Fayetteville VA Medical Center
Replacement of Air Handling Unit #34

Project Address
Fayetteville VAMC
2300 Ramsey Street
Fayetteville, NC 28301

1. General Description

The contractor shall provide all labor, materials, equipment, tools, supervision, testing, commissioning, and incidentals required to remove the existing Air Handling Unit (AHU) #34 and furnish and install a new fully operational AHU. Work includes general construction, demolition, mechanical, electrical, plumbing, controls integration, and all associated tasks necessary to deliver a complete and functional system meeting VA standards, ASHRAE requirements, and all applicable codes. Request the contractor provides a detailed and itemized cost estimate.

Air Handling Unit (AHU): A factory fabricated and tested assembly of modular sections consisting of single or multiple plenum fans with direct-drive, coils, filters, and other necessary equipment to perform one or more of the following functions of circulating, cleaning, heating, cooling, dehumidifying, humidifying and mixing of air.

2. Project Requirements

2.1 Demolition and Removal
- Disconnect and remove the existing AHU #34, including associated piping, valves, insulation, electrical feeds, controls wiring, and condensate components.
- Protect adjacent equipment, finishes, and occupied areas during demolition.
- Remove debris from the site daily in accordance with VA infection control and safety protocols.

3. New Air Handling Unit Specifications

The contractor shall furnish and install a new AHU meeting or exceeding the following minimum requirements:

3.1 Mechanical Performance
- Capable of maintaining minimum 6 air changes per hour (ACH) in accordance with VA standards and ASHRAE 170.
- Capable of maintaining positive air pressure relative to adjacent spaces.
- Temperature control range: 68°F to 73°F.
- Space Humidity control range: 30% to 60% RH, with a target of 45% RH.
- Equipped with HEPA, including housings, gaskets, and access doors for filter replacement.
- Includes a 40" x 20" single-row steam coil, factory-installed or field-installed per manufacturer requirements.
- Includes all required fans, motors, dampers, access panels, drain pans, and internal components.

3.2 Construction Requirements
- Double-wall insulated casing.
- Stainless steel drain pan sloped to outlet.
- Access sections for coil, filter, and fan maintenance.
- Factory-applied insulation meeting VA thermal and acoustic standards.

4. Mechanical Installation

4.1 Piping
- Provide and install all new steam coil piping, valves, unions, strainers, traps, and accessories.
- Install new condensate drain piping and a new condensate trap sized per manufacturer requirements.
- Provide complete insulation of all new and modified piping using closed-cell insulation meeting VA specifications.
- Pressure test all piping prior to insulation.

4.2 Ductwork
- Modify, reconnect, patch, and seal all supply, return, and outside air ductwork as required.
- Provide insulation on all new and disturbed ductwork to match existing system standards.
- Ensure all duct penetrations are sealed to maintain pressure relationships.

5. Electrical Work

5.1 Power
- Provide new conduit, wiring, disconnects, and breakers as required for the new AHU.
- Coordinate electrical loads with VA engineering to ensure compatibility with existing electrical infrastructure.
- New equipment should be 208 volts.

5.2 Controls and BAS Integration
- Integrate all AHU environmental controls into the existing Building Automation System (BAS).
- Provide all control wiring, conduit, terminations, and programming.
- Provide new control sequences and sensors as required to support humidity, temperature, and pressure control.

6. Commissioning and Testing

6.1 Start-Up
- Perform manufacturer-recommended start-up procedures.
- Verify fan rotation, airflow, coil performance, damper operation, and condensate drainage.
- Balance airflow to achieve minimum 6 ACH and required pressure differentials.

6.2 Controls Verification
- Test all BAS points, alarms, and sequences of operation.
- Confirm humidity and temperature control performance.

6.3 Full Commissioning
- Conduct full functional performance testing in accordance with VA commissioning guidelines.
- Provide commissioning agent access and support as required.

7. Validation and Reporting

The contractor shall provide complete documentation including:

- Airflow verification reports confirming 6 ACH minimum.
- Pressure differential validation confirming positive pressurization.
- Temperature and humidity performance logs confirming compliance with:
- 68–73°F temperature range
- 30–60% RH range, target 45%
- HEPA filtration integrity test results (if required by VA).
- BAS point-to-point checkout documentation.
- Final commissioning report summarizing all tests, adjustments, and verifications.

All reports must be submitted in both digital and hard-copy formats.

8. Safety, Infection Control, and Compliance

- Comply with all VA Infection Control Risk Assessment (ICRA) requirements.
- Maintain clean work areas and implement dust control barriers.
- Follow OSHA, NFPA, ASHRAE, and VA design standards.
- Coordinate shutdowns and tie-ins with VA engineering at least 14 days in advance.

9. Closeout Requirements

- Provide O&M manuals, as-built drawings, and training for VA staff.
- Submit warranty documentation for all equipment and components.
- Ensure the AHU is fully operational and accepted by VA engineering prior to project completion.

11. The contractor must review and utilize all approved specifications for replacement of AHU #34. The VA has highlighted a few for reference below.

Division 01 – General Requirements
- 01 00 00 – General Requirements
- 01 00 01 – Project General Requirements (Medical Center–specific)
- 01 33 23 – Shop Drawings, Product Data, and Samples
- 01 35 26 – Safety Requirements (ICRA, Interim Life Safety Measures)
- 01 42 19 – Reference Standards
- 01 57 19 – Temporary Environmental Controls
- 01 91 00 – General Commissioning Requirements

Division 23 – HVAC
- 23 05 11 – Common Work Results for HVAC
- 23 05 93 – Testing, Adjusting, and Balancing for HVAC
- 23 07 11 – HVAC and Boiler Plant Insulation
- 23 08 00 – Commissioning of HVAC Systems
- 23 09 23 – Direct Digital Control System for HVAC (DDC Controls)
- 23 21 13 – Hydronic Piping
- 23 21 23 – Hydronic Pumps (if applicable)
- 23 22 13 – Steam & Condensate Heating Piping
- 23 25 00 – HVAC Water Treatment

- 23 31 00 – HVAC Ductwork
- 23 33 00 – Air Duct Accessories
- 23 73 00 – Indoor Central-Station Air-Handling Units (Primary AHU Specification)
- 23 81 00 – Unitary HVAC Equipment

Division 26 – Electrical
- 26 05 11 – Requirements for Electrical Installations
- 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
- 26 05 26 – Grounding and Bonding
- 26 05 33 – Raceway and Boxes
- 26 27 26 – Wiring Devises
- 26 24 16 – Panelboards
- 26 29 11 – Motor Controllers
- 26 29 23 – Variable Frequency Drives (VFDs)

Division 28 – Electronic Safety & Security
- 28 31 00 – fire Detection & Alarm

All items must meet NFPA, VA specifications and all applicable codes and regulations.

Construction Duration

All work to be completed within 180 calendar days from issuance of Notice to Proceed.

Work to be performed between 0800 – 1630, Monday to Friday.

References

Project Specifications