

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			BPA NO.		1. CONTRACT ID CODE		PAGE 1		OF PAGES 21									
2. AMENDMENT/MODIFICATION NO. A00003			3. EFFECTIVE DATE 09-02-2016		4. REQUISITION/PURCHASE REQ. NO.			5. PROJECT NO. (if applicable) 818-M&R16-03										
6. ISSUED BY Department of Veterans Affairs NCA Contracting Service 75 Barrett Heights Rd. Suite 309 Stafford VA 22556			CODE 43C1		7. ADMINISTERED BY (If other than Item 6) Department of Veterans Affairs NCA Contracting Service 75 Barrett Heights Rd. Suite 309 Stafford VA 22556			CODE 43C1										
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) To all Offerors/Bidders					(X)		9A. AMENDMENT OF SOLICITATION NO. VA786-16-R-0385											
							9B. DATED (SEE ITEM 11) X 08-22-2016											
							10A. MODIFICATION OF CONTRACT/ORDER NO.											
							10B. DATED (SEE ITEM 13)											
CODE					FACILITY CODE													
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS																		
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. <div style="text-align: right;">SEPTEMBER 7, 2016 AT 1:00 PM</div>																		
12. ACCOUNTING AND APPROPRIATION DATA (If required)																		
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">CHECK ONE</td> <td>A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.</td> </tr> <tr> <td></td> <td>B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).</td> </tr> <tr> <td></td> <td>C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:</td> </tr> <tr> <td></td> <td>D. OTHER (Specify type of modification and authority)</td> </tr> </table>											CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.		B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).		C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:		D. OTHER (Specify type of modification and authority)
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	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:																	
	D. OTHER (Specify type of modification and authority)																	
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return <u>1</u> copies to the issuing office.																		
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)																		
SOLICITATION AMENDED TO: 1) INCORPORATE REVISED STATEMENT OF WORK 2) INCORPORATE SPECIFICATION FROR PANELBOARDS 3) ADDRESS QUESTIONS FROM PROSPECTIVE VENDORS AND 4) EXTEND CLOSING DATE OF SOLICITATION TO SEPTEMBER 7, 2016 AT 1:00 PM																		
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.																		
15A. NAME AND TITLE OF SIGNER (Type or print)					16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)													
					KENNETH DOUGHERTY CONTRACTING OFFICER													
15B. CONTRACTOR/OFFEROR				15C. DATE SIGNED		16B. UNITED STATES OF AMERICA			16C. DATE SIGNED									
(Signature of person authorized to sign)						BY (Signature of Contracting Officer)			9/2/2016									

1. Amendment to solicitation VA786-16-R-0385 issued to address questions from prospective vendors, incorporate specification 262416 panelboards, and incorporate a revised statement of work (SOW).

2. Questions from prospective vendors:

Q.1. “Statement of Work - B, Specific Work Items - #2, Storage Building 58005 - B, Electric Heater - The sizing of this requested heater would need to be relatively large as this is an open uninsulated area for which you can see outside and day light through numerous areas, and further there does not seem to be any 480v panels to feed such a heater. Please advise as how to proceed.”

A.1. This scope of work item is deleted from the project.

Revised panel work:

2. Storage / Maintenance Building (bldg. 58005):

a. Survey and trace all feeds for both panels LM-1 and LM-2. Provide single line drawing as submittal to show existing work, and another single line drawing showing new work. Demolish panel LM-1 and refeed a new panel to replace panel LM-2. New panel shall be a minimum 30 circuit 120/208V panel to match existing in function but meet new project specifications. Reference new specification section 262416 (attached). Once new panel is installed, demolish existing panel LM-2. See detail 2 on drawing 818-M&R16-03-001.

Q.2 “Work Item B.1.a - Ceiling is galvanized metal. Repainting of the surface to achieve adhesion (and avoid the same condition from reoccurring), will require pretreatment (chromates), surface prep (SSPC SP-1) deglossing, and primer. Since galvanized metal can be a troublesome substrate for paint application and since different galvanizing shops employ different surface treatments or processes, what has worked well with one project may not necessarily work for another. Since it can be challenging to obtain consistent results from one project to another, the effort to provide a guarantee may be more cost than the value obtained. Please confirm if scraping only is a more desired scope.”

A.2. Agreed. Scrape all paint off ceiling ONLY.

Q.3. “Work Item B.17 - Scope states "expected deliverable is a signed/sealed as-built of underground utilities by PE who accepts liability for errors and omissions". Please confirm this responsibility of liability is for the new irrigation work only.”

A.3. Confirmed this is for the specific work area in this irrigation scope of work item.

