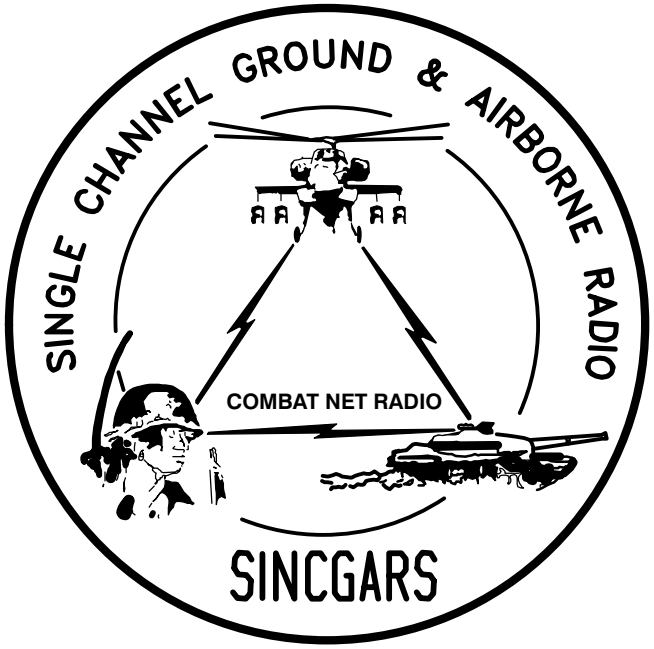
TECHNICAL BULLETIN



INSTALLATION INSTRUCTIONS FOR INSTALLATION KIT ELECTRONIC EQUIPMENT MK−2327/VRC (NSN 5895−01−229−1285) (EIC: N/A) TO PERMIT INSTALLATION OF RADIO SETS: AN/VRC−89 AND 92 SERIES, AN/VRC−91(DUAL) SERIES OR AN/VRC−92 (DUAL) SERIES IN A TRUCK, UTILITY: 1 1/4 TON, 4x4, CARGO/TROOP CARRIER M998/M1038

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HEADQUARTERS, DEPARTMENT OF THE ARMY

1 JUNE 2000

TECHNICAL BULLETIN

NO. 11–5820–890–20–29

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HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 1 JUNE 2000

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA 2028–2 located in back of this manual direct to: Commander, US Army Communications–Electronics Command Fort Monmouth, ATTN: AMSEL–LC–LEO–D–CS–CFO, Fort Monmouth, New Jersey 07703–5000. The Fax number is 732–532–1413, DSN 992–1413. You may also e–mail your recommendation to AMSEL–LC–LEO–PUBS–CHG@ce-com3.monmouth.army.mil.

In either case a reply will be furnished direct to you.

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*This manual supersedes TB 11–5820–890–20–29, dated 1 September 1993

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0.1 SCOPE.

This technical bulletin provides Installation Instructions for Electronic Equipment MK−2327/VRC, commonly referred to as the Mounting Kit (MK). The MK shall be installed into the following type of vehicle(s):

- Truck, Utility: 1 1/4 Ton, 4x4, Cargo/Troop Carrier M998/M1038

The MK is used for installation of radio set components at field locations. The information contained in this technical bulletin is the official authorization to perform the installation at the unit maintenance level.

NOTES

- This technical bulletin is not an authorization for requisition or turn−in of vehicles.
- This technical bulletin does not establish quantity or types of vehicles assigned to using units.

This technical bulletin does not contain information on the maintenance or replacement of the MKs. This information is contained in the MAC of TM 11−5820−890−20−2 and RPSTL of TM 11−5820−890−20P.

0.2 GENERAL INFORMATION.

The MK becomes operable when all the radio set components are installed in the vehicle and correct power is supplied. Refer to TM 11−5820−890−20−1 or TM 11−5820−890−20−2 for installation, Operational (OP) Check instructions, and required maintenance procedures. Refer to TM 11−5820−890−20P for repair parts.

Included in the Radio Set AN/VRC−89/91/92 Series is:

- Radio Set AN/VRC−89/91/92 Series (for RT−1523(C)/U)

0.3 MAINTENANCE FORMS, RECORDS, AND REPORTS.

0.3.1 Reports of Maintenance and Unsatisfactory Equipment. See section 4.2.2.3 for information.

0.3.2 Report of Packaging and Handling Deficiencies. See section 4.2.2.1 for information.

0.3.3 Discrepancy in Transportation Deficiency Report (TDR) (SF361). See section 4.2.2.2 for information.

0.4 CONSOLIDATED INDEX OF ARMY PUBLICATIONS.

Refer to the latest issue of DA Pam 25−30 to determine whether there are new changes, or additional publications pertaining to the equipment.

1. PURPOSE OF INSTALLATION.

The Electronic Equipment MK−2327/VRC (MK) contains the items needed to mount Radio Set: AN/VRC−89 and 92 series, AN/VRC−91 (dual) series, or AN/VRC−92 (dual) series in a Truck, Utility, 1 1/4 Ton, 4x4, Cargo/Troop Carrier M998/M1038 (vehicle). If Radio Set AN/VRC−92 Series is authorized, see section 5.6 for instructions to install MT−6353/VRC mounting base.

2. END ITEM OR SYSTEM TO BE MODIFIED.

Not applicable.

3. APPLICATION TIMES.

3.1 Time for Completion of Installation. Using two people, a total of 4.0 work hours is required. Typical vehicle downtime is 4.5 hours.

3.2 Time for Installation of One Assembly or Component. The following table lists the time required to install one component. All times have been rounded off to the nearest half hour. The sum of these times will not reflect the typical vehicle downtime.

ITEM	SECTION	TIME
Antenna AS−3900/VRC	5.1	1.0
Mounting Base, Electrical Equipment MT−6352/VRC	5.4	1.5
Cables	5.5	1.0

4. PREPARATION FOR INSTALLATION.

This section explains how to prepare the vehicle and MK for installation.

4.1 Preparation of Vehicle. To prepare the vehicle for installation, insure that the site includes adequate lighting and a power source when drilling is required. Inspect the vehicle for damage that could affect installation. Have any such damage repaired before installing MK.

4.1.1 Items to be Removed. Remove existing AN/VRC−12 radio family installation kit/harness. See TM 11−5820−401−20−2 for removing items used with intercom systems, or TM 11−5820−401−20−1 (used without intercom systems), and TM 9−2320−280−20.

4.1.2 List of Items to be Retained. Not applicable.

4.2 Preparation of MK. To prepare MK, unpack, inspect and check inventory.

4.2.1 Precautions During Handling. Observe these steps to prevent equipment damage.

a. Keep dust covers in place on connectors.

b. Do not disassemble or modify parts in MK unless authorized to do so.

c. Keep mounting hardware covered and protected until needed.

d. When exposed to moisture, rain or salt water, keep all parts dry to prevent corrosion.

4.2.2 Unpack and Inspect Equipment.

4.2.2.1 Inspect Packaging for Evidence of Damage. Any shipping damage should be reported on SF364 Report of Discrepancy (ROD) as prescribed in AR 735−11−2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400−64/MCO 4430.3F.

4.2.2.2 Unpack and Inventory MK. If any item is missing, fill out and forward Transportation Deficiency Report (TDR) (SF361) as described in AR 55−38/NAVSUPINST 4610.33C/AFR 75−18/MCO P4610.19D/DLAR 450015.

4.2.2.3 Examine Each Item for Damage. If any item is damaged, fill out and forward SF364 Report of Discrepancy (ROD) as prescribed in AR 735−11−2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400−64/MCO 4430.3F. All damages should be reported as prescribed by DA Pam 738−750, as contained in Maintenance Management Update.

4.3 MK, Distribution, and Consumables.

4.3.1 Items Supplied in MK and/or Required for Installation. Use Table 4−1 and figure 4−1 to identify and inventory MK parts supplied to install Radio Set(s) AN/VRC−89/91/92 Series. Refer to Table 4−2 and Figure 4−2 to identify additional items required to install Radio Set(s) AN/VRC−92 Series.

4.3.2 Distribution and Issue Instructions.

a. US Forces: Do not requisition MK. They will be shipped automatically.

b. US Army Depots: Requisition MK through supply channels.

c. Multiservice: Instructions shall be included for multiservice modifications.

d. MAP/MAS Countries: Instructions shall be provided for MAP/MAS countries.

Table 4–1. Parts List for Installation of Radio Set(s) AN/VRC–89/91/92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5985–01–297–2971	Antenna AS–3900/VRC (A3017899–1)	4	PAOOFA	4–1, 2
5305–00–847–1159	Screw, Cap, Hexagon (3/8–16 x 1 3/4 in) MS35307–365	16	PAOZZA	
5310–00–913–8881	Nut, Hexagon (3/8–16 in) MS51971–3	16	PAOZZA	
5310–00–061–1258	Washer, Lock, Internal/External–Toothed (3/8 in) MS45904–76	32	PAOZZA	
5310–00–889–2527	Washer, Lock, Internal/External–Toothed (5/16 in) MS45904–72	8	PAOZZA	
5306–00–225–9086	Bolt, Machine (5/16–24 x 5/8 in) MS90726–31 (Not Used)	4	PAOZZA	
5330–01–205–2864	Gasket (A3013655–1)	4	PAOZZA	
5965–01–222–1420	Loudspeaker – Control Unit LS–671/VRC (A3014065–1)	4	PAOFFA	4–1, 4
5975–01–188–8873	Mounting Base, Electrical Equipment MT–6352/VRC (A3013367–1)	2	PAOOFA	4–1, 1
5306–00–225–9089	Bolt, Machine (5/16–24 x 1 in) MS90726–34	10	PAOOFA	
5310–00–889–2527	Washer, Lock, Internal/External–Toothed (5/16 in) MS45904–72	20	PAOZZA	
5310–00–880–7746	Nut, Hexagon (5/16 – 24 in) MS51968–5	10	PAOZZA	
5995–01–274–5084	Cable Assembly, Power, Electrical CX–13302/VRC (6 FT, 0 IN) (A3014039–5)	2	PAOZZA	4–1, 16
5995–01–219–7034	Cable Assembly, Radio Frequency CG–3855/VRC (15 FT, 0 IN) (A3014031–7)	1	PAOZZA	4–1, 18
5995–01–219–7035	Cable Assembly, Radio Frequency CG–3855/VRC (18 FT, 0 IN) (A3014031–8)	2	PAOZZA	4–1, 18
5995–01–225–1660	Cable Assembly, Radio Frequency CG–3855/VRC (21 FT, 0 IN) (A3014031–17)	1	PAOZZA	4–1, 18
5995–01–259–9283	Cable Assembly, Special Purpose, Electrical CX–13292/VRC (8 FT, 0 IN) (A3014038–12)	4	PAOZZA	4–1, 17
5306–00–225–9086	Bolt, Machine (5/16–24 x 5/8 in) MS90726–31	8	PAOZZA	
5306–00–225–9087	Bolt, Machine (5/16–24 x 3/4 in) MS90726–32	1	PAOZZA	
	Bracket, Mounting – Antenna (A3014546–1)	2	XBOZZA	4–1, 5
	Bracket, Multiple Angle – Left (A3018371–1)	1	XBOZZA	4–1, 8
	Bracket, Multiple Angle – Right (A3018371–2)	1	XBOZZA	4–1, 8
	Bracket, Multiple Angle – Left (A3018372–1)	1	XBOZZA	4–1, 9
	Bracket, Multiple Angle – Right (A3018372–2)	1	XBOZZA	4–1, 9
	Bracket, Double Angle (A3014097–1)	4	XBOZZA	4–1, 11
	Bracket, Shelf (A3018373–1)	2	XBOZZA	4–1, 13

Table 4–1. Parts List for Installation of Radio Set(s) AN/VRC–89/91/92 Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5340–00–079–7837	Clamp, Loop (1/4–13/64 in) MS21333–67	5	PAOZZA	
5340–00–809–1490	Clamp, Loop (1/4–1/4 in) MS21333–98	4	PAOZZA	
5340–00–057–2904	Clamp, Loop (1/2–13/64 in) MS21333–71	6	PAOZZA	
5340–00–057–3043	Clamp, Loop (1/2–5/16 in) MS21333–112	2	PAOZZA	
5340–00–988–1162	Clamp, Loop (5/8–5/16 in) MS21333–113	1	PAOZZA	
5340–00–050–2740	Clamp, Loop (3/4–13/64 in) MS21333–75	9	PAOZZA	
5340–00–922–6300	Clamp, Loop (1–13/64 in) MS21333–77	3	PAOZZA	
4020–01–341–8795	Fiber Rope Assembly, Single Leg (A3167672–1)	4	PAOZZA	4–1, 7
	Grommet, Nonmetallic (1/4 in) (A3013068–2)	2	XBOZZA	
5325–01–174–9332	Grommet, Nonmetallic (11/16 in) MS35489–48	1	PAOZZA	
5325–01–923–9512	Grommet, Nonmetallic, MS21266–4N	2	PAOZZA	
5965–00–043–3463	Handset H–250/U	4	PAOZZA	4–1, 3
	Holder, Handset (A3050666–1)	2	XBOZZA	4–1, 10
5995–01–466–0693	Lead, Electrical – Ground Strap (0FT, 5 IN) (A3013552–10)	2	XBOZZA	
5310–00–761–6882	Nut, Hexagon (1/4–20 in) MS51967–2	44	PAOZZA	
5310–00–880–7746	Nut, Hexagon (5/16–24 in) MS51968–5	7	PAOZZA	
5310–00–913–8881	Nut, Hexagon (3/8–16 in) MS51971–3	6	PAOZZA	
5310–00–934–9751	Nut, Hexagon (No. 10–32) MS35650–302	2	PAOZZA	
	Plate, Mounting (A3142304–1)	1	XBOZZA	4–1, 15
	Plate, Mounting – Speaker (A3014550–1)	4	XBOZZA	4–1, 12
	Screw, Externally–Relieved Body (A3018701–2)	8		
	Plate, Mounting (A3018977–1)	1	XBOZZA	4–1, 14
5305–00–225–3839	Screw, Cap, Hexagon (1/4–20 x 1 in) MS90725–8	38	PAOZZA	
5305–00–225–9091	Screw, Cap, Hexagon (5/16–24 x 1 1/4 in) MS90726–36	6	PAOZZA	
5305–00–269–3217	Screw, Cap, Hexagon (3/8–16 x 2 1/4 in) MS90725–67	6	PAOZZA	
5305–00–071–1774	Screw, Cap, Hexagon (1/2–13 x 3 1/2 in) MS90725–121	2	PAOZZA	
5305–01–259–6322	Screw, Machine (No. 10–32 x 1/2 in) 12342499–1	16	PAOZZA	
5305–00–958–5246	Screw, Machine, Flat–Head (1/4–20 x 3/4 in) MS35190–289	10	PAOZZA	
5305–01–006–2052	Screw, Machine, Hex–Head (No. 10–32 x 5/8 in) MS51849–65	3	PAOZZA	
5305–00–432–4253	Screw, Tapping, Thread Forming (1/4–14 x 3/4 in) MS51861–67	1	PAOZZA	
5305–00–191–3641	Screw, Tapping, Thread Cutting (No. 10–24 x 5/8 in) MS51851–65	5	PAOZZA	

Table 4–1. Parts List for Installation of Radio Set(s) AN/VRC–89/91/92 Series Continued

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
	Shelf, Electrical Equipment (A3018374–1)	1	XBOZZA	4–1, 6
5975–00–074–2072	Strap, Tiedown, Electrical Components MS3367–1–9	20	PAOZZA	
5310–00–809–5998	Washer, Flat (1/2 in) MS27183–18	2	PAOZZA	
5310–00–809–4058	Washer, Flat (1/4 in) MS27183–10	16	PAOZZA	
5310–00–582–5965	Washer, Lock (1/4 in) MS35338–44	34	PAOZZA	
5310–00–889–2528	Washer, Lock, Internal/External–Toothed (1/4 in) MS45904–68	33	PAOZZA	
5310–00–889–2527	Washer, Lock, Internal/External–Toothed (5/16 in) MS45904–72	10	PAOZZA	
5310–00–081–4219	Washer, Flat (5/16 in) MS27183–12	9	PAOZZA	
5310–00–407–9566	Washer, Lock (5/16 in) MS35338–45	9	PAOZZA	
5310–00–637–9541	Washer, Lock (3/8 in) MS35338–46	6	PAOZZA	
5310–00–584–5272	Washer, Lock (1/2 in) MS35338–48	2	PAOZZA	
5310–00–045–3296	Washer, Lock (No. 10) MS35338–43	23	PAOZZA	

