

GENERAL MECHANICAL PIPING NOTES

- 1. CONTRACTOR TO SLOPE ALL CONDENSATE DRAIN PIPING ABOVE CEILING, UNDER SLAB, AND BELOW GRADE - 1/8" PER FOOT (MINIMUM)
2. IN MECHANICAL ROOMS AND ON MECHANICAL PLATFORMS, ROUTE ALL AHU UNIT CONDENSATE DRAIN PIPING TO CLOSEST FLOOR OR HUB DRAIN UNLESS SHOWN OTHERWISE
3. ROUTE 3/4" CONDENSATE DRAIN PIPES FROM EACH AHU UNIT TO CLOSEST HUB DRAIN UNLESS NOTED OTHERWISE AS SHOWN ON AHU UNIT DETAILS. WHERE PIPING IS ROUTED TO FLOOR DRAINS, SECURE PIPING TO FLOOR AND PROTECT FROM DAMAGE WITH ANGLE IRON. COORDINATE FLOOR AND HUB DRAIN LOCATIONS PRIOR TO ROUGH-IN BETWEEN GENERAL CONTR. AND PLUMBERS CONTRACTOR, SO THAT DRAINS DO NOT END UP UNDER HOUSEKEEPING PADS, THAT FLOORS ARE CORRECTLY SLOPED, ETC.
4. REFER TO STRUCTURAL DRAWINGS AND DETAILS FOR PERMISSIBLE LOCATIONS AND METHODS FOR HANGING PIPING FROM STRUCTURE. ALL PIPE HANGERS TO BE WITHIN 6" OF PANEL POINTS OF JOISTS. DO NOT WELD PIPE HANGERS/SUPPORTS TO STRUCTURE WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER AND GENERAL CONTRACTOR.