Q.4. “Is a layout available for the expected gravesites to allow to price estimation of material quantities?”

A.4. Delete new irrigation work. Delete specifically the following from the scope of work:

14. Irrigation Design/Build for Burial Sections 30A and 43A:

a. Reference drawing 818-M&R16-03-006. Burial Section 30A: Provide design/build to design and construct irrigation system to fully irrigate this area. Design/build solution to meet specifications and contain a minimum of eight (8) sprinkler heads. Irrigation piping shall be minimum of 2" mains with 1.5" laterals. Provide 1 new valve. Use Hunter products to match existing.

b. Reference drawing 818-M&R16-03-007. Burial Section 43A: Provide design/build to design and construct irrigation system to fully irrigate this area. Design/build solution to meet specifications and contain a minimum of fifteen (15) sprinkler heads. Irrigation piping shall be minimum of 2" mains with 1.5" laterals. Provide 1 new valve. 1 existing valve is to remain. Use Hunter products to match existing.

Q.5. "Is the new irrigation to be controlled locally in that zone, or tied back to a site wide irrigation control?"

A.5 Not applicable.

Q.6. "If site wide irrigation controls, what is the make and model?"

A.6. Not applicable.

Q.7. "Is the wiring in the damaged area single wire or triple wire?"

A.7. Existing is multistrand. Install new per the specifications and to match existing which contain (4) spare multistrand cables.

Q.8. "Work Item B.18 - Scope indicates to "replace hydrant piping back to the nearby isolation valves". Specific hydrants are not identified in the Scope. During the site visit, no isolation valves were observed nearby to many of the hydrants. Is there a maximum distance from the hydrant that bidders should assume for excavation/backfill and pipe replacement?"

A.8. See revised work description below:

18. Replace six (6) curbside fire hydrants. Existing isolation valves do exist but are non-functional. Replace piping with new back to the nearby isolation valve, and replace existing isolation valve with new. Coordinate with the local fire department for compatibility with hose fittings and hydrant connection. Contractor shall provide all adapters required.

3. Revised Statement of Work

Project Location: MASSACHUSETTS NATIONAL CEMETERY (818)

Project Title: General Maintenance and Repairs

Project Control #: 818-M&R16-03

Statement of Work Summary:

Contractor shall furnish all tools, labor, materials, equipment, services, and professional design services to perform work described below, in other specification sections, and on the drawings at Massachusetts National Cemetery.

A. General

1. Contractor is strongly encouraged to survey the project area prior to bidding to adequately understand the full scope of work and all requirements. Contractor is required to submit any questions or clarifications prior to bid. A bid submitted will be taken as agreement that the work shall be performed to meet the requirements herein based on the existing conditions in the field.
2. This contract is design-build, and as such the contractor shall contract with a professional design firm to provide the necessary signed and sealed details as required below. Contractor shall submit this firm for approval complete with qualifications prior to the start of construction.
3. For all items below, contractor shall submit to the COR for approval a stamped/sealed detail prior to fabrication/installation. Prior to submission to the COR, contractor shall have all submittals reviewed and stamped approved by the designer.
4. Reference specification section 012300 - ALTERNATES for more information on the base bid and also the deduct alternates.

B. Specific work items:

1. Pump House Building (bldg. # 58003):
 - a. Strip paint from the ceiling. ~~and prepare for new paint. Paint ceiling.~~
 - b. The three existing air tanks for the small lubricating pump are oversized and shall be removed and replaced with a single tank sized for the pump. Submit a signed/sealed detail confirming the correct sizing for a new air bladder tank. All work to meet specifications including 220511.

2. Storage / Maintenance Building (bldg. 58005):

a. Survey and trace all feeds for both panels LM-1 and LM-2. Provide single line drawing as submittal to show existing work, and another single line drawing showing new work. Demolish panel LM-1 and refeed a new panel to replace panel LM-2. New panel shall be a minimum 30 circuit 120/208V panel to match existing in function but meet new project specifications. Reference new specification section 262416. Once new panel is installed, demolish existing panel LM-2. See detail 2 on drawing 818-M&R16-03-001.

