

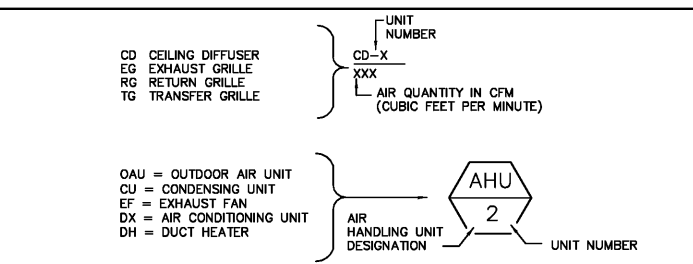
**LEGEND**

⊗ ⊙	NOTES ON DRAWINGS & SCHEDULES	☐	RETURN OR OUTSIDE AIR DUCT
△	REVISIONS	☒	DISCHARGE OR SUPPLY DUCT
AD	ACCESS DOOR (DUCT)	☒	EXHAUST GRILLE
AP	ACCESS PANEL (CEILING MOUNTED)	MD	VOLUME DAMPER (WITH OR WITHOUT MD)
AFF	ELEVATION/ABOVE FINISHED FLOOR	AD	FIRE DAMPER (F.DPR) WITH ACCESS DOOR
TE	TOP ELEVATION	AD	SMOKE DAMPER (S.DPR) WITH ACCESS DOOR
BE	BOTTOM ELEVATION	AD	COMBINATION FIRE/SMOKE DAMPER WITH ACCESS DOOR
CE	CENTERLINE ELEVATION	DN	DROP IN DIRECTION OF AIR FLOW
SA	SUPPLY AIR	R	RISE IN DIRECTION OF AIR FLOW
RA	RETURN AIR	AD	SPIN COLLAR WITH MANUAL DAMPER
EA	EXHAUST AIR	AD	AUTOMATIC MOTORIZED DAMPER
RTJW	RUN THRU JOIST WEB	AD	GRAVITY BACKDRAFT DAMPER
OA	OUTDOOR AIR	AD	CONICAL TYPE FITTING ON OVAL TO ROUND, ROUND TO ROUND AND SQUARE TO ROUND TAKE-OFF
RBJ	RUN BETWEEN JOISTS	CO2	CARBON DIOXIDE SENSOR
P.D.	PRESSURE DROP	T	TEMPERATURE SENSOR
N.E.C.	NATIONAL ELECTRICAL CODE	⊕	THERMOSTAT
TAB	TEST AND BALANCE	⊕	SMOKE DETECTOR
BHP	BREAK HORSEPOWER	⊕	HUMIDISTAT OR HUMIDITY SENSOR
WH	WATER HEATER	FMS	AIR FLOW MONITORING STATION
VFD	VARIABLE FREQUENCY DRIVE	EH	ELECTRIC DUCT HEATER WITH CONTROL AND TERMINAL CABINET WITH NEC REQUIRED CLEARANCE
EMS	ENERGY MANAGEMENT SYSTEM	UC	DOOR UNDERCUT DESIGNATION AND CFM TRANSFER AMOUNT
FT.	FOOT	TR	AIR TRANSFER DESIGNATION THRU AN OPEN SPACE AND CFM TRANSFER AMOUNT
C	CONDENSATE DRAIN LINE	WB	CONDENSATE WALL BOX
— —	UNION JOINT		
— —	FLANGE JOINT		
— —	TEE UP - BRANCH OUT OF TOP		
— —	TEE DOWN - BRANCH OUT OF BOTTOM		
— —	ELBOW - UP		
— —	ELBOW - DOWN		
— —	DIRECTION OF FLOW		
— —	FLEXIBLE PIPE CONNECTION		
— —	THERMOMETER		
(0-60)	PRESSURE GAUGE WITH GAUGE COCK (DIAL RANGE)		
↑	CEILING SUPPLY AIR DEVICE		
→	ARROW DENOTES DIRECTION OF THROW		
24x12	NEW SUPPLY, RETURN, EXHAUST OR OUTSIDE AIR DUCTWORK FIRST DESIGNATION IS SIDE SHOWN, FREE AREA DIMENSION.		
24x12	DOUBLE WALL INSULATED DUCT UNITED MCGILL K-27, FIRST DESIGNATION IS SIDE SHOWN, FREE AREA DIMENSION.		
— —	FLEXIBLE DUCT CONNECTION		
• SP	STATIC PRESSURE SENSOR IN DUCT		
— —	TRANSITIONS: F. O. T. = FLAT ON TOP OR F. O. B. = FLAT ON BOTTOM		
— —	SQUARE TO ROUND TRANSITION		
— —	TURNING VANES (NUMBER OF VANES SHALL BE BASED ON ACTUAL DUCT SIZE AND NOT ON SCHEMATIC SYMBOL ON DRAWING - SEE SMACNA)		

