- H. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before

concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.

- I. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- J. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.
- K. Insulated Piping:
  - 1. Attach clamps and spacers to piping.
    - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
    - b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
    - c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
  - 2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
    - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
  - 3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
    - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
  - 4. Shield Dimensions for Pipe: Not less than the following:
    - a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
    - b. NPS 4: 12 inches long and 0.06 inch thick.
    - c. NPS 5 and NPS 6: 18 inches long and 0.06 inch thick.
    - d. NPS 8 to NPS 14: 24 inches long and 0.075 inch thick.
    - e. NPS 16 to NPS 24: 24 inches long and 0.105 inch thick.
  - 5. Pipes NPS 8 and Larger: Include wood or reinforced calcium-silicate-insulation inserts of length at least as long as protective shield.
  - 6. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

### 3.3 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

### 3.4 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

### 3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780/A780M.

### 3.6 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-58 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use carbon-steel pipe hangers and supports and attachments for general service applications.
- F. Use stainless steel attachments for hostile environment applications.
- G. Use padded hangers for piping that is subject to scratching.
- H. Use thermal-hanger shield inserts for insulated piping and tubing.

- I. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of non-z e insulated or insulated, stationary pipes NPS 1/2 to NPS 30.
  2. U-Bolts (MSS Type 24): For support of heavy pipes NPS 1/2 to NPS 30.
  3. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.
  4. Pipe Saddle Supports (MSS Type 36): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate.
  5. Pipe Stanchion Saddles (MSS Type 37): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate, and with U-bolt to retain pipe.
  6. Single-Pipe Rolls (MSS Type 41): For suspension of pipes NPS 1 to NPS 30, from two rods if longitudinal movement caused by expansion and contraction might occur.
- J. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
  2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.
- K. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
  2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
  3. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
- L. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
  2. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
- M. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
  2. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- N. Comply with MSS SP-58 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.



- O. Comply with MFMA-103 for metal framing system selections and applications that are not specified in piping system Sections.
- P. Use mechanical-expansion anchors instead of building attachments where required in concrete construction.

END OF SECTION 230529

## SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Equipment labels.
  - 2. Pipe labels.

### PART 2 - PRODUCTS

#### 2.1 EQUIPMENT LABELS

- A. Plastic Labels for Equipment:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Brady Corporation.
    - b. Brimar Industries, Inc.
    - c. Carlton Industries, LP.
    - d. Champion America.
    - e. Craftmark Pipe Markers.
    - f. emedco.
    - g. Kolbi Pipe Marker Co.
    - h. LEM Products Inc.
    - i. Marking Services, Inc.
    - j. Seton Identification Products; a Brady Corporation company.
  - 2. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
  - 3. Letter Color: White .
  - 4. Background Color: Black .
  - 5. Maximum Temperature: Able to withstand temperatures up to 160 deg F.
  - 6. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
  - 7. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.

8. Fasteners: Stainless-steel rivets or self-tapping screws.
9. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

- B. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.

## 2.2 PIPE LABELS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Brady Corporation.
  2. Brimar Industries, Inc.
  3. Carlton Industries, LP.
  4. Champion America.
  5. Craftmark Pipe Markers.
  6. emedco.
  7. Kolbi Pipe Marker Co.
  8. LEM Products Inc.
  9. Marking Services, Inc.
  10. Seton Identification Products; a Brady Corporation company.
- B. Lettering Size: Size letters according to ASME A13.1 for piping.
- C. General Requirements: Pre-printed, color-coded, with lettering indicating service and showing flow direction according to ASME A13.1.
- D. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
- E. Pipe Label Contents: Include identification of piping service using same designation or abbreviations as used on the Drawings and an arrow indicating flow direction.
- F. Lettering Size: At least ½-inch for viewing distances up to 72-inches and proportionately larger letter for greater viewing distances.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

### 3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

### 3.3 EQUIPMENT LABEL INSTALLATION

- A. Install or permanently fasten labels on each major item of mechanical equipment.
- B. Locate equipment labels where accessible and visible.

### 3.4 PIPE LABEL INSTALLATION

- A. Pipe Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
  - 1. Near penetrations and on both sides of through walls, floors, ceilings, and inaccessible enclosures.
  - 2. At access doors, manholes, and similar access points that permit view of concealed piping.
  - 3. Near major equipment items and other points of origination and termination.
  - 4. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
  - 5. On piping above removable acoustical ceilings. Omit intermediately spaced labels.
- B. Directional Flow Arrows: Arrows shall be used to indicate direction of flow in pipes, including pipes where flow is allowed in both directions.
- C. Pipe Label Color Schedule:
  - 1. Heating Water Piping: White letters on a safety-green background .

END OF SECTION 230553

## **230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC**

### **A. SCOPE**

1. Heating, ventilating and air-conditioning (HVAC) systems listed below shall be tested, adjusted and balanced by an independent AABC or NEBB certified contractor.
2. Clean all strainers prior to performing water balancing.
3. Refer to the Drawings for additional balancing information.

### **B. TOLERANCE**

1. Test, adjust and balance all hydronic systems to within 10% of the quantities indicated on the Drawings.
2. Airflows at each reheat coil: Plus or minus 10 percent.
3. Maintaining design pressure relationships is to take priority over specific tolerances.

### **C. MEASUREMENTS AND ADJUSTMENTS**

1. Measure and record the following for each hot water reheat coil:
  - a. Location / equipment designation.
  - b. Water flow rate (design and actual).
  - c. Entering and leaving water temperatures (design and actual).
  - d. Water pressure drop (design and actual).
  - e. Airflow (design and actual).
  - f. Entering and leaving air temperatures (design and actual).
  - g. Air pressure drop (design and actual).
2. Permanently mark equipment settings, including balancing valve positions, control settings, and similar devices allowing settings to be restored. Set and lock all memory stops.

### **D. TESTING, ADJUSTING, AND BALANCING REPORT**

1. Report all results on AABC or NEBB standard forms.

END OF SECTION 230593

## **230700 – HVAC PIPING INSULATION**

### **A. PIPE INSULATION**

#### **1. Rigid Fiberglass Insulation:**

- a. Molded glass fiber, minimum nominal density of 3 pcf, thermal conductivity of not more than 0.23 at 75 deg F, minimum compressive strength of 25 psf at 10% deformation, rated for service to 450 deg F.
- b. Insulation shall have a factory-applied, white, kraft reinforced foil vapor barrier all service jacket with a self-sealing pressure sensitive adhesive lap, maximum permeance of 0.02 perms and minimum puncture resistance of 50 units.
- c. Provide white, PVC fitting covers on all fittings.
- d. Shields shall be minimum 180-degree coverage on the bottom of the supported piping.
- e. Insulation thickness:
  - 1) Heating Water: 1-1/2" thickness
- f. Insulation Jacket Colors:
  - 1) Chilled water: Match existing color, contractor to field verify.
  - 2) Dual Temperature Water: Match existing, contractor to field verify.

END OF SECTION 230700

## **SECTION 230713 - DUCT INSULATION**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes insulating the following duct services:
  - 1. Indoor, concealed supply and outdoor air.
  - 2. Indoor, exposed supply and outdoor air.

#### **1.2 ACTION SUBMITTALS**

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

### **PART 2 - PRODUCTS**

#### **2.1 PERFORMANCE REQUIREMENTS**

- A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products in accordance with ASTM E84, by a testing agency acceptable to authorities having jurisdiction. Factory label insulation, jacket materials, adhesive, mastic, tapes, and cement material containers with appropriate markings of applicable testing agency.
  - 1. All Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

#### **2.2 INSULATION MATERIALS**

- A. Comply with requirements in "Duct Insulation Schedule, General," "Indoor Duct and Plenum Insulation Schedule," and "Aboveground, Outdoor Duct and Plenum Insulation Schedule" articles for where insulating materials are applied.
- B. Products do not contain asbestos, lead, mercury, or mercury compounds.
- C. Products that come in contact with stainless steel have a leachable chloride content of less than 50 ppm when tested in accordance with ASTM C871.
- D. Insulation materials for use on austenitic stainless steel are qualified as acceptable in accordance with ASTM C795.
- E. Foam insulation materials do not use CFC or HCFC blowing agents in the manufacturing process.

