

TRUCK, UTILITY 3/4 TON, GS, MEDIUM RADIO STATION,  
AN/TRC-75 DUPLEX LANDROVER SERIES 2 OR 2A, 109 IN WB

REPLACEMENT OF INTERCONNECTING WIRING HARNESS

MODIFICATION INSTRUCTION

REFERENCE:- AO in WM No 23780/1.

INTRODUCTION

1. This instruction details the modification necessary to overcome crosstalk produced in voice lines, radio frequency interference in TH-5/TG circuits, and radio frequency hotspots in the vehicular system.

2. The modification consists of:-

- a. Replacing the existing interconnecting wiring harness, between Radio Set AN/TRC-75 (Duplex) and ancillary equipments, with a fully screened harness.
- b. Fitting earth bonding straps to equipments and mounting frames.
- c. Fitting a 600 Ω load resistor, for the hybrid unit, to the jackfield.
- d. Mounting of eight terminal posts to the rear vehicle panel for direct LINE operation of LSB/USB, SEND-REC circuits.
- e. Rerouting of the main earth and provision of additional earth attachment points.
- f. Fitting a swivel plate and stop to the morse key assembly.
- g. Replacing TH-5/TG power input cable with a screened type.
- h. Repositioning TH-5/TG-F98/U carrier on the main support frame.
- j. Replacing speaker leads with screened type.
- k. Repositioning of teletype, lamp and teletype power socket.
- l. Relabelling jackfield.

Estimated manhours to perform: 36.0

3. Priority: Group 1 - Modification to be implemented on receipt of stores.

4. Item affected:

Truck, Utility 3/4 Ton, GS, Medium Radio Station, AN/TRC-75 (Duplex) Landrover Series 2 or 2A, 109 in WB - all stocks to be modified.

5. Action required: By R A Sigs and RAEME field and base workshops in accordance with WKSP A 850.

6. Stores required: Stores are to be demanded as a complete kit from RAAOC. Individual items have NOT been catalogued. It is intended that Item 15, Main Loom only, will be catalogued as a maintenance spare for future repair requirements.

5820-66-024-3513 MODIFICATION KIT, ELECTRONIC EQUIPMENT, Radio Set AN/TRC-75, (Duplex), vehicle mounted (Landrover) comprising:-

Item No	Item	Qty	Where Fitted
1	Connectors copper braid plated 8 in x 5/8 in	11	} Earthing of AN/TRC-75 and Duplex receiver to main frame.
2	" " " " 16 in x 5/8 in	4	
3	" " " " 12 in x 5/8 in	1	
4	" " " " 12 in x 3/8 in	2	
5	" " " " 8 in x 3/8 in	2	
6 & 7	" " " " 26 in x 1/4 in and 3 in x 1/4 in	1	} Earthing jackfield panels.

Item No	Item	Qty	Where Fitted
8	Connector cable 7 ft 9 in single PVC covered 19/044 with 48 in x 5/8 in copper braid plated attached and lug on one end	1	Main earth lead from chain stud, at back of Landrover, to main frame.
9	Connectors 5 ft, single 162/0076 PVC covered cable	2	Main frame to earth spikes.
10	Connector 5 ft flex screened PVC covered 3 core 14/0076	1	Lamp fitting.
11	Connector 7 ft flex screened PVC covered 3 core 14/0076	2	Speaker leads.
12	Connector 9 ft flex screened PVC covered 3 core 14/0076	1	Telegraph Terminal to Power Distribution Box.
13	Connector 8 ft 8 in flex screened PVC covered 2 core 14/0076	1	Morse key lead to jackfield box.
14	Loom twisted wires 4 pairs 14/0076 PVC covered	1	Terminals to jackfield box.
15	Loom flex screened 2 core PVC covered 14/0076 complete with phone tips, lugs, earthing braids etc	1	Main loom.
16	Lug solder 60 A pressed	1	To be attached to main earth lead at chain stud.
17	Wire copper tinned 12 SWG 24 in long	2	Earth connection bar on jackfield panels.
18	Resistor carbon 600 ohm 1/2 W 5%	1	Jackfield box.
19	Saddles 5/16 in double mounting	8	Main earth cable.
20	Saddles conduit 3/4 in single mounting PVC covered	2	End of main loom to Duplex receiver.
21	Saddle 3/16 in single mounting	1	Morse key lead.
22	Clip 3/4 in PVC covered	1	Support wires under AN/TRC-75.
23	Clamp insulated 7554-2-8	3	One in jackfield. Two under table.
24	Grommet black rubber 3/4 in	1	Back shield of Landrover.
25	Grommets black rubber 3/8 in	3	Jackfield box and Landrover floor.
26	Grommets snap-in 1 1/4 in	1	Jackfield box.
27	Terminals 2 BA universal insulated	8	Rear of Landrover.
28	Mild steel plate 1/8 in x 2 9/16 in x 4 15/16 in	1	Mounting of morse key.
29	Plate Traffolite 1/16 in black and white 4 3/4 in x 5/8 in	1	Designation of terminals.
30	Stud stop 4 BA x 1/2 in with head 1/4 in dia x 3/8 in long	1	Limit stop morse key.
31	Strip paper typed	2	Designation of jackfield box.
32	Screw 1/4 in UNF x 1 1/4 in hex head cad plated M/8	24	Earthing braid connectors to frames.
33	Screw 5/16 in UNF x 1 1/2 in hex head cad plated M/8	2	Frame earth spike points.
34	Screw 1/4 in UNC x 1 1/2 in csk head cad plated M/8	-	Morse key support - fitted to item 28.
35	Screw 2 BA x 1/4 in cheese head cad plated M/8	3	Earthing phones and TH5.

Item No	Item	Qty	Where Fitted
36	Screw 2 BA x 2 in cheese head cad plated M/S	1	Junction box earth.
37	Screw 2 BA x 3/4 in csk head cad plated M/S	2	Mod to table for teletype and 2 pin plug.
38	Screw 2 BA x 3/4 in cheese head cad plated M/S	11	Base of hybrids.
39	Screw 4 BA x 3/4 in csk head cad plated M/S	6	Mounting of morse key.
40	Screw 4 BA x 5/8 in cheese head cad plated M/S	4	Saddles and clips.
41	Screw 4 BA x 3/8 in round head cad plated M/S	16	Saddles.
42	Screw self tapping 3/8 in binding head	14	Clips to support main loom.
43	Screw drive round head No 0 x 1/4 in	2	To mount Traffolite plate.
44	Nuts 1/4 in UNF Nyloc hex cad plated M/S	8	
45	" " " UNF " " " " " "	1	
46	" " " UNF wing cad plated M/S	15	
47	" " " std hex cad plated M/S	16	
48	" 5/16 in UNF " " " " " "	2	
49	" " " wing cad plated M/S	2	
50	" 2 BA std hex cad plated M/S	1	
51	" " Nyloc hex cad plated M/S	5	
52	" 4 BA " " " " " "	26	
53	" " std " " " " "	4	
54	Washers 3/8 in flat cad plated M/S	4	
55	" " 5/16 in " " " " "	8	
56	" " " spring cad plated M/S	4	
57	" " 1/4 in flat cad plated M/S	76	
58	" " " spring cad plated M/S	32	
59	" " 2 BA flat cad plated M/S	24	
60	" " " spring cad plated M/S	3	
61	" " " shakeproof cad plated M/S	8	
62	" " 4 BA flat cad plated M/S	49	
63	" " " shakeproof cad plated M/S	5	

7. Stores removed: (To be disposed of locally).

ADE(X)329-17 Interconnecting wiring harness, Radio Set AN/TRC-75 (Duplex)  
vehicle mounted

**DETAIL**

8. Important Note -

The effectiveness of the modification depends on good earth connections throughout the installation, it is therefore imperative that the detail in regard to Earth Bonding Points be strictly observed.

**Earth Bonding Points**

9. Where earth leads are attached to the vehicle, mounting frames or equipment, the paint surface will be thoroughly cleaned away from the attachment point. An area of approximately 1 inch diameter will be cleaned to expose the bare metal on both sides of the earth point mounting hole. The use of an electric drill fitted with a reamer end cutting, simplifies this task, alternatively scraping or abrasive action can be used.

**Work Schedule**

10. To simplify the fitting of the modification kit, table 1 provides a sequence guide and all relevant details. For ease of identification, items mentioned in table 1 are preceded by their kit number (material is listed in the sequence of assembly).

TABLE 1 - WORK SCHEDULE

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
1-0	Dismounting					
1-1	Existing wiring harness to AN/TRC-75 and ancillary equipments	Disconnect loom terminations from equipments.	Disconnect antenna and power cables to AN/TRC-75, 651-E and TH-5/TG.			
1-2	Duplex Receiver, TH-5/TG, F98/U Hybrids A and B	Remove equipments from vehicle.	To remove 651-E and AN/TRC-75, spring quick release levers.			
1-3	Mounting Frame for Duplex Receiver	Remove frame from vehicle.	Retain bolts, washers and nuts from frame.			
1-4	AN/TRC-75	Remove equipment from vehicle.	Spring quick release levers.			
1-5	Teletypewriter, lamp, power socket and morse key	Remove items from teletype table.	Retain securing screws, nuts etc.			
2-0	Vehicle earths for AN/TRC-75					
2-1	Vehicle seating platform (fig 1001) cargo compartment	Drill four 17/64 inch diameter holes in positions shown in fig 1001.  Secure bolt, washers, earth braid, nut and wing nut to each hole.	Remove paint from around holes (para 9 refers).  Screw head and flat washer on underside. Earth braid in contact with vehicle body on top side.	Item 32 Item 57 Item 1 Item 57 Item 58 Item 47 Item 57 Item 58 Item 46	Screw hex hd 1 1/4 in x 1/4 in UNF Washers flat 1/4 in Connector copper braid 8 in x 5/8 in Washer flat 1/4 in Washer spring 1/4 in Nuts hex 1/4 in UNF Washer flat 1/4 in Washer spring 1/4 in Nut wing 1/4 in UNF	4 4 4 4 4 4 4 4 4
3-0	AN/TRC-75 earth points					
3-1	AN/TRC-75 - earth terminals	Remove existing wing nuts from four corners beneath the case. Clean paint away from contact surfaces.				
3-2	AN/TRC-75 - inspection cover (top of the equipment)	Remove the second and the sixth bolt from the forward edge of the cover. Clean paint away from holes to expose bare metal (area of approx 1 sq in). Replace bolts and washers in original positions.	For attachment of earth straps from main mounting frame (ref serial 4-5 Forward channel - top).			
4-0	Mounting Frame for Duplex Receiver (figs 1002 and 1003)		Leave Duplex Receiver mounting plates in position.			

