

## MAST ARM POLES AND PEDESTALS



A mast arm pole consists of a transformer base, a vertical pole shaft, a traffic signal mast arm, and where applicable, a luminaire extension.

The pole is a 20-foot (6.1meters) high tapered octagonal shaft.

The mast arm is attached to the top of the shaft, it consists of two arms braced together to form a truss.

The length of mast arm ranges from 15 - 80 feet (4.6m – 24.4m).

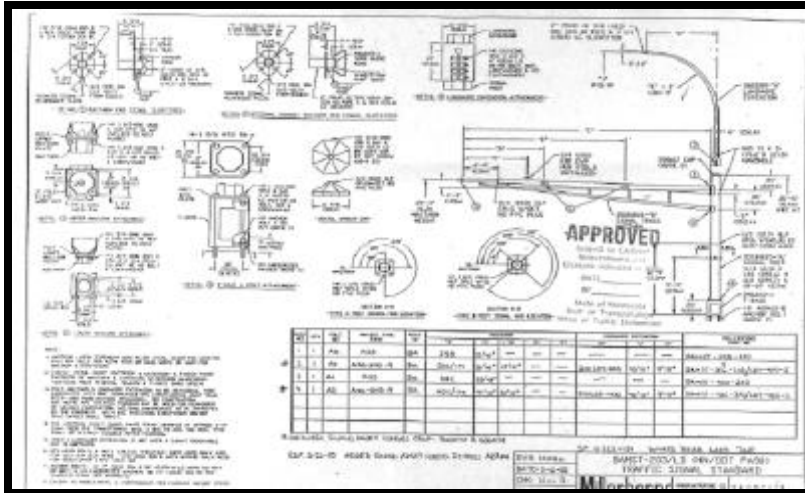
If required in the contract documents, luminaires must be installed on luminaire extensions atop the signal pole shaft. Luminaries are mounted vertically from the

top of the pole shaft and extend 35 or 40 feet (10.7m - 12.2m) above the concrete base.

If required by the contract documents, swing away hinges must be installed on the mast arm. The hinges must be installed in such a manner that the mast arm must swing away from the intersection.

Swing away hinges are used for signal systems that are located on house moving routes.





Before the project begins, the Contractor must furnish to the Engineer, for approval, 5 complete sets of shop drawings as specified in the Contract documents.

The drawings must indicate all member materials and dimensions, section modules of the main

component parts, and other pertinent data and calculations.

If approved by the Engineer, one set of drawings must be distributed as specified in the Contract documents.

## Installation

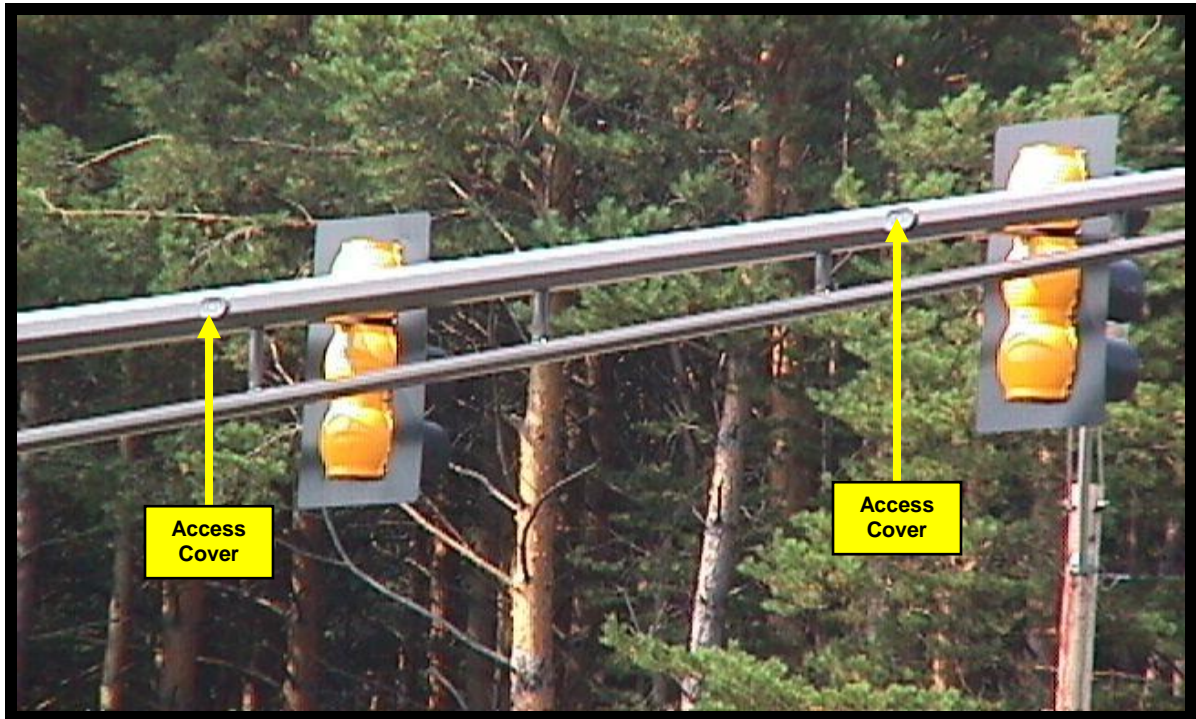
Mast arm poles are plumbed by using the leveling nuts on the anchor rods.