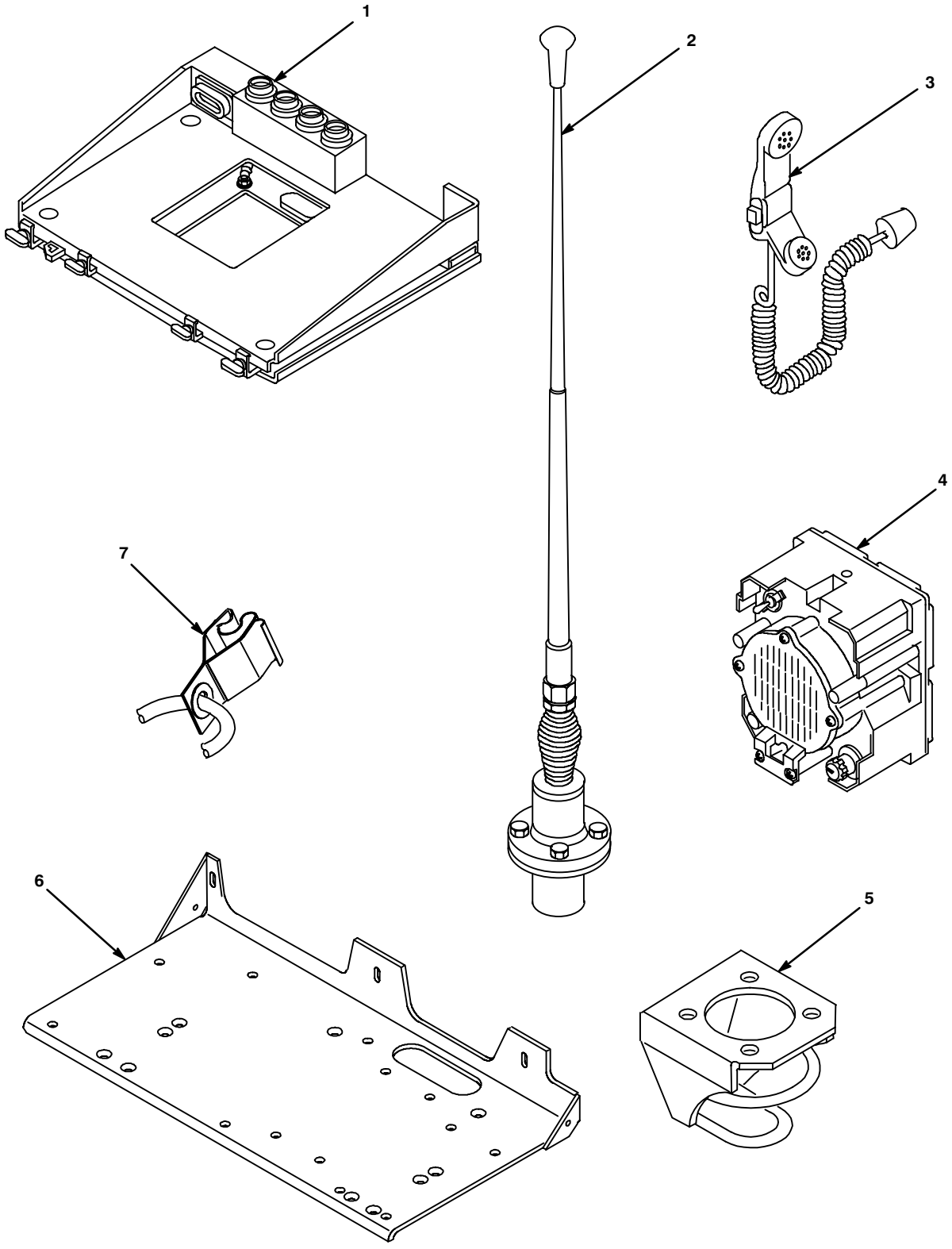


Figure 4−1 (1). MK Illustrated Parts List

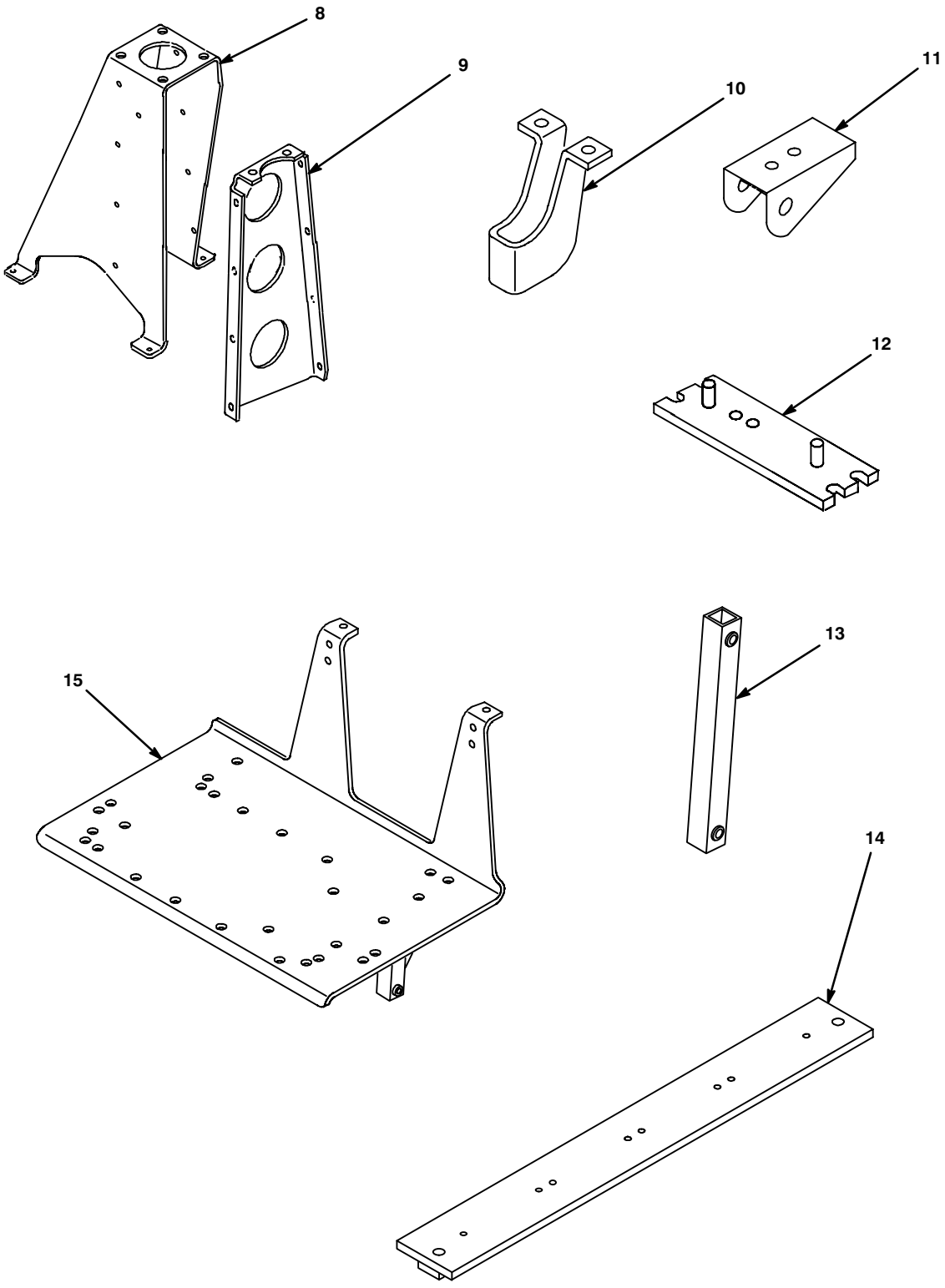


Figure 4−1 (2). MK Illustrated Parts List

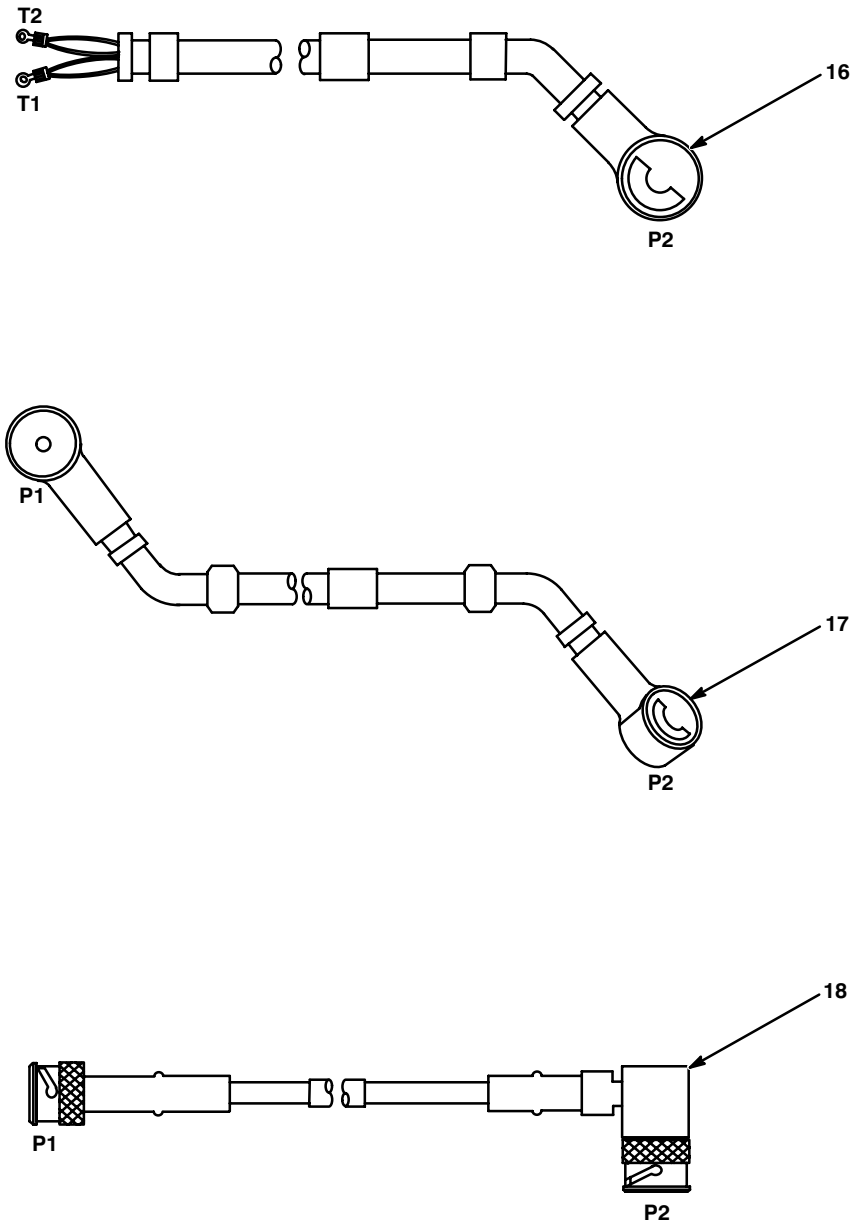


Figure 4−1 (3). MK Illustrated Parts List

Table 4−2. Additional Items Required for Installation of Radio Set(s) AN/VRC−92 Series

NSN	ITEM DESCRIPTION AND PART NUMBER	QUANTITY IN MK	SMR CODE	FIGURE, ITEM NO.
5975–01–235–1962	Mounting Base, Electrical Equipment MT–6353/VRC (A3014053–1)	2	PAOOHA	4–2, 1
5306–00–225–9089	Bolt, Machine (5/16–24 x 1 in) MS90726–34	8	PAOZZA	
5310–00–880–7746	Nut, Hexagon (5/16–24 in) MS51968–5	4	PAOZZA	
5310–00–889–2527	Washer, Lock, Internal/External–Toothed (5/16 in) MS45904–72	12	PAOZZA	
5310–00–081–4219	Washer, Flat (5/16 in) MS27183–12	4	PAOZZA	
	Nut Strip (A3014064–1)	2	XBOZZA	4–2, 5
5975–00–111–3208	Strap, Tiedown, Electrical Components MS3367–5–9	8	PAOZZA	
5995–01–300–9324	Cable Assembly, Power, Electrical CX–13303/VRC (4 FT, 6 IN) (A3014040–9)	2	PAOZZA	4–2, 4
5995–01–222–4209	Cable Assembly, Special Purpose, Electrical CX–13291/VRC (3 FT, 0 IN) (A3014037–1)	2	PAOZZA	4–2, 2
5995–01–219–7025	Cable Assembly, Radio Frequency CG–3856/VRC (5 FT, 0 IN) (A3014032–3)	2	PAOZZA	4–2, 3

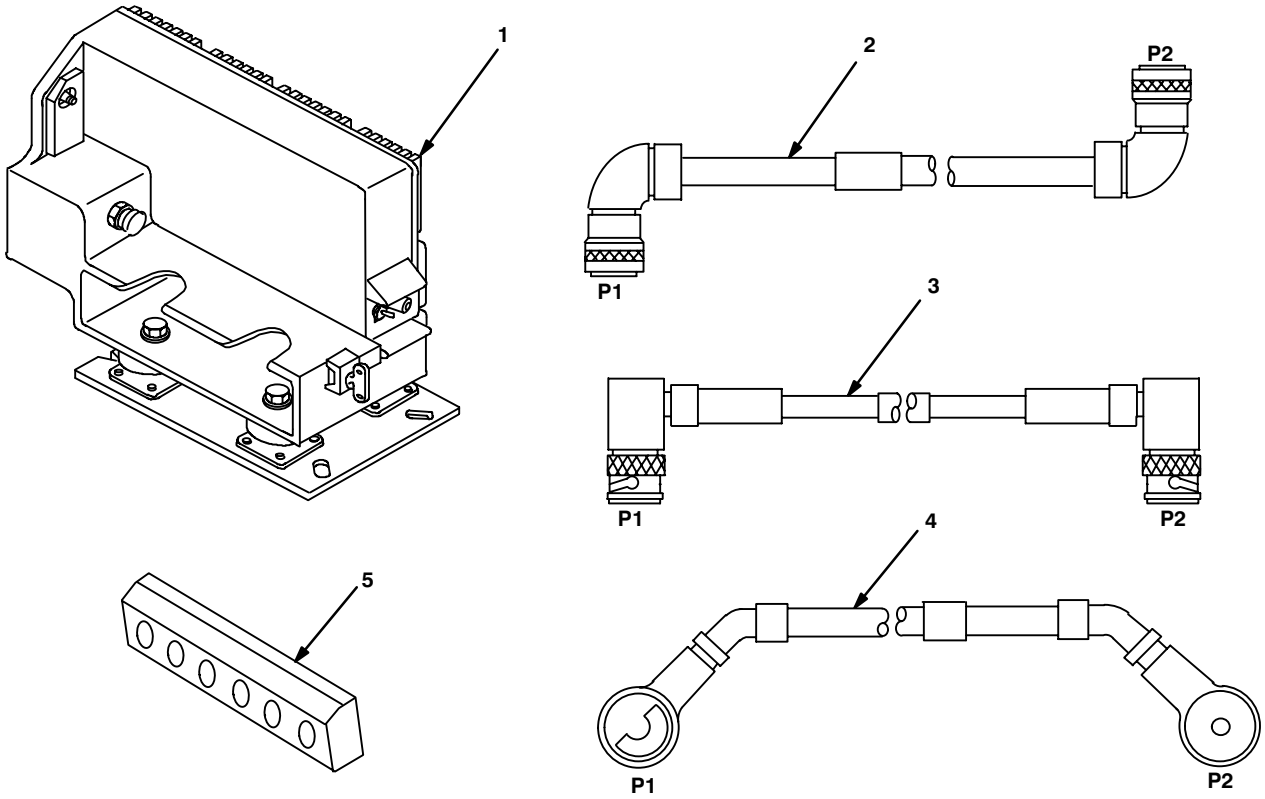


Figure 4−2. Illustrated Parts List for Table 4−2

4.3.3 Consumable Materials. The table below lists materials required for installation but not supplied with MK.

NSN	NOMENCLATURE
8040–00–117–8510	Adhesive–Sealant, Clear, RTV
6850–00–880–7616	Silicone Compound, MIL–S–8660
8030–00–292–1102	Conductive Anti–seize Compound

4.4 Tools and Test, Measurement, and Diagnostic Equipment (TMDE) Required. The following tools and TMDE are needed for installation.

NOMENCLATURE	NSN	QUANTITY
Radio Set*		1
Electrical Grinder or Equivalent		1
Pocket Knife, Electrician's	5110–00–240–5943	1
Screwdriver, No. 2 Point Phillips, 4 in	5120–00–234–8913	1
Screwdriver, 1/4 in Flatblade, 4 in	5120–00–222–8852	1
Pliers, Round Nose	5120–00–240–6172	1
Pliers, Diagonal Cutting	5110–00–965–0974	1
Wrench, Open/Box: 7/16 in	5120–00–228–9505	1
1/2 in	5120–00–228–9506	1
9/16 in	5120–00–228–9507	1
5/16 in	5120–00–228–9503	1
1/4 in	5120–00–228–9997	1
3/8 in	5120–00–228–9504	1
3/4 in	5120–00–228–9510	1
Handle, Socket Wrench	5120–00–240–5364	1
Socket: 7/16 in	5120–00–227–6703	1
1/2 in	5120–00–237–0977	1
9/16 in	5120–00–227–6704	1
5/16 in	5120–00–235–5878	1
1/4 in	5120–00–236–2264	1
3/8 in	5120–00–227–6702	1
3/4 in	5120–00–227–6705	1
Electric Drill	5130–00–889–8994	1
Drill Bits: 5/32 in	5133–00–227–9652	1
13/64 in	5133–00–243–9612	1
15/16 in		1
1/32 in	5133–00–227–9664	1
3/8 in		1
9/32 in	5133–00–222–9374	1

5. INSTALLATION PROCEDURES.

This section describes where and how to install MK items in the vehicle. See figure 5−1 for an overall view of where vehicular MK equipment, as well as radio components, typically will be installed. When installing MK equipment, be sure to read and follow instructions and illustrations carefully. If Radio Set AN/VRC−92 Series is authorized, see section 5.6 for instructions to install of MT−6353/VRC mounting base.

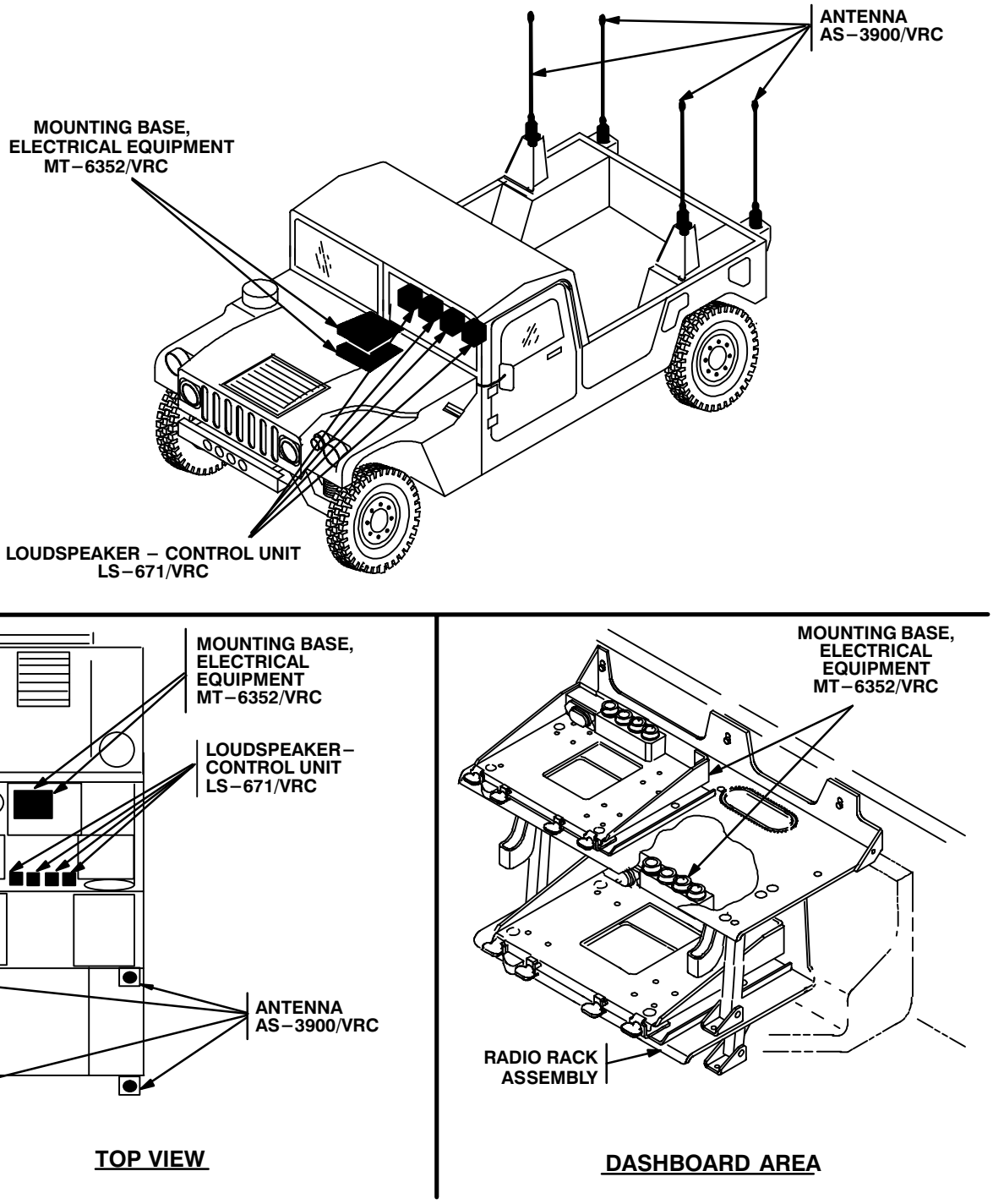
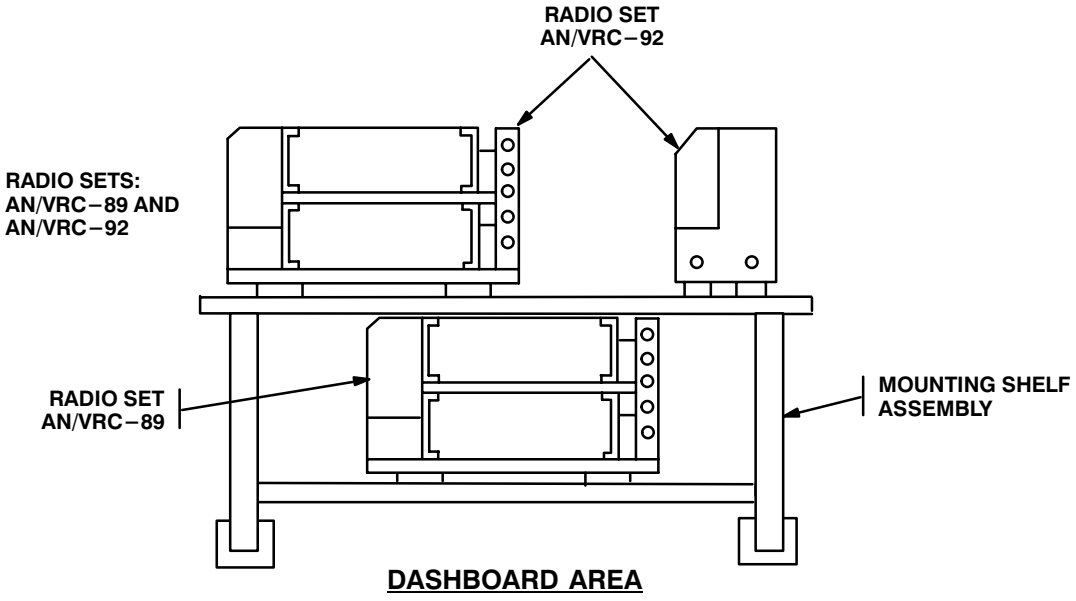


