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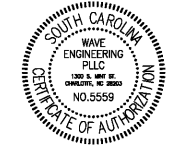
Order Plans @

MECHANICAL LEGEND	
—S—	SCHEDULE NUMBER
—D—	DIFFUSER DESIGNATION AND CFM
TYP. OF	NUMBER OF SIMILAR DEVICES
—G—	NATURAL GAS PIPING
—CD—	CONDENSATE PIPING
(MC)	MANUAL VOLUME DAMPER
(M)	MOTORIZED DAMPER
(B)	BIPOLAR IONIZATION UNIT
(T)	THERMOSTAT
(TS)	TEMPERATURE SENSOR
(CS)	COMBINATION CARBON MONOXIDE NITROGEN DIOXIDE SENSOR
(H)	HUMIDITY SENSOR
(R)	REFRIGERANT MONITORING DEVICE
(S)	STANDARD 4-WAY BLOW SUPPLY DIFFUSER
(-S)	3-WAY BLOW SUPPLY DIFFUSER
(-S-)	2-WAY BLOW SUPPLY DIFFUSER
(-S-)	1-WAY BLOW SUPPLY DIFFUSER
(L)	LINEAR DIFFUSER
(12x12)	MAIN TRUNK AND BRANCH DUCT TAKEOFF WITH VOLUME DAMPER
(RF)	ROOF EXHAUST FAN
(R)	RETURN OR EXHAUST AIR FLOW
(S)	SUPPLY AIR FLOW
(G)	RETURN OR TRANSFER GRILLE EXHAUST GRILLE
(RD)	RADIATION DAMPER
(FD)	FIRE DAMPER
(SD)	SMOKE DAMPER
(FSD)	FIRE/SMOKE DAMPER
(-)	FSD IF NOT NOTED
(L)	LOUVERED DOOR (SEE ARCHITECTURAL DRAWINGS)
(U)	1" DOOR UNDER CUT
(SD)	DUCT MOUNTED SMOKE DETECTOR

