U.S. Department of Veterans Affairs

Office of Information and Technology

IT Operations and Services

| Solution Delivery

COMMUNITY BASED OUTPATIENT CLINIC (CBOC)
INSIDE PLANT
INFORMATION TRANSPORT SYSTEMS SPECIFICATIONS

DEVELOPED BY:

DATA CENTER AND INFRASTRUCTURE ENGINEERING

Department of Veterans Affairs

IT Operations and Services Solution Delivery

EDICT

Enterprise Data Center and Infrastructure Engineering

PROJECT:

CBOC INFORMATION TRANSPORT SYSTEMS SPECIFICATIONS

MARK	DATE	DESCRIPTION

ISSUE:

DRAWING No:	
FILE:	CBOC DESIGN TEMPLATE-v1_1.vsd
DESIGNED BY:	KEVIN GRZELKA, CTDC
CHECKED BY:	MICHAEL JULIAN, RCDD KELLY BATES, DCIE
DOC VERSION No:	1.1
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SHEET TITLE

COVER

SHEET: 1 OF 19

LEGEND

ELECTRICAL

- DETAIL NUMBER
- DETAIL NUMBER TYPICAL THROUGHOUT THIS SHEET
- BONDING BUSBAR
- OR — WIRE MESH CABLE TRAY SIZE COMMENSURATE WITH REQUIREMENTS
- ELECTRICAL SERVICE PANEL
- OVERHEAD POWER DROP CORD WITH L21-20 RECEPTACLE
- OVERHEAD POWER DROP CORD WITH L21-30 RECEPTACLE
- POWER JUNCTION BOX FOR 60A CONNECTION
- POWER BUSWAY TAP WITH SINGLE BREAKER 3' DROP CORD WITH L21-20R FOR STANDARD-DENSITY CABINETS
- POWER BUSWAY TAP WITH DUAL BREAKER AND TWO 3' DROP CORDS WITH L21-20R FOR HIGH DENSITY CABINETS
- TYPICAL UNSWITCHED 110 VOLT, 20 AMP DUPLEX CONVENIENCE OUTLET
- MOTION SENSOR LIGHT SWITCH
- M — CEILING MOUNTED MOTION SENSOR (LOCATIONS AS REQUIRED FOR FULL ROOM COVERAGE)
- PIV ENABLED TWO-FACTOR AUTHENTICATION KEYPAD
- FIXED CAMERA, PAN/TILT/ZOOM, PASSIVE INFRARED CAMERA - DUAL TECHNOLOGY"
- LED LIGHTING
- POWER BUSWAY WITH METERED HEADEND FOR A SIDE POWER DISTRIBUTION
- POWER BUSWAY WITH METERED HEADEND FOR B SIDE POWER DISTRIBUTION
- MODULAR UPS CABINET (POWER MODULES, BATTERIES, POWER PANELS)

TELECOMMUNICATIONS

- DETAIL NUMBER
- DETAIL NUMBER TYPICAL THROUGHOUT THIS SHEET
- OR — WIRE MESH CABLE TRAY SIZE COMMENSURATE WITH REQUIREMENTS
- CONDUIT WITH BUSHING FIRESTOP AND INNERDUCT FOR FIBER
- SLEEVE WITH BUSHING FIRESTOP AND INNERDUCT FOR FIBER
- SLEEVE OR CONDUIT WITH BUSHING FIRESTOP AND INNERDUCT FOR FIBER
- TELECOMMUNICATIONS CHANNEL RACK, 19" RAILS, #12-24 TAPPED EIA HOLE PATTERN, 30" DEEP CHANNEL MINIMUM, 7' HIGH, 45RU, WHITE
- VERTICAL CABLE MANAGER WITH DOOR, 6" WIDE MINIMUM
- SERVER CABINET, 45U, 24"X48" (NOMINAL), SQUARE PUNCHED RAIL, SINGLE PERFORATED FRONT DOOR, SOLID REAR DOOR (VERTICAL EXHAUST DUCT IMPLEMENTATION), DOUBLE PERFORATED REAR DOOR (NO VED), TWO-POINT KEYED LOCKS, WHITE,SOLID SIDE PANELS
- TELECOMMUNICATIONS CABINET, 7' HIGH, 45U, 40"X48" (NOMINAL), SQUARE PUNCHED RAIL, SINGLE PERFORATED FRONT DOOR, SOLID REAR DOOR (VERTICAL EXHAUST DUCT IMPLEMENTATION), TWO-POINT KEYED LOCKS, WHITE,SOLID SIDE PANELS

ARCHITECTURAL

- DEMO WALL
- NEW WALL
- 4'X 8' AC GRADE ¾" TRADE SIZE PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE WITH TWO COATS OF FIRE RESISTANT PAINT FOR SERVICE PROVIDER / SECURITY / VIDEO / ET CETERA
- 3 FT WIDE, 8 FT HIGH DOOR, FIRE RESISTANT TO ¾ HOUR OR MORE PER AHJ
- 6 FT WIDE, 8 FT HIGH DOOR, NO CENTER MULLION, FIRE RESISTANT TO ¾ HOUR OR MORE PER AHJ

MECHANICAL

- STANDARD 25% OPEN PERFORATED FLOOR TILE
- COLD AISLE CONTAINMENT (PVC CURTAIN)
- RETURN AIR DUCT
- CRAC — COMPUTER ROOM AIR CONDITIONER (SEE COMPUTATIONAL FLUID DYNAMICS REPORT FOR SIZING)
- REQUIRED CLEARANCE AROUND CRACS
- AC — SPLIT PACKAGE AIR CONDITIONER OR EQUIVALENT 24/7 SUPPLY AIR TO REJECT 5KW (17,000 BTU PER TELECOMMUNICATIONS RACK)
- AC — ADDITIONAL SPLIT PACKAGE AIR CONDITIONER OR LARGER UNIT TO REJECT HEAT FROM ADDITIONAL RACKS (17,000 BTU PER TELECOMMUNICATIONS RACK)

NOTES

ELECTRICAL

1. MINIMUM TWO 110V 20A CONVENIENCE BUILDING POWER OUTLETS PER WALL; PLACEMENT DETERMINED BY OTHERS.
2. PRIMARY BONDING BUSBAR PLACEMENT DETERMINED BY OTHERS
3. SECONDARY BONDING BUSBAR PLACEMENT DETERMINED BY OTHERS
4. SERVICE PANEL FOR DEDICATED ROOM AIR CONDITIONING. NON-IT LOAD ONLY. SHALL BE EQUIPPED WITH POWER METER; MONITORED SOLUTION PREFERRED. PLACEMENT PER OTHERS
5. SERVICE PANEL FOR RACK POWER. IT LOAD ONLY. SHALL BE EQUIPPED WITH POWER METER; MONITORED SOLUTION PREFERRED. PLACEMENT PER OTHERS
6. 20 AMP 208 VOLT THREE-PHASE TWIST LOCK RECEPTACLE (L21-20R);2.5 FT AFF {WYE (5-WIRE)} COORDINATE INSTALLATION LOCATION WITH TELECOMMUNICATIONS CONTRACTOR
7. 30 AMP 208 VOLT THREE-PHASE TWIST LOCK RECEPTACLE (L21-30R);2.5 FT AFF {WYE (5-WIRE)} COORDINATE INSTALLATION LOCATION WITH TELECOMMUNICATIONS CONTRACTOR
8. POWER BUS BAR (VOLTAGE AND AMPERAGE SUFFICIENT TO SUPPORT TEN [10] SINGLE BREAKER 208V, 20 AMP, L21-20R BUSWAY TAPS) FED FROM A SIDE SOURCE
9. POWER BUS BAR (VOLTAGE AND AMPERAGE SUFFICIENT TO SUPPORT TEN [10] SINGLE BREAKER 208V, 20 AMP, L21-20R BUSWAY TAPS) FED FROM B SIDE SOURCE
10. POWER BUS BAR (VOLTAGE AND AMPERAGE SUFFICIENT TO SUPPORT FIVE [5] SINGLE BREAKER 208V, 20 AMP, L21-20R BUSWAY TAPS) FED FROM A SIDE SOURCE
11. POWER BUS BAR (VOLTAGE AND AMPERAGE SUFFICIENT TO SUPPORT FIVE [5] 208V, 20 AMP, L21-20R BUSWAY TAPS) FED FROM B SIDE SOURCE
12. BLUE CABLE PATH FOR A-SIDE UPS
13. YELLOW CABLE PATH FOR B-SIDE UPS

LIGHTING:
1. LED LIGHTING PLACED IN AISLES DIRECTLY IN FRONT OF AND BEHIND CABINET ROWS
2. LIGHTING OPERATED BY MOTION SENSOR PER CABINET ROW OR SECTION
3. 500 LUX IN THE HORIZONTAL PLANE AND 200 LUX IN THE VERTICAL PLANE REQUIRED MEASURED AT 3 FT AFF IN FRONT OF AND BEHIND EQUIPMENT CABINETS

TELECOMMUNICATIONS

1. SERVICE PROVIDER ENTRANCE POINT
2. SERVICE BACKBONE (ENTRANCE ROOM-MAIN COMPUTER ROOM)
3. MAIN CROSS CONNECT (CAMPUS/BUILDING DISTRIBUTOR) – BACKBONE CABLING (MCR-TELECOMMUNICATIONS ROOMS)
4. ENTRANCE ROOM (TR) INTERCONNECT
5. HORIZONTAL DISTRIBUTION TO WORK AREA OUTLETS (WAO)
6. ADDITIONAL CABINETS OR TELECOMMUNICATIONS RACKS TO MEET REQUIREMENTS.
7. HORIZONTAL DISTRIBUTION AREA – SIDE A
8. HORIZONTAL DISTRIBUTION AREA – SIDE B
9. MAIN DISTRIBUTION AREA – SIDE A
10. MAIN DISTRIBUTION AREA – SIDE B
11. STANDARD DENSITY CABINET SUPPORTING 5KW REDUNDANT
12. HIGH DENSITY CABINET SUPPORTING 10KW REDUNDANT
13. 40" TELECOMMUNICATIONS CABINET WITH HORIZONTAL CABLE CUTOUTS AND APPROPRIATE CABLE MANAGEMENT ACCESSORIES, SUPPORTING 5KW REDUNDANT
14. WIRE MESH CABLE TRAY MINIMUM OF 6"X 12" WITH SECOND LEVEL OF FIBER CHANNEL PATHWAY (4" X 4")
15. BLUE CABLE TRAY PATH FOR CABLES TO THE A-SIDE MDA/HDA
16. YELLOW CABLE TRAY PATH FOR CABLES TO THE B-SIDE MDA/HDA
17. TELECOMMUNICATIONS CHANNEL RACK

