MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**LIGHT STANDARD FOUNDATION, PRECAST, TYPE \_\_**

ALP:DB 1 of 3 APPR:NJM:MJF:04-20-23

**a. Description.** This work consists of the design, manufacture, furnishing, and installation of precast concrete light pole foundations as shown on the plans. This work includes preparing a leveling pad or base; placing the foundation; and placing backfill for the foundation. Complete this work in accordance with the standard specifications, the details shown on the plans, the manufacturer’s recommended installation procedures, and this special provision.

Furnish precast concrete light pole foundations by one of the manufacturers listed below or an approved equal:

Style Manufacturer Model

Type 1 Pole-Base LLC 24 inch Round, Smooth Finish, Utility Structures Inc. P50-24 G(H)

Type 2 Pole-Base LLC 24 inch Square, With Inlay, Utility Structures Inc. P53-24(H)

**b. Reference Standards.**

1. ASTM A36/A36M Carbon Structural Steel.

2. ASTM A123/A123M Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

3. ASTM A615/A615M Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

4. ASTM A706/A706M Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.

5. ASTM A767/A767M Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.

6. ASTM A775/A775M Epoxy-Coated Steel Reinforcing Bars.

7. ASTM C33/C33M Concrete Aggregates.

8. ASTM C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens.

9. ASTM C94/C94M Ready-Mixed Concrete.

10. ASTM C138/C138M Test Method for Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete.

11. ASTM C143/C143M Test Method for Slump of Hydraulic-Cement Concrete.

12. ASTM C150/C150M Portland Cement.

13. ASTM C173/C173M Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.

14. ASTM C231/C231M Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

15. ASTM C685/C685M Concrete Made by Volumetric Batching and Continuous Mixing.

16. ASTM C1611/C1611M Test Method for Slump Flow of Self-Consolidating Concrete.

17. ASTM D6913 Standard Test Method for Particle-Size Distribution of Soils.

18. ASTM D698 Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.

19. ASTM D4253 Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.

20. ASTM D4254 Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.

21. ASTM D6938 Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

22. ASTM F512 Smooth-Wall Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation.

**c. Submittals.** Submit shop drawings and calculations prepared and stamped by a Professional Engineer licensed in the State of Michigan to the Engineer. Allow up to 21 days for review of the shop drawings. No work can begin on the gravity modular block wall prior to approval of the shop drawings. Shop drawings must include:

1. The modular wall layout, height, and typical wall sections.

2. Construction details, including requirements for geotextile, backfill, underdrain, and drainage aggregates.

3. Submit plant certification from the Precast/Prestressed Concrete Institute (PCI).

Furnish the manufacturer’s recommended installation procedure and a sample of color and texture to the Engineer for approval at the preconstruction meeting.

**d. Materials.** Furnish Grade 3500 concrete in accordance with section 1004 of the Standard Specifications for Construction.

Furnish steel reinforcement in accordance with section 905 of the Standard Specifications for Construction.

Furnish Schedule 80 conduit.

Ensure anchor bolts, nuts, washers, templates, and miscellaneous hardware required for mounting the pole to the foundation are in accordance with subsection 908.14 of the Standard Specifications for Construction and as shown on the plans.

Ensure wire, conduit, ground rods and ground rod connectors for placement in the pole foundations meets the requirements of section 918 of the Standard Specifications for Construction. Ensure ground rod is copper clad steel. Ensure grounding wire is stranded bare copper wire. Furnish conduit in the foundation to allow for entrance of conductors and grounding wires as shown on the plans.

Backfill must meet granular material, Class II requirements in accordance with section 902 of the Standard Specifications for Construction.

**e. Construction.** Ensure foundation construction is in accordance with subsection 819.03.A.2 of the Standard Specifications for Construction and the details shown on the plans.

Locate the foundations as shown on the plans. Ensure the foundation depth is as shown on the plans. Cracked or otherwise deformed foundations will not be acceptable.

Secure in place the steel reinforcement, the raceway conduits, and the anchor bolts to each other and properly positioned in the foundation formwork so that at the time of pouring of concrete mixture in place, they retain their proper positions. Install the anchor bolts in the foundation with a template provided by the pole manufacturer, or existing salvaged items, ensuring the proper bolt circle diameter and anchor bolt diameter for the selected light standard.

Backfill per section 206 of the Standard Specifications for Construction. Dispose of surplus materials where required.

**f. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

**Pay Item Pay Unit**

Light Std Fdn, Precast, Type \_\_ Each

**Light Std Fdn, Precast, Type \_\_** includes reinforcing steel, ground rod and wire, conduit and all miscellaneous hardware required to complete the foundation.