ADDENDUM: **TWO**

DATE: 10 March 2021

PROJECT TITLE: **LeConte College Maintenance Renovation (RE-BID)**
SC Project No.**:** H27-6126-LC
University of South Carolina

FROM: Watson Tate Savory, Inc.
John McLean, AIA
1316 Washington Street, Suite 100 Columbia SC 29201
jmclean@watsontatesavory.com

This addendum is issued to clarify and revise the Bidding Documents which have been previously issued.

Addenda are issued prior to execution of Contract. All instructions contained herein shall be reflected in the Contract Sum and this Addendum will be made a part of the Contract Documents, if, as, and when a Construction Contract is awarded.

This Addendum forms a part of the Contract Documents and modifies the original documents dated **10 February 2021** as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so will subject the Bidder to disqualification.

This Addendum consists of 3 pages PLUS the following attachments:

- Sheet A5.01 . . . . . .1 sheet
- Sheet A6.22 . . . . . .1 sheet
- 07 1613 - Polymer Based Cementitious Waterproofing. . . . . 4 pages
- 14 2100 - Electric Traction Elevators . . . . . 10 pages
- Fire Sprinkler System Specification Sheet, dated 26 February 2021. . . . . .1 page
- RMF Addendum 02……1 page & 15 sheets

A. <u>REVISIONS TO THE DRAWINGS:</u>

1. Replace the originally issued sheet(s) with the attached sheet(s) with the same number.

B. <u>REVISIONS TO THE PROJECT MANUAL:</u>

1. Replace the originally issued pages(s)/section(s) with the attached specification page(s)/section(s) of the same name/number.
2. Table of Contents
   ADD; 07 1613 - Polymer Based Cementitious Waterproofing 4
3. 03 5400-2.1-A REPLACE sentence with;
   Acceptable Manufacturer: Ardex**<u>, Schönox</u>** or approved equal.
4. 07 2713-1.2-A, REPLACE with;
   A. Section includes self-adhering, vapor-retarding, modified bituminous sheet air barriers for use **<u>as continuous perimeter waterproofing over wood blocking at new exterior openings.</u>**

C. BIDDER QUESTIONS AND RESPONSES:

1. Question: Fire Pump - Can you find out if the fire pump is supposed to be a 750gpm instead of a 500gpm? NFPA 14 7.10.1.1.1 and 7.10.1.1.3 says the first standpipe is required to have 500gpm and each additional standpipe is to add 250gpm.
   Response: Fire pump is correctly specified as 500gpm. The design is NOT for a combination sprinkler standpipe system.
2. Question: We have a concern on this project about the availability of the Buckingham Slate. The quarry has stopped making slate for roofing purposes. I know the scope was to re-use the existing but finding 20-40% new Buckingham slate for the relay. It will be difficult to find that product. Would they accept salvaged slate for the relay, or look at putting all new Vermont slate on roof?
   Response: The specifications ask that the contractor provide 7,000 SF or "New or Repurposed" Buckingham Slate to provide for use in replacing any of the existing slate that cannot be reused. For the purposes of this project "Repurposed" would include salvaged or reclaimed slate from anywhere besides the existing roof of the project building itself. Availability of new slate from Buckingham Slate is very limited at this time and will be for the foreseeable future. The quantity will need to be made up primarily of repurposed, or salvaged slate.
   In the event that insufficient quantities of Repurposed Buckingham Slate cannot be obtained, we will accept substitution of new "CUPA 14" roofing slates from Vermont Slate Company. This is a slate mined in Spain and is widely considered the nearest replacement for Buckingham Slate in historical buildings.
3. Question: In specification section 07 3100 Slate Shingles, paragraph 1.12.1 Special Warranty: Use form included in Specification Section 01 7400 Warranties, Insurance and Bonds. Standard form in which Roofing Installer agrees to repair or replace slate roofing that fails in materials or workmanship within specified warranty period. Paragraph 1.12.1.1. Warranty Period: 7 years form (assuming should be from) the date of Substantial Competition.
   In specification Section 01 7400 Warranties Insurance and Bonds, paragraph 1.3.1 Contractors Warranty: The Contractor shall agree that the work covered under this contract shall remain free from any water penetration and physical defects caused by defective workmanship or materials for a period of 7 years from the final acceptance by Owner. Warranty shall be in the form enclosed at the end of the section.
   a. Please confirm 7 Year Warranty is only for the Slate Shingle Roofing on the project.

   Response: Correct. The 7-year warranty in section 01 7400 - Warranties, Insurance and Bonds applies to the Slate Roofing as described in the sample warranty language. This specific language needs to be used on the final warranty. Guarantee for all other portions of the work shall be limited to the form "Contractor's One-Year Guarantee" found in the project manual, unless noted otherwise in another section.

   b. Section 07 3100 above reads like the form in 01 7400 is to be provided by the Roofing Contractor. Please confirm.

   Response: Correct. The included sample warranty forms provided at the end of Section 01 7400 are to be used by the Roofing Installer and placed on their corporate letterhead as part of the close out for the project. The 7-year warranty in section 07 3100 refers to the provided sample warranty in section 01 7400. See 3.1.1 in Section 01 7400:

   Following this section there are sample Roofing Installer's Watertight Warranty and ASBESTOS FREE WARRANTY forms. Prior to final payment, submit these documents as written on the corporate letterhead of the appropriate party.
4. Is the project tax exempt?
   Response: There is no known tax exemption available for bidders bidding this project.

5. Section 034100 Precast Roof Deck Panels, Paragraph 1.5.C Qualified Installers, would it be acceptable for the Slate Roofing Contractor to Install the Precast Panels since they are already on the roof doing demo and roof replacement?
   Response: It is the General Contractors' prerogative to direct workers of their choosing who fulfill the requirements to be considered a "Qualified Installer" for the Precast Roof Deck Panels.
6. Details A4 and A5 on A6.22 at elevator and related sump pit call for spec 07 1700 Bentonite Waterproofing. We do not see this addressed in the Project Manual. Please provide.
   Response: See revised sheets and added specification section in this addendum.
7. Will the additional sump pit in other part of basement include this waterproofing in question above?
   Response: No waterproofing is required to be provided at exterior sump pit outside door 005.
8. Detail A5 on A6.22 shows horizontal and vertical porous fill around elevator pit and references structural. But the structural docs do not appear to address this issue. Please clarify.
   Response: See revised sheet A6.22 in the addendum.
9. Some of the flooring sub are concern with the flooring being chemically abated and the flooring manufacturers' warranting the flooring. See a. below from flooring subcontractor.
   a. Many Flooring Companies do not have a solution for a subfloor that has been Chemically Abated for Asbestos. Can this be addressed and an allowance or a standard be spec'd so all bids are using the same solution? (each flooring vendor has or doesn't have a solution, trying to standardize the solution in the spec. so all adhere. USC has spec'd the Mapei system before on previous projects.

   Response: See section 02 8200-1.4 paragraphs 2, 3, & 4. General Contractor shall coordinate the Work so the condition of the floor substrate is prepared in a such a way that the substrate is acceptable to division 9 flooring product manufacturers, so the manufacturers' warranties are not adversely impacted.
10. Will the Contractor need to pay for the encroachment permits for the site water work?
    Response: Bid the job with the understanding there is no encroachment permit fee
11. Since the owner is paying for the building permit, will the fire sprinkler, plumber, mechanical sub, and electrical sub pay for their own permits?
    Response: As the building is state owned and operated the Office of the State Engineer (OSE) issues the building permit and any other permits required. The building is within the City of Columbia and city staff has confirmed they will neither issue any permits of any kind for the project nor charge any permit fees for the project. OSE does not charge the subs listed above fees for permits. See response to question 12 in Addendum ONE for other fees clarified.
12. Otis (basis of design) and ThyssenKrupp are both saying that the specified 4000# capacity and center-opening 48" entry doors require a 9'8" clear shaft width (1' more than plans show). Apparently, a 3500# unit would fit in the shaft drawn, but entry doors would need to be 42" and be side-opening.
    a. Please clarify if 3500# capacity inside opening 42" wide config. is acceptable.

    Response: See revised specification section 14 2100 issued as part of this addendum. No changes to drawings related to this question or response.

END OF ADDENDUM 02

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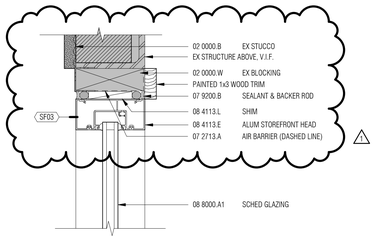
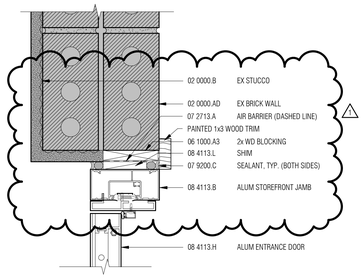
GLAZING TYPE LEGEND:

GL1 - CLEAR
1" INSULATED LOW-E GLASS (MATCH EXISTING)

GL2 - CLEAR
1/4" CLEAR FLOAT GLASS (TEMPERED WHERE REQUIRED)



E2 / A5.01 STOREFRONT HEAD DETAIL
3" = 1'-0"



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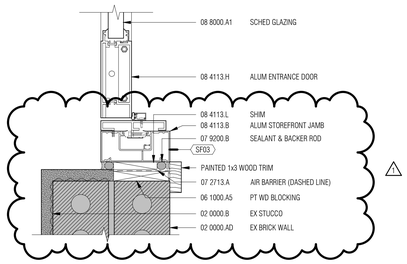

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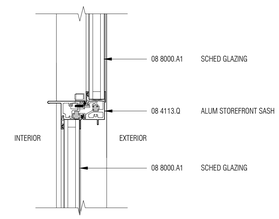

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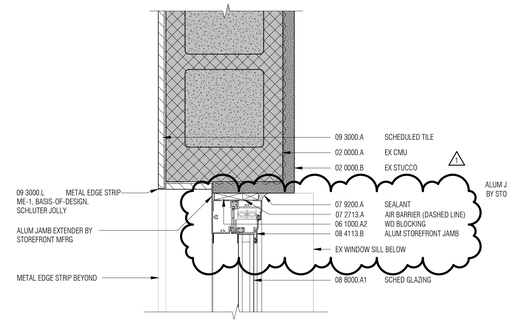

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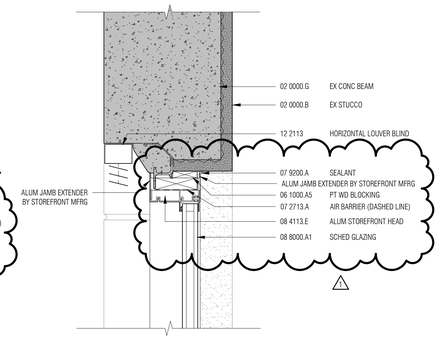

D5 / A5.01 STOREFRONT HEAD DETAIL
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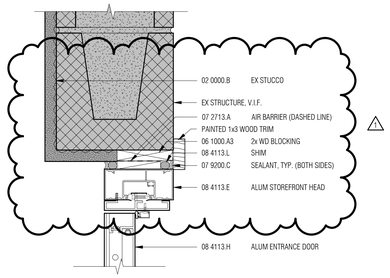

B1 / A5.01 TYP. HEAD DETAIL - STOREFRONT HEAD
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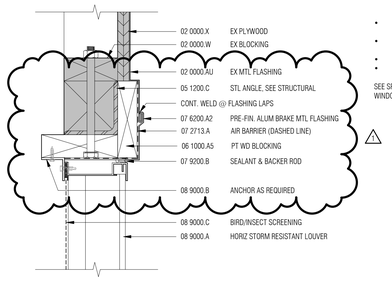
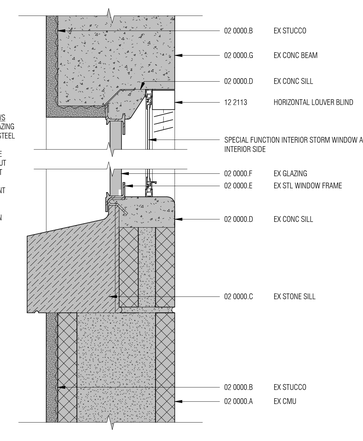


B2 / A5.01 LOUVER DETAIL
3" = 1'-0"

REPAIR SCOPE AT EXISTING ORIGINAL STEEL WINDOWS
- ABATE PERIMETER SEALANT, WINDOW GLAZING AND LEAD-BASED PAINT FROM ORIGINAL STEEL WINDOWS. SEE ABATEMENT SPEC.
- REPLACE STEEL MUNTIN BARS AND FRAME WHERE COMPONENTS PREVIOUSLY CUT OUT
- PAINT REPAIRED STEEL WINDOWS (DO NOT RETURN TO OPERABILITY.
- PROVIDE CONTINUOUS PERIMETER SEALANT
- REGLAZE WITH NEW TYPE GL2 GLASS

SEE SPECIFICATION FOR INTERIOR SPECIAL FUNCTION WINDOW WITH PERIMETER SEALANT AT FRAME



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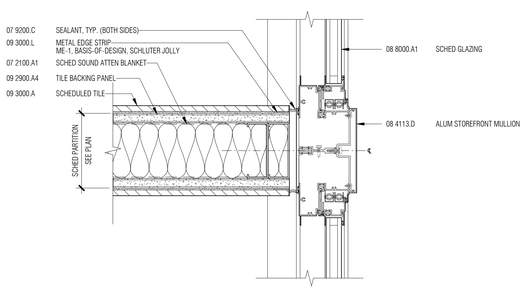

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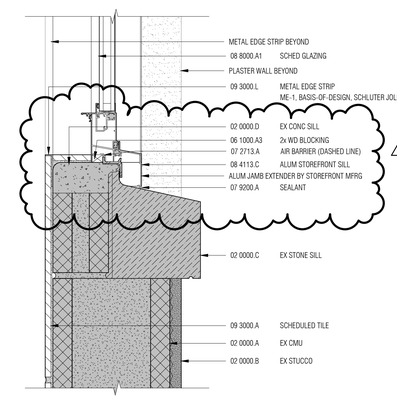

B5 / A5.01 STOREFRONT SILL DETAIL
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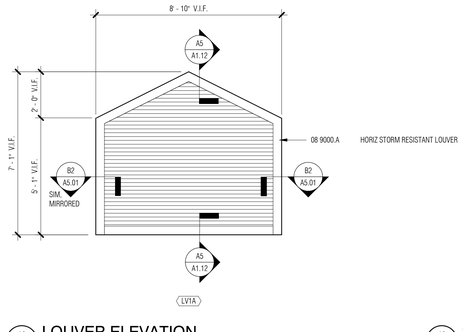
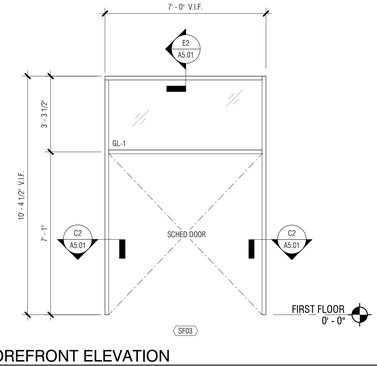
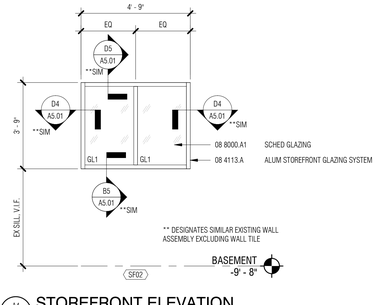


A2 / A5.01 LOUVER ELEVATION
3/8" = 1'-0"



A3 / A5.01 STOREFRONT ELEVATION
3/8" = 1'-0"



A4 / A5.01 STOREFRONT ELEVATION
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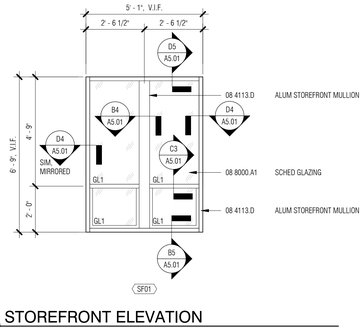

A6 / A5.01 STOREFRONT ELEVATION
3/8" = 1'-0"

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STATE OF SOUTH CAROLINA
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REGISTERED ARCHITECT
01-30-2020

STATE OF SOUTH CAROLINA
WATSON TATE SAVORY, INC.
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ARF.100837
REGISTERED ARCHITECT

ISSUE DATE: 10 FEBRUARY 2021
PHASE: BID DOCUMENTS

#	DATE	REVISION
1	3/10/2021	ADD 02

STOREFRONT/LOUVER ELEVATIONS & DETAILS

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

A5.01
SHEET

3/9/2021 12:11:49 PM C:\Users\jon\Documents\1813-USC-LeConte College Renovation(new proposed plan)_2021 model_jonclaxton@watsontatesavory.com.rvt

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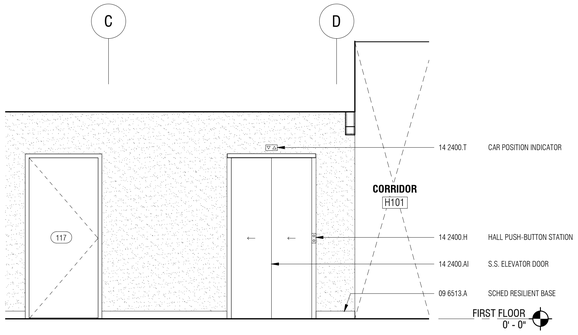

E1 A6.22 INTERIOR ELEVATION
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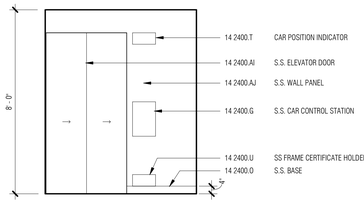

E2 A6.22 ELEVATOR INTERIOR ELEVATION
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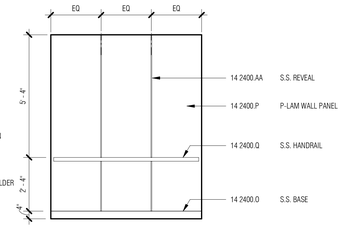

E3 A6.22 ELEVATOR INTERIOR ELEVATION
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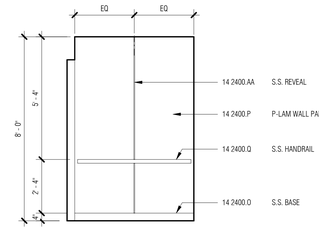

E4 A6.22 ELEVATOR INTERIOR ELEVATION
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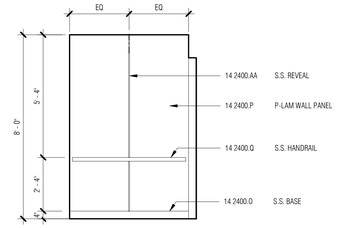

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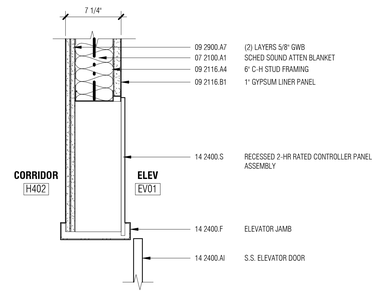

C4 A6.22 ELEVATOR DOOR JAMB DETAIL - LEVEL 4
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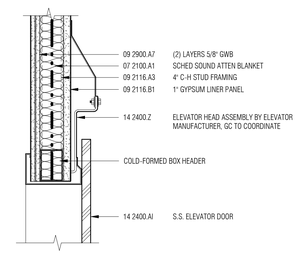
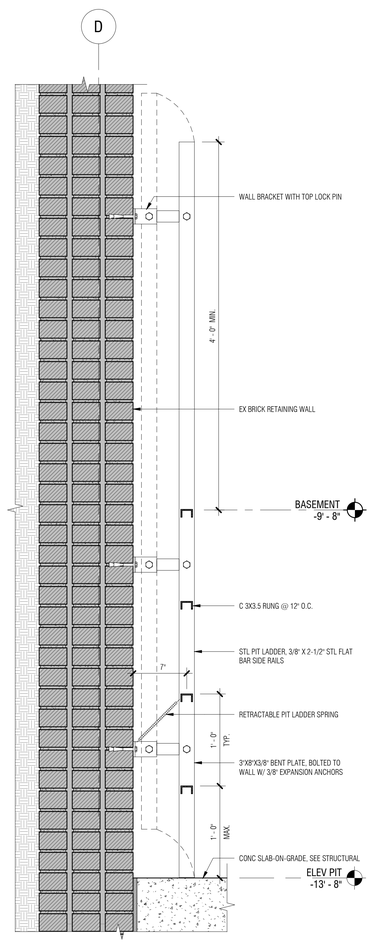


C5 A6.22 ELEVATOR HEAD DETAIL
1 1/2" = 1'-0"



A2 A6.22 ELEVATOR PIT LADDER SECTION
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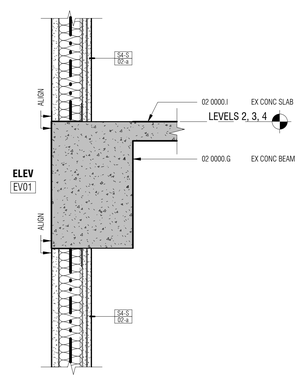

B3 A6.22 ELEVATOR SECTION DETAIL
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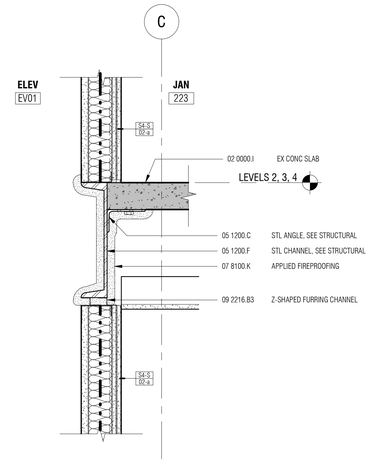

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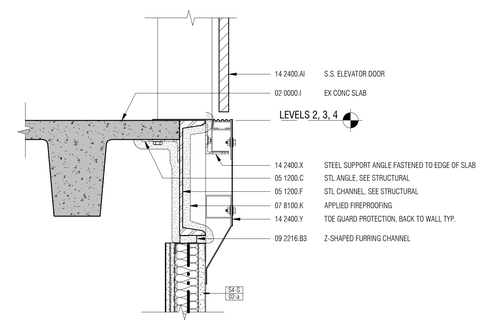

B5 A6.22 ELEVATOR SILL DETAIL
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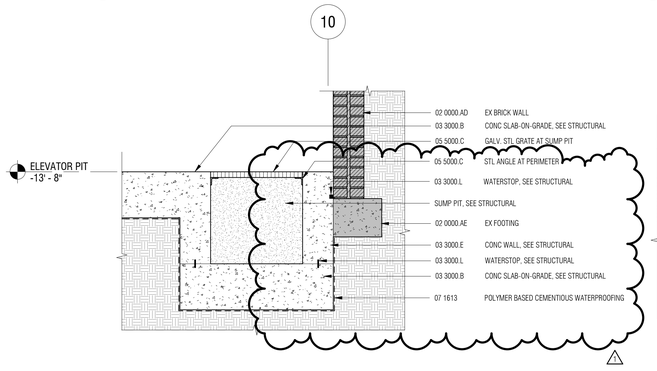

A4 A6.22 ELEVATOR SECTION DETAIL
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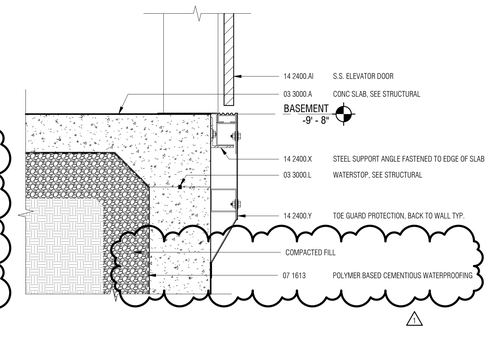

A5 A6.22 ELEVATOR SILL DETAIL
1 1/2" = 1'-0"

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MEP/FP:
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STATE OF SOUTH CAROLINA
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ISSUE DATE: 10 FEBRUARY 2021
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#	DATE	REVISION
1	3/10/2021	ADD 02

ELEVATOR DETAILS AND INTERIOR ELEVATIONS

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

A6.22
SHEET

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Section 071613 POLYMER MODIFIED CEMENT WATERPROOFING

PART 1 GENERAL

1.1 RELATED DOCUMENTS: Drawings And General Conditions of Contract including General and Supplementary Conditions and Division 01 sections apply to work of this Section.

