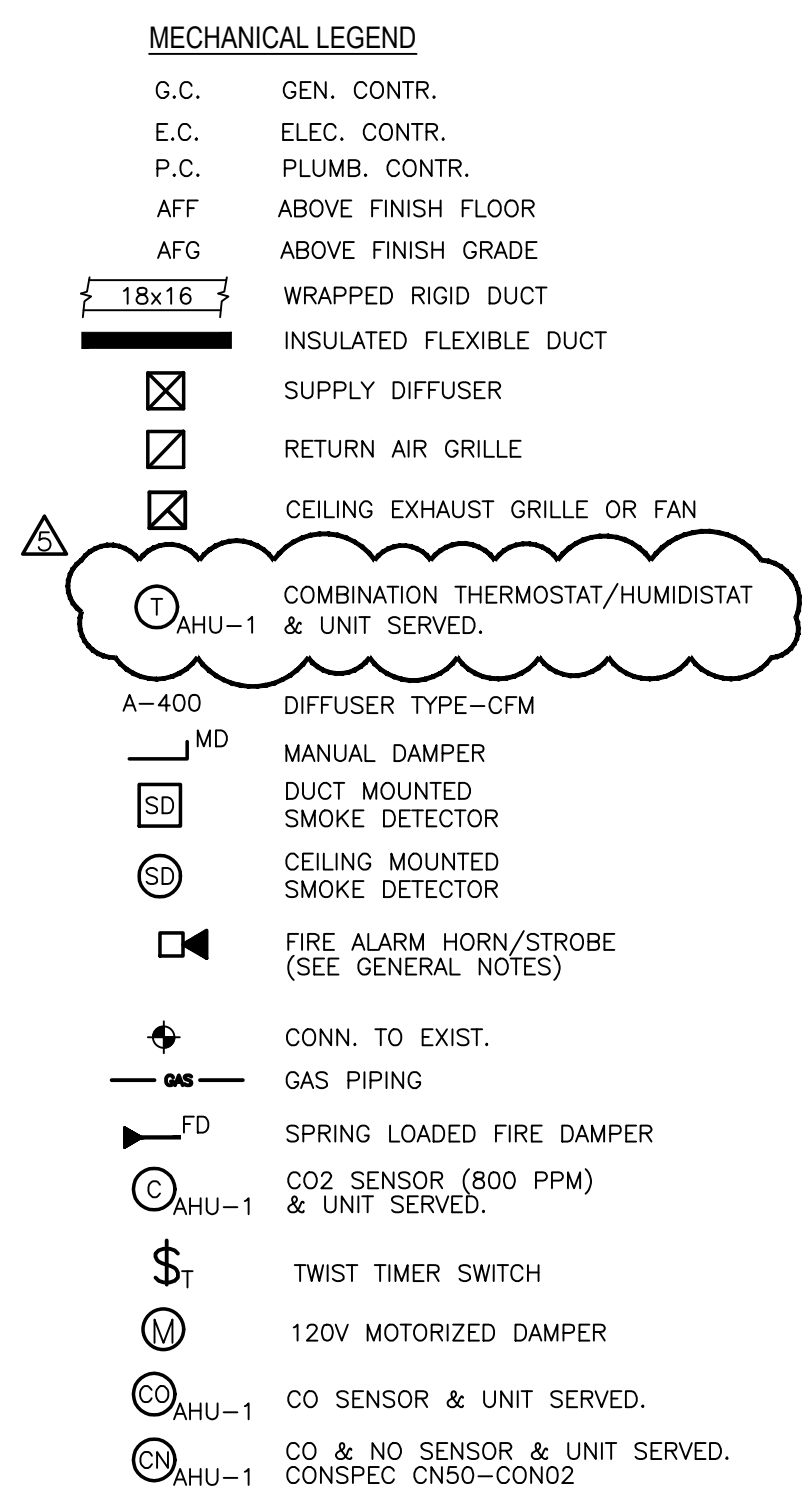
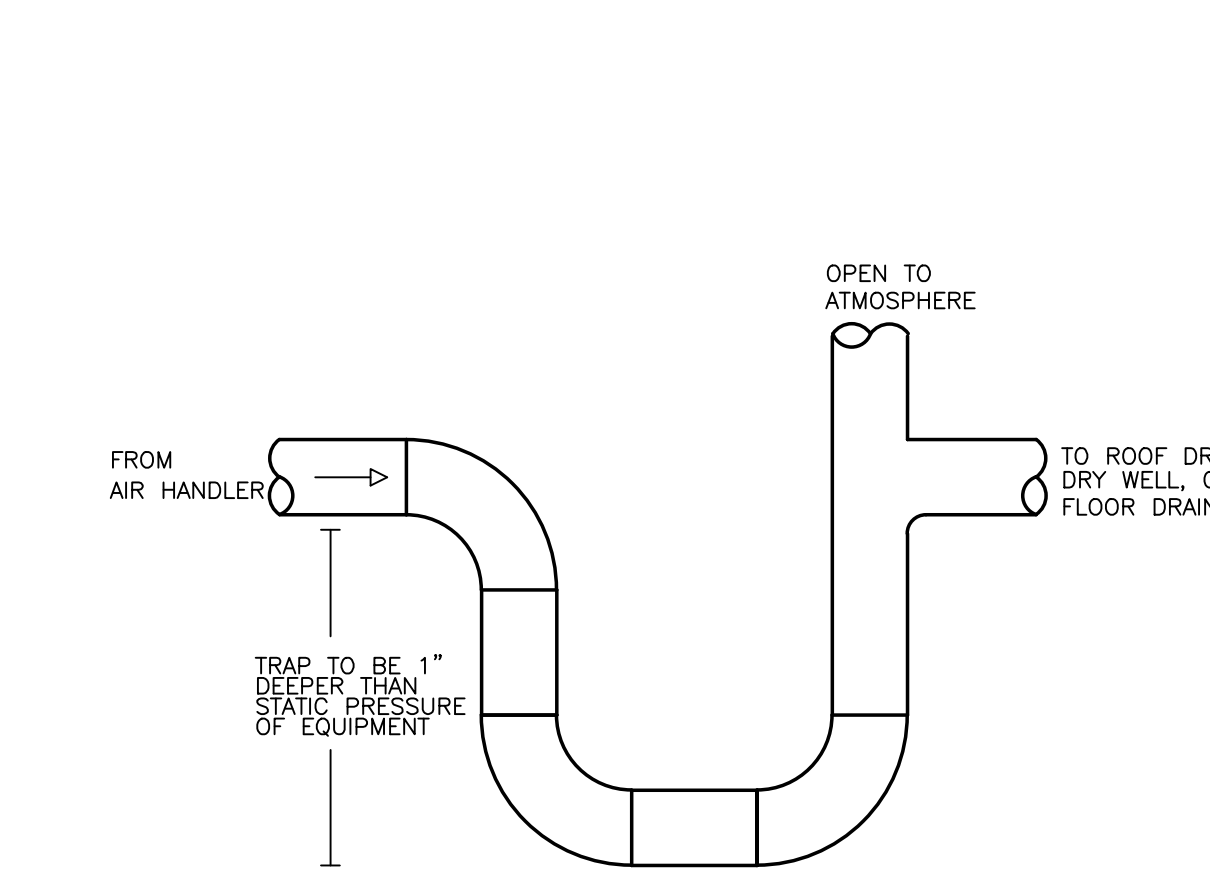


