
**TECHNICAL BULLETIN
INSTALLATION INSTRUCTIONS
FOR GATEWAY VEHICLE WITH SOFT TOP**

FOR SYSTEMS

**SINGLE CHANNEL GROUND AND AIRBORNE
RADIO SYSTEM (SINGARS)
AN/VRC-92F**

**FORCE XXI BATTLE COMMAND, BRIGADE-AND-BELOW (FBCB2)
AN/UYK-128 (V)4**

**PRECISION LIGHTWEIGHT GPS RECEIVER (PLGR)
AN/PSN-11**

**ENHANCED POSITION LOCATION REPORTING SYSTEM (EPLRS)
AN/VSQ-2 (V)**

**NEAR TERM DIGITAL RADIO (NTDR)
RT-1812**

**QUICK-ERECT ANTENNA MASTS (QEAM)
AB-1386/U**

SUPPLEMENTAL BATTERIES

FOR VEHICLES

**TRUCK, UTILITY, 2/4-DOOR: CARGO/TROOP CARRIER, 1-1/4 TON, 4X4,
M998 (2320-01-107-7155) (EIC: BBD); M998A1 (2320-01-371-9577) (EIC: BBN);**

**TRUCK, UTILITY, 2/4-DOOR: HEAVY VARIANT, 1-1/4 TON, 4X4,
M1097 (2320-01-346-9317) (EIC: BBM); M1097A1 (2320-01-371-9583) (EIC: BBU);
M1097A2 (2320-01-380-8604) (EIC: BB6).**

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HEADQUARTERS, DEPARTMENT OF THE ARMY

OCTOBER 2005

LIST OF EFFECTIVE PAGES

NOTE

A vertical line in the outer margins of the page indicates the portion of text affected by the change.

Dates of issue for original and change pages are:

Original 0 17 October 2005

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 112 PAGES.

Page No.	*Change No.
i-iii/iv (blank)	0
1-1-5-90	0

*Zero in this column indicates original page.

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AN/VRC-92F**

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M1097A2 (2320-01-380-8604) (EIC: BB6).**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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CHAPTER 1

INTRODUCTION

Section I. SCOPE

- 1-1.** This technical bulletin provides installation instructions for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) equipment. The C4ISR equipment shall be installed in the following vehicles:
- a. Truck, Utility, 2/4-Door: Cargo/Troop Carrier, 1-1/4 Ton, 4x4, M998, M998A1
 - b. Truck, Utility, 2/4-Door: Heavy Variant, 1-1/4 Ton, 4x4, M1097, M1097A1, M1097A2
- 1-2.** The information contained in this technical bulletin is the official authorization to perform the installation of the C4ISR equipment at the direct support maintenance level through contract maintenance teams.

Section II. NOTES

- 2-1.** This technical bulletin is not an authorization for requisition or turn-in of vehicles.
- 2-2.** This technical bulletin does not establish quantity or types of vehicles assigned to using units.

Section III. GENERAL INFORMATION

- 3-1.** Included in the C4ISR equipment are:
- a. Single Channel Ground and Airborne Radio System (SINCGARS), AN/VRC-88F, AN/VRC-89F, AN/VRC-90F, AN/VRC-91F, AN/VRC-92F.
 - b. Force XXI Battle Command, Brigade-and-Below (FBCB2), AN/UYK-128 (V)4
 - c. Precision Lightweight Global Positioning System Receiver (PLGR), AN/PSN-11
 - d. Enhanced Position Location Reporting System (EPLRS), AN/VSQ-2 (V)
 - e. Near Term Digital Radio (NTDR) RT-1812
 - f. Quick-Erect Antenna Mount (QEAM) AB-1386/U
 - g. Supplemental batteries
 - h. Additional terminal boards
- 3-2.** The C4ISR equipment becomes operable when all the components are installed in the vehicle and correct power is supplied.

Section IV. MAINTENANCE FORMS, RECORDS, AND REPORTS

Use the following to report any discrepancies:

- a. Reports of Maintenance and Unsatisfactory Equipment. See chapter 4, sections VI through VIII for information.
- b. Reports of Packaging and Handling Deficiencies. See chapter 4, sections VI through VIII for information.

Section V. 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 C4ISR equipment.

CHAPTER 2

PURPOSE OF INSTALLATION

The purpose of installing the C4ISR equipment is to provide the primary means of integrating command and control capability.

CHAPTER 3

COMPLETION TIME FOR INSTALLATION

A total of 20 man hours are required for two personnel to install the C4ISR equipment. Typical vehicle downtime is 12 hours.

CHAPTER 4 PREPARATION FOR INSTALLATION

Section I. PREPARATION OF VEHICLE

Ensure 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 the C4ISR equipment.

SECTION II. ITEMS TO BE REMOVED

- 2-1. Remove batteries. (Refer to TM 9-2320-280-20-2.)
- 2-2. Remove right-hand rear fixed door, as applicable. (Refer to TM 9-2320-280-20.)
- 2-3. Remove right-hand rear cab enclosure panel. (Refer to TM 9-2320-280-20.)
- 2-4. Remove center tunnel insulation, as applicable. (Refer to TM 9-2320-280-20.)
- 2-5. Remove cargo bulkhead. (Refer to TM 9-2320-280-20.)

Section III. LIST OF ITEMS TO BE RETAINED

- 3-1. Batteries.
- 3-2. Right-hand rear cab enclosure panel (if applicable).
- 3-3. Right-hand rear fixed door (if applicable).

Section IV. PREPARATION OF C4ISR EQUIPMENT

Unpack, inspect, and check inventory.

Section V. PRECAUTIONS DURING HANDLING

Observe the following precautions to prevent equipment damage.

- a. Keep dust covers in place on connectors.
- b. Do not disassemble or modify parts in the C4ISR equipment unless authorized to do so.
- c. Keep mounting hardware covered and protected until needed.

Section VI. UNPACK AND INSPECT EQUIPMENT

- 6-1. Unpack and inspect packaging for evidence of damage.
- 6-2. Report any shipping damage on SF 364 Report of Discrepancy (ROD), as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-64/MCO 4430.F.

Section VII. INVENTORY C4ISR EQUIPMENT

If any item is missing, fill out and forward Transportation Discrepancy Report (TDR) (SF 361), as described in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 450015.

Section VIII. EXAMINE EACH ITEM FOR DAMAGE

If any item is damaged, fill out and forward SF 364 Report of Discrepancy (ROD) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-64/MCO 4430.F. All damages should be reported as prescribed by DA PAM 738-750, as contained in the Maintenance Management Update.

Section IX. C4ISR EQUIPMENT, DISTRIBUTION, AND CONSUMABLES

- 9-1.** Use table 4-1 to identify and inventory C4ISR equipment installation parts supplied in kits.
- 9-2.** Use table 4-2 to identify and inventory C4ISR equipment installation parts not supplied in kits.

Section X. DISTRIBUTION AND ISSUE INSTRUCTIONS

- 10-1.** U.S. Forces: Do not requisition C4ISR equipment. They will be shipped automatically.
- 10-2.** U.S. Army Depots: Requisition C4ISR equipment through supply channels.
- 10-3.** Multiservice: Instructions shall be included for multiservice modifications.
- 10-4.** MAP/MAS countries: Instructions shall be provided for MAP/MAS countries.

Section XI. PARTS LIST

KITS REQUIRED FOR THIS INSTALLATION:

NOTE

- Not all material in kits is required for this installation. Material not used during installation will be returned to stock for disposition in accordance with AR 725-50.
- If maintenance is to be performed on a vehicle with an existing kit, do not order entire kit for necessary reinstallation.

SINGARS:

(A): MK-2327 (dual)

PLGR:

(B): 57K4400

EPLRS:

(C): No kits available

FBCB2:

(D): No kits available

NTDR:

(E): No kits available

QEAM:

(F): No kits available

SUPPLEMENTAL BATTERIES:

(G): No kits available

MATERIAL REQUIRED FROM KITS:*Table 4-1. Kit Parts List for Installation of C4ISR Equipment.*

ITEM NO.	NOMENCLATURE	PART NUMBER	NSN	KIT	QTY.
1.	Bracket, Antenna	A3014546-1	5340-01-391-2742	(A)	1
2.	Bracket, Antenna Mounting	A3018371-1	5340-01-392-2217	(A)	1
3.	Bracket, Antenna Mounting	A3018371-2	5340-01-425-8010	(A)	1
4.	Bracket, Base Reinforcement	A3018372-1	5340-01-392-2216	(A)	1
5.	Bracket, Base Reinforcement	A3018372-2	5340-01-425-5600	(A)	1
6.	Bracket, PLGR Mount	12480578	N/A	(B)	1
7.	Cable Assembly, Antenna	A3014031-17	5995-01-225-1660	(A)	1
8.	Cable Assembly, Radio Frequency	A3014031-8	5995-01-219-7035	(A)	1
9.	Clamp, Loop	MS21333-71	5340-00-057-2904	(A)	5
10.	Clamp, Loop	MS21333-75	5340-00-050-2740	(A)	2
11.	Clamp, Loop	MS21333-77	5340-00-922-6300	(A)	3
12.	Clamp, Loop	MS21333-96	5340-00-088-1255	(B)	2
13.	Fiber Rope Assembly, Single Leg	A3167672-1	4020-01-341-8795	(A)	2
14.	Gasket	A3013655-1	5330-01-205-2864	(A)	4
15.	Grommet, Nonmetallic	MS21266-4N	5325-00-923-9512	(A)	2
16.	Insert	12446871-2	5310-01-411-3422	(B)	3
17.	Loudspeaker	A3014065-1	5965-01-222-1420	(A)	2
18.	Mounting Base, Electrical Equipment	A3013367-1	5975-01-188-8873	(A)	1
19.	Nut	MS35650-302	5310-00-934-9751	(A)	2
20.	Nut	MS51967-2	5310-00-761-6882	(A)	22
21.	Nut	MS51968-5	5310-00-880-7746	(A)	2
22.	Nut	9419143	5310-01-148-0240	(B)	2
23.	Nut	9422771	5310-01-211-0691	(B)	1
24.	Plate, Mounting	A3014550-1	N/A	(A)	2
25.	Screw, Cap	MS35307-365	5305-00-847-1159	(A)	4
26.	Screw, Cap	MS90726-36	5305-00-225-9091	(A)	6
27.	Screw, Cap	B1821BH025C100N	5305-00-225-3843	(B)	3
28.	Screw, Cap	B1821BH025C125N	5305-00-068-0509	(B)	2
29.	Screw, Machine	MS35206-265	5305-00-984-6212	(B)	4
30.	Screw, Machine	MS35206-263	5305-00-984-6210	(B)	4
31.	Screw, Self- Tapping	9421073	5305-01-162-8512	(B)	6
32.	Strap, Tiedown	MS3367-1-0	5975-00-984-6582	(B)	2
33.	Washer	MS27183-10	5310-00-809-4058	(A)	16
34.	Washer	MS27183-12	5310-00-081-4219	(A)	9
35.	Washer	MS27183-18	5310-00-809-5998	(A)	2
36.	Washer	2436161	5310-01-102-3270	(B)	6
37.	Washer, Lock	MS35338-43	5310-00-045-3296	(A)	20
38.	Washer, Lock	MS35338-44	5310-00-582-5965	(A), (B)	37

MATERIAL REQUIRED FROM KITS (Contd):

Table 4-1. Kit Parts List for Installation of C4ISR Equipment (Contd).

ITEM NO.	NOMENCLATURE	PART NUMBER	NSN	KIT	QTY.
39.	Washer, Lock	MS35338-46	5310-00-637-9541	(A)	6
40.	Washer, Lock	MS45904-68	5310-00-889-2528	(A)	14
41.	Washer, Lock	MS45904-72	5310-00-889-2527	(A)	38
42.	Washer, Lock	MS45904-76	5310-00-061-1258	(A)	30
43.	Washer, Lock	MS35338-45	5310-00-407-9566	(A)	4
44.	Wellnut	12339397-3	5310-01-231-7455	(B)	1
45.	Wellnut	12339397-6	5310-01-388-6205	(B)	1

MATERIAL REQUIRED BUT NOT INCLUDED IN KITS:*Table 4-2. Non-Kit Parts List for Installation of CAISR Equipment.*

ITEM NO.	NOMENCLATURE	PART NUMBER	NSN	QTY.
1.	Antenna	A3005031	5820-01-183-9462	2
2.	Antenna AS-3900/VRC	A3017889-2	5985-01-308-8988	2
3.	Antenna, Element (lower)	A3018230-1	5985-01-201-1498	2
4.	Antenna, Element (upper)	A3017901-2	5985-01-306-4622	2
5.	Antenna, PLGR	AT575-030	5985-01-375-4660	1
6.	Assembly, Display Lock	872843-01	N/A	1
7.	Backing Plate	03A0101D	N/A	2
8.	Backing Plate	03A0102D	N/A	2
9.	Bar, Aluminum Flat	03A016D-2	N/A	1
10.	Battery Support Plate	03A0103D	N/A	2
11.	Battery Support Plate	03A0103D-1	N/A	1
12.	Bolt	MS35751-18	5306-00-108-9988	4
13.	Brace, Multi-Net Rack LH	A3046244	5340-01-262-9558	1
14.	Brace, Multi-Net Rack RH	A3046242	5342-01-262-9561	1
15.	Bracket, PLGR	986-0645-001	5975-01-375-1302	1
16.	Bracket, Radio Rack Mounting	A3046235	5340-01-262-9563	2
17.	Bracket, User Readout (URO)	A3006206-2	5340-01-386-7841	3
18.	Cable Assembly, Antenna, EPLRS	SM-C-911480	5995-01-167-1269	2
19.	Cable Assembly, Antenna, PLGR	426-0141-050	6150-01-375-8662	1
20.	Cable Assembly, Loudspeaker	A3014038-3	5995-01-219-4704	2
21.	Cable Assembly, Power	A3014039-2	5995-01-219-1843	2
22.	Cable Assembly, Power	A3279383-3	5995-01-453-9171	3
23.	Cable Assembly, Power, Electrical	A3154857-1	5995-01-438-7822	1
24.	Cable Assembly, Power, EPLRS	A3004939	5995-01-198-0538	2
25.	Cable Assembly, Power, PLGR	9728558-10	6150-01-375-8661	1
26.	Cable Assembly, Radio Frequency	A3014032-3	5995-01-219-7025	1
27.	Cable Assembly, Radio Frequency	A3014031-8	5995-01-219-7035	1
28.	Cable Assembly, Special Purpose	A3210672-1	5995-01-444-7933	1
29.	Cable, Large Control	03A0112D	N/A	1
30.	Charge Control Box	A3265665	6350-01-523-7612	1
31.	Charger	03A0113D	N/A	1
32.	Clamp, Loop	MS21333-65	5340-00-905-0790	12
33.	Clamp, Loop	MS21333-69	5340-00-764-7051	7
34.	Clamp, Loop	MS21333-77	5340-00-922-6300	6
35.	Clamp, Loop	MS21333-102	5340-00-984-8540	4
36.	Clamp Subassembly	04A0010D	N/A	4
37.	CPU (Central Processing Unit)	881292-1	7021-01-474-3793	1
38.	Decal	861868-2	N/A	1
39.	Display	881293-1	7025-01-475-0229	1
40.	Duo-Charge	371234	N/A	1

MATERIAL REQUIRED BUT NOT INCLUDED IN KITS (Contd):*Table 4-2. Non-Kit Parts List for Installation of C4ISR Equipment (Contd).*

ITEM NO.	NOMENCLATURE	PART NUMBER	NSN	QTY.
41.	Folding Step	2797AZN	N/A	2
42.	Gasket	A3013655-1	5330-01-205-2864	1
43.	Grommet, Nonmetallic	12338098	5325-01-308-5424	2
44.	Grommet, Nonmetallic	MS21266-1N	5325-00-960-2410	A/R
45.	Grommet, Nonmetallic	MS21266-6N	5325-00-783-4753	A/R
46.	Grommet, Nonmetallic	12341628	N/A	1
47.	Grommet, Nonmetallic	MS35489-143	5325-00-292-7558	2
48.	Guard, Amp	872842-1	5935-01-487-2172	1
49.	Insert	12446871	5325-01-475-9697	6
50.	Insert	12446871-2	5310-01-411-3422	15
51.	Integrated Rack	A3276903	N/A	1
52.	Isolation Kit, CPU	872826-2	5340-01-481-5741	1
53.	Isolation Kit, Display	872870-1	5340-01-481-5757	1
54.	J-Bolt	03A0103D-3	N/A	2
55.	Lanyard	8925T5-7X19	4010-01-497-2675	1
56.	Mount, Ramball	RAM-D-111U	5975-01-485-3615	1
57.	Mount, Resilient	MT-6146/VSQ-1	5340-01-167-8297	3
58.	Mounting Base, Electrical Equipment	A3014053-1	5975-01-235-1962	1
59.	Mounting Frame	A3265612	N/A	1
60.	Mounting Tray	8174934G1	N/A	1
61.	Nut	9418892	5310-01-157-9819	14
62.	Nut	13218E0320-293	5310-00-913-8881	8
63.	Nut	MS35649-2252	5310-00-997-1888	3
64.	Nut	MS35649-2382	5310-00-056-3395	2
65.	Nut	9417954	5310-00-931-8167	4
66.	Nut	9419143	5310-01-148-0240	5
67.	Nut	MS51967-5	5310-00-880-7744	18
68.	Nut	MS51967-6	5310-00-931-8167	4
69.	Nut	MS35650-302	5310-00-934-9751	16
70.	Nut, Self-Locking	MS17829-5C	5310-00-245-3424	4
71.	Nut, Self-Locking	MS17829-4C	5310-00-483-8792	6
72.	Nut, Self-Locking	MS51922-33	5310-00-225-6993	5
73.	Nut, Self-Locking	MS51943-33	5310-00-814-0673	4
74.	Nut Strip	A3014064-1	N/A	1
75.	Plate, Antenna	A3157646	9515-01-374-7166	1
76.	Plate, Antenna	A3157619	9515-01-374-7165	1
77.	Plate, Antenna	A3104004-1	N/A	1
78.	Plate, Antenna	A3104004-2	N/A	1
79.	Plate, Mounting	A3210617-1	N/A	1
80.	Plate, Mounting EPLRS	A3046204	5340-01-237-8094	1

MATERIAL REQUIRED BUT NOT INCLUDED IN KITS (Contd):*Table 4-2. Non-Kit Parts List for Installation of C4ISR Equipment (Contd).*

ITEM NO.	NOMENCLATURE	PART NUMBER	NSN	QTY.
81.	Plate, Placement	A3046203	5365-01-237-8104	1
82.	Power Entry Box	03A0108D	N/A	1
83.	Rack, QEAM	PKMM 000-006	N/A	1
84.	Rivet, Blind	AB4-5A	5320-00-052-1972	15
85.	RTV	12346193	6850-01-159-4844	A/R
86.	Rubber Sheet	03A016D-2	N/A	1
87.	Screw, Cap	B1821BH044C150N	5305-00-071-2055	2
88.	Screw, Cap	B1821BH044C125N	5305-00-071-1788	4
89.	Screw, Cap	B1821BH038C150N	5305-00-725-2317	8
90.	Screw, Cap,	B1821BH038C175N	5305-00-821-3869	4
91.	Screw, Cap	B1821BH038C225N	5305-00-658-8920	2
92.	Screw, Cap	B1821BH025C075N	5305-00-068-0508	8
93.	Screw, Cap	B1821BH025C150N	5305-00-071-2509	6
94.	Screw, Cap	B1821BH031C100N	5306-00-226-4827	8
95.	Screw, Cap	B1821BH031C113N	5306-00-226-4828	4
96.	Screw, Cap	B1821BH031C125N	5306-00-226-4829	4
97.	Screw, Cap	B1821BH031F075N	5306-00-050-1238	14
98.	Screw, Cap	B1821BH031F100N	5305-00-051-4076	4
99.	Screw, Cap	B1821BH031F125N	5305-00-051-4078	22
100.	Screw, Cap	B1821BH038F100N	5305-00-269-3236	6
101.	Screw, Cap	B1821BH038F125N	5305-00-269-3238	6
102.	Screw, Cap	B1821BH050C400N	5305-00-071-2079	3
103.	Screw, Cap	B1821BH050C450N	5305-00-071-2081	2
104.	Screw, Cap	B1821BH025C100N	5305-00-225-3843	50
105.	Screw, Cap	B1821BH025C125N	5305-00-068-0509	21
106.	Screw, Cap	MS90726-36	5305-00-225-9091	10
107.	Screw, Machine	160035	5305-00-016-0035	1
108.	Screw, Machine	MS35207-265	5305-00-993-1848	10
109.	Screw, Machine	MS35190-291	5305-00-958-5247	2
110.	Screw, Self-Tapping	9421073	5305-01-162-8512	20
111.	Screw, Self-Tapping	9426241	5305-01-206-7219	1
112.	Shelf, Electrical Equipment	A3046236	5975-01-262-9575	2
113.	Shunt	84-2016-01	N/A	1
114.	Spacer	A3046313	5820-01-237-8096	4
115.	Spacer	92510A318	N/A	12
116.	Spacer	10705AL315C	5365-01-487-3145	4
117.	Strap, Tiedown	MS3367-1-0	5975-00-984-6582	A/R
118.	Terminal Cover	MS18029-1L-16	N/A	1
119.	Terminal Lug	MS20659-108	5940-00-115-2674	1
120.	Terminal Lug	MS20659-129	5940-00-114-1314	2

MATERIAL REQUIRED BUT NOT INCLUDED IN KITS (Contd):

Table 4-2. Non-Kit Parts List for Installation of C4ISR Equipment (Contd).

ITEM NO.	NOMENCLATURE	PART NUMBER	NSN	QTY.
121.	Terminal Lug	MS20659-141	5940-00-113-9825	4
122.	Tubing, Shrink	MS23053/4-302-0	5970-01-161-6796	A/R
123.	Washer	2436163	5310-01-412-4013	18
124.	Washer	9414920	5310-01-476-8589	2
125.	Washer	9417373	5310-01-361-1163	1
126.	Washer	MS27183-18	5310-00-809-5998	1
127.	Washer	12338095	5310-01-208-7576	3
128.	Washer	MS27183-3	5310-00-951-4679	3
129.	Washer	MS27183-8	5310-00-809-8546	28
130.	Washer	MS27183-14	5310-00-080-6004	4
131.	Washer	2436162	5310-01-119-1024	4
132.	Washer	MS27183-12	5310-00-081-4219	5
133.	Washer	2436161	5310-01-102-3270	67
134.	Washer	MS27183-10	5310-00-809-4058	8
135.	Washer, Lock	120382	5310-00-774-7293	6
136.	Washer, Lock	MS45904-84	5310-00-935-8984	5
137.	Washer, Lock	MS35338-43	5310-00-045-3296	8
138.	Washer, Lock	MS35338-44	5310-00-582-5965	56
139.	Washer, Lock	MS45904-72	5310-00-889-2527	24
140.	Wingnut	MS51553-420	5310-01-384-2546	4
141.	Wire, Braided	AA59569F30T0375	6145-00-191-8402	A/R
142.	Wire, Lock	MS20995C32	9505-00-293-4208	A/R

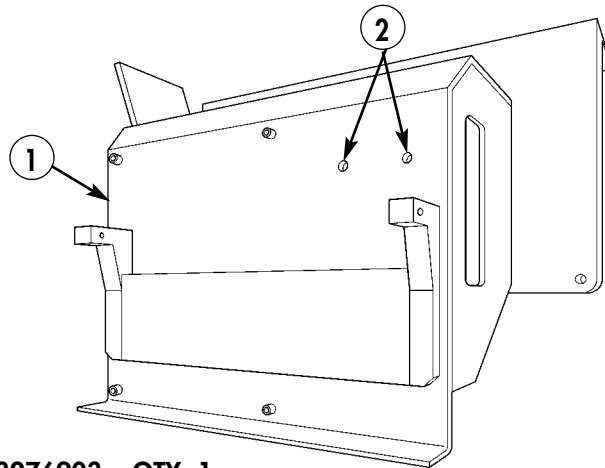
CHAPTER 5 INSTALLATION PROCEDURES

Section I. SCOPE

This chapter provides instructions for installation of C4ISR items in the vehicle. When installing C4ISR equipment, be sure to read and follow instructions and illustrations carefully.

Section II. INTEGRATED RACK INSTALLATION

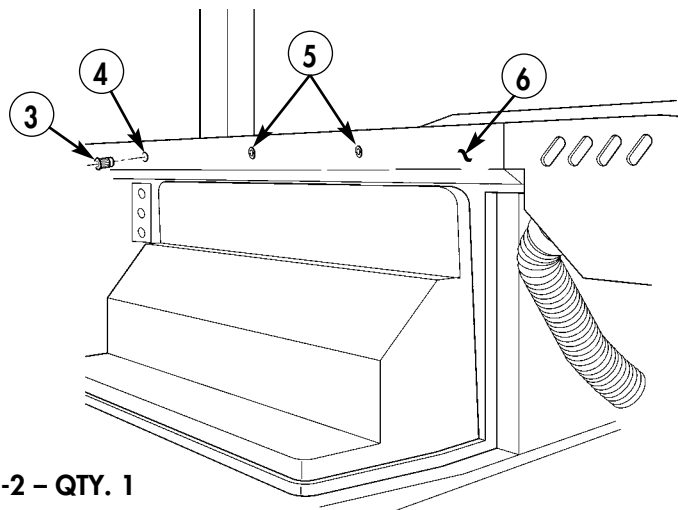
- 2-1.** Remove two inserts (2) from bottom of integrated rack (1).



- 1. INTEGRATED RACK – A3276903 – QTY. 1**

Figure 5-1.

- 2-2.** Using integrated rack (1) as template, locate, mark, and drill three 0.390-in. diameter holes (4) in dash (6).
- 2-3.** Remove paint from vicinity of holes (4) and two existing inserts (5).
- 2-4.** Install insert (3) and inserts (5) in holes (4).
- 2-5.** Apply anti-seize compound to vicinity of inserts (3) and (5) as required.



- 3. INSERT – 12446871-2 – QTY. 1**

Figure 5-2.

- 2-6. Remove paint from vicinity of three mounting slots (9) on integrated rack (1).
- 2-7. Apply anti-seize compound to vicinity of three mounting slots (8) and hole (7) on integrated rack (1) as required.

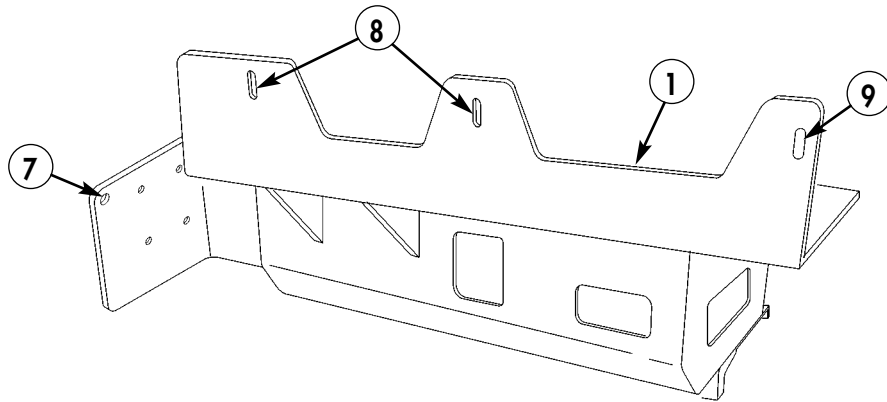
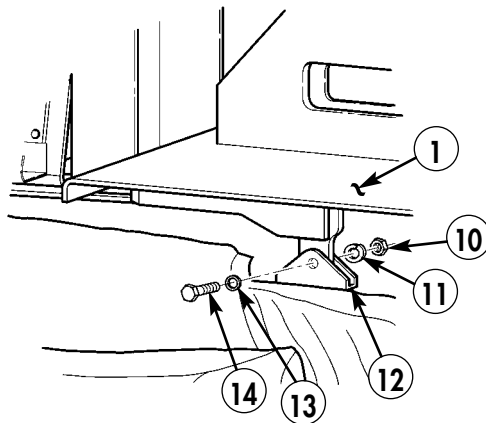


Figure 5-3.

NOTE

Do not install mounting hardware on top of integrated rack at this time. Not installing this hardware leaves the integrated rack free to pivot to assist in routing of cabling. Secure rack only after all cabling has been routed.

- 2-8. Mount integrated rack (1) to existing radio rack mount (12) using capscrew (14), washer (13), lockwasher (11), and nut (10). Repeat for opposite side. Do not tighten screws.



- 10. NUT – MS35649-2382 – QTY. 2
- 11. LOCKWASHER – MS35338-46 – QTY. 2
- 13. WASHER – 2436163 – QTY. 2
- 14. CAPSCREW – B1821BH038C225N – QTY. 2

Figure 5-4.

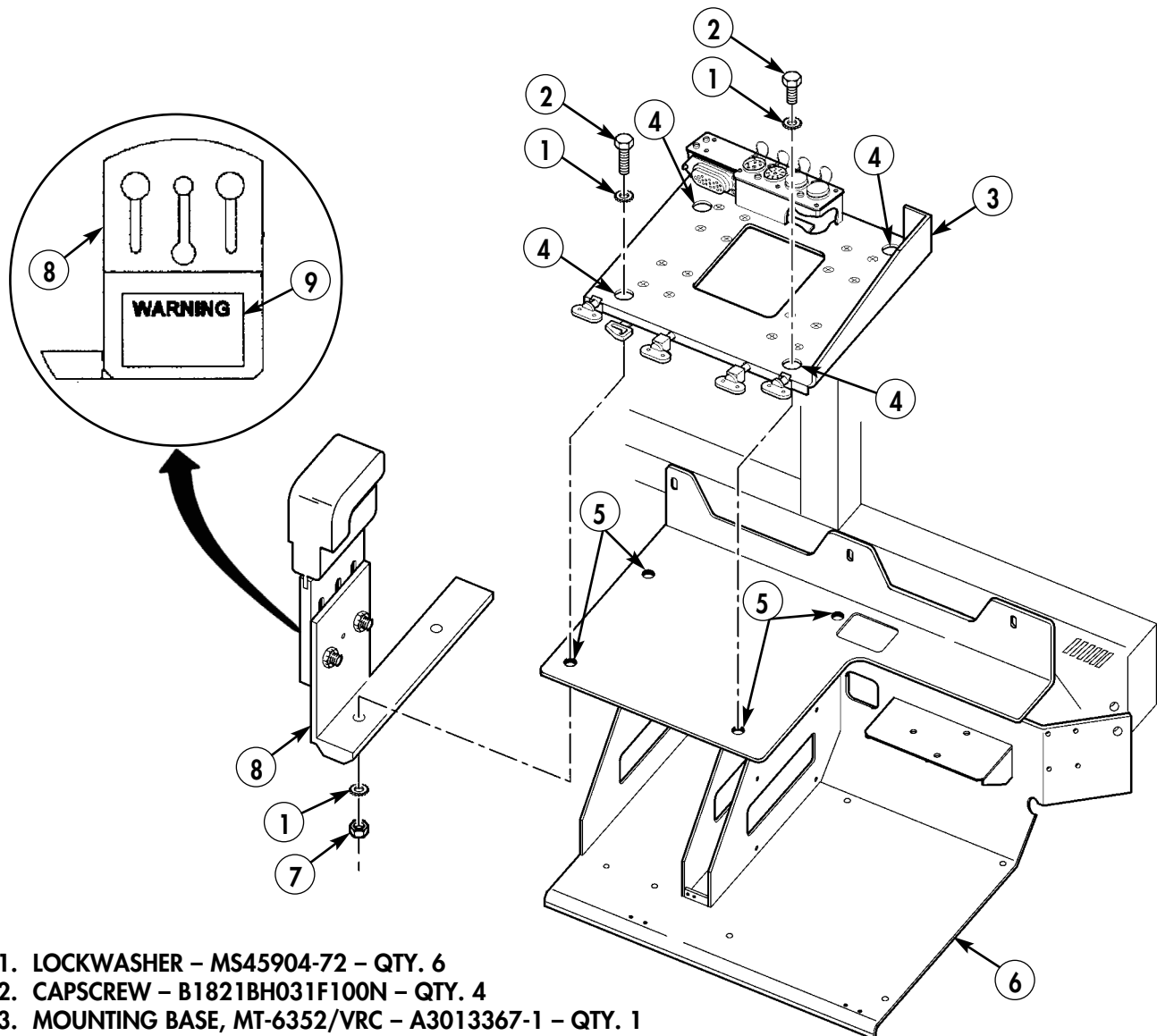
Section III. INSTALLATION OF SINGARS MOUNTING TRAY AND AMP GUARD

- 3-1. Remove paint from vicinity of four mounting holes (5) on integrated rack (6) and vicinity of four mounting holes (4) on bottom of mounting base (3).
- 3-2. Apply anti-seize compound to vicinity of four mounting holes (5) on integrated rack and four mounting holes (4) on bottom of mounting base as required.

NOTE

Two lockwashers and one nut are used on left-side screws only to accommodate amp guard. One lockwasher per screw is used on right side.

- 3-3. Install MT-6352/VRC mounting base (3) and amp guard (8) on integrated rack (6) with two capscrews (2), four lockwashers (1), and two nuts (7). Secure MT-6352/VRC mounting base (3) on integrated rack (6) with two capscrews (2) and two lockwashers (1).
- 3-4. Place warning decal (9) on amp guard (8).

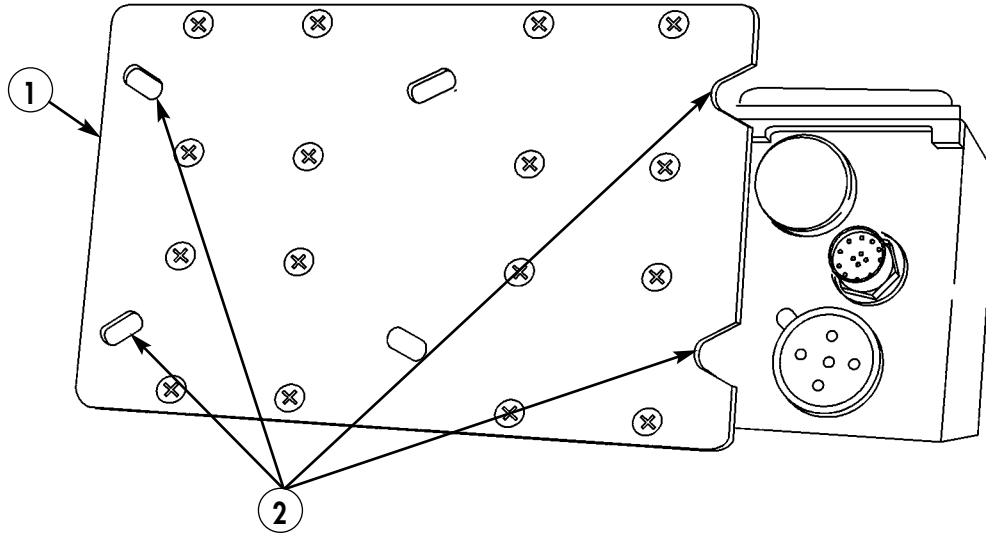


1. LOCKWASHER - MS45904-72 - QTY. 6
2. CAPSCREW - B1821BH031F100N - QTY. 4
3. MOUNTING BASE, MT-6352/VRC - A3013367-1 - QTY. 1
7. NUT - MS51968-5 - QTY. 2
8. AMP GUARD - 872842-1 - QTY. 1
9. DECAL - 861868-2 - QTY. 1

Figure 5-5.

SECTION IV. POWER AMPLIFIER INSTALLATION

- 4-1. Remove paint from vicinity of four mounting areas (2) on MT-6353/VRC mounting base (1) and apply anti-seize compound as required.



1. MOUNTING BASE, MT-6353/VRC - A3014053-1 - QTY. 1

Figure 5-6.

- 4-2. Remove paint from vicinity of four mounting holes (4) on integrated rack (3) and apply anti-seize compound as required.

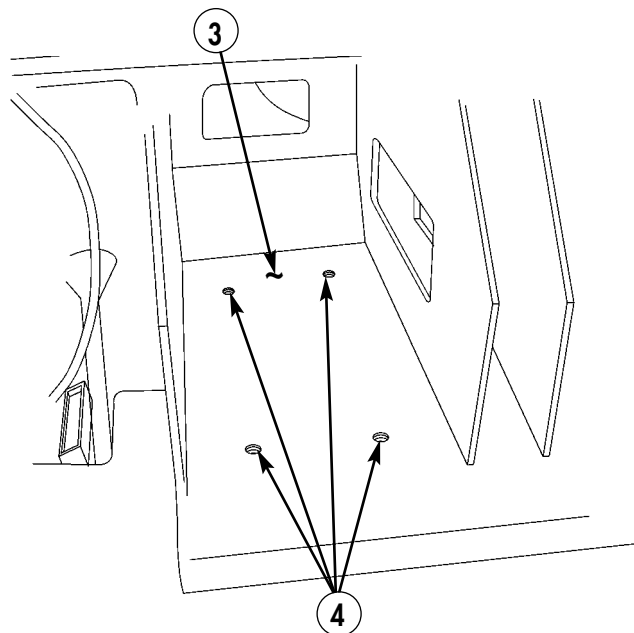
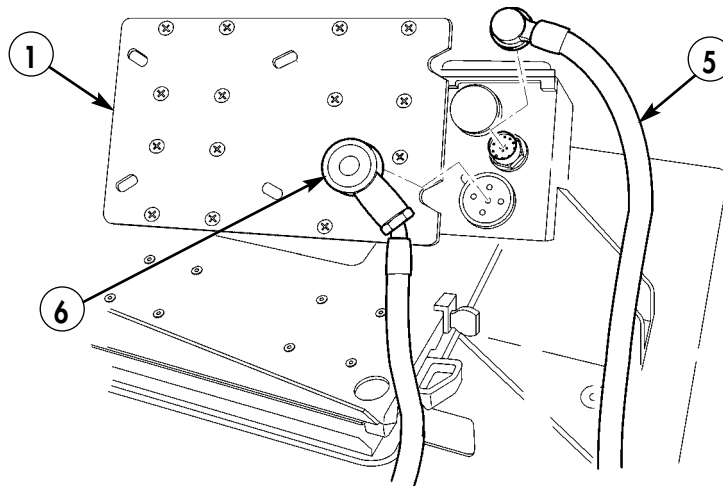


Figure 5-7.

- 4-3. Attach control cable (5) to MT-6353/VRC mounting base (1).
- 4-4. Attach power cable (6) to MT-6353/VRC mounting base (1).
- 4-5. Route cables (5) and (6) through hole in back of integrated rack (3).



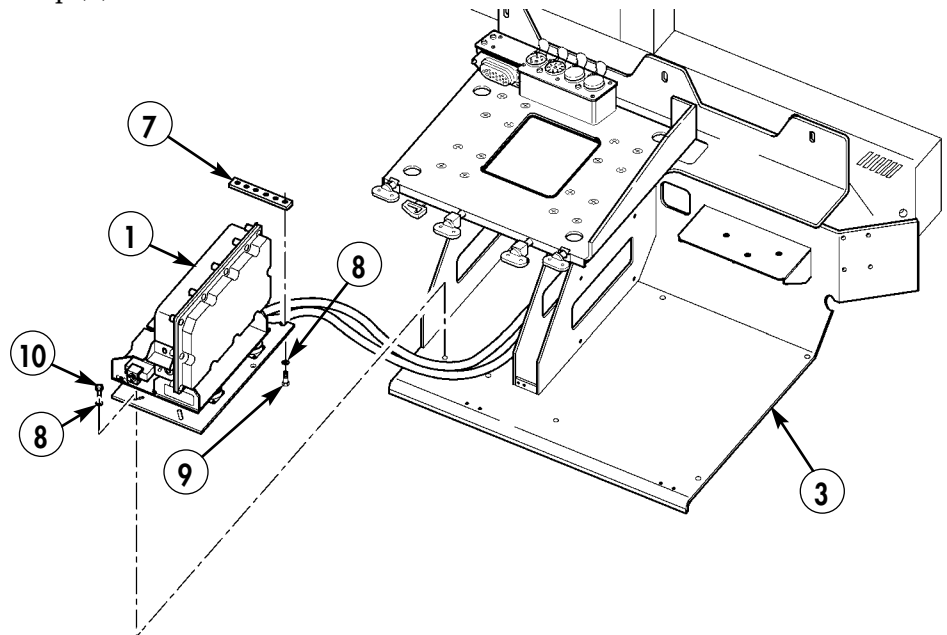
- 5. CONTROL CABLE – A3210672-1 – QTY. 1
- 6. POWER CABLE – A3154857-1 – QTY. 1

Figure 5-8.

NOTE

Ensure control cable and power cable are routed through hole in back of integrated rack before installing MT-6353/VRC mounting base.

- 4-6. Attach MT-6353/VRC mounting base (1) to integrated rack (3) with four capscrews (9) and (10), four lockwashers (8), and nut strip (7).

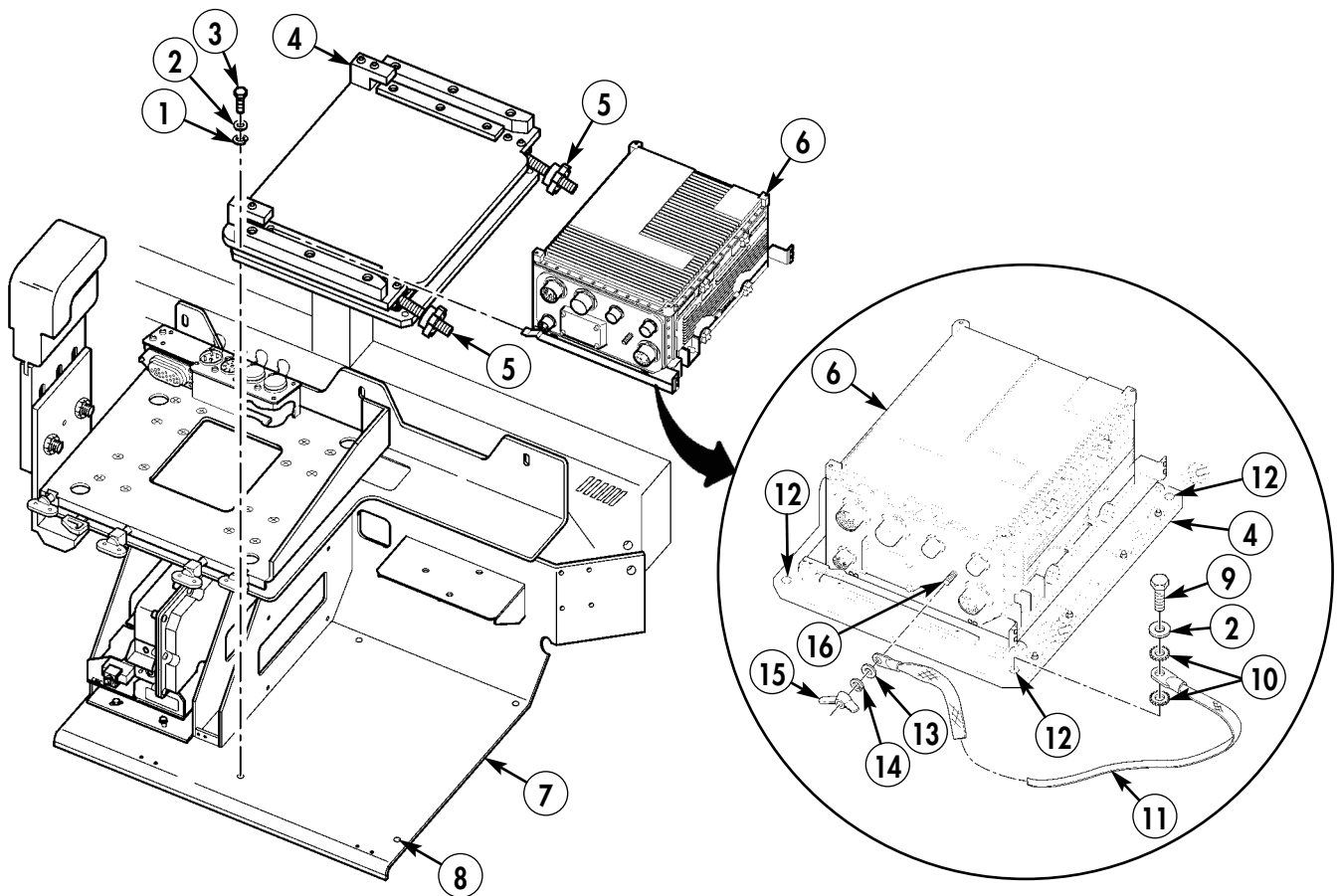


- 7. NUT STRIP – A3014064-1 – QTY. 1
- 8. LOCKWASHER – MS45904-72 – QTY. 4
- 9. CAPSCREW – B1821BH031F125N – QTY. 2
- 10. CAPSCREW – B1821BH031F075N – QTY. 2

Figure 5-9.

Section V. FBCB2 COMPONENTS INSTALLATION

- 5-1. Remove paint from vicinity of hole (8) on integrated rack (7) and on both sides from vicinity of corresponding hole (12) on CPU isolation kit (4). Apply anti-seize compound as required.
- 5-2. Install CPU isolation kit (4) on integrated rack (7) with three capscrews (3), washers (2), and lockwashers (1), leaving open holes (8) and (12).
- 5-3. Install CPU (6) on CPU isolation kit (4) with two existing fastener guards (5).
- 5-4. Fabricate ground strap (11) from 8.00-in. length of braided wire and two terminal lugs.
- 5-5. Install ground strap (11) on CPU ground stud (16) with existing washer (13), lockwasher (14), and wingnut (15).
- 5-6. Install ground strap (11) on CPU isolation kit (4) and integrated rack (7), with capscrew (9), washer (2), and two lockwashers (10).



