

TM 4-48.22/TO 13C7-26-71



Airdrop of Supplies and Equipment: Rigging Engineer Equipment (Wheeled)

MARCH 2016

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SUPERSESSSION: This publication supersedes FM 10-528/TO 13C7-26-71 dated 25 November 1977; FM 10-548/TO 13C7-24-21 dated 3 May 1984; FM 10-573/TO 13C7-27-141 dated 27 September 1988; FM 10-574/TO 13C7-31-31 2 May 1985; FM 10-575/TO 13C7-17-11 dated 4 May 1987; FM 10-576/TO 13C7-27-151 21 August 1987.

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No. 4-48.22

Headquarters
Department of the Army
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15 March 2016

Airdrop of Supplies and Equipment: Rigging Engineer Equipment (Wheeled)

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Preface

TM 4-48.22/TO 13C7-26-71 provides doctrinal guidance and direction for United States Army and United States Air Force units conducting aerial delivery operations. This manual provides information on how to prepare and rig wheeled engineer equipment such as; road rollers, crane, road grader, scoop loaders, water distributors and scrapers. They are rigged for low-velocity airdrop from a C-130 or C-17 aircraft.

The principal audience for TM 4-48.22/TO 13C7-26-71 is all members of the profession of arms. Commanders and staffs of Army and Air Force headquarters serving as joint task force or multinational headquarters should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces. Trainers and educators throughout the Army and Air Force will also use this publication.

Commanders, staffs, and subordinates ensure that their decisions and actions comply with applicable United States, international, and in some cases host-nation laws and regulations. Commanders at all levels ensure that their Soldiers and Airmen operate in accordance with the law of war and the rules of engagement. (See FM 27-10).

TM 4-48.22/TO 13C7-26-71 does not implement any STANAGs.

TM 4-48.22/TO 13C7-26-71 uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the glossary and the text. Terms for which TM 4-48.22/TO 13C7-26-71 is the proponent publication (the authority) are italicized in the text and marked with an asterisk (*) in the glossary. Terms and definitions for which TM 4-48.22/TO 13C7-26-71 is the proponent publication are boldfaced in the text. For other definitions shown in the text, the term is italicized and the number of the proponent publication follows the definition.

TM 4-48.22/TO 13C7-26-71 applies to the Active Army, Army National Guard/Army National Guard of the United States, United States Army Reserve, and the Air Force unless otherwise stated.

The proponent of TM 4-48.22/TO 13C7-26-71 is the United States Army Quartermaster School. The preparing agency is the G-3 Doctrine Division, USACASCOM. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, United States Army Combined Arms Support Command and Fort Lee, ATTN: ATCL-TS, 2221 A Avenue, Fort Lee, Virginia 23801 or submit an electronic DA Form 2028 by e-mail to: usarmy.lee.tradoc.mbx.lee-cascom-doctrine@mail.mil. In addition to submission of DA Form 2028, provide same comments and recommendations in MilWiki for rapid dissemination to doctrine authors and for universal review at <https://www.milsuite.mil>.

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Introduction

Publication of TM 4-48.22/TO 13C7-26-71 (FM 10-528/TO 13C7-26-71; FM 10-548/TO 13C7-24-21; FM 10-573/TO 13C7-27-141; FM 10-574/TO 13C7-31-31; FM 10-575/TO 13C7-17-11; FM 10-576/TO 13C7-27-151) Airdrop of Supplies and Equipment: Rigging Engineer Equipment (Wheeled) supersedes FM 10-528/TO 13C7-26-71 Airdrop of Supplies and Equipment: Rigging Road Rollers 25 November 1977 and FM 10-548/TO 13C7-24-21 Airdrop of Supplies and Equipment: Rigging Airborne Crane-Shovel and Attachments 3 May 1984 and FM 10-573/TO 13C7-27-141 Airdrop of Supplies and Equipment: Rigging the 130G Motor Grader 27 September 1988 and FM 10-574/TO 13C7-31-31 Airdrop of Supplies and Equipment: Rigging 950B Scoop-Loader 2 May 1985 and FM 10-575/TO 13C7-17-11 Airdrop of Supplies and Equipment: Rigging 613WD Water Distributors 4 May 1987 and FM 10-576/TO 13C7-27-151 Airdrop of Supplies and Equipment: Rigging the 613S Scrapers 21 August 1987.

The consolidation of manuals has reduced excess multi-service publication numbers. A single multi-service publication number will be retained on the new manual and the following remainder multi-service publication numbers will not be required/used: (TO 13C7-24-21; TO 13C7-27-141; TO 13C7-31-31; TO 13C7-17-11; TO 13C7-27-151). This revision to the TM publishing medium/nomenclature has been accomplished to comply with US Army Training and Doctrine Command doctrine restructuring requirements. The title is and the content of the manual(s) is nearly identical to that of the superseded manual(s) unless specifically noted changes are identified. There has been no change to procedural content in the main body. This revision does not integrate any changes in Army doctrine since 25 November 1977 / 3 May 1984 / 27 September 1988 / 2 May 1985 / 4 May 1987 / 21 August 1987 and does alter the publication's original references. For the status of official Department of the Army (DA) publications, consult DA Pam 25-30, Consolidated Index of Army Publications and Blank Forms, at <http://armypubs.army.mil/2530.html>. DA Pam 25-30 is updated as new and revised publications, as well as changes to publications are published.

DESCRIPTION OF LOADS

- This manual covers a wide range of construction equipment including, rollers, cranes, motor graders, scoop loaders, water distributors and scrapers.
- Model MDG 96 sheepsfoot roller is a large construction roller. The sheepsfoot roller weighs 7,440 pounds it is 140 inches long, reducible to 70 inches long, 54 inches high and 119 inches wide.
- 13-wheel Model (PT-13) pneumatic tire roller weighs 4,700 pounds, is 140½ inches long, 58 inches high and 96 inches wide.
- Vibratory Compactor Model CS-433C weighs 18,890 pounds, is 262 inches long, 99 inches high with the roll over protection removed and 108 inches wide.
- Vibratory Compactor Model CS-433P weighs, 19,147 pounds, is 262 inches long, 99 inches high and 108 inches wide.
- The Koehring 7½-Ton Crane weighs 24,215 pounds and is 348 inches long, is 93 inches high and 95 inches wide.
- Type I, 130G motor grader with the fuel tank ¾ full weighs 31,395 pounds. This weight can be reduced to 29,940 pounds by removing the components described in paragraph 1-5a. The grader is 330 inches long. Its width is 144 inches (reducible to 95 ½ inches). Its height is 126 inches (reducible to 91 inches). The type II, 130G motor grader with the fuel tank ¾ full weighs 31,750 pounds. This weight can be reduced to 30,150 pounds by removing the components described in paragraph 1-5a. The grader is 330 inches long. Its width is 144 inches (reducible to 95 1/2 inches). Its height is 126 inches (reducible to 91 inches).

- The 950B scoop loader is a commercial construction equipment 2 ½ cubic yard capacity loader, scoop type, with 4X4 articulated frame steering. When equipped with the 2 ½ cubic yard multi-purpose bucket, non-sectionalized, it is referred to as the type I loader and identified by models 950BNS and 950BNSCE. When equipped with the 2 ½ cubic yard multi-purpose bucket, sectionalized, it is referred to as the type II loader, models 950BS and 950BSCE.
- The type I 950B scoop-loader weighs 32,275 pounds with the fuel tank no more than ¾ full. The weight is reduced to 30,970 pounds by removing the roll over protection system (ROPS), the rear fender, and engine components which are specified in this chapter. The length of the scoop-loader is 297 inches, reducible to 292 inches. The height is 137 inches, reducible to 91 inches, and is 106 inches wide. The load is rigged on a 24-foot type V platform for low-velocity airdrop. The load requires eight G-11 cargo parachutes.
- The type II 950B scoop-loader weighs 32,880 pounds with the fuel tank no more than ¾ full. The weight is reduced to 31,340 pounds by removing the ROPS, sectionalization kit, and engine compartment lower doors. The length is 297 inches, reducible to 292 inches. The height is 137 inches, reducible to 91 inches and is 106 inches wide. The load is rigged on a 24-foot type V platform for low-velocity airdrop. The load requires eight G-11 cargo parachutes.
- The 613C Water Distributor is a sectionalized vehicle. The unrigged water distributor weighs 33,860 pounds with a full tank of fuel. The weight is reduced for airdrop to 33,330 pounds by removing the roll over protections structure (ROPS) and with the fuel tank three-fourths full. The overall length of the water distributor while in operation is 415 inches. Its height is 115 inches (reducible for airdrop to approximately 96.5 inches). It is 101 inches wide. Rigged for airdrop the water distributor weighs 40,160 pounds (rigged weight); it is 473-inches long, 108 inches wide and 100 inches high.
- The 613WDNS type I water distributor is a non-sectionalized vehicle and weighs 31,690 unrigged with a full fuel tank. The weight is reduced to 30,190 pounds with the roll over protection system (ROPS) and the internal air transport (IAT) and with the fuel tank three-fourths full. The fuel may be adjusted to meet the weight requirements, but the fuel tank must be at least one-fourth full. The type I water distributor is 404 inches long (reducible to 393 inches), 121 inches high (reducible to 93½ inches with the removal of the ROPS), and 100 inches wide.
- The 613WDS type II water distributor is a sectionalized vehicle and weighs 33,860 pounds with the fuel tank full. The weight is reduced to 30,900 with the ROPS, the external air transportation (EAT) kit, and IAT kit removed and fuel tank three-fourths full. The type II water distributor is 436 inches long (reducible to 393 inches), 100 inches wide, 121 inches high reducible to 93 ½ inches with the ROPS removed, and a 100 inches wide.
- The 613SNS type I scraper (NSN 3805-01-144-2992) or re-buy NSN 3805-02-267-4178 with the fuel tank full weighs 33,000 pounds. The fuel tank must be at least ½ full. The length of the scraper is 405 inches, reducible to 393 inches. Its height is 121 inches, reducible to 91 inches. The width is 104 ¾ inches.
- The 613SS type II scraper (NSN 3805-01-144-8837) or re-buy (NSN 3805-07-267-4177) with the fuel tank full weighs 34,645. The fuel tank must be at least ½ full. The length is 436 inches, reducible to 393 inches. The height is 121 inches, reducible to 91 inches. The width is 104 ¾ inches.

SPECIAL CONSIDERATIONS

- Special considerations for this manual are given below.
- The loads covered in this manual may include hazardous materials as defined in Air Force Manual (AFMAN) 24-204/TM 38-250. If included, the hazardous materials must be packaged, marked, and labeled as required by AFMAN 24-204/TM 38-250.

NOTICE OF EXCEPTION

There are two procedures in this manual which are different from those in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. An exception to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 is granted and the procedures in this manual must be followed.

SPECIAL CONSIDERATIONS**CAUTION**

Rigging of the 613C water distributor for airdrop is critical. Deviations from the rigging procedures and materials covered in this manual may result in Air Force rejection of the load and or loss of the load. Only ammunition listed in TM 4-48.16/MCRP 4-11.3B/TO 13C7-18-41 may be airdropped.

CAUTION

Rigging of the 613S water distributor for airdrop is critical. Deviations from the rigging procedures and materials covered in this manual may result in Air Force rejections of the load and or loss of the load.

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Chapter 1

Rigging Model MDG 96 Sheepfoot Roller on a Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

1-1. The MDG 96 towed sheepfoot roller is rigged on a 12-foot type V airdrop platform. The unrigged roller weighs 7,440 pounds. It is 140 inches long, reducible to 77 inches; 54 inches high, and 119 inches wide.

PREPARING PLATFORM

1-2. Prepare or inspect and prepare a 12-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22 and install 4 tandem links and 22 platform clevises according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-1 through 1-4.

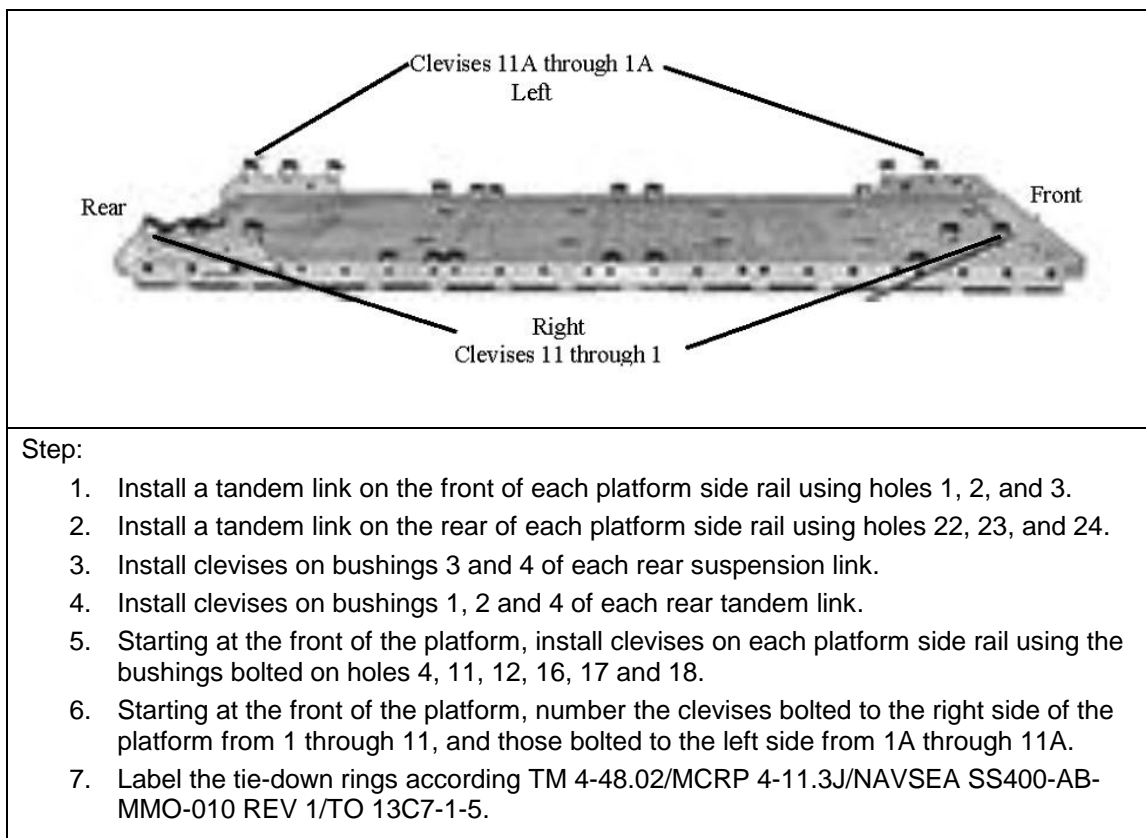


Figure 1-1. Platform prepared

PREPARING AND POSITIOINING HONEYCOMB STACKS

1-3. Prepare the honeycomb stacks as shown in Figure 1-2 and Figure 1-3. Position the honeycomb stacks on the platform as shown in Figure 1-2.

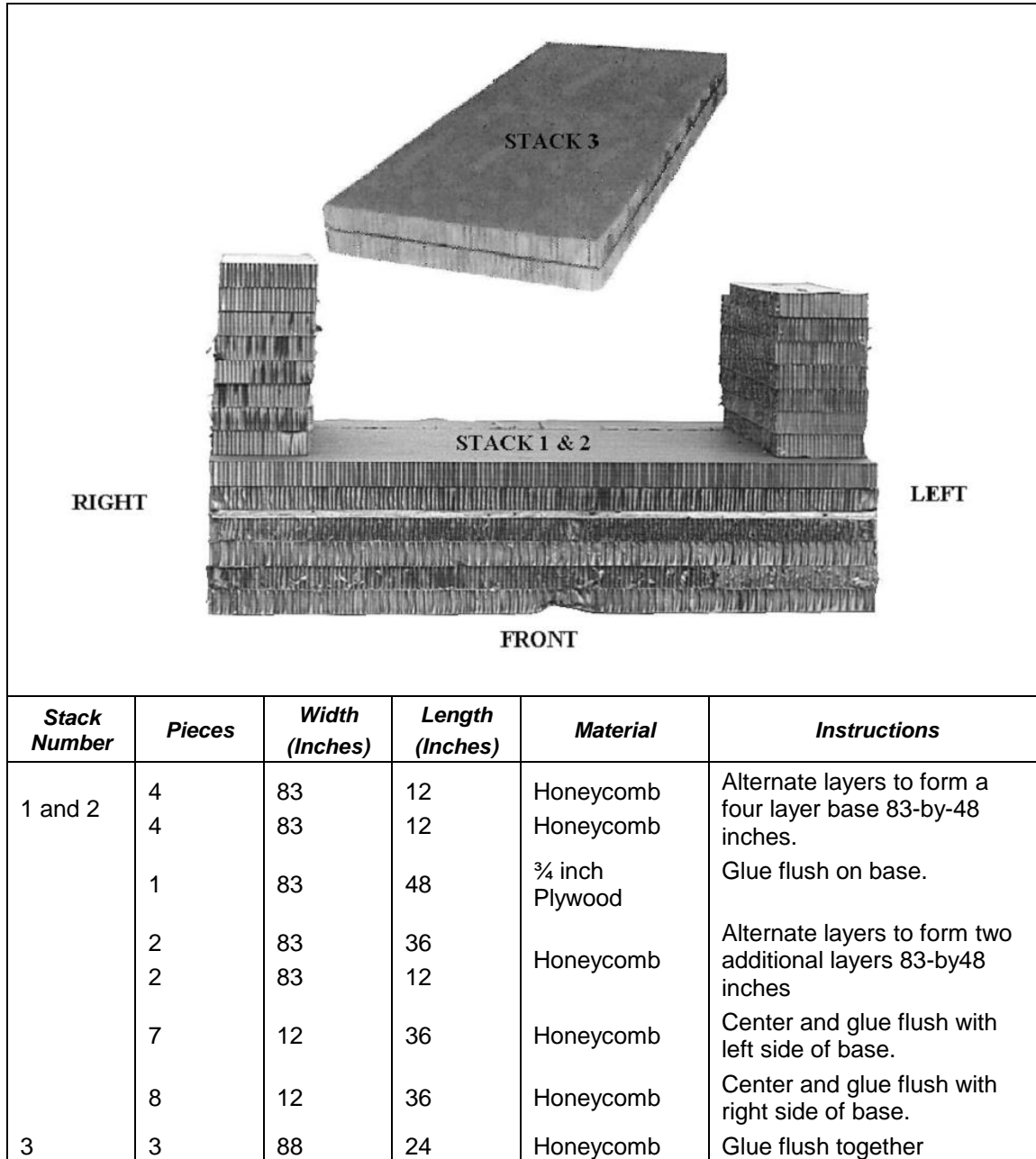


Figure 1-2. Honeycomb stacks prepared

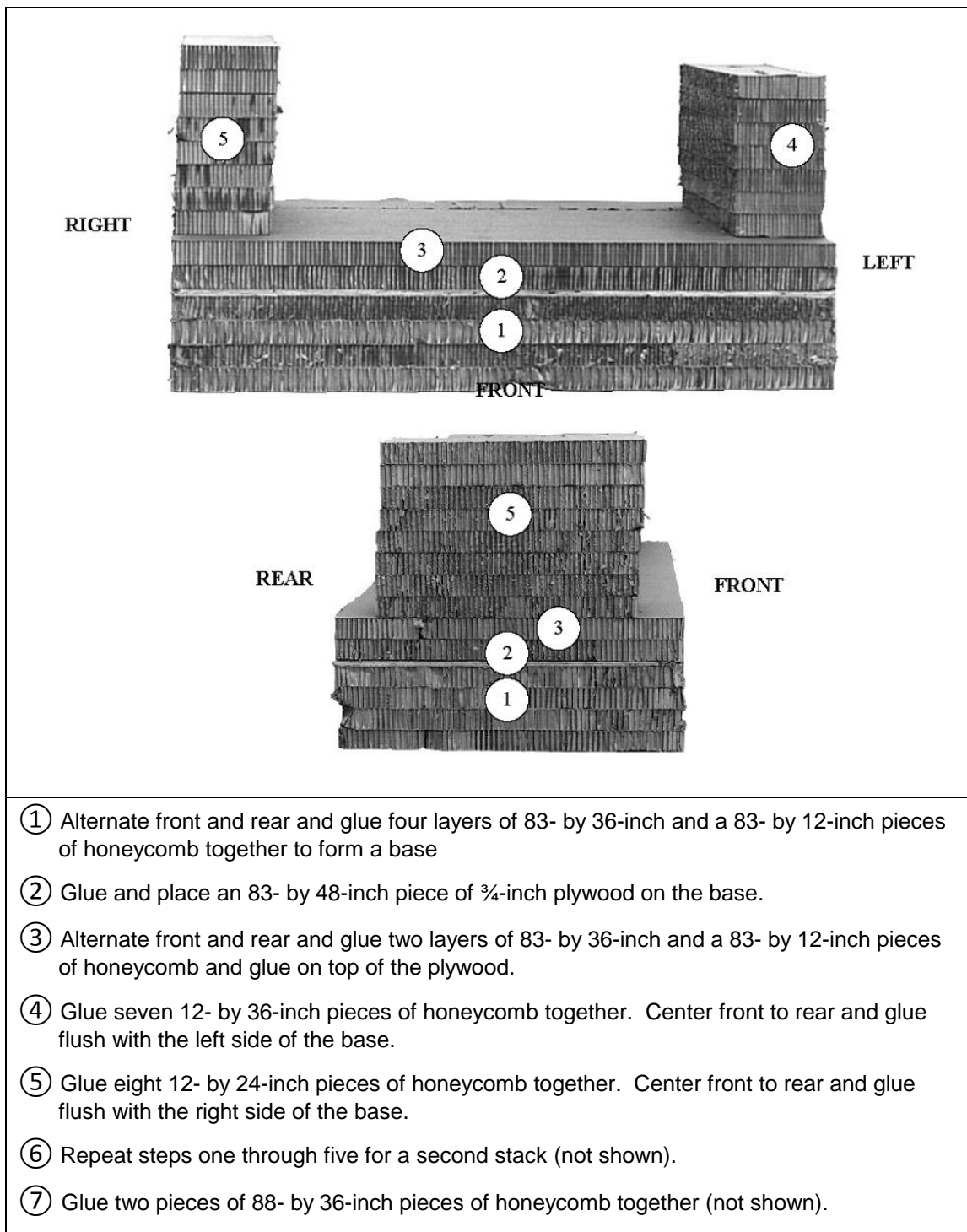


Figure 1-3. Honeycomb stack 1, 2 and 3 prepared

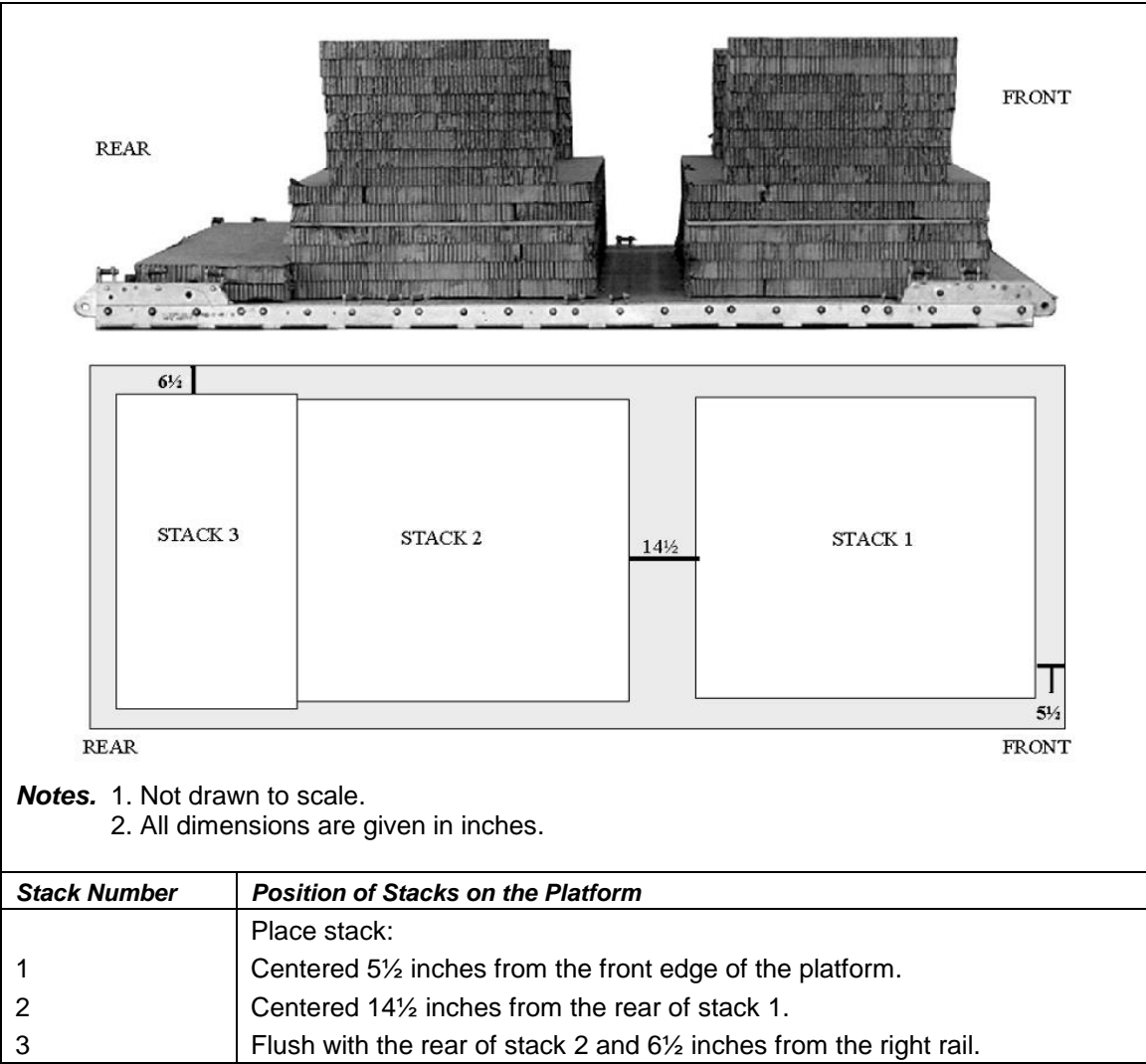


Figure 1-4. Honeycomb stacks positioned on the platform

PREPARING ROLLER AND INSTALLING PARACHUTE STOWAGE PLATFORM

1-4. Prepare the roller and install the parachute stowage platform as shown in Figure 1-5 and Figure 1-6.

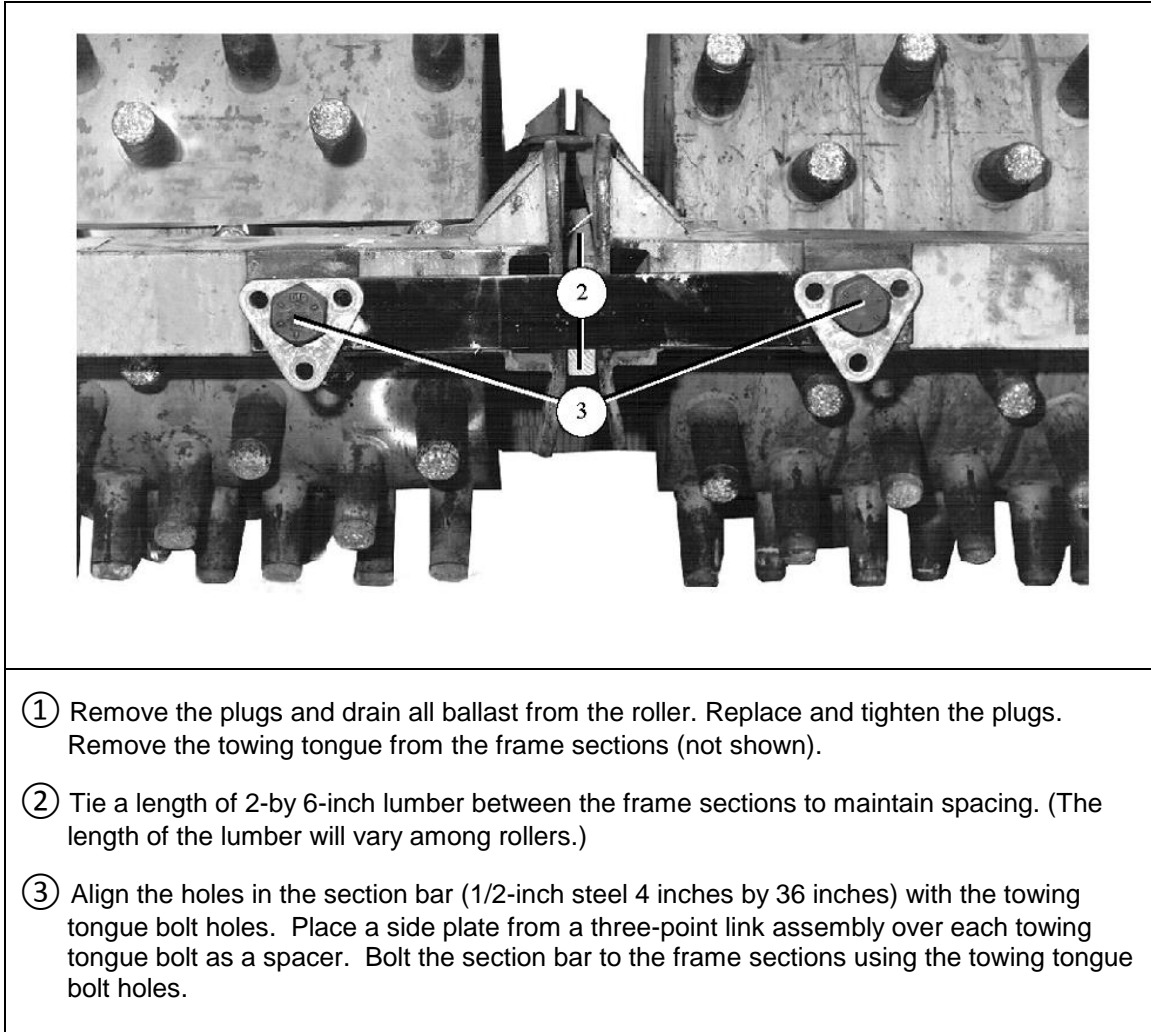


Figure 1-5. Roller prepared

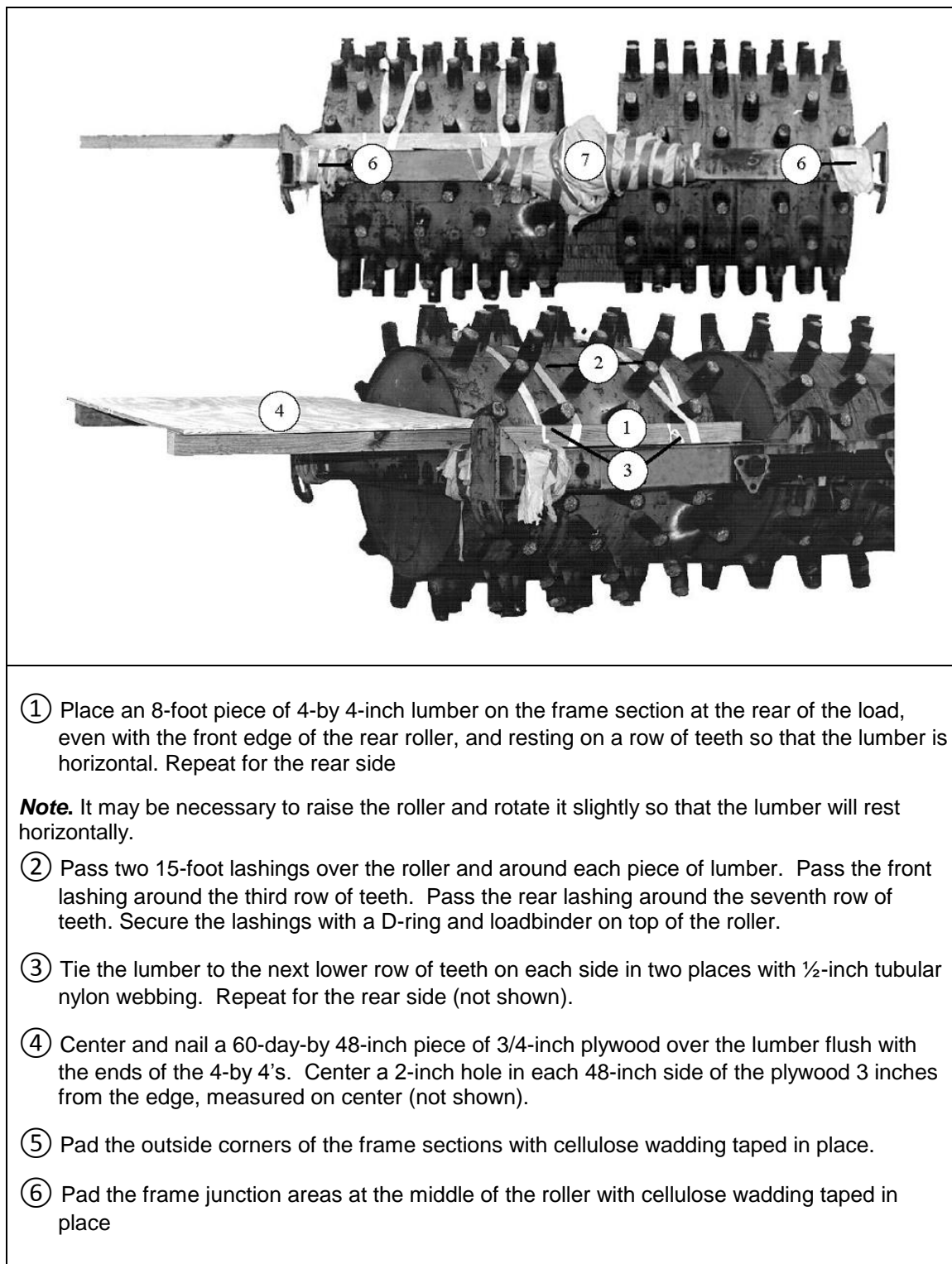


Figure 1-6. Parachute stowage platform installed

POSITIONING AND SECURING TOWING TONGUE

1-5. Place the towing tongue on the honeycomb as shown in Figure 1-7. Lash the tongue to the platform as shown in Figure 1-7 and 1-8.

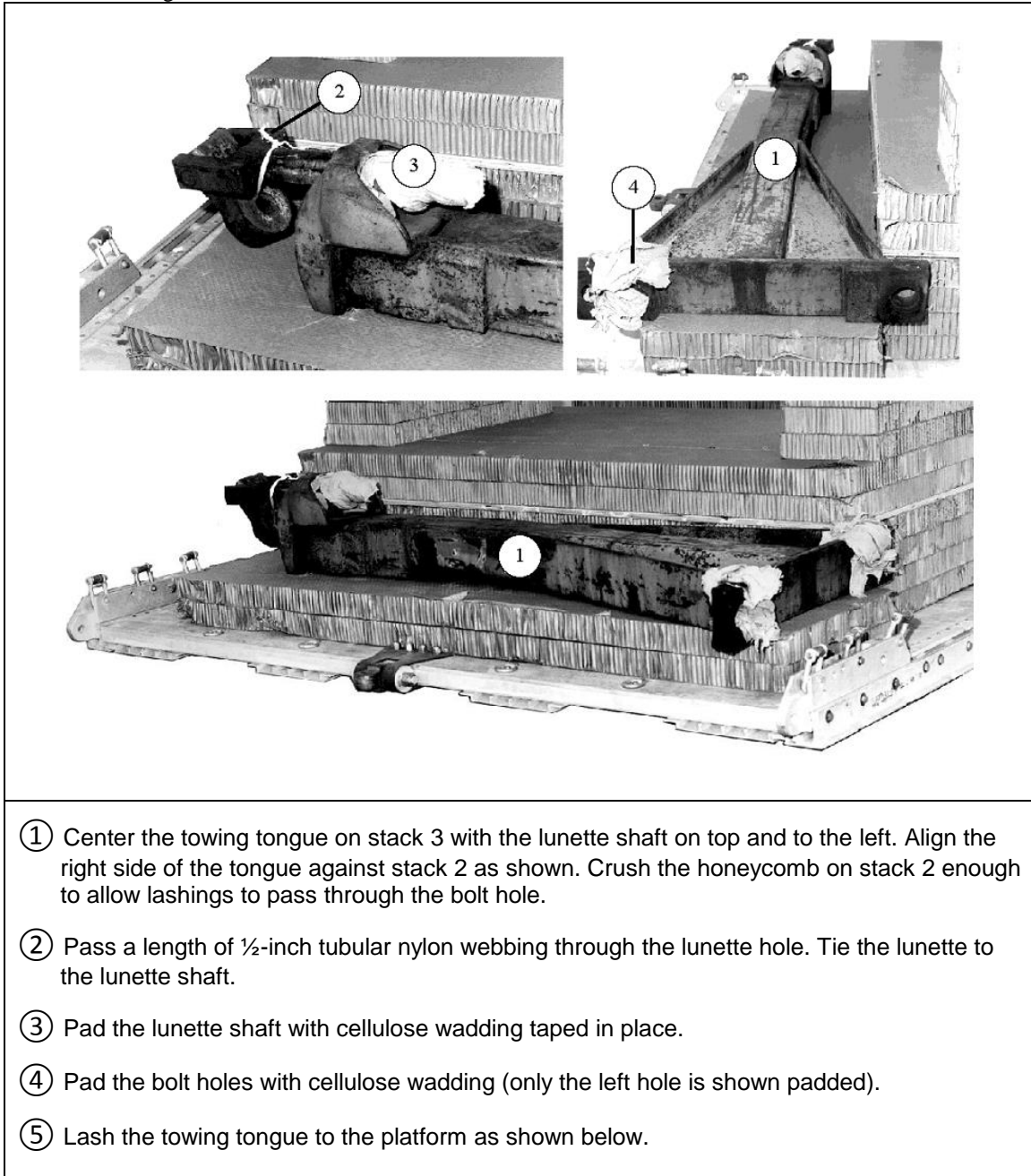


Figure 1-7. Towing tongue positioned

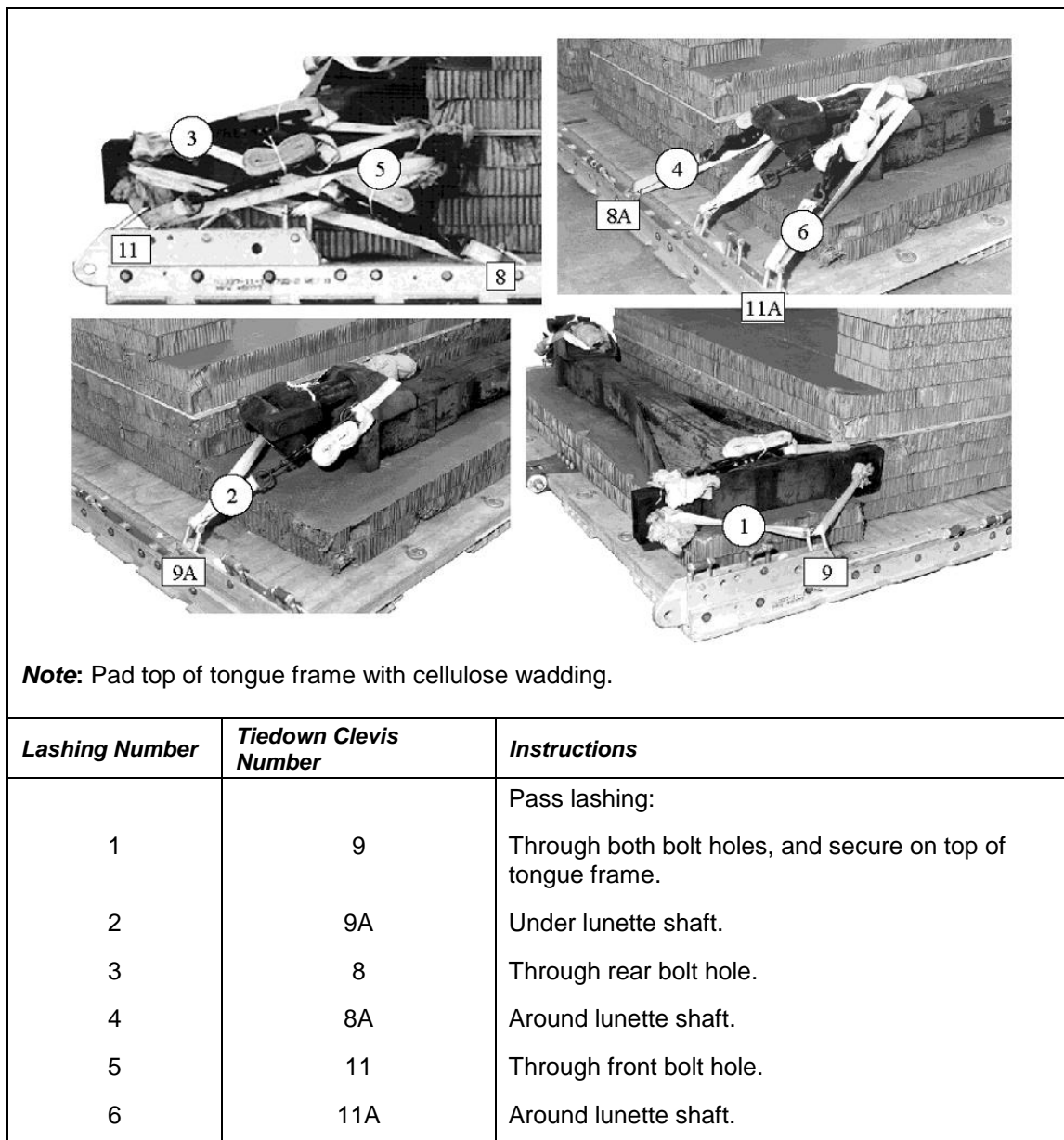


Figure 1-8. Towing Tongue Lashed to Platform

INSTALLING LIFTING SLINGS

1-6. Install lifting slings shown in Figure 1-9.

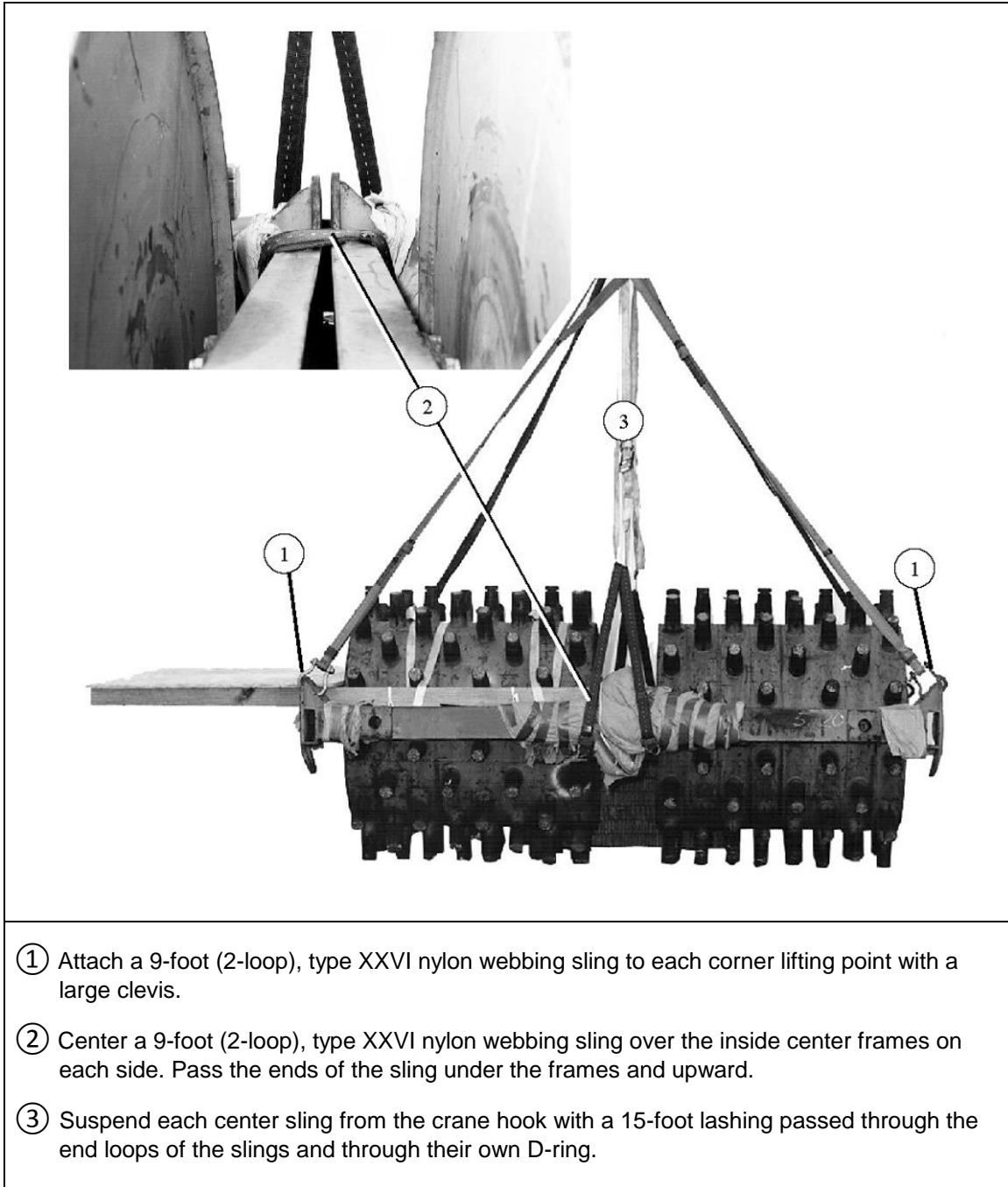


Figure 1-9. Lifting Slings Installed

POSITIONING ROLLER

1-7. Position roller on the honeycomb stacks as shown in Figure 1-10.

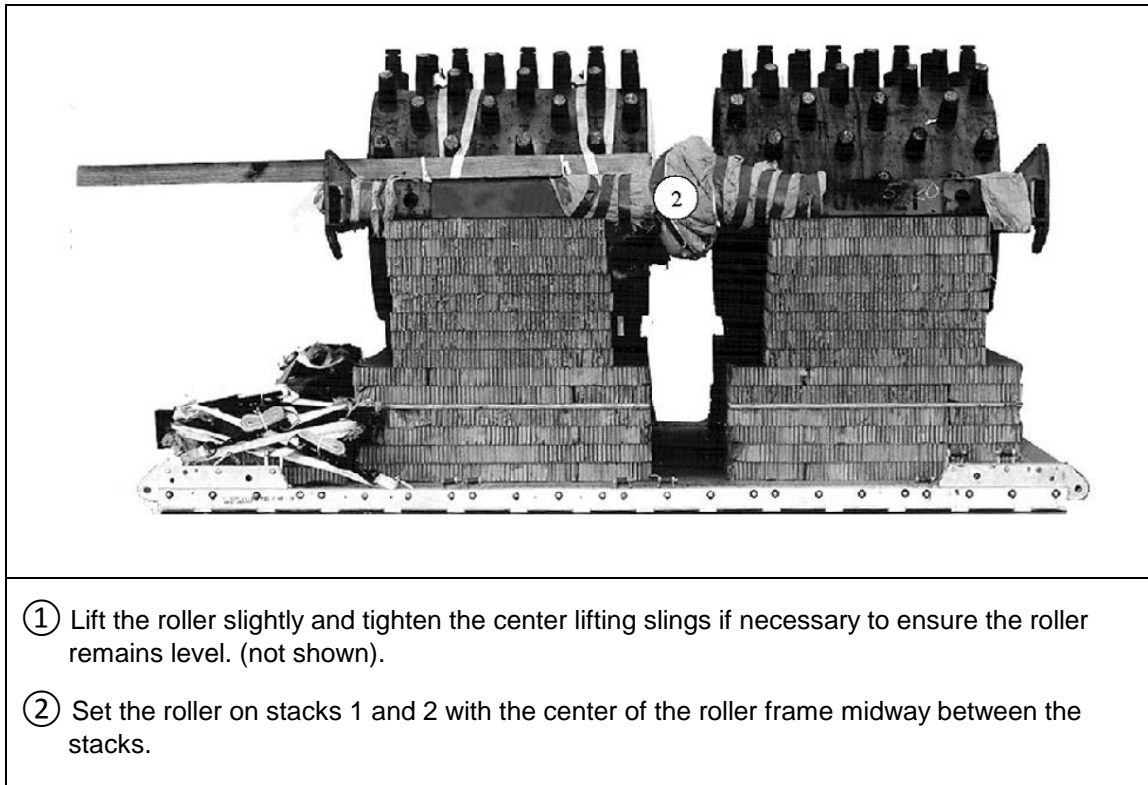


Figure 1-10. Roller Positioned

LASHING ROLLER

1-8. Lash the roller to the platform with sixteen 15-foot tiedown assemblies according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-11.

