

*future*  
The Future of Mobile Radio

**MASTR® E-Net**  
Base Station  
Application/Assembly Diagrams

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<u>Title</u>	<u>Publication</u>
T/R SHELF .....	LBI-38637
SYSTEM MODULE.....	LBI-39176
POWER MODULE .....	LBI-38752

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### SAFETY NOTES

- The means of disconnecting power from a station cabinet is the cabinet power supply plug.
- When conducting repair/maintenance, disconnect the cabinet power supply plug from the AC source.
- In European applications, equipment must be installed in a closed cabinet.
- Only replace components with components specified by M/A-COM Private Radio Systems.

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## INTRODUCTION

This manual contains information for the MASTR® E-Net Base Station, including application information, cable diagrams and parts list for the cabinet hardware. For additional information refer to the following manuals:

<u>MANUAL NUMBER</u>	<u>TITLE</u>	<u>COMMENTS</u>
LBI-38636	Installation	How to install including Interconnection Diagrams.
MM101453V1	Installation	Installation and configuration of MASTR E-Net Trunked Repeater Site
LBI-38754	VHF RF Package	Information on the VHF equipment.
LBI-38675	UHF RF Package	Information on the UHF equipment.
LBI-39025	800 MHz RF Package	Information on the 800 MHz equipment.
LBI-38983	Antenna System	Information on typical antenna system installations.
LBI-38812	EDACS Interface Panels	Information on the panel used in EDACS applications.
MM101271V1	Site Pro	Information on Site Pro equipment
MM101343V1	Site Pro	Information on Site Pro equipment installation.
LBI-38625	Charger/Emergency power	Information on the batter charger and emergency power equipment.
LBI-38805	RF Test Fixture	Information on the RF Test Fixture

## APPLICATIONS

<u>OPTION NUMBER</u>	<u>APPLICATION ASSEMBLY</u>	<u>DESCRIPTION</u>
SXRB1J	AA02 HRB 10426	Installation of T/R Shelf for MASTR III Station.
SXSU3D	19D902845P7	Installation of <b>SOR</b> (Squelch Operated Relay) Kit.
SXMIL3S	19D902845P10	Installation of MASTR III auxiliary Receiver in a 69" Cabinet
SXVV1N SXVV1M SXVV1S SXVW1J	19D902845P12	Installation of E/D Module (non-1027 version) in a 69" Indoor Cabinet (Aegis Remote/Remote/Repeat MASTR III).

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**APPLICATIONS**

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<u>OPTION NUMBER</u>	<u>APPLICATION ASSEMBLY</u>	<u>DESCRIPTION</u>
SXVG3C SXVG3D	19D902845P13	Installation of E/D module (1027 version) in a 69" Indoor Cabinet (Remote E/D & Remote/Repeat).
SXDE5B	19D902845P14	Installation of Transmit Data Board.
SXVT1L	19D902845P26	Modem Voting Installation.
SXCP5T	19D902845P27	CNI Installation.
SXFN1A		2-Speed Fan (110 VAC).
SXFA1L		2-Speed Fan (230 VAC).
	19D902845P18	MASTR III Reference Oscillator/Distribution Amplifier.

NOTES:

- ⚠ SET MDI/MDIX SWITCH TO MDI FOR 24 PORT HUB  
SET MDI/MDIX SWITCH TO MDIX FOR 12 PORT HUB
- ⚠ SEE SHEET 3

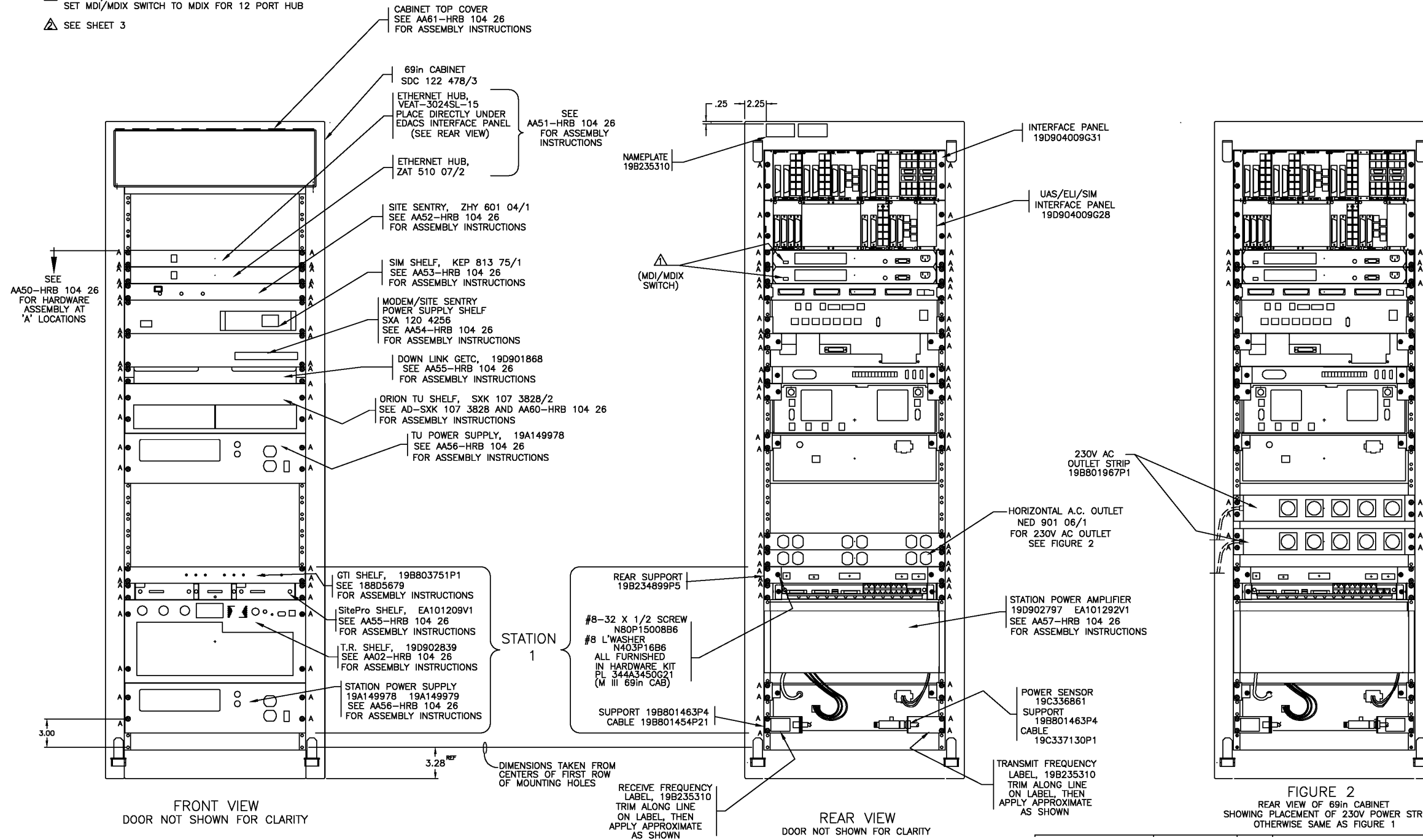


FIGURE 1  
SINGLE STATION 69in CABINET WITH SITE SENTRY/ELI/SIM/SitePro  
ELECTRICAL CONNECTIONS TO COMPLY WITH INTERCONNECT DIAGRAM ID38-HRB 104 26

SINGLE STATION 69 IN CABINET WITH SITE PRO/SIM

AA38-HRB 104 26 Rev. B

Sheet 1 of 3

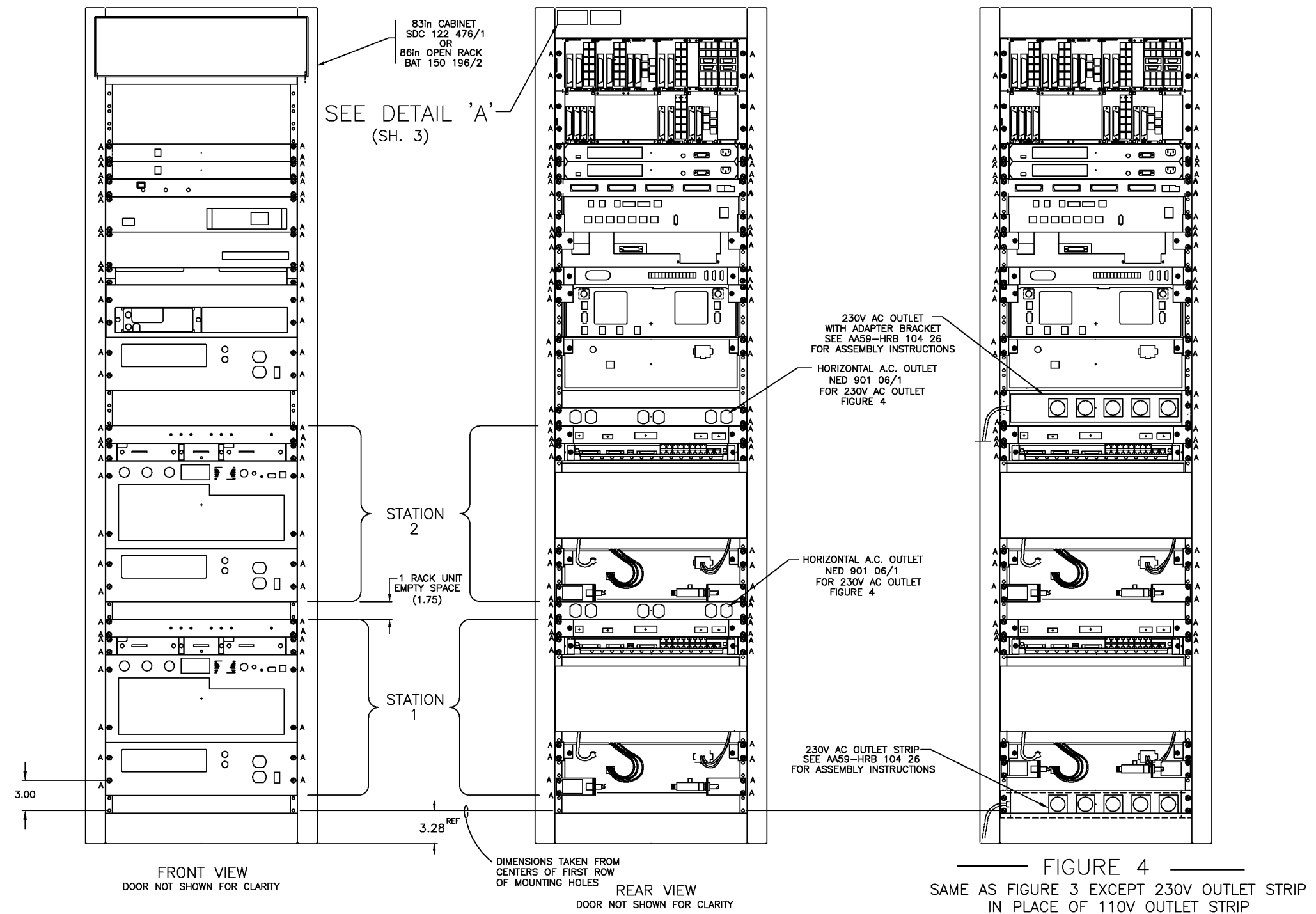


FIGURE 3  
MULTI-STATION 83in CABINET OR 86in OPEN RACK WITH SITE SENTRY/ELI/SIM/SitePro  
ASSEMBLED SAME AS FIGURE 1, SHEET 1 EXCEPT AS SHOWN

