Special Specification 6446
LED Pedestrian Illumination Assembly

Texas
Department
of Transportation

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1.   DESCRIPTION

Furnish and install LED (light emitting diode) pedestrian illumination assemblies.

2.   MATERIALS

Provide new materials that comply with the details shown on the plans, the requirements of this Item, and the pertinent requirements of the following items:

- Item 610, "Roadway Illumination Assemblies"
- Item 616, "Performance Testing of Lighting Systems"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors."

Provide six sets of submittals showing the fixtures to the Engineer for approval at the project address. Obtain the Engineer's approval on the submittals before purchasing materials and beginning work. Furnish two copies of the completed material identification form to the Engineer before beginning fabrication.

Ensure materials are UL-listed; meet NEMA, NEC, and AASHTO requirements; and are in accordance with the Electrical Detail standard sheet.

Provide a ceiling mount 23 W LED area type luminaire with a light distribution pattern that provides an average light level that exceeds 2 ft. candles minimum as needed to provide a 3:1 uniformity on the walkway surface, and 1 ft. candle average on the walls up to 6ft., according to the plans and specifications. Ensure that the luminaire is suitable for use in wet locations and the optical compartment meets an IP63 rating.

Provide a LED luminaire with 4000 K color temperature. Provide a multi-volt driver that operates on any line voltage from 120-277 V. Provide luminaires with mounting hardware.

Provide 4 ft. length assemblies with a matte white finish aluminum die-formed housing with heavy gauge steel reflector with white high reflectance polyester powder coat. Provide one-piece extruded UV stabilized polycarbonate lens with unique linear ribbed design that provides even light distribution while obscuring lamp image and direct glare. Lens nominal thickness of 0.135 in. Provide stainless steel fasteners mounted along the fixture side, concealed by the polycarbonate lens. Provide a UL- listed fixture suitable for wet locations under a covered ceiling.

Example: Fail-Safe HVSL LED, 8 in. width, as manufactured by Cooper, or approved equal.

Submit a photometric array showing the luminaire provided, mounted at the locations shown on the plans, to illuminate the pedestrian walkway with the minimum average maintained illuminance requirements shown in the AASHTO "Roadway Lighting Design Guide – Oct 2018." Obtain the Engineer's written approval of the array before purchasing and installing the fixtures. Photometric array will not be necessary if failsafe HVSL with photometric curve #HVSL8-4-LD4-1LO-40-UNV-C-EDC.IES is supplied.

3.   CONSTRUCTION

Perform work in accordance with the details shown on the plans and the requirements of this Item.

Use established industry and utility safety practices when installing luminaires located overhead. Consult with the Engineer before beginning work.

Prevent scarring or marring of the luminaires. Replace damaged components.

Install pedestrian illumination assemblies in accordance with the details, dimensions, and requirements shown on the plans and by manufacturer's instructions. Test installed pedestrian illumination standards in accordance with Item 616, "Performance Testing of Lighting Systems."

4. MEASUREMENT

This Item will be measured as each pedestrian illumination assembly installed and successfully tested.

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 Pedestrian Illumination Assembly." This price is full compensation for furnishing, installing, fixture anchoring, and testing luminaires; LEDs, drivers, internal conductors, and connections; system performance testing; and for furnishing equipment, labor, tools, and incidentals.

New conduit will be paid for under Item 618, "Conduit." New conductors, except the conductors internal to the fixture, will be paid for under Item 620, "Electrical Conductors."