**SPECIFICATION NOTES:**

Editor shall make modification to the specifications to for all options that are listed using the following demarcation “[**XXX]”** once the selection has been made delete all other options.

other items for additional editing to meet project specific requirements have been noted throughout the document. editor shall modify accordingly.

editor to be aware that there are drop down boxes for choices to be made throughout the DOCUMENT.

when editing is complete hide all editor notes using the “¶” symbol in the paragraph toolbar.

Additional details on various options can be found at the following website. (https://www.amcoenclosures.com/titandt/ )

SECTION 27 1116

Communications Cabinets

1. GENERAL
	1. SCOPE
		1. This section describes the products and accessories relating to furnishing and installation of Information Technology (IT) Equipment Cabinets.
		2. Provide all labor, materials, tools and equipment required for the complete installation within this section, construction documents, and scope of work.
		3. **[Communication Equipment Room][Data Center]** Cabinets are covered under this document.

Consultant to modify as appropriate for job specific requirements

* + 1. Refer to Project Drawings for cabinet layout and equipment placement.
	1. RELATED WORK

Modify and add other applicable sections as applicable that relate to this section

* + 1. Refer to Section 27 0000 - General Communications Requirements which identifies related specification sections in this and other Divisions (if applicable).
		2. Drawings and general provisions of the Contract, including related specifications applicable to this Section.
	1. Telecommunications standards references
		1. Work under this Section is subject to requirements of Contract Documents including General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements.
		2. The following industry standards are the basis for the cabinet system described in this document.
			1. TIA/EIA-569-D – Telecommunications Pathways and Spaces
			2. TIA/EIA-942-B – Telecommunications Infrastructure Standard for Data Centers
			3. TIA/EIA-606-B – Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
			4. TIA/EIA-607–C – Commercial Building Grounding/Bonding Requirements, 2015
			5. NFPA-70- National Electric Code (NEC)
		3. Related sections in other Divisions of Work:
			1. Refer to individual technical sections identified above (if applicable).
			2. Most recent industry related of all documents apply to this project. In the event of conflict between applicable documents, the order above shall dictate the order of precedence or supersede in resolving the issue unless an enforceable local or national code is in effect.
			3. 01 6000 Product Requirements
	2. DEFINITIONS
		1. Refer to Section **[27 0000]** - General Communications Requirements and Section **[27 1000]** - Structured Cabling which provide information on Definitions used in this and related sections.
			1. GA: gauge
	3. ABBREVIATIONS AND ACRONYMS
		1. Refer to Section **[27 0000]** - General Communications Requirements and Section **[27 1000]** - Structured Cabling which provide information on Abbreviations and Acronyms used in this and related sections.
	4. WORK BY OWNER

Modify and add other applicable sections to this section that defines work by the owner

* + 1. Refer to Section **[27 0000]** General Communications Requirements which identifies Work by Owner affecting sub-system(s) covered by this section.
	1. SUBMITTALS

Modify and add other information as needed for required submittal information

* + 1. Provide samples of finishes and panel material for review by owner/engineer upon request.
		2. Provide manufacturer’s product data including material descriptions, construction details, finishes, weight, static and dynamic loading capacities, operating characteristics, and included accessories.
		3. Provide manufacturer’s detailed shop drawings including cabinet, components factory and field mounted, location and size of field connections and components.
			1. Include individual dimensional information of cabinet and applicable attributes and its included components in elevation, plan, and isometric viewing perspectives.
			2. Include required working clearances, cable entry egress and ingress pathways and required clearance for access to cable and connections.
			3. Provide detailed location for ground connection to cabinet and components.
			4. Provide Manufacturer’s Installation and Operation Manual.
	1. GUARANTEE

