

REPLACE AIR HANDLING UNITS (AHU)

PROJECT #580-14-110

1.1 GENERAL INTENTION

A. Contractor shall provide materials, equipment and labor to perform as a turn-key project including cleaning/replacing the air intakes and the following requirements:

- New Air Handling Units (AHUs) shall be manufactured by York. Control components shall be Direct Digital Control (DDC) and manufactured by Johnson. The new AHUs and control components shall interface and communicate with existing Johnson building energy system (BMS). All existing control points shall be transferred to new AHUs.
- Remove existing AHUs through the louver inside of mechanical bay or as direction of the Contracting Officer Representative (COR). AHUs and associated material shall be discarded per industry standards and Construction Waste Management (Section 01-74-19). The following information of the existing AHUs are for preferences:

AHU #	LOCATION	APPROX. CFM	TYPE OF SYSTEM	ROOM #	SERVING AREA
1	B-103	24000	VAV	119	B-103
5	BE	37760	CV	BB-109	Warehouse
5A	BE	4800	CV	BB-109	Warehouse
6	BH	37790	VAV	BC-100	Dietetics
7	BH	14049	VAV	BC-100	Eyes Clinic/RAD
17	1D	9820	VAV	1C-238A	NHC NU
18	1D	1600	CV	1C-238A	NU BEDS
22	1E	21180	VAV	1B-340	Day Treatment
24	1J	19870	VAV	1A-380A	Ambulance Care
25	1K	7450	VAV	1A-200	Ambulance Care
27	1N	23720	VAV	1A-222A	Ambulance Care
28	2A	11740	VAV	2B-236A	Neurology NU
29	2A	2600	CV	2B-236A	NU Beds
30	2B	12660	VAV	2B-138A	Rehab. Med. NU
31	2B	2600	CV	2B-138A	NU Beds

36	2F	15470	VAV	2A-275	ENT/Pharmacy
37	2G	22900	VAV	2A-295	Dental
38	2H	19110	VAV	2C-456A	Radiology
39	2J	18400	VAV	2B-580	Rehab./Prosthetics
52	3E	20790	VAV	3B-350A	Lab/Dialysis
70	4K	20600	VAV	5A-146A	Administration
81	5E	6100	VAV	6C-238A	Gen. Surg. NU

- Design, fabricate, and install new supply and return duct fitting to attach to existing duct.
 - a. All duct to be built per Sheet Metal and Air Conditioning Contractors' National Association Standards medium pressure duct standards.
 - b. Duct to be externally insulated per industry standards.
- Modify existing housekeeping pads to accept new AHUs.
- Reconnect electrical service from existing Variable Speed Drives (VSDs) to new AHUs.
- Reconnect all control devices.
- Provide new actuators with DDC for all new and existing dampers for all new AHUs including smoke fire dampers.
- Install a new VSD and a new electrical motor for the return fan air system for all AHUs. New electrical motor shall be Premium Efficiency Motor. Remove or lock open all inlet vanes and demo the pneumatic motor and housing. Install all controls and control programming to control via volume matching logic the new return fan frequency drive. Field verify sizing of motor and controls required to achieve volume matching operation of fans.
- Provide and install new fire dampers with new actuators with DDC for AHUs.
- Connect existing smoke duct detectors to Building Automation System (BAS). Provide necessary programming to controls to use these to shut supply and return fan down as well as report alarms the building automation system.
- Filter Gauge (Measurement) shall be connected to BAS. Provide necessary programming to report this alarm to BAS for filter replacement.
- Install new DDC Chilled Water and Hot Water Control Valves.