MULTI-STATION 83IN CABINET OR 86IN OPEN RACK WITH SITE PRO/SIM

AA38-HRB 104 26 Rev. B  
Sheet 2 of 3

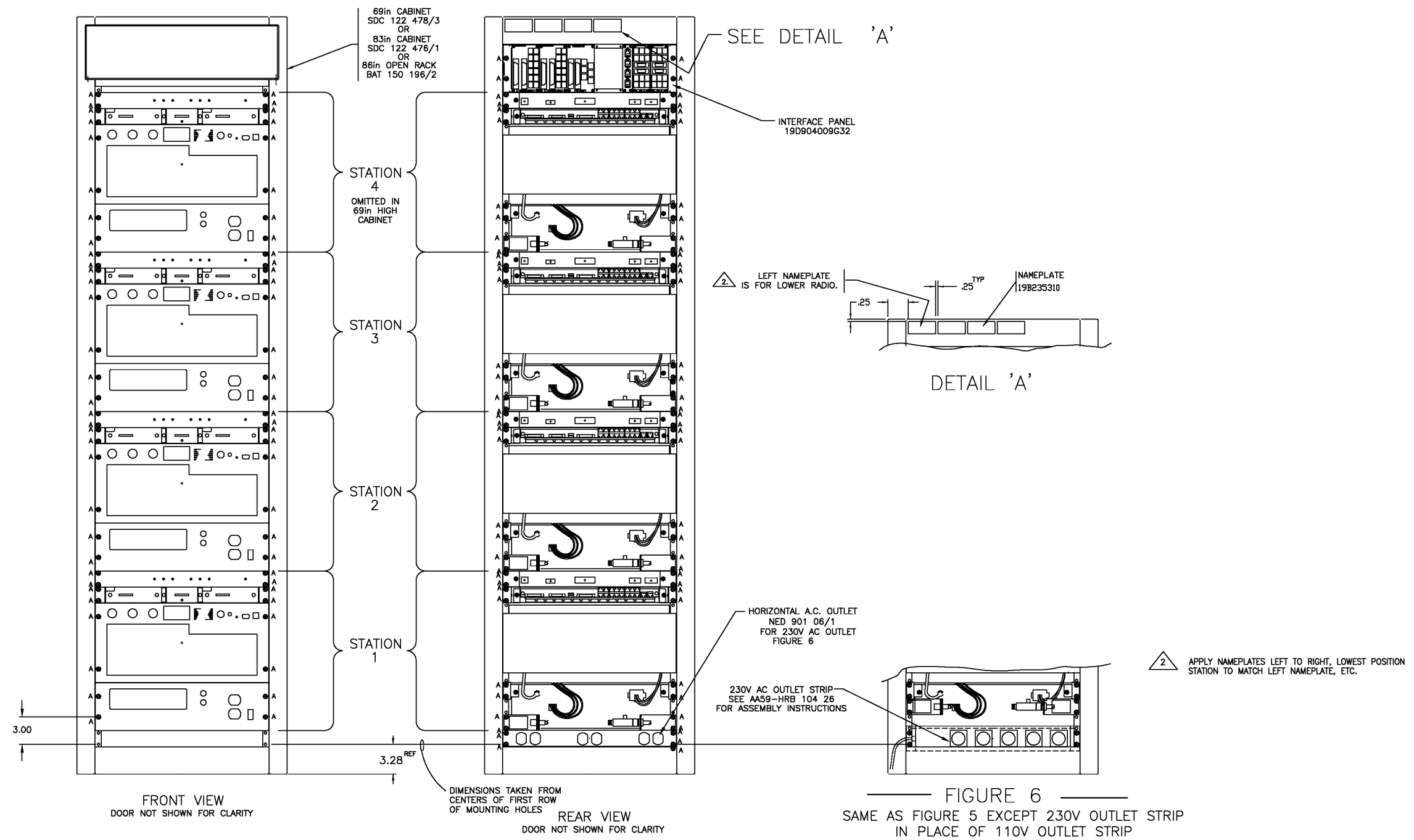
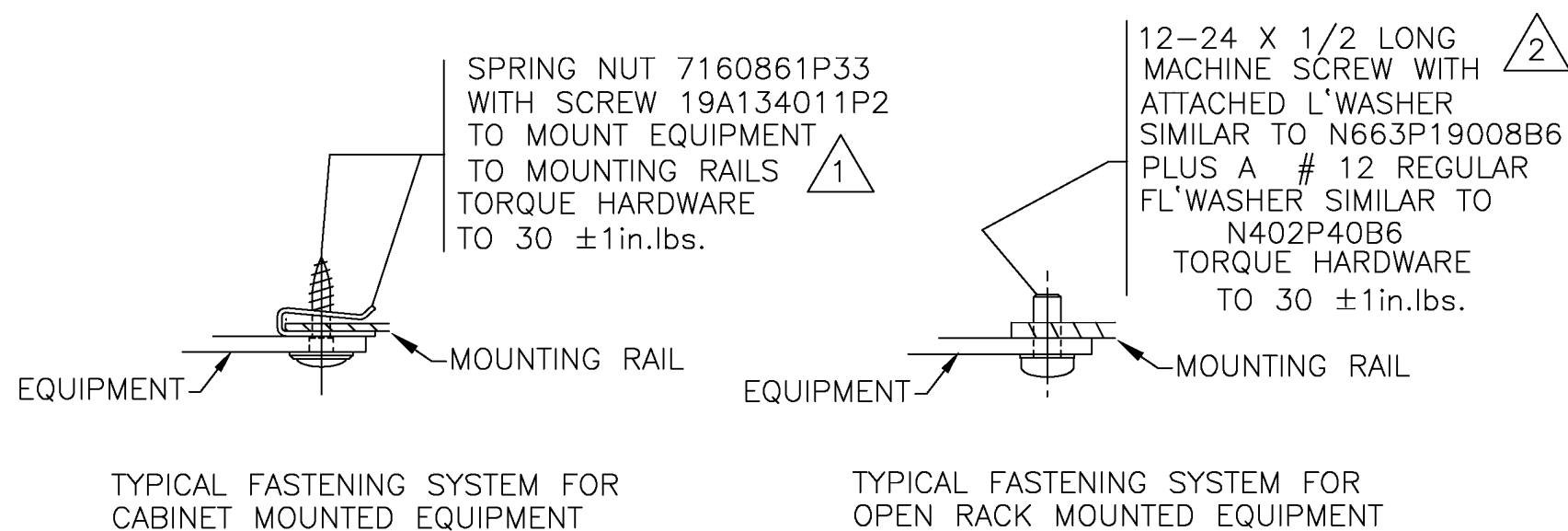




FIGURE 5  
MULTI-STATION 69in, 83in CABINET OR 86in OPEN RACK WITH SitePro  
ASSEMBLED SAME AS FIGURE 1, SHEET 1 EXCEPT AS SHOWN

MULTI-STATION 69IN, 83IN CABINET OR 86IN OPEN RACK WITH SITE PRO ASSEMBLED

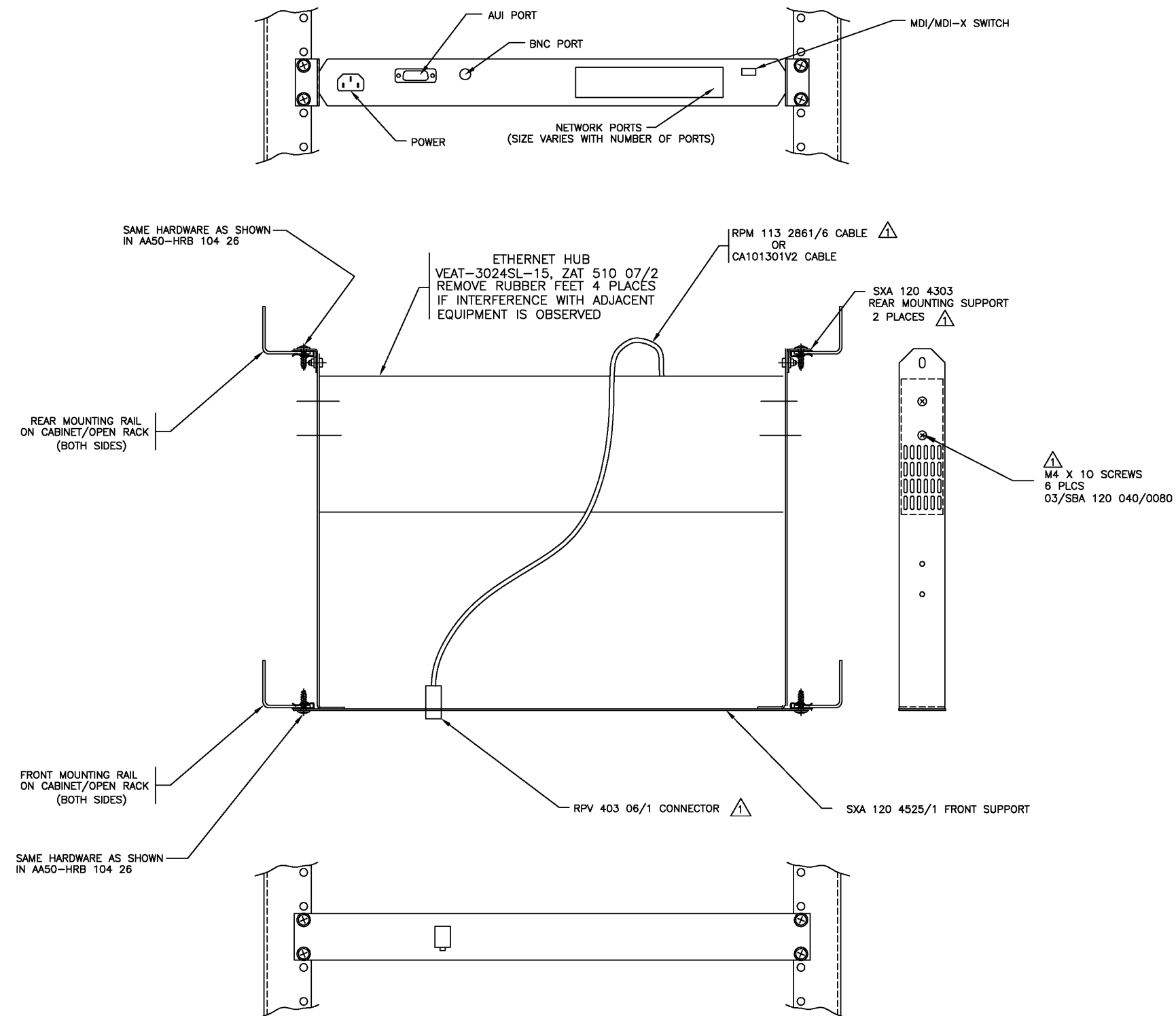
AA38-HRB 104 26 Rev. B  
Sheet 3 of 3



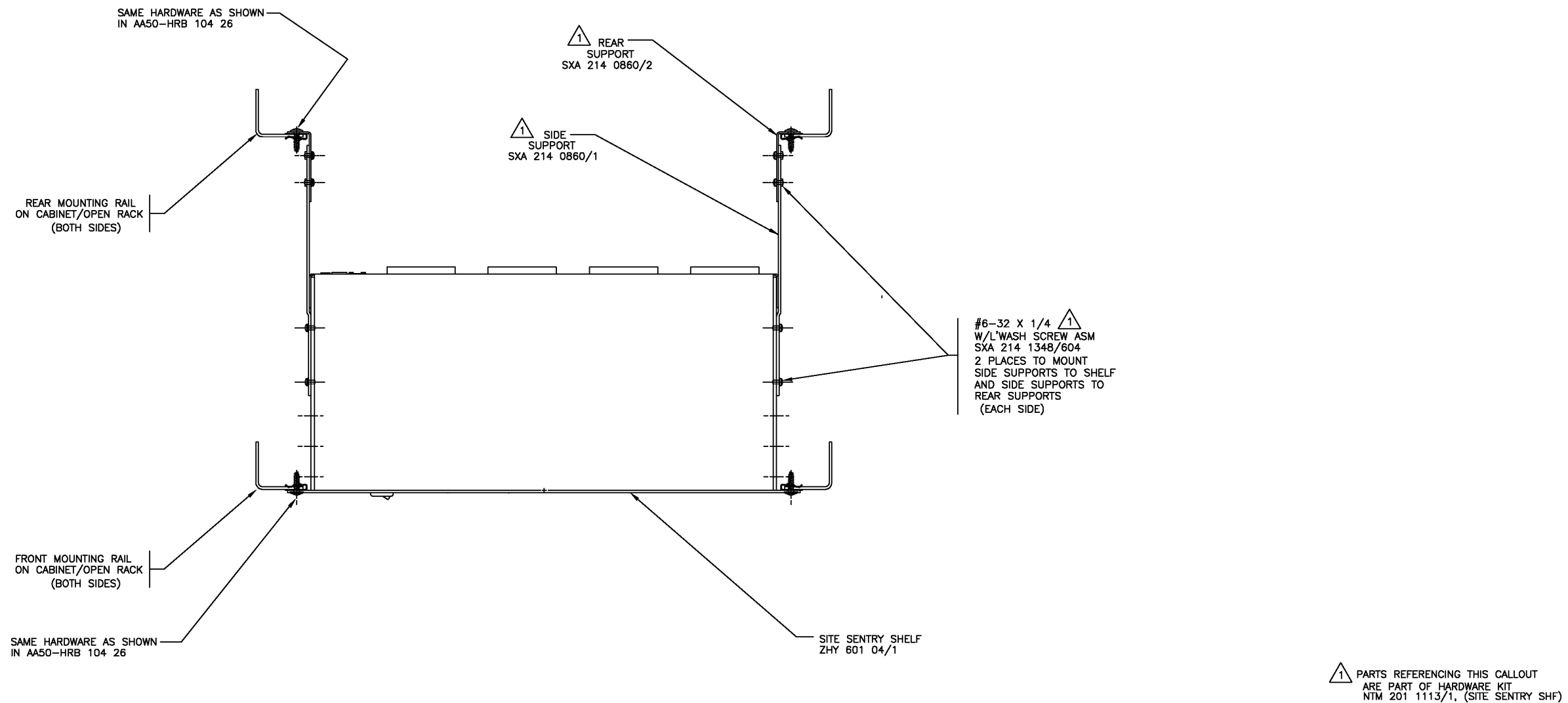
 PARTS REFERENCING THIS CALLOUT  
ARE PART OF HARDWARE KIT  
19A130031G12 (STD CAB.)

 PARTS REFERENCING THIS CALLOUT  
ARE PART OF HARDWARE KIT  
19A130031G44 ( 86" OPEN RACK)

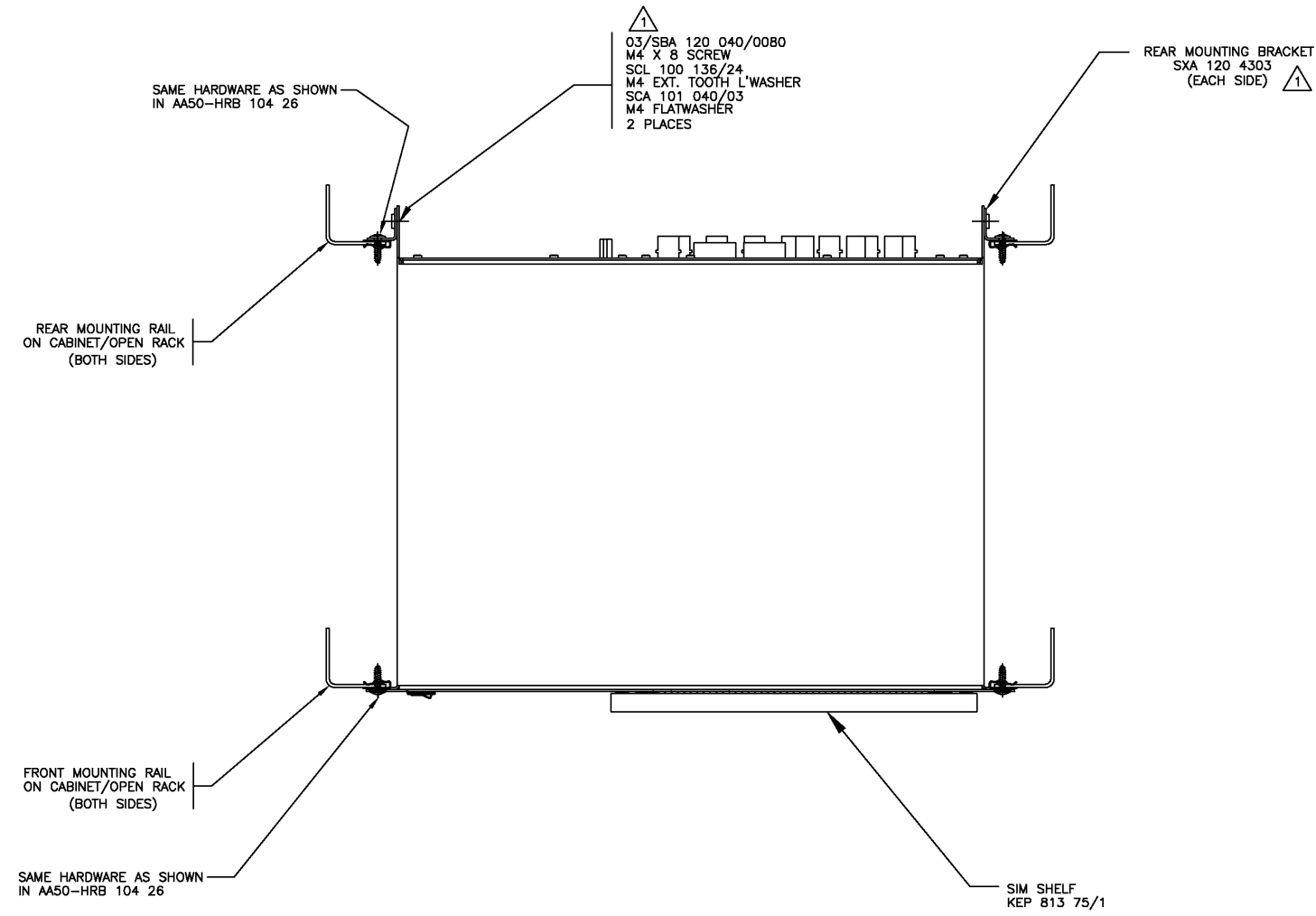




⚠ PARTS REFERENCING THIS CALLOUT ARE PART OF HARDWARE KIT NTM 201 1098/1, (ETHERNET HUB)

