ADDENDUM 5

ADDENDUM DATE: June 13th, 2025

PROJECT: United Middle School of Havelock Addition
Havelock, NC

OWNER: Craven County Schools
3600 Trent Road
New Bern, NC 28562

ARCHITECT: Smith Sinnett Architecture, P.A.
4600 Lake Boone Trail, Suite 205
Raleigh, North Carolina 27607

BIDS DUE: **June 24th 2025 at 2:00 p.m.**
Craven County Schools Board Room,
3600 Trent Road
New Bern NC 28562

Please note, Project Addenda and Bidders List are available at www.smithsinnett.com under the 'Documents' Tab on the navigation bar.

This Addendum shall be included in the contract for the above-referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Schedule

1. A second pre-bid meeting will be held at 1:00 pm on Tuesday June 17, 2025 at the existing Tucker Creek Middle School, 200 Sermons Blvd, Havelock, NC 28532.
    - **This pre-bid meeting is mandatory for bidders who did not attend the May 29 pre-bid meeting.**
    - This pre-bid meeting is optional for bidders who attended the May 29 pre-bid meeting, and for all subcontractors.

2. Phase 1 (Test and Balance of all existing building HVAC) must be completed on or before August 8, 2025. Refer to Section 007300 – Supplementary General Conditions for more information.

3. We are currently accepting new RFIs. The last day for pre-bid questions is June 19.

Drawings

1. None

Specifications

1. **Revised:** 002000 Instructions to Bidders: The following Articles were updated:
    - Article 7 Performance Bond and Payment Bond – revised
    - Testing – added as Article 8
    - Enumeration of the Proposed Contract Documents – moved to Article 9, populated 9.1 project data
2. **Revised:** 007300 Supplementary General Conditions: Liquidated Damages (LD) section was updated to reduce the Phase 2 LD rate from $1000 to $500.
3. **Revised:** 013100 Project Management and Coordination: Section 1.4.G was added to describe Architect's use of GC's required Construction Management Platform.
4. **Revised:** 042000 Unit Masonry: the following sections were updated:
    - 2.4.B Face Brick: revised to include more specific Basis of Design to match existing brick
    - 2.6, A and E: revised to include more specific Basis of Design for mortar color
    - 2.10.C: revised to include Basis of Design for weep and vent color
    - 2.12.E: revised to include more specific Basis of Design for mortar color

End of Addendum 5

Attached:
Drawings:
None
Specifications:
002000 Instructions to Bidders
007300 Supplementary General Conditions
013100 Project Management and Coordination
042000 Unit Masonry
Other:
Plumbing Addendum 5, under separate cover
Mechanical Addendum 5, under separate cover
Bid 1 RFI Log (previously issued in Addendum 3, for reference)
Bid 2 RFI Log
Revised DOI Approval Letter

AIA® Document A701® – 2018

Instructions to Bidders

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

2024004 Tucker Creek Middle School Classroom Addition
Tucker Creek Middle School
200 Sermons Boulevard
Havelock, NC 28532
Design and construction services for the expansion of Tucker Creek Middle School with an addition of approximately 20 classrooms.

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

Craven County Schools
3600 Trent Road
New Bern, NC 28562

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

Smith Sinnett Architecture
4600 Lane Boone Trail
Raleigh, NC 27607

TABLE OF ARTICLES

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 any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

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

§ 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, to which Work may be added or deleted by 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, or that does not change, 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 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** 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 observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

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

§ 3.1.3 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.

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

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

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

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

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

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four 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 Prior to submitting a Bid, each Bidder shall ascertain 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 or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name 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.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, 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. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party 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.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

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

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:
(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids
Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)
§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, 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 lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement
Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability
A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals
§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

.1 a designation of the Work to be performed with the Bidder's own forces;
.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
.3 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 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder 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, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for 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.

§ 6.3.4 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

§ 7.1 Bond Requirements
§ 7.1.1 The Contractor shall furnish bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder in a form and with a Surety satisfactory to the Owner.

§ 7.1.2 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.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 The Contractor is required to furnish in duplicate a Performance Bond and a Labor and Material Payment Bond, each in the amount of one hundred percent (100%) of the Contract Sum, written by a surety company licensed to do business in North Carolina and with a minimum AM Best "A" rating or comparable rating from another service reasonably acceptable to Owner.
(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of 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 not later than nine days following the date of execution of the Contract. If the Work is to commence sooner 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, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall predate the fully executed Contract.

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

ARTICLE 8 TESTING

§ 8.1 With regard to inspections and tests, the costs of which the Owner is responsible for paying, they will be made by a pre-qualified, independent testing agency selected by the Owner. The cost of the initial services of such agency will be paid by the Owner. When the initial tests indicate non-compliance with the Contract Documents, any subsequent testing occasioned by non-compliance shall be performed by the same agency and the cost thereof shall be borne by the Contractor. Representatives of the testing agency shall have access to the Work at all times. The Contractor shall provide facilities for such access in order that the agency may properly perform its functions.

§ 8.2 The independent testing agency, contracted by the Owner, shall prepare the test reports, logs, and certificates applicable to the specific inspections and tests and promptly deliver the specified number of copies to the designated parties. Certificates of inspection, testing or approval required by public authorities shall be secured by the Contractor and promptly delivered to them to the Owner, in adequate time to avoid delays in the Work or final payment therefore.

ARTICLE 9 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 9.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

Craven County Standard Contract (refer to spec section 008000

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

Craven County General Conditions (refer to spec section 007200)

.4 Building Information Modeling Exhibit, if completed:

N/A

.5 Drawings

Number	Title	Date
Refer to Construction Documents	United Middle School of Havelock Addition	May 14th 2025

.6 Specifications

Section	Title	Date	Pages
Refer to Project Manual	United Middle School of Havelock Addition	May 14th 2025	

.7 Addenda:

Number	Date	Pages
Addendum 1	May 23rd 2025	78
Addendum 2	May 30th 2025	161
Addendum 3	June 4th 2025	106
Addendum 4	June 6th 2025	14
Addendum 5	June 13th 2025 (anticipated)	54

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[**N/A**] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

[**N/A**] The Sustainability Plan:

Title	Date	Pages

[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Refer to Project Manual	United Middle School of Havelock Addition	May 14th 2025	

.9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

SECTION 00 72 00 - SUPPLEMENTARY GENERAL CONDITIONS

The following supplements modify, change, delete from or add to the of Craven County General Provisions: Attachment (A) Where any provisions of the Attachment (A) is modified or any paragraph, subparagraph or clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of that article, paragraph, subparagraph or clause shall remain in effect.

CONSTRUCTION PERIOD

Start and Completion Time:

1. The Contract time shall commence on a date to be specified in a written Notice to Proceed from the Architect. Anticipated Notice to Proceed: July 4th, 2025.

2. Phase 1 (T&B of all existing building HVAC) – Final Completion on or before August 8, 2025; irrespective of Notice to Proceed.

3. Phase 1 Liquidated Damages, final completion: The Contractor shall be liable for and shall pay the Owner, or the Owner shall retain from compensation otherwise due to be paid to the Contractor, the sum of One Thousand Dollars ($1,000.00), herein stipulated as liquidated damages, for each calendar day of delay until Phase 1 is Complete.

4. Phase 2 – Substantial completion to be six hundred and eighty-one (681) days from issuance of Notice to Proceed.

5. Phase 2 Liquidated Damages, substantial completion: The Contractor shall be liable for and shall pay the Owner, or the Owner shall retain from compensation otherwise due to be paid to the Contractor, the sum of Five Hundred Dollars ($500.00), herein stipulated as liquidated damages, for each calendar day of delay until Phase 2 is Substantially Complete.

6. The time of Phase 2 **Final Completion** shall be Thirty (30) consecutive calendar days past the Phase 2 Substantial Completion date noted above.

7. For each consecutive calendar day that the Work remains incomplete after the date established for Final Completion of each of the individual phases listed above, the Contractor shall pay, or the Owner will retain from compensation otherwise to be paid to the Contractor, the sum of Five Hundred Dollars ($500.00).

OFF-SITE STORED MATERIALS

Material Billing:

1. The GC may Elect to bill for off-site storage of materials under the following conditions:
    a. Provide a Certificate of Insurance in the Owner's name for the full amount of the stored materials.
    b. Name of the facility and address of the stored materials must be provided and listed on the Insurance Certificate.
    c. Photos of all the stored materials shall be provided.
    d. Refer to Section 01 29 00 Payment Procedures for submitting Insurance with monthly pay application.

APPLICATION FOR PAYMENT

1. The form of Application for payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet. Certificate of Release of Liens shall be submitted with each pay application. A reasonable facsimile of these AIA documents may be used provided they have been preapproved by the Architect.

2. Until Substantial Completion, the Owner will pay 95% of the amount due the Contractor on account of progress payments. After the Work is 50% complete, if the manner of completion of the Work and its progress are and remain satisfactory to the Owner and Architect, and in the absence of other good and sufficient reasons, retainage will be held at 5% of the total Contract and the Architect will authorize remaining partial payments to be paid in full.

3. The full Contract retainage may be reinstated if the manner of completion of the Work and its progress do not remain satisfactory to the Owner and Architect, or if the Surety withholds its consent, or for other good and sufficient reasons.

END OF SECTION 00 72 00

SECTION 01 31 00 - 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. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. Coordination Drawings.
   2. Administrative and supervisory personnel.
   3. Project meetings.
   4. Requests for Interpretation (RFIs).

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.

C. Related Sections include the following:
   1. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
   2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.

1.3 DEFINITIONS

A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

A. The General Contractor shall coordinate construction activities of other contractors, the Owner, and other entities involved to assure efficient and orderly installation of each part of the work.

B. 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.

C. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with 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 with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.
   4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

D. 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.

E. Administrative Procedures: The General Contractor shall coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors 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.
   9. Project closeout activities.

F. Conservation: The General Contractor shall coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
   1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

G. Construction Management Platform; should the General Contractor require the Architect and the Architect's consultants to use a Construction Management platform, such as Procore or similar, Contractor shall provide access to all required parties at no cost to the Architect or the Architect's consultants.

1.5 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
   1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
      a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
      b. Indicate required installation sequences.
      c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
   2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
   3. Number of Copies: Submit two opaque copies of each submittal. Architect will return **one copy**.
      a. Submit five copies where Coordination Drawings are required for operation and maintenance manuals. Architect will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.
   4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

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 and telephone numbers, including home

and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1. Include special personnel required for coordination of operations with other contractors.

B. Project Manager: General Contractor shall be required to provide and identify a qualified Project Manager who is responsible for overseeing all administrative activities for their Work.

