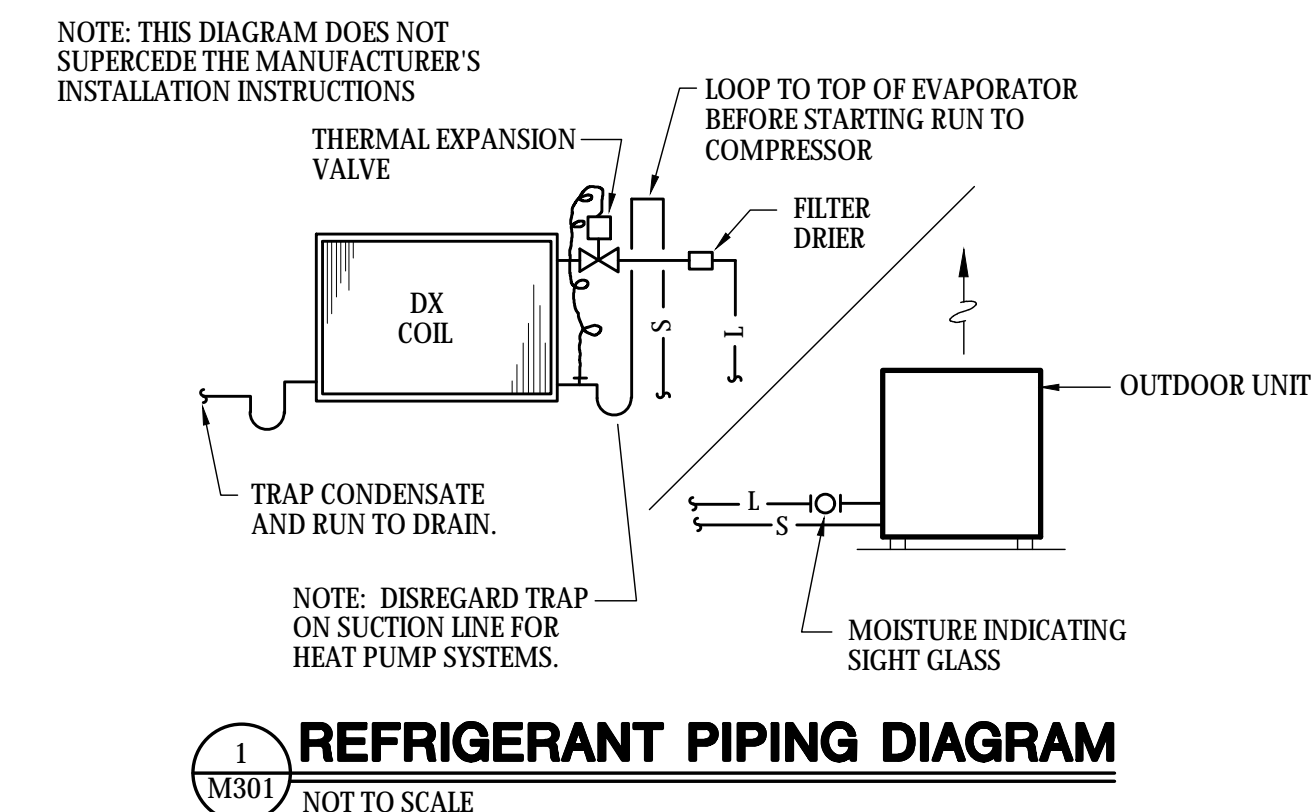


**STATE COURTHOUSE HVAC
RENOVATION
BULLOCH COUNTY COMMISSIONERS**



H.V.A.C. LEGEND	
SYMBOL	DESCRIPTION
— SL —	REFRIGERANT SUCTION / LIQUID
- - - D - - -	CONDENSATE DRAIN
Ⓧ	THERMOSTAT 4'-6" A.F.
⊘ or C.F.M.	CUBIC FEET PER MINUTE
Ⓛ / M-1	DETAIL NO. 1 / M-1 SHEET NO.
Ⓛ / S	AIR DEVICE NECK CONNECTION SIZE
A.F.	ABOVE FLOOR
RET.	RETURN (AIR - DUCT)
EXH.	EXHAUST
∅	DIAMETER
TYP.	TYPICAL

-- EVAPORATOR COIL SCHEDULE --						
ITEM	TOTAL MBH	EVAP. TEMP. (°F)	CFM	MAX. APD (IN. WG)	EAT (°F)	MANUF. MODEL NO.
EC-1	180	27	5000	0.500	80	TRANE TWE180 (1)
EC-2	180	45	5000	0.306	80	TRANE DUFB32055 (1)

(1) FURNISH THERMAL EXPANSION VALVE AND OTHER REQUIRED ACCESSORIES. VERIFY FIELD DIMENSIONS OF COIL PRIOR TO ORDERING.