1.2 SUMMARY

A. Section included polymer-modified cement waterproofing for positive-side application to concrete walls and floor at pits . This waterproofing will be exposed to view and care to be taken for final appearance during application. Color selected by architect from manufacturer's standard range.

B. Related Sections:

1. Division 03 for waterstops, concrete slabs, serving as floor toppings to protect waterproofing, and finishing concrete walls and slabs to receive waterproofing.
2. Division 04 for construction cleaning of unit masonry walls to receive waterproofing.
3. Division 07 for elastomeric and preformed sealants in concrete and masonry walls and floors.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions and installation instructions for polymer-modified cement waterproofing.

B. Samples for Verification: For each type of polymer-modified cement waterproofing indicated.

C. Qualification Data: For applicator.

D. Product Certificates: For waterproofing, patching, and plugging materials from manufacturer.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for each type of polymer-modified cement waterproofing.

F. Field quality-control reports.

1.4 QUALITY ASSURANCE: Applicator Qualifications: A firm experienced in applying polymer-modified cement waterproofing similar in material, design, and extent to that indicated for this project, whose work has resulted in applications with a record of successful in-service performance, and that employs workers trained and approved by manufacturer.

1.5 PROJECT CONDITIONS

A. Proceed with application only when existing and forecasted weather conditions permit polymer-modified cement waterproofing to be performed according to manufacturer's written instructions.

B. Proceed with waterproofing work only after pipe sleeves, vents, curbs, inserts, drains, and other projections through the substrate to be waterproofed have been completed. Proceed only after substrate defects, including honeycombs, voids, and cracks have been repaired to provide a sound substrate free of forming materials, including reveal inserts.

C. Proceed with waterproofing only if temperature is maintained at 5-degrees C or above during work and cure period and space is well ventilated and kept free of water.

PART 2 PRODUCTS

2.1 PREPACKAGED, POLYMER-MODIFIED CEMENT WATERPROOFING

A. Positive-Side, Polymer-Modified Cement Waterproofing: Manufacturer's proprietary blend of dry cementitous and other ingredients for mixing with polymer admixture to produce a waterproof coating that is suitable for vertical and horizontal applications below or above grade, is breathable, resists positive-side, and to a lesser degree – negative side, hydrostatic pressure, has VOC content complying with limits of authorities having jurisdiction, and has properties meeting or exceeding the specified criteria.
   1. Water Permeability: Zero for positive water pressure at 7-bar when tested to DIN 1048 Part 5.7.6:1991.
   2. Water Absorption: Maximum 1.48% when tested to ASTM 642C.
   3. Adhesive Strength at 28 Days: Minimum 1.0 MPa at 28 days.
   4. Tensile Strength at 28 days: Minimum 0.64 MPa at 28 days.
   5. Color: To be selected by architect from manufacturer's standard range.

2.2 MANUFACTURER

A. Provide the following Basis of Design products or prior approved equal:

   1. MasterSeal 581 by Master Builders Solutions (formerly Thorosealby BASF)

2.3 ACCESSORY MATERIALS

A. Patching Compound: Factory-premixed cementitous repair mortar, crack filler, or sealant recommended by waterproofing manufacturer for filling and patching tie holes, honeycombs, reveals, and other imperfections; compatible with substrate and other materials indicated; and VOC content complying with limits of authorities having jurisdiction.
B. Plugging Compound: Factory-premixed cementitous compound with hydrophobic properties and recommended by waterproofing manufacturer; resistant to water and moisture but vapor permeable for all standard applications (vertical, overhead, and horizontal surfaces not exposed to vehicular traffic); compatible with substrate and other materials indicated; and VOC content complying with limits of authorities having jurisdiction.
C. Portland Cement: ASTM C 150, Type I.
D. Polymer Admixture for Protective Topping: Polymer bonding agent and admixture designed to improve adhesion to prepared substrates and to not create a vapor barrier.
E. Water: Potable.

2.4 MIXES: Prepackaged, polymer-modified cement waterproofing: Add prepackaged dry ingredients to mixing liquid according to manufacturer's written instructions. Mix together with mechanical mixer to required consistency.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions with Applicator present for suitable conditions where waterproofing is to be applied.

B. Proceed with application only after unsatisfactory conditions have been corrected.

C. Notify architect in writing of active leaks or defects that would affect system performance.

3.2 PREPARATION

A. Protect other work from damage caused by cleaning, preparation, and application of waterproofing. Provide temporary enclosure to make sure of adequate ambient temperatures and ventilation conditions for applications.

B. Do not allow waterproofing, patching, and plugging materials to enter reveals or annular spaces intended for resilient sealants or gaskets, such as joint spaces between pipes and pipe sleeves.

C. Stop active water leaks with plugging compound according to waterproofing manufacturer's written instructions.

D. Repair damaged or unsatisfactory substrate with patching compound according to manufacturer's written instructions.

1. At holes and cracks in substrate, remove loosened chips and cut reveal with sides perpendicular to surface, not tapered and approximately 25.0 mm deep. Fill reveal with patching compound flush with surface.

E. Surface Preparation: Comply with waterproofing manufacturer's written instructions to remove efflorescence, chalk, dust, dirt, mortar spatter, grease, oils, paint, curing compounds, and form-release agents to make sure that waterproofing bonds to surfaces.

1. Clean concrete surfaces according to ASTM D 4258.
   a. Prepare smooth-formed and trowel-finished concrete by high pressure water jetting, mechanical abrading or abrasive-blast cleaning according to ASTM D 4259.

2. Clean concrete unit masonry surfaces according to ASTM D 4261.
   a. Lightweight Concrete Unit Masonry: Abrade surface by wire brushing.
   b. Medium- and Normal-Weight Concrete Unit Masonry: Sandblast or bush-hammer to a depth of 1.6 mm.

3. Clean clay masonry surfaces according to ASTM D 5703.

4. Concrete Joints: Clean reveals according to waterproofing manufacturer's written instructions.

3.3 APPLICATION

A. General: Comply with waterproofing manufacturer's written instructions for application and curing.

1. Saturate surface with water and maintain damp condition until applying waterproofing. Remove standing water.

2. Apply waterproofing to surfaces indicated on Drawings.

3. Number of Coats: Minimum two.
   a. Coating Thickness: Maximum application thickness of 1.0 mm per coat, apply 0.5 mm bedding layer where initial application of reinforcing polypropylene mesh is required.
   b. Apply with brush, roller, spray, or trowel.
   c. Vigorously work first coat onto the substrate, forcing the material into surface voids. Apply each subsequent coat into full contact with previous coat.
   d. Allow manufacturer's recommended time between coats.

B. Final Coat Finish: As application method.

C. Curing: Air-cure waterproofing for not less than six hours immediately after application.

3.4 FIELD QUALITY CONTROL: Engage manufacturer's representative to inspect completed application and provide a written report that application complies with manufacturer's written instructions.

END OF SECTION 071613

SECTION 14 2100 - ELECTRIC TRACTION ELEVATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes machine-room-less electric traction passenger elevators.

Related Requirements:

Section 051200 "Structural Steel Framing" for the following:
a. Attachment plates, angle brackets, and other preparation of structural steel for fastening guide-rail brackets.
Divider beams.
Hoist beams.
Structural-steel shapes for subsills.

2. Section 055000 "Metal Fabrications" for the following:
a. Pit ladders.

1.3 DEFINITIONS

A. Definitions in ASME A17.1/CSA B44 apply to work of this Section.

Service Elevator: A passenger elevator that is also used to carry freight.

1.4 ACTION SUBMITTALS

A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for car enclosures, hoistway entrances, and operation, control, and signal systems.

Shop Drawings:

1. Include plans, elevations, sections, and large-scale details indicating service at each landing, coordination with building structure, relationships with other construction, and locations of equipment.
Include large-scale layout of car-control station.
Indicate maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands.

B. Samples for Initial Selection: For finishes involving color selection.

Samples for Verification: For exposed car, hoistway door and frame, and signal equipment finishes; 3-inch- square Samples of sheet materials; and 4-inch lengths of running trim members.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

Seismic Qualification Certificates: For elevator equipment, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

B. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway, pit, layout and dimensions, as shown on Drawings, and electrical service including standby power generator, as shown and specified, are adequate for elevator system being provided.

C. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For elevators to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.

B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

Continuing Maintenance Proposal: Submit a continuing maintenance proposal from Installer to Owner, in the form of a standard five-year maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Elevator manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle materials, components, and equipment in manufacturer's protective packaging. Store materials, components, and equipment off of ground, under cover, and in a dry location.

1.9 COORDINATION

A. Coordinate installation of sleeves, block outs, elevator equipment with integral anchors, and other items that are embedded in concrete or masonry for elevator equipment. Furnish templates, sleeves, elevator equipment with integral anchors, and installation instructions and deliver to Project site in time for installation.

Coordinate locations and dimensions of other work relating to electric traction elevators including pit ladders; sumps and floor drains in pits; entrance subsills; electrical service; and electrical outlets, lights, and switches in hoistways, pits, and machine rooms.

1.10 WARRANTY

A. Manufacturer's Special Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

Warranty Period: Two year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Basis-of-Design Product: Subject to compliance with requirements, provide OTIS ELEVATOR, GEN 2 - Gearless machine-room-less elevator or comparable product by one of the following:

1. Schindler Elevator Corp.

ThyssenKrupp Elevator.

B. Source Limitations: Obtain elevators from single manufacturer.

1. Major elevator components, including driving machines, controllers, signal fixtures, door operators, car frames, cars, and entrances, shall be manufactured by single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with ASME A17.1/CSA B44.

Accessibility Requirements: Comply with Section 407 in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and with ICC A117.1.

Seismic Performance: Elevator system shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 and shall comply with elevator safety requirements for seismic risk Zone 2 or greater in ASME A17.1/CSA B44.

1. The term "withstand" means "the system will remain in place without separation of any parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event."

See Code Drawings included in Construction Documents for project seismic criteria.

2.3 ELEVATORS

A. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated, manufacturer's standard components shall be used, as included in standard elevator systems and as required for complete system.

ELEVATOR 1 (EV01)

Machine Location: Hoistway; no machine room is provided.
Machine Type: Gearless traction.
Rated Load: **3500 lb.**
Freight Loading Class for Service Elevator(s): Class A.
Rated Speed: 200 fpm .
Operation System: Group automatic operation.
Auxiliary Operations:
a. Standby power operation.
2. Security Features: Card-reader operation.
Car Enclosures:
a. Inside Width: **78** inches from side wall to side wall.
Inside Depth: 65 inches from front wall to back wall.
Inside Height: 93 inches to underside of ceiling.
Front Walls (Return Panels): Satin stainless steel, No. 4 finish.
Car Fixtures: Satin stainless steel, No. 4 finish.
Vertical Side and Rear Wall Panels: Plastic laminate.
Vertical Reveals: Brushed Aluminum.
Door Faces (Interior): Satin stainless steel, No. 4 finish.
Door Sills: Aluminum, mill finish.
Ceiling: Satin stainless steel, No. 4 finish.
Handrails: 1-1/2 inches round satin stainless steel, No. 4 finish, at sides and rear of car.
Floor prepared to receive resilient flooring LVT-1 (specified in Section 096500 "Resilient Flooring").
3. Hoistway Entrances:
a. Width: **42** inches.
Height: **84** inches.
Type: **Side** opening.
Frames: Satin stainless steel, No. 4 finish.
Doors: Satin stainless steel, No. 4 finish .
Sills: Aluminum, mill finish.

4. Hall Fixtures: Satin stainless steel, No. 4 finish .
Additional Requirements:
a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from satin stainless steel, No. 4 finish.
Provide hooks for protective pads and complete set of full-height protective pads.

5. Hall Fixtures: Satin stainless steel, No. 4 finish .
Additional Requirements:
a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from satin stainless steel, No. 4 finish.
Provide hooks for protective pads and one and complete set of full-height protective pads.

2.4 TRACTION SYSTEMS

A. Elevator Machines: Variable-voltage, variable-frequency, ac-type hoisting machines and solid-state power converters.

1. Limit total harmonic distortion of regenerated power to 5 percent per IEEE 519.
Provide means for absorbing regenerated power when elevator system is operating on standby power.
Provide line filters or chokes to prevent electrical peaks or spikes from feeding back into building power system.

B. Fluid for Hydraulic Buffers: If using hydraulic buffers, use only fire-resistant fluid.

Inserts: Furnish required anchorage devices for installing guide rails, machinery, and other components of elevator work. Device installation is specified in another Section.

Machine Beams: Provide framing to support elevator hoisting machine and deflector sheaves from the building structure. Comply with Section 055000 "Metal Fabrications" for materials and fabrication.

Car Frame and Platform: Bolted- or welded-steel units.

Guides: Roller guides or polymer-coated, nonlubricated sliding guides. Provide guides at top and bottom of car and counterweight frames.

2.5 OPERATION SYSTEMS

A. General: Provide manufacturer's standard microprocessor operation systems as required to provide type of operation indicated.

B. Auxiliary Operations: In addition to primary operation system features, provide the following operational features for elevators where indicated:

1. Independent Service: Keyswitch in car-control station removes car from group operation and allows it to respond only to car calls. Key cannot be removed from keyswitch when car is in independent service. When in independent service, doors close only in response to door close button.

C. Communication Cable: Provide the following:

1. Additional communications cable: Provide an additional data cable for future use of a security camera or other device with the carry cable bundle. Provide required conductors in traveling cable,. Provide sufficient coiled cable above ceiling of elevator cab and at top of hoistway for future connection of communication devices.

2.6 DOOR REOPENING DEVICES

A. Infrared Array: Provide door reopening device with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more light beams shall cause doors to stop and reopen.

Nudging Feature: After car doors are prevented from closing for predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound and doors shall begin to close at reduced kinetic energy.

2.7 CAR ENCLOSURES

A. General: Provide enameled-steel car enclosures to receive removable wall panels, with car roof, access doors, power door operators, and ventilation.

1. Provide standard railings complying with ASME A17.1/CSA B44 on car tops where required by ASME A17.1/CSA B44.

B. Materials and Finishes: Manufacturer's standards, but not less than the following:

1. Subfloor: Exterior, underlayment grade plywood, not less than 5/8-inch nominal thickness.

Plastic-Laminate Wall Panels: Plastic laminate adhesively applied to manufacturer's standard honeycomb core with plastic-laminate panel backing and manufacturer's standard protective edge trim. Panels have a flame-spread index of 25 or less, when tested according to ASTM E 84. Plastic-laminate color, texture, and pattern as selected by Architect from plastic-laminate manufacturer's full range.

Fabricate car with recesses and cutouts for signal equipment.

Fabricate car door frame integrally with front wall of car.

Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from stainless-steel sheet.

Unfinished-Steel Doors: Flush, hollow-metal construction; fabricated from cold-rolled steel sheet, with factory-applied enamel.

Sight Guards: Provide sight guards on car doors.

Sills: Extruded metal, with grooved surface, 1/4 inch thick.

Ceiling: Flush panels, with four low-voltage downlights in each panel. Align ceiling panel joints with joints between wall panels.

Handrails: Manufacturer's standard handrails, of shape, metal, and finish indicated.

2.8 HOISTWAY ENTRANCES

A. Hoistway Entrance Assemblies: Manufacturer's standard horizontal-sliding, door-and-frame hoistway entrances complete with track systems, hardware, sills, and accessories. Frame size and profile shall accommodate hoistway wall construction.

1. Where gypsum board wall construction is indicated, frames shall be self-supporting with reinforced head sections.

B. Fire-Rated Hoistway Entrance Assemblies: Door and frame assemblies shall comply with NFPA 80 and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at as close-to-neutral pressure as possible according to NFPA 252 or UL 10B.

1. Fire-Protection Rating: 2 Hours with 30-minute temperature rise of 450 deg F.

C. Materials and Fabrication: Manufacturer's standards, but not less than the following:

1. Stainless-Steel Frames: Formed from stainless-steel sheet.
Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from stainless-steel sheet.

2.9 SIGNAL EQUIPMENT

A. General: Provide hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate lighted elements with LEDs.

Car-Control Stations: Provide manufacturer's standard recessed car-control stations. Mount in return panel adjacent to car door unless otherwise indicated.

1. Mark buttons and switches for required use or function. Use both tactile symbols and Braille.

B. Emergency Communication System: Two-way voice communication system, with visible signal, which dials preprogrammed number of monitoring station and does not require handset use. System is contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.

Firefighters' Two-Way Telephone Communication Service: Provide flush-mounted cabinet in each car and required conductors in traveling cable for firefighters' two-way telephone communication service specified in Section 283111 "Digital, Addressable Fire-Alarm System."

Car Position Indicator: Provide illuminated, digital-type car position indicator, located above car door or above car-control station. Also, provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served. Include travel direction arrows if not provided in car-control station.

Hall Push-Button Stations: Provide one hall push-button station at each landing.

1. Provide units with flat faceplate for mounting with body of unit recessed in wall.
Equip units with buttons for calling elevator and for indicating desired direction of travel.

C. Hall Lanterns: Units with illuminated arrows; but provide single arrow at terminal landings. Provide the following:

1. Units mounted in both jambs of entrance frame[for each elevator].

D. Standby Power Elevator Selector Switches: Provide switches, as required by ASME A17.1/CSA B44, where indicated. Adjacent to switches, provide illuminated signal that indicates when normal power supply has failed. For each elevator, provide illuminated signals that indicate when they are operational and when they are at the designated emergency return level with doors open.

Emergency Pictorial Signs: Fabricate from materials matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire, elevators are out of service and exits should be used instead. Provide one sign at each hall push-button station unless otherwise indicated.

2.10 FINISH MATERIALS

A. General: Provide the following materials for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated.

Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish.

Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel, Type B, pickled.

Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

Stainless-Steel Tubing: ASTM A 554, Grade MT 304.

Aluminum Extrusions: ASTM B 221, Alloy 6063.

Nickel Silver Extrusions: ASTM B 151/B 151M, Alloy UNS No. C74500 or No. C77600.

Plastic Laminate: High-pressure type complying with NEMA LD 3, Type HGS for flat applications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elevator areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Examine hoistways, hoistway openings, pits, and machine rooms as constructed; verify critical dimensions; and examine supporting structure and other conditions under which elevator work is to be installed.

Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions.

Welded Construction: Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.

Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration transmission to structure and structure-borne noise due to elevator system.

Lubricate operating parts of systems, including ropes, as recommended by manufacturers.

Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with car. Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum, safe, workable dimension at each landing.

Leveling Tolerance: 1/8 inch, up or down, regardless of load and travel direction.

Set sills flush with finished floor surface at landing. Fill space under sill solidly with nonshrink, nonmetallic grout.

Locate hall signal equipment for elevators as follows unless otherwise indicated:

1. For groups of elevators, locate hall push-button stations between two elevators at center of group or at location most convenient for approaching passengers.

Place hall lanterns either above or beside each hoistway entrance.
Mount hall lanterns at a minimum of 72 inches above finished floor.

3.3 FIELD QUALITY CONTROL

A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.

Operating Test: Load each elevator to rated capacity and operate continuously for 30 minutes over full travel distance, stopping at each level and proceeding immediately to the next. Record temperature rise of elevator machine during 30-minute test period. Record failure to perform as required.

Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times that tests are to be performed on elevators.

3.4 PROTECTION

A. Temporary Use: Limit temporary use for construction purposes to one elevator. Comply with the following requirements for each elevator used for construction purposes:

1. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.

Provide strippable protective film on entrance and car doors and frames.

Provide padded wood bumpers on entrance door frames covering jambs and frame faces.

Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.

Do not load elevators beyond their rated weight capacity.

Engage elevator Installer to provide full maintenance service. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleanup, and adjustment as necessary for proper elevator operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

Engage elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate, adjust, and maintain elevator(s).

Check operation of each elevator with Owner's personnel present before date of Substantial Completion and again not more than one month before end of warranty period. Determine that operation systems and devices are functioning properly.