1. The Contractor shall be required to demonstrate his capability to provide a qualified Project Manager for the project who is acceptable to the Owner and Architect. The Project Manager shall have at least five years successful experience on projects of similar size, scope and nature. Contractor shall be required to substantiate these qualifications with a written submittal within seven calendar days after opening of the Bids.
2. The Contractor is charged with providing a qualified and experienced Project Manager for this project to the satisfaction of the Owner and Architect, and the Owner reserves the right to disapprove a proposed Project Manager who does not appear to be fully qualified and experienced to accomplish the work of the Project.
3. This Project Manager shall have the necessary authority to speak on behalf of the Contractor and commit the Contractor's resources.
4. Duties and responsibilities anticipated to be the responsibility of the Project Manager include, but are not limited to, the following:
    a. Preparation, submittal and coordination of required submittals.
    b. Scheduling and sequencing the Work.
    c. Preparation of coordination drawings.
    d. Coordination of materials and equipment purchasing, scheduling and delivery.
    e. Coordination of Subcontractor/Installer and labor force scheduling.
    f. Other duties and responsibilities as necessary and customary to back up and assist the Superintendent.
5. Project Manager shall have email access for the entire length of the project for communication with the design team, emailing of submittals, reports, field reports, proposal requests, RFIs, and change orders.

1.7 PROJECT MEETINGS

A. General: Architect will schedule and conduct the Preconstruction Conference and Monthly Meetings at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the 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. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

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. All 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. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing and long-lead items.
   d. Designation of key personnel and their duties.
   e. Procedures for processing field decisions and Change Orders.
   f. Procedures for RFIs.
   g. Procedures for testing and inspecting.
   h. Procedures for processing Applications for Payment.
   i. Distribution of the Contract Documents.
   j. Submittal procedures.
   k. Preparation of Record Documents.
   l. Use of the premises (and existing building if required).
   m. Work restrictions.
   n. Owner's occupancy requirements.
   o. Responsibility for temporary facilities and controls.
   p. Construction waste management and recycling.
   q. Parking availability.
   r. Office, work, and storage areas.
   s. Equipment deliveries and priorities.
   t. First aid.
   u. Security.
   v. Progress cleaning.
   w. Working hours.
3. Minutes: **Architect will record** and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   a. The Contract Documents.
   b. Options.
   c. Related RFIs.
   d. Related Change Orders.
   e. Purchases and Deliveries.
   f. Submittals.
   g. Review of mockups.
   h. Possible conflicts.
   i. Compatibility problems.
   j. Time schedules.
   k. Weather limitations.
   l. Manufacturer's written recommendations.
   m. Warranty requirements.
   n. Compatibility of materials.
   o. Acceptability of substrates.
   p. Temporary facilities and controls.
   q. Space and access limitations.
   r. Regulations of authorities having jurisdiction.
   s. Testing and inspecting requirements.
   t. Installation procedures.
   u. Coordination with other work.
   v. Required performance results.

w. Protection of adjacent work, construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Monthly Meetings: Architect will schedule and conduct monthly meetings minimum 1 per other. Additional monthly meetings may be added if requested by any party.
1. Attendees: 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. In addition, representatives of Owner, Architect, and Engineer will be present All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous monthly meetings. 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 utilization.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) RFIs.
16) Status of proposal requests.
17) Pending changes.
18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.
3. Minutes: Architect will record and distribute to all relevant parties the monthly minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
a. Schedule Updating: Revise Contractor's Construction Schedule after each monthly meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. Progress Meetings: Conduct progress meetings at **weekly** intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: 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. In addition, representatives of Owner and Architect may be present All participants at the conference 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 utilization.
        8) Temporary facilities and controls.
        9) Work hours.
        10) Hazards and risks.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Status of correction of deficient items.
        14) Field observations.
        15) RFIs.
        16) Status of proposal requests.
        17) Pending changes.
        18) Status of Change Orders.
        19) Pending claims and disputes.
        20) Documentation of information for payment requests.
3. Minutes: Contractor will record and distribute to all relevant subcontractors the weekly minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
    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.

F. Coordination Meetings: Contractor shall conduct project coordination meetings at **weekly** intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
1. Attendees: 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. In addition, representatives of Owner and Architect may be present All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    a. Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to

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.

b. Schedule Updating: Revise Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each contractor 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 utilization.
   8) Temporary facilities and controls.
   9) Work hours.
   10) Hazards and risks.
   11) Progress cleaning.
   12) Quality and work standards.
   13) Change Orders.

d. Reporting: Contractor shall Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.8 REQUESTS FOR INTERPRETATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
   1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
   2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
   1. Project name.
   2. Date.
   3. Name of Contractor.
   4. Name of Architect.
   5. RFI number, numbered sequentially.
   6. Specification Section number and title and related paragraphs, as appropriate.
   7. Drawing number and detail references, as appropriate.
   8. Field dimensions and conditions, as appropriate.
   9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   10. Contractor's signature.
   11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
      a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

C. Hard-Copy RFIs:
   1. Identify each page of attachments with the RFI number and sequential page number.

D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.

1. Attachments shall be electronic files in PDF format.

E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow **ten** working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
   1. The following RFIs will be returned without action:
      a. Requests for approval of submittals or substitutions.
      b. Requests for coordination information already indicated in the Contract Documents.
      c. Requests for adjustments in the Contract Time or the Contract Sum.
      d. Requests for interpretation of Architect's actions on submittals.
      e. Incomplete RFIs or RFIs with numerous errors.
   2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
   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 Division 01 Section "Contract Modification Procedures."
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within (**10**) days of receipt of the RFI response.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within **seven** days if Contractor disagrees with response.

G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log **weekly**. **Include the following:**
   1. Project name.
   2. Name and address of Contractor.
   3. Name and address of Architect.
   4. RFI number including RFIs that were dropped and not submitted.
   5. RFI description.
   6. Date the RFI was submitted.
   7. Date Architect's response was received.
   8. Identification of related Minor Change in the Work, Field Order, Construction Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. **Inspection of Conditions:** The Contractor shall require the Installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. **Coordinate temporary enclosures** with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.2 CLEANING AND PROTECTION

A. **Clean and protect construction** in progress and adjoining materials in place during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

B. **Clean and provide maintenance** on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. **Limiting Exposures:** Each contractor shall supervise its construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading, internal or external pressures, high or low temperatures.
2. Thermal shock.
3. Excessively high or low humidity.
4. Air contamination or pollution.
5. Water or ice.
6. Solvents or Chemicals.
7. Light.
8. Radiation.
9. Puncture
10. Abrasion.
11. Heavy traffic.
12. Soiling, staining, and corrosion.
13. Bacteria.
14. Rodent and insect infestation.
15. Combustion.
16. Electrical current.
17. High-speed operation.
18. Improper lubrication.
19. Unusual wear or other misuse.
20. Contact between incompatible materials.
21. Destructive testing.
22. Misalignment.
23. Excessive weathering.
24. Unprotected storage.
25. Improper shipping or handling.
26. Theft or Vandalism.

END OF SECTION 01 31 00

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:
   1. Concrete masonry units (CMUs).
   2. Concrete brick.
   3. Face brick.
   4. Mortar and grout.
   5. Reinforcing steel.
   6. Masonry joint reinforcement.
   7. Ties and anchors.
   8. Embedded flashing.
   9. Miscellaneous masonry accessories.

B. Related Sections include the following:
   1. Division 01 Section “Alternates” for work in this section as it is associated with the alternate.
   2. Division 01 Section “Allowances” for the Face Brick Allowance.
   3. Division 07 Section "Dampproofing" for dampproofing applied to cavity face of backup wythes of cavity walls.
   4. Division 07 Section "Water Repellents" for water repellents applied to unit masonry assemblies.
   5. Division 07 Section "Thermal Insulation" for cavity wall insulation type, thickness, and r value.
   6. Division 07 Section "Sheet Metal Flashing and Trim" for **exposed** sheet metal flashing.
   7. Division 07 Section "Joint Sealants" for sealing control and expansion joints in unit masonry.

C. Products furnished, but not installed, under this Section include the following:
   1. Anchor sections of adjustable masonry anchors for connecting to structural frame, installed under Division 05 Section "Structural Steel Framing."

D. Products installed, but not furnished, under this Section include the following:
   1. Steel **lintels and shelf angles** for unit masonry, furnished under Division 05 Section "Metal Fabrications."

1.3 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

A. Provide structural unit masonry that develops indicated net-area compressive strengths (f'_m) at 28 days.
   1. Determine net-area compressive strength (f'_m) of masonry by testing masonry prisms according to ASTM C 1314.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Certification:
   1. The producer shall furnish a letter of certification stating the following;
      a. All aggregate used in the manufacture of the units was produced by the rotary kiln process conforming to ASTM C 331 and ASTM C 330.
      b. Product has been tested and certificated by ASTM C 90.
C. Shop drawings.
   1. For reinforcing steel detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
   2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
D. Samples for Verification: For each type and color of the following:
   1. Face brick, in the form of straps of five or more bricks.
   2. Decorative concrete masonry units, in the form of small-scale units.
   3. Colored mortar samples showing the full range of colors available.
   4. Weep holes/vents.
   5. Accessories embedded in masonry.
E. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.
B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
   1. Manufacturer shall not have less than 10 years of experience for each type of unit.
C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.
D. Source Limitations for Concrete Masonry Units: Obtain CMU units from a manufacturer with a demonstrated history for providing first quality CMU units suitable for use in exposed work of the type and scope of this project, with units showing dense uniform face texture, square sides, corners, edges and faces, and free of chipped edges and broken corners when delivered to the site. Manufacturers with outdated equipment and worn molds incapable of providing consistently high quality materials will not be considered.
   1. Prism Test: For each type of construction required, per ASTM C 1314.
E. Preconstruction Testing Service: Owner may engage a qualified independent testing agency to perform preconstruction testing indicated below. Payment for these services will be made **by Owner**. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.
   1. Clay Masonry Unit Test: For each type of unit required, per ASTM C 67.
   2. Concrete Masonry Unit Test: For each type of unit required, per ASTM C 140.
   3. Mortar Test (Property Specification): For each mix required, per **ASTM C 780**.
   4. Grout Test (Compressive Strength): For each mix required, per **ASTM C 1019**.
   5. Prism Test: For each type of construction required, per **ASTM C 1314**.
F. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

G. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects. Comply with requirements in Division 01 Section "Quality Requirements" for mockups.
   1. Build sample panels for typical exterior wall in sizes approximately **48 inches** long by **48 inches** high by full thickness.
   2. Where masonry is to match existing, erect panels adjacent and parallel to existing surface.
   3. Clean exposed faces of panels with masonry cleaner indicated.
   4. Protect approved sample panels from the elements with weather-resistant membrane.
   5. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.
      a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved by Architect in writing.

H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Ordering: Comply with manufacture's ordering instructions and lead time requirements to avoid construction delays.

B. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry. Do not double stack pallets of masonry units.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

F. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
   1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
   1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
   2. Protect sills, ledges, and projections from mortar droppings.
   3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
   4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in **ACI 530.1/ASCE 6/TMS 602**.

