

SECTION 27 11 16
Communications Cabinets, Racks, Frames and Enclosures

Part 1 General

1.1 SUMMARY

1.1.1 Provide all labor, materials, and equipment for the complete installation of work called for in the Contract Documents.

1.2 RELATED DOCUMENTS

1.2.1 The latest versions of the following codes, standards, and best practices shall be followed. Bring to the immediate attention of CCS if construction documents or conditions differ from requirements in codes, standards, guidelines and specifications.

1.2.2 The following codes, as required by law:

Ontario Electrical Safety Code (OESC)

Ontario Building Code (OBC)

1.2.3 The following standards:

ANSI/BICSI N1-2019, Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure

TIA-569-E Commercial Building Standard for Telecommunications Pathways and Spaces

ANSI/TIA--607-D - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises

ANSI/TIA-942-B Telecommunications Infrastructure Standard for Data Centers, 2017

ANSI/BICSI N3-2020, Planning and Installation Methods for the Bonding and Grounding of Telecommunication and ICT Systems and Infrastructure

1.2.4 The following best practices:

BICSI, Telecommunications Distribution Methods Manual (TDMM)

BICSI, Information Transport Systems Installation Methods Manual (ITSIMM)

ANSI/BICSI 002-2019, Data Center Design and Implementation Best Practices

Part 2 Product

2.1 General

2.1 Wall Mount Brackets

2.1.1 Wall mount brackets supplied and installed for this project shall be black.

2.1.2 Wall mount brackets shall be tapped with mounting holes as per EIA-310-C.

2.1.3 Refer to drawings for quantity of wall mount brackets.

SECTION 27 11 16
Communications Cabinets, Racks, Frames and Enclosures

Specified Product:

	RU	Depth	Part Number
Panduit	2	16"	WBH2E
Panduit	4	16"	WBH4E
Panduit	6	16"	WBH6E

2.2 Telecommunications Racks

- 2.2.1 Telecommunications racks supplied and installed for this project shall be floor mounted, free standing and black.
- 2.2.2 The racks shall provide 44U of rack mounting space and shall be double tapped (front and back of rail) with mounting holes as per EIA-310-C.
- 2.2.3 Refer to drawings for quantity of telecommunications racks. Provide additional mounting screws as required, to secure all patch panels, shelves and Client equipment mounted on racks.

Specified Product:

	RU	Part Number
Panduit		R2P c/w PR2VWF

2.3 Telecommunications Rack Components

2.3.1 Vertical Cable Managers

- .1 Vertical cable managers shall be installed to run the full height of the rack.
- .2 The vertical cable manager shall have hinged front doors and back and side knockouts or fingers for transition of patch cords. Knockouts and fingers shall be able shall be removed without cutting and provide bend radius protection.
- .3 The manager shall include slack management spools that can be repositioned as required. Install the quantity of cable managers as shown on drawings.
- .4 Where racks are ganged, supply and install one 8" wide vertical cable manager at the end of each row, and supply and install one 12" wide vertical cable manager between racks.

Specified Product:

	Width	Part Number
Panduit	8"	PR2VFD08
Panduit	12"	PR2VFD12

2.3.2 Horizontal Cable Managers

- .1 Horizontal cable managers shall be compatible with standard 19" racks.
- .2 Each horizontal cable manager shall be located as shown on drawings.

Specified Product:

HCM 1	Panduit	NMF1	Located as shown
HCM 2	Panduit	NMF2	Located as shown
HCM 3	Panduit	NMF4	Located as shown

SECTION 27 11 16
Communications Cabinets, Racks, Frames and Enclosures

2.3.3 Shelves

- .1 Shelves supplied and installed for this project shall be black.
- .2 Shelves shall be made of heavy duty steel and rated for 200lbs.
- .3 Supply and install three (1) shelf for each rack supplied.