- F. Glass-Fiber Blanket: Glass fibers bonded with a thermosetting resin; suitable for maximum use temperature up to 450 deg F in accordance with ASTM C411. Comply with ASTM C553, Type II, and ASTM C1290, Type III with factory-applied FSK jacket . Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Certainteed; SAINT-GOBAIN.
    - b. Johns Manville; a Berkshire Hathaway company.
    - c. Knauf Insulation.
    - d. Manson Insulation Inc.
    - e. Owens Corning.

## 2.3 MASTICS AND COATINGS

- A. Materials shall be compatible with insulation materials, jackets, and substrates.
- B. Vapor-Retarder Mastic, Water Based, Interior Use: Suitable for indoor use on below ambient services.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Childers Brand; H. B. Fuller Construction Products.
    - b. Foster Brand; H. B. Fuller.
    - c. Knauf Insulation.
    - d. Vimasco Corporation.
  2. Water-Vapor Permeance: Comply with ASTM C755, Section 7.2.2, Table 2, for insulation type and service conditions.
  3. Service Temperature Range: Minus 20 to plus 180 deg F.
  4. Color: White .

## 2.4 FACTORY-APPLIED JACKETS

- A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
1. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C1136, Type I.
  2. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C1136, Type II.

## 2.5 TAPES

- A. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C1136.



1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. 3M Industrial Adhesives and Tapes Division.
  - b. Avery Dennison Corporation, Specialty Tapes Division.
  - c. Ideal Tape Co., Inc., an American Biltrite Company.
  - d. Knauf Insulation.
2. Width: 3 inches .
3. Thickness: 6.5 mils .
4. Adhesion: 90 ounces force/inch in width.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

## 2.6 SECUREMENTS

### A. Insulation Pins and Hangers:

1. Metal, Adhesively Attached, Perforated-Base Insulation Hangers: Baseplate welded to projecting spindle that is capable of holding insulation, of thickness indicated, securely in position indicated when self-locking washer is in place. Comply with the following requirements:
  - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) AGM Industries, Inc.
    - 2) Gemco.
    - 3) Midwest Fasteners, Inc.
    - 4) Nelson Stud Welding.
  - b. Baseplate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
  - c. Spindle: Copper- or zinc-coated, low-carbon steel , fully annealed, 0.106-inch- diameter shank, length to suit depth of insulation indicated.
  - d. Adhesive: Recommended by hanger manufacturer. Product with demonstrated capability to bond insulation hanger securely to substrates indicated without damaging insulation, hangers, and substrates.
2. Self-Sticking-Base Insulation Hangers: Baseplate welded to projecting spindle that is capable of holding insulation, of thickness indicated, securely in position indicated when self-locking washer is in place. Comply with the following requirements:
  - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) AGM Industries, Inc.
    - 2) Gemco.
    - 3) Midwest Fasteners, Inc.
  - b. Baseplate: Galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
  - c. Spindle: Copper- or zinc-coated, low-carbon steel , fully annealed, 0.106-inch- diameter shank, length to suit depth of insulation indicated.

- d. Adhesive-backed base with a peel-off protective cover.
3. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- thick, galvanized-steel sheet, with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.
  - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) AGM Industries, Inc.
    - 2) Gemco.
    - 3) Midwest Fasteners, Inc.
    - 4) Nelson Stud Welding.
  - b. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in exposed locations.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

#### 3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of ducts and fittings.
- B. Install insulation materials, vapor barriers or retarders, jackets, and thicknesses required for each item of duct system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, compress, or otherwise damage insulation or jacket.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Keep insulation materials dry during application and finishing. Replace insulation materials that get wet during storage or in the installation process before being properly covered and sealed in accordance with the Contract Documents.
- G. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- H. Install insulation with least number of joints practical.
- I. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.
  2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
  3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
- J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- K. Install insulation with factory-applied jackets as follows:
1. Draw jacket tight and smooth, but not to the extent of creating wrinkles or areas of compression in the insulation.
  2. Cover circumferential joints with 3-inch- wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
  3. Overlap jacket longitudinal seams at least 1-1/2 inches. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 2 inches o.c.
    - a. For below ambient services, apply vapor-barrier mastic over staples.
  4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
  5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to duct flanges and fittings.
- L. Cut insulation in a manner to avoid compressing insulation.
- M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

### 3.3 INSTALLATION OF GLASS-FIBER INSULATION

- A. Blanket Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.
- B. Comply with manufacturer's written installation instructions.
1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 100 percent coverage of duct and plenum surfaces.
  2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
  3. Install either capacitor-discharge-weld pins and speed washers or cupped-head, capacitor-discharge-weld pins on sides and bottom of horizontal ducts and sides of vertical ducts as follows:

- a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.
  - b. On duct sides with dimensions larger than 18 inches, place pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
  - c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
  - d. Do not over compress insulation during installation.
  - e. Impale insulation over pins and attach speed washers.
  - f. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.
4. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches from one edge and one end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch outward-clinching staples, 1-inch o.c. Install vapor barrier consisting of factory- or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.
    - a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.
    - b. Install vapor stops for ductwork and plenums operating below 50 deg F at 18-foot intervals. Vapor stops consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to two times the insulation thickness, but not less than 3 inches.
  5. Overlap unfaced blankets a minimum of 2 inches on longitudinal seams and end joints. At end joints, secure with steel bands spaced a maximum of 18 inches o.c.
  6. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
  7. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch- wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches o.c.

### 3.4 DUCT INSULATION SCHEDULE, GENERAL

#### A. Ducts Requiring Insulation:

1. Indoor, concealed supply and outdoor air.

#### B. Items Not Insulated:

1. Fibrous-glass ducts.
2. Metal ducts with duct liner of sufficient thickness to comply with energy code and ASHRAE/IESNA 90.1.
3. Factory-insulated flexible ducts.
4. Factory-insulated plenums and casings.
5. Flexible connectors.

6. Vibration-control devices.
7. Factory-insulated access panels and doors.

### 3.5 INDOOR DUCT INSULATION SCHEDULE

- A. Concealed, Supply-Air Duct and Plenum Insulation: Glass-fiber blanket , 2 inches thick and 0.75 lb/cu. ft. 6 lb/cu. ft. nominal density.

END OF SECTION 230713

## **232113 – HYDRONIC PIPING AND SPECIALTIES**

### **A. HEATING WATER PIPING**

1. Copper tube 2" and smaller:
  - a. ASTM B 88, Type L, hard-drawn copper tube with ASME B16.22 wrought copper solder-joint fittings using ASTM B 32, lead-free alloy solder and ASTM B 813 water-washable flux.

### **B. PIPE TESTING**

1. All piping systems shall be tested for leaks and proved tight in the presence of the engineer or owner's representative before piping is concealed below floors, above ceilings or covered with insulation.
2. Conduct pressure tests with test medium indicated below. Minimum test time shall be 8 hours; additional time may be necessary to conduct an examination for leakage.
  - a. Heating water: 100 psig, water

### **C. CLEANING**

1. Isolate new piping and affected portions of existing piping and flush with an alkaline compound with emulsifying agents and detergents to remove grease and petroleum products from piping. Circulate solution for a minimum of 24 hours, drain, clean strainer screens, and refill with fresh water.
2. After cleaning and flushing hydronic piping systems, but before balancing, remove disposable fine-mesh strainers in pump suction diffusers.
3. Flushing and cleaning shall be coordinated with the Owner.

### **D. PENETRATIONS**

1. Install sleeves and packing and caulk penetrations through walls and patch to match the adjacent construction.
2. All penetrations through fire resistance rated wall shall be firestopped in accordance with applicable codes and standards.

END OF SECTION 232113

## **SECTION 233113 - METAL DUCTS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

**A. Section Includes:**

1. Single-wall rectangular ducts and fittings.
2. Sheet metal materials.
3. Sealants and gaskets.
4. Hangers and supports.

**B. Related Requirements:**

1. Section 230593 "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing requirements for metal ducts.
2. Section 233300 "Air Duct Accessories" for dampers, sound-control devices, duct-mounting access doors and panels, turning vanes, and flexible ducts.

