ADDENDUM NO. 1

RE: **NC School of Science and Mathematics (NCSSM)**
Campus-Wide HVAC Upgrades
SCO ID #: 24-28565-01A; Code: 42219; Item: 306

DATE: September 19, 2025

FROM: McKim & Creed

To: Prospective Bidders

This Addendum issued prior to receipt of bids shall and does hereby become a part of the Contract Documents for the above Project. This Addendum must be acknowledged on the Form of Proposal.

All Prime contractors shall be responsible for ensuring that their Subcontractors are properly apprised of the contents of this Addendum.

All information contained in this Addendum shall supersede and shall take precedence over any conflicting information in the original Drawings and Specifications.

PRE-BID MEETING AND PUBLIC MEETING FOR PREFERREFD BRAND ALTERNATES

1. Meeting notes are included and are part of Addendum #1.

CHANGES TO SPECIFICATIONS

1. Form of Proposal

   The Form of Proposal has been updated to include the Unit Prices and Allowances noted below. **The revised Form of Proposal is included with this Addendum and must be used by the Contractor.** Failure to use the revised Form of Proposal may result in a noncompliant bid.

2. Section 01 21 00 Allowances
   a. Item 3.1.A.3 shall be added as follows:
      3. *Allowance No. 3: Replacement of two (2) existing wireless thermostats with two (2) new wireless thermostats*
      4. *Allowance No. 4: Replacement of two (2) existing terminal unit/VAV box controllers with two (2) new terminal unit/VAV box controllers*

3. Section 01 22 00 Unit Prices
   a. Item 3.1 shall be updated as follows:

No. 3: Provide cost for provision, complete installation, programming, etc of one (1) new wireless thermostat.

No. 4: Provide cost for provision, complete installation, programming, etc of one (1) new terminal unit/VAV controller.

4. Section 01 23 00 Alternates
    a. Part 3 shall be updated as follows:
        - *ALT-M1 - Resident Terminal Units: Remove and replace existing VAV and FCU terminal units serving resident rooms. Include replacement of all associated supply air grilles. Existing thermostats shall be reused for new terminal units. Remove existing terminal unit controllers from existing to-be-removed terminal units; reuse controllers on new equipment, remount, reprogram, and rewire as necessary.*
        - *ALT-M2 - Other Terminal Units: Remove and replace existing VAV and FCU terminal units serving common areas and corridors. Include replacement of all associated supply air grilles. Existing thermostats shall be reused for new terminal units. Remove existing terminal unit controllers from existing to-be-removed terminal units; reuse controllers on new equipment, remount, reprogram, and rewire as necessary.*
        - *ALT-M3 – Preferred Brand: Provide BACnet based building automation system by Trane controls as preferred brand alternate.*
5. Section 23 09 13 Instrumentation and Control Devices
    a. Item 2.8.C shall be deleted.
    b. Item 2.8.D shall be added as follows:

D. Thermostats (Wireless)

1. New Zone thermostats shall be similar to existing Trane Air-Fi Wireless Communication Sensors, with integral display and occupancy sensor, based on IEE 802.15.4 Standard and ASHRAE Standard 125. Power provided by (2) AA sized batteries.

a) Occupied timeout delay shall be 10 minutes after motion is detected.

2. The thermostat shall employ nonvolatile electrically erasable programmable read-only memory (EEPROM) for all adjustable parameters.

3. The thermostat shall have a temperature accuracy of ±0.9F°/±0.5C° at 70.0°F/21.0°C typical calibrated

4. The thermostat shall have a humidity accuracy of ±5% RH from 20 to 80% RH at 50 to 90°F (10 to 32°C).

5. Mounting shall fit a standard 2x4 junction box.

    c. Item 3.1 shall be updated as follows:

3.1 Ball Valves, 1/2 through 2 in. (VAV Boxes, FCUs):

d. Item 3.1.F shall be updated as follows:

F. Flow Characterization Disk shall be manufactured from Amodel AS-1145HS (or equal) Polyphthalamide Resin and rated for 50 psid maximum differential pressure and shall be inserted against the casting of the valve.

e. Item 3.2 shall be deleted.

f. Item 3.3 shall be deleted.

g. Item 3.4 shall be deleted.

h. Item 3.5 shall be updated as follows:

3.5 Globe Valves, Brass, 1/2 through 2 in. (AHU's):

i. Item 3.6 shall be updated as follows:

3.6 Globe Valves, Cast Iron, 2-1/2 through 6 in. (AHU's):

6. Section 23 09 23 Building Automation System

a. Item 2.2.A shall be updated as follows:

A. Programmable equipment controllers shall include direct wired and wireless input interfaces for monitoring analog and binary signals from field devices.

b. Item 2.2.B shall be updated as follows:

B. Programmable equipment controllers shall include direct wired output and wireless output interfaces for controlling field equipment.

c. Item 2.2.D.2 shall be updated as follows:

2. Network/Wireless sensors (NS-xxx), of the following types and characteristics:

d. Item 2.2.D.2.a.iii shall be updated as follows:

iii. The network room temperature and humidity sensor(s) shall be wireless devices.

e. Item 2.2.D.2.b shall be deleted.

f. Item 2.2.E shall be updated as follows:

E. Programmable equipment controllers shall have the capability to execute complex control sequences involving direct wired input/output points as well as input and output devices communicating over the FC Bus, Wireless, or the SA Bus.

g. Items 2.2.O.1.b, d and e shall all be deleted.

h. Item 2.3 shall be deleted.

i. Item 2.5.E shall be updated as follows:

E. The communication protocols utilized for peer-to-peer communications between supervisory controllers shall be Niagara 4 Fox, BACnet TCP/IP or SNMP. Use of a different communication protocol for peer-to-peer communications between supervisory controllers is not allowed.

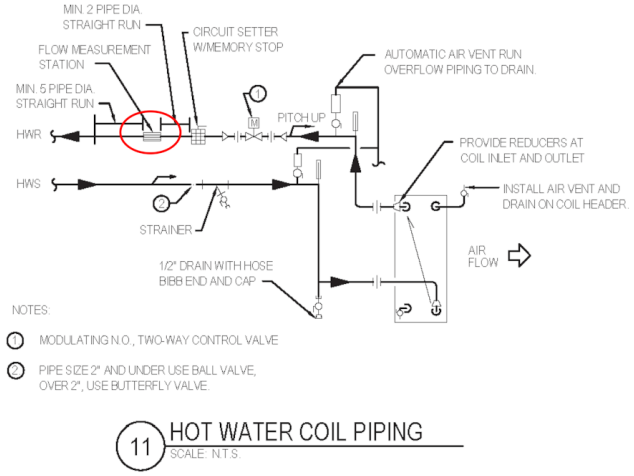
CHANGES TO DRAWINGS

1. MECHANICAL
   a. BCS-1 – Revised electrical lead design professional information.
   b. MD-100, M-100, M-100A, M-100B, M-101 – Revised Bid Alternate descriptions to indicate re-using terminal unit controllers and wireless thermostats.
   c. M-100 – Added more specific notes about fire-protection work.
   d. M-100A, M-300A, M-300B – Added hatching and revised keynote for new compacted stone to be added to mechanical room floor where new air handling units are going to be installed. Added hatching for existing gravel in section views as well.
   e. M-101 – Expanded drawing to include VAV-15 & VAV-16. Revised general note #3 and added note #1 to diffuser schedule.
   f. M-700 – Replaced Detail #1 with a more comprehensive equipment pad detail. Revised details #9 and #11 to remove flow measurement stations and add isolation valves.
   g. M-800 – Added note #3 to air handling unit schedule. Added column for maximum dimensions of air handling units. Added note about thermostat and controller to FCU and VAV terminal unit schedules.

PRE-BID QUESTIONS & RESPONSES

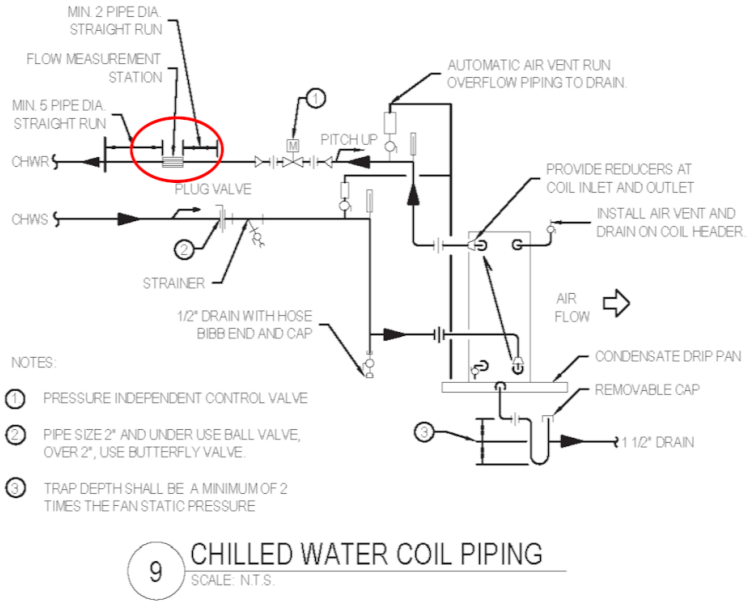
- Please describe the extent of chemical treatment referenced on spec 23 25 00 CHEMICAL WATER TREATMENT.
  - **RESPONSE:** We will provide a response to this question in Addendum 2 which will be forthcoming.
- If cleaning of the entire existing Heating and Cooling Water systems is required, please provide the total system volumes as well as the total number of terminal units for both the chilled and heating water systems.
  - **RESPONSE:** We will provide a response to this question in Addendum 2 which will be forthcoming.
- Who is the current chemical treatment provider?
  - **RESPONSE:** NCSSM is looking at a new contract for a chemical treatment provider; therefore, there are no Owner preferences relative to a chemical treatment contractor.

- Drawing M700 Detail 11 – Hot water Coil Piping shows a “Circuit Setter” and a “Flow Measurement Station”. Please provide a manufacturer / model number for the “Flow Measurement Station” and the “Circuit Setter”. (Note: specification 23-31-16 2.5 describes automatic flow control valves, but not circuit setters). If required, please add a shutoff valve on the heating water return piping



  - **RESPONSE:** Detail 11 has been updated on the drawings. Flow measurement station was removed, and isolation valve was added. Note 1 was changed to “2-way control valve”. Specifications have also been updated to include information on circuit setters.

- Drawing M700 Detail 9 – Chilled water Coil Piping shows a “Flow Measurement Station” and a “Pressure Independent Control Valve”. Please provide a manufacturer / model number for the “Flow Measurement Station”. If required, please add a shutoff valve on the chilled water return piping.



- **RESPONSE:** Detail 9 has been updated on the drawings. Flow measurement station was removed, and circuit setter and isolation valve were added. Note 1 was changed to "2-way control valve".

- EQUIPMENT MANUFACTURER SUBSTITUTION REQUESTS

  We are requesting permission to bid these specific manufacturers according to the plans and specifications.

Spec Section	Product	Requested Equal Manufacturer
23 73 00	AHUs	VTS
M-800	FCUs	AE Air

  - **RESPONSE:** AE Air is an acceptable substitute for the FCU manufacturer. VTS AHU manufacturer substitute request is still being evaluated.

- The specifications state the existing FACP at Hunt Hall is Notifier. What is the model number for this Notifier panel?
  - **RESPONSE:** Notifier NFS2-640/E

- Can you provide the model number for the existing smoke detectors at Hunt Hall?
  - **RESPONSE:** Model numbers for specific detectors not available; must integrate with fire alarm panel with info provided above.

F O R M O F P R O P O S A L

Campus-Wide HVAC Renovations – Phase 1 Contract: Single Prime

NC School of Science & Mathematics Bidder: _____

SCO-ID # 24-28565-01A Date: _____

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The bidder further declares that he and his subcontractors have fully complied with NCGS 64, Article 2 in regards to E-Verification as required by Section 2.(c) of Session Law 2013-418, codified as N.C. Gen. Stat. § 143-129(j).

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The Bidder proposes and agrees if this proposal is accepted to contract with the

State of North Carolina through NC School of Science and Mathematics

in the form of contract specified below, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of

the Campus-Wide HVAC Renovations in full in complete accordance with the plans, specifications, and contract documents, to the full and entire satisfaction of the State of North Carolina, NC School of Science and Mathematics and McKim & Creed Inc

with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the contract documents, for the sum of:

SINGLE PRIME CONTRACT:

Base Bid:

_____ Dollars($) _____

General Subcontractor:

_____ Lic _____

Plumbing Subcontractor:

_____ Lic _____

Mechanical Subcontractor:

_____ Lic _____

Electrical Subcontractor:

_____ Lic _____

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work, or (ii) with the approval of the awarding authority for good cause shown by the contractor.

ALTERNATES:

Should any of the alternates as described in the contract documents be accepted, the amount written below shall be the amount to be "added to" or "deducted from" the base bid.

ALT-M1 - Resident Terminal Units

_____ Dollars ($ _____)

ALT-M2 - Other Terminal Units

_____Dollars ($ _____)

ALT-M3 – Preferred Brand (Trane)

_____Dollars ($ _____)

UNIT PRICES

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the scope of the work all in accordance with the contract documents. Price shall include all labor and material (except where otherwise stated) to furnish and install complete and in working order.

No. 1: Replacement of existing vinyl coated tile (VCT) flooring (specific to areas where floor grilles are being replaced)

Per SF Unit Price ($)_____/sf

No. 2: Repair existing penetrations in fire rated assemblies (shall include floors and walls).

Per SF Unit Price ($)_____/sf

No. 3: Provide cost for provision, complete installation, programming, etc of one (1) new wireless thermostat.

Each Unit Price ($)_____/ea

No. 4: Provide cost for provision, complete installation, programming, etc of one (1) new terminal unit/VAV controller.

Each Unit Price ($)_____/ea

ALLOWANCES

Contractor shall include in the base contract sum the following allowances. Unless otherwise stated, the allowances shall include all costs for labor, material, taxes, overhead, profit, fees and associated costs. Costs shall be incorporated in the project by change order in accordance with General and Supplemental Conditions.

Allowance No. 1: Replacement of existing VCT flooring adjacent to floor grilles: 200 SF (square feet)

Allowance No. 2: Repair of existing fire rated penetrations in fire rated assemblies: 200 SF (square feet)

Allowance No. 3: Replacement of two (2) existing wireless thermostats with two (2) new wireless thermostats

Allowance No. 4: Replacement of two (2) existing terminal unit/VAV box controllers with two (2) new terminal unit/VAV box controllers

The bidder further proposes and agrees hereby to commence work under the contract on a date to be specified in a written order of the designer and shall fully complete all work thereunder within the time

specified in the Supplementary General Conditions. Applicable liquidated damages amount is also stated in the Supplementary General Conditions.

