# SECTION 238000 - TERMINAL HVAC EQUIPMENT

## PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide Heating, Cooling, and Ventilating Equipment as specified herein and shown on the Drawings.

B. Equipment capacity and size shall be as indicated on the Drawings.

C. Related Work: The requirements of Section 230500, Common HVAC Materials and Methods, also apply to this section.

1.2 QUALITY ASSURANCE

A. Air Handling Equipment: Rated in accordance with AMCA certified rating procedures and AMCA labeled.

B. Air Conditioning and Refrigeration Equipment Rating: Rated in accordance with ARI certified rating procedures and ARI labeled.

C. Gas-fired Equipment: Design certified by American Gas Association.

1.3 SUBMITTALS

A. Submit catalog data, construction details and performance characteristics for each HVAC unit.

B. Submit operating and maintenance data.

## PART 2 - PRODUCTS

2.1 GAS FIRED WARM AIR FURNACE

A. Burners and aluminized steel primary heat exchanger and secondary condensing heat exchanger designed to operate on natural gas. Forward curved commercial air conditioning duty centrifugal fan direct driven by permanently lubricated ball bearing multispeed fan motor.

B. Furnace casing of enameled steel with duct connections, access panels, and internal thermal insulation in heat exchanger section and acoustic lining in fan section. Provide with automatic gas valve, fan switch, high limit switch, fan door safety switch, gas cock, electric-electronic ignition assembly, control transformer, induced draft blower, and code vent. Provide unit with combustion air duct connection and internal or external filer rack for 1” thick disposable filters. **[Minimum certified unit efficiency of 90 percent. Provide condensate drain routed to approved point of disposal.]**

C. Direct Expansion Cooling Coil: Non-ferrous extended surface, counterflow serpentine type with heavy gauge galvanized insulated casing with double sloped, non-ferrous drain pan suitable for mounting required. Assembled with copper tubes brazed to copper headers. Copper or aluminum fins mechanically bonded to tube and spaced a maximum of 15 fins per inch. Construction shall allow for expansion and contraction without developing leaks.

D. Provide with electronic, 7-day programmable thermostat and controller system for night-set-back, economizer and heating/cooling control sequences. Honeywell Visionpro or approved substitute.

E. Provide with matched variable speed condensing unit as shown on the plans

F. Daikin, Trane, Carrier, Lennox, York, or approved substitute..

## PART 3 - EXECUTION

3.1 INSTALLATION

A. Install and arrange equipment as shown on the Drawings and as recommended by the equipment manufacturer.

3.2 AIR HANDLING INSTALLATION

A. Installation and Arrangement: Air handling equipment shall be instal­led and arranged as shown on the Drawings. Comply with the manufacturer's recommendations for installation connection and start-up.

B. Lubrication: All moving and rotating parts shall be lubricated in accordance with the manufacturer's recommendations prior to start-up.

3.3 Condensate drainage

A. Provide complete condensate drainage system for cooling and heat pump equipment. Route condensate to approved exterior location as shown on the plans. See Division 22 for piping materials and methods.

3.4 CONTROLS

A. Wiring: All wiring shall be in accordance with the National Electrical Code and local electrical codes. All thermostat wire shall be minimum 18 gauge, 6 conductor.

B. Mounting: All controls intended to be operable by the occupant shall be mounted with the operating portion no more than 46" above the floor or as otherwise required by applicable codes.

End of Section 238000