1. LOCKWASHER – MS35338-44 – QTY. 3
2. WASHER – 2436161 – QTY. 4
3. CAPSCREW – B1821BH025C100N – QTY. 3
4. CPU ISOLATION KIT – 872826-2 – QTY. 1
6. CPU – 881292-1 – QTY. 1
9. CAPSCREW – B1821BH025C125N – QTY. 1
10. LOCKWASHER – MS45904-68 – QTY. 2
11. CPU GROUND STRAP
 - BRAIDED WIRE – AA59569F30T0375 – QTY. A/R
 - TERMINAL LUG – MS20659-141 – QTY. 2

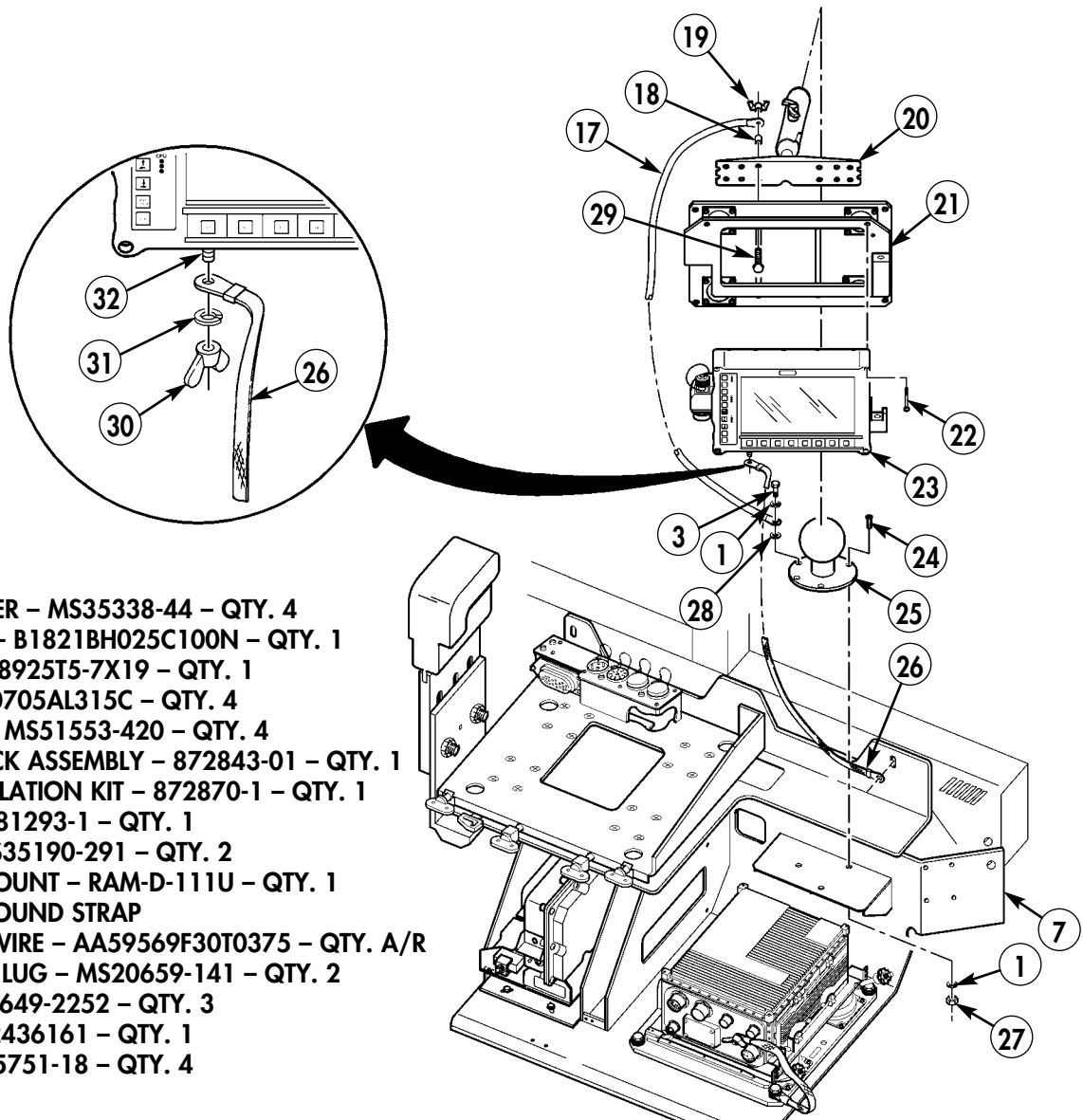
Figure 5-10.

- 5-7. Install ramball mount (25) on integrated rack (7) with two screws (24), screw (3), lockwasher (1), lanyard (17), washer (28), three lockwashers (1), and nuts (27).
- 5-8. Install display isolation kit (21) on display lock assembly (20) with four bolts (29), spacers (18), lanyard (17), and four wingnuts (19).
- 5-9. Install display unit (23) on display isolation kit (21) with four screws (22).
- 5-10. Install display lock assembly (20) on ramball mount (25).
- 5-11. Fabricate display ground strap (26) from 8-in. length of braided wire and two terminal lugs.

NOTE

Remove paint from vicinity of integrated rack mounting hole before performing step 5-12. Apply anti-seize compound as required.
Ground strap will be installed on integrated rack only when integrated rack is fully secured in vehicle.

- 5-12. Install display ground strap (26) on display ground stud (32) with existing lockwasher (31) and wingnut (30).



1. LOCKWASHER – MS35338-44 – QTY. 4
3. CAPSCREW – B1821BH025C100N – QTY. 1
17. LANYARD – 8925T5-7X19 – QTY. 1
18. SPACER – 10705AL315C – QTY. 4
19. WINGNUT – MS51553-420 – QTY. 4
20. DISPLAY LOCK ASSEMBLY – 872843-01 – QTY. 1
21. DISPLAY ISOLATION KIT – 872870-1 – QTY. 1
23. DISPLAY – 881293-1 – QTY. 1
24. SCREW – MS35190-291 – QTY. 2
25. RAMBALL MOUNT – RAM-D-111U – QTY. 1
26. DISPLAY GROUND STRAP
 - BRAIDED WIRE – AA59569F30T0375 – QTY. A/R
 - TERMINAL LUG – MS20659-141 – QTY. 2
27. NUT – MS35649-2252 – QTY. 3
28. WASHER – 2436161 – QTY. 1
29. BOLT – MS35751-18 – QTY. 4

Figure 5-11.

Section VI. LOUDSPEAKER AND MULTI-NET RACK INSTALLATION

NOTE

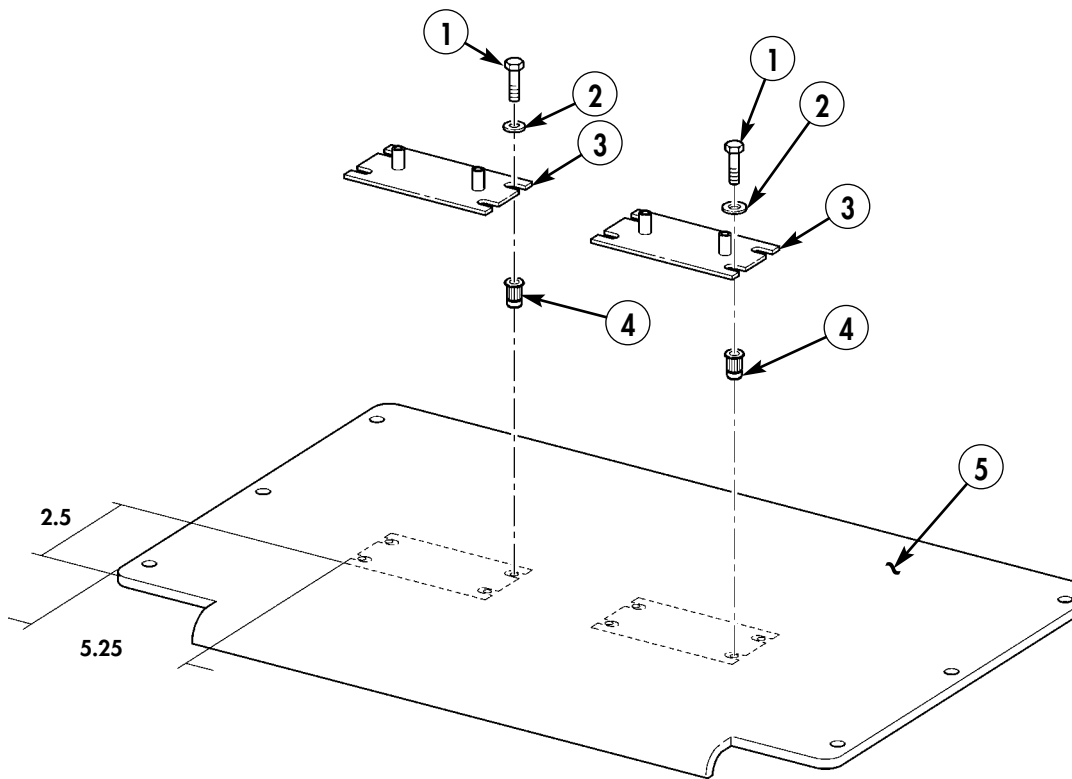
Remove paint from vicinity of all mounting holes.

- 6-1.** Using two speaker mounting plates (3) as templates, locate, mark, and drill eight 0.390-in. diameter holes in lower shelf (5).

NOTE

To ensure proper fit, keep mounting holes near outside edge of speaker mounting plate holes.

- 6-2.** Install eight inserts (4) in lower shelf (5).
6-3. Install two speaker mounting plates (3) on lower shelf (5) with eight capscrews (1), and eight lockwashers (2).

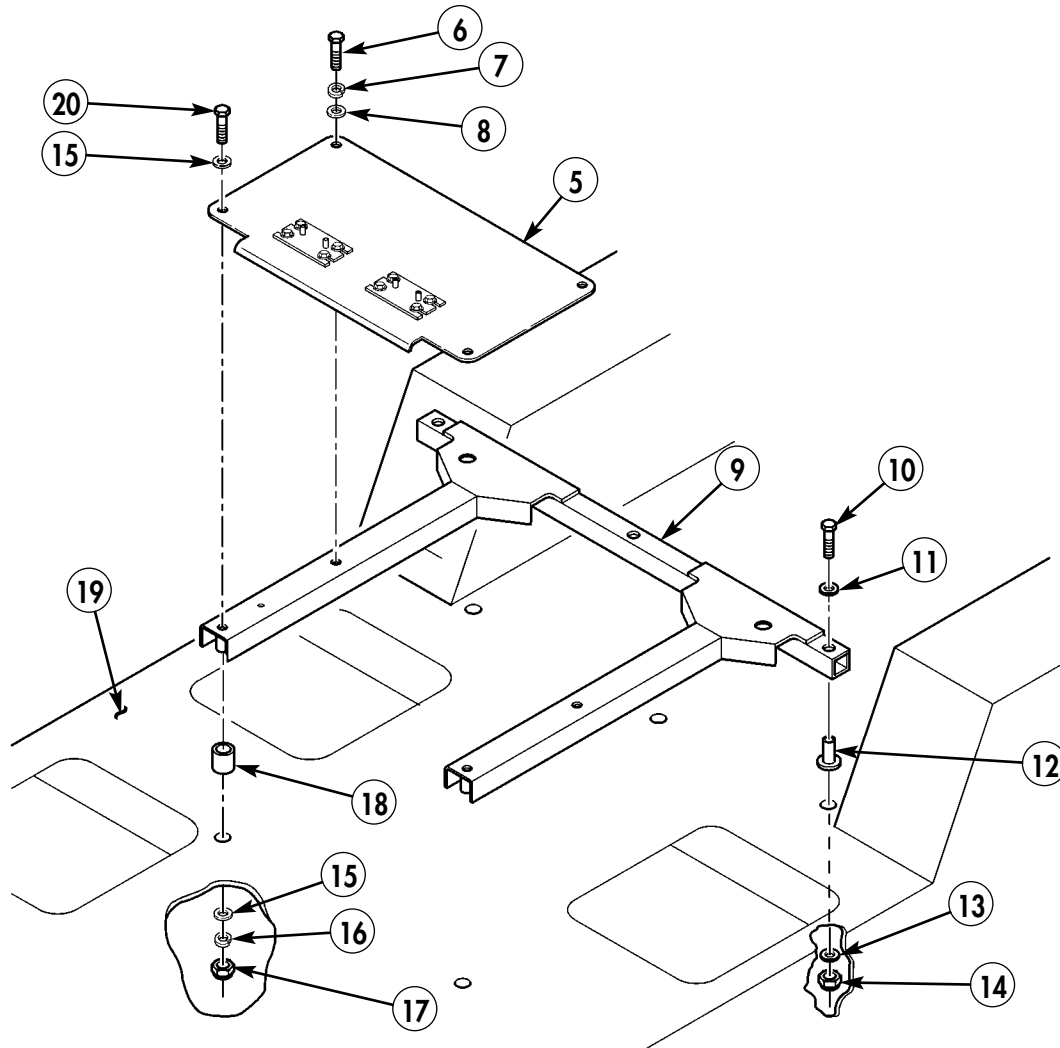


1. CAPSCREW – B1821BH025C125N – QTY. 8
2. LOCKWASHER – MS35338-44 – QTY. 8
3. MOUNTING PLATE – A3014550-1 – QTY. 2
4. INSERT – 12446871-2 – QTY. 8
5. MOUNTING PLATE – A3210617-1 – QTY. 1

Figure 5-12.

NOTE

- Use existing holes of D-rings to mount frame and shelf. Older model trucks have existing strux nuts. If installing multi-net rack on a newer model vehicle, use locknuts.
 - Any missing strux nuts must be replaced by locknuts.
- 6-4.** Install lower shelf (5) and frame (9) on cargo bed (19) with two capscrews (20), four washers (15), two spacers (18), two lockwashers (16), and nuts (17).
- 6-5.** Install lower shelf (5) on frame (9) with two capscrews (6), lockwashers (7), and washers (8).
- 6-6.** Install frame (9) on cargo bed (19) with three capscrews (10), three lockwashers (11), spacers (12), three washers (13), and locknuts (14) if necessary.

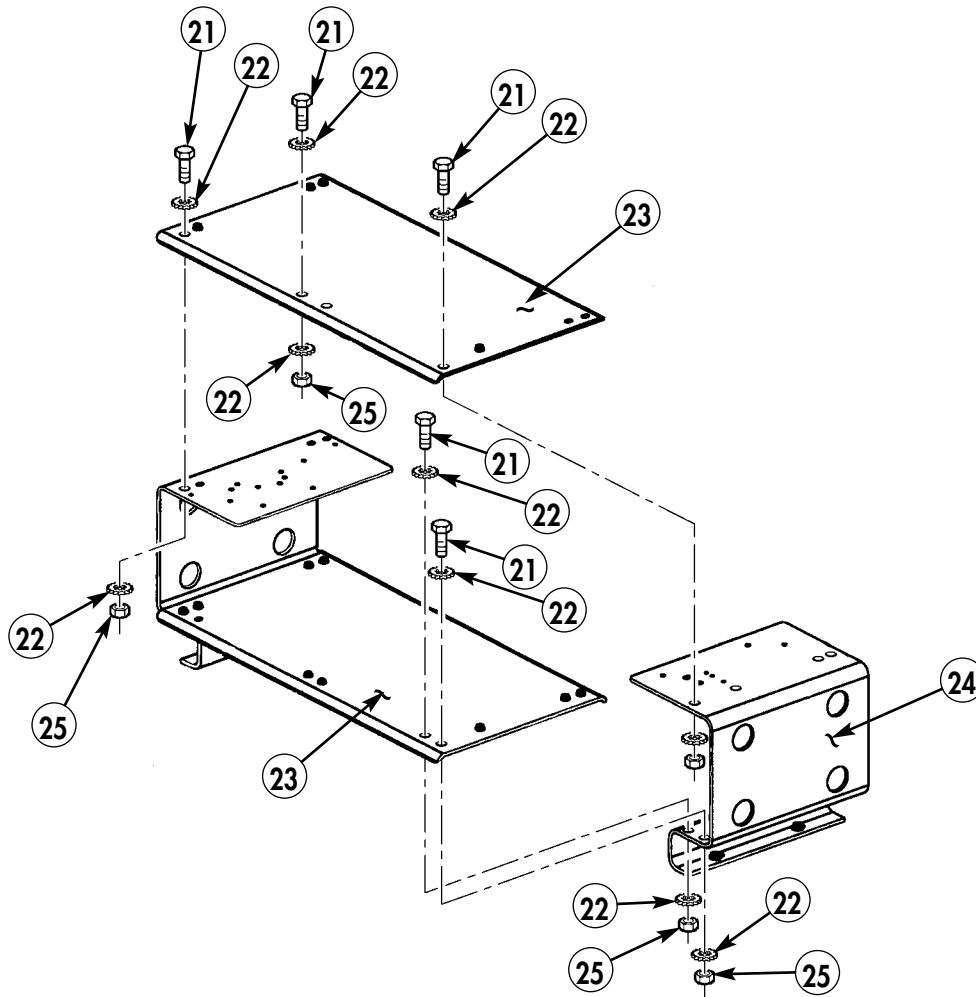


6. CAPSCREW – B1821BH038F100N – QTY. 2
 7. LOCKWASHER – MS45904-76 – QTY. 2
 8. WASHER – MS21783-14 – QTY. 2
 9. FRAME – A3265612 – QTY. 1
 10. CAPSCREW – B1821BH050C400N – QTY. 3
 11. LOCKWASHER – MS45904-84 – QTY. 5
 12. SPACER – PART OF A3265612 – QTY. 3

13. WASHER – MS27183-18 – QTY. 3
 14. LOCKNUT – MS51922-33 – QTY. 3
 15. WASHER – 2436161 – QTY. 4
 16. LOCKWASHER – MS35338-44 – QTY. 2
 17. LOCKNUT – MS51922-33 – QTY. 2
 18. SPACER – PART OF A3265612 – QTY. 2
 20. CAPSCREW – B1821BH050C450N – QTY. 2

Figure 5-13.

- 6-7. Attach side racks (24) to bottom shelf (23) with eight screws (21), sixteen lockwashers (22), and eight nuts (25).
- 6-8. Position top shelf (23) on side racks (24) and secure with eight screws (21), sixteen lockwashers (22), and eight nuts (25).



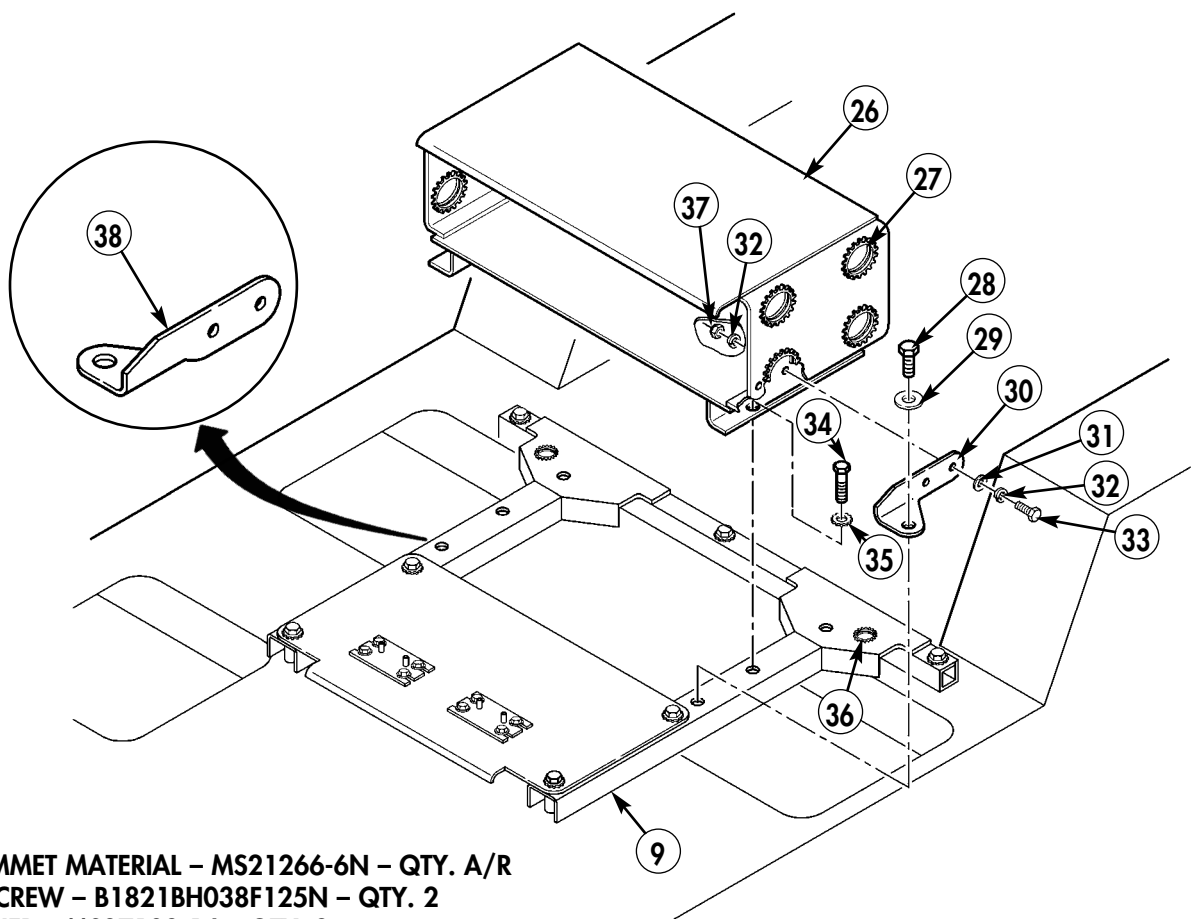
- 21. SCREW – MS90726-36 – QTY. 16
- 22. LOCKWASHER – MS45904-72 – QTY. 34
- 23. SHELF, ELECTRICAL – A3046236 – QTY. 2
- 24. BRACKET, RADIO RACK – A3046235 – QTY. 2
- 25. NUT – MS51967-5 – QTY. 16

Figure 5-14.

NOTE

- Remove paint from vicinity of all mounting holes. Apply anti-seize compound as required.
- Left-side brace A3046244 shown. Repeat procedure for right-side brace A3046242.

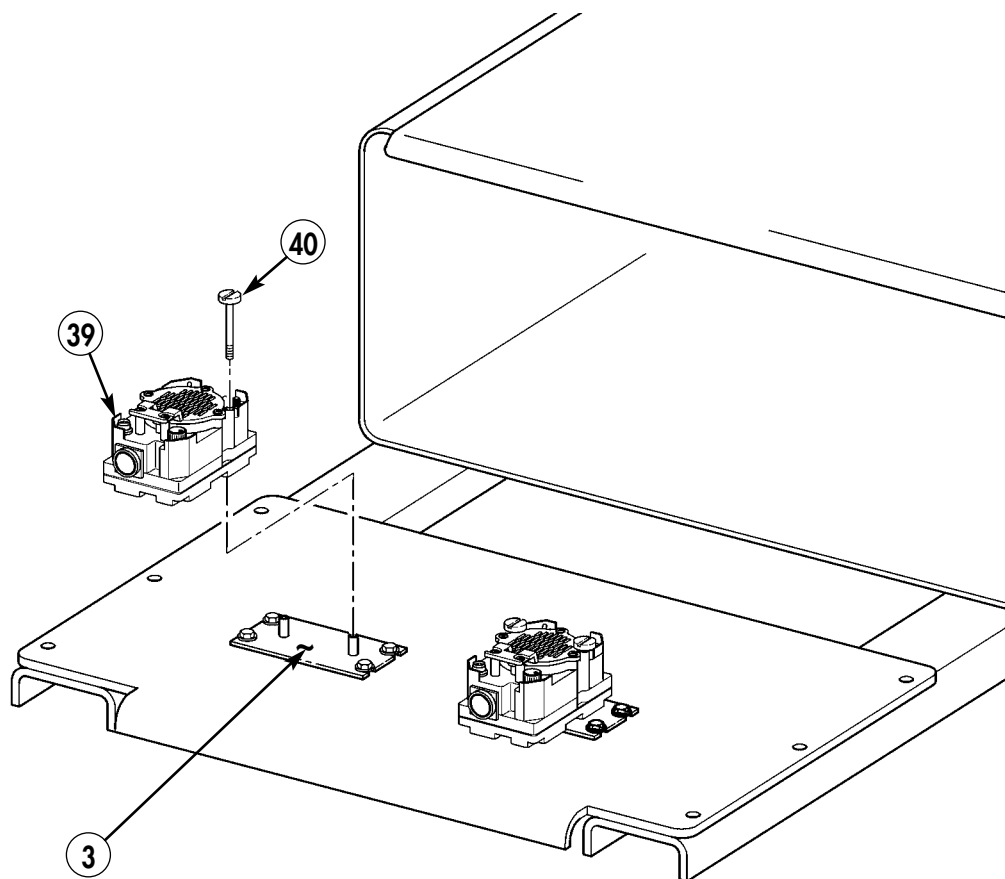
- 6-9.** Install multi-net bracket (30) to assembled multi-net rack (26) with two capscrews (33), lockwashers (32), washers (31), lockwashers (32), and nuts (37). Repeat for right side.
- 6-10.** Install assembled multi-net rack (26) and multi-net braces (30) and (38) to frame (9) with capscrew (28) and washer (29).
- 6-11.** Install assembled multi-net rack (26) to frame (9) with capscrew (34) and lockwasher (35).
- 6-12.** Install grommet material (27) in eight holes of multi-net rack (26).
- 6-13.** Install grommet material (36) in two holes of frame (9).



27. GROMMET MATERIAL - MS21266-6N - QTY. A/R
 28. CAPSCREW - B1821BH038F125N - QTY. 2
 29. WASHER - MS27183-14 - QTY. 2
 30. BRACE - A3046242 - QTY. 1
 31. WASHER - 2436162 - QTY. 4
 32. LOCKWASHER - MS35338-45 - QTY. 4
 33. CAPSCREW - B1821BH031C113N - QTY. 4
 34. CAPSCREW - B1821BH038F125N - QTY. 4
 35. LOCKWASHER - MS45904-76 - QTY. 4
 36. GROMMET MATERIAL - MS21266-4N - QTY. A/R
 37. NUT - MS51943-33 - QTY. 4
 38. BRACE - A3046244 - QTY. 1

Figure 5-15.

- 6-14.** Install four loudspeakers (39) on speaker mounting plate (3) with eight existing externally relieved body screws (40).



39. LOUDSPEAKER – A3014065-1 – QTY. 2

40. EXTERNALLY-RELIEVED BODY SCREW – P/O A3014065-1 – QTY. 4

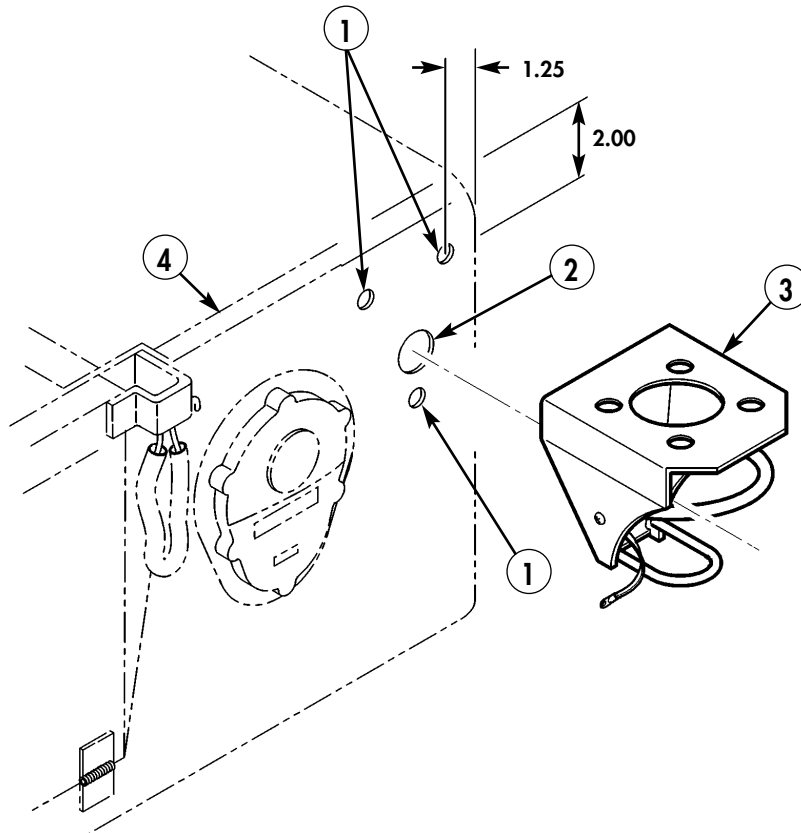
Figure 5-16.

Section VII. SINGARS ANTENNA INSTALLATION

NOTE

This procedure applies to vehicles without existing antennas, and to either left or right side of vehicle.

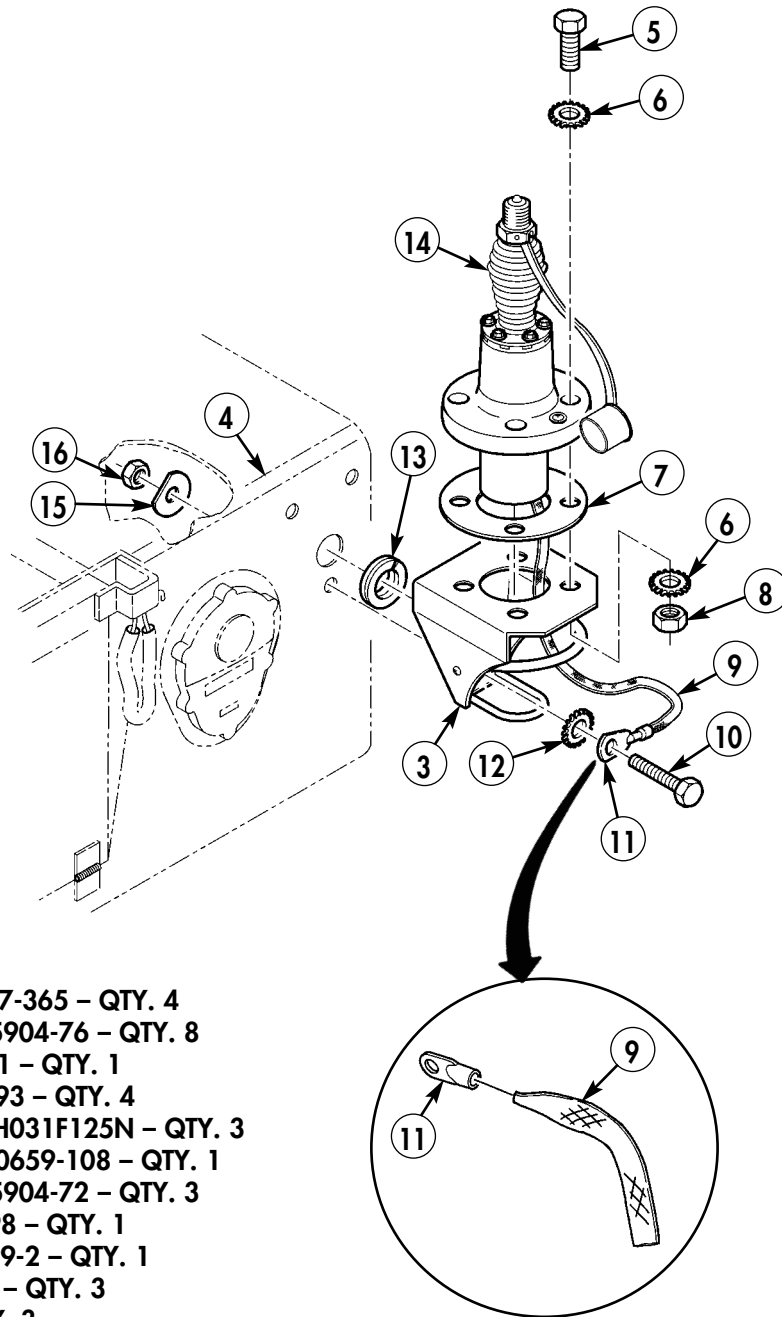
- 7-1. Using antenna bracket (3) as template, locate, mark, and drill 1.375-in. diameter hole (2) in rear wall (4).
- 7-2. Locate, mark, and drill three 0.343-in. diameter holes (1) in rear wall (4).
- 7-3. Remove paint from vicinity of three holes (1) and three holes in antenna bracket (3).
- 7-4. Apply anti-seize compound to vicinity of three holes (1) and rear of antenna bracket (3).



3. ANTENNA MOUNTING BRACKET - A3014546-1 - QTY. 1

Figure 5-17.

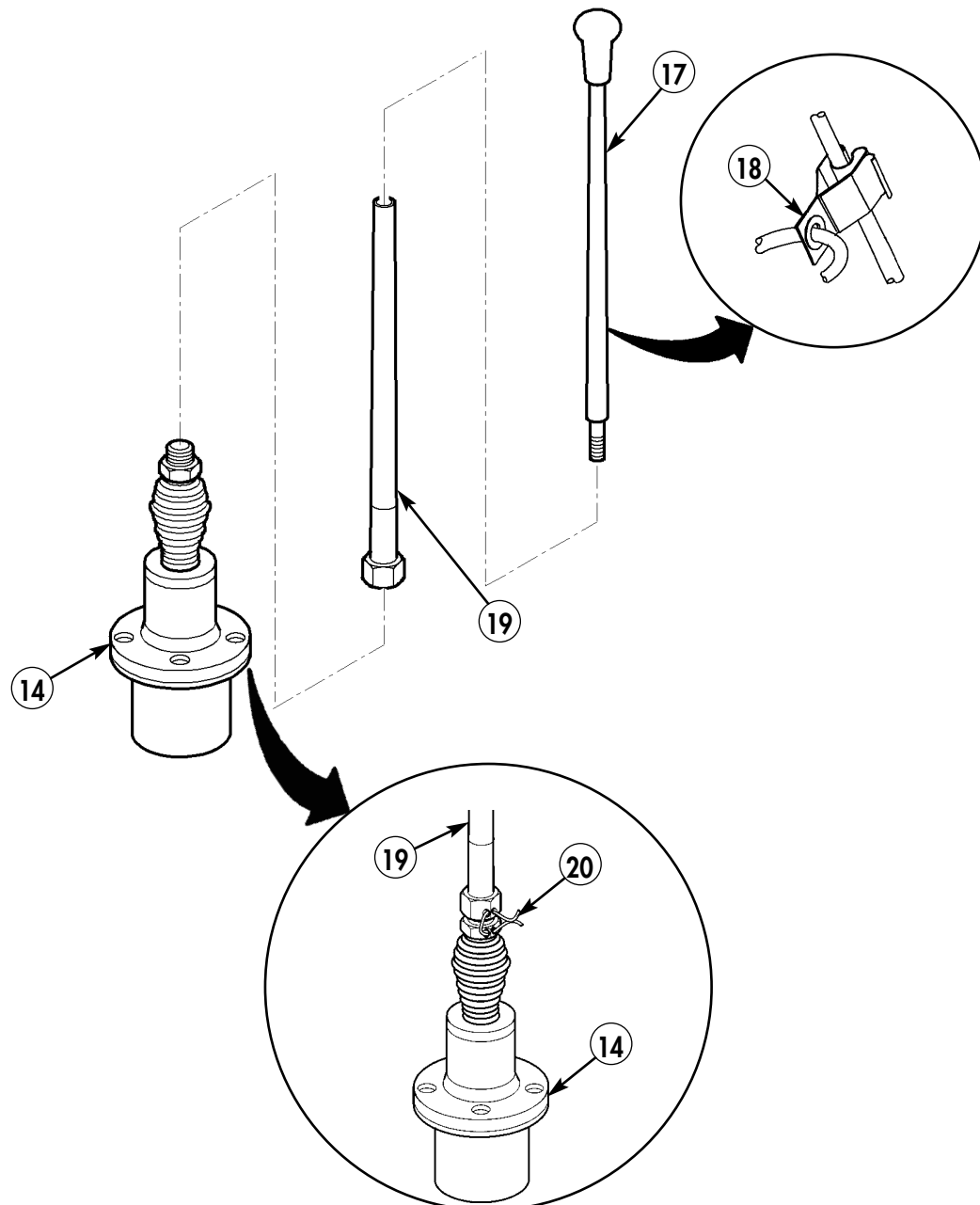
- 7-5. Install grommet (13) in hole of rear wall (4).
- 7-6. Position antenna (14) and gasket (7) on antenna bracket (3) and route existing ground strap (9) through antenna bracket (3).
- 7-7. Install antenna (14) on antenna bracket (3) with four capscrews (5), eight lockwashers (6), and four nuts (8).
- 7-8. Install antenna bracket (3) on rear wall (4) with two capscrews (10), lockwashers (12), washers (15), and nuts (16).
- 7-9. Remove old terminal lug, and install new terminal lug (11) on ground strap (9). Install ground strap (9) and antenna bracket (3) on rear wall (4) with capscrew (10), lockwasher (12), washer (15), and nut (16).



- 5. CAPSCREW – MS35307-365 – QTY. 4
- 6. LOCKWASHER – MS45904-76 – QTY. 8
- 7. GASKET – A3013655-1 – QTY. 1
- 8. NUT – 13218E0320-293 – QTY. 4
- 10. CAPSCREW – B1821BH031F125N – QTY. 3
- 11. TERMINAL LUG – MS20659-108 – QTY. 1
- 12. LOCKWASHER – MS45904-72 – QTY. 3
- 13. GROMMET – 12338098 – QTY. 1
- 14. ANTENNA – A3017899-2 – QTY. 1
- 15. WASHER – 12338095 – QTY. 3
- 16. NUT – 9418892 – QTY. 3

Figure 5-18.

- 7-10. Attach upper antenna element (17) to lower antenna element (19).
- 7-11. Attach antenna assembly to antenna base (14).
- 7-12. Attach fiber rope assembly (18) to upper antenna element (17).
- 7-13. Secure lower antenna element (19) to antenna base (14) with lockwire (20).
- 7-14. Repeat steps 7-1 through 7-13 for other side of vehicle.

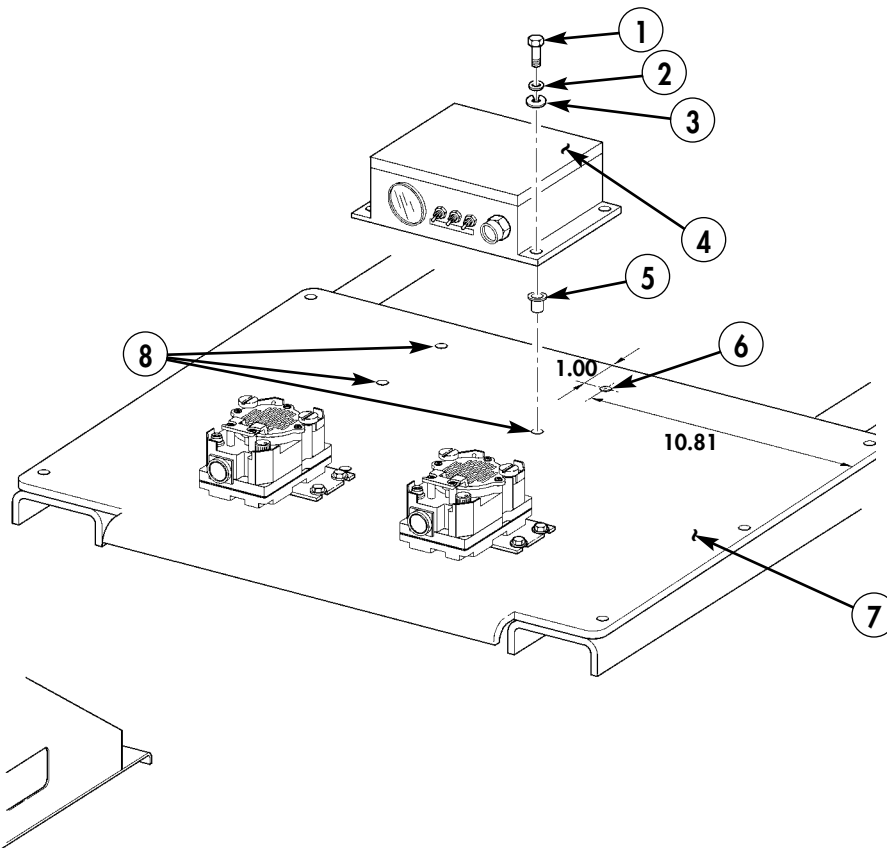


- 17. UPPER ANTENNA ELEMENT – A3017901-2 – QTY. 2
- 18. FIBER ROPE ASSEMBLY – A3167672-1 – QTY. 2
- 19. LOWER ANTENNA ELEMENT – A3018230-1 – QTY. 2
- 20. LOCKWIRE – MS20995C32 – QTY. A/R

Figure 5-19.

Section VIII. CHARGE CONTROL BOX INSTALLATION

- 8-1. Locate, mark, and drill one 0.375-in. diameter hole (6) in lower shelf of multi-net rack (7).
- 8-2. Using charge control box (4) as template, locate, mark, and drill three remaining holes (8).
- 8-3. Install four inserts (5) in lower shelf of multi-net rack (7).
- 8-4. Mount charge control box (4) on lower shelf of multi-net rack (7) with four screws (1), four lockwashers (2), and four washers (3).

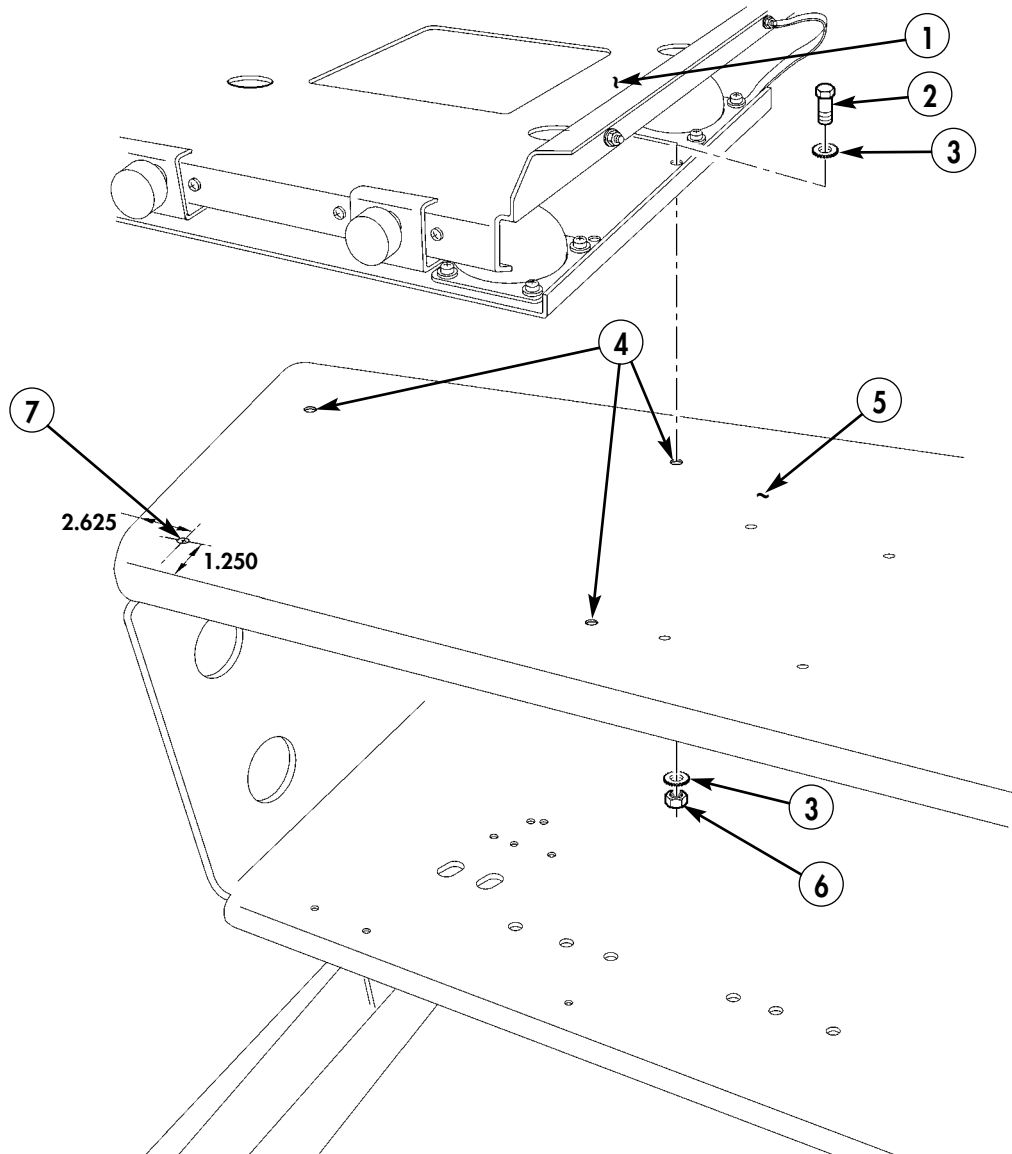


- 1. SCREW – B1821BH025C100N – QTY. 4
- 2. LOCKWASHER – MS35338-44 – QTY. 4
- 3. WASHER – 2436161 – QTY. 4
- 4. CHARGE CONTROL BOX – A3265665 – QTY. 1
- 5. INSERT – 12446871-2 – QTY. 4

Figure 5-20.

Section IX. RIGHT-SIDE EPLRS MOUNT INSTALLATION

- 9-1. Locate, mark, and drill one 0.343-in. diameter hole (7) in upper shelf of multi-net rack (5).
- 9-2. Using EPLRS mounting bracket (1) as template, locate, mark, and drill three remaining holes (4).
- 9-3. Mount EPLRS mounting bracket (1) to upper shelf of multi-net rack (5) with four capscrews (2), eight lockwashers (3), and four nuts (6).

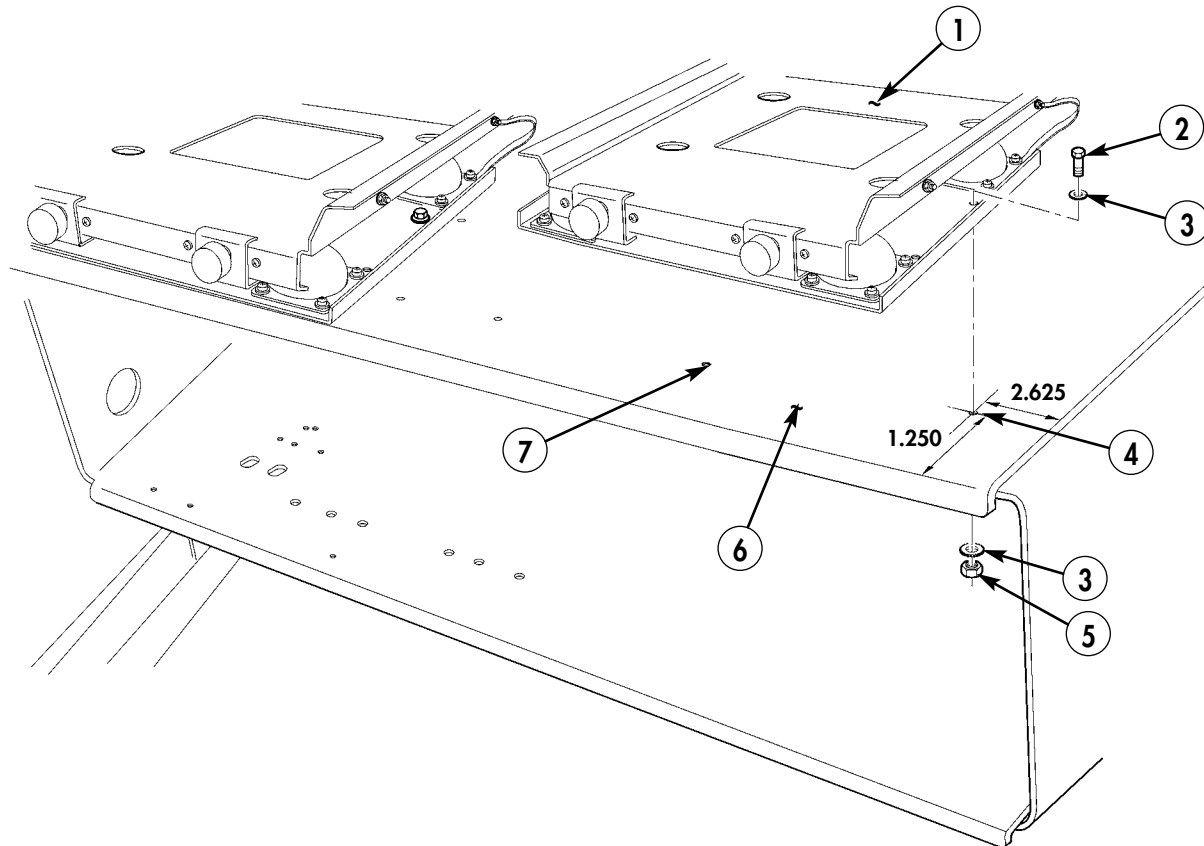


1. RESILIENT MOUNT – MT-6146/VSQ-1 – QTY. 1
2. CAPSCREW – B1821BH031F075N – QTY. 4
3. LOCKWASHER – MS45904-72 – QTY. 8
6. NUT – MS51967-6 – QTY. 4

Figure 5-21.