GENERAL MECHANICAL DUCTWORK NOTES

- 1. THE DRAWINGS SHOW THE LOCATION AND ARRANGEMENT OF PIPING, DUCTS, AND EQUIPMENT, TOGETHER WITH DETAILS OF CONNECTIONS OF CERTAIN PRINCIPAL ITEMS. THE LAYOUT SHOWN SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE UNLESS OTHERWISE NOTED. THIS CONTRACTOR SHALL REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELECTRICAL DRAWINGS AND SHALL COOPERATE FULLY WITH OTHER CONTRACTORS AND TRADES WHILE INSTALLING DUCTS, PIPING, AND OTHER EQUIPMENT BECAUSE OF CLOSE SPACE LIMITS. IN CASE OF CONFLICT, NOTIFY DESIGNER BEFORE PROCEEDING WITH INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND LOCATIONS OF PARTITION WALLS, DOORS, CHASES, CASEWORK, ETC. DO NOT SCALE MECHANICAL DRAWINGS FOR SUCH DIMENSIONS.
2. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, OR RECOMMENDED BY THE EQUIPMENT MANUFACTURER, WHETHER OR NOT THEY ARE SPECIFICALLY SHOWN OR SPECIFIED.
3. DUCTWORK SIZES INDICATED ON DRAWINGS ARE FREE IN SIDE DIMENSIONS.
4. ALL VALVES, DAMPERS, CONTROLS, AND OTHER ITEMS REQUIRED FOR OPERATION OR MAINTENANCE ARE TO BE ACCESSIBLE.
5. ALL SLEEVES, OUTLET BOXES, AND OTHER ROUGH-INS FOR SUCH ITEMS AS FIRE DAMPERS, PIPE PENETRATIONS, LOUVERS, AND CONTROL ITEMS SHALL BE INSTALLED AS THE BUILDING CONSTRUCTION PROGRESSES.
6. PROVIDE AND INSTALL VOLUME CONTROL DAMPERS AT ALL SUPPLY MAIN AND BRANCH DUCT TAKE-OFFS.
7. PROVIDE AND INSTALL DUCT ACCESS DOORS AT ALL SMOKE DAMPERS, FIRE DAMPERS, AND DUCT SMOKE DETECTORS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR DUCT SMOKE DETECTOR LOCATIONS.
8. THIS CONTRACTOR SHALL TAKE FIELD MEASUREMENTS BEFORE FABRICATING ANY DUCTS TO ENSURE THAT DUCT SIZES SHOWN WILL FIT INTO AVAILABLE SPACE. IN CASE OF CONFLICT, NOTIFY THE DESIGNER BEFORE PROCEEDING.
9. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
10. COORDINATE EXACT LOCATION FOR ALL CEILING DIFFUSERS/GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN AND ELECTRICAL CONTRACTOR'S LIGHTING LAYOUT.
11. ALL THERMOSTATS AND OTHER FIELD DEVICES MOUNTED ON WALLS TO BE PROTECTED FROM DAMAGE AS REQUIRED - INSTALL LEAK COVERS, WIRE GUARDS, OR SIMILARS AS REQUIRED. COORDINATE CONDITIONS IN THE FIELD.
12. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TO THE GENERAL CONTRACTOR THE QUANTITY, SIZE AND LOCATIONS OF ALL ACCESS DOORS IN WALLS, BRYWALL/CEILINGS, ETC. FOR ACCESS TO VALVES, BALANCE DAMPERS OR OTHER EQUIPMENT AS REQUIRED. COORDINATE THIS WORK WITH THE REFLECTED CEILING PLANS. ALL VALVES OR OTHER DEVICES LOCATED ABOVE THE CEILING SHALL BE LOCATED IN ACCESSIBLE CEILINGS WHENEVER POSSIBLE. VERIFY LOCATION OF ALL VALVES IN INACCESSIBLE CEILINGS OR CHASES WITH THE ARCHITECT PRIOR TO INSTALLATION.
13. COORDINATE EXACT SIZE, LOCATION, APPEARANCES, ETC. FOR ALL ROOF OPENINGS WITH GENERAL CONTRACTOR.
14. REFER TO STRUCTURAL DRAWINGS AND DETAILS FOR PERMISSIBLE LOCATIONS AND METHODS FOR HANGING DUCTWORK FROM STRUCTURE. ALL DUCTWORK HANGERS TO BE WITHIN 6" OF PANEL POINTS OF JOISTS. DO NOT WELD DUCT HANGERS/SUPPORTS TO STRUCTURE WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER AND GENERAL CONTRACTOR.
15. COORDINATE EXACT SIZES REQUIRED FOR ALL OPENING FOR DUCTWORK AND PIPING WITH SPACE REQUIREMENTS, FIRE DAMPER INSTALLATION INSTRUCTIONS, STRUCTURAL DRAWINGS, AND THE GENERAL CONTRACTOR, PRIOR TO RAMPING FOR THE PENETRATIONS.
16. THE MECHANICAL CONTRACTOR FURNISH AND INSTALL ACCESS PANELS IN CEILING AND WALLS WHERE ACCESS TO VALVES, BALANCE DAMPERS, FIRE DAMPERS, ETC. IS REQUIRED. COORDINATE LOCATION OF ACCESS PANELS WITH ARCHITECT AND ALL OTHER TRADES.

MECHANICAL SYMBOL SCHEDULE

Table with 2 columns: Symbol and Description. Includes symbols for ceiling supply diffuser, ceiling return grille, ceiling exhaust grille, sidewall or side of duct supply diffuser, sidewall or side of duct return grille, rectangular duct, round or spiral duct, duct balance damper, duct transition, duct takeoff at 45 degrees, duct square elbow with turning vanes, condensate drain piping, and 1 hour fire wall.

