

VA



U.S. Department of Veterans Affairs

Office of Information and Technology
IT Operations and Services
Solution Delivery

CFM/OIT DESIGN GUIDE TEMPLATES FOR CRITICAL TELECOMMUNICATIONS SPACES IN CLINICAL AND NON-CLINICAL ENVIRONMENTS

DEVELOPED BY:
DATA CENTER AND INFRASTRUCTURE ENGINEERING

Department of Veterans Affairs



IT Operations and Services
Solution Delivery



EDCT

Enterprise Data Center Engineering

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Michael Julian, RCDD

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Cover

Cover

SHEET: 1 OF 32

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Revision Sheet

Revision Sheet

SHEET: 2 OF 32

1

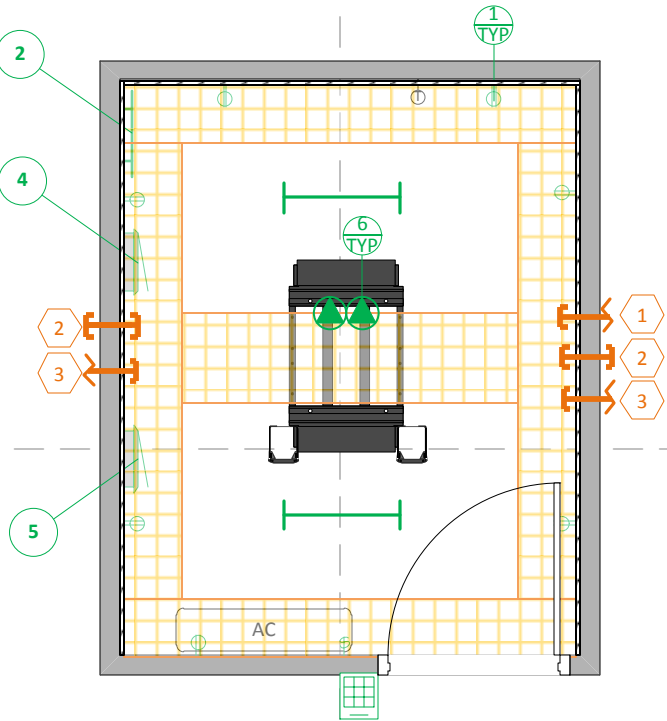
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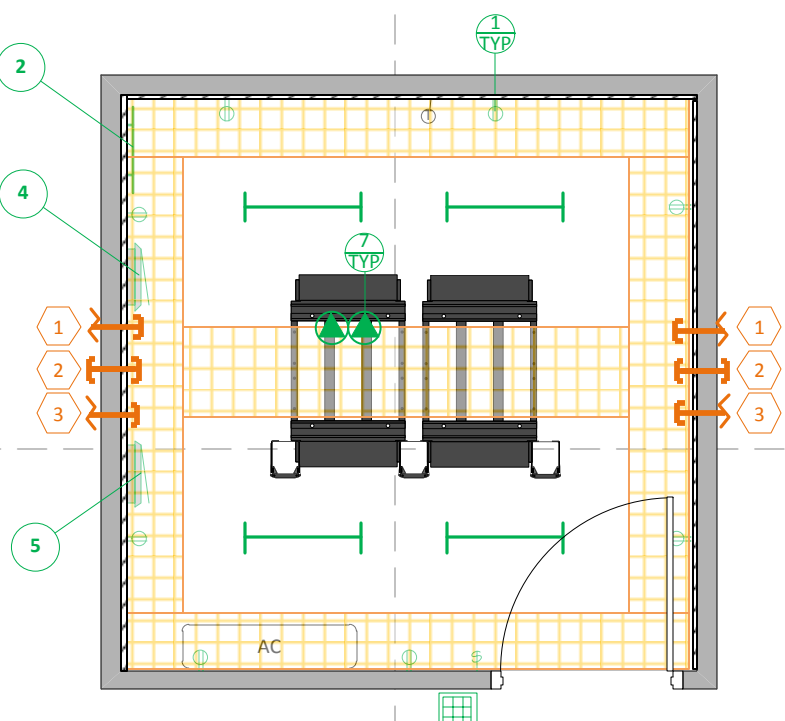
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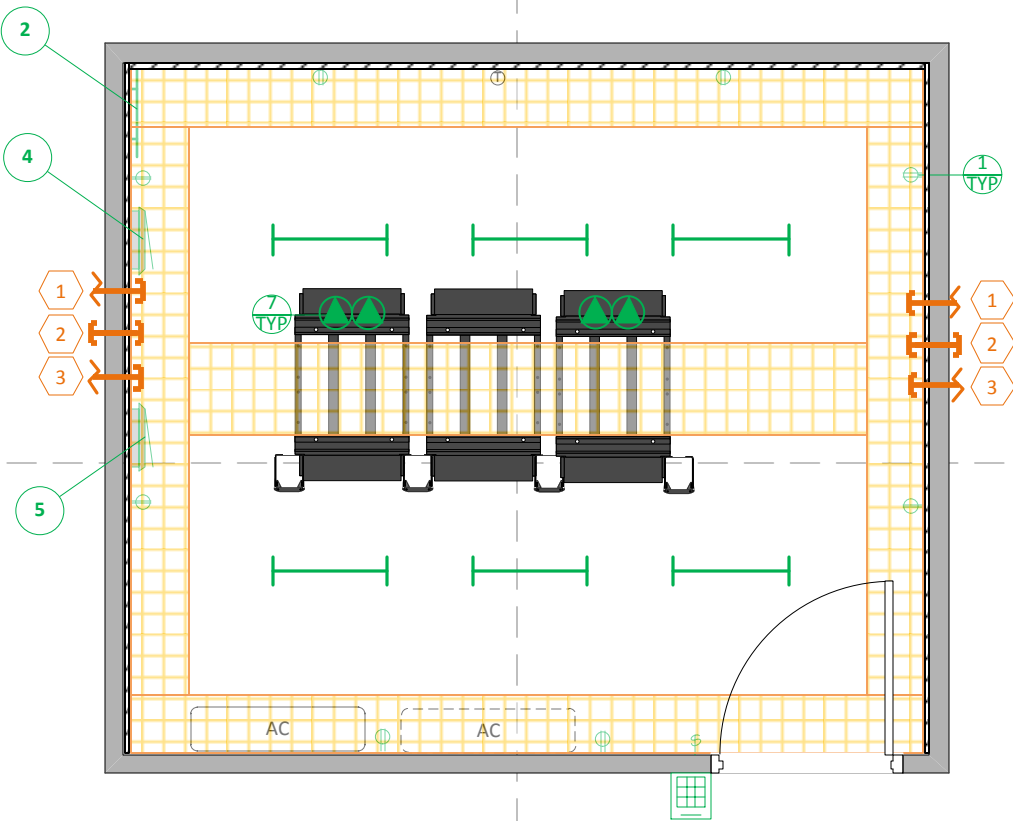
4 GENERIC FLOOR PLAN FOR ENTRANCE ROOM (ONE SERVICE PROVIDER)



3 GENERIC FLOOR PLAN FOR ENTRANCE ROOM (TWO SERVICE PROVIDERS)

B

A



2 GENERIC FLOOR PLAN FOR HEALTHCARE ENTRANCE ROOM

NOTE:

THERE SHALL BE A MINIMUM OF ONE ENTRANCE ROOM PER BUILDING.
A TELECOMMUNICATIONS ROOM OR EQUIPMENT ROOM (DATA CENTER) CAN SERVE AS AN ENTRANCE ROOM

WALL SPACE REQUIREMENT

REQUIRED TERMINATION WALL SPACE FOR AN ENTRANCE ROOM IN A TR OR ER PER THE CHART BELOW:

GROSS FLOOR SPACE SERVED (FT ²)	WALL LENGTH FOR ENTRANCE FACILITY TERMINATION
<10,000 FT ²	39"
<20,000 FT ²	42"
<40,000 FT ²	68"
<50,000 FT ²	90"
<60,000 FT ²	96"
<80,000 FT ²	120"
<100,000 FT ²	144"

FLOOR SPACE REQUIREMENT

ADDITIONAL FLOOR SPACE SHOULD BE PROVIDED FOR FACILITIES WITH GROSS SQUARE FOOTAGE PER THE CHART BELOW:

GROSS FLOOR SPACE SERVED (FT ²)	ENTRANCE FACILITY SIZE ALLOCATION
<200,000 FT ²	10'X10'
<400,000 FT ²	12'X13'
<500,000 FT ²	12'X15.5'
<600,000 FT ²	12'X18.5'
<800,000 FT ²	12'X22.5'
<1,000,000 FT ²	12'X27.5'

HEALTH CARE FACILITY ENTRANCE ROOMS SHALL BE 170 SQ FT

1 TELECOMMUNICATION ENTRANCE ROOM NOTES



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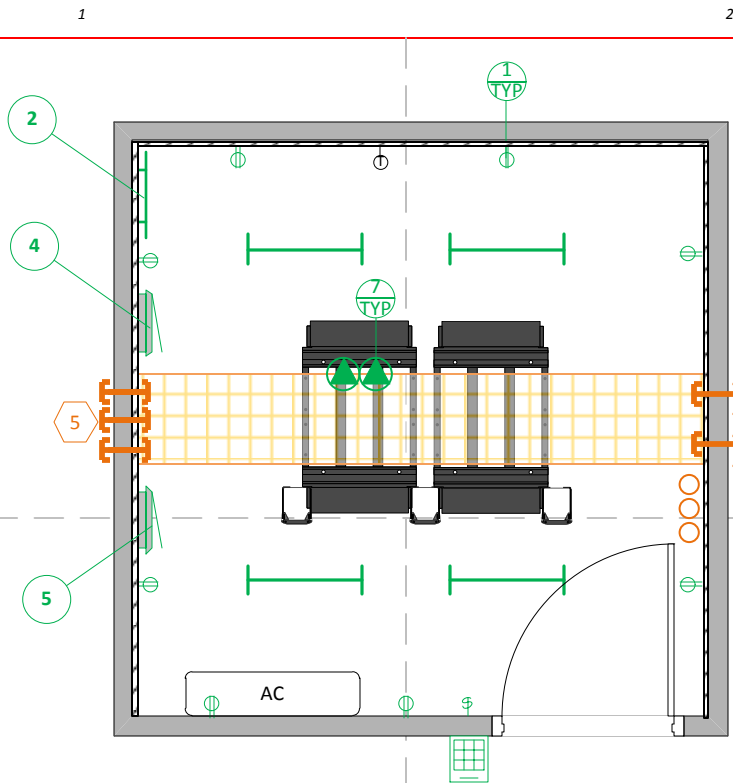
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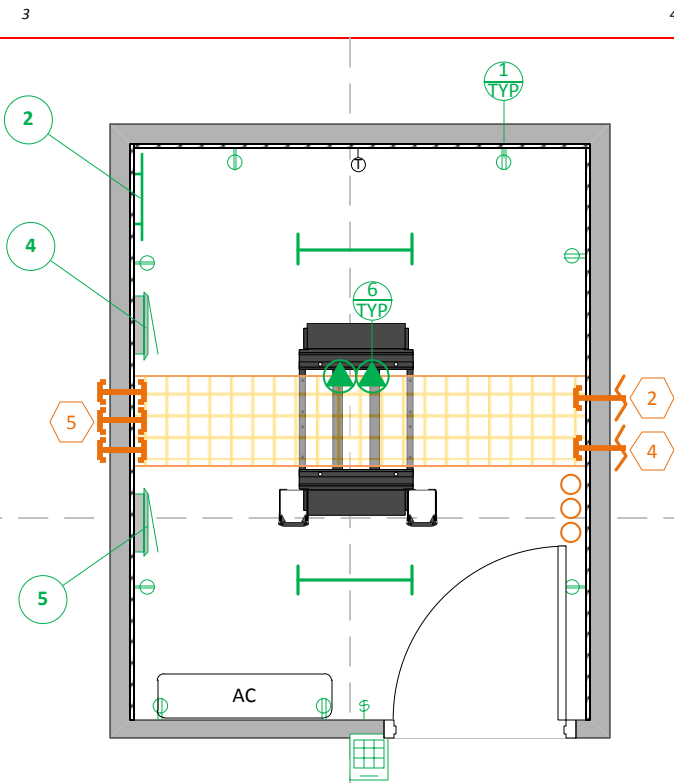
Telecommunication
Entrance Rooms

