

SECTION 2 - RADIO TRANSCEIVERS

2.1 AN/SRC-20/21 GENERAL DESCRIPTION

The AN/SRC-20/21 provides UHF point-to-point and ground to air radio communications for shipboard and shore installation. When operated with the standard shipboard control circuits and remote control equipments the set is capable of remote channel selection, remote on-off power control, and remote push-to-talk transmission and reception on any of the 19 preset channels. Frequency range 225.0 to 399.9 megacycles, 1 band, steps of 100 KC.A3 emission. AN/SRC-20 100 watts minimum power output. AN/SRC-21 25 watts power output.

2.2 REFERENCE DATA

- a. Table of Technical Publications - Table 2-1
- b. Primary Power Requirements - Table 2-2
- c. Heat Dissipation - Table 2-3
- d. Unit Weight - Table 2-3

2.3 INSTALLATION REQUIREMENTS

- a. Arrangement - Both the AN /SRC-20 and the AN/SRC-21 are usually installed on a flat surface mounted to the deck. See Figure 2-1 for typical foundation details.
- b. Outline and Mounting Dimensions - AN/SRC-20 Figure 2-2, AN/SRC-21 Figure 2-3
- c. Grounding Specifications - All bonding and grounding to be in accordance with Table 2-1 Item No. 3.

2.4 CABLE DIAGRAM AND CONNECTION DETAILS

- a. Elementary Connections - AN/SRC-20 Figure 2-4, AN/SRC-21 Figure 2-5
- b. Electronics Installation and Maintenance Standards - To be in accordance with Table 2-1 Item No. 14.
- c. Security Requirements - None

2.5 FIELD CHANGE REQUIREMENTS TABLE 2-4



| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|---|
| 1 | 0967-125-6010 | Vol. I Technical Manual for Radio Sets AN/SRC-20 and AN/SRC-21 |
| 2 | 0967-125-6020 | Vol. II Technical Manual for Radio Sets AN/SRC-20 and AN/SRC-21 |
| 3 | Mil. Std. 1310A (NAVY) | Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility |
| 4 | *RE-E2685986 | Interconnecting Wiring Diagram |
| 5 | *RE-D2685989 | Cable Running Sheets |
| 6 | *RE-F2686017 | Pictorial System Diagram |
| 7 | *RE-H1686018 | Primary Power Distribution Diagram |
| 8 | *RE-E2685988 | Interconnecting Wiring Diagram |
| 9 | *RE-D2686019 | Pictorial System Diagram |
| 10 | *RE-D2686021 | Summary List of Installation Material |
| 11 | *RE-D2683888 | General Arrangement |

*These plans are not essential for installation but if available use as reference.

TABLE OF TECHNICAL PUBLICATIONS
TABLE 2-1 (Continued)

RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

TABLE 2-1

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|--|
| 12 | | |
| 13 | *RE-H2635937 | Outline and Mounting Data |
| 14 | 0967-000-0000 | Electronics Installation and Maintenance Books |
| 15 | 0981-052-8090 | Data Pertaining to Electrical Shipboard Cable |
| | | |
| | | |
| | | |
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| | | |
| | | |
| | | |

ORIGINAL

*These plans are not essential for installation but if available use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-1

| EQUIPMENT | VOLTAGE | CURRENT | POWER | REMARKS |
|------------|--|---------|--|---|
| *AN/SRC-20 | 115/230 VAC, 50/60 HZ, Single Phase | | 540 WATTS (Receive) 1550 WATTS (Transmit) | Power Factor 0.9 |
| *AN/SRC-21 | 115/230 VAC, 50/60 HZ, Single Phase | | 290 WATTS (Receive) 455 WATTS (Transmit) | Power Factor (Receive) 0.92 Power Factor (Transmit) 0.95 |

*Both the AN/SRC-20 and the AN/SRC-21 are shipped ready for 115 volt operation to operate either of the sets on 230 Volts. It is necessary to change the primary power fuses and voltage selectors. See Table 2-1 Item No.1

TABLE OF PRIMARY POWER REQUIREMENTS
TABLE 2-2

| EQUIPMENT | HEAT DISSIPATION | UNIT WEIGHT | REMARKS |
|---------------------|------------------|-------------|---------|
| AN/SRC-20 | 1415 WATTS | 529 LBS. | |
| AN/SRC-21 | 455 WATTS | 295 LBS. | |
| MT-2299/UR (SRC-20) | | 84 LBS. | |
| MT-2300/UR (SRC-21) | | 72 LBS. | |
| C-3866/SRC | | 66 LBS. | |
| AN/URC-9 | | 157 LBS. | |
| AM-1565/URC | | 222 LBS. | |
| | | | |
| | | | |

TABLE OF MISCELLANEOUS DATA
TABLE 2-3

| FIELD CHANGE NUMBER AND SERIAL NO. EFFECTIVITY | NAVSHIPS BULLETIN # | BRIEF DESCRIPTION OF CHANGE | INSTALLING ACTIVITY & MANHOOURS | KIT FSN | IDENTITY |
|--|---------------------|--|---------------------------------|-----------------|--|
| 1-AN/SRC-20/21 All | 0967-032-5070 | Modification to C-3866/SRC to make system compatible with C-1138 control unit | FA-2 $\frac{1}{2}$ | None | Two wires (white with red and blue tracers) connected to F-205. |
| 2-AN/SRC-20/21 All used for Homing Beacon | 0967-0507040 | Provide MCW keying for homing beacon installations | FA-11 | None | Absence of wire on pin 5 of K-805 in modulator audio amplifier assembly. |
| 3-AN/SRC-20/21 All | 0967-032-5070 | Modification of PP-2702/URC-9 to provide improved operation | FA-1 | None | Use of 1N561 in place of 1N560 for CR-1501 thru CR-1504. |
| 4-AN/SRC-20/21 All | 0967-032-5070 | Modification of line fuses main F-204 and radio set F-206 to provide safety of operation | FA-2 | None | Presence of Dymo-type tape writer labeling on the front of the C-3866/SRC. |
| 5-AN/SRC-20 All | 0967-032-5040 | Change added to AN/SRC-20 adapts equipment to withstand shock and vibration | FA-3 | 2N5820-986-7729 | Presence of clamps in RT-581/URC-9 guide pins in C-3866 SRC and screw lock pin for P-401 of servo amplifier in AM-1565/URC |
| 5-AN/SRC-21 All | 0967-032-5050 | Changes added to adapt equipments to withstand shock and vibration | FA-2 | 2N5820-986-7746 | Presence of plug clamps in RT-581/URC-9 and guide pins in back panel to rear of C-3866/SRC. |

FIELD CHANGE REQUIREMENTS
TABLE 2-4 (Continued)

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| FIELD CHANGE NUMBER AND SERIAL NO. EFFECTIVITY | NAVSHIPS BULLETIN # | BRIEF DESCRIPTION OF CHANGE | INSTALLING ACTIVITY & MANHOURS | KIT FSN | IDENTITY |
|--|--|--|--------------------------------|--|---|
| 6-AN/SRC-20/21 All | 0967-032-5060 | Reduces failure of contacts in relay K-601 | FA-1 | 2N5820-988-1152 | Presence of 100 ohm resistor, 1 microfarad capacitor, and an insulated terminal stud installed vertically alongside the case of relay K-602 in the relay filter unit of RT-581/URC-9. |
| 7-AN/SRC-20/21 Specified ships | (20)-0967-032-5080 (21)-0967-032-5090 | Install running time meter | Special Team FA-8 | 20-2Z5820-056-1334 21-2Z5820-056-1366 | Presence of running time meter on PP-2702/URC-9 |
| 8-AN/SRC-20/21 All | 0967-125-6110 | Reduce failure of lamps DS201 & 202 | FA-1 | 2Z5820-928-5011 | Presence of 15 ohm term. 6 of TB 201 and ground. |
| 9-AN/SRC-20 Collins produced equips only | 0967-125-6120 | Ruggedized drawer slides | FA-1 | 2Z5820-019-2897 | Reinforced blocks on tilt control. |
| 10-AN/SRC-20 9-AN/SRC-21 All | 0967-125-6130 | Protect RF-PA from overheating | FA-10 ^{1/2} 1 1/2 | | Presence of thermal sensing device in center of PA anode. |
| 11-AN/SRC-20 10-AN/SRC-21 All | 0967-125-6140 | Reduce contact failure in K801 & K802 | FA-4 | | Presence of 15K resistor & 2 MFD capacitor near K801 socket. |

FIELD CHANGE REQUIREMENTS
TABLE 2-4

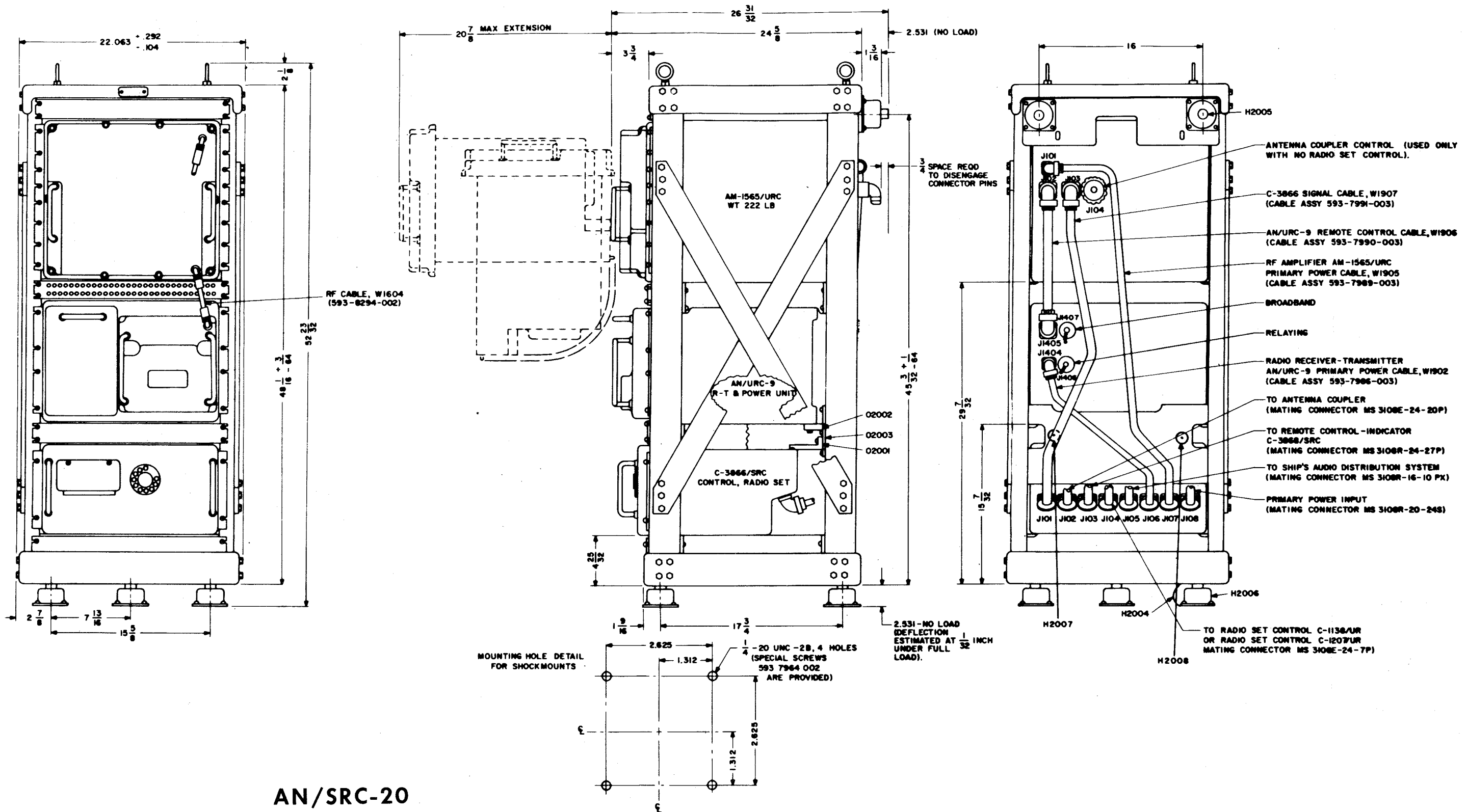
RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

TABLE 2.4

2-7/2-8





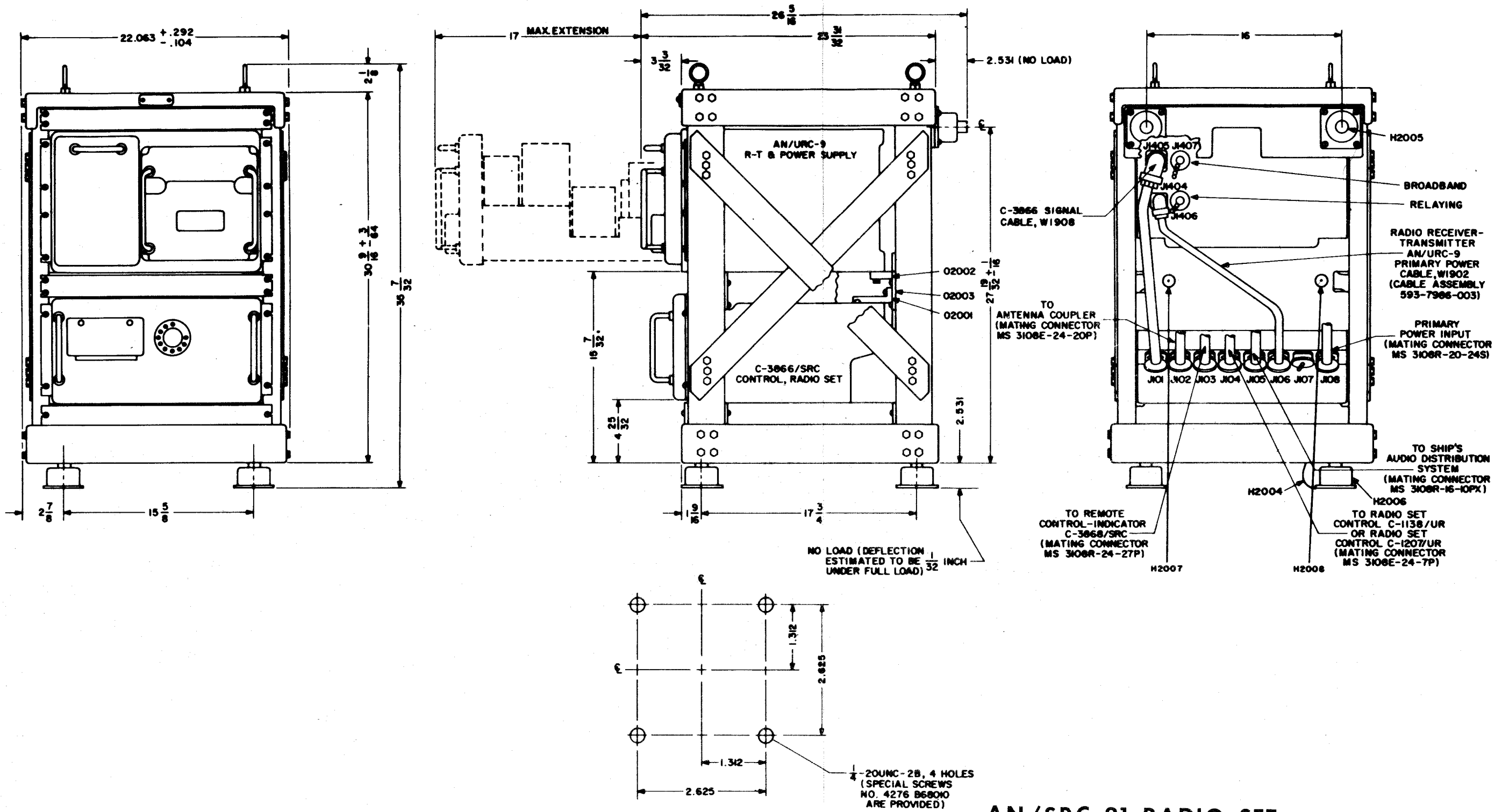
AN/SRC-20

OUTLINE AND MOUNTING DIMENSIONS

FIGURE 2-2

RADIO TRANSCEIVERS

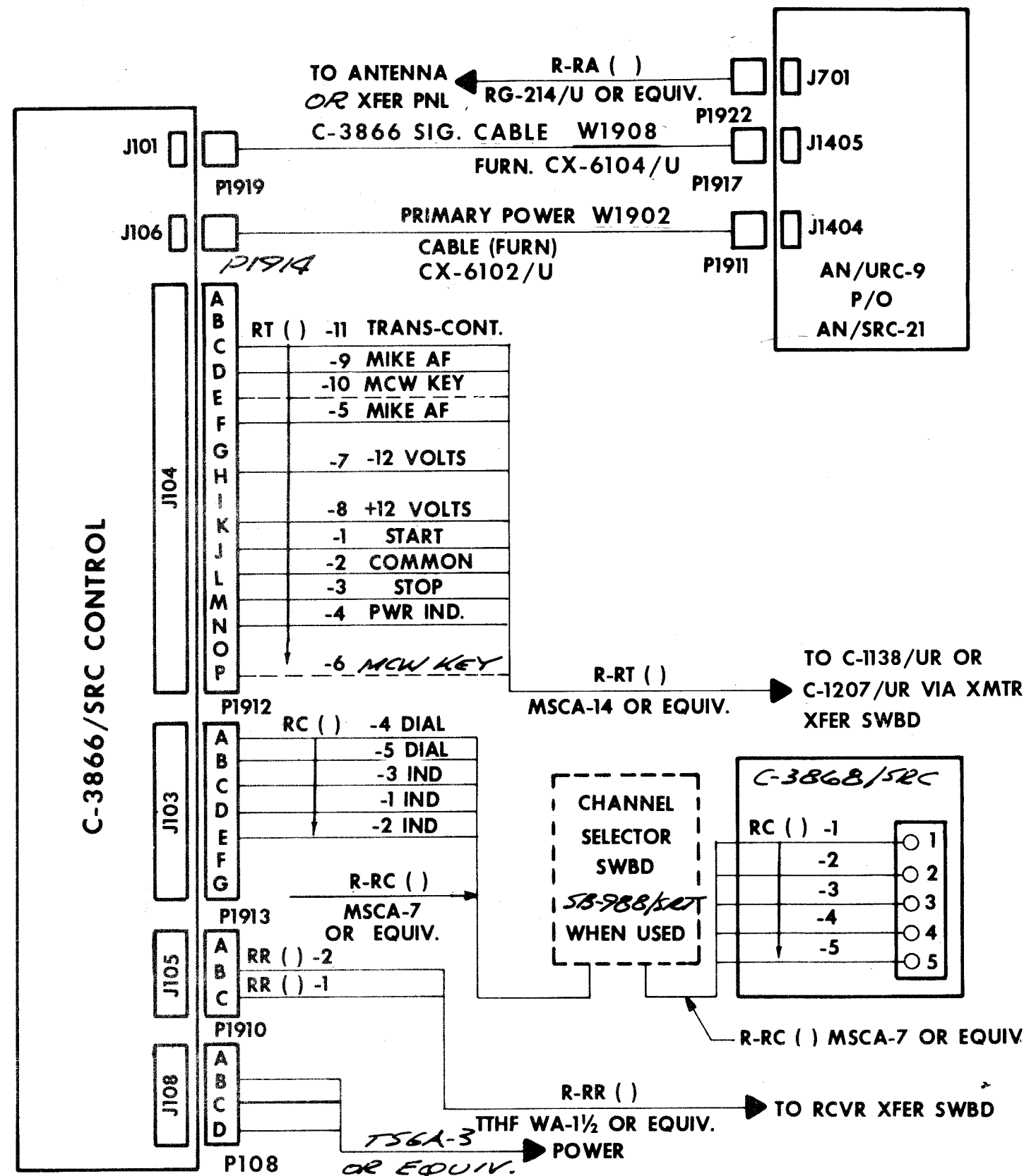
FIGURE 2-3



MOUNTING HOLE DETAIL FOR SHOCKMOUNTS

AN/SRC-21 RADIO SET
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-3

ORIGINAL



ORIGINAL
**AN/SRC-21
CABLE DIAGRAM
FIGURE 2-5
(CONTINUED)**

NOTE:

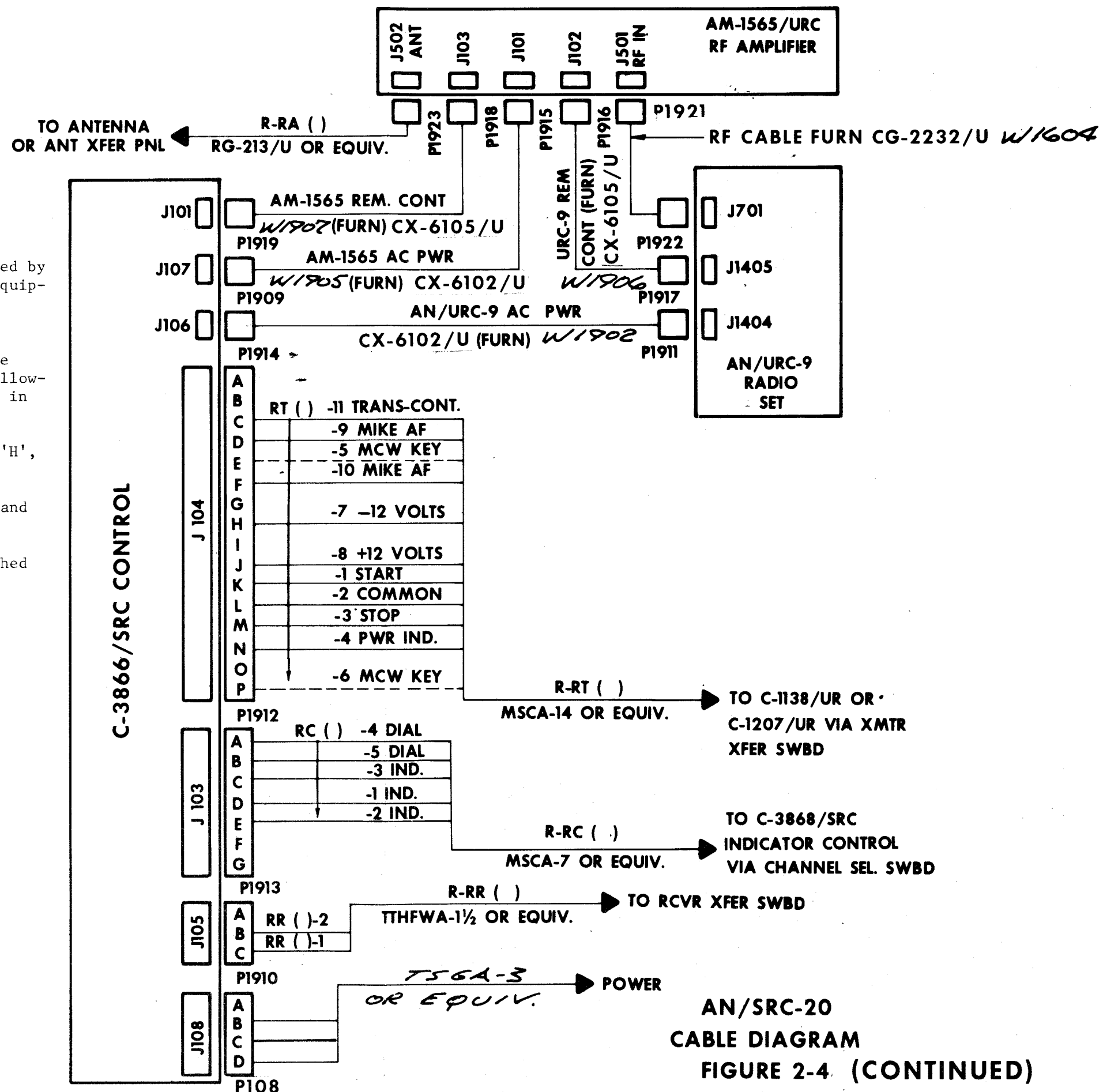
1. All connections represented by dotted lines to be added to equipments modified for remote MCW keying. See field change #2.

2. When AN/SRC-20/21 is to be used with an AN/SRA-33 the following jumpers are to be removed in radio set control C-3866/SRC.

a. Between pins 'G' and 'H', J102.

b. Between K207, Pin 1, and S201, terminal 8.

3. All connectors are furnished with AN/SRC-20/21 units. See sheet 2-13/2-14.



**AN/SRC-20
CABLE DIAGRAM
FIGURE 2-4. (CONTINUED)**

| C-3866/SRC | |
|-------------|-----------------|
| P1919 | MS3108R-24-7PY |
| P102 | MS3108E-24-20P |
| P1913 | MS3108R-24-27P |
| P1912 | MS3108E-24-7P |
| P1910 | MS3108R-16-10PX |
| P1914 | MS3108R-16-10P |
| P1909 | MS3108R-16-10P |
| P108 | MS3108R-20-24S |
| AM-1565/URC | |
| P1915 | MS3108R-16-10S |
| P1916 | MS3108R-24-7PY |
| P1918 | MS3108R-24-7P |
| P1921 | UG-710A/U |
| P1923 | UG-710A/U |
| AN/URC-9 | |
| P1922 | UG-710A/U |
| P1917 | MS3108R-24-7P |
| P1911 | MS3108R-16-10S |

**FIGURE 2-4/2-5
CONTINUED**

SECTION 2 - RADIO TRANSCEIVERS

2.6 AN/VRC-46 GENERAL DESCRIPTION

The AN/VRC-46 radio receiver-transmitter is a rugged, compact FM receiver-transmitter in a water tight case. Manually tuned from the front panel to any frequency in the range of 30 to 75.95 megacycles in 50 KC increments. An integral loudspeaker is mounted on the front panel. Transmitter: F3 emission, 35 watts maximum power output, 30 to 75.75 megacycle frequency range, 2 bands, 920 channels; receiver: F3 emission, receiving; 30 to 75.95 megacycle frequency range, 2 bands, 920 channels.

2.7 REFERENCE DATA

- a. Table of Technical Publications - Table 2-5
- b. Primary Power Requirements - Table 2-6
- c. Heat Dissipation - Table 2-7
- d. Unit Weight - Table 2-7

2.8 INSTALLATION REQUIREMENTS

a. Arrangement - The AN/VRC-46 () radio receiver-transmitter, and PP-2953/U power supply are designed for mounting on a shelf type or flat type foundation. See Figure 2-6 for typical foundation details. The MX-1986/SRC control adapter may be mounted either on a shelf or flat type foundation. See Figure 2-7 for typical foundation. The AS-1729/VRC and AT-912/VRC antenna may be installed vertical on masts, or deckhouses. See Figure 2-8 and 2-9 for typical foundation details.

b. Outline and Mounting Dimensions

- (1) AN/VRC-46 Figure 2-10
- (2) PP-2953/U Figure 2-11
- (3) MX-1986/SRC Figure 2-12
- (4) AT-912/VRC Figure 2-13
- (5) AS-1729/VRC Figure 2-14

c. Grounding Specifications - All bonding and grounding to be in accordance with Table 2-5, Item No. 6.

2.9 CABLE DIAGRAM AND CONNECTION DETAILS

- a. Elementary Connections - Figure 2-15.
- b. Electronics Installation and Maintenance Standards - To be in accordance with Table 2-5, Item No. 10.
- c. Security Requirements - To be in accordance with Table 2-5, Item No. 11.

2.10 FIELD CHANGE REQUIREMENTS - See Table 2-5 Item No. 10.

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|--|
| 1 | TM-11-5820-401-35 | Field and Depot Maintenance Manual Radio Sets AN/VRC-12 and AN/VRC-43, 44, 45, 46, 47, 48, and 49. |
| 2 | TM-11-5820-399-35 | Field and Depot Maintenance Manual |
| 3 | TM-11-5965-262-13 | Organizational and DS Maintenance Manual |
| 4 | TM-11-5820-401-20 | Organizational Maintenance Manual |
| 5 | TM-11-5820-401-10 | Operator's Manual |
| 6 | Mil. Std. 1310A (NAVY) | Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility |
| 7 | 0967-069-1010 | Technical Manual for Control Adapter MX-1986A |
| 8 | 0981-052-8090 | Data Pertaining to Electrical Shipboard Cable |
| 9 | *RE-B2696164 | Data Sheet |
| 10 | 0967-000-0000 | Electronics Installation and Maintenance Books |
| 11 | NAVSHIPS INST. 05510.33B | Installation Criteria for Shipboard Secure Electrical Information Processing Systems |

*These plans are not essential for installation but if available use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-5

RADIO TRANSCIEVERS

| EQUIPMENT | VOLTAGE | CURRENT | POWER | REMARKS |
|----------------|------------------------------|---------|----------|---------|
| MX-1986()/SRC | 115 VAC, 60 HZ, Single Phase | | 70 Watts | |
| PP-2953/U | 115 VAC, 60 HZ, Single Phase | 4 amps | | |

TABLE OF PRIMARY POWER REQUIREMENTS
TABLE 2-6

NAVSHIPS 0967-306-1010

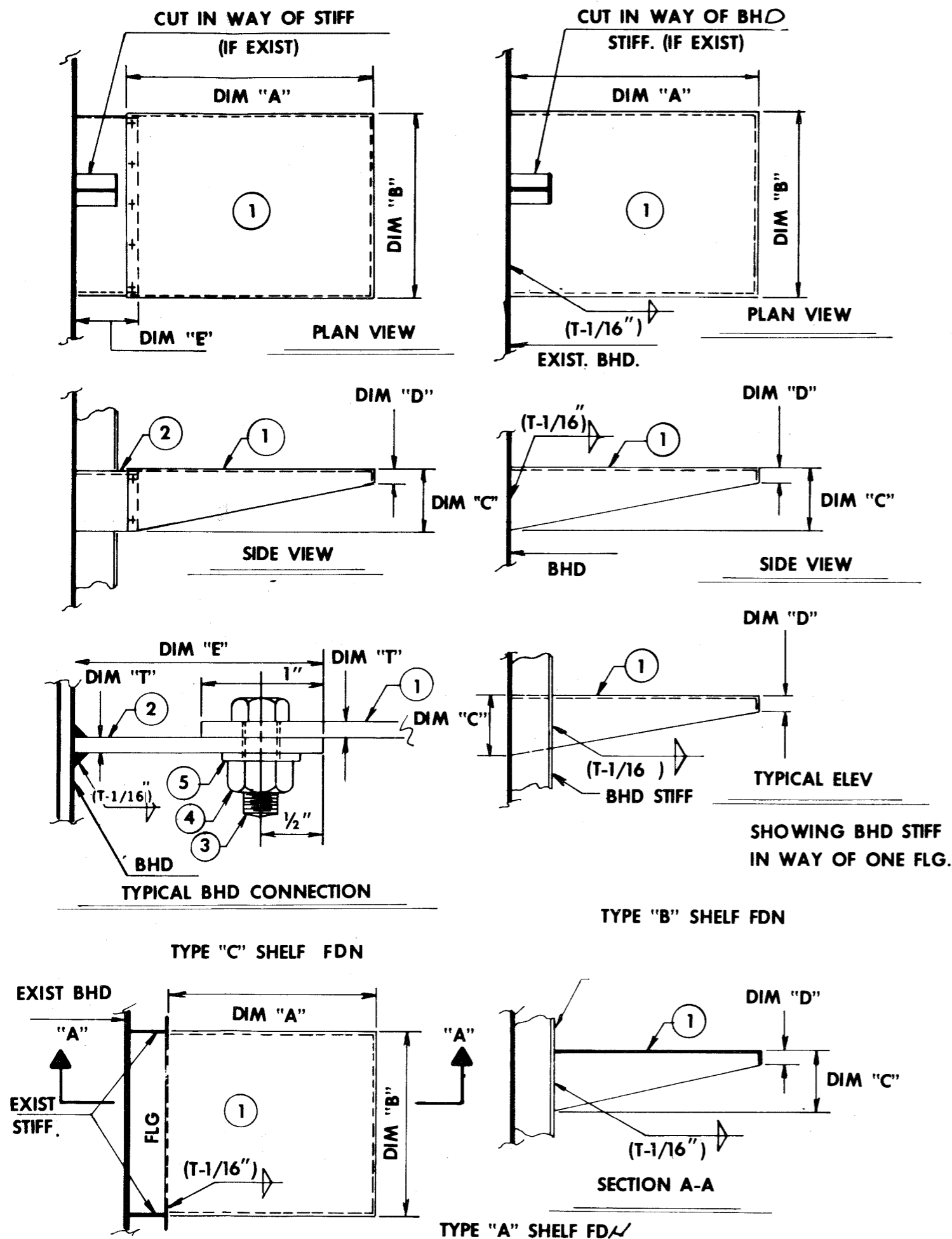
| EQUIPMENT | HEAT DISSIPATION | UNIT WEIGHT | REMARKS |
|-------------|------------------|-------------|---------|
| AN/VRC-46 | | 61 LBS. | |
| MT-1029/VRC | | 16-5/8 LBS. | |
| PP-2953/U | | 40 LBS. | |
| MX-1986/SRC | 70 WATTS | 30 LBS. | |
| AS-1729/VRC | | 9½ LBS. | |
| AT-912/VRC | | 18 LBS. | |

TABLE OF MISCELLANEOUS DATA
TABLE 2-7

TABLE 2-6/2-7

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2-18



| LIST OF MATERIAL QUANTITIES FOR ONE FDN | | | | | | |
|---|----------------------|----------|-----------|-------------|----------|----------|
| PC NO. | NAME | NO. | MATERIAL | MT'L SPEC. | REMARKS | |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "A" | |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "B" | |
| 1 | PLT (SEE NOTE #2) | 1 | AL-61S-T6 | QQ-A-327 | } | |
| 2 | PLT (SEE NOTE #2) | 1 | MED STL | MIL-S-16113 | | |
| 3 | 1/4" HEX H.D. BOLT | AS REQ'D | C.R.S. | MIL-B-857 | | TYPE "C" |
| 4 | 1/4" HEX NUT | | | MIL-B-857 | | |
| 5 | 1/4" DIA-FLAT WASHER | | | MIL-S-854 | | |
| | | | | | | |

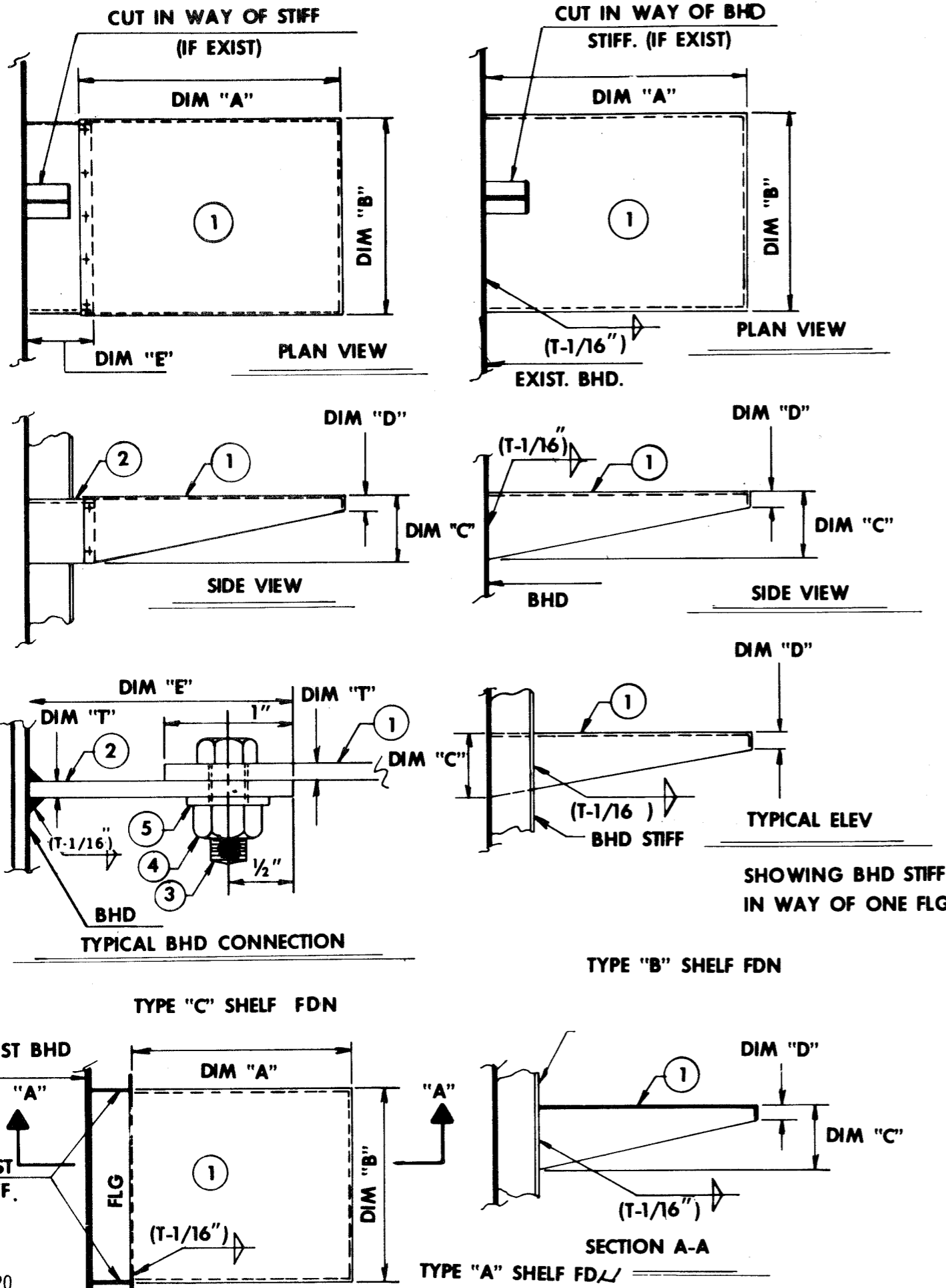
NOTES:

1. Thickness (Dim. "T" of material to be furnished on location).
2. All variable dimensions and type of foundation to be specified on location.
3. Foundation for AN/VRC-46 and PP-2953/U with 4" between units to be as follows:
 - a. Plating (7.65 #Plt. steel), 1/4" thick aluminum.
 - b. Type "B" shelf foundation.
 - c. For installation with stiffener in way of unit: Dimension "A" = 22" + depth of stiffener, dimension "B" = 36", dimension "C" = 8", dimension "D" = 1 1/2".
 - d. For installation with no stiffener interference: Dimension "A" = 22", dimension "B" = 36", dimension "C" = 8", dimension "D" = 1 1/2".
4. Size and location of mounting bolts for unit to be taken from equipment.

