

SECTION 01 00 00
GENERAL REQUIREMENTS

1.1 SAFETY REQUIREMENTS

Refer to section 01 35 26, SAFETY REQUIREMENTS for safety and infection control requirements.

1.2 GENERAL INTENTION

- A. Contractor shall completely prepare site for building operations, including demolition and removal of existing structures, and furnish labor and materials and perform work for 695-15-116 Replace (3) Boilers Building 112 as required by drawings and specifications. 1. The scope of this project is to replace (3) existing Nebraska water tube steam boilers with (3) new water tube steam boilers, install new DA tank, feed water pumps and Surge tank to provide a redundancy with the existing steam system, ~~and to upgrade existing 20 gpm Wogens Reverse Osmosis System to a 40 gpm system.~~
- B. Visits to the site by Bidders may be made only as described in the solicitation in accordance with FAR 52.236-27 Site Visit (Construction).
- C. Offices of Bancroft Architects + Engineers, as Architect-Engineers, will render certain technical services during construction. Such services shall be considered as advisory to the Government and shall not be construed as expressing or implying a contractual act of the Government without affirmations by Contracting Officer or his duly authorized representative.
- D. Before placement and installation of work subject to tests by testing laboratory retained by Contractor, the Contractor shall notify the COR in sufficient time to enable inspection of materials/conditions to be tested.
- E. 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.

F. Existing Conditions/Demolition

1. Currently there are five dual-fuel steam boilers in the boiler plant of Building 112. The two English boilers that were installed in 2008 and the existing DA tank, feed water pumps and surge tanks will remain. The three existing Nebraska boilers and their associated flues and economizers shall be removed in their entirety; however, the concrete pads for the boilers will remain and be reused for the new boilers. ~~The existing 20 gpm Wogens reverse osmosis system shall be removed and replaced with a new system that has a large enough capacity to handle the entire steam plant.~~
2. The existing 10" steam header will remain.

G. Asbestos Abatement

1. A visual inspection of the building materials located within the limits of the renovation was completed. In the areas of construction there will be selected asbestos abatement. The areas to be abated will primarily include the piping insulation at the associated hydronic piping systems of the 3 boilers being replaced, along with the asbestos abatement of the insulation on the boilers. An asbestos survey report is included as **Attachment B** in specifications Volume 2.

H. Architectural

1. The following modifications are included in the project scope:
 - a. Improved catwalk around the newly installed DA and Surge tanks
 - b. New upper level access doors to the catwalk level
 - c. New lab casework
 - d. New large rollup door at existing loading dock
 - e. Minor modifications to the roof to accommodate the economizers
 - f. New electrical closet under DA tank

I. HVAC System Description

1. The existing Nebraska boilers that are being replaced have a capacity to provide steam flow rate of 30,000 lb/hr. The new boilers will increase the capacity of the steam boiler plant by an additional total of 60,000 lbs/hr steam flow rate (an additional 20,000 lb/hr per boiler). They will provide 150 psi steam pressure and have the capability to turn down to 25% of its maximum capacity at an efficiency of 84%.
2. Burner piping shall be stainless steel and the boiler safety device switches were designed based on Mercoid.
3. New boilers shall be placed and anchored to existing concrete equipment pads.
4. The existing 6" steam supply mains from each existing boiler shall be upsized to 8" to accommodate the additional steam capacity.
5. A new 2200 gallon DA tank and 2200 gallon Surge tank shall be mounted above at the mezzanine, with their associated pumps being mounted on the first floor level below. This equipment shall be added to give redundancy to the existing system and piped in such a way so that the operation of the feed water pumps and tanks can be alternated from one system to another.
6. The existing air compressors located in the basement shall be replaced with new air compressors located in the basement and shall be replaced with new air compressors. All the existing air compressor piping and tanks shall be re-used and the new compressors shall be installed on the existing concrete equipment pads.
7. An existing 1 ½" condensate return main that runs from the steam header around the plant shall be removed and connected into an existing 1 ½" return line located in the trench at the boiler room floor level.

