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**SPECIFICATIONS**

**SECTION 230100 - GENERAL:**

- A. GENERAL
  - 1. CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, TOOLS AND LABOR NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM COMPLIANT WITH ALL REQUIRED CODES & STANDARDS.
  - 2. DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED.
  - 3. ALL REQUIRED PERMITS & INSPECTIONS SHALL BE SECURED & PAID FOR UNDER THIS CONTRACT. INSPECTION CERTIFICATIONS SHALL BE PROVIDED TO THE OWNER.
  - 4. CONTRACTOR SHALL VISIT THE SITE TO THOROUGHLY EXAMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. IF EXISTING CONDITIONS DIFFER FROM DESIGN DOCUMENTS IN SUCH A MANNER THAT AFFECTS PRICING, THE CONTRACTOR SHALL ADJUST THE BID ACCORDINGLY AND NOTIFY THE OWNER & ENGINEER PRIOR TO SUBMITTING THE BID. NO ALLOWANCES WILL BE MADE FOR LACK OF KNOWLEDGE REGARDING THE EXISTING CONDITIONS.
- B. VIBRATION ISOLATION
  - 1. VIBRATION ISOLATION SHALL BE PROVIDED FOR ALL MOTOR DRIVEN EQUIPMENT SUSPENDED FROM STRUCTURE OR MOUNTED ON FLOOR. VIBRATION ISOLATORS SHALL BE SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
- C. IDENTIFICATION
  - 1. PERMANENT BAKELITE TAGS WITH 1" TALL LETTERS SHALL BE PROVIDED FOR ALL EQUIPMENT. EQUIPMENT NUMBERING SHALL MATCH BUILDING STANDARDS.
- D. STARTERS
  - 1. ALL MOTORS SHALL BE PROVIDED WITH MAGNETIC MOTOR STARTERS WITH OVERLOAD PROTECTION.
  - 2. STARTERS SHALL BE PROVIDED WITH HAND-OFF-AUTO SWITCHES.
  - 3. INDOOR MOTOR STARTERS SHALL BE FURNISHED WITHIN A NEMA 1 ENCLOSURE.
  - 4. OUTDOOR MOTOR STARTERS SHALL BE FURNISHED WITHIN A NEMA 3R ENCLOSURE.
- E. SUBMITTALS & SHOP DRAWINGS
  - 1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS & PRODUCT DATA FOR ALL MECHANICAL EQUIPMENT & SYSTEMS TO BE PROVIDED AND/OR INSTALLED.
- F. SUBSTITUTE MANUFACTURERS
  - 1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION & COST OF ALL CHANGES REQUIRED FOR INSTALLATION OF EQUIPMENT & PRODUCTS MANUFACTURED BY THOSE OTHER THAN WHAT IS SPECIFIED IN THE CONTRACT DOCUMENTS.
  - 2. CAREFULLY COORDINATE SUBSTITUTE MANUFACTURER'S INSTALLATION REQUIREMENTS WITH ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO STRUCTURE, ELECTRICAL, PLUMBING AND ARCHITECTURAL. ALL INSTALLATION COSTS ASSOCIATED WITH INSTALLATION OF SUBSTITUTE MANUFACTURER SHALL BE INCLUDED IN BID. NO ALLOWANCES SHALL BE GIVEN FOR CHANGES ASSOCIATED WITH INSTALLATION OF SUBSTITUTE EQUIPMENT & SYSTEMS.
  - 3. LISTING OF A MANUFACTURER AS AN "EQUAL" DOES NOT RELIEVE CONTRACTOR'S RESPONSIBILITY OF COORDINATION & COST ASSOCIATED WITH CHANGES REQUIRED TO OTHER TRADES.
- G. WARRANTY
  - 1. CONTRACTOR SHALL WARRANT ALL EQUIPMENT, MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR.
  - 2. ALL HVAC COMPRESSORS SHALL BE WARRANTED FOR A PERIOD OF NOT LESS THAN 5 YEARS.
- H. AS-BUILT DRAWINGS
  - 1. CONTRACTOR SHALL KEEP REDLINE SET OF DRAWINGS ON SITE DURING CONSTRUCTION TO UPDATE LOCATION OF ALL EQUIPMENT AND SYSTEMS AS THE CONSTRUCTION PROGRESSES. REDLINE SET OF DRAWINGS SHALL BE TURNED OVER TO OWNER AT COMPLETION OF CONSTRUCTION.
- I. OPERATION & MAINTENANCE MANUALS
  - 1. CONTRACTOR SHALL PROVIDE AN ELECTRONIC SET AND ONE (1) SET OF HARD COPIES OF INSTALLATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT & SYSTEMS PROVIDED UNDER THIS CONTRACT.
- J. INSTRUCTION
  - 1. CONTRACTOR SHALL THOROUGHLY INSTRUCT OWNER ON OPERATION AND RECOMMENDED MAINTENANCE PROCEDURES OF ALL INSTALLED EQUIPMENT & SYSTEMS.