#### **1.2 ACTION SUBMITTALS**

**A. Product Data:** For each type of the following products:

1. Sheet metal materials and joining methods.
2. Sealants and gaskets.

### **PART 2 - PRODUCTS**

#### **2.1 PERFORMANCE REQUIREMENTS**

- A. Airstream Surfaces:** Surfaces in contact with airstream comply with requirements in ASHRAE 62.1.
- B. ASHRAE Compliance:** Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment," and Section 7 - "Construction and System Startup."
- C. ASHRAE/IES Compliance:** Applicable requirements in ASHRAE/IES 90.1, Section 6.4.4 - "HVAC System Construction and Insulation."
- D. Duct Dimensions:** Unless otherwise indicated, all duct dimensions indicated on Drawings are inside clear dimensions and do not include insulation or duct wall thickness.

## 2.2 SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.
  - 1. Construct ducts of galvanized sheet steel unless otherwise indicated.
- B. Transverse Joints: Fabricate joints in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
  - 1. For ducts with longest side less than 36 inches, select joint types in accordance with Figure 2-1.
  - 2. For ducts with longest side 36 inches or greater, use flange joint connector Type T-22, T-24, T-24A, T-25a, or T-25b. Factory-fabricated flanged duct connection system may be used if submitted and approved by engineer of record.
- C. Longitudinal Seams: Select seam types and fabricate in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Duct/Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible." All longitudinal seams are to be Pittsburgh lock seams unless otherwise specified for specific application.
- D. Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Ch. 4, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

## 2.3 SHEET METAL MATERIALS

- A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials are to be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- B. Galvanized Sheet Steel: Comply with ASTM A653/A653M.
  - 1. Galvanized Coating Designation: G90.
  - 2. Finishes for Surfaces Exposed to View: Mill phosphatized.
- C. Reinforcement Shapes and Plates: ASTM A36/A36M, steel plates, shapes, and bars; black and galvanized.
  - 1. Where black- and galvanized-steel shapes and plates are used to reinforce aluminum ducts, isolate the different metals with butyl rubber, neoprene, or EPDM gasket materials.



- D. Tie Rods: Galvanized steel, 1/4-inch- minimum diameter for lengths 36 inches or less; 3/8-inch- minimum diameter for lengths longer than 36 inches.

#### 2.4 SEALANT AND GASKETS

- A. General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets are to be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested in accordance with UL 723; certified by an NRTL.
- B. Flanged Joint Sealant: Comply with ASTM C920.
  - 1. General: Single-component, acid-curing, silicone, elastomeric.
  - 2. Type: S.
  - 3. Grade: NS.
  - 4. Class: 25.
  - 5. Use: O.

#### 2.5 HANGERS AND SUPPORTS

- A. Hanger Rods for Noncorrosive Environments: Galvanized-steel rods and nuts.
- B. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct."
- C. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.
- D. Trapeze and Riser Supports:
  - 1. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.

### PART 3 - EXECUTION

#### 3.1 DUCT INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and coordination drawings.
- B. Install ducts in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
- C. Install ducts in maximum practical lengths with fewest possible joints.
- D. Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.

- E. Unless otherwise indicated, install ducts vertically and horizontally, and parallel and perpendicular to building lines.
  - F. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
  - G. Install ducts with a clearance of 1 inch, plus allowance for insulation thickness.
  - H. Route ducts to avoid passing through transformer vaults and electrical equipment rooms and enclosures.
  - I. Where ducts pass through non-fire-rated interior partitions and exterior walls and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges of same metal thickness as the duct. Overlap openings on four sides by at least 1-1/2 inches.
  - J. Install fire, combination fire/smoke, and smoke dampers where indicated on Drawings and as required by code, and by local authorities having jurisdiction. Comply with requirements for fire and smoke dampers and specific installation requirements of the damper UL listing.
  - K. Install sleeves and packing and caulk penetrations through walls and patch to match the adjacent construction.
  - L. All penetrations through fire resistance rated walls shall be firestopped in accordance with applicable codes and standards.
  - M. Install heating coils, cooling coils, air filters, dampers, and all other duct-mounted accessories in air ducts where indicated on Drawings.
  - N. Protect duct interiors from moisture, construction debris and dust, and other foreign materials both before and after installation. Comply with SMACNA's "IAQ Guidelines for Occupied Buildings Under Construction," Appendix G, "Duct Cleanliness for New Construction Guidelines."
  - O. Elbows: Use long-radius elbows wherever they fit.
    - 1. Fabricate 90-degree rectangular mitered elbows to include turning vanes.
  - P. Branch Connections: Use lateral or conical branch connections.
- 3.2 INSTALLATION OF EXPOSED DUCTWORK
- A. Protect ducts exposed in finished spaces from being dented, scratched, or damaged.
  - B. Trim duct sealants flush with metal. Create a smooth and uniform exposed bead. Do not use two-part tape sealing system.
  - C. Maintain consistency, symmetry, and uniformity in arrangement and fabrication of fittings, hangers and supports, duct accessories, and air outlets.

- D. Repair or replace damaged sections and finished work that does not comply with these requirements.

### 3.3 DUCT SEALING

- A. Seal ducts at a minimum to the following seal classes in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":
  - 1. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
  - 2. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class A.
  - 3. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class B.

### 3.4 HANGER AND SUPPORT INSTALLATION

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 5, "Hangers and Supports."
- B. Hanger Spacing: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct," for maximum hanger spacing; install hangers and supports within 24 inches of each elbow and within 48 inches of each branch intersection.
- C. Hangers Exposed to View: Threaded rod and angle or channel supports.
- D. Support vertical ducts with steel angles or channel secured to the sides of the duct with welds, bolts, sheet metal screws, or blind rivets; support at each floor and at a maximum intervals of 16 feet.
- E. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

### 3.5 DUCTWORK CONNECTIONS

- A. Make connections to equipment with flexible connectors complying with Section 233300 "Air Duct Accessories."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

### 3.6 STARTUP

- A. Air Balance: Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."

### 3.7 DUCT SCHEDULE

- A. Fabricate ducts with galvanized sheet steel except as otherwise indicated and as follows:
  - 1. Fabricate all ducts to achieve SMACNA pressure class, seal class, and leakage class as indicated below.
- B. Supply Ducts:
  - 1. Ducts Connected between RTUs / AHUs supply fan and furthest supply outlet:
    - a. Pressure Class: Positive 3- inch wg.
    - b. Minimum SMACNA Seal Class: Refer to DUCT SEALING paragraph above.
    - c. SMACNA Leakage Class for Rectangular: 4.
    - d. SMACNA Leakage Class for Round and Flat Oval: 4.
- C. Intermediate Reinforcement:
  - 1. Galvanized-Steel Ducts: Galvanized steel.
- D. Elbow Configuration:
  - 1. Rectangular Duct - Requirements for Different Velocities: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
    - a. Velocity 1000 fpm or Lower:
      - 1) Radius Type RE 1 with minimum 0.5 radius-to-diameter ratio.
      - 2) Mitered Type RE 4 without vanes.
    - b. Velocity 1000 to 1500 fpm:
      - 1) Radius Type RE 1 with minimum 1.0 radius-to-diameter ratio.
      - 2) Radius Type RE 3 with minimum 0.5 radius-to-diameter ratio and two vanes.
      - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
    - c. Velocity 1500 fpm or Higher:
      - 1) Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
      - 2) Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.
      - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."

END OF SECTION 233113

## SECTION 233300 - AIR DUCT ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Manual volume dampers.
  2. Turning vanes.
  3. Duct-mounted access doors.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of products indicated and applicable to installation.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

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

#### 2.2 MANUAL VOLUME DAMPERS

- A. Standard, Steel, Manual Volume Dampers:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Air Balance; MESTEK, Inc.
    - b. American Warming and Ventilating (AWV); Mestek, Inc.
    - c. Arrow United Industries; Mestek, Inc.
    - d. Cesco Products; MESTEK, Inc.
    - e. Greenheck Fan Corporation.
    - f. McGill AirFlow LLC.
    - g. Nailor Industries Inc.
    - h. Ruskin; Air Distribution Technologies, Inc.; Johnson Controls, Inc.
    - i. Vent Products Co., Inc.
  2. Performance:
    - a. Leakage Rating Class III: Leakage not exceeding 40 cfm/sq. ft. against 1-inch wg differential static pressure.