**GENERAL MECHANICAL NOTES**

- ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL. DUCTS SHALL BE FABRICATED IN COMPLIANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE." REFER TO THE PROJECT SPECIFICATIONS FOR PRESSURE CLASSIFICATION AND SEALING REQUIREMENTS. ALL SUPPLY AND RETURN DUCT WORK WITHIN THE MECHANICAL ROOMS, AND WHERE OTHERWISE INDICATED ON THE FLOOR PLANS, SHALL BE CONSTRUCTED OF THE DUAL WALL TYPE WITH A PERFORATED GALVANIZED INNER WALL, 1" THICK MYLAR ENCAPSULATED DUCT LINER, AND GALVANIZED OUTER WALL EQUAL TO UNITED MCGILL K-27.
- EXHAUST AND OUTSIDE AIR DUCTWORK SHALL BE UNINSULATED.
- ALL CONCEALED SUPPLY AND RETURN AIR DUCTS SHALL BE EXTERNALLY INSULATED WITH DUCT WRAP AS INDICATED IN OUTSIDE AIR SPECIFICATIONS. DOUBLE WALL PRE-INSULATED DUCTWORK SHALL BE PROVIDED IN EXPOSED LOCATIONS SUCH AS MECHANICAL ROOMS.
- ALL DUCT SIZES ARE FREE AREA DIMENSIONS.
- EXACT LOCATION OF AIR DISTRIBUTION DEVICES SHALL BE COORDINATED WITH THE LIGHTS, SPRINKLER HEAD LOCATIONS AND WITH THE REFLECTED CEILING PLAN. THROW PATTERNS SHALL BE COORDINATED WITH THE INSTALLED LOCATION.
- REFRIGERANT PIPING SHALL BE HARD DRAWN TYPE "L" COPPER TUBING. VALVES AND FITTINGS IN COPPER LINES SHALL HAVE BRAZED JOINTS. REFER TO SPECIFICATIONS FOR INSULATION REQUIREMENTS.
- REFER TO THE ARCHITECTURAL LIFE SAFETY PLANS FOR LOCATIONS OF RATED WALLS
- PROVIDE ACCESS DOORS AT ALL SMOKE DAMPERS, SMOKE DETECTORS, DUCT HEATERS, AND AUTOMATIC TEMPERATURE CONTROL DEVICES WITH MAXIMUM ALLOWABLE STANDARD SIZE PERMITTED BY DUCT DIMENSIONS. DOORS SHALL BE REMOVABLE WITH CAM LATCHES AND SAFETY CHAIN AND BE FULLY GASKETED TO THE PERIMETER. PROVIDE ACCESS PANELS IN CEILING WHERE REQUIRED TO PROVIDE ACCESS TO DAMPERS, DUCT HEATERS, OR ANY DEVICES THAT REPUNES ACCESS IN SPECIALTY OR HARD CEILINGS, VOLUME DAMPERS FOR T&B AND SIMILAR DEVICES.
- COORDINATE INSTALLATION WITH ALL OTHER INVOLVED TRADES. IN THE CASE OF CONFLICT BETWEEN DRAWINGS AND SPECIFICATION, THE MORE STRINGENT REQUIREMENT AS DETERMINED BY THE ARCHITECT/ENGINEER SHALL TAKE PRECEDENT.
- REFER TO PLANS FOR ADDITIONAL NOTES.
- FLEXIBLE AIR DUCT SHALL BE USED FOR RUNOUTS BETWEEN THE SUPPLY AND RETURN AIR DUCTS AND AIR DISTRIBUTION DEVICES WHERE INDICATED. FLEXIBLE DUCT SHALL BE A MINIMUM OF FIVE AND MAXIMUM OF TEN FOOT IN LENGTH AND OF THE MYLAR-COATED WIRE HELIX TYPE WITH 1" THICK FIBERGLASS INSULATION AND METALIZED MYLAR LAMINATE VAPOR BARRIER COVER. ATTACH FLEXIBLE AIR DUCT TO DIFFUSERS AND SPIN COLLARS WITH PLASTIC METAL DRAW BANDS AND SEAL THE ENDS WITH TAPE AND MASTIC TO MAINTAIN THE VAPOR BARRIER. FLEXIBLE DUCT AND SPIN COLLAR SIZE SHALL BE THE SAME NOMINAL DIAMETER AS THE NECK OF THE AIR DISTRIBUTION DEVICE IT IS CONNECTED TO. FLEXIBLE DUCT SHALL BE OPEN ENDED AND NOT BE SPLICED TOGETHER. EQUAL TO A/C DUCTWORK OR APPROVED EQUAL.
