

SECTION 01 00 00
GENERAL REQUIREMENTS

1.1 GENERAL INTENTION

- A. Provide all labor, materials, tools and equipment, and design-build services necessary for design and construction of a restroom building at Fort Sam Houston National Cemetery, San Antonio, Texas, in accordance with the specifications, drawings, terms and conditions described herein other specific tasks as further defined by this request for proposal (RFP).
- B. Visits to the site by Bidders may be made only by appointment with the Cemetery Director. The address and phone number for the Cemetery Director are as follows:

Cemetery Director
Fort Sam Houston National Cemetery
1520 Harry Wurzbach Road
San Antonio, TX 78209
210-820-3891
- C. Offices of AMEC Engineering and Consulting, Inc., 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 the Contracting Officer's Technical Representative (COTR).
- D. 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.
- E. Prior to commencing work, general contractor shall provide proof that an OSHA certified "competent person" (CP) (29 CFR 1926.20(b)(2)) will maintain a presence at the work site whenever the general or subcontractors are present.

1.2 STATEMENT OF BID ITEM(S)

- A. CLIN 1, RESTROOM BUILDING AT FORT SAM HOUSTON NATIONAL CEMETERY: Work includes completion of the building design, temporary environmental controls, site preparation, earthwork, roads, parking lots, sidewalks, water utilities, sanitary sewerage, storm drainage, concrete foundation construction, restroom building construction, and all other work required by the RFP, Contract Drawings and Specifications for this project.

1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

- A. AFTER AWARD OF CONTRACT, one (1) set of the Contract Drawings and Specifications will be furnished.
- B. Additional sets of the Contract Drawings and Specifications may be made by the Contractor, at Contractor's expense.

1.4 FIRE SAFETY

A. Applicable Publications: Publications listed below form part of this Article to extent referenced. Publications are referenced in text by basic designations only.

1. ASTM International (ASTM):

E84-2010.....Standard Test Method for Surface Burning Characteristics of Building Materials

2. National Fire Protection Association (NFPA):

10-2010.....Standard for Portable Fire Extinguishers

30-2008.....Flammable and Combustible Liquids Code

51B-2009.....Standard for Fire Prevention During Welding, Cutting and Other Hot Work

70-2011.....National Electrical Code

241-2009.....Standard for Safeguarding Construction, Alteration, and Demolition Operations

3. Occupational Safety and Health Administration (OSHA):

29 CFR 1926.....Safety and Health Regulations for Construction

B. Fire Safety Plan: Establish and maintain a fire protection program in accordance with 29 CFR 1926. Prior to start of work, prepare a plan detailing project-specific fire safety measures, including periodic status reports, and submit to the COTR for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES Prior to any worker for the contractor or subcontractors beginning work, they shall undergo a safety briefing provided by the general contractor's competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, etc. Documentation shall be provided to the COTR that individuals have undergone contractor's safety briefing.

C. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.

D. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in accordance with NFPA 241. For small facilities with less than 20 feet exposing overall length, separate by 10 feet.

E. Temporary Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.

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- G. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with the COTR.
- H. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to the COTR.
- I. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10.
- J. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.
- K. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas daily. Coordinate with, and report findings and corrective actions to the COTR and other appropriate officials.
- L. Smoking: Smoking is prohibited within Cemetery property.
- M. Dispose of waste and debris in accordance with NFPA 241. Remove from the Cemetery property daily.
- N. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.
- O. If required, submit documentation to the COTR that personnel have been trained in the fire safety aspects of working in areas with impaired structural or compartmentalization features.

1.5 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 as determined by the COTR.
- E. Workmen are subject to rules of Cemetery applicable to their conduct.
- F. Execute work so as to interfere as little as possible with normal functioning of Cemetery as a whole, including operations of utility services, fire protection systems and any existing equipment, and with work being done by others.
- G. Utilities Services: Where necessary to cut existing pipes, electrical wires, conduits, cables, etc., of utility services, or of fire protection systems or communications systems (except telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by the COTR. All such actions shall be coordinated with the Utility Company involved:
 - 1. 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.
- H. Construction Fence: Before construction operations begin, Contractor shall provide a chain link construction fence, seven feet minimum height, around the construction area indicated on the Contract 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 15 inches. Bottom of fences shall extend to one inch above grade. Remove the fence when directed by the COTR.
- I. Utilities Services: Maintain existing utility services for Cemetery at all times. 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 the COTR.
 - 1. No utility service such as water, gas, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of the COTR. 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 the Cemetery Director's prior knowledge and written approval. Refer to applicable specification sections.
 - 2. Contractor shall submit a request to interrupt any such services to the COTR, in writing, 48 hours in advance of proposed interruption.

