CAPE HATTERAS NATIONAL SEASHORE

Outer Banks Group

STATEMENT OF WORK

Replace the Backflow Preventer on Lighthouse Road in Buxton, NC

PMIS# 350424 A

1.0 INTRODUCTION

The National Park Service (NPS) Cape Hatteras National Seashore (CAHA) has a requirement to replace the existing backflow preventer and install a new insulated fiberglass cover above ground enclosure.

1.1 OBJECTIVE

The purpose of this project is to remove the existing underground backflow preventer and water meter, abandon existing utility vault by filling it and covering it with new concrete slab, install new water connection backflow preventer, coordinating a new Dare County water meter installation, and providing a hotbox for both the new backflow preventer and water meter.

1.2 LOCATION

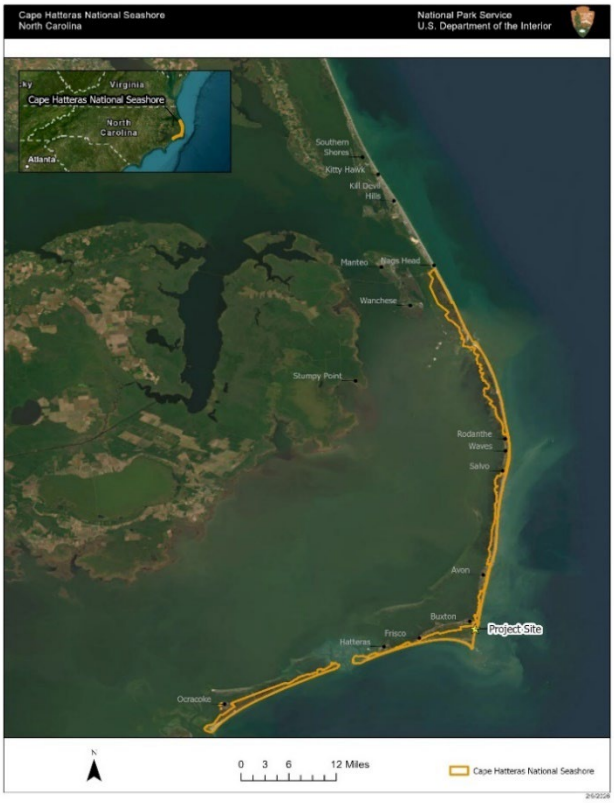

Figure 1: Cape Hatteras National Seashore

Figure 2: Site Location

1.3 BACKGROUND AND EXISTING CONDITIONS

The backflow preventer is located at the intersection of Lighthouse Road and Flowers Ridge Rd in Buxton, NC. The existing system is in an underground concrete vault and is subject to flooding. The system components inside the vault include a 6" water meter owned by Dare County Water Department and a 6" Watts double check valve backflow preventer along with 2 isolation valves. A one inch bypass meter is installed adjacent to the 6" meter. The vault measures 10' long x 6' wide x 4' deep. The double door aluminum lid opening measures 8' x 4'. There are two 6" Gate Valves located outside the concrete vault on the Dare County side of the meter which control water flow to an adjacent neighborhood outside of the Park as well as to this meter vault.

