

Project Name: Post Oak - HVAC

Project No.: 221125-050

Architect: Kingscott

Date: 12/11/2025

Bid Package No.: 1

Bid Due Date: 12/18/2025 @ 2:00PM

This Addendum is issued to inform the bidders of modifications in the scope of work being bid for this project.

**A. Documents included in this Addendum:**

- i. Project Manual
  1. WC 20 – Various changes to scope, including the full requirement for all roofing, including flagging and flagging maintenance.
  2. WC 20 – Clarification on allowances, all ceiling tile removal and reinstallation to be funded via WC Allowance, funded on a Time & Material basis, provide labor rates on bid form.
  3. WC 20 – Clarification on allowances, all painting to be funded via WC Allowance, funded on a Time & Material basis, provide labor rates on bid form.
  4. WC27 – Removal of all roofing scope notes.
  5. WC28 – Removal of all roofing scope notes.
  6. Sort Set revised to reflect changes to WC20.
- ii. RFI's – All pre-bid RFI's received included.
- iii. Kingscott Addendum 2 Narrative
- iv. Kingscott Specifications
- v. Kingscott Drawings

**B. Other modifications:**

- None

**C. Bids are due 12/18/2025 @ 2:00PM.**

- **Include in your bid the increase or decrease for all materials, labor, supervision, overhead and profit required to properly and completely execute the work described in this Addendum.**
- **Acknowledge receipt of this Addendum on the Bid Proposal Form.**

The applicable provisions of the Contract Documents shall govern all work included herein unless specifically noted otherwise.

**END OF ADDENDUM NO. [#2]**

## **Work Category No. 20 – General Trades**

### **Work Included:**

The subcontractor shall timely perform all work as detailed below, in accordance with the contract documents (including Bidding Requirements, Proposal Section, Contract Forms, General Conditions, Supplemental Conditions, General Requirements, Addenda, etc.), including, but not limited to, the following Specification Sections and Work Scope Items. Unless otherwise noted, this contractor is responsible for all items specified in the following specifications sections:

Reference WC Index

### **Work Category Notes:**

1. Complete all exterior and interior Carpentry/Millwork (rough and finish) and various General Trades Work as noted within this Work Category, including all labor, materials and equipment required for a complete installation.
2. All exterior and interior rough and finish carpentry including counters, cabinets, trim, nailers, blocking and plywood sheathing.
3. If in-wall backing/blocking is required by a specific manufacturer for products included as part of this Work, though not specifically shown within the documents, i.e. architectural millwork.
4. Provide non-combustible wood blocking in walls for wall mounted accessories and equipment installed by Owner/others shown or specified.
5. All interior finish carpentry, architectural woodwork, stainless steel countertops, shelving and millwork. Provide all sealants to adjacent surfaces, including dissimilar materials. Coordinate counter top support spacing with WC 27 under lavatory guards and lavatory installation.
6. Furnish and install formed metal countertops and shelving.
7. Furnish and install all solid-surface materials and grommets as indicated.
8. All architectural hardware for cabinets supplied by this Work Category.
9. Install all custom casework fabricated and furnished by others including cabinets, p-lam coat shelves, p-lam and solid surface vanity tops, and solid surface windowsills.
10. All fabricated materials are to be shop assembled to the greatest extent possible before shipping to the job site.
11. All required temporary enclosures, materials, shoring, etc., to perform the demolition of the existing wall systems. Temporary enclosures must be weather tight.
12. Protect from damage existing finish work that is to remain.
13. Furnish and install sealants for all materials installed by this contractor such as cabinets, counters, sills, etc.
14. Furnish shop drawings, samples, product data, test reports, coordination drawings and other submittals as specified. Coordinate submittal schedule with the Construction Manager.

### **Specific Notes and Details:**

The following details and notes are included in this Work Category; this list is to clarify the specific items noted below and does not exclude other details or otherwise limit the scope of work for this Work Category.

1. Provide a 200 hour allowance for laborers to be used at the discretion of TCC. Daily time tickets will be required by TCC. All unused funds will be returned to the Owner.
2. Provide and install all metal stud, batt insulation, rigid insulation, and drywall, as well as drywall finishing and finish painting at all bulkheads/pipe housings as noted in the Sort Set included in this project manual.
3. Furnish and install all metal studs, gypsum board, plywood, blocking, etc as required unless noted otherwise.
4. This WC shall include cutting and patching in the existing roof for an installation of a new roof curb for WC27 mechanical piping, please refer to Sort Set details. Coordination with WC27 and I2 is absolutely necessary to ensure the installation of this curb is located correctly. Any repairs required in the existing roofing at the conclusion of this scope of work shall be installed by this WC. Include all flashing and roofing repair.
5. This WC shall temporarily protect roof after penetrations have been made to ensure a weather tight system is maintained.
6. Protect from damage existing finish work that is to remain. This WC to provide room protection for teacher/classroom belongings to cover, protect, and encase all belongings gathered in a central/localized area in plastic wrapping. This WC responsible to remove at the conclusion of the project.
7. Provide all patching and painting at plaster/drywall surfaces requiring repair where noted on project drawings.
8. Remove and salvage all ceiling tiles, acoustical ceiling tiles, metal ceiling tiles, ceiling grid etc. as required for roof penetrations and ceiling access as coordinated with electrical and mechanical contractor. This WC to provide replacement ceiling tiles and grid for any damages during the removal process. Include removal and adjustment of ceiling tiles to accommodate revised lighting plans. This WC to reinstall existing ceiling tiles, including any modifications required for mechanical and electrical equipment, at the end of the project.
9. This WC to demolish and removal base cabinets, countertops, shelving, anchors and supports at all casework locations. Where casework is required to be removed and reinstalled, coordinate with MEP contractors for extent of removal. Coordination with Mechanical contractor is necessary for layout of new units. This may require multiple site visits and coordination meetings to ensure field measuring is correct.
10. Install all new casework, blank offs, and louver covers where indicated at existing casework per project drawings.
11. This WC responsible for the infill, patch, and repair of existing walls, floors, ceilings, and surfaces to match existing where demolition occurs other than as described, including but not limited to and patching ductwork from mechanical demolition at all locations other than masonry openings.
  - (a) Masonry openings are to be patched by others
  - (b) Penetrations for sleeves/piping/conduits to be filled in by others, this WC required to repair flooring/drywall damaged/removed for installation of new work.
  - (c) Refer to Sort Set for Roof Curb information & responsibilities for this WC.
12. At all locations where this WC creates a penetration through a presumed 1-hour fire rated wall, this

WC is responsible to provide fire caulk and fireproofing required to meet local code and requirements to maintain the 1-hour rating.

13. Provide temporary fire extinguishers (during construction) as located by the Construction Manager. Removal following use included. Quantity for each area to match minimum required by MIOSHA.
14. Caulk all installed countertops, base, wood trim reinstalled by this WC, etc. as required to complete assemblies removed and reinstalled by this WC.
15. Final cleanup for this work shall include broom sweeping.
16. Provide and install all flooring to match existing conditions as similar as possible upon completion of the installation of new mechanical equipment. Should the new equipment expose any areas not covered by the original unit, this WC shall patch and infill. This flooring patch-and-infill shall be funded via WC allowance tracked by time and material daily with tickets turned over to the construction manager.
17. Provide all roofing work for the entire project, including any temporary roofing required for penetrations by others. Ensure penetrations are entirely sealed and flashed correctly for all scopes of work, including but not limited to structural steel, mechanical, and electrical penetrations. Include flagging for the entire project, including where other work is taking place by other contractors.

**Related Work by Others:**

1. Dumpsters
2. Temporary water and electrical
3. Benchmarks and column lines (one in each direction) by Construction Manager.
4. Independent testing and inspections by Owner.
5. Temporary heat by Construction Manager.
6. Slip sheets for electrical by WC28 on roof.
7. Slip sheets for mechanical/plumbing/gas by WC27 on roof.

**Allowances:**

This Contractor shall include in their Base Bid a Construction Manager's allowance of \$35,000. Reference Section 01020 for specific instructions on allowances.

Intent for allowance is to fund any and all painting, ceiling removal and replacement. Base bid shall not account for any painting/ceiling work, and shall instead provide a time and material rate for both on bid proposal form.

**Unit Prices:**

Unit Prices are to be complete furnished in-place operations, and include all costs, incidental materials and work, insurance, fringes, bonds, engineering, overhead and profit. Reference the Trade Contract Proposal form for unit pricing required.

**End of Work Category No. 20**

**Work Category No. 27 – HVAC Systems****Work Included:**

The subcontractor shall timely perform all HVAC work, as detailed below, in accordance with the contract documents (including Bidding Requirements, Contract Forms and General Conditions, Supplemental Conditions, General Requirements, Addenda, etc.), including, but not limited to, the following Specification Sections and Work Scope Items. Unless otherwise noted, this contractor is responsible for all items specified in the following specifications sections:

See Work Category Index and Cross Reference

**Work Category Notes:**

1. Furnish all labor, materials, tools and equipment associated with HVAC/sheet metal, and air distribution equipment Work, including associated insulation, formal MEP space coordination process, commissioning and start-up/testing, for a complete installation, indicated by the contract documents (not just limited to the HVAC drawings) or as required for a complete installation, including labor, materials, dampers, duct detectors, louvers, accessories, and equipment for a complete installation.
2. Provide and install all mechanical equipment, piping, valves, etc., as required for a full and complete installation including but not limited to all energy recovery units, finned tube radiant units, hot water heaters, hot water cabinet unit heaters, roof top units, unit ventilators, mini split units, condensing units, boilers, pumps, fan coils, expansion tanks, grilles, registers, diffusers, etc.
  - a. This WC responsible to locate, cut, and waterproof all roofing assemblies. This WC shall flash and roof all penetrations in roof membrane. Include installation of pre-fabricated roof curbs. Where pre-fabricated roof curbs are not required, coordinate with WC20 location, size, and provide time to have built-in-place curbs/access. This WC shall waterproof at the end of the day, and consider this a daily task.
3. Include all required air plenums, including but not limited to insulated panels, sheet metal closures, misc. iron galvanized support angles, joint sealants, isolation valves, pressure relief valves, reducers, strainers, manual air vent, condensate neutralizer, condensate pump, manual air vet, access doors (including frames if required and hardware), fiberglass insulation, etc. for a complete installation.
4. Investigate areas prior to demolition activities, reroute and relocate existing services required for occupied operation. Cut, cap, and make safe, all existing ductwork and HVAC systems in renovated areas prior to demolition. Properly identify and mark system and components to be removed.
  - a. All mechanical systems including compressors, boilers, etc., as indicated to be demolished and removed to be by this WC.
5. All cutting, capping, coring, patching and firesafing of walls, floors, ceilings, etc., required for the installation of this work. Patch and repair work is to be done professionally by skilled craftsmen. All such openings require prior written approval from the Construction Manager, before work begins. Furnish and install all sleeves and or misc. steel in walls, floors, roofs and ceilings that may be required by this W.C.
6. All utility connection, disconnections, tie-ins, crossovers, shut downs and similar work must be performed and scheduled so they will not interfere with other work. It may be necessary to make these changes during "off" hours, or it may be necessary to make "hot tap" connections. The contractor should plan on premium time for this work. Coordinate with the Construction Manager prior to performing this work.
7. Furnish access panels where required for the wall and ceiling valves, dampers and controls that are not

shown on the Architectural/Mechanical plans but are necessary for the Mechanical Systems.

8. Furnish all hoisting, lifting, scaffolding and handling of all materials required to complete this work category.
9. The Electrical and Mechanical Contractors will be required to coordinate in a formal coordination process to accomplish the rough-in and final layout as required and specified in Section 1049. Any relocation required to coordinate work will be done at no additional cost to the Owner. All contractors are required to furnish layout and coordination prints for their work prior to these meetings allowing the team to be better prepared at each coordination meeting. Detailers will be provided by this contractor to accomplish this coordination. These meetings shall be coordinated with the construction manager and shall be held on-site.
10. Provide and install mechanical equipment tags, pipe identification and other required identification of signage related to his work.
11. Provide and install all necessary supports/anchoring/unistrut assemblies required for this scope of work to install all material and equipment.
12. Coordinate with WC20 locations of all mechanical openings, penetrations, etc., where WC20 must provide additional housings and assemblies.
13. All single pipe/multi-pipe roof penetrations outside housings constructed by WC20 housings to be flashed, and sealed by this WC.
14. A coordination meeting will be set up between the controls contractor, mechanical contractor, electrician, and construction manager prior to control work. This will include all required work for a complete system as indicated in the construction documents.

**Specific Notes and Details:**

The following details and notes are included in this Work Category; this list is to clarify the specific items noted below and does not exclude other details or otherwise limit the scope of work for this work category:

1. This work category shall assume base bid that 2<sup>nd</sup> shift (4:00PM – 12:00AM) from the months of February to June to get all overhead piping, inwall piping, rooftop routing, etc., completed to the fullest extent possible while the school is occupied.
2. Painting of all mechanical equipment to be done by this WC including but not limited to metal/plastic wall chases, filler panels, ductwork (interior and exterior) as noted and required in the drawings. Include caulking of these assemblies as required in base bid.
3. Paint all visible interior surfaces of ductwork flat black as required.
4. Install all louvers, metal fillers (Front, top and sides), sealants, etc. at interior and exterior penetrations. Include all painting required for mechanical equipment, covers, chases, etc.
5. Provide all roof curbs for mechanical equipment including but not limited to pipe curbs and equipment curbs.
6. Provide and install all slip-sheets required under mechanical units installed by this WC.
7. Provide and install metal/plastic wall chases, filler panels pre-finished & painted to match existing conditions. This WC to provide touch-up painting for surfaces scratched during installation and maneuvering of unit ventilators, chases, and filler panels.
8. This WC responsible for disconnecting supply piping at main and preparing for new connection.

9. At all locations where this WC creates a penetration through a presumed 1-hour fire rated wall, this WC is responsible to provide fire caulk and fireproofing required to meet local code and requirements to maintain the 1-hour rating.
10. Provide and install new 24V motorized damper duct up to relief hood.
11. Provide and install equipment stand as well as all roof slip-sheets for new condensing units as required.
12. Coordinate with WC 11 to field verify location of, dimension of, and extent of masonry removal to determine size required for new louvers.
13. Provide 16x12 transfer duct & grilles routed tight to underside of ceiling pre-finished to match existing adjacent wall color.
- ~~14. All metal deck cutting required to be performed by this WC. Roof structural steel support to be provided and installed by this WC in accordance with structural support details. Coordinate wood blocking/wood support with WC 20. All roofing repair to be done by this WC for all mechanical & plumbing penetrations required for new work to be installed.~~
- ~~15. Roofing and all roof associated assemblies required to be repaired in accordance with existing roof manufacturer requirements at all locations where this WC creates a penetration in the roof assembly.
  - ~~a. Though this WC will not be the only contractor on the roof, this WC is responsible to provide all fall protection flagging and MIOSHA requirements to make the roof a safe working environment for all WC's required to be on the roof (WC01A, WC20, WC28). Include maintenance and removal when directed by General Contractor.~~~~

**Addendum 2 removed notes 14 and 15. Added to WC20.**

16. This WC to provide and install all condensate, refrigerant, and steam lines, including supports, anchors, and hangers as required to be furnished and installed.
17. This WC responsible to provide all controls for all mechanical equipment, including but not limited to furnishing and installing control valves, Split AC Monitoring, DDC system architecture, Equipment Start-up Intervals, Split system AC monitoring, Vertical Unit DX and HHW controls, relief hood controls, and Heating Hot Water System controls. Carry SC Tech as the controls subcontractor. If a substitute controls contractor is requested, a substitution request for a voluntary alternative is required. Include final commissioning and balancing of control systems as required.
18. This WC to provide all cleaning of existing diffusers & grilles to remain.
19. This WC responsible for all mechanical demolition including but not limited to removal of unit ventilators, unit ventilator controls, louvers, baseboard radiant heaters, steam traps, piping, and air conditioning units, finned tube & associated assemblies, existing ductwork, thermostats, and hydronic piping.
  - a. This WC responsible to coordinate with WC 11 on all removal of exterior louvers, ensure that masonry can keep up with production of removal and can provide temporary protection and demolition for masonry assemblies as required. This WC responsible for removal of louvers.
20. Provide and install differential pressure device, verify install with TAB contractor also supplied by this WC.
21. This WC responsible for all TAB related requirements, including but not limited to balancing of existing FTR, CUH, UH, Convactor, sequences of operations of controls, DDC system architecture & tie in.
22. This WC responsible for a pre-construction TAB report for all existing mechanical equipment to remain,

including but not limited to CUH/UH/Convactor, FTR, and heating coil.

23. This WC responsible for a post-construction rebalancing of all existing equipment, including but not limited to FTR, CUH, UH, Convectors.
24. This WC responsible for all tie-ins to existing mechanical equipment including but not limited to existing OA duct to back of unit ventilator.
25. This WC responsible to remove all mechanical equipment required to be demolished including but not limited to mechanical pumps. For all items required to be turned over to owner, furnish material to owner warehouse located at *1717 Sams Way, Lansing, MI 48912*.
26. Mini-Split Indoor & Outdoor Units and all related accessories (thermostat, controls, etc.) to be provided by this WC. Coordinate electrical requirements with WC28.
27. This WC responsible for all sleeves and in-fill in penetrations where necessary, including concrete encasing, or mortar in-fill for penetrations made by this WC operations. Final architectural patching (drywall or VCT) by others. Final architectural painting by others.
28. Include safety plans, and adhere to local requirements for confined work space in tunnels as required for Mechanical equipment installation.
29. To the greatest extent possible, all metal enclosures, shrouds, unit ventilators, and accessories/components shall be pre-painted, if components do not come pre-painted by manufacturer, this WC shall have components powder coated to match adjacent surfaces prior to arriving on site.

**Related Work by Others:**

1. Power supply to mechanical equipment by W.C. 28.
2. Counter tops removal and reinstallation by WC 20.
3. Painting of all architectural assemblies to be done by WC 20.
4. Electrical disconnect of Unit Ventilators (Vertical and Horizontal) to be done by WC 28.
5. Flooring & wall base WC 20.
6. Roofing by WC20.

