

# STATEMENT OF WORK/SPECIFICATION

## A. General Information

1. Title of Project: **Replace Irrigation Central Control**
2. Scope of Work: The contractor shall provide all supervision, personnel, equipment, supplies, supervision, and other items and services necessary for installation of a control panel for the automation of the water system with a programmable logic controller (PLC) at the Fort Mitchell National Cemetery, Fort Mitchell, AL and hereafter referred to as "Cemetery." This panel and PLC will allow for the automation and proper utilization of the existing irrigation system throughout the cemetery, and the continual pressure of the water lines within the cemetery. The overall responsibility of the Contractor is to plan, coordinate, organize, manage, and perform the activities described herein, which are required to install a serviceable automated water system which will be programmable to allow both existing well pumps (with alternating activation) to fill a common tank and the level to be controlled by four (4) existing float switches.
  - a) An existing jockey pump shall be incorporated in order to maintain pressure on the supplementary system. This jockey pump shall activate as needed to meet current demand.
  - b) The proposed programmable water system shall include a 6"-7" touchscreen system status display mounted in the control cabinet door.
  - c) Pumps shall alternate duty to ensure pumps have equal stress / running time, over time. Manual operations will remain the same.
  - d) There shall be a manual, off, and auto mode for the system.
  - e) The touchscreen shall display the current status and aid in troubleshooting
  - f) A flashdrive containing all software, engineering files, PLC, HMI, and AutoCad shall be included as deliverables.
  - g) Services include one (1) training session for six (6) employees on pump operation. Training shall be a minimum of one (1) hour and shall be provided from an English-speaking, experienced Technician capable of describing the operation of the equipment and each control with a brief description of its function and step-by-step procedures.
3. Background:
  - a) Fort Mitchell National Cemetery is located at 553 Highway 165; Fort Mitchell, AL 36856.
  - b) The cemetery is approximately 64 irrigated acres on 316 acres of land.
  - c) National Cemeteries are National Shrines. The standards of maintenance and appearance at these cemeteries must reflect this nation's concern for those interred there. For this reason, strict adherence to the specifications is required as well as National Cemetery Administration standards.
4. Performance Period: The contractor shall complete the work required under this statement of work in sixty (60) calendar days upon issuance of the Notice to Proceed. If the contractor proposes an earlier completion date, and the government accepts the contractor's proposal, the contractor's proposed completion date shall prevail.

5. The contractor shall work Monday through Friday, not on Federal Holidays, and only from 8:00AM – 4:00 PM EST.
6. Type Of Contract: Firm Fixed Price

**B. Specific Mandatory Tasks and Associated Deliverables:**

1. DESCRIPTION OF TASKS AND ASSOCIATED DELIVERABLES:
  - a) The contractor shall provide the following deliverables:
    - (1) Complete Panel fabrication and shop test prior to delivery to cemetery.
    - (2) Two (2) printed sets of Electrical CAD drawings and Flash drive containing all Engineering files, PLC, HMI & AutoCAD
    - (3) Installation and wiring during regular hours Monday through Friday, 8:00 am -4:00 pm EST
    - (4) PLC-HMI Programming
    - (5) Startup, Debug and Training. Consists of getting the system working, training six employees, and ensuring the system is consistently functioning.
    - (6) Exact design (number / scope of screens, location of circuits, etc.) shall be provided with the quotation.
    - (7) **The following listed items are intended to be descriptive, but not restrictive. Offers for products other than those specifically referenced by brand name will be evaluated by the Government.** (See FAR 52.211-6 and VAAR 852.211-73)
      - (a) PLC: Allen Bradley (or equal)
      - (b) Communications with PLC: Ethernet
      - (c) Voltage Input: Allen Bradley 120 AC / DC 120 w Power Supply, 2 Eaton 1 pole 2A circuit breaker, (or equal)
      - (d) Inputs and outputs: Allen Bradley 8 PT AC input module, Allen Bradley micrologix 1400 w/24 ac in/12 relay output w/Memory Module, (or equal)
      - (e) Voltage Outputs: Industry Standard
      - (f) No spare I/O points or additional analog input or output devices required
      - (g) Touchscreen: Allen Bradley Panelview Plus 7 color touchscreen, (or equal)
      - (h) touchscreen NEMA rating: Industry Standard
      - (i) Communications from Touchscreen to PLC: Allen Bradley Ethernet Switch, (or equal)
    - (8) Additional parts required:
      - (a) 2 Allen Bradley Din Rail Mount Filters, (or equal)
      - (b) 1 Allen Bradley 30 mm red Illuminated Push button, (or equal)
      - (c) 3 Allen Bradley pressure switches, (or equal)
      - (d) 1 Allen Bradley Red Beacon w/base, (or equal)
      - (e) 1 Lot terminals, wire duct, fuses, wire, etc necessary for building panel
    - (9) Electrical Enclosure
      - (a) The electrical enclosure will go inside and requires a Hoffman fiberglass enclosure with a steel back panel, (or equal)
      - (b) The touchscreen display will be mounted in the control cabinet door to show system status and to aid in troubleshooting, this will REPLACE the red beacon located outside on the wall.
      - (c) No service light or HVAC are required.
      - (d) A 110 vac utility receptacle is required as well as a Uninterruptible power supply (UPS).