MECHANICAL GENERAL NOTES:

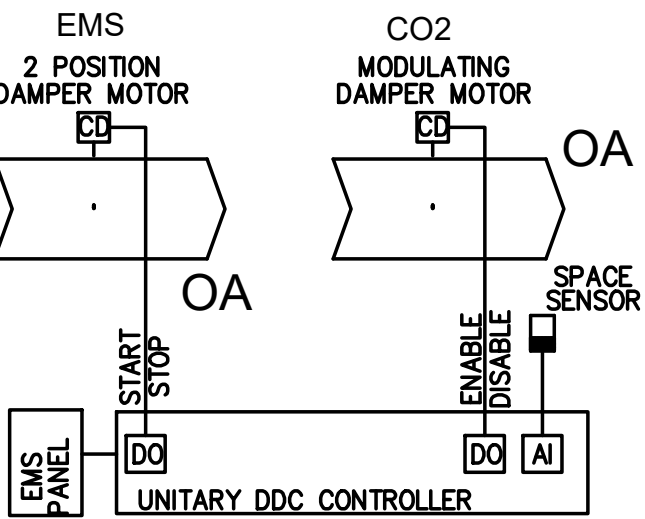
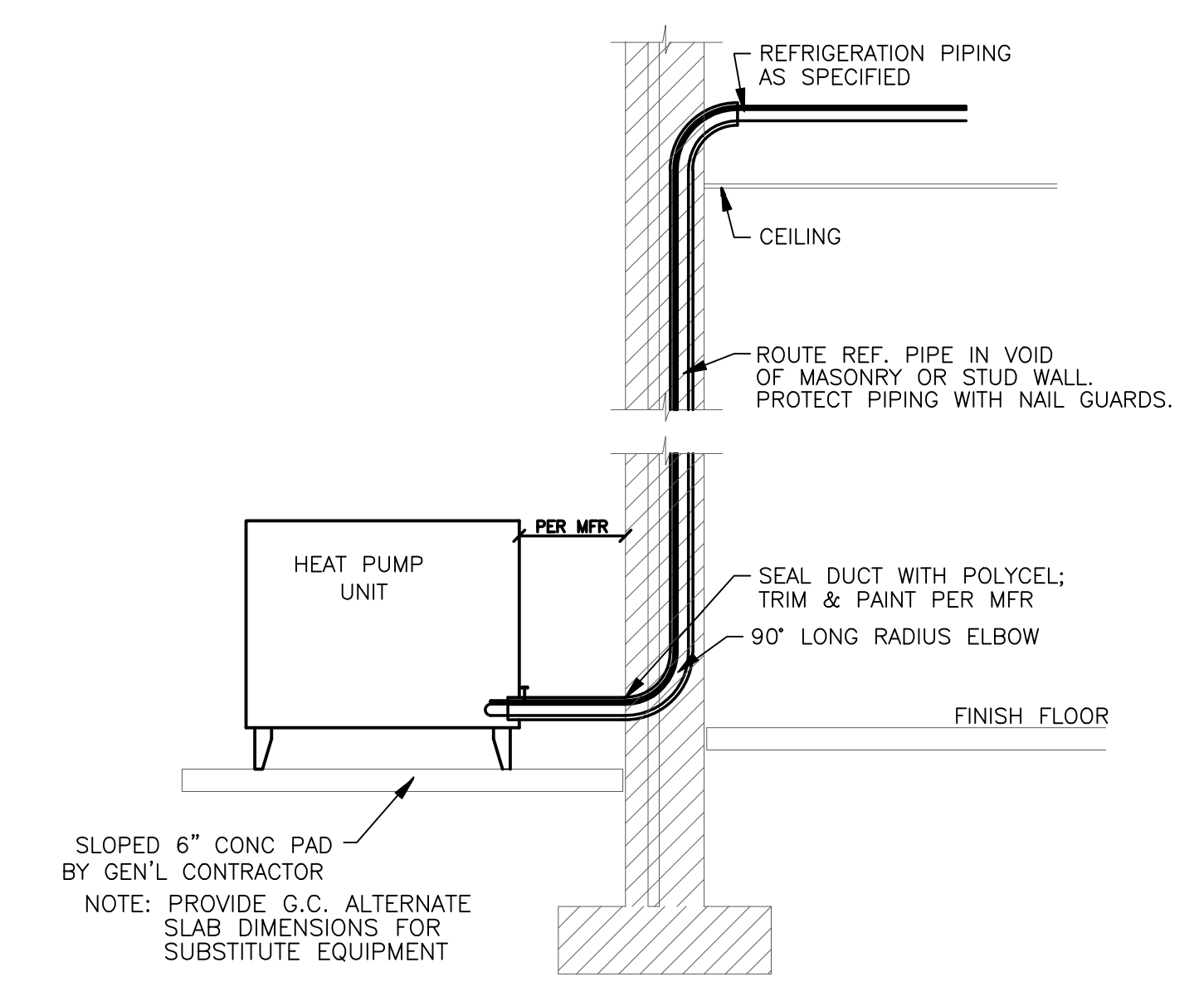
1. REFERENCE ARCHITECTURAL, STRUCTURAL, PLUMBING, & ELECTRICAL DRAWINGS, AND SPECIFICATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID.
2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE NC BUILDING CODE & CONTR. SHALL NOTIFY ENGINEER IN WRITING REGARDING ANY CODE DISCREPANCIES FOUND ON PLANS. CONTR. IS RESPONSIBLE FOR PERMITS, INSPECTIONS, THE CONTROLS CONTRACTOR (C.C.) SHALL PROVIDE ALL CONTROL VALVES, ACTUATORS, DAMPERS, FAN COIL COMBINATION STARTERS. C.C. SHALL PROVIDE ALL LOAD SIDE WIRING ASSOCIATED WITH ALL FAN COIL COMBINATION STARTERS. VALVE TAGS AND LABELING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR (M.C.).
3. DO NOT SCALE THESE DRAWINGS; REFER TO LARGEST SCALE ARCHITECTURAL DRAWINGS. THESE DRAWINGS ARE DIAGRAMMATIC ONLY & ARE NOT INTENDED TO SHOW MINOR DETAILS & EXACT LOCATIONS. DESIGN ADJUSTMENTS SHALL BE ANTICIPATED BY THE CONTRACTORS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
4. "PROVIDE" IS DEFINED AS FURNISH & INSTALL AS PER MANUFACTURERS RECOMMENDATIONS.
5. THE MECHANICAL & CONTROLS CONTRACTOR SHALL COORDINATE THE INSTALLATION OF HVAC EQUIPMENT & CONTROLS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION TO AVOID CONFLICT. CONTACT ARCHITECT IF ALTERNATE INSTALLATION METHOD IS REQUIRED.
6. SYSTEMS INDICATED ON PLANS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR SHALL EXAMINE SITE CONDITIONS PRIOR TO DUCT CONSTRUCTION AND COORDINATE INSTALLATION WITH OTHER TRADES. CONTRACTOR SHALL PROVIDE NECESSARY HANGERS, FASTENERS ETC. TO PROVIDE A COMPLETE AND WORKING SYSTEM.
7. CONTRACTOR SHALL SEAL ALL DUCTWORK WITH A PAINT ON MASTIC. ALL WALL PENETRATIONS SHALL BE SEALED AIR TIGHT.
8. CONTRACTOR SHALL COORDINATE ALL DUCTWORK, DIFFUSER AND GRILLE LOCATION WITH OTHER CEILING MOUNTED DEVICES SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLAN.
9. CONTRACTOR SHALL INSTALL BALANCING DAMPERS IN EACH BRANCH DUCT TO PROVIDE PROPER AIRFLOW TO EACH ZONE.
10. LOCATE THERMOSTATS AND TEMPERATURE SENSORS AT 4'-0" A.F.F. (CENTER OF BOX FOR GYP BRD, TOP OF BOX FOR MASONRY) IN LOCATIONS INDICATED ON PLANS.
11. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS.
12. CONTRACTOR SHALL COORDINATE ALL ROOF AND FLOOR PENETRATION LOCATIONS AND SIZES.
13. FABRICATE AND INSTALL ALL DUCT WORK PER SMACNA 1.5" W.C. PRESSURE. ALL ELBOWS SHALL HAVE 1.5R CENTERLINE. ALL DUCT UNDER SLAB SHALL BE FIBERGLASS.
14. SUSPEND ALL CEILING MOUNT AIR DISTRIBUTION DEVICES FROM STRUCTURE WITH 12 GA. WIRE. ALL HANGERS AND SUPPORTS TO BE INSTALLED PRIOR TO FIREPROOFING OF ROOF STRUCTURE.
15. ALL FLEXIBLE ROUND DUCT SHALL BE PRE-INSULATED DOUBLE WALLED WITH SPIRAL METAL RIB, AND SHALL HAVE MIN. RESISTANCE VALUE OF R-6. MAXIMUM LENGTH SHALL BE 10'-0" UNLESS SHOWN SPECIFICALLY OTHERWISE IN PLAN. SECURE ENDS WITH NYLON BANDS AND TAPE.