3. Construction:
  - a. Linkage out of airstream.
  - b. Suitable for horizontal or vertical airflow applications.
4. Frames:
  - a. Hat-shaped, 16-gauge- thick, galvanized sheet steel .
  - b. Mitered and welded corners.
  - c. Flanges for attaching to walls and flangeless frames for installing in ducts.
5. Blades:
  - a. Multiple or single blade.
  - b. Parallel- or opposed-blade design.
  - c. Stiffen damper blades for stability.
  - d. Galvanized steel; 16 gauge thick.
6. Blade Axles: Galvanized steel .
7. Bearings:
  - a. Oil-impregnated bronze .
  - b. Dampers mounted with vertical blades to have thrust bearing at each end of every blade.
8. Tie Bars and Brackets: Galvanized steel.
9. Locking device to hold damper blades in a fixed position without vibration.

B. Jackshaft:

1. Size: 0.5-inch diameter.
2. Material: Galvanized-steel pipe rotating within pipe-bearing assembly mounted on supports at each mullion and at each end of multiple-damper assemblies.
3. Length and Number of Mountings: As required to connect linkage of each damper in multiple-damper assembly.

C. Damper Hardware:

1. Zinc-plated, die-cast core with dial and handle, made of 3/32-inch- thick zinc-plated steel, and a 3/4-inch hexagon locking nut.
2. Include center hole to suit damper operating-rod size.
3. Include elevated platform for insulated duct mounting.

## 2.3 TURNING VANES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Aero-Dyne Sound Control Co.
2. Ductmate Industries, Inc; a DMI company.
3. Duro Dyne Inc.
4. DynAir; a Carlisle Company.
5. Ward Industries; a brand of Hart & Cooley, LLC.

- B. Manufactured Turning Vanes for Metal Ducts: Fabricate curved blades of galvanized sheet steel; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.

- C. General Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figure 4-3, "Vaness and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
- D. Vane Construction:
  - 1. Single wall for ducts up to 48 inches wide and double wall for larger dimensions.

## 2.4 DUCT-MOUNTED ACCESS DOORS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Aire Technologies, Inc.; DMI Companies.
  - 2. Arrow United Industries; Mestek, Inc.
  - 3. Cesco Products; MESTEK, Inc.
  - 4. Ductmate Industries, Inc; a DMI company.
  - 5. Duro Dyne Inc.
  - 6. McGill AirFlow LLC.
  - 7. Ruskin; Air Distribution Technologies, Inc.; Johnson Controls, Inc.
  - 8. United Enertech Corp.
  - 9. Ward Industries; a brand of Hart & Cooley, LLC.
- B. Duct-Mounted Access Doors: Fabricate access panels in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figure 7-2 (7-2M), "Duct Access Doors and Panels," and Figure 7-3, "Access Doors - Round Duct."
  - 1. Door:
    - a. Double wall, rectangular.
    - b. Galvanized sheet metal with insulation fill and thickness as indicated for duct pressure class.
    - c. 24-gauge- thick galvanized steel door panel.
    - d. Vision panel.
    - e. Hinges and Latches: 1-by-1-inch butt or piano hinge and cam latches.
    - f. Fabricate doors airtight and suitable for duct pressure class.
  - 2. Frame: Galvanized sheet steel, with bend-over tabs and foam gaskets.
    - a. 24-gauge- thick galvanized steel or 0.032-inch- thick aluminum frame.
  - 3. Number of Hinges and Locks:
    - a. Access Doors Less Than 12 Inches Square: No hinges and two sash locks.
    - b. Access Doors up to 18 Inches Square: Continuous and two sash locks.
    - c. Access Doors up to 24 by 48 Inches: Continuous and two compression latches with outside and inside handles.

## 2.5 DUCT ACCESSORY HARDWARE

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Ductmate Industries, Inc; a DMI company.
  2. Duro Dyne Inc.
  3. DynAir; a Carlisle Company.
  4. United Eneritech Corp.
  5. Ventfabrics, Inc.
  6. Ward Industries; a brand of Hart & Cooley, LLC.
- B. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct-insulation thickness.
- C. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.

## 2.6 MATERIALS

- A. Galvanized Sheet Steel: Comply with ASTM A653/A653M.
1. Galvanized Coating Designation: G60.
  2. Exposed-Surface Finish: Mill phosphatized.
- B. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless steel ducts.
- C. Tie Rods: Galvanized steel, 1/4-inch minimum diameter for lengths 36 inches or less; 3/8-inch minimum diameter for lengths longer than 36 inches.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install duct accessories in accordance with applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116 for fibrous-glass ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and fibrous-glass ducts, stainless steel accessories in stainless steel ducts, and aluminum accessories in aluminum ducts.
- C. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
1. Install steel volume dampers in steel ducts.
  2. Install aluminum volume dampers in aluminum ducts.



- D. Set dampers to fully open position before testing, adjusting, and balancing.
- E. Install test holes at fan inlets and outlets and elsewhere as indicated and as needed for testing and balancing.
- F. Install duct access doors on sides of ducts to allow for inspecting, adjusting, and maintaining accessories and equipment at the following locations:
  - 1. On both sides of duct coils.
  - 2. Downstream from manual volume dampers in rectangular ducts, control dampers, backdraft dampers, and equipment.
  - 3. Control devices requiring inspection.
  - 4. Elsewhere as indicated.
- G. Install access doors with swing against duct static pressure.
- H. Access Door Sizes:
  - 1. Size to allow adequate room for required task, but in no instances shall access door be smaller than 8 by 5 inches.
- I. Install duct test holes where required for testing and balancing purposes.

END OF SECTION 233300

## SECTION 238216.11 - HYDRONIC AIR COILS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Duct-mounted hot water air coils.

#### 1.2 ACTION SUBMITTALS

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

#### 1.3 INFORMATIONAL SUBMITTALS

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Performance Ratings: Tested and rated in accordance with AHRI 410 and ASHRAE 33.
- B. Minimum Working-Pressure/Temperature Ratings: 250 psig / 300 deg F.
- C. Coils shall be proof-tested to 300 psig and leak-tested under water to 200 psig.
- D. Coils shall be selected so that maximum air pressure drop does not exceed 0.10-in. wc at maximum airflow.

#### 2.2 HYDRONIC AIR COILS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings Daikin Applied or comparable product by one of the following:
1. Carrier Global Corporation.
  2. Super Radiator Coils.
  3. Trane.

4. York.
- B. Description: Coils constructed of staggered tubes mechanically expanded into continuous collars that are die-formed into the coil fins; self-venting; counterflow design of air to fluid.
- C. Tubes:
1. Material: Copper .
  2. Nominal Diameter: Minimum 5/8 inch (16 mm) before expanding, selected to provide performance indicated.
  3. Nominal Wall Thickness: As required by performance, minimum 0.020-inches thick.
  4. Return Bends: 180-degree bends; material and nominal diameter to match tubes.
  5. Fluid Velocity at Design Flow Rate:
    - a. Maximum: 10.0 fps at maximum airflow .
    - b. Minimum: 1.0 fps at design airflow .
  6. Features: Cleanable Individually drainable.
- D. Fins:
1. Type: Plate.
  2. Materials:
    - a. Aluminum: 0.0075-inch thick.
  3. Collars: Full collars for accurate fin spacing and maximum tube contact while leaving no surface of tube exposed.
  4. Configuration: Fin type as required by performance requirements .
  5. Fin and Tube Joint: Mechanical bond .
- E. Headers:
1. Material: seamless copper .
  2. Tube-to-Header Connections: Tube-to-header holes to intrude inward, so landed surface area is 3 times the core tube thickness, to provide enhanced-header-to-tube joint integrity. Evenly extend tubes within the ID of the header no more than 0.12 inch (3 mm).
  3. Header Top and Bottom Caps: End caps to be die-formed and installed on the ID of header, such that the landed surface area is 3 times the header wall thickness.
  4. Drains: Include low point of supply and return header with a NPS 1/2 (DN 13) drain connection.
  5. Vents: Include high point of supply and return header with a NPS 1/2 (DN 13) vent connection.
  6. Supply and Return Connections: Copper pipe; threaded , same end of coil.
  7. Protect opening of supply, return, vent, and drain connections with a threaded cap to prevent entry of dirt into coil.
- F. Casings and Tube Sheets:
1. Depth: Extend coil casing and tube sheets a minimum of 1/2 inch beyond face of fins on both entering and leaving sides.

