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INSTALLATION INSTRUCTIONS

for

RADIO TRANSMITTER
MODELS GPT-10K AND GPT-40K



THE TECHNICAL MATERIEL CORPORATION

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★
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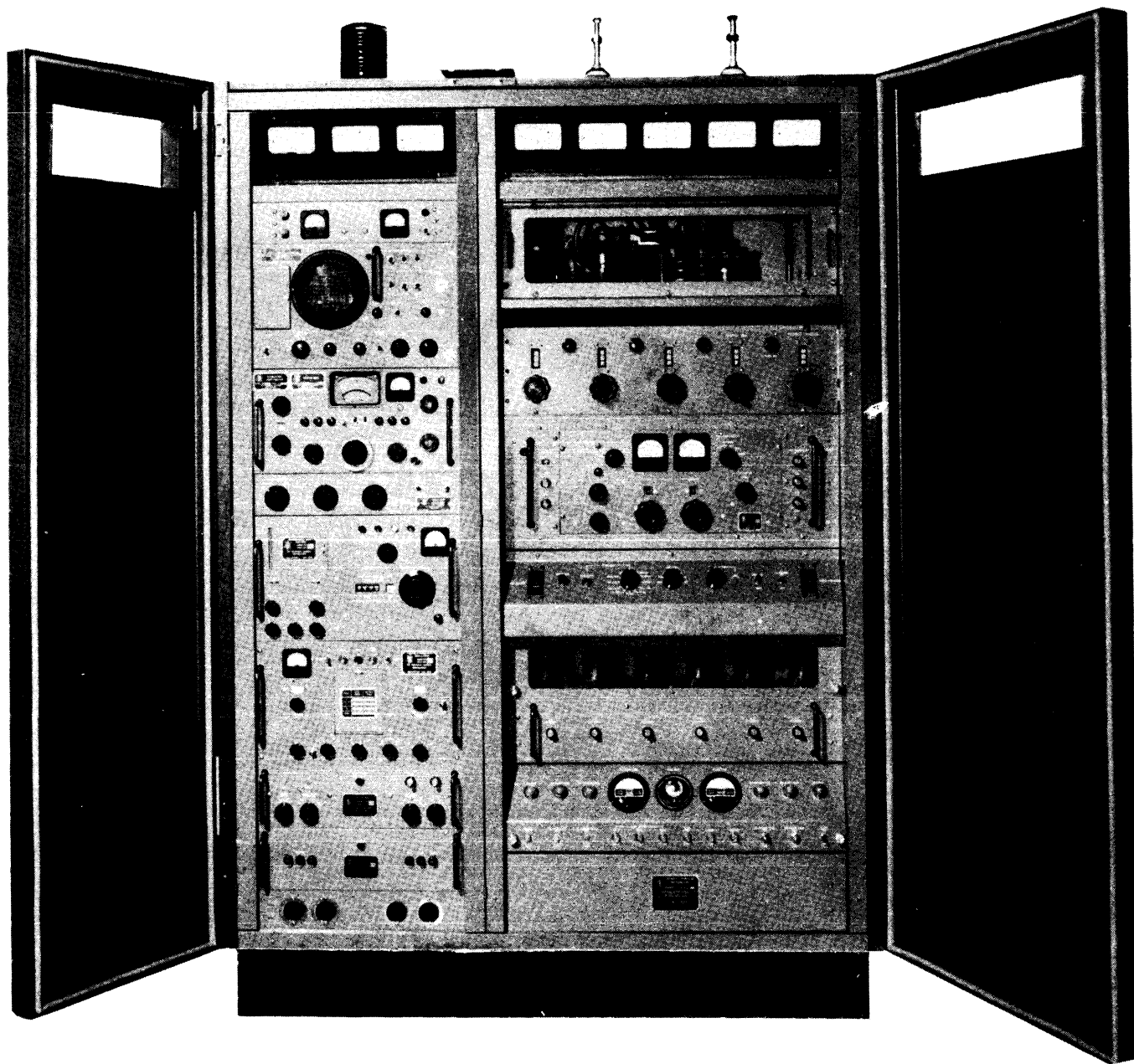


Figure 1-1-a. Front View, GPT-10K (Non-Synthesized)

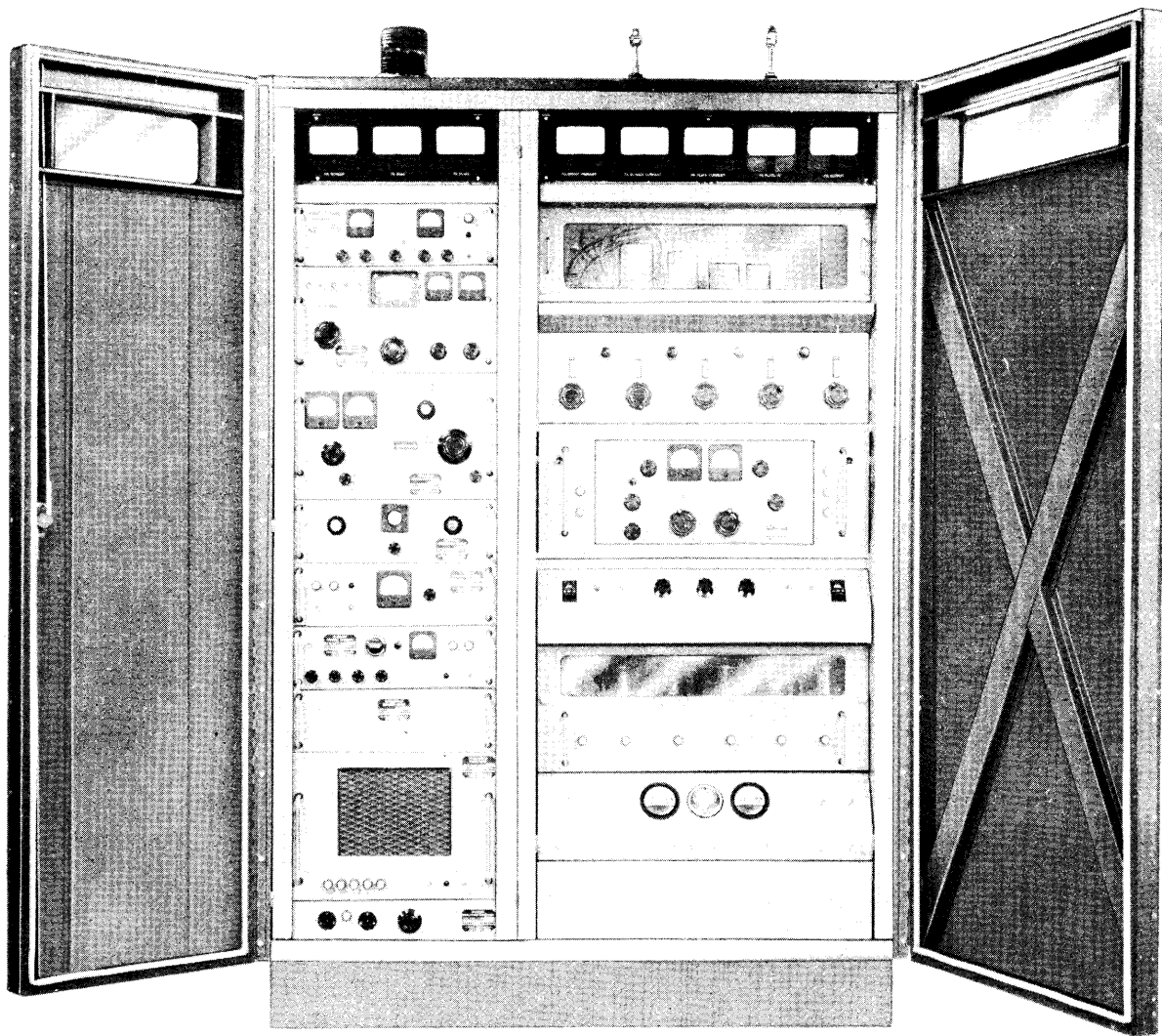


Figure 1-1-b. Front View, GPT-10K (Synthesized)

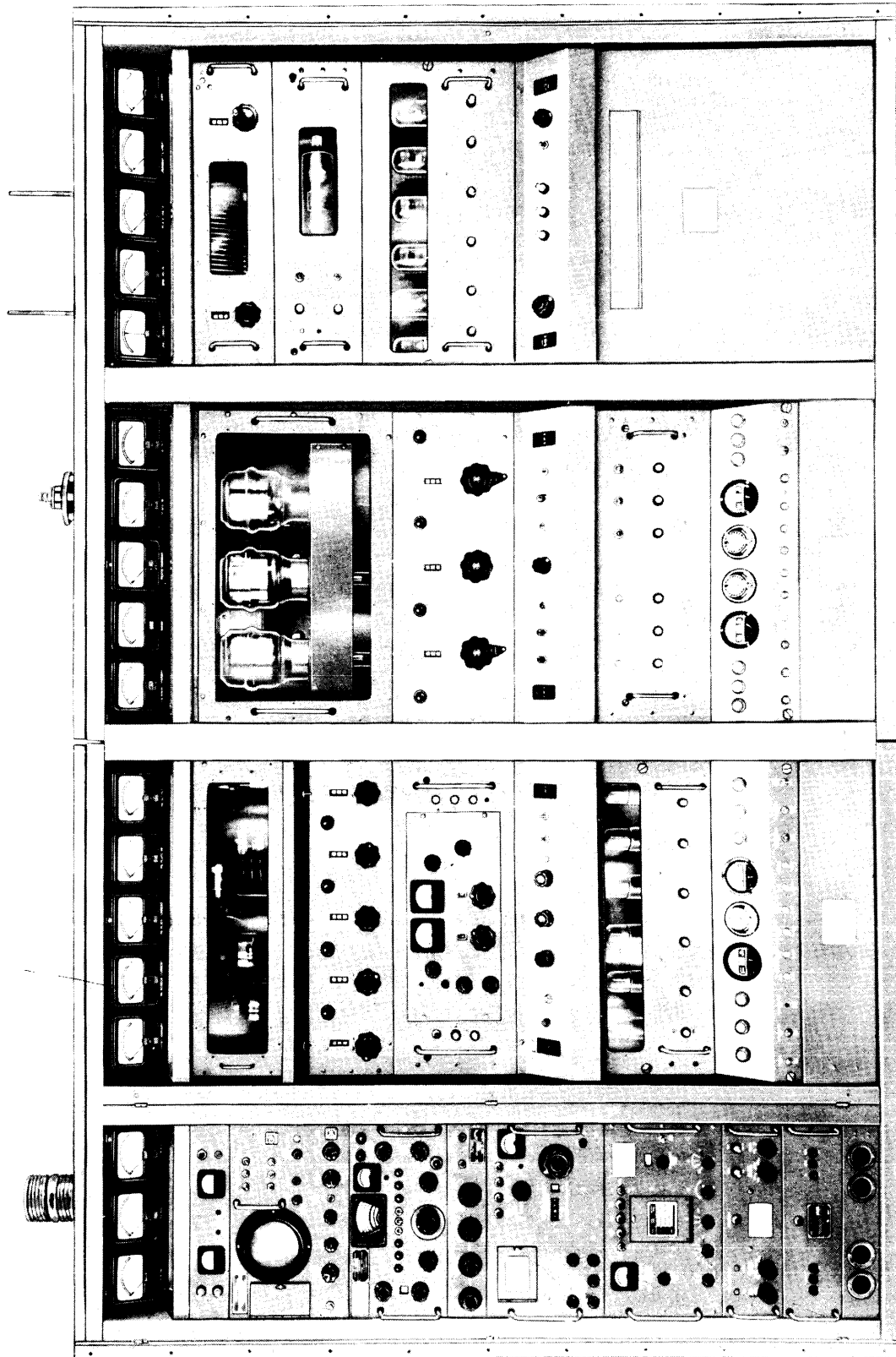


Figure 1-1-c. Front View, GPT-40K (Non-Synthesized)

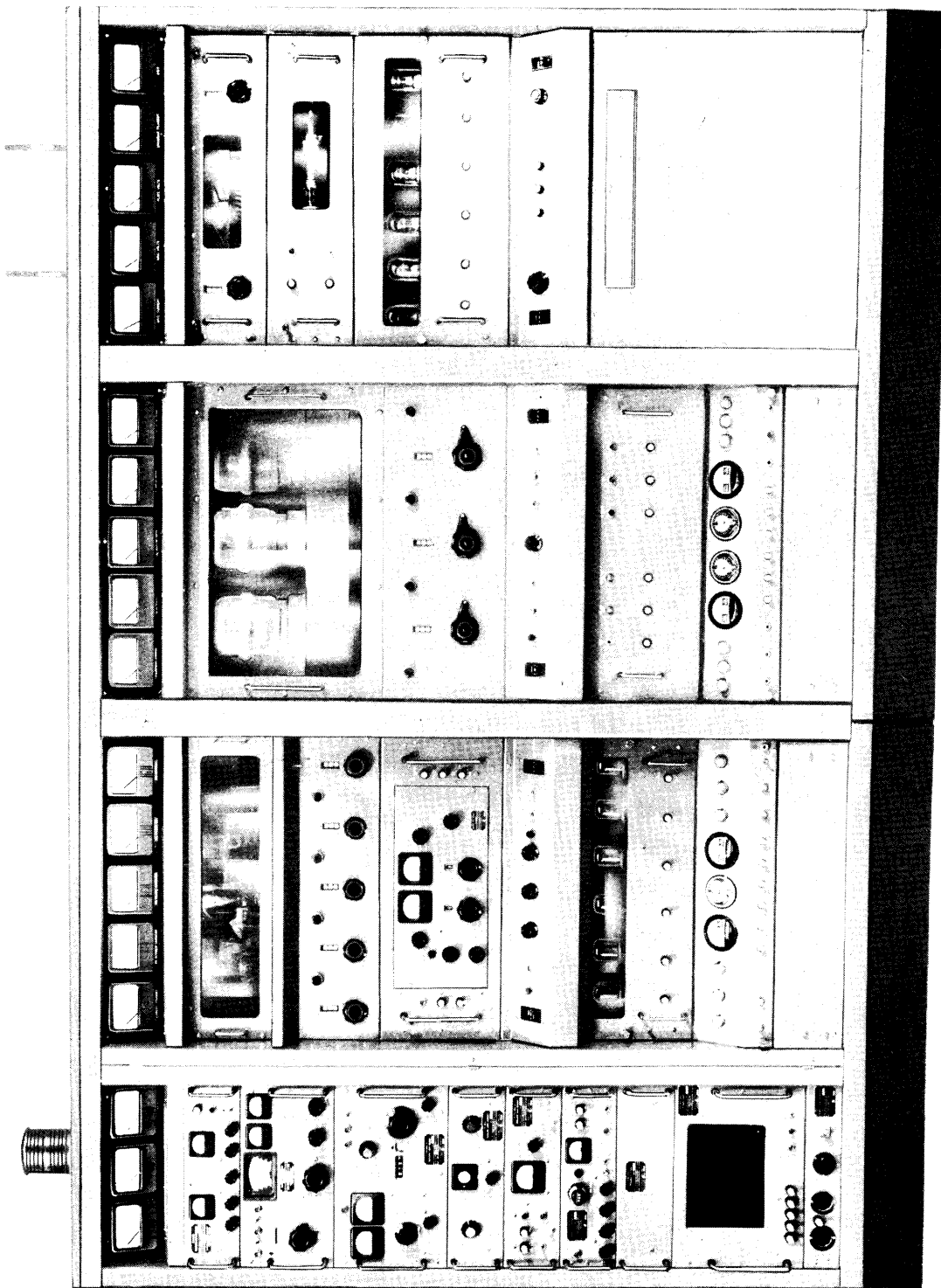


Figure 1-1-1-d. Front View, GPT-40K (Synthesized)

SECTION 1 GENERAL DESCRIPTION

Technical Materiel Corporation's general purpose transmitters, models GPT-10K and GPT-40K, fall into four broad categories, namely;

- a. 10-kilowatt, PEP, transmitters equipped with conventional exciter and test units.
- b. 10-kilowatt, PEP, transmitters equipped with synthesized exciter and test units.
- c. 40-kilowatt, PEP, transmitters equipped with conventional exciter and test units.
- d. 40-kilowatt, PEP, transmitters equipped with synthesized exciter and test units.

Figures 1-1-a, 1-1-b, 1-1-c, and 1-1-d are front views of these transmitters. Isometric diagrams, figures 1-2-a, 1-2-b, and 1-2-c, show the transmitters modular structure (figure 1-2-c being the isometric diagram only of the third and fourth frames of the GPT-40K). The synthesized GPT-40K is made up of a synthesized GPT-10K driver shown in figure 1-2-b and the two GPT-40K frames of figure 1-2-c. The non-synthesized GPT-40K is made up of a non-synthesized GPT-10K driver shown in figure 1-2-a and the two GPT-40K frames

of figure 1-2-c. Block diagrams of the GPT-10K and GPT-40K are presented on figures 1-3-a, 1-3-b, 1-3-c, and 1-3-d.

Installation of these transmitters is simplified because:

- a. the two 10-kilowatt transmitters have (1) identical exciter frames and (2) identical main frames.
- b. the two 40-kilowatt transmitters have (1) identical exciter frames, (2) identical driver and IPA frames, (3) identical PA frames, and (4) identical power supply frames.
- c. the two 10- and two 40-kilowatt transmitters have (1) identical exciter frames and (2) identical main versus driver and IPA frames.

The following instructions are abstracted from TMS's technical manuals which cover general description, installation, operation, theory, trouble shooting, maintenance, spare parts, and present complete drawings of the GPT-10K and GPT-40K transmitters. These manuals should be consulted where the abridged installation instructions given below are insufficient to satisfy a given situation.

BASIC TRANSMITTER COMPONENTS GPT-10K

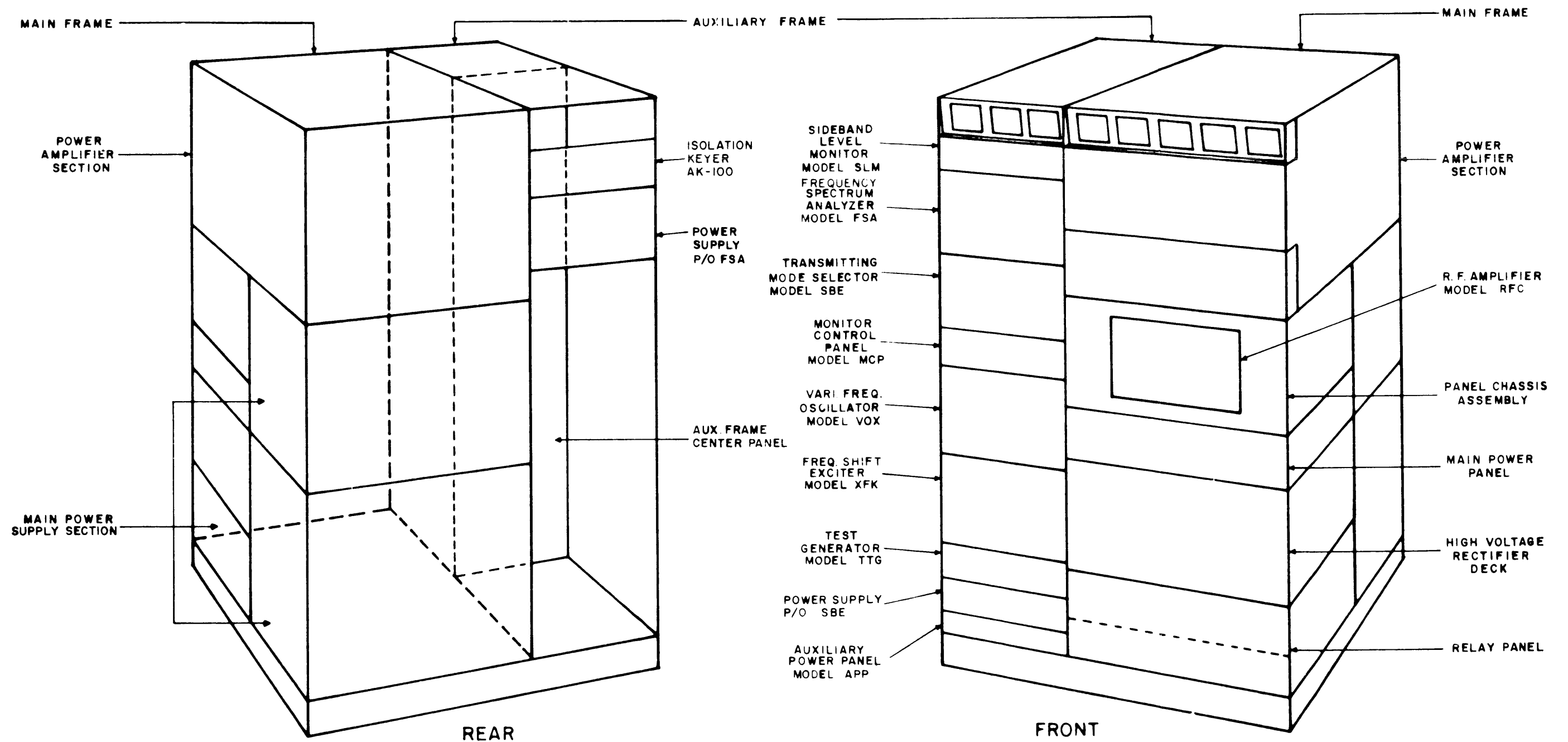


Figure 1-2-a. Isometric Diagram, GPT-10K
(Non-Synthesized)

BASIC TRANSMITTER COMPONENTS GPT-10K

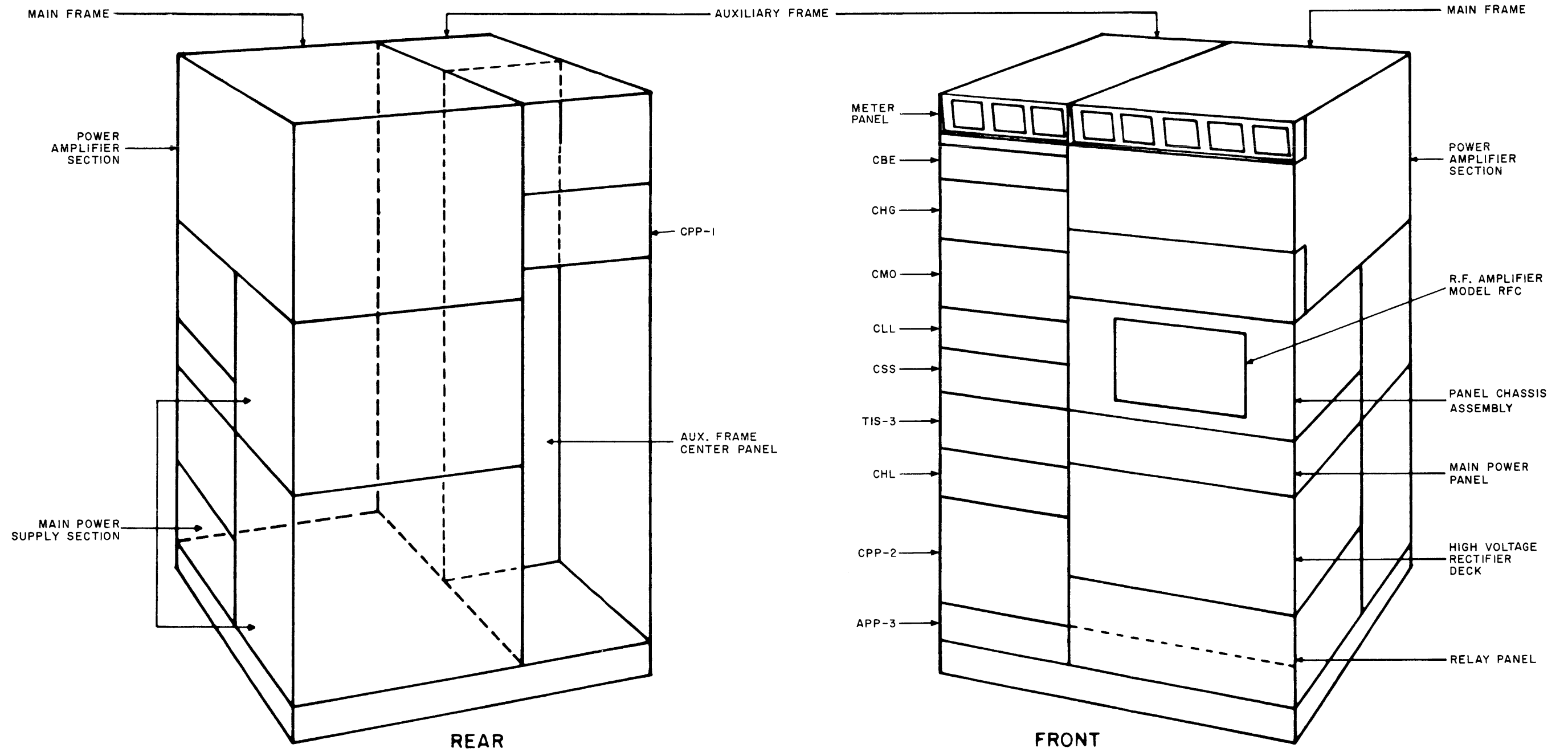
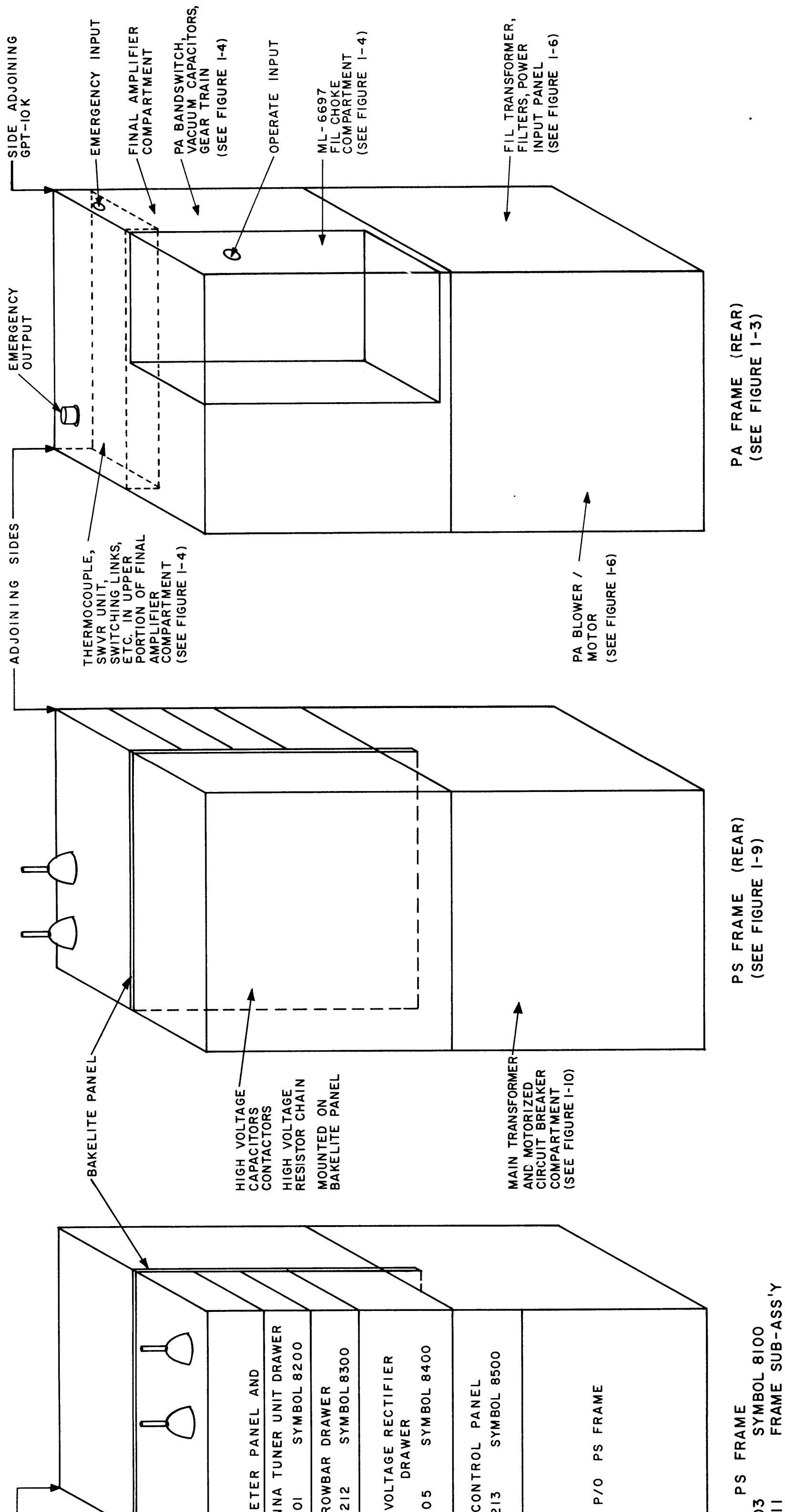


Figure 1-2-b. Isometric Diagram, GPT-10K
(Synthesized)



PS FRAME (REAR)
(SEE FIGURE 1-9)

PA FRAME (REAR)
(SEE FIGURE 1-3)

Figure 1-2-c. Isometric Diagram, GPT-40K
(Third and Fourth Frames Only)

Original

1-7-1-8

SIDE ADJOINING
GPT-10K (MOD)

ADJOINING SIDES

MIL-6697
FIL CHOKE
COMPARTMENT

METER PANEL
AM-109 SYMBOL 7200

PA SECTION
AX-209 SYMBOL 7300

P/O PA SECTION

MAIN CONTROL PANEL
AX-210 SYMBOL 7400

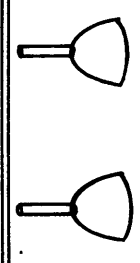
BIAS SUPPLY DRAWER
AP-104 SYMBOL 7500

RELAY PANEL
AR-116 SYMBOL 7600

PA FRAME
AP-102 SYMBOL 7100
AX-208 FRAME SUB-ASS'Y

HIG
CAP
CON
HIG
RES
MO
BA

MA
AND
CIR
CON
(SE



METER PANEL AND

ANTENNA TUNER UNIT DRAWER
AT-101 SYMBOL 8200

CROWBAR DRAWER
AX-212 SYMBOL 8300

HIGH VOLTAGE RECTIFIER
DRAWER
AP-105 SYMBOL 8400

PS CONTROL PANEL
AX-213 SYMBOL 8500

P/O PS FRAME

PS FRAME
AP-103 SYMBOL 8100
AX-211 FRAME SUB-ASS'Y

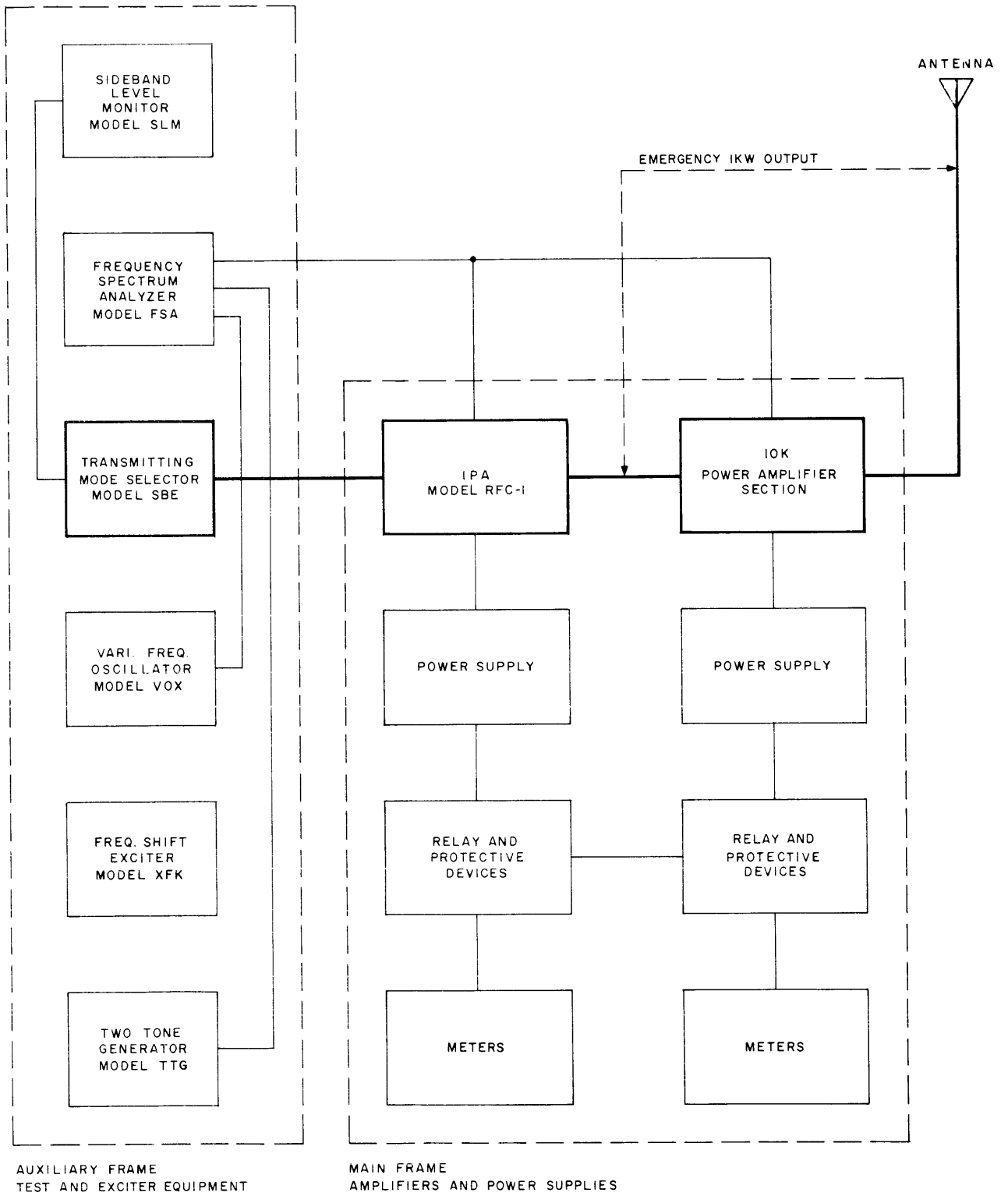


Figure 1-3-a. Block Diagram, GPT-10K (Non-Synthesized)

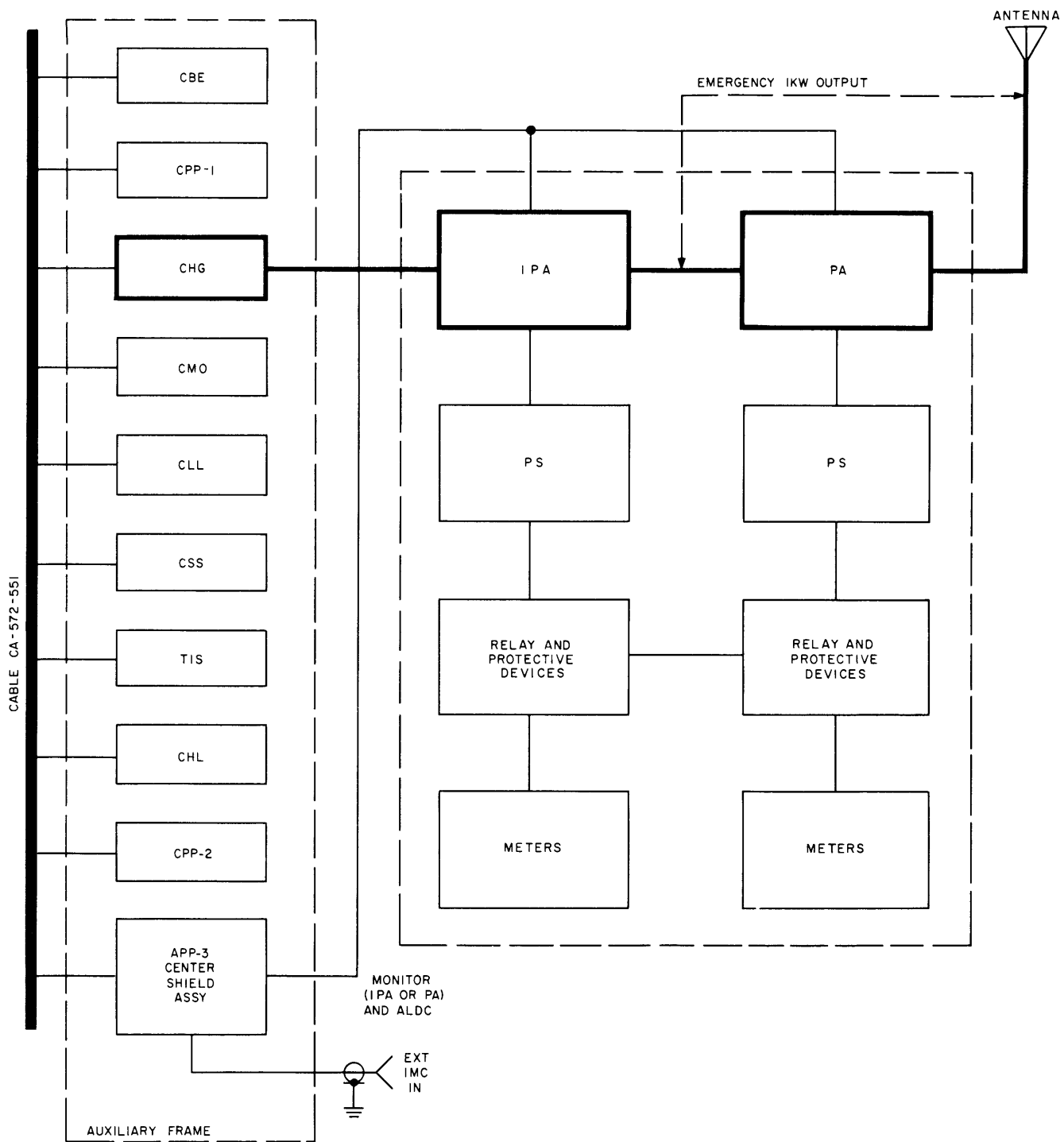


Figure 1-3-b. Block Diagram, GPT-10K (Synthesized)

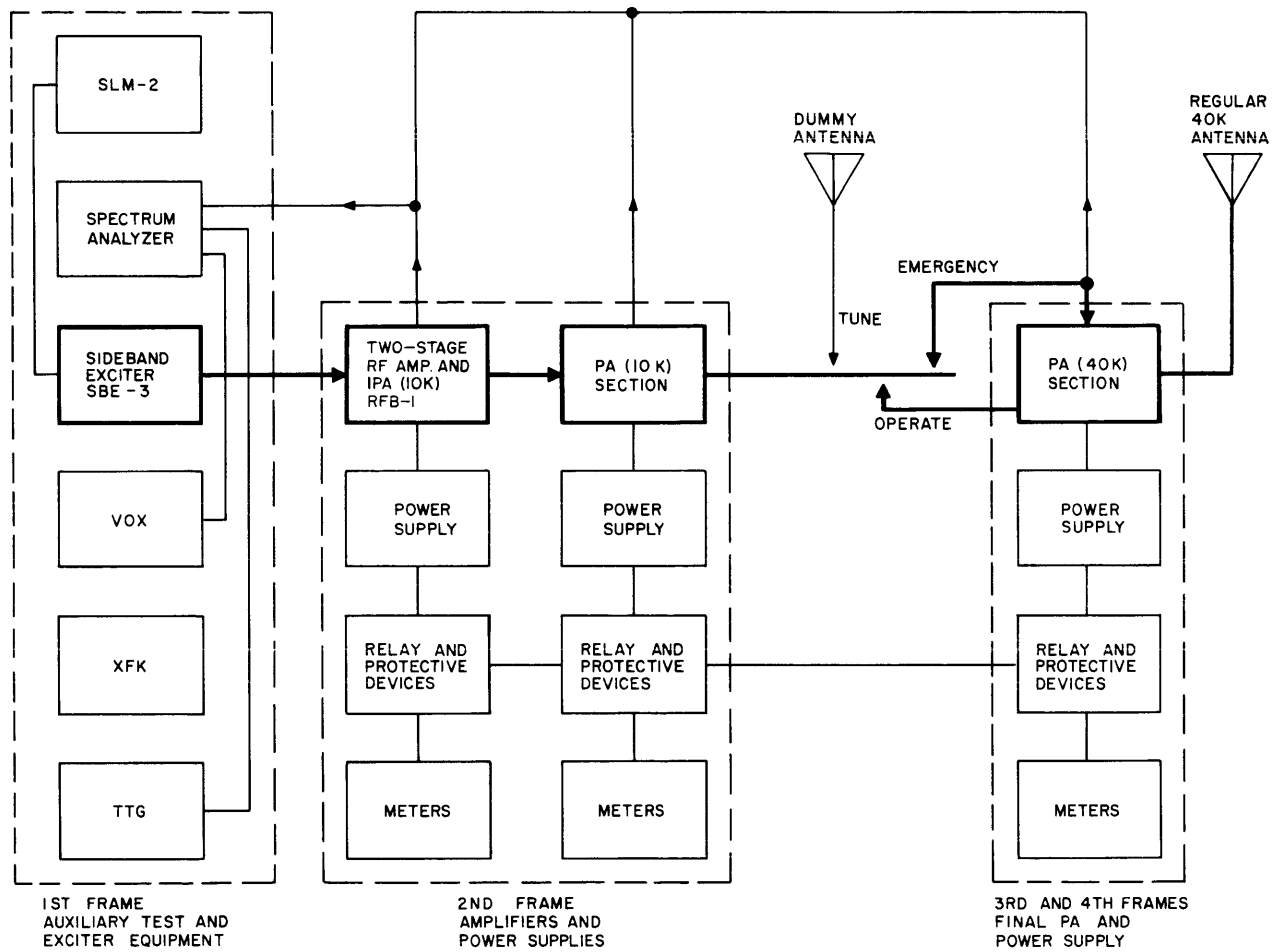


Figure 1-3-c. Block Diagram, GPT-40K (Non-Synthesized)

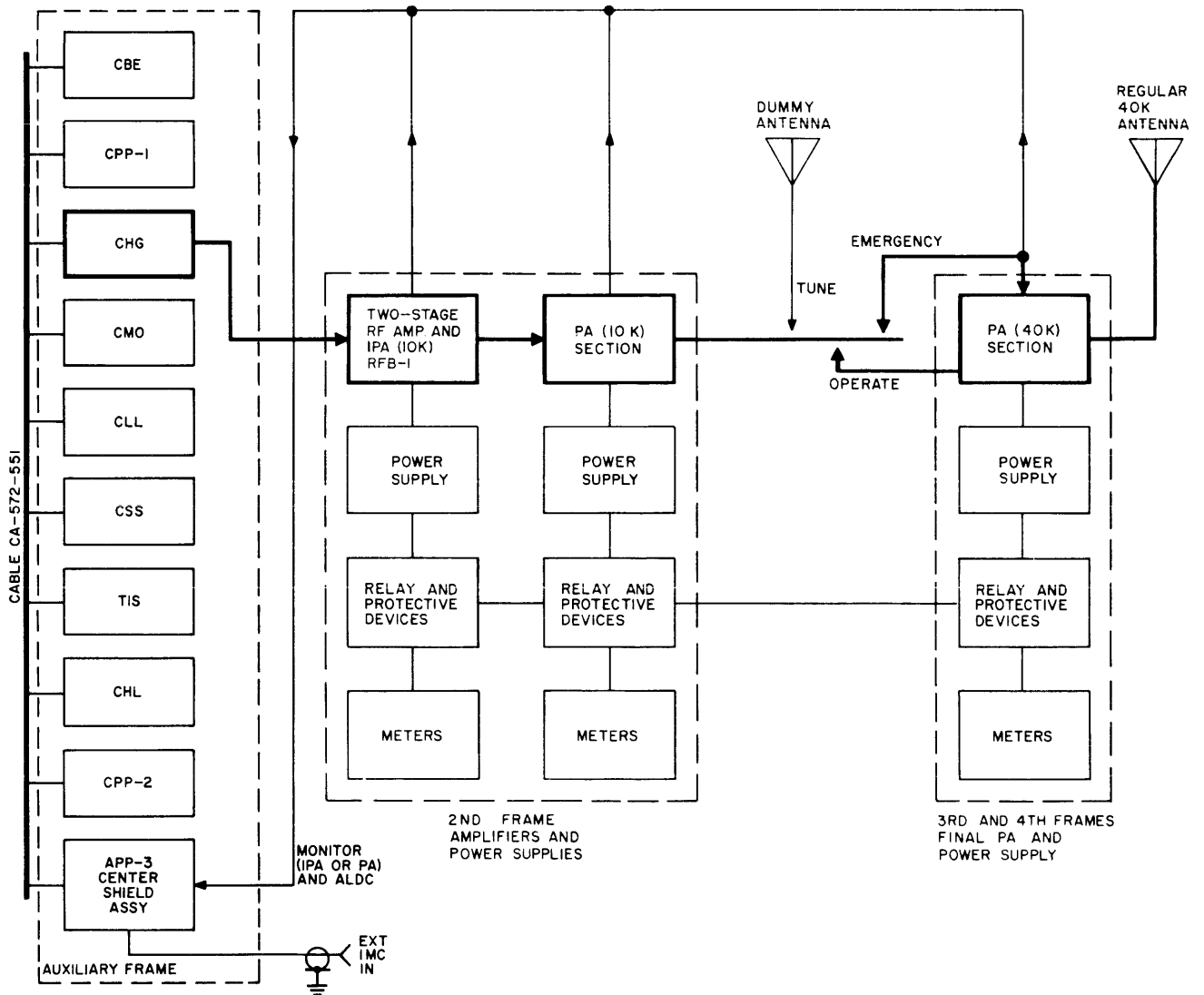


Figure 1-3-d. Block Diagram, GPT-40K (Synthesized)

SECTION 2

INSTALLATION OF GPT-10K

2-1. GENERAL.

