

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TOWER LIGHTING UNIT

UTL:BMB

1 of 2

APPR:RPB:CDJ:03-17-25
FHWA:APPR:03-17-25

Add the following at the end of subsection 819.03.D.1, on page 8-179 of the Standard Specifications for Construction:

Anchor bolt quantity, diameter, and length are the responsibility of the tower manufacturer. Submit complete design calculations for the anchor bolts and clearly show all anchor bolt details on the drawings.

Include a summary of tower base reactions at the top of the foundation including axial, base shear, and overturning forces for the Strength, Service, and Extreme limit states. Provide a comparison of the computed base reactions against the foundation design loads shown on the Tower Lighting Unit Foundation *Standard Plan R-135 Series* and indicate whether the computed base reactions are smaller than or larger than the foundation design loads.

Provide a new foundation design if the computed base reactions from the tower manufacturer's design exceed the foundation design loads shown on *Standard Plan R-135 Series*. Submit complete design calculations, working drawings, notes, and material specifications for the proposed foundation sealed by a Professional Engineer, licensed in the State of Michigan, for the review by the Department. Ensure all submittals are in PDF files submitted to the Engineer. Ensure the design of the foundation meets the following requirements:

- a. Design the foundation in accordance with the *LRFD Bridge Design Specifications* and the *MDOT Geotechnical Manual*.
- b. Design the foundation for the loads computed by the tower manufacturer. The foundation details shown on the plans are minimum requirements.

Delete the sixth paragraph in subsection 819.03.D.5, on page 8-182 of the Standard Specifications for Construction in its entirety and replace it with the following:

Tighten anchor bolts in accordance with subsections 810.03.N.2 and 810.03.N.3 of the Standard Specifications for Construction (as modified by 20SP-810H - Permanent Traffic Signs and Supports Revisions).

Delete the following pay items in subsection 819.04, on page 8-183 of the Standard Specifications for Construction:

Pay Item

Pay Unit

Tower Ltg Unit, Fdn Cased.....	Foot
Tower Ltg Unit, Fdn Uncased	Foot

Add the following pay items in subsection 819.04, on page 8-183 of the Standard Specifications for Construction:

Pay Item	Pay Unit
Tower Ltg Unit, Fdn Cased, __ inch dia.....	Foot
Tower Ltg Unit, Fdn Uncased, __ inch dia.....	Foot

Delete subsection 819.04.C, on page 8-184 of the Standard Specifications for Construction, in its entirety and replace it with the following:

C. Tower Lighting. The unit price for **Tower Ltg Unit, __ foot, __ Luminaire** includes the cost of the following:

1. Design of the tower lighting unit and its anchor bolts including all submittals and compare the computed base reactions against the foundation design loads on the *MDOT Standard Plan R-135 Series*;
2. Furnishing the tower lighting unit;
3. Erection;
4. Aligning plumb;
5. Anchoring to the foundation;
6. Electrically wiring for operation; and
7. Testing of the unit.

The Engineer will measure **Tower Ltg Unit, Fdn Cased, __ inch dia** and **Tower Ltg Unit, Fdn Uncased, __ inch dia** vertically from the bottom to the top of the foundation.

The unit price for **Tower Ltg Unit, Fdn Cased, __ inch dia** includes the cost of providing and installing the anchor bolts, hardware, conduit, concrete, slurry, steel reinforcement, steel casings, excavation, disposal of excavated material, other appurtenances required, and includes all costs associated with re-design of the foundation if the base reactions from the tower manufacturer's design exceed the foundation design loads shown on *Standard Plan R-135 Series*.

The unit price for **Tower Ltg Unit, Fdn Uncased, __ inch dia** includes the cost of providing and installing the anchor bolts, hardware, conduit, concrete, slurry, steel reinforcement, temporary casings, excavation, disposal of excavated material, other appurtenances required, and includes all costs associated with re-design of the foundation if the base reactions from the tower manufacturer's design exceed the foundation design loads shown on *Standard Plan R-135 Series*.