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- 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 the Cemetery. Interruption time approved by the Cemetery and COTR may occur at other than Contractor's normal working hours.
 4. Major interruptions of any system must be requested, in writing, at least 15 calendar days prior to the desired time and shall be performed as directed by the COTR.
 5. In case of a contract construction emergency, service will be interrupted on approval of the COTR. Such approval will be confirmed in writing as soon as practical.
 6. 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.
- M. To minimize interference of construction activities with flow of Cemetery 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 at all times.
 2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances must be approved by the COTR.
- N. Coordinate the work for this contract with other construction operations as directed by the COTR. 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 COTR, 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/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.

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3. Check in with the Cemetery Director for burial service schedules when on-site before commencement of work each day.

1.6 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. All items shall become property of the Contractor and be removed by Contractor from Cemetery.

1.7 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.
- C. Refer to Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS, for additional requirements on protecting vegetation, soils and the environment. Refer to Articles, "Restoration" and "Operations and Storage Areas" in this Section for additional instructions concerning repair of damage to structures and site improvements.
- D. Refer to FAR clause 52.236-7, "Permits and Responsibilities," which is included in General Conditions. A National Pollutant Discharge Elimination System (NPDES) permit is required for this project. The Contractor shall apply for and obtain the NPDES permit using information provided in the Drawings and Specifications. The Contractor is considered an "operator" under the permit and has responsibility for compliance with permit requirements. Contractor and affected subcontractors shall furnish all information and certifications that are required to comply with the permit process and permit requirements.

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1.8 RESTORATION

- A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COTR 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 (lawns, paving, roads, walks, etc.) disturbed or removed as a result 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 indicated on the Contract Drawings and which are not scheduled for discontinuance or abandonment.
- D. Expense of repairs to such utilities and systems not shown on the Contract 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).

1.9 PHYSICAL DATA

- A. Data and information furnished or referred to below is for the Contractor's information. The Government will not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.
 - 1. The indications of physical conditions on the Contract Drawings and in the Specifications are the result of site investigations by AMEC Environment & Infrastructure, Inc., in the document titled "Report of Geotechnical Exploration," dated April 3, 2012.
- B. A copy of the "Geotechnical Study" will be made available for inspection by bidders upon request to the Contracting Officer.
- C. Government does not guarantee that other materials will not be encountered nor that proportions, conditions or character of several materials will not vary from those indicated by the above referenced report. Bidders are expected to examine site of work and logs of borings; and, after investigation, decide for themselves character of materials and make their bids accordingly. Upon proper application to Department of Veterans Affairs, bidders will be permitted to make subsurface explorations of their own at the site.

1.10 PROFESSIONAL SURVEYING SERVICES

- A. A registered professional land surveyor licensed by the State of Texas, whose services are retained and paid for by the Contractor, shall

perform surveying services specified herein and in other specification sections. The Contractor shall certify that the land surveyor is not one who is a regular employee of the Contractor, and that the land surveyor has no financial interest in this contract.

1.11 LAYOUT OF WORK

- A. The Contractor shall lay out the work from Government established base lines and bench marks, indicated on the Contract Drawings, and shall be responsible for all measurements in connection with 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.
- B. Establish and plainly mark corner points for each building and such other lines and grades that are reasonably necessary to properly assure that location, orientation, and elevations established for the building, roads, parking lots, walkways, utilities, and other required construction, are in accordance with the lines and elevations shown on the Contract Drawings.
- C. Following completion of general mass excavation and before any other permanent work is performed, establish and plainly mark (through use of appropriate batter boards or other means) sufficient additional survey control points or system of points as may be necessary to assure proper alignment, orientation, and grade of all major features of work. Survey shall include, but not be limited to, location of lines and grades of footings, exterior walls, center lines of columns in both directions, utilities, and elevations of floor slabs:
 1. Such additional survey control points or system of points thus established shall be checked and certified by a registered land surveyor. Furnish such certification to the COTR before any work (such as footings, floor slabs, columns, walls, utilities and other major controlling features) is placed.
- D. During progress of work, Contractor shall have line grades and plumbness of all major form work checked and certified by a registered land surveyor as meeting requirements of the Contract Drawings. Furnish such certification to the COTR before any major items of concrete work are placed. In addition, Contractor shall also furnish to the COTR certificates from a registered land surveyor that the following work is complete in every respect as required by the Contract Drawings.
 1. Lines of building.

