

## **SECTION 00 91 10**

### **ADDENDUM NUMBER 1**

#### **PARTICULARS**

- 1.01 DATE: NOVEMBER 18, 2020**
- 1.02 PROJECT: ELMORE SPORTS MEDICINE RENOVATIONS**
- 1.03 PROJECT NUMBER: DCM NO. 2020452**
- 1.04 OWNER: ALABAMA A&M UNIVERSITY**
- 1.05 ARCHITECT: NOLA | VAN PEURSEM ARCHITECTS, PC**



#### **TO PROSPECTIVE BIDDERS**

- 2.01 THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE BIDDING DOCUMENTS DATED OCTOBER 2, 2020, WITH AMENDMENTS AND ADDITIONS NOTED BELOW.**
- 2.02 ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED IN THE PROPOSAL FORM. FAILURE TO DO SO MAY DISQUALIFY THE BIDDER.**
- 2.03 THIS ADDENDUM CONSISTS OF 25 PAGES.**

#### **CHANGES TO THE PROJECT MANUAL**

##### **3.01 SECTION 00 10 00-BID DOCUMENTS AND FORMS:**

- A. Advertisement for Bid:
  - 1. Replace Advertisement for Bid in its entirety.
  - 2. Change Bid Date to read, "December 15, 2020".

##### **3.02 SECTION 00 22 00-OWNER'S SUPPLEMENTARY INSTRUCTIONS TO BIDDERS:**

- A. Paragraph 1.03.B: Change paragraph to read as follows, "All sealed bids will be received by 2:00 p.m. CST on December 15, 2020 at which time each bidder must submit a sealed envelope properly titled containing the Proposal form, the Bid Bond, Accounting of Sales Tax - DCM Form C-3A form, and Supplement C - List of Alternates. Upon receipt of these documents the bids will be publicly opened and read aloud. Supplement A – List of Subcontractors (section 00 43 21) is to be hand delivered or emailed to the Architect within 24 hours after receipt of bids. No changes to the base bid will be allowed after 2:00 p.m.

##### **3.03 SECTION 08 71 00-DOOR HARDWARE:**

- A. Hardware Set #01: Remove doors 200.1 and 222.1 from this set.
- B. Add Hardware Set #01A to read as follows:  
SET #01A

Doors: 200.1, 222.1

6 Hinges	FBF168 4 1/2 X 4 1/2	US26D	ST
1 Removable Mullion	FL822 x LAR	600	PR
2 Exit Device-Passage	FL 2114 X 4914D SNB (2)	630	PR
3 Rim. Cylinder-Mullion	12E-72 PATD	626	BE
2 Closer	8916 SPA NFHD SN1	689	DM
2 Kick Plate	KO050 8" x 2" LDW B4E CSK	630	TR
2 Wall Bumper	1270CVSV	626	TR
1 Mullion Seal	5100N x LAR		NA
1 Perimeter Gasketing	5050 C x LAR		NA

C. Hardware Set #02:

1. Add door 214.1.
2. Change exist devise to be: Exit Device-Passage FL 2114 X 4914D SNB (2)
3. Delete Door Silencers
4. Add perimeter Gasketing to read as follows:
 

1 Perimeter Gasketing	5050 C x LAR	NA
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D. Hardware Set #03:

1. Remove doors 200.2, 200.3, 200.4, 200A.1, 200A.2 and 200A.3 from this set.
2. Delete Door Silencers
3. Add perimeter Gasketing to read as follows:
 

1 Perimeter Gasketing	5050 C x LAR	NA
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E. Hardware Set #05: Delete all Doors and Hardware. Change Set to, "Not Used".

F. Hardware Set #07: Delete doors 210, 253, 254, and 256 from this set.

G. Add Hardware Set #07A to read as follows:

SET #07A

Doors: 256

3 Hinges	FBF179 4 1/2 X 4 1/2	US26D	ST
1 Lockset-Storeroom	45H-7D14H PATD	626	BE
1 Kick Plate	KO050 8" x 2" LDW B4E CSK	630	TR
1 Wall Bumper	1270CVSV	626	TR
1 Perimeter Gasketing	5050 C x LAR		NA

H. Hardware Set #08:

1. Add doors 215, 217, 218, and 219.
2. Delete doors 251, 252, and 255.

I. Add Hardware Set #08A to read as follows:

SET #08A

Doors: 210, 251, 252, 253, 254, 255

3 Hinges	FBF179 4 1/2 X 4 1/2	US26D	ST
1 Lockset-Office	45H-7AT14H PATD	626	BE
1 Kick Plate	KO050 8" x 2" LDW B4E CSK	630	TR
1 Wall Bumper	1270CVSV	626	TR
1 Perimeter Gasketing	5050 C x LAR		NA

J. Hardware Set #09: Delete doors 215, 217, 218, and 219 from this set.

K. Hardware Set #11:

1. Delete Lockset

2. Add Exit Device to read as follows:  
1 Exit Device-Classroom 2108 X 4908D CD SNB (2) 630 PR
  
- L. Hardware Set #13: Change set to read as follows:  
SET #13  
Doors: 200.2, 200.3, 200.4, 200A.1, 200A.2, 200A.3, 222.2, 222.3, 222.4, 223.1, 223.2, 223.3  

3 Hinges	FBB168 4 1/2 X 4 1/2	US26D	ST
1 Exit Device-Passage	FL 2114 X 4914D SNB (2)	630	PR
1 Closer	8916 DS SN1	689	DM
1 Kick Plate	KO050 8" x 2" LDW B4E CSK	630	TR
1 Wall Bumper	1270CVSV	626	TR
1 Perimeter Gasketing	5050 C x LAR		NA
  
- M. Hardware Set #14:  
  1. Add Rim Cylinder, Wall Bumper and Perimeter Gasketing to read as follows:  

1 Rim Cylinder	12E-72 PATD	626	BE
1 Wall Bumper	1270CVSV	626	TR
1 Perimeter Gasketing	5050 C x LAR		NA
  2. Change Note to read as follows, "NOTE: Existing Doors and Hardware from Doors #200.2, 200.3, 200.4, 200A.1, 200A.2, & 200A.3 are being relocated to Door openings #226.1, 226.2, 226.3, 226.4, 226.5, 226.6."
  3. Add Note: At Door 226.1 provide a Removable Mullion and an additional Rim Cylinder as follows:  

1 Removable Mullion	FL822 x LAR	600	PR
1 Rim Cylinder	12E-72 PATD	626	BE

### 3.03 SECTION 14 24 00-MACHINE ROOM-LESS HYDRAULIC PASSENGER ELEVATORS:

- A. Paragraph 1.03.C.2: Change paragraph to read as follows, "Building Code: International Building Code 2015.
- B. Paragraph 1.03.C.5: Change paragraph to read as follows, "2010 ADA Standards for Accessible Design"
- C. Paragraphs 1.03.C.7, 1.03.C.8, and 1.03.C.9: Delete these paragraphs in their entirety.
- D. Paragraph 1.03.F: Delete this paragraph and its subparagraphs in their entirety.
- E. Paragraph 2.01.A: Change paragraph and its subparagraphs to read as follows:  
  - A. Manufacturer:
    1. Thyssenkrupp Elevator's endura Machine Room-Less hydraulic elevator (basis of design).
    2. Otis Elevator
    3. Substitutions: See Section 01 60 00 - Product Requirements.
- F. Paragraph 2.02.A: Delete paragraph in its entirety.
- G. Paragraph 2.08.B: Change paragraph and its subparagraph to read as follows:  
  - B. Enhanced Emergency Communications System: Meeting the requirements of ASME A17.1/CSA B44 2019.
    1. Integral ADA phone system.
    2. Passengers with hearing or speech disabilities to easily communicate with a remote emergency person.
    3. Text messages and video to be recorded for liability records.

4. Wide angle camera mounted in the return or cab ceiling, providing encrypted video connection for privacy.
5. Video feed to be able to be access locally from a local communications panel and accessed remotely via cloud services using a standard web browser, only when emergency services are in use.
6. 10-inch LCD display screen, flush-mounted with keypad.
7. Batter backup to provide four hours of system power in an unexpected power loss.

H. Add Paragraph 2.09.F to read as follows:

F. Controller User Interface Tool is to be non-proprietary with unrestricted access.

**3.04 SECTION 23 63 23-WATER SOURCE HEAT PUMPS:**

A. Replace this section in its entirety.

**3.05 SECTION 23 65 10-AIR COOLED CONDENSING UNITS:**

A. Replace this section in its entirety.

**3.06 SECTION 23 73 12-SPLIT SYSTEM AIR HANDLING UNITS:**

A. Replace this section in its entirety.

**CHANGES TO THE DRAWINGS**

**4.01 SHEETS:**

**P-1 – PLUMBING FLOOR PLAN  
M-1 – MECHANICAL FLOOR PLAN  
M-2 – MECHANICAL PIPING PLAN  
M-3 – MECHANICAL PIPING PLAN  
M-4 – MECHANICAL DETAILS  
E-4 – ELECTRICAL LIGHTING CONTROLS PLAN,  
E-5 – ELECTRICAL POWER PLAN,  
E-6 – ELECTRICAL EQUIPMENT POWER PLAN,  
E-7 – ELECTRICAL LOW VOLTAGE PLAN,  
E-8 – ELECTRICAL SCHEDULES & RISER DIAGRAM**

A. Replace these sheets in their entirety.

**END OF ADDENDUM NUMBER 1**



## ADVERTISEMENT FOR BIDS AND CONTRACTOR PRE-QUALIFICATION

Sealed proposals will be received by Alabama A&M University in Normal, AL at Alabama A&M University, Department of Purchasing – Room 305 Patton Hall, 4900 Meridian Street, Normal, Alabama 35762, until 2:00 p.m. CST December 8, 2020 for

### **Alabama A&M University Elmore Sports Medicine Renovations**

at which time and place they will be publicly opened and read.

A cashier's check or bid bond payable to Alabama A&M University in an amount not less than five (5) percent of the amount of the bid, but in no event more than \$10,000, must accompany the bidder's proposal. Performance and Payment Bonds and evidence of insurance required in the bid documents will be required at the signing of the Contract.

Drawings and specifications may be examined at the office of Nola | VanPeursem Architects, PC. 301 Jefferson Street, Huntsville, Alabama 35801; Phone 256-533-6617 after November 13, 2020

Bid Documents may be obtained from the Architect upon deposit of \$200.00 per set, which will be refunded in full on the first 2 sets issued to each general contract bidder submitting a bona fide bid, upon return of documents in good condition within ten days of bid date. Other sets for general contractors, and sets for subcontractors and dealers, may be obtained with the same deposit, which will be refunded as above, less cost of printing, reproduction, handling, and distribution.

Only general contractors who have been approved to bid pursuant to pre-qualification procedures and criteria established by the Owner will be eligible to bid the Project. Written pre-qualification procedures and criteria are available from the office of Nola | Van Peursem Architects, PC. 301 Jefferson Street, Huntsville, Alabama 35801.

**The deadline for submission of pre-qualification documents has been extended to 5:00 p.m., November 12, 2020.**

Bids must be submitted on proposal forms furnished by the Architect or copies thereof. All bidders bidding in amounts exceeding that established by the State Licensing Board for General Contractors must be licensed under the provisions of Title 34, Chapter 8, Code of Alabama, 1975, and must show evidence of license before bidding or bid will not be received or considered by the Architect; the bidder shall show such evidence by clearly displaying his or her current license number on the outside of the sealed envelope in which the proposal is delivered. Alabama A&M University encourages minority owned business participation in the bid process. The Owner reserves the right to reject any or all proposals and to waive technical errors if, in the Owner's judgment, the best interests of the Owner will thereby be promoted.

Nonresident bidders must accompany any written bid documents with a written opinion of an attorney at law licensed to practice law in such nonresident bidder's state of domicile, as to the preferences, if any or none, granted by the law of that state to its own business entities whose principal places of business are in that state in the letting of any or all public contracts.

Alabama A&M University  
(Awarding Authority)

Nola | VanPeursem Architects, PC  
(Architect)

## SECTION 236323

### WATER SOURCE HEAT PUMPS

#### PART 1 - GENERAL



##### 1.01 WORK INCLUDED

A. The contractor shall furnish and install where shown on the plans, packaged water source heat pump units. Sizes, types, and performance shall be as indicated in the unit schedule. Each unit shall be complete with factory furnished components and accessories as shown in the plans and as herein specified.

B. Provide labor, materials, and equipment and services to perform operations required for the complete installation and related work as required in Contract Documents.

##### 1.02 SUBMITTALS

A. Submit catalog data, shop drawings and installation instructions prior to commencement of work for all materials and equipment incorporated into the drawings and specified herein.

##### 1.03 QUALITY ASSURANCE

A. Heat pump performance shall be certified in accordance with ARI/ISO Standard 13256-1 and shall have the correct ARI/ISO and CUL labels affixed to the cabinet. Heat pump performance at scheduled project operating conditions shall be substantiated by computer generated output data.

B. Heat pumps shall be listed by a nationally recognized safety-testing laboratory or agency, such as Underwriters Laboratory (UL), or Electrical Testing Laboratory (ETL), or Canadian Standards Association (CSA).

#### PART 2: PRODUCTS

##### 2.01 GENERAL

A. Units shall be supplied completely factory assembled, piped, internally wired, fully charged with R-410A, horizontal unit and capable of operating over an entering water temperature range from 45°F to 120°F on standard range models, and 30° to 120°F on extended range models. All equipment must be rated and certified in accordance with AHRI/ISO 13256-1 and must be tested, investigated, and determined to comply with the requirements of the standards for Heating and Cooling Equipment UL-1995 for the US and CAN/CSA-C22.2 NO. 236 for Canada. Each unit shall be ETL, ETLC and CE Listed. Each unit shall be run tested at the factory. The

installing contractor shall be responsible for furnishing and installing Water Source Heat Pumps as indicated on the plans and per installation instructions.

B. Casing and cabinet - The cabinet shall be fabricated from heavy gauge G-60 galvanized sheet metal with interior surfaces lined with 1/2-inch thick, 1.5 lb., coated fiberglass insulation. The insulation shall have a flame spread of less than 25 and a smoke developed classification of less than 50 per ASTM E-84 and UL 723. All fiberglass shall be coated and have exposed edges tucked under flanges to prevent the introduction of glass fibers into the air stream. All insulation must meet NFPA 90A requirements.

C. Filter Rack and Filters - Unit shall have a 1" throwaway filter and a 1" factory-installed combination filter rack/return air duct collar. The filters shall be removable from either side of the unit.

D. Refrigerant Circuit - Units shall have a R-410A sealed refrigerant circuit, which includes a rotary, reciprocating or scroll compressor, thermostatic expansion valve, an aluminum lanced-fin and rifled copper tube refrigerant-to-air heat exchanger, reversing valve, coaxial, tube-in-tube, refrigerant-to-water heat exchanger. The coaxial coil shall be made of a copper inner tube and a steel outer tube and shall be deeply fluted to enhance heat transfer and minimize fouling and scaling. The coaxial coil shall be made have a working pressure of 500 psig on the waterside of the unit and 600 psig on the refrigerant side for all R-410A units. The compressor shall have thermal overload protection

E. Compressor - The hermetic compressor shall be mounted on compressor manufacturer furnished rubber grommets. The compressor shall be mounted on compressor manufacturer furnished rubber grommets on a mass plate under the compressor. The mass plate shall have a dual material assembly. The top is heavy gauge galvanized steel. The bottom is a viscoelastic isolation material. The isolation material is 1/8" thick, 1 lb./sq. ft. with a barrier layer to improve the sound transmission loss. The assembly reduces absorbs compressor vibration that can be transmitted to the cabinet.

F. Compressor Safety - Safety controls shall include a minimum of 3 safety devices; high refrigerant pressure switch, low refrigerant pressure switch and a low refrigerant suction temperature sensor. The low refrigerant suction temperature sensor shall provide freeze protection for the water coil and the air coil. Refrigerant gauge access fittings shall be factory installed on high and low pressure refrigerant lines to facilitate field service. Activation of any safety device shall prevent the compressor from operating via a microprocessor lockout circuit. The lockout circuit shall be reset at the thermostat or at the unit disconnect switch

G. Drain Pan - The condensate pan shall be constructed of high density polyethylene (HDPE) plastic to prevent corrosion and sweating. The bottom of the drain pan shall be sloped on two planes to provide complete drainage of water from the pan to meet IAQ requirements. The water source heat pump unit as standard shall be supplied with electronic condensate overflow protection. A mechanical float switch will not be accepted.

H. Fan and Motor Assembly - Unit shall have a direct drive centrifugal fan motor assembly. The fan housing shall have a removable orifice ring to facilitate fan motor and fan wheel removal without removing the fan housing. The fan motor shall be multi-speed, permanently lubricated, PSC type isolated from the fan housing with vibration grommets and internal thermal overload protection. The fan and motor assembly must be capable of overcoming the external static pressures as shown on the schedule.

I. Electrical - A control box shall be located within the unit and shall contain controls for compressor, reversing valve and fan motor operation and shall have either, a 50VA or (optional) 75VA transformer and a terminal block for low voltage field wiring connections. Unit shall be name-plated to accept time delay fuses or HACR circuit breaker for branch over-current protection of the power source. Unit control system shall provide heating or cooling as required by the set points of the wall thermostat. The unit control scheme shall provide for fan operation simultaneous with compressor operation (fan interlock) regardless of the thermostat type. The unit shall be capable of providing an output signal to an LED on the thermostat or to a central monitoring panel to indicate a "fault" condition from the activation of any one of the safety switches. All units shall have a Short-Circuit current rating of 5kA rms symmetrical, 600V maximum.

J. Disconnect Switch - This factory-installed option shall include the addition of a 2 or 3-pole switch mounted on the unit. The switch shall have a lockout/tag out feature. The switch shall be rated to handle the unit only (not to include additional amperage from field installed accessories).

K. Control System - Unit shall have a microprocessor- based control system. The unit control logic shall provide heating and cooling operation as required by the wall thermostat set point. The control system shall provide the following for stand-alone operation:

1. The use of standard non-programmable or programmable wall thermostats.
2. Fan operation simultaneous with the compressor (fan interlock) regardless of thermostat logic.
3. Time delay compressor operation.
4. Delayed de-energizing of the reversing valve for quiet reversing valve operation.
5. Compressor short cycle protection of a minimum of three minutes before restart is possible.
6. Random unit start-up after coming off on unoccupied mode.
7. Single grounded wire connection for activation of the unoccupied or unit shutdown modes.
8. Night setback temperature setpoint input signal from the wall thermostat.
9. Override signal from wall thermostat to override unoccupied mode for 2 hours.
10. Brownout protection to suspend unit operation if the supply voltage drops below 80% of normal.
11. Condensate overflow protection to suspend cooling operation in an event of a full drain pan.
12. Suspended compressor operation upon activation of the refrigerant safety devices.
13. Cooling operation activated for 60 seconds upon activation of the low suction temperature sensor - defrost cycle.

14. Method of defeating compressor, reversing valve and fan time delays for fast service diagnostics.

15. Remote reset - Provides means to remotely reset automatic lock-outs generated by high/low pressure faults and/or low temperature faults.

16. Fault retry clears faults the first two times they occur within a 24-hour period and triggers automatic lock-out on 3rd fault.

L. Unit shall have LED annunciators to aid in diagnosing unit operation by indicating the water source heat pump operating mode and alarm conditions. If there are no current alarm conditions, a green LED on the annunciator board will indicate normal unit operating mode. If an alarm condition exists, the unit controller will send the fault condition to the LED annunciator, which will assist in troubleshooting the unit.

M. Warranty - Manufacturer shall warranty equipment for a period of 12 months from start-up or 18 months from shipping (whichever occurs first).

## **2.02 BASIS OF DESIGN**

A. Model types HFC R-410A CCH or CCW by Daikin Applied.

B. Equal manufacturers are McQuay, Trane, and Carrier.

## **PART 3: EXECUTION**

### **3.01 INSTALLATION**

A. Install equipment in strict accordance with manufacturer's instructions and to as to be compatible with intent of the respective system performance requirements.

B. No field provided apparatus, electrical or mechanical, shall be fastened to the heat pump cabinet with screws, without the prior written approval by the manufacturer's representative.

C. A discrete grounding conductor shall be provided, sized in accordance with the National Electrical Code, for each heat pump unit. The use of conduit or water piping for grounding purposes shall not be allowed.

D. Piping, electrical conduits, lighting fixtures, etc. shall not be located under any ceiling suspended unit, so as to interfere with unit removal for service or replacement.

E. Piping and electrical connections shall be located to eliminate any interference with removal and replacement of the filter.

F. Contractor shall clean each unit of construction dust and debris, and/or, (SELECT ONE OR BOTH)

1. and install new filters at time of commissioning,

2. and shall supply to the owner one complete set of spare filters for each unit on the project.

G. Heat pump units shall not be used as "construction heaters" at any time during any phase of construction. Very low temperatures, harmful vapors, gypsum dust from dry wall finishing, may all damage the unit and affect its efficiency and useful service life. Failure to properly protect the unit from construction dirt and debris and from condensation forming within the unit may cause electronic component failure, and void the manufacturer's warranty.

H. Coordinate installation with work as part of "Control Systems" Section.

I. Manufacturer's Field Service – Engage the services of factory authorized service technician representative to provide equipment Start Up to verify installation for proper operation and compliance with manufacturer's recommendations, and to assist the contractor in making adjustments, and to assist in field testing as follows:

1. Inspect for visible damage to casing, coils and internal parts.
2. Inspect for visible traces of refrigerant leaks (oil, etc.) and then leak check.
3. Inspect all electrical connections and torque to manufacturer's recommendations, both power and control. Verify correctness.
4. Verify that filters are provided as specified and are installed properly.
5. Verify that proper clearances for both operation and servicing have been provided.
6. Verify that the unit has been cleaned of all construction dust and debris.
7. Verify proper fan rotation and v-belt drive alignment and tension where applicable.
8. Start unit according to the manufacturer's written instructions.
9. Observe initial unit operation to verify suitability for continuous operation for a period of time of sufficient duration to permit system air balancing.

**END OF SECTION**

## SECTION 236510

### AIR COOLED CONDENSING UNITS

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED

- A. The work of this section consists of providing all material, labor and equipment necessary for the fabrication and installation of all equipment and appurtenances specified herein and as indicated on the drawings.
  - 1. 1-5-ton single phase units.
  - 2. 2 1/2 - 6-ton 3 phase units.
  - 3. 7 1/2 - 17-ton 3 phase units.
- B. Not all the equipment specified herein may be used on this project. Refer to schedules on drawings for equipment requirements.
- C. All compressors shall have 5-year warranty.

##### 1.02 SUBMITTALS

- A. Submit catalog data, shop drawings and installation instructions prior to commencement of work for all materials and equipment incorporated into the drawings and specified herein.

#### PART 2 - PRODUCTS

##### 2.01 1-5 Ton Single Phase Units

- A. Units shall bear UL label and be certified in accordance with A.R.I. standards. Units shall be pre-charged and be pre-wired ready for final connections.
- B. Fan discharge and unit arrangement shall be as indicated on the plans.
- C. Units will feature the following as standard: Compressor crankcase heaters, compressor internal overload protection, O.D pressure taps for refrigerant pressure checks, refrigerant service valves and refrigerant filter dryer.
- D. Units will feature the following accessories: Outdoor low ambient operation, compressor time delay relay, high- and low-pressure protection and coil guards.
- E. Daikin units are specified as requested by owner. Equal manufacturers are Carrier, Trane, and Lennox.

##### 2.02 2 1/2 - 6 Ton Three Phase Units

- A. Units shall bear UL label and be certified in accordance with A.R.I. standards. Units shall be pre-charged and be pre-wired ready for final connections.
- B. Fan discharge and unit arrangement shall be as indicated on the plans.