- ELEVATIONS GIVEN: B.E. = BOTTOM ELEVATION, C.E. = CENTERLINE ELEVATION, T.E. = TOP ELEVATION, ARE TAKEN FROM THE CONCRETE FLOOR SLAB. THESE ELEVATIONS ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO FABRICATION OF ANY DUCTWORK OR PIPING.
- PROVIDE SINGLE THICKNESS METAL TURNING VANES IN ALL SQUARE ELBOWS INCLUDING SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTS. WHERE UNEQUAL SQUARE ELBOWS ARE SHOWN, TURNING VANES WITH TRAILING EDGE DIMENSIONS SHALL BE USED.
- DOCUMENTS ARE SCHEDULED IN NATURE AND DO NOT INDICATE EVERY BEND, ELBOW, OR OFFSETS REQUIRED IN DUCTWORK AND PIPING. FIELD VERIFY ALL SIZES AND ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION. PROVIDE MODIFICATIONS WHERE REQUIRED FOR COORDINATION WITH BASE CONTRACTOR PRICE AT NO ADDITIONAL COST.
- LOUVERS SHALL BE CONSTRUCTED OF ALUMINUM WITH A BAKED KYNAR FINISH EQUAL TO GREENHECK MODEL EHH-601D. COLOR AS APPROVED BY THE ARCHITECT.
- ENDS OF DUCTWORK SHALL BE KEPT SEALED USING PLASTIC SHEETING AND DUCT TAPE DURING CONSTRUCTION.
- LOCATIONS FOR TEMPERATURE AND HUMIDITY SENSOR ARE APPROXIMATE IN NATURE AND SHALL NOT BE SCALED FROM THE DRAWINGS. COORDINATE EXACT LOCATIONS WITH ROOM FURNITURE LAYOUT AND CONFIRM PROPOSED LOCATION WITH THE OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.
- LOCATIONS FOR TEMPERATURE AND HUMIDITY SENSOR ARE APPROXIMATE IN NATURE AND SHALL NOT BE SCALED FROM THE DRAWINGS. COORDINATE EXACT LOCATIONS WITH ROOM FURNITURE LAYOUT AND CONFIRM PROPOSED LOCATION WITH THE OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.
- EQUIPMENT SHALL BE SUPPLIED AND INSTALLED WITH PROVISION FOR IN-PLACE CLEANING AND SIMILAR MAINTENANCE TASKS IN ACCORDANCE WITH THE REQUIREMENTS OF ASHRAE 62.1-2007.
- PROVIDE MISCELLANEOUS STRUCTURAL STEEL TO SPAN ACROSS JOISTS WHERE REQUIRED FOR INTERMEDIATE SUPPORT.
- CONTRACTOR SHALL OBTAIN A COMPLETE SET OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS, AND REVIEW TO ENSURE ALL ITEMS INDICATED ON THE DRAWINGS ARE INCLUDED IN HIS BASE BID. ALL ITEMS REQUIRING A MECHANICAL CONNECTION (DUCTWORK, PIPING, ETC.) SHALL BE HOOKED-UP TO PROVIDE A FULLY OPERATIONAL AND FUNCTIONAL SYSTEM, AND INCLUDED IN THE BASE BID.
- ALL EXHAUST AIR FANS SHALL HAVE A GRAVITY BACKDRAFT DAMPER INSTALLED AT THE ROOF PENETRATION, OR AT THE LOUVER PLENUM CONNECTION, UNLESS NOTED OTHERWISE.
- ALL OUTDOOR AIR AND RELIEF AIR MOTORIZED DAMPERS SHALL BE ALL ALUMINUM CONSTRUCTION AND SHALL HAVE THE DOUBLE FLANGED FRAMEWORK FOR MOUNTING TO THE DUCTWORK, ALLOWING THE LINKAGE AND ACTUATOR TO BE POSITIONED OUTSIDE OF THE AIRSTREAM. SUPPORT THE DUCTWORK ON BOTH SIDES OF THESE DAMPERS ALLOWING THESE DAMPERS TO BE REMOVED WHILE THE DUCTWORK REMAINS IN PLACE.
- DIVISION 26 WIRING FOR MOTORIZED AIR HANDLERS (E.G., BLOW THRU FANS IN AIR HANDLERS, ETC.) SHALL BE TERMINATED INSIDE THE SEALED MOTOR TERMINAL BOXES WITH SILICONE FILLED WIRE NUTS.