Section X. LEFT-SIDE EPLRS MOUNT INSTALLATION

- 10-1. Locate, mark, and drill one 0.343-in. diameter hole (4) in upper shelf of multi-net rack (6).
- 10-2. Using EPLRS mounting bracket (1) as template, locate, mark, and drill three remaining holes (7).
- 10-3. Mount EPLRS mounting bracket (1) to upper shelf of multi-net rack (6) with four bolts (2), eight lockwashers (3), and four nuts (5).

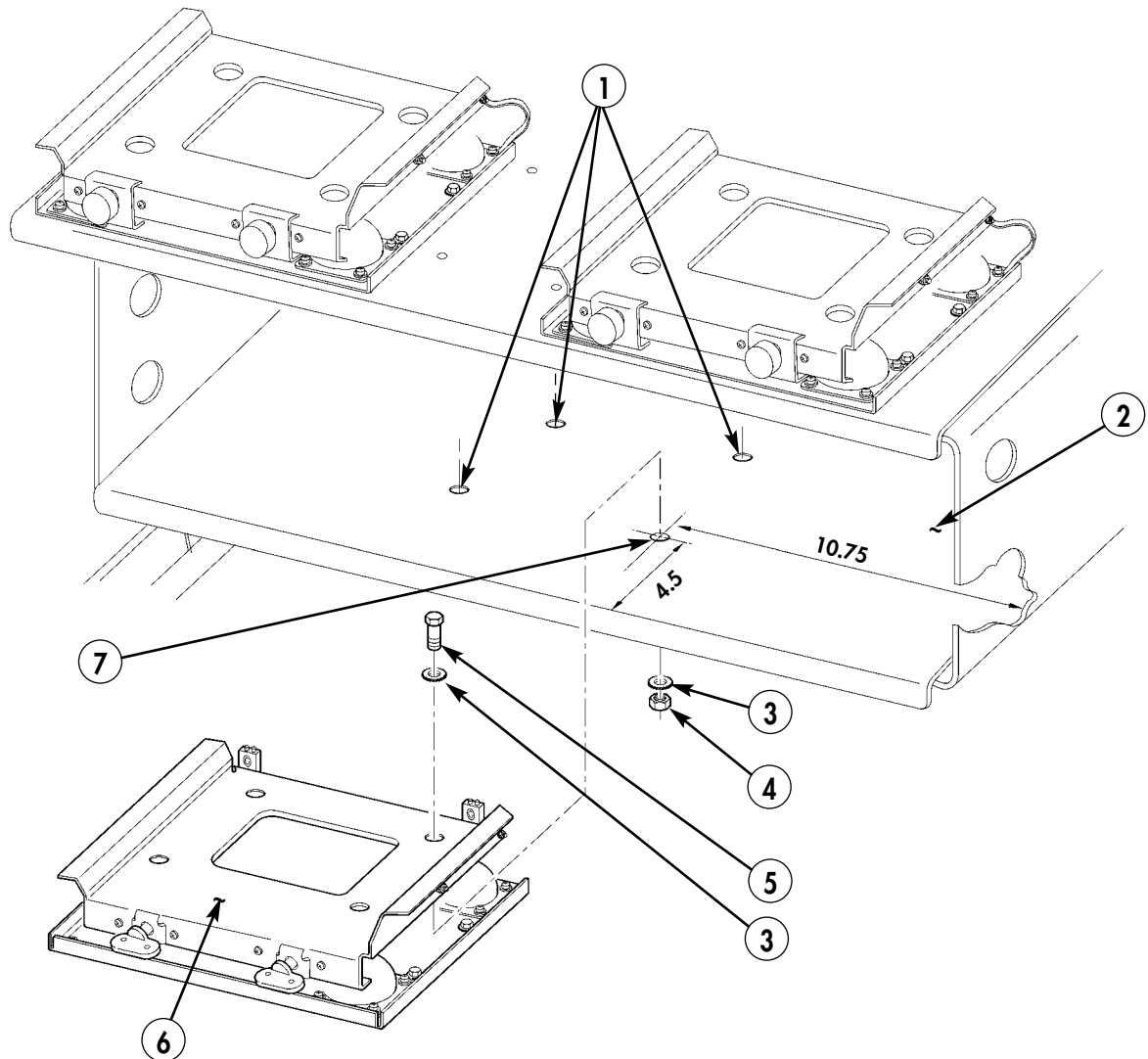


1. RESILIENT MOUNT – MT-6146/VSQ-1 – QTY. 1
2. CAPSCREW – B1821BH031F075N – QTY. 4
3. LOCKWASHER – MS45904-72 – QTY. 8
5. NUT – MS51967-6 – QTY. 4

Figure 5-22.

Section XI. NTDR MOUNT INSTALLATION

- 11-1.** Locate, mark, and drill one 0.343-in. diameter hole (7) in lower shelf of multi-net rack (2).
- 11-2.** Using NTDR mounting bracket (6) as template, locate, mark, and drill three remaining holes (1).
- 11-3.** Mount NTDR mounting bracket (6) to lower shelf of multi-net rack (2) with four capscrews (5), eight washers (3), and four nuts (4).



- 3.** LOCKWASHER – MS45904-72 – QTY. 8
4. NUT – MS51967-6 – QTY. 4
5. CAPSCREW – B1821BH031F075N – QTY. 4
6. MOUNTING TRAY – 8174934G1 – QTY. 1

Figure 5-23.

Section XII. EPLRS USER READOUT (URO) ON MULTI-NET RACK INSTALLATION

12-1. Remove four existing screws (2) and connector bracket (3) from two URO brackets (1).

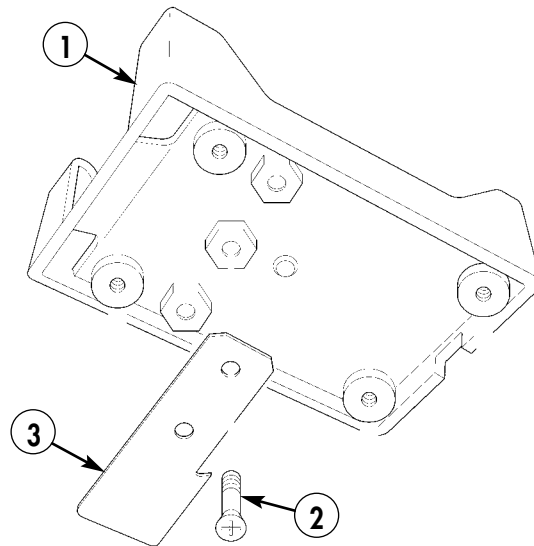
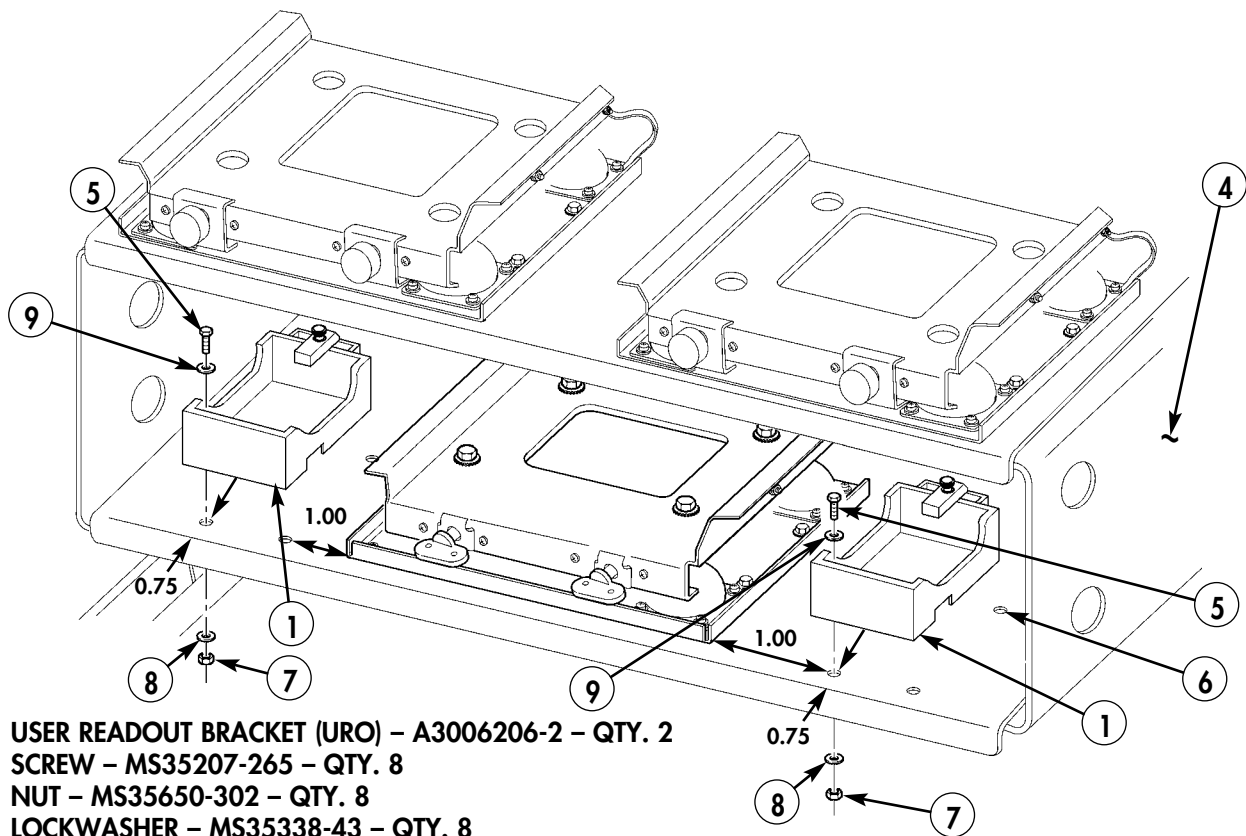


Figure 5-24.

12-2. Using URO brackets (1) as templates, mark and drill eight 0.147-in. holes (6) in multi-net rack (4).

12-3. Install URO brackets (1) on multi-net rack (4) with eight capscrews (5), washers (9), lockwashers (8), and nuts (7).



- 1. USER READOUT BRACKET (URO) – A3006206-2 – QTY. 2
- 5. SCREW – MS35207-265 – QTY. 8
- 7. NUT – MS35650-302 – QTY. 8
- 8. LOCKWASHER – MS35338-43 – QTY. 8
- 9. WASHER – MS27183-8 – QTY. 16

Figure 5-25.

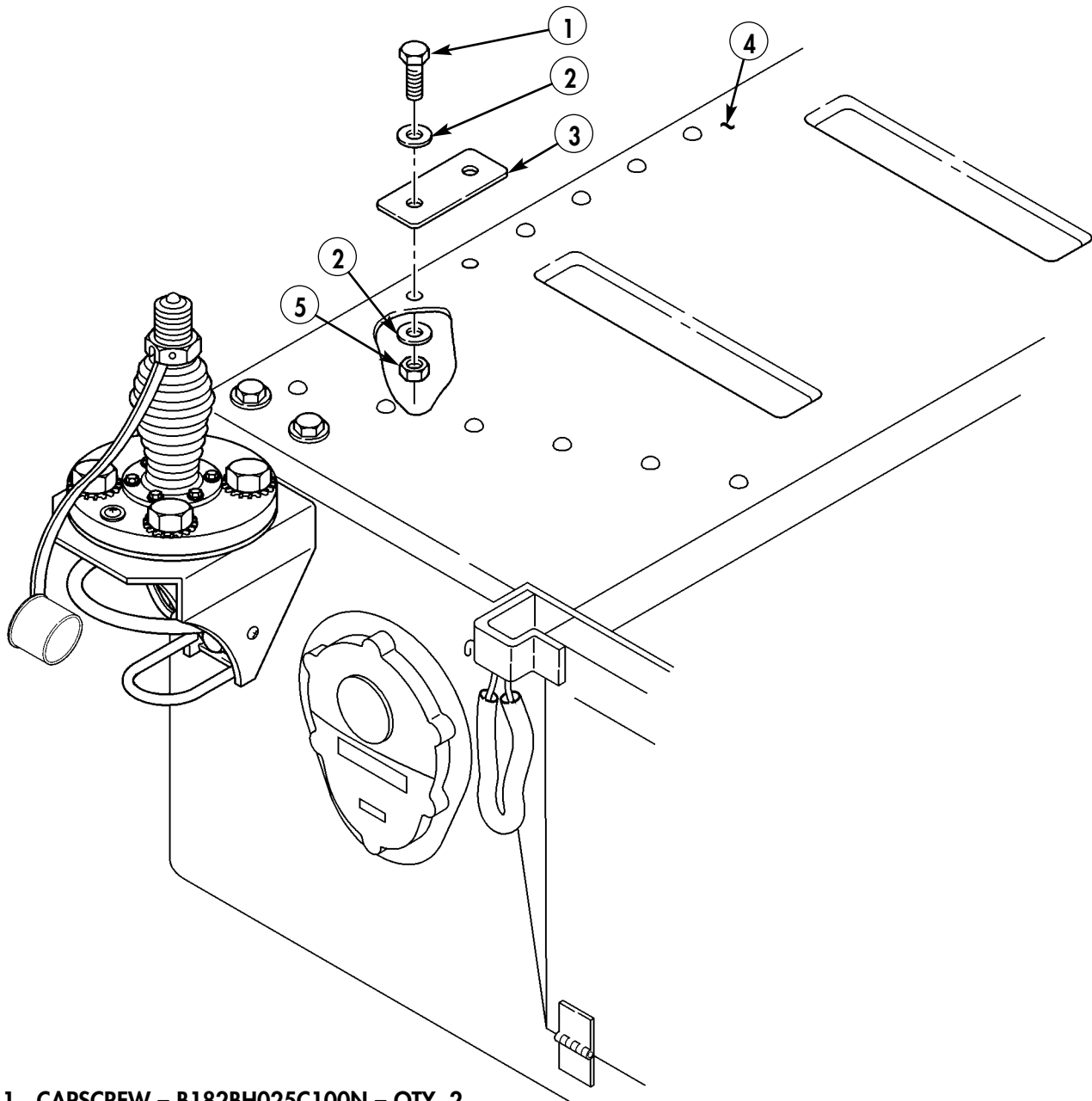
Section XIII. EPLRS MOUNTING BRACKET ON LEFT WHEELWELL INSTALLATION

NOTE

- Procedure may require removal of left rear side rail, which may require assistance. (Refer to TM 9-2320-280-20.)
- Ground out any rivets on wheelwell that will interfere with installation of EPLRS mounting plate.

13-1. Remove left rear side rail if necessary.

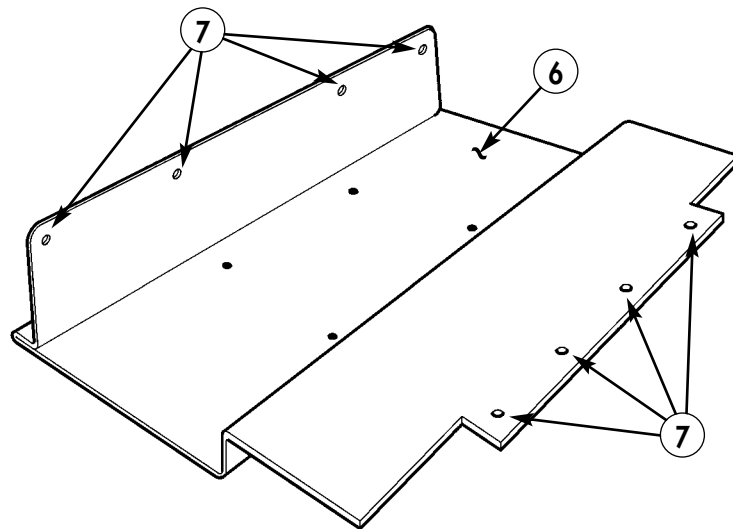
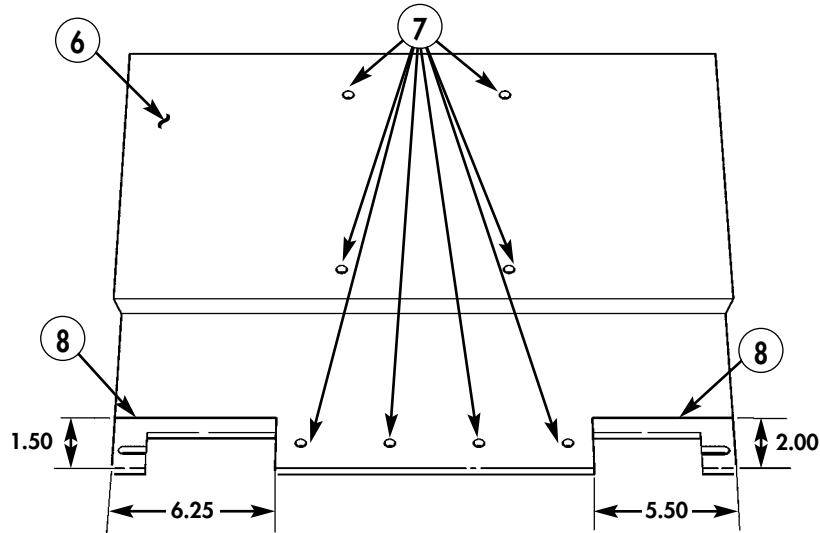
13-2. Install positioning plate (3) on wheelwell (4) with two capscrews (1), four washers (2), and two nuts (5).



1. CAPSCREW – B182BH025C100N – QTY. 2
2. WASHER – MS27183-10 – QTY. 2
3. PLATE, PLACEMENT – A3046203 – QTY. 1
5. NUT – MS51967-2 – QTY. 2

Figure 5-26.

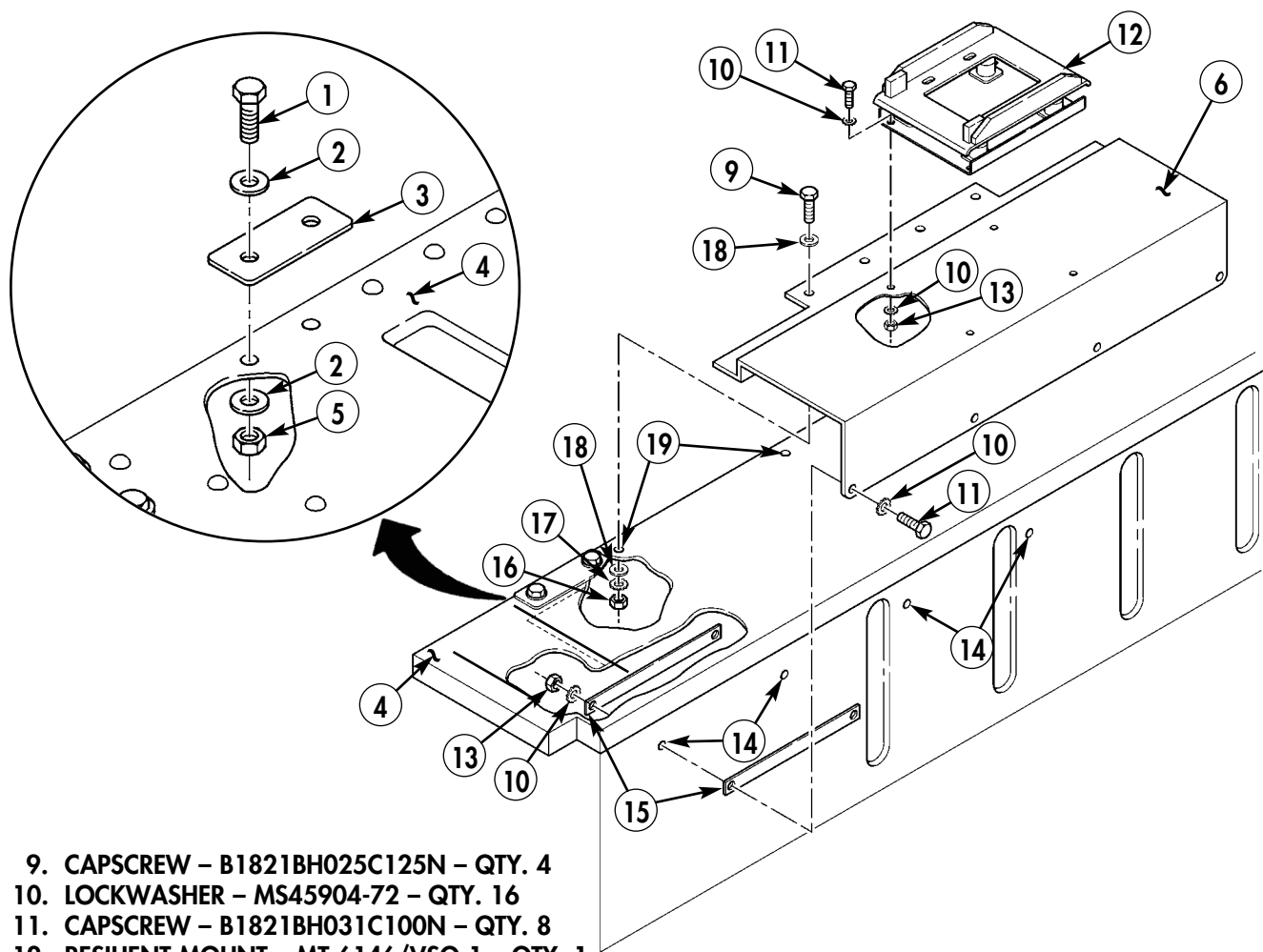
- 13-3. Using mounting plate (6) as template, locate, mark, and drill four 0.343-in. diameter holes (14) and four 0.281-in. diameter holes (19) in left rear wheelwell (4).
- 13-4. Remove two sections (8) from mounting plate (6) as shown.
- 13-5. Remove paint from vicinity of sixteen mounting holes (7) on mounting plate (6).



6. MOUNTING PLATE, EPLRS – A3046204 – QTY. 1

Figure 5-27.

- 13-6.** Install resilient mount (12) on mounting plate (6) with four capscrews (11), eight lockwashers (10), and four nuts (13).
- 13-7.** Remove paint from vicinity of eight mounting holes (19) and (14) on left rear wheelwell (4). Apply anti-seize compound as required. Position mounting plate (6) on left rear wheelwell (4) and align all holes.
- 13-8.** Install mounting plate (6) on left rear wheelwell (4) with four capscrews (9), lockwashers (17), eight washers (18), four nuts (13), capscrews (11), eight lockwashers (10), four spacers (15), and nuts (13).
- 13-9.** Remove two capscrews (1), four washers (2), and two nuts (5) from positioning plate (3) and wheelwell (4).



9. CAPSCREW – B1821BH025C125N – QTY. 4
 10. LOCKWASHER – MS45904-72 – QTY. 16
 11. CAPSCREW – B1821BH031C100N – QTY. 8
 12. RESILIENT MOUNT – MT-6146/VSQ-1 – QTY. 1
 13. NUT – 9417954 – QTY. 8
 15. SPACER – A3046313 – QTY. 4
 16. NUT – 9419143 – QTY. 4
 17. LOCKWASHER – MS35338-44 – QTY. 4
 18. WASHER – 2436161 – QTY. 8

Figure 5-28.

Section XIV. EPLRS USER READOUT (URO) ON LEFT WHEELWELL INSTALLATION

14-1. Remove two existing screws (2) and connector bracket (3) from URO bracket (1).

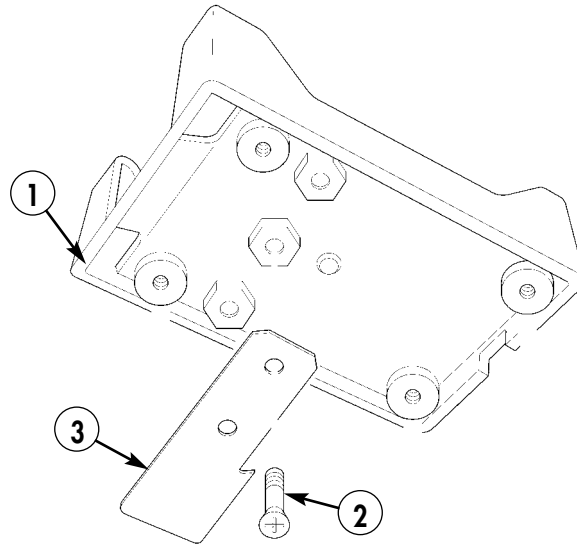


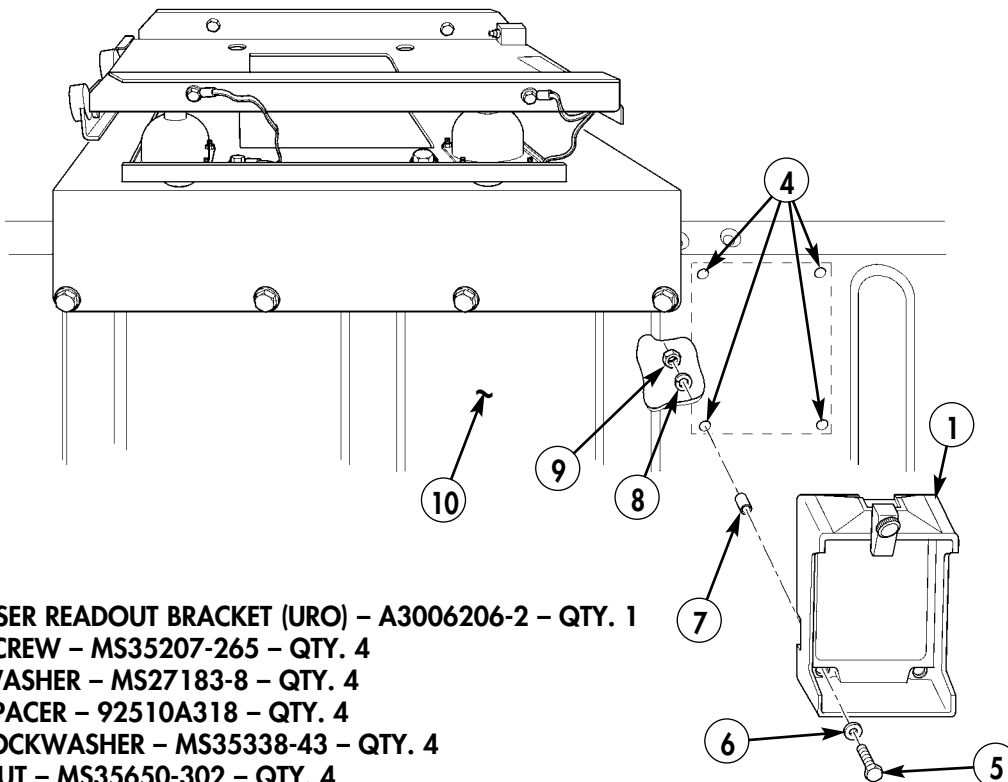
Figure 5-29.

NOTE

Install URO bracket flush against top edge of wheelwell and centered between insets.

14-2. Using URO bracket (1) as template, mark and drill four 0.147-in. holes (4) in left rear wheelwell (10).

14-3. Install URO bracket (1) on left rear wheelwell (10) with four screws (5), four spacers (7), four lockwashers (8), and four nuts (9).



- 1. USER READOUT BRACKET (URO) – A3006206-2 – QTY. 1
- 5. SCREW – MS35207-265 – QTY. 4
- 6. WASHER – MS27183-8 – QTY. 4
- 7. SPACER – 92510A318 – QTY. 4
- 8. LOCKWASHER – MS35338-43 – QTY. 4
- 9. NUT – MS35650-302 – QTY. 4

Figure 5-30.

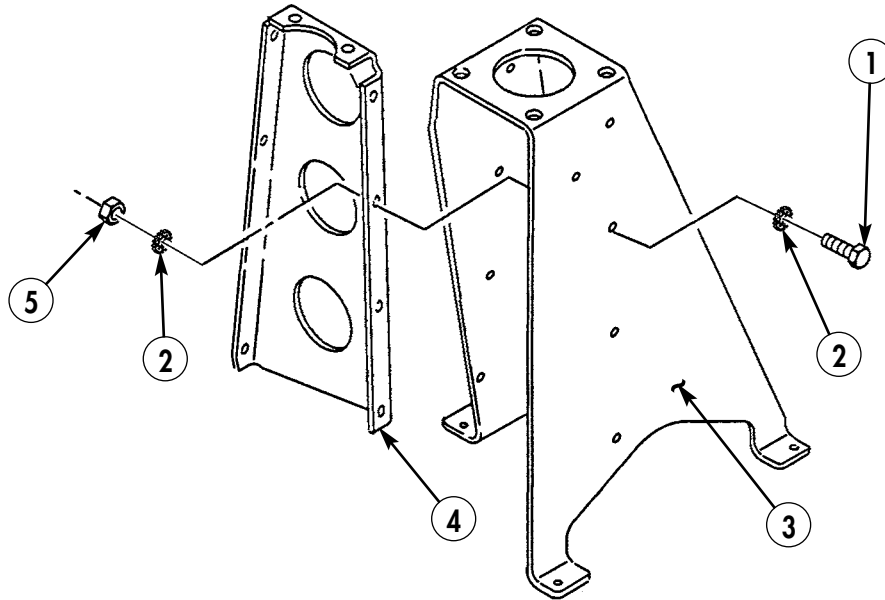
Section XV. RIGHT-SIDE EPLRS PEDESTAL ANTENNA INSTALLATION

- 15-1.** Assemble antenna mounting bracket (3) and antenna base reinforcement bracket (4) with eight screws (1), sixteen lockwashers (2), and eight nuts (5). Do not tighten nuts (5) at this time.

NOTE

Remove paint or tape from mounting holes.

- 15-2.** Remove paint from vicinity of all mounting holes on both antenna plates, antenna mount assembly, and ground strap. Apply anti-seize compound as required.



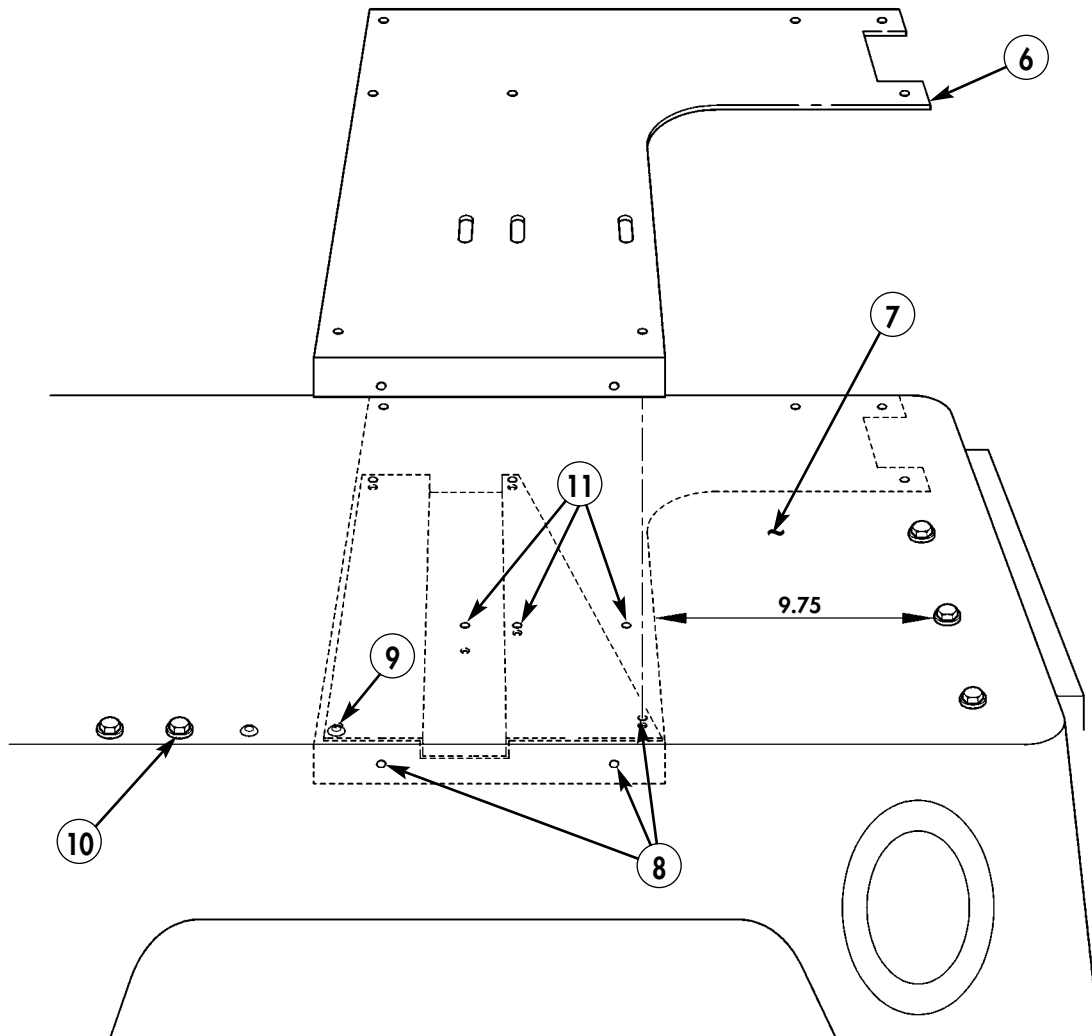
1. SCREW – B1821BH025C100N – QTY. 8
2. LOCKWASHER – MS35338-44 – QTY. 16
3. ANTENNA MOUNTING BRACKET – A3018371-2 – QTY. 1
4. ANTENNA BASE REINFORCEMENT BRACKET – A3018372-2 – QTY. 1
5. NUT – MS51967-2 – QTY. 8

Figure 5-31.

NOTE

- Remove right rear side rail, if necessary. (Refer to TM 9-2320-280-20.)
- Rear edge of upper mounting plate should be approximately 1.187 in. from front edge of EPLRS mounting plate.

- 15-3.** Locate screw (10) on right rear wheelwell (7) and drill out rivet (9) from right rear wheelwell (7). Enlarge hole to 0.281 in.
- 15-4.** Position support plate underneath wheelwell and drill two 0.281-in. diameter holes.
- 15-5.** Using upper antenna plate (6) as template, locate, mark, and drill thirteen 0.281-in. holes (8) and three 0.408-in. holes (11) in left rear wheelwell (7).



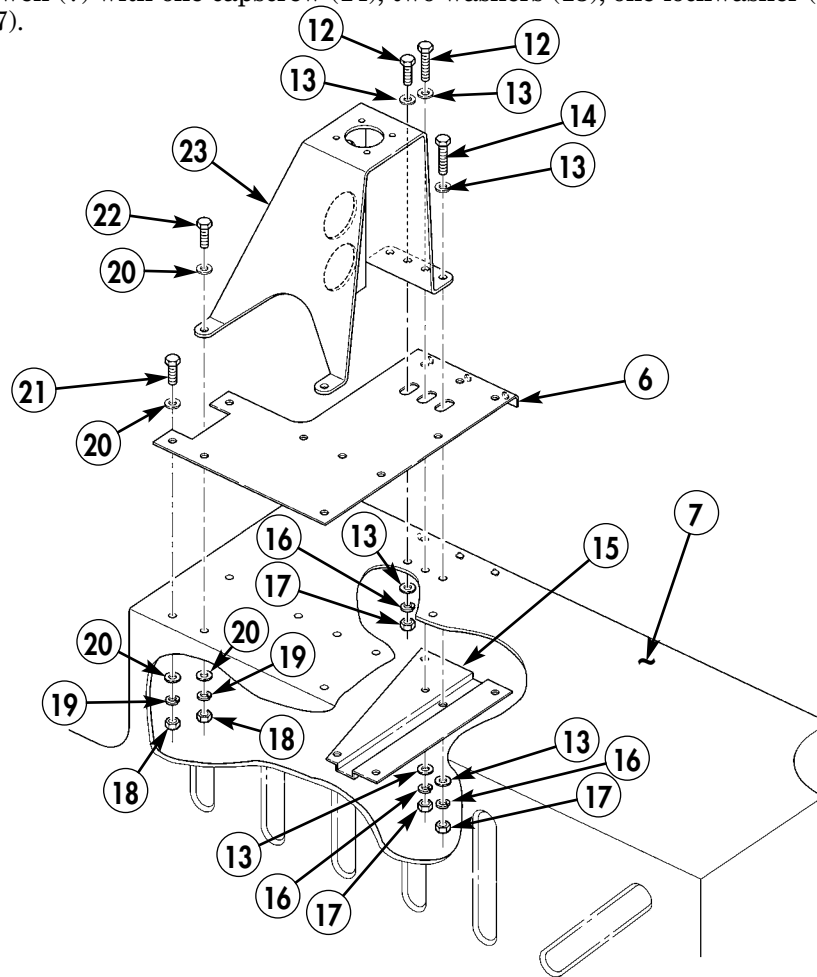
6. ANTENNA PLATE - A3104004-1 - QTY. 1

Figure 5-32.

NOTE

Enlarge hole on antenna mount assembly to accommodate 7/16-in. bolts.

- 15-6.** Install antenna mount assembly (23), upper antenna plate (6), and lower antenna plate (15) on left rear wheelwell (7) with eleven capscrews (21), twenty-two washers (20), eleven lockwashers (19), and eleven nuts (18).
- 15-7.** Install antenna mount assembly (23), upper antenna plate (6), and lower antenna plate (15) on left rear wheelwell (7) with two capscrews (12), four washers (13), two lockwashers (16), and two nuts (17).
- 15-8.** Secure antenna mount assembly (23), upper antenna plate (6), and lower antenna plate (15) to left rear wheelwell (7) with two capscrews (22), four washers (20), two lockwashers (19), and two nuts (18).
- 15-9.** Secure antenna mount assembly (23), upper antenna plate (6), and lower antenna plate (15) to left rear wheelwell (7) with one capscrew (14), two washers (13), one lockwasher (16), and one nut (17).



12. CAPSCREW - B1821BH044C125N - QTY. 2

13. WASHER - 2436163 - QTY. 6

14. CAPSCREW - B1821BH044C150N - QTY. 1

15. ANTENNA PLATE - A3157619 - QTY. 1

16. LOCKWASHER - 120382 - QTY. 3

17. NUT - 13218E0320-293 - QTY. 3

18. NUT - 9419143 - QTY. 13

19. LOCKWASHER - MS35338-44 - QTY. 13

20. WASHER - 2436161 - QTY. 26

21. CAPSCREW - B1821BH025C100N - QTY. 11

22. CAPSCREW - B1821BH025C150N - QTY. 2

Figure 5-33.

NOTE

Perform step 15-10 only if not installing cargo soft-top enclosure; otherwise, start with step 15-11.

- 15-10.** Install antenna (25) on antenna mount assembly (23) with four capscrews (24), gasket (26), eight lockwashers (31), and four nuts (30).

NOTE

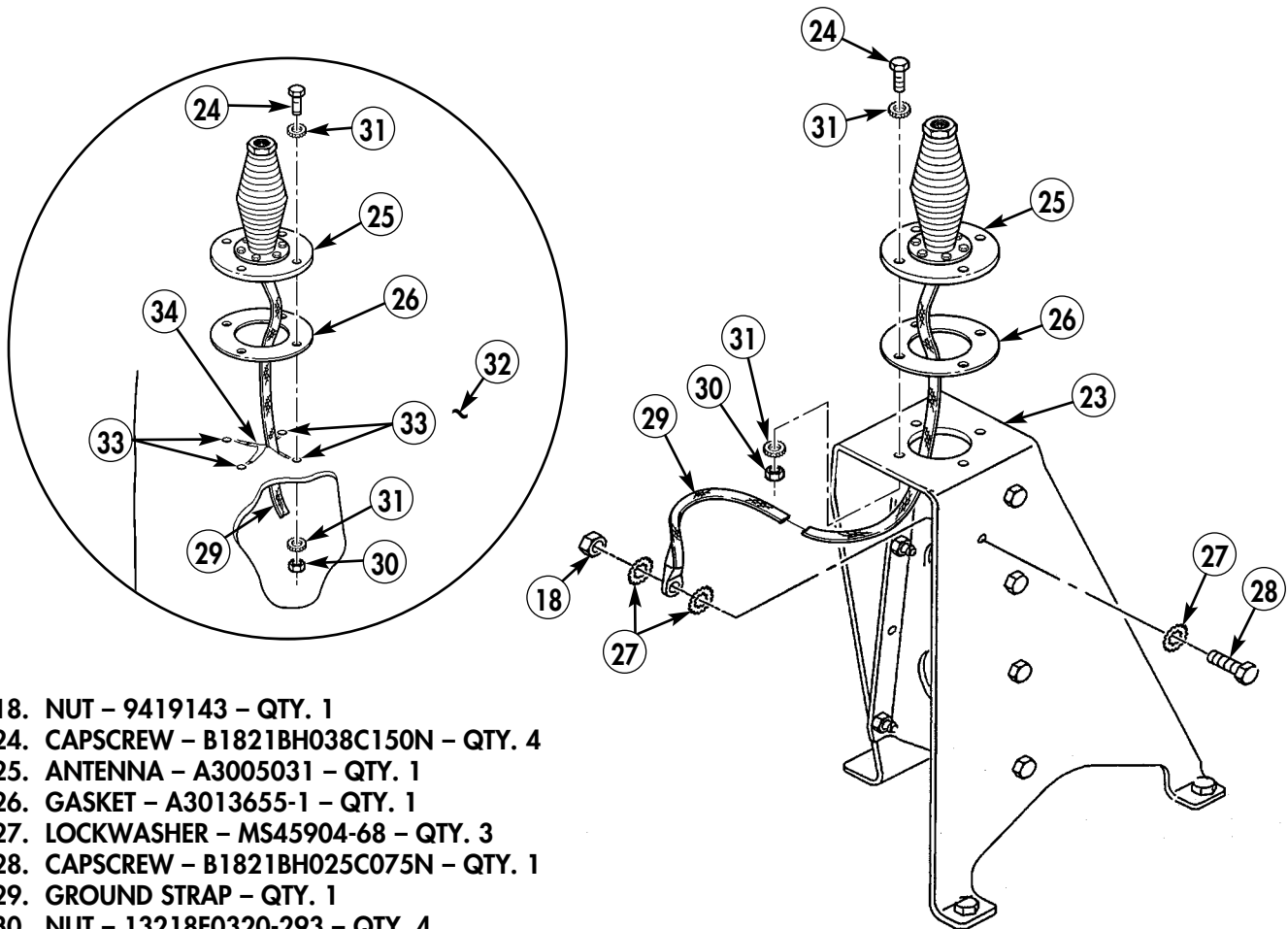
Perform steps 15-11 through 15-12 only when installing cargo soft-top enclosure.

- 15-11.** Install cargo soft-top enclosure (32). (Refer to TM 9-2320-280-10.)

NOTE

Ensure all slack has been taken out of cargo soft-top enclosure, and that cargo soft-top enclosure has been properly installed.

- 15-12.** Using antenna (25) as template, locate, mark, and drill four 0.375-in. holes (33) and cut "X" (34) in cargo soft-top enclosure (32).
- 15-13.** Install antenna (25) on antenna mount assembly (23) and cargo soft-top enclosure (32) with gasket (26), eight lockwashers (31), and four nuts (30), ensuring that ground strap (29) is inserted through cut hole (32).
- 15-14.** Install ground strap (29) on antenna mount assembly (23) with screw (28), three lockwashers (27), and nut (18).
- 15-15.** Tighten all nuts (18) and (30).

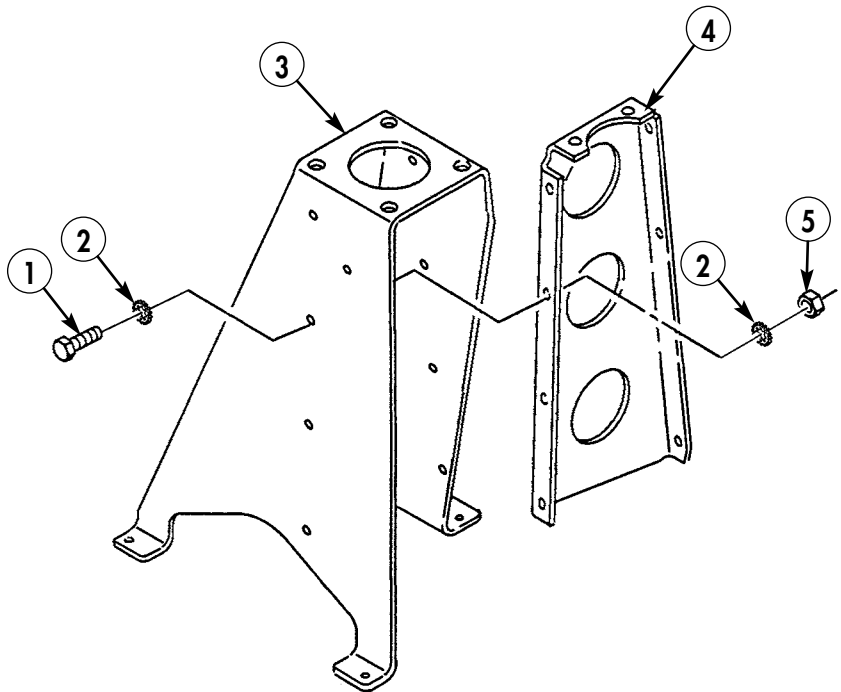


18. NUT - 9419143 - QTY. 1
 24. CAPSCREW - B1821BH038C150N - QTY. 4
 25. ANTENNA - A3005031 - QTY. 1
 26. GASKET - A3013655-1 - QTY. 1
 27. LOCKWASHER - MS45904-68 - QTY. 3
 28. CAPSCREW - B1821BH025C075N - QTY. 1
 29. GROUND STRAP - QTY. 1
 30. NUT - 13218E0320-293 - QTY. 4
 31. LOCKWASHER - MS45904-76 - QTY. 8

Figure 5-34.