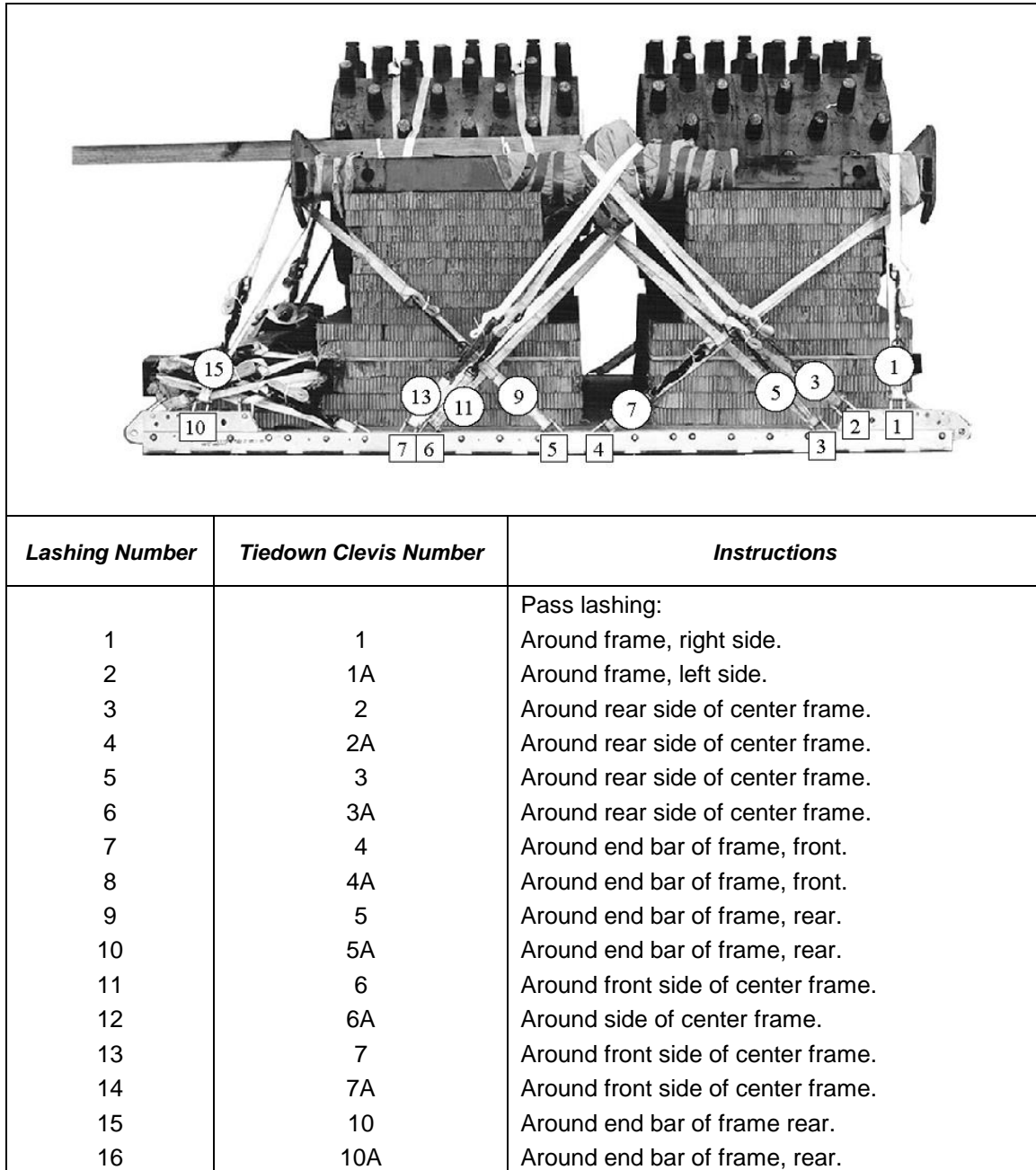


Figure 1-11. Roller Lashed to Platform

COVERING ROLLER AND INSTALLING SUSPENSION SLINGS

1-9. Cover the roller and install and pad the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-12.

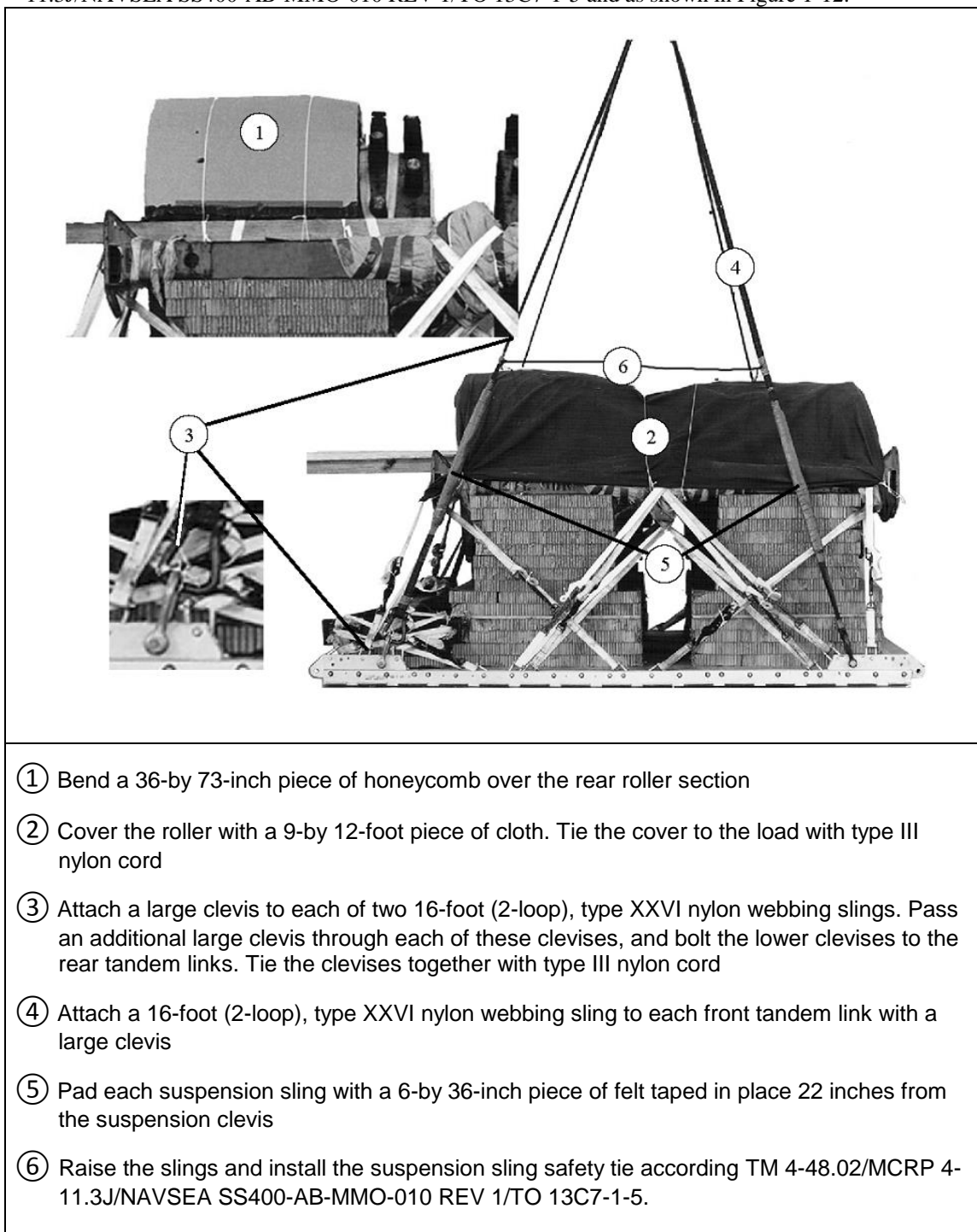


Figure 1-12. Roller Covered and Suspension Slings Installed

STOWING CARGO PARACHUTES

1-10. Prepare, stow, cluster, and restrain two G-11B cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-13.

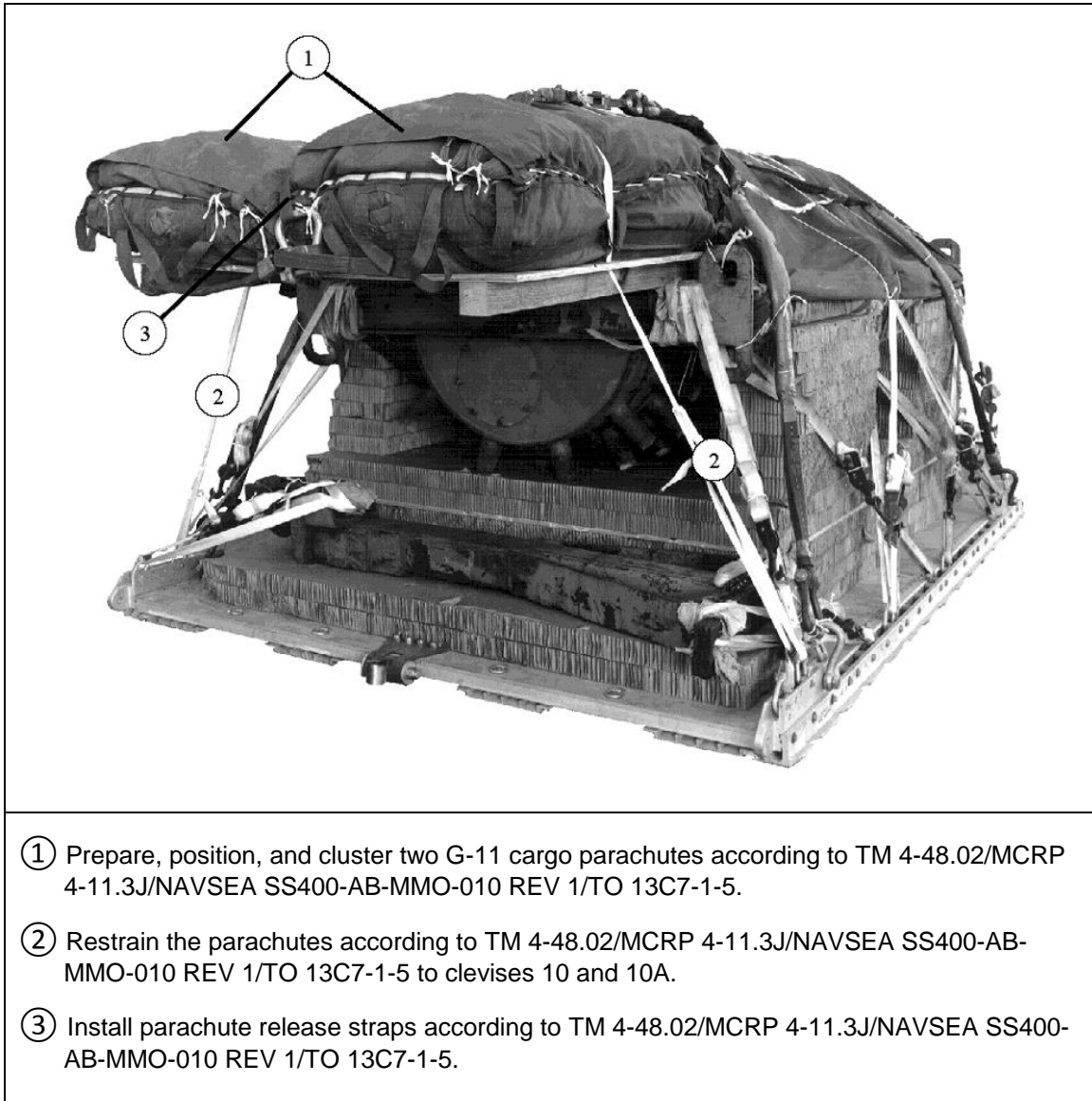


Figure 1-13. Cargo Parachutes Installed, Restrained and Release Knife Installed

INSTALLING M-1 RELEASE ASSEMBLY

1-11. Install the M-1 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-14.

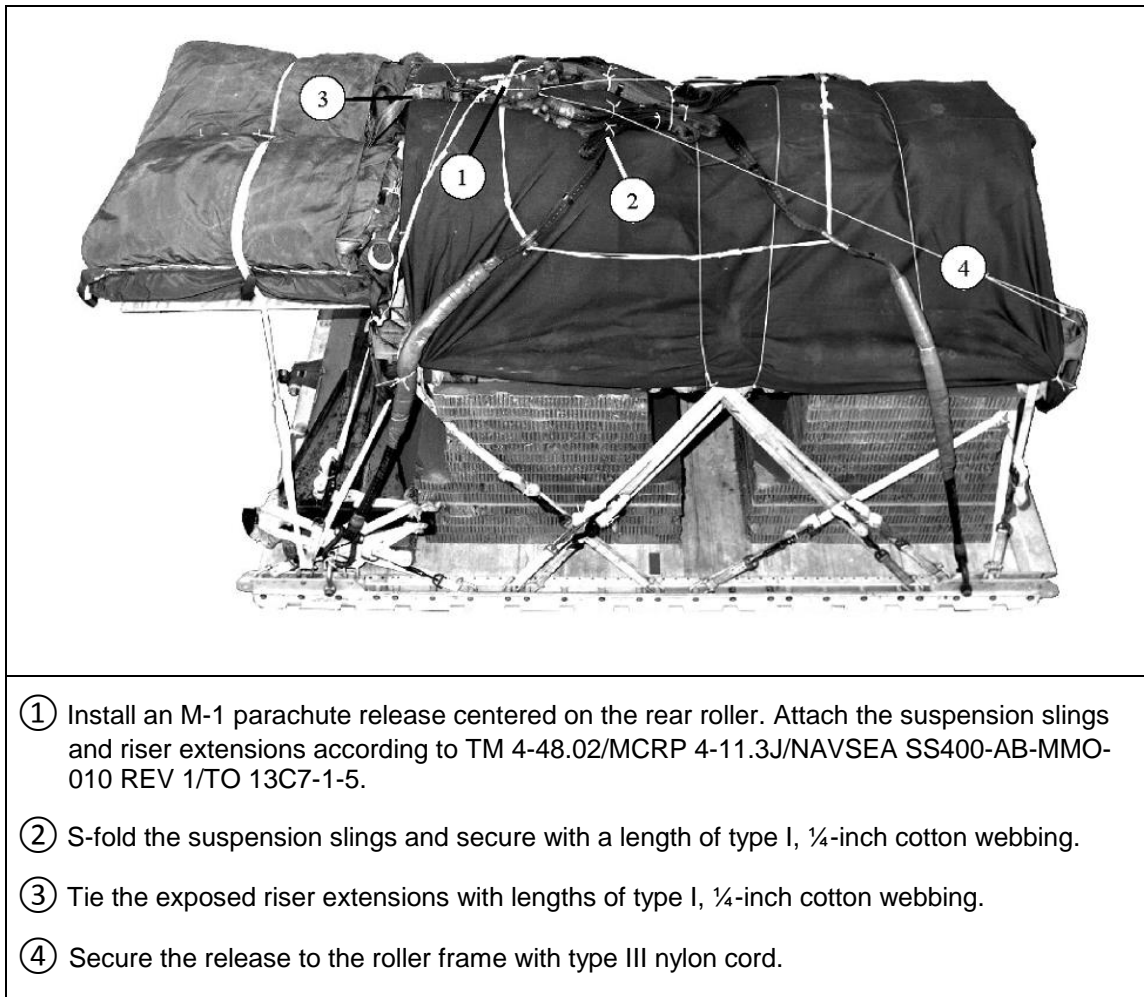


Figure 1-14. M1 Parachute Release Installed and Restrained

INSTALLING EXTRACTION SYSTEM

1-12. Install the extraction force transfer coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-15.

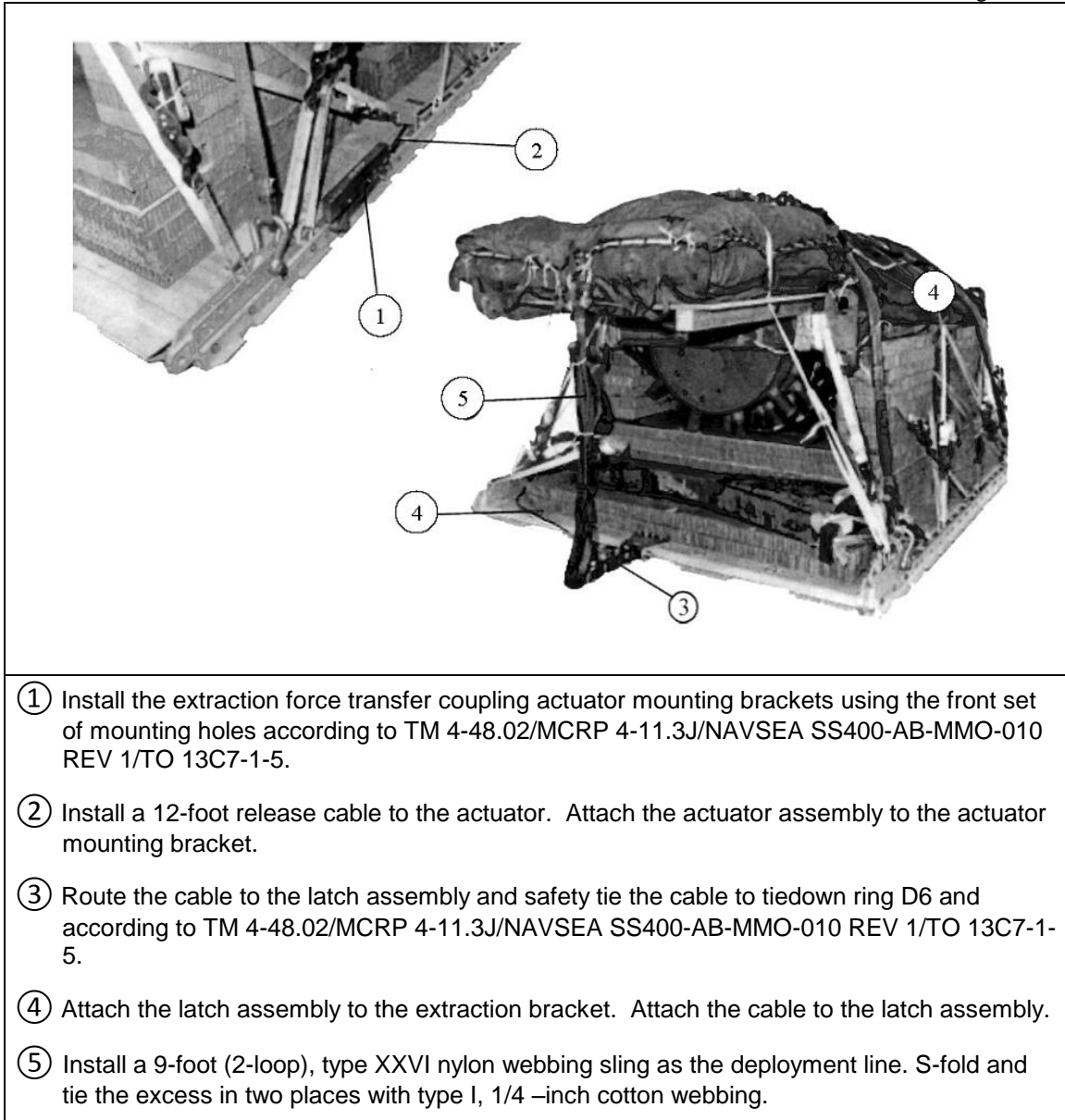


Figure 1-15. Extraction force transfer coupling system installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

1-13. Install provisions for emergency restraint according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

1-14. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft.

MARKING RIGGED LOAD

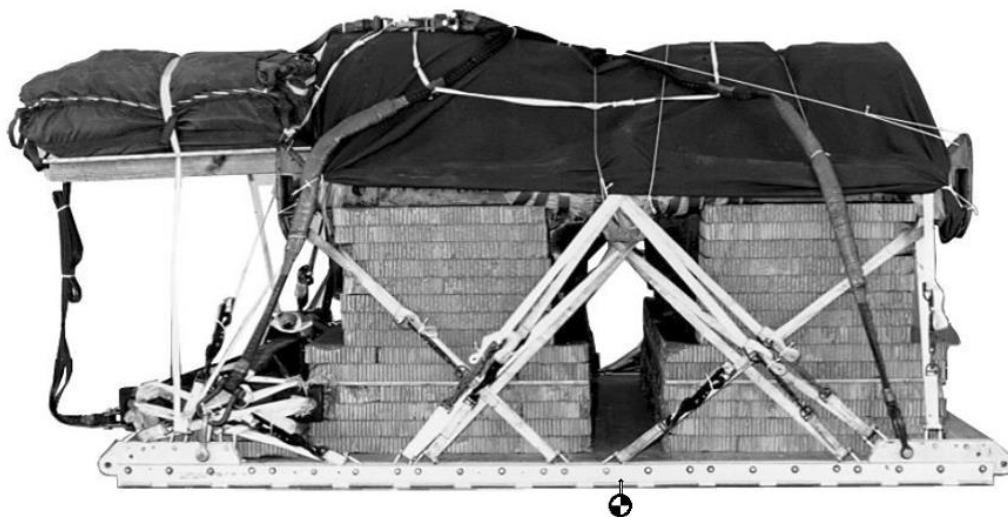
1-15. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 1-16. If the load varies from the one shown, the weight, height, center of balance (CB), tip-off curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

1-16. Use the equipment listed in Table 1-1 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of balance

RIGGED LOAD DATA

Weight.....	9,760 pounds
Maximum Weight.....	9,900 pounds
Height.....	82 inches
Width.....	108 inches
Length.....	173 inches
Overhang: Front.....	5 inches
Rear (parachute stowage platform)	24 inches
Center of Balance (from front edge of platform)	71 inches

Figure 1-16. MGD 96 Sheepsfoot Roller, Rigged on a Type V Platform for Low Velocity Airdrop

Table 1-1. Equipment Required for Rigging MDG 96 Sheepfoot Roller for Low-velocity Airdrop on a Type V Platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line lead, (line bag for DES)	
4030-00-090-5354	Clevis:	
	Large	7
	Medium	2
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
	Cover:	
1670-00-360-0328	Clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	3
	Extraction force transfer coupling (EFTC)	As required
1670-00-434-5783	Coupling, airdrop, EFTC with cable, 12-ft	1
1670-00-003-4391	Knife, parachute bag (for DES)	1
5340-00-040-8219	Knife, multi-parachute release strap, webbing	1
	Line, Multi-Loop:	
	For deployment	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For drogue (DES):	
1670-01-064-6313	60-ft (3-loop), type XXVI	1
	For extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI (for C-130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI (C-17)	1
	For lifting:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-ft (2 loop), type XXVI nylon webbing	2
	For suspension:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	6
	Link assembly:	
1670-01-493-6418	Assembly, small, two-point, 3¾-inch	4
1670-01-493-6240	Assembly, large, two-point, 5½-inch	2
1670-01-072-1378	Extraction, (C-130J) (DES)	1
1670-01-483-8259	Jettison (TRM H-block) (C-17)	1
	Lumber:	
5510-00-220-6148	2-by-6-by-36 inch	1
5510-00-220-6274	4-by-4-by-96 inch	2
5315-00-010-4659	Nail, steel wire, 8d	As required
1670-00-753-3928	Pad, energy-dissipating (honeycomb)	
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	20 sheets

Table 1-1. Equipment Required for Rigging MDG 96 Sheepfoot Roller for Low-velocity Airdrop on a Type V Platform (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Parachute:	
1670-01-016-7841	For cargo: G-11B	2
1670-01-063-3716	For extraction: 22 foot	1
1670-01-063-3715	15 foot Drogue (DES)	1
	Platform, airdrop, type V, 12 foot:	
1670-01-353-8425	Bracket assembly, component (EFTC)	2
1670-01-353-8424	Bracket assembly, extraction	1
1670-01-162-2372	Clevis assembly, type V	22
1670-01-162-2381	Link, tandem, suspension (Multipurpose link)	4
5530-00-618-8073	Plywood, ¾ inch	3 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
7510-00-266-5016	Tape, adhesive, 2 inch	As required
1670-00-937-0271	Tie-down assembly, 15 foot	24
5365-00-937-0147	D-ring, heavy duty, 10,000 pounds	24
1670-00-937-0272	Binder, load, 10,000 pounds	24
	Webbing:	
4020-00-240-2146	Cord, nylon, type III, 550lb	As required
8305-00-268-2411	Cotton, ¼-in, type 1	As required
8305-00-082-5752	Nylon, tubular, ½ inch	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

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Chapter 2

Rigging the 13-Wheel (Model PT 13) Towed Roller On a Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

2-1. The 13-wheel (Model PT-13) towed roller is rigged on a 12-foot, type V airdrop platform with two G-11 cargo parachutes. The roller weighs approximately 4,700 pounds unloaded. It is 140 ½ inches wide. The total rigged weight of this load is 6,582 pounds. The roller is shown in Figure 2-1.

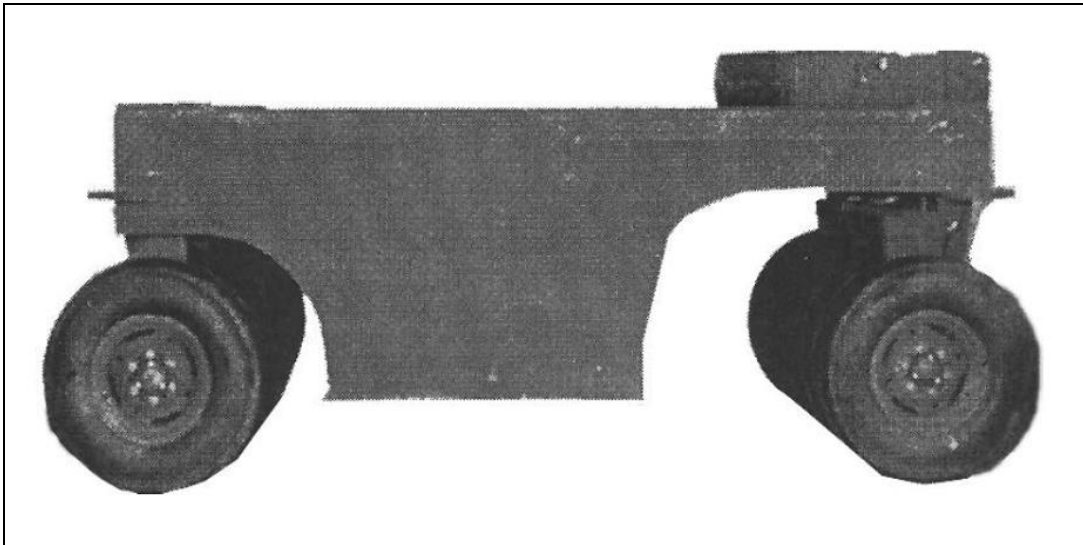


Figure 2-1. 13-Wheel Roller

PREPARING PLATFORM

2-2. Prepare or inspect and prepare a 12-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22 and install 4 tandem links and 10 platform clevises according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-2.

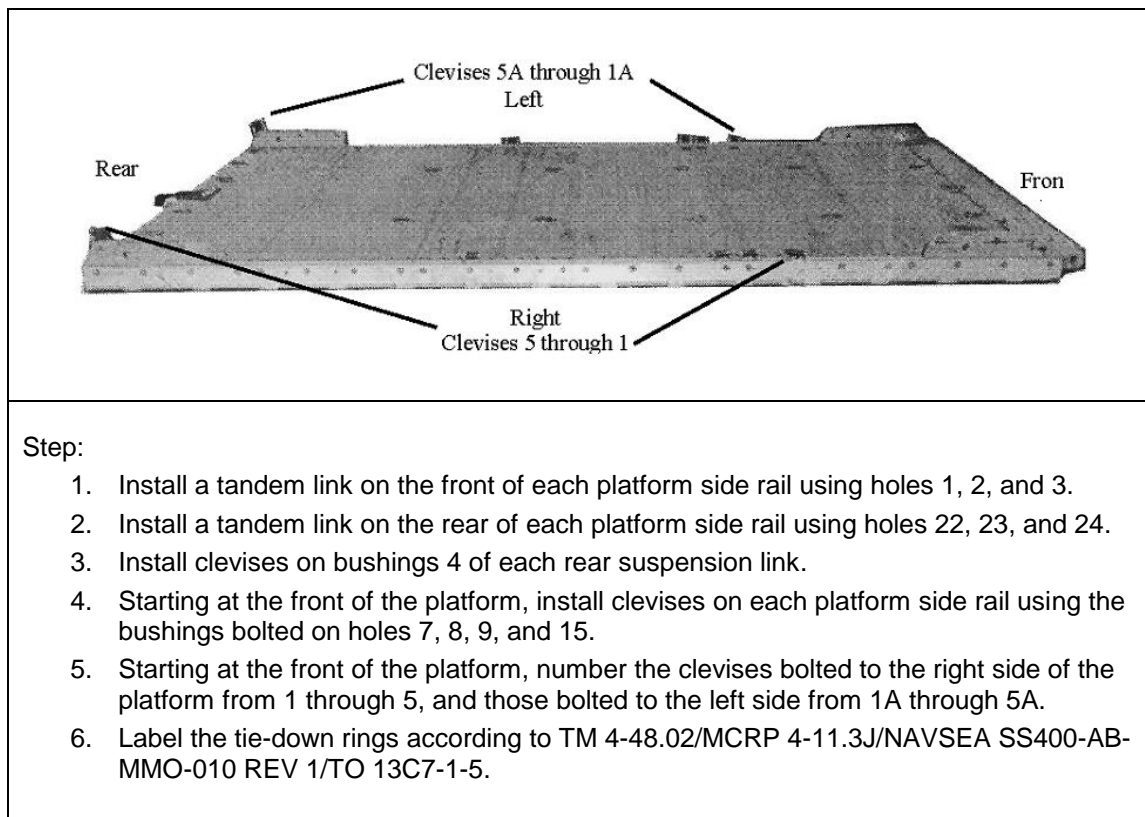


Figure 2-2. Platform prepared

PREPARING AND POSITIONING HONEYCOMB STACKS

2-3. Prepare the honeycomb stacks as shown in Figures 2-3. Position the honeycomb stacks on the platform as shown in Figure 2-4.

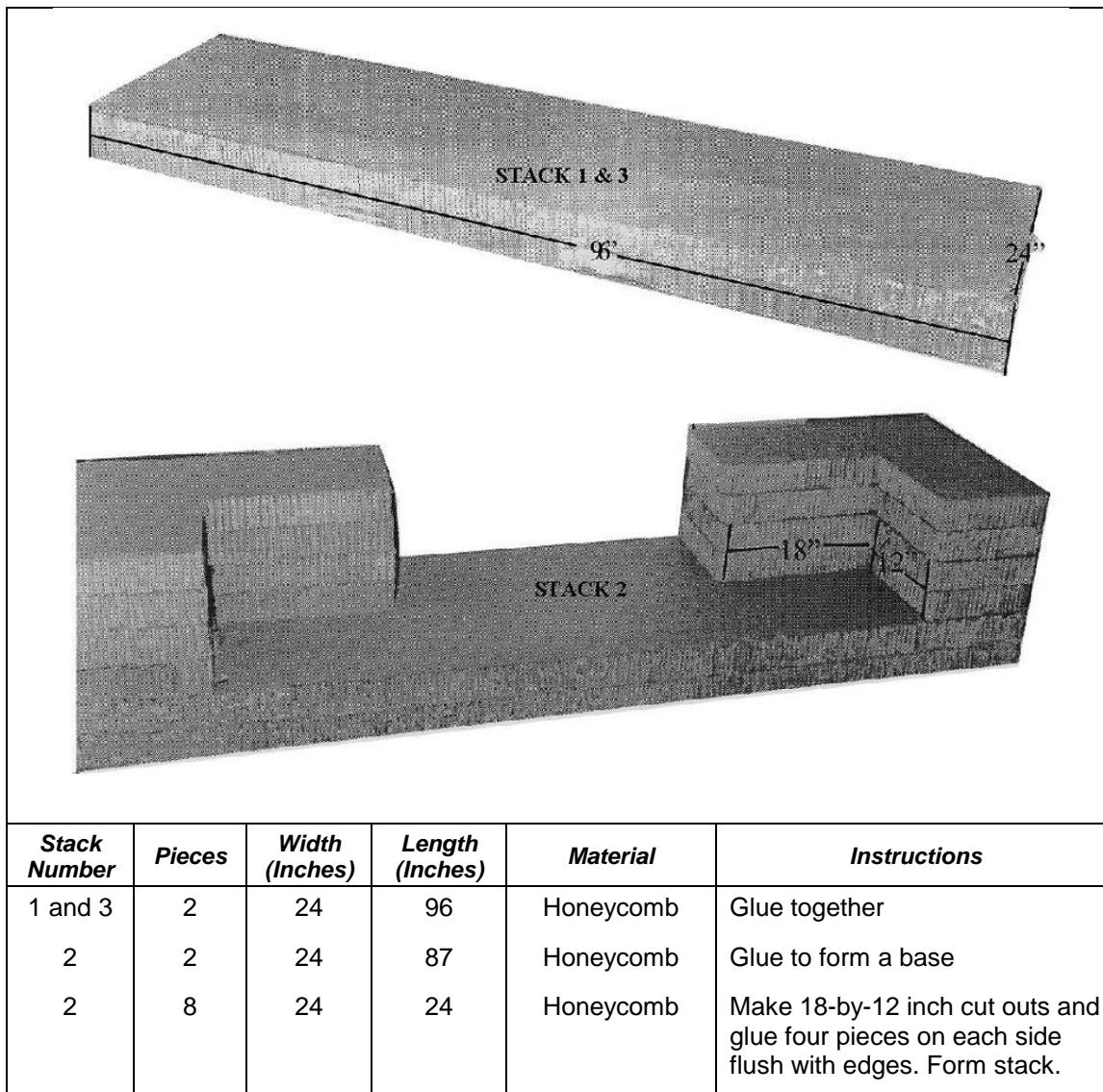


Figure 2-3. Honeycomb stacks prepared

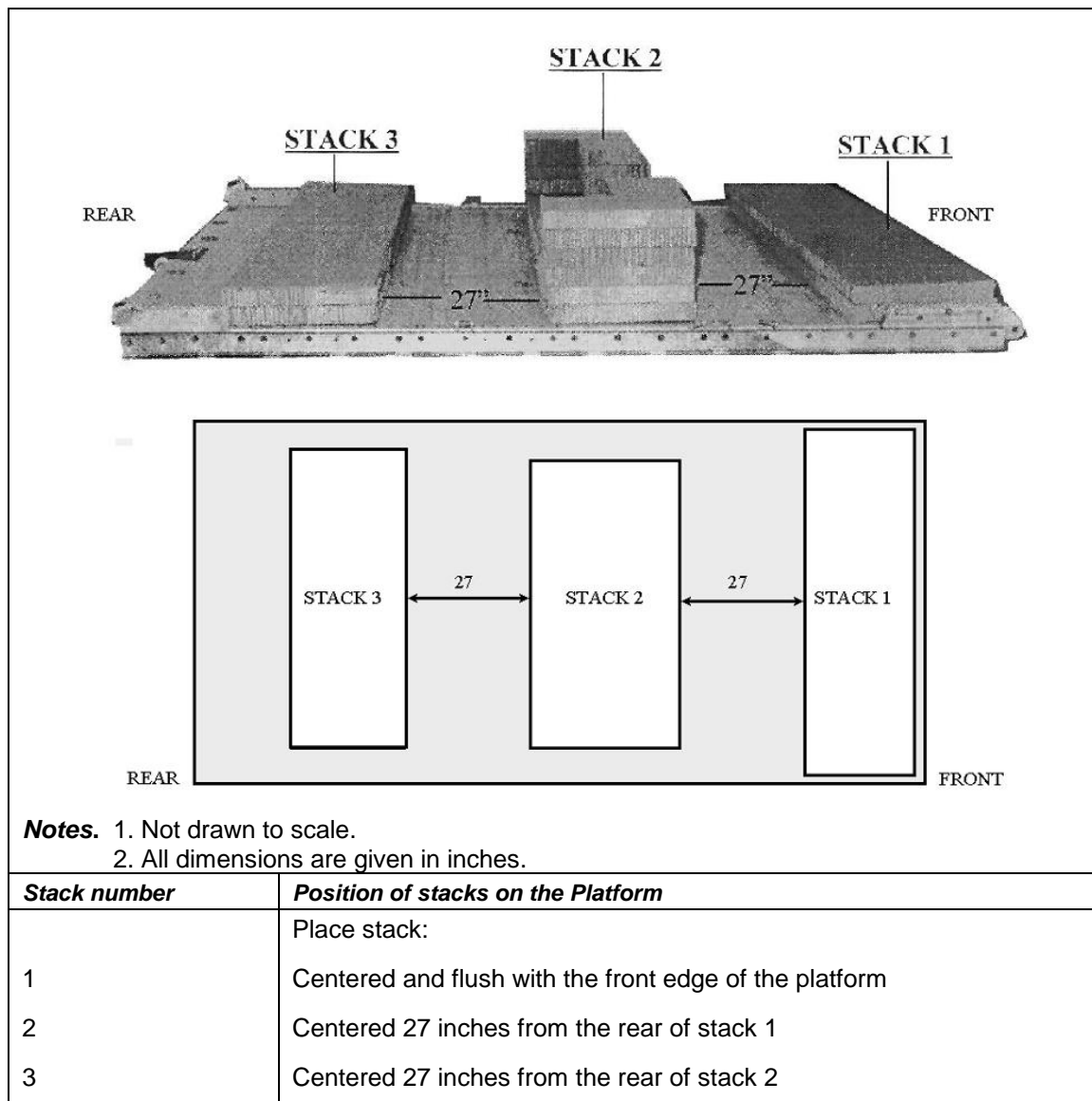


Figure 2-4. Honeycomb Stacks Positioned on the Platform

POSITIONING AND SECURING TOWING TONGUE AND SPARE TIRE

2-4. Position and secure the towing tongue and spare tire according to Figures 2-5.

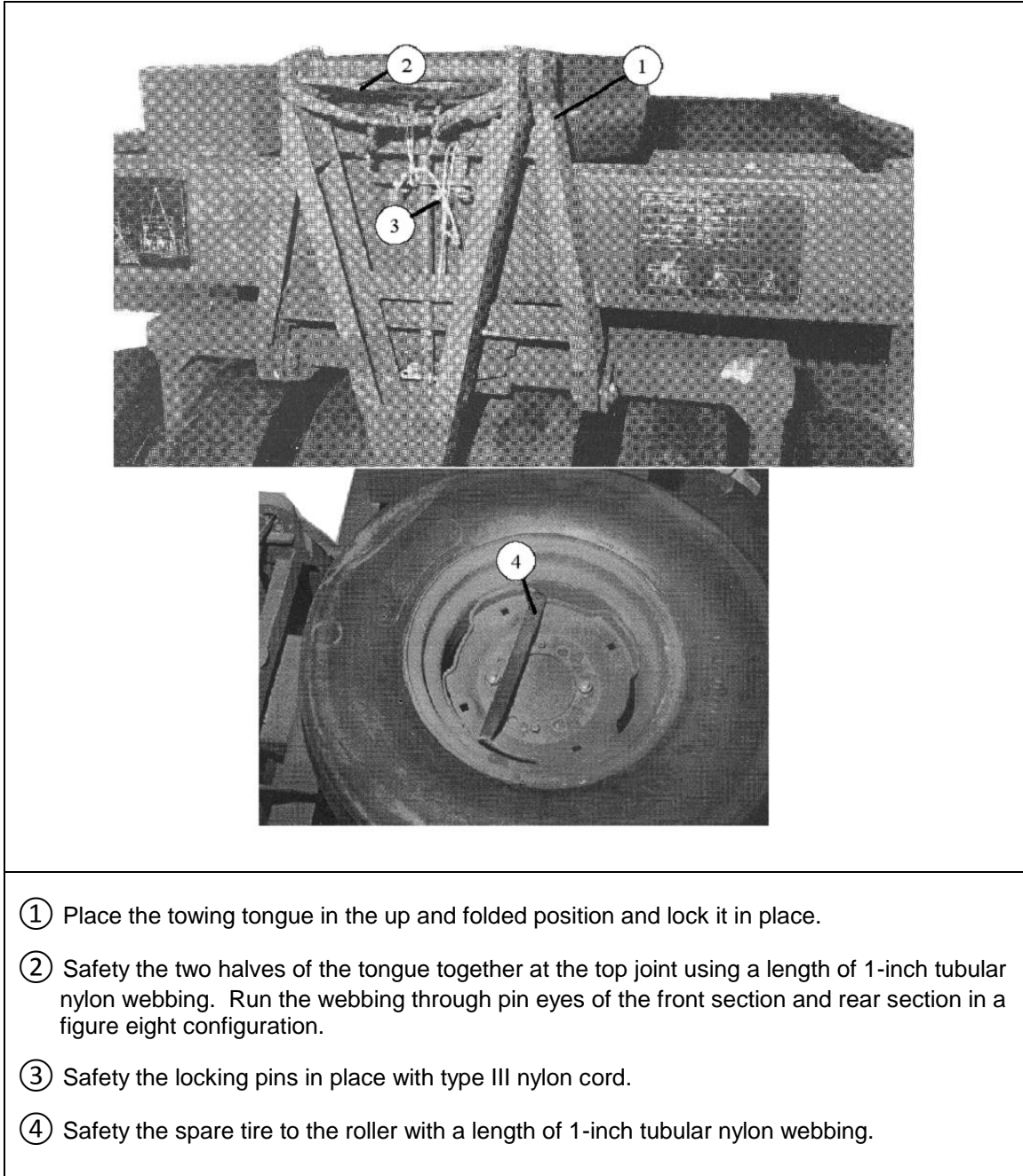


Figure 2-5. Tongue and Spare Tire Secured

INSTALLING LIFTING SLINGS

2-5. Install lifting slings according to positioning Roller on the honeycomb stacks according to Figure 2-6.

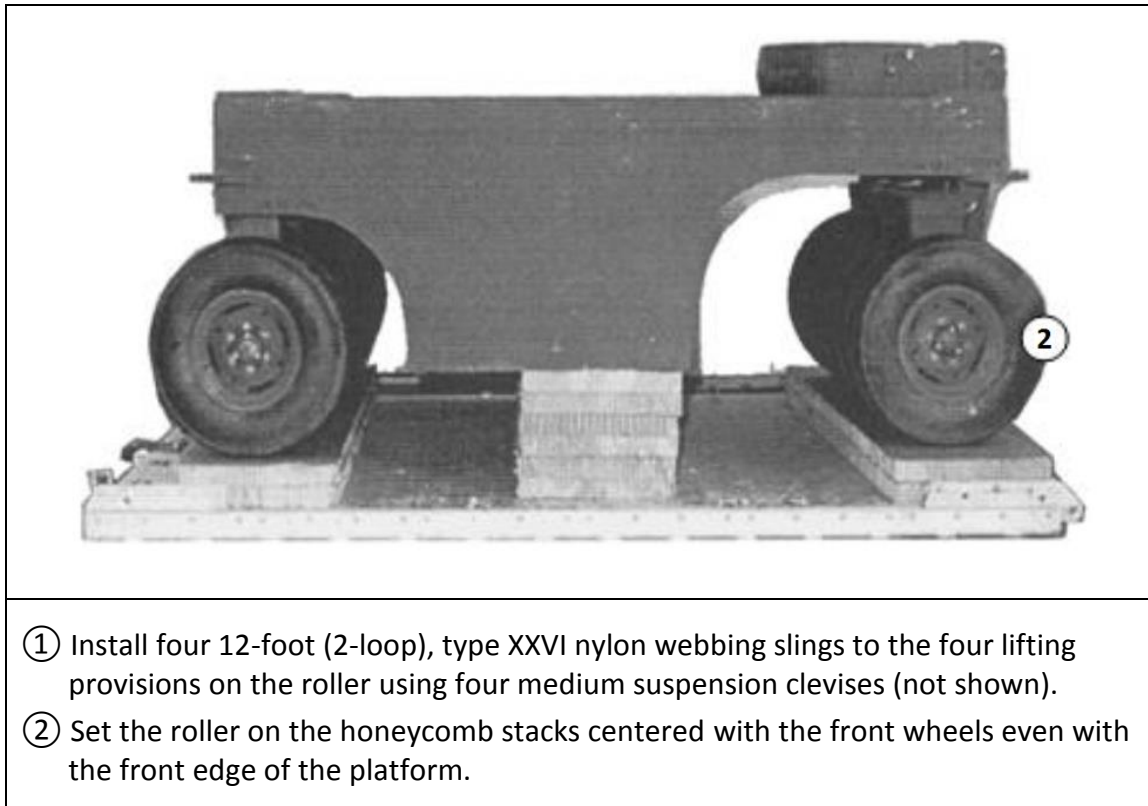


Figure 2-6. Roller positioned on honeycomb stacks

LASHING ROLLER

2-6. Lash the roller to the platform with sixteen 15-foot tiedown assemblies according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-7.