~~8. A new Reverse Osmosis (RO) System shall be installed in place of existing 20 gpm Wogens RO System with new manifolds, control panel and pump with VFD. The new system will tie into the existing piping and shall be used on an alternating basis with the other 40 gpm RO system.~~

89. The natural gas pressure entering the building is at 10 psi. The new boilers require 20 psi gas pressure to operate. Therefore new gas meter/regulator set will need to be installed to provide service for the three new boilers. The new gas meter/regulator will connect to the existing 12", 100 psi gas main located on the south side of Building 112 and shall be sized to reduce the pressure from 100 psi down to the required 20 psi. Once the pressure is reduced the existing 6" gas main that feeds the boilers shall be connected to this new meter/regulator set and be re-used for the new boilers.

J. Controls

1. The boiler control system and new wiring shall be provided by WHESCO group (sole source). This boiler control system will use the Allen-Bradley "Factory Talk View" version 7 system.

K. General - Mechanical

1. The scope of this project is to study and revise existing electrical systems related to:
 - a. Replacing (3) existing Nebraska water tube steam boilers and all associated pumps and control panels.
 - b. Provide power to new boiler water tube steam boilers and associated feed water pumps and control panels.
 - c. Replacing existing compressor located in basement.
 - d. Provide Power to new compressor.

~~e. Provide Power to upgrade 40 gpm Wogens Reverse Osmosis System.~~

L. Existing Conditions/Demolition - Mechanical

1. Currently the existing air compressors AC-1 and AC-2 are feeding out of the existing 480/277V, 3 phase, 4W MCC (East). Power to these 2 existing compressors shall be removed.
2. Currently existing Forced Air FD-1, FD-2 and FD-3 AC-1 and AC-2 are feeding out of existing 480/277V, 3 phase, 4W MCC (West). Power to these 3 existing Forced draft fans shall be removed.

3. Re-route selected existing overhead conduit systems to create space for new boiler.

M. Electrical System Description

1. Power to new Air compressor motor (two 7.5 HP) shall be fed from existing MCC utilizing adequately sized starters and cables.
2. Power to new boiler water tube steam boilers and associated controls shall be from existing MCC and existing power panels. All new Circuit Breakers, Starters, Variable Frequency Drive, Cable and conduit sized per code for all equipment.

~~3. Power to new RO System pump shall be from existing MCC utilizing adequately sized starter and cables.~~

43. Existing boiler control panel shall be re-used for new water tube steam boilers controls.

45. In order to deliver and locate the new boiler water tube steam boilers, existing overhead electrical conduit system needs to be relocated.

56. New MCC/distribution panel shall be provided for new 3 (three) 7.5 HP pumps and new 3 (three) 30 HP pump.

- N. Contractor shall completely prepare site for building operations, including demolition and removal of existing structures, and furnish labor and materials and perform work for the removal and replacement of the three boilers and related mechanical and electrical components as required by drawings and specifications.

- O. Visits to the site by Bidders may be made only by appointment with the Medical Center Engineering Officer. Routine Inspections and Maintenance during Construction:

1. Provide routine inspections and maintenance services as prescribed in Operations & Maintenance manuals required under this contract.
2. Provide services during construction and until items below are completed.

Milwaukee VAMC
695-15-116 Replace (3) Boilers Building 112
Milwaukee, Wisconsin 53295

10-01-17
Amendment 001
February 21, 2018

- a. VA inspection complete.
 - b. Successful commissioning
 - c. Training of VA Maintenance staff
 - d. Acceptance by VA of each system described in other specifications related to this contract.
 - e. O&M Manual submittals received, reviewed, and approved by VA.
3. Systems included in this contract are:
- a. Plumbing
 - b. HVAC
 - c. Electrical

1.3 STATEMENT OF BID ITEM(S)

- A. Refer to Bid Schedule

1.4 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

- A. Drawings and contract documents may be obtained from the website where the solicitation is posted. Additional copies shall be at Contractor's expense.