2. Materials:
  - a. Galvanized steel, ASTM A653/A653M, G90 coating.

G. Top and Bottom Casings:

1. Flange face minimum of 1-1/2 inches ; double-flange edge for rigidity and ease of removal with secondary flange face minimum of 1/2 inch.
2. Thickness:
  - a. Coils with Fin Length of Up to 72 Inches : Minimum of 16 gauge thick.
  - b. Coils with Fin Length Exceeding 72 Inches : Minimum of 14 gauge thick.

H. End Tube Sheets:

1. Tube sheet holes rolled to prevent chaffing of tubes during thermal expansion and contraction.
2. Flange face minimum of 1-1/2 inches .
3. Thickness: Minimum of 16 gauge thick.

I. Intermediate Tube Sheets:

1. Tube sheet holes rolled to prevent chaffing of tubes during thermal expansion and contraction.
2. Space intermediate tube sheets a maximum of 48 inches o.c. and locate to provide equal spacing between tube sheet across coil tube length.
3. Flange face minimum of 1/2 inch .
4. Thickness: Minimum of 16 gauge thick.

J. Holes: Include number, size, and location of holes in casing and end tube sheets required for coil installation.

K. Hardware: Use hex-head bolts, nuts, and washers constructed of stainless steel.

L. Nameplate: Aluminum or stainless steel nameplate with brass or stainless steel chain for each coil, with the following data engraved or embossed:

1. Manufacturer name, address, telephone number, and website address.
2. Manufacturer model number.
3. Serial number.
4. Manufacturing date.
5. Coil identification (indicated on Drawings).
6. Coil fin length.
7. Coil fin height.
8. Coil weight with fluid/without fluid.

M. Coating: None .

## 2.3 MATERIALS

A. Aluminum: ASTM B209.

- B. Copper Tube: ASTM B75/ASTM 75M annealed temper or ASTM B280 drawn temper.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine ducts, plenums, and casings to receive air coils for compliance with requirements for installation tolerances and other conditions affecting coil performance.
- B. Examine roughing-in for piping systems to verify actual locations of piping connections before coil installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

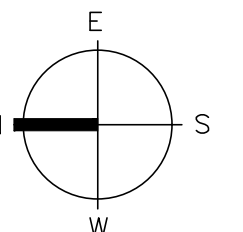
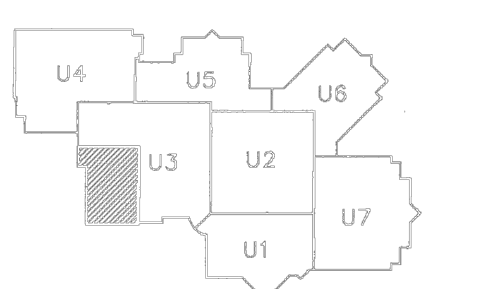
- A. Install coils level and plumb.
- B. Install coils in metal ducts and casings constructed in accordance with SMACNA's "HVAC Duct Construction Standards, Metal and Flexible."
- C. Straighten bent fins on air coils.
- D. Clean coils using materials and methods recommended in writing by manufacturers, and clean inside of casings and enclosures to remove dust and debris.

#### 3.3 PIPING CONNECTIONS

- A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to coils to allow service and maintenance.
- C. Connect water piping with unions and shutoff valves to allow coils to be disconnected without draining piping. Refer to Sections 230519 and 230523 for valves and piping specialties.