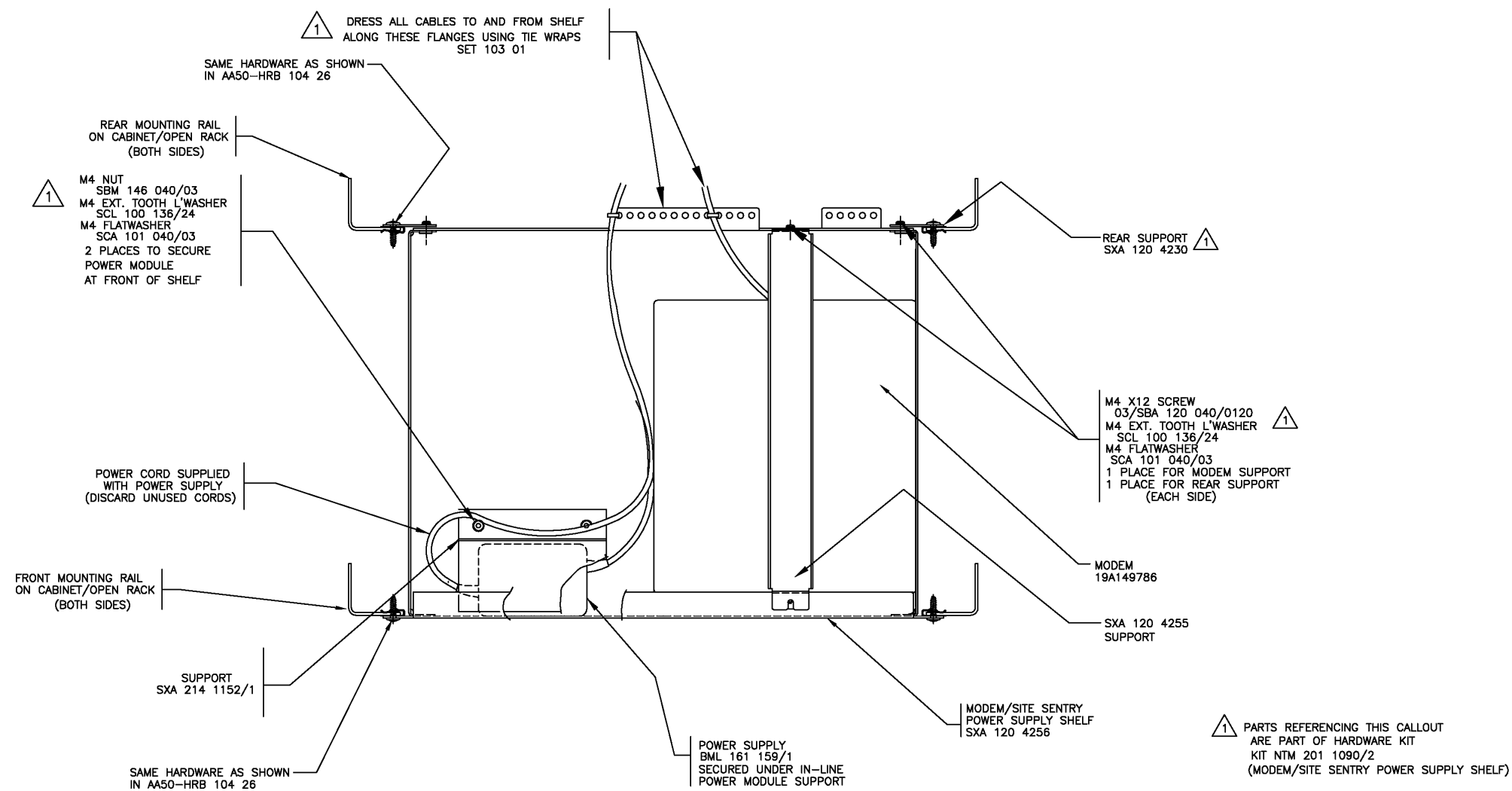


**SITE SENTRY ASSEMBLY**  
AA52-HRB 104 26

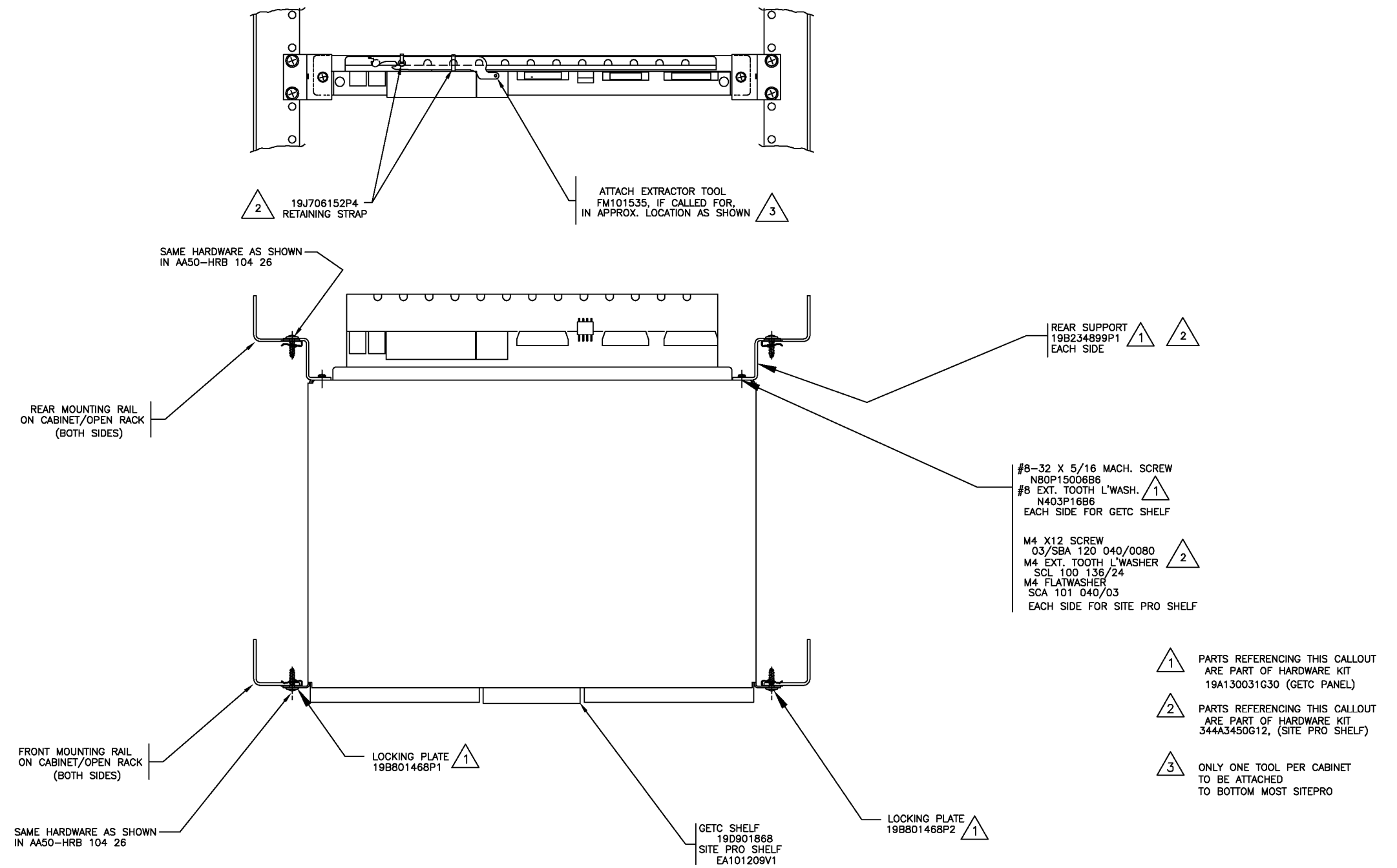


△ PARTS REFERENCING THIS CALLOUT ARE PART OF HARDWARE KIT NTM 201 1084 (SIM SHF)

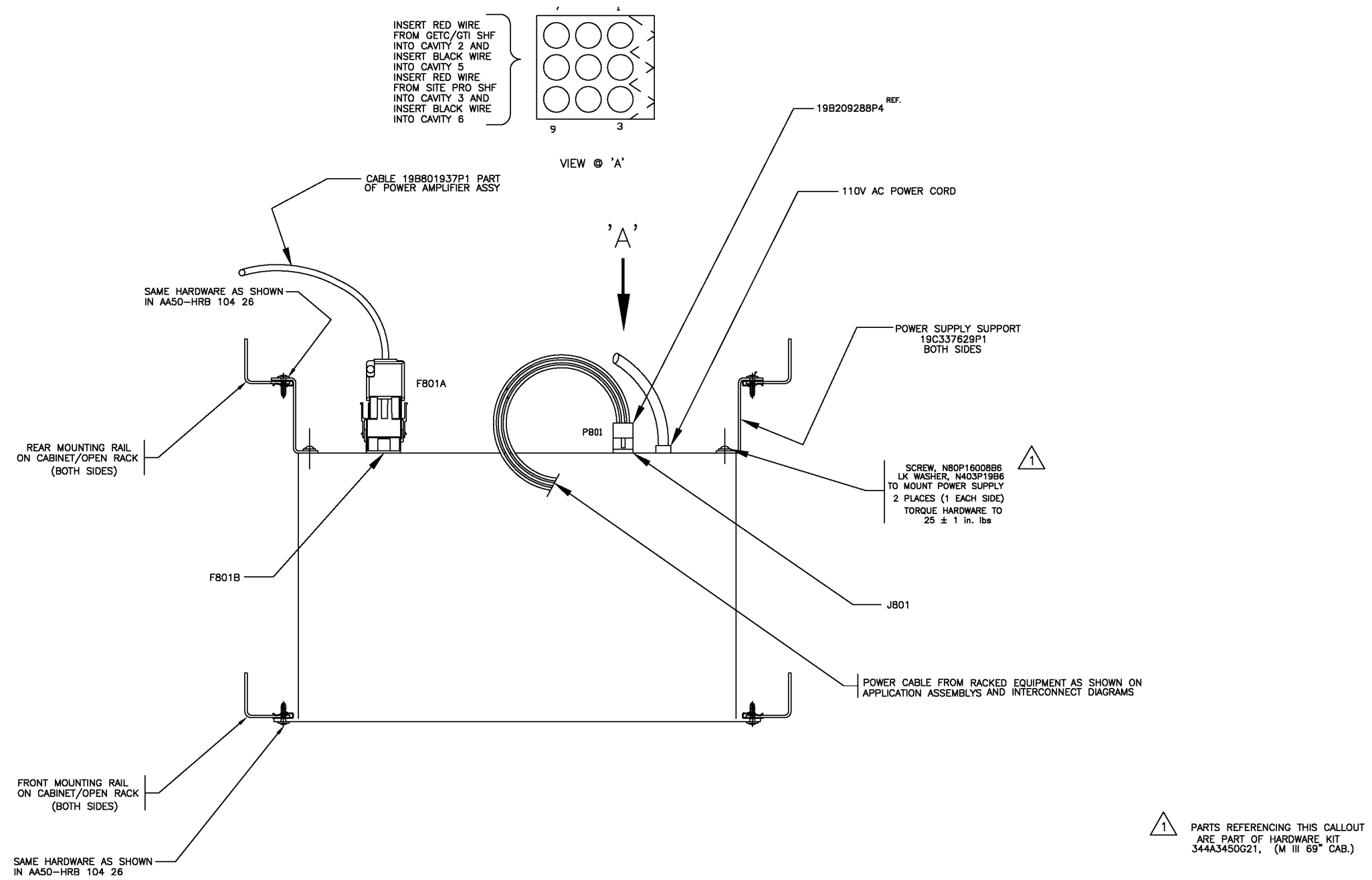
**SIM SHELF**  
AA53-HRB 104 26



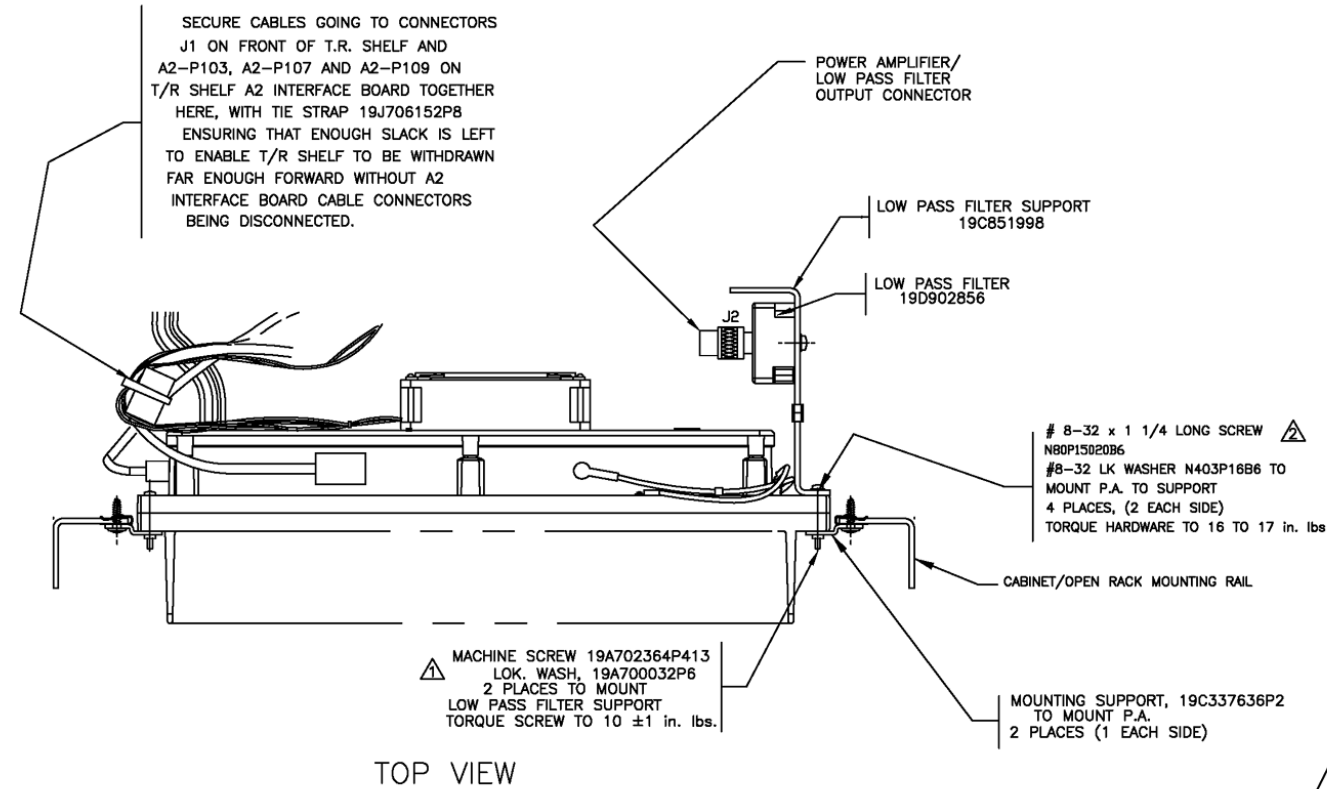
**MODEM/SITE SENTRY  
POWER SUPPLY SHELF**  
AA54-HRB 104 26