Figure 3: Buxton Backflow Preventer and Meter Vault

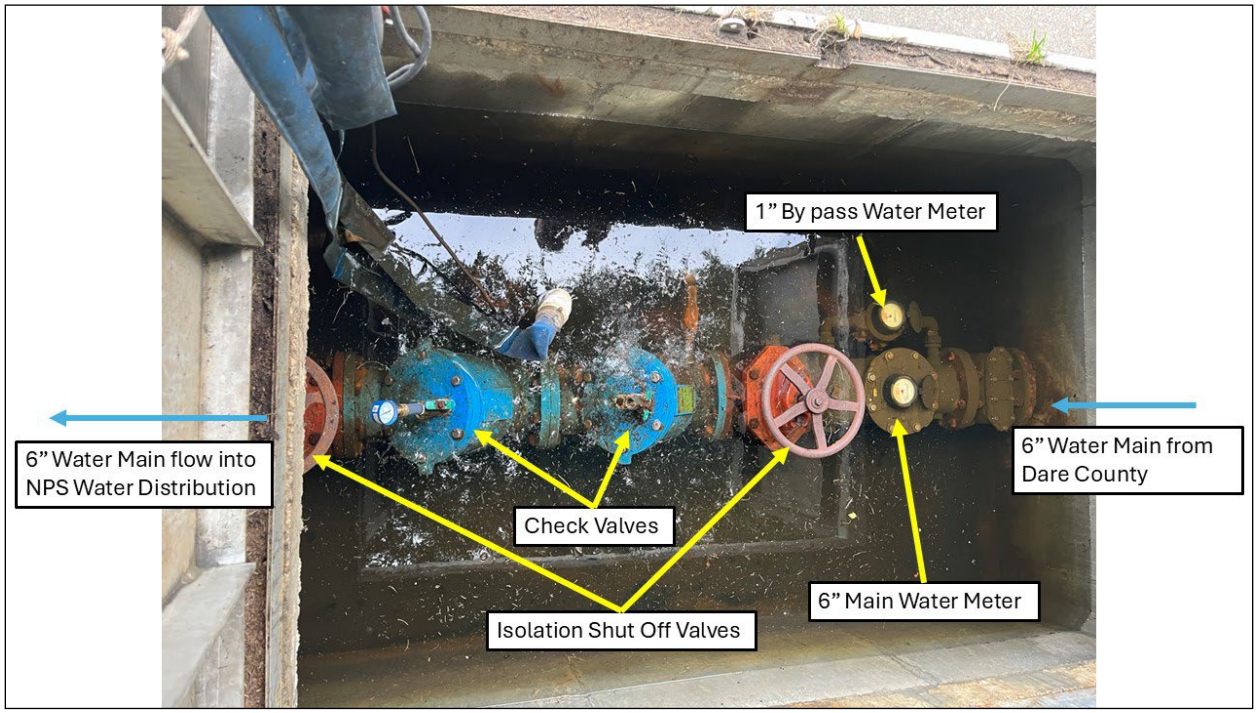

Figure 4: Interior View of the Backflow Preventer and Meter Vault

2.0 PERIOD OF PERFORMANCE

The contractor shall not be allowed to work at this site from May 15th – Oct 1st. All work must be scheduled outside of these dates. Project shall be completed within one hundred and twenty days (120) days of the approved schedule. Project start dates must be approved by the COR prior to beginning construction. Schedule utility interruptions at a time that will minimize impacts to park visitors and park staff.

3.0 SCOPE OF WORK

This Scope of Work includes removing the existing underground backflow preventer and water meter, abandoning existing utility vault by filling it and covering it with new concrete slab, installing a new water connection and backflow preventer, coordinating a new Dare County water meter installation in conjunction with the installation of the new backflow preventer, and providing an enclosure for both the new backflow preventer and water meter.

The contractor shall be responsible for coordinating the new Dare County water meter installation in conjunction with the installation of the new backflow preventer. The contractor shall be responsible for following all North Carolina Department of Environmental Quality Public Notification Requirements for all park facilities before, during, and after the completion of the installation of the backflow preventer and water meter. The contractor shall be responsible for completing North Carolina Department of Environmental Quality water testing after the installation of the backflow preventer and water meter are complete. The contractor shall be responsible for checking the backflow preventer and water meter for leaks after construction is

complete. The contractor shall be responsible for ensuring all water service to park facilities has resumed after completion of the installation of the backflow preventer and water meter.

To the extent possible, the contractor shall limit interruptions of water service to park facilities.