16. ALL SUPPLY AND RETURN DUCT SHALL BE INSULATED WITH A MINIMUM OF 2-3/16" 3/4 LB OR 2" 1.0 LB. DENSITY FIBERGLASS WRAP. PIPING INSULATION (REFRIGERANT OR WATER) SHALL BE A MINIMUM OF 1-1/2" THICK OR PER LATEST NC ENERGY CODE, WHICHEVER IS GREATER.
17. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALUMINUM JACKET PROTECTIVE COVERING FOR ALL REFRIGERANT PIPE INSULATION INSTALLED ON THE BUILDING EXTERIOR.
18. CABLE TRAY HAS RIGHT-OF-WAY OVER DUCTWORK; SEE ELECTRICAL DRAWINGS FOR LOCATION.
19. SIDEWALL SUPPLY REGISTERS AND RETURN GRILLES ARE TO BE INSTALLED PLUMB AND LEVEL ALONG A COMMON ELEVATION. INSULATE BACK OF ALL LAY-IN CEILING SUPPLY REGISTERS AND DIFFUSERS.
20. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN CONNECTIONS TO HVAC UNITS.
21. PROVIDE AUXILIARY CONDENSATE DRAIN PAN FOR ALL AIR HANDLING UNITS, FAN COIL UNITS, FURNACE WITH COOLING COIL, ETC. CONTRACTOR SHALL PROVIDE AND INSTALL WATER LEVEL FLOAT SWITCH IN AUXILIARY DRAIN PAN. FLOAT SWITCH SHALL SHUT DOWN INDOOR AND ASSOCIATED OUTDOOR UNIT WHEN ACTIVATED.
22. CONDENSATE PIPE SHALL BE SCHEDULE 40 PVC OR HARD DRAWN COPPER. INSTALL WITH PROPER SLOPE AND NO SAGS. COPPER PIPE SHALL BE INSULATED WITH 1/2" THICK CLOSED CELL INSULATION. SCHEDULE 40 PVC PIPE SHALL BE INSULATED WITH 1/2" THICK CLOSED CELL INSULATION.
23. ALL DUCTWORK AND PIPING SHALL BE CONCEALED ABOVE CEILINGS, TRUSSES AND SOFFITS EXCEPT IN MECHANICAL ROOMS, UTILITY PLATFORMS AND WHERE NOTED OTHERWISE.
24. CONTROLS CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL WIRING AND CONNECTIONS TO MECHANICAL EQUIPMENT.
25. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL EXTERNAL DISCONNECTS THAT ARE REQUIRED FOR EQUIPMENT PROVIDED UNDER THIS CONTRACT. MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED FUSES FOR ALL FUSED DISCONNECT SWITCHES. COORDINATE DISCONNECT AND FUSE INSTALLATION WITH ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DISCONNECT SWITCHES AND FUSES. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL LINE SIDE WIRING AND CONDUIT TO EXTERNALLY OR INTERNALLY MOUNTED DISCONNECTS AND SHALL PROVIDE AND INSTALL LOAD SIDE WIRING AND CONDUIT FROM EXTERNALLY MOUNTED DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT. SEE "MECHANICAL EQUIPMENT ELECTRICAL CONNECTION DETAIL".
26. ALL EXPOSED GAS PIPE AS SHOWN (INTERIOR OR EXTERIOR) SHALL BE SCHEDULE 40 BLACK STEEL PAINTED OSHA YELLOW OR YELLOW FLEXIBLE STAINLESS STEEL. ALL GAS PIPING SHALL BE LABELED WITH THE TYPE OF GAS AND SUPPLY PRESSURE. GAS PIPING CONCEALED IN WALL CAVITY SHALL NOT BE REQUIRED TO BE PAINTED YELLOW. CONTRACTOR SHALL INSTALL GAS PIPE PER INSTALLATION STANDARD MSS SP-58. M.C. SHALL PROVIDE MAPA PRODUCTS PIPE SUPPORTS WITH E-6000 ADHESIVE OR APPROVED EQUALS.