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

Provide with the bid - Under GS 143-128.2(c) the undersigned bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit **A**) made to solicit minority participation in the bid effort.

NOTE: A contractor that performs all of the work with its own workforce may submit an Affidavit (**B)** to that effect in lieu of Affidavit (**A)** required above. The MB Participation Form must still be submitted even if there is zero participation.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit **D** is not necessary;

*** OR ***

If less than the 10% goal, Affidavit (**D**) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

Note: Bidders must always submit **with their bid** the Identification of Minority Business Participation Form listing all MB contractors, vendors and suppliers that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit A **or** Affidavit B, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for rejection of the bid.

Proposal Signature Page

The undersigned further agrees that in the case of failure on his part to execute the said contract and the bonds within ten (10) consecutive calendar days after being given written notice of the award of contract, the certified check, cash or bid bond accompanying this bid shall be paid into the funds of the owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash or bid bond accompanying this proposal shall be returned to the undersigned.

Respectfully submitted this day of _____

_____
(Name of firm or corporation making bid)

WITNESS:

By:_____
Signature

_____
(Proprietorship or Partnership)

Name: _____
Print or type

Title_____
(Owner/Partner/Pres./V.Pres)

Address_____

ATTEST:

_____

By:_____

License No._____

Title:_____
(Corp. Sec. or Asst. Sec. only)

Federal I.D. No. _____

Email Address: _____

(CORPORATE SEAL)

Addendum received and used in computing bid:

Addendum No. 1 _____ Addendum No. 3 _____ Addendum No. 5_____ Addendum No. 7_____

Addendum No. 2 _____ Addendum No. 4 _____ Addendum No. 6 _____ Addendum No. 8 _____

PRE-BID MEETING AND PREFERRED BRAND ALTERNATES MEETING NOTES

Project Title: **NC School of Science and Mathematics (NCSSM)**
Durham Campus-Wide HVAC Renovations – Phase 1

Date of Meeting: September 11, 2025

Time of Meeting: 3:30 P.M.

Project Numbers: SCO ID #: 24-28565-01A
McKim & Creed No: 06376-0012

Place of Meeting: ETC Lecture Hall/Woolworth Room
NC School of Science and Mathematics
1219 Broad Street, Durham, NC

Attendance: See attached sign-in sheet

1) The meeting started at 3:30 p.m. and all were asked to sign pre-bid sign-in sheet, and take pre-bid agenda sheet.

2) Introductions Engineer and Owner were made. The pre-bid meeting is not mandatory and an additional site visit will be allowed for follow-up and additional subcontractors.

   The second allowed site visit for project access is Wednesday, September 17, 2025 at 10:00 AM (sign-in at Bryan Lobby entrance and NCSSM will escort attendees to Hunt Residence Hall mechanical rooms).

   Primary contacts from design and Owner are as follows:

   Design Firm: McKim & Creed
   Matthew Daves
   Phone Number: 919-233-8091 Emergency/Cell Phone Number: 919-270-3169
   E-mail: mdaves@mckimcreed.com

   For copies of plans, specs, addendums, and to submit formal questions, McKim & Creed additional contact for this information is listed below**. Note – all questions are to be submitted no later than September 23, 2025. Final project addendum will be issued on or before September 25, 2025.**

   Allison Jurgens
   Phone Number: 919-233-8091
   E-mail: ajurgens@mckimcreed.com

NCSSM Representative
Sarah Towles
SCIF Capital Projects Manager
Phone Number: 828-406-0742
E-mail: smtowles@northcarolina.edu

3) Brief project scope was discussed and emphasis was made on the schedule. This project shall be staffed adequately, planned, monitored and executed to meet the construction completion date of 245 consecutive calendar days from the notice to proceed as defined in the project specifications, supplementary general conditions section. All work must be complete on site no later than August 7, 2025 for resident students returning for fall semester. All project requirements are documented in contract drawings and specifications.

4) Bid opening date is October 2, 2025 at 3:00pm in NCSSM Bryan Center Conference Room 109 at which time bids will be opened and read aloud. Any bids submitted prior to 3:00 PM must be received and date and time stamped by Robert Allen with NCSSM. All bids must be submitted as hard copies (no electronic submittals allowed). This project is single prime (general contractors and mechanical contractors are allowed to bid as prime in accordance with specifications; prime contractors are to list subcontractors on the form of proposal). All forms required for bidding and subsequent contracts are found in the specifications, Form of Proposal, Bid Bond, MBE Participation, etc. Performance and payment bond forms are also included and are required to submitted following the bid by the awarded contractor. NCSSM and McKim & Creed emphasized MBE participation and contractors are encouraged to meet the 10% participation. Shop drawings shall be executed promptly following contract award to ensure long lead time items are ordered while maintaining the total project schedule.

5) Form of proposal, bid bond (or 5% deposit), as well as Affidavit A or B from MBE forms must all be submitted with the bid for this project as defined by the project specifications.

6) Liquidated damages are $500 per consecutive calendar day per Supplementary General Conditions.

7) Normal working hours are from 8:00am to 5:00pm Monday thru Friday. Working after hours shall be coordinated and approved by NCSSM.

8) Substitutions will only be evaluated in writing prior to bid date. All questions in writing shall be submitted to Matt Daves and copy Allison Jurgens (mdaves@mckimcreed.com and ajurgens@mckimcreed.com) by September 23, 2025

9) Alternates are detailed in specifications and drawings and were reviewed briefly including the controls with Owner Preferred brand alternates of: Trane Controls. No objection to the preferred brand alternate was raised.

10) Unit prices and allowances are detailed in specifications and were reviewed during the meeting. Reminder that allowances are to be included in project base bid (any unused allowances will be credited back to NCSSM at end of the project)

11) Contractor to provide chemical toilet adjacent to mechanical room entrance with final location as coordinated with Engineer and Owner per supplementary general conditions. 2 contractor vehicles are allowed parking adjacent to mechanical room area as reviewed onsite (all remaining vehicles to park in main Bryan parking lot). Staff to remain in project area while vehicles are parked at Hunt in case NCSSM security or maintenance staff need emergency access. Construction fencing with fabric screening (secure chain link fence footings with sandbags) is required if any exterior storage areas are needed adjacent to Hunt mechanical room. There is adequate lay-down space available in the Hunt mechanical rooms as well.

Project Title: NC School of Science and Mathematics (NCSSM)
Durham Campus-Wide HVAC Renovations – Phase 1

Project Numbers: SCO ID #: 24-28565-01A
McKim & Creed No: 06376-0012

Date of Meeting: September 11, 2025

Time of Meeting: 3:30 P.M.

Place of Meeting: ETC Lecture Hall/Woolworth Room; NC School of Science and Mathematics
1219 Broad Street, Durham, NC

Pre-Bid Meeting and Public Preferred Brand Alternates Meeting Attendees

Name	Company Name	Phone Number	E-Mail
Sarah Towles	UNC System Office	828-406-0742	smtowles@northcarolina.edu
Matt Daves	M&C	919-233-8091	mdaves@mckimcreed.com
Robert Allen	NCSSM	919-416-2659	allenr@ncssm.edu
Lorry Taylor	NCSSM		lorry.taylor@ncssm.edu
Wes Holyfield	CT Wilson	336-512-5499	wes.holyfield@ctwilson.com
Kyle Jeffreys	HM Kern	336-207-0733	estimating@hmkern.com
Ben Hockaday	HMC	919-277-0485	ben@hmcor.com
Jack Haigler	Comfort Mechanical	919-259-4118	jackhaigler@comfortmc.com
Chuck Champion	CWE	919-697-1988	cchampion@championwuthrich.com
Kevin Fleegle	Watco	919-883-7276	kfleegle@watcocorp.com
Brandt Smith	SGS Contracting	919-795-9989	brandt@sgscontractingllc.com
Tony Stevens	Comfort Systems	434-572-6986	tony.stevens@comfortsystemsusa.com
Christian Dockum	CCAC	336-451-5379	cdockum@ccair.com
Billy Jones	Morlando Crane	919-910-1935	billyj@morlandocrane.com

2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2 - FAMILY DWELLINGS AND TOWNHOUSES)

NAME OF PROJECT: **NC SCHOOL OF SCIENCE & MATHEMATICS, HUNT RESIDENCE HALL RENOVATION**
ADDRESS: **1219 BROAD STREET, DURHAM, NC** ZIP CODE: **27705**
PROPOSED USE: **RESIDENTIAL**
OWNER OR AUTHORIZED AGENT: **ROBERT ALLEN** PHONE #: **919.416.2659** E-MAIL: **ALLEN@NCSSM.EDU**
OWNED BY: ☐ CITY/COUNTY ☐ PRIVATE ☒ STATE
CODE ENFORCEMENT JURISDICTION: ☐ CITY: **DURHAM** ☐ COUNTY: **DURHAM** ☒ STATE: **NORTH CAROLINA**

LEAD DESIGN PROFESSIONAL **MEP**

DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE	E-MAIL
ARCHITECTURAL:					
CIVIL:					
ELECTRICAL:	McKIM & CREED	XING ZHOU, PE	052051	919.233.8091	szhou@mckimcreed.com
FIRE ALARM:	McKIM & CREED	XING ZHOU, PE	052051	919.233.8091	szhou@mckimcreed.com
ELECTRICAL (ADD. #1):	McKIM & CREED	JESSE ALONZO Jr., PE	053121	919.233.8091	jalonzo@mckimcreed.com
FIRE ALARM (ADD. #1):	McKIM & CREED	JESSE ALONZO Jr., PE	053121	919.233.8091	jalonzo@mckimcreed.com
PLUMBING:					
MECHANICAL:	McKIM & CREED	MICHAEL SINACK, PE	030053	412.489.4106	msinack@mckimcreed.com
SPRINKLER/STANDPIPE:					

2018 NC BUILDING CODE: ☐ NEW BUILDING ☐ SHELL/CORE ☐ 1ST TIME INTERIOR COMPLETIONS ☐ ADDITION ☐ PHASE CONSTRUCTION - SHELL CORE

2018 NC EXISTING BUILDING CODE: (CHECK ALL THAT APPLY) ☐ PRESCRIPTIVE ☐ ALTERATION LEVEL I ☐ HISTORIC PROPERTY ☐ REPAIR ☒ ALTERATION LEVEL II ☐ CHANGE OF USE ☐ CHAPTER 14 ☐ ALTERATION LEVEL III

CONSTRUCTED *(DATE)*: **1944** **CURRENT OCCUPANCY(S)** *(CH. 3)*: **RESIDENTIAL**
RENOVATED *(DATE)*: **1981 / 2001** **PROPOSED OCCUPANCY(S)** *(CH. 3)*: **NO CHANGE**
RISK CATEGORY (TABLE 1604.5): **CURRENT:** **II** **PROPOSED:** **II**

BASIC BUILDING DATA:
CONSTRUCTION TYPE: (CHECK ALL THAT APPLY) ☐ I-A ☐ I-B ☐ II-A ☒ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☐ V-B
SPRINKLERS: ☐ NO ☐ PARTIAL ☒ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
STANDPIPES: ☒ NO CLASS ☐ I ☐ II ☐ III WET ☐ DRY
PRIMARY FIRE DISTRICT: ☒ NO ☐ YES **FLOOD HAZARD AREA:** ☒ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: ☒ NO ☐ YES

GROSS BUILDING AREA TABLE: NO CHANGE

FLOOR	EXISTING (SQ FT)	ALTERATION	SUB-TOTAL
PENTHOUSE:	195	N/A	195
3RD FLOOR:	18,386	N/A	18,386
2ND FLOOR:	18,386	N/A	18,386
1ST FLOOR:	18,386	N/A	18,386
GROUND FLOOR:	18,386	N/A	18,386
BASEMENT:	8,798	N/A	8,798
TOTAL:	82,537	N/A	82,537

ALLOWABLE AREA: NO CHANGE
PRIMARY OCCUPANCY:
ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
BUSINESS ☐
EDUCATIONAL ☐
FACTORY ☐ F-1 MODERATE ☐ F-2 LOW
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM
INSTITUTIONAL ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-1 CONDITION ☐ 1 ☐ 2
I-2 CONDITION ☐ 1 ☐ 2
I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
MERCANTILE ☐
RESIDENTIAL ☐ R-1 ☒ R-2 ☐ R-3 ☐ R-4
STORAGE ☐ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED ☐ PARKING GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE
UTILITY & MISC. ☐

ACCESSORY OCCUPANCY CLASSIFICATION(S): **ASSEMBLY - UNCONCENTRATED**
INCIDENTAL USES: (TABLE 509)
SPECIAL USES (CHAPTER 4 - LIST CODE SECTIONS):
SPECIAL PROVISIONS: (CHAPTER 5 - LIST CODE SECTIONS):
MIXED OCCUPANCY: ☐ YES ☒ NO SEPARATION: _____ HR. EXCEPTION: _____

☐ NON-SEPARATED USE (508.3)
THE REQUIRED TYPE OF CONSTRUCTION FOR THE BUILDING SHALL BE DETERMINED BY APPLYING THE HEIGHT AND AREA LIMITATIONS FOR EACH OF THE APPLICABLE OCCUPANCIES TO THE ENTIRE BUILDING. THE MOST RESTRICTIVE TYPE OF CONSTRUCTION, SO DETERMINED, SHALL APPLY TO THE ENTIRE BUILDING.
☐ SEPARATED USE (508.4)
SEE BELOW FOR AREA CALCULATIONS FOR EACH STORY, THE AREA OF THE OCCUPANCY SHALL BE SUCH THAT THE SUM OF THE RATIOS OF THE ACTUAL FLOOR AREA OF EACH USE DIVIDED BY THE ALLOWABLE FLOOR AREA FOR EACH USE SHALL NOT EXCEED 1.