1. Cold-Weather Construction: When the ambient temperature is within the limits indicated, use the following procedures:
   a. 40 to 32 deg F: Heat mixing water or sand to produce mortar temperatures between 40 and 120 deg F .
   b. 32 to 25 deg F: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F. Heat grout materials to produce grout temperatures between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry.
   c. 25 to 20 deg F: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F . Heat grout materials to produce grout temperatures between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F if grouting. Use heat on both sides of walls under construction.
   d. 20 deg F and Below: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg F. Heat grout materials to produce grout temperatures between 40 and 120 deg F. Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg F. Provide enclosures and use heat on both sides of walls under construction to maintain temperatures above 32 deg F within the enclosures.
2. Cold-Weather Protection: When the mean daily temperature is within the limits indicated, provide the following protection:
   a. 40 to 25 deg F : Cover masonry with a weather-resistant membrane for 48 hours after construction.
   b. 25 to 20 deg F: Cover masonry with insulating blankets or provide enclosure and heat for 48 hours after construction to prevent freezing. Install wind breaks when wind velocity exceeds 15 mi./h .
   c. 20 deg F and Below: Provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for 48 hours after construction.
3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
1. Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and above.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

2.2 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not uses units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.3 CONCRETE MASONRY UNITS (CMUs)

A. Shapes: Provide shapes indicated and as follows:
   1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
   2. Provide square-edged units for outside corners, unless otherwise indicated.

B. Concrete Masonry Units: **ASTM C 90 (latest edition)**.
   1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 psi net average of three units.
   2. Weight Classification: Units shall be lightweight blended with aggregates that comply with ASTM C331 and ASTM C33 with a total mix weight not more than 105 lbs./cuft. and not less than 90lbs/cuft.
   3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
   4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.
   5. Aggregates: Do not use aggregates made from pumice, scoria, or tuff. All units will be free of organic impurities that will cause rusting, staining, or popouts and will not contain combustible material. The use of coal cinders, coal ash, bottom ash or other similar waste products are not permitted and shall not be allowed.
   6. CMU used in fire rated walls shall meet UL Design Assembly criteria.
   7. Basis for Design: Oldcastle APG - Adams: Redline
   8. Approved Manufacturers:
      a. Oldcastle APG - Adams
      b. Johnson Concrete
      c. York Building Products
      d. Martinsville Concrete Products

Products offered for substitution shall be pre-approved prior to bidding in accordance with the conditions of the contract documents and shall be so indicated in an addendum prior to bid only. Any other approval shall not be valid.

2.4 BRICK (Refer to Face Brick Allowance)

A. General: Provide shapes indicated and as follows:
   1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.

B. Face Brick:
   1. Modular Size: **3 5/8"** wide **2 1/4"** high by **7 5/8"** long.
   2. Bond Pattern: ½ Running Bond
   3. Basis of Design:
      a. Field Brick (BR-1) – Statesville Brick Company, Tennessee Smooth Modular
      b. Accent Brick (BR-2) – Continental Brick Company, Standard 490 Modular
   4. Approved Manufacturers:
      a. Continental Brick Company
      b. Statesville Brick Company
      c. Palmetto Brick
      d. Triangle Brick

2.5 MASONRY LINTELS

A. General: Provide masonry lintels complying with requirements below.

B. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.6 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.
   1. Provide natural color or white cement as required to produce mortar color indicated for Field Brick (BR-1) and Accent Brick (BR-2.
B. Hydrated Lime: **ASTM C 207**, Type S.
C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.
D. Masonry Cement: **ASTM C 91**.
   1. Available Products:
      a. Argos Cement Company
      b. Flamingo Color Masonry Cement. Brixment;
      c. Holcim (US) Inc.;
      d. National Cement Company
      e. Lehigh Cement Company
E. Colored Cement Product: Packaged blend made from **masonry cement** and mortar pigments, all complying with specified requirements, and containing no other ingredients.
   1. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
   2. Basis of Design: Argos Cement Company, Lite Beige
   3. Pigments shall not exceed 10 percent of portland cement by weight.
   4. Available Products:
      a. Flamingo Color Masonry Cement. Brixment;
      b. Holcim (US) Inc.;
      c. Argos Cement Company
      d. National Cement Company
      e. Lehigh Cement Company
F. Aggregate for Mortar: ASTM C 144.
   1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
G. Aggregate for Grout: ASTM C 404.
   1. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
   2. Available Products:
      a. Addiment Incorporated; Mortar Kick.
      b. Euclid Chemical Company (The); Accelguard 80.
      c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Morset.
      d. Sonneborn, Div. of ChemRex; Trimix-NCA.
H. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units, containing integral water repellent by same manufacturer.
   1. Available Products:
      a. Rainbloc by ACM Chemistries
      b. Addiment Incorporated; Mortar Tite.
      c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Dry-Block Mortar Admixture.
      d. Master Builders, Inc.
I. Water: Potable.

2.7 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.
B. Masonry Joint Reinforcement, General: **ASTM A 951**.
   1. Interior Walls: galvanized, carbon steel.
   2. Exterior Walls: Hot-dip galvanized, carbon steel.
   3. Wire Size for Side Rods Interior: **0.148-inch** diameter.
   4. Wire Size for Side Rods Exterior: **0.188-inch** diameter.
   5. Wire Size for Cross Rods: **W1.7 or 0.148-inch** diameter.
   6. Wire Size for Veneer Ties: **0.188-inch** diameter.
   7. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
   8. Provide in lengths of not less than 10 feet**, with prefabricated corner and tee units**.
C. Masonry Joint Reinforcement for Single-Wythe Masonry: Truss type with single pair of side rods.
D. Masonry Joint Reinforcement for Multiwythe Masonry:
   1. Adjustable (two-piece) type, truss design, with one side rod at each face shell of backing wythe and with separate ties that extend into facing wythe. Ties have two hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties extend at least halfway through facing wythe but with at least 5/8-inch cover on outside face. **Ties have hooks or clips to engage a continuous horizontal wire in the facing wythe.**
E. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.188-inch- diameter, **hot-dip galvanized, carbon**-steel continuous wire.

2.8 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with eight subparagraphs below, unless otherwise indicated.
   1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 641/A 641M, Class 1 coating.
   2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
B. Adjustable Anchors for Connecting to Structure: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
   1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- diameter, hot-dip galvanized steel wire. Mill-galvanized wire may be used at interior walls, unless otherwise indicated.
   2. Tie Section for Steel Frame: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from **0.188-inch-** diameter, hot-dip galvanized steel wire. Mill-galvanized wire may be used at interior walls, unless otherwise indicated.
C. Rigid Anchors: Fabricate from steel bars **1-1/2 inches** wide by **1/4 inch** thick by **24 inches** long, with ends turned up **2 inches** or with cross pins, unless otherwise indicated.
   1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A 153/A 153M.

D. Adjustable Masonry-Veneer Anchors, non-CMU backup wythe:
   1. General: Provide anchors that allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal studs, and as follows:
      a. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in both tension and compression without deforming or developing play in excess of 0.05 inch.
   2. Contractor's Option: Unless otherwise indicated, provide any of the following types of anchors:
   3. Screw-Attached, Masonry-Veneer Anchors: Units consisting of a wire tie and a metal anchor section.
      a. Anchor Section: Rib-stiffened, sheet metal plate with screw holes top and bottom, 2-3/4 inches wide by 3 inches high; with projecting tabs having slotted holes for inserting vertical legs of wire tie specially formed to fit anchor section.
      b. Anchor Section: Sheet metal plate, 1-1/4 inches wide by **6 inches** long, with screw holes top and bottom and with raised rib-stiffened strap, 5/8 inch wide by **3-5/8 inches** long, stamped into center to provide a slot between strap and plate for inserting wire tie.

c. Anchor Section: Gasketed sheet metal plate, 1-1/4 inches wide by 6 inches long, with screw holes top and bottom; top and bottom ends bent to form pronged legs of length to match thickness of insulation or sheathing; and raised rib-stiffened strap, 5/8 inch wide by 6 inches long, stamped into center to provide a slot between strap and plate for inserting wire tie. Provide anchor manufacturer's standard, self-adhering, modified bituminous gaskets manufactured to fit behind anchor plate and extend beyond pronged legs.

d. Anchor Section: Zinc-alloy barrel section with flanged head with eye and corrosion-resistant, self-drilling screw. Eye designed to receive wire tie and to serve as head for drilling fastener into framing. Barrel length to suit sheathing thickness, allowing screw to seat directly against framing with flanged head covering hole in sheathing.

e. Fabricate sheet metal anchor sections and other sheet metal parts from **0.067-inch-** thick, steel sheet, galvanized after fabrication **0.078-inch-** thick,.

f. Wire Ties: Triangular-, rectangular-, or T-shaped wire ties fabricated from **0.25-inch-** diameter, **hot-dip galvanized steel** wire.

4. Available Products:

a. Dayton Superior Corporation, Dur-O-Wal Division; **D/A 213 or D/A 210 with D/A 700-708**.

b. Heckmann Building Products Inc.; **315-D with 316 or Pos-I-Tie**.

c. Hohmann & Barnard, Inc.; **DW-10 DW-10HS or DW-10-X**.

d. Wire-Bond; 1004, Type III or RJ-711.

2.9 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing where flashing is exposed or partly exposed and where indicated, complying with Division 07 Section "Sheet Metal Flashing and Trim".

B. Cavity Wall Flashing

1. Metal Sub Flashing with integral Drip Edge: Provide continuous under Flexible Flashing. Fabricate from stainless steel. Extend at least 3 inches into wall inner wythe CMU backup and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.

a. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.

b. Metal Flashing Terminations: Fabricate from stainless steel. Extend at least 3 inches into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch and down into joint 3/8 inch to form a stop for retaining sealant backer rod.

2. Flexible Flashing: For flashing not exposed to the exterior, use **one of** the following, unless otherwise indicated:

a. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than **0.040 inch**.

1) Available Products:

a) Advanced Building Products Inc.; Peel-N-Seal.

b) Carlisle Coatings & Waterproofing; CCW-705-TWF Thru-Wall Flashing.

c) Dayton Superior Corporation, Dur-O-Wal Division; Dur-O-Barrier-44.

d) Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Perm-A-Barrier Wall Flashing.

e) Heckmann Building Products Inc.; No. 82 Rubberized-Asphalt Thru-Wall Flashing.

f) Henry Company: Blueskin TWF

g) Hohmann & Barnard, Inc.; Textroflash.

h) Polyguard Products, Inc.; Polyguard 300.

i) Polytite Manufacturing Corp.; Poly-Barrier Self-Adhering Wall Flashing.

j) Williams Products, Inc.; Everlastic MF-40.

b. Provide mechanically fastened stainless steel termination bar with continuous sealant at top.

2.10 MISCELLANEOUS MASONRY ACCESSORIES

A. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

B. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

C. Weep/Vent Products: Use the following, unless otherwise indicated:
   1. Material: High Density Polypropelene cellular
   2. Basis of Design is Mortar Maze, color Cocoa
      a. Provide at 32" o.c. unless otherwise noted.
      b. Approved products by Advanced Building Products or equals.
      c. Color to be selected by Architect from manufacturer's full range

D. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
   1. Provide one of the following configurations:
      a. Strips, full-depth of cavity and 10 inches wide, with dovetail shaped notches 7 inches deep that prevent mesh from being clogged with mortar droppings.
   2. Available Products:
      a. Advanced Building Products Inc.; **Mortar Break II**.
      b. Archovations, Inc.; CavClear Masonry Mat.
      c. Dayton Superior Corporation, Dur-O-Wal Division; Polytite MortarStop.
      d. Mortar Net USA, Ltd.; Mortar Net.
      e. Hohmann & Barnard, Inc.

