

DEVICE BOXES

- 1. PROVIDE 3-1/2"D ONE-GANG OUTLET BOX ASSEMBLIES FOR ALL **DATA OUTLET LOCATIONS**
- 2. PROVIDE NEMA-RATING FOR MOISTURE RESISTANCE PER PROJECT STANDARD AS SPECIFIED BY ELECTRICAL ENGINEER.
- 3. PROVIDE PROTECTIVE BUSHINGS ON ALL CONDUIT ENDS, INCLUDING INSIDE OF BOXES. REMOVE ANY CONDUIT BURRS OR SHARP POINTS THAT MAY DAMAGE CABLE
- 4. PROVIDE SECURED PULL STRING IN ALL CONDUITS AND BOXES
- 5. DO NOT TERMINATE CONDUITS IN BACKS OR SIDES OF OUTLET BOXES.
- 6. DO NOT SHARE CONDUIT RUNS WITH MORE THAN ONE OUTLET BOX.
- 7. HOME RUN ALL CONDUITS TO END POINT LOCATIONS. EXPOSED CABLE SHALL NOT BE PERMITTED OUTSIDE OF IDF ENCLOSURES OR THE MDF ROOM.
- BOXES FOR TELECOMMUNICATIONS SHALL BE DEDICATED FOR THAT PURPOSE AND SEPARATE FROM POWER AND OTHER FUNCTIONS.

CONDUITS

- 1. PROVIDE HOME RUN CONDUITS FROM ALL OUTLET BOXES TO NEAREST IDF.
- 2. SIZE CONDUITS ACCORDING TO CONDUIT SIZING TABLE BELOW BASED ON CABLE COUNTS INDICATED IN SYMBOL LEGEND. 3/4" CONDUITS SHALL ONLY BE PERMITTED FOR SYSTEMS REQUIRING ONLY ONE CABLE.
- 3. CONDUIT MATERIAL SHALL RIGID METALLIC (RMC) OR AS OTHERWISE SPECIFIED BY THE ELECTRICAL ENGINEER.
- 4. CONDUIT RUNS SHALL NOT EXCEED 100 FT. BETWEEN PULL POINTS.
- 5. CONDUIT RUNS SHALL NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN PULL POINTS. OFFSETS SHALL BE COUNTED AS 90 DEGREES OF BEND. A THIRD BEND SHALL BE PERMITTED IF THE CONDUIT IS UPGRADED BY ONE TRADE SIZE WHILE MAINTAIN THE MAXIMUM CABLE COUNT OF THE ORIGINAL SIZE.
- 6. CONDUITS FOR TELECOMMUNICATIONS SHALL BE DEDICATED TO THAT PURPOSE AND SEPARATE FROM POWER AND ANY OTHER FUNCTION.

CONDUIT SIZING TABLE			
CABLE COUNT	CONDUIT TRADE SIZE		
1	3/4"		
2 - 6	1"		
7 - 10	1-1/4"		
11 - 13	1-1/2"		
14 - 22	2"		
23 - 31	2-1/2"		
32 - 49	3"		
50 - 65	3-1/2"		
66 - 83	4"		
> 83	USE MULTIPLE		

PULL BOXES:

- 1. PROVIDE PULL BOXES WITH COVERS WHERE REQUIRED IN CONDUIT RUNS. PROVIDE MIN, NEMA 3R RATING OR AS OTHERWISE SPECIFIED BY THE ELECTRICAL ENGINEER.
- 2. INSTALL PULL BOXES IN READILY ACCESSIBLE LOCATIONS WITH COVERS FACING INWARD TO ROOM.
- 3. DO NOT USE PULL BOXES IN LIEU OF CONDUIT BENDS. LOCATE CONDUIT BENDS OUTSIDE OF PULL BOXES AND INSTALL PULL BOXES ONLY IN STRAIGHT SECTIONS OF CONDUIT.
- 4. MAINTAIN ALIGNMENT OF CONDUITS ON OPPOSITE SIDES OF (ENTERING AND LEAVING) PULL BOXES.
- 5. SIZE PULL BOXES PER PULL BOX SIZING TABLE BELOW (BOX DIMENSIONS SHOWN ARE BASED ON SERVING ONE CONDUIT).

PULL BOX SIZING TABLE						
CONDUIT TRADE SIZE	MIN. BOX WIDTH (1)	MIN. BOX LENGTH (2)		WIDTH INCREASE PER ADDITIONAL CONDUIT		
1"	4"	16"	3"	2"		
1-1/4"	6"	20"	3"	3"		
1-1/2"	8"	27"	4"	4"		
2"	8"	36"	4"	5"		
2-1/2"	10"	42"	5"	6"		
3"	12"	48"	5"	6"		
3-1/2"	12"	54"	6"	6"		
4"	15"	60"	8"	8"		

(1) WIDTH DIMENSION IS PERPENDICULAR TO CONDUIT RUN. (2) LENGTH DIMENSION IS PARALLEL TO CONDUIT RUN. FOR PULL BOXES SERVING MULTIPLE CONDUITS WITH DIFFERENT DIAMETERS, DETERMINE LENGTH BY LARGEST DIAMETER

MDF ROOM DESIGN

GENERAL:

- 1. LOCATE MDF ROOM TO AVOID BEING BELOW OR ADJACENT TO SOURCES OF POTENTIAL FLOODING, SUCH AS KITCHENS AND RESTROOMS
- 2. MINIMUM INTERIOR DIMENSIONS SHOULD BE AS INDICATED IN ENLARGED PLANS.
- 3. MINIMUM DOOR WIDTH SHOULD BE 3'-0" AND DOOR SHOULD BE LOCATED IN ROOM CORNER OR AS OTHERWISE SHOWN.
- 4. HEIGHT OF MDF ROOM SHOULD EXTEND TO DECK ABOVE AND SUSPENDED CEILINGS SHOULD BE OMITTED.
- 5. ALL SURFACE FINISHES SHOULD BE LIGHT IN COLOR TO ENHANCE ROOM LIGHTING SHOULD BE TREATED TO MINIMIZE DUST.

6. CONCRETE FLOORS SHOULD BE SEALED AND/OR COVERED WITH

- ANTI-STATIC FLOOR TILE. 7. FLOOR LOADING BENEATH EQUIPMENT RACKS SHOULD SUPPORT
- 8. EQUIPMENT SUCH AS PIPING, DUCTWORK, POWER CONDUITS AND OTHER ELEMENTS NOT RELATED TO THE SUPPORT OF THE MDF ROOM SHOULD NOT BE LOCATED IN OR PASS THROUGH THE MDF ROOM.
- 9. THE MDF ROOM SHOULD NOT SHARE SPACE WITH ANY OTHER FUNCTIONS (E.G., STORAGE).

PLYWOOD BACKBOARDS:

OR REQUIRED BY LOCAL CODE.

