SECTION 134900

RADIO FREQUENCY AND MAGNETIC SHIELDING FOR GALVANIZED MODULAR PANEL SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

The purpose of RF shield construction is to create an enclosure in which radio frequency (RF) and/or electromagnetic interference (EMI) is contained and/or prevented from entering.

1.2 WORK INCLUDED

This section includes furnishing all labor, materials, equipment, tools, and related items to engineer, pre-fabricate, deliver, install and test a modular RF & Magnetic shield.

1.3 WORK NOT INCLUDED

The following work is excluded, but shall be coordinated with the Shield Vendor:

A. Construction or preparation of the parent structure to receive the shield assembly.
B. Weatherproofing and climate control of the parent structure prior to the installation of the shield assembly.
C. Calculations and specifications for thickness, location, and composition of magnetic shielding.
D. Connections of other work to the RF shield.
E. Delivery and installation of equipment in the completed shield.
F. Field Painting and /or any other final finishes.
G. All work as required in Related Sections below.

1.4 RELATED SECTIONS

A. Section 087100 - Door Hardware
B. Section 088000 - Glazing
C. Section 092116 - Gypsum Board Systems
D. Section 096500 - Resilient Flooring
E. Section 099000 - Painting
F. Section 224100 - Plumbing Piping
G. Section 235050 - Air Conditioning Ductwork
H. Section 260533 – Conduit and Tubing

1.5 REFERENCES

A. Comply with applicable requirements of the following standards and those others referenced in this Section.

1) American Welding Society
   a. AWS D1.1, Structural Welding Code - Steel
2) Military Standards
   a. MIL-STD-220A, Method of Insertion Loss for Radio Frequency Filters.
   b. MIL-STD-285, Method of Attenuation Measurements for Electromagnetic Shielding Enclosures for Electronic Test Purposes.
3) Underwriters Laboratories Inc.
   a. UL-1283, Standard for Safety - Electromagnetic Interference Filters.
4) American Standards for Testing and Materials
   a. ASTM F1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

1.6 PERFORMANCE REQUIREMENTS

A. ATTENUATION: The shield must meet the following performance criteria according to specifications supplied by the owner:
1) Attenuation of magnetic field.
2) Attenuation of electric field.
3) Attenuation of plane wave.
4) Attenuation of sound.

B. GROUND: The shield structure must be electrically grounded at a single point, with a minimum resistance to alternate ground of 1,000 ohms.

1.7 SUBMITTALS

A. PROCEDURE: Submit under provisions of Section 013300.
B. PRODUCT DATA: Include manufacturer's complete information on system, including system specifications and maintenance procedures.
C. SHOP DRAWINGS: Show full layout of system, including all dimensions and required points of coordination with work of other sections. Demonstrate full compliance with contract documents. Shield Vendor’s shop drawings will be approved in writing by the General Contractor, or other appropriate responsible party prior to fabrication of the RF Shield.

1.8 QUALITY ASSURANCE

A. STANDARDS: Perform work of this section in accordance with provisions of the following:
1) MIL-STD-285.
2) MIL-STD-220A.

B. QUALIFICATIONS: Shield Vendor shall have been engaged in continuous business for at least five (5) years in the manufacturing and installation of shielded products and a minimum of five (5) years in manufacturing and installation of RF and magnetic shielding.

C. WARRANTIES

1) SPECIFIC: Shield Vendor will supply a signed written warranty stating that the RF shield enclosure is guaranteed as follows:

a. As long as it is maintained according to industry standards and written maintenance procedures, the structure is guaranteed against defective materials and workmanship and to retain the specified shielding characteristics for a period of five (5) years from date of completion of acceptance test.

b. The electrical RF filters, waveguides, and door system are guaranteed against defective materials and workmanship and to retain the specified shielding characteristics for a period of one (1) year from date of completion of acceptance test.

D. GENERAL: The warranties specified in this article shall not deprive the Owner of other rights the Owner may have under other provisions of the contract documents and shall bein addition to, and run concurrent with, other warranties made by the Shield Vendor under requirements of the contract documents.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. This section is based on products manufactured by:

National Shielding, Inc.
1604 Kestrel Ave #102
Desoto, TX 75115
(214) 614-8103
www.national-shielding.com

B. Alternative products (substitutions): Contractor must furnish appropriate and complete product data, proof of ISO 9001:2008 certification, worker OSHA certifications, environmental characteristics, and sample warranty with bid for the Architect to consider the substitutions as “equal” to the manufacturer, product specified and quality assurance requirements. Further additional information may be requested by the Architect for determination that the proposed product substitution is fully equal to the specified products. There is no guarantee that proposed substitutions will be approved, and the Contractor is hereby directed not to order any materials until said approval(s) are received in writing.

1. Requesting substitutions is at the Contractor’s own risk, with regard to uncompensated delays of the Project. Time is required for sufficient review and for additional requests of information. Delays of work which result from substitution reviews and resubmissions are not grounds for additional time or cost change orders, and will not be considered by the Owner.