2.11 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
   1. **Available** Manufacturers:
      a. Diedrich Technologies, Inc.
      b. EaCo Chem, Inc.
      c. ProSoCo, Inc.

2.12 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
   1. Do not use calcium chloride in mortar or grout.
   2. Limit cementitious materials in mortar to portland cement, **mortar cement,** and lime.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with **ASTM C 270 BIA Technical Notes 8A**, Property Specification. Provide the following types of mortar for applications stated unless another type is indicated **or needed to provide required compressive strength of masonry**.
   1. For masonry below grade or in contact with earth, use Type **S**.
   2. For reinforced masonry, use Type **S**
   3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type S.

4. For interior non-load-bearing partitions, Type S.

D. Pigmented Mortar: Use colored cement product. **Do not add pigments to colored cement products**.
1. Pigments shall not exceed 5 percent of **masonry cement or mortar cement** by weight.
2. Mix to match Architect's sample.

E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates.
1. Provide natural color or white cement as required to produce mortar color indicated for Field Brick (BR-1) and Accent Brick (BR-2.

F. Grout for Unit Masonry: Comply with **ASTM C 476**.

2.13 SOURCE QUALITY CONTROL

A. Owner may engage a qualified independent testing agency to perform source quality-control testing indicated below:
1. Payment for these services will be made **by Owner**.
2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

B. Clay Masonry Unit Test: For each type of unit furnished, per ASTM C 67.

C. Concrete Masonry Unit Test: For each type of unit furnished, per ASTM C 140.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this and other Sections.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
1. Mix units from several pallets or cubes as they are placed.

F. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

G. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.

3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch , with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.
7. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in **stack bond for Brick and running bond for CMU (all types)**; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
E. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.
F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
G. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
H. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
   1. Install compressible filler in joint between top of partition and underside of structure above.
   2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors **48 inches** o.c., unless otherwise indicated.
   3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
   4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 07 Section "Fire-Resistive Joint Systems."

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow **concrete masonry units** as follows:
   1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
   2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
   3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
   4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
C. Set trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.

1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
2. Allow cleaned surfaces to dry before setting.
3. Wet joint surfaces thoroughly before applying mortar.

D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

3.5 CAVITY WALLS

A. Bond wythes of cavity walls together using one of the following methods:
1. Individual Metal Ties: Provide ties as shown installed in horizontal joints, but not less than one metal tie for **2.67 sq. ft.** of wall area spaced not to exceed **16 inches** o.c. horizontally and 16 inches o.c. vertically. Stagger ties in alternate courses. Provide additional ties within 12 inches of openings and space not more than 36 inches apart around perimeter of openings. At intersecting and abutting walls, provide ties at no more than 24 inches o.c. vertically.
   a. Where bed joints of wythes do not align, use adjustable (two-piece) type ties.
   b. Where one wythe is of clay masonry and the other of concrete masonry, use adjustable (two-piece) type ties to allow for differential movement regardless of whether bed joints align.
2. Masonry Joint Reinforcement: Installed in horizontal mortar joints.
   a. Where bed joints of both wythes align, use Truss type **reinforcement extending across both wythes**
   b. Where bed joints of wythes do not align, use adjustable (two-piece) type reinforcement **with continuous horizontal wire in facing wythe attached to ties**.

B. Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity, to minimize mortar protrusions into cavity. Do not attempt to trowel or remove mortar fins protruding into cavity.

C. Coat cavity face of backup wythe to comply with Division 07 Section "Bituminous Dampproofing."

3.6 INSTALLATION OF CAVITY WALL INSULATION: RIGID – BASE BID

A. Installing Cavity-Wall Insulation: Place small dabs of adhesive, spaced approximately 12 inches o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.
1. Fill cracks and open gaps in insulation with crack sealer compatible with insulation and masonry. Tape joints.

3.7 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
1. Space reinforcement not more than 16 inches o.c.

Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.
   a. Reinforcement above is in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.
C. Provide continuity at wall intersections by using prefabricated T-shaped units.
D. Provide continuity at corners by using prefabricated L-shaped units.
E. Cut and bend reinforcing units as directed by manufacturer for continuity at[**corners,** returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:
   1. Provide an open space not less than **1/2 inch** in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar and other rigid materials.
   2. Anchor masonry to structural members with anchors embedded in masonry joints and attached to structure.
   3. Space anchors as indicated, but not more than 24 incheso.c. vertically o.c. horizontally.

3.9 ANCHORING MASONRY VENEERS

A. Anchor masonry veneers to **wall framing concrete and masonry backup** with **seismic** masonry-veneer anchors to comply with the following requirements:

3.10 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry **as follows**:
   1. Fit bond-breaker strips into hollow contour in ends of concrete masonry units on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
   2. Install preformed control-joint gaskets designed to fit standard sash block.
   3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.
   4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.
   5. Where control joints extend from window or door head lintels and shelf angles, install bond breaker of building felt in horizontal joint below lintel and rake horizontal joint at lintel for installation of sealant.

C. Form expansion joints in brick made from clay or shale as follows:
   1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches (100 mm) in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
   2. Build flanges of factory-fabricated, expansion-joint units into masonry.
   3. Build in compressible joint fillers where indicated.
   4. Form open joint full depth of brick wythe and of width indicated, but not less than **3/8 inch** for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants."

3.11 LINTELS

A. Install steel lintels where indicated.

B. Provide **masonry** lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.

C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.12 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. **Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.**

B. Install flashing as follows, unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of **8 inches**, and through inner wythe to within 1/2 inch of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches on interior face.
3. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of **8 inches**, and 1-1/2 inches into the inner wythe.
4. At masonry-veneer walls, extend flashing through veneer, across air space behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under building paper or building wrap, lapping at least 4 inches.
5. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
6. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
7. Install metal **drip edges and sealant stops** with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
8. Install metal sub flashing and integral drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to metal for the entire length.
9. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
10. Install flexible flashing with continuous stainless steel termination bar with continuous sealant at top.

C. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories" Article.

D. Install vents in head joints in exterior wythes at spacing indicated. Use **specified weep/vent products**.

3.13 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in **ACI 530.1/ASCE 6/TMS 602**.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in **ACI 530.1/ASCE 6/TMS 602** for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than **60 inches**.

3.14 FIELD QUALITY CONTROL

A. Inspectors: Owner will engage qualified independent inspectors to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
   1. Place grout only after inspectors have verified compliance of grout spaces and grades, sizes, and locations of reinforcement.

B. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections indicated below and prepare test reports:
   1. Payment for these services may be made **by Owner**.
   2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

C. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

D. Clay Masonry Unit Test: For each type of unit provided, per ASTM C 67.

E. Concrete Masonry Unit Test: For each type of unit provided, per ASTM C 140.

F. Mortar Test (Property Specification): For each mix provided, per **ASTM C 780**. Test mortar for **compressive strength**.

G. Grout Test (Compressive Strength): For each mix provided, per **ASTM C 1019**.

H. Prism Test: For each type of construction provided, per **ASTM C 1314 UBC Standard 21-17** at 28 days.

3.15 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
   3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
   4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
   5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
   6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
   7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
   8. Clean stone trim to comply with stone supplier's written instructions.
   9. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.16 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.

1. Crush masonry waste to less than 4 inches in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 31 Section "Earth Moving."
3. Do not dispose of masonry waste as fill within 18 inches of finished grade.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04 20 00

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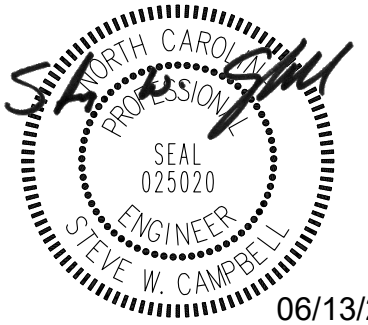
ADDENDUM 05 – PLUMBING

DATE: June 13, 2025

PROJECT: Unified Middle School of Havelock
PDC Project No. 24017



06/13/2025

This Addendum, applicable to the work designed below, shall be understood to be and is a change to the bid documents and shall be part of and included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Changes to Plumbing Specifications:

1. Specification 22 10 05
   a. Section 2.08 added Polyethylene Pipe as an option for Natural Gas buried beyond 5 feet of the building.
   b. Section 2.03 Strike out Lead and Oakum and added Neoprene gaskets and stainless steel clamp and shield assemblies.

END OF ADDENDUM 05 – PLUMBING

Attachments: Specification Sections (22 10 05)

SECTION 22 10 05
PLUMBING PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A Sanitary waste piping, buried within 5 feet of building.
B Sanitary waste piping, above grade.
C Domestic water piping, buried within 5 feet of building.
D Domestic water piping, above grade.
E Storm drainage piping, buried within 5 feet of building.
F Storm drainage piping, above grade.
G Natural gas piping, buried beyond 5 feet of building.
H Natural gas piping, buried within 5 feet of building.
I Natural gas piping, above grade.
J Pipe flanges, unions, and couplings.
K Pipe hangers and supports.
L Ball valves.

1.02 RELATED REQUIREMENTS

A Section 07 84 00 - Firestopping.
B Section 08 31 00 - Access Doors and Panels.
C Section 22 05 29 - Hangers and Supports for Plumbing Piping and Equipment.
D Section 22 05 53 - Identification for Plumbing Piping and Equipment.
E Section 22 07 19 - Plumbing Piping Insulation.
F Section 31 23 16 - Excavation.
G Section 31 23 16.13 - Trenching.
H Section 31 23 23 - Fill.

1.03 REFERENCE STANDARDS

A ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2021.
B ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2021.
C ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2021.
D ASME B31.1 - Power Piping; 2022.
E ASME B31.9 - Building Services Piping; 2020.
F ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators; 2023.
G ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
H ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings; 2021.
I ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
J ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2023a.
K ASTM B32 - Standard Specification for Solder Metal; 2020.
L ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2022.
M ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2020.
N ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube; 2016.
O ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings; 2023.
P ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2020a.
Q ASTM D2513 - Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings; 2020.

R ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2020.

S ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2020.

T ASTM D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing; 2020.

U ASTM D2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets; 2020.

V ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2023.

W ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018b.

X AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; 2018.

Y CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2021.

Z CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2020.

AA MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2018, with Amendment (2019).

BB MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; 2010, with Errata .

CC NSF 61 - Drinking Water System Components - Health Effects; 2023, with Errata.

DD NSF 372 - Drinking Water System Components - Lead Content; 2024.

EE UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.04 SUBMITTALS

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

B Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

C Welders' Certificates: Submit certification of welders' compliance with ASME BPVC-IX.

D Shop Drawings: For non-penetrating rooftop supports, submit detailed layout developed for this project, with design calculations for loadings and spacings.

E Project Record Documents: Record actual locations of valves.

F Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements for additional provisions.

1.05 QUALITY ASSURANCE

A Perform work in accordance with applicable codes.

B Valves: Manufacturer's name and pressure rating marked on valve body.

C Welding Materials and Procedures: Comply with ASME BPVC-IX and applicable state labor regulations.

D Welder Qualifications: Certified in accordance with ASME BPVC-IX.

E Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

1.06 DELIVERY, STORAGE, AND HANDLING

A Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B Provide temporary protective coating on cast iron and steel valves.

C Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.07 FIELD CONDITIONS

A Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

B Plenum-Installed Acid Waste Piping: Flame-spread index equal or below 25 and smoke-spread index equal or below 50 according to ASTM E84 or UL 723 tests.

2.02 SANITARY WASTE PIPING, BURIED WITHIN 5 FEET OF BUILDING

A PVC Pipe: ASTM D2665 or ASTM D3034.

1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.03 SANITARY WASTE PIPING, ABOVE GRADE

A ~~Cast Iron Pipe: ASTM A74, service weight.~~

1. ~~Fittings: Cast iron.~~
2. ~~Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.~~

B ***Cast Iron Pipe: CISPI 301, hubless, service weight.***

1. ***Fittings: Cast iron.***
2. ***Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.***

2.04 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

A Copper Pipe: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).

1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.

2.05 DOMESTIC WATER PIPING, ABOVE GRADE

A Copper Pipe: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).

1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.

2.06 STORM DRAINAGE PIPING, BURIED WITHIN 5 FEET OF BUILDING

A Cast Iron Pipe: ASTM A74 extra heavy weight.

1. Fittings: Cast iron.
2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.

2.07 STORM DRAINAGE PIPING, ABOVE GRADE

A Cast Iron Pipe: ASTM A74 extra heavy weight.

1. Fittings: Cast iron.
2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.

2.08 NATURAL GAS PIPING, BURIED BEYOND 5 FEET OF BUILDING

A Steel Pipe: ASTM A53/A53M, Grade B, Type F, Schedule 40 black.

1. Manufacturers:
   a. Wheatland Tube Company; _____: www.wheatland.com/#sle.
2. Fittings: ASTM A234/A234M, wrought steel welding type, with AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil polyethylene tape.
3. Joints: ASME B31.1, welded.

B ***Polyethylene Pipe: ASTM D2513, SDR 11.***

1. ***Fittings: ASTM D2683 or ASTM D2513 socket type.***
2. ***Joints: Fusion welded.***

2.09 NATURAL GAS PIPING, BURIED WITHIN 5 FEET OF BUILDING

A Steel Pipe: ASTM A53/A53M, Grade B, Type F, Schedule 40 black.

1. Manufacturers:
   a. Wheatland Tube Company; _____: www.wheatland.com/#sle.

2. Fittings: ASTM A234/A234M, wrought steel welding type.
3. Joints: ASME B31.1, welded.
4. Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil polyethylene tape.

2.10 NATURAL GAS PIPING, ABOVE GRADE

A Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
2. Joints: Threaded or welded to ASME B31.1.

2.11 PIPE HANGERS AND SUPPORTS

A Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
3. Trapeze Hangers: Welded steel channel frames attached to structure.
4. Vertical Pipe Support: Steel riser clamp.
5. Rooftop Supports for Low-Slope Roofs: Steel pedestals with bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified; and as follows:
   a. Bases: High-density polypropylene.
   b. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   c. Steel Components: Stainless steel or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   d. Attachment and Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports; corrosion-resistant material.
   e. Height: Provide minimum clearance of 6 inches under pipe to top of roofing.

B Plumbing Piping - Drain, Waste, and Vent:
1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
2. Hangers for Pipe Sizes 2 inch and Over: Carbon steel, adjustable, clevis.

C Plumbing Piping - Water:
1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
2. Hangers for Cold Pipe Sizes 2 inch and Over: Carbon steel, adjustable, clevis.

2.12 BALL VALVES

A Manufacturers:
1. Anvil International; _____: www.anvilintl.com/#sle.
2. Apollo Valves; _____: www.apollovalves.com/#sle.
3. Nibco, Inc; _____: www.nibco.com/#sle.

B Construction, 4 inch and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

PART 3 EXECUTION

3.01 EXAMINATION

A Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

A Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
B Remove scale and dirt, on inside and outside, before assembly.
C Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

A Install in accordance with manufacturer's instructions.
B Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

C Install piping to maintain headroom, conserve space, and not interfere with use of space.

D Group piping whenever practical at common elevations.

E Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

F Provide access where valves and fittings are not exposed.

1. Coordinate size and location of access doors with Section 08 31 00.

G Excavate in accordance with Section 31 23 16.

H Backfill in accordance with Section 31 23 23.

I Install valves with stems upright or horizontal, not inverted. See Section 22 05 23.

J Install water piping to ASME B31.9.

K Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.

L PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

M Inserts:

1. Provide inserts for placement in concrete formwork.
2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

N Pipe Hangers and Supports:

1. Install in accordance with ASME B31.9.
2. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
3. Place hangers within 12 inches of each horizontal elbow.
4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
5. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
7. Provide copper plated hangers and supports for copper piping.
8. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.04 APPLICATION

A Install unions downstream of valves and at equipment or apparatus connections.

B Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.

C Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.

3.05 TOLERANCES

A Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/8 inch per foot slope.

B Water Piping: Slope at minimum of 1/32 inch per foot and arrange to drain at low points.

3.06 SERVICE CONNECTIONS

A Provide new sanitary sewer services. Before commencing work, check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing.

B Provide new water service complete with approved reduced pressure backflow preventer and water meter with by-pass valves, pressure reducing valve, and sand strainer.

1. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Calk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
2. Provide 18 gauge, 0.0478-inch galvanized sheet metal sleeve around service main to 6 inch above floor and 6 feet minimum below grade. Size for minimum of 2 inches of loose batt insulation stuffing.

END OF SECTION 22 10 05

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ADDENDUM 05 MECHANCIAL

DATE: June 12, 2025

PROJECT: Unified Middle School of Havelock
PDC Project # 24017

This Addendum, applicable to the work designed below, shall be understood to be and is a change to the bid documents and shall be part of and included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Changes to Mechanical Drawings:
Drawing M6.01

- Add Freeze Protection sequence of operation

Drawing M6.03

- Delete Keynote 1
- Freeze protection of the existing air handling units cooling coils is not part of the scope of work

Attachments: M6-01 and M6-03

END OF ADDENDUM 03 MECHANICAL

CONSTANT VOLUME ROOFTOP UNIT WITH HEAT PUMP / HYBRID HEAT SEQUENCE OF OPERATIONS

THE UNIT SHALL BE STARTED UP AND COMMISSIONED BY THE MECHANICAL AND CONTROLS CONTRACTORS IN COORDINATION WITH THE AUTHORIZED FACTORY REPRESENTATIVE.

THE CONTROLS CONTRACTOR SHALL COORDINATE BACNET INTEROPERABILITY BUILDING BLOCKS WITH THE EQUIPMENT MANUFACTURER

A. THE UNITS HEATING AND COOLING MODES SHALL BE CONTROLLED THROUGH THE UNITS CONTROLLER TO MEET HEATING AND COOLING SPACE TEMPERATURE SETPOINTS.

B. MECHANICAL COOLING SHALL BE STAGED AS REQUIRED TO MEET THE SPACE TEMPERATURE SETPOINT.

C. HYBRID HEATING CONTROL

ON A CALL FOR HEATING THE FIRST HEAT PUMP STAGE SHALL BE ENABLED UPON ADDITIONAL CALL FOR HEATER THE SECOND HEAT PUMP STAGE SHALL BE ENABLED.IF THE SPAVCE TEMPERATURE CONTINUES TO NOT BE SATISFIED, THE CONTROLLED SHALL ENABLED THE GAS HEAT FIRST STAGE AND DISABLE THE HEAT PUMP OPERATION. ON A CONTUNUED CALL FOR HEAT THE GAS HEAT SECOND STAGE SHALL BE ENABLED

D. HUMIDITY CONTROL (HGRH) OPERATION

a. DEHUMIDIFICATION SHALL BE ENABLED WHEN THE SPACE RELATIVE HUMIDITY IS ABOVE 60% OR WHEN THE SPACE DEW POINT IS GREATER THAN 60 DEG. F.
b. THE HOT GAS REHEAT (HGRH) WILL OPERATE AS REQUIRED TO REHEAT THE DEHUMIDIFIED AIR TO MAINTAIN THE ACTIVE SUPPLY AIR TEMPERATURE SET POINT (60-72°F), ADJ.
c. WHEN THE SPACE RELATIVE HUMIDITY DROPS BELOW 60%, THE UNIT SHALL REVERT BACK TO COOLING MODE.

E. OCCUPIED MODE OPERATION:
a. THE CONTROLLER WILL USE OCCUPIED SETPOINTS FOR HEATING, COOLING, AND DEHUMIDIFICATION MODES OF OPERATION. THE SUPPLY FAN SHALL BE CONFIGURED TO RUN CONTINUOUSLY.

F. CO DETECTION :
a. THE UNIT SHALL BE DISABLED. THE UNITS GAS VALVE SHALL CLOSE. THE OUTSIDE AIR AND RETURN AIR DAMPERS SHALL FULLY CLOSE.

G. ECONOMIZER MODE:

a. WHEN THE OUTSIDE AIR TEMPERATURE IS 60 DEG F THE UNIT SHALL GO INTO ECONOMIZER MODE AND ALL HEATING AND COOLING SHALL BE DISABLED, ABOVE 65 DEG F (ADJ.)THE UNIT COOLING SHALL BE ENABLED WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 55 DEG F. THE UNIT HEATING SHALL BE ENABLED.,

H. OUTSIDE AIR:

a. THE OUTSIDE AIR FLOW STATION SHALL MEASURE THE ACTUAL OUTSIDE AIR FLOW AND COMPARE TO THE REQUIRED AIRFLOW RATE TO MONITOR AT ALL TIMES., WHEN THE UNIT IS IN OCCUPIED MODE

4

FREEZE PROTECTION
UPON SIGNAL FROM THE FREEZESTAT THAT THE MIXED AIR TEMPERATURE HAS DROPPED BELOW 38°F (ADJ.), SHUT DOWN SUPPLY FAN, CLOSE OUTDOOR AIR DAMPER, OPEN RETURN DAMPER FULLY, STAGE ON THE COOLING COIL AND ENABLE GAS HEATER TO MODULATE ON TO LOW HEAT

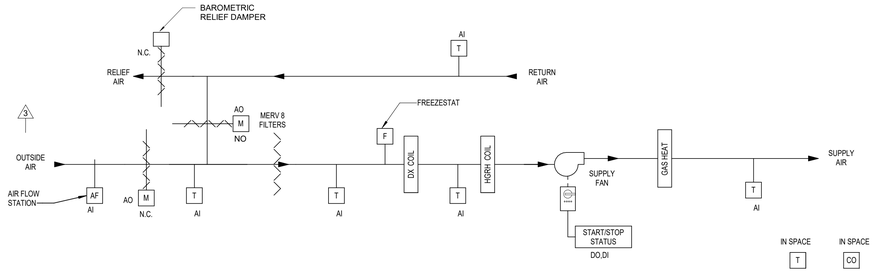
IF A FREEZE PROTECTION SHUTDOWN IS TRIGGERED, IT SHALL REMAIN IN EFFECT UNTIL IT IS RESET AT THE MANUAL RESET SWITCH. AN ALARM SHALL BE SENT TO THE OPERATOR WORKSTATION.

SCHEDULING
SHALL HAVE REGULAR, DAY-TO-DAY SCHEDULE OF OCCUPIED HOURS. THE OWNER SHALL BE CONSULTED DURING THE SUBMITTAL PHASE TO ESTABLISH ALL SCHEDULES.