Tables 2-1, 2-2, 2-3-a, 2-3-b, 2-3-c present information pertaining to the GPT-10K as follows:

<u>Table</u>	<u>Shipping and Installation Data</u>
2-1	Equipment supplied and physical characteristics of major GPT-10K units. Units designated by symbol (SX) are supplied only with synthesized GPT-10Ks; units designated by symbol (N/S/X) are supplied only with non-synthesized GPT-10Ks; units without qualification symbols are supplied with both synthesized and non-synthesized GPT-10Ks.
2-2	Equipment NOT supplied with GPT-10K.
2-3-a	Crating data for non-synthesized GPT-10K. Observe that GPT-10K (non-synthesized) is shipped in 13 boxes. Box 13 contains assorted loose items as detailed in Table 2-3-b.
2-3-c	Crating data for synthesized GPT-10K. Observe that GPT-10K (synthesized) is shipped in 12 boxes. Box 12 contains assorted loose items as detailed in Table 2-3-b.
2-3-b	List of assorted loose items contained in boxes 13 and 12 of non-synthesized and synthesized GPT-10Ks respectively.

When uncrating equipment, carefully inspect for damage. If any damage is found notify the carrier or supply department immediately. Inspect all packing material for parts shipped as loose items; loose items are packaged in case 12 or 13, and are listed in Table 2-3-b. Each package in case 12 or 13 is designated by the name of the assembly using its contents (top, main frame, auxiliary frame, frame to base, front/rear trim strip, transformer mounting, door latch stops, skins to frame, etc.). Case 12 or 13 also contains two complete instruction manuals which should be read and understood for proper installation and maintenance of the GPT-10K.

The contents of the 12 or 13 cases are packaged according to military specifications. The units are wrapped to avoid being scratched, placed in cartons, cushioned against shock, and wrapped and sealed with waterproof material within which the units are kept dry with a desiccant.

Exploded views of GPT-10K frame's structural components are shown in figure 2-1 (2 sheets). These views are presented to clarify assembly procedure given in following paragraphs 2-3 and 2-4.

As shown, the assemblies consists of two frames (main and auxiliary), a number of shields (top, sides, bottom, including front and back doors), and miscellaneous parts such as trim, door latches, insulators, a warning light, etc. These are stamped with an identifying number which serves as a callout in the following assembly procedure. A complete listing of these parts is given in the bill of materials found on figure 2-1, sheet 1. Generally, the structural parts are drilled and shaped so that they fit correctly in one position only. When the GPT-10K is to be modified as a driver for the GPT-40K, see Section 3 of these instructions.

2-2. PRODUCTION LINE CHECKOUT.

Before any GPT-10K is shipped, it has been assembled on the test floor and thoroughly checked against the manufacturer's test specifications. This procedure eliminates assembly line errors and guarantees that a GPT-10K shall fully satisfy all design requirements. After this thorough checkout, the GPT-10K is disassembled and packed for customer use. The packaging operation in turn, is such as to minimize troubles that may develop in transit.

2-3. LOCATION OF MAIN AND AUXILIARY FRAME ASSEMBLIES OF GPT-10K.

Before assembling the GPT-10K in its operating location, select a location that will provide a minimum clearance of 3 feet at the sides, 4 feet in the rear, 4-1/2 feet in the front, and approximately 1 foot overhead. Figure 2-1 shows two antenna outlet arrangements, one when the customer orders a TMA-10K meter box assembly and one when no such box is ordered. In either case a two-foot clearance is recommended, if practicable, between the transmitter's top cover and the ceiling that houses the transmitter.

The first step in the assembly of the GPT-10K is to place its base assembly properly, laying it level and bolted to the floor. Two types of base assemblies are available; shock mounting and standard base assembly. These are depicted in figure 2-3 which is an elaboration of the base assembly details of figure 2-2. Figure 2-2 illustrates numerous pertinent installation details. For example:

a. Two air filter locations

b. Access holes for 220-volt power input, 50/600 ohm unbalanced antenna feed line, and bowls for balanced antenna feed line

c. Other features detailed in following figures 2-3 and 2-4.

Figure 2-4 is an elaboration of the base shield details of figure 2-2. The four small holes designated B are used to hold the base shield to the base assembly during the initial process of assembling the remaining cabinet framework parts and accessories. The 10 holes designated A accommodate studs that anchor the cabinet framework to the base assembly; the 24 holes designated AA accommodate studs that anchor the cabinet framework to shock mounts. Thus, when the base assembly is used, only 10 studs are used; 3 along the left side, 3 along the right side, and 4 along the center channel (brace). These 10 studs bolt into 10 nuts welded into the base framework. When shock mounts are used, 24 studs are used; these are bolted into 24 nuts welded into the shock mounts. The four holes designated C afford clearance for bolts that anchor the main power transformer to the base framework. The nine holes designated D afford clearance for bolts that attach to shock mounts. Holes designated E affix cover plates to access holes in the base shield.

In order to power the GPT-10K conveniently, the base assembly should be placed over a conduit raceway. The presence of a common raceway between station units allows equipment in the GPT-10K to be used in conjunction with other units. Figure 2-4 illustrates access holes for incoming and outgoing power signal conductors. The external power requirements of the GPT-10K are given in Table 2-4.

The following paragraphs detail the complete GPT-10K assembly procedure.

2-4. ASSEMBLY OF GPT-10K.

Assembly of the GPT-10K is limited to serial numbers 197 and on, mainly because earlier serial numbers have already been assembled in the field. Figure 2-1, however, covers assembly details of both the later and the earlier models.

a. Preliminary

Before bolting the base framework, base shield, and cabinet framework together, pull power, signal and ground straps into place as follows:

1) The bolt designated X (figure 2-3) is connected to the main transmitter station ground. Two ground straps are provided as loose parts. One ground strap interconnects bolt X and the auxiliary frame through the cutout in the base shield designated Y on figure 2-4; a second strap interconnects the main frame to bolt X through cutout Z in the base shield.

2) The access hole designated W on figure 2-4 accommodates three incoming 230-volt, three-phase power conductors when the raceway is beneath the base assembly. However, two optional access holes are provided in the base framework and may be used if desired. These are designated P and Q on figure 2-3. Hole P is on the main frame chassis side of the base framework toward the rear of the GPT-10K; hole Q is on the auxiliary frame chassis side and to the rear of the base framework.

3) Access holes P, Q, and W provide outlets for test and exciter equipments mounted on the auxiliary frame chassis to supply points throughout the transmitter station.

b. Detailed Assembly Procedure

The following detailed assembly description applies in the case where a GPT-10K is mounted on its base assembly rather than on shock mounts. In the latter case, the base assembly is replaced by three channels. These channels have 24 holes that align themselves with 24 shock mount holes in the RF shields and the main and auxiliary frame chassis. When a GPT-10K is shock mounted, it may have nine shock mounts at its base, or nine on the base and two stabilizers at its top. The nine shock mounts at its base lie in a horizontal plane; the two stabilizers at the top lie in a vertical plane.

<u>STEP</u>	<u>DESCRIPTION</u>
1	Place base framework assembly level and bolted to floor as stated previously.
2	Pull power leads through access hole in base framework and attach ground straps to bolt X. Place base RF shield on framework, run ground strap through access holes Y and Z and power leads through access hole W. Attach shield to framework by means of four screws through holes designated B on figure 2-3.
3	Using a wrench, disengage two hexagonal bolts that fasten relay and indicator control panel (at the bottom front of the main frame chassis) to the main frame chassis. Note that the two large connectors at the extreme right of the panel are already disengaged. This operation is to facilitate the next steps of assembly. Remove the panel. The relay and indicator control panel is shown in figure 1-6 in volume I of TMC's Technical Manual.
4	Set the main frame chassis in place, oriented with respect to the base, as shown in figure 2-1. Do not bolt to base assembly at this time. Check that the holes in the main frame chassis base align with the holes in the RF shield.

<u>STEP</u>	<u>DESCRIPTION</u>
5	Set the auxiliary frame chassis in place but do not bolt to base assembly at this time. Check to see that the holes in the auxiliary frame chassis align with the holes in the RF shield.
6	Insert bolts through chassis of both main and auxiliary frames into base but do not tighten. The bolts mate with 10 nuts welded to the base framework shown in figure 2-3 on holes designated "A".
7	Align holes between main and auxiliary chassis starting at the top of the two frames; place bolts between auxiliary and main frames working from top down. Holes for this operation are shown in figure 2-5.

NOTE

If the main and auxiliary frames are properly aligned these bolts can be inserted by hand. If a bolt starts to bind do not attempt to force its entry, this is an indication that further alignment is necessary. Further alignment is facilitated by removing the bolts between the two frames. Beginning again at the top align each hole visually clamping the frame with a "C" clamp as each hole is positioned satisfactorily. Insert bolts between two frames and tighten, working from the top down.

8	Tighten bolts between main and auxiliary frame chassis and base. Check that the GPT-10K is level and its sides are vertical.
9	Connect grounding straps to main and auxiliary frame chassis. Points of connection are as follows: on main frame chassis near bottom secure free end of longer strap to stud welded to Z member near high voltage capacitor location; on auxiliary frame chassis near bottom secure free end of shorter strap to stud welded to channel, near Sola transformer. Use flat and lockwasher under each unit. Remove insulation from all connectors and unwrap coverings on all vacuum power capacitors. Insert components in clip board shown in figure I-1-7-b in volume I of TMC's Technical Manual.
10	Put three-phase power transformer in its place in the bottom of the main frame chassis as shown in figure I-1-7-c in volume I of TMC's Technical Manual. The three channels on the transformer slide inside three larger channels on the main frame chassis. Fasten transformer to chassis using four bolts provided for this purpose. (Refer to package designated "transformer mounting").

<u>STEP</u>	<u>DESCRIPTION</u>
11	Connect transformer as shown in figure I-1-7-c and 2-6 (in this section). Low-voltage primary side (delta connected) requires three jumpers and three 230-volt line conductors. Three 230-volt line conductors emerge from line terminal board at left of transformer. Three jumpers are factory installed. All conductors are equipped with "soldered-on" lugs for connection to transformer. High-voltage secondary side (wye connected) is connected to four violet colored leads; three are fastened to spring contacts (high voltage rectifier) and the fourth (B+) to stud in bake-lite panel (longest of four violet colored leads). Four wires go to high voltage transformer terminals successively from left to right. At right of transformer locate four conductor cable. Connect the two black wires of this cable to 0 terminal of transformer nearest cable. Connect red and white and red wires to 220 terminal of same phase. These wires are connected to PLATE TIME meter on indicator control panel.

NOTE

In connecting transformer, use taps (210, 220, 230, etc.) that best accommodate the incoming supply line voltage. It is important that transformer is not energized at this time. Circuit must be open between transformer primary and supply line voltage.

WARNING

Final connection in assembly must be to supply line voltage (Refer to step 24).

12	Replace relay and indicator control panel (Refer to step 3). Assembly is now complete so far as transformer compartment is concerned.
13	High voltage rectifier (located in case 12) may now be placed in its compartment. (See figure I-1-2-a in volume I of TMC's Technical Manual). Six each, type 872A vacuum tubes (located in case 12 or 13) may now be inserted into sockets of rectifier. These are shown in figure I-1-8 in volume I of TMC's Technical Manual. This completes assembly of high voltage rectifier compartment.
14	Continuing upward along main frame chassis is main power control panel. This comes installed with all wiring complete.
15	RF amplifier and its power supply is next unit for assembly. It comprises a pull-out drawer with a removable compartment. Removable RF amplifier compartment contains a 35-conductor plug connector which permits

<u>STEP</u>	<u>DESCRIPTION</u>
	interconnection between it and a 35-conductor socket connector in power supply drawer. Make this interconnection. Other connections to removable RF amplifier compartment comprise the following: a spring connector on rear (RF output), a small coaxial connector on rear (RF input from SBE or CHG unit), a high voltage coaxial connector on rear for plate power supply, and a coaxial connector on rear (RF output direct to antenna). The pullout drawer containing the power supply has a 35-conductor plug connector which is connected to a 35-conductor socket connector attached to an external cable. Laced together at the rear right side are the fore-mentioned 35-conductor cable to power supply drawer, the small coaxial cable from SBE or CHG unit to the RF amplifier compartment, and high voltage plate power supply cable to RF amplifier compartment. Interconnection of these cables plus that of 35-conductor cable between RF amplifier compartment and its power supply drawer completes assembly of this unit, since all cables internal to power supply drawer are preassembled at factory.
16	Power amplifier compartment (see figure 2-7) comes preassembled as far as the customer is concerned, except for final amplifier tube, Eimac - type 4X5000A. (TMC type 4CX5000A), contained in case 12 or 13, and loose parts comprising antenna feed through insulator rods and warning lamp, also contained in case 12 or 13. These parts may be assembled most easily by removing RF shields MS-1592 and 1830 and rear RF shield MS-1594 shown in figure 2-1.
17	Assembly of 4CX5000A tube includes placing tube in its socket (working it solidly in place by gentle but firm rocking motions) and securing with clamping strap (which should be tightened with two short hexagonal bolts). Two vacuum capacitors are now secured, each with one terminal on the clamping strap and the other terminal on an associated standoff terminal. (See figure 2-7).
	NOTE
	Capacitors are secured when clamping strap is tightened, since one terminal is factory soldered to off insulator and other terminal over clamping strap. High voltage should not be supplied to tube until it is ascertained that PA blower produces adequate air flow through PA tube. (Refer to step 24).
18	After installing final amplifier tube and antenna feed through insulator rods, install top RF shield MS-1699, replace shields temporarily removed in 15, install antenna

<u>STEP</u>	<u>DESCRIPTION</u>
	terminals, and install warning light on top of GPT-10K, auxiliary frame. Necessary hardware for these operations is contained in case 12 or 13 in suitably labeled packages.
	NOTE
	Normal antenna connections are for balanced 600 ohm output operation. Where unbalanced 50/70 ohm output is to be used, a kit is provided and instructions are given at end of this section.
19	Attention is now directed to installation of equipment units on auxiliary frame chassis. These practices consists of two general directives: <ul style="list-style-type: none"> (1) Inserting pull-out units in their respective places, as shown in figure 1-2 (two sheets) . (2) Making proper cable connections, referring to following section 2-5. Fixed panels are factory wired.
20	Insert top most unit in auxiliary frame. When this unit is secure, place units in position starting from the bottom and working upward. Connect cables to each unit as it is positioned. For more detail, refer to following section 2-5.
	NOTE
	Most cables are custom fitted to the units they service. The proper cable is therefore indicated first of all by the length. Secondly, each cable is marked with a small white tag which contains the number of the mating connector or the last digits of that number. If a cable does not have an identifying tag it is because the connector has a unique keying arrangement that will not allow it to mate with any but the proper receptacle. No two cable identification numbers are the same. Following Table 2-5 lists cable connections to be made by installer.
21	Remaining assemblage now constitutes trim strips, front and rear doors and connection of 230-volt, 3-phase, 60-cycle power cable circuitry.
22	As figure 2-1 shows, trim strip MS-1920 covers front left side of auxiliary frame chassis and should be attached to the left side of auxiliary frame panel MS-2117 with

STEP

DESCRIPTION

three hinges. Right side of auxiliary trim (hinged) MS-1637 and left side main trim (hinged) MS-1634 cover the juncture of auxiliary and main frame chassis assemblies. Attachment to main frame chassis is made by three clips welded into main frame upright angle. Right side main trim MS-1633 covers front right side of main frame chassis. Attachment is made by three clips welded into main frame upright angle. Front top trim MS-1635 covers top of main and auxiliary frame chassis assemblies. Attachment to the frames is made by three clips welded to main and auxiliary frames. Eleven screws each on the left and right auxiliary and main frame panels MS-2117 and MS-2116 accommodate and mount front doors MS-2119 and MS-2118, respectively. Doors are latched by two parts designated MS-1660 and MS-1661. At top, door latch stop (MS-1660 and door latch mounting bracket (MS-1661) are fastened to top skin; at bottom, door latch stop (MS-1660) and door latch mounting bracket (MS-2122) are fastened to bottom frame angle (MS-2123). Attachments span juncture of main and auxiliary frame uprights. Hardware to implement these operations is contained in suitably designated packages.

As figure 2-1 shows, trim strip MS-1670 covers rear left side of auxiliary frame assembly and should be attached to left side of auxiliary frame panel MS-2117 via three tapped holes in upright angle. Rear center trim MS-1669, covers juncture of auxiliary and main frame chassis assemblies. Attachment to auxiliary and main frame upright angles is via three tapped holes in each angle. Right side main trim MS-1671 covers rear right side of main frame chassis and should be attached to right side of main frame panel MS-2116 via three tapped holes in upright angle. Rear top and bottom trim MS-1672 is attached to top and bottom main and auxiliary frame chassis assemblies by three tapped holes in main and auxiliary framework. Rear doors MS-1647 and MS-1648 are hung on side panels MS-2116 and MS-2117 by three hinges and are latched by two parts designated MS-1660 and MS-1661. Hardware to implement these operations is contained in suitably designated packages in case 12 or 13.

Final assembly operation is to complete electrical connections between station's 230-volt 3-phase power supply mains and GPT-10K's power input box. Figure 2-4 shows a wiring diagram of GPT-10K's power circuit. Input power enters from 230-volt station source to GPT-10K's input box located in the rear, lower right-hand side of main frame.

STEP

DESCRIPTION

NOTE

Last connection to be made is connection between power input box and customer's 230-volt, 3-phase power supply mains. It is strongly recommended that this connection be made through an external circuit breaker of disconnect switch in order to avoid connecting hot leads to power input box's terminals.

It then is fed to the line filter terminal board located on the center shield assembly. From this point to a circuit breaker located on the main power control panel and back to the filter board to feed-through terminals. At this point power is fed to the auxiliary frame; red sleeve cable in the auxiliary frame must be connected to the feed-through terminals mentioned above. The black sleeve cable of the auxiliary frame is the 230-volt 3-phase return and must be connected to the feed-through terminals of the filter board that supply the H.V. transformer of the main frame.

- 24 Check main three-phase blower's (B800) rotation as follows: Remove blower's filter located on auxiliary frame chassis. Blades of blower are now visible. Proper rotation is clockwise looking toward blades through auxiliary frame chassis. Throw main power circuit breaker CB1000 and note direction of rotation. If counterclockwise, reverse two incoming 230-volt phase wires. Check once more for proper rotation. With proper rotation, a considerable volume of air will be forced through cooling ducts of PA tube; with improper rotation, volume of air is relatively small. Another check for proper rotation is position of air vane (rotation switch) associated with blower's air stream. Movable arm should be pointed upward at about a 45-degree angle.

2-5. INTERCONNECTION OF CABLES.

a. General

The lengths, sizes, strappings, and markings of the cables in the GPT-10K are such that the possibility of incorrect interconnection is negligible. However, the following figures and table are submitted in order to present diagrammatically the GPT-10K's cable interconnection picture. See also paragraph 2-4 step 20.

b. Figures 2-8-a and 2-8-b and Table 2-5

The interconnection diagrams presented on figures 2-8-a and 2-8-b show interconnection details between

various units of the GPT-10K, non-synthesized and synthesized. Physically, the cable terminals are located close to unit terminals, conveniently strapped to the frame chassis for correct interconnection. Table 2-5 gives cable identification information in the form of CA numbers; these markings appear on the cables. The column marked "code" indicates connections that must be made by the installer, also those connections made in the factory.

Note that the cables called out in this paragraph are equipped with plug-in connector terminals.

c. Figures 2-9-a, 2-9-b, 2-9-c, and 2-9-d

The wiring diagrams presented on figures 2-9-a, 2-9-b, 2-9-c, and 2-9-d show, in general, inter-connection details between the auxiliary frame's terminal block to equipment units, and equipment unit to equipment unit within the auxiliary frame's chassis. Again the terminal arrangements of the various cables make incorrect interconnection practicably impossible.

2-6. SUPPLEMENTARY INSTRUCTIONS FOR INSTALLATION OF UNBALANCED 50/70Ω ANTENNA.

a. General

The nominal output of GPT-10K transmitter is 10KW (FEP) to either a balanced 600 ohm rhombic antenna or to an unbalanced 50/70 ohm antenna. Normal antenna connections as described previously, are for balanced 600 ohm operation. To switch from the balanced to the unbalanced antenna, or vice versa, requires installation changes. Where unbalanced antenna operation is desired, a kit is provided that contains the necessary parts for conversion. The type of kit provided depends on certain characteristics of the antenna. Four basic types of kits and the parts they contain are described below.

b. Figure 2-10 illustrates electrical details (sketch 1 for balanced transmitter output circuit; sketch 2 for unbalanced transmitter output circuit) and strapping arrangements on the antenna tuner terminal board located behind the meter panel (sketch 3). For balanced transmitter output circuit connect jumper between terminals E900 and E901. For unbalanced

transmitter output circuit connect jumpers between terminals E900 and E902, between terminals E901 and E903, and between terminals E903 and E904. In 50/70 ohm output operation, the thermocouple TC900 is placed in service, and the PA OUTPUT meter M1004 also comes into use. Remove the ground on the (DC) terminal of TC900 used during balanced transmitter output circuit operation.

c. There are four basic types of antenna connections possible when 50/70 ohm operation is desired. These are QDL, LC, 1-5/8 EIA (Heliac 50 ohm) and 1-5/8 EIA (Heliac 70 ohm). Figure 2-11 shows the assembly layout for the following connections:

Sketch 1 - Quick disconnect (QDL), connector model JJ-225 and threaded type (LC), connector model JJ-229.

Sketch 2 - Heliac 50/70 ohm 1-5/8 EIA.

The connections shown in figure 2-12 appear on equipment delivered prior to February 1, 1962; figure 2-11 shows revised assembly procedures designed so the antenna can be mounted without removing the shields. Following Table lists each basic type of connection, the kit required to mount each type, the TMC part number required to order each kit, and the parts the kit contains. The four kits are designed to fulfill the following requirements:

- AX-273-5 Accommodates straight-away direction in lead from transmitter to antenna. QDL - 50 ohm type connection is used.
- AX-287-6 Accommodates straight-away direction in lead from transmitter to antenna. LC - 50 ohm type connection is used.
- AX-272 Accommodates right-angle direction change in lead from transmitter to antenna. TMC's PO-171-50 connector fits into contact adapter PM-710.
- AX-271 Accommodates right-angle direction change in lead from transmitter to antenna. TMC's PO-171-70 connector fits into contact adapter PM-707.

PARTS LIST—MOUNTING KITS CONVERSION FROM 600Ω TO 50/70Ω ANTENNA OPERATION

TYPE CONNECTION	KIT PROVIDED (TMC PT. #)	CALL OUT	PARTS CONTAINED IN KIT		
			DESCRIPTION	TMC #	QUANTITY
QDL-50	AX-273-5	1	MOUNTING PLATE	PM-403	1
		2	WASHER, LOCK, SPLIT	LWS25MSS	4
		3	BOLT, MACH, HEX. HD.	SCHH2520SS12	4
		4	WASHER, LOCK, SPLIT	LWS25MSS	4
		5	SCREW, MACHINE	SCHH2520SS8	4
		6	CONNECTOR, RECEPTACLE	JJ-225	1
		7	CONNECTOR, PLUG	PL-136	1

PARTS LIST—MOUNTING KITS CONVERSION FROM 600Ω TO 50/70Ω ANTENNA OPERATION (Cont.)

TYPE CONNECTION	KIT PROVIDED (TMC PT. #)	CALL OUT	PARTS CONTAINED IN KIT		
			DESCRIPTION	TMC#	QUANTITY
LC - 50	AX-287-6	1	MOUNTING, PLATE	PM-403	1
		2	WASHER, LOCK, SPLIT	LWS25MSS	4
		3	BOLT, MACH, HEX.HD.	SCHH2520SS12	4
		4	WASHER, LOCK, SPLIT	LSS25MSS	4
		5	SCREW, MACHINE	SCHH2520SS8	4
		6	CONNECTOR, RECEPTACLE	JJ-229	1
		7	CONNECTOR, PLUG	PL-214	1
1-5/8 HELIAX CABLE(50)	AX-272	1	LOCKWASHER, SPLIT	LWS31MRN	4
		2	SCREW, MACHINE	SCHH3118BN16	4
		3	WASHER, FLAT	FW25HBN	1
		4	LOCKWASHER, SPLIT	LWS25MRN	5
		5	SCREW, MACHINE	SCHH2520BN10	1
		6	SCREW, MACHINE	SCHH2520BN16	4
		7	ADAPTOR, CONTACT, 50	PM-710	1
		8	PLATE, ADAPTOR, 1-5/8	PM-708	1
		9	EIA		
1-5/8 HELIAX CABLE (70)	AX-271	1	LOCKWASHER, SPLIT	LWS31MRN	4
		2	SCREW, MACHINE	SCHH3118BN16	4
		3	WASHER, FLAT	FW25HBN	1
		4	LOCKWASHER, SPLIT	LWS25MRN	5
		5	SCREW, MACHINE	SCHH2520BN10	1
		6	SCREW, MACHINE	SCHH2520BN16	4
		7	ADAPTOR, CONTACT, 70	PM-707	1
		8	PLATE, ADAPTOR, 1-5/8	PM-708	
		9	EIA		

2-7. SUPPLEMENTARY INSTRUCTIONS FOR INSTALLATION USING 50-CYCLE POWER SUPPLY.

a. The Sola constant current regulator transformer, T3000, is provided with terminals that enable it to supply regulated 115-volt single-phase power to all the exciter and test equipments mounted on the auxiliary frame chassis on either a 50 or 60 cycle power supply basis. The main power supply circuit requires no adjustment for 50-cycle versus 60-cycle power supply.

b. Sketch 1 of figure 2-8 is a simplified schematic of the Sola transformer. Terminals H 1 and H 2 are used for 190-to 260-volt incoming power, either 50 or 60 cycles single-phase. If the supply is 60 cycles, the 118-volt regulated secondary is taken from one set of C and 60 terminals as shown; and the jumper is connected between the other set of C and 60 terminals as shown. If the supply is 50 cycles, the 118-volt regulated secondary is taken from one set of C and 50 terminals as shown, and the jumper is connected between the other C and 50 terminals as shown. Sketch 2 of figure 2-8 shows the connections at the transformer's terminal board. Sketch 3 schematically represents the circuitry associated with the Sola transformer and its power input, taken directly from two of the main three-phase power lines. Note that the circuit breaker CB3000 for the transformer circuit is separate from main power circuit breaker. The circuit breaker

is located on the center shield panel assembly of the auxiliary frame chassis just above the Sola transformer. The circuit breakers for the main power are located on the front of the main frame power control panel. These breakers must be in the "ON" position in order to feed power to the auxiliary frame.

2-8. EMERGENCY 1-KW (PEP) TRANSMITTER OUTPUT.

a. General

Recently the GPT-10K transmitter has been provided with a ready means of switching from the nominal 10KW to an emergency 1-KW output. This ready switch is possible under two conditions (a) transmitter arranged for a balanced antenna, when output is switched from 10KW to 1-KW or vice versa (see figure 2-14) (b) transmitter arranged for an unbalanced antenna, when output is switched from 10KW to 1-KW or vice versa (see figure 2-14). To make the more complicated double switch from balanced antenna 10KW output to unbalanced antenna 1-KW output or vice versa requires installation changes indicated in figures 2-11, 2-12, 2-14, and 2-15. For 10KW output, the output of the power amplifier tube J900 in GPT-10K is fed to the antenna. For 1-KW output, the output of the intermediate power amplifier tube V-203 is fed to the antenna, and the power amplifier tube is bypassed by installing the emergency hook-up wiring for 1-KW.

The terminal board of the antenna tuner, figure 2-14, is located behind the meter panel in the power amplifier section and the arrangement of straps on the board indicate whether the antenna installation is balanced (sketch A) or unbalanced (sketch B). The rear view of the power amplifier (sketch C) shows the changes necessary to convert from 10KW normal operation (dotted lines) to 1-KW emergency operation (solid lines).

b. Electrical Arrangements to Obtain Nominal 10-KW or Emergency 1-KW Outputs

Figure 2-15 illustrates the simplified schematic circuits resulting from the four physical arrangements possible in GPT-10K described in paragraph a. above.

c. Installation Details of Emergency Hook-up for 1-KW Output

Perform the following three operations (see figure 2-14).

1. Unstrap strapping MS-202-22-7.50 between C911 and C928
2. Connect CA-582-1 (loose part, shipping case 13) between CP900 and C911
3. Switch cable CA-437 from C901 to CP900

After installation of emergency hook-up, retune GPT-10K output by adjusting OUTPUT BALANCE and OUTPUT LOAD controls on front panel of the RFC-1. PA TUNE and PA LOAD controls will be inoperative for tuning purposes.

2-9. INITIAL ADJUSTMENTS AND CHECKOUT.

Refer to Volume I - Technical Manual for Transmitting Set, Radio, Model GPT-10K.

TABLE 2-1. EQUIPMENT SUPPLIED AND PHYSICAL CHARACTERISTICS, GPT-10K

UNIT	DESIGNATION		QUANTITY PER GPT-10K	APPROXIMATE INSTALLATION DIMENSIONS*			VOLUME*	WEIGHT*
	COMMERCIAL	MILITARY		LENGTH	HEIGHT	DEPTH		
Main Frame Chassis	AX-186	None	1	32	72	38-5/8	52	500 (835)**
Auxiliary Frame Chassis	AX-180 AX-239(S/X)	None	1	21	72	38-5/8	33	385
Base Mount and RF Base Shield	MS-1458-1	None	1	53	6	38	8.5	152
	MS-2175	None	1					
Sides for Frames	MS-2116-1, 2117-1	None	2	38	72	27	43	408
Tops for Frames	MS-1699-1	None	1					
Doors for Main Frame Chassis	MS-2120-1, 2037	None	2					
Doors for Auxiliary Frame Chassis	MS-1648-1, 2119-1	None	2					
Trim strips	MS-1633, 1634, 1635 1636, 1637 1669, 1670, 1671, 1672 (2), 1920	None	11 pieces					
Main Power Transformer	TF-203	None	1	24	16	13	4.5	475
Sideband Exciter (S/X)	CBE-1	C-714/UR	1	19	5-1/4	12-7/8	0.6	17
	CBE-2	None						
Controlled Precision Oscillator (S/X)	CPO-1	AN/URA-31	-	-	-	-	-	-

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

** 835 represents frame loaded with controlpanel, relay panel, meter box assembly sagamore capacitors, relays, etc; 500 represents bare framework.

(S/X) signifies synthesized transmitter.

TABLE 2-1. EQUIPMENT SUPPLIED AND PHYSICAL CHARACTERISTICS, GPT-10K (Cont.)

UNIT	DESIGNATION		QUANTITY PER GPT-10K	APPROXIMATE INSTALLATION DIMENSIONS*			VOLUME*	WEIGHT*
	COMMERCIAL	MILITARY		LENGTH	HEIGHT	DEPTH		
a. Frequency Amplifier (S/X)	CHG-1 or CHG-2	AM-2565/URA-31 or none	1	19	10-1/2	19-1/4	2.2	46
b. Power Supply (S/X)	CPP-1	PP-2561/URA-31	1	19	5-1/4	16-1/2	0.9	41
c. Controlled Master Oscillator (S/X)	CMO-1 or CMO-2	0-716/URA-31 or none	1	19	10-1/2	18	1.8	45
d. Primary Standard (S/X)	CSS-1	0-715/URA-31	1	19	5-1/4	14-3/4	0.8	16
e. Divider Chain (S/X)	CHL-1	CV-928/URA-31	1	19	5-1/4	15	0.8	9
f. Controlled Oscillator (S/X)	CLL-1	0-717/URA-31	1	19	5-1/4	19	1.1	25
g. Power Supply (S/X)	CPP-2	PP-2562/URA-31	1	19	12-1/4	16	2.1	67
Tone Intelligence Unit (S/X)	TIS-3	TN-39A/UGT	1	19	5-1/4	17-1/8	0.8	26
Transmitting Mode Selector	SBE-3 SBE-2	AN/URA-28 AN/URA-23	- -	- -	- -	- -	- -	- -
RF Oscillator	AO-101 A-1516	0-672/URA-28 0-503A/URA-23	1 1	19 19	8-3/4*** 8-3/4***	17-1/4 17-1/4	1.5 1.5	41 41
Power Supply (N/S/X)	A-1397 A-1397	PP-1769/URA-23 PP-1769/URA-23	1 1	19 19	5-1/4*** 5-1/4***	10-1/4 10-1/4	0.9 0.9	38 38

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

**A/P means assembly of parts. No specific designation.

***Rack mounted space required.

(N/S/X) signifies non-synthesized transmitter.

(S/X) signifies synthesized transmitter.

TABLE 2-1. EQUIPMENT SUPPLIED AND PHYSICAL CHARACTERISTICS, GPT-10K (Cont.)

UNIT	DESIGNATION		QUANTITY PER GPT-10K	APPROXIMATE INSTALLATION DIMENSIONS*			VOLUME*	WEIGHT*
	COMMERCIAL	MILITARY		LENGTH	HEIGHT	DEPTH		
Frequency Shift Exciter (N/S/X)	XFK	C-2749/URT	1	19	10-1/2***	18-1/2	1.8	48
Variable Frequency Oscillator (N/S/X)	VOX-5	0-330(B)/FR	1	19	10-1/2***	19-1/4	1.8	65
Frequency Spectrum Analyzer	FSA	AN/URM-116	-	-	-	-	-	-
Analyzer (N/S/X)	SA-2	TS-1236/URM-116	1	19	10-1/2***	20-1/2	1.8	32
Power Supply for SA-2 (N/S/X)	PS-2	PP-2206/URM-116	1	19	8-3/4***	12	0.9	32
Two Tone Generator (N/S/X)	TTG	0-579/URT	1	19	5-1/4***	17-1/4	0.8	19
RF Amplifier with Power Supply	RFC-1 AX-104	None	1	28-3/4	11-3/4***	20-1/2	3.4	100
Isolation Keyer (N/S/X)	AK-100	None	1	19	5-1/4***	9-1/2	0.6	10
High Voltage Rectifier	AX-103	None	1	28-3/4	10-3/4***	16-3/4	2.7	80
Tube for PA	4CX5000A	-	1	5 dia	-	9	0.1	8
Tubes for High Voltage Rectifier	872A	-	6	2-1.4 dia	-	8	-	-
Tube for IPA	PL-172	-	1	4 dia	-	5	-	-

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

***Rack mounted space required.

(N/S/X) signifies non-synthesized transmitter.

(S/X) signifies synthesized transmitter.

TABLE 2-1. EQUIPMENT SUPPLIED AND PHYSICAL CHARACTERISTICS, GPT-10K (Cont.)

UNIT	DESIGNATION		QUANTITY PER GPT-10K	APPROXIMATE INSTALLATION DIMENSIONS*			VOLUME*	WEIGHT*
	COMMERCIAL	MILITARY		LENGTH	HEIGHT	DEPTH		
High Voltage Light and Socket Assembly	AX-124	-	1	-	-	-	-	-
Insulator Bowl Assembly with Hardware	AX-159	-	1	-	-	-	-	-
Lamp, Incandescent	BI-106-1	-	1	-	-	-	-	-
Connector, Plug, QDS	PL-149	-	1	-	-	-	-	-
8 Bags of Installation Hardware and Plug Buttons	-	-	1 carton	-	-	-	-	-
19 Glass Resistors	-	-	1 carton	-	-	-	-	-
Grounding straps; Door latch plates and brackets; plate covers and adapters; connecting cables	-	-	Loose Items	-	-	-	-	-
Test Sheet	-	-	1	-	-	-	-	-
Instruction Manuals (3 volumes each)	-	-	2	-	-	-	-	-

NOTE

See table 1-7 for power requirement of individual units.

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

TABLE 2-2. EQUIPMENT NOT SUPPLIED

QUANTITY PER EQUIPMENT	TYPE	CHARACTERISTICS	USE
1	230-volt power line	3 phase 50 to 60 cps (At least 13.4 kw)	Operation of GPT-10K

TABLE 2-3-a. SHIPPING DATA (NON-SYNTHESIZED GPT-10K)

CASE NO.	PART	DESIGNATION		DIMENSIONS*			VOLUME*	WEIGHT*
		COMMERCIAL	MILITARY	LENGTH	WIDTH	HEIGHT		
1	Main Frame Chassis	None	None	42-1/2	36-1/4	81-1/2	72.2	1083
2	Auxiliary Frame Chassis	None	None	43-1/2	25-3/4	81-1/2	53.1	580
3**	One Base Mount and Two RF Shields	MS-1458-1 MS-2175 (2)	None	57	7-7/8	40-1/8	10.4	175
4	Two Sides and Top of Main Frame Doors for Main Frame Chassis Doors for Auxiliary Frame Chassis 11 Pieces of Trim Strip	MS-2116-1, 2117-1, 1699-1 MS-2037, 2120-1 MS-1648-1, 2119-1 MS-1633, 1634, 1635, 1636, 1637, 1669, 1670, 1671, 1672 (2), 1920	None	76-1/2	26-5/8	44	51.6	620
5	Main Power Transformer	TF-203	None	28-7/8	19-1/2	23-1/2	7.5	531
6	Transmitting Mode Selector RF Oscillator Variable Frequency Oscillator	SBE-3 or SBE-2 AO-101 or A-1516 VOX-5	AN/URA-28 AN/URA-23 O-672/URA-28 O-503A/URA-23 O-330(B)/FR	30-7/8	23	29-1/2	12.0	196

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

**When the GPT-10K is to be shock mounted, the base mount in case 3 is replaced by nine shock mounts and three heavy support bars for mounting the shock mounts. (See figure 2-2.) In addition, case 12 contains two stabilizers which are sometimes called shock mounts.

TABLE 2-3-a. SHIPPING DATA (NON-SYNTHEZIZED GPT-10K) (Cont.)

CASE NO.	PART	DESIGNATION		LENGTH	DIMENSIONS*		VOLUME*	WEIGHT*
		COMMERCIAL	MILITARY		WIDTH	HEIGHT		
7	Frequency Shift Exciter	XFK	C-2749/URT	30-7/8	23-1/2	29-1/2	12.0	171
8	Analyzer	SA-2	TS-1236/URM-116	30-7/8	23	29-1/2	12.0	154
	Power Supply for: SBE-2	A-1397	PP-1769/URA-23	30-7/8				
	SBE-2	A-1397	PP-1769/URA-23					
	Isolation Keyer	AK-100	-					
	Two-Tone Generator	TTG	0-579/URT					
9	Power Supply for SA-2	PS-2	PP-2206/URM-116	20-3/4	26	16	5.0	80
10	RF Amplifier with Power Supply	RFC-1 AX-104	AM-2103A/URT	35-1/2	26	16	8.5	180
11	High-Voltage Rectifier with One Set (2 pieces) of Ground Straps	TI-104		35-1/2	26	16	8.5	165
12	Refer to Table 2-3b for contents of Case No. 13.			30-7/8	23	29-1/2	12.0	110

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

TABLE 2-3-b. SHIPPING DATA

<u>Crate 13 (Non-Synthesized GPT-10K)</u> <u>Crate 12 (Synthesized GPT-10K)</u> Assorted Items List	
1.	Tube, Electron, 1 each, Ref./Symbol XV900, TMC P/N 4CX5000A, removed from Main Frame, Power Amplifier Section.
2.	Tube, Electron, 6 each, Ref./Symbols V600 thru V605, TMC P/N 872-A, removed from High-Voltage Rectifier Section.
3.	Manuals, Technical, 2 each, TMC P/N IN-202, supplied as a loose item.
4.	Test Data, 1 each, supplied as a loose item.
5.	Strap, Grounding, 1 each, TMC P/N MS-1753-2-18, supplied as a loose item.
6.	Strap, Grounding, 1 each, TMC P/N MS-1753-2-30, supplied as a loose item.
7.	Lamp Socket Assembly, High-Voltage, 1 each, TMC P/N AX-124, removed from Auxiliary Frame Top.
8.	Insulating Rods, 2 each, TMC P/N A-1403 removed from Main Frame Top.
9.	Resistor, Fixed, 9 each, Ref./Symbol R801 thru R809, TMC P/N RW-118F-183, removed from Main Frame.
10.	Resistor, Fixed, 4 each, Ref./Symbol R800, 816, 819, 820, TMC P/N RW-118F-502, removed from Main Frame.
11.	Resistor, Fixed, 2 each, Ref./Symbol R812, 813, TMC P/N RW-1196-181, removed from Main Frame.
12.	Resistor, Fixed, 2 each, Ref./Symbol R814, 815, TMC P/N RW-122-3-604.
13.	Resistor, Fixed, 2 each, Ref./Symbol R810, 811, TMC P/N RW-122-1-405.
14.	Door Latch Plate, bottom front and rear, 2 each, TMC P/N MS-2122, P/O exterior covers.
15.	Door Latch Plate, top front and rear, 2 each, TMC P/N MS-1660, P/O exterior covers.
16.	Door Latch Bracket, top front and rear, 2 each, TMC P/N MS-1661, P/O exterior covers.
17.	Door Latch Bracket, bottom front and rear, 2 each TMC P/N MS-2123, P/O exterior covers.
18.	Plug, Electrical, 1 each, TMC P/N PL-149, supplied as a loose item.
19.	Equipment Mounting Hardware Kit, 1 each, consisting of: 40 each, Screw, binderhead, TMC P/N SCBS1032BN8 40 each, Washer, fiber, TMC P/N WA-101-11
20.	Assembly Kit, Transmitter Top, 1 each, consisting of: 9 each, Screw, hexagon head, TMC P/N SCHH2520SS24 9 each, Washer, flat, TMC P/N FW25MBN 9 each, Washer, split, TMC P/N LW331MBN
21.	Assembly Kit, Auxiliary and Main Frame, 1 each, consisting of: 9 each, Screw, Hexagon head, TMC P/N SCHH3118BN16 9 each, Washer, flat, TMC P/N FW31HBN 9 each, Washer, split, TMC P/N LW331MBN

TABLE 2-3-b. SHIPPING DATA (Cont.)

22.	Mounting Kit, Trim Strip, 1 each, consisting of: 12 each, Screw, binderhead, TMC P/N SCBS0632BN6 22 each, Screw, binderhead, TMC P/N SCBS0832BN6 12 each, Nut, speed, TMC P/N NT-1G8-1
23.	Mounting Kit, Exterior Covers to Frame, 1 each, consisting of: 20 each, Screw, hexagon head, TMC P/N SCHH3118SS24 20 each, Washer, flat, TMC P/N FW31HBN 20 each, Washer, split, TMC P/N LWS31MBN
24.	Mounting Kit, Door Latch Brackets, 1 each, consisting of: 8 each, Screw, binderhead, TMC P/N SCBS1032BN10 8 each, Screw, flathead, TMC P/N SCFS1032BN8 16 each, Washer, flat, TMC P/N FW10MRN 16 each, Washer, split, TMC P/N LWS10MRN 8 each, Nut, threaded, TMC P/N NTH1032BN12
25.	Mounting Kit, Main Power Transformer, 1 each, consisting of: 4 each, Screw, hexagon head, TMC P/N SCHH5020SN48 4 each, Washer, flat, TMC P/N FW50HBN 4 each, Washer, split, TMC P/N LWS50MRN
26.	Mounting Kit, Grounding Strap, 1 each, consisting of: 1 each, Screw, hexagon head, TMC P/N SCHH6211SN24 9 each, Washer, flat, TMC P/N FW62HBN 4 each, Washer, split, TMC P/N LWS62MBN 3 each, Nut, threaded, TMC P/N NTH6211BN30
27.	Plug, Button, 1/23 inch, 8 each, TMC P/N HB-101-6, supplied as a loose item.
28.	Plug, Button, 7/8 inch, 32 each, TMC P/N HB-101-3, supplied as a loose item.
29.	Cover, Plate, 1 each, TMC P/N MS-2442.
30.	Strap, Grounding, 1 each, TMC P/N MS-202-19-13-12 (Balanced XTMRS only)
31.	Cable, Connecting, 1 each, TMC P/N CA-412-8-2. (Balanced XTMRS only)
32.	Plate, Cover, 1 each, TMC P/N 2338.
33.	Plate, Adapter, 1 each, TMC P/N MS-1666.
34.	Sola Voltage Regulator Manual, 1 each.
35.	Warranty Claim for 4CX5000A, 1 each.
36.	Plate, Cover, 1 each, TMC P/N MS-1665. (Unbalanced XTMRS only)
37.	Insulator Bowl Ass'y, 2 each, TMC P/N AX-159. (Unbalanced XTMRS only)
38.	Cable Output, 2 each, TMC P/N CA-412-20-90. (Unbalanced XTMRS only)
39.	Cable Emergency Output, TMC P/N CA-582.

TABLE 2-3-c. SHIPPING DATA (SYNTHESIZED GPT-10K)

CASE NO.	PART	DESIGNATION		LENGTH	DIMENSIONS*		VOLUME*	WEIGHT*
		COMMERCIAL	MILITARY		WIDTH	HEIGHT		
1	Main Frame Chassis	None	None	42-1/2	36-1/4	81-1/2	72.2	1083
2	Auxiliary Frame Chassis	None	None	43-1/2	26-1/4	81-1/2	53.1	580
3**	One Base Mount and Two RF Shields	MS-1458-1 MS-2175 (2)	None	57	7-7/8	40-1/8	10.4	175
4	Two Sides and Top of Main Frame Doors for Main Frame Chassis Doors for Auxiliary Frame Chassis 11 Pieces of Trim Strip	MS-2116-1, 2117-1, 1699-1 MS-1647-1, 2118-1 MS-1648-1, 2119-1 MS-1633, 1634, 1635 1636, 1637, 1669, 1670, 1671, 1672 (2), 1920	None	76-1/2	26-5/8	44	51.6	620
5	Main Power Transformer	TF-203	None	28-7/8	19-1/2	23-1/2	7.5	531
6	Power Supply Frequency Divider Primary Standard	CPP-1 CHL-1 CSS-1	PP-2561/URA-31 CV-928/URA-31 0-715/URA-31	26-1/2	21-3/4	21-3/4	7.3	133
7	Controlled Oscillator Tone Intelligence Unit Sideband Exciter	CLL-1 TIS-3 CBE-1 or -2	0-717/URA-31 TH-39A/UGT 0-714/URA-31	32-1/2	23-1/8	27	10.6	162
8	Controlled Master Oscillator Frequency Amplifier	CMO-1 or -2 CHG-1 or -2	0-716/URA-31 AM-2505/URA-31	32-1/2	23-1/8	27	10.6	174
9	Power Supply	CPP-2	PP-2562/URA-31	26-1/4	20-3/4	16.0	5.0	116

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

**When the GPT-10K is to be shock mounted, the base mount in case 3 is replaced by nine shock mounts and three heavy support bars for mounting the shock mounts. (See figure 2-2.) In addition, case 13 contains two stabilizers which are sometimes called shock mounts.