~~b. Provide and install a unit heater sized for this bay area which is assumed as 20'L x 30'W x 30'H. Provide for interior temperature of 68F given an exterior temperature of 10F. Size unit appropriately and submit signed/sealed calculations with shop drawing verifying unit sizing. Utilize panels in building which contain 480V power.~~

3. Storage / Maintenance Building (bldg. 58006):

a. Replace two (2) overhead doors including new automatic operators with manual operation overrides and all electrical including switches. Doors are sized approximately 10'W x 12'H and 14'W x 20'H respectively. Additionally, contractor shall replace three (3) additional automatic door switches.

b. Demolish unit heater and all associated piping, conduit, controls. Seal all penetrations remaining from demolished work, such as the exterior building envelope. See detail 1 on drawing 818-M&R16-03-001.

c. Install six (6) new LED wallpack light fixtures. Fixtures shall be minimum: 70W consumption, 375W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. See drawing 818-M&R16-03-003 for approximate locations for fixtures and existing panels. Install new fixtures as close to the top of the building as is practical, and within manufacturer's requirements (typical all exterior light fixtures for this project). Provide new circuit in conduit for these fixtures. Install new photocell on this circuit such that the new fixtures only run

when it is dark. Demolish six (6) existing wallpack fixtures and remove all associated conduits, cabling, and circuits. Seal all penetrations remaining from demolished work, such as the exterior building envelope.

4. Wash Bay Building (bldg. 58007):

a. Install five (5) new LED wallpack light fixtures. Fixtures shall be minimum: 70W consumption, 375W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. Install four (4) new LED flood light fixtures to uniformly illuminate the nearby parking lot area. Fixtures shall be minimum: 70W consumption, 250W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. See drawing 818-M&R16-03-003 for approximate locations for fixtures and existing panels. Provide new circuit in conduit for these fixtures. Install new photocell on this circuit such that the new fixtures only run when it is dark.

5. Maintenance Building (bldg. 58004):

a. Install three (3) new LED wallpack light fixtures. Fixtures shall be minimum: 70W consumption, 375W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. Install two (2) new LED flood light fixtures to uniformly illuminate the nearby parking lot area. Fixtures shall be minimum: 70W consumption, 250W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. See drawing 818-M&R16-03-003 for approximate locations for fixtures and existing panels. Provide new circuit in conduit for these fixtures. Install new photocell on this circuit such that the new fixtures only run when it is dark.

b. The six (6) interior high bay light fixtures have the following specifications each: 150W, ED23 shape, E39 mog base, 16000 lumens. This area has insufficient lighting output. Design-build a solution which increases the lumen output of each of these fixtures to a minimum of 24000 lumens. This solution can be either bulb replacement which meets code / UL, or full fixture replacement with an LED fixture.

c. Install one (1) new circuit to the maintenance area with three (3) new duplex receptables. Locations are on 3 different walls and are to be coordinated with the COR. Run surface mounted EMT conduit to surface mounted stainless boxes.

d. Replace two (2) electrical yard box covers with tier 22 rated Quazite covers from the manufacturer. Turn over existing covers which are tier 8 rated Quazite to the VA. Reference drawing 818-M&R16-03-005, detail 1 for more information.

6. Columbarium Wall C:

a. Replace a cracked section of sidewalk, approximately 6'x8'. Provide 5" thick concrete sidewalk slab. Excavate for and compact 6" of gravel for the base for this slab. Concrete is to be 6-9% air entrained, 4000psi, slump of 3-5", and reinforced with 4"x4" 6 gauge wire mesh. Reinforcing should be a minimum of 1" from any edge of concrete either vertical or horizontal, and a maximum of 2" from any horizontal edge of concrete. Control joints to match existing and be provided with 1/2" expansion joints and polyurethane caulking. Slope slab at 1:12 to provide drainage to match existing directions.

7. Columbarium Wall D:

a. Demolish and replace one (1) granite panel, approximately 3'x5' x3" thick in size. Assume existing panel is the same dimensions.

8. Columbarium Wall E:

a. Demolish an area of asphalt paving approximately 40'x4' by 3" thick adjacent to the concrete sidewalk. Install new asphalt to be flush with concrete slab sidewalk and asphalt, and seal all connections to existing asphalt.

b. See Detail 3 on drawing 818-M&R16-03-001. Demolish spalled section of concrete and remove all loose concrete. Dowel #4 rebar with epoxy into existing, form and pour concrete back to match existing shape and color. Caulk to match existing. Concrete is to be 6-9% air entrained, 4000psi, slump of 3-5", and reinforced with 4"x4" 6 gauge wire mesh.

Reinforcing should be a minimum of 1" from any edge of concrete either vertical or horizontal, and a maximum of 2" from any horizontal edge of concrete. Control joints to match existing and be provided with 1/2" expansion joints and polyurethane caulking.

c. Replace a cracked section of sidewalk, approximately 8'x16'. Provide 5" thick concrete sidewalk slab. Excavate for and compact 6" of gravel for the base for this slab. Concrete is to be 6-9% air entrained, 4000psi, slump of 3-5", and reinforced with 4"x4" 6 gauge wire mesh. Reinforcing should be a minimum of 1" from any edge of concrete either vertical or horizontal, and a maximum of 2" from any horizontal edge of concrete. Control joints to match existing and be provided with 1/2" expansion joints and polyurethane caulking. Slope slab at 1:12 to provide drainage to match existing directions.