- C. Units will feature the following as standard: Compressor crankcase heaters, compressor internal overload protection, O.D. pressure taps for refrigerant. pressure checks, refrigerant service valves and refrigerant filter dryer.
- D. Units will feature the following accessories: Outdoor low ambient operation, compressor time delay relay, high- and low-pressure protection and coil guards.
- E. Daikin units are specified as requested by owner. Equal manufacturers are Carrier, Trane, and Lennox.

### **2.03. 7 1/2 - 20 Tons Three Phase Units**

- A. Units shall be UL listed, CSA CAN/CSA-C22.2 NO.236-M90 certified and rated in accordance with A.R.I.
- B. 7 1/2-ton units shall be single or dual compressor as indicated with a refrigerant filter dryer and both suction and liquid line service valves. Provide high- and low-pressure cutout devices and evaporator defrost control.
- C. Condenser coils shall be internally finned or smooth bore 3/8-inch copper tubing mechanically bonded to configured aluminum plate fin. Coils shall be factory pressure tested.
- D. Condensing units shall be completely factory wired and tested; control wiring shall be 24 volt. Provide head pressure control for low ambient operation. Provide anti-short cycle timer to prevent rapid on-off compressor cycling. Provide condenser coil guards.
- E. 10-20-ton units shall be dual compressor or 2 speed scroll compressors. Dual compressor units shall have dual independent refrigeration circuits with dual integral sub-cooling circuit. Scroll compressors shall have 2 speed control single refrigeration circuit with temperature and over current protection. Each unit shall be provided with high- and low-pressure cutout devices and evaporator defrost control.
- F. Daikin units are specified as requested by owner. Equal manufacturers are Carrier, Trane, and Lennox.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. All equipment shall be installed in accordance with the recommendations of the manufacturer.
- B. Refrigerant line sizes shall be determined in accordance with the manufacturer's recommendations. This contractor is responsible for any changes or accessories required due to the specific requirements of a particular manufacturer. All refrigerant



lines shall be sized by the manufacturer and approved by the engineer prior to any work commencement.

- C. Provide and install any accessories necessary for a complete and functioning system.
- D. All condensers shall be set on 6" thick concrete slabs for on grade installations. For roof mounted condensers see mechanical prints for details.

**END OF SECTION**

## SECTION 237312

### SPLIT SYSTEM AIR HANDLING UNITS

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED

- A. The work of this section consists of providing all labor, materials, equipment and services necessary for the fabrication and installation of all equipment and appurtenances in connection with the heating, ventilating and air conditioning work. This includes work as shown on the drawings and as specified herein.

##### 1.02 SUBMITTALS

- A. Submit catalog data, shop drawings and installation instructions prior to commencement of work for all materials and equipment incorporated into the drawings and specified herein.

#### PART 2 – PRODUCTS

##### 2.01 SPLIT SYSTEM AIR HANDLING UNITS

- A. General
1. Provide split system air handlers of the type, capacity, configuration, and quantities, as scheduled on the drawings, and specified herein.
  2. Air handling units shall be completely factory assembled including coil, condensate drain pan, fan, motor, filters, and controls in an insulated casing.
  3. Casings shall be 22-gauge steel with baked enamel finish with internal insulation. Knockouts shall be provided for electrical power, control wiring and refrigerant piping.
  4. Blowers shall be centrifugal type, statically and dynamically balanced, with permanently lubricated bearings permanently lubricated, internally protected motors.
  5. Evaporator coil shall be aluminum fins mechanically bonded to 3/8" copper tubing. Coil shall be factory pressure and leak tested.
  6. Condensate pan shall be double sloped and constructed of stainless steel or plastic.
  7. Air handler shall be equipped with fan contactor, single point power entry and 24-volt transformer.
  8. Filter Racks shall accept standard size filters. Provide accessible field fabricated racks where manufacturer does not include provisions for filters.
- B. 1 to 5 Ton Air Handling Units
1. Fan motor shall be direct drive, multi-speed.
- C. Greater than 5 Ton Air Handling Units



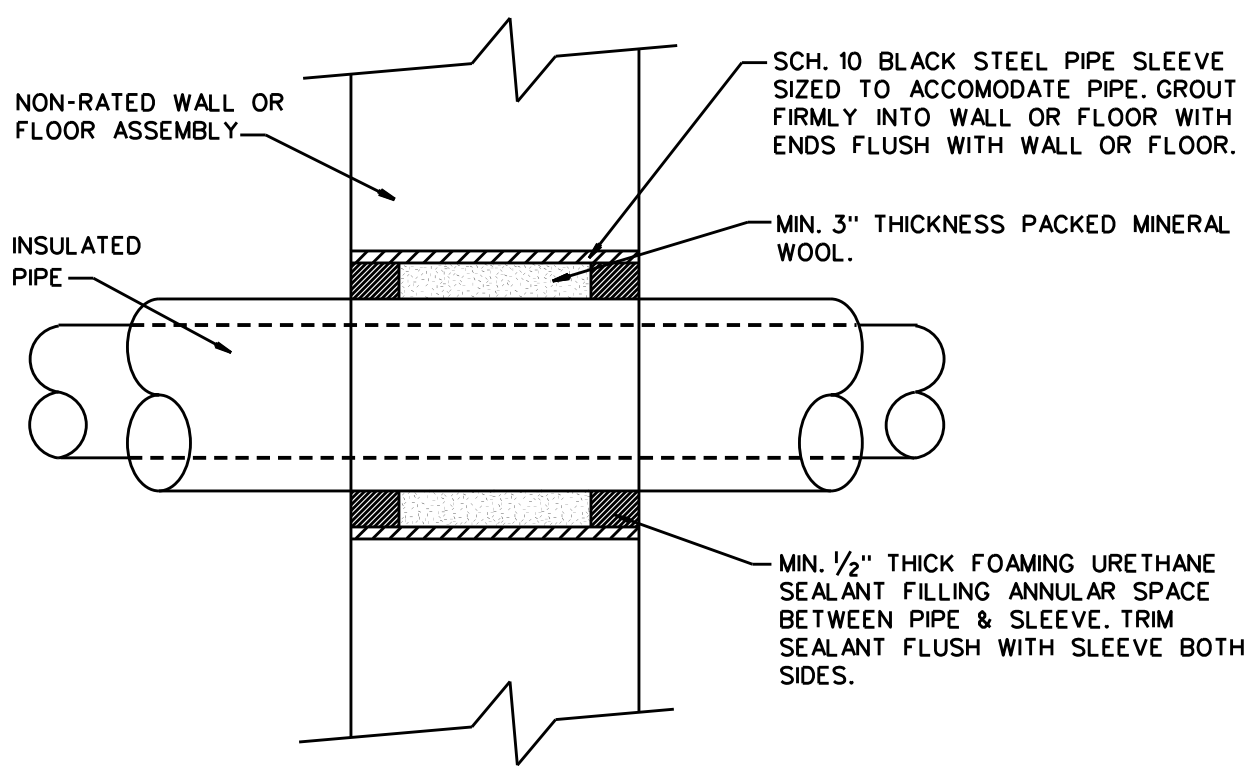
- 1. Fan shall be belt driven.
- D. Electric heaters, when specified, shall be UL approved and fabricated to be installed directly on the fan discharge. The heater shall be equipped with high limit controls.
- E. Split system air handling units shall be Daikin. Equal manufacturers are Trane, Carrier, and Lennox.

### **PART 3 - EXECUTION**

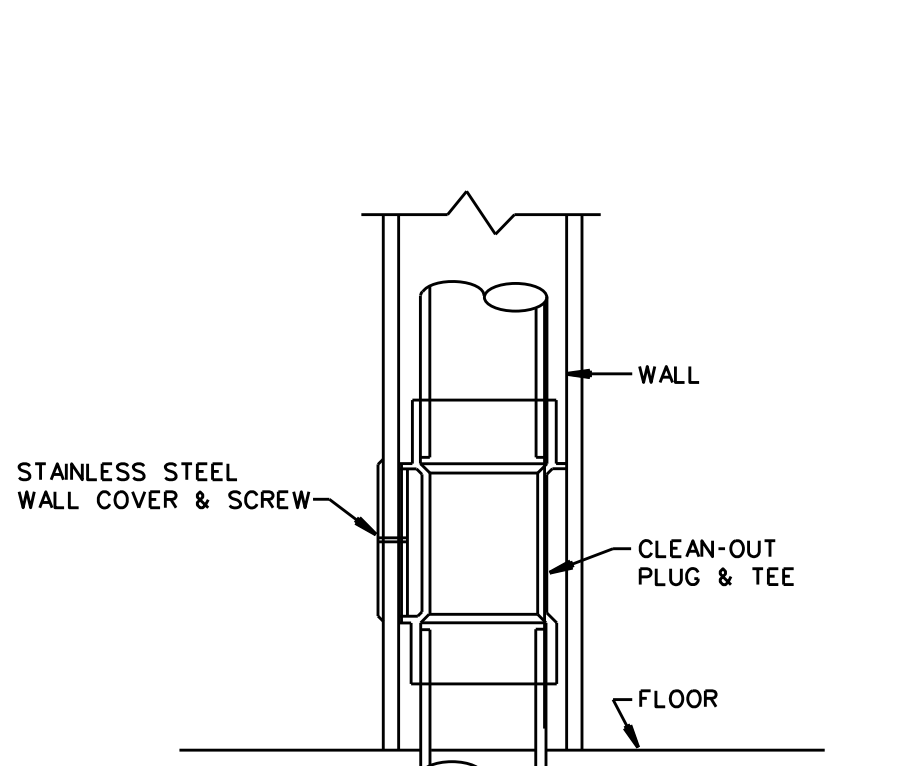
#### **3.01 GENERAL**

- A. All equipment shall be installed in accordance with the manufacturer installation instructions and as indicated on the drawings or specified herein.
- B. Provide vibration isolators for split system air handling units, rubber in shear for floor mounted models and spring-loaded isolators for horizontally hung units.

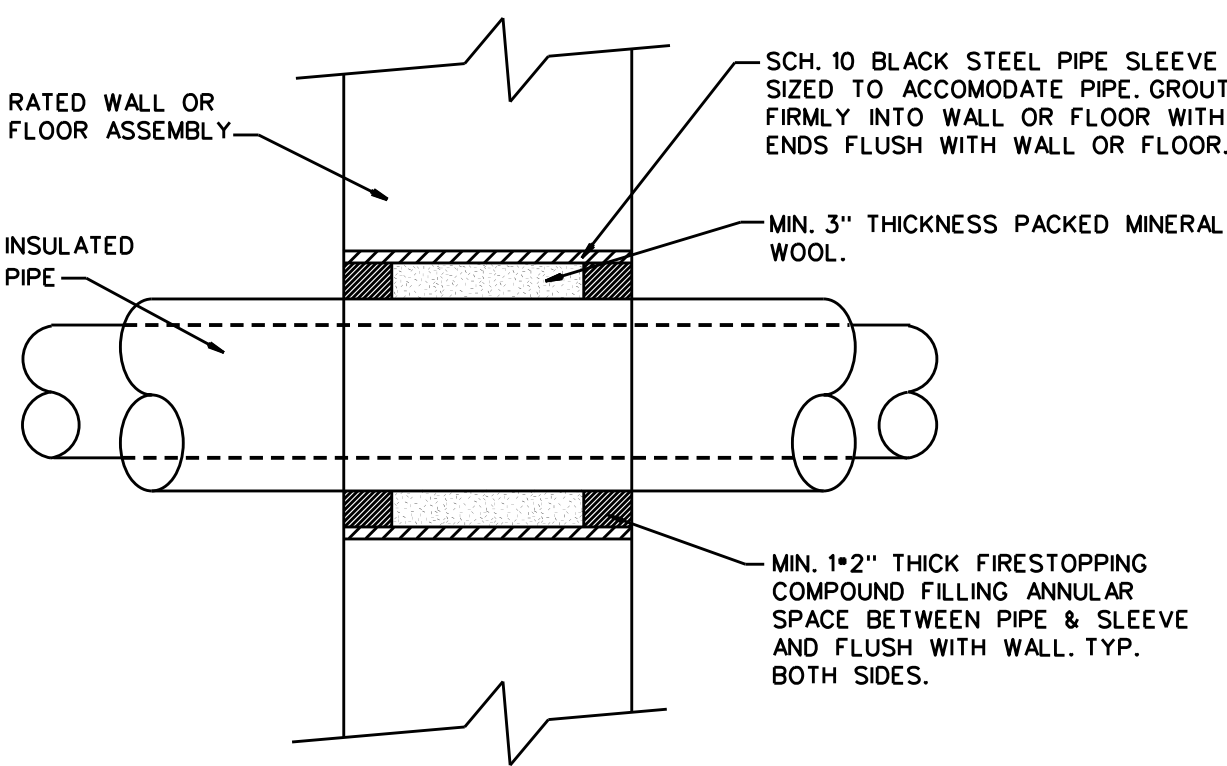
### **END OF SECTION**



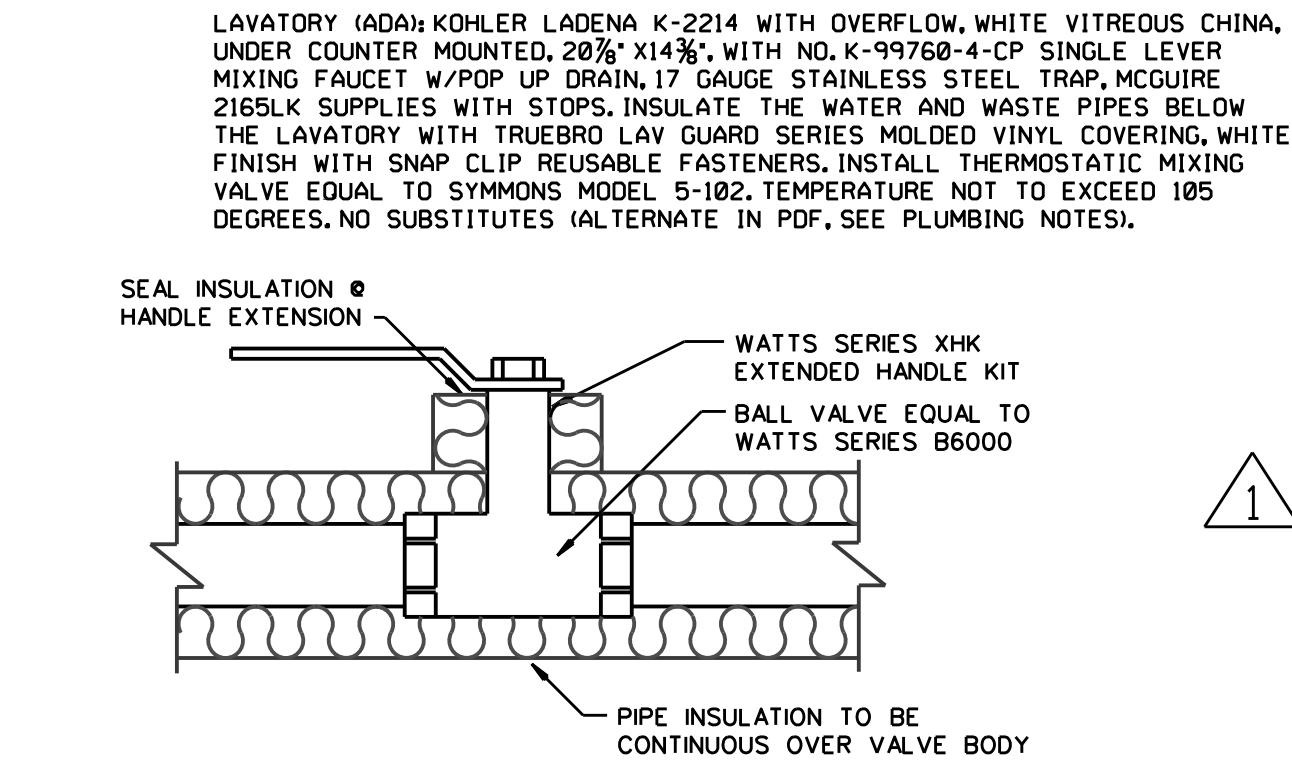
**NON-RATED PIPE SLEEVE DETAIL**  
NOT TO SCALE



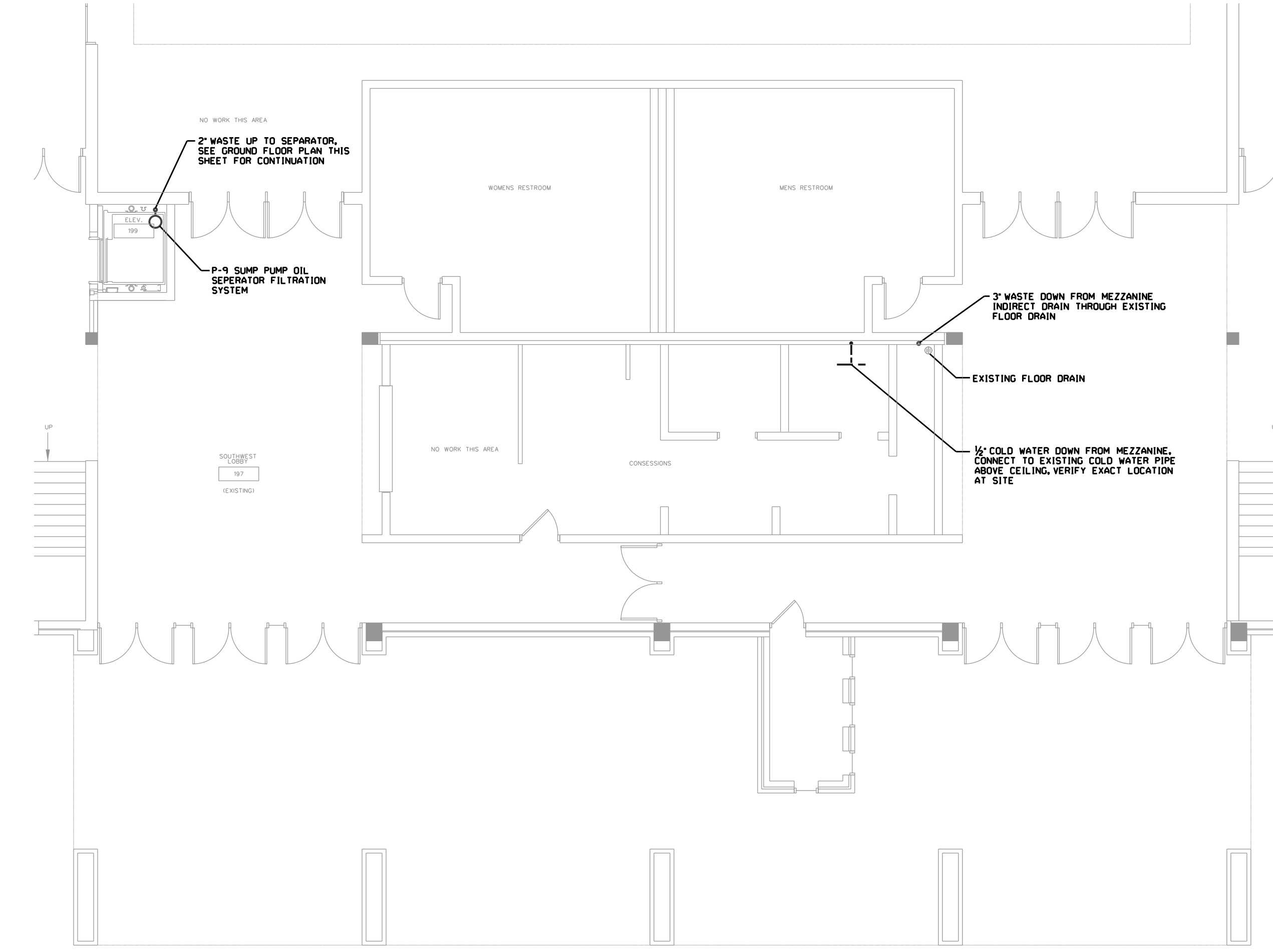
**WALL CLEANOUT DETAIL**  
NOT TO SCALE



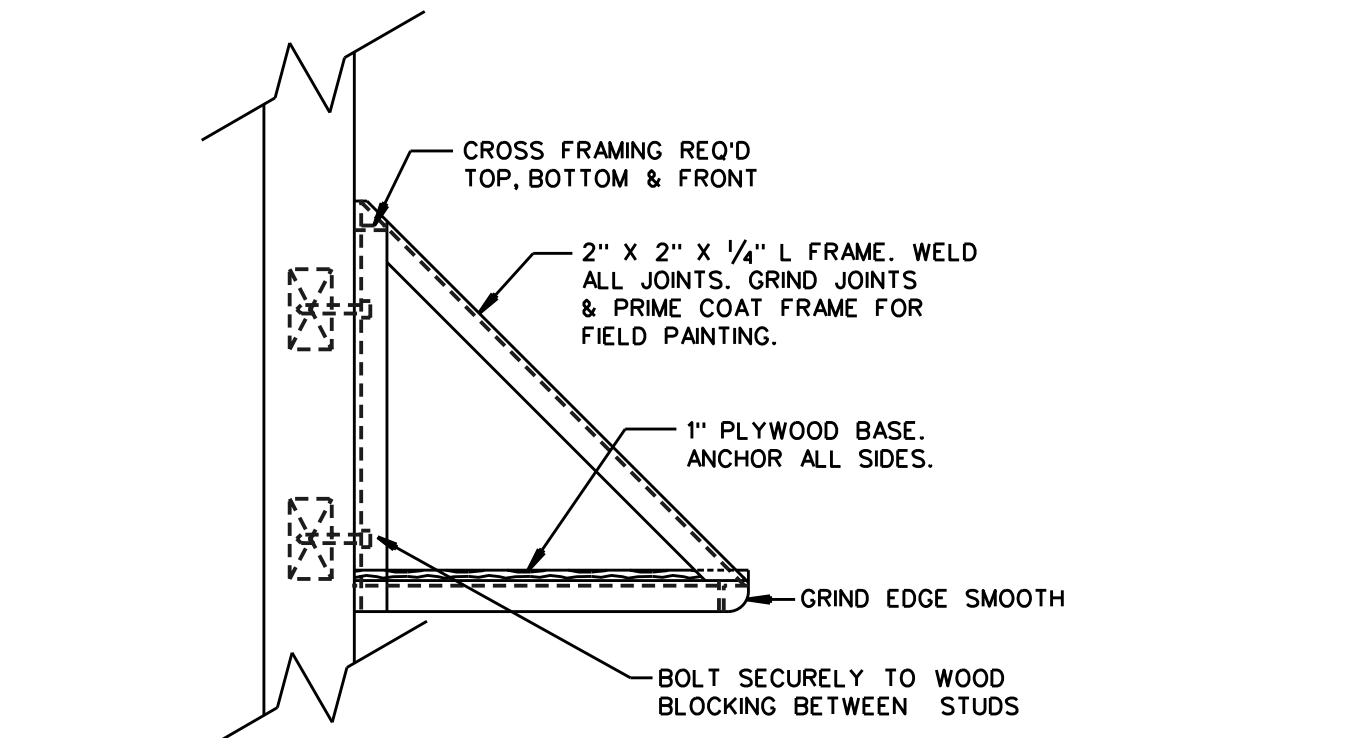
**RATED PIPE SLEEVE DETAIL**  
NOT TO SCALE