### GENERAL MECHANICAL NOTES

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT IN STRICT ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, AND PER MANUFACTURER'S DIRECTIONS.
- THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS SHALL REVIEW AND BE FAMILIAR WITH ALL DRAWINGS ASSOCIATED WITH THIS PROJECT INCLUDING THE ARCHITECTURAL, CIVIL, STRUCTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS. SPECIFIC REQUIREMENTS DEPICTED ON ONE DRAWING PAGE OR IN ONE PORTION OF THE DRAWINGS SHALL BE APPLICABLE TO ALL DRAWING PAGES AND ALL PORTIONS OF THE DRAWINGS. SHOULD A CONFLICT OR DISCREPANCY BE DISCOVERED DURING THE BIDDING OR NEGOTIATION PHASE, THE GENERAL CONTRACTOR, SUBCONTRACTOR OR MATERIAL SUPPLIER SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND REQUEST ADDITIONAL INFORMATION AND CLARIFICATION. FAILURE TO DO SO WILL NOT RELIEVE THE GENERAL CONTRACTOR, SUBCONTRACTOR OR MATERIAL SUPPLIER FROM THE REQUIREMENTS OF ALL PORTIONS OF THE DRAWINGS.
- THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS, LICENSE, INSPECTIONS, APPROVALS, AND FEES.
- THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. ANY BREAKDOWN OCCURRING IN THE FIRST YEAR SHALL BE AT NO EXPENSE TO THE OWNER. ALL REFRIGERATION COMPRESSORS SHALL HAVE A FIVE YEAR (PARTS ONLY) WARRANTY, AND ALL NATURAL GAS HEAT EXCHANGERS SHALL HAVE A TEN YEAR (PARTS ONLY) WARRANTY.
- DRAWINGS ARE SCHEMATIC, NOT ALL RISES AND DROPS ARE SHOWN. DO NOT SCALE DRAWINGS FOR MEASUREMENTS. DRAWINGS THAT HAVE NOT RECEIVED PERMIT APPROVAL FROM AUTHORITY HAVING JURISDICTION SHOULD NOT BE USED FOR FINAL OR GUARANTEED PRICING. ANY PRICING BASED ON UNAPPROVED DRAWINGS SHOULD BE NOTED AS PROVISIONAL. CONTRACTOR ACCEPTS ALL RESPONSIBILITY FOR GUARANTEED PRICING BASED ON UNAPPROVED DRAWINGS.
- WHEN EXISTING EQUIPMENT IS REUSED CONTRACTOR SHALL ENSURE EQUIPMENT IS IN GOOD WORKING ORDER AND SHALL REPORT TO THE OWNER ANY REPAIRS REQUIRED TO BRING EQUIPMENT TO GOOD WORKING ORDER PRIOR TO TURN OVER.
- TRADES ARE TO COORDINATE THEIR WORK WITH ALL OTHER TRADES TO AVOID CONFLICTS. GENERALLY, DUCTWORK SHALL BE KEPT AS HIGH AS POSSIBLE. MECHANICAL CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS INCLUDING BUT NOT NECESSARILY LIMITED TO ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL, ELECTRICAL, PLUMBING AND ENTIRE PROJECT MANUAL. MECHANICAL CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN THE SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF THE MECHANICAL WORK. MECHANICAL CONTRACTOR SHALL FULLY COORDINATE MECHANICAL WORK WITH THE INSTALLATION WORK BY ALL OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE MECHANICAL INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS AND SHALL FURNISH EQUIPMENT WIRING FOR VOLTAGES SHOWN THEREIN.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO ORDERING ANY EQUIPMENT OR MATERIALS. ALL SUSPENDED MATERIALS AND EQUIPMENT SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR ITS SUPPORT SYSTEM.
- CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER OF RECORD.