NOTE: THIS LIST MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL PROVIDE ALL, EQUIPMENT, SUPPLIES, AND OTHER ITEMS AND MUST PROVIDE DESCRIPTIVE LITERATURE, TO INCLUDE ILLUSTRATIONS AND DRAWINGS OF THE MATERIALS TO BE PROVIDED, AND CURRENT WARRANTY PROVISIONS WITH THE QUOTATION TO SUPPORT THE GOVERNMENT'S EVALUATION OF THE OFFERED PRODUCT(S).

PRIOR TO SUBMISSION OF ANY QUOTATION, THE CONTRACTOR IS URGED AND EXPECTED TO PERFORM A THOROUGH FIELD SURVEY OF THE EXISTING CONDITIONS AND FEATURES. ANY CONDITIONS WHICH MAY CAUSE DEVIATION SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR CLARIFICATION PRIOR TO SUBMISSION OF THE QUOTATION.

2. STANDARDS OF EMPLOYEE CONDUCT:

- a) Contractor and 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., Part I, Chapter 9, Section 901.
- (1) Be fully clothed at all times in matching uniforms, to include long slacks or pants and shirt, buttoned up from neck to waist. Clothing shall be clean each day. Any soiled clothing should be cemetery work-related that day. T-shirts and/or tank tops as outer garments are prohibited. Shoes/boots will have no holes or loose soles. Steel-toed shoes will be required in accordance with OSHA requirements. Contractor employees shall maintain personal hygiene.
  - (2) Shall not engage in loud or boisterous behavior or use profane or abusive language. Shall show proper reverence during committal services.
  - (3) Shall neither eat nor drink beverages (except water or non-alcoholic drinks) in the work areas, nor in site of committal shelter during a service. Use of intoxicating beverages and/or drugs is strictly prohibited.
  - (4) Contractor personnel shall not lean, sit or stand on or against headstones or monuments. No tools, equipment or other items shall be placed or leaned on headstones or monuments.
  - (5) The Contractor shall be responsible to provide a safe working environment for Contractor, cemetery staff and general public.
  - (6) The only designated smoking area for the Fort Mitchell National Cemetery is located by the maintenance building. **All other areas are designated as NO SMOKING.**

3. PARKING AND VA REGULATIONS:

- a) Contractor employees may park privately owned vehicles in the area designated for parking by the COR. It is the responsibility of the Contractor to ensure his employees park in the appropriate designated parking areas. The Cemetery will not invalidate or make reimbursement for parking violations of the Contractor's employees under any conditions. Smoking is

prohibited inside any buildings at the Cemetery. Possession of weapons is prohibited. Enclosed containers, including tool kits, shall be subject to search. Violations of VA regulations may result in citation answerable in the United States (Federal) District Court, not a local district, state, or municipal court.

- b) **All contractor personnel operating vehicles on government property must possess a valid state driver's license.**

4. USE OF CEMETERY FACILITIES:

- a) The Government shall provide a staging area on site for contractor operations. The Government shall not be responsible for any loss, damage, or theft of Contractor items. Contractor shall be responsible for acceptable standards of housekeeping and custodial maintenance of Cemetery facilities used by Contractor's employees.
- b) The Government will allow the use of the pump house at the cemetery site for use by the Contractor to store supplies and materials. The Government will not be responsible for any damage to or loss of the Contractor's equipment and supplies stored on the Government's premises.
- c) Electricity and phone service will NOT be furnished by the Government for the contractor's work area. However, government will provide all electricity and water used on and for the cemetery facility.
- d) The Contractor shall be responsible for safely storing any chemicals, pesticides, herbicides, cleaning solutions, etc. in accordance with manufacturers recommendations. An MSDS (Material Safety Data Sheet) is required for all chemicals and cleaning solutions.

5. INSPECTION AND CLEANING OF CEMETERY FACILITIES:

- a) The Contractor shall police the work area no later than 4:30 pm ET each day. The work area must be cleaned and all excess materials removed upon completion of the work.
- b) The Contractor shall repair and replace any existing structure to existing condition when altered or damaged by the construction.

6. HISTORIC PRESERVATION:

- a) Where the Contractor or any of the Contractor's employees, prior to, or during the service work, are advised of or discover any possible archeological, historical and/or cultural resources, the Contractor shall immediately notify the COR verbally, and then with a written follow up.

(END OF WORK STATEMENT)

# PRICE/COST SCHEDULE

ITEM NUMBER	DESCRIPTION OF SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	Complete Programmable logic controller (PLC) fabrication and shop test prior to delivery	1.00	EA	_____	_____
0002	Printed sets of Electrical CAD drawings and Flash drive containing all Engineering files, PLC, HMI & AutoCAD	2.00	EA	_____	_____
0003	Installation and wiring	1.00	JB	_____	_____
0004	PLC-HMI Programming	1.00	JB	_____	_____
0005	Startup, Debug and Training	1.00	JB	_____	_____
				<b>GRAND TOTAL</b>	_____