AN/VRC-46 AND PP-2953/U
TYPICAL FOUNDATION DETAILS

FIGURE 2-6

ORIGINAL



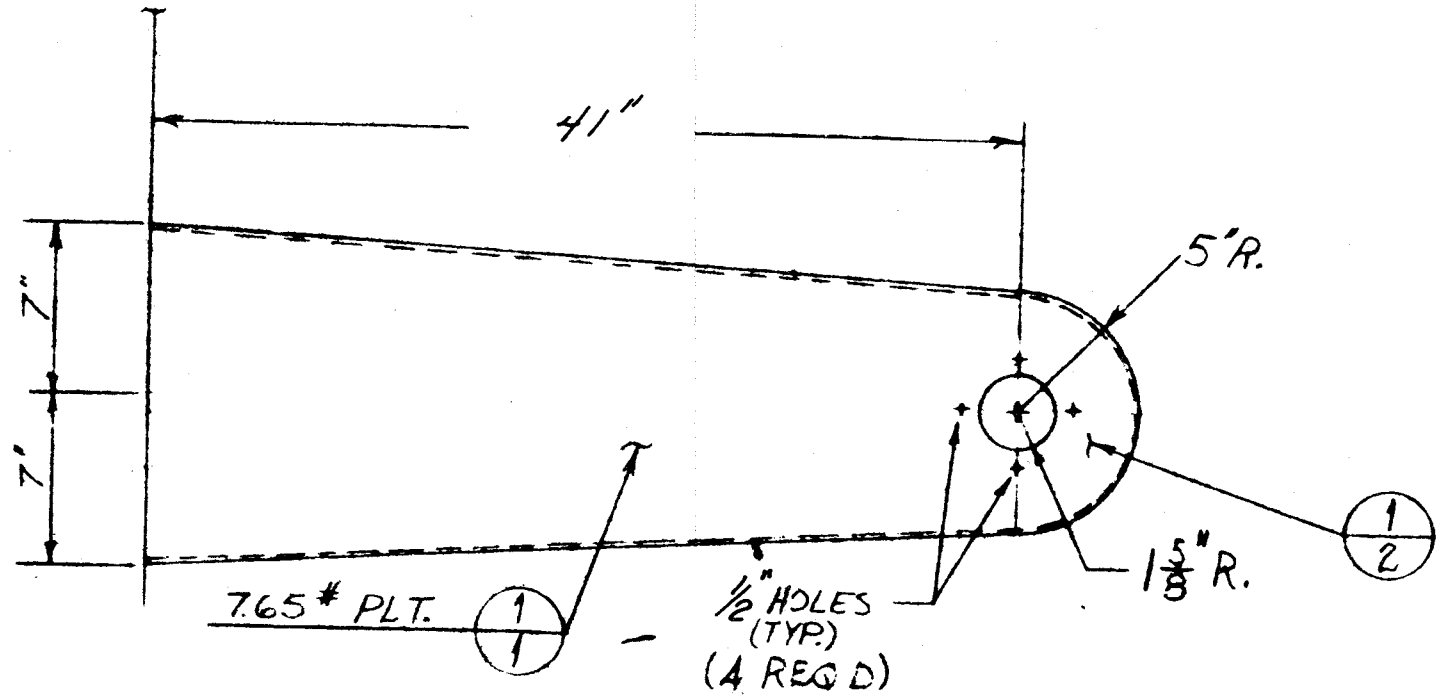
| LIST OF MATERIAL QUANTITIES FOR ONE FDN | | | | | |
|---|----------------------|----------|-----------|-------------|----------|
| PC NO. | NAME | NO. | MATERIAL | MT'L SPEC. | REMARKS |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "A" |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "B" |
| 1 | PLT (SEE NOTE #2) | 1 | AL-61S-T6 | QQ-A-327 | |
| 2 | PLT (SEE NOTE #2) | 1 | MED STL | MIL-S-16113 | |
| 3 | 1/4" HEX H.D. BOLT | AS REQ'D | C.R.S. | MIL-B-857 | TYPE "C" |
| 4 | 1/4" HEX NUT | | | MIL-B-857 | |
| 5 | 1/4" DIA-FLAT WASHER | | | MIL-S-854 | |
| | | | | | |
| | | | | | |

NOTES:

- Thickness (Dim. "T" of material to be furnished on location).
- All variable dimensions and type of foundation to be specified on location.
- Foundation for MX-1986/SRC to be as follows:
 - Plating (7.65 #Plt. steel), 1/4" thick aluminum.
 - Type "B" shelf foundation.
 - For installation with stiffener in way of unit. Dimension "A" = 11 1/2" + depth of stiffener, dimension "B" = 17", dimension "C" = 7", dimension "D" = 1 1/2".
 - For installation with no stiffener interference: Dimension "A" = 11 1/2", dimension "B" = 17", dimension "C" = 7", dimension "D" = 1 1/2".
- Size and location of mounting bolts to be taken from equipment.

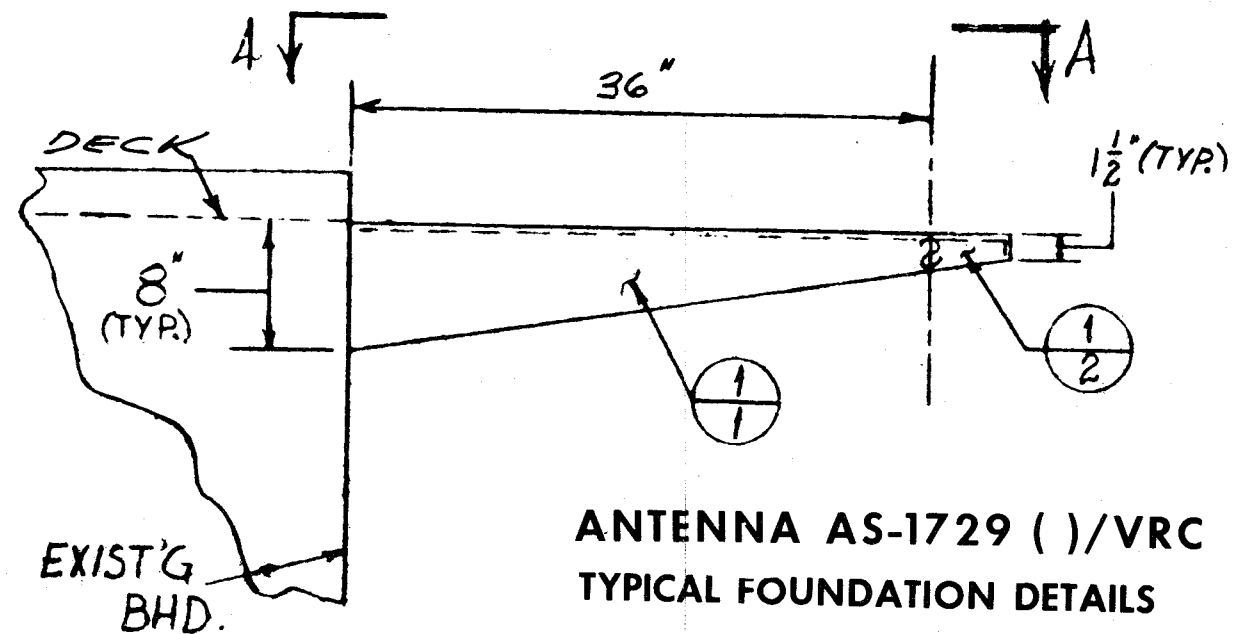
MX-1986/SRC CONTROL ADAPTER
 TYPICAL FOUNDATION DETAILS

FIGURE 2-7



| LIST OF MATERIAL - QUANTITIES FOR ONE FOUNDATION | | | | | |
|--|-----------------|-----------|----------|------------------------|-------------------|
| Pc. No. | NAME | No. Reqd. | MATERIAL | MATERIAL SPECIFICATION | FEDERAL STOCK No. |
| 1 | 7.65 No. 2 Plt. | 2 | M.S. | | 9515-237-5333 |

NOTES: Template all work from ship.
 All welds to be in accordance with NAVSHIPS Weld Specifications 0900-000-1000.
 Template location of mounting bolts from equipment.
 Foundations to be parallel to base line.



ANTENNA AS-1729 ()/VRC
 TYPICAL FOUNDATION DETAILS
 FIGURE 2-8

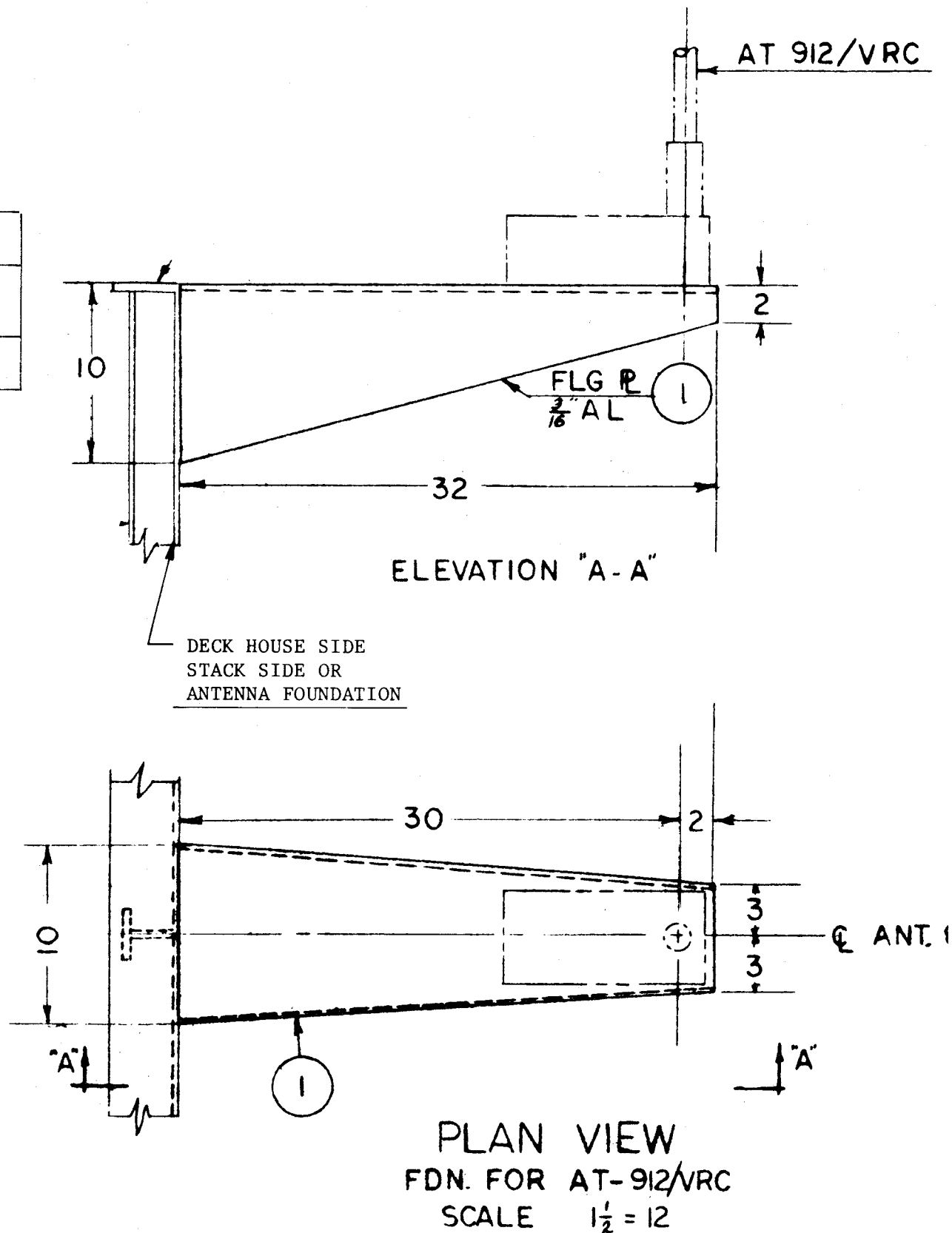
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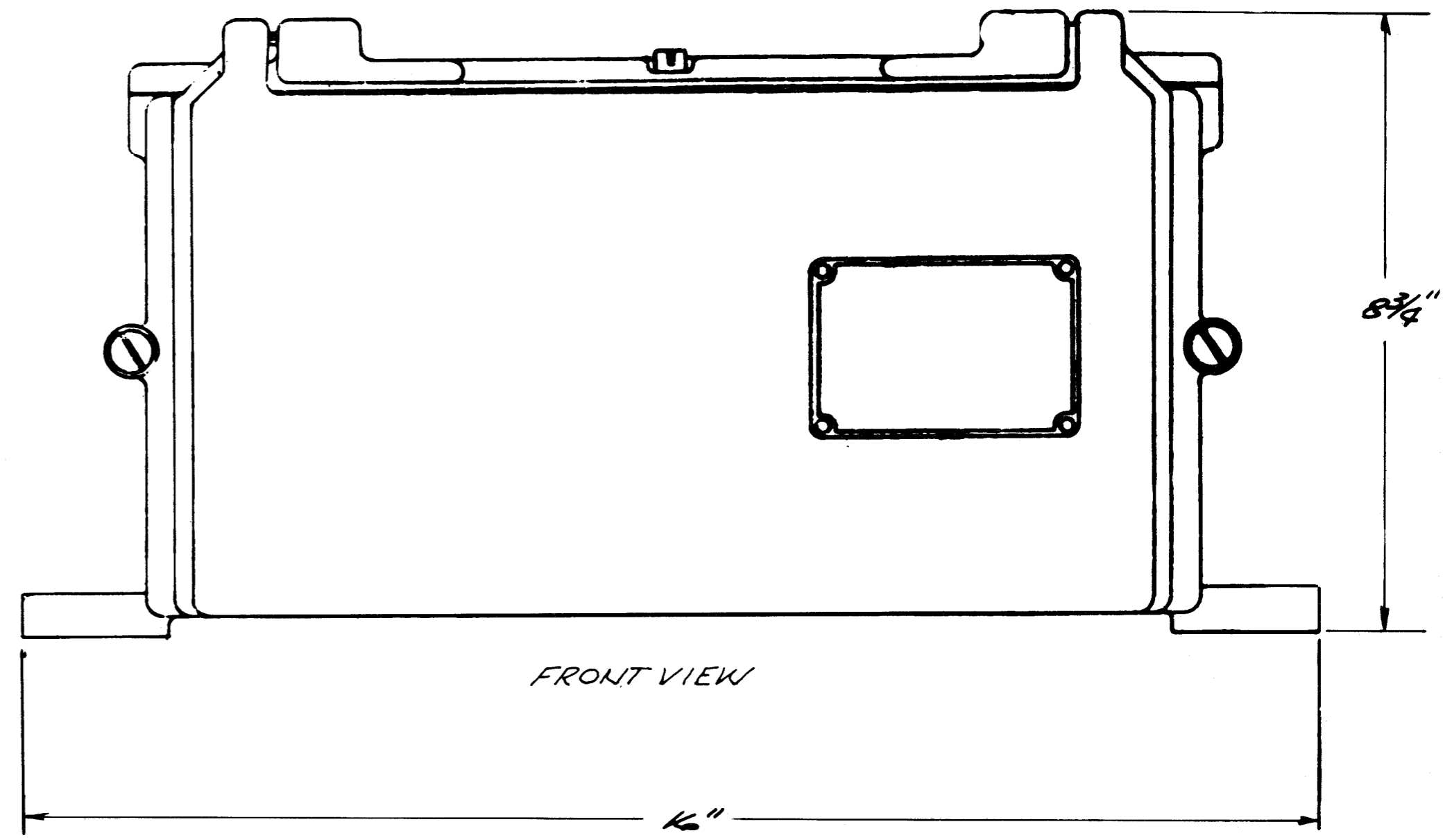
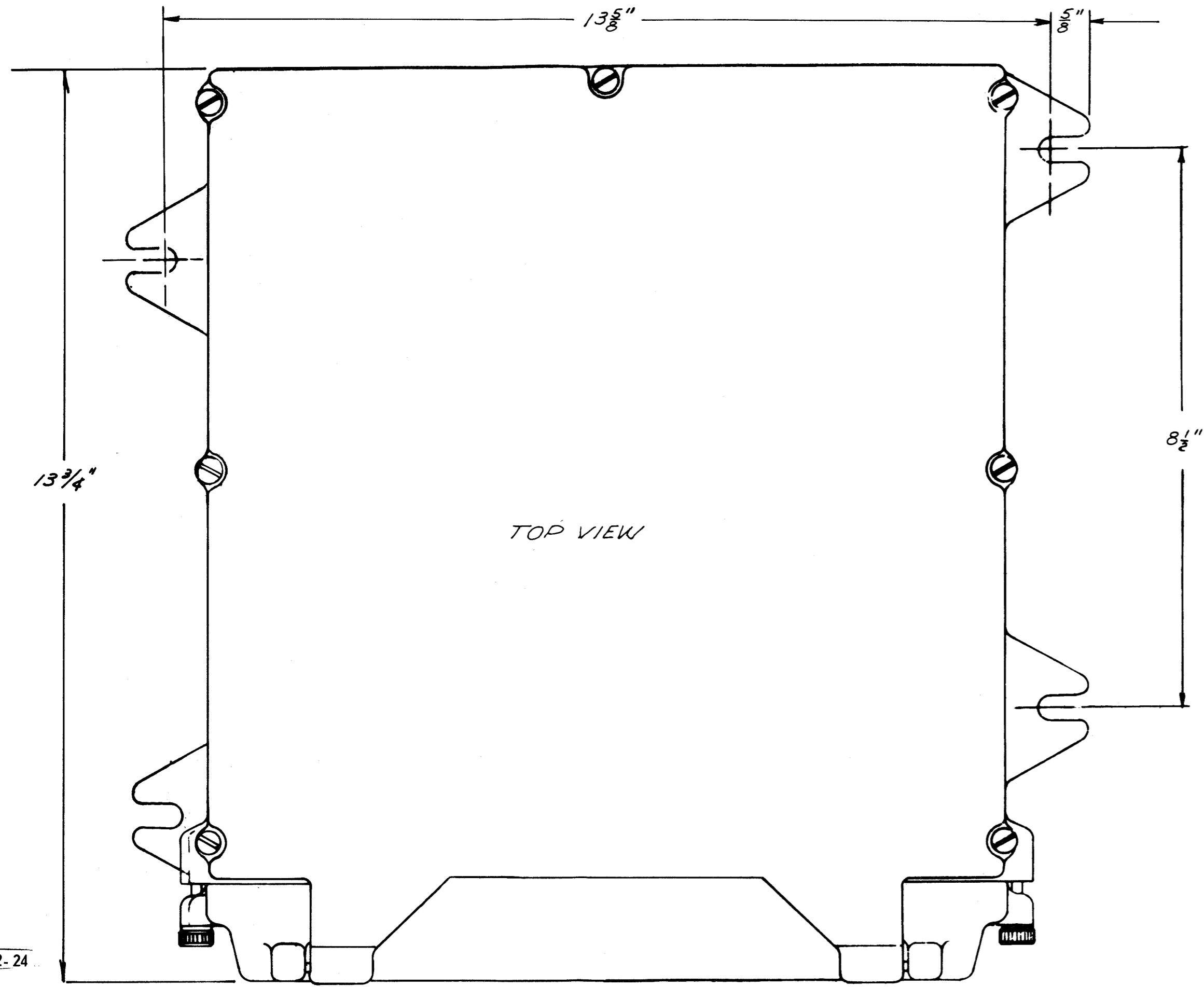
| LIST OF MATERIAL - QUANTITIES FOR ONE FOUNDATION | | | | | |
|--|---------------------|-----------|----------|------------------------|-------------------|
| PC. No. | NAME | No. REQD. | MATERIAL | MATERIAL SPECIFICATION | FEDERAL STOCK No. |
| 1 | 3/4" Aluminum Plate | 1 | 5086H32 | Mil-A-19020 | 9535-542-2639 |

GENERAL NOTES

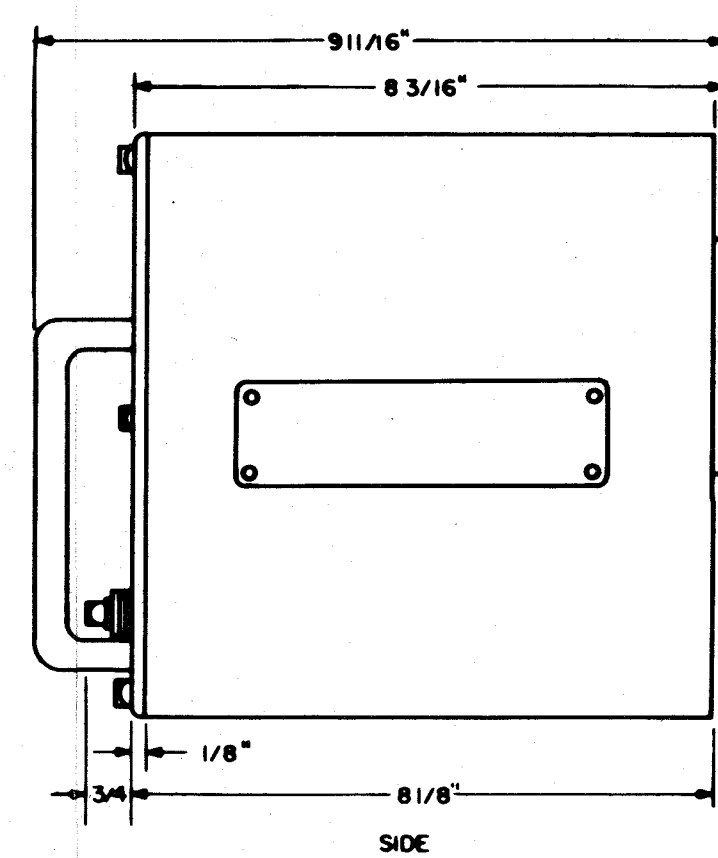
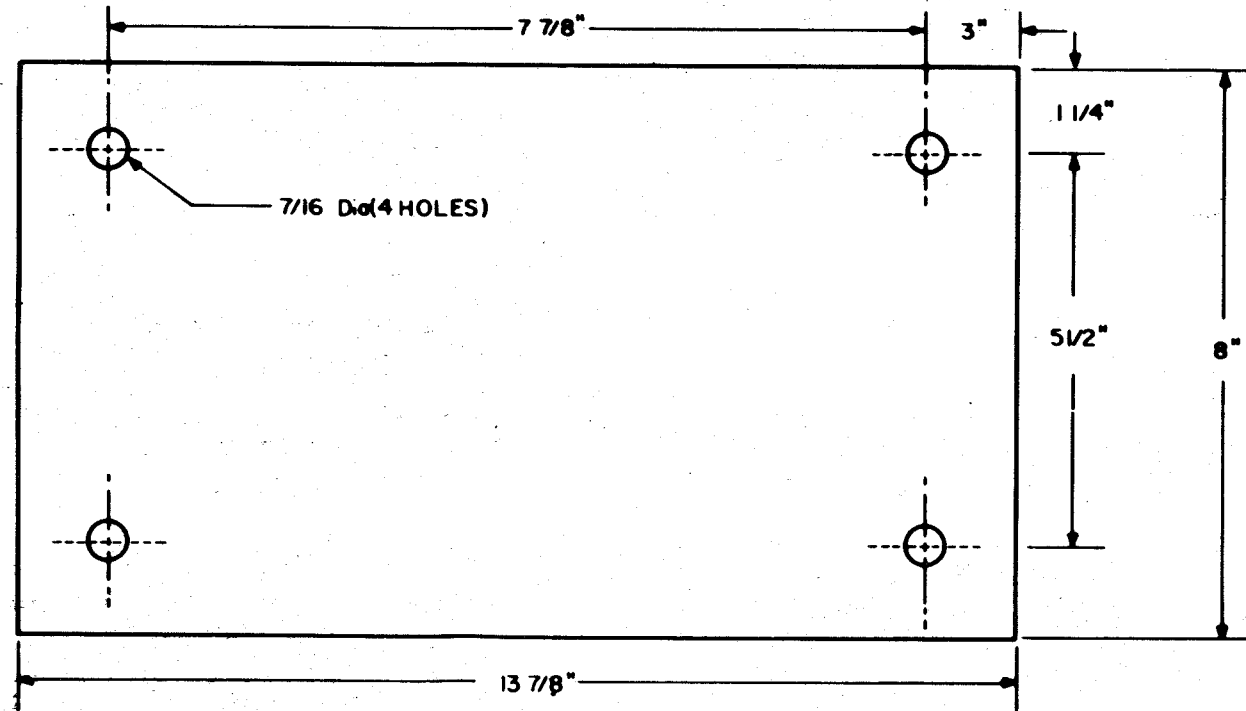
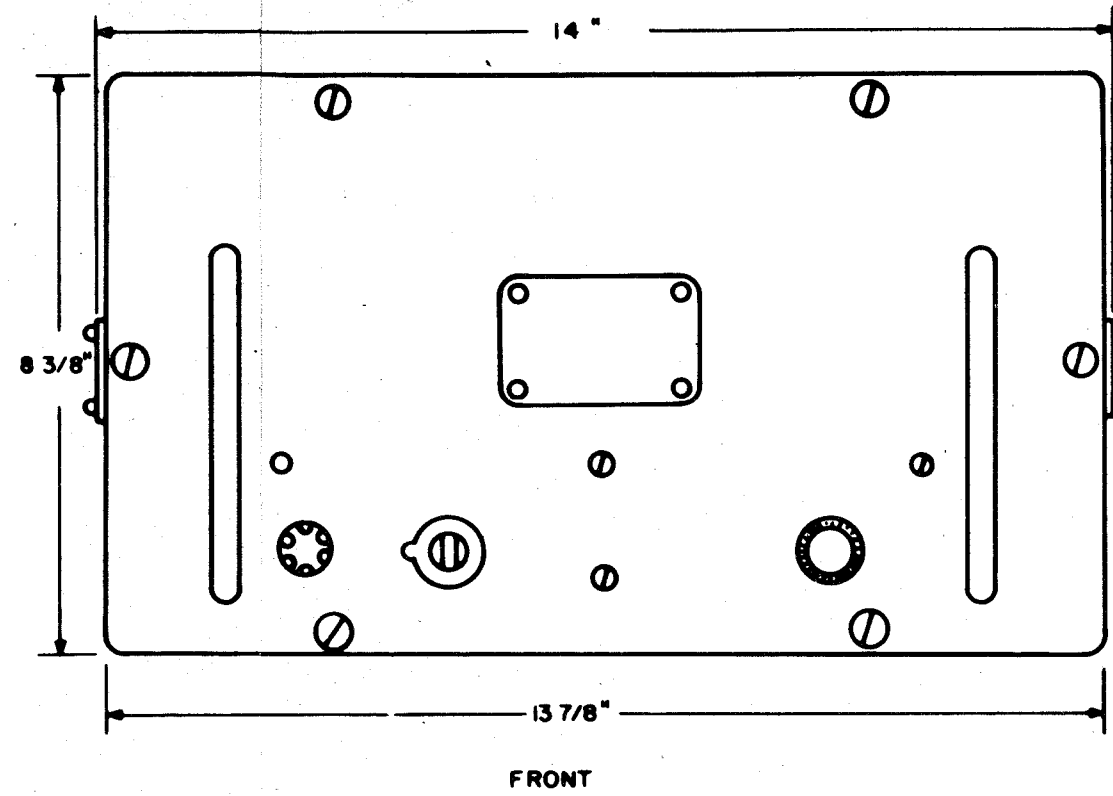
1. ALL FOUNDATIONS TO BE INSTALLED LEVEL
2. GRIND SMOOTH ALL ROUGH EDGES TO PREVENT INJURY TO PERSONNEL.
3. ALL WELDING TO BE IN ACCORDANCE WITH GEN. SPECS S9-1
4. MOUNTING HARDWARE PROVIDED WITH ANTENNA.

**AT-912/VRC
TYPICAL FOUNDATION DETAILS
FIGURE 2-9**





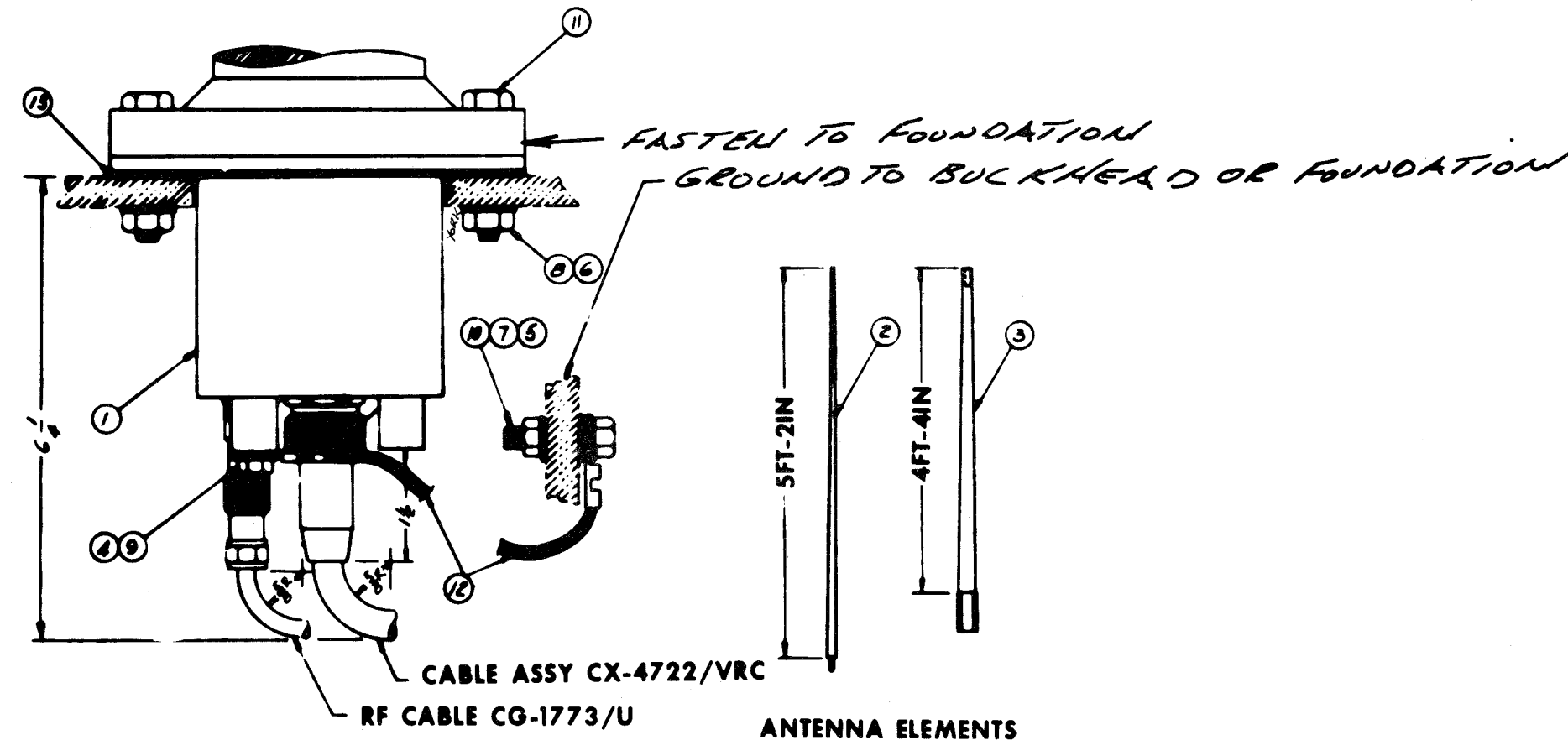
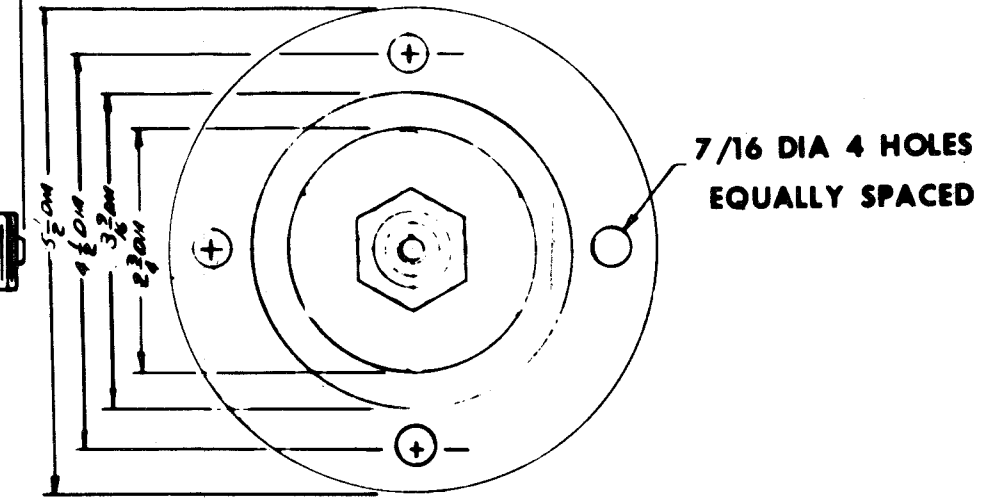
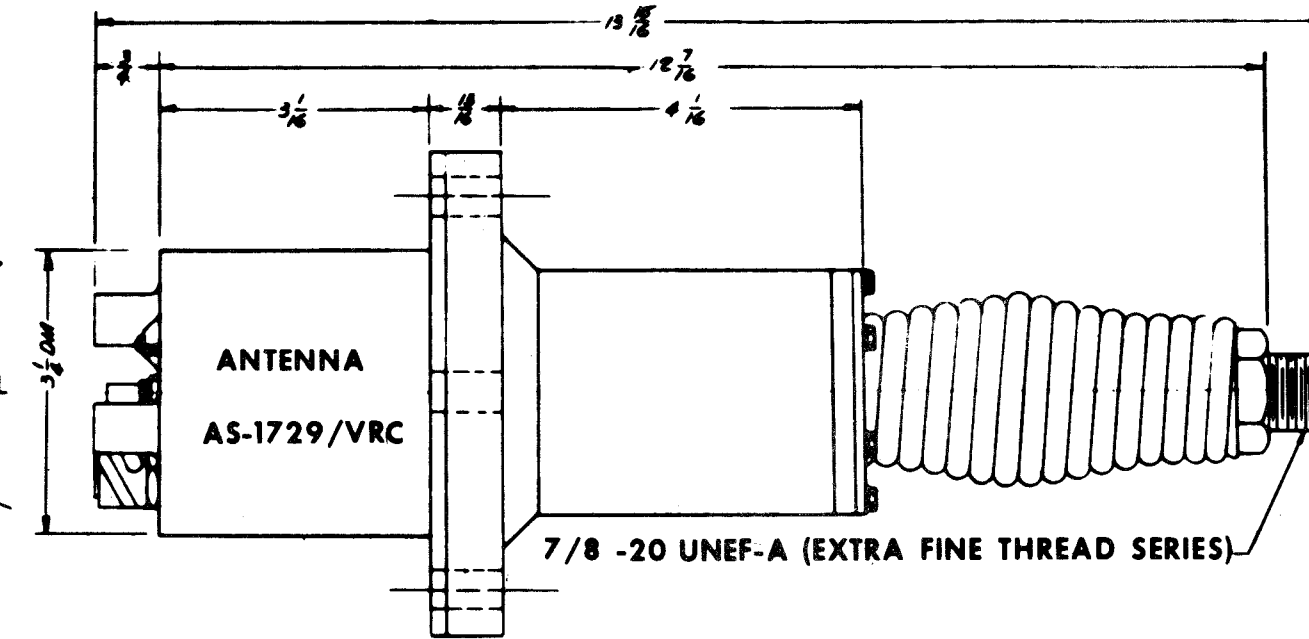
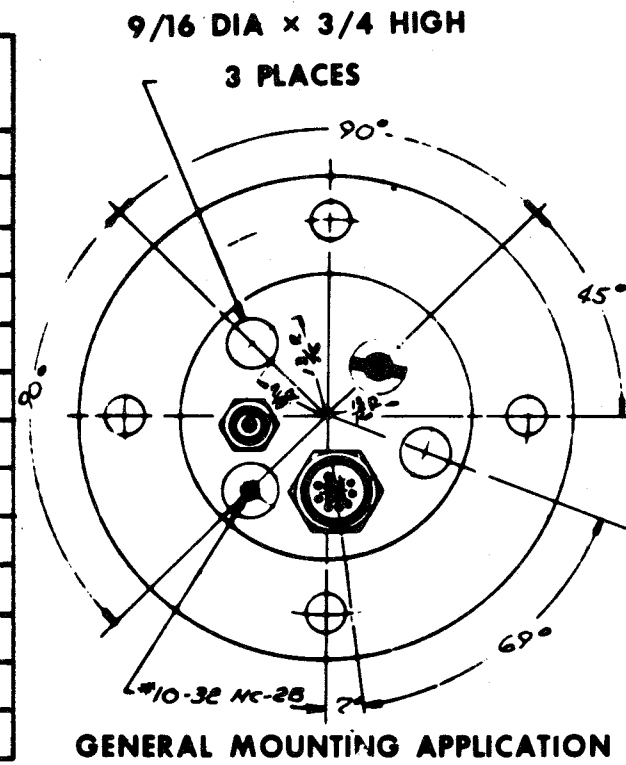
PP-2953/U POWER SUPPLY
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-11



