

SCOPE OF WORK
PROVIDE TANKLESS WATER HEATERS AND
TEPID WATER TO EMERGENCY SHOWER EYEWASH
FLORENCE NATIONAL CEMETERY
FLORENCE, SOUTH CAROLINA

A. Scope of Work. Furnish all labor, tools, materials, equipment, and testing to provide tankless water heaters and tepid water to emergency shower eyewash units in the Maintenance building, complete with all associated mechanical, plumbing, and electrical work.

1. Contractor shall disconnect and remove the existing water heater located in the Maintenance building mechanical room along with all appurtenances. Contractor shall cap water lines, gas lines, and seal penetrations thru brick walls with mortar that are not reused in the new work.
2. Contractor shall install two (2) condensing natural gas tankless water heaters in the mechanical room in a manifold system. The heat exchanger shall be an ASME stamped heat exchanger free-floating non-welded 316L stainless steel finned tube design. A 0.5 gallon stainless steel internal buffer tank and built-in circulation pump shall assist in normalizing temperature in the heat exchanger and eliminating minimum flow rates. The heater shall provide hot water at flow rates as low as 0.1 GPM and allow for recirculation without the need for an external pump. An advanced LED multi-function display shall provide temperature control. A built in timer, which works in conjunction with the advanced temperature and flow sensors, shall control recirculation heating without the need for an external thermostat. Heaters that require greater than 0.1 GPM to activate shall not be acceptable. Heater to be Ultra low NOx certified by SCAQMD and shall include an over temp sensor in the exhaust port, capable of first turning down, then turning off the heater if the flue gas reaches an over temperature condition. The heater is to be rated for a maximum allowable working pressure of 150psi. A factory provided ASME rated combination temperature and pressure safety relief valve set at 150psi and 210°F shall provide protection for the heater and shall be installed in the hot water piping. Each tankless water heater shall be rated at a minimum 30,000 and a maximum 199,950 mBTU/HR capable of heating a minimum of 5.0 GPM of water at 75°F rise and 10.0 GPM of

water at 35°F rise. Minimum combustion efficiency shall be 98% with minimum thermal efficiency 94%. Ignition shall be electronic spark. Venting shall be direct vent two pipe intake and exhaust using Schedule 40 PVC or stainless steel pipe. Tankless water heater shall be capable of operating on a minimum of 30 psi and a maximum of 150 psi water pressure. Temperature setting range shall be 100 – 140°F adjustable in 1° increments. The electrical power required for the water heater shall be 120V AC at 60 Hz. The manufacturer shall warranty all internal components against defects in workmanship and material for a period of (5) years from date of start-up, and the heat exchanger for five (5) years Non Pro-Rated from date of start-up. Each water heater shall be shipped with a complete set of installation and operating instructions including spare parts list and approved drawings. Condensing tankless natural gas water heater shall be Hubbell Model 200P or approved equal.

3. Contractor shall tap the existing building hot water supply main and install a new 3/4" insulated copper hot water line to the existing emergency shower eyewash inside the maintenance building and install a new 3/4" insulated copper hot water line to the existing exterior emergency shower eyewash outside the maintenance building. Contractor shall provide and install a 20 gallon per minute flow rate thermostatic mixing valve at each emergency shower eyewash location. The thermostatic mixing valve shall control outlet temperature over a wide range of flow and shall be suitable for a single emergency shower eyewash to comply with ANSI Standard Z358.1. The valve shall include a thermometer to measure the temperature of the stream. Temperature adjustment shall be vandal-resistant. The control mechanism shall employ a liquid filled thermostatic motor to drive the valve without additional power requirements. The control mechanism shall employ a stainless steel sliding piston control device with reverse seat closure and both fixed and variable cold water bypass. In the event of interruption of the cold water supply, the control mechanism shall close off the hot water port stopping all flow providing positive hot water shut-off. In the event the liquid motor fails, the control mechanism shall close off the hot water port with the reverse seat and fully open the internal variable bypass to allow cold water flow. The valve shall have a maximum inlet pressure equal to 125 psi and minimum supply pressure of 35 psi. Recommended operating pressure shall be 65 psi. The valve recommended inlet temperature shall be 120 degrees Fahrenheit with a temperature operating range of 70 – 90 degrees Fahrenheit with a set point of 85

degrees Fahrenheit. Thermostatic mixing valve shall be a Lawler Thermostatic Mixing Valve Model 911E or approved equal.