Section XVI. LEFT-SIDE EPLRS PEDESTAL ANTENNA INSTALLATION

- 16-1.** Assemble antenna mounting bracket (3) and antenna base reinforcement bracket (4) with eight capscrews (1), sixteen lockwashers (2), and eight nuts (5). Do not tighten nuts (5) at this time.
- 16-2.** Remove paint from vicinity of all mounting holes on both antenna plates, antenna mount assembly, and ground strap. Apply anti-seize compound as required.



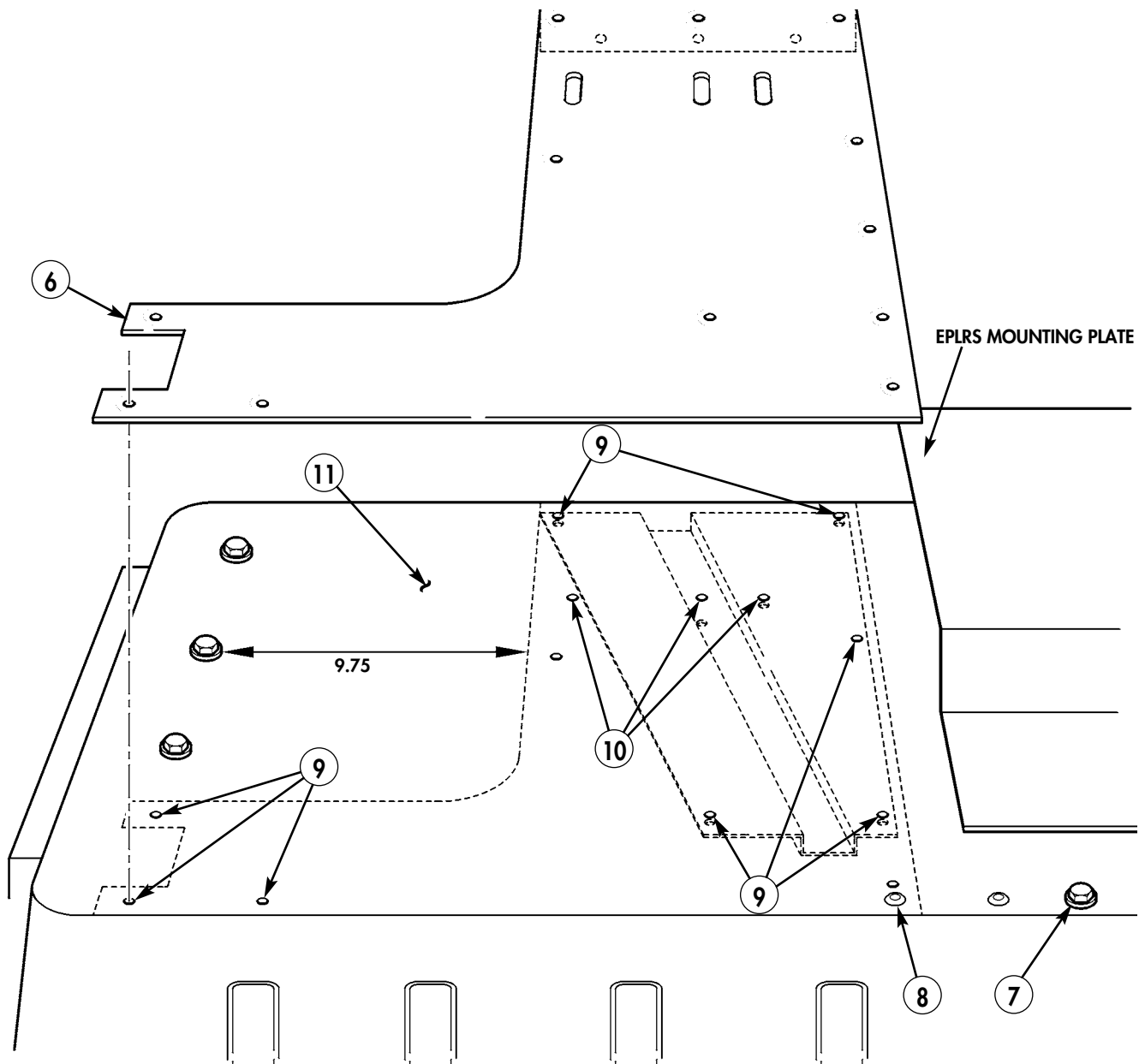
1. CAPSCREW – B1821BH025C100N – QTY. 8
2. LOCKWASHER – MS35338-44 – QTY. 16
3. ANTENNA MOUNTING BRACKET – A3018371-1 – QTY. 1
4. ANTENNA BASE REINFORCEMENT BRACKET – A3018372-1 – QTY. 1
5. NUT – MS51967-2 – QTY. 8

Figure 5-35.

NOTE

- Remove left rear side rail, if necessary. (Refer to TM 9-2320-280-20.)
- Rear edge of upper mounting plate should be approximately 1.187 in. from front edge of EPLRS mounting plate.

- 16-3.** Locate screw (7) on left rear wheelwell (11), and drill out rivet (8) from left rear wheelwell (11). Enlarge hole to 0.281 in.
- 16-4.** Position support plate underneath wheelwell (11) and drill two 0.281-in. diameter holes.
- 16-5.** Using upper antenna plate (6) as template, locate, mark, and drill nine 0.281-in. holes (9) and three 0.408-in. holes (10) in left rear wheelwell (11).



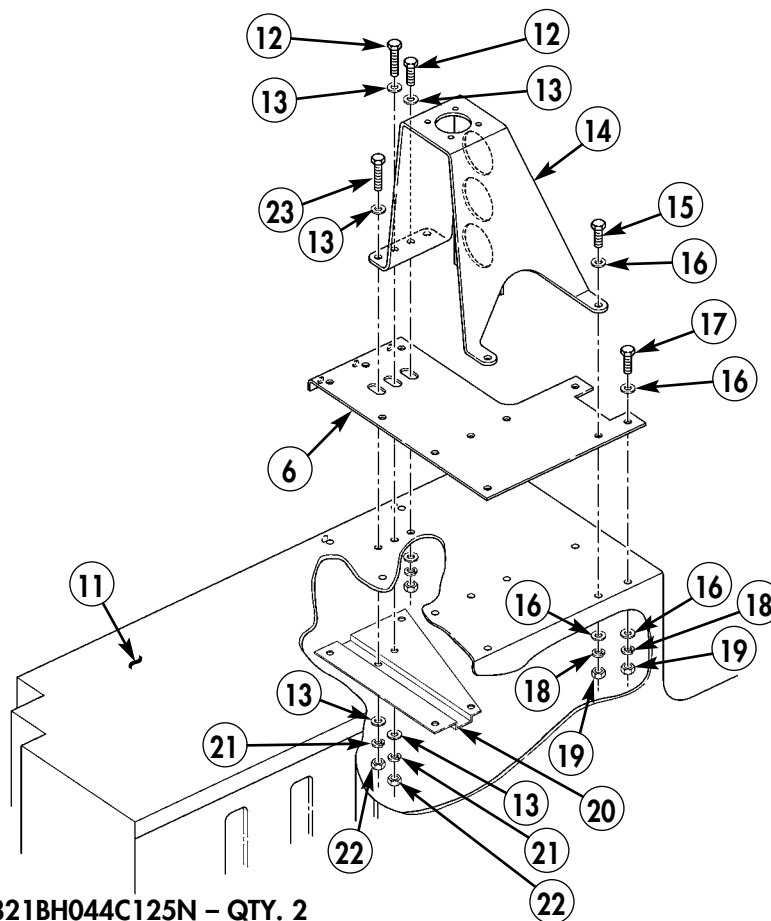
6. ANTENNA PLATE - A3104004-1 - QTY. 1

Figure 5-36.

NOTE

Enlarge hole on antenna mount assembly to accommodate 7/16-in. bolts.

- 16-6.** Install antenna mount assembly (14), upper antenna plate (6), and lower antenna plate (20) on left rear wheelwell (11) with eleven capscrews (17), twenty-two washers (16), eleven lockwashers (18), and eleven nuts (19).
- 16-7.** Secure antenna mount assembly (14), upper antenna plate (6), and lower antenna plate (20) to left rear wheelwell (11) with two capscrews (12), four washers (13), two lockwashers (21), and two nuts (22).
- 16-8.** Secure antenna mount assembly (14), upper antenna plate (6), and lower antenna plate (20) to left rear wheelwell (11) with two capscrews (15), four washers (16), two lockwashers (18), and two nuts (19).
- 16-9.** Secure antenna mount assembly (14), upper antenna plate (6), and lower antenna plate (20) to left rear wheelwell (11) with one capscrew (23), two washers (13), one lockwasher (21), and one nut (22).



12. CAPSCREW - B1821BH044C125N - QTY. 2
 13. WASHER - 2436163 - QTY. 6
 15. CAPSCREW - B1821BH025C150N - QTY. 2
 16. WASHER - 2436161 - QTY. 26
 17. CAPSCREW - B1821BH025C100N - QTY. 11
 18. LOCKWASHER - MS35338-44 - QTY. 13
 19. NUT - 9419143 - QTY. 13
 20. ANTENNA PLATE - A3157619 - QTY. 1
 21. LOCKWASHER - 120382 - QTY. 3
 22. NUT - 13218E0320-293 - QTY. 3
 23. CAPSCREW - B1821BH044C150N - QTY. 1

Figure 5-37.

NOTE

Perform step 16-10 only if not installing cargo soft-top enclosure; otherwise, start with step 16-11.

- 16-10.** Install antenna (31) on antenna mount assembly (14) with four capscrews (24), gasket (30), eight lockwashers (25), and four nuts (26).

NOTE

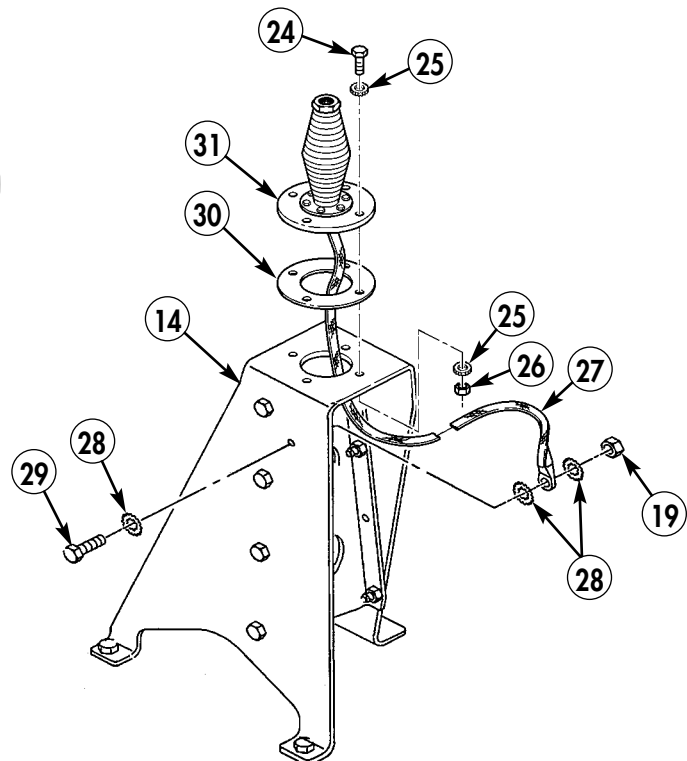
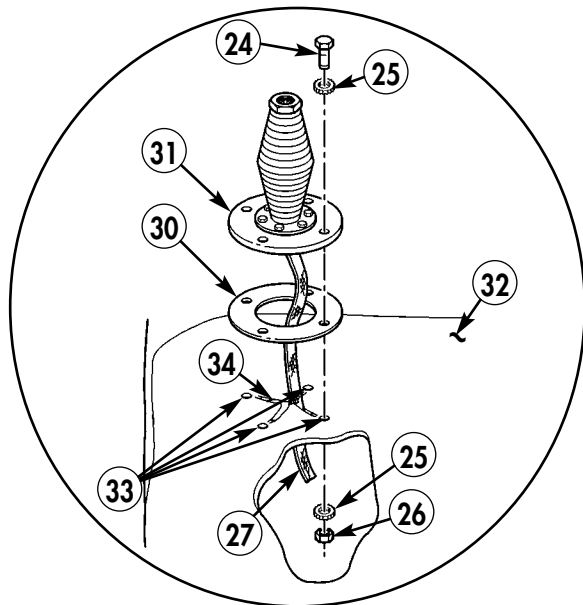
Perform steps 16-11 through 16-12 only when installing cargo soft-top enclosure.

- 16-11.** Install cargo soft-top enclosure (32). (Refer to TM 9-2320-280-10.)

NOTE

Ensure all slack has been taken out of cargo soft-top enclosure, and that cargo soft-top enclosure has been properly installed.

- 16-12.** Using antenna (31) as template, locate, mark, and drill four 0.375-in. holes (33) and cut "X" (34) in cargo soft-top enclosure (32).
- 16-13.** Install antenna (31) on antenna mount assembly (14) and cargo soft-top enclosure (32) with four capscrews (24), gasket (30), eight lockwashers (25), and four nuts (26), ensuring that ground strap (27) is inserted through cut hole (34).
- 16-14.** Install ground strap (27) on antenna mount assembly (14) with screw (29), three lockwashers (28), and nut (19).
- 16-15.** Tighten all nuts (19) and (26).

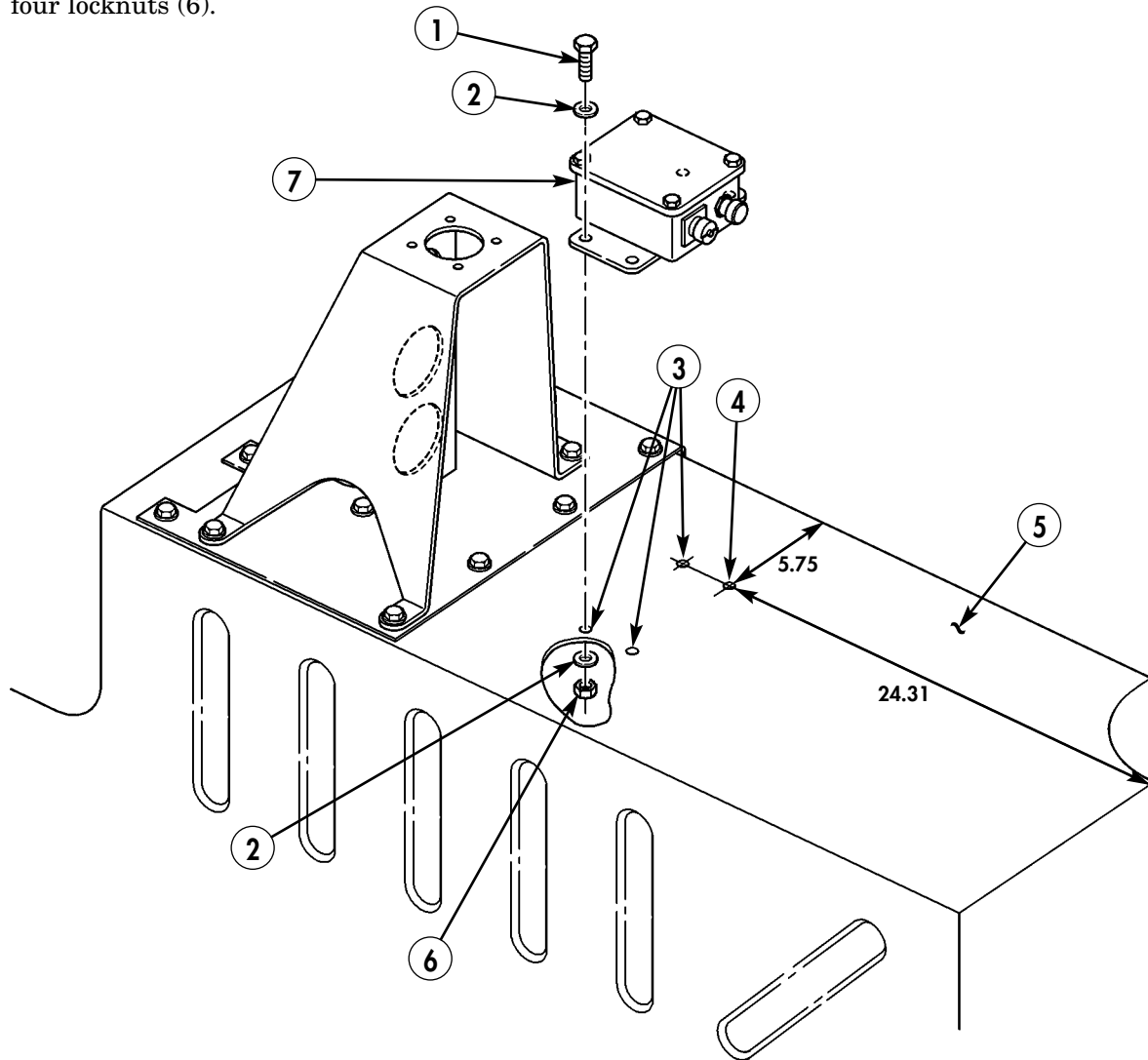


19. NUT - 9419143 - QTY. 1
 24. CAPSCREW - B1821BH038C150N - QTY. 4
 25. LOCKWASHER - MS45904-76 - QTY. 8
 26. NUT - 13218E0320-293 - QTY. 4
 27. GROUND STRAP - QTY. 1
 28. LOCKWASHER - MS45904-68 - QTY. 3
 29. CAPSCREW - B1821BH025C075N - QTY. 1
 30. GASKET - A3013655-1 - QTY. 1
 31. ANTENNA - A3005031 - QTY. 1

Figure 5-38.

Section XVII. POWER ENTRY BOX INSTALLATION

- 17-1.** Locate, mark, and drill one 0.188-in. diameter hole (4) in right wheelwell (5).
- 17-2.** Using power entry box (7) as template, locate, mark, and drill three 0.188-in. diameter holes (3) in right wheelwell (5).
- 17-3.** Install power entry box (7) on right wheelwell (5) with four capscrews (1), eight washers (2), and four locknuts (6).



1. SCREW – MS35207-265 – QTY. 4
 2. WASHER – MS27183-8 – QTY. 8
 6. NUT – MS35650-302 – QTY. 4
 7. POWER ENTRY BOX – 03A0108D – QTY. 1

Figure 5-39.

Section XVIII. CHARGER INSTALLATION

18-1. Locate, mark, and drill four 0.281-in. diameter holes (2) in multi-net rack (1).

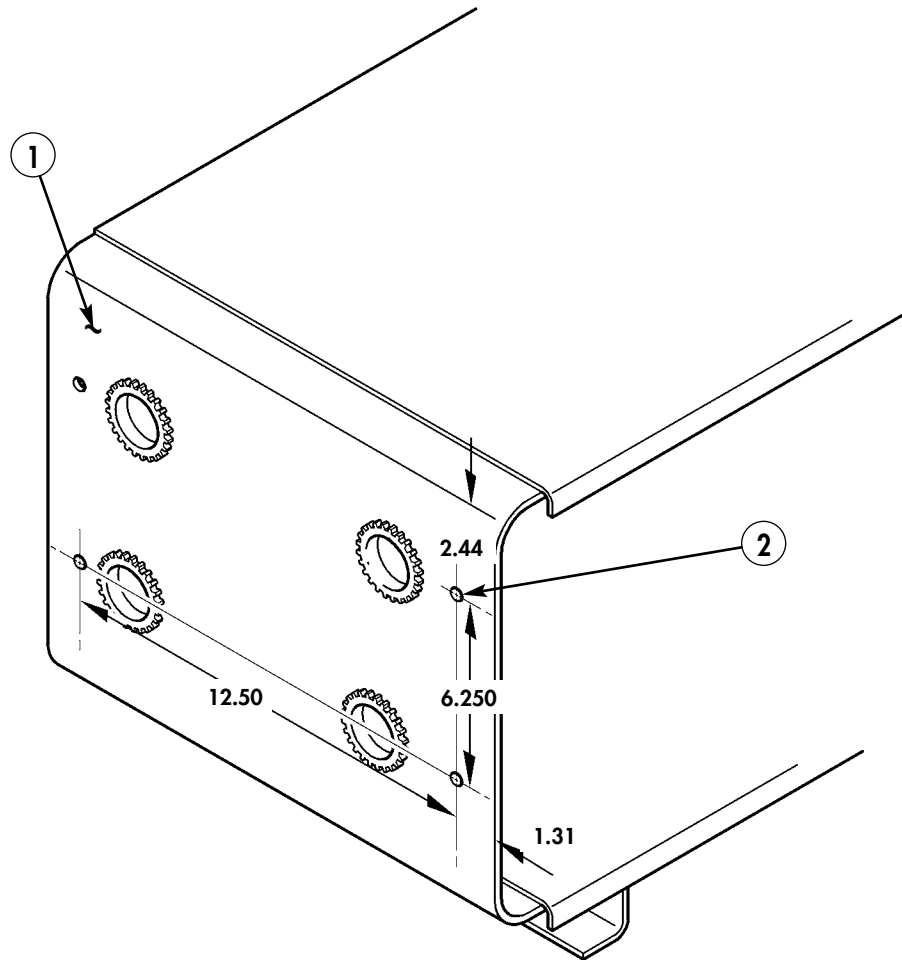
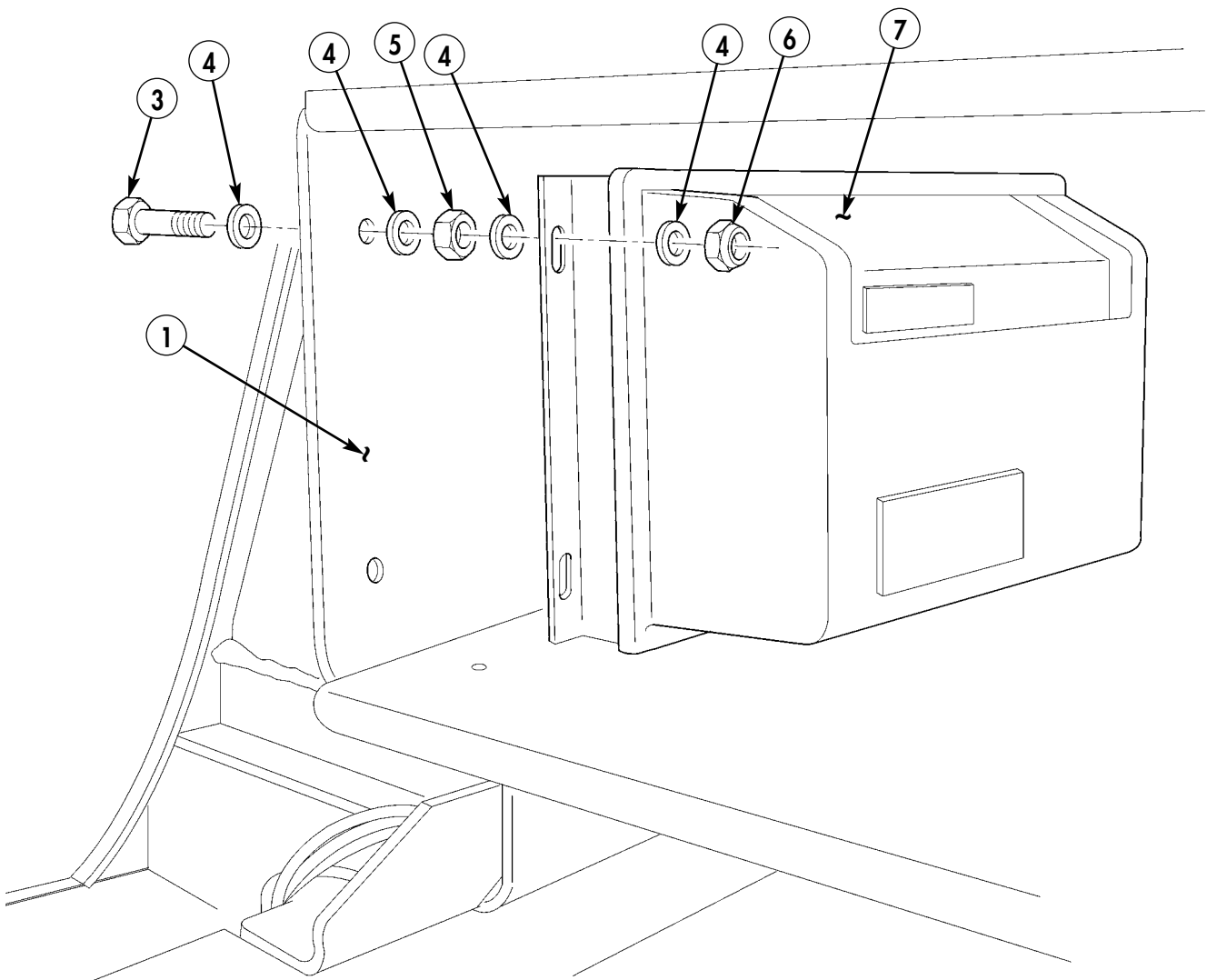


Figure 5-40.

- 18-2.** Install charger (7) on multi-net rack (1) with four screws (3), sixteen washers (4), four nuts (5), and four locknuts (6).

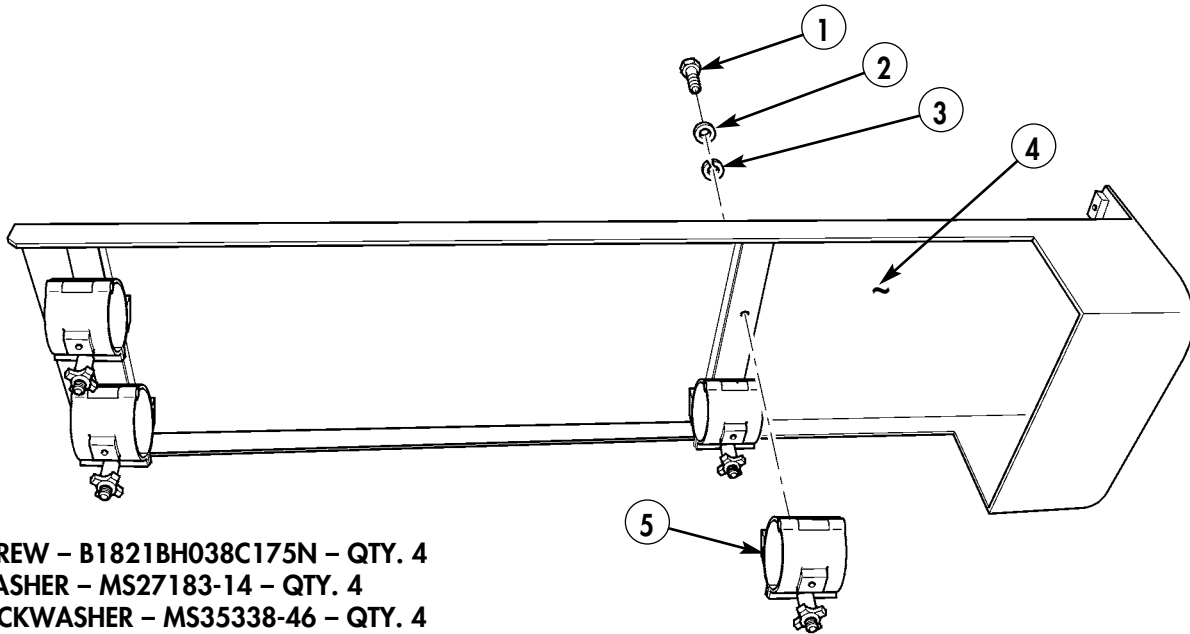


- 3. SCREW - B1821BH025C125N - QTY. 4
- 4. WASHER - MS27183-10 - QTY. 16
- 5. NUT - MS51967-2 - QTY. 4
- 6. LOCKNUT - MS17829-4C - QTY. 4
- 7. CHARGER - 03A0113D - QTY. 1

Figure 5-41.

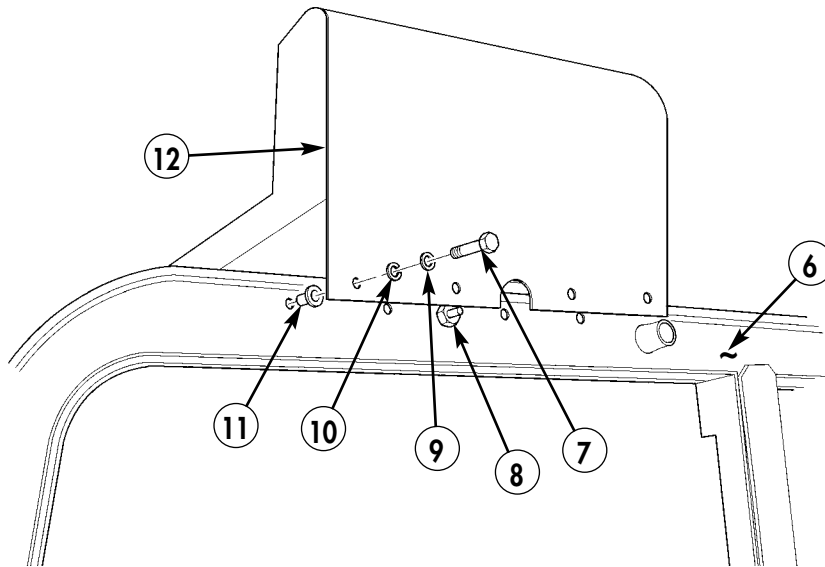
Section XIX. QEAM MOUNTING: ANTENNAS AND BRACKETS

19-1. Install four clamp subassemblies (5) to QEAM rack (4) with four screws (1), washers (2), and lockwashers (3).



- 1. SCREW – B1821BH038C175N – QTY. 4
- 2. WASHER – MS27183-14 – QTY. 4
- 3. LOCKWASHER – MS35338-46 – QTY. 4
- 4. RACK, QEAM – PKMM 000-006 – QTY. 1
- 5. CLAMP SUBASSEMBLY – 04A0010D – QTY. 4

Figure 5-42.



- 7. CAPSCREW – B1821BH025C150N – QTY. 4
- 9. WASHER – MS27183-10 – QTY. 4
- 10. LOCKWASHER – MS35338-44 – QTY. 4
- 11. INSERT – 12446871-2 – QTY. 4

Figure 5-43.

- 19-2. Remove windshield wiper from right-side windshield frame. (Refer to TM 9-2320-280-20-3.)
- 19-3. Position cutout of QEAM rack (12) centered on windshield wiper pivot (8).
- 19-4. Using QEAM rack (12) as template, locate, mark, and drill four 0.250-in. diameter holes in right-side windshield frame (6). Remove QEAM rack (12).
- 19-5. Enlarge four holes drilled in step 19-4 to 0.391-in. diameter.
- 19-6. Install four inserts (11).
- 19-7. Draw centerline on top and bottom of C-beam (14).
- 19-8. Using QEAM rack (12) as template, locate and mark hole position (13) on top of C-beam (14).

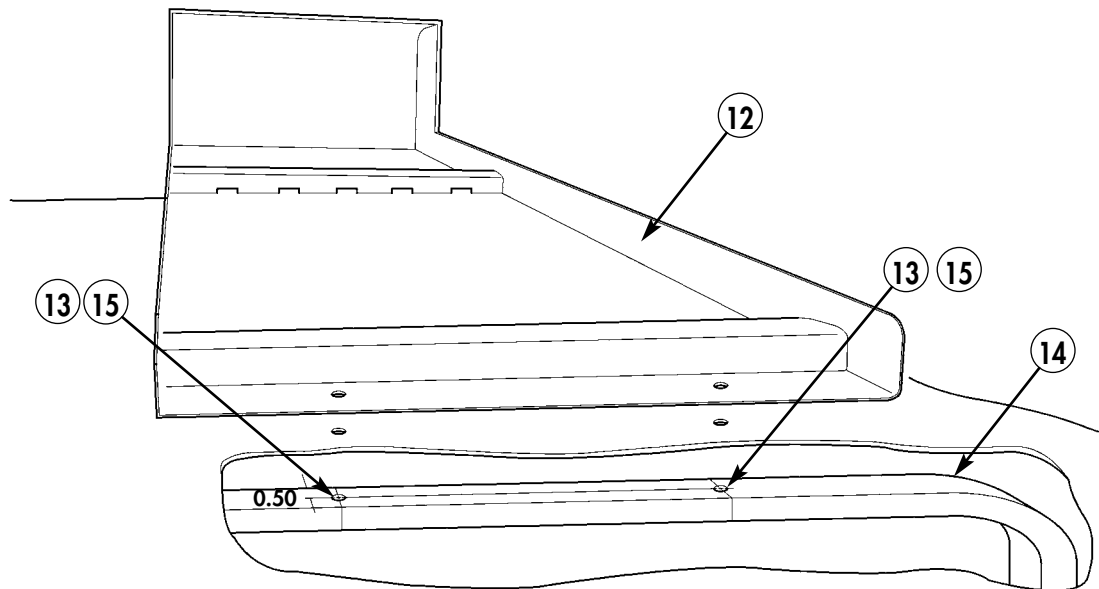


Figure 5-44.

19-9. Scribe line around C-beam (14) to locate hole position (13) on underside of C-beam (14).

NOTE

C-beam is angled and bolt length will be lost if hole is drilled too far forward.

19-10. Drill two 0.343-in. diameter holes (15) through C-beam (14).

NOTE

Center holes vertically on C-beam.

19-11. Install QEAM rack (12) on C-beam (14) with four screws (7), washers (9), and lockwashers (10).

19-12. Install windshield wiper. (Refer to TM 9-2320-280-20-3.)

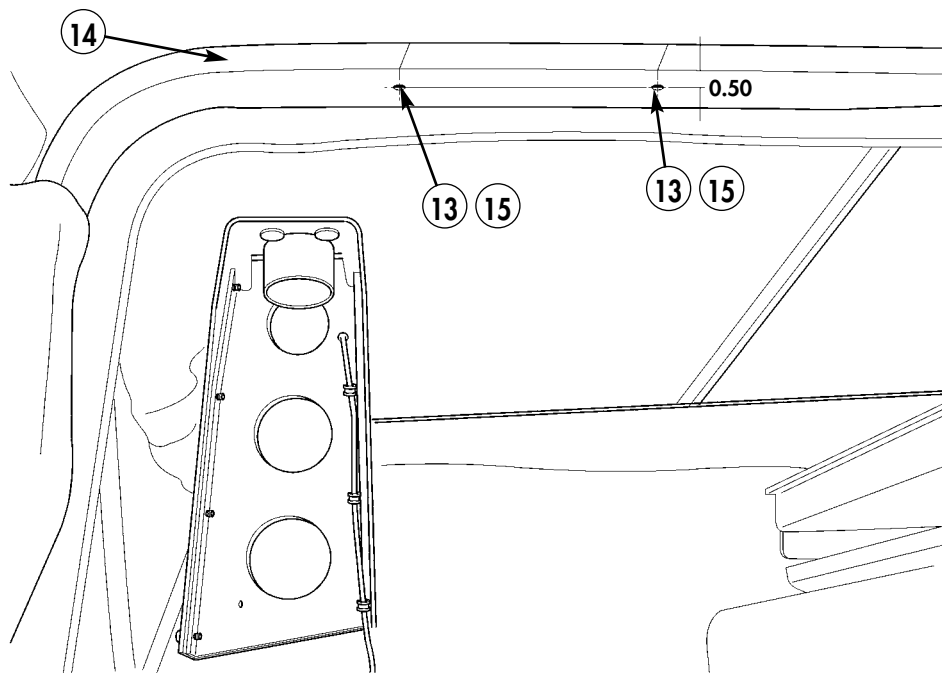
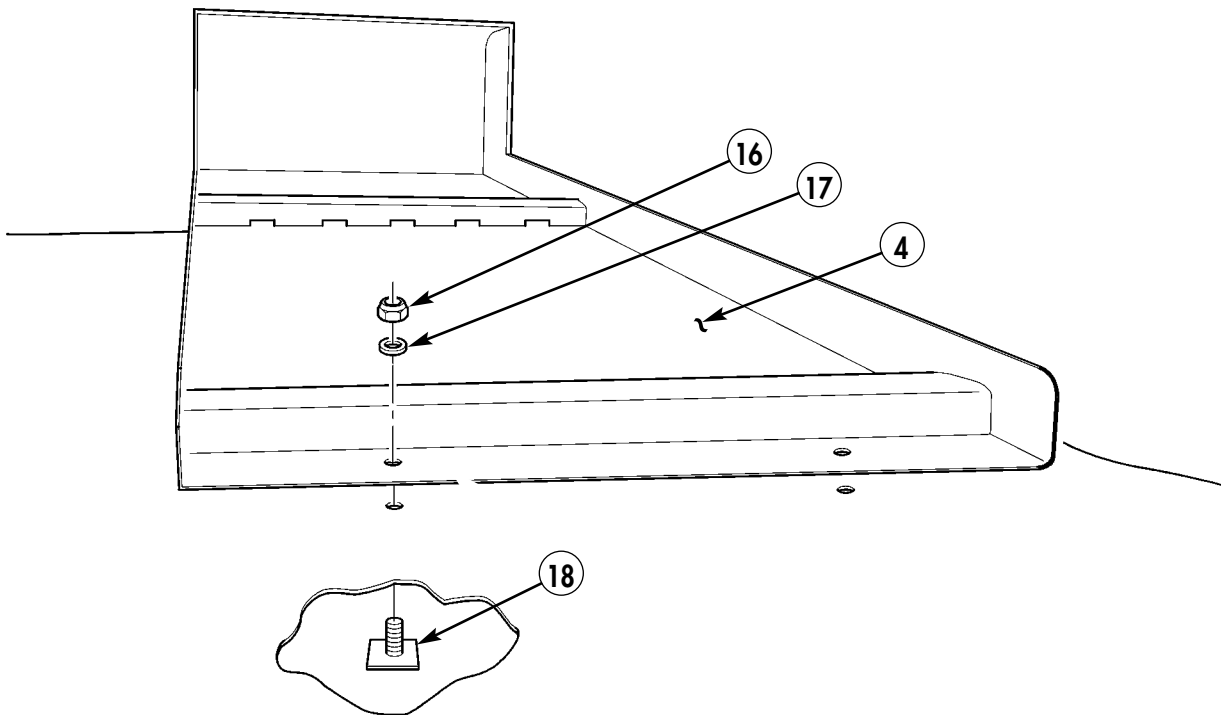


Figure 5-45.

19-13. Secure QEAM rack (4) to vehicle with two backing plates (18), washer (17), and locknuts (16).



- 16. LOCKNUT - MS17829-5C - QTY. 2
- 17. WASHER - MS27183-12 - QTY. 2
- 18. BACKING PLATE - 03A0102D - QTY. 2

Figure 5-46.

NOTE

Use folding step as a template to correctly space holes.

19-14. Locate, mark, and drill two 0.328-in. diameter holes (20) in body of vehicle (19).

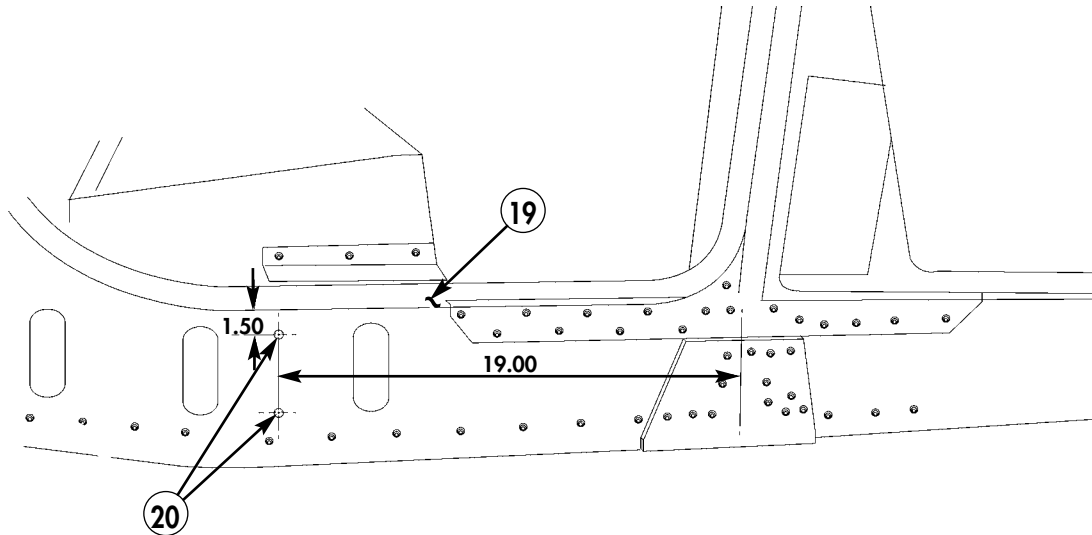


Figure 5-47.

19-15. Locate, mark, and drill two 0.328-in. diameter holes (21) in body of vehicle (19).

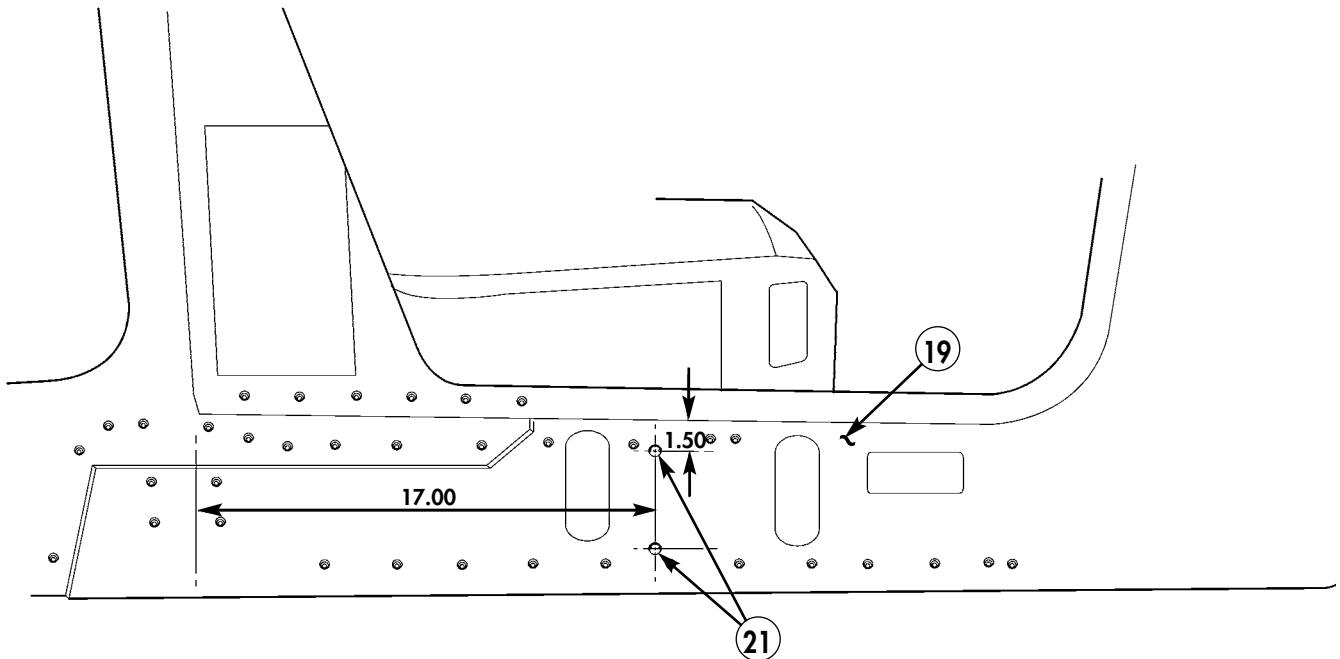
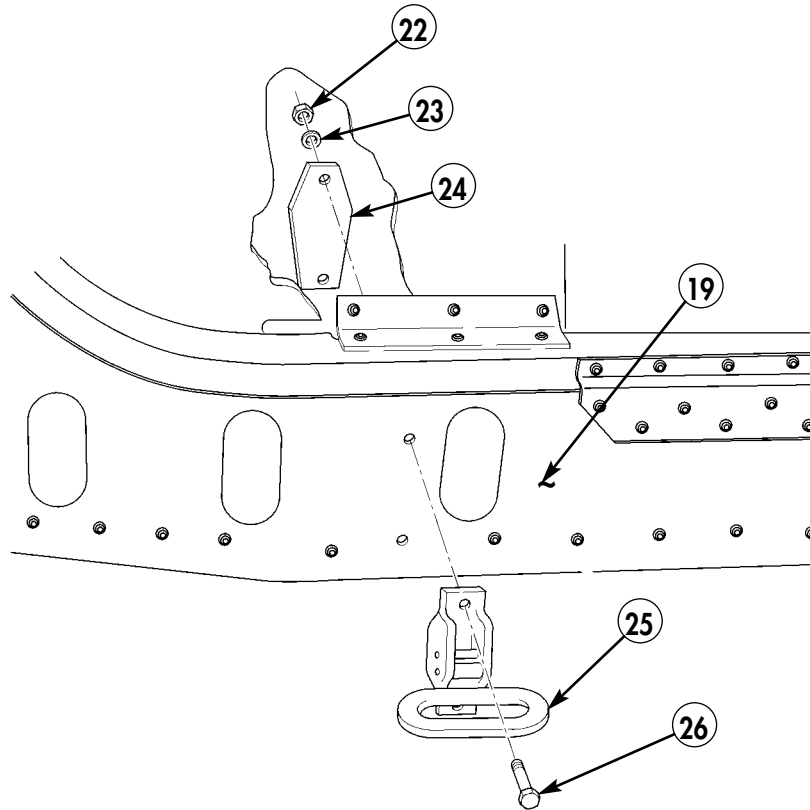


Figure 5-48.

NOTE

Rear folding step installation is shown. Front folding step is mounted the same way.

- 19-16.** Install folding step (25) on body of vehicle (19) with two screws (26), backing plate (24), two washers (23), and two locknuts (22).