1.5 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. 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. Before starting work the General Contractor shall give one week's notice to the Contracting Officer so that security 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 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.

C. Guards: NOT USED

D. Key Control: NOT USED

E. Document Control:

1. Before starting any work, the General Contractor/Sub Contractors shall submit an electronic security memorandum describing the approach to following goals and maintaining confidentiality of "sensitive information".
2. The General Contractor is responsible for safekeeping of all drawings, project manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.
3. Certain documents, sketches, videos or photographs and drawings may be marked "Law Enforcement Sensitive" or "Sensitive Unclassified". Secure such information in separate containers and limit the access to only those who will need it for the project. Return the information to the Contracting Officer upon request.
4. These security documents shall not be removed or transmitted from the project site without the written approval of Contracting Officer.

5. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.
6. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information".
7. All electronic information shall be stored in specified location following VA standards and procedures.

F. Motor Vehicle Restrictions

1. See Section 01 01 10 SN.

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. 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. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- C. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and 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.

- D. Working space and space available for storing materials shall be shown on the drawings, except for new boilers. New boilers shall be stored off-site at a secured location until earliest date of installation following existing boiler demolition and site preparation. All three boilers shall be demolished, then all three boilers shall be delivered and placed on their final footprint. Installation of the first boiler shall follow.

Off-site storage and eligibility for progress payment for boilers constructed and stored but not installed shall meet requirements outlined below. Payment for material delivered to the Contractor at off site location is authorized in accordance with FAR Clause 52.232 5 (b)(2); if the contractor fully complies with the following conditions:

- a. Contractor furnishes evidence to the Contracting Officer that it has acquired title so such material (paid invoices, bills of sale, etc.).
- b. Contractor fully identifies the material (description, manufacturer, model number, quantities, etc.) in storage and certifies that said material shall be used to perform the contract.
- c. Contractor furnishes the exact location of the storage facility and material within it.
- d. Contractor furnishes evidence that the storage facility is bonded and insured, including insurance certificate naming the United States Department of Veterans Affairs as an additional insured.
- e. Contractor furnishes a written certified acknowledgment from the storage facility that they recognize the United States Department of Veterans Affairs, as the owner of the materials.
- f. Contractor provides written acknowledgement that it is fully responsible and liable for the security of the materials; and,

g. Contractor furnishes photographs of the material and the storage facility.

In addition to FAR 52.232-5, the contract also contains VAAR 852-236-82(d):

(d) The contracting officer will consider for monthly progress payments material and/or equipment procured by the contractor and stored on the construction site, as space is available, or at a local approved location off the site, under such terms and conditions as such officer approves, including but not limited to the following:

(1) The material or equipment is in accordance with the contract requirements and/or approved samples and shop drawings.

(2) Only those materials and/or equipment as are approved by the resident engineer for storage shall be included.

(3) Such materials and/or equipment shall be stored separately and shall be readily available for inspection and inventory by the resident engineer.

(4) Such materials and/or equipment shall be protected against weather, theft and other hazards and will not be subjected to deterioration.

(5) Terms, provisions, conditions and covenants contained in the contract shall be and remain in full force and effect as therein provided.

(6) A supplemental agreement will be executed between the Government and the contractor with the consent of the contractor's surety for off-site storage.

The contractor must include on each invoice the address of the storage facility and an itemized breakdown of the stored materials. Only the cost of the materials will be paid. The cost for installation must be excluded from the invoiced amount since it will occur later. Only after documentation has been

submitted by the contractor and approved by the CO shall payment for stored materials off site be made.

- E. Workmen are subject to rules of Medical Center applicable to their conduct.
- F. Execute work to interfere as little as possible with normal functioning of Medical Center including operations of utility services, fire protection systems and any existing equipment, and with work being done by others. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied, during construction, jointly by patients or medical personnel, and Contractor's personnel, except as permitted by COR where required by limited working space.
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 not more than two work days. Provide unobstructed access to Medical Center areas required to remain in operation.
 3. Where access by Medical Center personnel to vacated portions of buildings is not required, storage of Contractor's materials and equipment will be permitted subject to fire and safety requirements.