500 LB/SF.

- 1. PROVIDE 3/4" PLYWOOD BACKBOARDS IN MDF ROOM ON ALL WALL SURFACES WIDER THAN 12", INCLUDING ABOVE DOORS
- 2. INSTALL PLYWOOD WITH SHEETS ORIENTED VERTICALLY AND WITH ADJACENT SHEETS ABUTTED TIGHTLY.
- 3. SECURELY MOUNT ALL PLYWOOD TO WALL STRUCTURE FROM 0'-8" TO 8'-8" A.F.F.
- 4. PROVIDE PLYWOOD WITH AT LEAST ONE SMOOTH SIDE AND MOUNT PLYWOOD WITH SMOOTH SIDE FACING INTO ROOM.
- COATS OF WHITE OR LIGHT-COLORED PAINT. 6. PROVIDE FIRE RETARDANT PLYWOOD AND PAINT AS PERMITTED

5. THOROUGHLY COVER ALL SURFACES OF PLYWOOD WITH TWO

- 1. PROVIDE DEDICATED CIRCUITS TO EQUIPMENT RACKS AS INDICATED IN ENLARGED POWER PLAN.
- 2. PROVIDE CONVENIENCE POWER OUTLETS (MAY BE ON SHARED CIRCUITS) AS INDICATED ON ENLARGED POWER PLAN OR AT 6-FOOT INTERVALS AROUND ROOM PERIMETER.
- 3. SUPPORT RACK POWER WITH EMERGENCY GENERATOR SYSTEM.

LIGHTING:

1. COORDINATE POSITIONING OF LIGHTING FIXTURES WITH EQUIPMENT LAYOUT SO THAT LIGHT IS NOT OBSTRUCTED

4. FEED RACK POWER FROM CLEAN POWER SOURCE.

- 2. PROVIDE LIGHTING FROM SEPARATE PANEL FROM RACK POWER.
- 3. AVOID USE OF DIMMERS

NON-CONDENSING.

- 4. SUPPORT LIGHTING WITH EMERGENCY GENERATOR BACKUP.
- 5. PROVIDE 500 LUX (50 FOOT-CANDLES) OF LIGHT INTENSITY, MEASURED AT 36" A.F.F. IN FRONT OF EQUIPMENT RACKS.
- 6. MOUNT LIGHTING FIXTURES ABOVE 8'-6" A.F.F. OR AS CLOSE TO OVERHEAD DECK AS PRACTICABLE.

HVAC:

- 1. PROVIDE COOLING TO BE FULLY FUNCTIONAL ON A CONTINUOUS (24/7) BASIS AND SUPPORTED BY EMERGENCY POWER.
- 2. DESIGNED COOLING SYSTEM TO PRODUCE A POSITIVE AIR PRESSURE WITHIN THE MDF ROOM.
- 3. DESIGNED COOLING SYSTEM TO PROVIDE A MINIMUM OF ONE AIR CHANGE PER HOUR.
- 4. PROVIDE HEAT DISSIPATION SUFFICIENT TO MAINTAIN A
- TEMPERATURE RANGE OF 65 75 DEGREES FAHRENHEIT 5. CONTROL HUMIDITY TO MAINTAIN 40% TO 55% RH

CABLING SYSTEMS

GENERAL

- 1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF ANSI/TIA-568.
- 2. ALL SIGNAL-CARRYING COMPONENTS SHALL BE LISTED BY AN INDEPENDENT TESTING LABORATORY FOR RATED PERFORMANCE AND SHALL BEAR THE APPROPRIATE MARKINGS
- 3. ALL CABLE ASSEMBLIES SHALL LISTED AS BEING BE RATED FOR PLACEMENT IN THEIR INTENDED ENVIRONMENTS PER NEC AND SHALL BEAR THE APPROPRIATE CABLE MARKINGS.
- 4. PROVIDE SUBMITTALS OF MANUFACTURER'S PRODUCT DATA FOR ALL COMPONENTS INTENDED FOR INSTALLATION, INCLUDING ALL CABLE AND CONNECTOR TYPES, CONNECTOR PANELS, RACKS AND CABLE RUNWAY COMPONENTS.

HORIZONTAL STRUCTURED CABLING

- 1. PROVIDE HORIZONTAL CABLING TO DATA OUTLETS AS INDICATED IN SYMBOL LEGEND.
- 2. PROVIDE CATEGORY 6 TYPE CM-LS CABLE CONSTRUCTION RATED FOR DUCT PLACEMENT FOR ALL HORIZONTAL CABLING.
- 3. TERMINATE ALL CABLE ENDS WITH CATEGORY 6 CONNECTORS.
- 4. PROVIDE OUTLET FACEPLATE CONSTRUCTED OF SAME MATERIAL AS FOR ELECTRICAL OUTLETS. PROVIDE SAME DEGREE OF MOISTURE RESISTANCE AS SPECIFIED FOR ELECTRICAL OUTLETS.
- 5. ROUTE ALL HORIZONTAL CABLES TO NEAREST IDF AND TERMINATE ON RACK-MOUNTED PATCH PANELS.
- 6. CERTIFY ALL CABLES FOR CATEGORY 6 PERFORMANCE AFTER INSTALLATION IS COMPLETE. ANY REWORK AT OUTLETS OR PATCH PANELS WILL NULLIFY PRIOR TESTING AND REQUIRE RE-CERTIFICATION OF AFFECTED CABLES. PROVIDE DETAILED CERTIFICATION REPORT FOR EACH CATEGORY 6 CABLE
- 7. PROVIDE (2) CATEGORY 6 PATCH CORDS FOR EACH CATEGORY 6 CABLE INSTALLED. ONE HALF OF PATCH CORD QUANTITY SHALL BE 8 FT. LONG, FOR USE AT THE MDF, AND THE OTHER HALF SHALL BE 3 FT. LONG, FOR USE AT IDFs.

BACKBONE STRUCTURED CABLING:

- . PROVIDE BACKBONE CABLING BETWEEN MDF AND EACH IDF, AND BETWEEN MDF AND CENTRAL LOCATIONS ON 3RD FLOOR (COPPER) AND 4TH FLOOR (FIBER) OF WORTHAM BUILDING.
- 2. PROVIDE CABLE TYPES AND PAIR/FIBER COUNTS AS INDICATED IN PLANS.
- 3. TERMINATE COPPER CABLES ON BOTH ENDS ON WALL-MOUNTED TERMINATION BLOCKS AND EXTEND TO RACK-MOUNTED MODULAR PATCH PANELS.
- 4. CERTIFY COPPER BACKBONE CABLES FOR CATEGORY 5e PERFORMANCE. PROVIDE DETAILED CERTIFICATION REPORT
- 5. TERMINATE FIBER OPTIC CABLES ON BOTH ENDS ON DUPLEX-LC FIBER OPTIC ADAPTOR PANELS IN RACK-MOUNTED FIBER OPTIC ENCLOSURES.
- 6. CERTIFY PERFORMANCE OF ALL OPTICAL FIBERS AT 1310 AND 1550 NM. TOTAL LINK LOSS SHALL NOT EXCEED MANUFACTURER'S FIGURES FOR CHARACTERISTIC INSERTION LOSS FOR FIBER AND CONNECTORS. PROVIDE DETAILED CERTIFICATION REPORT.
- 7. ANY REWORK AT CABLE TERMINATION WILL NULLIFY PRIOR TESTING AND REQUIRE RE-CERTIFICATION OF AFFECTED CABLES.

CABLING FOR "PARC" SYSTEM:

- 1. PROVIDE ADDITIONAL CATEGORY 6 CABLING FOR THE PARKING ACCESSED REVENUE CONTROL SYSTEM (PARC) PER THE "PARC" SYSTEM CABLING TABLE ON THIS SHEET
- 2. COMPLY WITH ALL REQUIREMENTS FOR HORIZONTAL STRUCTURED CABLING AS GIVEN ABOVE.
- 3. VERIFY ALL DATA OUTLET LOCATIONS AND COORDINATE INSTALLATION DETAILS WITH SYSTEM EQUIPMENT REQUIREMENTS.