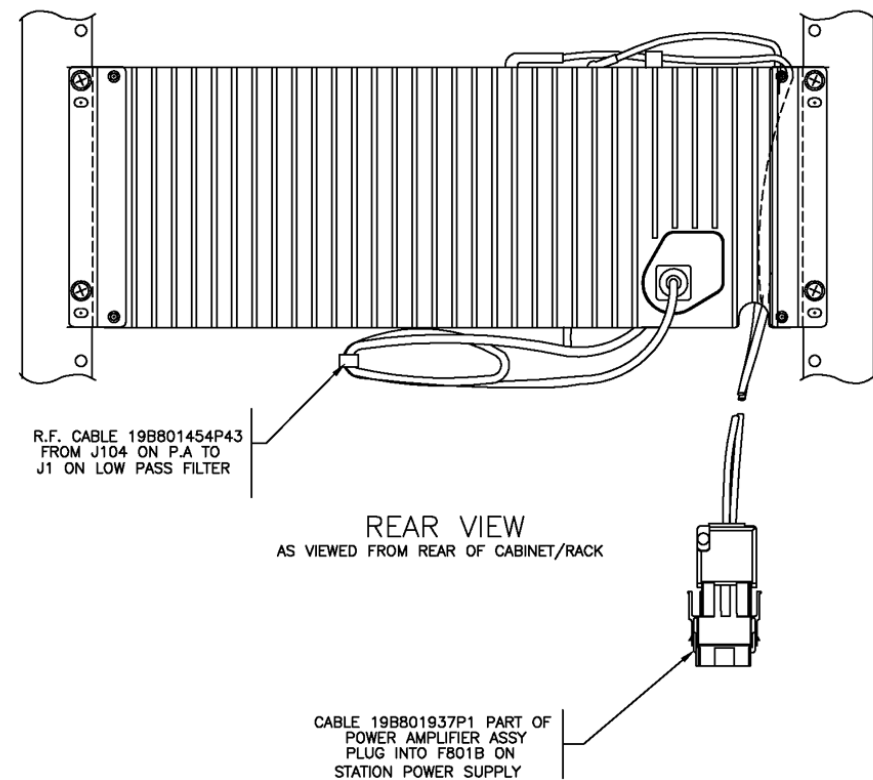
**GETC/SITE PRO SHELF**  
AA55-HRB 104 26 Rev. B



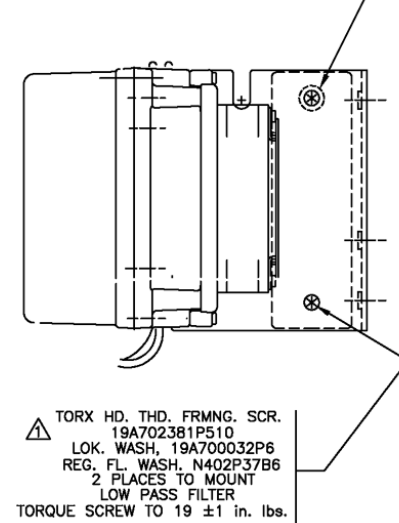
STATION POWER SUPPLY  
 AA56-HRB 104 26



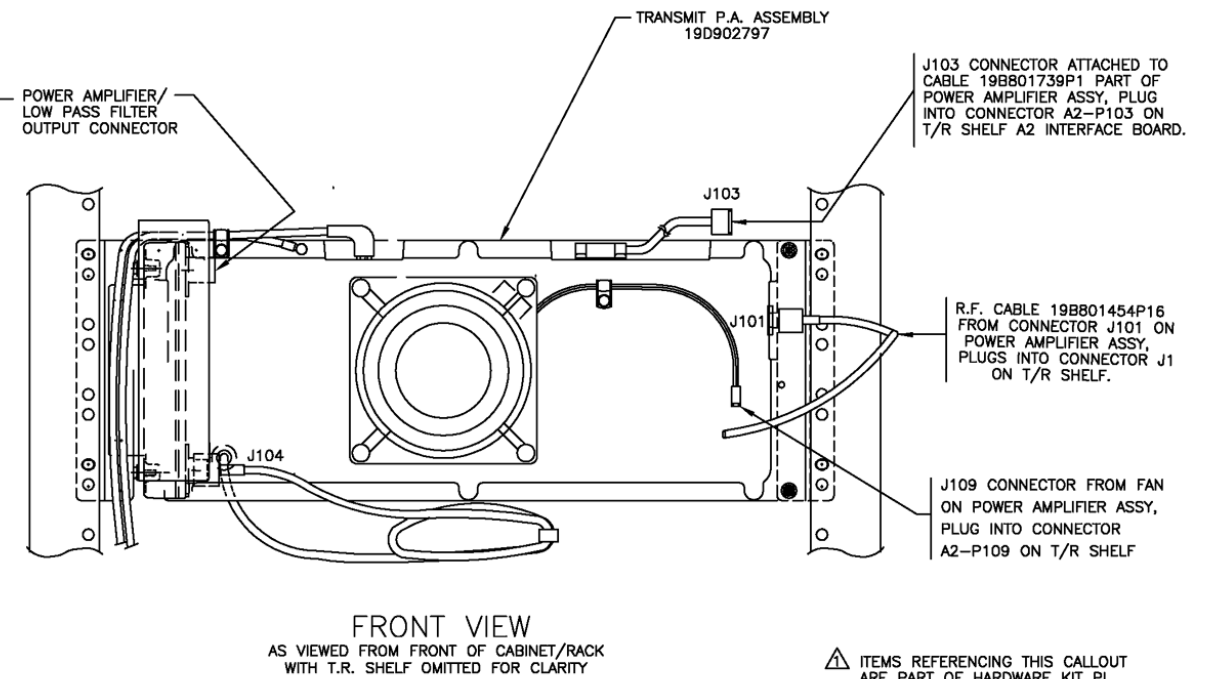
TOP VIEW



REAR VIEW  
AS VIEWED FROM REAR OF CABINET/RACK



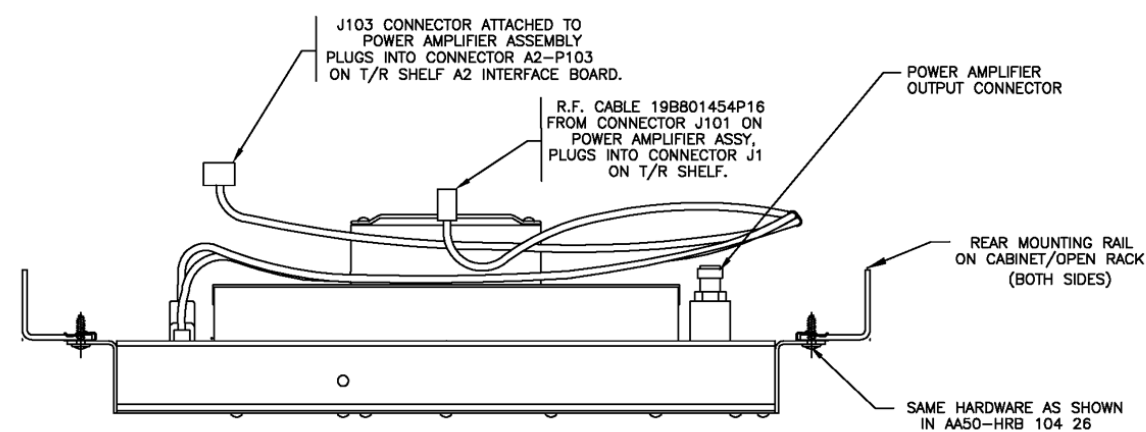
SIDE VIEW



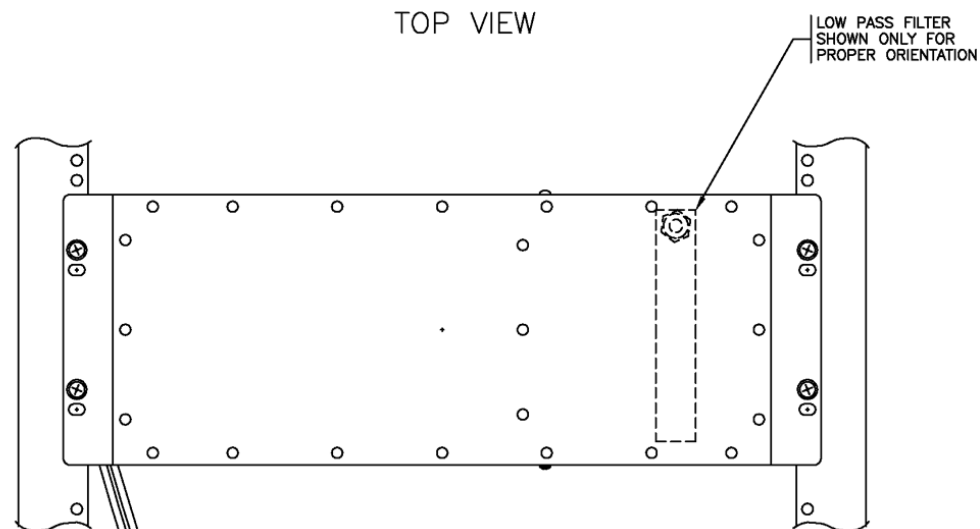
FRONT VIEW  
AS VIEWED FROM FRONT OF CABINET/RACK  
WITH T.R. SHELF OMITTED FOR CLARITY

⚠ ITEMS REFERENCING THIS CALLOUT ARE PART OF HARDWARE KIT PL 344A3450G2 (BASIC STATION)

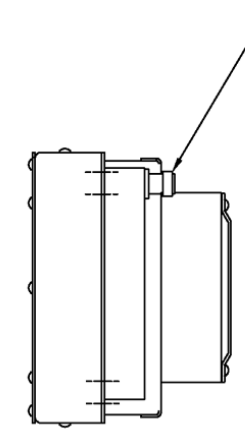
⚠ ITEMS REFERENCING THIS CALLOUT ARE PART OF HARDWARE KIT PL 344A3450G21 (M III 69in CAB)



