

SECTION 11.04
MAST ARM ASSEMBLY

11.04.01--Description: This item shall consist of furnishing and installing traffic signal mast arm assemblies of the type and size of arms specified, on prepared foundations, at the locations shown on the plans or as indicated by the Engineer and in conformity with these specifications.

11.04.02--Materials: The materials for this work shall conform to the requirements of Article M.16.05.

11.04.03--Construction Methods: Each mast arm shall be securely bolted to its base, electrically grounded, and installed per the manufacturer's specifications. The mast arm shall be oriented so the handhole is away from traffic. It shall be the Contractor's responsibility to establish the angle for the mast arm based on the actual location of the foundation.

The mast arm shall be raked by means of a double nut construction. Stainless steel shims shall be used if necessary for raking Aluminum Mast Arms. The opening between the mast arm 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 Light Standard and Traffic Control Foundations.

Installation Procedure:

- A. Install leveling nuts onto anchor bolts with the approximate mast arm "rake."
- B. Install mast arm base plate onto leveling nuts and tighten the anchoring nuts loosely.
- C. The unloaded pole shall be "raked" back according to manufacturer's specifications by adjusting the nuts as necessary. Upon completion, the "rake" should give the mast arm 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. Shop drawings of the mast arms and attachments shall be submitted by the Contractor to the Engineer for approval.

Each standard shall be effectively grounded using a 16 mm by 3 m copper ground rod with #8 AWG solid bare tinned copper wire attached to the pole by a stainless steel bolt and to the ground rod by a square head bolt clamp.

11.04.04--Method of Measurement: This work will be measured for payment by the number of mast arm assemblies of the type and size specified, completed and accepted in place.

11.04.05--Basis of Payment: This work will be paid for at the contract unit price each for "Mast Arm Assembly" of the type and size arm specified, which price shall include all materials, shaft, arm, handhole, transformer base (when required), pole cap, paint, painting, grouting, ground wire, mid-mount bracket assembly (when required), miscellaneous hardware, labor, tools and work incidental thereto.

Pay Item	Pay Unit
Mast Arm Assembly (Type and Size)	EA.