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
4.1	Mounting frame - top	Drill 6 holes 17/64 in dia in positions as in fig 1002 (marked G). Drill 4 holes 9/32 in dia in positions shown in fig 1003 OR Drill 12 holes with No 26 drill as per fig 1003.	Earth bonding points - clean away paint (para 9 refers). For anti-vibration mountings No 4 on TH-5/TG, F98/U sub-carrier OR Moulded rubber shock mounts with flange on TH-5/TG, F98/U sub-carrier.			
4.2	Mounting frame - off-side	Drill 5 holes 17/64 in dia in positions shown in fig 1002 (marked G). Drill 1 hole 11/32 in dia in the position shown in fig 1002 (marked E).	Earth bonding points - clean away paint (para 9 refers). " " " " "			
4.3	Mounting frame - near-side	Drill 4 holes 17/64 in dia in positions shown in fig 1002 (marked G). Drill 1 hole 11/32 in dia in position shown in fig 1002 (marked E).	" " " " " " " " " "			
4.4	Mounting frame - front	Drill 1 hole with No 12 drill in position shown in fig 1002 (marked G). Drill 10 holes with No 30 drill in positions shown in fig 1002 (marked C).	" " " " " For mounting cable clips.			
4.5	(a) Earth straps on frame - top	Attach 8 in earth straps to the holes adjacent to outer edges of Duplex receiver mounting plates.	Braid tails towards centre of frame. Screw heads and washer on underside of frame.	Item 32 " 57 " 1 " 57 " 58 " 47 " 57 " 58 " 46	Screw hex hd 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Connector copper braid 8 in x 5/8 in Washer flat 1/4 in Washer spring 1/4 in Nut hex 1/4 in UNF Washer flat 1/4 in Washer spring 1/4 in Nut wing 1/4 in UNF	4 4 4 4 4 8 4 4
	(b) Forward channel - top	Attach 8 in earth straps to the remaining two holes in forward channel.	Braid tails to drop over front of frame.	Item 32 " 57 " 58 " 47 " 57 " 1 " 57 " 58 " 46	Screw hex hd 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Washer spring 1/4 in Nut hex 1/4 in UNF Washer flat 1/4 in Connector copper braid 8 in x 5/8 in Washer flat 1/4 in Washer spring 1/4 in Nut wing 1/4 in UNF	2 4 2 2 2 2 2 2
	(c) Offside and nearside legs	Attach 16 in earth straps to the four bottom holes on offside and nearside legs.	Attach braids on inside of frame - bolt heads and washer on outside.	Item 32 " 57 " 2 " 44	Screw hex hd 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Connector copper braid 16 in x 5/8 in Nut Nyloc 1/4 in UNF	4 4 4 4

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
4.5	(d) Nearside frame - top channel	Attach an 8 in earth strap to hole adjacent to TH-5/TG sub-carrier earthing point.	Screw head and washer on outside of frame (refer serial 7.1 for earth point on sub-carrier).	Item 32 " 57 " 1 " 57 " 44	Screw hex hd 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Connector copper braid 8 in x 5/8 in Washer flat 1/4 in Nut Nyloc 1/4 in UNF	1 1 1 1 1
	(e) Offside frame - top channel	Secure two earth braids to outer holes on top channel.	Screw head and washer on outside of frame. (Earthing straps to hybrids).	Item 32 " 57 " 5 " 57 " 44	Screw hex hd 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Connector copper braid 8 in x 3/8 in Washer flat 1/4 in Nut Nyloc 1/4 in UNF	2 2 2 2 2
	(f) Frame - external earth terminals	Fit two 5/16 in screws, washers and nuts to central holes in top channel of nearside and offside legs.	Screw head and washer on inside of frame.	Item 33 " 55 " 56 " 48 " 55 " 56 " 49	Screw hex hd 1 1/2 in x 5/16 in UNF Washer flat 5/16 in Washer spring 5/16 in Nut hex 5/16 in UNF Washer flat 5/16 in Washer spring 5/16 in Nut wing 5/16 in UNF	2 4 2 2 4 2 2
5.0	Terminal Telegraph TH-5/TG					
5.1	Replace power cable TH-5/TG	Remove TH-5/TG from sub-carrier. Remove TH-5/TG from its case. Disconnect existing power cable and replace it with the kit item. Disconnect power plug from old cable and fit it to new TH-5/TG cable. Secure TH-5/TG back in its case.	Attach the braid and green lead to earth point on TH-5/TG chassis (earth screw at rear of C7).  Connect shield to G on plug.	Item 12	Cable 3 core, shielded, 9 ft, 14/0076	1
5.2	External earthing TH-5/TG	Clean away paint from forward bush on right side channel support on the underside of case. Secure a 12 in x 3/8 in earth strap to inner side of bush.	Pass No 12 drill through bush.	Item 4 Item 35 " 59 " 51	Connector copper braid 12 in x 3/8 in Screw ch hd 2 BA x 1 1/4 in long Washer flat 2 BA Nut Nyloc 2 BA	1 1 2 1
6.0	Filter Unit F98/U					
6.1	External earthing F98/U	Remove F98/U from sub-carrier. Drill hole (No 10 drill) in right hand corner of front flange. Clean away paint from around hole (both sides).  Attach a 12 in x 3/8 earth strap to F98/U.	Hole position must allow for closure of lid and clearance when fitted to sub-carrier.  Screw head and strap on outside of unit (temporary attachment).	Item 4 " 38 " 59 " 51	Connector copper braid 12 in x 3/8 in Screw ch hd 2 BA x 3/4 in Washer flat 2 BA Nut Nyloc 2 BA	1 1 2 1

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
7-0	Sub-Carrier TH-5/TG, F98/U					
7-1	Earthing	Clean away paint around both sides of the existing 17/64 in hole in the nearside angle. Fit screw washers and nut to hole.	Screw head on inside.	Item 32 " 57 " 58 " 47 " 57 " 58 " 46	Screw hex hd 1 1/4 in x 1/4 in UNF Washers flat 1/4 in Washers spring 1/4 in Nut hex 1/4 in UNF Washer flat 1/4 in Washer spring 1/4 in Nut wing 1/4 in UNF	1 2 1 1 2 1 1
7-2	Mounting of sub-carrier and equipments	Remount carrier in new position (fig 1003) on the main mounting frame, use existing screws, washers and shock mounts. Mount TH-5/TG and F98/U on sub-carrier.	Hole positions provide for either the single bolt anti-vibration mounts or the moulded rubber shock mounts with flange.			
8-0	Duplex Receiver 651-E					
8-1	External earthing 651-E	Channel members beneath 651-E. Mark and drill four 9/32 in dia holes. Clean away paint from surface around drilled holes.	Drill holes 2 inches in, and centrally on the outer surface, from each of the open ends of channels.	Item 32 " 57 " 58 " 47 " 57 " 58 " 46	Screw hex hd 1 1/4 in x 1/4 in UNF Washers flat 1/4 in Washers spring 1/4 in Nut hex 1/4 in UNF Washer flat 1/4 in Washer spring 1/4 in Nuts wing 1/4 in UNF	4 8 4 4 4 4 4
8-2	Loom branch support clamps 651-E	Drill two holes (No 30 drill) in right side front panel of case, as in fig 1004. Attach two PVC covered conduit saddles (3/4 in) to these positions.	Use tamper inside case to prevent metal chips from entering equipment circuitry. Temporary attachment until loom is installed.	Item 20 " 42 " 59	Saddles conduit PVC 3/4 in Screws self tapping 3/8 in Washers flat 2 BA	2 2 2
9-0	Hybrids A and B					
9-1	External earthing of hybrids	Drill hole (No 10 drill) in centre of base flange, front panel of each unit and 3/8 in from edge. Countersink holes on outer surface for 4 BA csk hd screws. Secure an 8 in x 3/8 in earth strap to the hole on each equipment flange.	Clean paint from inner lip around holes.	Item 39 " 63 " 53 " 62 Ser 4.5 (e) Item 62 " 52	Screw csk hd 4 BA x 3/4 in Washer lock 4 BA Nut hex 4 BA Washer flat 4 BA Connector copper braid 8 in x 3/8 in Washer flat 4 BA Nut Nyloc 4 BA	2 2 2 2 - 2 2
9-2	Replacement of mounting screws	Remove existing 2 BA x 5/8 in securing screws from mounting plate and replace with 2 BA x 3/4 in screws supplied in the kit.		Item 38 " 59 " 61	Screws ch hd 2 BA x 3/4 in Washers flat 2 BA Washers shakeproof 2 BA	8 8 8

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
10.0	Refitting Mounting Frame and Equipments					
10.1	AN/TRC-75	Replace in vehicle - secure the four lock levers on mounting plates.	Secure a 16 in (serial 4.5 (c)) and 8 in (serial 2.1) earth straps to each corner of AN/TRC-75. Tighten wing nuts.			
10.2	Mounting Frame for Duplex Receiver	Fit into position and secure with bolts, washers and nuts previously removed (serial 1.3).				
10.3	Duplex Receiver	Replace on the support frame using original mounting fixtures. Attach the four adjacent earth straps to channel earth points underneath the Duplex receiver. Tighten wing nuts.				
10.4	Hybrids A and B	Secure on the offside of frame using original plate mounting fixtures.	Two nuts 5/16 in UNF and washers secure mounting plate to the support frame.			
11.0	Connection of equipment earth straps					
11.1	AN/TRC-75	Attach the two straps on frame to bolts on inspection cover (serial 4.5).				
11.2	TH-5/TG	Attach earth braid from underside to adjacent wing nut between 651-E and TH-5/TG.				
11.3	F98/U	Attach earth braid from F98/U to adjacent hole on the offside frame.	Bolt head and washer on outside of frame.	Item 32 " 57 Ser 6.1	Screw 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Connector copper braid 12 in x 3/8 in	1 1 -
11.4	Mounting Frame to Distribution Box	Attach a 12 x 5/8 in earth strap to wing nut (between 651-E and Hybrid A), secure other end under mounting screw at bottom left corner of distribution box.	Clean away paint from corner hole on distribution box and rear panel at attachment point.	Item 57 " 44 Item 3	Washer flat 1/4 in Nut Nyloc 1/4 in UNF Connector copper braid 12 x 5/8 in	1 1 1
12.0	Main Loom					
12.1	Removal of existing loom	Open jackfield panels. Unsolder all connections from the main loom. Uncouple gland nut from side of jackfield case. Remove flexible conduit and loom.	Discard.			