Modify and add other information as needed for guarantee requirements

* + 1. Refer to **[Division 01], [General Conditions], and [General Requirements]** - Guarantee Documents for general warranty requirements.
		2. Provide 10-year manufacturer warranty.
1. PRODUCTS
	1. Cabinet
		1. Approved Manufacturer: AMCO Enclosures
		2. The cabinet shall be used to provide a clean and efficient means for IT Equipment, routing and protection of cables, patch cords, and power cables. The cabinet shall provide provisions for mounting patch panels and Power Distribution Units (PDUs) vertically without blocking IT Equipment. Cabinets shall include air barriers around the cabinet mounting rails to prevent cold air from bypassing equipment to the hot aisle, provisions for routing cables from under floor or overhead, and cable management accessories supporting the cabling system. The cabinet shall protect its components by enclosing cabling and equipment, maintaining system performance, and controlling cable bend radius.
		3. Cabinet Attributes
			1. Frame Construction:
				1. Minimum 14GA cold rolled steel
				2. Fully welded construction
				3. Tested to UL 2416 and UL Listed, NWIN.E490068
				4. Static Load rating: 5,400lbs.
				5. Dynamic (Rolling) Load Rating: 3,300lbs.
				6. Horizontal Channels shall be used for rail mounts and allow infinitely variable adjustment to front and rear mounting rail positions.
				7. Ground studs shall be in all 4 corners of the cabinet base and ¼-20 X 5/8” in size
				8. Color: Choose Cabinet Color Drop down choice
				9. Cabinet Height: Choose Cabinet Height Drop down choice

Height includes leveling feet

Light duty casters add 1” to cabinet height and heavy-duty casters add 1.5” to cabinet height

Skid packaging adds 5.75” to overall cabinet height (cabinet plus caster)

* + - * 1. Cabinet Width: Choose Cabinet Width Drop down choice
				2. Cabinet Depth: Choose Cabinet Depth Drop down choice
				3. Leveling legs shall be rated for 1,000lbs.
			1. Equipment Mounting Rails
				1. Attributes

12 GA Cold Rolled Steel

M6 Square Punched Holes

Rack Units individually numbered and marked through a white silkscreen process.

Black powder coat finish.

EIA-310E hole spacing

Choose the following rail mounting options and associated attributes for cabinets that have a width of 29” or 32”. Options are not available on cabinets with a 24” width. Editor to also note which rails will have these options. (Front Left, Front Right, Rear Left, Rear Right)

[Oval cutouts with plastic grommets and covers

Three 1 RU cutouts in each channel with **[patch panel mounting] [brush covers]**

Finger cable management Finger Material: .250” diameter wire and the usable length is 6”: **[Every RU] [Every other RU]]**

* + - 1. Side Panel Construction Requirements:
				1. Side panels shall be 18GA cold rolled steel and painted to match the cabinet color and are the full height of the cabinet. Each side panel shall have two keyed latches located at the top of the panel to secure the panel. Side panel latches shall not obstruct the mounting surface of accessories.
				2. Side Panel Quantity: **[None] [One] [Two]**
			2. Doors:
				1. Door perforation shall be a minimum of 77% free area.
				2. Full and Curved doors shall be constructed of 18GA cold rolled steel. Double doors shall be constructed of 18GA cold rolled steel.
				3. The doors shall be removable and reversible to open from the right or left. The door shall open to 120° when the cabinet is bayed with other cabinets.
				4. Door closure mechanism shall be a swing handle with **[keyed]** **[combination]** lock.
				5. Double doors shall use a three-point latching mechanism.
				6. Perforated doors shall have provisions to enable the door to become solid with the installation of a solid metal insert. Inserts are not available for curved doors.

Choose door type

* + - * 1. Front Door Type: **[Double Doors- Flush Mount], [Full Flat Door-flush mount], [Curved Door- Face mount** this adds 3” to overall dimensional depth**], [NONE].**

For cabinets using a chimney, select a solid type rear door option

* + - * 1. Rear Door Type: **[Double Doors- Flush Mount], [Full Flat Door-Flush Mount], [Solid Double Doors], [Solid Full Flat Door- Flush Mount], [ NONE].**

Select cabinet top panel option and attribute based upon cabinet size

* + - 1. Top Panels Options:
				1. Shall be fastened to the cabinet frame using screws and allow for replacement without cabinet or frame modification.
				2. Single Brush Strip:

**[24” wide brush strip is 16.25” in length]**

**[29” wide brush strip is 21.25” in length]**

**[32” wide brush strip is 24.25” in length]**

* + - * 1. **[Solid] [Vented]** Solid Top Panel with Oval cutouts

**[42” deep cabinet: 6 x oval cutouts, 2.5” wide x 6” long]**

**[45” deep cabinet: 6 x oval cutouts, 2.5” wide x 6” long]**

**[48” deep cabinet: 6 x oval cutouts, 2.5” wide x 6” long]**

* + - * 1. Double Brush Strip from front to back of Cabinet:

**[42” deep cabinet: 2 x brush openings, 5” wide x 37.719” long]**

**[45” deep cabinet: 2 x brush openings, 5” wide x 40.719” long]**

**[48” deep cabinet: 2 x brush openings, 5” wide x 43.719” long]**

Choose chimney height based upon project requirements. Choose Chimney cutout based upon cabinet width. Delete other choices options.