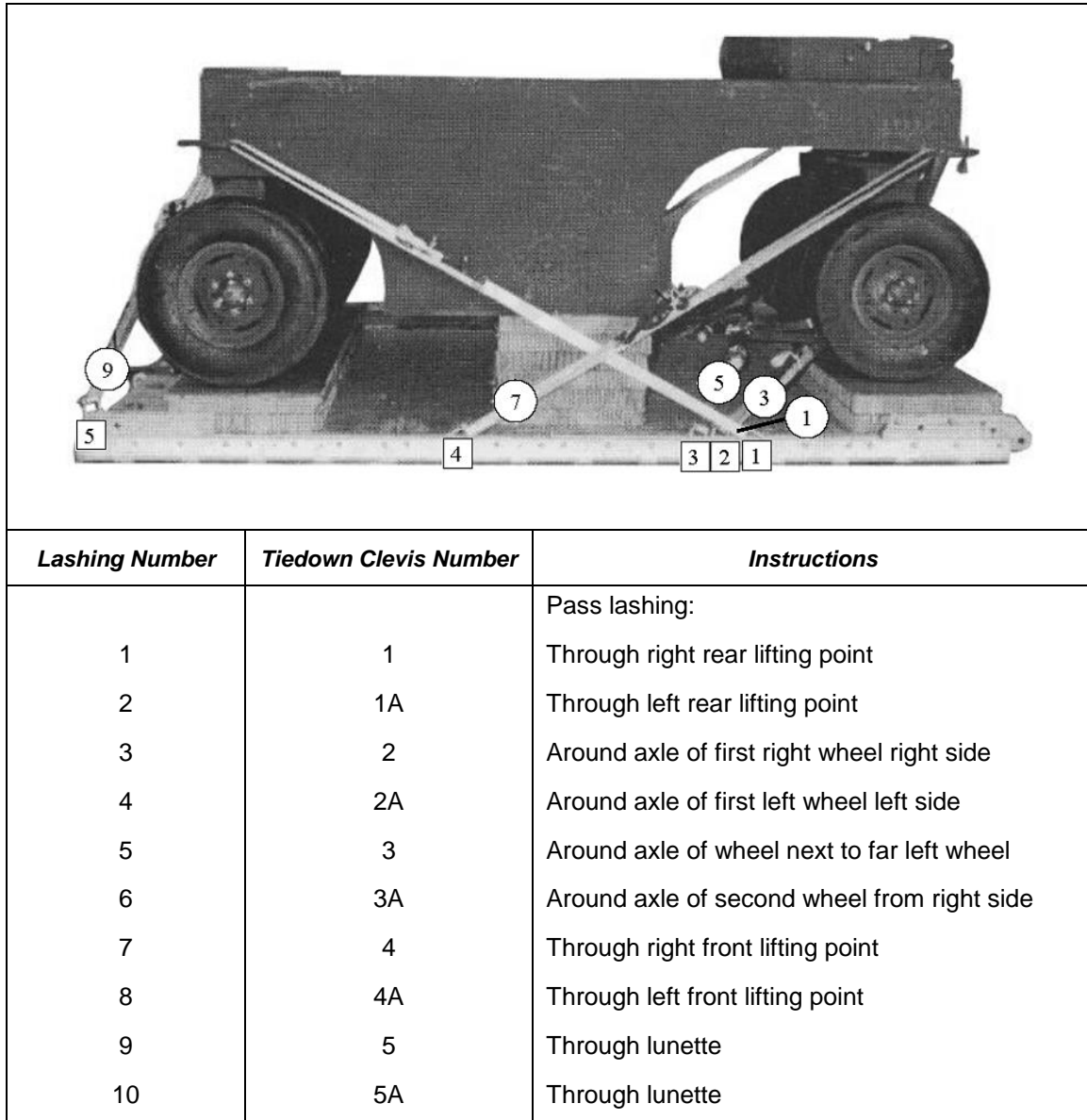


Figure 2-7. Roller Lashed to Platform

INSTALLING SAFETYING SUSPENSION SLINGS

2-7. Install and pad the suspension slings and install the suspension safety tie according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-8.

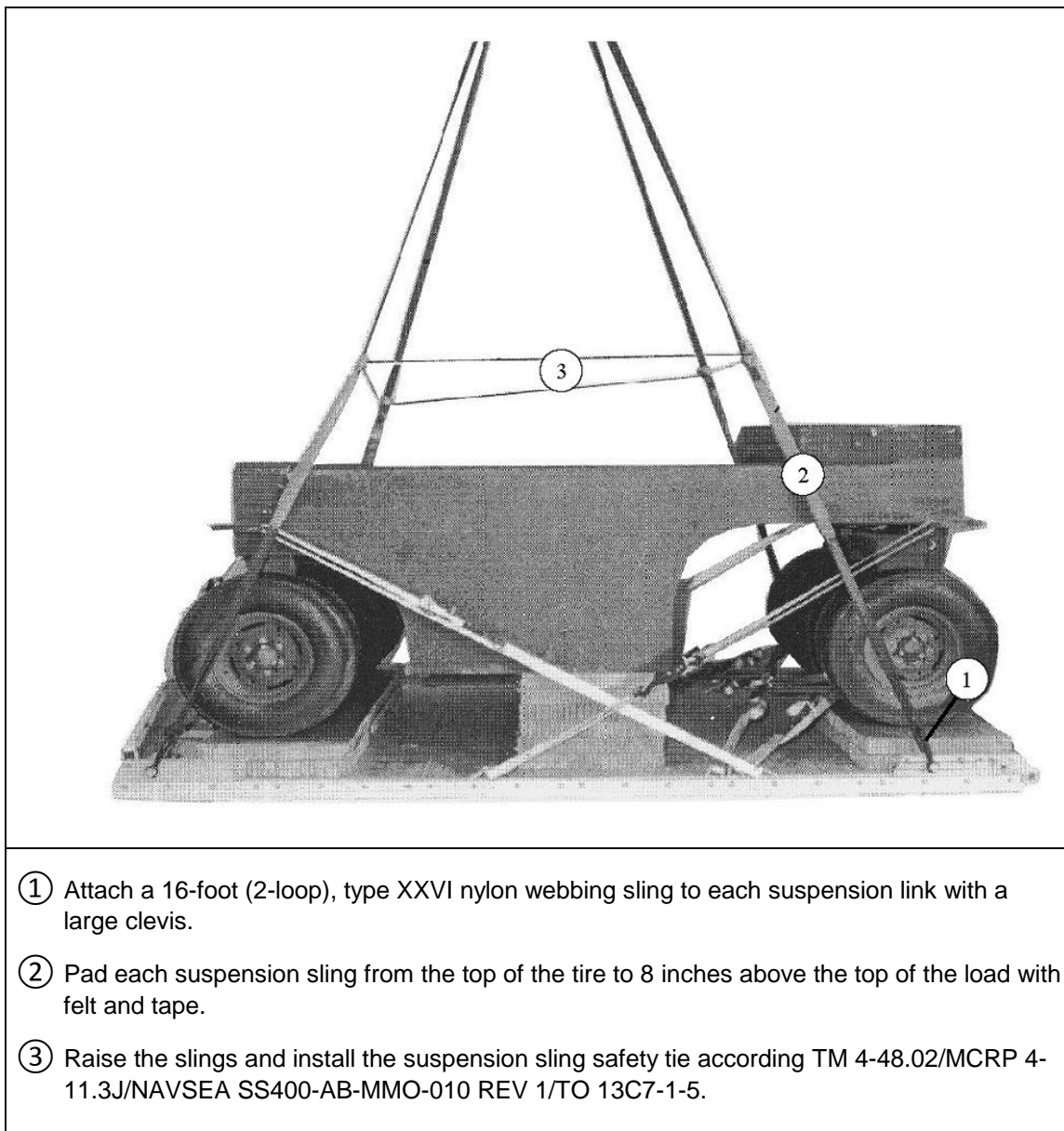


Figure 2-8. Suspension Slings Installed and Safety Tied

BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

2-8. Build and position the parachute stowage platform as shown in Figure 2-9.

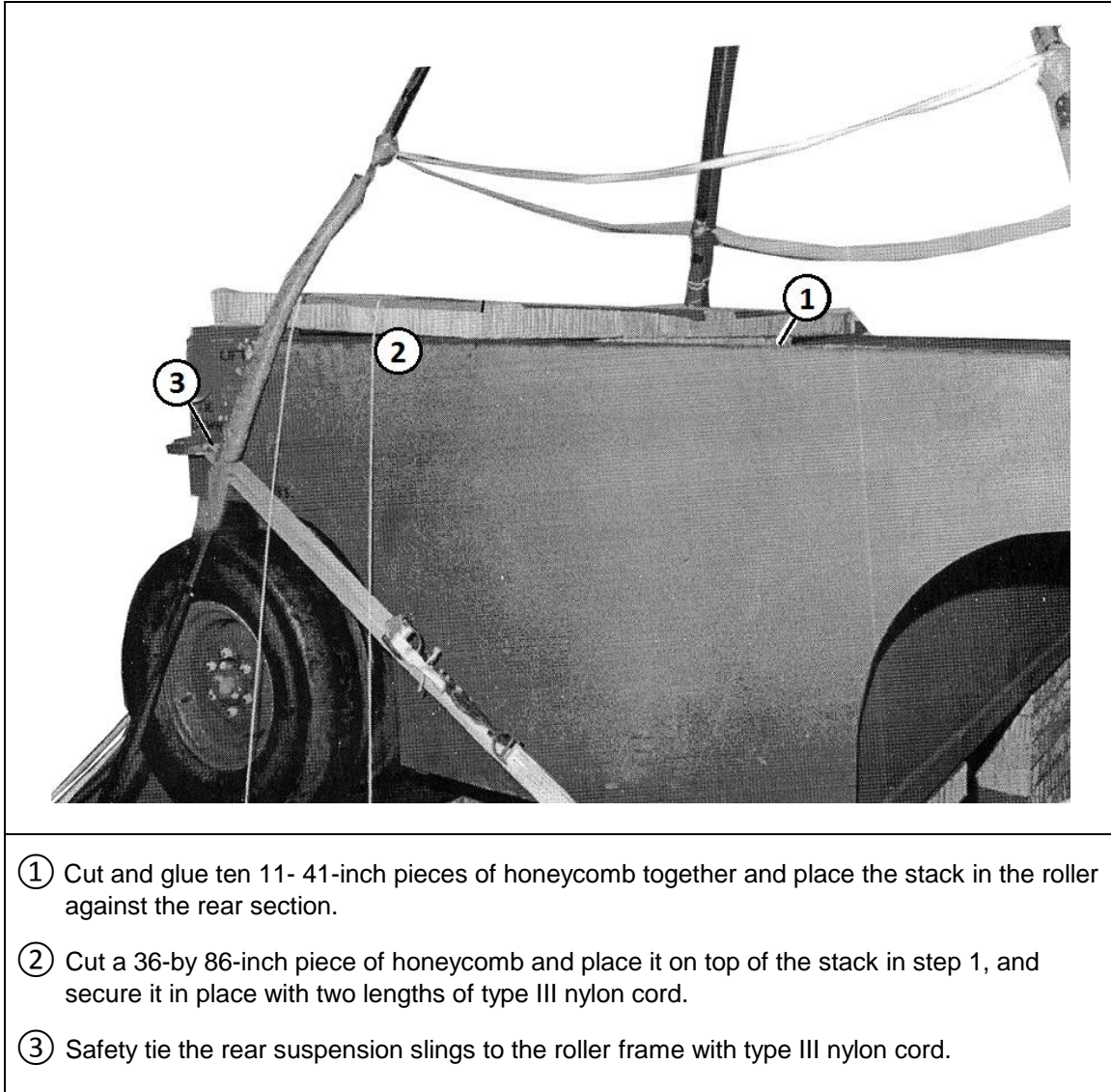


Figure 2-9. Parachutes Stowage Platform Built and Installed

INSTALLING CARGO PARACHUTES

2-9. Install two G-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-10.

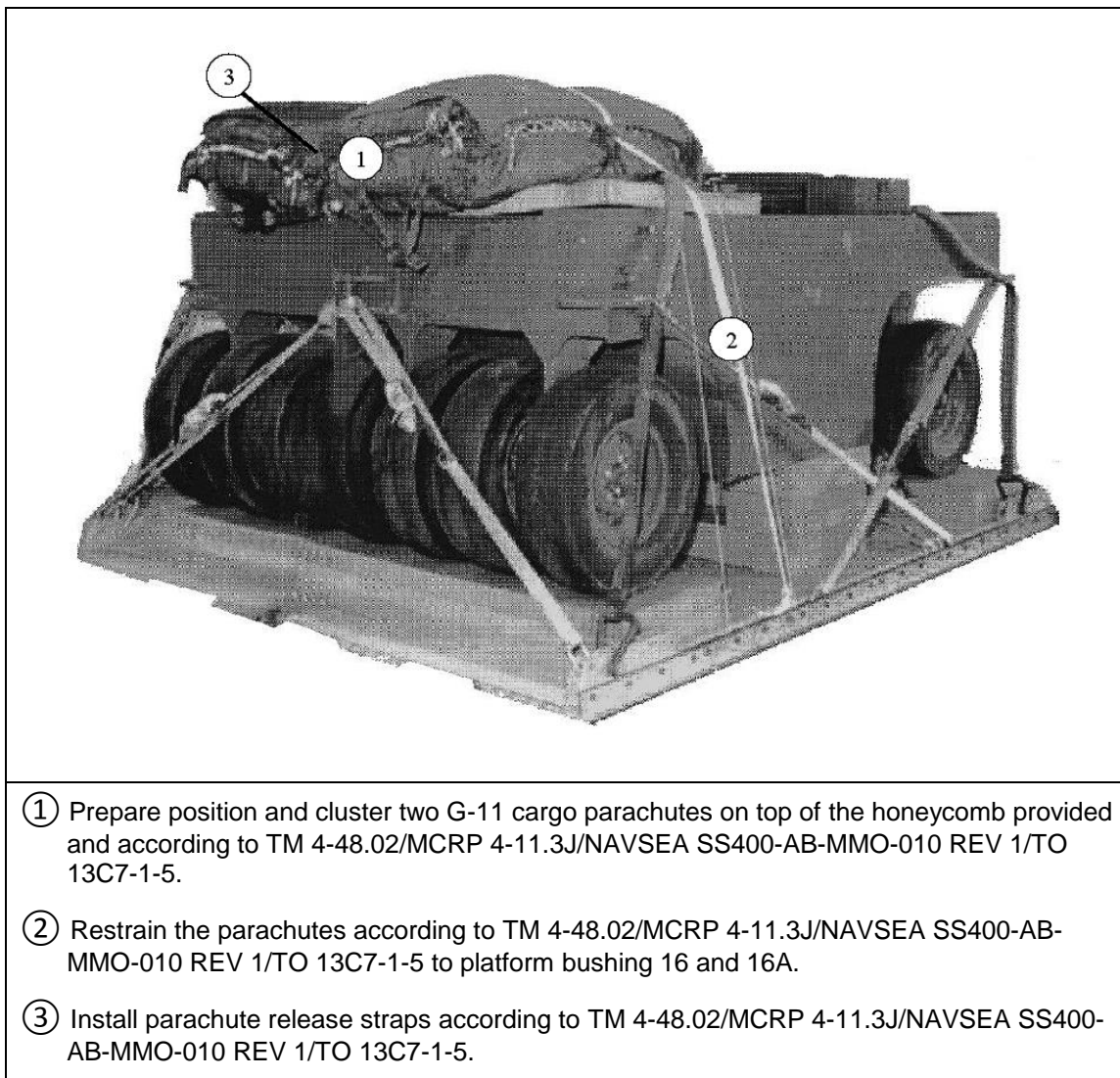


Figure 2-10. Parachutes Prepared, Positioned, and Restrained

INSTALLING EXTRACTION SYSTEM

2-10. Install the EFTC extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-11.

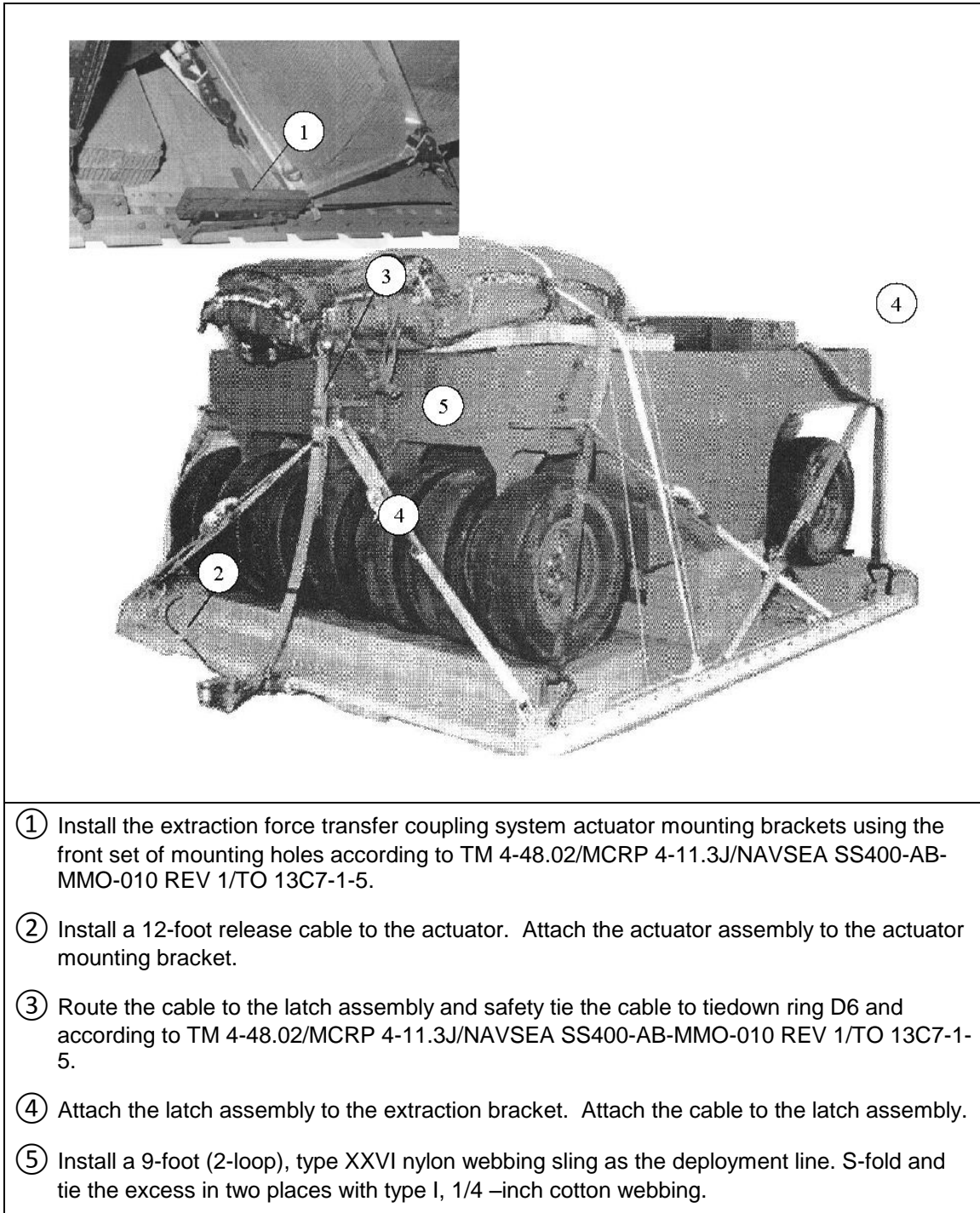
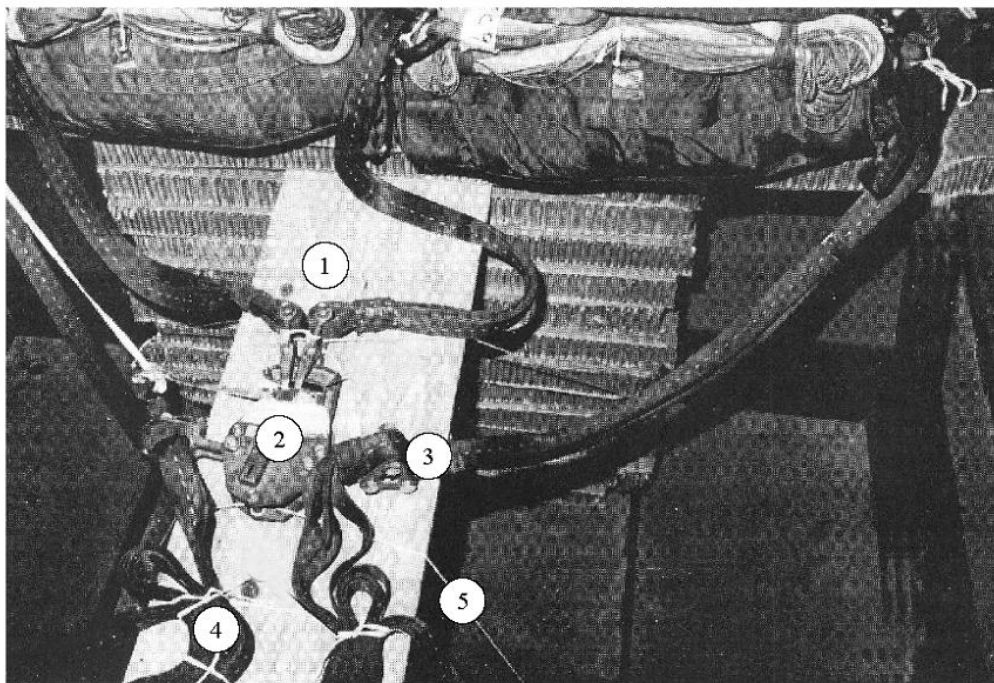


Figure 2-11. Extraction force transfer coupling system installed

INSTALLING M-1 RELEASE ASSEMBLY

2-11. Install the M-1 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-12.



- ① Cut a piece of $\frac{3}{4}$ -inch plywood 16-by 60 inches. Wedge one end of the plywood between the top two pieces of honeycomb of the parachute platform stack and set the other end on the bottom of the roller. Secure the plywood in place with type III nylon cord.
- ② Place the M-1 release centered on the top of the plywood in step 1.
- ③ Attach the suspension slings and riser extensions according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ④ S-fold the suspension slings and secure with a length of type I, $\frac{1}{4}$ -inch cotton webbing.
- ⑤ Secure the release to the roller frame with type III nylon cord to convenient points on the load.

Figure 2-12. M1 Parachute Release Installed and Restrained

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-12. Select and install provisions for emergency restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

2-13. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft.

MARKING RIGGED LOAD

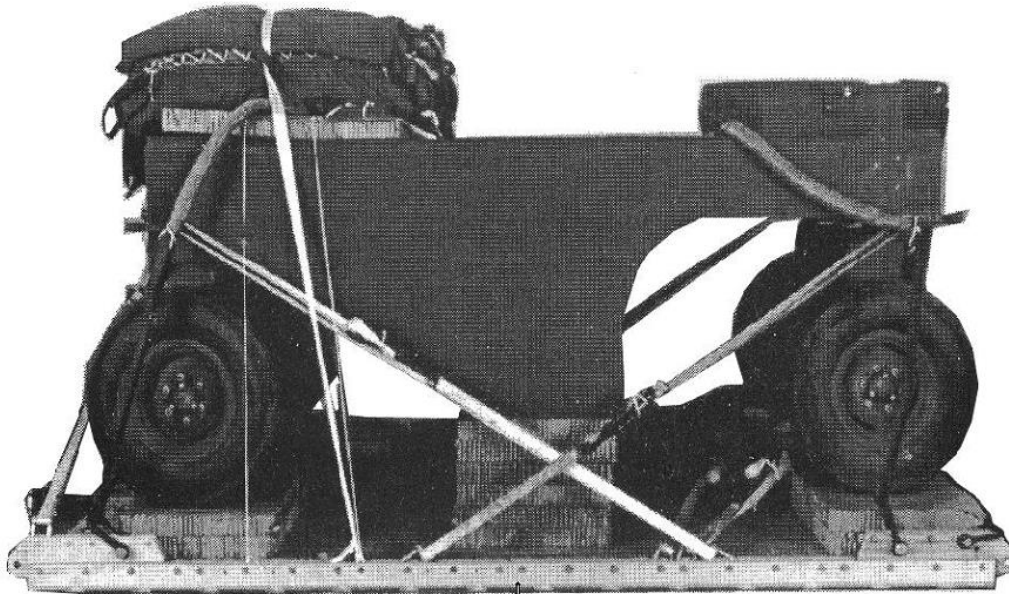
2-14. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-13. If the load varies from the one shown, the weight, height, CB, tip-off curve, and parachute requirement must be recomputed.

EQUIPMENT REQUIRED

2-15. Use the equipment list in Table 2-1 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of balance

RIGGED LOAD DATA

Weight	6,582 pounds
Maximum Weight	6,700 pounds
Height	75 inches
Width	108 inches
Length.....	162 inches
Overhang: Rear (extraction force transfer coupling system).....	18 inches
Center of Balance (from front edge of platform)	68 inches

Figure 2-13. Thirteen Wheel (Model PT-13) Towed Roller Rigged on a Type V Platform for Low Velocity Airdrop

Table 2-1. Equipment Required for Rigging 13-Wheel (Model PT 13) Roller for Low-velocity Airdrop on a Type V Platform

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line lead, (line bag for DES)	
4030-00-090-5354	Clevis:	
	Large	5
	Medium	4
	Cover:	
1670-00-360-0328	Clevis, large	1
	Extraction Force Transfer Coupling (EFTC)	
1670-00-434-5783	Coupling, airdrop, EFTC with cable, 12-ft	1
8305-00-958-3685	Felt, ½ inch	As required
1670-00-003-4391	Knife, parachute bag (for DES)	1
5340-00-040-8219	Knife, multi-parachute release strap, webbing	1
1670-01-183-2678	Leaf, extraction line (line bag)(add 2 for DES)	1
	Line, Multi-Loop:	
	For deployment	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For drogue: (DES)	
1670-01-064-4452	60-ft (1-loop), type XXVI nylon webbing	1
	For extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI nylon webbing (for C-130)	1
1670-01-107-7652	160-ft (3-loop), type XXVI nylon webbing (C-17)	1
	For lifting:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-ft (2 loop), type XXVI nylon webbing	2
	For suspension:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	6
	Link assembly:	
1670-01-493-6418	Assembly, small, two-point, 3 ¾ inch	4
1670-01-072-1378	Extraction, (C-130J) (DES)	1
1670-01-483-8259	Jettison (TRM H-block) (C-17)	1
	Lumber:	
5510-00-220-6148	2-by-6-by-36 in	1
5510-00-220-6274	4-by-4-by-96 in	2
5315-00-010-4659	Nail, steel wire, 8d	As required
1670-00-753-3928	Pad, energy-dissipating (honeycomb)	
	3-by-36-by-96 in	12 sheets
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 2-1. Equipment Required for Rigging 13-Wheel (Model PT 13) Roller for Low-velocity Airdrop on a Type V Platform (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Parachute:	
	For suspension:	
1670-01-016-7841	G-11B	2
	For extraction:	
1670-01-063-3715	15-ft, add one for (DES)	1
	Platform, airdrop, type V, 12-ft	
1670-01-353-8425	Bracket assembly, component (EFTC)	2
1670-01-353-8424	Bracket assembly, extraction	1
1670-01-162-2372	Clevis assembly, type V	10
1670-01-162-2381	Link, tandem, suspension (Multipurpose link)	4
5530-00-618-8073	Plywood, ¾-in	1 sheet
1670-01-097-8816	Release, cargo parachute, M-1	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-foot	10
5365-00-937-0147	D-ring, heavy duty, 10,000lbs	10
1670-00-937-0272	Binder, load, 10,000lbs	10
	Webbing:	
4020-00-240-2146	Cord, nylon, type III, 550lb	As required
8305-00-268-2411	Cotton, ¼-in, type 1	As required
8305-00-082-5752	Nylon, tubular, ½-in	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Chapter 3

Rigging the Vibratory Compactor (Model CS-433C) On a Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

3-1. The vibratory compactor (Figure 3-1) is a four-cylinder, turbocharged, self-propelled diesel driven engine. This load is rigged on a 20-foot type V platform with four G-11 cargo parachutes. The rigged weight of the vibratory compactor is 18,890 pounds. It is 262 inches long, 99 inches high with the roll over protection system removed, and 108 inches wide, when prepared for rigging.

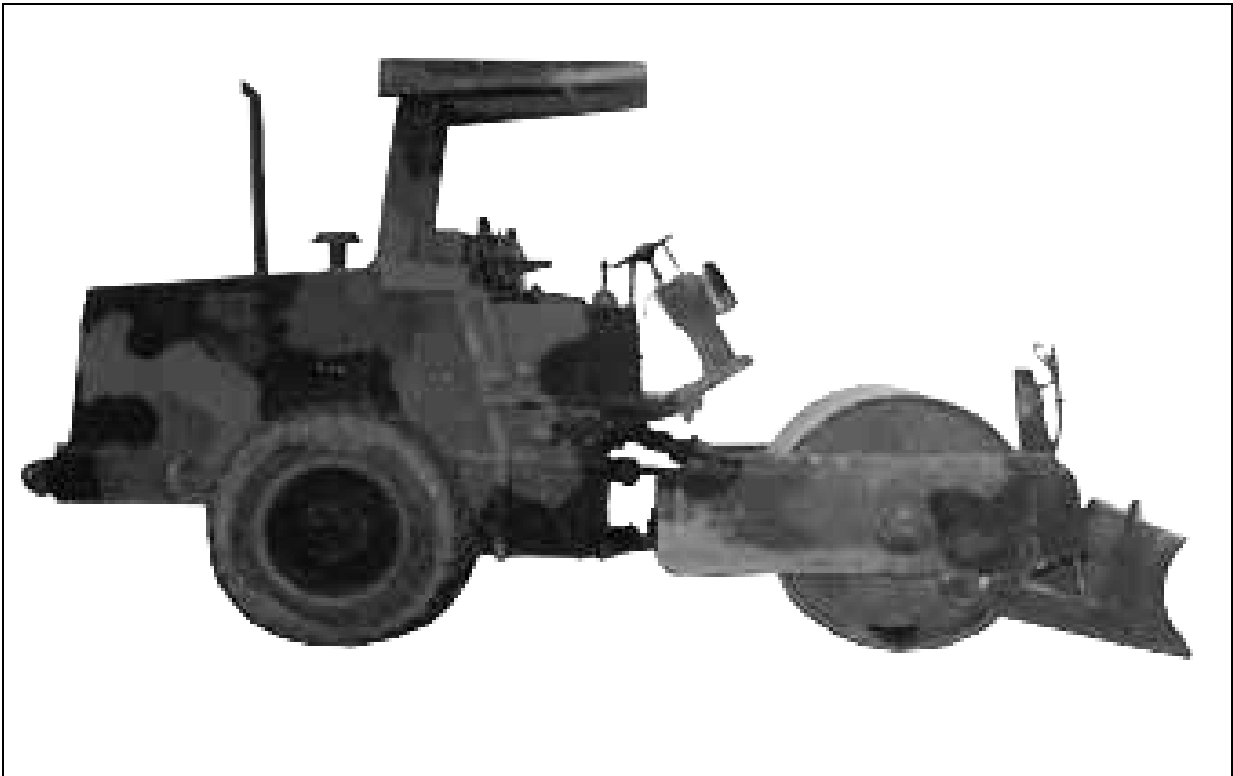


Figure 3-1. Vibratory compactor (Model CS-433C)

PREPARING THE PLATFORM

3-2. Prepare a 20-foot, type V platform using two six suspension links and 24 tiedown clevises as shown in Figure 3-2.

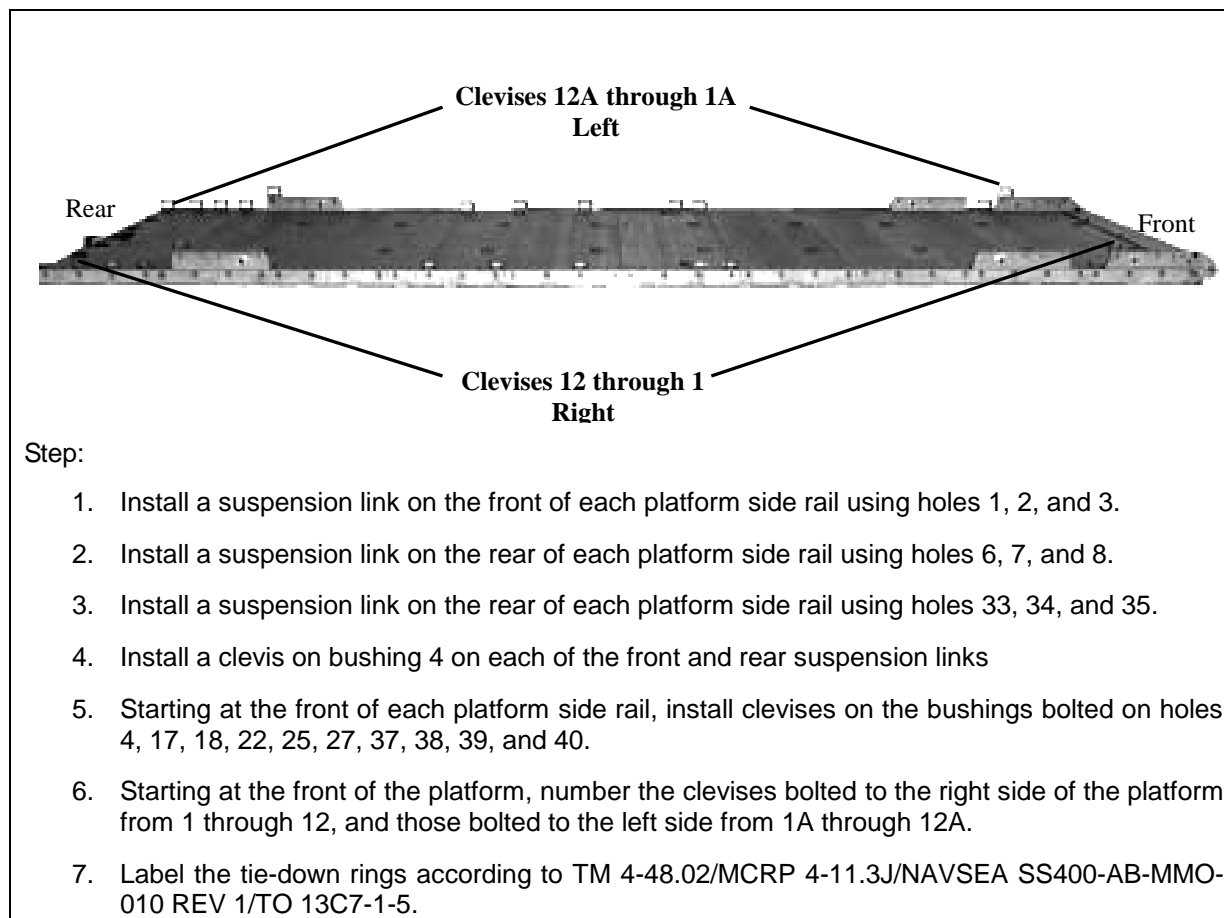
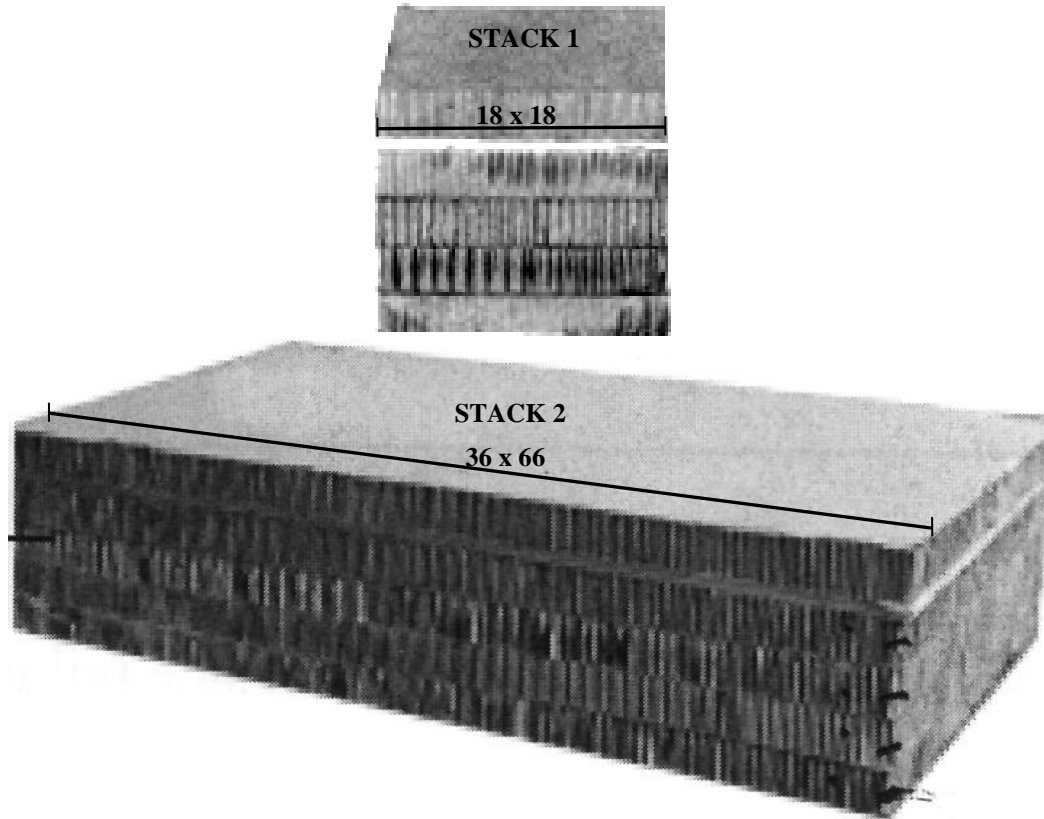


Figure 3-2. Platform Prepared

PREPARING AND POSITIONING HONEYCOMB STACKS

3-3. Prepare the honeycomb stacks as shown in Figures 3-3 and 3-4. Position the honeycomb stacks on the platform as shown in Figure 3-5 and 3-6.

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	5	18	18	Honeycomb	Glue four pieces of honeycomb together to form a base.
	1	18	18	¾ inch Plywood	Glue plywood to base and glue the last piece of honeycomb on top.
2	5	36	66	Honeycomb	Glue four pieces of honeycomb to form a base.
	1	36	66	¾ inch Plywood	Glue the plywood on top of the base and glue the fifth piece of honeycomb to the plywood.

Figure 3-3. Honeycomb stacks 1 and 2 prepared

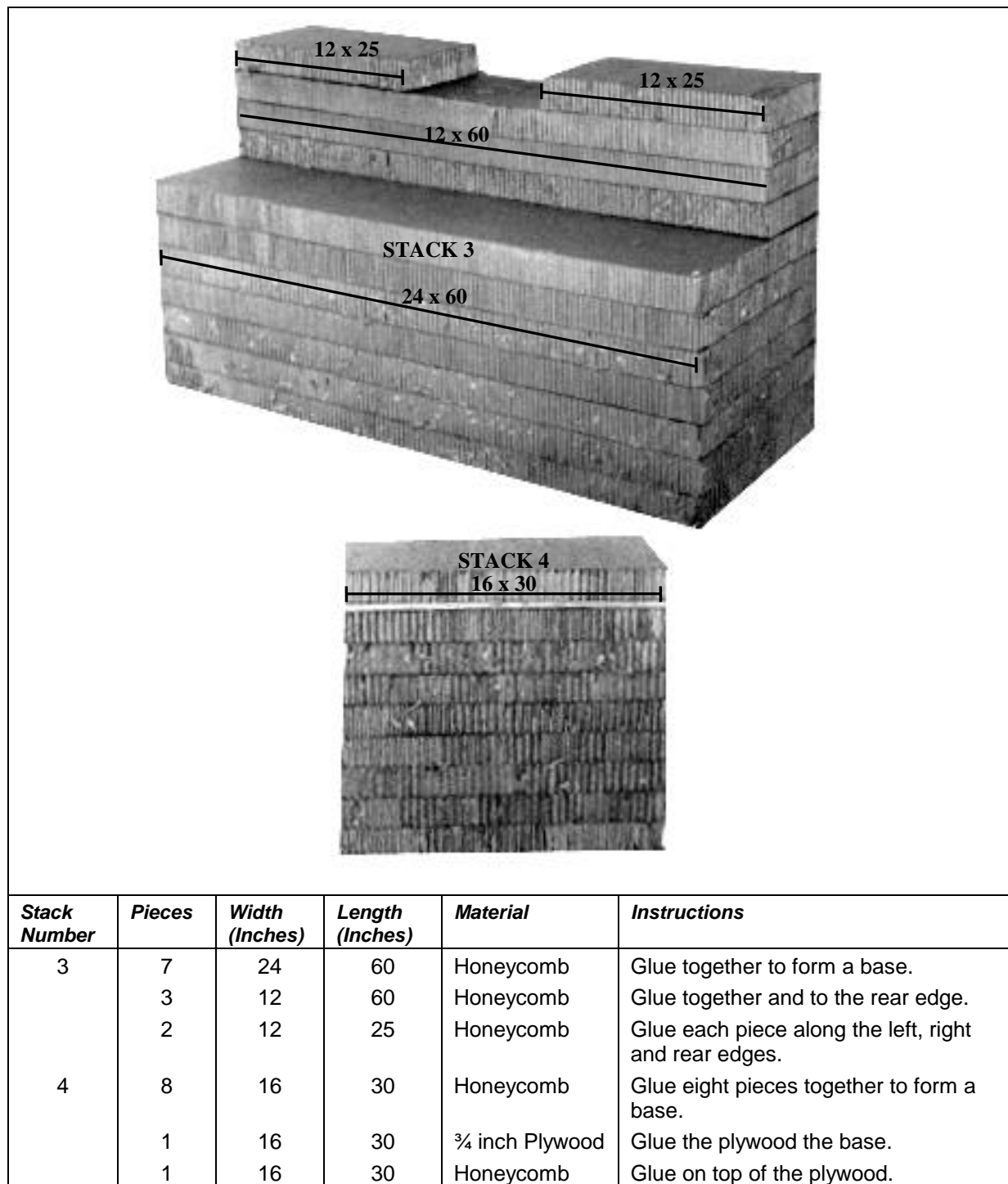


Figure 3-4. Honeycomb Stacks 3 and 4 Prepared

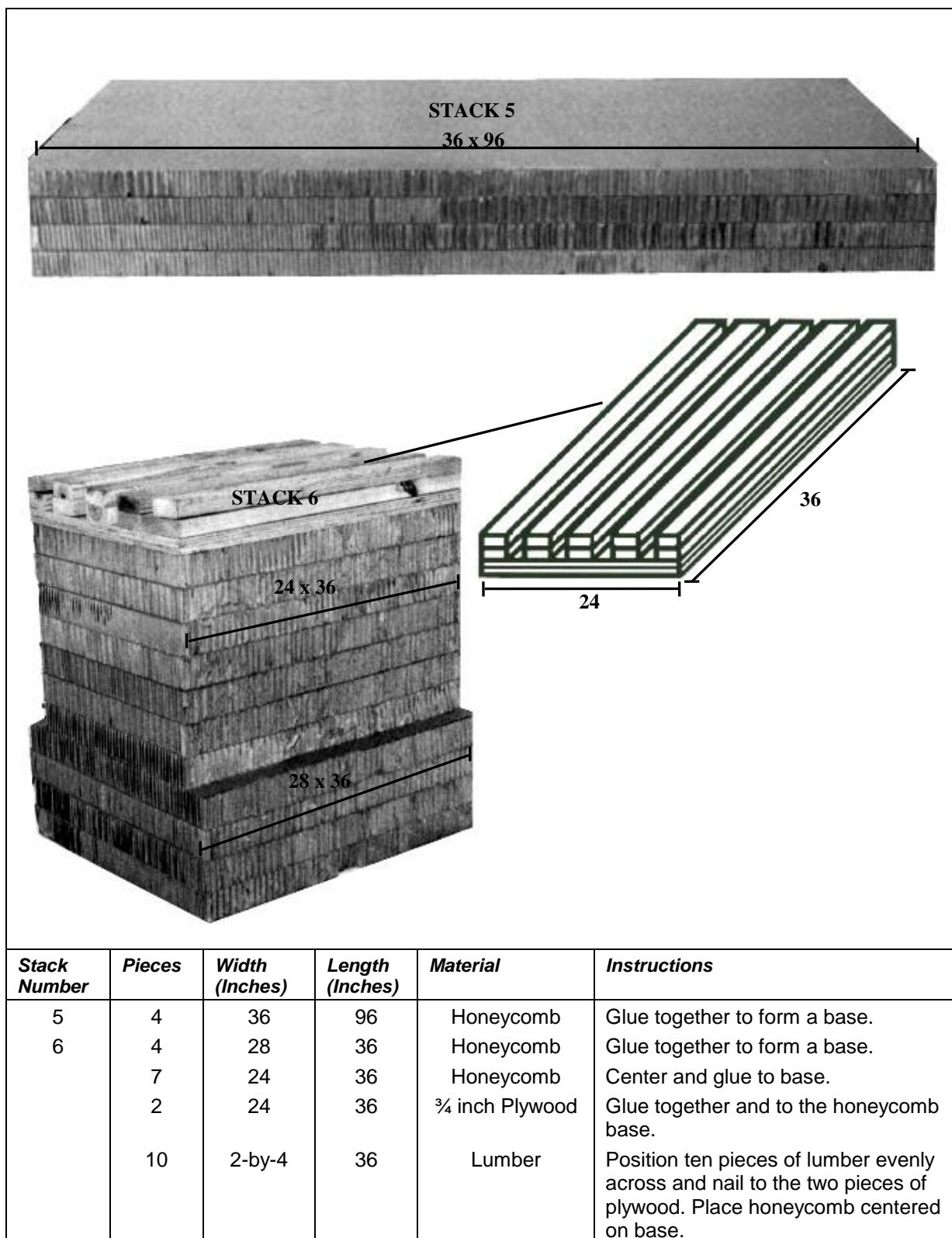
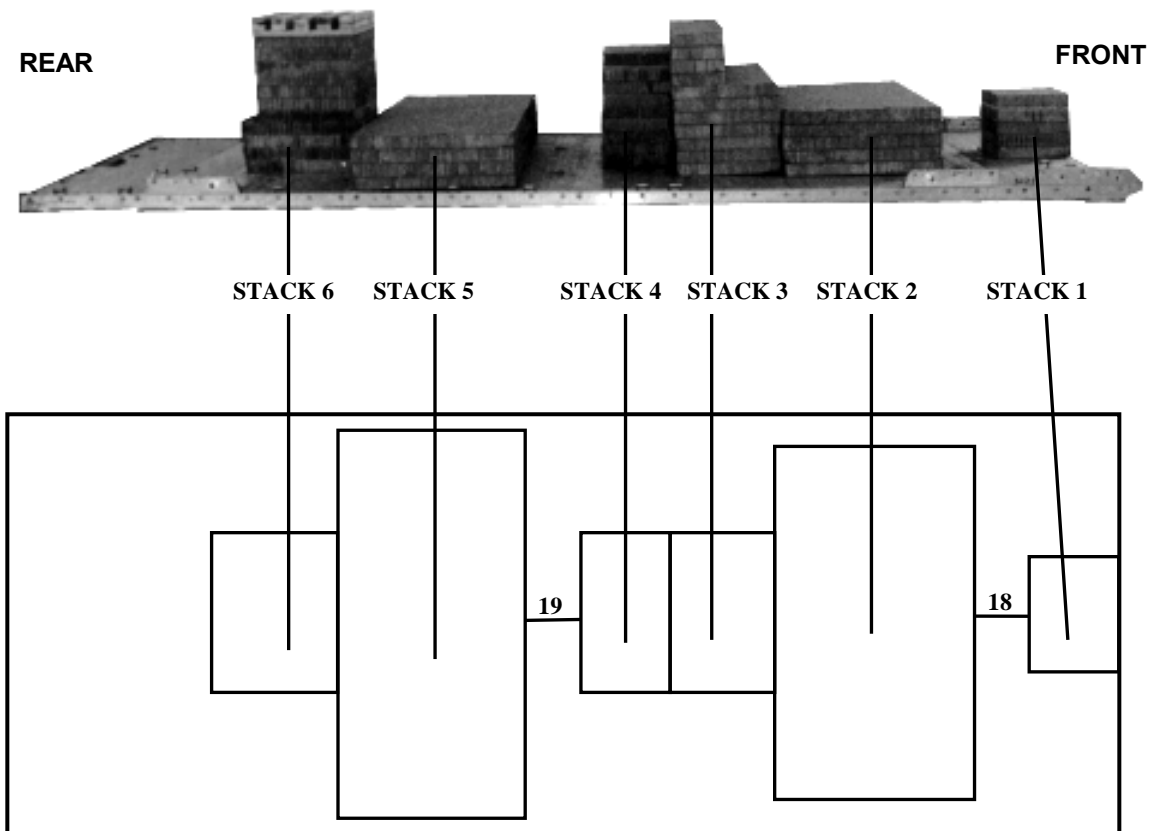


Figure 3-5. Honeycomb Stacks 5 and 6 Prepared

Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



Stack Number	Position on Platform
1	Place stack: Centered flush with the front edge of the platform.
2	Centered 18 inches from stack 1.
3	Centered and flush against stack 2.
4	Centered and flush against stack 3.
5	Centered 19 inches from stack 4.
6	Centered flush against stack 5.