ARCHITECTURAL

FLOORPLANS ARE NOT TO SCALE
DOCUMENTS ARE NOT TO BE USED FOR CONSTRUCTION

MECHANICAL

CHANGES TO DESIGN WILL REQUIRE A NEW COMPUTATIONAL FLUID DYNAMICS (CFD) ANALYSIS TO BE PERFORMED

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LEGEND

SHEET: 2 OF 19

GENERIC TELECOMMUNICATIONS MEDIA AND INTERFACE SPECIFICATIONS FOR TELECOMMUNICATION SPACES			
ID	PRIMARY ATTRIBUTE	SECONDARY ATTRIBUTE	SPECIFICATION
1	COPPER PATCH PANELS	PERFORMANCE CATEGORY	CATEGORY 6A (10 GBE)
		POSITION COUNT	48
		FORM FACTOR	ANGLED
		SIZE	ONE RACK UNIT
		JACK COLOR CODING	A-SIDE BLUE / B-SIDE YELLOW
2	FIBER DISTRIBUTION PANELS	CASSETTE CAPACITY	12 CASSETTES OR 6 DOUBLE CASSETTES
		CASSETTE USER INTERFACES	LC DUPLEX CONNECTORS
		CASSETTE BACKBONE INTERFACES	MPO-12
		PERFORMANCE CHARACTERISTICS	OM4 LASER ENHANCED 40 GBE 50/125 MULTIMODE / OS1 9/125 SINGLE MODE
		FORM FACTOR	ONE (1) RU
3	UTP (HORIZONTAL AND FIRST LEVEL BACKBONE)	PERFORMANCE CATEGORY	CATEGORY 6A (10 GBE)
		PERFORMANCE SPECIFICATIONS	MEETS OR EXCEEDS TIA-EIA-568-C.2-10, TSB-155.
		JACKET COLOR	BLUE (HORIZONTAL), WHITE (1ST LEVEL BACKBONE)
4	FIBER (HORIZONTAL AND FIRST LEVEL BACKBONE)	PERFORMANCE CATEGORY	OM4 LASER ENHANCED TO 40 GIGABIT ETHERNET (GBE) / OS1 / OS2
		PERFORMANCE SPECIFICATIONS	LASER OPTIMIZED 50/125 MM FIBERS WITH AT LEAST 4,700 MHZ-KM AT 850 NM / OS1 9/125 SM FIBERS (INTRA-BUILDING) / OS2 9/125 SM (INTER-BUILDING)
		MODE	MULTIMODE/SINGLE MODE (DISTRIBUTION TO TRS ONLY)
		JACKET COLOR	AQUA (OM4) / YELLOW (OS1/2)
		MEDIA CONNECTOR	PRE-TERMINATED WITH MPO, TYPE A
		STRAND COUNT	12 OR 24
		BUNDLING	LOOSE TUBE
5	UTP PATCH CORDS	PERFORMANCE CATEGORY	CATEGORY 6A, 26-GAUGE, STRANDED
		PERFORMANCE SPECIFICATIONS	CENTER TUNED TO HORIZONTAL MEDIA
		JACKET COLOR	BLUE
		TERMINATION METHOD	FACTORY PRE-TERMINATED
6	FIBER PATCH CORDS	PERFORMANCE CATEGORY	OM4 / OS1 / OS2
		PERFORMANCE SPECIFICATIONS	LASER OPTIMIZED 50/125 MM FIBERS WITH AT LEAST 4,700 MHZ-KM AT 850 NM / OS1 9/125 SM FIBERS (INTRA-BUILDING) / OS2 9/125 SM (INTER-BUILDING)
		MODE	MULTIMODE/SINGLE MODE (PATCH CORD TO TRS ONLY)
		JACKET COLOR	AQUA (OM4) / YELLOW (OS1/2)
		MEDIA CONNECTOR	PRE-TERMINATED WITH DUPLEX LC

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SPECIFICATIONS

- MINIMUM 170 FT²
- STATIC DISSIPATING FLOOR
- NO DROP CEILING
- SLAB TO DECK ABOVE 12 FT MINIMUM (16 FT PREFERRED)
- WALLS FULL HEIGHT TO DECK ABOVE

TELECOMMUNICATIONS CHANNEL RACK, 19" RAILS, #12-24 TAPPED EIA HOLE PATTERN, MINIMUM 30" DEEP, 7' HIGH, 45RU, WHITE

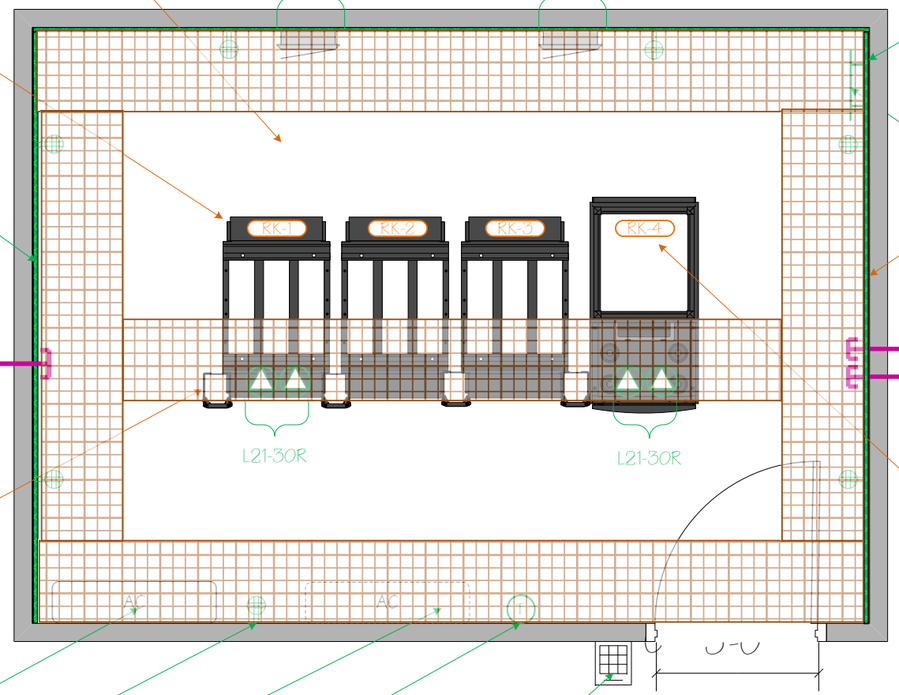
4'X 8' AC GRADE ¾" TRADE SIZE PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE WITH TWO COATS OF FIRE RESISTANT PAINT FOR SECURITY EQUIPMENT

CONDUIT OR SLEEVES WITH BUSHING AND FIRESTOP OR OTHER AHJ-APPROVED PENETRATION FOR HORIZONTAL DISTRIBUTION FROM WORK AREA OUTLETS AND TELECOMMUNICATION ROOMS

VERTICAL CABLE MANAGER WITH DOOR, 6" WIDE

SERVICE PANEL FOR DEDICATED ROOM AIR CONDITIONING. NON-IT LOAD ONLY. SHALL BE EQUIPPED WITH SCHNEIDER EM3500 SERIES DIN RAIL METER OR EQUIVALENT

SERVICE PANEL FOR RACK POWER IN TELECOMMUNICATION ROOM. IT LOAD ONLY. SHALL BE EQUIPPED WITH SCHNEIDER EM3500 SERIES DIN RAIL METER OR EQUIVALENT



4'X 8' AC GRADE ¾" TRADE SIZE PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE WITH TWO COATS OF FIRE RESISTANT PAINT FOR SERVICE PROVIDER EQUIPMENT

PRIMARY OR SECONDARY BONDING BUSBAR (PBB/SBB)

WIRE MESH CABLE TRAY SIZE COMMENSURATE WITH REQUIREMENTS

TWO (2) CONDUITS INTERCONNECTING NETWORK SUPPORT CENTER WITH ENTRANCE FACILITY. TRADE SIZE 2

SERVER CABINET, 45U, 24"X48" (NOMINAL), SQUARE PUNCHED RAIL, SINGLE PERFORATED FRONT DOOR, SOLID REAR DOOR, TWO-POINT KEYED LOCKS, WHITE,SOLID SIDE PANELS

PIV/ KEYPAD

SPLIT PACKAGE AIR CONDITIONER (32,600 BTU/H)

TYPICAL UNSWITCHED DUPLEX CONVENIENCE OUTLETS

ADDITIONAL SPLIT PACKAGE AIR CONDITIONER (32,600 BTU) WHEN NECESSARY

AIR CONDITIONER THERMOSTAT

NOTE:

THERE SHALL BE A MINIMUM OF ONE TELECOMMUNICATIONS ROOM (TR) PER FLOOR.

THE EQUIPMENT ROOM CAN SERVE AS A TR. ADDITIONAL ROOMS SHOULD BE PROVIDED WHEN:

A) THE FLOOR AREA TO BE SERVED EXCEEDS 1000 M2 (10 000 FT2);
OR
B) THE HORIZONTAL DISTRIBUTION DISTANCE TO THE WORK AREA EXCEEDS 90 M (295 FT).

NO RAISED FLOOR.

1 GENERIC FLOOR PLAN FOR HEALTH CARE FACILITY EQUIPMENT ROOM

Department of Veterans Affairs

IT Operations and Services Solution Delivery

EDCT

ENTERPRISE DATA CENTER AND INFRASTRUCTURE ENGINEERING

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GENERIC HEALTH CARE FACILITY EQUIPMENT ROOM

4'X 8' AC GRADE ¾" TRADE SIZE PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE WITH TWO COATS OF FIRE RESISTANT PAINT FOR SECURITY EQUIPMENT

- MAXIMUM 170 FT²
- STATIC DISSIPATING FLOOR
- NO DROP CEILING
- SLAB TO DECK 12 FT MINIMUM (16 FT PREFERRED)
- WALLS FULL HEIGHT TO DECK

CONDUIT OR SLEEVES WITH BUSHING AND FIRESTOP OR OTHER AHJ-APPROVED PENETRATION FOR HORIZONTAL DISTRIBUTION FROM WORK AREA OUTLETS AND TELECOMMUNICATION ROOMS

TELECOMMUNICATIONS RACK, 19" RAILS, #12-24 TAPPED EIA HOLE PATTERN, 30" DEEP CHANNEL, 7' HIGH, 45RU, WHITE

VERTICAL CABLE MANAGER WITH DOOR, 6" WIDE

SPLIT PACKAGE AIR CONDITIONER

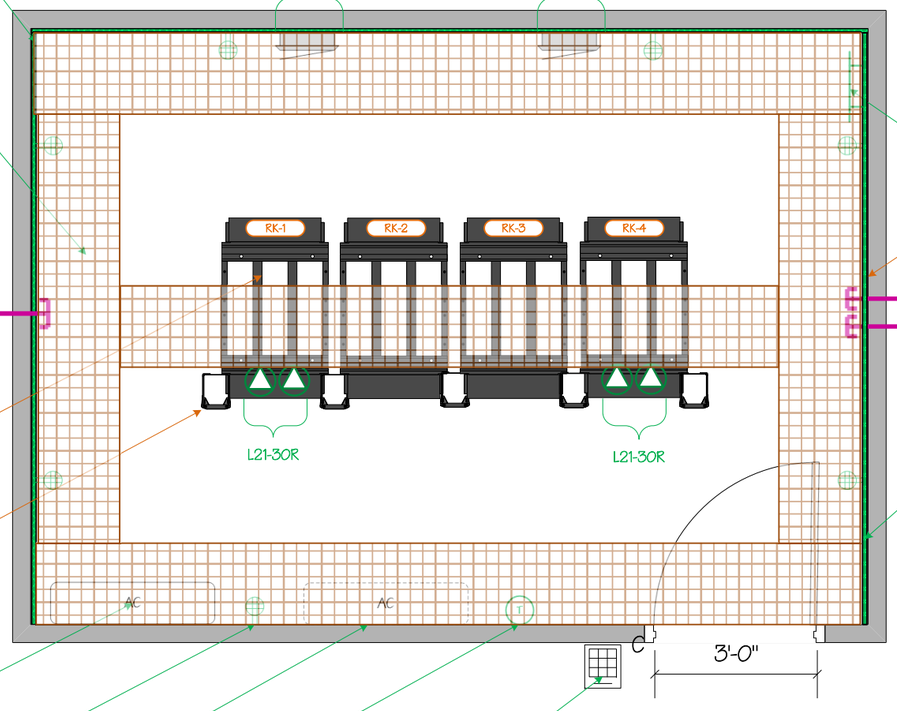
TYPICAL UNSWITCHED DUPLEX CONVENIENCE OUTLETS