ACTUAL AREA OF OCCUPANCY A / **ALLOWABLE AREA OF OCCUPANCY A** + **ACTUAL AREA OF OCCUPANCY B** / **ALLOWABLE AREA OF OCCUPANCY B** = < 1.00

STORY NUMBER	DESCRIPTION AND USE	(A) BUILDING AREA PER STORY (ACTUAL)	(B) TABLE 506.2[2] AREA	(C) AREA FOR FRONTAGE INCREASE[3]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[1,4]
3	R-2 - RESIDENTIAL	18,386	16,000	10,204	24,240
2	R-2 - RESIDENTIAL	18,386	16,000	10,204	24,240
1	R-2 - RESIDENTIAL	18,386	16,000	10,204	24,240
GROUND FLOOR	R-2 - RESIDENTIAL	18,386	16,000	10,204	24,240
TOTAL		73,544	64,000	40,816	96,960

[3] FRONTAGE AREA INCREASE FROM SECTION 506.3 ARE COMPUTED THUS:
A: PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FEET MINIMUM WIDTH = 784 (F)
B. TOTAL BUILDING PERIMETER = 884 (P)
C: RATIO (F/P)= 0.89 (F/P) D. W= MINIMUM WIDTH OF PUBLIC WAY= 30 (W)
E: PERCENT OF FRONTAGE INCREASE I = 100 (F/P-0.25) x W/30 = 64 (%)

[1] UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTION 507.
[2] MAXIMUM BUILDING AREA = TOTAL NUMBER OF STORIES IN THE BUILDING x D. (506.2).
[3] THE MAXIMUM AREA OF OPEN PARKING GARAGES MUST COMPLY WITH 406.5.4.
[4] FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 506.2

ALLOWABLE HEIGHT: NO CHANGE

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE[1]
BUILDING HEIGHT IN FEET (TABLE 504.3)[2]	FEET: 55	FEET: 52	
BUILDING HEIGHT IN STORIES (TABLE 504.3)[3]	STORIES: 4	STORIES: 4	

[1] PROVIDE CODE REFERENCE IF THE "SHOWN ON PLANS" QUANTITY IS NOT BASED ON TABLE 504.3 OR 504.4.
[2] THE MAXIMUM HEIGHT OF THE AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH TABLE 412.3.1.
[3] THE MAXIMUM HEIGHT OF OPEN PARKING GARAGES MUST COMPLY WITH TABLE 406.5.4

FIRE PROTECTION REQUIREMENTS: NO CHANGE

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES	>30						
BEARING WALLS	>30						
EXTERIOR	>30						
NORTH	>30						
EAST	>30						
WEST	>30						
SOUTH	>30						
INTERIOR	>30						
NON-BEARING WALLS & PARTITIONS	>30						
EXTERIOR WALLS	>30						
NORTH	>30						
EAST	>30						
WEST	>30						
SOUTH	>30						
INTERIOR WALLS AND PARTITIONS	>30						
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS & JOISTS		1	1				
FLOOR CEILING ASSEMBLY		N/A	N/A				
COLUMNS SUPPORTING FLOORS		N/A	N/A				
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS & JOISTS		0	0				
ROOF CEILING ASSEMBLY		N/A	N/A				
COLUMNS SUPPORTING ROOF		N/A	N/A				
SHAFT ENCLOSURES - EXIT		2	2				
SHAFT ENCLOSURES - OTHER		2	2				
CORRIDOR SEPARATION		1	1				
OCCUPANCY/FIRE BARRIER SEPARATION		1	1				
PARTY/FIRE WALL SEPARATION		N/A	N/A				
SMOKE BARRIER SEPARATION		N/A	N/A				
SMOKE PARTITION		N/A	N/A				
TENANT/DWELLING UNIT/ SLEEPING UNIT SEPARATION		1	1				
INCIDENTAL USE SEPARATION		N/A	N/A				

* INDICATED SECTION NUMBER PERMITTING REDUCTION.

PERCENTAGE OF WALL OPENING CALCULATIONS: NO CHANGE

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLAN (%)

LIFE SAFETY SYSTEM REQUIREMENTS: NO CHANGE

EMERGENCY LIGHTING:	☐ NO	☒ YES	
EXIT SIGNS:	☐ NO	☒ YES	
FIRE ALARM:	☐ NO	☒ YES	
SMOKE DETECTION SYSTEMS:	☐ NO	☐ YES	☒ PARTIAL ____
CARBON MONOXIDE DETECTION:	☐ NO	☐ YES	

LIFE SAFETY PLAN REQUIREMENTS: NO CHANGE LIFE SAFETY PLAN SHEET#: _____

- ☐ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7)
- ☐ ASSUMED AND REAL PROPERTY LINE LOCATIONS (IF NOT ON THE SITE PLAN)
- ☐ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8)
- ☐ OCCUPANCY USE FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
- ☐ OCCUPANT LOADS FOR EACH AREA
- ☐ EXIT SIGN LOCATIONS (1013)
- ☐ EXIT ACCESS TRAVEL DISTANCES (1017)
- ☐ COMMON PATH OF TRAVEL DISTANCES (TABLES 1006.2.1 & 1006.3.2(1))
- ☐ DEAD END LENGTHS (1020.4)
- ☐ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
- ☐ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE
- ☐ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
- ☐ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATE FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION
- ☐ LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10)
- ☐ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7)
- ☐ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9)
- ☐ LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES
- ☐ LOCATION OF EMERGENCY ESCAPE WINDOWS (1030)
- ☐ THE SQUARE FOOTAGE OF EACH FIRE AREA (202)
- ☐ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT FOR OCCUPANCY CLASSIFICATION I-2 (407.5)
- ☐ NOTE: ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

ACCESSIBLE DWELLING UNITS (SECTION 1107): **NO CHANGE**

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

MECHANICAL SUMMARY:

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

THERMAL ZONE:
WINTER DRY BULB: 20°F
SUMMER DRY BULB: 93°F
INTERIOR DESIGN CONDITIONS:
WINTER DRY BULB: 70°F
SUMMER DRY BULB: 75°F
RELATIVE HUMIDITY: 50%
BUILDING HEATING LOAD: **EXISTING**
BUILDING COOLING LOAD: **EXISTING**

MECHANICAL SPACING CONDITIONING SYSTEM
UNITARY
DESCRIPTION OF UNIT N/A
HEATING EFFICIENCY N/A
COOLING EFFICIENCY N/A
SIZE CATEGORY OF UNIT N/A
BOILER
EXISTING
CHILLER
EXISTING

ACCESSIBLE PARKING *(SECTION 1106)*: **NO CHANGE**

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # OF ACCESSIBLE SPACES PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
TOTAL:						

PLUMBING FIXTURE REQUIREMENTS *(TABLE 2902.1)*: **NO CHANGE**

USE: **R-2 (GROUND FLOOR)**

		WATER CLOSETS			URINALS	LAVATORIES		SHOWERS/ TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE		REGULAR	ACCESSIBLE
SPACE	EXISTING (TOTAL)	-	-	-	-	-	-	-	-	-
	REQUIRED - FOR SLEEPING UNITS	-	-	-	-	-	-	-	-	-
	TOTAL PROVIDED	-	-	-	-	-	-	-	-	-
	REQUIRED - FOR DWELLING UNITS	-	-	-	-	-	-	-	-	-
	TOTAL PROVIDED	-	-	-	-	-	-	-	-	-

SPECIAL APPROVALS: SPECIAL APPROVAL (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ICC, ETC., DESCRIBE BELOW)
STATE CONSTRUCTION OFFICE

ENERGY SUMMARY: **EXISTING BUILDING - ENERGY CODE DOES NOT APPLY.**

ENERGY REQUIREMENTS:
THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE NORTH CAROLINA ENERGY CONSERVATION CODE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL FURNISH THE REQUIRED PORTIONS OF THE PROJECT INFORMATION FOR THE PLAN DATA SHEET. IF PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD DESIGN VS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.

EXISTING BUILDING ENVELOPE COMPLIES WITH CODE:
EXEMPT BUILDING:
CLIMATE ZONE: ☐ 3A ☐ 4A ☐ 5A
METHOD OF COMPLIANCE: ENERGY CODE ☐ **PERFORMANCE** ☐ **PRESCRIPTIVE**
ASHRAE 90.1 ☐ **PERFORMANCE** ☐ **PRESCRIPTIVE**
IF "OTHER" SPECIFY SOURCE HERE) _____

THERMAL ENVELOPE (PRESCRIPTIVE METHOD ONLY)

ROOF/CEILING ASSEMBLY (EACH ASSEMBLY):
DESCRIPTION OF ASSEMBLY:
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF TOTAL INSULATION:
SKYLIGHT IN EACH ASSEMBLY
TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY:
EXTERIOR WALLS (EACH ASSEMBLY):
DESCRIPTION OF ASSEMBLY:
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
OPENING (WINDOWS OR DOORS WITH GLAZING)
U-VALUE OF ASSEMBLY:
SOLAR HEAT GAIN COEFFICIENT:
PROJECTION FACTOR:
DOOR R-VALUES:

WALLS BELOW GRADE (EACH ASSEMBLY):
DESCRIPTION OF ASSEMBLY:
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
FLOORS OVER UNCONDITIONED SPACE (EACH ASSEMBLY):
DESCRIPTION OF ASSEMBLY:
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
FLOORS SLAB ON GRADE:
DESCRIPTION OF ASSEMBLY:
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
HORIZONTAL / VERTICAL REQUIREMENTS:
SLAB HEATED? (Y/N)

STRUCTURAL DESIGN: NO CHANGE

DESIGN LOADS:
IMPORTANCE FACTORS: SNOW (I$_S$) _____ SEISMIC (I$_E$) _____
LIVE LOADS: SLAB ON GRADE _____ PSF; BEDROOM _____ PSF; PARTITION ALLOWANCE _____ PSF; CORRIDORS (1ST FLOOR) _____ PSF
SNOW LOAD: _____ PSF
WIND LOAD: ULTIMATE WIND SPEED _____ MPH (ASCE-7); EXPOSURE CATEGORY _____

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
OCCUPANCY CATEGORY (TABLE 1604.5): ☐ I ☐ II ☐ III ☐ IV
SPECTRAL RESPONSE ACCELERATION S$_S$ _____ %G S$_1$ _____ %G
SITE CLASSIFICATION (ASCE 7) DATA SOURCE: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ **FIELD TEST** ☐ **PRESUMPTIVE** ☐ **HISTORICAL DATA**
BASIC STRUCTURAL SYSTEM
☐ BEARING WALL ☐ DUAL WITH SPECIAL MOMENT FRAME
☐ BUILDING FRAME ☐ DUAL WITH INTERMEDIATE R/C OR SPECIAL STEEL
☐ MOMENT FRAME ☐ INVERTED PENDULUM
ANALYSIS PROCEDURE: ☐ SIMPLIFIED ☐ EQUIVALENT LATERAL FORCE ☐ MODAL
ARCHITECTURAL, MECHANICAL COMPONENTS ANCHORED? ☐ YES ☐ NO

LATERAL DESIGN CONTROL: ☐ EARTHQUAKE ☐ WIND

SOIL BEARING CAPACITIES:
FIELD TEST (PROVIDE COPY OF TEST REPORT): _____ PSF
PRESUMPTIVE BEARING CAPACITY: _____ PSF
PILE SIZE, TYPE, AND CAPACITY: _____

ELECTRICAL SUMMARY: NEW CONNECTIONS ONLY

ELECTRICAL SYSTEM AND EQUIPMENT
METHOD OF COMPLIANCE: ENERGY CODE: ☐ PRESCRIPTIVE ☐ PERFORMANCE
ASHRAE 90.1: ☐ PRESCRIPTIVE ☐ PERFORMANCE

LIGHTING SCHEDULE (EACH FIXTURE TYPE)
LAMP TYPE REQUIRED IN FIXTURE: N/A
NUMBER OF LAMPS IN FIXTURE: N/A
BALLAST TYPE USED IN THE FIXTURE: N/A
NUMBER OF BALLASTS IN FIXTURE: N/A
TOTAL WATTAGE PER FIXTURE: N/A
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED: N/A
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED: N/A

ADDITIONAL EFFICIENCY PACKAGE OPTIONS
(WHEN USING THE 2018 NCECC; NOT REQUIRED FOR ASHRAE 90.1)
☐ C406.2 MORE EFFICIENT MECHANICAL EQUIPMENT
☐ C406.3 REDUCED LIGHTING POWER DENSITY
☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
☐ C406.5 ON-SITE RENEWABLE ENERGY
☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

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NCSSM

NORTH CAROLINA PROFESSIONAL SEAL 030053 ENGINEER MICHAEL J. SINACK II
09/19/2025

REV	REVISION DESCRIPTION	DATE
1	ADDENDUM 1	09/19/25

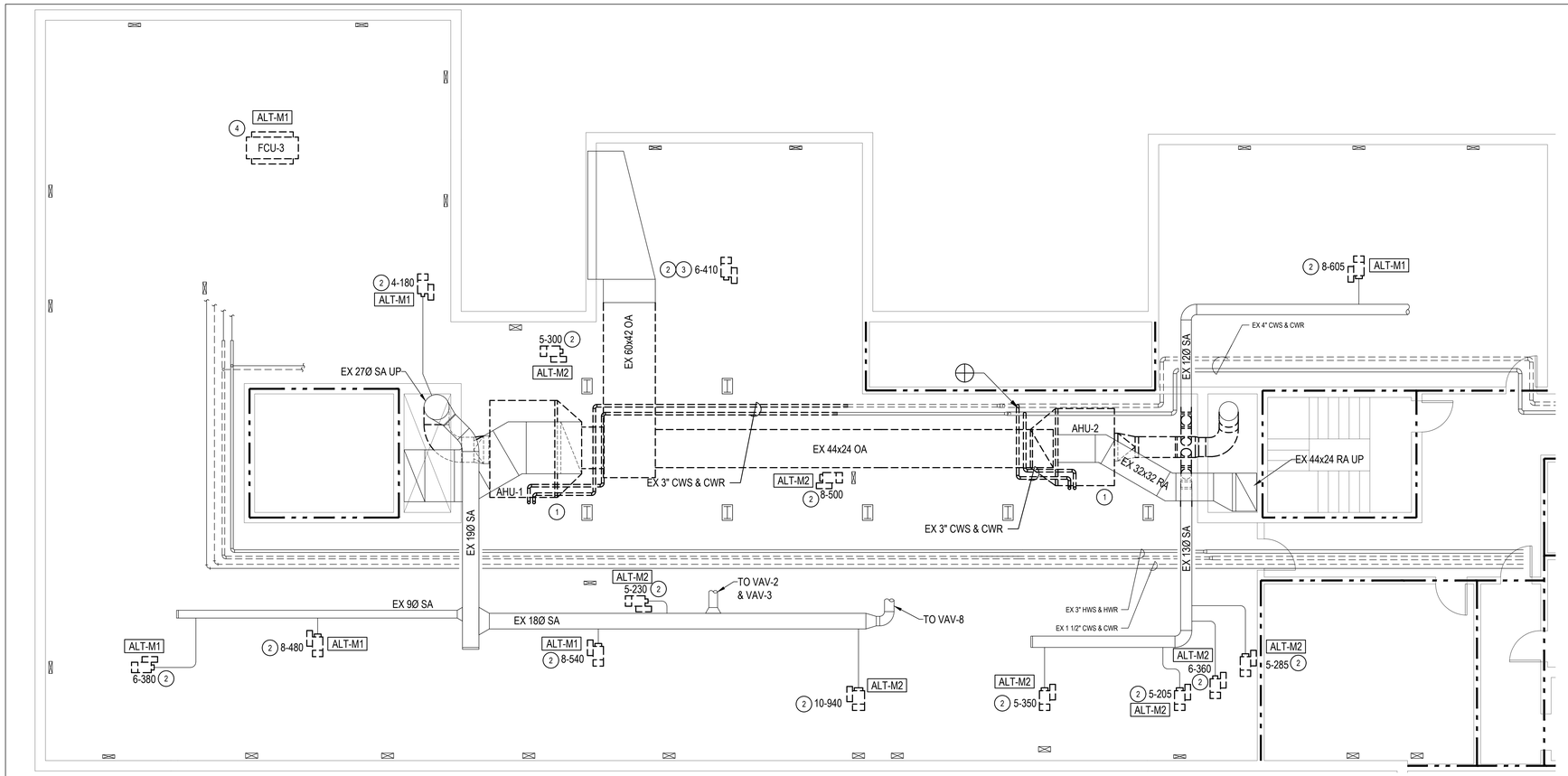
NCSSM Campus-Wide HVAC Renovations - PHASE 1
NC School of Science and Math
1219 Broad Street
Durham, North Carolina

DATE: **09/19/2025**
M&C PROJ. # **06376-0012**
SCO ID # **24-28565-01A**
DESIGNED
CHECKED
PROJ. MGR.