TABLE 2-3-c. SHIPPING DATA (SYNTHESIZED GPT-10K) (Cont.)

CASE NO.	PART	DESIGNATION		DIMENSIONS*			VOLUME*	WEIGHT*
		COMMERCIAL	MILITARY	LENGTH	WIDTH	HEIGHT		
10	RF Amplifier	RFC-1	AM-2103A/URT	35-1/2	26	16	8.5	180
11	High Voltage Rectifier With one Set (2 Pieces) of Ground Straps	TI-104	None	35-1/2	26	16	8.5	165
12	Refer to Table 1-3B for contents of Case No. 12.			29-3/8	24	20-1/2	8.4	110

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

TABLE 2-4. POWER REQUIREMENTS, GPT-10K (NON-SYNTHESIZED AND SYNTHESIZED)

UNIT	POWER REQUIREMENT
GPT-10K including exciters and test equipment	230 volts, 36 amps, 50 and 60 cps, 3 phase*
GPT-10K excluding exciters and test equipment	230 volts, 34 amps, 50 and 60 cps 3 phase
Transmitting Mode Selector Model SBE-3	115 volts, 1.3 amps, 50 and 60 cps, 1 phase
Frequency Shift Exciter Model XFK	115 volts, 1.6 amps, 50 and 60 cps, 1 phase
Variable Frequency Oscillator Model VOX-5	115 volts, 2.2 amps, 50 and 60 cps, 1 phase
Frequency Spectrum Analyzer Model FSA	115 volts, 1.6 amp, 50 and 60 cps, 1 phase
Two Tone Generator Model TTG	115 volts, 0.3 amp, 50 and 60 cps, 1 phase
<p>NOTE</p> <p>Single-phase, 115-volt power is derived from three-phase power via regulating transformer in the GPT-10K.</p>	
<p>* For station planning greater capacity should be provided. TMC recommends a three-phase bank of 20-kw capacity. This oversize capacity is recommended to avoid low voltage on station facilities when GPT-10K transmitters are turned on.</p>	

TABLE 2-5. CABLE INTERCONNECTIONS ON GPT-10K (NON-SYNTHEZIZED AND SYNTHESIZED)

FRAME	CABLE	FUNCTION	CABLE SYMBOL	CODE (See Note)	CONNECTORS ON CABLE	INTERCONNECTION
MAIN	CA-425	CABLE, MAIN	W1000	* * * ** * **	P1000 (S) P1001 J1000(S) J1001(S) J1008 NONE	J700(P) - Relay Panel (See Fig. 5-23) J701(P) - Relay Panel (See Fig. 5-23) P3000(P) - CA-570(W3000) Aux. Frame P1011(P) - CA-431(W1001) P3048(P/O W3000) Aux. Frame Internal to Main Power Supply
MAIN	CA-431	MAIN FRAME TO RFB INTERCONNECT	W1001	* **	P1010(S) P1011(P)	J2002(P) - P. S. for RF Amp. J1001(S) - Power Amp. (PA-900)
MAIN	CA-437	RFB OUTPUT TO PA	W1004	** **	P1004 P1009	J1004 - RFB Output J901 - Power Amp.
MAIN	CA-460	H. V. INPUT, RFB INTERCONNECT	W1003	** *	P1003(P) P1006(S)	J1003(S) - W1008 (CA-466) H. V. Rect. Deck J203 - RF Amp. (IPA)
MAIN	CA-461-1	RF, SBE, INPUT, MAIN TO AUX. FRAME	W1005	* **	J1005 J1002	P3005 (P/O W3000) Aux. Frame P1002 Driver (RF Amp.)
MAIN	CA-462	RF, IPA MONITOR, PA MONITOR	W1006 W1007	* ** ** *	J1006 P1008 J1007 P1007	P3006 (P/O W3000) Aux. Frame J902 - IPA Monitor J900 - PA Monitor P3007 (P/O W3000) Aux. Frame
MAIN	CA-466	H. V. , IN, RFB	W1008	** **	J1003(S) NONE	P1003(P) - W1003 To H. V. Rect. Deck
MAIN	CA-503	RF, SBE-2 INPUT, RFB	W1002	** *	P1002 P1005	J1002 - W1005 (Driver) J201 - Exciter Input - RF Amp.
MAIN	CA-419	RF AMP TO P. S.	W201	** *	NONE P201(P)	RF Amplifier J2001(S) Panel Chass. Assy.
MAIN	CA-422	INTERNAL PANEL ASSY.	W2002	** * ** **	P2000 J2001(S) J2002(P) NONE	J2000 - W2001 P201 - W201 P1010(S) - W1001 Internal to Panel Chass. Assy.
NOTE - CODE * Connection made by Installer ** Factory connected						

TABLE 2-5. CABLE INTERCONNECTIONS ON GPT-10K (NON-SYNTHESIZED AND SYNTHESIZED) (Cont.)

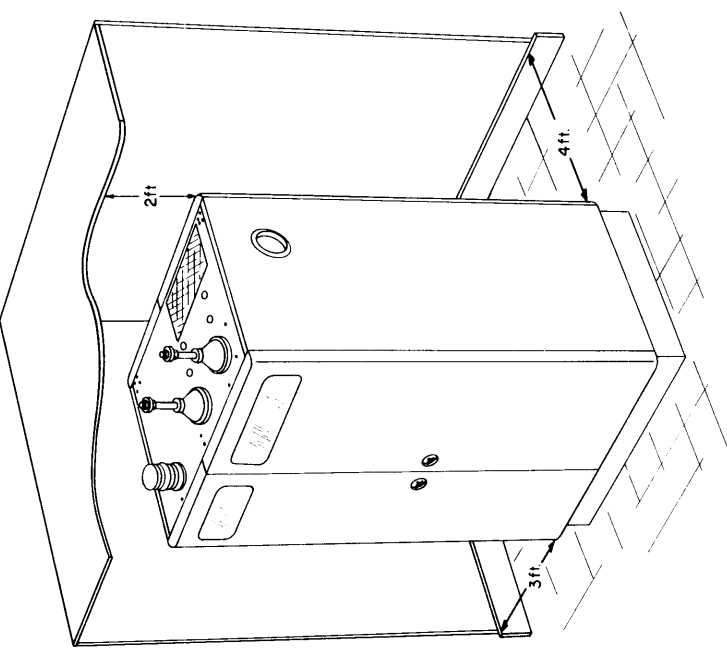
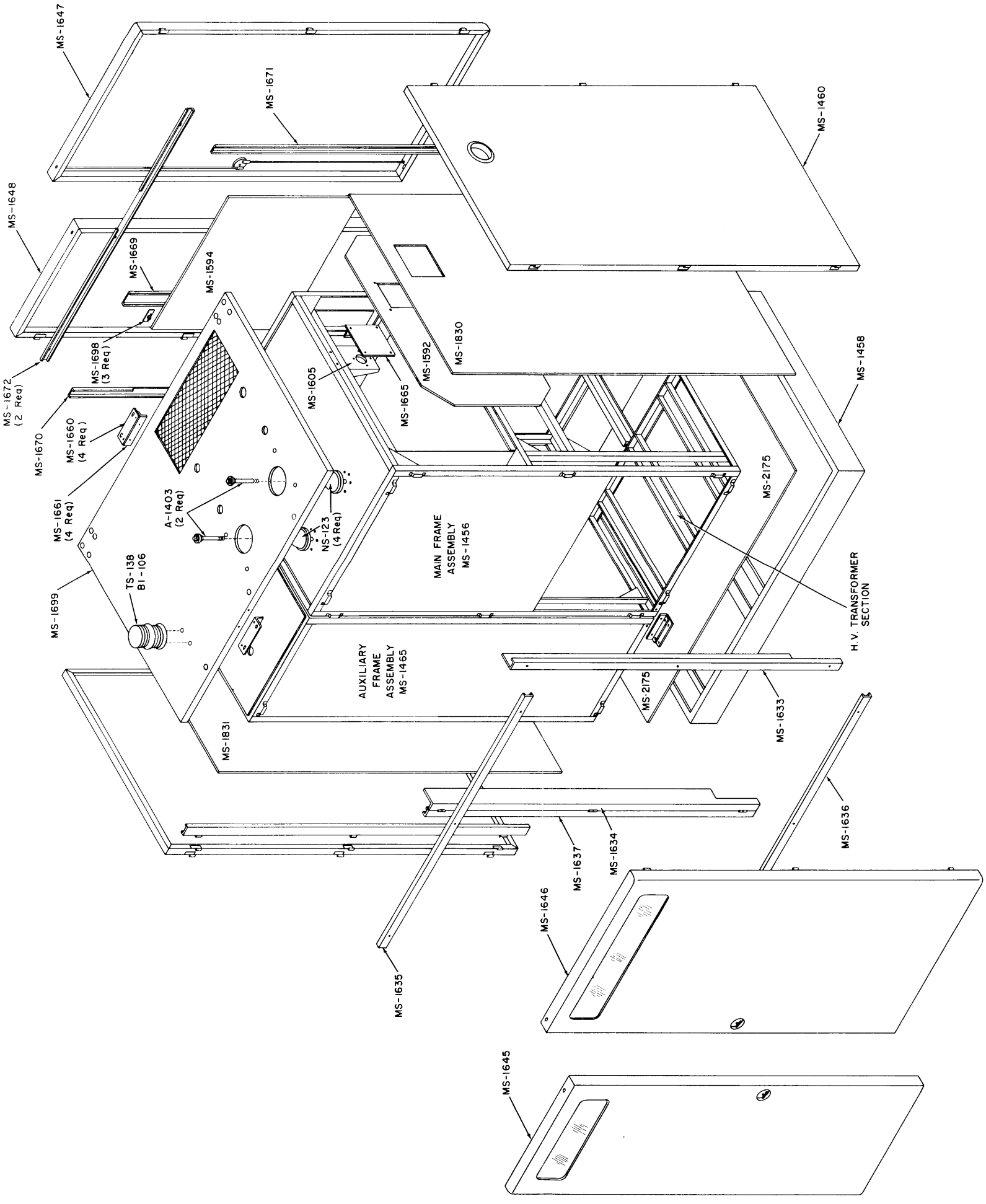
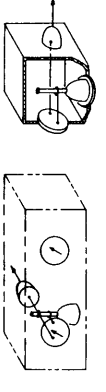
FRAME	CABLE	FUNCTION	CABLE SYMBOL	CODE (See Note)	CONNECTORS ON CABLE	INTERCONNECTION
MAIN	CA-420	INTERNAL PANEL CHASS. ASSY.	W2001	** **	J2000 NONE	P2000 - W(2002) Internal to Panel Chass. Assy.
MAIN		220V, 3Ø INPUT TO AUX. FRAME		*		Term. Bd. Center Shield Assy. See Step 23 Assembly Procedure
AUX (SYNTH)	CA-571	MAIN FRAME TO AUX. (*CALLED CA-430 N. S)	W3000	* ** * ** * ** * ** * ** **	P3001 P3005 P3002 P3006 P3003 P3007 P3049 P3048 P3000(P) NONE	J3001 SBE Output (Center Shields Panel Assy.) J1005 - W1005 J3002 IPA Monitor (C. S. PA) J1006 - W1006 J3003 - PA Monitor (C. S. PA) J1007 - W1007 J3017 - ALDC (C. S. PA) J1008 - W1000 J1000(S) - W1000 Meters, Fans, Contactors
AUX (SYNTH)	CA-576	CPP-1 TO CHG	W3002	* *	P3038 P3039	J402 - CPP-1 J1106 - CHG
AUX (SYNTH)	CA-551-4	CPP-2 TO CHL-1	W3005	* *	P3044 P3045	J101 - CHL J503 - CPP-2
AUX (SYNTH)	CA-551-5	CPP-2 TO CLL-1	W3003	* *	P3040 P3041	CLL-1 J501 - CPP-2
AUX (SYNTH)	CA-551-6	CPP-2 TO CMO-1	W3004	* *	P3042 P3043	J304 - CMO J502 - CPP-2
AUX (N. S.)	CA-427	CABLE ASSY MAIN	W3001	* * * * * * *	P3009 P3010 P3011 P3012 P3013 P3014 P3015	VFO - IN SA-1 SIGNAL IN - SA-1 RF MONT - SBE VMO IN - SBE RF OUT - SBE USB - SBE LSB - SBE
<p>NOTE - CODE * Connection made by Installer ** Factory connected</p>						

TABLE 2-5. CABLE INTERCONNECTIONS ON GPT-10K (NON-SYNTHESIZED AND SYNTHESIZED) (Cont.)

FRAME	CABLE	FUNCTION	CABLE SYMBOL	CODE (See Note)	CONNECTORS ON CABLE	INTERCONNECTION
				*	P3023	J701 - 1 KC - CLL-1
				*	P3024	J702 - 500 KC - CLL-1
				*	P3025	J605 - Power In - CSS-1
				*	P3026	J603 - 1 MC IN - CSS-1
				*	P3027	J606 - 1 MC OUT - CSS-1
				*	P3028	J102 - 1 MC - CHL
				*	P3029	J103 - 500 KCS - CHL
				*	P3030	J104 - 10 KCS - CHL
				*	P3031	J113 - 10 KCS - CHL
				*	P3032	J105 - 1 KCS - CHL
				*	P3033	J106 - 100 CPS - CHL
				*	P3034	SI-A - APP-3
				**	P3035	SI-B - APP-3
				**	P3036	SI-C - APP-3
				**	P3046	J3015 - A-2048
				**	P3047	J3016 - A-2048
				*	P3050	J1108 ALDC - CHG

NOTE - CODE * Connection made by Installer
 ** Factory connected

- NOTE:
1. FOR INSTALLATION DETAILS SEE FIGURE 2-2.
 2. IN ASSEMBLING TRANSMITTER SIDE PANELS MS-1460 AND MS-1465, RAISE THESE PANELS AS MUCH AS POSSIBLE BEFORE TIGHTENING SECURELY. OTHERWISE FRONT DOORS (MS-1645 AND MS-1646) AND REAR DOORS (MS-1647 AND MS-1648) WILL NOT FIT PROPERLY INTO LATCHES.
 3. SERIAL NO. 123 THROUGH 196.
 4. TMA-10K METER BOX (SUPPLIED ON CUSTOMER'S ORDER) CONTAINS ANTENNA BOWLS, METERS AND IS APPROXIMATELY 7 INCHES HIGH.



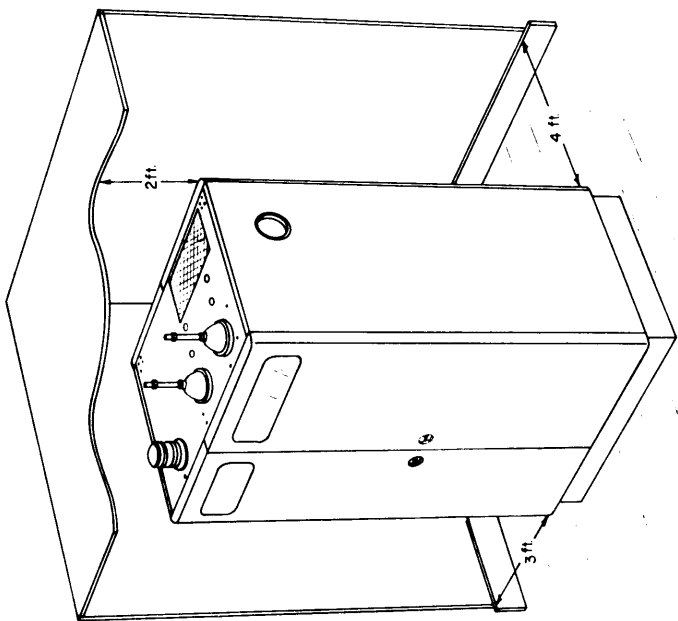
RECOMMENDED MINIMUM CLEARANCE REQUIREMENTS

Figure 2-1. Assembly Drawing, GPT-10K
(Non-Synthesized and Synthesized)
(Sheet 1 of 2)

Original

2	57	MS-1850-A	PLATE, ACCESS, ALUMINUM
2	56	MS-1850-S	PLATE, ACCESS, STEEL
12	55	FW25HBN	WASHER, FLAT
12	54	LWS25MRN	LOCKWASHER, SPLIT
12	53	SCHH2520BN10	BOLT, HEX HEAD 1/4" - 20
8	52	HB-101-3	PLUG, BUTTON 1/2"
30	50	FW3HBN	WASHER, FLAT
3	49	MS-1698	BRACKET, TRIM STRIP
30	48	LWS3MSN	LOCKWASHER, SPLIT 5/16
30	47	SCHH318N16	BOLT, HEX HEAD 5/16 - 18 X 1" LG
1	46	MS-1753-2-30	GROUND STRAP 30" LG
1	45	MS-1753-2-18	GROUND STRAP 18" LG
10	44	FW37HSN	WASHER, FLAT 3/8
10	43	LWS37MSN	LOCKWASHER, SPLIT 3/8
10	42	SCHH3716SN24	BOLT, HEX HEAD 3/8 - 16 X 1-1/2 LG
2	41	MS-2123	DOOR LATCH MTG. BRACKET
2	40	MS-2122	DOOR LATCH STOP, BOTTOM
2	39	MS-1661	DOOR LATCH MTG. BRACKET, TOP
2	38	MS-1660	DOOR LATCH STOP, TOP
2	37	MS-1672	TRIM, REAR, TOP AND BOTTOM
1	36	MS-1671	TRIM, REAR, MAIN FRAME
1	35	MS-1670	TRIM, REAR, AUX FRAME
1	34	MS-1669	TRIM, REAR, CENTER
1	33	MS-1920	TRIM, HINGED LEFT AUX
1	32	MS-1637	TRIM, HINGED RIGHT AUX
1	31	MS-1636	TRIM, FRONT, BOTTOM
1	30	MS-1635	TRIM, FRONT, TOP
1	29	MS-1634	TRIM, FRONT, LEFT SIDE, MAIN
1	28	MS-1633	TRIM, FRONT, RIGHT SIDE, MAIN
1	27	PL-149	CONNECTOR, PLUG, ODS
1	26	MS-1665	PLATE, BLANK UNBAL. OUTPUT
2	25	AX-159	INSULATOR BOWL ASSEMBLY
1	24	BI-106	LAMP, INCANDESCENT
1	23	AX-124	H.V. LAMP SOCKET ASSEMBLY
2	22	MS-2257	SPACER, DOOR
22	21	SCBS1032BN8	SCREW, MACHINE
1	20	AD-103-1	FILTER, AIR
1	19	MS-2255	COVER, FILTER, PERFORATED
48	18	NTH0348BN6	NUT, HEX
48	17	LWS03MRN	LOCKWASHER, SPLIT
48	16	SCFS0348BN6	SCREW, MACHINE
24	15	FS-102-1	SPRING, "S" TYPE
24	14	FS-110-1	STUD, SLOTTED HEAD
1	12	MS-2258	COVER, UNBAL. OUTPUT
2	11	MS-2256	COVER, FILTER, BLANK
26	10	SCFS1032BN6	SCREW, MACHINE, F.H. 10-32 X 3/8 LG
1	9	MS-2117	PANEL, LEFT SIDE, AUX. FRAME
1	8	MS-2116	PANEL, RIGHT SIDE, MAIN FRAME
1	7	MS-1458	BASE, TOP
1	6	MS-1699	PANEL, TOP
1	5	MS-2175	SHIELD, BASE
1	4	MS-1648	DOOR, REAR, AUX. FRAME
1	3	MS-1647	DOOR, REAR, MAIN FRAME
1	2	MS-2118	DOOR, FRONT, MAIN FRAME
1	1	MS-2119	DOOR, FRONT, AUX. FRAME

NOTES:
1. SIGNALS BEYOND 196
SERIALS BEYOND 196
2. THE LOCK METER BOX (SUPPLIED ON CUSTOMER'S
ORDER) CONTAINS ANTENNA BOWLS, METERS
AND IS APPROXIMATELY 7 INCHES HIGH.



RECOMMENDED MINIMUM CLEARANCE REQUIREMENTS

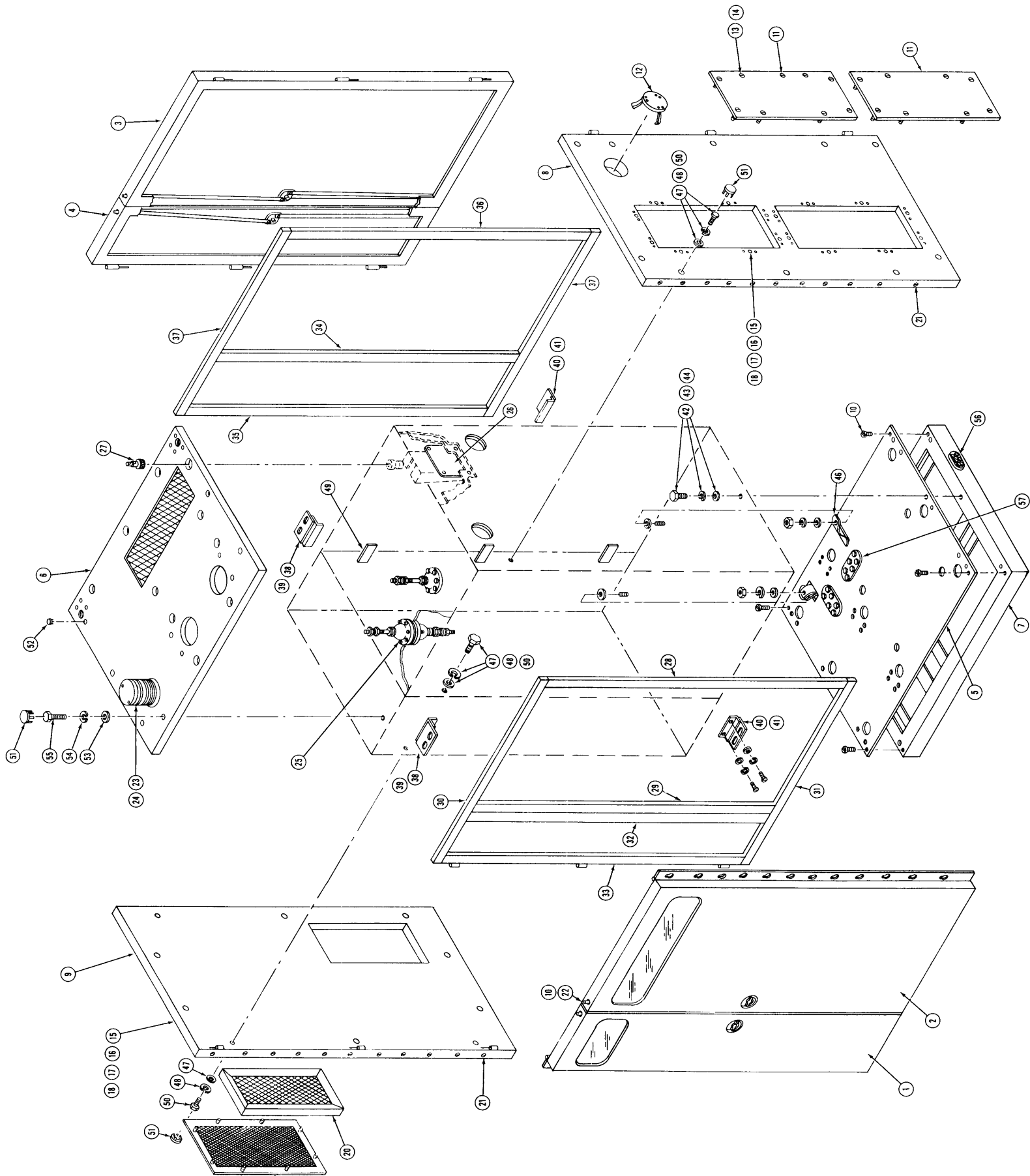
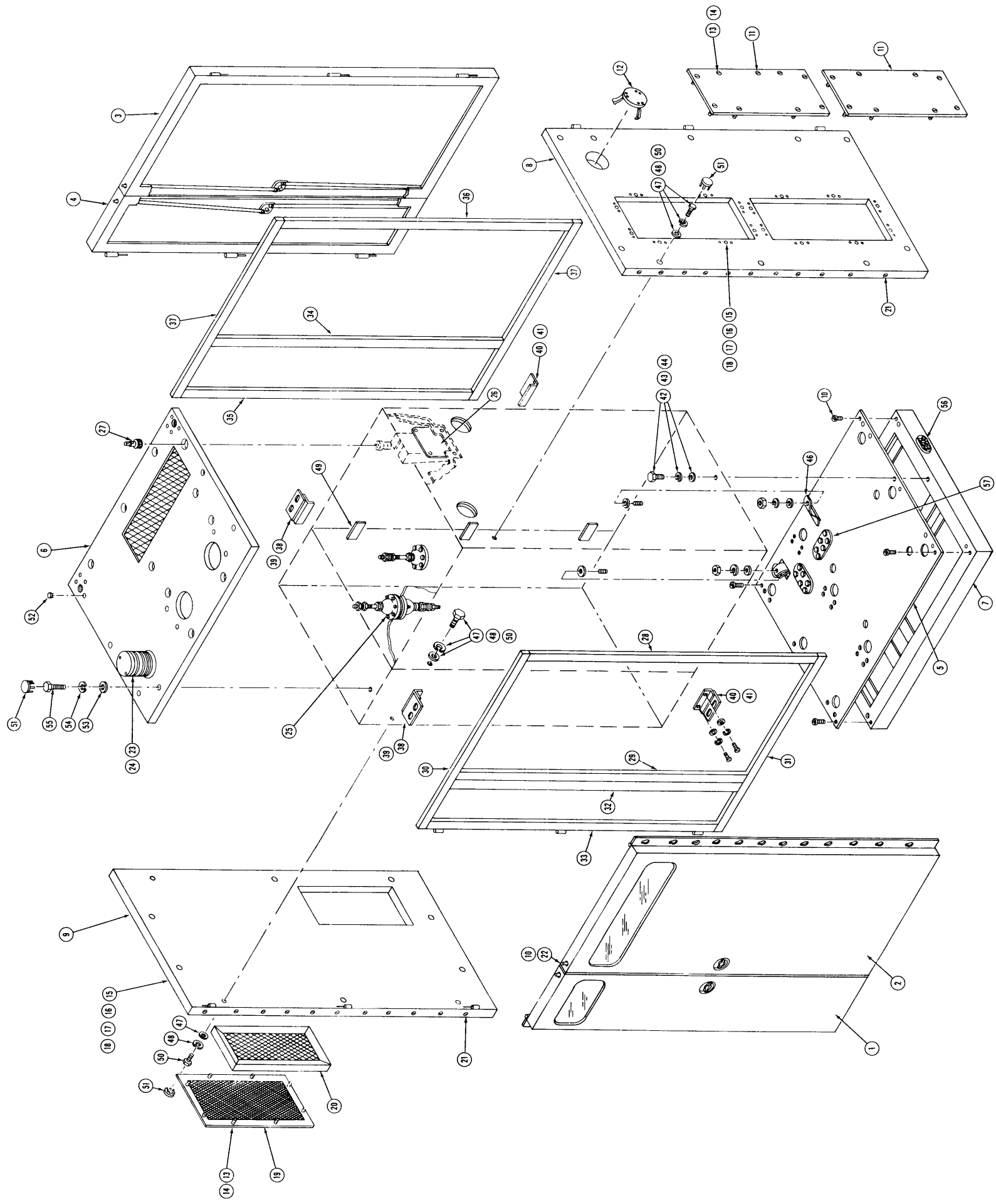
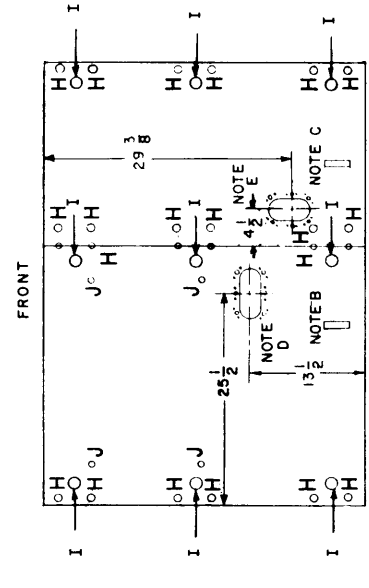
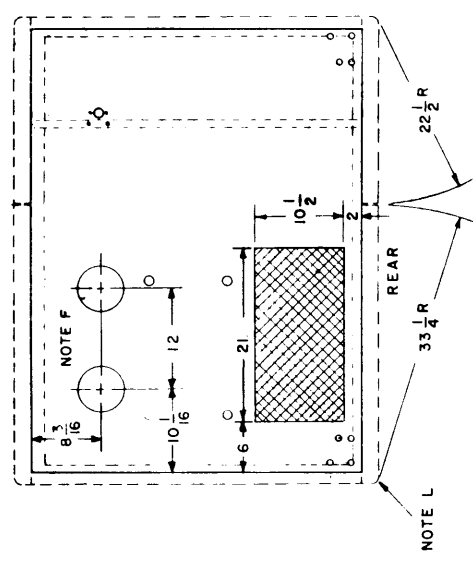


Figure 2-1. Assembly Drawing, GPT-10K
(Non-Synthesized and Synthesized) (Sheet 2 of 2)

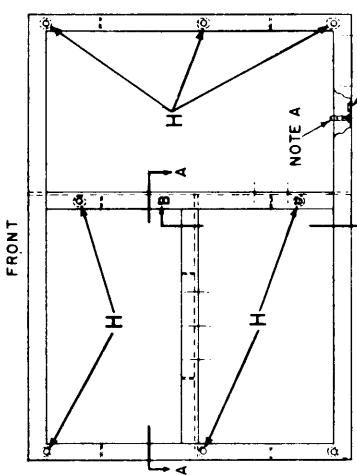
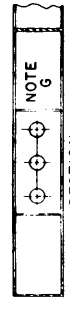
Original



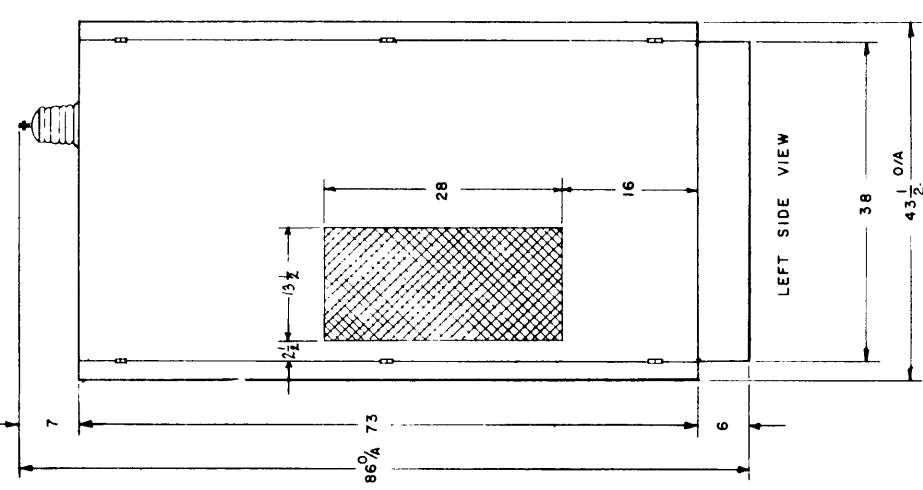
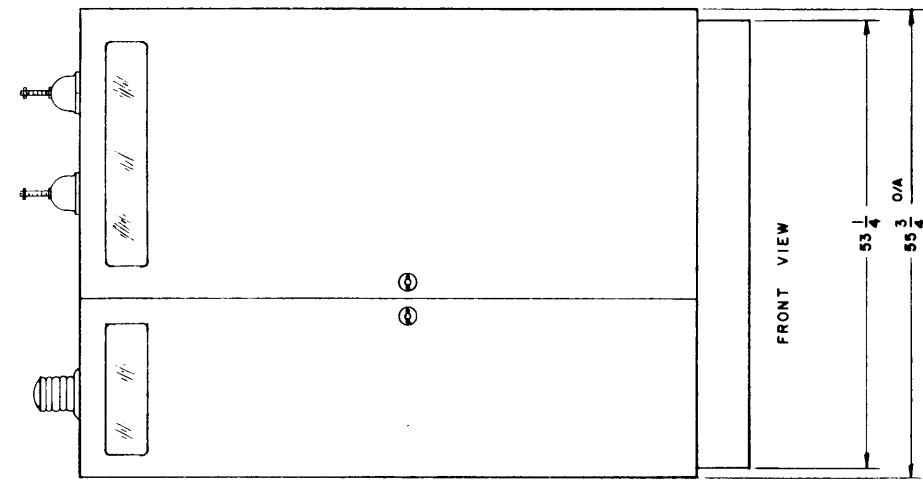
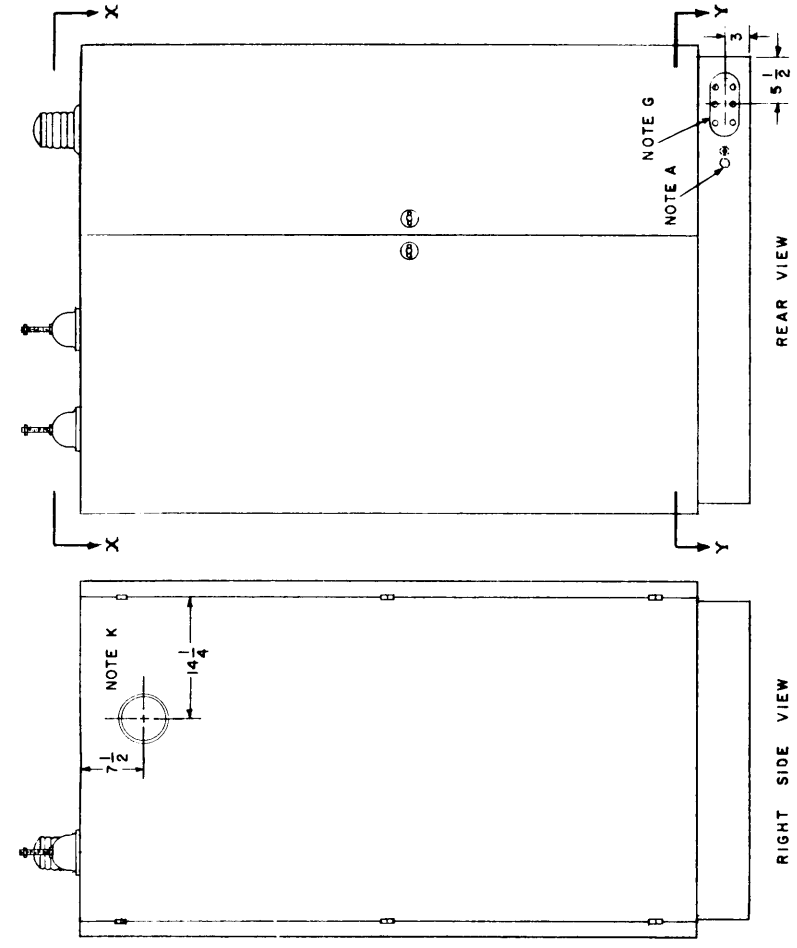
PLAN DETAIL OF TOP COVER
VIEW X-X
(SERIALS BEFORE 196)



PLAN DETAIL OF BASE SHIELDS
(SERIALS BEFORE 196)



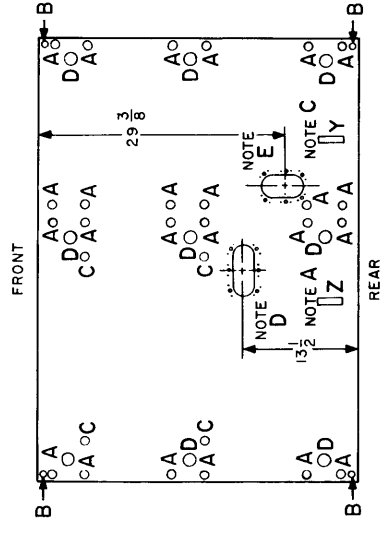
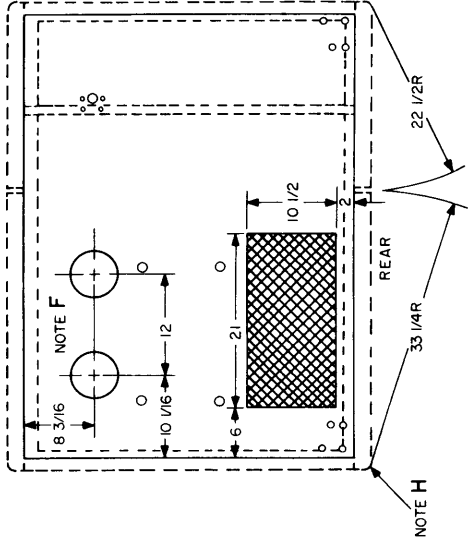
PLAN DETAIL OF BASE
VIEW Y-Y
(SERIALS BEFORE 196)



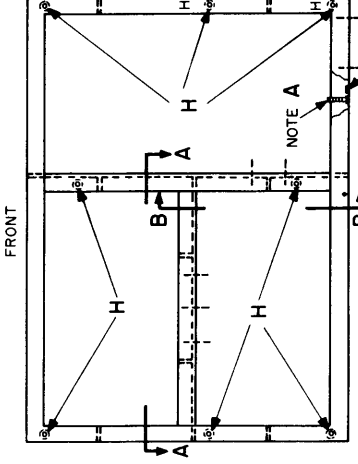
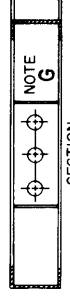
- NOTES:
 A - BOLT FOR TRANSMITTER GROUND.
 B - ACCESS HOLE FOR GROUND LEAD TO MAIN FRAME CHASSIS.
 C - ACCESS HOLE FOR GROUND LEAD TO AUXILIARY FRAME CHASSIS.
 D - ACCESS HOLE FOR 220V 3-PHASE 60 CYCLE POWER INPUT TO MAIN FRAME.
 E - ACCESS HOLE FOR SIGNAL CONDUCTORS INTERCONNECTING TEST EQUIPMENT ON AUXILIARY FRAME TO CIRCUITS EXTERNAL TO TRANSMITTER.
 F - ACCESS HOLES FOR INSULATORS FOR BALANCED ANTENNA.
 G - ACCESS HOLE AUXILIARY TO D AND E.
 H - CLEARANCE HOLES TO PERMIT FRAMES TO BE BOLTED TO BASE.
 I - CLEARANCE HOLES FOR SHOCK MOUNTS TO BE BOLTED TO FRAME.
 J - CLEARANCE HOLES TO PERMIT TRANSFORMER TO BE BOLTED TO FRAME.
 K - ACCESS HOLE FOR CONNECTIONS BETWEEN UNBALANCED OUTPUT CONNECTOR (OR OUTPUT CIRCUIT OF TRANSMITTER) TO 70-OHM ANTENNA.
 L - FRONT AND REAR DOOR SWINGS ARE IDENTICAL.
 M - FOR APPROXIMATE LOCATION ON THIS DRAWING USE 3/32 ± .1 INCH.

Figure 2-2. Installation Diagram, GPT-10K
(Non-Synthesized and Synthesized) (Sheet 1 of 2)

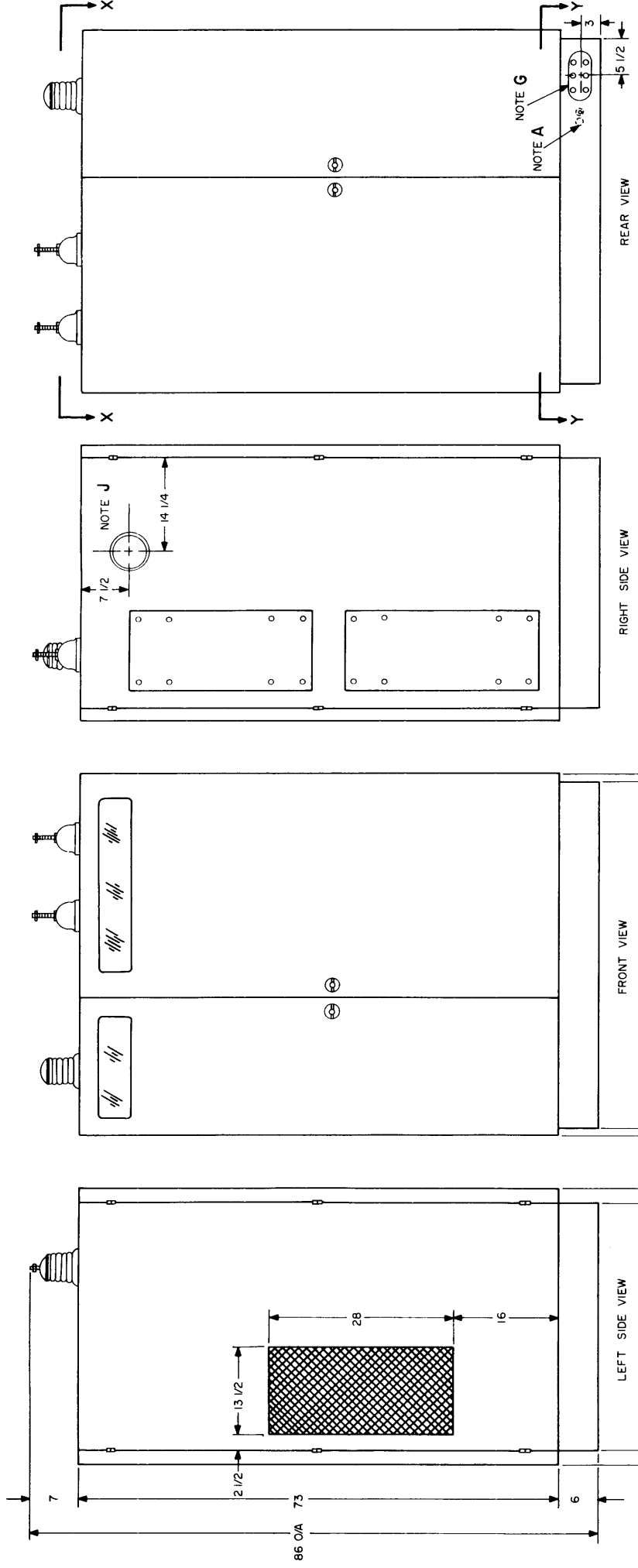
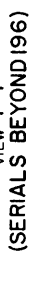
PLAN DETAIL OF TOP COVER
VIEW X-X
(SERIALS BEYOND 196)



PLAN DETAIL OF BASE SHIELDS
(SERIALS BEYOND 196)



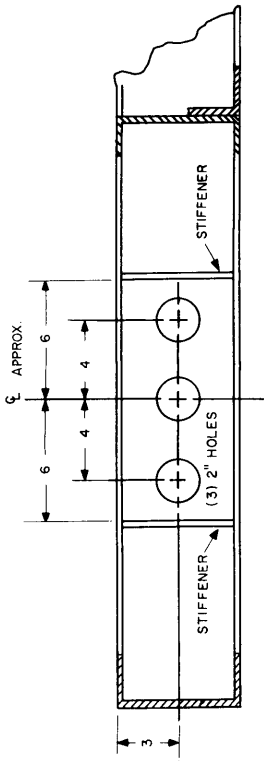
PLAN DETAIL OF BASE
VIEW Y-Y
(SERIALS BEYOND 196)



- NOTES:
- A- ACCESS HOLE FOR GROUND LEAD TO MAIN FRAME CHASSIS.
 - B- BOLT FOR TRANSMITTER GROUND.
 - C- ACCESS HOLE FOR GROUND LEAD TO AUXILIARY FRAME CHASSIS.
 - D- ACCESS HOLE FOR 220V 3-PHASE 60 CYCLE POWER INPUT TO MAIN FRAME.
 - E- ACCESS HOLE FOR SIGNAL CONDUCTORS INTERCONNECTING TEST EQUIPMENT ON AUXILIARY FRAME TO CIRCUITS EXTERNAL TO TRANSMITTER.
 - F- ACCESS HOLES FOR INSULATORS FOR BALANCED ANTENNA.
 - G- ACCESS HOLE AUXILIARY TO D AND E.
 - H- FRONT AND REAR DOOR SWINGS ARE IDENTICAL.
 - I- FOR APPROXIMATE LOCATION ON THE DRAWING USE 3/32=1 INCH.
 - J ACCESS HOLE FOR CONNECTIONS BETWEEN UNBALANCED OUTPUT CONNECTOR (OR OUTPUT CIRCUIT OF TRANSMITTER) TO 70-OHM ANTENNA.