Figure 3-6. Honeycomb stacks positioned on platform

PREPARING AND POSITIONING VIBRATORY COMPACTOR ON PLATFORM

3-4. Prepare and position the vibratory compactor on a platform as shown in Figures 3-7 and 3-8.

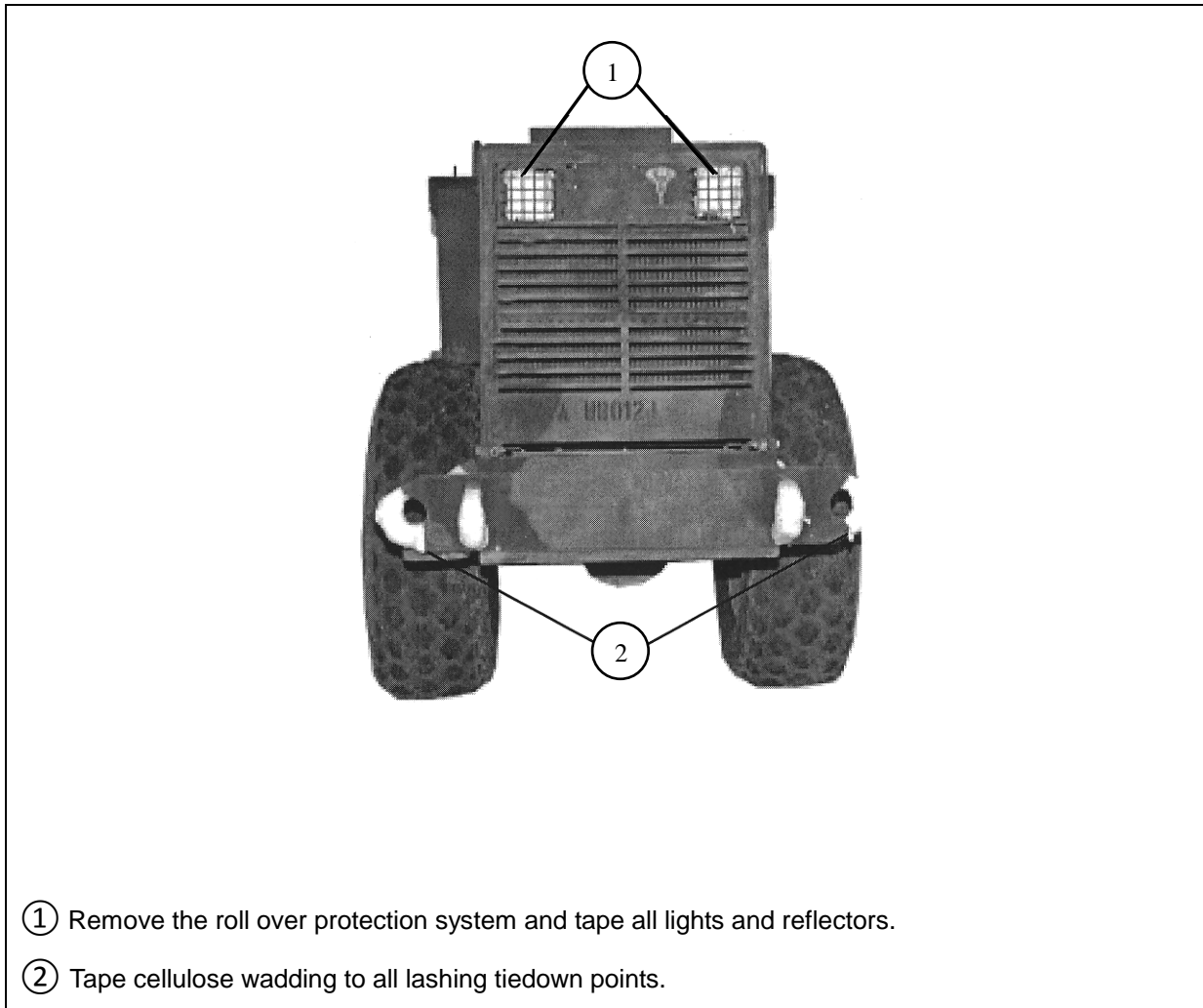
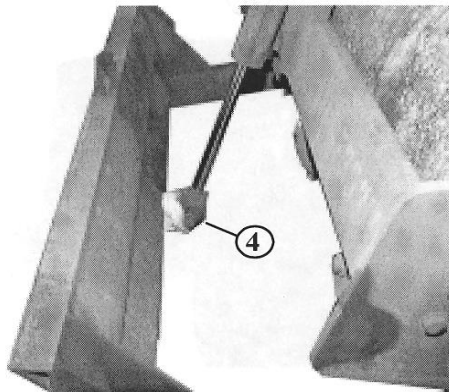
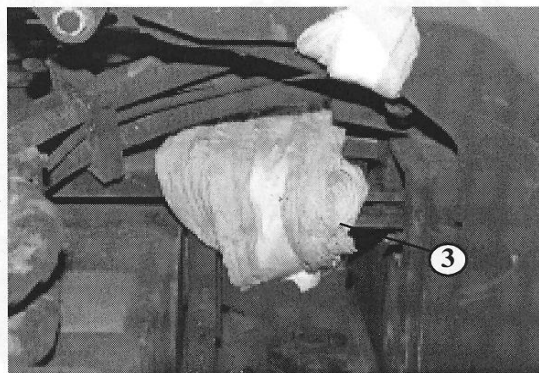
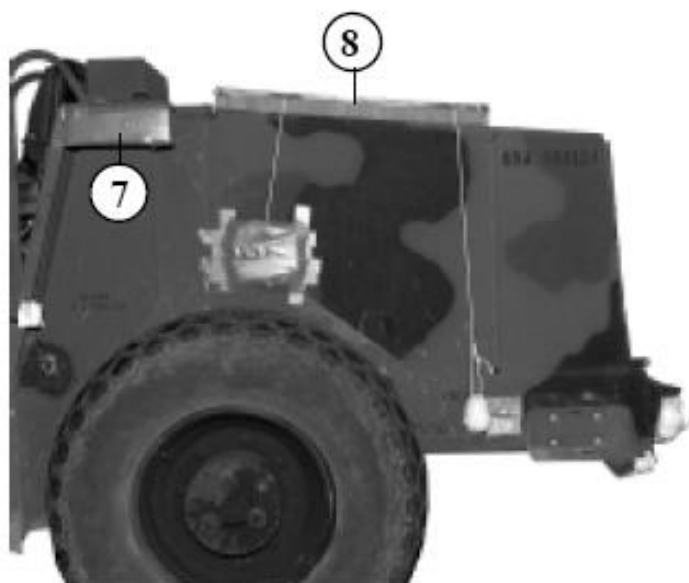
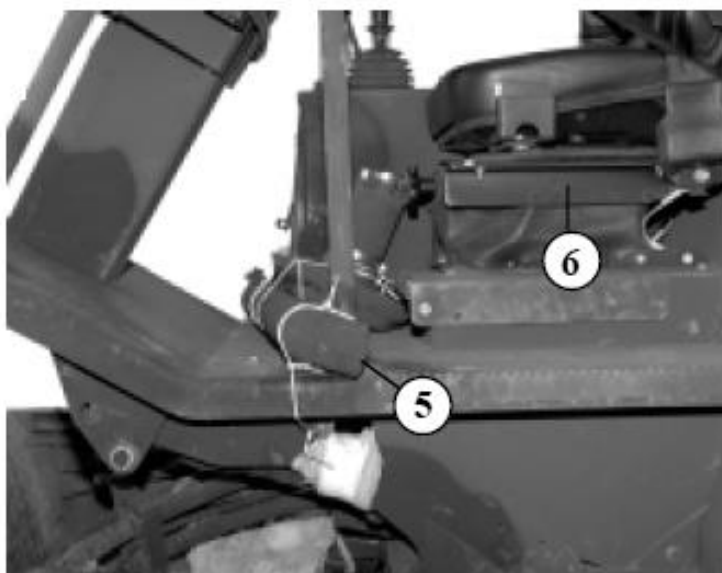


Figure 3-7. Vibratory Compactor Prepared



- ③ Tape Cellulose Wadding to the upper pivot arm of the chassis.
- ④ Tape cellulose wadding to the hydraulic attaching point of the blade.

Figure 3-7. Vibratory compactor prepared



- ⑤ Remove the air-filter and exhaust pipe. Secure them to convenient points in the cab.
- ⑥ Lower the seat and lock it down.
- ⑦ Tape felt on the upper portions of the rear wheel wells where the slings will make contact.
- ⑧ Tape the edges of a 29-inch by 38-inch piece of honeycomb and secure it on top of the engine compartment with type III nylon tied to a convenient point on the load.

Figure 3-7. Vibratory compactor prepared (continued)

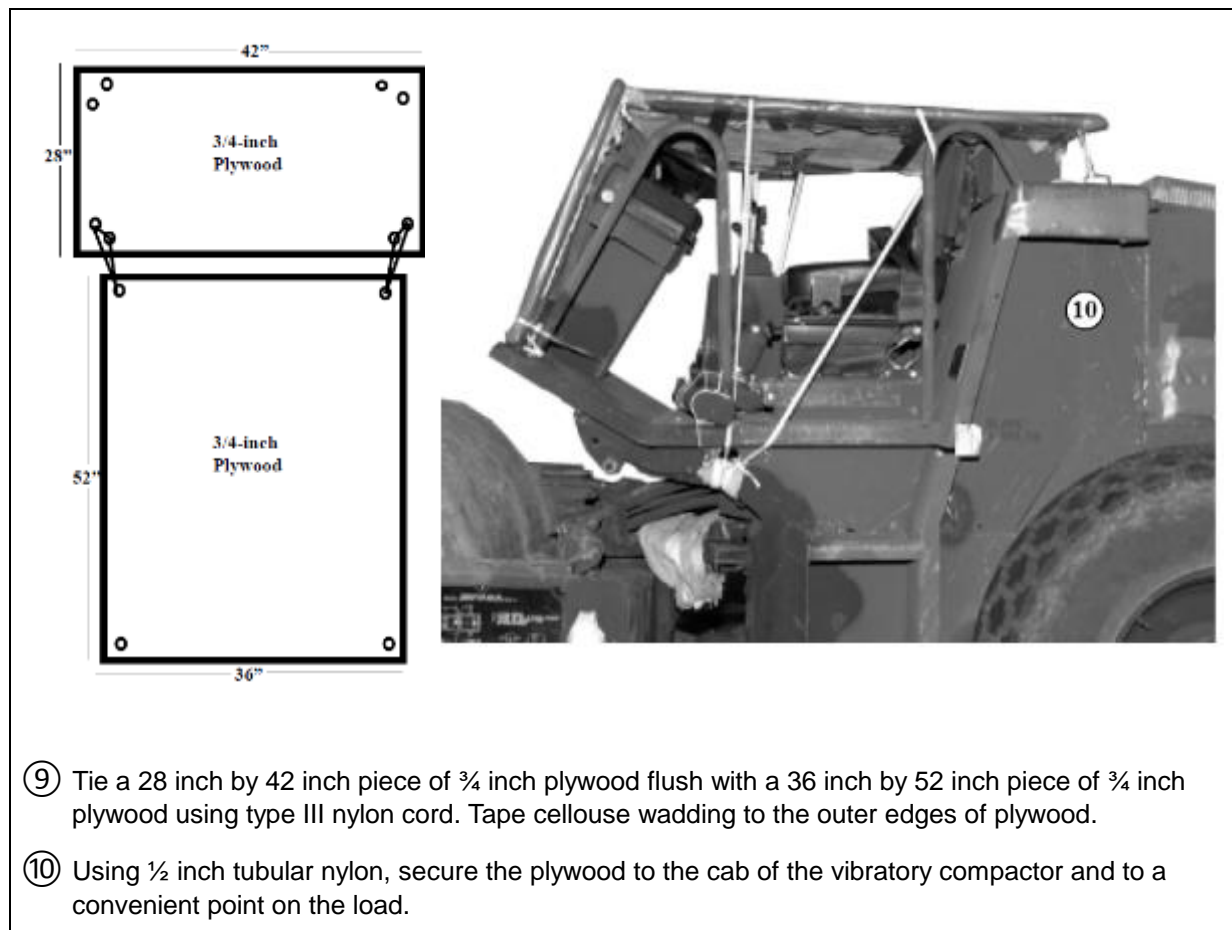


Figure 3-7. Vibratory compactor prepared (continued)

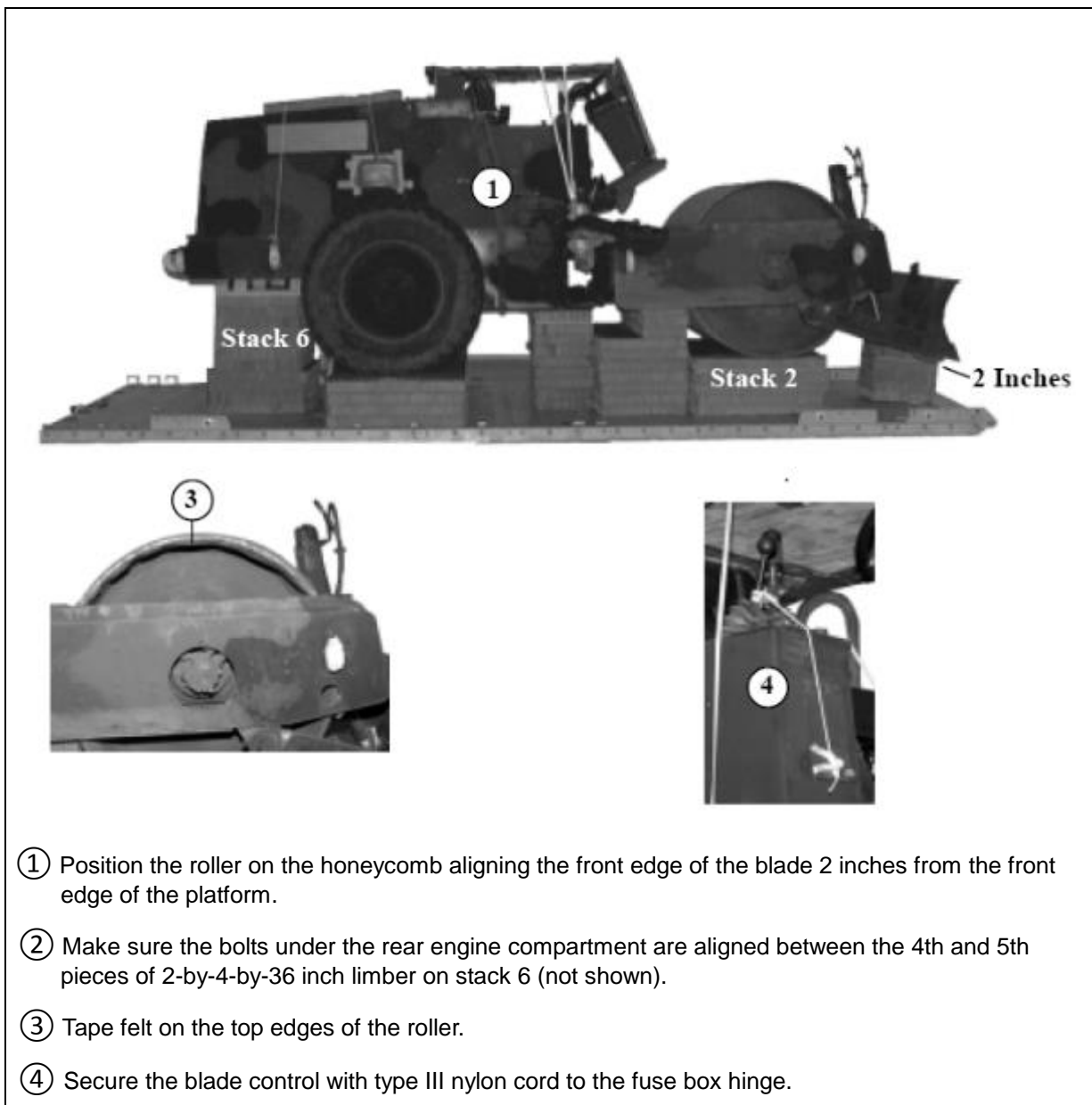


Figure 3-8. Vibratory compactor positioned on platform

LASHING VIBRATORY COMPACTOR ON PLATFORM

3-5. Lash the vibratory compactor to the platform as shown in Figures 3-9 through 3-11 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

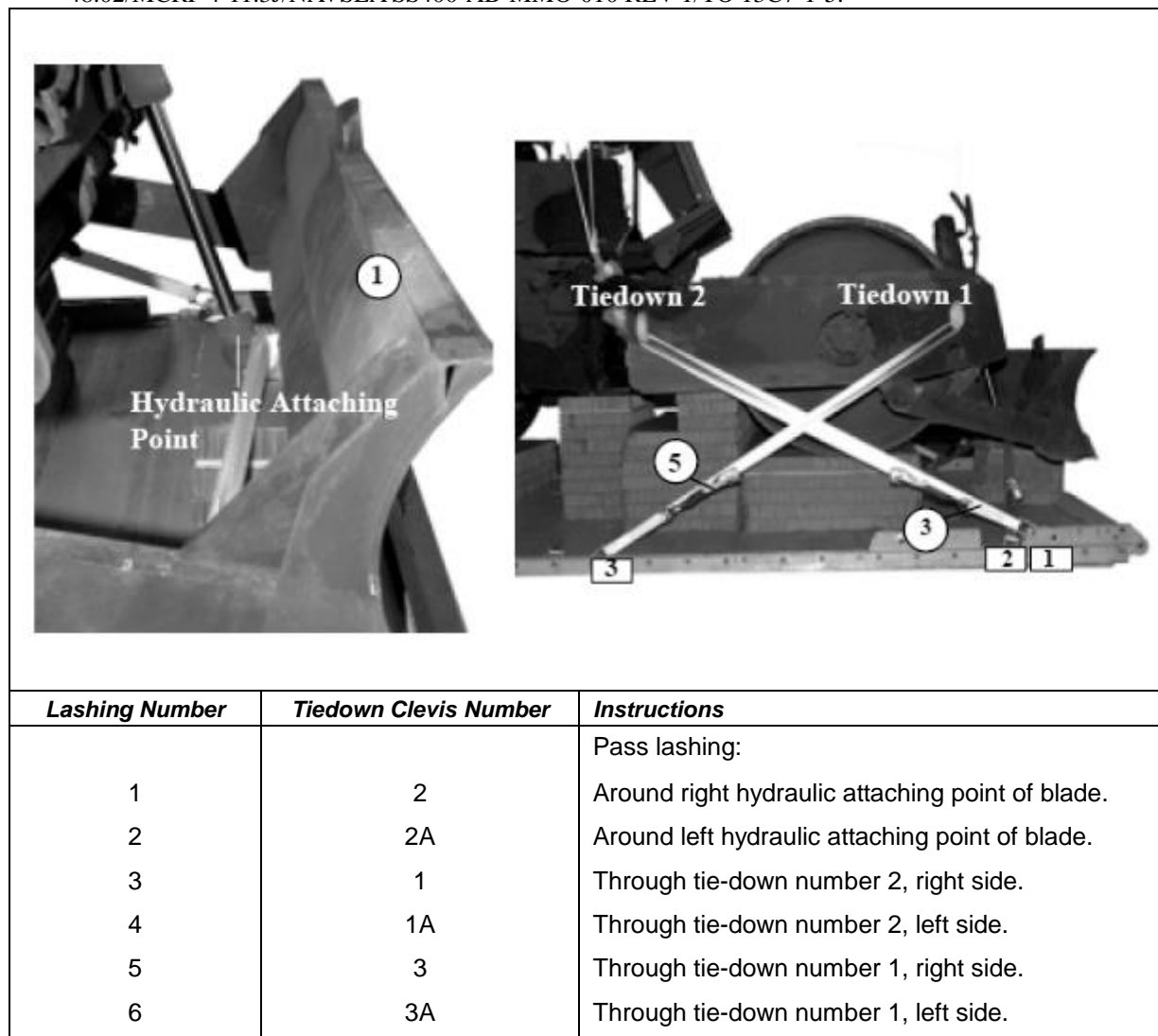


Figure 3-9. Lashings 1 through 6 installed

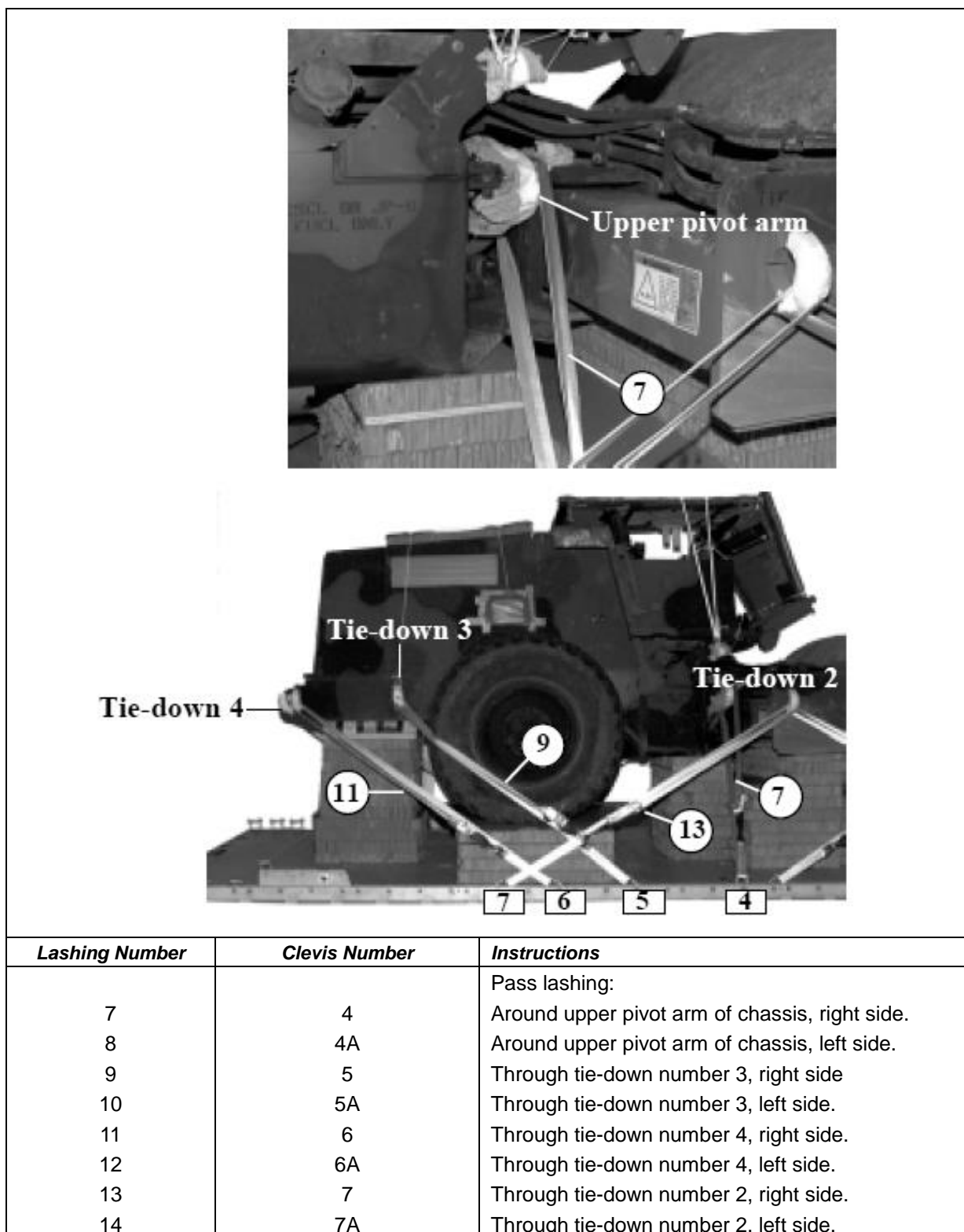


Figure 3-10. Lashings 7 through 14 installed

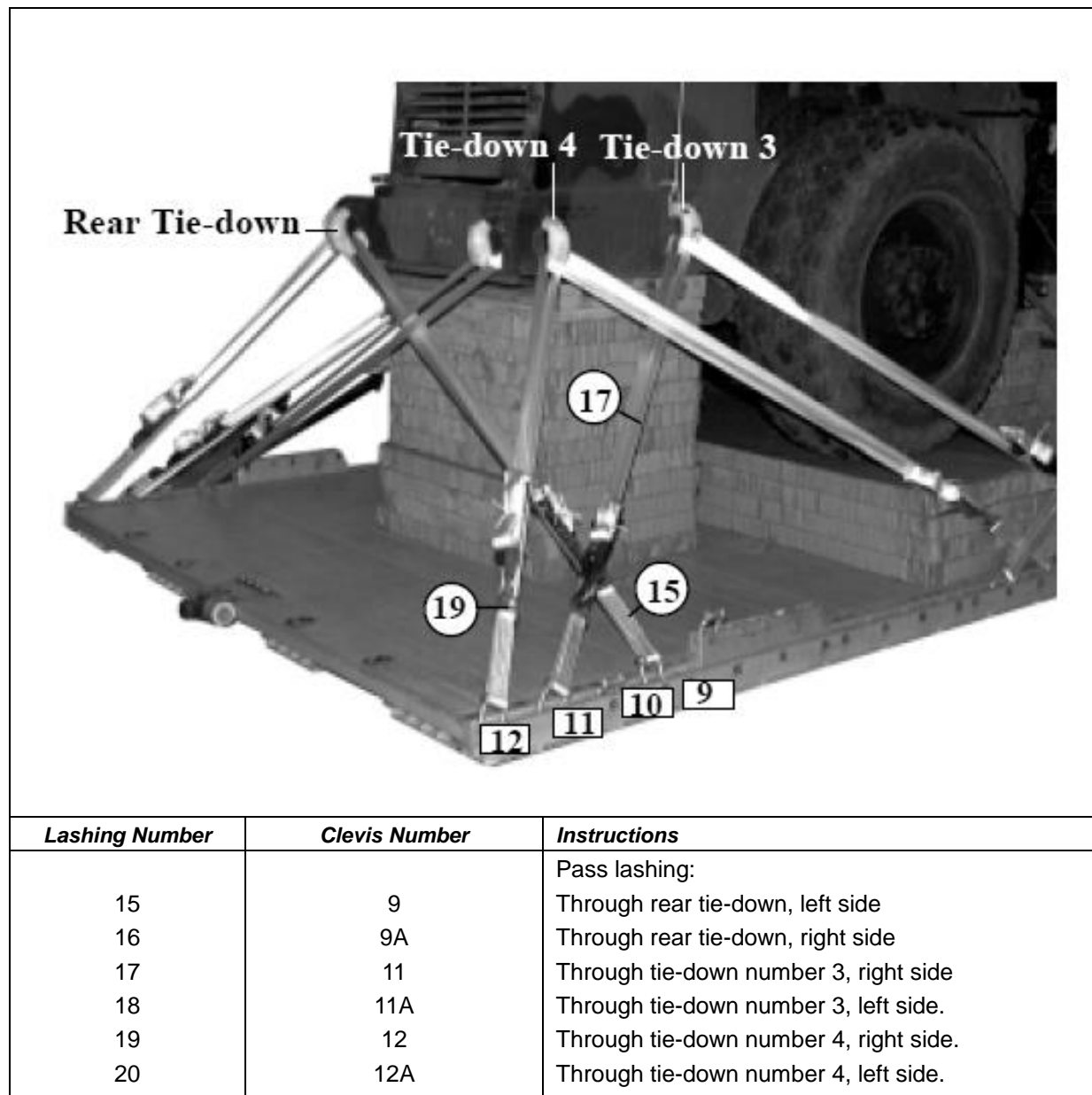


Figure 3-11. Lashings 15 through 20 installed

INSTALLING AND SAFETYING SUSPENSION SLINGS AND DEADMAN'S TIE

3-6. Install and safety four 16-foot (4-loop), type XXVI nylon webbing slings to the tandem links as shown in Figure 3-12.

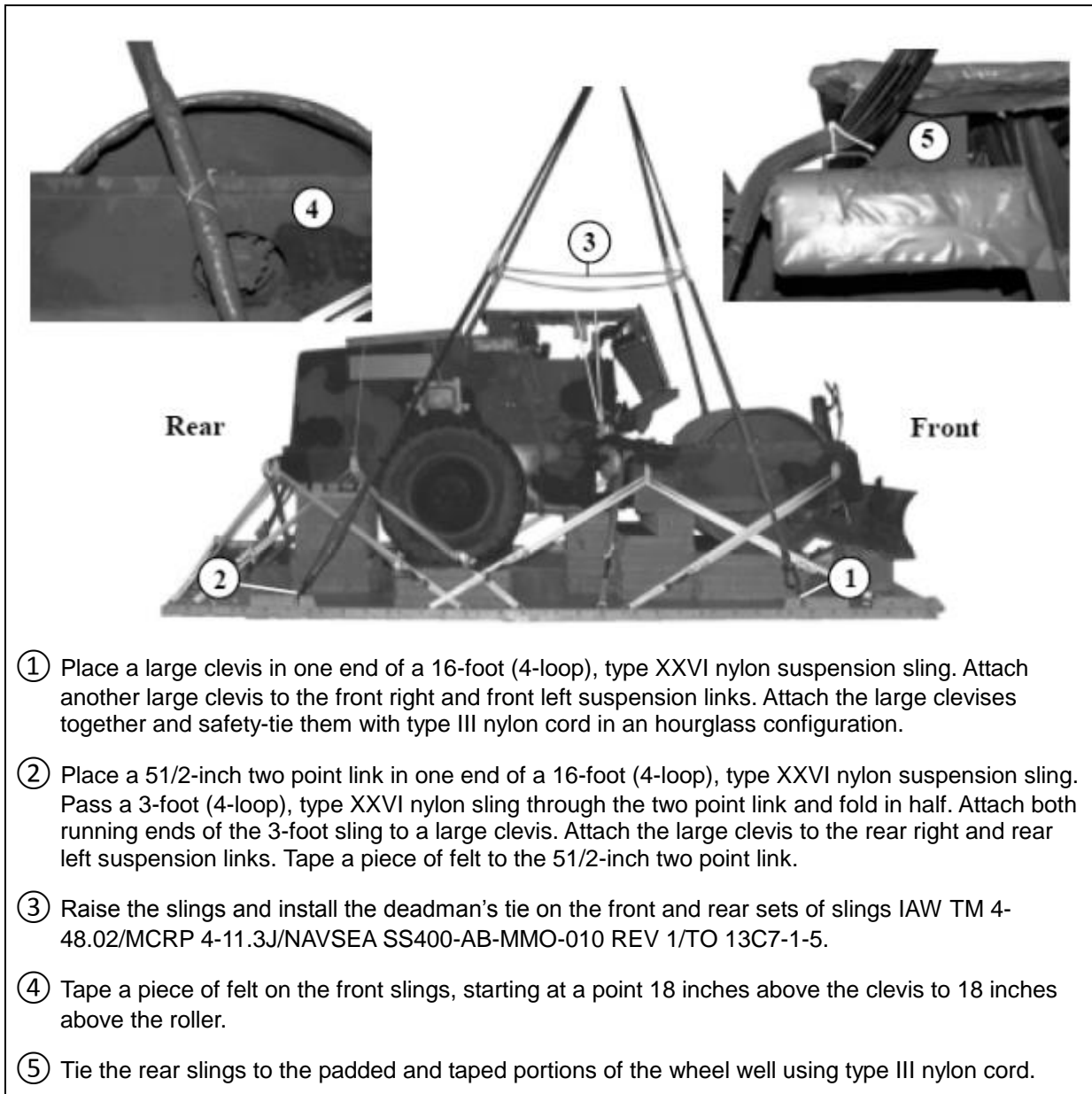


Figure 3-12. Suspension slings and deadman's tie installed

BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

3-7. Build and position the parachute stowage platform as shown in Figure 3-13.

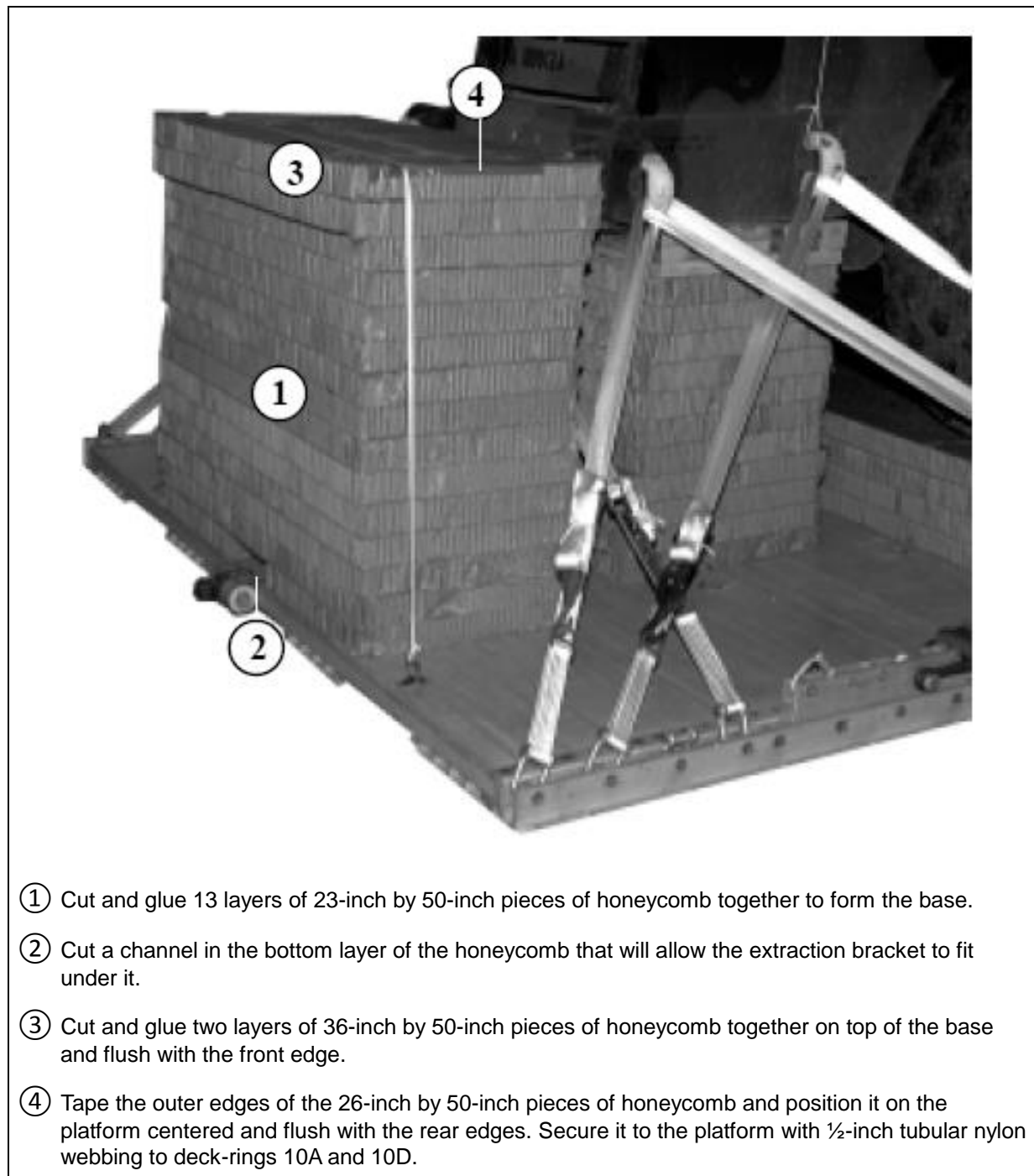


Figure 3-13. Parachute stowage platform built and positioned

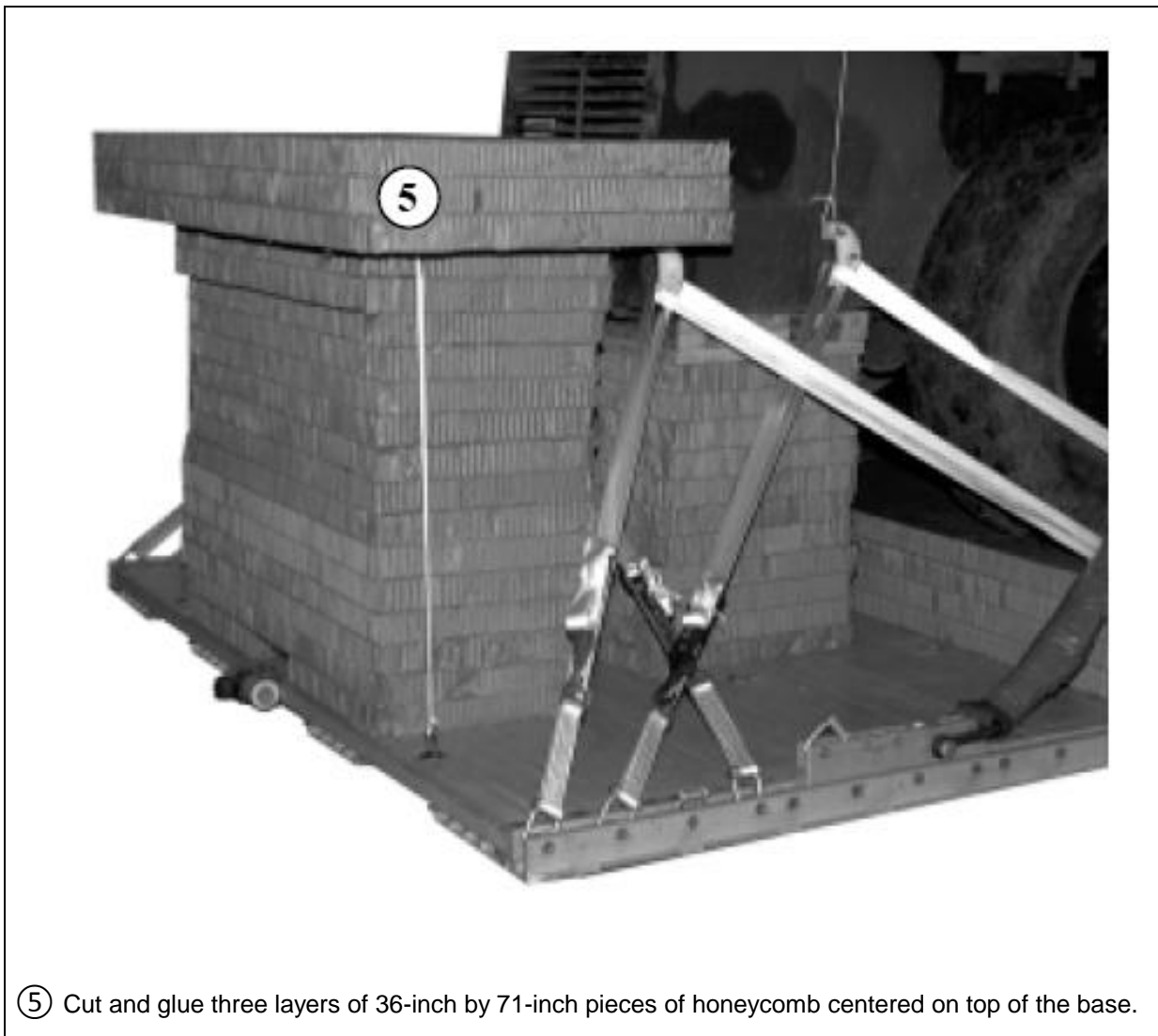


Figure 3-13. Parachute stowage platform built and positioned (continued)

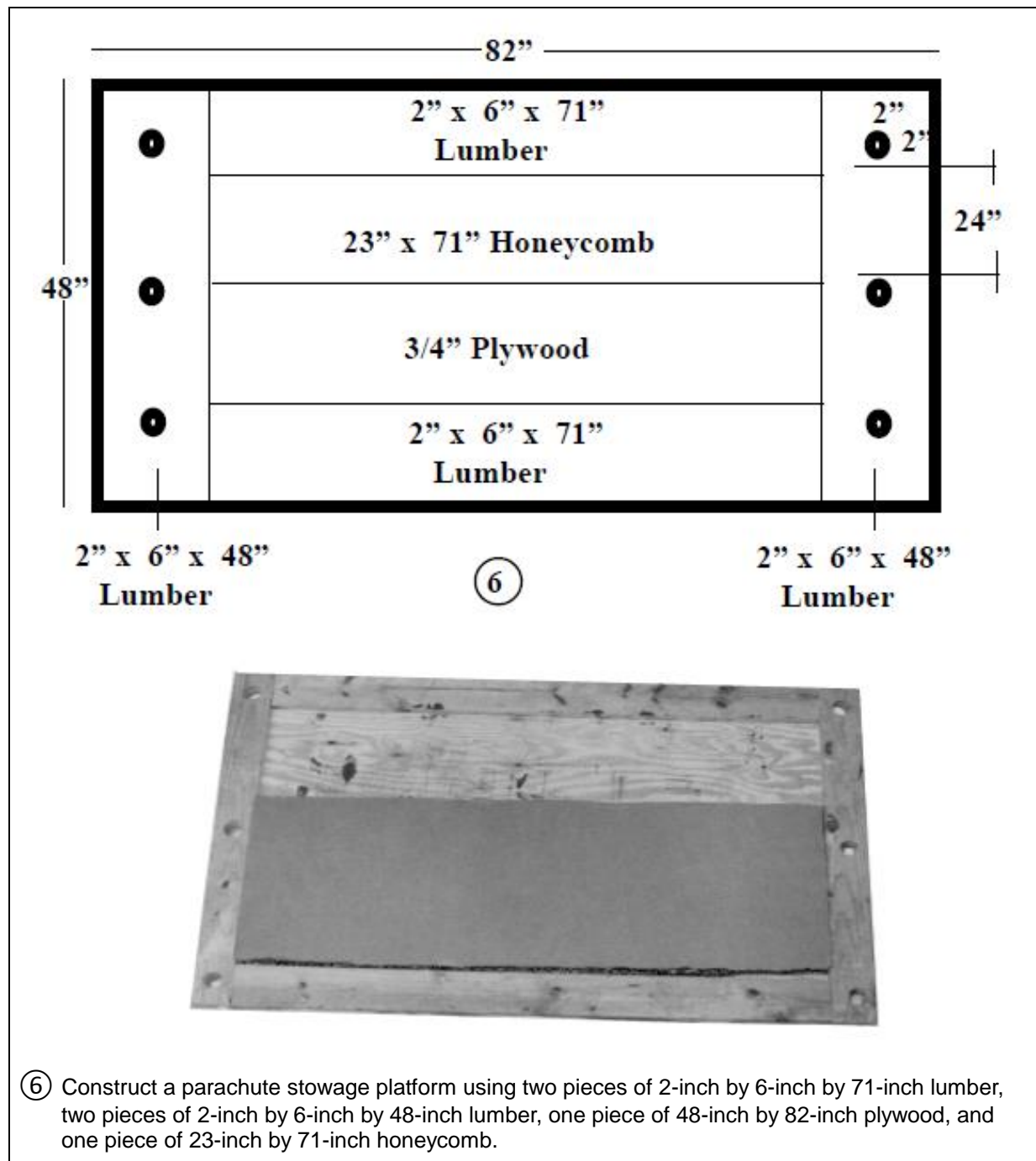
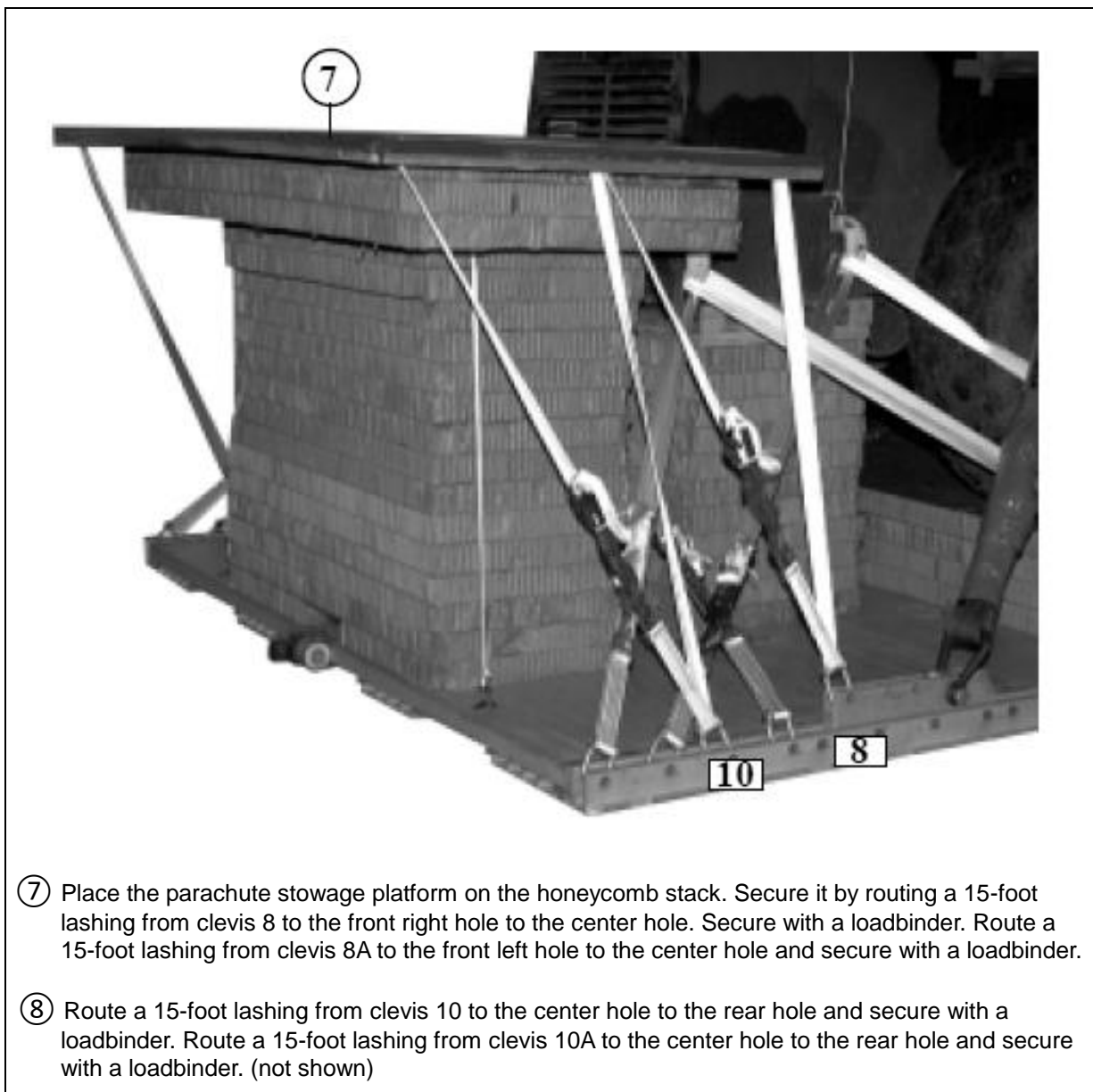


Figure 3-13. Parachute stowage platform built and positioned (continued)



- ⑦ Place the parachute stowage platform on the honeycomb stack. Secure it by routing a 15-foot lashing from clevis 8 to the front right hole to the center hole. Secure with a loadbinder. Route a 15-foot lashing from clevis 8A to the front left hole to the center hole and secure with a loadbinder.
- ⑧ Route a 15-foot lashing from clevis 10 to the center hole to the rear hole and secure with a loadbinder. Route a 15-foot lashing from clevis 10A to the center hole to the rear hole and secure with a loadbinder. (not shown)

Figure 3-13. Parachute stowage platform built and positioned (continued)

INSTALLING CARGO PARACHUTES

3-8. Install four G-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure. 3-14.