- CONTRACTOR SHALL KEEP A SET OF MARKED UP PRINTS WITH ANY FIELD CHANGES MADE DURING CONSTRUCTION TO CREATE AN "AS-BUILT" SET OF PRINTS TO BE TURNED OVER TO THE OWNER AT THE COMPLETION OF THE PROJECT. NOTE PER ENERGY CODE SECTION 3 DESIGN SET POINTS OF EQUIPMENT AT A MAXIMUM OF NO LOWER THAN 75° IN COOLING AND NO HIGHER THAN 72° IN HEATING.
- IN THE EVENT CONTRACTOR SUBSTITUTES ALTERNATE MANUFACTURERS THEN CONTRACTOR SHALL COORDINATE ALL ASPECTS OF SUBSTITUTED EQUIPMENT WITH ALL TRADES INCLUDING BUT NOT LIMITED TO GAS SERVICE, ELECTRICAL SERVICE, STRUCTURAL LOADS AND OPENINGS, ETC.
- PROVIDE ACCESS PANELS IN CEILINGS AND WALLS TO ALLOW ACCESS TO VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. MINIMUM ACCESS SIZE - 12"x12", UNLESS LIMITED BY PHYSICAL CONSTRAINTS.
- ALL CONDENSATE DRAIN PIPING SHALL BE TYPE L HARD DRAWN COPPER ASTM B-88 WITH TYPE DWV FITTINGS, SMOKE DAMPERS, OR SCHEDULE 40 PVC, ASTM D1785, WITH TYPE DWV FITTINGS, ASTM D2672. COPPER DRAIN PIPE AND FITTINGS SHALL BE JOINED USING 95-5 SILVER SOLDER AND PVC PIPE AND FITTINGS SHALL BE JOINED USING SOLVENT CEMENT. PROVIDE TRAP WITH CLEANOUT AND UNIONS. SLOPE CONDENSATE DRAIN LINES A MINIMUM OF 1/8" PER FOOT AWAY FROM THE MECHANICAL EQUIPMENT. PROVIDE AUXILIARY WATER LEVEL MONITORING DEVICE PER SECTION 3.2.3. UNLESS OTHERWISE NOTED ROUTE CONDENSATE AT FULL SIZE OF EQUIPMENT CONNECTION FROM EQUIPMENT TO DRAIN WELL OR SITE STORM. IN CASES WHERE NEITHER IS AVAILABLE DISCHARGE TO NEAREST MOP SINK OR UTILITY SINK. PROVIDE CONDENSATE PUMP AS REQUIRED BY FIELD CONDITIONS.
- SUBMITTALS: AS A MINIMUM, THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL ITEMS SCHEDULED ON THE DRAWINGS, UNLESS DIRECTED OTHERWISE.
- MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- OUTSIDE AIR FOR AIR CONDITIONING UNITS SHALL BE A MINIMUM OF 10 FEET FROM EXHAUST FANS, EXHAUST OPENINGS AND PLUMBING VENTS.
- ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.
- ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA AND ASHRAE STANDARDS. DUCTWORK SHALL BE FABRICATED OF GALVANIZED STEEL FOR A PRESSURE RATING OF (-) 2" WG FOR RETURN AND (+) 2" WG FOR SUPPLY. EXHAUST DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA AND ASHRAE STANDARDS. EXHAUST DUCTWORK SHALL BE FABRICATED OF GALVANIZED STEEL FOR A PRESSURE RATING OF 1" WG IN EXCESS OF THE SYSTEM FAN TOTAL STATIC PRESSURE RATING AT DESIGN FLOW RATE, UNLESS NOTED OTHERWISE.
- SUPPORT DUCTWORK FROM BUILDING STRUCTURE IN ACCORDANCE WITH SMACNA STANDARDS.
- RADIUSED DUCTWORK BOWS SHALL HAVE A CENTERLINE RADIUS OF 1.5 TIMES THE DUCT WIDTH (OR DIAMETER) UNLESS NOTED OTHERWISE.
- ALL FILTERED BOWS (RECTANGULAR AND ROUND) SHALL HAVE DOUBLE THICKNESS TURNING VANES INSTALLED UNLESS NOTED OTHERWISE ON DRAWINGS.
- SECURE AND SEAL ALL JOINTS LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK USING WELDMENTS, MECHANICAL FASTENERS WITH SEALS OR GASKETS OR MASTICS, MESH AND MASTIC SEALING SYSTEMS OR TAPE. SEALS AND MASTICS MUST BE LISTED AND LABELED IN ACCORDANCE WITH UL181A OR UL181B.