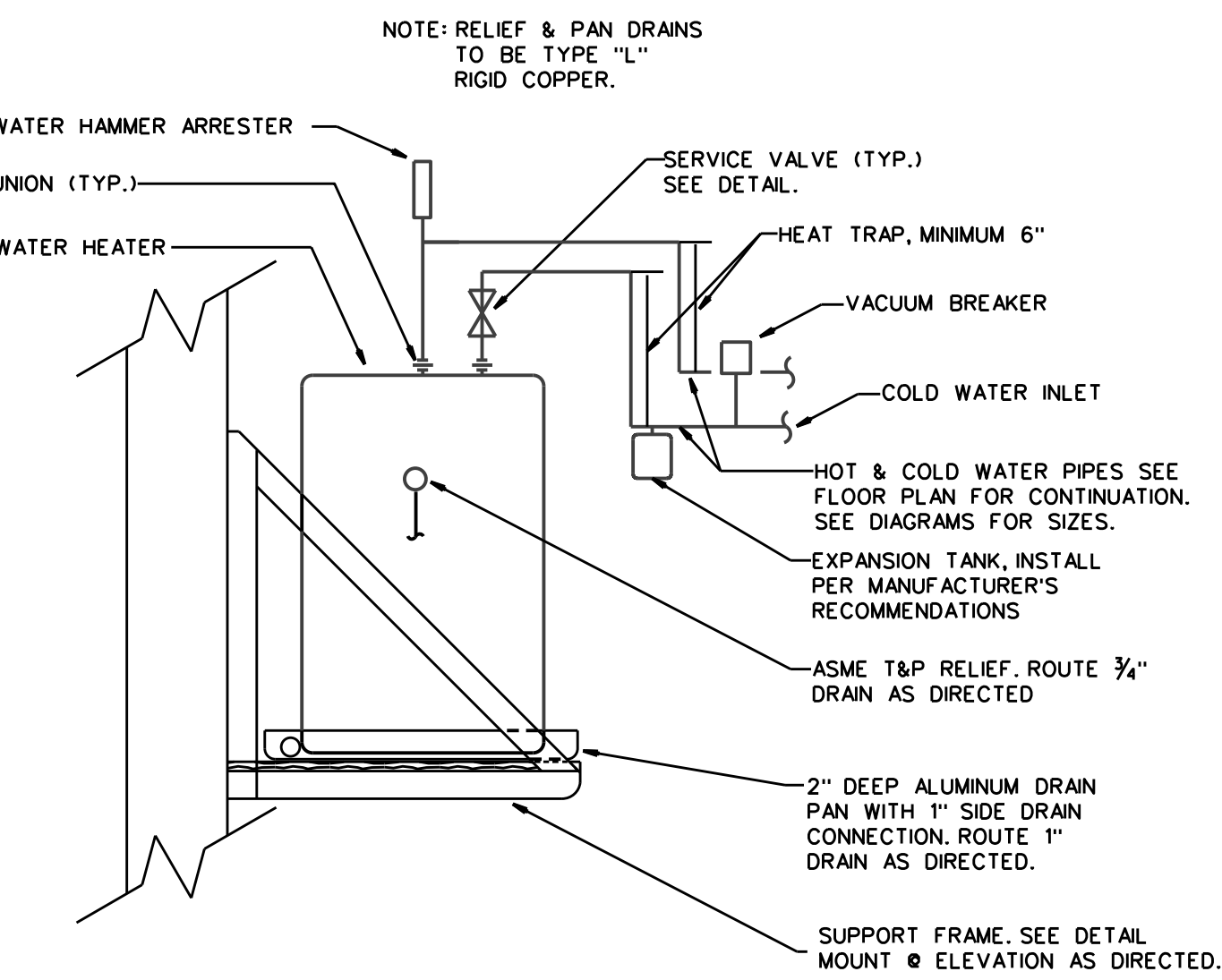
**SERVICE VALVE INSTALLATION DETAIL**  
NOT TO SCALE



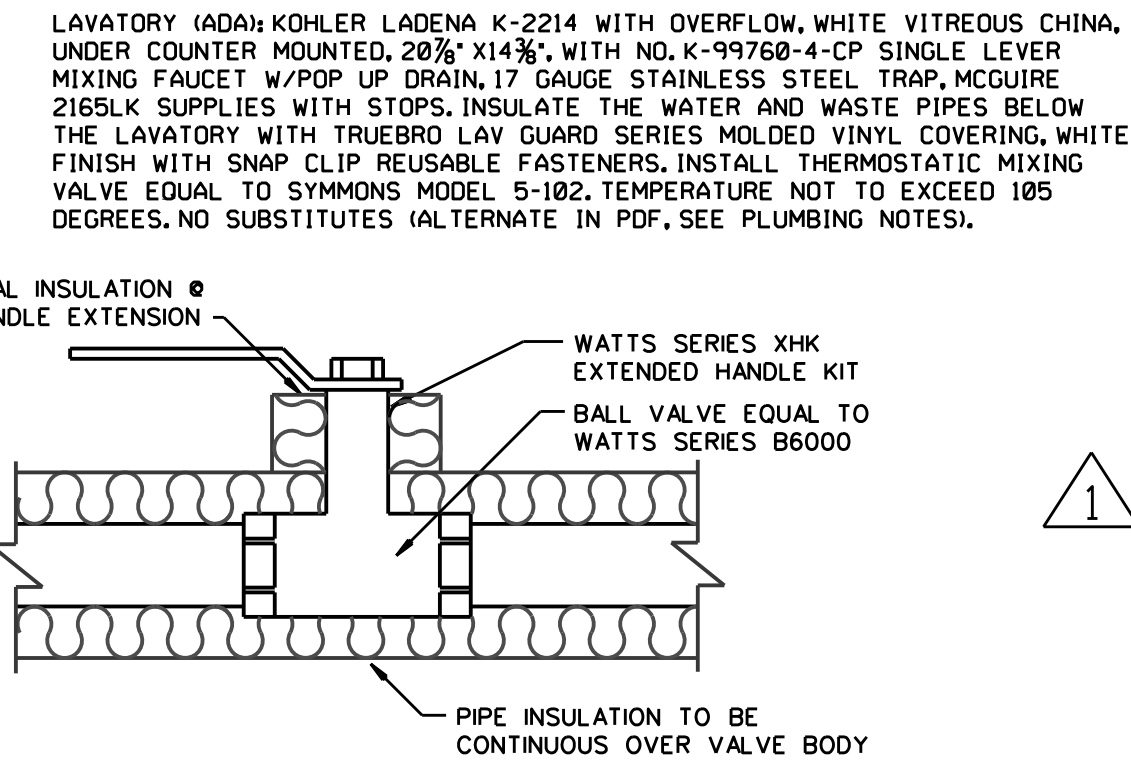
**PARTIAL GROUND FLOOR PLUMBING FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



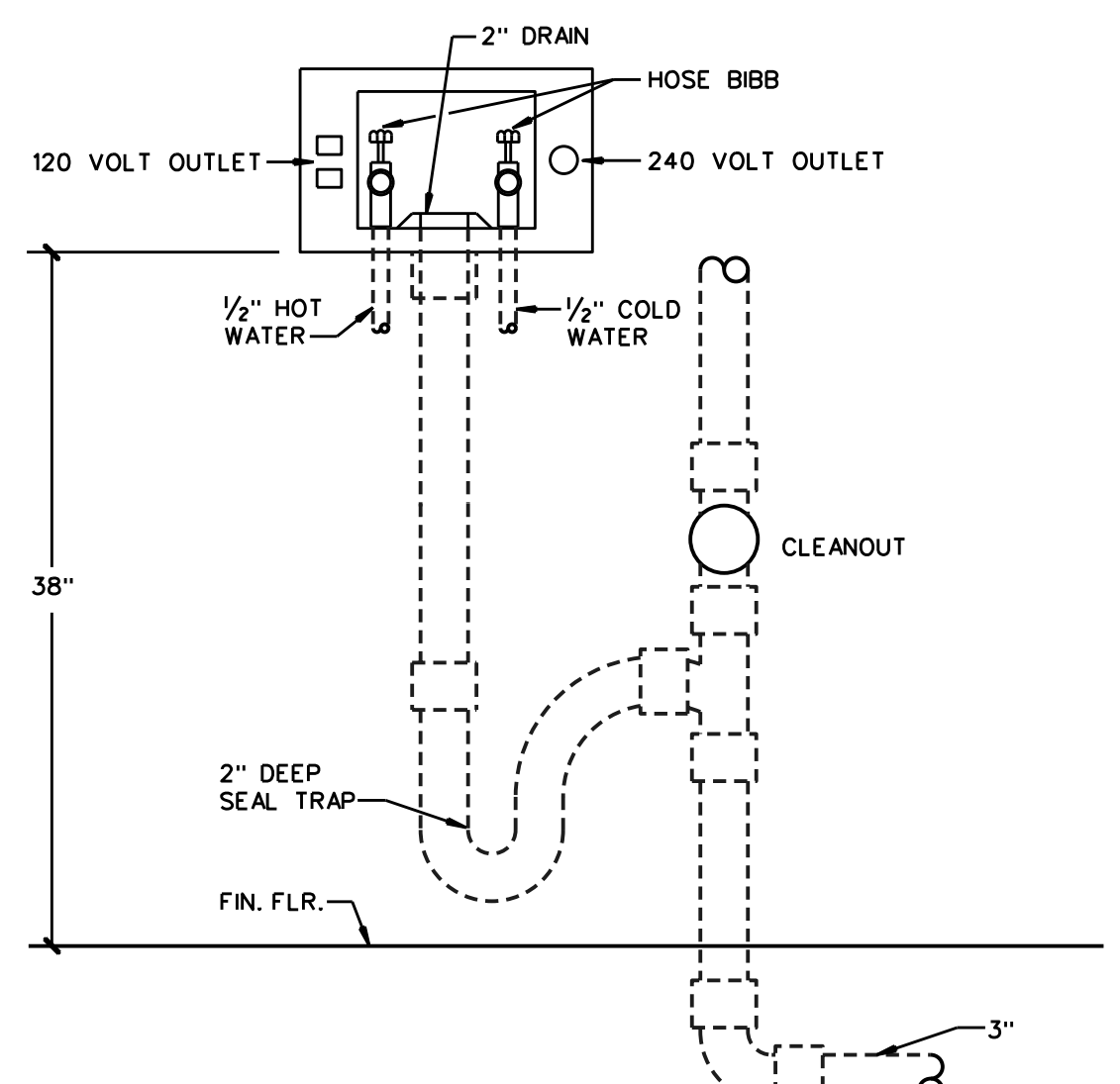
**WATER HEATER MTG. FRAME DETAIL**  
NOT TO SCALE



**WATER HEATER PIPING DETAIL**  
NOT TO SCALE



**ELEVATOR SUMP DETAIL**  
NOT TO SCALE



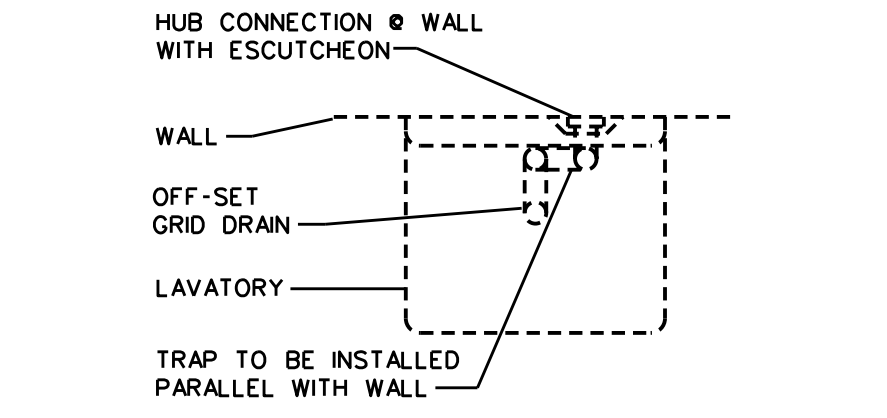
**WASHER BOX DETAIL**  
NOT TO SCALE

**PLUMBING FIXTURE SCHEDULE**

FIXTURE NUMBER	DESCRIPTION	PIPE SIZE		
		WASTE	C.W.	H.W.
P-1	WATER CLOSET (ADA) KOHLER NO. K-4405, 17 1/4" HIGH, WHITE, FLOOR MOUNTED, ELONGATED SIPHON JET, SOLID PLASTIC OPEN FRONT SEAT WITH STAINLESS STEEL SELF-SUSTAINING CHECK HINGE, CHINA BOLT CAPS AND SLOW REGAL FLUSH VALVE NO. 111-XL-YK. MOUNT THE FLUSH VALVE 28" ABOVE THE FLOOR WITH THE HANDLE ON THE WIDE SIDE OF THE SEAT OR ROOM.	4"	1"	-
P-2	LAVATORY (ADA) KOHLER NO. K-2084-0, WHITE, VITREOUS CHINA, WALL HUNG, 20" X 18" X 18" MODIFICATION ANCHOR LUGS, WITH INCLUDED KOHLER CARRIER, KOHLER NO. K-97283-4-CP SINGLE LEVER MIXING FAUCET WITH GRID DRAIN, 17 GAUGE STAINLESS STEEL TRAP, MCGUIRE 216SLK SUPPLIES WITH STOPS, INSULATE THE WATER AND WASTE PIPES, ALUM. THE LAVATORY WITH TRUEBRO LAY GUARD SERIES MOLDED VINYL COVERING, WHITE FINISH WITH SNAP CLIP REUSABLE FASTENERS, INSTALL THERMOSTATIC MIXING VALVE EQUAL TO SYMMONS MODEL S-102, TEMPERATURE NOT TO EXCEED 105 DEGREES.	2"	1/2"	1/2"
P-3	MOP SINK: FIAT MODEL TSB-100, 24" X 24" X 24" DEEP PRE-CAST TERRAZZO SINK WITH STAINLESS STEEL BUMPER GUARDS ALL SIDES, 3" DEEP SEAL TRAP, MODEL 1453-BB STAINLESS STEEL STRAINER, MODEL MSG-2424 STAINLESS STEEL WALL GUARD, SPEAKMAN NO. S-581 MIXING FAUCET WITH WALL SUPPORT, VACUUM BREAKER, SCREWDRIVER STOPS AND THREADED HOSE OUTLET, INSTALL WITH MODEL 889-CC THREE MOP HANGER & MODEL 832-AA 30" LONG FLEXIBLE HOSE WITH HOSE MOUNTING BRACKET, SEAL THE SINK TO THE WALL WITH NO. 833-AA SILICONE SEALANT, MOUNT THE MIXING FAUCET 30" ABOVE THE FLOOR.	3"	1/2"	1/2"
P-4	WASHING MACHINE SUPPLY AND DRAIN: GUY GRAY MODEL BED-200, 20 GAUGE RECESSED STEEL WALL BOX, EPOXY FINISH, WITH 2" DRAIN, HOT AND COLD WATER HOSE CONNECTIONS, GROUNDED DUPLEX 120V RECEPTACLE AND 240V DRYER OUTLET, BOTTOM OF WALL BOX TO BE MOUNTED 38" FROM FINISHED FLOOR.	3"	1/2"	1/2"
P-5	BOTTLE FILLING STATION WITH BI-LEVEL ADA COOLER (ADA) ELKAY MODEL LMABT18WSLK, WALL MOUNTED DUAL UNIT, 120 VOLTS, FILTERED 8 GALLON/HR COLD WATER, ELECTRONIC BOTTLE FILLER SENSOR, JOSSAM NO.17005 DUAL LEVEL DUAL PLATE CARRIER, 17 GAUGE STAINLESS STEEL TRAP AND MCGUIRE NO.216SLK SUPPLY WITH STOP, SUBMIT FINISH SHALL BE SELECTED BY THE ARCHITECT. ANCHOR THE UNIT TO THE WALL TOP AND BOTTOM.	2"	1/2"	-
P-6	ICE MAKER VALVE BOX: PLASTIC ODDITIES MODEL IB-9, RECESSED WALL BOX WITH 1/2" VALVE AND WALL FLANGE.	-	1/2"	-
P-7	FLOOR SINK: ZURN NO. Z1960, 8" ROUND, CAST IRON BODY, PORCELAIN ENAMEL, HALF GRATE COVER WITH BOTTOM DOME STRAINER, 1/2" PRIMER TAP	3"	-	-
P-8	WATER HEATER: RHEEM MODEL NO. E05P30, 30 GALLON WITH 1-3000 WATT ELEMENTS, 208/1/60, FOAM INSULATED, GLASS LINED, OPERATING AND SAFETY CONTROLS, VACUUM BREAKER AND ASME T&P RELIEF VALVE. INSTALL ON MOUNTING FRAME AS INDICATED ON THE DRAWINGS. INSTALL EXPANSION TANK, HYDRAPRO MODEL HP1ET2.	-	3/4"	3/4"
P-9	ELEVATOR SUMP DISCHARGE FILTRATION SYSTEM: PARK USA MODEL ELVX-050 ELEVATOR SUMP PUMP DISCHARGE FILTER FOR 50 GPM FLOW RATE, ABOVE GROUND INSTALLATION W/ PUMP CONTROL/ALARM PANEL-NEMA 4X (IP69) ENCLOSURE 1PH/60HZ/115V, INCLUDED DISCHARGE PUMP WITH 1/2 HP, 1PH/60HZ/110V STANDARD SUBMERSIBLE PUMP, ELEVATOR DISCHARGE PUMP CONTROL, SENSOR W/MOUNTING BRACKETS/CLAMPS, INSTALL PER MANUFACTURERS SPECIFICATIONS AND DETAIL SUBS ACCEPTED.	2"	-	-

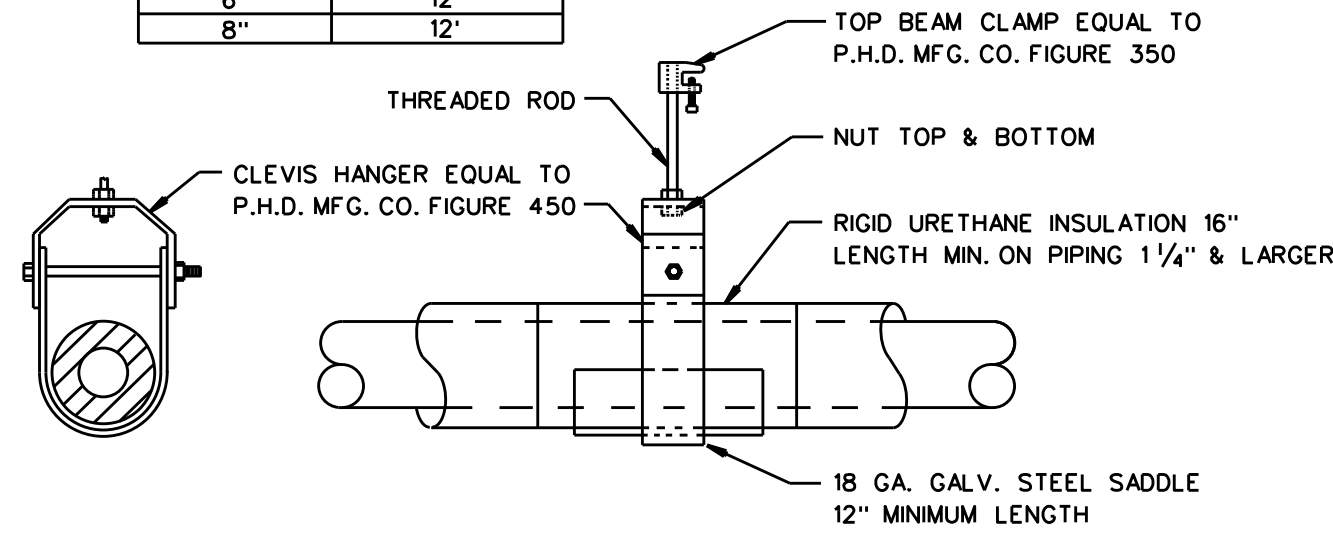
**PLUMBING NOTES**

1. ALL PLUMBING VENTS TO BE INSTALLED WITH A MINIMUM OF 10'-0" CLEARANCE FROM ALL OUTSIDE AIR INTAKE SYSTEMS ON THE MECHANICAL EQUIPMENT.
2. ALL WATER PIPES AT EXTERIOR WALLS SHALL BE INSTALLED ON THE BUILDING SIDE OF THE INSULATION. FURTHER ALL WATER PIPES SHALL BE INSULATED WITH 2" THICK FIBERGLASS INSULATION WITH VAPOR BARRIER JACKET.
3. ADD TO THE DOMESTIC WATER MAIN 50 PPM (PARTS PER MILLION) AVAILABLE CHLORINE. ALLOW THE SOLUTION TO STAND FOR 24 HOURS, THEN FLUSH THOROUGHLY. THE PROCEDURE WILL BE OBSERVED BY THE LOCAL PLUMBING OFFICIAL COORDINATE SAMPLING OF THE CLEAN WATER WITH THE LOCAL HEALTH DEPARTMENT.
4. EQUAL FIXTURES CAN BE SUBMITTED IN PLACE OF SPECIFIED FIXTURES.
5. PEX PLUMBING PIPE CAN BE INSTALLED IN PLACE OF COPPER PIPING.
6. ROUTE WATER HEATER PAN & RELIEF DRAINS TO ADJACENT MOP SINK.
7. FIRST 8'-0" OF COLD WATER INLET AND HOT WATER OUTLET PIPING FROM WATER HEATER TO BE INSULATED.