-- OUTDOOR CONDENSING UNIT SCHEDULE --					
ITEM	SERVES	COOLING CAPACITY MBH (1)	EER	SEER	MANUFACTURER MODEL NO.
OHP-12	EXIST. AHU-12 (2)	180.0	13.0	12.4	TWA180
OHP-13E	EXIST. AHU-13 (2)	180.0	13.0	12.4	TWA180

(1) RATINGS IN ACCORDANCE WITH APPROPRIATE A.H.R.I. STANDARD.
(2) SEE EVAPORATOR COIL SCHEDULE FOR NEW COILS TO BE INSTALLED IN EXISTING UNITS.

HVAC NOTES:

- NOT ALL EXISTING WORK IS SHOWN, AND THAT SHOWN IS IN ITS APPROXIMATE LOCATION AND ARRANGEMENT. EXACT LOCATION, ARRANGEMENT, AND SIZES SHALL BE VERIFIED ON THE JOB BEFORE STARTING ANY NEW WORK.
- INSTALL PIPING AND DUCTWORK IN EQUIPMENT ROOMS ADJACENT TO WALLS AND CEILINGS WHERE POSSIBLE TO PROVIDE MAXIMUM ROOM CLEARANCE.
- COORDINATE THE INSTALLATION OF WORK UNDER THIS DIVISION WITH THAT OF OTHER TRADES TO PROVIDE THE BEST ARRANGEMENT OF PIPING, DUCTWORK, AND EQUIPMENT.
- PIPING, DUCTWORK, AND EQUIPMENT IS SHOWN IN ITS GENERAL LOCATION UNLESS DIMENSIONED.
- ARRANGE PIPING AND DUCTWORK TO CLEAR STRUCTURAL MEMBERS, PIPING AND LIGHT FIXTURES.
- ALL PIPING SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.
- PROVIDE FLEXIBLE DUCT CONNECTIONS TO ALL AIR HANDLING EQUIPMENT.
- SLOPE DRAIN LINES TOWARD DRAIN WITH A MINIMUM SLOPE OF 1/4" PER FOOT.
- PROVIDE SMOKE DETECTOR SHUTDOWN CONTROLS FOR ALL HVAC SYSTEMS IN EXCESS OF 2000 CFM.

H.V.A.C. SPECIFICATION

GENERAL: Entire system shall be installed to meet applicable Local, State and National Codes, current requirements of NFPA, State Heating and Air Conditioning Code and National Electric Code.

All equipment shall be installed in accordance with the manufacturer's instructions. Installing contractor shall furnish fully functioning systems.

EXISTING CONDITIONS: Not all existing work is shown on the plans. The Contractor is responsible for verifying actual job site conditions prior to ordering equipment and fabricating duct. Any discrepancies discovered shall be reported to the Owner.

ELECTRICAL: All line and low voltage control wiring shall be provided by the HVAC Contractor. Provide and submit complete wiring diagrams and all switches, starters, controls, relays, etc. necessary for a complete system. Run all wiring in EMT raceways.

Voltage and phase of mechanical equipment requiring power is designated under the Electrical division. Model numbers listed in mechanical equipment schedule shall not be construed to indicate electrical characteristics. Furnish written documentation that all electrical characteristics of mechanical equipment have been coordinated with and confirmed by the electrical subcontractor.

Power wiring and disconnects shall be provided under this Division.

SHOP DRAWINGS: Submit 5 sets of Shop Drawings for approval before ordering equipment.

DUCTWORK:

- Low Pressure, Metal: Fabricate of galvanized steel as per SMACNA Manual for HVAC Duct Construction Standards for 1" W.C., with transverse joints, branch connections and tap-ins sealed.
- Duct sealant shall be water-based joint and seam sealant: Flexible, adhesive sealant, resistant to UV light when cured, UL 723 listed, and complying with NFPA requirements for class 1 ducts. Duct tape shall not be used.

DUCT ACCESSORIES:

- Access Doors: Provide construction and airtightness suitable for duct pressure class. Frame: Galvanized sheet steel. Provide with bend-over tabs and foam gaskets. Door: Double-wall, galvanized sheet metal construction with insulation fill and thickness, number of locks as indicated for duct pressure class. Provide cam latches. Seal around frame attachment to duct and door to frame with neoprene or foam rubber seals. Insulation: 1-inch-thick fiber glass or polystyrene foam board.
- Fire dampers shall be dynamically rated and UL labeled in accordance with UL Standard 555 for the fire resistance required by the partition rating. Damper shall have blades out of the airstream.
- Combination fire/smoke dampers shall be electrically operated, dynamically rated and UL labeled in accordance with UL Standard 555 for the fire resistance required by the partition rating, and Class II smoke resistance. Damper shall have its operator out of the airstream. Furnish damper end switch for control interlocks.