TOP VIEW

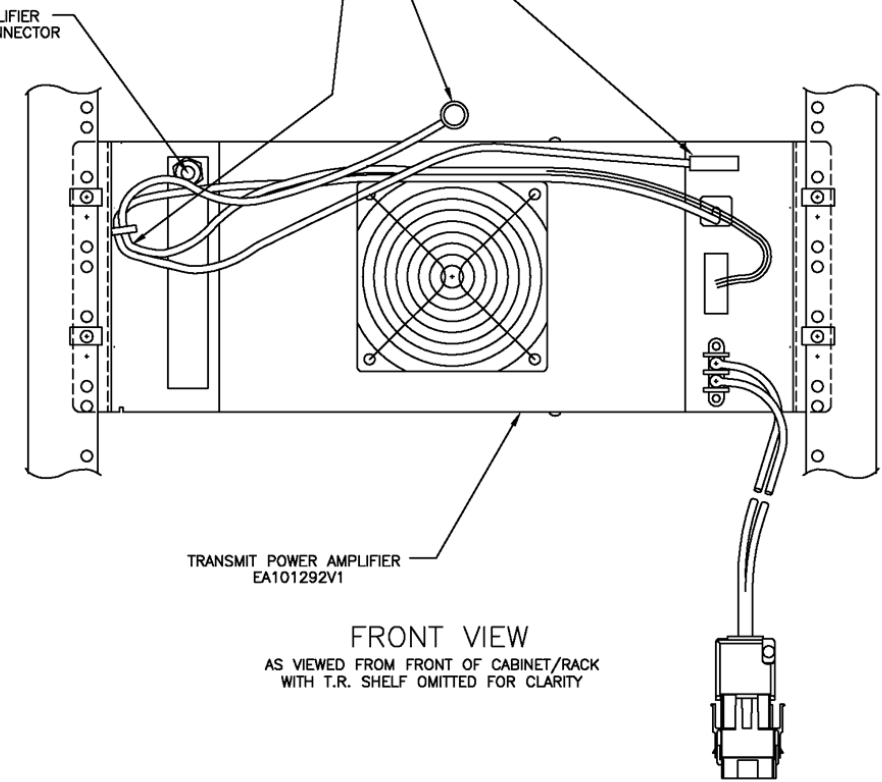


REAR VIEW  
AS VIEWED FROM REAR OF CABINET/RACK



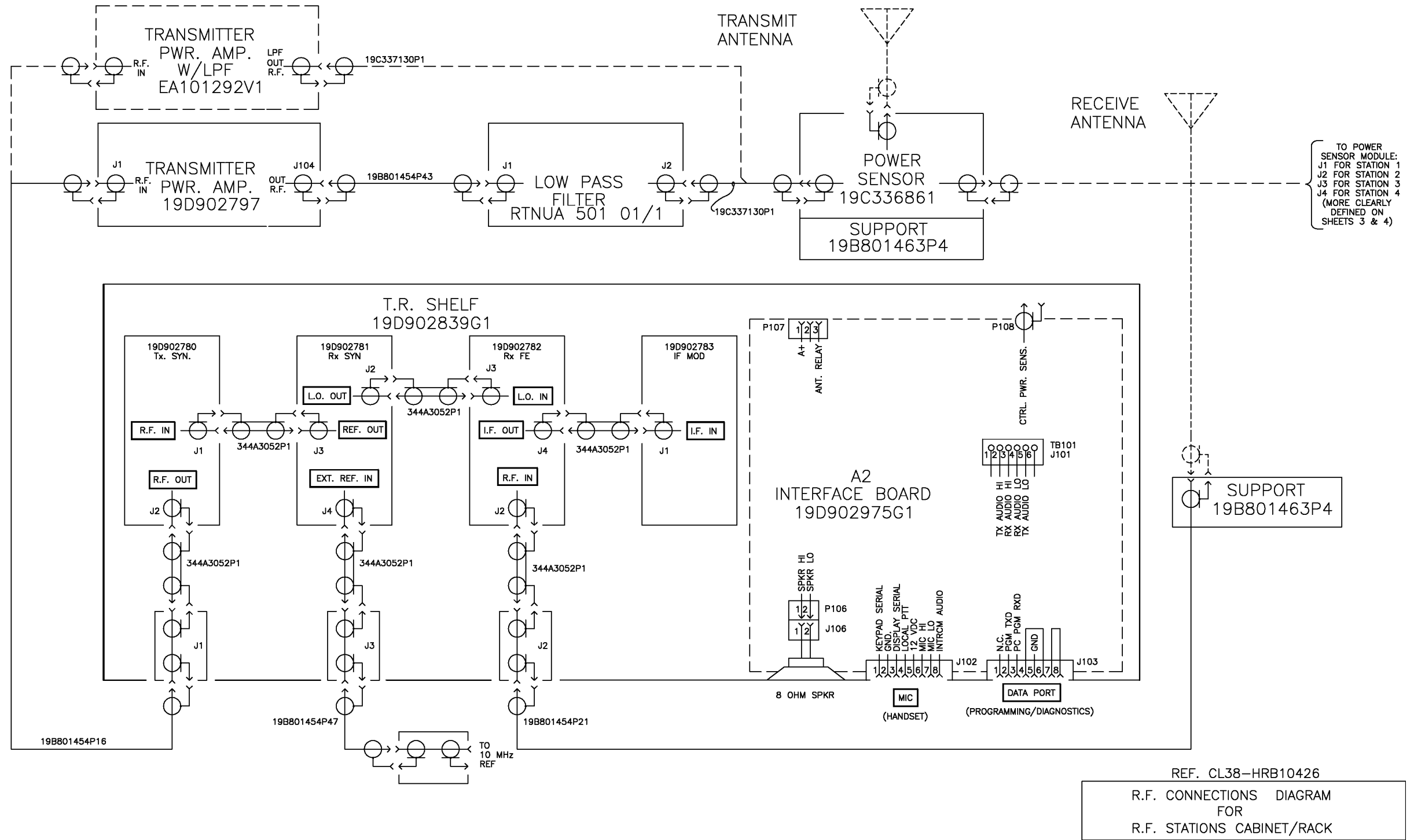
SIDE VIEW

SECURE CABLES GOING TO CONNECTORS J1 ON FRONT OF T.R. SHELF AND A2-P103, A2-P107 OR A2-P109 ON T/R SHELF A2 INTERFACE BOARD TOGETHER WITH TIE STRAP 19J706152P8 ENSURING THAT ENOUGH SLACK IS LEFT TO ENABLE T/R SHELF TO BE WITHDRAWN FAR ENOUGH FORWARD WITHOUT A2 INTERFACE BOARD CABLE CONNECTORS BEING DISCONNECTED.



FRONT VIEW  
AS VIEWED FROM FRONT OF CABINET/RACK WITH T.R. SHELF OMITTED FOR CLARITY



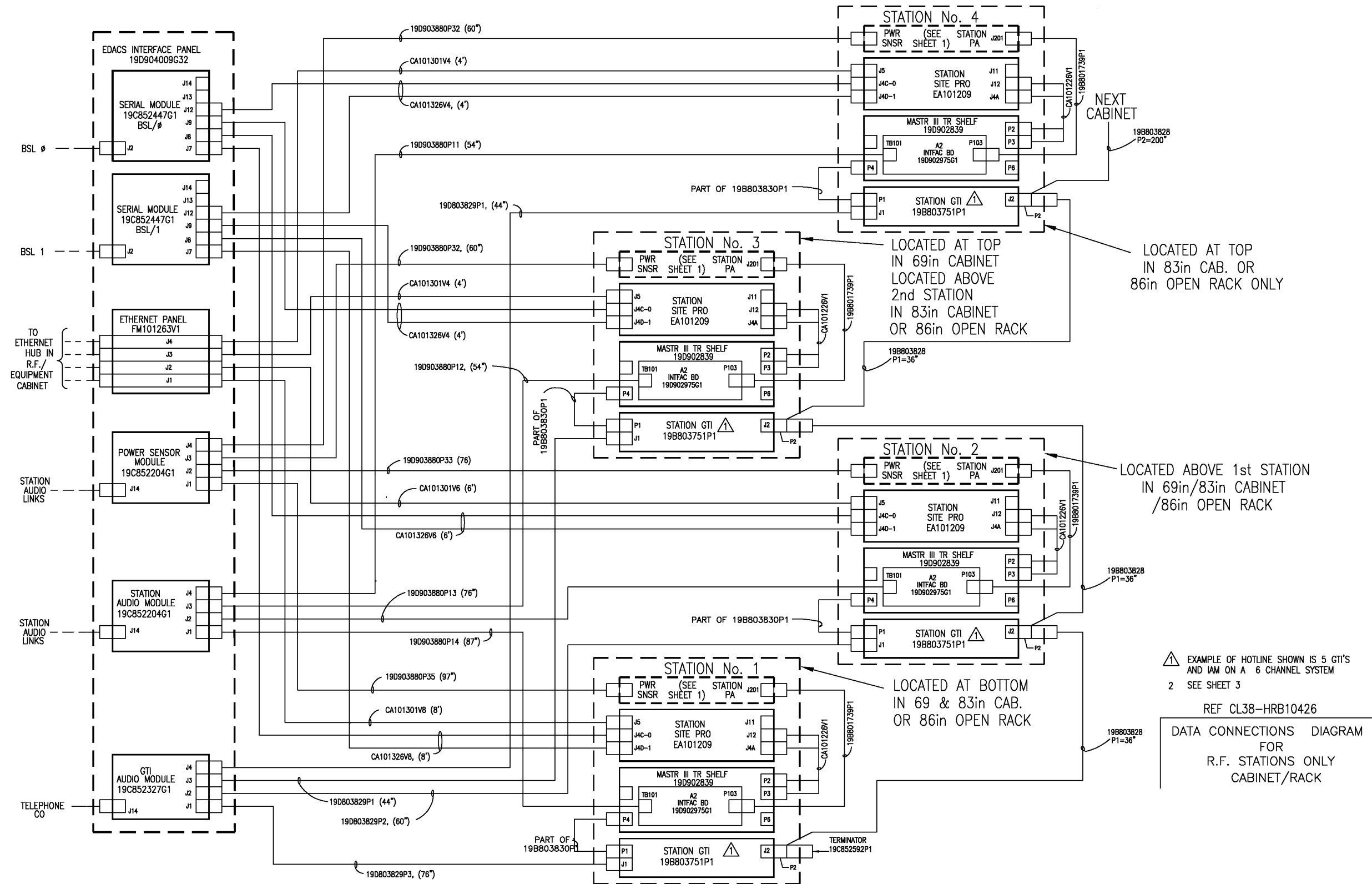


R.F. CONNECTIONS DIAGRAM FOR R.F. STATIONS CABINET/RACK

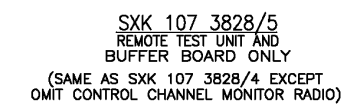
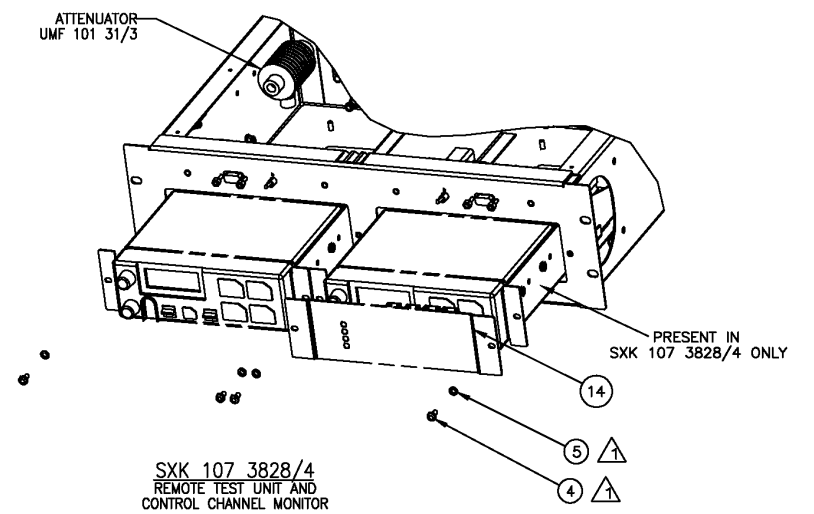
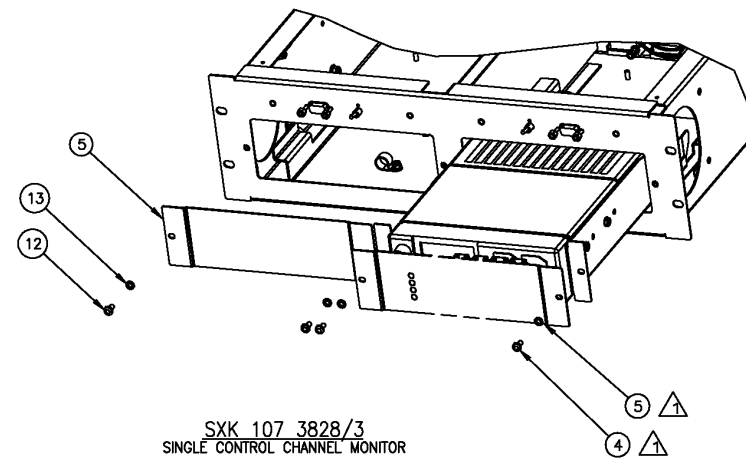
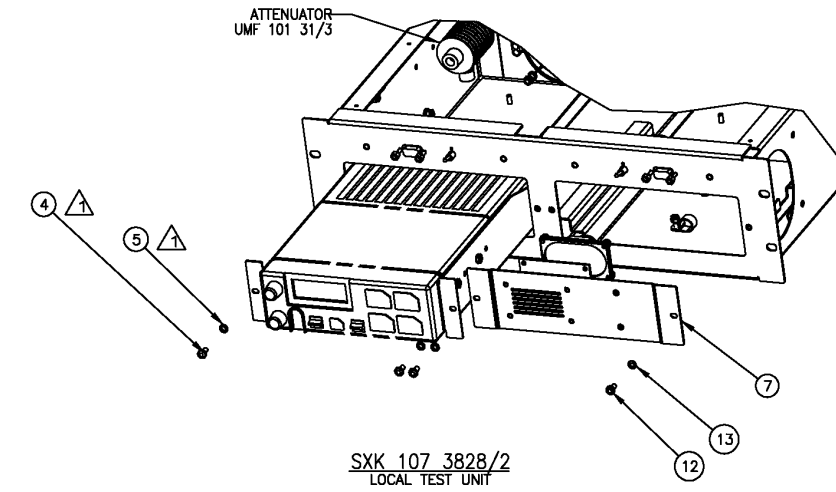
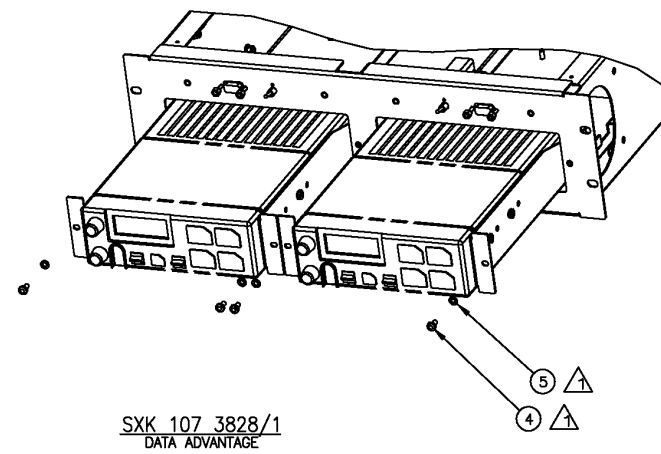
ID38-HRB 104 26 Rev C  
 Sheet 1 of 4







