

# Special Specification 8026

## Traffic Signal Pole Assemblies (Steel) (Materials Only)



### 1. DESCRIPTION

Furnish and deliver Steel Traffic Signal Pole Assemblies to sites specified on the plans.

### 2. MATERIALS

Furnish 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 441, "Steel Structures,"
- Item 442, "Metal for Structures,"
- Item 445, "Galvanizing," and
- Item 449, "Anchor Bolts."

Furnish alloy steel or medium-strength mild steel anchor bolts in accordance with Section 449.2.1., "Bolts and Nuts," as shown on the plans.

### 3. FABRICATION

- 3.1. **Standard Design.** Fabricate poles assemblies in accordance with this Item based on the pole types as shown in the plans. Alternate designs are not acceptable. Deviations that affect the basic structural behavior of the pole are considered to be alternate designs. For deviations that do not affect the basic structural behavior of the pole, electronically submit shop drawings in accordance with Item 441, "Steel Structures," to the Bridge Division for approval.
- 3.2. **Fabrication.** Fabricate and weld in accordance with Item 441, "Steel Structures," AWS D1.1, Structural Welding Code—Steel; and the requirements of this Item. Fabrication tolerances are given in Table 1.

**Table 1**  
**Fabrication Tolerances**

Part	Dimension	Tolerance (in.)
Pole and mast arm shaft	Length	±1
	Thickness	+0.12, -0.02
	Difference between flats or diameter	±3/16
	Straightness	1/8 in 10 ft.
	Attachment locations	±1
Base and mast arm mounting plates	Overall	±3/16
	Thickness	+1/4, -0
	Deviations from flat	3/16 in 24 in.
	Spacing between holes	±1/8
	Bolt hole size	±1/16
Anchor bolts	Length	±1/2
	Threaded Length	±1/2
	Galvanized Length	-1/4
Assembled shafts	Angular Orientation	1/16 in 12 in. <sup>1</sup>
	Centering	±3/16
	Twist	3° in 50 ft.

1. 1/8 in 12 in. between mounting plates and between mounting plates and base plates.

Fabrication plants that produce steel traffic signal pole assemblies must be approved in accordance with DMS-7380, "Steel Non-Bridge Member Fabrication Plant Qualification." The Department maintains an MPL of approved traffic signal pole assembly fabrication plants.

Provide properly fitting components. Provide round or octagonal shafts for poles and mast arms tapered as shown on the plans. Fabricate mast arms straight in the unloaded condition unless otherwise shown on the plans. The Department will accept bolted slip joints overlapping by at least 1.5 diameters in mast arms 40 ft. and longer.

Provide circumferential welds only at the ends of the shafts. Provide no more than 2 longitudinal seam welds in shaft sections. Grind or smooth the exterior of longitudinal seam welds to the same appearance as other shaft surfaces. Ensure 100% penetration within 6 in. of circumferential base welds and 60% minimum penetration at other locations along the longitudinal seam welds. Use a welding technique that minimizes acid entrapment during later galvanizing. Hot-dip galvanize all fabricated parts in accordance with Item 445, "Galvanizing."

Treat welds with Ultrasonic Impact Treatment when shown on the plans after galvanization and with the dead load (actual or simulated) applied. Repair damaged galvanizing in accordance with Section 445.3.5., "Repairs."

Connect the luminaire arm to the pole with simplex fittings. Ensure the fittings have no defects affecting strength or appearance.

Permanently mark, at a visible location when erected, pole base plates and mast arm mounting plates with the design wind speed.

Permanently mark, at a visible location when erected, pole base plates and fixed mast arm mounting plates with the fabrication plant's insignia or trademark. Place the mark on the pole base plate adjacent to the hand-hole access compartment.

Deliver each traffic signal pole assembly with fittings and hardware either installed or packaged with its associated components. Ship all components with a weatherproof tag identifying the manufacturer, Contract number, date, and destination of shipment.

#### **4. MEASUREMENT**

This Item will be measured by each traffic signal pole assembly as specified in the plans.

#### **5. PAYMENT**

**Material (Delivery).** The materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Traffic Signal Pole Assemblies (Steel)" of the types and sizes specified. This price is full compensation for furnishing, fabricating, galvanizing, delivering assemblies, anchor bolts, nuts, washers, and templates; and materials, equipment, labor, tools, and incidentals.