9. Flagpole:

a. Replace winch, truck, all stainless steel hardware, and cables and provide a 5 year warranty. Existing flagpole is approximately 90' tall. Existing items above which are removed by the contractor shall be turned over to the owner.

b. Install two (2) new LED flood light fixtures at ground level to uniformly illuminate the flagpole. Fixtures shall be minimum: 70W consumption, 250W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. These two new fixtures shall replace the existing LED fixture (1) and HID fixture (1) which are to be demolished. Reuse existing circuit.

10. PIC/Admin Building (bldg. 58001):

a. Install one (1) new LED wallpack light fixture. Fixtures shall be minimum: 70W consumption, 375W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated, waterproof, and UL listed. Install one (1) new LED flood light fixture to uniformly illuminate the nearby parking lot area. Fixtures shall be minimum: 70W consumption, 250W equivalent output, 5000K temperature, 6000 Lumens, outdoor rated,

waterproof, and UL listed. See drawing 818-M&R16-03-002 for approximate locations for fixtures and existing panels. Provide new circuit in conduit for these fixtures. Install new photocell on this circuit such that the new fixtures only run when it is dark.

b. Install exhaust fan or fans in men's and women's restrooms to automatically exhaust when light switch is in the on position only. The as-builts indicate ductwork and 75CFM exhausts above each toilet but this is non-functional. Contractor may review in the field and if another solution is found, may submit for approval. For bidding purposes, bid to install an exhaust fan or fans installed on the roof and connected via ductwork to the above-toilet locations to automatically exhaust when the light switch is in the on position only. Note there is space in the electrical panels for either a 277/480V circuit or a 120/208V circuit. See drawing 818-M&R16-03-002 for approximate location of these two restrooms.

c. Install a manual sliding vision panel with a manual interior locking mechanism. Opening is approximately 58" x 52" and is a wood-framed customer service opening.

d. Demolish eight (8) interior CFL fixtures located 20' AFF in the lobby. Use existing circuits to install in these same locations eight (8) interior LED fixtures. Each fixture to be minimum 15W consumption, 60W equivalent output, 5000K temperature, 2000 Lumens, and UL listed. Contractor shall turn over these removed CFL fixtures to the owner.

11. Spoils Area (See drawing 818-M&R16-03-004 for location):

a. Demolish and remove two (2) project trailers. See detail 6 on drawing 818-M&R16-03-001 for more information.

12. Public Restrooms (bldg. 58002):

a. Install new commercial automatic power door including all necessary components. Install pedestal mounted push button outside and wall mounted push button inside. All work required to meet ADA accessibility standards shall be included in the bid. Install new circuits as necessary from building electrical panels.

13. Site (General):

- a. Provide material, labor and equipment to repair fourteen (14) storm drain inlet manholes. Reference drawing 818-M&R16-03-001, detail 4 for more information. Repair the area surrounding the inlet to match existing grade. All locations have sunken areas approximately 5'x5' that will require fill, compaction, and asphalt repairs to key connect to existing. Asphalt finish to be uniform and straight line cuts will only be accepted. Contractor is strongly encouraged to survey these manholes to better understand the existing conditions. These storm drain inlets do not match the details provided and contain concrete block and concrete to build up to grade, and other concrete patching used to prevent further degradation. New work shall be based on a design build solution provided by the contractor to best meet the intent of the provided storm inlet detail and provide a long term solution to the sinkage and degradation present at the site. Design build solution shall utilize reinforced concrete either cast in place or precast and connected to existing.
- b. Provide for the following asphalt patches, which shall be per the drawing details: two (2) locations of 3'x3' patch and one (1) location of 10'x3' patch. Coordinate with COR for locations.
- c. Caulk entire joint between asphalt and concrete walkway near the PIC/Admin building which is 70' in length. Coordinate with COR for location.