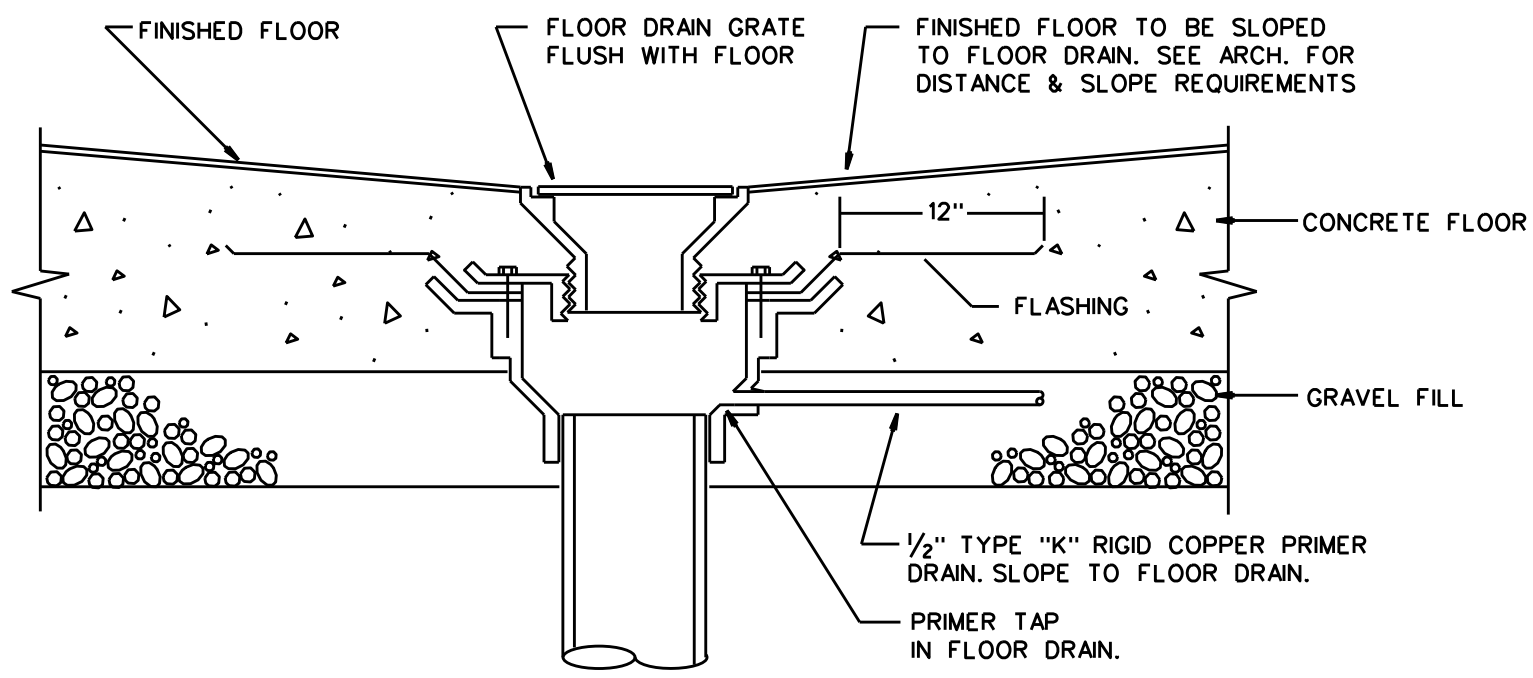


**HANDICAPPED LAV. WASTE CONNECTION DETAIL**  
NOT TO SCALE

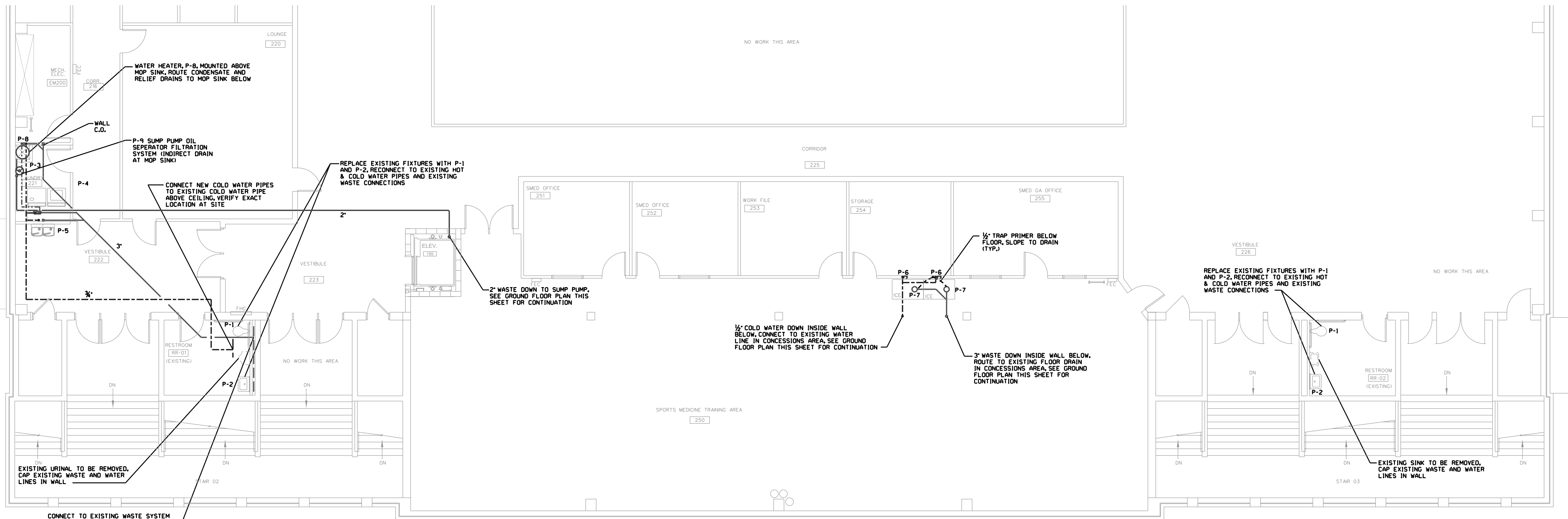
PIPE SIZE	HANGER SPACING
1/2"	6"
3/4"	6"
1"	6"
1 1/4"	8"
1 1/2"	8"
2"	10"
2 1/2"	10"
3"	12"
4"	12"
6"	12"
8"	12"



**HOT & COLD WATER PIPE HANGER DETAIL**  
NOT TO SCALE



**TYPICAL FLOOR DRAIN DETAIL @ CONC. FLOOR ON GRADE**  
NOT TO SCALE



**PARTIAL MEZZANINE PLUMBING FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



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**ALABAMA A&M UNIVERSITY**  
**ELMORE SPORTS MEDICINE RENOVATIONS**  
NORMAL, ALABAMA

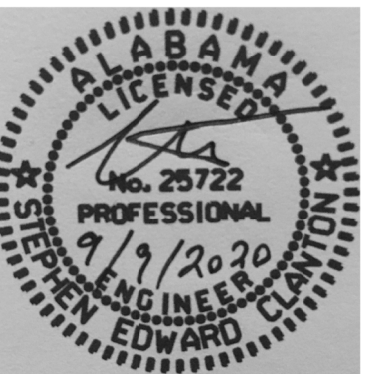
JOB NUMBER  
**20132**

JTB / SEC/SLP / 09.09.20  
DRAWING - CHECKED - DATE

REVISIONS  
ADDENDUM #1: 10.28.20

SHEET TITLE  
**PLUMBING FLOOR PLAN**

SHEET NUMBER  
**P-1**  
OF  
**1**



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DRAWN - CHECKED - DATE

REVISIONS  
ADDENDUM #1 10.28.20

SHEET TITLE  
**MECHANICAL FLOOR PLAN**

SHEET NUMBER  
**M-1**  
OF  
**4**

**DEMOLITION LEGEND**

- R --- EXISTING RETURN PIPING TO REMAIN
- G --- EXISTING GAS PIPING TO REMAIN
- S --- EXISTING SUPPLY PIPING TO REMAIN
- FD --- EXISTING RELIEF VALVE PIPING TO REMAIN
- --- EXISTING GAS LINE VENT/ DRAIN TO REMAIN

**MECHANICAL LEGEND**

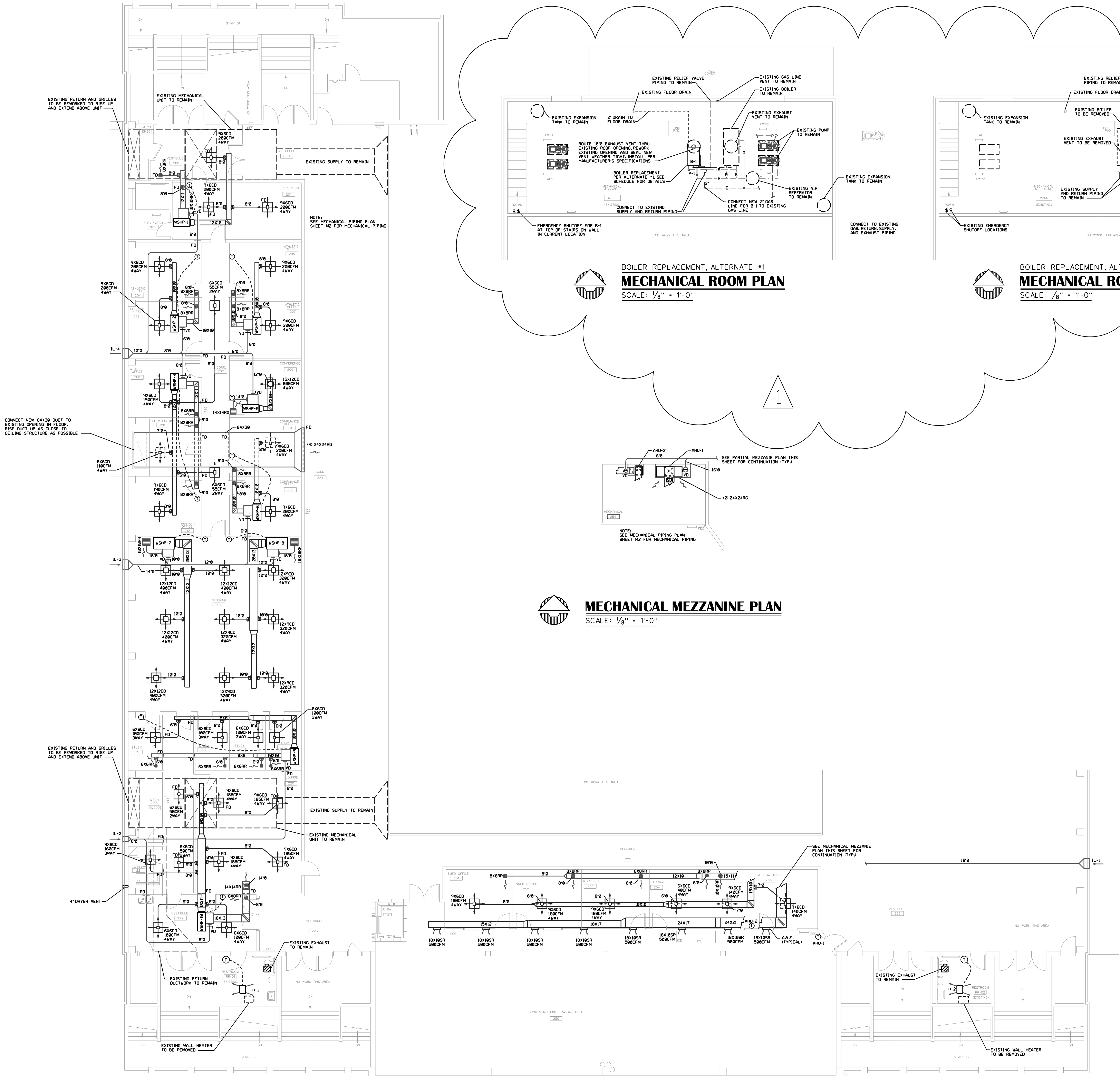
- SD • SMOKE DETECTOR
- VD • VOLUME DAMPER
- FD • FIRE DAMPER
- ① • THERMOSTAT
- A.V.E. • ADJUSTABLE VOLUME EXTRACTOR

BOILER REPLACEMENT, ALTERNATE #1  
**MECHANICAL ROOM PLAN**  
SCALE: 1/8" = 1'-0"

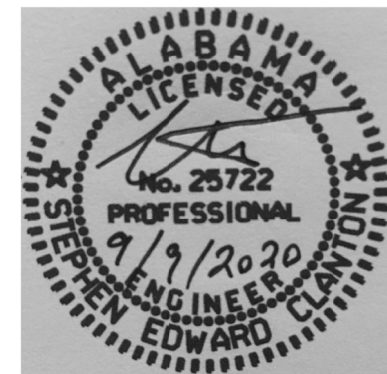
BOILER REPLACEMENT, ALTERNATE #1  
**MECHANICAL ROOM DEMO PLAN**  
SCALE: 1/8" = 1'-0"

**MECHANICAL MEZZANINE PLAN**  
SCALE: 1/8" = 1'-0"

**PARTIAL MEZZANINE PLAN**  
SCALE: 1/8" = 1'-0"







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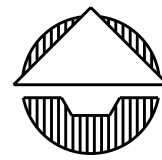
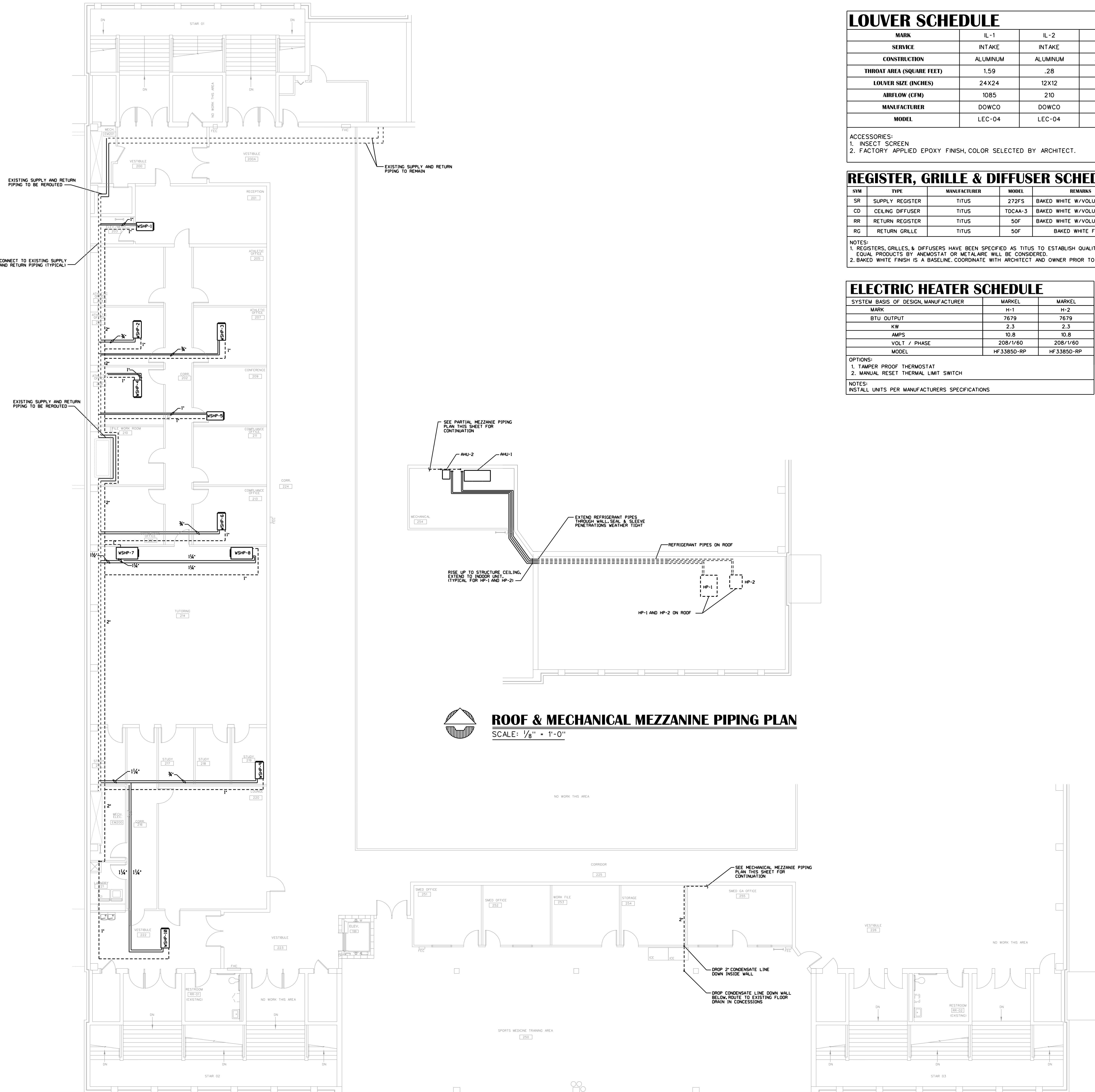
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20132

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DRAWN - CHECKED - DATE

REVISIONS  
ADDENDUM #1: 10.28.20

SHEET TITLE  
MECHANICAL  
PIPING  
PLAN

SHEET NUMBER  
M-2  
OF  
4



ROOF & MECHANICAL MEZZANINE PIPING PLAN  
SCALE: 1/8" = 1'-0"

## LOUVER SCHEDULE

MARK	IL-1	IL-2	IL-3	IL-4
SERVICE	INTAKE	INTAKE	INTAKE	INTAKE
CONSTRUCTION	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
THROAT AREA (SQUARE FEET)	1.59	.28	1.19	.61
LOUVER SIZE (INCHES)	24X24	12X12	24X18	24X12
AIRFLOW (CFM)	1085	210	795	320
MANUFACTURER	DOWCO	DOWCO	DOWCO	DOWCO
MODEL	LEC-04	LEC-04	LEC-04	LEC-04

ACCESSORIES:  
1. INSECT SCREEN  
2. FACTORY APPLIED EPOXY FINISH, COLOR SELECTED BY ARCHITECT.

## REGISTER, GRILLE & DIFFUSER SCHEDULE

SYM	TYPE	MANUFACTURER	MODEL	REMARKS
SR	SUPPLY REGISTER	TITUS	272FS	BAKED WHITE W/VOLUME DAMPER
CD	CEILING DIFFUSER	TITUS	TDCAA-3	BAKED WHITE W/VOLUME DAMPER
RR	RETURN REGISTER	TITUS	50F	BAKED WHITE W/VOLUME DAMPER
RG	RETURN GRILLE	TITUS	50F	BAKED WHITE FINISH

NOTES:  
1. REGISTERS, GRILLES, & DIFFUSERS HAVE BEEN SPECIFIED AS TITUS TO ESTABLISH QUALITY.  
EQUAL PRODUCTS BY ANEMOSTAT OR METALAIRE WILL BE CONSIDERED.  
2. BAKED WHITE FINISH IS A BASELINE. COORDINATE WITH ARCHITECT AND OWNER PRIOR TO ORDERING.

## ELECTRIC HEATER SCHEDULE

SYSTEM BASIS OF DESIGN, MANUFACTURER	MARKET	MARKET
MARK	H-1	H-2
BTU OUTPUT	7679	7679
KW	2.3	2.3
AMPS	10.8	10.8
VOLT / PHASE	208/1/60	208/1/60
MODEL	HF33850-RP	HF33850-RP

OPTIONS:  
1. TAMPER PROOF THERMOSTAT  
2. MANUAL RESET THERMAL LIMIT SWITCH

NOTES:  
INSTALL UNITS PER MANUFACTURERS SPECIFICATIONS

## ROUND DUCT SYSTEM GAGES

DUCT DIAMETER, IN.	MAXIMUM 24-IN. WG STATIC POSITIVE		MAXIMUM 10-IN. WG STATIC POSITIVE		MAXIMUM 24-IN. WG STATIC POSITIVE	
	MINIMUM GAGE IN.	MAXIMUM GAGE IN.	MINIMUM GAGE IN.	MAXIMUM GAGE IN.	MINIMUM GAGE IN.	MAXIMUM GAGE IN.
3-8	28	28	26	24	28	24
9-14	28	26	26	24	26	24
15-26	26	24	24	22	24	22
27-36	24	22	22	20	22	20
37-50	22	20	20	20	20	18
51-60	20	18	18	18	18	16
61-84	18	16	18	16	16	14

## BOILER SCHEDULE

MARK	B-1
TYPE	STAINLESS STEEL
FUEL	NATURAL GAS
INPUT M.B.H.	3500
OUTPUT M.B.H.	3045
GALLON CAPACITY	12.2
MAX. WATER FLOW RATE (GPM)	225
VOLT/PHASE	208/3/60
VOLTAGE/CONTROL	24
AMPS	6.8
HEATING SURFACE (SQ.FT.)	390.7
MANUFACTURER	LOCHINVAR
MODEL #	PBN3080M9

1. SEALED COMBUSTION, VERTICAL VENTING PACKAGE  
2. BOILER INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF THE STATE OF ALABAMA "BOILER AND PRESSURE VESSEL SAFETY ACT"  
3. PRIOR TO ORDERING, COORDINATE WITH OWNER ON BUILDING CONTROL SYSTEM

## SPLIT HEAT PUMP SYSTEM SCHEDULE

SERVING	10 TON	2 TON
SYSTEM BASIS OF DESIGN, MANUFACTURER	DAKIN	DAKIN
OUTSIDE AIR CFM	990	95
ER	11.0	14.0
TOTAL CAPACITY AT ARI, MBH	120.0	24.0
AIR HANDLING UNIT		
MARK	AHU-1	AHU-2
SUPPLY FAN		
SUPPLY AIR CFM	4000	800
EXTERIOR STATIC PRESSURE IN. WG	.50	.50
MOTOR HP	2	3/4
MODEL	DAT12044	ASPT29B14
AUXILIARY ELECTRIC HEAT		
KW	20	4.5
MCA	33.7	27
MAX OCP	35	30
VOLT / PHASE	480/3/60	208/1/60

HEAT PUMP		
MARK	HP-1	HP-2
HEAT PUMP, HIGH TEMP MBH	100.0	23.0
MCA	22	13.5
MAX OCP	35	20
VOLT / PHASE	480/3/60	208/1/60
MODEL	DZ11A1204	DZ16TC0241

OPTIONS:  
1. PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT WITH NIGHT SET-BACK CAPABILITIES.  
2. PROVIDE LOW AMBIENT CONTROLS FOR OPERATION DOWN TO 30 DEGREES F.  
3. PROVIDE THERMAL EXPANSION VALVE  
4. UNIT SHALL INCLUDE 1" FILTER RACK.

