

ADDENDUM NO. 2 - TO
SPECIFICATIONS AND CONTRACT DOCUMENTS
DESOTO CENTRAL PRIMARY ADDITION
DESOTO COUNTY SCHOOLS

OCTOBER 12, 2020

This addendum forms a part of the Contract Documents and modifies the original specifications and drawings, dated 9-10-20 as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

This Addendum consists of 2 pages and 22 attachments.

- Item No. 1: SPECIFICATIONS, SECTION 00 00 04 – LIST OF DRAWINGS: Remove and destroy this section and insert the attached revised Section 00 00 04 – LIST OF DRAWINGS, consisting of 2 pages and marked “Revised 10-12-20” in lower left corner.
- Item No. 2: SPECIFICATIONS, SECTION 07 5216 – SBS MODIFIED BITUMINOUS MEM ROOFING:
 1. Page 5, Paragraph 2.6 B., add “R Value = R20”.
 2. Page 5, Paragraph 2.6 D., delete in its entirety.
- Item No. 3: SPECIFICATIONS, SECTION 08 1416 – FLUSH WOOD DOORS:
 1. Page 2, Paragraph 2.2 A., delete paragraph “A.” in its entirety.
 2. Page 3, Paragraph 2.3 A.2., change “white maple” to “Cherry”.
 3. Page 3, Paragraph 2.3 A.3., change “Quarter” to “Plain”.
- Item No. 4: SPECIFICATIONS, SECTION 08 7100 –DOOR HARDWARE: Remove and destroy this section and insert the attached revised Section 08 7100 –DOOR HARDWARE, consisting of 12 pages and marked “Revised 10-12-20” in lower left corner.
- Item No. 5: SPECIFICATIONS, SECTION 27 0000 – STRUCTURED CABLING: Page 18, delete “Bill of Material” and replace with the following:

Desoto Central Primary

Manufacturer	Product	Description
Siemon	Z6A-02	10G Module
Siemon	10GMX-FPS02-02	2 Port Faceplate
Siemon	10GMXFPS01-02	Single Port Faceplate
Siemon	Z6A-PNL-24K	24Port Patch Panel
Siemon	MX-SMZ2-02	Surface Mount Boxes
Siemon	BP6A-05-06	3' Patch Cords
Siemon	BP6A-10-06	10' Patch Cords
Siemon	9C6P4-A5-02-R1A	Augmented Cat6A Plenum
Aruba	IAP550	Aruba Instant AP
Ruckus	ICX7150-48ZP-E8X10GR2-A	IDF Switches
Ruckus	E1MG-LX-OM	1GbE Fiber Module
Axis	01152-001	M3016
Axis	01049-001	M2026

- Item No. 6: DRAWINGS, SHEET A12.1 – FINISH FLOOR PLAN AND INTERIOR ELEVATIONS: Remove and destroy this sheet and insert the attached revised Sheet A12.1 – FINISH FLOOR PLAN AND INTERIOR ELEVATIONS dated 10-12-20.
- Item No. 7: DRAWINGS, SHEET S1.1 – FOUNDATION PLANS: Add the following Note 7 as follows: "Top of all proposed footings shall be 2'-0" below finished floor except as otherwise noted or at adjacent existing construction."
- Item No. 8: DRAWINGS, SHEET M0.1 – GENERAL NOTES - MECHANICAL: Remove and destroy this sheet and insert the attached revised Sheet M0.1 – GENERAL NOTES - MECHANICAL dated 10-12-20.
- Item No. 9: DRAWINGS, SHEET M1.1 – FIRST FLOOR PLAN - MECHANICAL: Remove and destroy this sheet and insert the attached revised Sheet M1.1 – FIRST FLOOR PLAN - MECHANICAL dated 10-12-20.
- Item No.10: DRAWINGS, SHEET M1.2 – ROOF PLAN - MECHANICAL: Remove and destroy this sheet and insert the attached revised Sheet M1.2 – ROOF PLAN - MECHANICAL dated 10-12-20.
- Item No.11: DRAWINGS, SHEET M2.1 – SCHEDULES & RTU SEQUENCE OF OPERATIONS - MECHANICAL: Remove and destroy this sheet and insert the attached revised Sheet M2.1 – SCHEDULES & RTU SEQUENCE OF OPERATIONS - MECHANICAL dated 10-12-20.
- Item No.12: DRAWINGS, SHEET M3.1 – DETAILS - MECHANICAL: Remove and destroy this sheet and insert the attached revised Sheet M3.1 – DETAILS - MECHANICAL dated 10-12-20.
- Item No.13: DRAWINGS, SHEET E0.1 – LEGEND, FIXTURE SCHEDULE, SINGLE-LINE DIAGRAM - ELECTRICAL: Remove and destroy this sheet and insert the attached revised Sheet E0.1 – LEGEND, FIXTURE SCHEDULE, SINGLE-LINE DIAGRAM - ELECTRICAL dated 10-12-20.
- Item No.14: DRAWINGS, SHEET E3.1 – FLOOR PLAN – POWER/COMMUNICATIONS: Remove and destroy this sheet and insert the attached revised Sheet E3.1 – FLOOR PLAN – POWER/COMMUNICATIONS dated 10-12-20.

ALLEN & HOSHALL, PLLC
ENGINEERS ARCHITECTS
1661 INTERNATIONAL DRIVE SUITE 100
MEMPHIS, TENNESSEE 38120

JOB NO. 62983

DOCUMENT 00 0004

LIST OF DRAWINGS

The following is a list of Contract Drawings which this contract is to be based. These drawings are entitled DESOTO CENTRAL PRIMARY ADDITION and dated SEPTEMBER 10, 2020 with revision dates (if any), as noted. They will be supplemented by additional shop and dimensional drawings of materials and equipment and other drawings where specified.

<u>Drawing Number</u>	<u>Sub-Title</u>	<u>Revision Date</u>
.	COVER SHEET	
GENERAL		
G0.1	SHEET INDEX	
G0.2	LIFE SAFETY PLAN	
G0.3	LIFE SAFETY INFORMATION	
CIVIL		
C0.01	EXISTING CONDITIONS AND DEMOLITION PLAN	
C1.01	SITE PLAN	
C2.01	GRADING AND DRAINAGE PLAN	
C3.01	EROSION CONTROL PLAN PHASE 1	
C3.02	EROSION CONTROL PLAN PHASE 2	
C3.03	EROSION CONTROL PLAN NOTES AND DETAILS	
C4.01	SITE DETAILS	
ARCHITECTURAL		
A0.1	ABBREVIATIONS, SYMBOLS & INDEX	
AD1.0	DEMOLITION PLAN	
A1.1	FLOOR PLAN	
A3.1	REFLECTED CEILING PLAN	
A4.1	ROOF PLAN	
A5.1	EXTERIOR ELEVATIONS	
A6.1	BUILDING SECTIONS	
A7.1	WALL SECTIONS	
A7.2	WALL SECTIONS	
A10.1	DOOR AND WINDOW SCHEDULES AND DETAILS	
A12.1	FINISH FLOOR PLAN AND INTERIOR ELEVATIONS	10-12-20
STRUCTURAL		
S0.1	STRUCTURAL GENERAL NOTES	
S0.2	STRUCTURAL SPECIAL INSPECTIONS	
S1.1	FOUNDATION & ROOF FRAMING PLANS	
S4.1	FOUNDATION DETAILS	
S4.2	CONCRETE MASONRY DETAILS	
S4.3	FRAMING DETAILS	
S4.4	FRAMING DETAILS	

MECHANICAL

M0.1	GENERAL NOTES – MECHANICAL	10-12-20
M1.1	FIRST FLOOR PLAN – MECHANICAL	10-12-20
M1.2	ROOF PLAN – MECHANICAL	10-12-20
M2.1	SCHEDULES & RTU SEQUENCE OF OPERATIONS – MECHANICAL	10-12-20
M3.1	DETAILS – MECHANICAL	10-12-20

PLUMBING

P1.1	LEGEND, NOTES, DETAILS, AND FLOOR PLANS - PLUMBING	
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FIRE PROTECTION

FP1.1	LEGEND, NOTES, AND FLOOR PLANS - FIRE PROTECTION	
FP2.1	DETAILS - FIRE PROTECTION	

ELECTRICAL

E0.1	LEGEND, FIXTURE SCHEDULE, SINGLE-LINE DIAGRAM – ELECTRICAL	10-12-20
E1.1	SITE PLAN	
E2.1	FLOOR PLAN - LIGHTING	
E3.1	FLOOR PLAN - POWER/COMMUNICATIONS	10-12-20
E4.1	FLOOR PLAN - MECHANICAL EQUIPMENT - POWER	

END OF SECTION

SECTION 08 7100

DOOR HARDWARE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Cylinders specified for doors in other sections.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Division 08 Section "Hollow Metal Doors and Frames".
- C. Division 08 Section "Flush Wood Doors".
- D. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- E. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- F. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series.
 - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies.
 - 3. CAN/ULC-S104 – Standard Method for Fire Tests of Door Assemblies.
 - 4. ANSI/UL 294 – Access Control System Units.
 - 5. ULC-S319 - Electronic Access Control Systems.
 - 6. ULC-60839-11-1, Alarm and Electronic Security Systems - Part 11-1: Electronic Access Control Systems - System and Components Requirements.
 - 7. CAN-ULC-S132 -- Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware.
 - 8. CAN-ULC-S533 - Egress Door Securing and Releasing Devices.
 - 9. UL 305 – Panic Hardware.
 - 10. ULC-S132, Emergency Exit and Emergency Fire Exit Hardware.
 - 11. ULC-S533 – Egress Door Securing and Releasing Devices.
 - 12. ANSI/UL 437- Key Locks.

13. ULC-S328, - Burglary Resistant Key Locks.

- G. Registrations: All hardware specified herein shall be registered with the following agencies, as applicable:
1. Federal Communications Commission (FCC).
 2. Industry Canada (IC).
 3. California State Fire Marshall.
 4. Florida Department of Business & Professional Regulation.
 5. New York State Office of Mental Health (OMH).

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- D. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Ten years for mortise locks and latches.
 - 2. Five years for exit hardware.
 - 3. Twenty five years for manual overhead door closer bodies.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 5. Manufacturers:
 - a. Hager Companies (HA).
 - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
 - c. Stanley Hardware (ST).
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
1. Manufacturers:
 - a. Bommer Industries (BO).
 - b. Hager Companies (HA).
 - c. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

2.3 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.

2. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
3. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 5. Keyway: Manufacturer's Standard.
- D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1, certified patented cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents.
 1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
 2. Manufacturers:
 - a. Sargent (SA) – XC.
- E. Keying System: Each type of lock and cylinders to be factory keyed.
 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- F. Key Quantity: Provide the following minimum number of keys:
 1. Change Keys per Cylinder: Two (2)
 2. Master Keys (per Master Key Level/Group): Five (5).
 3. Construction Keys (where required): Ten (10).
- G. Construction Keying: Provide construction master keyed cylinders.
- H. Key Registration List (Bitting List):
 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
 2. Provide transcript list in writing or electronic file as directed by the Owner.

2.5 MCHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a

corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) – ML2000 Series.
 - b. Sargent Manufacturing (SA) – 8200 Series.
 - c. Schlage (SC) – L9000 Series.

2.6 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 4. Dustproof Strikes: BHMA A156.16.

2.7 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
 1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
 5. Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
 6. Motorized Electric Latch Retraction: Devices with an electric latch retraction feature must use motors which have a maximum current draw of 600mA. Solenoid driven latch retraction is not acceptable.
 7. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
 8. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise

indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

9. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
10. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
11. Rail Sizing: Provide exit device rails factory sized for proper door width application.
12. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - b. Sargent Manufacturing (SA) - 80 Series.
 - c. Yale (YA) - 7000 Series.

2.8 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) – DC8000 Series.
 - b. Norton Door Controls (NO) – 9500 Series.
 - c. Sargent Manufacturing (SA) – 281 Series.

2.9 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.10 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 1. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.11 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 1. National Guard Products (NG).
 2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
 3. Reese Enterprises, Inc. (RE).

2.12 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.13 FINISHES

- A. Standard: Comply with BHMA A156.18.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case, less than specified by referenced standards for the applicable units of hardware.
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- D. Finishes on locksets, latch sets and exit devices to incorporate an FDA recognized antimicrobial coating (AM) listed for use on medical and food preparation equipment that will suppress the growth and spread of a broad range of bacteria, algae, fungus, mold and mildew.
- E. BHMA Designations: Comply with base material and finish requirements indicated by the following:
 - 1. BHMA 600: Primed for painting, over steel base metal.
 - 2. BHMA 626: Satin chromium plated over nickel, over brass or bronze base metal.
 - 3. BHMA 628: Satin aluminum, clear anodized, over aluminum base metal.
 - 4. BHMA 630: Satin stainless steel, over stainless-steel base metal.
 - 5. BHMA 689: Aluminum painted, over any base metal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures" and "Cash Allowances". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
 2. Submit documentation of incomplete items in the following formats:
 - a. PDF electronic file.
 - b. Electronic formatted file integrated with the Openings Studio™ door opening management software platform.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
1. Quantities listed are for each pair of doors, or for each single door.
 2. **The supplier is responsible for handing and sizing all products.**
 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

Hardware Sets**Set: 1.0**

Doors: F344A

2	Continuous Hinge	CFM83HD1	PE	
1	Removable Mullion	L980S	PC	SA
1	Rim Exit Device, Dummy	43 8810 862	US32D	SA
1	Rim Exit Device, Storeroom	11 21 43 8804 862	US32D	SA
2	Door Closer	281 CPS	EN	SA
2	Door Stop	409 / 446 as required	US26D	RO
1	Threshold	2005AT MSES25SS		PE
2	Gasketing	S88D (Mullion)		PE
1	Gasketing	303AS		PE
2	Sweep	315CN		PE

Set: 2.0

Doors: F339, F340, F341, F342

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK
1	Classroom Lock	11 21 8237 LNP	US26D	SA
1	Door Stop	409 / 446 as required	US26D	RO

Set: 3.0

Doors: F343, F34B

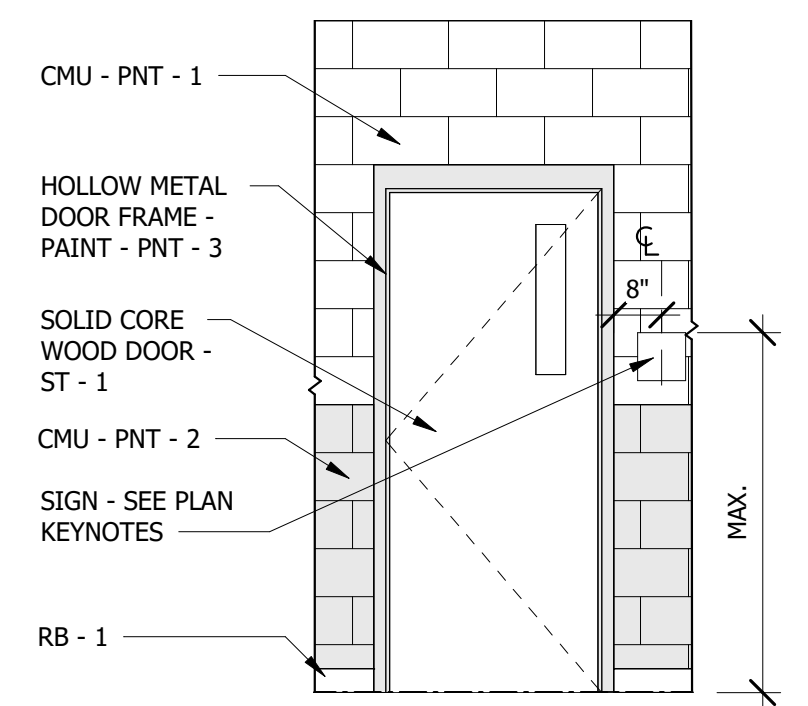
2	Continuous Hinge	CFM83HD1		PE
2	Surface Vert Rod Exit, Exit Only	12 NB8710 EO	US32D	SA
2	Door Closer	281 Reg / PA	EN	SA
2	Electromagnetic Holder	980 / 990 series	689	RF