G. Phasing:

The Medical Center must maintain its operation 24 hours a day 7 days a week. Therefore, any interruption in service must be scheduled and coordinated with the COR to ensure that no lapses in operation occur.

Notify COR two weeks before proposed date of starting work in each specific area of site, building or portion thereof.

Arrange such dates to ensure accomplishment of this work in successive phases as follows:

New Boiler Installation Phasing <u>(to occur in calendar year immediately following calendar year of contract award)</u>	
October 1	One boiler fully operational, commissioning complete
October 15	Second boiler fully operational, commissioning complete
November 1	Third boiler fully operational, commissioning complete

Contractor shall take all measures and provide all material necessary for protecting existing equipment and property in affected areas of construction against 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 and patients through other construction areas which serve as routes of access to such affected areas and equipment. These routes whether access or egress shall be isolated from the construction area by temporary partitions and have walking surfaces and lighting to facilitate patient and staff access. Coordinate alteration work in areas occupied by Department of Veterans Affairs so that Medical Center operations will continue during the construction period.

- I. Construction Fence: Before construction operations begin, Contractor shall provide a chain link construction fence, 2.1m (seven feet) minimum height, around the construction area indicated on the drawings. Provide gates as required for access with necessary hardware, including hasps and padlocks. Fasten fence fabric to terminal posts with tension bands and to line posts and top and bottom rails with tie wires spaced at maximum 375mm (15 inches). Bottom of fences shall extend to 25mm (one inch) above grade. Remove the fence when directed by COR.
- J. When a building and/or construction site is turned over to Contractor, Contractor shall accept entire responsibility including upkeep and maintenance therefore:

1. Contractor shall maintain a minimum temperature of 4 degrees C (40 degrees F) always, except as otherwise specified.
2. Contractor shall maintain in operating condition existing fire protection and alarm equipment. About fire alarm equipment, Contractor shall plan for pre-inspection of site with Fire Department or Company (Department of Veterans Affairs or municipal) whichever will be required to respond to an alarm from Contractor's employee or watchman.

K. Utilities Services: Maintain existing utility services for Medical Center always. Provide temporary facilities, labor, materials, equipment, connections, and utilities to assure uninterrupted services. Where necessary to cut existing water, steam, gases, sewer or air pipes, or conduits, wires, cables, etc. of utility services or of fire protection systems and communications systems (including telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by COR.

1. No utility service such as water, gas, steam, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of COR. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished, work on any energized circuits or equipment shall not commence without a detailed work plan, the Medical Center Director's prior knowledge and written approval. Refer to specification Sections 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS, 27 05 11 REQUIREMENTS FOR COMMUNICATIONS INSTALLATIONS and 28 05 00, COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY for additional requirements.
2. Contractor shall submit a request to interrupt any such services to COR, in writing, 217 days in advance of proposed interruption. Request shall state reason, date, exact time of, and approximate duration of such interruption.
3. Contractor will be advised (in writing) of approval of request, or of which other date and/or time such interruption will cause least inconvenience to operations of Medical Center. Interruption time

- approved by Medical Center may occur at other than Contractor's normal working hours.
4. Major interruptions of any system must be requested, in writing, at least ~~30~~¹⁵ calendar days prior to the desired time and shall be performed as directed by the COR.
5. Whenever it is required that a connection fee be paid to a public utility provider for new permanent service to the construction project, for such items as water, sewer, electricity, gas or steam, payment of such fee shall be the responsibility of the Government and not the Contractor.
- L. Abandoned Lines: All service lines such as wires, cables, conduits, ducts, pipes and the like, and their hangers or supports, which are to be abandoned but are not required to be entirely removed, shall be sealed, capped or plugged at the main, branch or panel they originate from. The lines shall not be capped in finished areas, but shall be removed and sealed, capped or plugged in ceilings, within furred spaces, in unfinished areas, or within walls or partitions; so that they are completely behind the finished surfaces.
- M. To minimize interference of construction activities with flow of Medical Center traffic, comply with the following:
1. Keep roads, walks and entrances to grounds, to parking and to occupied areas of buildings clear of construction materials, debris and standing construction equipment and vehicles. Wherever excavation for new utility lines cross existing roads, at least one lane must be open to traffic always with approval.
 2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances must be approved by the COR.
- N. Coordinate the work for this contract with other construction operations as directed by COR. This includes the scheduling of traffic and the use of roadways, as specified in Article, USE OF ROADWAYS.
- O. Coordination of Construction with Cemetery Director: The burial activities at a National Cemetery shall take precedence over