~~14. Irrigation Design/Build for Burial Sections 30A and 43A:~~

- ~~a. Reference drawing 818-M&R16-03-006. Burial Section 30A: Provide design/build to design and construct irrigation system to fully irrigate this area. Design/build solution to meet specifications and contain a minimum of eight (8) sprinkler heads. Irrigation piping shall be minimum of 2" mains with 1.5" laterals. Provide 1 new valve. Use Hunter products to match existing.~~
- ~~b. Reference drawing 818-M&R16-03-007. Burial Section 43A: Provide design/build to design and construct irrigation system to fully irrigate this~~

~~area. Design/build solution to meet specifications and contain a minimum of fifteen (15) sprinkler heads. Irrigation piping shall be minimum of 2" mains with 1.5" laterals. Provide 1 new valve. 1 existing valve is to remain. Use Hunter products to match existing.~~

15. Demolish existing three (3) fuel storage cabinets, which are of the same sizes as the new cabinets indicated below, and replace with new to match the following quantities and specifications:

Supply and install a fuel storage cabinet with the following dimensions and specifications:

One (1): H 65" W 43" D 18"

One (1): H 44" W 43" D 18"

Cabinets shall be 18 gauge steel, meet NFPA 30, UL listed, and FM tested and approved.

Dual 2" vents with flame arresters, durable lead-free powder paint finish, inside and out, for maximum chemical resistance.

Cabinets shall be designed for storage of flammables, resistant to chemicals.

Location will be inside the maintenance buildings as determined by the COR. Coordinate with COR for location.

Submit for approval.

Supply and install a propane storage cabinet with the following dimensions and specifications:

One (1): Cabinet shall be able to fit a minimum of six (6), twenty (20) lb cylinders. Cabinet shall be constructed of a fully welded 1/8" x 1-1/2"

Angle Iron Frame and 14 gauge solid steel top and bottom. These cabinets shall feature expanded metal doors, back and side which allow for ventilation and visibility of contents. Retention chain shall be included to help keep vertical cylinders in the upright position. "DANGER FLAMMABLE MATERIALS" sign shall be located on the door(s) and the units are coated in durable, Safety Yellow Powder Coat. Door shall

feature padlock hasp to secure contents (padlock not included in the project) and magnets to keep doors safely shut when not locked. Per-punched lagging holes in feet for anchoring to the ground.

Location will be inside the maintenance buildings as determined by the COR. Coordinate with COR for location.

Submit for approval.

16. Install 6' tall chain link fence with single man gate around the windmill and its electrical panels. Chain link fence shall be black PVC coated in its entirety. This chain link fence area is to be assumed as 20x30'. Bury posts in concrete per manufacturer's recommendations and project specifications.

17. Reference drawing 818-M&R16-03-004. The highlighted burial areas 4, 4A, 5, 6, 6A, 7, 7A, 9, and 9A have failed irrigation control wiring which needs replaced. Underground utility locating: For area shown on plans, locate all underground utilities and mark locations on a scaled drawing for submission. Include depth of utility, type, and whether the utility is abandoned or active. Excavate as necessary for this investigation. The expected deliverable is a signed/sealed as-built of the underground utilities by a professional engineer who accepts liability for any errors or omissions in this utility location drawing. The burial areas shown will be used by the VA in the near term and the safety of those VA persons excavating in the area is paramount to the Government.

Perform all work so as to avoid damaging underground utilities. Install new irrigation control wiring throughout these sections to provide full functionality of automatic sprinklers. Install new irrigation control wiring per specifications and in schedule 40 PVC direct burial pipe, buried minimum 2' below grade. Trench, excavate, backfill, and perform road repairs as per project specifications and as necessary to install this control wiring.

18. Replace six (6) curbside fire hydrants. Existing isolation valves do exist but are non-functional. Replace piping with new back to the nearby isolation valve, and replace existing isolation valve with new. Coordinate with the local fire department for compatibility with hose fittings and hydrant connection.

Contractor shall provide all adapters required.

19. Eternal Flame:

a. Provide one (1) LED floodlight to illuminate the Eternal Flame.

Fixtures shall be minimum: 40W consumption, 200W equivalent output, 5000K temperature, 4000 Lumens, outdoor rated, waterproof, and UL listed. Floodlight pattern shall be direct, spot pattern which only illuminates the Eternal Flame as opposed to a wide area typical of a floodlight. Provide integral photocell to control light which shall only illuminate during dark periods. See drawing 818-M&R16-03-002 for location. Electrical power is available in this area, and routing is to be done underground to a surface mounted floodlight. Install floodlight in a location to be coordinated with the COR such that it is hidden as much as possible while still illuminating the Eternal Flame. Include in the bid price a mesh reinforced concrete base 18"x18"x18" for mounting. Concrete specifications shall be per typical concrete specifications shown above and in the 033000 specification section.