**Allowances:**

This Contractor shall include in their Base Bid a Construction Manager's allowance of \$20,000. Reference Section 01020 for specific instructions on allowances.

**Unit Prices:**

Unit Prices are to be complete furnished in-place operations, and include all costs, incidental materials and work, insurance, fringes, bonds, engineering, overhead and profit. Reference the Trade Contract Proposal form for unit pricing required.

**End of Work Category No. 27**



**Work Category No. 28 – Electrical Systems****Work Included:**

The subcontractor shall timely perform all Electrical work, as detailed below, in accordance with the contract documents (including Bidding Requirements, Contract Forms and General Conditions, Supplemental Conditions, General Requirements, Addenda, etc.), including, but not limited to, the following Specification Sections and Work Scope Items. Unless otherwise noted, this contractor is responsible for all items specified in the following specifications sections:

See Work Category Index and Cross Reference

**Work Category Notes:**

1. Furnish and install all electrical systems, including power, lighting, site lighting, fire alarm, system commissioning, etc., indicated by the contract documents (not just limited to the electrical drawings) or as required for a complete installation, including labor, materials, equipment, adhesives, fasteners, supports, hangers, grounds, blocking, shims and all necessary anchoring devices and accessories.
2. Investigate areas prior to demolition activities, reroute and relocate existing services required for occupied operation. Cut, cap, and make safe, all existing electrical systems in renovated areas prior to demolition. Properly identify and mark system and components to be removed by others.
3. All cutting, capping, coring, patching and firesafing of walls, floors, ceilings, etc., required for the installation of this work. Patch and repair work is to be done professionally by skilled craftsmen. All such openings require prior written approval from the Construction Manager, before work begins. Furnish and install all sleeves and or misc. steel in walls, floors, roofs and ceilings that may be required by this W.C.
4. All utility connection, disconnections, tie-ins, crossovers, shut downs and similar work must be performed and scheduled so they will not interfere with other work. It may be necessary to make these changes during "off" hours, or it may be necessary to make "hot tap" connections. The contractor should plan on premium time for this work. Coordinate with the Construction Manager prior to performing this work.
5. Furnish access panels where required for the wall and ceiling valves, dampers and controls that are not shown on the Architectural/Electrical plans but are necessary for the Electrical Systems.
6. Extreme care is to be taken when installing hangers and equipment in the area that has "spray on fireproofing", so as not to damage it. This contractor will be responsible for patching fireproofing incase of damage by this trade. This work is to be performed by a qualified contractor so that the warranty will not be affected.
7. Furnish all hoisting, lifting, scaffolding and handling of all materials required to complete this work category, all locating and installing of electrical equipment in place shall be reviewed prior to bidding, and bids shall include all means of installation necessary for equipment, including any door removal necessary for equipment sizes to fit in spaces.
8. The Electrical and Mechanical Contractors will be required to coordinate in a formal coordination process to accomplish the rough-in and final layout as required and specified in Section 1049. Any relocation required to coordinate work will be done at no additional cost to the Owner. All contractors are required to furnish layout and coordination prints for their work prior to these meetings allowing the team to be better prepared at each coordination meeting. Detailers will be provided by this contractor to accomplish this coordination. These meetings shall be coordinated with the construction manager and shall be held on-site.

9. Provide and install panel labeling, identification and other required identification of signage related to his work.
10. The electrical contractor will provide concrete equipment pads for required panelboards. Accommodate floor finishes when calculating elevations.
11. A coordination meeting will be set up between the controls contractor, mechanical contractor, electrical contractor, and construction manager prior to control work. This will include all required work for a complete system as indicated in the construction documents.
12. Electrical connections to equipment and devices provided by others, including by not limited to duct detectors, fire dampers, flow and tamper switches, variable frequency drives, power assist door motors, food service equipment, etc. Verify construction documents have been coordinated with power requirements of equipment prior to installation of devices.
13. Install electrical disconnects for all mechanical equipment provided by W.C. 27.

**Specific Notes and Details:**

The following details and notes are included in this Work Category; this list is to clarify the specific items noted below and does not exclude other details or otherwise limit the scope of work for this work category:

1. This work category shall assume base bid that 2<sup>nd</sup> shift (4:00PM – 12:00AM) from the months of February to June to get all overhead conduit, wire pulls, inwall piping, rooftop routing, etc., completed to the fullest extent possible while the school is occupied to ensure work can be completed by August
2. At all locations where this WC creates a penetration through a presumed 1 hour fire rated wall, this WC is responsible to provide fire caulk and fireproofing required to meet local code and requirements to maintain the 1 hour rating.
- ~~3. Roofing and all roof associated assemblies required to be repaired in accordance with existing roof manufacturer requirements at all locations where this WC creates a penetration in the roof assembly.~~  
**Removed in Add 2 – See WC 20 for roofing requirements**
4. This WC responsible for all demolition associated with electrical assemblies, including but not limited to assemblies shown on the Electrical Riser Diagrams.
5. This WC responsible to relocate downstream electrical equipment to new panel affected by electrical demolition activities, including all work associated with re-feeding existing panels from new main distribution panel.
6. This WC responsible to provide and install all electrical equipment including but not limited to new lighting control equipment, new luminaire equipment, MDP, electrical panels, breakers, and inverters.
  - a. Coordinate with LBWL for utility supplied/installed equipment.
  - b. This WC responsible to receive and install pre-purchase electrical equipment. Pre-purchase electrical equipment is to be brought on site, and this WC to unload and take ownership of equipment at time of delivery on site. This WC responsible for all means and methods for installation of equipment once on site in final location and maintaining of all warranties, and manufacturer requirements.
7. This WC responsible for all removal, storage, and relocation of all electrical equipment including but not limited to lighting, surface mounted conduit, wall mounted equipment, wall switches, etc. as it interferes with the installation of new work.
8. Temporary power to be provided by this WC during all power shutdowns required to be performed for the safe demolition of all electrical devices & equipment. This WC to include lighting and power stations

for the use of electrical tools and equipment of 120v.

9. Disconnect and make safe all unit ventilators, outdoor air units, radiant ceiling panels, pumps, etc. for equipment removal by WC 27, include receptacles as noted in drawings.
10. This WC responsible for all removal and replacement of asphalt/concrete surfaces, and turf grass surfaces associated with the installation of new electrical service. All excavation and backfill related to Work including suitable backfill, compaction, & restoration and removal (from site) of all unsatisfactory fill in accordance with the documents.
11. New utility pad mounted transformer to be provided by LBWL.
12. This WC to take precautions when installing underground conduit so as to not damage existing underground utilities including but not limited to existing storm and sanitary lines crossing in the path of the new proposed electrical conduit.
13. This WC to provide updated typed-in directories for all panels affected by this scope of work.
14. Disconnect and remove all electrical equipment required to be demolished/removed including but not limited to existing VFDs and provide new as required for a full and complete installation, including all bracing/supports/anchoring required.
15. This WC to provide all protection measures as required.
16. NOTE; MDP is the only piece of equipment that has been purchased by the owner. Owner and Construction Manager will coordinate delivery to the site the Monday after the Last Day of School. This pre-purchased MDP shop drawings and product data will be shared for coordination and this scope's use, this WC shall receive, unload, and install the MDP, including all connections and terminations.

**Related Work by Others:**

1. Installation of access panels/doors by W.C. 20
2. Low voltage wiring not identified on the drawings by the trade providing equipment.
3. Site utilities to transformers/cabinets by Utility Company.
4. Temperature Control wiring and conduit associated with the mechanical systems by W.C. 27.
5. MDP has been purchased by the owner, this WC shall install owner provided MDP.

**Allowances:**

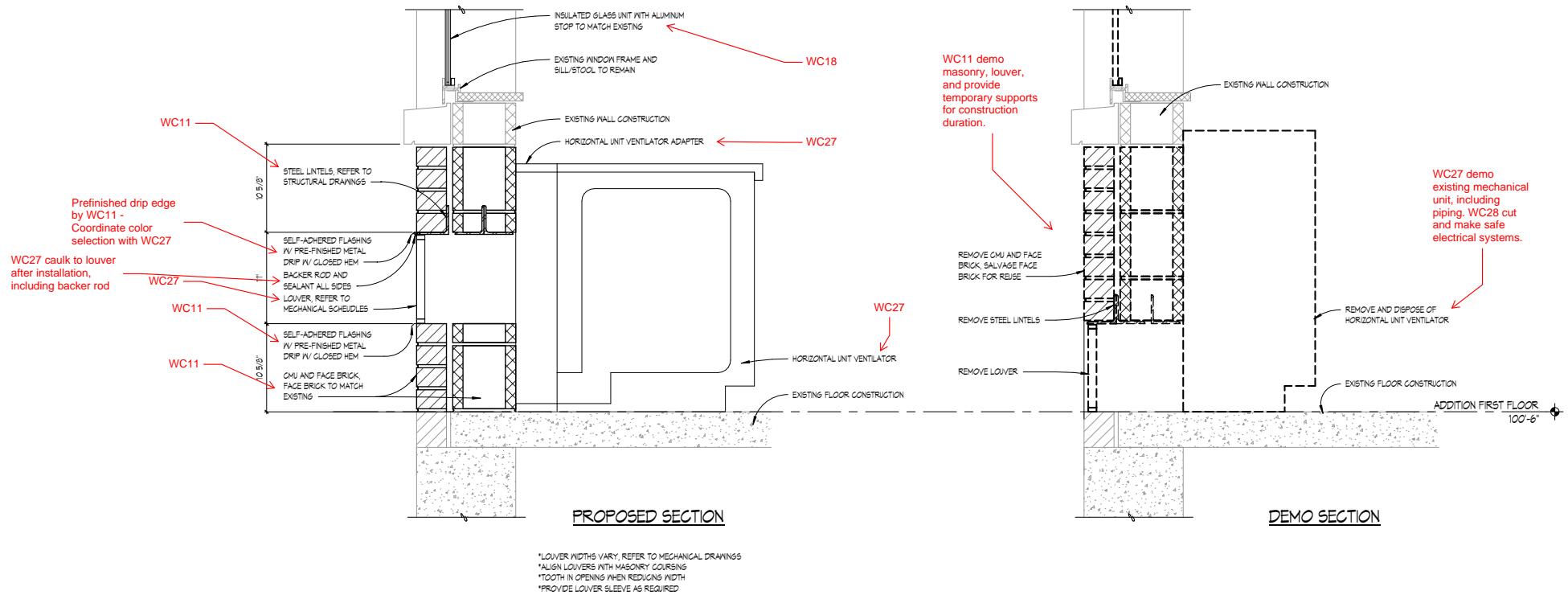
This Contractor shall include in their Base Bid a Construction Manager's allowance of \$20,000. Reference Section 01020 for specific instructions on allowances.

**Unit Prices:**

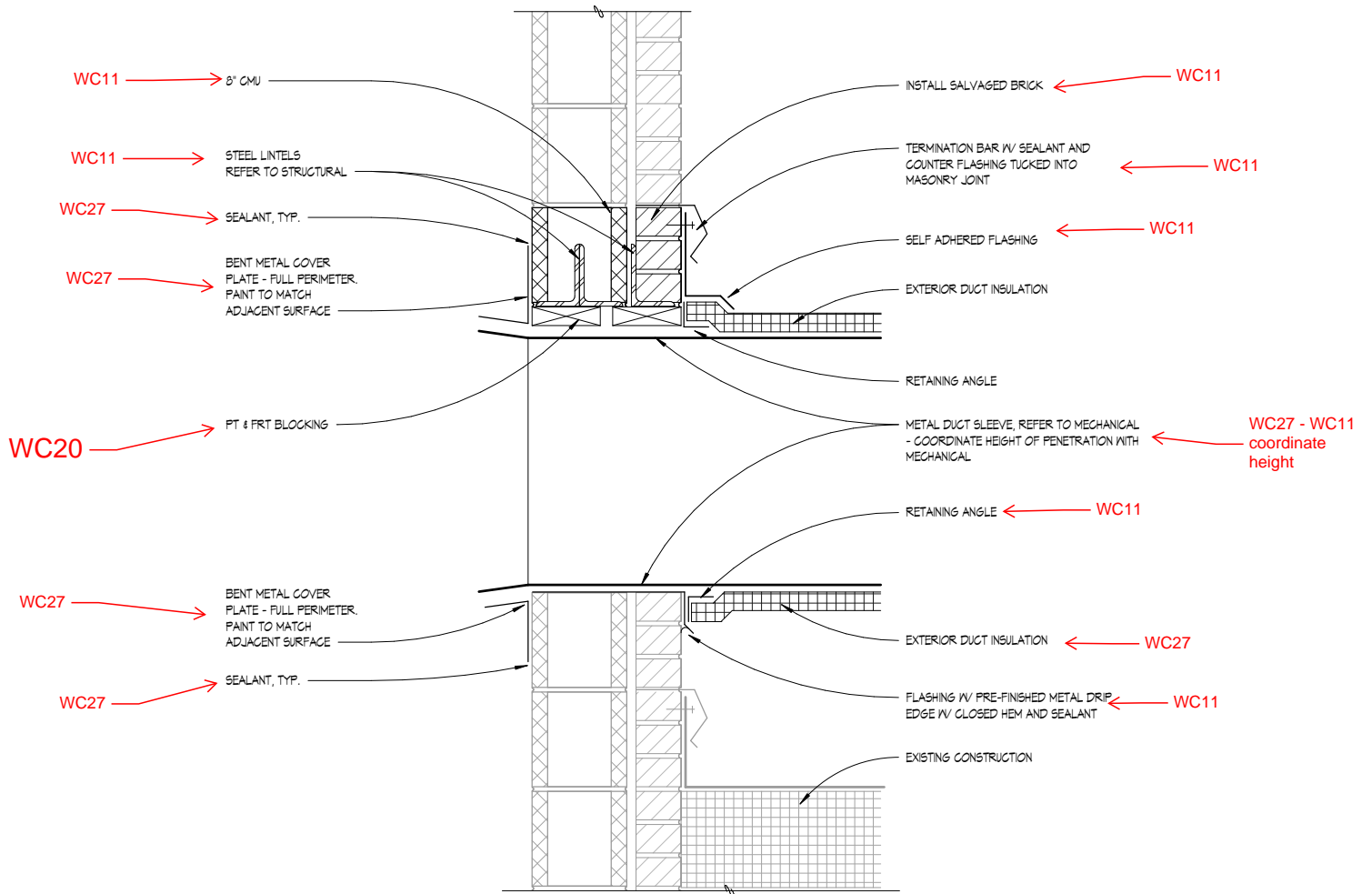
Unit Prices are to be complete furnished in-place operations, and include all costs, incidental materials and work, insurance, fringes, bonds, engineering, overhead and profit. Reference the Trade Contract Proposal form for unit pricing required.

**End of Work Category No. 28**

SORT SET - WC RESPONSIBILITIES - NEW LOUVER & UNIT INSTALLATION  
DRAWING A4.1 DETAIL 2



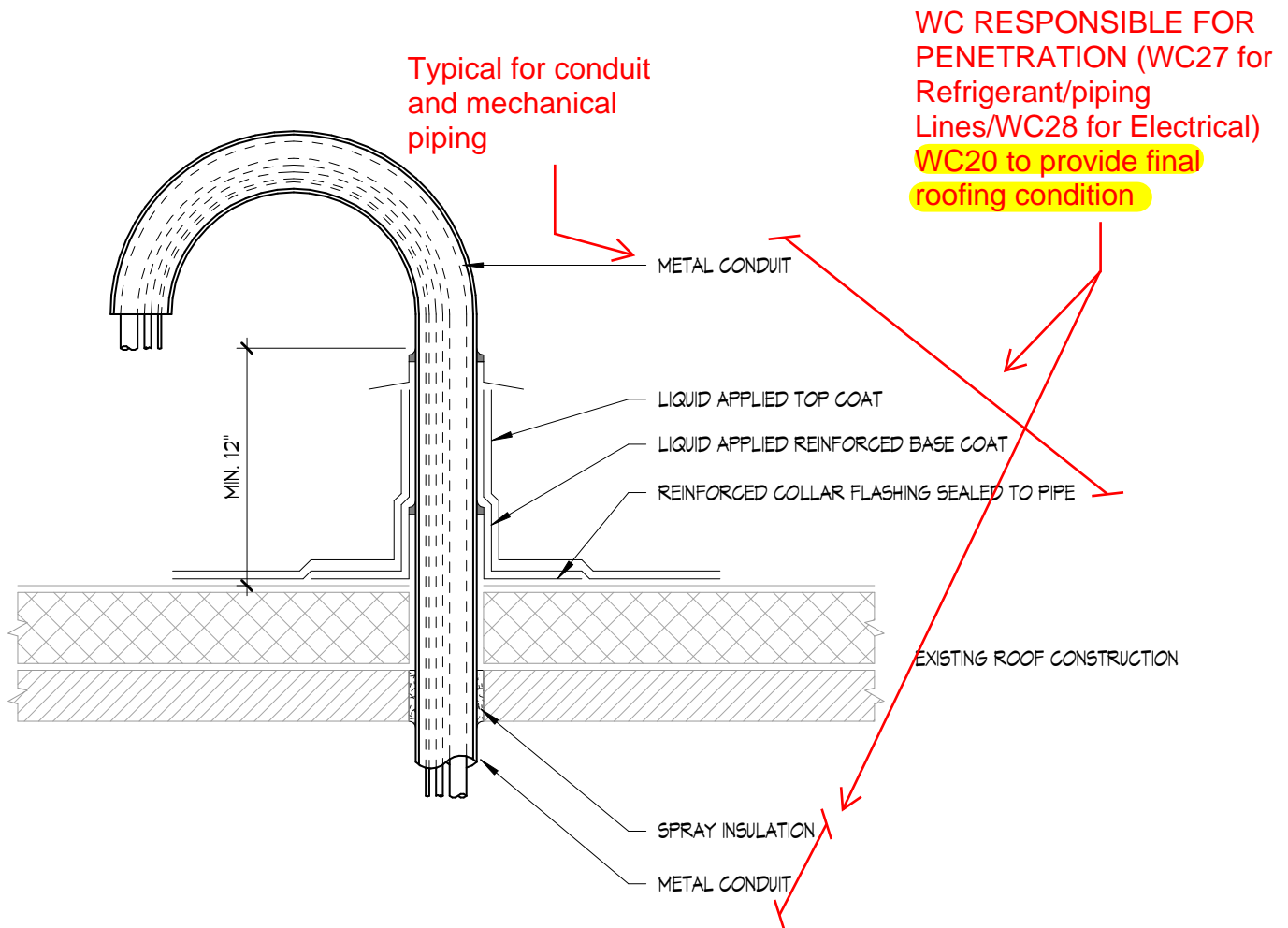
SORT SET - WC RESPONSIBILITIES - THROUGHWALL DUCT PENETRATION  
DRAWING A4.1 DETAIL 3



3 DUCT PENETRATION THROUGH EXISTING WALL  
1 1/2" = 1'-0"

SORT SET - WC RESPONSIBILITIES - TYPICAL PIPE PENETRATION AT ROOFING

DRAWING A5.1 DETAIL 3



NOTES:

1. COORDINATE WITH MECHANICAL DETAILS.
2. COORDINATE WITH ROOFING MANUFACTURER TO MAINTAIN ROOF WARRANTY.
3. INSTALL ALL COMPONENTS SECURELY, CONTINUOUS, AND WEATHER TIGHT.