construction activities. The Contractor must cooperate and coordinate with the Cemetery Director, through the COR, in arranging construction schedule to cause the least possible interference with cemetery activities in actual burial areas. Construction noise during the interment services shall not disturb the service. Trucks and workmen shall not pass through the service area during this period:

1. The Contractor is required to discontinue his work sufficiently in advance of Easter Sunday, Mother's Day, Father's Day, Memorial Day, Veteran's Day and ~~and/or~~ Federal holidays, to permit him to clean up all areas of operation adjacent to existing burial plots before these dates.
2. Cleaning up shall include the removal of all equipment, tools, materials and debris and leaving the areas in a clean, neat condition.

1.7 ALTERATIONS

- A. Survey: Before any work is started, the Contractor shall make a thorough survey with the COR of building 112 and areas within 100 feet of buildings exterior and furnish a report. Provide 3-D Laser Scanning and BIM Conversion for Initial Survey:
 - i. 3D laser scanning of the boiler work site. Scanning to be performed in approximately 1-2 days during normal business hours (i.e. 7 am to 4 pm). Scanning contractor to coordinate effort with COR.
 - ii. Scanning to be performed using a terrestrial scanner with equal to or greater capabilities of the Faro X330 terrestrial scanner.
 - iii. Registrations (i.e. alignment) of each scan position and subsequent export to Autodesk compatible Recap point cloud format.

- iv. Recap Project and scan exports (*.rcs) of point cloud for insertion into Autodesk products delivered on external hard drive or USB depending on size.
 - v. Convert the laser scan data to create an as-built Autodesk Revit 2015 model of the existing conditions. All elements shall be modeled as generic materials and walls and slabs with unknown thickness shall be modeled as a default 6 inches.
 - vi. Submittal product shall identify discernable features for the VA such as structural columns and walls, interior partition walls, piping & conduit (>2"), ductwork, and/or ceiling mounted fixtures.
 - vii. Modeling shall be done within ½ inch tolerance of the scan data.
 - viii. Final submittal: Autodesk Recap point cloud (.rcs) and Revit 2016 or 2017 model (as required by client) with as-built geometry as described above.
- B. Any items required by drawings to be either reused or relocated or both, found during this survey to be nonexistent, or in opinion of COR to be in such condition that their use is impossible or impractical, shall be furnished and/or replaced by Contractor with new items in accordance with specifications which will be furnished by Government. Provided the contract work is changed because of this subparagraph B, the contract will be modified accordingly, under provisions of clause entitled "DIFFERING SITE CONDITIONS" (FAR 52.236-2) and "CHANGES" (FAR 52.243-4 and VAAR 852.236-88).
- C. Re-Survey: Thirty days before expected partial or final inspection date, the Contractor shall make a thorough survey with the COR of building 112 and areas within 100 feet of buildings exterior and furnish a report. Provide 3-D Laser Scanning and BIM Conversion for Initial Survey:
- 1. Provide same work and submittals described in A.

D. Protection: Provide the following protective measures:

1. Wherever existing roof surfaces are disturbed they shall be protected against water infiltration. In case of leaks, they shall be repaired immediately upon discovery.
2. Temporary protection against damage for portions of existing structures and grounds where work is to be done, materials handled and equipment moved and/or relocated.
3. Protection of interior of existing structures always, from damage, dust and weather inclemency. Wherever work is performed, floor surfaces that are to remain in place shall be adequately protected prior to starting work, and this protection shall be maintained intact until all work in the area is completed.