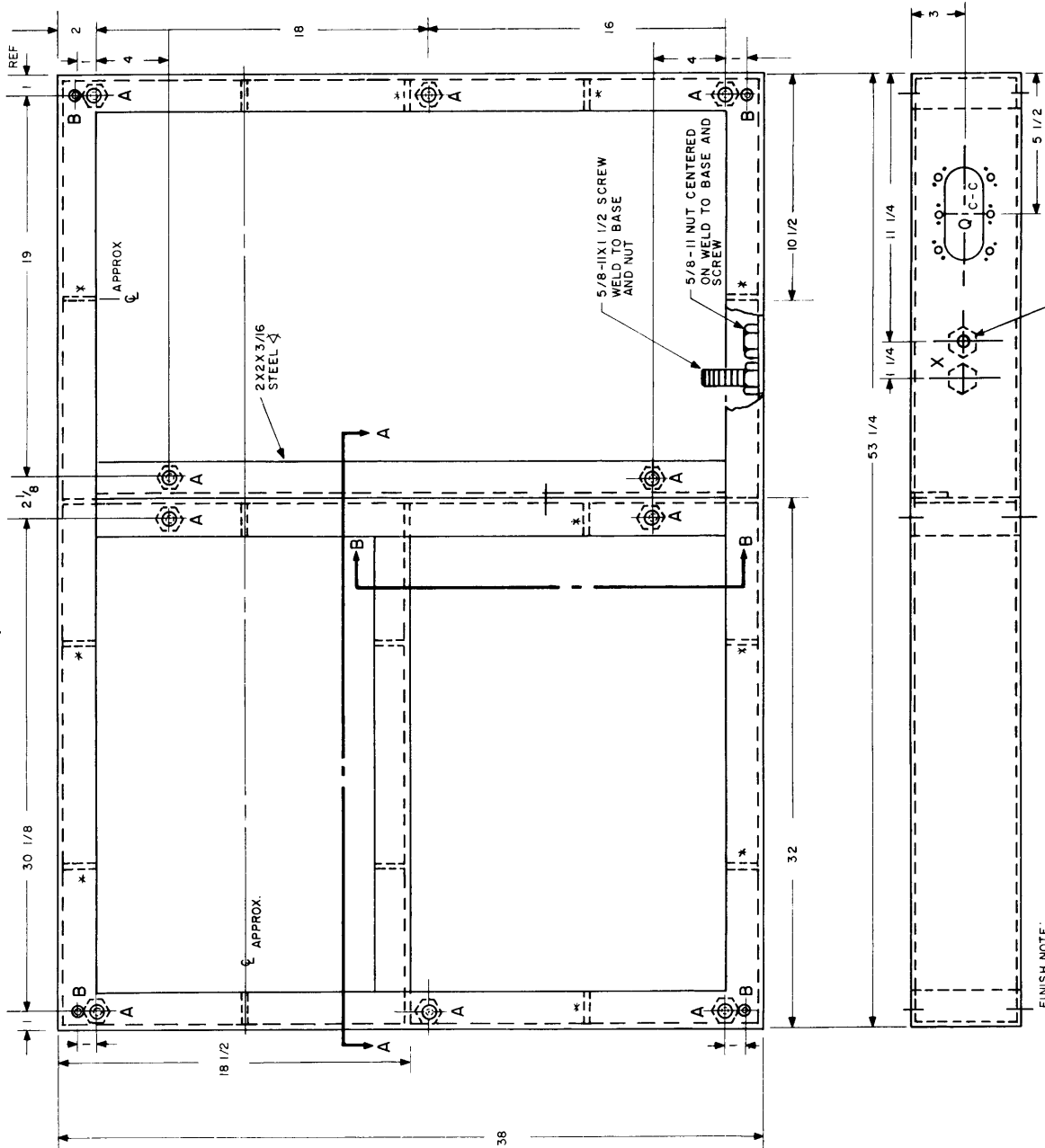
Figure 2-2. Installation Diagram, GPT-10K
(Non-Synthesized and Synthesized) (Sheet 2 of 2)

- NOTES:
1. A \rightarrow 7/16 (.438) DIA. 18 REQ. ON BOTH TOP & BOTTOM PLANES
 2. AA \rightarrow 24 STUDS TO ANCHOR SHIELD TO SHOCK MOUNTS (SEE FIG. 2-4). C \rightarrow CLEARANCE HOLES FOR BOLTS FOR AMPFA TO GO THROUGH (SEE FIG. 2-4).
 3. B \rightarrow DR & TAP FOR 8-32 4 REQ.

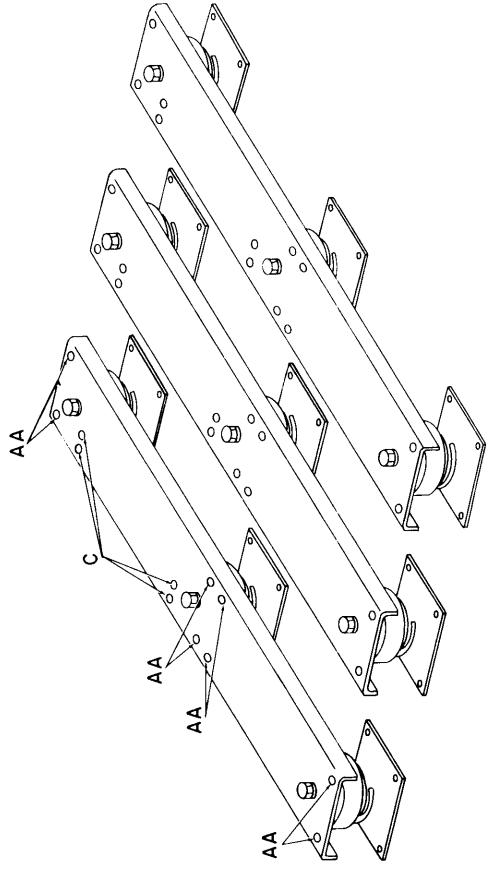
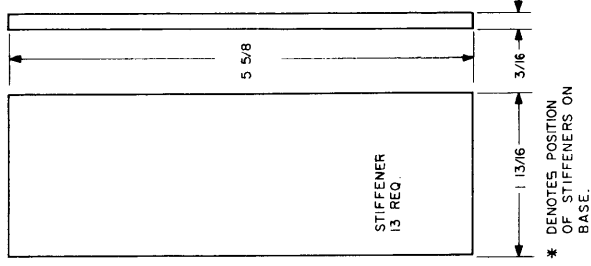
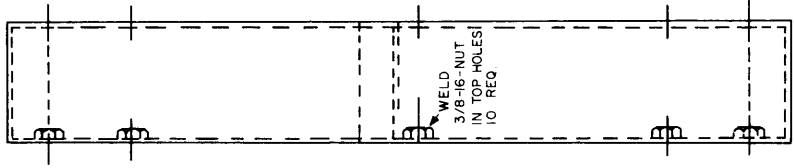


SECTION A-A

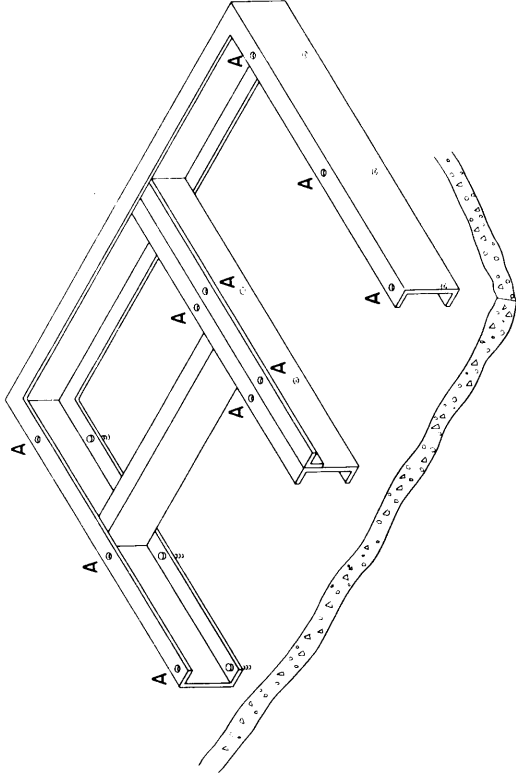
FRONT OF UNIT



FINISH NOTE:
 GREASE AND PREPARE SURFACE FOR FOLLOWING
 S220 TMC RC AF BLUE GRAY SMOOTH ENAMEL
 OR PAINT AND PRIME TO CUSTOMERS SPEC.



SKETCH SHOWING METHOD OF ATTACHING NINE BARRY MOUNTS TO GPT-10K FRAMES.

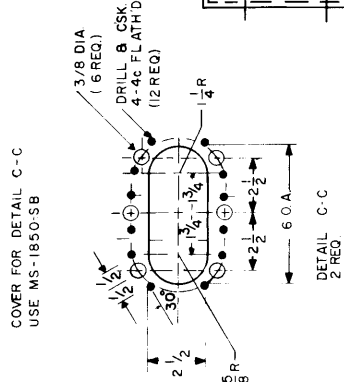
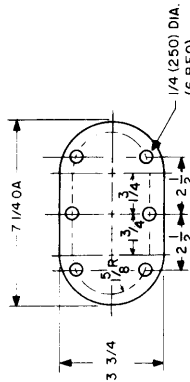
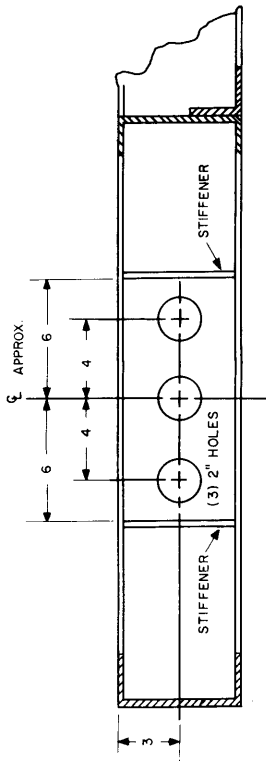


SKETCH SHOWING METHOD OF ATTACHING BASE TO FLOORING. (FRONT CHANNEL REMOVED)

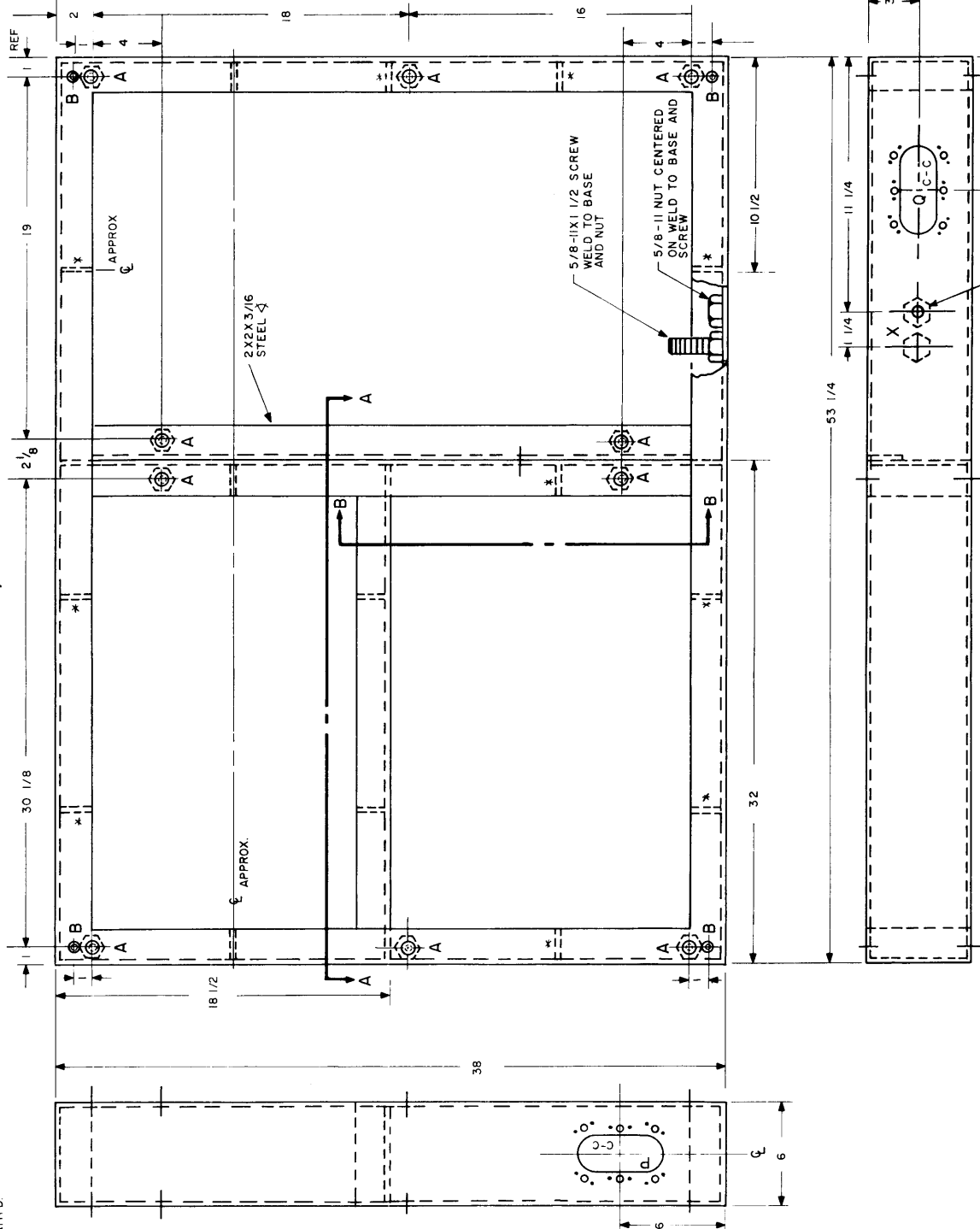
Figure 2-3. Installation Diagram, Base Assembly, GPT-10K (Non-Synthesized and Synthesized)

NOTES:

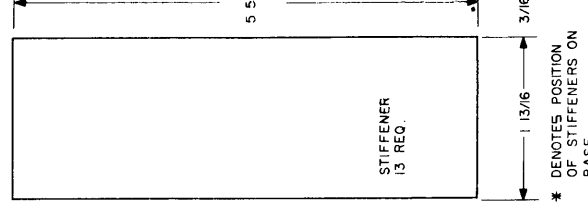
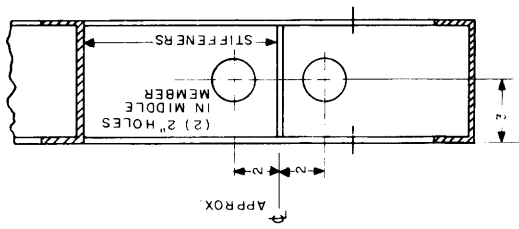
1. A \rightarrow 7/16 (.438) DIA. - ON BOTH TOP & BOTTOM PLANES 18 REQ.
2. AA \rightarrow 24 STUDS TO ANCHOR SHIELD TO SHOCK MOUNTS (SEE FIG. 2-4). C \rightarrow CLEARANCE HOLES FOR BOLTS FOR XMPR. TO GO THROUGH (SEE FIG. 2-4).
3. B \rightarrow DR & TAP FOR 8-32



SECTION A-A

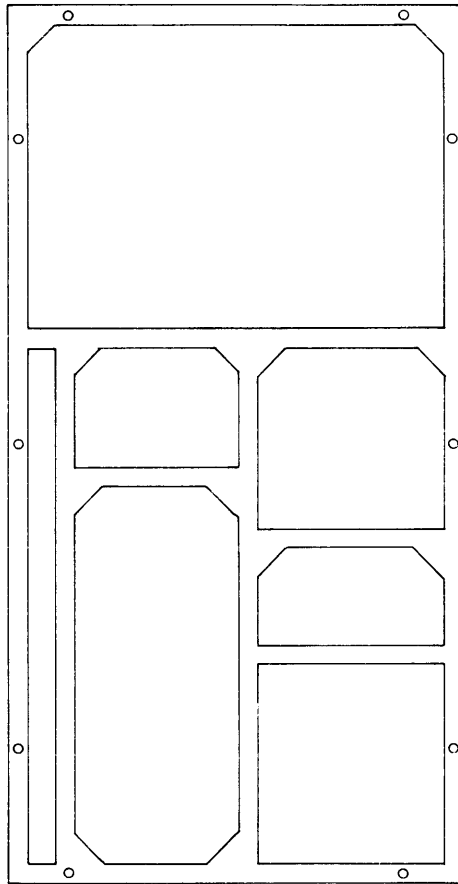


SECTION B-B



* DENOTES POSITION OF STIFFENERS ON BASE.

FINISH NOTE:
DEGREASE AND PREPARE SURFACE FOR FOLLOWING
S114 ZINC CHROMATE
S220 TMC RCAF BLUE, GRAY, SMOOTH ENAMEL
OR PAINT AND PRIME TO CUSTOMERS SPEC



NOTE:
REFER TO STEP 7 OF
PARAGRAPH 2-4
ASSEMBLY OF GPT-10K

Figure 2-5. Installation Diagram, Location of Ten Bolts to Fasten Main and
(Auxiliary Frame Chassis, GPT-10K (Non-Synthesized and Synthesized))

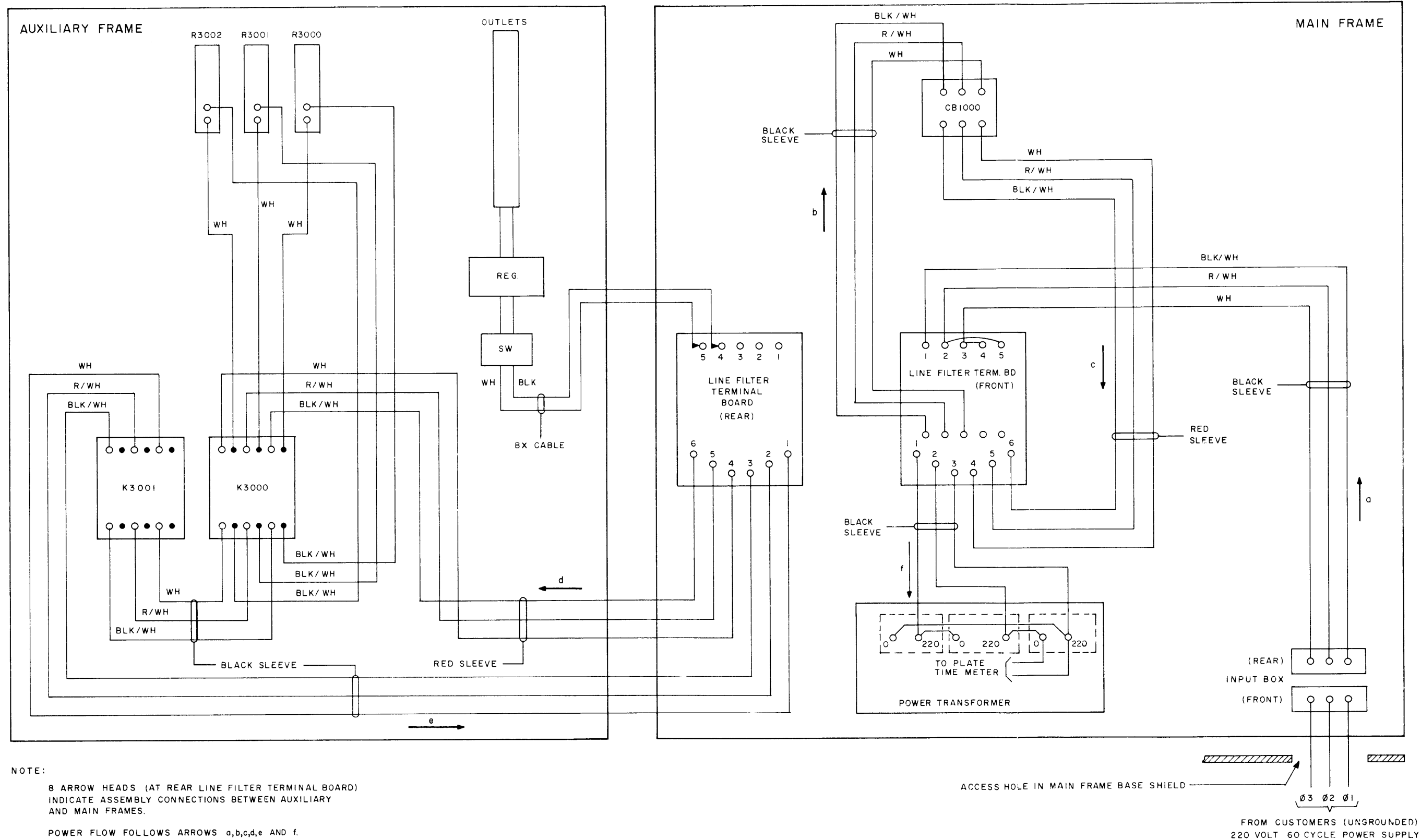


Figure 2-6. Wiring Diagram, GPT-10K's Power Circuit from Input Box to Main Power Transformer

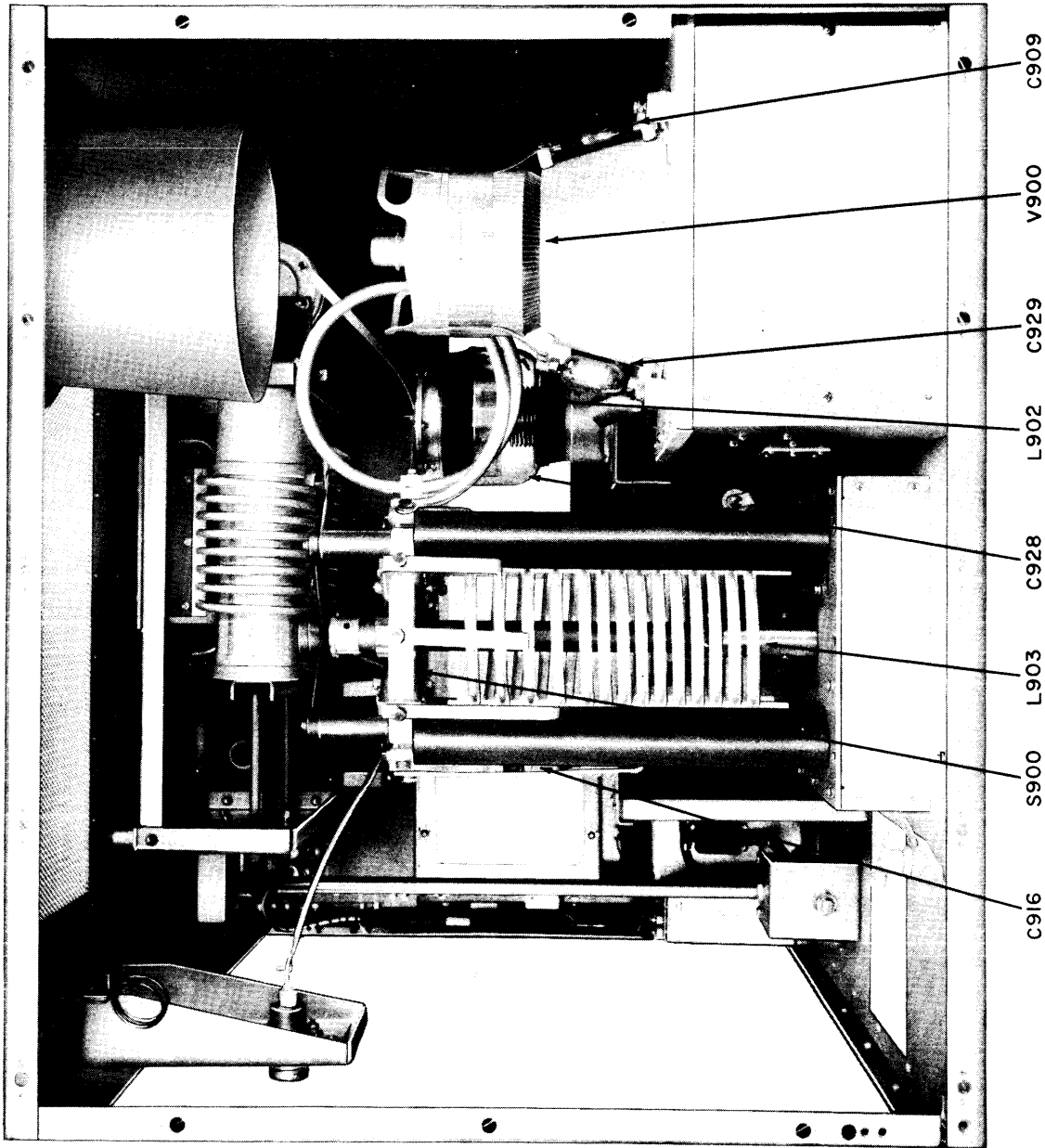


Figure 2-7. Rear View of PA Section of GPT-10K

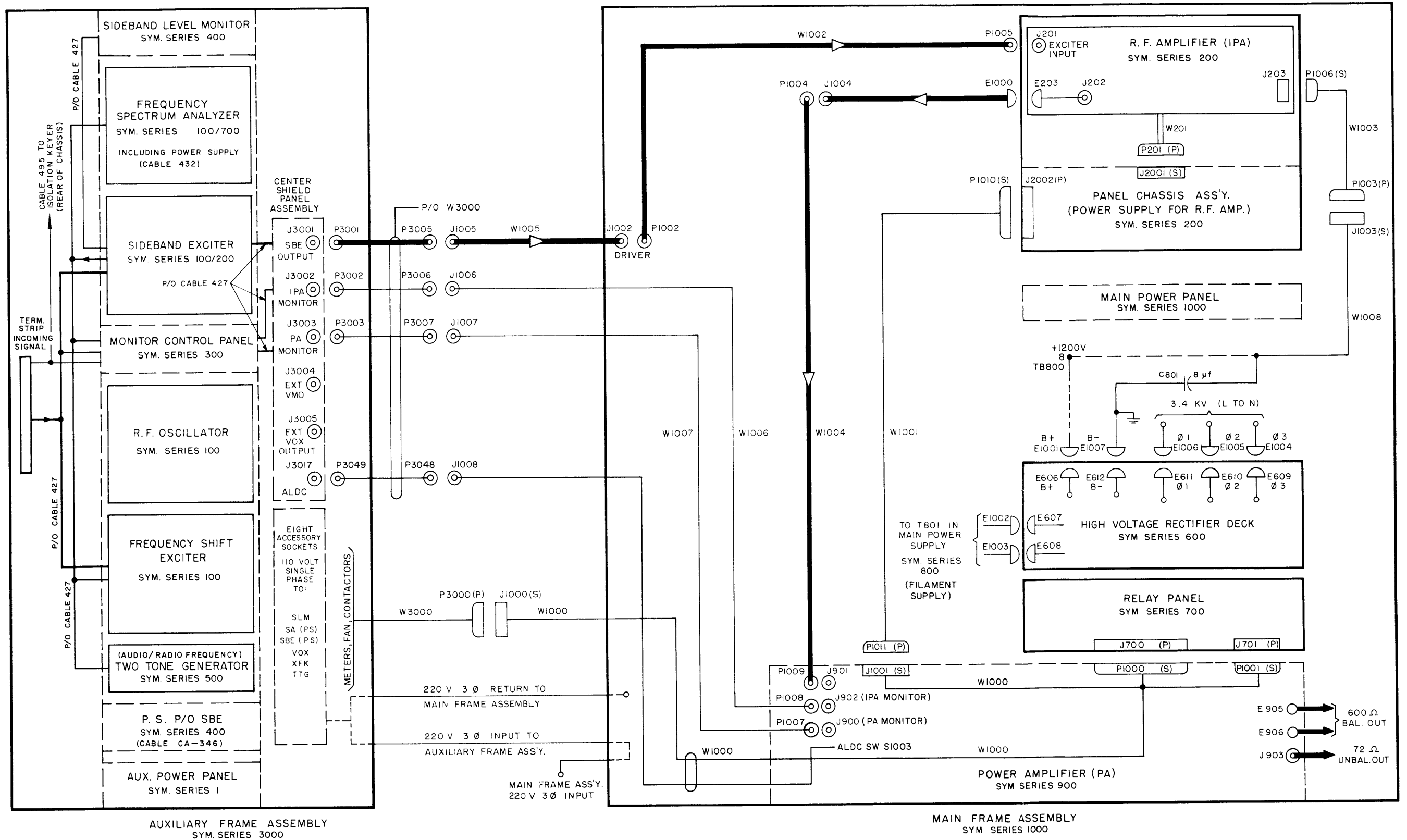


Figure 2-8-a. Simplified Block and Interconnection Diagram, GPT-10K, Non-Synthesized

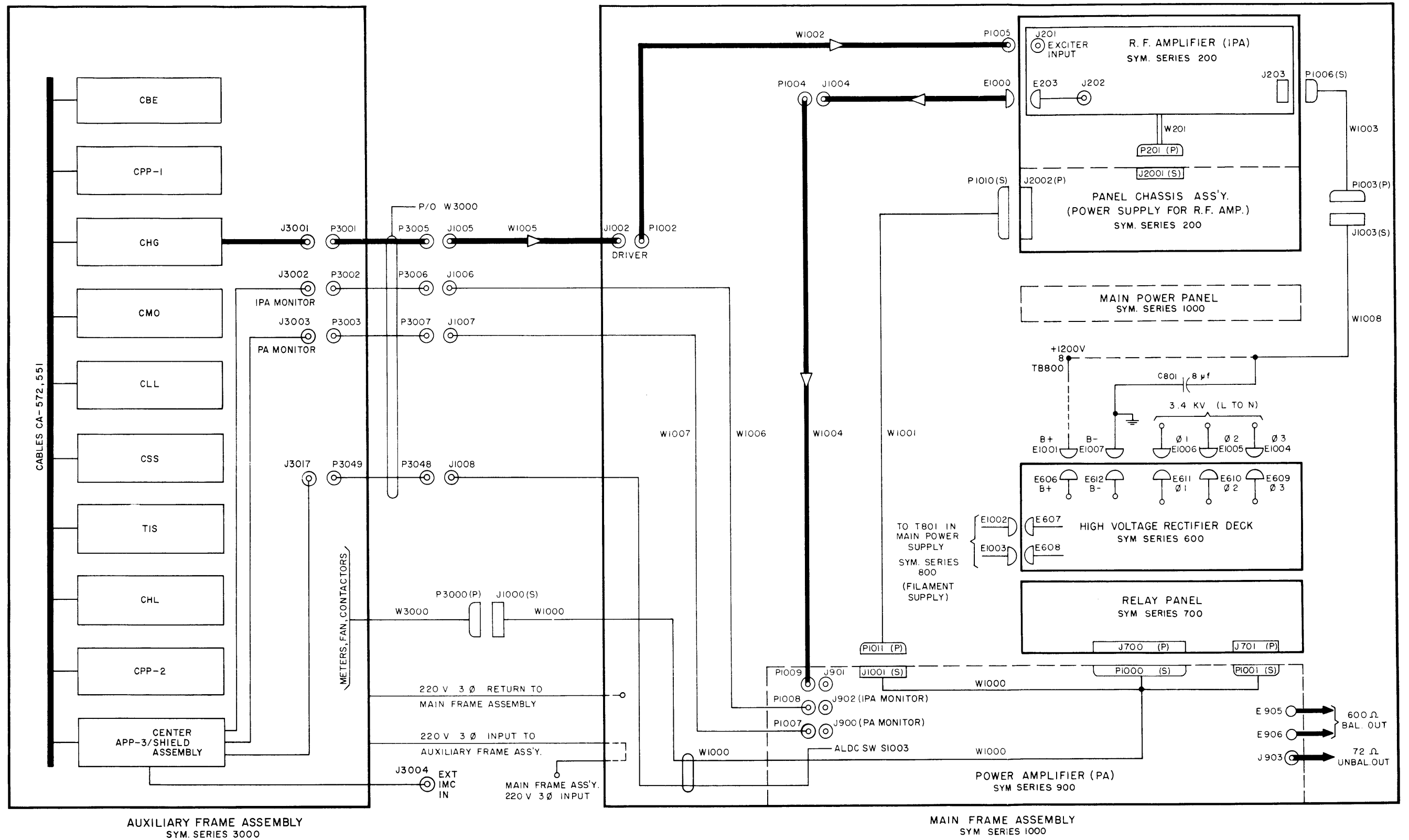


Figure 2-8-b. Simplified Block and Interconnection Diagram, GPT-10K, Synthesized

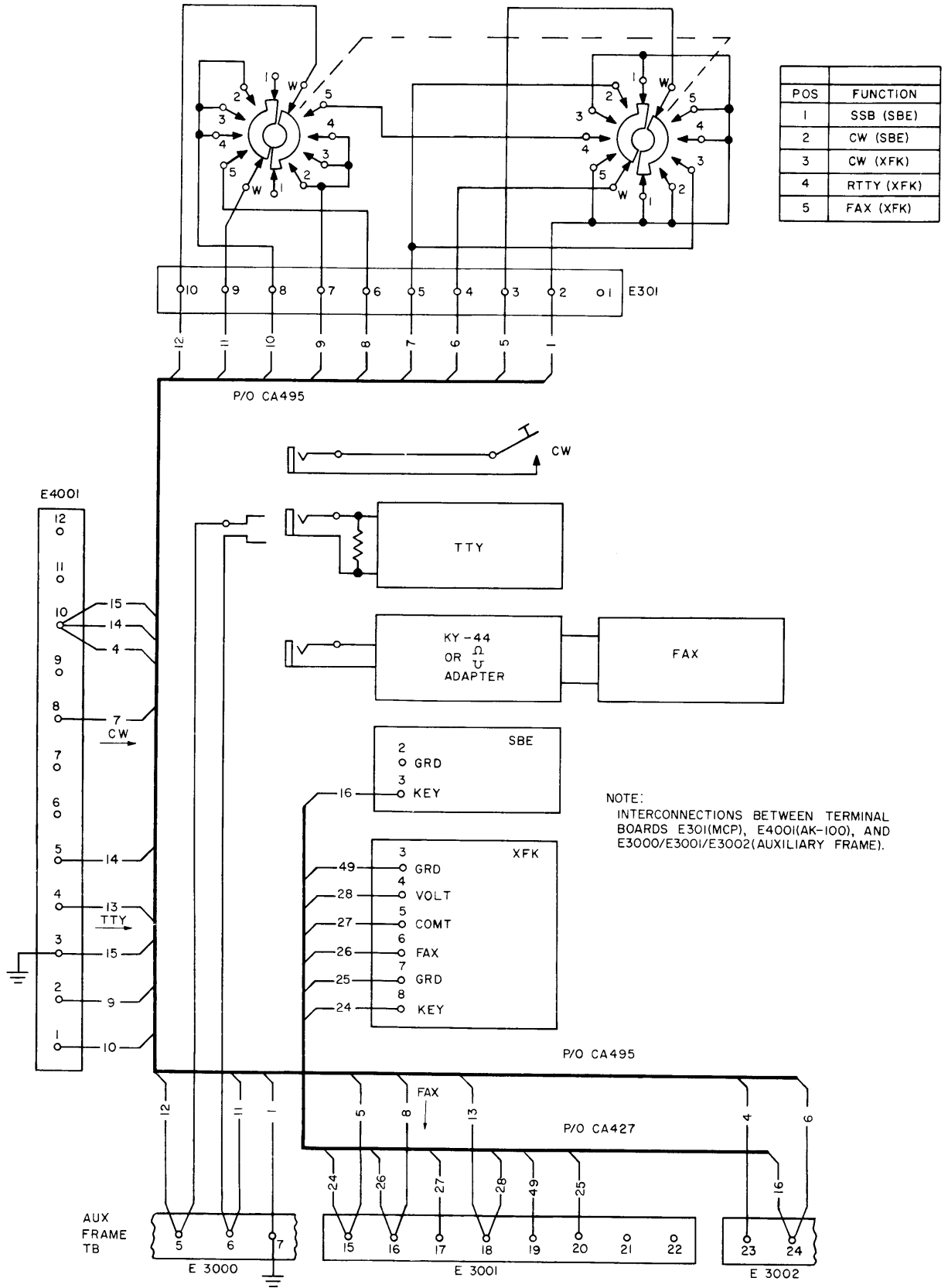


Figure 2-9-a. Partial Wiring Diagram, Auxiliary Frame Chassis for Non-Synthesized GPT-10K

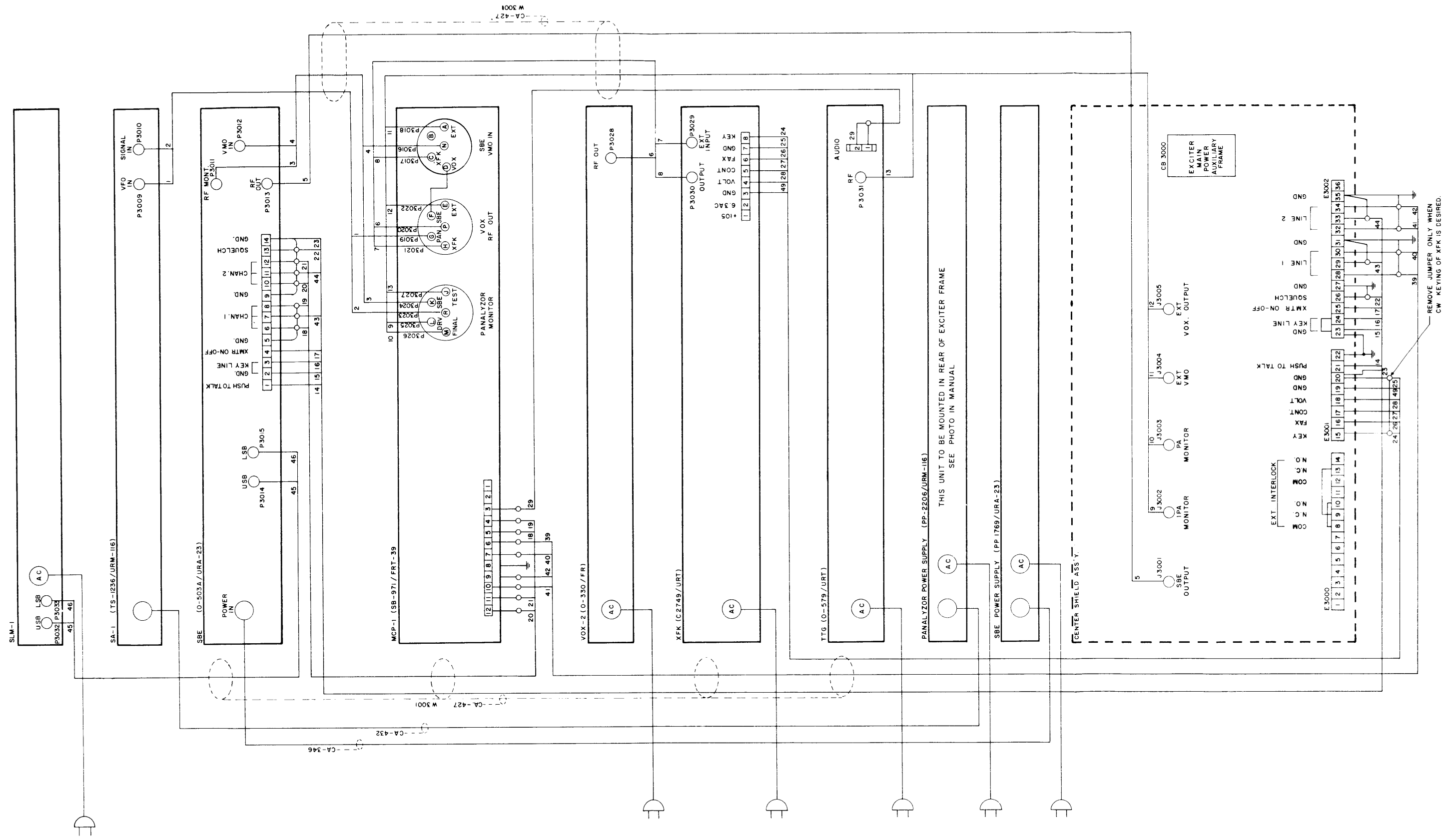


Figure 2-9-b. Wiring Diagram, Auxiliary Frame Chassis for Non-Synthesized GPT-10K Equipped with MCP-1 Unit

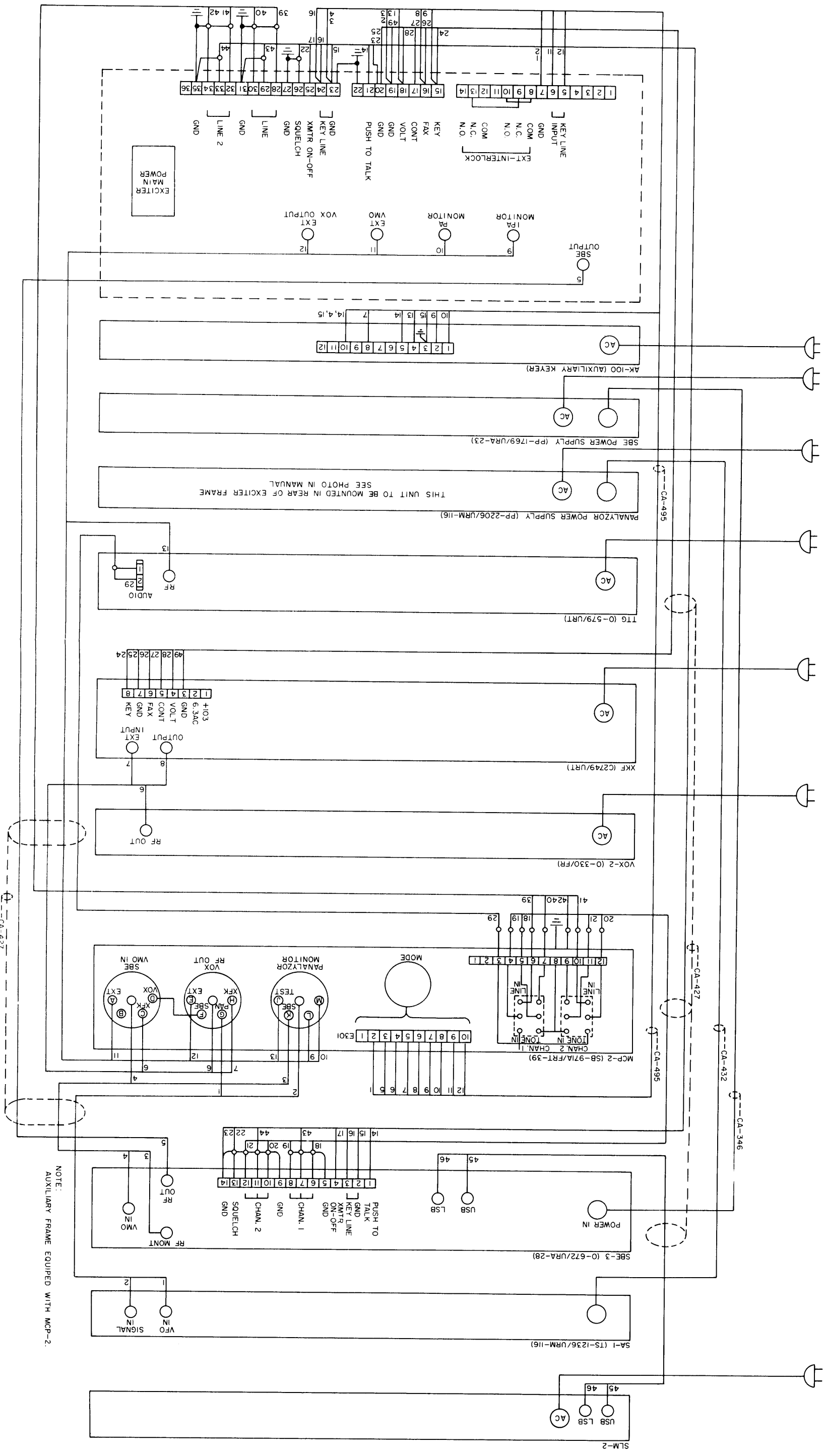
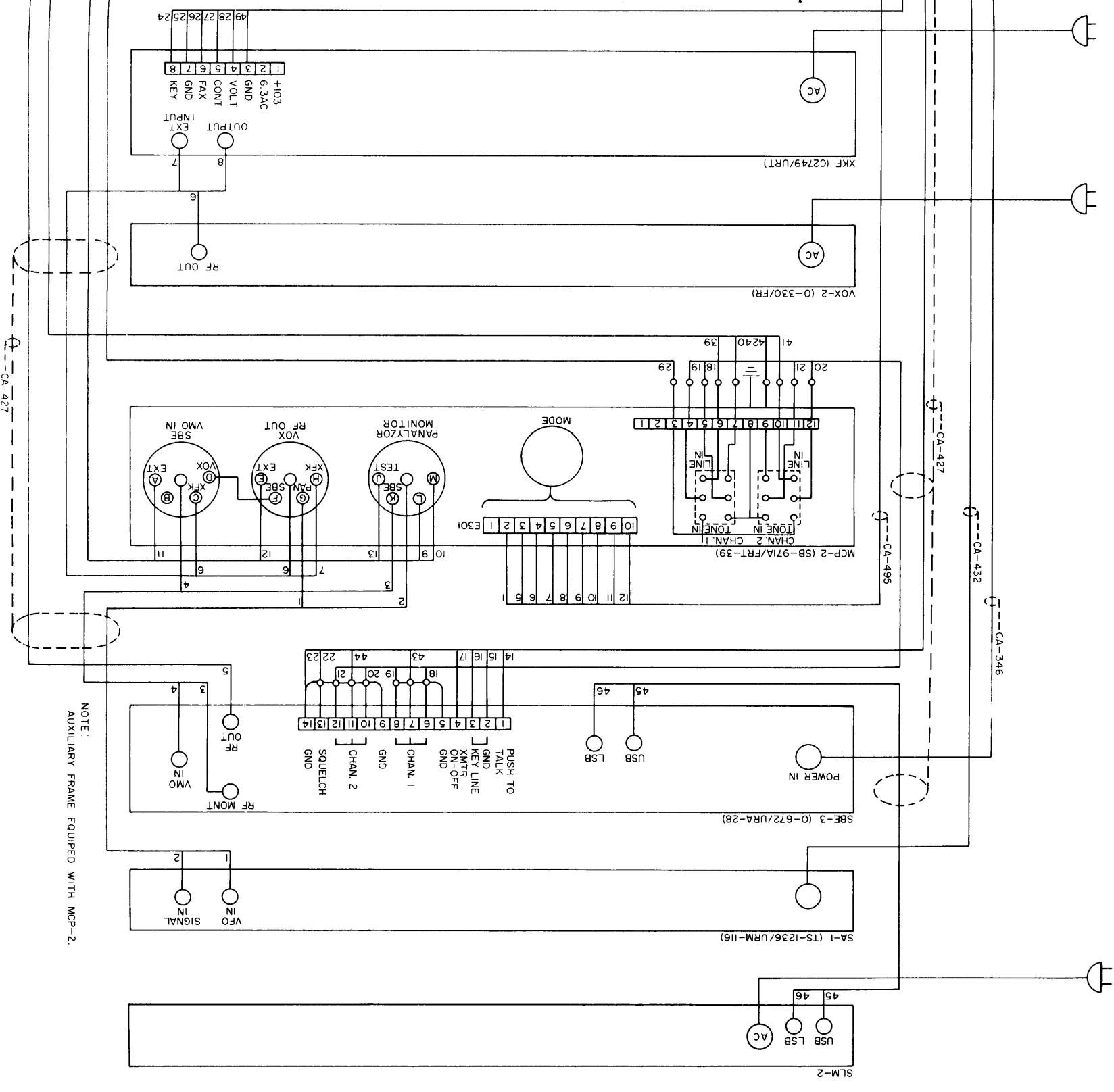
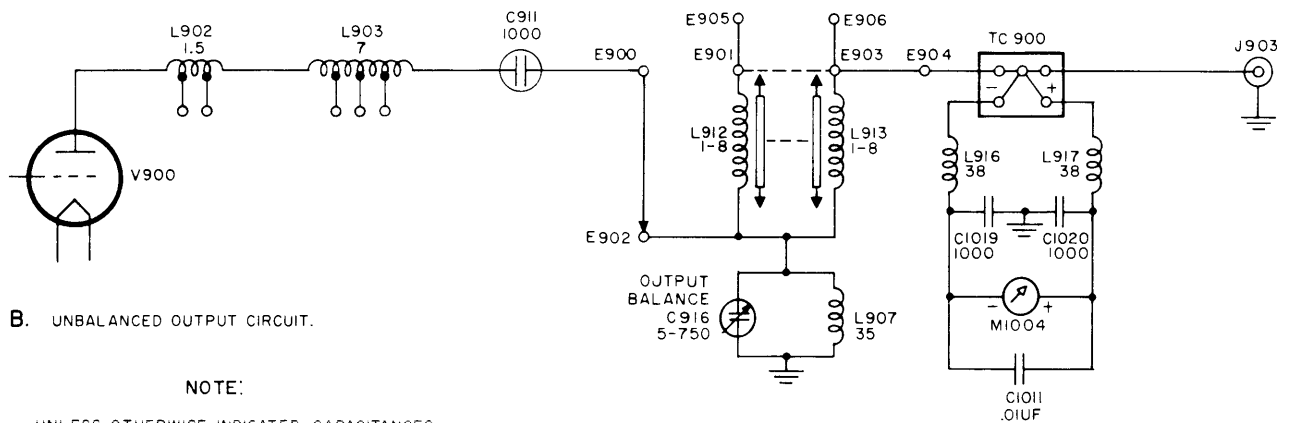
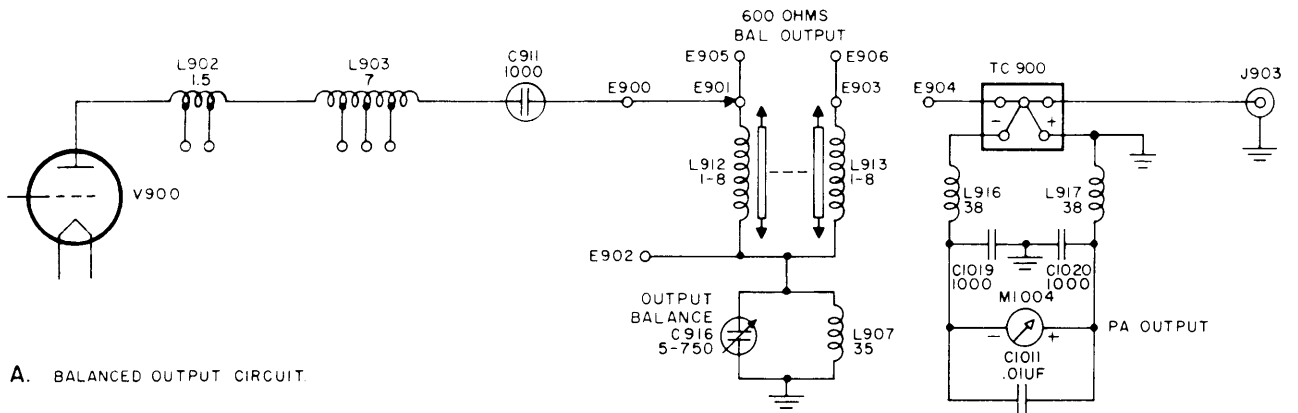