3

## CONDENSING UNIT CONDUIT

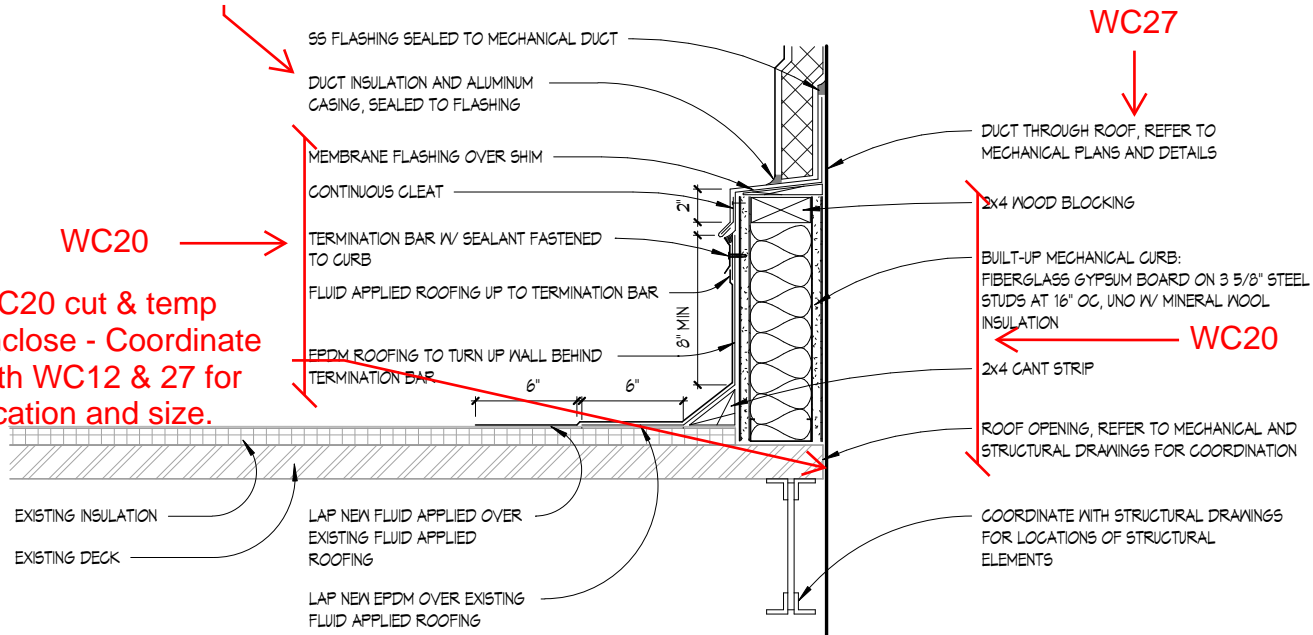
NOT TO SCALE

WC27 including sealing

WC27

WC20

WC20 cut & temp  
enclose - Coordinate  
with WC12 & 27 for  
location and size.



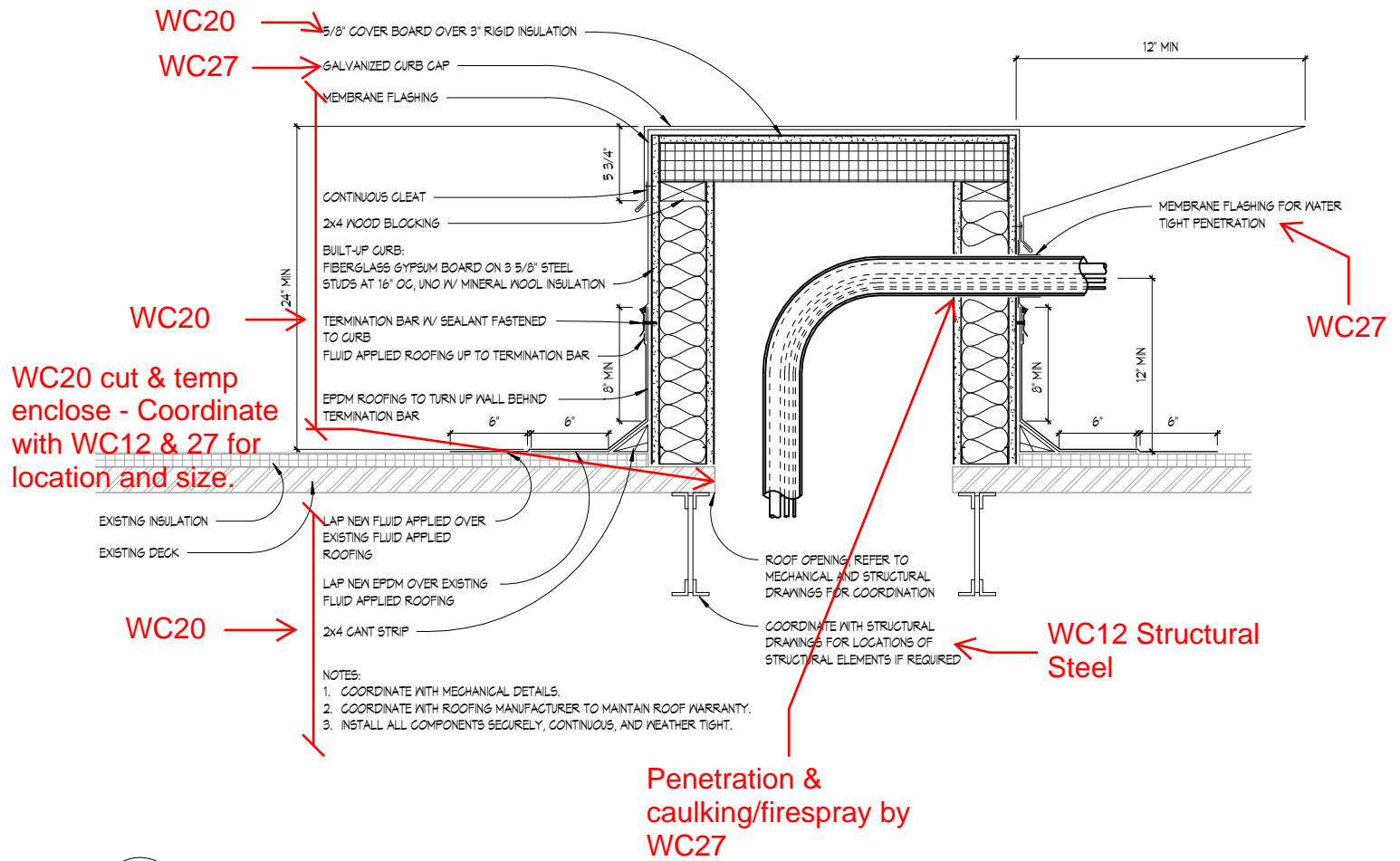
NOTES:

1. COORDINATE WITH MECHANICAL DETAILS.
2. COORDINATE WITH ROOFING MANUFACTURER TO MAINTAIN ROOF WARRANTY.
3. INSTALL ALL COMPONENTS SECURELY, CONTINUOUS, AND WEATHER TIGHT.

4

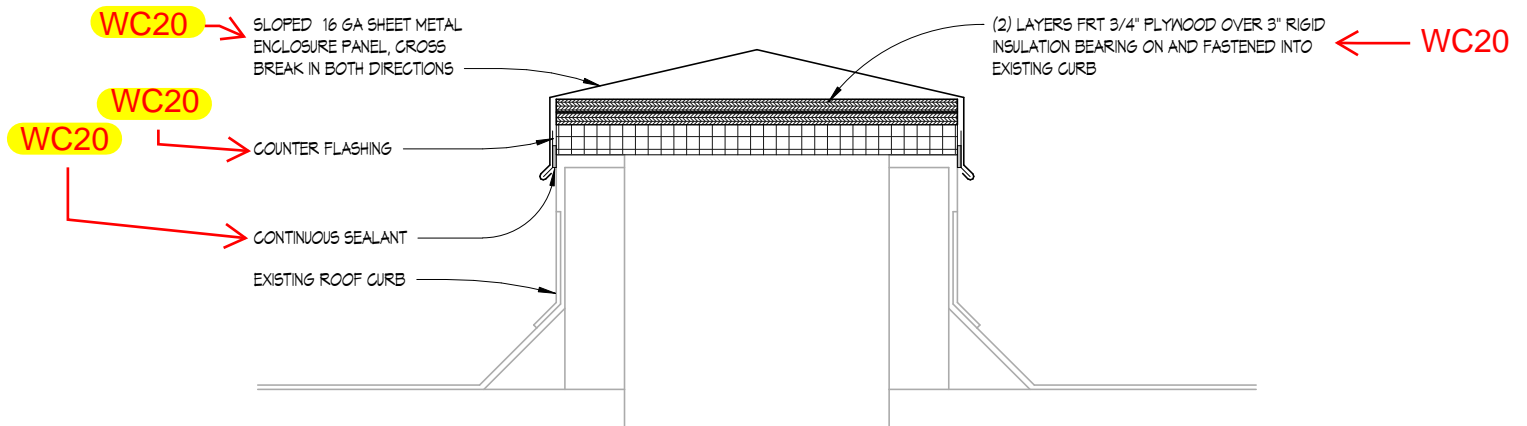
## DUCT THROUGH ROOF DETAIL

NOT TO SCALE



## 5 GROUPED PIPE CURB DETAIL

NOT TO SCALE



## 1 CURB CAPPING DETAIL

NOT TO SCALE





The Christman Company

## RFI LOG

#	Revision	Subject	Status	Responsible Contractor	Received From	Date Initiated	RFI Manager	Assignee	Ball In Court	Due Date	Closed Date	Location	Schedule Impact	Cost Impact	Cost Code	Sub Job	RFI Stage	Distribution List	Private
12	0	Low Voltage Wiring in Hallways - Ceiling Tiles	Closed		None	12/09/2025	Austin Brown	Brown, Austin (Th...		12/15/2025	12/11/25								No
<b>Q:</b> Austin Brown Sent Tue Dec 9, 2025 at 01:49 pm EST The controls contractor must run wiring throughout the building. Will ceiling tiles be removed and replaced in the classrooms and hallways?																			
<b>A:</b> Austin Brown (The Christman Company (LAN)) Responded Tue Dec 9, 2025 at 01:51 pm EST The ceiling tile removal and replacement will need to be coordinated between trades, the controls contractor shall assume some adjustment and ceiling tile selective removal/reinstallation of existing, but in general, the extent of removal and replacement will be performed by WC21.																			
11	0	Exposed wiring controls for thermostats	Closed		None	12/09/2025	Austin Brown	Suardini, Lindsey...		12/15/2025	12/11/25								No
<b>Q:</b> Austin Brown Sent Tue Dec 9, 2025 at 01:47 pm EST Is wire mold acceptable to conceal thermostat wiring for surface mount thermostat controls?																			
<b>A:</b> Lindsey Suardini (Kingscott) Responded Wed Dec 10, 2025 at 12:28 pm EST This is acceptable.																			
10	0	SC Technologies for Controls	Closed		None	12/08/2025	Austin Brown	Brown, Austin (Th...		12/12/2025	12/11/25								No
<b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 05:08 pm EST VUV - Controls: Please confirm with LSD if they want factory controls or controls by SCT on the VUV's. In the past SCT provided the controls on VUV's																			
<b>A:</b> Austin Brown (The Christman Company (LAN)) Responded Thu Dec 11, 2025 at 10:36 am EST Units to be shipped with controls included, SCTech to be utilized for tie into building BMS and all other controls wirings.																			
9	0	WC20 Ceilings and WC27 Scope of Work	Closed		None	12/08/2025	Austin Brown	Brown, Austin (Th...		12/12/2025	12/11/25								No
<b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 04:52 pm EST It appears that the WC-20 General trades will be removing all ceilings for MEP trades. Does this include all ceilings where new piping and duct is being installed? Or are you requiring we install these systems through the grid?																			
Austin Brown (The Christman Company (LAN)) Responded Thu Dec 11, 2025 at 10:32 am EST WC20 will remove ceilings on a time and material basis funded via the work category allowance.																			
<b>A:</b> WC27 and 28 will need to account for ceiling tile removal and reinstallation of existing during the 2nd shift work, the expectation is that WC27 and WC28 will be running all overhead piping/supports during the 2nd shift, and will re-install on a daily basis to ensure teachers/students re-entering these spaces receive the space as they left it.  WC20 will not be on site daily to remove and reinstall just for WC27 and 28 2nd shift work. WC20 will remove bulk ceiling areas where required for significant work.																			
8	0	Pro-press on 2" lines	Closed		None	12/08/2025	Austin Brown	Suardini, Lindsey...		12/12/2025	12/11/25								No
<b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 04:49 pm EST Section 23 2113 Hydronic Piping: This section calls for Copper pipe/ Sweat joints for 2" and under, can Copper Press seal joints be used on 2" and under as it has been on previous Lansing School Projects?																			
<b>A:</b> Lindsey Suardini (Kingscott) Responded Tue Dec 9, 2025 at 10:16 am EST Copper piping and fittings under 2" can be pro-press, specification section will be updated accordingly for addendum 02 to reflect this change																			
7	0	Roofing Scope WC 27 & WC 20	Closed		None	12/08/2025	Austin Brown	Brown, Austin		12/12/2025	12/11/25								No

The Christman Company

#	Revision	Subject	Status	Responsible Contractor	Received From	Date Initiated	RFI Manager	Assignee	Ball In Court	Due Date	Closed Date	Location	Schedule Impact	Cost Impact	Cost Code	Sub Job	RFI Stage	Distribution List	Private
						2025	Brown	(Th...		2025									
		<p><b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 04:45 pm EST All schools are requiring each work category to carry the necessary roof work for their respected trade. It is also in WC-27 to provide roof flagging. This could possibly create some confusion in the construction process with so many different trades carrying roof work scope. We suggest wrapping all of the roof work into one work category - preferably WC 20 as they would have the most roofing work in their package to build the group pipe curbs.</p> <p><b>A:</b> Austin Brown (The Christman Company (LAN)) Responded Thu Dec 11, 2025 at 10:21 am EST WC20 will provide all roofing materials and patching. Scope clarifications are in an upcoming addendum.</p>																	
6	0	Roof Accessories Specification	Closed		None	12/08/2025	Austin Brown	Suardini, Lindsey...		12/12/2025	12/11/25								No
		<p><b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 03:28 pm EST After reviewing the bidding documents for this project, I noticed that section 077200 - Roof Accessories is missing from the project specifications. Is this forthcoming in an addendum?</p> <p><b>A:</b> Lindsey Suardini (Kingscott) Responded Tue Dec 9, 2025 at 02:15 pm EST Spec section 077200 is not used and will be removed from the Table of Contents in the addendum.</p>																	
5	0	Casework requirements	Closed		None	12/08/2025	Austin Brown	Suardini, Lindsey...		12/12/2025	12/11/25								No
		<p><b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 01:06 pm EST Cabinet is called to be removed and replaced with new, no replacement is specified. Please provide requirements for new cabinet. <a href="#">Post Oak Cabinet Type and countertop.jpeg</a></p> <p><b>A:</b> Lindsey Suardini (Kingscott) Responded Tue Dec 9, 2025 at 01:33 pm EST New plastic laminate sink cabinets in CR 120 and CR 122 need to match existing casework height and depth (27"h, 24"d). Width is to fit vacant space, approx. 42" wide. Standard 2-door sink cabinet. Arch. Keynote #14: NEW PLASTIC LAMINATE SINK BASE CABINET AND COUNTERTOP. WIDTH IS TO MATCH VACANT SPACE LEFT BY THE REMOVED CABINET. PROVIDE ISOLATION MATERIAL WHERE BASE CABINET MEETS THE NEW MECHANICAL UNIT. CONTRACTOR TO REVIEW EXISTING CONDITIONS PRIOR TO BIDDING AND AGAIN AT THE START OF CONSTRUCTION. PLAM MATERIAL IS TO BE SELECTED BY OWNER. <a href="#">GetAttachmentThumbnail.png</a></p>																	
4	0	Ceiling outside Gymnasium	Closed		None	12/08/2025	Austin Brown	Brown, Austin (Th...		12/12/2025	12/11/25								No
		<p><b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 01:04 pm EST Gym ceiling has multiple linear lights, these are called to be temporary removed. Please verify who and what responsibility there is to remove these, and what temporary requirements there are. <a href="#">Post Oak - Ceiling outside Gym.jpeg</a></p> <p><b>A:</b> Austin Brown (The Christman Company (LAN)) Responded Mon Dec 8, 2025 at 01:05 pm EST Lights to be removed by WC28, reinstalled by WC28 upon completion of drywall repair by WC 20 after WC27 completes all ductwork.</p>																	
3	0	Mechanical Demolition - Note Z8	Closed		None	12/08/2025	Austin Brown	Suardini, Lindsey...		12/12/2025	12/11/25								No
		<p><b>Q:</b> Austin Brown Sent Mon Dec 8, 2025 at 01:00 pm EST Throughout the project, fin tube radiant heat is called to be demolished and removed, and blank off panels installed. Included is an image of the site conditions showing that the existing casework to remain has grilles integral with the finned tube heat, please verify if this can be cut/capped and remain in place, or if there are requirements for a full removal including these grilles. <a href="#">Post Oak - Radiant Heat Casework.jpeg</a></p> <p><b>A:</b> Lindsey Suardini (Kingscott) Responded Tue Dec 9, 2025 at 01:43 pm EST See Architectural General Note #7: 7. WHERE LOUVER PANEL WAS REMOVED FROM METAL CASEWORK TOPS, REPLACE WITH SOLID METAL FILLER PANEL. COLOR TO MATCH EXISTING CASEWORK.</p>																	

