

**STATEMENT OF WORK FOR
MULTIPLE AWARD CONSTRUCTION CONTRACT (MACC)
PROJECT MUHJ 08-7027A/B
INSTALL ELECTRIC SIGNAGE, AIRFIELD
AT
LANGLEY AFB, JBLE, VIRGINIA**

1 GENERAL REQUIREMENTS:

1.1 The following statement of work for the MACC contract is keyed to the General Provisions contained in Attachment 3 to the basic contract and serves to clarify intent within the annotated paragraphs. The requirements identified within the General Provisions shall remain in full affect unless otherwise specifically noted. Airfield Construction Waiver for this project has to be approved. The approval process can take approximately 60 days following the award of this contract. The Contractor shall not begin any construction activity on the flight line prior to the approval of the Airfield Construction Waiver.

1.2 GENERAL AIRFIELD CONSTRUCTION REQUIRMENTS:

1.2.1 Construction within 100 feet of the runway edge shall only be accomplished on **one** side of the runway at a time.

1.2.2 Non-essential vehicles and equipment shall be parked at least 100 feet from the nearest runway edge. Essential vehicles and equipment shall be parked as far from the runway that the construction operation will allow.

1.2.3 Contractors will be required to move at the tower's request. This will happen for landing aircraft with a wingspan of 45 feet or greater or any In Flight Emergency (IFE).

1.2.4 There will be a mandatory brief with Airfield Ops at the beginning of each day to review anything that may affect work or be potentially dangerous beyond the typical daily work.

1.2.5 The clear zone will be expanded significantly for any demo flights. All personnel, including Contractors, will have to completely vacate the airfield. Demo flights typically happen every other week for approximately one hour.

1.2.6 A low profile (2'), orange FOD fence is required around any earth breaking or concrete activities. Fence can be removed once all work at that site is complete. The same fence can be moved from one sign location to the next to avoid setting multiple FOD fences.

1.2.7 Contractors will need to obtain their flight line drivers license. This will be a very in depth and thorough brief with Airfield Operations.

1.2.8 The Contractors will be authorized to be up to, but not actually on the runway. The Con-

tractors will not set foot on the runway without prior coordination and approval from the tower. Realize that coordination could take anywhere from getting immediate approval to having to wait 20-30 minutes for aircraft arrivals.

1.3 CURRENT CONDITIONS:

- 1.3.1** Currently, the airfield at Langley AFB, JBLE lacks visual references to direct pilots to and from parking areas and taxiways during night time and inclement weather conditions. Pilots have routinely noted that lack of signage has caused them to enter/exit the wrong taxiway and/or parking areas. The signs would also allow Air Traffic Control to minimize verbiage to direct aircraft to a particular area thus increasing their ability to focus on proper separation of airborne aircraft.
- 1.3.2** The 633d Civil Engineer Squadron has received a 100% design for the repair and construction of electrical airfield signage. The current design documents consist of drawings, specifications, material cut sheets, bid schedule and load calculations.
- 1.3.3** The Contractor shall use the government-furnished documents to complete a construction effort as outlined in all following sections of this Statement of Work.

1.4 BUILD (MINOR CONSTRUCTION):

- 1.4.1** Construct the airfield signage in accordance with the approved 100% final design package provided.

1.5 BUILD (REPAIR)

- 1.5.1** Demolish and repair the airfield signage in accordance with the approved 100% final design package provided.

1.6 Power, Communications, and Equipment Outages: All necessary power and equipment outages shall be coordinated with the Contracting Officer or his/her representative. **Provide not less than a 3 week notice.**

1.7 Erosion and Sediment Control: Due to work on or near the flight line, the Contractor shall provide adequate Foreign Object and Debris (FOD), erosion and sediment controls at all times during the entire construction operation.

2 PROGRAM MANAGEMENT: The contractor shall sequence his work to ensure progress efficient for occupancy and use.

2.1 COMMENCEMENT, PROSECUTION AND COMPLETION OF SERVICES: There is no requirement for Title I Services within this scope of services.