Telecommunication Entrance
Rooms

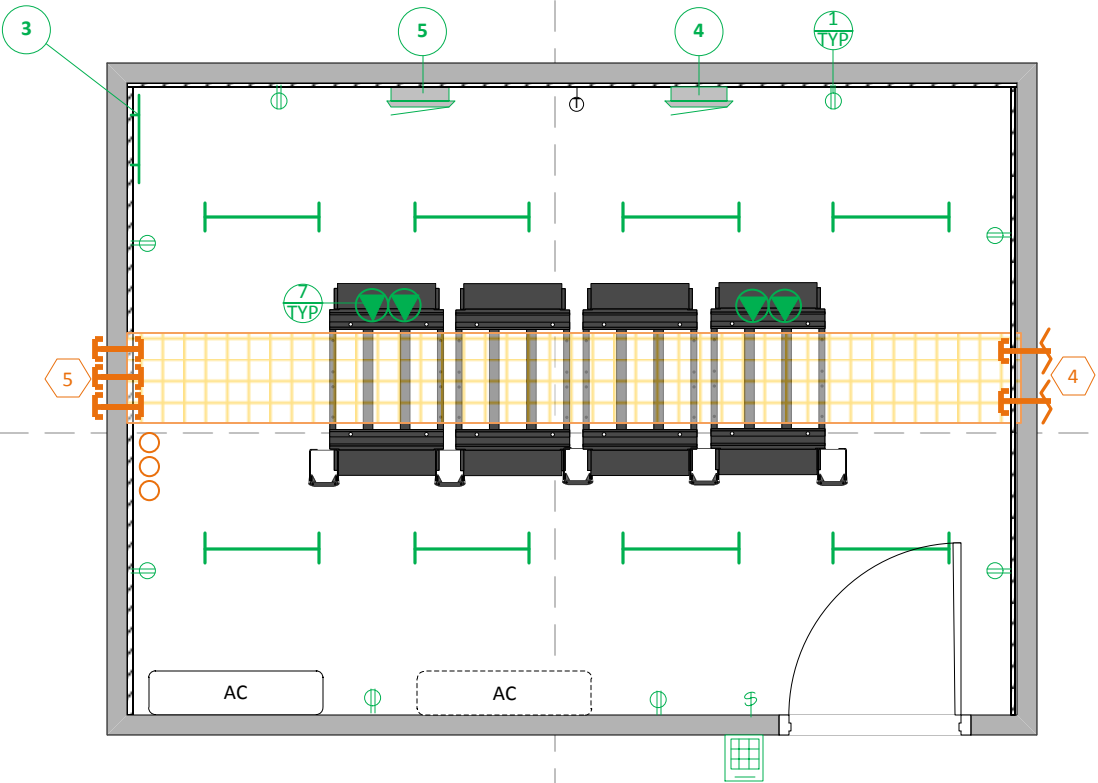
SHEET: 4 OF 32



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



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



GENERIC FLOOR PLAN FOR HEALTH CARE FACILITY TELECOMMUNICATIONS ROOMS

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).

FLOOR SPACE REQUIREMENT:

1. MINIMUM OF 80 SQ FT FOR A 1 RACK TR
2. ADD AN ADDITIONAL 20 SQ FT PER ADDITIONAL RACK
3. MINIMUM OF 170 SQ FT FOR A HEALTH CARE FACILITY TR

TELECOMMUNICATION ROOM NOTES



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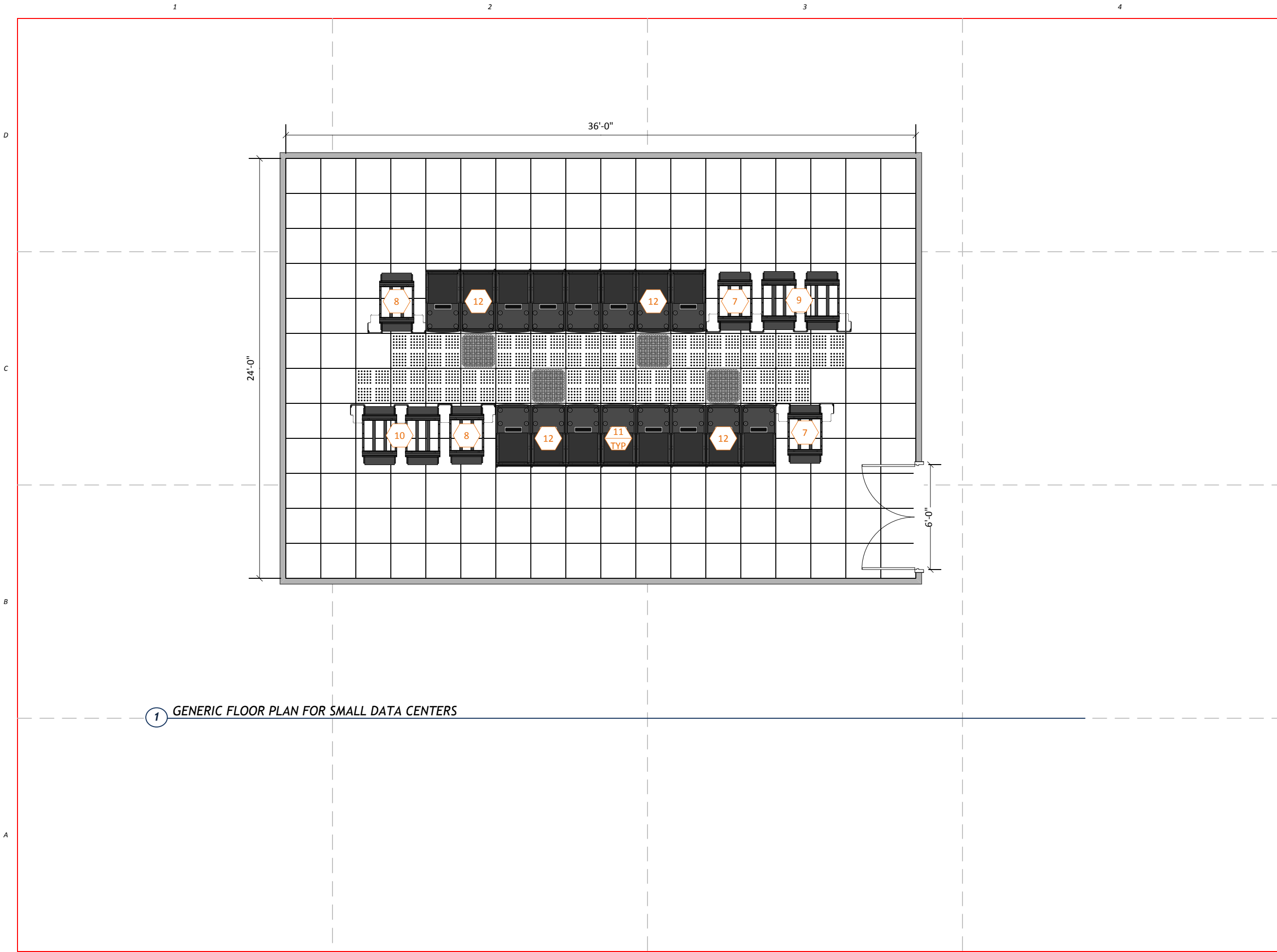
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Telecommunications Rooms



1 GENERIC FLOOR PLAN FOR SMALL DATA CENTERS

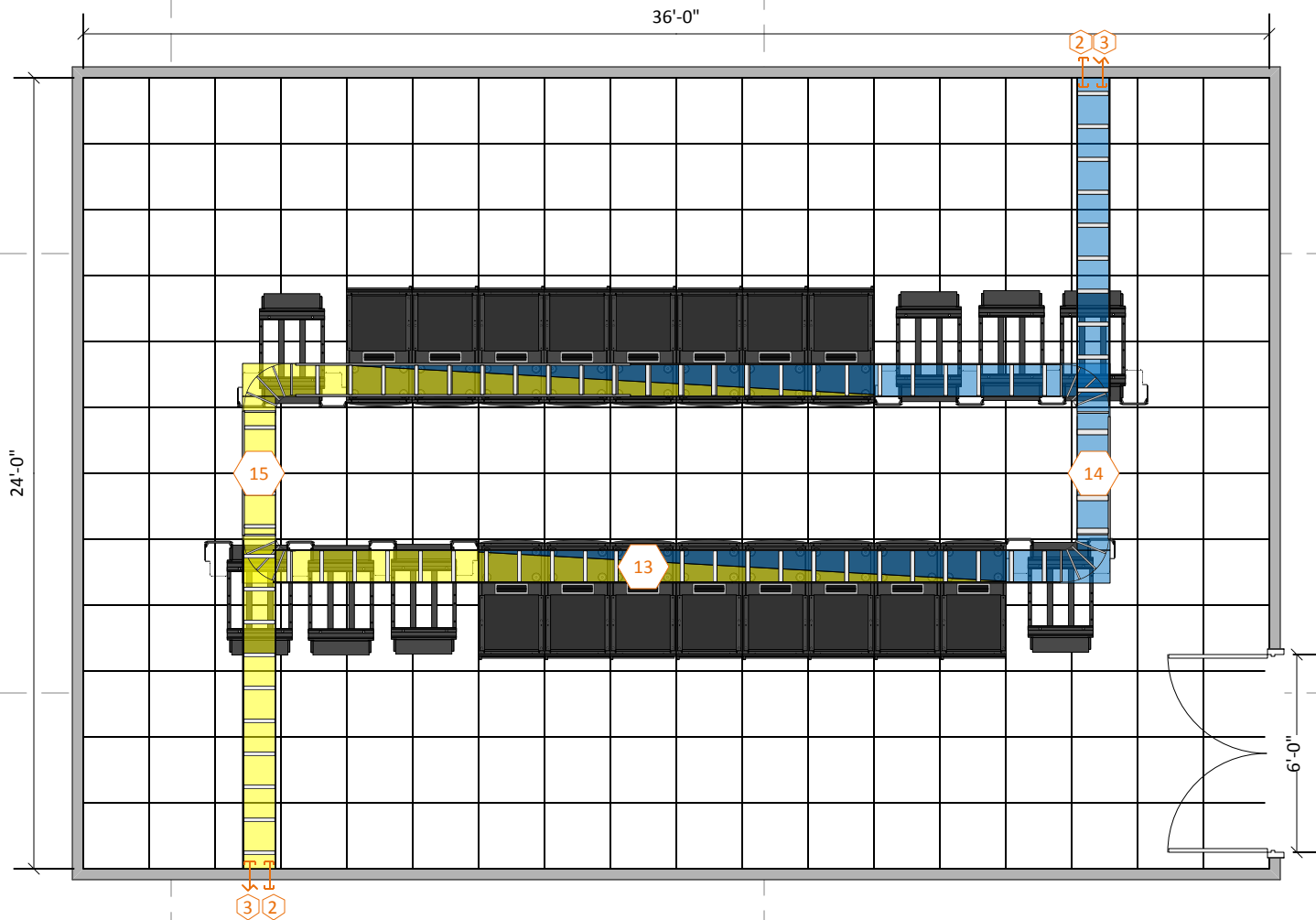


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Small Data Center		
Small Data Center		
SHEET:	7	OF 32