ADDITIONAL SPLIT PACKAGE AIR CONDITIONER WHEN NECESSARY

AIR CONDITIONER THERMOSTAT

SERVICE PANEL FOR DEDICATED ROOM AIR CONDITIONING. NON-IT LOAD ONLY. SHALL BE EQUIPPED WITH SCHNEIDER EM3500 SERIES DIN RAIL METER OR EQUIVALENT

SERVICE PANEL FOR RACK POWER IN TELECOMMUNICATION ROOM. IT LOAD ONLY. SHALL BE EQUIPPED WITH SCHNEIDER EM3500 SERIES DIN RAIL METER OR EQUIVALENT



PRIMARY OR SECONDARY BONDING BUSBAR (PBB/SBB)

WIRE MESH CABLE TRAY SIZE COMMENSURATE WITH REQUIREMENTS

CONDUITS INTERCONNECTING NETWORK SUPPORT CENTER WITH ENTRANCE FACILITY

PIV/ KEYPAD

4'X 8' AC GRADE ¾" TRADE SIZE PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE WITH TWO COATS OF FIRE RESISTANT PAINT FOR SERVICE PROVIDER EQUIPMENT

NOTE:

THERE SHALL BE A MINIMUM OF ONE TELECOMMUNICATIONS ROOM (TR) PER FLOOR.

THE EQUIPMENT ROOM CAN SERVE AS A TR. ADDITIONAL ROOMS SHOULD BE PROVIDED WHEN:

A) THE FLOOR AREA TO BE SERVED EXCEEDS 1000 M2 (10 000 FT2);
OR
B) THE HORIZONTAL DISTRIBUTION DISTANCE TO THE WORK AREA EXCEEDS 90 M (295 FT).

NO RAISED FLOOR.

1 GENERIC FLOOR PLAN FOR HEALTH CARE FACILITY TELECOMMUNICATIONS ROOMS

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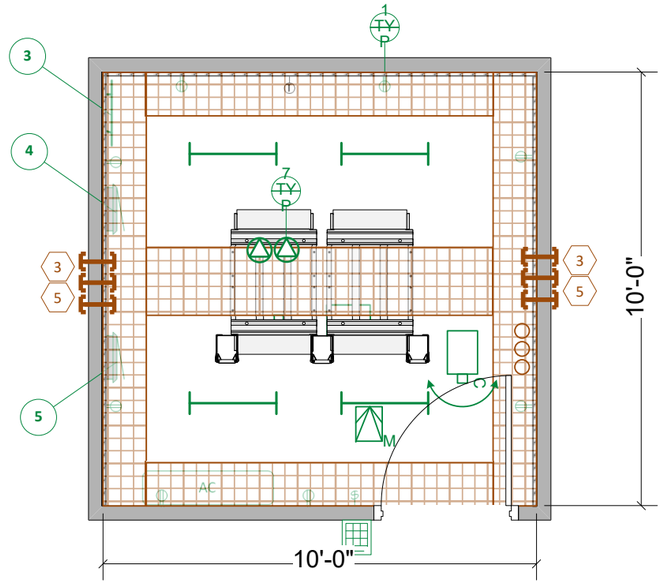
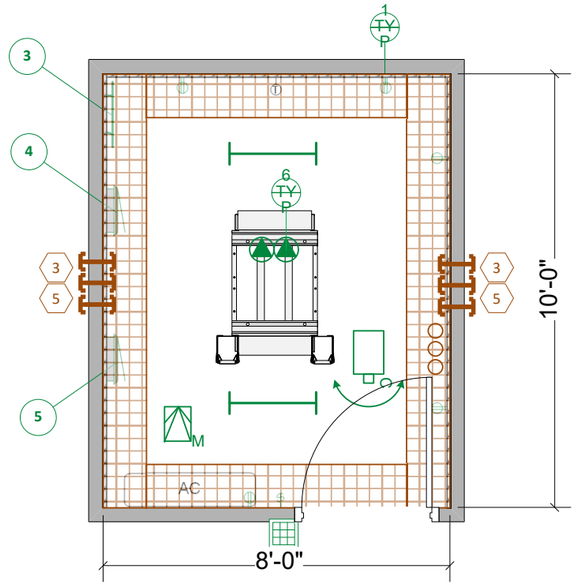
GENERIC HEALTH CARE FACILITY TELECOMMUNICATIONS ROOM

SHEET: 5 OF 19



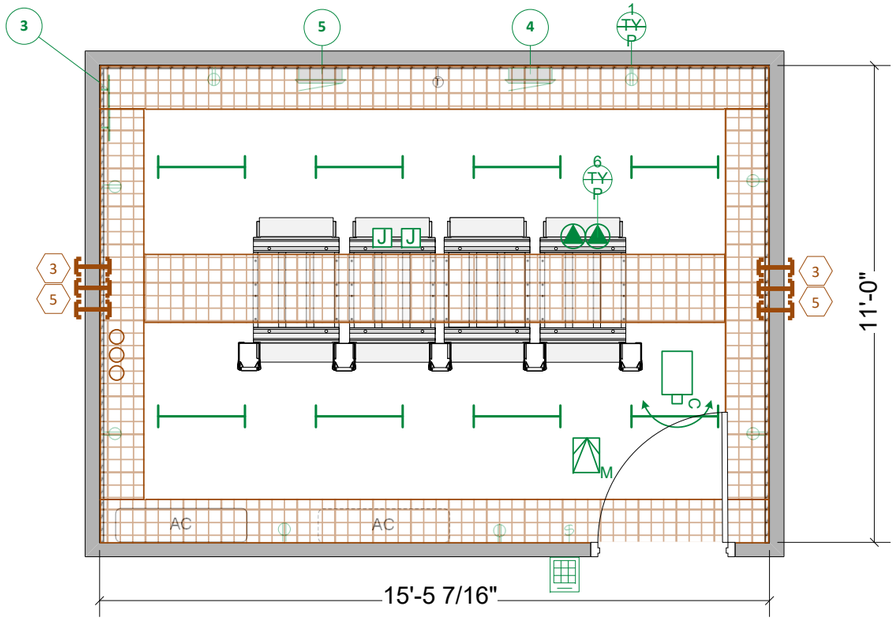
GENERIC FLOOR PLAN FOR TELECOMMUNICATIONS ROOMS (TWO RACK REQUIREMENT) (TELECOMMUNICATIONS SPACE SUPPORTING NETWORK DISTRIBUTION TO WORK AREA OUTLETS)

3



GENERIC FLOOR PLAN FOR TELECOMMUNICATIONS ROOMS (ONE RACK REQUIREMENT) (TELECOMMUNICATIONS SPACE SUPPORTING NETWORK DISTRIBUTION TO WORK AREA OUTLETS)

4



GENERIC FLOOR PLAN FOR HEALTH CARE FACILITY TELECOMMUNICATIONS ROOMS

2

NOTE:

THERE SHALL BE A MINIMUM OF ONE TELECOMMUNICATIONS ROOM (TR) PER FLOOR.

ADDITIONAL ROOMS SHOULD BE PROVIDED WHEN:

A) THE FLOOR AREA TO BE SERVED EXCEEDS 1000 M^2 (10,000 FT^2);
OR
B) THE HORIZONTAL DISTRIBUTION DISTANCE TO THE WORK AREA EXCEEDS 90 M (295 FT).

FLOOR SPACE REQUIREMENT:

1. *MINIMUM OF 80 SQ FT FOR A ONE RACK TR*
2. *ADD AN ADDITIONAL 20 SQ FT PER ADDITIONAL RACK*

TELECOMMUNICATION ROOM NOTES

1

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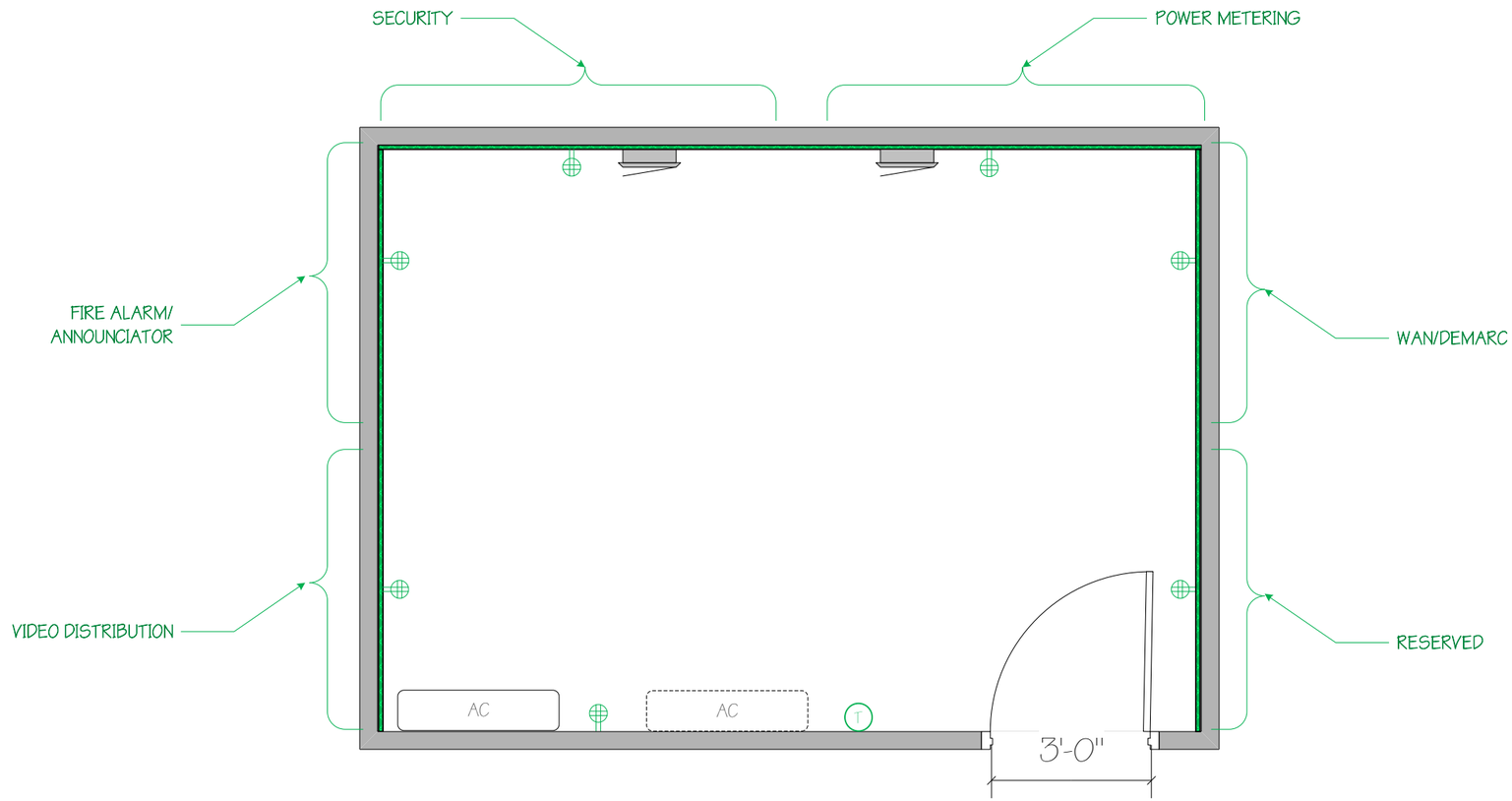
TELECOMMUNICATIONS ROOMS IN ADMINISTRATIVE AREAS