Figure 5−1 (1). MK and Radio Installation: MK Equipment Locations

5. INSTALLATION PROCEDURES. Continued.



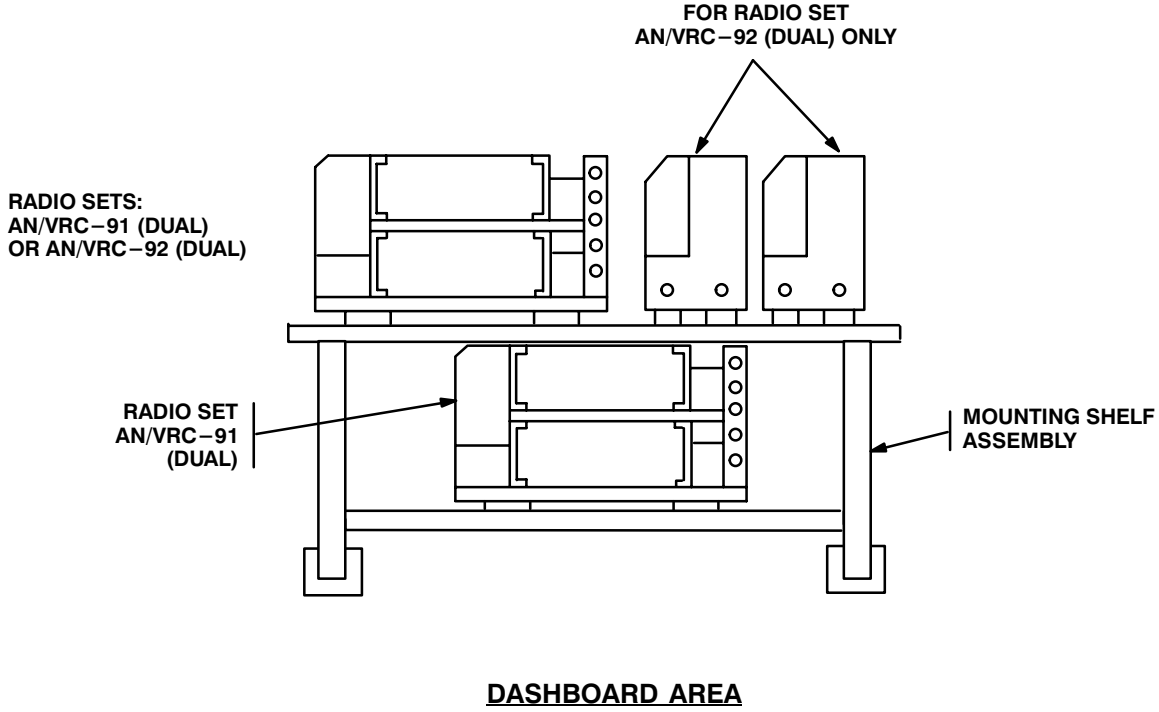


Figure 5−1 (2). MK and Radio Installation: Radio Equipment Locations

5.1 Installation of Antenna AS−3900/VRC (antenna). Use the following procedure to install two rear antennas. See figure 5−1 (1) for locations.

5.1.1 Installation of Rear Antenna Base.

ITEM	ACTION	REMARKS
	NOTE Apply a thin coat of adhesive−sealant to both sides of each internal/external−toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.	
a. Mounting holes for antenna bracket (3).	If mounting holes exist, disregard this step and go to step b. Using dimensions shown and antenna bracket as a template, drill three 11/32 in diameter holes and one 1 3/8 in hole through rear wall of vehicle. See figure 5−2 (1).	Tools: Electric drill, 11/32 in drill bit, and 1 3/8 in drill bit.

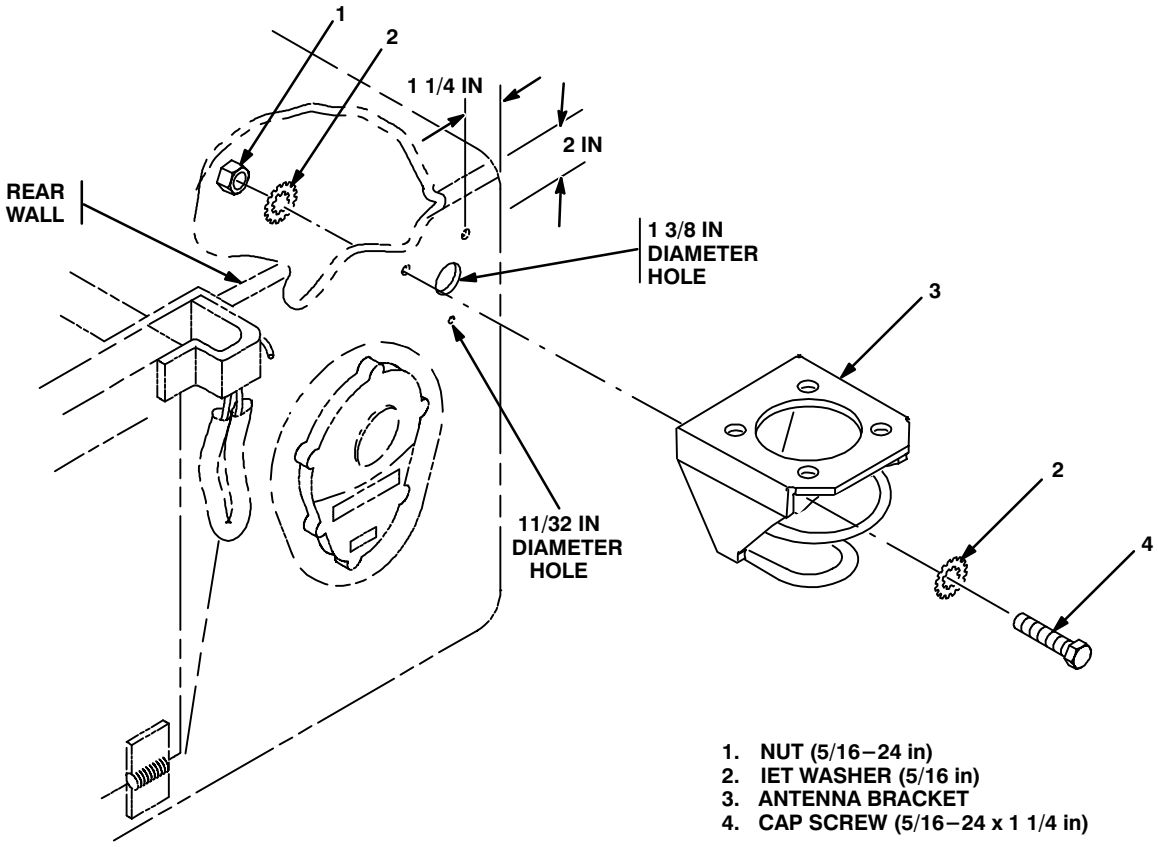
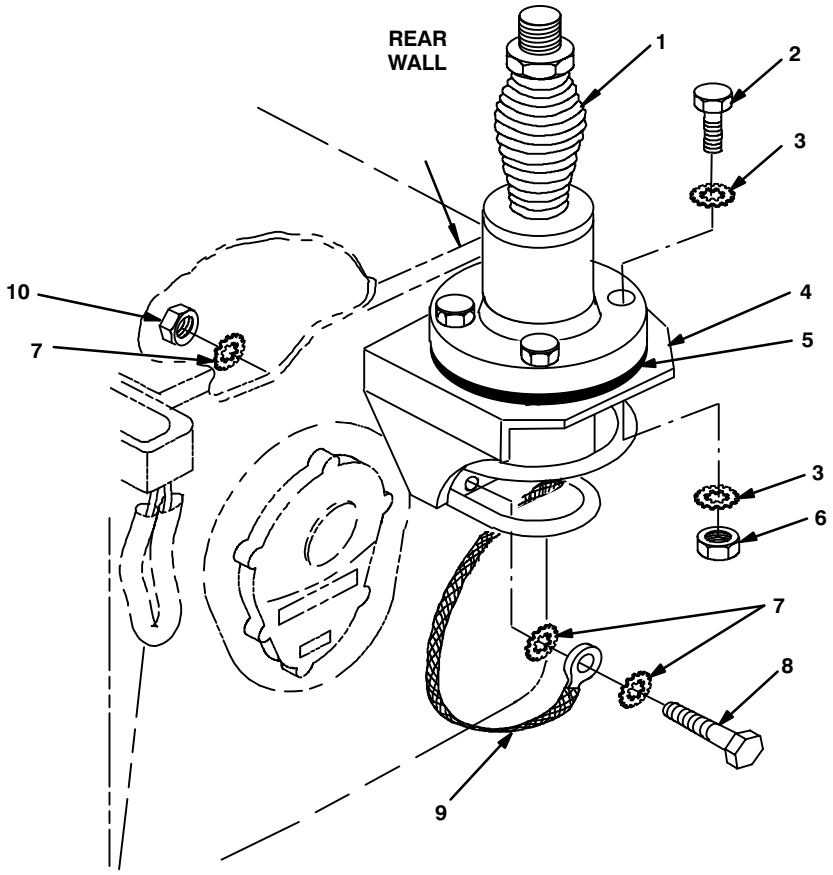


Figure 5−2 (1). Antenna Base Installation: Installing Rear Antenna Brackets

5.1.1 Installation of Rear Antenna Base. Continued

ITEM	ACTION	REMARKS
	NOTE To insure good electrical grounding, remove 1 in diameter of paint around mounting holes in vehicle before installing antenna bracket. Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	
b. Antenna bracket (3).	Remove a 1” diameter area of paint around both sides of mounting holes in antenna bracket (3). Clean the paint removed areas and apply a thin coat of conductive anti−seize compound	Tools: Electric grinder or equivalent.
c. Antenna bracket (3).	Place against rear wall and align mounting holes iwith holes drilled in step a. See figure 5−2 (1).	
d. Two cap screws (4), four internal/external−toothed (IET) washers	Install and secure to two upper mounting holes in antenna bracket (3) and rear wall.	Tools: 1/2 in socket and 1/2 in open/box wrench. (2) and two nuts (1).
e. Gasket (5).	Place on antenna bracket (4) and aline mounting holes. See Figure 5−2(2).	



1. ANTENNA BASE
2. CAP SCREW (3/8−16 x 1 3/4 in)
3. IET WASHER (3/8 in)
4. ANTENNA BRACKET
5. GASKET
6. NUT (3/8−16 in)
7. IET WASHER (5/16 in)
8. CAP SCREW (5/16−24 x 1 1/4 in)
9. GROUND STRAP
10. NUT (5/16−24 in)

5.1.1 Installation of Rear Antenna Base. Continued

ITEM	ACTION	REMARKS
f. Antenna base (1).	Place on top of gasket (5) and antenna bracket (4); then align mounting holes. See figure 5−2 (2).	
g. Four cap screws (2), eight IET washers (3) and four nuts (6).	Install and secure to antenna base (1) and antenna bracket (4).	Tools: 9/16 in socket and 9/16 in open/box wrench.
h. Ground strap (9), cap screw (8), three IET washers (7) and nut (10).	Install and secure to bottom hole in antenna bracket (4) and rear wall.	Tools: 1/2 in socket and 1/2 in open/box wrench.

5.1.2 Installation of Forward Antenna Base. Use the following procedure to install two forward antenna bases. See figure 5−1 (1) for locations.

ITEM	ACTION	REMARKS
	NOTE Apply a thin coat of adhesive−sealant to both sides of each internal/external−toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.	
a. Reinforcement bracket (2) and antenna mount bracket (1).	Remove a 1” diameter area of paint around both sides of eight mounting holes in reinforcement bracket (2) and eight mounting holes in antenna mount bracket (1). Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: Electric grinder or equivalent.
a. Reinforcement bracket (2).	Position inside of antenna mount brac−ket (1) and align holes. See figure 5−2(3).	Tools: Electric drill or equivalent.
c. Four cap screws (6), four flat washers (7), four lock washers (4), and four nuts (3).	Install and secure to rear holes in anten−na mount bracket (1) and reinforcement bracket (2).	Tools: 7/16 in socket and 7/16 in open/box wrench.
d. Three cap screws (6), three flat washers (7), three lock washers (4), and three nuts (3).	Install and secure to front holes in anten−na mount bracket (1) and reinforcement bracket (2), except loop clamp hole. (See figure 5−2 (4) for loop clamp hole.)	Tools: 7/16 in socket and 7/16 in open/box wrench.
e. Mounting holes for an−tenna mount bracket (1).	Using assembled antenna mount bracket (1) as a template, drill four 9/32 in diameter holes through rear wheelwell in approximate locations shown. Remove a 1” area diameter of paint around the four drilled holes. Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: Electric drill, 9/32 in drill bit and electric grinder of equivalent.

5.1.2 Installation of Rear Antenna Base. Continued.

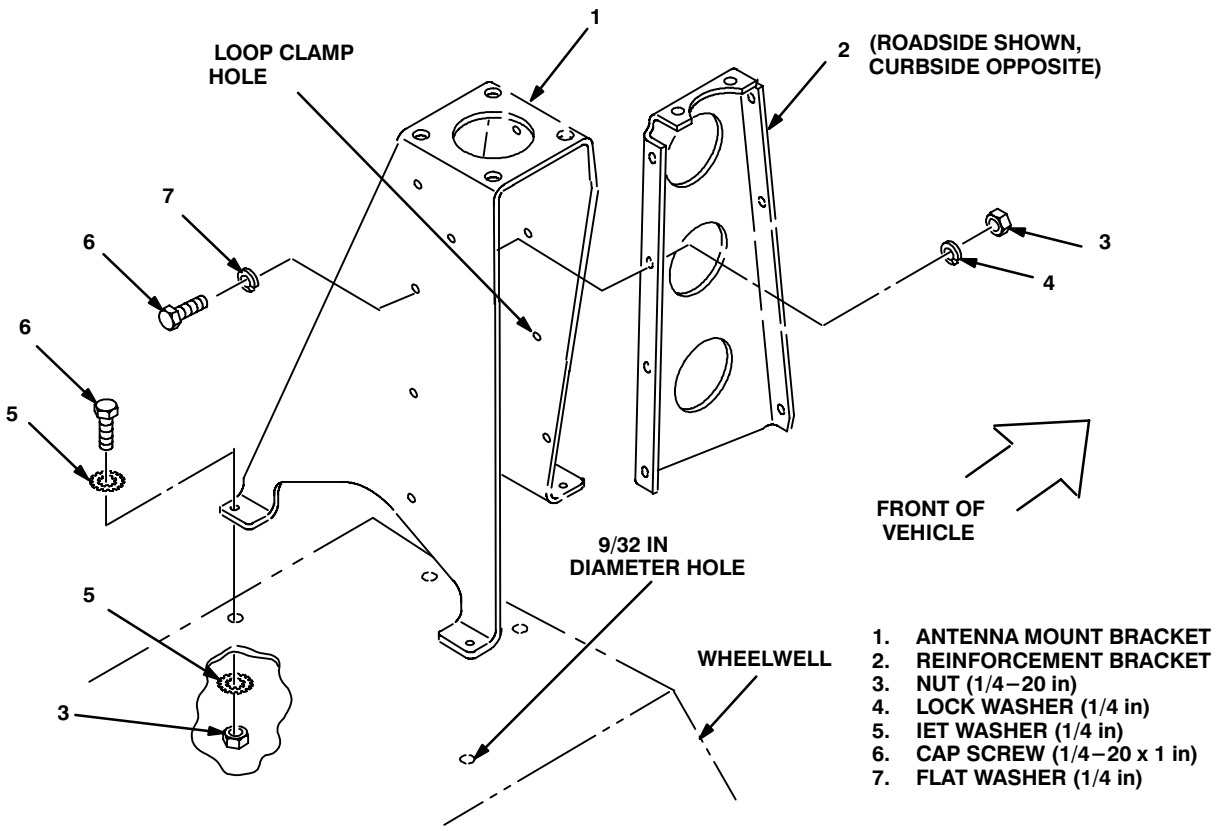
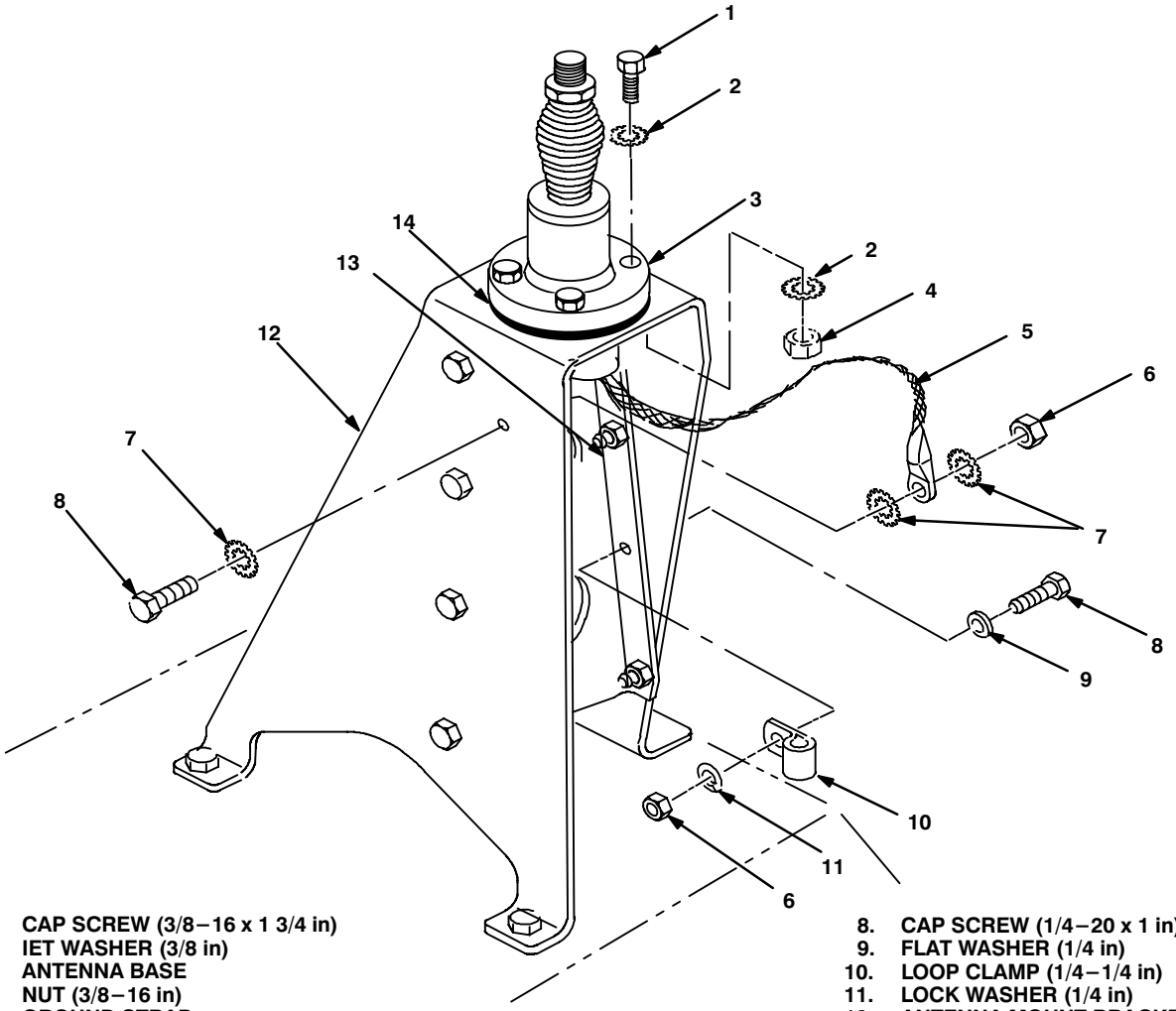