SPECIFICATION SECTIONS:

01 00 02	General Requirements
01 23 00	Alternates
01 33 23	Shop Drawings, Product Data, and Samples
01 42 19	Reference standards
01 45 29	Testing Lab Services
01 57 19	Temporary environmental controls
01 74 19	Construction waste management
02 41 10	Demolition and Site Clearing
03 30 00	Cast-In-Place Concrete
04 05 13	Masonry Mortaring
08 33 00	Coiling Doors and Grilles
09 91 00	Painting
22 05 11	Common Work Results for Plumbing
22 05 23	General-Duty Valves For Plumbing Piping
23 05 11	Common Work Results For Hvac
23 05 12	General Motor Requirements For Hvac Equipment
23 05 93	Testing, Adjusting, And Balancing For Hvac
23 07 11	Hvac And Plumbing Insulation
23 82 39	Unit Heaters
26 05 11	Requirements For Electrical Installations

26 05 21	Low-Voltage Electrical Power Conductors And Cables (600 Volts And Below)
26 05 26	Grounding And Bonding For Electrical Systems
26 05 33	Raceway And Boxes For Electrical Systems
26 05 41	Underground Electrical Construction
26 24 16	Panelboards
26 27 26	Wiring Devices
26 29 11	Motor Starters
26 51 00	Interior Lighting
26 56 00	Exterior Lighting
31 20 11	Earth moving (short form)
32 12 16	Asphalt Paving
32 31 13	Chain Link Fences And Gates
32 84 00	Planting Irrigation System
33 10 00	Water Utilities
33 46 13	Drainage

DRAWINGS:

818-M&R16-03-001
818-M&R16-03-002
818-M&R16-03-003
818-M&R16-03-004
818-M&R16-03-005
818-M&R16-03-006
818-M&R16-03-007

Pre-Bid Site Visit: Bidders are strongly urged to inspect, site investigate by observation, and Request for Information (RFI) and responses through the Contracting Office to satisfy their understanding of the work to be done, all general, local and technical conditions that may affect the cost and the feasibility of their proposal. In no event shall failure to inspect the site constitute grounds for a claim after award. Visitors planning to conduct a site visit shall contact the Cemetery Director to make arrangements:

Cemetery POC(s):

John Spruyt, Massachusetts National Cemetery Director..... 508-563-7113 or John.Spruyt@va.gov

Technical POC:

Rico Silveti, North Atlantic District (NAD) Engineer..... (215) 381-3787 x4050 or rico.silveti@va.gov

PRICE SCHEDULE

DESCRIPTION	QTY	UNIT	TOTAL PRICE
Base Bid: Contractor shall provide all labor, tools, materials, equipment, and supervision necessary to perform all work detailed above, in specifications, and drawings at the Massachusetts National Cemetery.	1	JOB	\$ _____
Deduct Alternate No. 1: Proposal price shall include all base bid work including specifications and drawings, less ONLY the following work items: 1. Specification 010002, 1.2, B, 1. (Pump House Building) 2. Specification 010002, 1.2, B, 11. (Spoils Area) 3. Specification 010002, 1.2, B, 16. (Chain Link Fence)	1	JOB	\$ _____
Deduct Alternate No. 2: Proposal price shall include all base bid work including specifications and drawings, less ONLY the following work items: 1. Specification 010002, 1.2, B, 17. (Burial areas 4, 4A, 5, 6, 6A, 7, 7A, 9, and 9A failed irrigation control wiring for replacement)	1	JOB	\$ _____
Deduct Alternate No. 3: Proposal price shall include all base bid work including specifications and drawings, less ONLY the following work items: 1. Specification 010002, 1.2, B, 1. (Pump House Building) 2. Specification 010002, 1.2, B, 11. (Spoils Area) 3. Specification 010002, 1.2, B, 16. (Chain Link Fence) 4. Specification 010002, 1.2, B, 17. (Burial areas 4, 4A, 5, 6, 6A, 7, 7A, 9, and 9A failed irrigation control wiring for replacement)	1	JOB	\$ _____

Duration: Term of the contract shall be one hundred and eighty days (180 days) from date of award. The Contractor shall complete all work within 180 calendar days after receipt of Notice of Award, subject to all terms, conditions, provisions and schedules of the contract. Contractor shall perform work in the spring after evening temperatures are sustained above freezing.

SECTION 26 24 16 PANELBOARDS

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies the furnishing, installation and connection of panelboards.

1.2 RELATED WORK

- A. Section 09 91 00, PAINTING: Identification and painting of panelboards.
- B. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General electrical requirements and items that are common to more than one Section of Division 26.
- C. Section 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS: Conduits and outlet boxes.
- D. Section 26 05 21, LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600 VOLTS AND BELOW): Cables and wiring.
- E. Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS: Requirements for personnel safety and to provide a low impedance path for possible ground fault currents.