"PARC" SYSTEM CABLING

ADDITIONAL CABLING SCOPE FOR PARKING ACCESSED REVENUE **CONTROL (PARC) SYSTEM:**

PROVIDE (1) CAT 6 FROM THE NEAREST IDF TO EACH ITEM OF EQUIPMENT IN THE FOLLOWING LIST. PROVIDE (4) CAT 6 TO EACH PARKING BOOTH VERIFY ALL LOCATIONS AND COORDINATE ALL

PARKIN	NG EQUIPMENT	- BG, YG & GG GARAC	SES
STREET	ENTRANCE	EQUIPMENT	QUANTITY
		AVI	2
		BAR CODE	2
		EXIT VERIFIER	2
		GATES	2
JSK	1	INTERCOM	2
		KEYPAD	1
		PARKING BOOTH	1
		POS	1
		TICKET SPITTER	1
		AVI	4
		BAR CODE	4
		EXIT VERIFIER	2
W RUSK	2	GATES	4
		INTERCOM	4
		KEYPAD	2
		POS	2
		TICKET SPITTER	2
		AVI	3
		BAR CODE	2
		EXIT VERIFIER	1
		GATES	3
PITOL	4	INTERCOM	3
		KEYPAD	2
		PARKING BOOTH	1
		POS	1
		TICKET SPITTER	2
		AVI	2
		BAR CODE	2
		EXIT VERIFIER	1
		GATES	2
W CAPITOL	5	INTERCOM	2
		KEYPAD	2
		PARKING BOOTH	1
		POS	1
		TICKET SPITTER	1
XAS	6		
		AVI	2
		BAR CODE	2
			4

EXIT VERIFIER

PARKING BOOTH

TICKET SPITTER

GATES

INTERCOM

KEYPAD

POS

AVI

BAR CODE

GATES

INTERCOM

KEYPAD

6 & 8

EXIT VERIFIER

PARKING BOOTH

TICKET SPITTER

3

3

1

TEXAS

PRARIE

SYMBOL LEGEND

- STANDARD WALL-MOUNTED DATA OUTLET. PROVIDE (2) CAT 6 TYPE CM-LS RATED FOR DUCT PLACEMENT. VERIFY LOCATION. PROVIDE ADJACENT DUPLEX POWER OUTLET.*
- DATA OUTLET FOR TALK-A-PHONE EMERGENCY PHONE AND CAMERA SYSTEM. PROVIDE (2) CAT 6 TYPE CM-LS RATED FOR DUCT PLACEMENT. VERIFY LOCATION AND COORDINATE INSTALLATION DETAILS WITH SYSTEM EQUIPMENT REQUIREMENTS.
- DATA OUTLET FOR WIRELESS ACCESS POINT. FASTEN OUTLET ASSEMBLY TO OVERHEAD DECK STRUCTURE. PROVIDE (2) CAT 6 TYPE CM-LS RATED FOR DUCT PLACEMENT. VERIFY LOCATION.
- DATA OUTLET FOR PARKING GUIDANCE SYSTEM MATRIX DISPLAY. PROVIDE (2) CAT 6 TYPE CM-LS RATED FOR DUCT PLACEMENT. VERIFY LOCATION AND COORDINATE INSTALLATION DETAILS WITH EQUIPMENT REQUIREMENTS. PROVIDE DISPLAY POWER AS REQUIRED.
- DATA OUTLET FOR SECURITY CAMERA. PROVIDE (1) CAT 6 TYPE CM-LS RATED FOR DUCT PLACEMENT. VERIFY LOCATION AND COORDINATE INSTALLATION DETAILS WITH EQUIPMENT REQUIREMENTS. DATA OUTLET RADIO REPEATER. PROVIDE (4) CAT 6

LOCATION AND COORDINATE INSTALLATION

TYPE CM-LS RATED FOR DUCT PLACEMENT. VERIFY

DETAILS WITH SYSTEM EQUIPMENT REQUIREMENTS

NOTE: PROVIDE A STANDARD WALL-MOUNTED DATA OUTLET IN ALL ELECTRICAL AND MECHANICAL ROOMS AND AT ALL INTERFACE PANELS FOR BAS AND OTHER SYSTEMS.

UNIT PRICING

- 1. PROVIDE A UNIT PRICE FOR THE ADDITION OR DELETION OF ONE COMPLETE DATA OUTLET ASSEMBLY, INCLUDING CONDUIT, FOR EACH OF THE DATA OUTLET TYPES INDICATED IN THE SYMBOL LEGEND, ASSUMING THE OUTLET TO BE WITHIN A 200-FOOT RADIUS OF AN IDF.
- 2. PROVIDE A UNIT PRICE FOR THE ADDITION OR DELETION OF ONE COMPLETE IDF INSTALLATION AS SPECIFIED IN THE PLANS. INCLUDING THE FOLLOWING
- A. ENCLOSURE/CABINET ASSEMBLY
- B. AIR CONDITIONER
- C. ALL INTERNAL COMPONENTS
- D. ALL CONDUIT, INCLUDING JUNCTION BOX, AS SHOWN IN PLANS
- E. POWER FOR EQUIPMENT AND AIR CONDITIONER (SEPARATE CIRCUITS)
- F. TBB AS SPECIFIED FOR GROUNDING AND BONDING SYSTEM

THEATER CENTER **GARAGE (BG) REHABILITATION**

IT / LOW VOLTAGE

03-27-2018

511 Rusk St., Houston, TX 77002

TRANQUILITY GARAGE (YG) REHABILITATION

CIVIC CENTER GARAGE (GG) REHABILITATION

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Revisions

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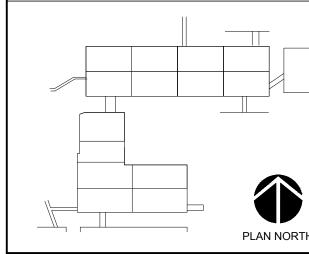
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Key Plan



TELECOM NOTES AND SYMBOLS

BG/YG/ GG-T001

KEY NOTES: 1 PROVIDE BETWEEN ADJACENT RACKS AND AT EACH END OF RACK ROW. **EQUIPMENT KEY**: (A) 4-POST EQUIPMENT RACK¹ 2 PROVIDE (100) #12-24 CAGE NUTS AND SCREWS. (B) 4-POST SERVER RACK² (3) MEASUREMENT INDICATED FROM PLYWOOD (C) 6"W VERTICAL CABLE MANAGER³ FACE TO CENTER LINE OF FRONT RACK POSTS. 4 TYPICAL WHERE SHOWN AT CORNERS OF RUNWAY JUNCTIONS. (D) 18"W CABLE RUNWAY (E) 12"W CABLE RUNWAY (5) TYPICAL AT ALL RUNWAY STRINGER (F) RADIUS DROP, 18" CROSS MEMBER JUNCTIONS. (G) RUNWAY CORNER BRACKET 6 PROVIDE (2) RADIUS DROPS PER VERTICAL CABLE MANAGER. ALIGN WITH EDGES OF (H) RUNWAY T-JUNCTION HARDWARE VERTICAL CHANNELS OF CABLE MANAGER. (J) RUNWAY SUPPORT WALL ANGLE 7 MEASUREMENT INDICATED FROM PLYWOOD FACE TO CENTER LINE OF 18"W CABLE RUNWAY. (K) TRIANGLE SUPPORT BRACKET (L) PROTECTIVE RUBBER END CAPS **GENERAL NOTES**: ¹CPI QUADRA RACK 50120-703 OR EQUAL ²CPI SERVER RACK 15053-703 OR EQUAL