22. LOCKNUT - MS17829-5C - QTY. 2
 23. LOCKWASHER - MS45904-72 - QTY. 2
 24. BACKING PLATE - 03A0101D - QTY. 2
 25. FOLDING STEP - 2797AZN - QTY. 2
 26. CAPSCREW - B1821BH031C125N - QTY. 2

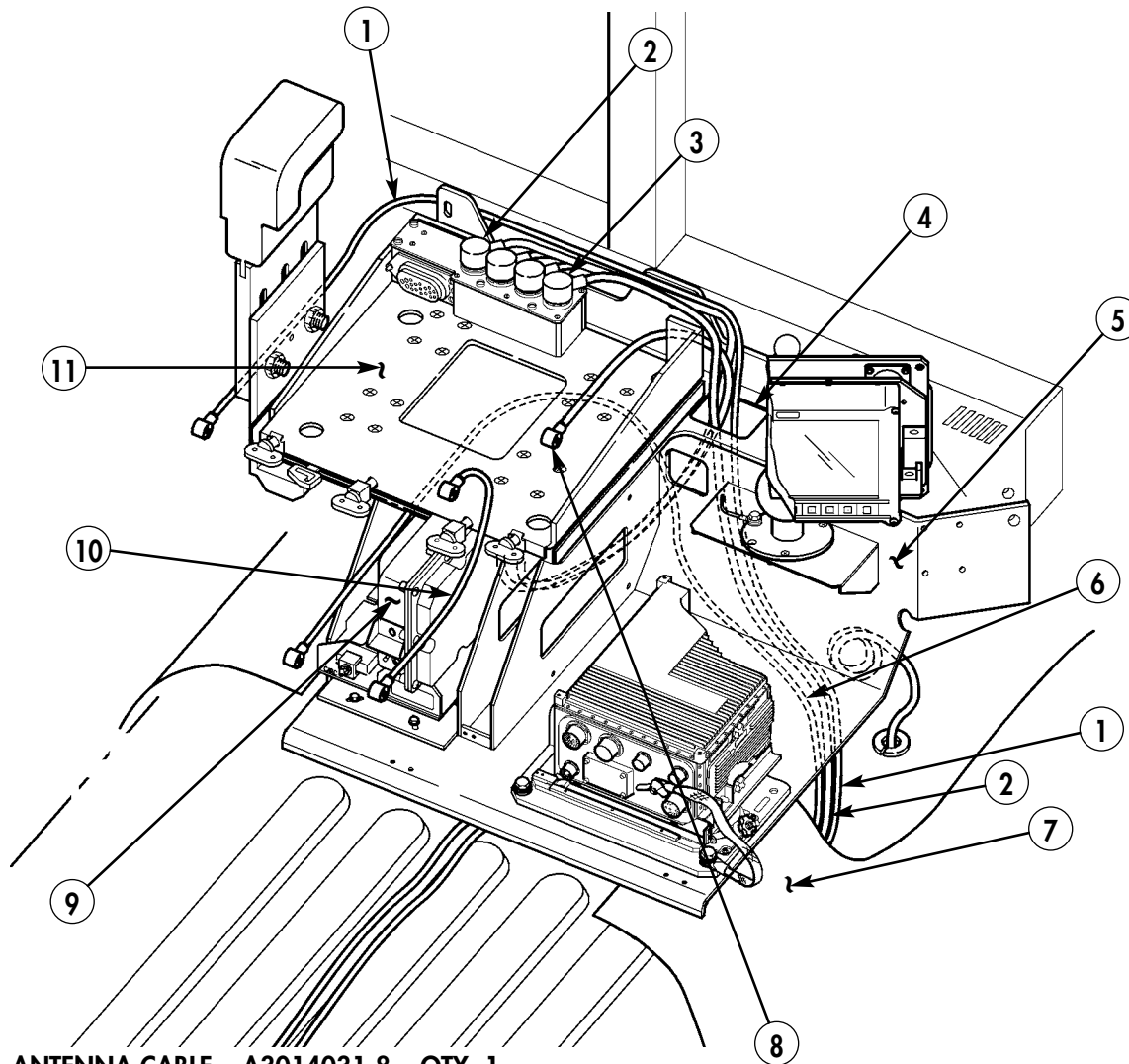
Figure 5-49.

Section XX. SINGGARS ANTENNA CABLES INSTALLATION

NOTE

Loosen left- and right-side tunnel insulation.
(Refer to TM 9-2320-280-20.)

- 20-1. Route antenna cable (1) from left side of mounting base (11) and power cable (2) from mounting base (11), down through center access hole (4), under integrated rack (5), and under right-side tunnel insulation (7) towards rear of vehicle.
- 20-2. Route antenna cable (10) from mounting base (11) to MT-6353/VRC mounting base (9).
- 20-3. Route power amp cable (3) from MT-6353/VRC mounting base (9), up through center access hole (4), and connect to mounting base (11).
- 20-4. Route control cable (8) from MT-6353/VRC mounting base (9), up through center access hole (4), to mounting base (11).
- 20-5. Route antenna cable (6) from front of MT-6353/VRC mounting base (9), under integrated rack (5), and under right-side tunnel insulation (7) towards rear of vehicle.



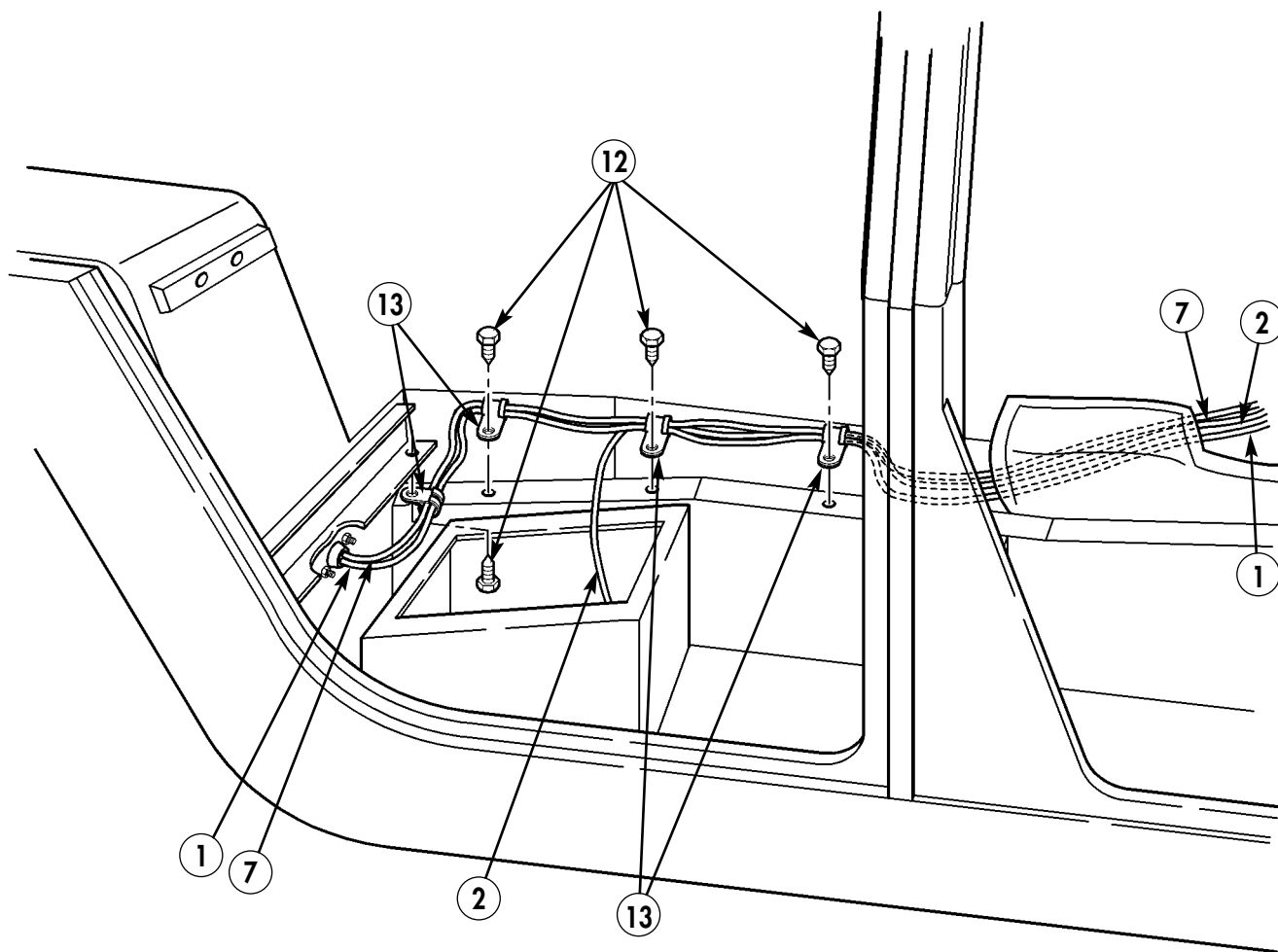
- 1. ANTENNA CABLE – A3014031-8 – QTY. 1
- 2. SINGGARS POWER CABLE – A3014039-2 – QTY. 1
- 6. ANTENNA CABLE – A3014031-17 – QTY. 1
- 10. ANTENNA CABLE – A3014032-3 – QTY. 1

Figure 5-50.

NOTE

It may be necessary to drill four 0.147-in. holes in right wheelwell/utility area before performing step 20-6.

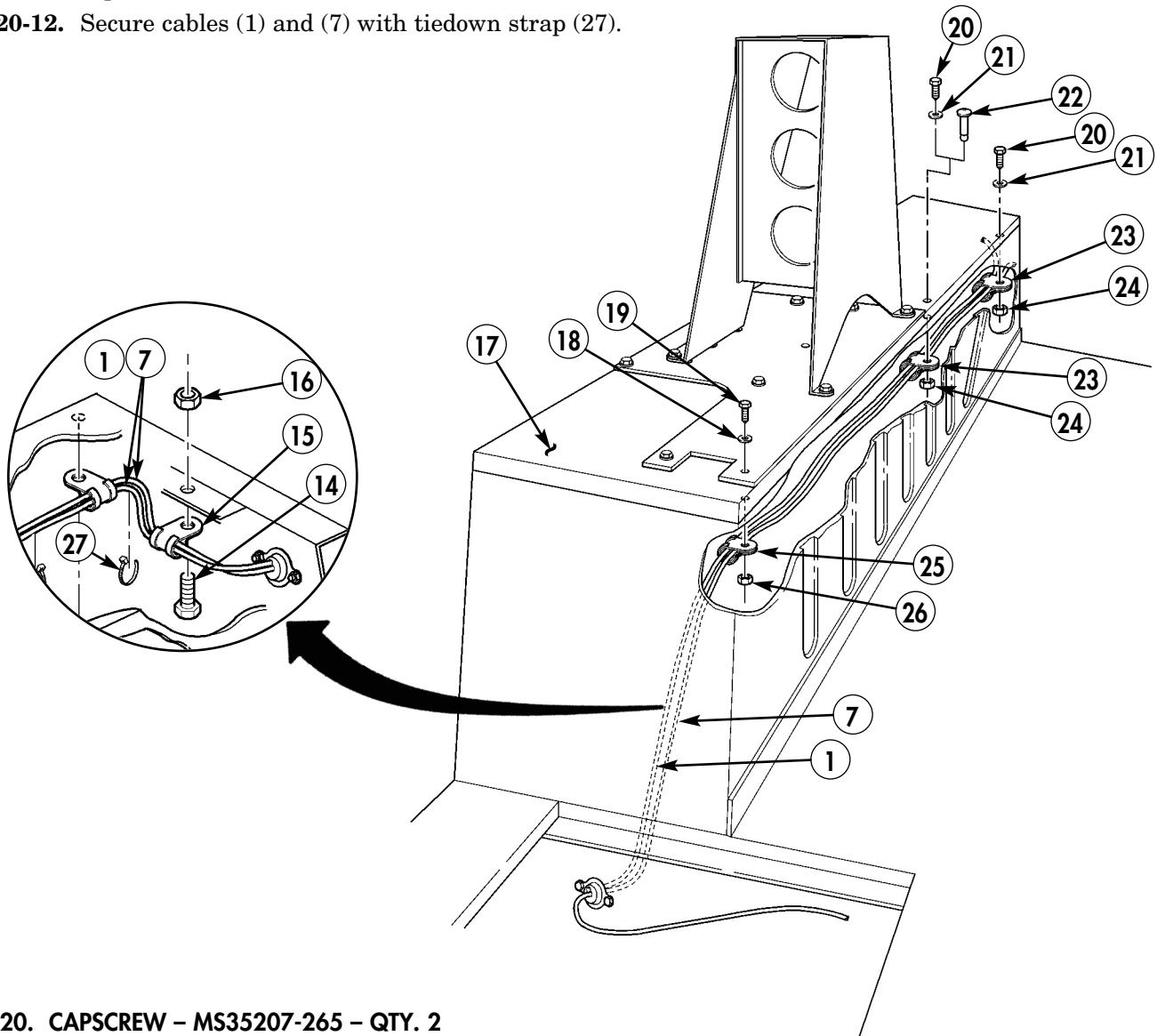
- 20-6.** Route antenna cables (7) and (1) and power cable (2) along right rear seat/utility area with four self-tapping screws (12) and loop clamps (13).
- 20-7.** Route two antenna cables (7) and (1) through right wheelwell/utility area with existing grommet, retainer, screws, and plain-assembled nuts. (Refer to TM 9-2320-280-20.)



- 12. SELF-TAPPING SCREW - 9421073 - QTY. 4**
13. LOOP CLAMP - MS21333-69 - QTY. 4

Figure 5-51.

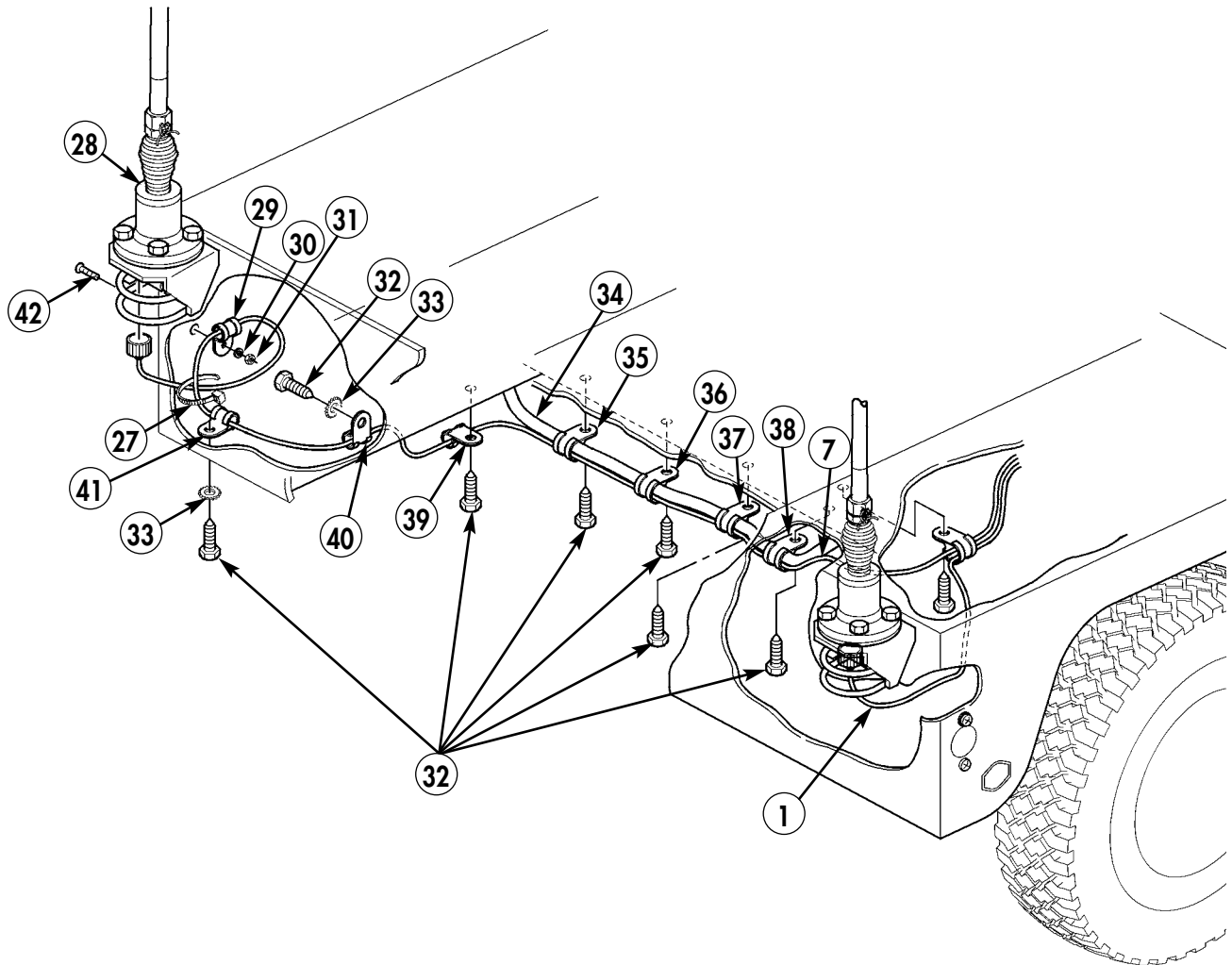
- 20-8. Locate position for two loop clamps. Remove two rivets (22) from right wheelwell (17).
- 20-9. Route antenna cables (1) and (7) along wheelwell (17). Secure with existing loop clamp (15), capscrew (14), and nut (16).
- 20-10. Route antenna cables (1) and (7) along wheelwell (17). Secure with loop clamp (25) and existing capscrew (19), existing washer (18), and existing nut (26).
- 20-11. Route antenna cables (1) and (7) along wheelwell (17). Secure with two loop clamps (23), two capscrews (20), two washers (21), and two nuts (24).
- 20-12. Secure cables (1) and (7) with tiedown strap (27).



- 20. CAPSCREW – MS35207-265 – QTY. 2
- 21. WASHER – MS27183-8 – QTY. 2
- 23. LOOP CLAMP – MS21333-71 – QTY. 2
- 24. NUT – MS35650-302 – QTY. 2
- 27. TIEDOWN STRAP – MS3367-1-0 – QTY. 2

Figure 5-52.

- 20-13.** Route antenna cable (7) along existing taillight wiring harness (34) and secure with four existing loop clamps (35), (36), (37), and (38) and existing self-tapping screws (32).
- 20-14.** Route antenna cable (7) along existing taillight wiring harness (34) on left-side frame rail with three existing loop clamps (39), (40), and (41) and existing self-tapping screws (32) and lockwashers (33).
- 20-15.** Route antenna cable (7) to antenna base (28) with existing loop clamp (29), screw (42), lockwasher (30), and nut (31).
- 20-16.** Attach antenna cable (7) to antenna base (28).
- 20-17.** Coil excess antenna cable (7) and secure to inside of taillight closeout cover with tiedown strap (27).

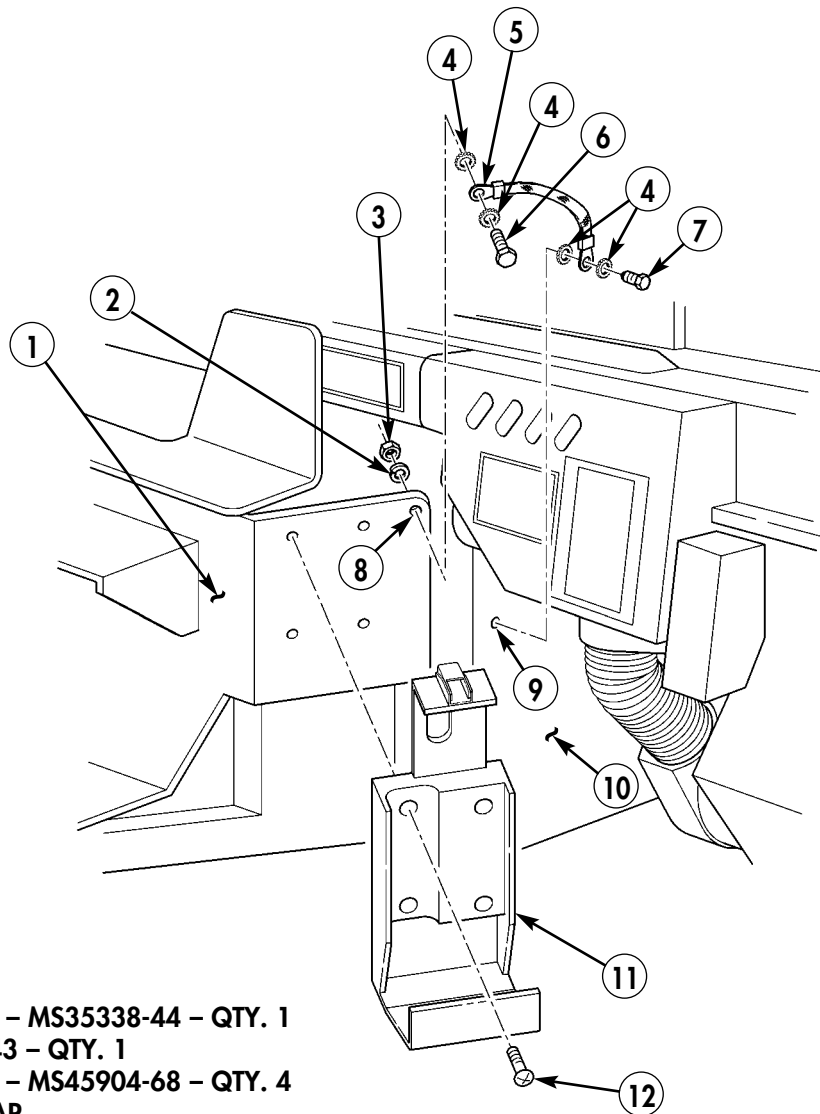


27. TIEDOWN STRAP – MS3367-1-0 – QTY. A/R

Figure 5-53.

Section XXI. PLGR BRACKET INSTALLATION

- 21-1. Install PLGR bracket (11) on integrated rack (1) with four screws (12).
- 21-2. Locate, mark, and drill one 0.201-in. diameter hole (9) in right-side engine tunnel (10).
- 21-3. Remove paint from vicinity of hole (8) on integrated rack (1) and hole (9) on right-side engine tunnel (10). Apply anti-seize compound as required.
- 21-4. Fabricate ground strap (5) from 8.00-in. length of braided wire and two terminal lugs.
- 21-5. Install ground strap (5) on integrated rack (1) with capscrew (6), two lockwashers (4), lockwasher (2), and nut (3).
- 21-6. Install ground strap (5) on right-side engine tunnel (10) with self-tapping screw (7) and two lockwashers (4).



2. LOCKWASHER – MS35338-44 – QTY. 1
3. NUT – 9419143 – QTY. 1
4. LOCKWASHER – MS45904-68 – QTY. 4
5. GROUND STRAP
 - BRAIDED WIRE – AA59569F30T0375 – QTY. A/R
 - TERMINAL LUG – MS20659-129 – QTY. 2
6. CAPSCREW – B1821BH025C100N – QTY. 1
7. SELF-TAPPING SCREW – 9426241 – QTY. 1
11. PLGR BRACKET – 986-0645-001 – QTY. 1
12. SCREW – MS35206-263 – QTY. 4

Figure 5-54.

Section XXII. PLGR ANTENNA AND CABLE INSTALLATION

NOTE

- Perform this procedure only when installing additional PLGR antenna when MTS is installed.
- Drilled holes on inside and outside of windshield frame should align to allow routing of PLGR cable through windshield frame.
- Relocate all caution labels as necessary.

22-1. Using PLGR antenna mount bracket as template, locate, mark, and drill two 0.50-in. holes (3) in outer windshield frame (1).

22-2. Locate, mark, and drill one 0.375-in. diameter hole (2) in outer windshield frame (1).

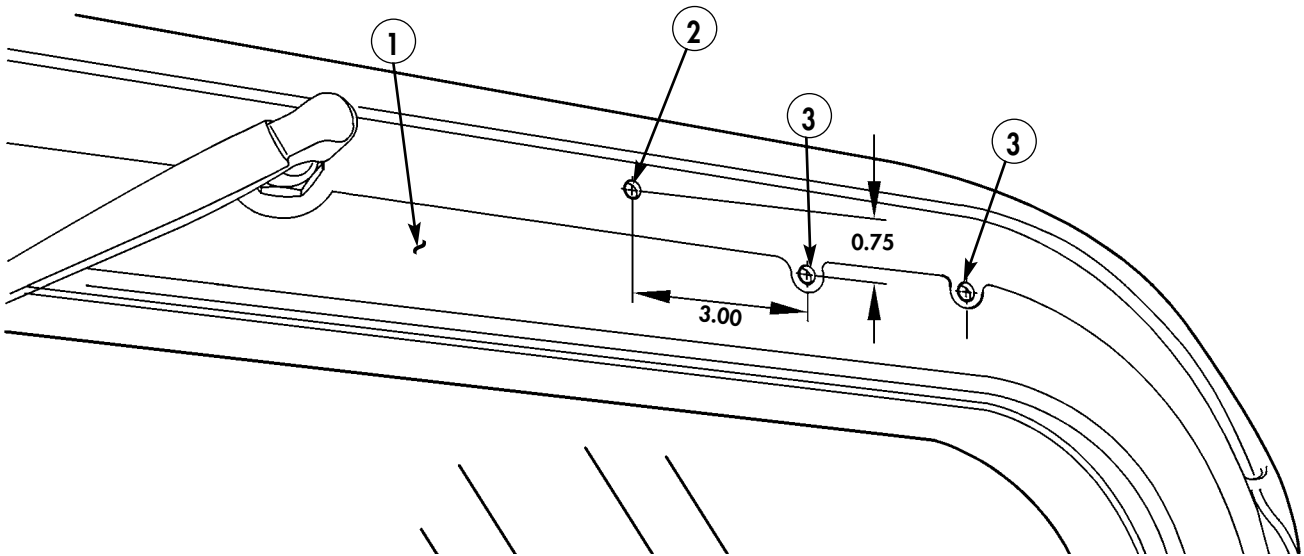


Figure 5-55.

22-3. Locate, mark, and drill one 0.375-in. diameter hole (4) in left-side inner windshield frame (5).

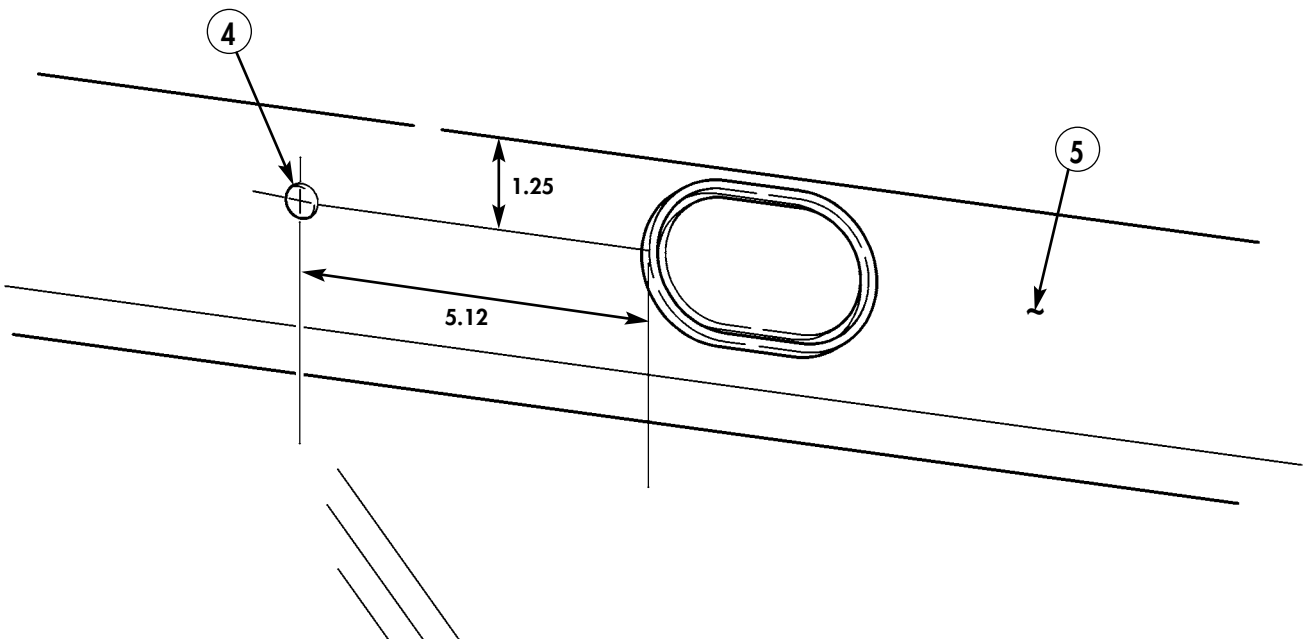
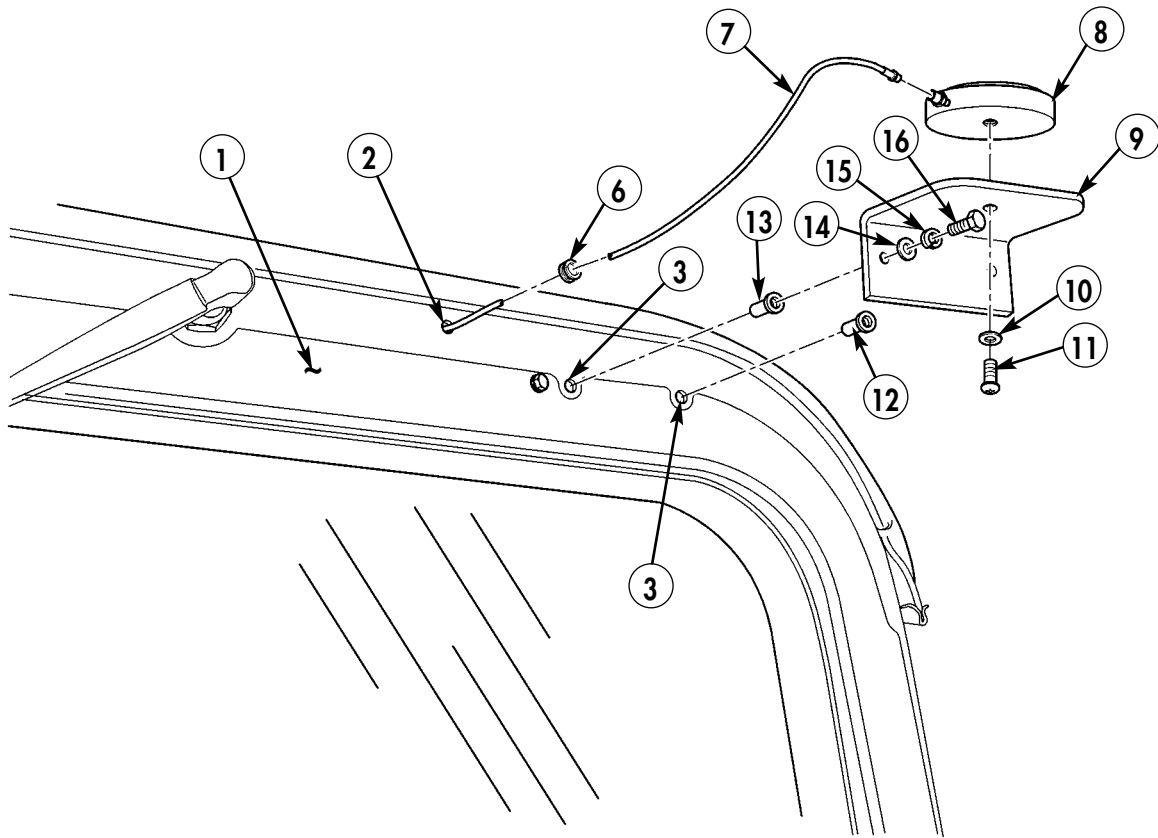


Figure 5-56.

- 22-4. Pull PLGR antenna cable (7) through hole (2) in left-side outer windshield frame (1). Split one side of grommet (6), place grommet (6) on cable (7), and insert grommet (6) in hole (2) in outer left-side windshield frame (1).
- 22-5. Install wellnuts (12) and (13) in holes (3).
- 22-6. Install PLGR antenna mount bracket (9) on outer left side windshield frame (1) with two lockwashers (15), washers (14), and capscrews (16).
- 22-7. Install PLGR antenna (8) on PLGR antenna mount bracket (9) with washer (10) and screw (11).
- 22-8. Pull PLGR antenna cable (7) through hole (2) in left-side outer windshield frame (1) and grommet (6).
- 22-9. Attach PLGR antenna cable (7) to PLGR antenna (8).



- 6. GROMMET - MS35489-143 - QTY. 1
- 7. PLGR ANTENNA CABLE - 426-0141-050 - QTY. 1
- 8. PLGR ANTENNA - AT575-030 - QTY. 1
- 9. PLGR ANTENNA MOUNT BRACKET - 12480578 - QTY. 1
- 10. WASHER - 9417373 - QTY. 1
- 11. SCREW - 160035 - QTY. 1
- 12. WELLNUT - 12339397-3 - QTY. 1
- 13. WELLNUT - 12339397-6 - QTY. 1
- 14. WASHER - 9414920 - QTY. 2
- 15. LOCKWASHER - MS35338-44 - QTY. 2
- 16. CAPSCREW - B1821BH025C125N - QTY. 2

Figure 5-57.

- 22-10.** Route PLGR antenna cable (7) through hole (4) in left-side inner windshield frame (5).
- 22-11.** Split one side of grommet (6), place grommet (6) on cable (7), and insert grommet (6) in hole (4) in left-side windshield frame (5).

NOTE

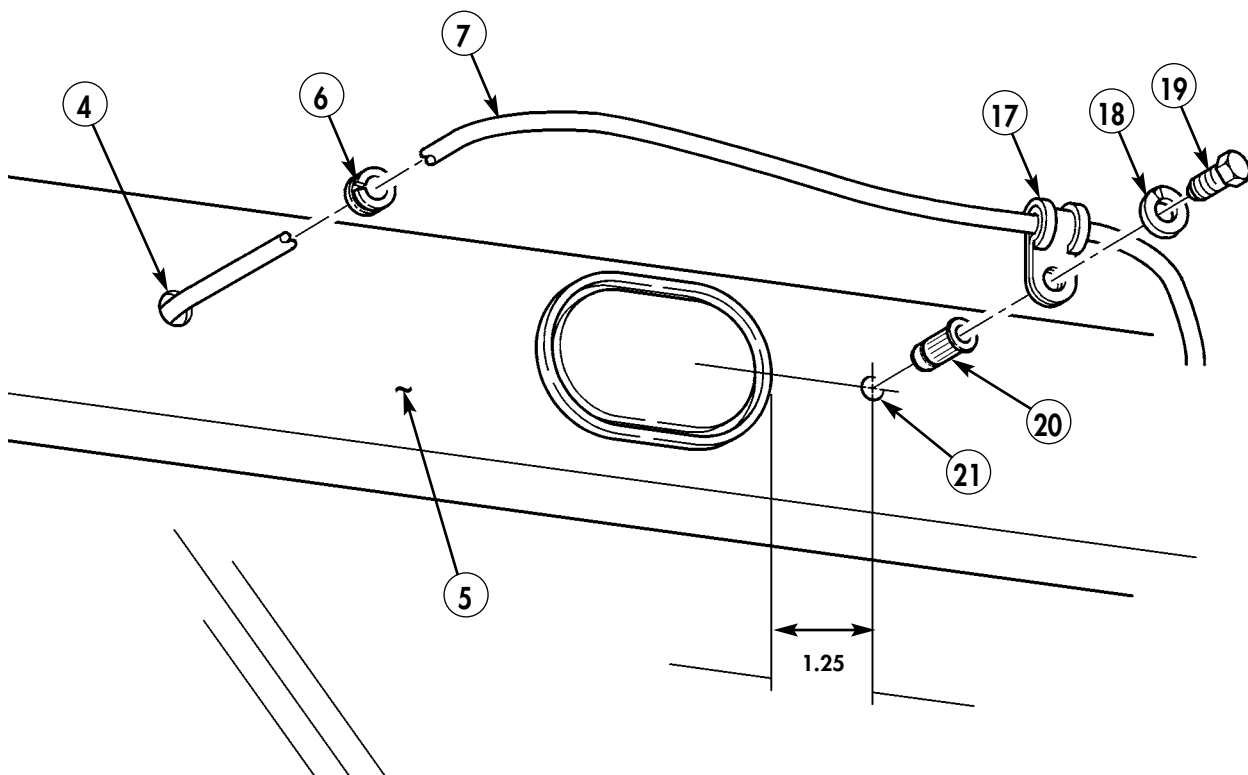
Perform steps 22-12 and 22-13 for vehicles without sun visor kit installed.

- 22-12.** Locate, mark, and drill one 0.390-in. hole (21) in left-side windshield frame (5). Install insert (20) in hole (21).
- 22-13.** Route cable (7) along left-side windshield frame (5) and secure with loop clamp (17), capscrew (19), and lockwasher (18).

NOTE

- Perform step 22-14 for vehicles with sun visor kit installed.
- Antenna cable is secured with topmost sun visor bracket screw.

- 22-14.** Route cable (7) along left-side windshield frame (5) and secure with loop clamp (17), existing capscrew (19), and lockwasher (18).

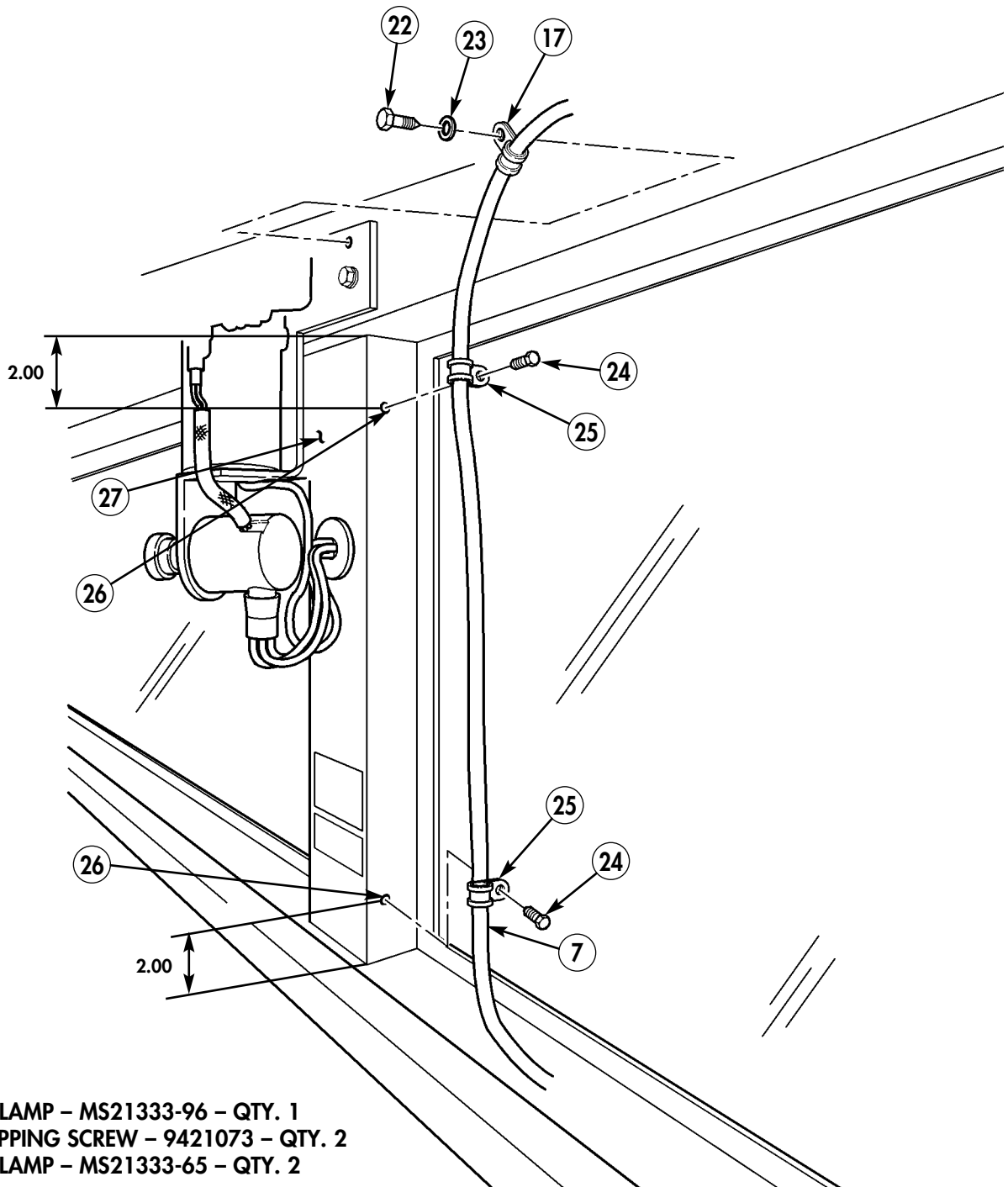


- 6.** GROMMET – MS35489-143 – QTY. 1
17. LOOP CLAMP – MS21333-96 – QTY. 1
18. LOCKWASHER – MS35338-44 – QTY. 1
19. CAPSCREW – B1821BH025C100N – QTY. 1
20. INSERT – 12446871-2 – QTY. 1

Figure 5-58.

22-15. Locate, mark, and drill two 0.147-in. diameter holes (26) in windshield center frame (27).

22-16. Route PLGR antenna cable (7) along windshield center frame (27) with two self-tapping screws (24), loop clamps (25) and (17), existing screw (22), and washer (23).



- 17. LOOP CLAMP – MS21333-96 – QTY. 1
- 24. SELF-TAPPING SCREW – 9421073 – QTY. 2
- 25. LOOP CLAMP – MS21333-65 – QTY. 2

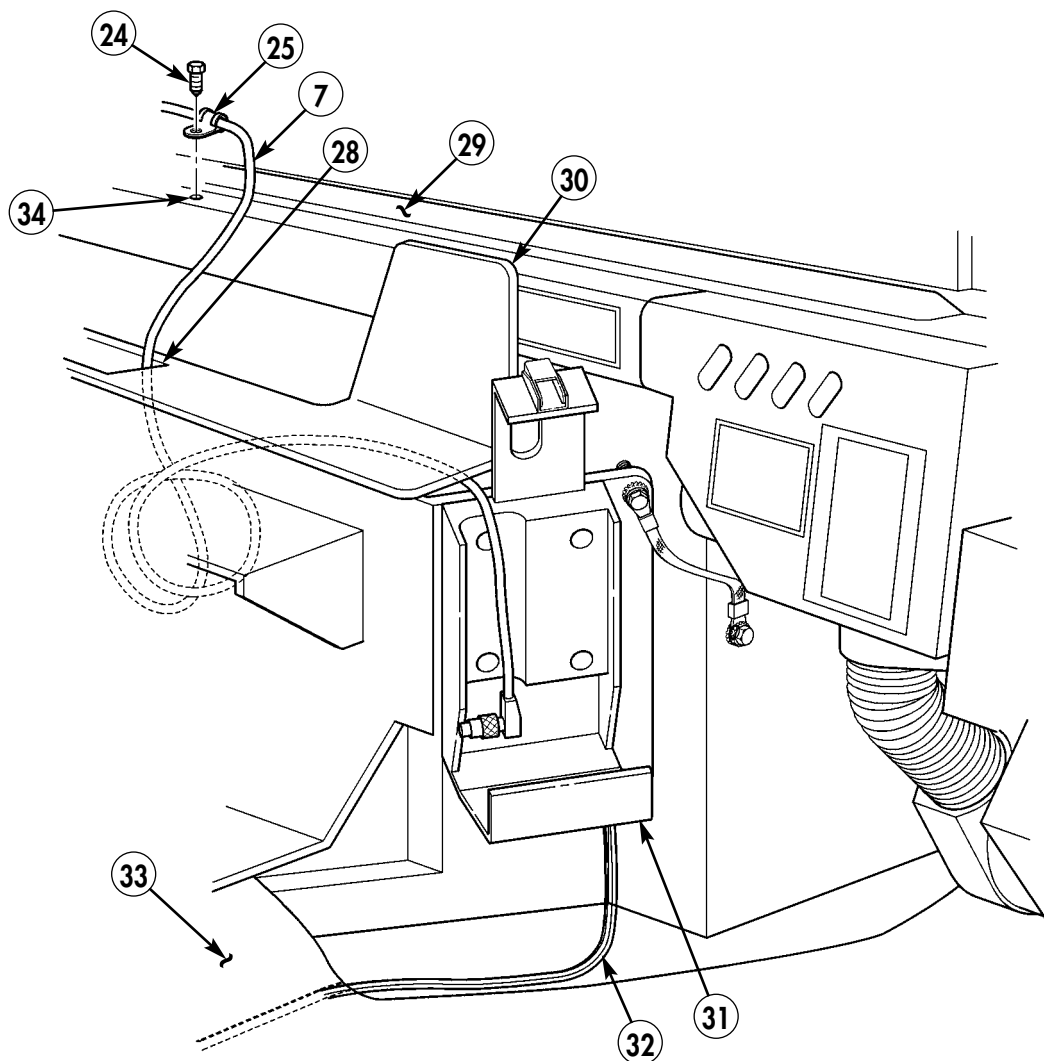
Figure 5-59.

- 22-17. Locate, mark, and drill one 0.147-in. hole (34) in top of windshield frame (29).
- 22-18. Route PLGR antenna cable (7) on top of windshield frame (29) and secure with loop clamp (25) and self-tapping screw (24).
- 22-19. Route PLGR antenna cable (7) down through center access hole (28) of integrated rack (30), and coil excess antenna cable (7) under integrated rack (30).
- 22-20. Route PLGR power cable (32) from PLGR installation mount (31) to right-side tunnel insulation (33).

NOTE

Loosen right-side tunnel insulation before performing step 22-21.
(Refer to TM 9-2320-280-20.)

- 22-21. Route PLGR power cable (32) under edge of right-side tunnel insulation (33) to 24V terminal bar at cab enclosure panel.