1 GENERIC FLOOR PLAN FOR SMALL DATA CENTERS - DATA CABLE TRAYS



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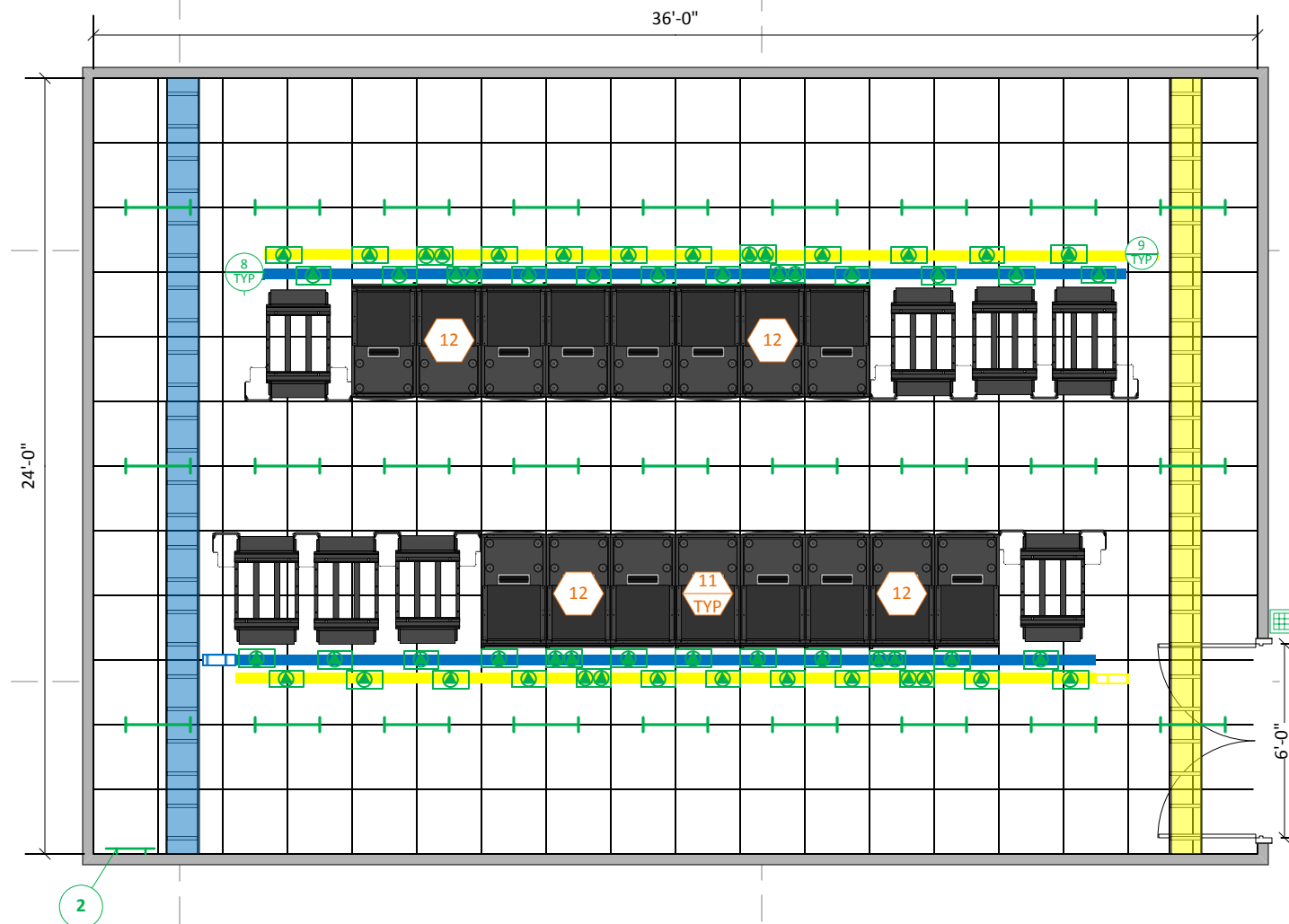
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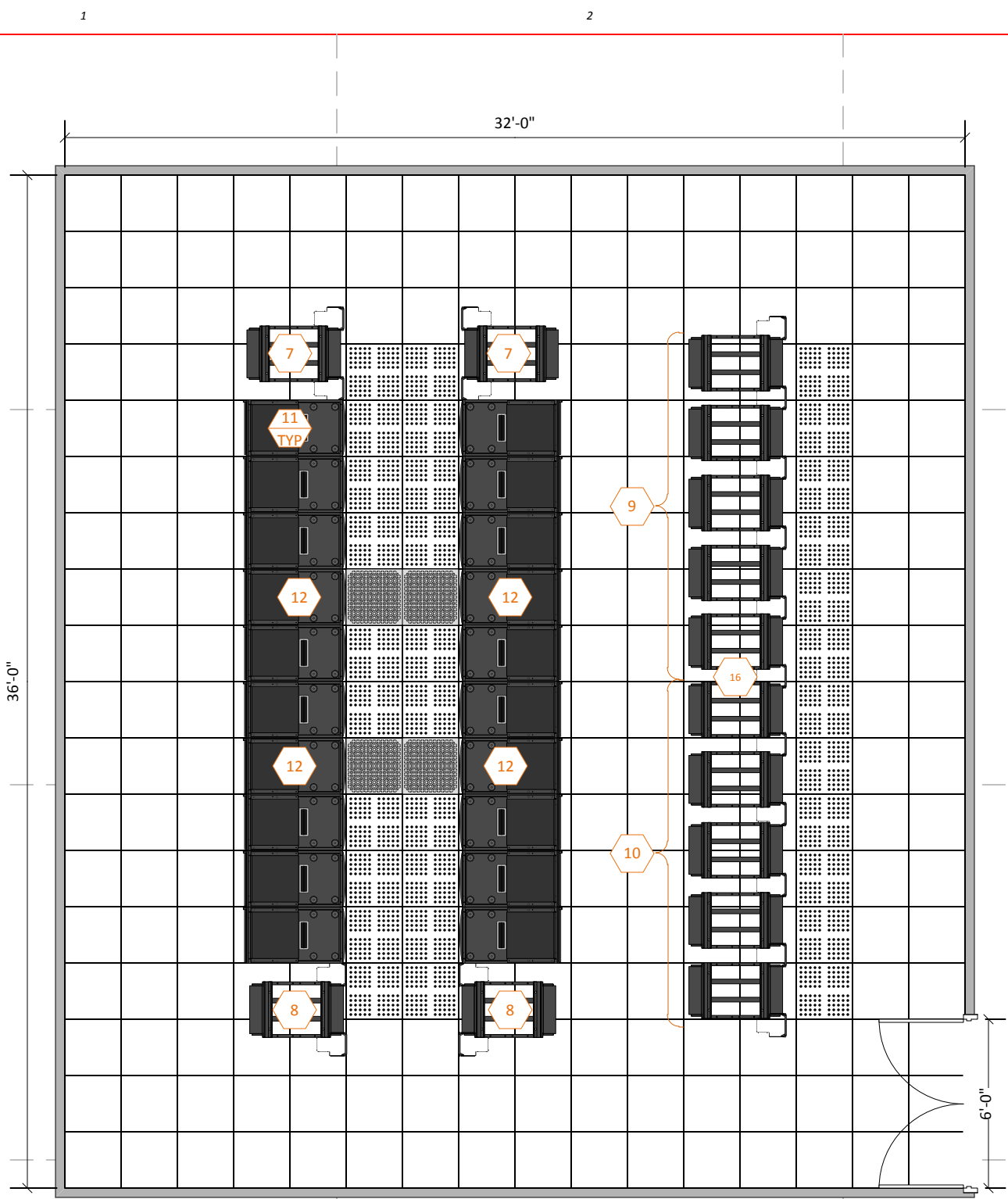
Small Data Center - Data
Cable Trays

Small Data Center - Data Cable
Trays

SHEET: 8 OF 32



1 GENERIC FLOOR PLAN FOR SMALL DATA CENTERS - POWER DISTRIBUTION



1 GENERIC FLOOR PLAN FOR MEDIUM DATA CENTERS

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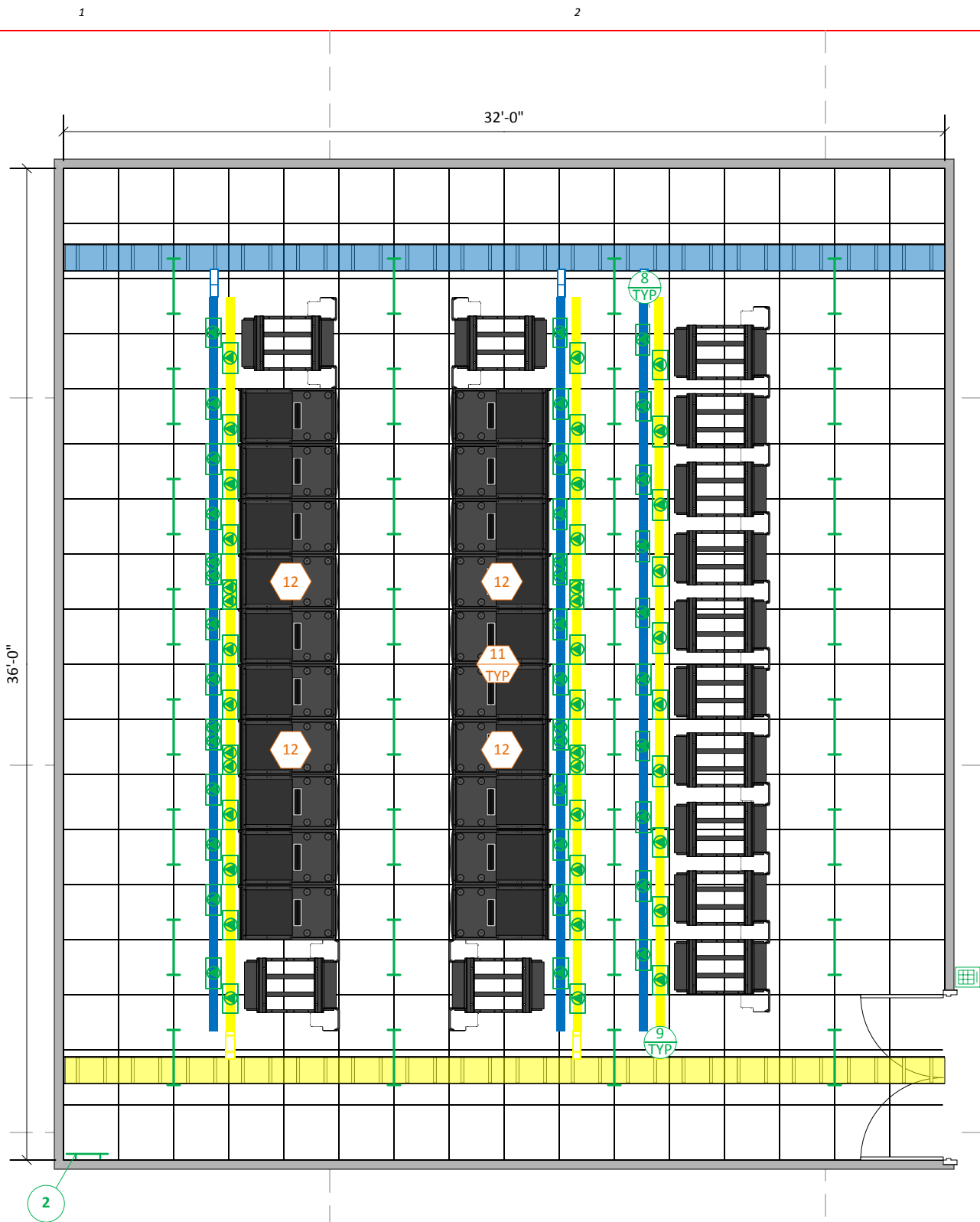
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Medium Data Center

Medium Data Center

SHEET: 10 OF 32





1 GENERIC FLOOR PLAN FOR MEDIUM DATA CENTERS - POWER DISTRIBUTION



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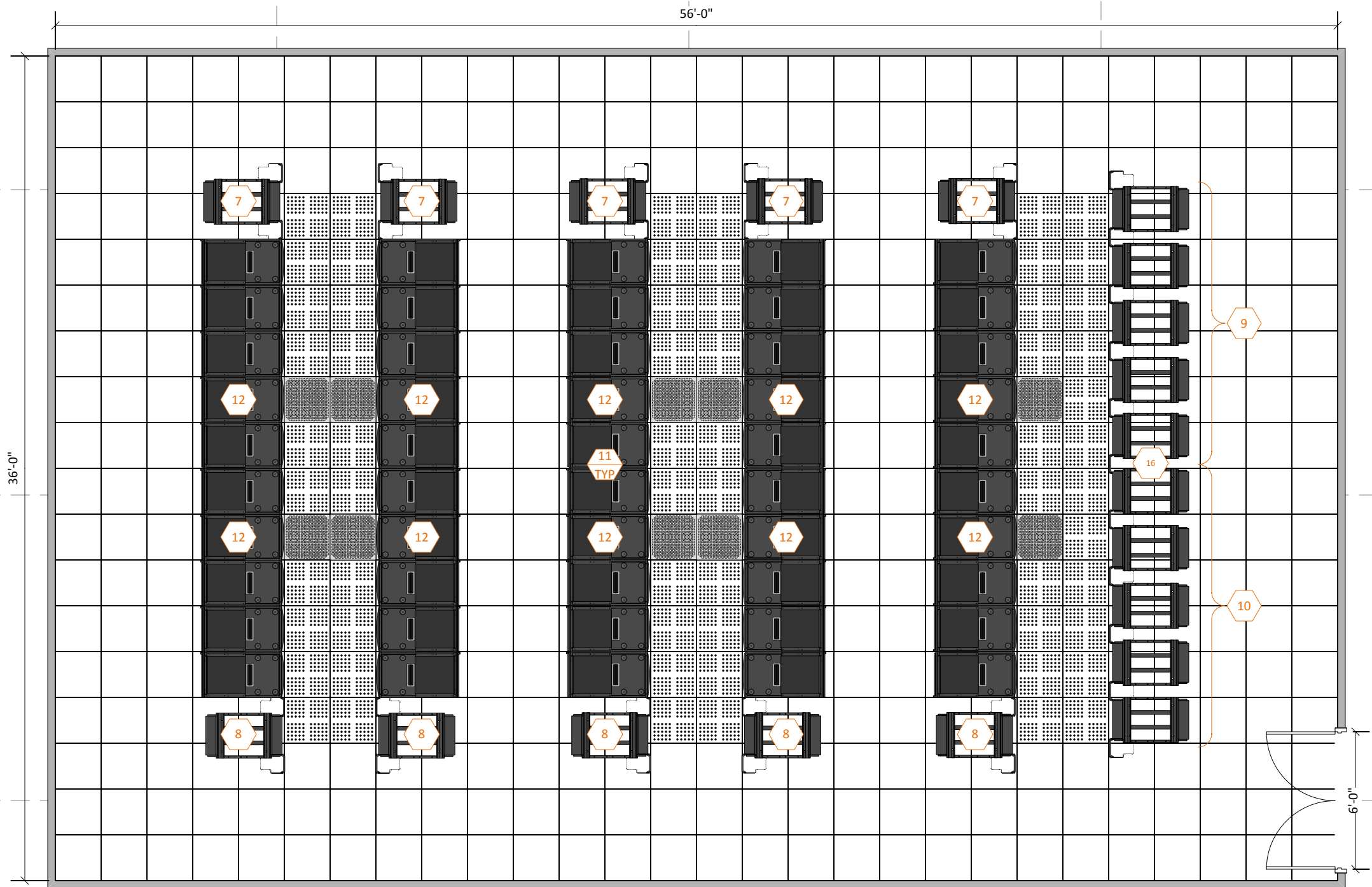
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Medium Data Center -
Power