Figure 5−2 (3). Antenna Base Installation: Installing Forward Antenna Mount Brackets

ITEM	ACTION	REMARKS
f. Antenna mount bracket (1)	Remove a 1” diameter of paint around both sides of four mounting holes that mate with holes drilled in step e. Clean the paint removed areas and apply a thin coat of conductive anti–seize compound.	Tools: Electric grinder or equivalent.
g. Antenna mount bracket (1)	Place on wheelwell and align with holes drilled in step e.	
h. Four cap screws (6), eight IET washers (5), and four nuts (3).	Install and secure to antenna mount bracket (1) and rear wheel well. See figure 5–2(3).	Tools: 7/16 in socket and 7/16 in open/box wrench.
i. Gasket (14).	Place on antenna mount bracket (12) and align with mounting holes. See figure 5–2 (4).	
j. Antenna base (3).	Place on top of gasket (14) and antenna mount bracket (12). Align mounting holes.	Tools: 1/2 in socket.
k. Four cap screws (1), eight IET washers (2), and four nuts (4).	Install and secure to antenna base (3) and antenna mount bracket (12) .	Tools: 9/16 in socket and 9/16 in open/box wrench.

5.1.2 Installation of Rear Antenna Base. Continued

ITEM	ACTION	REMARKS



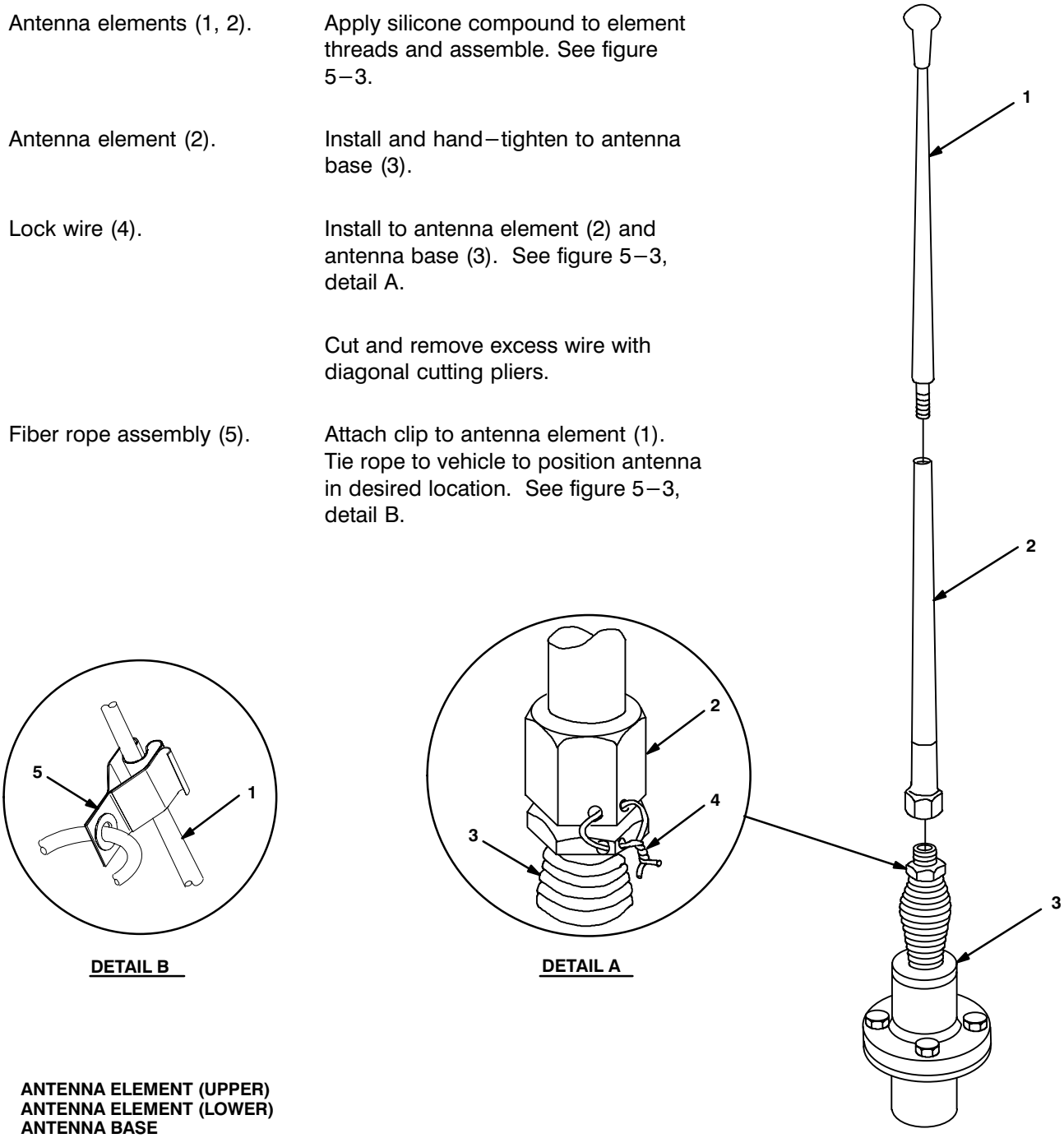
1. CAP SCREW (3/8−16 x 1 3/4 in)
2. IET WASHER (3/8 in)
3. ANTENNA BASE
4. NUT (3/8−16 in)
5. GROUND STRAP
6. NUT (1/4−20 in)
7. IET WASHER (1/4 in)
8. CAP SCREW (1/4−20 x 1 in)
9. FLAT WASHER (1/4 in)
10. LOOP CLAMP (1/4−1/4 in)
11. LOCK WASHER (1/4 in)
12. ANTENNA MOUNT BRACKET
13. REINFORCEMENT BRACKET
14. GASKET

Figure 5−2 (4). Antenna Base Installation: Installing Forward Antenna Bases

l.	Mounting hole for ground strap (5).	Remove a 1” area diameter of paint around both sides of mounting hole in antenna mount bracket (12) that mounts the ground strap (5). Clean the paint removed areas and apply a thin coat of conductive anti–seize compound.	Tools: Electric grinder or equivalent.
m.	Ground strap (5), cap screw (8), three IET washers (7) and nut(6).	Install and secure to antenna mount bracket (12). See figure 5–2 (4).	Tools: 7/16 in socket and 7/16 in open box wrench.
n.	Loop clamp (10), cap screw (8), flat washer (9), lock washer (11) and nut (6).	Install (without securing) to loop clamp hole in antenna mount bracket (12) and reinforcement bracket (13). See figure 5–2 (4) for location(s).	Tools: 7/16 in socket and 7/16 in open/box wrench.

5.1. Installation of Top Antenna Assembly. The top portion of the antenna includes a lower element and an upper element (with installed cap). Use the following procedure to assemble, install and tie down all antennas.

ITEM	ACTION	REMARKS
a. Antenna elements (1, 2).	Apply silicone compound to element threads and assemble. See figure 5−3.	
b. Antenna element (2).	Install and hand−tighten to antenna base (3).	
c. Lock wire (4).	Install to antenna element (2) and antenna base (3). See figure 5−3, detail A.	
	Cut and remove excess wire with diagonal cutting pliers.	
d. Fiber rope assembly (5).	Attach clip to antenna element (1). Tie rope to vehicle to position antenna in desired location. See figure 5−3, detail B.	



1. ANTENNA ELEMENT (UPPER)
2. ANTENNA ELEMENT (LOWER)
3. ANTENNA BASE
4. LOCK WIRE
5. FIBER ROPE ASSEMBLY

Figure 5−3. Top Antenna Assembly Installation

5.2 Installation of Electrical Equipment Shelf.

ITEM	ACTION	REMARKS
	NOTE Apply a thin coat of adhesive−sealant to both sides of each internal/external−toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.	
a. Existing radio rack assembly.	Deinstall all parts. Discard mounting hard−ware removed from front holes in curb−side and roadside mounting brackets. See figure 5−4 (1).	
b. Vehicle floor padding.	Cut away floor padding around curbside and roadside mounting bracket mounting holes in vehicle floor.	Tools: Pocketknife.
c. Existing curbside and roadside mounting bracket and mounting holes in vehicle floor.	Remove a 1” diameter area of paint around mounting holes in vehicle floor. Remove a 1” diameter area of paint around both sides of all mounting holes in curbside and road−side mounting brackets. Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: Electric grinder or equivalent.
d. Existing mounting hard−ware removed in step a. vehicle floor.	Reinstall to rear hole in existing curbside and roadside mounting brackets and vehicle floor.	
e. Two ground straps (3), two cap screws (8) and four IET washers (7).	Install and secure one end of each ground strap to front hole in existing mounting brackets. See figure 5−4(1), Detail A.	Tools: 7/16 in socket.
f. Two mounting plate (2) legs.	Remove a 1” diameter area of paint around both sides of mounting holes in mounting plate legs. Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: Electric grinder or equivalent.
g. Two mounting plate (2) legs.	Position in existing mounting brackets and align mounting holes.	
h. Two ground straps (3), (not shown) two cap screws (6), four IET washers (7) and two nuts (4).	Install and secure loose end of ground strap (installed in step e) to mounting plate (2) legs and existing mounting brackets.	Insert each cap screw from outside of mounting plate leg.
i. Two double angle brackets (9).	Place on either side of mounting plate (2) near edges and align mounting holes. See figure 5−4 (1).	
j. Two cap screws (8), two lock washers (10) and two nuts (11).	Install and secure to rear holes in double angle brackets (9) and mounting plate (2). See figure 5−4 (1), detail B.	Tools: 7/16 in socket and 7/16 in open/box wrench.
k. Two shelf brackets (1). two cap screws (8),	Place one in each double angle bracket (9) and align mounting holes.	Install in upright position.

5.2 Installation of Electrical Equipment Shelf. Continued

1. SHELF BRACKET
2. MOUNTING PLATE
3. GROUND STRAP
4. NUT (3/8−16 in)
5. LOCK WASHER (3/8 in)
6. CAP SCREW (3/8−16 x 2 1/4 in)
7. IET WASHER (1/4 in)
8. CAP SCREW (1/4−20 x 1 in)
9. DOUBLE ANGLE BRACKET
10. LOCK WASHER (1/4 in)
11. NUT (1/4−20 in)

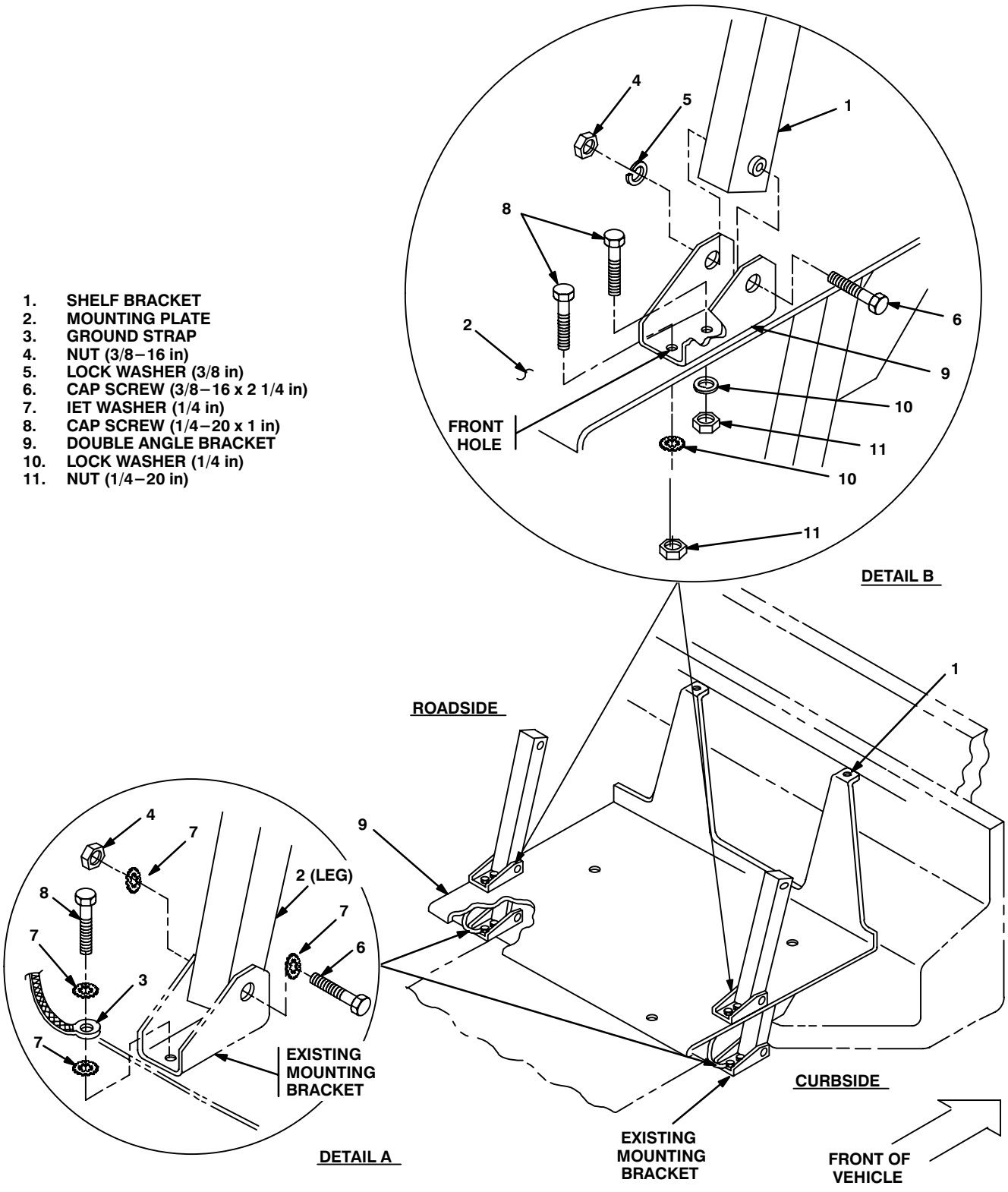
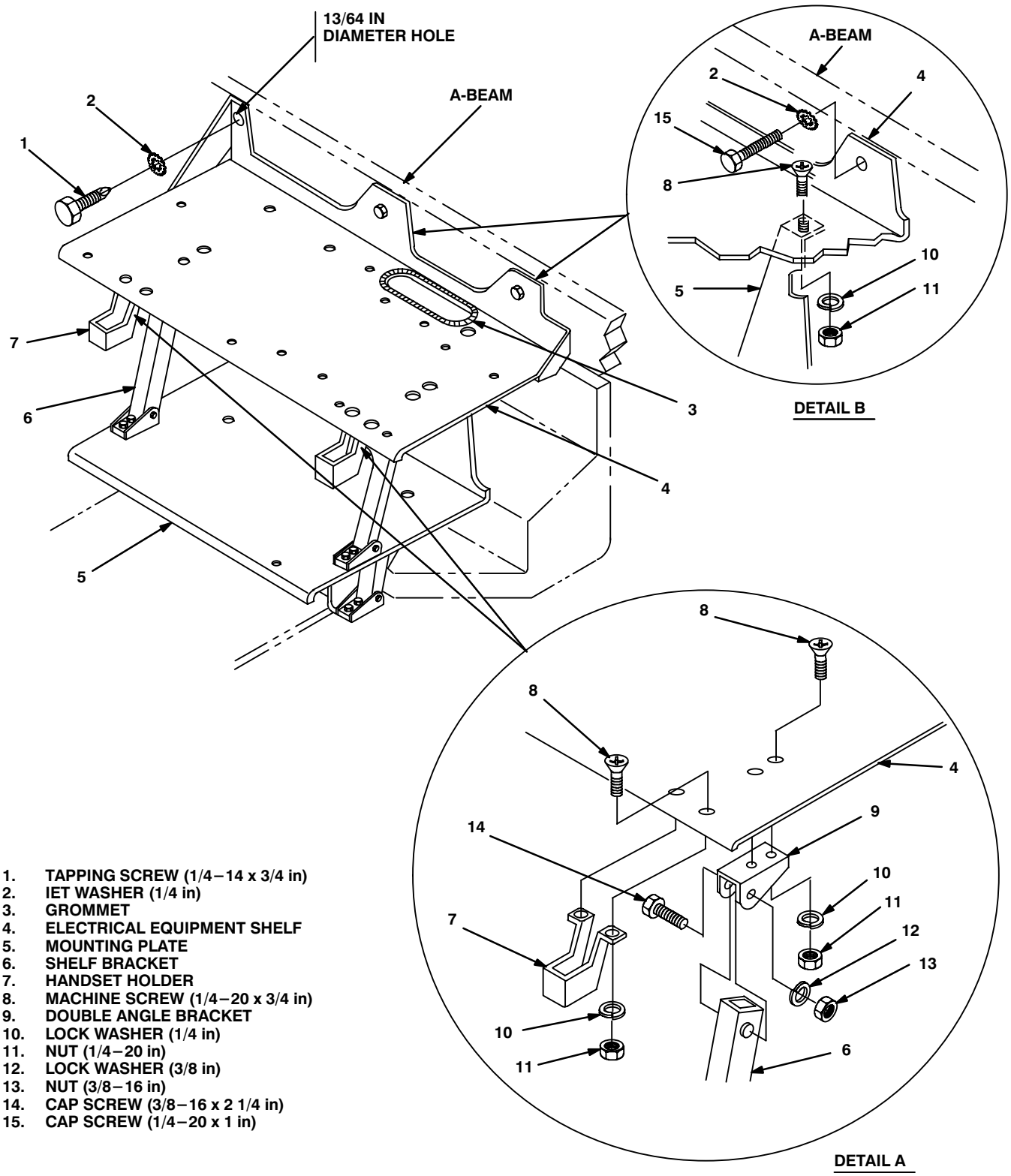