END OF SECTION

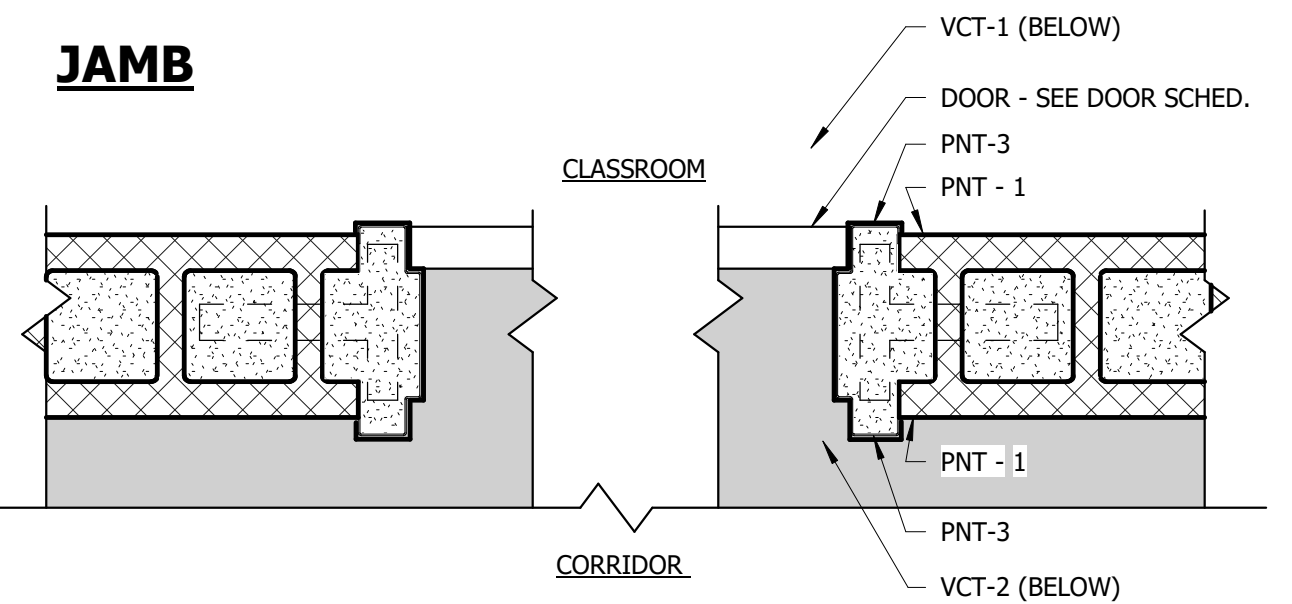


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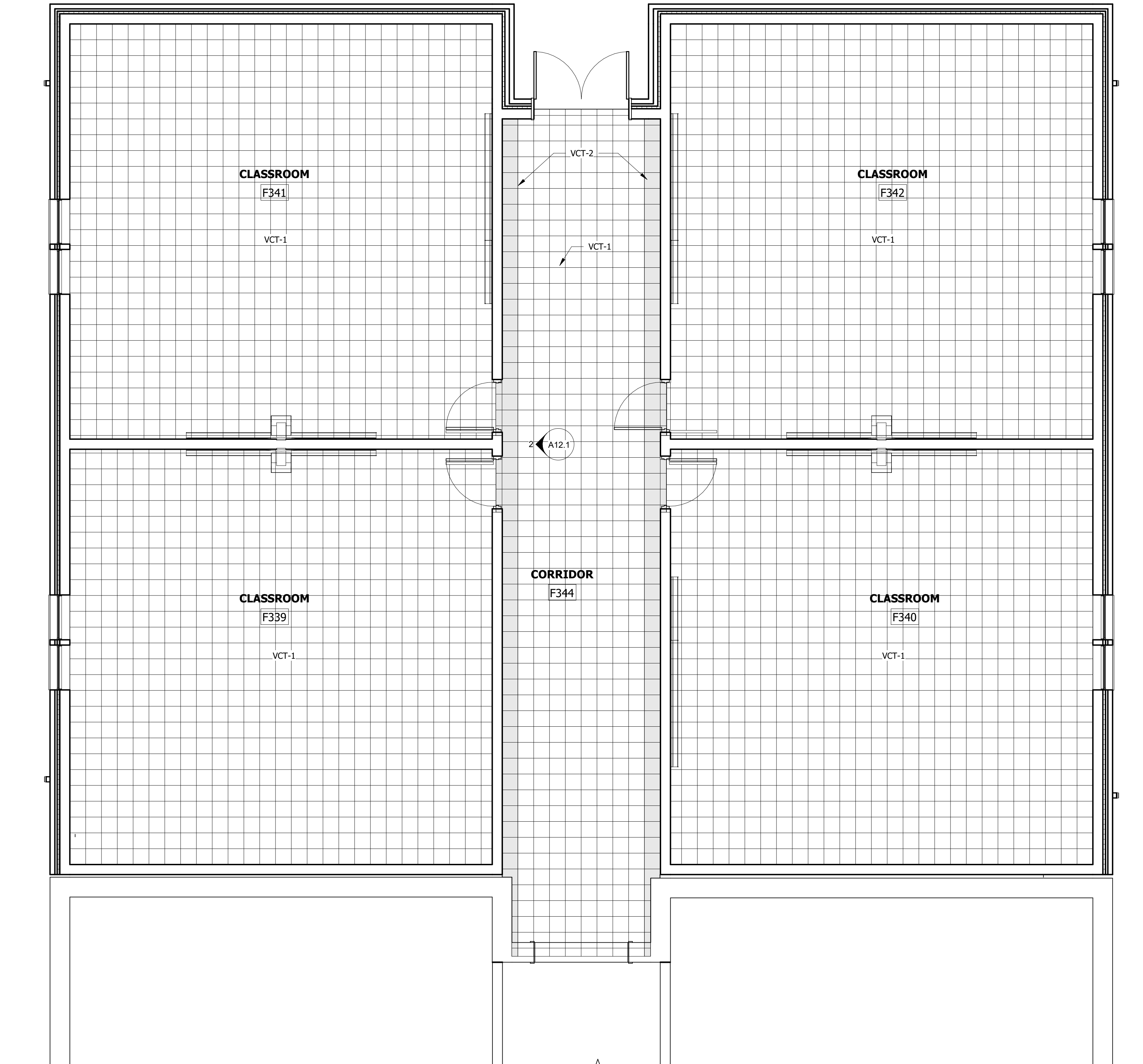
ROOM / FINISH SCHEDULE								
NAME	NUMBER	FLOOR	BASE	N. WALL	E. WALL	S. WALL	W. WALL	CEILING
CLASSROOM	F339	VCT-1	RB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1
CLASSROOM	F340	VCT-1	RB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1
CLASSROOM	F341	VCT-1	RB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1
CLASSROOM	F342	VCT-1	RB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1
VESTIBULE	F343	VCT-1, VCT-2	RB-1	PNT-1, PNT-2	PNT-1, PNT-2	PNT-1, PNT-2	PNT-1, PNT-2	ACT-1
CORRIDOR	F344	VCT-1, VCT-2	RB-1	PNT-1, PNT-2	PNT-1, PNT-2	PNT-1, PNT-2	PNT-1, PNT-2	ACT-1



2 INT. FINISH ELEV. @ CORR.
3/8" = 1'-0"



3 PLAN FINISH DETAIL @ CLASSROOM DOOR
1 1/2" = 1'-0"



1 FINISH FLOOR PLAN
1/4" = 1'-0"

FINISH LEGEND	
FLOOR	
VCT - 1	VINYL COMPOSITE TILE (FIELD) MANUF: ARMSTRONG STYLE: STANDARD EXCELON COLOR: HEAT WAVE 57538
VCT - 2	VINYL COMPOSITE TILE (ACCENT #1) MANUF: ARMSTRONG STYLE: STANDARD EXCELON COLOR: CARNIVAL WHITE 52500
BASE	
RB -	4" RUBBER BASE MANUF: JOHNSONITE STYLE: MATCH EXISTING COLOR: MATCH EXISTING
WALL	
PNT - 1 -	WALL PAINT (FIELD) MANUF: SHERWIN WILLIAMS COLOR: MATCH EXISTING
PNT - 2 -	WALL PAINT (ACCENT) MANUF: SHERWIN WILLIAMS COLOR: MATCH EXISTING
CEILING	
ACT - 1 -	ACOUSTICAL CEILING TILE SYST. MANUF: ARMSTRONG STYLE: 2' X 4' COLOR: WHITE
DOORS AND FRAMES	
HOLLOW METAL DOORS AND FRAMES	DOOR & FRAME PAINT MANUF: SHERWIN WILLIAMS COLOR: MATCH EXISTING
SOLID CORE WOOD DOORS	FLUSH WOOD DOORS MANUF: GRAHAM TYPE: PLAIN SLICED CHERRY COLOR: #371 SS-1 STAIN
FINISH NOTES	
1. BLACK ADHESIVE IS NOT TO BE USED FOR VCT, VRB, OR RB	

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DESOTO CENTRAL
PRIMARY SCHOOL
CLASSROOM ADDITION

3210 GETWELL ROAD,
SOUTHAVEN, MS 38672

DESOTO COUNTY SCHOOL
DISTRICT

No.	Description	Date
2	ADDENDUM #2	10.12.20

FINISH FLOOR PLAN AND
INTERIOR ELEVATIONS

JOB NO: 62983
DATE: 09.10.2020
DRAWN: ZAW
CHECKED: MHL



BID SET

A12.1



Allen & Hoshall
engineers • architects • surveyors

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**DESOTO CENTRAL
PRIMARY SCHOOL
CLASSROOM ADDITION**

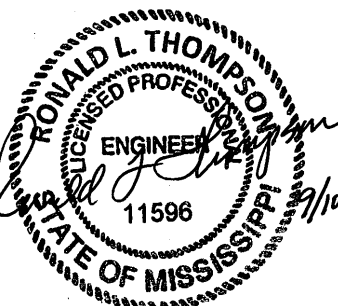
3210 GETWELL ROAD,
SOUTHAVEN, MS 38672

**DESOTO COUNTY SCHOOL
DISTRICT**

No.	Description	Date
2	ADD02	10/12/20
1	ADDENDUM 1	09/29/20

**GENERAL NOTES -
MECHANICAL**

JOB NO: 62983
DATE: 09/10/20
DRAWN: NMT
CHECKED: RLt



BID SET

M0.1

LEGEND

DUCTS AND PIPES

- OVAL DUCTWORK
- RECTANGULAR DUCTWORK
- ROUND DUCTWORK
- FLEXIBLE ROUND DUCTWORK
- HVAC CONTROL WIRING

SYMBOLS

- BALANCING DAMPER
- CONTROL DAMPER AUTOMATIC
- FIRE DAMPER
- SMOKE DAMPER
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- EXHAUST DIFFUSER
- DIFFUSER CFM AND TYPE
- AIR FLOW AND DIRECTION
- TURNING VANES
- CARBON DIOXIDE SENSOR
- HUMIDISTAT
- PRESSURE SENSOR
- SENSOR
- SMOKE DETECTOR
- THERMOSTAT
- PUSH BUTTON
- BALL VALVE
- CHECK VALVE
- CONTROL (MOTOR) VALVE
- Y STRAINER
- PRESSURE REDUCING VALVE
- KEYNOTE
- LUBRICATED PLUG VALVE

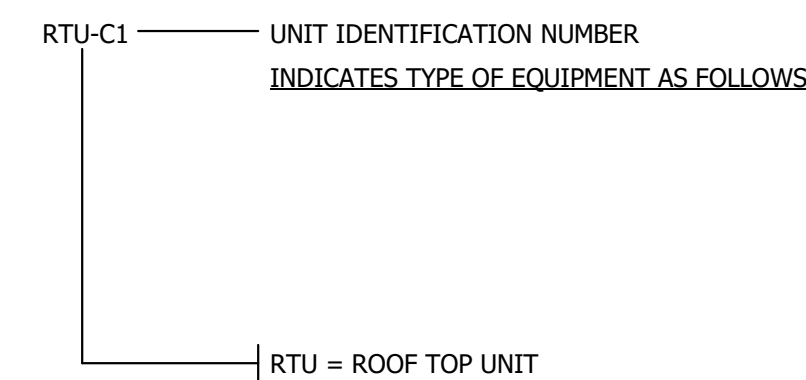
ABBREVIATIONS

- SP STATIC PRESSURE
- ESP EXTERNAL STATIC PRESSURE
- LAT LEAVING AIR TEMPERATURE
- EAT ENTERING AIR TEMPERATURE
- DN DOWN
- OA OUTSIDE AIR
- RA RETURN AIR
- SA SUPPLY AIR
- EA EXHAUST AIR
- TAD TRANSFER AIR DUCT
- A.F.F. ABOVE FINISHED FLOOR
- CFM CUBIC FEET PER MINUTE
- BDD BACKDRAFT DAMPER
- TYP. TYPICAL
- VAD VOLUME AIR DAMPERS
- HPG HIGH PRESSURE GAS (5 PSIG)
- G LOW PRESSURE GAS
- MD MOTORIZED DAMPER
- OBDO OPPOSED BLADE DAMPER
- SAD SUPPLY AIR DUCT
- RAD RETURN AIR DUCT
- EAD EXHAUST AIR DUCT

GENERAL NOTES

1. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILING UNLESS OTHERWISE NOTED.
2. ACCESS PANELS IN HARD CEILINGS ARE REQUIRED FOR ALL VALVES, DAMPERS, CONTROLS, ABOVE CEILING EQUIPMENT, ETC. AND SHALL BE FURNISHED AND INSTALLED PER ARCHITECTURAL SPECIFICATIONS.
3. VERIFY LOCATION OF NEW EQUIPMENT AND APPURTENANCES.
4. PROVIDE FIRE AND FIRE/SMOKE DAMPERS AS REQUIRED. COORDINATE LOCATIONS WITH LIFE SAFETY PLAN.
5. ALL DUCT DIMENSIONS ARE NET INSIDE CLEAR DIMENSIONS MEASURED INSIDE BARE METAL OR DUCT LINER.
6. ALL NEW EQUIPMENT, PIPING, AND CONDUIT SHALL BE PROVIDED WITH SEISMIC BRACING IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AND ASCE 07-2010.
7. COORDINATE DUCTWORK AND PIPING INSTALLATION WITH ALL OTHER TRADES. OFFSET NEW AND EXISTING WORK AS REQUIRED.
8. PROVIDE MANUAL VOLUME DAMPERS FOR ALL AIR DEVICE RUNOUTS. PROVIDE ADDITIONAL MANUAL VOLUME DAMPERS IN DUCTWORK AS REQUIRED WHETHER INDICATED OR NOT FOR PROPER HVAC TESTING & BALANCING PURPOSES AT NO ADDITIONAL COST. BALANCE USING OPPOSED BLADE DAMPERS IS NOT PERMITTED.
9. FIELD VERIFY ALL EXISTING PIPING AND DUCTWORK DIMENSIONS AND LOCATIONS PRIOR TO START OF WORK.
10. REROUTE ELECTRICAL CONDUIT AS REQUIRED TO ACCOMMODATE NEW DUCTWORK. COORDINATE WITH ELECTRICAL.
11. CONTROLS TO BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED. COORDINATE WITH DESOTO COUNTY SCHOOLS.
12. DIFFUSER LOCATIONS ON MECHANICAL SHEETS ARE FOR QUANTITY, REFERENCE, AND APPROXIMATE LOCATION. DIFFUSERS NOTED AS EXISTING ARE TO BE REINSTALLED IN THE NEW CEILING GRID. MODIFY RUNOUT AS NECESSARY.
13. REPAIR, RESEAL, AND REINSULATE EXISTING DUCTWORK AS REQUIRED.
14. ALL EQUIPMENT SHALL BE LOCATED TO ALLOW ACCESS FOR GENERAL MAINTENANCE. CONFORM TO MFR'S RECOMMENDATIONS ON EQUIPMENT CLEARANCES.
15. DURING DEMOLITION, COVER ALL EQUIPMENT TO REMAIN WITH PROTECTIVE COVERING. ALL PIPING, EQUIPMENT, AND DUCTWORK TO BE PROTECTED AGAINST CONTAMINATION.
16. DOUBLE THICKNESS TURNING VANES (AIRFOIL TYPE) SHALL BE INSTALLED IN DUCTWORK AT ALL NEW 45° AND 90° ELBOWS.
17. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED EXTERNALLY WITH TWO INCH FLEXIBLE FIBERGLASS DUCT WRAP. INSULATION SHALL COMPLY WITH ANSIASTM C612; COMMERCIAL GRADE; K VALUE OF 0.29 AT 75°F. PROVIDE A 0.002 INCH FOIL SCRIM FACING FOR DUCTWORK INSULATION. SECURE INSULATION WITH VAPOR BARRIER WITH WIRES AND SEAL JACKET JOINTS WITH VAPOR BARRIER ADHESIVE OR TAPE TO MATCH JACKET. SECURE INSULATION WITHOUT VAPOR BARRIER WITH STAPLES, TAPE, OR WIRES.
18. HANGERS FOR PIPING SHALL BE FEE & MASON ADJUSTABLE SPLIT STEEL RING FIGURE 201, 202, OR 304. STEEL PIPE MAX SPACING SHALL BE 7' FOR 3/4" AND 1", 9' FOR 1-1/4", 10' FOR 2", 11' FOR 2-1/2", 12' FOR 3", 14' FOR 4", 17' FOR 6", 19' FOR 8", AND 20' FOR 10" AND 12". COPPER PIPE MAX SPACING SHALL BE 5' FOR 3/4", 6' FOR 1", 8' FOR 1-1/4", 1-1/2", AND 2", 9' FOR 2-1/2", AND 10' FOR 3". PROVIDE HANGERS AT EACH ELBOW.
19. REFRIGERANT PIPING SHALL BE COPPER TUBING, TYPE "K" AND SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX. PIPE GREATER THAN 1" DIA. SHALL BE INSULATED WITH 1" THICK ARMAFLEX. ALL EXTERIOR INSULATION SHALL BE PROTECTED FROM ULTRAVIOLET RADIATION AND WEATHER DAMAGE. CONTRACTOR SHALL PROVIDE HVAC AS-BUILT DRAWINGS AND OPERATIONS AND MAINTENANCE MANUALS FOR ALL INSTALLED HVAC EQUIPMENT AND ACCESSORIES TO THE OWNER WITHIN 90 DAYS OF SYSTEM ACCEPTANCE BY THE OWNER.
21. THIS ALTERATION PROJECT IS EXEMPT FROM THE REQUIRED HVAC COMMISSIONING PER SECTION C408.2, EXEMPTION 1 AND SECTION C503.1 OF THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE.