27. MECHANICAL CONTRACTOR MAY USE ROUND DUCT OF EQUIV. AREA IN LIEU OF RECTANGULAR. COOR'D. ROUND DUCT SIZES W/ ENGINEER. USE INSULATED DOUBLE WALLED SPIRAL DUCT WITH PAINT GRIP FINISH WHERE DUCT IS TO BE EXPOSED.
28. MECHANICAL CONTRACTOR SHALL PROVIDE ENGR. WITH AN AIR BALANCE REPORT INDICATING INITIAL AND FINAL READINGS AT EACH DIFFUSER AND TOTAL CFM PER UNIT. INCLUDE IN DOCUMENTS PROVIDED TO OWNER AT JOB CLOSEOUT.
29. MECHANICAL CONTRACTOR SHALL LABEL ALL EQUIPMENT WITH ENGRAVED PLASTIC LAMINATE, SCREWED TO PIECE OF EQUIPMENT.
30. CONVENTIONAL FURNACES SHALL HAVE TYPE B VENTS, CONDENSING TYPE SHALL HAVE PVC VENTS.
31. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL CO SENSOR FOR ALL GAS FIRED EQUIPMENT.
32. M.C. SHALL PROVIDE 3'-0" MIN. SERVICE CLEARANCE BETWEEN ALL MECHANICAL EQUIPMENT.
33. UNIT CONTROLLER OR PROGRAMMABLE THERMOSTAT SHALL HAVE 7 DAY PROGRAMMING, TIMED OVER-RIDE AND THE ABILITY TO RUN FANS IN OCCUP. MODE & CYCLE FANS IN UN-OCCUP. MODE.
34. THE M.C. & C.C. SHALL PROTECT EQUIPMENT DURING CONSTRUCTION & BRAZING AS REQ'D. CLEAN ALL EQUIP. SURFACES OF GREASE, DIRT, DUST, & OTHER FOREIGN MATERIALS PRIOR TO PROJECT CLOSEOUT.
35. MECHANICAL CONTRACTOR SHALL CHANGE UNIT FILTERS AFTER EACH TWO WEEKS OF RUN TIME, AND SHALL LEAVE ONE CHANGE OF FILTERS FOR OWNER TO USE FOR NEXT FILTER CHANGE.
36. MECHANICAL CONTRACTOR SHALL NOT ALLOW DUCTWORK TO CONTACT LAY-IN LIGHT FIXTURES. ROUTE ACCORDINGLY.
37. MECHANICAL CONTRACTOR SHALL INSTALL DUCT MOUNTED SMOKE DETECTORS WHERE INDICATED ON PLANS. AN EXISTING FIRE ALARM SYSTEM IS PRESENT. DUCT DETECTORS SHALL BE CONNECTED TO EXISTING FIRE ALARM SYSTEM. MECHANICAL CONTRACTOR SHALL COORDINATE CONNECTION TO FIRE ALARM SYSTEM WITH ELECTRICAL CONTRACTOR AND/OR FIRE ALARM CONTRACTOR. M.C. IS RESPONSIBLE FOR DUCT ACCESS DOORS UNDER ALL CIRCUMSTANCES.
38. PROVIDE HEAT PUMP WITH CONTROLS TO PREVENT HEAT STRIP FROM OPERATING WHEN OUTSIDE AIR TEMP. IS ABOVE 50°F. (503.2.4.1.1 NCEC)
39. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL MECHANICAL EQUIPMENT WITH ANY AND ALL FENCING TO ENSURE THAT EQUIPMENT IS INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. MECHANICAL CONTRACTOR SHALL COORDINATE ANY EQUIPMENT YARD FENCING AND CONCRETE EQUIPMENT PAD SIZES WITH FENCING CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO INSTALLATION TO ENSURE EQUIPMENT HAS MINIMUM REQUIRED OPERATIONAL AND SERVICE CLEARANCES AS STATED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL FENCING AND CLEARANCES SHOWN ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EXACT DIMENSIONS AND LOCATIONS. MECHANICAL CONTRACTOR SHALL MAKE ALLOWANCES FOR ANY ADJUSTMENTS THAT ARE REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. NOTIFY ARCHITECT AND ENGINEER IF AN ALTERNATE INSTALLATION METHOD IS REQUIRED.