NOTES:  
INSTALL UNITS PER MANUFACTURERS SPECIFICATIONS

## RECTANGULAR DUCT SYSTEM GAGES

LARGEST DIMENSION, INCHES	RECTANGULAR DUCTWORK, 1/2-IN. WG STATIC PRESSURE POSITIVE OR NEGATIVE, UP TO 2,500 FPM, BASED ON PROPER REINFORCEMENT SPACED AT 10-FT INTERVALS		RECTANGULAR DUCTWORK, 24-IN. WG STATIC PRESSURE POSITIVE OR NEGATIVE, UP TO 2,500 FPM, BASED ON PROPER REINFORCEMENT SPACED AT 10-FT INTERVALS	
	GALVANIZED STEEL GAGE	ALUMINUM, "B&S" GAGE	COPPER, "B&S" GAGE	COPPER, "B&S" GAGE
THROUGH 26	26	24	24	24
27-30	24	22	20	20
31-36	22	20	18	18
37-48	20	18	18	18
49-60	18	16	14	14
73-84	16	14	12	12
85-96	16	BUT 8-FT REINFORCEMENT SPACING REQUIRED	BUT 5-FT CLASS-H SPACING	BUT 5-FT CLASS-H SPACING
OVER 96	18	BUT 8-FT REINFORCEMENT SPACING REQUIRED	BUT 5-FT CLASS-H SPACING	BUT 5-FT CLASS-H SPACING

LARGEST DIMENSION, INCHES	RECTANGULAR DUCTWORK, 1/2-IN. WG STATIC PRESSURE POSITIVE OR NEGATIVE, UP TO 2,500 FPM, BASED ON PROPER REINFORCEMENT SPACED AT 10-FT INTERVALS		RECTANGULAR DUCTWORK, 24-IN. WG STATIC PRESSURE POSITIVE OR NEGATIVE, UP TO 2,500 FPM, BASED ON PROPER REINFORCEMENT SPACED AT 10-FT INTERVALS	
	GALVANIZED STEEL GAGE	ALUMINUM, "B&S" GAGE	COPPER, "B&S" GAGE	COPPER, "B&S" GAGE
THROUGH 14	26	24	24	24
15-24	24	22	20	20
25-30	22	20	18	18
31-36	20	18	18	18
37-42	18	16	14	14
43-54	16	14	12	12
55-60	18	BUT 8-FT REINFORCEMENT SPACING REQUIRED	BUT 5-FT CLASS-H SPACING	BUT 5-FT CLASS-H SPACING
61-84	18	BUT 5-FT CLASS-H SPACING	BUT 8-FT REINFORCEMENT SPACING REQUIRED	BUT 5-FT CLASS-H SPACING
85-96	16	BUT 8-FT REINFORCEMENT SPACING REQUIRED	BUT 5-FT CLASS-H SPACING	BUT 5-FT CLASS-H SPACING
OVER 96	18	BUT 5-FT CLASS-H SPACING	BUT 5-FT CLASS-H SPACING	BUT 5-FT CLASS-H SPACING

LARGEST DIMENSION, INCHES	RECTANGULAR DUCTWORK, 1/2-IN. WG STATIC PRESSURE POSITIVE OR NEGATIVE, UP TO 2,500 FPM, BASED ON PROPER REINFORCEMENT SPACED AT 10-FT INTERVALS		RECTANGULAR DUCTWORK, 24-IN. WG STATIC PRESSURE POSITIVE OR NEGATIVE, UP TO 2,500 FPM, BASED ON PROPER REINFORCEMENT SPACED AT 10-FT INTERVALS	
	GALVANIZED STEEL GAGE	ALUMINUM, "B&S" GAGE	COPPER, "B&S" GAGE	COPPER, "B&S" GAGE
THROUGH 18	22	20	10	10
19-26	20	18	10	10
27-30	18	16	10	10
31-36	16	14	10	10
37-48	16	14	8	8
49-60	18	16	5	5
61-72	16	14	5	5
73-84	18	16	4, CLASS J	4, CLASS J
85-96	16	14	4, CLASS K	4, CLASS K
OVER 96	18	16	2 1/2, CLASS H	2 1/2, CLASS H

## WATER SOURCE HEAT PUMP SCHEDULE

MARK	MODEL	CAPACITY (BTU/HR)	AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN H2O)	FLUID FLOW (GPM)	OUTSIDE AIR (CFM)	COOLING							HEATING					ELECTRICAL				
							EWT (°F)	LWT (°F)	EAT (°F)	LDB (°F)	LWB (°F)	TOTAL (Btu/hr)	EER (DESIGN)	EWT (°F)	LWT (°F)	EAT (°F)	LDB (°F)	LWB (°F)	TOTAL (Btu/hr)	COP (DESIGN)	VOLTAGE	MCA (A)	MAX FUSE
WSHP-1	WCCH5019	19393	630	0.54	5.3	85	85.0	94.1	80.0	67.0	59.1	56.9	19393	14.1	70.0	62.5	70.0	106.6	24858	4.9	208/1/60	13.0	20
WSHP-2	WCCH5012	13011	400	0.2	3.00	45	85.0	96.0	80.0	67.0	58.1	56.2	13011	12.8	70.0	61.8	70.0	107.5	16183	4.2	208/1/60	8.0	15
WSHP-3	WCCH5012	13011	400	0.2	3.00	45	85.0	96.0	80.0	67.0	58.1	56.2	13011	12.8	70.0	61.8	70.0	107.5	16183	4.2	208/1/60	8.0	15
WSHP-4	WCCH5019	19393	630	0.54	5.3	85	85.0	94.1	80.0	67.0	59.1	56.9	19393	14.1	70.0	62.5	70.0	106.6	24858	4.9	208/1/60	13.0	20
WSHP-5	WCCH5019	19393	630	0.54	5.3	60	85.0	94.1	80.0	67.0	59.1	56.9	19393	14.1	70.0	62.5	70.0	106.6	24858	4.9	208/1/60	13.0	20
WSHP-6	WCCH5012	13011	400	0.2	3.00	45	85.0	96.0	80.0	67.0	58.1	56.2	13011	12.8	70.0	61.8	70.0	107.5	16183	4.2	208/1/60	8.0	15
WSHP-7	WCCH5048	48379	1600	0.6	12.30	375	85.0	94.9	80.0	67.0	59.7	57.1	48379	13.32	70.0	62.3	70.0	104.9	60202	4.63	480/3/60	9.9	15
WSHP-8	WCCH5048	48379	1600	0.6	12.30	375	85.0	94.9	80.0	67.0	59.7	57.1	48379	13.32	70.0	62.3	70.0	104.9	60202	4.63	480/3/60	9.9	15
WSHP-9	WCCH5012	13011	400	0.2	3.00	40	85.0	96.0	80.0	67.0	58.1	56.2	13011	12.8	70.0	61.8	70.0	107.5	16183	4.2	208/1/60	8.0	15
WSHP-10	WCCH5036	36215	1200	.55	9.0	170	85.0	95.0	80.0	67.0	59.7	57.1	36215	14.31	70.0	62.3	70.0	104.2	44290	4.64	480/3/60	8.9	15

OPTIONS:  
1. RANGE OF OPERATION - CCH-STANDARD (55 DEGREES TO 110 DEGREE F)  
2. CABINET - HEAVY-GAUGE UNPAINTED C-60 GALVANIZED STEEL  
3. INSULATION - 1/2" THICK, 1-1/2 LB. DUAL DENSITY FIBER GLASS  
4. DRAIN PAN - ABS PLASTIC, CORROSION-RESISTANT, DOUBLE-SLOPED, FOR POSITIVE DRAINING TO REDUCE STANDING WATER, MICROBIAL GROWTH AND PROMOTE GOOD INDOOR AIR QUALITY.  
5. FILTER - 1" THICK THROWAWAY TYPE, MOUNTED IN A COMBINATION FILTER RACK/RETURN AIR DUCT COLLAR  
6. REFRIGERANT CIRCUIT - INCLUDES A ROTARY COMPRESSOR, REVERSING VALVE, WATER-TO-REFRIGERANT HEAT EXCHANGER, TXV EXPANSION DEVICE, AIRSIDE COIL, HIGH/LOW SIDE REFRIGERANT ACCESS VALVES, AND SAFETY CONTROLS  
7. SAFETY CONTROLS - LOW SUCTION TEMPERATURE SENSOR, ELECTRONIC CONDENSATE OVERFLOW PROTECTION AND HIGH PRESSURE SWITCHES TO LOCK OUT COMPRESSOR OPERATION AT EXTREME CONDITIONS  
8. FAN SECTION - DIRECT DRIVE CENTRIFUGAL FAN WITH STANDARD PSC MOTOR, UNITS TO HAVE A STRAIGHT-THROUGH OR END DISCHARGE AIR CONVERTER FROM ONE TO THE OTHER WITHOUT THE USE OF ADDITIONAL PARTS  
9. UNITS TO INCLUDE MICROTECH III UNIT CONTROLLER  
10. UNIT MOUNTED NON-FUSED DISCONNECT SWITCH  
11. COPPER INNER TUBE / STEEL OUTER TUBE HEAT EXCHANGER  
12. 50VA CONTROL TRANSFORMER  
13. 5 YEAR COMPRESSOR PARTS WARRANTY W/ 1ST YEAR LABOR ALLOWANCE  
14. CONDENSATE PUMP TO BE INSTALLED AT EACH WSHP, ROUTE CONDENSATE LINES TO MOP SINK AS SHOWN.

NOTES:  
INSTALL UNITS PER MANUFACTURERS SPECIFICATIONS

## MECHANICAL NOTES

- DUCT SIZES ARE BASED ON FREE AREA OPENING. SUPPLY DUCTS LOCATED IN INTERIOR UNCONDITIONED SPACES SHALL HAVE AN INSULATION RATING OF NO LESS THAN R-6. SUPPLY AND RETURN DUCTS LOCATED IN EXTERIOR AREAS SHALL HAVE AN INSULATION RATING OF NO LESS THAN R-8. EXTERIOR INSULATION (IF USED) SHALL INCLUDE A VAPOR BARRIER. THE CONTRACTOR WILL ADJUST ACCORDINGLY TO COMPENSATE FOR DUCT LEAK (IF USED). ROUND AND RECTANGULAR EQUIVALENT DIMENSIONS ARE ALLOWABLE.
- THE CONTRACTOR SHALL SELECT DIFFUSERS WITH A NOISE CRITERIA RATING OF NO GREATER THAN NC 40 BASED ON THE SPECIFIED FLOWRATES. DIFFUSERS SHALL CONSIDER THROW AND DROP PERFORMANCE TO PROVIDE APPROPRIATE COVERAGE TO THE CONDITIONED AREAS. ALL DIFFUSERS SHALL PROVIDE FOR ADJUSTABLE FLOWRATE. CONTRACTOR SHALL BE RESPONSIBLE FOR BALANCING TO DESIGN FLOWRATES.
- ALL 90 DEG. ELBOWS SHALL INCLUDE TURNING VANES.
- INSTALL A SMOKE DETECTOR IN THE RETURN DUCTS AND SUPPLY DUCTS PRIOR TO FRESH AIR INTAKE UPON ACTIVATION THE SMOKE DETECTOR SHALL SHUT DOWN THE AHU. THE DUCT SMOKE DETECTOR SHALL ALSO BE CONNECTED TO A FIRE ALARM SYSTEM IF SYSTEM IS REQUIRED BY CODE WHICH UPON ACTIVATION SHALL ACTIVATE A VISIBLE AND AUDIBLE SIGNAL. DUCT DETECTORS TO BE INSTALLED ON ALL UNITS OVER 2000 CFM, AND ALL UNITS THAT SERVE EGRESS CORRIDORS.
- MECHANICAL CONTRACTOR TO COORDINATE EXACT LOCATION OF DIFFUSERS AND REGISTERS WITH GRID AND LIGHTS.
- MECHANICAL CONTRACTOR TO TIE SUPPLY AND RETURN DIFFUSERS AND GRILLES TO CEILING GRID OR STRUCTURE.
- REFERENCE TO SPECIFIC MANUFACTURERS ARE USED IN TO ESTABLISH MINIMUM PERFORMANCE REQUIREMENTS AND QUALITY. OTHER MANUFACTURERS WITH EQUAL OR BETTER QUALITY EQUIPMENT ARE ALLOWED TO SUBSTITUTE THEIR PRODUCTS. EQUAL MANUFACTURERS WILL BE CONSIDERED AT DISCRETION OF ENGINEER.
- ALL TAKE-OFFS SHALL INCLUDE MANUAL DAMPERS. BALANCE TO DESIGN FLOWRATES BY MECHANICAL CONTRACTOR.
- DUCTS PENETRATING WALLS OR PARTITIONS HAVING A FIRE RESISTANCE RATING OF 1 BUT LESS THAN 3 HOURS SHALL INCLUDE FIRE DAMPERS AT THE PENETRATION. DAMPERS SHALL HAVE A FIRE RESISTANCE RATING NO LESS THAN 1.5 HR. USE OF STATIC RATED DAMPERS IS ACCEPTABLE SINCE SYSTEM IS DESIGNED FOR AUTOMATIC SHUTDOWN IN CASE OF FIRE/SMOKE.

10. MECHANICAL CONTRACTOR TO VERIFY EXACT LOCATION OF T'STATS WITH OWNER.

11. ROUTE CONDENSATE DRAINS AS SHOWN ON DRAWINGS.

12. RETURN AIR PLENUM PLATFORMS SHALL BE CONSTRUCTED WITH 2" X 2" X 1/4" BLACK STEEL ANGLE IRON WITH WELDED CONNECTIONS. INSTALL ADDITIONAL IRON SUPPORTS AT PLENUM TOPS TO SUPPORT THE INDOOR UNITS. COVER THE ANGLE IRON FRAME, TOP, BOTTOM AND SIDES WITH 22 GAUGE GALVANIZED SHEET METAL. LINE THE PLENUMS WITH 1" THICK 2 LB. DENSITY DUCT INSULATION SIMILAR TO INTERNALLY LINED AIR DUCTS. FRAME AIR OPENINGS THRU THE PLENUM WITH GALVANIZED SHEET METAL CHANNELS TO SECURE THE INSULATION AT THE OPENINGS.

13. ALL MATERIALS ABOVE CEILING TO BE PLENUM RATED.

14. CONTRACTOR TO APPLY PAINT GRP FINISH TO ALL EXPOSED DUCTWORK THAT WILL READILY ACCEPT A FIELD PAINTED FINISH. THIS INCLUDES ALL HANGARS, DRIVES, AND ACCESSORIES. COORDINATE WITH OWNER.

## SEQUENCE OF CONTROL

### GENERAL

THE CONTROLS SUPPLIER SHALL BE RESPONSIBLE FOR THE CORRECT INSTALLATION, CONNECTION, SET UP AND OPERATION OF THE CONTROLS SYSTEM. THIS SHALL APPLY TO BOTH THE CONTROLS SUPPLIER INSTALLING THE SYSTEM AND ALSO WHEN THE CONTROLS ARE SUPPLIED TO THE MECHANICAL CONTRACTOR FOR INSTALLATION. IF THE MECHANICAL CONTRACTOR IS NOT ABLE GET THE CONTROLS TO OPERATE CORRECTLY, THE SUPPLIER SHALL BE RESPONSIBLE FOR MAKING ALL NECESSARY CORRECTIONS TO INSURE PROPER OPERATION.

THE MECHANICAL/CONTROLS CONTRACTOR SHALL INSURE THAT THE ELECTRICAL CONTRACTOR PROVIDES SUFFICIENT SOURCES OF 120 VOLT POWER FOR ALL DAMPER ACTUATORS. THE MECHANICAL/CONTROLS CONTRACTOR SHALL PROVIDE ALL TRANSFORMERS AND COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR THE INSTALLATION OF THE TRANSFORMERS.

THE CONTROLS CONTRACTOR SHALL FURNISH AND INSTALL ALL WALL BOXES, CONDUIT AND WIRING FOR ALL REQUIRED CONTROL DEVICES. THESE SHALL BE INSTALLED IN ACCORDANCE WITH DIVISION 16 AND THE BOX LOCATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.

ALL SET POINTS SHALL BE ADJUSTABLE.

ALL EQUIPMENT SCHEDULED TO START AT THE SAME TIME SHALL HAVE A RANDOM START FEATURE PROGRAMMED TO ELIMINATE MULTIPLE PICES OF EQUIP/LENT FROM STARTING AT THE SAME INSTANT.

ALL CONTROLS INSTALLED AS PART OF THESE DESIGN DOCUMENTS SHALL BE CAPABLE OF STAND ALONE CONTROL AND SHALL BE ELECTRONIC DDC TYPE. IN THE FUTURE THESE CONTROLS SHALL BE CAPABLE OF BEING CONNECTED WITH A NETWORK CABLE TO THE CENTRAL DDC CONTROL PANEL. AT THAT POINT THE SET POINTS SHALL BE CAPABLE OF BEING PROGRAMMED IN CONJUNCTION WITH OPERATING SCHEDULES AND SETUP/SETBACK SCHEDULES AND BE ABLE TO BE MONITORED.

CONTROLS SHALL BE HONEYWELL OR EQUALS BY JOHNSON OR AUTOMATED LOGIC.

CENTRAL PLANT

THE LOOP WATER PUMPS SHALL OPERATE IN A LEAD LAG MODE, WITH ONE OF THE PUMPS OPERATING AT ALL TIMES. THE PUMPS SHALL BE ALTERNATED ON A WEEKLY BASIS.

WHENEVER THE OUTDOOR TEMPERATURE IS BELOW 55°F THE BOILER SHALL BE ENERGIZED. WHEN FLOW IS PROVEN, THE BOILER SHALL FIRE TO MAINTAIN THE LOOP WATER TEMPERATURE BASED ON THE HOT WATER RESET SCHEDULE.

OUTDOOR TEMP 55 F LOOP WATER TEMP 120 F  
30 F 180 F

WHEN THE OUTDOOR AIR TEMPERATURE RISES TO 55 F THE CHILLER SHALL BE ENERGIZED. THE CHILLER SHALL MAINTAIN THE CHILLED WATER LOOP TEMPERATURE AT 45 F. THE THREE-WAY VALVE

INFORMALLY OPEN TO THE BYPASS ON THE CHILLER LOOP SHALL MODULATE TO MAINTAIN A MAXIMUM ENTERING WATER TEMPERATURE

TO THE CHILLER OF 55 F.

WATER SOURCE HEAT PUMPS SHALL HAVE A MICROPROCESSOR- BASED CONTROL SYSTEM. THE UNIT CONTROL LOGIC SHALL PROVIDE HEATING AND COOLING OPERATION AS REQUIRED BY THE WALL THERMOSTAT SET POINT. THE CONTROL SYSTEM SHALL PROVIDE THE FOLLOWING FOR STAND-ALONE OPERATION:

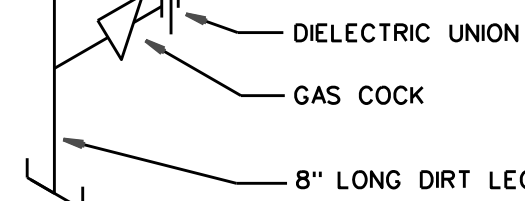
- THE USE OF STANDARD PROGRAMMABLE WALL THERMOSTATS.
- FAN OPERATION SIMULTANEOUS WITH THE COMPRESSOR (FAN INTERLOCK) REGARDLESS OF THERMOSTAT LOGIC.
- TIME DELAY COMPRESSOR OPERATION.
- DELAYED DE-ENERGIZING OF THE REVERSING VALVE FOR QUIET REVERSING VALVE OPERATION.
- COMPRESSOR SHORT CYCLE PROTECTION OF A MINIMUM OF THREE MINUTES BEFORE RESTART IS POSSIBLE.
- RANDOM UNIT START-UP AFTER SHUT OFF ON UNOCCUPIED MODE.
- SINGLE GROUNDED WIRE CONNECTION FOR ACTIVATION OF THE UNOCCUPIED OR UNIT SHUTDOWN MODES.
- NIGHT SETBACK TEMPERATURE SETPOINT INPUT SIGNAL FROM THE WALL THERMOSTAT.
- VERRIDE SIGNAL FROM WALL THERMOSTAT TO OVERRIDE UNOCCUPIED MODE FOR 2 HOURS.
- BROWNOUT PROTECTION TO SUSPEND UNIT OPERATION IF THE SUPPLY VOLTAGE DROPS BELOW 80% OF NORMAL.
- CONDENSATE OVERFLOW PROTECTION TO SUSPEND COOLING OPERATION IN AN EVENT OF A FULL DRAIN PAN.
- SUSPENDED COMPRESSOR OPERATION UPON ACTIVATION OF THE REFRIGERANT SAFETY DEVICES.

## OUTSIDE AIR SCHEDULE

FROM IBC SECTION 403.3  
Vbz=(Rp+Pz)+(Ro+Az)  
Vbz=THE BREATHING ZONE OUTDOOR  
AIRFLOW  
Ro=OUTDOOR AIRFLOW RATE REQUIRED  
PER PERSON AS DETERMINED FROM  
TABLE 403.3  
Pz=ZONE POPULATION  
Az=ZONE FLOOR AREA

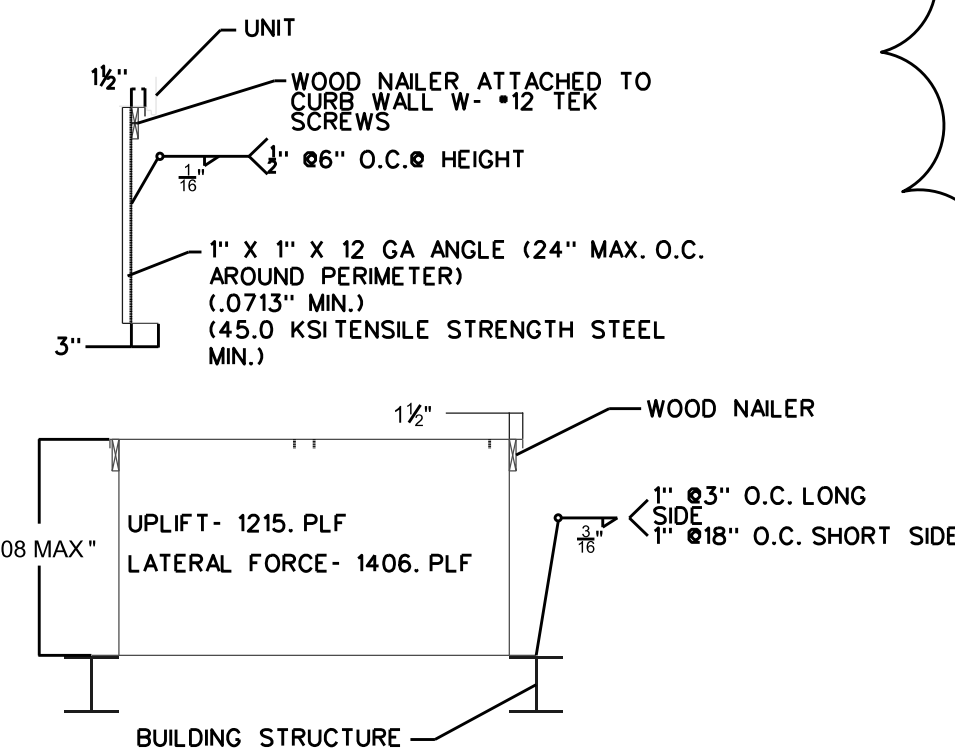
	Rp	Pz	Ra	Az	Vbz
SPORTS MED TRG AREA 250	20	40	.06	2880	973
OFFICE 251	5	2	.06	165	20
OFFICE 252	5	2	.06	165	20
WORK FILE 253	5	2	.06	165	20
STORAGE 254	-	-	.06	165	10
OFFICE 255	5	2	.06	250	25
WSHP-1	Rp	Pz	Ra	Az	Vbz
VESTIBULE 200	-	-	.06	220	13
RECEPTION 201	5	10	.06	320	69
WSHP-2	Rp	Pz	Ra	Az	Vbz
OFFICE 204	5	2	.06	180	21
OFFICE 206	5	2	.06	180	21
WSHP-3	Rp	Pz	Ra	Az	Vbz
OFFICE 205	5	2	.06	180	21
OFFICE 207	5	2	.06	180	21
WSHP-4	Rp	Pz	Ra	Az	Vbz
OFFICE 208	5	2	.06	180	21
WORK ROOM 210	5	2	.06	125	18
OFFICE 212	5	2	.06	180	21
CORRIDOR 202	-	-	.06	240	20
WSHP-5	Rp	Pz	Ra	Az	Vbz
CONFERENCE 209	5	9	.06	180	56
WSHP-6	Rp	Pz	Ra	Az	Vbz
OFFICE 211	5	2	.06	180	21
OFFICE 213	5	2	.06	188	21
WSHP-7 & WSHP-8	Rp	Pz	Ra	Az	Vbz
TUTORING 214	10	264	.12	1290	745
WSHP-9	Rp	Pz	Ra	Az	Vbz
STUDY 215	5	1	.06	90	10
STUDY 217	5	1	.06	90	10
STUDY 218	5	1	.06	90	10
STUDY 219	5	1	.06	90	10
WSHP-10	Rp	Pz	Ra	Az	Vbz
CORRIDOR 216	-	-	.06	218	13
LOUNGE 220	5	19	.06	535	127
LAUNDRY 221	5	1	.12	60	12
VESTIBULE 222	-	-	.06	293	18

NOTE:  
ANY REDUCTION IN GAS PIPE SIZE FOR UNIT  
CONNECTION SHALL BE MADE WITHIN 6" OF  
THE FACTORY UNIT CONNECTION.