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
12.2	Retaining clips	Remove existing cable clips from canopy bow and refit five clips on front of 651-E mounting frame (fig 1002 and serial 4.4 refer). Mount two clips above distribution box (refer fig 1005).	Leave existing clips in position above Hybrid Units and Distribution Box.	Existing Item 42	Cable clips Screws self tapping 3/8 in bd hd	6 12
13.0	Rear Panel Modification					
13.1	USB-LSB/SEND-REC terminals	Mark and drill eight 17/64 in dia holes THROUGH rear panel and jackfield (refer fig 1006). Remove jackfield case from its securing fixtures.	Ensure the jackfield case is secured in its normal position.			
13.2	Terminal clearance on rear panel	Enlarge the eight holes on the rear panel to 3/4 in dia using the 17/64 in dia holes as guide centres.				
13.3	Elongated slide holes, jackfield mounting	Increase the length of the slots by 1 7/8 inch in the forward direction.	This allows the jackfield to be removed when terminals are fitted.			
13.4	Saddle mounting holes, main earth connector	Drill 1/4 holes (No 26 drill) in side panel as shown in fig 1006.				
13.5	Entry hole for 2 W and 4 W lines	Cut a 3/4 in hole in the rear panel as in fig 1006.	Fit rubber grommet to hole.	Item 24	Grommet rubber 3/4 in	1
13.6	Ident plate mounting	Position the ident plate, above the terminal clearance holes (fig 1006), drill holes (No 51 drill) and secure plate with drive pins.		Item 29 " 43	Ident plate 4 3/4 in x 5/8 in Screws drive rd hd No 0 x 1/4 in	1 2
14.0	Jackfield Case					
14.1	Terminal mounting holes	File the eight terminal mounting holes to shape (fig 1006 detail 1).	Hole shape to conform with terminal base lock.			
14.2	Loom entry hole (fig 1007)	Enlarge loom entry hole to 1 1/4 in dia and fit snap-in grommet to hole.		Item 26	Grommet snap-in, 1 1/4 in	1
14.3	Lamp, repositioning holes	Drill one 1/4 in dia hole for lamp mounting, and a 1/2 in dia hole for cable feed through, fit grommet to hole.		Item 25	Grommet rubber 3/8 in	1
14.4	Loom anchor (pad protection)	Drill a hole (No 27 drill) in base of case, 7 inches in from front and 8 inches in from terminal side.	Attach clip to hole.	Item 23 " 40 " 62 " 52	Clamp ins 7554-2-8 Screw ch hd 4 BA x 5/8 in Washers flat 4 BA Nut Nyloc 4 BA	1 1 2 1
14.5	Jackfield earth studs	Remove earth stud from rear of case. Clean paint away from both sides of hole and refit stud in position using items previously removed.				

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
14.6	USB and LSB terminal mounting	Mount terminals on side of jackfield case. Attach the loom twisted 4 pair to appropriate terminals (serial 21.3 refers).		Item 27	Terminals 2 BA univ, ins	8
				Item 14	Loom 4 pr twisted	1
14.7	Refit jackfield case	Use existing securing fixtures.	Refit jackfield panels temporarily.			
15.0	Repositioning of Teletypewriter and Power Socket on Table					
15.1	Hole positions	Drill holes in table in accordance with fig 1008.				
15.2	Teletypewriter mounting	Left side - secure with two 2 BA x 5/8 in csk hd screws through table strip and teletypewriter mounting bars. Right side - secure with two 2 BA x 5/8 in ch hd screws and washers from underside of table.	Secure strip to teletype, then secure strip to table using existing screws.	Item 37	Screws csk hd 2 BA x 3/4 in	2
				Item 38	Screws ch hd 2 BA x 3/4 in	2
				" 59	Washers flat 2 BA	2
				" 60	Washers spring 2 BA	2
15.3	Power socket	Terminate and secure in the new position using original screws (fig 1008).				
15.4	Cable clamps under table	Fit clamp to power cable under nut securing power socket (770-B side). Fit clamp to existing hole (top right corner of key).	Clamps key lead	Item 23	Clamp insulated 7554-2-8	2
				Item 40	Screw ch hd 4 BA x 5/8 in	1
				" 62	Washer flat 4 BA	2
				" 52	Nut Nyloc 4 BA	1
15.5	Table earthing	Remove earth terminal and earth lead secured under table. Clean paint away from attachment points. Refit earth terminal and earth lead from junction box.	Replace screw fitting on earth lead under table (central channel).	Item 36	Screw ch hd 2 BA x 2 in	1
				" 59	Washers flat 2 BA	2
				" 51	Nut hex Nyloc 2 BA	1
16.0	Morse Key					
16.1	Earth attachment point	Clean paint away from LH corner mounting hole on key (terminal end).				
16.2	Fitting of swivel plate	Secure new swivel plate to base of key using 4 BA x 3/4 in csk hd screws.	Earthing screw (serial 16.1) fitted with lock washer, hex nut, two flat washers and Nyloc nut.	Item 28	Plate mounting MS 2 9/16 x 4 15/16 in	1
				" 39	Screw csk hd 4 BA x 3/4 in	4
				" 62	Washer flat 4 BA	5
				" 63	Washer shakeproof 4 BA	1
				" 53	Nut hex 4 BA	1
				" 52	Nut hex Nyloc 4 BA	4
16.3	Stop stud on table	Fit stop stud to table, in position as in fig 1008.	This allows 80° key traverse.	Item 30	Stud-stop 4 BA x 3/8 in	1
				" 63	Washer shakeproof 4 BA	1
				" 62	Washer flat 4 BA	1
				" 52	Nut hex Nyloc 4 BA	1

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
16.4	Key mounting	Secure key to table, position as in fig 1008.		Item 57 " 58 " 45	Washer flat 1/4 in Washer spring 1/4 in Nut hex 1/4 in UNC Nyloc	2 1 1
16.5	Replacement cable for morse key	Remove existing morse key cable. Feed new screened two core cable (free ends) through grommet on top of table, route cable through "Duratur" conduit to jackfield. Terminate connections at key. Attach braid to LH rear mounting screw. Secure cable on top of table with saddle clamp.	Discard. Apply a smear of silicon grease to cable sleeving to permit passage through "Duratur" conduit.  Leave small loop in cable to allow for key travel.	Item 13  Item 21 " 40 " 62 " 52	Cable screened, 2 core 8 ft 8 in  Saddle 3/16 in single mounting Screw ch hd 4 BA x 5/8 in Washer flat 4 BA Nut hex Nyloc 4 BA	1  1 1 1
17.0	Main Earth Connector					
17.1	Cable routing	Open offside spares compartment (hinged lid). Drill holes in accordance with fig 1009. Fit grommets to holes. Feed free end of PVC sheathed earth through the seat, floor hole and under the vehicle. Solder the 60 A lug to cable. Couple lug to main earth terminal under rear offside bumper.	Beneath teletype table.	Item 25 Item 8 Item 16 " 54	Grommets rubber 3/8 in Connector cable single PVC ins 7 ft 9 in with 4 ft x 5/8 in braid junction Lug solder 60 A pressed Washers flat 3/8 in	2 1 1 4
17.2	Cable routing in vehicle	Run cable along offside wall panel. Position the braid junction approximately along centre line of "Duratur" conduit. Secure the sheathed cable with eight saddles (fig 1009 for position of eighth saddle). Terminate sheathed cable at offside rear leg of mounting frame (approximately in line with cable run).	Between jackfield case and teletype table.  Mounting holes (serial 13.4, fig 1006), screw heads external.  Screw and washer on outside of frame. Lug, washer and locknut on inside of frame.	Item 19 " 41 " 62 " 52  Item 32 " 57 " 58 " 47	Saddles double mounting 5/16 in Screws rd hd 4 BA x 3/8 in Washers flat 4 BA Nuts hex Nyloc 4 BA  Screw hex hd 1 1/4 in x 1/4 in UNF Washer flat 1/4 in Washer spring 1/4 in Nut hex 1/4 in UNF	8 16 32 16  1 2 1 1
17.3	Braid connection (short leg)	Run behind "Duratur" to jackfield case and attach to common earth bar in jackfield case.	Braid attached to main earth when supplied. Braid held in position by "Duratur" clamp.			
17.4	Braid connection (long leg)	Run behind "Duratur" conduit and attach to existing earth stud on the underside of teletype table.	Braid held in position by "Duratur" clamp. Ensure teletype table can be withdrawn without creating tension on earth braid.			

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
18-0	Lamp Cable					
18-1	Removal of existing cable	Disconnect and remove existing power cable to lamp.	Discard.			
18-2	Replacement cable	Route the 3 core 5 ft cable through "Duratur" conduit, from jackfield end to junction box beneath teletype table. Connect red lead to terminal 1, black - terminal 5, green - terminal 3. Pass free end of cable through grommet on forward end of jackfield case.	Apply a smear of silicon grease to cable to permit passage in "Duratur" conduit. Leave sufficient cable protruding from jackfield for lamp termination.	Item 10	Connector 3 core 5 ft PVC ins	1
19-0	Main Loom Installation					
19-1	Loom positioning (fig 1010)	Feed jackfield end of loom through entry hole on forward end of jackfield case.  Route trunk of loom over distribution box and along the mounting frame between AN/TRC-75 and 651-E.	Allow sufficient length for termination when jackfield panels are out of case (approx 3 in of PVC binding through hole). Loom trunk held in position by cable clips (serial 12-2 refers).	Item 15	Loom connector c/w tip, plugs and braids	1
19-2	Loom branches	Route loom branches to appropriate equipments, ie, (a) Hybrids A and B. (b) Duplex Receiver 651-E. (c) Radio Set AN/TRC-75. (d) Filter Unit F98/U. (e) Terminal Telegraph TH-5/TG. (f) Telephones A and B.	Connect all loom terminations to posts and jacks on equipments (fig 1010 and serial 21-3 refer).  Position loom and secure under saddles on Duplex Receiver (serial 8-2 refers).			
20-0	Termination of Main Loom Earths					
20-1	Hybrids A and B	Commoned earth to central earth stud on front flange of each hybrid.				
20-2	Duplex Receiver 651-E	Secure under Philips head screw RH lower corner of 651-E control panel.				
20-3	Terminal Telegraph TH-5/TG	Wing nut between 651-E and TH-5/TG.				
20-4	Filter F98/U	Secure under screw head on side flange of case.				
20-5	Telephone A	Adjacent hole on leg of mounting frame.		Item 35 " 59 " 60 " 50 " 59 " 51	Screw ch hd 1 1/4 in x 2 BA Washers flat 2 BA Washer spring 2 BA Nut hex 2 BA Washers flat 2 BA Nut hex Nyloc 2 BA	1 2 1 1 2 1
20-6	Telephone B	Drill hole (No 10 drill) in position shown in fig 1011. Clean away paint from around hole. Attach braid to this point.		Item 35 " 59 " 51	Screw ch hd 2 BA x 1 1/4 in Washers flat 2 BA Nuts Nyloc 2 BA	1 2 1

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
21.0	Loom Termination at Jackfield					
21.1	Jackfield panel connections (fig 1012)	Remove panels from case.				
21.2	Fitting 600 Ω hybrid load	Locate jacks A1 and A21, A2 and A22 (figs 1012 and 1013), disconnect bridging wires between jacks.  Connect 600 Ω resistor between the two short spring jumpers on jack A21 and jack A22 (see detail fig 1012).		Item 18	Resistor 600 Ω 1/2 W 5%	1
21.3	Loom connections	Solder connections to jacks in accordance with figs 1010 and 1012 and following sub-table.	Allow at least a 2 inch loop of free wire at jacks. This facilitates reconnection during repair. Tie loom neatly to support bar at rear of jacks (PVC cord).			

