

**SECTION 641
PRESTRESSED CONCRETE POLES**

641-1 Description.

Furnish and install prestressed concrete poles for service pole applications, luminaire support, and strain poles for span wire support of traffic signals, signs, and other devices (multiple types). Obtain precast, prestressed concrete poles from a manufacturing plant that is currently on the Department's list of Producers with Accepted Quality Control Programs. Producers seeking inclusion on the list shall meet the requirements of 105-3.

Ensure that each pole is constructed and permanently and legibly marked in accordance with Design Standards, Index No. 17725, including the date cast. The marking shall be visible after installation.

Ensure that the shipment of the products to the job site meets the requirements of 450-16.3 and 105-3.2.

641-2 Materials.

Meet the following requirements:

Portland Cement Concrete	Section 346 Class V Special
.....	or Class VI
Reinforcing Steel	931-1
Prestressed Strands.....	933-1
Spiral Reinforcing.....	ASTM A 82

641-3 Concrete Pole Construction.

Construct concrete poles in accordance with Section 450. Assume responsibility for performance of all quality control testing and inspections required by Sections 346 and 450, however; the PCI personnel and plant certifications are not required.

641-4 Installation Requirements.

641-4.1 General: Furnish poles of the type and length shown in the Plans. Provide catenary cable of the size shown in the Plans. Ground poles in accordance with Section 620. Install span wire assemblies in accordance with Section 634.

Do not consider the poles acceptable for use if the camber of the pole, measured as the maximum deviation between the centerline of the pole and a straight line connecting the centroids of the cross-sections at each end of the pole, is greater than the total pole length in inches divided by 140.

641-4.2 Footings: Provide footings 3 feet 6 inches in diameter and of the depth specified in the Plans for strain poles used for span wire support of traffic signals. Provide footings for all other pole applications as specified in the Plans. Construct the footings with concrete as specified in Section 347.

For the excavation and backfill of the footing, meet the requirements specified in 125-4 and 125-8.2 with the exception of the backfill density. In lieu of the requirements for obtaining the specified density, the Contractor may hand tamp the backfill in 4 inch maximum layers or machine tamp the backfill in 6 inch maximum layers. When performing such operations, ensure that the material is neither dry nor saturated. The Contractor may backfill with concrete.

Use forms, when required, meeting the requirements of ~~700-7.3400-5~~. If the footing is cast in an oversize hole, place the concrete in the top 6 inches in a form. Trowel all exposed surfaces to a smooth finish.

641-4.3 Orientation of Poles: For poles supporting one catenary wire, orient the pole so that the load face is perpendicular to the catenary wire. For poles supporting two catenary wires, orient the pole so that the load face is perpendicular to a line bisecting the angle between the two catenary wires.

Rake pole back from the span wire as necessary to achieve a final rake of 1/2 inch per foot, plus or minus 1/4 inch.

641-5 Method of Measurement.

641-5.1 General: Measurement for payment will be in accordance with the following work tasks.

641-5.2 Furnish and Install: The Contract unit price for prestressed concrete poles, furnish and install, will consist of the pole plus all labor, concrete for the foundation and other materials necessary for a complete and accepted installation as specified in the Contract Documents.

641-5.3 Furnish: The Contract unit price for prestressed concrete poles, furnish, will include the cost of the pole and shipping, handling, and delivery of the pole to the site designated in the Contract Documents.

641-5.4 Install: The Contract unit price for prestressed concrete poles, install, will include all labor, concrete for the foundation and other materials necessary for a complete and accepted installation as specified in the Contract Documents. The Engineer will supply the poles.

641-6 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section.

Payment will be made under:

Item No. 641- Prestressed Concrete Poles - each.