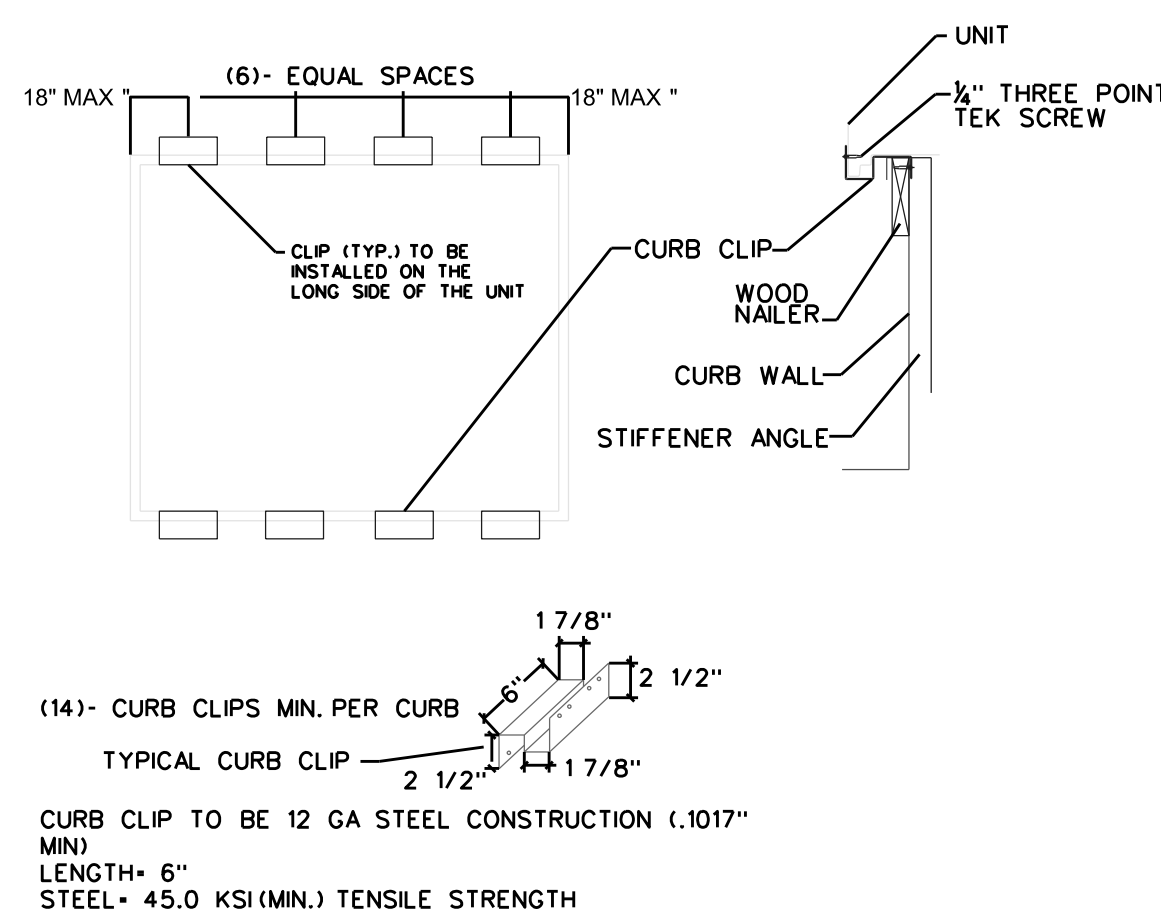
## UNIT CONNECTION DETAIL

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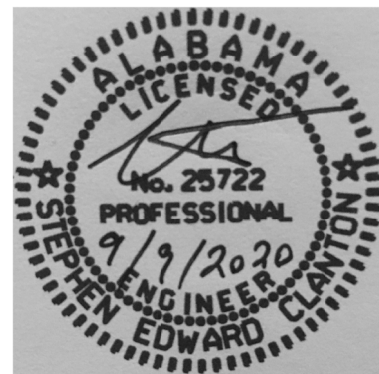
## CURB STIFFENER ATTACHMENT TO CURB

NOT TO SCALE



## CURB CLIPS

NOT TO SCALE



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JOB NUMBER

20132

JTB / SECURJ / 09.09.20  
DRAWN - CHECKED - DATE

REVISIONS  
ADDENDUM #1: 10.28.20

SHEET TITLE

**MECHANICAL  
PIPING  
PLAN**

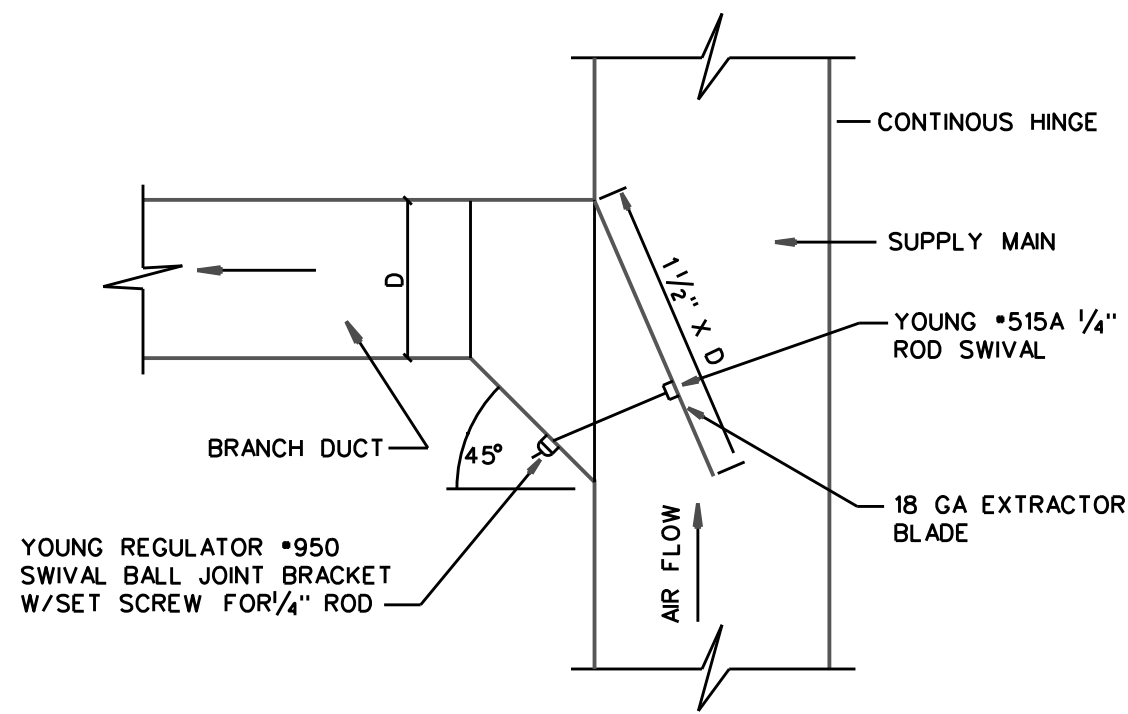
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**M-3**

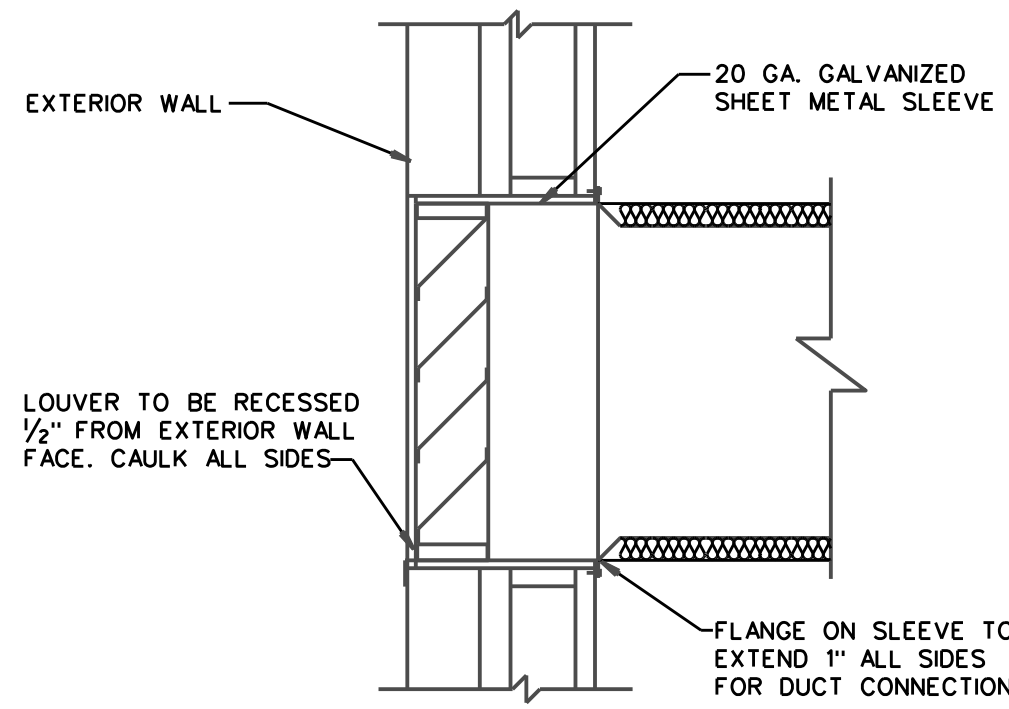
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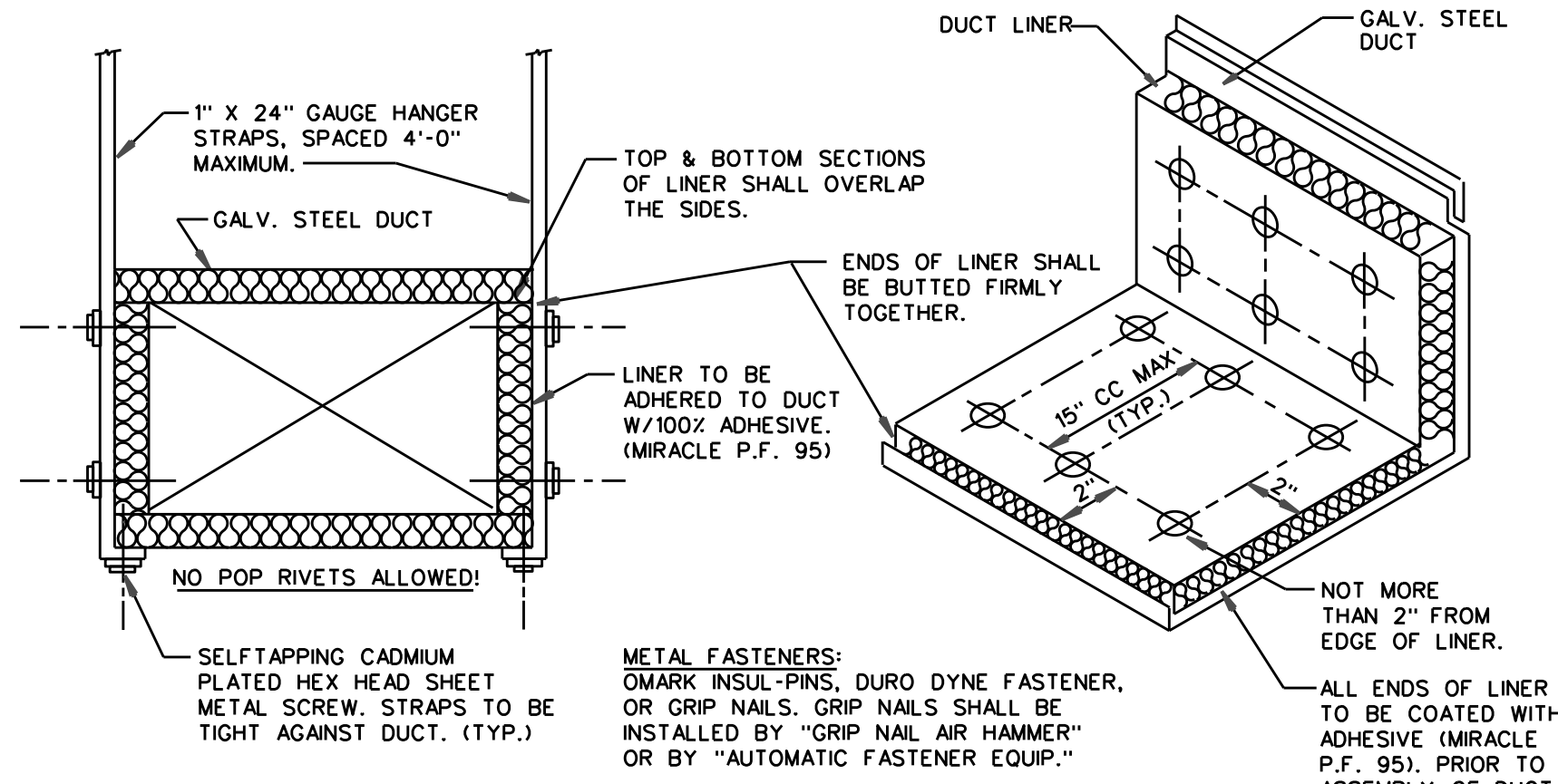




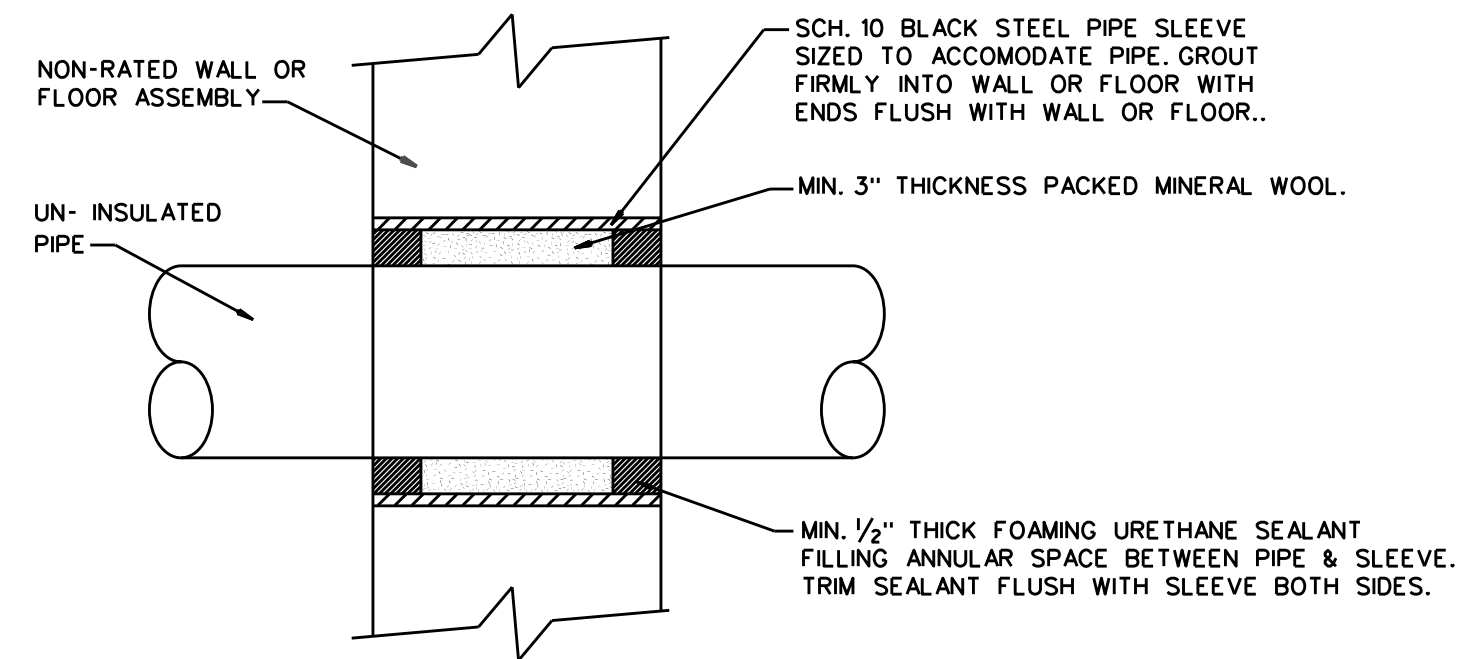
**RECTANGULAR SIDE TAP DETAIL**  
NOT TO SCALE



**LOUVER MOUNTING DETAIL**  
NOT TO SCALE

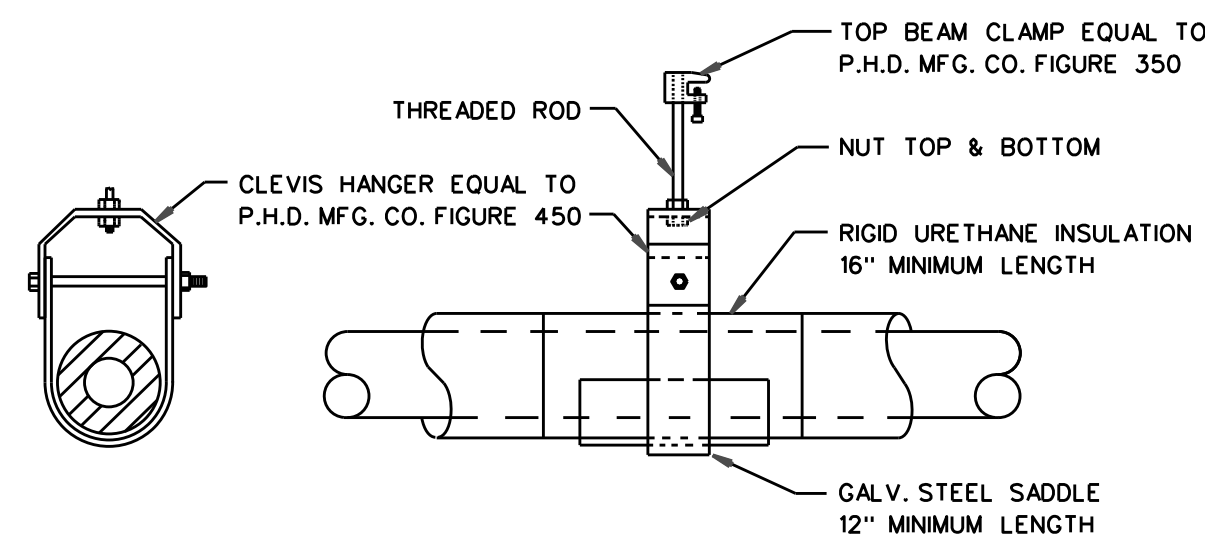


**DUCT LINER & STRAP HANGER DETAIL**  
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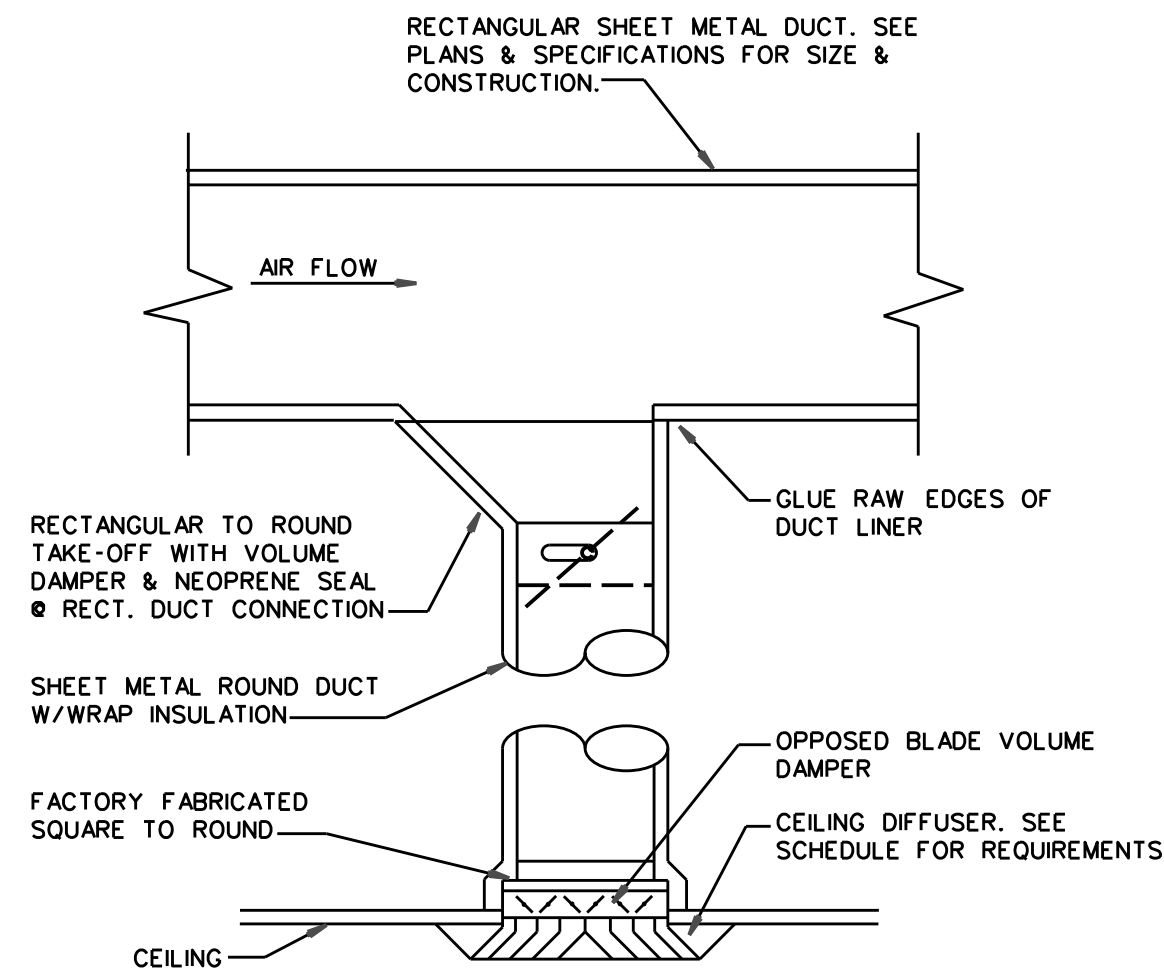


**NON-RATED PIPE SLEEVE DETAIL**  
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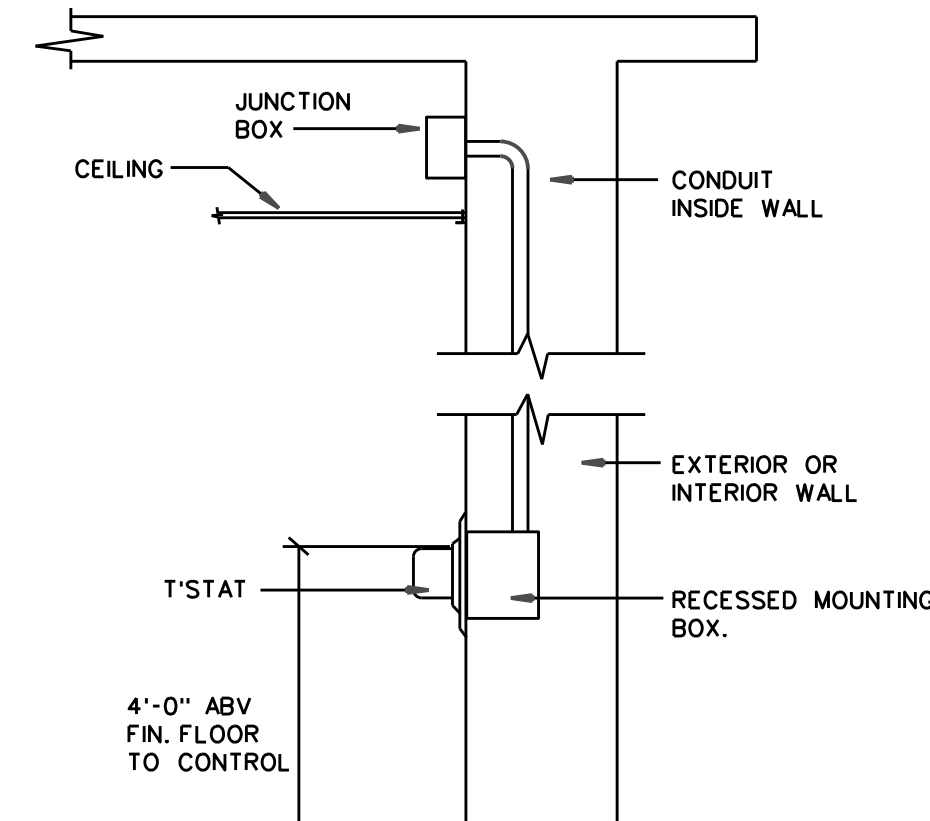
PIPE SUPPORT SCHEDULE		
PIPE SIZE	SCHEDULE 40 BLACK STEEL	COPPER PIPE
1/2"	6'	6'
3/4"	6'	6'
1"	8'	8'
1 1/4"	8'	8'
1 1/2"	8'	8'
2"	10'	10'
2 1/2"	10'	10'
3"	12'	12'
4"	12'	12'
6"	12'	12'
8"	12'	12'