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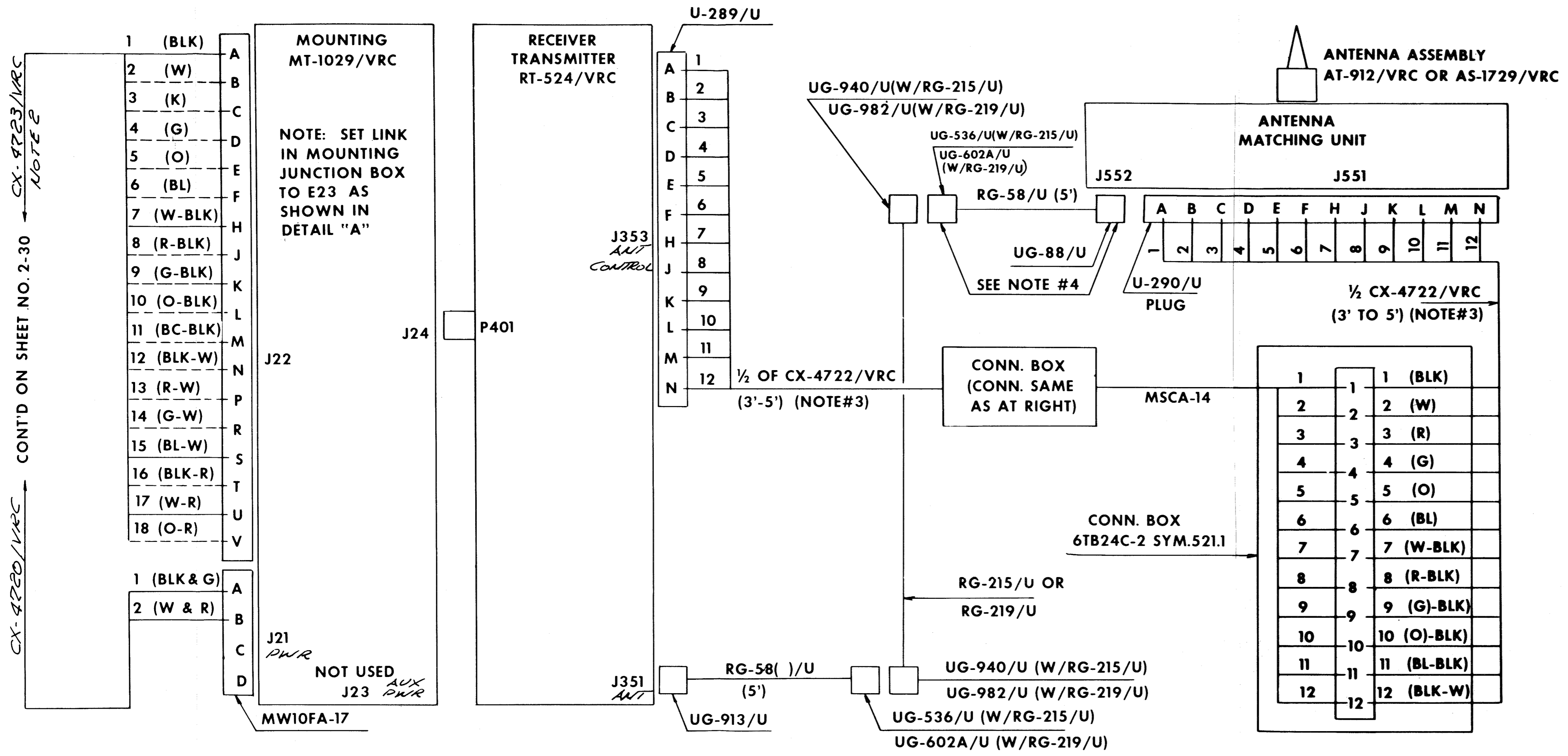
**MX-1986A/SRC
CONTROL ADAPTER
OUTLINE AND MOUNTING
DIMENSIONS
FIGURE 2-12**

| ITEM No. | NAME OF ITEMS (FURNISHED WITH ANTENNA AS-1729/VRC) | ATY. REQD. | REMARKS |
|----------|---|------------|-----------------|
| 1 | ANTENNA AS-1729/VRC | 1 | |
| 2 | ANTENNA ELEMENT AT-1095/VRC (5Ft.-2In.) | 1 | |
| 3 | ANTENNA ELEMENT AS-1730/VRC (4Ft.-4In.) | 1 | |
| 4 | LOCKWASHER #10 1 ET | 2 | MS45904-60 |
| 5 | LOCKWASHER 5/16 1ET | 3 | MS45904-72 |
| 6 | WASHER, SPLIT 13/32 I.D. - 3/8 O.D. | 4 | MS35338-27 |
| 7 | HEX NUT, PLAIN 5/16-24 | 1 | MS51968-4 |
| 8 | NEX NUT, PLAIN 3/8-16 | 4 | MS51967-7 |
| 9 | HEX HD CAP SCREW #10-32 X 1/2 LG | 1 | MS9122-03 |
| 10 | HEX HD CAP SCREW 5/16-24 X 1 1/2 LG | 1 | MS90726-38 |
| 11 | HEX HD CAP SCREW 3/8-16 X 1-3/4 LG | 4 | MS90725-65 |
| 12 | GROUND STRAP (6IN. LG) | 1 | SC-C-27813-GR-9 |
| 13 | GASKET, RUBBER | 1 | SC-B-160382 |



ANTENNA AS-1729 ()/VRC
OUTLINE AND MOUNTING DIMENSIONS

FIGURE 2-14



NOTES:

1. This cable diagram drawn to show shipboard installation of AN/VRC-46 using A.C. power supply and adapter.
2. In CX-4723/VRC cable conductors indicated by dashed lines exist but are not used and shall be individually taped to prevent inadvertant shorts in adapter. If assembly (pc. #3) is used connector at MX-1986/SRC is removed.
3. Conductors Nos. 9, 10, and 11 in CX-4722/VRC cable are spares.
4. Wrap antenna connectors installed in the weather with linen and/or Neoprene tape and liquid Neoprene.
5. Provide suitable sheetmetal cover for openings at top end of matching unit using holes for alternate antenna position for attachment.
6. Where special cable assemblies (pcs. 1, 2, and 3) shown in table on sheet 2-30 are not available, they maybe fabricated using the connectors and cables (or appropriate substituted type) shown in table on sheet 2-30.

**AN/VRC-46
RECEIVER-TRANSMITTER
CABLE DIAGRAM
FIGURE 2-15
CONTINUED**

ORIGINAL

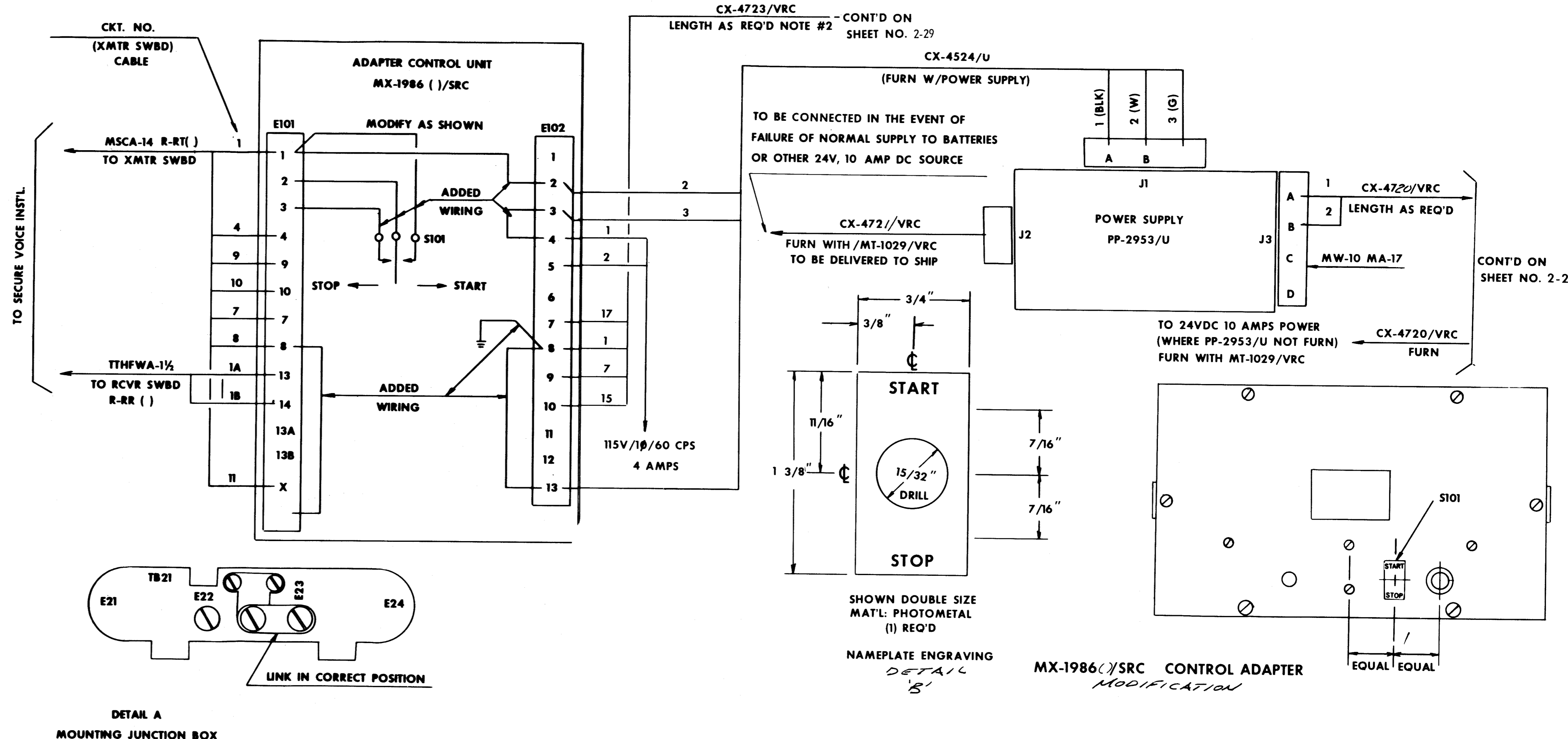
| LIST OF MATERIAL | | | | | |
|------------------|--|-----------|------------|------------------------------------|-------------------|
| SYM. OR PC. NO. | DESCRIPTION | No. REQD. | MATERIAL | REMARKS | FEDERAL STOCK NO. |
| 1 | Cable Assembly CX-4721/VRC | 1 | 8'-0" Long | See Note #6 | 5995-823-2852 |
| 2 | Cable Assembly CX-4722/VRC | 1 | 6'-0" Long | See Note #6 | 5995-823-2821 |
| 3 | Cable Assembly CX-4723/VRC | 1 | 6'-0" Long | See Note #6 | 5995-823-2834 |
| S101 | Switch, Toggle, Single Pole, 3 Pos., 2 MOM. Ctr. off | 1 | | For Modification of MX-1986()/SRC | N5930-655-1518 |
| 5 | Nameplate | 1 | Photometal | SEE DETAIL B | |

| ASSY. NO. | CONNECTORS | | CABLE | |
|-----------|--|------------------|------------------------------|-----------------|
| | TYPE | FEDERAL STK. NO. | TYPE | FED. STK. NO. |
| 4721 | MW10MA-17 (Amphenol #164-203-4P (520)) | 9N5935-815-3216 | CO-04 M of (4/14)0500 | 9Z6145-889-0612 |
| | MW10FA (Amphenol #164-203-4S(520)) | 9N5935-815-3213 | | |
| 4722 | U 289/U (Amphenol #67-06J14-12P) | 9N5935-982-8933 | CO-12L of (12/22) 0325 | 9Z6145-889-0580 |
| | U -290/U (Amphenol #67-06J14-12S) | 9N5935-815-3219 | | |
| 4723 | Amphenol #164-203-8P(520) | 9N5935-815-2325 | CO-18L of (4/22-4/22S1) 0500 | 9Z6145-889-0581 |

**AN/VRC-46
RADIO RECEIVER-TRANSMITTER
CABLE DIAGRAM**

FIGURE 2-15

ORIGINAL



SECTION 2 - RADIO TRANSCEIVERS

2.11 AN/URC-32 - GENERAL DESCRIPTION

The AN/URC-32 is a group of manually operated transceivers for use in the 2 to 30 megacycle range with a peak envelope power output of 500 watts during transmit. The equipment is designed primarily for single sideband transmission with reception on upper, lower, or independent sidebands, each contains a separate audio and I-F channel for each of the sidebands during independent sideband operation. All of the transceivers include circuitry for AM (carrier reinsertion on transmit) CW, and 850 CPS shift FSK operation. The 2 to 30 megacycle range is covered in four bands: 2.0 to 3.7 MC, 3.7 to 7.7 MC, 7.7 to 15.7 MC and 15.7 to 30.0 MC. The operating frequency is set in 1 KC increments via a direct reading frequency counter in the AN/URC-32 and AN/URC-32A and 0.1 KC increment in the AN/URC-32B. Frequency accuracy and stability are controlled by a built-in frequency standard.

2.12 REFERENCE DATA

- a. Table of Technical Publications - Table 2-8
- b. Primary Power Requirements - Table 2-9
- c. Heat Dissipation - Table 2-10
- d. Unit Weight - Table 2-10

2.13 INSTALLATION REQUIREMENTS

a. Arrangement - The AN/URC-32 radio set is designed for mounting in an upright position. The basic installation is one in which all units are mounted on one rack. See Figure 2-16 Type 1 and 2. See Figure 2-17 for typical foundation details. An alternate configuration is obtained when the high voltage power supply is removed from the rear of the rack and remotely installed. See Figure 2-16 Type 3 and 4. See Figure 2-17 for typical foundation details. In order to install the PP-2153/U remotely, the installing activity may order an electrical equipment installation kit MK-446A /URC-32 used to mount PP-2153/U power supply on bulkhead or fabricate foundation from information shown in Figure 2-19. Install C-2698/SRA-22 tuner control unit in space reserved on AN/URC-32. See Figure 2-21. When the CU-737/URC is required, install above AN/URC-32. See Figure 2-18 for typical foundation details. The antenna coupler CU-714/SRA-22 should be mounted adjacent to the base of the antenna to be used. A distance of 19 inches should be left for removing the antenna coupler from its case. See Figure 2-20 for typical foundation details.

b. Outline and Mounting Dimensions

- (1) AN/URC-32 Figure 2-21
- (2) CU-714/SRA-22 Figure 2-22
- (3) C-2698/SRA-22 Figure 2-23
- (4) CU-737/URC Figure 2-24

c. Grounding Specifications - All bonding and grounding to be in accordance with Table 2-8, Item No. 4.

2.14 CABLE DIAGRAM AND CONNECTION DETAILS

a. Elementary Connections - Figure 2-25.

b. Electronics Installation and Maintenance Standards - To be in accordance with Table 2-8, Item No. 6.

c. Security Requirements - To be in accordance with Table 2-8, Item No. 16.

2.15 FIELD CHANGE REQUIREMENTS - Table 2-11.

ORIGINAL

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|---|--|
| 1 | 0967-066-7010 0967-066-7020 0967-066-7030 | Vol. I Technical Manual of Radio Set AN/URC-32 Vol.II Technical Manual of Radio Set AN/URC-32 Vol. III Technical Manual of Radio Set AN/URC-32 |
| 2 | 0967-066-7060 | Maintenance Standards Book |
| 3 | 0967-066-7040 | Operator's Instruction Chart |
| 4 | Mil. Std. 1310A(NAVY) | Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility |
| 5 | 0981-052-8090 | Data Pertaining to Electrical Shipboard Cable. |
| 6 | 0967-000-0000 | Electronics Installation and Maintenance Books |
| 7 | *RE-F2686015 | Outline and Mounting Data |
| 8 | *RE-D2685865 | Outline and Mounting Data |
| 9 | *RE-D2685883 | Cable Running Sheets |
| 10 | *RE-H2685884 | Interconnecting Cabling Diagram |
| 11 | *RE-H2685885 | Interconnecting Wiring Diagram |

*These plans are not essential for installation but if available use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-8 (Continued)

RADIO TRANSCIVER

NAVSHIPS 0967-306-1010

TABLE 2-8

RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

TABLE 1-8

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|--|
| 12 | *RE-C2685-888 | Outline and Mounting Data |
| 13 | *RE-F2685981 | Primary Power Distribution Diagram |
| 14 | *RE-D2685879 | Pictorial System Diagram |
| 15 | *RE-D2695733 | Pictorial System Diagram |
| 16 | NAVSHIPSINSTR 05510.33B | Installation Criteria for Shipboard Secure Electrical Information Processing Systems |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

*These plans are not essential for installation but if available use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-8

ORIGINAL

2-34

| EQUIPMENT | VOLTAGE | CURRENT | POWER | REMARKS |
|-----------|---------------------------------------|---------|---|------------------|
| AN/URC-32 | 115/230 VAC, 50-60 HZ SINGLE PHASE | | Receive 1000 Watts Transmit 1500 Watts | Power Factor 90% |

TABLE OF PRIMARY POWER REQUIREMENTS
TABLE 2-9

| EQUIPMENT | HEAT DISSIPATION | UNIT WEIGHT | REMARKS |
|-----------|------------------|-------------|---------|
| AN/URC-32 | 1100 WATTS | 390 Lbs. | |

TABLE OF MISC. DATA
TABLE 2-10

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOURL |
|---|--|--|---|----------------------|--------------------------------|
| 1-AN/URC-32 Serial No. 1 through 359 | 562 557 | Interconnecting Box J-1007/U | Added receiver overload protective device. | 0967-066-7080 | FA-12 |
| | | Converter-Oscillator CV-731/URC | Dial lamp resistors changed to 470 ohms | | |
| | | Power Supply PP-2154/U | Wire is added from T1-7 to J2 pin 15. | | |
| | | Amplifier-Converter Modulator AM-2064/URC | CR6 and CR7 (1N457) are added and connected so that r-f gain control also controls the gain of the i-f amplifiers | | |
| | | Radio Frequency Amplifier AM-2061/URT | Improved spring washer in Driver and P.A. Tuning Knobs | | |
| | | Amplifier-Control AM-2062/URC | Monitoring local audio with headphones does not disconnect the speaker amplifier. | | |
| | | Control-Power Supply C-2691/URC | Added isolation transformer T3. | | |
| Electrical Equipment Rack MT-2092/U | Added improved interlock bracket behind AM-2061/URT. | | | | |

TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11 (Continued)

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOUR |
|---|-------------------|---------------------------------------|---|----------------------|-------------------------------|
| 2-AN/URC-32 Serial No. 1 through 631 | 557 | Power Supply PP-2153/U | F3 is changed to a 1½ inch, 1 amp, sand-packed fuse. | 0967-066-7090 | FA - ½ |
| 3-AN/URC-32 Serial No. 1 through 629 | 558 | Interconnecting Box J-1007/U | Jumper wires are added; J4 to S11 and S4 to S12. | 0967-066-7100 | FA . |
| 4-AN/URC-32 Serial No. 1 through 584 | 559 561 | Power Supply PP-2154/U | A jumper wire is added; T1-4 to S1-3. | 0967-207-1030 | FA-½ |
| 5-AN/URC-32 Serial No. 1 through 662 | 561 565 570 | Radio Frequency Amplifier AM-2061/URT | Screen voltage may be measured at screen grid of V3 or V4 when transmitter is keyed or unkeyed. | 0285-035-0000 | FA-3 |
| 6-AN/URC-32 Serial No. 1 through 359 | 568 | Radio Frequency Amplifier AM-2061/URT | Two air holes will be seen at the rear of the AM-2061/URT. | 0967-066-7130 | FA - ½ |
| 7-AN/URC-32 Serial No. 1 through 690 | 580 589 | Converter-Monitor CV-730/URC | A 1N198 diode (CR6) is added in the teletype input line between terminal 1 of J1 and R11. | 0967-066-7140 | FA - 2 |

TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11 (Continued)

RADIO TRANSCEIVERS

NAVSHIPS 0967- 306- 1010

TABLE 2- 11

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOUR |
|---|---|--|---|----------------------|-------------------------------|
| 8-AN/URC-32 Serial No. 1 through 822 | 580 585 632 607 | Radio Frequency Amplifier AM-2061/URT | A 270K ohm resistor (R39) and a type 1N198 diode (CR4) connected to relay K2 | 0967-066-7150 | FA - 1 |
| 1-KWT-6(8) Serial No. 1 through 79 | | | | | |
| 9-AN/URC-32 Serial No. 1 through 900 | 584 | Power Supply PP-2153/U | A ten inch bonding wire bolted to the S1 sub-chassis and the other end is connected to the back plate of the Power Supply. | 0967-066-7160 | FA - $\frac{1}{2}$ |
| 2-KWT-6(8) Serial No. 1 through 88 | | | | | |
| 10-AN/URC-32 Serial No. 1 through 882 | NOTE: NAVSECNORDIV has not released this field change pending stock number identification and field change corrections. | | A 4K ohm 18 watt resistor is mounted in the enclosed compartment of the RF tuner with K2. | 0967-066-7170 | FA-2 |
| 11-AN/URC-32 All Serial Nos. When using AN/WRA-5(XN-1) | 603 | Radio Set AN/URC-32 | The transmitter-transfer control C-4360 (XN-1)/URC-32 will be mounted on or near the AN/URC-32. Installed only in specific authorized applications. | 0285-051 6000 | FA-5 |

TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11 (Continued)

ORIGINAL

2-38

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOUR |
|---|------------|---|---|----------------------|-------------------------------|
| 12-AN/URC-32 All Serials 1-AN/URC-32A Serial No. 1 through 200 3-KWT-6(8) Serial No. All | 609 615 | Radio Frequency Amplifier AM-2061/URT Power Amplifier 367A | R22 has been changed to a 68K ohm resistor. | 0967-066- 7190 | FA |
| 13-AN/URC-32 Serial No. 1 through 981 4-KWT-6(8) Serial No. 1 through 90 | 612 | Control Power Supply C-2691/URC and Power Supply PP-2154/U Handset Adapter and Low Voltage Power Supply 429B-1 | All 1N1084 diodes are re- placed with 1N1095 diodes. | 0967-066- 7200 | FA-3/4 |
| 14-AN/URC-32 Serial No. 1 through 664 5-KWT-6(8) Serial No. 1 through 90 | 612 | Power Supply PP-2153/U High Voltage Power Supply 428B-1 | All 1N1084 diodes are re- placed with 1N1095 diodes. | 0285-065- 8000 | FA-3/4 |

TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11 (Continued)

RADIO TRANSCIVERS

NAVSHIPS 0967- 306- 1010

TABLE 2- 11

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOUR |
|--|------------|--|---|----------------------|-------------------------------|
| 15-AN/URC-32 Serial No. All when using CU-737/URC 6-KWT-6(8) Serial No. 1 through 90 | 612 | Interconnecting Box J-1007/U Junction Box 153H-2 | A jumper wire is connected between K15 and H6. | 0967-066- 7190 | FA- $\frac{1}{4}$ |
| 16-AN/URC-32 All Serial Nos. 2-AN/URC-32A Serial No. All 7-KWT-6(8) Serial No. 1 through 90 | 610 | Radio Frequency Amplifier AM-2061/URT Power Amplifier 367A-3 | Bus wire connecting pin 2 to pin 9 on tube sockets XV1 and XV2 have been removed. | 0967-066- 7190 | FA- $\frac{1}{2}$ |
| 17-AN/URC-32 All Serial Nos. 1 through 981 3-AN/URC-32A Serial No. 1 through 90 8-KWT-6(8) Serial No. 1 through 10 | 641 | Radio Frequency Amplifier AM-2061/URT Power Amplifier 367A-3 | Addition of ALC potentiometer R49, viewed from front panel. | 0285-081 1300 | FA -8 |

TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11 (Continued)

ORIGINAL

2-40

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOUR |
|---|------------|-----------------------|--|----------------------|-------------------------------|
| 18-AN/URC-32 All Serial Nos. | 620 628 | Junction Box J-1007/U | Addition of 1800 ohm resistor between terminals G5 and G6. | 0967-066-7190 | FA-1 |
| 4-AN/URC-32A All Serial Nos. | | | | | |
| 9-KWT-6(8) All Serial Nos. | | Junction Box 153H-2 | | | |
| 1-AN/URC-32B All Serial Nos. | | | | | |
| 19-AN/URC-32 Serial No. 822 and above | 641 | Junction Box J-1007/U | A jumper wire will be connected between J15 and H14 | 0967-066-7190 | FA-1 |
| 5-AN/URC-32A All Serial Nos. | | | | | |
| 2-AN/URC-32B All Serial Nos. | | | | | |
| 10-KWT-6(8) Serial No. 80 and above | | Junction Box 153H-2 | | | |

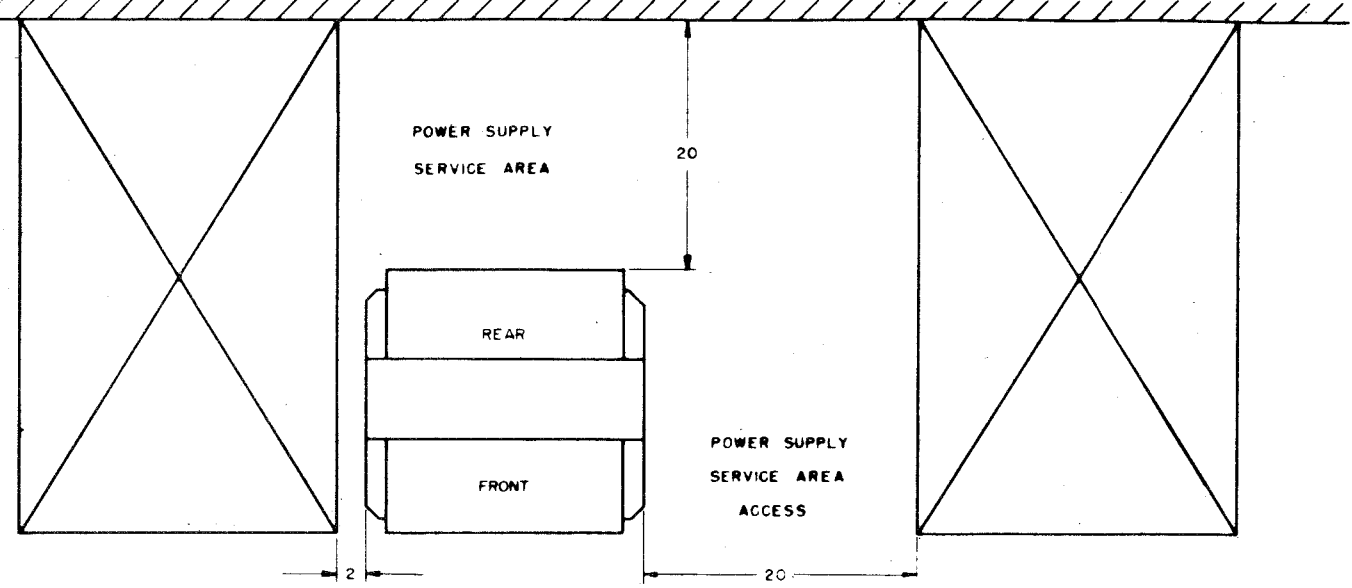
TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11(Continued)

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NUMBER | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOOR |
|---|------------|----------------|---|----------------------|-------------------------------|
| 20-AN/URC-32 All Serial Nos. 6-AN/URC-32A All Serial Nos. 3-AN/URC-32B All Serial Nos. | 641 | | The BNC connector connected to K1, will be shorted. | 0967-066-7190 | FA. 1 |
| 21-AN/URC-32 6-AN/URC-32A 4-AN/URC-32B | 652 | P.A. AM-2061 | Change Jack J3 to TNC type | 0967-066-7190 | FA 1 |
| 22-AN/URC-32 7-AN/URC-32A Serial No. 1-90 | 662 | PP-2154 Lups | Change CR6 and CR7 to type 1N3190 diode | 0967-066-7190 | FA 1 |
| 23-AN/URC-32(all) 9-AN/URC-32A (1-681) 14-KWT-6(8)(all) | | CV-731 | J-8 installed on upper right side of CV-731/URC main chassis | 0967-066-7300 | FA-8 |
| 24-AN/URC-32(all) 10-AN/URC-32A(all) 7-AN/URC-32B(all) 15-KWT-6(8)(all) | | AM-2061/URT | Trans 2T2 mounted inside right vertical main "A" frame of MT-2092/U | 0967-066-7310 | FA - 2 |

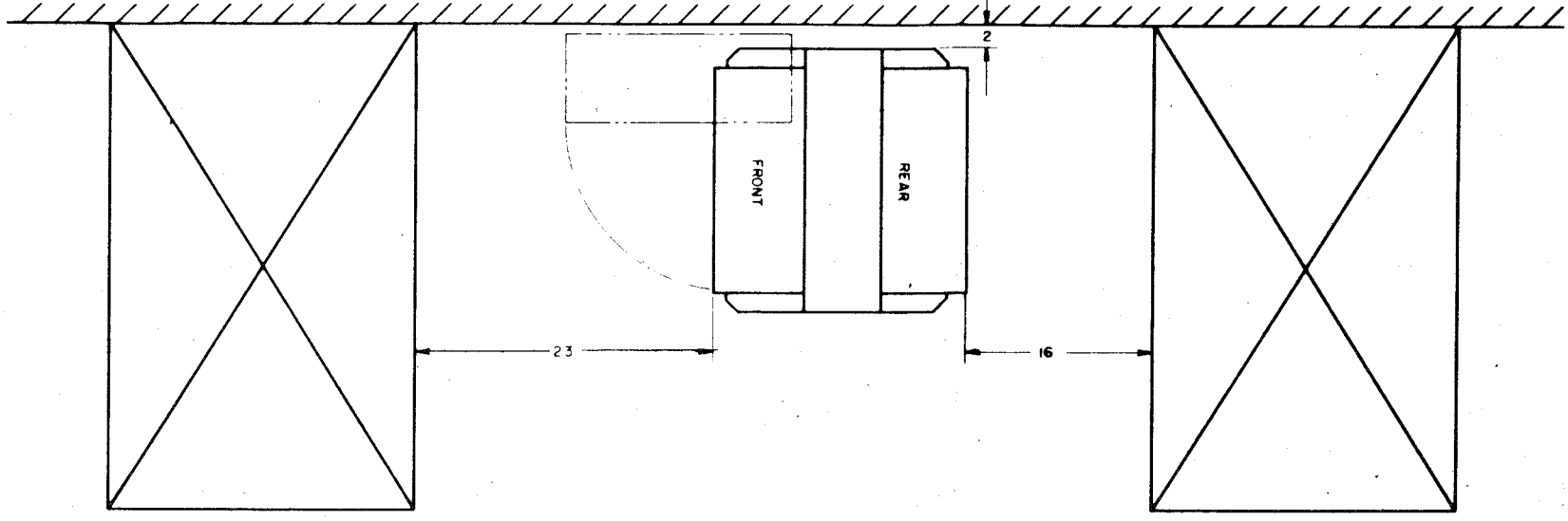
TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11 (Continued)

| FIELD CHANGE NUMBER AND SERIAL NUMBER EFFECTIVITY | EIB NO. | UNITS AFFECTED | BRIEF DESCRIPTION OF CHANGE | NAVSHIPS PUBLICATION | INSTALLING ACTIVITY & MANHOUR |
|--|------------|-------------------------------------|---|-------------------------|-------------------------------------|
| 25-AN/URC-32(selected ships) 11-AN/URC-32A " 8-AN/URC-32B " 16-KWT-6(8) " | | Amplifier Control AM-2062/URC | Elapsed time meter on front of AM-2062/URC | 0967-066- 7330 | FA -2 |
| 26-AN/URC-32(all) 12-AN/URC-32A(all) 9-AN/URC-32B(all) 17-KWT-6(8)(all) | 713 | AM-2061 R.F. Amplifier | Tube clamp clip located above 2C33 | | FA - 2 |
| -AN/URC-32(Ships with AN/SSQ-54) -AN/URC-32A " -AN/URC-32B " -KWT-6(8) " | | | Presence of two relays installed in J-1007/U J.B. | | Yd RF |
| | | | | | |

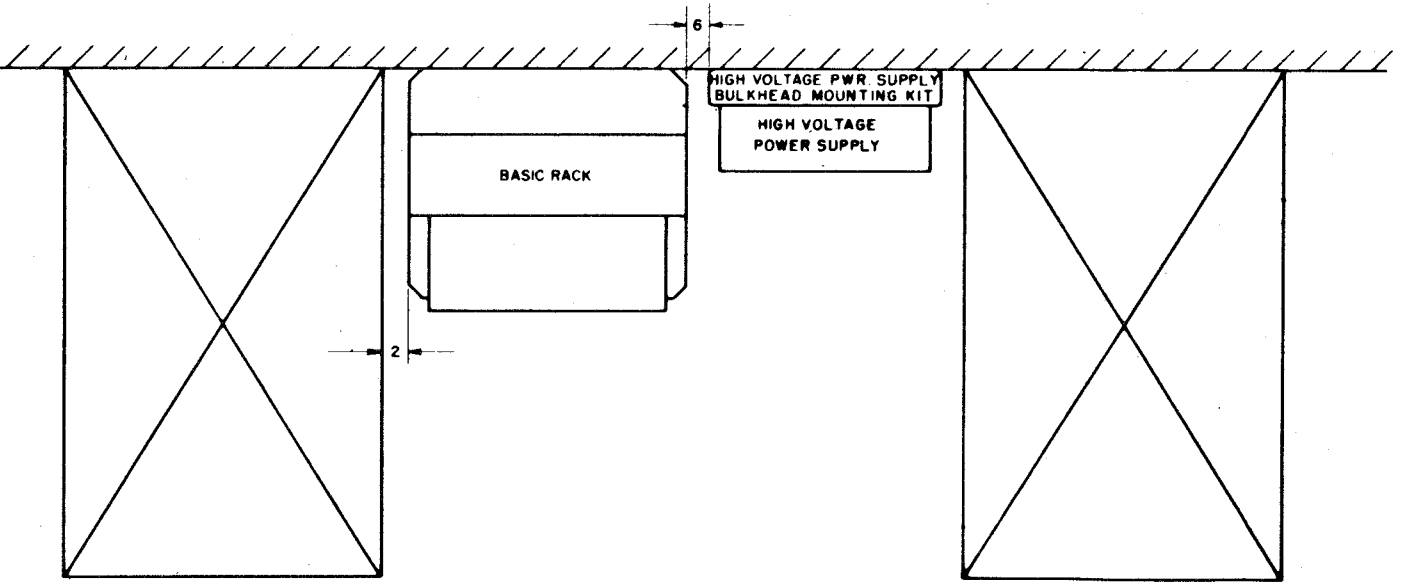
TABLE OF FIELD CHANGE REQUIREMENTS
TABLE 2-11



