

Engineers/Architects/Planners

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## Addendum No. 1 City of Corbin, Kentucky Corbin Center Addition Project Bid Date: June 3, 2025 Addendum Issue Date: May 15, 2025

The Contractor shall conform to the following changes, as same shall become binding upon the Contract to be issued in response to this invitation.

Item 1: Add attached Section 237413 – Packaged Outdoor Central Station Air-Handling Units.

**Item 2:** There will be two days available for contractors to visit the existing building and site. These are Tuesday May 20 and Wednesday May 21 from 11am to 1pm. Please contract Bruce Carpenter at 606-215-6754 to schedule a different time if needed.

END OF ADDENDUM NO. 1

# SECTION 237413 – PACKAGED OUTDOOR CENTRAL STATION AIR-HANDLING UNITS

# PART 1 - GENERAL

## 1.1 QUALITY ASSURANCE:

- A. Manufacturers: Firms regularly engaged in manufacturer of terminal units, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. ARI Compliance: Test and rate heat pump units in accordance with Air Conditioning and Refrigeration Institute (ARI) Standards.
- C. UL or ETL Compliance: Construct and install heat pump units in compliance with applicable standards.

#### 1.2 SUBMITTALS:

- A. Shop Drawings: Submit assembly type shop drawings showing unit capacities, operational features and parameters, dimensions, construction details, and field connection details.
- B. Maintenance Data: Submit maintenance instructions, including lubrication instructions, filter replacement, motor, and drive replacement, and spare parts lists. Include this data in maintenance manuals.

## PART 2 - PRODUCTS

#### 2.1 HVAC PACKAGED GAS-FIRED ROOFTOP UNITS:

A. This contractor shall furnish and install package type natural heating/cooling units, each with all its components assembled into one compact weather proof casing, mounted on a common base and installed on a prefabricated roof curb. All rotating equipment within the unit shall be mounted on vibration isolators. Curb shall protrude a minimum of 16" above the finished roof surface. Space inside curb shall be filled with layers of rigid insulation. The unit shall be completely self-contained with factory wired controls and factory assembled components and piping. The unit shall be completely weatherized for mounting on the roof. The unit shall be equipped with roof curb that shall support unit from structural framing. Roof curb shall provide weatherproof seal for unit and duct penetrations.

- B. Provide unit with heavy ga. chassis and weather resistant coating, and full charge of R-32 or R-454B refrigerant.
- C. A refrigerant detection system to be provided for each HVAC system. The refrigerant detection system shall comply with the following:
  - 1. Utilize a set point, nonadjustable in the field, to generate an output signal to initiate mitigation actions.
  - 2. Be capable of detecting the presence of a specified refrigerant corresponding to the refrigerant designation of the refrigerant contained in the refrigeration system. Field recalibration of the refrigerant detection system shall not be permitted.
  - 3. Have access for replacement of refrigerant detection system components.
  - 4. Have self-diagnostics to determine operational status of the sensing element.
  - 5. Energize air circulation fan of the equipment upon failure of a self-diagnostic check.
  - 6. Generate an output signal in not more than 30 seconds when exposed to a refrigerant concentration of 25% LFL (+0%, -1%).
- D. <u>.Mitigation Action Requirements</u>. The following mitigation actions shall be completed in not more than 15 seconds after the initiation of the output signal of the refrigerant detection system, and shall be maintained for at least 5 minutes after the output signal has reset:
  - 1. Energize the air circulation fan(s) of the equipment per the manufacturer's instructions.
  - 2. De-energize furnace heat and/or heat pump heating functions. De-energize any duct resistance heat installed in the air duct that is connected to the refrigeration system.
  - 3. Activate any safety shut-off valves utilized to reduce releasable refrigerant charge.
  - 4. De-energize potential ignition sources, including open flames and unclassified electrical sources of ignition with apparent power rating greater than 1 kVA, where the apparent power is the product of the circuit voltage and current rating.
- E. Controls shall be factory wired with required control transformers and contactors. Provide factory heating-cooling solid state programmable thermostats with the capability to setback or shut-down the system based upon day of the week and time of the day. Thermostat to be BACNet compatible programmable with 24/7 programming ability.