1.3 SUBMITTALS

- A. Submit in accordance with Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS.
- B. Shop Drawings:
 - 1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
 - 2. Include electrical ratings, dimensions, mounting details, materials, wiring diagrams accessories and weights of equipment. Complete nameplate data including manufacturer's name and catalog number.
- C. Certification: Two weeks prior to final inspection, submit four copies of the following to the Resident Engineer:
 - 1. Certification that the material is in accordance with the drawings and specifications has been properly installed, and that the loads are balanced.

1.4 APPLICABLE PUBLICATIONS

Publications listed below (including amendments, addenda, revisions, supplements and errata) form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

- A. National Electrical Manufacturers Association (NEMA):
 - PB-1-2006.....Panelboards
 - AB-1-2002.....Molded Case Circuit Breakers, Molded Case
Switches and Circuit Breaker Enclosures
- B. National Fire Protection Association (NFPA):
 - 70-2005National Electrical Code (NEC)
 - 70E-2004.....Standard for Electrical Life Safety in the
Workplace
- C. Underwriters Laboratories, Inc. (UL):
 - 50-2003.....Enclosures for Electrical Equipment
 - 67-2003.....Panel boards
 - 489-2006.....Molded Case Circuit Breakers and Circuit
Breaker Enclosures

PART 2 - PRODUCTS

2.1 PANELBOARDS

- A. Panelboards shall be in accordance with UL, NEMA, NEC, and as shown on the drawings.
- B. Panelboards shall be standard manufactured products. All components of the panelboards shall be the product and assembly of the same manufacturer. All similar units of all panelboards to be of the same manufacturer.
- C. All panelboards shall be hinged "door in door" type with:
 - 1. Interior hinged door with hand operated latch or latches as required to provide access to circuit breaker operating handles only, not to energized ports.
 - 2. Outer hinged door shall be securely mounted to the panelboard box with factory bolts, screws, clips or other fasteners requiring a tool for entry, hand operated latches are not acceptable.
 - 3. Push inner and outer doors shall open left to right.
- D. All panelboards shall be completely factory assembled with molded case circuit breakers. Include one-piece removable, inner dead front cover independent of the panelboard cover.
- E. Panelboards shall have main breaker or main lugs, bus size, voltage, phase, top or bottom feed, and flush or surface mounting as scheduled on the drawings.

- F. Panelboards shall conform to NEMA PB-1, NEMA AB-1 and UL 67 and have the following features:
1. Nonreduced size copper or aluminum bus bars, complete with current ratings as shown on the panel schedules connection straps bolted together and rigidly supported on molded insulators.
 2. Bus bar connections to the branch circuit breakers shall be the "distributed phase" or "phase sequence" type. Single-phase, three-wire panelboard busing shall be such that when any two adjacent single-pole breakers are connected to opposite phases, two-pole breakers can be installed in any location. Three-phase, four-wire busing shall be such that when any three adjacent single-pole breakers are individually connected to each of the three different phases, two-or three-pole breakers can be installed at any location. Current-carrying parts of the bus assembly shall be plated. Mains ratings shall be as shown.
 3. Mechanical lugs furnished with panelboards shall be cast, stamped or machined metal alloys of sizes suitable for the conductors indicated to be connected thereto.
 4. Neutral bus shall be 100% rated, mounted on insulated supports.
 5. Grounding bus bar equipped with screws or lugs for the connection of grounding wires.
 6. Buses braced for the available short circuit current, but not less than 22,000 amperes symmetrical for 120/208 volt panelboards, and 14,000 amperes symmetrical for 277/480-volt panelboards.
 7. Branch circuit panels shall have buses fabricated for bolt-on type circuit breakers.
 8. Protective devices shall be designed so that they can be easily replaced.
 9. Where designated on panel schedule "spaces", include all necessary bussing, device support and connections. Provide blank cover for each space.
 10. In two section panelboards, the main bus in each section shall be full size. The first section shall be furnished with subfeed lugs on the line side of main lugs only, or through-feed lugs for main breaker type panels, and with cable connections to the second section. Panelboard sections with tapped bus or crossover bus are not acceptable.
 11. Series rated panelboards are not permitted.

2.2 CABINETS AND TRIMS

A. Cabinets:

1. Provide galvanized steel cabinets to house panelboards. Cabinets for outdoor panels shall be factory primed and suitably treated with a corrosion-resisting paint finish meeting UL 50 and UL 67.
2. Cabinet enclosure shall not have ventilating openings.
3. Cabinets for panelboards may be of one-piece formed steel or of formed sheet steel with end and side panels welded, riveted, or bolted as required.