Figure 2-9-c. Wiring Diagram, Auxiliary Frame Chassis for Non-Synthesized GPT-10K Equipped with MCP-2 Unit

Original



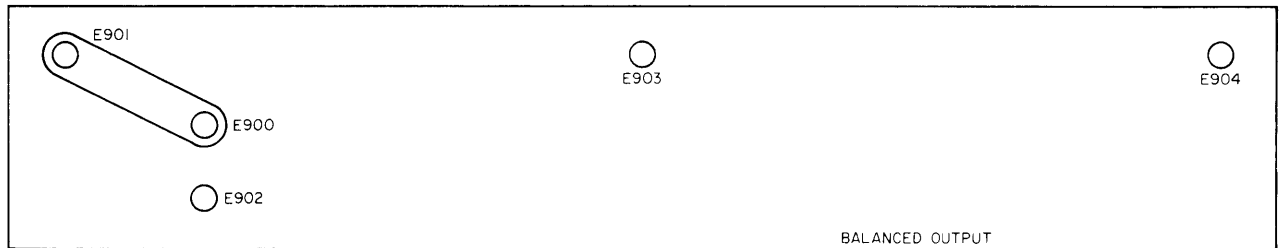
NOTE:
 AUXILIARY FRAME EQUIPPED WITH MCP-2



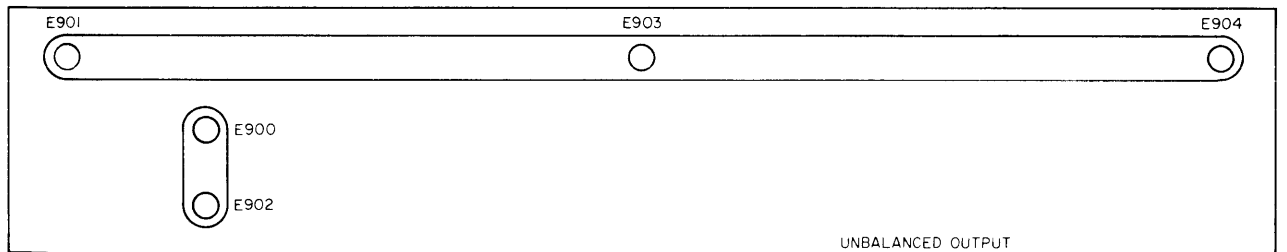
NOTE:

UNLESS OTHERWISE INDICATED, CAPACITANCES ARE IN UUF AND INDUCTANCES ARE IN UH.

ANTENNA TUNER TERMINAL BOARD

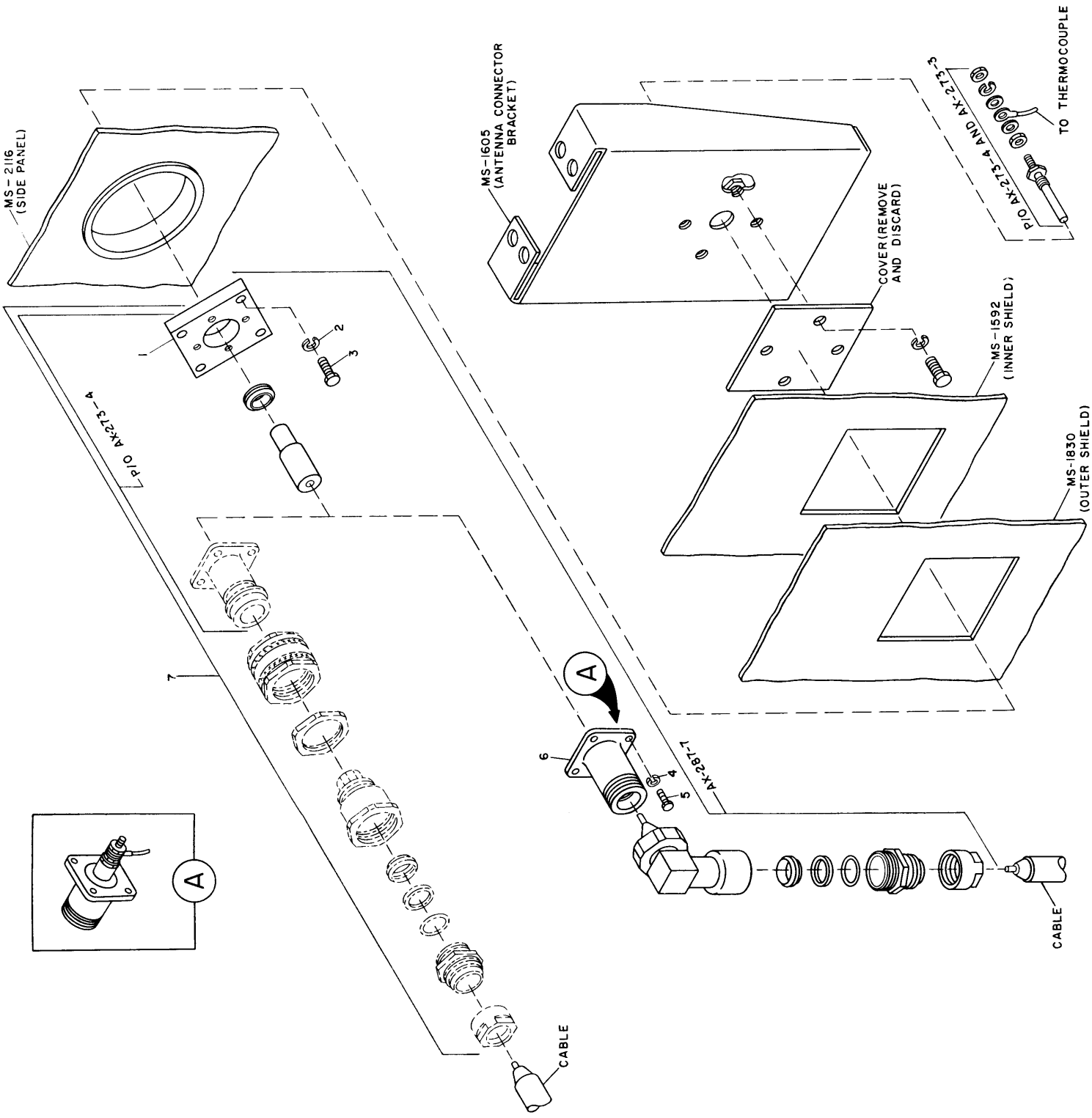


STRAP ARRANGEMENT FOR BALANCED ANTENNA



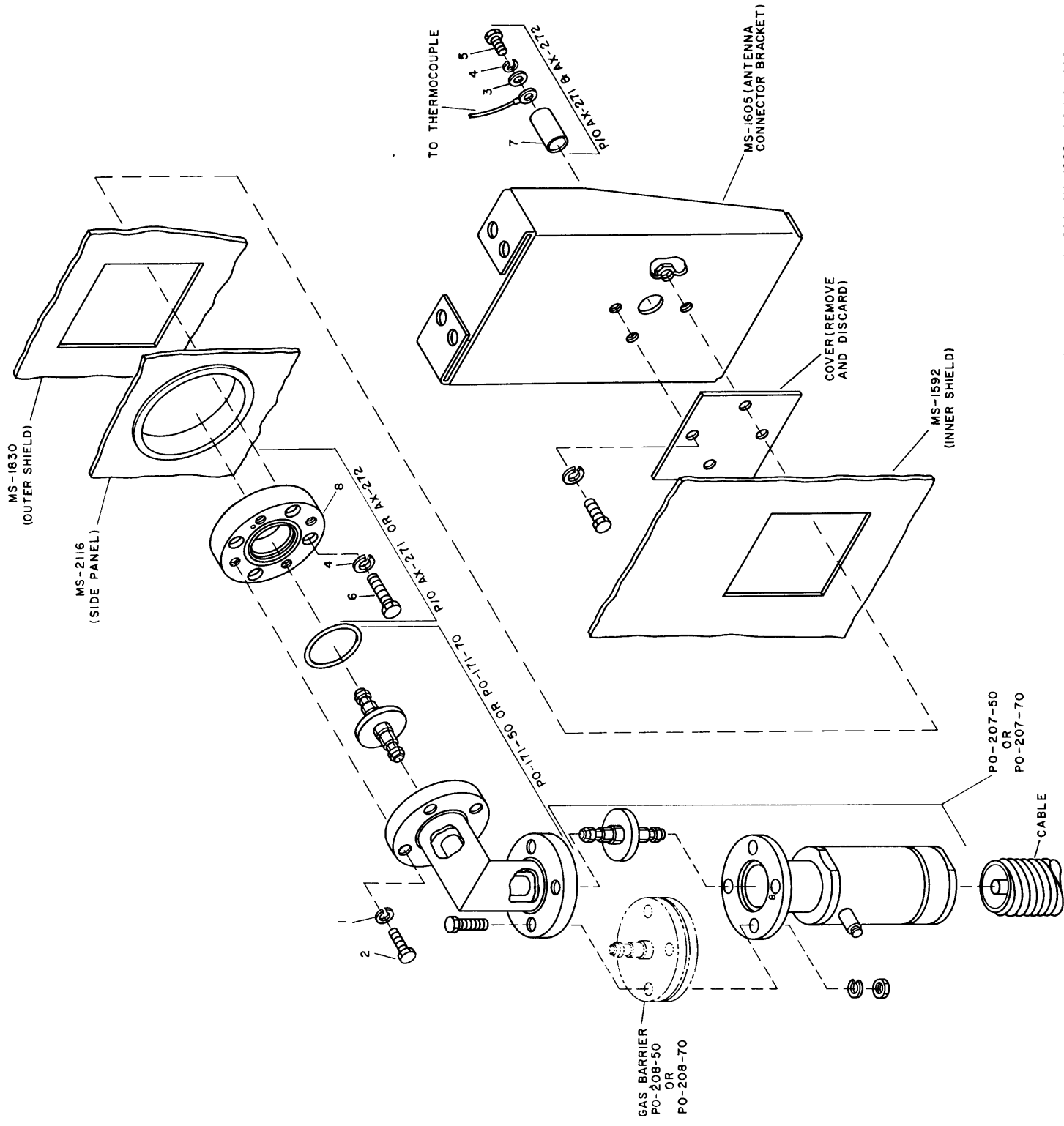
STRAP ARRANGEMENT FOR UNBALANCED ANTENNA

Figure 2-10. Simplified Diagram Showing Circuit Difference Between Balanced (600 ohm) and Unbalanced (50/70 ohm) Output Circuits



SKETCH 1. MOUNTING KIT-LC AND QDL CONNECTIONS-ANTENNA CABLE

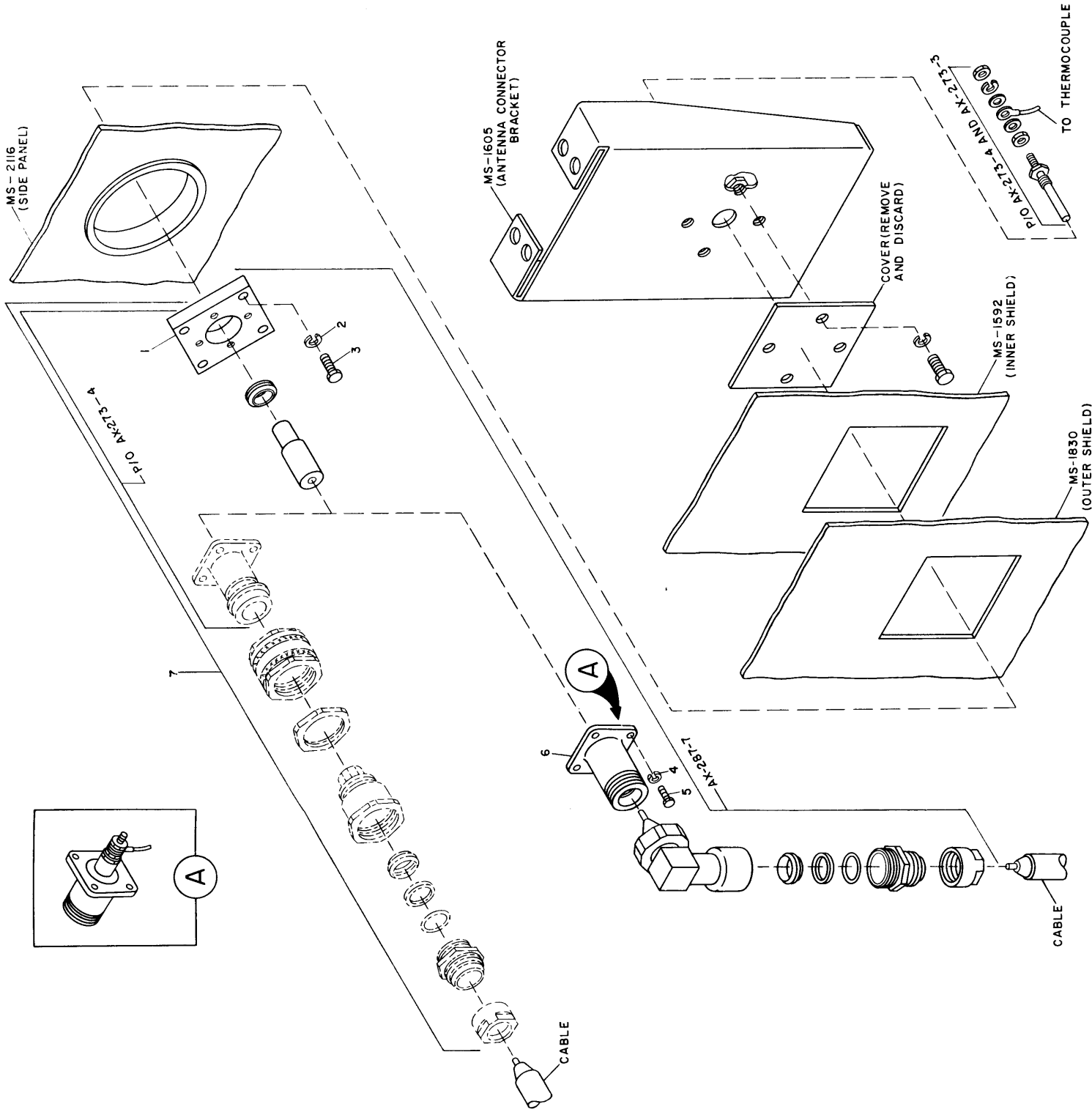
- NOTES:
1. MATING RIGHT ANGLE RF CONNECTOR FOR AX-273-4 IS DESIGNATED AS AX-273-6 (PL-141).
 2. MATING STRAIGHT RF CONNECTOR FOR AX-287-3 IS DESIGNATED AS AX-287-6 (PL-214).
 3. MS-2116, MS-1830, MS-1592, MS-1666 AND MS-1605 ARE PARTS OF TRANSMITTER.



NOTE: MS-2116, MS-1830, MS-1592, MS-1666 AND MS-1605 ARE PARTS OF TRANSMITTER

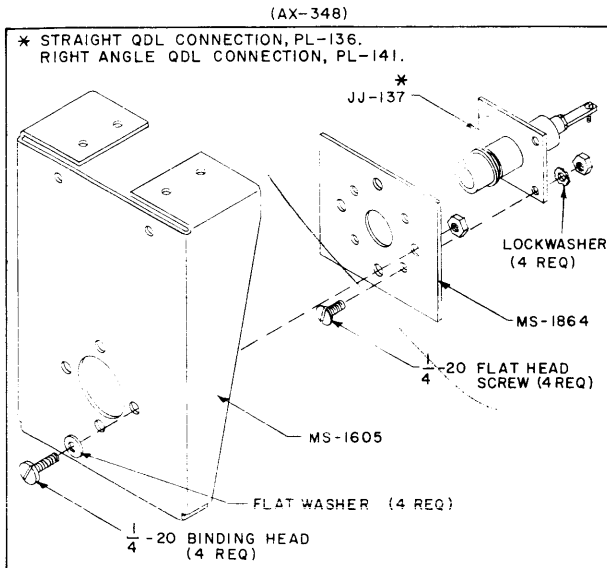
SKETCH 2. MOUNTING KIT I-5/8 EIA FLANGE ANTENNA CABLE 50/70 OHM

Figure 2-11. Assembly Procedure for Installing 50/70-Ohm Transmitter Output Connections (on later models)

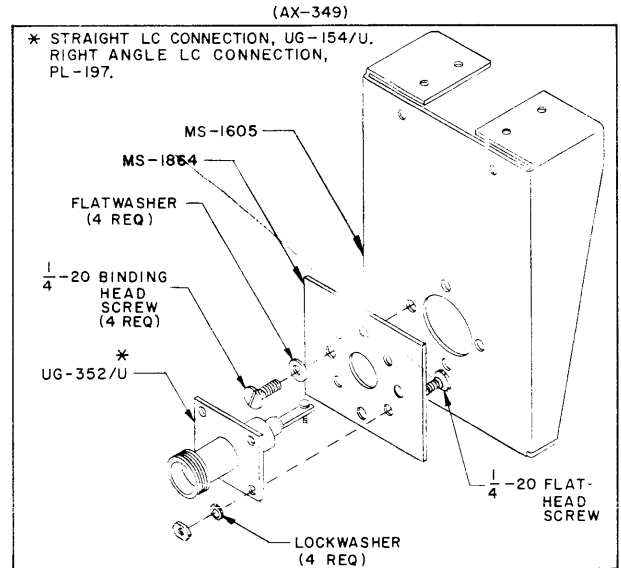


- NOTES:
1. MATING RIGHT ANGLE RF CONNECTOR FOR AX-273-4 IS DESIGNATED AS AX-273-6 (PL-141).
 2. MATING STRAIGHT RF CONNECTOR FOR AX-287-3 IS DESIGNATED AS AX-287-6 (PL-214).
 3. MS-2116, MS-1830, MS-1592, MS-1666 AND MS-1605 ARE PARTS OF TRANSMITTER.

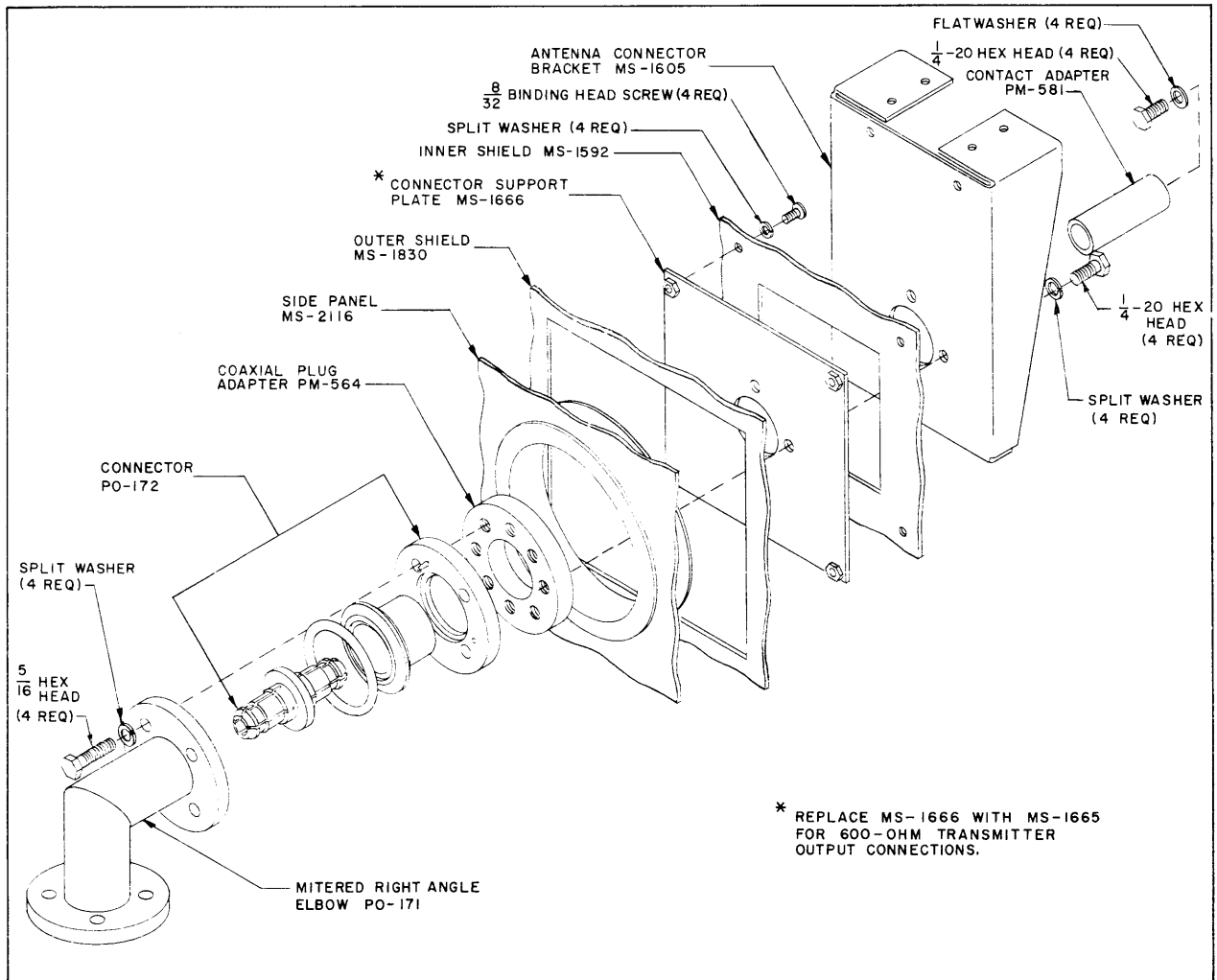
SKETCH 1. MOUNTING KIT- LC AND QDL CONNECTIONS-ANTENNA CABLE



SKETCH 1 ASSEMBLY PROCEDURE FOR QDL FEED THRU RECEPTACLE CONNECTOR, MODEL JJ-137 FOR FLEXIBLE CABLES.

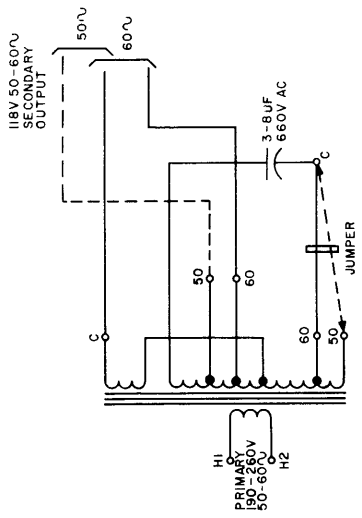


SKETCH 2 ASSEMBLY PROCEDURE FOR LARGE LC FEED THRU RECEPTACLE CONNECTOR, MODEL JJ-178 FOR FLEXIBLE CABLES.

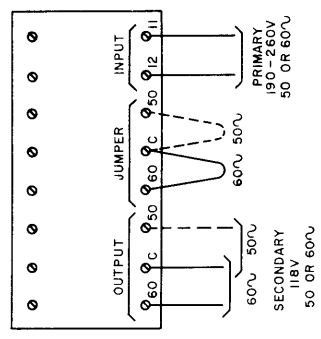


SKETCH 3 ASSEMBLY PROCEDURE FOR 1 5/8" EIA RIGID/SEMI-RIGID CABLES.

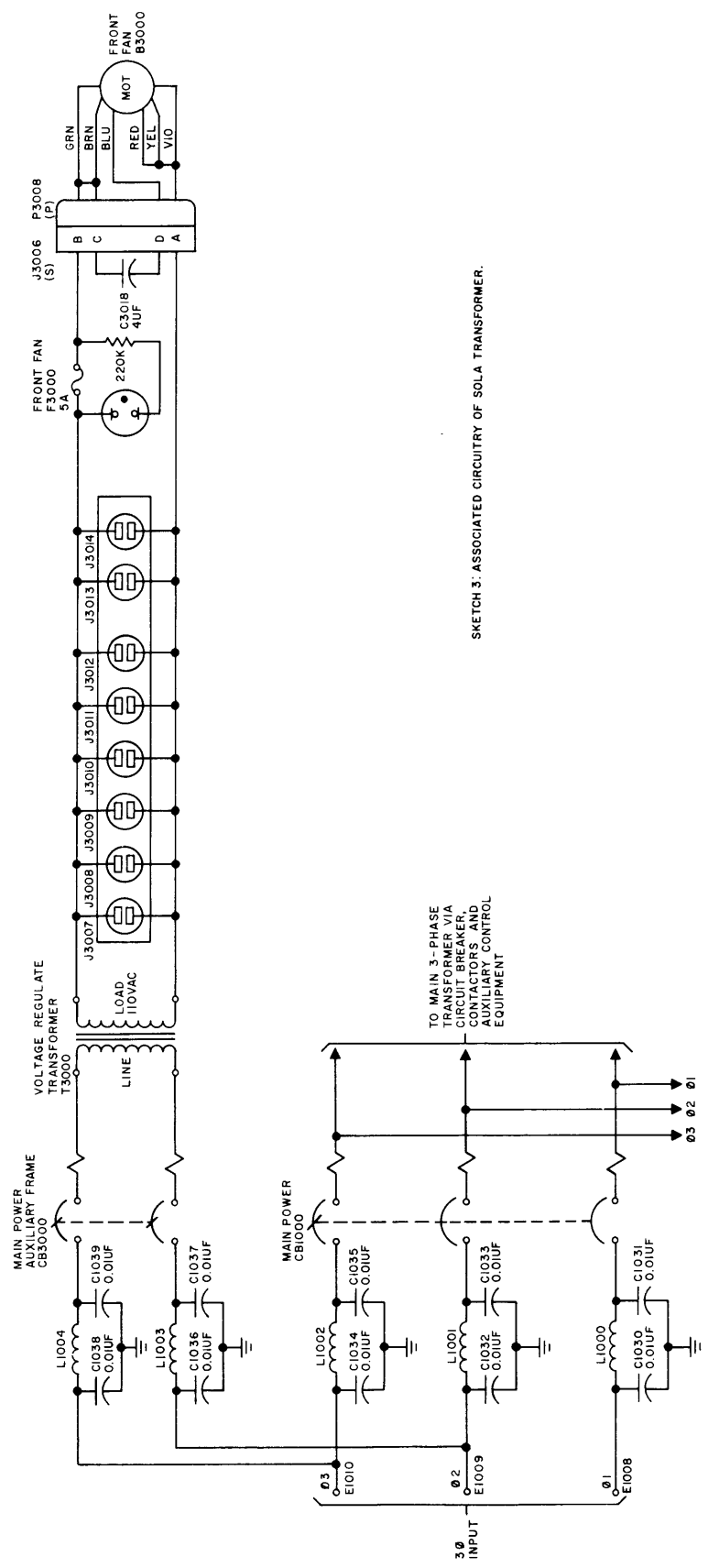
Figure 2-12. Assembly Procedure for Installing 50-Ohm (AX-140) or 70-Ohm (AX-302) Transmitter Output Connections



SKETCH 1: SCHEMATIC DIAGRAM OF SOLA TRANSFORMER.



SKETCH 2: TERMINAL CONNECTIONS ON SOLA TRANSFORMER



SKETCH 3: ASSOCIATED CIRCUITRY OF SOLA TRANSFORMER.

Figure 2-13. Diagrams Showing 60-Cycle and 50-Cycle Connections of Sola Constant Circuit Transformer

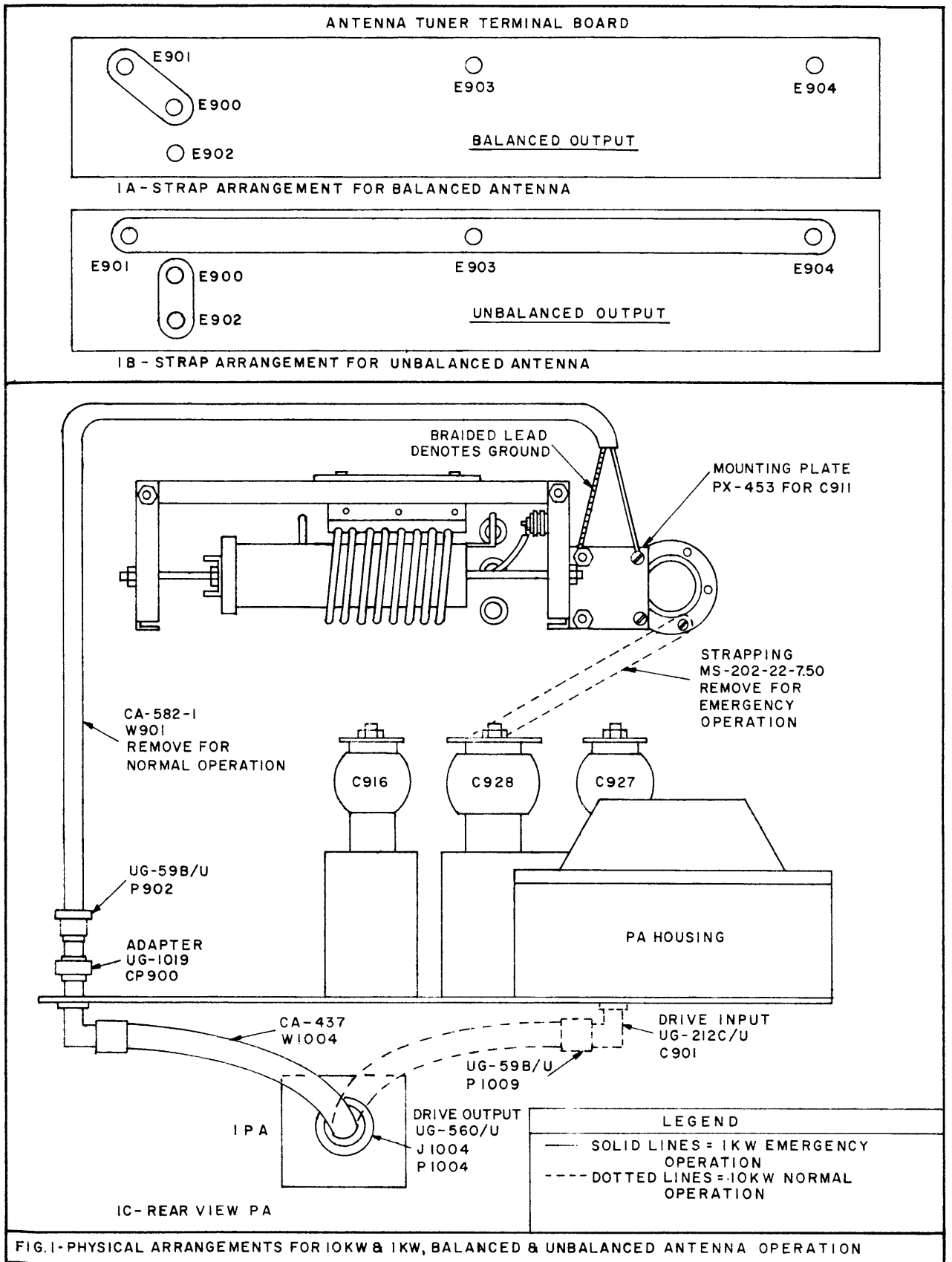


Figure 2-14. Physical Arrangements for 10 KW and 1 KW, Balanced and Unbalanced Antenna Operation

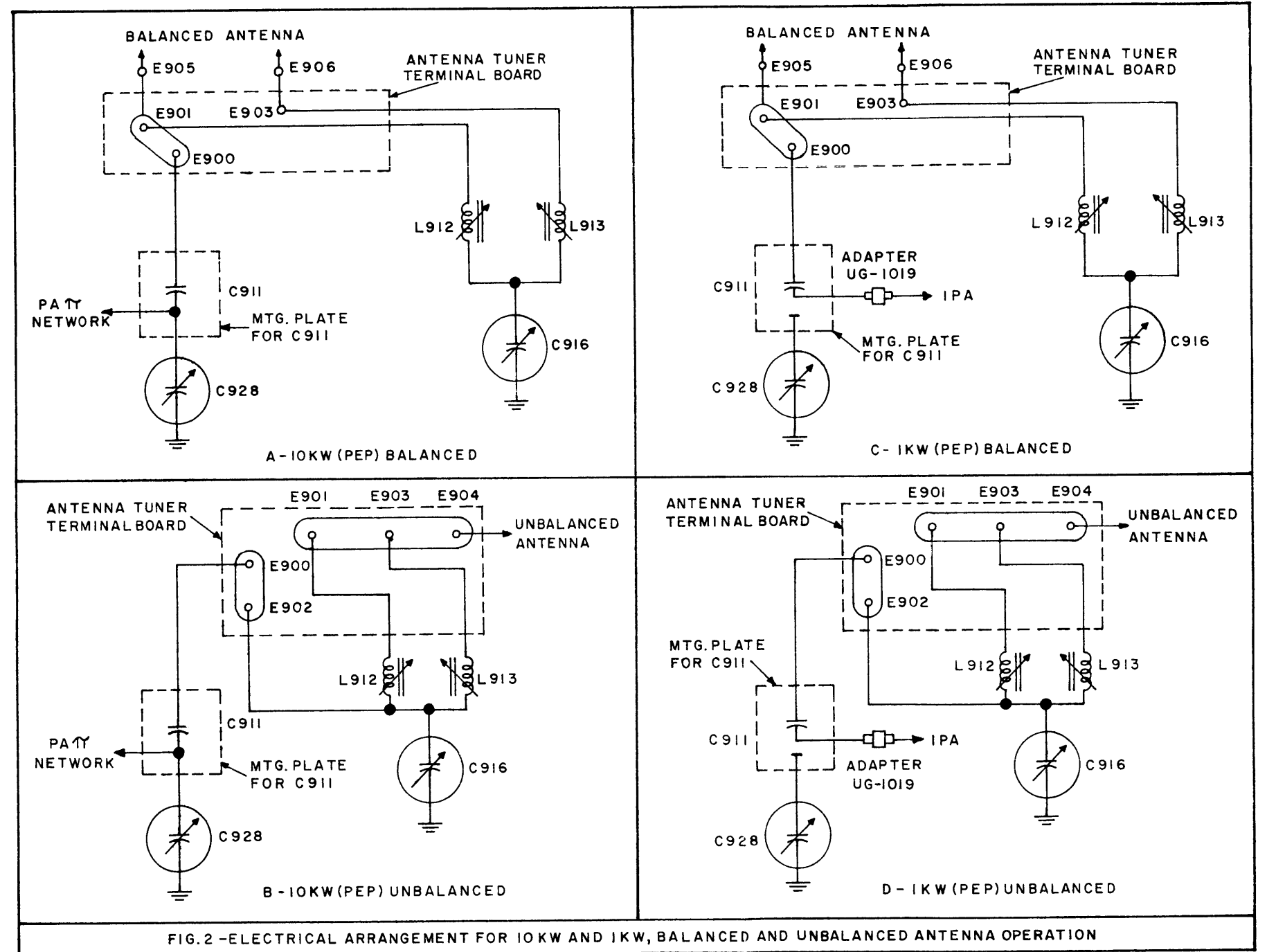


Figure 2-15. Electrical Arrangements for 10 KW and 1 KW, Balanced and Unbalanced Antenna Operation

SECTION 3 INSTALLATION OF GPT-40

3-1. GENERAL.

The general description contained in Section 1 applies to both GPT-10K and GPT-40K transmitters.

The chassis (frame) of any GPT-10K and of the first (test and exciter) and second (IPA and power supply) frame of any GPT-40K are identical. This means that their installation procedures are identical. Within the chassis, GPT-10K's main frame components are somewhat different from GPT-40K's second frame components. The differences are readily apparent from the simplified block diagram sketch shown below.

1. GPT-10K's PA section contains an antenna tuning unit and antenna arrangements suitable for its requirements.
2. GPT-40K's IPA section replaces the antenna tuning unit with a 3-way selector switch for three RF output arrangements (dummy load used in tuning, emergency feed, and regular feed).
3. Because of the differences cited in 1 and 2, antenna installation details between the GPT-10K and the GPT-40K will differ. Access holes for antenna conductors are located in the main frame panels in the GPT-10K and in the third and fourth frame panels in the GPT-40K. The matter of these access holes and GPT-40K's power supply input circuits is amply covered in subsequent paragraphs.

The basic equipment supplied with the GPT-40K and its physical characteristics are given in Table 3-1. Table 3-2 gives the shipping data, while Table 3-3 lists loose items packed separately in crate numbers 12 or 13, 28 and 29. Power requirements of the GPT-40K are given in Table 3-4.

3-2. PRODUCTION LINE CHECKOUT. - (See paragraph 2-2.)

3-3. LOCATION OF GPT-40K'S FOUR FRAMES.

After unpacking and inspecting the equipment and before assembling the GPT-40K in its operating location, select a location that provides a minimum clearance of 3 feet at the sides, 4 feet in the rear, 4-1/2 feet in the front, and approximately 1 foot overhead. Figure 3-1 shows two antenna outlet arrangements, one when the customer orders a TMA-40K meter box assembly and one when no such box is ordered. In either case a two-foot clearance is recommended, if practicable, between the transmitter's top cover and the ceiling that houses the transmitter.

The first step in the assembly of the GPT-40K is to place its base assembly properly, laying it level and bolted to the floor. In order to power the GPT-40K conveniently, the base assembly may be placed over the conduit raceway. Figure 3-2 illustrates access holes for incoming and outgoing power and signal conductors. The notes on figure 3-2 call out the purpose of all the access holes.

3-4. ASSEMBLY OF GPT-40K.

WARNING

High Power Tubes: Upon primary installation or upon replacement, a power tube such as type ML-6697 Machlett, as used in the GPT-40K, should be given adequate time to age. This can be accomplished by allowing the filament full time to heat before application of plate voltage. The GPT-40K should then be run with residual plate current applied but with no drive (DC condition) for a minimum of 2 hours. The GPT-40K should then be

operated at half power for the next 24 hours; thereafter, full power may be applied for continuous duty.

Air Temperature: Sufficient air is supplied to the ML-6697 tube to dissipate safely 32 kw at 50°C incoming air. Correctly tuned, the ML-6697 tube should dissipate about 28 kw. Normal incoming air should be approximately 30°C and outgoing approximately 72°C. If for any reason the tube is being overheated due to operation with full plate current in and little or no output, or because incoming air is superheated, thermostat in the air exhaust stream cuts the GPT-40K off the air. This result is indicated by the RETUNE light on the relay panel. When the thermostat cools, the GPT-40K may again be placed in operation, but the operator should remove the cause either by correctly tuning the GPT-40K or reducing power, so that its plate dissipation is not exceeded.

STEP

DESCRIPTION

- 5 Mount antenna insulating rods in the top, front of the power supply frame, shown in figure 3-1 and components mounted in compartments shown in rear view of power supply frame (right side). These components consist of oil filled capacitors C8107 and C8108 and choke coil L8101. Caution must be used when placing L8101 in the lower compartment or the interlock switch at the top of this compartment will be damaged.

POWER AMPLIFIER FRAME

- 6 Mount PA frame on base assembly. Insert bolts into base assembly but do not tighten. Align holes between PS and PA frames; insert bolts and tighten from the top down. Tighten base assembly bolts.

STEP

DESCRIPTION

- 1 Place base assembly of PS and PA frames shown in figure 3-2 in position, level and bolted to the floor.
- 2 Position base shield and secure to base assembly as shown in figures 3-2 and 3-3. Holes marked B secure shield to base.

POWER SUPPLY FRAME

- 3 Position power supply frame properly on shield and bolt to base assembly. Tighten bolts and secure frame. Remove shield MS-2018 figure 3-1.
- 4 The next step is to mount the main transformer in the power supply frame (see figures 3-4 and 3-5). This operation is facilitated by removal of a few parts already mounted on the frame. The transformer mounts from the left side of the power supply frame looking at it from the rear as shown in figure 3-4. The channels of the transformer fit into the larger channels in the base of the frame. The parts to be removed are the transformer bar, a switch on the power supply control panel and the bolts located in the power supply frame channels that are used to secure transformer. The transformer bar is an angle beam located on the side of the power supply frame and is shown designated as item 53 in figure 3-1. The switch to be removed is designated FINAL FIL. The panel directly below the power supply control panel may also be removed but this is optional. Place transformer in proper position, align holes, and replace bolts removed previously. Do not tighten these bolts until the transformer bar has been replaced and secured. Remount switch and panel if removed previously. Replace right side shield. Connect transformer as shown in figure 3-6.

NOTE

If a bolt starts to bind do not attempt to force its entry. This is an indication that further alignment is required. In this case remove all bolts. Align each hole visually and clamp with a "C" clamp, working from the top down. When satisfactory visual alignment is achieved proceed as indicated above.