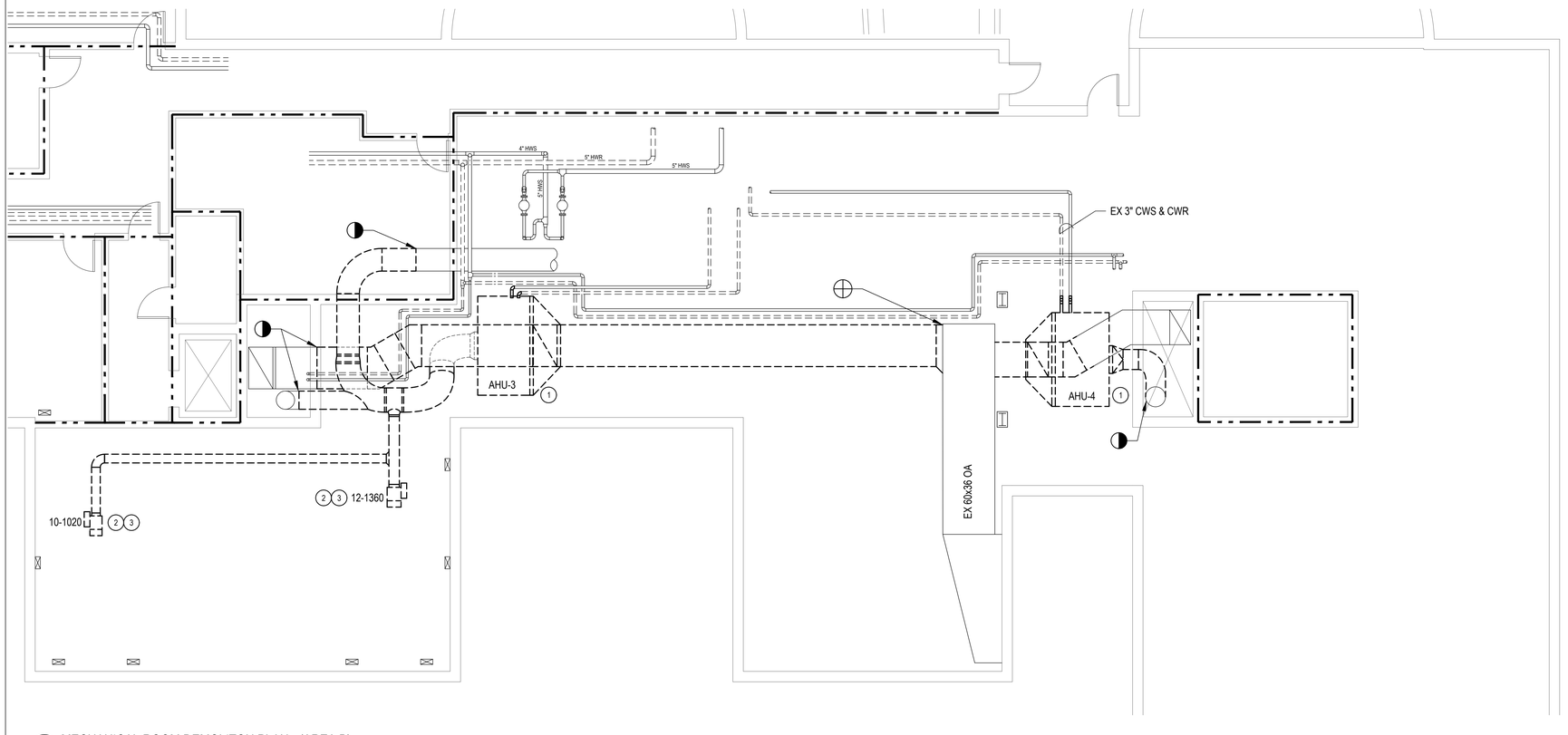
CONSTRUCTION DOCUMENTS

BUILDING CODE SUMMARY - HUNT

BCS-1



1 MECHANICAL ROOM DEMOLITON PLAN - (AREA A)
SCALE: 3/16" = 1'-0"



2 MECHANICAL ROOM DEMOLITON PLAN - (AREA B)
SCALE: 3/16" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE MADE IN PART FROM SITE SURVEYS AND OWNER'S EXISTING DRAWINGS FROM PREVIOUS PROJECTS. EXISTING EQUIPMENT IS SHOWN SCHEMATICALLY. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, PIPING, VALVES, DUCTWORK, CONDUITS, CONTROLS, ETC FOR EQUIPMENT CLEARANCES. NOT ALL EXISTING CONDITIONS ARE SHOWN.
2. ALL DUCTWORK ASSOCIATED WITH EXISTING FAN COIL UNITS AND VAV TERMINAL UNITS IS TO REMAIN UNLESS OTHERWISE NOTED.
3. EXISTING PIPING WITH A DIAMETER OF 3 INCHES OR GREATER IS SHOWN IN DOUBLE-LINE. PIPING WITH A DIAMETER LESS THAN 3 INCHES IS SINGLE-LINE.

1 DEMOLITION KEY NOTES

1. REMOVE ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTS AND DUCT ACCESSORIES USED BY AIR HANDLING UNIT BACK TO POINT SHOWN ON PLANS. REMOVE ALL PIPING BACK TO MAIN INCLUDING ALL VALVES AND ACCESSORIES AND CAP. SEE PIPING DIAGRAMS ON M-700.
2. REMOVE EXISTING TERMINAL UNIT AND ALL ASSOCIATED LOW-PRESSURE DUCT. REMOVE HOT WATER PIPING, VALVES, AND ACCESORIES BACK TO SHUTOFF VALVE.
3. TERMINAL UNIT AND ALL ASSOCIATED DUCTWORK AND PIPING IS TO BE REMOVED AS PART OF THE BASE BID.
4. REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED LOW-PRESSURE DUCT. REMOVE HOT WATER AND CHILLED WATER PIPING, VALVES, AND ACCESORIES BACK TO SHUTOFF VALVE.

WALL LEGEND

1-HOUR FIRE RATED WALL	
2-HOUR FIRE RATED WALL	

FIRE PROTECTION

CONTRACTOR SHALL VERIFY EXISTING FIRE SPRINKLER SYSTEM COVERAGE IN ALL AREAS IMPACTED BY HVAC EQUIPMENT REMOVAL, INSTALLATION, AND DUCTWORK MODIFICATIONS. WHERE NEW EQUIPMENT, DUCTWORK, OR OTHER OBSTRUCTIONS AFFECT EXISTING SPRINKLER HEAD LOCATIONS, SPACING, OR COVERAGE, CONTRACTOR SHALL COORDINATE WITH A LICENSED FIRE PROTECTION CONTRACTOR TO ADJUST, RELOCATE, OR ADD SPRINKLER HEADS AS REQUIRED TO MAINTAIN COMPLIANCE WITH THE 2018 NORTH CAROLINA FIRE PREVENTION CODE, THE ORIGINAL INSTALLATION STANDARD (NFPA 13 OR APPLICABLE), AND LOCAL AHJ REQUIREMENTS. ANY FIRE PROTECTION SYSTEM IMPAIRMENTS SHALL COMPLY WITH NCFC SECTION 901.7.

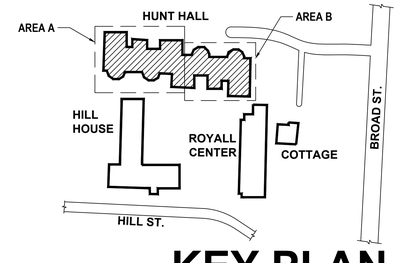
BID ALTERNATES

ALL WORK SHOWN ON THIS DRAWING IS PART OF THE BASE BID UNLESS OTHERWISE NOTED.

BASE BID: AIR HANDLING UNITS - REMOVE AND REPLACE AHU-1, AHU-2, AHU-3, AHU-4 INCLUDING ALL ASSOCIATED DUCTWORK AND PIPING CONNECTIONS. INCLUDE REPLACEMENT OF EXISTING VAV TERMINAL UNITS CONFLICTING WITH NEW AIR HANDLING UNITS.

ALTERNATE M1: RESIDENT TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING RESIDENT ROOMS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY.

ALTERNATE M2: OTHER TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING COMMON AREAS AND CORRIDORS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY. 1



KEY PLAN

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NCSSM

NORTH CAROLINA PROFESSIONAL SEAL 030053 ENGINEER MICHAEL W. SIMMONS II
09/19/2025

REV	REVISION DESCRIPTION	DATE
1	ADDENDUM 1	09/19/25

NCSSM Campus-Wide HVAC Renovations - PHASE 1

NC School of Science and Math
1219 Broad Street
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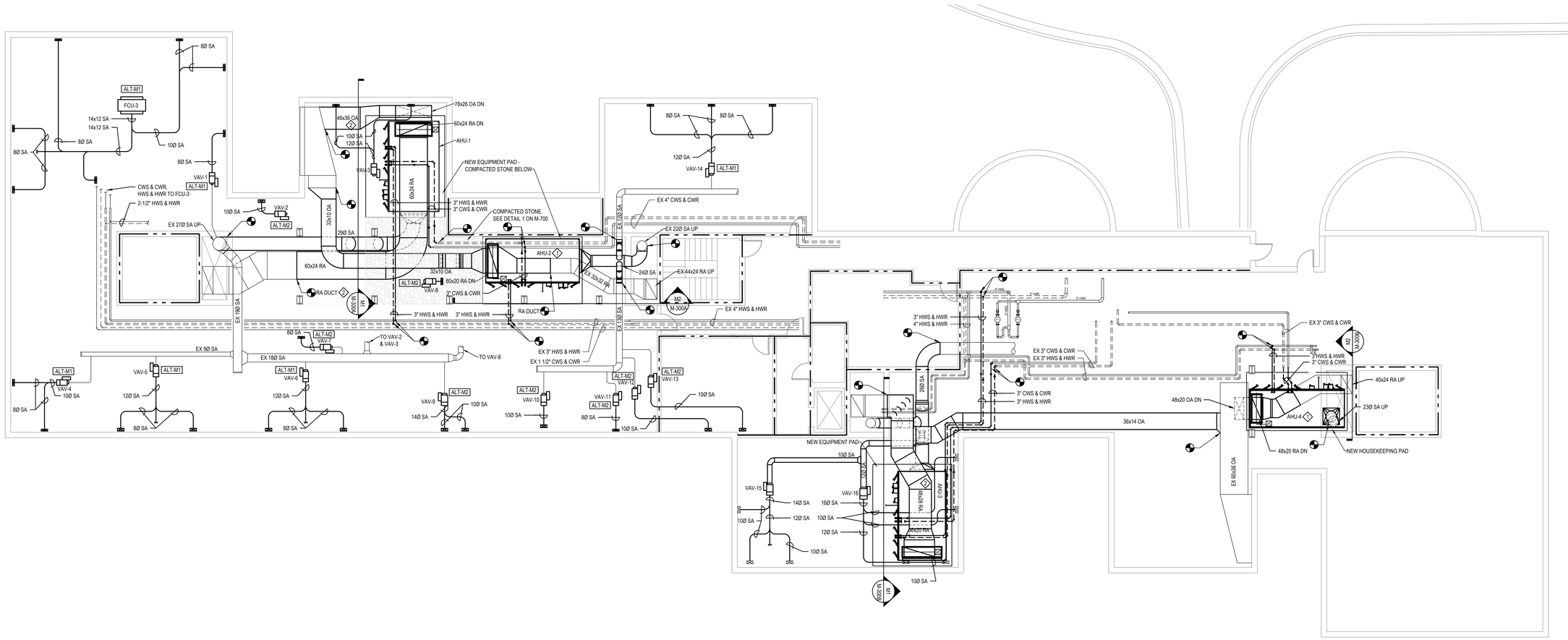
DATE	09/19/2025
M&C PROJ. #	06376-0012
SCO ID #	24-28565-01A
DESIGNED	
CHECKED	
PROJ. MGR.	

CONSTRUCTION DOCUMENTS

MECHANICAL DEMOLITION PLAN - HUNT GROUND FLOOR

MD-100



1 MECHANICAL NEW WORK - OVERALL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE MADE IN PART FROM SITE SURVEYS AND OWNER'S EXISTING DRAWINGS FROM PREVIOUS PROJECTS. EXISTING EQUIPMENT IS SHOWN SCHEMATICALLY. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, PIPING, VALVES, DUCTWORK, CONDUITS, CONTROLS, ETC FOR EQUIPMENT CLEARANCES. NOT ALL EXISTING CONDITIONS ARE SHOWN.
2. ALL NEW AIR HANDLING UNITS ARE TO BE PROVIDED WITH A FIELD FABRICATED HOUSEKEEPING PAD THAT EXTENDS NO LESS THAN 6 INCHES FROM EACH SIDE OF THE UNIT. THE PAD SHOULD EXTEND AT LEAST 3 FEET FROM THE ACCESS SIDE OF EACH UNIT.
3. EXISTING PIPING WITH A DIAMETER OF 3 INCHES OR GREATER IS SHOWN IN DOUBLE-LINE. PIPING WITH A DIAMETER LESS THAN 3 INCHES IS SINGLE-LINE. ALL NEW PIPING IS SHOWN IN SINGLE-LINE FOR CLARITY.