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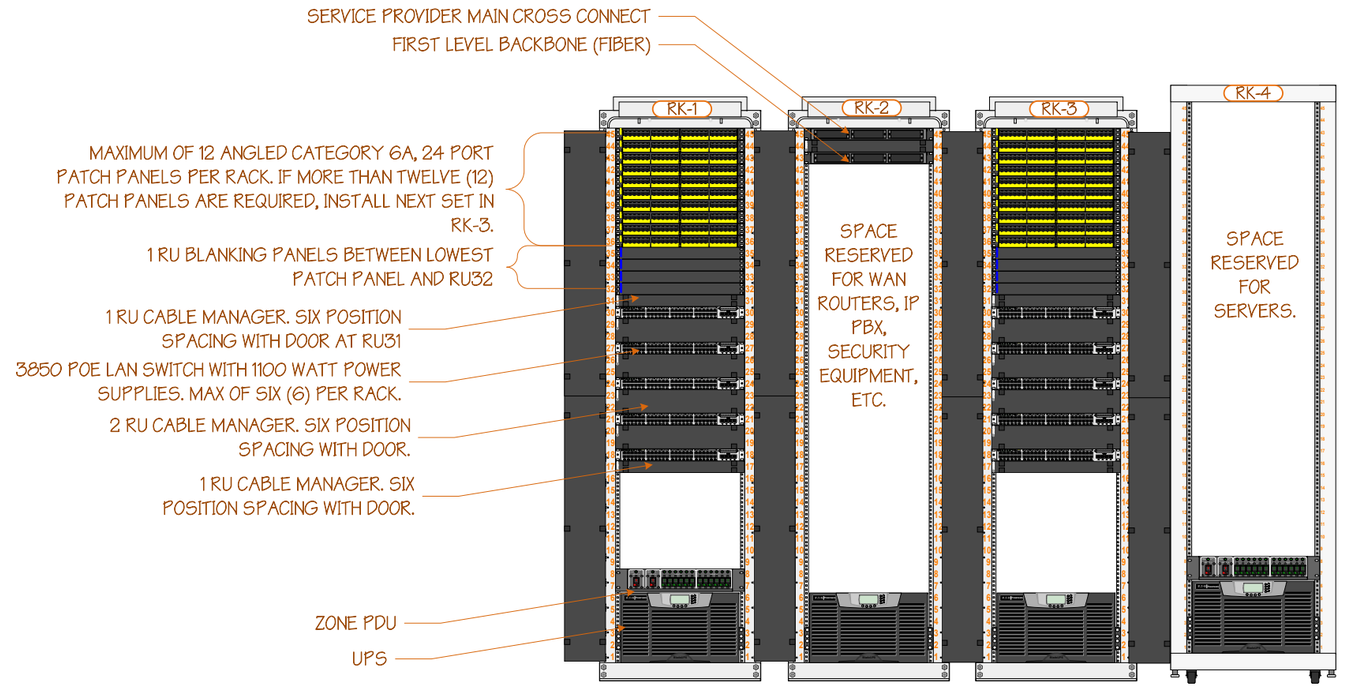
TYPICAL BACKBOARD
RESERVATIONS

SHEET: 7 OF 19



1 TYPICAL RACK ELEVATION FOR HEALTH CARE FACILITY TELECOMMUNICATIONS ROOMS

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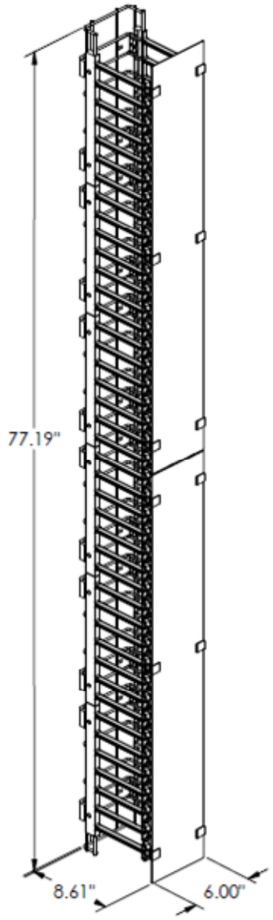
TYPICAL RACK ELEVATION

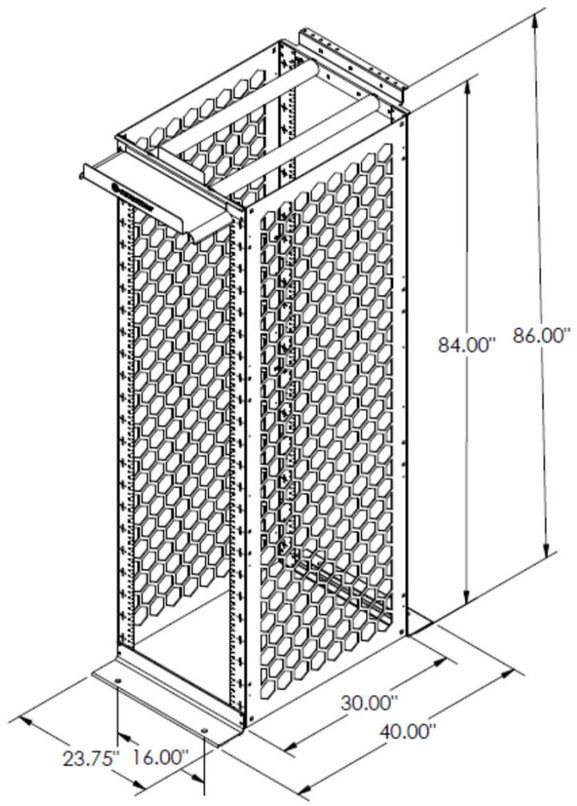


P/N: OR-MM20VMD706 (OR EQUIVALENT)

MM20 VERTICAL CABLE MANAGEMENT "CAGE", WITH DOOR, 6" X 8.61" X 7' , BLACK

CAPACITY: 350 CATEGORY 6 PATCH CORDS OR 245 CATEGORY 6A PATCH CORDS

3 6" WIDE VERTICAL CABLE MANAGEMENT

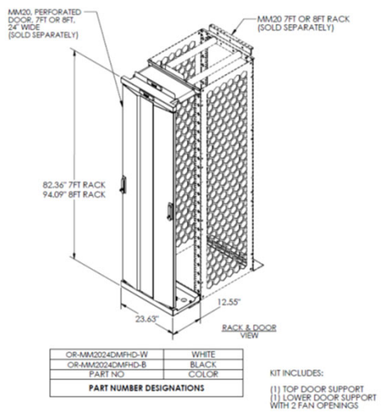


MIGHTY MO 20 CABLE MANAGEMENT RACK
30" CHANNEL DEPTH, 7' HIGH, WHITE FINISH OR EQUIVALENT

DIMENSIONS:
USABLE HEIGHT: 45RU
DEPTH (US): 30
HEIGHT (US): 7'
WIDTH (US): 23.75"
STATIC LOAD CAPACITY: 2000 LBS

SQUARE HOLE

2 TYPICAL RACK DIMENSIONS AND SPECIFICATIONS
NTS

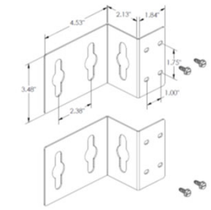


PART NO	COLOR
OR-MM2024DMFHD-W	WHITE
OR-MM2024DMFHD-B	BLACK
PART NO	COLOR

PART NUMBER DESIGNATIONS

KIT INCLUDES:
(1) TOP DOOR SUPPORT
(1) LOWER DOOR SUPPORT WITH 2 FAN OPENINGS

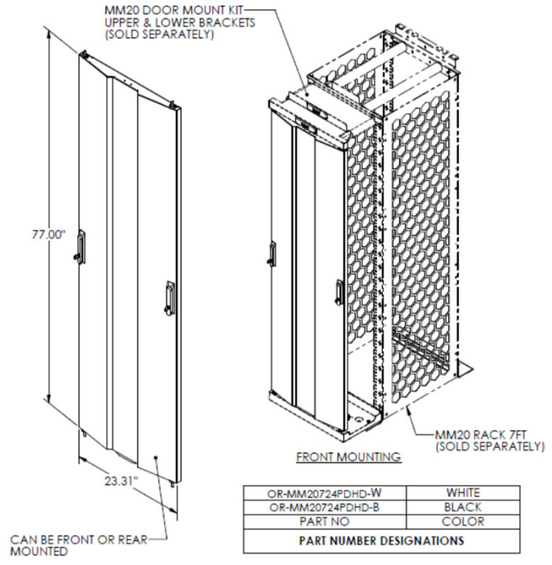
4 SECURITY DOOR FRONT MOUNTING HARDWARE (OR-MM2024DMFHD-W) OR EQUIVALENT



PDU MOUNTING BRACKET KIT
(TWO KITS PER RACK)
P/N: OR-MM20PDUMB1D2W-W
OR EQUIVALENT

6

5 SECURITY DOOR REAR MOUNTING HARDWARE (OR-MM2024DMRHD-W) OR EQUIVALENT



PART NO	COLOR
OR-MM20724PDHD-W	WHITE
OR-MM20724PDHD-B	BLACK
PART NO	COLOR

PART NUMBER DESIGNATIONS

1 FRONT AND REAR HEAVY DUTY PERFORATED SECURITY DOOR (OR-MM20724PDHD-W)

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SHEET TITLE

TYPICAL RACK DETAIL

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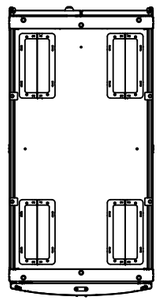
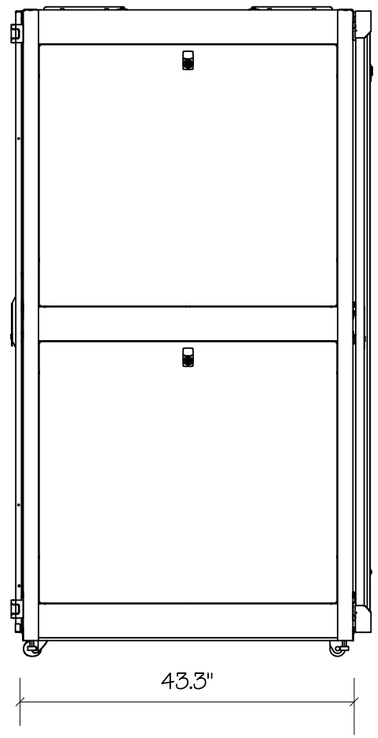