The contractor shall provide all technical support, materials, tools, equipment, and labor required to install a new backflow preventer, insulated fiberglass cover with concrete pad and coordinate with Dare County Water Department for the water meter replacement. The contractor shall follow International Building Code/North Carolina Building Code, North Carolina Department of Environment Quality Code/Requirements, Dare County Water Department Code/Requirements/Specifications, American Waterworks Association (AWWA), and American Society of Sanitary Engineering (ASSE).

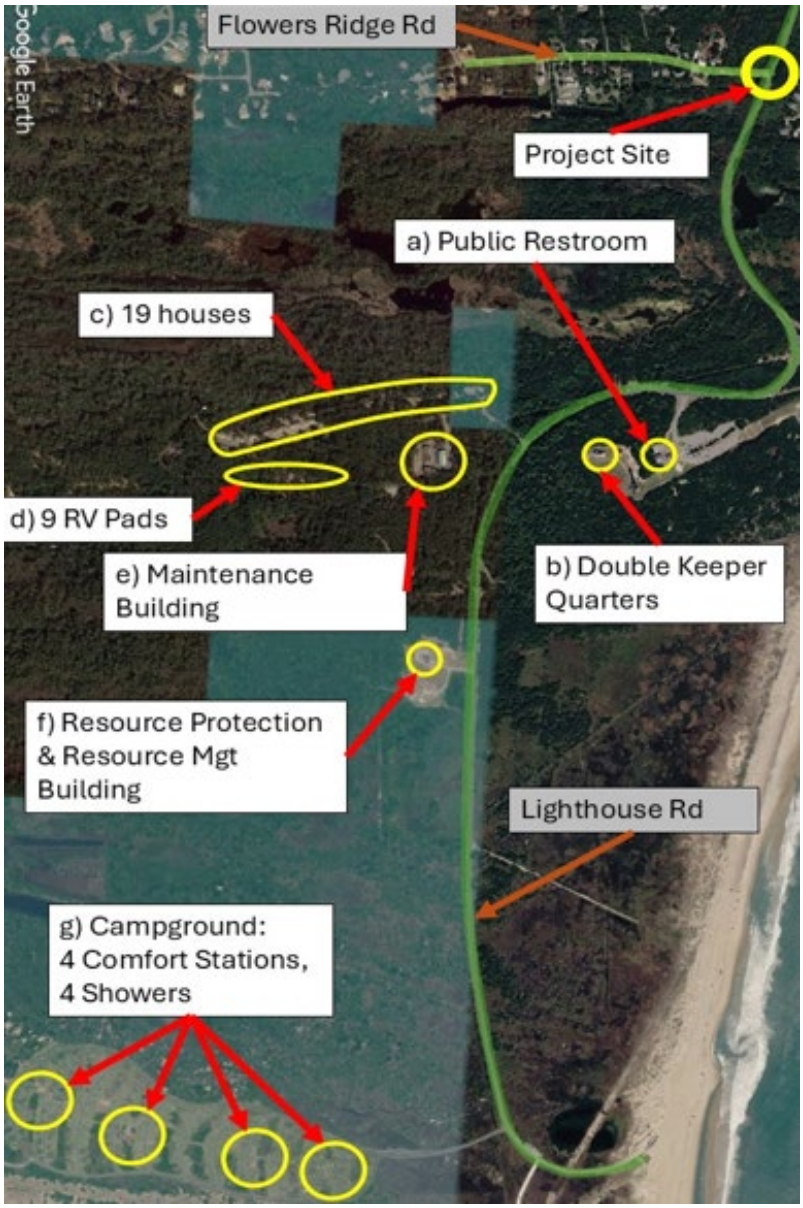

Figure 5: Map Showing Park Facilities with Potable Water Fixtures

3.1 BASE BID

The contractor shall:

3.1.1 Submit product material data to be used on this project. No work shall be completed on site until submittals are accepted by the Contracting Officer (CO).