3.6 WARRANTY

A. See Division 1 and Paragraph 1.10 of the Section for warranty requirements.

END OF SECTION 142100

Fire Sprinkler System Specification Sheet

(Per §40-10-250)

Project Data			
Project name: University of South Carolina LeConte College Renovation			
Location in South Carolina:	Address (street # & street name): 1523 Greene Street		State project: ☒ Yes ☐ No
	City: Columbia	County: Richland	State project #: H27-6126-LC

Water Supply Information (flow test data must be less than 1 year old per §40-10-250(A)(1))			
Date test conducted: 02 / 08 / 2021	Static pressure (psi): 54	Residual pressure (psi): 36	Flow (gpm): 1130
Distances of test gauges relative to the base of the riser:	Horizontal (ft): 150	Vertical (elevation difference in ft): 4	
Source of water supply:	☐ Municipal dead-end ☒ Municipal circulation ☐ Other:		Pipe Size (in.): 6
Test data by/from:	Name: Jason Shaw, P.E.	Title: Water Engineer	
	Organization: Columbia Water		Telephone #: 803-545-3400
Fire pump:	☒ Yes ☐ No	Pump Capacity (gpm): 500	Churn Pressure (psi): 84
	☒ New ☐ Existing	Rated Pressure (psi): 70	Pressure @ 150% flow (psi): 45.5
On-site storage tank:	☐ Yes ☒ No	☐ New ☐ Existing	Tank capacity (gallons): N/A

NFPA Hazard Classification
(attach continuation page when necessary)

Area #	Class or Code Reference	Description of Hazard Protected (commodity description, storage height, and arrangement as applicable.)
1	Light Hazard	Classrooms, office spaces, and corridors
2	Ordinary Hazard Group 1	Basement mechanical space
3	Light Hazard	Noncombustible attic space

Design Parameters
(attach continuation page when necessary)

Area #	System Type	Density (gpm/ft^2) / Area (ft^2) or Other (reference code section)	Inside Hose (gpm)	Outside Hose (gpm)
1	Wet-pipe	0.10 gpm/ft^2 over 1,500 ft^2 (NFPA 13, §11.2.3.1.1)	100	0
2	Wet-pipe	0.15 gpm/ft^2 over 1,500 ft^2 (NFPA 13, §11.2.3.1.1)	100	150
3	Wet-pipe	0.10 gpm/ft^2 over 1,950 ft^2 (NFPA 13, §11.2.3.1.1/§11.2.3.2.4)	100	0

Seismic Design Data: S_S= 0.419

Codes and Standards
(attach continuation page when necessary)

Applicable Codes, Standards & Editions (i.e. "2006 IBC", "2007 NFPA 13", etc.) **for the Scope of Work on the Sprinkler System**

IBC 2015, IFC 2015

NFPA 13, 2013 Edition, NFPA 14, 2013 Edition, NFPA 20, 2013 Edition, NFPA 24, 2013 Edition

Scope of work: An automatic wet sprinkler system with fire pump and manual wet standpipe system for the existing USC LeConte College with sprinkler work beginning at a nominal 5 ft. outside building perimeter. The protection scheme consists of automatic wet-pipe sprinklers throughout the Basement, Floors 1 through 4, and the Attic. Work includes demolishing the existing 4-inch fire service main back to the city main and replacement with a 6-inch fire service main. A double check detector assembly will be provided in the Basement mechanical room on the supply side of the fire pump. Attic wet sprinkler design area to be increased 30% per NFPA 13, §11.2.3.2.4. FSSSS for underground sprinkler piping to be provided by civil engineer.

Specifier's Information

Name: John J. Foley III, PE

Engineering services provided through a firm: ☒ Yes ☐ No

Firm name: JENSEN HUGHES

Address: 3500 Piedmont Road, Suite 750

City: Atlanta

State: Georgia Zip: 30305

Phone #: 404-239-1000 Fax #:

E-mail: jfoley@jensenhughes.com

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION JENSEN HUGHES, INC. No. 1502

Certificate of Authorization

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 21814 JOHN J. FOLEY, III

26 February 2021

Professional Engineer's Seal

Revision No.: 2 Page 1 of 1 Signature:

Date: 26 February 2021

RMF ADDENDUM TWO

March 10, 2021

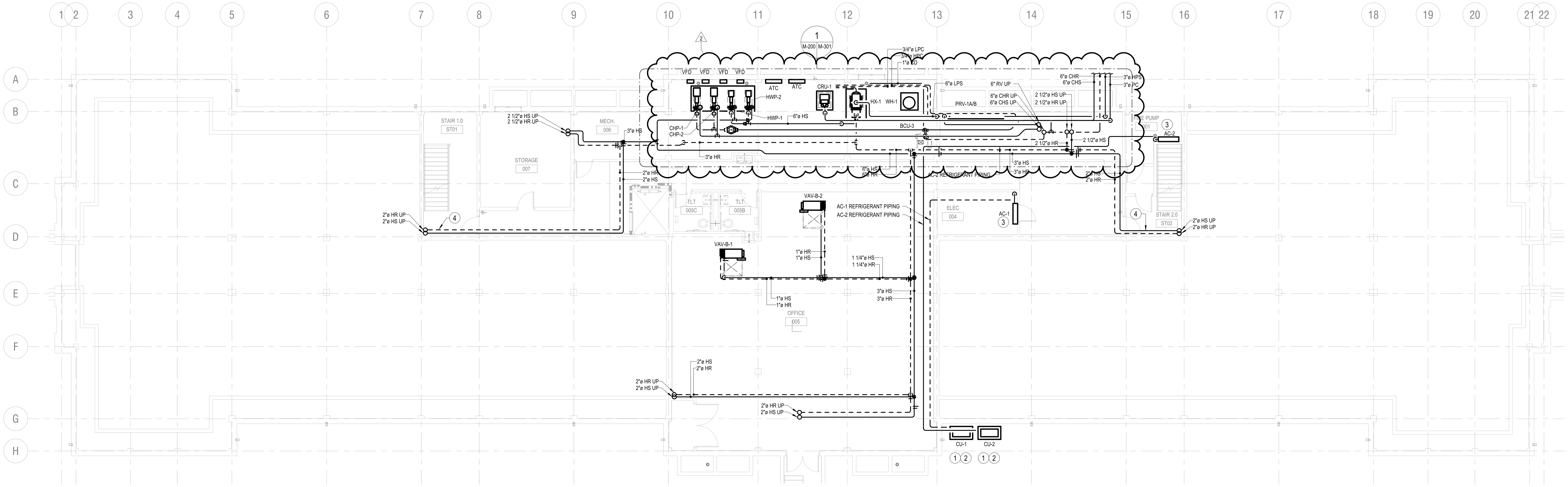
ADDENDUM NO. 2

QUESTIONS:

DRAWINGS

Item No.	Description
1.	Drawing M-200: Pipe sizes updated to match new chilled water flow rates. Added clarity for bridge decoupler installation.
2.	Drawing M-201: Pipe sizes updated to match new chilled water flow rates.
3.	Drawing M-202: Pipe sizes updated to match new chilled water flow rates.
4.	Drawing M-203: Pipe sizes updated to match new chilled water flow rates.
5.	Drawing M-204: Pipe sizes updated to match new chilled water flow rates.
6.	Drawing M-205: Pipe sizes updated to match new chilled water flow rates.
7.	Drawing M-301: Pipe sizes updated to match new chilled water flow rates. Added clarity for bridge decoupler installation.
8.	Drawing M-303: Pipe sizes updated to match new chilled water flow rates.
9.	Drawing M-304: Pipe sizes updated to match new chilled water flow rates.
10.	Drawing M-502: Schematic pipe sizes updated to match new chilled water flow rates.
11.	Drawing M-701: Updated Cooling Coil and Blower Coil Unit Schedule Flow Rates and entering water conditions. Scheduled new pumps to match new flowrates and head loss caused by pipe size changes.
12.	Drawing M-703: Updated Air Dirt Separator Schedule with new chilled water flow rates.
13.	Drawing E-201: Location of exterior W3 fixture is updated. Provide exterior timer switch for W3 fixture. All devices, conduit and fixture colors shall be coordinated with architect.
14.	Drawing E-600: Light fixture schedule updated to include alternate manufacturer catalog numbers.
15.	Drawing E-601: Provide 480V,3P,20A breakers for both HWP-1 pumps.

END OF ADDENDUM NO.2



BASEMENT HVAC PIPING PLAN

1 / M-200

SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. EQUIPMENT SHALL BE INSTALLED ON 4 INCH EQUIPMENT PADS THAT EXTEND 6 INCHES FROM ALL SIDES OF THE EQUIPMENT.
3. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.

DRAWING NOTES

(1) INSTALL EQUIPMENT ON 4" CONCRETE PAD.

(2) REFRIGERANT PIPING SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTION BASED ON PROJECT SPECIFIC SHOP DRAWINGS. EXACT ROUTING SHALL BE FIELD COORDINATED AND SHALL NOT BE ROUTED ABOVE PATHS OF EGRESS.

(3) ROUTE 3/4" CONDENSATE DRAIN PIPING FROM FAN COIL UNIT TO FLOOR DRAIN. PIPING SHALL BE INSTALLED WITH 1" STANDOFFS STRAIGHT DOWN WALL TO 6" ABOVE FLOOR AND ELBOW TO DISCHARGE CONDENSATE ABOVE CENTER OF FLOOR DRAIN. PIPING SHALL BE PAINTED TO MATCH ADJACENT WALL COLOR.

(4) ROUTE HS/HR PIPE IN RATED BULKHEAD THROUGH STAIRS TO RATED SHAFT.

GRAPHIC SCALE

8 4 0 8 16

SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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BASEMENT HVAC PIPING PLAN

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

SHEET M-200

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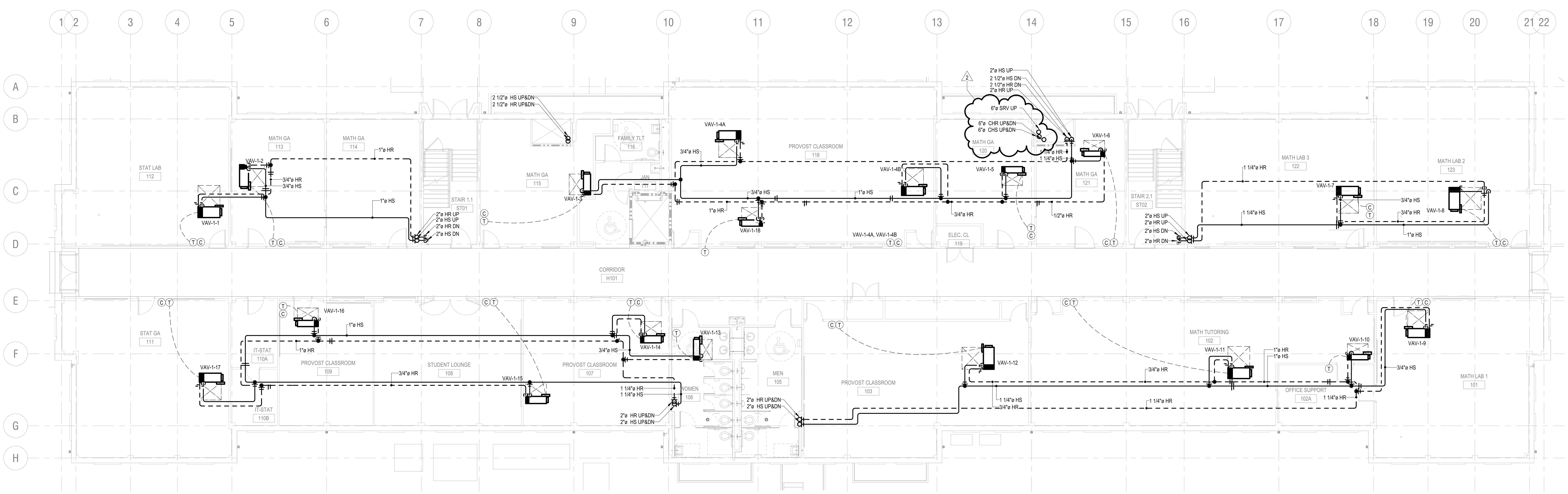

FIRST FLOOR HVAC PIPING PLAN

1 E-401 M-201

SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. NO PIPING OR WIRING SHALL BE INSTALLED IN THE CENTRAL CORRIDOR UNLESS INDICATED ON THE PLANS.
3. INSTALLATION OF MEP SYSTEM SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.

GRAPHIC SCALE
8 4 0 8 16
SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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FIRST FLOOR HVAC PIPING PLAN

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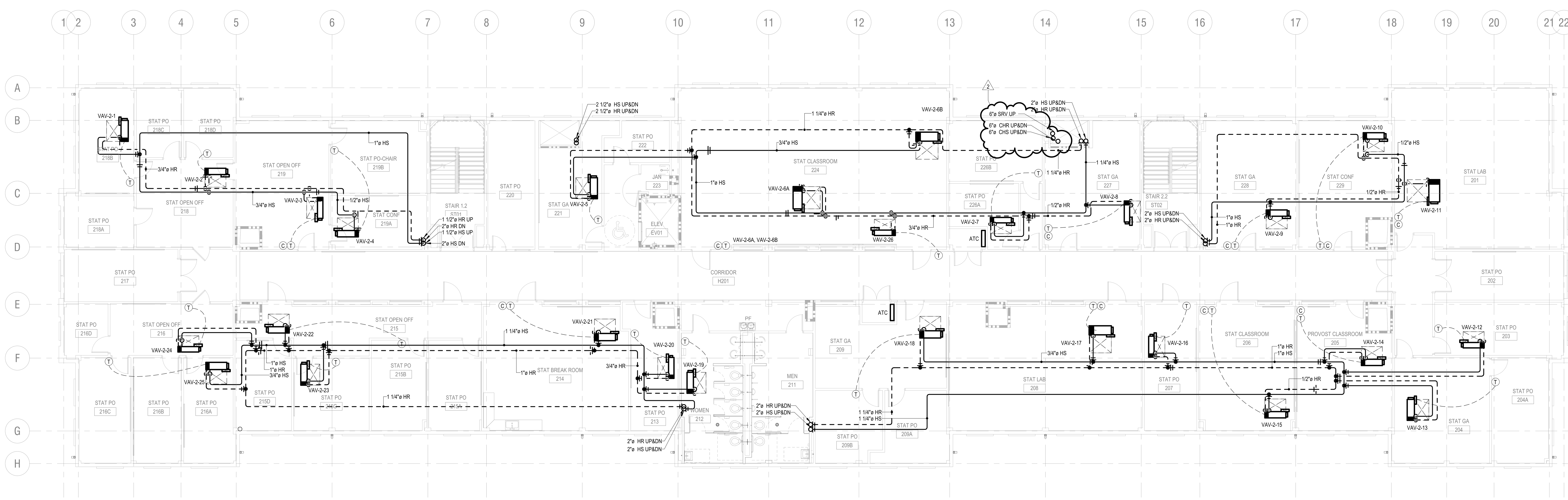
SHEET M-201



SECOND FLOOR HVAC PIPING PLAN

SCALE: 1/8" = 1'-0"

1 E-401 M-202

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. NO PIPING OR WIRING SHALL BE INSTALLED IN CENTRAL CORRIDOR UNLESS INDICATED ON THE PLANS.
3. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.

GRAPHIC SCALE

8 4 0 8 16

SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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SECOND FLOOR HVAC PIPING PLAN

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SHEET M-202

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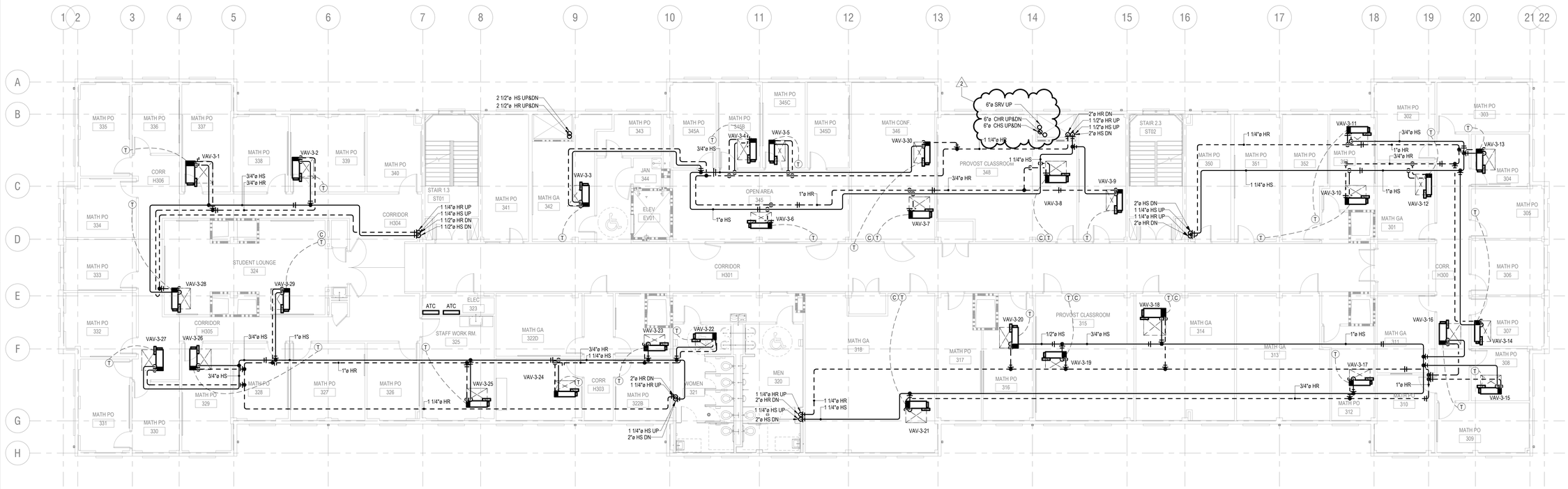

1 M-203 **THIRD FLOOR HVAC PIPING PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. NO PIPING OR WIRING SHALL BE INSTALLED IN CENTRAL CORRIDOR UNLESS INDICATED ON THE PLANS.
3. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.

GRAPHIC SCALE
8 4 0 8 16
SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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THRID FLOOR
HVAC PIPING
PLAN

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A/E PROJECT NO.

M-203
SHEET

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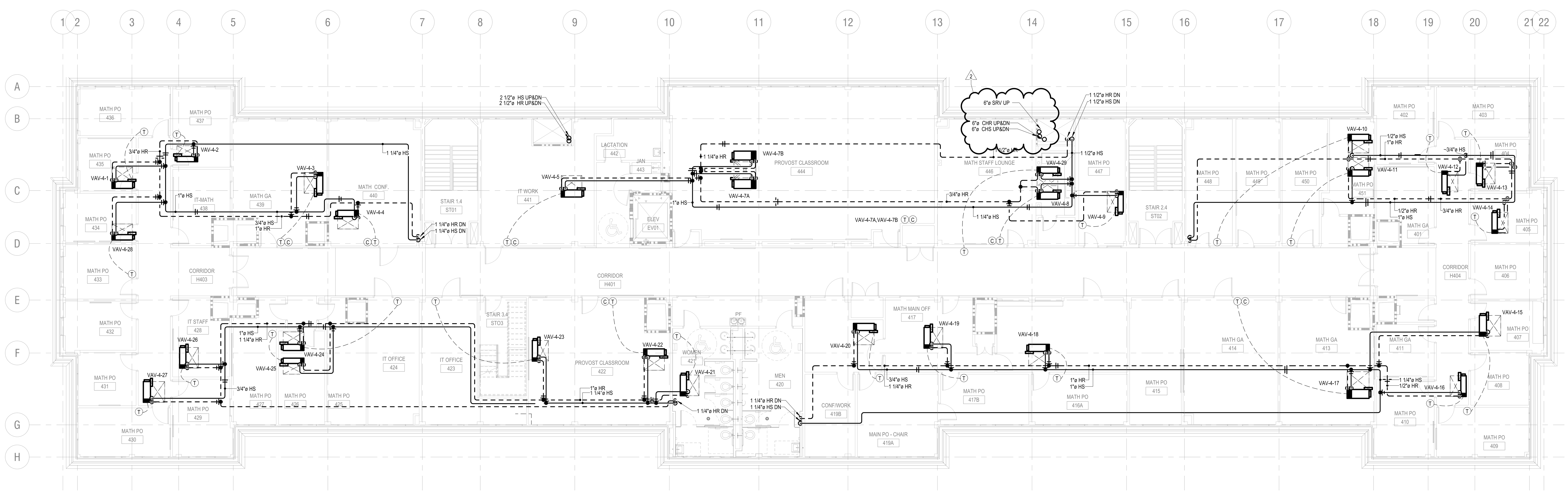

1 M-204 **FOURTH FLOOR HVAC PIPING PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. NO PIPING OR WIRING SHALL BE INSTALLED IN CENTRAL CORRIDOR UNLESS INDICATED ON THE PLANS.
3. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.

GRAPHIC SCALE
8 4 0 8 16
SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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FOURTH FLOOR
HVAC PIPING
PLAN

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STATE PROJECT NO.
1813
A/E PROJECT NO.

M-204
SHEET

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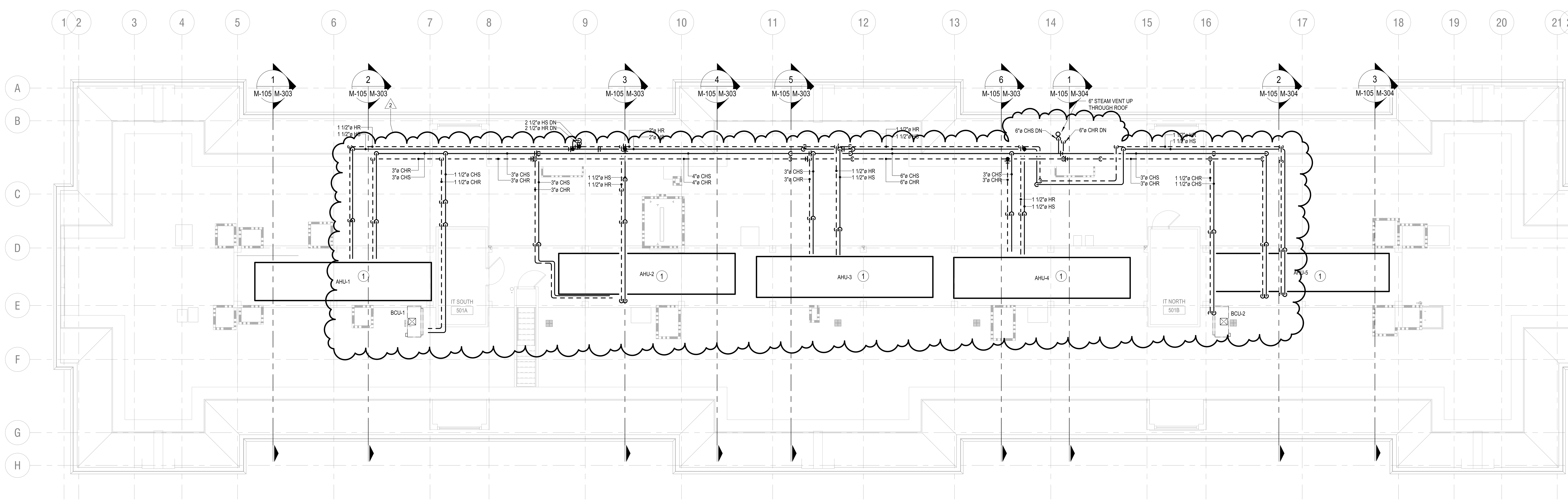

ATTIC HVAC PIPING PLAN

1 — M-303 | M-205

SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.