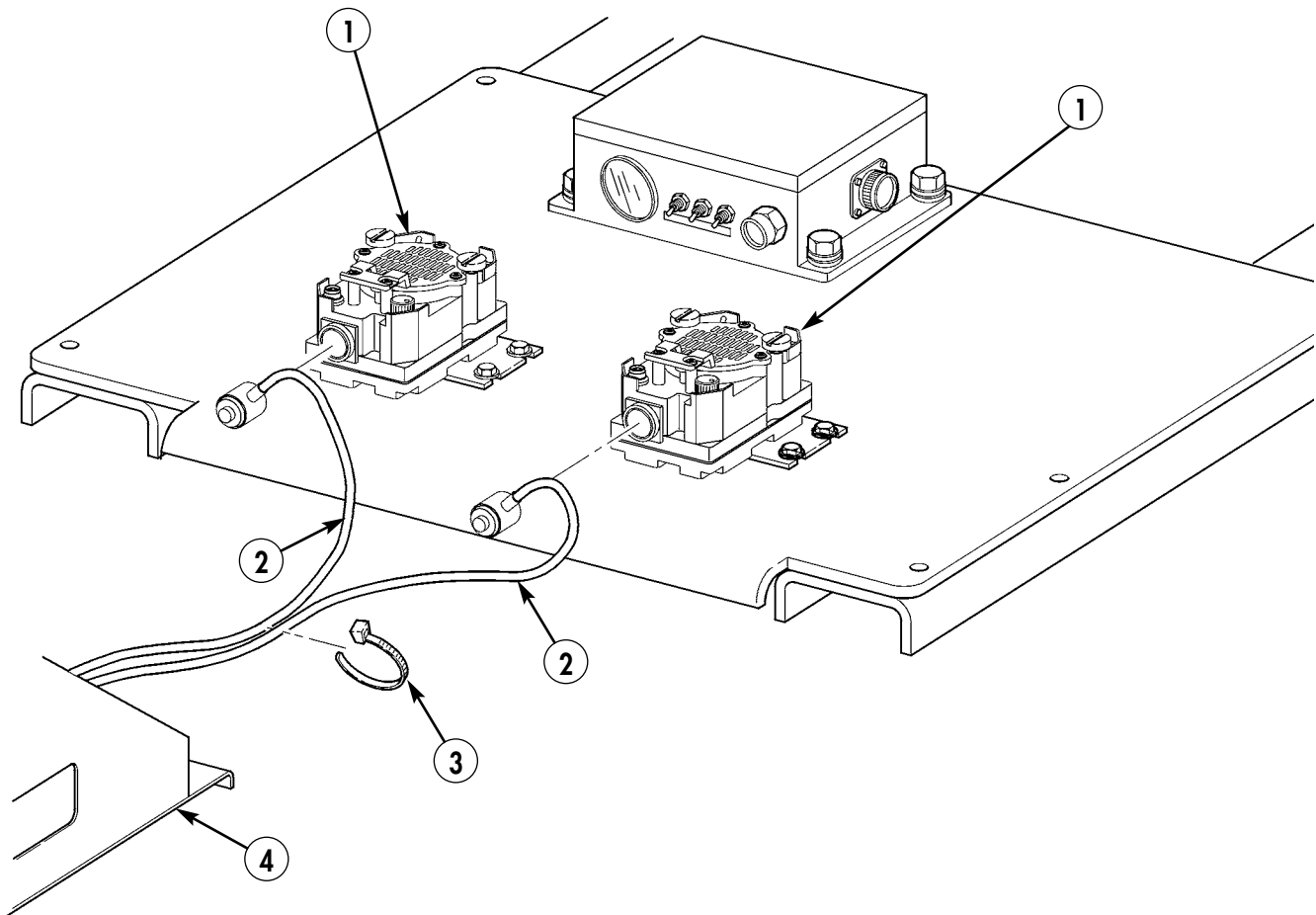


- 24. SELF-TAPPING SCREW - 9421073 - QTY. 1
- 25. LOOP CLAMP - MS21333-65 - QTY. 1
- 32. PLGR POWER CABLE - 9728558-10 - QTY. 1

Figure 5-60.

Section XXIII. LOUDSPEAKER CABLES INSTALLATION

- 23-1.** Connect speaker cables (2) to loudspeakers (1).
- 23-2.** Secure cables (2) together with tiedown strap (3).
- 23-3.** Route speaker cables (2) to integrated rack (4).



- 2. LOUDSPEAKER CABLE – A3014038-3 – QTY. 2**
- 3. TIEDOWN STRAP – MS3367-1-0 – QTY. 1**

Figure 5-61.

- 23-4.** Route speaker cables (2) through center access hole (6) in integrated rack (4) and behind SINGARS mounting base MT-6352/VRC (5).

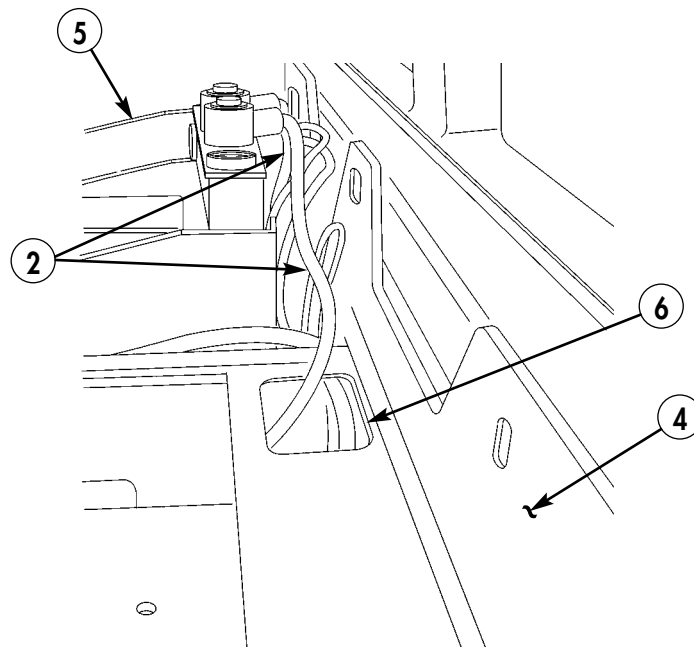


Figure 5-62.

- 23-5.** Connect speaker cables (2) to SINGARS mounting base power distribution (7).

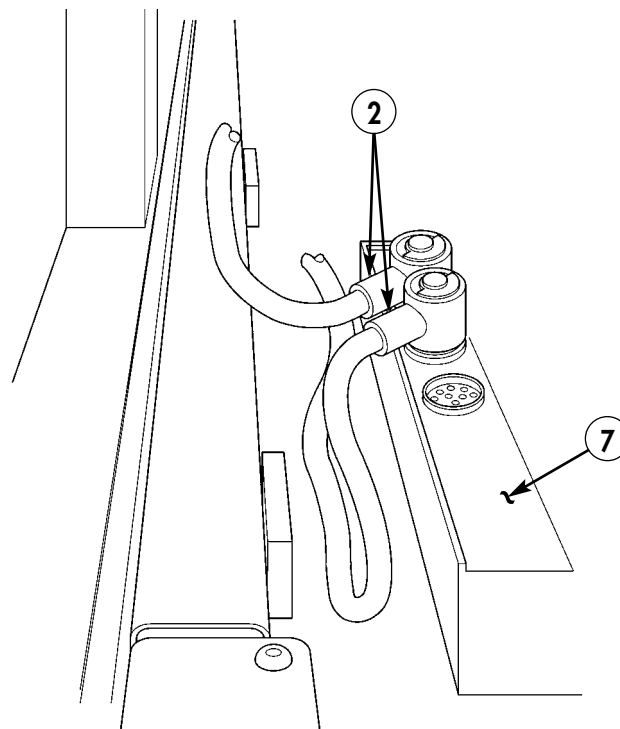
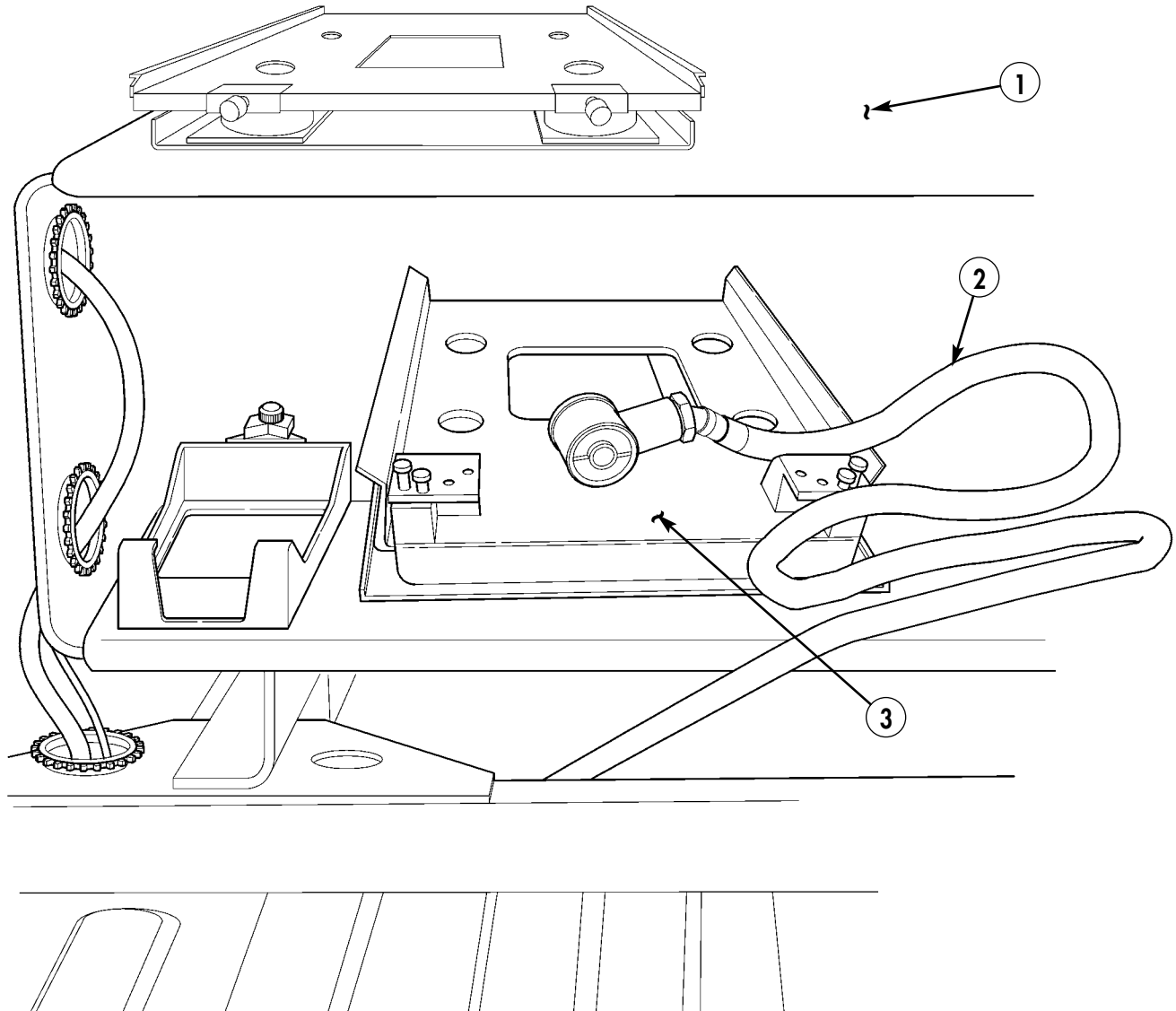


Figure 5-63.

Section XXIV. NTDR POWER CABLE INSTALLATION

- 24-1. Route NTDR power cable (2) from battery box to rear of multi-net rack (1).
- 24-2. Route NTDR power cable along rear of multi-net rack (1) to vicinity of NTDR mounting bracket (3).



1. CABLE, POWER - A3014039-2 - QTY. 1

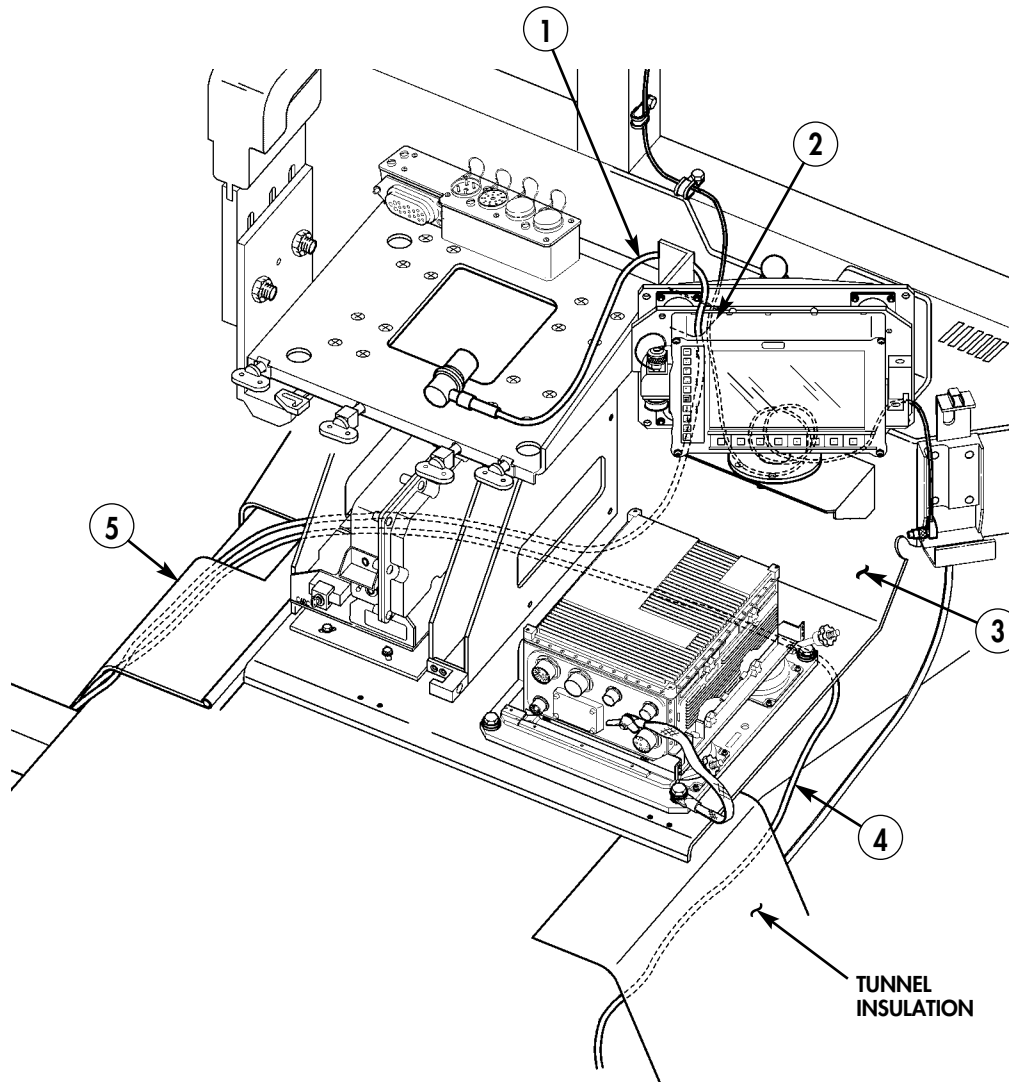
Figure 5-64.

Section XXV. EPLRS CABLES INSTALLATION

NOTE

- Loosen tunnel insulation before performing steps 25-1 and 25-2. (Refer to TM 9-2320-280-20.)
- SINGARS model AN/VRC-92F shown.

- 25-1.** Route INC-EPUU cable (1) from integrated rack (3), down through center access hole (2), and under left-side tunnel insulation (5) towards rear of vehicle.
- 25-2.** Route power cable (4) from rear battery box forward and under integrated rack (3) and under left-side tunnel insulation (5) towards rear of vehicle.
- 25-3.** Secure left-side tunnel insulation (5). (Refer to TM 9-2320-280-20.)



1. INC-EPUU CABLE – A3279383-3 – QTY. 1
 4. EPLRS POWER CABLE – A3004939 – QTY. 1

Figure 5-65.

NOTE

Perform step 25-15 for vehicles with left rear cab enclosure panel only.

- 25-4.** Cut 2x2 in. section (13) from left rear cab enclosure panel (11). Install grommet (12). Reinstall cab enclosure panel (11). (Refer to TM 9-2320-280-20.)
- 25-5.** Locate, mark, and drill three 0.147-in. holes (8) along tunnel edge (9).
- 25-6.** Route INC-EPUU cable (1) and power cable (4) rearward under left-side B-beam (10) and along tunnel edge (9).
- 25-7.** Route INC-EPUU cable (1) and power cable (4) rearward along tunnel edge (9) and secure with three clamps (7) and self-tapping screws (6).

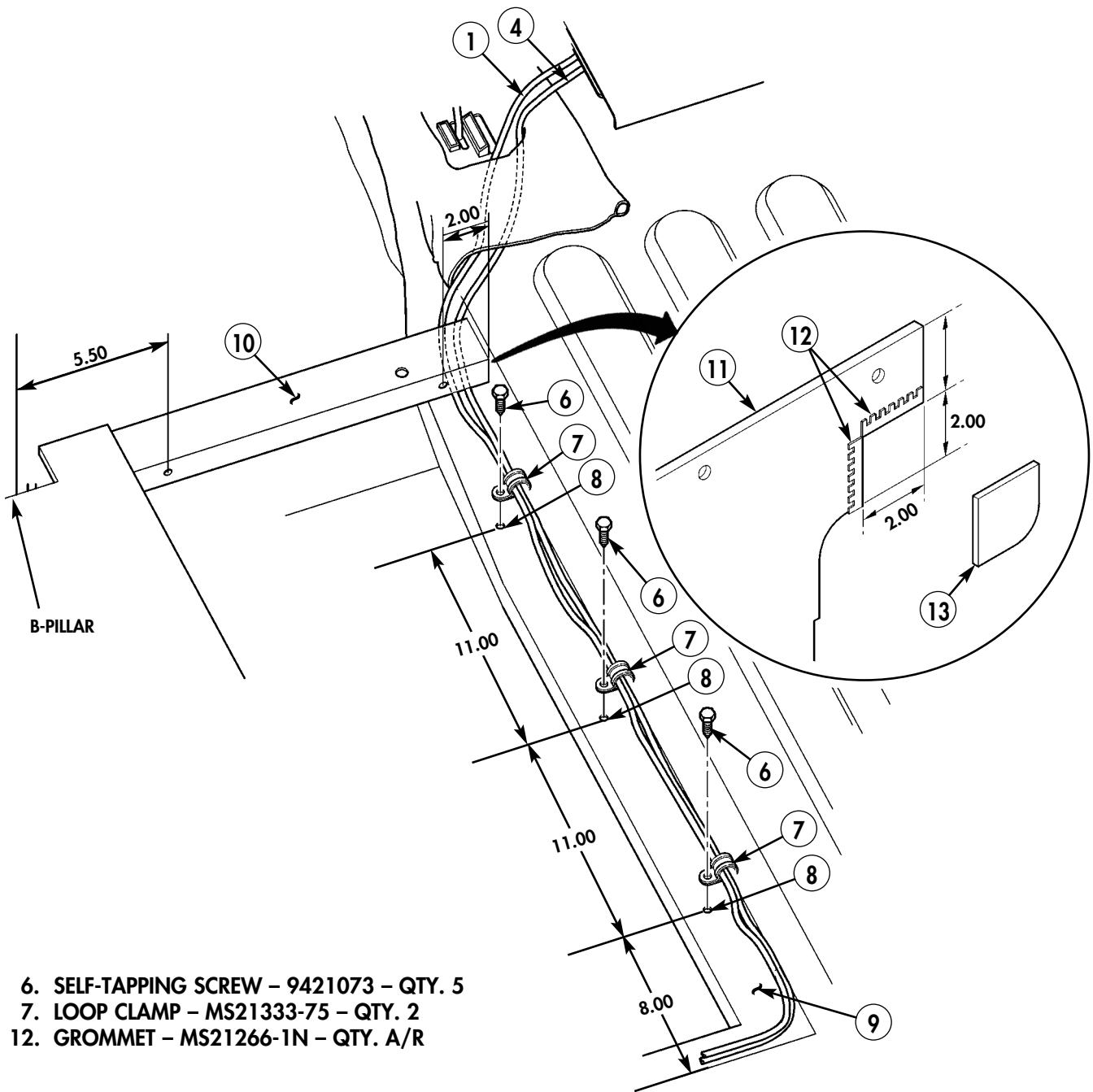
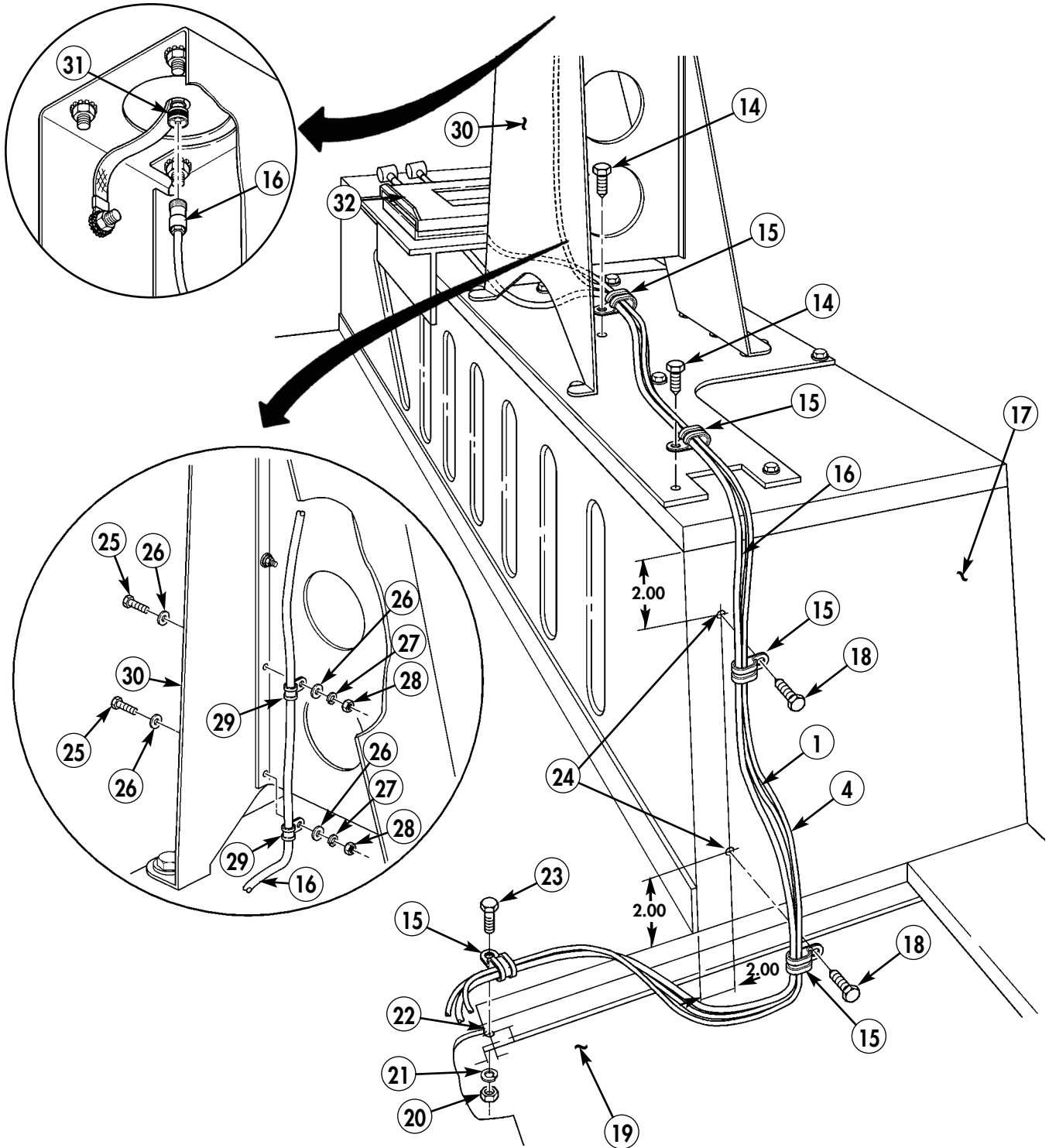


Figure 5-66.

- 25-8.** Locate, mark, and drill one 0.225-in. hole (22) in inboard corner on rear inside lip of left rear seat back support (19).
- 25-9.** Locate, mark, and drill two 0.147-in. holes (24) in front face of left rear wheelwell (17).
- 25-10.** Route cables (16), (1), and (4) along rear perimeter of left rear seat back support (19), up front face of left rear wheelwell (17), and under antenna base (30).
- 25-11.** Secure cables (16), (1), and (4) to left rear wheelwell (17) with screw (23), lockwasher (21), nut (20), two self-tapping screws (18), two existing screws (14), and five loop clamps (15).
- 25-12.** Route cables (1) and (4) to EPLRS mount (32)
- 25-13.** Secure antenna cable (16) to antenna base (30) with existing loop clamps (29), screws (25), washers (26), lockwashers (27), and nuts (28).
- 25-14.** Connect antenna cable (16) to antenna (31).
- 25-15.** Take all slack out of cable and store under EPLRS mount assembly.
- 25-16.** Tighten all screws and nuts on all clamps.
- 25-17.** Secure right-side tunnel insulation. (Refer to TM 9-2320-280-20.)



- 15. LOOP CLAMP - MS21333-77 - QTY. 5
- 16. ANTENNA CABLE - SM-C-911480 - QTY. 1
- 18. SELF-TAPPING SCREW - 9421073 - QTY. 2
- 20. NUT, PLAIN-ASSEMBLED - 9422771 - QTY. 1
- 21. LOCKWASHER - MS35338-43 - QTY. 1
- 23. SCREW - MS35206-265 - QTY. 1
- 29. LOOP CLAMP - MS21333-102 - QTY. 2

Figure 5-67.

- 25-18.** Locate, mark, and drill one 0.225-in. hole (22) in inboard corner on rear inside lip of left rear seat back support (19).
- 25-19.** Locate, mark, and drill two 0.147-in. holes (24) in front face of left rear wheelwell (34).
- 25-20.** Route EPLRS antenna cable (16) along rear perimeter of left rear seat back support (19), up front face of left rear wheelwell (34), and up antenna base (35).

NOTE

Clamps are large to accommodate black charger cable from power entry box in step 25-20.

- 25-21.** Secure EPLRS antenna cable (16) to seat back support (19) with screw (23), lockwasher (21), nut (20), two self-tapping screws (18), two existing screws (14), and five loop clamps (15).
- 25-22.** Secure antenna cable (16) to antenna base (35) with clamps (29), existing screws (25), washers (26), lockwashers (27), and nuts (28).
- 25-23.** Connect antenna cable (16) to antenna (31). Route antenna cable (16) through multi-net rack (33) to vicinity of EPLRS mount.
- 25-24.** Tighten all screws and nuts on all clamps.
- 25-25.** Secure right-side tunnel insulation. (Refer to TM 9-2320-280-20.)

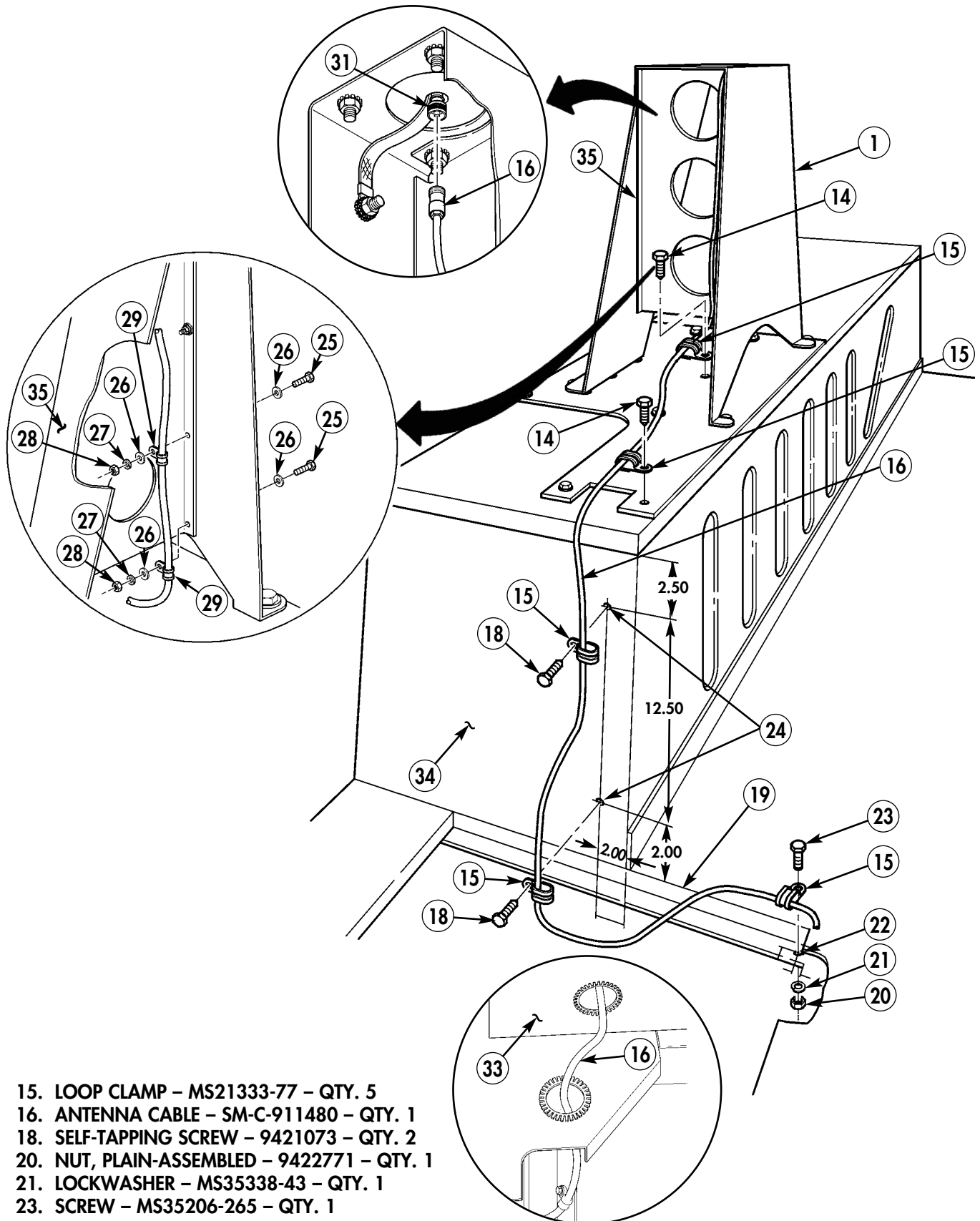
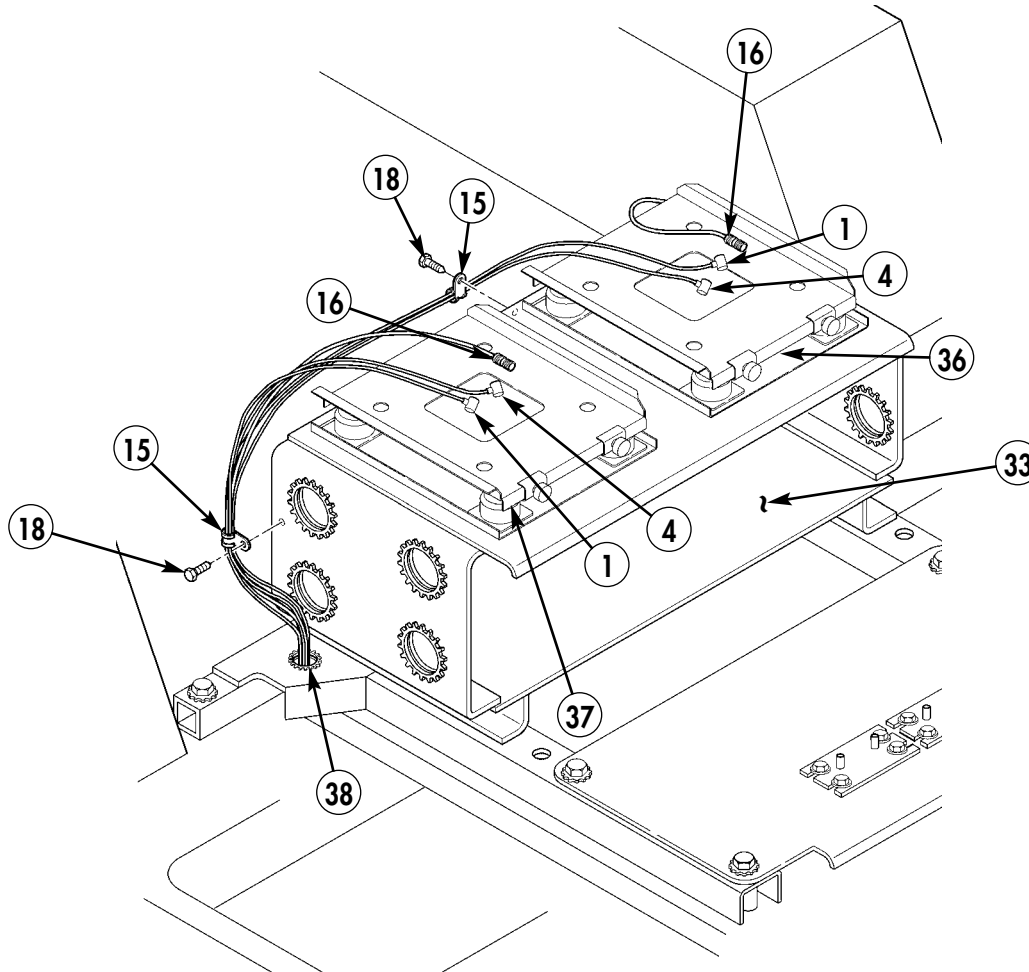


Figure 5-68.

- 25-26. Route left-side antenna cable (16) to left-side EPLRS mount (36).
- 25-27. Route left-side EPLRS power cable (4) and INC-EPUU cable (1) along rear of multi-net rack (33). Secure with clamp (15) and self-tapping screw (18).
- 25-28. Route left-side EPLRS power cable (4) and INC-EPUU cable (1) down right-side of multi-net rack (33) to hole in frame (38).
- 25-29. Route right-side EPLRS power cable (4) and INC-EPUU cable (1) down right-side of multi-net rack (33) through hole in frame (38) of multi-net rack (33).
- 25-30. Route right-side antenna cable (16) to right-side antenna mount (37).
- 25-31. Secure cables to right-side of multi-net rack (33) with clamp (15) and self-tapping screw (18).



- 1. INC-EPUU CABLE – A3279383-3 – QTY. 2
- 4. EPLRS POWER CABLE – A3004939 – QTY. 2
- 15. LOOP CLAMP – MS21333-77 – QTY. 1
- 18. SELF-TAPPING SCREW – 9421073 – QTY. 1

Figure 5-69.

NOTE

Loosen right side tunnel insulation. (Refer to TM 9-2320-280-20.)

- 25-32.** Route INC-EPUU cables (1) and power cables (4) forward along tunnel edge (42) and under right-side B-beam (40), and secure to tunnel edge (42) with existing screws (39) and clamps (41).

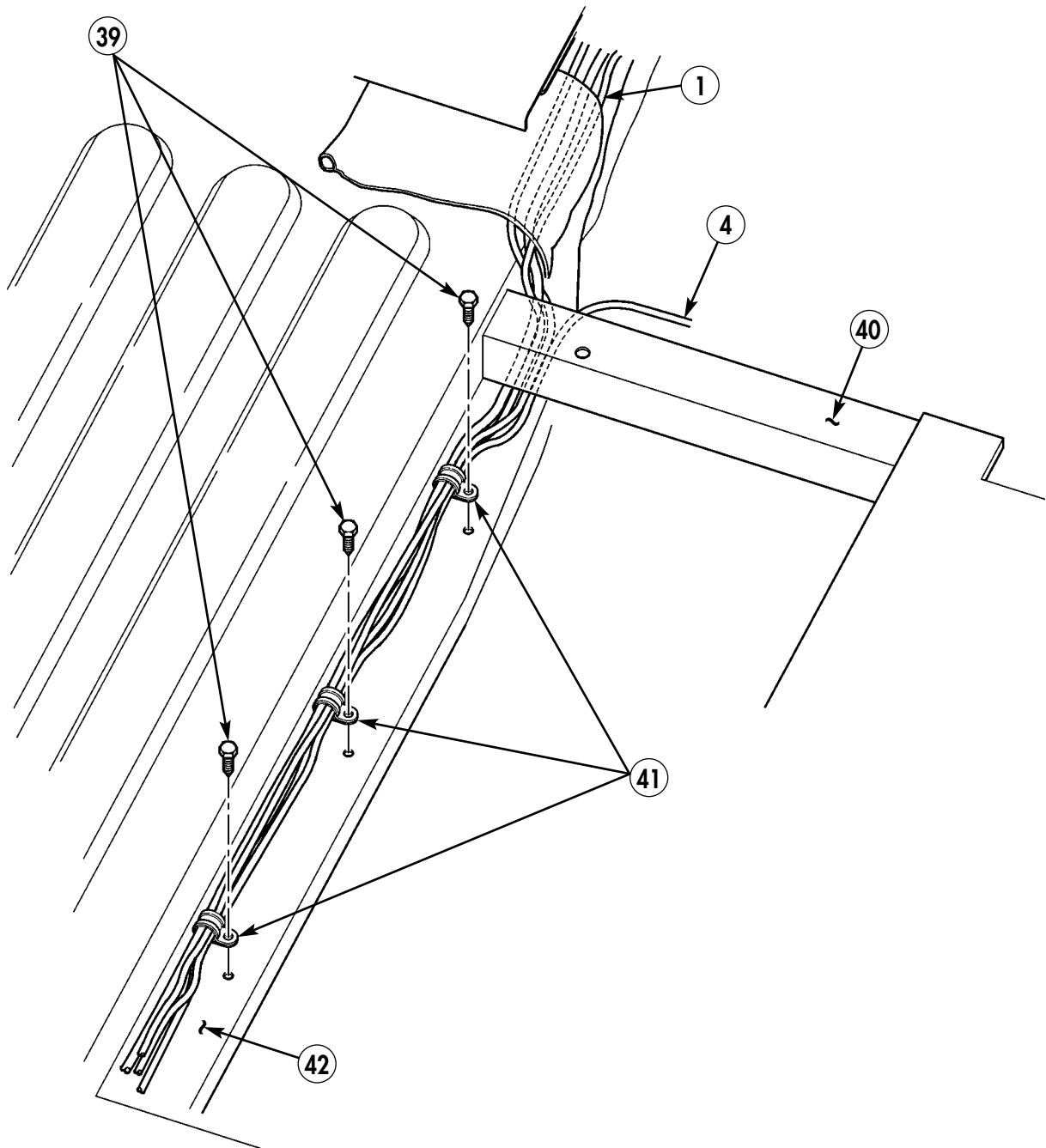


Figure 5-70.

25-33. Route INC-EPUU cables (1) under right-side tunnel insulation (43) and under integrated rack (3).

25-34. Route power cables (4) along right-side B-beam (40) towards terminal board area.

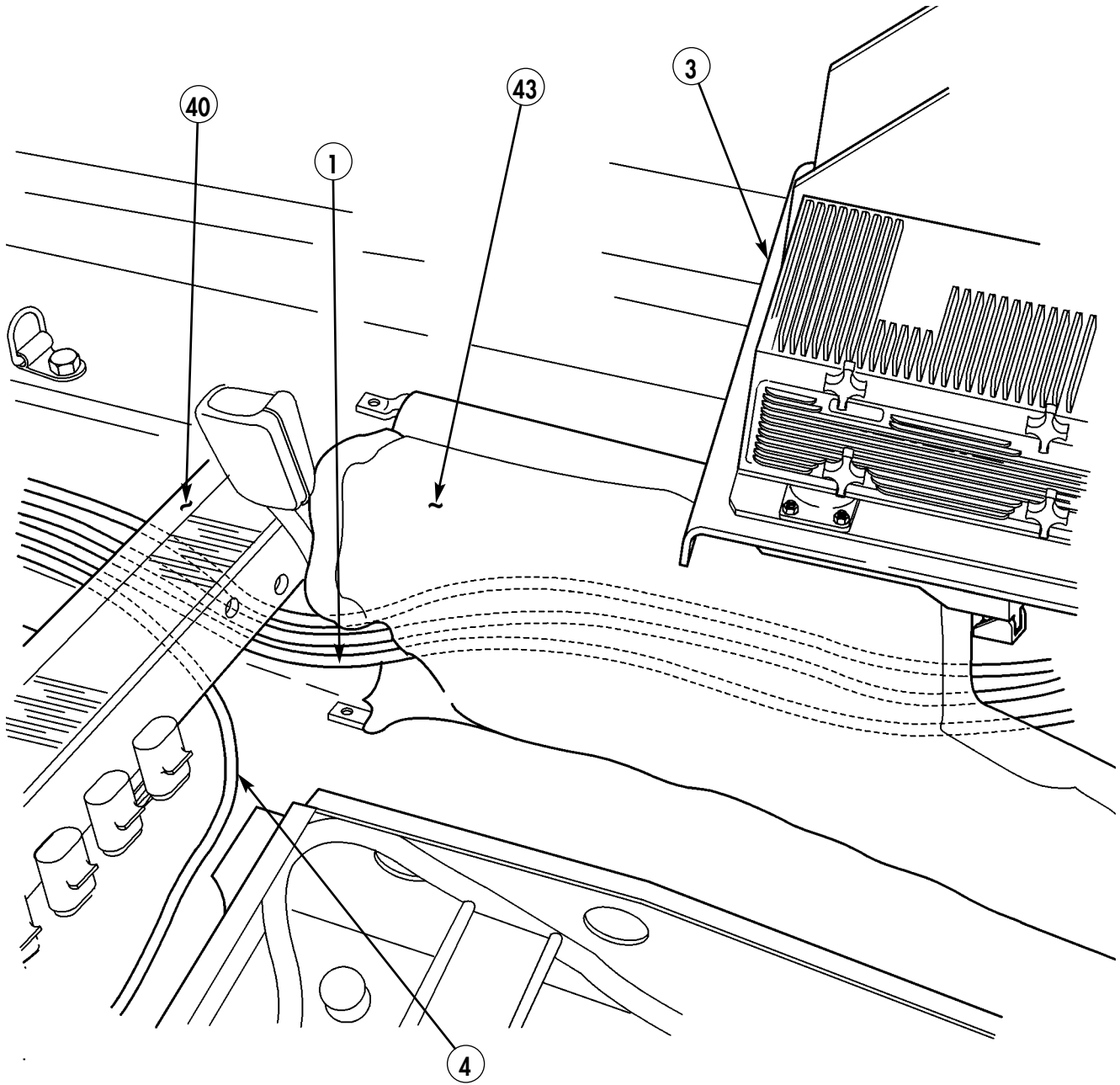


Figure 5-71.

NOTE

- All previously routed cables have been removed from figure 5-72 for clarity.
- Procedure shows routing for one INC-EPUU cable. Routing for second INC-EPUU is similar.

25-35. Route INC-EPUU cable (1) forward under integrated rack (3), up through center access hole (2), and rest on SINGARS mount (44).

25-36. Take all slack out of all cables and store under EPLRS mount assembly.

25-37. Tighten all screws on all clamps.

25-38. Secure right-side tunnel insulation (43). (Refer to TM 9-2320-280-20.)

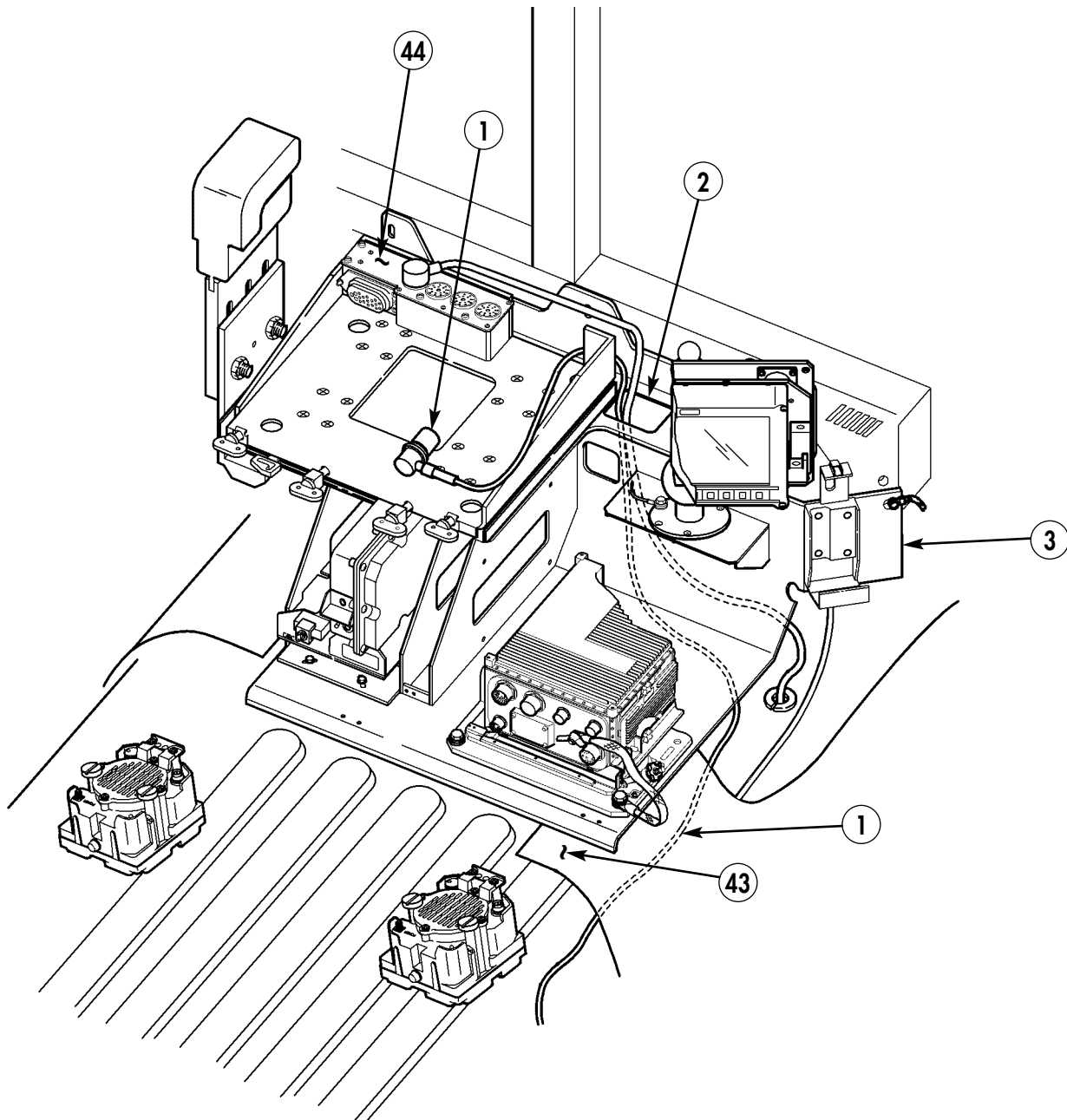
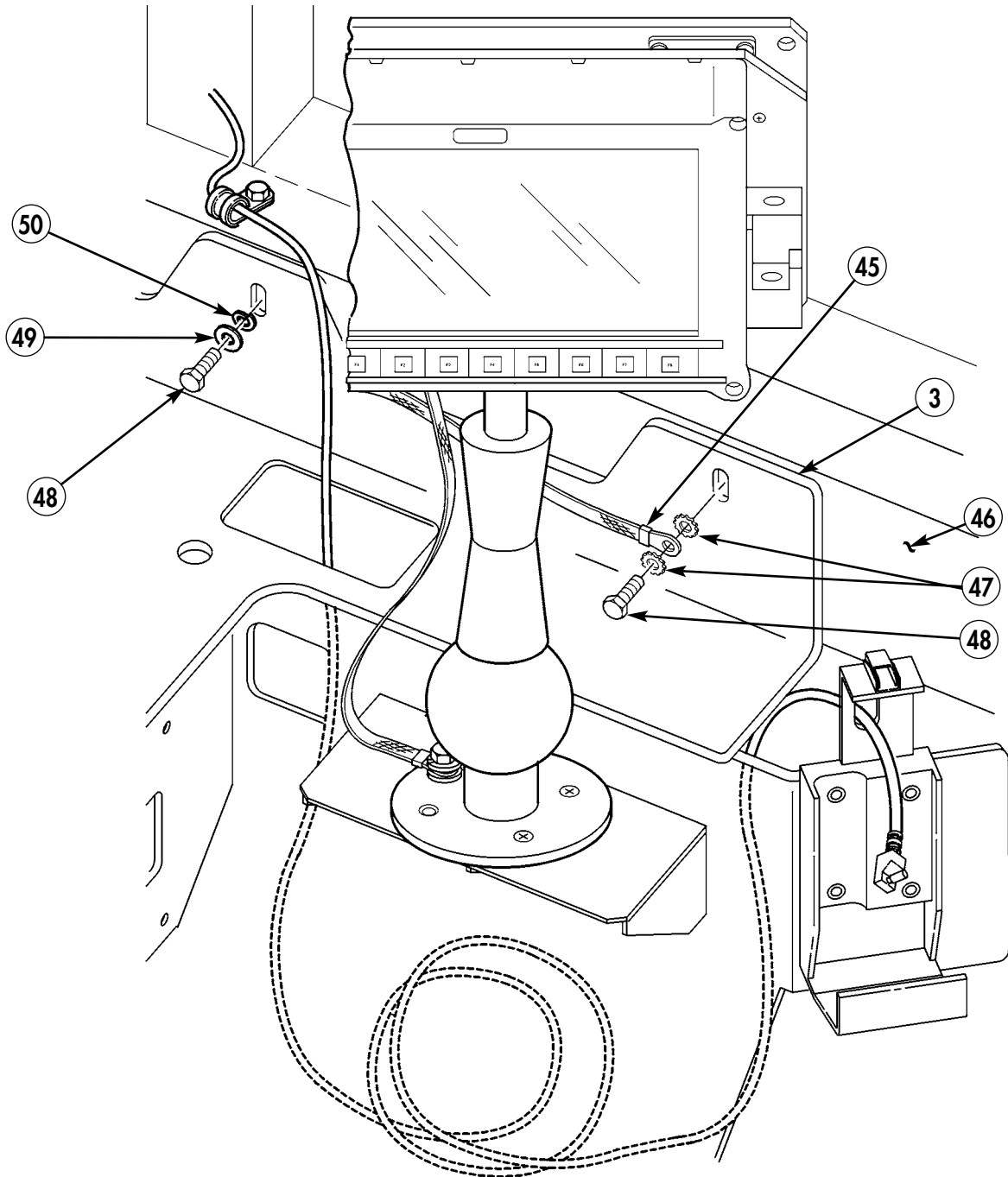


Figure 5-72.