EQUIPMENT DESIGNATIONS



TRA (HVAC & Lighting) Responsibility Matrix

Description	Furnished	Located	Installed	Power Wiring	Control Wiring	Qty	Comments for Electrical Contractor
DXR/TRA Controls	CC	CC	CC	CC	CC		
QMX (Room Sensors)	CC	CC	CC	CC	CC		
QMX (Room Sensors) Box & Conduit Rough-in	EC	CC	EC	N/A	CC	4	RTU's - Locations per plans
DXR Power Supply(s) (high voltage power)	CC	CC	EC	EC	CC		
DXR Power Supply(s) (high voltage power) Box & Conduit Rough-in	EC	CC	EC	EC	CC		
TRA Communication Trunk(s)	CC	CC	CC	N/A	CC		
PL-Link Communication Trunk(s)	CC	CC	CC	N/A	CC		
PL-Link Power Supply(s) (high voltage power)	CC	CC	EC	EC	CC		
PL-Link Power Supply(s) (high voltage power) Box & Conduit Rough-in	EC	CC	EC	EC	CC		
Lighting Power Pack(s) (high voltage power)	CC	CC	EC	EC	CC	1	1-Lighting power pack (120-277VAC) in the Corridor/Hall mounted above the ceiling
Lighting Power Pack(s) (high voltage power) Box & Conduit Rough-in	EC	CC	EC	EC	N/A	1	1-Lighting power pack (120-277VAC) in the Corridor/Hall mounted above the ceiling
Ceiling Occupancy Sensor (low voltage)	CC	CC	CC	CC	CC		
Ceiling Occupancy Sensor (high voltage)	CC	CC	EC	EC	N/A		
Ceiling Occupancy Sensor (low & high voltage) Box & Conduit Rough-in	EC	CC	EC	EC	N/A		
Wall Occupancy Sensor (low voltage)	CC	CC	CC	CC	CC		
Wall Occupancy Sensor (high voltage)	CC	CC	EC	EC	CC		
Wall Occupancy Sensor (low & high voltage) Box & Conduit Rough-in	EC	CC	EC	EC	N/A		
Corridor/Hall Occupancy Sensor (low voltage)	CC	CC	CC	CC	CC		
Corridor/Hall Occupancy Sensor (high voltage)	CC	CC	EC	EC	CC		
Corridor/Hall Occupancy Sensor (low & high voltage) Box & Conduit Rough-in	EC	CC	EC	EC	N/A		
Wall Light Switches (low voltage)	CC	CC	CC	CC	CC		
Wall Light Switches (high voltage)	CC	CC	EC	EC	N/A		
Wall Light Switches (low & high voltage) Box & Conduit Rough-in	EC	CC	EC	EC	N/A		
Light Controllers (Switch/Dimming Actuators)	CC	CC	CC	EC	N/A		
Light Controllers-Single Circuit (Switch/Dimming Actuators) Line Voltage Wiring	N/A	N/A	N/A	EC	N/A	5	1 per Classroom (Classrooms to have 3 lighting Zones) & 1 for Corridor
Light Controllers-Single Circuit (Switch/Dimming Actuators) 0-10V Dimming Wiring	N/A	N/A	N/A	EC	N/A	5	1 per Classroom (Classrooms to have 3 lighting Zones) & 1 for Corridor
Light Controllers-Two Circuit (Switch/Dimming Actuators) Line Voltage Wiring	N/A	N/A	N/A	EC	N/A	4	1 per Classroom (Classrooms to have 3 lighting Zones)
Light Controllers-Two Circuit (Switch/Dimming Actuators) 0-10V Dimming Wiring	N/A	N/A	N/A	EC	N/A	4	1 per Classroom (Classrooms to have 3 lighting Zones)
Light Controllers-Three Circuit (Switching Actuators) Line Voltage Wiring	N/A	N/A	N/A	EC	N/A		
Light Fixture w/Electronic Ballast	EC	EC	EC	EC	N/A		See Electrical plans & schedules for types & counts
Light Fixture/Electronic Ballast Wiring (Line Voltage)	N/A	N/A	EC	EC	N/A		See Electrical plans & schedules for types & counts
Light Fixture/Electronic Ballast Wiring (0-10V Dimming)	N/A	N/A	EC	N/A	N/A		See Electrical plans & schedules for types & counts
Emergency Shunt Relay (ESRN)	CC	EC	EC	EC	EC		See Electrical plans & schedules for fixtures requiring ESRN
Exterior Light Fixtures	EC	EC	EC	EC	CC		See Electrical plans & schedules for types & counts
Exterior Light Photo Cells and Controls	CC	EC	EC	EC	CC		
Exterior Light Fixtures /Photo Cells/Controls - Box & Conduit Rough-in	EC	EC	EC	EC	N/A		
RTU BACnet Integration (Card) Module	MC	MC	MC	EC	CC		
RTU Ionizers	MC	MC	MC	EC	N/A		
RTU Fan Safety Shutdown	EC	EC	EC	EC	CC		
OAU BACnet Integration (Card) Module	MC	MC	MC	EC	CC		
OAU Fan Safety Shutdown	EC	EC	EC	EC	CC		
VAV Electric Re-Heat Boxes	MC	MC	MC	EC	CC		
Ductless Split-System (low voltage) Box & Conduit Rough-in	EC	MC	EC	EC	CC		
Building Automation System Main Control Panel	CC	CC	CC	EC	CC		
Electric Sub Meter - MAIN SERVICE PANEL	CC	CC	EC	EC	CC		
Gas Meter - MAIN	CC	CC	CC	EC	CC		

- Abbreviations
 CC: Controls Contractor (Low voltage-24VAC & less)
 EC: Electrical Contractor (High voltage-120VAC & greater)
 MC: Mechanical Contractor
 N/A: Not Applicable

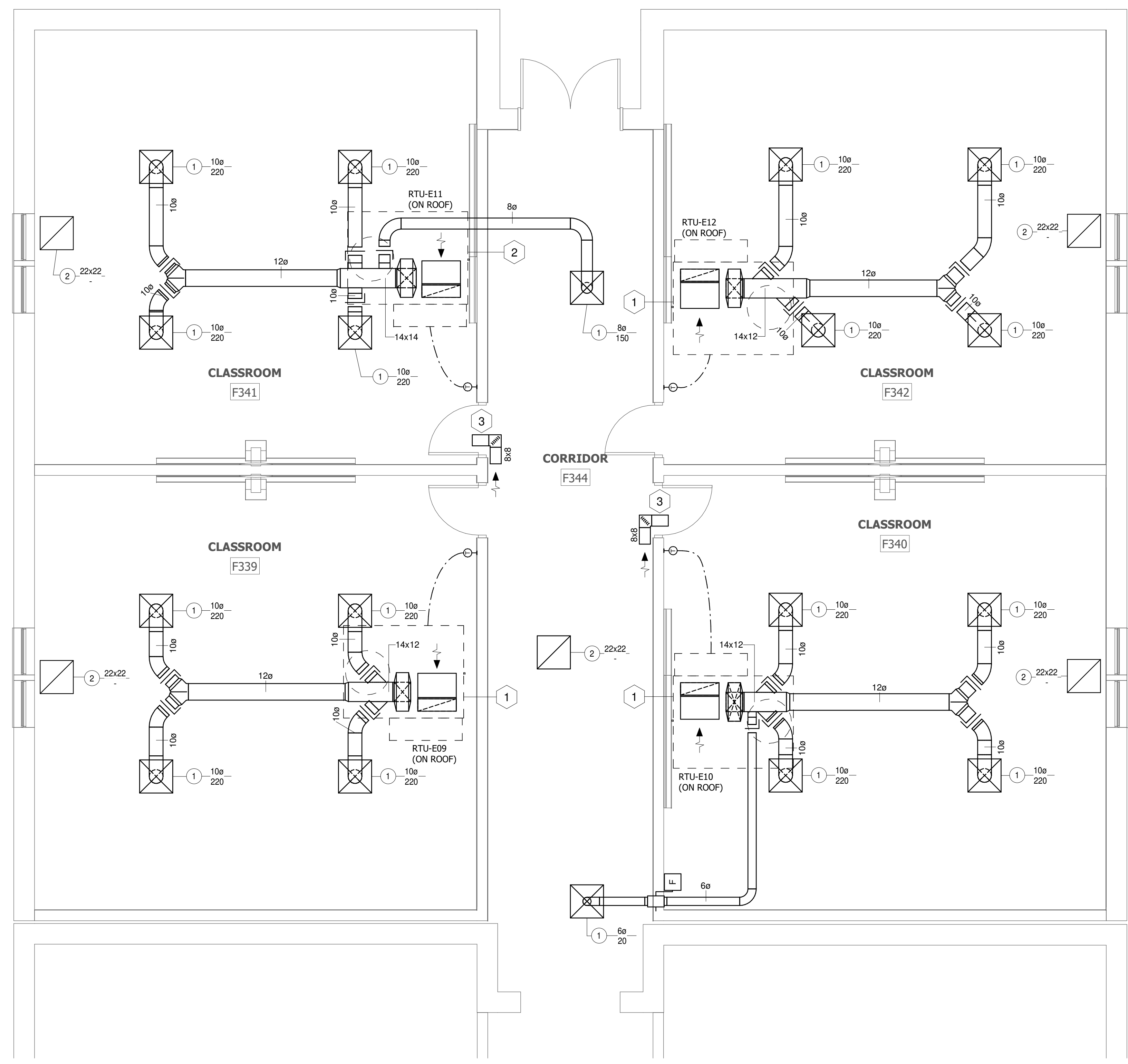


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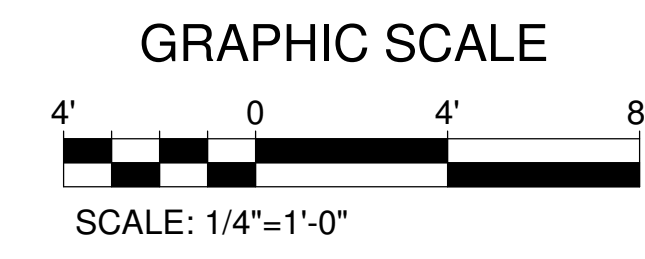
DESOTO CENTRAL
PRIMARY SCHOOL
CLASSROOM ADDITION
3210 GETWELL ROAD,
SOUTHAVEN, MS 38672



1 1ST FLOOR PLAN - MECHANICAL
1/4" = 1'-0"

KEYNOTE LEGEND	
KEY NO.	COMMENTS
1	14x12 SAD AND FULL SIZE RAD UP TO RTU ON ROOF. INSTALL DUCT MOUNTED CO2 SENSOR IN RAD RISE. TRANSITION SAD TO FULL SIZE IN RISE. SEE ROOF PLAN ON SHEET M1.2 FOR CONTINUATION.
2	14x14 SAD AND FULL SIZE RAD UP TO RTU ON ROOF. INSTALL DUCT MOUNTED CO2 SENSOR IN RAD RISE. TRANSITION SAD TO FULL SIZE IN RISE. SEE ROOF PLAN ON THIS SHEET FOR CONTINUATION.
3	8x8 TRANSFER DUCT ABOVE THE CEILING. SEE DETAIL ON DRAWING M3.1.

FIRE RATING LEGEND	
	SMOKE TIGHT WALL
	1 HOUR RATED WALL
	2 HOUR RATED WALL
	EXISTING 2-HOUR RATED EQUIVALENT FIRE WALL - REFER TO LIFE SAFETY LEGEND
	EXISTING 1-HOUR RATED EQUIVALENT FIRE BARRIER - REFER TO LIFE SAFETY LEGEND
	EXISTING WALL - ENSURE EXISTING WALL (AND DOORS & PENETRATIONS WITHIN) ADHERE TO SMOKE TIGHT REQUIREMENTS

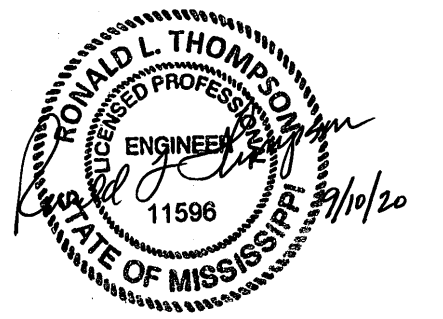


DESOTO COUNTY SCHOOL DISTRICT

No.	Description	Date
1	ADD02	10/12/20

FIRST FLOOR PLAN - MECHANICAL

JOB NO: 62983
DATE: 09/10/20
DRAWN: NMT
CHECKED: RLt



BID SET

M1.1

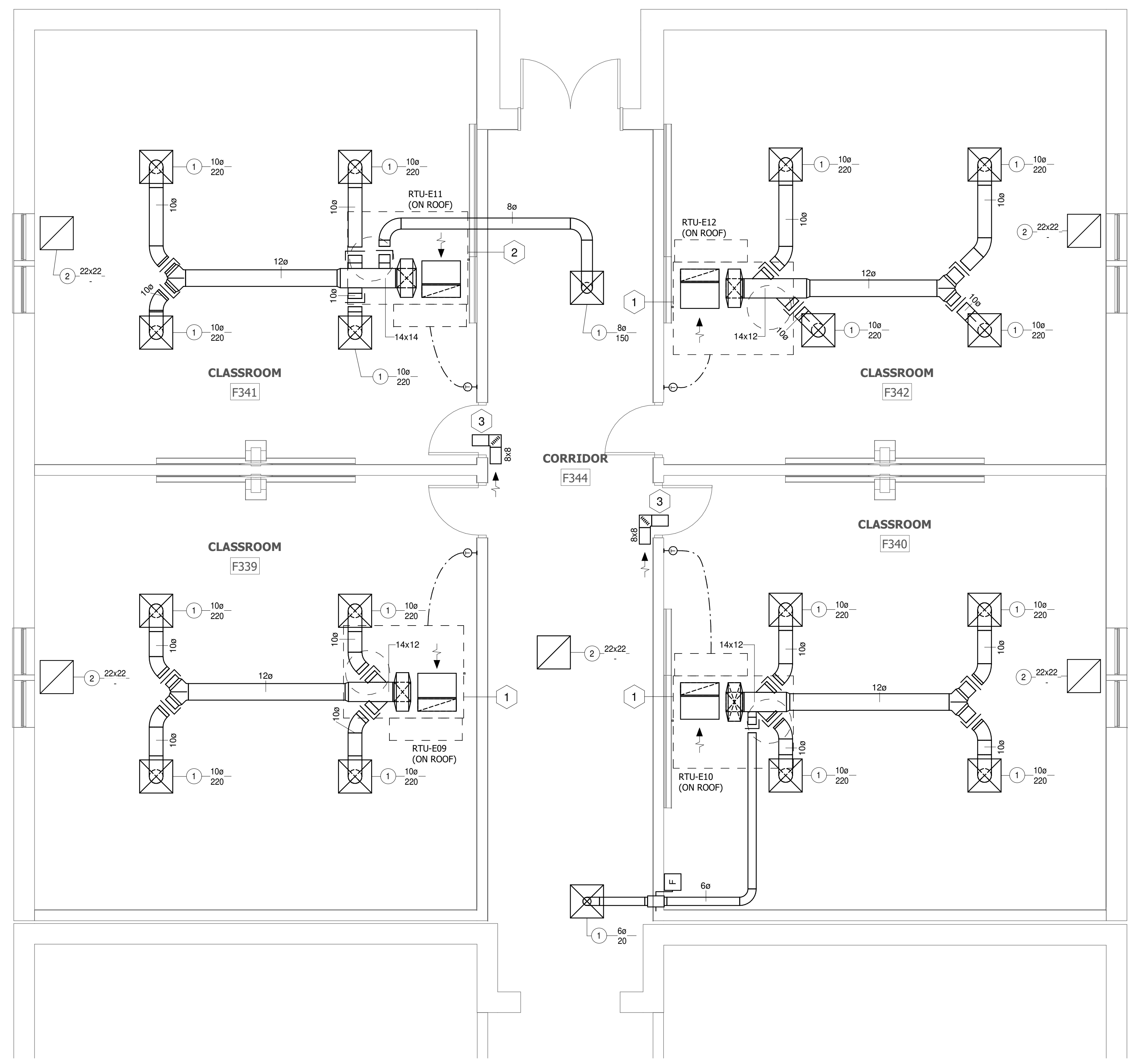


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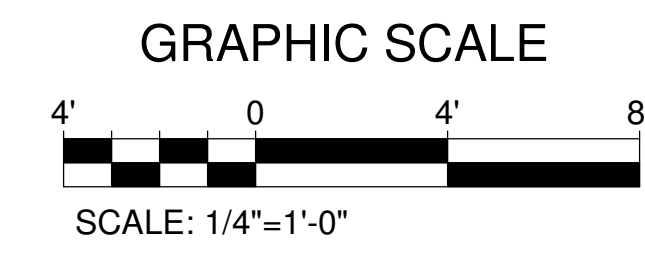
DESOTO CENTRAL
PRIMARY SCHOOL
CLASSROOM ADDITION
3210 GETWELL ROAD,
SOUTHAVEN, MS 38672



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1/4" = 1'-0"

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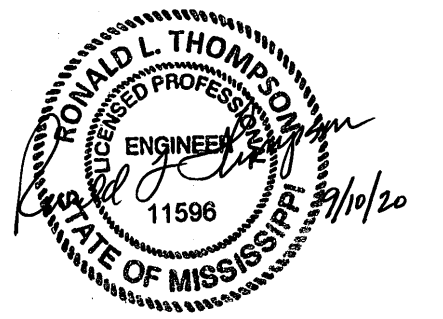


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FIRST FLOOR PLAN - MECHANICAL

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M1.1



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PACKAGED HEAT PUMP ROOFTOP UNIT WITH BACKUP ELECTRIC HEATING SCHEDULE																																						
MARK	SUPPLY AIR CFM	OUTSIDE AIR CFM	SEER	HSPF	SUPPLY EXT. S.P. W.G.	SUPPLY FAN HP	EXHAUST EXT. S.P. W.G.	EXHAUST FAN HP	REFRIG. TYPE	VOLT.	PHASE	MCA	MOCp	DX COIL DATA										HOT GAS REHEAT COIL				BACKUP ELECTRIC HEATING DATA				OPERATING WEIGHT (LBS)	BASIS OF DESIGN MANUFACTURER'S MODEL NO.	REMARKS				
														ELECTRICAL DATA					COOLING					HEATING					LVG AIR TEMP.	CAPACITY BTU/HR	HEATING AIR CFM				ENT. AIR TEMP.	LVG AIR TEMP.	HEATING CAPACITY	STAGES
														AMBIENT AIR DB/WB	ENT. AIR DB	ENT. AIR WB	LVG AIR DB	LVG AIR WB	SENSIBLE BTU/HR	TOTAL BTU/HR	AMBIENT AIR TEMP. DB	ENT. AIR TEMP.	LVG AIR TEMP.	TOTAL BTU/HR	LVG AIR TEMP.	CAPACITY BTU/HR	HEATING AIR CFM	ENT. AIR TEMP.										
RTU-E09	880	164	15.3	9.1	0.50 in-wg	1.3 hp	0.50 in-wg	1.3 hp	R-410A	460 V	3	25.6 A	30 A	98.0 °F/80.0 °F	80.8 °F	67.8 °F	55.5 °F	55.5 °F	23,954 Btu/h	33,903 Btu/h	47.0 °F	63.3 °F	97.0 °F	32,047 Btu/h	70.0 °F	13,688 Btu/h	880	54.5 °F	97.4 °F	12 kW	SCR	1347 lb	DAIKIN DP5003	SEE BELOW				
RTU-E10	900	170	15.3	9.1	0.50 in-wg	1.3 hp	0.50 in-wg	1.3 hp	R-410A	460 V	3	25.6 A	30 A	98.0 °F/80.0 °F	80.8 °F	68.1 °F	56.2 °F	24,035 Btu/h	34,232 Btu/h	47.0 °F	63.1 °F	96.2 °F	32,153 Btu/h	70.0 °F	13,479 Btu/h	900	54.3 °F	96.2 °F	12 kW	SCR	1347 lb	DAIKIN DP5003	SEE BELOW					
RTU-E11	1,030	195	14.3	8.8	0.50 in-wg	2.3 hp	0.50 in-wg	1.3 hp	R-410A	460 V	3	27.7 A	30 A	98.0 °F/80.0 °F	81.3 °F	67.6 °F	53.2 °F	31,235 Btu/h	45,441 Btu/h	47.0 °F	62.0 °F	98.8 °F	40,945 Btu/h	70.0 °F	18,602 Btu/h	1,030	53.1 °F	89.2 °F	12 kW	SCR	1377 lb	DAIKIN DP5004	SEE BELOW					
RTU-E12	880	158	15.3	9.1	0.50 in-wg	1.3 hp	0.50 in-wg	1.3 hp	R-410A	460 V	3	25.6 A	30 A	98.0 °F/80.0 °F	80.6 °F	67.7 °F	55.5 °F	23,954 Btu/h	33,903 Btu/h	47.0 °F	63.3 °F	97.0 °F	32,047 Btu/h	70.0 °F	13,688 Btu/h	700	54.5 °F	97.4 °F	12 kW	SCR	1347 lb	DAIKIN DP5003	SEE BELOW					