DRAWING NOTES

(1) PROVIDE A FIELD ASSEMBLED AUXILIARY DRAIN PAN WITH SEPARATE DRAIN BELOW EACH AIR HANDLING UNIT, SET INTO PLACE ON THE CONCRETE PAD PRIOR TO THE RESPECTIVE AHU ASSEMBLY. THE AUXILIARY DRAIN PAN SHALL BE FULL SIZE OF THE AHU CONCRETE PAD (NOT LESS THAN 6-INCHES LARGER THAN THE AHU IN ALL DIMENSIONS) AND CONSTRUCTED OF MINIMUM 16-GAUGE TYPE 304 STAINLESS STEEL WITH UPTURNED EDGES AND FULLY WELDED SEAMS. PAN SHALL HAVE MINIMUM 2 ½" WALL HEIGHT, WITH 1 ½" SCHEDULE 80 PVC OR TYPE K COPPER DRAIN FITTING AND PIPE EXTENDING FROM THE SIDEWALL OF THE PAN TO THE NEAREST FLOOR SINK. IN ADDITION TO THE DRAIN, THE AUXILIARY DRAIN PAN SHALL BE EQUIPPED WITH A WATER-LEVEL DETECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT OFF THE AHU AND ALARM THE BAS PRIOR TO OVERFLOW OF THE DRAIN PAN.

GRAPHIC SCALE

8 4 0 8 16

SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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ATTIC HVAC
PIPING PLAN

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

SHEET
M-205

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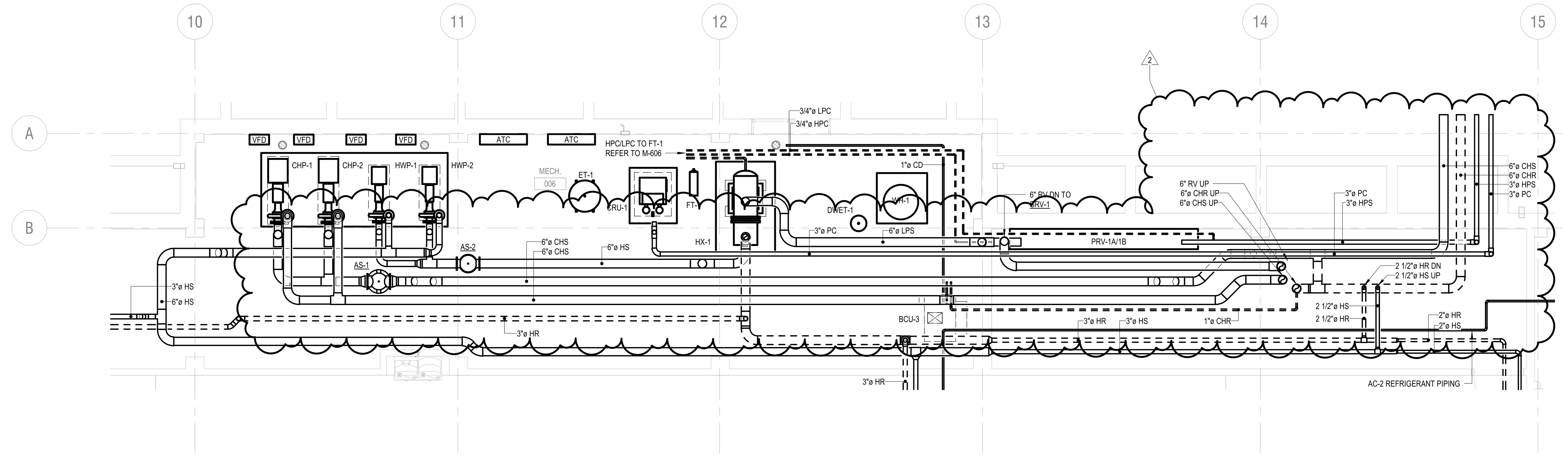
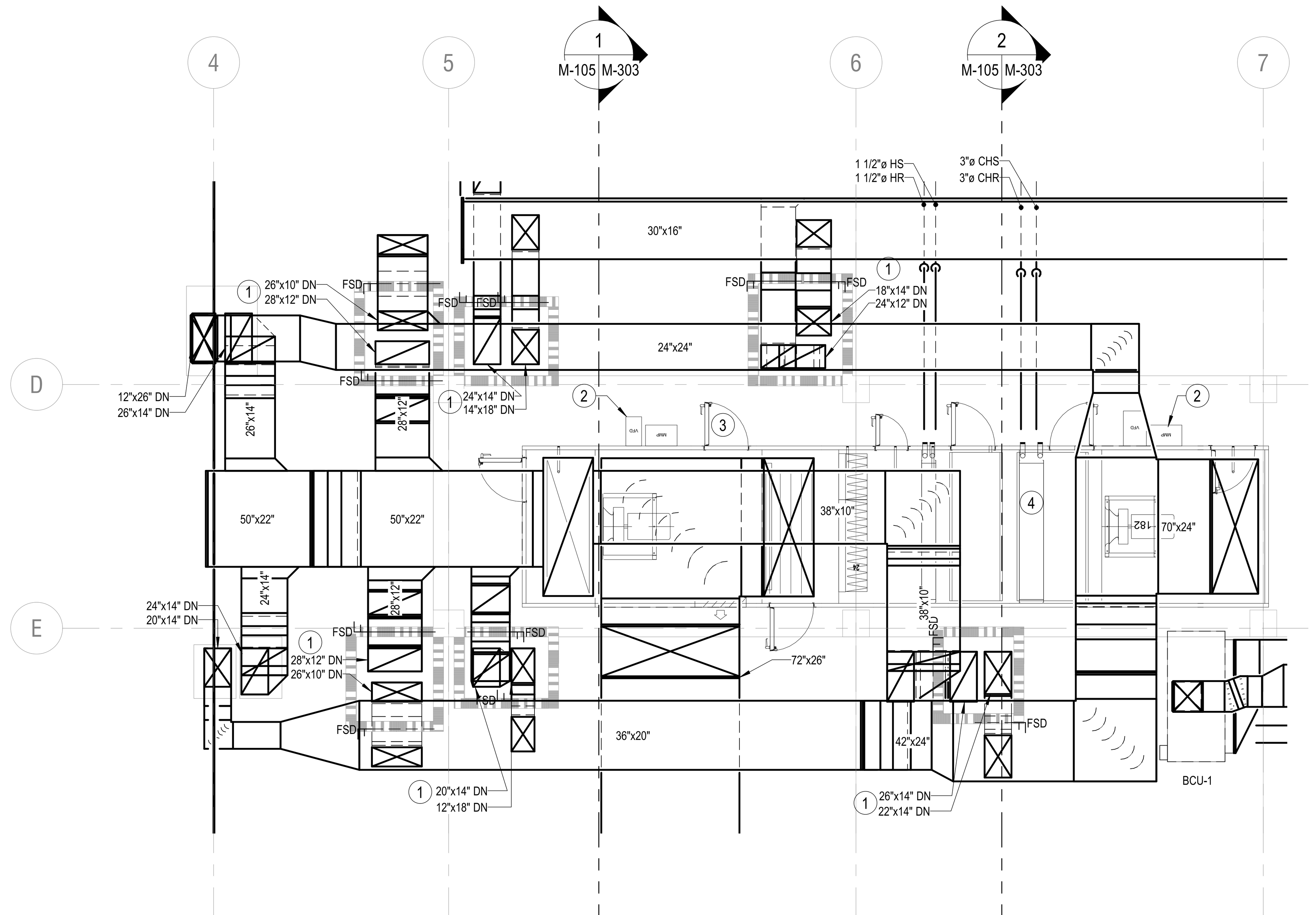
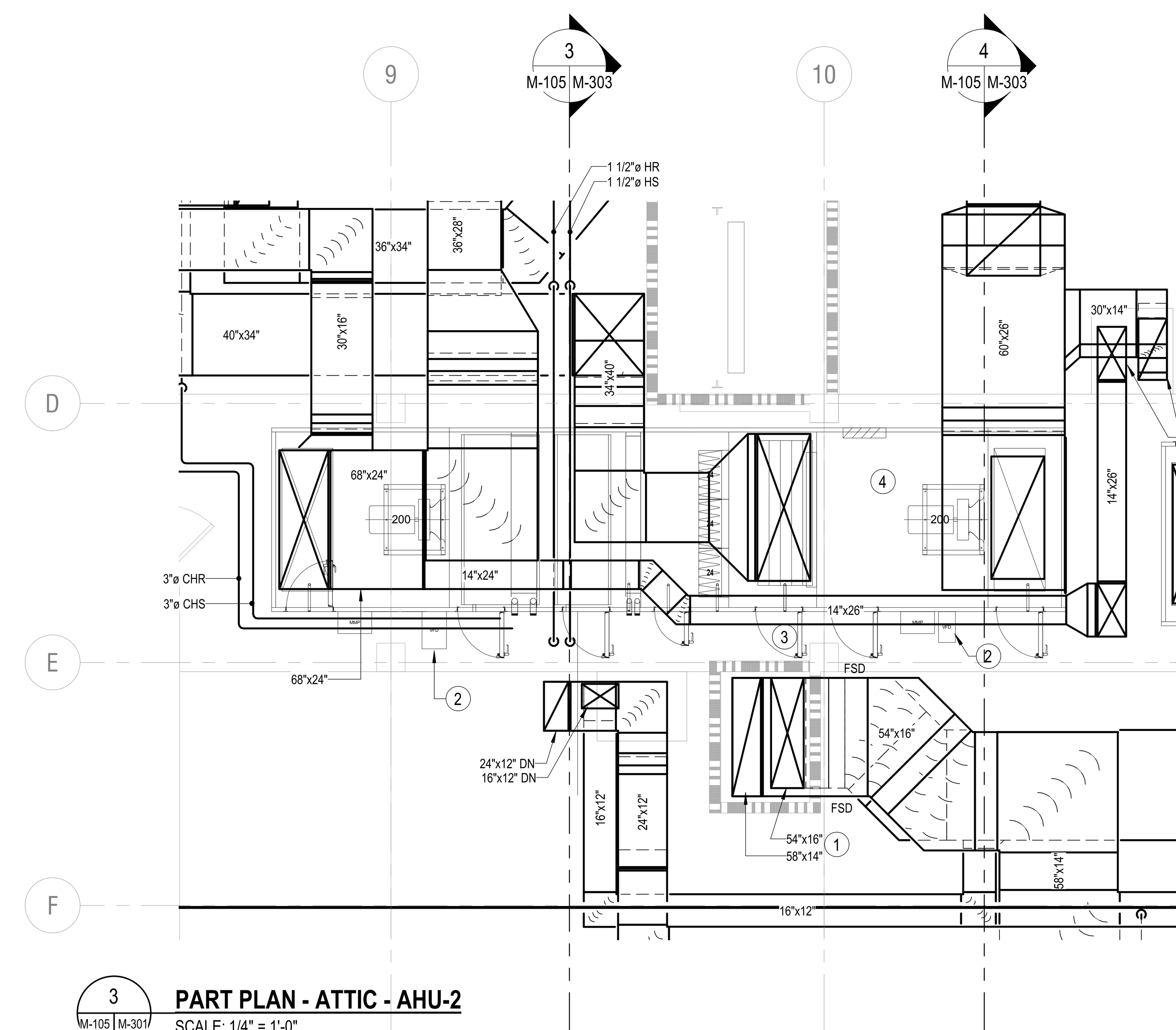


1 (M-200 | M-301)
PART PLAN - BASEMENT MECHANICAL ROOM 005
SCALE: 1/4" = 1'-0"



2 (M-105 | M-301)
PART PLAN - ATTIC - AHU-1
SCALE: 1/4" = 1'-0"



3 (M-105 | M-301)
PART PLAN - ATTIC - AHU-2
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.
3. THE CONTRACTOR SHALL FIELD LOCATE DUCT SMOKE DETECTORS WITH THE ARCHITECT PRESENT. THE CONTRACTOR SHALL SHOW THE LOCATION OF THE DUCT SMOKE DETECTORS ON THE COORDINATION DRAWINGS FOR ARCHITECT APPROVAL PRIOR TO INSTALLATION.

DRAWING NOTES

(1) COORDINATE DUCT ROUTING WITH FIRE RATED SHAFT INSTALLATION. THE SHAFT EXTENDS PAST THE SLAB AND TERMINATES ABOVE THE FINISHED FLOOR. ROUTE DUCT SO THAT THE DUCT PENETRATES THE VERTICAL SHAFT WALL. INSTALL FIRE/SMOKE DAMPER AT PENETRATION INTO VERTICAL SHAFT WALL. SEE ARCHITECTURAL DRAWINGS FOR SHAFT CONSTRUCTION. DRAFT DAMPER SO THAT AIR CAN FLOW OUT OF THE ATTIC.

(2) UNIT MOUNTED VFD. COORDINATE VFD LOCATION WITH VFD MANUFACTURER REQUIRED CLEARENCES.

(3) COORDINATE AHU ACCESS DOOR LOCATIONS WITH STRUCTURAL COLUMNS, SHAFT WALLS, DUCTWORK AND PIPING. ALL DOORS MUST BE FULLY ACCESSIBLE AND ABLE TO OPEN. TYPICAL OF ALL AHU ACCESS DOORS.

(4) PROVIDE A FIELD ASSEMBLED AUXILIARY DRAIN PAN WITH SEPARATE DRAIN BELOW EACH AIR HANDLING UNIT, SET INTO PLACE ON THE CONCRETE PAD PRIOR TO THE RESPECTIVE AHU ASSEMBLY. THE AUXILIARY DRAIN PAN SHALL BE FULL SIZE OF THE AHU CONCRETE PAD (NOT LESS THAN 6-INCHES LARGER THAN THE AHU IN ALL DIMENSIONS) AND CONSTRUCTED OF MINIMUM 16-GAUGE TYPE 304 STAINLESS STEEL WITH UPTURNED EDGES AND FULLY WELDED SEAMS. PAN SHALL HAVE MINIMUM 2 ½" WALL HEIGHT, WITH 1 ½" SCHEDULE 80 PVC OR TYPE K COPPER DRAIN FITTING AND PIPE EXTENDING FROM THE SIDEWALL OF THE PAN TO THE NEAREST FLOOR SINK. IN ADDITION TO THE DRAIN, THE AUXILIARY DRAIN PAN SHALL BE EQUIPPED WITH A WATER-LEVEL DETECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT OFF THE AHU AND ALARM THE BAS PRIOR TO OVERFLOW OF THE DRAIN PAN.

GRAPHIC SCALE
SCALE: 1/4" = 1'-0"
UNIT OF MEASURE: FEET

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MECHANICAL
ENLARGED FLOOR
PLAN

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A/E PROJECT NO.
M-301
SHEET

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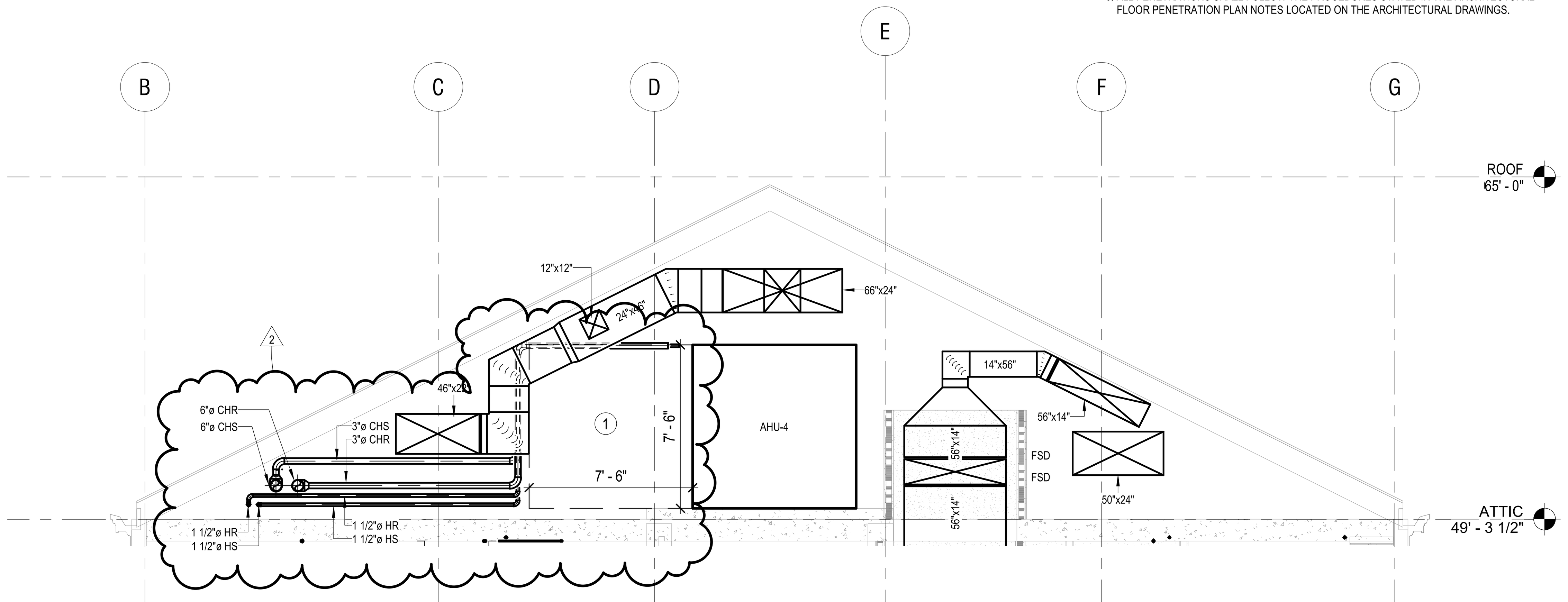
GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.
3. ALL PENETRATIONS SHALL FOLLOW THE PROCEDURES STATED IN THE ARCHITECTURAL FLOOR PENETRATION PLAN NOTES LOCATED ON THE ARCHITECTURAL DRAWINGS.

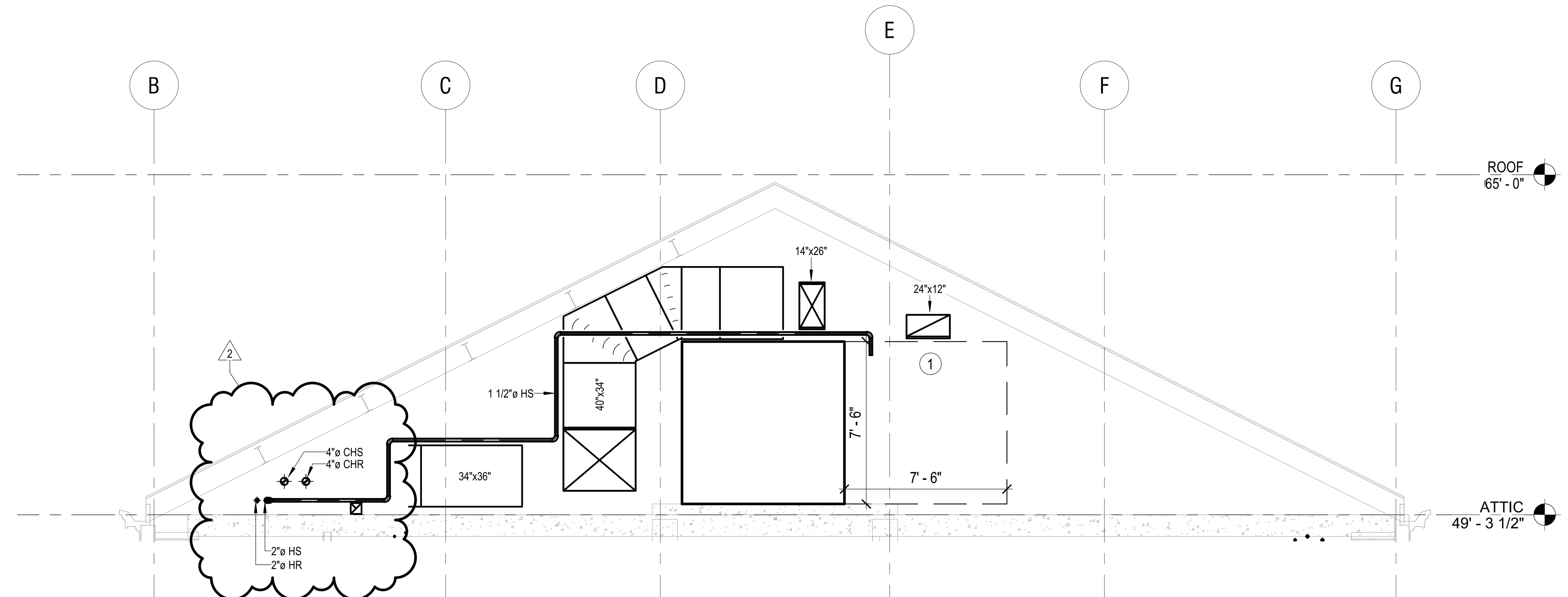
DRAWING NOTES

(1) PROVIDE MINIMUM INDICATED CLEARENCE FOR COIL PULL. NO UTILITIES ARE TO BE RUN THROUGH THIS CLEARANCE ZONE.