2.2 SUBCONTRACTORS: No variance.

- 2.3 QUALITY CONTROL PLAN:** No variance.
- 3 RESPONSE REQUIREMENT:** No variance.
- 4 DESIGN DOCUMENTS, GENERAL:** No variance.
- 4.1 DRAWINGS, BID SCHEDULE AND COST ESTIMATE:** No variance.
- 4.2 REQUIRED DRAWINGS:** No variance.
- 4.3 RENDERED PERSPECTIVE:** There is no requirement for architectural renderings within this scope of services.
- 4.4 SPECIFICATIONS:** No variance.
- 4.5 CONSTRUCTION COST ESTIMATE BREAKDOWN:** No variance.
- 4.6 PREPARATION OF AF FORM 66, Schedule of Material Submittals:** No variance.
- 4.7 BID SCHEDULE:** Bid Schedule is attached.
- 5 DESIGN ANALYSIS:** No variance.
- 6 CONTRACT DOCUMENTS SPECIAL REQUIREMENTS:** No variance.
- 7 APPLICABLE CODES AND REGULATIONS:** In addition to Special Conditions Section 01 11 00, Paragraphs 1.6 and 1.12.3, the following information and criteria are made a part of this contract by reference:
- 7.1** Unified Facilities Criteria UFC 3-535-01, Visual Air Navigation Facilities
- 7.2** Air Force Instruction AFI 32-1044, Visual Air Navigation Systems
- 7.3** Air Force Joint Manual AFJMAN 32-1082, Facilities Engineering Electrical Exterior Facilities
- 7.4** Air Force Engineering Technical Letter ETL 01-20, Guidelines for Airfield Frangibility Zones
- 7.5** Federal Aviation Administration Advisory Circular 150/5340-18D, Standards for Airport Sign Systems
- 7.6** Federal Aviation Administration Advisory Circular 150/5345-44H, Specification for Runway and Taxiway Signs
- 7.7** Federal Aviation Administration Advisory Circular 150/5345-47B, Specification for Series to Series Isolation Transformers for Airport Lighting Systems

7.8 National Fire Protection Association Codes (NFPA) – latest edition

7.9 Langley AFB, JBLE Electrical, Fire, and Communications Design Standards -- latest edition

7.10 Air Force Engineering Technical Letter ETL 01-1, Reliability and Maintainability (R&M) Design Checklist

8 GOVERNMENT POINT OF CONTACTS

8.1 Noah Fillian (Project Manager), Civ, 633 CES/CEPM 757.764.1151

8.2 Glen Barrett (Construction Inspector), Civ, 633 CES/CEPM 757.764.1152

8.3 Emma Michels, 2ndLt, 1 OSS/OSA, 757.764.2438

9 DELIVERABLES

9.1 ELECTRONIC DOCUMENT REQUIREMENTS:

9.1.1 **Geodetic Control Surveys:** The Contractor (A-E) shall provide horizontal and vertical control surveys for the precise location of primary survey points for planning, engineering, construction, real estate projects, GIS applications, or facility management.

9.1.1.1 **Deliverable Requirements:** All locational base map (point, line, and polygon feature(s)) data collected shall be delivered in **ESRI ArcGIS 9.x** digital format along with the original source files. The geospatial files shall have an external spatial reference (**.prj**) file attached specifying the parameters of the coordinate system used (as provided by the government). All topologically correct geospatial data shall overlay on the installations latest orthorectified imagery provided by the government, using the same coordinate and projection system of the imagery (*WGS84*). All accuracy errors shall be reported to the contract program manager.

- All Architectural/Engineering data (building components, plans, designs, etc.) shall be in a **digital** (electronic information) **format** AutoCAD 2005 or higher. Drawings will be delivered in the AutoCAD “.DWG” file format. The Contractor shall use the A-E/C CADD Standard 4.0 (or latest version) when creating or revising any CADD data deliverables.
- All graphic and non-graphic data will be collected in the format defined by the *Spatial Data Standards Facilities, Infrastructure, and Environmental (SDSFIE) release 2.60* (or the most current version available), except where modified by the Government. This standard can be found at: <https://www.sdsfie.org>
- The contractor shall provide a quality control (QC) report that must state whether all inconsistencies in the data generated were corrected, or it must detail the remaining errors by case. The contractor shall utilize a topology build and clean routine to assure that there are no overshoots or undershoots in the line work, slivers or dangles in polygons, and that

there is complete closure of polygons with a maximum fuzzy tolerance value of 10^{-9} . The quality report must identify the software (name and version) and satisfy these conditions:

- a. The edges of all digitized vector data or raster imagery must exactly match digitally with those of all adjacent maps.
 - b. The digital representation of the common boundaries for all graphic features must be exactly the same, regardless of feature layer. Each feature within a layer must be represented by a single graphic element (e.g., polygon, line, or line string).
 - c. Lines and line strings which represent the same graphic element must be continuous (i.e., not broken or segmented), unless that segmentation reflects a specific visual line type. Lines or line strings representing the same type of data must not cross except at intersections.
 - d. Polygons must be closed (i.e., the first x- and y-coordinates must *exactly match* the last x- and y-coordinates). Each polygon must have a single unique centroid to which attributes (i.e., an attribute table) can be attached. Polygons of the same coverage must not overlap and must cover the area of interest completely (i.e., have no gaps in coverage).
 - e. All graphic elements that connect must exactly connect digitally, without overlaps or gaps.
 - f. Straight lines must be represented by only the beginning and ending x- and y-coordinate points. Line strings must not cross back on themselves or be of zero length.
- Feature Attributes: The contractor shall identify the classification, type, size, location, ID number, and any other necessary attributes (specified by the Government) for all surveyed, mapped, designed, or proposed features.
 - All symbol libraries, font libraries, text size, text format, and text placement shall be prepared in accordance with and conform to the Spatial Data Standards (SDS).
 - The contractor shall not develop new libraries without prior written approval from the Government.
 - The contractor shall provide metadata files for all locational data produced under this contract. The metadata file shall conform to the Federal Geographic Data Committee's "[Content Standard for Digital Geospatial Metadata, Version 2.0](http://www.fgdc.gov/standards/publications/index.html)" (or latest version) found at: <http://www.fgdc.gov/standards/publications/index.html>. The output from the **ESRI ArcCatalog metadata generator software (or compatible software)** shall be the standard format for all metadata files created under this contract. In addition, the metadata data shall be provided in **ASCII text** format. The digital metadata files shall be provided to the Government along with each final product deliverable, unless otherwise approved in writing by the Government.

9.1.1.2 Survey Data:

- The contractor shall use conventional surveying and other methods, such as a total station or Global Positioning Systems (GPS) for field data collection at an accuracy level in accordance with “Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy,” published by the Federal Geographic Data Committee (FGDC), dated July 1998. This standards document can be found at: http://www.fgdc.gov/standards/standards_publications/index.html .
- All Survey data collected shall be provided to the Government in a digital format with an attached Survey Report identifying survey method, equipment list, calibration documentation, survey layout, description of control points, control diagrams, and field survey data.
- Data on the location of utility lines shall be captured at a minimum every 50 feet and each turn or bend in a utility line must be captured.
- A Survey Control Database (consisting of a survey marker database and a survey traverse database) will be produced for all survey control points established under this contract, and delivered in a .dbf or ASCII comma-delimited format.
- If GPS is used, the contractor shall use *survey grade* GPS, at an accuracy level of +/- 2 cm., when appropriate, to collect data to be overlaid onto the installation’s ortho-photograph and/or base map.

9.1.1.3 Delivery Format:

Note: No deviations from the Government's established standards will be permitted unless prior written approval of such deviation has been issued by the Government. All linkages of non-graphical data with graphic elements, relationships between data objects and attributes, and report formats shall be maintained.