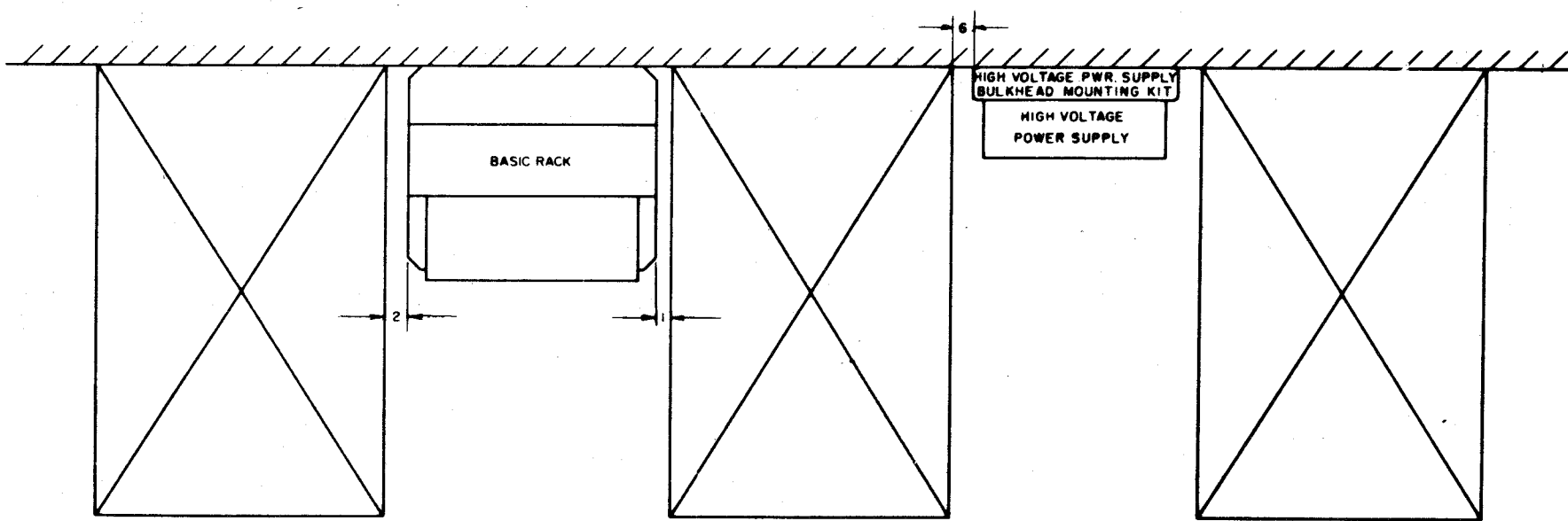
INSTALLATION TYPE 1



INSTALLATION TYPE 2



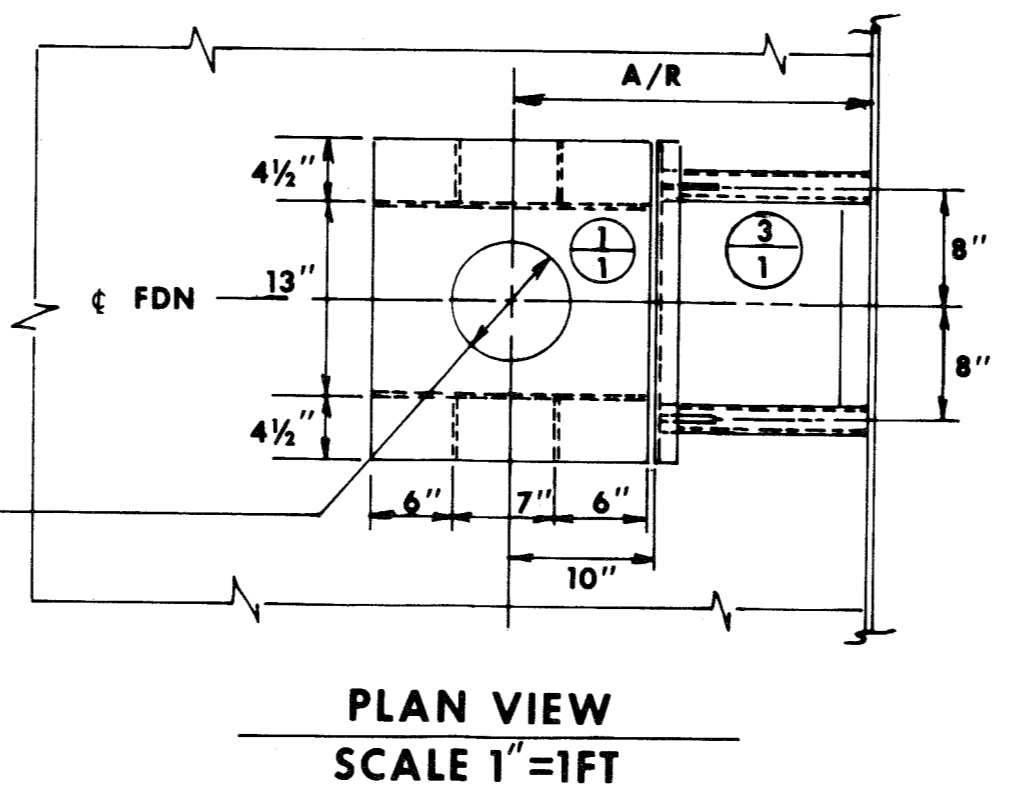
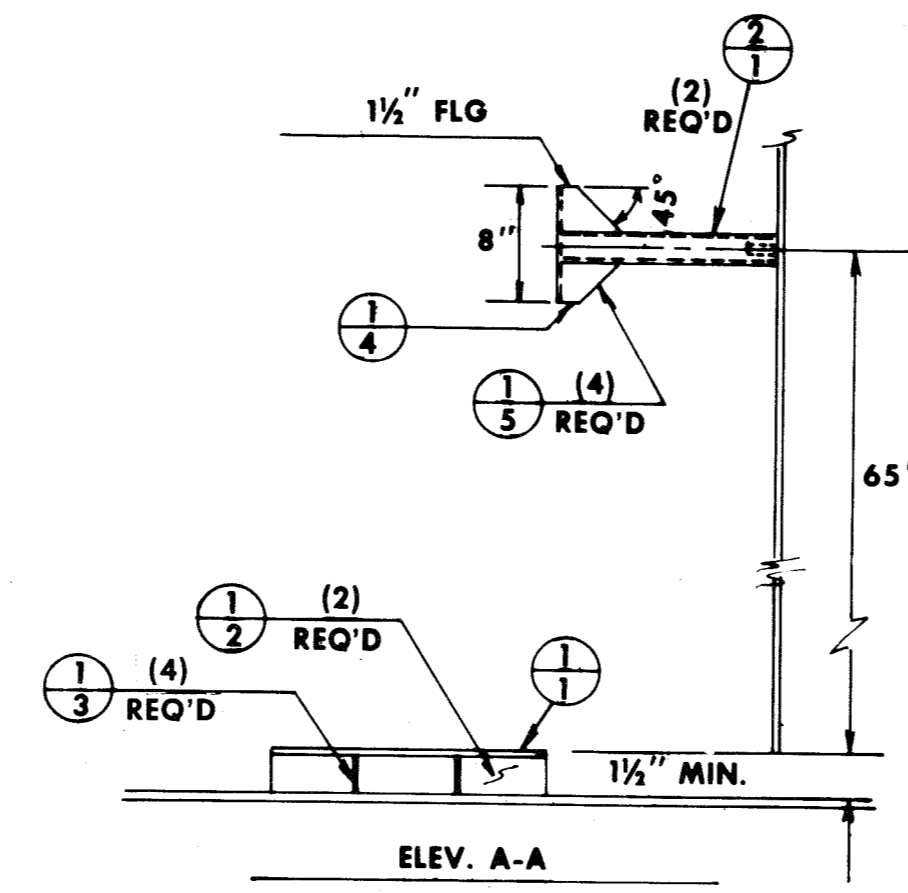
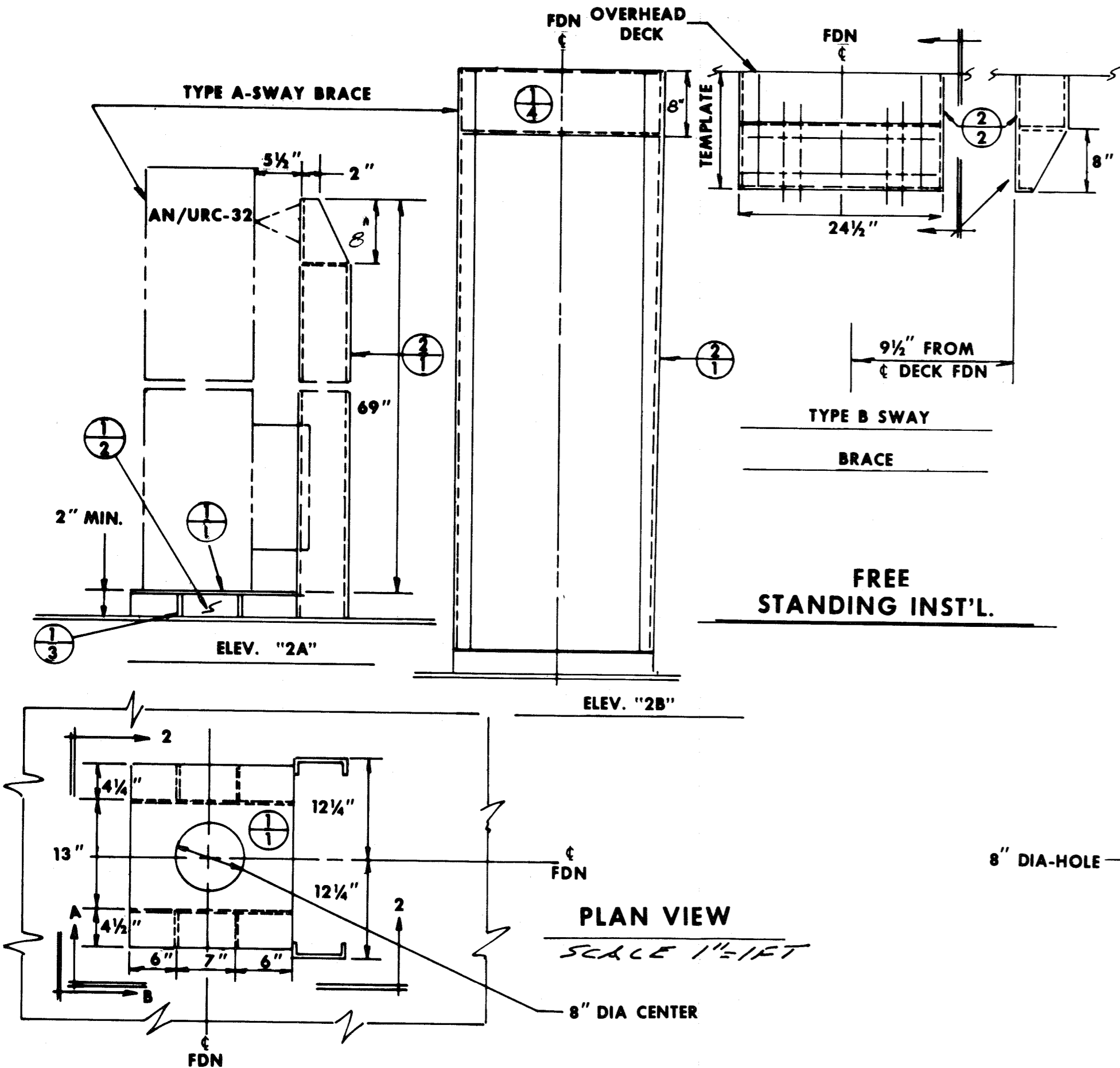
INSTALLATION TYPE 3
(USING HIGH VOLTAGE POWER SUPPLY BULKHEAD MOUNTING KIT)



INSTALLATION TYPE 4
(USING HIGH VOLTAGE POWER SUPPLY BULKHEAD MOUNTING KIT)

AN/URC-32
TYPICAL EQUIPMENT ARRANGEMENT
FIGURE 2-16

ORIGINAL



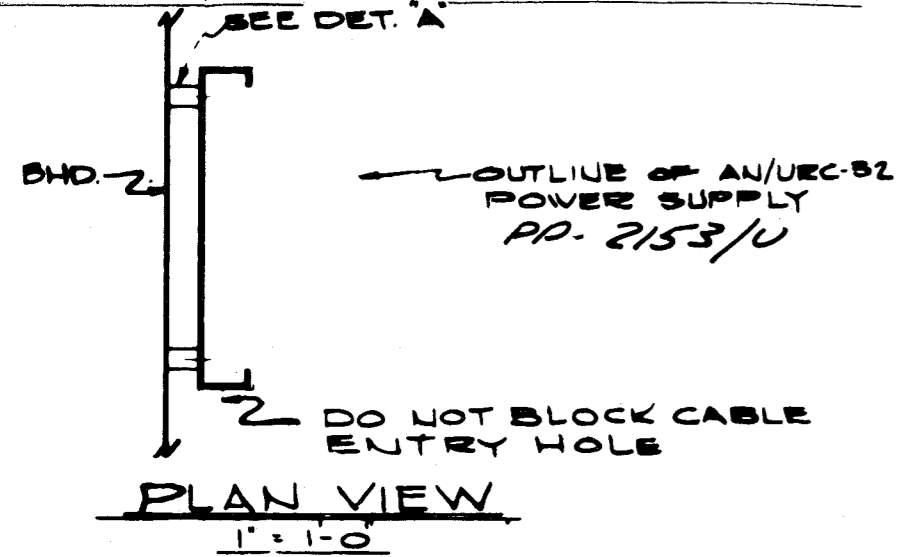
LIST OF MATERIAL - QUANTITIES FOR ONE FOUNDATION

| PIECE NO. | NAME | NO. REQ'D. | MATERIAL | MT'L. SPEC. | REMARKS |
|-----------|--------------|------------|----------|-------------|------------------------------|
| 1 | 10.2 #Plt. | 12 | M.S. | Mil-S-16113 | FREE STANDING FOUNDATION |
| 2 | 1 1/2" Pipe | 2 | STL. | WW-P-00404 | |
| 3 | 2"x1/4" F.B. | 1 | M.S. | Mil-S-20166 | |
| 1 | 10.2" Plt. | 8 | M.S. | Mil-S-16113 | BULKHEAD FOUNDATION STEEL |
| 2 | 6X2X8.2# C | 2 | M.S. | Mil-S-20166 | |
| 1 | 10.2 # Plt. | 8 | AL. A | Mil-A-19842 | BULKHEAD FOUNDATION ALUMINUM |
| 2 | 6x2x8.2 #C | 2 | AL. A | Mil-A-21170 | |

BULKHEAD INSTALLATION

**AN/URC-32
TYPICAL FOUNDATION DETAIL
FIGURE 2-17**

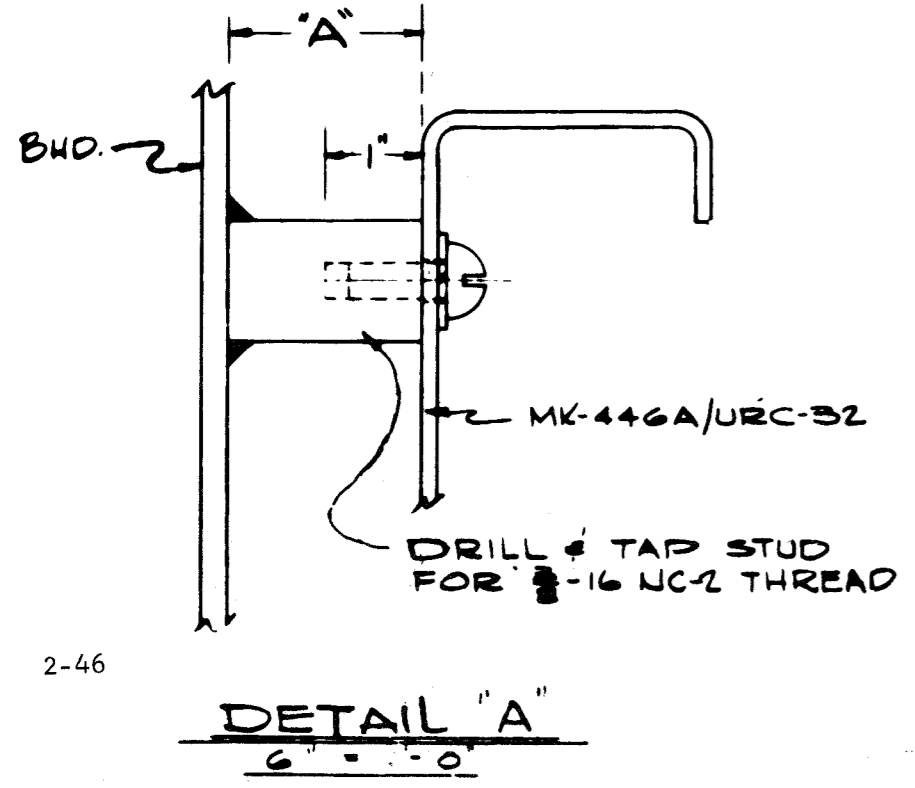
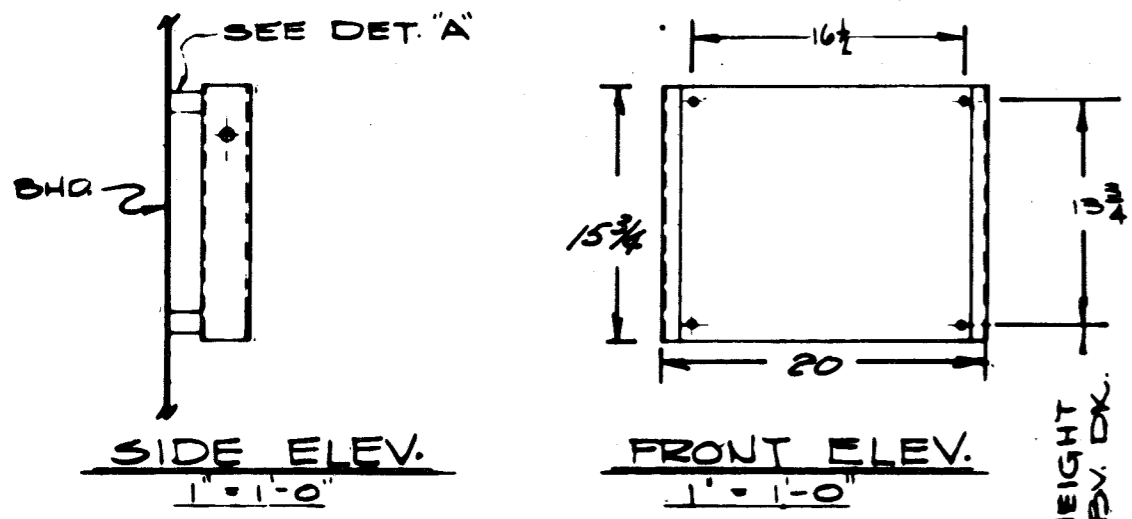
ORIGINAL



| LIST OF MATERIAL - QUANTITIES FOR ONE (1) FDN. | | | | | | |
|--|------------------|-----------|-----------|------------|-------------------|--------------|
| PIECE NO. | NAME | NO. REQ'D | MATERIAL | MT'L SPEC. | REMARKS | SHOP ROUTING |
| 1 | STUD | 4 | MED. STL. | MIL-S-2046 | 1 1/2 DIA. BAR | 31-11 |
| 2 | R.H. MACH. SCREW | 4 | CRS | MIL-S-933 | 1/4-16 NC-2 L. 1" | |
| 3 | LOCKWASHER | 4 | CRS | FF-W-84 | | |
| | | | | | | |
| | | | | | | |
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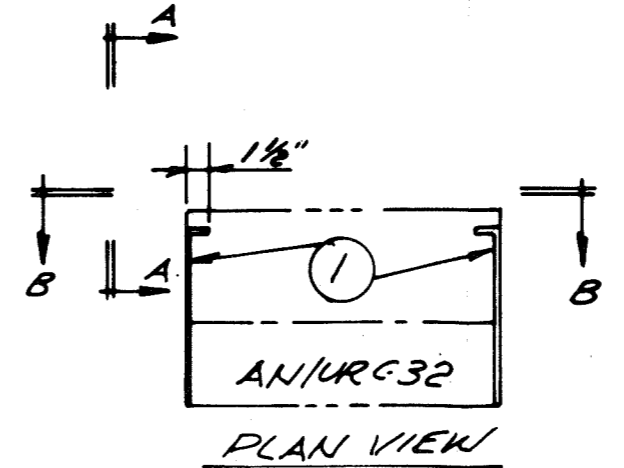
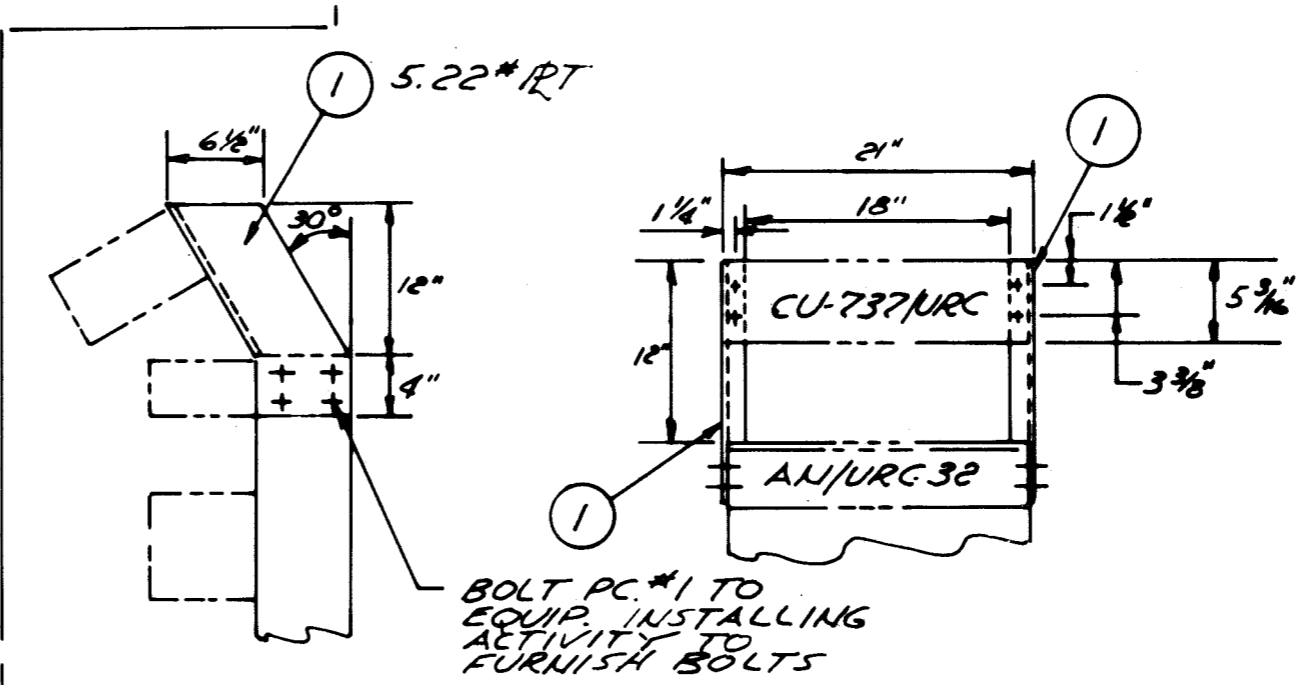
| LIST OF MATERIAL - QUANTITIES FOR ONE FDN. | | | | | |
|--|--------------|------------|------------|---------------|--------------|
| PIECE NO. | NAME | NO. REQ'D. | MT'L SPEC. | | SHOP ROUTING |
| 1 | 5.22 # PLATE | 4 | M.S. | 9515-237-5406 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

NOTES:
1. Template - All bolt holes from equipment..

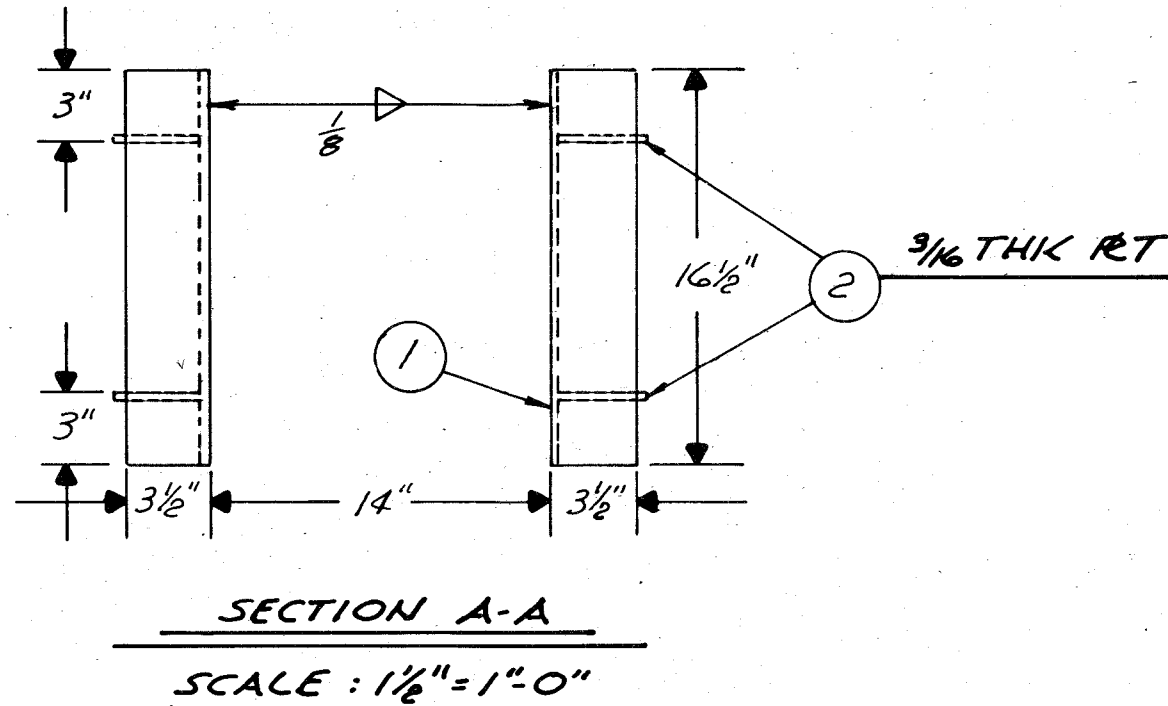


PP. 2153/U
TYPICAL FOUNDATION DETAILS
FIGURE 2-19

ORIGINAL



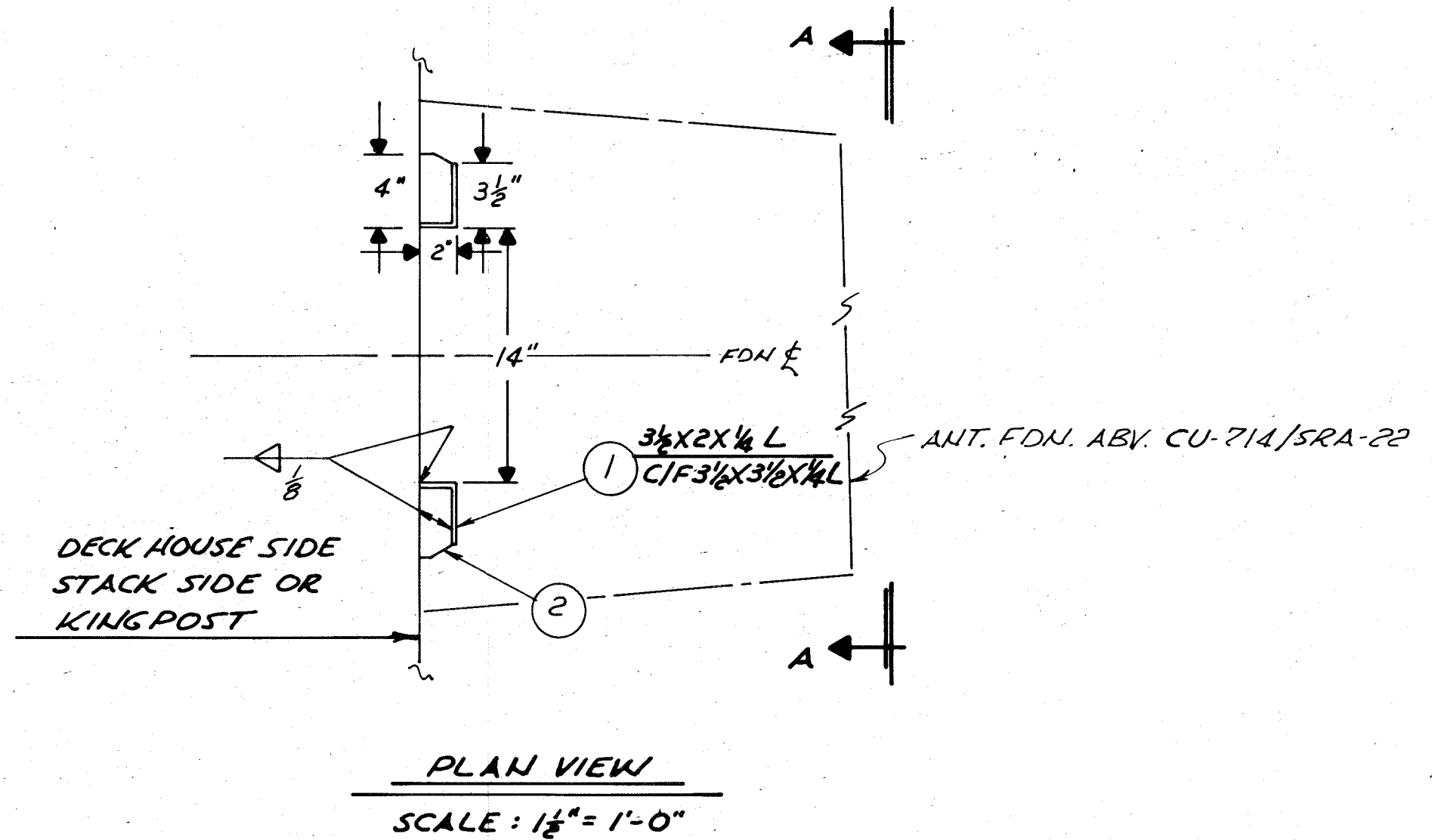
CU-737/URC
TYPICAL FOUNDATION DETAILS
FIGURE 2-18



NOTES:

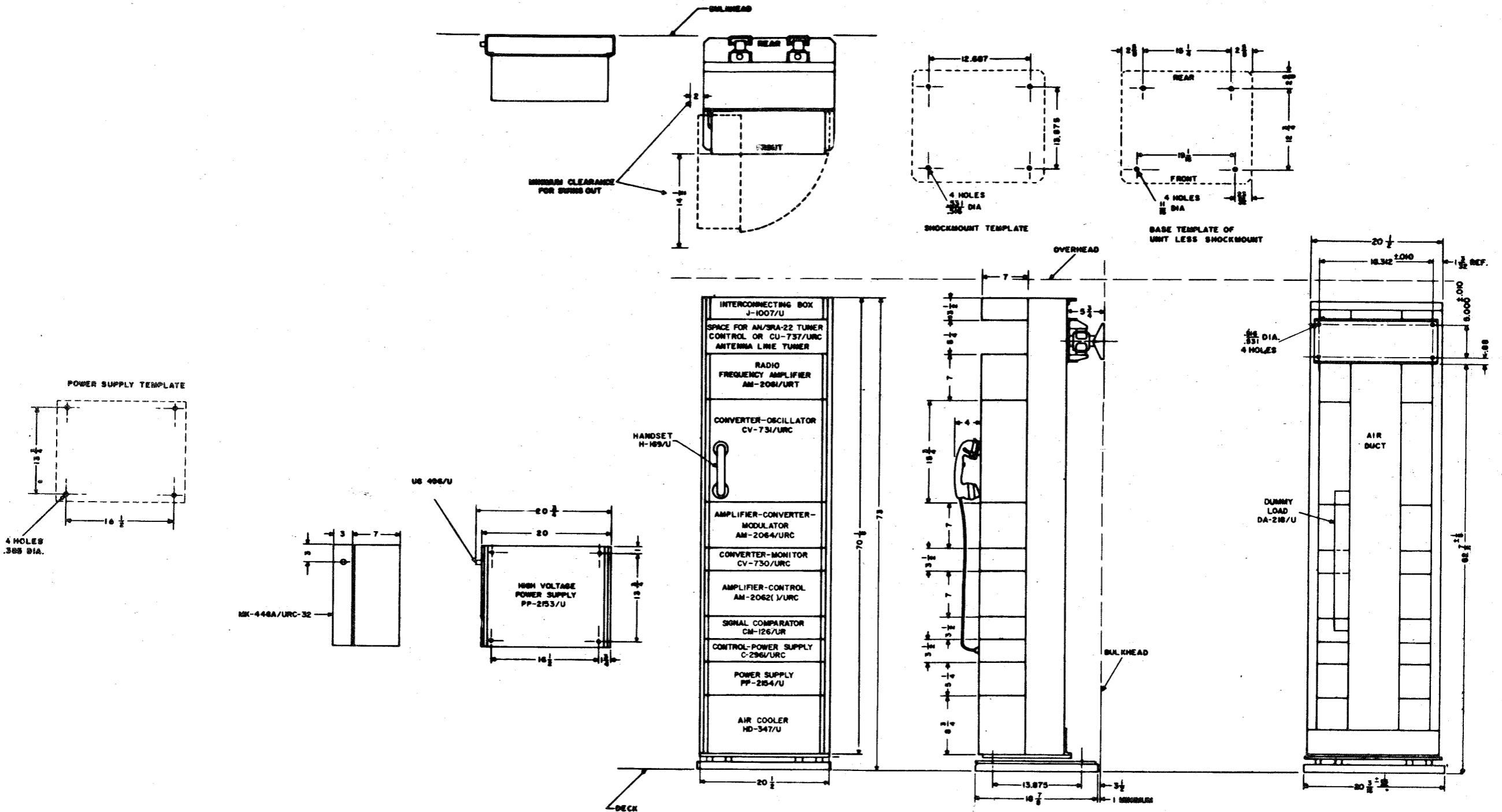
1. All foundations to be installed level.
2. Grind smooth all rough edges to prevent injury to personnel.
3. All welding to be in accordance with General Specifications 59-1.
4. Size and location of mounting bolts for unit to be taken from equipment.

| LIST OF MATERIAL - QUANTITIES FOR ONE FOUNDATION | | | | |
|--|-----------------------|-----------|-----------|-------------------|
| PIECE NO. | NAME | NO. REQ'D | MATERIAL | FEDERAL STOCK NO. |
| 1 | 3 1/2 X 3 1/2 X 1/4 L | 2 | Al. Alloy | G9540-250-1059 |
| 2 | .187 Thk. Plt. | 4 | Al. Alloy | G9535-824-9485 |