END OF SECTION 238216.11





ISSUED FOR BIDS	02/09/2023
NO. DESCRIPTION	DATE

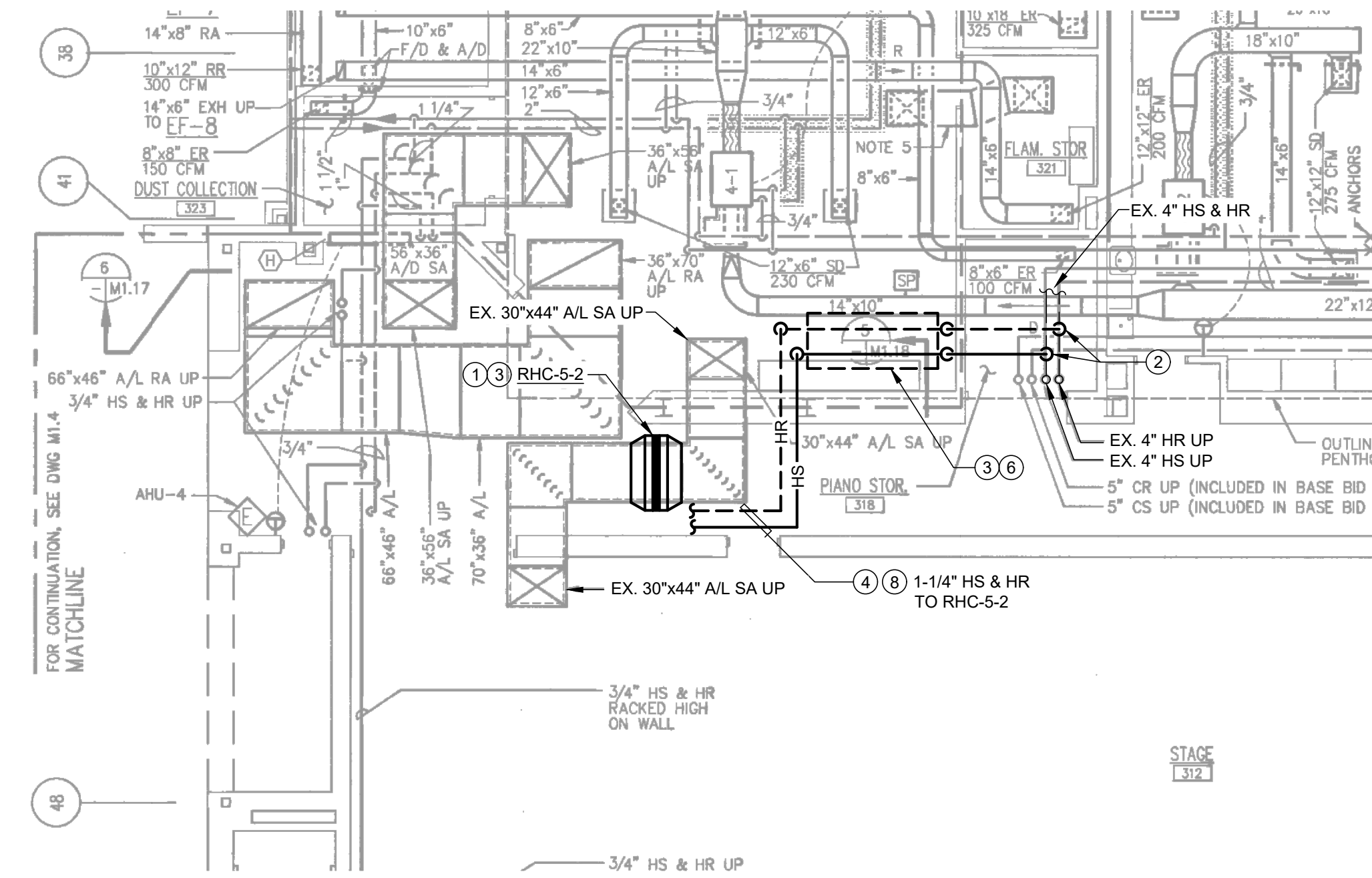
DRAWING

PART PLAN - THEATER UPPER LEVEL

DRAWN BY	RML
CHECKED BY	JRB
PROJECT NO.	202219
SCALE	1/8"=1'-0"
SHEET	

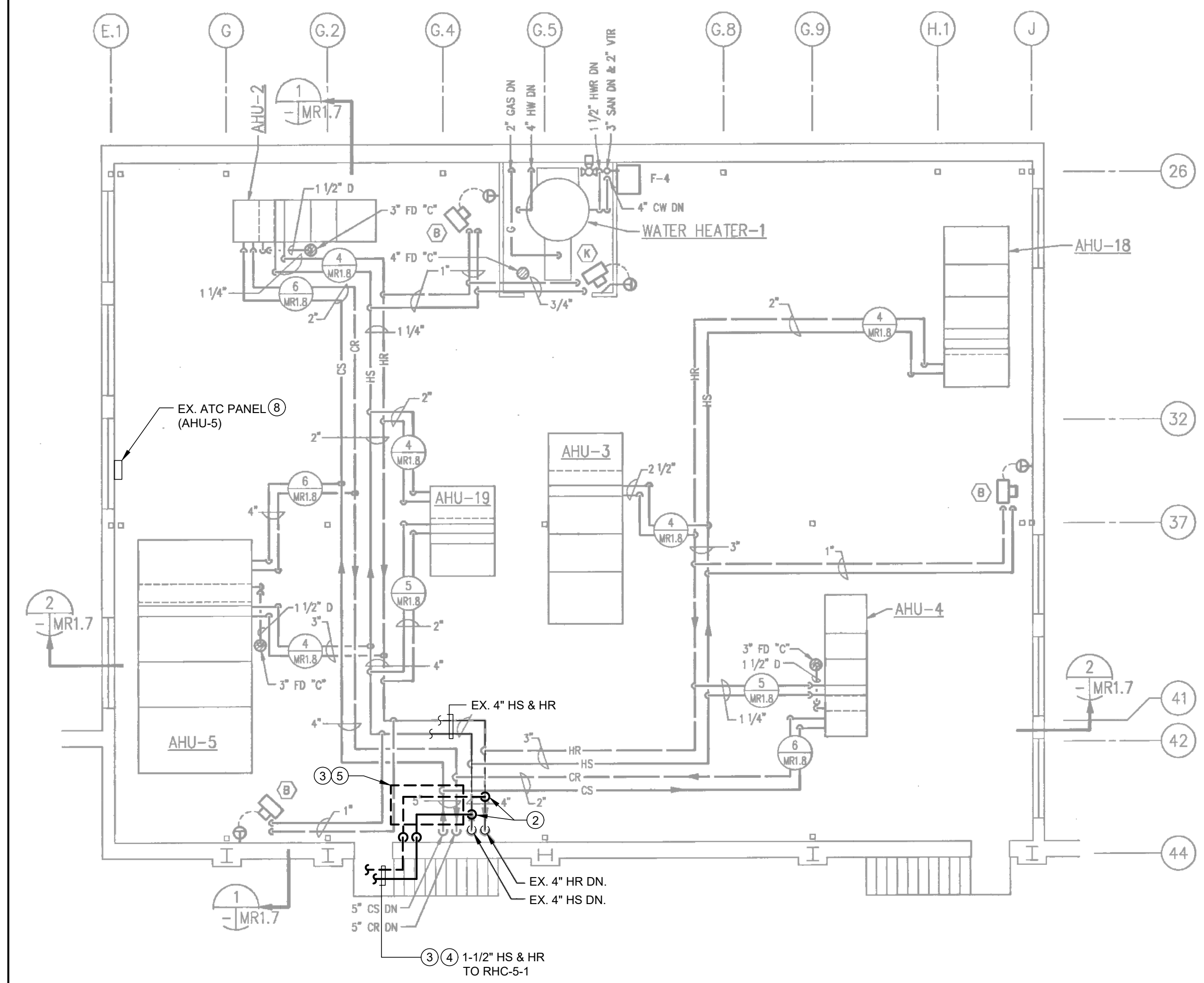
**SHEET NOTES**

- PROVIDE TRANSITION AND MODIFY EXISTING DUCTWORK AS REQUIRED TO INSTALL NEW HOT WATER REHEAT COIL. SEAL EDGES OF INTERNAL DUCT LINER. PROVIDE 2" THICK EXTERNAL DUCT INSULATION AROUND NEW HEATING WATER COIL AND TRANSITION DUCT. PROVIDE ALL AUTOMATIC TEMPERATURE CONTROLS WIRING FROM CONTROL VALVE TO THE EXISTING ATC PANEL IN THE MECHANICAL PENTHOUSE. PROVIDE PLASTIC ENGRAVED EQUIPMENT LABELS ON COILS AND BRASS VALVE TAGS ON VALVES AND CONTROL VALVES.
- CONNECT TO EXISTING HS & HR PIPING. CONTRACTOR SHALL FIELD VERIFY EXACT CONNECTION POINT AND ADJUST AS REQUIRED.
- REFER TO HEATING WATER COIL CONNECTION DETAIL ON SHEET M-2.
- PROVIDE INSULATION ON ALL NEW HEATING WATER PIPING IN ACCORDANCE WITH SCOPE OF WORK. PROVIDE PIPE LABEL IDENTIFICATION AND FLOW ARROWS ON PIPING. STENCIL SIZE, PAINT COLOR AND SYSTEM IDENTIFICATION SHALL MATCH EXISTING PIPING.
- PROVIDE VALVES AND ACCESSORIES FOR REHEAT COIL IN ACCESSIBLE LOCATION IN PENTHOUSE IN THIS VICINITY.
- PROVIDE VALVES AND ACCESSORIES FOR REHEAT COIL IN ACCESSIBLE LOCATION ABOVE CEILING IN THIS VICINITY.
- TEMPORARILY REMOVE AND RELOCATE EXISTING STRIP LIGHT FIXTURE LOCATED BELOW EXISTING SUPPLY DUCT TO BE BELOW RECONFIGURED SUPPLY DUCTWORK / REHEAT COIL.
- THE CONTRACTOR SHALL PROVIDE AUTOMATIC TEMPERATURE CONTROLS (ATC) WIRING FROM THE 2-WAY MODULATING CONTROL VALVES TO THE EXISTING JOHNSON CONTROLS ATC PANELS. LOW-VOLTAGE CABLES SHALL BE 4-WIRE, NO. 18 AWG COPPER, SHIELDED CABLE, CONSISTING OF TWO TWISTED PAIRS, TFI INSULATION, UL-APPROVED FOR 600-VOLTS AT 90 °C. COLORS SHALL BE BLACK, RED, WHITE AND GREEN. PROVIDE MINIMUM 3/4-INCH ELECTRICAL METALLIC TUBING (EMT) FOR INSTALLATION OF LOW-VOLTAGE CABLES. THE HOISTS WILL CONNECT THE WIRING TO THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) AND PROVIDE ALL NECESSARY PROGRAMMING TO INTEGRATE THE CONTROL OF THE HOT WATER REHEAT COILS INTO THE SEQUENCE OF OPERATIONS.



