

SECTION 11.03 SPAN POLE

11.03.01--Description: This item shall consist of furnishing and installing a steel span pole, as indicated on the plans in conformity with these specifications or as directed by the Engineer.

This item shall also include furnishing a wood span pole and installing it at the location designated on the plans, or as indicated by the Engineer, and in conformity with these specifications.

11.03.02--Materials: The materials for this work shall conform to the requirements of Article M.16.04.

11.03.03--Construction Methods:

1. Steel Pole: Each pole shall be securely bolted to its base, electrically grounded, and installed per the manufacturers specifications. The pole shall be oriented so the handhole is away from traffic. The steel pole shall be raked by means of a double nut construction. The opening between the steel pole base and the concrete foundation shall be grouted and neatly finished with a non-shrinkable, non-stainable grout that conforms to the requirements of Article M.03.01-12. The mast arm anchor bolts are specified in M.15.02.3.

Installation Procedure:

- A.** Install leveling nuts onto anchor bolts with the approximate pole "rake."
- B.** Install steel pole base plate onto leveling nuts and tighten the anchoring nuts loosely.
- C.** The unloaded pole shall be "raked" back according to manufacturers specifications by adjusting the nuts as necessary. Upon completion the "rake" should give the pole a plumb look under load.
- D.** Tighten up the anchoring nuts to a "snug-tight" condition, while insuring that the leveling nuts are always in firm contact with the base plate. A "snug-tight" condition is defined as the tightness attained by the full effort of a person using a spud wrench.
- E.** Check all nuts for looseness after the traffic lights and other loads are in place, paying special attention to the leveling nuts on the tension bolts. Retighten any loose nuts to a "snug-tight" condition. Upon completion each pole shall be securely bolted to its base and have a plumb appearance.
- F.** Grout underneath base plate.
- G.** Install Handhole cover, anchor bolt covers, and pole cap.

2. Wood Pole: The hole into which the pole is to be placed shall be mechanically dug, and its diameter shall be only large enough to accept the pole and the tamper and shall be 1.8 m deep.

A lead of approximately 6 m should be maintained from the pole when placing the anchor. The hole for the anchor shall be mechanically dug, and the diameter will be the nominal size of the unexpanded diameter of the anchor. A slot shall be cut in the side of the hole to permit the anchor rod to line up with the guy strand. The anchor rod shall extend above the ground not less than 150 mm nor more than 300 mm.

Prior to installation, the anchor shall be locked in its expanded position. This shall be done by marking the expanding bar end away from the anchor, with the anchor in the expanded position. The Contractor shall collapse the anchor tie plates and install in hole with expanding bar, and then expand into undisturbed earth with several heavy blows on the expanding bar. The anchor will be fully expanded when the mark on the expanding bar is opposite the top of the anchor rod. All backfill is to be thoroughly tamped as it is being placed. A wet porcelain strain insulator shall be installed on the guy strand at a minimum height of 2.4 m. The installation of the guy strand will be as shown on the installation detail sheet.

3. Combination Steel Pole: Specifications for steel poles in sub-article one apply to combination steel poles including the following specifications.

When illumination service is underground, a nylon pull rope shall be installed from the end of the luminaire bracket to the pole base. At combination poles where service is overhead, a separate rigid service clevis, 50

mm entrance fitting and weatherhead shall be installed. A nylon pull rope shall be installed from the end of the bracket to the clevis. The luminaire bracket shall be attached to the pole shaft perpendicular to the centerline of the roadway as shown on the plans. Clamp-type brackets are permissible for ease and adjustment. The mounting height shall be a nominal 9 m measured from the center of the light source to the pavement directly below. It shall be the responsibility of the Contractor to arrange with the utility company for installation of the luminaire on the bracket and secondary service to the luminaire.

11.03.04--Method of Measurement: This work will be measured for payment by the number of poles of the type specified, completed and accepted in place.

11.03.05--Basis of Payment: This work will be paid for as follows:

1. Steel Span Pole: This work shall be paid for at the contract unit price each for "Steel Span Pole" or "Combination Steel Span Pole" of the type specified, which price shall include all materials, pole, pole cap, handhole, handhole cover, ground wire, grounding nut, anchor bolt covers, entrance fittings, service clevis, span clamps, paint, painting, grouting, labor, tools, luminaire bracket, miscellaneous hardware, and work incidental thereto.

2. Wood Span Pole: This work will be paid for at the contract unit price each for "Wood Span Pole," complete in place, which price shall include all materials, pole, anchor, anchor rod, anchor guy strand wire, anchor guy protector, neutral bracket, excavating and backfilling, and all necessary fittings, hardware, tools, labor and work incidental thereto.

Pay Item	Pay Unit
(Type) Steel Span Pole	EA.
(Type) Steel Combination Span Pole (Bracket Type)	EA.
Wood Span Pole	EA.