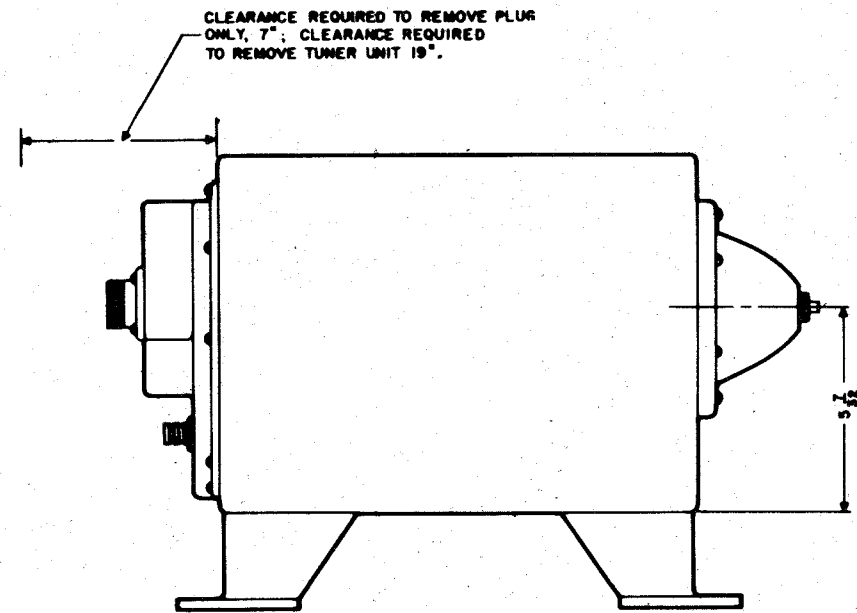
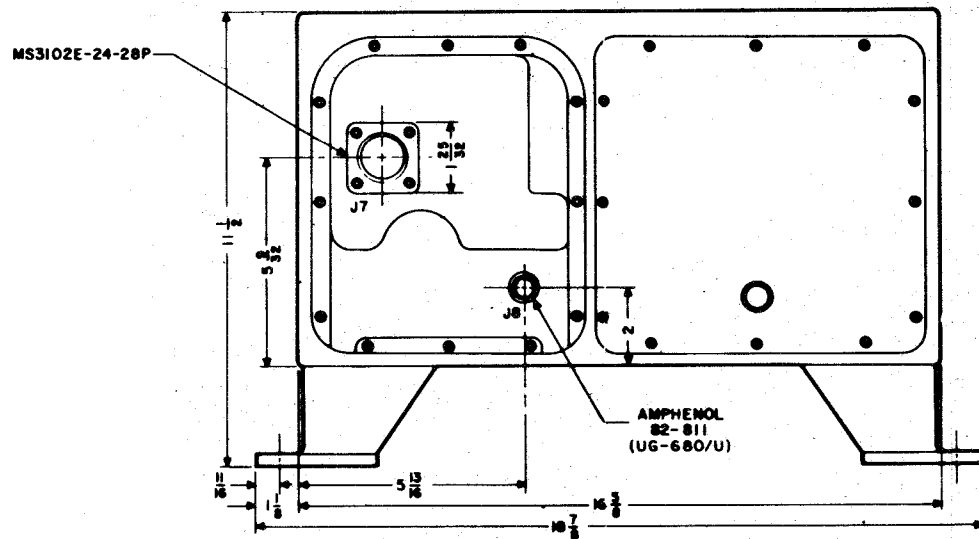
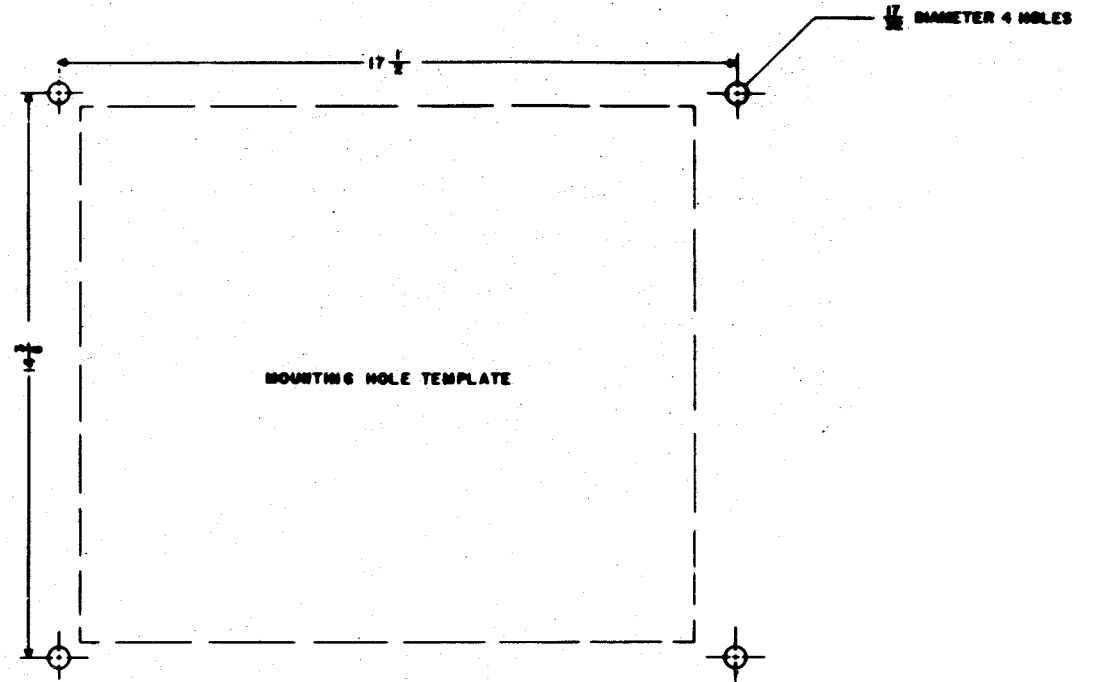
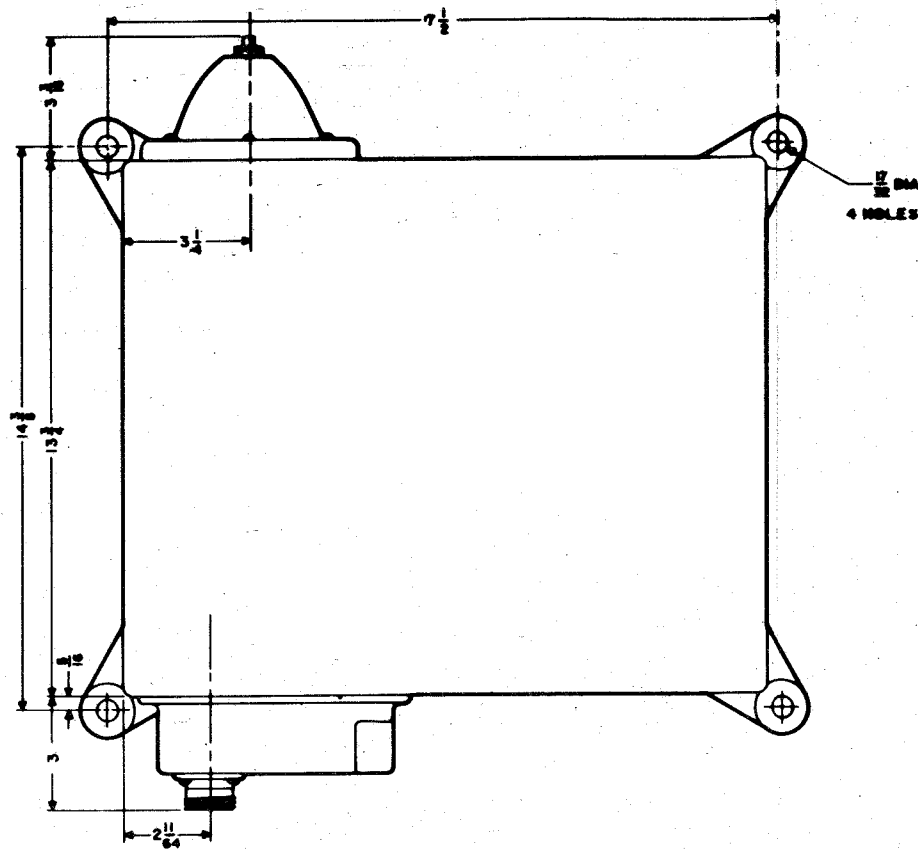


CU-714/SRA-22
TYPICAL FOUNDATION DETAILS
FIGURE 2-20

ORIGINAL

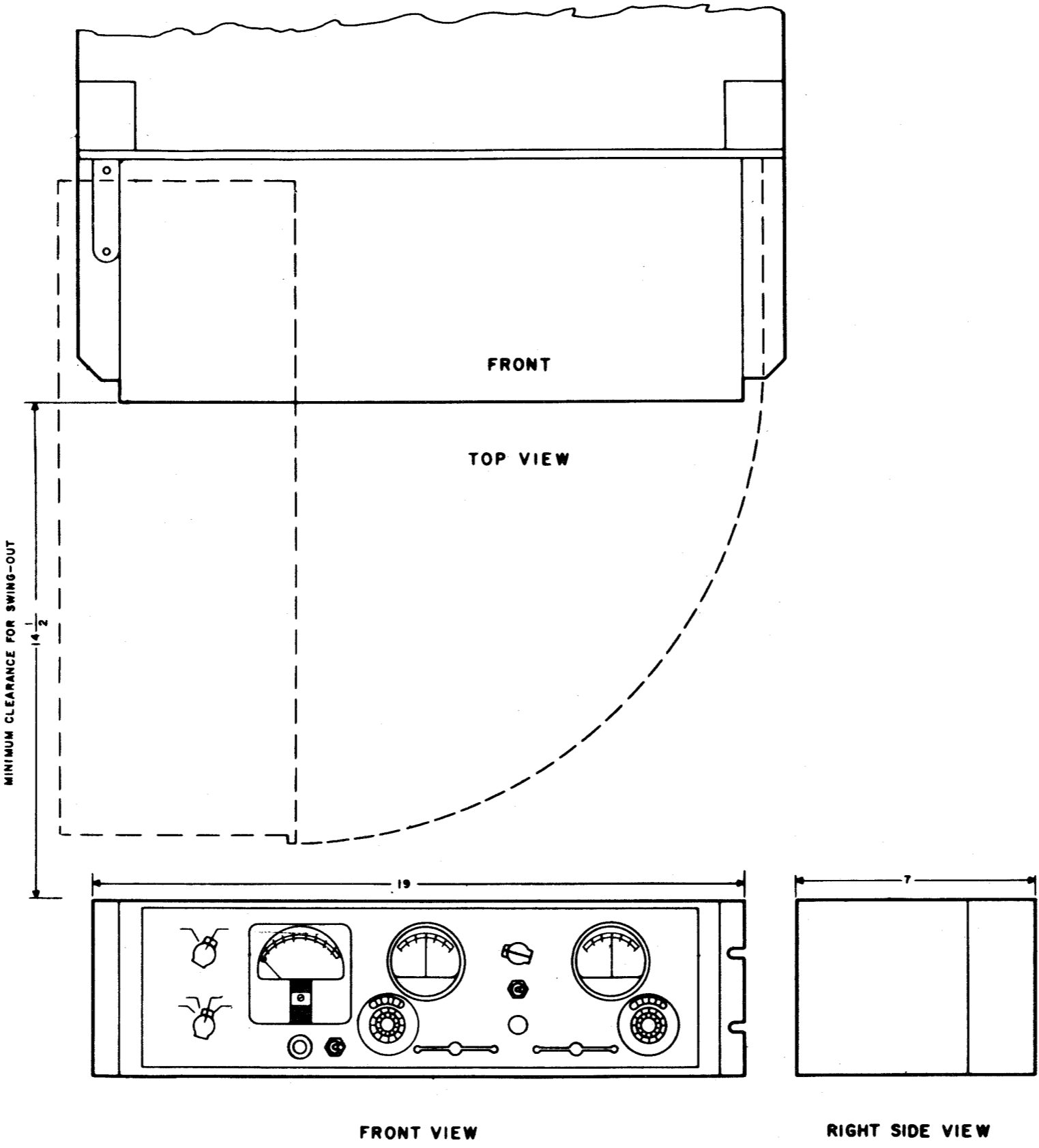


AN/URC-32
 OUTLINE AND MOUNTING DIMENSIONS
 FIGURE 2-21

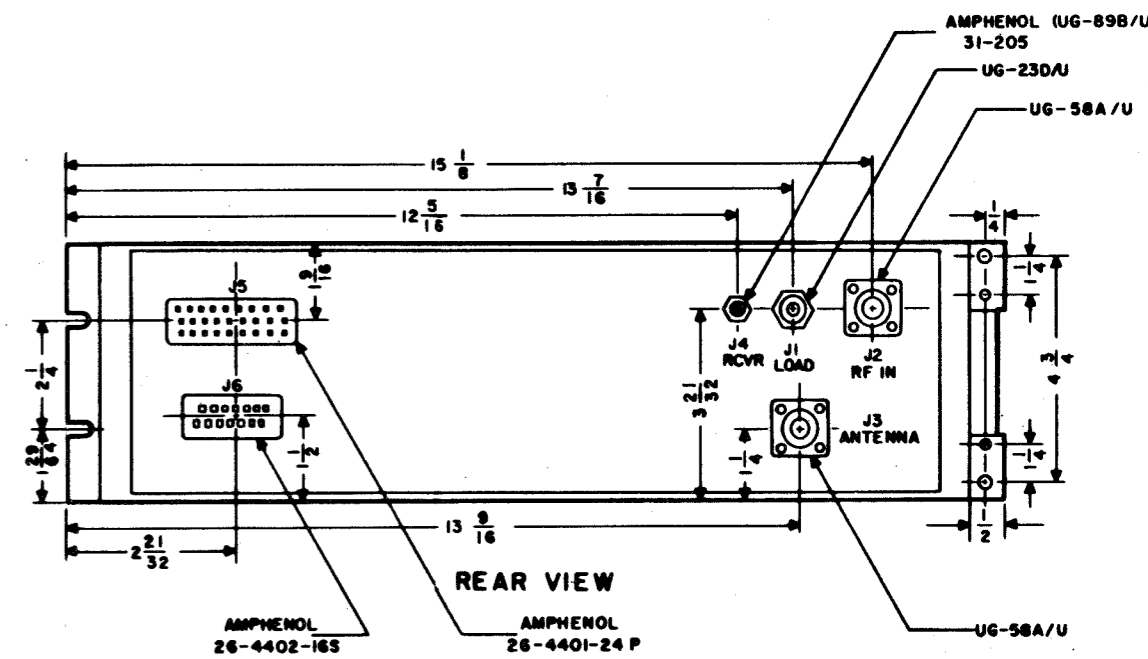


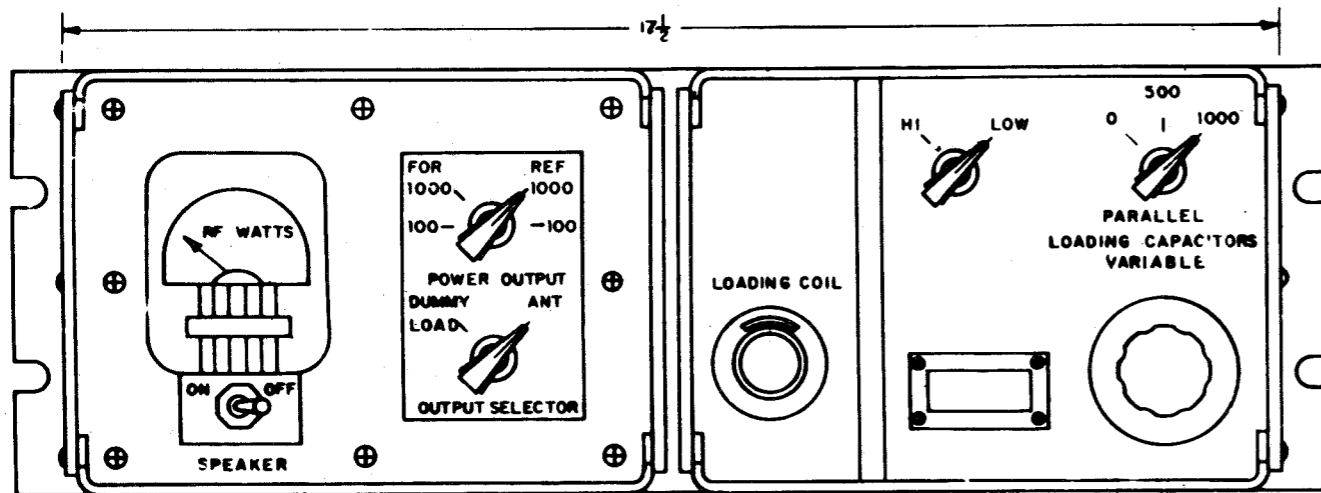
CU-714/SRA-22 ANTENNA COUPLER
 OUTLINE AND MOUNTING DIMENSIONS
 FIGURE 2-22
 ORIGINAL

RADIO TRANSCEIVERS

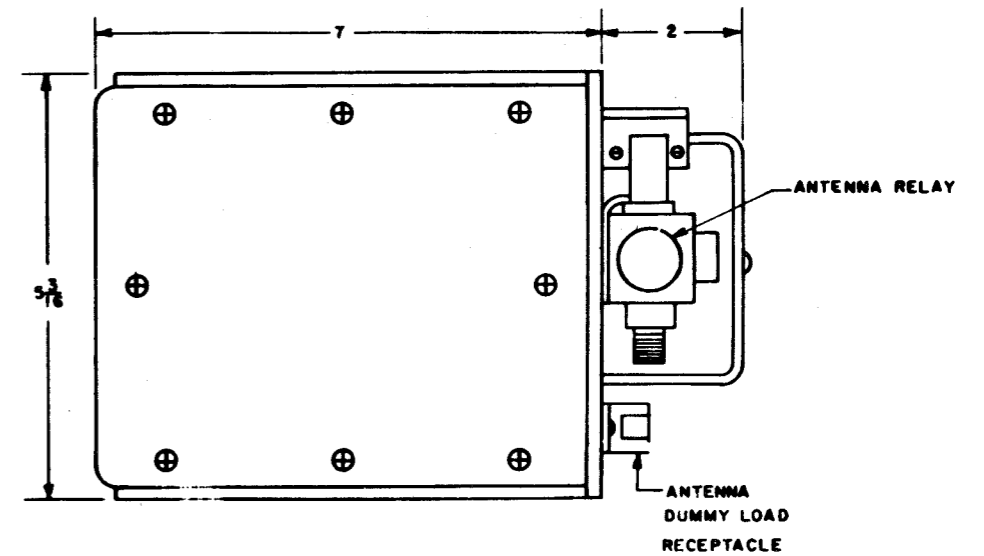


C-2698/SRA-22
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-23





FRONT VIEW

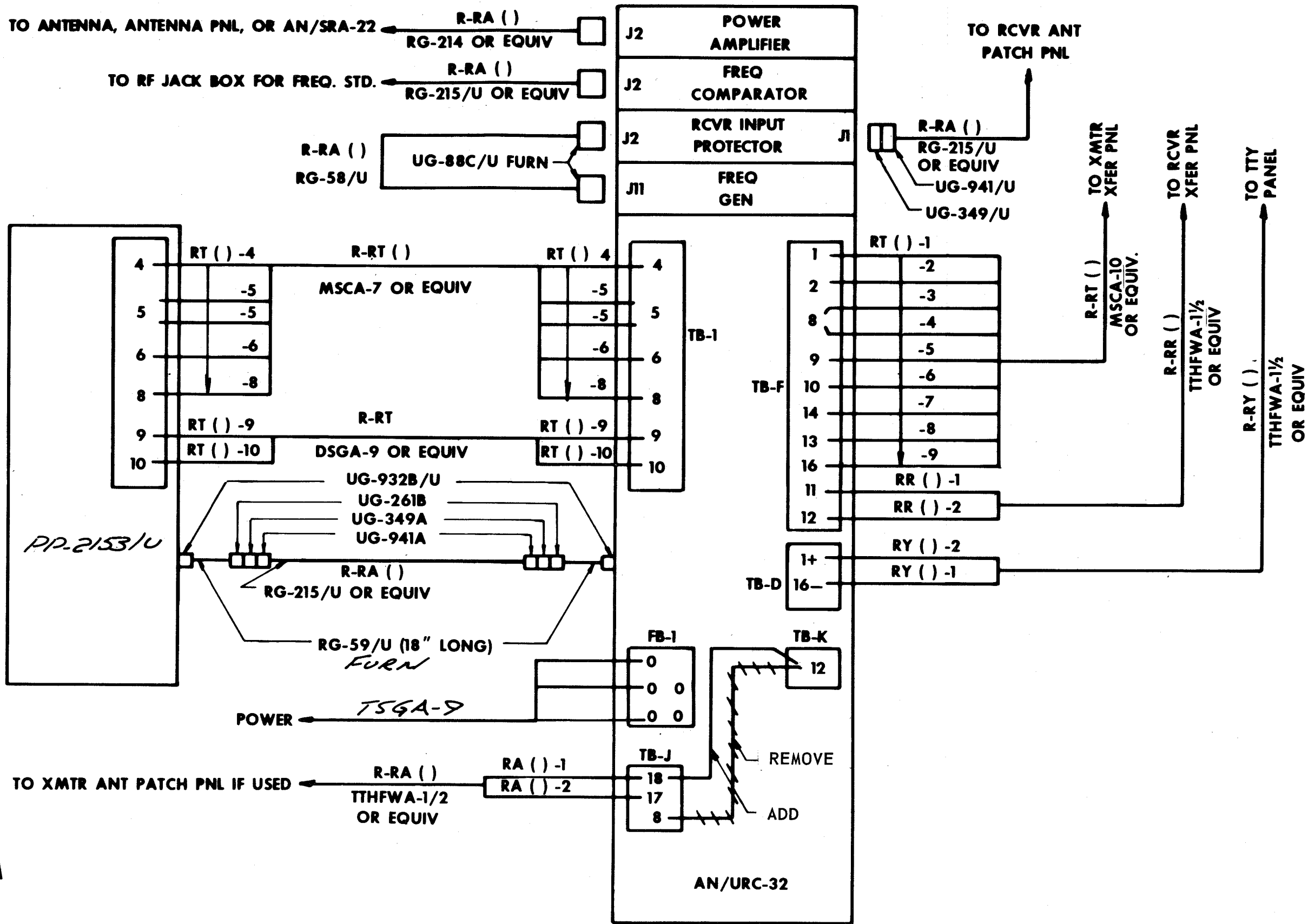


SIDE VIEW

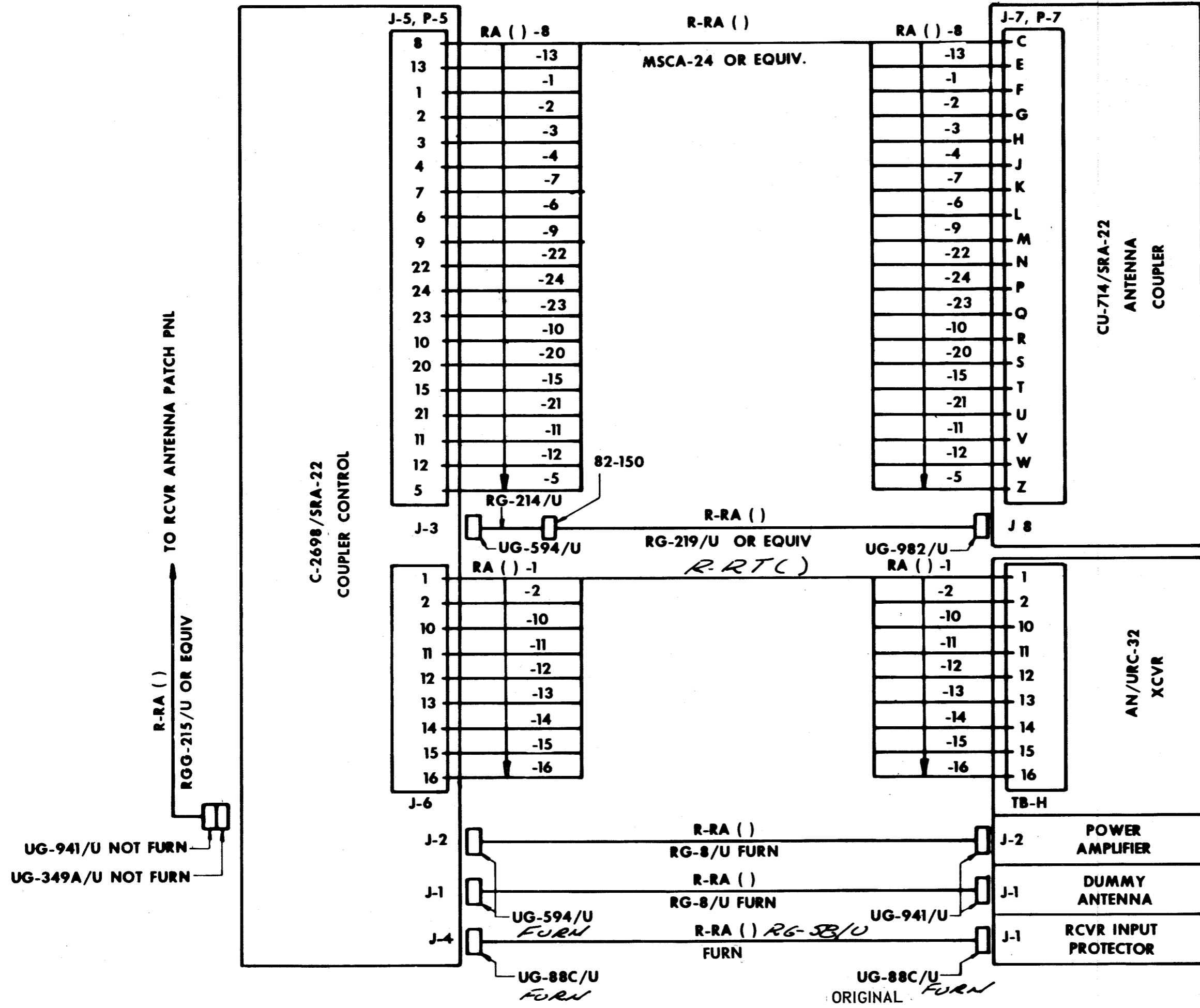
CU-737/URC
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-24

| | | | | | | | | | |
|---------|---|---|---|----|---|----|----|----|----|
| TB,F | 1 | 2 | 8 | 8 | 9 | 10 | 14 | 13 | 16 |
| SWBD,TB | 1 | 4 | 6 | 11 | 9 | 10 | 7 | 8 | 5 |

SWBD. TO EQUIP CONV. TABLE



AN/URC-32
CABLE DIAGRAM
FIGURE 2-25
CONTINUED



AN/URC-32
CABLE DIAGRAM
FIGURE 2-25

SECTION 2 - RADIO TRANSCEIVERS

2.16 AN/URC-9 GENERAL DESCRIPTION

The AN/URC-9 is a 1750 channel triple-conversion superheterodyne transceiver operating in the 225 to 399.9 megacycles frequency range. The unit has a self contained power supply and a 19 channel preset selector for local or remote operation. Number of channels: 1750 channels spaced 0.1 megacycles apart. Preset channels: 19, plus one manually tuned channel.

2.17 REFERENCE DATA

- a. Table of Technical Publications - Table 2-12
- b. Primary Power Requirements - Table 2-13
- c. Heat Dissipation - Table 2-14
- d. Unit Weight - Table 2-14

2.18 INSTALLATION REQUIREMENTS

a. Arrangement - The AN/URC-9 radio transceiver may be installed in a standard 19 inch rack or flat type surface of adequate strength. See Figure 2-26 for typical foundation details. When the AN/URC-9 is installed on a flat foundation, a shock mounting assembly may be installed. See Figure 2-27 for shock mounting details. The MX-1743()/SRC may be mounted to the bulkhead or on a shelf type foundation. See Figure 2-28 for typical foundation details.

b. Outline and Mounting Dimensions

- | | |
|--------------------|-------------|
| (1) AN/URC-9 | Figure 2-29 |
| (2) MX-1743()/SRC | Figure 2-30 |

c. Grounding Specifications - All bonding and grounding to be in accordance with Table 2-12, Item No. 2.

2.19 CABLE DIAGRAM AND CONNECTION DETAILS

- a. Elementary Connections - Figure 2-31.
- b. Electronics Installation and Maintenance Standards - To be in accordance with Table 2-12, Item No. 4.
- c. Security Requirements - To be in accordance with Table 2-12, Item No. 8.

2.20 FIELD CHANGE REQUIREMENTS - Table 2-15



ORIGINAL

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|--|
| 1 | 0967-032-5010 0967-032-5000 | Vol. I Technical Manual for Radio Set AN/SRC-20 and AN/SRC-21 |
| 2 | Mil. Std. 1310A(NAVY) | Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility |
| 3 | 0981-052-8090 | Data Pertaining to Electrical Shipboard Cable |
| 4 | 0967-000-0000 | Electronics Installation and Maintenance Books |
| 5 | *RE-D2695720 | Pictorial System Diagram |
| 6 | *RE-F2686017 | Pictorial System Diagram |
| 7 | *RE-D2694841 | Outline and Mounting Data |
| 8 | NAVSHIPS INSTR. 05510.33B | Installation Criteria for Shipboard Secure Electrical Information Processing Systems |
| | | |
| | | |
| | | |

*These plans are not essential for installation, but if available, use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-12

RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

TABLE 2-12

RADIO TRANSCEIVERS

| EQUIPMENT | VOLTAGE | CURRENT | POWER | REMARKS |
|-----------|------------------------------|---------|-----------|---------|
| AN/URC-9 | 115 VAC, 60 Hz, Single Phase | | 464 Watts | |

ORIGINAL

TABLE OF PRIMARY POWER REQUIREMENTS
TABLE 2-13

NAVSHIPS 0967-306-1010

| EQUIPMENT | HEAT DISSIPATION | UNIT WEIGHT | REMARKS |
|-----------|------------------|-------------|---------|
| AN/URC-9 | 415 Watts | 157 LBS. | |

TABLE OF MISCELLANEOUS DATA
TABLE 2-14

TABLE 2-13/2-14

ORIGINAL

| FIELD CHANGE NUMBER AND SERIAL NO. EFFECTIVITY | NAVSHIPS BULLETIN # | BRIEF DESCRIPTION OF CHANGE | INSTALLING ACTIVITY & MAN HOURS | KIT FSN | IDENTITY |
|---|------------------------|---|---------------------------------------|---------------------|---|
| 1-AN/URC-9 All | 0967-972- 4020 | Changes added to AN/URC-9 adapts equipment to with- stand shock and vibration | FA-1 | 2N5820- 986-7728 | The presence of plug covers plate in radio transmitter RT-581/ URC-9. |
| 2-AN/URC-9 All | 0967-032- 5060 | Reduces failure of contacts in relay K-601 | FA-1 | | |
| 3-AN/URC-9 Equips to be used for homing beacon | 0967-972- 4030 | Provides for keying of tone for homing beacon (MCW) | FA-11 | | Same as 2 - AN/SRC-20 |
| 4-AN/URC-9 | 0967-125- 6130 | Protect RF-PA from over heating | FA-1½ | | Presence of thermal sensing device in center of PA Anode |
| 5-AN/URC-9 | 0967-125- 6140 | Reduce contact failure in K-801 and K-802 | FA-4 | | Presence of 15K resistor and .2 Microfarad capaci- tor near K-801 socket. |

FIELD CHANGE REQUIREMENTS
TABLE 2-15

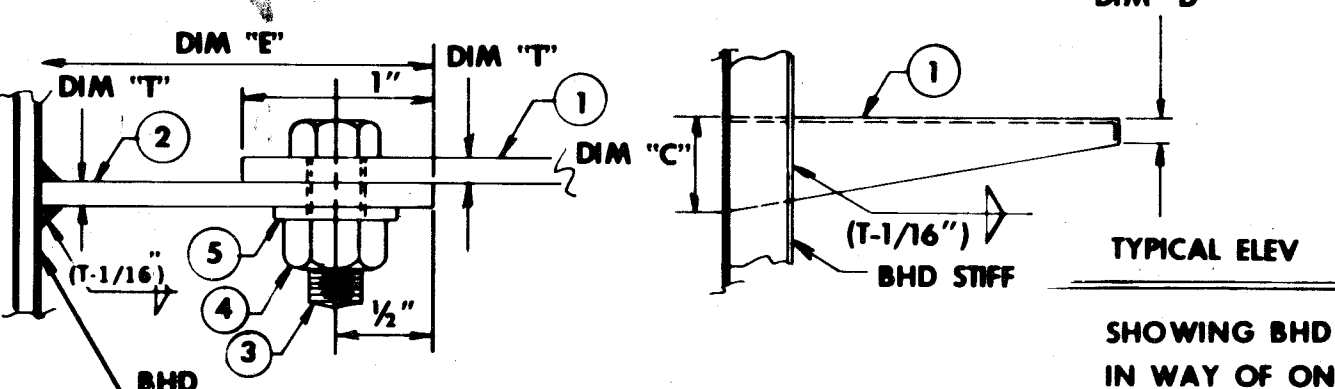
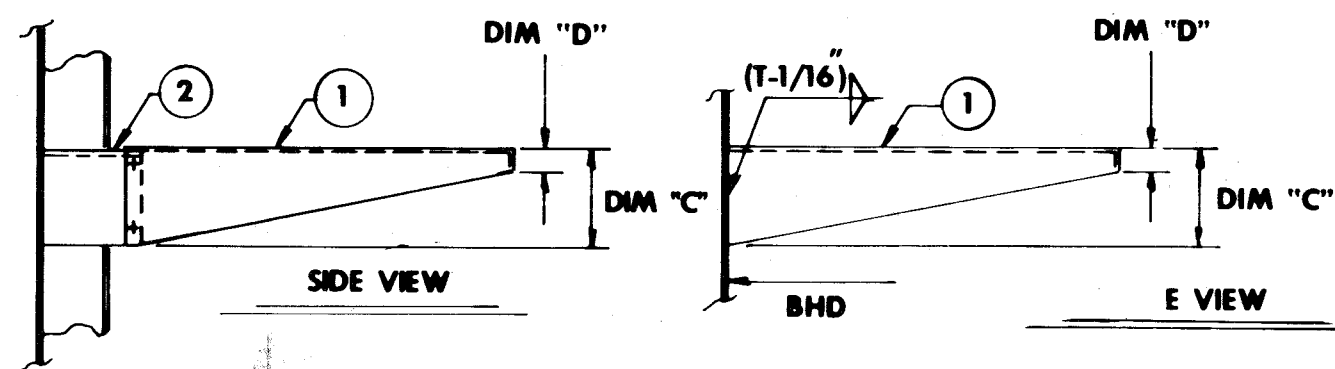
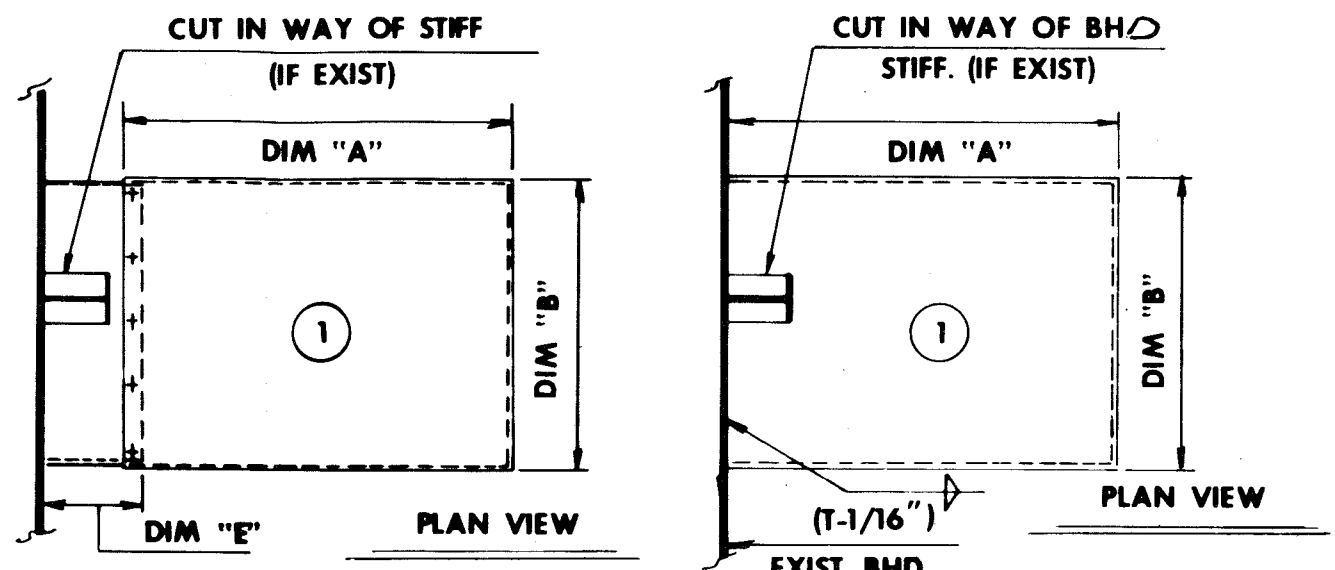
RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