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2. Elevations of bottoms of footings and top of floor of building.
 3. Lines and elevations of water, sanitary sewerage, and storm drainage utilities.
 4. Lines of elevations of all graded areas.
 5. Lines and elevations of roads, parking lots, and walkways.
 6. Location of irrigation lines, control valves, and irrigation spray heads.
- E. Upon completion of the work, the Contractor shall furnish the COTR, reproducible record (as-built) drawings at the scale of the Contract Drawings, showing the finished grade on the grid developed for constructing the work, including 50-foot stationing along new road centerlines. These as-built drawings shall bear the seal of the registered land surveyor.
- F. The Contractor shall perform the surveying and layout work of this and other specifications in accordance with the provisions of Article "Professional Surveying Services".

1.12 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, and shall 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 COTR's review as often as requested.
- C. Contractor shall deliver two approved completed sets of as-built drawings to the COTR within 15 calendar days after each completed phase and after the acceptance of the project by the COTR.
- D. Paragraphs A, B, & C shall also apply to all shop drawings.
- E. Contractor shall also deliver to the COTR, on CDs or DVDs, one electronic copy of the as-built drawings in PDF and AutoCAD formats.

1.13 USE OF ROADWAYS

- A. For hauling, use only established public roads and roads on Cemetery property and, when authorized by the COTR, such temporary roads which are necessary in the performance of contract work. Temporary roads shall be constructed by the Contractor at Contractor's expense. When necessary to cross curbing, sidewalks, or similar construction, they must be protected by well-constructed bridges.
- B. When new permanent roads are to be a part of this contract, Contractor may construct them immediately for use to facilitate building operations. These roads may be used by all who have business thereon within zone of building operations.

1.14 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 compliance with the following provisions:
1. Permission to use each unit or system must be given by the COTR. If the equipment is not installed and maintained in accordance with the following provisions, the COTR 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. 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. Automatic temperature control systems for preheat coils shall function properly and all safety controls shall function to prevent coil freeze-up damage.
 5. The air filtering system utilized shall be that which is designed for the system when complete, and all filter elements shall be replaced at completion of construction and prior to testing and balancing of system.
 6. 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.
- 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.

1.15 TEMPORARY TOILETS

- A. Provide where directed, (for use of all Contractor's workmen) ample temporary sanitary toilet accommodations. All connections and appliances connected therewith shall be removed prior to completion of the contract, and the premises left clean. Contractor shall keep such

places clean and shall be responsible for any damage thereto by Contractor's workmen.

1.16 AVAILABILITY AND USE OF UTILITY SERVICES

- A. The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. If utility connections are through the system the Government is using, the amount to be paid by the Contractor for chargeable utility services shall be the prevailing rates charged to the Government. The Contractor shall carefully conserve any utilities furnished without charge.
- B. The Contractor, at Contractor's expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of electricity and other utilities used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.
- C. Contractor shall install meters at Contractor's expense and furnish the Cemetery a monthly record of the Contractor's usage of electricity and other utilities as hereinafter specified.
- D. Heat: Furnish temporary heat necessary to prevent injury to work and materials through dampness and cold. Use of open salamanders or any temporary heating devices which may be fire hazards or may smoke and damage finished work, will not be permitted. Maintain minimum temperatures as specified for various materials.
- E. Electricity (for Construction and Testing): Furnish all temporary electric services.
 - 1. Obtain electricity by connecting to the Cemetery electrical distribution system. The Contractor shall meter and pay for electricity required for electric cranes and hoisting devices, electrical welding devices and any electrical heating devices providing temporary heat. Electricity for all other uses is available at no cost to the Contractor.
- F. Water (for Construction and Testing): Furnish temporary water service.
 - 1. Obtain water by connecting to the Cemetery water distribution system. Provide reduced pressure backflow preventer at each connection.
 - 2. Maintain connections, pipe, fittings and fixtures and conserve water use so that none is wasted. Failure to stop leakage or other wastes will be cause for revocation (at COTR's discretion) of use of water from Cemetery's system.

1.17 TESTS

- A. Pre-test mechanical and electrical equipment and systems and make corrections required for proper operation of such systems before requesting final tests. Final tests shall not be conducted unless pre-tested.

- B. Conduct final tests required in various sections of the Specifications in presence of the COTR. Contractor shall furnish all labor, materials, equipment, instruments, and forms, to conduct and record such tests.
- C. Mechanical and electrical systems shall be balanced, controlled and coordinated. A system is defined as the entire complex 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.
- D. All related components as defined above shall be functioning when any system component is tested. Tests shall be completed within a reasonably short period of time during which operating and environmental conditions remain reasonably constant.
- E. 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.

