

SECTION 920—SIGN LIGHTING

920.1 DESCRIPTION—This work is the furnishing and installation of a complete electrical distribution, control, and lighting system for the illumination of indicated signs.

920.2 MATERIAL—[Section 1102](#). Certification and warranties, as specified in [Section 910.2\(c\)](#).

920.3 CONSTRUCTION—As shown on the [Standard Drawings](#), as indicated, and as follows:

(a) General. [Section 910.3\(a\)](#) and as follows:

Do not alter sign structure members to attach electrical items, unless indicated. When necessary, drill during structural fabrication.

(b) Trench Excavation and Backfill. [Section 910.3\(c\)](#)

(c) Service Pole Installation. [Section 910.3\(k\)](#)

(d) Photoelectric Control Device. [Section 910.3\(m\)](#)

(e) Enclosure Installation. [Section 910.3\(n\)](#)

(f) Luminaires. Attach the luminaires to the supports. Install a lamp in each luminaire. Clean the luminaires as specified in [Section 910.3\(j\)](#). If the luminaire is provided with a remote ballast, mount the remote ballast over the shoulder. Submit mounting method and materials for approval.

(g) Junction Boxes. [Section 910.3\(p\)](#)

(h) Conduit Installation. [Section 910.3\(g\)](#) and as follows:

Unless another method is specified, attach exposed conduits to sign structures using galvanized or stainless steel supports and U-bolts or two-hole straps with spacers and expansion bolts, and attach the conduit to sign columns and shafts with clamping bands and bolts.

(i) Cable Installation. [Section 910.3\(h\)](#)

Deviation from the indicated layout may be allowed if it is necessary to overcome obstacles during construction, provided that drawings showing the deviations are submitted for approval.

Extend cables from the breakers of each sign structure mounted lighting panel to each ballast and sign lighting fixture.

Attach exposed cable runs to the structures using 13 mm (1/2-inch) stainless steel straps or black plastic tie straps, as directed, at intervals not exceeding 1 m (3 feet).

(j) Cable and Conduit Markers. [Section 910.3\(t\)](#)

(k) Grounding. Install grounding wire, ground rods, connectors, and necessary devices to ground the entire electrical system and sign structure.

Connect the 13.3 mm² (No. 6 AWG) ground wire to the breaker panel ground bus and to the ground rod at the service pole.

Install a 13.3 mm² (No. 6 AWG) ground wire at sign structures through the sign column shaft and attach to the grounding lug accessible from the handhole. Connect the ground wire to the ground rod with a bronze clamp. Ground the system neutral conductor and enclosure using a connection on the grounding lug in the column shaft. Drive the ground rod vertically into the ground a horizontal distance of 300 mm (12 inches) from the foundation and opposite the roadway side of the shaft.

(m) **Tests.** [Section 910.3\(u\)](#), except as follows:

1. Circuit Tests. Make voltage readings at the power supply side of the service pole equipment or at the supply side of the highway sign lighting circuit, and make readings at ballasts. Provide a voltage drop not exceeding 5% of the rated voltage at the service point when under full load at the lamp ballast.

Take current readings on the load side of each main breaker and neutral circuit. Take current readings at nighttime and at daytime with the lighting systems in normal operation.

2. Performance Test. As directed, take lux (footcandle) readings at several points on each sign face.

(n) **Guarantee.** [Section 910.3\(v\)](#)

920.4 MEASUREMENT AND PAYMENT—Lump Sum

The price includes furnishing personnel, equipment, and the costs of electrical energy for the tests.