3.1.2 Coordinate meter replacement matching the size and specifications of the Dare County Water Department. New water meter shall be for a minimum 6" water line, with smaller by-pass meter included.

3.1.3 Post Temporary Notification signs prior to starting work on site. Post signs above each water fixture in public buildings according to the following list. Post signs on the front door of each house included in the list below. All buildings are within the Park boundaries (See Figure 3 below). Coordinate posting of signs at any building in question with the Contracting Officer Representative (COR). Affix each sign with removable strips of tape for the duration of the project. A template is provided as an attachment to this scope of work.

3.1.3.1 Lighthouse Public Restroom
3.1.3.2 Double Keeper Quarters
3.1.3.3 19 Houses (Cabin Rd and Loggerhead Lane)
3.1.3.4 9 RV Pads (Loggerhead Lane)
3.1.3.5 Maintenance Building
3.1.3.6 Resource Protection & Resource Management Building
3.1.3.7 Campground (4 Comfort Stations, 4 Showers)

3.1.4 Remove existing water distribution system components inside the vault; to include existing meter, existing backflow preventor (BFP), by-pass meter piping and valves, and aluminum vault lid. Provide old water meter assembly to Dare County.

3.1.5 Provide 6" piping system components outside of the utility vault connecting to the existing Dare County Water supply main line to elevate the position of the new BFP and new meter assembly above ground. Elbows, fittings, and all other materials are included to meet Dare County Water Department and AWWA specifications for size, location, elbow turning radius, thrust blocks, depth of burial, etc. Provide concrete thrust blocks approximately 1 cubic ft around underground 90 degree bends below ground. Provide dewatering to complete demolition, install new piping, thrust pipes, etc.

3.1.6 Existing utility vault box will be abandoned in place and filled with gravel/sand to level with top of vault. Material shall be well draining sand or gravel without fines or silt material. Drill out drain hole in the floor of the concrete vault. Compact fill material. Top 6 inches of material shall be clean #57 stone.

3.1.7 Form and pour a concrete slab over the old vault in the same footprint as the original lid. New concrete slab shall be minimum 3,500 psi, 4" thick with top of concrete 4" above existing grade, approx. 10' x 6'. Exact dimensions of the slab shall be adequate to provide for the enclosure manufacturer. Concrete shall have an admixture for fast setting to achieve minimum 2,700 psi strength in 3 days.

3.1.8 Coordinate with water utility company for their installation of the meter. Provide new BFP assembly and valves and connect to the new meter and to the existing NPS water distribution piping. Provide Wilkins Reduced Pressure Zone Backflow Preventer, 375A, Standard Configuration, Ductile Iron, Flange fittings, or approved Equal.

3.1.9 Provide a test for new system to verify operation, flow, meter assembly operation, and leaks per AWWA M14 or Dare County Water Department Test Method. Coordinate test date with CO and Dare County Water Department. Provide test results to Dare County Water Department and NPS CO. Provide a certification by a certified BFP inspector of the proper installation and operation of the new BFP. Failure of any leak test or certification of the BFP will require repairs or replacement and retesting by the Contractor at the expense of the Contractor.

3.1.10 After new BFP and water meter are installed and accepted, flush water lines according to NC Department of Environmental Quality (DEQ) and Dare County Water Department requirements. Provide three Bac-T water sampling tests per NC DEQ and Dare County requirements at park fixtures after flushing the lines. Provide copies of sample test results to Local and State authorities, and a copy to the CO and COR.

3.1.11 Provide new insulated fiberglass cover over new BFP and water meter components. Enclosure shall be insulated and shall meet the requirements of ASSE standard 1060. Provide SAFE-T-COVER model 600D-AL or approved equal.

3.1.12 Remove temporary notification signage at buildings and houses.

3.1.13 Fill ruts greater than 1 inch depth with top soil and rake smooth. Rake smooth all ruts less than 1 inch depth. Provide hydroseed or broadcast 100% winter rye at 1 lb per 100 sf over the disturbed areas and provide water for 3 days or until 75% coverage is obtained over disturbed area. Overseed entire seeded area after one week with 100% rye grass at 1 lb per 200 sf.