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#	Revision	Subject	Status	Responsible Contractor	Received From	Date Initiated	RFI Manager	Assignee	Ball In Court	Due Date	Closed Date	Location	Schedule Impact	Cost Impact	Cost Code	Sub Job	RFI Stage	Distribution List	Private
2	0	Room 147A and 147C notes	Closed		None	12/08/2025	Austin Brown	Suardini, Lindsey...		12/12/2025	12/11/25								No
<p>Austin Brown Sent Mon Dec 8, 2025 at 12:56 pm EST</p> <p><b>Q:</b> A1.1 Note 14 in room 147 does not look like it should apply, the casework and sink are likely not largely impacted by the construction in these rooms.  <a href="#">Post Oak - Rm 147A &amp; CClassroom lab ceiling exposed sides.jpeg</a></p> <p><b>A:</b> Lindsey Suardini (Kingscott) Responded Tue Dec 9, 2025 at 01:36 pm EST  Keynote #14 does not apply to rooms 147A and 147C.</p>																			
1	0	Substitution Request - EFCO & Wausau	Closed		None	12/04/2025	Austin Brown	Szeszulski, Sami ... Suardini, Lindsey...		12/10/2025	12/08/25								No
<p>Austin Brown Sent Thu Dec 4, 2025 at 07:01 am EST</p> <p>Below are two alternative window systems to be considered for approval as a substitute for the specified Winco systems.</p> <p><b>Q:</b></p> <ul style="list-style-type: none"> <li>EFCO 2700: this is a close match in frame depth/performance, but does not off an integral beveled glazing stop that the 1150S has.</li> <li>Wausau 2250i Invent: this does have the integral beveled glazing stop, but it has a 2-1/2" depth.</li> </ul> <p>Austin Brown (The Christman Company (LAN)) Responded Mon Dec 8, 2025 at 03:11 pm EST</p> <p>The proposed manufacturers are acceptable to be presented as voluntary alternates only. Base bid is Winco as the thickness of existing window system will work with the specified Winco system, which must be included in base bid proposal.</p> <p><b>A:</b></p> <p>If the contractor can present upon contract award a field dimension/shop drawings to ensure the voluntary manufacturers will work with the existing window systems, a change order can be completed to change from base bid Winco to proposed manufacturers. Indicate on the base bid form on the voluntary alternates costs to provide these alternative manufacturers for future consideration.</p>																			

Date: 12/11/2025  
Project: Post Oak HVAC Improvements  
Owner: Lansing School District  
Location: Lansing, MI  
A/E #: 2616.16

## **ADDENDUM NO. 02**

### **SPECIAL NOTE:**

The Notice to Bidders, Instructions to Bidders, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, and all modifications and previously issued Contract Documentation are a part of this Addendum.

### **SCOPE OF WORK:**

The following items are changes, additions, deletions, clarifications and/or errors and omissions in plans & specifications and shall be considered by each Bidder in making up and submitting their proposal. All items shall be considered a part of the Contract Documents.

### **NOTICE TO ALL BIDDERS:**

All Bidders shall take note of all items covered by this Addendum. Each Bidder shall review the total scope of his responsibilities with respect to his contract work and his interface with the work of others, as well as his required interface with their work.

### **SPECIFICATIONS:**

Section 000110 – Table of Contents (Re-issued):

- Section 077200 – Roof Accessories removed.
- Section 095113 – Acoustical Panel Ceiling added.

Section 095113 – Acoustical Panel Ceiling (Added):

- Added to the project.

Section 232113 – Hydronic Piping (Re-issued):

- RFI #8 - Revised fittings and unions for copper piping for 2” and under to be press seal.

### **DRAWINGS:**

A1.1: First Floor Plan – Unit 100, Door and Louver Schedules, Window Types (Re-issued):

- Removed Keynote #14 in Lab 147A and 147C. Added Keynote #12.

MD1.1: Mechanical Demolition Plan – Unit 100 (Re-issued)

- Revised demolition keynote language.

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800.632.7815

**DETROIT**  
7303 W. Seven Mile Road  
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**GRAND RAPIDS**  
801 Broadway NW, Suite 306  
Grand Rapids, MI 49504  
800.632.7815

**PORTAGE**  
950 Trade Centre Way, Suite 130  
Portage, MI 49002  
800.632.7815

MD1.2: Mechanical Demolition Plan – Unit 200 (Re-issued)

- Revised demolition keynote language.

MD1.3: Mechanical Demolition Plan – Unit 300 (Re-issued)

- Revised demolition keynote language.

MD1.13: Roof Mechanical Demolition Plan – Unit 300 (Re-issued)

- Revised demolition keynote language.

MH1.3: First Floor Mechanical HVAC Plan – Unit 300 (Re-issued)

- Revised N.I.C. scope area to indicate correct scope of work.

ED1.1: First Floor Power Demolition Plan – Unit 100 (Re-issued)

- Revised keynote D2.
- Added keynote D2 to office areas where indicated.

ED1.2: First Floor Power Demolition Plan – Unit 200 (Re-issued)

- Revised keynote D2.
- Added keynote D2 to office areas where indicated.

ED1.3: First Floor Power Demolition Plan – Unit 300 (not-issued)

- Revised keynote D2.

EP1.13: Roof Power Demolition Plan – Unit 300 (not-issued)

- Revised keynote D2.

EP1.1: First Floor Power Plan – Unit 100 (Re-issued)

- Revised keynote D2.
- Added keynote R3 to office areas where indicated.

EP1.2: First Floor Power Plan – Unit 200 (Re-issued)

- Revised keynote D2.
- Added keynote R3 to office areas where indicated.

EP1.3: First Floor Power Plan – Unit 300 (not-issued)

- Revised keynote R3.

EP1.11: Roof Power Plan – Unit 100 (not-issued)

- Revised keynote R3.

EP1.12: Roof Power Plan – Unit 200 (not-issued)

- Revised keynote R3.

EP1.13: Roof Power Plan – Unit 300 (not-issued)

- Revised keynote R3.

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**END OF ADDENDUM**

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SECTION 095113  
ACOUSTICAL PANEL CEILINGS

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 acoustical panels, trims and exposed suspension systems for interior ceilings.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For finishes to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity installed.
  - 2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

## 1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: Class A according to ASTM E1264.
  - 2. Smoke-Developed Index: 450 or less.
- B. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Indicate design designations from UL or from the listings of another qualified testing agency.

### 2.3 ACOUSTICAL PANELS **APC-1**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide:
  - 1. USG Interiors, Inc.; Subsidiary of USG Corporation; **USG 86785** Acoustical Panels or comparable product by one of the following:
    - a. CertainTeed Corp.
    - b. Armstrong World Industries, Inc

- B. Insert drawing designation for each product required. Use the same designation for the acoustical panels in this article and for the related suspension system in "Metal Suspension System" Article; together, they make up the ceiling assembly. Use these designations on Drawings to identify each ceiling assembly.
- C. Acoustical Panel Standard: Provide manufacturer's standard panels according to ASTM E1264 and designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.
- D. Classification: Provide panels as follows:
  - A. Material: 3354 – Fiberglass with DuraBrite® acoustically transparent membrane; CAC backing
  - B. Surface Material: DuraBrite scrim with factory-applied latex paint
  - C. Color: White.
  - D. Light Reflectance (LR): Not less than 0.88.
  - E. Ceiling Attenuation Class (CAC): Not less than CAC indicated in a schedule 35.
  - F. Noise Reduction Coefficient (NRC): Not less than 0.90.
  - G. Edge/Joint Detail: Square Tegalur
  - H. Thickness: 1 inch.
  - I. Weight: 0.64 LBS/SF
  - J. Modular Size: 24 by 24 inches or 24 by 48 inches.
  - K. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D3273, ASTM D3274, or ASTM G21 and evaluated according to ASTM D3274 or ASTM G21.

## 2.4 METAL SUSPENSION SYSTEM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Armstrong World Industries, Inc.
  - 2. Rockfon (Rockwool International)
  - 3. USG Corporation.
- B. Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C635/C635M and designated by type, structural classification, and finish indicated.
  - 1. High-Humidity Finish: Where indicated, provide coating tested and classified for "severe environment performance" according to ASTM C635/C635M.

- C. Wide-Face, Aluminum-Capped, Double-Web, Hot-Dip Galvanized, G60, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; hot-dip galvanized, G60 coating designation; with prefinished, 15/16-inch-wide aluminum caps on flanges.
  - 1. Structural Classification: Intermediate-duty system.
  - 2. Face Design: Flat, flush.
  - 3. Cap Finish: Painted white.

## 2.5 ACCESSORIES

- A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
- B. Wire Hangers, Braces, and Ties: Provide wires as follows:
  - 1. Zinc-Coated, Carbon-Steel Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper.
  - 2. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C635/C635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch-diameter wire.
- C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.
- D. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch-thick, galvanized-steel sheet complying with ASTM A653/A653M, G90 coating designation; with bolted connections and 5/16-inch-diameter bolts.
- E. Hold-Down Clips: Where indicated, provide manufacturer's standard hold-down clips spaced 24 inches o.c. on all cross tees. / At all vestibule locations.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.
- B. Layout openings for penetrations centered on the penetrating items.

### 3.3 INSTALLATION

- A. Install acoustical panel ceilings according to ASTM C636/C636M and manufacturer's written instructions.
- B. Suspend ceiling hangers from building's structural members and as follows:
  - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
  - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
  - 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
  - 5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
  - 6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
  - 7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
  - 8. Do not attach hangers to steel deck tabs.
  - 9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
  - 10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
  - 11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
  - 1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
  - 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
  - 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.
  - 1. Arrange directionally patterned acoustical panels as follows:
    - a. As indicated on reflected ceiling plans.
    - b. Install panels with pattern running in one direction parallel to long axis of space.
    - c. Install panels in a basket-weave pattern.
  - 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
  - 3. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
  - 4. Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

### 3.4 ERECTION TOLERANCES

- A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet non-cumulative.

### 3.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113



SECTION 23 2113  
HYDRONIC PIPING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Hydronic system requirements.
- B. Heating water piping, above grade.
- C. Equipment drains and overflows.
- D. Pipe hangers and supports.
- E. Unions, flanges, mechanical couplings, and dielectric connections.

1.2 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.
- B. Section 09 9123 - Interior Painting.
- C. Section 23 0516 - Expansion Fittings and Loops for HVAC Piping.
- D. Section 23 0523 - General-Duty Valves for HVAC Piping.
- E. Section 23 0553 - Identification for HVAC Piping and Equipment.
- F. Section 23 0719 - HVAC Piping Insulation.
- G. Section 23 2500 - HVAC Water Treatment: Pipe cleaning.
- H. Section 25 3516 - Integrated Automation Sensors and Transmitters: Pipe-mounted product furnishing.
- I. Section 25 3519 - Integrated Automation Control Valves: Product furnishing.
- J. Section 26 0583 - Wiring Connections: Electrical characteristics and wiring connections.

1.3 REFERENCE STANDARDS

- A. ANSI/FCI 70-2 - Control Valve Seat Leakage; 2021.
- B. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators; 2023.
- C. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2021.
- D. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2021.

- E. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2021.
  - F. ASME B31.9 - Building Services Piping; 2020.
  - G. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
  - H. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2023a.
  - I. ASTM B32 - Standard Specification for Solder Metal; 2020.
  - J. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2022.
  - K. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2020.
  - L. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers; 2024.
  - M. ASTM F1476 - Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications; 2007 (Reapproved 2019).
  - N. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding; 2019.
  - O. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
  - P. AWWA C606 - Grooved and Shouldered Joints; 2022.
  - Q. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2018, with Amendment (2019).
- 1.4 SUBMITTALS
- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
  - B. Product Data:
    - 1. Include data on pipe materials, pipe fittings, and accessories.
    - 2. Indicate valve data and ratings.
    - 3. Show grooved joint couplings, fittings, and specialties on drawings and product submittals, specifically identified with the manufacturer's style or series designation.
- 1.5 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience.
  - B. Provide all grooved joint couplings, fittings, valves, specialties, and grooving tools from a single manufacturer.

- C. Coupling Manufacturer:
  - 1. Perform on-site training by factory-trained representative to the Contractor's field personnel in the proper use of grooving tools and installation of grooved joint products.
  - 2. Periodic job site visits by factory-trained representative to ensure best practices in grooved joint installation.

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

## 1.6 PERFORMANCE REQUIREMENTS

- A. Provide components and installation capable of producing hydronic piping systems with the following minimum working-pressure ratings:
  - 1. Hot-Water Piping: 150 psig at 200 deg. F

## PART 2 PRODUCTS

### 2.1 HYDRONIC SYSTEM REQUIREMENTS

- A. Comply with ASME B31.9 and applicable federal, state, and local regulations.
- B. Piping: Provide piping, fittings, hangers, and supports as required, as indicated, and as follows:
  - 1. Where more than one piping system material is specified, provide joining fittings that are compatible with piping materials and ensure that the integrity of the system is not jeopardized.
  - 2. Use non-conducting dielectric connections whenever jointing dissimilar metals.
  - 3. Grooved mechanical joints may be used in accessible locations only.
    - a. Accessible locations include those exposed on interior of building, in pipe chases, and in mechanical rooms, aboveground outdoors, and as approved by Architect.
    - b. Use rigid joints unless otherwise indicated.
  - 4. Provide pipe hangers and supports in accordance with ASME B31.9 or MSS SP-58 unless indicated otherwise.
- C. Pipe-to-Valve and Pipe-to-Equipment Connections: Use flanges, unions, or grooved couplings to allow disconnection of components for servicing; do not use direct welded, soldered, or threaded connections.
- D. Valves: Provide valves where indicated:
  - 1. Provide drain valves where indicated, and if not indicated, provide at least at main shut-off, low points of piping, bases of vertical risers, and at equipment. Use 3/4 inch gate valves with cap; pipe to nearest floor drain.

2. Isolate equipment using butterfly valves with lug end flanges or grooved mechanical couplings.
3. For throttling, bypass, or manual flow control services, use butterfly valves.
4. In heating water systems, butterfly valves may be used interchangeably with gate and globe valves.

E. Welding Materials and Procedures: Comply with ASME BPVC-IX.

## 2.2 HEATING WATER PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black, using one of the following joint types:

1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings; AWS D1.1/D1.1M welded.
2. Threaded Joints: ASME B16.3, malleable iron fittings.
3. Grooved Joints: AWWA C606 grooved pipe, fittings of same material, and mechanical couplings.

B. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), drawn, using one of the following joint types:

1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings.
  - a. Solder: ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.
  - b. Braze: AWS A5.8M/A5.8 BCuP copper/silver alloy.
2. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.

## 2.3 EQUIPMENT DRAINS AND OVERFLOWS

A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), drawn; using one of the following joint types:

1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings; ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.

## 2.4 PIPE HANGERS AND SUPPORTS

A. Provide hangers and supports that comply with MSS SP-58.

1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.

- B. In grooved installations, use rigid couplings with offsetting angle-pattern bolt pads or with wedge-shaped grooves in header piping to permit support and hanging in accordance with ASME B31.9.

## 2.5 UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS

### A. Unions for Pipe of 2 Inches and Less:

1. Ferrous Piping: 150 psi brass or malleable iron, threaded.
2. Copper Pipe: Press seal joints.

### B. Flanges for Pipe 2 Inches and Greater:

1. Ferrous Piping: 150 psig forged steel, slip-on.
2. Copper Piping: Bronze.
3. Gaskets: 1/16 inch thick, preformed neoprene.

### C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.

1. Dimensions and Testing: In accordance with AWWA C606.
2. Mechanical Couplings: Comply with ASTM F1476.
3. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
4. When pipe is field grooved, provide coupling manufacturer's grooving tools.
5. Manufacturers:
  - a. Anvil International: [www.anvilintl.com/#sle](http://www.anvilintl.com/#sle).
  - b. Gruvlok by ASC Engineered Solutions [www.asc-es.com](http://www.asc-es.com)
  - c. Victaulic Company: [www.victaulic.com/#sle](http://www.victaulic.com/#sle).
  - d. Substitutions: See Section 01 6000 - Product Requirements.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Prepare pipe for grooved mechanical joints as required by coupling manufacturer.
- C. Remove scale and dirt on inside and outside before assembly.

- D. Prepare piping connections to equipment using jointing system specified.
- E. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.
- F. After completion, fill, clean, and treat systems. See Section 23 2500 for additional requirements.

### 3.2 PIPING APPLICATIONS

- A. Heating water piping, above grade:
  - 1. Pipe sizes 3/4" - 2": Copper, press seal joints.
  - 2. Pipe sizes 2 1/2" and larger: Schedule 40 black steel, welded joints or grooved joints where allowed

### 3.3 INSTALLATION

- A. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- B. Install in accordance with manufacturer's instructions.
- C. Route piping in orderly manner, parallel to building structure, and maintain gradient.
- D. Install piping to conserve building space and to avoid interference with use of space.
- E. Group piping whenever practical at common elevations.
- F. Sleeve pipe passing through partitions, walls, and floors.
- G. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified.
- H. Slope piping and arrange to drain at low points.
- I. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- J. Grooved Joints:
  - 1. Install in accordance with the manufacturer's latest published installation instructions.
  - 2. Gaskets to be suitable for the intended service, molded, and produced by the coupling manufacturer.
- K. Pipe Hangers and Supports:
  - 1. Install in accordance with ASME B31.9, ASTM F708, or MSS SP-58.