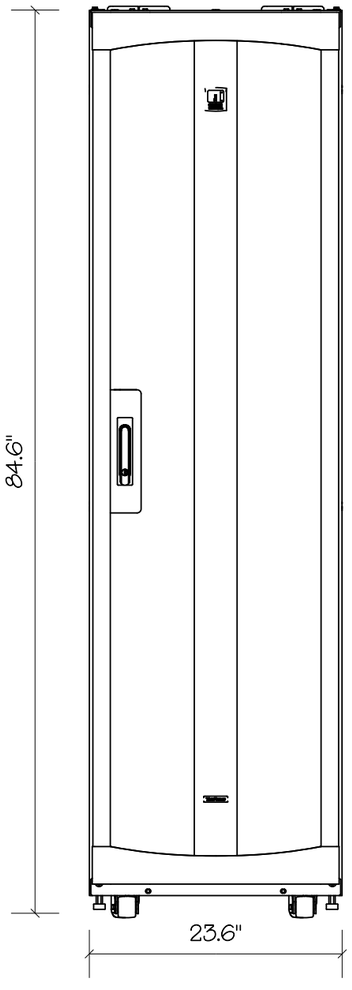
4 TYPICAL ENCLOSURE TOP VIEW WITH FOUR (4) BRUSHED GROMMET CABLE OPENINGS

NTS



3 TYPICAL ENCLOSURE SIDE VIEW

NTS



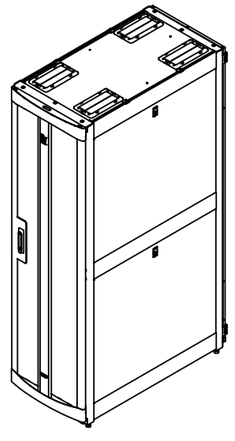
2 TYPICAL ENCLOSURE FRONT

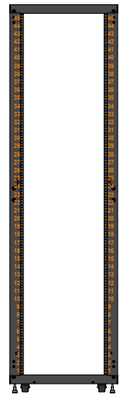
NTS

CP3210245 F-Series TeraFrame Gen 3 Cabinet System with accessories installed
Configuration includes the following components:

Item Number	Description (Qty)
FF1N-113C-E42-B	F-Series TeraFrame Gen 3 Cabinet System, 45 RMU, 84.6 in. (2149mm) H x 23.6" (600mm) W x 43.30" (1100mm) D Square-Punched Rails, 2-Pair, Single, Perforated Metal Front Door, Two Point, Keyed Swing Handle Lock, Double Perforated Metal Rear Door, Two Point, Keyed Swing Handle Latch, Server Top Panel, 2 Solid Side Panel, Glacier White, 6-Slide Frame
024-739003-E63	Frame, 6 Slide, 23.6" (600 mm) W x 43.3" (1100 mm) D x 45 RMU, Glacier White (1)
024-739060-E03	Door, TeraFrame, Front, Assembly, 23.6" (600 mm) W x 45 RMU, Glacier White (1)
024-739064-703	Lock Kit, 2-Point, Keyed, Front Door, 45 RMU (1)
024-739050-E03	Double Door Assembly, 23.6" (600 mm) W x 45 RMU, Glacier White (1)
024-739054-703	Lock Kit, 2-Point Latching, Keyed, Perforated Door, 45 RMU (1)
024-739140-E12	Top Panel, 2-Piece, Brush, 23.6" (600 mm) W x 43.3" (1100 mm) D, Glacier White
024-739046-E63	Side Panel, 6 SLIDE, 43.3" (1100 mm) D x 45 RMU, Glacier White (2)
024-739200-002	Kit,Common Parts Parts,Teraframe,UL,White (1)
024-739110-701	PDU Bracket, Assembly, Standard, 0.7" (17 mm) W x 3.9" (100 mm) D x 2.4" (60 mm), Black (1)
39110-C01	PDU Bracket, Assembly, Standard, 0.7" (17 mm) W x 3.9" (100 mm) D x 2.4" (60 mm), Black (1)
024-739240-003	Kit, Packaging, 600 W x 1075-1200D x 42U - 48U (1)
024-739029-001	Caster Kit, Two Swivel, Two Fixed, 1.6" (41 mm) W x 2" (51 mm) D x 2" (41 mm) H
39085-E03	Air Dam, 6 SLIDE, 23.6" (600 mm) W x 45 RMU, Glacier White (1)
39137-703	Baying Seal Kit, 45U (2)
39132-E00	Bottom Panel, With Brush, 23.6" (600 mm) W x 39.4" - 47.2" (1000 - 1200 mm) D, Glacier White (1)
31920-E03	Finger Cable Manager no Cover (2)
UL2416	This Cabinet and any included accessories are UL Listed under the NWIN category per the UL2416 Standard. UL file number E227626. Note, the UL Listing only applies to cabinets manufactured in the United States.

(VENDOR TO PROVIDE 45 RU OF PLENAFILL BLANKING PANEL PER ENCLOSURE)





1 TYPICAL ENCLOSURE SPECIFICATION

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SHEET TITLE

TYPICAL CABINET DETAIL

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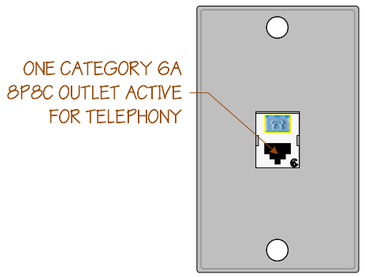
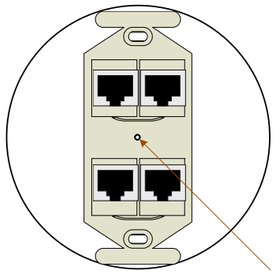


3 TYPICAL WALL MOUNT PHONE VOIP OUTLET



4 TYPICAL WORK FLOOR MOUNT OUTLET

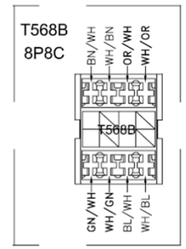
NOTES:

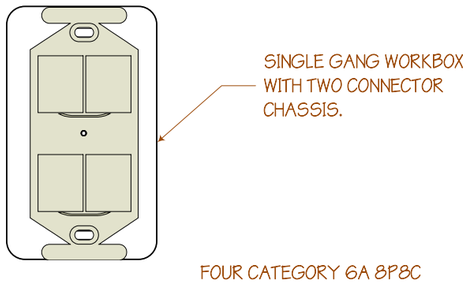
TYPICAL WORK AREA OUTLET FACEPLATE WILL BE INSTALLED WITH CATEGORY 6A COMPONENT-COMPLIANT 8P8C MEDIA INTERFACE CONNECTORS (RJ45). EACH CONNECTOR WILL BE TERMINATED TO HIGH QUALITY CATEGORY 6A HORIZONTAL CABLING WHICH WILL TERMINATE IN THE TELECOMMUNICATIONS ROOM AS SPECIFIED ELSEWHERE IN THIS DESIGN PACKAGE.
ALL HORIZONTAL UTP SHALL BE CATEGORY 6A AND TERMINATED TO T568B.

TYPICAL FACEPLATE WILL BE INSTALLED WITH TWO RJ45s. HIGH DENSITY FACEPLATES WILL BE ISNTALLED WITH FOUR RJ45s.

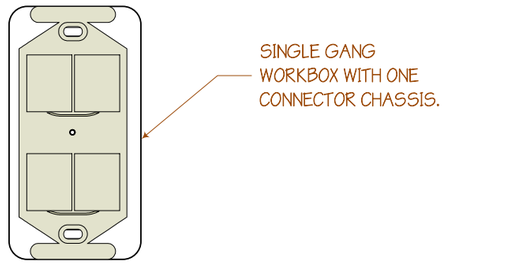
FACEPLATE MATERIAL AND COLOR DETERMINED BY OTHERS.

THIS SHEET DETAILS A GENERIC FACEPLATE SPECIFICATION.





2 TYPICAL HIGH DENSITY WALL MOUNTED WORK AREA OUTLET CONFIGURATION



1 STANDARD DENSITY WALL MOUNTED WORK AREA OUTLET CONFIGURATION

ALL LABELING SHALL BE ANSI/TIA/EIA/606C COMPLIANT. BLACK LETTERING ON WHITE FIELD. MACHINE PRINTED. FURTHER GUIDANCE ON ADMINISTRATION MAY BE SPECIFIED IN OTHER SECTIONS OF THIS DESIGN PACKAGE.

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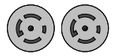
TYPICAL WORK AREA OUTLETS

30 Amp 3-Phase PDU BASE UNIT – FRONT
(ZONIT ZON-C-ZPDU1)
REQUIRES TWO 30 AMP 3-PHASE (WYE) CIRCUITS
WITH L21-30R RECEPTACLES
(OR EQUIVALENT)

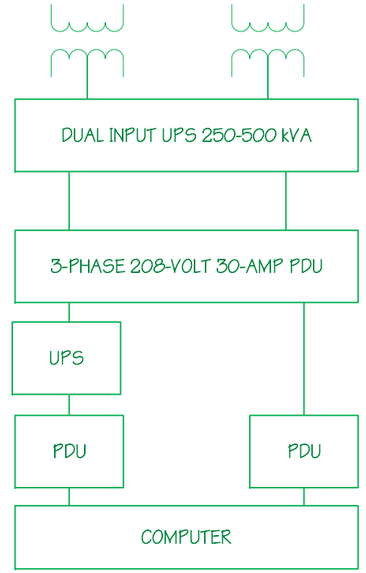


PDU INPUTS REQUIRE
TWO L21-30Rs

30 Amp 3-Phase PDU BASE UNIT – REAR
FOUR (4) L21-20R
SIX (6) NEMA 5-15/20 T-SLOT
(OR EQUIVALENT)

NOTE: THE CORRECT SPECIFICATION FOR THE PDU IS TO FEED IT WITH A TWO POWER SOURCES. POWER INPUTS SHOULD ORIGINATE FROM TWO INDEPENDENT POWER SOURCES. EACH INPUT WILL USE IDENTICAL SPECS: WYE (5-WIRE) CONFIGURED, 208V, 30A, THREE-PHASE, TERMINATING IN A NEMA L21-30R LOCKING RECEPTACLE. THE NEUTRAL CONDUCTOR SHOULD BE UPSIZED ONE GAUGE TO MATCH THE UPSIZED NEUTRAL CONDUCTORS IN THE PDU UNITS. THE NEUTRAL "UPSIZING" SHOULD IDEALLY BE CONTINUED IN THE POWER DISTRIBUTION SYSTEM BACK TO THE UPS OR TRANSFORMER WINDING POLE. THIS INCREASES THE EFFICIENCY OF THE POWER DISTRIBUTION SYSTEM AND SUPPRESSES HARMONICS IN THE SYSTEM.