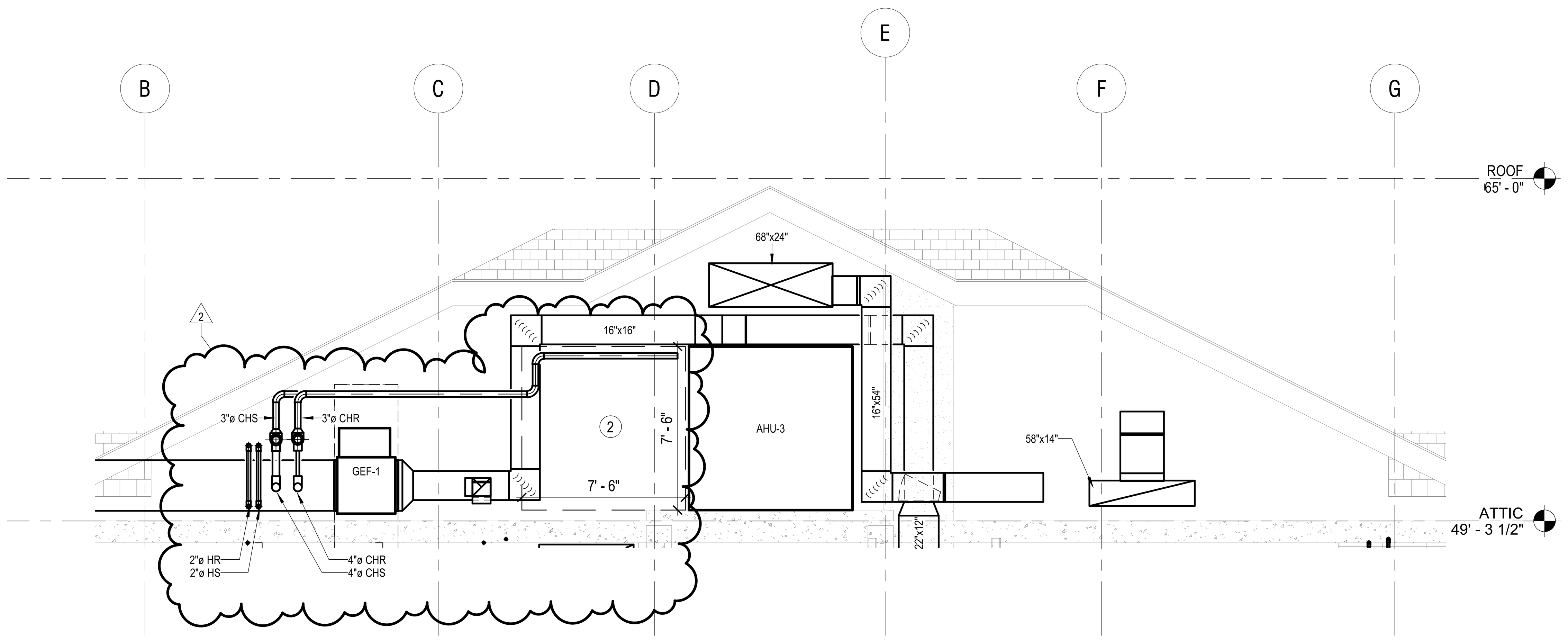
(2) PROVIDE MINIMUM INDICATED CLEARANCE IN FRONT OF AHU VFD AND ELECTRIC PANEL. NO UTILITIES ARE TO BE RUN THROUGH THIS CLEARANCE ZONE.



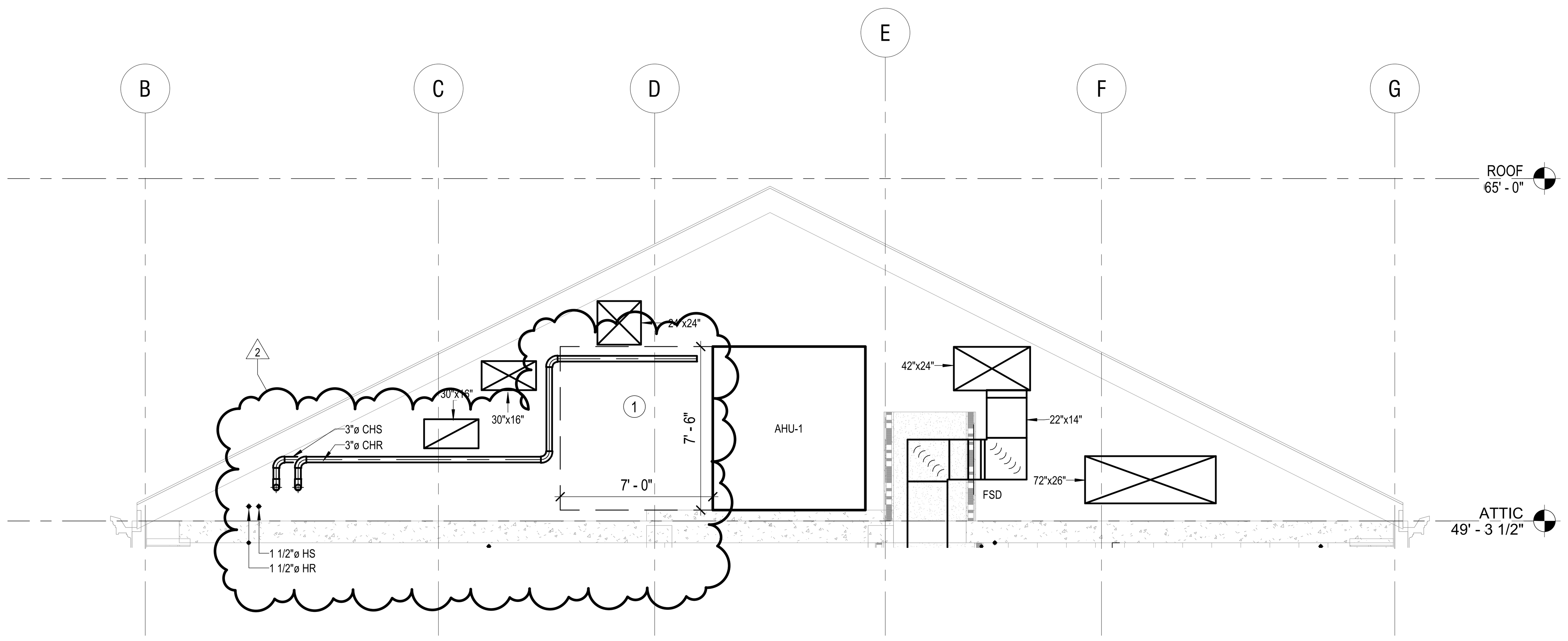
6 (M-105 | M-303) **MECHANICAL SECTION 6 - ATTIC**
SCALE: 1/4" = 1'-0"



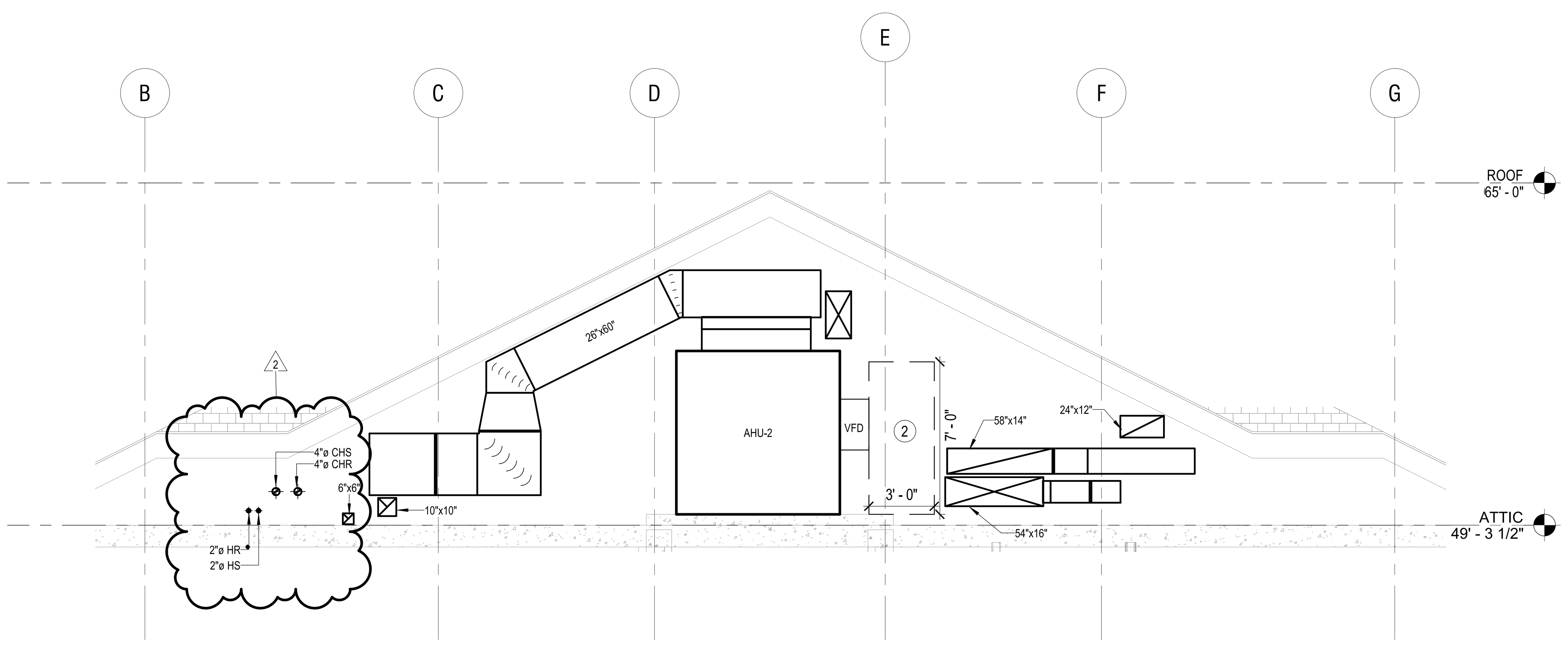
3 (M-105 | M-303) **MECHANICAL SECTION 3 - ATTIC**
SCALE: 1/4" = 1'-0"



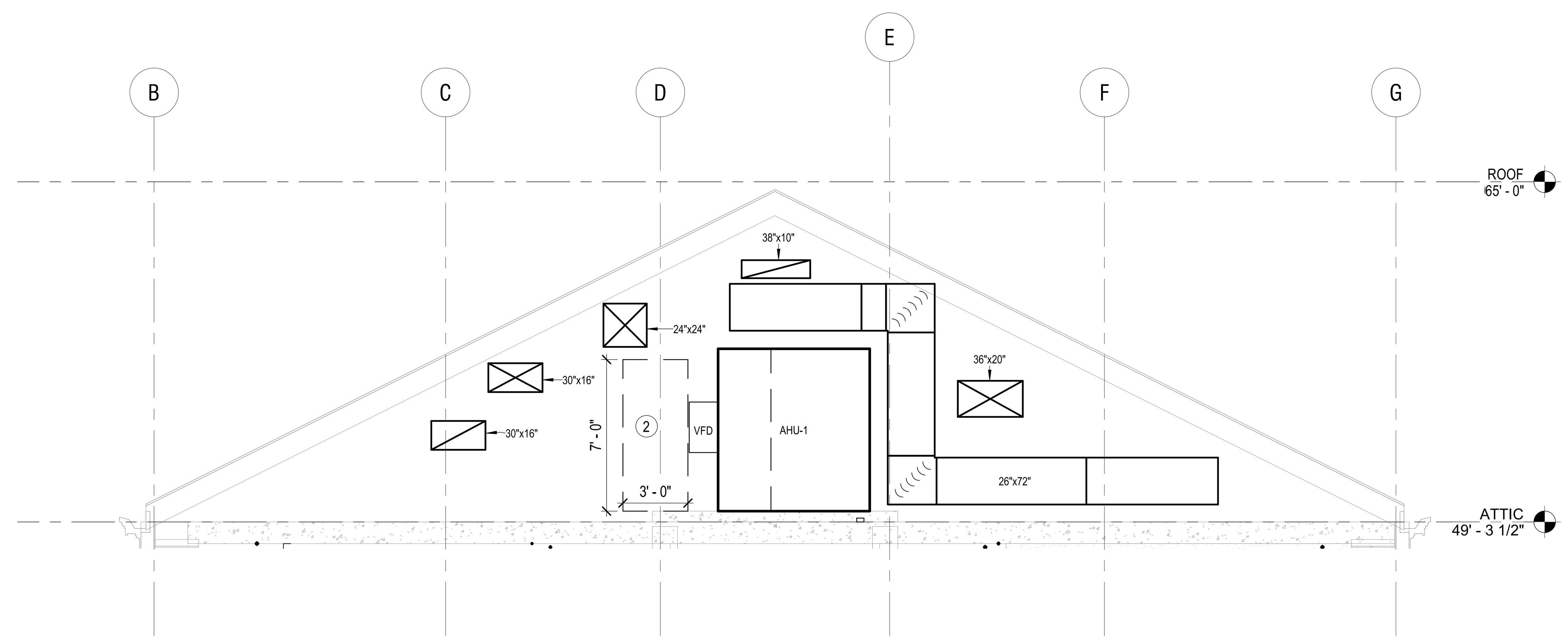
5 (M-105 | M-303) **MECHANICAL SECTION 5 - ATTIC**
SCALE: 1/4" = 1'-0"



2 (M-105 | M-303) **MECHANICAL SECTION 2 - ATTIC**
SCALE: 1/4" = 1'-0"



4 (M-105 | M-303) **MECHANICAL SECTION 4 - ATTIC**
SCALE: 1/4" = 1'-0"



1 (M-105 | M-303) **MECHANICAL SECTION 1 - ATTIC**
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE
4 2 0 4 8
SCALE: 1/4" = 1'-0"
UNIT OF MEASURE: FEET

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MECHANICAL SECTIONS

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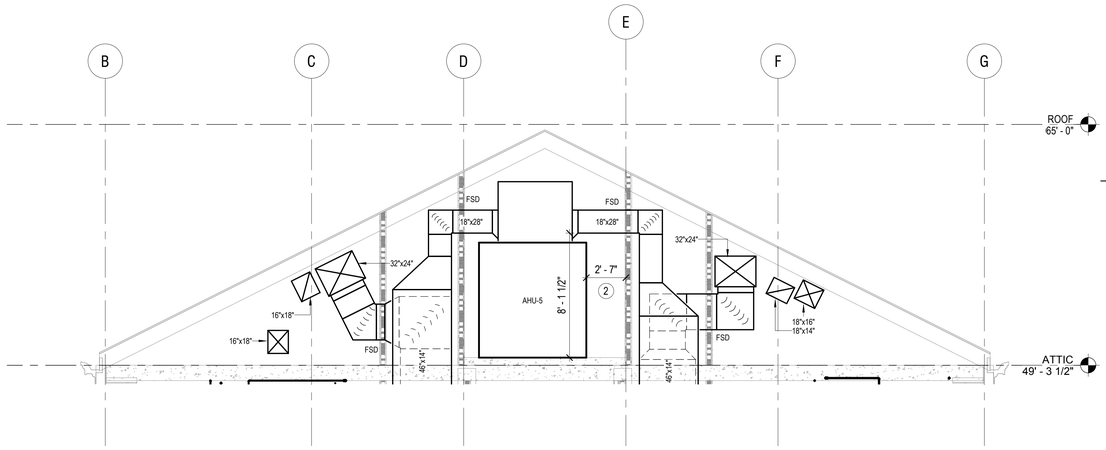
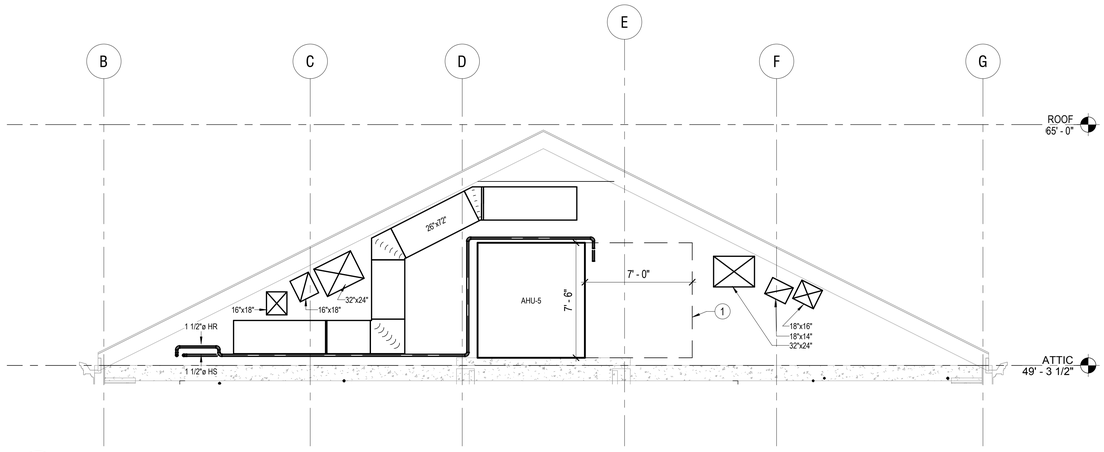


3 M-105 M-304

MECHANICAL SECTION 9 - ATTIC

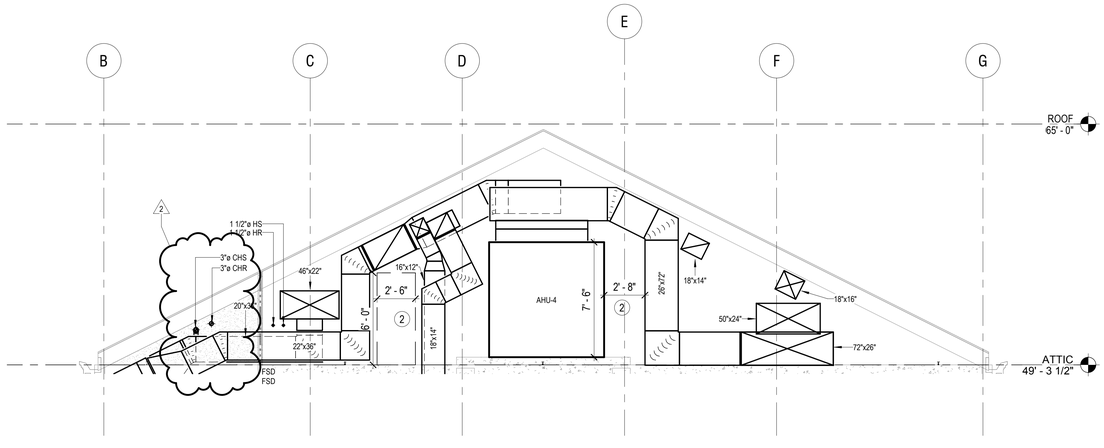
SCALE: 1/4" = 1'-0"



2 M-105 M-304

MECHANICAL SECTION 8 - ATTIC

SCALE: 1/4" = 1'-0"



1 M-105 M-304

MECHANICAL SECTION 7 - ATTIC

SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. REFER TO M-001 FOR GENERAL NOTES.
2. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.
3. ALL PENETRATIONS SHALL FOLLOW THE PROCEDURES STATED IN THE ARCHITECTURAL FLOOR PENETRATION PLAN NOTES LOCATED ON THE ARCHITECTURAL DRAWINGS.

DRAWING NOTES

1. PROVIDE MINIMUM INDICATED CLEARENCE FOR COIL PULL. NO UTILITIES ARE TO BE RUN THROUGH THIS CLEARANCE ZONE.
2. PROVIDE AS MUCH CLEARANCE AS POSSIBLE BETWEEN OBSTRUCTIONS TO ALLOW A PATH OF TRAVEL.

GRAPHIC SCALE

4 2 0 4 8

SCALE: 1/4" = 1'-0"
UNIT OF MEASURE: FEET

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COLUMBIA, SC

RMF ENGINEERING INC. CHARLESTON, SC C-00831

ISSUE DATE: 10 FEBRUARY 2021
PHASE: BID DOCUMENTS

#	DATE	REVISION
2	03/10/21	ADDENDUM 2

MECHANICAL SECTIONS

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

M-304
SHEET

BIM 360://318380AD-USC LeConte College Renovations/318380AD_MEP_B360.rvt
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INPUT/OUTPUT SUMMARY

POINT NO.	SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUTS – ANALOG – MEASURED: RETURN TEMPERATURE	SUPPLY TEMPERATURE	DIFFERENTIAL PRESSURE	GPM	TEMPERATURE	PRESSURE	INPUTS – ANALOG – CALC.: RUN TIME	BTUH	TONS	TON-HR TOTALIZATION	INPUTS – BINARY: STATUS (DIFF. PRESS.)	STATUS (AMPS)	FLOW (FROM CC)	FAULT (FROM CC)	FAULT (FROM VFD)	OUTPUTS – BINARY: ENABLE/DISABLE	VALVE POSITION	EVAPORATOR INLET VALVE	OUTPUTS – ANALOG: VALVE POSITION	FAN SPEED	PUMP SPEED	SYSTEM FEATURES – ALARMS: LOSS OF FLOW	CC FAULT	VFD FAULT	HIGH DIFF. PRESS.	SYSTEM FEATURES – PROGRAMS: TIME SCHEDULING	LEAD/LAG ALTERNATE	PRIMARY/STANDBY ALTERNATE	GENERAL: COLOR GRAPHICS
1 - 4	CHWP-1							X					X			X	X					X			X				X	X
5 - 8	CHWP-2							X					X			X	X					X			X				X	X
9 - 13	CAMPUS CHILLED WATER	X		X			X													X										X
14 - 16	BUILDING CHILLED WATER	X	X	X																						X				X
17	BLDG CHILLED WATER FLOW METER				X																									X
18	BLDG CHILLED WATER ENERGY METER								X	X																				X

DRAWING NOTES:

1. DIFFERENTIAL PRESSURE SENSORS SHALL BE LOCATED IN THE CHILLED WATER PIPING TO ACHIEVE THE BEST COMPROMISE BETWEEN MINIMIZING PUMPING COSTS AND REDUCING THE DIFFERENTIAL VARIATIONS ACROSS THE SYSTEM CONTROL VALVES. SENSOR SHALL BE LOCATED A MINIMUM 2/3 DOWNSTREAM AND THE INITIAL BALANCED SET POINT DETERMINED THROUGH TEST AND BALANCE.
2. BRIDGE/DECOUPLER PIPE SHALL BE A MINIMUM STRAIGHT LENGTH OF 18 INCHES (AS MEASURED FROM CHS TO CHR CENTERLINES) WITH A PRESSURE DROP OF LESS THAN 1.5 FT AT THE BUILDING FULL LOAD RATE.
3. PROIDE THE MANUFACTURER'S RECOMMENDED STRAIGHT LENGTHS OF PIPING UPSTREAM AND DOWNSTREAM OF THE FLOW METER.
4. CONNECT BUILDING DIGITAL ENERGY METER TO FLOW METER FM-1 AND TEMPERATURE SENSORS TS-CHS AND TS-CHR.
5. BALANCING VALVE SHALL BE SET FOR THE MINIMUM FLOW OF A SINGLE PUMP (BASED ON APPROVED PUMP SUBMITTAL), WHEN ALL SYSTEM CONTROL VALVES ARE CLOSED.
6. MANUAL FILL STATION SHALL BE REMOVED AND CAPPED AT COMPLETION OF CONSTRUCTION.