**SECTION 230600 PIPING SYSTEMS**

- A. CONDENSATE PIPING SHALL BE TYPE L HARD COPPER WITH WROUGHT COPPER FITTINGS & SOLDERED JOINTS.
- B. REFRIGERANT PIPING SHALL BE TYPE ACR CLEANED COPPER FOR REFRIGERANT SERVICE WITH WROUGHT COPPER JOINTS AND SIL-PHOS BRAZED JOINTS. REFRIGERANT PIPING SHALL BE PURGED WITH NITROGEN DURING BRAZING OF JOINTS.
- B. GAS PIPING SHALL BE SCHEDULE 40 STEEL WITH MALLEABLE IRON FITTINGS AND THREADED JOINTS. THREADS SHALL BE COATED WITH RECTOR SEAL PRIOR TO ASSEMBLING EACH JOINT. PROVIDE GAS COCK, DRIP LEG AND UNION AT EACH EQUIPMENT CONNECTION. FOR SYSTEMS WITH DELIVERY PRESSURE ABOVE 14" W.C. A REGULATOR SHALL BE PROVIDED AND SIZED FOR EACH PIECE OF EQUIPMENT. ENTIRE GAS PIPING SYSTEM SHALL BE PRESSURE TESTED TO 30 PSI FOR A MINIMUM OF 8 HOURS WITHOUT A LOSS IN PRESSURE. GAS SERVICE SHALL NOT BE CONNECTED UNTIL PRESSURE TEST HAS BEEN COMPLETED AND PASSED.

**SECTION 231810 INSULATION**

- A. RETURN AIR AND TRANSFER AIR DUCTS SHALL BE LINED WITH 1" THICK DUCT LINER.
- B. SUPPLY & OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 2" THICK, 3/4 LB DENSITY, R-6 FOIL BACKED INSULATION. JOINTS SHALL BE LAPPED A MINIMUM OF 2" AND SECURED WITH FLARE TYPE STAPLES.
- C. REFRIGERANT PIPING SHALL BE INSULATED WITH 1/2" THICK, CLOSED CELL, NEOPRENE INSULATION. INSULATION SHALL BE SLIP ON

- TYPE. ALL JOINTS SHALL BE SEALED WITH AN ADHESIVE APPROVED BY THE INSULATION MANUFACTURER.
- D. ALL REFRIGERANT PIPING INSULATION INSTALLED OUTDOORS SHALL BE COATED WITH TWO (2) COATS OF UV RESISTANT COATING.
- E. CONDENSATE PIPING SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS INSULATION WITH WHITE ALL SERVICE JACKET AND MITERED ELBOWS. ALL JOINTS SHALL BE SEALED WITH SELF ADHESIVE OVERLAP.

**SECTION 238000 - DUCTWORK**

- A. ALL DUCTWORK SHALL BE FABRICATED WITH GALVANIZED SHEET METAL.
- B. LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED FOR 2" PRESSURE SERVICE WITH CLASS C SEALS.
- C. DUCTWORK CONSTRUCTION AND INSTALLATION SHALL CONFORM TO THE LATEST VERSION OF SMACNA DUCT STANDARDS.
- D. ALL ELBOWS SHALL BE FULL RADIUS TYPE OR MITERED WITH TURNING VANES.
- E. PROVIDE SPIN IN FITTING WITH SCOOP & LOCKING DAMPER AT ALL LOW PRESSURE BRANCH DUCT CONNECTIONS TO MAIN DUCT.
- F. DUCTWORK SHALL BE INSPECTED & SEALED AIR TIGHT TO BE FREE OF LEAKS PRIOR TO INSULATING OR COVERING UP THE DUCTWORK.
- G. FIRE DAMPERS SHALL BE TYPE 'B' UL LISTED DAMPERS WITH FIRE CURTAIN LOCATED OUTSIDE OF THE AIR STREAM. FIRE DAMPERS SHALL BE LISTED FOR USE IN THE WALL RATING WITHIN WHICH THE DAMPER IS INSTALLED.
- H. SMOKE DAMPERS SHALL BE UL LISTED. DAMPERS SHALL CLOSE UPON DETECTION OF SMOKE OR UPON POWER FAILURE UNLESS NOTED OTHERWISE. SMOKE DAMPERS SHALL BE AUTOMATIC RESET TYPE.
- I. SMOKE DETECTORS SHALL BE PROVIDED BY DIVISION 26 FOR INSTALLATION BY DIVISION 23.
- J. SMOKE DETECTORS SHALL CLOSE ALL ASSOCIATED SMOKE DAMPERS AND SHUT DOWN THE ASSOCIATED AIR MOVING DEVICE.

**SECTION 239500 - TEST & BALANCE**

- A. TEST & BALANCE AGENCY SHALL BE NEBB OR AABC CERTIFIED.
- B. TEST & BALANCE AGENCY SHALL BE HIRED DIRECTLY BY THE GENERAL CONTRACTOR.
- C. ALL EQUIPMENT SHALL BE LUBRICATED, TESTED, ADJUSTED AND BALANCED TO MEET DESIGN, MANUFACTURER'S OPERATING & INSTALLATION GUIDELINES.
- D. AIR TERMINALS SHALL BE BALANCED TO CFM INDICATED ON PLAN.
- E. TERMINAL UNITS SHALL BE BALANCED TO THE SUM OF THE CONNECTED AIR DISTRIBUTION DEVICES.
- F. ALL DEFICIENCIES SHALL BE RECORDED AND SENT TO THE MECHANICAL CONTRACTOR FOR RESOLUTION.
- G. ONCE ALL DEFICIENCIES HAVE BEEN CORRECTED, TWO (2) HARD COPIES OF THE FINAL REPORT SHALL BE DELIVERED TO THE OWNER. AN ELECTRONIC COPY IN PDF FORMAT SHALL BE SUBMITTED IN ADDITION TO THE HARD COPIES.

#	DATE	TITLE

PROJECT NUMBER:  
**00-000**

1167 PACE ST. - PHASE I

1167 PACE ST, COVINGTON, GA

**SPECIFICATIONS**

M002

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