Sample Project Special Provision: 613slsf

06-29-06

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REVISION OF SECTIONS 613 AND 715

SCREW-IN LIGHT STANDARD FOUNDATIONS

Sections 613 and 715 of the Standard Specifications and standard special provisions are hereby revised for this project as follows:

Subsection 613.02(a) shall include the following:

Screw-in light standard foundations shall conform to the requirements of subsection 715.02.

Subsection 613.04 shall include the following:

The Contractor may substitute screw-in galvanized steel foundations for light standard foundations.

Screw-in foundations shall be installed only where soil testing shows that the maximum aggregate size is less than 3 inches in diameter. The Contractor shall test and report soil conditions to the Engineer as necessary to ensure proper installation of screw-in foundations.

The Contractor shall install screw-in foundations according to the manufacturer’s recommended procedures using either a boom type or a bed-mounted type digger truck. The maximum torque used shall not exceed the manufacturer’s recommended limits. If approved by the Engineer, the Contractor may install the foundation in a pre-drilled hole when difficult soils require a torque that exceeds the capacity of capacity of the installation equipment or the mechanical limit of the foundation to be exceeded. The predrilled hole shall not be larger than the foundation shaft diameter. The Contractor shall follow the minimum recommended torque requirements when the foundation is installed in a predrilled hole. The installation torque may be measured by a torque-measuring device or by calibrating the hydraulic system of the installing equipment.

Subsection 715.02 shall include the following:

Screw in foundations shall be a type and manufacture previously approved by the Department. Screw-in foundations shall have a minimum auger helix pitch of 3 inches and shall be galvanized according to ASTM A 153. The following minimum screw-in foundation sizes are required for a 40-foot light standard:

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| --- | --- | --- |
| **No. of Mast Arms** | **Foundation Inside Diameter and Length** | **Outside Diameter of Helix** |
| 1 | 6 inch by 7 foot | 12 inch |
| 2 | 8 inch by 7 foot | 14 inch |

The cableway openings in the screw-in foundation shall be 2-1/2 by 12 inches. The openings shall have rounded ends and run vertically with the top 12 inches below the base plate. The baseplate shall have a pole mounting surface free from curvature or other deformity. The baseplate shall be machine-smooth and flame-cut on the external edges and on the inner hole providing access to the foundation interior. The size of the baseplate shall be adequate to provide actual contact support at outer corners and edges of the lighting structure or breakaway mounting device. The baseplate shall be permanently marked to indicate the locations of the cableway openings. It shall have the thickness required by the manufacturer’s design, based on shape of plate and number of mast

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arms. Bolt holes shall be provided through the baseplate for the attachment of a breakaway device or light structure as specified on the plans. If tapped holes are used, they shall be center tapped perpendicular to the baseplate ± 1 degree. After the baseplate is hot dip galvanized, the threads shall be fully cleaned so a bolt may be hand turned in the threads. Baseplate material shall conform to ASTM A 709 Grade 36.

The screw-in foundation shaft shall be flame cut to length. The shaft shall be 90 degrees square on top and truly helical on the bottom. Cableway openings shall be smooth cut on both sides of the shaft 180 degrees apart unless otherwise specified. The sides of the cableway openings shall be parallel to the axis of the shaft ± ½ degree as measured along their full length. Round shaft material shall be new, unused, and mill-traceable. The edges shall be mechanically cleaned before the welding operation. The shaft shall be fabricated from standard weight pipe conforming to ASTM A 53, Type E or S, Grade B or ASTM 252, Grade 2.

The helix on screw-in foundations shall be truly helical. The helix shall be produced with a matching metal die from formable weldable ⅜-inch thick steel conforming to ASTM A29, Grade M 1010. The preformed helix shall be tumbleblasted to remove scale and contaminants before welding.

The screw-in foundation pilot point shall be sheared on a 45 degree angle from 1.25 inch diameter round bar steel conforming to ASTM A 575. It shall project a minimum of 6 inches below the leading edge of the helix and shall be tumbleblasted prior to welding.

Screw-in foundations shall be supplied with lighting standard to base plate connection hardware consisting of 1 inch by 10 UNC, 4 inch long Grade 8 hex head bolts, nuts, and washers. The bolts, nuts, and washers shall be galvanized in accordance with ASTM A 153.

All welding for fabrication of screw-in foundations shall be in accordance with Sections 1 through 8 of AWS D1.1.

Completed screw-in foundations shall be hot dip galvanized in accordance with ASTM A 153 after fabrication. Minor damage to the coating shall be field repaired by thoroughly cleaning the damaged area with a wire brush and removing all damaged and loose coating. The cleaned areas shall be painted with two coats of zinc rich paint meeting the requirements of Federal Specification TT-P-641 or MIL-P-21035.

The lot or piece number identifying each screw-in foundation shall be clearly stamped or painted on the foundation where it will not be visible after installation. The foundation will be accepted on the basis of visual examination at the project site and the manufacturer’s Certificate of Compliance. When requested by the Engineer, the Contractor shall furnish the manufacturer’s Quality Control Inspection Reports and shall provide certification with regard to:

1. Material Application
2. Welder Certification
3. Weld Quality
4. Coating Requirements