AAV	-	AUTOMATIC AIR VENT
CT	-	CURRENT TRANSMITTER
DPT	-	DIFFERENTIAL PRESSURE TRANSMITTER
FM	-	FLOW METER
NC	-	NORMALLY CLOSED
NO	-	NORMALLY OPEN
PS	-	PRESSURE SENSOR
TS	-	TEMPERATURE SENSOR
V	-	VALVE
VFD	-	VARIABLE FREQUENCY DRIVE

SEQUENCE OF OPERATION

PART 1 - TEMPERATURE CONTROL SEQUENCES

A. SEE SCHEMATICS FOR LOCATIONS OF ALL TEMPERATURE TRANSMITTERS, PANELS, VALVES, AND EQUIPMENT; WHERE SUCH DEVICES ARE NOT INDICATED, HOWEVER REQUIRED BY THE SEQUENCES, THEY SHALL BE PROVIDED BY THE BUILDING AUTOMATION SYSTEM (BAS) PROVIDER AND LOCATED IN THE FIELD BY THE ENGINEER.

B. A FULL COMMUNICATIONS INTERFACE AND COMPLETE INTEROPERABILITY WITH THE EXISTING CAMPUS BAS SHALL BE PROVIDED TO PERFORM THE FUNCTIONS HEREIN DESCRIBED OR INDICATED IN THE CONTRACT DOCUMENTS.

C. THE BAS PROVIDER SHALL PREPARE AND SUBMIT FOR APPROVAL A COMPOSITE CONTROL AND INTERLOCK WIRING DIAGRAM DEPICTING THE CHILLED WATER SYSTEM PROVIDED. THE BAS PROVIDER SHALL BE RESPONSIBLE FOR AND SHALL PROVIDE ALL CONTROL AND INTERLOCK WIRING FOR THE ENTIRE SYSTEM.

D. ALL SET POINTS SHALL BE FULLY ADJUSTABLE (ADJ) FROM THE BAS.

PART 2 - TEMPERATURE CONTROL SEQUENCES

A. AUTOMATIC START/STOP CONTROL OF ALL CHILLED WATER PUMPS AND OPEN/CLOSE CONTROL OF ALL SYSTEM VALVES SHALL BE PROVIDED THROUGH THE BAS.

B. ALL CHILLED WATER PUMPS SHALL BE INITIALLY MANUALLY INDEXED TO THE AUTOMATIC POSITION VIA THE H-O-A SWITCH ON THE PUMP VARIABLE FREQUENCY DRIVE (VFD).

C. THE CHILLED WATER SYSTEM SHALL BE ENERGIZED MANUALLY THROUGH THE BAS OPERATOR'S WORK STATION, AUTOMATICALLY WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE FIFTY-FIVE (55) DEGREES FAHRENHEIT (ADJUSTABLE), AUTOMATICALLY ON A 365 DAY/24 HOUR GRAPHIC INTERFACE SCHEDULER PROGRAM, OR AUTOMATICALLY ON A NEED FOR CHILLED WATER FROM ANY SYSTEM LOAD. UPON START OF THE CHILLED WATER SYSTEM, THE BAS SHALL AUTOMATICALLY START TREND LOG REPORTS.

D. BUILDING CHILLED WATER PUMP CONTROL

1. TWO (2) CHILLED WATER PUMPS ARE EACH SIZED FOR THE 100% OF THE BUILDING CHILLED WATER LOAD AND SHALL BE CONTROLLED IN A PRIMARY/STANDBY OPERATION WITH ONE PUMP FULLY REDUNDANT.
2. THE PRIMARY CHILLED WATER PUMP AS SELECTED BY THE PRIMARY/STANDBY PROGRAM SHALL BE STARTED AT A REDUCED SPEED THROUGH ITS VARIABLE FREQUENCY PUMP DRIVE WHEN SYSTEM ENABLE IS INITIATED. REDUCED STARTING SPEED SHALL BE THE MINIMUM SETTING OF THE VARIABLE FREQUENCY PUMP DRIVE AND SHALL BE FULLY ADJUSTABLE THROUGHOUT THE RANGE OF THE DRIVE.
3. THE CHILLED WATER PUMP SPEED SHALL BE MODULATED VIA THE PUMP VFD TO MAINTAIN THE SYSTEM DIFFERENTIAL PRESSURE SET POINT AS SEEN BY BUILDING DIFFERENTIAL PRESSURE TRANSMITTER DPT-2.
4. THE CHILLED WATER DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET TO ALWAYS HAVE ONE CHILLED WATER CONTROL VALVE ON ITS PIPING DISTRIBUTION 80% OPEN SO THE PUMP OPERATED AT THE LOWEST SPEED AND PRESSURE REQUIRED TO SATISFY THE CURRENT LOAD. EVERY 10 MINUTES (ADJ) ALL CHILLED WATER VALVES SHALL BE POLLED. WHEN THE MOST OPEN CHILLED WATER VALVE IS MORE THAN 80% OPEN, THE BAS SHALL RESET THE DIFFERENTIAL PRESSURE SETPOINT BY 0.5 PSI (ADJ). WHEN ALL COOLING CONTROL VALVES ARE 60% (ADJ) OR BELOW, THE BAS SHALL RESET THE DIFFERENTIAL PRESSURE SETPOINT DOWN BY 0.25 PSI.
5. THE REMOTE DIFFERENTIAL PRESSURE SETPOINTS SHALL BE MAINTAINED BETWEEN MAXIMUM AND MINIMUM PRESSURES. THE MAXIMUM PRESSURE LIMIT IS THE PRESSURE REQUIRED TO PROVIDE FULL FLOW TO ALL CHILLED WATER CONTROL VALVES SUMULTANEOUSLY (DETERMINED AT TAB). THE MINIMUM PRESSURE LIMIT IS THE PRESSURE CORRELATING TO THE LOWEST SPPED THE PUMP MOTOR IS ALLOWED TO BE OPERATED AT TO MAINTAIN STABLE PUMP OPERATION.
6. ON A DROP IN THE SYSTEM DIFFERENTIAL PRESSURE BELOW THE DPT-2 SET POINT, THE LEAD CHILLED WATER PUMP SPEED SHALL BE GRADUALLY INCREASED VIA THE PUMP VFD TO MAINTAIN THE SYSTEM DIFFERENTIAL PRESSURE SET POINT. ON A RISE IN SYSTEM DIFFERENTIAL PRESSURE. THE REVERSE SHALL OCCUR.
7. THE SYSTEM DIFFERENTIAL PRESSURE SET POINT FOR DPT-2 SHALL BE DETERMINED BY THE BAS PROVIDER AND TAB CONTRACTOR AS REQUIRED TO MATCH INSTALLED SYSTEM PERFORMANCE REQUIREMENT.

E. CHILLED WATER TEMPERATURE CONTROL

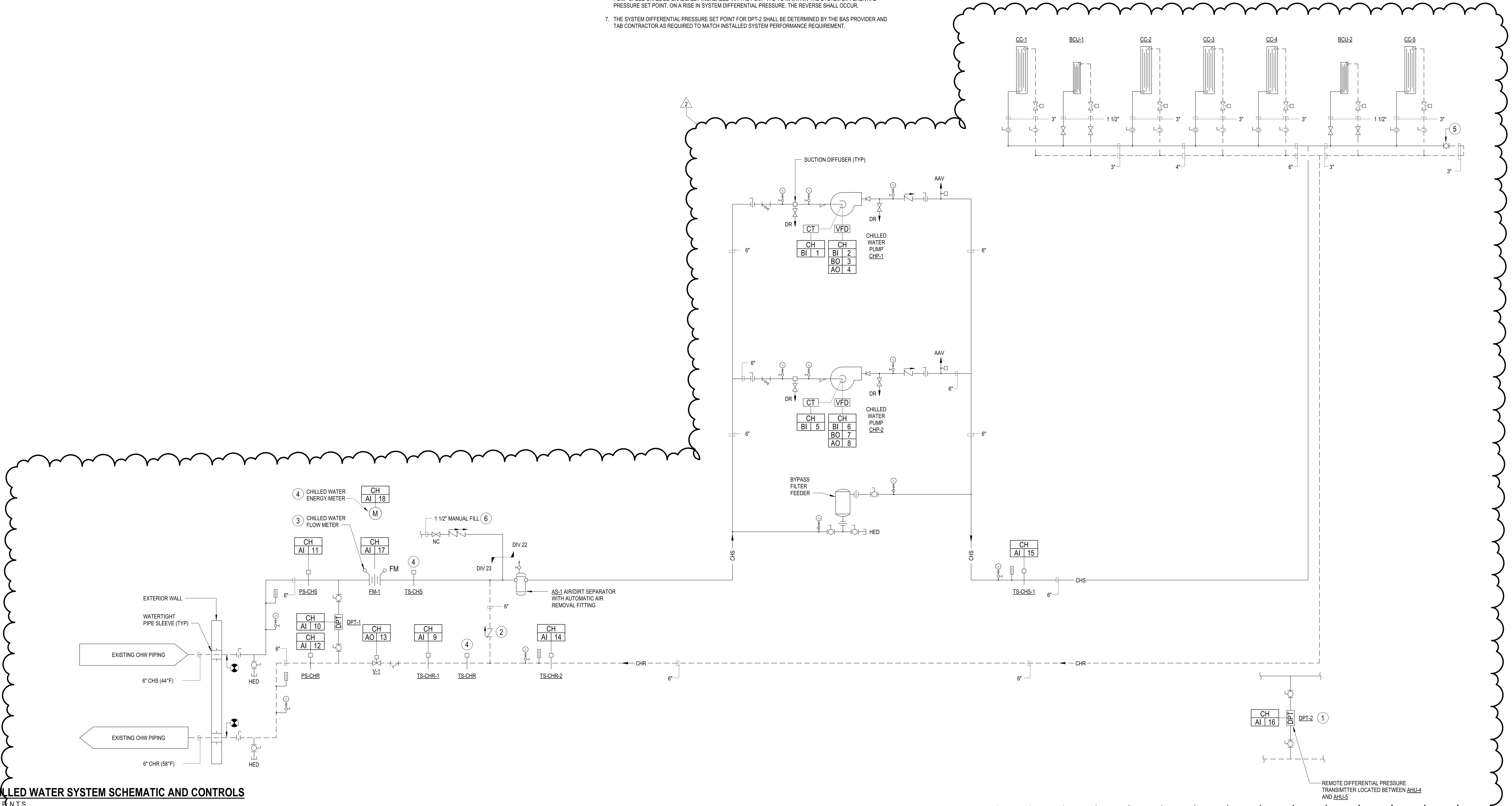
1. TWO-WAY VALVE V-1 SHALL BE NORMALLY CLOSED.
2. CAMPUS CHILLED WATER RETURN VALVE V-1 SHALL BE MODULATED TO MAINTAIN CHILLED WATER RETURN TEMPERATURE SET POINT (58°F-ADJ) AS SEEN BY TS-CHR-1.
3. WHEN THE BAS COMMANDS ANY OF THE AHUS INTO DEHUMIDIFICATION MODE, VALVE V-1 SHALL MODULATE FULL OPEN. WHEN ALL OF THE UNITS RETURN TO NORMAL COOLING MODE, VALVE V-1 SHALL RETURN TO TS-CHR-1 CONTROL.

F. ALARMS & FAILURE MODES

1. UPON A FAILURE OF THE PRIMARY CHILLED WATER PUMP TO OPERATE (AS SENSED BY ITS CURRENT TRANSDUCER), AN ALARM SHALL BE ANNUNCIATED AT THE BAS. THE FAILED PRIMARY CHILLED WATER PUMP SHALL BE DISABLED AND THE STANDBY CHILLED WATER PUMP SHALL BE ENABLED.
2. CHILLED WATER RETURN VALVE V-1 SHALL FAIL OPEN.
3. HIGH CHILLED WATER DIFFERENTIAL PRESSURE AS SENSED BY DPT-2. (HIGH LIMIT ALARM SETTING SHALL BE 25% ABOVE SET POINT)
4. UPON A LOSS OF BUILDING POWER, CHILLED WATER DISTRIBUTION OPERATION SHALL BE DISABLED.

G. PROGRAMS

1. THE PUMP PRIMARY/STANDBY PROGRAMS SHALL BE WRITTEN BY THE BAS PROVIDER TO EQUALIZE THE RUN AND LOAD TIMES ON THE EQUIPMENT (ADJUSTABLE).
2. THE BAS SHALL BE CONNECTED TO THE VARIABLE FREQUENCY DRIVES FOR NUMERIC AND GRAPHIC DISPLAY OF ALL POSSIBLE CHILLED WATER PUMP PARAMETERS.



1 / M-502 **CHILLED WATER SYSTEM SCHEMATIC AND CONTROLS**
SCALE: N.T.S.

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ISSUE DATE: 10 FEBRUARY 2021
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#	DATE	REVISION
2	03/10/21	ADDENDUM 2

MECHANICAL CONTROLS AND SCHEMATICS

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

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AIR HANDLING UNIT SCHEDULE

DESIGNATION	LOCATION	SERVICE	AIRFLOW CFM	AIRFLOW DESIGN OA CFM	AIRFLOW MINIMUM OA CFM	SUPPLY FAN	RELIEF OR RETURN FAN	COOLING COIL	HEATING COIL	PREFILTER	FINAL FILTER	WEIGHT (LBS)	ELECTRICAL VOLTS	ELECTRICAL PHASE	ELECTRICAL HERTZ	BASIS OF DESIGN	REMARKS
AHU-1	ATTIC	BUILDING	16,750	2,400	1,685	SF-1	RF-1	CC-1	HC-1	F-1-1	F-1-2	17,551	460	3	60	YORK	1
AHU-2	ATTIC	BUILDING	19,055	4,800	2,385	SF-2	RF-2	CC-2	HC-2	F-2-1	F-2-2	18,233	460	3	60	YORK	1
AHU-3	ATTIC	BUILDING	17,285	4,720	3,890	SF-3	RF-3	CC-3	HC-3	F-3-1	F-3-2	18,107	460	3	60	YORK	1
AHU-4	ATTIC	BUILDING	17,360	2,800	2,130	SF-4	RF-4	CC-4	HC-4	F-4-1	F-4-2	18,295	460	3	60	YORK	1
AHU-5	ATTIC	BUILDING	16,500	2,700	1,945	SF-5	RF-5	CC-5	HC-5	F-5-1	F-5-2	17,551	460	3	60	YORK	1

REMARKS:
1. PROVIDE EACH UNIT IN SPLITS TO BE FIELD FABRICATED. CONTRACTOR TO COORDINATE UNIT SECTION SIZES WITH OPENINGS IN ATTIC DORMERS. SPLIT DISTANCES SHOULD NOT EXCEED 50" AND EACH UNIT SHOULD BE NO WIDER THAN 90".

2

FAN SCHEDULE

DESIG	SERVICE	TYPE	TOTAL CFM	NO. OF FANS	CFM/FAN	TSP (INCH WG)	ESP (INCH WG)	FAN RPM	MOTOR HP (PER FAN)	WHEEL DIAMETER (IN)	DRIVE	VFD REQUIRED	VFD ENCLOSURE	VFD BYPASS	ELECTRICAL (V/PH/HZ)	BASIS OF DESIGN	REMARKS
RF-1	AHU-1 RETURN	A	15070	2	7535	2.44	1.50	2207	7.5	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
RF-2	AHU-2 RETURN	A	16670	2	8335	2.38	1.50	2364	10.0	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
RF-3	AHU-3 RETURN	A	13340	2	6670	2.21	1.50	2009	7.5	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
RF-4	AHU-4 RETURN	A	15230	2	7615	2.54	1.50	2235	7.5	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
RF-5	AHU-5 RETURN	A	14560	2	7280	2.40	1.50	2150	7.5	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
SF-1	AHU-1 SUPPLY	A	16750	2	8375	6.29	3.00	3403	20.0	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
SF-2	AHU-2 SUPPLY	A	19055	2	9530	5.10	3.00	3594	20.0	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
SF-3	AHU-3 SUPPLY	A	17285	2	8645	6.16	3.00	3460	20.0	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
SF-4	AHU-4 SUPPLY	A	17360	2	8680	6.20	3.00	3473	20.0	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
SF-5	AHU-5 SUPPLY	A	16500	2	8250	6.14	3.00	3357	20.0	-	DIRECT	YES	NEMA 4X	NO	460/3/60	TWIN CITY MPQN	1,2,3
GEF-1	GENERAL EXHAUST	B	3525	1	3525	0.75	0.75	886	1.0	-	BELT	NO	-	-	460/3/60	GREENHECK BSQ-200	
EF-1	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-2	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-3	ELECTRICAL CLOSET	D	250	1	250	0.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-4	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-5	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-6	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-7	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	
EF-8	ELECTRICAL CLOSET	D	250	1	250	.26	0.25	1050	0.03	-	DIRECT	NO	-	-	120/1/60	GREENHECK SQ-95	

REMARKS:
1. PROVIDE WITH INVERTOR DUTY MOTOR AND VARIABLE FREQUENCY DRIVE.
2. TSP INCLUDES ADDITIONAL LOADED FILTER PRESSURE ALLOWANCES OF 0.50" WC FOR MERV 8 PREFILTER AND 0.75" WC FOR MERV 13 INTERMEDIATE FILTER.
3. FANS SHALL BE AN INTEGRAL PART OF A FACTORY FABRICATED AIR HANDLING UNIT.

2

COOLING COIL SCHEDULE

DESIG	SERVICE	CFM	OA CFM	EAT (DEG F) DB	EAT (DEG F) WB	LAT (DEG F) DB	LAT (DEG F) WB	TOTAL MBH	SENSIBLE MBH	GPM @ 44 DEG F EWT 58 DEG F LWT	MAXIMUM H20 PD (FT H20)	MAX FACE VELOCITY (FPM)	MAX FIN SPACING (FIN/IN.)	MAX AIR PD (IN. H20)	MAX NUMBER OF ROWS	FLUID	REMARKS
CC-1	AHU-1	16,750	2,400	79.40	64.70	51.0	50.5	687.8	521.4	98.3	15	465	10	1.0	8	WATER	
CC-2	AHU-2	19,055	4,800	81.80	66.20	51.0	50.5	884.6	642.6	126.4	15	465	10	1.0	8	WATER	
CC-3	AHU-3	17,285	4,300	81.90	66.20	51.0	50.5	802.7	584.3	114.7	15	465	10	1.0	8	WATER	
CC-4	AHU-4	17,360	4,720	79.80	64.90	51.0	50.5	728.0	547.6	104.0	15	465	10	1.0	8	WATER	
CC-5	AHU-5	16,500	2,700	80.0	65.0	51.0	50.5	696.9	524.4	99.6	15	465	10	1.0	8	WATER	

HEATING COIL SCHEDULE

DESIGNATION	SERVICE	AIRFLOW CFM	AIRFLOW OA CFM	EAT (°F) DB	EAT (°F) WB	LAT (°F) DB	LAT (°F) WB	MBH	GPM @ 160°F EWT 140°F LWT	MAXIMUM H20 PD (FT H20)	MAXIMUM FACE VEL (FPM)	MAX FIN SPACING (FIN/IN)	MAXIMU M AIR PD (IN H20)	NUMBER OF ROWS	FLUID	REMARKS
HC-1	AHU-1	8,375	2,400	46.6	41.7	55	45.8	82	8.2	15.0	500	8	0.25	1	WATER	1
HC-2	AHU-2	9,530	4,800	46.6	41.7	55	45.8	82	8.2	15.0	500	8	0.25	1	WATER	1
HC-3	AHU-3	8,645	4,300	46.6	41.7	55	45.8	82	8.2	15.0	500	8	0.25	1	WATER	1
HC-4	AHU-4	8,680	2,800	46.6	41.7	55	45.8	82	8.2	15.0	500	8	0.25	1	WATER	1
HC-5	AHU-5	8,250	2,700	46.6	41.7	55	45.8	82	8.2	15.0	500	8	0.25	1	WATER	1

REMARKS:
1. HEATING COIL AIRSIDE PRESSURE LOSS SHALL BE CALCULATED USING MAXIMUM AHU AIR FLOW.