001.6 CONDENSATE TRAP DETAIL
SCALE: N.T.S.



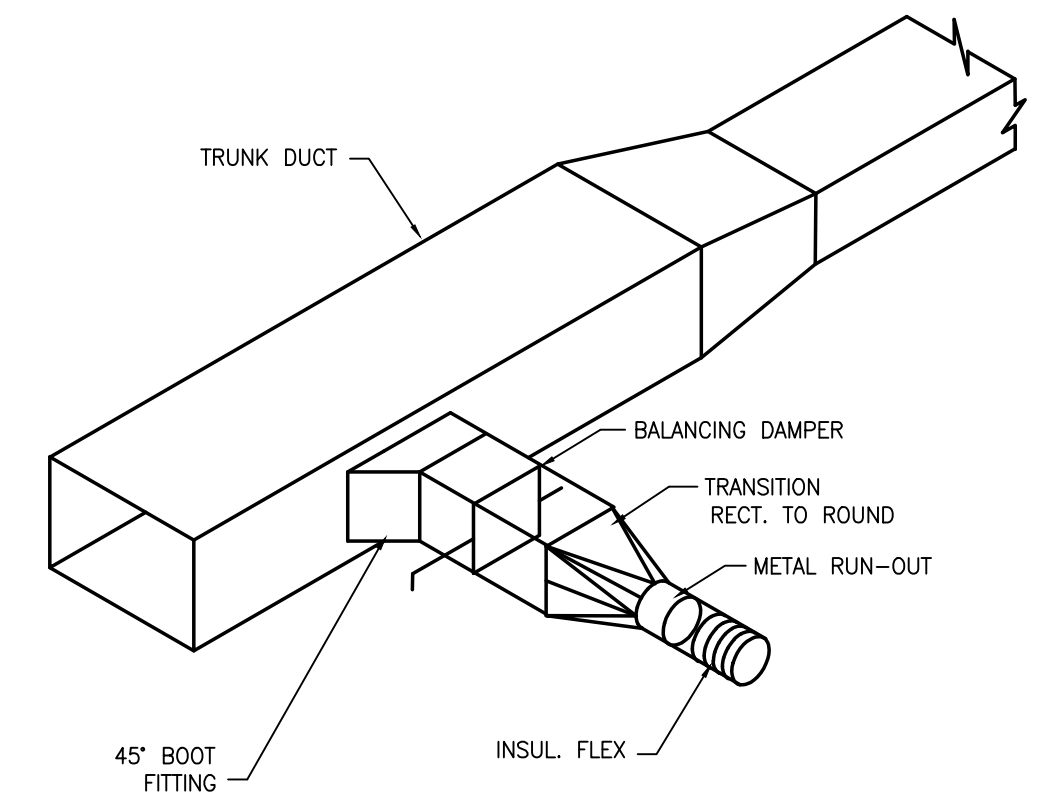
001.5 HEAT PUMP INSTALLATION DETAIL
SCALE: N.T.S.