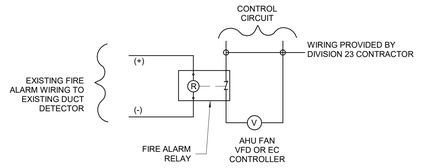
ALARMS
MAINTENANCE INTERVAL ALARM WHEN FAN HAS OPERATED FOR MORE THAN 1,500 HOURS. RESET INTERVAL COUNTER WHEN ALARM IS ACKNOWLEDGED. FAN ALARM IS INDICATED BY THE STATUS BEING DIFFERENT FROM THE COMMAND FOR A PERIOD OF 15 SECONDS.

SAFETIES:

UPON ACTIVATION OF THE E-STOP BUTTON, THE SYSTEM SHALL SHUT DOWN.



CONSTANT VOLUME DX HEAT PUMP / HYBRID GAS UNIT



RTU SHUTDOWN DIAGRAM

FIRE ALARM INTERLOCK

The Fire Alarm Contractor shall provide a fire alarm relay for the supply fan at each RTU. The relay shall be a be wired directly to the fan variable frequency drive or EC fan motor controller for RTU shutdown by the BAS Contractor.

INTEGRATION POINTS LIST

SPACE TEMPERATURE	AI	CURRENT VALUE OF SPACE TEMPERATURE SENSOR
SPACE HUMIDITY	AI	CURRENTL VALUE OF SPACE HUMIDITY
NUMBER OF COOLING STAGES	AI	
NUMBER OF HEATING STAGES	AI	
OCCUPIED COOLING SETPOINT	AO	
OCCUPIED HEATING SETPOINT	AO	
UNOCCUPIED COOLING SETPOINT	AO	
UNOCCUPIED HEATING SETPOINT	AO	
FAN STATUS	DO	
LOW FAN SPEED OUTPUT	DO	
MEDIUM FAN SPEED OUTPUT	DO	
HIGH FAN SPEED OUTPUT	DO	
DEHUMIDIFICATION STATUS	DI	
EXCEPTION STATUS	DI	
FILTER ALARM	DI	
FROST PROTECTION ALARM	DI	
SERVICE ALARM	DI	
AUTO MODE ENABLE	DO	
CONTROL STATUS	AI	
FAN MODE	AI	
FROST PROTECTION	AI	
OCCUPANCY COMMAND	AI	
REVERSING VALVE OPERATION	AI	
SYSTEM MODE	AI	

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PROJECT# 24017

06/13/2025

CONSTRUCTION DRAWINGS

CRAVEN COUNTY SCHOOLS
UNIFIED MIDDLE SCHOOL OF HAVELOCK ADDITION
200 Sermons Blvd, Havelock, NC 28532

ID	DATE	DESCRIPTION
4	06/12/25	ADDENDUM 5
3	06/04/2025	ADDENDUM 3

DRAWN BY: TLH
CHECKED BY: JTB

ROOFTOP UNIT SCHEMATIC

2024004 07 MAY 2025

M6-01

EXISTING CONSTANT VOLUME AIR HANDLER SEQUENCE OF OPERATIONS

**THIS IS THE EXISTING CONTROLS SEQUENCE OF OPERATION FOR THE CONSTANT VOLUME AIR HANDLING UNITS. MODIFICATIONS TO THE CONTROLS SEQUENCE IS NOTED BELOW

RUN CONDITIONS - SCHEDULED:
SEQUENCES WILL BE INITIATED 30 MINUTES (ADJ.) OR MORE PRIOR TO BUILDING OCCUPANCY SCHEDULE BASED ON OPTIMIZED START PARAMETERS. THE OUTSIDE AIR DAMPER SHALL BE OPEN IN OCCUPIED MODE AND CLOSED IN MORNING WARM-UP, COOL-DOWN, OR UNOCCUPIED MODES.

THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
  75°F (ADJ.) COOLING SETPOINT
  70°F (ADJ.) HEATING SETPOINT.
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
  81°F (ADJ.) COOLING SETPOINT.
  64°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
THE OCCUPANTS SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR (OPERATOR SHALL HAVE ABILITY TO LOCK OUT LOCAL ADJUSTMENT). THE ZONE SENSOR MAY BE OVERRIDDEN AT THE BAS OPERATOR WORKSTATION.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME (DEFAULT, 2 HOURS, ADJ.). AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

UNIT INTERLOCKS:
THE AHU SHALL BE INTERLOCKED WITH THE EXISTING EXHAUST FANS ON THE EXISTING ZONE..

RETURN AIR SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING ACTIVATION OF THE RETURN AIR SMOKE DETECTOR.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

DELETE CONTROL SEQUENCE

ZONE TEMPERATURE CONTROL:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND SHALL MODULATE THE HEATING AND COOLING CONTROL VALVES TO MAINTAIN ZONE TEMPERATURE SETPOINT.

ROOM TEMPERATURE AVERAGING CONTROL FOR EACH ZONE AHU

EACH AHU ZONE WILL BE PROVIDED WITH MULTIPLE SPACE THERMISTORS, ONE IN EACH ROOM ASSOCIATED WITH ITS ZONE UNIT. THE BAS SHALL CONTINUOUSLY MONITOR THE TEMPERATURES OF EACH SPACE AND CALCULATE THE AVERAGE TEMPERATURE EVERY 5 MINUTES (ADJ.) AND WILL ADJUST THE DISCHARGE AIR TEMPERATURE.
ROUTE ALL NEW CONTROL CONDUIT ABOVE CORRIDOR CEILINGS AND IN NON-BLOCK WALLS. WHERE WALLS ARE CONSTRUCTED OF CONCRETE BLOCKS, RUN CONDUIT EXPOSED. PAINT CONDUIT TO MATCH WALL COLOR. ALL WORK AND DEVICES SHALL BE PROVIDED AND INSTALLED BY THE CONTROLS CONTRACTOR

3

NEW CONTROLS SEQUENCE

COOLING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE COOLING COIL VALVE TO MAINTAIN ITS COOLING SETPOINT.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE HEATING IS NOT ACTIVE.

MINIMUM OUTSIDE AIR VENTILATION:
THE OUTSIDE AIR DAMPERS SHALL BE OPEN DURING BUILDING OCCUPIED HOURS. OUTSIDE AIR DAMPER SHALL BE FULLY CLOSED DURING UNOCCUPIED HOURS.

DEHUMIDIFICATION:
THE CONTROLLER SHALL MEASURE THE RETURN RELATIVE HUMIDITY AND OVERRIDE THE COOLING SEQUENCE TO MAINTAIN RETURN AIR HUMIDITY AT OR BELOW 60% RH (ADJ.). DURING DEHUMIDIFICATION MODE, THE COOLING COIL DISCHARGE AIR TEMPERATURE SHALL BE RESET TO 53 DEG F (ADJ), AND THE REHEAT COIL (HOT WATER OR ELECTRIC HEAT) SHALL MODULATE TO MAINTAIN A SUPPLY AIR SETPOINT 2°F (ADJ.) LESS THAN THE ZONE COOLING SETPOINT. THE FAN SPEED SHALL BE RESET TO 50% OF DESIGN FLOW DURING DEHUMIDIFICATION MODE.

DEHUMIDIFICATION SHALL BE ENABLED WHENEVER:
- THE SUPPLY FAN STATUS IS ON.
- RETURN AIR RELATIVE HUMIDITY EXCEEDS 60% (ADJ)
- AND THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 50 DEG F (ADJ)

RETURN AIR HUMIDITY:
THE CONTROLLER SHALL MONITOR THE RETURN AIR HUMIDITY AND USE AS REQUIRED FOR HUMIDITY CONTROL.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS GREATER THAN 65% (ADJ.) FOR 15 MINUTES

RETURN AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 85°F (ADJ.).
- LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 55°F (ADJ.).

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 110°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

GENERAL ZONING/SCHEDULING

EACH AHU IS A ZONE THAT CAN BE INDIVIDUALLY ASSIGNED AN OPERATION SCHEDULE OR OPERATE IN CONJUNCTION WITH OTHER ZONES AS DEFINED BY THE OWNER. IF AN OVERRIDE BUTTON ASSOCIATED WITH THE AHU IS PUSHED DURING NORMALLY OCCUPIED TIMES, NO CHANGE IN OPERATION WILL OCCUR. IF AN OVERRIDE BUTTON IS PUSHED DURING NORMALLY UNOCCUPIED TIMES, BOTH THE AHU AND CENTRAL HEATING AND/OR COOLING PLANT WILL TURN ON AND OPERATE IN THE OCCUPIED MODE FOR THE PROGRAMMED TIME DURATION (SET FOR ONE HOUR).

SCHEDULING
REGULAR SCHEDULING: EACH ZONE SHALL HAVE REGULAR, DAY-TO-DAY SCHEDULE OF OCCUPIED HOURS. THE OWNER SHALL BE CONSULTED DURING THE SUBMITTAL PHASE TO ESTABLISH ALL SCHEDULES. AN OPTIMIZED START ALGORITHM SHALL BE USED. THE HVAC EQUIPMENT IN EACH ZONE WILL START EARLY ENOUGH SO THAT THE SPACE TEMPERATURES IN EACH ZONE ARE AT SETPOINT BY THE BEGINNING OF OCCUPIED HOURS. THE START TIME SHALL BE AUTOMATICALLY ADJUSTED WITH CHANGES IN OUTSIDE AIR TEMPERATURE AND OTHER FACTORS.

HOLIDAYS: HOLIDAYS CAN BE SCHEDULED UP TO A YEAR IN ADVANCE. DURING SCHEDULED HOLIDAYS, THE ZONES REMAIN IN UNOCCUPIED MODE. CONSULT THE OWNER ON HOLIDAY SCHEDULING.