- REMARKS
- MANUFACTURER BASIS OF DESIGN: DAIKIN APPLIED, OR EQUIVALENT UNITS MEETING SPECIFIED CONSTRUCTION DESIGN AND SCHEDULED PERFORMANCE BY CARRIER OR LENNOX, NO SUBSTITUTIONS ALLOWED.
 - UNITS SHALL BE TRUE VAV OPERATION BASED OFF DUCT STATIC PRESSURE DEMAND CONTROLS PROVIDE WITH MANUFACTURER'S SUPPLY DUCT-MOUNTED STATIC PRESSURE SENSOR.
 - UNITS SHALL BE ASHRAE 90.1-2010 COMPLIANT AND LABELED.
 - UNITS SHALL BE EQUIPPED WITH FULLY MODULATING COMPARATIVE ENTHALPY BASED ECONOMIZER WITH HOOD AND MODULATING POWERED EXHAUST BASED OFF BUILDING PRESSURE CONTROL.
 - UNITS SHALL BE EQUIPPED WITH THROUGH THE BASE ELECTRICAL CONNECTIONS, AND CONDENSER COIL HAIL GUARDS.
 - UNITS SHALL BE EQUIPPED WITH SINGLE POINT POWER CONNECTION WITH INTEGRAL DISCONNECT AND UNIT POWERED 120V CONVENIENCE OUTLET.
 - UNITS SHALL BE EQUIPPED WITH A FULLY MODULATING HOT GAS REHEAT COIL FOR DEHUMIDIFICATION CONTROL. PROVIDE WITH MANUFACTURER'S DUCT-MOUNTED RH SENSOR.
 - UNITS SHALL BE EQUIPPED WITH INVERTER COMPRESSORS. DIGITAL SCROLL COMPRESSORS WILL NOT BE ACCEPTED.
 - UNITS SHALL BE EQUIPPED WITH A BIOPOLAR IONIZATION DEVICE EQUIVALENT TO GLOBAL PLASMA SOLUTIONS MODEL#: GPS-FC24-AC. UNIVERSAL VOLTAGE SELECTOR SWITCH, INCLUDE AN ON/OFF SWITCH, LED POWER INDICATOR LIGHT, MAGNETS FOR MOUNTING PURPOSES, AND INTEGRAL BAS ALARM "DRY" CONTACTS. MECHANICAL CONTRACTOR SHALL INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - UNITS SHALL BE EQUIPPED WITH A STAINLESS STEEL DRAIN PAN AND A FACTORY INSTALLED EMERGENCY CONDENSATE OVERFLOW SWITCH.
 - UNITS SHALL INCLUDE HINGED ACCESS DOORS TO ALL SERVICE COMPONENTS.
 - PROVIDE WITH MANUFACTURER'S DUCT-MOUNTED CO2 SENSOR AND DEMAND CONTROL VENTILATION CONTROL.
 - UNITS SHALL BE EQUIPPED WITH A FACTORY INSTALLED OUTSIDE AIRFLOW MEASURING DEVICE.
 - PROVIDE WITH MANUFACTURER'S 14" HIGH ROOF CURB.
 - PROVIDE FACTORY INSTALLED BACNET CARD PROVIDING FULL INDOOR UNIT SETPOINT AND MODE CONTROL FROM SPECIFIED SIEMENS DESIGO TRA INTEGRATION.
 - MINIMUM EFFICIENCY REQUIREMENTS: UNITS WITH COOLING CAPACITY < 65,000 BTU/H, 13.0 SEER. UNITS WITH COOLING CAPACITY >= 65,000 BTU/H AND < 135,000 BTU/H, 11.0 EER AND 11.2 IEER.
 - FACTORY START-UP AND UNITS BACNET SETUP SHALL BE PERFORMED BY EQUIPMENT MANUFACTURER.
 - PROVIDE WITH 5 YEAR MANUFACTURER'S ENTIRE UNIT PARTS AND LABOR WARRANTY.

AIR DEVICE SCHEDULE								
MARK	SERVICE	NECK SIZE (IN)	FACE SIZE (IN)	THROW PATTERN	NOISE CRITERIA	MAX. S.P. DROP (IN. W.G.)	EQUAL TO PRICE MODEL NO.	REMARKS
1	SUPPLY	SEE PLANS	24x24	4-WAY	25	0.1"	SCD	1
2	RETURN/EXHAUST	22x22	24x24	NONE	25	0.1"	80	2,3

- REMARKS
- SUPPLY AIR GRILLE TO BE ALUMINUM FULL LOUVERED FACE w/ FOIL BACK INSULATION.
 - RETURN/EXHAUST AIR GRILLE TO BE ALUMINUM EGG CRATE w/ FOIL BACK INSULATION.
 - PROVIDE SILENCER EQUAL TO PRICE MODEL NO. RAS.

ROOFTOP UNIT SEQUENCE OF OPERATIONS

BUILDING AUTOMATION SYSTEM INTERFACE:
THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED BYPASS, MORNING WARM-UP / PRE-COOL, OCCUPIED / UNOCCUPIED AND HEAT / COOL MODES. IF A BAS IS NOT PRESENT, OR COMMUNICATION IS LOST WITH THE BAS THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS.

OCCUPIED MODE:
DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. THE DX COOLING AND ELECTRIC HEAT SHALL STAGE TO MAINTAIN THE OCCUPIED SPACE TEMPERATURE SETPOINT.

UNOCCUPIED MODE:
WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 55°F (ADJ.) THE SUPPLY FAN SHALL START, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE HEAT PUMP SHALL BE ENABLED. IF HEAT PUMP CANNOT MAINTAIN SETPOINT OR IF THE HEAT PUMP IS DISABLED, ELECTRIC HEAT SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 55°F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4°F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE HEAT PUMP AND ELECTRIC HEAT SHALL BE DISABLED.

WHEN THE SPACE TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 85°F (ADJ.) THE SUPPLY FAN SHALL START, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE DX COOLING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85°F (ADJ.) MINUS THE UNOCCUPIED DIFFERENTIAL OF 4°F (ADJ.) THE SUPPLY FAN SHALL STOP, THE DX COOLING SHALL BE DISABLED.

OPTIMAL START:
THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL START OCCURS.

MORNING WARM-UP MODE:
DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED THE UNIT SHALL ENABLE THE HEATING AND SUPPLY FAN. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

PRE-COOL MODE:
DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED THE UNIT SHALL ENABLE THE FAN AND COOLING. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

OPTIMAL STOP:
THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT.

OCCUPIED BYPASS:
THE BAS SHALL MONITOR THE STATUS OF THE "ON" AND "CANCEL" BUTTONS OF THE SPACE TEMPERATURE SENSOR. WHEN AN OCCUPIED BYPASS REQUEST IS RECEIVED FROM A SPACE SENSOR, THE UNIT SHALL TRANSITION FROM ITS CURRENT OCCUPANCY MODE TO OCCUPIED BYPASS MODE AND THE UNIT SHALL MAINTAIN THE SPACE TEMPERATURE TO THE OCCUPIED SETPOINTS (ADJ.).

COOLING MODE:
THE UNIT CONTROLLER SHALL USE SPACE TEMPERATURE AND SPACE TEMPERATURE SETPOINT TO DETERMINE WHEN TO INITIATE REQUESTS FOR COOLING. WHEN THE SPACE TEMPERATURE RISES ABOVE THE SETPOINT, THE UNIT CONTROLLER SHALL STAGE THE DX COOLING AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE FIRST COMPRESSOR SHALL ENERGIZE AFTER ITS MINIMUM 3-MINUTE OFF TIME HAS EXPIRED. IF ADDITIONAL COOLING CAPACITY IS REQUIRED THE SECOND STAGE OF COOLING SHALL BE ENABLED. ONCE THE SPACE TEMPERATURE FALLS BELOW THE SETPOINT THE COMPRESSORS SHALL BE DEACTIVATED.

HEATING MODE:
THE UNIT CONTROLLER SHALL USE THE SPACE TEMPERATURE AND SPACE TEMPERATURE SETPOINT (ADJ.) TO DETERMINE WHEN TO INITIATE REQUESTS FOR HEAT. WHEN THE SPACE TEMPERATURE DROPS BELOW THE SETPOINT, THE UNIT CONTROLLER SHALL ENABLE HEAT PUMP TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF HEAT PUMP CANNOT MAINTAIN SETPOINT OR IF THE HEAT PUMP IS DISABLED, ELECTRIC HEAT SHALL BE ENABLED.

ECONOMIZER CONTROL:
OUTSIDE AIR ENTHALPY IS COMPARED WITH RETURN AIR ENTHALPY POINT. THE ECONOMIZER SHALL BE ENABLED WHEN OUTDOOR AIR ENTHALPY IS 3.0 BTU/LB (ADJ.), LESS THAN RETURN AIR ENTHALPY. THE SUPPLY AIR SENSOR SHALL MEASURE THE DRY BULB TEMPERATURE OF THE AIR LEAVING THE EVAPORATOR COIL WHILE ECONOMIZING. WHEN ECONOMIZING IS ENABLED AND THE UNIT IS OPERATING IN THE COOLING MODE, THE ECONOMIZER DAMPER SHALL MODULATE BETWEEN ITS MINIMUM POSITION AND 100% TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. MINIMUM POSITION SHALL BE CALCULATED BASED ON SUPPLY FAN SPEED. IF THE SUPPLY AIR TEMPERATURE STARTS TO FALL BELOW SUPPLY AIR TEMPERATURE SETPOINT, THE OUTDOOR DAMPER SHALL BE AT MINIMUM POSITION. COMPRESSORS SHALL BE DELAYED FROM OPERATING UNTIL THE ECONOMIZER HAS OPENED TO 100% FOR 5 MINUTES. THE ECONOMIZER SHALL BE DISABLED WHEN OUTDOOR AIR ENTHALPY IS GREATER THAN RETURN AIR ENTHALPY.

DEMAND CONTROL VENTILATION:
ROOFTOP UNIT OUTSIDE AIR DAMPER SHALL BE ALLOWED TO MODULATE AND DECREASE OUTSIDE AIR INTAKE DOWN FROM THE SCHEDULED OUTSIDE AIR VALVE TO THE SCHEDULED DCV OUTSIDE AIR VALUE. UPON DETECTION OF CARBON DIOXIDE (CO2) CONCENTRATIONS OF 750 PPM (ADJ) OR GREATER IN SPACE SERVED BY DUCT MOUNTED CO2, THE OUTSIDE AIR DAMPER SHALL MODULATE OPEN TO INCREASE OUTSIDE AIR INTAKE, UP TO THE SCHEDULED OUTSIDE AIR CFM VALUE. THE DAMPER SHALL MODULATE TO INCREASE OUTSIDE AIR AT INCREMENTS OF 60%, 70%, 80%, AND 100% OF THE SCHEDULED OUTSIDE AIR VALUE AND AT TIME INTERVALS OF 5 MINUTES (ADJ.). UPON DETECTION OF CARBON DIOXIDE CONCENTRATIONS LESS THAN 750 PPM (ADJ.), THE SEQUENCE SHALL BE REVERSED.

IF THE OUTSIDE AIR DAMPER HAS BEEN MODULATED TO ITS NORMAL MINIMUM POSITION AND THE CARBON DIOXIDE CONCENTRATION HAS BEEN 2,500 PPM (ADJ) OR GREATER FOR MORE THAN 20 MINUTES, AN ALARM SHALL BE INDICATED AT THE BAS AND AT THE UNIT CONTROLLER.

SUPPLY FAN:
THE SUPPLY FAN SHALL BE ENABLED WHILE IN THE OCCUPIED MODE AND CYCLED ON DURING THE UNOCCUPIED MODE. A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FAN. IF THE SWITCH DOES NOT OPEN WITHIN 40 SECONDS AFTER A REQUEST FOR FAN OPERATION A FAN FAILURE ALARM SHALL BE ANNUNCIATED AT THE BAS, THE UNIT SHALL STOP, REQUIRING A MANUAL RESET.

FILTER STATUS:
A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER WHEN THE FAN IS RUNNING. IF THE SWITCH CLOSURES FOR 2 MINUTES AFTER A REQUEST FOR FAN OPERATION A DIRTY FILTER ALARM SHALL BE ANNUNCIATED AT THE BAS.

CONDENSATE PAN STATUS:
UPON RECEIVING A SINGLE FROM THE CONDENSATE OVERFLOW SWITCH, THE UNIT SHALL DE-ENERGIZE AND A CONDENSATE OVERFLOW ALARM SHALL BE ANNUNCIATED AT THE BAS.

1 SEQUENCE OF OPERATIONS - ROOFTUP UNIT
NOT TO SCALE

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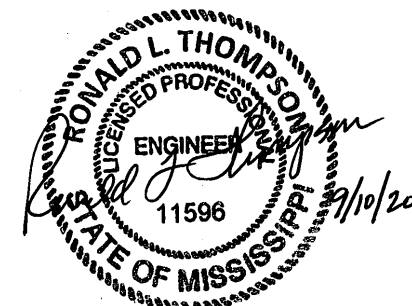
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DESOTO COUNTY SCHOOL
DISTRICT

No.	Description	Date
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SCHEDULES & RTU
SEQUENCE OF OPERATIONS -
MECHANICAL

JOB NO: 62983
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CHECKED: RLТ



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Allen & Hoshall
engineers • architects • surveyors

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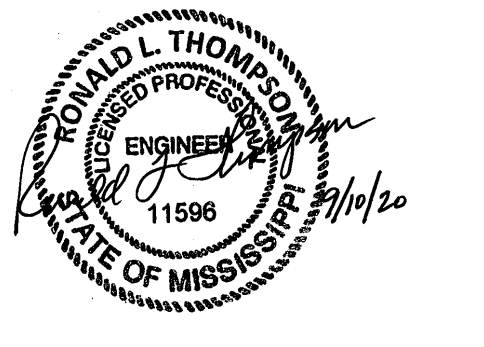
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**DESOTO COUNTY SCHOOL
DISTRICT**

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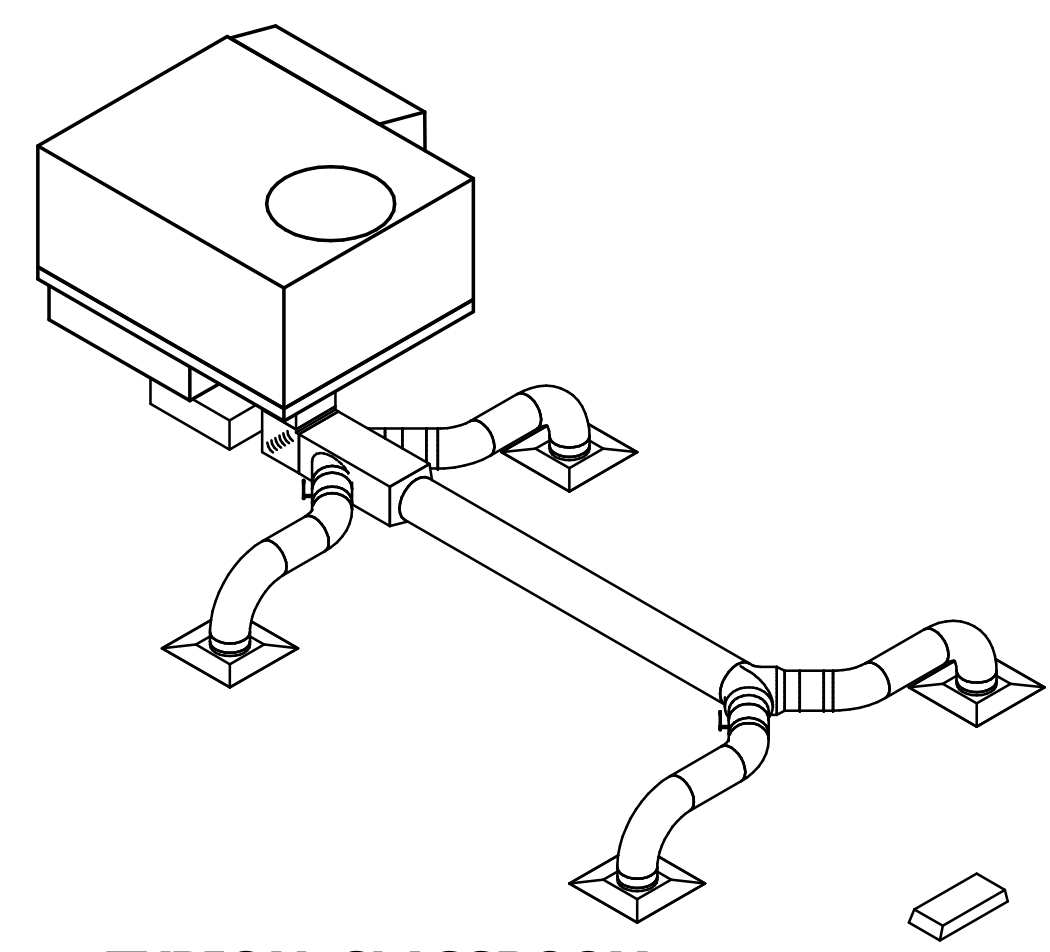
DETAILS - MECHANICAL