1.8 DISPOSAL AND RETENTION

A. Materials and equipment accruing from work removed and from demolition of buildings or structures, or parts thereof, shall be disposed of as follows:

1. Reserved items which are to remain property of the Government are noted on drawings or in specifications as items to be stored. Items that remain property of the Government shall be removed or dislodged from present locations in such a manner as to prevent damage which would be detrimental to re-installation and reuse. Store such items where directed by COR.
2. Items not reserved shall become property of the Contractor and be removed by Contractor from Medical Center.
3. Items of portable equipment and furnishings located in rooms and spaces in which work is to be done under this contract shall remain the property of the Government. When rooms and spaces are vacated by the Department of Veterans Affairs during the alteration period, such items which are NOT required by drawings and specifications to be either relocated or reused will be removed by the Government in advance of work to avoid interfering with Contractor's operation.

4. PCB Transformers: NOT USED.

1.9 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 are 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.

(FAR 52.236-9)

- C. Refer to Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS, for additional requirements on protecting vegetation, soils and the environment. Refer to Articles, "Alterations", "Restoration", and "Operations and Storage Areas" for additional instructions concerning repair of damage to structures and site improvements.
- D. Refer to FAR clause 52.236-7, "Permits and Responsibilities," : NOT USED.

1.10 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 COR. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COR 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 because 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 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).

1.11 PHYSICAL DATA - APPENDIX B IN SPECIFICATIONS VOLUME 2 IS THE ASBESTOS SURVEY REPORT.

1.12 PROFESSIONAL SURVEYING SERVICES

A registered professional land surveyor or registered civil engineer whose services are retained and paid for by the Contractor shall perform services specified herein and in other specification sections. The Contractor shall certify that the land surveyor or civil engineer is not one who is a regular employee of the Contractor, and that the

land surveyor or civil engineer has no financial interest in this contract. Surveyor shall perform work under Article 1.7.

1.13 LAYOUT OF WORK

- A. The Contractor shall lay out the work from Government established base lines and bench marks, indicated on the drawings, and shall be responsible for all measurements about the layout. The Contractor shall furnish, at Contractor's own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through Contractor's negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

1.14 AS-BUILT DRAWINGS

- A. The contractor shall maintain two full size sets of as-built drawings which shall 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 COR review, as often as requested.
- C. Contractor shall deliver two approved completed sets of as-built drawings in the electronic version (scanned PDF) to the COR within 15 calendar days after each completed phase and after the acceptance of the project by COR.
- D. Paragraphs A, B, & C shall also apply to all shop drawings.
- E. Submittals: Monthly updates shall be submitted under transmittal for review and approval by COR with each pencil draft pay request. Contractor may, at no added cost to government, substitute additional

monthly scanned imaging of project work progress in lieu of redline markups of as-built drawings.

1.15 USE OF ROADWAYS

- A. For hauling (including removal of demolished boilers and transportation of new boilers), use only established public roads and roads on Medical Center property and, when authorized by the COR, such temporary roads which are necessary in the performance of contract work. Temporary roads shall be constructed and restoration performed by the Contractor at Contractor's expense. When necessary to cross curbing, sidewalks, or similar construction, they must be protected by well-constructed bridges meeting WISDOT requirements for load transfer safely over buried conditions. Bridges are required over fuel tanks and steam tunnel for hauling.

1.16 RESIDENT ENGINEER'S FIELD OFFICE - NOT USED.

1.17 TEMPORARY USE OF MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Use of new installed mechanical and electrical equipment to provide heat, ventilation, plumbing, light and power will be permitted subject to written approval and compliance with the following provisions:
1. Permission to use each unit or system must be given by COR in writing. If the equipment is not installed and maintained in accordance with the written agreement and following provisions, the COR will withdraw permission for use of the equipment.
 2. Electrical installations used by the equipment shall be completed in accordance with the drawings and specifications to prevent damage to the equipment and the electrical systems, i.e. transformers, relays, circuit breakers, fuses, conductors, motor controllers and their overload elements shall be properly sized, coordinated and adjusted. Installation of temporary electrical equipment or devices shall be in accordance with NFPA 70, National Electrical Code, (2014 Edition), Article 590, *Temporary Installations*. Voltage supplied to each item of equipment shall be verified to be correct and it shall be determined that motors are not overloaded. The electrical equipment shall be thoroughly cleaned before using it and again

immediately before final inspection including vacuum cleaning and wiping clean interior and exterior surfaces.