Medium Data Center - Power

SHEET: 12 OF 32

1 GENERIC FLOOR PLAN FOR LARGE DATA CENTERS



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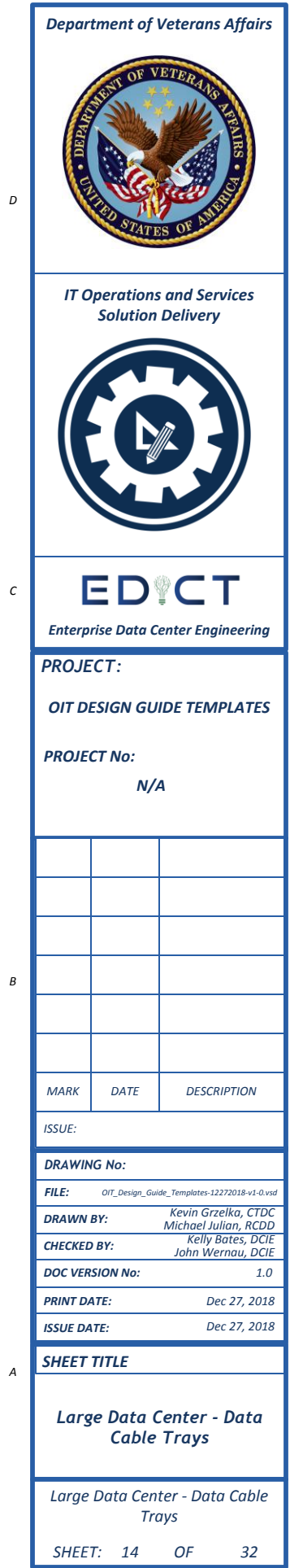
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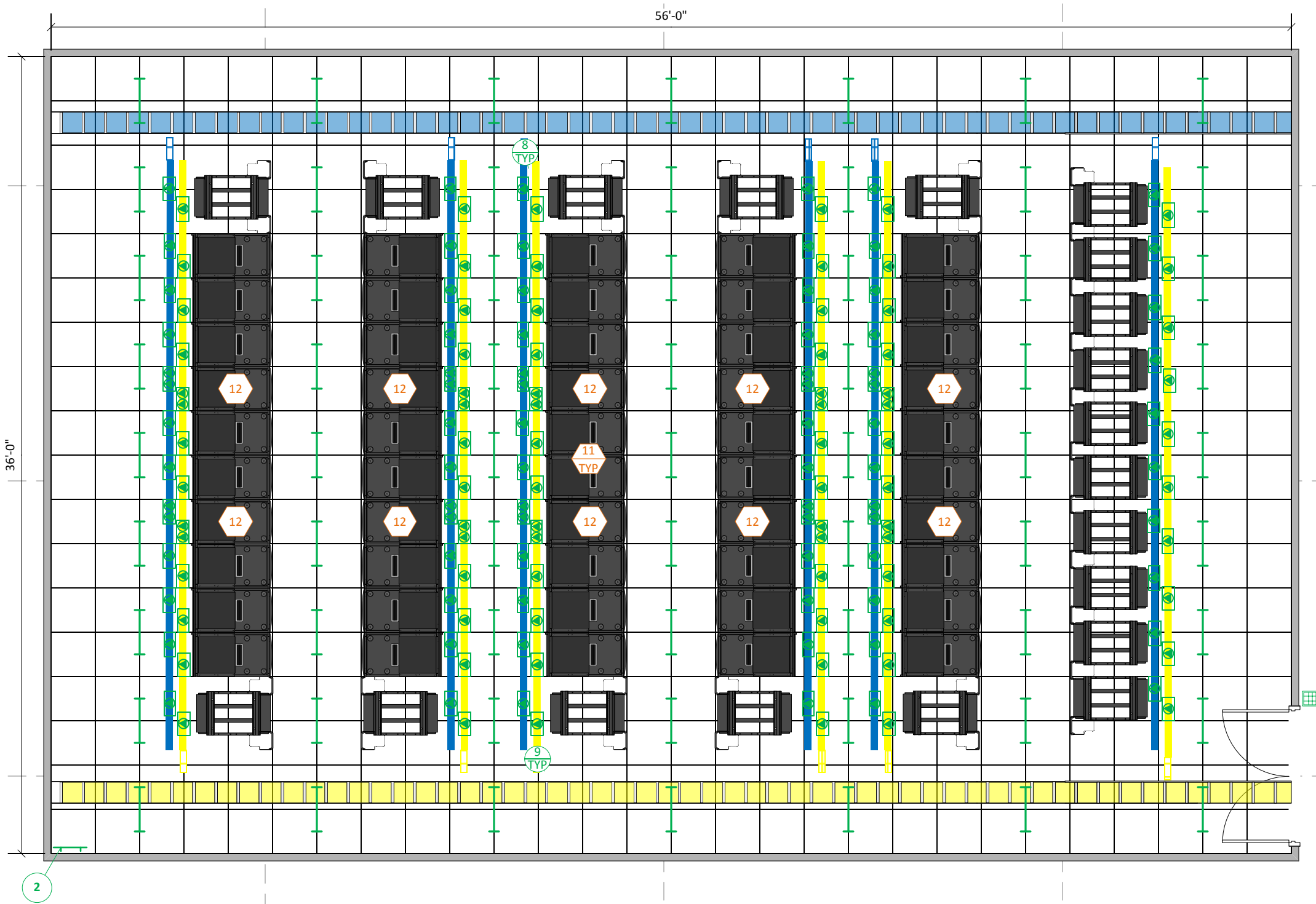
Large Data Center

Large Data Center

SHEET: 13 OF 32



1 GENERIC FLOOR PLAN FOR LARGE DATA CENTERS - POWER DISTRIBUTION



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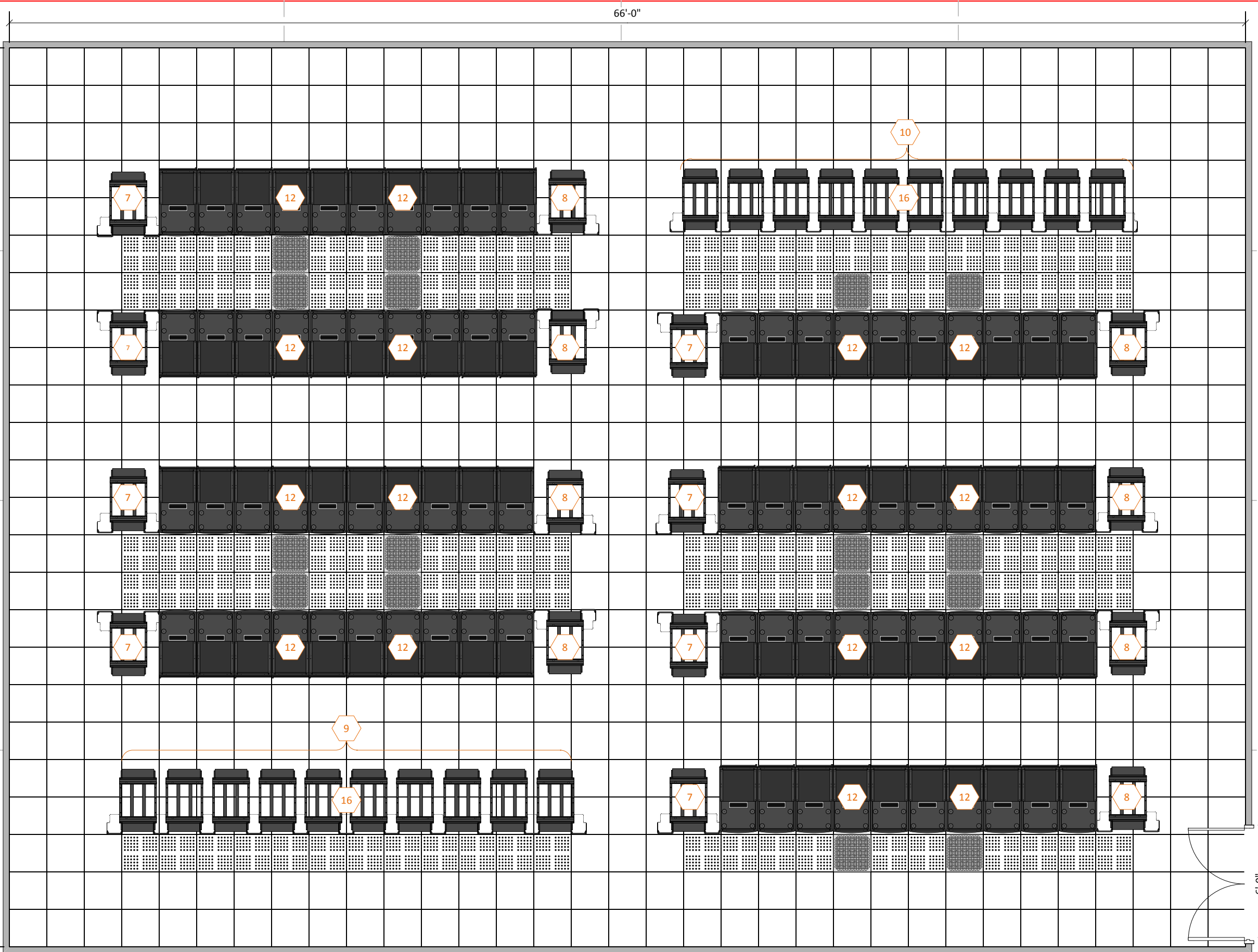
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Large Data Center - Power

Large Data Center - Power

SHEET: 15 OF 32



1 GENERIC FLOOR PLAN FOR EXTRA LARGE DATA CENTERS

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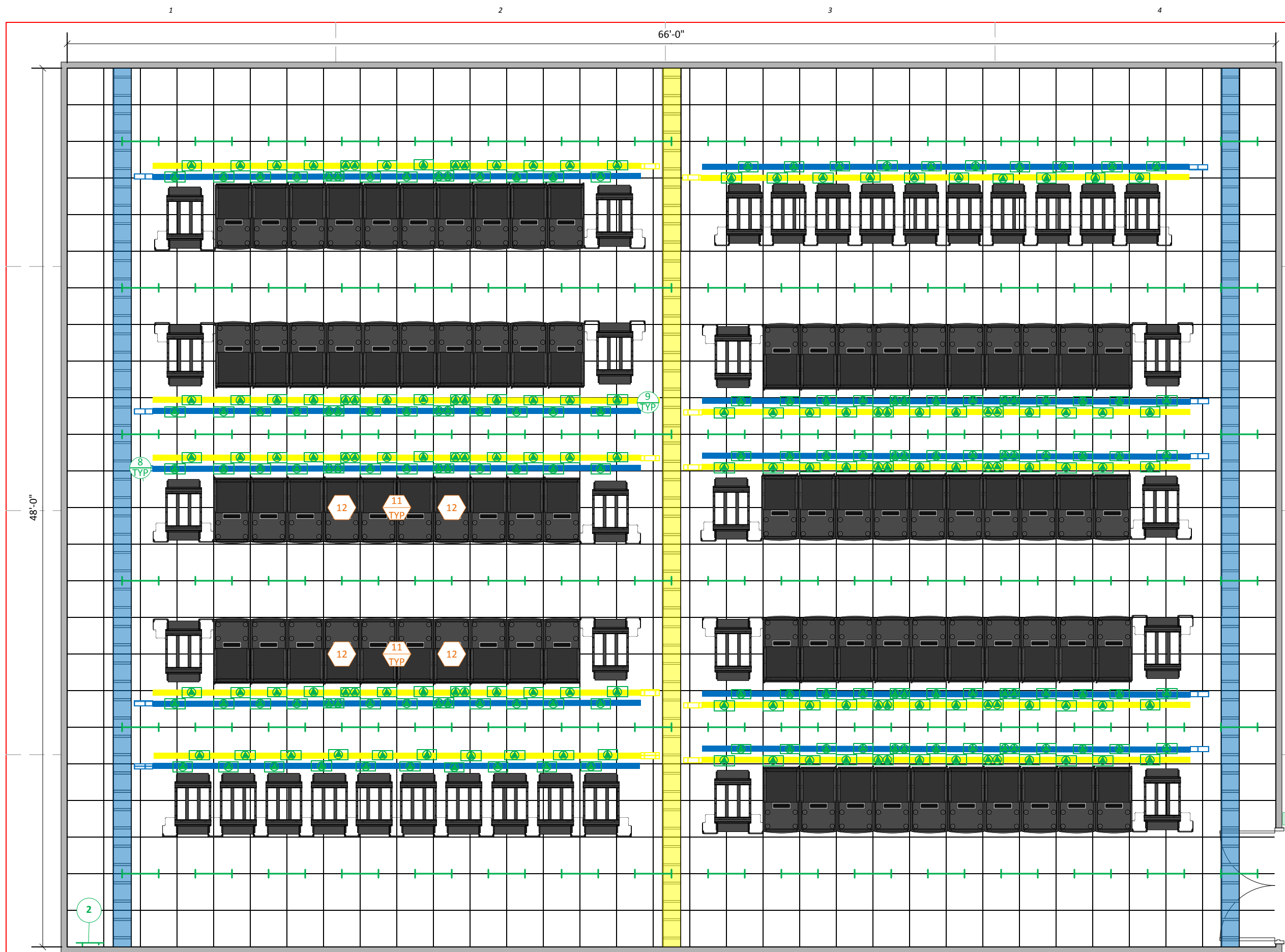
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X-Large Data Center