JOB NO: 62983
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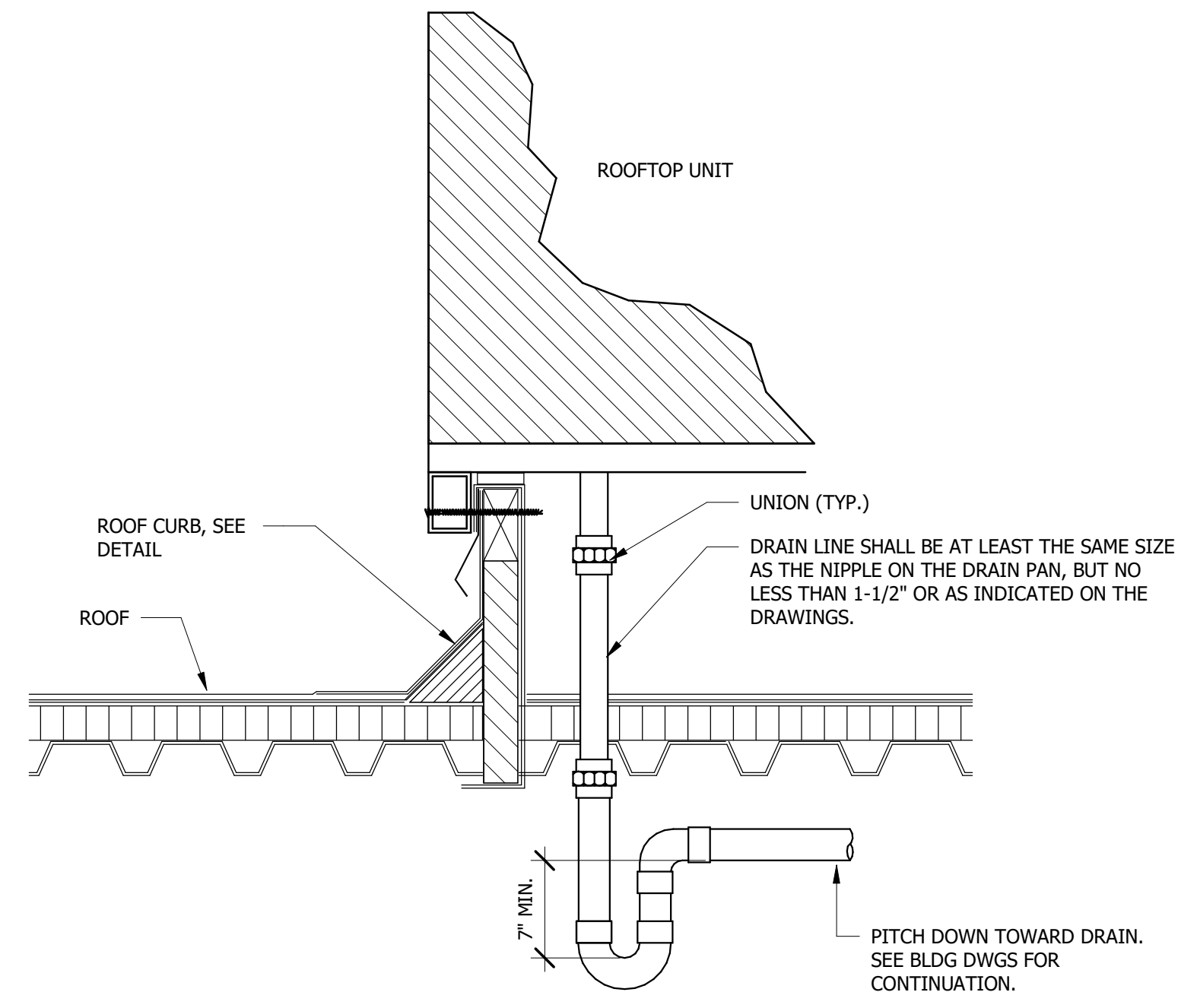


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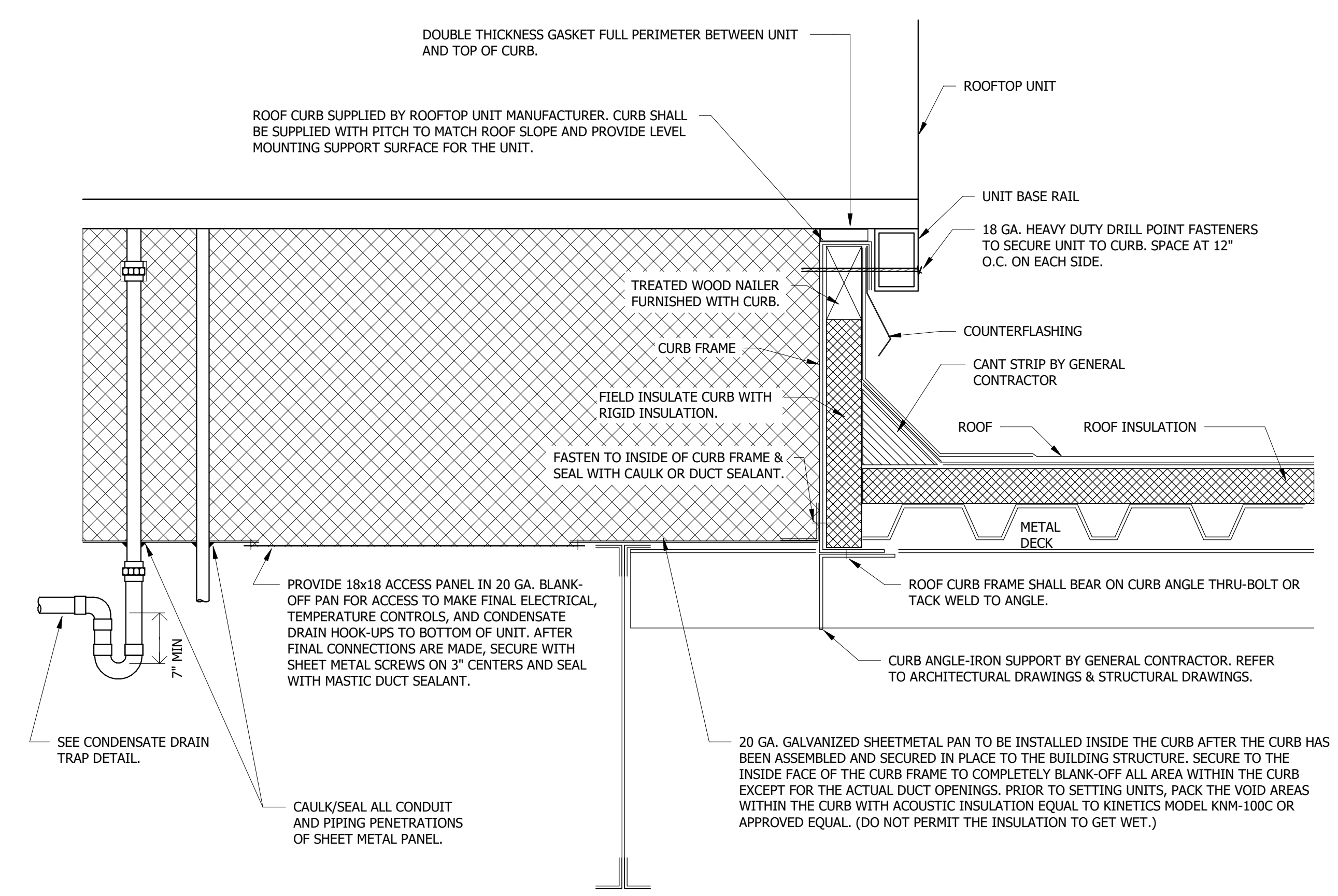
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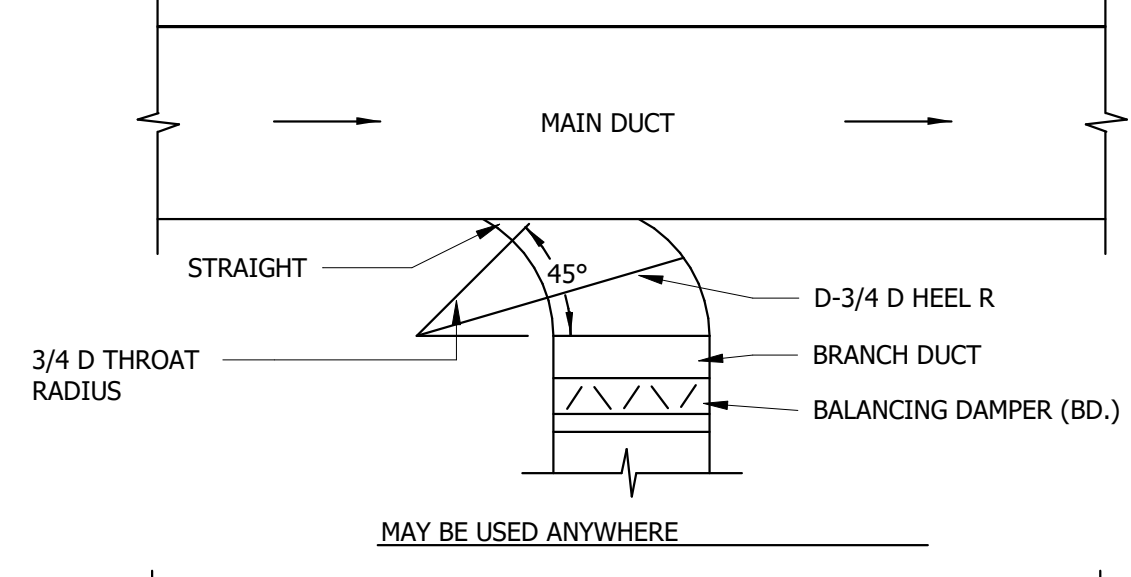
1 TYPICAL CLASSROOM



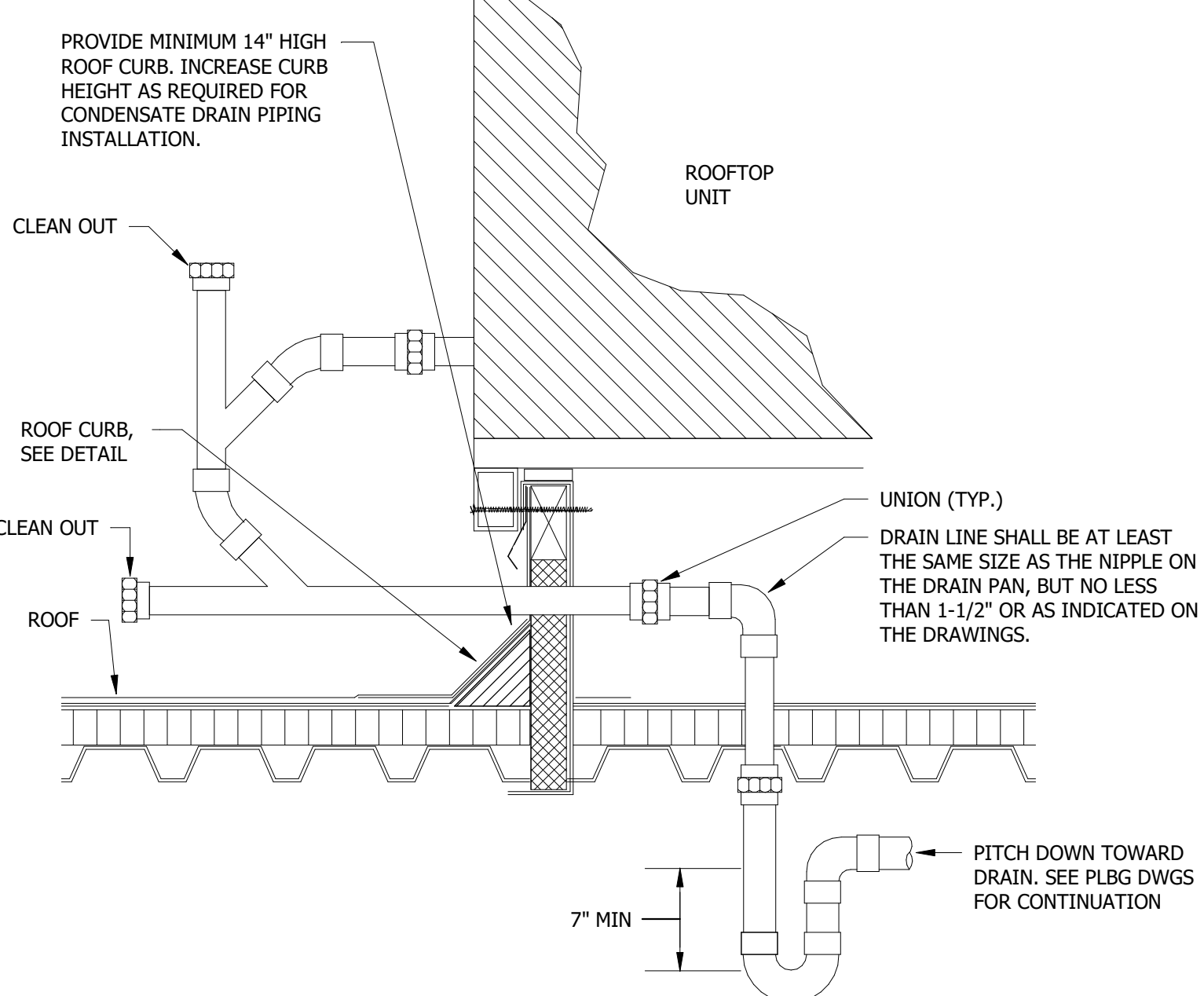
2 THROUGH BOTTOM CONDENSATE DRAIN TRAP FOR ROOFTOP UNIT DETAIL
NOT TO SCALE



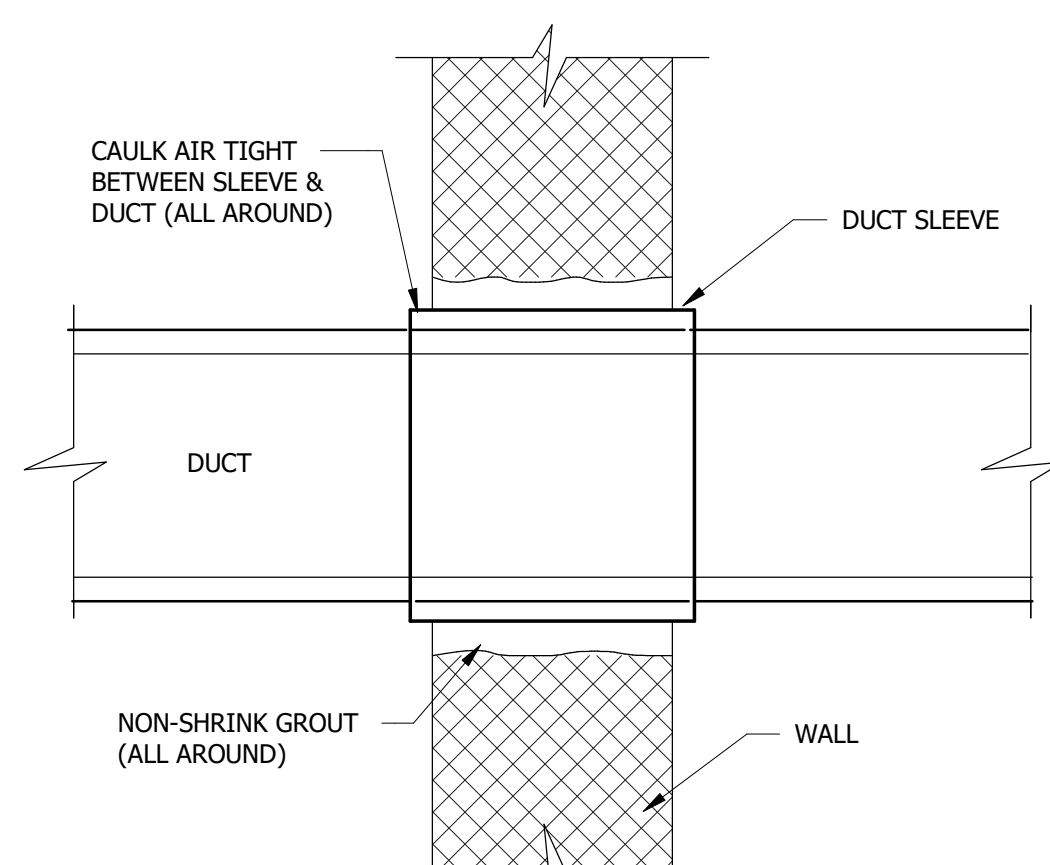
3 ROOF CURB AND FLASHING DETAIL
NOT TO SCALE



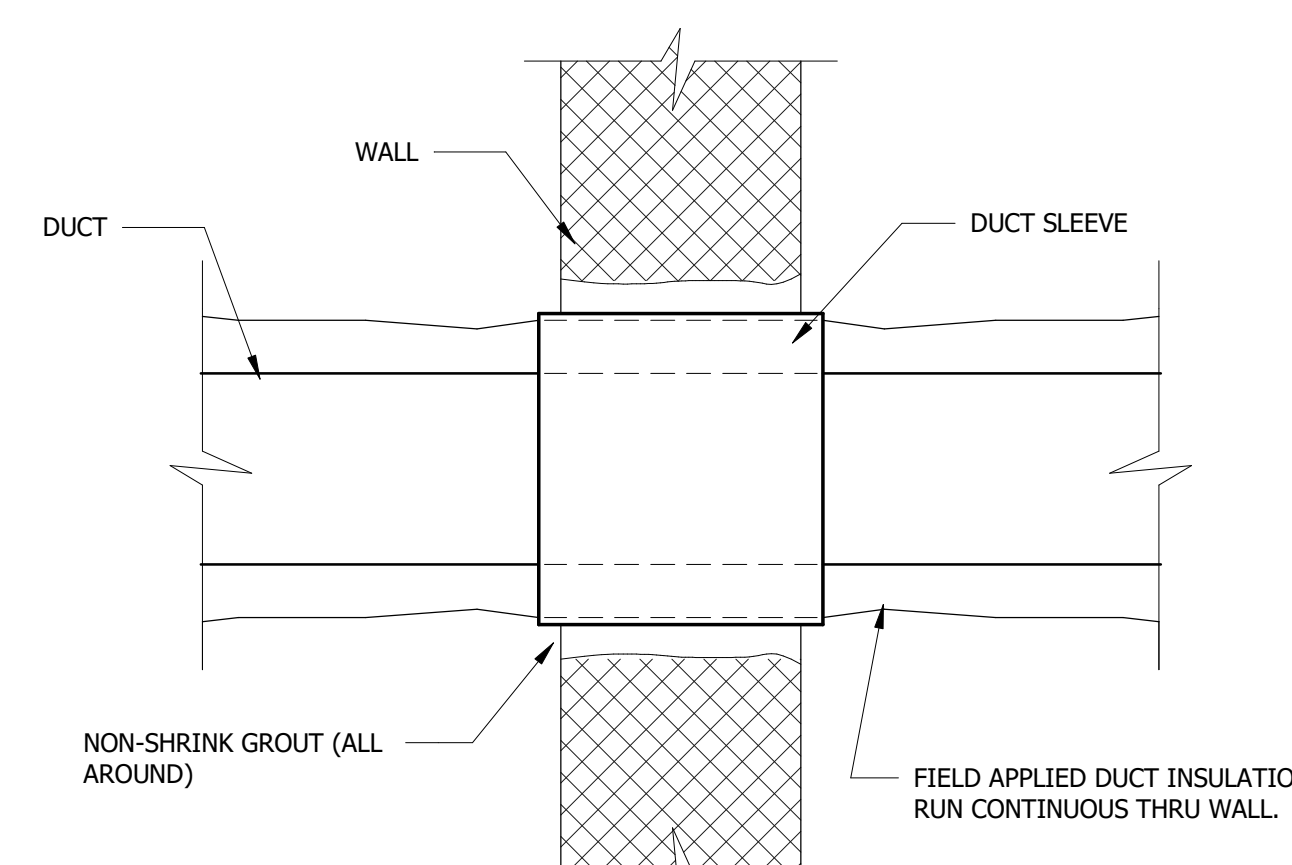
4 TYPICAL MAIN BRANCH CONNECTIONS
1/8" = 1'-0"