1. PROVIDE 3/4" PLYWOOD BACKBOARDS ON ALL

3. PROVIDE PROTECTIVE BUSHINGS ON BOTH ENDS

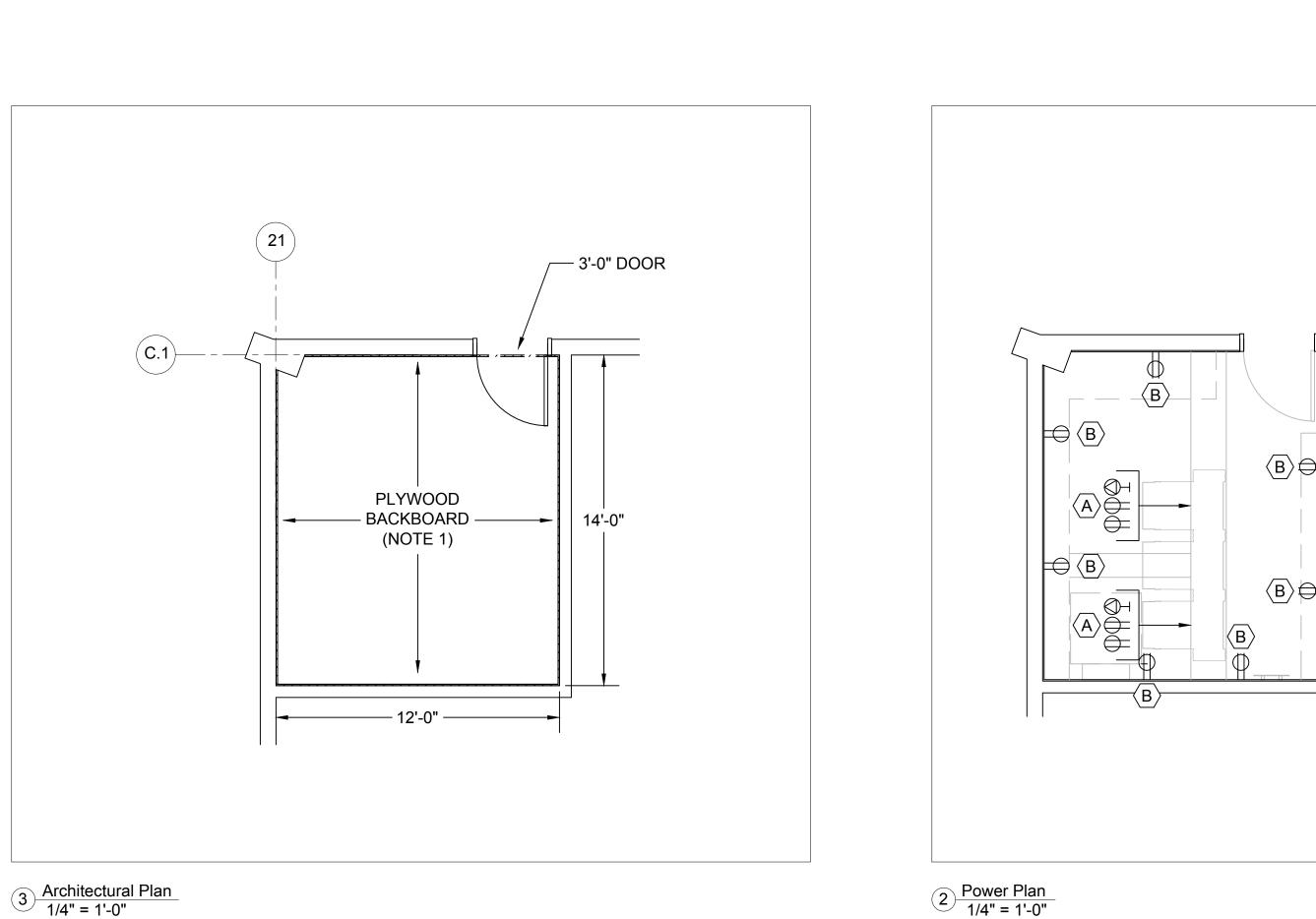
WALLS FROM 0'-6" AFF TO 8'-6" AFF.

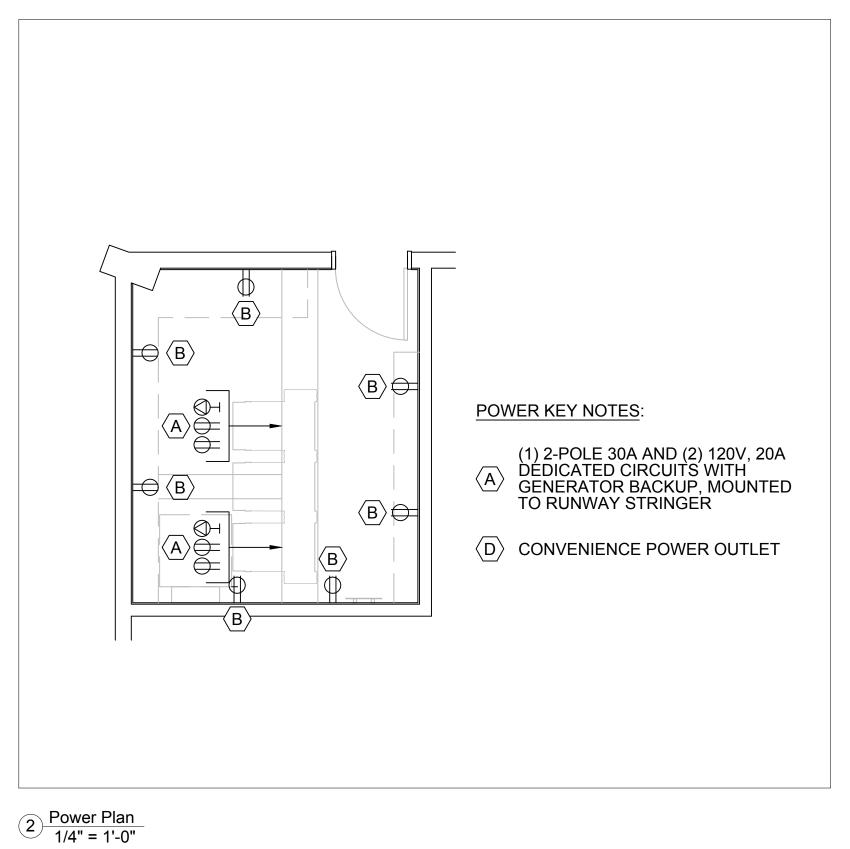
OF ALL CONDUITS AND SLEEVES.

EQUAL.