3.2 OPTION 1

The contractor shall:

3.2.1 Provide heated enclosure with slab mounted moisture resistant heater inside the enclosure. Enclosure and heater shall be provided by the same manufacturer. Provide SAFE-T-COVER model 600D-AL with HCH2000-120 heater or approved equal.

3.2.2 New power shall be coordinated with Cape Hatteras Electric Cooperative (CHEC) and include a panel in exterior NEMA rated enclosure mounted on 4x4 posts with 2x12 panel mounting boards, conduit, and connection to new enclosure heater. The 4x4 posts and 2x12 mounting boards shall be large enough to accommodate the meter and panel/shut off. Coordinate the location of the new meter with the NPS CO. The meter is to be provided by CHEC. Connections, coordination, and all other materials are the responsibility of the contractor. Direct boring between CHEC transformer and new meter base is acceptable. Hand dig the connection from the meter/panel to the new BFP enclosure.

4.0 CONTRACTOR REQUIREMENTS

The contractor shall:

4.1 Possess required qualifications/certifications required to complete this project and provide any proof of qualifications/certifications. Possess experience in the installation of potable water systems and plumbing. Perform work according to manufacture instructions and requirements, in addition to Local, Federal and State Regulations and American Water Works (AWWA) Standards. Where a sub-contractor is meeting the qualifications/certifications and experience, the contractor shall provide proof of qualifications/certifications for the sub-contractor to meet this requirement.

4.2 Coordinate with private or public parties as required to complete the project.

4.3 Confine storage of materials to the immediate work area. Storage area shall be approved by the COR prior to being used by the contractor.

4.4 Remove all material and waste generated during this project and properly dispose of offsite, both daily and at the conclusion of the project.

4.5 Remove safety fencing and equipment from the work area after project completion.

4.6 Restore disturbed areas to a suitable condition, which may include backfilling, reseeding, and or sodding disturbed areas. COR must approve seed/sod prior to use on site.

4.7 Supervise contracted employees performing services under this order at all times. Contractor management will ensure that employees properly comply with the performance work standards outlined in the statement of work, specifications, and contract documents.

The Contractor is advised to visit the site and verify all existing conditions and measurements prior to submitting a quote. Site visits will be coordinated with the Primary Point of Contact (POC) and the CO.

5.0 DELIVERABLES/SUBMITTALS

5.1 Provide a proposed work schedule in the form of a graph or chart indicating the proposed work schedule for the phases of the work. In order to track the progress of the contracted work, the schedule should include beginning and ending dates of each phase and shall include schedules of work to be done by Dare County and Cape Hatteras Electrical Co-Op (CHEC) where applicable and coordinated with those parties.

5.2 Provide CO and COR with:

- Product data/specifications for approval prior to acquiring materials.
    - Backflow Preventer
    - Gate Valves
    - Enclosure and heating element
    - Concrete
    - Piping Materials (PVC, DI, etc.) including fittings
    - Water Utility Interruption Notification Sign
- Daily progress reports on a weekly basis.
- Certified Payroll
- Warranty for parts and labor
- Copy of all test results and certification for the Backflow Preventer
- Water Quality Test results
- Receipts from Landfill/recycling center for all materials disposed of and those materials diverted from the Landfill showing weight or volume of the material.
- As-built drawings, where applicable.
- Product specifications and maintenance manuals.

6.0 INSPECTION

Representatives of the contractor and the National Park Service will conduct a final inspection. This inspection includes testing to determine the completion and functionality of the contract work. Testing to ensure proper operation and certification of the BFP is the responsibility of the contractor. The NPS reserves the right to have the completed project retested. The National Park Service will not authorize final payment until the inspection is complete with full acceptance of the work.