SECTION 271116 - COMMUNICATIONS CABINETS, RACKS, FRAMES, AND ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

Section Includes:

1. VRX Cable Management Rack

1.3 DEFINITIONS

A. BICSI: Building Industry Consulting Service International

B. EIA: Electronic Industries Alliance.

C. TIA: Telecommunications Industry Association.

D. ANSI: American National Standard Institute.

E. LAN: Local area network.

F. RCDD: Registered Communications Distribution Designer.

1.4 REFERENCES

A. ANSI/TIA-569-D Telecommunications Pathways and Spaces, 2015

B. ANSI/TIA-568-D.0 Generic Telecommunications Cabling for Customer Premises, 2015

C. ANSI/TIA – 568-D.1 Commercial Building Telecommunications Cabling Standard, 2015.

D. ANSI/NECA/BICSI 568-2006 – Standard for Installing Commercial Building Telecommunications Cabling.

E. ANSI/TIA-942-A Telecommunications Infrastructure Standard for Data Centers, 2014.

F. ANSI/TIA – 606-B Administration Standard for Telecommunications Infrastructure, 2012.

G. ANSI/TIA – 607-C Generic Telecommunications Bonding and Grounding (Earthing) For Customer Premises, 2015.

H. ANSI/NFPA 70 – National Electric Code, 2008, 2014.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for equipment racks and cabinets.

2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Shop Drawings: For communications equipment room fittings.

1. Include plans, elevations, sections, details, and attachments to other work.

2. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

3. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.

4. Grounding: Indicate location of bonding bus bar and its mounting detail showing standoff insulators and wall mounting brackets.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For [Installer] qualified layout technician, installation supervisor, and field inspector.

B. Seismic Qualification Certificates: For equipment frames from manufacturer.

C. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

1. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions. Base certification on the maximum number of components capable of being mounted in each rack type. Identify components on which certification is based.

2. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.

B. Layout Responsibility: Preparation of Shop Drawings shall be under the direct supervision of [RCDD] [RCDD/NTS] [Commercial Installer, Level 2].

1. Installation Supervision: Installation shall be under the direct supervision of [Registered Technician] [Level 2 Installer], who shall be present at all times when Work of this Section is performed at Project site.

2. Field Inspector: Currently registered by BICSI as [RCDD] [Commercial Installer, Level 2] to perform the on-site inspection.

PART 2 - PRODUCTS

2.1 RACKS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Great Lakes Data Racks & Cabinets (GLDRC); VRX Variable Depth Rack.

1. Color: Black textured powder coated steel

2. UL 2416 Listed: 2500lbs Capacity

3. Constructed of #12ga, cold rolled steel

4. Complete Rack Kit assembly feature of a Variable Depth of 24” to 36” at 1” Increments

5. Self-Squaring Design feature, with a Toe-in or Toe-out orientation.

6. Upright Post Design with 3 surfaces with FMP Holes (Flexible Mounting Profile)

 Front surface to have additional Square holes for Plastic Cable Rings,

7. Upright have provisions for optional cable management & power strip mounting brackets

a. Plastic Cable Fingers, #CM-47, 4” Depth or #CM-77, 7” Depth

b. Plastic Cable Rings, #CM-25, 1.5” x 3.5 set of 10, field adjustable installation.

c. Plastic Cable Rings, #CM-26, 3.5” x 5” set of 10, field adjustable installation.

d. Vertical Cable Bar, #VCP1, Single PDU Bar & Additional FMP holes

e. PDU Brackets, #PDU2ER, Pair of Brackets for 2 Vertical PDU mtg.

f. PDU Brackets, #PDU3ER, Pair of Brackets for 3 Vertical PDU mtg.

8. Rack Design allows for either 19” EIA (24” W) or 23” EIA (28” W) Width Assembly.

9. Uprights to provide two ¼-20 threaded studs x 5/8” spacing for bonding.

10. Optional Mid Rail Kits:

a. #VRXK145 U, Threaded #12-24 Rail Type

b. #VRXKM645 U, 3/8” Square Hole Rail Type

11. Rack Mounting Units (RMU) Numerically Labeled in Ascending order, bottom to top

12. Country of Origin Made in the USA

13. Rack Assembly to include Qty-50 Screw Fasteners for M6 Cage Nut

14. RMU Height: 45

15. Channel Depth: 24"-36"”

16. Equipment Mounting: M6 Cage Nut

 B. MODEL NUMBER AND SIZE

 1) VRX-45U2436-B-SQM6

PART 3 - EXECUTION

3.1 INSTALLATION OF FLOOR MOUNTED EQUIPMENT RACKS

Assemble racks according to manufacturer's instructions. Verify that equipment mounting rails are sized properly for rack-mount equipment before attaching the rack to the floor.

Use GLDRC Part Number AK-101 for concrete slab floors.

All racks must be attached to the floor in four places using appropriate floor mounting anchors. When placed over a raised floor, threaded rods should pass through the raised floor tile and be secured in the structural floor below. Racks shall be grounded to the bonding busbar using appropriate hardware provided by the contractor. The bond will meet local code requirements and will be approved by the Authority Having Jurisdiction (AHJ).

Ladder rack may be attached to the top of the rack to deliver cables to the rack. The rack shall not be drilled to attach ladder rack. Use appropriate hardware from the ladder rack manufacturer.

The equipment load will be evenly distributed and uniform on the rack. Place large and heavy equipment towards the bottom of the rack. Secure all equipment to the rack with equipment mounting screws. In seismic areas, secure equipment to shelves with additional bracing.

A. Accessory Equipment Mounting Rails: Equipment must be attached to the equipment mounting rails and must not exceed the accessory equipment mounting rails load capacity. Verify that the rack has sufficient load capacity for the accessory equipment mounting rails and equipment.

B. Shelves: Equipment placed on the shelf must fit completely within the shelf surface and must not exceed the shelf load capacity. Verify that the rack has sufficient load capacity for the shelf and equipment.

C. Cable Runway Mounting Bracket: Install according to manufacturer's instructions.

END OF SECTION 271100