2. Install hangers to provide minimum 1/2-inch space between finished covering and adjacent work.
  3. Place hangers within 12 inches of each horizontal elbow.
  4. Use hangers with 1-1/2 inches minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
  5. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
  6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
  7. Provide copper plated hangers and supports for copper piping.
- L. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. See Section 23 0719.
- M. Provide access where valves and fittings are not exposed. Coordinate size and location of access doors with Section 08 3100 .
- N. Use eccentric reducers to maintain top of pipe level.
- O. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welds.
- P. Install valves with stems upright or horizontal, not inverted.
- 3.4 FIELD QUALITY CONTROL
- A. Prepare hydronic piping according to ASME B31.9 and as follows:
1. Leave joints, including welds, uninsulated and exposed for examination during test.
  2. Provide temporary restraints for expansion joints that cannot sustain reactions due to test pressure. If temporary restraints are impractical, isolate expansion joints from testing.
  3. Flush hydronic piping systems with clean water; then remove and clean or replace strainer screens.
  4. Isolate equipment from piping. If a valve is used to isolate equipment, its closure shall be capable of sealing against test pressure without damage to valve. Install blinds in flanged joints to isolate equipment.
  5. Install safety valve, set at a pressure no more than one-third higher than test pressure, to protect against damage by expanding liquid or other source of overpressure during test.
- B. Perform the following tests on hydronic piping:

1. Use ambient temperature water as a testing medium unless there is risk of damage due to freezing. Another liquid that is safe for workers and compatible with piping may be used.
2. While filling system, use vents installed at high points of system to release air. Use drains installed at low points for complete draining of test liquid.
3. Isolate expansion tanks and determine that hydronic system is full of water.
4. Subject piping system to hydrostatic test pressure that is not less than 1.5 times the system's working pressure. Test pressure shall not exceed maximum pressure for any vessel, pump, valve, or other component in system under test. Verify that stress due to pressure at bottom of vertical runs does not exceed 90 percent of specified minimum yield strength or 1.7 times the "SE" value in Appendix A in ASME B31.9, "Building Services Piping."
5. After hydrostatic test pressure has been applied for at least 4 hours, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.
6. Prepare written report of testing.

C. Perform the following before operating the system:

1. Open manual valves fully.
2. Inspect pumps for proper rotation. Set makeup pressure-reducing valves for required system pressure.
3. Inspect air vents at high points of system and determine if all are installed and operating freely (automatic type), or bleed air completely (manual type).
4. Set temperature controls so all coils are calling for full flow.
5. Inspect and set operating temperatures of hydronic equipment, such as boilers, chillers, cooling towers, to specified values.
6. Verify lubrication of motors and bearings.





LOUVER SCHEDULE				
TYPE MARK	ROOM NUMBER	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	FREE AREA
L5	101	5'-2"	11"	120 SF
L5	102	5'-2"	11"	120 SF
L3	103	4'-0"	1'-1 1/2"	121 SF
L3	103A	4'-0"	1'-1 1/2"	36 SF
L3	104	4'-0"	1'-1 1/2"	121 SF
L3	104	4'-0"	1'-1 1/2"	120 SF
L5	110	5'-2"	11"	120 SF
L5	111	5'-2"	11"	120 SF
L5	112	5'-2"	11"	120 SF
L5	113	5'-2"	11"	119
L5	114	5'-2"	11"	120 SF
L5	116	5'-2"	11"	120 SF
L5	118	5'-2"	11"	120 SF
L3	119	4'-0"	1'-1 1/2"	150 SF
L2	120	4'-0"	11"	150 SF
L4	121	4'-10"	11"	120 SF
L2	122	4'-0"	11"	150 SF
L4	123	4'-10"	11"	120 SF
L1	124	3'-3"	1'-1 1/2"	111 SF
L4	126	4'-10"	11"	120 SF
L4	125	4'-10"	11"	120 SF
L4	130	4'-10"	11"	120 SF
L4	132	4'-10"	11"	150 SF
Grand total: 23				

GENERAL NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR LOUVERS AT VERTICAL UNIT VENTILATORS.
2. REFER TO SHEET A4.1 FOR LOUVER DETAILS IN MASONRY WALLS.

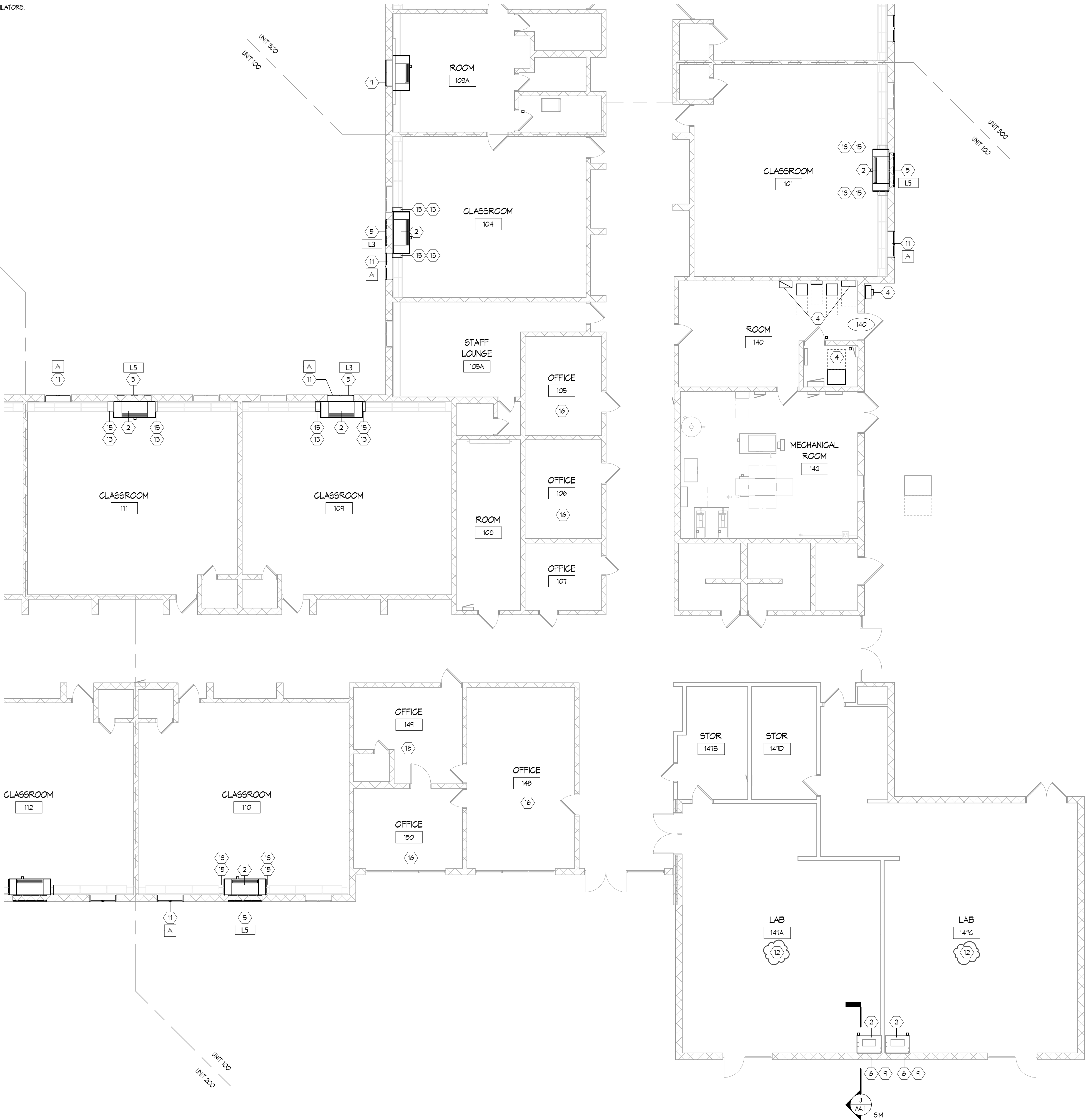
DOOR SCHEDULE												
DOOR NUMBER	DOOR			FRAME				DETAILS				HARDWARE SET
	WIDTH	HEIGHT	DOOR TYPE	DOOR MATERIAL	DOOR GLASS	FRAME TYPE	FRAME MATERIAL	FRAME GLASS	HEAD	JAMB	SILL	
140	4'-0"	7'-0"	EXST	EXST HM	--	EXST	EXST HM	--	--	--	--	EXST

GENERAL NOTES:

1. MATCH EXISTING KEYING SYSTEM. COORDINATE WITH OWNER.

HARDWARE SET:

1. RETROFIT EXISTING DOOR TO MEET PANIC HARDWARE REQUIREMENTS  
(1) RM EXIT DEVICE  
(1) STORAGE LOCK



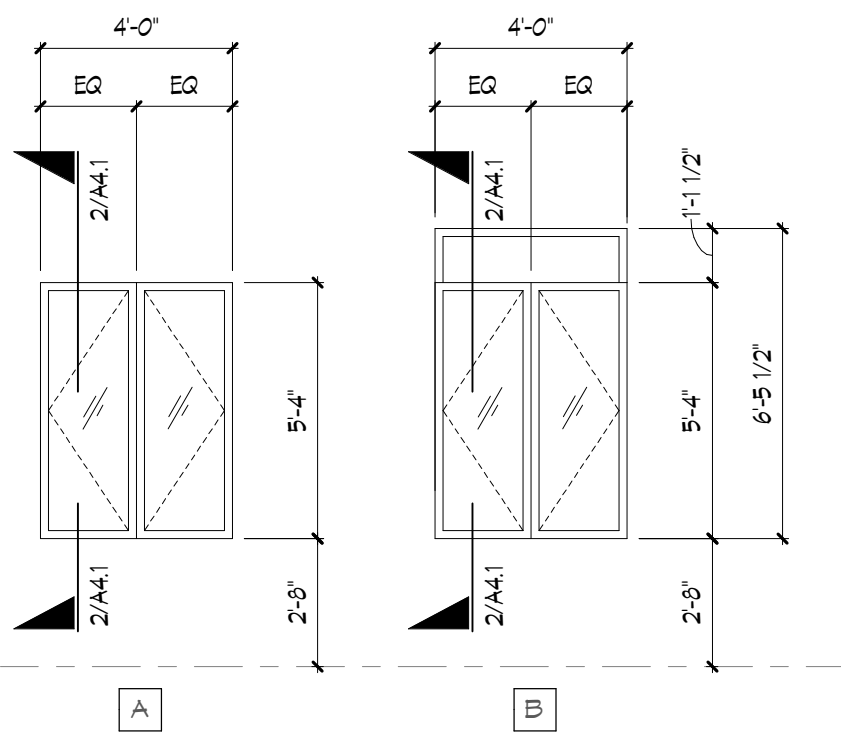
1 FIRST FLOOR ARCH - UNIT 100  
1/8" = 1'-0"

ARCHITECTURAL GENERAL NOTES

1. [XX] INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
3. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
4. CAULK & SEAL AROUND ALL NEW LOUVERS INSTALLED IN EXTERIOR WALLS.
5. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSEING AND MASONRY SIZES U.N.O.
6. PATCH AND PAINT WALLS, PATCH FLOOR AND WALL BASE TO MATCH EXISTING ADJACENT FINISHES AS NEEDED DUE TO MECHANICAL WORK AT NEW UNIT VENTS AND AS INDICATED BY KEYNOTE 16. CONTRACTOR TO VERIFY AREAS OF WORK PRIOR TO BID.
7. WHERE LOUVER PANEL HAS REMOVED FROM METAL CASEWORK TOPS, REPLACE WITH SOLID METAL FILLER PANEL. COLOR TO MATCH EXISTING CASEWORK.

ARCHITECTURAL PLAN KEYNOTES

1. NOT USED.
2. HORIZONTAL OR VERTICAL UNIT VENTILATOR MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS. PROVIDE VERTICAL BREAK METAL PIPE COVER PAINTED TO MATCH EXISTING AT EACH LOCATION.
3. NOT USED.
4. ELECTRICAL EQUIPMENT. REFER TO ELECTRICAL DRAWINGS.
5. LOUVER. REFER TO ARCHITECTURAL SCHEDULE AND DETAILS.
6. LOUVER AT VERTICAL UNIT VENTS. REFER TO MECHANICAL DRAWINGS AND SCHEDULES.
7. MECHANICAL DUCT / LOUVER PENETRATION IN EXISTING BRICK/BLOCK WALL. PROVIDE STEEL LINTEL. REFER TO STRUCTURAL.
8. NOT USED.
9. REMARK MASONRY OPENING TO ACCOMMODATE NEW LOUVER. PROVIDE STEEL LINTEL. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW UNITS MATCHING IN SIZE, COLOR, FINISH AND COURSEING. FILL/ABANDONED LOUVER OPENING AS NEEDED. REFER TO MECHANICAL FOR NEW LOUVER SIZES.
10. BLANK OFF EXISTING LOUVER ON INTERIOR SIDE WITH RIGID INSULATION AND MASONRY.
11. PROVIDE NEW WINDOW TO MATCH EXISTING DOUBLE CASEMENT WITH TRANSOM AND DOUBLE CASEMENT WITHOUT TRANSOM. SIZES VARY. VERIFY EXISTING MASONRY OPENINGS IN FIELD.
12. REINSTALL SALVAGED ACOUSTICAL PANEL CEILING AND GRID.
13. REPLACE ANY TEMPORARY CABINET SUPPORT WITH A FINISHED END PANEL THAT PROVIDES THE ABILITY TO MEET OR EXCEED THE EXISTING SUPPORT. ALL EXPOSED EXISTING TRIM SHALL BE GRINDED SMOOTH TO ENSURE NO SHARP EDGES. CONTRACTOR TO REVIEW EACH EXISTING CONDITION PRIOR TO BIDDING AND AGAIN AT THE START OF CONSTRUCTION AS THEY VARY FROM ROOM TO ROOM.
14. NEW PLASTIC LAMINATE SINK BASE CABINET AND COUNTERTOP. WIDTH IS TO MATCH VACANT SPACE LEFT BY THE REMOVED CABINET. PROVIDE ISOLATION MATERIAL WHERE BASE CABINET MEETS THE NEW MECHANICAL UNIT. CONTRACTOR TO REVIEW EXISTING CONDITIONS PRIOR TO BIDDING AND AGAIN AT THE START OF CONSTRUCTION. PLUM MATERIAL IS TO BE SELECTED BY OWNER.
15. NEW METAL FILLER PANEL AND TOP TO MATCH ADJACENT CASEWORK PROFILE AND OVERALL HEIGHT. FILLER PANEL COLOR IS TO MATCH ADJACENT MECHANICAL EQUIPMENT. REINFORCE FILLER PANEL TO ENSURE OIL CANNING WILL NOT OCCUR AND IS NOT EASILY DAMAGED. PROVIDE ISOLATION MATERIAL WHERE METAL FILLER PANEL AND TOP MEET NEW MECHANICAL UNIT AND EXISTING CASEWORK AND COUNTERTOP TO REMAIN. CONTRACTOR TO REVIEW EACH EXISTING CONDITION PRIOR TO BIDDING AND AGAIN AT THE START OF CONSTRUCTION AS THEY VARY FROM ROOM TO ROOM AND EACH LOCATION WILL BE CUSTOM IN OVERALL DIMENSIONS.
16. PATCH AND PAINT CEILING, WALLS, FLOOR, AND WALL BASE TO MATCH EXISTING ADJACENT FINISHES AS NEEDED DUE TO MECHANICAL WORK OR WALL INFILL.



WINDOW TYPES

FIELD VERIFY OPENING SIZE PRIOR TO MANUFACTURING

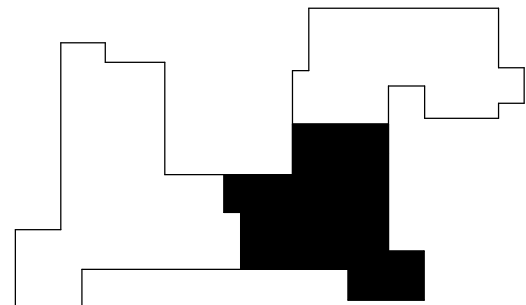


POST OAK HVAC  
IMPROVEMENTS  
LANSING SCHOOL DISTRICT  
2020 Post Oak Ln, Lansing, MI 48912

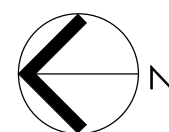


ISSUANCES  
CONSTRUCTION DOCUMENTS  
ADDENDUM 02

DATE  
11.14.2025  
12.11.2025



KEY PLAN



JOB NO. 2616.16

SHEET TITLE

FIRST FLOOR PLAN - UNIT 100,  
DOOR AND LOUVER SCHEDULES,  
WINDOW TYPES  
SHEET NO.

A1.1

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### ELECTRICAL DEMOLITION NOTES

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES, BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES.
3. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION OF DEVICES AND EQUIPMENT REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES.
4. COORDINATE WITH NEW WORK PLANS, ONE LINE, AND Riser DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. COORDINATE ANY SHUTDOWN OF EXISTING SERVICES AND EQUIPMENT REMAINING IN USE WITH OWNERS REPRESENTATIVE. WHERE EXISTING BUILDING SERVICE IS REQUIRED TO BE SHUT DOWN, INCLUDE ALL ASSOCIATED OVERTIME COST TO PERFORM THIS WORK DURING EVENING AND WEEKENDS. INCLUDE ALL COSTS FOR PROVIDING TEMPORARY POWER.
6. REMOVE ALL CONDUIT AND WIRE BACK TO NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM DEVICES TO REMAIN, EXTEND CONDUIT AND WIRE AS REQUIRED TO MAINTAIN ELECTRICAL SERVICE.
8. PROVIDE BLANK COVER PLATES WHERE SWITCHES AND DEVICES ARE REMOVED AND WALL REMAINS INTACT. MARK ALL UNUSED CIRCUIT BREAKERS AS "SPARE".
9. CONTRACTOR TO TAG ALL CIRCUITS AT BOTH ENDS AFFECTED BY THIS SCOPE OF WORK.
10. CONTRACTOR SHALL PROVIDE UPDATED, TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS SCOPE OF WORK.
11. CONTRACTOR SHALL VERIFY ALL UNDERGROUND AND IN-SLAB UTILITIES LOCATIONS PRIOR TO SAW CUTTING OR PENETRATING ANY FLOOR SLABS. CONTRACTOR SHALL REPAIR ALL UTILITIES DAMAGED BY SAW CUTTING.