5 TYPICAL ZONE PDU UNIT WITH REAR DETAIL AND ADAPTORS REQUIRED FOR VERTICAL PDU



2 NOTIONAL POWER SCHEMATIC FOR INFORMATION ONLY – NOT FOR CONSTRUCTION

APC AP7900 RACK PDU, SWITCHED, 1U, 15A, 100/120V, (8)5-15 APC
SWITCHED RACK PDU , INPUT: 120V (OR EQUIVALENT)

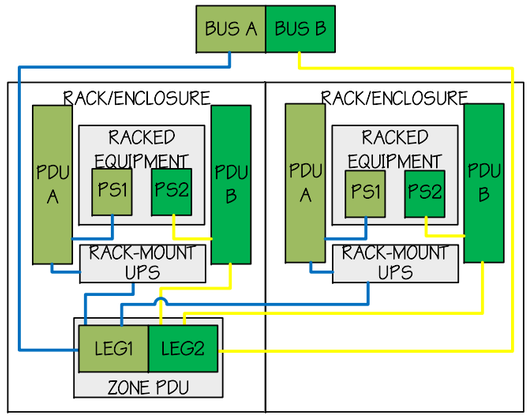
4 110 Volt PDU FOR PLACEMENT AS NEEDED

APC AP8861 RPDU OR EQUIVALENT; RACK PDU 2G, METERED; L21-20 PLUG;
THREE PHASE; 120/208V INPUT; 20A; ZERO U,
5.7 KW, 208V, (36) C13 & (6) C19 & (2) 5-20 OUTLETS; FOR USE IN
TELECOMMUNCIATION ROOMS AND LOCATIONS WITH LEGACY 110V ONLY
EQUIPMENT

REQUIRES ONE (1) L21-20R

3 208 VOLT PDU FOR EQUIPMENT POWER – TO BE ENERGIZED BY ZONE PDU

NOTE: THIS DESIGN PROVIDES DIVERSE POWER INPUTS FOR ACTIVE EQUIPMENT BY SPLITTING THE SOURCE POWER ACROSS TWO INPUTS ON THE ZONE PDU. EACH INPUT WILL SUPPORT TWO EQUIPMENT-FACING PDUs. EACH SERVER CABINET WILL CONTAIN A MINIMUM OF TWO EQUIPMENT-FACING PDUs – EACH WILL BE ENERGIZED BY SEPARATE ZONE PDU INPUTS.



ONE ZONE PDU FOR TWO
SERVER CABINETS/
NETWORK RACKS

1 POWER SCHEMATIC FOR POWER RACK- LEVEL REDUNDANCY

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TYPICAL RACK POWER DISTRIBUTION

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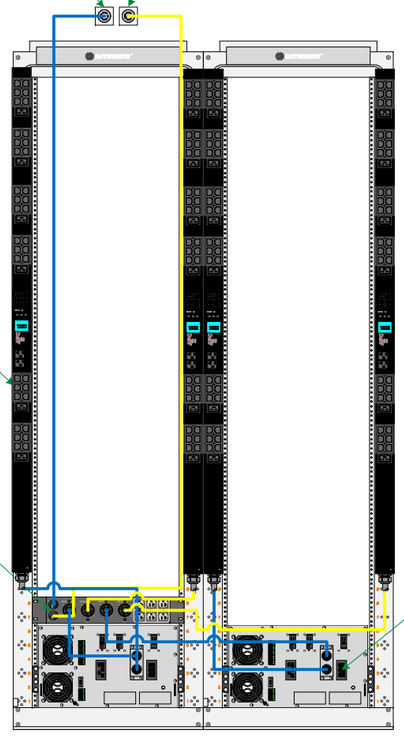
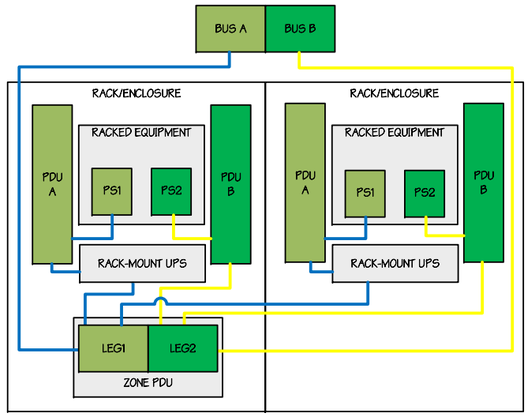
L21-30P SIDE A
REQUIRES A 208V, 30A, THREE-PHASE CIRCUIT, TERMINATING IN A NEMA L21-30R LOCKING RECEPTACLE.

L21-30P SIDE B
REQUIRES A 208V, 30A, THREE-PHASE CIRCUIT, TERMINATING IN A NEMA L21-30R LOCKING RECEPTACLE.

ZONE PDU
30A 3-PHASE ZONE PDU BASE UNIT – REQUIRES TWO 30A 3-PHASE (WYE) CIRCUITS WITH L21-30R RECEPTACLES

ZONE PDU
30A 3-PHASE ZONE PDU BASE UNIT – REQUIRES TWO 30A 3-PHASE (WYE) CIRCUITS WITH L21-30R RECEPTACLES





RACK-MOUNTED 5 KW, 208V UNINTERRUPTIBLE POWER SUPPLY (UPS) WITH NEMA 20A L21-20P INPUT AND L21-20R OUTPUT

1 POWER SCHEMATIC RACKS – REAR VIEW

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POWER DISTRIBUTION

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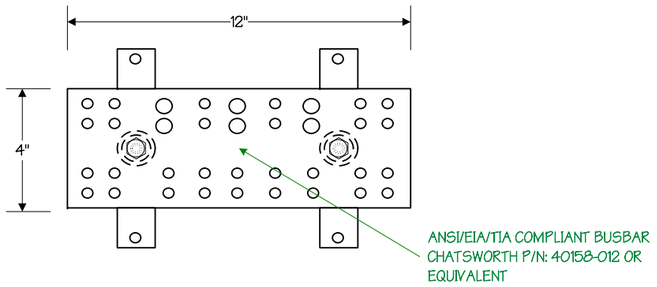
NOTES: ALL GROUNDING SHALL BE DONE IN ACCORDANCE WITH ANSI/TIA-607-D "COMMERCIAL BUILDING GROUNDING (EARTHING) AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS", NFPA 70, AND IN COMPLIANCE WITH LOCAL CODES.

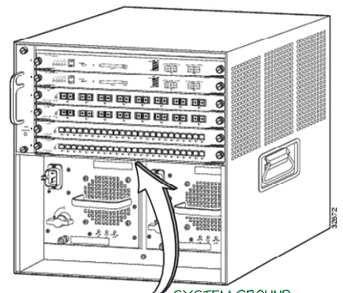
ALL EQUIPMENT SHALL BE GROUNDED PER MANUFACTURER'S INSTRUCTIONS.



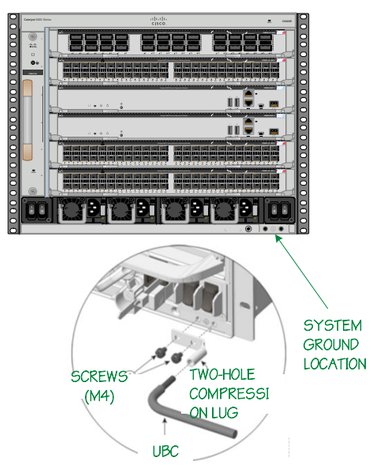
3 TELECOMMUNICATIONS SECONDARY BONDING BUSBAR (SBB)

NETWORK EQUIPMENT MUST BE GROUNDED. NEVER DEFEAT THE GROUND CONDUCTOR OR OPERATE THE EQUIPMENT IN THE ABSENCE OF A SUITABLY INSTALLED GROUND CONDUCTOR. THESE DEVICES WILL BE BONDED TO THE RACK BONDING BUSBAR (RBB) IN THE SAME RACK. EACH DEVICE WILL HAVE A DEDICATED UNIT BONDING CONDUCTOR (UBC). THE UBC WILL NOT BE SHARED.