NOTE

Integrated rack will be secured to dash at this time.

25-39. Secure integrated rack (3) to plenum (46) with three capscrews (48), two washers (49), two lockwashers (50), two lockwashers (47), and ground strap (45). Tighten lower mounting screws on integrated rack (3). (Refer to chapter 5, section II.)



- 47. LOCKWASHER – MS45904-68 – QTY. 2
- 48. CAPSCREW – B1821BH025C100N – QTY. 3
- 49. WASHER – MS27183-10 – QTY. 2
- 50. LOCKWASHER – MS35338-44 – QTY. 2

Figure 5-73.

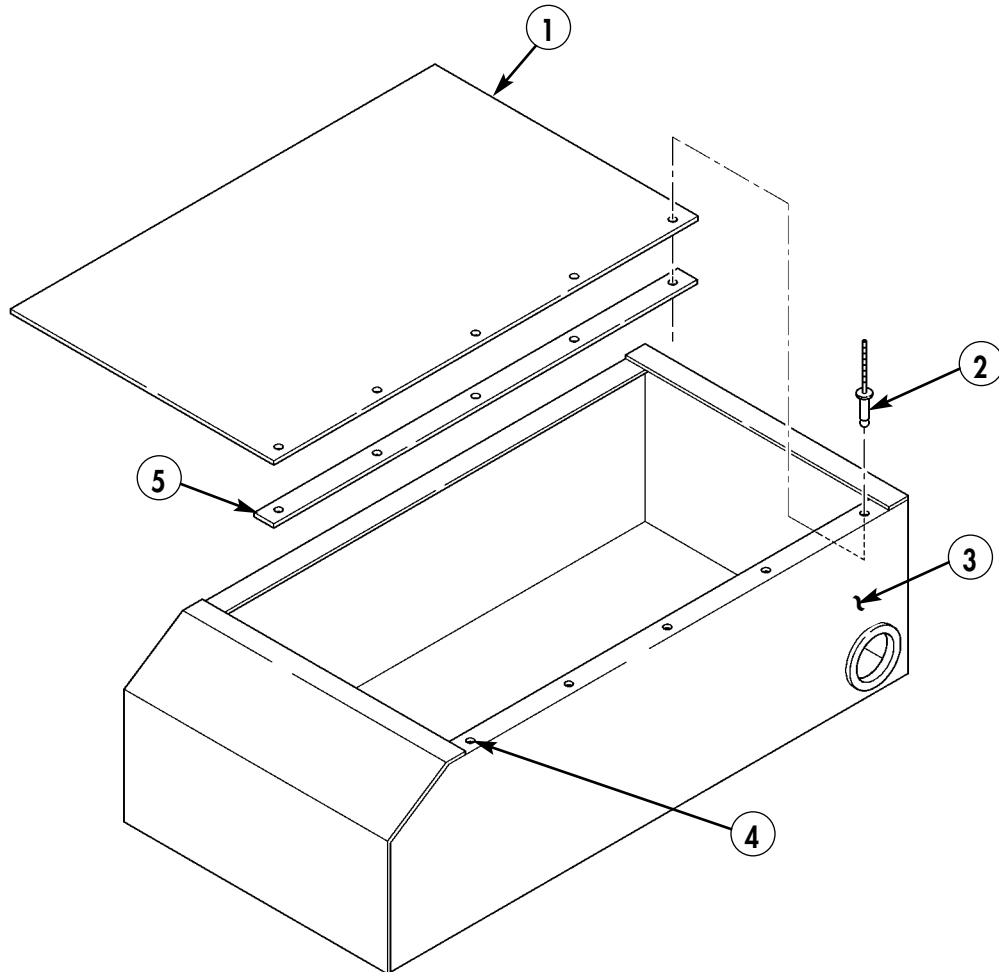
Section XXVI. C4ISR POWER CABLES INSTALLATION

NOTE

- Use aluminum flat bar as template to locate and mark hole position.
- Use No. 30 drill bit to drill holes in battery box.

26-1. Drill five 0.129-in. to 0.133-in. diameter holes (4) in lip of battery box (3).

26-2. Install rubber sheet (1) and aluminum flat bar (5) on battery box (3) with four rivets (2).



1. RUBBER SHEET – 03A016D-1 – QTY. 1
 2. RIVET – AB4-5A – QTY. 5
 5. ALUMINUM FLAT BAR – 03A016D-2 – QTY. 1

Figure 5-74.

- 26-3. Position buss bar in battery box (3). Using buss bar as template, locate, mark, and drill three 0.125-in. diameter holes (7) in battery box (3).
- 26-4. Position shunt in battery box (3). Using shunt as template, locate, mark, and drill two 0.391-in. diameter holes (6) in battery box (3).
- 26-5. Position duo-charge in battery box (3). Using duo-charge as template, locate, mark, and drill four 0.391-in. diameter holes (8) in battery box (3).

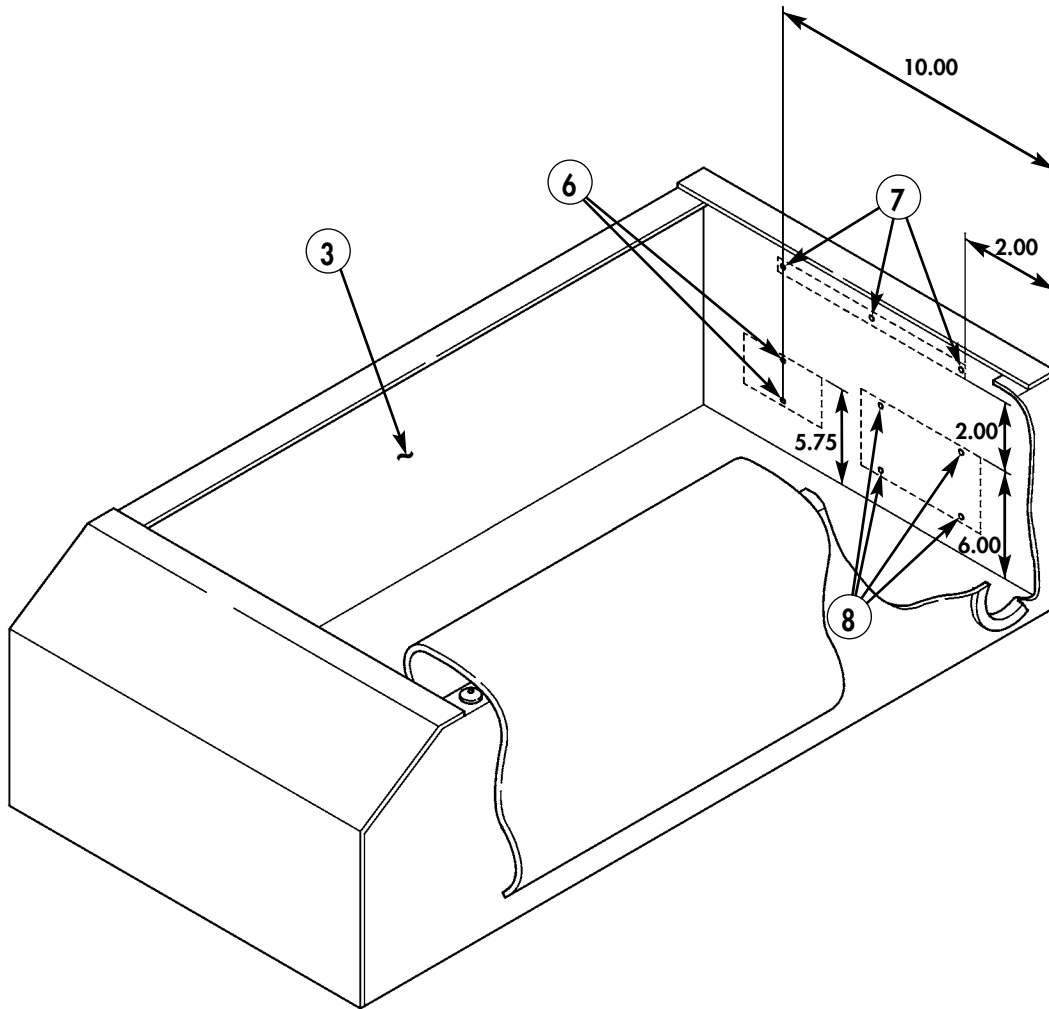
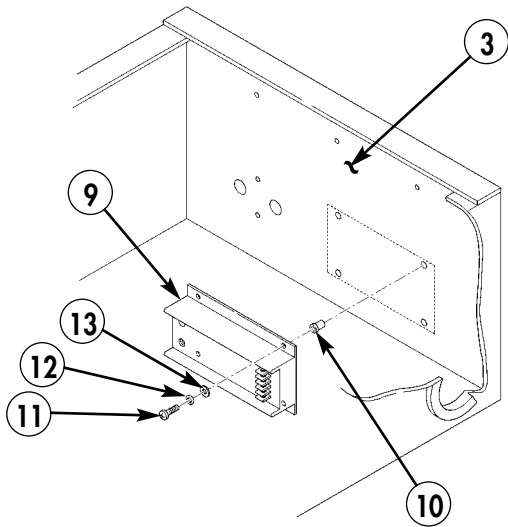


Figure 5-75.

NOTE

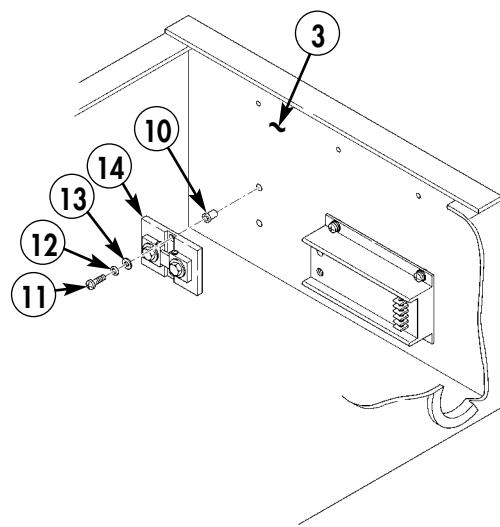
See Section XXVII for duo-charge programming.

- 26-6.** Install duo-charge (9) in battery box (3) with four capscrews (11), lockwashers (12), washers (13), and inserts (10).
- 26-7.** Install shunt (14) in battery box (3) with two capscrews (11), lockwashers (12), and inserts (10).
- 26-8.** Install terminal block (15) in battery box (3) with three screws (17) and washers (16).



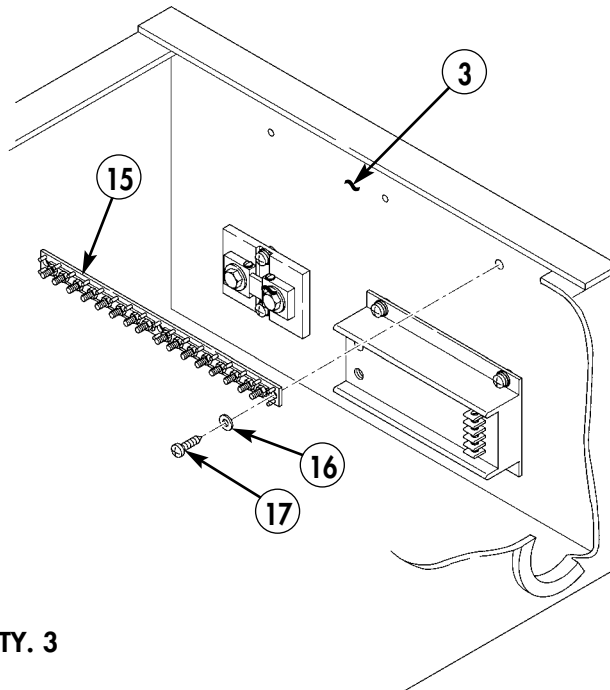
- 9. DUO-CHARGE - 371234 - QTY. 1
- 10. INSERT - 12446871 - QTY. 4

Figure 5-76.



- 10. INSERT - 12446871 - QTY. 2
- 14. SHUNT - 84-2016-01 - QTY. 1

Figure 5-77.

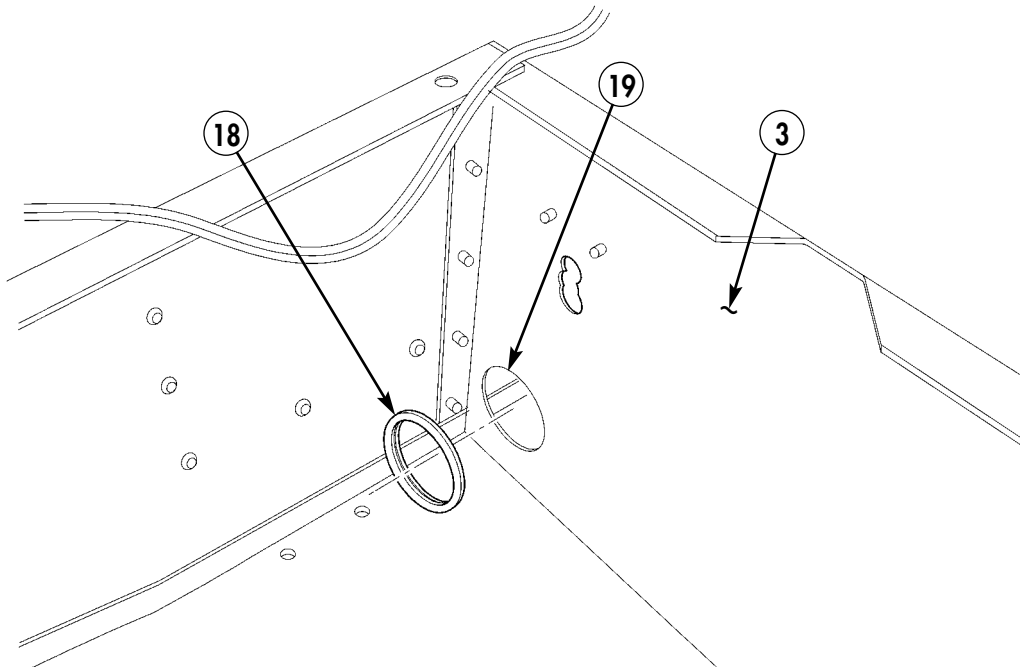


- 16. WASHER - MS27183-3 - QTY. 3
- 17. SCREW - N/A - QTY. 3

Figure 5-78.

26-9. Drill one 2.50-in. diameter hole (19) in battery box (3).

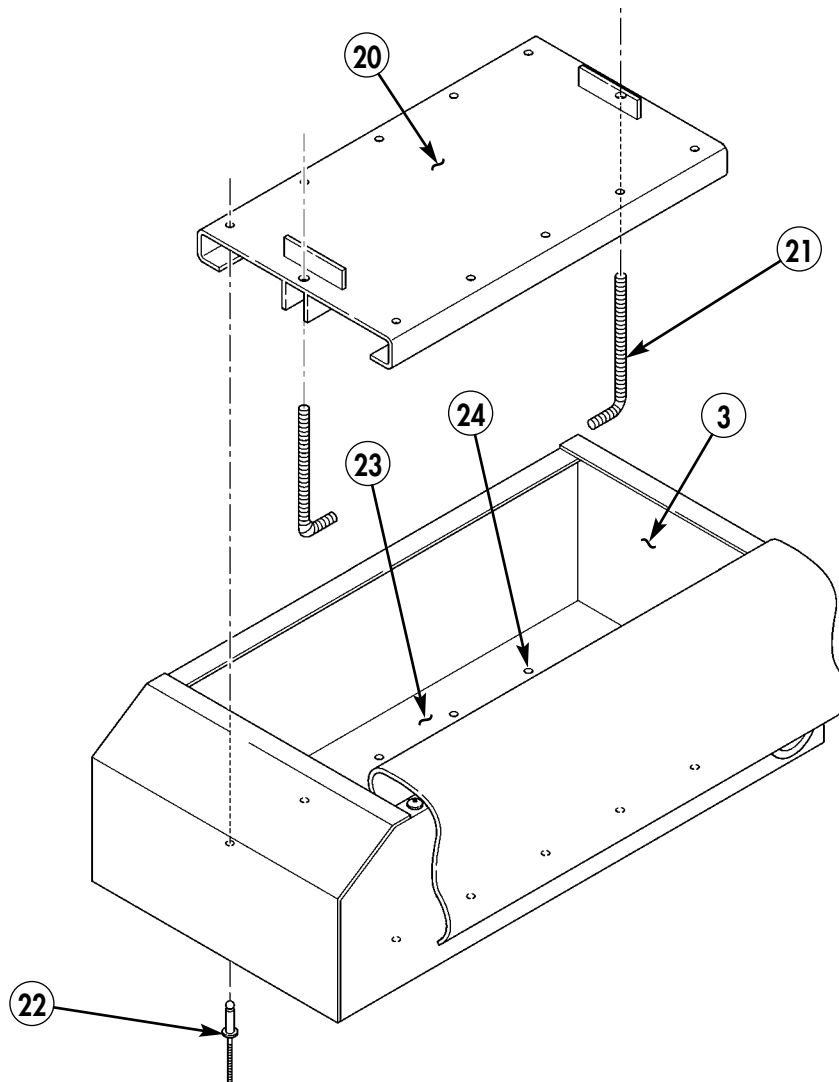
26-10. Cut grommet material (18) to length and install in hole (19) of battery box (3).



18. GROMMET MATERIAL - 12341628 - QTY. A/R

Figure 5-79.

- 26-11.** Using battery support plate (20) as template, locate, mark, and drill ten 0.129-in. to 0.133-in. diameter holes (24) in vehicle floor (23) and battery box (3).
- 26-12.** Install battery support plate (20) and J-bolts (21) on vehicle and battery box (3) with ten rivets (22).



- 20. BATTERY SUPPORT PLATE – 03A0103D-1 – QTY. 1**
21. J-BOLT – 03A0103D-3 – QTY. 2
22. RIVET – AB4-5A – QTY. 10

Figure 5-80.

26-13. Locate, mark, and drill five 0.188-in. diameter holes (25) on top of tunnel (26).

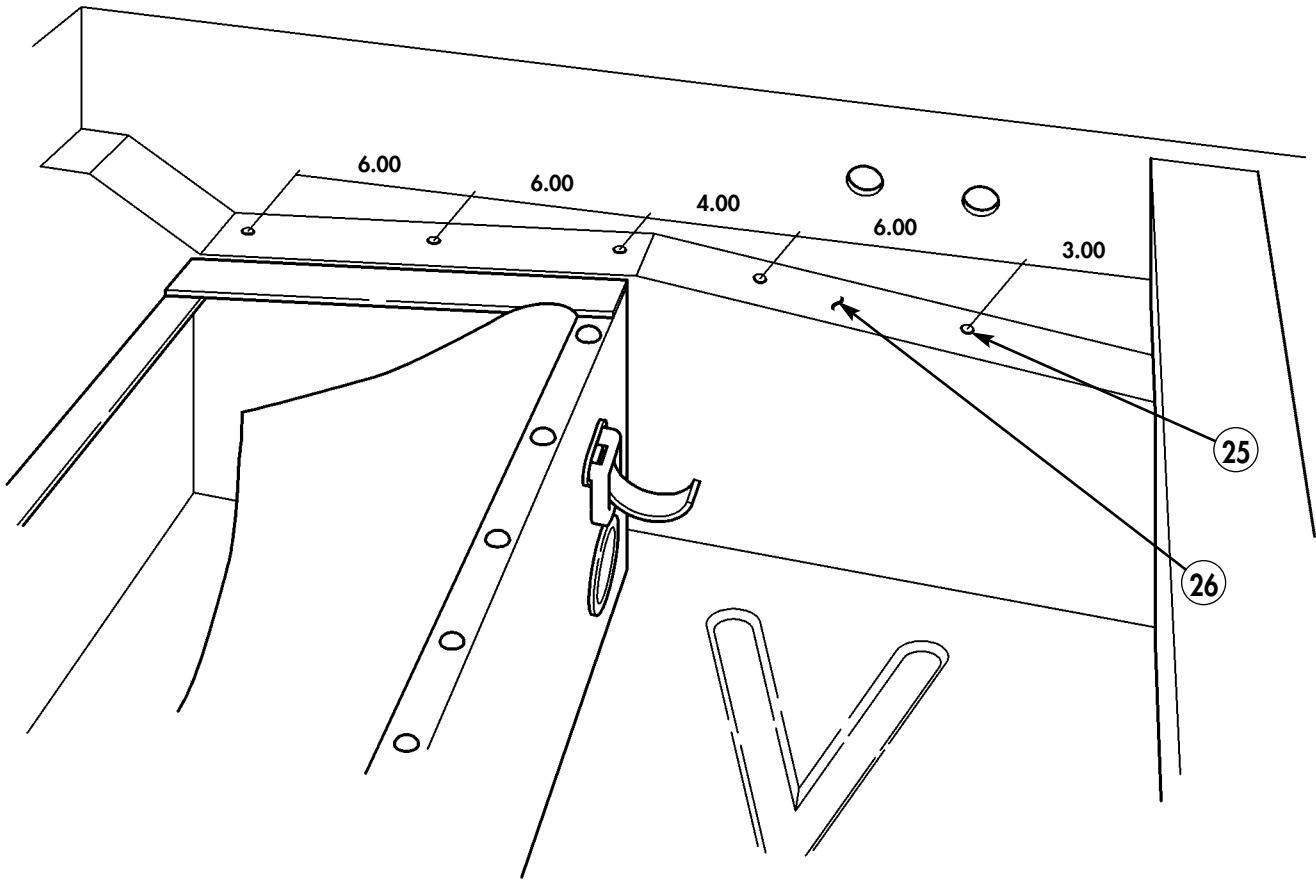


Figure 5-81.

26-14. Locate, mark, and drill two 0.188-in. diameter holes (27) in side of tunnel (26).

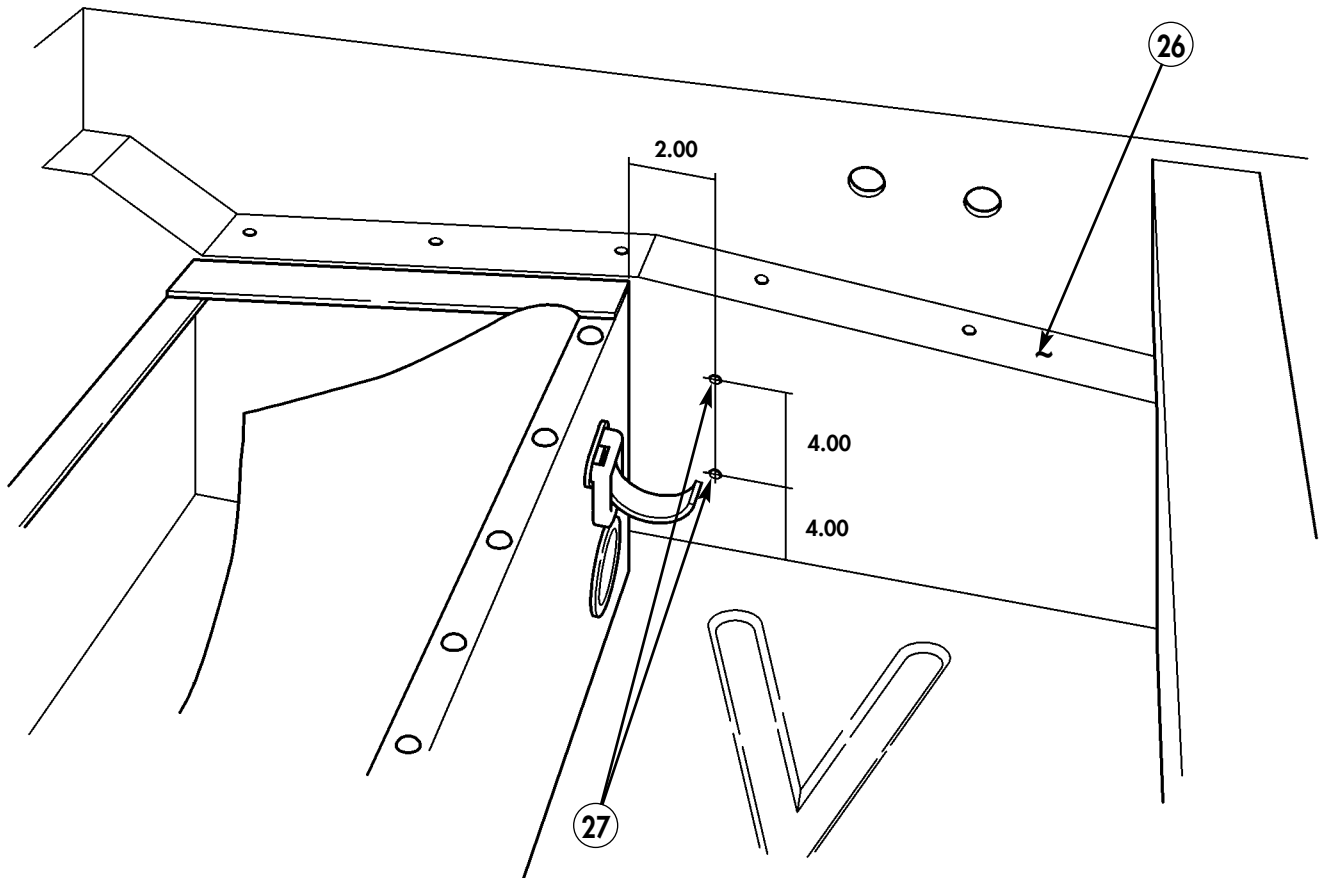
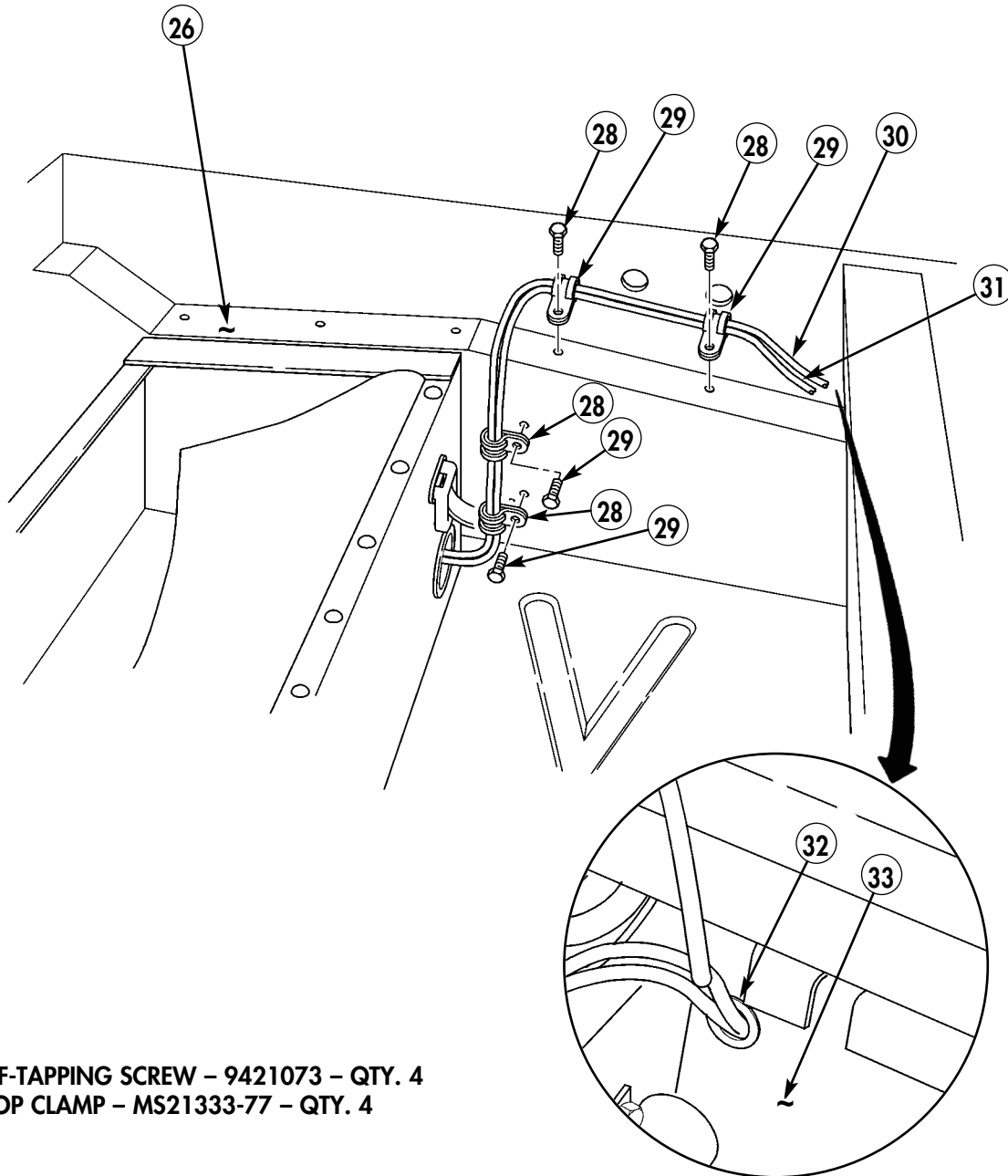


Figure 5-82.

26-15. Route battery-to-shunt cable (30) and battery-to-duo-charge cable (31) along tunnel (26), through hole (32) in front battery box (33), and secure with clamps (29) and self-tapping screws (28).



- 28. SELF-TAPPING SCREW - 9421073 - QTY. 4
- 29. LOOP CLAMP - MS21333-77 - QTY. 4

Figure 5-83.

26-16. Connect battery-to-shunt cable (30) and battery-to-duo-charge cable (31) to batteries (34).

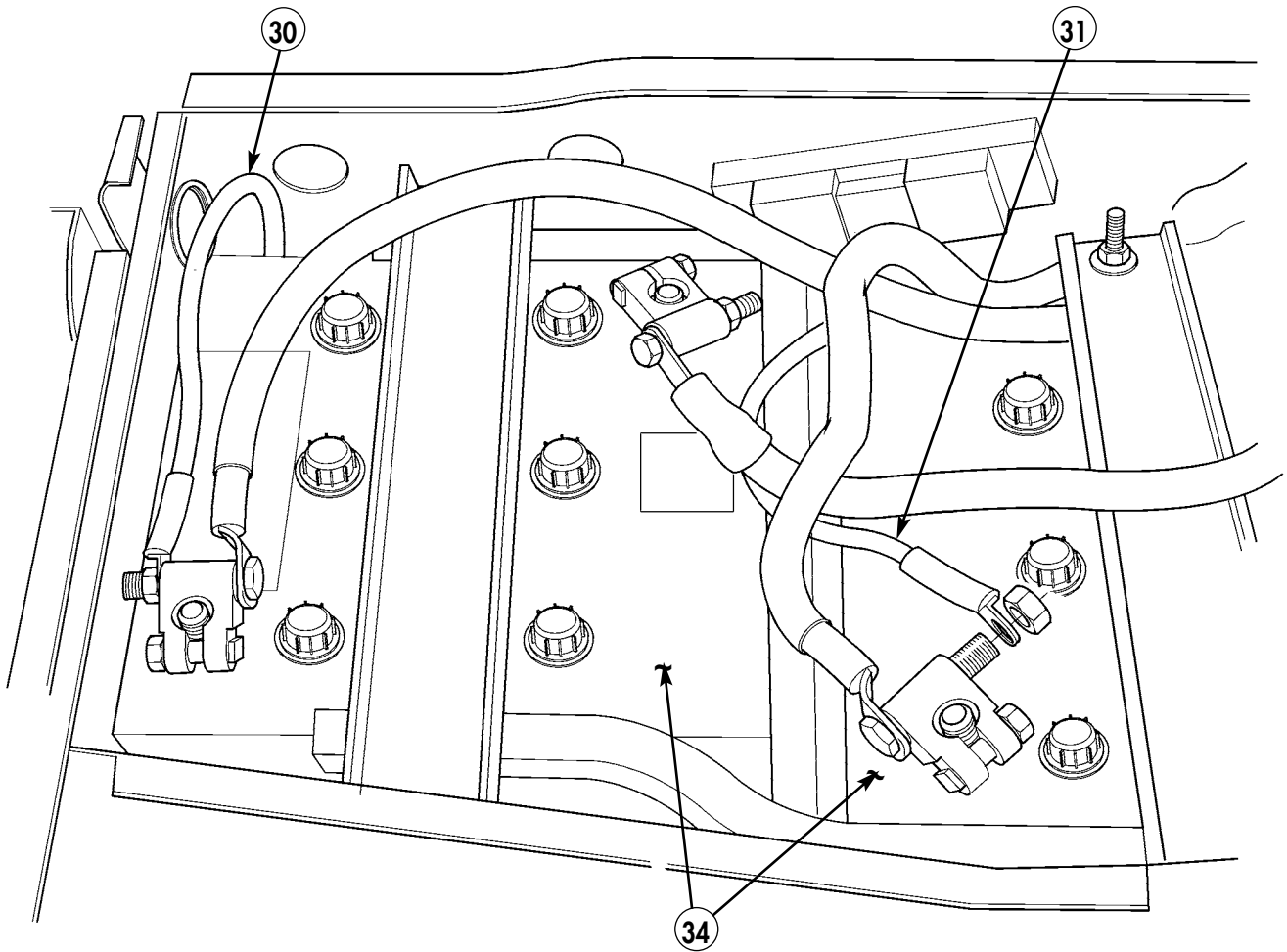
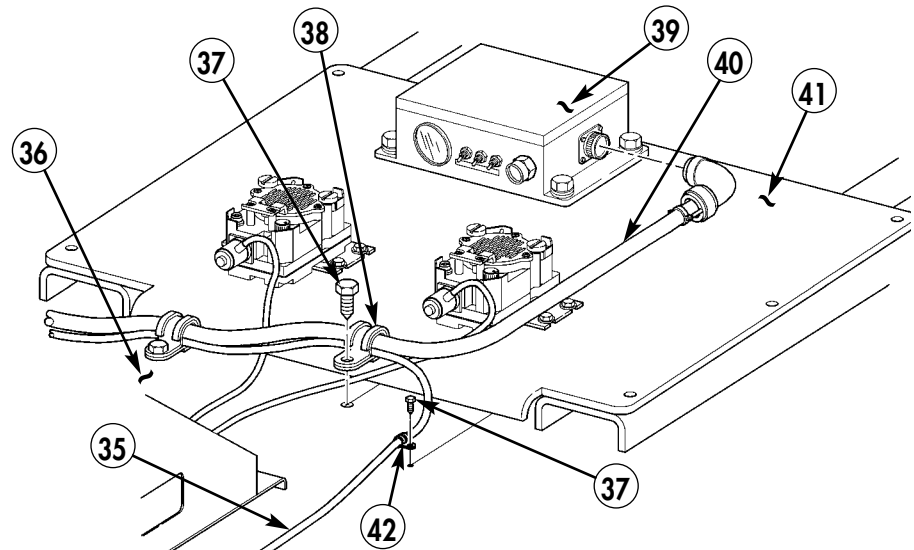


Figure 5-84.

- 26-17. Connect large control cable (40) to charge control box (39).
- 26-18. Route large control cable (40) across lower shelf of multi-net rack (41) to cargo floor (36).
- 26-19. Route large control cable (40) along cargo floor (36) towards battery box.
- 26-20. Route small control cable (35) from battery box, along cargo floor (36), and under tunnel insulation (43).
- 26-21. Secure control cables with two loop clamps (38) and self-tapping screws (37).
- 26-22. Secure small control cable (35) to vehicle with clamp (42) and self-tapping screw (37).



- 37. SELF-TAPPING SCREW - 9421073 - QTY. 3
- 38. LOOP CLAMP - N/A - QTY. 2
- 40. LARGE CONTROL CABLE - 03A0112D - QTY. 1
- 42. LOOP CLAMP - MS21333-71 - QTY. 1

Figure 5-85.

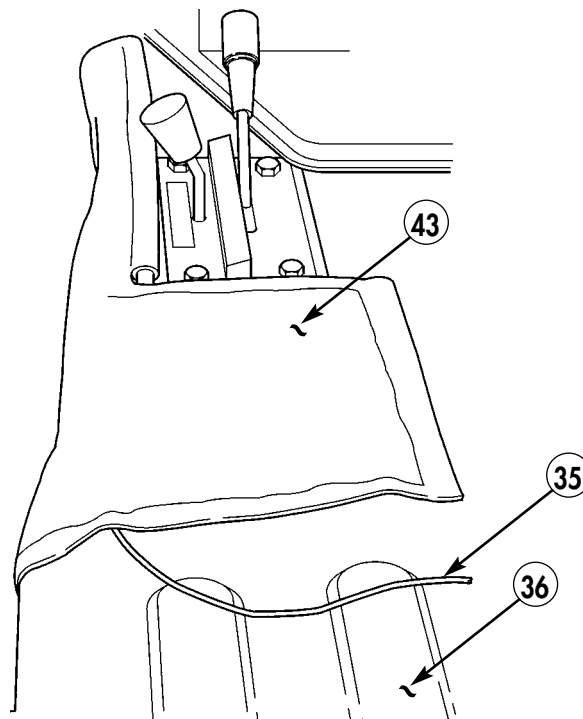
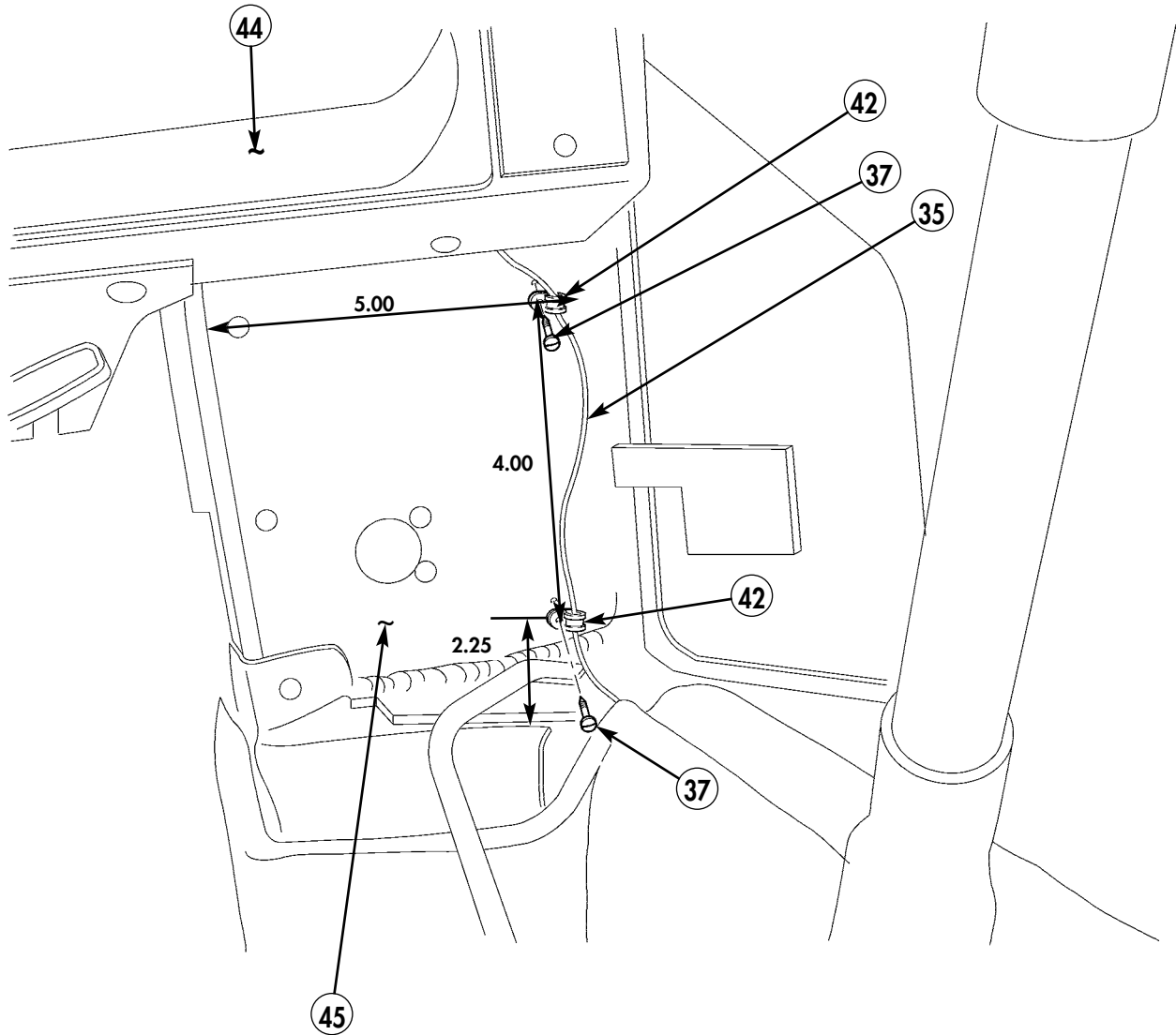


Figure 5-86.

- 26-23. Route small control cable (35) up firewall (45).
- 26-24. Secure small control cable (35) with two clamps (42) and self-tapping screws (37).
- 26-25. Route small control cable (35) under dash panel (44).



- 37. SELF-TAPPING SCREW - 9421073 - QTY. 2
- 42. LOOP CLAMP - MS21333-71 - QTY. 2

Figure 5-87.

26-26. Disconnect light switch (48) from harness (49).

26-27. Remove four bolts (47) and light switch (48) from dash panel (46).

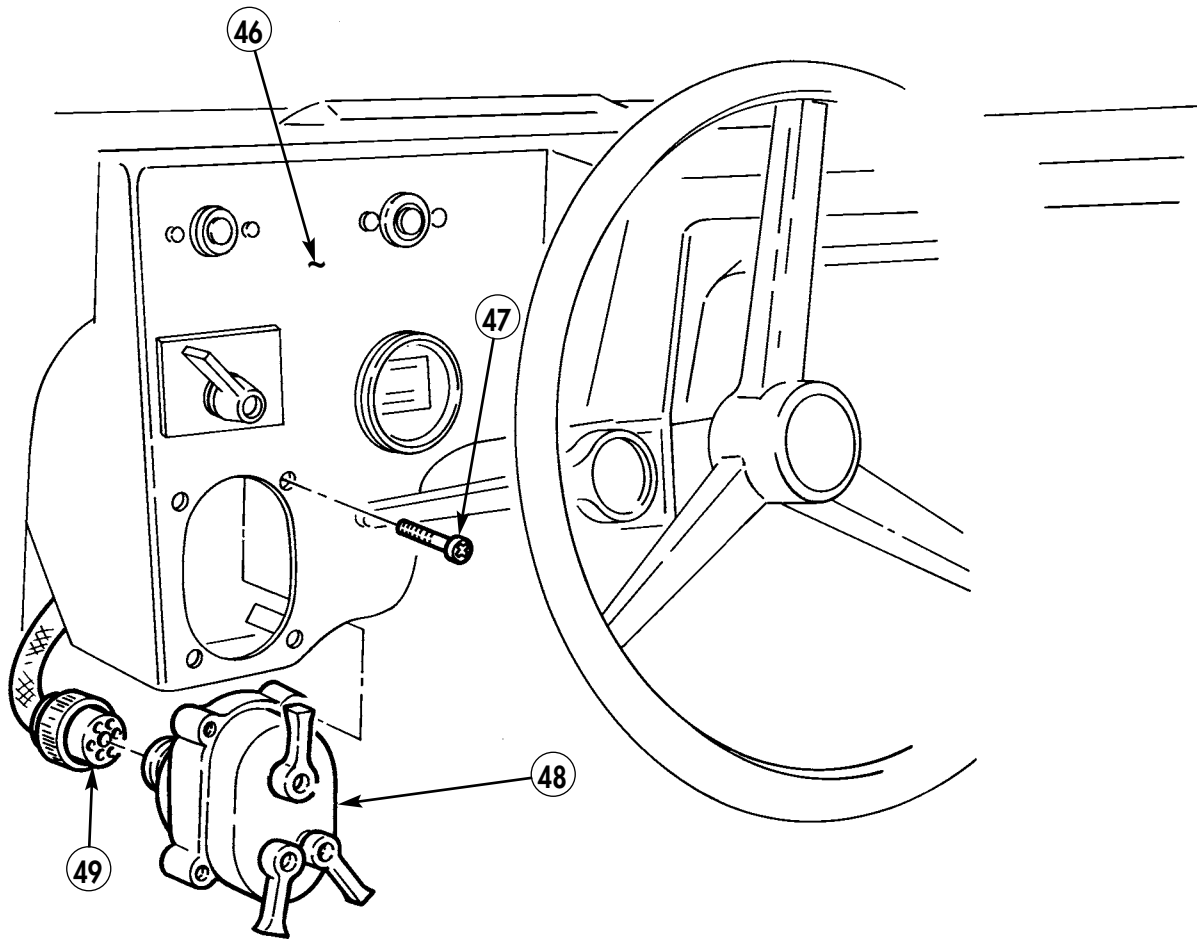


Figure 5-88.