FILTER SCHEDULE

DESIG	SERVICE	APPROX. BANK DIMENSIONS (IN.) (WxHxD)	NO. CARTRIDGES	CARTRIDGE SIZE (IN) (WxHxD)	MAX FACE VELOCITY (FPM)	MEDIA AREA PER CARTRIDGE (SQ. FT)	MAXIMUM INITIAL PD @ 500 FPM (IN. WG)	MERV RATING	BASIS OF DESIGN	REMARKS
F-1-1	AHU-1	72x72x2	9	24x24x2	450	-	0.24	8	CAMFIL FARR 30/30	
F-1-2	AHU-1	72x72x2	9	24x24x2	450	-	0.47	13	CAMFIL FARR RIGAFLO	
F-2-1	AHU-2	80x72x2	12	20x24x2	450	-	0.25	8	CAMFIL FARR 30/30	
F-2-2	AHU-2	80x72x2	12	20x24x2	450	-	0.49	13	CAMFIL FARR RIGAFLO	
F-3-1	AHU-3	72x72x2	9	24x24x2	450	-	0.25	8	CAMFIL FARR 30/30	
F-3-2	AHU-3	72x72x2	9	24x24x2	450	-	0.50	13	CAMFIL FARR RIGAFLO	
F-4-1	AHU-4	72x72x2	9	24x24x2	450	-	0.26	8	CAMFIL FARR 30/30	
F-4-2	AHU-4	72x72x2	9	24x24x2	450	-	0.50	13	CAMFIL FARR RIGAFLO	
F-5-1	AHU-5	72x72x2	9	24x24x2	450	-	0.24	8	CAMFIL FARR 30/30	
F-5-2	AHU-5	72x72x2	9	24x24x2	450	-	0.46	13	CAMFIL FARR RIGAFLO	

AIR DEVICE SCHEDULE

NUMBER	DUTY	TYPE	CFM MIN	CFM MAX	FACE/MODULE SIZE (IN)	NOMINAL DUCT SIZE (IN)	BLOW	MAX TOTAL AIR PD (IN H2O)	MAX NOISE CRITERIA VALUE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	REMARKS
A1	CEILING SUPPLY DIFFUSER	A	0	200	24"x24"	8"ø	4-WAY	0.10	10	TITUS	OMNI	1,2,3,4
A2	CEILING SUPPLY DIFFUSER	A	201	325	24"x24"	10"ø	4-WAY	0.10	10	TITUS	OMNI	1,2,3,4
B1	SIDEWALL SUPPLY GRILLE	B	0	300	12"x12"	12"x12"	ADJUSTABLE	0.10	10	TITUS	301FL	2,3
C1	SIDEWALL SUPPLY GRILLE	C	0	100	12"x6"	6"x6"	ADJUSTABLE	0.10	10	TITUS	301RL	2,3
C2	SIDEWALL SUPPLY GRILLE	C	101	250	10"x10"	10"x10"	ADJUSTABLE	0.10	10	TITUS	301RL	2,3
C3	SIDEWALL SUPPLY GRILLE	C	251	400	12"x12"	12"x12"	ADJUSTABLE	0.10	10	TITUS	301RL	2,3
C4	SIDEWALL SUPPLY GRILLE	C	251	400	12"x12"	12"x12"	ADJUSTABLE	0.10	10	TITUS	301RL	2,3
C5	SIDEWALL SUPPLY GRILLE	C	401	1000	24"x10"	24"x10"	ADJUSTABLE	0.10	10	TITUS	301RL	2,3
D1	CEILING SUPPLY DIFFUSER (ROUND)	D	0	200	18"ø	8"ø	0° DEFL	0.10	10	TITUS	R- OMNI	2,3,4
E1	CEILING RETURN REGISTER	E	0	475	24"x24"	15"x15"	-	0.05	10	TITUS	PAR	1,2,3
F1	CEILING EXHAUST REGISTER	F	0	75	12"x12"	6"x6"	-	0.10	20	TITUS	PAR-AA	1,2,3
G1	SIDEWALL EXHAUST GRILLE	G	0	100	6"x6"	6"x6"	35° DEFL.	0.10	20	TITUS	355FL	2,3
G2	SIDEWALL EXHAUST GRILLE	G	0	250	12"x12"	12"x12"	35° DEFL.	0.1	20	TITUS	355FL	2,3
G3	SIDEWALL EXHAUST GRILLE	G	0	500	18"x12"	18"x12"	35° DEFL.	0.10	20	TITUS	355FL	2,3

REMARKS:
1. SCHEDULED SIZE IS NOMINAL, AND WHERE REQUIRED SHALL FIT WITHIN 24"x48" OR 24"x24" ARCHITECTURAL ACOUSTICAL CEILING GRID.
2. MAX NC VALUE SHALL BE BASED ON OCTAVE BAND 2-7 SOUND POWER LEVELS MINUS ROOM ABSORBTION OF 10dB.
3. GENERALLY, ALL AIR DEVICES SHALL BE FACTORY STANDARD COLOR WHITE, UNLESS OTHERWISE NOTED. ALL AIR DEVICES ON COLORED VERTICAL ALL SURFACES SHALL BE PAINTED TO MATCH THE WALL COLOR.
4. PROVIDE FACTORY-INSULATED R-6 FOIL-BACKED INSULATION AND EARTHQUAKE TABS.

DUPLEX CONDENSATE RETURN UNIT SCHEDULE

DESIGN	SERVICE	CAPACITY SQ FT EDR	GPM	DISCHARGE (PSIG)	RECEIVER CAPACITY (GAL)	RECEIVER CONNECTION SIZE (IN)	DISCHARGE SIZE (IN)	VENT SIZE (IN)	MOTOR HP	RPM	ELECTRICAL	BASIS OF DESIGN	REMARKS
CRU-1	BUILDING STEAM	10,000	15	60	21	2.5	1.25	1.5	2.0	3500	460/3/60	SPIRAX-SARCO V SERIES	1

REMARKS:
1. FURNISH WITH CONTROL PANEL TO INCLUDE MOTOR STARTERS, AL TERNATORS, FLOAT SWITCHES, HAND ON-OFF SWITCHES, NEMA 3R ENCLOSURE.

STEAM PRESSURE REDUCING VALVE SCHEDULE

DESIGNATION	SERVICE	PRESSURE INLET (PSI)	PRESSURE OUTLET (PSI)	VALVE CAPACITY DEMAND LOAD (LB/HR)	VALVE CAPACITY LB/HR @ CRITICAL VELOCTY	VALVE SIZE (IN)	PIPE SIZE (IN) UPSTREAM	PIPE SIZE (IN) DOWNSTREAM	BASIS OF DESIGN	REMARKS
PRV-1A	BLDG STEAM	125	15	800	965	1	1.25	2.5	SPIRAX/SARCO 25P	1
PRV-1B	BLDG STEAM	125	15	1600	2435	1.5	2	4	SPIRAX/SARCO 25P	1

REMARKS:
1. PRESSURE REDUCING VALVE SHALL BE REDUCED PORT.

STEAM TRAP SCHEDULE

DESIGNATION	SERVICE	CAPACITY (LB/HR)	PRESSURE DIFF (PSI)	MAX OPERATING PRESSURE (PSI)	TRAP SIZE (IN)	TYPE	BASIS OF DESIGN
ST-1	LOW PRESSURE DRIPS	200	0.5	25	3/4	FLOAT AND THERMOSTATIC	SPIRAX SARCO/FT-15
ST-2	HIGH PRESSURE DRIPS	200	10.0	125	3/4	THERMODYNAMIC	SPIRAX SARCO/UTD52L
ST-3	HX-1	7200	10.0	25	2	FLOAT AND THERMOSTATIC	SPIRAX SARCO/FT-15

REMARKS:
1. TRAP CAPACITY INCLUDES A SAFETY FACTOR OF THREE (3).

FLASH TANK SCHEDULE

DESIGNATION	SYSTEM	VENT SIZE	CONDESATE RETURN LINE	DIMENSIONS DIAMETER	DIMENSIONS LENGTH	ORIENTATION	WEIGHT (LBS)	BASIS OF DESIGN	REMARKS
FT-1	BUILDING STEAM	3	2.5	6"	2' - 0"	HORIZONTAL	75	SPIRAX FLASH RECOVERY VESSEL	

SAFETY RELIEF VALVE SCHEDULE

DESIGNATION	SERVICE	RELIEF CAPACITY (LB/HR)	OPERATING PRESSURE (PSI)	RELIEF VALVE SETTING (PSI)	VALVE DESIGN PRESSURE RATING	VALVE SIZE (IN)	BASIS OF DESIGN	REMARKS
SRV-1	PRV-1	3400	15	25	250	2.5x3	SPIRAX SARCO/SV73	1

REMARKS:
1. PROVIDE 3" DRIP PAN ELBOW WITH 4" SAFETY RELIEF VENT AT DISCHARGE OF SAFETY RELIEF VALVE.

STEAM / HEATING WATER CONVERTOR SCHEDULE

DESIG	CAPACITY (MBH)	HEATING WATER SIDE GPM	EWT (ºF)	LWT (ºF)	TUBE VELOCITY (FT/S)	MAXIMUM PRESSURE DROP (PSI)	NO PASS	HEATING SURFACE (FT^2)	FOULING FACTOR	STEAM SIDE STEAM PRESSURE	SAT STEAM TEMP	COND LOAD (GPM)	BASIS OF DESIGN
HX-1	2400	240	140	160	5.58	1.0	2	40.6	0.0005	15	249.06	5	BELL AND GOSSETT SU

2

PUMP SCHEDULE

DESIG	SERVICE	TYPE	FLUID TEMP (DEG F)	CAPACITY (GPM)	HEAD (FT H20)	SUCTION X DISCHARGE (IN)	VFD REQUIRED	VFD ENCLOSURE	VFD BYPASS	ELECTRICAL (V/PH/HZ)	PUMP BHP	MOTOR HP	RPM	PUMP EFFICIENCY (%)	BASIS OF DESIGN	REMARKS
CHP-1	CHILLED WATER	A	44	583	65	5x4	YES	NEMA 12	NO	460/3/60	11.30	15	1800	84.7	BELL AND GOSSETT E-1510	1,2,3
CHP-2	CHILLED WATER	A	44	583	65	5x4	YES	NEMA 12	NO	460/3/60	11.30	15	1800	84.7	BELL AND GOSSETT E-1510	1,2,3
HWP-2	HEATING WATER	A	160	240	50	3x2.5	YES	NEMA 12	NO	460/3/60	4.09	5	1800	72.4	BELL AND GOSSETT E-1510	1,2,3
HWP-1	HEATING WATER	A	160	240	50	3x2.5	YES	NEMA 12	NO	460/3/60	4.09	5	1800	72.4	BELL AND GOSSETT E-1510	1,2,3

REMARKS:
1. PUMP MOTOR SHALL BE NON-OVERLOADING, THROUGH THE ENTIRE PUMP CURVE WITHOUT ENTERING MOTOR SERVICE FACTOR.
2. PUMPS WITH IMPROVED EFFICIENCIES, THEREBY REDUCING REQUIRED HORSEPOWER, MAY BE SUBMITTED FOR REVIEW DURING SUBMITTAL PROCESS.
3. PROVIDE WITH INVERTER DUTY MOTOR AND VARIABLE FREQUENCY DRIVE.

DUCT CONSTRUCTION AND LEAK TEST SCHEDULE

DUCT SYSTEM	MAXIMUM OPERATING PRESSURE (IN WG)	DUCT CONSTRUCTION PRESSURE CLASS (IN WG)	POSITIVE OR NEGATIVE	SMACNA DUCT SEAL CLASS	DUCT PRESSURE TEST TEST REQUIRED (YES/NO)	TEST PRESSURE (IN WG)	DUCT LEAK CLASS RECTANGULAR	DUCT LEAK CLASS ROUND	REMARKS
SUPPLY AIR	4"	4"	POSITIVE	A	YES	4"	4	2	1, 2
SUPPLY AIR	2"	2"	POSITIVE	A	NO	2"	4	2	3
RETURN AIR	-2"	2"	NEGATIVE	B	NO	2"	8	4	
EXHAUST AIR	-2"	2"	NEGATIVE	B	NO	2"	8	4	
OUTSIDE AIR	-2"	2"	NEGATIVE	B	NO	2"	8	4	
RELIEF AIR	2"	2"	POSITIVE	B	NO	2"	8	4	

REMARKS:
1. TEST PER SMACNA HVAC DUCT LEAKAGE TEST MANUAL, 2ND EDITION 2012.
2. AHU-1, 2, 3, 4, AND 5 SUPPLY DUCTWORK FROM AIR HANDLING UNIT TO AIR TERMINAL UNITS.
3. AHU-1, 2, 3, 4, AND 5 SUPPLY DUCTWORK FROM AIR TERMINAL UNITS TO AIR DEVICESM AND ALL OTHER SUPPLY AND RETURN DUCTWORK.

2

BLOWER COIL UNIT SCHEDULE

DESIGNATION	FAN CFM	FAN HP	COIL DUTY COOLING GPM	MAX H2O PD FT H2O	EWT ºF	EAT ºF DB	EAT ºF WB	COOL. CAP SENS (MBH)	COOL. CAP TOTAL (MBH)	ELECTRICAL (V/PH/HZ)	BASIS OF DESIGN	REMARKS
BCU-1	4000	2.0	17.0	2.13	48	80	67	93.7	117.7	208/3/60	JCI AVI	1
BCU-2	4000	2.0	17.0	2.13	48	80	67	93.7	117.7	208/3/60	JCI AVI	1
BCU-3	1300	0.75	6.0	15.0	48	80	67	32.0	43.0	208/3/60	JCI AVI	1

REMARKS:
1. BLOWER COIL UNIT SHALL BE COOLING ONLY.

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1801

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UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, SC

STATE OF SOUTH CAROLINA
RMF ENGINEERING INC. CHARLESTON, SC C-00831
REGISTERED ENGINEERS

ISSUE DATE: 10 FEBRUARY 2021
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2	03/10/21	ADDENDUM 2

MECHANICAL SCHEDULES

H27-6126-LC
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EXPANSION TANK SCHEDULE

DESIGNATION	SYSTEM	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	TYPE	DIMENSIONS		DRY WEIGHT (LBS)	ORIENTATION	BASIS OF DESIGN	REMARKS
					DIAMETER	HEIGHT				
ET-1	HEATING WATER	53	53	BUTYL BLADDER	2' - 0"	3' - 2"	190	VERTICAL	AMTROL L-SERIES	

2

AIR/DIRT SEPARATOR SCHEDULE

DESIGNATION	SYSTEM	FLOW RATE (GPM)	FLUID	TYPE	MAXIMUM PD (FT H2O)	MAXIMUM VELOCITY (FPS)	DIMENSIONS (IN)			SHIPPING WEIGHT (LBS)	BASIS OF DESIGN	REMARKS
							PIPE SIZE	DIAMETER	HEIGHT			
AS-1	CHILLED WATER	583	WATER	COALESCING	3.0	6.0	8	18	42	325	TACO/4900AD	
AS-2	HEATING WATER	240	WATER	COALESCING	3.0	6.0	6	14	34	245	TACO/4900AD	

SPLIT SYSTEM AIR-CONDITIONER SCHEDULE

DESIG	SERVICE	TYPE	INDOOR UNIT FAN SECTION				INDOOR UNIT COIL DATA				OUTDOOR UNIT DATA				REFRIGERANT	BASIS OF DESIGN	REMARKS
			CFM	ESP (IN WG)	MCA (AMPS)	ELECTRICAL (V/PH/HZ)	EAT (DEG F) DB	EAT (DEG F) WB	COOLING MBH	HEATING MBH	DESIG	MCA (AMPS)	ELECTRICAL (V/PH/HZ)	SEER			
AC-1	006 ELEC	CP	705	-	20	208/1/60	80.0	67.0	28.0	-	CU-1	20	208/1/60	18	R-410a	YORK DCP30	
AC-2	001 FIRE PUMP	HP	705	-	20	208/1/60	80.0	67.0	28.0	32.9	CU-2	20	208/1/60	18	R-410a	YORK DHP30	

THROUGH PENETRATION FIRESTOP SCHEDULE

A. THIS SCHEDULE IDENTIFIES REQUIREMENTS FOR ACCEPTABLE THROUGH PENETRATION FIRESTOPS FOR THIS PROJECT BASED ON BARRIER TYPE, BASIS OF BARRIER CONSTRUCTION, AND PENETRANT TYPE.
B. THROUGH PENETRATION FIRESTOPS ARE NOT REQUIRED FOR FLOOR PENETRATIONS CONTAINED TOTALLY WITHIN A RATED SHAFT ENCLOSURE.
C. FOR EACH PENETRATION, SELECT A THROUGH PENETRATION FIRESTOP BASED ON ACTUAL FIELD CONDITIONS, WHICH INCLUDE BUT ARE NOT LIMITED TO PENETRATION SIZE, PENETRATION SHAPE, PENETRANT MATERIAL(S), QUANTITY OF PENETRANTS PER PENETRATION, AND LOCATION(S) OF PENETRANT(S) WITHIN PENETRATION.
D. NOMENCLATURE OF UL CLASSIFIED FIRESTOP ASSEMBLIES USED IN THIS SCHEDULE IS IDENTICAL TO THAT USED IN CATALOGS OF APPROVED FIRESTOP MANUFACTURERS (SEE DIVISION 15) AND IN UNDERWRITERS LABORATORIES "FIRE RESISTANCE DIRECTORY."

RATED BARRIER				PENETRANT TYPE					
TYPE	BASIS OF CONSTRUCTION	FIRESTOP ASSEMBLY REQUIREMENTS		NO PENETRANTS	METALLIC, UNINSULATED PIPE OR TUBING (EX. COPPER, IRON, STEEL)	NONMETALLIC, UNINSULATED PIPE OR TUBING (EX. PVC, PP, FRPP)	INSULATED PIPES (EX. COPPER, IRON PLASTIC, STEEL) IN SYSTEMS OPERATING BETWEEN 32°F AND 122°F	INSULATED PIPES (EX. COPPER, IRON PLASTIC, STEEL) IN SYSTEMS OPERATING BELOW 32°F OR ABOVE 122°F	METAL DUCT (NOTE 1)
WALL	METAL STUDS & GYPSUM WALLBOARD (U400 SERIES)	UL CLASSIFIED SERIES	SINGLE PENETRANT	W-L-0000 SERIES OR NOTE 2	W-L-1000 SERIES	W-L-2000 SERIES	W-L-5000 SERIES	W-L-5000 SERIES	W-L-7000 SERIES
			MULTIPLE PENETRANTS		W-L-8000 SERIES (NOTE 3)		W-L-8000 SERIES (NOTE 3)	W-L-8000 SERIES (NOTE 3)	N/A
		F RATING		EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING
		T RATING		NOTE 5	NOTE 5	NOTE 5	NOTE 5	NOTE 5	NOTE 5
		EXCEPTIONS/ ADDED REQUIREMENTS		NONE	NOTE 8	NOTE 8	NONE	NOTE 4	NONE
WALL	POURED CONCRETE, CONCRETE BLOCK OR MASONRY (BLOCK & U900 SERIES) (ANY THICKNESS)	UL CLASSIFIED SERIES	SINGLE PENETRANT	W-J-0000 SERIES OR NOTE 2	C-AJ-1000 OR W-J-1000 SERIES	C-AJ-2000 OR W-J-2000 SERIES	C-AJ-5000 OR W-J-5000 SERIES	C-AJ-5000 OR W-J-5000 SERIES	C-AJ-7000 OR W-J-7000 SERIES
			MULTIPLE PENETRANTS		C-AJ-8000 OR W-J-8000 SERIES (NOTE 3)		C-AJ-8000 OR W-J-8000 (NOTE 3)	C-AJ-8000 OR W-J-8000 (NOTE 3)	N/A
		F RATING		EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING	EQUAL TO WALL RATING
		T RATING		NOTE 5	NOTE 5	NOTE 5	NOTE 5	NOTE 5	NOTE 5
		EXCEPTIONS/ ADDED REQUIREMENTS		NONE	NOTES 7 & 8	NOTE 8	NONE	NOTE 4	NONE
FLOOR	POURED CONCRETE (ANY THICKNESS)	UL CLASSIFIED SERIES	SINGLE PENETRANT	C-AJ-0000 SERIES F-A-0000 SERIES OR NOTE 2	C-AJ-1000 OR F-A-1000 SERIES	C-AJ-2000 OR F-A-2000 SERIES	C-AJ-5000 OR F-A-5000 SERIES	C-AJ-5000 OR F-A-5000 SERIES	C-AJ-7000 OR F-A-7000 SERIES
			MULTIPLE PENETRANTS		C-AJ-8000 OR F-A-8000 SERIES (NOTE 3)		C-AJ-8000 OR F-A-8000 (NOTE 3)	C-AJ-8000 OR F-A-8000 (NOTE 3)	N/A
		F RATING		EQUAL TO FLOOR RATING, BUT NOT LESS THAN 1 HR	EQUAL TO FLOOR RATING, BUT NOT LESS THAN 1 HR	EQUAL TO FLOOR RATING, BUT NOT LESS THAN 1 HR	EQUAL TO FLOOR RATING, BUT NOT LESS THAN 1 HR	EQUAL TO FLOOR RATING, BUT NOT LESS THAN 1 HR	EQUAL TO FLOOR RATING, BUT NOT LESS THAN 1 HR
		T RATING		NOTE 6	NOTE 6	NOTE 6	NOTE 6	NOTE 6	NOTE 6
		EXCEPTIONS/ ADDED REQUIREMENTS		NONE	NOTE 7	NONE	NONE	NOTE 4	NONE

NOTES:

1. THIS SCHEDULE'S DATA APPLY ONLY TO PENETRATIONS WITHOUT DAMPERS. FOR DAMPERED PENETRATIONS, REFER TO SPECIFICATIONS. AT DAMPERS, DO NOT APPLY MATERIAL THAT IS NOT INCLUDED IN THE DAMPER'S CLASSIFICATION.
2. SEAL OPENING USING BARRIER'S ORIGINAL CONSTRUCTION.
3. WHERE A SERIES 8000 CLASSIFIED SYSTEM IS NOT AVAILABLE, INSTALL PENETRANTS SINGLY, AND PROVIDE SINGLE-PENETRANT SYSTEMS.
4. FOR SYSTEMS THAT OPERATE BELOW 32°F OR ABOVE 122°F, COMPLY WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:
   A. PROVIDE TPFS SYSTEM USING INTUMESCENT ELASTOMERIC WRAP STRIP AS ITS FILL, VOID, OR CAVITY MATERIAL.
   B. DO NOT USE SERIES 8000 PENETRATIONS. PROVIDE ONLY SINGLE PENETRATIONS.
5. TEMPERATURE (T) RATINGS OF ASSEMBLIES IN WALLS MAY EQUAL ZERO.
6. TEMPERATURE (T) RATINGS OF ASSEMBLIES IN FLOORS SHALL EQUAL THE GREATER OF EITHER THE BARRIER RATING OR ONE HOUR EXCEPT AS FOLLOWS:
   A. AN ASSEMBLY'S T RATING MAY EQUAL ZERO WHEN THE PENETRANT ABOVE THE FLOOR PENETRATION IS CONTAINED AND LOCATED WITHIN THE CAVITY OF A WALL.
7. CLASSIFIED TPFS ASSEMBLY IS NOT REQUIRED WHEN ALL THE FOLLOWING CONDITIONS ARE MET:
   A. PENETRANT HAS A MAXIMUM NOMINAL DIAMETER OF 6-INCHES.
   B. PENETRATION HAS A MAXIMUM AREA OF 144 SQUARE INCHES.
   C. ANNULAR SPACE IS COMPLETELY FILLED WITH CONCRETE, GROUT, OR MORTAR THE FULL THICKNESS OF THE BARRIER.