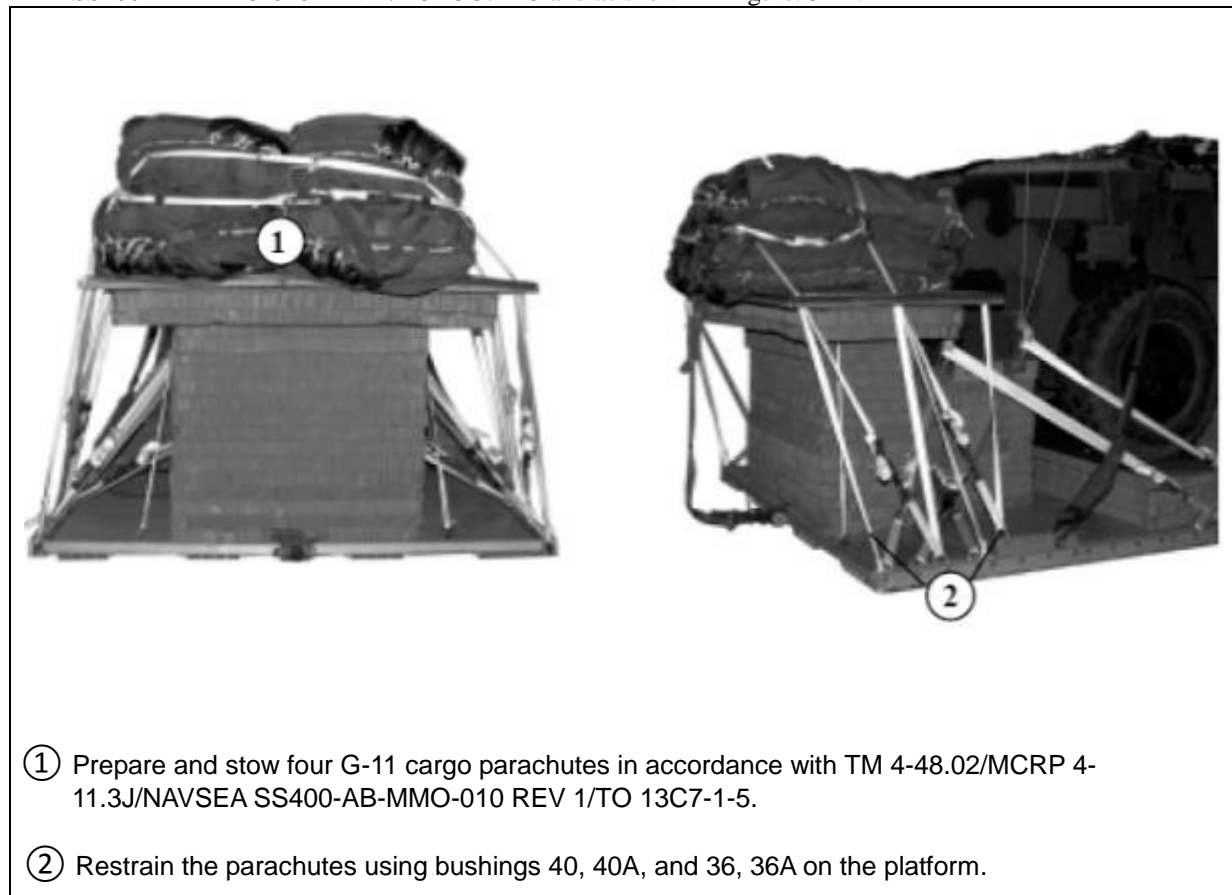
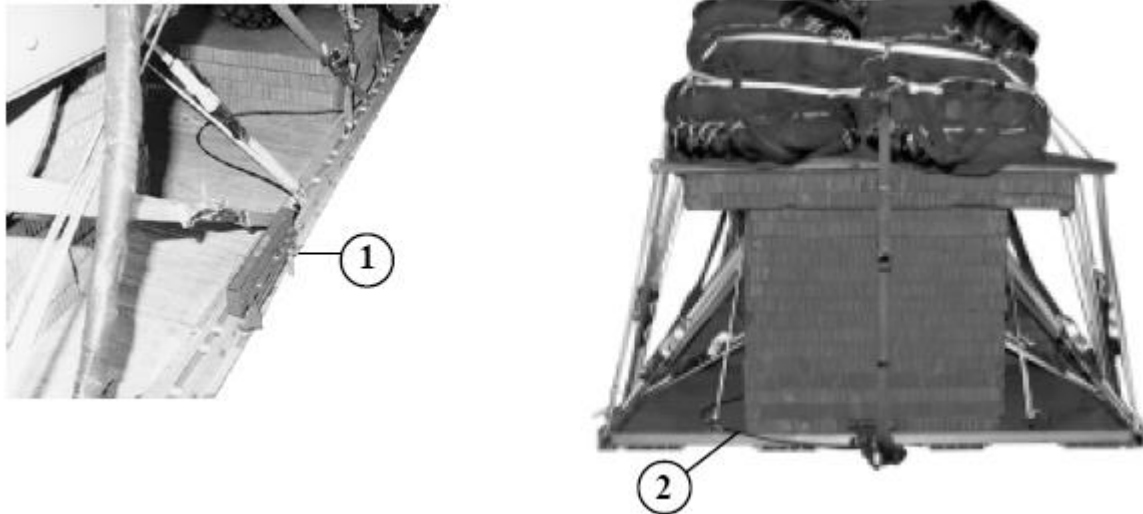


Figure 3-14. Parachutes stowed

INSTALLING EXTRACTION SYSTEM

3-9. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-15.

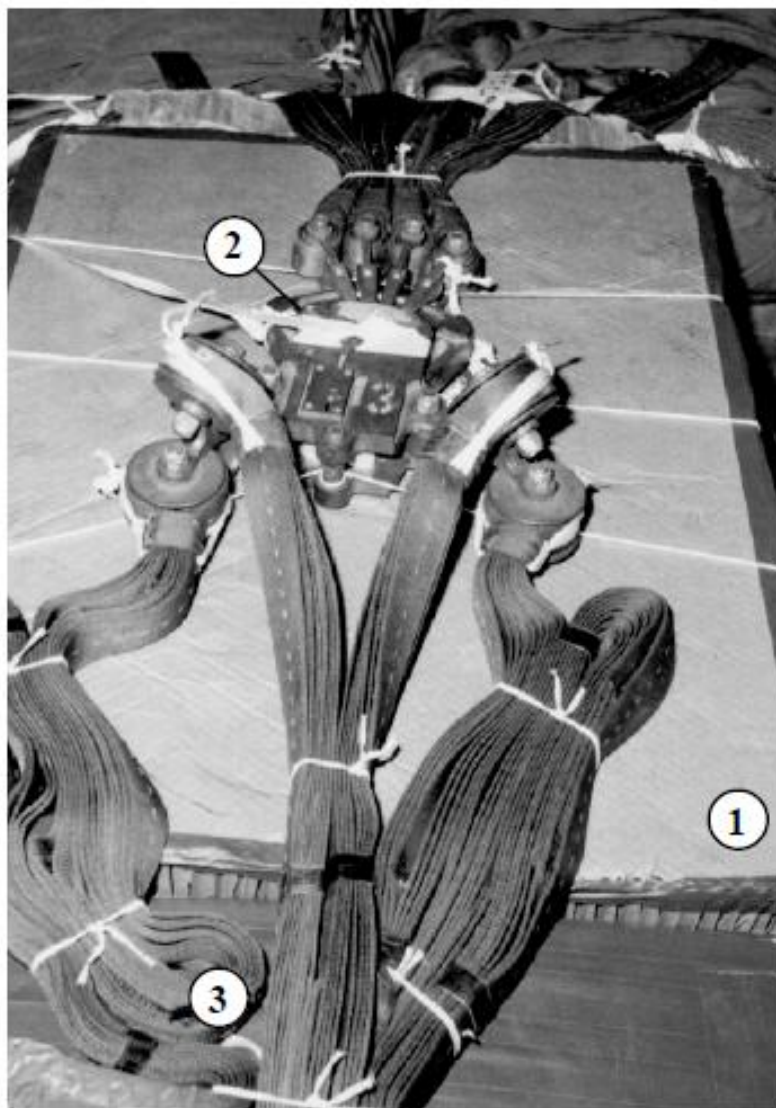


- ① Install the components of the extraction force transfer coupling system (EFTC) according TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Use the rear mounting holes for the EFTC bracket.
- ② Secure a 16-foot EFTC cable with type I, ¼-inch cotton webbing to a convenient point on the platform.
- ③ Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line.(not shown)

Figure 3-15. Extraction force transfer coupling system installed

INSTALLING PARACHUTE RELEASE

3-10. Install an M-2 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-16.



- ① Cut and position a 29-inch by 38-inch piece of honeycomb on the engine compartment and secure it with type III nylon cord.
- ② Attach the suspension slings and the riser extensions to the M-2 release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Secure the release to the platform with type III nylon cord.
- ③ S-fold the suspension slings and tie the folds with type I, 1/4-inch cotton webbing.

Figure 3-16. M-2 release installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

3-11. Select and install provisions for emergency restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5

PLACING EXTRACTION PARACHUTE

3-12. Select the extraction parachute and extraction needed using the extraction line requirements table I TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft.

MARKING RIGGED LOAD

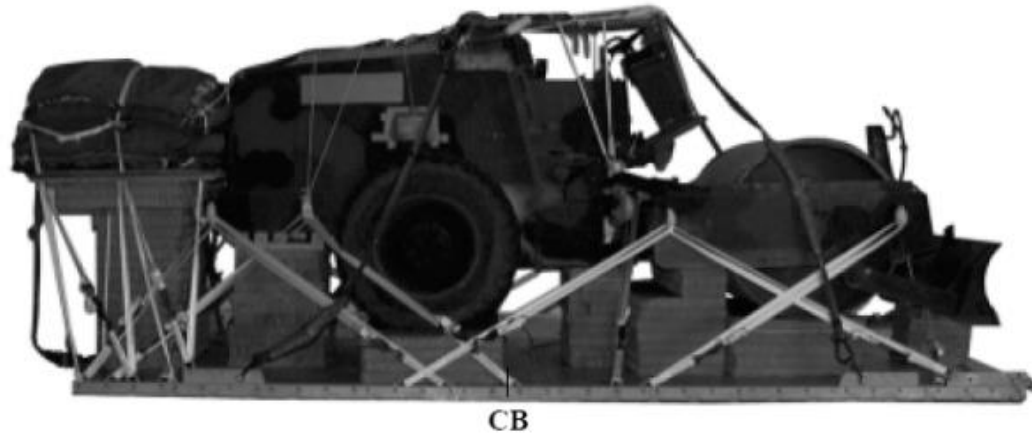
3-13. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-17. If the load varies from the one shown, the weight, height, CB, tip-off curve, and parachute requirement must be recomputed.

EQUIPMENT REQUIRED

3-14. Use the equipment list in Table 3-1 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.

**RIGGED LOAD DATA**

WEIGHT	18,890 Pounds
MAXIMUM WEIGHT	20,000 Pounds
HEIGHT	99 Inches
WIDTH	108 Inches
LENGTH	262 Inches
OVERHANG.....	Front: 0 Inches
	Rear: 22 Inches
CENTER OF BALANCE (from the front edge of platform)	108 Inches
Extraction System (adds 18 inches to length of platform)	

Figure 3-17. Vibratory compactor (Model CS-433C) rigged on a type V platform

Table 3-1. Equipment required for rigging vibratory compactor (Model CS-433C) for low-velocity airdrop on a type V platform

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1-gal	As Required
4030-00-090-5354	Clevis, suspension, 1-in (large)	11
4030-00-067-8562	Clevis, emergency restraints, (med)	6
8305-00-242-3593	Cloth, cotton duck, 60-in	As Required
4020-00-240-2164	Cord, nylon III, 550-lb	As Required
1670-00-434-5787	Coupling, airdrop, extraction force transfer with cable, 20 ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As Required
8305-00-958-3685	Felt ½ inch	As Required
1670-01-183-2678	Leaf, extraction line, (line bag)	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI (for C130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI (for C141, C5, and C17)	1
	Line, drogue (C17)	
1670-01-062-6313	60-ft (1-loop) type XXVI	1
	Suspension:	
1670-00-062-6310	11-ft (4-loop), type XXVI	2
1670-00-062-6307	12-ft (4-loop), type XXVI	2
	Link assembly:	
1670-00-783-2752	Two-point, 5 ½-in	3
1670-00-783-5988	Type IV	12
5315-00-010-4657	Nail, steel wire, common, 6d	As Required
1670-00-753-3928	Pad, energy-dissipating (honeycomb)	28 sheets
5530-00-618-8073	Plywood, ¾-in	2 sheets
5510-00-220-6146	Lumber, 2-by-4 in	As Required
	Parachute, Cargo:	
1670-01-016-7841	G-11B	4
	Cargo Extraction	
1670-00-040-8135	28ft	1
1670-01-063-3715	Drogue, 15-ft (C17)	1
	Platform, airdrop, type V, 20ft	1
1670-01-353-8425	Bracket assembly, coupling	1
1670-01-162-2372	Clevis assembly, type V	24
1670-01-353-8424	Extraction bracket assembly	1
1670-01-247-2389	Suspension link	4
1670-01-162-2381	Tandem Link	2
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 3-1. Equipment required for rigging vibratory compactor (Model CS-433C) for low-velocity airdrop on a type V platform (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-097-8816	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For extension:	
1670-01-062-6314	60-ft (3-loop), type XXVI nylon webbing	4
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	1
1670-00-040-8219	Knife, multi, strap, parachute release	2
7510-00-266-5016	Tape, PSA, cloth back, 2-in	As Required
1670-00-937-0271	Tiedown assembly, 15-ft	28
	Webbing:	
8305-00-268-2411	Cotton, ¼-in, type I	As Required
8305-00-082-5752	Nylon, tubular, ½-in	As Required
8305-00-263-3591	Type VIII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Chapter 4

Rigging the Vibratory Compactor (Model CS-433P) on a 20-Ft, Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

4-1. The vibratory compactor (Figure 4-1) is a four-cylinder, turbocharged, self-propelled diesel driven engine, and uses a single sheep-foot drum with an optional leveling blade. This load is rigged on a 20-foot, type V platform with four G-11 cargo parachutes. The rigged weight of the vibratory compactor is 19, 147 pounds. It is 262 inches long, 99 inches high, and 108 inches wide, when prepared for rigging.

PREPARING THE PLATFORM

4-2. Prepare a 20-foot, type V platform using two tandem multi-purpose links, four suspension links and 24 tiedown clevises as shown in Figure 4-2.

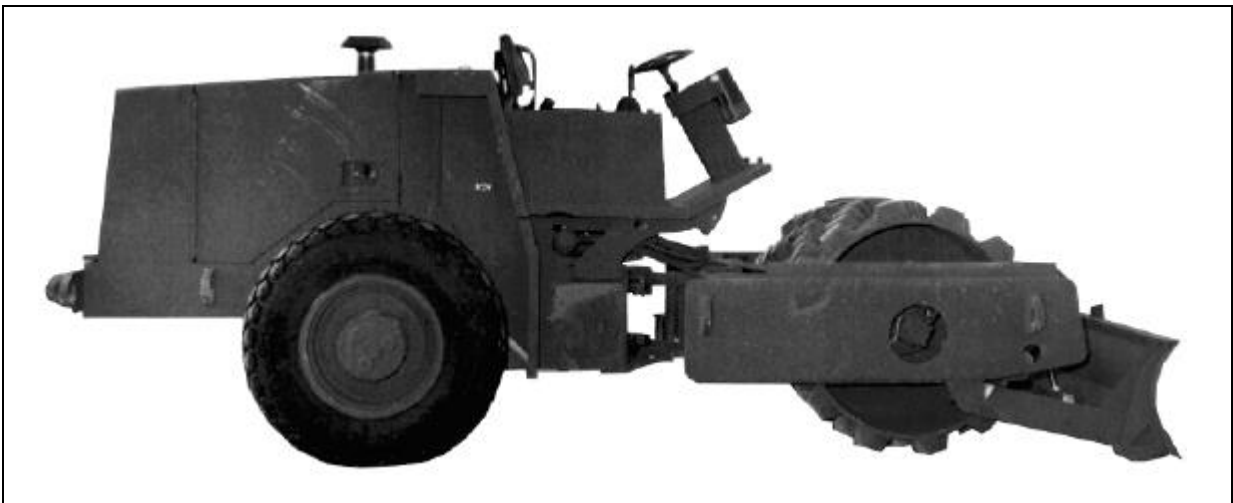


Figure 4-1. Vibratory compactor (Model CS-433P)

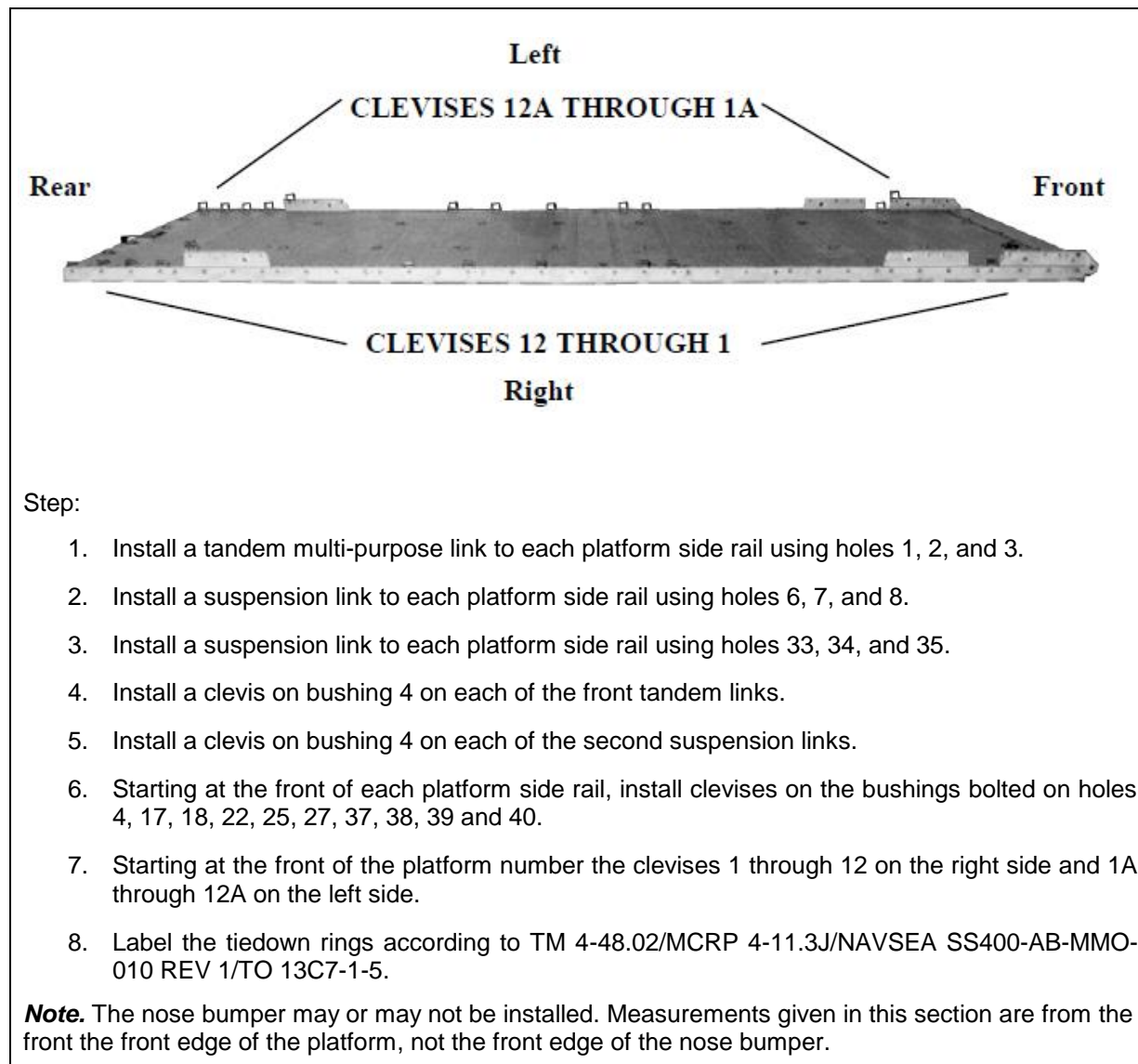


Figure 4-2. Platform prepared

PREPARING AND POSITIONING HONEYCOMB STACKS

4-3. Prepare the honeycomb stacks as shown in Figures 4-3 through 4-5. Position the honeycomb stacks on the platform as shown in Figure 4-6.

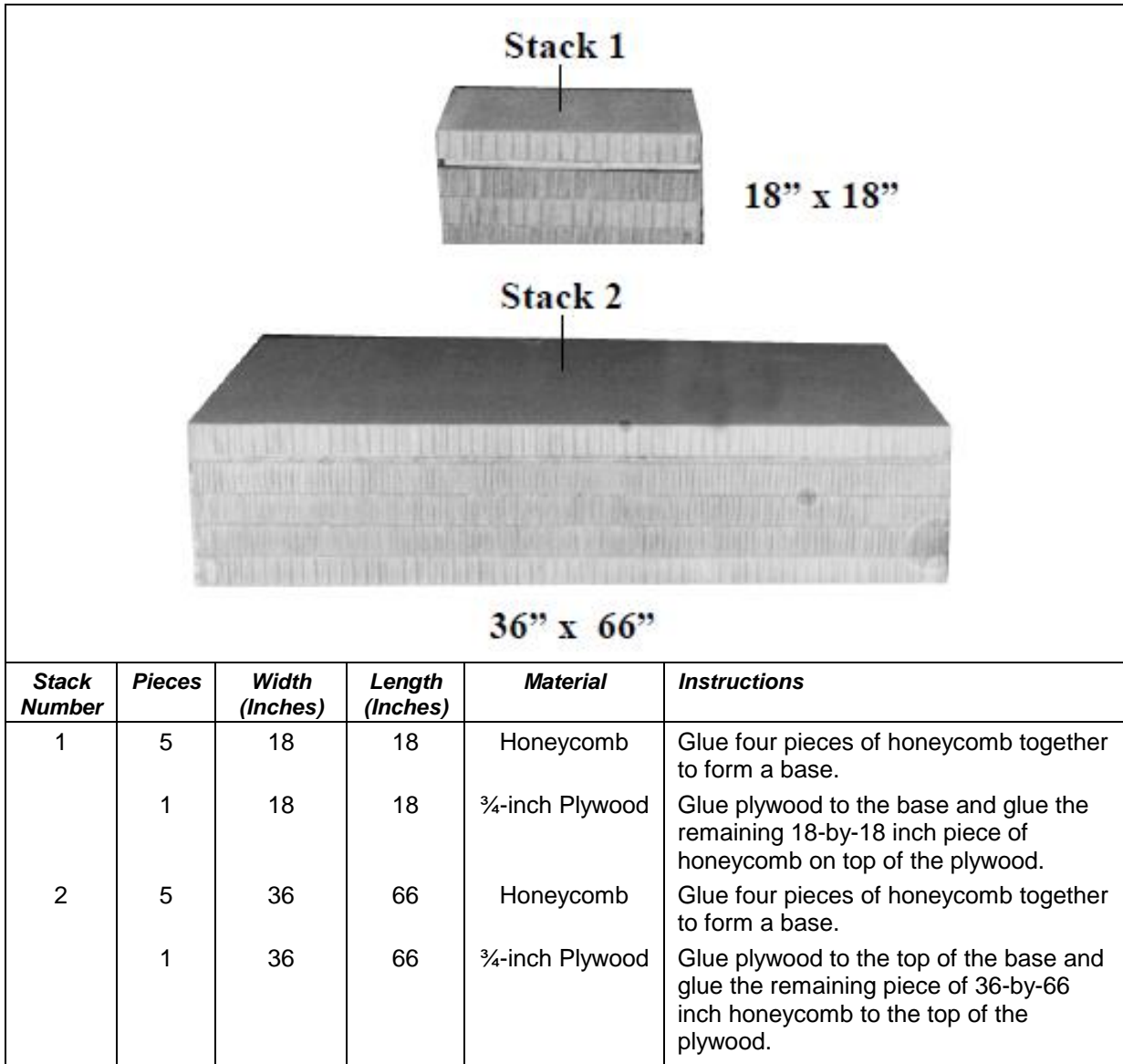


Figure 4-3. Honeycomb stacks 1 and 2 prepared

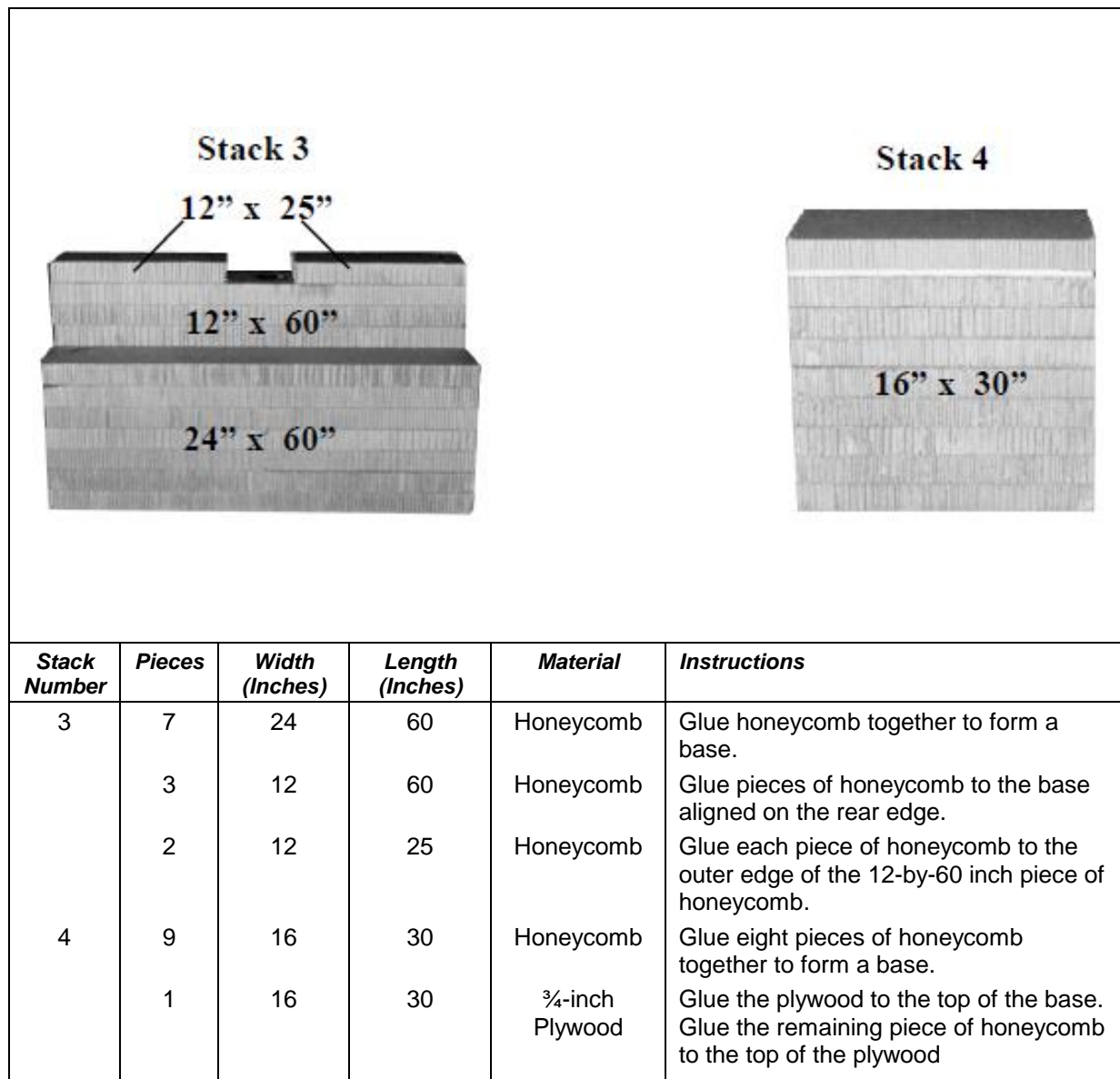


Figure 4-4. Honeycomb stacks 3 and 4 prepared

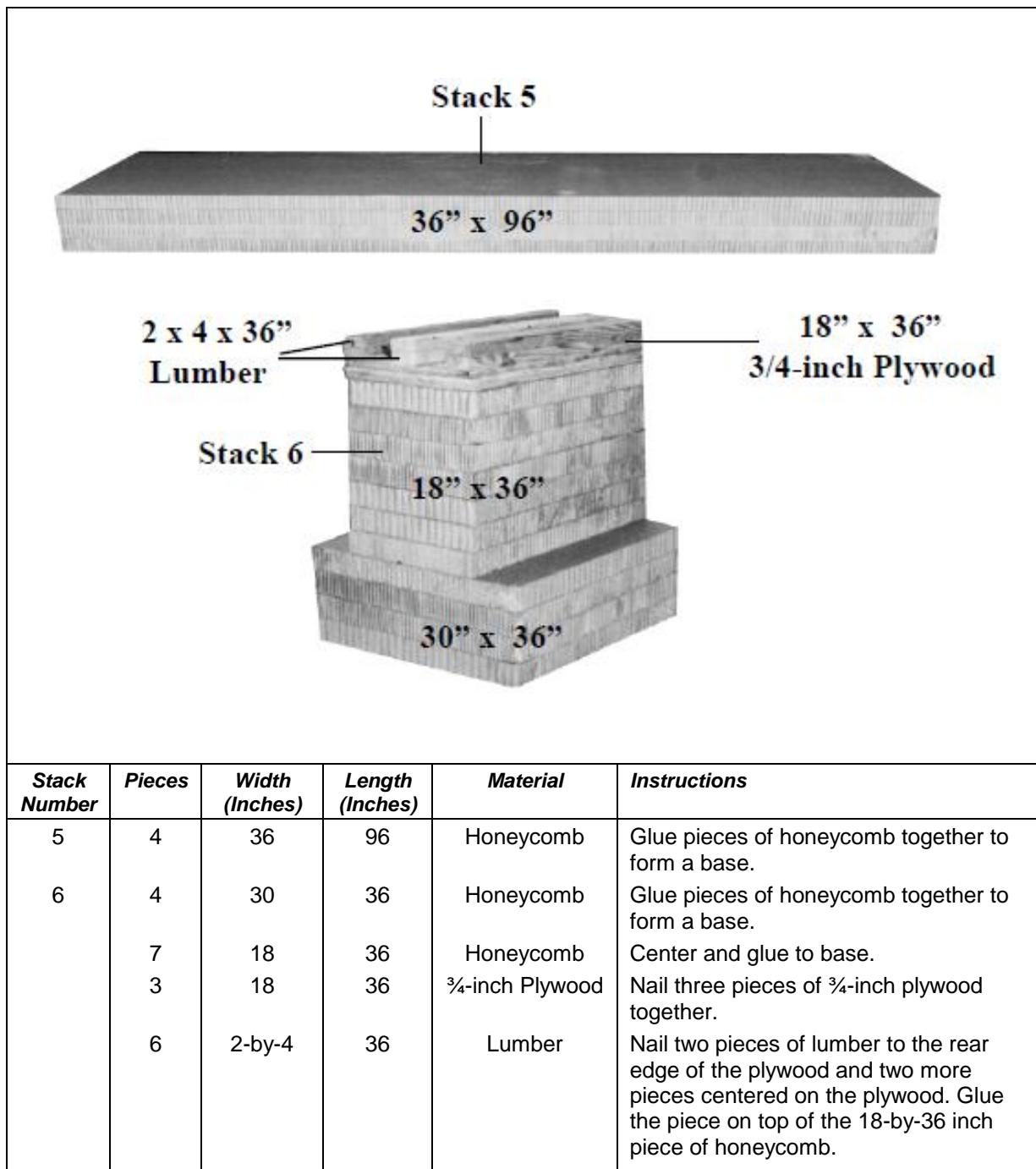
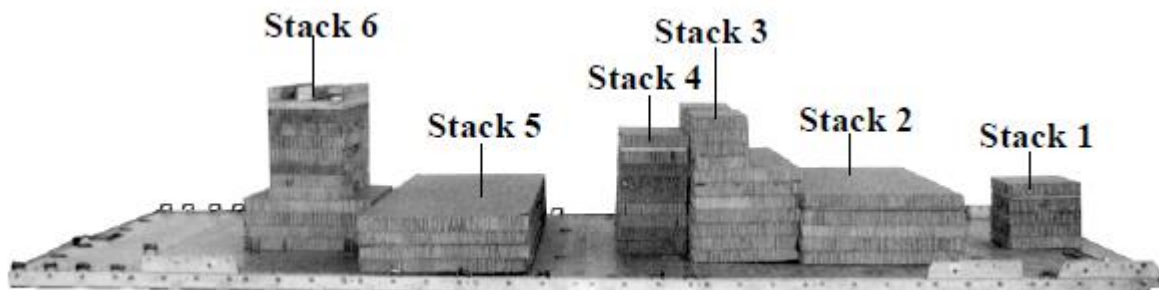


Figure 4-5. Honeycomb stacks 5 and 6 prepared



Step:

9. Position stack 1 centered and flush with the front edge of the platform and not the nose bumper if present.
10. Position stack 2 centered and 18 inches from stack 1.
11. Position stack 3 centered and flush against stack 2.
12. Position stack 4 centered and flush against stack 3.
13. Position stack 5 centered and 19 inches from stack 4.
14. Position stack 6 centered and 1 inch from stack 5.

Figure 4-6. Honeycomb stacks positioned on platform

PREPARING AND POSITIONING VIBRATORY COMPACTOR ON PLATFORM

4-4. Prepare and position the vibratory compactor on a platform as shown in Figures 4-7 and 4-8.

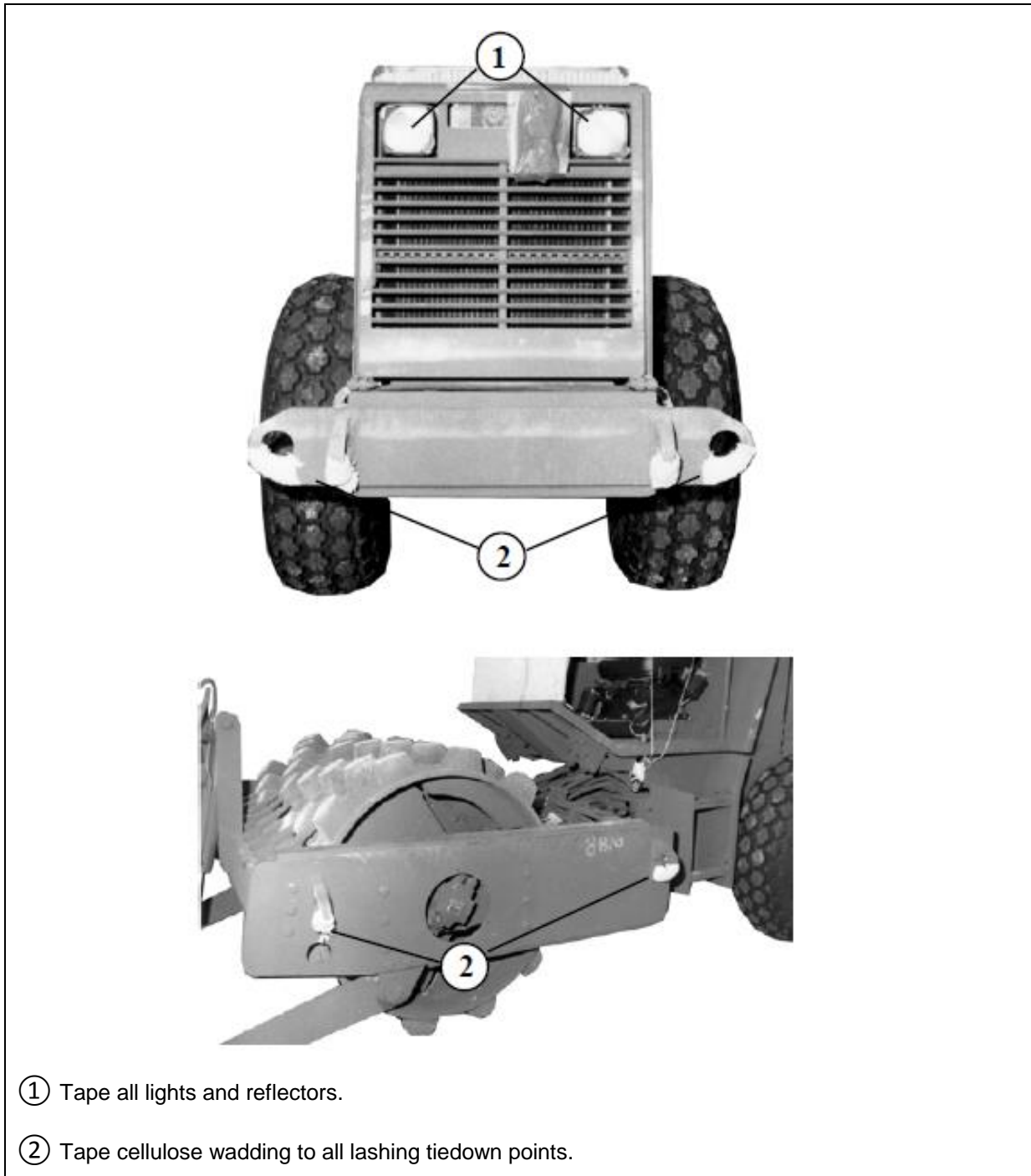
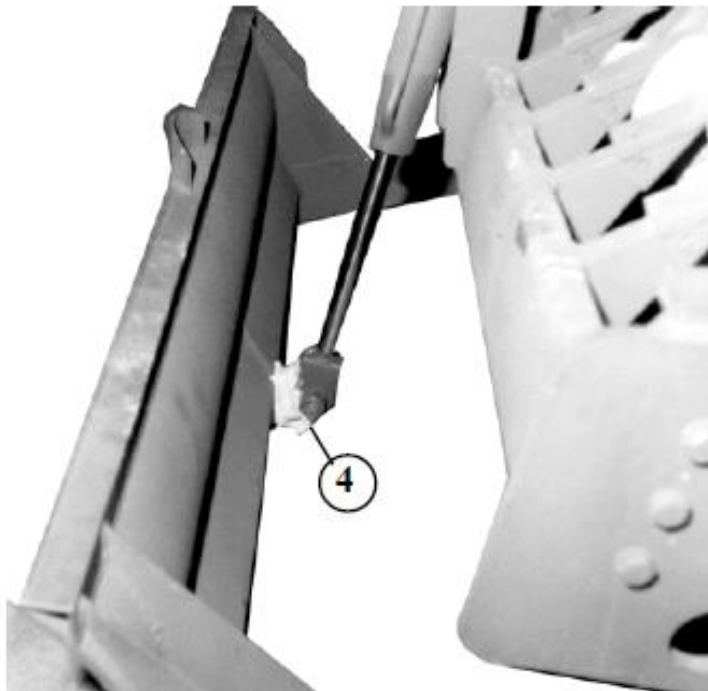
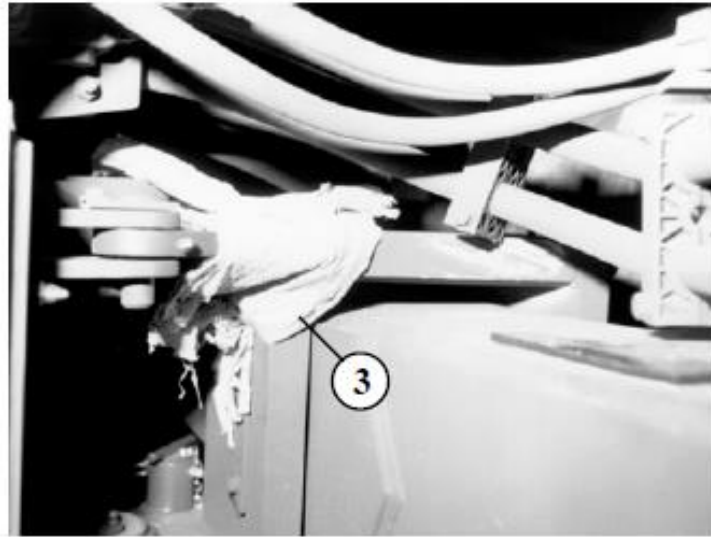
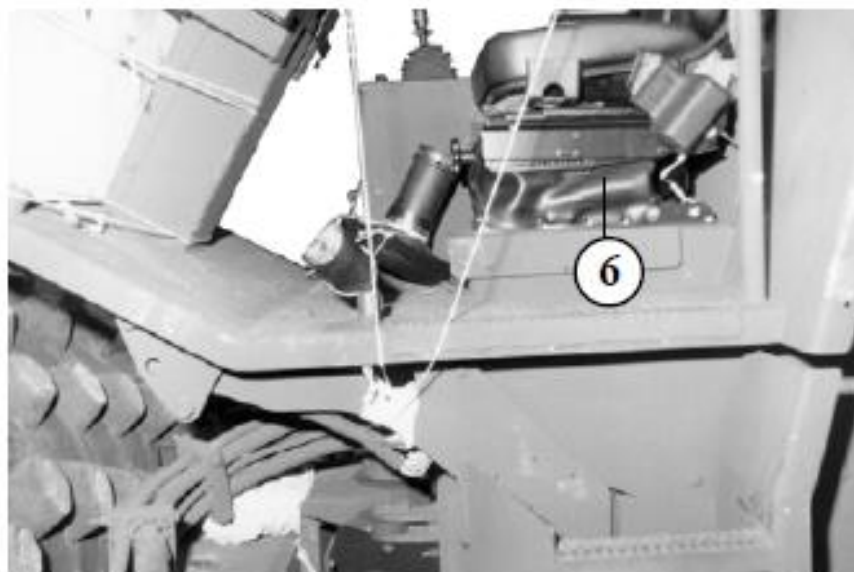
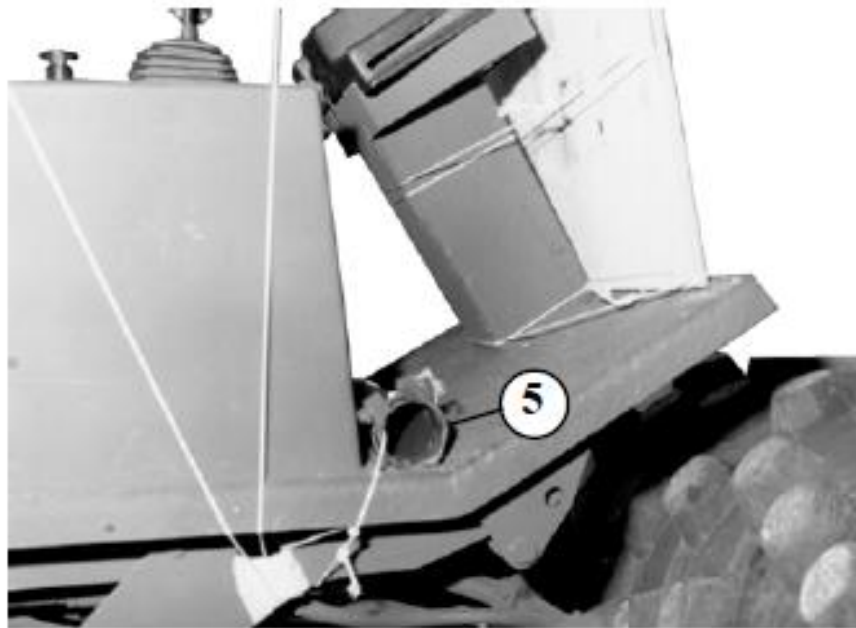


Figure 4-7. Vibratory compactor prepared



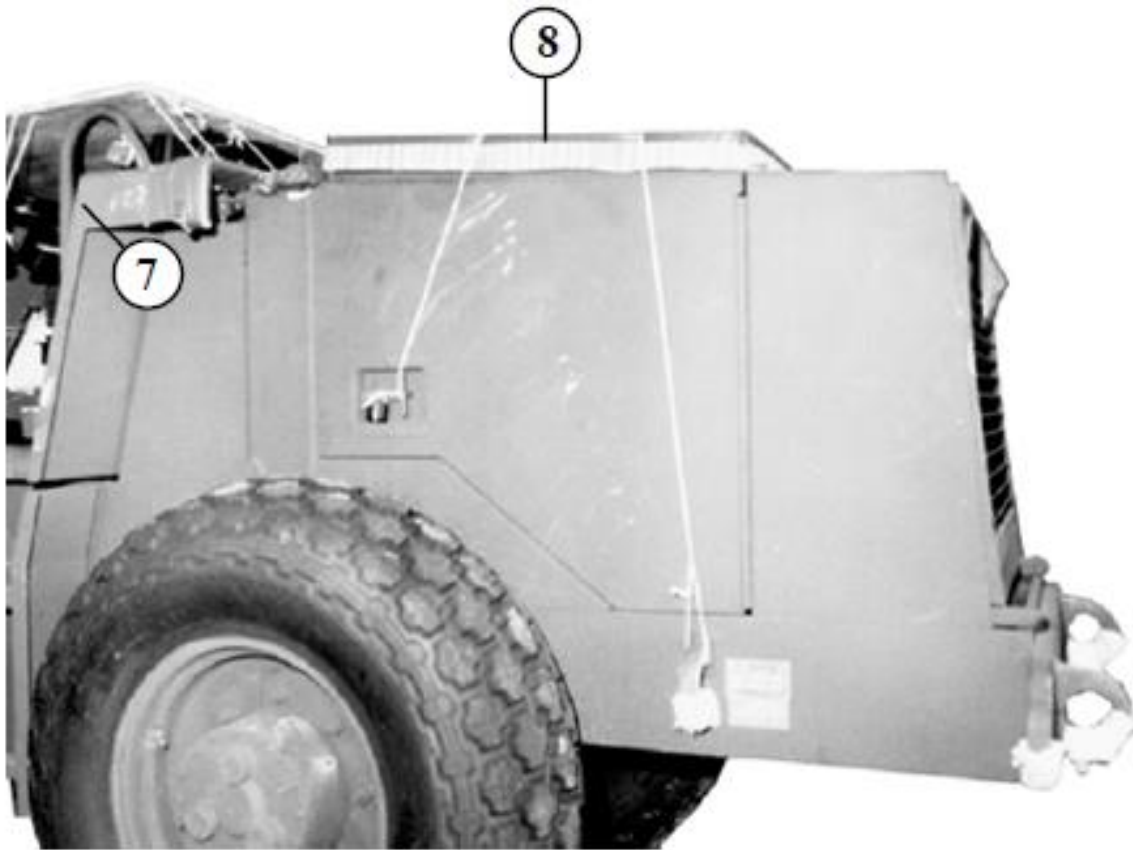
- ③ Tape cellulose wadding to the upper pivot arm of the chassis.
- ④ Tape cellulose wadding to the hydraulic attaching point of the blade.

