***Airfield As-Builts Scope***

Hartsfield Jackson International Airport Airfield Lighting System is a complex system composed of thousands of lights, hundreds of guidance signs, hundreds of manholes, high voltage electrical distribution and an Airfield Lighting Control and Monitoring System. Without adequate and comprehensive documentation of all these components, it’s extremely challenging to maintain existing system as well as develop designs to accommodate construction activities meeting the requirements for continuous airfield changes. The scope of this project is to develop a comprehensive Airfield Lighting As-Built document as recommended in AC 150/5340-26B that identifies complete circuit routing for each circuit, all light fixtures, signs, manholes, hand holes, pull boxes and light bases.  As-Built documentation shall include surveyed data for all lights, signs and structures provided in airport grid coordinates.  A base map shall be developed illustrating airfield lighting layout utilizing surveyed information. This base map shall include a layering methodology that is approved by DOA. DOA will provide any existing layout and/or drawings to be utilized where applicable for the development of this base map.

All of the following airfield components shall be included on the base map:

**Lighting Circuits**

Each circuit route shall be field traced in its entirety and findings documented in AutoCAD base map drawing. AutoCAD fields shall be populated with circuit name and length. Circuit details such as the area served, different modes of operation shall be documented on a spreadsheet in Excel format. Examples of modes of operation to be documented are Normal, SMGCS, and De-Icing. The Consultant shall also evaluate the condition of each circuit by obtaining Insulation Resistance Measurement reports from existing ALCMS. The data shall be evaluated recommendations set forth. Proper threshold shall be identify and set in the ALCMS in order to initiate and alert that would allow for either re-calibration or replacement of affected cables.

**Manhole Layout**

Each manhole shall be shown and identified with a naming methodology coordinated with DOA. Details of the interior of the manhole section shall be documented and provided to show each duct with the number of conductors. Manhole documentation shall be illustrated in AutoCAD base map and detail drawing. AutoCAD fields documenting attributes shall be populated with the manhole name, manhole type, elevation, invert and coordinates. All manhole names and location shall be documented in an Excel spreadsheet.

**Handhole/Pull Can Layout**

Each handhole/pull can shall be shown and identified with a naming methodology coordinated with DOA. Details of the interior of the handhole/pull can section shall be documented and provided to show each duct with the number of conductors. Handhole/Pull can documentation shall be illustrated in AutoCAD base map and detail drawing. AutoCAD fields documenting attributes shall be populated with the handhole/pull can name, elevation, invert and coordinates. All handhole/pull can names and locations shall be documented in an Excel spreadsheet.

**Conduit Routing**

Each conduit route shall be illustrated in the AutoCAD base map. AutoCAD fields documenting conduit attributes shall include the size and the circuits contained within the conduit.

**Duct bank Routing**

Each conduit route shall be illustrated in the AutoCAD base map. A section details for duct banks shall be created detailing its size, the conductors that are contained in each duct. AutoCAD fields documenting conduit attributes shall include the size/duct array and circuits contained within each duct.

**Light Fixtures**

Each light fixture shall be identified in AutoCAD base map drawing with an identifier that is coordinated with DOA. AutoCAD fields documenting attributes of each light fixture shall be created. Fields shall include but not be limited to the following: fixture type, color, unidirectional/bi-directional, wide/narrow beam, lighting technology and coordinates.

**Airfield Guidance Signs**

Each guidance sign shall be identified in AutoCAD base map drawing with an identifier that is coordinated with DOA. AutoCAD fields documenting guidance sign attributes shall be created. Fields shall include but not be limited to the following: sign number, circuit information, number of modules and coordinates. Also verify and update sign panel information for existing sign schedule that is provided by DOA. Updates shall be documented in AutoCAD, Excel and PDF format.

**Lighting Vaults**

Create/update existing floor plan layouts and single line drawings for each airfield lighting vault. Single line shall include all voltage levels and distribution equipment including emergency distribution equipment. Document panel directories for each panel in an Excel spreadsheet. Also, document existing generator and constant current regulator information (CCR) in an Excel spreadsheet. Information shall include name, location, KW rating, voltage, fuel type, number of steps for each CCR and mode of operation for all scenarios. Identify all devices that are missing nameplates and flag them for update during a subsequent phase of the project