X-Large Data Center

SHEET: 16 OF 32



1 GENERIC FLOOR PLAN FOR EXTRA LARGE DATA CENTERS - POWER DISTRIBUTION



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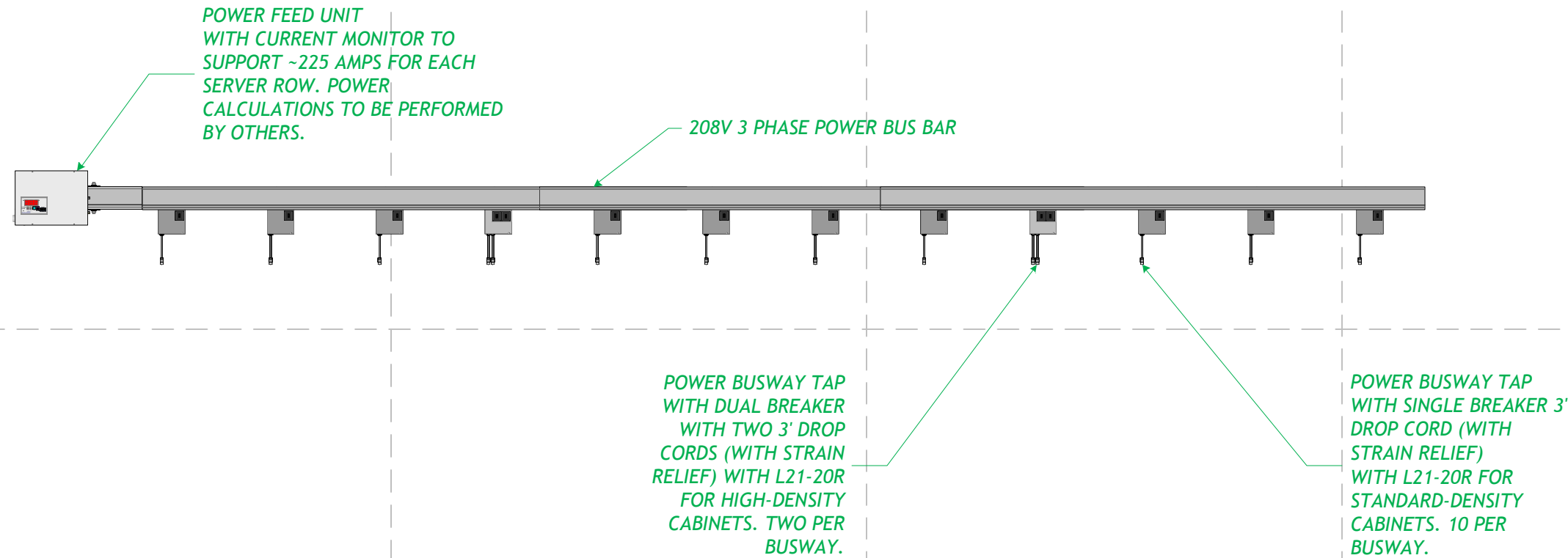
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X-Large Data Center Power

X-Large Data Center Power

SHEET: 18 OF 32



3 TYPICAL POWER BUSWAY COMPONENTS FOR SERVER ROWS



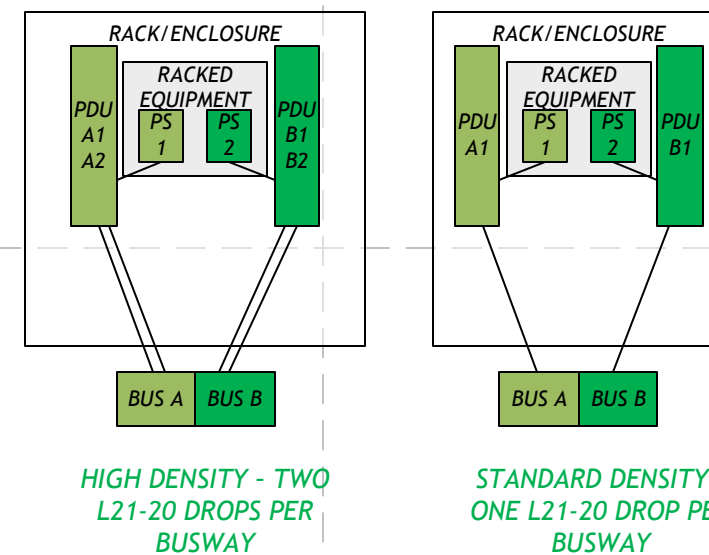
CHATSWORTH ECONNECT PDU; VERTICAL; MONITORED; L21-20 PLUG; THREE PHASE; 120/208V INPUT; 20A; (30) C13 (6) C19 OUTLETS; 208V OUTPUT; 3 X 2P 20A HYDRAULIC MAGNETIC BREAKERS; LCD; ETHERNET, USB, AND ENVIRONMENTAL SENSOR PORTS; IP AND SERIAL MONITORING; IP CONSOLIDATION (PDU LINKING); TOOL-LESS MOUNTING; 70.5"H (1791 MM) X 2.2"W (56 MM) X 2.2"D (56 MM)



REQUIRES ONE (1) L21-20R

2 208 VOLT PDU FOR EQUIPMENT POWER - TO BE ENERGIZED BY ZONE PDU

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.



1 POWER SCHEMATIC FOR POWER RACK- LEVEL REDUNDANCY



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Busway Power Distribution

Busway Power Distribution

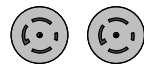
SHEET: 19 OF 32



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)



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



PDU INPUTS
REQUIRE TWO L21-30RS

THE CORRECT SPECIFICATION FOR THE PDU IS TO ENERGIZE IT FROM 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.

NOTE:

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



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



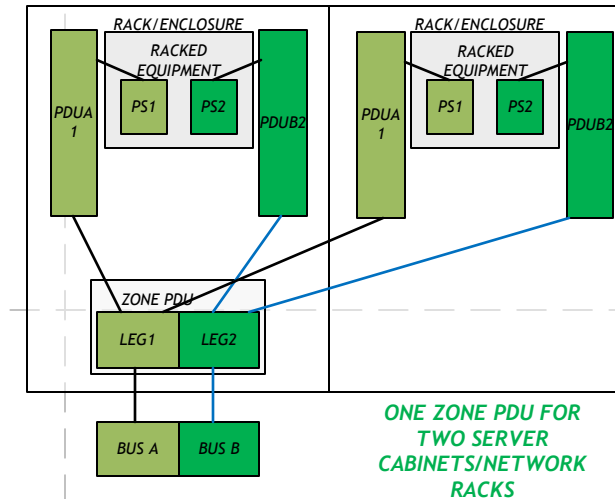
REQUIRES ONE (1) L21-20R

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

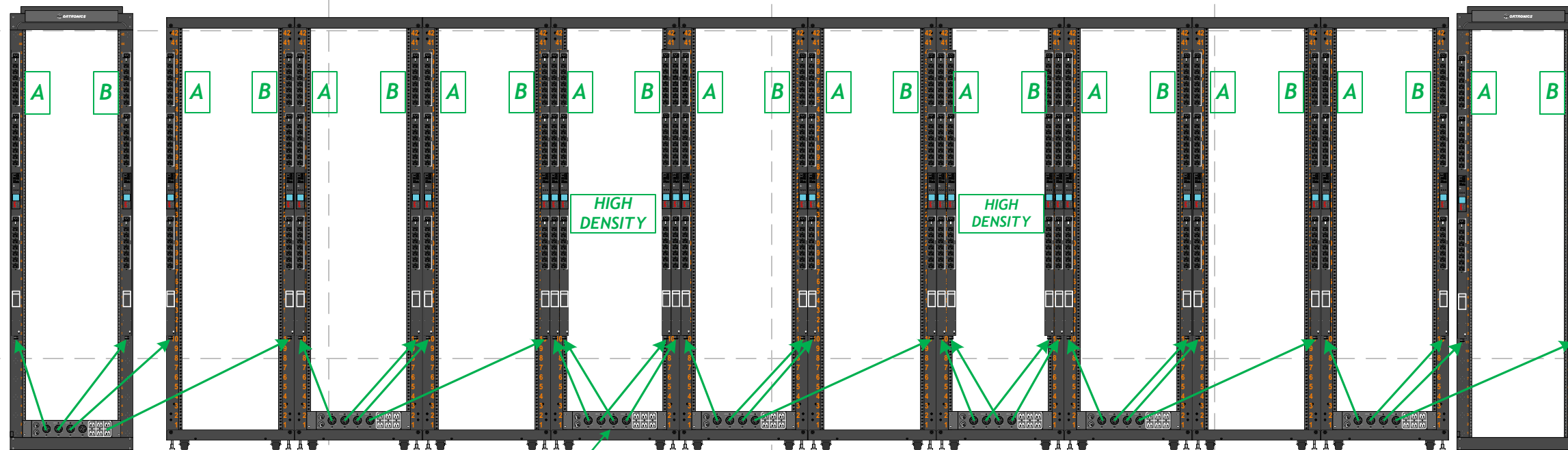
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ONE ZONE PDU FOR TWO SERVER CABINETS/NETWORK RACKS

2 POWER SCHEMATIC FOR POWER RACK- LEVEL REDUNDANCY



SEVEN (7) ZONE PDUs PER ROW

1 SUBZONE TO ZONE PDU CONNECTION MAP FOR TYPICAL (12 RACK) SERVER ROWS



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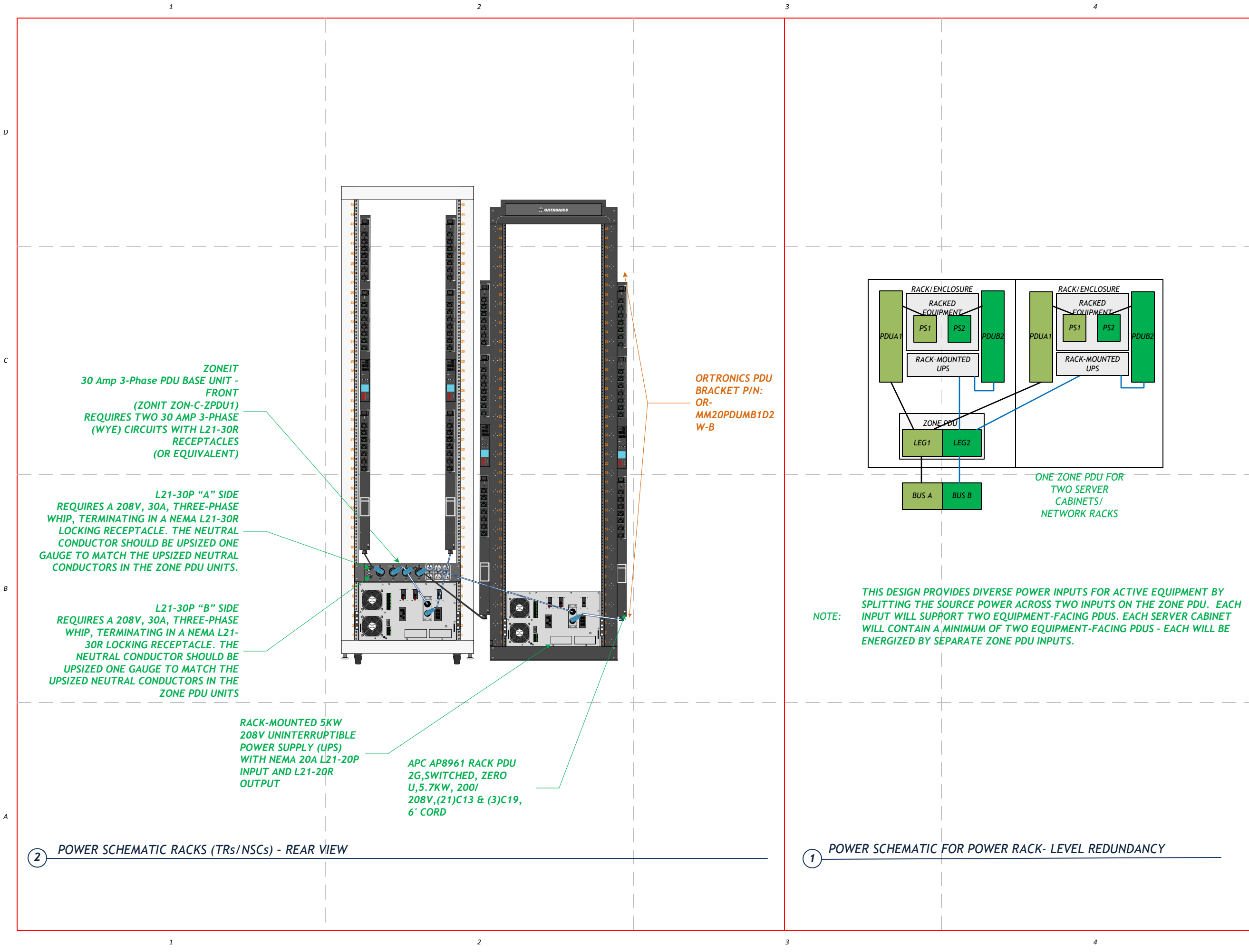
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SHEET TITLE