Figure 4-7. Vibratory compactor prepared (continued)



- ⑤ Remove the air-filter and exhaust pipe. Secure them to convenient points in the cab.
- ⑥ Lower the seat the lock it down.

Figure 4-7. Vibratory compactor prepared (continued)



- ⑦ Tape felt on the upper portions of the rear wheel wells where the slings will make contact.
- ⑧ Tape the edges of a 29-inch by 38-inch piece of honeycomb and secure it on top of the engine compartment with type III nylon cord tied to a convenient point on the roller.

Figure 4-7. Vibratory compactor prepared (continued)

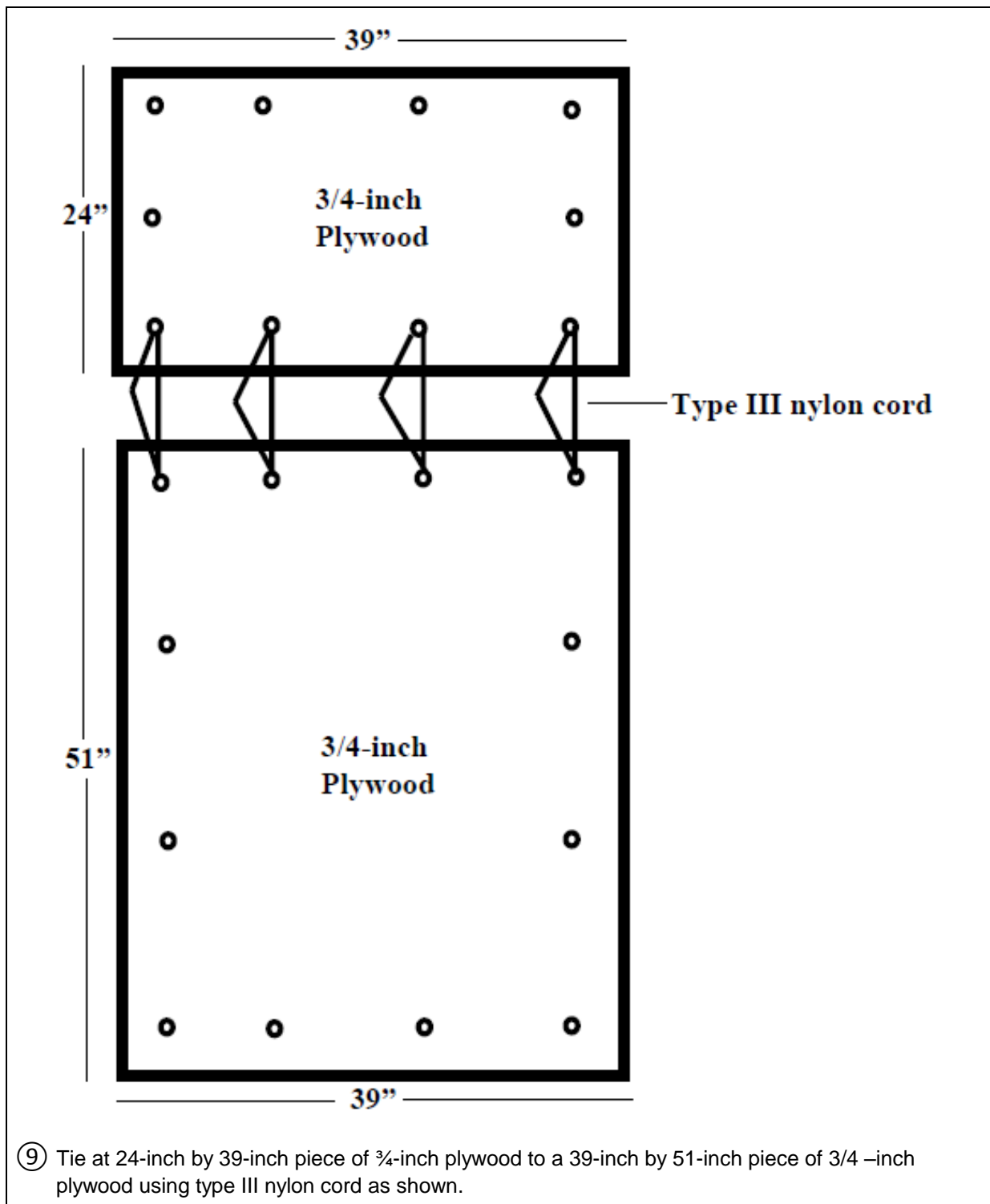
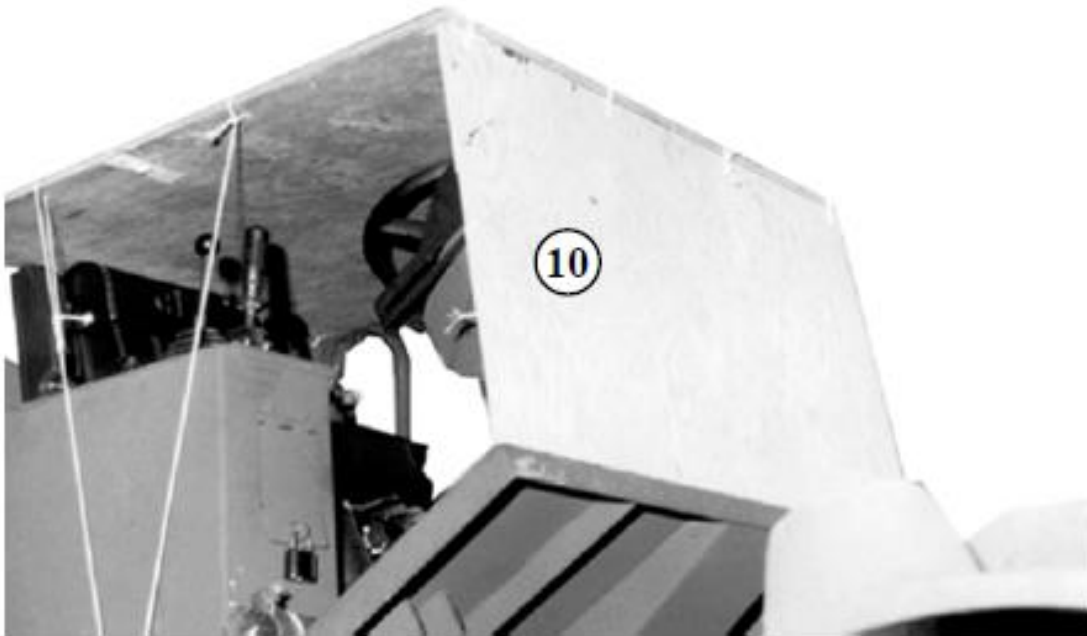


Figure 4-7. Vibratory compactor prepared (continued)



- ⑩ Using ½-inch tubular nylon, secure the piece of plywood to the cab of the vibratory compactor to a convenient point on the load.

Figure 4-7. Vibratory compactor prepared (continued)

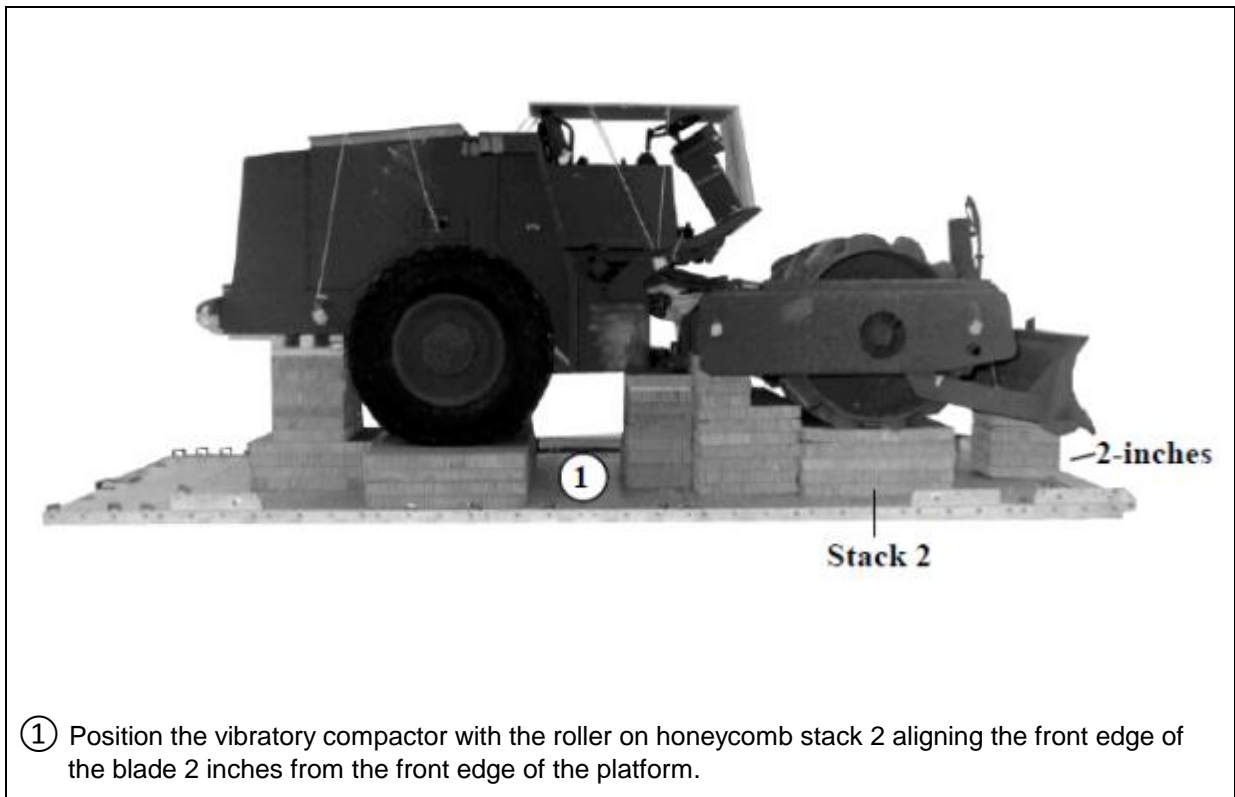


Figure 4-8. Vibratory compactor positioned on platform

LASHING VIBRATORY COMPACTOR TO THE PLATFORM

4-5. Lash the vibratory compactor to the platform as shown in Figures 4-9 through 4-11 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

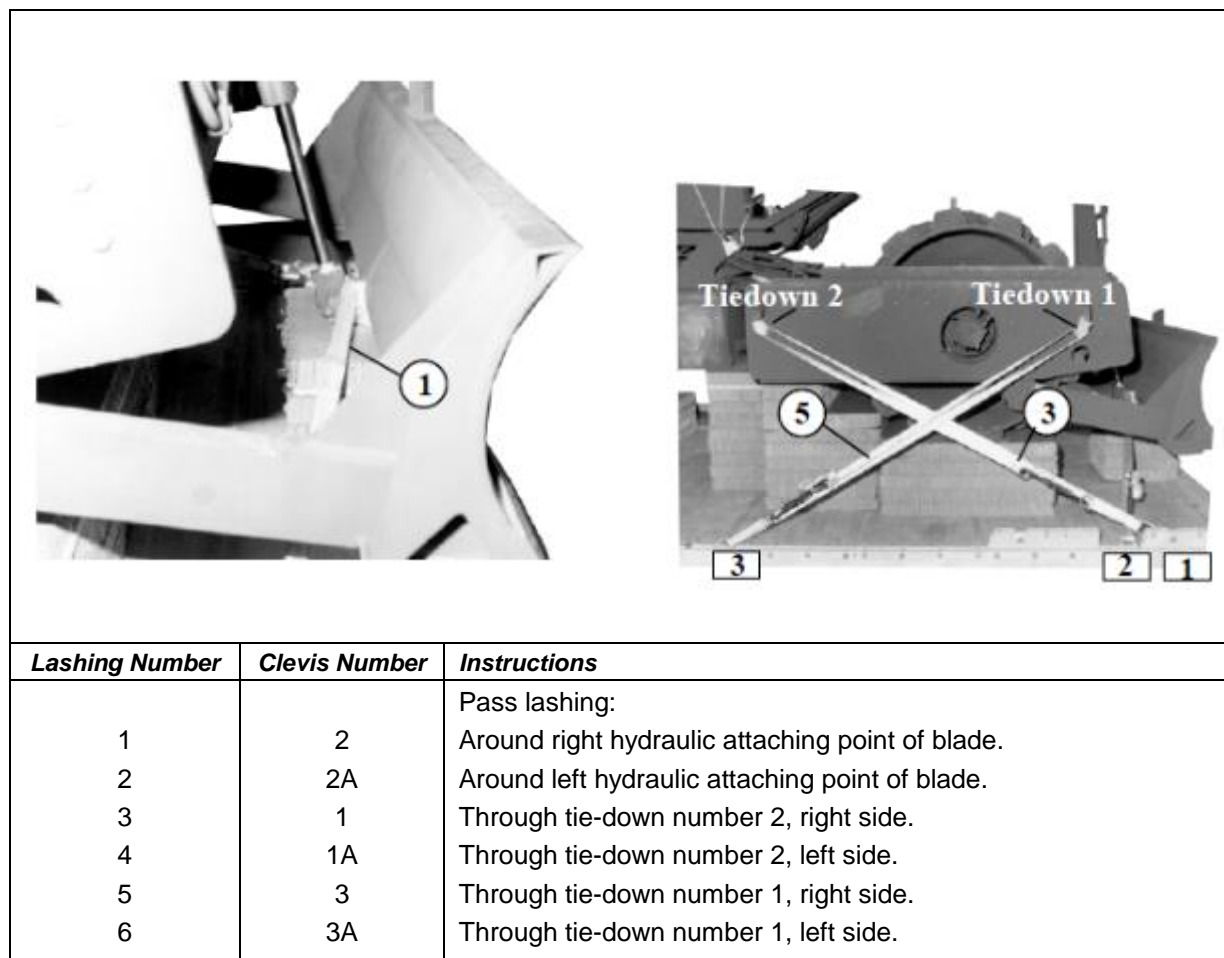


Figure 4-9. Lashings 1 through 6 installed

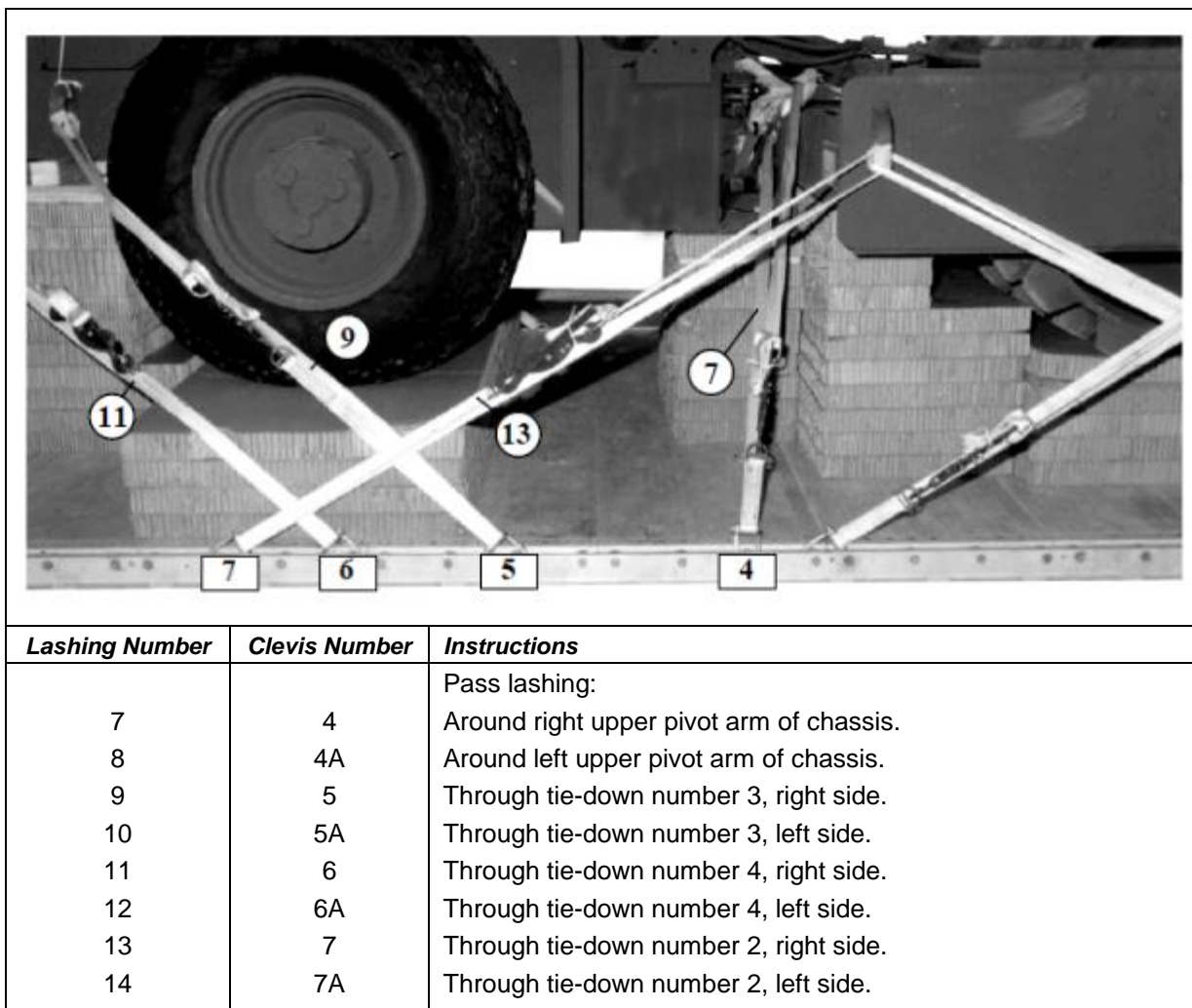


Figure 4-10. Lashings 7 through 14 installed

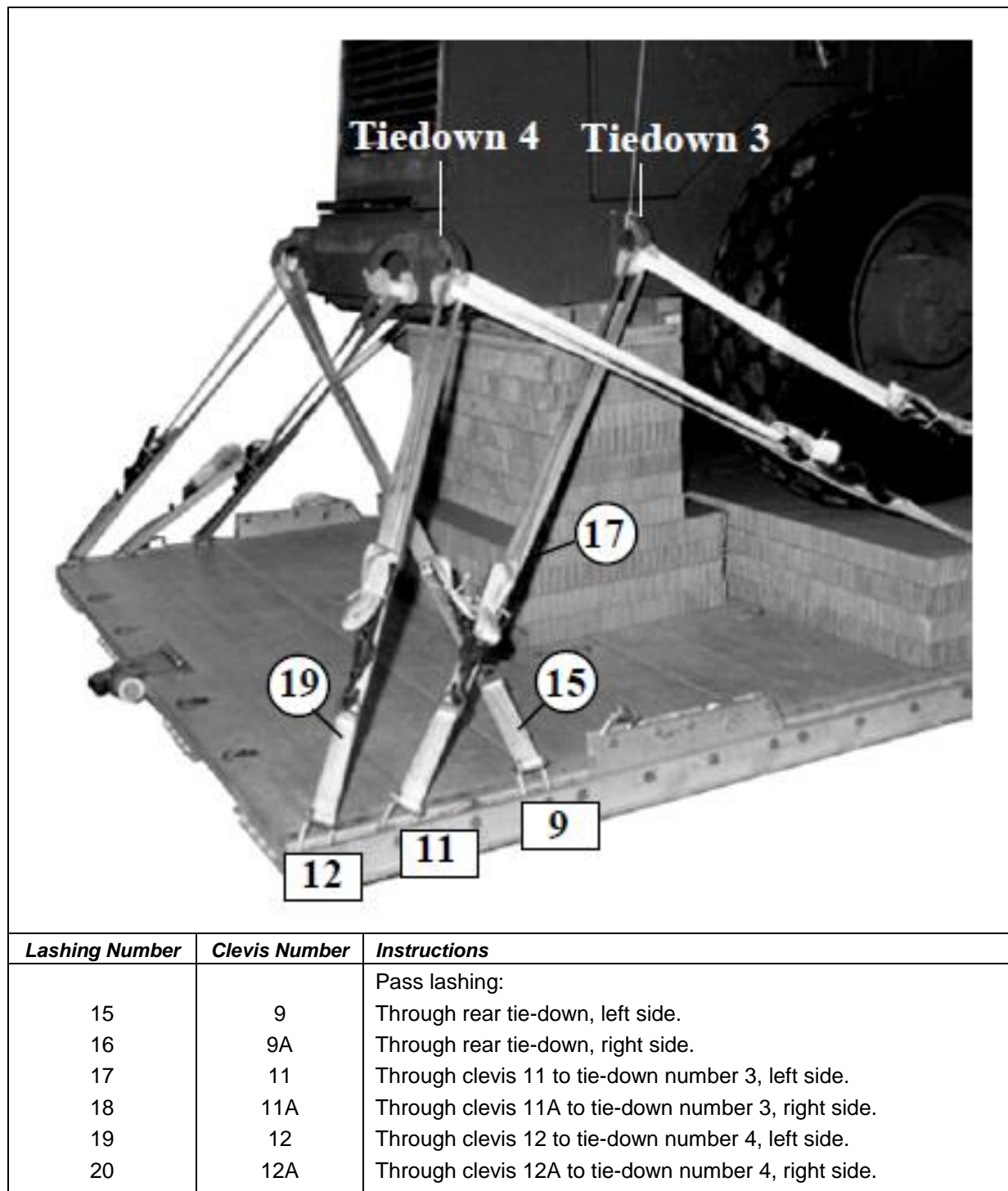


Figure 4-11. Lashings 15 through 20 installed

INSTALLING AND SAFETYING SUSPENSION SLINGS AND DEADMAN'S TIE

4-6. Install and safety four 16-foot (4 loop), type XXVI nylon webbing slings to the tandem links as shown in Figure 4-12.

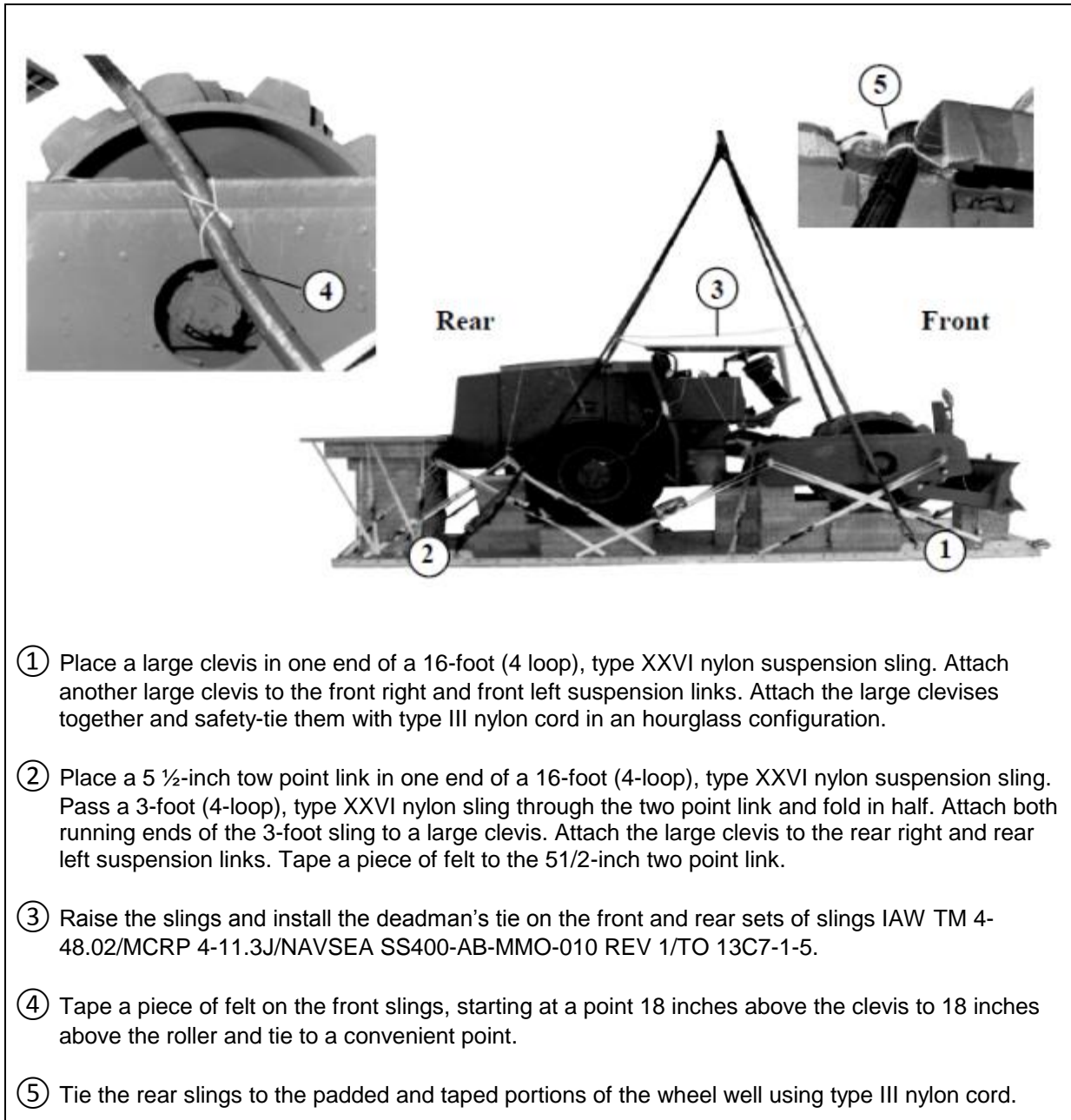


Figure 4-12. Suspension slings and deadman's tie installed

BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

4-7. Build and position the parachute stowage platform as shown in Figure 4-13.

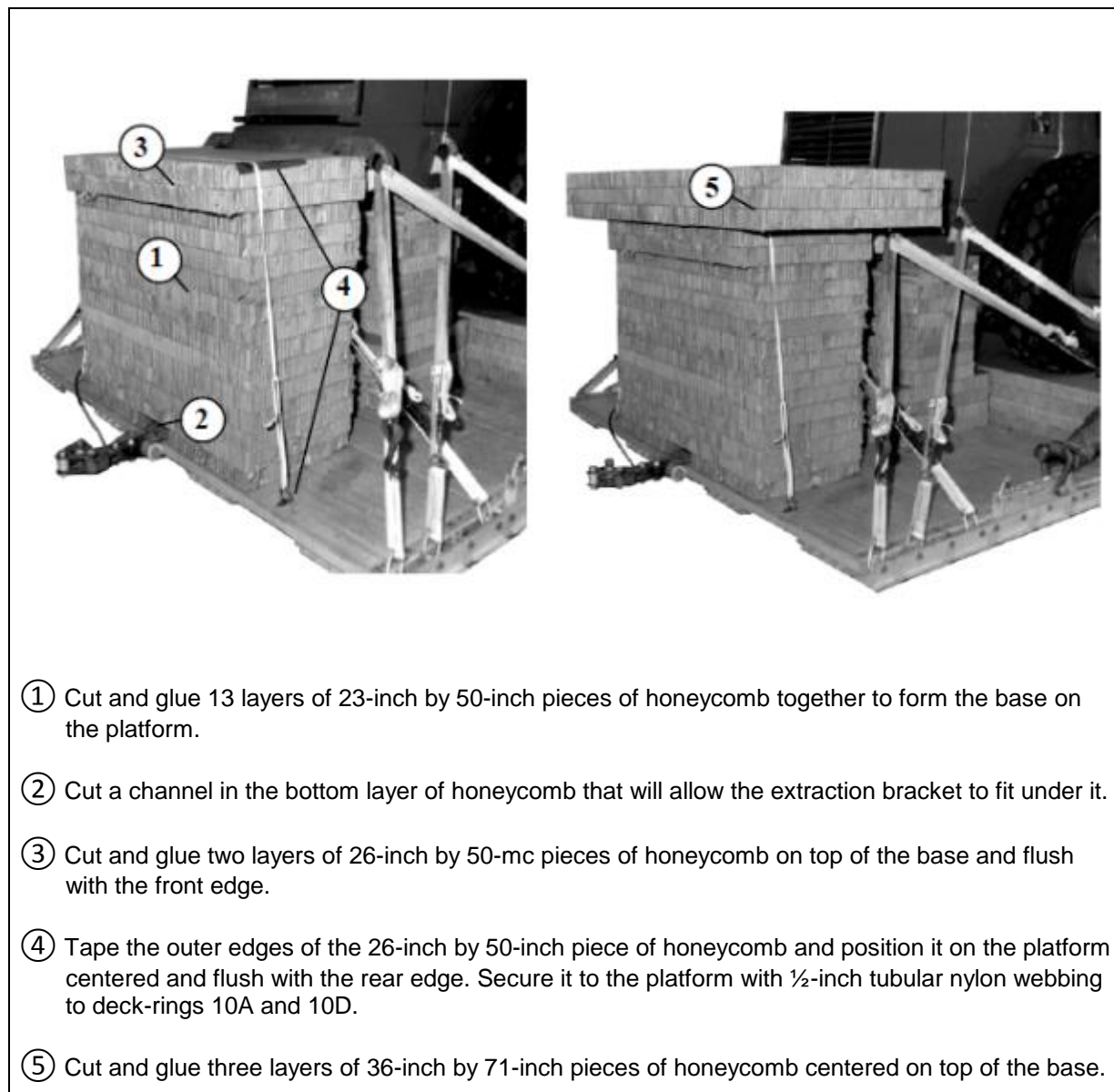


Figure 4-13. Parachute stowage platform constructed and positioned

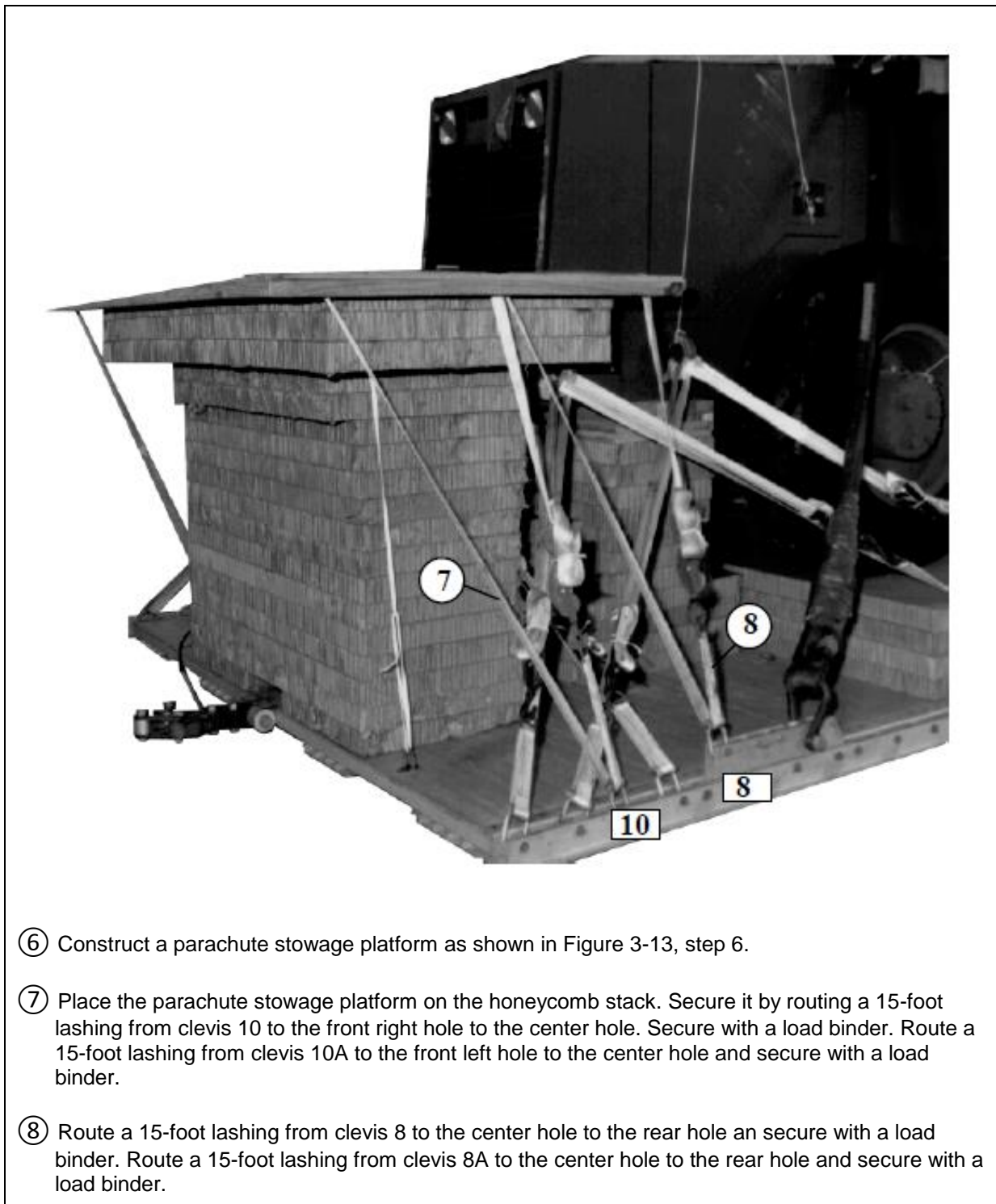


Figure 4-13. Parachute stowage platform constructed and positioned (continued)

INSTALLING CARGO PARACHUTES

4-8. Install four G-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 4-14.

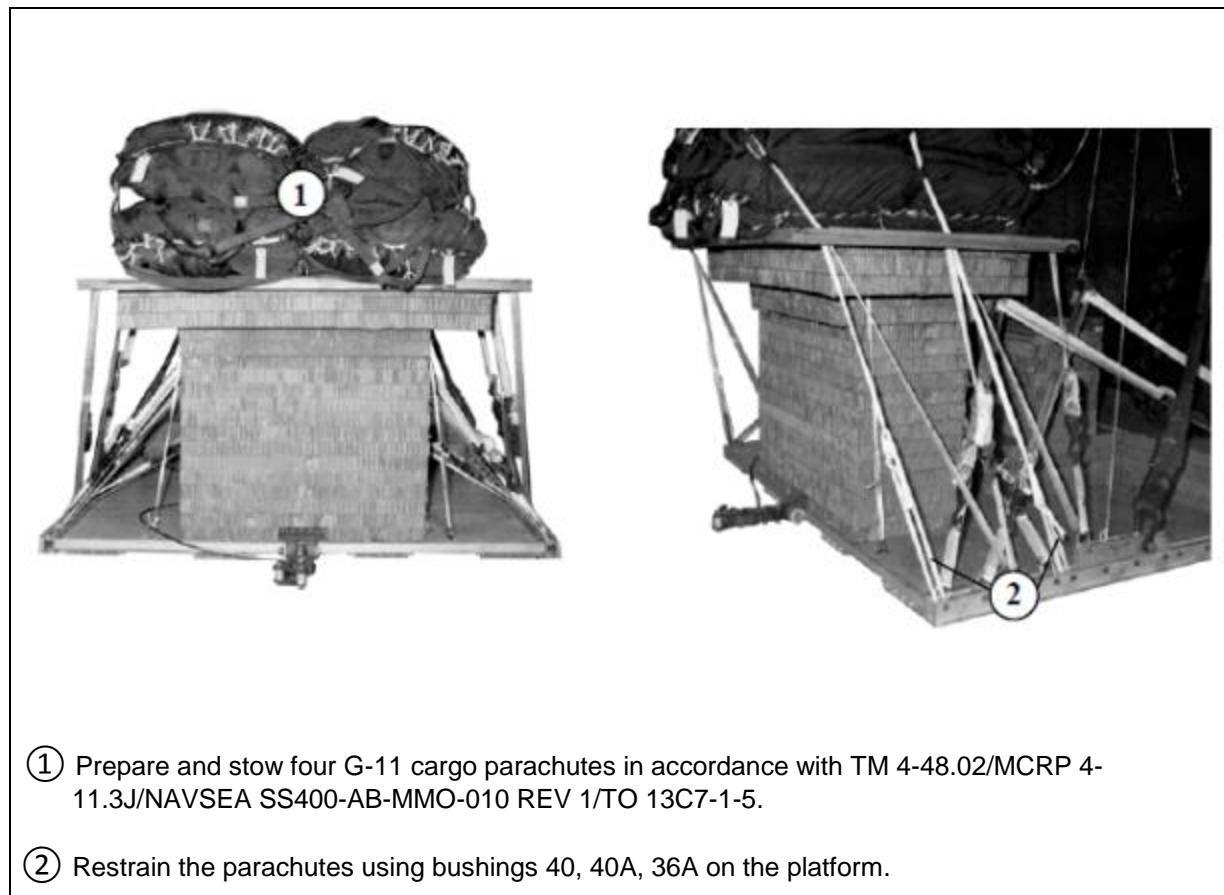
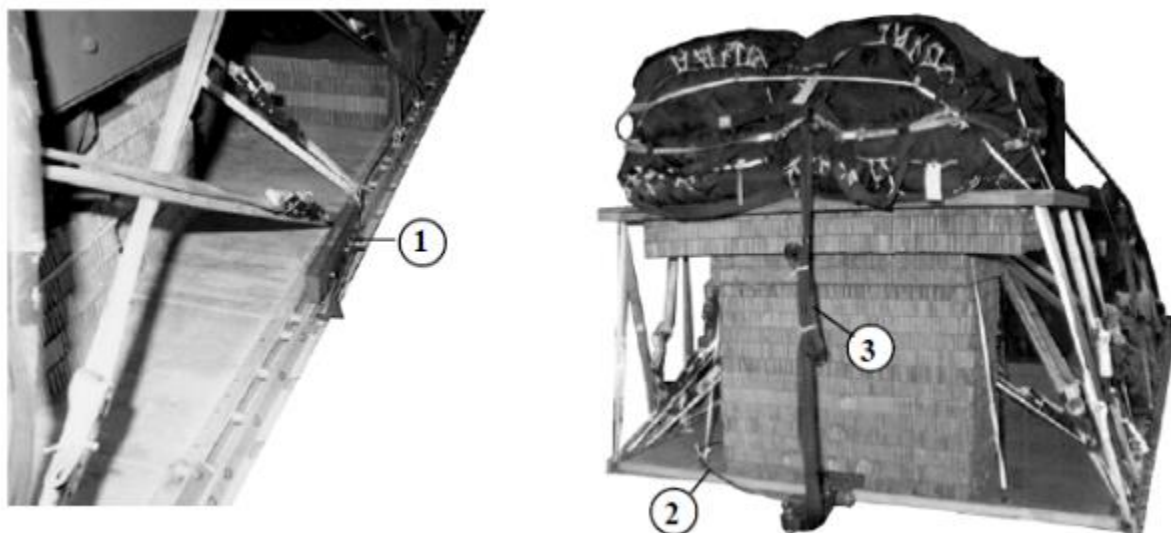


Figure 4-14. Parachutes stowed

INSTALLING EXTRACTION SYSTEM

4-9. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 4-15.



- ① Install the components of the extraction force transfer coupling system (EFTC) according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Use the rear mounting holes for the EFTC bracket.
- ② Secure a 16-foot EFTC cable with type I, ¼-inch cotton webbing a convenient point on the platform.
- ③ Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line.

Figure 4-15. Extraction force transfer coupling system installed

INSTALLING PARACHUTE RELEASE

4-10. Installing an M-2 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 4-16.

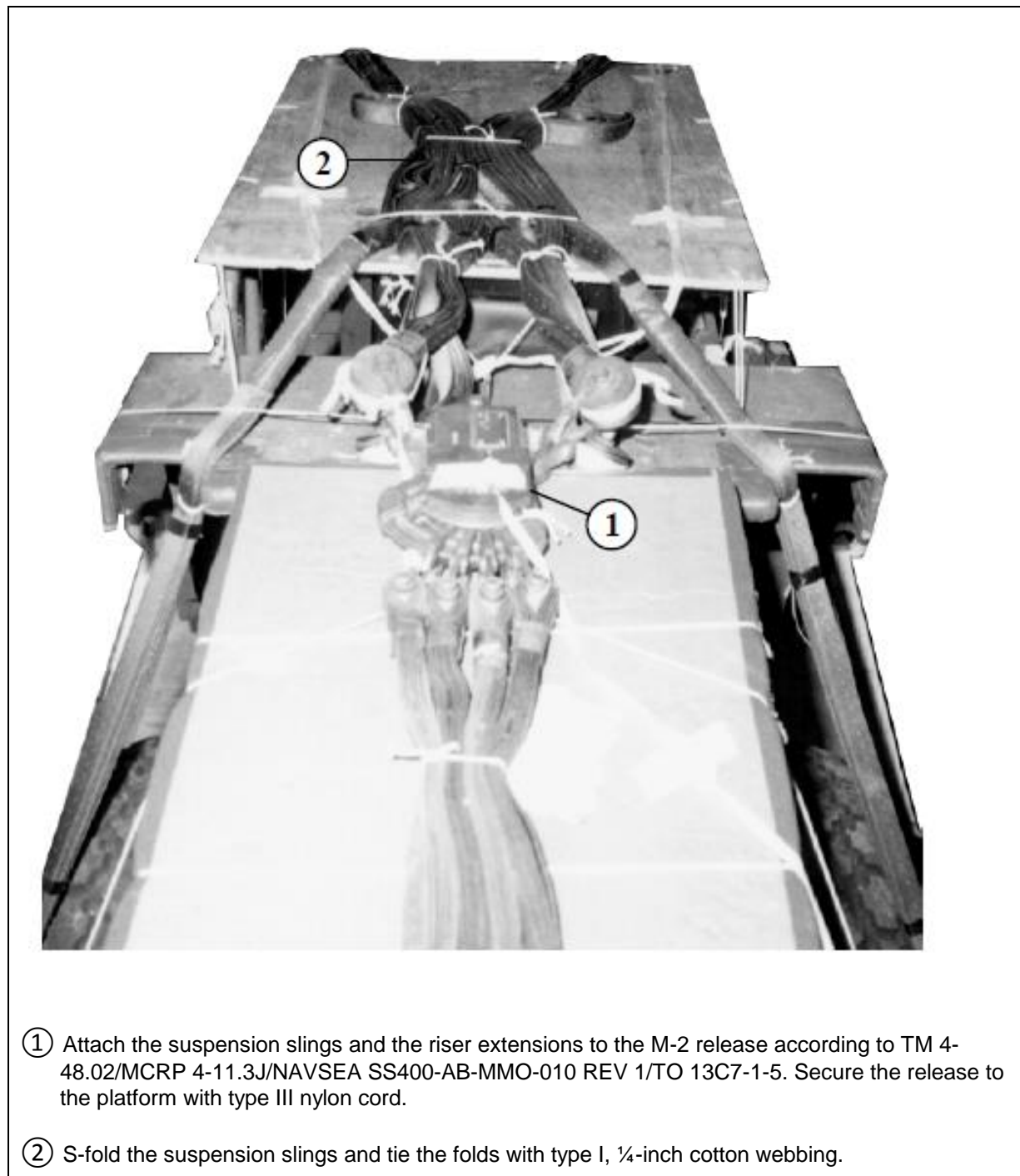


Figure 4-16. M-2 release installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

4-11. Select and install provisions for emergency restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

4-12. Select the extraction parachute and extraction line needed using the extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place on the load for installation in the aircraft.

MARKING RIGGED LOAD

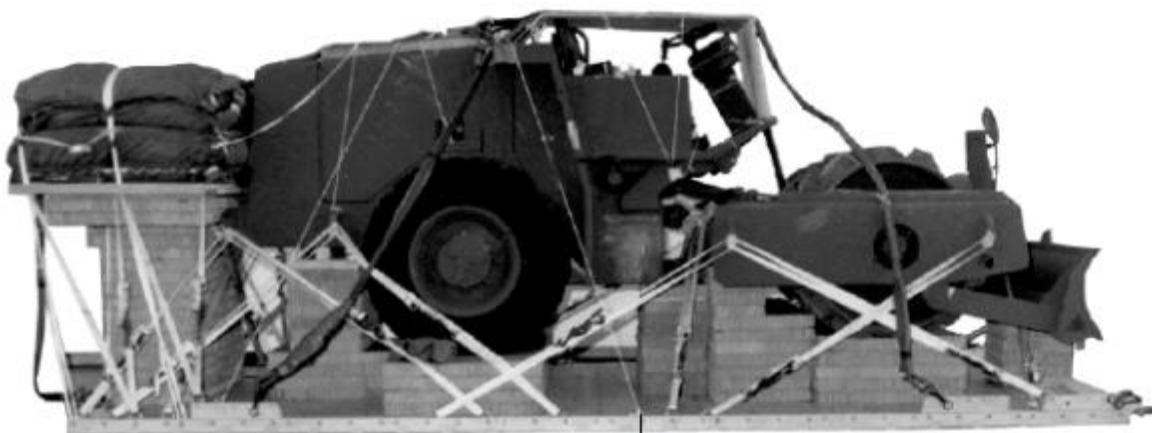
4-13. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 4-17.

EQUIPMENT REQUIRED

4-14. Use the equipment list in Table 4-1 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of balance

RIGGED LOAD DATA

WEIGHT	19,147 Pounds
MAXIMUM WEIGHT	21,000 Pounds
HEIGHT	99 Inches
WIDTH	108 Inches
LENGTH	262 Inches
OVERHANG	Front: 0 Inches
	Rear: 22 Inches
CENTER OF BALANCE (from the front edge of platform)	108 Inches
Extraction System (adds 18 inches to length of platform)	

Figure 4-17. Vibratory compactor (Model CS-433P) rigged on a type V platform

Table 4-1. Equipment required for rigging vibratory compactor (Model CS-433P) for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As Required
4030-00-090-5354	Clevis, suspension, 1-in (large)	5
4030-00-067-8562	Clevis, emergency restraints, (med)	6
8305-00-242-3593	Cloth, cotton duck, 60-in	As Required
4020-00-240-2164	Cord, nylon III, 550-lb	As Required
1670-00-434-5787	Coupling, airdrop, extraction force transfer (EFTC) with cable, 20 ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As Required
8305-00-958-3685	Felt ½ inch	As Required
1670-01-183-2678	Leaf, extraction line, (line bag)	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI (for C130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI (for C141, C5, and C17)	1
	Line, drogue (C17)	
1670-01-062-6313	60-ft (1-loop) type XXVI	1
	Suspension:	
1670-00-062-6310	12-ft (4-loop), type XXVI	2
1670-00-062-6310	11-ft (4-loop), type XXVI	2
	Link assembly:	
1670-00-783-2752	Two-point, 5 ½-in	3
1670-00-783-5988	Type IV	2
5315-00-010-4657	Nail, steel wire, common, 6d	As Required
1670-00-753-3928	Pad, energy-dissipating (honeycomb)	28 sheets
5530-00-618-8073	Plywood, ¾-in	2 sheets
5510-00-220-6146	Lumber, 2-by-4 in	As Required
	Parachute, Cargo:	
1670-01-016-7841	G-11B	4
	Cargo Extraction	
1670-00-040-8135	28ft	1
1670-01-063-3715	Drogue, 15-ft (C17)	1
	Platform, airdrop, type V, 20ft	1
1670-01-353-8425	Bracket assembly, component, EFTC	1
1670-01-162-2372	Clevis assembly, type V	24
1670-01-353-8424	Extraction bracket assembly	1
1670-01-247-2389	Suspension link	4
1670-01-162-2381	Tandem Link	2
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 4-1. Equipment required for rigging vibratory compactor (Model CS-433P) for low-velocity airdrop on a type V platform (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-097-8816	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop	
	Suspension and lifting:	
1670-01-062-6308	16-ft (4 loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For extension:	
1670-01-062-6314	60-ft (3-loop), type XXVI nylon webbing	4
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	1
1670-01-062-6305	Link, assembly, coupling, 3-point	2
1670-00-040-8219	Knife, multi, strap, parachute release	2
7510-00-266-5016	Tape, PSA, cloth back, 2-in	As Required
1670-00-937-0271	Tiedown assembly, 15-ft	28
	Webbing:	
8305-00-268-2411	Cotton, ¼-in, type I	As Required
8305-00-082-5752	Nylon, tubular, ½-in	As Required
8305-00-263-3591	Type VIII, OD	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Chapter 5

Rigging Koehring 7 ½-Ton Crane on A Type V Platform

DESCRIPTION OF LOAD

5-1. The Koehring 7 ½-ton crane (Figure 5-1) is rigged on a 24-foot, type V platform for low-velocity airdrop. The crane is rigged with seven G-11A or G-11B cargo parachutes. The unrigged vehicle weighs approximately 24,215 pounds and is 347 ³/₈ inches long. It is 93 ¹/₈ inches high and 95 ³/₄ inches wide.