1.18 INSTRUCTIONS

- A. Contractor shall furnish Maintenance and Operating manuals and verbal instructions when required by the various sections of the Specifications and as hereinafter specified.
- B. Manuals: Maintenance and operating manuals (four copies each) for each separate piece of equipment shall be delivered to the COTR 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 instructions 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

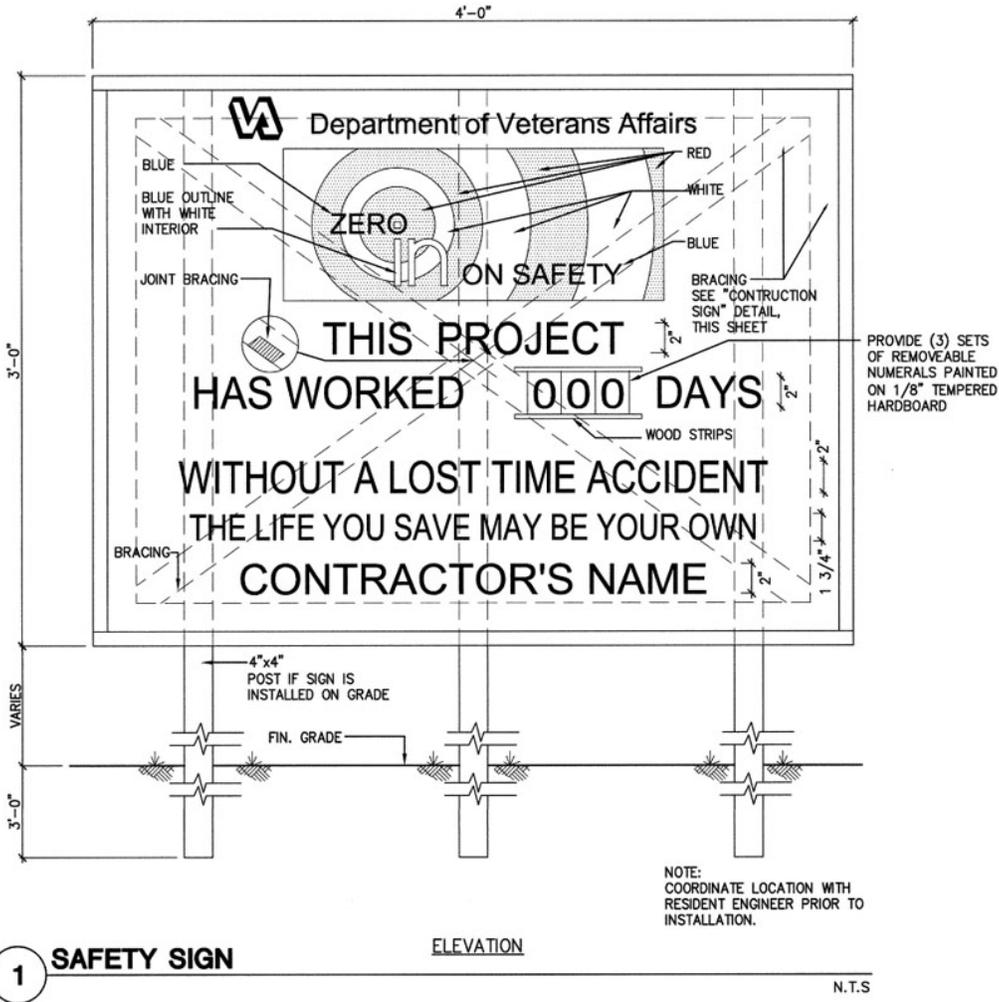
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equipment that are component parts of a complete system, shall be given in an integrated, progressive manner. All instructors for every piece of component equipment in a system shall be available until instructions for all items included in the system 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 COTR and shall be considered concluded only when the COTR is satisfied in regard to complete and thorough coverage. The Department of Veterans Affairs reserves the right to request the removal of, and substitution for, any instructor who, in the opinion of the COTR, does not demonstrate sufficient qualifications in accordance with requirements for instructors above.

1.19 CONSTRUCTION SIGN

- A. Provide a Construction Sign where directed by the COTR. All wood members shall be of framing lumber. Cover sign frame with 24 gage galvanized sheet steel nailed securely around edges and on all bearings. Provide three 4 inch by 4 inch posts (or equivalent round posts) set four feet into ground. Set bottom of sign level at three feet above ground and secure to posts with through bolts. Make posts full height of sign. Brace posts with two by four inch material as directed.
- B. Paint all surfaces of sign and posts with 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 COTR.
- D. Detail Drawing of construction sign showing required legend and other characteristics of sign is attached hereto and made a part of this specification.