TABLE 2.15

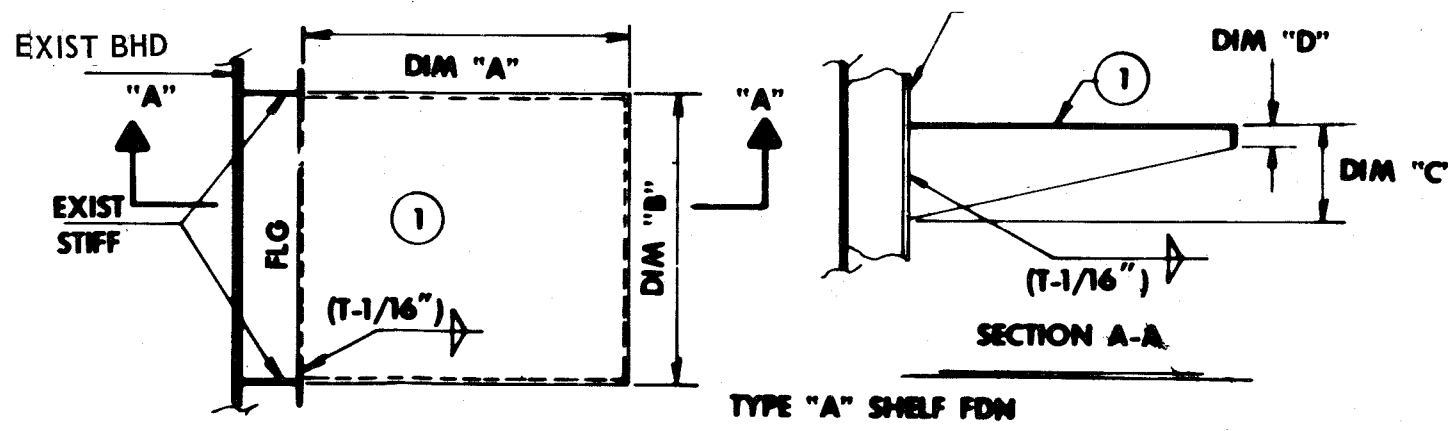
2-59/2-60





TYPE "C" SHELF FDN

TYPE "B" SHELF FDN



| LIST OF MATERIAL QUANTITIES FOR ONE FDN | | | | | |
|---|----------------------|-----------|-----------|-------------|----------|
| PC NO. | NAME | NO. REQ'D | MATERIAL | MT'L SPEC. | REMARKS |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL. | MIL-S-16113 | TYPE "A" |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL. | MIL-S-16113 | TYPE "B" |
| 1 | PLT (SEE NOTE #2) | 1 | AL-61S-T6 | QQ-A-327 | |
| 2 | PLT (SEE NOTE #2) | 1 | MED STL. | MIL-S-16113 | |
| 3 | 1/4" HEX H.D. BOLT | AS REQ'D | C.R.S. | MIL-B-857 | TYPE "C" |
| 4 | 1/4" HEX NUT | | | MIL-B-857 | |
| 5 | 1/4" DIA-FLAT WASHER | | | MIL-S-854 | |
| | | | | | |
| | | | | | |

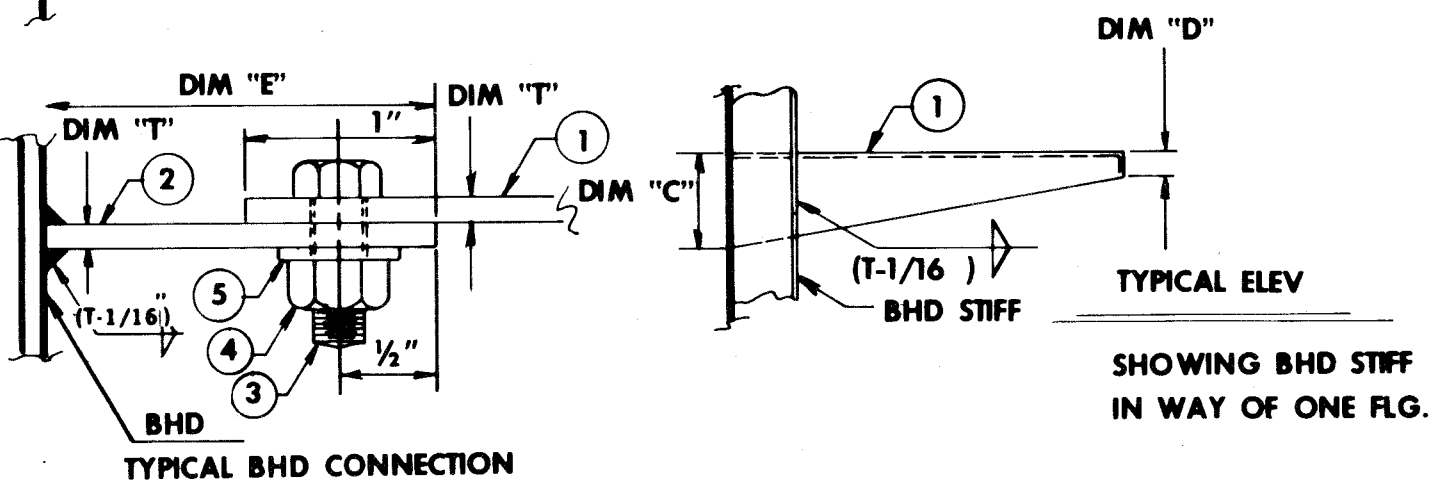
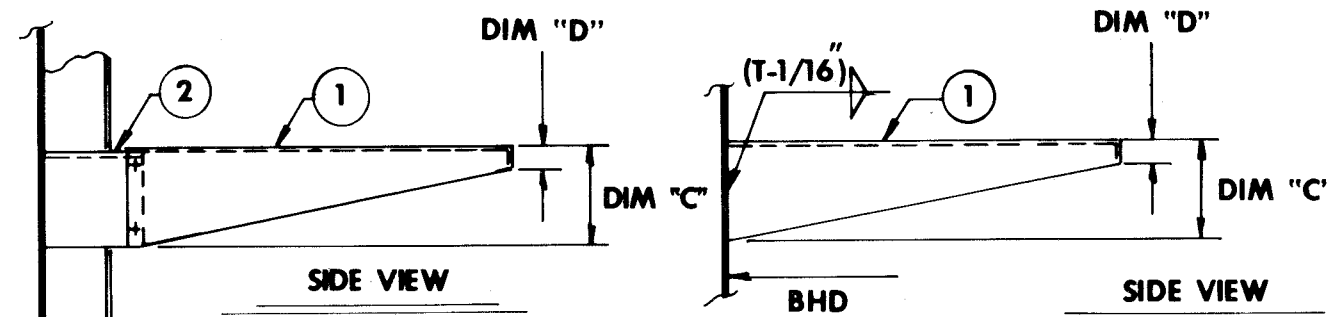
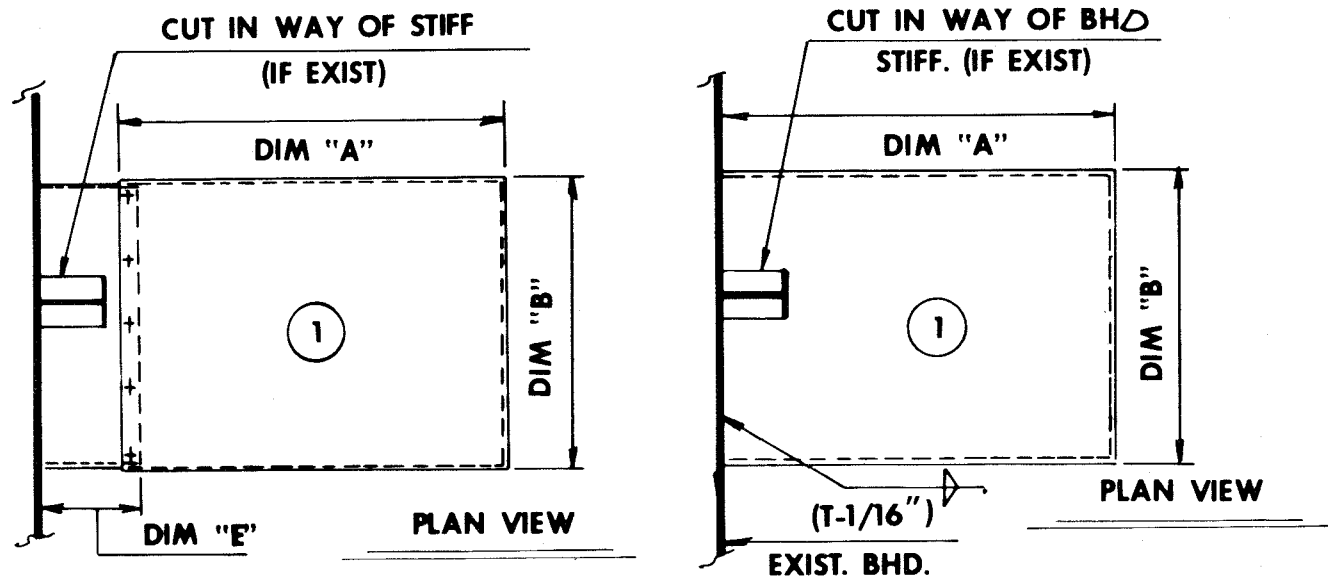
NOTES:

1. Thickness (Dim. "T" of material to be furnished on location).
2. All variable dimensions and type of foundation to be specified on location.
3. Foundation for AN/URC-9 to be as follows:
 - a. Plating (7.65 #Plt. steel), 1/4" thick aluminum
 - b. Type "B" shelf foundation
 - c. For installation with stiffener in way of unit. Dimension "A" = 18" + depth of stiffener, dimension "B" = 18", dimension "C" = 6", dimension "D" = 1 1/2".
 - d. For installation with no stiffener interference: Dimension "A" = 18", dimension "B" = 18", dimension "C" = 6", dimension "D" = 1 1/2".
4. Size and location of mounting bolts for unit to be taken from equipment.

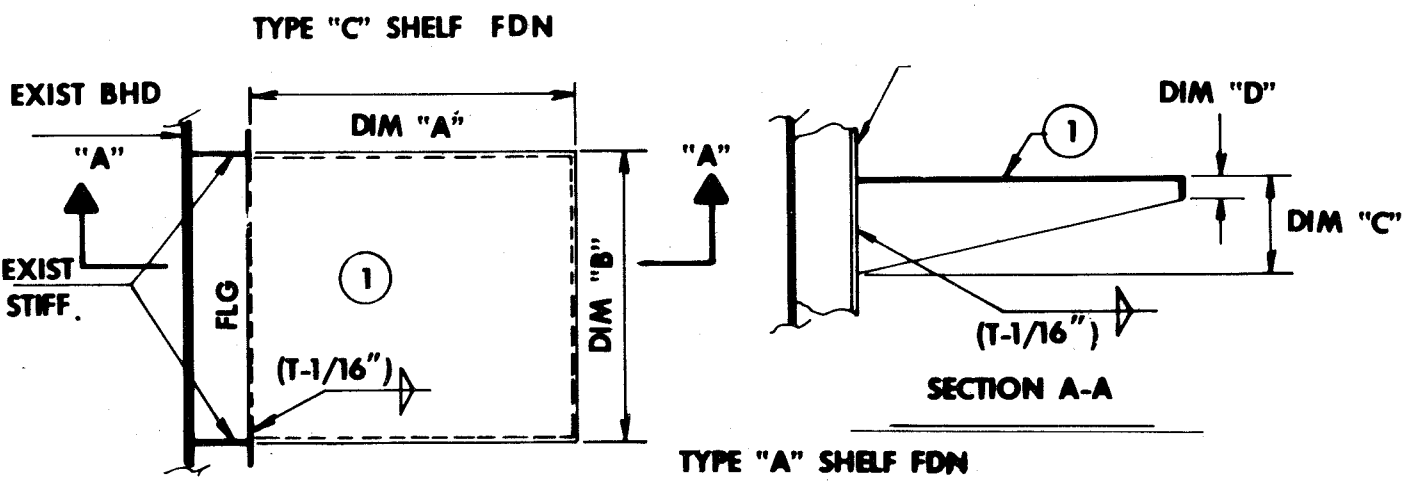
AN/URC-9 RADIO SET
TYPICAL FOUNDATION DETAILS

FIGURE 2-26

ORIGINAL



TYPE "B" SHELF FDN



TYPE "A" SHELF FDN

| LIST OF MATERIAL QUANTITIES FOR ONE FDN | | | | | |
|---|----------------------|----------|-----------|-------------|----------|
| PC NO. | NAME | NO. | MATERIAL | MT'L SPEC. | REMARKS |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "A" |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "B" |
| 1 | PLT (SEE NOTE #2) | 1 | AL-61S-T6 | QQ-A-327 | TYPE "C" |
| 2 | PLT (SEE NOTE #2) | 1 | MED STL | MIL-S-16113 | |
| 3 | 1/4" HEX H.D. BOLT | AS REQ'D | C.R.S. | MIL-B-857 | |
| 4 | 1/4" HEX NUT | | | MIL-B-857 | |
| 5 | 1/4" DIA-FLAT WASHER | | | MIL-S-854 | |
| | | | | | |

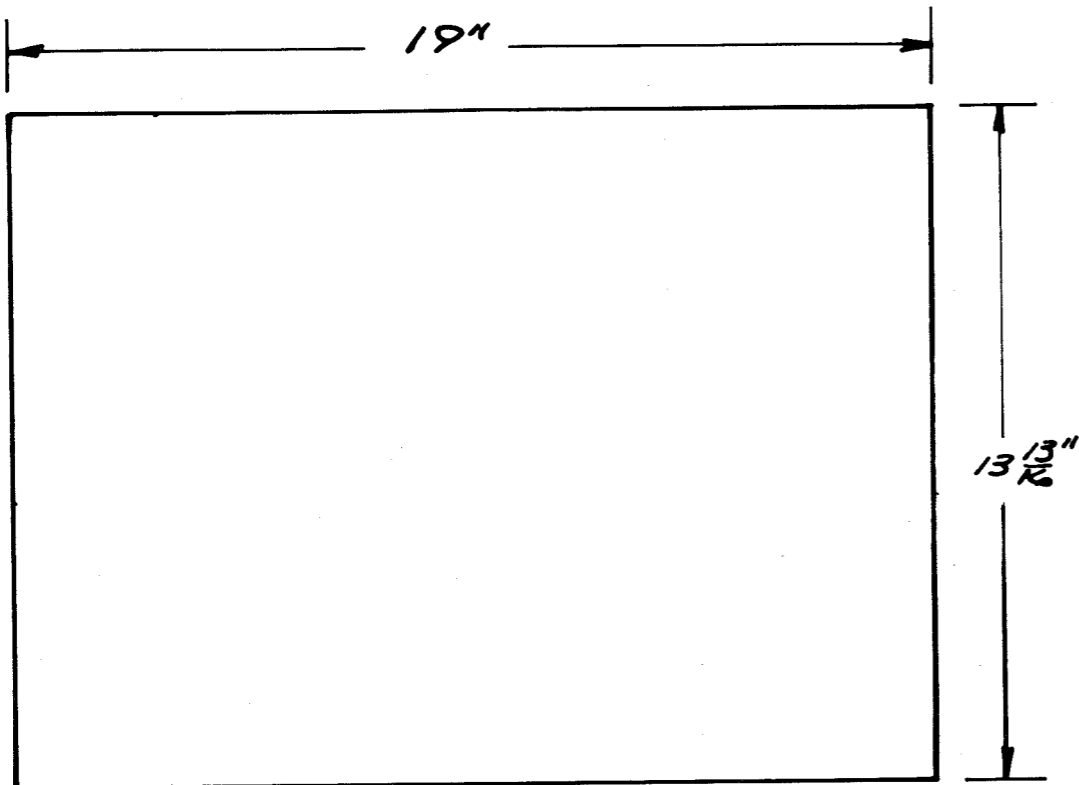
NOTES:

1. Thickness (Dim. "T") of material to be furnished on location.
2. All variable dimensions and type of foundation to be specified on location.
3. Foundation for MX-1743/SRC to be as follows:
 - a. Plating (7.65# plt. steel), 1/4" thick aluminum
 - b. Type "B" shelf foundation
 - c. For installation with stiffener in way of unit: Dimension "A" = 13" + depth of stiffener, dimension "B" = 12 1/2", dimension "C" = 7", dimension "D" = 1 1/2".
 - d. For installation with no stiffener interference: Dimension "A" = 13", dimension "B" = 12 1/2", dimension "C" = 7", dimension "D" = 1 1/2".
4. Size and location of mounting bolts to be taken from equipment.

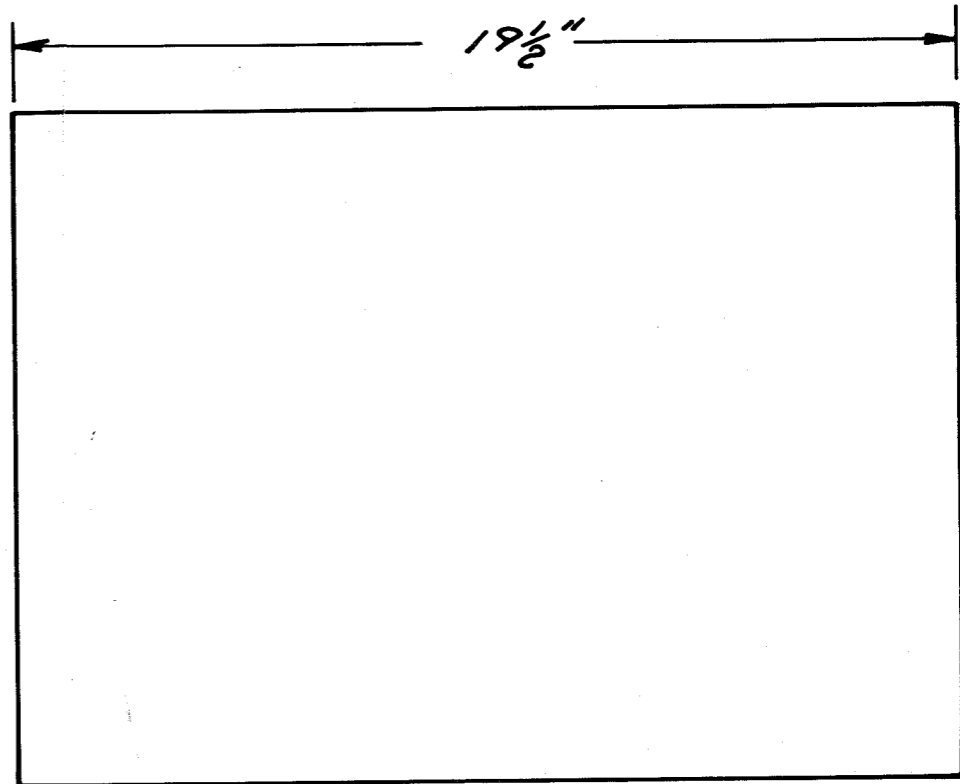
MX-1743/SRC
TYPICAL FOUNDATION DETAILS

FIGURE 2-28

ORIGINAL

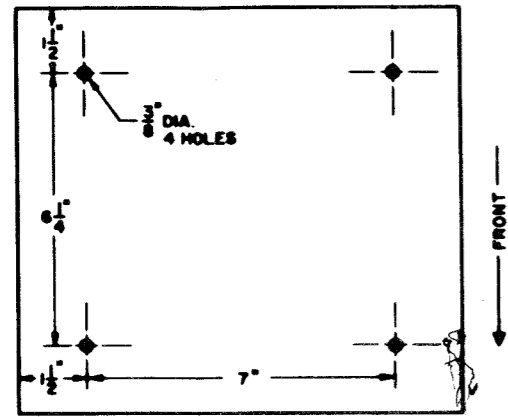


FRONT VIEW

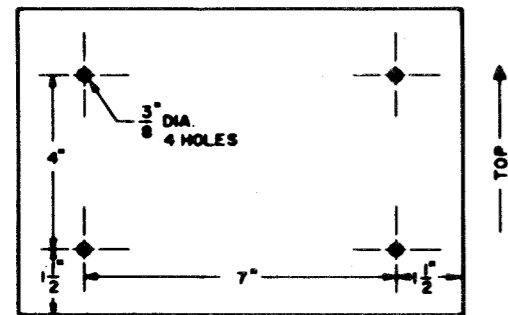


SIDE VIEW

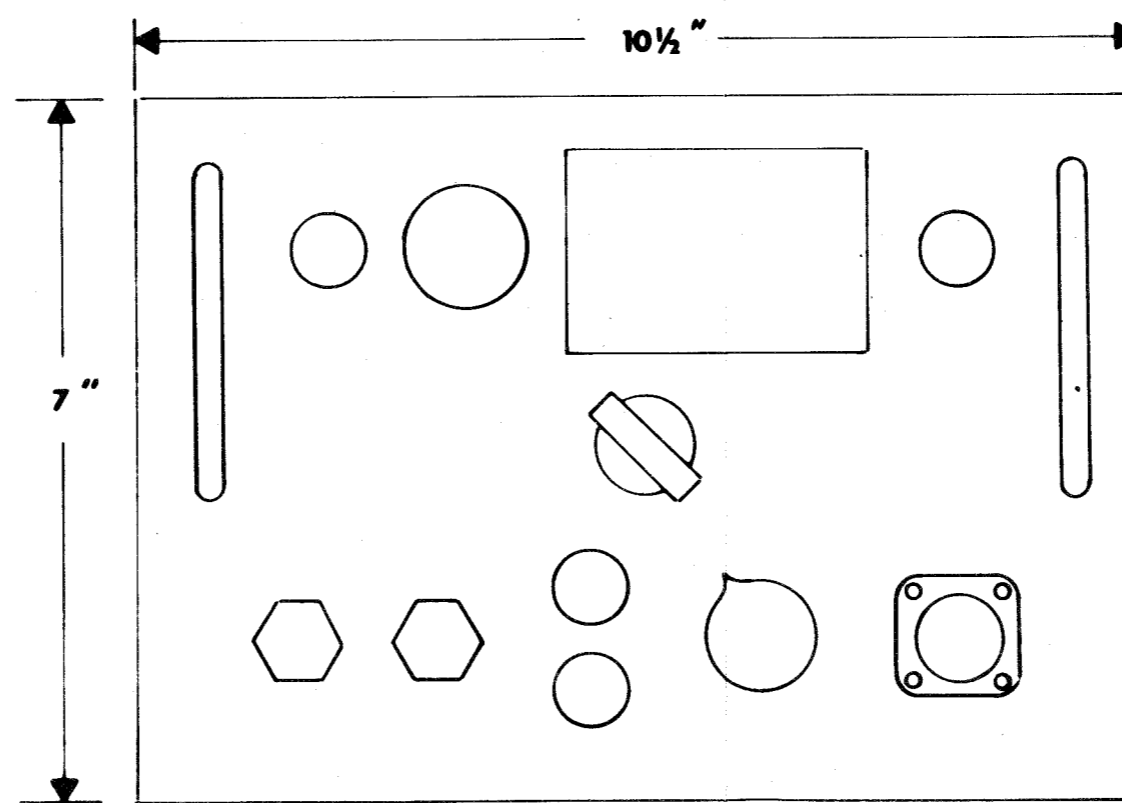
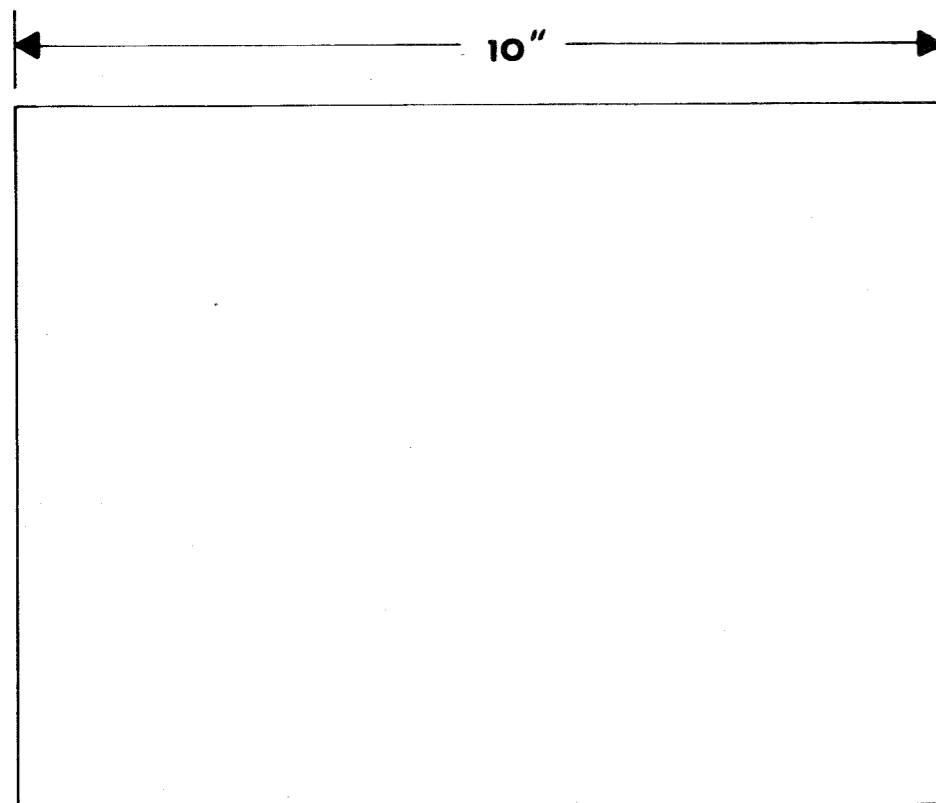
AN/URC-9
OUTLINE & MOUNTING DIMENSIONS
FIGURE 2-29



CABINET BOTTOM



CABINET BACK



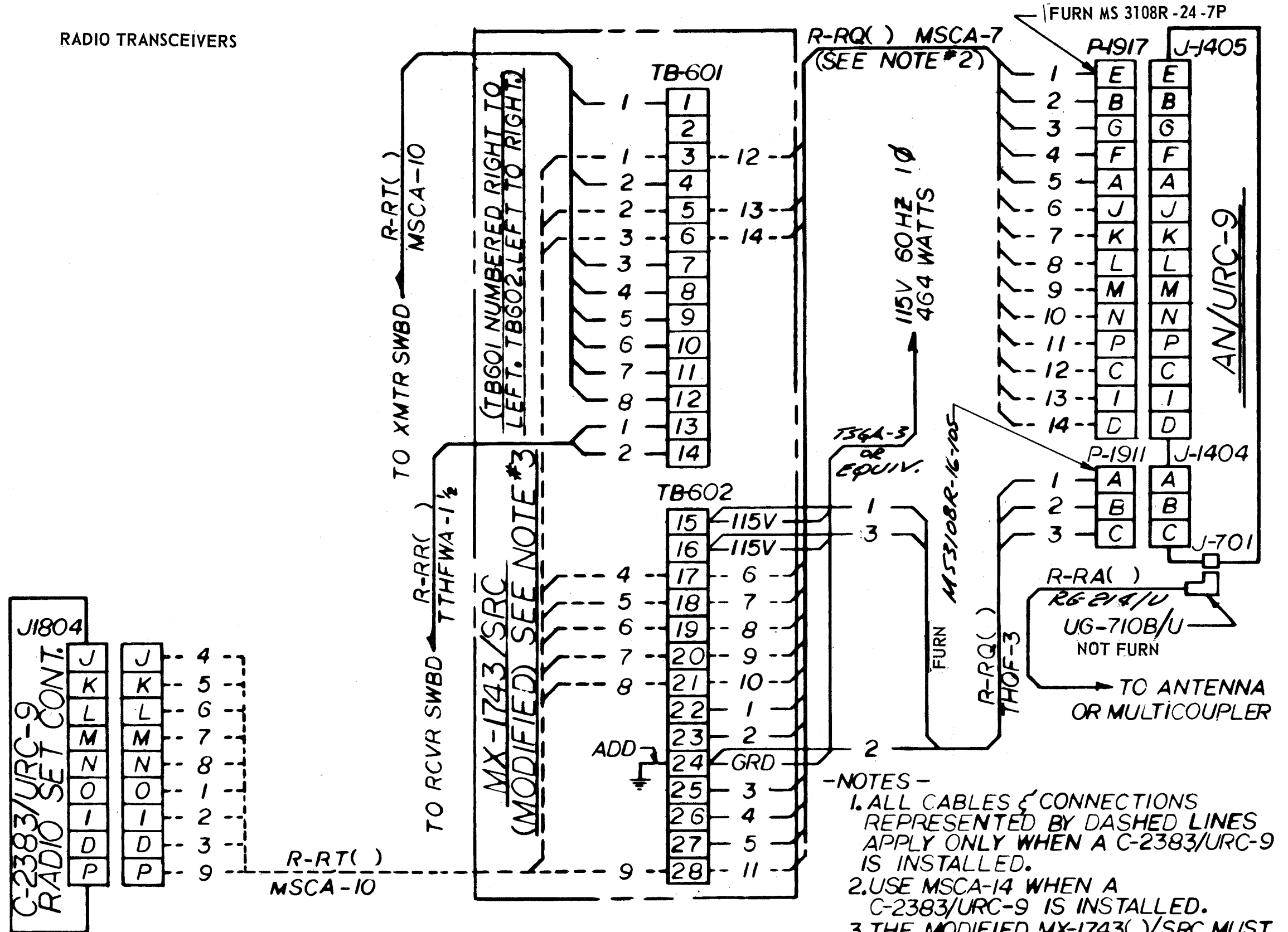
ORIGINAL

**MX-1743/SRC CONTROL ADAPTER
OUTLINE AND MOUNTING DIMENSIONS**

FIGURE 2- 30

AN/URC-9 RADIO SET
CABLE DIAGRAM

FIGURE 2-31



SECTION 2 - RADIO TRANSCEIVERS

2.21 AN/WRC-1 GENERAL DESCRIPTION

The AN/WRC-1 is a single sideband radio set capable of transmitting on any one of 56,000 channels, spaced in 0.5 kilocycle increments, in the 2.0 to 29.9995 megacycle frequency range. Vernier (continuous) tuning enables reception on any frequency in the 2.0 to 30.0 megacycle frequency range. Five modes of operation are provided: Upper sideband (USB), lower sideband (LSB), independent sideband (ISB), continuous wave (CW), and amplitude modulation (AM). FSK operation may be obtained by using suitable auxiliary equipment. Transmitter: 4A3a (selectable), 4A3b, 4A9 (upper sideband and carrier), and A1, A9c, and F1 type of emission. Receiver: 4A2, 4A3a, 4A3b, 4A9, (upper sideband with carrier) and A1, A9c, and F1 type of emission received.

2.22 REFERENCE DATA

- a. Table of Technical Publications - Table 2-16
- b. Primary Power Requirements - Table 2-17
- c. Heat Dissipation - Table 2-18
- d. Unit Weight - Table 2-18

2.23 INSTALLATION REQUIREMENTS

a. Arrangement

(1) The AN/WRC-1 are stacked and secured together in the order shown in Figure 2-35. Mounting brackets and hardware are supplied with each unit to secure equipment together. The AN/WRC-1 is designed for installing in a standard 19 inch rack (mounting bracket not supplied) or in an upright position on a radio operating desk (top table) or similar flat surface foundation. See Figure 2-32 for typical foundation details. See Figure 2-33 for rack mounting bracket details.

(2) The J-1265/U may be mounted to bulkhead using the mounting plate provided. The mounting plate must be drilled as required. The installing activity may weld the mounting bolts or studs to the bulkhead to secure J-1265/U. See Figure 2-37 for mounting information.

(3) To install the CU-937/UR drill mounting holes approximately 10 inches from the antenna base and bolt the CU-937/UR to the mounting surface. See Figure 2-34 for typical foundation details.

b. Outline and Mounting Dimensions

- | | | |
|-----|-----------|-------------|
| (1) | AN/WRC-1 | Figure 2-35 |
| (2) | CU-937/UR | Figure 2-36 |
| (3) | J-1265/U | Figure 2-37 |

c. Grounding Specifications - All bonding and grounding to be in accordance with Table 2-16, Item No. 2.

2.24 CABLE DIAGRAM AND CONNECTION DETAILS

a. Elementary Connections - Figure 2-38.

b. Electronics Installation and Maintenance Standards - To be in accordance with Table 2-16, Item No. 6.

c. Security Requirements - To be in accordance with Table 2-16, Item No. 8.