**PART PLAN - STAGE LEVEL**

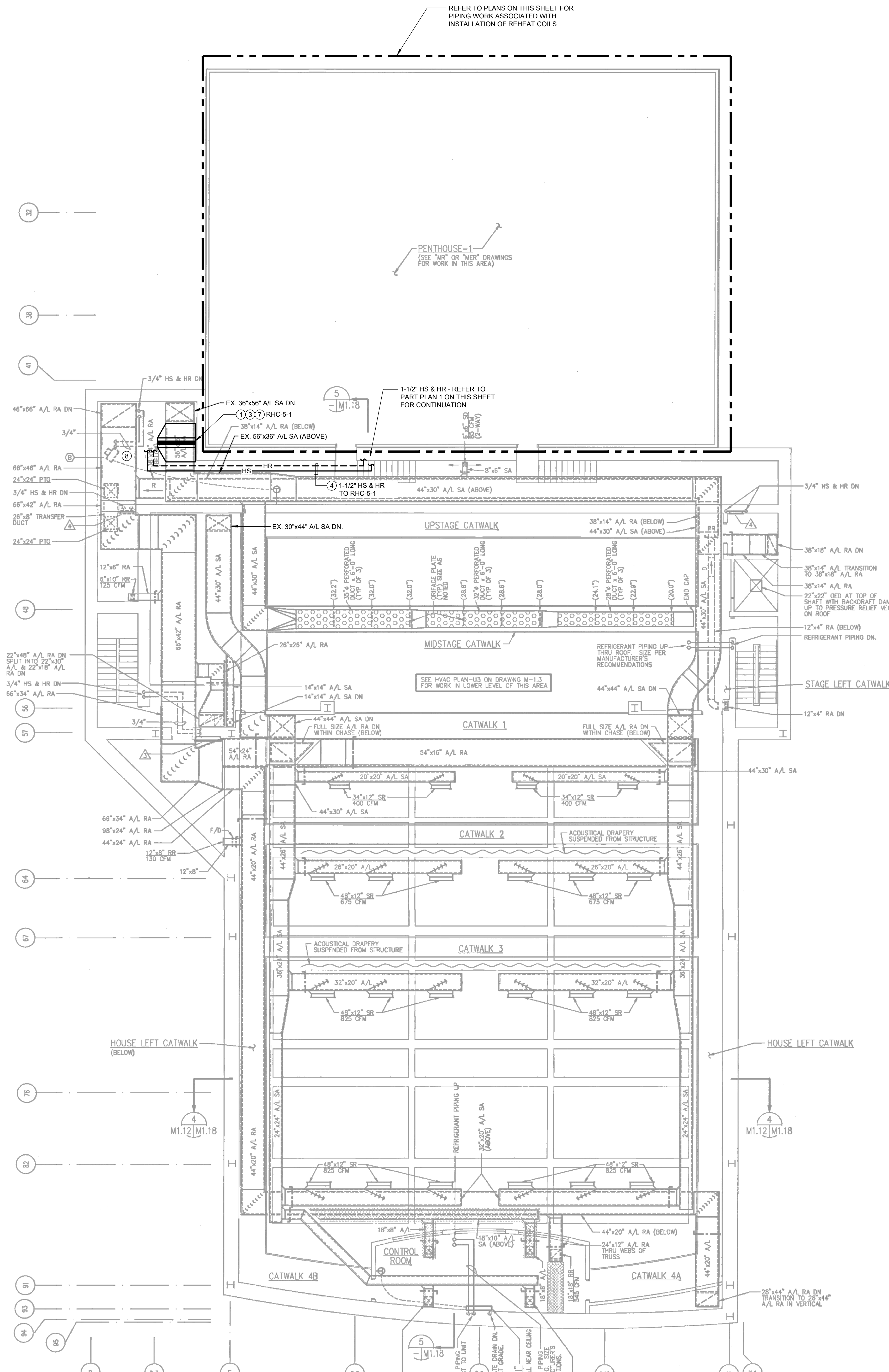
SCALE: 1/8" = 1' - 0"



**MECHANICAL EQUIPMENT PENTHOUSE 1 PLAN - PIPING**

SCALE: 1/8" = 1' - 0"

REFER TO PLANS ON THIS SHEET FOR PIPING WORK ASSOCIATED WITH INSTALLATION OF REHEAT COILS



**PART PLAN - THEATER UPPER LEVEL**

SCALE: 1/8" = 1' - 0"