E. Post the number of accident free days on a daily basis.



1.21 CONSTRUCTION DIGITAL IMAGES

- A. During the construction period through completion, furnish the Department of Veterans Affairs with 100 views of digital images, including one color print of each view and one Compact Disc (CD) per visit containing those views. Digital views shall be taken of interior and exterior as specified and as selected and directed by the COTR. Each view shall be taken with a professional grade camera with minimum size of 6 megapixels (MP) and the images will be a minimum of 2272 by 1704 pixels for 8 by 10 inch prints. Normally such images shall be taken at weekly intervals. However, the COTR may also direct the taking of special digital images at any time during the progress of the work prior to completion and acceptance of the contract.
- B. Prints shall be made on 8 by 10 inch regular-weight matte archival grade photographic paper and produced by a process with a minimum of 300 pixels per inch (PPI). Prints must be printed using the commercial RA4 process (inkjet prints will not be acceptable). It is required that the prints are professionally processed so the quality will meet or exceed

that of the same size print made with a film camera. Prints must be shipped flat to the COTR.

- C. Images on CD-ROM shall be recorded in JPEG format with a minimum of 24-bit color and no reduction in actual picture size. Compressed size of the file shall be no less than 80 percent of the original with no loss of information. File names shall contain the date the image was taken, the Project number and a unique sequential identifier. The CD-ROM shall also contain an index of all the images contained therein in either a TXT or Microsoft® Word format.
- D. Photographic documentation elements:
1. Before construction, the building pad, adjacent streets, roadways, parkways, driveways, curbs, sidewalks, landscaping, adjacent utilities and adjacent structures surrounding the building pad and site shall be documented. Overlapping photographic techniques shall be used to insure maximum coverage.
 2. Construction progress for all trades shall be tracked at pre-determined intervals, but not less than once every thirty (30) calendar days ("Progressions"). Progression documentation shall track both the exterior and interior construction of the building. Exterior Progressions shall track 360 degrees around the site and each building. Interior Progressions shall track interior improvements beginning when stud work commences and continuing until Project completion.
 3. As-built condition of pre-slab utilities and site utilities shall be documented prior to pouring slabs, placing concrete and/or backfilling. This process shall include all underground and in-slab utilities within the building(s) envelope(s) and utility runs in the immediate vicinity of the building(s) envelope(s). This may also include utilities enclosed in slab-on-deck in multi-story buildings. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive site utility plans.
 4. As-built conditions of mechanical, electrical, plumbing and all other systems shall be documented post-inspection and pre-insulation, sheet rock or dry wall installation. This process shall include all finished systems located in the walls and ceilings of all buildings at the Project. Overlapping photographic techniques shall be used to insure maximum coverage.
 5. As-built conditions of exterior skin and elevations shall be documented with an increased concentration of digital photographs as directed by the COTR in order to capture pre-determined focal points, such as waterproofing, window flashing, radiused steel work, architectural or Exterior Insulation and Finish Systems (EIFS) detailing. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive elevations or elevation details.

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6. As-built finished conditions of the interior of building including floors, ceilings and walls shall be documented at certificate of occupancy or equivalent, or just prior to occupancy, or both, as directed by the COTR. Overlapping photographic techniques shall be used to insure maximum coverage.

1.22 FINAL ELEVATION DIGITAL IMAGES

- A. A minimum of four (4) images of each elevation shall be taken with a minimum 6 MP camera, by a professional photographer with different settings to allow the RE/COTR to select the image to be printed. All images are provided to the RE on a CD.
- B. Photographs shall be taken upon completion, including landscaping. They shall be taken on a clear sunny day to obtain sufficient detail to show depth and to provide clear, sharp pictures. Pictures shall be 400 mm x 500 mm (16 by 20 inches), printed on regular weight paper, matte finish archival grade photographic paper and produced by a RA4 process from the digital image with a minimum 300 PPI. Identifying data shall be carried on a label affixed to back of the photograph without damage to the photograph and shall be similar to that provided for final construction photographs.
- C. Furnish six (6) 400 mm x 500 mm (16 by 20 inch) color prints of the All Cemetery buildings constructed under this project (elevations as selected by the RE from the images taken above). Photographs shall be artistically composed showing full front elevations. All images shall become property of the Government. Each of the selected six prints shall be place in a frame with a minimum of 2 inches of appropriate matting as a border. Provide a selection of a minimum of 3 different frames from which the SRE will select one style to frame all six prints. Photographs with frames shall be delivered to the RE/COTR in boxes suitable for shipping.

1. Restroom building.

1.23 HISTORIC PRESERVATION

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

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