- DUCT CONNECTIONS TO FANS AND OTHER AIR DISTRIBUTION EQUIPMENT SHALL BE MADE USING MECHANICAL FASTENERS WITH SEALS, MASTICS OR GASKETS. ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION BETWEEN EQUIPMENT AND BUILDING STRUCTURE.
- SUPPLY AIR AND RETURN AIR DUCTWORK SHALL BE INSULATED WITH A MINIMUM 2" THICK, 3/4 LB. PER CUBIC FOOT, FIBERGLASS DUCTWRAP, WITH FOIL FACED VAPOR BARRIER AND AN INSTALLED THERMAL RESISTANCE OF 6.0 (R VALUE). ALTERNATE INSULATION FOR RECTANGULAR SUPPLY AND RETURN DUCT SHALL BE AN INTERIOR DUCT LINING WITH A MINIMUM 1-1/2" THICK, 1.5 LB. PER CUBIC FOOT DUCT LINER. DUCT LINER SHALL CONTAIN AN ANTI-MICROBIAL AGENT WITHIN THE DUCT LINING ITSELF. MINIMUM "R" VALUE SHALL BE R-6.3. INCREASE DUCT SHEET METAL SIZE AS REQUIRED TO MEET INSIDE CLEAR DIMENSIONS GIVEN ON DRAWINGS.
- ALL DUCT INSULATION SHALL MEET THE MINIMUM REQUIREMENTS OF U.L. 181 FOR FLAME SPREAD AND SMOKE DEVELOPMENT, AND SHALL BE U.L. LISTED.
- TRANSFER DUCTS SHALL BE INTERNALLY LINED TO AID IN CANCELING NOISE TRANSFER.
- EXHAUST DUCTWORK SHALL BE INSULATED UNLESS NOTED OTHERWISE.
- EXPOSED DUCTWORK SHALL BE INTERNALLY LINED AND WHEN ROUND SHALL BE SPIRAL CONSTRUCTION. STANDING SEAM ROUND DUCT WORK SHALL NOT BE ALLOWED WHEN VISIBLE. INTERNAL INSULATION EXPOSED TO AIR STREAM SHALL BE CLOSED CELL ELASTOMERIC MATERIAL.
- COORDINATE LOCATIONS OF GRILLES, REGISTERS AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN. LOCATIONS SHOWN ARE APPROXIMATE, ADJUST LOCATIONS IN THE FIELD AS REQUIRED BY CONSTRUCTION CONSTRAINTS.
- PROVIDE EACH SUPPLY AIR OUTLET OR DIFFUSER WITH ITS OWN BALANCING DEVICE. DEVICES CAN BE LOCATED IN DUCTWORK OR SUPPLY AIR DEVICE ITSELF.
- ALL MANUAL BALANCING DAMPERS SHALL HAVE A LOCKING QUADRANT.
- FLEXIBLE DUCTWORK SHALL BE CLASSIFIED UNDER UL 181. PROVIDE A MINIMUM OF 3 FEET IN LENGTH AND A MAXIMUM OF 10 FEET IN LENGTH. SUPPORTED WITH 3" GALVANIZED SHEET METAL STRAPS AT 4 FEET CENTERS (MAX). FLEXIBLE DUCT RUNOUTS SHALL BE ROUND DUCTWORK REINFORCED WITH A WIRE HELIX AND INSULATED WITH 1-1/2" THICK FIBERGLASS (WITH A 6.0 "R" VALUE MINIMUM) COVERED WITH FLAMEPROOF VAPOR BARRIER OF ALUMINUM METALIZED POLYESTER FILM LAMINATED TO GLASS MESH. DUCT SHALL BE ATCO'S UPC #036 VALUFLEX CLASS 1 AIR DUCT OR EQUAL. CONNECTIONS TO DUCT MAINS SHALL BE MADE WITH FITTINGS PROVIDED WITH TWIST RINGS, BUTTERFLY DAMPERS, LOCKING HAND QUADRANTS, AND INSULATION GUARDS.
- CONTRACTOR SHALL FURNISH, ROUTE, AND INSTALL CONTROL WIRING FOR ALL MECHANICAL SYSTEMS. FOR SYSTEMS WITH MULTIPLE COMPONENTS CONTRACTOR IS RESPONSIBLE FOR ALL WIRING BETWEEN COMPONENTS.
- INSTALL THERMOSTATS AT 4'-0" A.F.F. UNLESS NOTED OTHERWISE. THERMOSTAT LOCATIONS SHALL BE COORDINATED WITH FINAL LOCATIONS OF WALL-MOUNTED ARCHITECTURAL AND ELECTRICAL EQUIPMENT. FINAL LOCATIONS MUST BE APPROVED BY THE ARCHITECT AND OWNER. THERMOSTATS SHALL NOT BE INSTALLED ON EXTERIOR WALLS IF INTERIOR WALLS ARE AVAILABLE WITHIN SPACE SERVED BY THERMOSTAT. SHOULD THE THERMOSTAT REQUIRE INSTALLATION ON AN EXTERIOR WALL AN INSULATED BACKING PLATE MUST BE PROVIDED TO PREVENT FALSE READINGS BY THE THERMOSTAT.