- Reconnect all chilled water and hot water piping to coils.
- Replace chilled water and hot water cut-off valves as needed.
- Replace associate louvers as needed. Clean, vacuum, seal, paint, and reinsulate the air intake including washing the screen.
- AHUs shall be installed/completed around the clock during weekend (start from Friday, 6pm until 12 am Monday) or as scheduling with the Contracting Officer Representative (COR). Preparation for the installation can be accomplished during the normal working hours.
- Start-up and recommissioning of units.
- Work shall include but not be limited to:

Furnish Indoor Air Handling Units with the following features:

- o 2" Double Wall Foam Insulated Panels
- Unit Options:
 - o 16 Gauge Thickness Galvanized Exterior Liner
 - o Each Unit will be provided with an additional full perimeter formed galvanized steel 6" high baserail.
 - o Unit Level Access Doors options:
 - Inside / Outside Door Handle
 - Multi-Point Door Latch
 - o Ships with shipping splits
- Light will be provided in Variable Length Access, Supply Fan and Discharge Plenum segments, all wired to a single switch located on the supply fan segment.
- An 15 Amp Ground Fault Circuit Interrupter Outlet will be provided on the supply fan segment
- Supply Fan Segment
 - o Galvanized Interior Liner, Galvanized Floor Liner
 - o Single TEFC (Total enclosed Fan Cooled) fan
 - o Left Outward Swing Access Door provided
 - o 460 Volt TEFC (Total Enclosed Fan Cooled) Premium Efficiency

Motor

- Fan Segment Options:
 - Extended Lube Lines for Bearings
 - Fixed Belt Drive
 - 2" Isolation
 - Inverter Drive Fan Balancing
 - Thrust Restraints
- Cooling Coil Segment
 - Left Outward Swing Access Door provided
 - IAQ Drain Pan with Stainless Steel Liner
 - Coil Options:
 - Stainless Steel Coil Bulkheads, Stainless Steel Coil Supports
 - Cooling Coil provided with Stainless Steel coil casing
 - Cooling Water Coils provided with MPT connections
- Heating Coil Segment
 - Coil Options:
 - Galvanized Coil Bulkheads, Galvanized Coil Supports
 - Heating Coil provided with Stainless Steel coil casing
 - Heating Water Coil provided with MPT connections
- Rigid Filter Segment
 - Left Outward Swing Access Door provided
 - Right Outward Swing Access Door provided
 - Side Loading Filter Frames
 - 12" Rigid 80-85% Eff, (MERV 13)
- Flat Filter Segment
 - Left Outward Swing Access Door provided

- o Right Outward Swing Access Door provided
 - o Side Loading Filter Frames
 - o 4" Pleated 30% (MERV 7)
 - Access Segment
 - o Left Outward Swing Access Door provided
 - Discharge Plenum Segment
 - o Left Inward Swing Access Door provided
 - Diffuser Segment
- B. All employees of general contractor and subcontractors shall comply with VA security management program and obtain permission of the VA police, be identified by project and employer, and restricted from unauthorized access.
- C. Prior to commencing work, general contractor shall provide proof that a OSHA certified "competent person" (CP) (29 CFR 1926.20(b)(2)) will maintain a presence at the work site whenever the general or subcontractors are present.
- D. Training:
1. All employees of general contractor or subcontractors shall have the 10-hour OSHA certified Construction Safety.
 2. Submit training records of all such employees for approval before the start of work.

1.2 STATEMENT OF BID ITEM(S)

- A. ITEM I, GENERAL CONSTRUCTION: Work includes all labor, materials, equipment, tools, supplies, supervision and administration to replace air handlers at the Michael E. DeBakey VA Medical Center. Provide total cost for each air handler.
- B. Alternate:
- Provide spot coolers or other method with associated accessories to keep the air handler serving area in operation for the duration of

replacement of the air handling units.

1.3 SUBMITTALS AND SHOP DRAWINGS FROM CONTRACTOR

- A. AFTER AWARD OF CONTRACT, the contractor shall prepare a complete set of shop drawings, including control sequence shop drawings and provide submittals of all proposed materials and equipment used in the project to be reviewed and approved by the VA. The VA will provide to the successful offeror a list of all submittals required. After approval of the shop drawings and the submittals the contractor shall commence with the work.

1.4 CONSTRUCTION SECURITY REQUIREMENTS

A. Security Plan:

1. The security plan defines both physical and administrative security procedures that will remain effective for the entire duration of the project.
2. The General Contractor is responsible for assuring that all sub-contractors working on the project and their employees also comply with these regulations.