5 THROUGH-CURB CONDENSATE DRAIN TRAP FOR ROOFTOP UNIT DETAIL
NOT TO SCALE



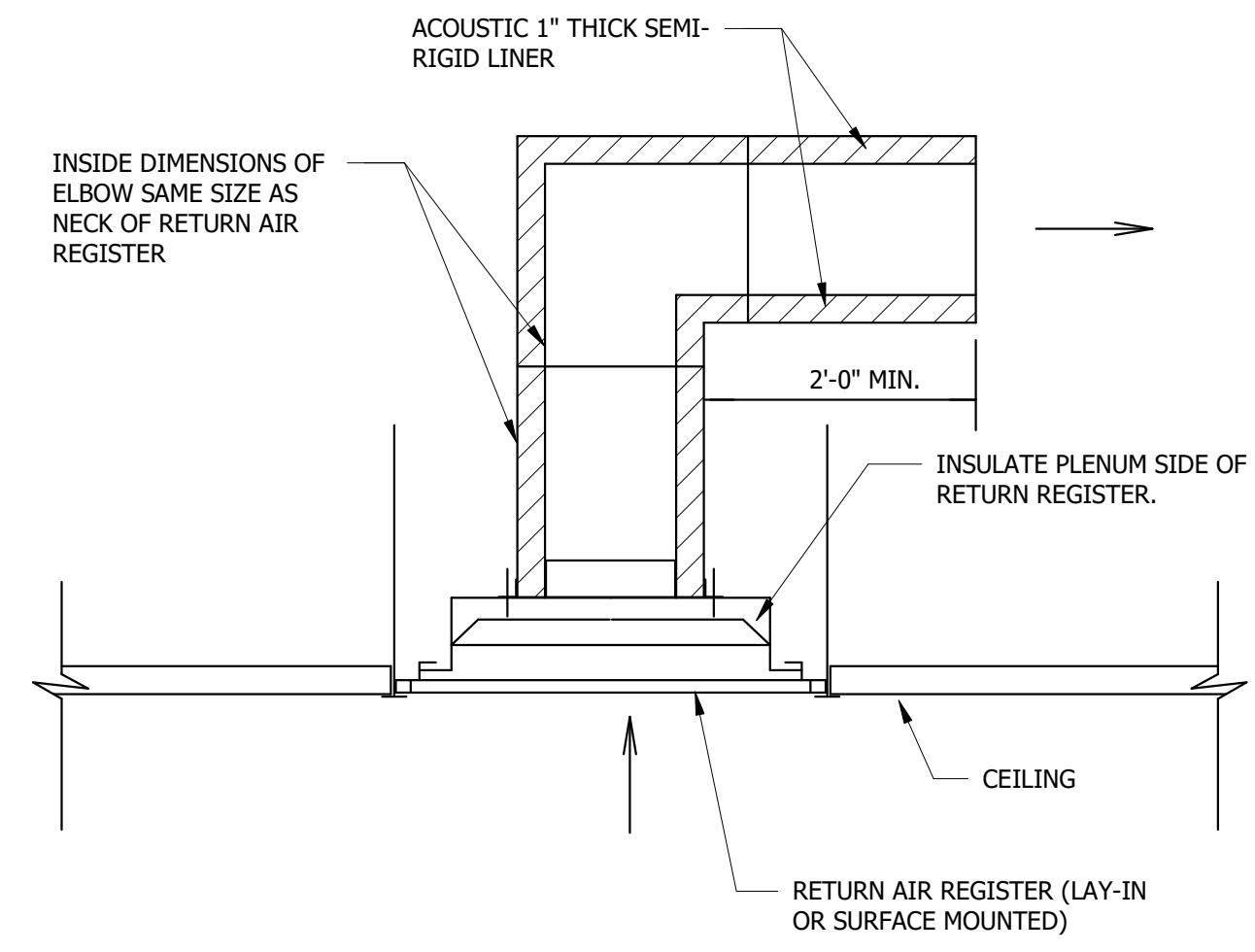
6 INTERIOR WALL PENETRATION - INTERNALLY INSULATED DUCT
NOT TO SCALE



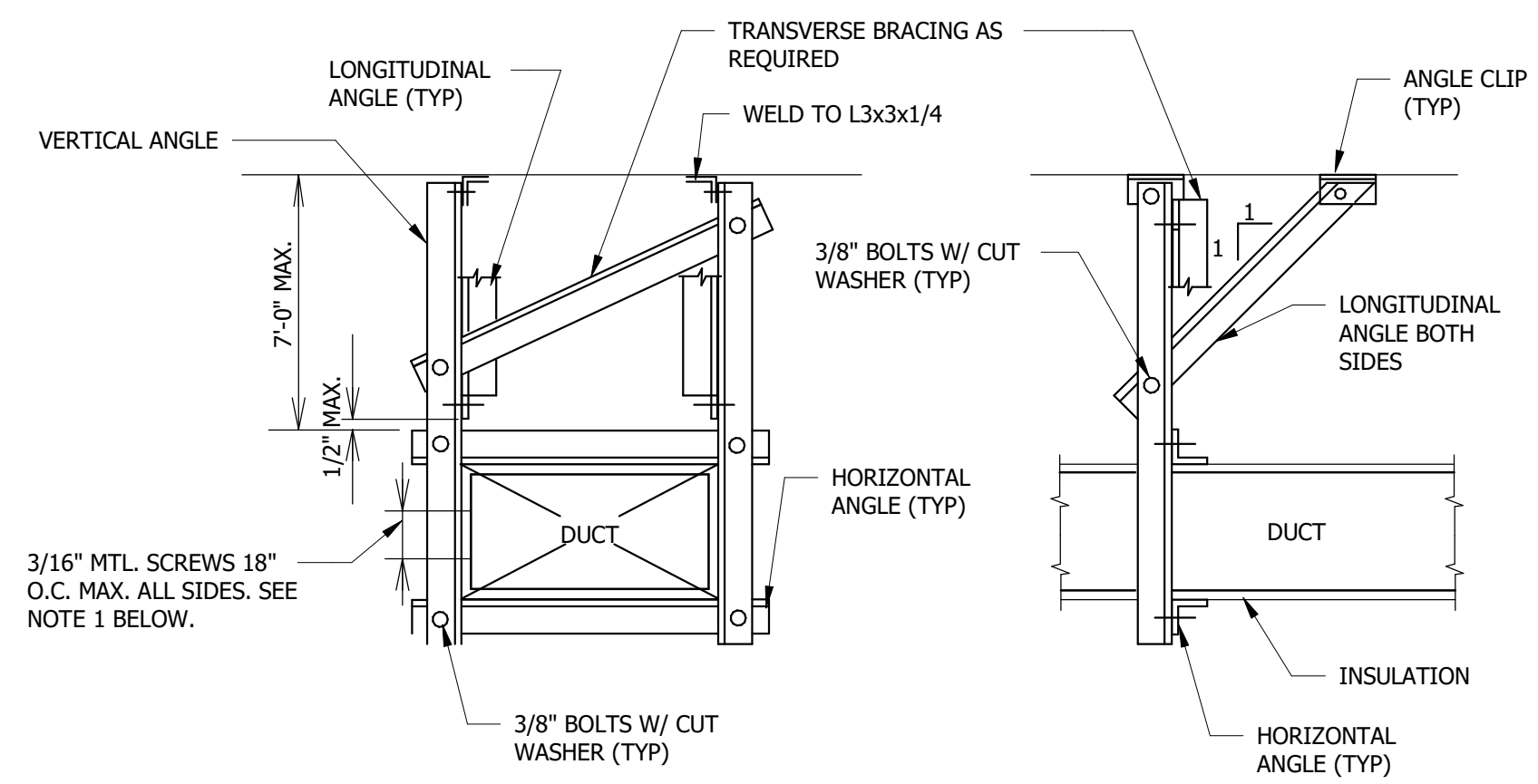
7 INTERIOR WALL PENETRATION OF EXTERNALLY INSULATED DUCT
NOT TO SCALE

- SEISMIC BRACING GENERAL NOTES:**
- SEISMIC BRACING OF MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL BE IN ACCORDANCE WITH 2012 INTERNATIONAL BUILDING CODE AND THE LATEST EDITION OF ASCE/SEI 7.
 - REFER TO STRUCTURAL DRAWING DESIGN CRITERIA FOR SEISMIC FORCES.
 - SEISMIC RESTRAINTS SHALL NOT BE REQUIRED FOR THE FOLLOWING INSTALLATIONS:
 - GAS PIPING LESS THAN 1-INCH INSIDE DIAMETER.
 - PIPING IN MECHANICAL ROOMS LESS THAN 1-1/4 INCH INSIDE DIAMETER.
 - ALL OTHER PIPING LESS THAN 2-1/2 INCH INSIDE DIAMETER.
 - ALL RECTANGULAR AIR-HANDLING DUCTS LESS THAN 6 SQ. FT. IN CROSS-SECTIONAL AREA.
 - ALL ROUND AIR-HANDLING DUCTS LESS THAN 28 INCHES IN DIAMETER.
 - ALL PIPING SUSPENDED BY INDIVIDUAL HANGERS 12 INCHES OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE SUPPORT FOR THE HANGER.
 - ALL DUCTS SUSPENDED BY HANGERS 12 INCHES OR LESS IN LENGTH FROM THE TOP OF THE DUCT TO THE BOTTOM OF THE SUPPORT FOR THE HANGER.

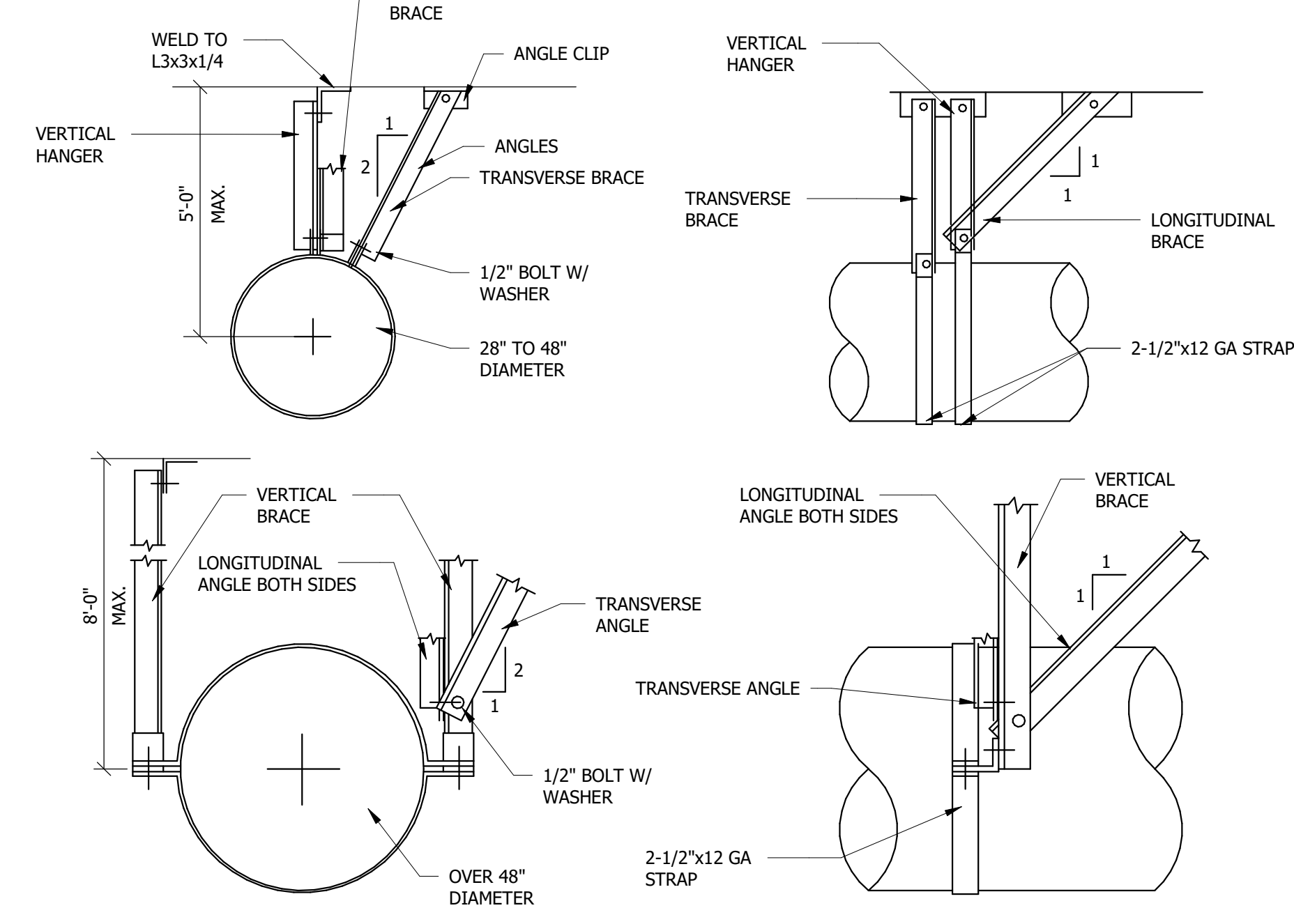
8 GENERAL NOTES - SEISMIC BRACING
NOT TO SCALE



9 RETURN GRILLE ACOUSTIC ELBOW DETAIL
NOT TO SCALE



10 TYPICAL SEISMIC BRACING FOR RECTANGULAR DUCT
NOT TO SCALE

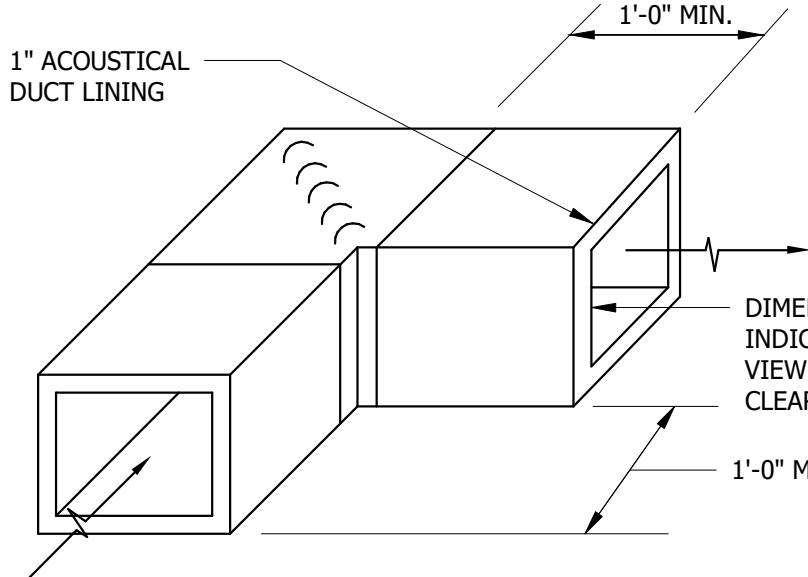


11 TYPICAL SEISMIC BRACING FOR ROUND/OVAL DUCT
NOT TO SCALE

MAX. DUCT DIMENSION	BRACING ANGLES		ANGLE CLIP
	VERTICAL	ALL OTHERS	
UP TO 60"	4x4x12 GA	3x3x16 GA	3x3x 1/4
84"	4x4x 1/4"	4x4x12 GA	4x4x 1/2

- NOTES:**
- ROUND DUCT SUPPORTS SHALL BE SIMILAR, EXCEPT (1) 3/16" METAL SCREW ON EACH OF THE FOUR QUADRANTS.
 - DUCT SUPPORT INTERVALS SHALL BE AS FOLLOWS:
 - TRANSVERSE SWAY BRACING: MAX. EVERY 30' O.C. EACH HORIZONTAL TURN GREATER THAN 45° AND AT END OF EACH RUN.
 - LONGITUDINAL SWAY BRACING: MAX. EVERY 5' O.C.
 - TRANSVERSE BRACING MAY SERVE AS HORIZ. BRACING OF PERPENDICULAR INTERSECTING DUCTS IF INSTALLED WITHIN 4" OF INTERSECTION AND SIZED FOR LARGER DUCT.
 - WALLS WHICH DUCTS PENETRATE MAY SERVE AS TRANSVERSE BRACING.
 - BOLT SIZE SHALL BE 1/4" UP TO 54" DUCT SIZE AND 3/8" FOR 54" AND GREATER DUCT SIZE.