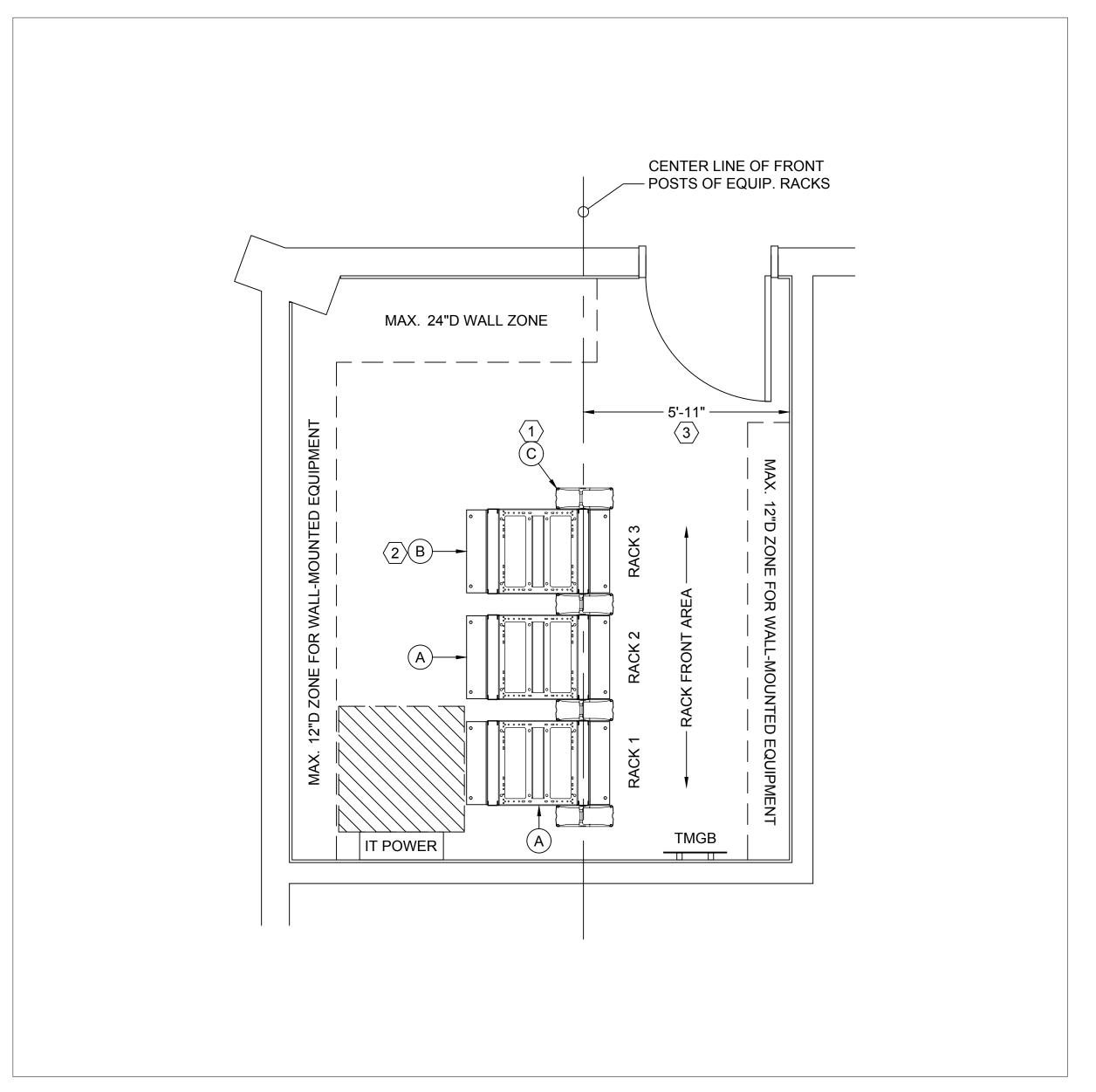
2. ALL CABLE RUNWAY TO HAVE ADJUSTABLE CROSS MEMBERS, CHATSWORTH 14300 OR

4 Cable Runway Plan 1/2" = 1'-0"





³CPI VELOCITY SERIES 13912-703 OR EQ.



1) Equipment Location Plan
1/2" = 1'-0"

IT / LOW VOLTAGE 03-27-2018

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REHABILITATION

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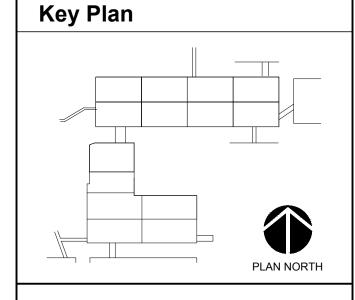
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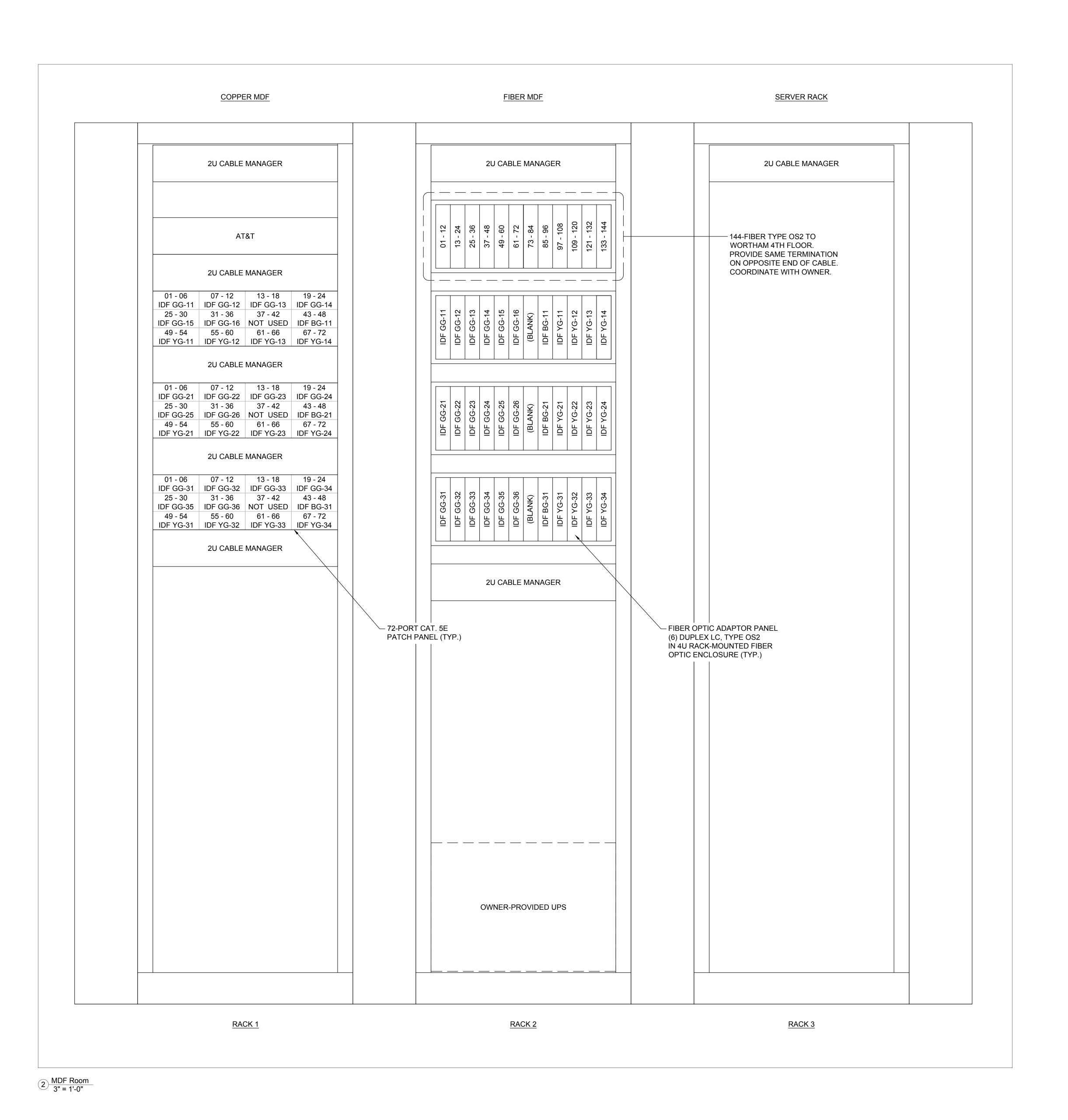