### ELECTRICAL DEMOLITION KEYNOTES

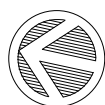
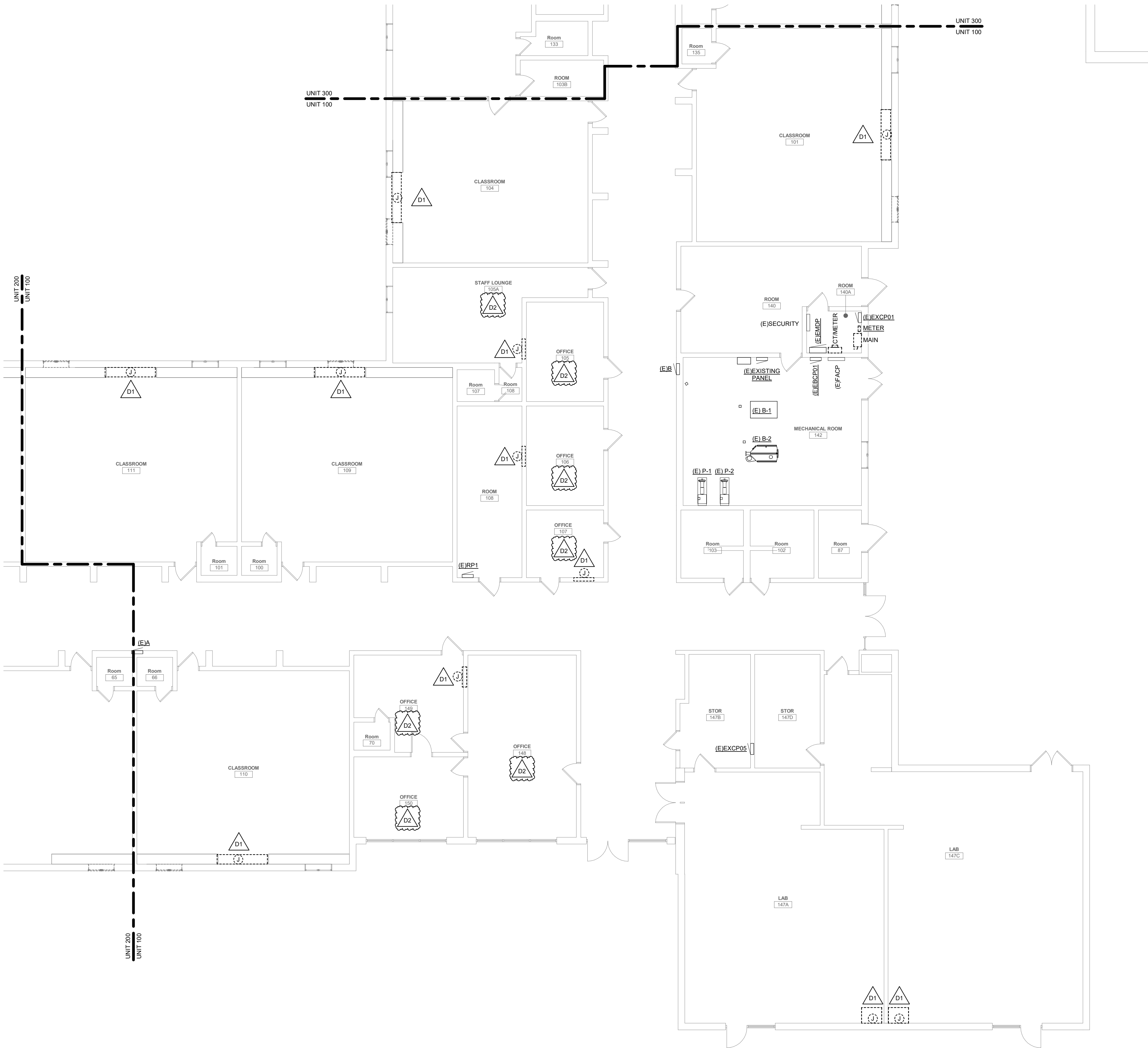
- D1 DISCONNECT AND DEMOLISH MECHANICAL EQUIPMENT POWER CONNECTION COMPLETE BACK TO SOURCE
- D2 COORDINATE TEMPORARY REMOVAL OF CEILING MOUNTED LIGHTING AND POWER DEVICES, AND FEEDS IN CEILING AS REQUIRED FOR NEW MECHANICAL WORK. SAVE LIGHTING AND POWER DEVICES FOR REINSTALLATION IN NEW WORK. COORDINATE WITH MECHANICAL TRADES FOR EXACT AREA OF SCOPE IN FIELD.



# POST OAK HVAC IMPROVEMENTS

## LANSING SCHOOL DISTRICT

2020 Post Oak Ln, Lansing, MI 48912

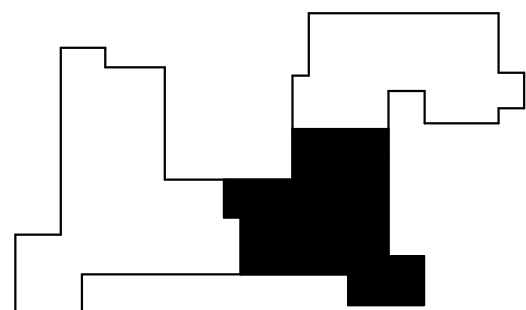


### FIRST FLOOR POWER DEMOLITION PLAN - UNIT 100

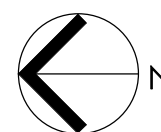
SCALE: 1/8" = 1'-0"



ISSUANCES	DATE
DESIGN DEVELOPMENT	09.26.2025
CD PROGRESS	10.24.2025
CONSTRUCTION DOCUMENTS	11.14.2025
ADDENDUM 02	12.11.2025



### KEY PLAN



JOB NO. 2616.16

SHEET TITLE

FIRST FLOOR POWER  
DEMOLITION PLAN - UNIT 100

SHEET NO.

# ED1.1



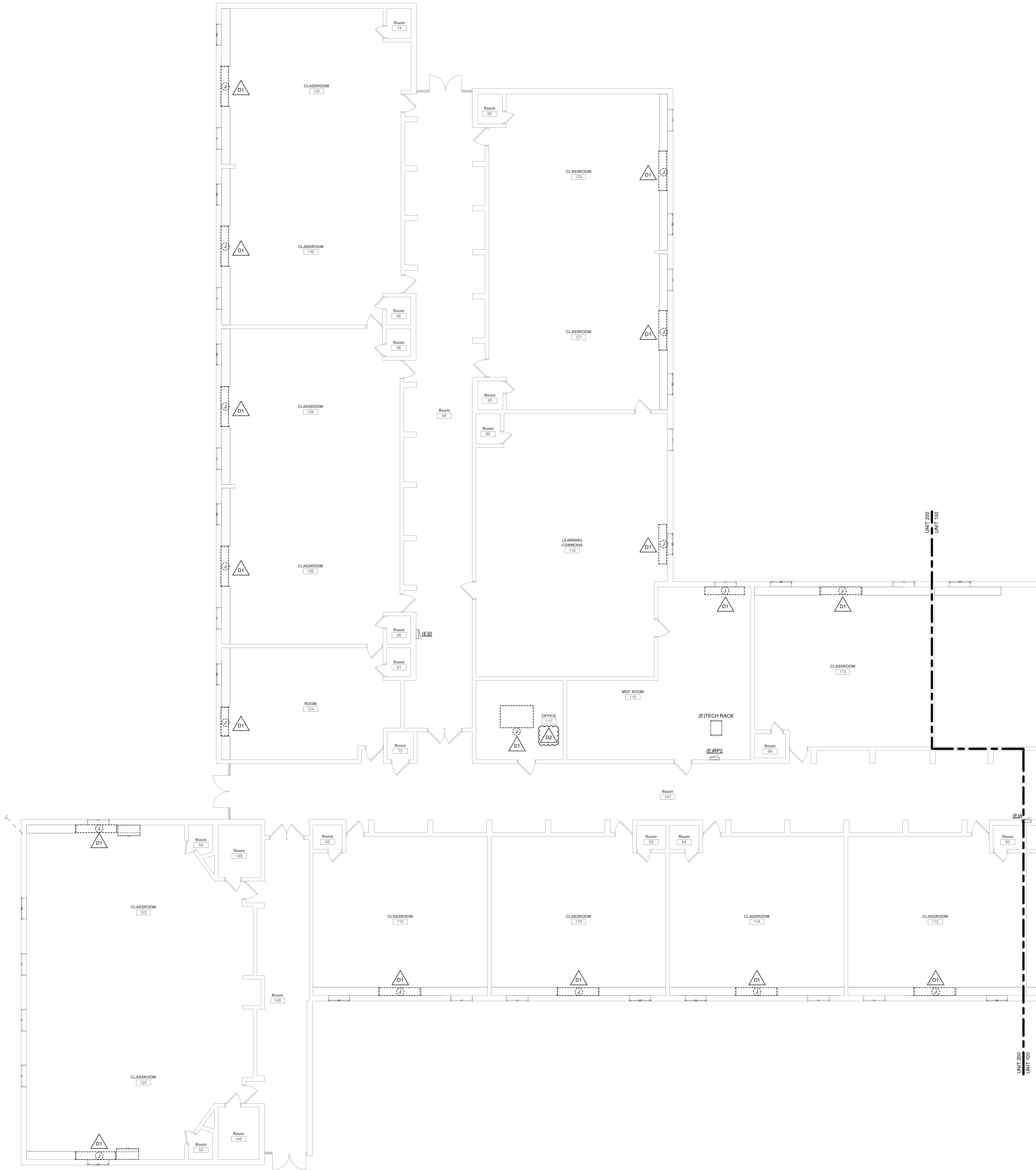
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FIRST FLOOR POWER DEMOLITION PLAN - UNIT 200  
SCALE: 1/8" = 1'-0"

### ELECTRICAL DEMOLITION NOTES

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES, BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES.
3. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION OF DEVICES AND EQUIPMENT REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES.
4. COORDINATE WITH NEW WORK PLANS, ONE LINE, AND Riser DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. COORDINATE ANY SHUTDOWN OF EXISTING SERVICES AND EQUIPMENT REMAINING IN USE WITH OWNERS REPRESENTATIVE. WHERE EXISTING BUILDING SERVICE IS REQUIRED TO BE SHUT DOWN, INCLUDE ALL ASSOCIATED OVERTIME COST TO PERFORM THIS WORK DURING EVENING AND WEEKENDS. INCLUDE ALL COSTS FOR PROVIDING TEMPORARY POWER.
6. REMOVE ALL CONDUIT AND WIRE BACK TO NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM DEVICES TO REMAIN, EXTEND CONDUIT AND WIRE AS REQUIRED TO MAINTAIN ELECTRICAL SERVICE.
8. PROVIDE BLANK COVER PLATES WHERE SWITCHES AND DEVICES ARE REMOVED AND WALL REMAINS INTACT. MARK ALL UNUSED CIRCUIT BREAKERS AS "SPARE".
9. CONTRACTOR TO TAG ALL CIRCUITS AT BOTH ENDS AFFECTED BY THIS SCOPE OF WORK.
10. CONTRACTOR SHALL PROVIDE UPDATED, TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS SCOPE OF WORK.
11. CONTRACTOR SHALL VERIFY ALL UNDERGROUND AND IN-SLAB UTILITIES LOCATIONS PRIOR TO SAW CUTTING OR PENETRATING ANY FLOOR SLAB. CONTRACTOR SHALL REPAIR ALL UTILITIES DAMAGED BY SAW CUTTING.

### ELECTRICAL DEMOLITION KEYNOTES

- D1 DISCONNECT AND DEMOLISH MECHANICAL EQUIPMENT POWER CONNECTION COMPLETE BACK TO SOURCE
- D2 COORDINATE TEMPORARY REMOVAL OF CEILING MOUNTED LIGHTING AND POWER DEVICES, AND FEEDS IN CEILING AS REQUIRED FOR NEW MECHANICAL WORK. SAVE LIGHTING AND POWER DEVICES FOR REINSTALLATION IN NEW WORK. COORDINATE WITH MECHANICAL TRADES FOR EXACT AREA OF SCOPE IN FIELD.



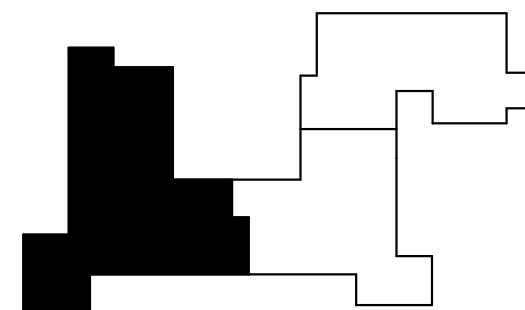
# POST OAK HVAC IMPROVEMENTS

## LANSING SCHOOL DISTRICT

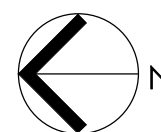
2020 Post Oak Ln, Lansing, MI 48912



ISSUANCES	DATE
DESIGN DEVELOPMENT	09.26.2025
CD PROGRESS	10.24.2025
CONSTRUCTION DOCUMENTS	11.14.2025
ADDENDUM 02	12.11.2025



### KEY PLAN



JOB NO. 2616.16

SHEET TITLE

FIRST FLOOR POWER  
DEMOLITION PLAN - UNIT 200

SHEET NO.

# ED1.2



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1. ALL RECEPTACES ON EXTERIOR, INTERIOR, IN CONCESSION, IN LABORATORY AND WITHIN 6' OF SINK OR OTHER WATER SUPPLY SHALL BE READILY ACCESSIBLE GFCI TYPE RECEPTACLE.
2. REFER TO ARCHITECTURAL FLOOR PLANS AND ELEVATIONS TO VERIFY LOCATION OF DEVICES.
3. ALL CONDUITS SERVING 120 VOLTS OR GREATER SHALL INCLUDE A GROUND WIRE. ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.
4. ALL 120 VOLT CIRCUITS SHALL UTILIZE A SEPARATE NEUTRAL.
5. ALL NEW 15- AND 20-AMPERE, 125- AND 250-VOLT NONLOCKING-TYPE RECEPTACLES TO BE USED IN DUPLEX RECEPTACLE LOCATIONS SHALL BE INSTALLED AT LEAST 4 FEET ABOVE THE FLOOR. THIS INCLUDES RECEPTACLES LOCATED MORE THAN 4 FEET ABOVE THE FLOOR AND SINGLE OR DUPLEX RECEPTACLES FOR DEDICATED APPLIANCES THAT ARE NOT READILY ACCESSIBLE.
6. ALL RECEPTACLE REPAIRS AND REPLACEMENTS SHALL BE COMPLETED. RENOVATION WORK SHALL BE UPDATED PER NEW RECEPTACLE NOTES ABOVE AS WELL.

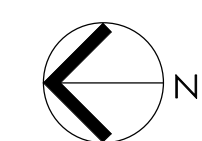
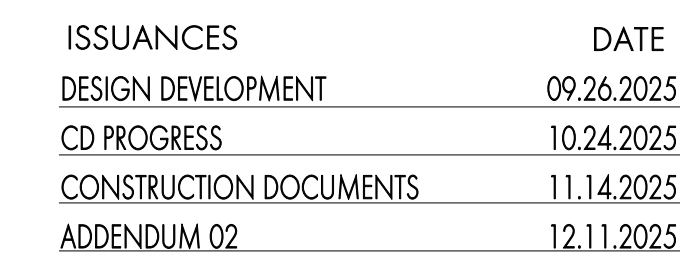
R1 EQUIPMENT DISCONNECT OR COMBINATION DISCONNECT/VFD TO PROVIDED BY MANUFACTURER. EC TO PROVIDE ALL POWER CONNECTIONS TO ENERGIZE EQUIPMENT AS INDICATED. COORDINATE INSTALLATION WITH MECHANICAL TRADES AND FINAL EQUIPMENT SUBMITTAL POWERED.

R2 INDOOR AC AND FCU MECHANICAL EQUIPMENT POWERED BY OUTDOOR CU OR HP. COORDINATE PLACEMENT OF INTERIOR DISCONNECT IN ACCESSIBLE LOCATION PRIOR TO ROUGH-IN.

R3 COORDINATE REINSTALLATION OF CEILING MOUNTED LIGHTING AND POWER DEVICES, AND FAN/EXHAUST UNITS DURING DEMOLITION ONCE MECHANICAL SCOPE IS COMPLETE. COORDINATE WITH ARCHITECTURAL TRADES FOR EXACT AREA OF SCOPE IN FIELD.