Figure 5−4 (1). Installation of Electrical Equipment Shelf: Mounting Plate

l.	Two cap screws (6), two lock washers (5) and two nuts (4).	Install (without securing) to two shelf brackets (1) and two double angle brackets (9).	Insert each cap screw from outside of shelf bracket. Tools: 9/16 in socket and 9/16 in open/box wrench.
m.	Two handset holders (7), four flat−head machine screws (8), four lock washers (10) and four nuts (11).	Install and secure to electrical equip−ment shelf (4). See figure 5−4 (2).	Tools: Phillips screwdriver and 7/16 in socket.
n.	Two double angle brack−ets (9), four flat−head machine screws (8), four lock washers (10) and four nuts (11).	Install and secure to electrical equip−ment shelf (4). See figure 5−4 (2), Detail A.	Tools: Phillips screwdriver and 7/16 in socket.
o.	Mounting plate (5) and electrical equipment shelf (4).	Remove a 1” diameter area of paint around both sides of mounting holes in top arms of mounting plate (5) and around bottom side of mating mounting holes in electrical equipment shelf (4). Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: Electric grinder or equivalent.
p.	Electrical equipment shelf (4).	Place on top of mounting plate (5) and shelf brackets (6). See figure 5−4 (2).	
q.	Two flat−head machine screws (8), two lock washers (10) and two nuts (11).	Install and secure to electrical equip−ment shelf (4) and mounting plate (5). See figure 5−4 (2), Detail B.	Tools: Phillips screwdriver and 7/16 in socket.
r.	Two shelf brackets (6).	Position upper ends in double angle brackets (9) and aline mounting holes. See figure 5−4 (2), Detail A.	
s.	Two cap screws (14), two lock washers (12) and two nuts (11).	Install and secure to two shelf brackets (6) and two double angle brackets (9).	Insert each cap screw from inside of shelf bracket. Tools: 9/16 in socket and 9/16 in open/box wrench.
t.	Two cap screws (6), two lock washers (5) and twonuts (4), installed in step	Secure. See figure 5−4 (1), Detail B.	Tools: 9/16 in socket and 9/16 in open/box wrench.
u.	Two cap screws (15) and two IET washers (2).	Install and secure to electrical equip−ment shelf (4) and A−beam. See figure 5−4 (2), Detail B.	Tools: 7/16 in socket.

5.2 Installation of Electrical Equipment Shelf. Continued



1. TAPPING SCREW (1/4−14 x 3/4 in)
2. IET WASHER (1/4 in)
3. GROMMET
4. ELECTRICAL EQUIPMENT SHELF
5. MOUNTING PLATE
6. SHELF BRACKET
7. HANDSET HOLDER
8. MACHINE SCREW (1/4−20 x 3/4 in)
9. DOUBLE ANGLE BRACKET
10. LOCK WASHER (1/4 in)
11. NUT (1/4−20 in)
12. LOCK WASHER (3/8 in)
13. NUT (3/8−16 in)
14. CAP SCREW (3/8−16 x 2 1/4 in)
15. CAP SCREW (1/4−20 x 1 in)

Figure 5−4 (2). Installation of Electrical Equipment Shelf: Electrical Equipment Shelf

v. Left mounting hole for electrical equipment shelf (4).	Using electrical equipment shelf (4) as a template, drill 13/64 in diameter hole in A−beam. See figure 5−4 (2), Detail B.	Tools: Electric drill and 13/64 in drill bit.
w. Hex−head tapping screw (1) and IET washer (2).	Install and secure to electrical equip−ment shelf (4) and A−beam.	Tools: 7/16 in socket.
x. Two grommets (3).	Cut to length and install to cable hole in electrical equipment shelf (4).	Tools: Pocket knife.

5.3 Installation of Mounting Base, Electrical Equipment MT−6352/VRC (mounting base). Remove and retain attaching bag of 5/16 in mounting hardware for installation. To insure good electrical grounding, any rust, corrosion or paint around mounting holes in mounting plate and electrical equipment shelf should be removed before installing the mounting base. See figure 5−5 and perform the following steps.

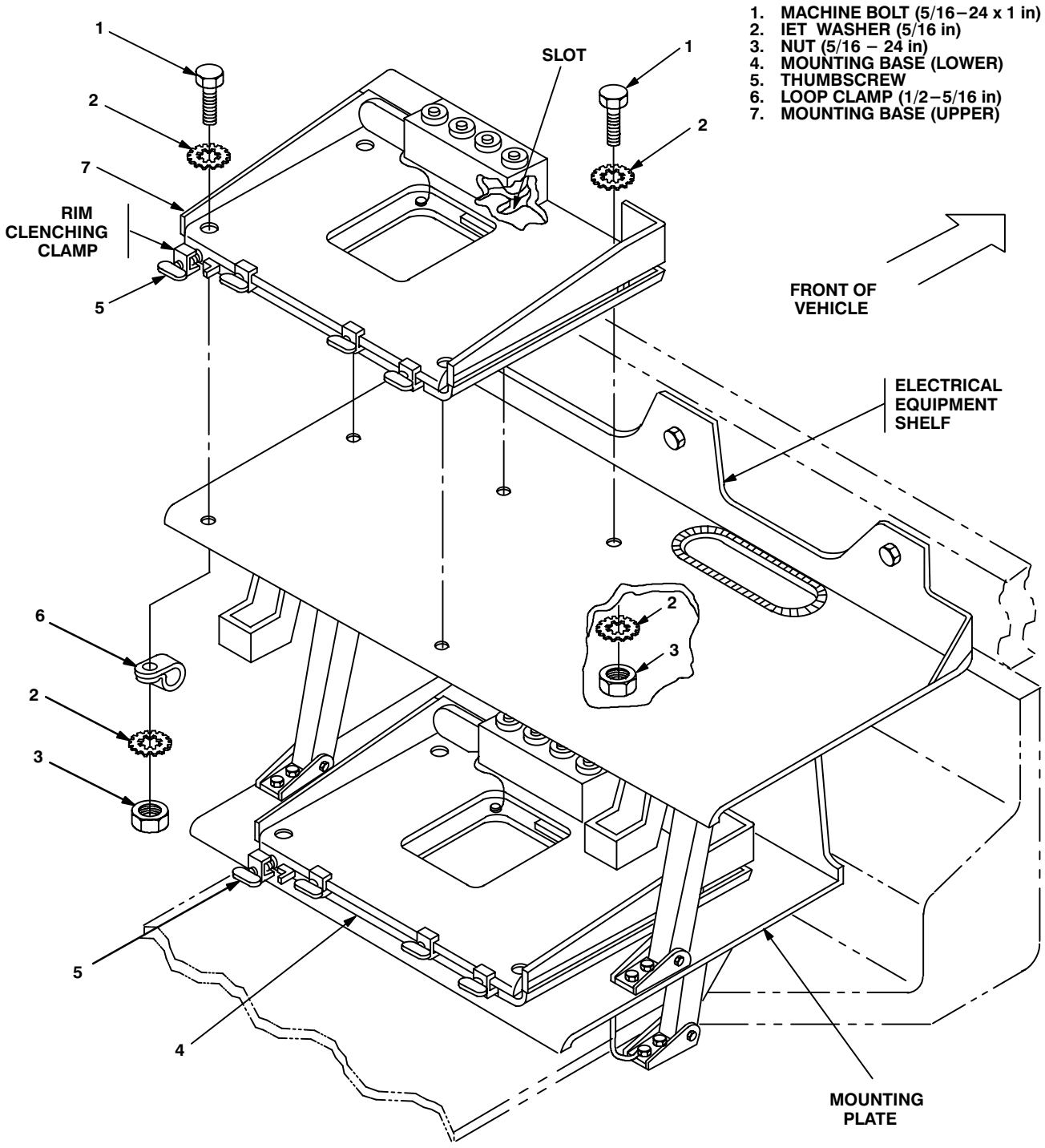


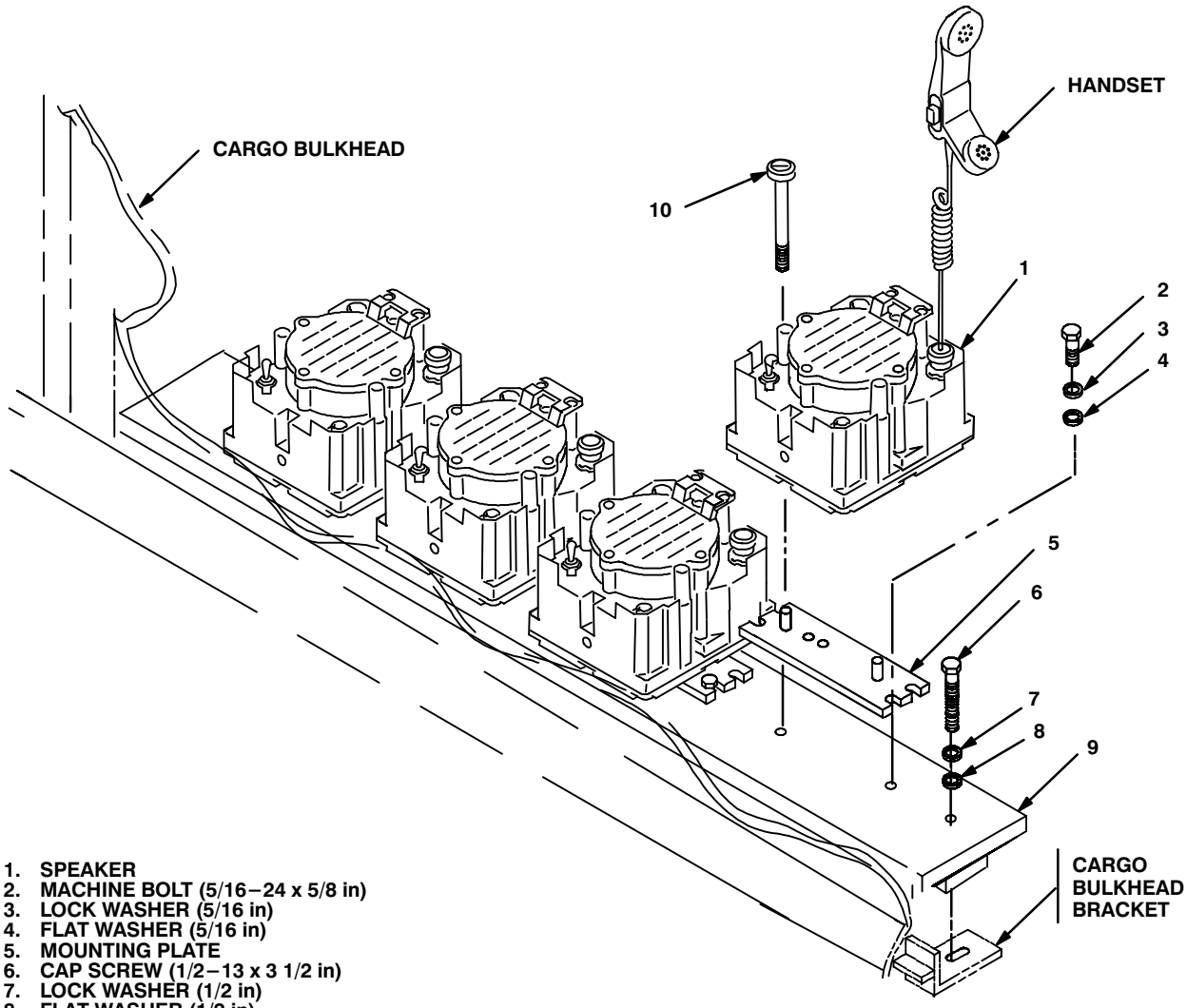
Figure 5−5. Mounting Base Installation

5.3 Installation of Mounting Base, Electrical Equipment MT−6352/VRC (mounting base). Continued

ITEM	ACTION	REMARKS
	NOTE Apply a thin coat of adhesive−sealant to both sides of each internal/external−toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed.	
a. Lower mounting base (4).	Remove a 2” square area of paint on the underside of the mounting base (4) around left front and rear mounting holes. Remove a 2” square area of paint on the mounting plate around the existing mounting holes that mate with left front and rear mounting holes of mounting base (4). Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: Electric grinder or equivalent.
b. Mounting base (4).	Place on mounting plate. See figure 5−5.	
c. Two outer thumbscrews (5).	Turn ccw until both sets of threads have cleared center of holes.	
d. Lower mounting base (4).	Align four holes and rear slot with matching hole pattern in mounting plate.	
e. Five machine bolts (1), ten IET washers (2) and five nuts (3).	Install and secure to lower mounting base (4) and mounting plate.	Tools: 1/2 in socket and 1/2 in open/box wrench.
f. Two outer thumbscrews (5).	Tighten and secure.	
g. Upper mounting base (7) and electrical equipment shelf.	Remove a 2” square area of paint on the underside of the mounting base (7) around left front and rear mounting holes. Remove a 2” square area of paint on the electrical equipment shelf around the existing mounting holes of mounting base (7). Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	
h. Two outer thumbscrews (5).	Place on electrical equipment shelf.	
i. Three machine bolts (1), six IET washers (2) and three nuts (3).	Turn ccw until both sets of threads have cleared center of holes.	
j. Upper mounting base (7).	Align four holes and rear slot with matching hole pattern in electrical equipment shelf.	
k. Three machine bolts (1), six IET washers (2) and three nuts (3).	Install and secure to electrical equipment shelf and two rear holes and rear slot in upper mounting base (7).	Tools: 1/2 in socket and 1/2 in open/box wrench.
l. Two loop clamps (6), two machine bolts (1), four IET washers (2) and two nuts (3).	Install (without securing) to electrical equipment shelf and two front holes in upper mounting base (7).	Tools: 1/2 in socket and 1/2 in open/box wrench.
m. Two outer thumbscrews (5).	Tighten and secure.	

5.4 Installation of Loudspeaker − Control Unit LS−671/VRC (speaker). Use the following procedure to mount four speakers.

ITEM	ACTION	REMARKS
a. Existing mounting hardware in two cargo bulkhead brackets.	Remove. See figure 5−6.	Existing mounting hardware not shown.



1. SPEAKER
2. MACHINE BOLT (5/16−24 x 5/8 in)
3. LOCK WASHER (5/16 in)
4. FLAT WASHER (5/16 in)
5. MOUNTING PLATE
6. CAP SCREW (1/2−13 x 3 1/2 in)
7. LOCK WASHER (1/2 in)
8. FLAT WASHER (1/2 in)
9. MOUNTING PLATE
10. BODY SCREW

Figure 5−6. Speaker Installation

5.4 Installation of Loudspeaker − Control Unit LS−671/VRC (speaker). Continued

ITEM	ACTION	REMARKS
b. Mounting plate (9).	Place on cargo bulkhead brackets and aline mounting holes.	
c. Two cap screws (6), two lock washers (7) and two flat washers (8).	Install and secure to mounting plate (9) and cargo bulkhead brackets.	Tools: 3/4 in socket or 3/4 open/box wrench.
d. Mounting plate (5).	Place on mounting plate (9) and and aline top slotted holes with mounting holes.	
e. Two machine bolts (2), two lock washers (3) and two flat washers (4).	Install and secure to mounting plate (5) and mounting plate (9).	Tools: 1/2 in socket.
f. Speaker (1) and externally−relieved body screws (10).	Thread body screws (10) through speaker (1); then install and secure to mounting plate (5).	
g. Handset.	Connect and secure to speaker (1) connector J2.	
h. Steps d through g.	Repeat to install remaining three speakers (1).	

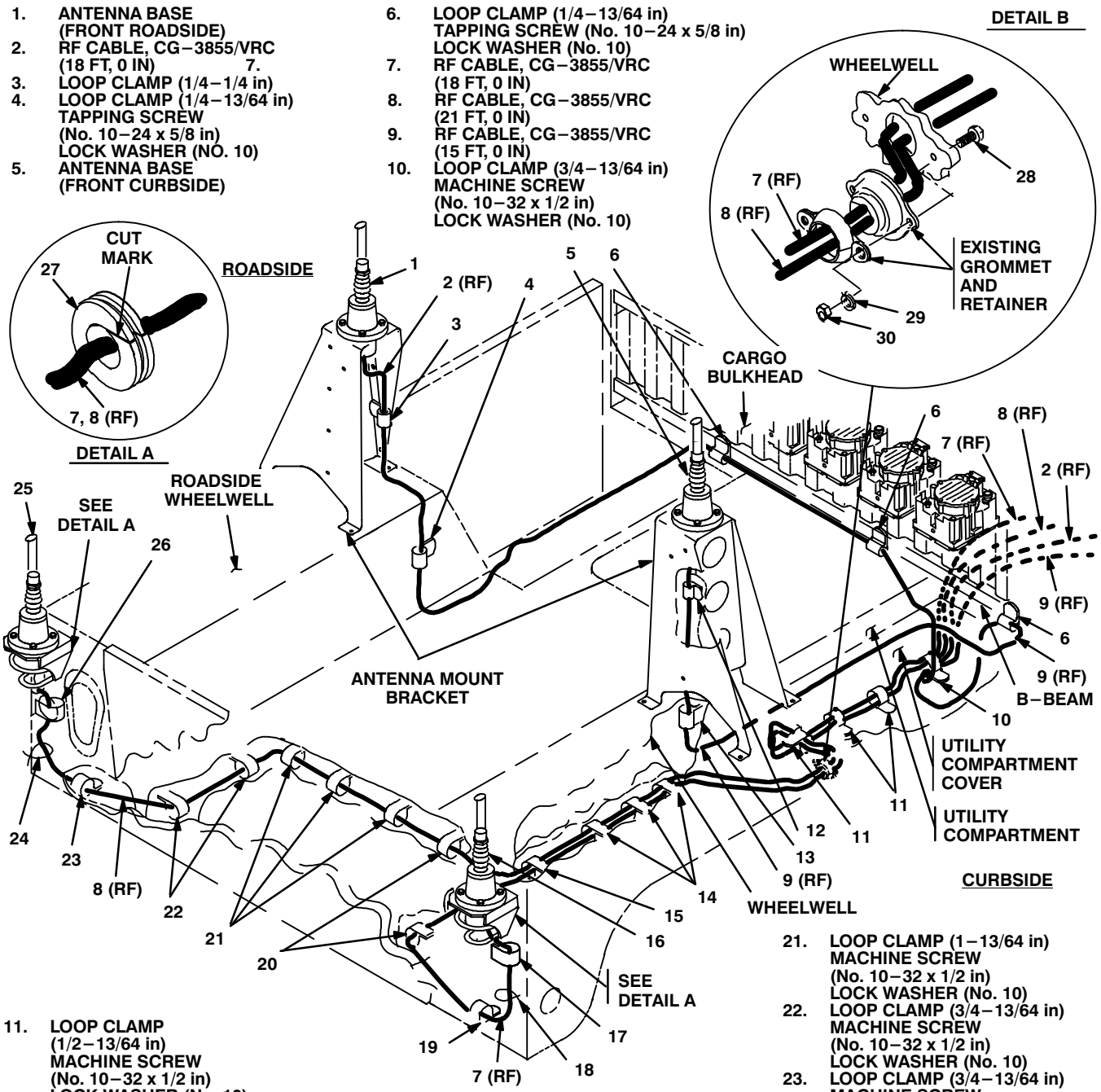
5.5 Installation of Cables. To accomplish the installation, leave loop clamps and tiedown straps loose enough to adjust cable slack and allow easy adjustment of equipment. When installation is complete, tighten and secure clamps and tiedown straps.

