Special Specification 6335
LED Decorative Bridge Column Lighting

1. DESCRIPTION

Furnish, fabricate and install color-changing LED (Light Emitting Diode) lighting assemblies. A color-changing LED lighting assembly is the complete assembly of light fixture, LED light source, lens, mounting brackets, connectors, drivers, power supplies, visors, components and hardware constituting a complete operational lighting unit.

2. MATERIALS

For the installation of all lighting assemblies, use new materials that meet the requirements of the NEC, UL, CSA, and NEMA. Provide all new materials that comply with the details shown on the plans, the requirements of this Item and to the pertinent requirements for the following items:

- Item 616, “Performance Testing of Lighting Systems,”
- Item 618, “Conduit,”
- Item 620, “Electrical Conductors,” and
- Special Specification 6XXX, “Bridge Lighting DMX Control System.”

Furnish 4 sets of submittals of fixtures (type, manufacturer and catalog designations noted), controls, mounting provisions, and anticipated lead times for delivery of equipment to the TxDOT Area Office at 7479 Bagby Ave, Waco Texas 76712. Do not purchase materials or begin work before these submittals are approved.

2.1. Warranty. Provide manufacturer’s warranty for each LED bridge lighting assembly that will replace failed components or parts for a period of five years from the purchase date.

3. CONSTRUCTION

Perform work in accordance with the details shown on the plans and the requirements of this Item. Consult with the proper utility company before beginning work. Coordinate conduit layout and mounting design on bridge column with the bridge fabricator and lighting assembly manufacturer. Prevent scarring or marring of fixtures. Replace damaged components. Repair damaged painted areas of lighting assemblies.

Furnish and install each color-changing lighting assembly as shown on the plans and in coordination with the lighting assembly manufacturer. Field verify dimensions and coordination of conduit entry and all other mounting conditions with the entity manufacturing lighting fixtures. The Department may shift an assembly’s location, if necessary to secure a more desirable location or to avoid conflicts.

Install cables and equipment necessary for fixture connection in a manner that minimizes visibility from pedestrian and roadway traffic.

Support and align lighting fixtures with necessary hangers, supporting members, and frames for proper installation, as shown in the Contract Drawings and the Specifications, and as approved by the Engineer. Aim fixtures initially as shown on the plans for review. Make provisions for trial lighting to review and adjust fixture angle for final positioning as directed by the Engineer.

Fabricate and install lighting assembly components in accordance with the details, dimensions, and requirements shown on the plans and in coordination with the fabricator to assure the components are installed thru the appropriate conduits for acceptable visual appearance and functionality.
Follow the NEC when installing the lighting assemblies. All lighting fixtures must be properly wired and connected to branch circuits, tested, and left ready for operation. Bond all lighting fixtures and metal accessories to the branch circuit equipment-grounding conductor.

Complete performance test of all systems per Item 616, “Performance Testing of Lighting Systems.”

4. MEASUREMENT

This Item will be measured as each LED Decorative Bridge Column Lighting assembly is complete and in place.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “LED Decorative Bridge Column Lighting,” of the type specified. This price is full compensation for furnishing; installing; aiming and testing luminaires; LEDs; driver; power supplies; mounting brackets; internal conductors and connections; power cable and connectors from j-box to fixture; j-box; coordination with bridge fabricators; system performance testing & adjustments; equipment; labor; tools; and incidentals.

New conduit will be paid for under Item 618, “Conduit.” New electrical conductors will be paid for under Item 620, “Electrical Conductors.” New ground boxes will be paid for under Item 624, “Ground Boxes.” New electrical services will be paid for under Item 628, “Electrical Services”. The DMX control will be paid for under Item XXX, “Bridge Lighting DMX Control System.”