



Iowa Department of Transportation

SPECIAL PROVISIONS FOR DECORATIVE STREET LIGHTING SYSTEM

Madison County
STP-E-8497(601)--8V-61

Effective Date
04/15/2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

127013.01. DESCRIPTION.

- A.** The work to be performed under this section shall consist of furnishing all work, apparatus, and materials to construct, install, and prove to the Engineer's satisfaction, complete street lighting foundations with ground rod and the conduit system for the street lights and outlets as shown on the plans and described in the contract documents. The Contracting Authority will pull cable, set street lights and make terminations.
- B.** All apparatus, materials, and work shall be in accordance with the plans and specifications and with standards, practices, and codes of the electrical industry and the state of Iowa.
- C.** All licenses or permits required shall be obtained by the Contractor at the Contractor's expense.
- D.** Any discrepancies between the plans, specifications, other contract requirements, or actual field conditions shall be brought to the attention of the Engineer.
- E.** The Contractor has full responsibility for locating all existing underground facilities for coordination of work with the owners of such underground facilities, for safety and protection thereof, and for repairing any damage thereto.
- F.** This project is being constructed in areas which contain existing underground utilities. Neither the Contracting Authority nor the Engineer assumes responsibility for the accuracy of location of any utilities that may be shown on the plans. It shall be the Contractor's responsibility to locate these utilities and make minor pole, conduit, or foundation location or trench location adjustments.
- G.** Contractor shall be responsible for the acceptance of delivery and storage of all material for the project. Arrangements shall be made to properly store all material prior to installation. The City will not accept shipped material unless the Contractor makes such arrangements.
- H.** Submit shop drawings or catalog cuts for all materials to be installed.

- I. Records and as-built information shall be submitted at the end of the construction to the Engineer. The submitted as-built records shall include foundation, conduit and other pertinent information and locations. The information may be submitted in red-line to the Engineer.

127013.02. MATERIALS.

A. Foundations.

1. The street light concrete foundation includes furnishing and installing the forms, concrete, reinforcing rod, conduit, ground wire, ground rod and clamp for one complete street light base. The anchor bolts will be furnished by the Contracting Authority and installed by this Contractor. This Contractor shall furnish a complete foundation with electrical ground ready for installation of the street light pole and circuit wires by others.
2. Concrete for foundations shall be mixed using a minimum of six sacks of Portland cement per cubic yard, and a minimum of 5.5 gallons of water per sack of cement. Aggregates shall be washed sand and gravel having clean, hard, durable, uncoated particles free of deleterious substances. Mixing water shall be free from oil, acid and injurious amounts of vegetative matter, alkalies and other salts. Concrete shall have a minimum 28 day compressive strength of 4000 psi.

B. Grounding.

1. Ground Wire.

- a. Ground wire or conductor from street light foundation to the ground rod shall be No. 6 AWG copper solid.
- b. Conductors shall be soft drawn, meeting requirements of ASTM B3, or medium-hard drawn, meeting requirements of ASTM B2.

2. Ground Wire Clamps.

Clamps for connection between No. 6 AWG copper wire and copper clad ground rod shall be copper or bronze and approved for direct burial.

3. Ground Rods.

All ground rods shall be copper clad 5/8 inch dia. by 8 feet in length.

C. Electrical Conduit.

1. Plastic Conduit and Fittings.

- a. Shall be Schedule 40 rigid polyvinyl chloride meeting requirements of NEMA TC-2, Type 2, and applicable UL standards. Ends of plastic conduit shall be fitted with socket-type, bell-end fittings supplied by the Contractor.
- b. Solvent-welded, socket-type fittings shall be used except where otherwise indicated on the plans.
- c. Threaded adapters shall be used for jointing plastic conduit to rigid metal ducts.
- d. All required materials and methods for attaching fittings and making fittings shall comply with applicable requirements of NEMA TC-2 and the manufacturer's recommendation and shall be subject to approval of the Engineer.

2. Pull Tape.

- a. Pull tape shall be a 1/2 inch pre-lubricated, woven polyester tape made from low friction, high abrasion resistant yarns.
- b. Pull Tape shall be marked with sequential footage markings.
- c. Tensile strength shall be 1250 pounds.