Specified Product:

Depth	Part Number
Panduit	SRM19X18A1

2.4 Telecommunications Cabinets:

- 2.4.1 Cabinets shall be supplied and installed complete with all accessories to provide a complete cabinet as indicated below.
- 2.4.2 Cabinets shall be floor mounted, freestanding and have the ability to be ganged together.
- 2.4.3 Cabinets shall have a capacity of 44U, with mounting holes as per EIA-310-C.
- 2.4.4 Cabinets shall have (6) knockouts on top and be able to accept fans or chimney extensions.
- 2.4.5 Shelving shall be able to bear 200 lbs in a retreated or extended position.
- 2.4.6 Each server cabinet shall be black, 30" x 42" and include the following components:

Specified Product:

Description	Manufacturer	Part Number	Qty
30" x 42" Cabinet	Panduit	N8512B	1
30" x 42" Cabinet	Panduit	N8519B	1
Front – Mesh Door	Panduit		1
Rear – Mesh Door	Panduit		1
Solid Side Panels (depending on cabinet)	Panduit		2
Vertical Manager	Panduit		2
Shelf (Heavy Duty)	Panduit	SRM19X25A1	2
Set of (2) Fixed and (2) Swivel Castors	Panduit		1

2.5 Wall Mount Shallow Enclosures

- 2.5.1 All wall mount shallow enclosures supplied and installed for this project shall be no more than 42" high x 28.6" wide x 20" deep.
- 2.5.2 Rails shall be tapped with mounting holes as per EIA-310-C.
- 2.5.3 Wall mount shallow enclosure shall accommodate one 2U patch panel and one 2U switch.

Specified Product:

Panduit	WME3BL
Panduit	WME6BL
Panduit	WME9BL

SECTION 27 11 16
Communications Cabinets, Racks, Frames and Enclosures

- 2.6 Plywood Backboards
 - 2.6.1 All backboards supplied and installed for this project shall be constructed of 3/4" thick, fire rated, 4' wide x 8' high, one side good plywood as noted on drawings.
 - 2.6.2 Unless otherwise noted, plywood sheets shall be placed vertically.
 - 2.6.3 All backboards shall be painted with two (2) coats of fire retardant non-conductive white paint. "Fire Rating" stamp shall be left visible (unpainted) to allow for confirmation.
 - 2.6.4 Communications Contractor shall supply and install all backboards as noted on Communications Drawings including for use by others.
 - 2.6.5 Offset backboards:
 - .1 Shall be mounted to 2"x6" studs.
 - .2 All cables shall be fed from behind the backboard unless otherwise noted.
 - .3 Install offset backboards where required as shown on drawings.
 - 2.6.6 Surface mounted (flush) backboards:
 - .1 Shall be used for wall mount brackets, wall mount double swing-out cabinets, wall mount racks, telephone equipment, service provider equipment, lightning protection, horizontal cables, riser cables, IDC punch down blocks, CATV equipment, and/or any other use as identified in the scope of work for this project.
 - .2 Install surface mounted (flush) backboards where required as shown on drawings.
- 2.7 Cabling Waterfalls
 - 2.7.1 Waterfalls shall be manufactured by the cable tray manufacturer when available. If cable waterfalls are not available supply and install Panduit CMW-KIT in quantities required.

Part 3 Execution

- 3.1 Assemble relay racks/cabinets according to manufacturer's instructions. Verify that equipment mounting rails are sized properly for rack-mount equipment before attaching the rack to the floor.
- 3.2 All racks/cabinets 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.
- 3.3 Racks/cabinets shall be grounded to the TGB using appropriate hardware provided by the contractor. The ground will meet local code requirements and will be approved by the Authority Having Jurisdiction (AHJ).
- 3.4 In seismic areas, the rack should have additional bracing as required by building codes and the recommendations of a licensed structural engineer.
- 3.5 Ladder rack may be attached to the top of the rack/cabinet to deliver cables to the rack. The rack/cabinet shall not be drilled to attach ladder rack. Use appropriate hardware from the ladder rack manufacturer.

SECTION 27 11 16
Communications Cabinets, Racks, Frames and Enclosures

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

End of Section 27 11 16