- ANY REQUIRED OPTIONAL EQUIPMENT OR ACCESSORY SHALL BE SUPPLIED BY THE ORIGINAL EQUIPMENT MANUFACTURER (OEM). IF NOT AVAILABLE FROM THE OEM, IT SHALL BE SPECIFICALLY APPROVED BY THE OEM WHO WILL ASSUME FULL SINGLE SOURCE RESPONSIBILITY FOR QUALITY, PERFORMANCE, SUITABILITY, AND COMPATIBILITY OF SUCH ITEM WITH ASSOCIATED MAIN EQUIPMENT.
- LOCATIONS OF ALL OUTSIDE AIR INTAKES, MINIMUM OF TEN (10) FEET CLEAR FROM ALL PLENUMS, VENTS, EXHAUST AND RELIEF DISCHARGE LOCATIONS.
- PROVIDE 1/8" HINGED ALUMINUM CEILING ACCESS PANELS TO PROVIDE ACCESS TO ALL MANUAL VOLUME DAMPERS LOCATED ABOVE NON-ACCESSIBLE OR HARD CEILINGS, OR PROVIDE A REMOTE CABLE ACTUATOR ASSEMBLY MOUNTED IN THE CEILING, EQUAL TO "TABLING REGULATORS".
- COORDINATE THE LOCATIONS OF ALL FIRE DAMPERS, SMOKE DAMPERS, AND COMBINATION FIRE-SMOKE DAMPERS WITH THE ARCHITECTURAL LIFE SAFETY PLANS.
- THE INSIDE SURFACES OF ALL SHEET METAL PLENUM BOXES ABOVE RETURN, EXHAUST, OR TRANSFER GRILLES SHALL BE CLEANED, PRIMED AND PAINTED FLAT BLACK.
- PROVIDE TEST AND BALANCE BY INDEPENDENT NEBB CERTIFIED FIRM AND SUBMIT REPORT TO ENGINEER FOR APPROVAL.
- THE HVAC SYSTEM SHALL NOT BE OPERATED FOR ANY PURPOSE UNTIL FILTERS ARE IN PLACE AND THE CONTROL SYSTEM IS FULLY FUNCTIONING. IF OPERATED DURING DUST GENERATING ACTIVITIES ALL RETURN AIR GRILLE/OPENINGS SHALL BE PROTECTED WITH FILTER MEDIA.
- EXTERIOR MOUNTED EQUIPMENT SHALL BE DESIGNED, MANUFACTURED, AND INSTALLED TO WITHSTAND THE APPLIED WIND FORCE. THE APPLICABLE WIND FORCE SHALL BE AS DETERMINED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE CHAPTER 26. A "SPECIALTY ENGINEER" LICENSED TO PRACTICE IN FLORIDA SHALL DETERMINE THE APPLICABLE WIND FORCE AND CERTIFY THE PROPOSED EQUIPMENT CONSTRUCTION AND MOUNTING MEETS THE APPLIED WIND FORCE WITH SUITABLE DOCUMENTATION PROVIDED TO THE PERMITTING AUTHORITIES.
- WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
  - FLORIDA STATE FIRE PREVENTION CODE (2014 EDITION)
  - FLORIDA BUILDING CODE 2014 EDITION
  - FLORIDA MECHANICAL CODE 2014 EDITION
  - NFPA-13 (2012), STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
  - NFPA-90A (2012), STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS
  - NFPA-90B (2012), STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS
  - NFPA 99 (2012), STANDARD FOR HEALTH CARE FACILITIES
  - ASHRAE STANDARD 62.1-2010
  - OCCUPATIONAL SAFETY ACT OF 1970, AS AMENDED (OSHA) 59.A-3.079
  - 2010 AIA GUIDELINES
  - AHCA - FLORIDA AGENCY FOR HEALTH CARE ADMINISTRATION
  - FGI - GUIDELINES FOR HEALTH CARE FACILITIES - 2010
  - OTHER CODES AS INDIVIDUALLY REFERRED TO IN OTHER SECTIONS OF THE SPECIFICATIONS

**EQUIPMENT MARK DESIGNATION**



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**STEM BUILDING  
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CONSTRUCTION DOCUMENTS

Correl. No.	16117.00	
Job No.	117030	
Date	10-23-17	
Drawn	WLM	
Revisions		
No.	Date	Note

TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE MINIMUM BUILDING CODES.

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**MO.1**

**Order Plans**