SECTION 16710

COMMUNICATIONS GROUNDING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This section describes hardware, and installation methods that the Contractor shall use to insure the installation of a competent grounding system that will avoid/minimize ground-loops, and Electromagnetic Interference (EMI) problems in the operation of the communications systems installed under this Contract. In addition to the methods detailed in this Section, the Contractor shall insure that his crews adhere to all generally accepted installation practices that are meant to minimize interference between communications systems.

B. Equipment and Rack Grounding.

C. Cable Shield Grounding.

1.02 UNIT PRICES

A. Unit Prices include all Required conduits and fittings, junction boxes, wiring, and cabling to provide grounding to the communications systems and facilities and incidental items, not specifically mentioned, but required for complete and proper system operation.

1.03 RELATED SECTIONS

A. Section 16705 – Communications Standard Specifications - Equipment & Material.

B. Section 16706 - Communications System Submittals & Services

C. Section 16721 -Communications -Telephone System.

D. Section 16723 -Communications -Garage Emergency Telephone System.

E. Section 16727 -Communications -Passenger Emergency Reporting System.

F. Section 16731 -Communications -Fire and Intrusion Alarm System.

G. Section 16733 -Communications -Kiosk System.

H. Section 16771 -Communications - Carrier Transmission System.

I. Section 16776 -Communications - Fiber Optics System.

J. Section 16791 -Communications - Mobile Radio System.

K. Section 16820 -Communications - Public Address System.

L. Section 16821 -Communications - Automatic Public Address Announcement System.

M. Section 16851 -Communications - Closed Circuit Television System.

1.04 REFERENCES

A. NFPA 130 - Standard for Fixed Guideway Transit Systems

1.05 SUBMITTALS

A. Submit under provisions of Section 16706.

B. Shop Drawings: Indicate electrical system wiring diagram.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 INSTALLATION

A. Ground Communication system and facilities, equipment and cables using a single-point grounding scheme. Each Communication Equipment Room will have a separate isolated ground bus bar designated as “communications ground.”

B. Unless otherwise specified, ground the shields of all single shielded communications cables, the shields of multi-conductor cables that have individual shielded pairs, and the inner shield of all double shielded communications cables and communications cables with separate shield and armor only at a single point and only to the “communications ground.” These shields shall be electrically continuous throughout the cable length by bonding across all splices and terminations in equipment enclosures and junction boxes.

C. Ground the outer shield of all double-shielded communications cables and the armor of all communications cables with separate shield and armor only at a single point in each cable section. Locate the single point ground at the end of the cable section nearest to the associated Communications Equipment Room. Ground outer shield or armor Cable sections originating at Communications Equipment Rooms to the "communications ground."

D. Electrically isolate equipment racks and equipment cabinets from the building structure, adjacent equipment racks and equipment cabinets. Minimum resistance between adjacent equipment racks and equipment cabinets, and between equipment racks and equipment cabinets and the building structure, shall be 10 megohms. Individually wire each equipment rack and equipment cabinet to the communications ground, via the copper ground bus bar on the equipment rack and equipment cabinet, by a No. 6 AWG, stranded, insulated wire, Type XHHW.

E. Wire each copper ground bus bar in the multi-section cable terminal housings of the Main Distribution Frame (MDF)/ MDF/Protector Cabinet and the systems distribution frames to the communications ground by a No. 6 AWG, stranded, insulated wire, Type XHHW.

F. Electrically insulate all power conductors from equipment racks and equipment cabinets, with a separate power ground isolated from communications ground. Insulate Conduit containing power conductors running from ac distribution boxes to equipment racks, equipment cabinets, ac receptacle boxes on equipment racks and equipment cabinets from the equipment cabinet or equipment rack by means of short lengths of non-conducting conduit.

END OF SECTION