3. Units shall be properly lubricated, balanced, and aligned.

Vibrations must be eliminated.

4. All components of heat production and distribution system, metering equipment, condensate returns, and other auxiliary facilities used in temporary service shall be cleaned prior to use; maintained to prevent corrosion internally and externally during use; and cleaned, maintained and inspected prior to acceptance by the Government. Boilers, pumps, feedwater heaters and auxiliary equipment must be operated as a complete system and be fully maintained by operating personnel. Boiler water must be given complete and continuous chemical treatment.

- B. Prior to final inspection, the equipment or parts used which show wear and tear beyond normal, shall be replaced with identical replacements, at no additional cost to the Government.

- C. This paragraph shall not reduce the requirements of the mechanical and electrical specifications sections.

- D. Any damage to the equipment or excessive wear due to prolonged use shall be repaired replaced by the contractor at the contractor's expense.

1.18 TEMPORARY USE OF EXISTING ELEVATORS - NOT USED.

1.19 TEMPORARY USE OF NEW ELEVATORS - NOT USED.

1.20 TEMPORARY TOILETS.

- A. Provide where directed, (for use of all Contractor's workmen) ample temporary sanitary toilet accommodations. Keep such places clean and free from flies, and all connections and appliances connected therewith are to be removed prior to completion of contract, and premises left perfectly clean.

1.21 AVAILABILITY AND USE OF UTILITY SERVICES - NOT USED.

1.22 NEW TELEPHONE EQUIPMENT - NOT USED.

1.23 TESTS

- A. As per specification section 23 05 93 the contractor shall provide a written testing and commissioning plan complete with component level, equipment level, sub-system level and system level breakdowns. The plan will provide a schedule and a written sequence of what will be tested, how and what the expected outcome will be. This document shall be submitted for approval prior to commencing work. The contractor shall document the results of the approved plan and submit for approval with the as built documentation.
- B. Pre-test mechanical and electrical equipment and systems and make corrections required for proper operation of such systems before requesting final tests. Final test will not be conducted unless pre-tested.
- C. Conduct final tests required in various sections of specifications in presence of an authorized representative of the Contracting Officer. Contractor shall furnish all labor, materials, equipment, instruments, and forms, to conduct and record such tests.
- D. Mechanical and electrical systems shall be balanced, controlled and coordinated. A system is defined as the entire system which must be coordinated to work together during normal operation to produce results for which the system is designed. For example, air conditioning supply air is only one part of entire system which provides comfort conditions for a building. Other related components are return air, exhaust air, steam, chilled water, refrigerant, hot water, controls and electricity, etc. Another example of a system which involves several components of different disciplines is a boiler installation. Efficient and acceptable boiler operation depends upon the coordination and proper operation of fuel, combustion air, controls, steam, feedwater, condensate and other related components.
- E. All related components as defined above shall be functioning when any system component is tested. Tests shall be completed within a reasonable period during which operating and environmental conditions remain reasonably constant and are typical of the design conditions.

- F. Individual test result of any component, where required, will only be accepted when submitted with the test results of related components and of the entire system.