TELECOM ENLARGED PLANS - MDF ROOM

BG/YG/ GG-T401

Scale: As Noted

12



1 Typical IDF Rack
3" = 1'-0"

IT / LOW VOLTAGE 03-27-2018

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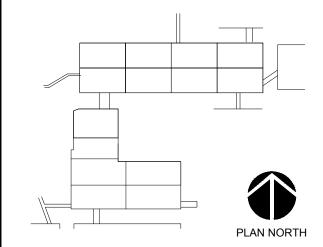
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Key Plan



TELECOM
RACK ELEVATIONS &
PANEL ASSIGNMENTS

BG/YG/ GG-T402

Scale: As Noted

12

TOP VIEW WALL-MOUNTED -**IDF CABINET** EXTERNALLY-MOUNTED AIR CONDITIONING UNIT

1" = 1'-0"

(6) 2" CONDUITS TO J-BOX (HORIZONTAL CABLING) — 2" CONDUIT TO MDF (BACKBONE CABLING) 00000 - EXTERNALLY-MOUNTED WALL-MOUNTED IDF CABINET AIR CONDITIONING UNIT TOP VIEW

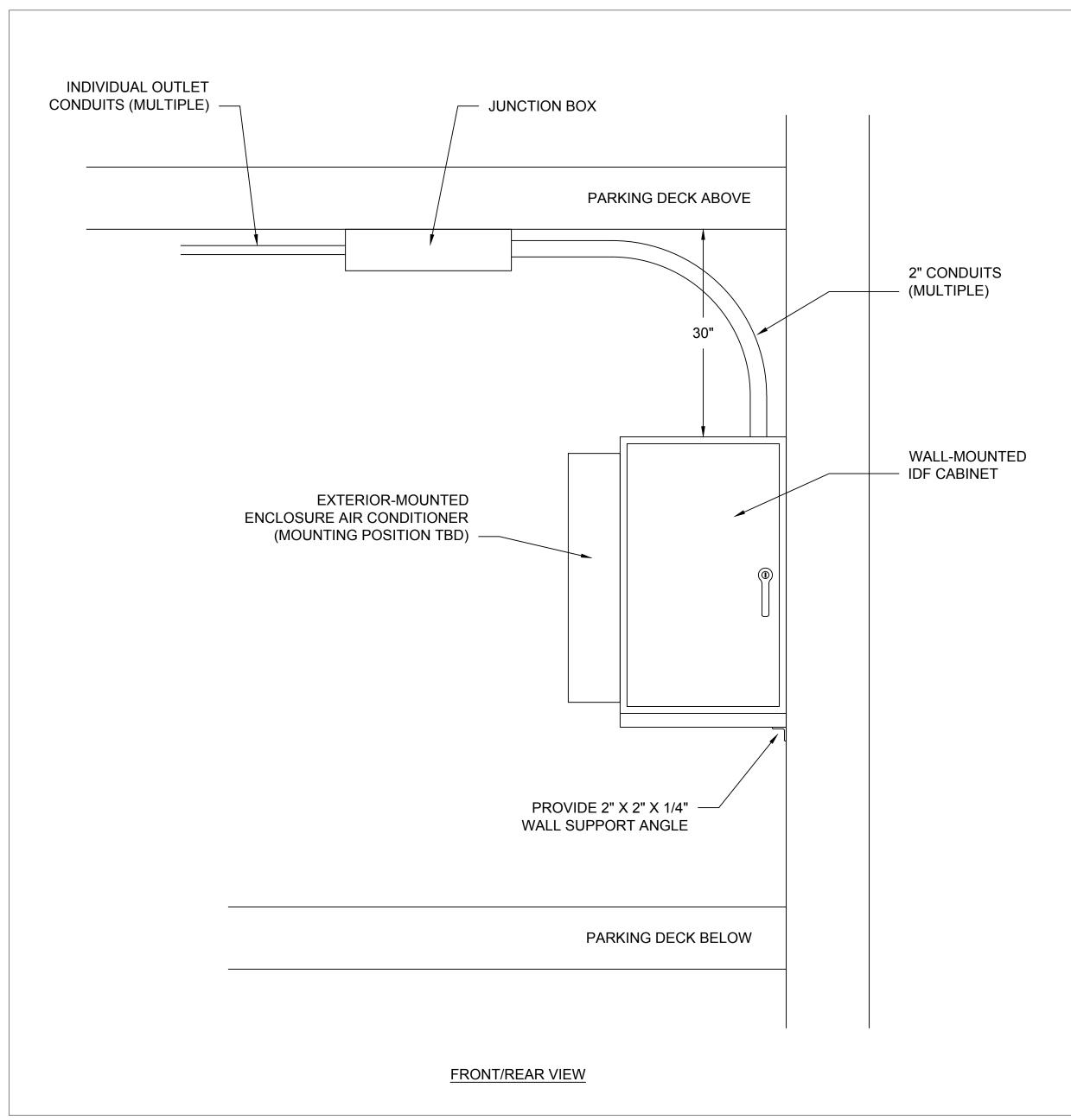
Typical IDF Cabinet - Top View
1" = 1'-0"

IDF CABINET - CONSTRUCTION AND FEATURES **ENCLOSURE CABINET** 42"H X 24"W X 30"D NEMA 4X WELDED TYPE 304 STAINLESS STEEL CONSTRUCTION FRONT AND REAR HINGED DOORS THREE-POINT LATCHES WITH KEY LOCKS SOLID DOORS - NO WINDOWS 19" RACK MOUNTING RAILS, FRONT AND REAR GROUNDING STUDS INSIDE CABINET AND ON EACH DOOR BOLT-DOWN LEGS ON BOTTOM OF ENCLOSURE, 6"H CABLE EXIT PLATE* *NOTE: CABLE EXIT HOLES AND GLAND FITTINGS BY CONTRACTOR **ENCLOSURE AIR CONDITIONER** 5,000 BTU/HR CLOSED LOOP SYSTEM HIGH-EFFICIENCY COMPRESSOR HIGH-EFFICIENCY NON-CFC REFRIGERANT DIGITAL TEMPERATURE CONTROLLER CONDENSATE MANAGEMENT SYSTEM EASILY-ACCESSIBLE WASHABLE FILTER MEDIA EXTERIOR MOUNTING TO SIDE OF ENCLOSURE MOUNTING GASKET AND TAMPER-RESISTANT HARDWARE 120 VAC OPERATION NEMA 4X MIN. 1-YEAR FULL WARRANTY

BASIS OF DESIGN:

CABINET: EIC SOLUTIONS S422430-RM-CB5K-RS-20241 AIR CONDITIONER: EIC SOLUTIONS CBIQ5000V16-N4X-1 WWW.EICSOLUTIONS.COM

NOTE: SECURE CABINET TO WALL PER MANUFACTURER'S INSTRUCTIONS.



