

# Special Specification 8044

## Decorative Traffic Signal Pole with Luminaire



### 1. DESCRIPTION

Furnish, fabricate, and install decorative traffic signal pole with luminaire as shown on the plans. A decorative traffic signal pole with luminaire is 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 and signal pole unit.

### 2. MATERIALS

Use new materials conforming to the details shown on the plans and the pertinent requirements of the following Standard Specification Items:

- Item 416, "Drilled Shaft Foundations"
- Item 421, "Hydraulic Cement Concrete"
- Item 441, "Steel Structures"
- Item 442, "Metal for Structures"
- Item 449, "Anchor Bolts"
- Item 616, "Performance Testing of Lighting Systems"
- Item 618, "Conduit"
- Item 620, "Electrical Conductors."

- 2.1. **Submittals.** Furnish two sets of submittals of the decorative traffic signal pole with luminaire to the Engineer. Provide load calculations sealed by a licensed professional engineer in the State of Texas for the pole shaft and mast arm. Do not begin work or purchase materials before these submittals are approved.
- 2.2. **Pole Shaft.** Provide 12-fluted tapered mandrel-formed shaft with nominal height of 30 ft. Pole shaft must support the luminaire, mast arm, and all equipment for typical wind load expected at location of installation. Provide a nominal mounting height of 30 ft. for the luminaire fixture arm and a nominal mounting height of 18 ft. for the mast arm. The finish must be bronze textured powder coat paint with thermosetting resins to provide discoloration-resistant finish in accordance with ASTM D 2244 and luster retention in keeping with ASTM D 523, be humidity-proof in accordance with ASTM D 2247, and have a minimum of 2,000 hr. for salt-spray resistant finish in accordance with ASTM B 117.
- 2.3. **Ornamental Base Assembly.** The base must be cast aluminum. Provide a base 40 in. high and 36 in. in diameter at the bottom. All connecting hardware must be stainless steel. Base assembly must match the material, finish, and color of the traffic signal pole.
- 2.4. **Decorative Luminaire.** Provide a 130W light-emitting diode historic drop acorn streetlight-style Illuminating Engineering Society (IES) cutoff decorative fixture. The housing and hood must be made of die-cast A360.1 aluminum complete with weatherproof door giving tool-free access to the ballast without disconnection of wiring. The fixture must allow for full rotation of the luminaire in 90° increments. The globe must be a one-piece seamless injection-molded clear borosilicate glass globe having an inner prismatic surface and external glare-softening prisms. The globe must be permanently sealed on the optical system reflector. The optical system must be IES Type III hyper-extensive. Position the lamp in a vertical position in the sealed optical assembly. The optical assembly must comprise an anodized aluminum hydro-formed reflector permanently assembled on the refractor globe with an IP66 rating. Provide the ballast with a high-power factor of 90% and a lamp starting capacity of -20°F. The ballast must be on a unitized removable tray with quick-disconnect plug. Provide the fixture adaptor made of 356 cast aluminum, complete with block connector, that can be mounted on a 1.66-in.-2.38-in. outside diameter bracket arm tubing that slip-fits 6.5

in. long inside the adaptor and permits an adjustment of  $\pm 5^\circ$ . All exposed screws must be stainless steel with ceramic primer seal basecoat to reduce seizing of the parts. The fixture must match the style shown on the plans and finish and color of the traffic signal pole.

- 2.5. **Mast Arm.** Provide a mast arm to match the material, finish, and color of the traffic signal pole. Length of mast arm must be as specified on the plans. Match the style as shown on the plans.

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### 3. CONSTRUCTION

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

Use established industry and utility safety practices when installing poles located near overhead or underground utilities. Consult with the appropriate utility company before beginning work.

Prevent scarring or marring of poles, arms, and luminaires. Replace damaged components. Repair damaged painted areas of decorative signal pole in conformance with manufacturer's recommendations.

Stake, install, and align each signal pole assembly as shown on the plans. The Department may shift the pole assembly's location, if necessary, to secure a more desirable location or to avoid conflict with utilities.

Construct foundations for signal pole assemblies in accordance with Item 416 and the details shown on the plans.

Furnish and install components of decorative traffic signal pole with luminaire in conformance with the details, dimensions, and requirements shown on the plans. Install anchor bolts and coat anchor bolt threads in accordance with Item 449. Erect structures after foundation concrete has attained its design strength in accordance with the plans and Item 421. Tighten anchor bolts in accordance with Item 449. Do not place grout between base plate and foundation. Test installed luminaires in accordance with Item 616.

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### 4. MEASUREMENT

This Item will be measured as each decorative traffic signal pole with luminaire installed.

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### 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 "Decorative Traffic Signal Pole with Luminaire" of the types specified.

This price is full compensation for furnishing, installing, and testing luminaires, ballasts, poles, lamps, anchor bolts, internal conductors, connections, and equipment, and for labor, tools, and incidentals.

New drilled shaft foundations will be paid for under Item 416. New conduit will be paid for under Item 618. New conductors will be paid for under Item 620. New ground boxes will be paid for under Item 624, "Ground Boxes." New electrical services will be paid for under Item 628, "Electrical Services."