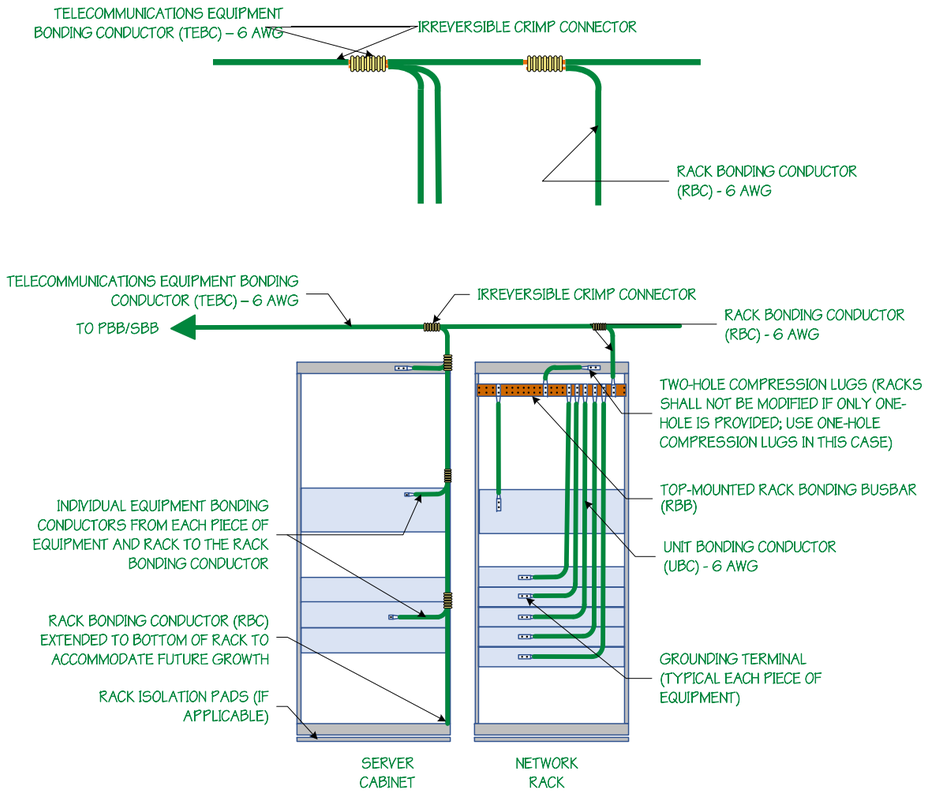
CISCO 6509

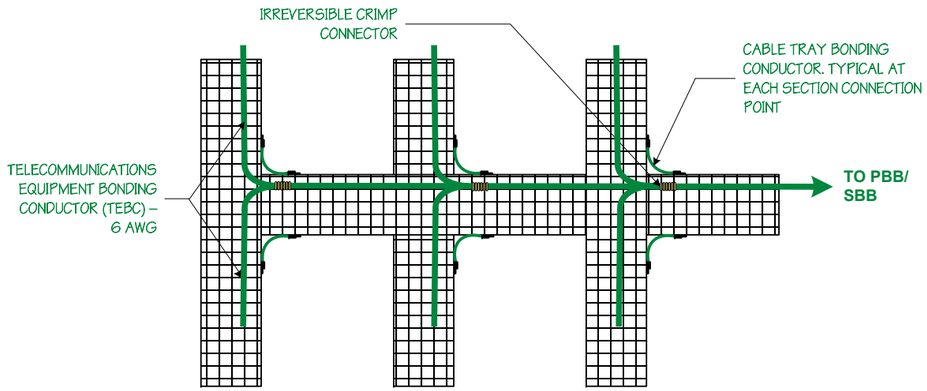


CISCO 9606



2 EARTHING EXAMPLE (CISCO 6509/9606)
Ref: CISCO PRODUCT INSTALLATION GUIDE





1 PATHWAY, RACK, BONDING CONDUCTOR JOIN REQUIREMENTS

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BONDING

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- RACK = RK1 THROUGH RK4. LABELED LEFT TO RIGHT WHEN LOOKING AT THE FRONT OF THE RACK. APPLIES TO RACKS AND CABINETS.
- UTP PATCH PANEL = CPL-RACK NAME-01 THROUGH 45. EXAMPLE: CPL-RK1-01 FOR THE PANEL LOCATED IN RACK UNIT #1 IN RACK #1.
- UTP PATCH PANEL POSITION = PANEL ID.01 THROUGH 24. EXAMPLE CPL-RK1-01.01
- FIBER DISTRIBUTION PANEL = FDP-RACK NAME-01 THROUGH 45. EXAMPLE: FDP-RK1-01 FOR THE PANEL IN RACK UNIT #1 RACK #1.
- FIBER DISTRIBUTION CASSETTE = FDC-RACK NAME-01 THROUGH 45.1 THROUGH 3. EXAMPLE: FDC-RK1-01.1 FOR THE CASSETTE IN POSITION #1 IN PANEL LOCATED IN RACK UNIT #1 IN RACK #1.
- UTP PATCH CORDS = CCA[SOURCE.PORT]/[DESTINATION.PORT]. EXAMPLE CCA[CPL-RK1-01.01]/[CPL-RK2-02.02] AS A PATCH CORD CONNECTING PORT #1 IN THE COPPER PATCH PANEL LOCATED IN RACK #1, RACK UNIT #1 WITH PORT 2 LOCATED IN RACK 2, RACK UNIT #2.
- FIBER PATCH CORDS = FCA[SOURCE.PORT]/[DESTINATION.PORT]. EXAMPLE FCA[FDP-RK1-01.01.01]/[FDP-RK2-02.02.02] AS A PATCH CORD CONNECTING PORT #1 IN THE FIBER PATCH PANEL LOCATED IN RACK #1, RACK UNIT #1 WITH PORT 2 LOCATED IN RACK 2, RACK UNIT #2.
- FACEPLATE = TR ROOM NUMBER-PATCH PANEL ID.PORT. EXAMPLE. 1A-CPL-RK1-01.1 FOR TELECOMMUNICATIONS ROOM 1, UTP PANEL IN RACK #1, RACK UNIT #1, PORT POSITION #1.

1 EXAMPLE INSIDE PLANT ADMINISTRATION

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CBOC ITS NAMING STANDARDS

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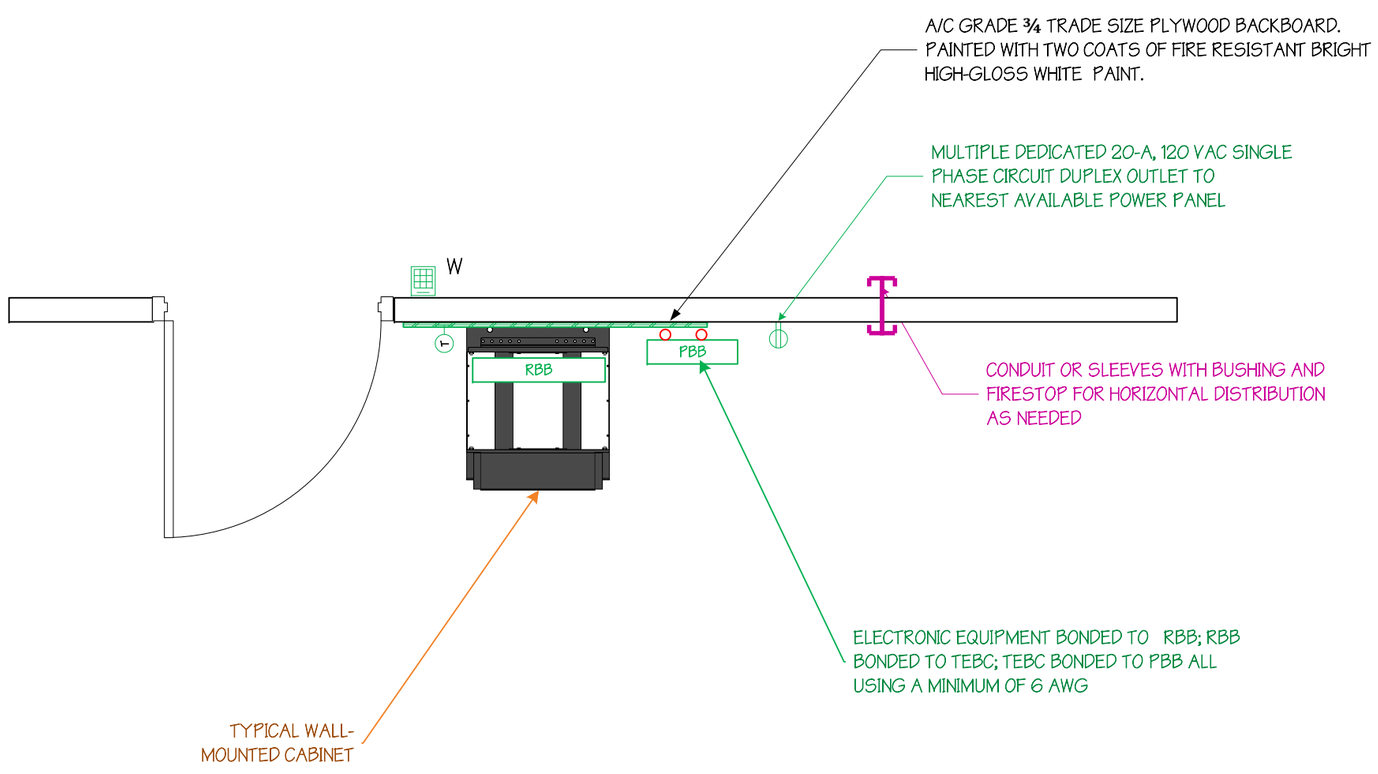

1 TYPICAL TOP-DOWN VIEW
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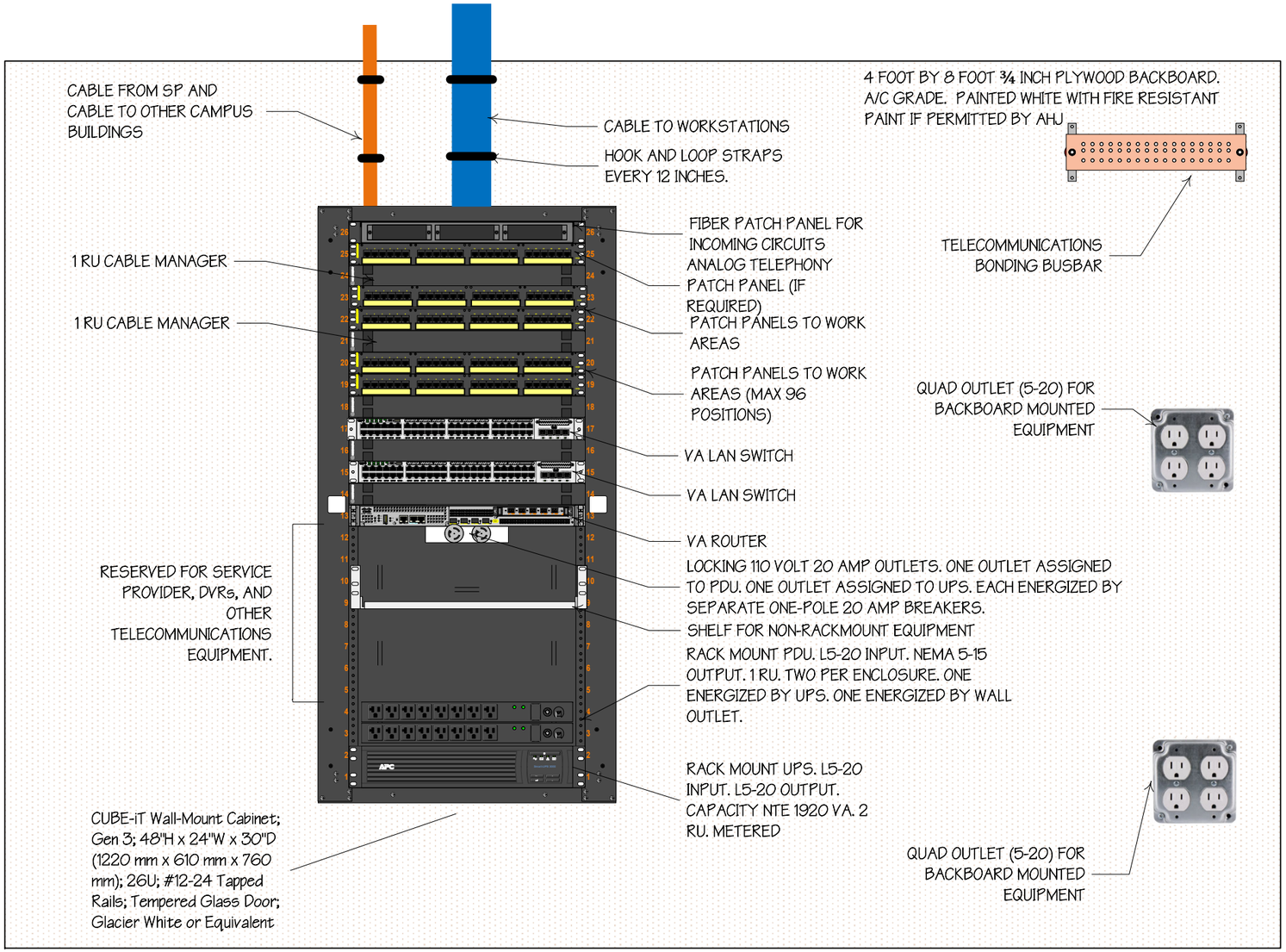
SHEET TITLE

TELECOMMUNICATIONS ENCLOSURE (TOP VIEW)