LOOM CONNECTIONS AT JACKFIELD

Equipment Connection	Termination at Equipment	Wire No	Jack No	Equipment Connection	Termination at Equipment	Wire No	Jack No
Morse Key (TTY TABLE)	Teletag - Red	-	B7	20 dB PAD (LSB) (REAR OF PATCH PANEL)	Wire 15 to pad	-	A29
	" - Black	-	B8		Wire 16 to pad	-	A30
TTY Send	Lug 4 BA - Screen	-	Earth bar	20 dB PAD (USB) (REAR OF PATCH PANEL)	Wire 17 to pad	-	A33
	Spade - Red (T1)	1	B15		Wire 18 to pad	-	A34
	" - Black (T2)	2	B16				
TTY Receive	" - Screen	-	Earth bar	CW (KEY LINE) (AN/TRC-75)	Phone plug - Tip	20	B33
	Spade - Red (T3)	3	B17		" - Sleeve	-	B34
	" - Black (T4)	4	B18		Screen	-	Earth bar
LSB - FSK (DUPLX RECEIVER)	Spade - Screen	-	Earth bar	TH-5/TG - 'R'	RED phone plug - Tip	21	B37
	Teletag	7	B31		" " - Sleeve	-	B38
LSB - 'S' (DUPLX RECEIVER)	"	8	B32	Screen	-	Earth bar	
	Screen	-	Earth bar	TH-5/TG - 'S'	BLACK phone plug - Tip	22	B35
	Teletag	9	A27		" " - Sleeve	-	B36
USB - FSK (DUPLX RECEIVER)	"	10	A28	Screen	-	Earth bar	
	Screen	-	Earth bar	TH-5/TG (2 W TERMINALS)	Teletag	23	A17
	Teletag	11	B29		"	24	A18
USB - 'S' (DUPLX RECEIVER)	"	12	B30	Screen	-	Earth bar	
	Screen	-	Earth bar	FILTER F98/U - 'C'	Teletags	25	A15
	Teletag	13	A31		"	26	A16
LSB - 'R' (DUPLX RECEIVER)	"	14	A32	Screen	-	Earth bar	
	Screen	-	Earth bar	FILTER F98/U - 'TP'	Teletags	27	A25
	Solder connection	15	LSB PAD		"	28	A26
USB - 'R' (DUPLX RECEIVER)	"	16	" "	Screen	-	Earth bar	
	Screen	-	Mounting screw	FILTER F98/U - 'T'	Teletags	29	A37
	Solder connection	17	USB PAD		"	30	A38
CW (KEY) (DUPLX RECEIVER)	"	18	" "	Screen	-	Earth bar	
	Screen	-	Mounting screw	HYBRID 'A' - SEND	Teletags	31	A7
	Phone plug - Tip	19	B27		"	32	A8
	" - Sleeve	-	B28	Screen	-	Earth bar	
	Screen	-	Earth bar				

TABLE 1 (CONTD)

LOOM CONNECTIONS AT JACKFIELD (contd)

Equipment Connection	Termination at Equipment	Wire No	Jack No	Equipment Connection	Termination at Equipment	Wire No	Jack No
HYBRID 'A' - RECEIVE	Teletags	33	A9	REAR WALL PANEL	Terminal lug	Brown	LSB pad (15)
	"	34	A10				
HYBRID 'A' - LINE	Screen	-	Earth bar	LSB - REC (TERMINAL SET 1)	"	Grey	LSB pad (16)
	Teletags	35	A21	USB - REC (TERMINAL SET 2)	Terminal lug	Red	USB pad (17)
"	36	A22					
HYBRID 'B' - SEND	Screen	-	Earth bar	LSB - SEND (TERMINAL SET 3)	"	Orange	A27
	Teletags	37	A11	USB - SEND (TERMINAL SET 4)	Terminal lug	Yellow	A31
"	38	A12					
HYBRID 'B' - RECEIVE	Screen	-	Earth bar	Jack No A5	Jumper wires	-	B5
	Teletags	39	A13				
HYBRID 'B' - LINE	"	40	A14	" " A6	" "	-	B6
	Screen	-	Earth bar	Jack No A23	Jumper wires	-	B1
Teletags	41	A35					
TELEPHONE 'A'	"	42	A36	" " A24	" "	-	B2
	Screen	-	Earth bar	Jack No A3	Jumper wires	-	B3
Teletags	43	B21					
TELEPHONE 'B'	"	44	B22	" " A4	" "	-	B4
	Screen	-	Earth bar	2 W LINE TERMINALS JACKFIELD	Terminal lug	White	A23
Teletags	45	B25					
2 W LINE TERMINALS JACKFIELD	"	46	B26	4 W LINE (SEND) TERMINALS JACKFIELD	Terminal lug	White	A3
	Screen	-	Earth bar				
4 W LINE (SEND) TERMINALS JACKFIELD	Terminal lug	White	A4	4 W LINE (REC) TERMINALS JACKFIELD	Terminal lug	White	A5
	"	Black	A24				
4 W LINE (REC) TERMINALS JACKFIELD	"	Green	A4	Terminal lug	"	Orange/	A6
	"	Black	A6				

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
21-4	Earthing bars	Remove existing securing screws from loom support brackets on each jack panel.	Bind ends of earthing bars to loom support brackets with PVC cord.	Item 17	Jackfield panel earth bar	2
		Clean away paint from mounting hole areas.		Item 6 & 7	Connector copper braid PVC 26 in plus 3 in bare junction	1
		Secure an earthing bar to the rear of each loom support bar using the same anchor points.				
		Attach an earth strap under RH end of earthing bar and attach to the common earth point at rear of jackfield case.				
		Solder loom braids to earthing bars directly behind their appropriate jack termination.				

TABLE 1 (CONTD)

Serial	Location or Item	Operation	Remarks	Kit Item	Material	Qty
22.0	Lamp Mounting	Terminate lamp connections and mount on forward end of jackfield.	Use existing mounting screws, washers and nuts.			
23.0	Retaining clip for cables beneath AN/TRC-75	Secure a retaining clip to existing hole in the channel beneath AN/TRC-75.	Retains power cable for TH-5/TG and speaker lead.	Item 22 " 40 " 62 " 63 " 53	Clip PVC covered 3/4 in Screw ch hd 4 BA x 5/8 in Washer flat 4 BA Washer shakeproof 4 BA Nuts hex 4 BA	1 1 2 1 1
24.0	Jackfield Identification	Insert new jackfield identification labels. Jacks are in accordance with fig 1013.		Item 31	Jackfield identification labels	2
25.0	Speaker Cable Replacement	Remove the U-77/U plugs from speakers. Remove existing cables and replace with shielded type. Connect U-77/U plugs to new cables.  Connect braid to speaker frame screw and contact H on U-77/U plug.	Note connecting points. Replace wires Red with Red. " " White with Green. " " Black with Blue on transformer.	Item 11	Connector screened 3 core 7 ft	2
26.0	Ancillary Connectors	Stow in trailer.	Vehicle side earth connector between mounting frame and earth spikes.	Item 9	Connector single PVC covered 162/0076, lug each end, 5 ft o/a length	2
27.0	Functional Test of Equipment					

NOTE:- The next page is Page 1001.

INDEX TO FIGURES

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1012	Equipment and Jackfield - Wiring Diagram (MGO(W)267-12)	1013
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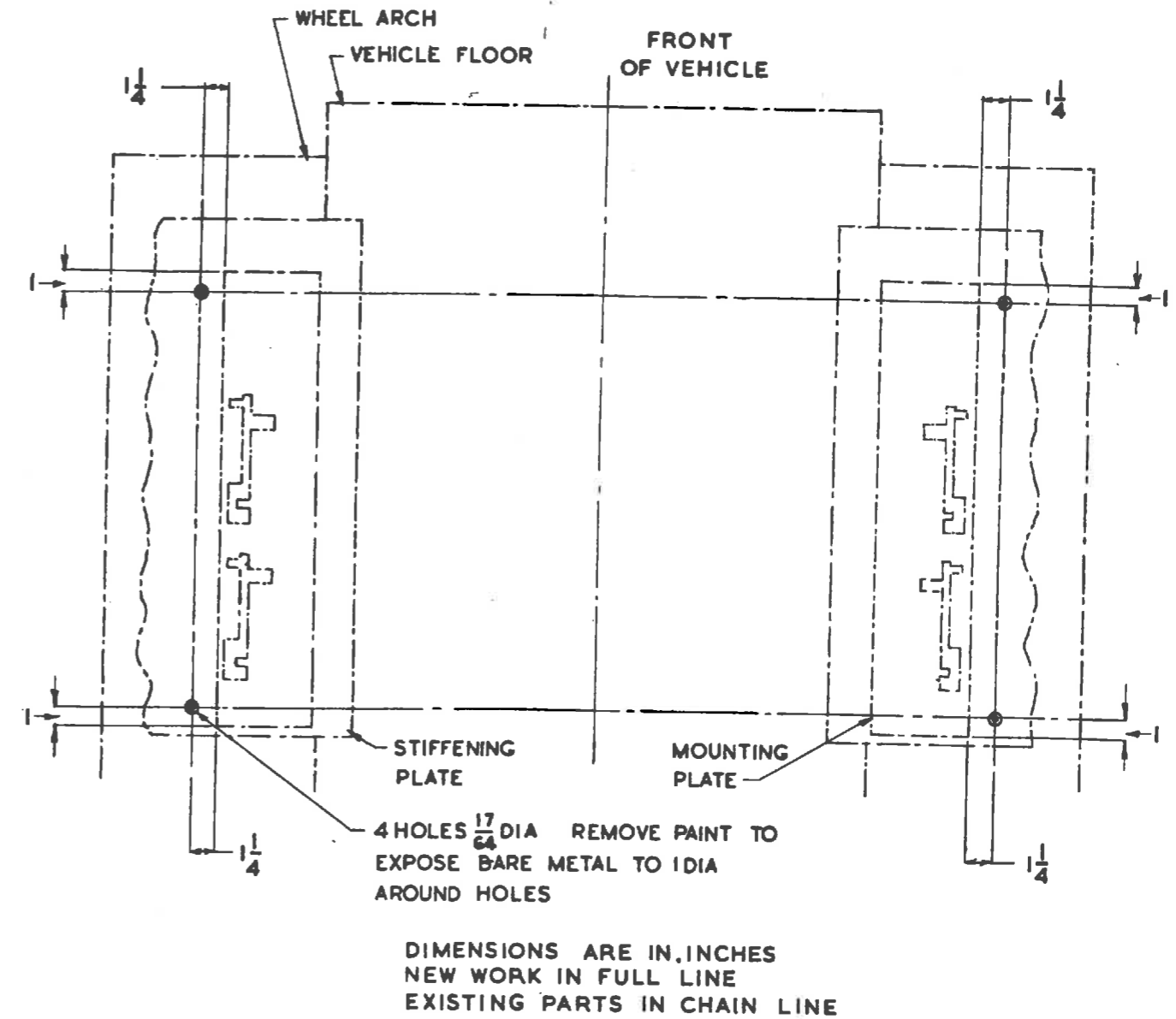