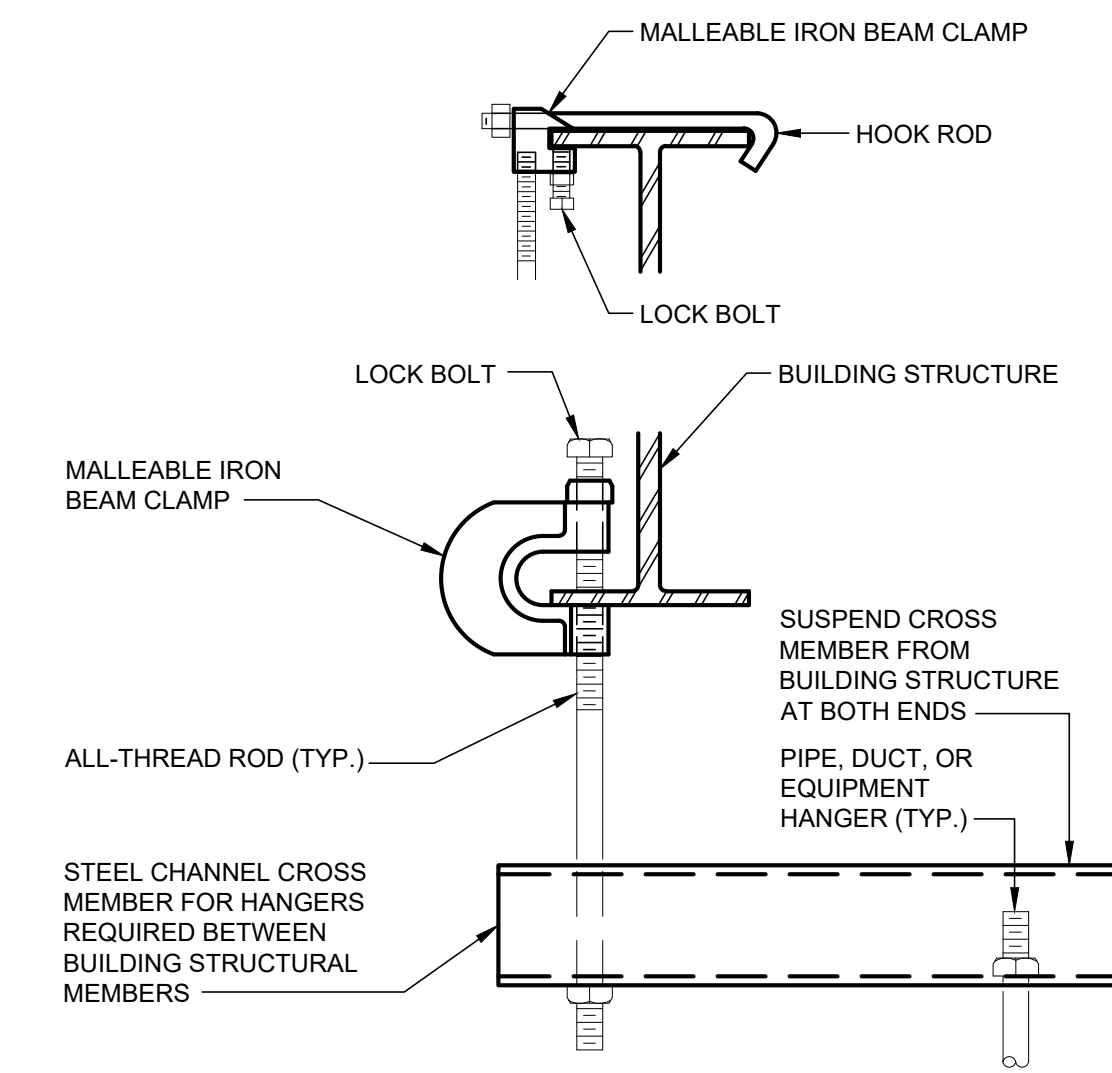




### HOT WATER DUCT COIL SCHEDULE

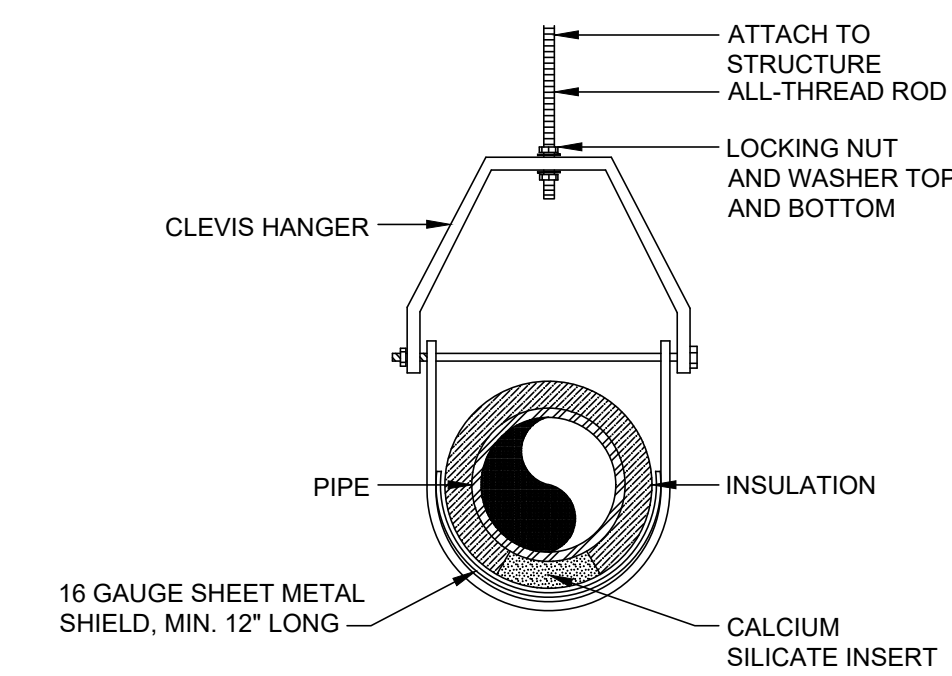
DES.	AREA SERVED	MAX. AIRFLOW (CFM)	DESIGN AIRFLOW (CFM)	CAP. (MBH)	EAT (°F)	LAT (°F)	MAX. APD @ MAX. AIRFLOW (IN. WC.)	FLUID	FLOW (GPM)	EWT (°F)	LWT (°F)	PIPE DIA.	WPD (FT. WC.)	APPROX. FINS DIMS (L x H x Dp)	MANUFACTURER & MODEL NO.	NOTES
RHC-S-1	AHU-5	15,200	4,580	98.9	55.0	75.0	0.10	WATER	9.9	140	120	5/8" Ø	0.7	72"L x 48"H x 6"Dp	DAIKIN SMQ0601A	1-7
RHC-S-2	AHU-5	9,640	2,890	62.4	55.0	75.0	0.10	WATER	6.2	140	120	5/8" Ø	0.5	56"L x 33"H x 5"Dp	DAIKIN SWQ0701A	1-7

- NOTES:**
- PROVIDE WITH ALUMINUM FINS AND 5/8" OD, 0.020" THICK SEAMLESS COPPER TUBES.
  - PROVIDE WITH GALVANIZED OR STAINLESS STEEL COIL CASING.
  - COILS SHALL BE MOUNTED IN THE DUCTWORK, DOWNSTREAM OF THE SUPPLY FAN.
  - COILS SHALL BE PROOF-TESTED TO 300 PSIG AND LEAK-TESTED UNDER WATER TO 200 PSIG.
  - COIL PERFORMANCE SHALL BE CERTIFIED IN ACCORDANCE WITH AHRI STANDARD 410.
  - DIMENSIONS GIVEN ARE BASED OFF OF THE METAL SIZE OF THE DUCTWORK. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ACCOMMODATE FOR INTERNAL DUCT LINER PRIOR TO PROVIDING SUBMITTALS TO THE ENGINEER.
  - CONTRACTOR SHALL FIELD VERIFY COIL CONNECTION SIDE AND ADJUST AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS.



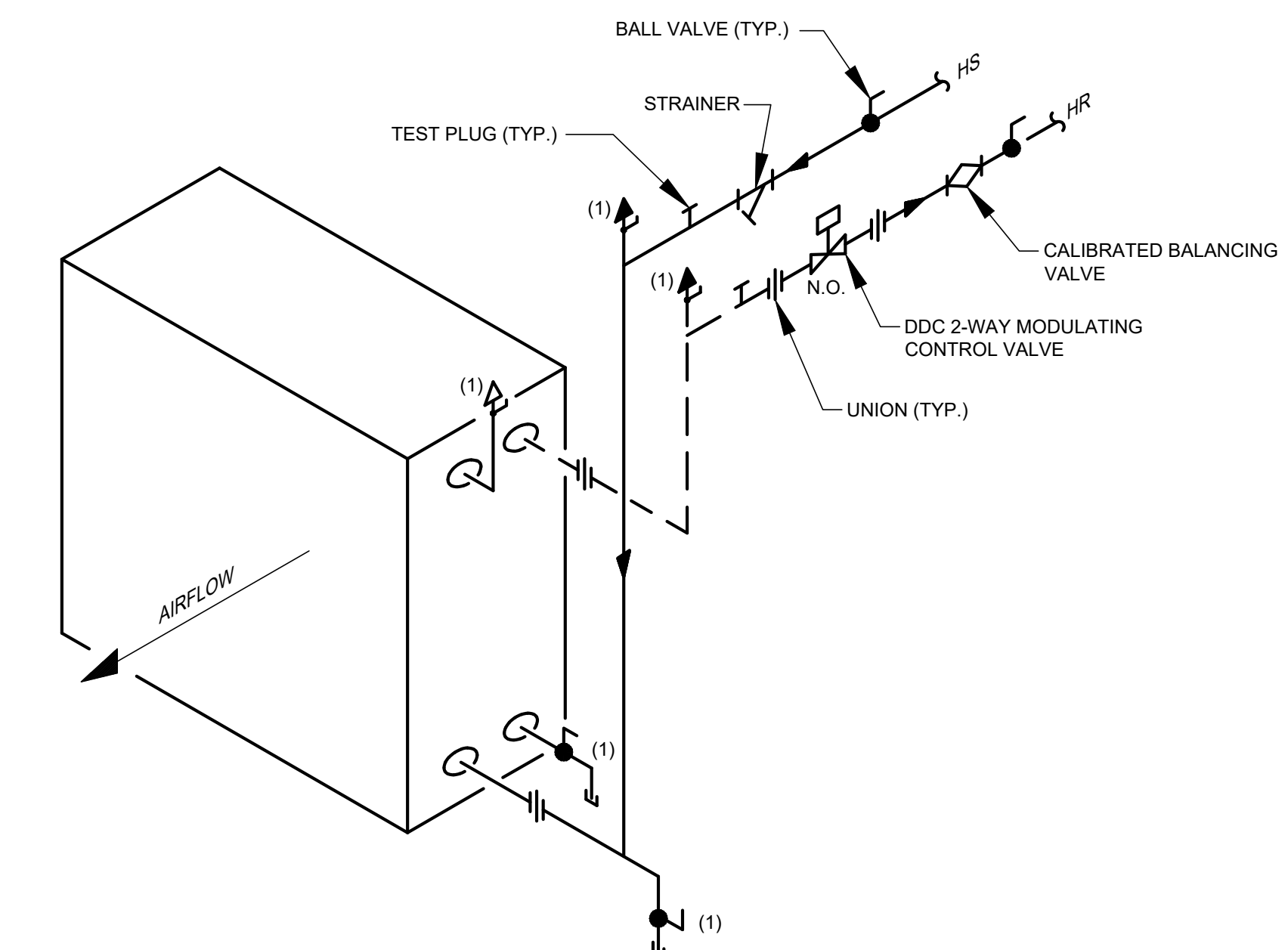
NOTE: STEEL CHANNEL CROSS MEMBER SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS

#### CONNECTIONS TO BUILDING STRUCTURE



NOTE: DETAIL IS FOR INTERIOR STEEL PIPING, NOT PRE-INSULATED EXTERIOR PIPING

**2** PIPE HANGER DETAIL  
M-2 NO SCALE



**NOTES:**

- PROVIDE 3/4" HOSE END DRAIN VALVE AT ALL LOW POINTS OF PIPING, MANUAL AIR VENT AT COIL AND AUTOMATIC AIR VENTS AT ALL HIGH POINTS OF PIPING.
- ALL PIPE, VALVES, AND FITTINGS SHALL BE ARRANGED SO AS NOT TO INTERFERE WITH COIL ACCESS OR REMOVAL.
- CONTRACTOR SHALL DETERMINE PIPING CONNECTION SIDES FOR EACH COIL BASED ON FIELD CONDITIONS.

**1** HEATING WATER COIL CONNECTION DETAIL  
M-2 NO SCALE

SEAL

PROJECT

**RIVER HILL HIGH SCHOOL**  
**HOT WATER REHEAT COILS**  
12101 CLARKSVILLE PIKE  
CLARKSVILLE, MD 21029

KEY PLAN

NO.	DESCRIPTION	DATE

DRAWING

**MECHANICAL DETAILS AND SCHEDULES**

DRAWN BY	RML
CHECKED BY	JRB
PROJECT NO.	202210
SCALE	NOTED
SHEET	

**M-2**