Zone PDU Power
Distribution

Zone PDU Power Distribution

SHEET: 20 OF 32



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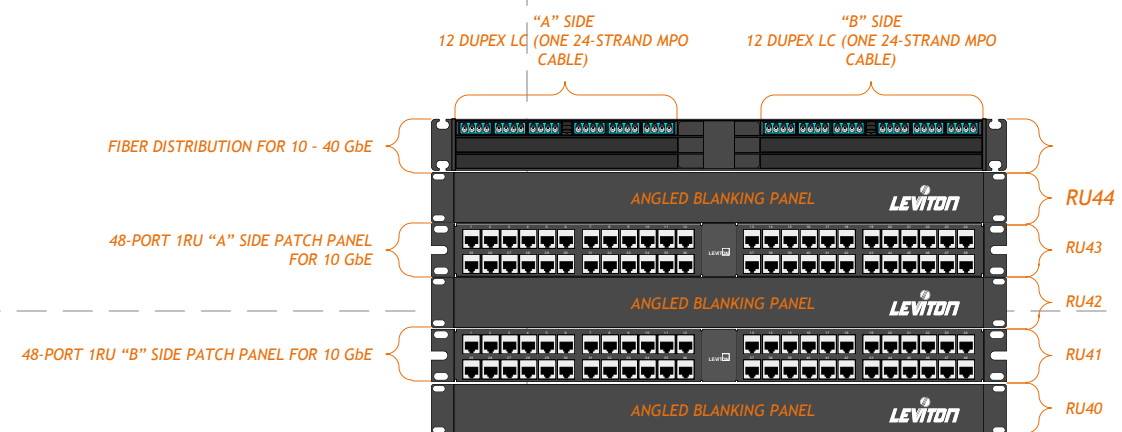
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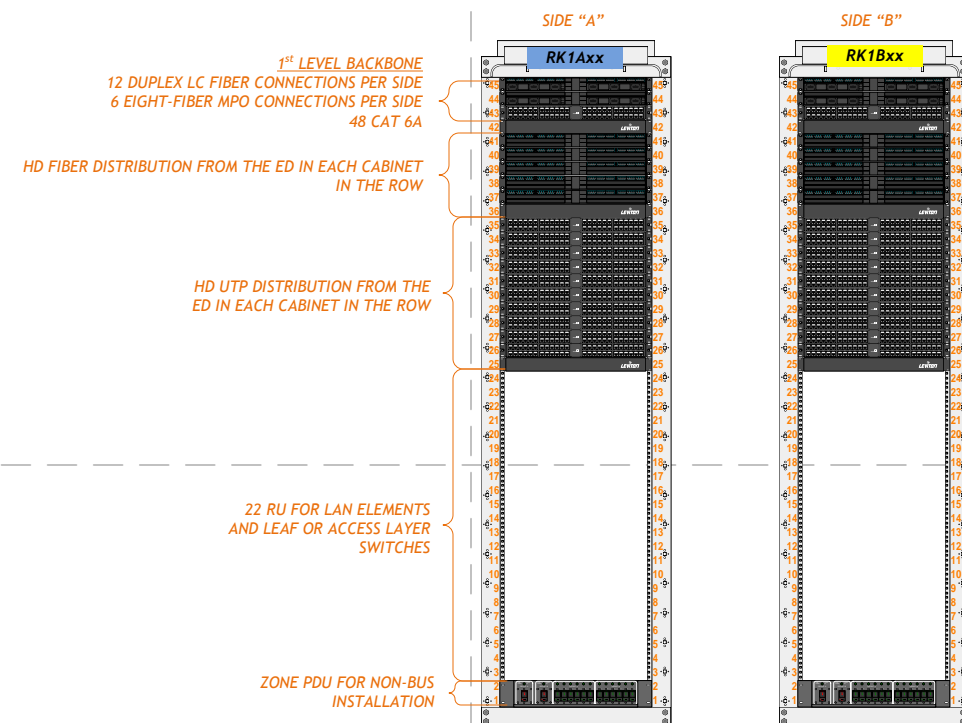
Zonit Power Distribution to UPS

Zonit Power Distribution to UPS

SHEET: 21 OF 32



STANDARD DENSITY EQUIPMENT DISTRIBUTOR ELEVATION FOR CABINETS OR PATHWAY RACKS (MINIMUM REQUIREMENT)



TYPICAL EOR ELEVATION FOR TEN (10) CABINET ROW (MEDIUM, LARGE, X-LARGE DESIGNS)



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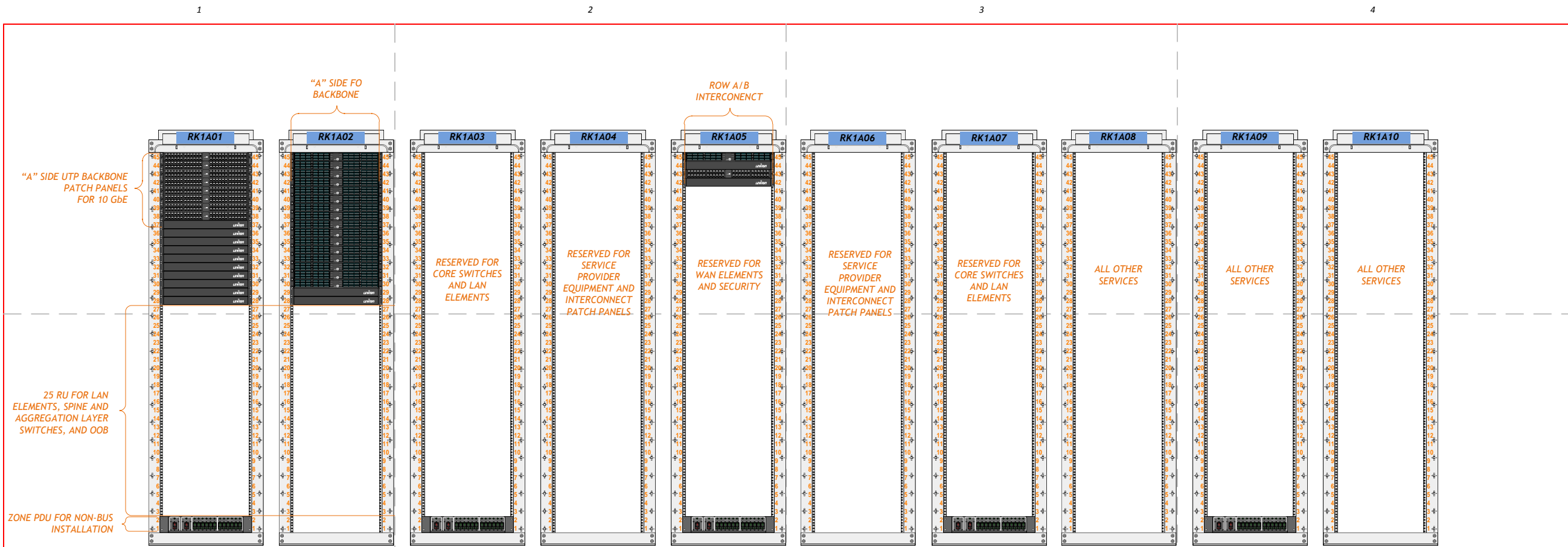
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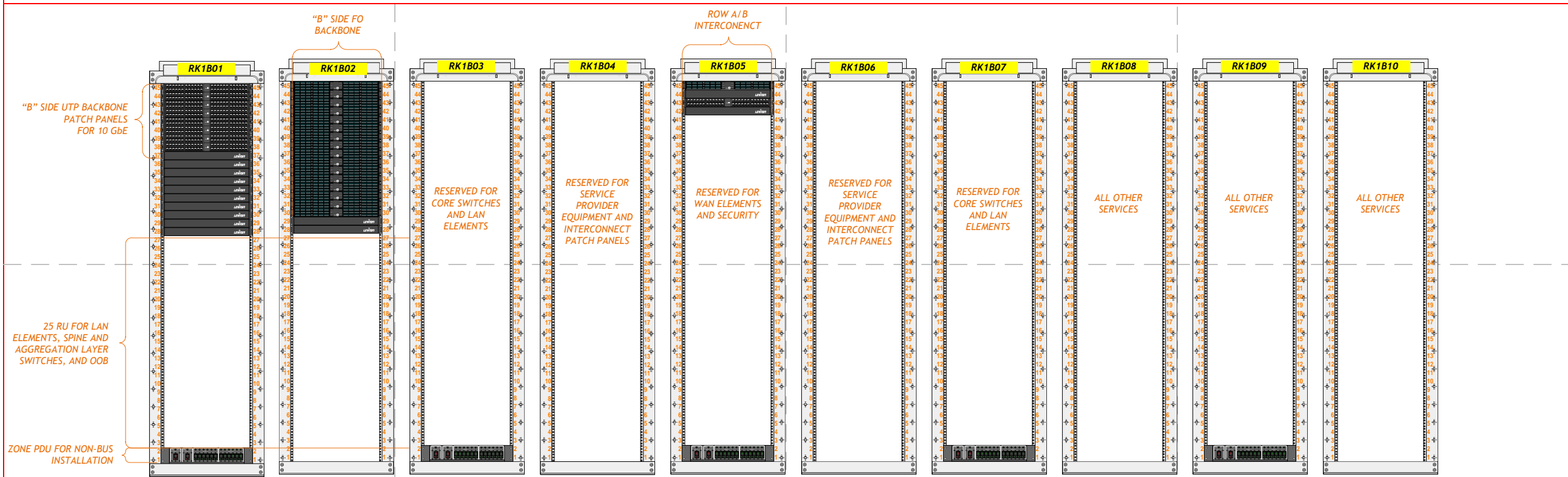
ED & HD (XL, L, M)

ED & HD (XL, L, M)