KEY NOTES

1. INSTALLATION OF NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK IS NOT EXPECTED TO AFFECT EXISTING FIRE PROTECTION SPRINKLER COVERAGE. CONTRACTOR SHALL FIELD-VERIFY AND ENSURE COMPLIANCE WITH NFPA 13 REQUIREMENTS UPON COMPLETION OF NEW WORK.
2. FIRE PROTECTION SPRINKLER COVERAGE IS REQUIRED UNDER ALL OBSTRUCTIONS OVER 48" PER NFPA 13 8.5.5.3.1. CONTRACTOR TO ADD SPRINKLER HEADS, AS NECESSARY, UNDER NEW DUCTWORK THAT EXCEEDS 48" INCLUDING INSULATION.

BID ALTERNATES

ALL WORK SHOWN ON THIS DRAWING IS PART OF THE BASE BID UNLESS OTHERWISE NOTED.

BASE BID: AIR HANDLING UNITS - REMOVE AND REPLACE AHU-1, AHU-2, AHU-3, AHU-4 INCLUDING ALL ASSOCIATED DUCTWORK AND PIPING CONNECTIONS. INCLUDE REPLACEMENT OF EXISTING VAV TERMINAL UNITS CONFLICTING WITH NEW AIR HANDLING UNITS.

ALTERNATE M1: RESIDENT TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING RESIDENT ROOMS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY.

ALTERNATE M2: OTHER TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING COMMON AREAS AND CORRIDORS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY.

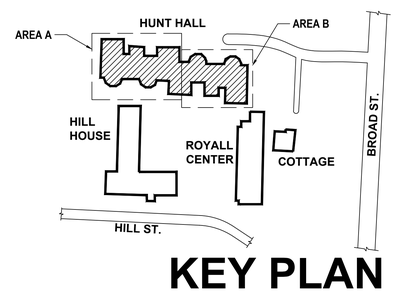
WALL LEGEND

1-HOUR FIRE RATED WALL

2-HOUR FIRE RATED WALL

FIRE PROTECTION

CONTRACTOR SHALL VERIFY EXISTING FIRE SPRINKLER SYSTEM COVERAGE IN ALL AREAS IMPACTED BY HVAC EQUIPMENT REMOVAL, INSTALLATION, AND DUCTWORK MODIFICATIONS. WHERE NEW EQUIPMENT, DUCTWORK, OR OTHER OBSTRUCTIONS AFFECT EXISTING SPRINKLER HEAD LOCATIONS, SPACING, OR COVERAGE, CONTRACTOR SHALL COORDINATE WITH A LICENSED FIRE PROTECTION CONTRACTOR TO ADJUST, RELOCATE, OR ADD SPRINKLER HEADS AS REQUIRED TO MAINTAIN COMPLIANCE WITH THE 2018 NORTH CAROLINA FIRE PREVENTION CODE, THE ORIGINAL INSTALLATION STANDARD (NFPA 13 OR APPLICABLE), AND LOCAL AHJ REQUIREMENTS. ANY FIRE PROTECTION SYSTEM IMPAIRMENTS SHALL COMPLY WITH NCFC SECTION 901.7.



KEY PLAN

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NC License# F-1222

NCSSM

NORTH CAROLINA PROFESSIONAL SEAL 030053 ENGINEER MICHAEL W. SIMACK
09/19/2025

REV	REVISION DESCRIPTION	DATE
1	ADDENDUM 1	09/19/25

NCSSM Campus-Wide HVAC Renovations - PHASE 1

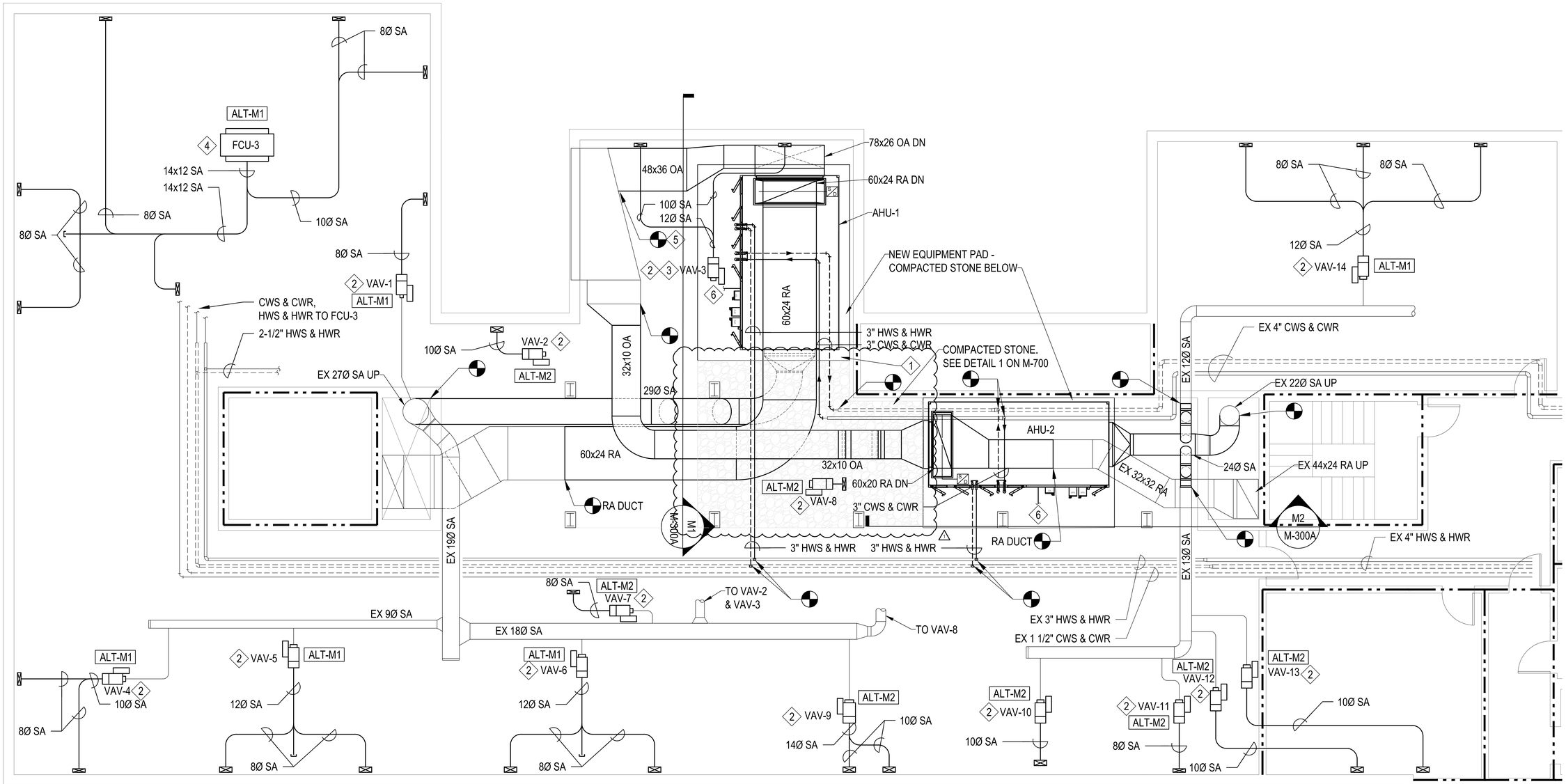
NC School of Science and Math
1219 Broad Street
Durham, North Carolina

DATE	09/19/2025
M&C PROJ. #	06376-0012
SCO ID #	24-28565-01A
DESIGNED	
CHECKED	
PROJ. MGR.	

CONSTRUCTION DOCUMENTS

MECHANICAL NEW WORK PLAN - HUNT GROUND FLOOR

M-100



1 ENLARGED MECHANICAL PLAN - PLAN WEST MECHANICAL ROOM
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE MADE IN PART FROM SITE SURVEYS AND OWNER'S EXISTING DRAWINGS FROM PREVIOUS PROJECTS. EXISTING EQUIPMENT IS SHOWN SCHEMATICALLY. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, PIPING, VALVES, DUCTWORK, CONDUITS, CONTROLS, ETC FOR EQUIPMENT CLEARANCES. NOT ALL EXISTING CONDITIONS ARE SHOWN.
2. ALL NEW AIR HANDLING UNITS ARE TO BE PROVIDED WITH A FIELD FABRICATED HOUSEKEEPING PAD THAT EXTENDS NO LESS THAN 6 INCHES FROM EACH SIDE OF THE UNIT. THE PAD SHOULD EXTEND AT LEAST 3 FEET FROM THE ACCESS SIDE OF EACH UNIT.
3. EXISTING PIPING WITH A DIAMETER OF 3 INCHES OR GREATER IS SHOWN IN DOUBLE-LINE. PIPING WITH A DIAMETER LESS THAN 3 INCHES IS SINGLE-LINE. ALL NEW PIPING AND LOW-PRESSURE DUCT IS SHOWN IN SINGLE-LINE FOR CLARITY.
4. MECHANICAL CONTRACTOR TO PROVIDE ALL POWER AND CONTROLS WIRING FROM JUNCTION BOX TO NEW VAV TERMINAL UNITS. UNITS SHALL BE FURNISHED WITH INTEGRATED STEP-DOWN TRANSFORMERS.

KEY NOTES

1. PROVIDE COMPACTED STONE WITH 10 MIL VAPOR BARRIER LEVEL WITH EXISTING CONCRETE SLAB. NEW EQUIPMENT PAD SHALL BE INSTALLED ON TOP OF COMPACTED STONE. EXTEND STONE AND VAPOR BARRIER TO FULLY COVER WALKING PATH AROUND UNITS AND EXTEND BACK TO EXISTING CONCRETE SLAB. SEE DETAIL 1 ON M-700.
2. PROVIDE NEW VAV TERMINAL UNIT AND NEW LOW-PRESSURE SUPPLY DUCTWORK. ROUTE DUCT TO FINAL LOCATION AS SHOWN AND COORDINATE CONNECTIONS TO EXISTING FLOOR PENETRATIONS. REFER TO FLOOR PLANS AND SECTIONS FOR ROUTING INTENT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET. PROVIDE NEW VALVE PACKAGE EXTENDING FROM EXISTING SHUTOFF VALVE. SEE PIPING DETAIL ON M-700.
3. NEW TERMINAL UNIT AND ALL ASSOCIATED DUCT AND PIPING TO BE PROVIDED AS PART OF THE BASE BID.
4. PROVIDE NEW FAN COIL UNIT AND LOW-PRESSURE SUPPLY DUCTWORK AND RETURN DUCT. ROUTE DUCT TO FINAL LOCATION AS SHOWN AND COORDINATE CONNECTIONS TO EXISTING FLOOR PENETRATIONS. REFER TO FLOOR PLANS AND SECTIONS FOR ROUTING INTENT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET. PROVIDE NEW VALVE PACKAGE EXTENDING FROM EXISTING SHUTOFF VALVES.
5. CONNECT NEW OUTSIDE AIR DUCT TO EXISTING PLENUM. CONNECTION SHALL BE MADE AS LOW AS POSSIBLE TO AVOID CONFLICT WITH LOW PRESSURE DUCTWORK FROM VAV-3.
6. ROUTE CONDENSATE PIPING TO EXISTING FLOOR DRAIN. PROVIDE PROTECTIVE COVER OR PIPE GUARD WHERE PIPING CROSSES ANY WALKING PATHS.

BID ALTERNATES

ALL WORK SHOWN ON THIS DRAWING IS PART OF THE BASE BID UNLESS OTHERWISE NOTED.

BASE BID: AIR HANDLING UNITS - REMOVE AND REPLACE AHU-1, AHU-2, AHU-3, AHU-4 INCLUDING ALL ASSOCIATED DUCTWORK AND PIPING CONNECTIONS. INCLUDE REPLACEMENT OF EXISTING VAV TERMINAL UNITS CONFLICTING WITH NEW AIR HANDLING UNITS.

ALTERNATE M1: RESIDENT TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING RESIDENT ROOMS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY.

ALTERNATE M2: OTHER TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING COMMON AREAS AND CORRIDORS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY.

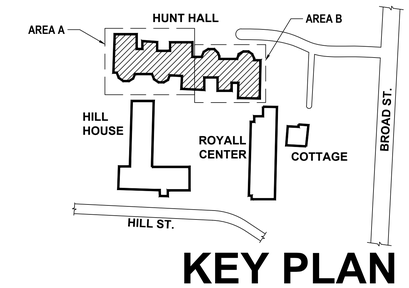
WALL LEGEND

1-HOUR FIRE RATED WALL

2-HOUR FIRE RATED WALL

FIRE PROTECTION

CONTRACTOR SHALL VERIFY EXISTING FIRE SPRINKLER SYSTEM COVERAGE IN ALL AREAS IMPACTED BY HVAC EQUIPMENT REMOVAL, INSTALLATION, AND DUCTWORK MODIFICATIONS. WHERE NEW EQUIPMENT, DUCTWORK, OR OTHER OBSTRUCTIONS AFFECT EXISTING SPRINKLER HEAD LOCATIONS, SPACING, OR COVERAGE, CONTRACTOR SHALL COORDINATE WITH A LICENSED FIRE PROTECTION CONTRACTOR TO ADJUST, RELOCATE, OR ADD SPRINKLER HEADS AS REQUIRED TO MAINTAIN COMPLIANCE WITH THE 2018 NORTH CAROLINA FIRE PREVENTION CODE, THE ORIGINAL INSTALLATION STANDARD (NFPA 13 OR APPLICABLE), AND LOCAL AHJ REQUIREMENTS. ANY FIRE PROTECTION SYSTEM IMPAIRMENTS SHALL COMPLY WITH NCFC SECTION 901.7.