WARNING

Make sure vehicle power source is positioned OFF or disconnected before installing cables.

ITEM	ACTION	REMARKS
a. RF cable (8) connector P1.	Insert through grommet hole below rear roadside antenna base (25); then connect and secure to antenna base connector J1. See figure 5−7 (1).	
b. Grommet (27).	Cut through on mark shown; then wrap around RF cable (8) and install to grom−met hole in rear roadside wall.	Tools: Pocket knife.
c. RF cable (8).	Route from roadside to curbside of vehicle along bottom of frame.	
d. Loop clamp (26) and existing upper mounting hardware of roadside reflector.	Wrap clamp around RF cable (8); then install to inside rear wall. See figure 5−7 (1) for location(s).	
e. Loop clamp (23), hex−head machine screw (no. 10−32 x 5/8 in), lock washer (no. 10) and nut (no. 10−32 in).	Wrap clamp around RF cable (8) and existing harness; then install to exist−ing mounting hole on bottom edge of rear roadside wall.	Tools: 5/16 in socket or 5/16 in open/box wrench and 3/8 in socket or 3/8 in open/box wrench.
f. Tiedown strap (24).	Wrap around RF cable (8) and secure to tail light harness.	
g. Two loop clamps (22), two hex−head machine screws (no. 10−32 x 1/2 in) and two lock washers (no. 10).	Wrap clamps around RF cable (8) and existing harness; then install to bottom of rear roadside frame.	Tools: 5/16 in socket.
h. Three loop clamps (21), three hex−head machine screws (no. 10−32 x 1/2 in) and three lock washers (no. 10).	Wrap clamps around RF cable (8) and existing harness; then install across bottom surface of frame.	Tools: 5/16 in socket.
i. Loop clamp (20), hex−head machine screw (no. 10−32 x 1/2 in) and lock washer (no. 10).	Wrap clamp around RF cable (8) and existing harness; then install across bottom surface of frame.	Tools: 5/16 in socket.
j. RF cable (7) connector P1.	Insert through grommet hole below rear curbside antenna base (16); then connect and secure to antenna base connector J1.	
k. Grommet (27).	Cut through on mark shown, figure 5−7, detail A; then wrap around RF cable (7) and install to rear curbside wall. See fig−ure 5−7 (1).	Tools: Pocket knife.

5.5 Installation of Cables. Continued



1. ANTENNA BASE (FRONT ROADSIDE)
2. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
3. LOOP CLAMP (1/4−1/4 in)
4. LOOP CLAMP (1/4−13/64 in) TAPPING SCREW (No. 10−24 x 5/8 in) LOCK WASHER (NO. 10)
5. ANTENNA BASE (FRONT CURBSIDE)
6. LOOP CLAMP (1/4−13/64 in) TAPPING SCREW (No. 10−24 x 5/8 in) LOCK WASHER (No. 10)
7. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
8. RF CABLE, CG−3855/VRC (21 FT, 0 IN)
9. RF CABLE, CG−3855/VRC (15 FT, 0 IN)
10. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
11. LOOP CLAMP (1/2−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
12. LOOP CLAMP (1/4−1/4 in)
13. LOOP CLAMP (1/4−13/64 in) TAPPING SCREW (No. 10−24 x 5/8 in) LOCK WASHER (NO. 10)
14. LOOP CLAMP (1/2−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
15. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
16. ANTENNA BASE (REAR CURBSIDE)
17. LOOP CLAMP (1/4−1/4 in)
18. TIEDOWN STRAP
19. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (No. 10−32 x 5/8 in) LOCK WASHER (No. 10) NUT (No. 10−32 in)
20. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
21. LOOP CLAMP (1−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
22. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (No. 10−32 x 1/2 in) LOCK WASHER (No. 10)
23. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (No. 10−32 x 5/8 in) LOCK WASHER (No. 10) NUT (No. 10−32 in)
24. TIEDOWN STRAP
25. ANTENNA BASE (REAR ROADSIDE)
26. LOOP CLAMP (1/4−1/4 in)
27. GROMMET
28. CAP SCREW (1/4−20 x 1 in)
29. LOCK WASHER (1/4 in)
30. NUT (1/4−20 in)

Figure 5−7 (1). Cable Installation: RF Cabling

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
l. Loop clamp (17) and existing upper mounting hardware of curbside reflector.	Wrap clamp around RF cable (7); then install to inside rear wall. See figure 5−7 (1) for location(s).	
m. Loop clamp (19), hex−head machine screw (no. 10−32 x 5/8 in), lock washer (no. 10) and nut (no. 10−32 in).	Wrap clamp around RF cable (7) and existing cable harness; then install to existing mounting hole on bottom edge of rear curbside wall. See figure 5−7 (1).	Tools: 5/16 in socket and 3/8 in socket.
n. Loop clamp (20), hex−head machine screw (no. 10−32 x 1/2 in) and lock washer (no. 10).	Wrap clamp around RF cable (7) and existing harness; then install to bottom of rear curbside frame.	Tools: 5/16 in socket.
o. Tiedown strap (18).	Wrap around RF cable (7) and secure to tail light harness.	
p. RF cables (7, 8).	Route forward along bottom of frame to area near existing grommet and retainer.	
q. Loop clamp (15), three loop clamps (14), four hex−head machine screws (no. 10−32 x 1/2 in) and four lock washers (no. 10).	Wrap clamps around RF cables (7,8); then install to bottom surface of curbside frame. See figure 5−7 (1) for location(s).	Tools: 5/16 in socket.
r. Utility compartment cover.	Remove. See figure 5−7 (1).	
s. Existing grommet, retainer and mounting hardware.	Remove. Retain grommet and retainer. See figure 5−7 (1), detail B.	Existing mounting hardware not shown.
t. Connector P2 of RF cables (7, 8).	Insert through existing retainer, grommet and grommet hole.	
u. Existing grommet and retainer, two cap screws (28), two lock washers (29) and two nuts (30).	Install grommet and retainer to existing grommet hole and secure.	Tools: 7/16 in socket and 7/16 in open/box wrench.
v. RF cables (7, 8).	Route forward through utility compartment and under B−beam to to passenger seat area. See figure 5−7 (1).	
w. Three loop clamps (11), three hex−head machine screws (no. 10−32 x 1/2 in) and three lock washers (no. 10).	Wrap clamps around RF cables (7, 8); then install to existing holes in utility compartment. See figure 5−7 (1) for location(s).	
x. RF cable (2) connector P1.	Connect and secure to forward roadside antenna base (1) connector J1. See figure 5−7 (1).	
y. RF cable (2).	Route down to cargo floor and forward to cargo bulkhead; then route across to utility compartment and under B−beam to passenger seat area.	

5.5 Installation of Cables. Continued

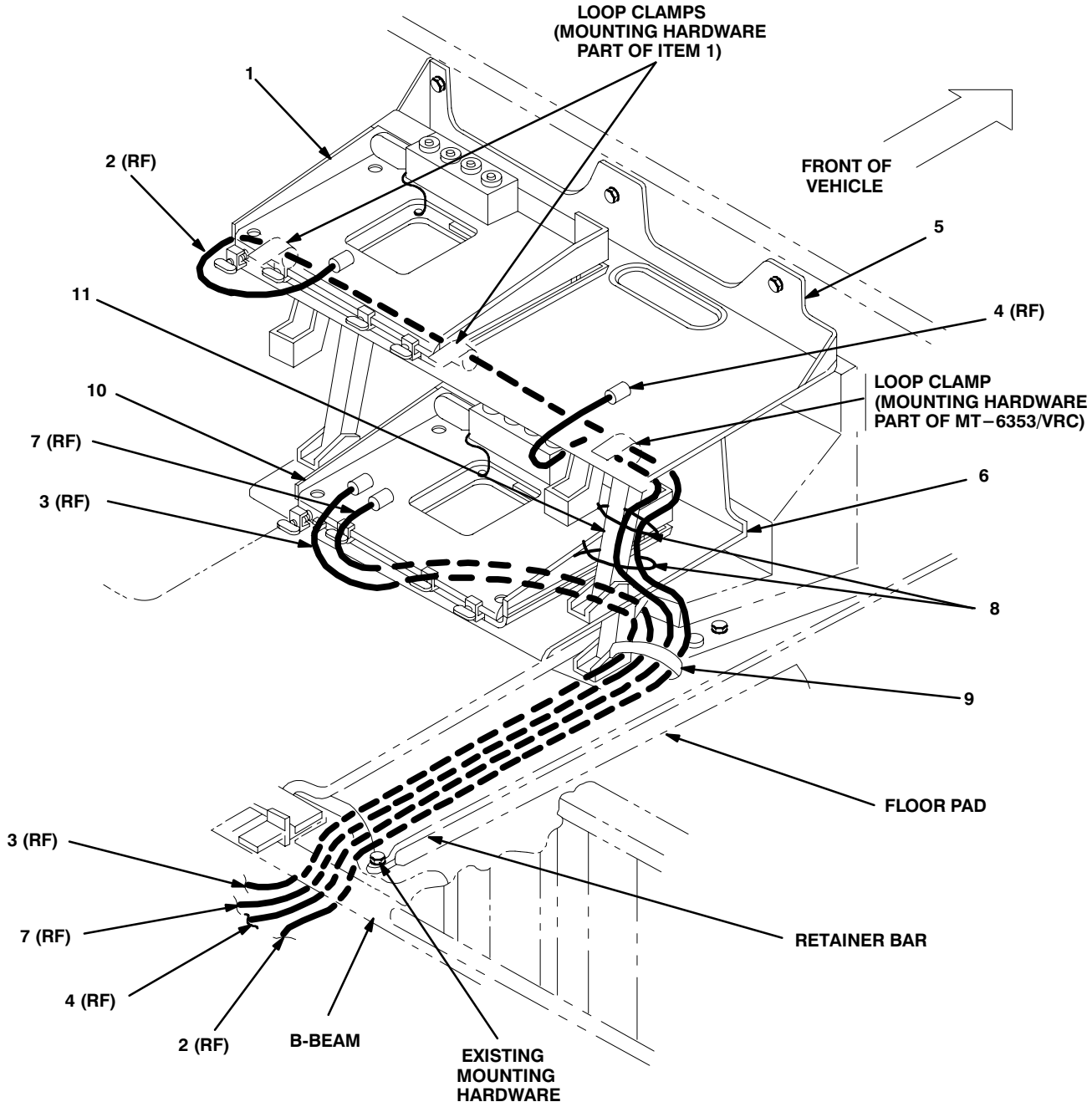
ITEM	ACTION	REMARKS
z. Loop clamp (3), installed in section 5.1.2, step k.	Remove and wrap around RF cable (2); then reinstall to roadside antenna mount bracket. See figure 5−7 (1) for location(s).	Tools: 7/16 in socket and 7/16 in open/box wrench.
aa. RF cable (9) connector P1.	Connect and secure to forward curbside antenna base (5) connector J1. See figure 5−7 (1).	
ab. RF cable (9).	Route down to cargo floor and forward to utility compartment; then route down under B−beam to passenger seat area.	
ac. Loop clamp (12), installed in section 5.1.2, step k.	Remove and wrap around RF cable (9); then reinstall to curbside antenna mount bracket. See figure 5−7 (1) for location(s).	Tools: 7/16 in socket and 7/16 in open/box wrench.
ad. Mounting holes for loop clamps (6, 13, 4).	Drill five 5/32 in diameter holes: one in roadside rear wheelhouse, one in curbside rear wheelhouse and three in cargo bulkhead. See figure 5−7 (1) for location(s).	Tools: Electric drill and 5/32 in drill bit.
ae. Five loop clamps (6, 13, 4), five hex−head tapping screws (no. 10−24 x 5/8 in) and five lock washers (no. 10).	Wrap clamps around RF cables (2, 9); then install to holes drilled in step ad.	Tools: 5/16 in socket.
af. Loop clamp (10), hex−head machine screw (no. 10−32 x 1/2 in) and lock washer (no. 10).	Wrap clamp around RF cables (2, 7, 8, 9). Install to existing hole in utility compartment.	Tools: 5/16 in socket.

NOTES

- For AN/VRC−89 and AN/VRC−92 radio sets, go to step ag.
- For dual AN/VRC−91 radio sets , go to step aq.
- For dual AN/VRC−92 radio sets, go to step ba.

ag. Retainer bar.	Remove and retain existing mounting hardware; then move retainer bar off floor pad. See figure 5−7 (2).	
ah. RF cables (2, 3, 4, 7).	Route forward under floor pad to mounting plate (6).	
ai. RF cables (3, 7).	Route under mounting plate (6) to front of lower mounting base (10).	
aj. Connector P2 of RF cables (3, 7).	Position on top of lower mounting base (10).	

5.5 Installation of Cables. Continued



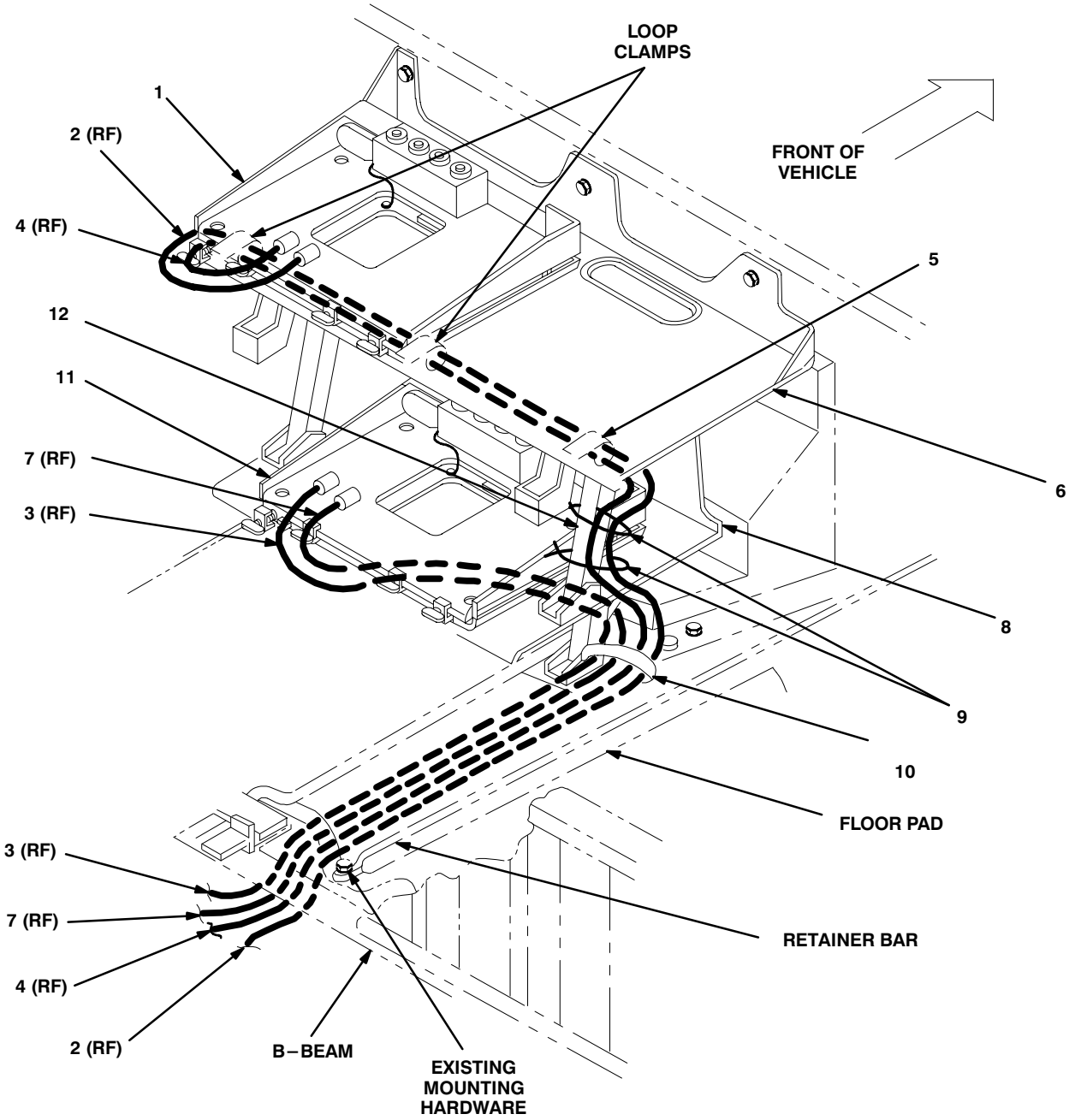
1. MOUNTING BASE (UPPER)
2. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
3. RF CABLE, CG−3855/VRC (15 FT, 0 IN)
4. RF CABLE, CG−3855/VRC (21 FT, 0 IN)
5. ELECTRICAL EQUIPMENT SHELF
6. MOUNTING PLATE
7. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
8. TIEDOWN STRAP
9. LOOP CLAMP (3/4−13/64 in)
   MACHINE SCREW (NO. 10−32 x 5/8 in)
   LOCK WASHER (NO. 10)
10. MOUNTING BASE (LOWER)
11. SHELF BRACKET

Figure 5−7 (2). Cable Installation: RF Cabling (AN/VRC−89 and AN/VRC−92 Only)

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
ak. Two tiedown straps (8).	Wrap around RF cables (2, 4); then secure to shelf bracket (11). See figure 5−7 (2).	
al. RF cable (2).	Route under electrical equipment shelf (5) and position connector P2 on top of upper mounting base (1).	
am. Two loop clamps (installed in section 5.3, step k).	Remove and wrap around RF cable (2); then reinstall to underside of electrical equipment shelf (5). See figure 5−7 (2) for location(s).	Tools: 1/2 in socket and 1/2 in open/box wrench.
an. RF cable (4) connector P2.	Position on right side of electrical equipment shelf (5). See figure 5−7 (2).	
ao. Loop clamp (9), hex−head machine screw (no. 10−32 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (2, 3, 4, 7); then install to cargo floor. See figure 5−7 (2) for location(s).	Tools: 5/16 in socket.
ap. Retainer bar.	Move back onto floor pad and secure with existing mounting hardware (retained in step ag). See figure 5−7 (2). Go to step bk.	
aq. Retainer bar.	Remove and retain existing mounting hardware; then move retainer bar off floor pad. See figure 5−7 (3).	
ar. RF cables (2, 3, 4, 7).	Route forward under floor pad to mounting plate (8).	
as. RF cables (3, 7).	Route under mounting plate (8) to front of lower mounting base (11).	
at. Connector P2 of RF cables (3, 7).	Position on top of lower mounting base (11).	
au. Two tiedown straps (9).	Wrap around RF cables (2, 4); then secure to shelf bracket (12).	
av. RF cables (2, 4).	Route under electrical equipment shelf (6) and position P2 connectors on top of upper mounting base (1).	
aw. Two loop clamps (installed in section 5.3, step k).	Remove and wrap around RF cables (2, 4); then reinstall to underside of electrical equipment shelf (6). See figure 5−7 (3) for location(s).	Tools: 1/2 in socket and 1/2 in open/box wrench.