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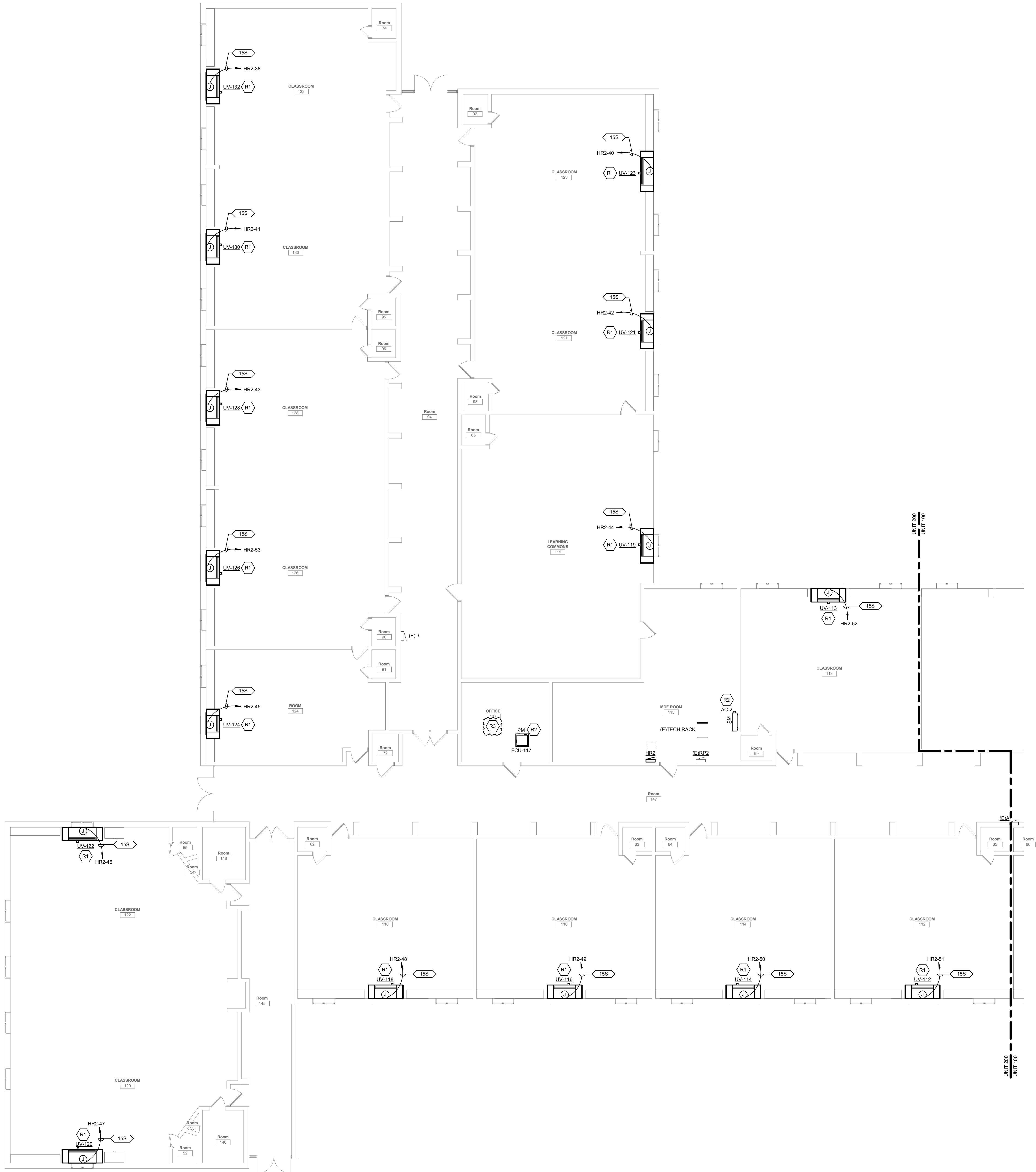


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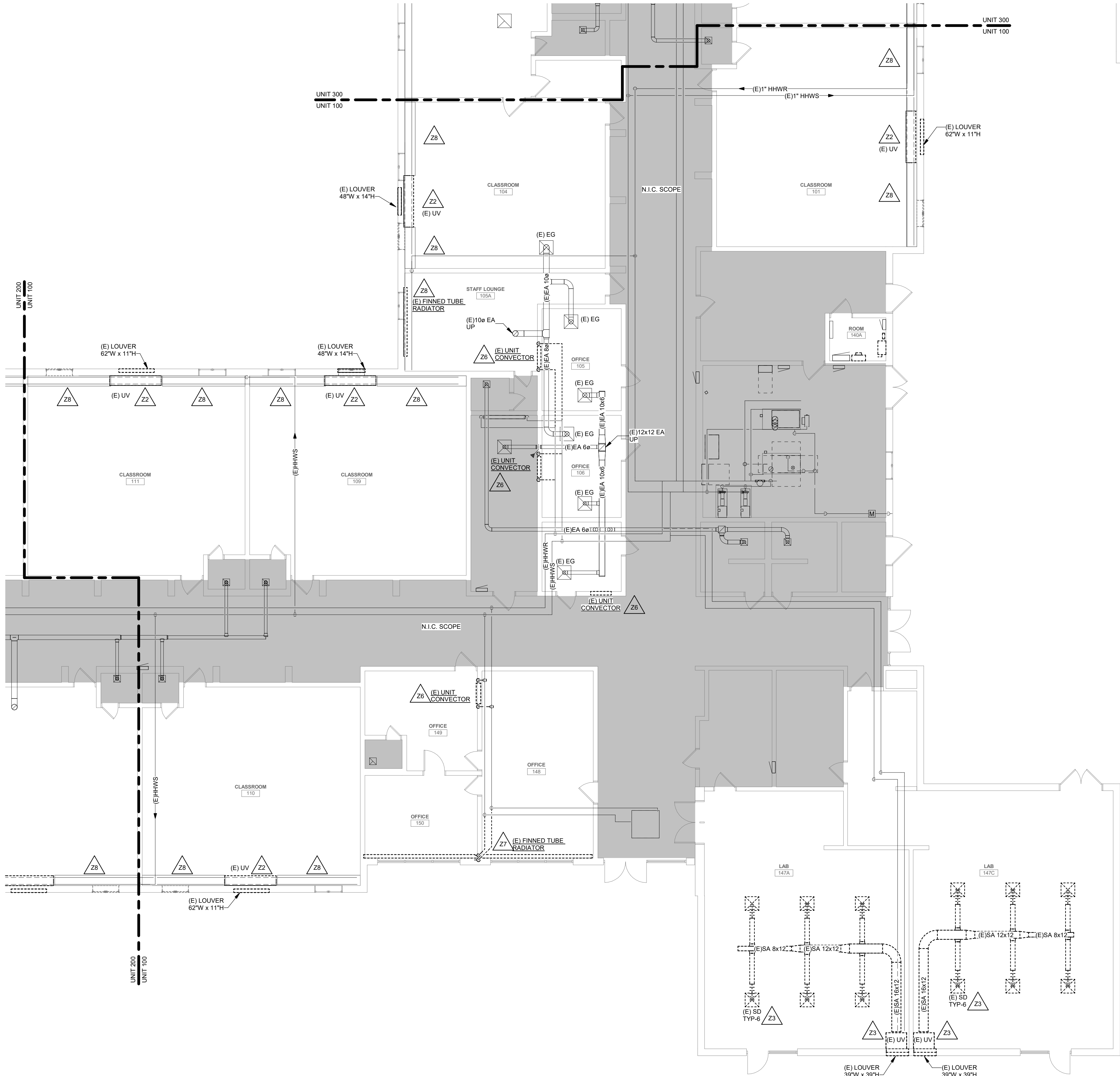




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Author: Chris L. Lutz - First Floor HVAC Improvements 25 0588 25, LST Post Oak AC Upgrade, MEP 2025.rvt  
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FIRST FLOOR MECHANICAL DEMOLITION PLAN - UNIT 100  
SCALE: 1/8" = 1'-0"

MECHANICAL DEMOLITION NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK.
2. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY ARCHITECT OF ANY INTERFERENCES OR DISCREPANCIES.
3. VERIFY DEPTH, SIZE, LOCATIONS AND CONDITION OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION PRIOR TO STARTING ANY WORK.
4. ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
5. ALL ITEMS ON DEMOLITION PLANS SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
6. ALL ITEMS INDICATED WITH BROKEN LINES SHALL BE REMOVED COMPLETE, WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN ENDED PIPES AND DUCTS.
7. ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT OR PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.
8. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER PROVIDED EQUIPMENT.

MECHANICAL DEMOLITION KEYNOTES

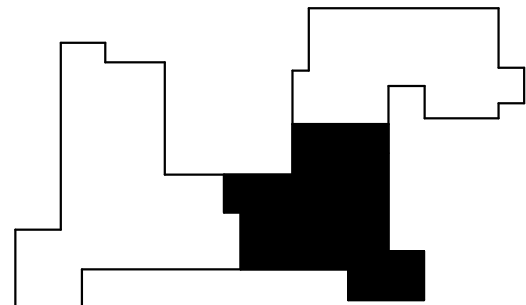
21. REMOVE (E) AHU-1 AND ALL ASSOCIATED DUCTWORK, CONTROLS AND ACCESSORIES. DEMOLISH EXISTING ASSOCIATED HEATING HOT WATER PIPING TO UNIT TO JUST BELOW ROOF. DEMOLISH EXISTING IN-LINE BOOSTER PUMP AND ALL ASSOCIATED CONTROLS AND ACCESSORIES.
22. REMOVE HORIZONTAL UNIT VENTILATOR AND ASSOCIATED LOUVER. DEMOLISH AND REMOVE ALL ASSOCIATED PIPING, FITTINGS, VALVES AND ACCESSORIES BACK TO PIPE MAINS.
23. REMOVE VERTICAL UNIT VENTILATOR AND ASSOCIATED LOUVER. DEMOLISH AND REMOVE ALL ASSOCIATED PIPING, FITTINGS, VALVES AND ACCESSORIES TO ACCOMMODATE NEW UNIT VENTILATOR. DEMOLISH ALL ASSOCIATED DUCTWORK, FITTINGS, AND DIFFUSERS.
24. REMOVE CEILING-MOUNTED UNIT VENTILATOR AND ASSOCIATED LOUVER. DEMOLISH ALL ASSOCIATED PIPING, FITTINGS, VALVES AND ACCESSORIES TO ACCOMMODATE NEW UNIT VENTILATOR.
25. REMOVE HEATING HOT WATER UNIT CONNECTOR. DEMOLISH ALL ASSOCIATED PIPING, VALVES AND FITTINGS BACK TO ASSOCIATED PIPE BRANCH. COORDINATE WITH ARCHITECTURAL FOR WALL PATCHING AND PAINT DETAILS.
26. REMOVE EXISTING HEATING HOT WATER FINNED TUBE RADIATOR. DEMOLISH ALL ASSOCIATED PIPING, VALVES AND FITTINGS BACK TO ASSOCIATED PIPE BRANCH.
27. REMOVE ALL FINNED TUBE RADIATOR PIPING IN CLASSROOM. COORDINATE WITH ARCHITECTURAL FOR BLANK-OFF PANEL DETAILS.
28. REMOVE EXISTING HORIZONTAL UNIT VENTILATOR AND ASSOCIATED LOUVER. DEMOLISH ALL ASSOCIATED PIPING, FITTINGS, VALVES AND ACCESSORIES BACK TO PIPE MAINS. COORDINATE WITH ARCHITECT TO REMOVE EXTERIOR LOUVER AND CAP WALL CAVITY FROM WITHIN THE BUILDING.



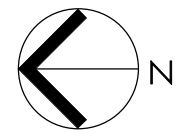
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ISSUANCES	DATE
DESIGN DEVELOPMENT	09.26.2025
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ADDENDUM 02	12.11.2025



KEY PLAN



JOB NO. 2616.16

SHEET TITLE

FIRST FLOOR MECHANICAL  
DEMOLITION PLAN - UNIT 100

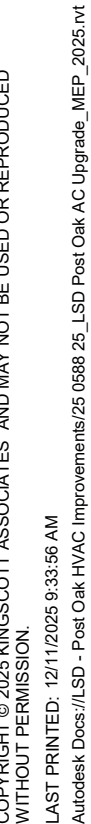
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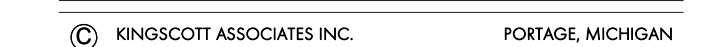


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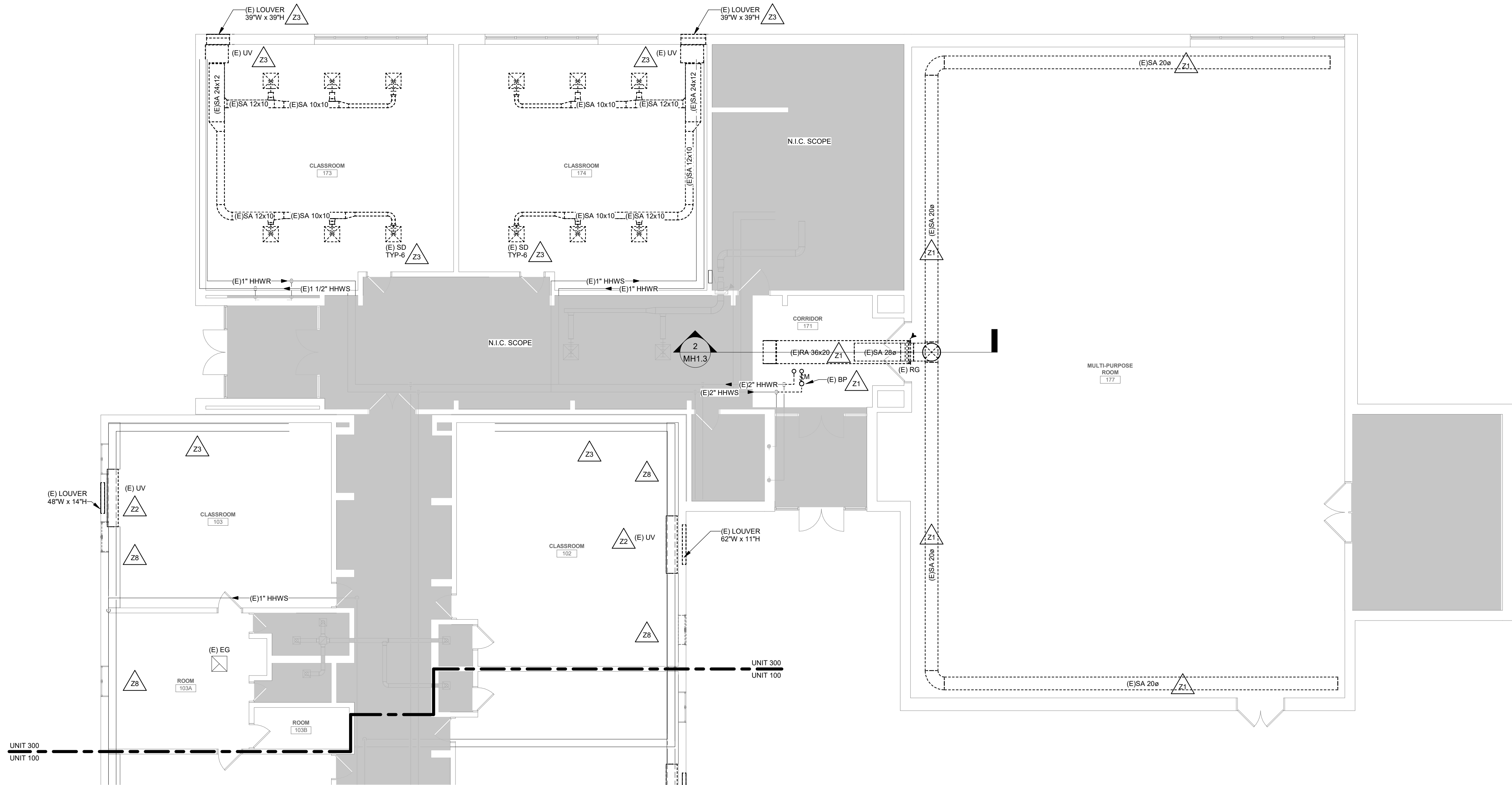
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MECHANICAL DEMOLITION NOTES

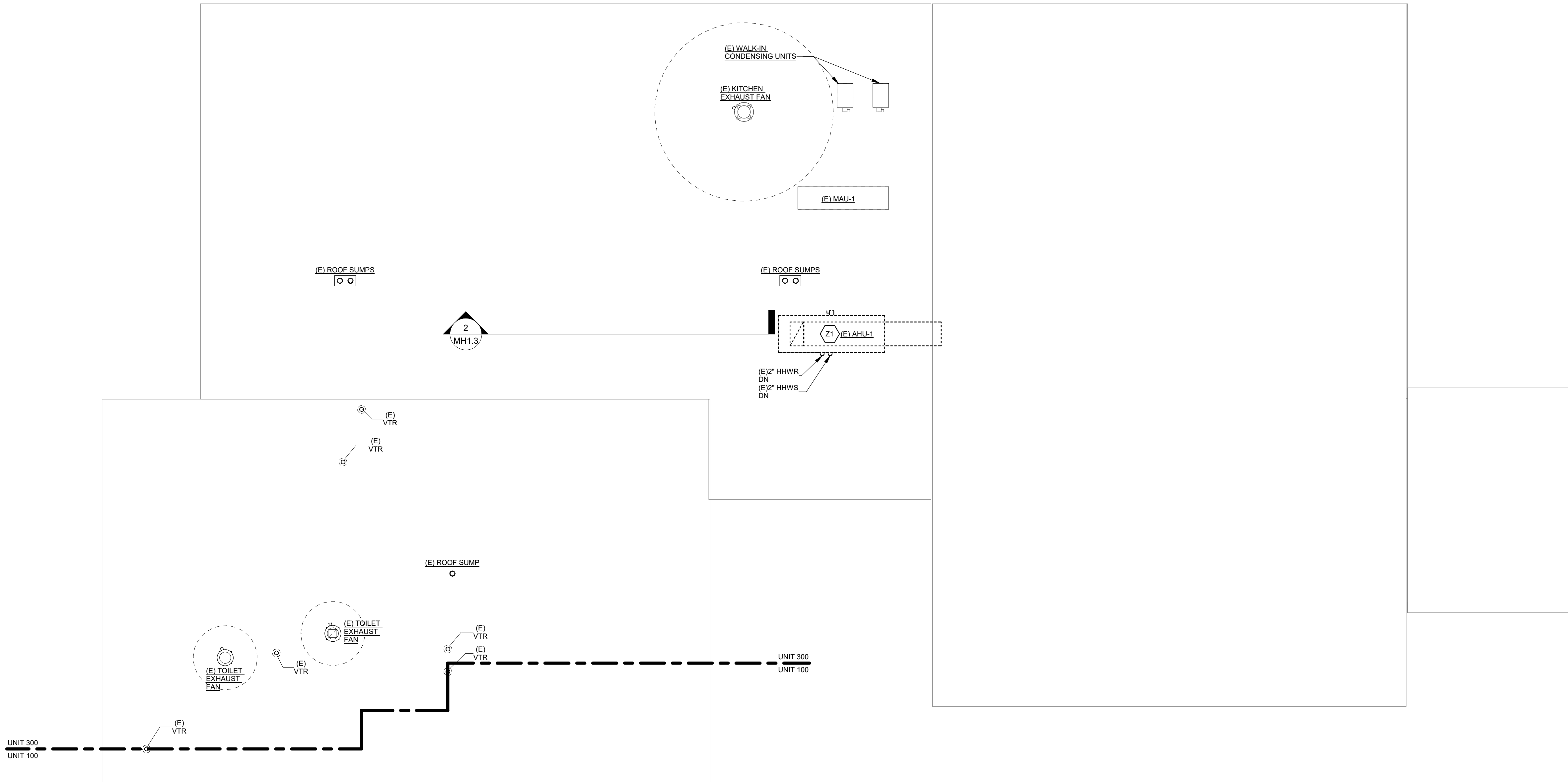
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MECHANICAL DEMOLITION KEYNOTES

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- REMOVE EXISTING HEATING HOT WATER FINNED TUBE RADIATOR. DEMOLISH ALL ASSOCIATED PIPING, VALVES AND FITTINGS BACK TO ASSOCIATED PIPE BRANCH.
- REMOVE ALL FINNED TUBE RADIATOR PIPING IN CLASSROOM. COORDINATE WITH ARCHITECTURAL FOR BLANK-OFF PANEL DETAILS.
- REMOVE EXISTING HORIZONTAL UNIT VENTILATOR AND ASSOCIATED LOUVER. DEMOLISH ALL ASSOCIATED PIPING, FITTINGS, VALVES AND ACCESSORIES BACK TO PIPE MAINS. COORDINATE WITH ARCHITECT TO REMOVE EXTERIOR LOUVER AND CAP WALL CAVITY FROM WITHIN THE BUILDING.