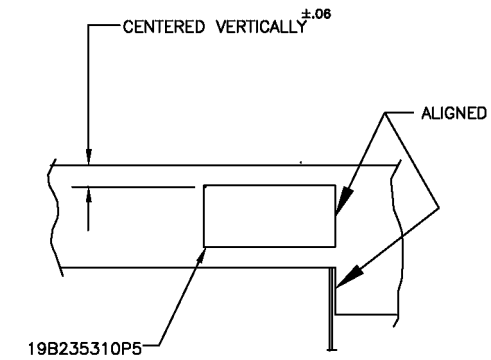
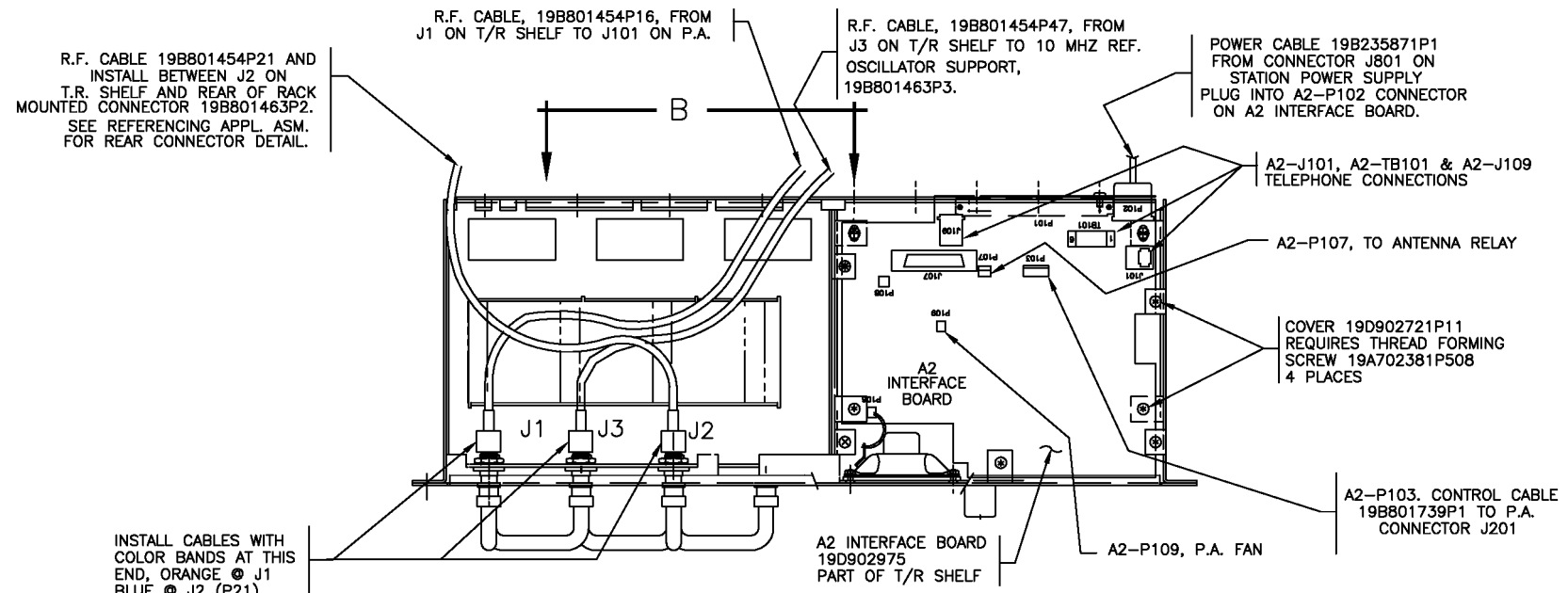
**DATA CONNECTIONS DIAGRAM FOR R.F.STATIONS ONLY  
CABINET/RACK**  
ID38-HRB 10426 Rev C  
Sheet 4 of 4



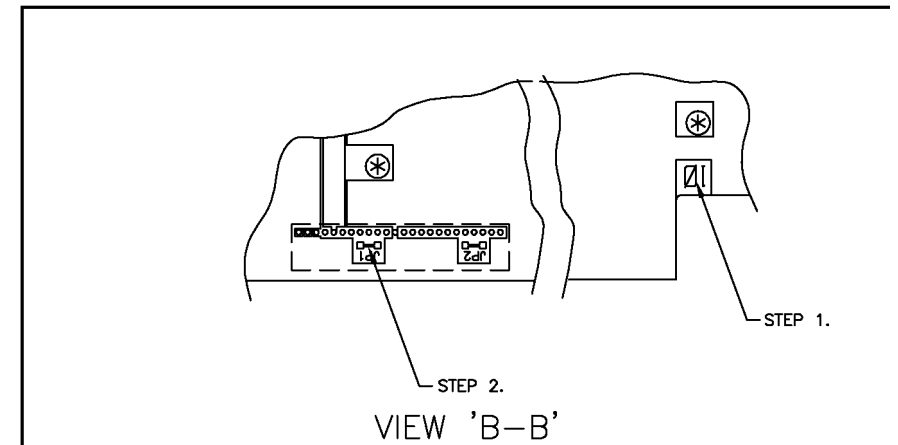
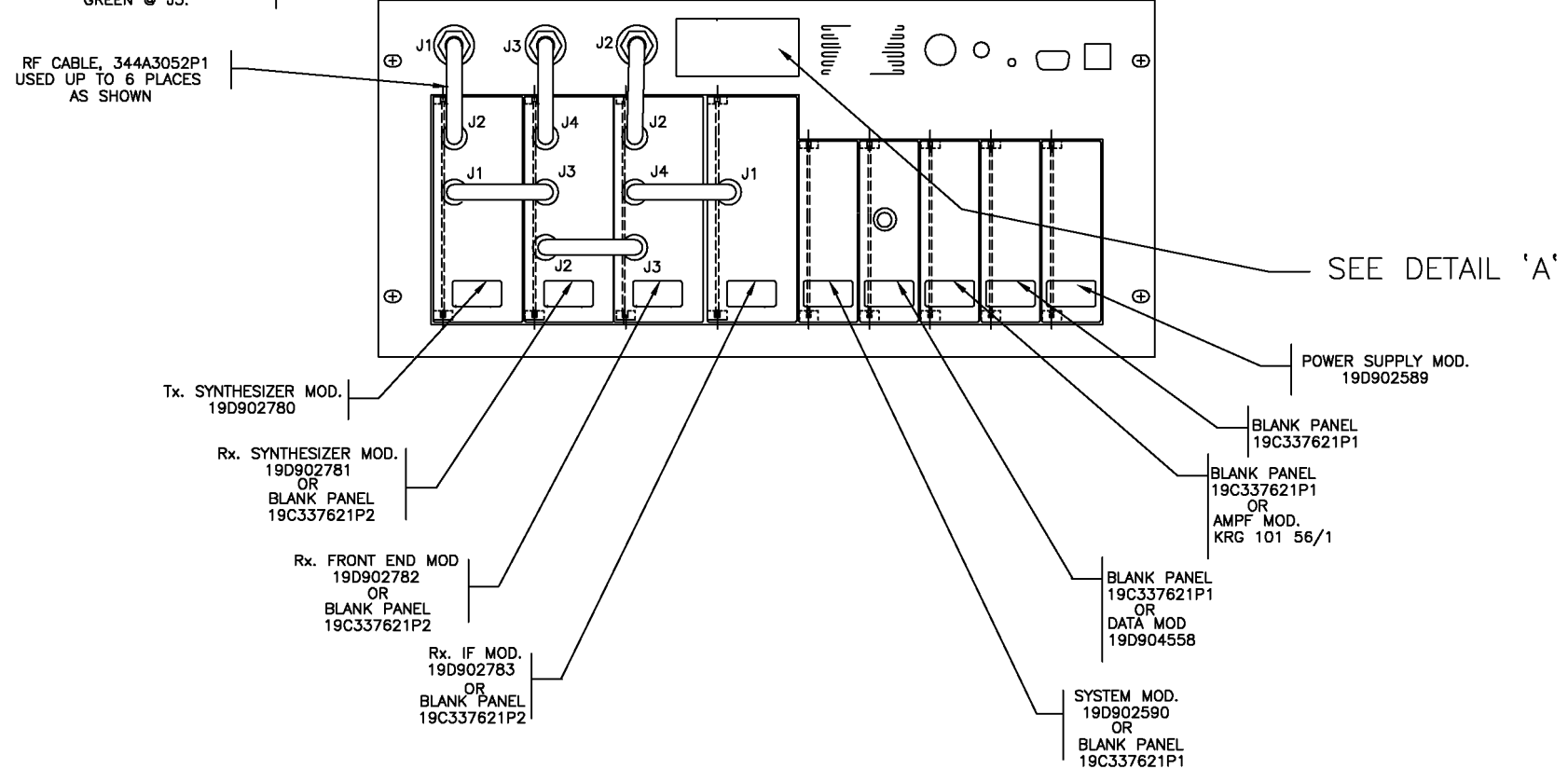
ASSEMBLY CONFIGURATIONS

- NOTES:
- △ PART OF HARDWARE KIT: NTM 201 1087 PICKED UP AT HIGHER ASSEMBLY LEVEL.
  - △ PART OF HARDWARE KIT: NTM 201 1086
  - △ PART OF HARDWARE KIT: NTM 201 1090 TO BE ASSEMBLED AFTER SHELF IS INSTALLED IN CABINET AND TO BE PICKED UP AT HIGHER ASSEMBLY LEVEL.

**APPLICATION/ASSEMBLY DIAGRAMS**



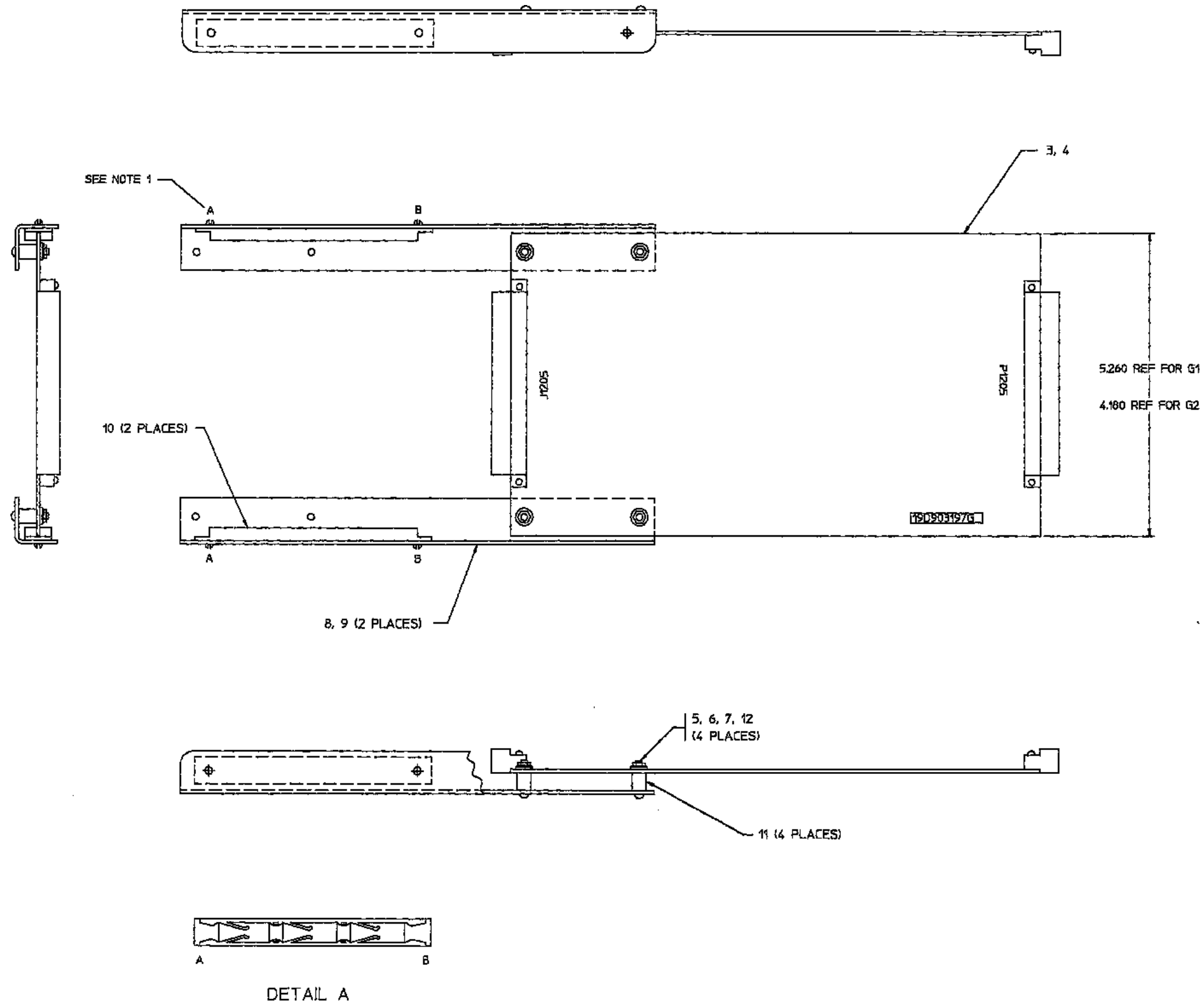
**DETAIL 'A'**  
ALTERNATE NAMEPLATE MOUNTING IF NO CABINET



**ITEM 19**  
**INSTALLATION OF AMPF MODULE.**

MODIFICATION INSTRUCTIONS FOR THE BACKPLANE PRINTED CIRCUIT BOARD 19D902947G1, REVISION 10 OR HIGHER

- STEP 1. VERIFY BACKPLANE 19D902947G1'S PRINTED CIRCUIT BOARD IS A REVISION 10 OR LATER BOARD PER THE ETCHED NUMBER IN THE BOARD AS SHOWN.
- STEP 2. CUT THE PRINTED CIRCUIT TRACE "JP1" BETWEEN THE SQUARE PADS SHOWN. FAILURE TO COMPLETELY REMOVE THE PRINTED CIRCUIT TRACE MAY RESULT IN UNWANTED INDUCTION OF NOISE INTO THE STATION'S RECEIVE AUDIO.