2018 NC ENERGY CODE COMMISSIONING REQUIREMENT: PER 2018 NC ENERGY CODE SECTION C604, THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING SYSTEM COMMISSIONING. THE MECHANICAL CONTRACTOR SHALL HIRE EITHER A CERTIFIED COMMISSIONING PROFESSIONAL OR AN ENGINEER REGISTERED IN NC TO PROVIDE COMMISSIONING PER THE REQUIREMENTS IN THE NC ENERGY CODE (SECTION C604). AT THE END OF THE PROJECT, THE OWNER AND AHJ SHALL BE PROVIDED WITH A SEALED STATEMENT OF COMPLETION, PER THE REQUIREMENTS / TEMPLATE SHOWN IN APPENDIX C1 OF THE ENERGY CODE. CONTRACTOR SHALL PROVIDE SUBMITTALS SHOWING PROPOSED COMMISSIONING PLAN, TEMPLATES, DOCUMENTS, AND PEOPLE PERFORMING COMMISSIONING, FOR APPROVAL BY THE PROJECT TEAM PRIOR TO CONSTRUCTION. MECHANICAL CONTRACTOR SHALL PROVIDE ALL SUPPORT MATERIALS, MANPOWER, EQUIPMENT, INFORMATION, ACCESS TO VENDORS AND TECHNICIANS FOR EQUIPMENT FURNISHED AND INSTALLED, ETC. AS REQUIRED, SO THAT COMMISSIONING AUTHORITY CAN COMPLETE THEIR WORK. NOTE: ALL BUILDINGS LESS THAN OR EQUAL TO 10,000 SQUARE FEET OF CONDITIONED FLOOR AREA ARE EXEMPT FROM THE COMMISSIONING REQUIREMENTS.

GRILLE & DIFFUSER SCHEDULE table with columns: SYMBOL, TYPE, LOCATION, MANUFACTURER, MODEL, SIZE, CFM, REMARKS. Lists various grilles and diffusers for supply and return air.

ALTERNATE #M1 - HEAT PUMPS AND AHU'S BY TRANE ONLY. Split System Heat Pump Schedule table with columns: Tag, Brand, Model #, SEER, Heat Pump Stages, Cooling Capacity @AHRI, Heating Capacity @47F, Heating Capacity @17F, COP @47F, COP @17F, HSPF, HSPF (Btu/Watt), V/PhHz, MCA (A), MOCP (A). Includes notes on installation and equipment.

ALTERNATE #M1 - HEAT PUMPS AND AHU'S BY TRANE ONLY. Split System Air Handler Schedule table with columns: Tag, Brand, Model #, Nominal Capacity (tons), Supply Air (cfm), Outdoor Air (cfm), Variable Speed, Fan Amp (max), Electric Heat (kW) @ 208V, V/PhHz, MCA (A), MOCP (A). Includes notes on MERV filters and equipment.

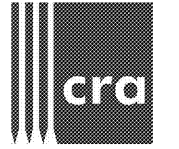
NOTES: 1. ALL GRILLES / DIFFUSERS SERVING LOCKERS, KITCHEN, TOILETS AND JAN. CLOSETS TO HAVE ALUMINUM CONSTRUCTION. 2. ALL GRILLE DESIGNATIONS MAY NOT BE UTILIZED ON THIS PROJECT. 3. BASIS OF DESIGN - PRICE, EQUIVALENT PRODUCTS BY CARNES, TTUS, AND KRUEGER. 4. ALL GRILLES / DIFFUSERS SHOWN WITH RADIATION DAMPERS TO HAVE STEEL CONSTRUCTION.

FAN SCHEDULE table with columns: FAN #, TYPE, LOCATION, CFM, S.P., RPM, HP, VOLT-PH, MFG. & MODEL, SONES, REMARKS. Lists exhaust fans for roof and closet.

NOTE: BASIS OF DESIGN - GREENHECK; EQUIVALENT PRODUCTS BY CARNES, COOK & PENN. REVISIONS: 1. BACKDRAFT DAMPER 2. VARI-GREEN MOTOR WITH VARIABLE SPEED CONTROL (UNIT MOUNTED) 3. ON PROGRAM CONTROL (TO RUN WHEN BUILDING IS IN 'OCCUPY' MODE) / 'OFF' OTHERWISE) - INTERLOCK WITH FURNACE AHU-1 4. DISCONNECT 5. BIRD SCREEN

EQUIPMENT SCHEDULE table with columns: ITEM, DESCRIPTION. Lists dehumidifiers and condensate pumps.

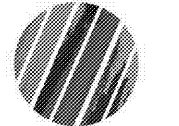
Order Plans



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Renovation of 920 Corporate Drive Orange County Schools 920 Corporate Drive Hillsborough, North Carolina



no. revisions

MECHANICAL SUMMARY AND SCHEDULES

sheet MO.1

project no. 2019016.00

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