2 Typical IDF Cabinet - Front/Rear View 1" = 1'-0"

PARKING DECK ABOVE AAAAAA ! 2" CONDUIT TO MDF (BACKBONE CABLING) JUNCTION BOX -(6) 2" CONDUITS TO J-BOX — (HORIZONTAL CABLING) EXTERIOR-MOUNTED ENCLOSURE AIR CONDITIONER (MOUNTING POSITION TBD) WALL-MOUNTED **IDF CABINET** PROVIDE 2" X 2" X 1/4" WALL SUPPORT ANGLE PARKING DECK BELOW SIDE VIEW

1 Typical IDF Cabinet - Side View
1" = 1'-0"

IT / LOW VOLTAGE 03-27-2018

> THEATER CENTER **GARAGE (BG) REHABILITATION**

511 Rusk St., Houston, TX 77002 **TRANQUILITY**

> **GARAGE (YG) REHABILITATION**

500 Rusk St., Houston, TX 77002

CIVIC CENTER GARAGE (GG)

REHABILITATION 401 Capitol St., Houston, TX 77002

Houstonfirst.

701 Avenida de las Americas Houston, TX 77010

HarrisonKornberg/ARUP 3800 Buffalo Speedway, Suite 550 Houston, Texas 77098 tel (713) 229-0688 fax (713) 229-0692

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construction methods shown herein are not adhered to, or
the terms of the contractual agreement for its use is
violated. wolated.
Written dimensions on these drawings shall have precedence over scale dimensions. Contractors shall be responsible for all dimensions and conditions on the job. HarrisonKornberg Architects, LLC must be notified of any variation from the dimension and conditions shown by these drawings.

Revisions

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MEP ENGINEER Arup, Texas Reg. # F-1990 Contact: Tom Smith t: 713.343.1472