5.5 Installation of Cables. Continued



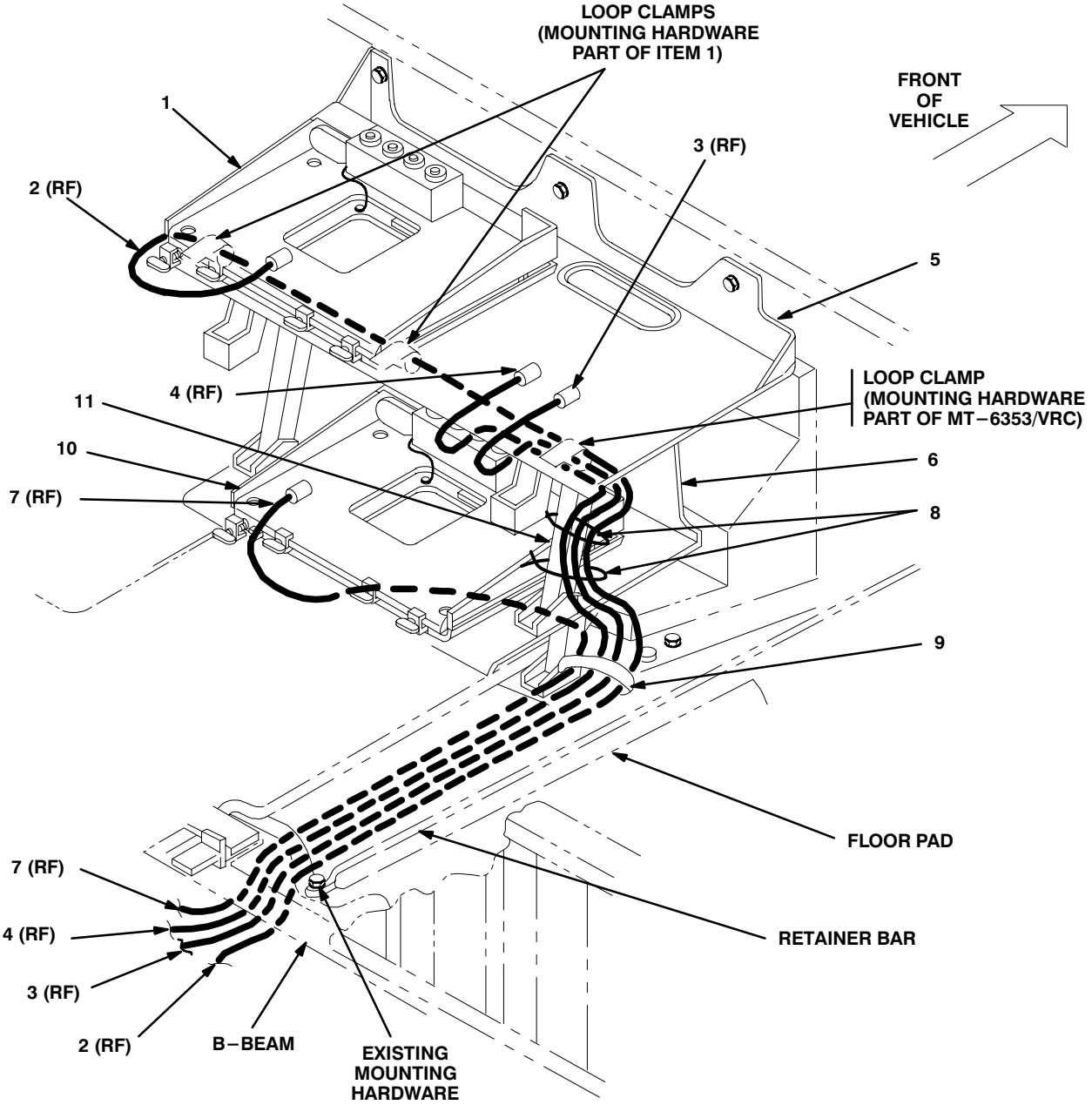
1. MOUNTING BASE (UPPER)
2. RF CABLE, CG−3855/VRC (18 FT, 0IN)
3. RF CABLE, CG−3855/VRC (15 FT, 0 IN)
4. RF CABLE, CG−3855/VRC (21 FT, 0 IN)
5. LOOP CLAMP (5/8−5/16 in)
   MACHINE BOLT (5/16−24 x 3/4 in)
   LOCK WASHER (5/16 in)
   FLAT WASHER (5/16 in)
   NUT (5/16−24 in)
6. ELECTRICAL EQUIPMENT SHELF
7. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
8. MOUNTING PLATE
9. TIEDOWN STRAP
10. LOOP CLAMP (3/4−13/64 in)
    MACHINE SCREW (NO. 10−32 x 5/8 in)
    LOCK WASHER (NO. 10)
11. MOUNTING BASE (LOWER)
12. SHELF BRACKET

Figure 5−7 (3). Cable Installation: RF Cabling (Dual AN/VRC−91 Only)

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
ax. Loop clamp (5), machine bolt (5/16−24 x 1 in), lock washer (5/16 in), flat washer (5/16 in) and nut (5/16−24 in).	Wrap clamp around RF cables (2, 4); then install to underside of electrical equipment shelf (6). See figure 5−7 (3) for locations.	Tools: 1/2 in socket and 1/2 in open/box wrench.
ay. Loop clamp (10), hex−head machine screw (no. 10−32 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (2, 3, 4, 7); then install to cargo floor.	Tools: 5/16 in socket.
az. Retainer bar.	Move back onto floor pad and secure with existing mounting hardware (retained in step aq). See figure 5−7 (3). Go to step bk.	
ba. Retainer bar.	Remove and retain existing mounting hardware; then move retainer bar off floor pad. See figure 5−7 (4).	
bb. RF cables (2, 3, 4, 7).	Route forward under floor pad to mounting plate (6).	
bc. RF cable (7).	Route under mounting plate (6) to front of lower mounting base (10).	
bd. RF cable (7) connector P2.	Position on top of lower mounting base (10).	
be. Two tiedown straps (8).	Wrap around RF cables (2, 3, 4); then secure to shelf bracket (11).	
bf. RF cable (2).	Route under electrical equipment shelf (5) and position connector P2 on top of upper mounting base (1).	
bg. Two loop clamps (installed in section 5.3, step k).	Remove and wrap around RF cable (2); then reinstall to underside of electrical equipment shelf (5). See figure 5−7 (4) for location(s).	Tools: 1/2 in socket and 1/2 in open/box wrench.
bh. Connector P2 of RF cables (3, 4).	Position on right side of electrical equipment shelf (5). See figure 5−7 (4).	
bi. Loop clamp (9), hex−head machine screw (no. 10−32 x 5/8 in) and lock washer (no. 10).	Wrap clamp around RF cables (2, 3, 4, 7); then install to cargo floor. See figure 5−7 (4) for location(s).	Tools: 5/16 in socket.
bj. Retainer bar.	Move back onto floor pad and secure with existing mounting hardware (retained in step ba). See figure 5−7 (4).	

5.5 Installation of Cables. Continued



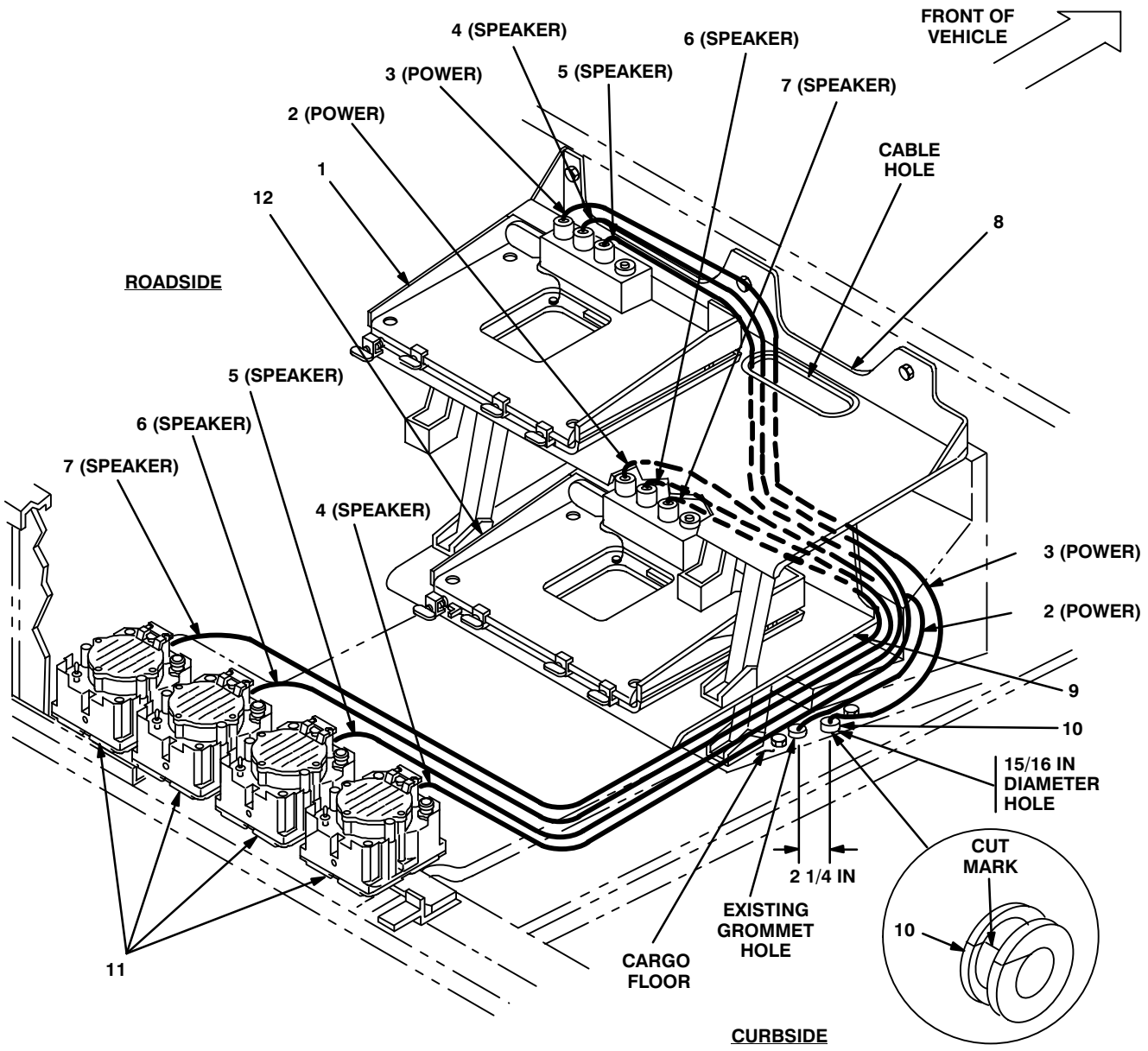
1. MOUNTING BASE (UPPER)
2. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
3. RF CABLE, CG−3855/VRC (21 FT, 0 IN)
4. RF CABLE, CG−3855/VRC (15 FT, 0 IN)
5. ELECTRICAL EQUIPMENT SHELF
6. MOUNTING PLATE
7. RF CABLE, CG−3855/VRC (18 FT, 0 IN)
8. TIEDOWN STRAP
9. LOOP CLAMP (3/4−13/64 in) MACHINE SCREW (NO. 10−32 x 5/8 in) LOCK WASHER (NO. 10)
10. MOUNTING BASE (LOWER)
11. SHELF BRACKET

Figure 5−7 (4). Cable Installation: RF Cabling (Dual AN/VRC−92 Only)

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
bk. Grommet hole for power cable (3).	Using dimension shown, drill 15/16 in diameter hole through cargo floor. See figure 5−7 (5).	Tools: Electric drill and 15/16 in drill bit.
bl. Power cable (3) connector P2.	Position on top of upper mounting base (1).	
bm. Power cable (3).	Route down through cable hole in electrical equipment shelf (8) and behind mounting plate (9) to cargo floor.	
bn. Power cable (3) terminal leads: T1 (red) and T2 (black).	Insert down through hole drilled in step bk.	
bo. Grommet (10).	Cut through on mark shown, figure 5−7 (5), detail A; then wrap around power cable (3) and install to hole drilled in step bk. See figure 5−7 (5).	Tools: Pocket knife.
bp. Existing grommet, retainer and mounting hardware.	Remove. Retain grommet and retainer. See figure 5−7 (6).	Existing mounting hardware not shown.
bq. Power cable (2) connector P2.	Position on top of lower mounting base (12). See figure 5−7 (5).	
br. Power cable (2).	Route behind mounting plate (9) to cargo floor.	
bs. Power cable (2) terminal leads: T1 (red) and T2 (black).	Insert down through existing grommet hole. Insert through existing grommet and retainer (retained in step bp). See figure 5−7 (6).	
bt. Power cables (5, 6) terminal leads: T1 (red) and T2 (black).	Connect and secure to power feed through stud and shunt.	Red (+) secures to power feed through stud. Black (−) secures to shunt.
bu. Existing grommet and retainer, two cap screws (1), two lock washers (3) and two nuts (2).	Install and secure to existing grommet hole.	Tools: 7/16 in socket and 7/16 in open/box wrench.
bv. Speaker cable (4) connector P2.	Connect and secure to upper mounting base (1) connector J3. See figure 5−7 (5).	
bw. Speaker cable (5) connector P2.	Connect and secure to upper mounting base (1) connector J4.	
bx. Speaker cables (4, 5).	Route down through cable hole in electrical equipment shelf (8) and behind mounting plate (9); then route across cargo floor to two curbside speakers (11).	

5.5 Installation of Cables. Continued



1. MOUNTING BASE (UPPER)
2. POWER CABLE, CX−13302/VRC (6 FT, 0 IN)
3. POWER CABLE, CX−13302/VRC (6 FT, 0 IN)
4. SPEAKER CABLE, CX−13292/VRC (8 FT, 0 IN)
5. SPEAKER CABLE, CX−13292/VRC (8 FT, 0 IN)
6. SPEAKER CABLE, CX−13292/VRC (8 FT, 0 IN)
7. SPEAKER CABLE, CX−13292/VRC (8 FT, 0 IN)
8. ELECTRICAL EQUIPMENT SHELF
9. MOUNTING PLATE
10. GROMMET
11. SPEAKER
12. MOUNTING BASE (LOWER)

Figure 5−7 (5). Cable Installation: Speaker and Power Cabling

5.5 Installation of Cables. Continued

ITEM	ACTION	REMARKS
by. Connector P1 of speaker cables (4, 5).	Connect and secure to connector J1 of two curbside speakers (11). See figure 5−7 (5).	
bz. Speaker cable (6) conn− ector P2.	Connect and secure to lower mounting base (12) connector J3.	
ca. Speaker cable (7) conn− ector P2.	Connect and secure to lower mounting base (12) connector J4.	
cb. Speaker cables (6, 7).	Route behind mounting plate (9) and along cargo floor to two roadside speakers (11).	
cc. Connector P1 of speaker cables (6, 7).	Connect and secure to connector J1 of two roadside speakers (11).	
cd. Power cable (3) connector P2.	Connect and secure to upper mounting base (1) connector J1.	
ce. Power cable (2) connector P2.	Connect and secure to lower mounting base (12) connector J1.	
cf. Adhesive−sealant.	Apply to and around all previously install− ed grommets and drilled holes.	
cg. Utility compartment cover.	Reinstall. See figure 5−7 (1).	