- 7 Mount glass vacuum capacitors C7325, C7301, C7302, C7303 and C7328, shown in figure 4-7-a, -c. C7325 is mounted first. Remove bracket taped to sockets of C7301, C7302 and C7303 and mount capacitors as shown. These three capacitors are mounted on shafts which link them to front panel controls. This connection is shown in figure 4-7-b. When the three capacitors are secured, mount C7328 to the bracket holding C7301, C7329 and C7303.
- 8 Remove air duct and fiber board cover from power tube compartment. The compartment with cover and duct removed is shown in figure 3-7-c. Also remove small rubber hose to blower. This is to prevent hardware from falling into blower enclosure.
- 9 Install switch S7302 shown in figure 3-7-c. This is best accomplished by loosening the allen screws in the switch shaft socket and removing key taped to socket. Place switch assembly in position with shaft poised at entrance to socket. Insert key in socket and slide shaft in place. Secure switch to floor of compartment and connect leg of coil to C7325 as shown.
- 10 Remove screen above V7301, loosen socket and insert power tube. Before securing tube and socket, connect C7326 to V7301 as shown

<u>STEP</u>	<u>DESCRIPTION</u>
	in lower right hand side of figure 3-7-c. Connect C7316 also as shown Replace screen and ducting.

SECOND GPT-40K FRAME

- 11 Mount second frame on base and shield provided for GPT-10K main and auxiliary frame. Follow same procedure as previously outlined in section 2 for frame to base assembly. Secure second frame to PA frame, then to base.
- 12 Connect strap MS2535 from antenna switch to feedthru terminal E8114 and attach proper cables. See following section 3-5.
- 13 Insert pull out units in proper drawers and connect cables as directed in step 12.
- 14 For assembly procedure of remaining frames, see installation 10K section 2.

3-5. INTERCONNECTION OF CABLES.

Figure 3-8 presents a simplified block and interconnection diagram of the third and fourth GPT-40K's frames. The following tabulation summarizes the interconnections:

Connector	Connector	Where Connection is Made
P7102(P)	J8102(S)	PS Frame
P7101(S)	J8101(P)	PS Frame
P7106(P)	J8104(S)	PS Frame
J8201(P)	J8103(S)	PS Frame
J7103(P)	P900(S)	PA Frame
J7103(S)	P7104(P)	PA Frame
P7105(S)	J7501(P)	PA Frame
P7109(P)	J7502(S)	PA Frame
J7302(S)	P7302(P)	PA Frame
J7601	P7107	PA Frame
J7602	P7108	PA Frame
J7101(P)	P7103(S)	PA Frame
J8301(P)	P8101(S)	PS Frame

In section 2-5 there are simplified block and interconnection diagrams of the first and second GPT-40K's frames. Refer to figures 2-8-a, -b. However, as pointed out in section 3-1, some RF output circuit changes will slightly modify the data given in section 2-5. These changes affect only the RF

output leg of GPT-40K's IPA and are covered in detail in subsequent section 4-6. With this exception, the GPT-40K's cables may be completely interconnected.

3-6. GPT-40K'S ANTENNA CONNECTIONS.

As shown on figure 3-8 the GPT-40K is arranged to supply the following power to 600 and 50/70 antennas (balanced and unbalanced types respectively.

- (1) 600 balanced (rhombic) antennas 40 KW, 10 KW, 1 KW (PEP)
- (2) 50/70 unbalanced antennas 40 KW, 10 KW, 1 KW (PEP)

Basically, figure 3-8 schematically shown how the six arrangements are possible. From an installation standpoint physical arrangements to accomplish the electrical (schematic) arrangements are needed. These resolve themselves into two general categories:

- (1) Arrangements on frame 2 of the GPT-40K.
- (2) Arrangements on frame 3 of the GPT-40K.

a. Frame 2 of GPT-40K

- (1) Power to Antenna (either 600- or 70/50) 40 KW (PEP)

Normal within-frame connections: TUNE/EMERGENCY/OPERATE switch in OPERATE.

- (2) Power to Antenna (either 600- or 50/50) 10 KW (PEP)

Normal within-frame connections: TUNE/EMERGENCY/OPERATE switch in EMERGENCY.

- (3) Power to Antenna (either 600- or 70/50) 1 KW (PEP)

Special connections in frame 2 of GPT-10K; TUNE/EMERGENCY/OPERATE switch in EMERGENCY.

The special connections in frame 2 are shown in figures 2-14 and 2-15. Step (1), make change per sketch 1c. Step (2), for 600 balanced antenna, make change per sketch 1a. Step (3), for 70/50 antenna, make change per sketch 1b.

b. Frame 3 of GPT-40K

- (1) 40 KW (PEP) Power to 600 (Rhombic) Antenna

See figure 3-9, sketch A.

- (2) 40 KW (PEP) Power to 70/60 Antenna

See figure 3-9, sketch D.

(3) 10 KW (PEP) Power to 600 (Rhombic) Antenna

See figure 3-9, sketch B.

(4) 10 KW (PEP) Power to 70/50 Antenna

See figure 3-9, sketch E.

(5) 1 KW (PEP) Power to 600 (Rhombic) Antenna

See figure 3-9, sketch C.

(6) 1 KW (PEP) Power to 70/50 Antenna

See figure 3-9, sketch F.

3-7. SUPPLEMENTARY INSTALLATION INSTRUCTIONS FOR 50-CYCLE POWER SUPPLY.

Refer to section 2-7.

3-8. INITIAL ADJUSTMENTS AND CHECKOUT.

Refer to Technical Manual for Transmitting Set, Radio, Model GPT-40K.

TABLE 3-1. EQUIPMENT SUPPLIED AND PHYSICAL CHARACTERISTICS, GPT-40K

UNIT	COMMERCIAL DESIGNATION	QUANTITY PER GPT-40K	APPROXIMATE INSTALLATION DIMENSIONS*			VOLUME*	WEIGHT*
			LENGTH	WIDTH	HEIGHT		
<p>The equipment constituting the first two frames of GPT-40K is called out in Table 2-1 which deals with both synthesized and non-synthesized transmitters. However, the 11 pieces of trim strips should be increased to 20 pieces. The additional pieces are as follows and weigh approximately 20 pounds.</p>							
	<u>TMC P/N</u>	<u>Item</u>					
	MS-2025	Trim for front right side of power supply frame					
	MS-2026	Trim for front left side of power amplifier frame					
	MS-2027	Trim for front right side of power amplifier frame					
	MS-2028	Trim for front top of third/fourth frames					
	MS-2029	Trim for front bottom of third/fourth frames					
	MS-2051	Trim for front center of third/fourth frames					
	MS-2052	Trim for rear right side of power amplifier frame					
	MS-2053 (2)	Trim for rear, top, bottom of third/fourth frames					
<p>The equipment constituting the third and fourth frames of GPT-40K is as follows:</p>							
Power Amplifier Frame	AP-106	1	32-1/8	38-3/8	73-1/2	58	650
Power Supply Frame	AP-103	1	33	39	74	62	712
Base Mount	MS-1996	1	64-1/2	38	6-1/2	9.3	177
Base Shield	MS-1999	1					
Top Cover	MS-1997	1	74	16	42	33	321
Front Doors	MS-2120-2 (1)	1					
	MS-2118 (1)	1					
Rear Doors	MS-2037 (1)	1					
	MS-1647 (1)	1					
Main Power Transformers	TF-211	1	22-1/4	9-1/2	27	3.3	585
Main Power Transformer	TF-211	1	22-1/4	9-1/2	27	3.3	585
Main Power Transformer	TF-211	1	22-1/4	9-1/2	27	3.3	585

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

TABLE 3-1. EQUIPMENT SUPPLIED AND PHYSICAL CHARACTERISTICS, GPT-40K (C nt.)

UNIT	COMMERCIAL DESIGNATION	QUANTITY PER GPT-40K	APPROXIMATE INSTALLATION DIMENSIONS*			VOLUME*	WEIGHT*
			LENGTH	WIDTH	HEIGHT		
Bias Supply Drawer	AP-104	1	28-3/4	14-3/4	10-3/4	2.7	75
Antenna Tuning Unit and Meter Panel Drawer	AT-101	1	28-3/4	21	14-3/4	5.2	86
Crowbar Drawer	AX-212	1	28-3/4	17-1/4	8	2.2	40
High Voltage Rectifier Drawer	AP-105	1	28-3/4	18-3/4	14	4.5	111
Oil Filled Capacitors (C8107 and C8108)	CP-107	2	12	9-1/2	12-1/2	0.8	116
Transformer (L8101)	TF-5016	1	9-3/4	8	17-3/4	0.8	127
Main PA Tube (V7301)	ML-6697	1	21	8-1/2	8-1/2	0.9	45
Filament Transformer (T7101)	TF-215	1	12-3/8	8-1/2	11-5/8	0.7	129
Main Band Switch			13	13	29	3.2	48
1 Choke	CL-271	1	43	33	21	18	136
1 Resistor	RW-119G1RO	1					
10 Resistors	RW-118F183	10					
3 Resistors	RW-118F5RO	3					
3 Resistors	RW-118F5RO	3					
1 Electron Tube	CH1095	1					
6 Electron Tubes	6895	6					
1 Red Bulb	BI-106-3	1					
1 White Bulb	BI-106-3	1					
1 Insulator	AX-221	1					
1 Connector	JJ-163	1					
1 Capacitor	CB-149	1					
1 Capacitor	CB-149	1					
1 Capacitor	CB-158	1					
3 Capacitors	CO-106-1000-30	3					
1 Capacitor	CX-103	1					
1 Capacitor	CO-107-30C	1					

*Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

TABLE 3-2. SHIPPING DATA, GPT-40K

CASE NO.	PART	COMMERCIAL DESIGNATION	DIMENSIONS**			VOLUME**	WEIGHT**																		
			LENGTH	WIDTH	HEIGHT																				
<p>The equipment constituting the first two frames of GPT-40K is called out in Table 2-3-b which deals with both synthesized and non-synthesized transmitters. However, the 11 pieces of trim strips should be increased to 20 pieces. The additional pieces are as follows and weigh approximately 20 pounds.</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><u>TMC P/N</u></td> <td style="text-align: center;"><u>Item</u></td> </tr> <tr> <td>MS-2025</td> <td>Trim for front right side of power supply frame</td> </tr> <tr> <td>MS-2026</td> <td>Trim for front left side of power amplifier frame</td> </tr> <tr> <td>MS-2027</td> <td>Trim for front right side of power amplifier frame</td> </tr> <tr> <td>MS-2028</td> <td>Trim for front top of third/fourth frames</td> </tr> <tr> <td>MS-2029</td> <td>Trim for front bottom of third/fourth frames</td> </tr> <tr> <td>MS-2051</td> <td>Trim for front center of third/fourth frames</td> </tr> <tr> <td>MS-2052</td> <td>Trim for rear right side of power amplifier frame</td> </tr> <tr> <td>MS-2053 (2)</td> <td>Trim for rear, top, bottom of third/fourth frames</td> </tr> </table>								<u>TMC P/N</u>	<u>Item</u>	MS-2025	Trim for front right side of power supply frame	MS-2026	Trim for front left side of power amplifier frame	MS-2027	Trim for front right side of power amplifier frame	MS-2028	Trim for front top of third/fourth frames	MS-2029	Trim for front bottom of third/fourth frames	MS-2051	Trim for front center of third/fourth frames	MS-2052	Trim for rear right side of power amplifier frame	MS-2053 (2)	Trim for rear, top, bottom of third/fourth frames
<u>TMC P/N</u>	<u>Item</u>																								
MS-2025	Trim for front right side of power supply frame																								
MS-2026	Trim for front left side of power amplifier frame																								
MS-2027	Trim for front right side of power amplifier frame																								
MS-2028	Trim for front top of third/fourth frames																								
MS-2029	Trim for front bottom of third/fourth frames																								
MS-2051	Trim for front center of third/fourth frames																								
MS-2052	Trim for rear right side of power amplifier frame																								
MS-2053 (2)	Trim for rear, top, bottom of third/fourth frames																								
The equipment constituting the third and fourth frames of GPT-40K is as follows:																									
13	Power Amplifier Frame	AP-106	36-1/4	42-1/4	81-1/2	72.2	1150																		
14	Power Supply Frame	AP-103	36-1/4	42-1/4	81-1/2	72.2	990																		
15	Base Mount and Shield	MS-1996 MS-1999	67-3/4	40	7-3/4	12.2	215																		
16	Top, Front and Rear Doors	MS-1997 MS-2037 MS-1647	77	18-1/2	44-1/4	36.5	483																		
17	Main Power Transformer	TF-211	26-1/4	16-3/4	38	9.7	649																		
18	Main Power Transformer	TF-211	26-1/4	16-3/4	38	9.7	649																		
19	Main Power Transformer	TF-211	26-1/4	16-3/4	38	9.7	649																		
20	Bias Supply Drawer	AP-104	35-1/2	26	16	8.5	165																		
21	Antenna Tuning Unit and Meter Panel Drawer	AT-101	35-3/4	29-7/8	23-3/8	14.4	170																		
22	Crowbar Drawer	AX-212	35-1/2	26	16	8.5	131																		
23	High Voltage Rectifier Drawer	AP-105	35-3/4	29-7/8	23-3/8	14.4	200																		
24	Two Capacitors	CP-107	23-1/4	13-3/4	19-5/8	3.6	208																		
25	Transformer	TF-5016	22-1/4	11-1/2	11-1/8	1.6	148																		
<p>**Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.</p>																									

TABLE 3-2. SHIPPING DATA, GPT-40K (C nt.)

CASE NO.	PART	COMMERCIAL DESIGNATION	DIMENSIONS**			VOLUME**	WEIGHT**
			LENGTH	WIDTH	HEIGHT		
26	Main PA Tube	ML-6697	28-1/4	26-1/2	34-3/4	15.1	150
27	Filament Transformer	TF-215	15-1/4	16-1/4	12-1/8	1.7	160
28	Loose Items		45	36	23-1/8	21.7	240
29	Main Band Switch		23-7/8	20-1/8	36-1/8	10.	118

**Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

TABLE 3-3. SHIPPING DATA, ASSORTED ITEMS LIST, GPT-40K

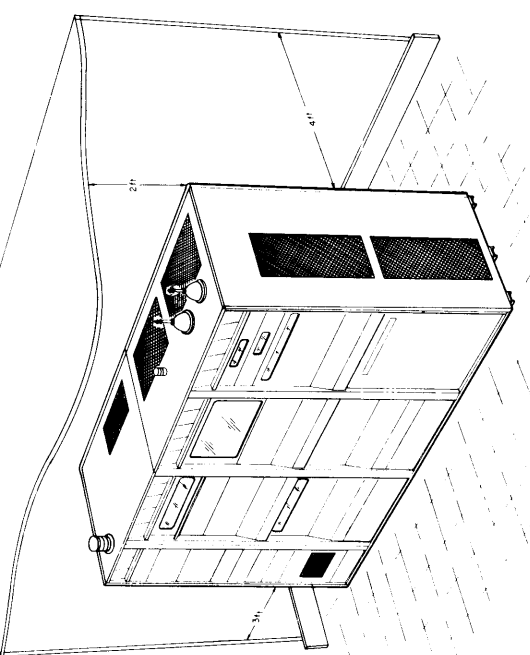
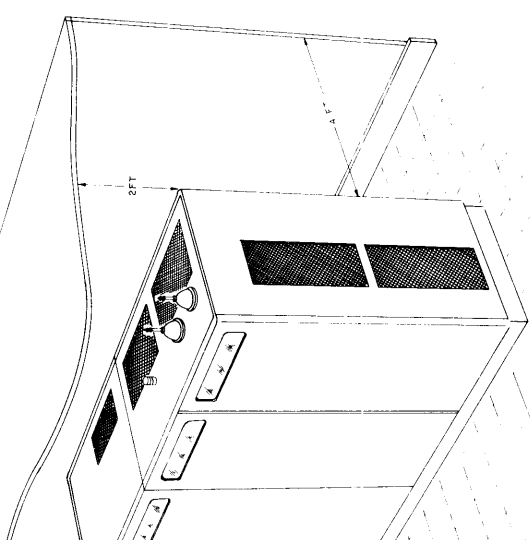
EXHIBIT "C", BOX 12 P/O AN/ FRT-40A TMC MODEL GPT-40KW (E) ASSORTED ITEMS LIST	
The applicable items are the same as the 39 items called out in Table 2-3-b	
EXHIBIT "D", BOX 28 P/O AN/ FRT-40A TMC MODEL GPT-40KW (E) ASSORTED ITEMS LIST	
1.	Choke, 1 ea., TMC P/N CL-166, Ref/Sym L7312
2.	Resistors, 1 ea., TMC P/N RW-119GIRO Ref/Sym R8101
3.	Resistors, 10 ea., TMC P/N RW-118F183 Ref/Sym, R8102 thru R8111
4.	Resistors, 3 ea., TMC P/N RW-118F5RO Ref/Sym R8112 thru R8114
5.	Resistors, 3 ea., TMC P/N RW-118F5RO Ref/Sym R8301 thru R8303
6.	Tube, Electron, 1 ea., TMC P/N CH1095 Ref/Sym V8301
7.	Tube Electron, 6 ea., TMC P/N 6895 Ref/Sym 8401 thru 8406
8.	Bulb, Red, 2 ea. 25 watts, TMC P/N-BI-106-3, Ref/Sym 1801 and 1704
9.	Bulb, White, 2 ea. 25 watts, TMC P/N BI-106-2, Ref/Sym I1007 and 1703
10.	Insulator, 1 ea. TMC P/N A1847, Ref/Sym E8114
11.	Connector, 1 ea., TMC P/N JJ-163 or JJ-137 Ref/Sym J-902
12.	Capacitor, 1 ea., TMC P/N CB-149 Ref/Sym C7301
13.	Capacitor, 1 ea., TMC P/N CB-149 Ref/Sym C7303
14.	Capacitor, 1 ea., TMC P/N CB-158 Ref/Sym C7329
15.	Capacitor, 1 ea., TMC P/N C0106-1000-30C Ref/Sym C7328
16.	Capacitor, 1 ea., TMC P/N CX-103 Ref/Sym C7316
17.	Capacitor, 1 ea., TMC P/N CO-107-30C Ref/Sym C7326

TABLE 3-4. POWER REQUIREMENTS, GPT-40K

UNIT	POWER REQUIREMENT
GPT-40K, total (including exciters and test equipment)	230 volts, 190 amps, 50 and 60 cps, 3 phase *
GPT-10K (modified), total (including exciters and test equipment)	230 volts, 36 amps, 50 and 60 cps, 3 phase
GPT-10K (modified), net (excluding exciters and test equipment)	230 volts, 34 amps, 50 and 60 cps, 3 phase
Transmitting Mode Selector SBE-3	115 volts, 1.3 amps, 50 and 60 cps, 1 phase
Frequency Shift Exciter XFK	115 volts, 1.6 amps, 50 and 60 cps, 1 phase
Variable Frequency Oscillator VOX-2 or -3	115 volts, 2.2 amps, 50 and 60 cps, 1 phase
Frequency Spectrum Analyzer FSA	115 volts, 1.6 amps, 50 and 60 cps, 1 phase
Two Tone Generator TTG	115 volts, 0.3 amp, 50 and 60 cps, 1 phase
<p>NOTE</p> <p>Single-phase, 115-volt power is derived from 3-phase power via regulating transformer in the standard GPT-10K.</p>	
<p>* For station planning, greater capacity should be provided. TMC recommends a three-phase bank of 100-kw capacity. This oversize capacity is recommended to avoid low voltage on station facilities when GPT-40K transmitters are turned on.</p>	

1	MS-2299-2	SPACER BOTTOM RT SIDE REAR
1	MS-2299-1	SPACER BOTTOM RT SIDE FRONT
1	MS-2300	STRIP BOTTOM RT SIDE
1	MS-2301	STRIP TOP REAR PA FR
1	MS-2302	STRIP TOP REAR PA FR
1	MS-2303	STRIP RT SIDE PA FR
1	MS-2304	COVER UN BAL
1	MS-2305	COVER EXP METAL FILTER
3	MS-2306	COVER EXP METAL FILTER
3	MS-2307	BRACKET DOOR M/G, LT SIDE
3	MS-2308	BRACKET DOOR M/G, RT SIDE
4	MS-2309	PLATE LATCH, BOTTOM
4	MS-2310	TRIM RT SIDE REAR PA FR
1	MS-2311	STRIP BOTTOM REAR PA FR
1	MS-2312	STRIP BOTTOM REAR PA FR
1	MS-2313	STRIP LEFT SIDE REAR PA FR
1	MS-2314	TRIM HINGED RT SIDE AUX FR
1	MS-2315	TRIM HINGED RT SIDE AUX FR
1	MS-2316	PLATE BLANK, CONVERSION IT 2
1	MS-2317	BRACKET DOOR M/G, PS FR
1	MS-2318	BRACKET M/G DOOR LATCH
1	MS-2319	BRACKET M/G DOOR LATCH
1	MS-2320	PLATE TOP
1	MS-2321	TRIM RT SIDE PS FR
1	MS-2322	TRIM RT SIDE PS FR
1	MS-2323	TRIM RT SIDE PS FR
1	MS-2324	TRIM RT SIDE PS FR
1	MS-2325	TRIM RT SIDE PS FR
1	MS-2326	TRIM RT SIDE PS FR
1	MS-2327	TRIM RT SIDE PS FR
1	MS-2328	TRIM RT SIDE PS FR
1	MS-2329	TRIM RT SIDE PS FR
1	MS-2330	TRIM RT SIDE PS FR
1	MS-2331	TRIM RT SIDE PS FR
1	MS-2332	TRIM RT SIDE PS FR
1	MS-2333	TRIM RT SIDE PS FR
1	MS-2334	TRIM RT SIDE PS FR
1	MS-2335	TRIM RT SIDE PS FR
1	MS-2336	TRIM RT SIDE PS FR
1	MS-2337	TRIM RT SIDE PS FR
1	MS-2338	TRIM RT SIDE PS FR
1	MS-2339	TRIM RT SIDE PS FR
1	MS-2340	TRIM RT SIDE PS FR
1	MS-2341	TRIM RT SIDE PS FR
1	MS-2342	TRIM RT SIDE PS FR
1	MS-2343	TRIM RT SIDE PS FR
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1	MS-2393	TRIM RT SIDE PS FR
1	MS-2394	TRIM RT SIDE PS FR
1	MS-2395	TRIM RT SIDE PS FR
1	MS-2396	TRIM RT SIDE PS FR
1	MS-2397	TRIM RT SIDE PS FR
1	MS-2398	TRIM RT SIDE PS FR
1	MS-2399	TRIM RT SIDE PS FR
1	MS-2400	TRIM RT SIDE PS FR

1	MS-2399-2	SPACER BOTTOM RT SIDE REAR
1	MS-2399-1	SPACER BOTTOM RT SIDE FRONT
1	MS-2400	STRIP BOTTOM RT SIDE
1	MS-2401	STRIP TOP REAR PA FR
1	MS-2402	STRIP TOP REAR PA FR
1	MS-2403	STRIP RT SIDE PA FR
1	MS-2404	COVER UN BAL
1	MS-2405	COVER EXP METAL FILTER
3	MS-2406	COVER EXP METAL FILTER
3	MS-2407	BRACKET DOOR M/G, LT SIDE
3	MS-2408	BRACKET DOOR M/G, RT SIDE
4	MS-2409	PLATE LATCH, BOTTOM
4	MS-2410	TRIM RT SIDE REAR PA FR
1	MS-2411	STRIP BOTTOM REAR PA FR
1	MS-2412	STRIP BOTTOM REAR PA FR
1	MS-2413	STRIP LEFT SIDE REAR PA FR
1	MS-2414	TRIM HINGED RT SIDE AUX FR
1	MS-2415	TRIM HINGED RT SIDE AUX FR
1	MS-2416	PLATE BLANK, CONVERSION IT 2
1	MS-2417	BRACKET DOOR M/G, PS FR
1	MS-2418	BRACKET M/G DOOR LATCH
1	MS-2419	BRACKET M/G DOOR LATCH
1	MS-2420	PLATE TOP
1	MS-2421	TRIM RT SIDE PS FR
1	MS-2422	TRIM RT SIDE PS FR
1	MS-2423	TRIM RT SIDE PS FR
1	MS-2424	TRIM RT SIDE PS FR
1	MS-2425	TRIM RT SIDE PS FR
1	MS-2426	TRIM RT SIDE PS FR
1	MS-2427	TRIM RT SIDE PS FR
1	MS-2428	TRIM RT SIDE PS FR
1	MS-2429	TRIM RT SIDE PS FR
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1	MS-2436	TRIM RT SIDE PS FR
1	MS-2437	TRIM RT SIDE PS FR
1	MS-2438	TRIM RT SIDE PS FR
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1	MS-2470	TRIM RT SIDE PS FR
1	MS-2471	TRIM RT SIDE PS FR
1	MS-2472	TRIM RT SIDE PS FR
1	MS-2473	TRIM RT SIDE PS FR
1	MS-2474	TRIM RT SIDE PS FR
1	MS-2475	TRIM RT SIDE PS FR
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1	MS-2492	TRIM RT SIDE PS FR
1	MS-2493	TRIM RT SIDE PS FR
1	MS-2494	TRIM RT SIDE PS FR
1	MS-2495	TRIM RT SIDE PS FR
1	MS-2496	TRIM RT SIDE PS FR
1	MS-2497	TRIM RT SIDE PS FR
1	MS-2498	TRIM RT SIDE PS FR
1	MS-2499	TRIM RT SIDE PS FR
1	MS-2500	TRIM RT SIDE PS FR



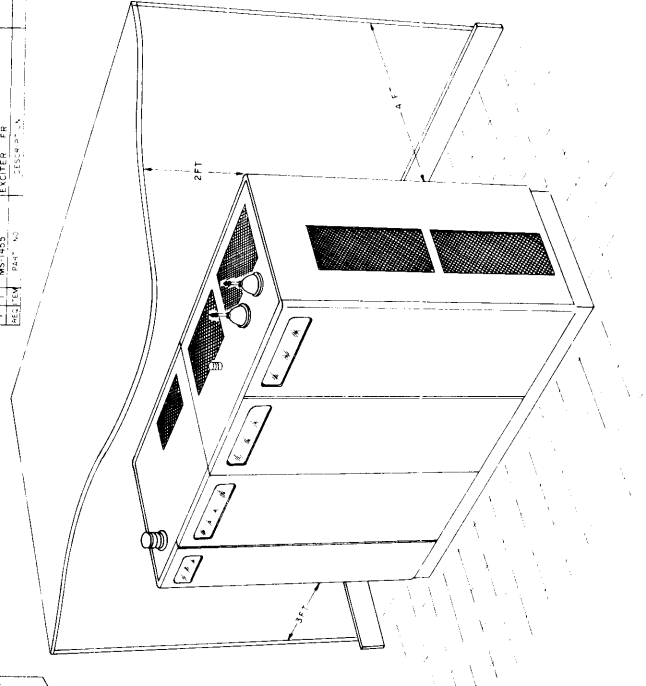
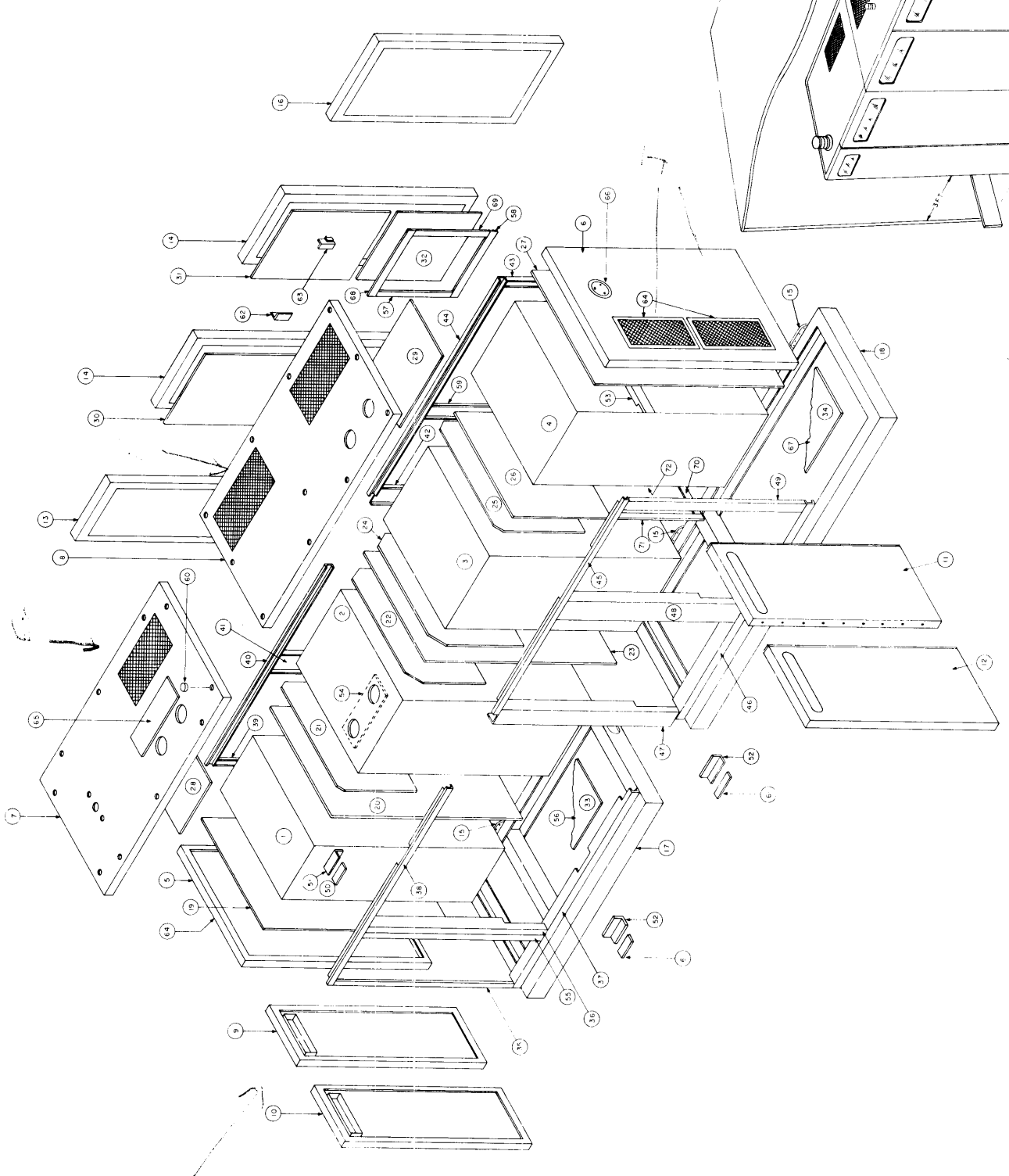
NOTE: 15A-40K METER BOX SUPPLIED ON CUSTOMER'S ORDER. IT IS 11.5 INCHES HIGH AND 11.5 INCHES WIDE.

Figure 3-1. Assembly Drawing, Exploded View, GPT-40K

Original

3-11-3-12

171	MS-2299-2	SPACER BOTTOM RT SIDE REAR
172	MS-2299-1	SPACER BOTTOM RT SIDE FRONT
173	MS-2303	SPACER BOTTOM RT SIDE
174	MS-2302	SPACER RT SIDE PA FR
175	MS-2301	SPACER RT SIDE PA FR
176	MS-2335	COVER AC ACCESS ON/AM34
177	MS-2336	COVER UN BIL
178	MS-2337	COVER UNV OPENING AT EX
179	MS-2338	COVER UNV OPENING AT EX
3143	MS-2042	BRACKET DOOR MTS LT SIDE
3144	MS-2041	BRACKET DOOR MTS RT SIDE
3145	MS-2040	PLATE LATCH BOTTOM
4610	MS-2039	TRIM RT SIDE REAR PA FR
1159	MS-2038	STRIP BOTTOM REAR PA FR
1158	MS-2037	STRIP BOTTOM REAR PA FR
1157	MS-2036	STRIP BOTTOM REAR PA FR
1156	MS-2035	STRIP BOTTOM REAR PA FR
1155	MS-2034	STRIP BOTTOM REAR PA FR
1154	MS-2033	STRIP BOTTOM REAR PA FR
1153	MS-2032	STRIP BOTTOM REAR PA FR
1152	MS-2031	STRIP BOTTOM REAR PA FR
1151	MS-2030	STRIP BOTTOM REAR PA FR
1150	MS-2029	STRIP BOTTOM REAR PA FR
1149	MS-2028	STRIP BOTTOM REAR PA FR
1148	MS-2027	STRIP BOTTOM REAR PA FR
1147	MS-2026	STRIP BOTTOM REAR PA FR
1146	MS-2025	STRIP BOTTOM REAR PA FR
1145	MS-2024	STRIP BOTTOM REAR PA FR
1144	MS-2023	STRIP BOTTOM REAR PA FR
1143	MS-2022	STRIP BOTTOM REAR PA FR
1142	MS-2021	STRIP BOTTOM REAR PA FR
1141	MS-2020	STRIP BOTTOM REAR PA FR
1140	MS-2019	STRIP BOTTOM REAR PA FR
1139	MS-2018	STRIP BOTTOM REAR PA FR
1138	MS-2017	STRIP BOTTOM REAR PA FR
1137	MS-2016	STRIP BOTTOM REAR PA FR
1136	MS-2015	STRIP BOTTOM REAR PA FR
1135	MS-2014	STRIP BOTTOM REAR PA FR
1134	MS-2013	STRIP BOTTOM REAR PA FR
1133	MS-2012	STRIP BOTTOM REAR PA FR
1132	MS-2011	STRIP BOTTOM REAR PA FR
1131	MS-2010	STRIP BOTTOM REAR PA FR
1130	MS-2009	STRIP BOTTOM REAR PA FR
1129	MS-2008	STRIP BOTTOM REAR PA FR
1128	MS-2007	STRIP BOTTOM REAR PA FR
1127	MS-2006	STRIP BOTTOM REAR PA FR
1126	MS-2005	STRIP BOTTOM REAR PA FR
1125	MS-2004	STRIP BOTTOM REAR PA FR
1124	MS-2003	STRIP BOTTOM REAR PA FR
1123	MS-2002	STRIP BOTTOM REAR PA FR
1122	MS-2001	STRIP BOTTOM REAR PA FR
1121	MS-2000	STRIP BOTTOM REAR PA FR
1120	MS-1999	STRIP BOTTOM REAR PA FR
1119	MS-1998	STRIP BOTTOM REAR PA FR
1118	MS-1997	STRIP BOTTOM REAR PA FR
1117	MS-1996	STRIP BOTTOM REAR PA FR
1116	MS-1995	STRIP BOTTOM REAR PA FR
1115	MS-1994	STRIP BOTTOM REAR PA FR
1114	MS-1993	STRIP BOTTOM REAR PA FR
1113	MS-1992	STRIP BOTTOM REAR PA FR
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1104	MS-1983	STRIP BOTTOM REAR PA FR
1103	MS-1982	STRIP BOTTOM REAR PA FR
1102	MS-1981	STRIP BOTTOM REAR PA FR
1101	MS-1980	STRIP BOTTOM REAR PA FR
1100	MS-1979	STRIP BOTTOM REAR PA FR
1099	MS-1978	STRIP BOTTOM REAR PA FR
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1097	MS-1976	STRIP BOTTOM REAR PA FR
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1093	MS-1972	STRIP BOTTOM REAR PA FR
1092	MS-1971	STRIP BOTTOM REAR PA FR
1091	MS-1970	STRIP BOTTOM REAR PA FR
1090	MS-1969	STRIP BOTTOM REAR PA FR
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1088	MS-1967	STRIP BOTTOM REAR PA FR
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1085	MS-1964	STRIP BOTTOM REAR PA FR
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1083	MS-1962	STRIP BOTTOM REAR PA FR
1082	MS-1961	STRIP BOTTOM REAR PA FR
1081	MS-1960	STRIP BOTTOM REAR PA FR
1080	MS-1959	STRIP BOTTOM REAR PA FR
1079	MS-1958	STRIP BOTTOM REAR PA FR
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1077	MS-1956	STRIP BOTTOM REAR PA FR
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1069	MS-1948	STRIP BOTTOM REAR PA FR
1068	MS-1947	STRIP BOTTOM REAR PA FR
1067	MS-1946	STRIP BOTTOM REAR PA FR
1066	MS-1945	STRIP BOTTOM REAR PA FR
1065	MS-1944	STRIP BOTTOM REAR PA FR
1064	MS-1943	STRIP BOTTOM REAR PA FR
1063	MS-1942	STRIP BOTTOM REAR PA FR
1062	MS-1941	STRIP BOTTOM REAR PA FR
1061	MS-1940	STRIP BOTTOM REAR PA FR
1060	MS-1939	STRIP BOTTOM REAR PA FR
1059	MS-1938	STRIP BOTTOM REAR PA FR
1058	MS-1937	STRIP BOTTOM REAR PA FR
1057	MS-1936	STRIP BOTTOM REAR PA FR
1056	MS-1935	STRIP BOTTOM REAR PA FR
1055	MS-1934	STRIP BOTTOM REAR PA FR
1054	MS-1933	STRIP BOTTOM REAR PA FR
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1050	MS-1929	STRIP BOTTOM REAR PA FR
1049	MS-1928	STRIP BOTTOM REAR PA FR
1048	MS-1927	STRIP BOTTOM REAR PA FR
1047	MS-1926	STRIP BOTTOM REAR PA FR
1046	MS-1925	STRIP BOTTOM REAR PA FR
1045	MS-1924	STRIP BOTTOM REAR PA FR
1044	MS-1923	STRIP BOTTOM REAR PA FR
1043	MS-1922	STRIP BOTTOM REAR PA FR
1042	MS-1921	STRIP BOTTOM REAR PA FR
1041	MS-1920	STRIP BOTTOM REAR PA FR
1040	MS-1919	STRIP BOTTOM REAR PA FR
1039	MS-1918	STRIP BOTTOM REAR PA FR
1038	MS-1917	STRIP BOTTOM REAR PA FR
1037	MS-1916	STRIP BOTTOM REAR PA FR
1036	MS-1915	STRIP BOTTOM REAR PA FR
1035	MS-1914	STRIP BOTTOM REAR PA FR
1034	MS-1913	STRIP BOTTOM REAR PA FR
1033	MS-1912	STRIP BOTTOM REAR PA FR
1032	MS-1911	STRIP BOTTOM REAR PA FR
1031	MS-1910	STRIP BOTTOM REAR PA FR
1030	MS-1909	STRIP BOTTOM REAR PA FR
1029	MS-1908	STRIP BOTTOM REAR PA FR
1028	MS-1907	STRIP BOTTOM REAR PA FR
1027	MS-1906	STRIP BOTTOM REAR PA FR
1026	MS-1905	STRIP BOTTOM REAR PA FR
1025	MS-1904	STRIP BOTTOM REAR PA FR
1024	MS-1903	STRIP BOTTOM REAR PA FR
1023	MS-1902	STRIP BOTTOM REAR PA FR
1022	MS-1901	STRIP BOTTOM REAR PA FR
1021	MS-1900	STRIP BOTTOM REAR PA FR
1020	MS-1899	STRIP BOTTOM REAR PA FR
1019	MS-1898	STRIP BOTTOM REAR PA FR
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1016	MS-1895	STRIP BOTTOM REAR PA FR
1015	MS-1894	STRIP BOTTOM REAR PA FR
1014	MS-1893	STRIP BOTTOM REAR PA FR
1013	MS-1892	STRIP BOTTOM REAR PA FR
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1011	MS-1890	STRIP BOTTOM REAR PA FR
1010	MS-1889	STRIP BOTTOM REAR PA FR
1009	MS-1888	STRIP BOTTOM REAR PA FR
1008	MS-1887	STRIP BOTTOM REAR PA FR
1007	MS-1886	STRIP BOTTOM REAR PA FR
1006	MS-1885	STRIP BOTTOM REAR PA FR
1005	MS-1884	STRIP BOTTOM REAR PA FR
1004	MS-1883	STRIP BOTTOM REAR PA FR
1003	MS-1882	STRIP BOTTOM REAR PA FR
1002	MS-1881	STRIP BOTTOM REAR PA FR
1001	MS-1880	STRIP BOTTOM REAR PA FR
1000	MS-1879	STRIP BOTTOM REAR PA FR



NOTE:
 1. METER BOX (SUPPLIED BY CUSTOMER) CONTAINS ANTERIOR BOWLS.
 2. METER BOX COMPLETELY 7 INCHES HIGH.



