

ITEM 022000

Item 0220001 - LIGHT POLE FOUNDATION

Item 0220002 - SPAN POLE FOUNDATION

Item 0220003 - MAST ARM FOUNDATION

DESCRIPTION

Work under this item shall consist of furnishing and installing a light pole, span pole, or mast arm foundation at the location and to the dimensions and details shown on the plans or as directed by the Engineer and in conformity with these specifications.

REFERENCED ITEMS

0106401

REQUIRED SUBMITTALS

Shop Drawings:

Submit 5 copies of shop drawings for foundations in accordance with the contract general requirements.

Material Certificate of Compliance:

Submit 5 copies of material certificate of compliance for concrete and reinforcement in accordance with the contract general requirements.

MATERIALS

Materials shall conform to the following specifications:

1. **CEMENT CONCRETE**

All materials for this work shall conform to the requirements of Section M.03 of the State of Connecticut Standard, Department of Transportation, Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004, for Class "A" concrete.

2. **REINFORCING**

Reinforcing bars to be furnished and placed under this item shall conform to M.06.01 of Form 816. Steel reinforcement bars shall be

placed in the exact positions shown on the plans or as directed by the Engineer.

3. **TOP SOIL, FERTILIZER SEED AND MULCH**

These items shall conform to Item 0106401.

4. **ANCHOR BOLTS**

Shall conform to Article M.15.02 of Form 816.

5. **ROCK ANCHORS**

Shall conform to Article M.15.03 of Form 816.

6. **ELECTRICAL CONDUIT**

Shall conform to Article M.15.09 of Form 816.

7. **GROUND ROD**

Shall conform to Article M.15.15 and shall be 5/8" X 10'.

CONSTRUCTION METHODS

Forms shall be built true to lines and grades designated, shall be strong, stable, firm, mortar-tight and adequately braced or tied, or both. They shall be designed and constructed to withstand all loads and pressures including those imposed by plastic concrete, taking full account of the stresses due to the rate of pour, effect of vibration and conditions brought about by construction methods. Forms shall be filleted at all sharp corners. Form material in contact with concrete shall be of a quality to provide the required concrete surface smoothness and shall be oiled with a to the concrete.

Concrete, except for central plant-mix, truck or transit-mixed, shall be placed in the forms immediately after mixing; and in no case shall concrete be used which does not reach its final position in the forms within 60 minutes after the time that water is first added to the mix, except that the Engineer reserves the right to alter this time by as much as one-half when necessary to achieve the requirements related to set and plasticity. After initial set of the concrete, the forms shall not be jarred.

Concrete shall be consolidated by vibrator. Dried mortar chips and dust shall not be puddled into the wet concrete. The anchor bolts shall be carefully and accurately

set to the requirements of the plans. Concrete surfaces exposed to conditions causing premature drying shall be protected by covering, within two (2) hours of placing. The external surface of the hardened concrete shall be finished immediately after the removal of the forms. All voids on the surface shall be filled and finished to conform to the surrounding concrete surface. The entire exposed surface shall be thoroughly wet with a brush and rubbed with a No. 16 Carborundum stone or an abrasive of equal quality, bringing the surface to a paste. The rubbing shall be continued sufficiently to remove all form marks and Projections, producing a smooth, dense surface without pits or irregularities.

The finished elevation of the top of the foundation shall be as shown on plans. When rock is encountered within the excavation the Engineer shall decide whether rock anchors shall be used or the rock shall be excavated. Foundations shall be placed monolithically against undisturbed soil for poured-in-place foundations. Necessary electrical conduit, anchor bolts, ground rod sleeves and ground rods shall be placed in proper position and shall be held in place by means of a template. The concrete may be placed against the sides of the excavation, however, the exposed portion of the foundation shall be formed to neat lines as shown on the plans. When in the judgment of the Engineer, unusual soil conditions prevent excavation to neat lines as shown on the plans, the complete foundation shall be formed.

Backfill to be furnished and placed under this item shall be acceptable granular material. All costs for furnishing and placing backfill are to be included in the unit price bid for Span Pole Foundation. Backfill shall be thoroughly compacted to the satisfaction of the Engineer.

All conduits shall be capped with standard pipe caps before placing the concrete and shall remain capped until the cable is installed. Electrical conduit of the size indicated shall extend 2' outside the foundation. All portions of the foundations which will remain exposed to view shall be finished to the satisfaction of the Engineer. Forms shall not be removed until after the concrete has hardened properly and not less than 24 hours after the concrete has been placed. The contractor shall allow sufficient time for foundation to cure before placing any strain on the foundations. Steel poles shall not be installed until a minimum of seven days after the concrete has been placed and a minimum of ten days before making span wire attachments thereto. Mast arm assemblies shall not be installed until ten days after the concrete has been placed. At each location where a pole is to be installed, a temporary bituminous patch must be placed immediately after backfilling around the foundation. Materials for patch shall be hot bituminous concrete, when available, and shall be maintained by the Contractor until permanent paving is constructed.

METHOD OF MEASUREMENT

Light Pole Foundation, Span Pole Foundation, and Mast Arm Foundation shall be measured for payment by the number of each foundation installed and accepted. This measurement shall include the electrical conduit sweeps which shall extend 2' outside of the foundation.

The rock in foundation excavation will be measured from the top of the rock to the bottom of rock excavation.

BASIS OF PAYMENT

The work will be paid for at the contract unit price each for "LIGHT POLE FOUNDATION", "SPAN POLE FOUNDATION" or "MAST ARM FOUNDATION", called for, which price shall include all materials, labor, equipment, tools, forms, excavation, disposal of surplus material, concrete, electrical conduit sweeps, conduit caps, ground rod sleeves, bonding bushings, anchor bolts, backfill, temporary bituminous patch, top soil, grading, seeding, fertilizing, mulching, rip-rap, restoration of sidewalk and roadway surfaces, and incidental expenses thereto.

When rock is encountered within the limits of the excavation, this removal will be paid for at the contact unit price per vertical for ROCK IN FOUNDATION EXCAVATION.

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0220001	Light Pole Foundation	EA
0220002	Span Pole Foundation	EA
0220003	Mast Arm Foundation	EA