SHEET: 22 OF 32



2 TYPICAL TEN (10) RACK MDA WITH PROPOSED FUNCTIONAL ASSIGNMENTS (A SIDE)



1 TYPICAL TEN (10) RACK MDA WITH PROPOSED FUNCTIONAL ASSIGNMENTS (B SIDE)



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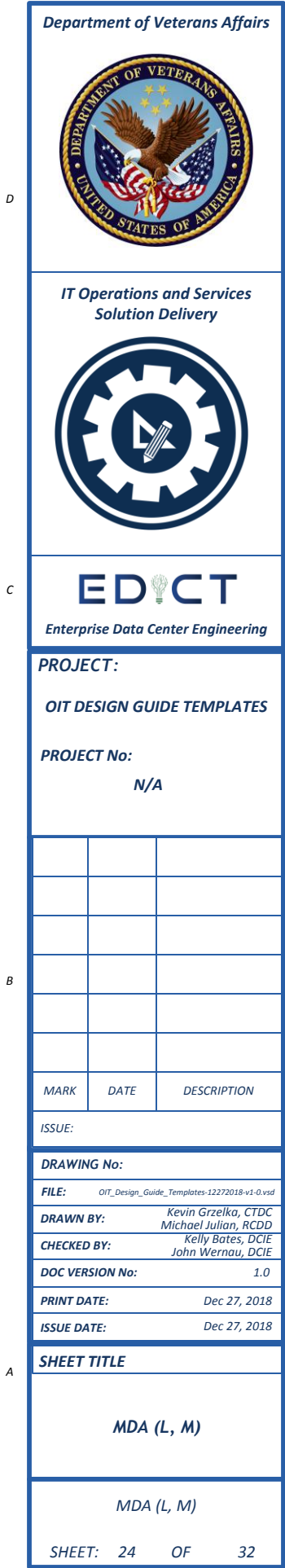
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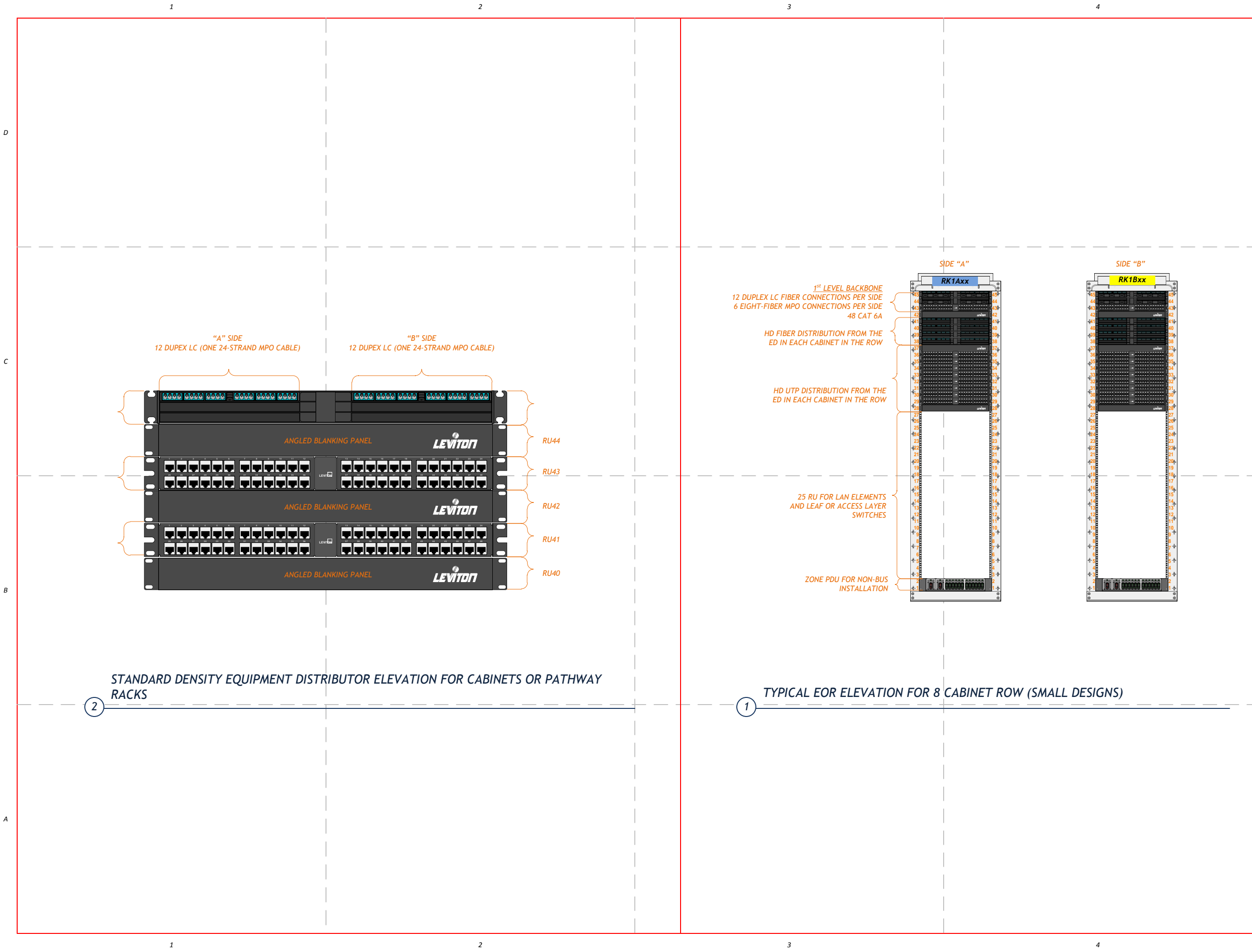
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MDA XL

MDA XL

SHEET: 23 OF 32





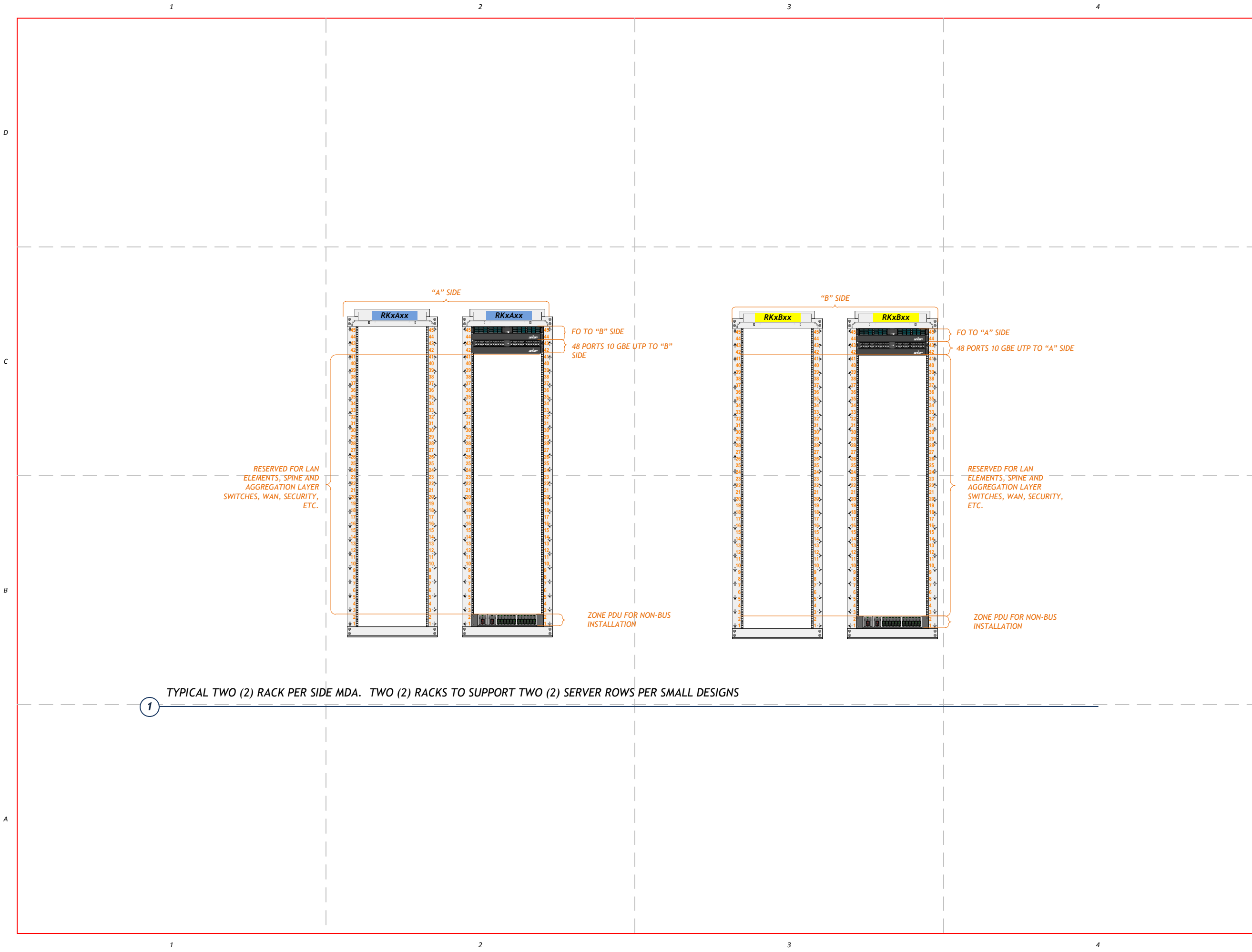
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SHEET:	25	OF 32



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Work Area Outlets

Work Area Outlets

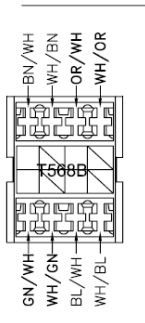
SHEET: 27 OF 32

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.

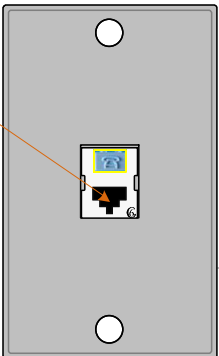
TYPICAL FACEPLATE WILL BE INSTALLED WITH TWO (2) RJ45s. HIGH DENSITY FACEPLATES WILL BE INSTALLED WITH FOUR (4) RJ45s.

T568B
8P8C



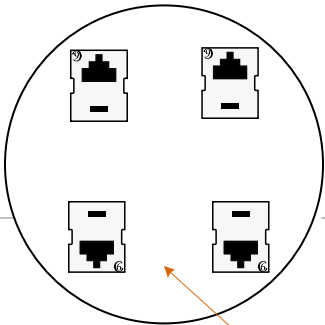
ALL LABELING SHALL BE ANSI/TIA/EIA/606C COMPLIANT. BLACK LETTERING ON WHITE FIELD. MACHINE PRINTED. FURTHER GUIDANCE ON ADMINISTRATION MAY BE SPECIFIED IN OTHER SECTIONS OF THIS DESIGN PACKAGE.

ONE (1) CATEGORY 6A 8P8C OUTLET ACTIVE FOR TELEPHONY



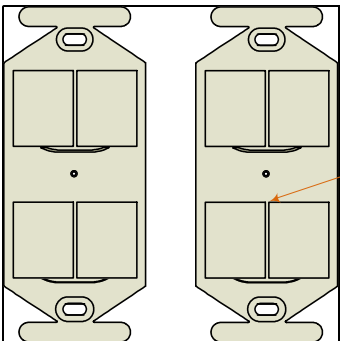
4 TYPICAL WALL MOUNT PHONE VOIP OUTLET

MINIMUM OF FOUR CATEGORY 6A 8P8C OUTLETS FOR DATA OR TELEPHONY



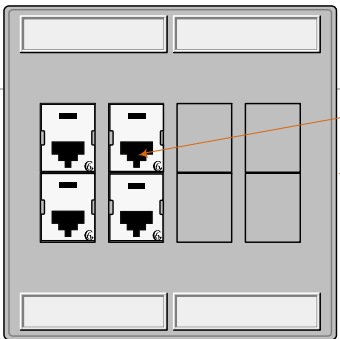
3 TYPICAL WORK FLOOR MOUNT OUTLET

DUAL GANG WORKBOX WITH TWO CONNECTOR CHASSIS.



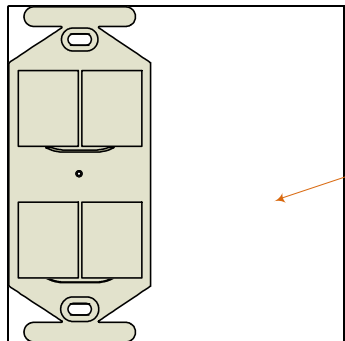
FOUR (4) CATEGORY 6A 8P8C OUTLETS ACTIVE FOR TELEPHONY/DATA

EIGHT (8) POSITION FACEPLATE MOUNTED ON DUAL GANG WORKBOX. FACEPLATE COLOR SPECIFIED BY OTHERS.



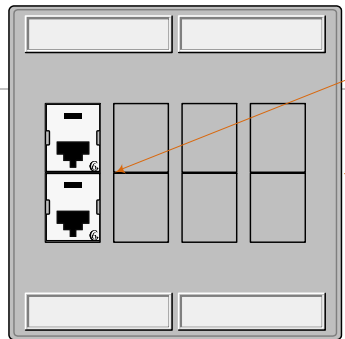
2 TYPICAL HIGH DENSITY WALL MOUNTED WORK AREA OUTLET CONFIGURATION

DUAL GANG WORKBOX WITH ONE CONNECTOR CHASSIS.

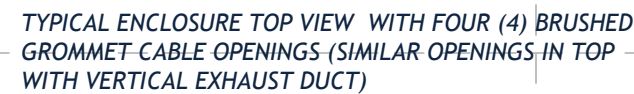


TWO (2) CATEGORY 6A 8P8C OUTLETS ACTIVE FOR TELEPHONY/DATA

EIGHT (8) POSITION FACEPLATE MOUNTED ON DUAL GANG WORKBOX. FACEPLATE COLOR SPECIFIED BY OTHERS.