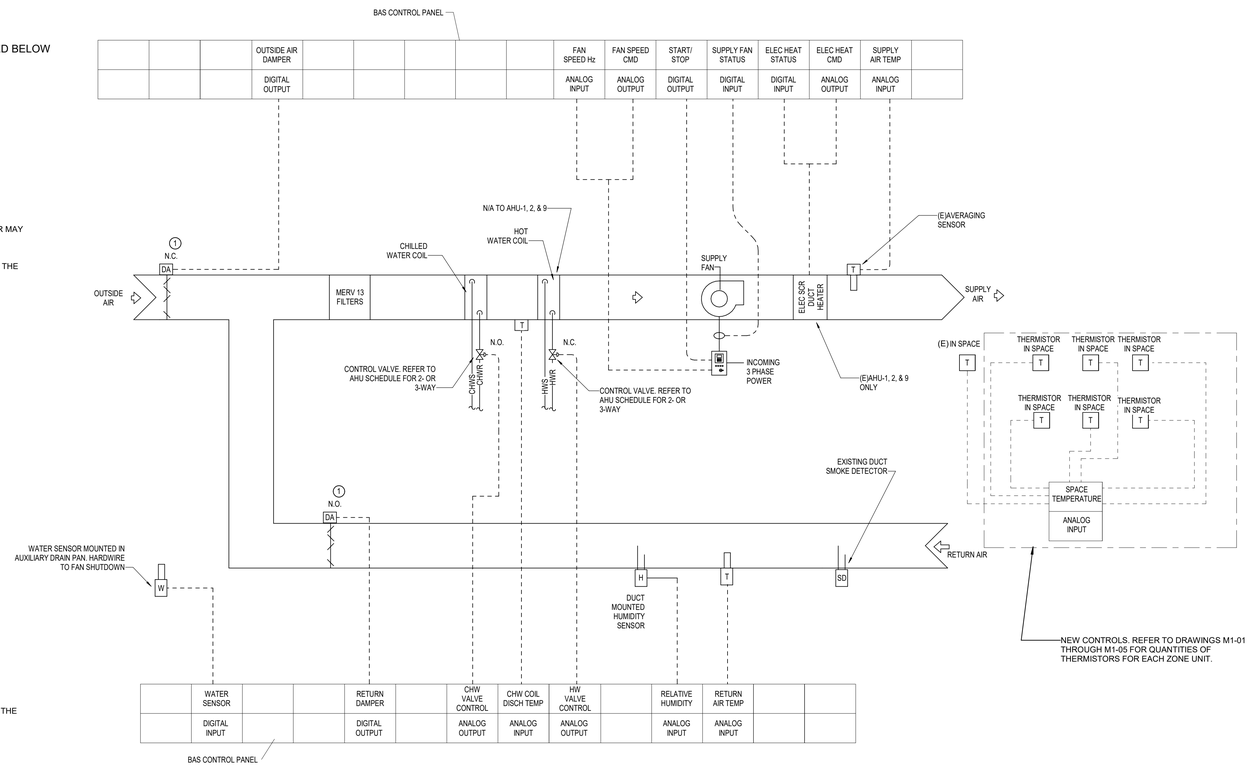
SPECIAL EVENT SCHEDULING: SPECIAL EVENTS CAN BE SCHEDULED UP TO A YEAR IN ADVANCE DURING WHICH A ZONE WILL OPERATE IN OCCUPIED MODE REGARDLESS OF THE ZONE'S REGULAR SCHEDULE OR SCHEDULED HOLIDAYS.

BAS OPERATOR OVERRIDES: THE BAS OPERATOR SHALL BE ABLE TO OVERRIDE THE ENTIRE BUILDING EITHER ON OR OFF AT SINGLE POINTS IN THE GLOBAL CONTROL MODULE'S SOFTWARE.

ALARMS
MAINTENANCE INTERVAL ALARM WHEN FAN HAS OPERATED FOR MORE THAN 1,500 HOURS. RESET INTERVAL COUNTER WHEN ALARM IS ACKNOWLEDGED.
FAN ALARM IS INDICATED BY THE STATUS BEING DIFFERENT FROM THE COMMAND FOR A PERIOD OF 15 SECONDS.

ALARM LEVELS

ALARMS SHALL BE GROUPED INTO A MINIMUM OF THREE (3) LEVELS. HIGHER LEVEL ALARMS SHALL AUTOMATICALLY SUPPRESS LOWER LEVEL ALARMS.



EXISTING CONSTANT VOLUME AIR HANDLING UNIT

4

VARIABLE FREQUENCY DRIVE INTERFACE POINTS LIST TABLE			
POINT NAME	HARDWIRED	INTERFACE COM CARD	GUI DISPLAY
VFD COMMAND START/STOP	X	X	HARDWIRED
VFD SPEED COMMAND (%)	X	X	HARDWIRED
PUMP STATUS (VIA VFD)	X	X	HARDWIRED
VFD SPEED FEEDBACK (Hz)		X	COM
PUMP ALARM (COMMAND/STATUS MISMATCH)		X	COM
VFD FAULT STATUS		X	COM
VFD FAULT RESET		X	COM
VFD POWER (KW)		X	COM
TIMESTAMP		X	COM

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PROJECT# 24017
NORTH CAROLINA PROFESSIONAL SEAL 025020 ENGINEER JASON W. CAMP
06/13/2025

CONSTRUCTION DRAWINGS

CRAVEN COUNTY SCHOOLS
UNIFIED MIDDLE SCHOOL OF HAVELOCK ADDITION
200 Sermons Blvd, Havelock, NC 28532

ID	DATE	DESCRIPTION
4	06/12/25	ADDENDUM 5
3	06/04/2025	ADDENDUM 3

DRAWN BY: TLH
CHECKED BY: JTB

EXISTING TYPICAL AIR HANDLING UNIT CONTROLS

2024004 07 MAY 2025

M6-03

Unified Middle School of Havelock Addition
Pre-Bid RFI

smith sinnett ARCHITECTURE

RFI		Date Received	Submitted By	Assigned To	Response	Associated Revision	Issued
1	Specifications are unclear on the resonsibility for the Independent testing agency. Please confirm that the independent agency will be hired and paid by the owner.	5/23/2025	JM Thompson	Arch	Yes, special inspections will be hired and paid by the owner.	-	ADD 1 5/23/2025
2	Sheet C-310 note which calls out for 6' wide sidewalk to be part of alt#2 appears to be in error, sidewalk should be part of base bid. Please clarify	5/23/2025	JM Thompson	Civil	The referenced sidewalk is part of Alternate #2. An exhibit has been provided with this reponse for clarification.	-	ADD 1 5/23/2025
3	Doors 331B & 420A indicate aluminum door in hollow-metal frames per the door schedule. Please confirm the intent for these units.	5/23/2025	JM Thompson	Arch	Intent is for aluminum door in aluminum frame.	-	ADD 1 5/23/2025
4	Sheet A9-02 Keynote 4, calls out a metal roof system, the elevations seem to indicate a shingle roof system. Multiple details on A9-03 indicate a shingle roof system. Please clarify.	5/23/2025	JM Thompson	Arch	Shingle roof system is design intent, metal roofing is incorrect.	-	ADD 1 5/23/2025
5	PE Storage Bldg, architectural drawings and and notes on S9-02 indicate a cold-formed metal truss roof system, however, the cuts 14 & 15/S2.01 indicate a bar joist roof system. Please clarify the design intent.	5/23/2025	JM Thompson	Structural	Design intent is bar joists, notation on sheet S9-02 changed to be more clear.	S9-02	ADD 2 5/30/2025
6	Sunshade detail 5/A5-11 indictaes a mixture of galvanized steel, steel, and aluminum. Please confirm the composition of the components of the sunshades. We also ask that you confirm the AESS Level 3 requirements.	5/23/2025	JM Thompson	Arch	All components shall be galvanized steel. Refer to Steel Tube Institute standards for AESS, as is found here: https://steeltubeinstitute.org/resources/architecturally-exposed-hollow-structural-sections/	A5-11	ADD 1 5/23/2025
7	Details 6 & 7/A5-01 indicate reinforced sidewalks, please clarify which walks this detail refers to, as this does not appear in the civil sidewalk details.	5/23/2025	JM Thompson	Arch / Civil	Refer to the sidewalk and pavement details on the sivil plans for site sidewalks and pavements. Details 6 and 7 will be removed from Architectural sheets.	A5-01	ADD 2 5/30/2025
8	Alternate 1 "New Bus Canopy" please confirm that the new island and sidewalks will be included as part of the base bid and only the canopy structure and foundations are added in alternate 1.	5/23/2025	JM Thompson	Civil	The new islands and sidewalk are included in the base bid.	-	ADD 1 5/23/2025
9	Specification 013200; please confirm that the contractor will be required to submit and maintain a fully "Cost Loaded" progress schedule.	5/23/2025	JM Thompson	Arch	Yes.	-	ADD 1 5/23/2025
10	G1-01, please confirm that temporary egress tunnels are for emergency use only. Please define how far the tunnels should extend beyond the footprint or the additions.	5/23/2025	JM Thompson	Arch	Temporary egress tunnels are for emergency use only. Egress tunnels shall extend to the far side of the proposed fire lane.	-	ADD 2 5/30/2025
11	Renovation of the existing buildings calls for significant removal and reinstallation of existing ceiling tiles with the replacement of any damaged tiles. What constitutes damage which will require replacement? Will an inspection be performed before work begins and all damaged existing tiles be replaced prior to our scope of work? Will color and style variations from the original tile and replacement tiles be accepted? This items seems to be extremely subjective and we suggest establishing an allowance for tile replacement.	5/23/2025	JM Thompson	Arch	GC shall document existing conditions prior to start of work to identify previously damaged tiles and issue as a report to Architect and Owner. GC is only responsible for replacing tiles damaged in the course of their scope of work. After scope of work is complete, Owner will replace previously damaged tiles as identified in existing conditions report. Inspection will be performed before and after GC scope of work. Replacement tiles shall match existing.	-	ADD 2 5/30/2025
12	Are there schedule restraints for working within the existing school?	5/23/2025	JM Thompson	Arch	This will be addressed with the owner at the pre-bid meeting.	-	ADD 1 5/23/2025
13	Please confirm that we are to maintain a current criminal background investigation (CBI) for all personnel who will be onsite.	5/23/2025	JM Thompson	Arch	Yes, adhere to the Jessica Lunsford Act requirements as described in the specs. Form is provided with new General Conditions in Addendum 1	Spec Section 007200	ADD 1 5/23/2025
14	Does the Davis-Bacon Act apply to this contract? Will certified payrolls be required?	5/23/2025	JM Thompson	Arch	No.	-	ADD 1 5/23/2025
15	Will retainage be held on this project and if so at what rate?	5/23/2025	JM Thompson	Arch	Retainage paragraph was omitted in error, specs will be revised.	Spec Section 007300	ADD 1 5/23/2025
16	Are sales tax reports required to be submitted to the owner?	5/23/2025	JM Thompson	Arch	Yes.	-	ADD 1 5/23/2025
17	Spec section 114000 - Food Service Equipment is missing from bid documents, please provide.	5/23/2025	JM Thompson	Arch	This spec section does not pertain to the project but was left on the table of contents in error. Disregard.	-	ADD 1 5/23/2025