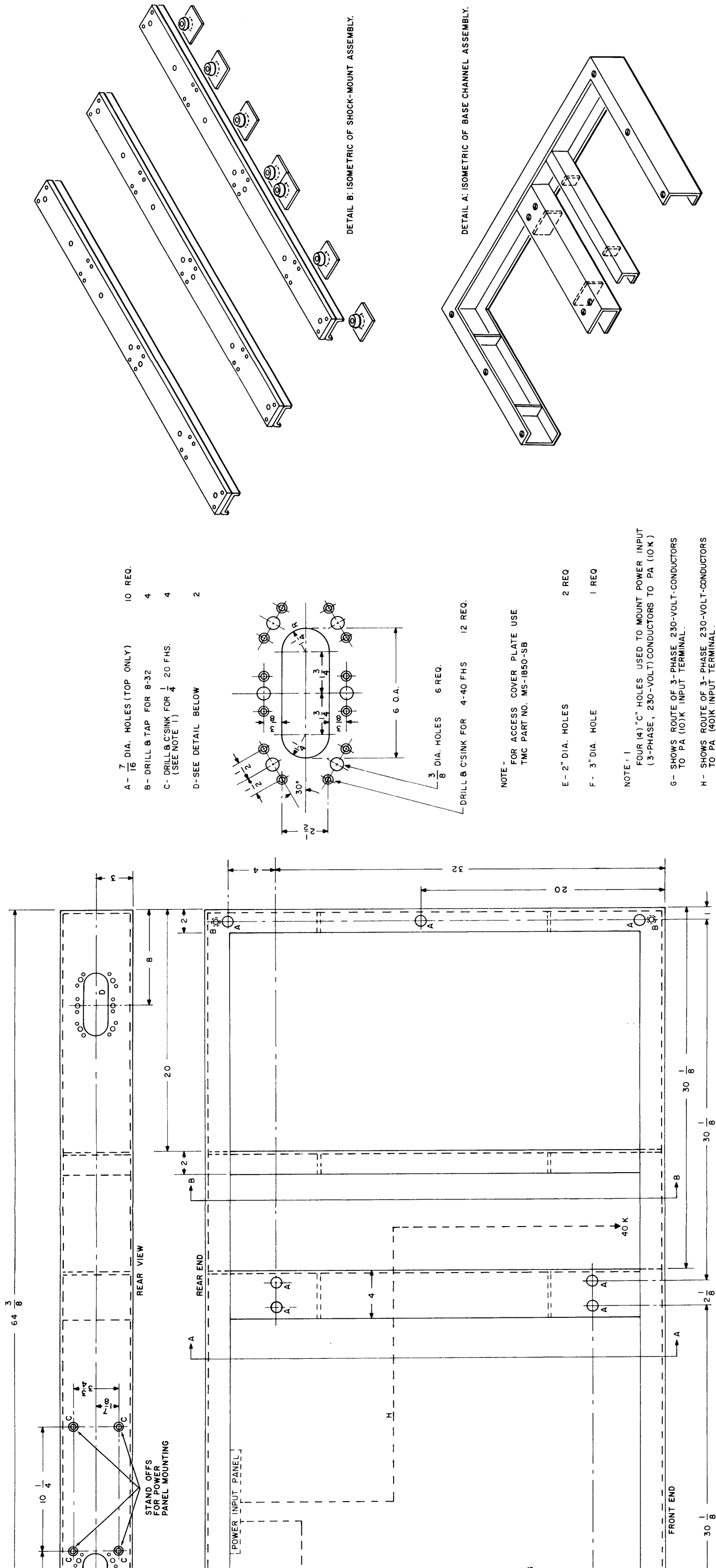
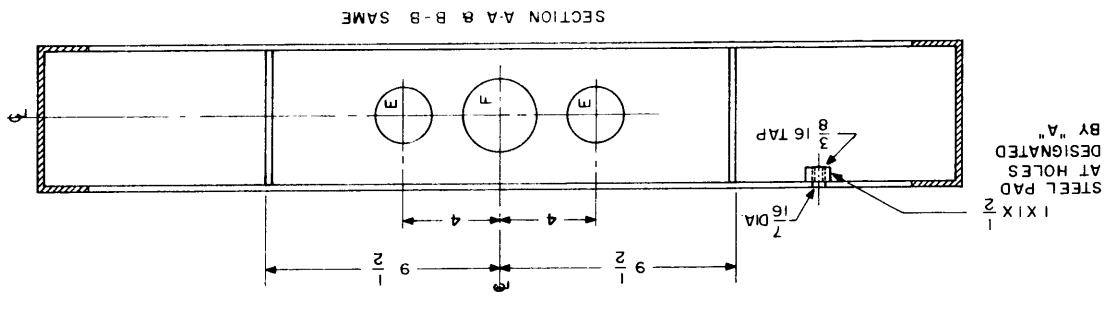
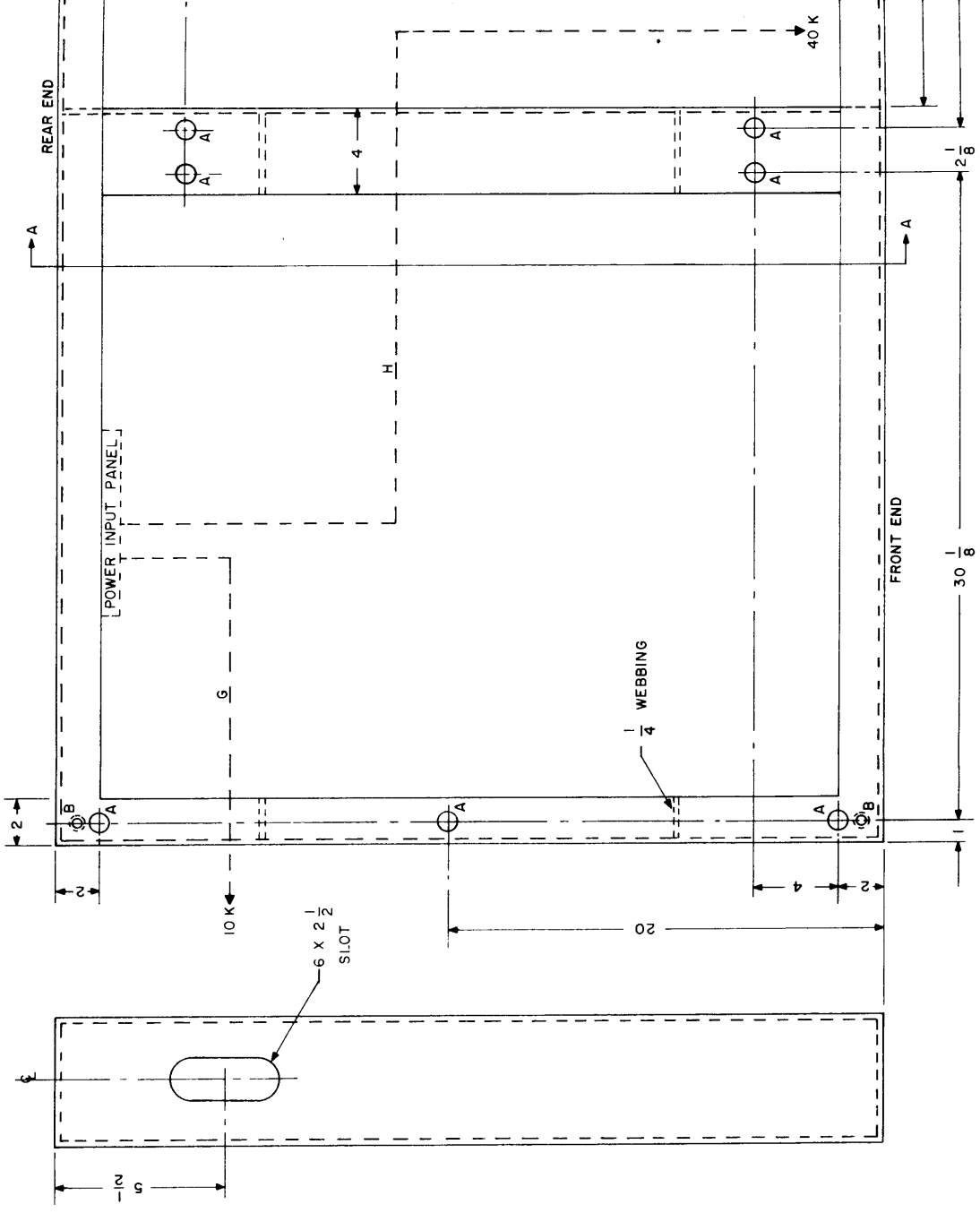
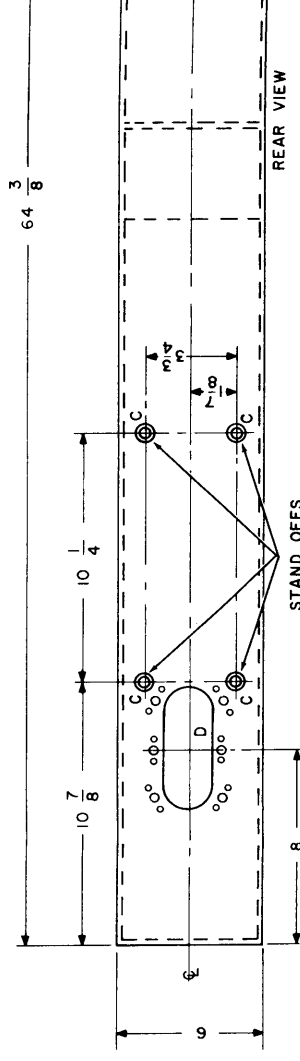
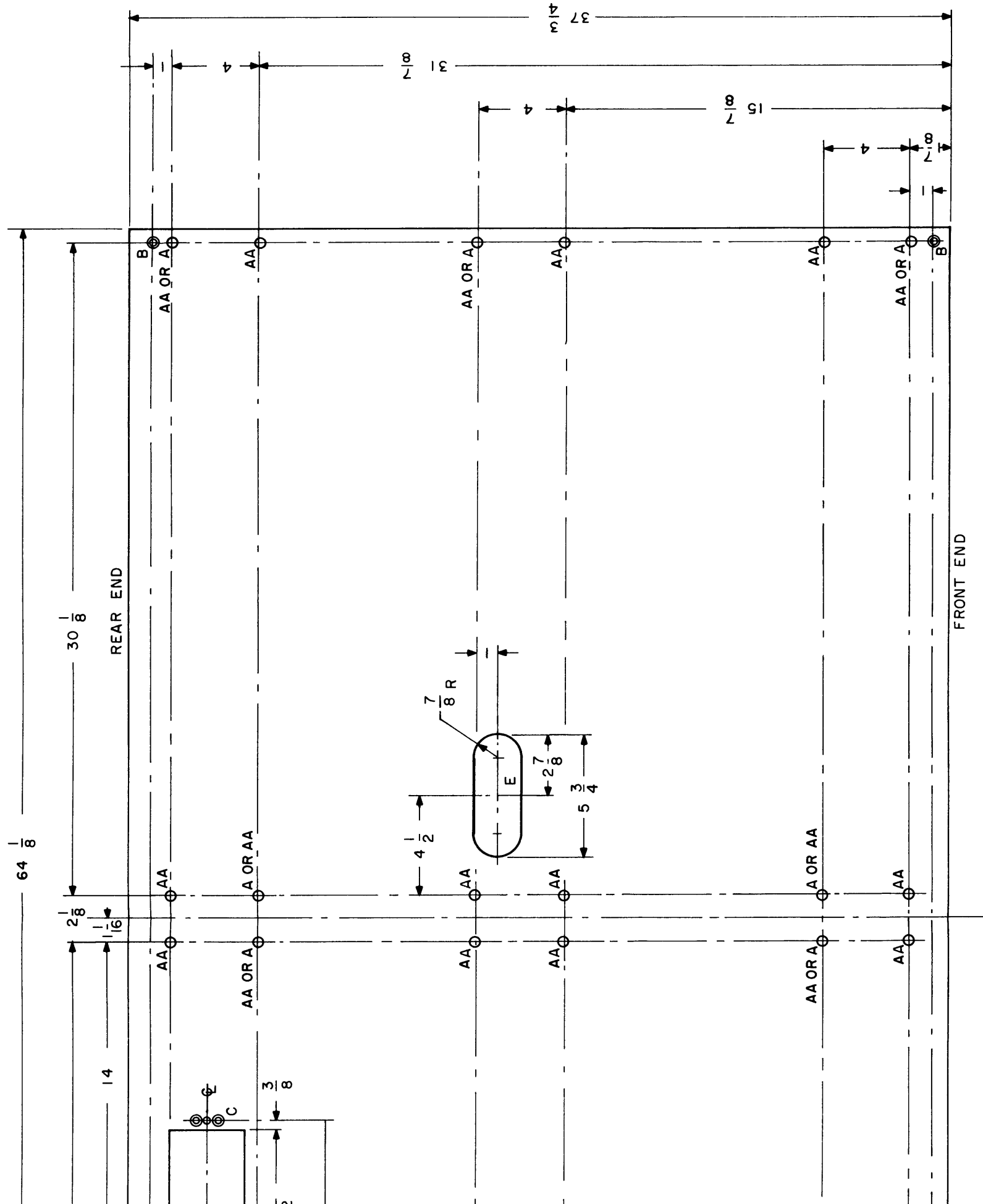


Figure 3-2. Installation Diagram, Base Assembly, GPT-40K

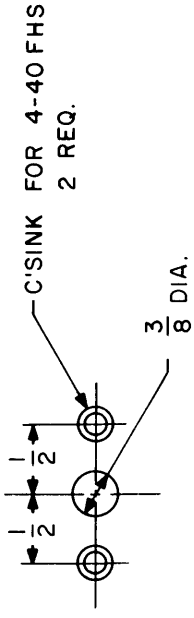




HOLES

A - $\frac{1}{2}$ (.500) DIA.	REQ.	24
B - 8-32		4

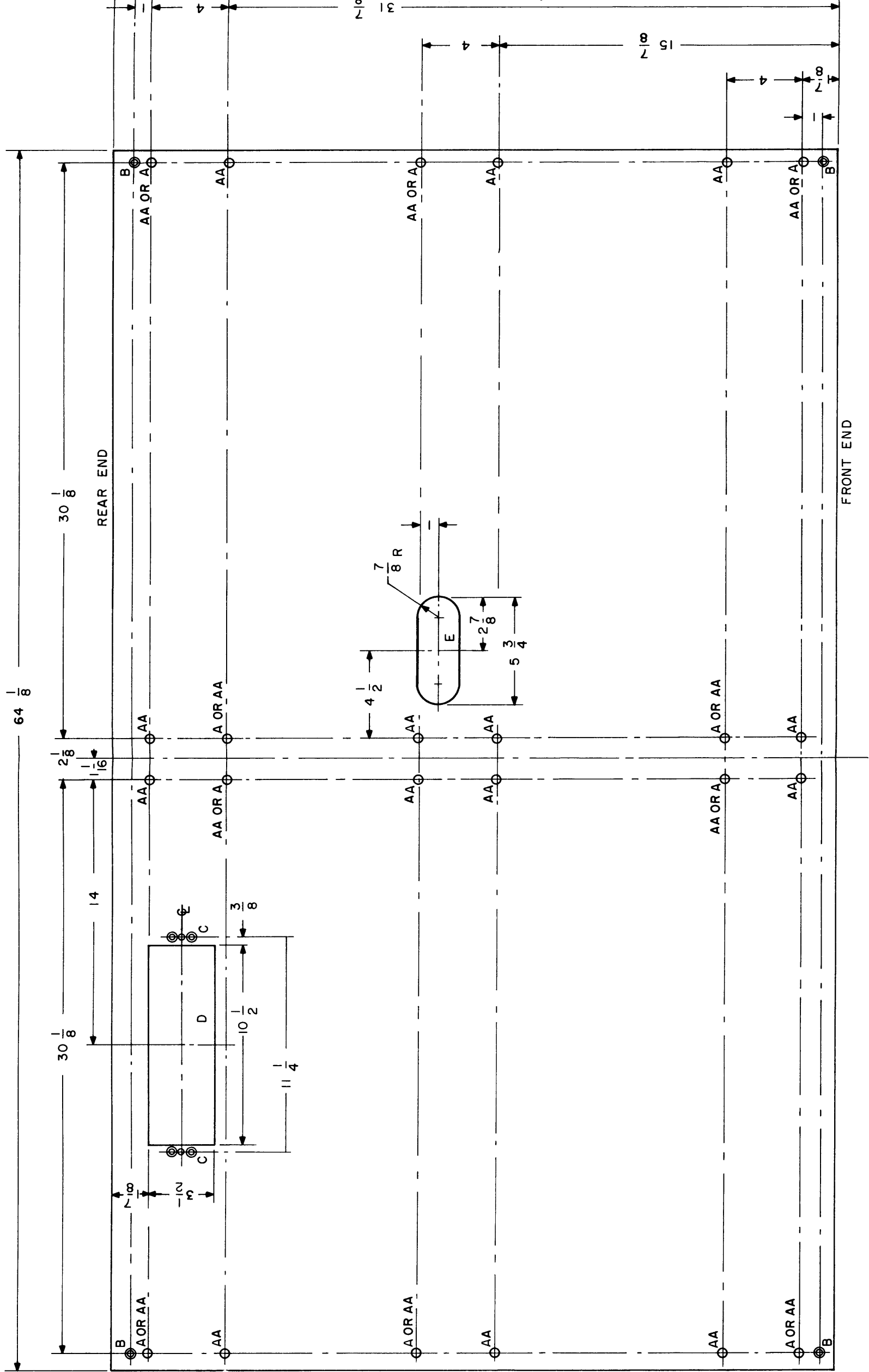
C - SEE DETAIL



D - ACCESS HOLE FOR AC POWER TERMINAL PANEL.
 E - ACCESS HOLE FOR 3 PHASE 230 - VOLT CONDUCTORS TO GPT-40K'S PA.

Original

Figure 3-3. Installation Diagram, Bottom Shield Details, GPT-40K



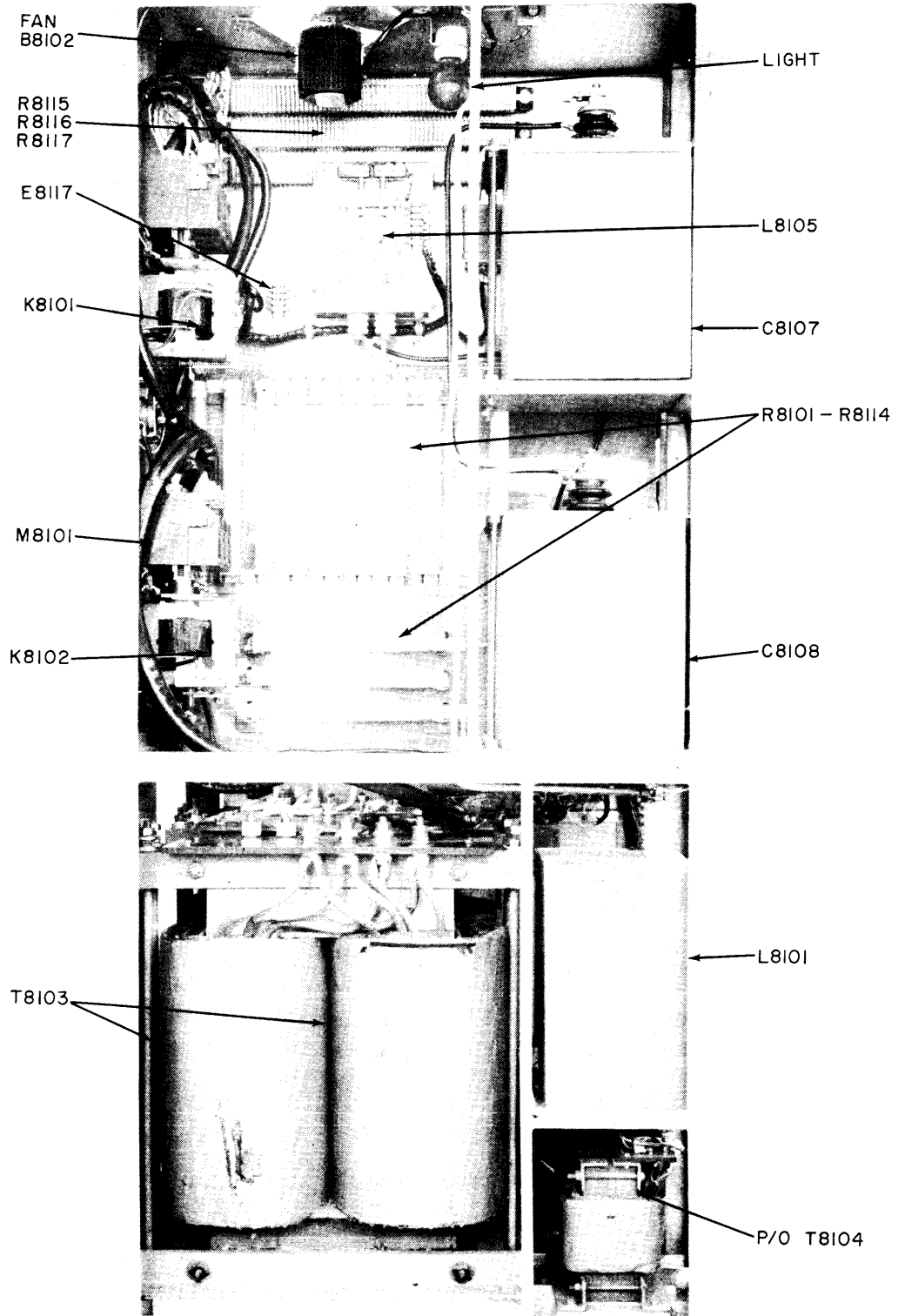


Figure 3-4. Overall Rear and Front (Removable Drawers Removed) Views, Fourth Frame, GPT-40K

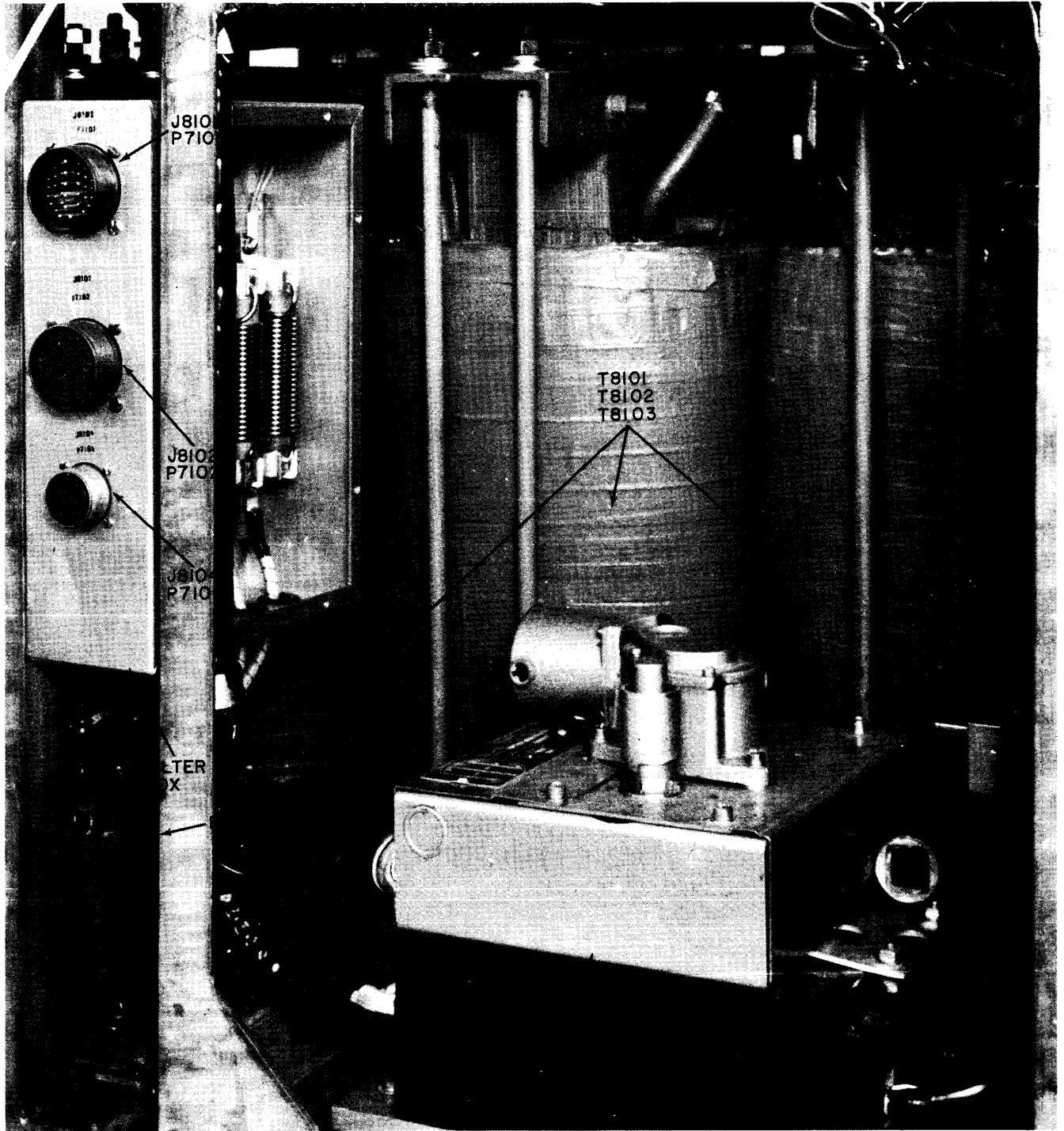


Figure 3-5. Right Side View of Power Supply (Fourth Frame), Shield Removed, GPT-40K

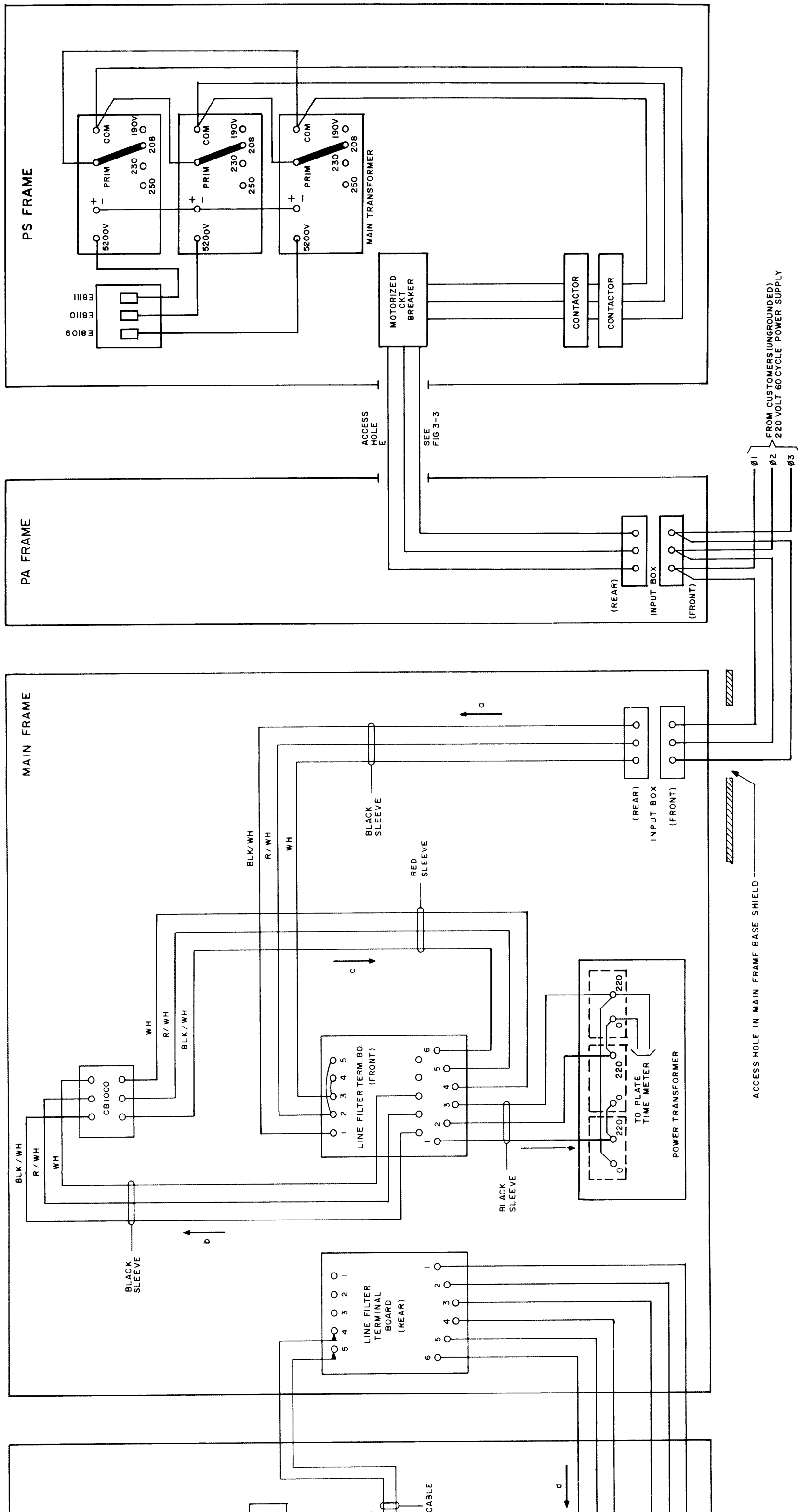
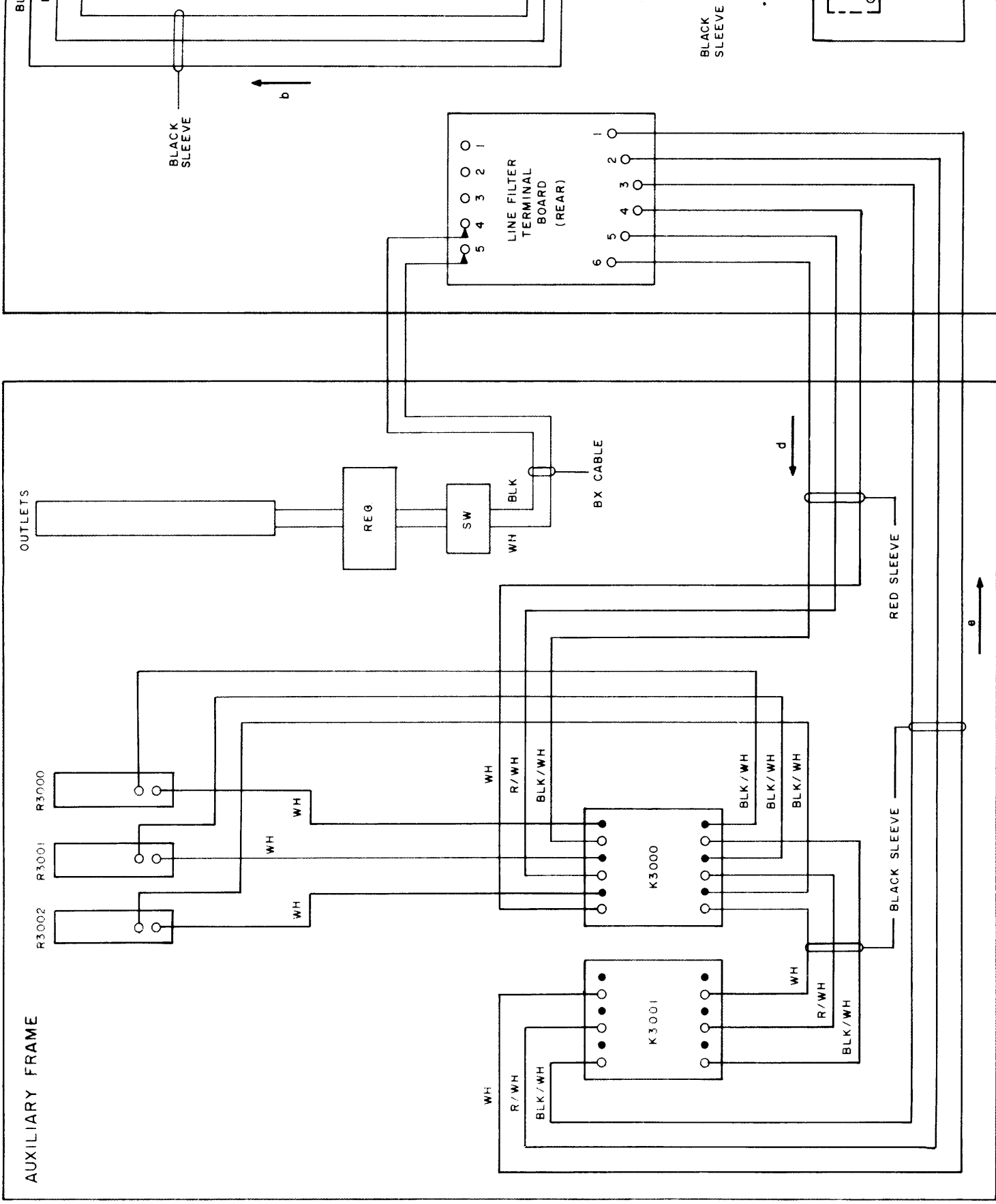


Figure 3-6. Wiring Diagram, GPT-40K's Power Circuit from Input Box to Power Supply Points



NOTE:
 8 ARROW HEADS (AT REAR LINE FILTER TERMINAL BOARD)
 INDICATE ASSEMBLY CONNECTIONS BETWEEN AUXILIARY
 AND MAIN FRAMES.
 POWER FLOW FOLLOWS ARROWS a,b,c,d,e AND f.

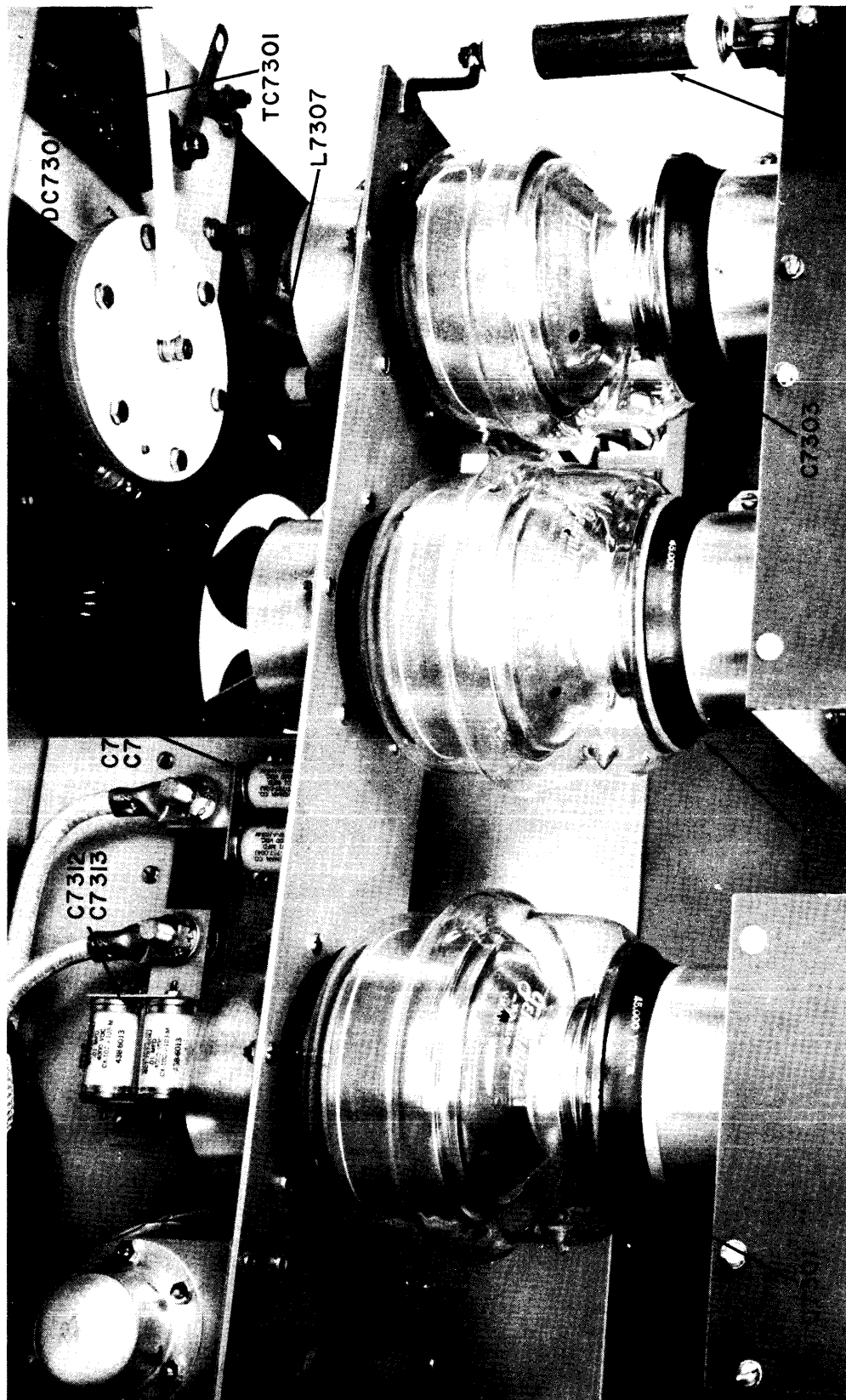


Figure 3-7-a. Front and Side Views of PA Section, GPT-40K

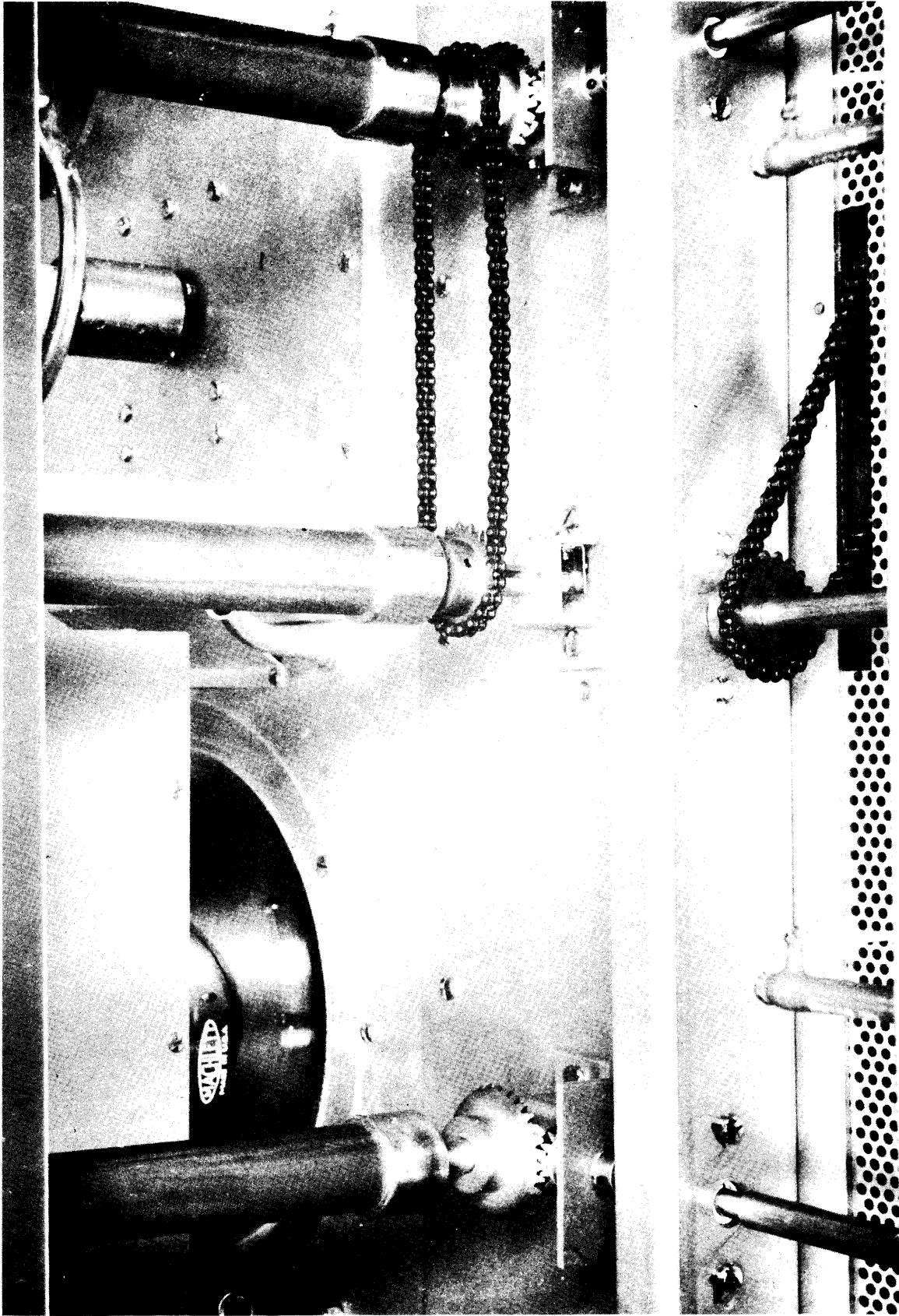


Figure 3-7-b. Front and Side Views of PA Section, GPT-40K

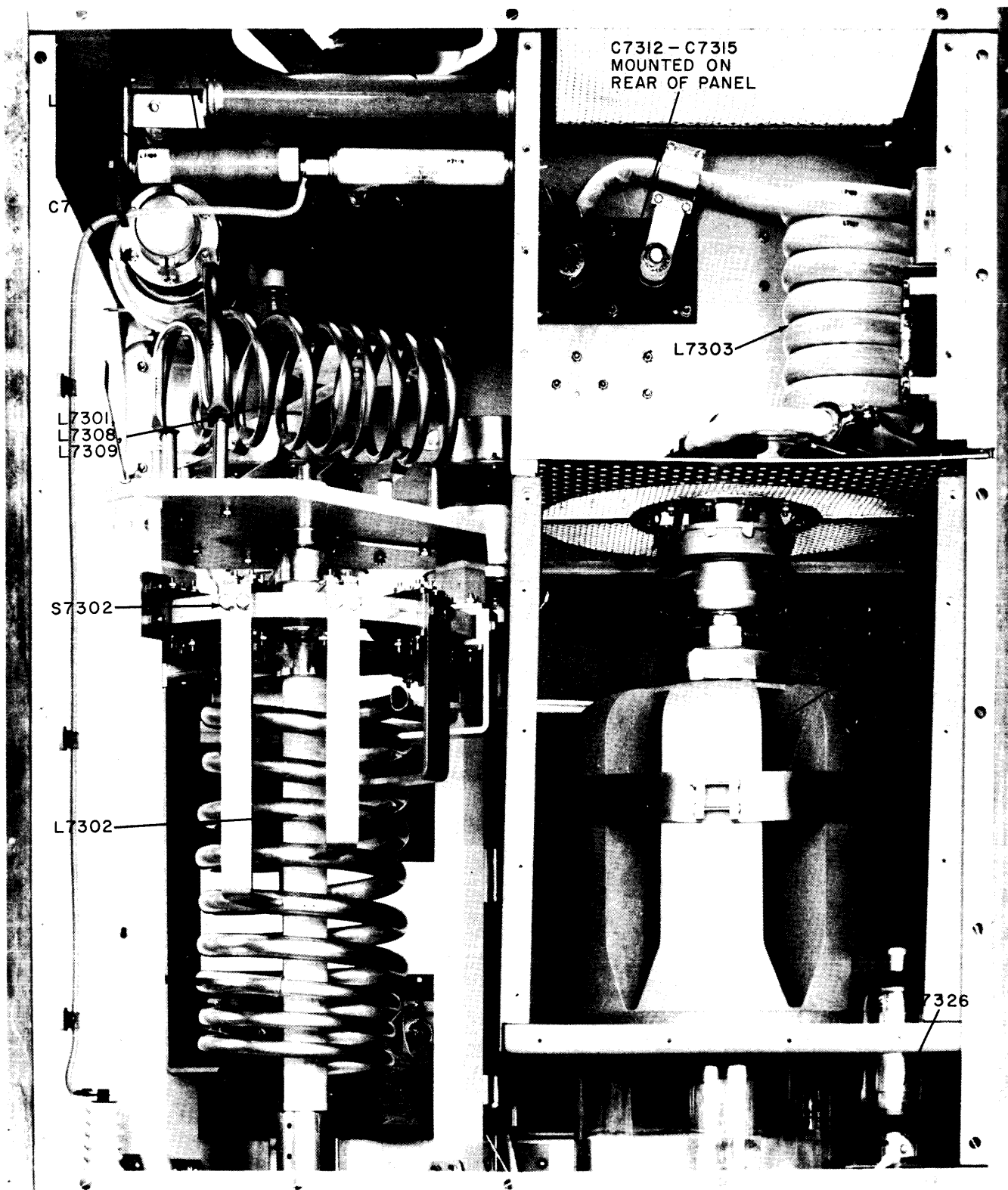


Figure 3-7-c. Front and Side Views of PA Section, GPT-40K

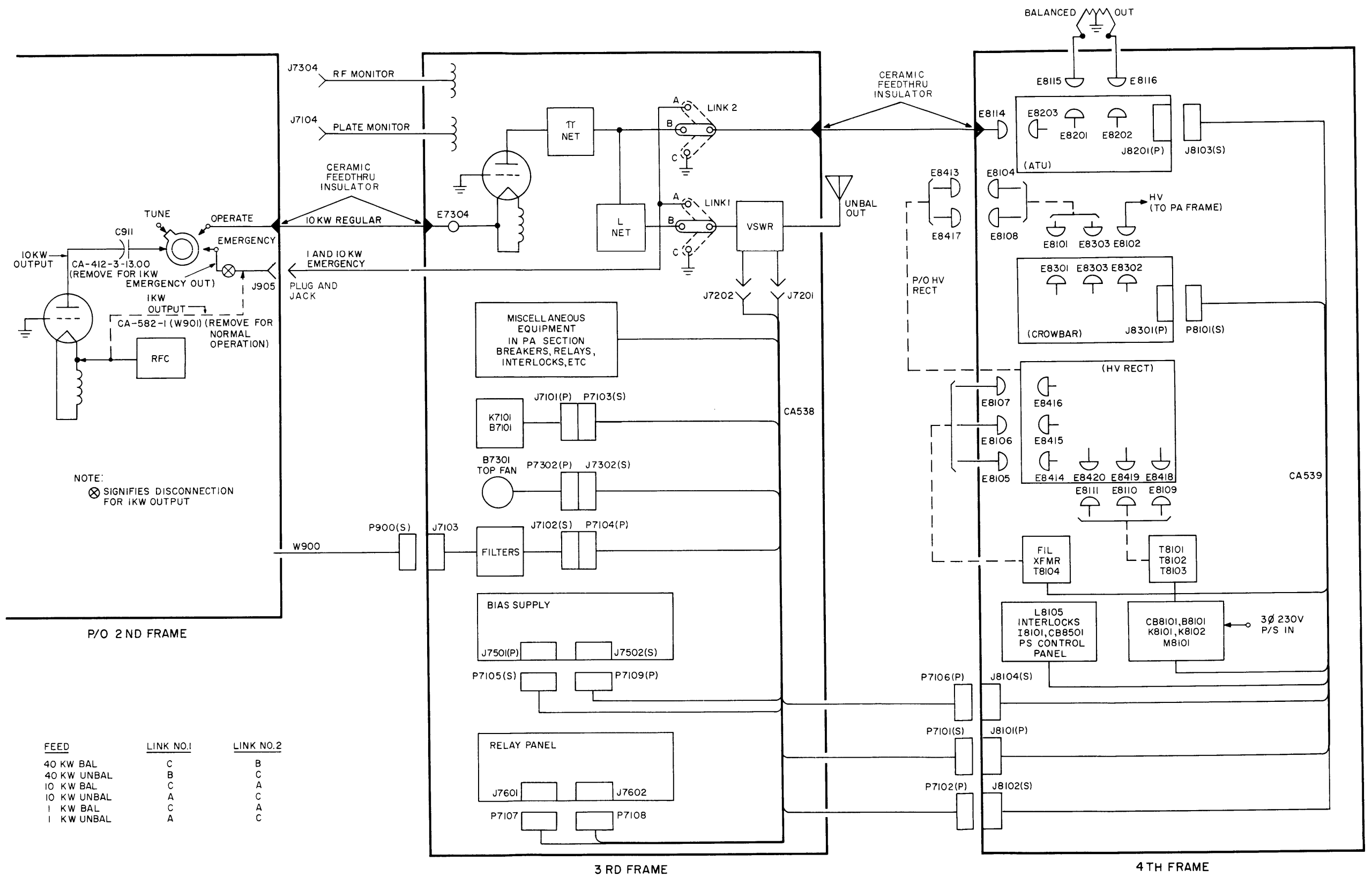
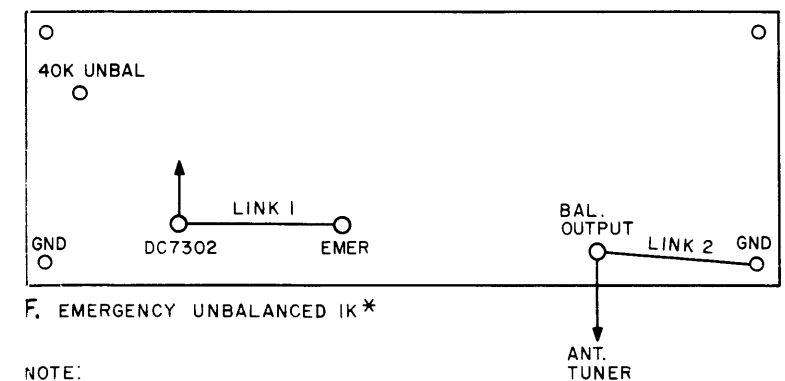
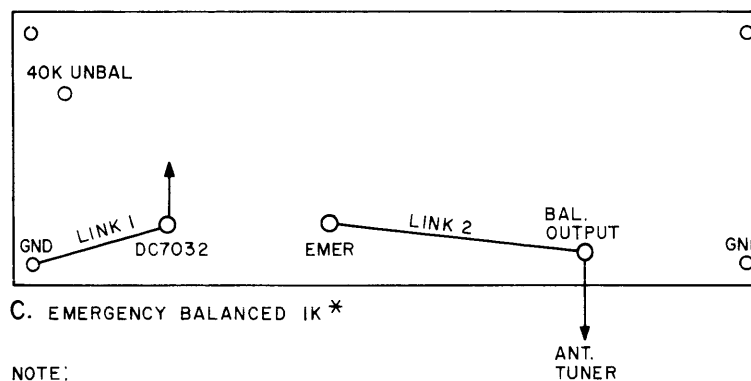
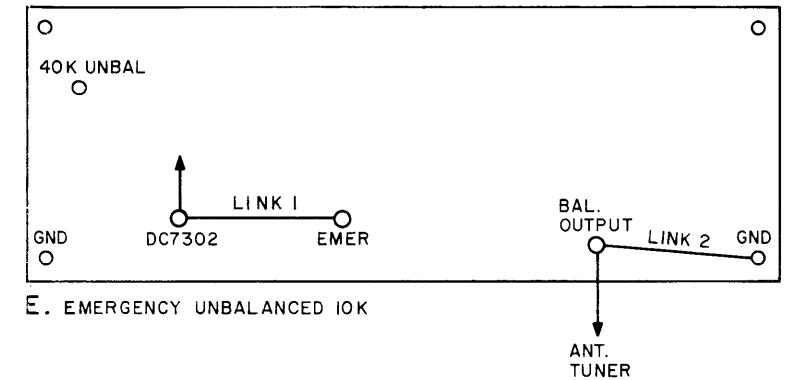
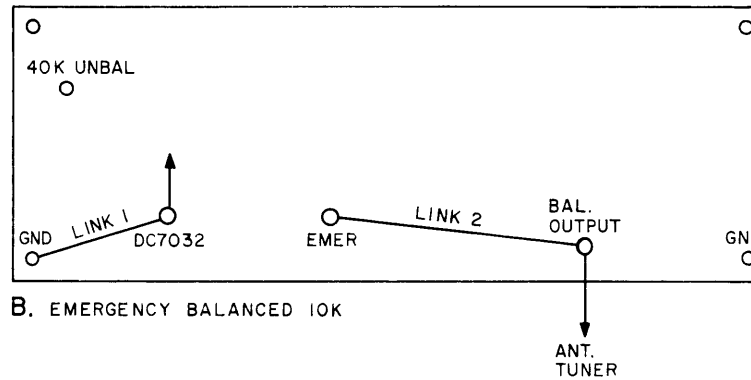
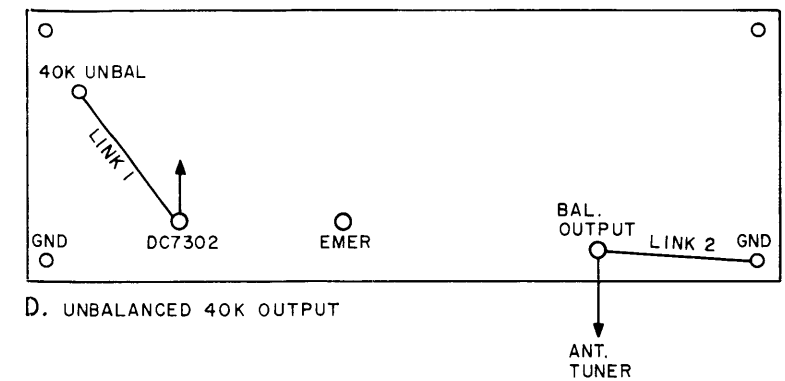
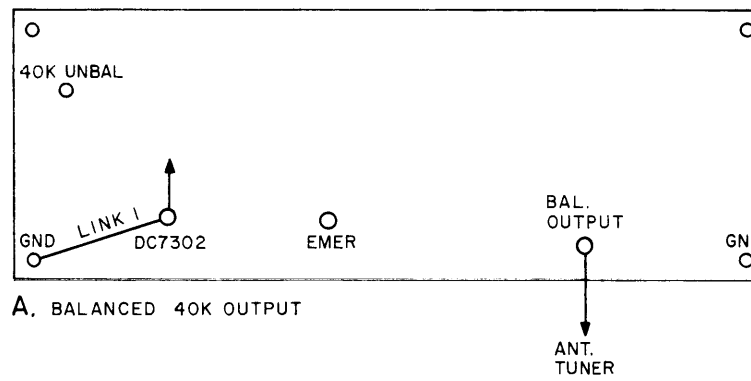


Figure 3-8. Cable Interconnections and Connections for Various Power and Type Outputs



NOTE:
 BALANCE BAR LINK 2 (LONG LINK)
 CONNECTED FOR ALL BALANCED CONNECTIONS.
 * SEE FIG. 3-8

NOTE:
 FOR ALL UNBALANCED CONNECTIONS
 LONG LINK 2 NOT CONNECTED.
 * SEE FIG. 3-8.