MAX. DIA.	ANGLE CLIP	LONGITUDINAL/ TRANSVERSE BRACE	VERTICAL HANGER
48"	5"x3"x 1/2"	2x2x16 GA	2x2x16 GA
60"	5"x3"x 1/2"	4x4x14 GA	3x3x16 GA



12 TRANSFER AIR DUCT DETAIL
NOT TO SCALE

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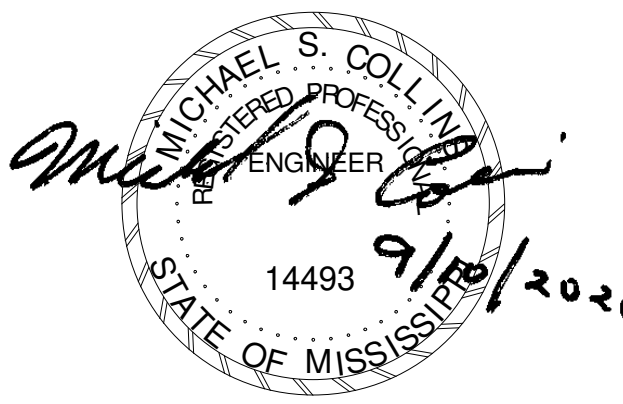
3210 GETWELL RD,
SOUTHAVEN, MS 38672

DESOTO COUNTY
SCHOOLS

No.	Description	Date
2	ADD02	10/12/20
1	ADD01	09/29/20

LEGEND, FIXT. SCHEDULE,
NOTES, DETAILS, AND
SINGLE-LINE - ELECTRICAL

JOB NO: 62983
DATE: 09/10/2020
DRAWN: LMT
CHECKED: MSC



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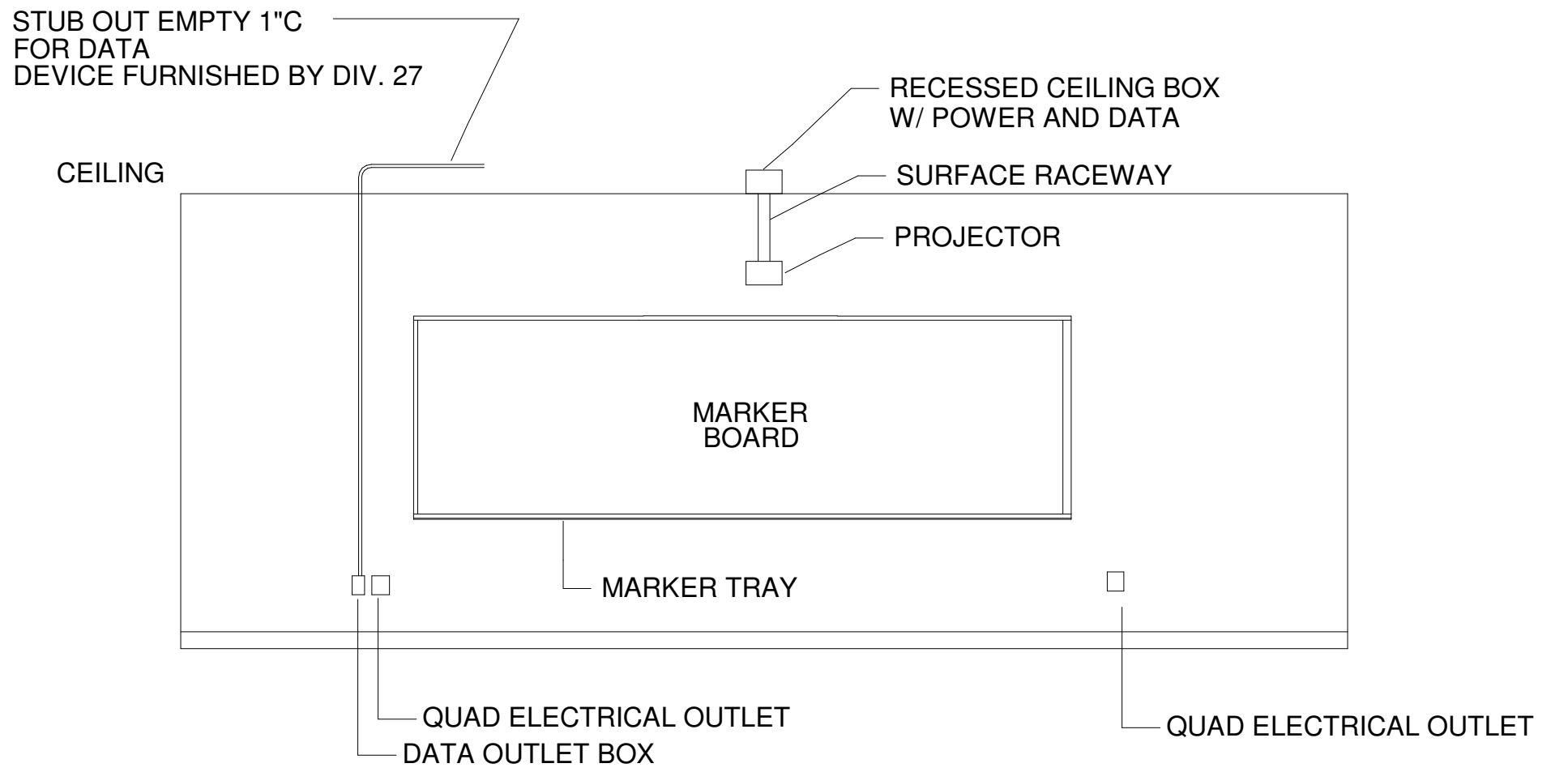
LIGHTING FIXTURE SCHEDULE							
TYPE MARK	MANUFACTURER	MODEL	LAMP	WATTAGE	COLOR	VOLTAGE	DESCRIPTION
A	DECO LIGHTING	BLP-LED-24-35-354050-U-D	LED	35 W	4000 K	277 V	LED FLAT PANEL TROFFER, 4500 LUMEN - PROVIDE WITH 1% DIMMING DRIVER; CCT SET TO 40K
B	DECO LIGHTING	BLP-LED-24-26-354050-U-D	LED	26 W	4000 K	277 V	LED FLAT PANEL TROFFER, 3400 LUMEN - PROVIDE WITH 1% DIMMING DRIVER; CCT SET TO 40K
D	PRESCOLITE	LTR-6RD-H-ML20L-DM1-EM-LTR-6RD-T-ML40K8MD-SS-EM	LED	23 W	4000 K	277 V	LED DOWNLIGHT WITH WET-LOCATION LENSE
DE	DUAL-LITE	EVEURWEI	LED	2 W	0 K	277 V	LED, EXIT SIGN - MTD. ABOVE DOOR HEADER AS REQUIRED
EA	DUAL-LITE	EV4RI	LED	4 W	0 K	277 V	RECESSED LED EMERGENCY EGRESS LIGHT
EL	DUAL-LITE	EVHC12ID-06L	LED	4 W	0 K	277 V	WALL MOUNTED LED EMERGENCY EGRESS LIGHT
J	HUBBELL	TRP1-12L-30-3K7-3-UNV-DBS	LED	30 W	3500 K	277 V	ARCHITECTURAL WALL PACK MTD 10' AFG

GENERAL NOTES:

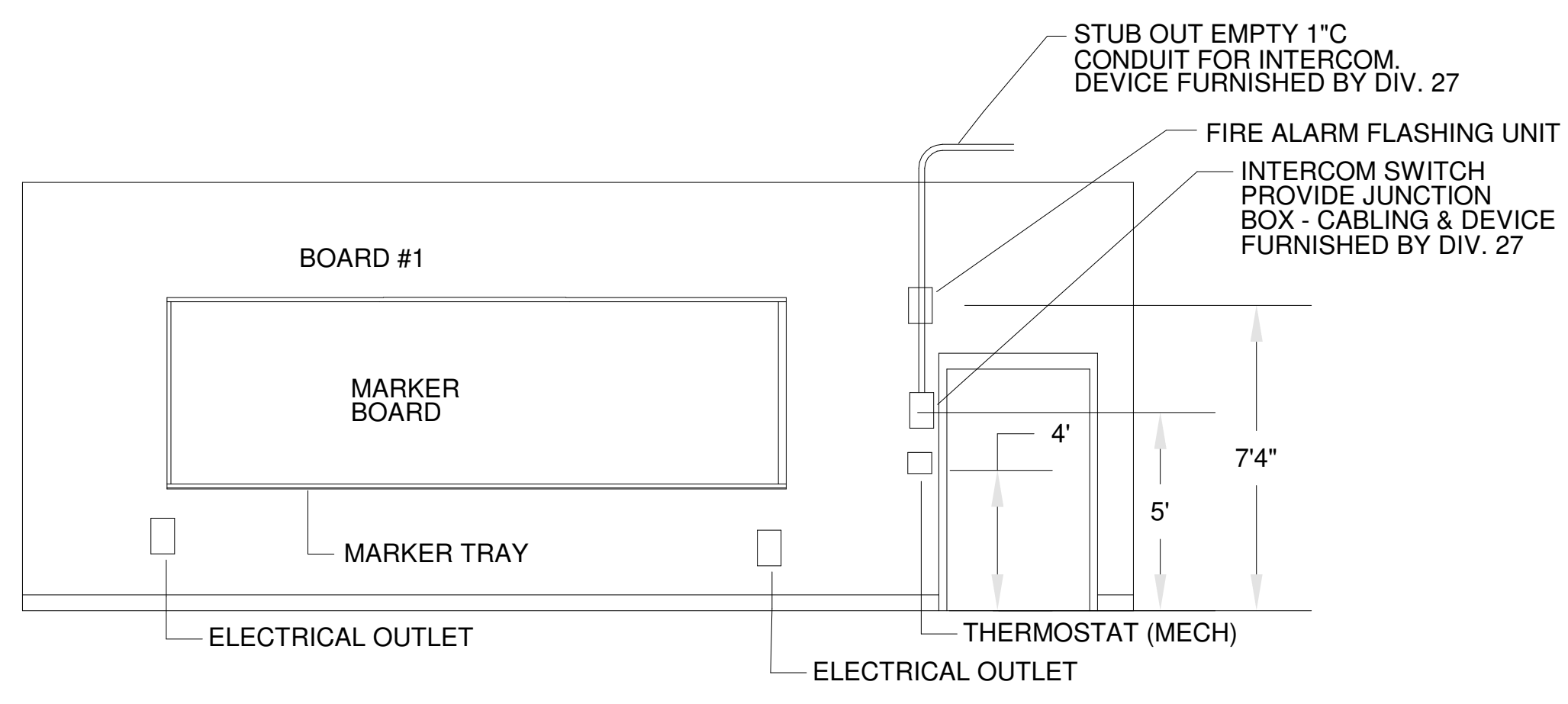
- CONTRACTOR SHALL TIE ALL FIRE ALARM DEVICES INTO EXISTING FIRE ALARM SYSTEM IN EXISTING SCHOOL. CONTRACTOR SHALL PROVIDE (1) NEW LOOP CARD AND (2) NEW POWER SUPPLIES TO ALLOW INTEGRATION OF NEW FIRE ALARM DEVICES. SEE DRAWING E1-1.
- LIGHTING CONTROLS SHALL BE DONE BY DIVISION 27.
- EXPAND EXISTING P/A INTERCOM SYSTEM AS REQUIRED.
- NO LIGHTING CONTROLS ARE SHOWN IN THESE PLANS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE LIGHTING CONTROLS CONTRACTOR AND UNDERSTAND ALL EQUIPMENT THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL - REFER TO RESPONSIBILITY MATRIX FOR ADDITIONAL INFORMATION. ELECTRICAL CONTRACTOR SHALL ENSURE FINAL LIGHTING CONTROL INSTALLATION COMPLIES WITH ASHRAE 90.1-2010.
- ALL WIRING NOT INSTALLED IN CONDUIT SHALL BE PLENUM RATED.

6. ALL ELECTRICAL SUBMITTALS SHALL BE ON LOCAL MANUFACTURER REPRESENTATIVES LETTERHEAD.

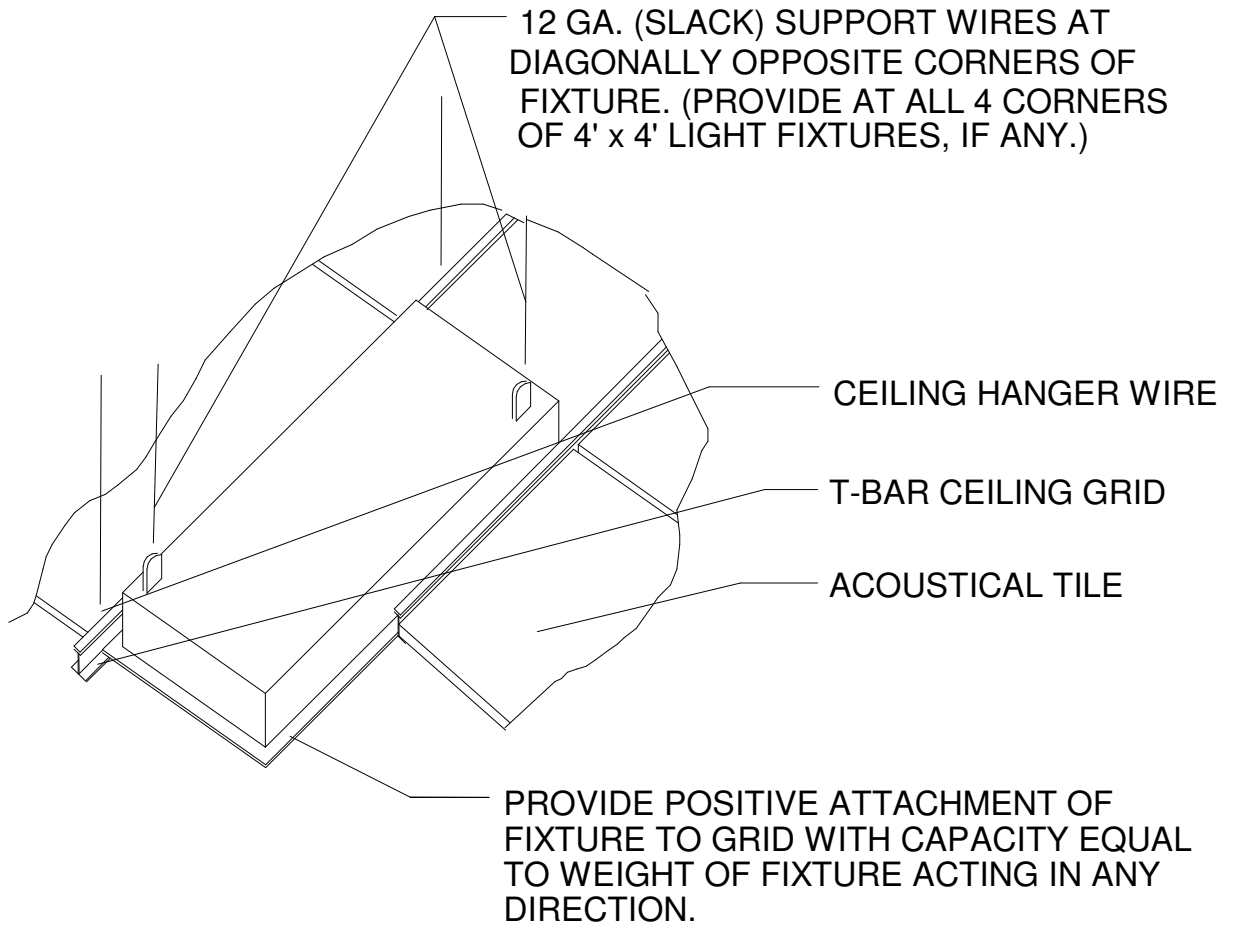
3 GENERAL NOTES - ELECTRICAL
N.T.S.



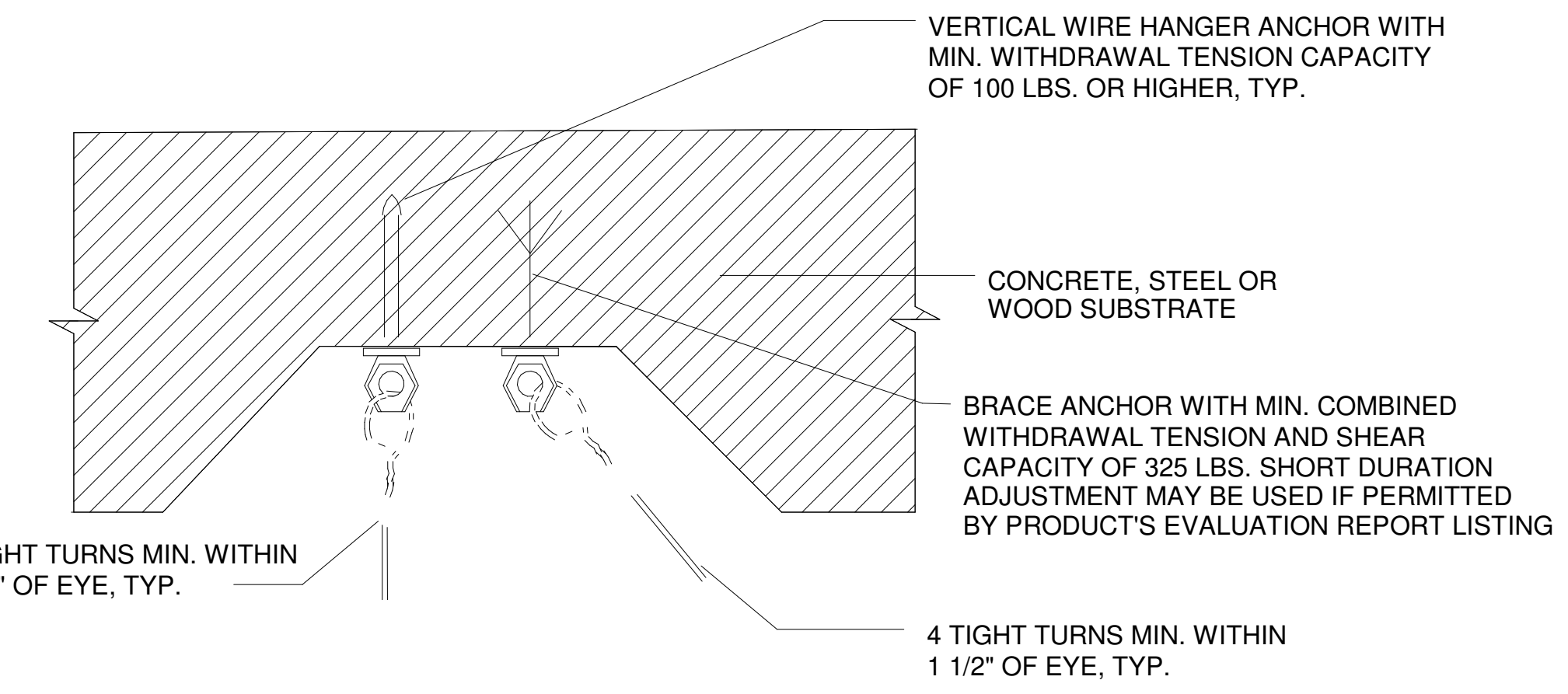
4 CLASSROOM ADJACENT WALL SCHEMATIC - ELECTRICAL
N.T.S.