FIG 1001 - SEAT PLATFORM DRILLING (MGO(W)267-1)

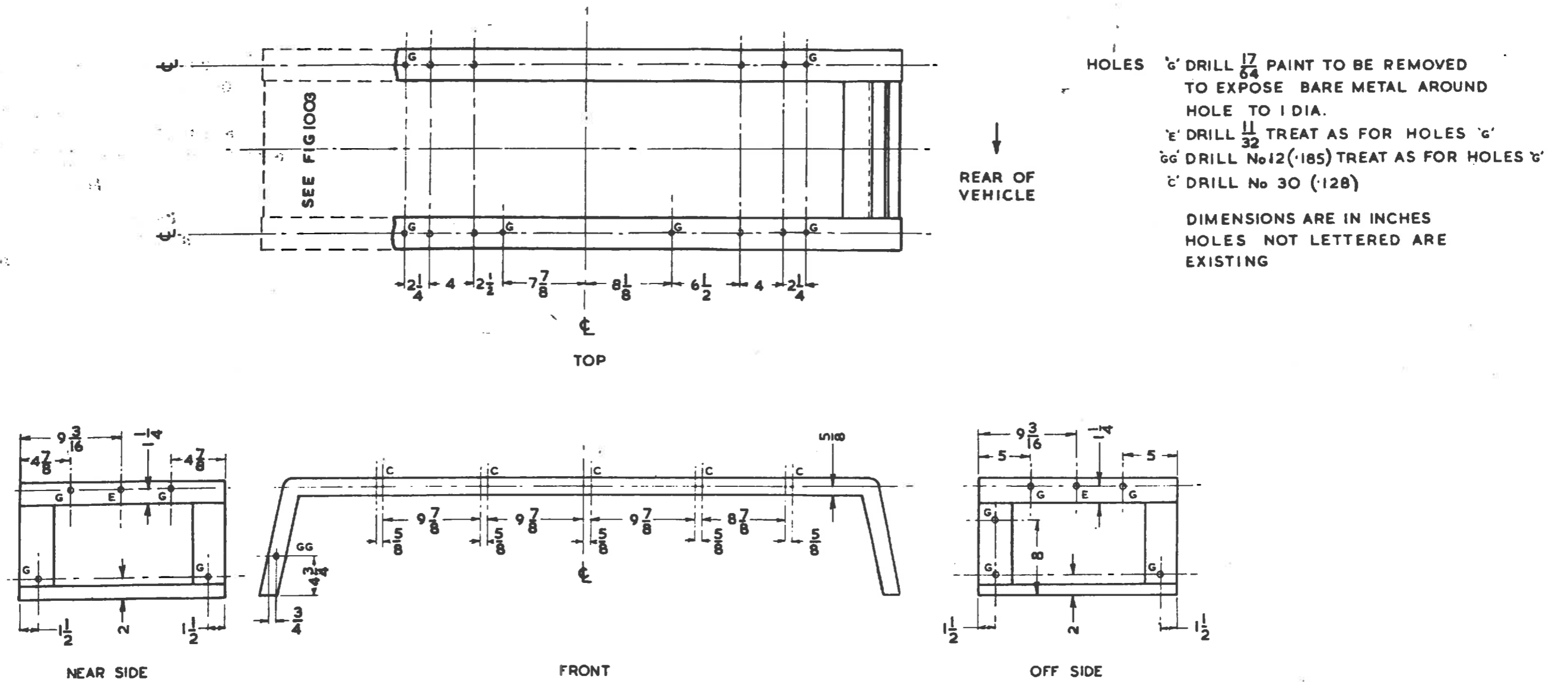


FIG 1002 - MAIN FRAME - DRILLING DETAILS (MGO(W)267-2)

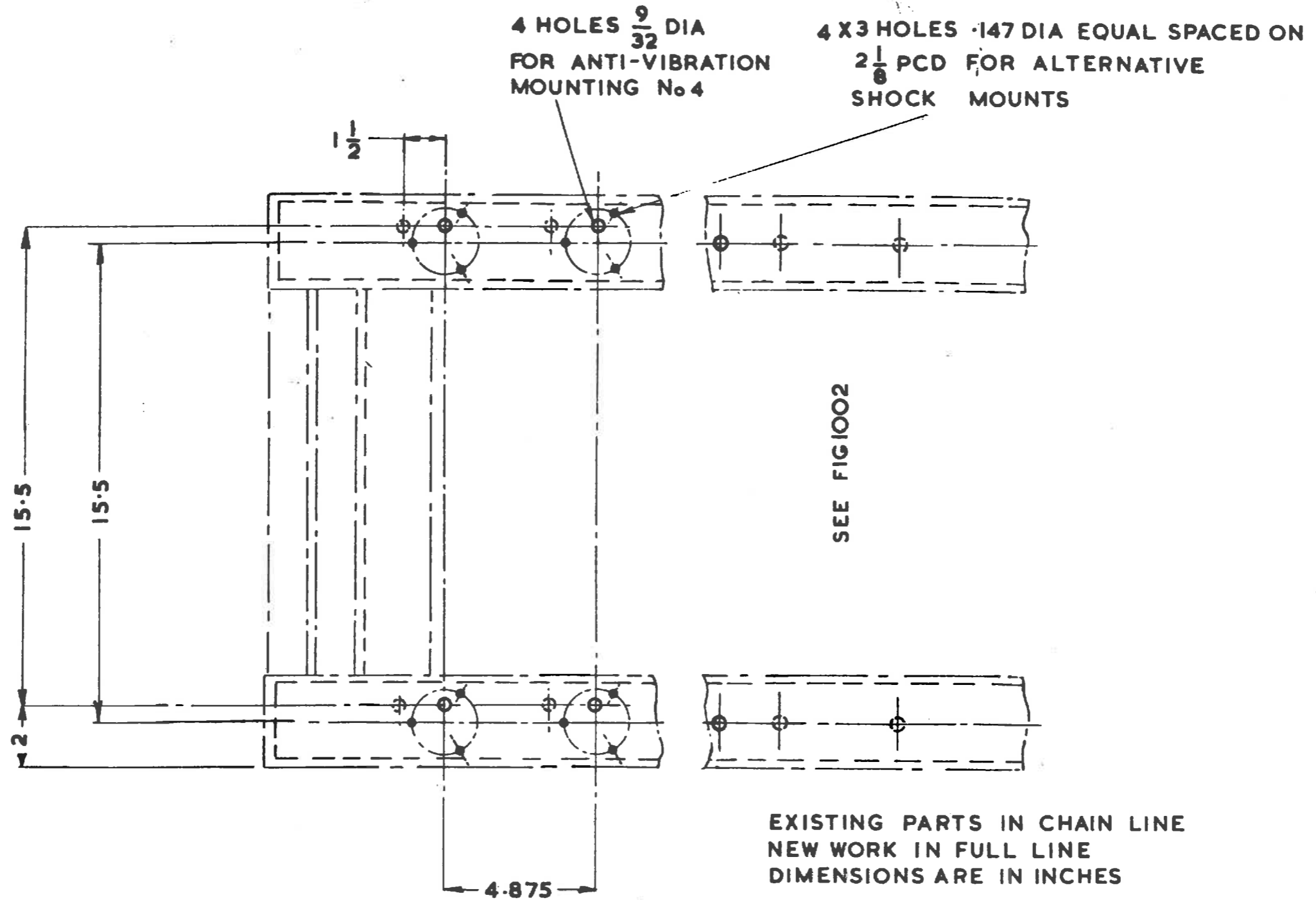


FIG 1003 - MOUNTING HOLES FOR TH-5/TG AND F98/U SUB-CARRIER (MGO(W)267-3)

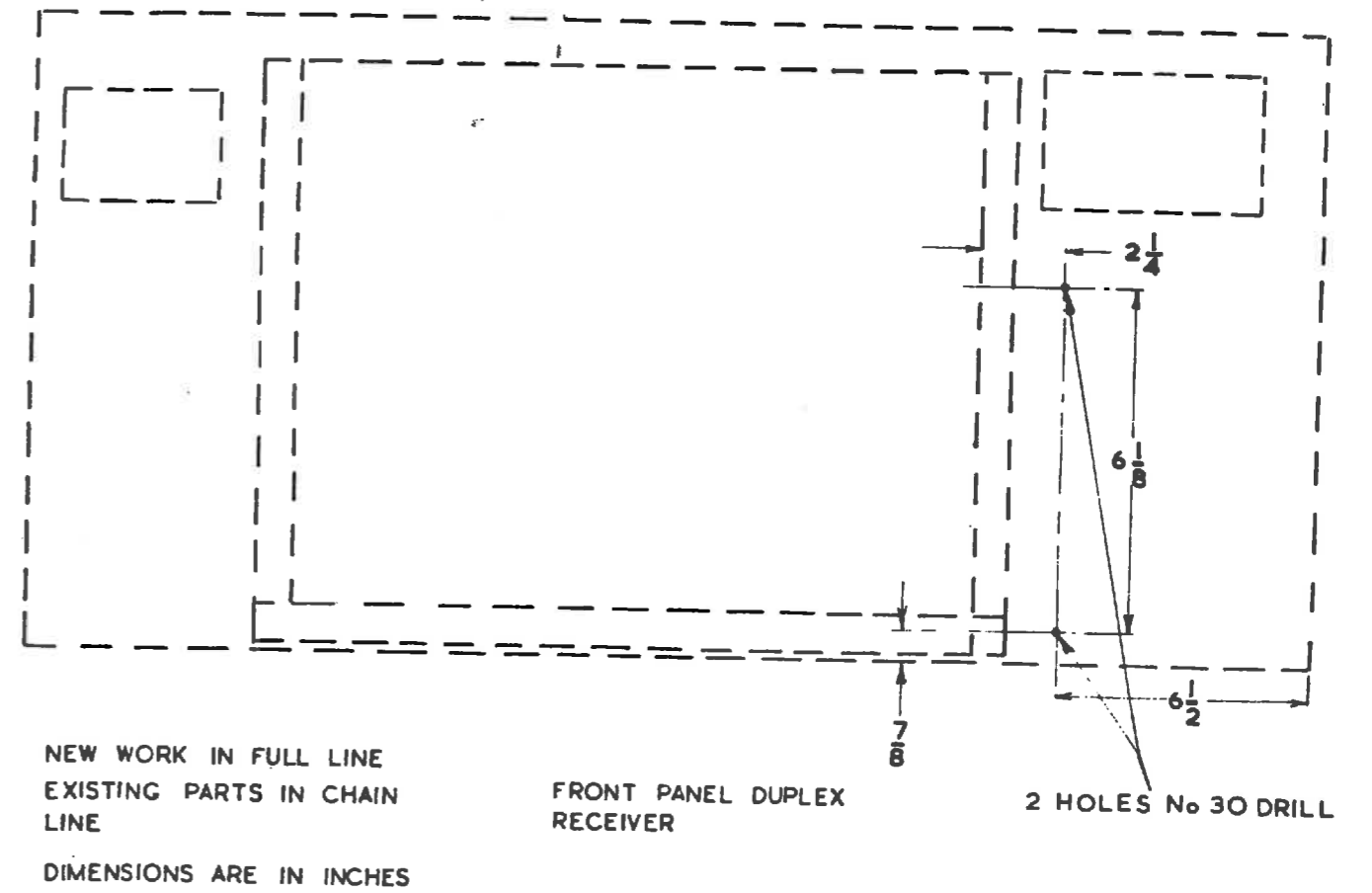


FIG 1004 - LOOM CLAMP POSITIONS - DUPLEX RECEIVER (MGO(W)267-4)