Poles must be carefully hoisted into position to avoid damage to the finish. Damaged areas must be repaired as specified in the Contract documents.

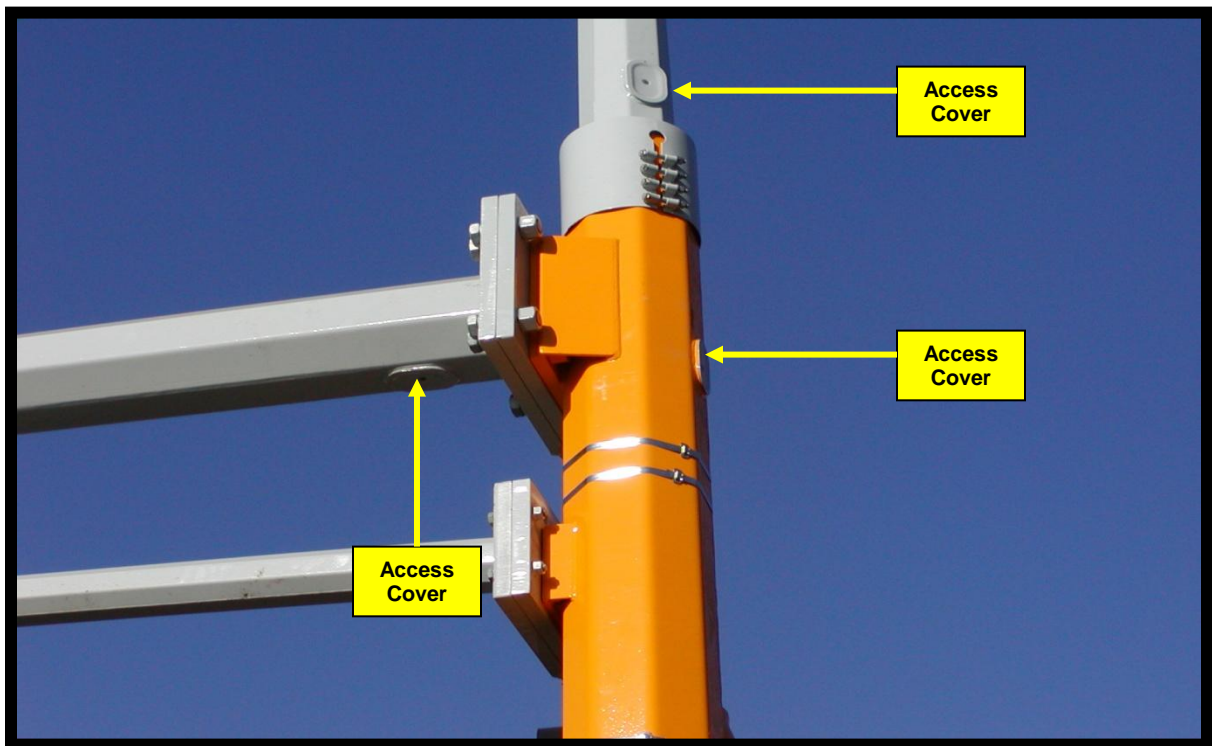
The access door of the transformer base must be oriented away from the traffic, as specified in the Contract documents, to allow electricians to see the intersection while servicing the base.

The mast arm pole standard must be installed on the concrete foundation anchor rods as specified in the installation procedure of the Contract documents.





After all mast arm pole standard wiring is complete, the access opening covers must be sealed with a clear silicone sealant prior to final installation.