PREPARING PLATFORM

5-2. Prepare a 24-foot, type V platform using two tandem links, two suspension links, and 44 clevis assemblies as shown in Figure 5-2.

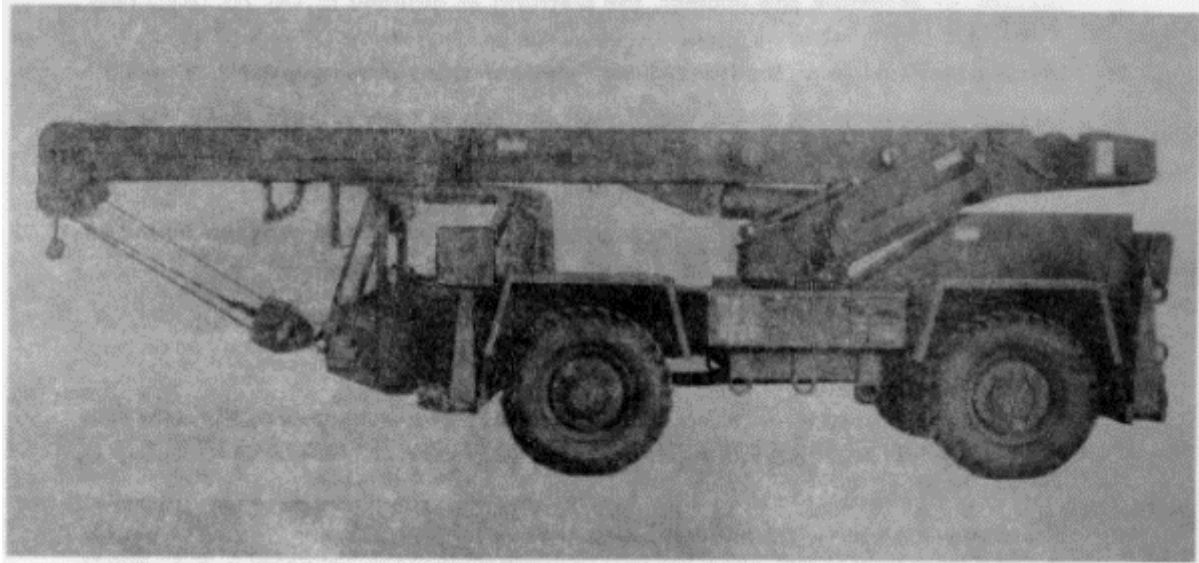
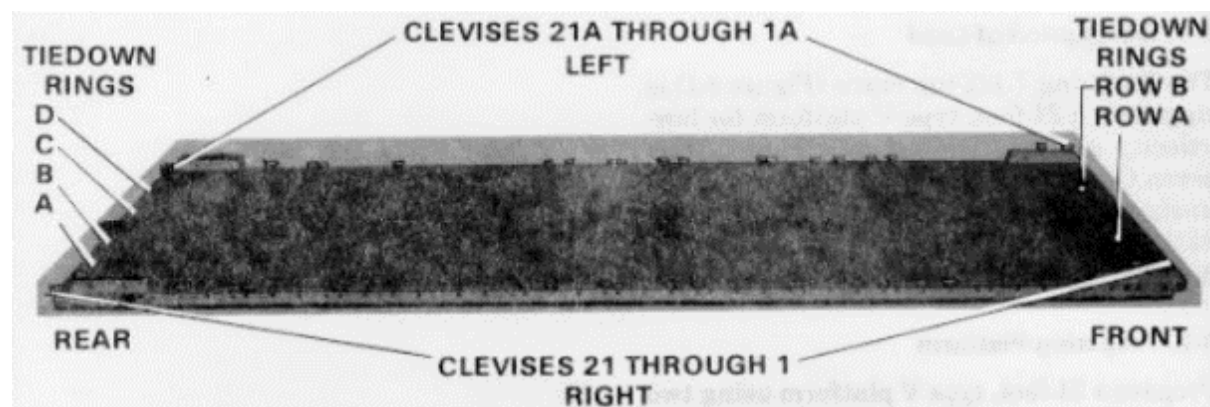


Figure 5-1. Koehring 7 ½-ton crane

- Notes:** 1. The nose bumper may or may not be installed.
 2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.



Step:

15. Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
16. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
17. Install a suspension link on the rear of each platform side rail using holes 45, 46, and 47.
18. Install a clevis on bushings 1 and 3 on each front tandem link.
19. Starting at the front of each platform side rail, install a clevis to bushings bolted on holes 10, 11, 13, 14, 16, 17, 21, 22, 24, 25, 27, 28, 36, 40, 41, and 43.
20. Install a clevis on bushing 4 on each rear suspension link.
21. Install an inverted clevis on each platform side rail using the bushing bolted on hole 48. Attach two clevises to the inverted clevis on each rail.
22. Starting at the front of each platform, number the clevises bolted to the right side from 1 through 21 are without spacers.

Figure 5-2. Platform prepared

PREPARING AND POSITIONING HONEYCOMB STACKS

5-3. Use the material in Table 5-1 to prepare 12 honeycomb stacks as shown in Figures 5-3 through 5-9. Position the stacks on the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 5-10.

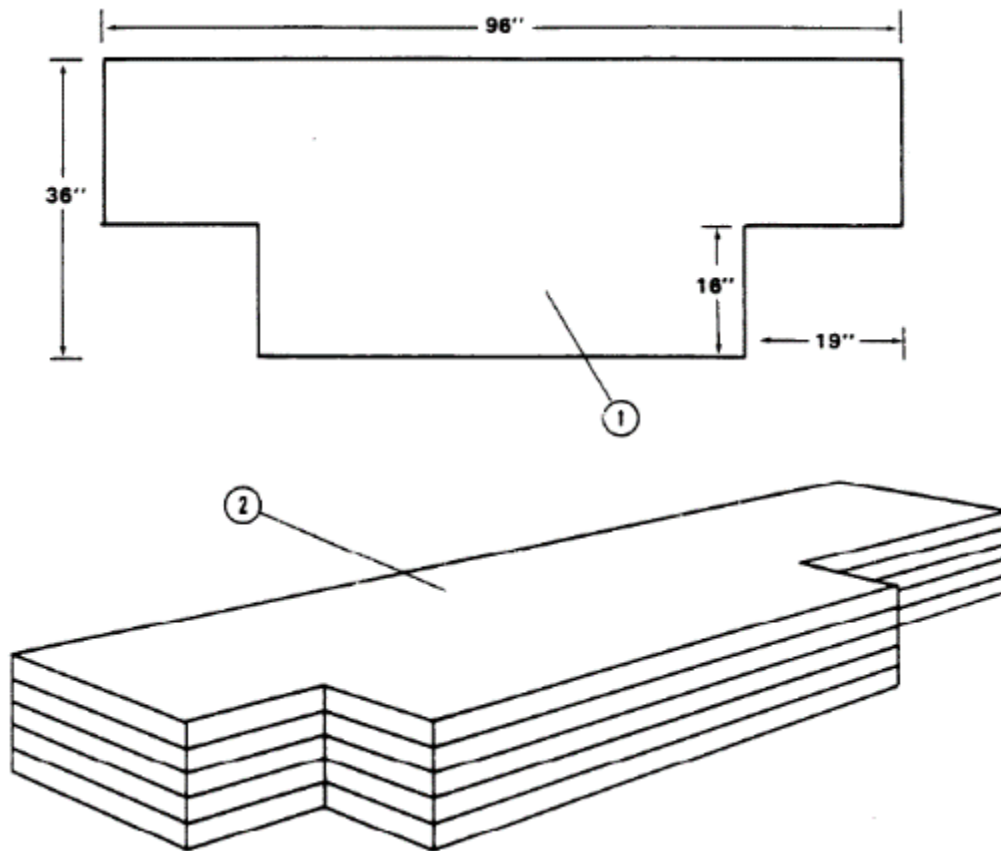
Table 5-1. Material required to build honeycomb stacks

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	5	96	36	Honeycomb	See Figure 5-3
	2	96	36	¾-inch plywood	
	4	4	20	2-by-4 inch lumber	
	5	4	36	2-by-4 inch lumber	
	1	96	12	¾-inch plywood	
	1	58	12	¾-inch plywood	
2	7	16	9	Honeycomb	See Figure 5-4
	1	16	9	¾-inch plywood	
3	7	16	9	Honeycomb	See Figure 5-4
	1	16	9	¾-inch plywood	
4	1	16	36	Honeycomb	See Figure 5-5
5	1	16	36	Honeycomb	See Figure 5-5
6	1	16	36	Honeycomb	See Figure 5-5
7	1	16	36	Honeycomb	See Figure 5-5
8	8	33	67	Honeycomb	See Figure 5-6
	3	33	67	¾-inch plywood	
	3	4	67	2-by-4 inch lumber	
	1	4	56	2-by-4 inch lumber	
	1	4	48	2-by-4 inch lumber	
9	8	33	67	Honeycomb	See Figure 5-7
	3	33	67	¾-inch plywood	
	3	4	67	2-by-4 inch lumber	
	1	4	63	2-by-4 inch lumber	
	1	4	48	2-by-4 inch lumber	
10	6	18	6	Honeycomb	See Figure 5-8
	1	18	6	¾-inch plywood	

Table 5-1. Material required to build honeycomb stacks (continued)

<i>Stack Number</i>	<i>Pieces</i>	<i>Width (Inches)</i>	<i>Length (Inches)</i>	<i>Material</i>	<i>Instructions</i>
11	5	53	9	Honeycomb	See Figure 5-9
	4	13 ½	9	Honeycomb	
	2	13 ½	9	¾-inch plywood	
	1	26	9	¾-inch plywood	
	1	26	9	Honeycomb	
12	5	96	36	Honeycomb	See Figure 5-3
	2	96	36	¾-inch plywood	
	4	4	20	2-by-4 inch lumber	
	5	4	36	2-by-4 inch lumber	
	1	96	12	¾-inch plywood	
	1	58	12	¾-inch plywood	

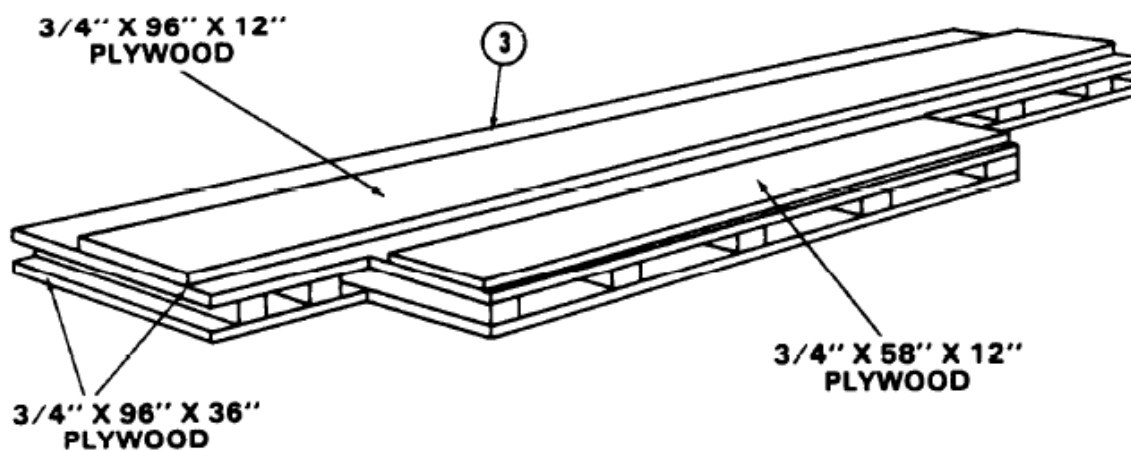
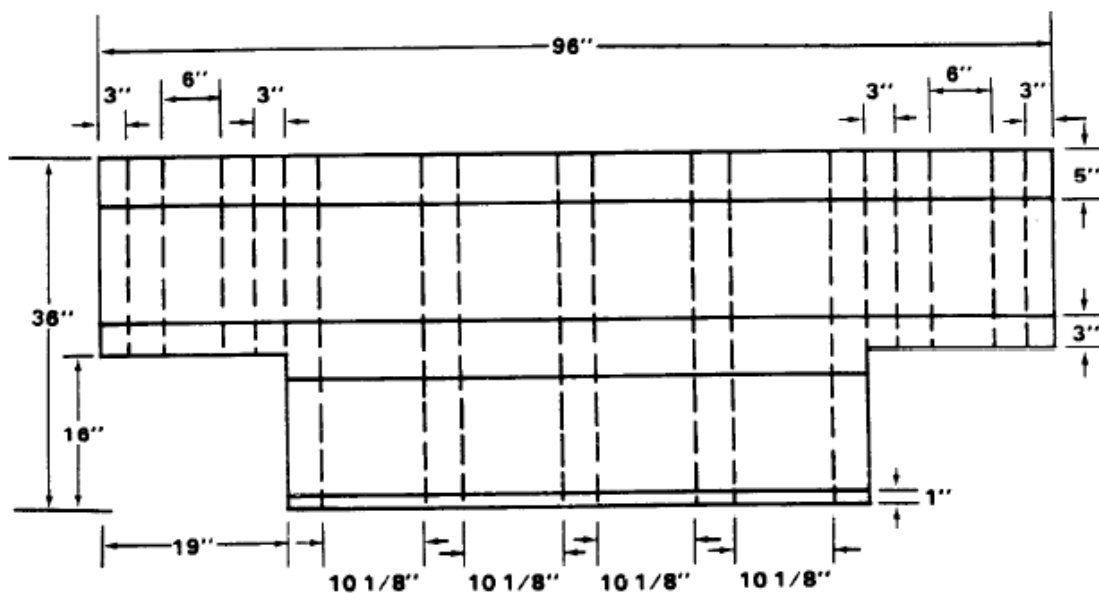
Note. These drawing are not drawn to scale.



- ① Make a 10-by 16-inch cutout in two corners of five 96-by 36-inch pieces of honeycomb as shown.
- ② Glue the honeycomb together as the base.

Figure 5-3. Stacks 1 and 12 prepared

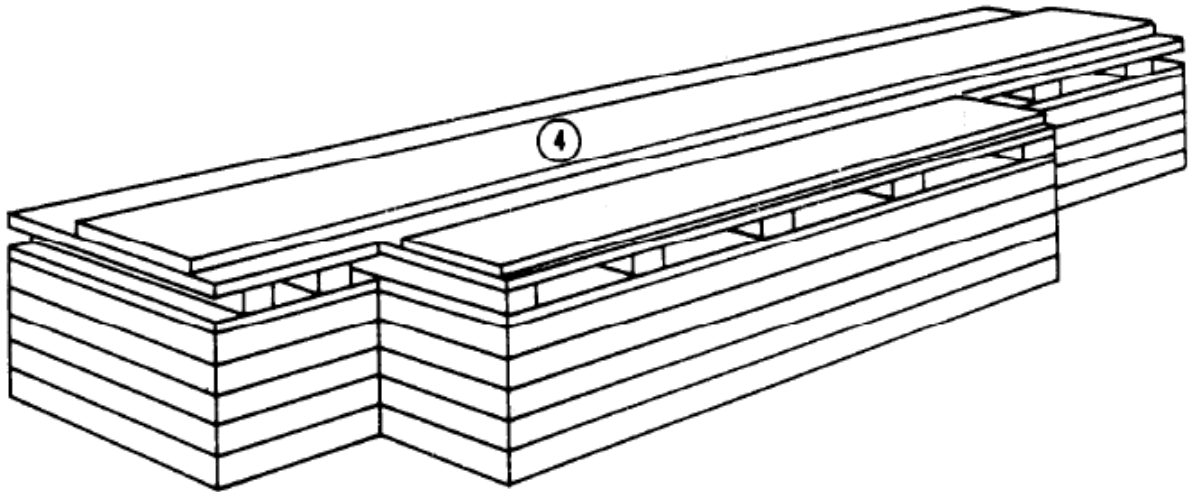
Note. These drawing are not drawn to scale.



- ③ Construct a load spreader as shown above using the material in Table 5-1 and sixpenny nails.

Figure 5-3. Stacks 1 and 12 prepared (continued)

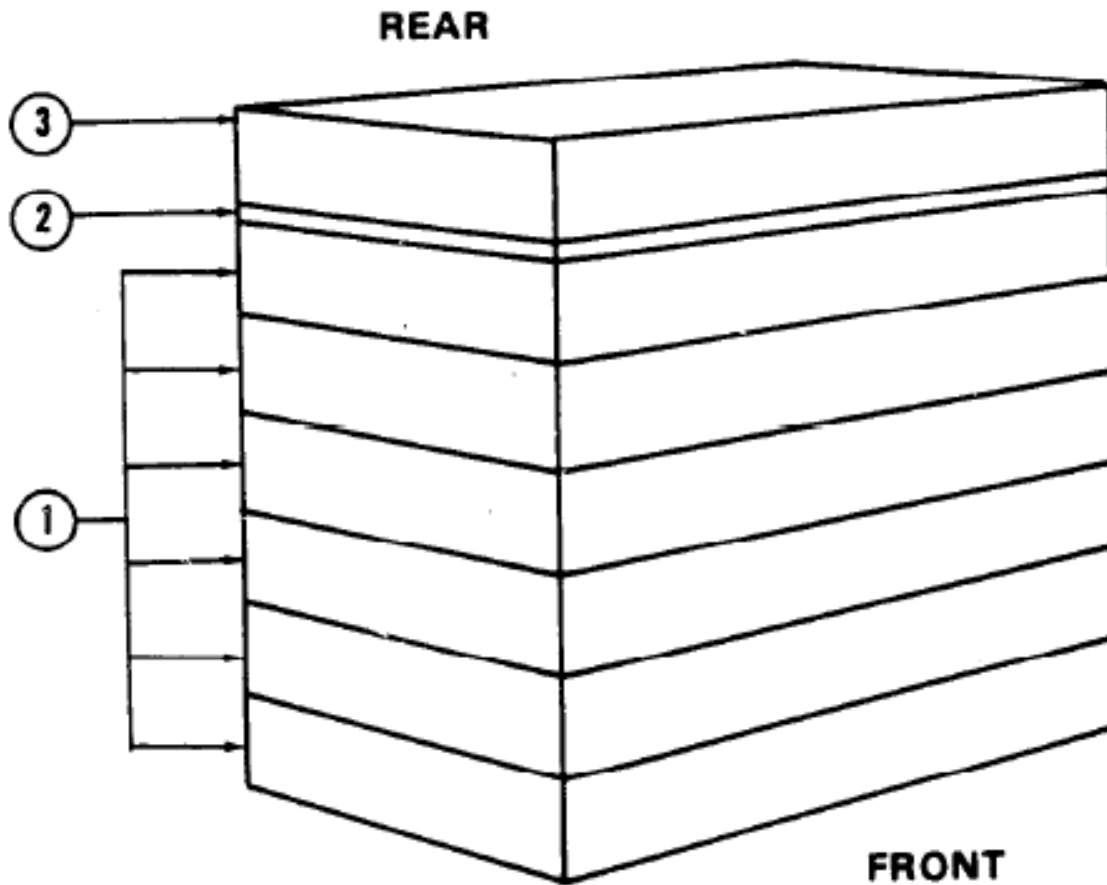
Note. These drawing are not drawn to scale.



④ Glue the load spreader to the top of the honeycomb

Figure 5-3. Stacks 1 and 12 prepared (continued)

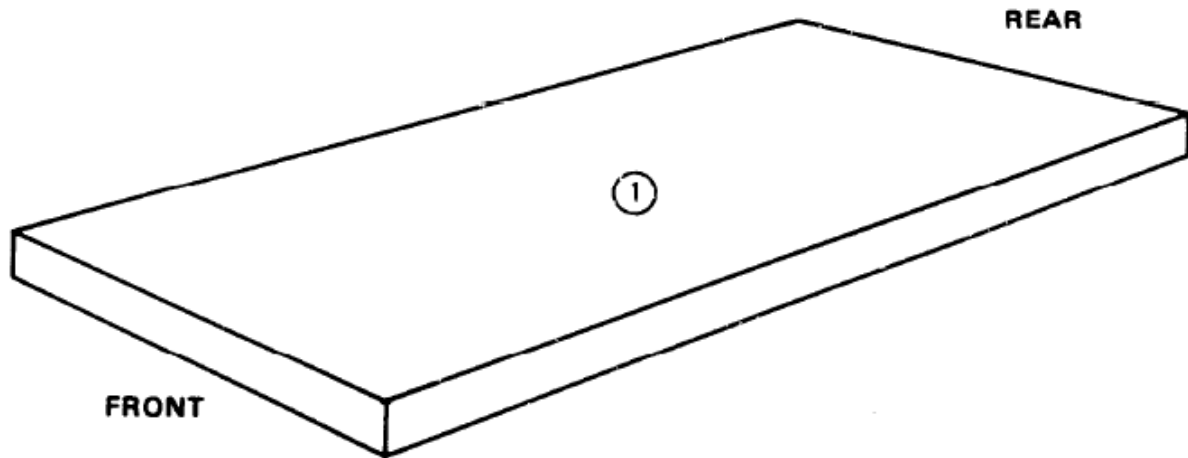
Note. These drawing are not drawn to scale.



- ① Glue six 16-by 9-inch pieces of honeycomb together as the base.
- ② Glue a $\frac{3}{4}$ -by 16-by 9-inch piece of plywood to the top of the honeycomb.
- ③ Glue a 16-by 9-inch piece of honeycomb to the top of the plywood.

Figure 5-4. Stacks 2 and 3 prepared

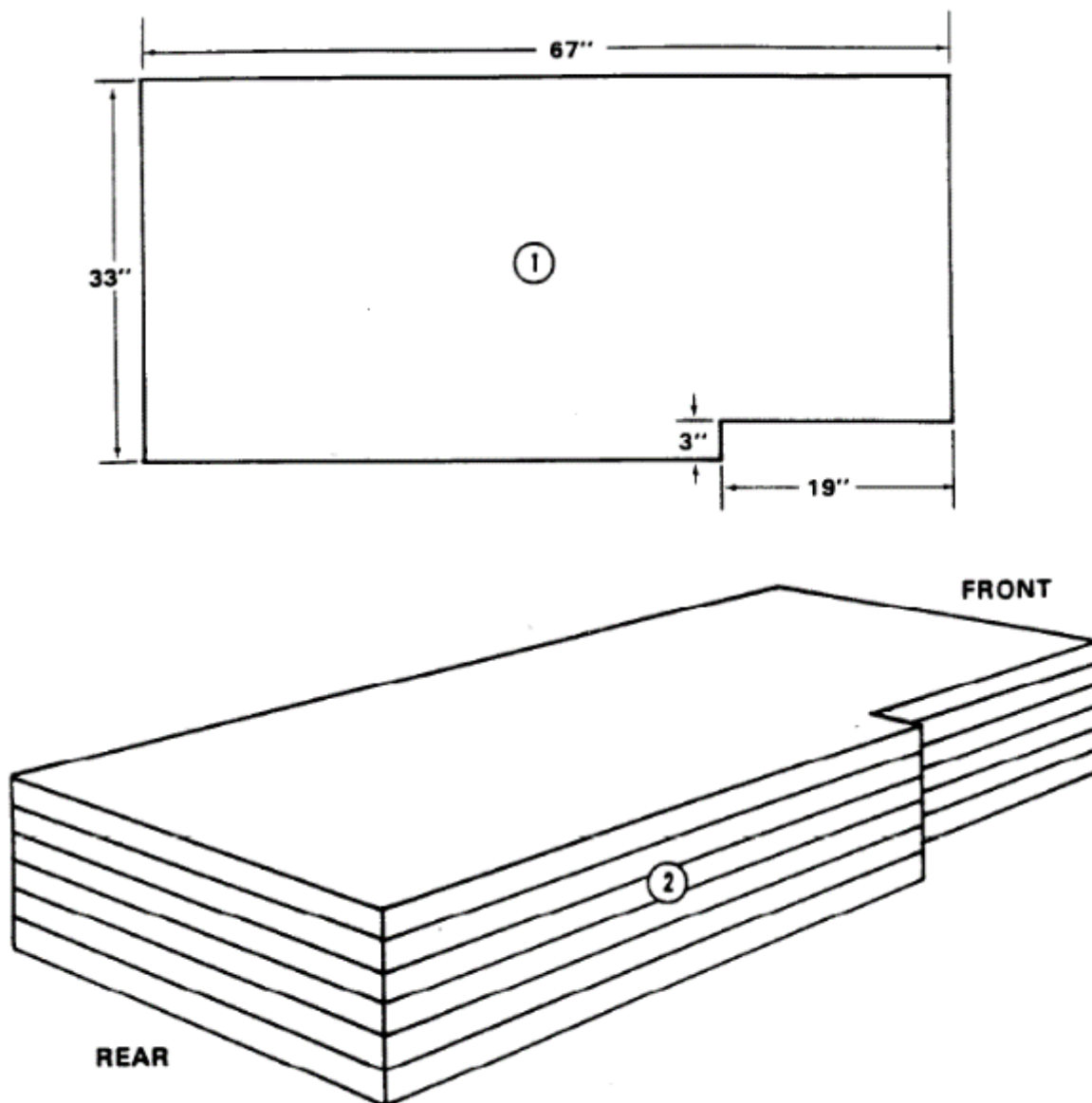
Note. These drawing are not drawn to scale.



① Cut a 16-by 36-inch piece of honeycomb for stacks 4, 5, 6, and 7.

Figure 5-5. Stacks 4, 5, 6, and 7 prepared

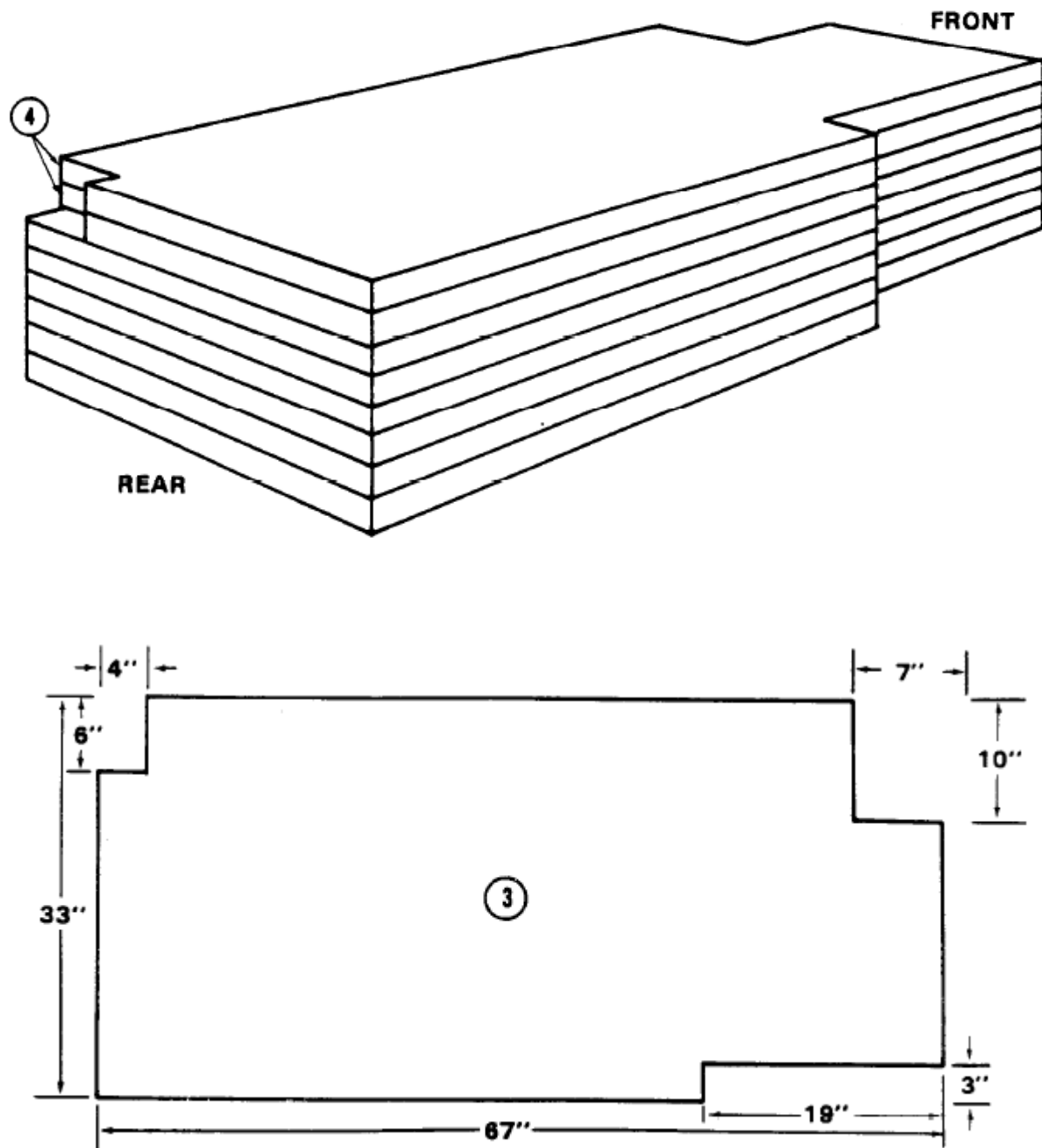
Note. These drawing are not drawn to scale.



- ① Make 3-by-19-inch cutout in the right front corner of six 33-by-67-inch pieces of honeycomb.
- ② Glue the honeycomb together as the base.

Figure 5-6. Stack 8 prepared

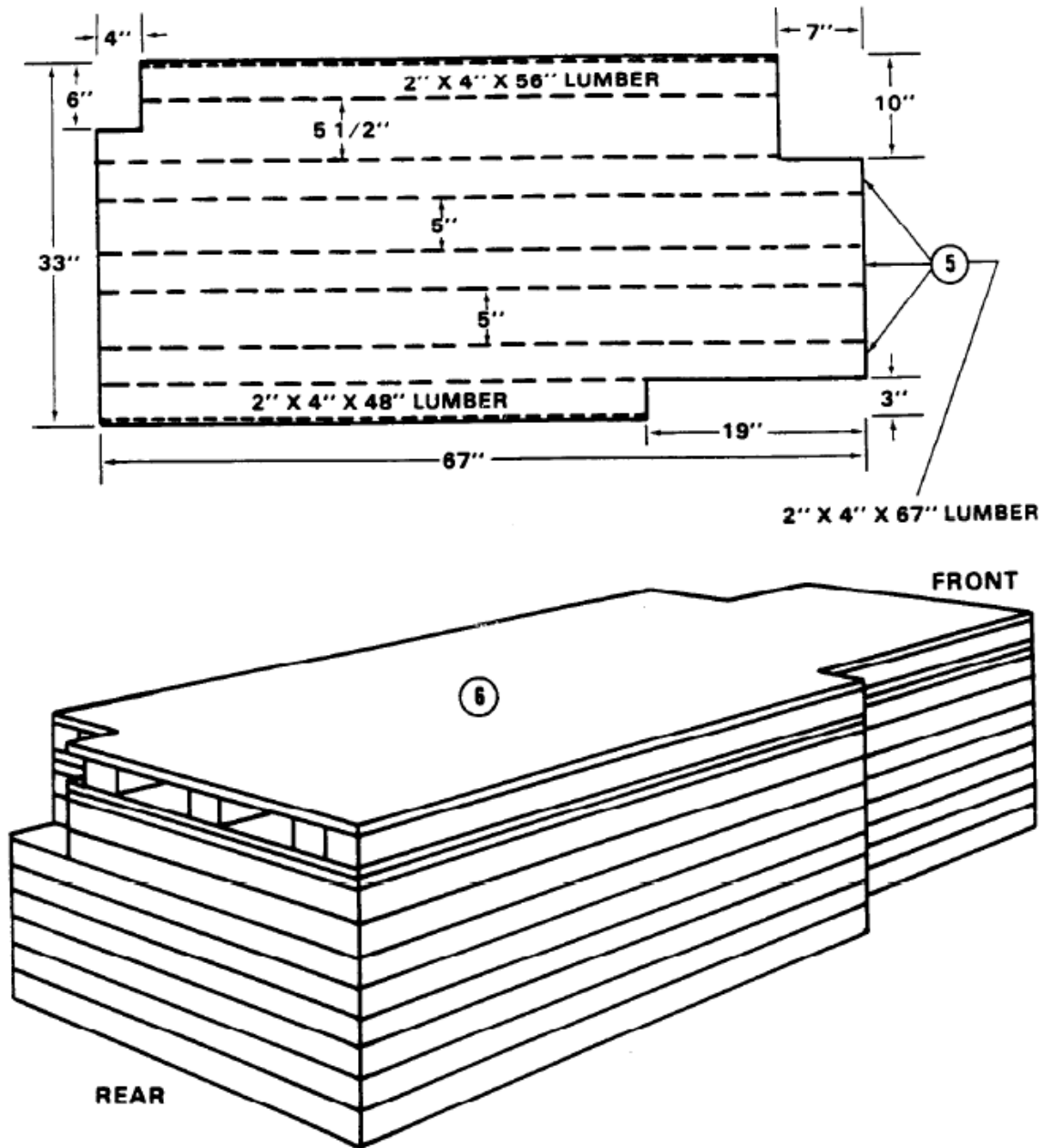
Note. These drawing are not drawn to scale.



- ③ Make the cutouts as shown above in two 33-by 67-inch pieces of honeycomb.
- ④ Glue the piece together, and place them on top of the base.

Figure 5-6. Stack 8 prepared (continued)

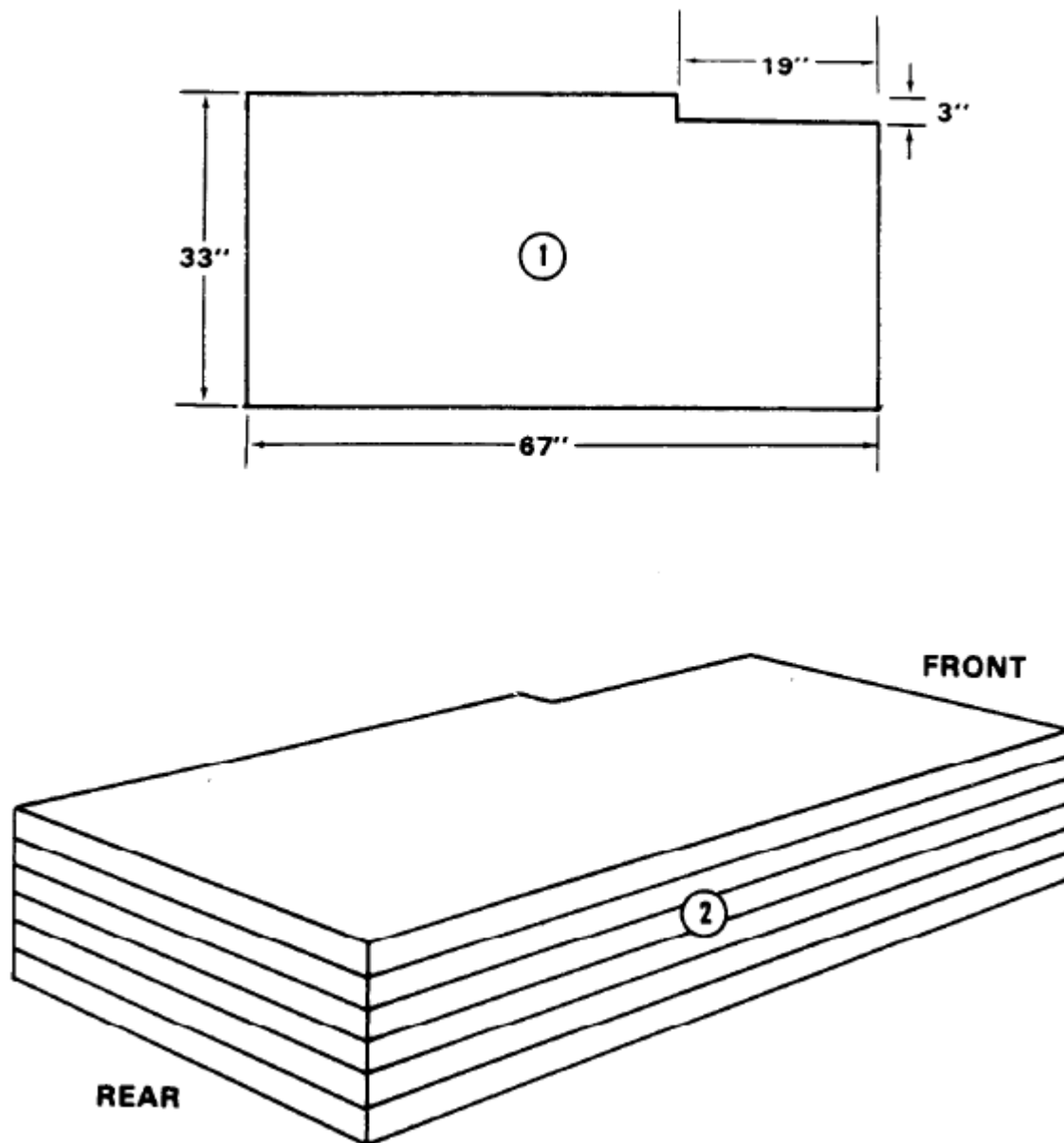
Note. These drawing are not drawn to scale.



- ⑤ Construct a load spreader as shown above the using the material in Table 5-1 and sixpenny nails
- ⑥ Glue the load spreader to the top of the honey.

Figure 5-6. Stack 8 prepared (continued)

Note. These drawing are not drawn to scale.



- ① Make a 3-by 19-inch cutout in the left front corner of six 33-by 6-inch pieces of honeycomb
- ② Glue the honeycomb together as a base.

Figure 5-7. Stack 9 prepared

Note. These drawing are not drawn to scale.

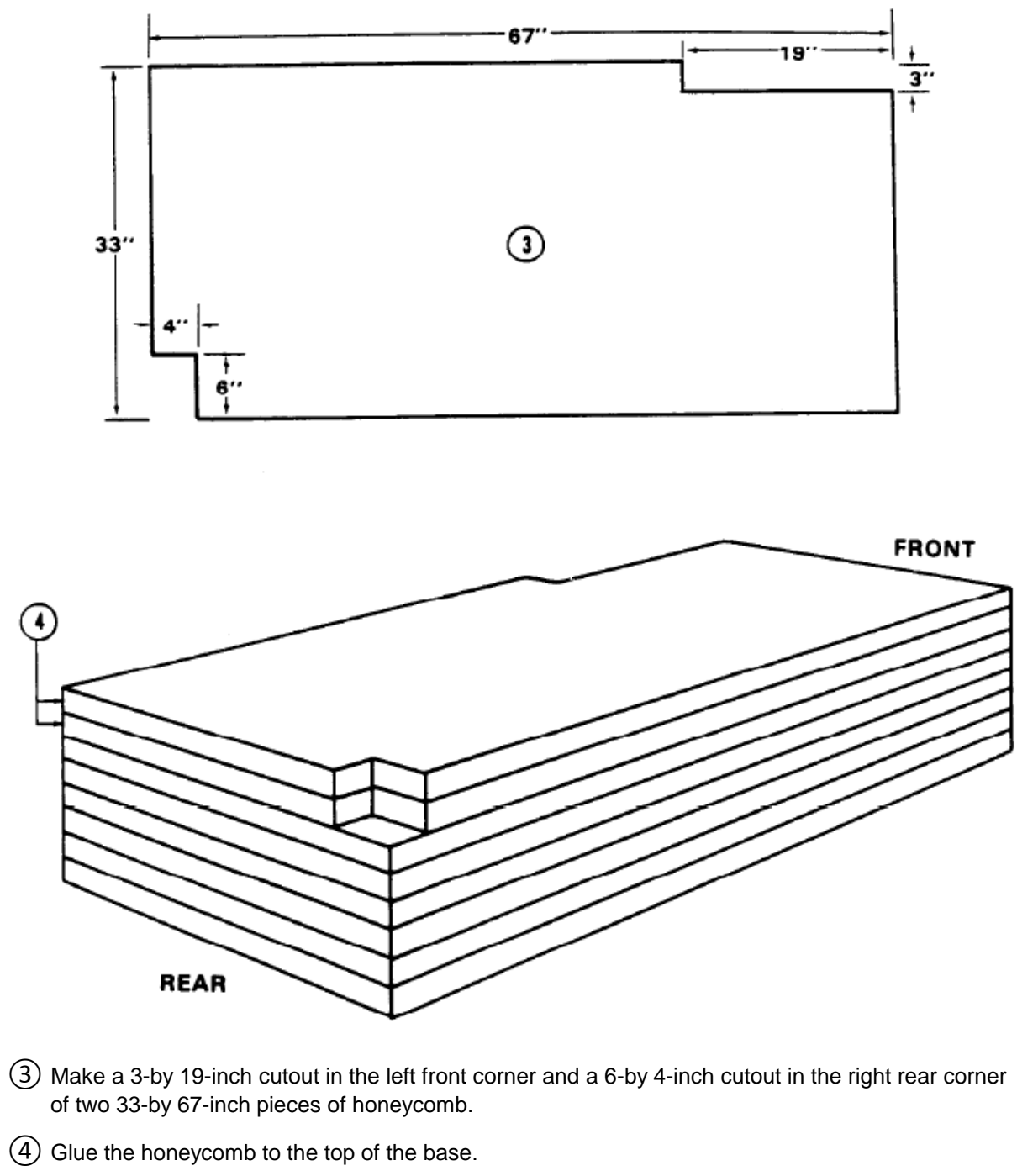
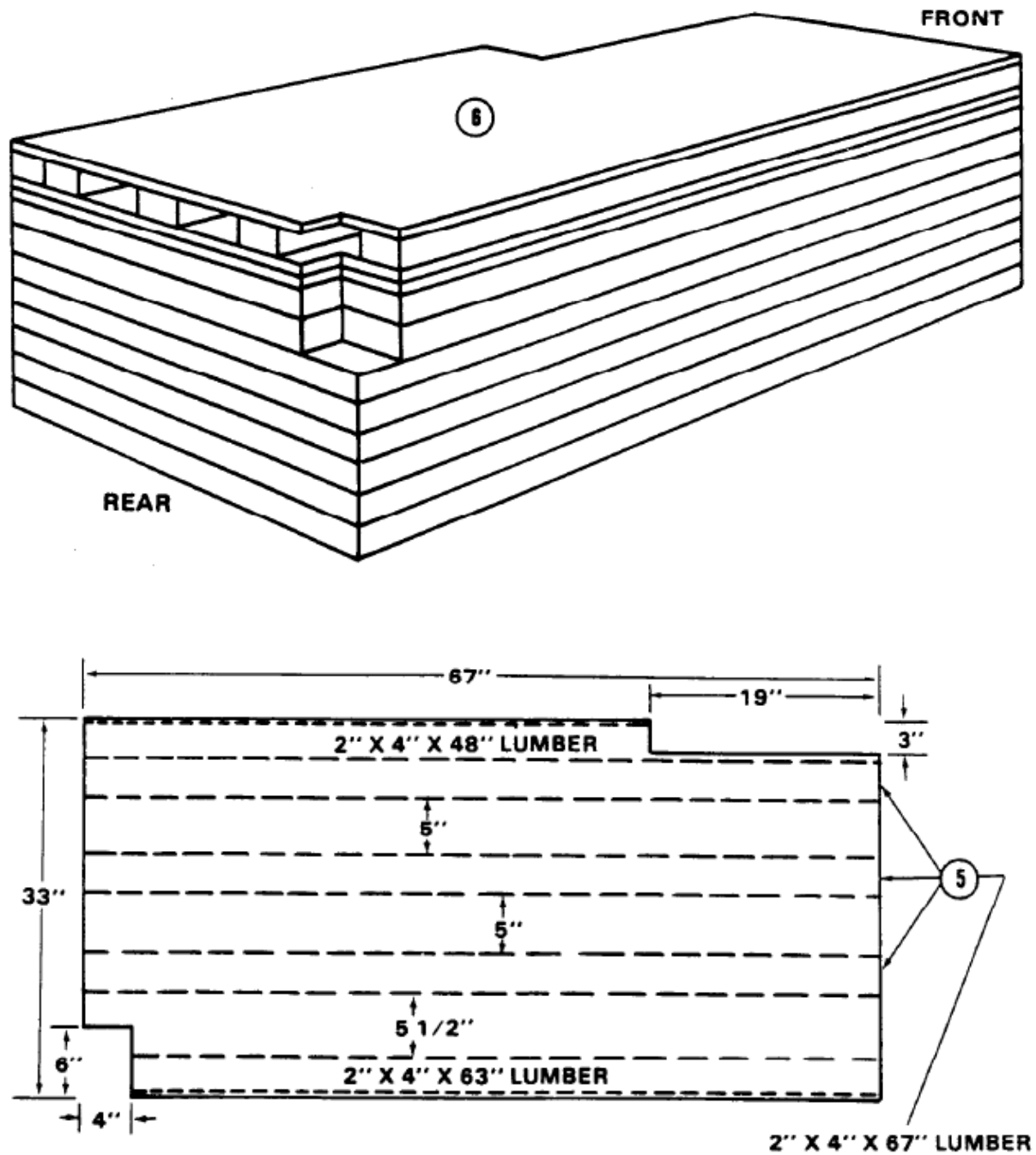


Figure 5-7. Stack 9 prepared (continued)

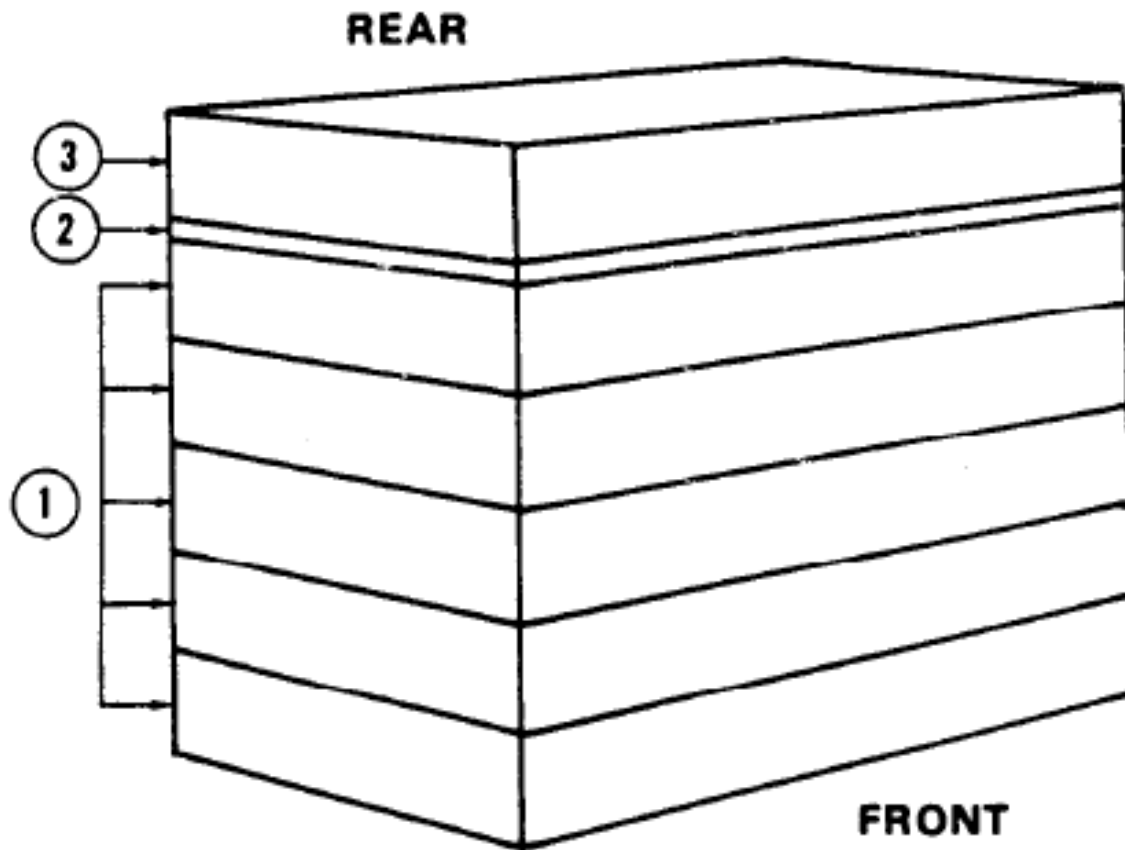
Note. These drawing are not drawn to scale.