2.25 FIELD CHANGE REQUIREMENTS - Table 2-19

ORIGINAL

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|--|
| 1 | 0967-971-0010 0967-971-0020 | Vol. I Technical Manual for Radio Set AN/WRC-1 and Antenna Coupler CU-937/UR |
| 2 | Mil. Std. 1310A (NAVY) | Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility |
| 3 | *RE-D2686324 | Outline and Mounting Data |
| 4 | *RE-D2686325 | Interconnecting Cabling Diagram |
| 5 | *RE-D2686389 | Cabling Running Sheets |
| 6 | 0967-000-0000 | Electronics Installation and Maintenance Books |
| 7 | 0981-052-8090 | Data Pertaining to Electrical Shipboard Cable |
| 8 | NAVSHIPS INST. 05510.33B | Installation Criteria for Shipboard Secure Electrical Information Processing Systems |
| | | |
| | | |
| | | |

*These plans are not essential for installation but if available, use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-16

RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

TABLE 2-16

RADIO TRANSCIEVERS

| EQUIPMENT | VOLTAGE | CURRENT | POWER | REMARKS |
|------------------------|-------------------------------------|---------|--------------|---------|
| AN/WRC-1 (J-1265/U) | 115 VAC, 48-450 HZ, Single Phase | | 375 Watts | |

ORIGINAL

TABLE OF PRIMARY POWER REQUIREMENTS
TABLE 2-17

NAVSHIPS 0967-306-1010

| EQUIPMENT | HEAT DISSIPATION | UNIT WEIGHT |
|------------------|---------------------|----------------|
| R-1051/URR | 55 WATTS | 70 LBS. |
| T-827/URT | | 70 LBS. |
| AM-3007/URT | | 78 LBS. |
| J-1265/U | | 19 LBS. |
| MT-3115/WRC-1 | | 16 LBS. |
| CU-937/UR | | 26 LBS. |
| AN/WRC-1 (Total) | | 279 LBS. |

TABLE 2-17/ 2-18

TABLE OF MISCELLANEOUS DATA
TABLE 2-18

2-70

| FIELD CHANGE NUMBER AND SERIAL NO. EFFECTIVITY | NAVSHIPS BULLETIN # | BRIEF DESCRIPTION OF CHANGE | INSTALLING ACTIVITY & MANHOURS | KIT FSN | IDENTITY |
|---|---------------------|--|--------------------------------|----------------|---|
| 1. AN/WRC-1 All equipment procured under NObsR87614 | 0967-971-0050 | Production wiring change | FA-4 | | Proper recording of the F.C. number on F.C. Record Plate |
| 2. AN/WRC-1 | | Superseded by F.C. No. 2A AN/WRC-1 | | | |
| 2A. AN/WRC-1 All equipment under NObsR89368 and NObsR89368 | 0967-034-2010 | Fiberglass shield for H. voltage protection | FA-1 | F5820-999-8869 | All AM-3007/URT R.F. amplifiers modified per this F.C. May be identified by the presence of the epoxy impregnated fiberglass plate immediately back of the amplifier front panel and over the heat sink casting into which both amplifier vacuum tubes are mounted. |
| 3. AN/WRC-1 Ser. No. A & B Series Serial No. produced under NObsR87614 & 89368 | 0967-034-0050 | Reliability increase of AF amplifier output circuit. | FA-1 | | R37 has been changed to 100 ohms and R29 is shunted by a .1 Microfarad capacitor on the A2 boards of the lower and upper sideband IF/AF amplifier electronic assemblies (1A2A2). |

FIELD CHANGE REQUIREMENTS
TABLE 2-19

RADIO TRANSCEIVERS

NAVSHIPS 0967-306-1010

| FIELD CHANGE NUMBER AND SERIAL NO. EFFECTIVITY | NAVSHIPS BULLETIN # | BRIEF DESCRIPTION OF CHANGE | INSTALLING ACTIVITY & MANHOURS | KIT FSN | IDENTITY |
|---|---------------------|--|--------------------------------|---------|--|
| 4. AN/WRC-1 All Serial Nos. of the A, B, and C Series produced under NObsR87614, 89368, and 93015 | | Reduction of panel lamp failures | FA-2 | | Observing that R2 has been changed to 120 OHMs on the A8 power supply board located on the bottom left rear side of the receiver main frame. |
| 5. AN/WRC-1 for ships DD706,708,709, 729,790,840, 848,876;DL-5, DLG-18, 33; MSO 426,432, 435, 455,460, 468,470,491, 519;SS-425,522; SSN-596,613 | 0967-971-0080 | Installation of elapsed time indicator | FA-2 Special Team | | Presence of an elapsed time indicator just in front panel of the R.F. amplifier assembly on T-827/URT chassis and the R-1051/URR chassis |

FIELD CHANGE REQUIREMENTS
TABLE 2-19

TABLE 2-19

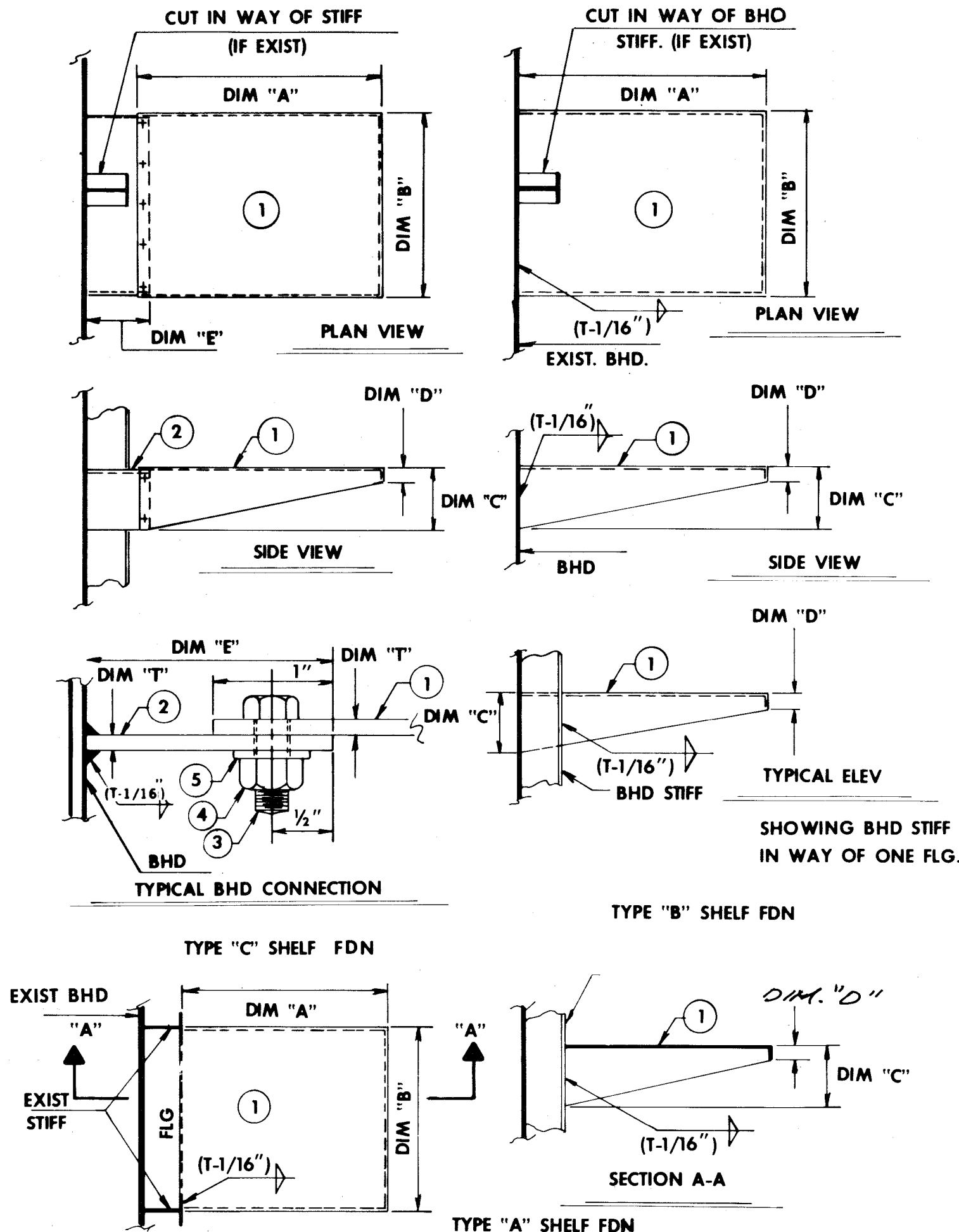
ORIGINAL

2-72

| LIST OF MATERIAL QUANTITIES FOR ONE FDN | | | | | | |
|---|----------------------|-----------|-----------|-------------|----------|----------|
| PC NO. | NAME | NO. REQ'D | MATERIAL | M'TL SPEC. | REMARKS | |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL. | MIL-S-16113 | TYPE "A" | |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL. | MIL-S-16113 | TYPE "B" | |
| 1 | PLT (SEE NOTE #2) | 1 | AL-61S-T6 | QQ-A-327 | } | |
| 2 | PLT (SEE NOTE #2) | 1 | MED STL | MIL-S-16113 | | |
| 3 | 1/4" HEX H.D. BOLT | AS REQ'D | C.R.S. | MIL-B-857 | | TYPE "C" |
| 4 | 1/4" HEX NUT | | | MIL-B-857 | | |
| 5 | 1/4" DIA-FLAT WASHER | | | MIL-S-854 | | |
| | | | | | | |

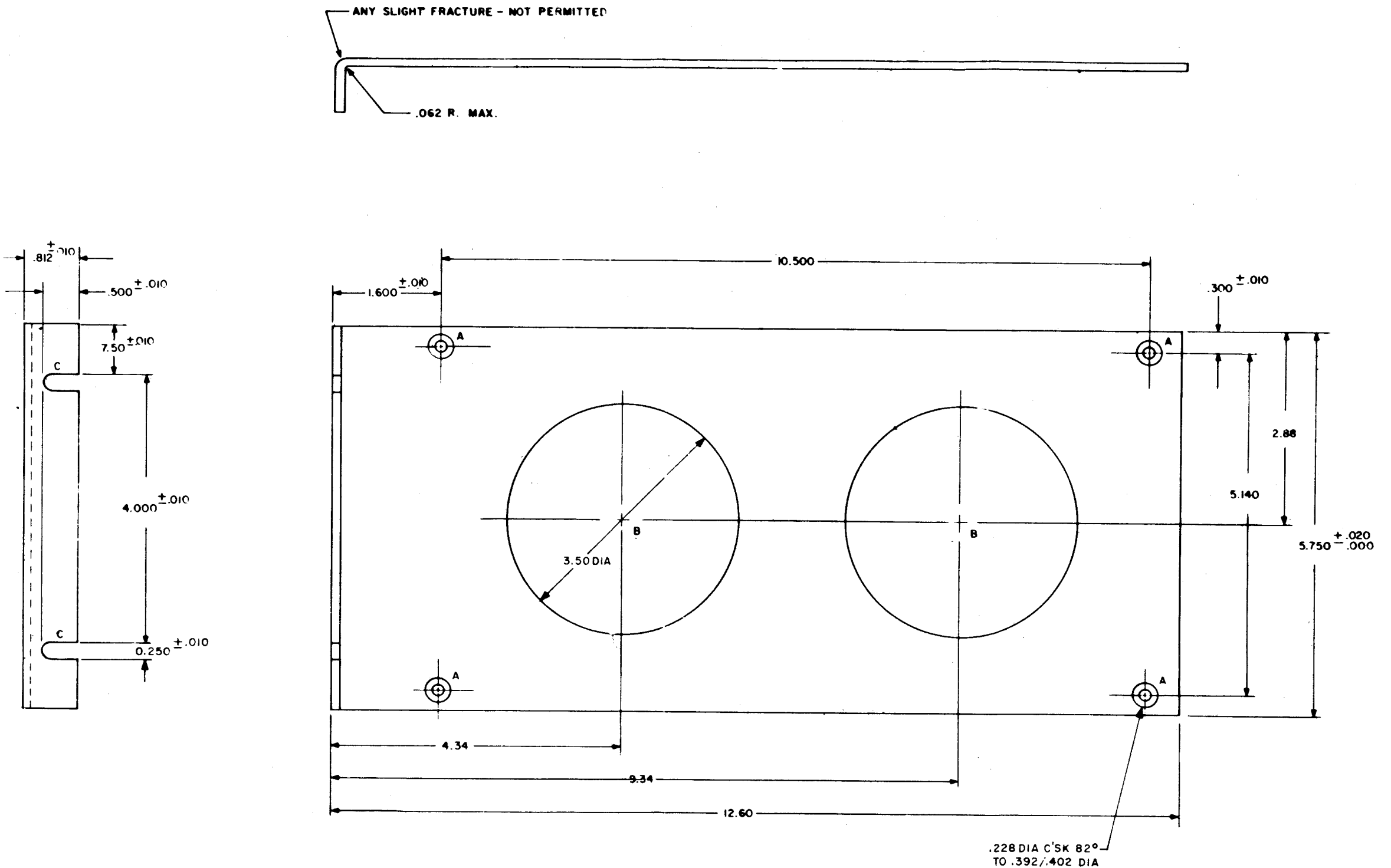
NOTES:

1. Thickness (Dim. "T" of material to be furnished on location).
2. All variable dimensions and type of foundation to be specified on location.
3. Foundation for AN/WRC-1 to be as follows:
 - a. Plating (7.65 #Plt. steel), 1/4" thick aluminum
 - b. Type "B" shelf foundation
 - c. For installation with stiffener in way of unit. Dimension "A" = 25" ± depth of stiffener, dimension "B" = 22", dimension "C" = 8", dimension "D" = 1 1/2".
 - d. For installation with no stiffener interference: Dimension "A" = 25", dimension "B" = 22", dimension "C" = 8", dimension "D" = 1 1/2".
4. Size and location of mounting bolts for unit to be taken from equipment.



**AN/WRC-1 RADIO SET
TYPICAL FOUNDATION DETAILS**

FIGURE 2-32



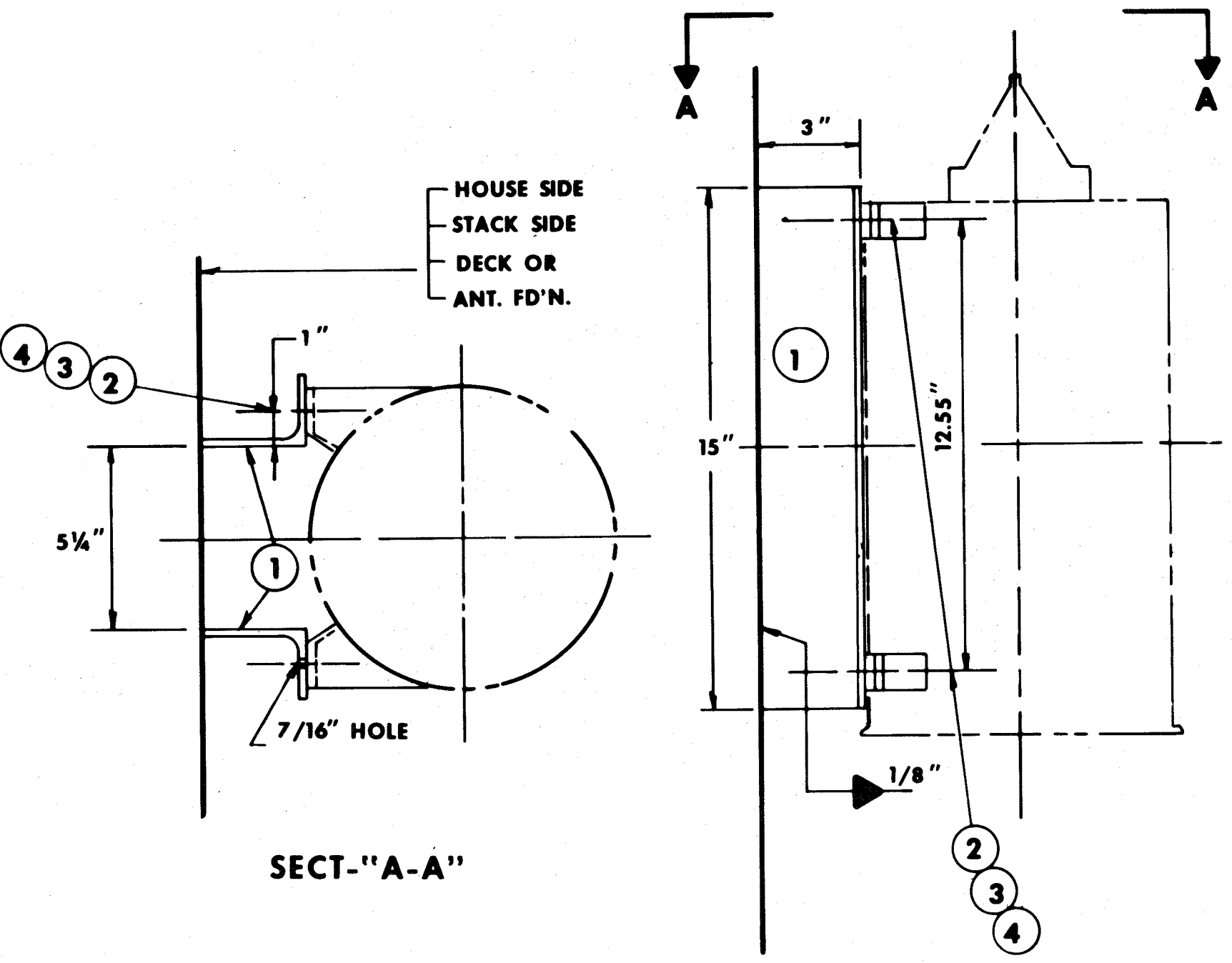
NOTES:

1. FINISH: IRIDITE NO. 14 PER MIL-C-5541
PAINT PER MIL-E-15090 ENAMEL
EQUIPMENT, LIGHT GRAY (FORMULA NO II)
2. MATERIAL .125" THICK ALUMINUM ALLOY
5052-H32, PER QQ-A-318
3. NOT SUPPLIED. IF REQUIRED, INSTALLATION
ACTIVITY MUST FABRICATE

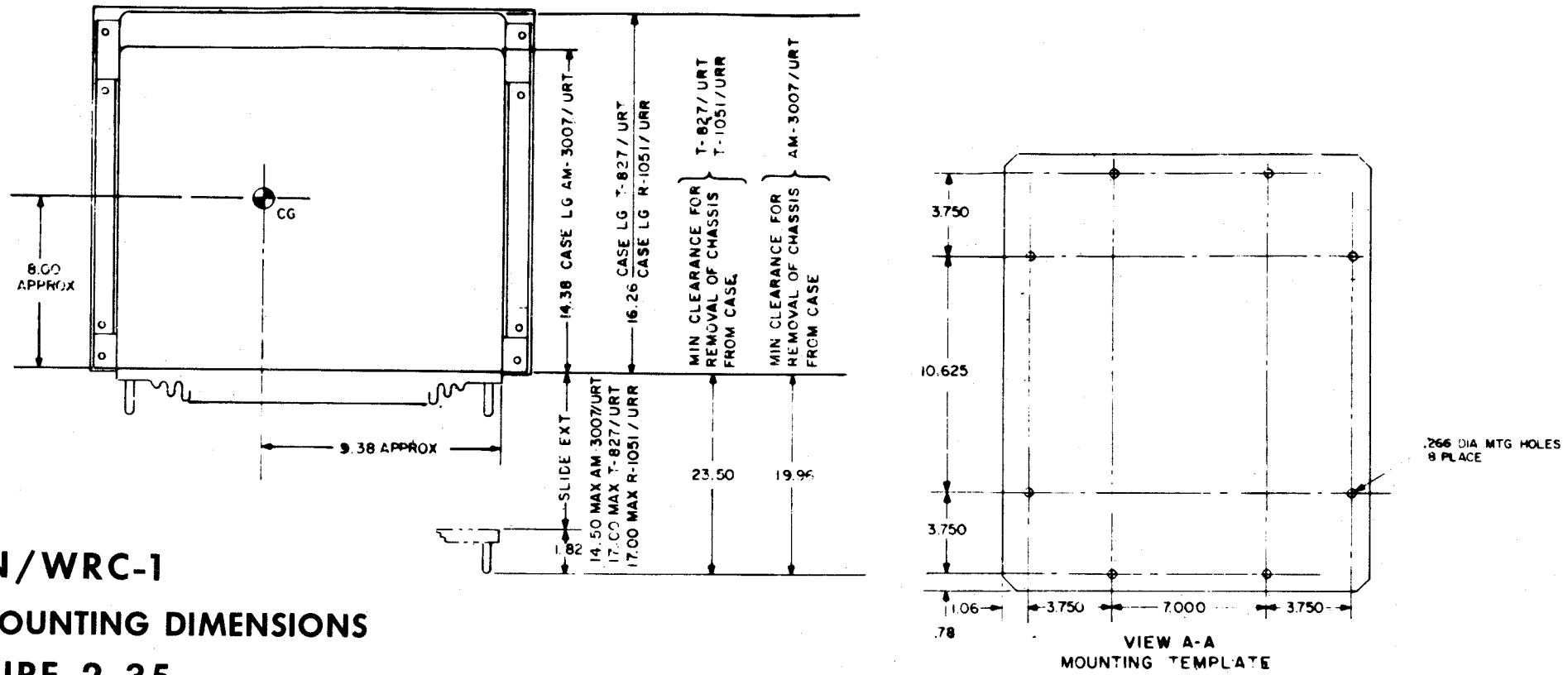
AN/WRC-1 RACK-MOUNTING BRACKET DETAILS
FIGURE 2-33

ORIGINAL

| LIST OF MATERIAL - QUANTITIES FOR ONE FOUNDATION | | | | |
|--|---------------------|------------|----------|-------------------|
| PIECE NO. | NAME | NO. REQ'D. | MATERIAL | FEDERAL STOCK NO. |
| 1 | 3"x2"x3/16" Angle | 2 | MS | 9520 277 4939 |
| 2 | 3/8" HH Bolt 1" lg. | 4 | CRES | 5306 299 2455 |
| 3 | 3/8" Hex Nut | 4 | CRES | 5310 543 5627 |
| 4 | 3/8" Lock Washer | 4 | CRES | 5310 584 5446 |
| 1 | 3"x2"x3/16" Angle | 2 | Alum. | 9540 542 2717 |



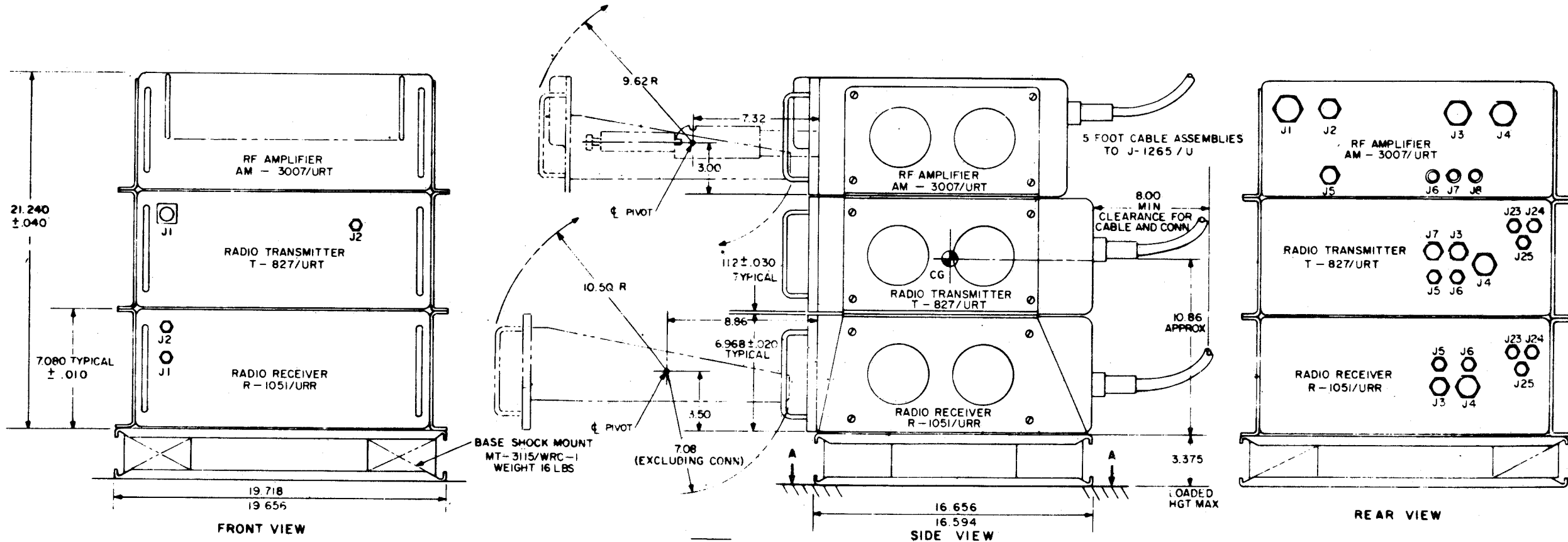
CU-937/UR
TYPICAL FOUNDATION DETAIL
FIGURE 2-34

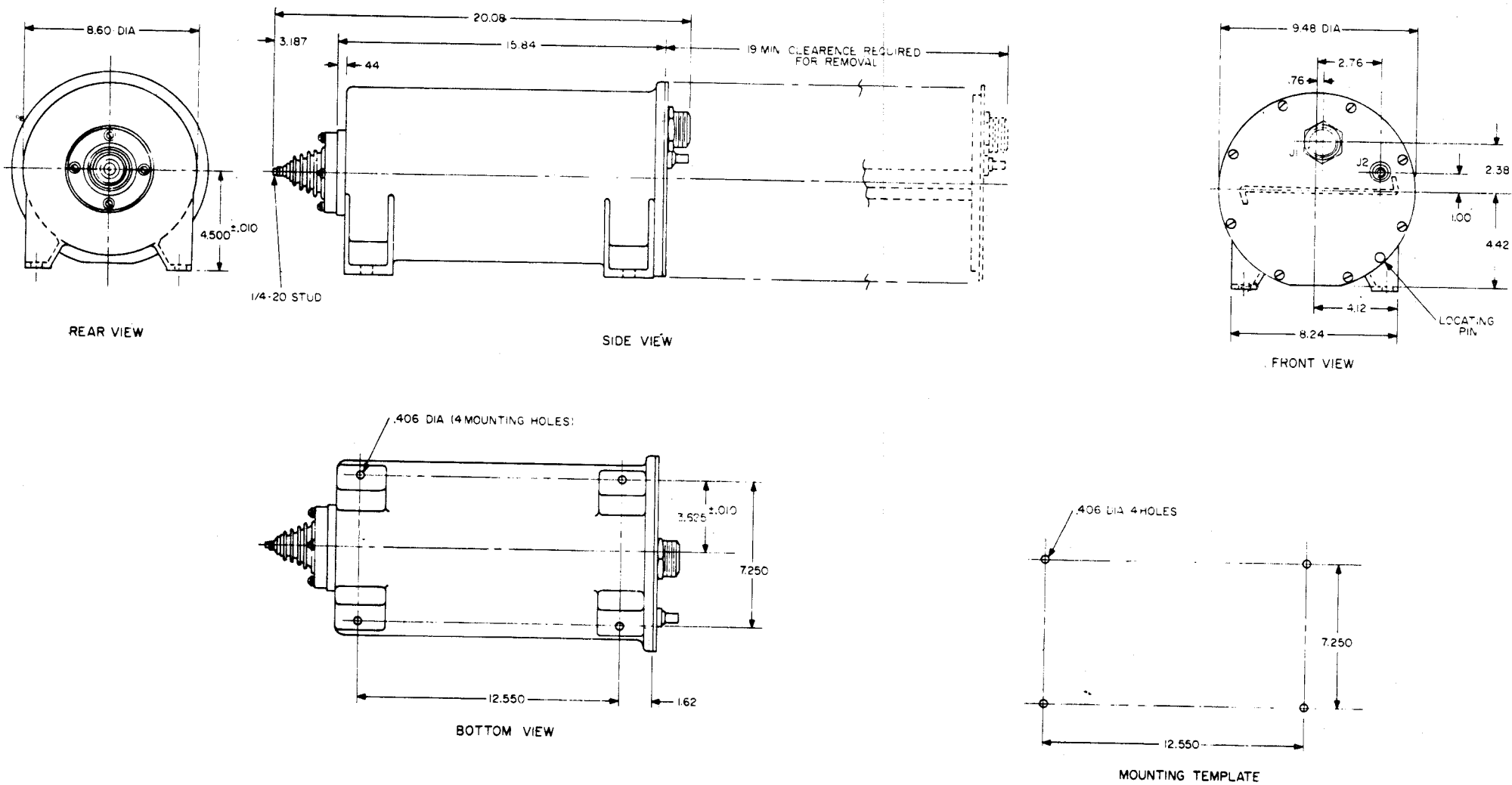


AN/WRC-1

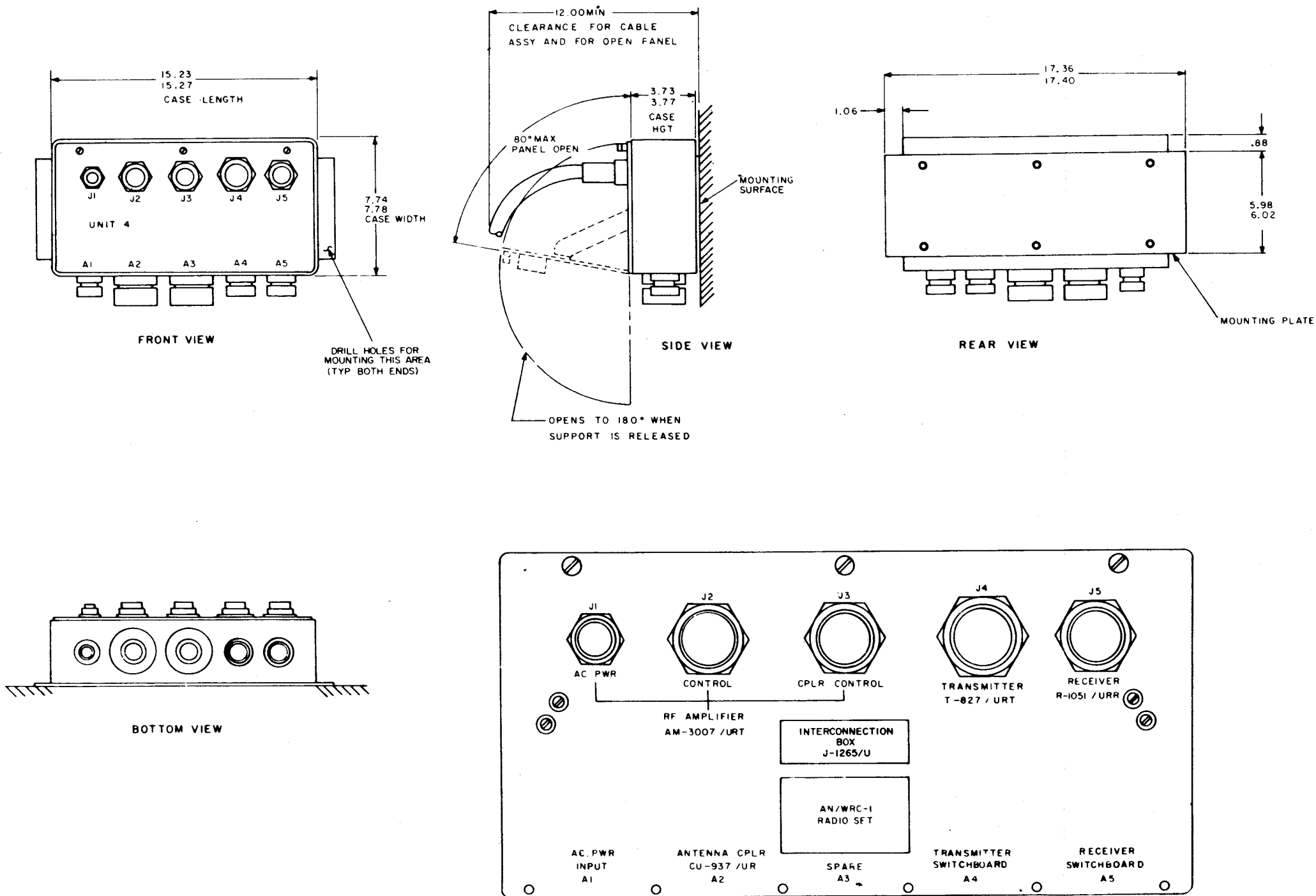
OUTLINE AND MOUNTING DIMENSIONS

FIGURE 2-35





**CU-937/UR ANTENNA COUPLER
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-36**



PANEL LAYOUT

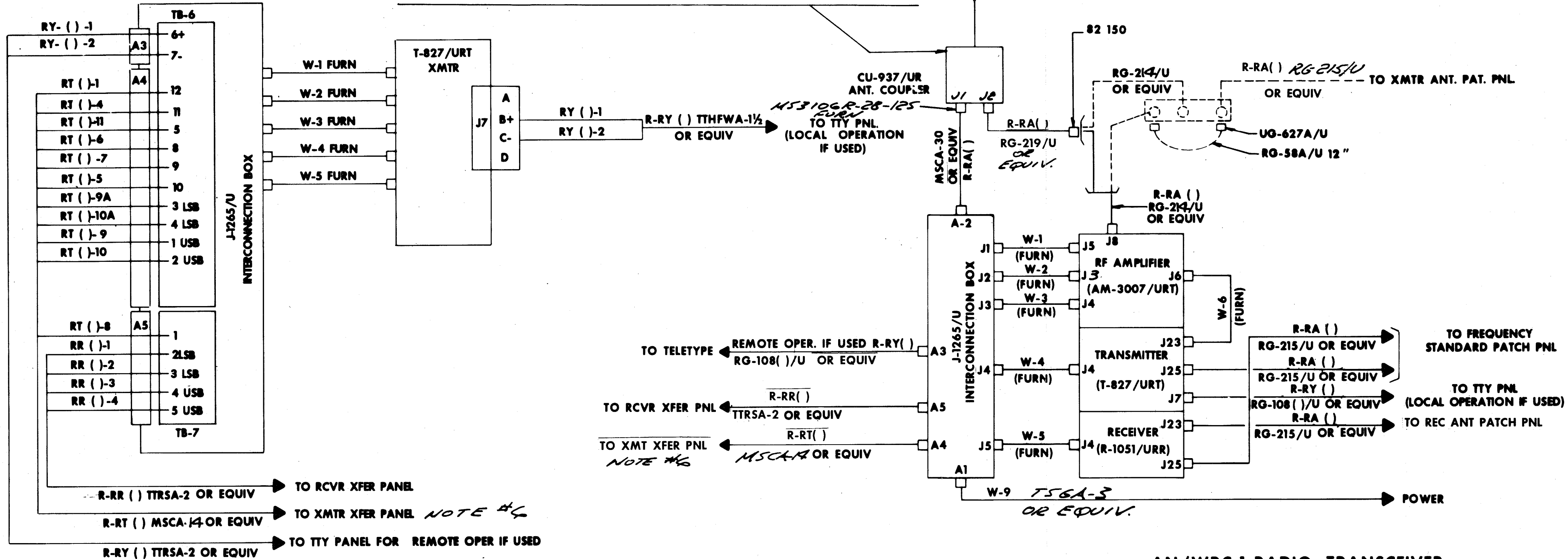
J-1265/U INTERCONNECTION BOX

OUTLINE AND MOUNTING DIMENSIONS

FIGURE 2-37

ORIGINAL

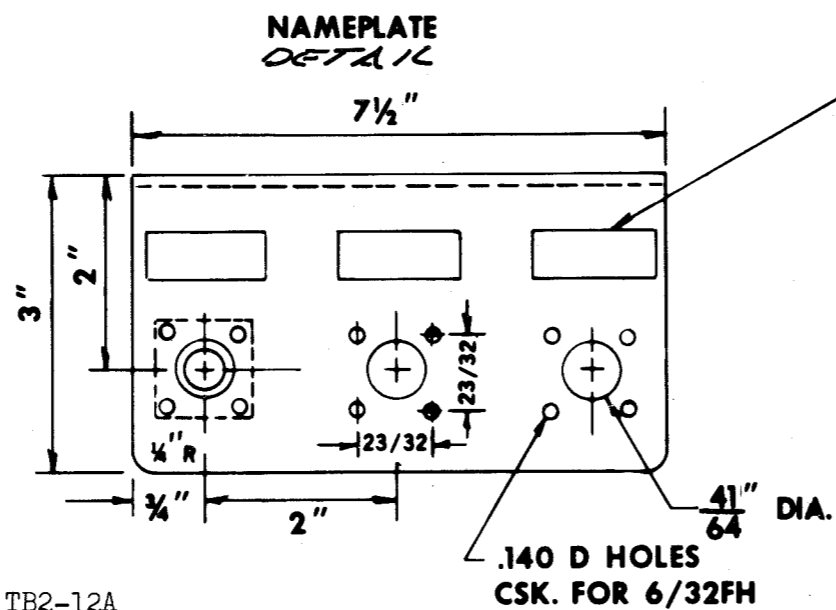
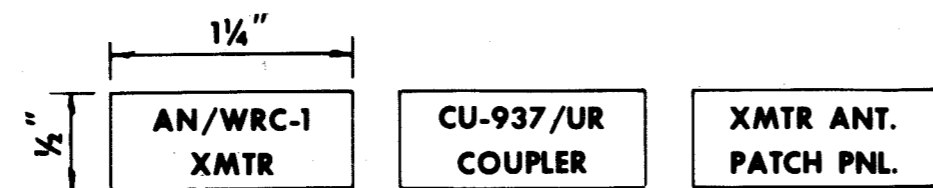
SPECIAL NOTE: The CU-937/UR must be placed close to the base of the antenna to permit the connection between the antenna and the CU-937/UR to be made with a 12 inch long stranded copper conductor.



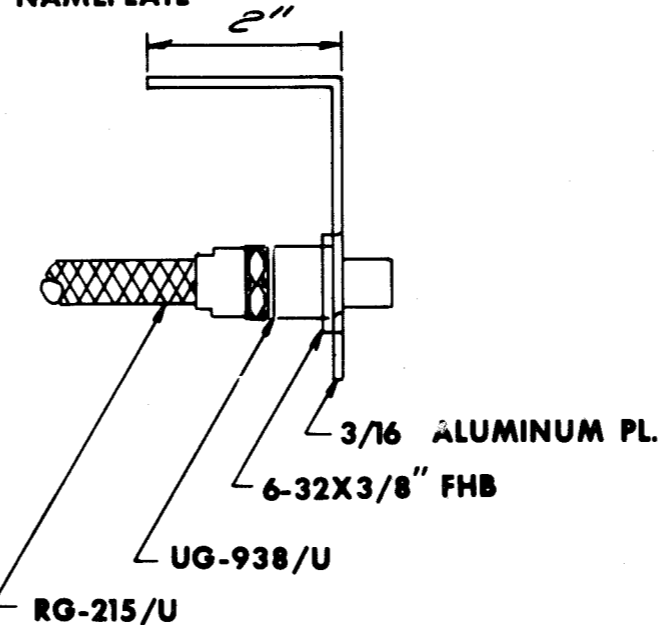
**AN/WRC-1 RADIO TRANSCEIVER
CABLE DIAGRAM**

**FIGURE 2-38
(CONTINUED)**

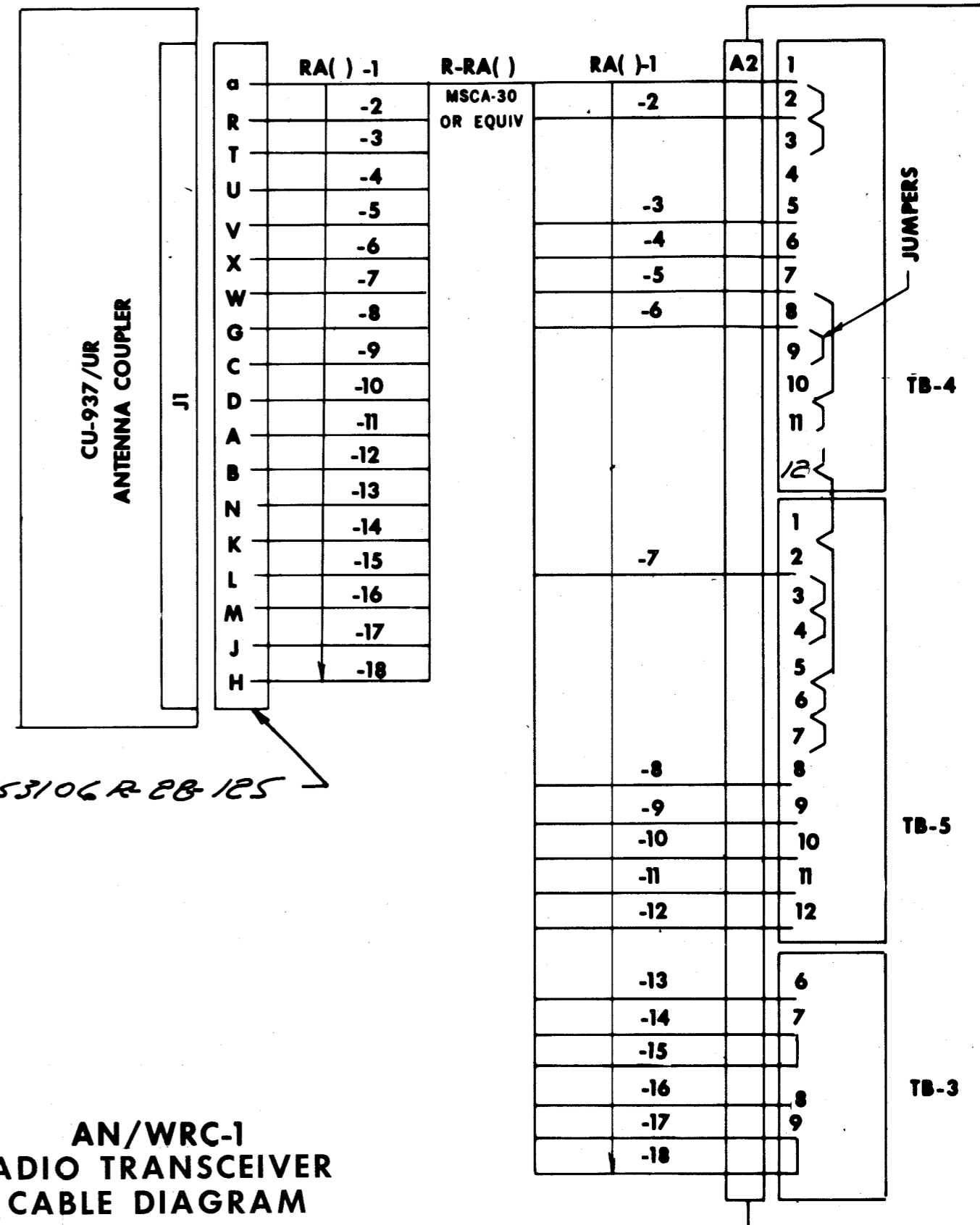
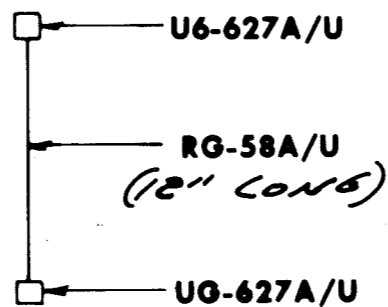
RADIO TRANSCEIVERS



SEE TYPICAL NAMEPLATE



AN/WRC-1 ANT. PATCH PNL.