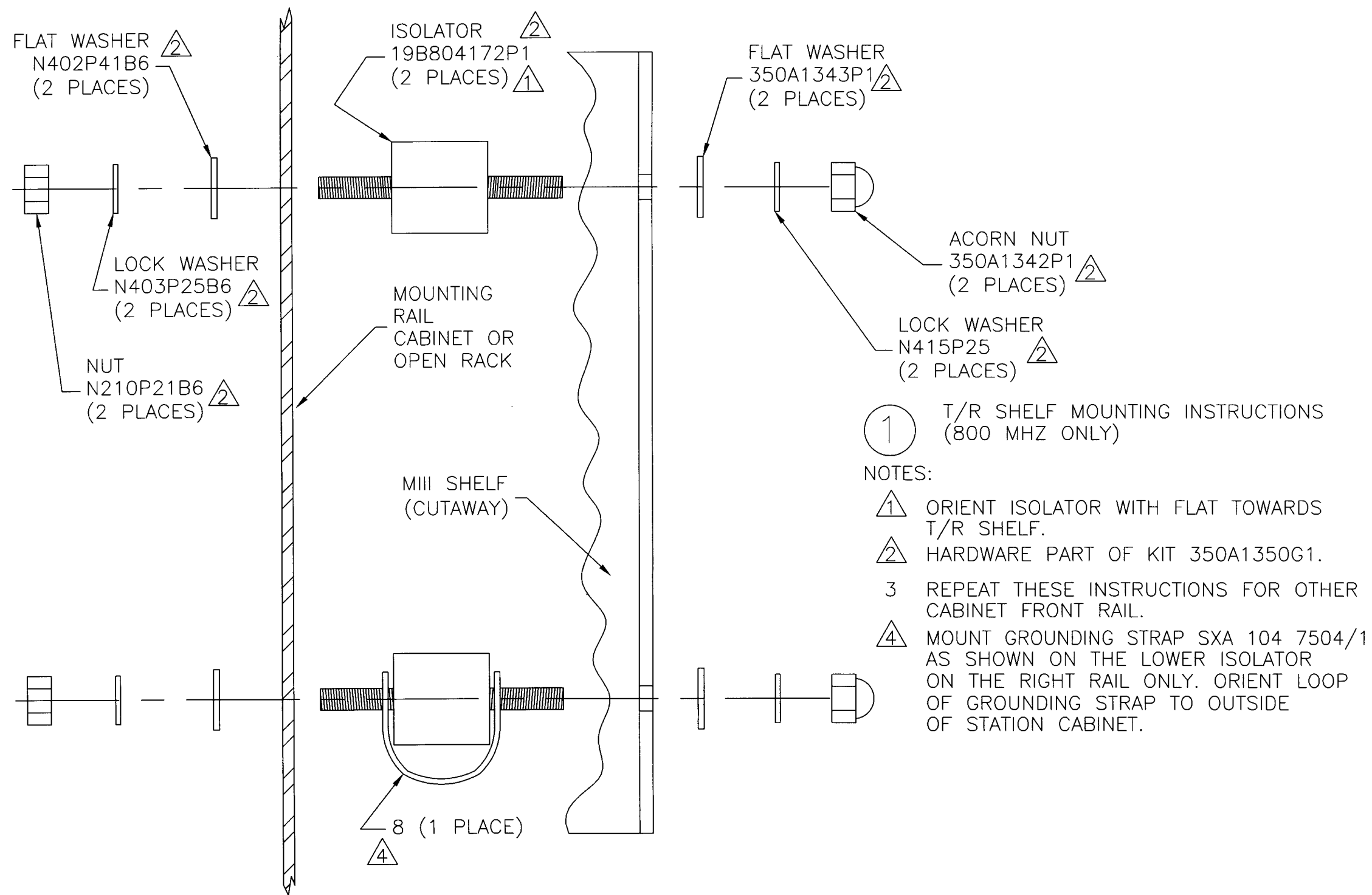


① MASTR III EXTENDER BOARD

NOTES:

1. ORIENT CARD GUIDES IN SUPPORT AS SHOWN (SEE DETAIL A).

**CONTROL EXTENDER BOARD 188D5338G1**  
**RF EXTENDER BOARD 188D5338G2**  
 (188D5338, Sh. 1, Rev. 2)



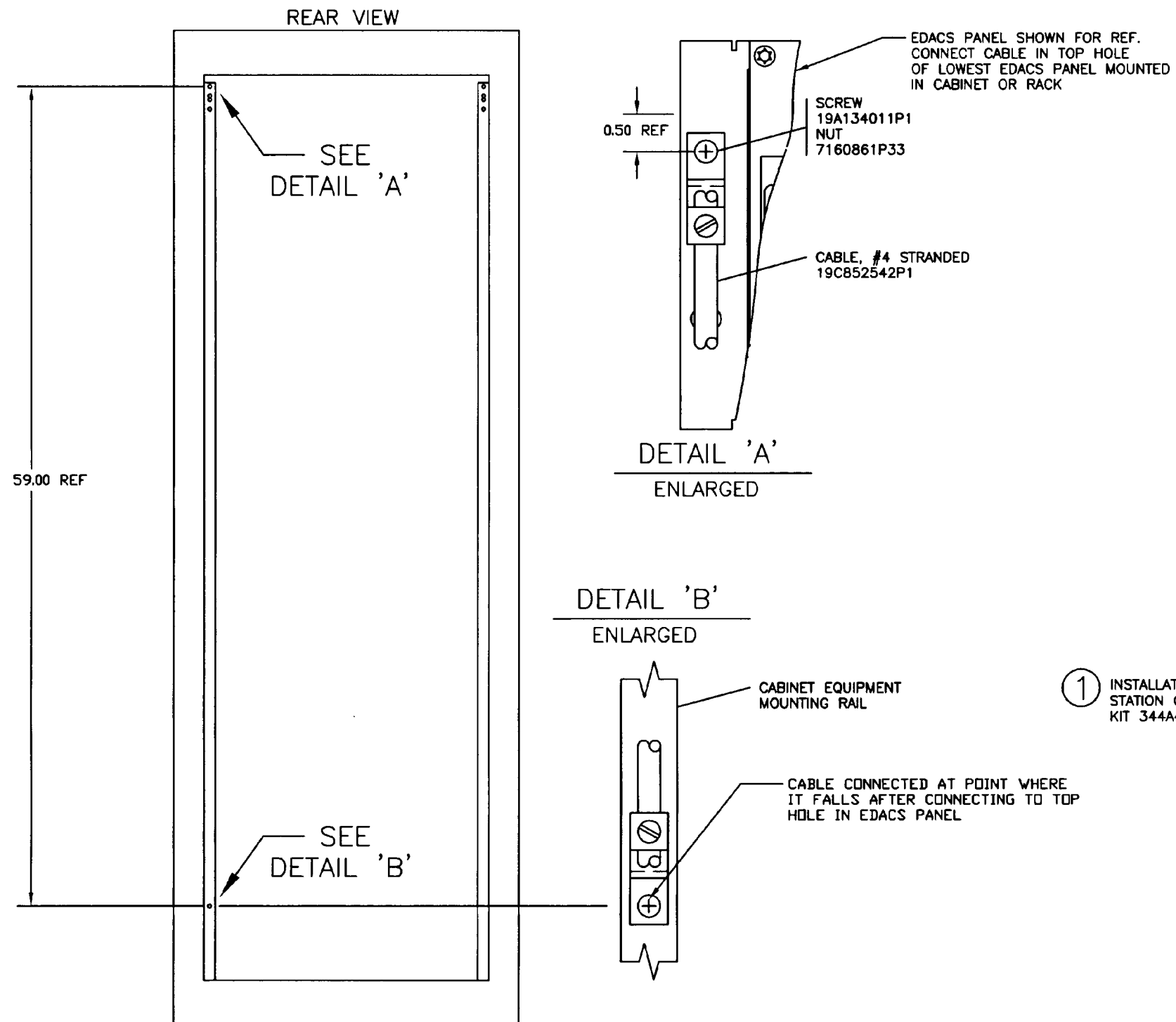
The MASTR III 800 MHz T/R shelf is mounted in the station cabinet using Isolator Kit 350A1350G1, which provides rubber isolators, needed at 800 MHz to dampen vibrations. This kit also provides grounding strap SXA 104 7504/1. This grounding strap is used with the lower isolator on the right rail only. As shown above, this strap (*Item 8*) slips over each end of the isolator studs with the loop oriented toward the outside cabinet wall.

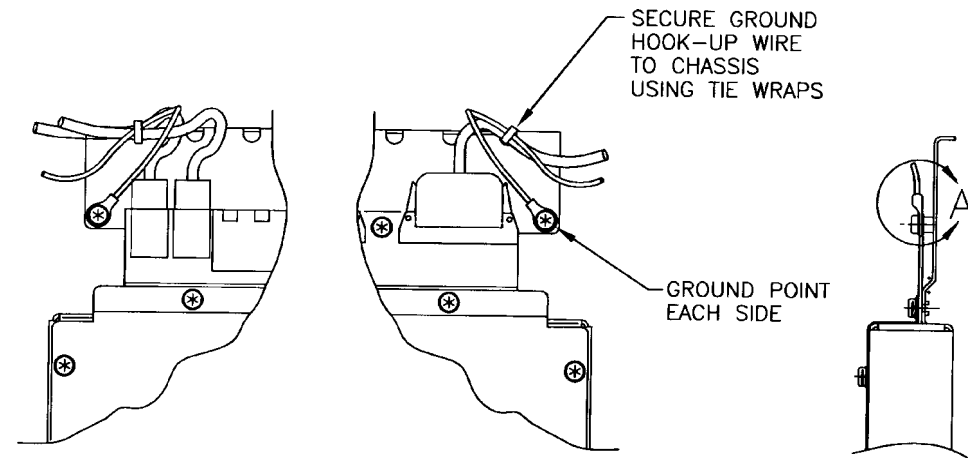
**GROUNDING STRAP INSTALLATION INSTRUCTIONS**

(19B803970, Rev. 3)

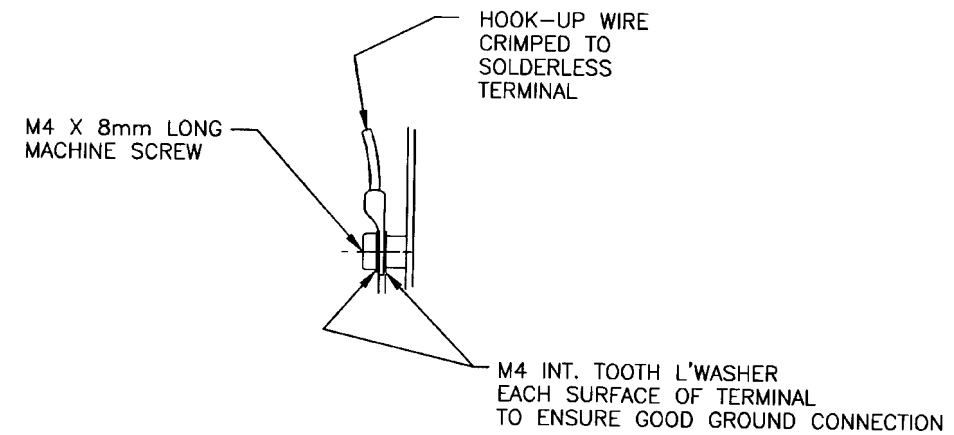


69 IN. OR 83 IN. STATION CABINET OR  
OR 86 IN. OPEN RACK





TOP VIEW OF SITE PRO SHELF



DETAIL 'A'

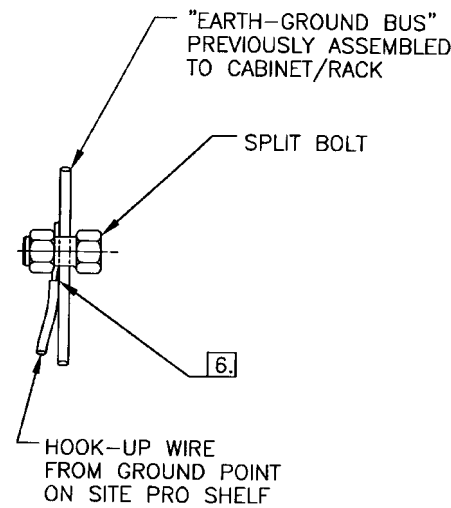
② INSTRUCTIONS FOR INSTALLATING THE SITE PRO LIGHTNING PROTECTION KIT IN THE MASTR III 69in. 83in CABINET OR 86in OPEN RACK

OVERVIEW:

THIS DOCUMENT PROVIDES INSTRUCTIONS FOR INSTALLATION OF THE SITE PRO LIGHTNING PROTECTION OPTION BY ADHERING TO THE FOLLOWING STEPS USING MATERIAL LISTED IN HARDWARE KIT PL344A4500G2

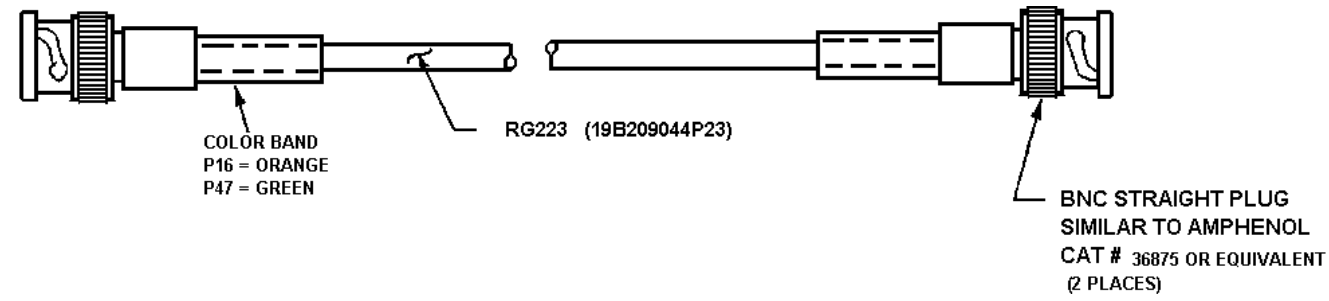
STEPS:

1. CUT THE 4ft. LENGTH OF BLACK HOOK-UP WIRE INTO TWO 2ft. SECTIONS.
2. STRIP & TIN 1/2in. OF ONE END OF EACH OF THE 2ft. SECTIONS OF HOOK-UP WIRE.
3. CRIMP THE SOLDERLESS TERMINALS ON THE ENDS PREPARED IN STEPS 1 & 2
4. STRIP & TIN 1in. OF THE REMAINING END OF EACH OF THE TWO SECTIONS.
5. CONNECT THE SOLDERLESS TERMINALS TO THE PRESSED-IN SPACERS ON EACH SIDE OF THE SITE PRO SHELF. A LOCKWASHER IS REQUIRED ON BOTH SURFACES OF THE SOLDERLESS TERMINAL AS SHOWN IN DETAIL 'A'
6. WHEN THE SITE PRO SHELF IS ASSEMBLED IN THE CABINET/RACK, CONNECT THE OTHER END OF THE HOOK-UP WIRES TO A CONVENIENT PLACE ON THE "EARTH-GROUND BUS WIRE" PREVIOUSLY ASSEMBLED USING THE SPLIT BOLT. SEE DETAIL 'B'