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MECHANICAL SCHEDULES

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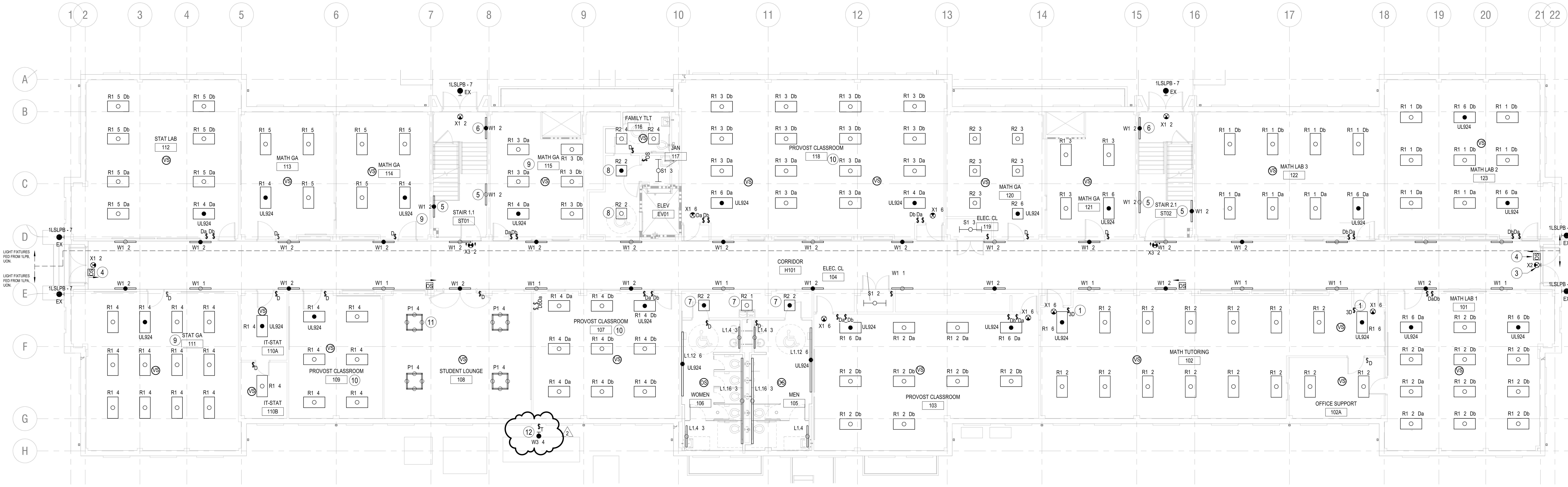

1 E-401 E-201
FIRST FLOOR FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE E-402 FOR DETAILS ON LIGHTING CONTROLS WITH IN THE CLASSROOMS.
2. PROVIDE AN UNSWITCHED HOT WIRE TO ALL EXIT SIGNS. TYPICAL.
3. FOR ALL W1 FIXTURES, MOUNT TOP OF FIXTURE AT 9' 4" AFF. UON. SEE ARCHITECTURAL PLAN A3.03 FOR ADDITIONAL DETAILS ON MOUNTING HEIGHTS AND LOCATIONS.
4. INSTALLATION OF MEP SYSTEMS SHALL BEGIN ONLY AFTER COMPREHENSIVE COORDINATION DRAWINGS ARE SUBMITTED TO THE ARCHITECT AND APPROVED BY THE ARCHITECT.
5. PROVIDE A UNIVERSAL VOLTAGE POWER PACK FOR THE EXISTING TO REMAIN CASE LIGHTING, TIE POWER PACK TO CORRIDOR OCCUPANCY SENSOR FOR CONTROL. SEE POWER PLANS FOR CIRCUIT NUMBER.
6. PROVIDE EXTERIOR PHOTOCELL FOR CONTROL OF EXTERIOR FIXTURES. COORDINATE LOCATION WITH ON-SITE CONDITIONS (TREES, SHADED AREAS) AND THE ARCHITECT.
7. NO LIGHTING CIRCUITS/CONDUITS SHALL CROSS THE STAIRWELLS. CIRCUITS SHALL BE ROUTED THROUGH THE SOFFIT PROVIDED ON THE CORRIDOR SIDE OF THE STAIRWELL. SEE ARCHITECTURAL PLANS FOR SOFFIT DETAILS. TYPICAL FOR ALL FLOORS.

DRAWING NOTES

(1) PROVIDE A 3-WAY DIMMER SWITCH. LIGHT LEVELS SHALL BE CAPABLE OF BEING CONTROLLED FROM EITHER ENTRY.

(2) NOT USED

(3) MOUNT BOTTOM OF FIXTURE 10' 6" AFF.

(4) MOUNT DEVICE 10' 6" AFF. AIM DOWN DEVICE TO ACHIEVE LONGEST RANGE POSSIBLE.

(5) MOUNT FIXTURE AT 9' 6" AFF.

(6) MOUNT FIXTURE AT 7' AFF.

(7) SET FIXTURE TO 2200 LUMENS.

(8) SET FIXTURE TO 3300 LUMENS.

(9) SET FIXTURE TO 4000 LUMENS.

(10) SET FIXTURE TO 5000 LUMENS.

(11) MOUNT BOTTOM OF FIXTURE AT 8' AFF. TYPICAL OF P1 FIXTURE.

(12) MOUNT BOTTOM OF FIXTURE AT 6' 8" AFG. CONDUIT SHALL BE ROUTED FROM BASEMENT UNDERGROUND, TRANSITION TO SURFACE MOUNTED 3/4" CONDUIT AT GRADE TO TIMER SWITCH TO FIXTURE. PROVIDE TIMER SWITCH, MOUNT CENTER OF DEVICE AT 3' AFG. FIXTURE SHALL ONLY BE ENERGIZED DURING EMERGENCY EVENT. ALL SURFACE MOUNTED BOXES, CONDUITS, AND FIXTURE SHALL MATCH THE BUILDING COLOR. VERIFY COLOR WITH ARCHITECT PRIOR TO ORDERING. 2

GRAPHIC SCALE
8 4 0 8 16
SCALE: 1/8" = 1'-0"
UNIT OF MEASURE: FEET

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FIRST FLOOR
LIGHTING PLAN

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LIGHTING FIXTURE SCHEDULE

	DESCRIPTION	LAMPS			VOLTS	MOUNTING	MOUNTING SURFACE	REMARKS	BASIS OF DESIGN MANUFACTURER	ALTERNATE MANUFACTURER	ALTERNATE MANUFACTURER
		TYPE	WATTS	COLOR TEMP.							
B	LED EMERGENCY FIXTURE, WITH 90 MINUTE BATTERY BACK	LED	2.5		277	WALL		FIXTURE COLOR SHALL MATCH THE COLOR OF THE BUILDING. COORDINATE WITH ARCHITECT PRIOR TO ORDERING.	LITHONIA #AFN-OEL-X-UVOLT-LTP-SDRT-WT	LIGHT ALARM# CAM-ACSD-OW-FT-P	HE WILLIAMS #EMER/DECO-X-D
L1.4	WALL MOUNTED LED LINEAR FIXTURE, DIRECT, 2" APERATURE, 4' IN LENGTH, 1000 LUMENS PER FOOT	LED	37	3500 K	277	WALL			MARK#S2LWD-4-80CRI-1000LMF-MIN1-MVOLT-WHT	AXIS# TB2WDLED-1000-80-35-SO-4-W-UNV-DP-1	FINELITE#HP2-WM-D-4'-V-835-F-96LG-277-SC-FC-1%-MB-FE-STD FINISH
L1.12	WALL MOUNTED LED LINEAR FIXTURE, DIRECT, 2" APERATURE, 12' IN LENGTH, 1000 LUMENS PER FOOT	LED	111	3500 K	277	WALL			MARK#S2LWD-12-80CRI-1000LMF-MIN1-MVOLT-WHT	AXIS# TB2WDLED-1000-80-35-SO-12-W-UNV-DP-1	FINELITE#HP2-WM-D-12'-V-835-F-96LG-277-SC-FC-1%-MB-FE-STD FINISH
L1.16	WALL MOUNTED LED LINEAR FIXTURE, DIRECT, 2" APERATURE, 16' IN LENGTH, 1000 LUMENS PER FOOT	LED	148	3500 K	277	WALL			MARK#S2LWD-16-80CRI-1000LMF-MIN1-MVOLT-WHT	AXIS# TB2WDLED-1000-80-35-SO-16-W-UNV-DP-1	FINELITE#HP2-WM-D-16'-V-835-F-96LG-277-SC-FC-1%-MB-FE-STD FINISH
P1	3x3 LINEAR SQUARE PENDANT FIXTURE	LED	60	3500 K	277	CEILING		ALL MITERED CORNERS AND LENS SHALL APPEAR CONTINUOUS.	DELRAY#C2L-3x3-W35-S	NULITE# RP13D-FF-05-L35-1C-U-D-FINISH CEILING-3X3 SQUARE	FINELITE#HP2-P-D-3'X3' SQUARE-H-835-F-96LG-277-SC-FC-1%-FA50-CEILING TYPE-FE-STD FINISH
R1	2x4 LED FLAT PANEL W/ FIELD SELECTABLE LUMENS (4000,5000,6000), 0-10V DIM	LED	53	3500 K	277	CEILING			LITHONIA #CPANL-2X4-40/50/60LM-35K-M2	HUBBELL# CFP24-55/41/3435	ELITE# 24-FPL-BL-LED-3000/4000/5000-DIM10-MVOLT-35K/40K/50K-85
R2	2x2 LED FLAT PANEL W/ FIELD SELECTABLE LUMENS (2200,3000,4400), 0-10V DIM	LED	32	3500 K	277	CEILING			LITHONIA #CPANL-2X2-24/33/44LM-35K-M2	HUBBELL# CFP22-40/33/2835	ELITE# 22-FPL-BL-LED-2000/3000/4000-DIM10-MVOLT-35K/40K/50K-85
S1	4' LED STRIP FIXTURE, 5000 LUMENS MINIMUM	LED	41	3500 K		SUSPENDED			LITHONIA #Z1LD-L48-5000LM-FST-MVOLT-35K-80CRI	COLUMBIA #MPS4-35ML-CW-EDU	HE WILLIAMS #75R-4-L50-8-35-DRV-UNV
S2	2' LED STRIP FIXTURE, WALL MOUNTED, 4000 LUMENS MINIMUM	LED	32	3500 K	277	WALL			LITHONIA #Z1LD-L24-3500LM-FST-MVOLT-35K-80CRI	COLUMBIA #MPS2-35HL-CW-EDU	HE WILLIAMS #75R-2-L32/832-DRV-UNV
W1	4' WALL MOUNTED LED FIXTURE, INDIRECT, 1000LUMENS PER FOOT	LED	30.52	3500 K	277	WALL			MARK #S2LWI-4-80CRI-1000LMF-MIN1-MVOLT-WHT	AXIS# TB2WILED-1000-80-35-SO-4-W-UNV-DP-1	HE WILLIAMS#MX2WU-4'-L12-8-35-F-DIM-UNV
W2	SEALED AND GASKETED LED FIXTURE, IP 67, 5000 LUMENS MINIMUM.	LED	32	3500 K	277	WALL			LITHONIA #FEM-L48-60000LM-LMAFL-MD-277-GZ10-35K-80CRI	COLUMBIA# LXEM4-35HL-RFA-EDU	HE WILLIAMS#96-4-L62/835-HIAFR-(L50)-(2)WMB-DIM-UNV
W3	WALL MOUNTED EXTERIOR LED WALL PACK	LED	26	3500 K	277	WALL			LITHONIA #DSXW1-10C-XXX-30K-XXX-MVOLT	HUBBELL# LNC2-12L-3K-070-3-U-DB	HE WILLIAMS#VWMH-L20-730-T3-X-CGL-DIM-UNV
X1	CEILING MOUNTED EXIT SIGN	Red LED	5		277	CEILING			LITHONIA	COLUMBIA	HE WILLIAMS
X2	WALL MOUNTED (BACK) EXIT SIGN	Red LED	5		277	WALL			LITHONIA	COLUMBIA	HE WILLIAMS
X3	WALL MOUNTED (SIDE) EXIT SIGN	Red LED	5		277	WALL			LITHONIA	COLUMBIA	HE WILLIAMS

DRAWING NOTES

1. ALTERNATE MANUFACTURES SHALL BE CONSIDERED FOR USE. ALL MANUFACTURE SHALL MEET DESIGN INTENT AND SPECIFICATIONS.

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LECONTE COLLEGE MAINTENANCE RENOVATION (RE-BID)
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COLUMBIA, SC

STATE OF SOUTH CAROLINA
RMF ENGINEERING INC.
CHARLESTON, SC
C-00831
REGISTERED ENGINEERS

ISSUE DATE: 10 FEBRUARY 2021
PHASE: BID DOCUMENTS

#	DATE	REVISION
1	02/23/21	ADDENDUM 1
2	03/10/21	ADDENDUM 2

LIGHT FIXTURE SCHEDULE

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.

SHEET
E-600

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Switchboard: MSLC

Location: ELEC 005A
Supply From:
Mounting:
Enclosure:
Volts: 480/277 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 65k
Mains Type: MCB
Mains Rating:
MCB Rating: 2000

Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	MECHB	3	400	400	77.20	
2	LP-BASE	3	100	100	8.36	
3	1LPA	3	200	200	26.08	
4	1LPB	3	200	200	27.54	
5	2LPA	3	200	200	35.27	
6	2LPB	3	200	200	25.22	
7	3LPA	3	200	200	29.62	
8	3LPB	3	200	200	22.77	
9	4LPA	3	200	200	35.12	
10	4LPB	3	200	200	24.53	
11	ATS-LS	3	200	200	11.81	
12	SPD	3	--	60	0.00	
13	ATS-EQ	3	200	200	65.74	
14	MECHP	3	800	800	346.36	
15	SPARE	3	--	200	0.00	
16	SPARE 400AF	3	--	400	0.00	
17	SPARE 400AF	3	--	400	0.00	
18						
19						
20						
				Total Conn. Load:	735.62	
				Total Amps:	885	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	85.12	100.00%	85.12		
HVAC	397.64	100.00%	397.64	Total Conn. Load (kVA):	735.62
LTG	46.82	100.00%	46.82	Total Est. Demand (kVA):	637.60
REC	206.04	52.43%	108.02	Total Conn (Amps).:	885
				Total Est. Demand (Amps):	767

Notes: Building Sq. Ft.: 73000

PANELBOARD: MECHB

LOCATION: BASEMENT
MOUNTING: Surface
ENCL NEMA: Type 1
MIN AIC: SEE ONE-LINE DIAGRAM
MAINS: MCB
VOLTS: 480/277 Wye
PHASE: 3
WIRES: 4
AMPS: 400

PANEL NOTES:
PROVIDE GROUND BUS
PROVIDE FULL SIZE NEUTRAL BUS UNLESS NOTED OTHERWISE

WIRE SIZE	LOAD DESCRIPTION	P	TRIP AMPS	TYPE	CKT	A		B		C		CKT	TYPE	TRIP AMPS	P	LOAD DESCRIPTION	WIRE SIZE
3#8 + 1#10GRD IN 1" CND	CHP-1	3	50 A		1	5.83	3.03					2		20 A	3	HWP-1	3#10 + 1#10GRD IN 1" CND
					3			5.83	3.03			4					
					5					5.83	3.03	6					
3#8 + 1#10GRD IN 1" CND	CHP-2	3	50 A		7	5.83	3.03					8		20 A	3	HWP-1	3#10 + 1#10GRD IN 1" CND
					9			5.83	3.03			10					
					11					5.83	3.03	12					
--	SPARE	1	20 A	--	13	0.00	8.00					14		40 A	3	WH-1	3#8 + 1#10GRD IN 1" CND
--	SPARE	1	20 A	--	15			0.00	8.00			16					
--	SPARE	1	20 A	--	17					0.00	8.00	18					
--	SPARE	1	20 A	--	19	0.00	0.00					20	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	21			0.00	0.00			22	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	23					0.00	0.00	24	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	25	0.00	0.00					26	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	27			0.00	0.00			28	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	29					0.00	0.00	30	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	31	0.00	0.00					32	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	33			0.00	0.00			34	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	35					0.00	0.00	36	--	20 A	1	SPARE	--
--	SPACE	--	--	--	37	0.00	0.00					38	--	--	--	SPACE	--
--	SPACE	--	--	--	39			0.00	0.00			40	--	--	--	SPACE	--
--	SPACE	--	--	--	41					0.00	0.00	42	--	--	--	SPACE	--
					TOTAL LOAD:	25.73 kVA		25.73 kVA		25.73 kVA							

BREAKER TYPE KEYS:
LO - INDICATES C.B. EQUIPPED WITH "LOCK-ON" DEVICE
GF - INDICATES C.B. IS GROUND FAULT TYPE (5mA FOR PERSONNEL)
ST - INDICATES C.B. EQUIPPED WITH SHUNT TRIP DEVICE
HT - INDICATES C.B. EQUIPPED WITH 30mA GROUND FAULT FOR EQUIPMENT

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	24.00	100.00%	24.00		
HVAC	53.20	100.00%	53.20	Total Conn. Load:	77.20 kVA
				Total Est. Demand:	77.20 kVA
				Total Conn. Current:	92.86 A
				Total Est. Demand Current:	92.86 A

PANELBOARD: LP-BASE

LOCATION: BASEMENT
MOUNTING: Surface
ENCL NEMA: Type 1
MIN AIC: 22K
MAINS: MLO
VOLTS: 480/277 Wye
PHASE: 3
WIRES: 4
AMPS: 100

PANEL NOTES:
PROVIDE GROUND BUS
PROVIDE FULL SIZE NEUTRAL BUS UNLESS NOTED OTHERWISE

WIRE SIZE	LOAD DESCRIPTION	P	TRIP AMPS	TYPE	CKT	A		B		C		CKT	TYPE	TRIP AMPS	P	LOAD DESCRIPTION	WIRE SIZE
	LTG OFFICE 003	1	20 A		1	1.00	0.40					2		20 A	1	LTG MECH. 006	
--	SPARE	1	20 A	--	3			0.00	0.00			4	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	5					0.00	0.00	6	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	7	0.00	0.00					8	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	9			0.00	0.00			10	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	11					0.00	0.00	12	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	13	0.00	0.00					14	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	15			0.00	0.00			16	--	20 A	1	SPARE	--
--	SPACE	--	--	--	17					0.00	0.00	18	--	--	--	SPACE	--
--	SPACE	--	--	--	19	0.00	0.00					20	--	--	--	SPACE	--
--	SPACE	--	--	--	21			0.00	0.00			22	--	--	--	SPACE	--
--	SPACE	--	--	--	23					0.00	0.00	24	--	--	--	SPACE	--
--	SPACE	--	--	--	25	0.00	2.33					26		50 A	3	T-RPBASE	SEE ONE-LINE
--	SPACE	--	--	--	27			0.00	1.95			28					
--	SPACE	--	--	--	29					0.00	2.69	30					
					TOTAL LOAD:	3.73 kVA		1.95 kVA		2.69 kVA							

BREAKER TYPE KEYS:
LO - INDICATES C.B. EQUIPPED WITH "LOCK-ON" DEVICE
GF - INDICATES C.B. IS GROUND FAULT TYPE (5mA FOR PERSONNEL)
ST - INDICATES C.B. EQUIPPED WITH SHUNT TRIP DEVICE
HT - INDICATES C.B. EQUIPPED WITH 30mA GROUND FAULT FOR EQUIPMENT

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LTG	1.40	100.00%	1.40		
REC	4.40	100.00%	4.40	Total Conn. Load:	8.36 kVA
Equipment	0.96	100.00%	0.96	Total Est. Demand:	8.36 kVA
HVAC	1.60	100.00%	1.60	Total Conn. Current:	10.06 A
				Total Est. Demand Current:	10.06 A

PANELBOARD: RPBASE

LOCATION: BASEMENT
MOUNTING: Surface
ENCL NEMA: Type 1
MIN AIC: 10K
MAINS: MCB
VOLTS: 208/120 Wye
PHASE: 3
WIRES: 4
AMPS: 100

PANEL NOTES:
PROVIDE GROUND BUS
PROVIDE FULL SIZE NEUTRAL BUS UNLESS NOTED OTHERWISE

WIRE SIZE	LOAD DESCRIPTION	P	TRIP AMPS	TYPE	CKT	A		B		C		CKT	TYPE	TRIP AMPS	P	LOAD DESCRIPTION	WIRE SIZE
	VAV-B-1,2,3	1	20 A		1	0.20	0.36					2		20 A	1	REC MECH RM	
	REC MECH. 006	1	20 A		3			0.36	0.18			4		20 A	1	REC FIRE PUMP RM.	
	REC MECH. 006	1	20 A		5					0.36	0.90	6		20 A	1	REC OFFICE	
	REC OFFICE	1	20 A		7	0.18	0.18					8		20 A	1	ATC MECH. 006	
	Equipment MECH. 005	1	20 A		9			0.18	0.36			10		20 A	1	REC RESTROOM	
	RP-1 MECH. 006	1	20 A		11					0.40	0.20	12	GF	20 A	1	TOILETS FLUSH VALVE	
	REC OFFICE 003	1	20 A		13	0.54	0.40					14	GF	20 A	1	REC EWC	
--	SPARE	1	20 A	--	15			0.00	0.40			16	GF	20 A	1	REC EWC	
--	SPARE	1	20 A	--	17					0.00	0.36	18		20 A	1	REC CORRIDOR H001	
--	SPARE	1	20 A	--	19	0.00	0.00					20	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	21			0.00	0.00			22	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	23					0.00	0.00	24	--	20 A	1	SPARE	--
--	SPARE	1	20 A	--	25	0.00	0.00					26	--	20 A	1	SPARE	--
--	SPACE	--	--	--	27			0.00	0.00			28	--	--	--	SPACE	--
--	SPACE	--	--	--	29					0.00	0.00	30	--	--	--	SPACE	--
--	SPACE	--	--	--	31	0.00	0.00					32	--	--	--	SPACE	--
--	SPACE	--	--	--	33			0.00	0.00			34	--	--	--	SPACE	--
--	SPACE	--	--	--	35					0.00	0.00	36	--	--	--	SPACE	--
--	SPACE	--	--	--	37	0.00	0.47					38		20 A	3	FCU-3 MECH. 005	
--	SPACE	--	--	--	39			0.00	0.47			40					
--	SPACE	--	--	--	41					0.00	0.47	42					
					TOTAL LOAD:	2.33 kVA		1.95 kVA		2.69 kVA							

BREAKER TYPE KEYS:
LO - INDICATES C.B. EQUIPPED WITH "LOCK-ON" DEVICE
GF - INDICATES C.B. IS GROUND FAULT TYPE (5mA FOR PERSONNEL)
ST - INDICATES C.B. EQUIPPED WITH SHUNT TRIP DEVICE
HT - INDICATES C.B. EQUIPPED WITH 30mA GROUND FAULT FOR EQUIPMENT

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
REC	4.40	100.00%	4.40		
Equipment	0.96	100.00%	0.96	Total Conn. Load:	6.96 kVA
HVAC	1.60	100.00%	1.60	Total Est. Demand:	6.96 kVA
				Total Conn. Current:	19.32 A
				Total Est. Demand Current:	19.32 A

PANEL LEGEND

MSLC	MECHB
LP-BASE	RPBASE

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ISSUE DATE: 10 FEBRUARY 2021
PHASE: BID DOCUMENTS

#	DATE	REVISION
2	03/10/21	ADDENDUM 2

ELECTRICAL SCHEDULES

H27-6126-LC
STATE PROJECT NO.
1813
A/E PROJECT NO.
E-601
SHEET