

ROAD COMMISSION FOR OAKLAND COUNTY

SPECIAL PROVISION
FOR
GROUND ROD

RCOC/TOC

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RCOC20SP820EE

ORG:12-05-22

REV: 03-01-25

a. Description

This work shall be done in accordance with sections 818, 819, 820, 918, and 921 of the Standard Specifications for Construction, except as herein provided.

The intent is to:

1. Install a new grounding system and equipment where not present in the existing signalized intersection, as shown on the plans, and as specified herein.
2. Install additional ground rods required at new signalized intersections, not included in other items of work, where resistance to ground exceeds specified values.
3. Pay item shall not be used when included in other items of work.

b. Materials

All work must be in accordance with the contract documents.

1. Grounding Rod

- A. Provide a copper clad steel grounding rod with a diameter of at least $\frac{3}{4}$ inch and a length of at least 10 feet, with no more than 10 ohms resistance to ground.

Use a ground rod that meets the requirements of subsection 918.02.C. of the Standard Specifications for Construction.

2. #6 AWG ground wire – conforms to standard details and contract documents.
3. Connect the ground wire to the ground rod with a UL listed for direct burial copper or bronze ground clamp.
4. Acceptance
Provide General Certification per the *MDOT's Materials Quality Assurance Procedures Manual* to the Engineer that the materials meet the requirements specified herein.

c. Construction

Complete this work in accordance with sections 818, 820, and 918 of the Standard Specifications for Construction, as shown on the plans, and as directed by the Engineer.

1. Submittals / Working Drawings

If requested by the Engineer, submit a detailed dimensional drawing of all equipment, material specification list which shows the materials to be used, equipment to be furnished, and assembly/installation method.

2. Grounding Rod (work at existing signalized intersections)

The grounding rod must be installed centered in the handhole sump opening. The ground rod must be installed with 12 inches of exposed rod above the bottom of the handhole.

3. Grounding Conductors

Route along shortest and straightest paths possible (nearest pole, pedestal, controller, etc.), unless otherwise indicated or required by N.E.C. Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

4. Field Quality Control

A. After installing grounding system, test for compliance with contract documents and specification requirements. Report measured ground resistances to Engineer.

B. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer, and include recommendations to reduce ground resistance.

5. Additional ground rod (outside handhole)

A. If an additional ground rod is recommended to meet specified values by the Engineer, connect the handhole ground rod to the additional ground rod a minimum of 10 feet from the handhole ground rod at approximately 180 degrees. Connect with #6 AWG ground wire and clamps as indicated by N.E.C. Code. Bury the ground wire and top of additional grounding rods at least 12 inches below finished ground. The Engineer may require the ground wire from the handhole to the additional ground rod to be placed in conduit. The conduit shall be paid for separately.

d. Measurement and Payment

The completed work, as described, will be measured and paid for at the contract unit price using the following pay item(s):

Pay Item	Pay Unit
Ground Rod, RCOC.....	Each

Ground Rod, RCOC (Each) includes all costs for, but not limited to, labor, materials, furnishing and installing ground rod(s), ground wire, clamps, wiring through handhole, excavation, backfill, tuck point hand hole with mortar, and such other material as may be required to provide a complete and operating job as specified herein as shown on the plans.