INSULATION:

- Ductwork: Insulate lined and unlined supply and return ductwork with 3/4 lb. 2" thick fiberglass blanket insulation with FSK jacket. Lap all vapor barrier joints 2" minimum, staple 4" o.c. and seal with vapor barrier mastic reinforced with fiber glass mesh ("glas-fab and mastic"). Use Stik-clips 24" o.c. on bottom of 30" wide and larger ducts. Refrigerant and Condensate Drainage Pipe: Insulate with flexible elastomeric insulation (Armaflex or equivalent). Thickness: 3/4" for refrigerant suction and hot gas piping, 3/8" for condensate drainage piping. Seal all joints with compatible adhesive. Slip whole sections of insulation on piping before pipe joints are made. Miter all elbows in insulation. Paint outdoor insulation two brush coats of exterior latex enamel in color selected by the Owner.

PIPING:

- Refrigerant piping shall be ACR nitrogen charged tubing with joints made with high temperature (1200 degrees F) brazing compound. Bleed dry nitrogen through piping during brazing process. After satisfactory leak test, piping and system shall be evacuated and charged in accordance with the manufacturer's printed instructions.
- Support pipe from structure above with clevis type hanger, all thread rod and upper attachment devices appropriate for the

structural type. Provide supplementary steel for upper attachment as required. Hangers shall fit around insulated pipe and shall have 24 gauge galvanized sheet metal saddle between the support and the insulation jacket.

TESTS:

- Refrigerant Piping: Charge system per industry accepted standards for systems utilizing R-410A, or manufacturer's recommended procedures if more stringent than industry standards. The following is an outline of the triple evacuation method.
 - Pull initial vacuum on the line set testing for a leak. If it holds then pressure test with Nitrogen at 300 psi minimum.
 - Pump system down, recharge with Nitrogen to 2 psi. Perform this step two times.
 - Pump system down, re-pressurize with Nitrogen and then evacuate system to 500 microns. Hold for 30 minutes.
 - Break vacuum with refrigerant and charge per manufacturer's directions.
- Heat and Cooling Units: Record all motor and heater nameplate amps and running amps during Heating and Cooling cycle (below 60 degrees F. cooling). Record all fan motor amps for motors 1/2 HP and larger.

EVAPORATOR COILS: Unit shall be of size, type and capacity as indicated on the Drawings and shall be manufactured by Trane. Equal units by Johnson Controls or Carrier will be acceptable.

AIR-COOLED CONDENSING UNIT: Units shall be of size, type and capacity as indicated on the Drawings and shall be manufactured by Trane. Equal products by Carrier or Johnson Controls are acceptable.

The following accessories shall be provided:

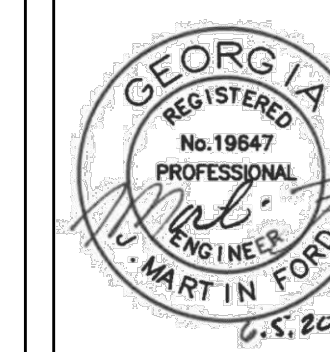
- 5-minute Anti-Recycle Timer
- Hard Start Kit for Single Phase Units
- Crankcase Heater
- Condenser Coil Guard

OPERATING AND MAINTENANCE MANUALS: Provide Owner 3 bound copies of Operating and Maintenance Instructions on each piece of HVAC equipment.

INSTRUCTION TO OWNER: Provide formal instruction period to familiarize the Owner in the operation and maintenance of the HVAC System. Document attendance and material covered for each instruction session.

CONTROLS: Control system consists of sensors, indicators, actuators, microprocessors, final control elements, interface equipment, other apparatus, and accessories connected to controllers to operate mechanical systems according to sequences of operation indicated or specified. Installation shall be in accordance with HVAC equipment manufacturer's wiring diagrams. Control components shall form a fully functional system.

- Thermostats: Existing thermostats shall be used.



KEY PLAN

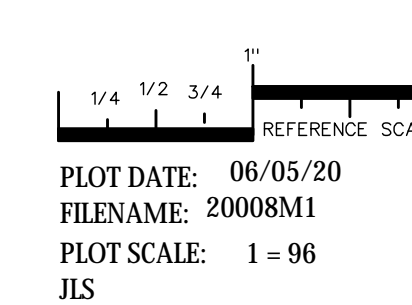
REVISION DATE

SHEET TITLE:
**HVAC NEW WORK
PLAN**

DRAWN BY: JLS CHECKED BY: JMF DATE: 06/05/2020

FILE NO. SHEET

20008 M301



PLOT DATE: 06/05/20
FILE NAME: 2000RM1
PLOT SCALE: 1 = 96
JLS