1 ELEVATION FOR TELECOMMUNICATIONS ENCLOSURE

Department of Veterans Affairs

IT Operations and Services Solution Delivery

EDCT

Enterprise Data Center and Infrastructure Engineering

PROJECT:

CBOC INFORMATION TRANSPORT SYSTEMS SPECIFICATIONS

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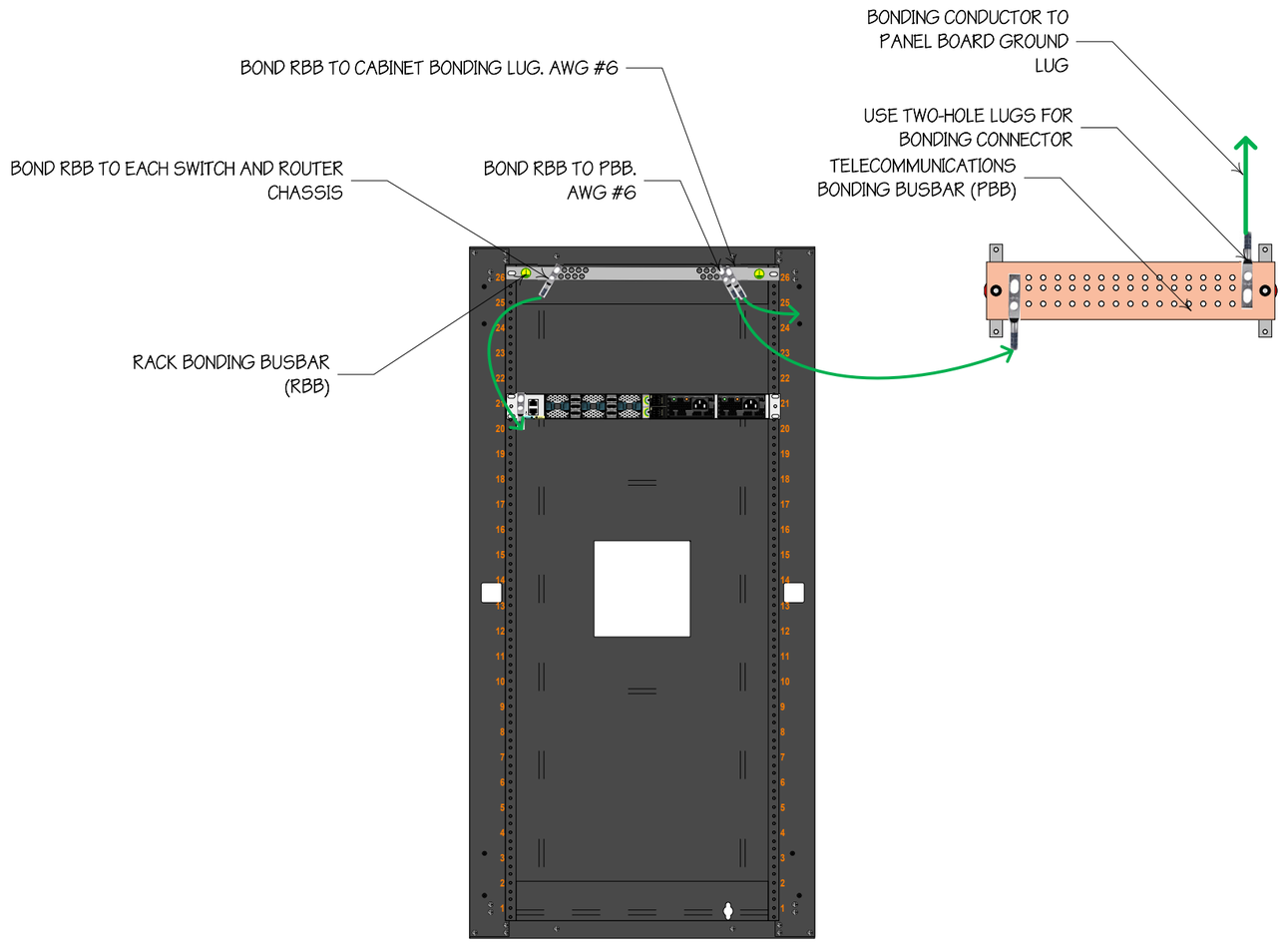
TELECOMMUNICATIONS ENCLOSURE (ELEVATION VIEW)



1 BONDING TOPOLOGY FOR TELECOMMUNICATIONS ENCLOSURES

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TELECOMMUNICATIONS ENCLOSURE (ELEVATION)

SPECIFICATIONS

DESCRIPTION:
Wall-mount enclosure with lockable front door and swing-out rear access to equipment. Tempered glass front door.

PRIMARY:
CUBE-iT Wall-Mount Cabinet; Gen 3; 48"H x 24"W x 30"D (1220 mm x 610 mm x 760 mm); 26U; #12-24 Tapped Rails; Tempered Glass Door; Glacier White. 12419-E48 CUBE-It or Equivalent

SECONDARY:
CUBE-iT Wall-Mount Cabinet; Gen 3; 24"H x 24"W x 30"D (610 mm x 610 mm x 760 mm); 12U; #12-24 Tapped Rails; Tempered Glass Door; Black. 12419-724 or Equivalent.

USE:
For indoor use only, in environmentally controlled areas; may not be used outdoors, in harsh environments, or in air-handling spaces
SIZE:
- Height: 48" (1220 mm)
- Width: 24" (610 mm); 19" EIA rack-mount
- Depth: 30" (760 mm)

INTERIOR:
- Height: 26U
- Width: 19" EIA rack-mount
- Threaded #12-24 equipment mounting holes
- 19"W, EIA-310-D compliant
- Fan assemblies with filter kits

10 SPECIFICATIONS

Part Number	Input			Output		Dimension - in (mm)		
	Amp	kW	Plug	Breakers	Outlets	H	W	D
110-125 Volt, Single-Phase Power Strip								
12820-701	15	1.4	NEMA 5-15P	1 x 20A	(8) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
12820-702	15	1.4	NEMA L5-15P	1 x 20A	(8) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
12820-705	20	1.9	NEMA 5-20P	1 x 20A	(8) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
12820-706	20	1.9	NEMA L5-20P	1 x 20A	(8) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
110-125 Volt, Single-Phase Power Strip, Surge-Protected								
12820-703	15	1.4	NEMA 5-15P	1 x 20A	(6) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
12820-704	15	1.4	NEMA L5-15P	1 x 20A	(6) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
12820-707	20	1.9	NEMA 5-20P	1 x 20A	(6) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)
12820-708	20	1.9	NEMA L5-20P	1 x 20A	(6) 5-20R	19.2 (488)	1.8 (44)	2.7 (68)

6 POWER STRIP (TWO PER CABINET)

Cable Port Brush Kit for CUBE-iT Wall-Mount Cabinet
- Optional cover when rectangular knockout on the rear panel is removed
- Seals opening around cables with brush seal
- Sold in pairs

Part Number	Description	Shipping Weight lb (kg)
25190-000	0.8"H x 10.6"W x 2.9"D (20 mm x 268 mm x 74 mm)	2 (0.9)

5 BRUSH KIT (ONE PER CABINET)

Equipment Mounting Rail Kit for CUBE-iT Wall-Mount Cabinet
- Use with equipment that needs front and rear support
- Sold in pairs
- Aluminum material

Part Number	Description	Shipping Weight lb (kg)
12787-524	12U; For 24"H (610 mm) cabinet	4 (1.8)
12787-536	19U; For 36"H (910 mm) cabinet	6 (2.7)
12787-548	26U; For 48"H (1220 mm) cabinet	8 (3.6)

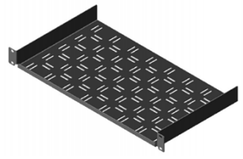
9 FRONT AND REAR RAIL KIT

Low-Decibel Dual-Fan and Filter Kit for CUBE-iT Wall-Mount Cabinet
- Pressurizes interior of the cabinet, forcing warm air out of open vents
- Assembly includes 2 fans and 2 filters
- Noise Level: 31 dB (measured at 3' (1 m) distance)
- Recommended placement on bottom right and left sides of the cabinet
- Airflow: 120 CFM (204 CMH)
- 50/16 Hz
- 6'L (1.8 m) NEMA 5-15P/6-15P Power Cord

Part Number	Description	Shipping Weight lb (kg)
40975-001	115 Volt, 5-15P power cord	4 (1.8)
40975-002	230 Volt, 6-15P Power cord	4 (1.8)

8 FAN KIT QTY 1 PER CABINET

- For use with small equipment such as modems, routers and fiber modules in 19" EIA racks
- 1U; Includes multiples tie-down points
- Supports up to 20 lb (9.1 kg) of equipment



4 SHELF (TWO PER CABINET)

Vertical Cabling Section for CUBE-iT Wall-Mount Cabinet
- Attaches to the outside edge of equipment mounting rails
- 4U height; openings align with rack-mount unit spaces on equipment mounting rails
- Sold in pairs
- Order additional kits as-needed per cable management requirements

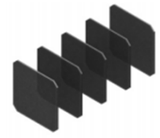
Part Number	Description	Shipping Weight lb (kg)
40970-704	4U, 7"H x 0.5"D (178 mm x 13 mm)	3 (1.4)
40970-707	7U, 12.3"H x 0.5"D (311 mm x 13 mm)	3 (1.4)
40970-711	11U, 19.3"H x 0.5"D (489 mm x 13 mm)	4 (1.8)

Color is black.

3 VERTICAL CABLE MANAGEMENT. TWO KITS FOR PRIMARY. ONE KIT FOR SECONDARY.

Replacement Filter Kit for CUBE-iT Wall-Mount Cabinet
- Compatible with Low-Decibel Dual-Fan and Standard Fan kits

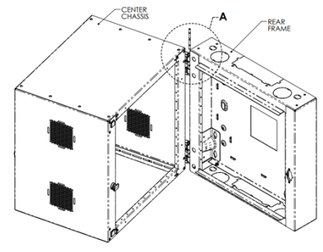
Part Number	Description	Shipping Weight lb (kg)
40973-001	Pack of 5	2 (0.9)



LED Light Kit for CUBE-iT Cabinets
- Attaches to the bottom, top or side of CUBE-iT Cabinets
- Toggle switch, 4W LED light
- Detachable, 120 VAC with NEMA 1-15P Power Cord

Part Number	Description	Shipping Weight lb (kg)
12803-701	LED Light Kit, 4W, 120 Vac	2 (0.9)

7 FAN FILTER KIT AND LIGHT KIT (ONE PER CABINET).



LOAD CAPACITY (per UL2416): 300 lb (163kg)

2 REAR HINGE AND PANEL

Ground Jumpers
- Provide common bonding from equipment rack or cabinet to halo conductor
- Available individually or in packages of 10
- Constructed of UL Listed components

Part Number	Description	Shipping Weight lb (kg)
40159-009	9' (2.7 m) Ground Jumper, 1 Each	2 (0.9)
40159-019	9' (2.7 m) Ground Jumper, 10 Each	20 (1.9)

1 REQUIRED GROUND JUMPERS

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SHEET: 19 OF 19