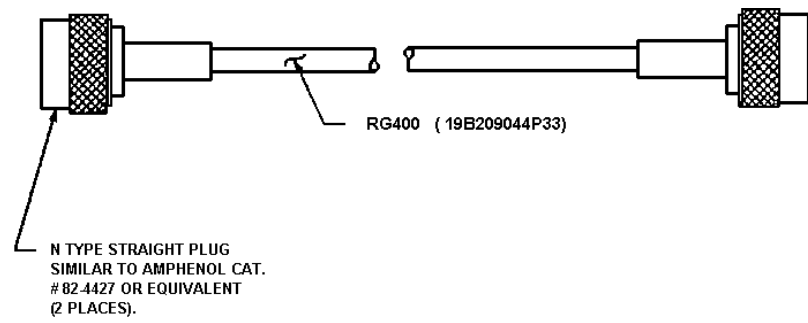
DETAIL 'B'

SHOWING TERMINATION OF HOOK-UP WIRE FROM GROUND POINTS ON THE SITE PRO SHELF TO THE "EARTH-GROUND BUS" PREVIOUSLY ASSEMBLED TO THE CABINET/RACK



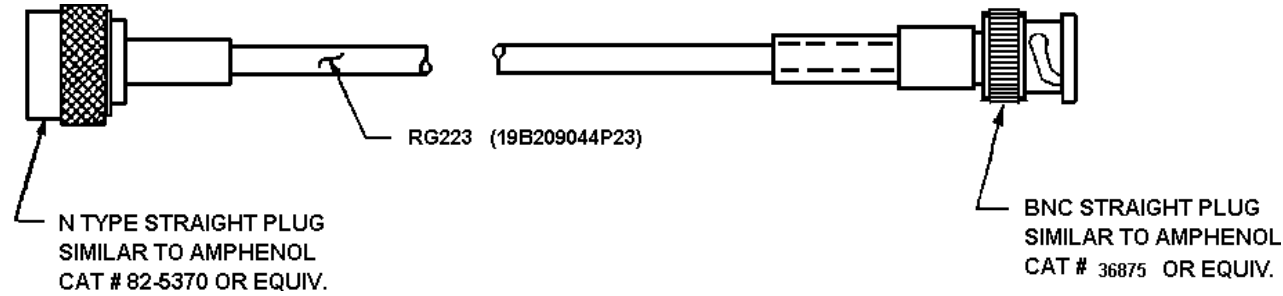
**19B801454P16 & P17**

(19B801454, Sh. 10, Rev. 27)



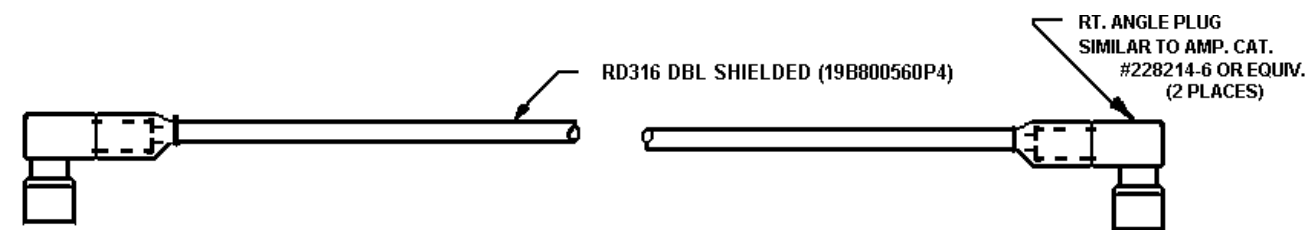
**19B801454P17 & P18**

(19B801454, Sh. 11, Rev. 27)



**19B801454P19 & P20**

(19B801454, Sh. 12, Rev. 27)

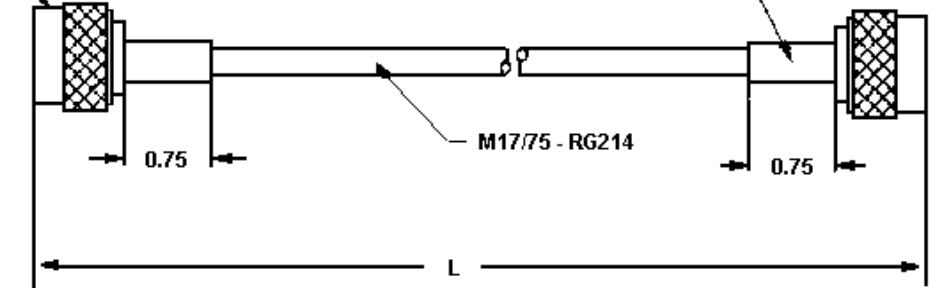


**19B801454P24**

(19B801454, Sh. 15, Rev. 27)

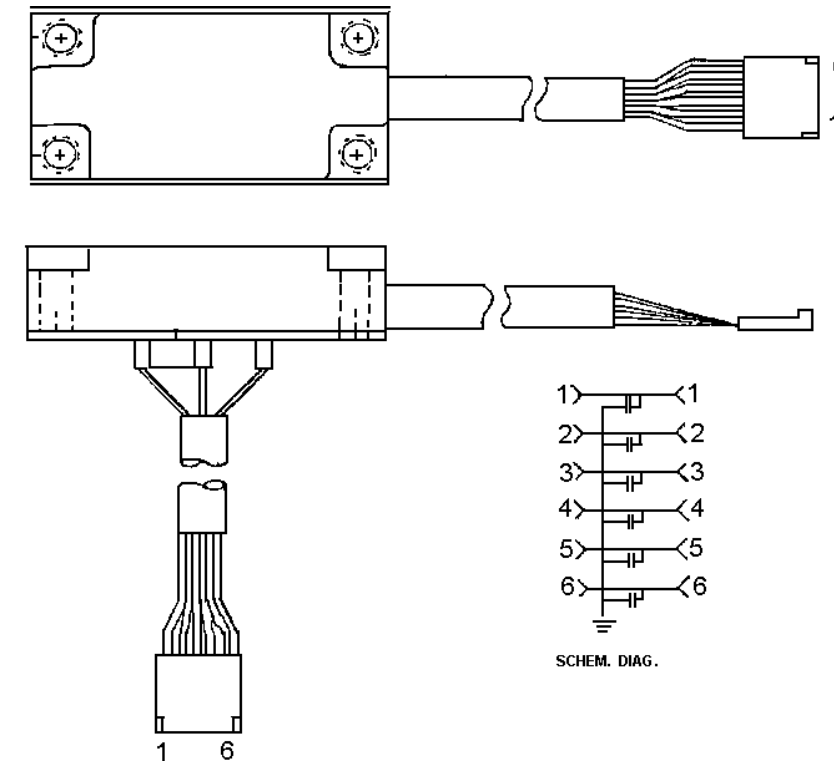
N TYPE STRAIGHT PLUG CRIMP  
TYPE, SILVER PLATED BODY. GOLD PLATED  
CENTER CONTACT. TEFLON  
DIELECTRIC, CAPTIVE CENTER  
CONTACT. SIMILAR TO AMPHENOL  
CAT. #82-4427 OR EQUIV. (2 PLACES)

SLEEVE WITH HEAT SHRINK  
POLYOLEFIN SLEEVING  
(2 PLACES)



**19B801454P43**

(19B801454, Sh. 23, Rev. 27)



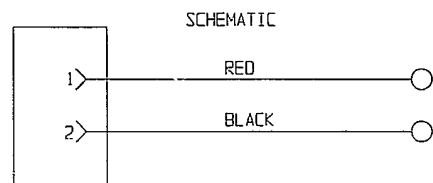
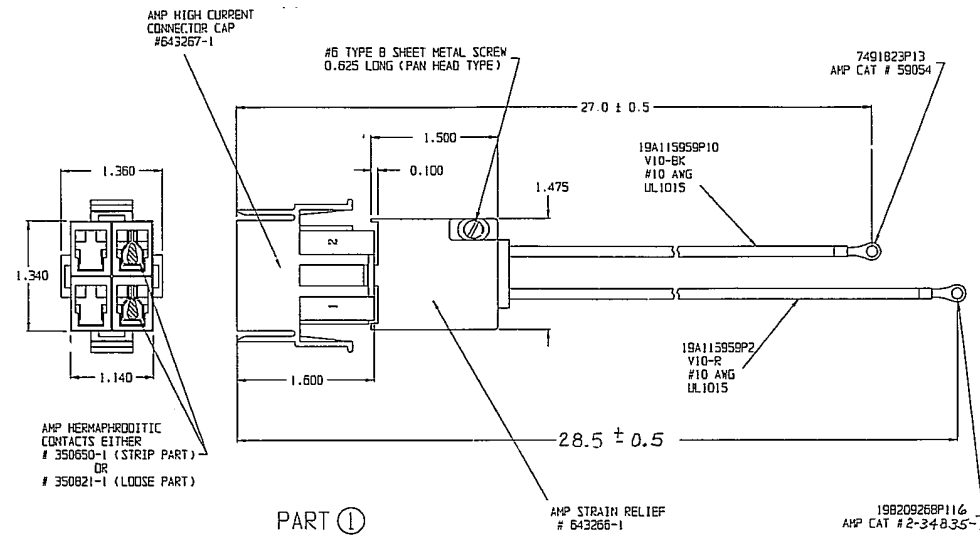
PIN NO.	WIRE COLOR
1	RED
2	BLUE
3	GREEN
4	BROWN
5	BLACK
6	WHITE

CONNECTOR COLOR CODE

**CONTROL CABLE ASSEMBLY (PART OF POWER AMPLIFIER)**

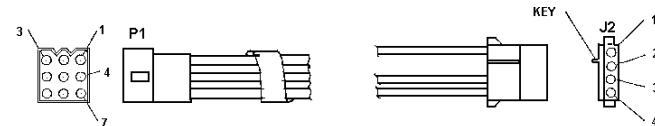
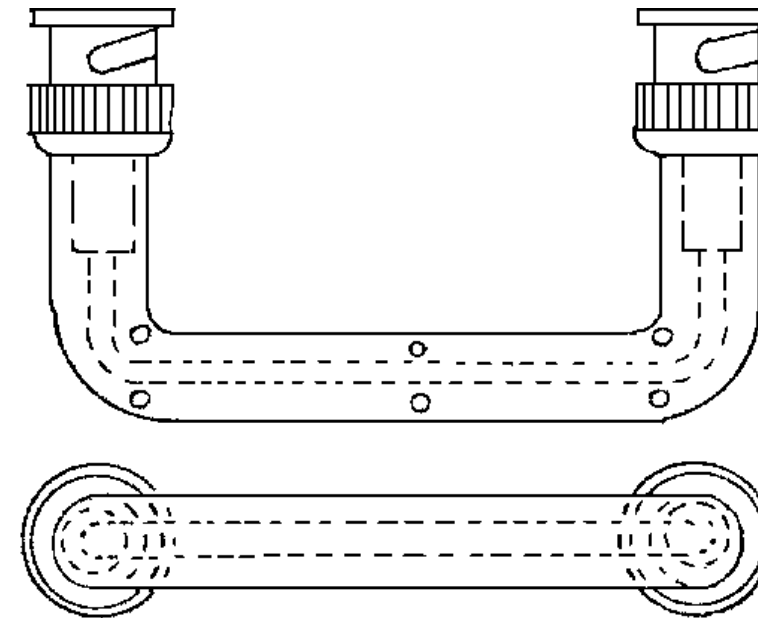
19B801739P1

**APPLICATION/ASSEMBLY DIAGRAMS**



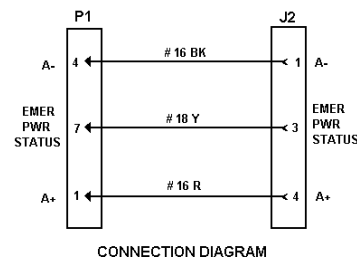
**POWER CABLE (PART OF POWER AMPLIFIER)  
19B801937P1**

(19B801937, Sh. 1, Rev. 2)



**CONNECTIONS CHART**

FROM	CONTACT	CONN HOUSING	WIRE TYPE	TO	CONTACT	CONN HOUSING
P1 - 4	19B209288P2 MOLEX CAT# 02 - 09 - 2101	19B209288P4 MOLEX CAT# 03 - 09 - 2092 9 POSITION PLUG	19A116850P10 UL1015 #16 AWG COLOR BLACK	J2 - 1	AMP CAT# 61117 - 1 OR 60619 - 1 SOCKET CONTACTS	AMP CAT# 1 - 480424 - 0 4 POSITION RECEPTACLE
P1 - 7			19A11688AP4 UL1015 #18 AWG COLOR YELLOW	J2 - 3		
P1 - 1			19A116850P2 UL1015 #16 AWG COLOR RED	J2 - 4		



**19B235871P1**

(19B237871, Sh. 1, Rev. 2)

**344A3052P1**

(344A3052, Sh. 1, Rev. 2)

**PARTS LIST  
MASTR E-NET**

SYMBOL	PART NO.	DESCRIPTION
		----- 69" CABINET -----
	SDC 122 478/3	69-inch Cabinet.
	19D417623G4	Grill, Label.
	19B226318P2	Plate.
	19B801476P1	Cover.
	19B801476P2	Cover.
	19B209539P1	Lock, rim.
	19B209539P2	Lock, rim.
	19B209539P3	Key, lock, rim.
	344A3450G21	Hardware Kit.
	5490407P29	Grommet.
	19C320895G12	Fan 120 VAC.
	19C320895G15	Fan 230 VAC.
		----- 83" CABINET -----
	SDC 122 476/1	83-inch Cabinet.
	19A130031G12	Hardware Kit.
	19C337428G1	Door.
	19C337428G2	Door.
	19B801476P1	Cover.
	19B801476P2	Cover.
	19B209539P2	Lock, rim.
	19B209239P2	Lock, rim.
	19B209539P3	Key, lock, rim.
	19B226318P2	Plate.
	344A2450P21	Hardware Kit.
	19C320895G12	Fan 120 VAC.
	19C320895G15	Fan 230 VAC.
		----- CABLES -----
	19B235871P1	Power Cable: Station Power Supply (J801) to T/R Shelf (A2-P102).
	19B801454P17	RF Cable: Low Pass Filter (J1) to Power Amplifier (J104). Replaced by 19B801454P43.
	19B801454P20	RF Cable: T/R Shelf (J2) to Duplexer Shelf (J2) (Used when Duplexer is installed).
	19B801454P19	RF Cable: T/R Shelf (J2) to Antenna Switch (J2).
	19B801454P16	RF Cable: T/R Shelf (J1) to Power Amplifier (J101).
	19B801454P43	RF Cable: Low Pass Filter (J1) to Power Amplifier (J104).

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

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