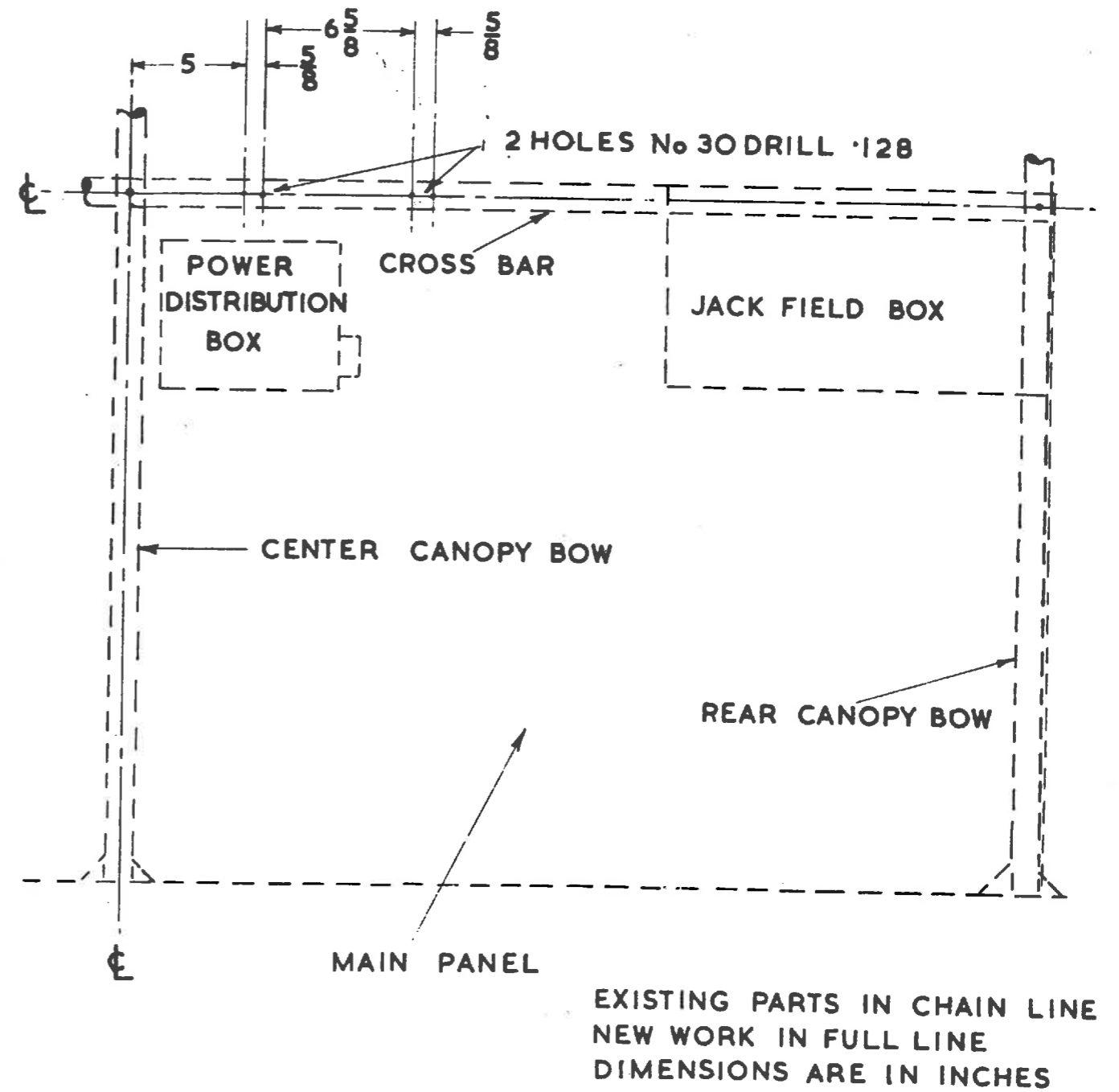
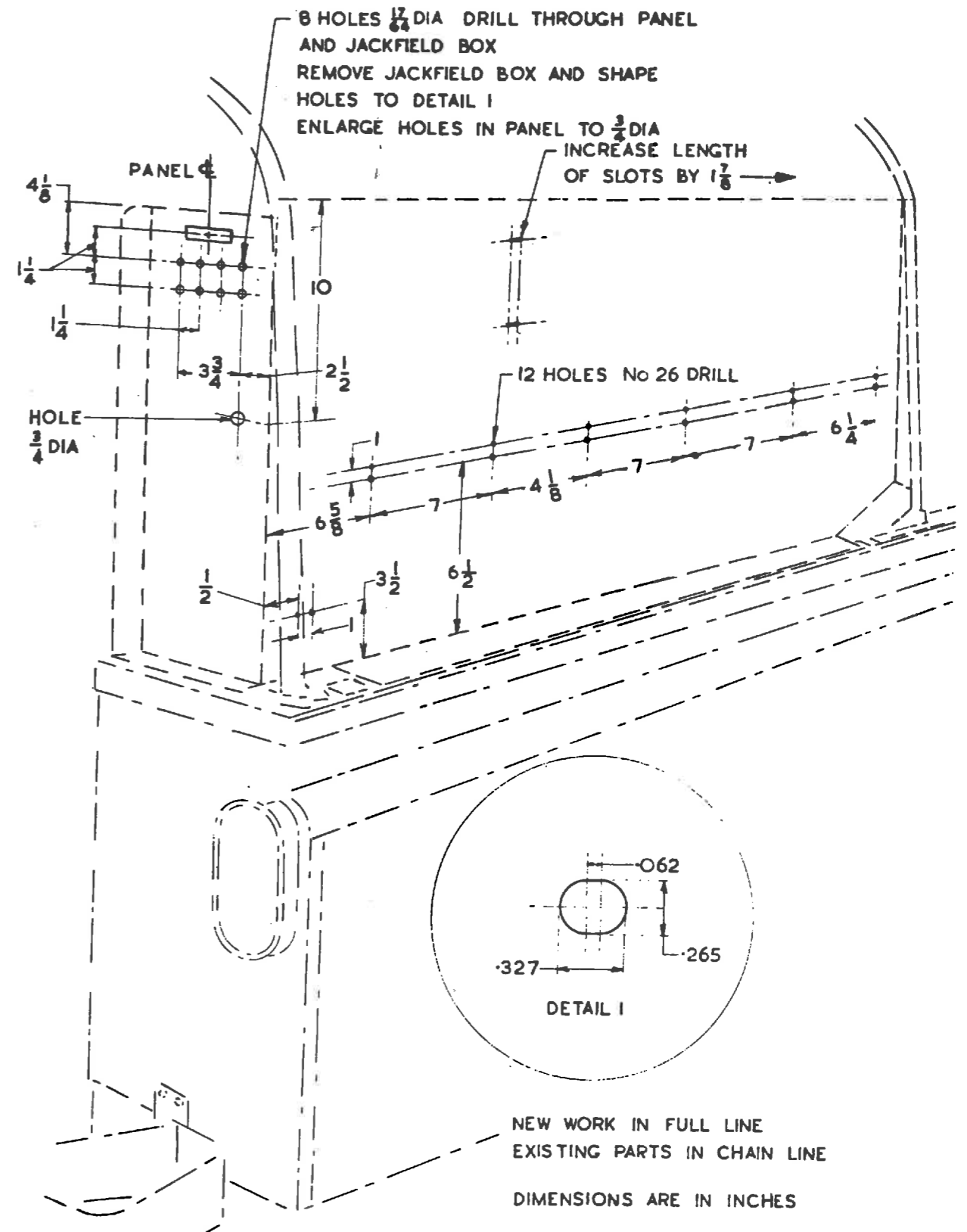


FIG 1005 - LOOM CLIP POSITION - OFFSIDE WALL (MGO(W)267-5)