KEY PLAN

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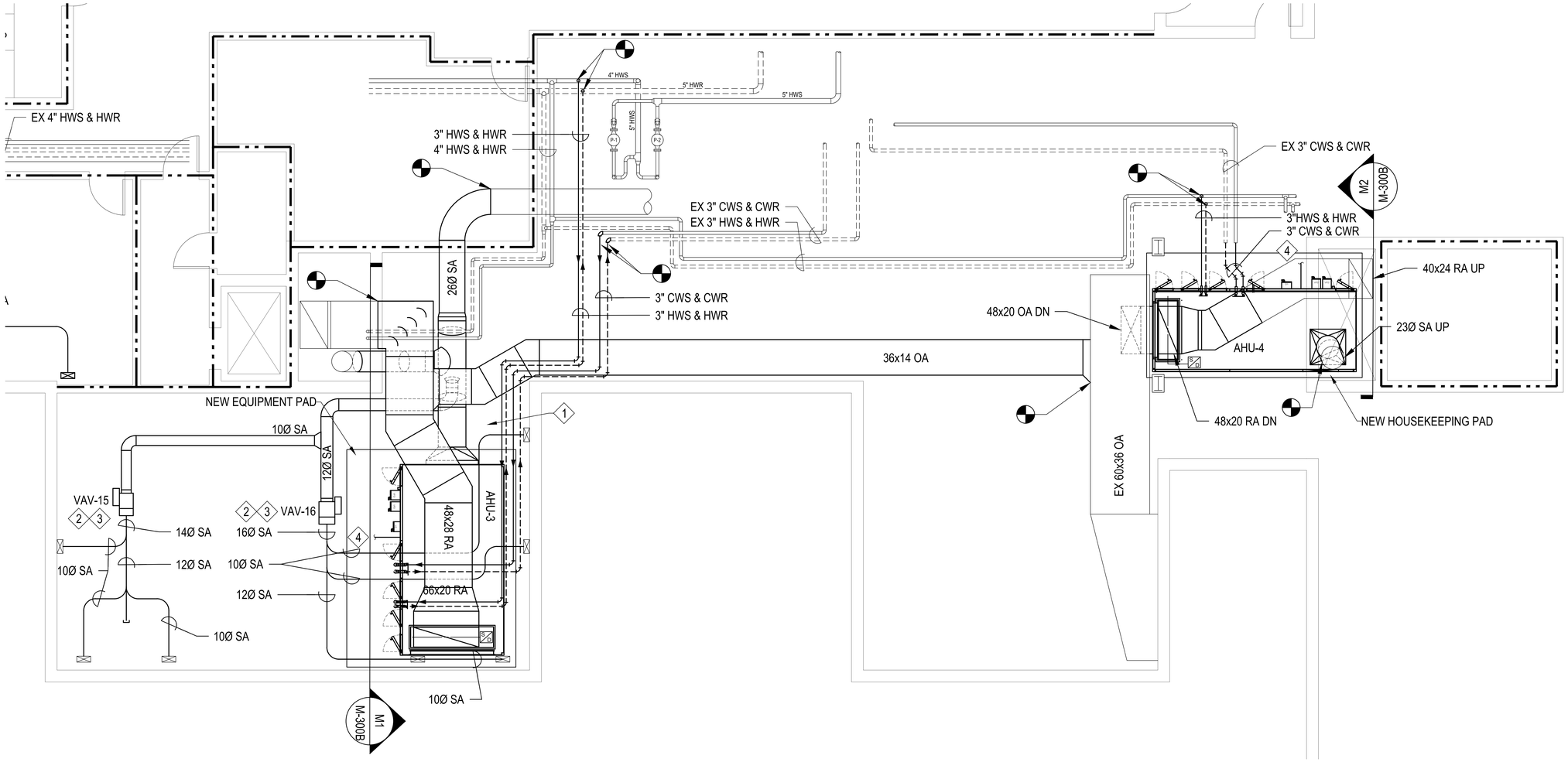
ENLARGED MECHANICAL PLANS - HUNT GROUND FLOOR

M-100A



1 ENLARGED MECHANICAL PLAN - PLAN EAST MECHANICAL ROOM
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE MADE IN PART FROM SITE SURVEYS AND OWNER'S EXISTING DRAWINGS FROM PREVIOUS PROJECTS. EXISTING EQUIPMENT IS SHOWN SCHEMATICALLY. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, PIPING, VALVES, DUCTWORK, CONDUITS, CONTROLS, ETC FOR EQUIPMENT CLEARANCES. NOT ALL EXISTING CONDITIONS ARE SHOWN.
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3. EXISTING PIPING WITH A DIAMETER OF 3 INCHES OR GREATER IS SHOWN IN DOUBLE-LINE. PIPING WITH A DIAMETER LESS THAN 3 INCHES IS SINGLE-LINE. ALL NEW PIPING AND LOW-PRESSURE DUCT IS SHOWN IN SINGLE-LINE FOR CLARITY.
4. MECHANICAL CONTRACTOR TO PROVIDE ALL POWER AND CONTROLS WIRING FROM JUNCTION BOX TO NEW VAV TERMINAL UNITS. UNITS SHALL BE FURNISHED WITH INTEGRATED STEP-DOWN TRANSFORMERS.

◇ KEY NOTES

1. PROVIDE COMPACTED CRUSHED STONE OR GRAVEL FILL TO CREATE A LEVEL, STABLE WALKING SURFACE IN THE MECHANICAL ROOM WHERE NEW AIR HANDLING UNITS ARE INSTALLED. INSTALL A DURABLE PLASTIC OR POLYETHYLENE SHEET (MIN. 6 MIL) BENEATH FILL AS A VAPOR BARRIER. EXTEND FILL AND PLASTIC SHEETING TO FULLY COVER WALKING PATH AROUND UNITS AND EXTEND BACK TO EXISTING CONCRETE SLAB.
2. PROVIDE NEW VAV TERMINAL UNIT AND NEW LOW-PRESSURE SUPPLY DUCTWORK. ROUTE DUCT TO FINAL LOCATION AS SHOWN AND COORDINATE CONNECTIONS TO EXISTING FLOOR PENETRATIONS. REFER TO FLOOR PLANS AND SECTIONS FOR ROUTING INTENT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET. PROVIDE NEW VALVE PACKAGE EXTENDING FROM EXISTING SHUTOFF VALVE. SEE PIPING DETAIL ON M-700.
3. NEW TERMINAL UNIT AND ALL ASSOCIATED DUCT AND PIPING TO BE PROVIDED AS PART OF THE BASE BID.
4. ROUTE CONDENSATE PIPING TO EXISTING FLOOR DRAIN. PROVIDE PROTECTIVE COVER OR PIPE GUARD WHERE PIPING CROSSES ANY WALKING PATHS.

BID ALTERNATES

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ALTERNATE M2: OTHER TERMINAL UNITS - REMOVE AND REPLACE EXISTING VAV AND FCU TERMINAL UNITS SERVING COMMON AREAS AND CORRIDORS. INCLUDE REPLACEMENT OF ALL ASSOCIATED SUPPLY AIR GRILLES. EXISTING THERMOSTATS SHALL BE REUSED FOR NEW TERMINAL UNITS. REMOVE EXISTING TERMINAL UNIT CONTROLLERS FROM EXISTING TO-BE-REMOVED TERMINAL UNITS; REUSE CONTROLLERS ON NEW EQUIPMENT, REMOUNT, REPROGRAM, AND REWIRE AS NECESSARY.

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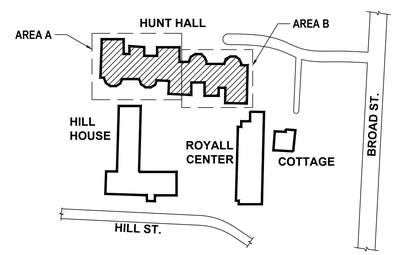

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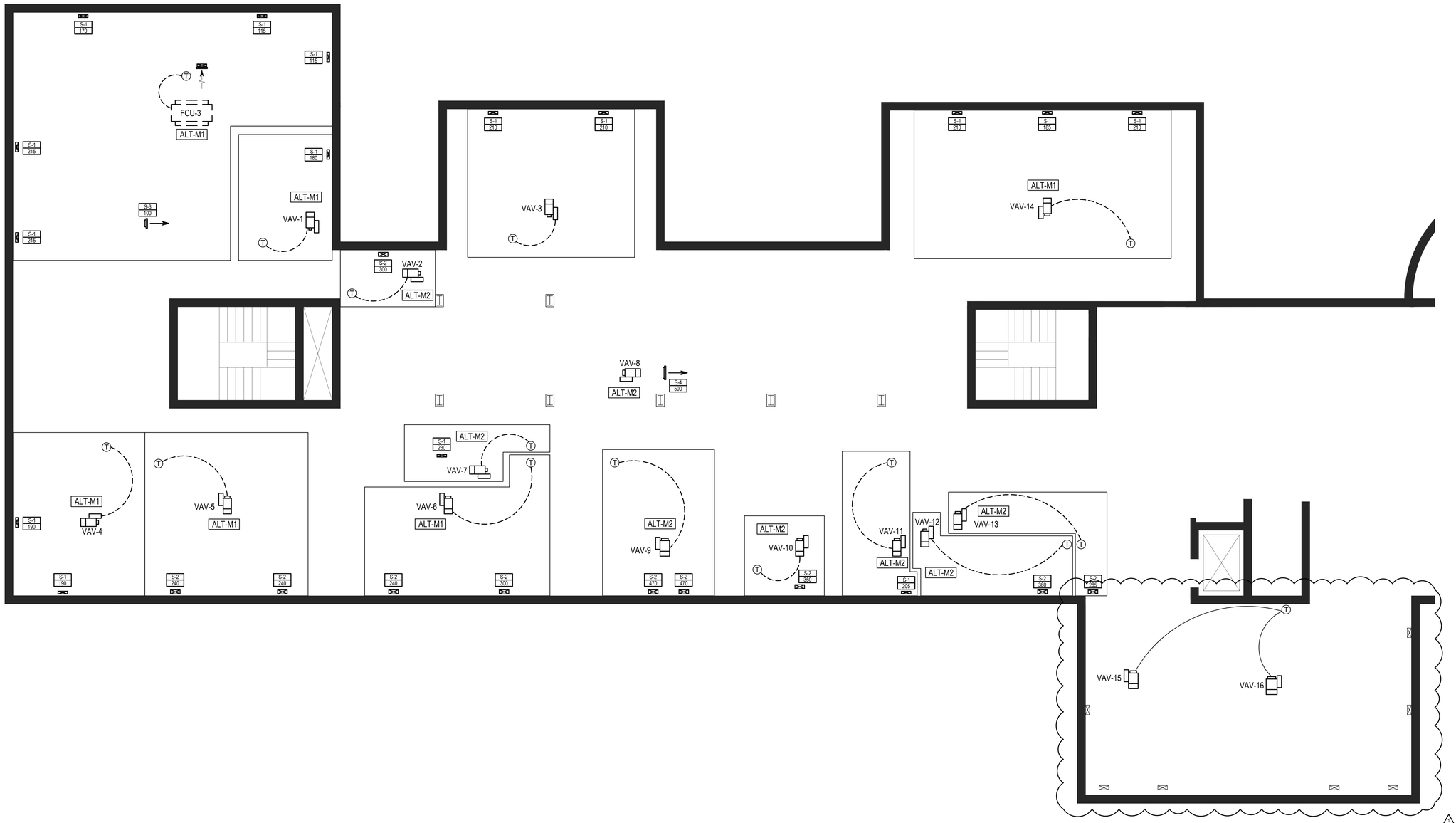
CONSTRUCTION DOCUMENTS

ENLARGED MECHANICAL PLANS - HUNT GROUND FLOOR

M-100B



1 MECHANICAL NEW WORK - OVERALL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. THESE DRAWINGS ARE MADE IN PART FROM SITE SURVEYS AND OWNER'S EXISTING DRAWINGS FROM PREVIOUS PROJECTS. EXISTING EQUIPMENT IS SHOWN SCHEMATICALLY. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, PIPING, VALVES, DUCTWORK, CONDUITS, CONTROLS, ETC FOR EQUIPMENT CLEARANCES. NOT ALL EXISTING CONDITIONS ARE SHOWN.
2. LOCATION OF TERMINAL UNITS, THERMOSTATS, AND AIR DISTRIBUTION DEVICES IS SHOWN IN APPROXIMATED LOCATIONS. ADJUST AS REQUIRED FOR INSTALLATION.
3. EXISTING TERMINAL UNIT CONTROLLERS AND WIRELESS THERMOSTATS ARE TO REMAIN. CONTRACTOR SHALL REMOVE EXISTING CONTROLLERS AND INSTALL THEM ON TO NEW TERMINAL UNITS.
4. ALL TERMINAL UNITS SHOWN ON THIS DRAWING ARE LOCATED IN THE MECHANICAL ROOM ON THE FLOOR BELOW. CONTRACTOR TO VERIFY THERMOSTAT LOCATIONS IN THE FIELD.
5. ALL SUPPLY AIR GRILLES SHOWN ON THIS DRAWING ARE TO BE REMOVED AND REPLACED. SEE SCHEDULE FOR SIZES AND MODELS. RETURN AND EXHAUST AIR GRILLES ARE TO REMAIN.

KEY NOTES

BID ALTERNATES

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BASE BID: AIR HANDLING UNITS - REMOVE AND REPLACE AHU-1, AHU-2, AHU-3, AHU-4 INCLUDING ALL ASSOCIATED DUCTWORK AND PIPING CONNECTIONS. INCLUDE REPLACEMENT OF EXISTING VAV TERMINAL UNITS CONFLICTING WITH NEW AIR HANDLING UNITS.

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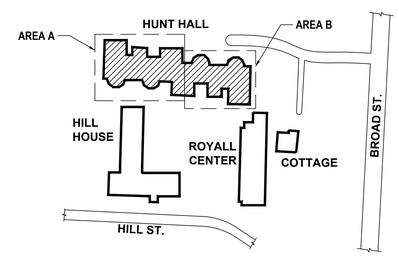
WALL LEGEND	
1-HOUR FIRE RATED WALL	
2-HOUR FIRE RATED WALL	

AIR DISTRIBUTION SCHEDULE

TAG	SYSTEM	BASIS OF DESIGN		SIZE	DESCRIPTION	MAX. NC	NOTES
		MANUF.	MODEL				
S-1	SUPPLY	TITUS	CT-TAF-480	14x4	FIXED LINEAR BAR DIFFUSER FOR UNDERFLOOR APPLICATIONS. 1/4" BLADE SPACING, 0° DEFLECTION.	25	ALL
S-2	SUPPLY	TITUS	CT-TAF-480	14x6	FIXED LINEAR BAR DIFFUSER FOR UNDERFLOOR APPLICATIONS. 1/4" BLADE SPACING, 0° DEFLECTION.	25	ALL
S-3	SUPPLY	TITUS	272RS	14x4	STEEL AEROBLADE DOUBLE DEFLECTION SUPPLY GRILLE. 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO SHORT DIMENSION.	30	ALL
S-4	SUPPLY	TITUS	272RS	20x10	STEEL AEROBLADE DOUBLE DEFLECTION SUPPLY GRILLE. 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO SHORT DIMENSION.	30	ALL

NOTES:
1. CONTRACTOR TO VERIFY EXISTING GRILLE DIMENSIONS AND COORDINATE NEW GRILLE DIMENSIONS ACCORDINGLY.
2. REFER TO FLOOR PLAN FOR LOCATION AND CFM.
3. COLOR AND FINISH TO MATCH EXISTING DIFFUSERS UNLESS OWNER REQUESTS OTHERWISE.