* + - * 1. **[20” –35”] [35” – 60”]** Adjustable Height Chimney

Chimney cutout is 15.808” deep for all cabinet depths

**[24” wide cabinet: Chimney cutout is 16.559” wide]**

**[29” and 32” wide cabinets: Chimney cutout is 21.559” wide]**

Provide air deflector at the bottom rear of cabinet.

(4) 2.5” wide x 6” long oval cutouts

Top Panel Chimney opening coverplate**. Optional**, specify if chimney isn’t used initially but will be used in the future

* + - 1. Combination PDU and Cable Mounting panels: Allows for tool less vertical mounting of cabinet powerstrips and cable management
				1. Constructed from 14GA cold rolled steel
				2. Allow for tool less vertical mounting of PDU’s and cable management
				3. Width: **[5”]** **[7”] [10”]**
			2. Casters: **[Light Duty: 175lbs load rating] [Heavy Duty: 1,200lbs load rating]**
			3. Baying Kit: One included with each cabinet
			4. Mounting Hardware: (50) Dzus brand M6 Nuts and screws for fastening IT equipment to the EIA Mounting Rails

Editor shall choose the following **OPTIONAL** Accessories to meet the project requirements.

* 1. Accessories
		1. Manufacturer: AMCO Enclosures
		2. Cable lacing Panels: Allows for cable management in cabinet
			1. Constructed from 14GA cold rolled steel
			2. 5” width
		3. Baying Kit
		4. Air Dam Kit.
		5. Overhead Strut Kit
		6. Overhead Cable Management
		7. Horizontal Cable Manager
			1. Constructed from 10GA cold rolled steel
			2. 2RU in height
			3. Depth: **[4”] [7”]**
		8. Cable Management Accessories
			1. Cable Ring Kit (10)
		9. Vertical Cable Management
		10. Network Switch Cooling Solution: **[6” width] [8” width]**
		11. Shelves
			1. Adjustable solid shelve
			2. Adjustable vented shelve
		12. Mounting Hardware: (50) M6 Cage Nuts and screws for fastening IT equipment to the EIA Mounting Rails (50) DZUS M6 nuts and screws are included with the cabinet
		13. Cabinet Busbar Ground
			1. Material: Copper
			2. Size: 1.00” X0.25”
			3. Vertical Mounting Configuration
			4. Material Configuration: #10-32 at 3.5” increments
1. EXECUTION
	1. GENERAL
		1. Refer to project Drawings for communications equipment room layout and equipment placement.
		2. Ensure room is clean and ready to accept IT Equipment cabinet for installation and final placement. Cabinet shall have final cleaning prior to installing an IT Equipment.
		3. Cabinet shall be finally installed, bayed (if appropriate), and leveled prior to installation of IT Equipment.
		4. Follow manufacturer’s recommended installation and termination practices.
		5. Follow and Comply with NECA 1

Modify section below as necessary to make comment specific to project requirements

* 1. EQUIPMENT cabinets
		1. Provide equipment cabinets as shown on project Drawings.
		2. Assemble Cabinet and accessories per manufacturer’s recommendations. Remove paint at the point(s) of contact of assembly hardware or use internal-external tooth lock washers to pierce paint to maintain ground continuity.
		3. Cabinets shall be positioned in final location and aligned prior to baying. Use baying kit as provided and instructed by manufacturer instructions.
		4. Label the cabinets in coordination with owner requirements.

Discuss with owner their desired labeling scheme and type of labels

* + 1. Adjust brush in brush of brushed opening once cables and or powerstrip is installed to minimize air leakage through brush.
		2. Provide Cable Management in equipment cabinets **[per project Drawings] [as follows]**.
			1. Provide horizontal cable management above and below each cabinet mounted patch panel.
	1. Grounding
		1. Install grounding systems according to BICSI TDMM, “Grounding, Bonding, and Electrical Protection” Chapter.
		2. Bond each cabinet mounted ground bar to telecommunications ground bus bar (TGB) as defined in TIA 607-C and local and state codes as defined by the authority having jurisdiction (AHJ).
			1. Use 4AWG/16 mm2(#6 AWG) or larger copper conductor (green jacket).

END OF SECTION