2.3 MOLDED CASE CIRCUIT BREAKERS FOR PANELBOARDS

A. Breakers shall be UL 489 listed and labeled, in accordance with the NEC, as shown on the drawings, and as specified.

B. Circuit breakers in panelboards shall be bolt on type on phase bus bar or branch circuit bar.

1. Molded case circuit breakers for lighting and appliance branch circuit panelboards shall have minimum interrupting rating as indicated but not less than:
 - a. 120/208 Volt Panelboard: 22,000 amperes symmetrical.
 - c. 277/480 Volt Panelboard: 14,000 amperes symmetrical.
2. Molded case circuit breakers shall have automatic, trip free, non-adjustable, inverse time, and instantaneous magnetic trips for 225-ampere frame or less. Magnetic trip shall be adjustable from 3X to 10X for breakers with 400 ampere frames and higher. Breaker trip setting shall be set in the field based on the approved protective device study as specified in Section 26 05 71, ELECTRICAL SYSTEM PROTECTIVE DEVICE STUDY.

C. Breaker features shall be as follows:

1. A rugged, integral housing of molded insulating material.
2. Silver alloy contacts.
3. Arc quenchers and phase barriers for each pole.
4. Quick-make, quick-break, operating mechanisms.
5. A trip element for each pole, thermal magnetic type with long time delay and instantaneous characteristics, a common trip bar for all poles and a single operator.
6. Electrically and mechanically trip free.
7. An operating handle which indicates ON, TRIPPED, and OFF positions.
 - a. Line connections shall be bolted.

- b. Interrupting rating shall not be less than the maximum short circuit current available at the line terminals//as indicated on the drawings.
- 8. An overload on one pole of a multipole breaker shall automatically cause all the poles of the breaker to open.
- 9. Shunt trips shall be provided where indicated
- 10. For circuit breakers being added to existing panelboards, coordinate the breaker type with existing panelboards. Modify the panel directory.

2.4 SEPARATELY ENCLOSED MOLDED CASE CIRCUIT BREAKERS

- A. Where separately enclosed molded case circuit breakers are shown on the drawings, provide circuit breakers in accordance with the applicable requirements of those specified for panelboards.
- B. Enclosures are to be of the NEMA types shown on the drawings. Where the types are not shown, they are to be the NEMA type most suitable for the environmental conditions where the breakers are being installed.

2.5 CIRCUIT BREAKERS INSTALLED IN EXISTING SWITCHBOARDS

- A. Provide UL listed and labeled molded case circuit breakers in accordance with NEC and as shown on the drawings. Circuit breakers shall be the solid state adjustable trip type. Circuit breakers shall be of the same manufacturer as the gear into which they are installed,
 - 1. Trip units shall have field adjustable tripping characteristics as follows:
 - 1) Ampere setting (continuous).
 - 2) Long time band.
 - 3) Short time trip point.
 - 4) Short time delay.
 - 5) Instantaneous trip point.
 - 6) Ground fault trip point.
 - 7) Ground fault trip delay.
 - 2. Trip settings shall be as indicated on the drawings. Final settings shall be as shown on the electrical system protective device study.
 - 3. Breakers, which have same rating, shall be interchangeable with each other.

PART 3 - EXECUTION**3.1 INSTALLATION**

- A. Installation shall be in accordance with the Manufacturer's instructions, the NEC, as shown on the drawings, and as specified.
- B. Locate panelboards so that the present and future conduits can be conveniently connected. Coordinate the sizes of cabinets with designated closet space.
- C. In accordance with Section 09 91 00, PAINTING, paint the panelboard system voltage, and feeder sizes as shown on the riser diagram in 1 inch block lettering on the inside cover of the cabinet door. Paint the words "LIFE SAFETY BRANCH", "CRITICAL BRANCH", or "EQUIPMENT SYSTEM" as applicable and the panel designation in one inch block letters on the outside of the cabinet doors.
- D. Install a typewritten schedule of circuits in each panelboard after being submitted to and approved by the Resident Engineer. Schedules, after approval, shall be typed on the panel directory cards and installed in the appropriate panelboards, incorporating all applicable contract changes pertaining to that schedule. Include the room numbers and items served on the cards.
- E. Mount the panelboard fully aligned and such that the maximum height of the top circuit breaker above finished floor shall not exceed 1980 mm (78 inches). For panelboards that are too high, mount panelboard so that the bottom of the cabinets will not be less than 150 mm (6 inches) above the finished floor.
- F. For panelboards located in areas accessible to the public, paint the exposed surfaces of the trims, doors, and boxes with finishes to match surrounding surfaces after the panelboards have been installed.
- G. Directory-card information shall be typewritten to indicate outlets, lights, devices, and equipment controlled and final room numbers served by each circuit and shall be mounted in holders behind protective covering.
- H. Provide ARC flash identification per NFPA 70E.

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