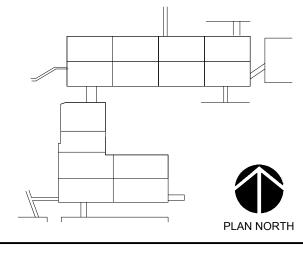
STRUCTURAL ENGINEER **Walter P Moore**

Contact: Mark Williams t: 713.630.7424 PARKING CONSULTANT Walker Parking

Contact: James Brooks t: 281.280.0068 ACOUSTICS / AV / IT Jaffe Holden

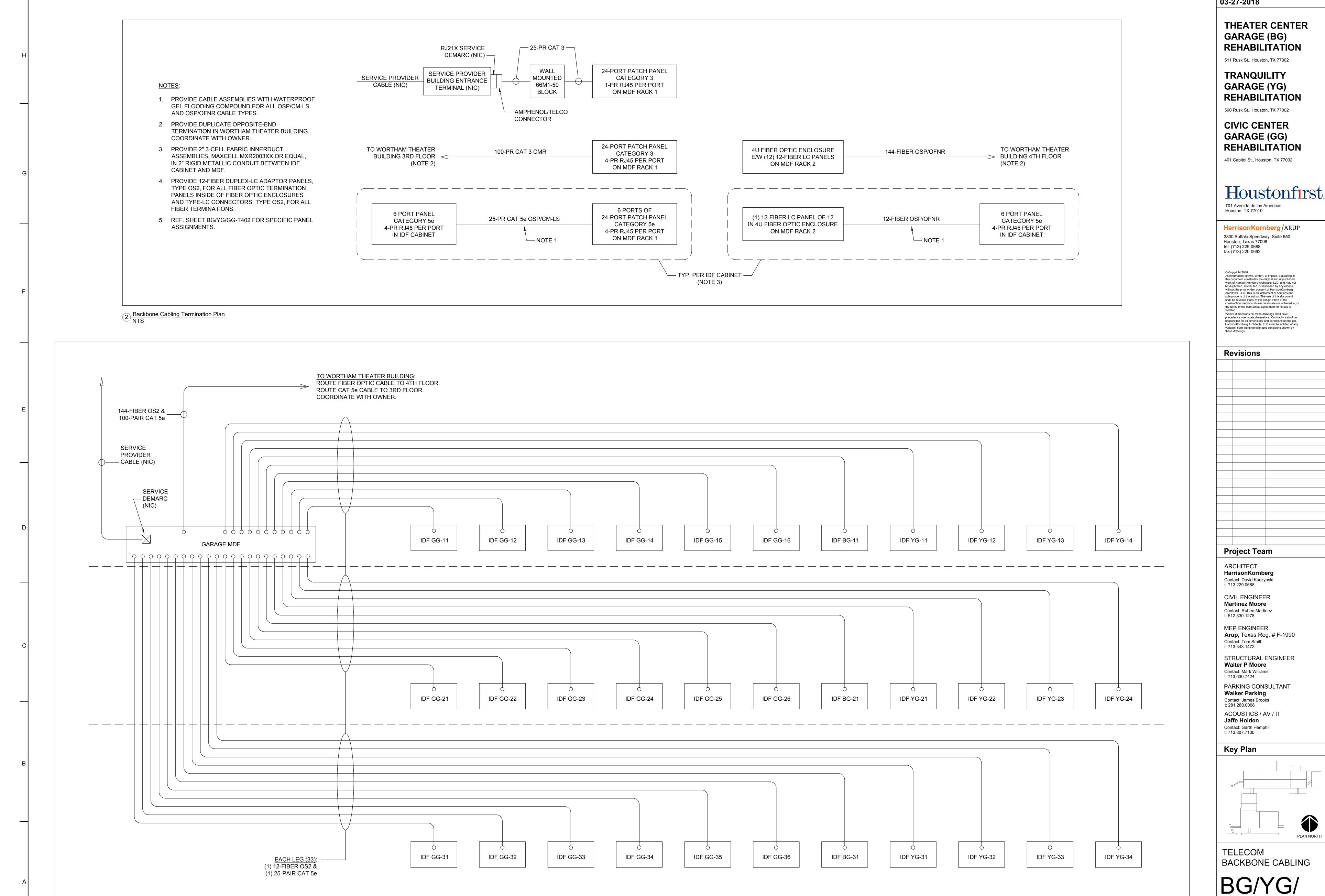
Contact: Garth Hemphill t: 713.807.7100

Key Plan



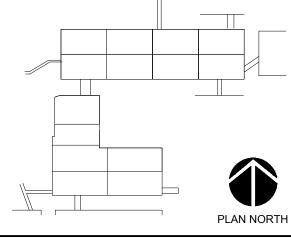
TELECOM TYPICAL IDF DETAILS

BG/YG/ GG-T403



1 Backbone Cabling Riser Diagram NTS

IT / LOW VOLTAGE 03-27-2018



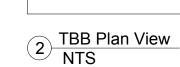
GG-T610

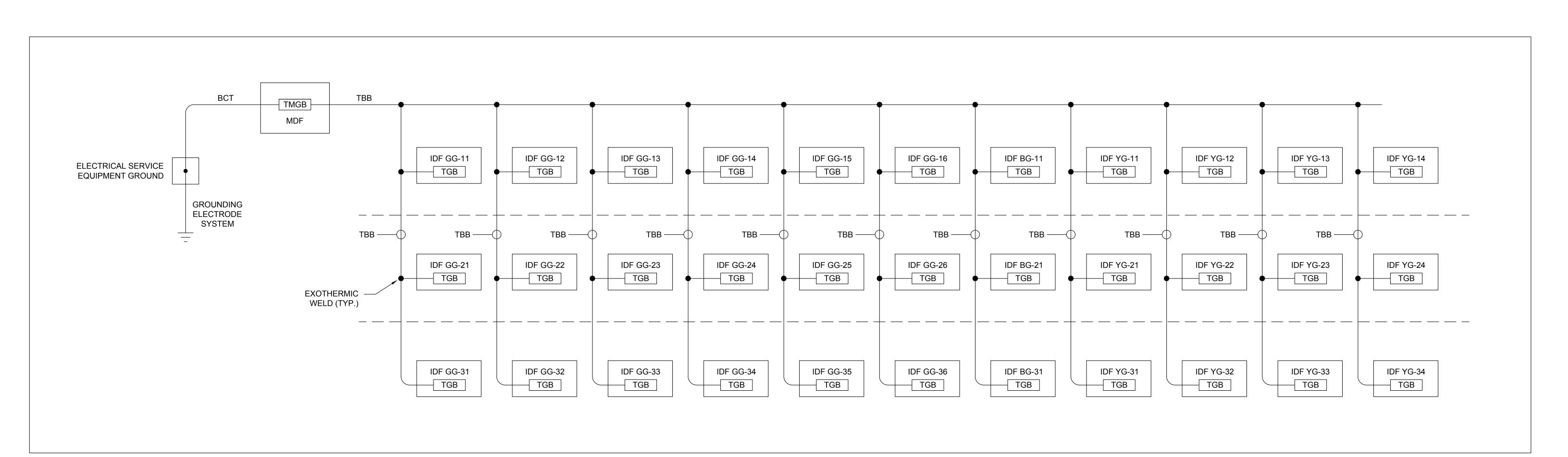
TELECOM GROUNDING & BONDING NOTES

- 1. DESIGN, COMPONENTS AND INSTALLATION OF THE TELECOMMUNICATIONS GROUNDING AND BONDING SYSTEM TO COMPLY WITH ANSI/TIA-607-C.
- 2. PROVIDE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB) ON WALL IN MDF ROOM. LOCATE TO BE HIGHLY VISIBLE AND READILY ACCESSIBLE FOR MAINTENANCE.
- 2. PROVIDE TELECOMMUNICATIONS GROUNDING BUSBAR (TGB) INSIDE OF EACH IDF CABINET. MOUNT ON REAR MOUNTING RAILS, FACING REARWARD. POSITION TO NOT OBSTRUCT ACCESS TO REAR OF FRONT-MOUNTED **EQUIPMENT AND PANELS.**
- 3. CONNECT EACH TGB TO THE TMGB VIA TELECOMMUNICATIONS BONDING BACKBONE (TBB) CONDUCTOR SIZED PER TBB MINIMUM SIZING TABLE ON THIS SHEET.
- 4. CONNECT TMGB TO BUILDING GROUNDING ELECTRODE WITH BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT). REFER TO RISER DIAGRAM. SIZE BCT PER TBB MINIMUM SIZING TABLE AND NO SMALLER THAN LARGEST TBB SIZE USED IN SYSTEM.
- 5. BOND TMGB AND EACH TGB TO THE FOLLOWING BUILDING ELEMENTS WITH MIN. #6 INSULATED COPPER GROUND WIRE:
- A. GROUND BUS OF ELECTRICAL PANELBOARD PROVIDING RACK POWER. USE LISTED CONNECTOR TO PANELBOARD GROUND BUS.
- B. NEAREST VERTICAL STEEL OF BUILDING STRUCTURE, WHERE AVAILABLE, USING EXOTHERMIC WELD FOR BUILDING STEEL CONNECTION.
- C. CONDUITS AND SLEEVES FOR TELECOMMUNICATIONS WITHIN SAME ROOM (MDF) OR EQUIPMENT ENCLOSURE (IDFs).
- D. ALL METALLIC, NON-CURRENT-CARRYING ELEMENTS WITHIN 6 FT. OF ANY EQUIPMENT LOCATION OR SERVICEABLE
- 6. BOND IDF CABINET BODY, DOORS, EQUIPMENT MOUNTING RAILS, AND ANY IDF EQUIPMENT TO TGB WITHIN CABINET.
- 7. BOND EACH EQUIPMENT RACK IN MDF DIRECTLY TO TMGB WITH MIN. #6 INSULATED GROUND WIRE. DO NOT RELY ON LOOPING FROM RACK TO RACK.
- 8. BOND CABLE RUNWAY (LADDER RACK) IN MDF TO TMGB WITH MIN. #6 INSULATED COPPER GROUND WIRE. BOND THROUGH ALL RUNWAY END-BUTT AND JUNCTION SPLICES.
- 9. PROVIDE LISTED 2-HOLE LUGS AND NON-REVERSIBLE COMPRESSION CONNECTORS FOR ALL BONDING CONNECTIONS THAT ARE NOT EXOTHERMICALLY WELDED.
- 10. TBB ROUTING SHOWN IN RISER DIAGRAM AND TBB PLAN VIEW ARE SCHEMATIC ONLY AND INTENDED TO INDICATE MOST DIRECT RECTILINEAR PATHS BETWEEN TMGB AND EACH TGB TO ACHIEVE MINIMUM CONDUCTOR LENGTHS. ACTUAL TBB ROUTING MAY VARY AS PRACTICABLE OR AS OTHERWISE SPECIFIED BY THE ELECTRICAL ENGINEER

TELECOMMUNICATIONS BONDING AND GROUNDING DEFINITIONS		
ВСТ	BONDING CONDUCTOR FOR TELECOMMUNICATIONS	
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR	
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR	
TBB	TELECOMMUNICATIONS BONDING BACKBONE	

TBB MINIMUM SIZING TABLE					
LENGTH	SIZE (AWG)	LENGTH	SIZE (AWG)		
< 14 FT.	6	85 - 105 FT.	4/0		
14 - 20 FT.	4	106 - 125 FT.	250 MCM		
21 - 26 FT.	3	126 - 150 FT.	300 MCM		
27 - 33 FT.	2	151 - 175 FT.	350 MCM		
34 - 41 FT.	1	176 - 250 FT.	500 MCM		
42 - 52 FT.	1/0	251 - 300 FT.	600 MCM		
53 - 66 FT.	2/0	> 300 FT.	750 MCM		
67 - 84 FT.	3/0				





1 Grounding & Bonding Riser Diagram NTS

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REHABILITATION

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Revisions

ARCHITECT

Project Team

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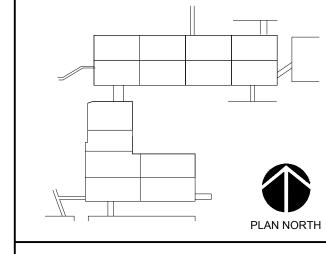
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Key Plan



TELECOM **GROUNDING & BONDING**

BG/YG/ GG-T620

— MDF/TMGB

– TBB (TYP.)

— IDF/TGB (TYP.)