- MECHANICAL CONTRACTOR SHALL PROVIDE A COMPLETE TEST AND BALANCE REPORT OF THE HVAC SYSTEMS PREPARED BY AN INDEPENDENT TEST AND BALANCE CONTRACTOR. A COPY OF THE TEST AND BALANCE REPORT SHALL BE TRANSMITTED TO THE LOCAL CODE OFFICIALS AS REQUIRED. THE TEST AND BALANCE REPORT SHALL INCLUDE COIL LEAVING TEMPERATURE, OUTSIDE AIR TEMPERATURE, RETURN AIR TEMPERATURE, AND BOTH OUTDOOR AND INDOOR HUMIDITY READINGS.
- CONTRACTOR SHALL PROVIDE A COMPLETE COMMISSIONING REPORT OF THE HVAC SYSTEMS PREPARED BY AN INDEPENDENT COMMISSIONING CONSULTANT AS REQUIRED BY THE ENERGY CONSERVATION CODE IN EFFECT. A COPY OF THE COMMISSIONING REPORT SHALL BE TRANSMITTED TO THE LOCAL CODE OFFICIALS AS REQUIRED.
- ALL PENETRATIONS THROUGH EXTERIOR WALLS & ROOF SHALL BE FLASHED & COUNTERFLASHED IN A WATERPROOF MANNER. (COLOR TO MATCH EXTERIOR).
- CONTRACTOR SHALL VERIFY LOCATION OF ALL PENETRATIONS FOR RELIEF HOODS, OUTSIDE AIR HOODS, LOUVERS, AND WALL CAPS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
- PENETRATIONS OF RATED WALLS, PARTITIONS AND FLOORS OF NON-COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH NONCOMBUSTIBLE MATERIALS. PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOOR OF COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH MATERIALS EQUIVALENT TO TWO INCHES OF WOOD. FIRESTOPPING SHALL COMPLY WITH ASTM E-814. CONTRACTOR SHALL COORDINATE PENETRATIONS WITH ARCHITECTURAL PLANS AND SHALL PROVIDE FIRE DAMPERS AT EVERY PENETRATION OF A RATED WALL AND SMOKE DAMPERS WHERE ARCHITECTURAL RATINGS REQUIRE INCLUDING THE PENETRATION OF CORRIDOR ENCLOSURES. WHERE BOTH A FIRE AND SMOKE DAMPER ARE REQUIRED A COMBINATION FIRE SMOKE DAMPER MAY BE PROVIDED. PROVIDE RADIATION DAMPERS FOR ALL AIR DEVICES PENETRATING A RATED CEILING. LISTING OF DAMPERS SHALL MEET OR EXCEED RATING OF ASSEMBLY WHERE INSTALLED.
- REFRIGERANT PIPING, NOT SHOWN ON PLANS, SHALL BE SIZED & INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTALLATION INSTRUCTIONS AND LOCAL CODES.
- KITCHEN HOOD EXHAUST DUCT SHALL BE 16 GAUGE CARBON STEEL OF FACTORY FABRICATED STAINLESS STEEL. ALL JOINTS AND SEAMS SHALL BE CONSTRUCTED WITH A CONTINUOUS LIQUID-TIGHT EXTERNAL WELD. ALL DUCTWORK SHALL BE INSTALLED PER SECTION 506 OF THE MECHANICAL CODE. PROVIDE CLEANOUTS AT EVERY CHANGE OF DIRECTION IN THE EXHAUST DUCT AND PER SPACING REQUIREMENTS INDICATED IN SECTION 506.
- AIR HANDLERS WITH AIRFLOWS GREATER THAN OR EQUAL TO 2000 CFM OR THAT SHARE A COMMON OUTSIDE AIR OR RETURN DUCT SHALL BE FURNISHED WITH SMOKE DETECTORS LOCATED IN THE RETURN SECTIONS FOR ALL UNITS.

d3 studio  
 PLANNING + ARCHITECTURE + INTERIORS  
 1318 CENTRAL AVENUE :: SUITE A-10  
 CHARLOTTE, N.C. 28205  
 WEBSITE :: WWW.D3STUDIO.COM



FOR CONSTRUCTION

**Viva Chicken.**  
 PERUVIAN ROTISSERIE JOINT  
 1139 WOODRUFF RD.  
 -SUITE B  
 GREENVILLE, SC  
 29607

REVISION		
no.	date	comment

DRAWN BY: BRD  
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MECHANICAL NOTES AND LEGEND

M0.01