5 CLASSROOM DOOR WALL SCHEMATIC - ELECTRICAL
N.T.S.



6 SEISMIC DETAILS
N.T.S.

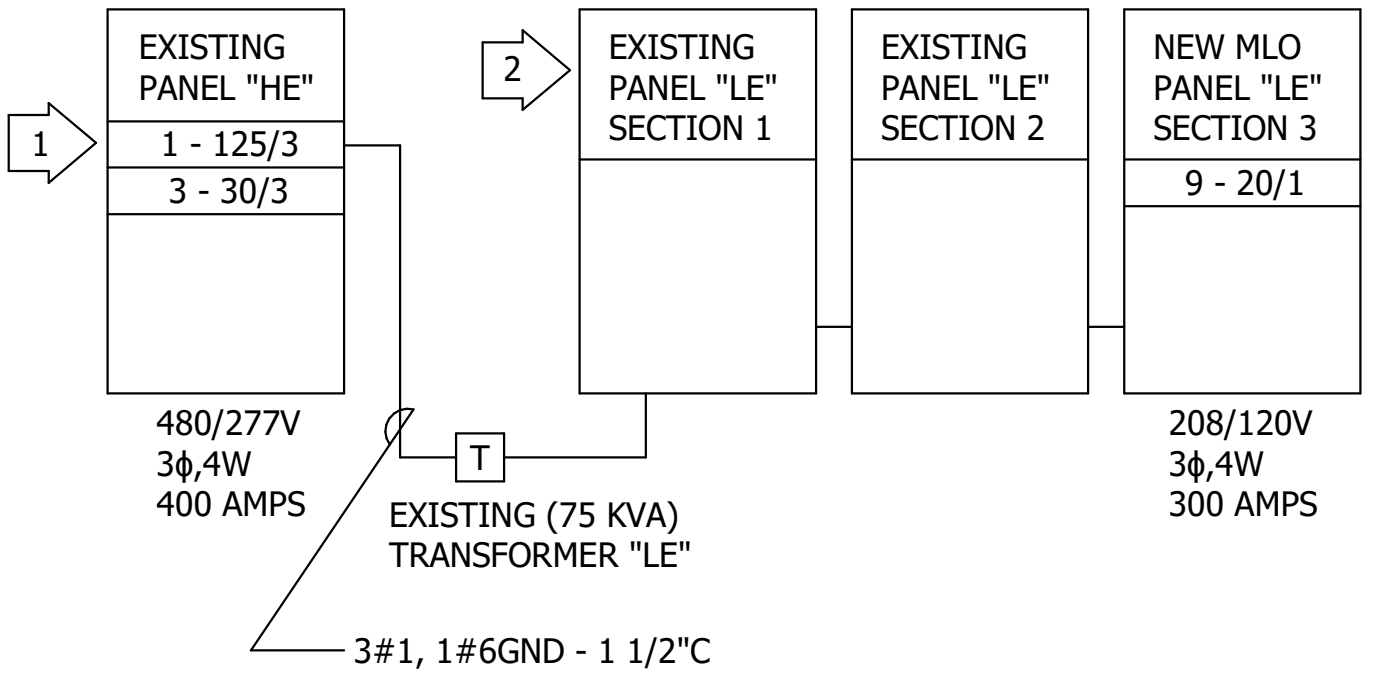


NOTE
1. FOR WEIGHT LESS THAN 56 LBS. ONLY. CONTACT ARCHITECT IF FIXTURE WEIGHS MORE THAN 56 LBS.

REFERENCE NOTES:

- CONTRACTOR TO REPLACE EXISTING 70/3 BREAKER FEEDING TRANSFORMER "LE" WITH 125/3 BREAKER.
- CONTRACTOR SHALL CONFIRM MAIN BREAKER IN PANEL "LE" IS 300A. IF NOT, CONTRACTOR SHALL PROVIDE 300/3 MAIN CIRCUIT BREAKER AND REPLACE EXISTING CIRCUITRY FROM TRANSFORMER TO PANEL WITH (4)350MCM, 1#4GND - 3 1/2" C.

7 SINGLE-LINE DIAGRAM
N.T.S.



- RECESSED 2'x4' LIGHTING FIXTURE - ALL FIXTURES SHALL BE TYPE "A", UOI.
- WALL MOUNTED EMERGENCY LIGHT FIXTURE - MTD. 8' AFF.
- RECESSED LED LIGHTING FIXTURE
- RECESSED LED EMERGENCY LIGHTING FIXTURE
- EXIT SIGN, FIXTURE TYPE "X1" OR "X2", CHEVRONS AS REQUIRED
- A DENOTES FIXTURE TYPE A - SEE FIXTURE SCHEDULE
- S SWITCH - MTD. 48" AFF, UOI
- DUPLEX RECEPTACLE, MTD. 18" AFF, UOI
- GROUND FAULT INTERRUPTER RECEPTACLE - MTD. AC, UOI
- DOUBLE DUPLEX RECEPTACLE - MTD. 18" AFF, UOI
- FUSED OR NON-FUSED DISCONNECT SWITCH - SIZE AS INDICATED
- COMBINATION STARTER AND FUSED OR NON-FUSED DISCONNECT SWITCH - SIZE AS REQUIRED
- WP WEATHER PROOF, NEMA 3R ENCLOSURE
- AFF ABOVE FINISHED FLOOR
- UOI UNLESS OTHERWISE INDICATED
- AC SPECIAL MOUNTING HEIGHT OR ABOVE COUNTER - COORDINATE WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
- EX EXISTING
- OFCL OWNER FURNISHED CONTRACTOR INSTALLED
- USB COMBINATION DUPLEX AND UNIVERSAL SERIAL BUS RECEPTACLE
- 120/208V 3PH, 4W PANELBOARD - SEE SINGLE LINE DIAGRAM
- 277/480V 3PH, 4W PANELBOARD - SEE SINGLE LINE DIAGRAM
- TRANSFORMER
- WIRE IN CONDUIT RUN OVERHEAD - CONCEALED IN OR ABOVE CEILING
- INDICATES GROUNDING CONDUCTOR
- KEYNOTE INDICATION
- SCHEDULE REFERENCE
- FIRE ALARM SYSTEM - MANUAL STATION, MTD. 48" AFF, UOI
- FIRE ALARM SYSTEM - COMBINATION AUDIBLE & VISUAL INDICATOR
- FACP FIRE ALARM SYSTEM - CONTROL PANEL
- ANN FIRE ALARM SYSTEM - ANNUNCIATOR PANEL
- FIRE ALARM SYSTEM - VISUAL SIGNAL DEVICE
- FIRE ALARM SYSTEM - SMOKE DETECTOR IN DUCT
- FIRE ALARM SYSTEM - CEILING MTD. SMOKE DETECTOR
- FIRE ALARM SYSTEM - HEAT DETECTOR
- INTERCOM LOCATION . PROVIDE BACKBOX, MTD. 48" AFF AND ROUTE 3/4" CONDUIT TO CORRIDOR CEILING. PROVIDE POWER AS REQUIRED.
- 2" CONDUIT SLEEVE, ABOVE CEILING. UNLESS OTHERWISE INDICATED.
- WAP CEILING MOUNTED "WIDE-AREA ACCESS POINT" RUN 1" CONDUIT FROM BOX TO NEAREST ACCESSIBLE CEILING. PROVIDE TWO CAT6A DATA DROP.
- SECURITY CAMERA - ELECTRICAL CONTRACTOR SHALL PROVIDE EMPTY BOX AND CONDUIT. ROUTE 1 1/4" UP TO NEAREST ACCESSIBLE CEILING SPACE. COORDINATE MOUNTING HEIGHT WITH OWNER. CAMERAS BY DIVISION 27.
- RECESSED CONNECTION BLOCK FOR POWER, COXIAL, USB, AND HDMI CABLES (DATACOMM ELETRONICS MODEL # 45-0010-WH OR APPROVED EQUAL). SHALL HAVE (1) DUPLEX PLATE, (1) COXIAL PLATE, AND (1) DATA PLATE. FLUSH MOUNT IN CEILING, AGAINST WALL, CENTERED ABOVE WALL MOUNTED PROJECTOR. PROVIDE ONE CAT6A DATA DROP. USB, DATA, AND HDMI CABLING BY DIVISION 27.
- SPEAKER - DEVICE AND CABLES BY DIVISION 27.
- OUTLET FOR DATA CABLES MTD. 18" AFF, UOI. - RUN 1 1/4" EMPTY CONDUIT FROM SS JUNCTION BOX UP TO NEAREST ACCESSIBLE CEILING SPACE - PROVIDE BLANK COVERPLATE. PROVIDE TWO CAT6A DATA DROPS.
- OUTLET FOR HDMI AND USB CABLES MTD. 18" AFF, UOI. - RUN 1 1/4" EMPTY CONDUIT FROM SS JUNCTION BOX UP TO NEAREST ACCESSIBLE CEILING SPACE - PROVIDE BLANK COVERPLATE.

1 LEGEND - ELECTRICAL
N.T.S.



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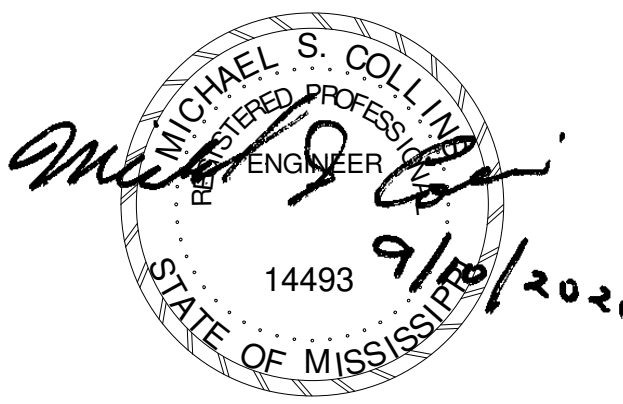
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**DESOTO COUNTY
SCHOOLS**

No.	Description	Date
2	ADD02	10/12/20
1	ADD01	09/29/20

**FLOOR PLAN -
POWER/COMMUNICATIONS**

JOB NO: 62983
DATE: 09/10/2020
DRAWN: LMT
CHECKED: MSC

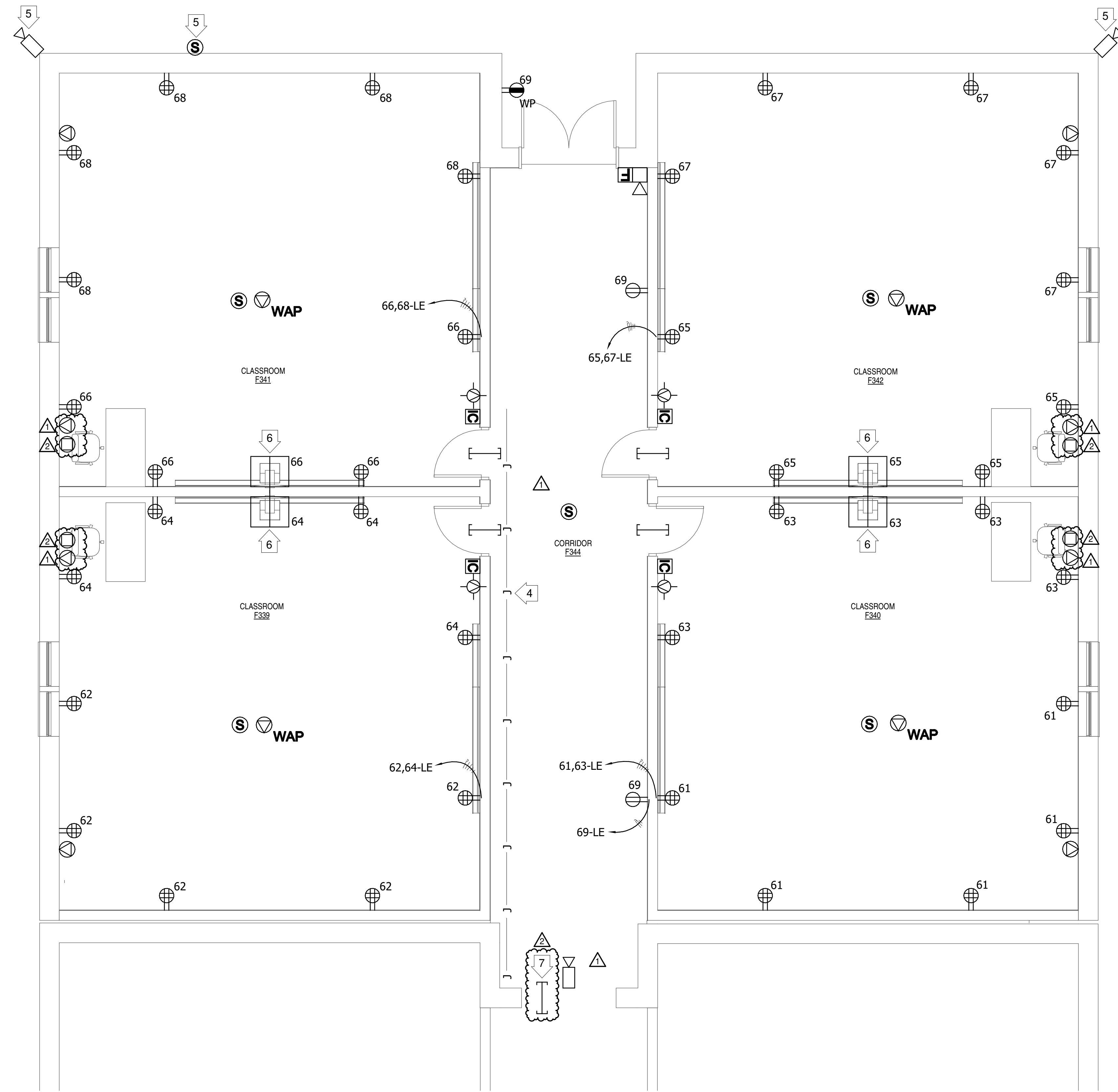


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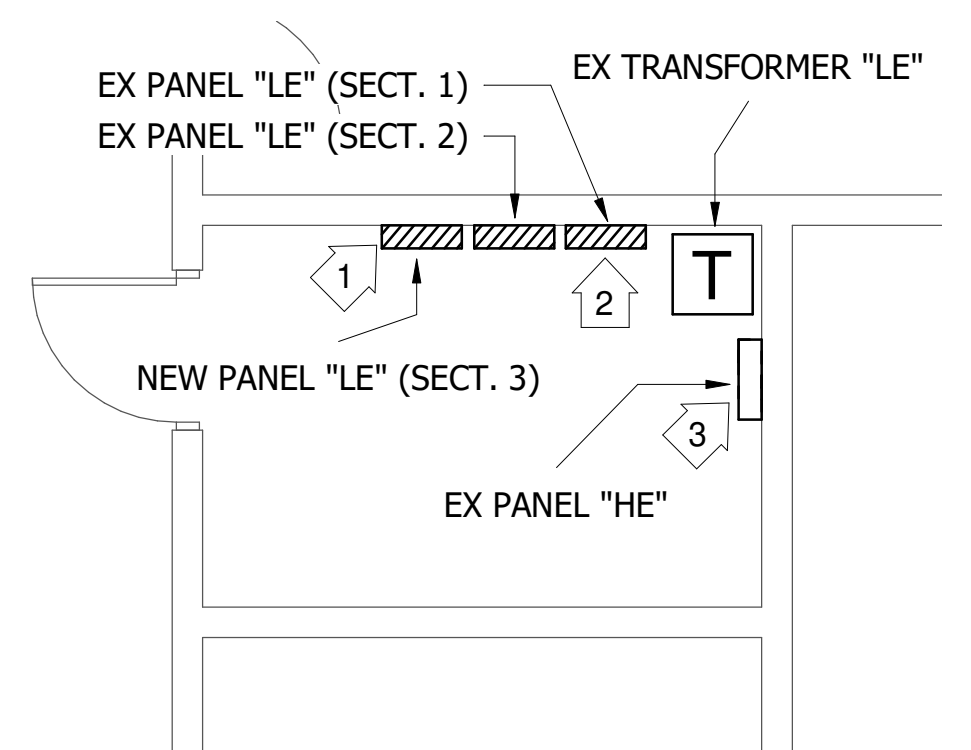
GENERAL NOTES:

- EXPAND EXISTING FIRE ALARM SYSTEM TO CONNECT NEW INITIATING, CONTROL, AND ANNUNCIATING DEVICES.
- DISCONNECTS ARE PROVIDED BY MECHANICAL AND SHALL BE CIRCUITED BY ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL.
- EXPAND EXISTING P/A INTERCOM SYSTEM AS REQUIRED.

KEYNOTE LEGEND	
KEY NO.	COMMENT
1	CONTRACTOR SHALL MATCH EXISTING PANEL LE SECTIONS (SQUARE D 300A MLO) INSTALLED WITH (9) 20A CIRCUIT BREAKERS AND ALL REMAINING BLANKED OFF. CIRCUIT NUMBERING WILL START WITH 61 AND END WITH 90 TO MATCH WITH OTHER SECTIONS.
2	CONTRACTOR SHALL CONFIRM MAIN BREAKER IN PANEL LE IS 300A. IF NOT, CONTRACTOR SHALL PROVIDE 300A/3P MAIN CIRCUIT BREAKER AND REPLACE EXISTING CIRCUITRY FROM TRANSFORMER TO PANEL WITH 4-350MCM, 1#4G-3 1/2".
3	CONTRACTOR SHALL REPLACE TRANSFORMER LE BREAKER INSIDE PANEL HE FROM 70A BREAKER TO 125A BREAKER AND RUN NEW SUPPLY, 3#1, 1#6G-1 1/2", FROM PANEL HE TO TRANSFORMER LE.
4	PROVIDE AN ARRAY OF J-HOOKS ABOVE CEILING OF CORRIDOR (6' ON CENTERS) TO SUPPORT DATA CABLES AND OTHER LOW VOLTAGE CABLES. SPACE J-HOOKS PER CABLE MANUFACTURER STANDARDS. COORDINATE INSTALLATION WITH ALL TRADES.
5	RELOCATED EXISTING DEVICE.
6	PROVIDE HBL4750810GY SURFACE MOUNTED RACEWAY WITH COVER FROM CEILING DOWN TO WALL COMPONENT OF WALL MOUNTED EPSON PROJECTOR, FOR CONCEALING PROJECTOR CABLES. FIELD-CUT RACEWAY AS REQUIRED (APPROX. 12"). PAINT TO MATCH WALL. RUN (1) USB AND (1) HDMI CABLE FROM PROJECTOR TO NEARBY HDMI/USB OUTLET.
7	3" CONDUIT SLEEVE, ABOVE CEILING.



1 FLOOR PLAN - POWER/COMMUNICATIONS
1/4" = 1'-0"



2 FLOOR PLAN - ELECTRICAL CLOSET - POWER
1/4" = 1'-0"