These deliverables include, but are not limited to:

- Site plans
- As-built drawings
- Engineering designs, plans or surveys
- Topographic surveys or studies
- Boundary or Cadastral surveys
- Master Plan drawings
- Utility (water, sewer, power, storm, etc.) designs, plans, surveys and studies
- Pavement, Grading, or Excavation plans
- Soil/Geology studies or surveys
- Environmental assessments, surveys, studies, or plans
- Historical or Archaeological surveys, studies, or plans

All data deliverables shall be in a ***digital*** (electronic information) ***format*** and shall be delivered in a format that conforms to the ***Spatial Data Standards Facilities, Infrastructure, and Environmental (SDSFIE) release 2.60 (or latest version available) at***

<http://www.sdsfie.org> and A/E/C CAD Standards version 4.0 (or latest version available) at <https://cadbim.usace.army.mil/CAD> .

The following procedures must be performed before a file is placed on the delivery media:

1. Include all files, both graphic and non-graphic, required for the project. Make sure all files are in the same directory, and that references to those files do not include device or directory specifications.
2. Ensure all reference (external reference) files are attached and without device or directory specifications.
3. Remove all extraneous graphics/text outside the project border area, and set the active parameters to a standard setting (or the setting contained in the seed or prototype file).
4. Include any standards sheets (abbreviations, symbols libraries, font libraries, color tables, pen tables, plot configuration files, user command files, etc.) necessary for a complete project.
5. Compress and/or reduce all files using the appropriate utilities. A digital media copy of the decompression utility should be provided with the delivered data, if necessary.

Note: Using the eTransmit command on newer versions of AutoCad will satisfy some or all of the items listed in 1, 2, 4 and 5 listed above.

9.1.1.3.1 Delivery Media :

* CD-ROM

Digital Media must have an *external label* listing the project title, project number and BCE drawing number in large, bold font. Format and version of the operating system on which the media was created (e.g. Windows XP), utility/command used for writing the files to the media, a short description of contents, a sequence number if there are multiple volumes, and the date of CD creation must also be printed on the label.

A *transmittal sheet* must accompany the media containing the information included on the external labels, total number of volumes being delivered, and a list of file names *and* file descriptions on each volume. The transmittal sheet must also include instructions for reading, restoring, or transferring the files from the media, and *certification that all delivery media is free of known computer viruses* - including the name(s) of the virus scanning software and the date the virus scan was performed.

9.1.1.4 Government Furnished Materials:

The Government will provide the contractor with data and information concerning all necessary and pertinent functions and principal features of the identified project. These items will include:

- The installation's latest georeferenced digital planimetric data and/or base map in ESRI Arc/Info 9.x format, or best format available, with associated data files.

- The installation's latest orthorectified imagery and specified geospatial parameters (coordinate system, datum, projection, distance units).
- Installation standard AutoCAD drawing sheet template.
- Any pertinent and necessary prototype or seed files.
- Frequency settings for the Real-Time Kinematic (RTK) GPS Base Station and the preferred GPS receiver specifications if required.
- Any other data or schematics deemed necessary for project completion, pending approval from the Government.

9.1.2 Government Review: The Government shall review the submitted data and documentation upon completion of all stated work. Missing or incomplete items will be documented and forwarded to the Contractor for completion. Upon receipt of a complete submittal, the Government will conduct a quality review and notify the Contractor within 14 days of acceptance (along with any stipulations this includes) or rejection of the deliverables described herein. Failure to adhere to any of the stated delivery specifications could result in rejection of deliverables and nonpayment. Contractors should, at a minimum, submit data and documentation samples at 25% and 75% project completion to avoid the rejection of final deliverables.

Any questions regarding data collection efforts, deliverable formats or deliverable specifications should be addressed to the Geo Integration Office, contact information:

633d Civil Engineer Squadron – MSgt Robert Gracey, 633 CES/CEPT
 37 Sweeney Blvd; Room 224
 Langley AFB, JBLE, VA 23665
757.764.1164

9.2 HARD COPY DOCUMENT REQUIREMENTS:

9.2.1 Submit three sets of full sized paper copies of the final as-built drawings.

9.2.2 Refer to paragraph 1.24.10 of specification section 01 11 00 for as-built Mylar submission specifications.

9.3 SUBMITTAL DELIVERIES: All submittals shall be express delivered/overnight mailed to the following:

633d Contracting Squadron – 633 CONS/LGCB
 74 Nealy Avenue
 Langley AFB, JBLE, VA 23665

***** END OF STATEMENT OF WORK *****