- F. Condenser Fan: Shall be statically and dynamically balanced, weatherproofed, and shall be powered by heavy duty, permanently lubricated ball bearing motors with thermal overload protection.
- G. Units provided as indicated, with economizers shall have low-leakage dampers, and shall be capable of introducing up to 100% outside air. Economizers shall have factory controls with enthalpy control and shall modulate return and outside air dampers for free cooling when thermostat calls, and interior conditions have higher enthalpy than indoors. Economizer dampers shall close fully to use 100% return air when the unit goes to a night setback condition or if the unit shuts-off. Provide units with economizers with one of the following as indicated on the Drawings:
  - 1. Barometric relief dampers, to include all required blade seals, and hardware.
  - 2. Powered exhaust fan with controls and dampers as required.
- H. Set the minimum setpoint position of economizer dampers (when in normal thermostatic mode) to flow the minimum amount of fresh air indicated in the drawings. Units not provided with economizers shall have two-position dampers to intake the amount of fresh air indicated on the Drawings. The two-position dampers shall close when the unit de-energizes or when the unit operates at the night setback condition.
- I. Fuel Fired Furnace: Natural-gas self-contained, package unit complete with burner and controls. Aluminized steel heat exchanger, AGA certified, minimum AFUE efficiency of 81 percent. Electronic pilot ignition shall be provided Unit shall be provided as an integral part of the Roof Top Air Conditioning Unit.
- J. Supply Air Fan: Shall be statically and dynamically balanced, and shall be powered by heavy duty, permanently lubricated ball bearing motors with thermal overload protection. Variable air volume units shall include variable frequency drives.
- K. Weatherproof cabinets shall be heavy gauge hot-dipped galvanized steel with baked enamel finish, and all interior panels shall be lined with 1" thick fiberglass insulation with an approved coating on the air surface side. Filter section shall be complete with MERV 13 filters; refer to drawings for thicknesses. Removable fully gasketed panels shall provide access to all working parts, components, and connections for installation and service. Complete service access shall be provided to all interior equipment and controls.
- L. Each unit shall be provided with a complete factory-sealed refrigeration system consisting of compressor, condenser coil and fan, evaporator coil and blower, refrigerant lines fully connected, and a full charge of refrigerant. Controls shall consist of necessary high and low pressure switches, compressor non-recycling

relay, low oil pressure cutout, and overload protection. Compressors shall be mounted on vibration isolators and have force fed lubrication system, thermal overload protection, and crankcase heaters.

M. Unit shall be complete with manufacturer's one year guarantee on all components plus an additional four year guarantee on the compressors. Units shall be Trane, Carrier, York or Lennox. See drawings for capacities, voltages, etc.

# PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Install HVAC units as indicated and in accordance with manufacturer's installation instructions.
- B. Uncrate units and inspect for damage. Verify that nameplate data corresponds with unit designation.
- C. Adequately protect equipment from damage, assuming custody of equipment provided and/or installed in this Scope of Work during delivery, unloading, storage, laydown, staging, installation, commissioning, until acceptance by the Owner.

### 3.2 ADJUSTMENT AND CLEANING OF UNITS:

- A. General: After construction is completed, including painting, clean unit exposed surfaces, vacuum clean terminal coils and inside of cabinets.
- B. Retouch any marred or scratched surfaces of factory finished cabinets, using finish materials furnished by manufacturer.

### 3.3 <u>STARTUP AND COMMISSIONING</u>

A. Provide completed startup and commissioning data for each piece of equipment, on the manufacturer's form, or on another form approved by Gray. Provide completed documentation prior to and independent of TAB and BMS startup and testing. Submit proposed forms for review one month prior to startup of first equipment.

END OF SECTION 237413