1 STANDARD DENSITY WALL MOUNTED WORK AREA OUTLET CONFIGURATION



NOTE: SERVER CABINETS MAY ONLY HOUSE SERVER AND STORAGE EQUIPMENT AND SUPPORTING PATCH PANELS. SERVER CABINETS MAY NOT HOUSE TELECOMMUNICATIONS (NETWORK) EQUIPMENT



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

<u>Item Number</u>	<u>Description (Qty)</u>
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 (1)
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 BLANKING PANEL PER ENCLOSURE)



Enterprise Data Center Engineering

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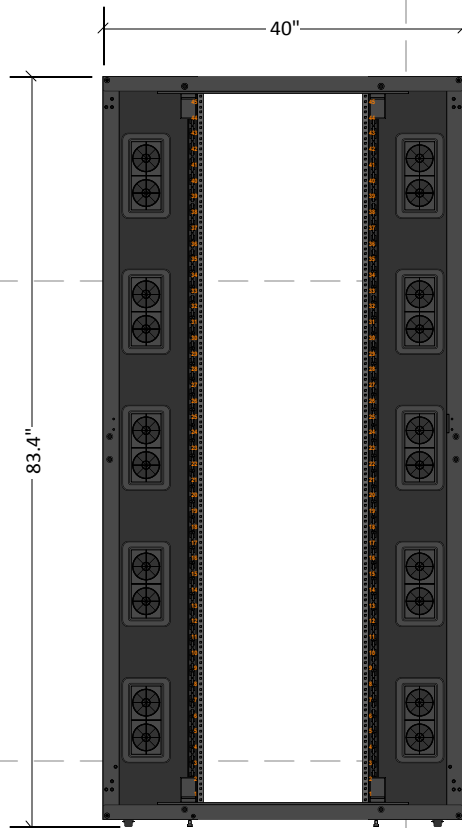
TYPICAL SERVER CABINET DETAIL

TYPICAL SERVER CABINET
DETAIL

SHEET: 28 OF 32

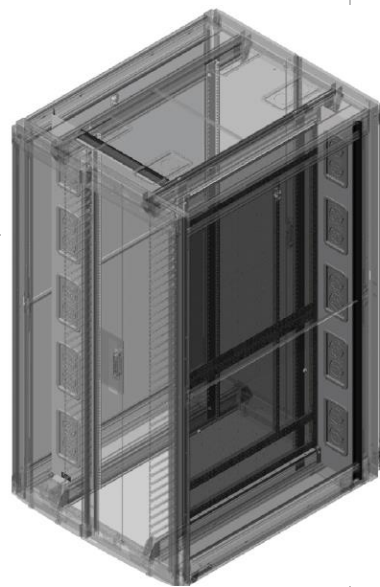
NOTE:

TELECOMMUNICATION CABINETS ARE PURPOSE BUILT TO PROVIDE AMPLE ROOM FOR CABLING NEEDS OF THE HORIZONTAL DISTRIBUTION AREA AND THE MAIN DISTRIBUTION AREA AND MAY BE USED IN LIEU OF TELECOMMUNICATION CHANNEL RACKS FOR THIS PURPOSE. TELECOMMUNICATION CABINETS MAY NOT BE USED IN TLECOMMUNICATION ROOMS.



FRONT VIEW DIMENSIONS

3



ISOMETRIC VIEW WITH DOUBLE DOORS

2

N H W D - R F R L - C T S - E

1. Height			
U	in	mm	
42	78.1	1984	C
43	79.9	2029	D
44	81.6	2073	E
45	83.4	2117	F
46	85.1	2162	G
47	86.9	2206	H
48	88.6	2251	J
49	90.4	2295	K
50	92.1	2340	L
51	93.9	2384	M
52	95.6	2429	N

Height includes transport casters.

2. Width		Included Air Manager	
in	mm		
31.5	800	No Air Manager	0
31.5	800	Front Air Dams	7
31.5	800	Side Intake Duct	1
40.0	1016	No Air Manager	6
40.0	1016	Front Air Dams	8
40.0	1016	Side Intake Duct	5

40.0"W(1016 mm) cabinets are only available 44.3"D(1100 mm) or deeper.

3. Depth		With Doors		
in	mm	in	mm	
39.4	1000	43.3	1100	J
40.4	1025	44.3	1125	K
41.3	1050	45.3	1150	L
42.3	1075	46.3	1175	M
43.3	1100	47.3	1200	N
44.3	1125	48.2	1225	P
45.3	1150	49.2	1250	R
46.3	1175	50.2	1275	T
47.2	1200	51.2	1300	U

Frame Depth does not include doors. Front door adds 2.4" (61 mm). Rear door adds 1.5" (38 mm). See Dimensional Drawing.

4. Equipment Mounting Rail Style	
Square-Punched, 2-Pair	1
Tapped, #12-24, 2-pairs	2

5. Front Door	
None	0
Perforated Metal, matches F-Series TeraFrame Gen 3 Cabinet	1
Perforated Metal, matches GF-Series GlobalFrame Gen 2 Cabinet	2

Single door on the 31.5"W(800 mm) cabinet. Double door on the 40.0"W(1016 mm) cabinet.

11. Cable Entry Cover	
0 Plastic Grommet	
1 Brush Sealed	

10. Side Panel Style	
0 None	
1 Solid, 1 each	
2 Solid, 2 each	

Include side panels on all cabinets with Front Air Dams or Side Intake Duct Air Managers.

9. Top Panel Style	
4 Standard Top	
5 Vertical Exhaust Duct, 20"-34"H (508-863 mm)	
6 Vertical Exhaust Duct, 34"-60"H (863-1523 mm)	
7 Vertical Exhaust Duct, 14"-20"H (356-508 mm)	

Options 5, 6, & 7 are for cabinets that are 41.3"D(1050 mm) or deeper. Use Solid Metal Rear Door or Solid Metal with Perforated Insert Rear Door with Vertical Exhaust Duct. Vertical Exhaust Duct includes a Bottom Panel.

8. Color	
C Black	
E Glacier White	

7. Latch/Locks Kits	
C Two-Point, Keyed Lock	
E Two-Point, Keyed/Combination Lock	
N None	

There is a single-Point latch on front door that matches GF-Series GlobalFrame Gen 2 Cabinet

6. Rear Door	
0 None	
3 Double, Perforated Metal	
4 Solid Metal with Perforated Insert	
5 Solid Metal	

Use Double Perforated Metal door with Standard Top panel. Use Solid Metal With Perforated Insert with Vertical Exhaust Duct and Side Intake Duct. Use Solid Metal door with Vertical Exhaust Duct and Air Dams. Solid Metal with Perforated Insert and Solid Metal doors are single doors on the 31.5"W(800 mm) cabinet and double doors on the 40.0"W(1016 mm) cabinet.

1

TYPICAL NETWORK CABINET CONFIGURATION - CHATSWORTH NF8N-113N-C42-1

Department of Veterans Affairs



IT Operations and Services
Solution Delivery



EDCT

Enterprise Data Center Engineering

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TYPICAL
TELECOMMUNICATION
CABINET

TYPICAL TELECOMMUNICATION
CABINET

SHEET: 29 OF 32



Cable Lashing Manager

Cable Lashing Manager creates a simple vertical pathway for multiple cable bundles and has multiple attachment points for securing cables using CPI Saf-T-Grip® Straps or zip ties. Use to support network cables along the sides of the cabinet.

- Attaches to the frame, adjusts in depth independent of the equipment mounting rails
- Two sizes: Slim and Wide
- Slim manager is 5"W (130 mm) and has three vertical columns of attachment points for 1.5" (38 mm) diameter cable bundles, 5 in² (3200 mm²) cable fill area
- Wide manager is 9.8"W (250 mm) and has five vertical columns of attachment points for 1.5" (38 mm) diameter cable bundles, 9.8 in² (6320 mm²) cable fill area
- Includes: Bracket and installation hardware, order Saf-T-Grips or cable ties separately
- Material: Steel; Select part number to match usable height and color of the cabinet

Part Number		Height (U)	Shipping Weight lb (kg)
Slim	Wide		
5.1"W (130 mm)	9.8"W (250 mm)		
39380-X00	39381-X00	42	19 (8.9)
39380-X01	39381-X01	43	20 (9.1)
39380-X02	39381-X02	44	20 (9.1)
39380-X03	39381-X03	45	21 (9.5)

CABLE LASHING MANAGER



Telescoping Cable Manager

Telescoping Cable Manager attaches to the sides of the front and rear equipment mounting rail providing a front-to-rear or vertical pathway for cables along the side of equipment.

- Attaches to and adjusts in depth with mounting rails, fully compatible with Front Air Dams and Side Intake Duct
- Five smooth, plastic L-shaped spools support cables
- Spools on 31.5"W (800 mm) model are 2.5"H x 2.6"D (64 mm x 66 mm)
- Spools on 40.0"W (1016 mm) model are 3.3"H x 6.8"D (84 mm x 173 mm)
- Spools rotate and lock in 90-degree increments and can be adjusted to manage horizontal or vertical cable runs
- Includes: cable manager, five cable spools, hardware
- Material: Steel manager, plastic spools
- Select part number to match the color of the cabinet

Part Number - Cabinet Width		Frame Depth in (mm)	Shipping Weight lb (kg)
31.5" (800 mm)	40.0" (1016 mm)		
39377-X01	39377-X02	Any	5 (2.3)

X=color; C=Black, E=Glacier White. Shipping Weights are for 1016 mm kits.

TELESCOPING CABLE MANAGER

NOTE:

WHEN TELECOMMUNICATION CABINETS ARE USED IN LIEU OF TELECOMMUNICATION CHANNEL RACKS SPECIAL ACCESSORIES ARE REQUIRED TO BE INSTALLED TO ALLOW FOR PROPER CABLE MANAGEMENT WITHIN THE CABINET. SOME TYPICAL EXAMPLES ARE LISTED ON THIS PAGE, BUT ARE NOT ALL INCLUSIVE. CABLE MANAGEMENT ACCESSORIES SHOULD MATCH THE CABLE MANAGEMENT NEEDS OF YOUR STRUCTURED CABLING PLAN AND PATCHING REQUIREMENT.



Full Height Dual PDU Bracket

Full Height Dual PDU Bracket supports two vertical PDUs side-by-side and has multiple slots for CPI Saf-T-Grip® Straps or tie wraps to secure cords to the bracket.

- Attaches to the frame, adjusts in depth independent of the mounting rails
- Available in two widths: Dual and Wide
- Dual bracket is 4.8"W (121 mm) and supports two PDUs up to 2.2"W (56 mm) side-by-side
- Dual bracket supports most eConnect PDUs and power strips side-by-side
- Wide bracket is 5.8"W (147 mm) and supports two PDUs up to 2.7"W (69 mm) side-by-side
- Wide bracket is required to mount two 6-breaker eConnect PDUs (series P/N PX-3XXXX) side-by-side
- Tool-less mounting on 28" (711 mm), 61.25" (1556 mm) or 64.75" (1645 mm) centers
- Includes: brackets, installation hardware, order Saf-T-Grips or cable ties separately
- Material: Steel; Select part number to match the usable height and color of the cabinet

Part Number		Height (U)	Shipping Weight lb (kg)
Dual	Wide		
4.8"W (121mm)	5.8"W (147 mm)		
39086-X00	39221-X00	42	10 (4.5)
39086-X01	39221-X01	43	10 (4.5)
39086-X02	39221-X02	44	11 (5.0)
39086-X03	39221-X03	45	11 (5.0)

PDU BRACKET



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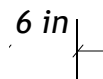
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TYPICAL
TELECOMMUNICATION
CABINET ACCESSORIES

TYPICAL TELECOMMUNICATION
CABINET ACCESSORIES

SHEET: 30 OF 32



6 6" WIDE VERTICAL CABLE MANAGEMENT

TYPICAL RACK DIMENSIONS AND SPECIFICATIONS



D	TELECOMMUNICATIONS MEDIA AND INTERFACES SPECIFICATION			
	ID	PRIMARY ATTRIBUTE	SECONDARY ATTRIBUTE	SPECIFICATION
D	1	COPPER PATCH PANELS	PERFORMANCE CATEGORY	CATEGORY 6A (10 GBE)
			POSITION COUNT	48
			FORM FACTOR	ANGLED
			SIZE	ONE RACK UNIT
			COLOR CODING	BLACK
C	2	FIBER DISTRIBUTION PANELS	CASSETTE CAPACITY	6 CASSETTES
			CASSETTE USER INTERFACES	LC PAIR CONNECTORS OR 8 FIBER MPO
			CASSETTE BACKBONE INTERFACES	MPO
			PERFORMANCE CHARACTERISTICS	OM4 LASER ENHANCED 40 GBE 50/ 125 MULTIMODE
			FORM FACTOR	ONE (1) RU
C	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 (1 ST LEVEL BACKBONE)
			SIZE	ONE RACK UNIT
			COLOR CODING	BLACK
B	4	FIBER (HORIZONTAL AND FIRST LEVEL BACKBONE)	PERFORMANCE CATEGORY	OM4 LASER ENHANCED TO 40 GIGABIT ETHERNET (GBE
			PERFORMANCE SPECIFICATIONS	LASER OPTIMIZED 50/ 125 MM FIBERS WITH EFFECTIVE MODAL BANDWIDTH OF AT LEAST 4,700 MHZ·KM AT 850 NM
			MODE	MULTIMODE
			JACKET COLOR	AQUA
			MEDIA CONNECTOR	PRE-TERMINATED WITH MPO, TYPE A
			STRAND COUNT	12 OR 24
			BUNDLING	LOOSE TUBE
B	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
			PERFORMANCE CATEGORY	OM4 LASER ENHANCED TO 40 GIGABIT ETHERNET (GBE
A	6	FIBER PATCH CORDS	PERFORMANCE SPECIFICATIONS	OM4
			MODE	MULTIMODE
			JACKET COLOR	AQUA
			MEDIA CONNECTOR	PRE-TERMINATED WITH DUPLEX LC



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