4. Contractor shall install a new underground natural gas line along with all necessary gas pressure regulators, connectors, and fittings from the existing natural gas meter to the tankless water heaters.
5. Contractor shall replace the existing exterior emergency shower eyewash station outside of the maintenance building with a Speakman Combination Eyewash Shower, Model SE 697 or approved equal.

B. Specifications.

1. Specifications, Section 31 51 00, Natural Gas Distribution

C. Cemetery Location.

Florence National Cemetery
803 East National Cemetery Road
Florence, SC 29506-3232
Phone: 843-669-8783

D. Project Information.

- a. Period of Performance. The contractor shall complete all work within 60 calendar days after issuance of Notice to Proceed. Time stated includes final cleanup of the premises.
- b. Work Hours. All work shall be performed between the normal business hours of 8:00 am to 4:30 pm, Monday thru Friday, excluding Federal Legal holidays.
- c. Pre-bid Site Inspection. A pre-bid site inspection is recommended. Contact the Cemetery Director at 843-669-8783 to make site visit arrangements.
- d. Preconstruction Meeting. The contractor shall not commence performance of work until the Contracting Officer has conducted a preconstruction meeting or has advised the contractor that a preconstruction meeting is not required.
- e. Detailed Work Plan. The contractor shall provide in writing a detailed work plan which presents the contractor's plan for completing the work. The contractor's plan shall be responsive with the scope of work and describe, in detail, the approach to be used for each task required. For each task, the contractor shall identify all necessary subtasks (if any), associated costs by task, and milestone dates. Four copies of the contractor's work plan shall be provided to the Contracting Officer prior to issuance of the Notice to Proceed.

- f. Changes to the Scope of Work. Any changes to the scope of work shall be authorized and approved only by the Contracting Officer. Any costs incurred by the contractor through directions of parties other than the Contracting Officer shall be borne by the contractor.

E. Standards of Conduct. The National Cemetery Administration honors veterans with a final resting place and lasting memorials that commemorate their service to our Nation. National Cemeteries are national shrines. The standards of work, appearance, and procedures performed by the contractor at the cemetery shall reflect this nations concern for those interred there. Due to the sensitive mission of the cemetery, contractor personnel must exercise and exhibit absolute decorum, composure, and stability at all times.

1. The burial activities at a National Cemetery shall take precedence over construction activities. The Contractor shall cooperate and coordinate with the Cemetery Director in arranging construction schedule activities 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.
2. The contractor shall cease work operations as necessary to ensure that no contract work causes any funeral, ceremony, procession or visitation be delayed, altered, or otherwise impacted in such a way that the dignity, serenity or security of the event is compromised.
3. 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 Federal holidays, to permit the contractor to clean up all areas of operation adjacent to existing burial plots before these dates. Cleaning up shall include the removal of all equipment, tools, materials and debris and leaving the areas in a clean, neat condition.
4. Workmen are subject to rules of the Cemetery applicable to their conduct. While on site at the National Cemetery, contractor personnel shall be required to adhere to the following standards of dress and conduct while performing work in the national cemetery. These standards and regulations are enforceable under Title 38, U.S.C., Section 218.
5. Contractor personnel appearance and conduct shall be professional and unobtrusive at all times. Shirts and full length pants must be worn at all times.
6. Smoking is not allowed in any building at the National Cemetery.

7. The playing of radios, cassette recorders, etc., is prohibited on site or in buildings. The contractor's work force is governed by the same rules governing cemetery employees. All individuals failing to comply will be removed from the site.
8. Sexual harassment will not be tolerated and the offending individual(s) will be removed from the site.
9. Contractor personnel shall not sleep on cemetery grounds, sit or stand on installed grave markers, or put, place or lean equipment or materials on grave markers.
10. Questions from cemetery visitors shall be politely referred or directed to cemetery personnel.
11. The contractor shall ensure that all employees behave with appropriate decorum, courtesy, and respect while within the cemetery or at its perimeter or entrances. Shouting, cursing, angry outbursts, sleeping, intoxication, unsafe driving of private or company vehicles, and violence or criminal acts of any kind will not be tolerated and is cause for immediate removal from the cemetery.
12. The contractor and subcontractors will not fuel equipment in grass/turf areas. Petroleum based products will damage the grass/turf. Contractor shall bear all costs associated with removing any contaminated soil as a result of fueling in grass/turf areas and shall resod the area.