1.24 INSTRUCTIONS

- A. Contractor shall furnish Maintenance and Operating manuals (hard copies and electronic) and verbal instructions when required by the various sections of the specifications and as hereinafter specified.
- B. Manuals: Maintenance and operating manuals and one compact disc (four hard copies and one electronic copy each) for each separate piece of equipment shall be delivered to the COR coincidental with the delivery of the equipment to the job site. Manuals shall be complete, detailed guides for the maintenance and operation of equipment. They shall include complete information necessary for starting, adjusting, maintaining in continuous operation for long periods of time and dismantling and reassembling of the complete units and sub-assembly components. Manuals shall include an index covering all component parts clearly cross-referenced to diagrams and illustrations. Illustrations shall include "exploded" views showing and identifying each separate item. Emphasis shall be placed on the use of special tools and instruments. The function of each piece of equipment, component, accessory and control shall be clearly and thoroughly explained. All necessary precautions for the operation of the equipment and the reason for each precaution shall be clearly set forth. Manuals must reference the exact model, style and size of the piece of equipment and system being furnished. Manuals referencing equipment similar to but of a different model, style, and size than that furnished will not be accepted.
- C. Instructions: Contractor shall provide qualified, factory-trained manufacturers' representatives to give detailed training to assigned Department of Veterans Affairs personnel in the operation and complete maintenance for each piece of equipment. All such training shall be at the job site. These requirements are more specifically detailed in the various technical sections. Instructions for different items of equipment that are component parts of a complete system, shall be given in an integrated, progressive manner. All instructors for every piece

of component equipment in a system shall be available until instructions for all items included in the system have been completed. This is to assure proper instruction in the operation of inter-related systems. All instruction periods shall be at such times as scheduled by the COR and shall be considered concluded only when the COR is satisfied in regard to complete and thorough coverage. The contractor shall submit a course outline with associated material to the COR for review and approval prior to scheduling training to ensure the subject matter covers the expectations of the VA and the contractual requirements. The Department of Veterans Affairs reserves the right to request the removal of, and substitution for, any instructor who, in the opinion of the COR, does not demonstrate sufficient qualifications in accordance with requirements for instructors above.

1.25 GOVERNMENT-FURNISHED PROPERTY - NOT USED.

1.26 RELOCATED EQUIPMENT ITEMS - NOT USED.

1.27 STORAGE SPACE FOR DEPARTMENT OF VETERANS AFFAIRS EQUIPMENT - NOT USED.

1.28 CONSTRUCTION SIGN

- A. Provide a Construction Sign where directed by the COR. All wood members shall be of framing lumber. Cover sign frame with 0.7 mm (24 gage) galvanized sheet steel nailed securely around edges and on all bearings. Provide three 100 by 100 mm (4 inch by 4 inch) posts (or equivalent round posts) set 1200 mm (four feet) into ground. Set bottom of sign level at 900 mm (three feet) above ground and secure to posts with through bolts. Make posts full height of sign. Brace posts with 50 x 100 mm (two by four inch) material as directed.
- B. Paint all surfaces of sign and posts two coats of white gloss paint. Border and letters shall be of black gloss paint, except project title which shall be blue gloss paint.
- C. Maintain sign and remove it when directed by the COR.
- D. Detail Drawing of construction sign showing required legend and other characteristics of sign is in specifications section 01 01 10 SN.

1.29 SAFETY SIGN

- A. Provide a Safety Sign where directed by COR. Face of sign shall be 19 mm (3/4 inch) thick exterior grade plywood. Provide two 100 mm by 100 mm (four by four inch) posts extending full height of sign and 900 mm (three feet) into ground. Set bottom of sign level at 1200 mm (four feet) above ground.
- B. Paint all surfaces of Safety Sign and posts with one prime coat and two coats of white gloss paint. Letters and design shall be painted with gloss paint of colors to be determined by COR.
- C. Maintain sign and remove it when directed by COR.
- D. Standard Detail Drawing Number SD10000-02(Found on VA TIL) of safety sign showing required legend and other characteristics of sign is attached hereto and is made a part of this specification.
- E. Post the number of accident free days daily.

1.30 PHOTOGRAPHIC DOCUMENTATION - NOT USED.

1.31 FINAL ELEVATION DIGITAL IMAGES - NOT USED.

1.32 HISTORIC PRESERVATION - NOT USED.

1.33 VA TRIRIGA CPMS - NOT USED.

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