# SECTION 260526 GROUNDING AND BONDING

## PART 1 - GENERAL

A. Description

This section includes materials, testing, and installation of electrical grounding.

B. Related Work Specified Elsewhere

1. General Electrical Requirements: 260500.

2. Wires and Cables Less Than 600 Volts: 260519.

3. Gravel and Crushed Rock Base for Structures: 312323.

C. Submittals

1. Submit shop drawings in accordance with the General Conditions and Section 260500.

2. Submit material list for all grounding materials and equipment. Indicate size, material, and manufacturer.

3. Submit test results. Indicate overall resistance to ground and resistance of each electrode.

D. Performance Requirements

1. Grounding System Resistance:

   a. Separately Derived Sources (as Defined by NEC 250) Grounding Electrode: 25 ohms.

   b. Grounds Not Covered Above: 25 ohms.

## PART 2 - MATERIALS

A. Ground Rods

Ground rods shall be copper-clad steel, 3/4 inch in diameter, minimum 10 feet long, with hardened steel points.

B. Connections

1. Ground Clamps: Clamps for connection of ground wire to ground rod shall be bronze.

2. Exothermic Connections: Provide Cadweld or equal.

C. Conductors

1. Equipment Ground: Conductors shall be low-voltage building-wire type as specified in Section 260519.

2. Bare Copper Conductors: Annealed bare copper, conforming to ASTM B3 and B8.

PART 3 - EXECUTION

A. Ground Electrode

Install 20 feet of bare copper ground wire around the power pedestal as shown in the drawings. Connect the wire to the ground bus within the power pedestal. Protect wire with a rigid PVC conduit where wire stubs up through slab.

B. Equipment Grounding

1. Ground raceways and noncurrent-carrying parts of electrical equipment in accordance with NEC Article 250. Use the metallic conduit system for equipment and enclosure grounding.

2. Additionally, all circuits shall carry one ground conductor for equipment grounding. Ground conductor shall be in excess of grounding through the metallic conduit system.

C. Ground Test Well

1. Provide a handhole and ground rod as detailed in the drawings to aid in performing ground testing and connecting additional ground rods if required by the test results. Connect ground wire from ground rod to main service switchboard ground bus as detailed in the drawings.

2. Gravel base shown in ground well detail shall comply with Section 312323.

D. Connections

Exothermic weld all underground connections.

E. Tests

Before making connections to the ground electrode, measure the resistance of the electrode to ground using a ground resistance tester specifically designed for ground resistance testing. Perform testing in accordance with test instrument manufacturer's recommendations using fall-of-potential method. Perform the test not less than two days after the most recent rainfall and in the afternoon after any ground condensation (dew) has evaporated. If a resistance less than the performance requirements is not obtained, provide a ground rod driven 6 inches below grade spaced 10 feet away from the ground well and connect to ground test well with No. 4 AWG bare copper wire and repeat the test. If the performance requirements are still not obtained, inform the Owner for resolution.

END OF SECTION