AN/WRC-1 RADIO TRANSCEIVER CABLE DIAGRAM

FIGURE 2-38

J-1265/U INTERCONNECTION BOX

NOTES:

1. For duplex operation stud connectors between TB2-11A and 11B TB2-12A and 12B must be removed.
2. For transmit mode LSB/LSB attach wire to TB6-3B.
For transmit mode USB/AM/LSB attach wire to TB6-1B.
3. For transmit mode LSB/LSB attach wire to TB6-4B.
For transmit mode USB/AM/LSB attach wire to TB6-2B.
4. For receive mode LSB/LSB attach wire to TB7-2B.
For receive mode USB/AM/CW/LSB attach wire to TB7-4B.
5. For receive mode LSB/LSB attach wire to TB7-3B.
For receive mode USB/AM/CW/LSB attach wire to TB7-5B.
6. Parallel terminals Nos. 1, 4, 5, 6, 7, 8, and 11 between USB and LSB in transmitter transfer panel.

SECTION 2 - RADIO TRANSCEIVERS

2.26 AN/URC-35 GENERAL DESCRIPTION

The AN/URC-35 is a single sideband HF radio set designed for ship-board installation with capabilities for general purpose use. The set provides transmission and reception on 280,000 channels, spaced 100 CPS apart in the 2 to 30 MC range. The receiving section includes vernier control for continuous tuning between tuning increments to permit compatibility with less stable transmitters now in use. Transmission and reception can be performed in upper side band (USB), lower sideband (LSB) continuous wave (CW) and compatible amplitude modulation (AM).

The radio set employs circuits for automatic digital tuning.

The coupler (CU-937/UR) enables matching to a 15, 25, or 35 foot whip antenna. The coupler can be located up to 300 feet from the RF amplifier.

2.27 REFERENCE DATA

- a. Table of Technical Publication - Table 2-20
- b. Primary Power Requirement - Table 2-21
- c. Heat Dissipation - Table 2-22
- d. Unit Weight - Table 2-22
- e. Connection Cables from CU-937/UR to Connecting Box Terminal Board Connections - Table 2-23
- f. Connection Box, Terminal Board Antenna Programming - Table 2-24.

2.28 INSTALLATION REQUIREMENTS

a. Arrangement

(1) The units that comprise the AN/URC-35 are stacked and secured together in the order shown in Figure 2-41. Mounting brackets and hardware are supplied with each unit to secure equipment together. The AN/URC-35 is designed to be mounted in an upright position on a radio operating desk (LOP table) or similar flat surface foundation. See Figure 2-39 for typical foundation details. See Figure 2-40 for rack mounting bracket details.

(2) To install the CU-973/UR drill mounting holes approximately 10 inches from the antenna base and bolt the CU-937/UR to the mounting surface. See Figure 2-34 for typical foundation details.

(3) To install the C-3697/URC drill mounting holes in mounting plate as shown in Figure 2-39 and Figure 2-42.

(4) The PP-4679/URC-35 is to be installed on a shelf type foundation. See Figure 2-39 for typical foundation details.

2.28 INSTALLATION REQUIREMENTS (Continued)

b. Outline and Mounting Dimensions

- (1) AN/URC-35 Figure 2-41
- (2) C-3697/URC Figure 2-42
- (3) PP-4629/URC-35 Figure 2-43
- (4) CU-937/UR Figure 2-36

c. Grounding Specification - All bonding and grounding to be in accordance with Table 2-20 Item No. 6.

2.29 CABLE DIAGRAM AND CONNECTION DETAILS

a. Elementary Connections - Figure 2-44

b. Electronics Installation and Maintenance Standards - To be in accordance with Table 2-20 Item No. 7.

c. Security Requirement - To be in accordance with Table 2-20 Item No. 8.

2.30 FIELD CHANGE REQUIREMENT - None

ORIGINAL

| ITEM NO. | NAVSHIPS NO. DRAWING NO. MIL. STD. NO. | TITLE |
|----------|--|---|
| 1 | 0967-289-5010 | Technical Manual for Radio Transceiver AN/URC-35 |
| 2 | *RE-D-2696364(A) | AN/URC-35 Interconnecting and Cabling Diagram |
| 3 | *RE-D-2696368(A) | AN/URC-35 Outline and Mounting Dimensions |
| 4 | *RE-D-2696369(A) | C-3697/URC Outline and Mounting Dimensions |
| 5 | *RE-D-2696370 | PP-4679/URC-35 Outline and Mounting Dimension |
| 6 | Mil. Std. 1310A (NAVY) | Shipboard Bonding and Grounding Methods for Electromagnetic Compatibility |
| 7 | 0967-000-0000 | Electronic Installation and Maintenance Books |
| 8 | NAVSHIPSINST. 05510.33B | Installation Criteria for Shipboard Secure Electrical Information Processing System |
| 9 | 0981-052-8090 | Data Pertaining to Electrical Shipboard Cable |

*These plans are not essential for installation but if available use as reference.

TABLE OF TECHNICAL PUBLICATIONS

TABLE 2-20

RADIO TRANSCEIVERS

NAVSHIPS 0967 - 306 - 1010

TABLE 2-20

2-83

RADIO TRANSCIVERS

NAVSHIPS 0967-306-1010

TABLE 2-21/ 2-22

ORIGINAL

| EQUIPMENT | VOLTAGE | CURRENT | POWER | REMARKS |
|----------------|--|---------------------|-----------|-------------------------------|
| AN/URC-35 | 115 VAC, 60, Hz Single Phase Or 27.5 VDC | 2.3 Amps. Normal | 375 Watts | |
| C-3697/URC | 28 V D C | | 10 Watts | Gets power from RT-618/URC |
| PP-4679/URC-35 | 115 VAC, 60 Hz, Single Phase | | 450 Watts | |

TABLE OF PRIMARY POWER REQUIREMENTS
TABLE 2-21

| EQUIPMENT | HEAT DISSIPATION | UNIT WEIGHT | REMARKS |
|-------------------|------------------|-------------|---------|
| AN/URC-35 (Total) | 300 Watts | 186 Lbs. | |
| C-3697/URC | 8 Watts | 5-3/4 Lbs. | |
| PP-4679/URC-35 | 400 Watts | 32 Lbs. | |

TABLE OF MISCELLANEOUS DATA
TABLE 2-22

| J1 ANT. COUPLER CU-937/UR | 15 FOOT WHIP ANTENNA | 25 FOOT WHIP ANTENNA | 35 FOOT WHIP ANTENNA |
|---------------------------------|-------------------------|-------------------------|-------------------------|
| J1-Z | No Connections | No Connection | No Connection |
| J1-Y | No Connection | TB2-6B | No Connection |
| J1-S | No Connection | No Connection | No Connection |
| J1-P | TB1-1A | No Connection | No Connection |
| J1-a | TB1-2A | TB1-1A | TB1-1A |
| J1-R | TB1-3A | TB1-2A | TB1-2A |
| J1-T | TB1-7A | TB1-6A | TB1-5A |
| J1-U | TB1-10A | No Connection | TB1-6A |
| J1-V | TB1-11A | TB2-1B | TB1-7A |
| J1-X | No Connection | TB1-9A | TB1-8A |
| J1-W | TB1-12A | TB2-7B | TB2-2A |
| J1-M | TB3-3A | TB3-3A | TB3-3A |
| J1-J | TB3-4A | TB3-4A | TB3-4A |
| J1-G | TB2-8A | TB2-8A | TB2-8A |
| J1-K | TB3-2A | TB3-2A | TB3-2A |
| J1-L | TB3-2A | TB3-2A | TB3-2A |
| J1-C | TB2-9A | TB2-9A | TB2-9A |
| J1-N | TB3-1A | TB3-1A | TB3-1A |
| J1-B | TB2-12A | TB2-12A | TB2-12A |
| J1-A | TB2-11A | TB2-11A | TB2-11A |
| J1-D | TB2-10A | TB2-10A | TB2-10A |
| J1-H | TB3-4A | TB3-4A | TB3-4A |

CONNECTING CABLE FROM CU-937/UR TO CONNECTING BOX TERMINAL
BOARD CONNECTIONS

TABLE 2-23

TABLE 2- 24

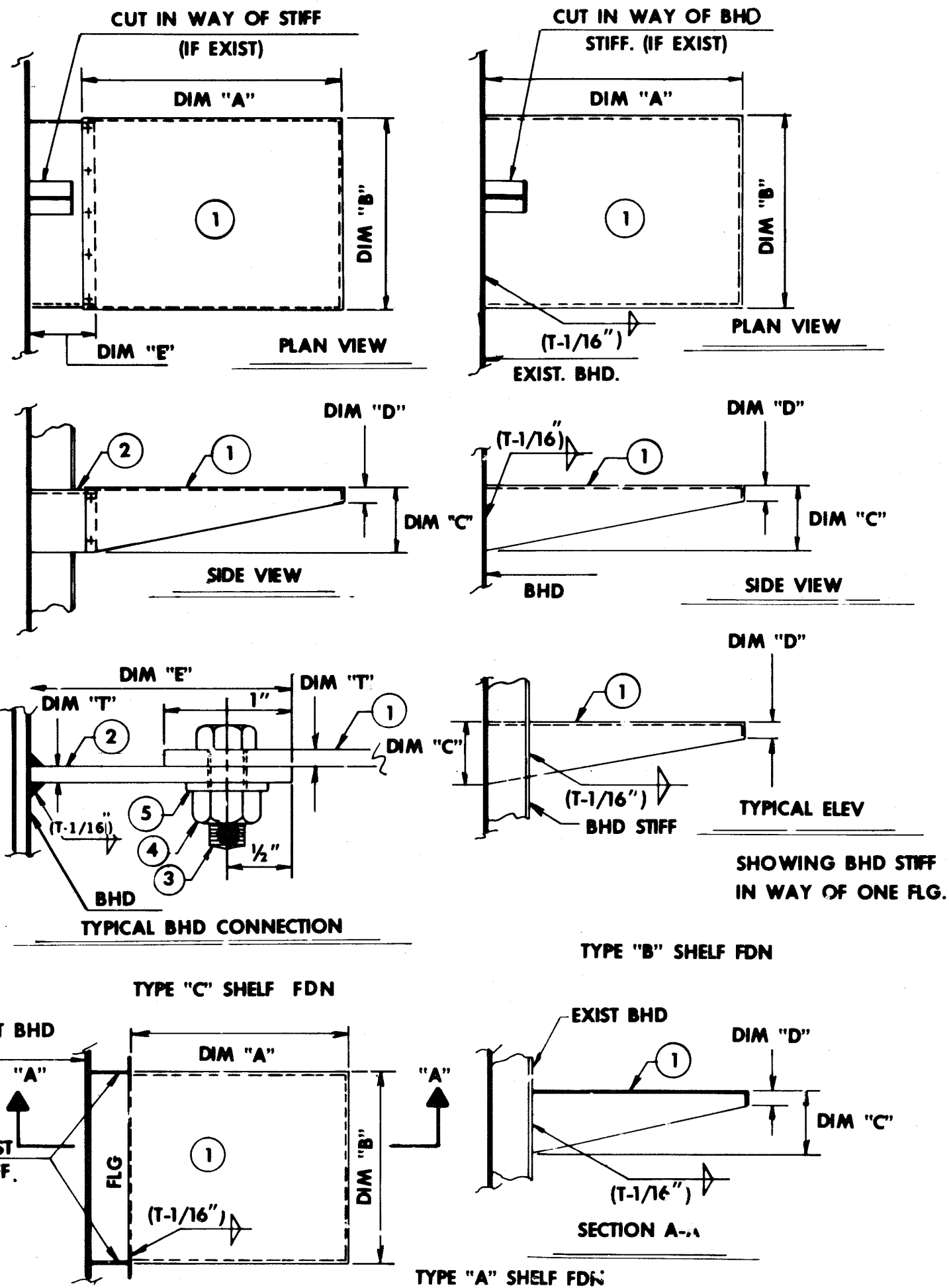
NAVSHIPS 0967- 306- 1010

RADIO TRANSCEIVERS

| 15 FOOT WHIP ANTENNA | | 25 FOOT WHIP ANTENNA | | 35 FOOT WHIP ANTENNA | |
|----------------------|--------|----------------------|---------|----------------------|---------|
| FROM | TO | FROM | TO | FROM | TO |
| TB1-3B | TB1-4B | TB1-2B | TB1-3B | TB1-2A | TB1-3A |
| TB1-4B | TB1-5B | TB1-3B | TB1-4B | TB1-3A | TB1-4A |
| TB1-5B | TB1-6B | TB1-4B | TB1-5B | TB1-7A | TB1-10A |
| TB1-7B | TB1-8B | TB1-6B | TB1-7B | TB1-8A | TB1-9A |
| TB1-8B | TB1-9B | TB1-8B | TB2-1A | TB1-10A | TB1-11A |
| TB1-11B | TB2-3A | TB2-1A | TB2-2A | TB1-11A | TB1-12A |
| TB2-3A | TB2-5A | TB2-2A | TB2-3A | TB1-12A | TB2-1A |
| TB2-5A | TB2-6A | TB2-3A | TB2-4A | TB2-1A | TB2-5A |
| TB2-6A | TB2-7A | TB2-4A | TB2-5A | TB2-2A | TB2-3A |
| TB1-12A | TB2-1A | TB1-9B | TB1-10B | TB2-3A | TB2-4A |
| TB2-1A | TB2-2A | TB1-10B | TB1-11B | TB2-5A | TB2-6A |
| TB2-2A | TB2-4A | TB1-11B | TB1-12B | TB2-6A | TB2-7A |

CONNECTION BOX TERMINAL BOARDS ANTENNA PROGRAMMING

TABLE 2-24



| LIST OF MATERIAL QUANTITIES FOR ONE FDN | | | | | |
|---|----------------------|-----------|-----------|-------------|----------|
| PC NO. | NAME | NO. REQ'D | MATERIAL | M'TL SPEC. | REMARKS |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "A" |
| 1 | PLT (SEE NOTE #2) | 1 | MED. STL | MIL-S-16113 | TYPE "B" |
| 1 | PLT (SEE NOTE #2) | 1 | AL-61S-T6 | QQ-A-327 | |
| 2 | PLT (SEE NOTE #2) | 1 | MED STL | MIL-S-16113 | |
| 3 | 1/4" HEX H.D. BOLT | AS REQ'D | C.R.S. | MIL-B-857 | TYPE "C" |
| 4 | 1/4" HEX NUT | | | MIL-B-857 | |
| 5 | 1/4" DIA-FLAT WASHER | | | MIL-S-854 | |
| | | | | | |
| | | | | | |

NOTES:

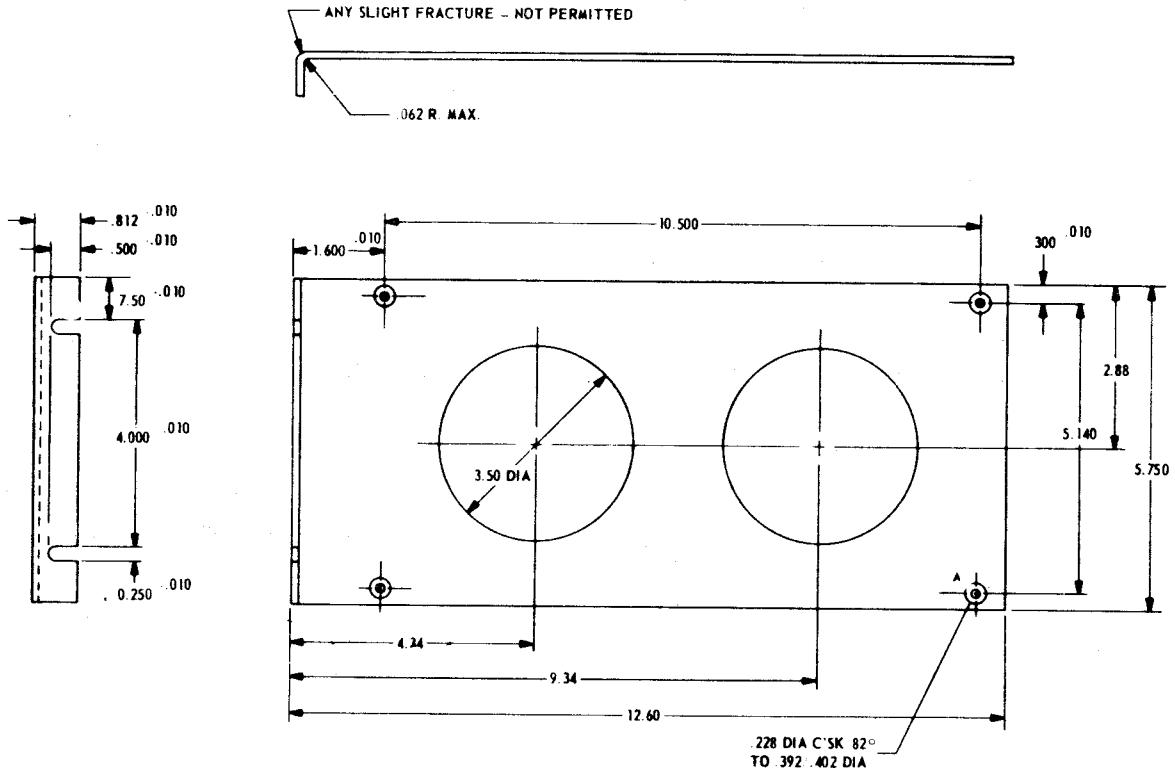
- Thickness (Dim. "T" of material to be furnished on location).
- All variable dimensions and types of foundation to be specified on location.
- Foundation for AN/URC-35 to be as follows:
 - Plating (7.65 #Plt. steel), 1/4" thick aluminum.
 - Type "B" shelf foundation.
 - For installation with stiffener in way of unit: Dimension "A" = 26" + depth of stiffener, dimension "B" = 20", dimension "C" = 9", dimension "D" = 1 1/2".
 - For installation with no stiffener interference: Dimension "A" = 26", dimension "B" = 20", dimension "C" = 9", dimension "D" = 1 1/2".
- Foundation for C-3697-URC-35 to be as follows:
 - Plating (7.65 #Plat. steel), 1/4" thick aluminum.
 - Type "B" shelf foundation.
 - For installation with stiffener in way of unit: Dimension "A" = 26" + depth of stiffener, dimension "B" = 20", dimension "C" = 9", dimension "D" = 1 1/2".
 - For installation with no stiffener interference: Dimension "A" = 26", dimension "B" = 20", dimension "C" = 9", dimension "D" = 1 1/2".
- Foundation for PP-4679/URC to be as follows:
 - Plating (7.65 #Plt. Steel), 1/4" thick aluminum.
 - Type "B" shelf foundation.
 - For installation with stiffener in way of unit: Dimension "A" = 12" + depth of stiffener, dimension "B" = 15", dimension "C" = 4", dimension "D" = 1 1/2".
 - For installation with no stiffener interference: Dimension "A" = 12", dimension "B" = 15", dimension "C" = 4", dimension "D" = 1 1/2".
- Size and location of mounting bolts to be taken from equipment.

AN/URC-35, C-3697/URC-35, AND PP-4679/URC-35

TYPICAL FOUNDATION DETAILS

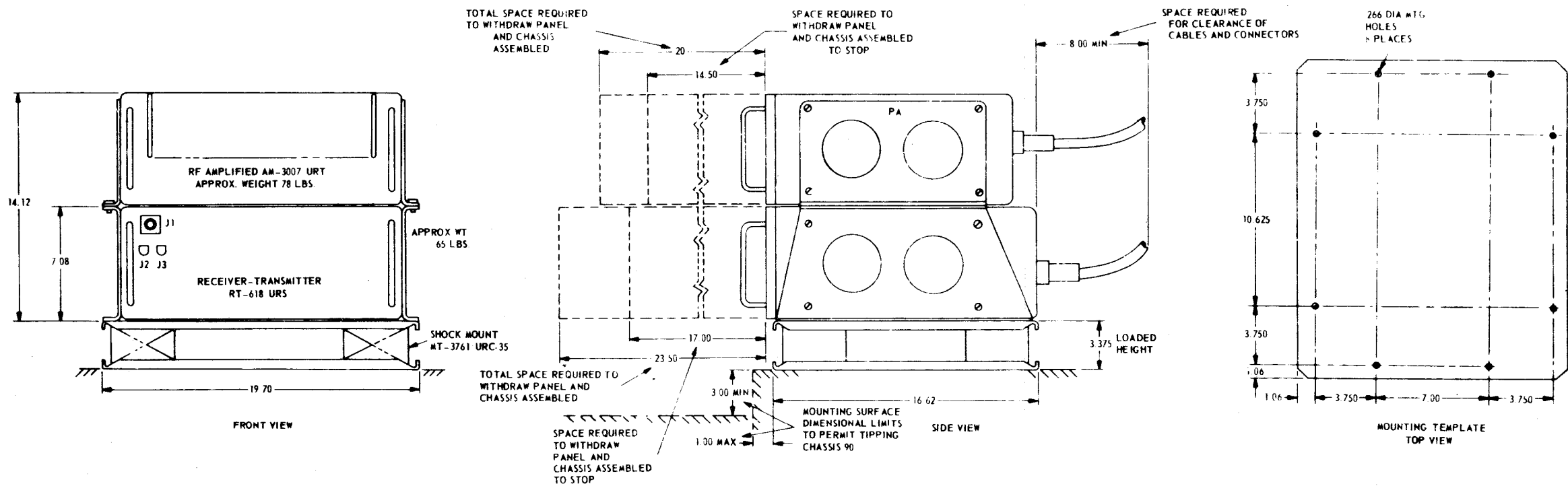
FIGURE 2-39

ORIGINAL

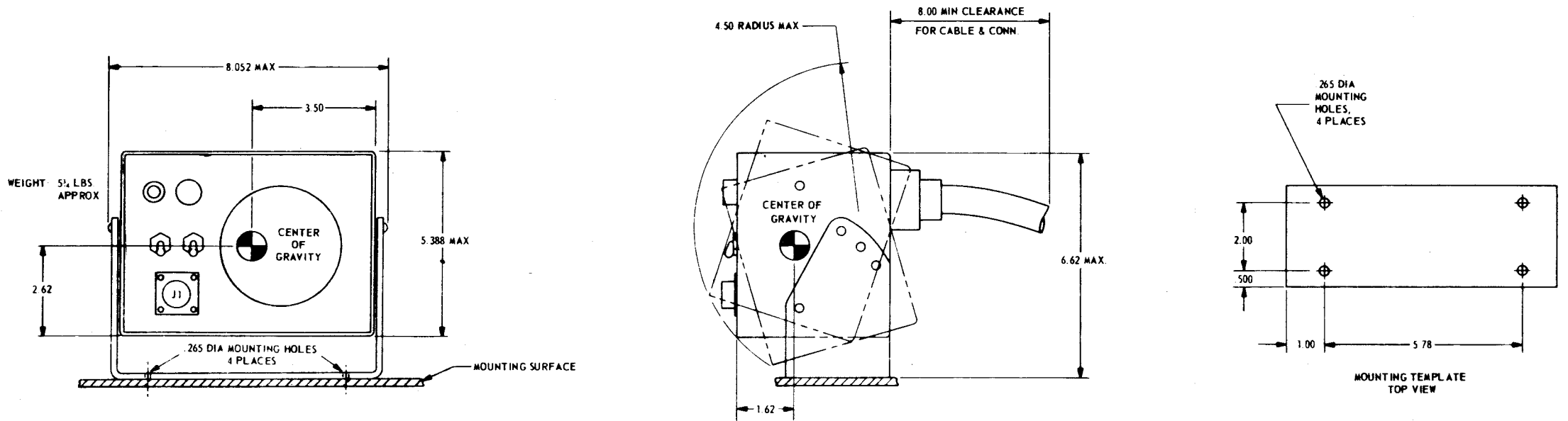


MOUNTING BRACKET FOR RACK MOUNTING
(4) REQ'D

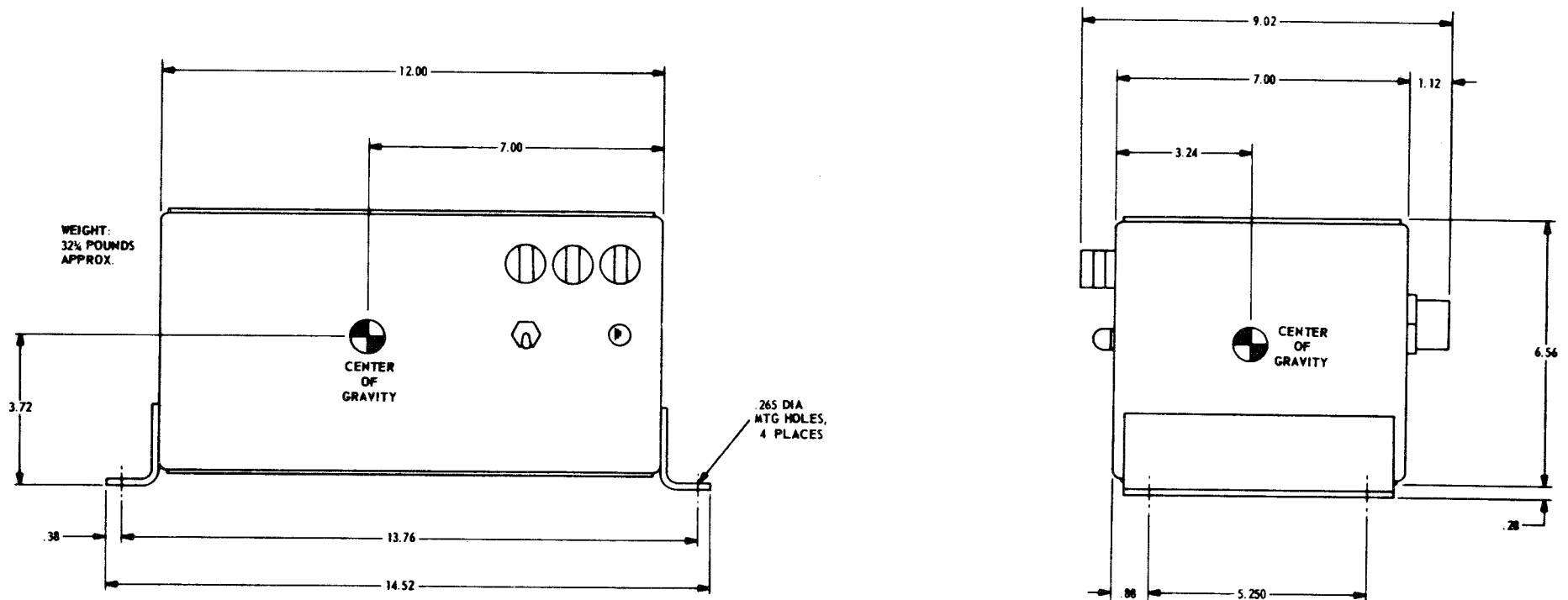
**AN/URC-35
RACK MOUNTING BRACKET DETAILS
FIGURE 2-40**



**AN/URC-35
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-41**



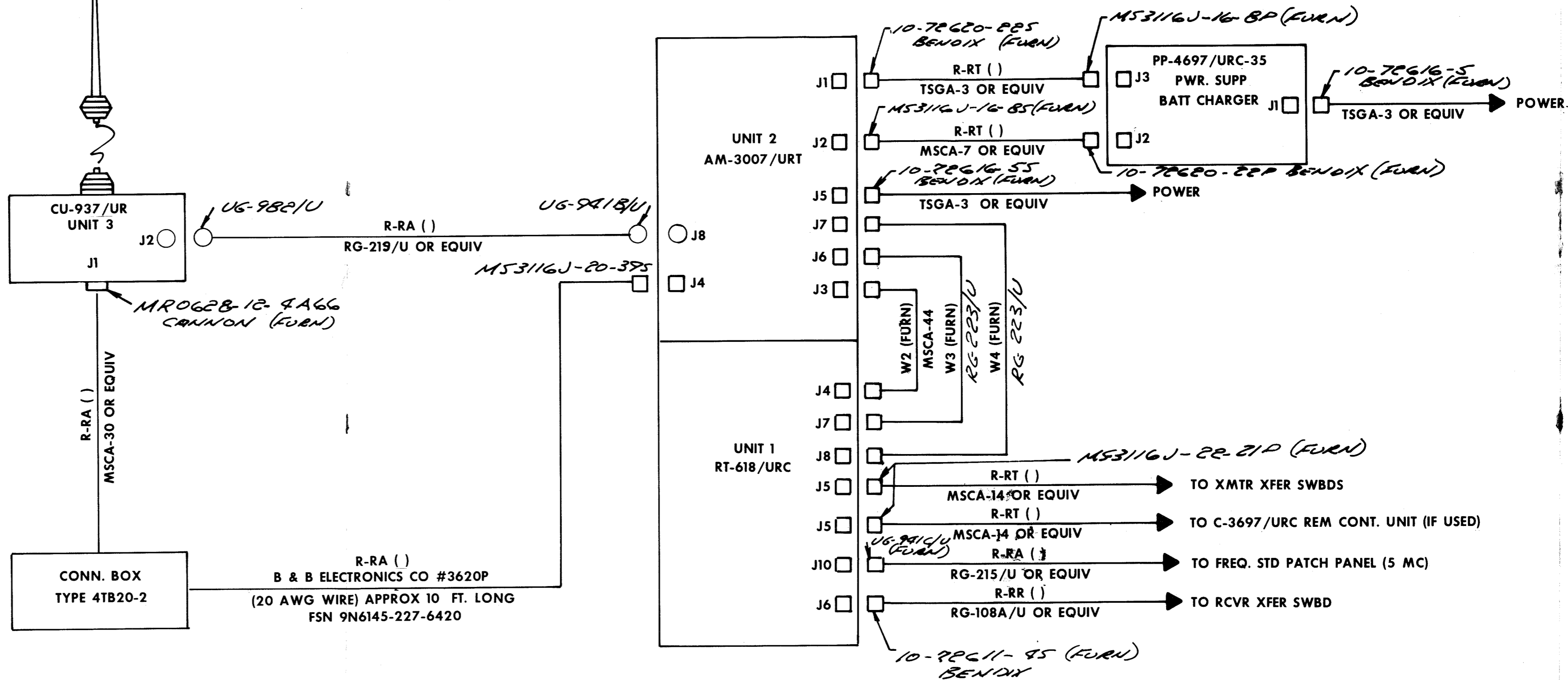
**C-3697/URC-35
OUTLINE AND MOUNTING DIMENSIONS
FIGURE 2-42**



PP-4679/URC-35
 OUTLINE AND MOUNTING DIMENSIONS
 FIGURE 2-43

RADIO TRANSCEIVERS

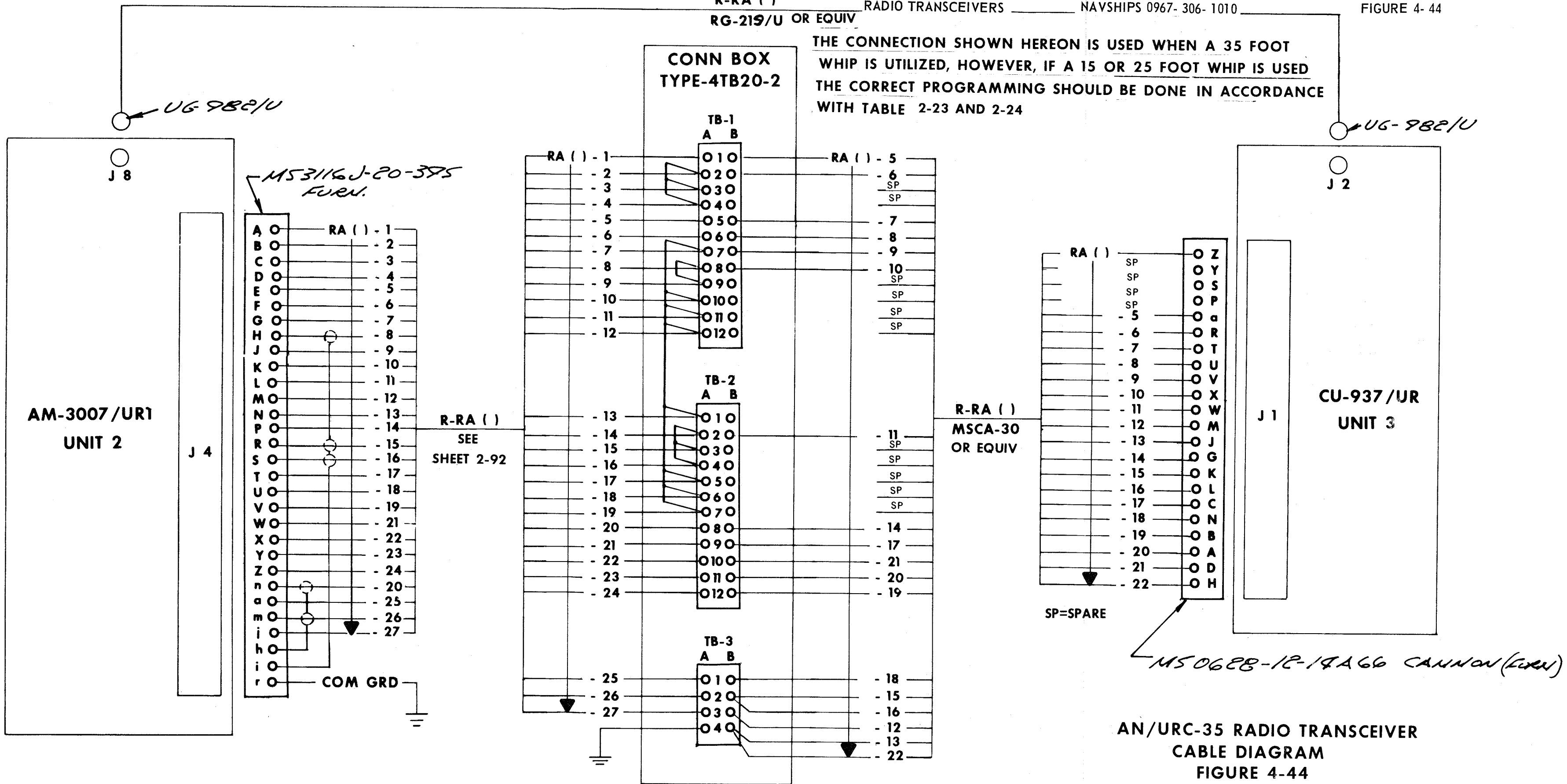
A 35 FOOT WHIP ANTENNA IS PREFERRED, ALTERNATELY A 15 OR 25 FOOT WHIP MAY BE USED WITH APPROPRIATE PROGRAMMING OF CU-937/UR, VIA CONN BOX TYPE 4TB20-2.



AN/URC-35 RADIO TRANSCEIVER CABLE DIAGRAM FIGURE 2-44 (CONTINUED)

ORIGINAL

THE CONNECTION SHOWN HEREON IS USED WHEN A 35 FOOT WHIP IS UTILIZED, HOWEVER, IF A 15 OR 25 FOOT WHIP IS USED THE CORRECT PROGRAMMING SHOULD BE DONE IN ACCORDANCE WITH TABLE 2-23 AND 2-24



AN/URC-35 RADIO TRANSCEIVER
CABLE DIAGRAM
FIGURE 4-44
(CONTINUED)

AN/URC-35
RADIO TRANSCEIVER
CABLE DIAGRAM
FIGURE 2-44