EXHAUST FAN CONTROL SEQUENCES:
 EMS CONTROL: EMS SHALL INDEX DAMPER OPEN DURING OWNER-SPECIFIED OCCUPIED HOURS AND DRIVE DAMPER CLOSED DURING UNOCCUPIED TIMES AND MAINTAIN POSITION DURING MORNING WARM-UP. (SEE ALSO UNIT SEQ.)
 CO2 CONTROL: EMS SHALL INDEX DAMPER OPEN DURING OWNER-SPECIFIED OCCUPIED HOURS TO COINCIDE WITH UNIT OUTDOOR AIR DAMPER CONTROL AND DRIVE DAMPER CLOSED DURING UNOCCUPIED TIMES. DAMPER SHALL BE INDEXED OPEN REGARDLESS OF SCHEDULE UPON SPACE CO2 SENSOR SENSING A CO2 LEVEL ABOVE SET POINT (700 PPM).

001.4 OUTSIDE AIR DAMPER CONTROL
SCALE: N.T.S.

001.3 LOW PRESSURE BRANCH CONNECTION
SCALE: N.T.S.



MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
METHOD OF COMPLIANCE:

- PRESCRIPTIVE ENERGY COST BUDGET
- CLIMATE ZONE: IBC - 3
- THERMAL ZONE:
WINTER DRY BULB: 18°F
SUMMER DRY BULB: 93°F
- INTERIOR DESIGN CONDITIONS:
WINTER DRY BULB: 70°F
SUMMER DRY BULB: 75°F
RELATIVE HUMIDITY: 50%
- BUILDING HEATING LOAD: 3,671.0 MBH
BUILDING COOLING LOAD: 5,887.0 MBH
- MECHANICAL SPACE CONDITIONING SYSTEM:
UNITARY
DESCRIPTION OF UNIT: 4-PIPE CHILLER/BOILER (EXISTING)
HEATING EFFICIENCY: EXISTING TO REMAIN
COOLING EFFICIENCY: EXISTING TO REMAIN
HEAT OUTPUT OF UNIT: SEE SCHEDULE
COOLING OUTPUT OF UNIT: SEE SCHEDULE
- BOILER:
TOTAL BOILER OUTPUT: (if oversized, state reason)
CHILLER:
TOTAL CHILLER OUTPUT: (if oversized, state reason)
- LIST EQUIPMENT EFFICIENCIES:
EQUIPMENT SCHEDULES WITH MOTORS (Not used for mechanical systems)
MOTOR HORSEPOWER:
NUMBER OF PHASES:
MINIMUM EFFICIENCY:
MOTOR TYPE:
OF POLES:

DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the 2012 North Carolina Energy Conservation Code.