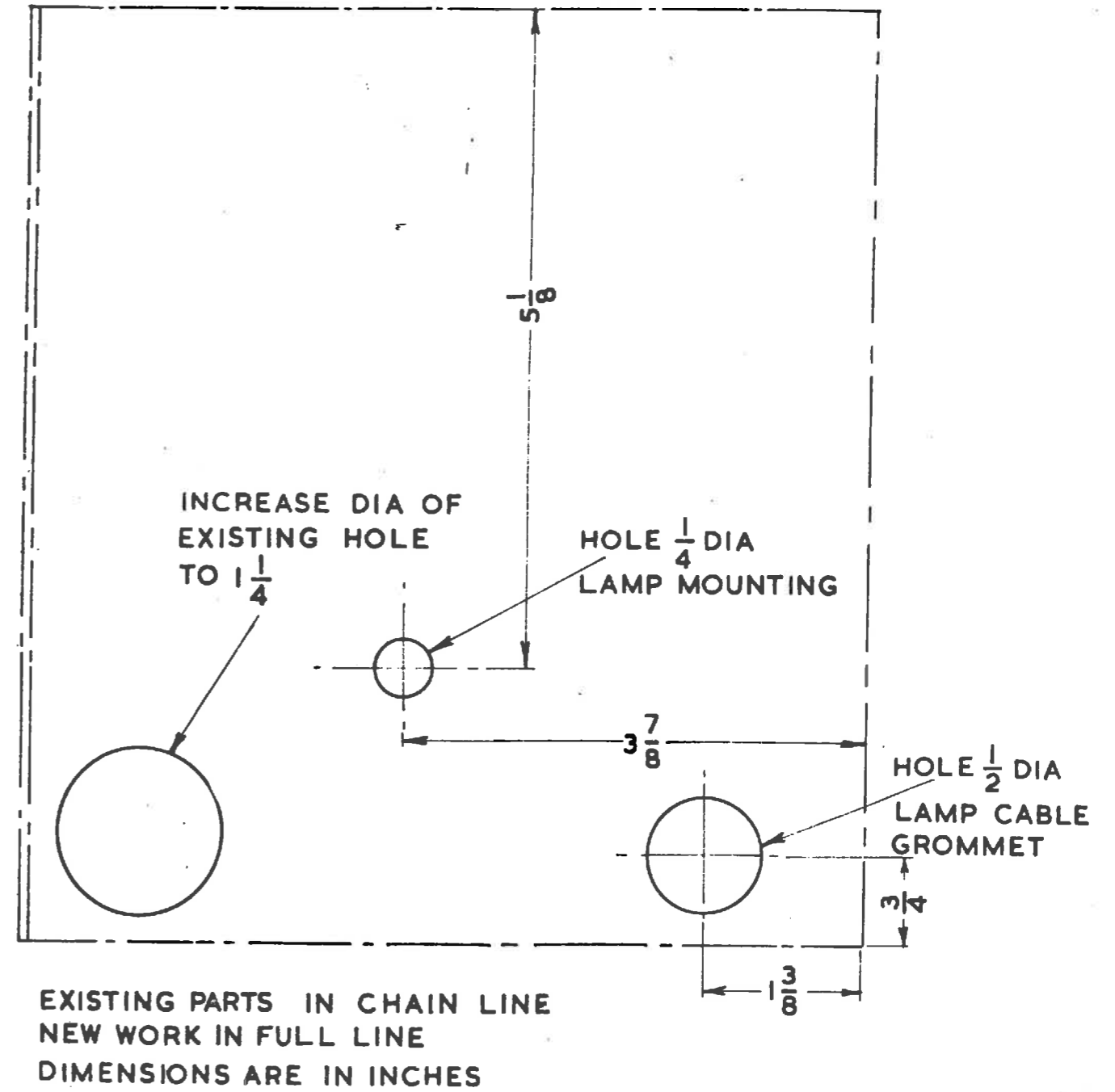
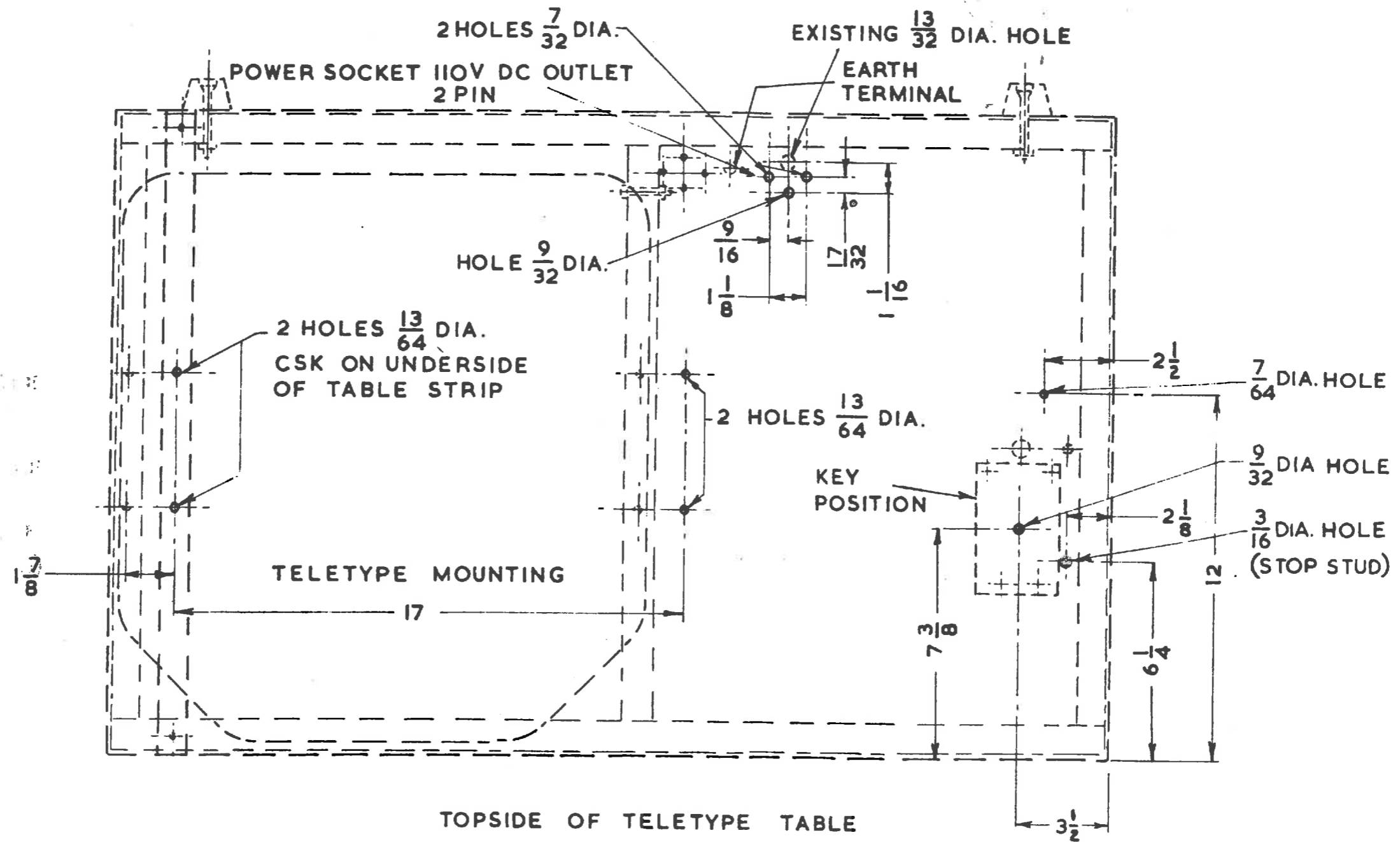
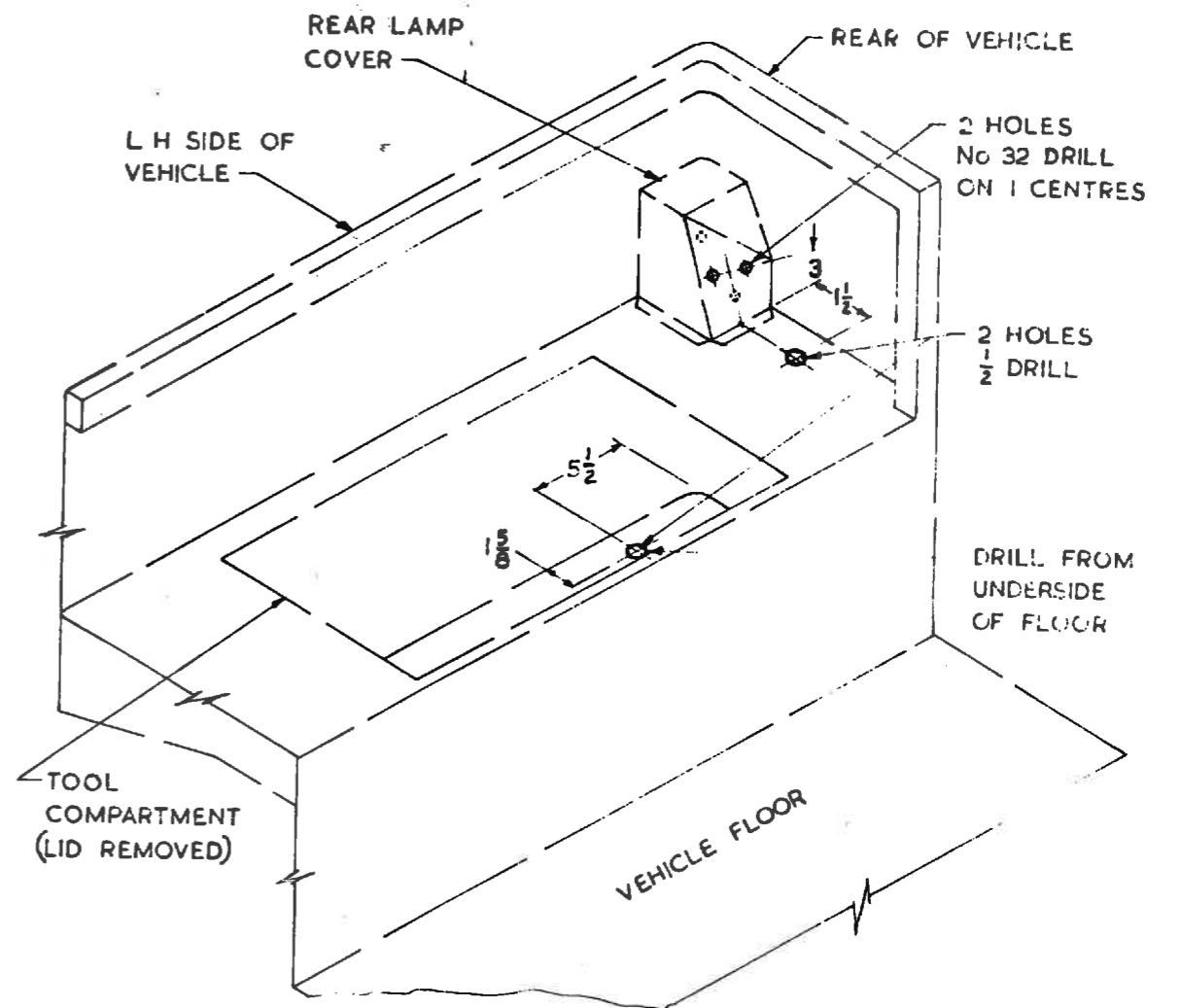


FIG 1007 - JACKFIELD CASE - FORWARD END (MGO(W)267-7)