D. Handholes.

1. The handholes shall be Polymer Concrete Reinforced Composite with a cover.
2. Furnish minimum size 17 inch (W) by 30 inch (L) by 18 inch (D) box with heavy duty cover. Color shall be concrete gray.

127013.03. CONSTRUCTION.**A. Staking.**

The Contracting Authority will stake all necessary reference points such as poles, handholes, and conduit route which may be deemed unclear or required by the Contractor. Structures shall not be erected in any other location without prior approval of the Engineer.

B. Trenching.

1. The trenching shall be in the general location shown on the plans. Any significant deviation from the location shown on the plans shall be brought to the attention of the Engineer.
2. Excavated materials not required for the construction shall be hauled from the site and disposed of by the Contractor to the satisfaction of the Engineer.

C. Backfilling.

1. After inspection of the completed duct work, backfill the trench with the material that was removed, unless stated otherwise on the plans or directed by the Engineer.
2. The backfill shall be compacted by hand or mechanical tampers.
3. Material containing glass, metal, concrete, brick, cinders, or any other abrasive material shall not be used for backfill.

D. Concrete Pole Foundations.

1. Comply with details for reinforcement and for anchor bolts, nuts and washers. Verify anchor-bolt templates by comparing with actual pole bases furnished.
2. Finish for Parts Exposed to View: Trowel and rub smooth.
3. Ground connections shall be made according to instructions and arrangement as shown on the plans.

E. Electrical Conduit.

1. Details of duct installations are shown on the plans.
2. All spare conduits shall be capped and marked as shown on the drawings. Each spare conduit shall have a pull tape installed.
3. All above ground conduit shall be Ridged Galvanized Steel (RGS) conduit to a minimum of 12 inches below the surface.
4. As field conditions permit, the runs shall be so installed to avoid adding bends or total bend angle to the design layout. Spacers shall be used near handholes to maintain conduit spacing in the box and as needed.

5. Stubs shall be run as far as possible within the project limits to facilitate continuing the run in the future. The end of the stub shall be in line with the future conduit run. The ends of all stubs shall be capped to keep moisture and contaminants out of the conduit. The end of the stub shall be marked with a minimum of 24 inches of driven No. 6 rebar to aid in future locating of the conduit end with a metal locator.
6. Blow or vacuum each duct to remove all moisture or loose material. A flexible mandrel designed to clean and test the conduit system shall be drawn through all ducts to prove alignment and opening size. A pull tape shall be left in each duct for future use. The conduit testing shall be done in the presence of the Engineer.

F. Handholes.

1. The handholes shall be installed in the side walk as shown on the drawings.
2. The handholes shall be installed as per the manufacturer's recommendations on a compacted gravel base.

127013.04. METHOD OF MEASUREMENT.

1. **Conduit.**
Each size of conduit provided and installed according to project requirements shall be measured separately for payment. Measurement shall be by each linear foot installed.
2. **Pole Foundations.**
Each pole base installed will be measured separately for payment.
3. **Handholes.**
Each handhole installed will be measured separately for payment.

127013.05. BASIS OF PAYMENT.

1. The bid item, Conduit, PVC, of the size specified will be full payment for all materials and labor necessary to install the conduit in accordance with the project requirements. Price includes conduit, excavation, exploration of existing utilities to avoid conflicts, pull rope, class 'A' roadstone backfill material, backfilling, and compaction and the trench.
2. The bid item, Concrete Footing for Street Light, will be full payment for all materials and labor necessary to construct the footing according to the project requirements. Item includes excavation for the footing, placing the provided anchor bolts in the required configuration, pouring the footing, finishing the top to the specified elevations, and installing the grounding as shown on the drawings. Wiring and light pole installation will be completed by others.
3. The bid item, Handhole, will be full payment for all materials and labor necessary to install a handhole according to the project requirements. Item includes excavation and placement of the handhole, and installing the grounding as shown on the drawings. Wiring in the handhole will be completed by others.