KEY PLAN

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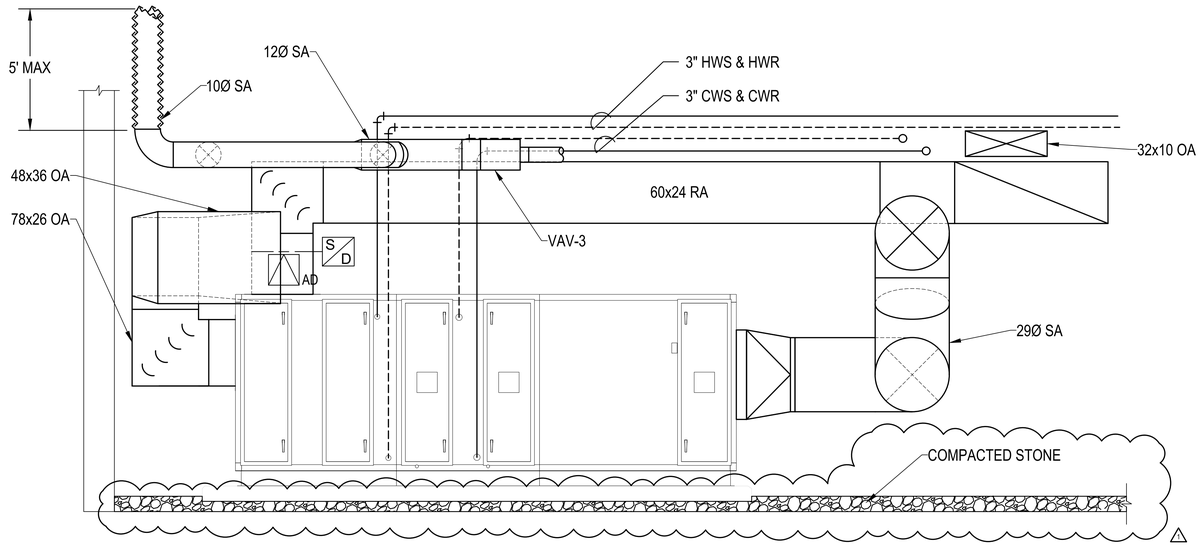
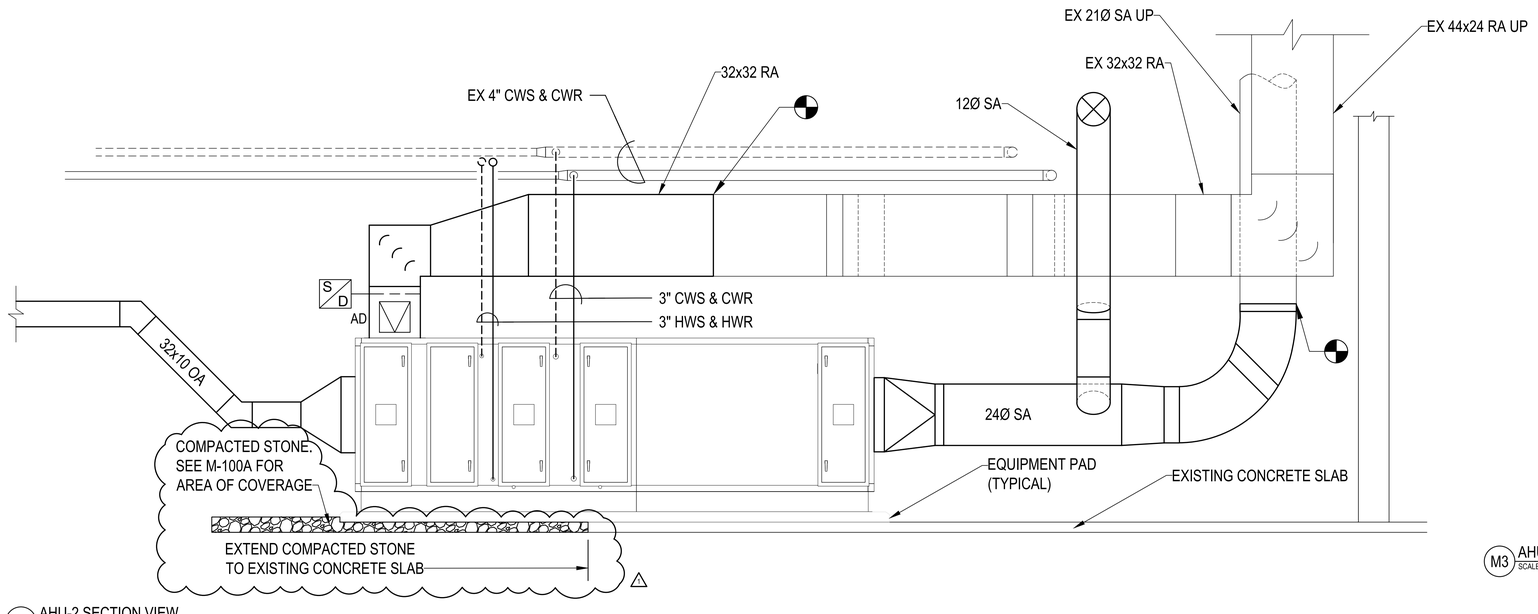
CONSTRUCTION DOCUMENTS

MECHANICAL NEW WORK PLAN - HUNT FIRST FLOOR

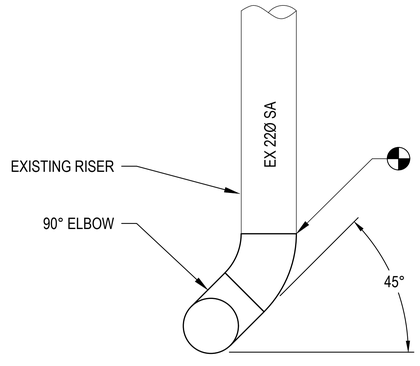
M-101



M1 AHU-1 SECTION VIEW
SCALE: 1/2" = 1'-0"



M2 AHU-2 SECTION VIEW
SCALE: 1/2" = 1'-0"



M3 AHU-2 SA RISER CONNECTION
SCALE: 1/2" = 1'-0"

GENERAL NOTES
1. SECTION DIMENSIONS FOR REFERENCE ONLY. DO NOT SCALE. VERIFY IN FIELD. DUCT SIZES ARE DESIGN INTENT AND SHALL BE MAINTAINED.
2. NEW HOUSEKEEPING PADS SHALL BE 4" HIGH AND EXTEND NO LESS THAN 6" FROM NON-ACCESS SIDES OF AIR HANDLING UNITS AND 36" FROM ACCESS SIDE.

◇1 KEY NOTES

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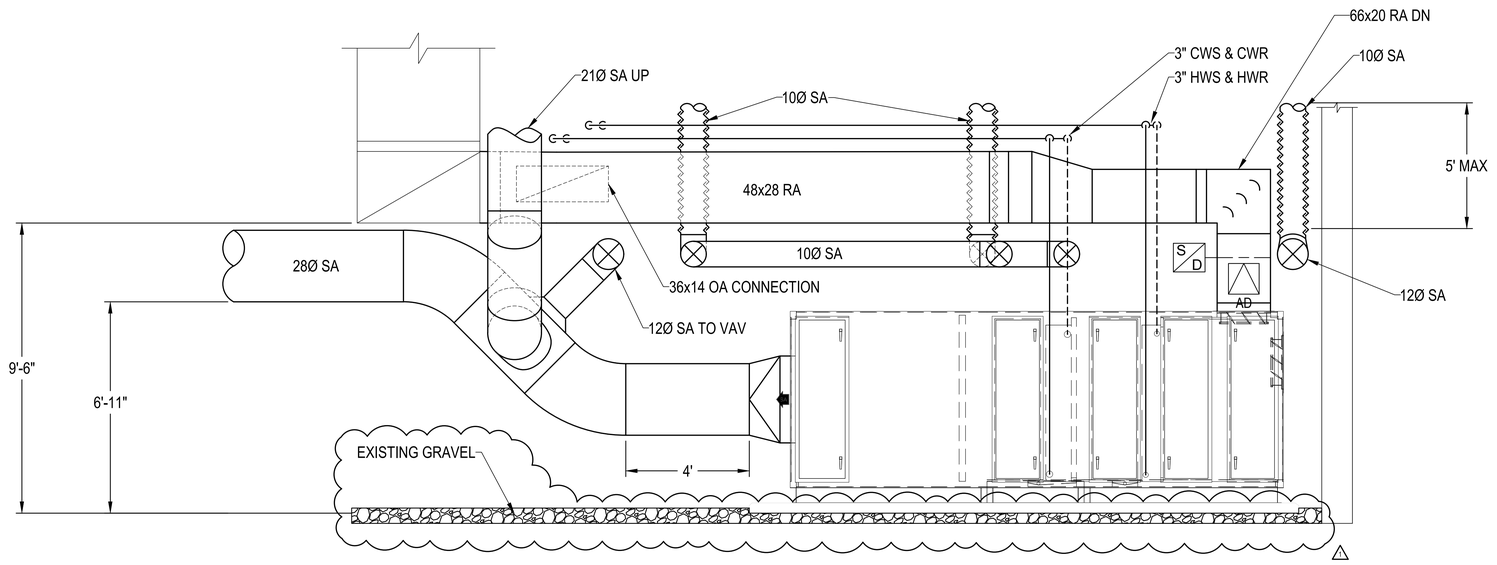
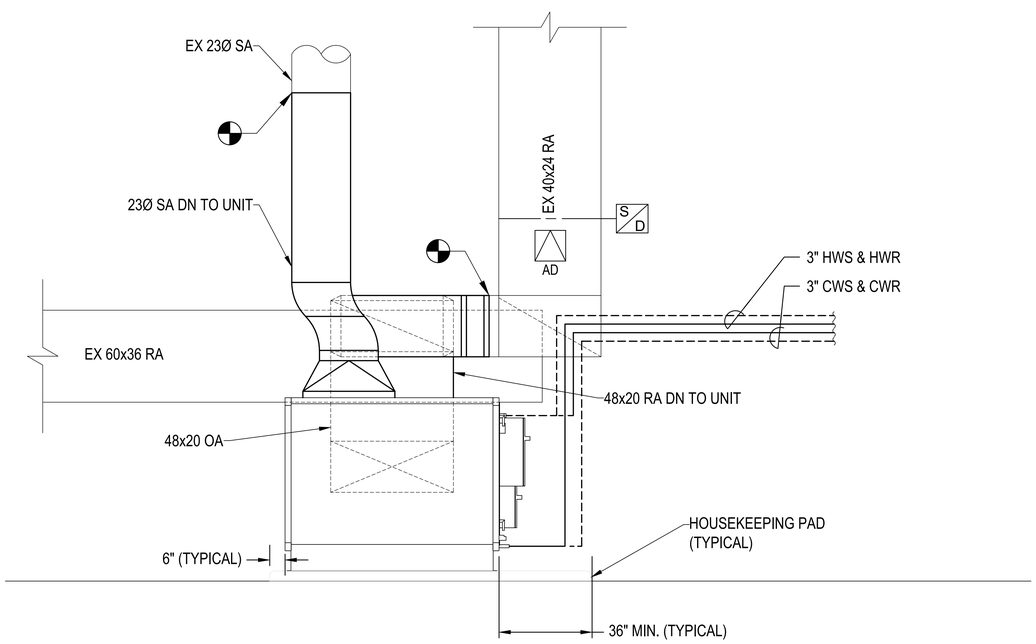
CONSTRUCTION DOCUMENTS

MECHANICAL
SECTIONS - AHU-1,2

M-300A



M1 AHU-3 SECTION VIEW
SCALE: 1/2" = 1'-0"



M2 AHU-4 SECTION VIEW
SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SECTION DIMENSIONS FOR REFERENCE ONLY. DO NOT SCALE. VERIFY IN FIELD. DUCT SIZES ARE DESIGN INTENT AND SHALL BE MAINTAINED.
2. SUPPLY AIR DUCT FROM AHU-3 MUST BE INSTALLED AS TO NOT BLOCK WALKING ACCESS BETWEEN THE UNIT AND THE SHAFT WALL.
3. NEW HOUSEKEEPING PADS SHALL BE 4" HIGH AND EXTEND NO LESS THAN 6" FROM NON-ACCESS SIDES OF AIR HANDLING UNITS AND 36" FROM ACCESS SIDE.

KEY NOTES

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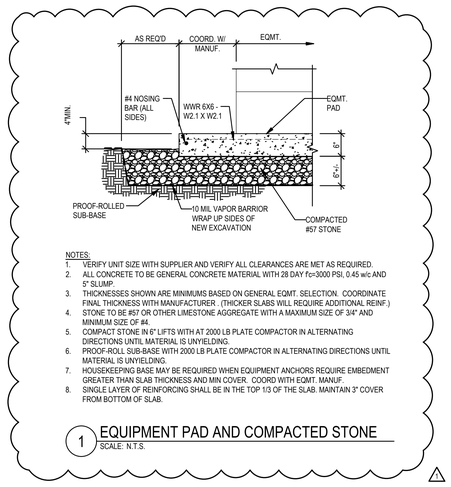
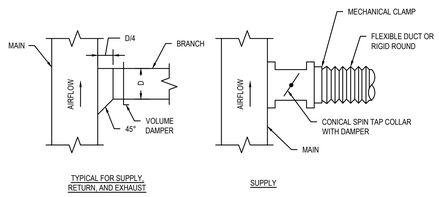
MECHANICAL
SECTIONS - AHU-3,4

M-300B



NOTES:
1. VERIFY UNIT SIZE WITH SUPPLIER AND VERIFY ALL CLEARANCES ARE MET AS REQUIRED.
2. ALL CONCRETE TO BE GENERAL CONCRETE MATERIAL WITH 28 DAY f'c=3000 PSI, 0.45 w/c AND 5" SLUMP.
3. THICKNESSES SHOWN ARE MINIMUMS BASED ON GENERAL EQMT. SELECTION. COORDINATE FINAL THICKNESS WITH MANUFACTURER . (THICKER SLABS WILL REQUIRE ADDITIONAL REINF.)
4. STONE TO BE #57 OR OTHER LIMESTONE AGGREGATE WITH A MAXIMUM SIZE OF 3/4" AND MINIMUM SIZE OF #4.
5. COMPACT STONE IN 6" LIFTS WITH AT 2000 LB PLATE COMPACTOR IN ALTERNATING DIRECTIONS UNTIL MATERIAL IS UNYIELDING.
6. PROOF-ROLL SUB-BASE WITH 2000 LB PLATE COMPACTOR IN ALTERNATING DIRECTIONS UNTIL MATERIAL IS UNYIELDING.
7. HOUSEKEEPING BASE MAY BE REQUIRED WHEN EQUIPMENT ANCHORS REQUIRE EMBEDMENT GREATER THAN SLAB THICKNESS AND MIN COVER. COORD WITH EQMT. MANUF.
8. SINGLE LAYER OF REINFORCING SHALL BE IN THE TOP 1/3 OF THE SLAB. MAINTAIN 3" COVER FROM BOTTOM OF SLAB.