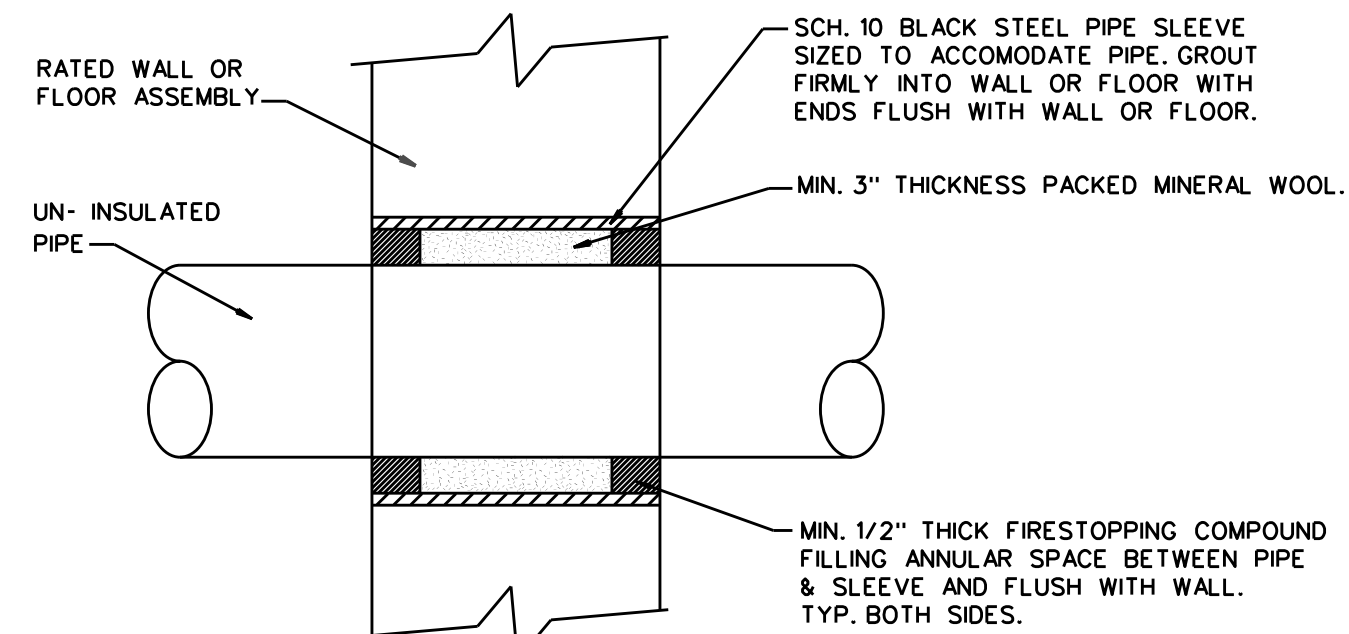
**HOT & CHILLED WATER PIPE HANGER DETAIL**  
NOT TO SCALE



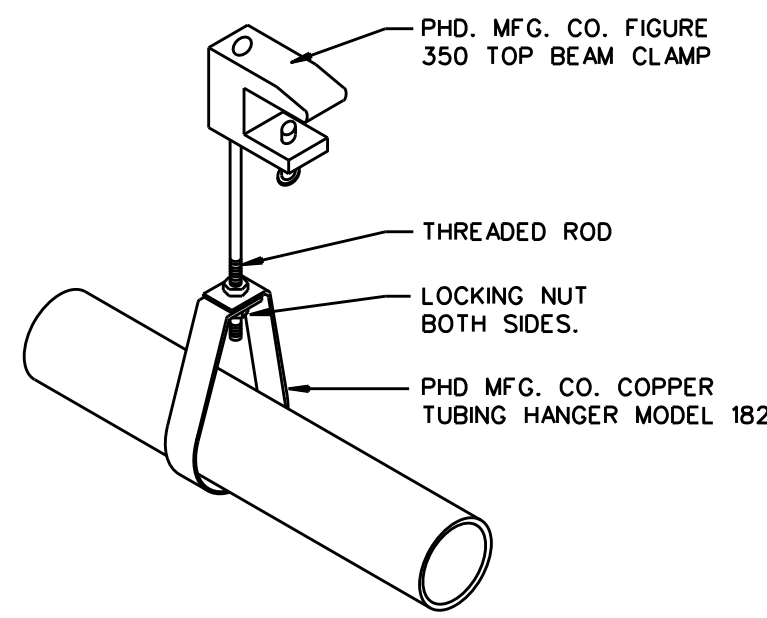
**DIFFUSER DUCTING DETAIL**  
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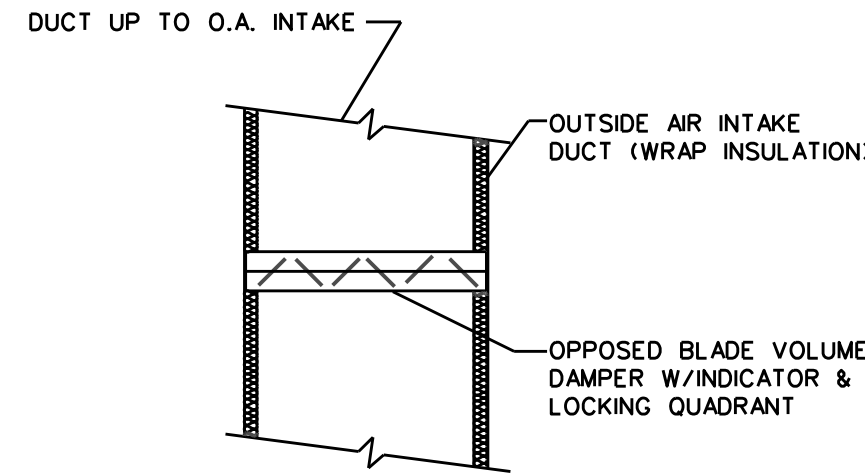
**T'STAT MOUNTING DETAIL**  
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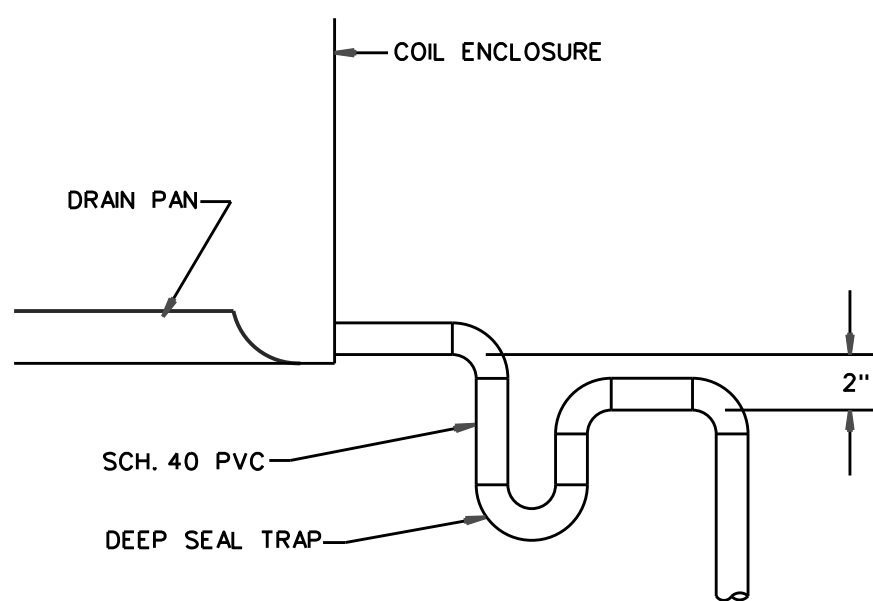
U.L. LISTING C-AJ-1009  
**RATED PIPE SLEEVE DETAIL**  
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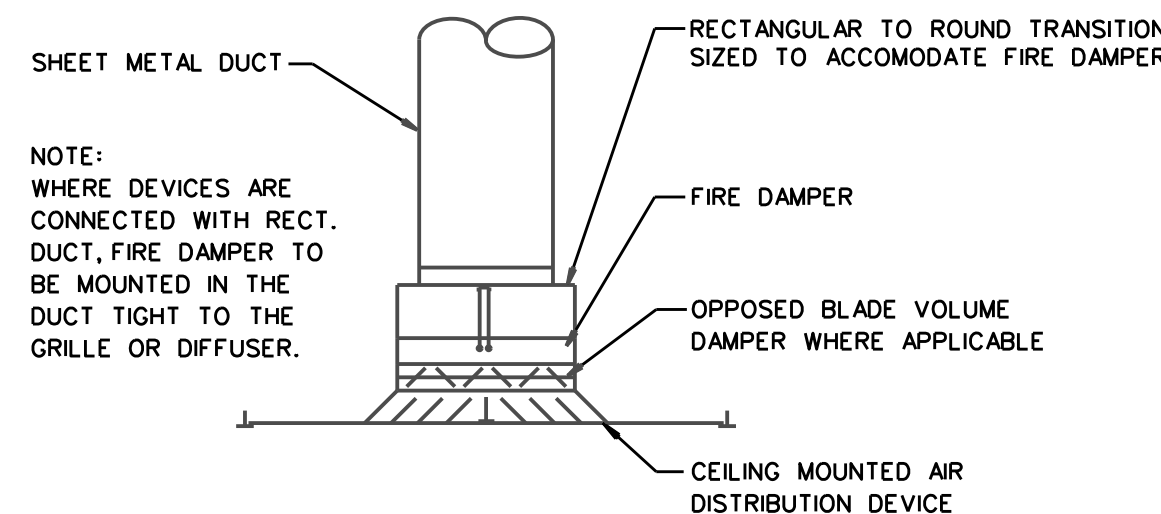
**REFRIGERANT PIPE HANGER DETAIL**  
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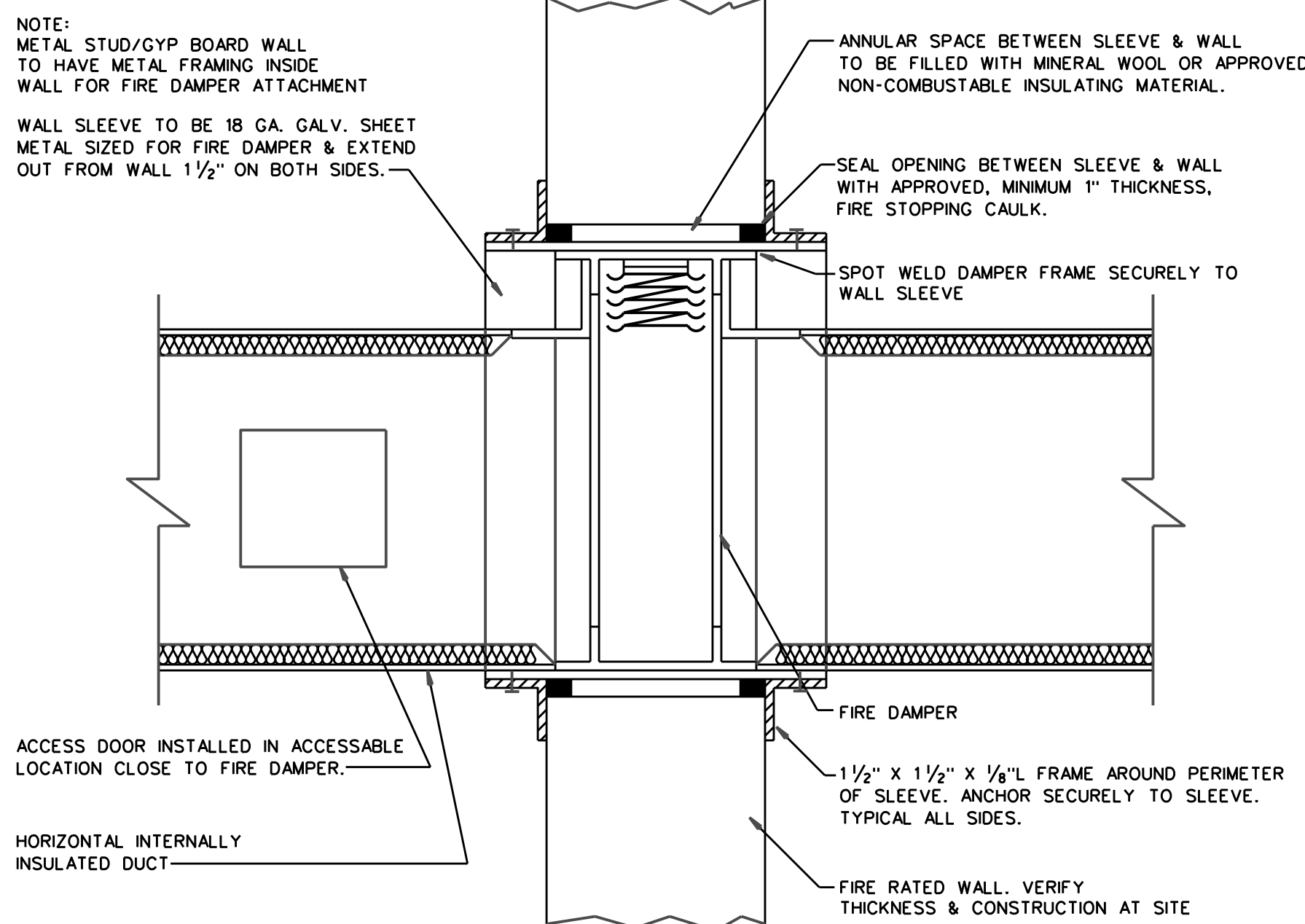
**VOLUME DAMPER DETAIL**  
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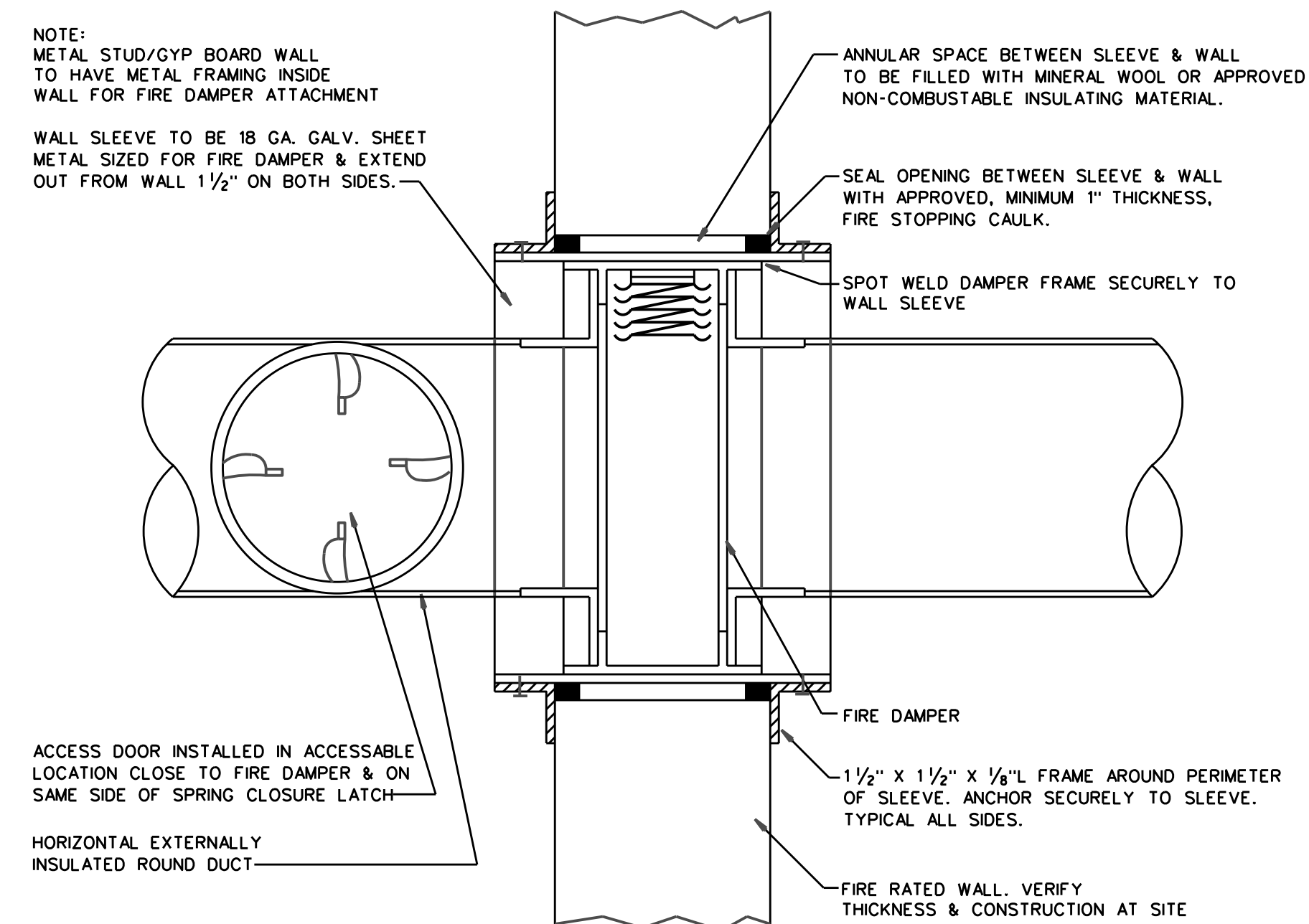
**TYPICAL CONDENSATE CONNECTION & TRAP**  
NOT TO SCALE



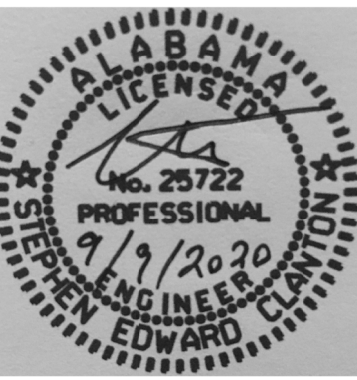
CEILING MTD. GRILLE & DIFFUSER  
**FIRE DAMPER INSTALLATION DETAIL**  
NOT TO SCALE



RECTANGULAR DUCT  
**VERTICAL FIRE DAMPER MOUNTING DETAIL**  
NOT TO SCALE



ROUND DUCT  
**VERTICAL FIRE DAMPER MOUNTING DETAIL**  
NOT TO SCALE



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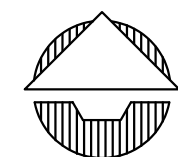
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ADDENDUM #1	10.28.20

SHEET TITLE  
**MECHANICAL DETAILS**

SHEET NUMBER  
**M-4**  
OF  
**4**





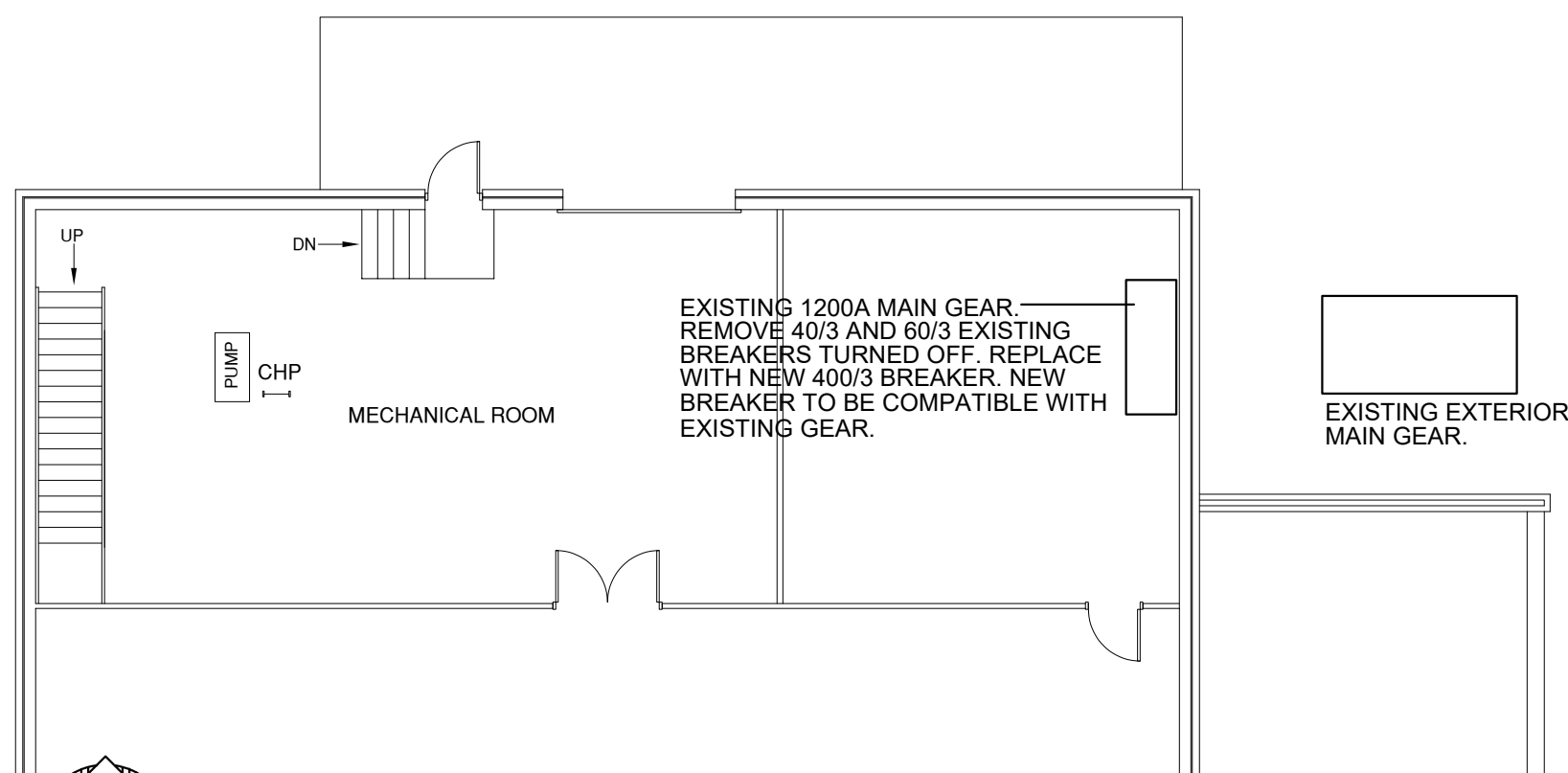
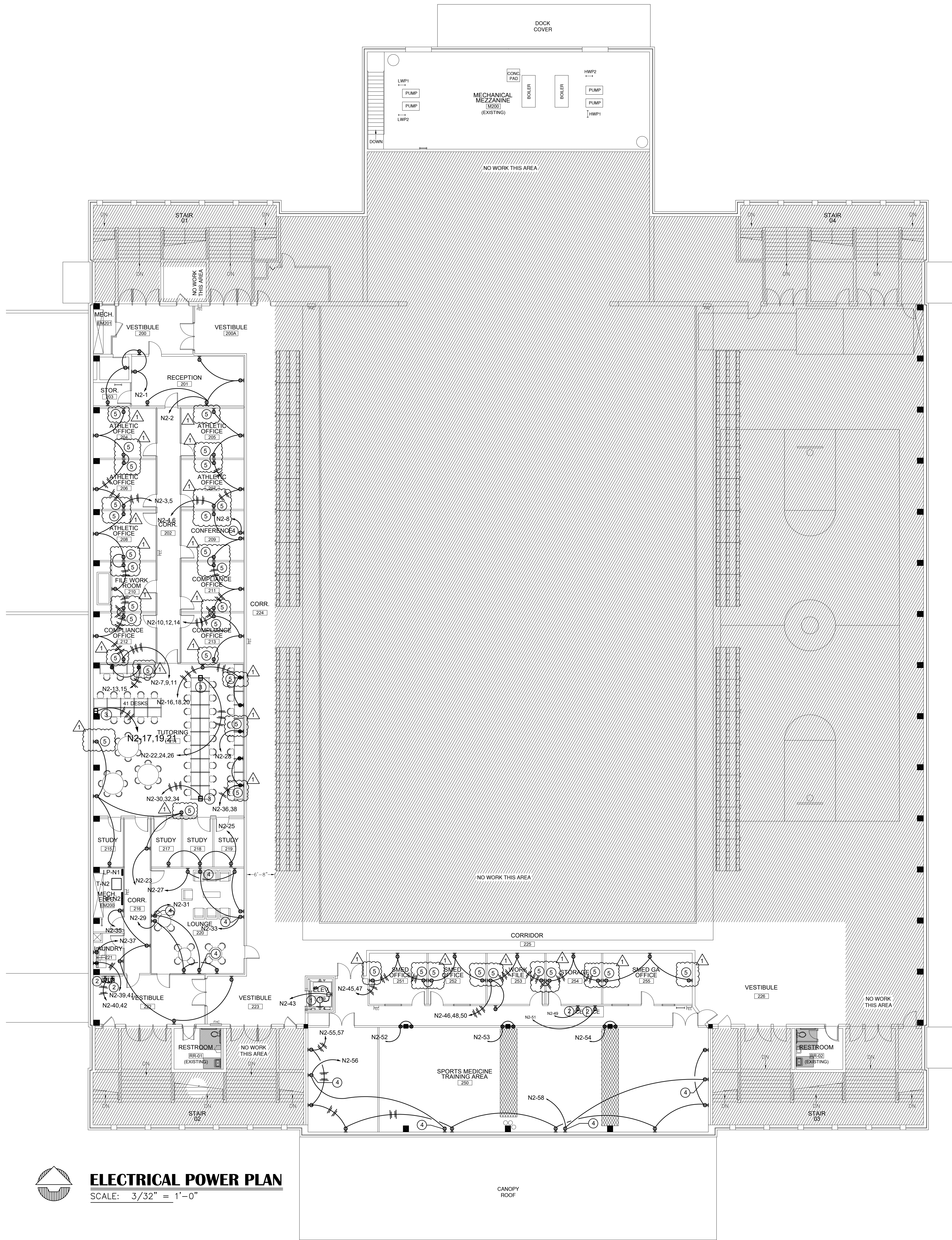
SCALE:  $3/32" = 1'-0"$

