SECTION 16390

PRIMARY GROUNDING

PART 1 - GENERAL

1.01 SECTION INCLUDES
A. Primary grounding.
B. Substation grounding.

1.02 REFERENCES
E. University of Colorado Boulder – Utility Standard EO-110-A Rev. 0

1.03 SYSTEM DESCRIPTION
A. The medium voltage system utilized on both the main and East campus is 13,800/7960 WYE connected. The neutral of this system serves as the ground for the system. It is grounded at the engineering switchgear and carried via 600 V 1/0 insulated GND cable to all medium voltage system equipment, raceways and the phase conductor cable shield concentric neutral.

NOTE: Extreme caution should be exercised when working with this system neutral/ground as 7960 volts maybe present if opened.

1.04 PROJECT RECORD DOCUMENTS
A. Submit documents under provisions of Section 01300.
B. Accurately record exact locations of neutral and equipment grounding points and ground electrodes.

1.05 REGULATORY REQUIREMENTS

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PART 2 - PRODUCTS

2.01 GROUNDING ACCESSORIES

A. Ground Rods and Connectors and Locations: see also Section 16450.

B. Ground Rods shall be minimum ¾ inch and 10 foot long.

C. Ground Rod connectors of mechanical (only in visible locations) or exothermal weld type may be used.

D. Ground Rod 15KV Required Locations

1. Transformers
2. Switches
3. Vaults
4. Manholes

2.02 GROUND BUS

A. Provide a grounding bus in all electric rooms in the Facility. The ground bus shall be connected by the proper sized grounding conductor and directly connected to the building’s main grounding system.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install neutral grounding equipment in accordance with the drawing at the end of the section.

3.02 FIELD QUALITY CONTROL

A. Field testing will be performed under provisions of Section 01400.

B. Test resistance to the earth of grounding connections in accordance with ANSI/IEEE 81. Perform fall of potential test on main system. Use two point method tests to determine resistance between main system and neutral. Test cable in accordance with NETA ATS (Acceptance Testing Specifications), Section 7.14, for electrical power distribution equipment.
C. Maximum Acceptable Ground Resistance: 5 ohms for distribution systems. 1 ohm or less for generating transmission station grounds.

D. Investigate levels which exceed the above.

END OF SECTION 16390