Figure 3-9. Physical Arrangements to Obtain Various Power and Type Outputs Shown on Figure 3-8

SECTION 4

MODIFICATION OF GPT-10K TO BECOME DRIVER FOR GPT-40K

4-1. GENERAL.

The differences between an unmodified GPT-10K's main frame components and the GPT-40K's second frame components are outlined in paragraph 3-1 of section 3. Following list outlines in greater detail the principal modifications required to make a nominal GPT-10K mate with or become the driver of a GPT-40K.

(a) Three 140 , 900W resistors (dummy load) associated with 3-position OUTPUT LOADING switch (TUNE, OPERATE, EMERGENCY) replace the standard GPT-10K's antenna OUTPUT LOADING coils. OUTPUT LOADING gear train is used to operate the selector switch.

(b) Coupling capacitor C911 is remounted.

(c) FSA monitor wiring is arranged to monitor RF in two of three places in GPT-40K: IPA(10K), PA(10K) and PA(40).

(d) Modified GPT-10K's EMERGENCY and OPERATE output wiring assemblies differ from standard GPT-10K's unbalanced and balanced antenna wiring assemblies.

(e) EXTERNAL RF probe in PA(10K)'s tank circuit.

(f) PA(10K) and PA(40K) interconnecting signal cables.

(g) Shields, covers, and power input details.

4-2. SHIELDS AND COVERS.

(a) Right Side Top Inside Shield, MS-1592 (Refer to Figures 2-1, 3-1, and 4-1):

Figure 4-1 in this section shows the right side, top inside shield on the main frame of GPT-10K (modified). The hole designated X is the access hole for the PA(40K)'s EMERGENCY antenna supply. The hole designated Y is the access hole for the PA(40K)'s OPERATE input. The hole designated Z is the access hole for a standard PA(10K)'s unbalanced antenna operation. The right side, top inside shield on the main frame of a standard GPT-10K has access holes X and Y covered by a plate, and hole Z is uncovered. The shield on a modified GPT-10K has access holes X and Y uncovered, and hole Z is covered by a plate.

(b) Right Side Shield, MS-1830 and MS1990:

Figure 4-2 in this section shows the right side shield on the main frame of GPT-10K (modified). Figure 4-3 in this section shows the left side shield of abutting GPT-40K's PA frame. Figures 4-1, 4-2, and 4-3 show that the modified GPT-10K accommodates two antenna outlets: the holes designated X accommodate the PA (40K)'s EMERGENCY antenna lead; the holes designated Y, the PA (40K)'s OPERATE lead. A feed-through insulation assembly supports the PA(40K)'s OPERATE lead. A QDL feed-through connector supports the PA(40K)'s EMERGENCY antenna lead. The hole designated W on figure 4-2 in this section is an access hole for a cable interconnecting the PA(10K) and PA(40K) frames.

(c) Emergency Bracket, MS-1605:

As pointed out in figures 4-1, 4-2, and 4-3, the position of GPT-10K's standard versus modified MS-1605 is different and figure 4-4 shows mechanical details for mounting the modified MS-1605.

The modified GPT-10K is also equipped with a detent bracket mounted as shown in figure 4-4 on the front right side of the RF deck.

(d) Power Input Details

Figure 3-6 in section 3 shows the method of feeding 3-phase power to the 40K. The standard GPT-10K receives the three-phase power directly via an input box in the base of the main frame. The modified GPT-10K receives its power via a jumper cable from the three-phase input in the PA frame. Access holes are provided in both base frames and shields to accommodate this cable (see figure 3-2 and 3-3).

(e) Antenna Output Details

Figure 2-1 shows balanced antenna outlet (A-1403) and unbalanced antenna outlet (MS-1605) locations for standard GPT-10K; figure 3-1 shows corresponding outlets for modified GPT-10K.

Referring to figure 2-1, plate MS-1665 covers the unbalanced antenna outlet when not in use; figure 3-1, plate MS-2338 covers the standard GPT-10K's balanced outlet in the modified GPT-10K.

(f) Removal of Standard GPT-10K's Right Side Panel MS-1460:

Figures called out in preceding paragraph (e) show use of MS-1460 in standard GPT-10K and non-use of MS-1460 in modified GPT-10K.

4-3. ATS REMOVAL AND THREE-POSITION OUTPUT SWITCH SUBSTITUTION.

The simplified schematic of figure 4-5 shows electrically, the circuit changes that must be instituted when the 3-position OUTPUT LOADING switch ("Y" wiring figure 4-5) is substituted for the output loading coils (X wiring) of the standard GPT-10K. Figure 4-6 shows major assembly differences between GPT-10K's standard and modified PA sections. The heavy dashed lines show the assemblies common to the two sections. Conversion from the standard to the modified sections PA therefore, involves replacing the remaining assemblies of the standard with the remaining assemblies of the modified PA sections. The procedure for doing this is tabulated below and will be clarified by figures.

Figure 4-7 in this section shows switch and lead assembly A-2064 required to modify PA(10K)'s ceiling in order to mate with GPT-40K's final amplifier section.

The following list outlines in greater detail the principal modifications required to make a nominal GPT-10K mate with or become the driver of a GPT-40K.

CONVERSION OF EXISTING GPT-10K'S TO MATE WITH GPT-40K FINAL AMPLIFIER SECTION

<u>STEP</u>	<u>DESCRIPTION</u>
1	Remove all external connections to the top and/ or right side of the GPT-10K.
2	Remove right front door from hinges (see callout 2 in figure 2-1).
3	Remove right side panel (callout 8) and PA inner shields.

<u>STEP</u>	<u>DESCRIPTION</u>
4	If operating unbalanced, remove right side unbalanced output connectors, connections and mounting brackets (see callout 26). If operating balanced, remove top bowls and connections (callout 25).
5	Remove all connections to antenna tuning unit.
6	Disassemble entire shaft assembly, front panel, knob counter and gears connected with the antenna tuning unit and meter panel drawer.
7	Remove antenna tuning unit and meter panel drawer.
8	Drill two holes in right side shield upper front corner near roof of PA compartment (figure 4-4 in this section) for attachment of emergency bracket.
9	Drill two holes in right front corner of PA deck (figure 4-4 in this section) for attachment of detent bracket.
10	Install AS-117 MODE SELECTOR switch, bolting it to four holes left vacant by removal of antenna tuning unit and meter panel drawer in standard GPT-10K. The procedure for doing steps 10 through 13 are clarified by figures 4-5, 4-6, 4-7, 4-8 and 4-9.
11	Install emergency bracket, bolting it to two holes specified in item <u>c</u> above.
12	Install detent bracket, bolting it to two holes specified in item <u>b</u> above.
13	Connect the eight incoming wires to, or outgoing wires from, AS-117 to associated electrical components.

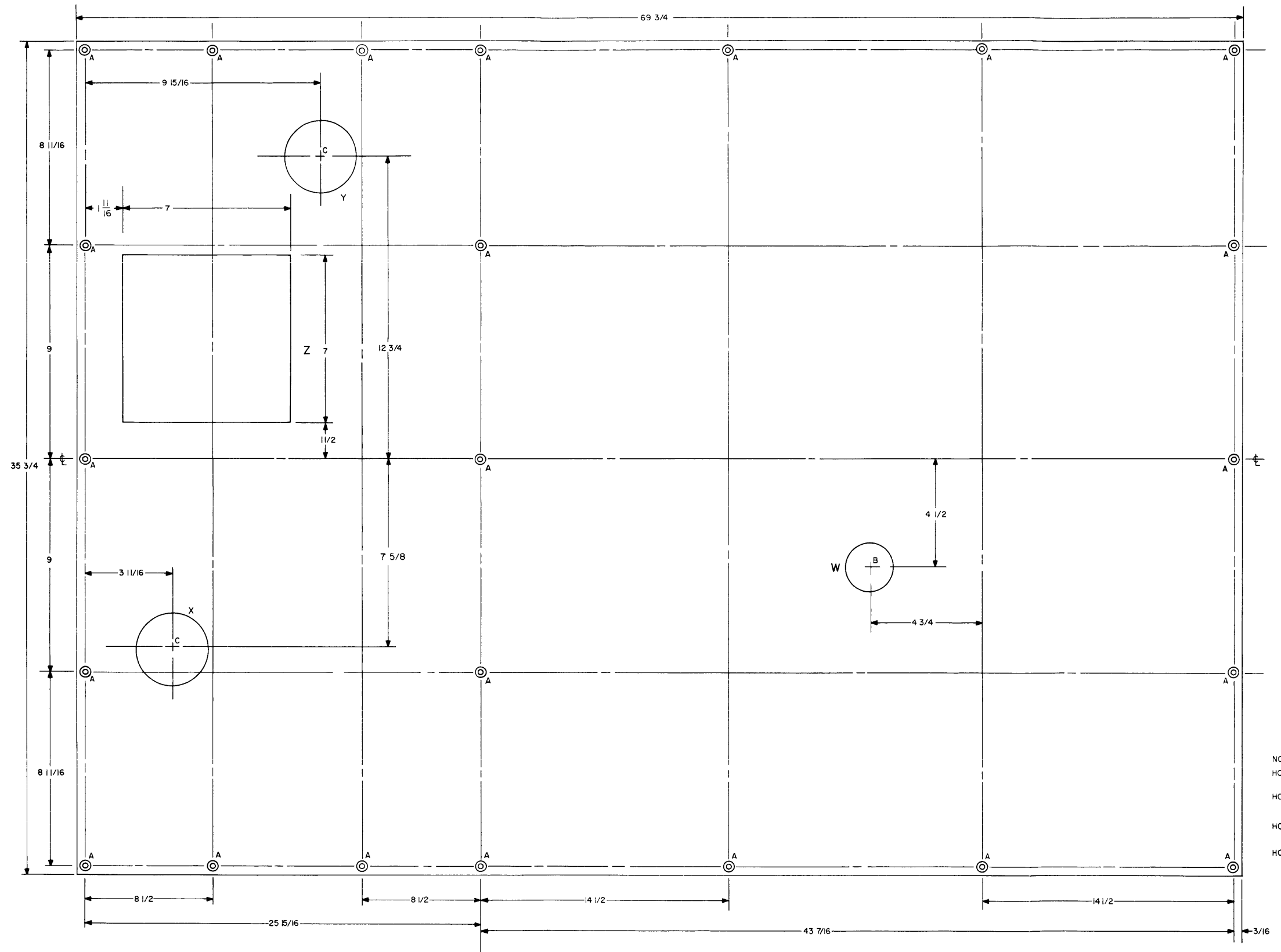
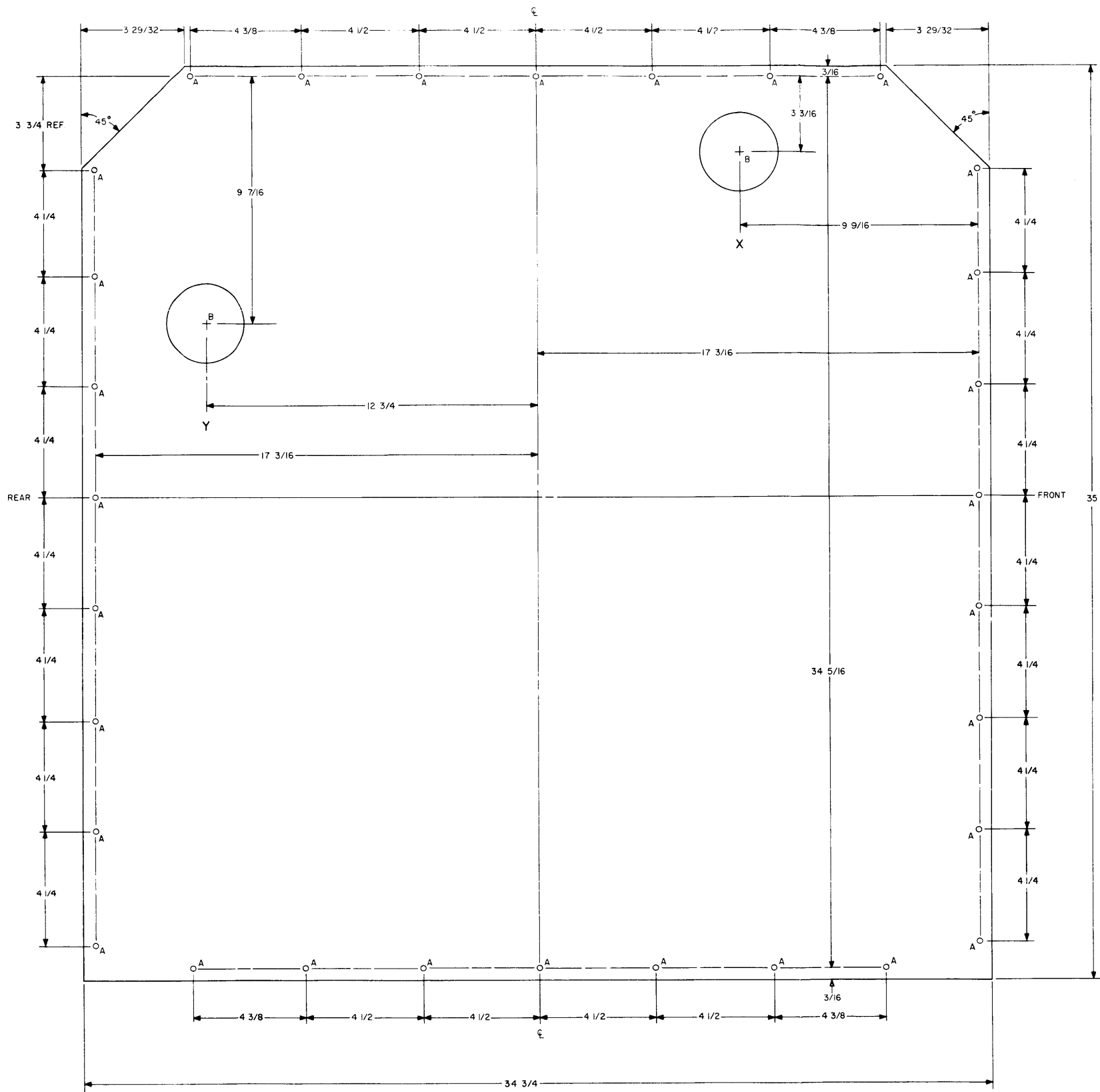


Figure 4-2. Modified GPT-10K's Right Side Shield



NOTES:
 HOLE X= ACCESS HOLE FOR
 EMERGENCY ANTENNA
 (GPT-40K OPERATION).
 HOLE Y= ACCESS HOLE FOR
 PA INPUT TO PA (40K)
 FINAL AMPLIFIER.

Figure 4-3. GPT-40K's Left Side PA Frame Shield

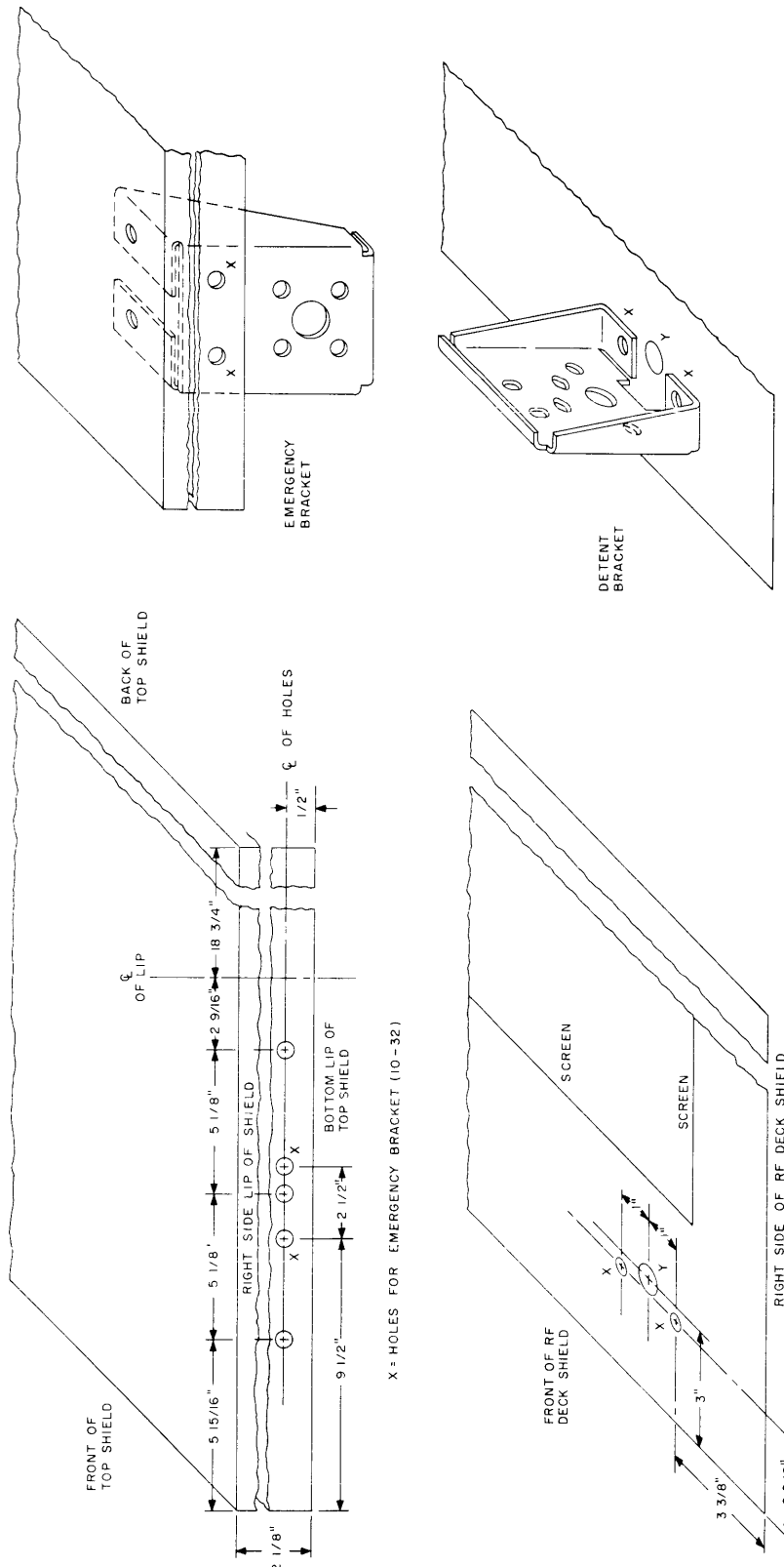
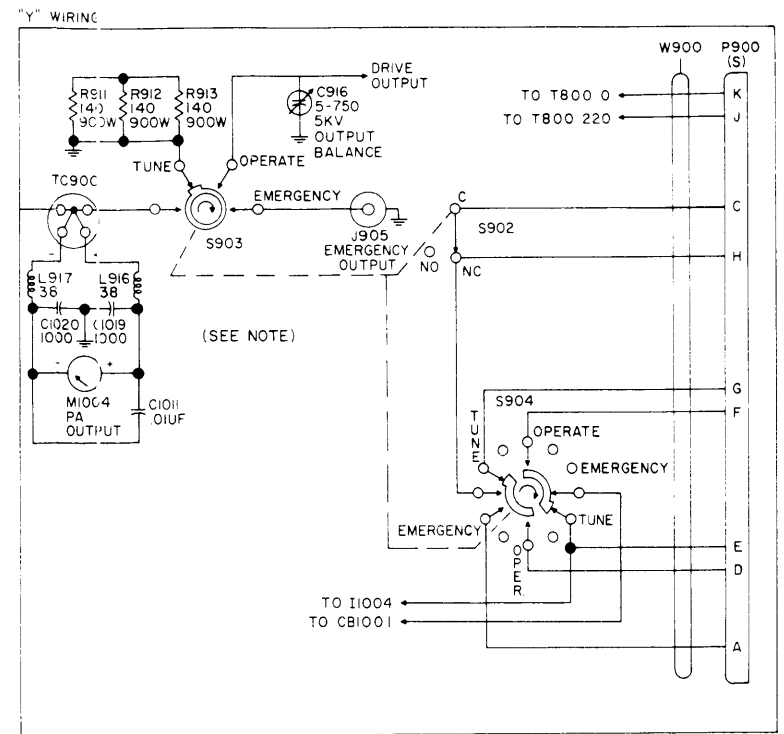
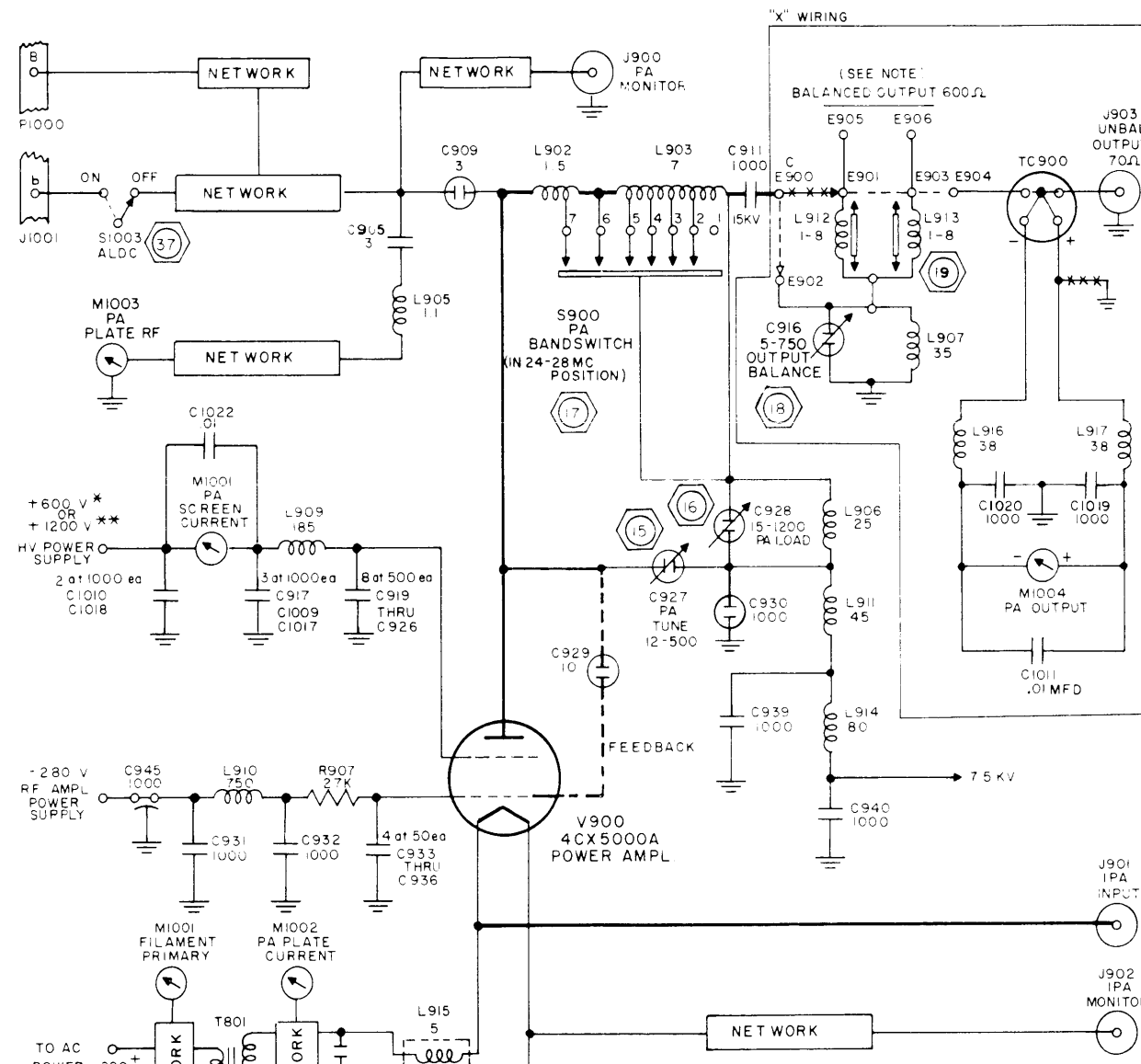
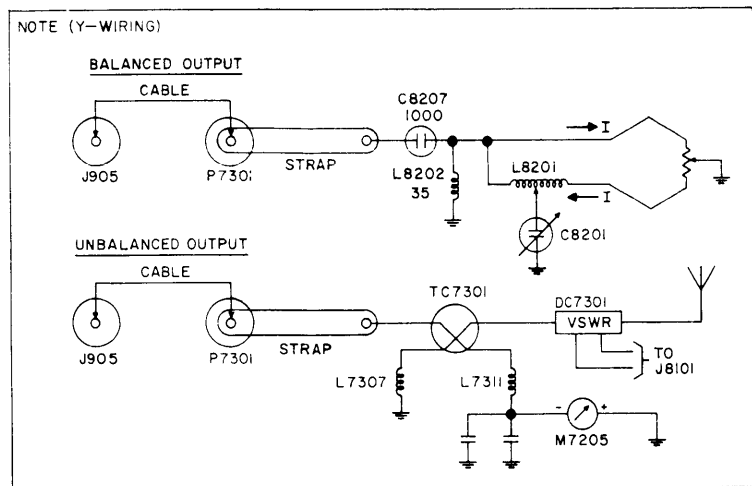
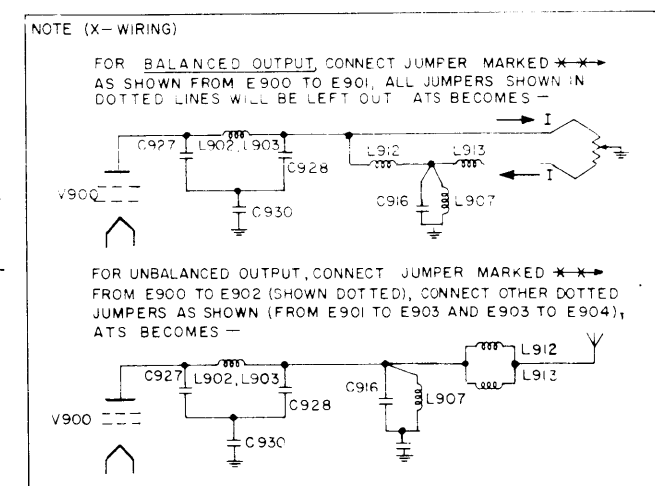


Figure 4-4. Additional Holes Required to Accommodate Attachment of GPT-40K's Emergency and Detent Brackets



NOTE:
 "X" WIRING APPLIES TO STANDARD GPT-10K's 10KW(PEP) OUTPUT.
 "Y" WIRING APPLIES TO GPT-40K's-10KW(PEP) EMERGENCY OUTPUT.



SYMBOL	P/O	S900 PA BANDSWITCH
800	MAIN POWER SUPPLY	1 4-6 MC 5 15-19 MC
900	POWER AMPLIFIER SECTION	2 6-8 MC 6 19-24 MC
1000	MAIN FRAME ASSEMBLY	3 8-11 MC 7 24-28 MC
		4 11-15 MC

X TUNE-OPERATE SWITCH S1004 ON OPERATE
 XX TUNE-OPERATE SWITCH S1004 ON TUNE

⊕ VACUUM CAPACITOR, FIXED ⊕ VACUUM CAPACITOR, VARIABLE

NORMAL DC VOLTAGES ON V900	
GRID	- 280
SCREEN	+1200* OR +600**
PLATE	+ 7500
FILAMENT	GND

Figure 4-5. Simplified Schematic Diagram, Standard Vs. Modified GPT-10K's PA Circuit

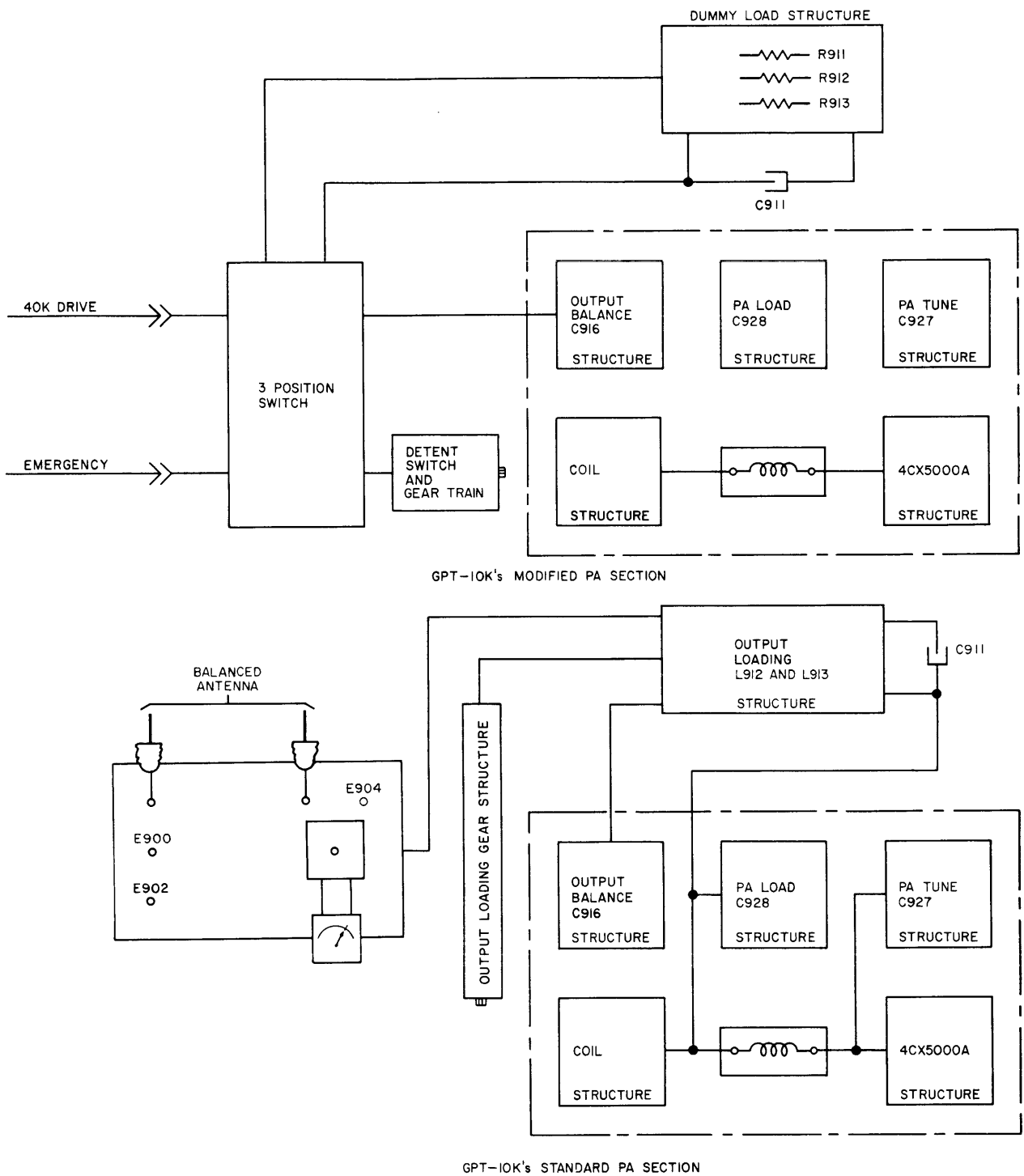


Figure 4-6. Major Assembly Differences Between GPT-10K's Standard and Modified PA Section

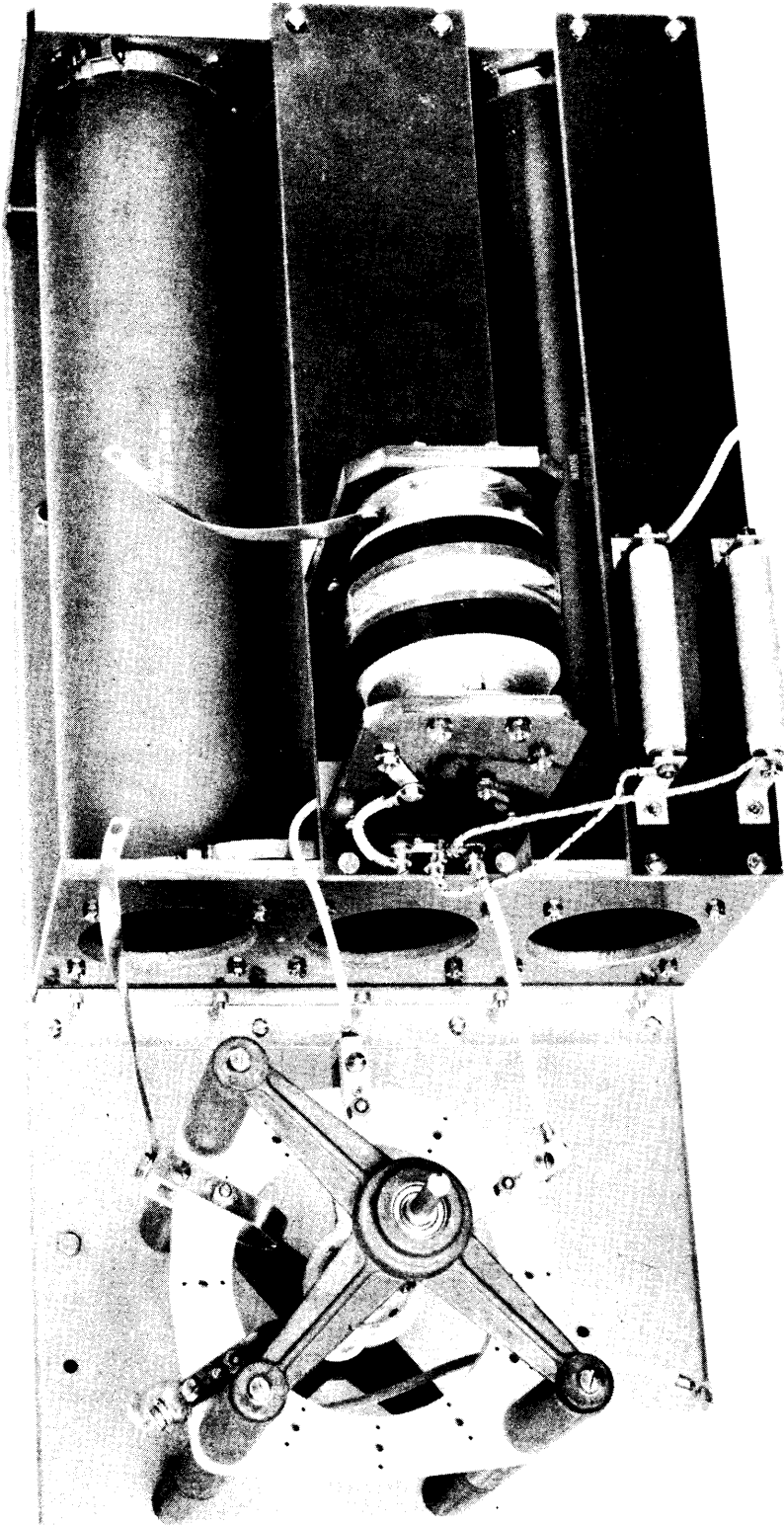


Figure 4-7. Switch and Load Assembly (A-2064) Located in GPT-10K's Modified PA Section

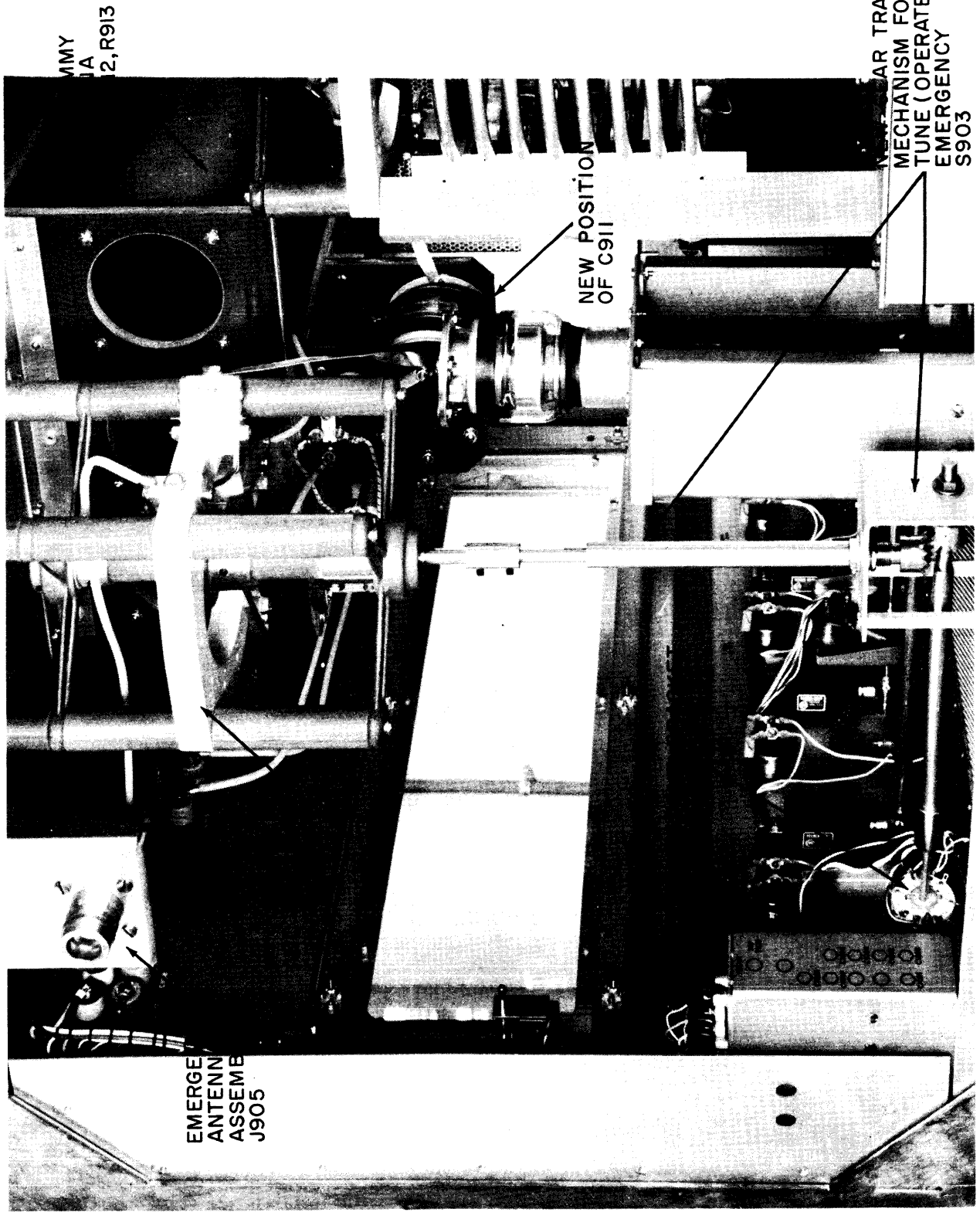


Figure 4-8. Modified GPT-10K's PA Compartment (45-degree Angle Side View)

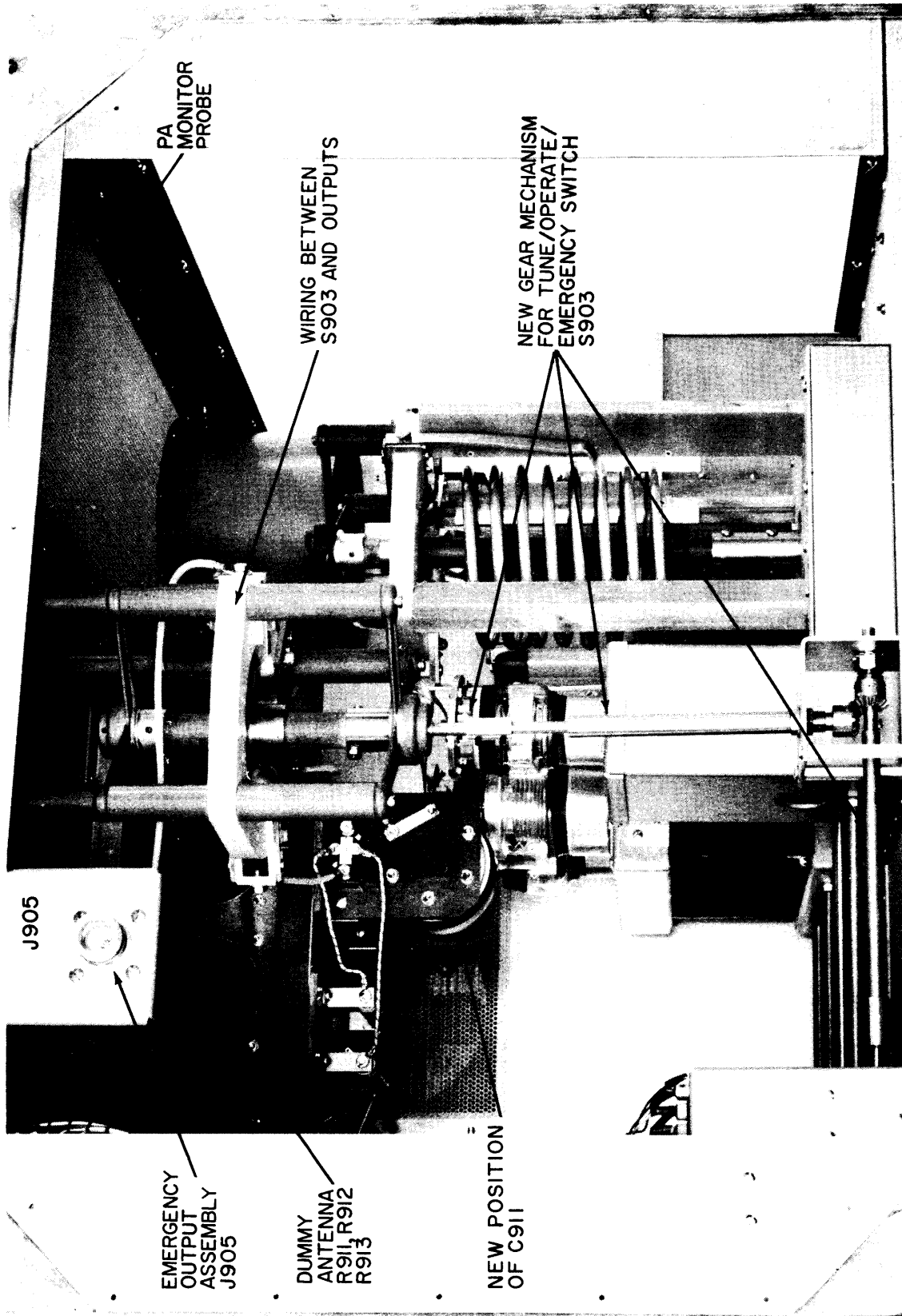


Figure 4-9. Modified GPT-10K's PA Compartment (135-degree Angle Side View)