## WIRE LEGEND - LC 1.0

CAT5e  
CAT5e  
Pre-terminated CAT5e cable

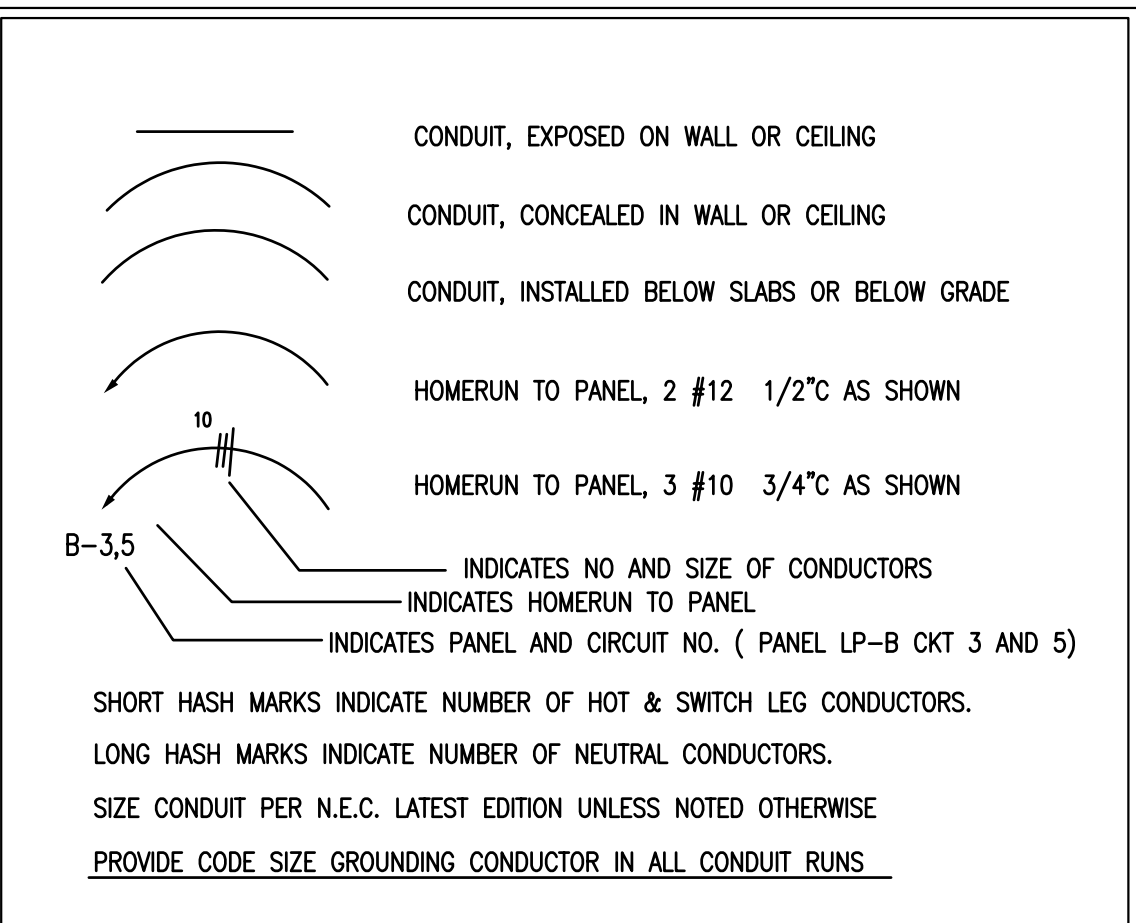






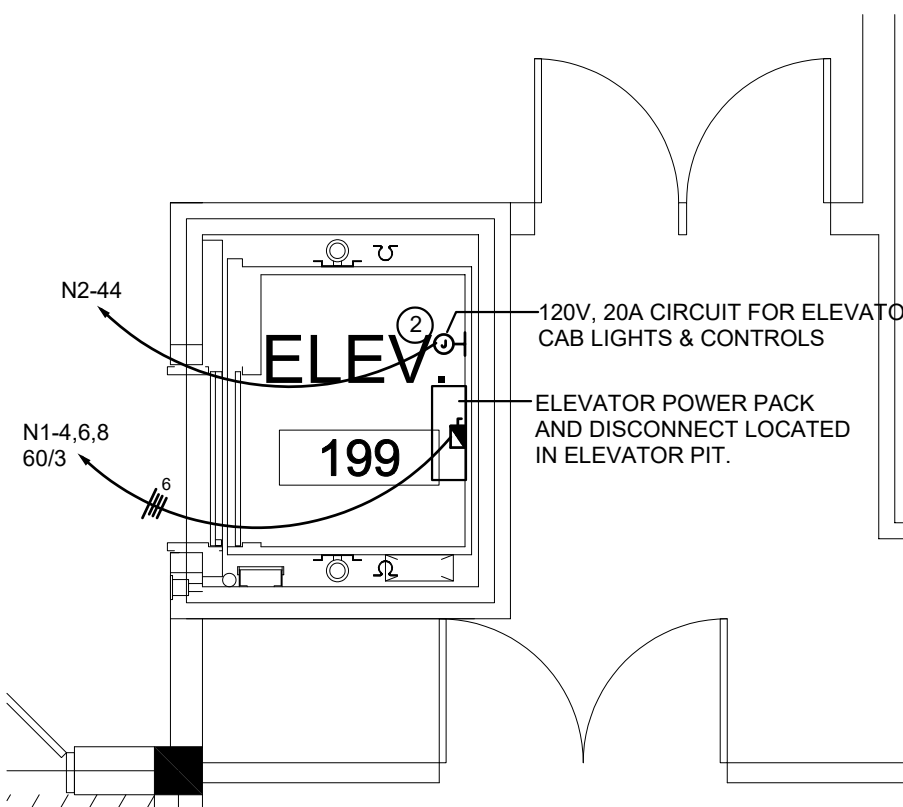
**1ST FLOOR MAIN ELECTRICAL ROOM PLAN**  
SCALE: 3/32" = 1'-0"

- ⊞ DUPLEX OUTLET, NEMA 5-15R, 125 VOLT
  - ⊞ QUADRAPLEX OUTLET, NEMA 5-15R, 125V, 15 AMP.
  - ⊞ DUPLEX OUTLET, GFCI TYPE, NEMA 5-15R, 125V, 15AMP.
  - ⊞ DUPLEX OUTLET, GFCI TYPE, MOUNTED ABOVE COUNTERTOP
  - ⊞ SINGLE OUTLET, 240 VOLT, 30 AMP, NEMA 6-30R
  - ⊞ NON-FUSED DISCONNECT
  - ⊞ SINGLE POLE TOGGLE DISCONNECT EQUAL TO SQUARE D 2510-KF1
  - ⊞ TWO POLE TOGGLE DISCONNECT EQUAL TO SQUARE D 2510-KG1
  - ⊞ PHONE/DATA OUTLET, WALL MOUNTED, 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE
  - ⊞ PHONE/DATA OUTLET, WALL MOUNTED ACT, 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE
- MOUNTING HEIGHTS OF WALL OUTLETS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
- WALL SWITCHES-----48"
  - RECEPTACLES-----18"
  - TELEPHONE-----18"
  - THERMOSTAT-----48"
- ACT - ABOVE COUNTERTOP---2" ABOVE BACKSPASH

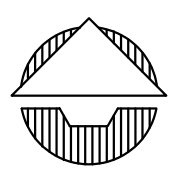


**ELECTRICAL POWER KEYED NOTES**

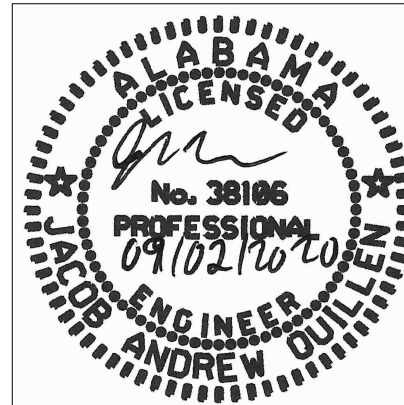
- 1 PROVIDE GFCI TYPE DUPLEX RECEPTACLE, ONE WALL MOUNTED J-BOX WITH BRYANT RJ850B SOCKET WITH WIRE GUARD FOR LAMP. BOTH CONTROLLED WITH WALL MOUNTED SWITCH FOR ELEVATOR PIT AND SLUMP PUMP POWER.
- 2 DEVICE TO BE PROTECTED BY GFCI BREAKER. SEE PANEL SHCHEDULE.
- 3 DUAL CHANNEL (POWER/DATA) POWER POLE. LEGRAND #25DTC SERIES 3 CIRCUITS PER POLE. PROVIDE SEPERATE NEAUTRL AND GROUND FOR EACH CIRCUIT.
- 4 DUPLEX RECEPTACLE MOUNTED AT MIN. 6'-0" A.F.F. FOR TV POWER. COORDINATE EXACT LOCATION WITH ARCH. OWNER PRIOR TO ROUGH-IN.
- 5 RECEPTACLE CONTROLLED BY PLUG LOAD CONTROLLER. SEE LIGHTING CONTROLS PLAN.



**ELEVATOR PIT PLAN**  
SCALE: 1/8" = 1'-0"



**ELECTRICAL POWER PLAN**  
SCALE: 3/32" = 1'-0"



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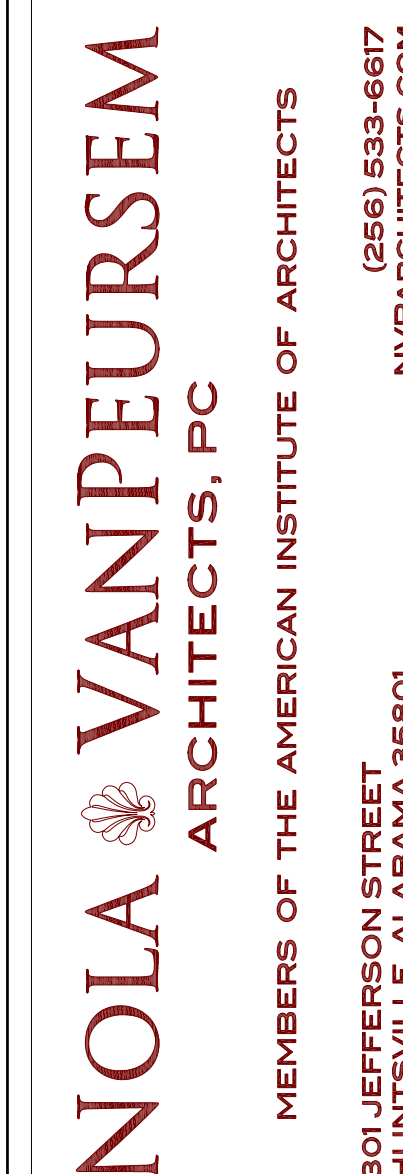
MAS / JAO / 09.02.20  
DRAWN - CHECKED - DATE

REVISIONS	DATE
ADDENDUM 1	10.30.20

SHEET TITLE  
**ELECTRICAL POWER PLAN**

SHEET NUMBER  
**E-5**  
OF  
**8**





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NORMAL, ALABAMA

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REVISIONS	
1	ADDENDUM 1 10/30/20

SHEET TITLE

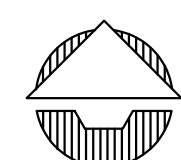
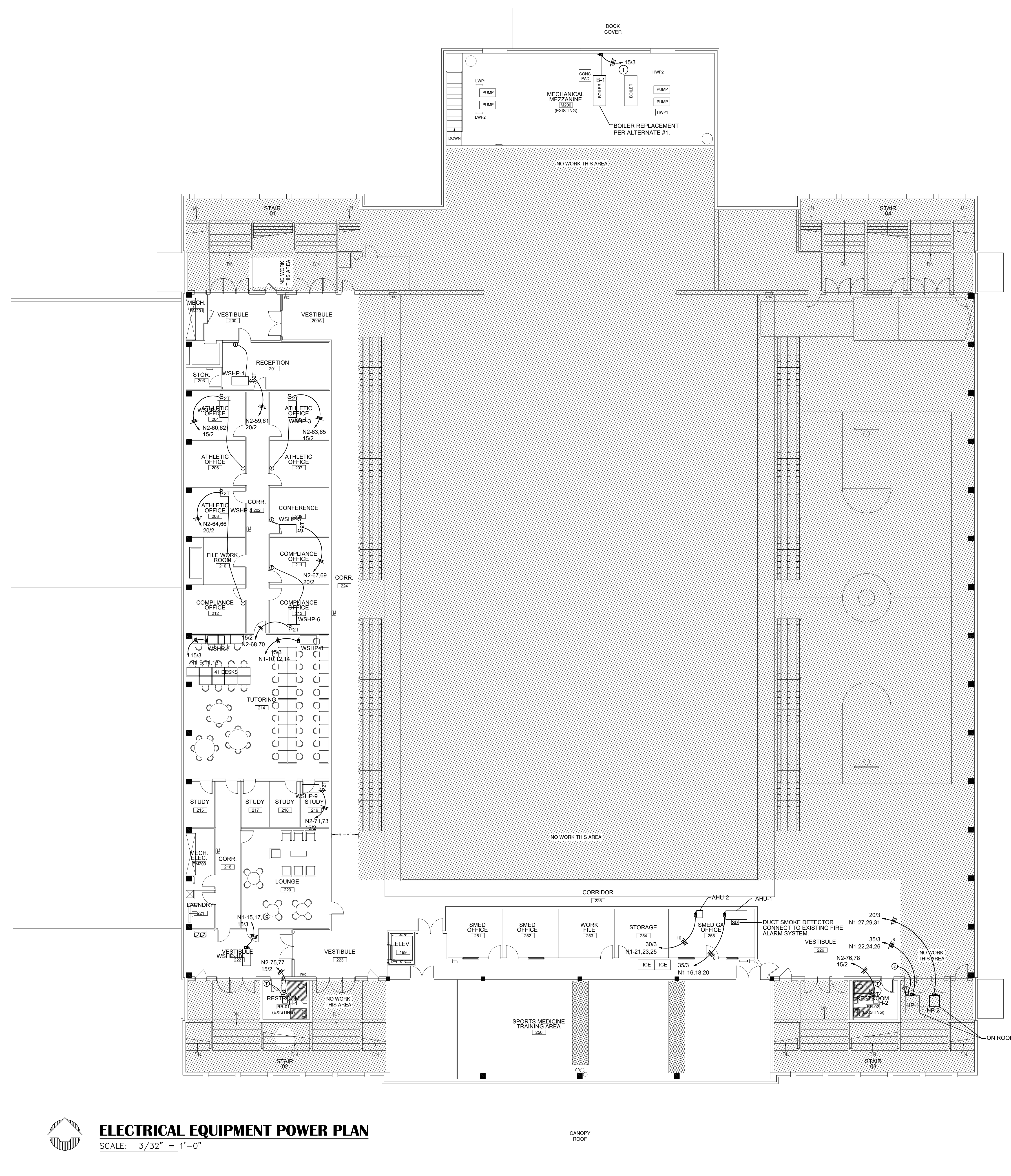
**ELECTRICAL  
EQUIPMENT  
POWER  
PLAN**

SHEET NUMBER

**E-6**

OF

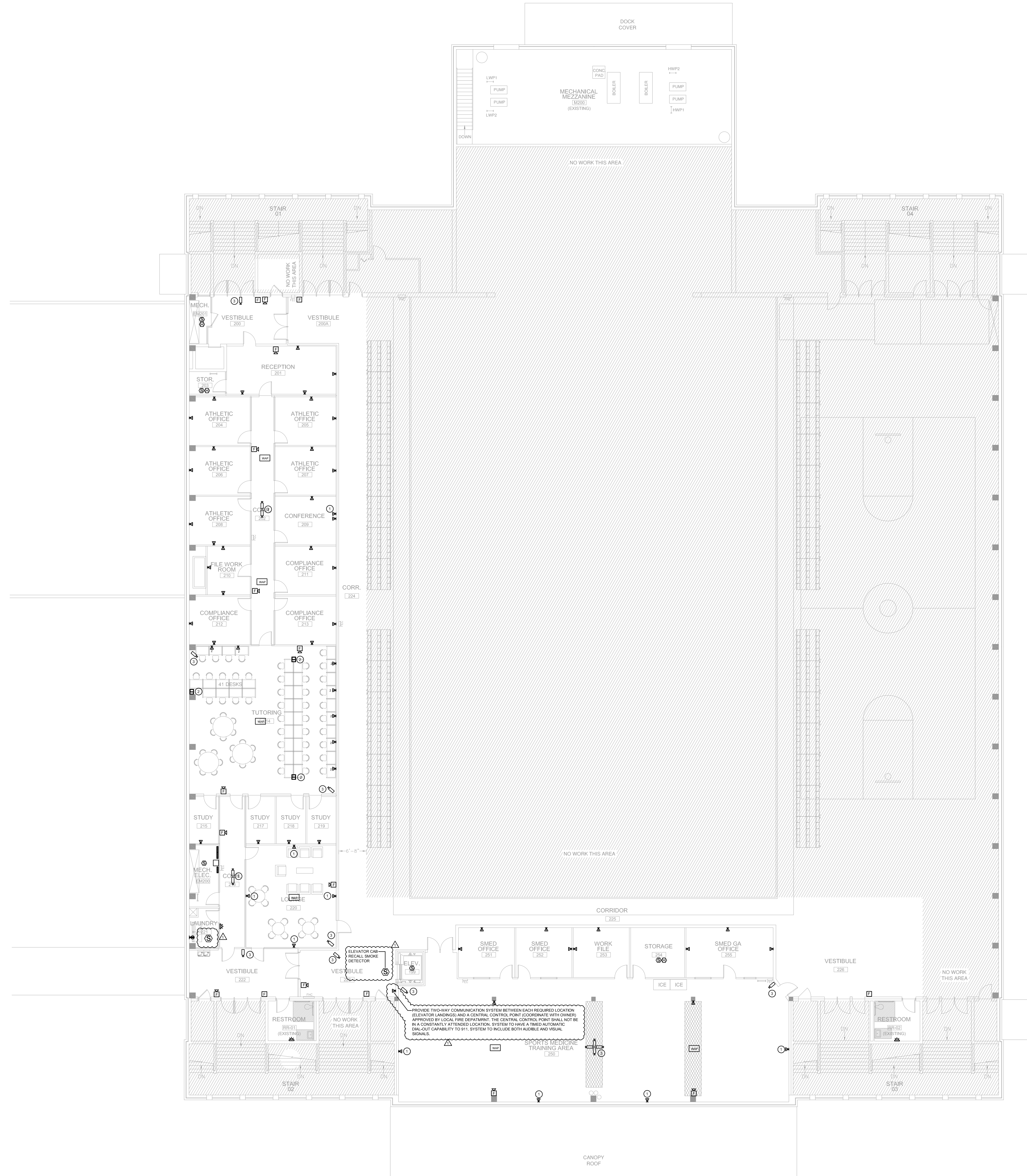
**8**



## ELECTRICAL EQUIPMENT POWER PLAN

SCALE:  $3/32" = 1'-0"$





▼ DATA/TELE/CABLE OUTLET FLUSH MOUNT WITH COVER  
SINGLE GANG BOX WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE.

📹 SECURITY CAMERA

WAP WIRELESS ACCESS POINT

☐ MANUAL PULL STATION  
NOTIFIER NBS-12LX OR EQUAL

🔊 HORN / STROBE  
NOTIFIER P2R OR EQUAL

🔊 WALL MOUNTED STROBE  
NOTIFIER SR OR EQUAL

🔥 SMOKE DETECTOR  
NOTIFIER FSP-851 OR EQUAL

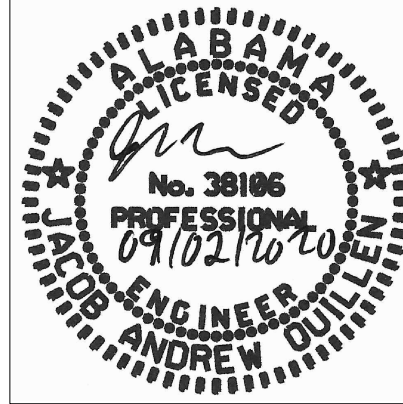
🔥 HEAT DETECTOR  
NOTIFIER FSP-851 OR EQUAL

🔥 SMOKE DETECTOR, DUCT MOUNTED WITH RTS-451 KEY REMOTE TEST SWITCH  
NOTIFIER DNR WITH RTS-151 KEY REMOTE TEST SWITCH OR EQUAL

NOTE: FIRE ALARM CONTRACTOR TO BE LICENSED THROUGH ALABAMA FIRE MARSHALL'S OFFICE.

ELECTRICAL LOW VOLTAGE KEYED NOTES.

- DATA/CABLE RECEPTACLE MOUNTED AT MIN. 6'-0" A.F.F. COORDINATE WITH ARCH./OWNER FOR EXACT LOCATION PRIOR TO ROUGH-IN.
- DUAL CHANNEL (POWER/DATA) POWER POLE, LEGRAND #7777777777 PROVIDE ALL REQUIRED HARDWARE, DEVICES, AND WIRING FOR A COMPLETE INSTALLATION.
- SECURITY CAMERA LOCATION, PROVIDE J-BOX WITH 3/4" C STUBBED INTO ACCESSIBLE CEILING SPACE, MOUNT J-BOX MIN. 6'-0" A.F.F. COORDINATE EXACT LOCATION WITH ARCH./OWNER PRIOR TO ROUGH-IN.



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SHEET TITLE  
ELECTRICAL LOW VOLTAGE  
PLAN

SHEET NUMBER  
E-7  
OF  
8