ROOF MECHANICAL DEMOLITION PLAN - UNIT 300  
SCALE: 1/8" = 1'-0"

### MECHANICAL DEMOLITION NOTES

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### MECHANICAL DEMOLITION KEYNOTES

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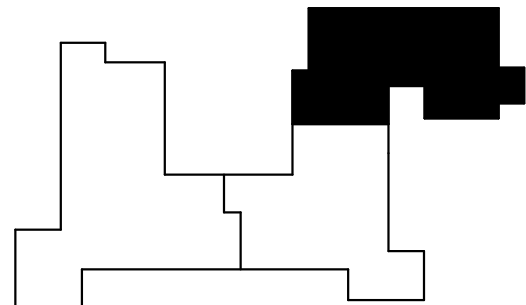
# POST OAK HVAC IMPROVEMENTS

## LANSING SCHOOL DISTRICT

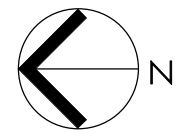
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### KEY PLAN



JOB NO. 2616.16

SHEET TITLE

ROOF MECHANICAL  
DEMOLITION PLAN - UNIT 300

SHEET NO.

# MD1.13

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HVAC GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE HVAC SYSTEMS COMPLETE PER SPECIFICATION, SMACNA STANDARDS, AND PER APPLICABLE CODES INCLUDING ALL NECESSARY OFFSETS, FITTINGS, SPECIAL RADII, OR MITERED ELBOWS WHICH ARE REQUIRED DUE TO SPACE CONSTRAINTS OR STRUCTURAL CONDITIONS OR OTHER CONDITIONS.
2. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK OF ALL OTHER TRADES. ALL DUCTWORK IS TO BE ROUTED AS HIGH AS POSSIBLE. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. VERIFY ALL CLEARANCES PRIOR TO THE FABRICATION OF ANY WORK.
3. DUCTWORK/PIPING SHALL BE ROUTED AS HIGH AS POSSIBLE AND SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT/PANELS. PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT. DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
4. DUCTWORK/PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
5. THE CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL, ETC. FOR THE PROPER INSTALLATION OF ALL MECHANICAL SYSTEMS.
6. COORDINATE FLOOR, WALL, ROOF PENETRATIONS, LOUVER SIZES, PAD LOCATIONS ETC. WITH ARCHITECTURAL TRADES. SEAL ALL PIPING AND DUCT PENETRATIONS.
7. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.
8. COORDINATE AND PROVIDE ACCESS DOORS IN HARD CEILING AREAS FOR ACCESS TO BALANCING DAMPERS, ETC. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
9. BRANCH DUCTWORK TO GRILLES, REGISTERS AND DIFFUSERS SHALL BE THE SAME SIZE AS THE GRILLE, REGISTER OR DIFFUSER NECK SIZE WHERE NO DUCT SIZE IS INDICATED ON PLAN.
10. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0".
11. FOR EQUIPMENT VALVING, COMPONENT, AND PIPING ARRANGEMENT, REFER TO PIPING DIAGRAMS AND DETAILS.
12. PAINT ALL VISIBLE INTERIOR SURFACES OF EXHAUST/RETURN GRILLES, REGISTERS AND VISIBLE ASSOCIATED DUCTWORK FLAT BLACK.
13. THE CEILING SPACE IS USED AS A RETURN AIR PLENUM. NO PLASTIC MATERIALS INCLUDING PVC PIPING, CONDUIT, WIRING, ETC. SHALL BE USED. ALL MATERIAL IN THE CEILING SPACE IS TO BE PLENUM RATED.
14. PROVIDE CODE REQUIRED CLEARANCE/ACCESS DOORS FOR DAMPERS, VALVES, AND CLEANOUTS LOCATED IN WALLS OR ABOVE HARD CEILINGS. COORDINATE LOCATIONS WITH ARCHITECT. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES.
15. DUCTWORK TO AND FROM VAV BOXES/TERMINAL UNITS SHALL BE EQUAL TO THE BOX CONNECTION SIZES UNLESS INDICATED OTHERWISE.
16. CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
17. ALL BRANCH PIPING TO TERMINAL UNITS TO BE 3/4" UNLESS OTHERWISE NOTED.
18. ROOF MOUNTED EQUIPMENT REQUIRING SERVICE SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ROOF EDGES. WHERE EQUIPMENT CANT BE LOCATED AWAY FROM ROOF EDGE AND GUARD RAILS ARE NOT PROVIDED, PROVIDE PERMANENT FALL ARREST ANCHORAGE CONNECTION DEVICE THAT COMPLIES WITH ANSII/ASSE 2.399.1.

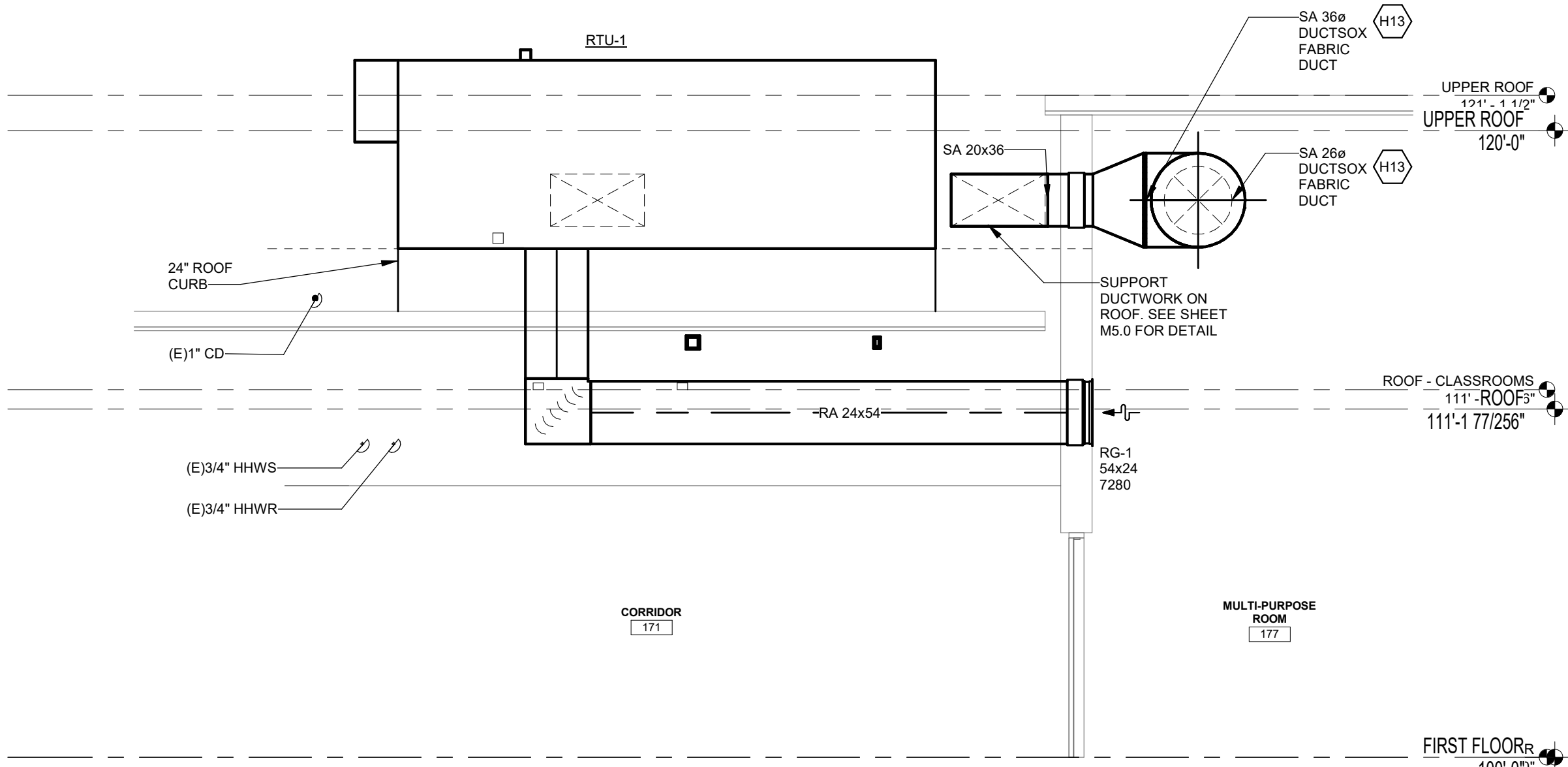
MECHANICAL KEYNOTES

- H2 LOCATE NEW RTU OVER EXISTING AHU-1 OPENING. COORDINATE WITH STRUCTURAL FOR SUPPORT DETAILS ON NEW ROOFTOP UNIT. ROUTE CONDENSATE DRAIN FROM COOLING COIL TO NEAREST ROOF DRAIN.
- H3 NEW MANUFACTURER PROVIDED 4" W X 36" H DRAINABLE BLADE LOUVER. MANUFACTURER TO PROVIDE WALL SLEEVE TO MATCH EXISTING WALL THICKNESS. REFER TO MANUFACTURER'S GUIDE FOR INSTALLATION OF LOUVER AND CONNECTION UP TO UNIT. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL TO PROVIDE NECESSARY SUPPORT FOR NEW LOUVER OPENING WHERE REQUIRED.
- H4 ROUTE DRA DUCT FROM CEILING CASSETTE UP THROUGH ROOF AND TERMINATE 18" ABOVE ROOF WITH GOOSENECK AND BIRD SCREEN.
- H5 MOUNT NEW CONDENSING UNIT ON STEEL RAILS. ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO CASSETTES THROUGH A COVERED PIPE CURB.
- H6 MOUNT NEW CONDENSING UNIT ON 6" REMOVABLE PAD. ROUTE ASSOCIATED REFRIGERANT PIPING THROUGH COVERED PIPE CURB.
- H7 CONNECT NEW HHWS & HHWR PIPING TO NEW UNIT VENTILATOR FROM EXISTING HEATING HOT WATER PIPES NEAR UNIT. REFER TO MANUFACTURER'S GUIDE FOR INSTALLATION OF PIPING TO NEW UNIT.
- H8 PROVIDE THERMOSTAT WITH LOCKING COVER IN MULTI-PURPOSE ROOM.
- H9 MOUNT NEW SPLIT SYSTEM CONDENSING UNIT ON STEEL RAILS. ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO INDOOR WALL-MOUNTED UNIT THROUGH A COVERED PIPE CURB.
- H10 ROUTE REFRIGERANT PIPING TO AND FROM RESPECTIVE CONDENSING UNIT ON ROOF TO CEILING CASSETTE THROUGH COVERED PIPE CURB. INSULATE AND ROUTE 3/4" PVC CONDENSATE DRAIN PIPE FROM CEILING CASSETTE TO NEAREST UTILITY SINK OR MECHANICAL ROOM FLOOR DRAIN.
- H11 ARCHITECT TO PROVIDE NEW DECORATIVE DRAINABLE BLADE LOUVER FOR NEW UNIT VENTILATOR. COORDINATE WITH ARCHITECT AND STRUCTURAL FOR DETAILS AND SUPPORT REQUIRED FOR INSTALLATION OF LOUVER.
- H12 PIPE CURB SIZES AND LOCATION, SHOWN AS REFERENCE ONLY.
- H13 DUCTSOX FABRIC DUCT WITH INTERNAL HOOP SUPPORT SYSTEM MOUNTED AT ~16" 3" AFF. COORDINATE LOCATION WITH EXISTING LIGHTS AND BASKETBALL HOOPS. COORDINATE DISCHARGE/NOZZLE DIRECTION, SPACING, AND THROW WITH LIGHT FIXTURES. FABRIC DUCT MFR TO PROVIDE FINAL LAYOUT AND ENGINEERING INCLUDING, BUT NOT LIMITED TO, THROWS, VELOCITIES, MATERIALS, SPACING, ETC.

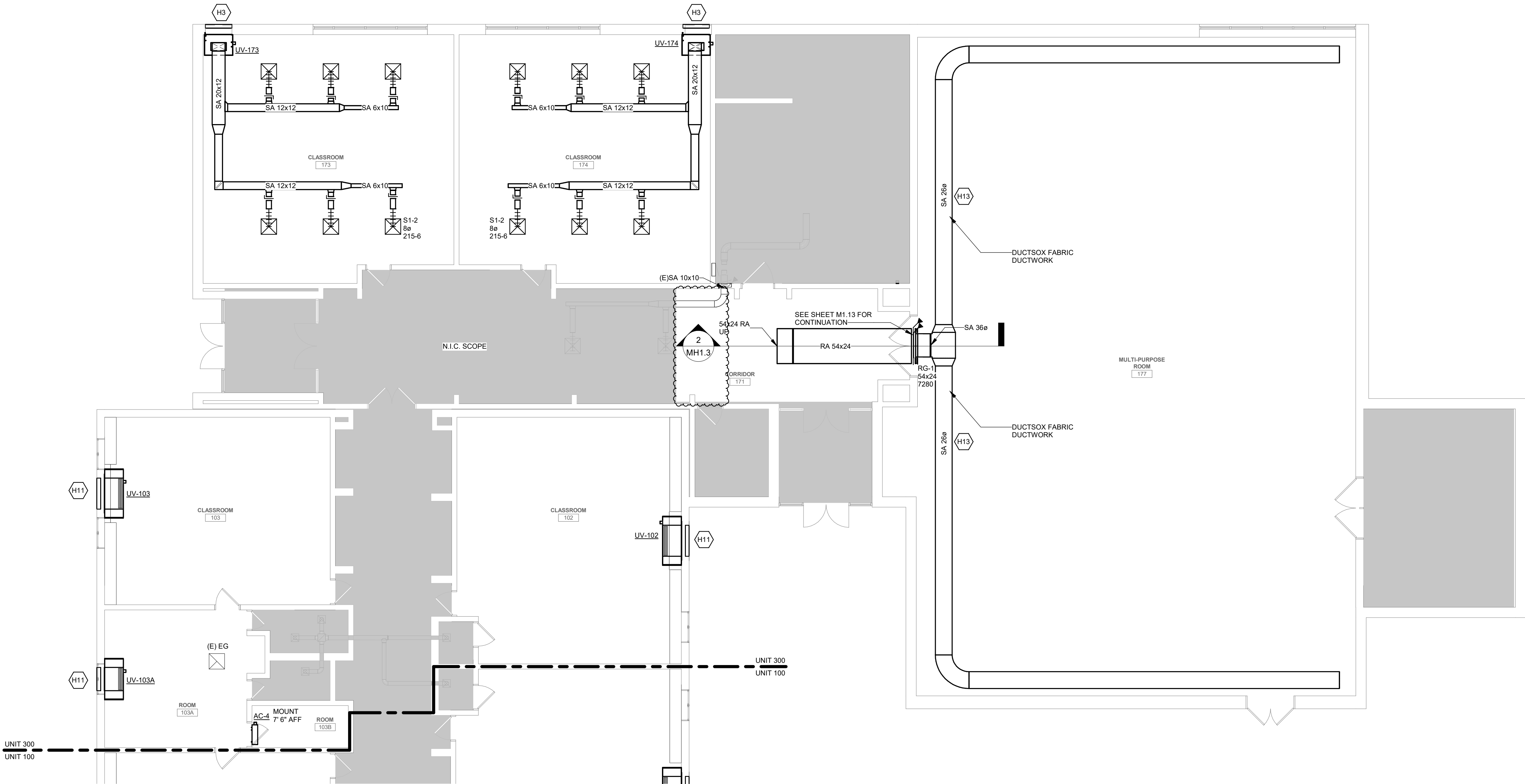


POST OAK HVAC  
IMPROVEMENTS  
LANSING SCHOOL DISTRICT

2020 Post Oak Ln, Lansing, MI 48912



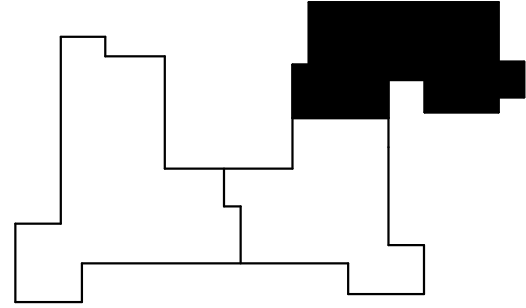
RTU-1 E-W SECTION  
SCALE: 1/4" = 1'-0"



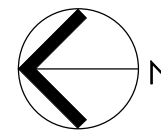
FIRST FLOOR MECHANICAL HVAC PLAN - UNIT 300  
SCALE: 1/8" = 1'-0"



ISSUANCES	DATE
DESIGN DEVELOPMENT	09.26.2025
CD PROGRESS	10.24.2025
CONSTRUCTION DOCUMENTS	11.14.2025
ADDENDUM 02	12.11.2025



KEY PLAN



JOB NO. 2616.16

SHEET TITLE

FIRST FLOOR MECHANICAL HVAC  
PLAN - UNIT 300

SHEET NO.

MH1.3



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