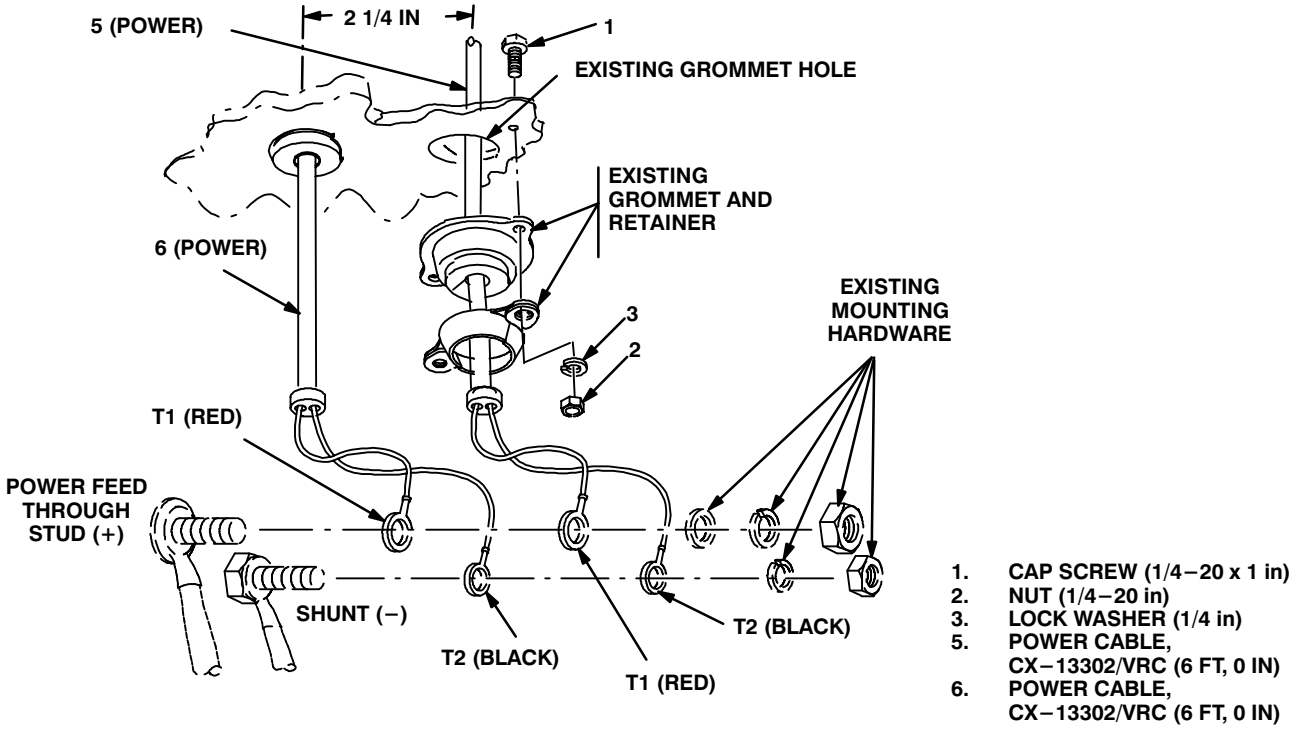
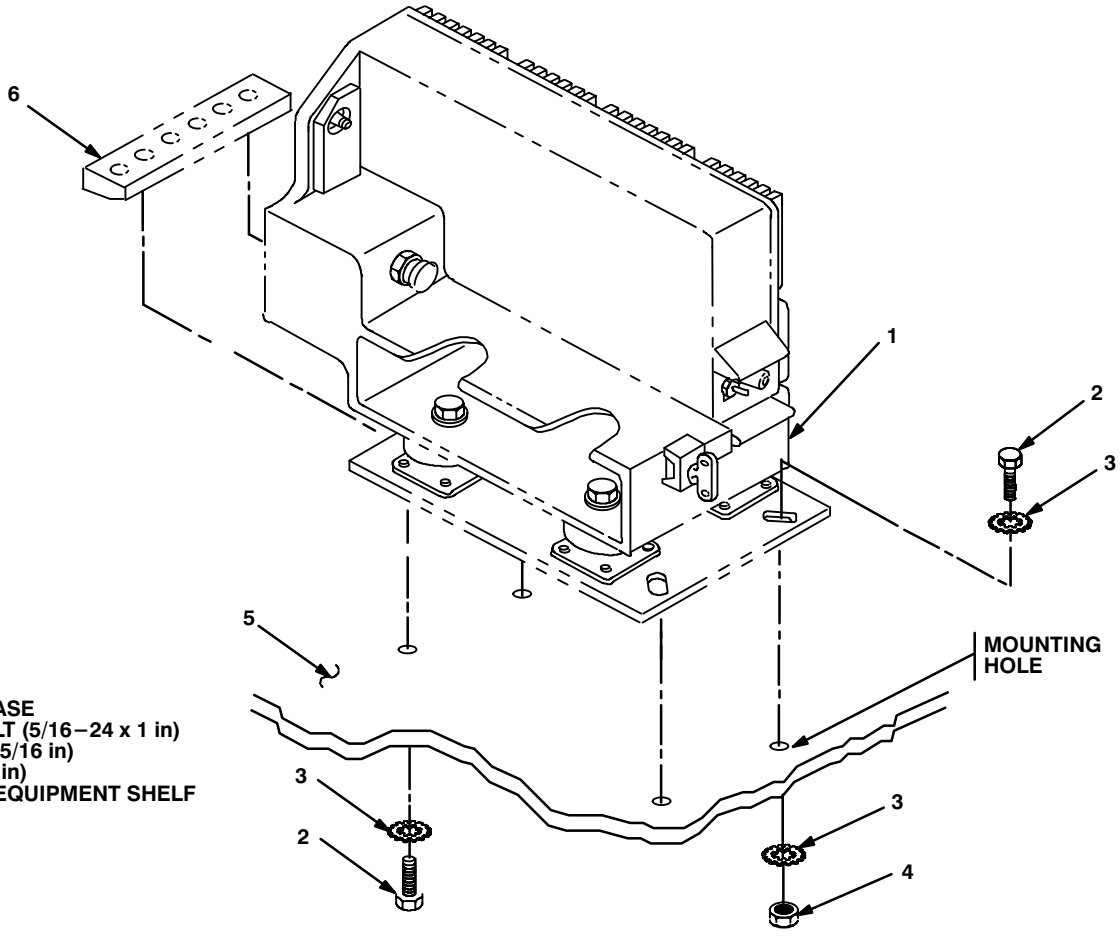


Figure 5−7 (6). Cable Installation: Power Cabling

5.6 Installation of Mounting Base, Electrical Equipment MT−6353/VRC. If Radio Set AN/VRC−92 Series is authorized, use the following instructions to install MT−6353/VRC mounting base in the location(s) shown in figure 5−1 (2). Refer to section 5.7 for connection of cables.

ITEM	ACTION	REMARKS
	NOTE Apply a thin coat of adhesive−sealant to both sides of each internal/external−toothed (IET) washer during installation, and to the area of contact where IET washer is to be placed. Before proceeding, connect and secure CX−13291/VRC control cable and CX−13303/VRC power cable to MT−6353/VRC mounting base. (Refer to Section 5.7, step b.)	
a. MT−6353/VRC mounting base (1) and electrical equipment shelf (5).	Remove a 2” square area of paint on the underside of the mounting base (1) around the front two mounting holes. Remove a 2” square area of paint on the electrical equipment shelf around the two front mounting holes in mounting base (1). Clean the paint removed areas and apply a thin coat of conductive anti−seize compound.	Tools: electric grinder or equivalent.



1. MOUNTING BASE
2. MACHINE BOLT (5/16−24 x 1 in)
3. IET WASHER (5/16 in)
4. NUT (5/16−24 in)
5. ELECTRICAL EQUIPMENT SHELF
6. NUT STRIP

Figure 5−8. MT−6353/VRC Mounting Base Installation

5.6 Installation of Installation of Mounting Base, Electrical Equipment MT−6353/VRC. Continued

ITEM	ACTION	REMARKS
b. MT−6353/VRC mounting base (1).	Place on electrical equipment shelf (5) over existing holes. See figure 5−8.	
c. MT−6353/VRC mounting base (1).	Align front holes and rear slots with matching hole pattern in electrical equipment shelf (5). See figure 5−8.	
d. Two machine bolts (2), two IET washers (3) and nut strip (6).	Install and secure to rear slots in MT−6353/VRC mounting base (1) and electrical equipment shelf (5).	Tools: 1/2 in socket.
e. Machine bolt (2), two IET washers (3) and nut (4).	Install and secure to left front hole in MT−6353/VRC mounting base and electrical equipment shelf (5).	Tools: 1/2 in socket and 1/2 in open/box wrench.
f. Loop clamp (5/8−5/16 in) machine bolt (2), two IET washers (3) and nut (4).	Wrap clamp around RF cables, figure 5−7 (3) and figure 5−7 (4); then install and secure to right front hole in middle MT−6353/VRC mounting base (1) and electrical equipment shelf (5), figure 5−8.	Tools: 1/2 in socket and 1/2 in open/box wrench. Loop clamp not shown in figure 5−9.

5.7 Post−Installation and Checkout. After equipment is installed and cables are connected, perform the following steps.

ITEM	ACTION	REMARKS
a. Equipment.	Check for secure mounting. Check for loose parts, connectors and mounting hardware.	
b. Cables.	Check for proper installation and connection of cables. See figure 5−9 for cable connections. Unused cables should be stowed in appropri−ate place inside the vehicle.	
c. Loop clamps.	Check that all have been properly installed and tightened.	
d. Protective covers.	Insure that all installed cables are covered when not in use or con−nected.	
e. Radio issued with vehicle.	Install and connect cables. See TM 11−5820−890−20−1 or TM 11−5820−890−20−2 for installation and Operational (OP) Check instructions.	
f. MK line replaceable units.	See TM 11−5820−890−20P for Repair Parts and Special Tools List (RPSTL) information.	

5.7 Post−Installation and Checkout. Continued

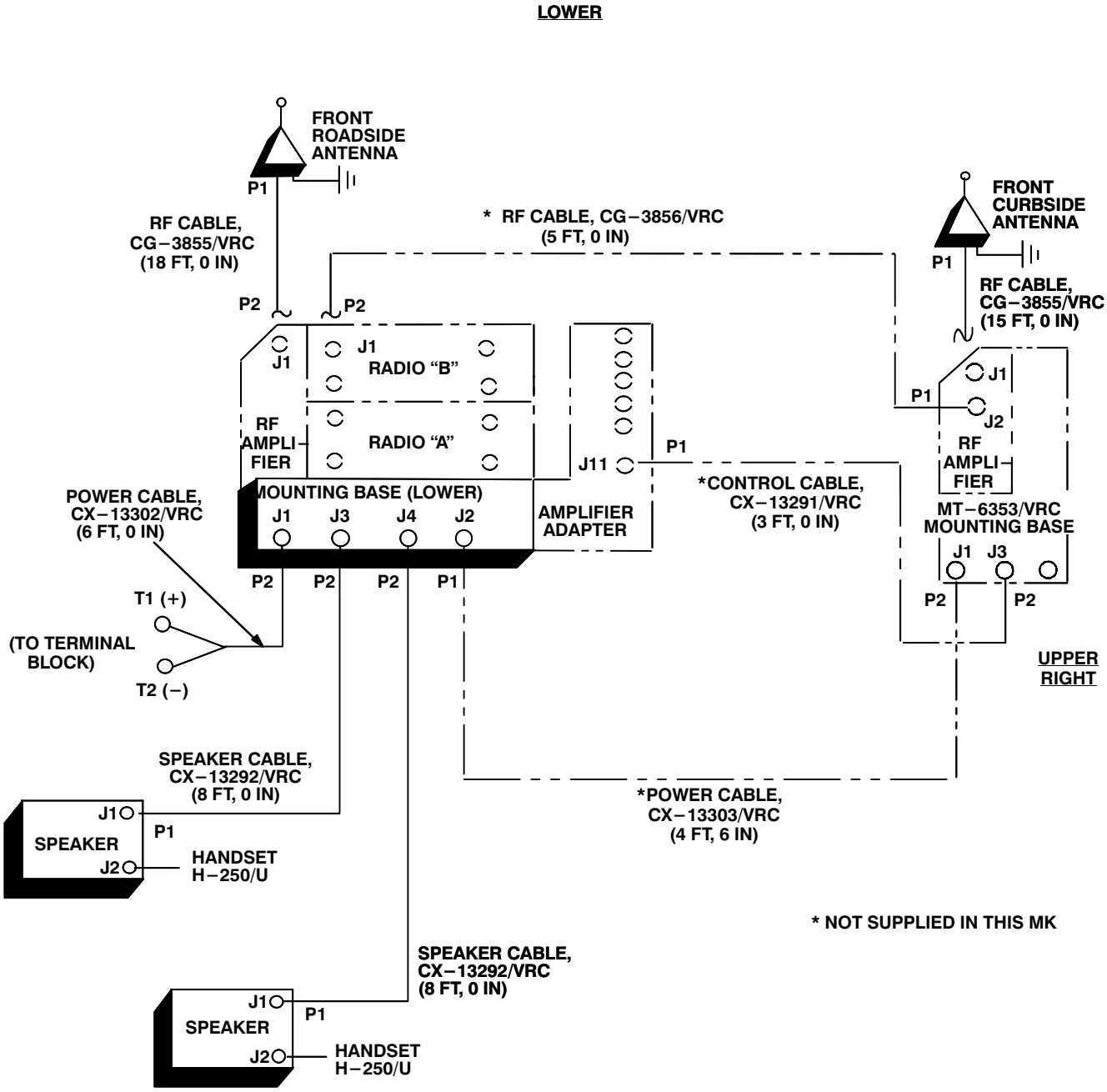


Figure 5−9. Typical Cable Diagram: For Dual AN/VRC−91/92 Series Radio Sets

5.7 Post−Installation and Checkout. Continued

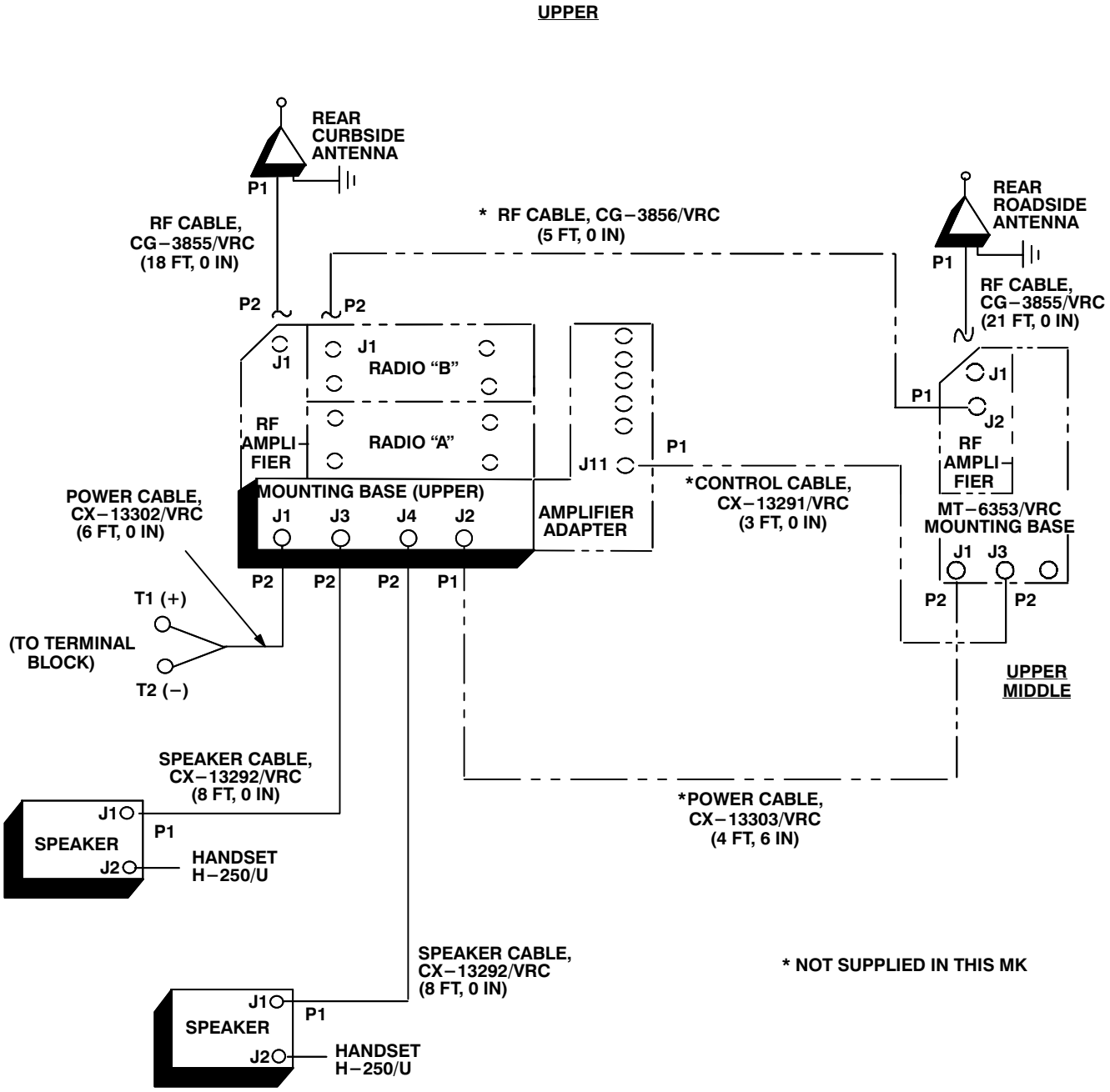


Figure 5−9. Typical Cable Diagram: For Dual AN/VRC−91/92 Series Radio Sets Continued

5.7 Post–Installation and Checkout. Continued

CABLE ASSEMBLY	FROM			TO		
	CABLE CONN.	UNIT	UNIT CONN.	CABLE CONN.	UNIT	UNIT CONN.
CX–13302/VRC (6 FT, 0 IN)	P2	Mounting base (upper)	J1	T1: Red (+) T2: Black (–)	Terminal block	(+) Stud (–) Shunt
CX–13302/VRC (6 FT, 0 IN)	P2	Mounting base (lower)	J1	T1: Red (+) T2: Black (–)	Terminal block	(+) Stud (–) Shunt
CG–3855/VRC (18 FT, 0 IN)	P1	Antenna base (front roadside)	J1	P2	RF amplifier (lower)	J1
CG–3855/VRC (15 FT, 0 IN)	P1	Antenna base (front curbside)	J1	P2	RF amplifier (upper right)	J1
CG–3855/VRC (21 FT, 0 IN)	P1	Antenna base (rear roadside)	J1	P2	RF amplifier (upper middle)	J1
CG–3855/VRC (18 FT, 0 IN)	P1	Antenna base (rear curbside)	J1	P2	RF amplifier (upper)	J1
CX–13292/VRC (8 FT, 0 IN)	P2	Mounting Base (upper)	J3	P1	Speaker	J1
CX–13292/VRC (8 FT, 0 IN)	P2	Mounting Base (upper)	J4	P1	Speaker	J1
CX–13292/VRC (8 FT, 0 IN)	P2	Mounting Base (lower)	J3	P1	Speaker	J1
CX–13292/VRC (8 FT, 0 IN)	P2	Mounting Base (lower)	J4	P1	Speaker	J1
*CX–13303/VRC (4 FT, 6 IN)	P1	Mounting base (lower)	J2	P2	MT–6353/VRC mounting base (upper right)	J1
*CX–13303/VRC (4 FT, 6 IN)	P1	Mounting base (upper)	J2	P2	MT–6353/VRC mounting base (upper middle)	J1
*CG–3856/VRC (5 FT, 0 IN)	P1	RF amplifier (upper right)	J2	P2	Radio “B” (lower)	J1
*CG–3856/VRC (5 FT, 0 IN)	P1	RF amplifier (upper middle)	J2	P2	Radio “B” (upper)	J1
*CX–13291/VRC (3 FT, 0 IN)	P2	MT–6353/VRC mounting base (upper middle)	J3	P1	Amplifier-adapter (lower)	J11
*CX–13291/VRC (3 FT, 0 IN)	P2	MT–6353/VRC mounting base (upper right)	J3	P1	Amplifier-adapter (upper)	J11

* Not supplied in this MK.

Figure 5–9. Typical Cable Diagram: For Dual AN/VRC–91/92 Series Radio Sets Continued

APPENDIX A

REFERENCES

AMDF	Army Master Data File (Microfiche)
AR 710−2	Supply Policy Below the Wholesale Level as Contained in Unit Supply UPDATE
AR 725−50	Requisitioning, Receipt and Issuing System in UPDATE
DA Pam 25−30	Consolidated Index of Army Publications (Microfiche)
DA Pam 710−2−1	Using Unit Supply System Manual Procedures as Contained in Unit Supply UPDATE
SB 11−131	Vehicular Radio Sets and Authorized Installations (SINCGARS)
TM 11−5820−890−10−1	Operator's Manual (ICOM Radio Sets)
TM 11−5820−890−10−3	Operator's Manual (Non−ICOM Radio Sets)
TM 11−5820−890−20−1	Unit Maintenance Manual (ICOM Radio Sets)
TM 11−5820−890−20−2	Unit Maintenance Manual (Non−ICOM Radio Sets)
TM 11−5820−890−20P	Repair Parts and Special Tools List

By Order of the Secretary of the Army:

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General, United States Army
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TM 11-5840-340-12	23 Jan 74	Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
2-25	2-28			Recommend that the installation antenna alignment procedure be changed throughout to specify a 20 IFF antenna lag rather than 10. REASON: Experience has shown that with only a 10 lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing stress to the drive train. Hunting is minimized by adjusting the lag to 20 without degradation of operation.
3-10	3-3		3-1	Item 5, Functional Description. Change □2 dB" to □3 dB". REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 dB (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, □Replace cover plate removed in step f above." REASON: To replace the cover plate.
		FO-3		Zone C 3. On J1-2, change □+24 VDC" to □+5 VDC". REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

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