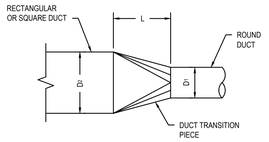
1 EQUIPMENT PAD AND COMPACTED STONE
SCALE: N.T.S.



TYPICAL FOR SUPPLY, RETURN, AND EXHAUST

SUPPLY

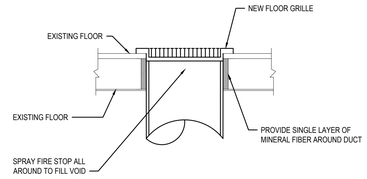
2 DUCT TAKE OFFS
SCALE: NTS



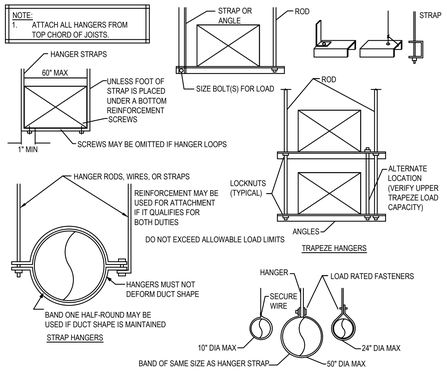
L = D1 - D2 OR 6", WHICHEVER IS LARGER

D1 IS THE LARGER SIZE OF RECTANGULAR DUCT

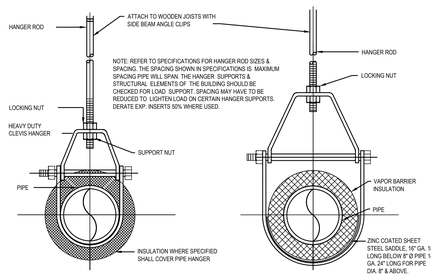
3 DUCT TRANSITION
SCALE: NTS



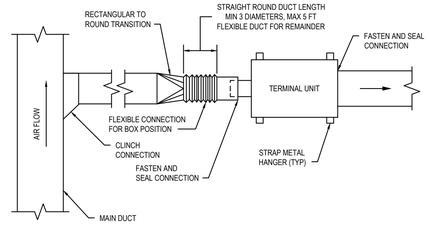
4 DUCT PENETRATION
SCALE: N.T.S.



5 DUCT HANGERS
SCALE: N.T.S.



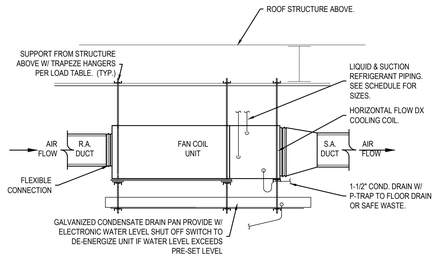
6 PIPE HANGER
SCALE: N.T.S.



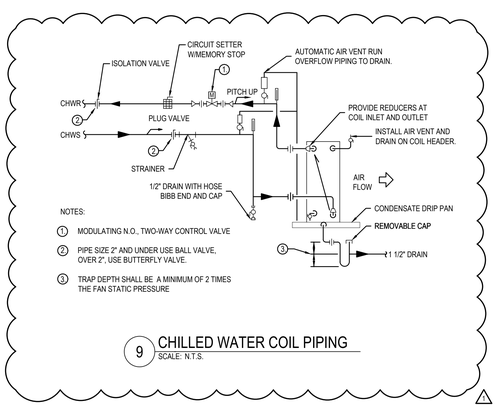
PLAN VIEW

NOTES:
1. THE OPERATION OF TERMINAL UNITS ARE EFFECTED BY EXCESSIVE TURBULENCE ON THE ENTERING SIDE OF EACH TERMINAL UNIT THEREFORE, TERMINAL UNITS MUST NOT BE INSTALLED TOO CLOSE TO MAIN DUCTS, ELBOWS AND FITTINGS.
2. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
3. MANUFACTURER OF TERMINAL UNIT CONTROLS (SEE SPECIFICATIONS) SHALL PROVIDE CONTROLS ON LEFT OR RIGHT SIDE AS REQUIRED BY FIELD CONDITIONS.
4. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT. PROVIDE CEILING ACCESS DOORS AS REQUIRED.
5. WHEN MAIN DUCT DEPTH PERMITS, CONICAL ROUND CONNECTION MAY BE USED IN LIEU OF THE RECTANGULAR CONNECTION SHOWN.

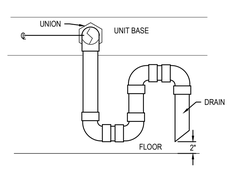
7 TERMINAL UNIT INSTALLATION
SCALE: NTS



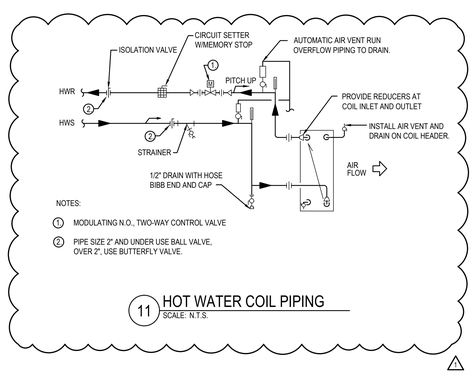
8 FAN COIL INSTALLATION
SCALE: N.T.S.



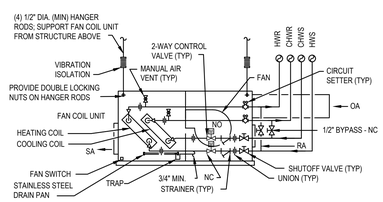
9 CHILLED WATER COIL PIPING
SCALE: N.T.S.



10 COOLING COIL CONDENSATE DRAIN
SCALE: N.T.S.



11 HOT WATER COIL PIPING
SCALE: N.T.S.



SUSPENDED UNIT

NOTES:
1. HYDRONIC SYSTEM SHUTOFF VALVES SHALL BE:
   2" & SMALLER: BALL (FULL PORT) OR PLUG VALVES
   2-1/2" & LARGER: BUTTERFLY OR PLUG VALVES.
2. FAN COIL UNIT MAY BE FULLY RECESSED, SEMI-RECESSED, OR SURFACE MOUNTED. SEE SCHEDULES OR SPECIFICATIONS.
3. FAN COIL UNIT PIPING MAY ALSO COME FROM ABOVE. SEE PLANS.
4. CLOSE VALVES TO COILS AND OPEN BYPASS WHEN FLUSHING SYSTEM.
5. SEAL ALL FLOOR OPENINGS WITH FIRESTOPPING TO MAINTAIN FIRE RATING.

12 FAN COIL UNIT PIPING DETAIL
SCALE: N.T.S.

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NCSSM

NORTH CAROLINA PROFESSIONAL SEAL 030053 ENGINEER MICHAEL J. SMACK II
09/19/2025

REV	REVISION DESCRIPTION	DATE
1	ADDENDUM 1	09/19/25

NCSSM Campus-Wide HVAC Renovations - PHASE 1

NC School of Science and Math
1219 Broad Street
Durham, North Carolina

DATE	09/19/2025
M&C PROJ. #	06376-0012
SCO ID #	24-28565-01A
DESIGNED	
CHECKED	
PROJ. MGR.	

CONSTRUCTION DOCUMENTS

MECHANICAL DETAILS

M-700

AIR HANDLING UNIT SCHEDULE

TAG	UNIT TYPE	AREA SERVED	MAX SUPPLY AIR (CFM)	MIN SUPPLY AIR (CFM)	MIN OA (CFM)	SUPPLY FAN							COOLING COIL SECTION							HEATING COIL SECTION						FILTER DATA		BASIS OF DESIGN			NOTES
						FAN TYPE	MAX AIRFLOW (CFM)	MAX FAN SPEED (RPM)	TOTAL / EXT SP (IN WG)	MOTOR HP	VOLTS/ PHASE/ HERTZ	MOTOR FLA	CAP TOT/ SENS (MBH)	EAT DB / WB (°F)	LAT DB /WB (°F)	APD (IN. WG)	WATER TEMP ENT / LVG (°F)	FLOW (GPM)	WPD (FT. H20)	CAP (MBH)	EAT/ LAT (°F/ DB)	APD (IN WG)	WATER TEMP ENT/LVG (°F)	FLOW (GPM)	WPD (FT H20)	PRE-FILTER EFF	PRIMARY FILTER EFF	MANUF	MODEL	MAXIMUM DIMENSIONS (LxWxH)	
AHU-1	INDOOR AHU	ALL FLOORS - PLAN WEST	18,200	4,550	4,550	AIRFOIL	18,200	3,950	6.38/3.50	10.0	460/3/60	12.00	660/503	79.0/65.0	53.3/52.6	0.74	45.0/59.0	94.3	13.4	812	40.0/79.7	0.10	180/160	55.1	9.5	30%	80%	YORK	XTI-69X11	220x162x84	ALL
AHU-2	INDOOR AHU	ALL FLOORS - PLAN CENTRAL WEST	13,000	3,250	3,250	AIRFOIL	13,000	3,728	6.38/3.50	7.5	460/3/60	8.70	456/351	79.0/65.0	53.5/52.8	0.74	45.0/59.0	65.2	7.3	583	40.0/79.8	0.10	180/160	39.6	8.2	30%	80%	YORK	XTI-60X96	275x96x84	ALL
AHU-3	INDOOR AHU	ALL FLOORS - PLAN CENTRAL EAST	16,500	4,125	4,125	AIRFOIL	16,500	3,316	6.25/3.50	10.0	460/3/60	12.00	596/456	79.0/65.0	53.3/52.6	0.69	45.0/59.0	85.1	10.6	745	40.0/80.2	0.10	180/160	50.5	7.8	30%	80%	YORK	XTI-69X105	210x166x92	ALL
AHU-4	INDOOR AHU	ALL FLOORS - PLAN EAST	11,000	2,750	2,750	AIRFOIL	11,000	3725	6.24/3.50	7.5	460/3/60	8.70	384/295	79.0/65.0	53.7/52.9	0.65	45.0/59.0	54.7	13.3000	490	40.0/79.6	0.09	180/160	33.2	5.5	30%	80%	YORK	XTI-60X84	220x84x84	ALL

NOTES:
1. EACH UNIT TO BE PROVIDED WITH SINGLE-POINT POWER AND DISCONNECT SWITCH.
2. (2) VFDs PER UNIT, EACH VFD SERVES (2) FANS.
3. CONTRACTOR SHALL COORDINATE AHU SECTION SIZES AND SHIPPING SPLITS WITH MANUFACTURER. CONTRACTOR SHALL REMOVE AND REINSTALL MECHANICAL ROOM DOORS AND/OR LOUVERS AS REQUIRED FOR REMOVAL OF EXISTING AHU'S AND INSTALLATION OF NEW AHU'S.

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FAN COIL SCHEDULE

TAG	MOTOR HP	NOMINAL CFM	MAX TSP (IN.WG)	COOLING COIL					HEATING COIL					UNIT DIMENSIONS			VOLTS/ PHASE/ HERTZ	BASIS OF DESIGN		NOTES
				CAPACITY (MBH)	EWT (°F)	LWT (°F)	GPM	WPD (FT)	MBH	EWT (°F)	LWT (°F)	GPM	WPD (FT.)	L (IN.)	W (IN.)	H (IN.)		MANUF.	MODEL	
FCU-1	1/4	330	0.56	19.5	44	54	4.0	9.8	19.7	180	160	1.4	19.8	60	24	10	120/1/60	TITUS	THBE-A	

NOTES :
1. EXISTING TERMINAL UNIT CONTROLLER AND WIRELESS THERMOSTAT IS TO REMAIN. CONTRACTOR SHALL REMOVE EXISTING CONTROLLER AND INSTALL IT ON TO NEW TERMINAL UNIT.

△1

VARIABLE AIR VOLUME (VAV) BOX SCHEDULE

TAG	COOLING CFM		INLET DUCT SIZE (DIA)	REHEAT COIL DATA							ELECTRICAL INFORMATION	BASIS OF DESIGN		BID PACKAGE	NOTES
	MAX	MIN		HTG AIRFLOW (CFM)	EAT	MBH	GPM	COIL ROWS	HW TEMP (°F)		WPD (FT H2O)		MANUF.	MODEL		
									EWT	LWT						
VAV-1	180	150	4"	150	55	6.4	1.0	2	180	160	0.18	120V	TITUS	DESV		ALL
VAV-2	300	165	5"	165	55	6.1	0.6	2	180	160	0.17	120V	TITUS	DESV		ALL
VAV-3	410	225	6"	225	55	7.1	0.7	2	180	160	0.22	120V	TITUS	DESV		ALL
VAV-4	380	200	6"	200	55	6.9	0.7	2	180	160	0.21	120V	TITUS	DESV		ALL
VAV-5	480	260	8"	260	55	7.7	0.8	2	180	160	0.26	120V	TITUS	DESV		ALL
VAV-6	540	290	8"	290	55	9.8	1.0	2	180	160	0.52	120V	TITUS	DESV		ALL
VAV-7	230	150	5"	150	55	5.2	0.5	2	180	160	0.14	120V	TITUS	DESV		ALL
VAV-8	500	270	8"	270	55	7.9	0.8	2	180	160	0.27	120V	TITUS	DESV		ALL
VAV-9	940	500	10"	500	55	15	1.5	2	180	160	0.23	120V	TITUS	DESV		ALL
VAV-10	350	190	5"	190	55	6.6	0.6	2	180	160	0.19	120V	TITUS	DESV		ALL
VAV-11	205	150	5"	150	55	5.8	0.6	2	180	160	0.15	120V	TITUS	DESV		ALL
VAV-12	360	185	6"	185	55	6.7	0.7	2	180	160	0.20	120V	TITUS	DESV		ALL
VAV-13	285	150	5"	150	55	5.9	0.6	2	180	160	0.16	120V	TITUS	DESV		ALL
VAV-14	605	325	8"	325	55	10.3	1.0	2	180	160	0.58	120V	TITUS	DESV		ALL
VAV-15	1020	550	10"	550	55	15.6	1.5	2	180	160	0.25	120V	TITUS	DESV		ALL
VAV-16	1350	725	10"	725	55	17.8	1.7	2	180	160	0.32	120V	TITUS	DESV		ALL

NOTES :
1. PROVIDE WITH INTEGRATED STEP DOWN TRANSFORMER.
2. EXISTING TERMINAL UNIT CONTROLLERS AND WIRELESS THERMOSTATS ARE TO REMAIN. CONTRACTOR SHALL REMOVE EXISTING CONTROLLERS AND INSTALL THEM ON TO NEW TERMINAL UNITS.

△1

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M-800