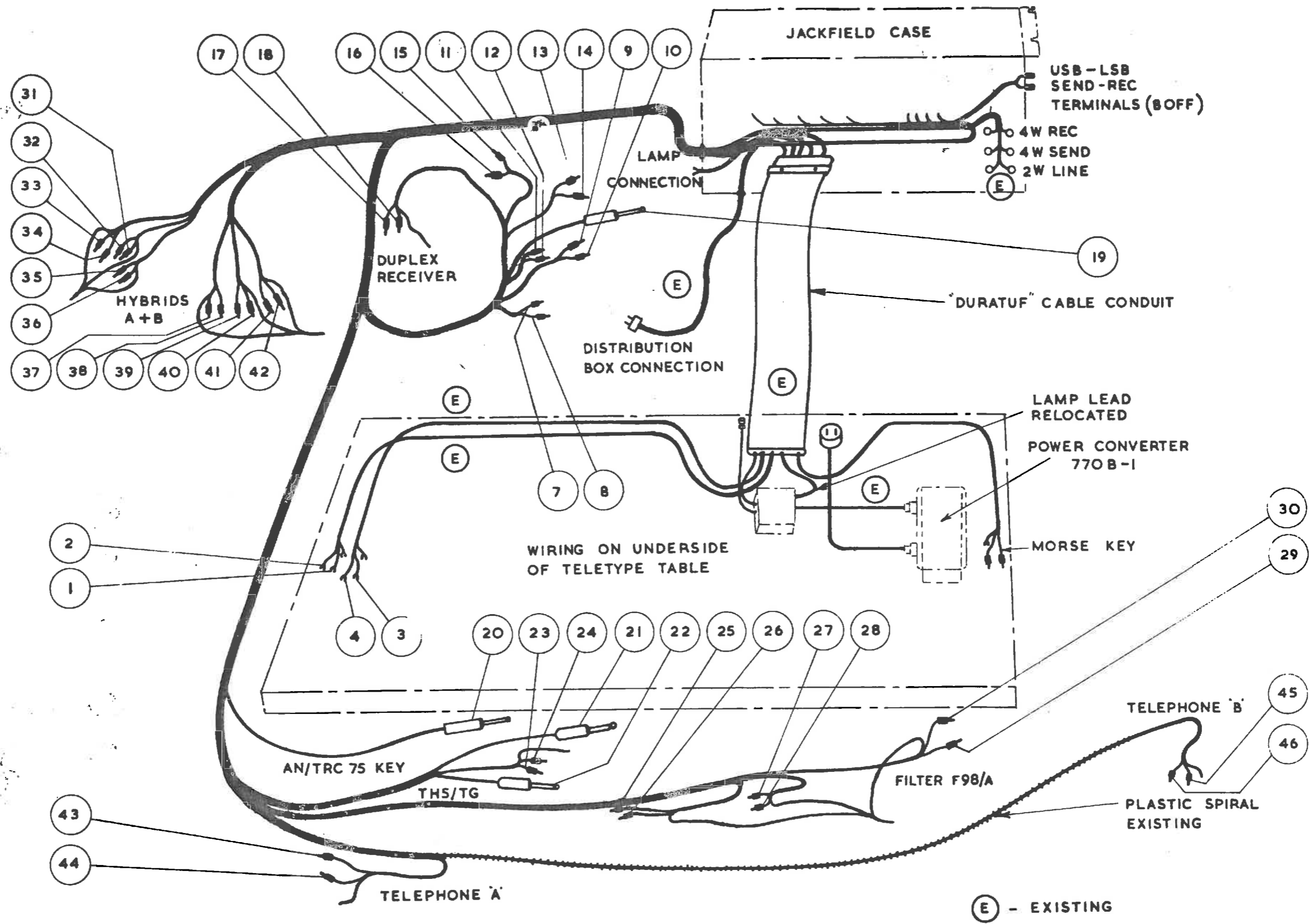
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EXISTING WORK IN CHAIN LINE  
NEW WORK IN FULL LINE



NEW WORK IN FULL LINE  
EXISTING PARTS IN CHAIN LINE

DIMENSIONS ARE IN INCHES

FIG 1009 - HOLE POSITIONS FOR MAIN EARTH LEAD (MGO(W)267-9)



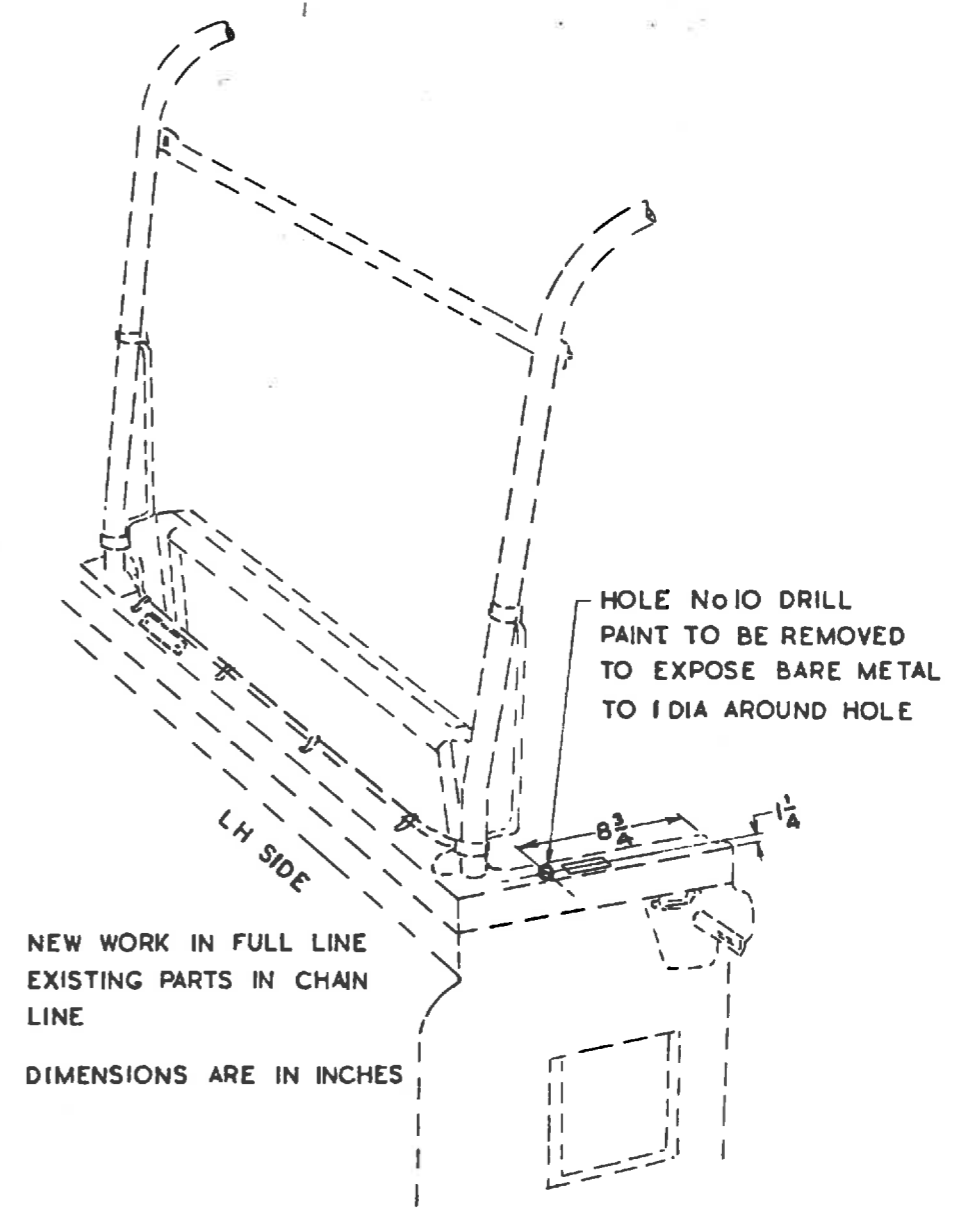
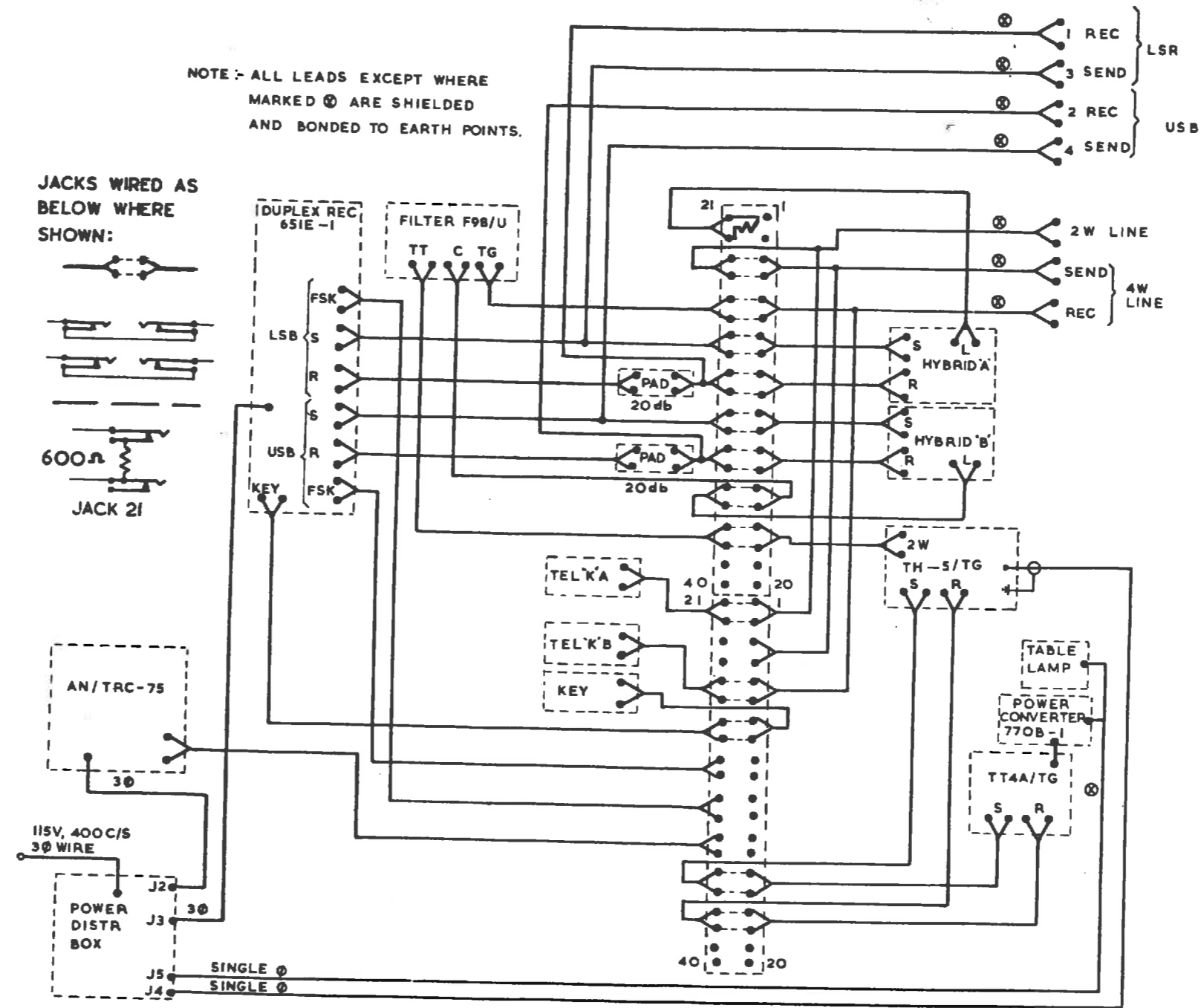


FIG 1011 - TELEPHONE EARTH NEARSIDE BODY (MGO(W)267-11)



TEL.K.A.		TEL.K.B.	651E-1 CW	USB FSK	LSB FSK	TRC75 CW	TH-5/TG S	TH-5/TG R	
2W LINE	4W SEND	4W REC	KEY				TTY S	TTY R	
HYBRID A LINE	2W LINE	F98/U TP	LSB S	LSB R	USB S	USB R	HYBRID B LINE	F98/U TG	
	4W SEND	4W REC	HYBRID A SEND	HYBRID A REC	HYBRID B SEND	HYBRID B REC	F98/U LINE	TH-5/TG 2W	

Jack Strip  
'B'

Jack Strip  
'A'

Jacks are numbered from left to right (1-20, 21-40) with jack 1 in the lower row.

FIG 1013 - JACKFIELD IDENTIFICATION (MGO(W)267-13)