18	Structural Drawings doing not call for AESS Level 3, as specified on the architectural drawings (details 1/A1-30 & 5/A5-11 vs 13/S2-00 for example). This could be a significant cost difference and most of the steel fabricators will reference the structural documents only. We request this discrepancy in the documents be clarified.	5/23/2025	JM Thompson	Structural	Additional notes added to sheets S0-01, S2-00 and S2-01 for clarification.	S0-01 S2-00 S2-01	ADD 2 5/30/2025
19	Sheeet C-902 has two separate design details for the firelane paving to be performed under alternate 3. Please clarify which detial is to be followed as part of altermate 3.	5/23/2025	JM Thompson	Civil	The pavement section named "Typical Fire Access Road Section (Alternate #3)" is the final pavement section under Alternate #3. The pavement section named "Typical Construction Fire Access Road Section (Alternate #3)" is the Alternate #3 pavement section that will be used during construction. Under Alternate #3, the contractor will be responsible for removing the excess stone prior to converting to the final pavement section.	-	ADD 1 5/23/2025
20	Note on sheet C-902 states that paving details are provided for reference only and that the contractor is to refer to the geotechnical engineers report for the minimum pavement secction designs. We suggest that the civil designer is much more appropriate for evaluating the engineers report and providing the contractors with the proper design. Please advise;	5/23/2025	JM Thompson	Civil	The referenced note will be removed. The pavement sections provided have been shown based on the recommendations of the geotechnical engineer.	-	ADD 1 5/23/2025
21	Please provide detail information on the gates and knox box to be provided at each end of the firelane. We assume a pipe gate of some configuration. Please advise.	5/23/2025	JM Thompson	Civil	A gate detail has been provided with this addendum. The detail includes information on the Knox padlock that is to be provided by the contractor.	-	ADD 2 5/30/2025
22	Manual roller shades are spec'd. A1-11, note 9, refers to the window shades as blinds. A-700, note 1, calls out manual roller shades. A5-12/2 states provide motorized roller shades.	5/27/2025	Atlantic FESP	Arch	Both Manual and Motorized shades are needed on the project. Basis of Design for Motorized is Crestron Electronics with Draper, MechoShades, and Hunter Douglas as acceptable manufacturers. A1-11 Note 9 is a boilerplate note and was not updated to match design intent. Disregard in its entirety. A-700 note 1 is correct, manual roller shades are TYP in classrooms. A5-12 Detail 2 was cut on A4-15 and refers to the Gymnasium only.	Spec Section 122413	ADD 2 5/30/2025
23	Confirming science classroom sinks/faucets (S1, S2A, S2B) are provided by others while the dilution tanks are provided by the plumbers.	5/30/2025	JL Cayton	Arch	Science sinks are integral to the countertop and provided with the countertop. Faucets and dilution tanks are provided by the plumbers.	-	ADD 1 5/23/2025
24	Sheet S9-03 appears to be titled incorrectly, should this reflect "Alt 4 - Walk-in Freezer and Cooler"	5/30/2025	JM Thompson	Structural	This was a typo, this sheet pertains to Alt 4.	-	ADD 2 5/30/2025
25	Please confirm if Walk-in Coolers in Alternate 4 are provided by owner or GC. If provided by GC, please provide a specification or product sheet.	5/30/2025	JM Thompson	Arch	Walk-in coolers are provided by the GC. Existing coolers are custom built units by Bally, design intent is for new units to be similar. Shop drawings for existing units provided as an exhibit to Addendum 3.	-	ADD 3 6/4/2025
26	Lab casework seems to be in conflict between plans and specifications; plastic laminate per the drawings and wood veneer in the specs. Please clarify. If the lab casework is to be plastic laminate, which spec would govern the laminate casework? There is laminate casework mentioned in div. 6 and div. 12. The laminate casework is called to be plywood core in the drawings but particleboard core in the specs. Please clarify which to use.	5/30/2025	JM Thompson	Arch	Spec Section 064023 does not apply to the project, disregard in its entirety. Resource room casework shall be plastic laminate over plywood core, Spec Section 123216 Part 2.3.A has been revised accordingly. Lab casework shall be wood veneer plywood, Spec Section 123553 Part 2.2.A has been revised accordingly. Casework sections on A4-21 have been revised accordingly.	A4-21 Spec Section 123216 Spec Section 123553	ADD 3 6/4/2025
27	Superior Mason Products is one of the approved vendors for the walkway covers, however, they have several issues with the specifications. 1- Mason's employs a 6x3x.078 decking in lieu of the 6x3.5x.087 specified 2- Mason supplies Class II clear anodized finish in lieu of the Class 1 specified, 3- Mason's is unable to achive the 16' column span they indicate an 8' span maximum, 4- Mason's provides mechanical bents in lieu of the welded specified Will Mason's be approved for this project with the noted deviations from the specifications?	5/30/2025	JM Thompson	Arch	GC is responsible for submitting products that meet the specified requirements. If a manufacturer's current offerings do not meet the requirements, GC shall select from remaining approved vendors or propose a substitution request.	-	ADD 3 6/4/2025
28	Sheet P 3-02 indicates for a gasline and a 3/4" waterline be provided for the PE Storage buidling. Should the cost associated with this work be included in the cost for Alternates #2 or included within the base bid?	5/30/2025	JM Thompson	Plumbing	This will be associated with Alternate #2.	-	ADD 2 5/30/2025

29	Alternate #9 is for the additional cost to provide new BDA for the existing building. Allowance #12 is a $50,000 lumpsum allowance for BDA. We are assuming the allowance only pertains to the BDA for additions only. Please clarify.	5/30/2025	JM Thompson	Arch	Allowance 12 applies only to the BDA system in the new classroom additions, if required. Alternate 9 applies only to the BDA system added to the existing building. It is the Architect's understanding from DOI that the BDA can only be mandated in the new classroom additions but, if it is required, Owner would like the option to provide coverage for the entire building.	-	ADD 2 5/30/2025
30	Please confirm that all fire alarm cabling within the existing school can be installed with plenum rated cabling and that we will not need to run all new conduit throughout the existing facility.	5/30/2025	JM Thompson	Arch / Fire Alarm	Owner has approved plenum-rated cable in lieu of conduit above ceilings.	-	ADD 3 6/4/2025
31	Can the Fire Alarm System be installed free air cable in existing lay-in ceiling or does it all need to be in conduit?	6/3/2025	Coastline Electrical	Arch / Fire Alarm	Owner has approved plenum-rated cable in lieu of conduit above ceilings.	-	ADD 3 6/4/2025
32	For new fire alarm devices on existing walls, do they need to be installed in conduit or wire mold?	6/3/2025	Coastline Electrical	Arch / Fire Alarm	Owner wants to minimize exposed conduit, install wiring in-wall wherever posible. At block walls, use conduit and paint to match wall.	-	ADD 3 6/4/2025
33	Are a synchronized clock or critical notification system is being considered as part of the scope of work for this project?	6/3/2025	Primex	Arch	Neither of those are included in the project.	-	ADD 3 6/4/2025
34	Are furnishings a part of this bid?	6/3/2025	Furnitureland South	Arch	We have shown basis of design furniture to indicate how each space will be used but all furnishings will be purchased directly by the owner.	-	ADD 3 6/4/2025
35	Per Plan sheet C-902, The detail for "Standard Duty Asphalt" calls for 3" S9.5B, which is achievable with two 1.5" lifts (per NCDOT spec). But my question is for the "Heavy Duty Asphalt" and the "Fire Access Road (Alternate #3)", both of which call for 4" S9.5B. Although achievable with two 1.5" lifts and one 1", It would not be recommended to lay that thick of a Surface Asphalt in a Heavy Duty Area. For the "Heavy Duty Asphalt" and "Fire Access Road (Alternate #3)", Can we use 2.5" I19.0C Intermediate /1.5" S9.5B or C Surface? Which is typical thickness/mix type when paving Heavy Duty Areas. It does not specify Asphalt Mix Type per thickness in the Geotechnical Report.	6/3/2025	Onslow Grading & Paving	Geotech	We are OK with the proposed 2.5" I19.0C Intermediate /1.5" S9.5B or C Surface.	-	ADD 3 6/4/2025
36	Fabric wrapped Panels and Diffusers - indicates AP1 and DP1 but I don't have a selected manufacturer. A) where is the AP1 and DP1 detail? B) is there a spec section for these for an approved vendor or can I price our preferred best priced vendor? Metal Panels in Gym A) which spec section is this found in? B) Calls out as AP2 but I don't see AP2 info anywhere.	6/3/2025	Group III Mgt	Arch	AP1 and DP1 wall panels can be found in Chorus and Auditorium, refer to sheets A4-13 and A4-14. AP2 wall panels can be found in Gymnasium, refer to sheet A4-15. CD1 ceiling panels can be found in Chorus and Auditorium, refer to sheet A1-31. Please refer to spec section 095113 Acoustical Panels, in the following parts: AP-2 Part 2.1, AP-1 Part 2.2, DP-1 Part 2.3, CD-1 Part 2.4.	-	ADD 3 6/4/2025

Unified Middle School of Havelock Addition
Pre-Bid RFI No. 2

smith sinnett ARCHITECTURE

RFI		Date Received	Submitted By	Assigned To	Response	Associated Revision	Issued
1	On M6-03, Keynote (1) indicates that the controls contractors will be required to provide and install new OA and RA damper actuators. Could you confirm this is correct? We wanted to double check because it seems all other control devices associated to the existing AHU's are existing to remain (besides the new thermistors in each classroom)	6/11/2025	Johnson Controls	Mechanical	Keynote 1 has been removed, disregard.	M6.01 M6.03	ADD 5 6/13/2025
2	I don't see a provision pertaining to freeze protection for the cooling coils in the existing AHU's, such as a low temp alarm. Given these are existing AHU's maybe this is a none issue but I did want to inquire prior to bidding incase we needed to include wiring new LTA sensors on the (6) existing AHU's. Please confirm Freeze protection is not a part of this project scope.	6/11/2025	Johnson Controls	Mechanical	Freeze protection of the existing air handling units cooling coils is not part of the scope of work.	M6.01 M6.03	ADD 5 6/13/2025
3	The specifications call for schedule 40 steel pipe for all gas lines, however, the table supplied in the drawings indicates that steel and/or plastic pipe are acceptable. The local contractors indicated that al gas piping at the schools are plastic. Please advise.	6/11/2025	JM Thompson	Plumbing	Polyethylene Pipe has been added as an option for Natural Gas buried beyond 5 feet of the building.	Spec Section 221005	ADD 5 6/13/2025

OSFM
NC DEPT OF INSURANCE
STATE FIRE MARSHAL

MIKE CAUSEY
INSURANCE COMMISSIONER

BRIAN TAYLOR
STATE FIRE MARSHAL

June 11, 2025

Ms. Allison Harris AIA
Smith Sinnett Architecture, PA
4600 Lake Boone Trail, Suite 205
Raleigh, NC 27607

RE: REVISED UNIFIED MIDDLE SCHOOL OF HAVELOCK
(Formerly - Tucker Creek Middle School)
New School Building Additions
Craven County

Dear Ms. Harris:

Final plans relative to the above named project have been reviewed for general compliance with General Construction of the 2018 North Carolina State Building Code and are approved with the following comment(s):

1. *All Fire Alarm work shall be closely coordinated with Craven County Schools (CCS) and The Local Fire Marshal (AHJ).*

2. *Provide Detail/Riser Diagram to the local jurisdiction - Emergency responder radio coverage shall have radio coverage based on existing coverage levels of the public safety communications system. Provide a written statement of how the path to compliance to achieve this safety feature will move forward to meet the needs of the jurisdiction for each building. 2018 NC Fire Code, section 510*

This project may be subject to the architectural standards of the Americans with Disabilities Act of 1990 (the ADA). Issuance of this letter does not certify that this project is in compliance with this Federal Law. Copies of the guidelines and information concerning the ADA may be obtained through the Architectural and Transportation Barriers Compliance Board, 800-USA-ABLE or the Dept. of Justice, (202)-514-0301. Failure to comply with the ADA may result in federal fines and penalties. These plans are so marked and filed approved in this Office.

These drawings are subject to the review and approval of the local inspection authority having jurisdiction and to all local inspection fees and permits.

Sincerely,

Mark G. Bailey
Building Code Consultant

MGB/
cc: Jurisdiction – City of Havelock, NC
School Planning