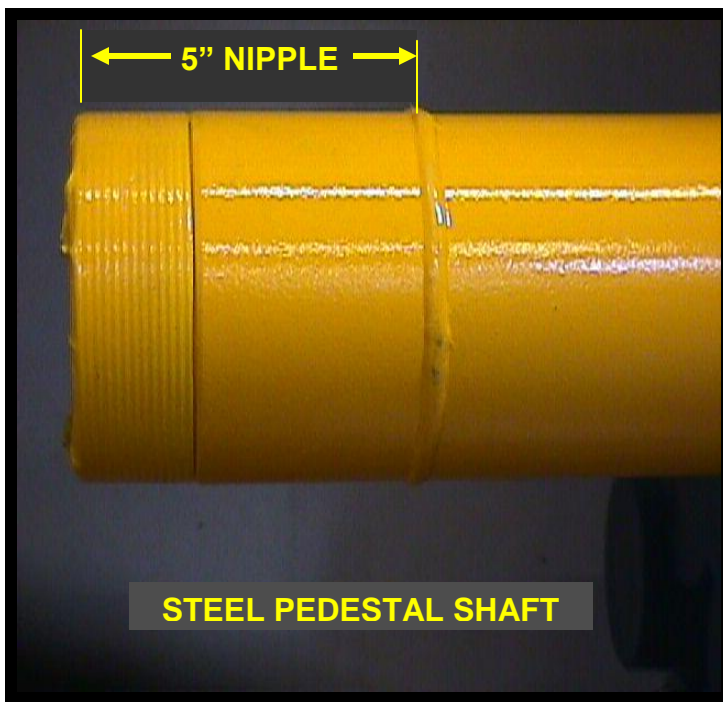
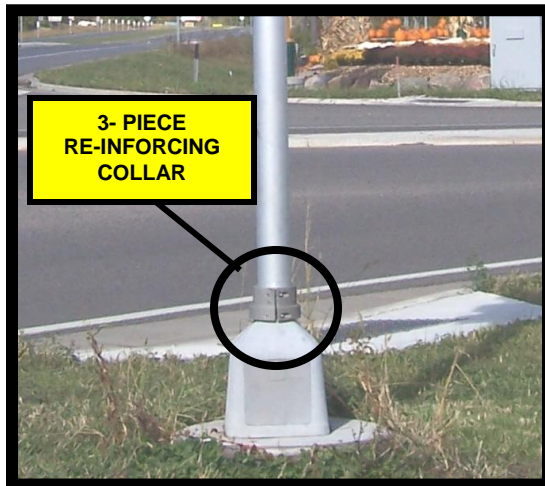
The Contractor must furnish and install a stainless steel woven wire cloth that is inserted and wound around the opening at the bottom of the signal pole transformer base in accordance with the requirements in the Contract documents. The entire stainless steel woven wire cloth assembly must be grounded in accordance with the National Electrical Code (NEC).



## Pedestals

Pedestal shafts and bases must be unpainted anodized aluminum, unless otherwise specified in the Contract documents.

Pedestals consist of a shaft and a base. The base is designed to break away from the foundation when struck by a vehicle. Re-inforcing collar (wind collar) or a base with an extended neck and set screws is required with each pedestal installation.



If steel pedestal shafts are specified, the steel shaft must be constructed of a welded 4-1/2 inch (114mm) outside diameter steel tubing and a threaded 5 inch (127mm) long, 4-inch (100mm) standard steel pipe nipple. The nipple is electric welded to the end of the steel tube and must follow American Welding Society requirements. See Standard Plate No. 8122 for all requirements.



The Contract documents may require pedestal shafts and bases to be painted. All painting of pedestal shafts and bases must be in accordance with the Contract documents. Pre-painted pedestal shafts and bases with scratches or other type damage will not be accepted.

The pedestal base must have a threaded top and square transformer base design. For steel pedestal shafts, a 4-inch (100mm) threaded steel pipe nipple must mate with the pedestal base.

Four new anchor rods, with washers, and nuts must be furnished with each pedestal base.

The pedestal base access door must provide a positive closure with a fixed catch on the inside bottom of the door and a bolt type locking mechanism on the top. Anti-seize compound must be applied to the threads of the stainless steel hex-head bolt.





One NRTL listed ground wire connector must be mounted with a single bolt on the sidewall, 3 inches (90mm) from the door and 8 inches (200mm) above the bottom of the base. The connector must accommodate a No. 6 bare copper ground wire and must have a slot head screw to connect the ground wire.

**Pedestal Concrete Foundation**



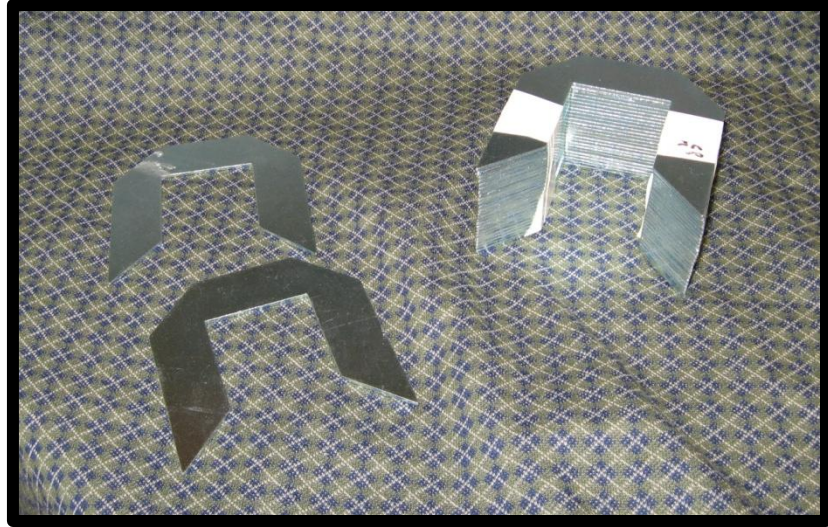
**Pedestal Screw-in Steel Base**



**Installation** – The pedestal foundations must be installed as required by the Contract documents. The pedestal base must be secured to anchorages of the concrete foundations or screw-in steel bases utilizing nuts and washers as specified in the Contract documents.

The Contract documents for each signal system project will dictate whether a pedestal concrete foundation or a pedestal screw-in base are to be installed by the Contractor.

The pedestal and base must be plumbed with galvanized steel metal shims only.



The access door of base must be oriented away from traffic to allow maintenance personnel to see the intersection while servicing the base.