B. Security Procedures:

1. Contractors are required to submit all personal information for a background investigation before MEDVAMC's Human Resources issues a badge. General Contractor's employees shall not enter the project site without appropriate badge. They may also be subject to inspection of their personal effects when entering or leaving the project site.
2. For working outside the "regular hours" as defined in the contract, The General Contractor shall give 7 days notice to the Contracting Officer so that arrangements can be provided for the employees. This notice is separate from any notices required for utility shutdown described later in this section.
3. No photography of VA premises is allowed without written permission of the Contracting Officer.

4. VA reserves the right to close down or shut down the project site and order General Contractor's employees off the premises in the event of a national emergency. The General Contractor may return to the site only with the written approval of the Contracting Officer.

1.5 FIRE SAFETY

- A. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with Project Engineer to obtain a hot work permit from facility Safety Officer in advance of the work.
- B. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to Project Engineer.
- C. Smoking: Smoking is prohibited in and adjacent to construction areas, inside existing buildings, and additions under construction.
- D. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.

1.6 OPERATIONS AND STORAGE AREAS

- A. The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer or his/her representative. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
- C. Working space and space available for storing materials shall be as

determined by the Project Engineer.

- D. Workmen are subject to rules of Medical Center applicable to their conduct.
- E. Execute work so as to interfere as little as possible with normal functioning of Medical Center as a whole. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied except as permitted by the Project Engineer.
 - 1. Do not store materials and equipment in other than assigned areas.
 - 2. Schedule delivery of materials and equipment to immediate construction working areas within buildings in use by Department of Veterans Affairs in quantities sufficient for the storage space provided. Provide unobstructed access to areas required to remain in operation.
- F. Building 100 will be occupied during performance of work. The contractor shall take all measures and provide all material necessary for protecting entrances, existing equipment and property in affected areas of construction against safety hazards, dust and debris, so that equipment and affected areas to be used in the Medical Centers operations will not be hindered. Contractor shall permit access to Department of Veterans Affairs personnel through other construction areas which serve as routes of access to such affected areas and equipment. Coordinate alteration work in areas occupied by Department of Veterans Affairs so that Medical Center operations will continue during the construction period.
- H. Abandoned Lines: All service lines such as wires, cables, conduits, ducts, pipes and the like, and their hangers or supports, shall be removed

1.7 DISPOSAL AND RETENTION

- A. Materials and equipment accruing from work removed and from demolition shall be disposed of as follows:

1. Items removed shall become property of the Contractor and be removed by Contractor from the Medical Center. The Contractor shall recycle all removed material and report weights to the Project Engineer when removed from site.

1.8 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS

- A. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which is not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- B. The Contractor shall protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

1.9 RESTORATION

- A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, steam, gas, or electric work without approval of the Project Engineer. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the Project Engineer before it is disturbed. Materials and workmanship used in

restoring work, shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.

- B. Upon completion of contract, deliver work complete and undamaged. Existing work (walls, ceilings, partitions, floors, mechanical and electrical work, lawns, paving, roads, walks, etc.) disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work.
- C. At Contractor's own expense, Contractor shall immediately restore to service and repair any damage caused by Contractor's workmen to existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone) which are indicated on drawings and which are not scheduled for discontinuance or abandonment.
- D. Expense of repairs to such utilities and systems not shown on drawings or locations of which are unknown will be covered by adjustment to contract time and price in accordance with clause entitled "CHANGES" (FAR 52.243-4 and VAAR 852.236-88) and "DIFFERING SITE CONDITIONS" (FAR 52.236-2) of Section 00 72 00,

1.10 AS-BUILT DRAWINGS

- A. The contractor shall maintain two full size sets of as-built drawings which will be kept current during construction of the project, to include all contract changes, modifications and clarifications.
- B. All variations shall be shown in the same general detail as used in the contract drawings. To insure compliance, as-built drawings shall be made available for the Project Engineer's review, as often as requested.
- C. Contractor shall deliver two approved completed sets of as-built drawings to the Project Engineer within 15 calendar days after each completed phase and after the acceptance of the project by the Project Engineer.

D. Paragraphs A, B, & C shall also apply to all shop drawings.

1.11 AVAILABILITY AND USE OF UTILITY SERVICES

A. The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies.

** Mandatory Site review is required to compete for this construction project to adequately perform the services requested.

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