- 26-28. Strip wire insulation from wire 29A (50).
- 26-29. Splice small control cable (35) with wire 29A (50).
- 26-30. Cover splice with electrical tape (51).

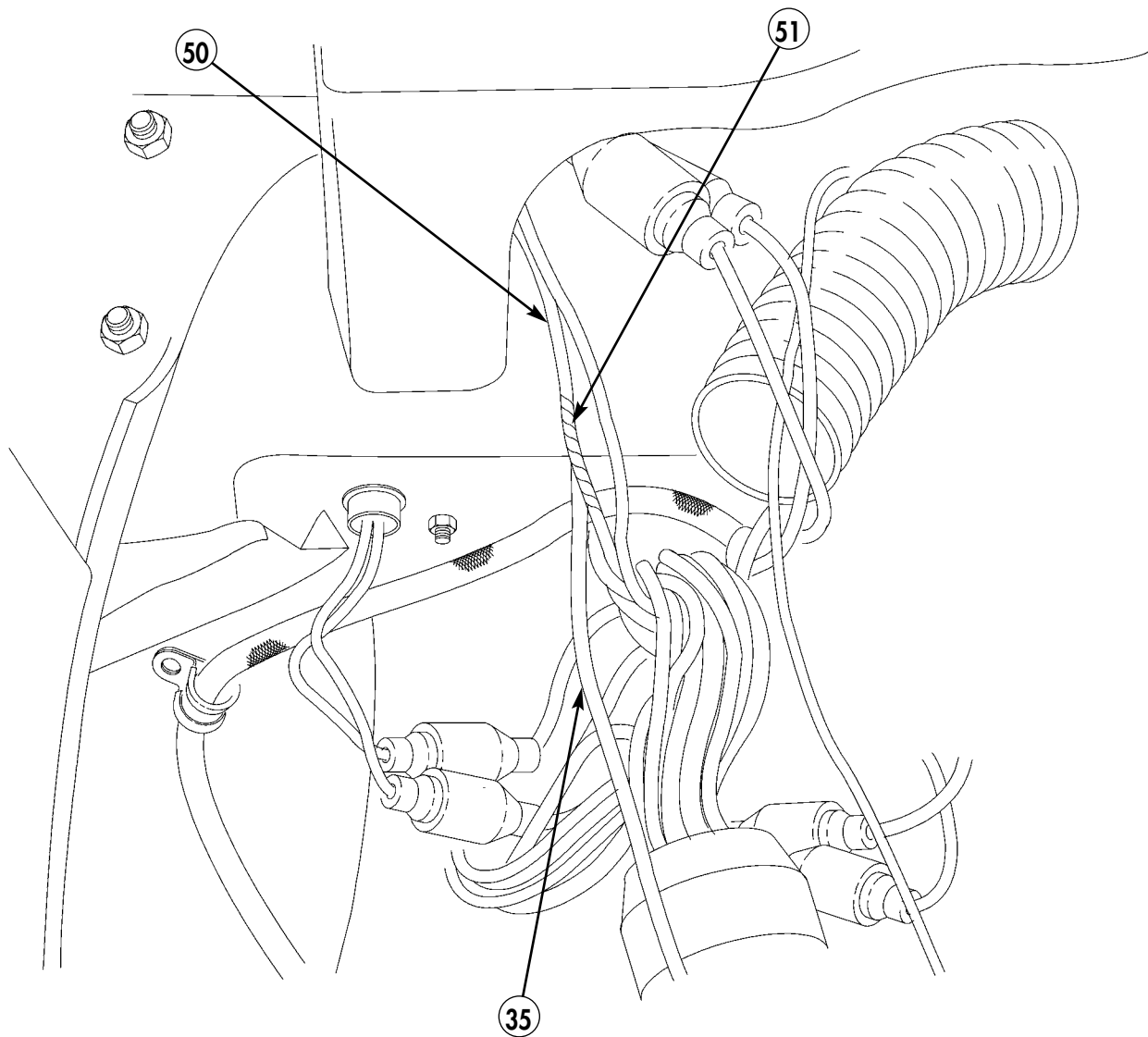


Figure 5-89.

26-31. Connect light switch (48) to harness (49).

26-32. Install light switch (48) in dash panel (46) with four bolts (47).

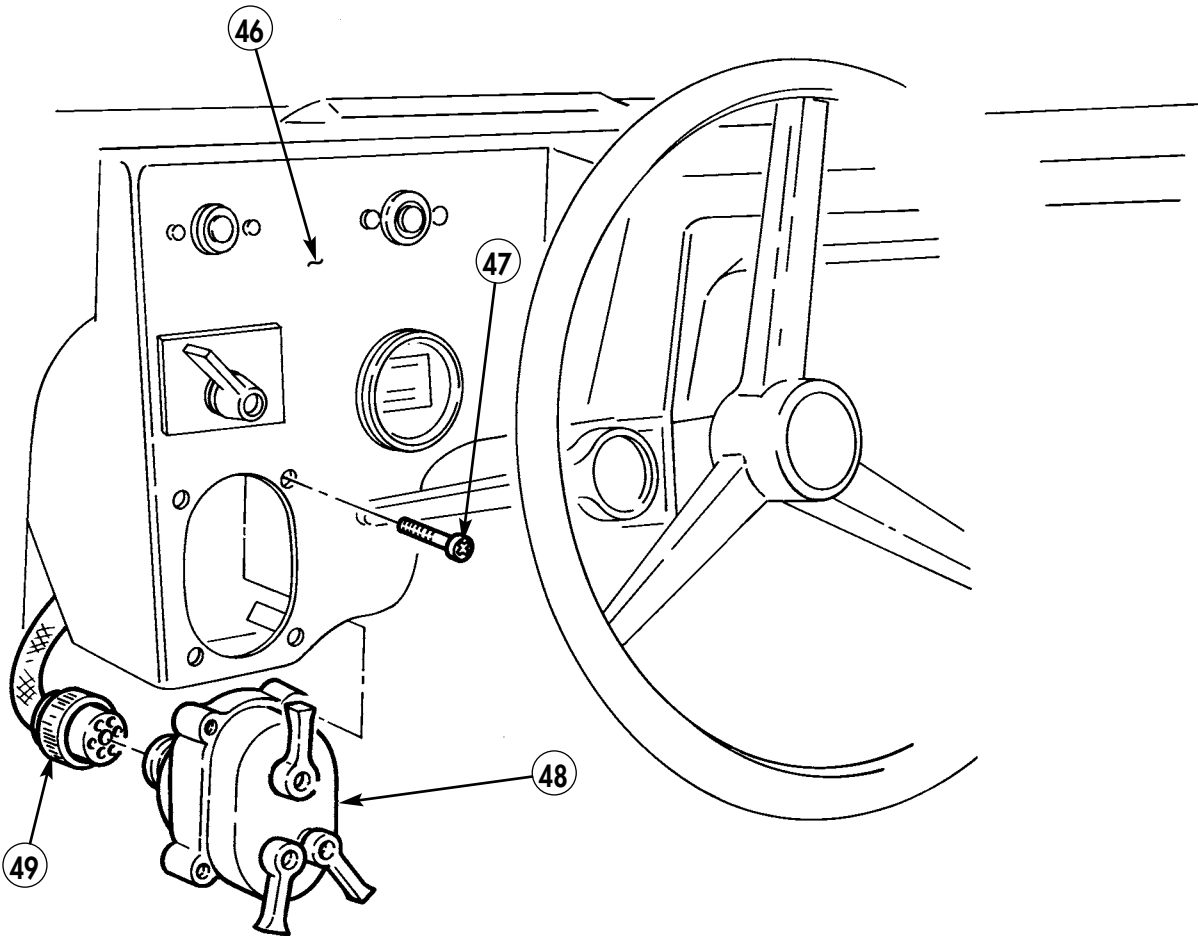


Figure 5-90.

- 26-33.** Connect black charger cable (52) under antenna bracket (53) to power entry box (54).
- 26-34.** Route black charger cable (52) from power entry box (54) along top of wheelwell (56). Secure with existing clamps (57) and self-tapping screws (55).
- 26-35.** Route black charger cable (52) down front of wheelwell (56). Secure with existing clamps (58) and self-tapping screws (64).
- 26-36.** Route black charger cable (52) along C-beam (63). Secure with existing clamp (60), screw (59), lockwasher (61), and nut (62).

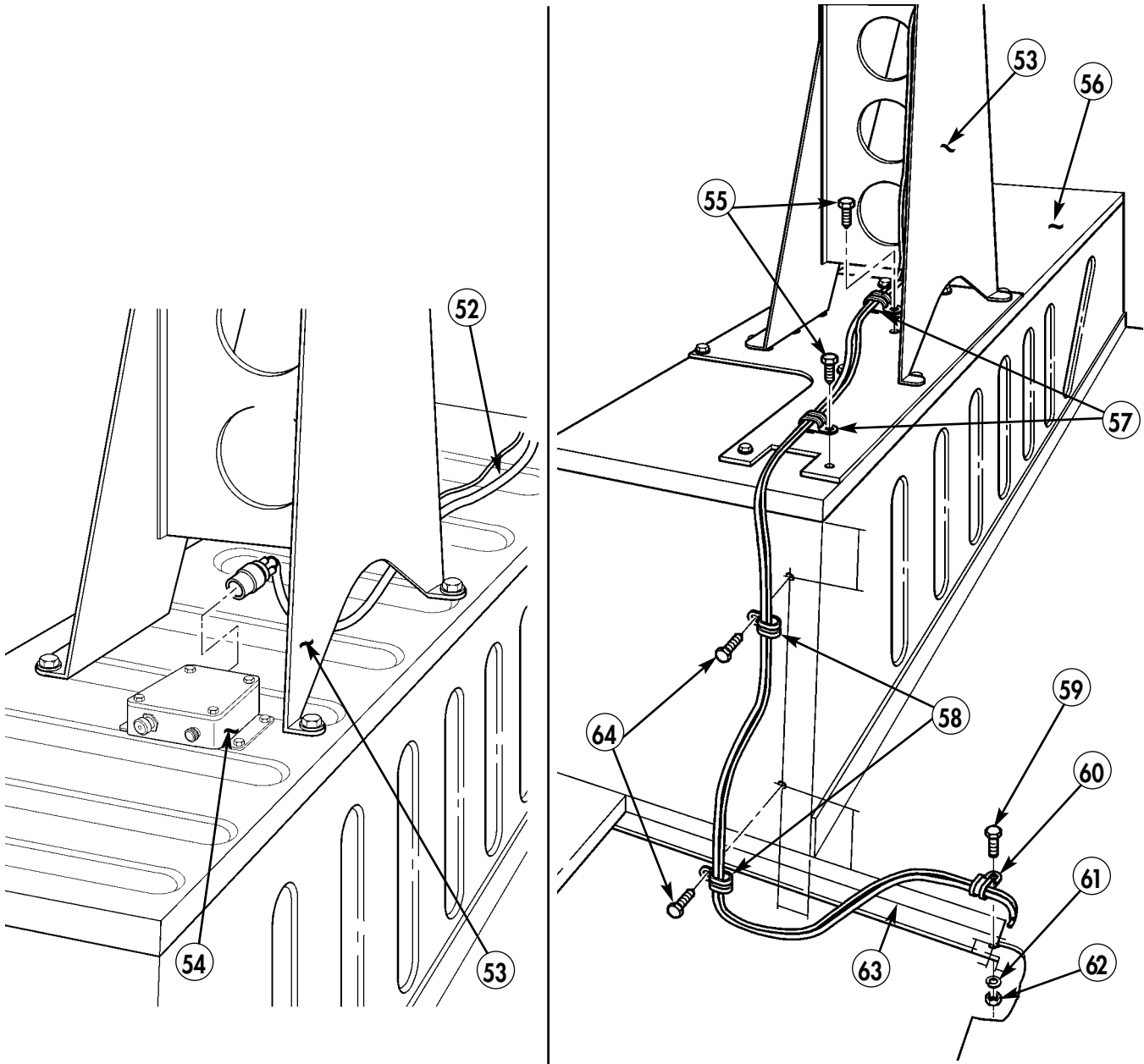


Figure 5-91.

26-37. Route black charger cable (52) through hole (66) in frame (65).

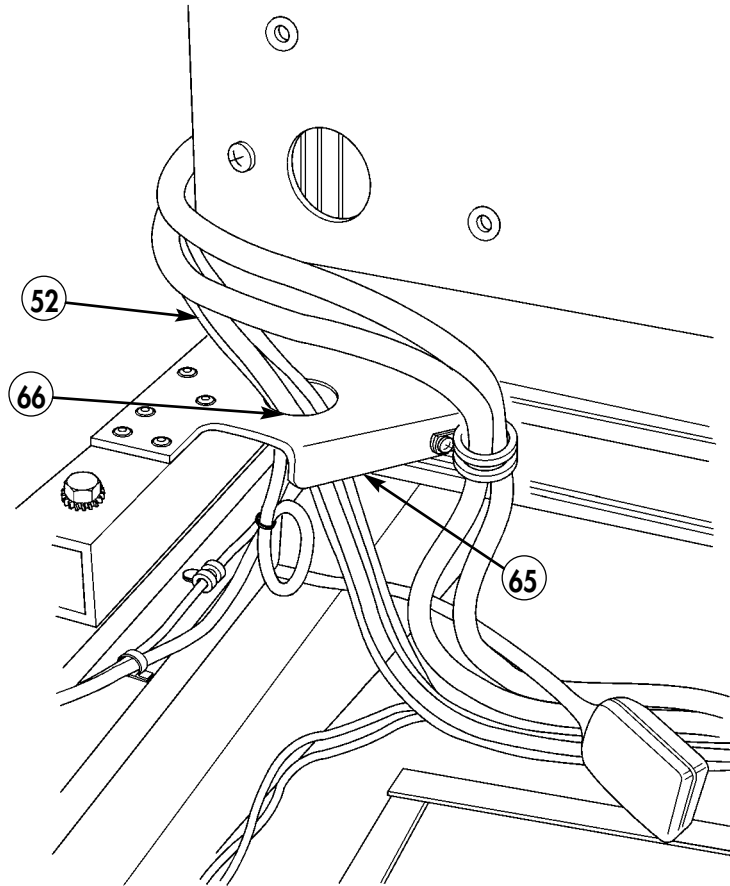


Figure 5-92.

- 26-38.** Connect positive cable from house battery (71) to duo-charge (9) with capscrew (83).
- 26-39.** Connect cable-to-supplemental-batteries cable (82) to duo-charge (9) with capscrew (81).
- 26-40.** Connect shunt-to-duo-charge cable (79) to top connection point (72) of duo-charge (9).
- 26-41.** Connect red lead of temperature sensor (76) to second connection point (73) of duo-charge (9).
- 26-42.** Connect black lead of temperature sensor (77) to second connection point (74) of duo-charge (9).
- 26-43.** Connect purple and brown cable (78) to fifth connection point (75) of duo-charge (9).
- 26-44.** Connect supplemental battery ground cable (87) and external ground cable (86) to shunt (14) with capscrew (85) and washer (84).
- 26-45.** Connect negative cable from house battery (91), shunt-to-terminal-block cable (90), and shunt-to-duo-charge cable (79) to shunt (14) with capscrew (88) and washer (89).
- 26-46.** Connect green cable (92) to shunt (14) with capscrew (67) and washer (93).
- 26-47.** Connect orange cable (70) to shunt (14) with capscrew (68) and washer (69).

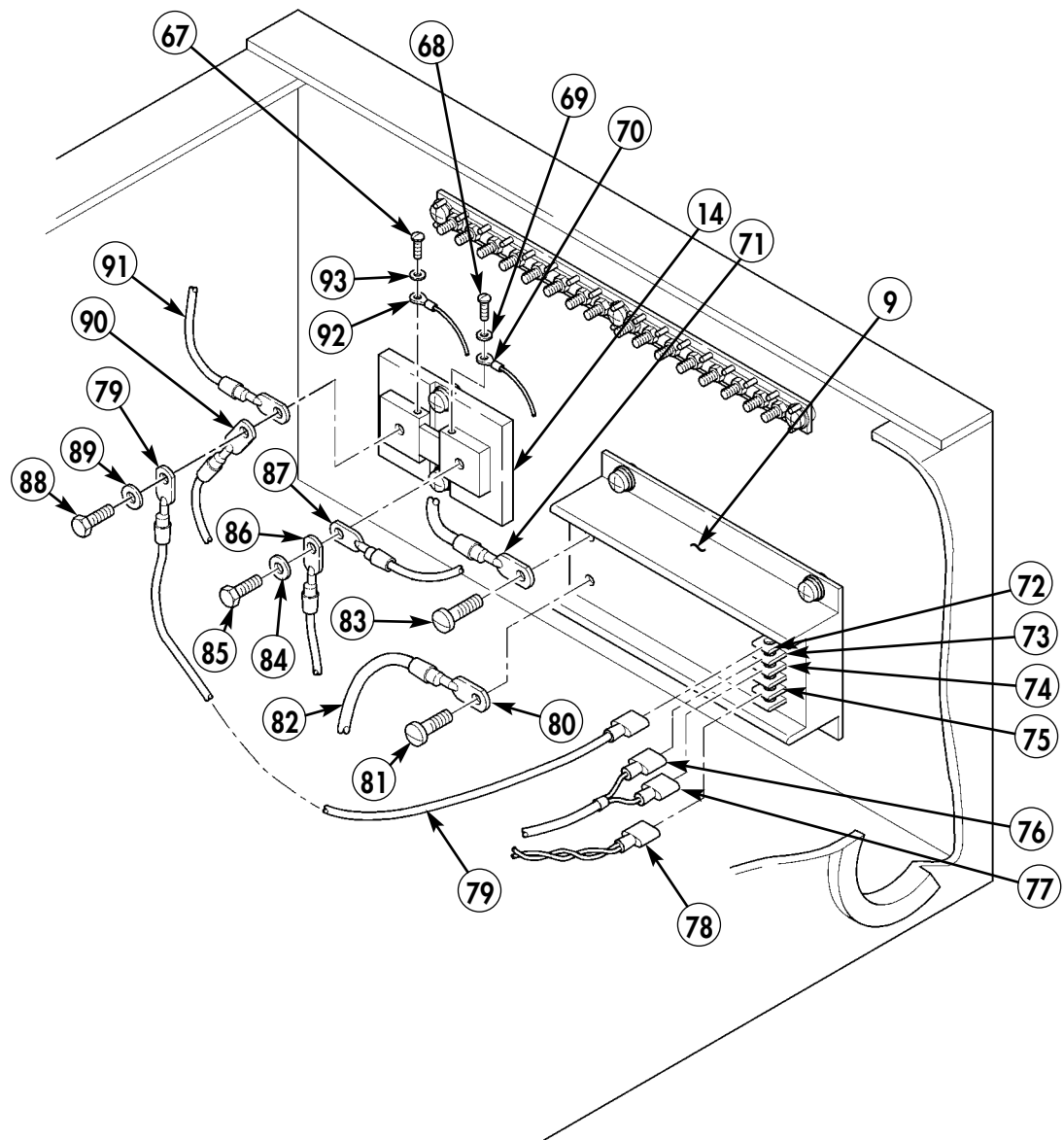
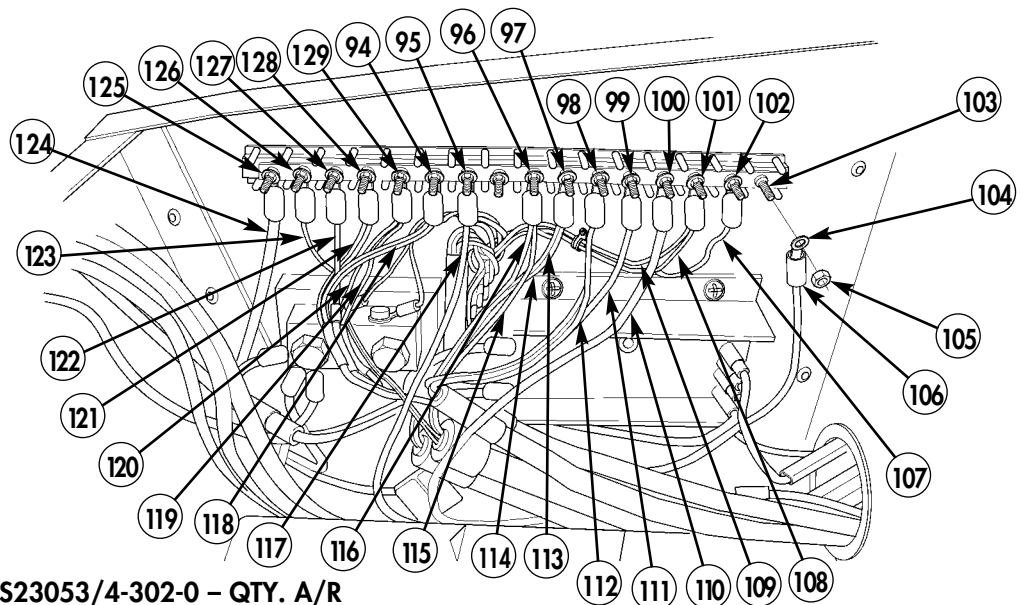


Figure 5-93.

- 26-48. Attach shrink tubing (106) and terminal lug (104) to shunt negative terminal (124). Secure to terminal board stud (125) with existing nut (105).
- 26-49. Attach shrink tubing (106) and terminal lug (104) to battery negative terminal (123). Secure to terminal board stud (126) with existing nut (105).
- 26-50. Attach shrink tubing (106) and terminal lug (104) to left EPLRS negative power terminal (122). Secure to terminal board stud (127) with existing nut (105).
- 26-51. Attach shrink tubing (106) and terminal lug (104) to SINGARS negative power terminal (117). Secure to terminal board stud (95) with existing nut (105).
- 26-52. Attach shrink tubing (106) and terminal lug (104) to right EPLRS negative power terminal (121). Secure to terminal board stud (128) with existing nut (105).
- 26-53. Attach shrink tubing (106) and terminal lug (104) to NTDR power terminal (118). Secure to terminal board stud (94) with existing nut (105).
- 26-54. Attach shrink tubing (106) and terminal lug (104) to third EPLRS negative power terminal (120) and PLGR terminal (119). Secure to terminal board stud (129) with existing nut (105).
- 26-55. Attach shrink tubing (106) and terminal lug (104) to right EPLRS positive terminal (112). Secure to terminal board stud (98) with existing nut (105).
- 26-56. Attach shrink tubing (106) and terminal lug (104) to SINGARS positive terminal (116) and NTDR positive terminal (115). Secure to terminal board stud (96) with existing nut (105).
- 26-57. Attach shrink tubing (106) and terminal lug (104) to left EPLRS positive terminal (111). Secure to terminal board stud (99) with existing nut (105).
- 26-58. Attach shrink tubing (106) and terminal lug (104) to positive to battery cable (110) and PLGR positive terminal (100). Secure to terminal board stud (98) with existing nut (105).
- 26-59. Attach shrink tubing (106) and terminal lug (104) to right EPLRS positive power terminal (112). Secure to terminal board stud (98) with existing nut (105).
- 26-60. Attach shrink tubing (106) and terminal lug (104) to charge control box blue (109) and yellow (108) terminals. Secure to terminal board stud (101) with existing nut (105).
- 26-61. Attach shrink tubing (106) and terminal lug (104) to charge control box red wire terminal (107). Secure to terminal board stud (102) with existing nut (105).
- 26-62. Attach shrink tubing (106) and terminal lug (104) to digital duo-charge power cable terminal (106). Secure to terminal board stud (103) with existing nut (105).
- 26-63. Attach shrink tubing (106) and terminal lug (104) to third EPLRS positive terminal (113) and PLGR positive terminal (114). Secure to terminal board stud (97) with existing nut (105).



106. SHRINK TUBING – MS23053/4-302-0 – QTY. A/R

Figure 5-94.

- 26-64. Install left-side supplemental battery (130) and right-side supplemental battery (135) on battery support plate (20).
- 26-65. Install battery connector plate (133) on existing studs (134) with two washers (132) and nuts (131).
- 26-66. Install battery hold-down plate (136) on J-bolts (21) with two washers (132) and nuts (131).

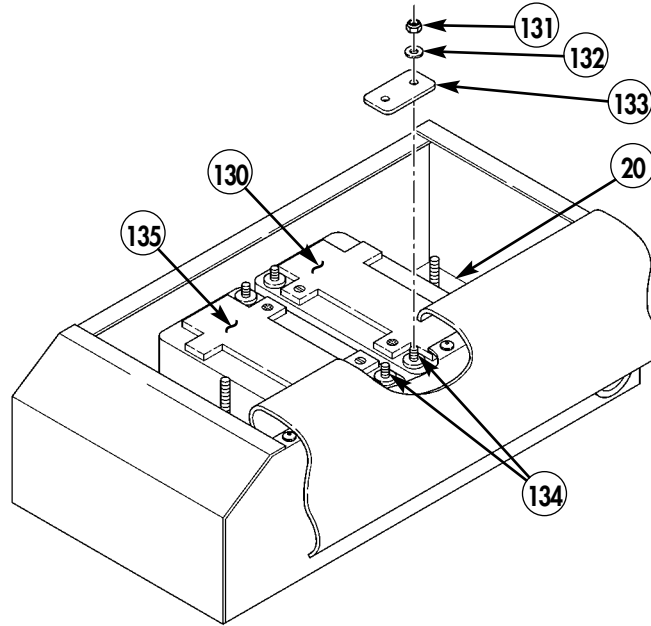
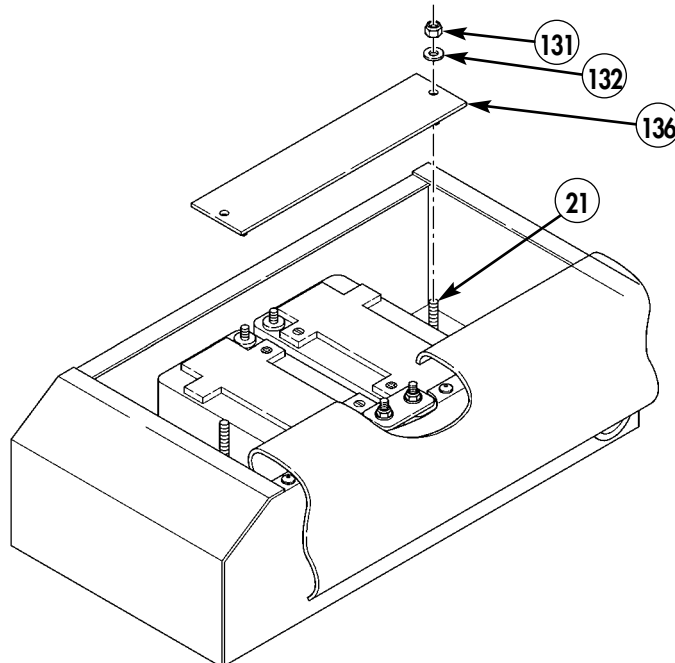


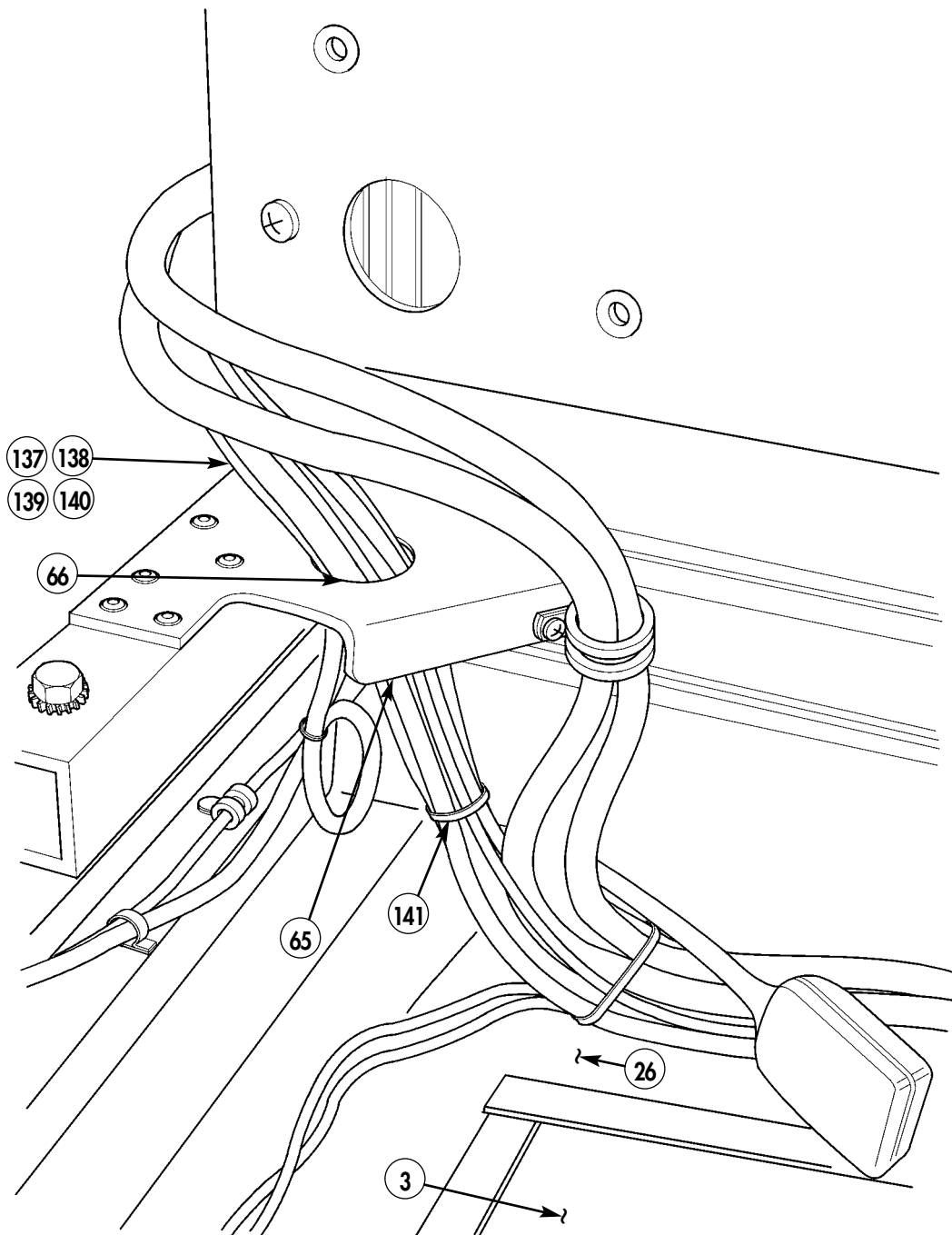
Figure 5-95.



136. BATTERY HOLD-DOWN PLATE - 03A0103D - QTY. 2

Figure 5-96.

26-67. Route four charger power cables (137), (138), (139), and (140) through hole (66) in frame (65), along tunnel (26), and into battery box (3). Secure cables with tiedown strap (141).



141. TIEDOWN STRAP – MS3367-1-0 – QTY. A/R

Figure 5-97.

NOTE

Two charger cables connect to each battery. Connect positive and negative leads respectively.

- 26-68.** Connect charger cable positive leads (144) to left and right rear batteries (130) and (135).
- 26-69.** Connect charger cable negative leads (148) to left and right rear batteries (130) and (135).
- 26-70.** Connect shunt cable (143) to left rear battery (130).
- 26-71.** Connect duo-charge cable (142) to right rear battery (135).
- 26-72.** Connect ground cable (147) to left rear battery (130).
- 26-73.** Secure cables to batteries (135) and (130) with washers (145) and nuts (146).

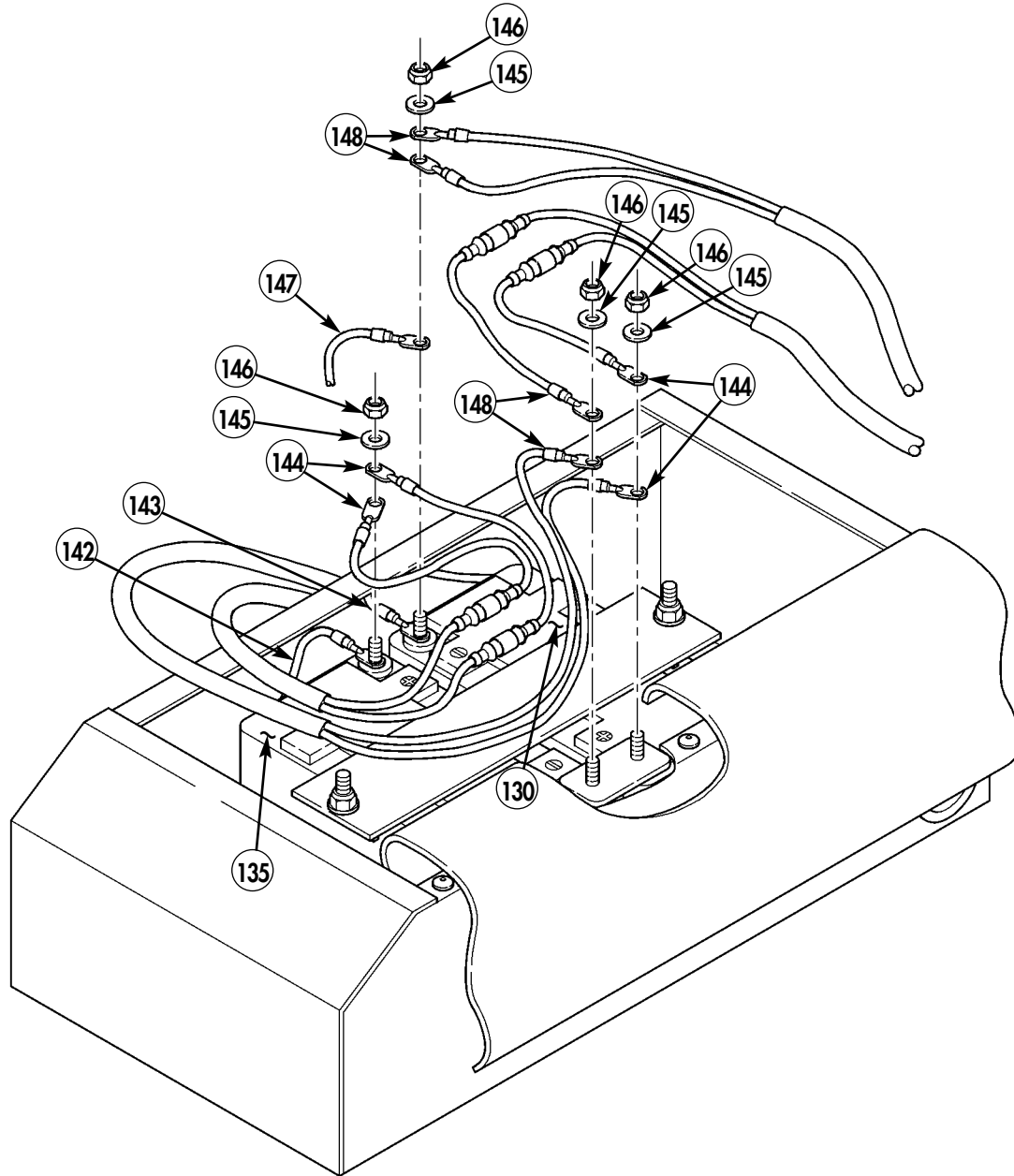
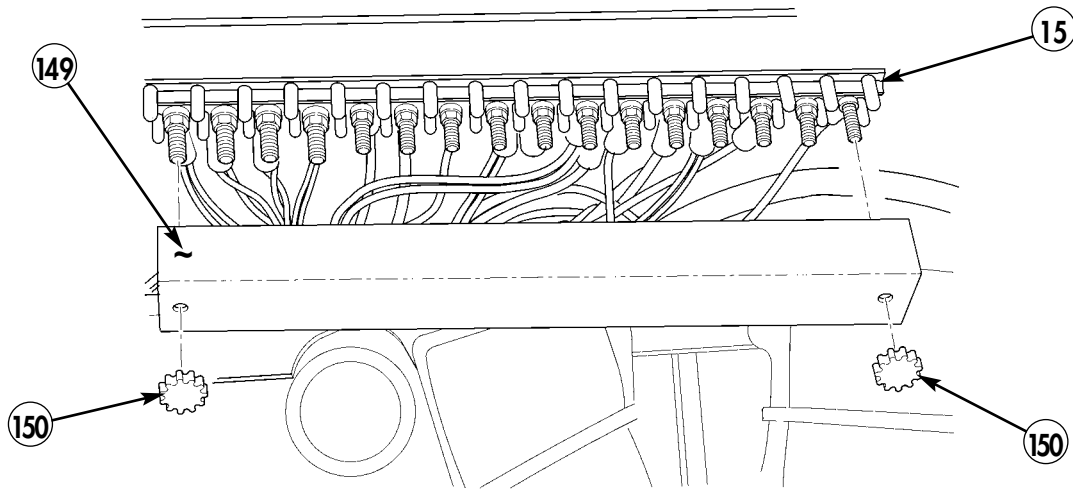


Figure 5-98.

26-74. Install terminal cover (149) on terminal block (15). Secure terminal cover (149) to terminal block (15) with nuts (150).



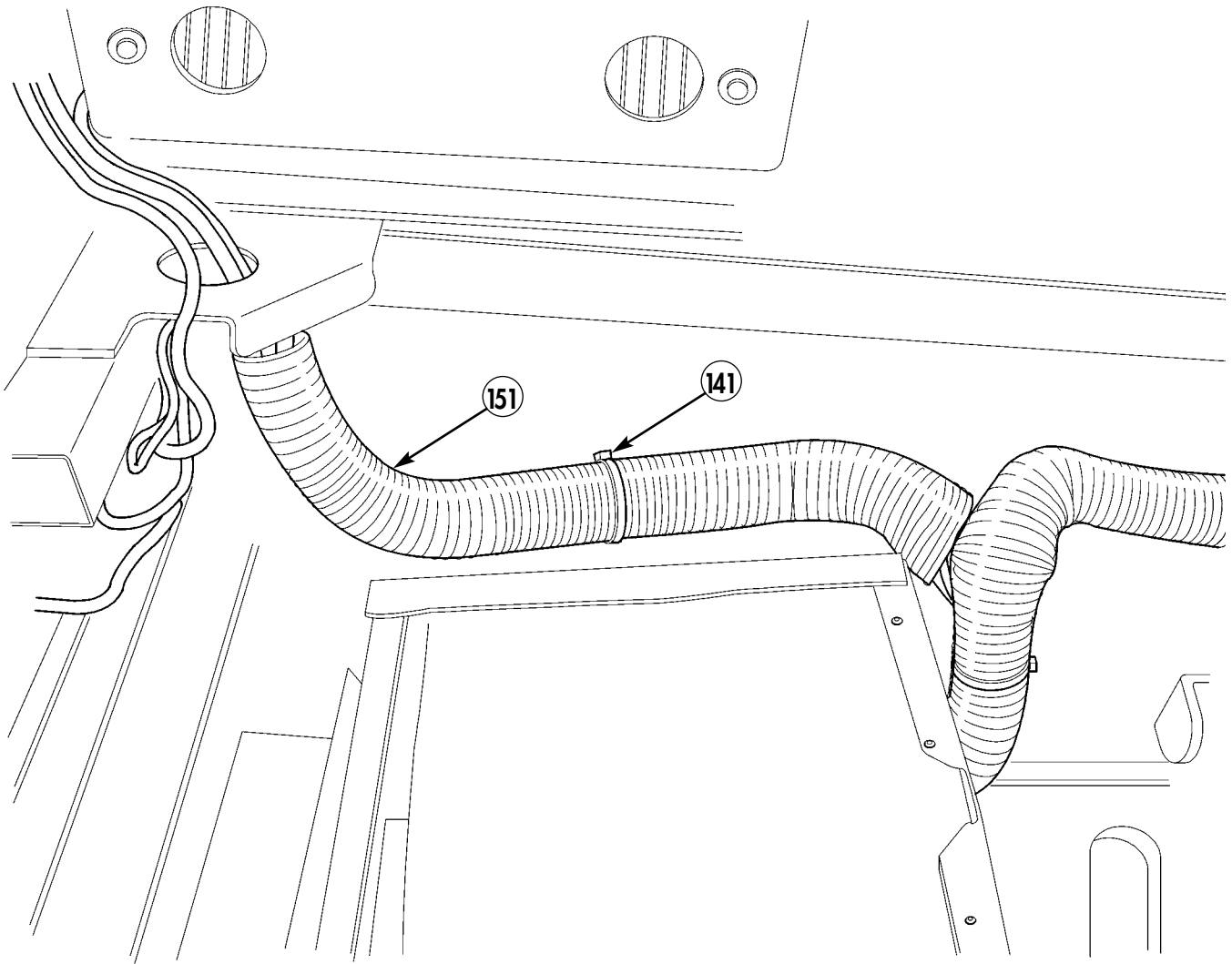
149. TERMINAL COVER – MS18029-IL-16 – QTY. 1

Figure 5-99.

NOTE

- Bundle any excess cable with tiedown straps and place behind multi-net rack.
- Cut convoluted tubing to length, approximately 34 inches and 9.5 inches.

26-75. Install convoluted tubing (151) over cabling with tiedown straps (141).



151. CONVOLUTED TUBING – N/A – QTY. A/R

Figure 5-100.

Section XXVII. DUO-CHARGE PROGRAMMING

NOTE

When duo-charge is powered, LEDs will scroll four times (from bottom to top in 12V mode or from top to bottom in 24V mode), followed by #1 and #2 amber lights and green light indicating base program as shown in table 5-1.

27-1. Have assistant turn ignition switch to run position and record LED lights.

Table 5-1. Battery Style and Light Sequence.

PROGRAM #1 STANDARD FLOODED (UFF)	Indicated by #1 Amber, #2 Amber, #3 Green (Voltage limits: 13V to 14V) or (26V to 27.8 V in 24V mode)
PROGRAM #2 DEEP CYCLE FLOODED (FLA)	Indicated by #1 Amber, #2 Amber, #4 Green (Voltage limits: 13V to 14.4V) or (26V to 27.8 V in 24V mode)
PROGRAM #3 GEL (FLA)	Indicated by #1 Amber, #2 Amber, #5 Green (Voltage limits: 13V to 13.9V) or (26V to 27.8 V in 24V mode)
PROGRAM #4 ABSORBED GLASS MAT	Indicated by #1 Amber, #2 Amber, #6 Green (Voltage limits: 13V to 14.2V) or (26V to 27.8 V in 24V mode)

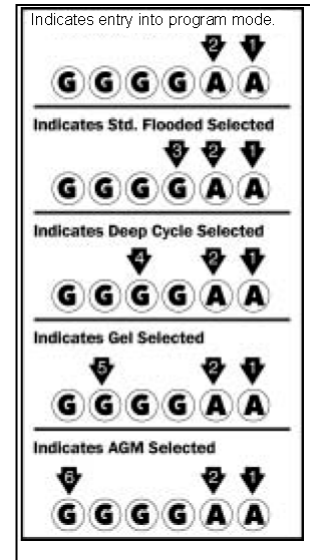


Figure 5-101.

NOTE

Duo-charge comes from factory pre-programmed for standard flooded (UFP) batteries.

27-2. To select battery type, activate magnetic reed switch (1) with suitable magnet and hold. #1 and #2 amber lights will be illuminated, followed by individual scrolling green lights indicating battery program choices.

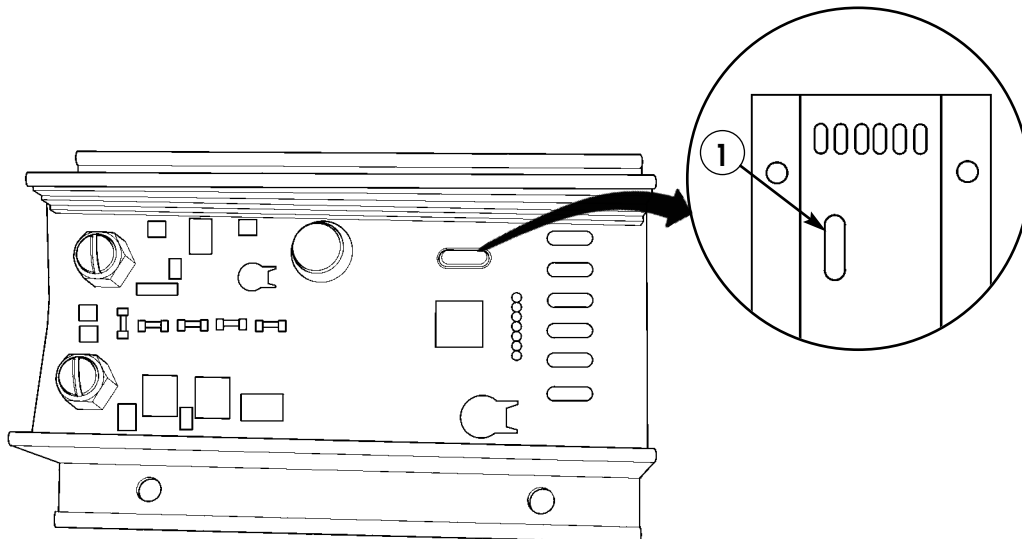


Figure 5-102.

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:



SANDRA R. RILEY
Administrative Assistant to the
Secretary of the Army
0522905

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21	5-10			5-14		<p style="text-align: center;">Screw part number should be MS90726-36</p>

SAMPLE

**Reference to line numbers within the paragraph or subparagraph.*

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PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER TB 9-2320-280-35-9	DATE 17 OCT 2005	TITLE TECHNICAL BULLETIN INSTALLATION INSTRUCTIONS
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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

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TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.				Use Part II (reverse) for Repair Parts and Special Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).		DATE:
TO: <i>(Forward to proponent of publication or form) (include ZIP code)</i> AMSTA-LC-LMIT/Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630				FROM: <i>(Activity and location) (include ZIP code)</i>		
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS						
PUBLICATION/FORM NUMBER TB 9-2320-280-35-9			DATE 17 OCT 2005		TITLE TECHNICAL BULLETIN INSTALLATION INSTRUCTIONS	
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON <i>(Provide exact wording of recommended changes, if possible)</i>
<i>*Reference to line numbers within the paragraph or subparagraph.</i>						
TYPED NAME, GRADE, OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE

TO: <i>(Forward direct to addressee listed in publication)</i> AMSTA-LC-LMIT/Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: <i>(Activity and location) (include ZIP code)</i>	DATE:
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