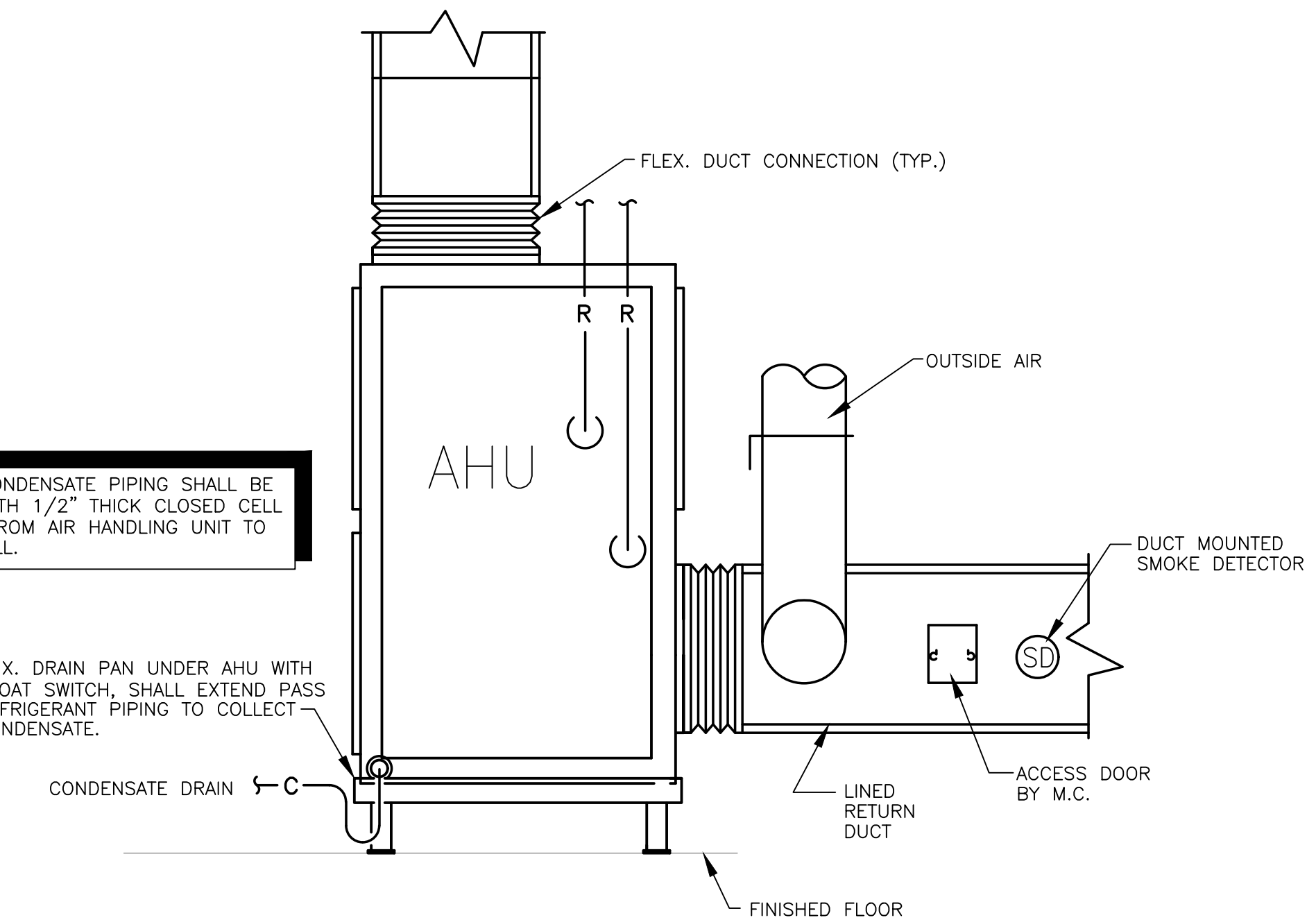
SIGNED: *D. Wilson Pau*
 NAME: D. Wilson Pau, P.E.
 TITLE: Owner/Engineer

CONTROLS - BID DESCRIPTIONS:

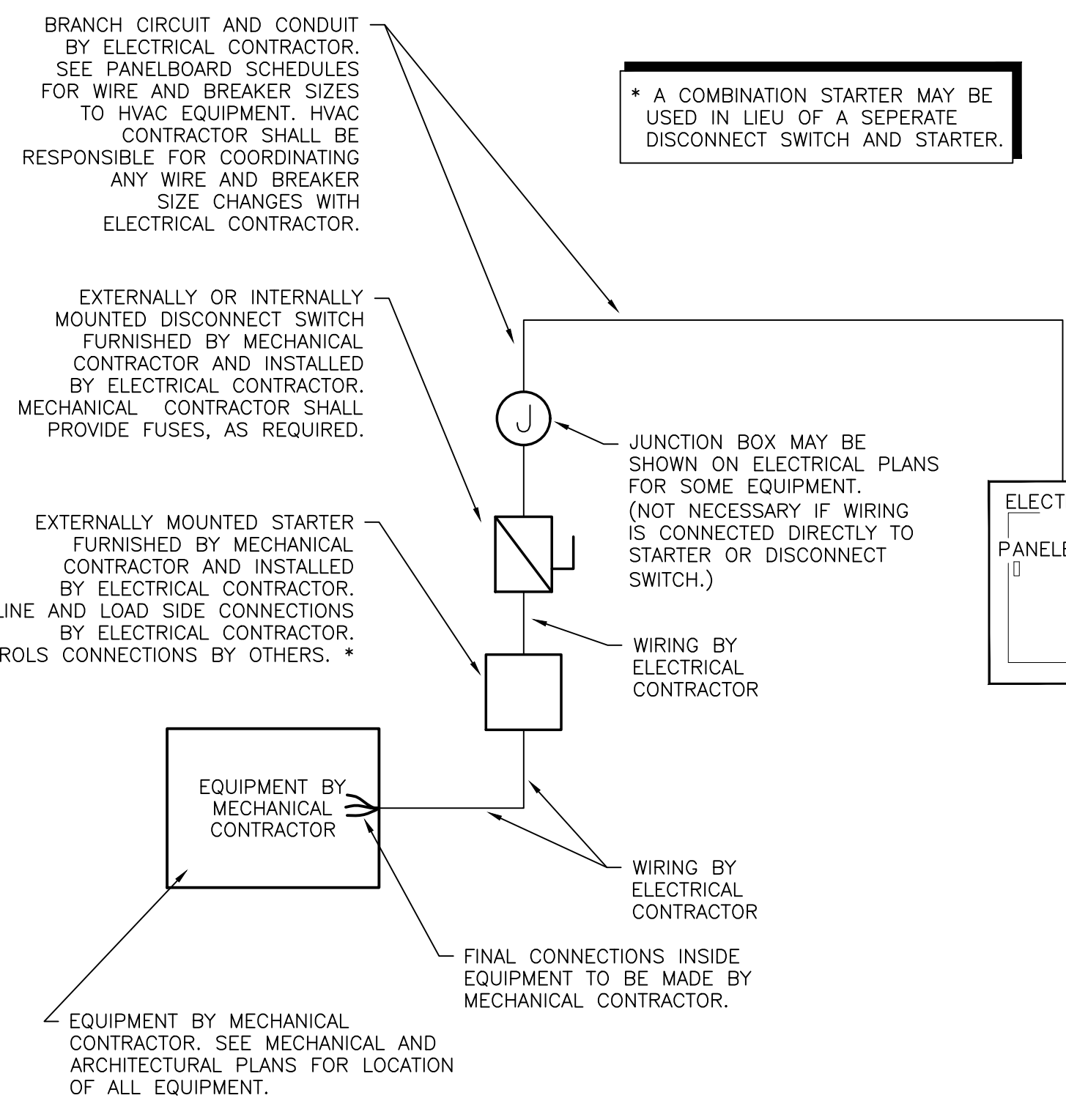
BASE BID:
 MECHANICAL CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PROGRAMMING, SOFTWARE AND WARRANTIES NECESSARY TO TIE THE NEW EQUIPMENT LOCATED IN THE SCIENCE CLASSROOM ADDITION AND ANY NEW EQUIPMENT IN THE NEW AREAS OF THE EXISTING BUILDING INTO THE EXISTING JCI CONTROLS SYSTEM. THE NEW SCIENCE CLASSROOM EQUIPMENT SHALL UTILIZE JCI COMPATIBLE TRIDIUM CONTROLLERS SUCH THAT IT WILL BE A FULLY FUNCTIONAL SINGLE SYSTEM. ALL REPLACEMENT EQUIPMENT IN THE EXISTING AREAS SHALL TIE BACK TO THE EXISTING JCI CONTROLLERS, EXCEPT THE HW CONTROL VALVES SHALL BE CHANGED TO MODULATING VALVES. MODIFY EXISTING EQUIPMENT WITH EXPANSION CARDS, NEW GRAPHICS AND PROGRAMMING AS REQUIRED FOR SEAMLESS OPERATION. CONTROL CONTRACTOR SHALL PROVIDE NEW BACNET BUS AS PART OF THIS CONTRACT.

GYM ALTERNATE BID:
 MECHANICAL CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PROGRAMMING, SOFTWARE AND WARRANTIES NECESSARY TO TIE THE NEW EQUIPMENT LOCATED IN NEW GYM ADDITION INTO THE JCI TRIDIUM CONTROLS SYSTEM WITH THE NEW SCIENCE CLASSROOM EQUIPMENT AS INDICATED IN THE BASE BID.

001.1 AHU DETAIL
SCALE: N.T.S.

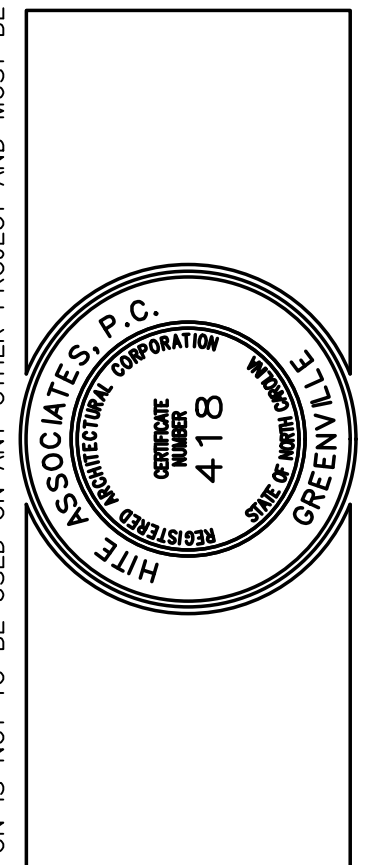


001.2 ELECTRICAL CONNECTION DETAIL
SCALE: N.T.S.



1	12/01/23	REVISION # 6
2	11/27/23	REVISION # 4
3	11/27/23	REVISION # 3
4	11/27/23	REVISION # 2
5	11/09/23	REVISION # 1

Hite associates
 ARCHITECTURE / PLANNING / TECHNOLOGY
 2600 Meridian Drive / Greenville, NC 27834 / tel (252) 757-0333



New Additions & Renovations to
West Carteret High School
 4700 Country Club Road, Morehead City NC 28577
 Carteret County Schools / North Carolina

Project No. 22112
 Date: 05 Oct 2023
 Drawing no. **M 001**

ENGINEERING
 SOURCE OF NC, P.A.
 102-40 Regency Blvd, Greenville, NC 27834
 E-Mail Address: general@hiteassociates.com
 Tel (252) 438-0338 • Fax (252) 438-0462 • TDD (252) 438-0338

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