

Special Specification 6379

Roadway Lighting Assembly with LED Fixtures



1. DESCRIPTION

This Item will govern for furnishing and installing the various types of roadway lighting assemblies as shown on the plans. The term "Roadway Lighting Assemblies" as used herein will constitute the complete assemblage of poles, parts, fixtures, equipment and miscellaneous components, erected as shown on the plans and in accordance with these specifications forming a complete and independent lighting unit.

2. GENERAL

All materials furnished by the Contractor must be new, UL-listed, meet NEMA, NEC, AASHTO, and the Electrical Detail standard sheet requirements.

The contractor must comply with the latest Electronic Shop Drawing Submittal Guidelines for non-standard Roadway Lighting Assemblies. These submittals must be approved by the Engineer before the Contractor begins work.

Furnish LED light fixtures from new materials that are in accordance with DMS-11011, "LED Roadway Luminaires."

Provide prequalified light fixtures from the Department's MPL. When required by the Engineer, notify the Department in writing of selected materials from the MPL intended for use on each project.

All materials and construction methods must be in accordance 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 620, "Electrical Conductors"

3. MATERIALS

3.1 **Luminaire.** The LED luminaire fixtures must be 250W HPS equivalent units in conformance with DMS-11011, "LED Roadway Luminaires" and operate at 480 volts. Finish will be electrostatically applied thermoset polyester powder coat color Traffic Black (RAL 9017) or as approved by the Engineer.

3.2 **Bracket Arm.** The assembly will contain either one (Type 1) or two (Type 2) bracket arms. The bracket arm(s) must be 6 ft. in length, have a 2 3/8-in. OD and have a 21 in. unsweep as shown on the plans. Finish color and finish type must match that specified for light pole.

3.3 **Lighting Pole.** The lighting assembly pole should be 29.5 ft. in height. Pole to be a round tapered 11-gauge steel shaft with hand hole. Poles must include breakaway coupling system that includes four couplings with associated hardware and a two-piece aluminum skirt with attachment hardware and grounding lug. The aluminum skirt finish must match color and type of finish specified for the light pole. The breakaway coupling system must conform to current AASHTO standards and must be approved by FHWA for breakaway characteristics at impact speeds for 20 to 60 mph. Finish color will be Traffic Black (RAL 9017) or as approved by the Engineer. All surfaces must be chemically treated before painting and must use the process recommended by the manufacturer. All nuts and bolts will be painted to match the pole by a painting method and materials recommended by manufacturer and to the satisfaction of the Engineer. Submit shop drawings

and wind load calculations including fixtures, breakaway connectors, and anchor bolts into the calculations sealed by a Professional Engineer registered in Texas.

4. INSTALLATION

Lighting assemblies must be fabricated and installed in accordance with this specification and the details and dimensions shown on the plans or approved in writing by the Engineer.

Lighting assemblies must be located as shown on the plans, except that the Engineer may shift the assembly locations when necessary to secure a more desirable location or to avoid conflicts with utilities. Unless otherwise shown on the plans, the Contractor will do all staking and the Engineer will verify and approve all lighting assembly locations.

Erection of the poles and luminaires located near any overhead or underground utilities will be accomplished using established industry and utility safety practices. The Contractor will consult with the appropriate utility company before beginning such work. The careful erection and aligning of the lighting assemblies must be considered an essential feature of the installation of roadway lighting assemblies.

Paint and coating repairs must be made in accordance with the manufacturer's recommendations to the satisfaction of the Engineer.

Use breakaway connectors. Ground in accordance with the National Electric Code.

5. MEASUREMENT

This Item will be measured as each Roadway Lighting Assembly complete in place.

6. 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 "Roadway Lighting Assembly (Ty 1)" or "Roadway Lighting Assembly (Ty 2)". This price will be full compensation for furnishing, installing and testing all luminaires, poles, conductors, and connections in poles, and for all labor, tools, equipment and incidentals necessary to complete the work.

Foundations for roadway illumination assemblies will be paid for under Item 416, "Drilled Shaft Foundations".