- ⑤ Construct a load spreader as shown above using the material in Table 5-1 and sixpenny nails.
- ⑥ Glue the load spreader to the top of the honeycomb.

Figure 5-7. Stack 9 prepared (continued)

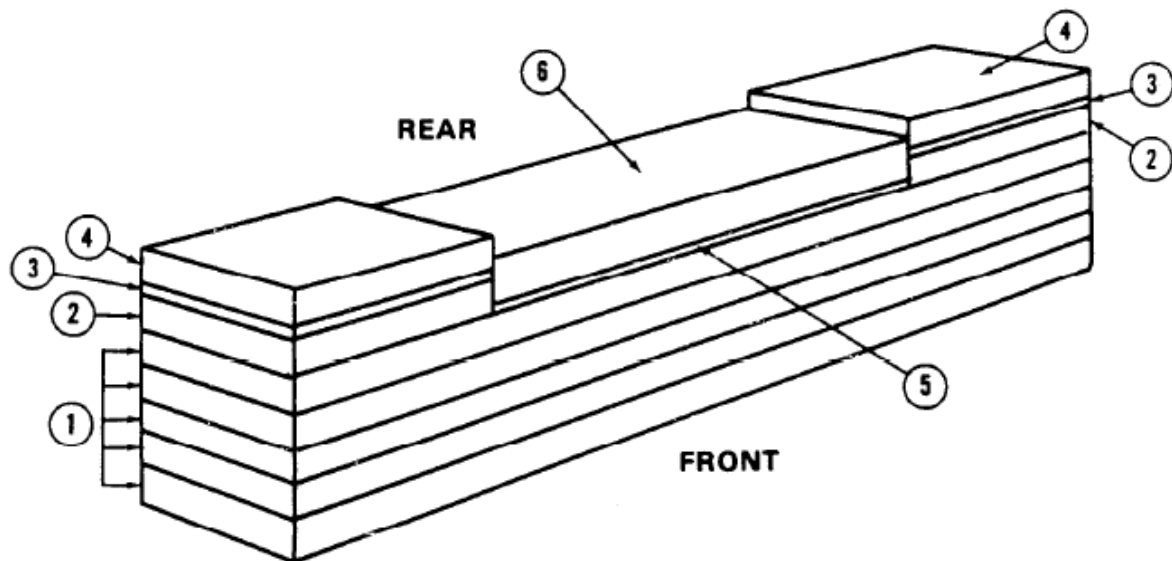
Note. These drawing are not drawn to scale.



- ① Glue five 18-by 6-inch pieces of honeycomb together as the base.
- ② Glue a $\frac{3}{4}$ -by 18-by 6-inch piece of plywood to the top of the base.
- ③ Glue an 18-by 6-inch piece of honeycomb to the top of the plywood.

Figure 5-8. Stack 10 prepared

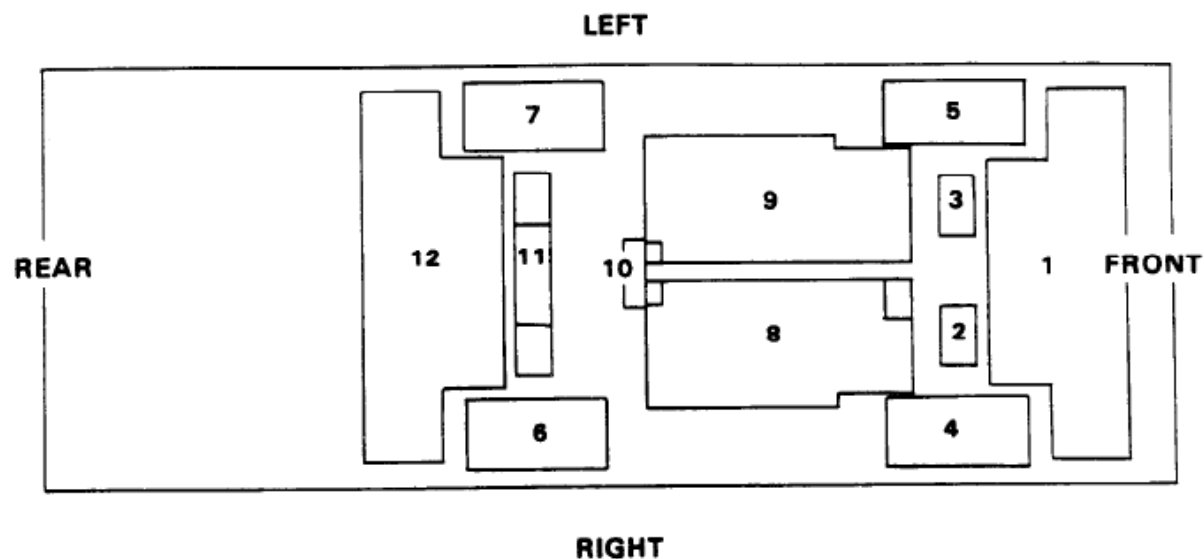
Note. These drawing are not drawn to scale.



- ① Glue five 53-by 9-inch pieces of honeycomb together as the base.
- ② Glue one 13 ½ by 9-inch piece of honeycomb on each side of the base.
- ③ Glue one ¾-by 13 ½-by 9-inch piece of plywood on top of each 13 ½-by 9-inch piece of honeycomb.
- ④ Glue one 13 ½-by 9-inch piece of honeycomb on top of each ¾-by 13 ½-by 9-inch piece of plywood.
- ⑤ Glue and center a ¾-by 26-by 9-inch piece of plywood on top of the base.
- ⑥ Glue a 26-by 9-inch piece of honeycomb on top of the ¾-by 26-by 9-inch plywood.

Figure 5-9. Stack 11 prepared

Note. These drawing are not drawn to scale.



<i>Stack Number</i>	<i>Position of Stack on Platform</i>
	Place stack:
1	Centered 12 inches from the front edge of the platform.
2	3 ¼ inches from the rear edge of stack 1 and 28 inches from the right rail.
3	3 ¼ inches from the rear edge of stack 1 and 28 inches from the left rail.
4	38 inches from the front edge of the platform and 4 inches from the right rail.
5	38 inches from the front edge of the platform and 4 inches from the left rail.
6	145 inches from the front edge of the platform and 4 inches from the right rail.
7	145 inches from the front edge of the platform and 4 inches from the left rail.
8	7 ¼ inches from the rear edge of stack 2 and 17 inches from the right rail.
9	7 ¼ inches from the rear edge of stack 3 and 17 inches from the left rail.
10	Centered flush against stacks 8 and 9.
11	Centered 18 ½ inches from the rear edge of stack 10.
12	Centered 3 inches from the rear edge of stack 11 and 81 inches from the rear edge of the platform.

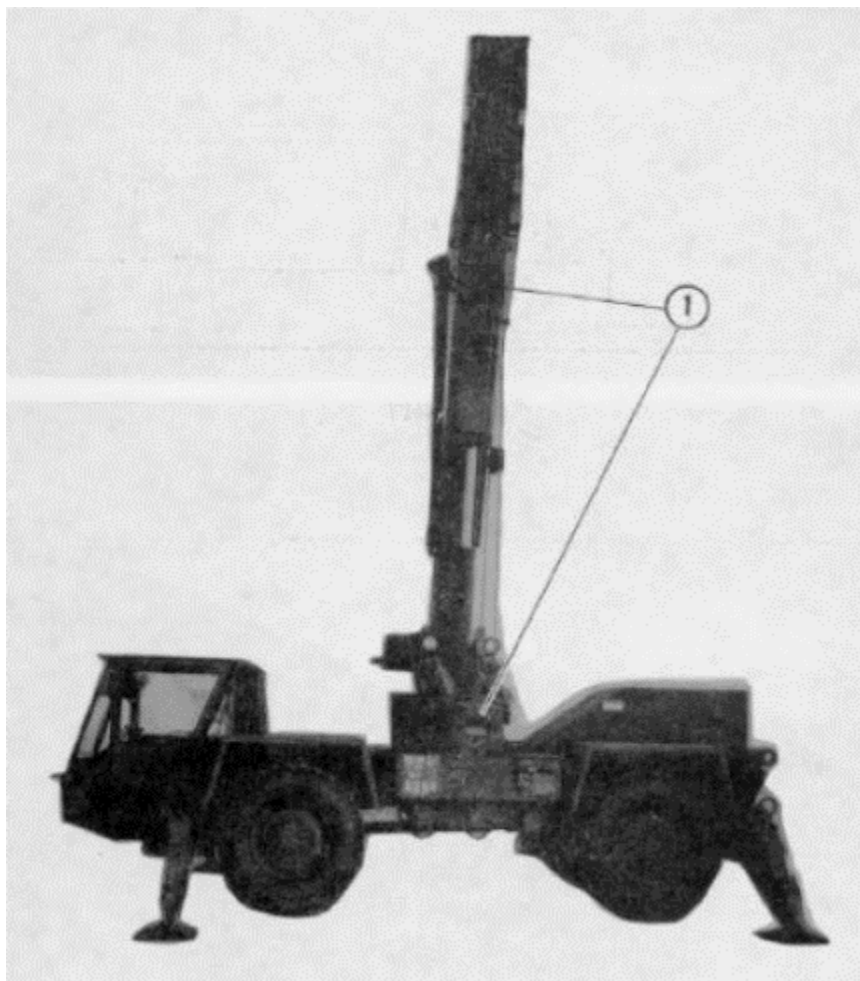
Figure 5-10. Honeycomb stacks positioned on platform

PREPARING CRANE

- 5-4. Prepare the crane as described below and as shown in Figures 5-11 through 5-23.
- Make sure the fuel tank is not more than ½ full
 - Tape all lights and reflectors.

CAUTION

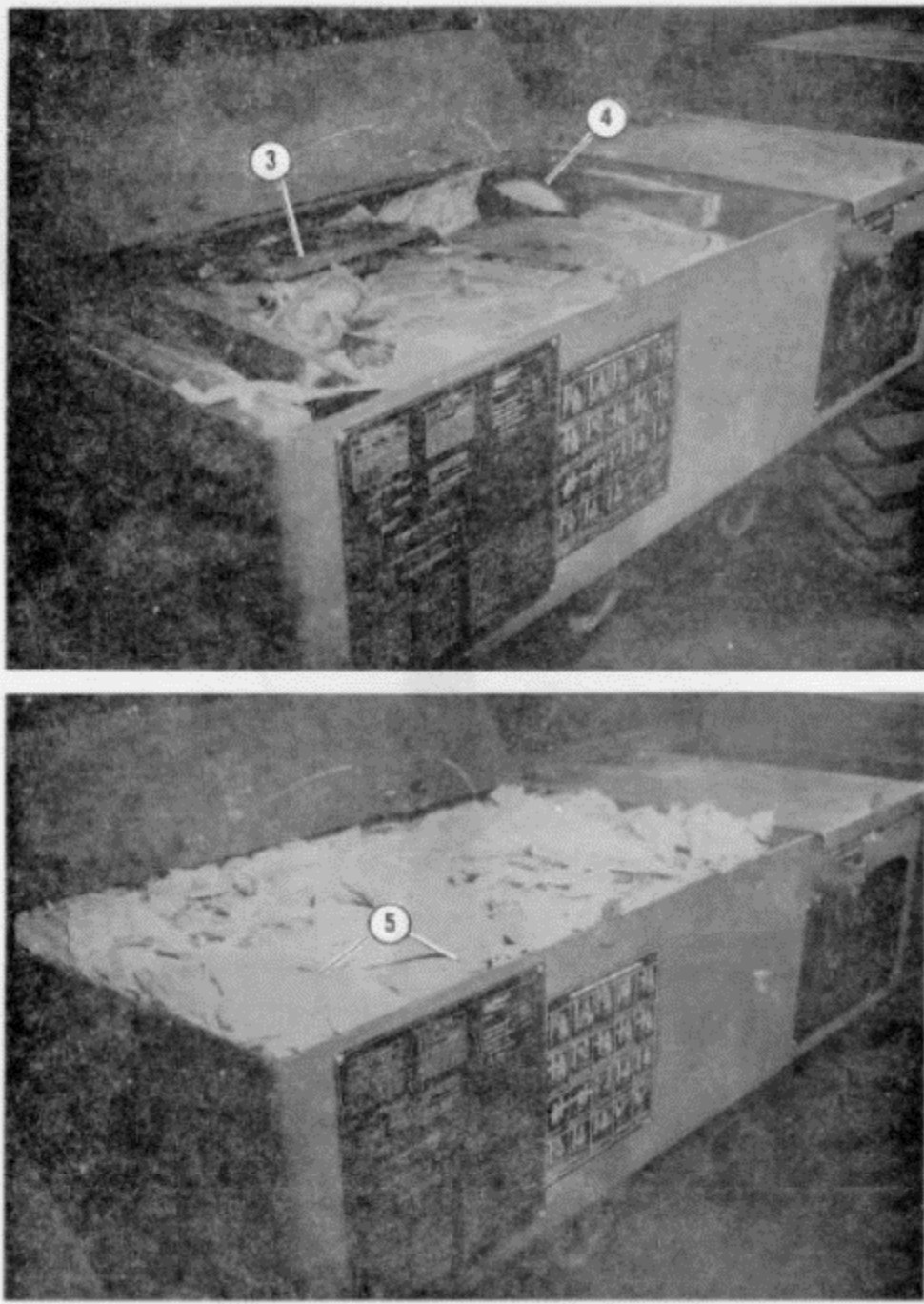
The outriggers must be down when the boom is being raised and lowered.



- ① Raise the boom and lower the hook block into the OVM box.

Note. The operator must remove the hook block from the boom and store it in the OVM box. The operator will place a 4-by4-by 16-inch block under the cable and in front of the cable guide bar to prevent damage to the guide bar and rewind the cable.

Figure 5-11. OVM box prepared



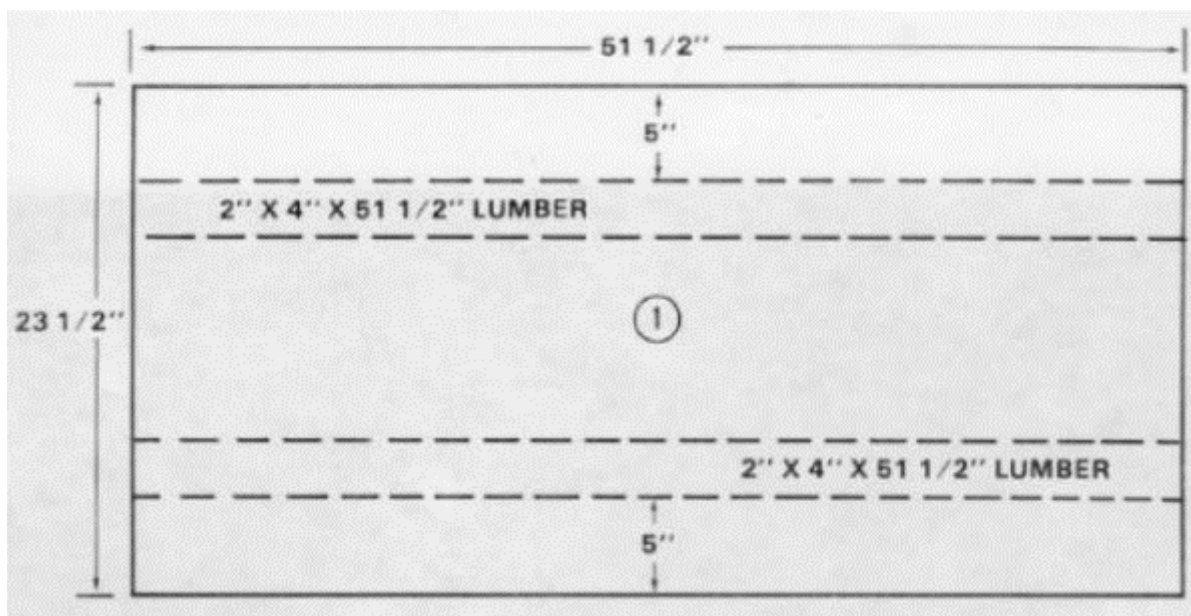
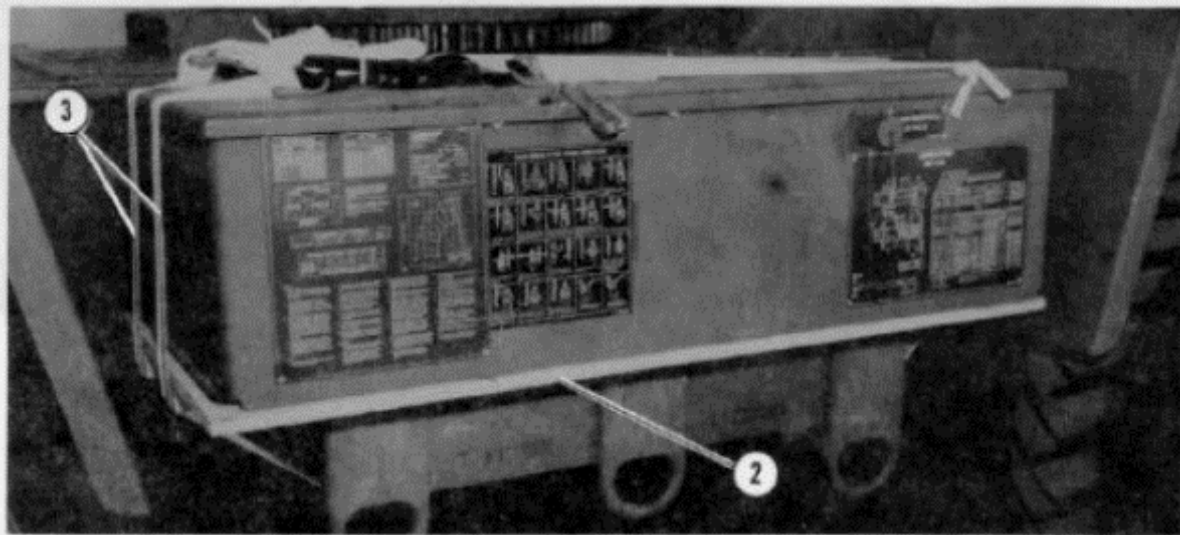
- ③ Remove the weight counter balance, and place it in the OVM box.
- ④ Remove the work light, and place it in the OVM box.
- ⑤ Pad the OVM box with cellulose wadding.

Figure 5-11. OVM box prepared (continued)



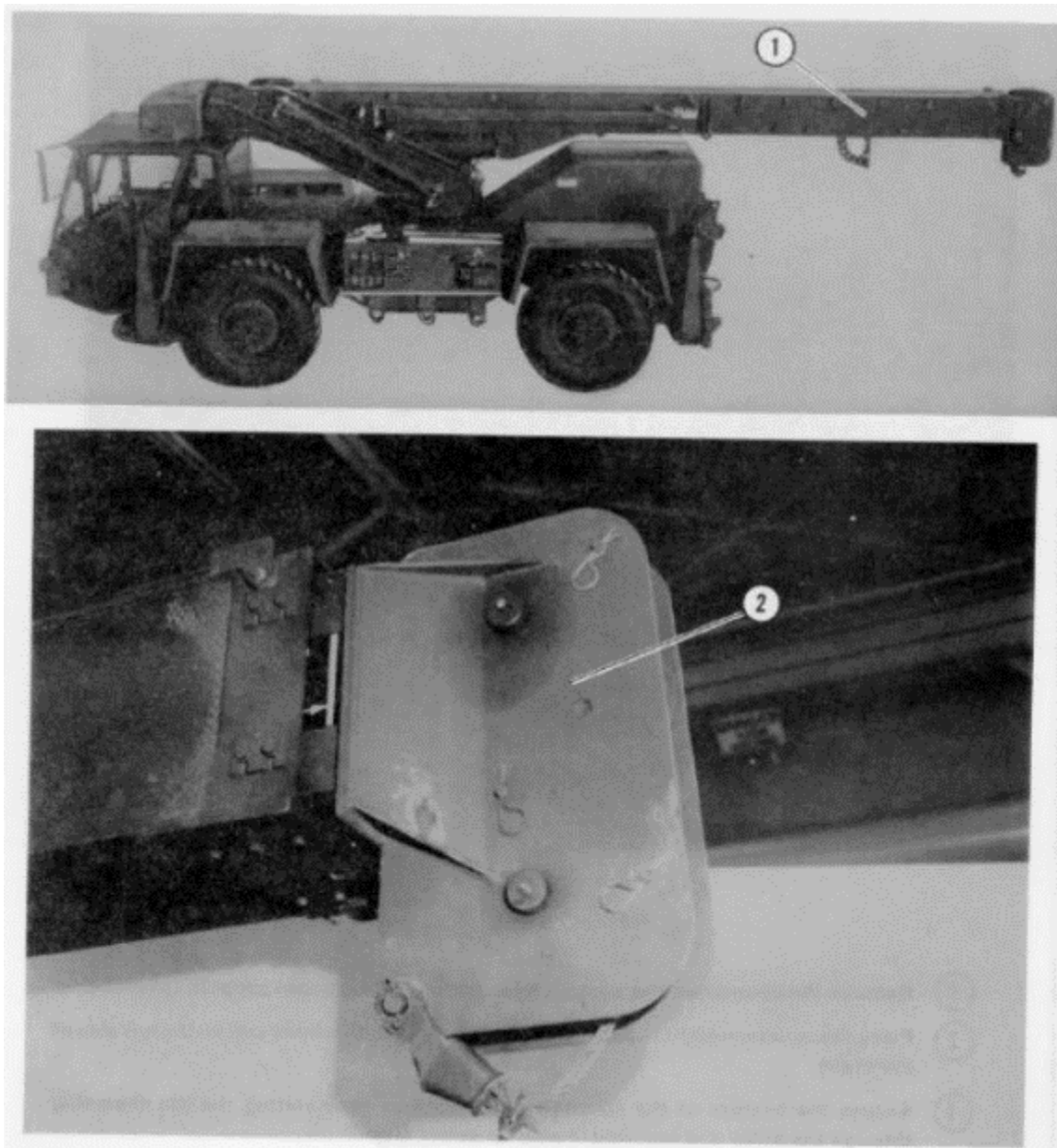
- ① Close the OVM box, and lock or safety it with ½-inch tubular nylon webbing.
- ② Safety the battery box with ½-inch tubular nylon webbing.

Figure 5-12. OVM and battery box secured



- ① Construct a support tray for the storage box on the left side of the crane as shown above using $\frac{3}{4}$ -inch plywood and sixpenny nails.
- ② Place the support tray under the storage box.
- ③ Secure the support tray to the storage box using two 15-foot lashings. Secure the ends of the lashing with a D-ring and a load binder.

Figure 5-13. Storage box support tray constructed and secured

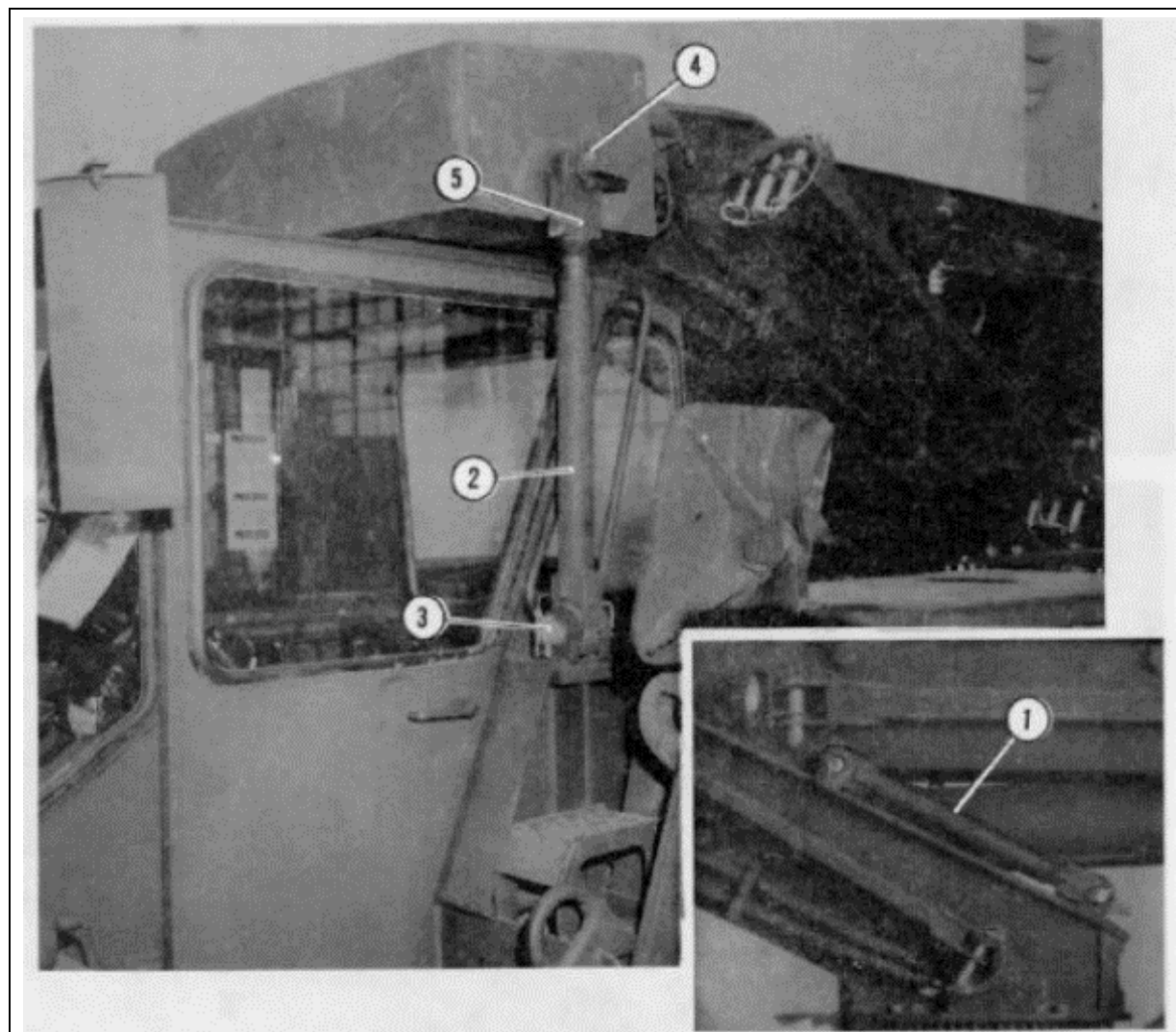


① Rotate the boom so that it overhangs the rear of the crane and is centered.

② Retract the boom, and fully lower it.

Note. Once the weight block is removed when lowering or rotating the boom, the override switch must be used. When the boom is fully lowered, there will be no polished material visible on the actuator cylinder.

Figure 5-14. Boom positioned



- ① Remove the counterweight support from the top of the boom support structure.
- ② Place the counterweight support in the fittings next to the driver cab on the left side of the crane.
- ③ Secure the bottom of the counterweight support by inserting the pin assembly through the holes and securing it with its safety clip
- ④ Remove the nut from the side of the counterweight.
- ⑤ Adjust the top support by turning the free end until the nut can be placed through the support free end and back into the counterweight. Place the nut through the support and into the counterweight. Tighten the nut.
- ⑥ Repeat the procedures in steps 1 through 5 for the right side of the cab.

Figure 5-15. Counterweight supports installed

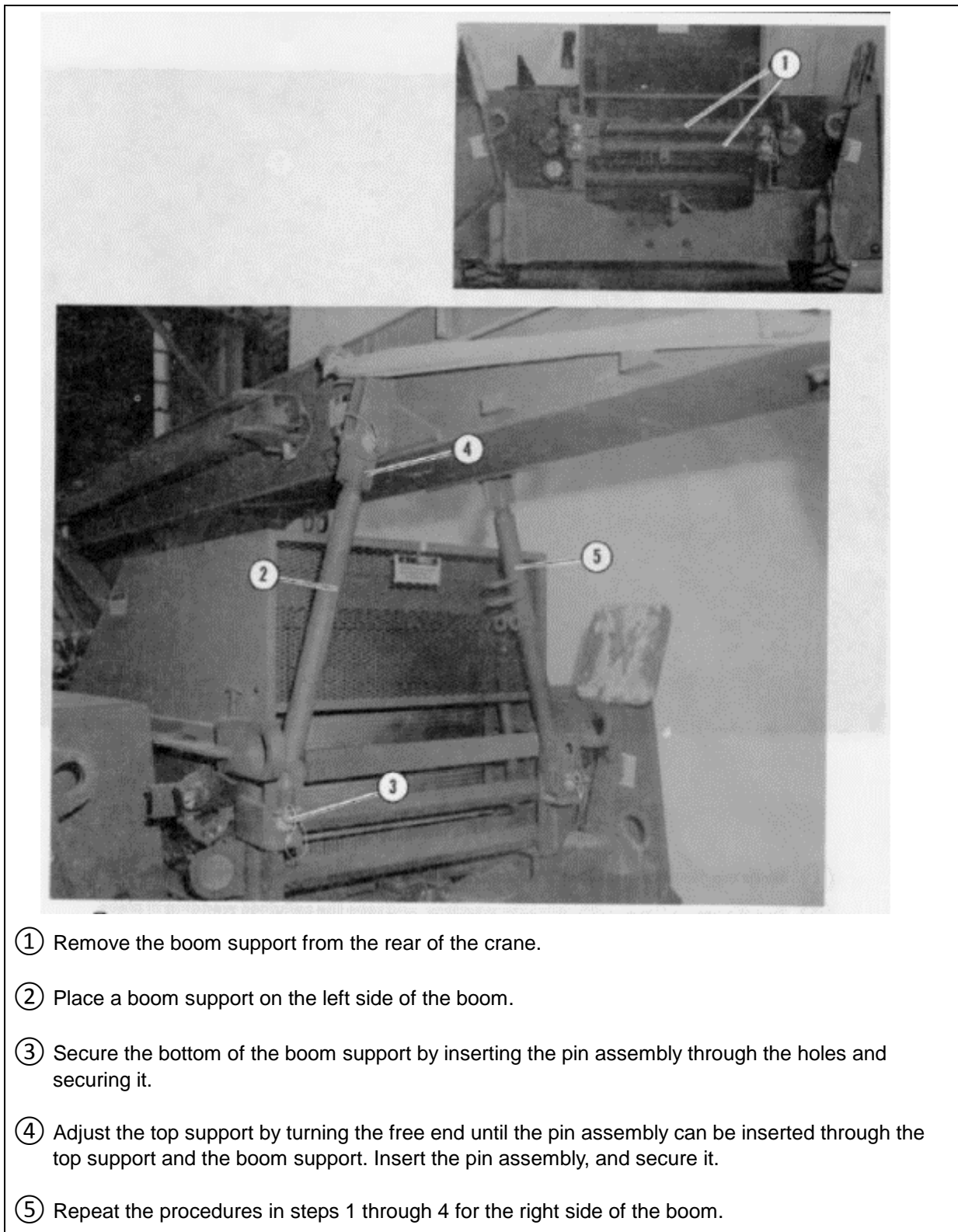
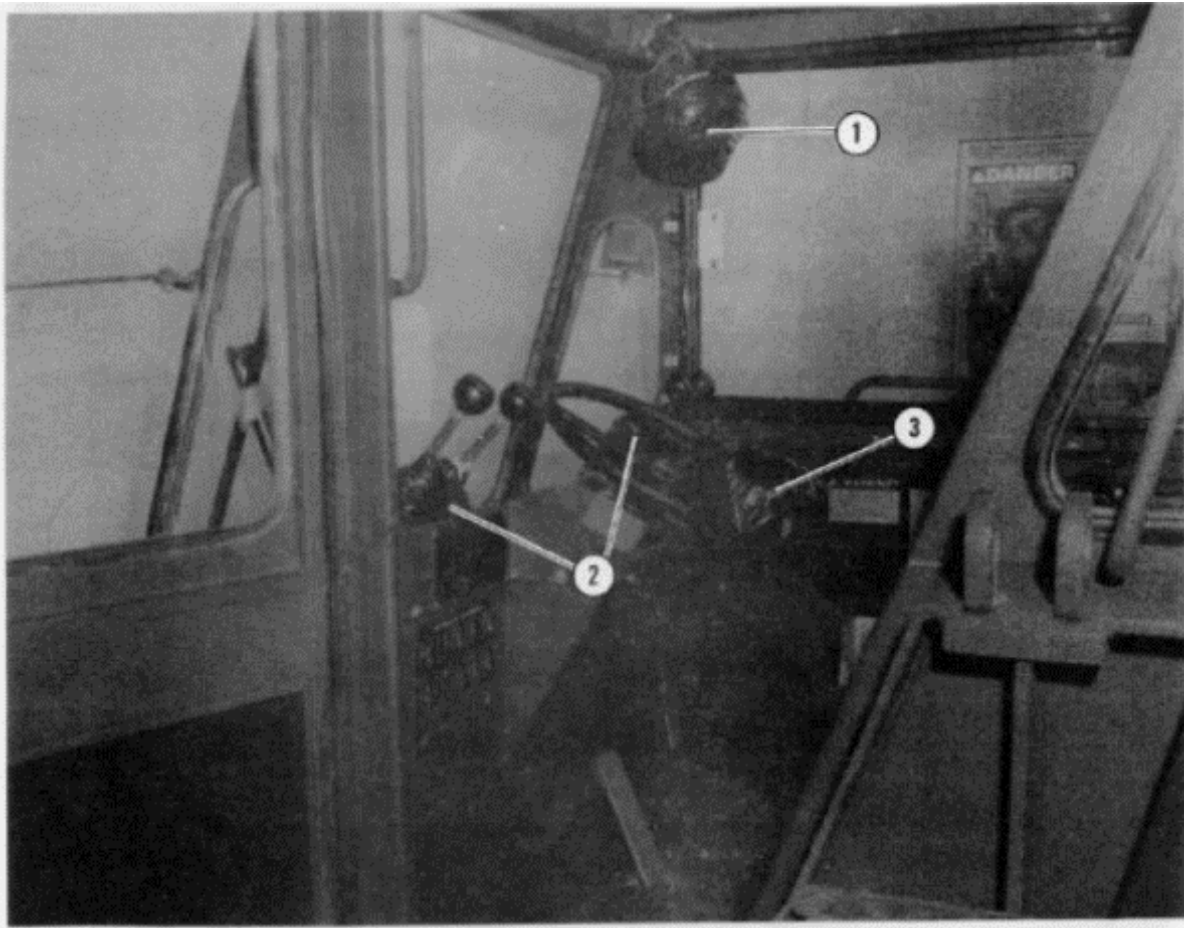


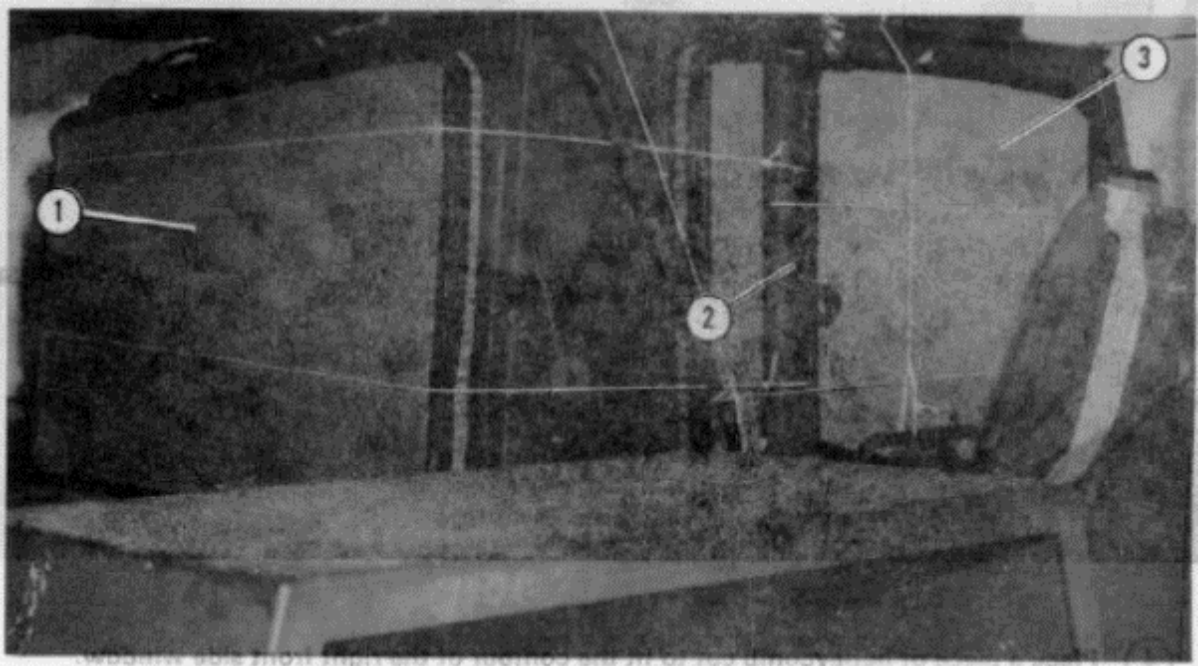
Figure 5-16. Boom supports installed



- ① Wrap the fan with cellulose wadding, and tape the cellulose wadding place.
- ② Pad the control lever with cellulose wadding, and tape the cellulose wadding in place.
- ③ Place the air breather cover on the steering wheel. Pad it with cellulose wadding, and tape it to the steering wheel.

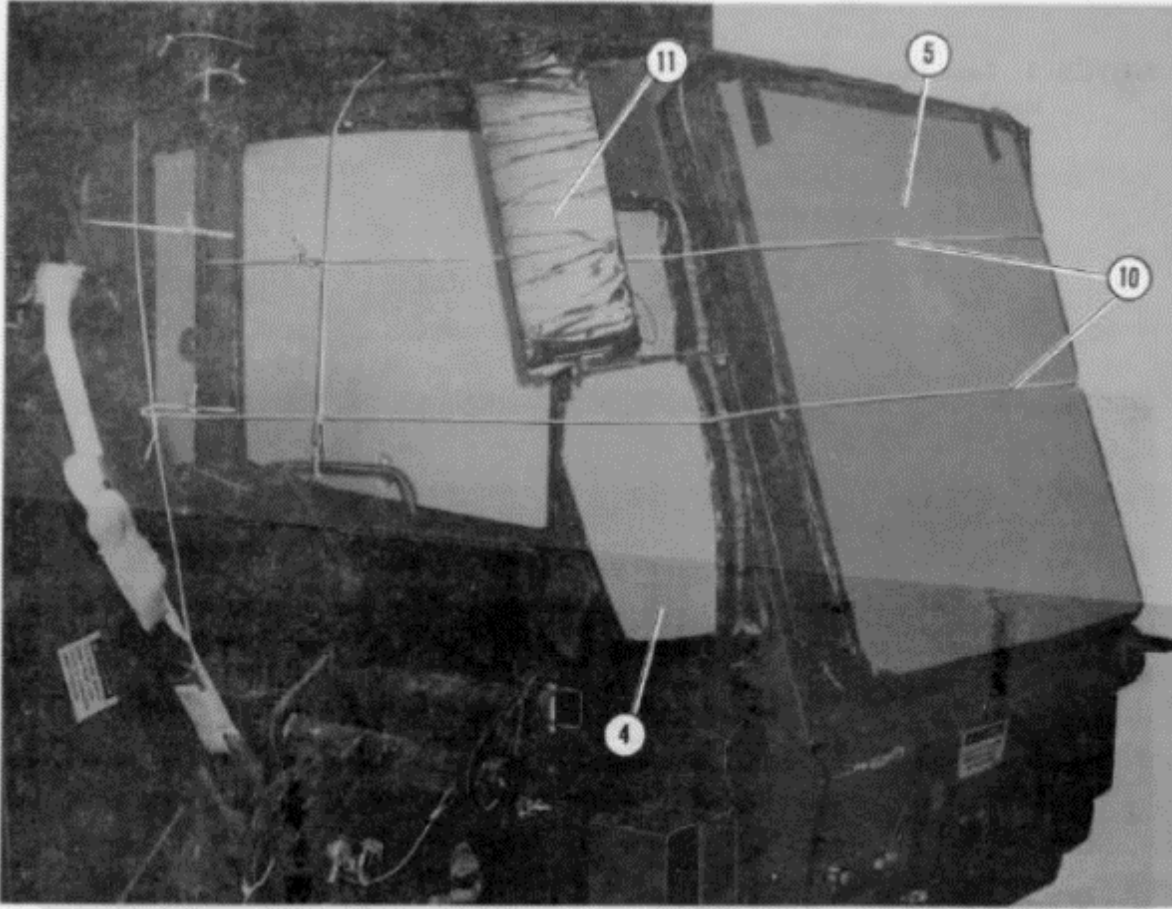
Figure 5-17. Inside of cab prepared

- Note.**
1. Tape the edges of each piece of honeycomb used in preparing the cab.
 2. When placing honeycomb on the cab, temporarily tape the honeycomb to the cab until it is secured with type III nylon cord.



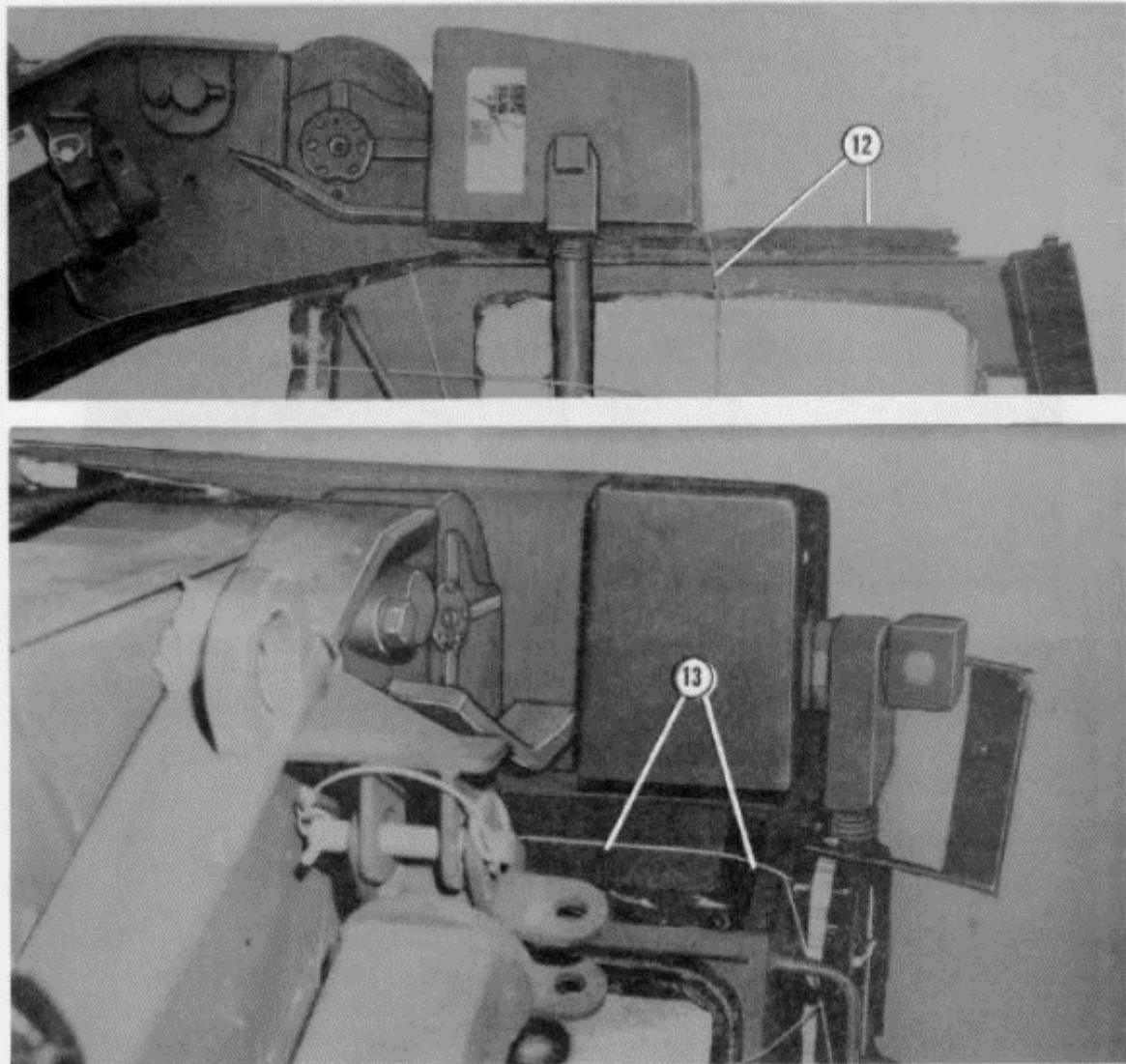
- ① Place a 23-by 41-inch piece of honeycomb on the rear window.
- ② Place a 6-by 26-inch piece of honeycomb on the right rear side window.
- ③ Place a 25-by 26-inch piece of honeycomb on the right side window.

Figure 5-18. Cab prepared



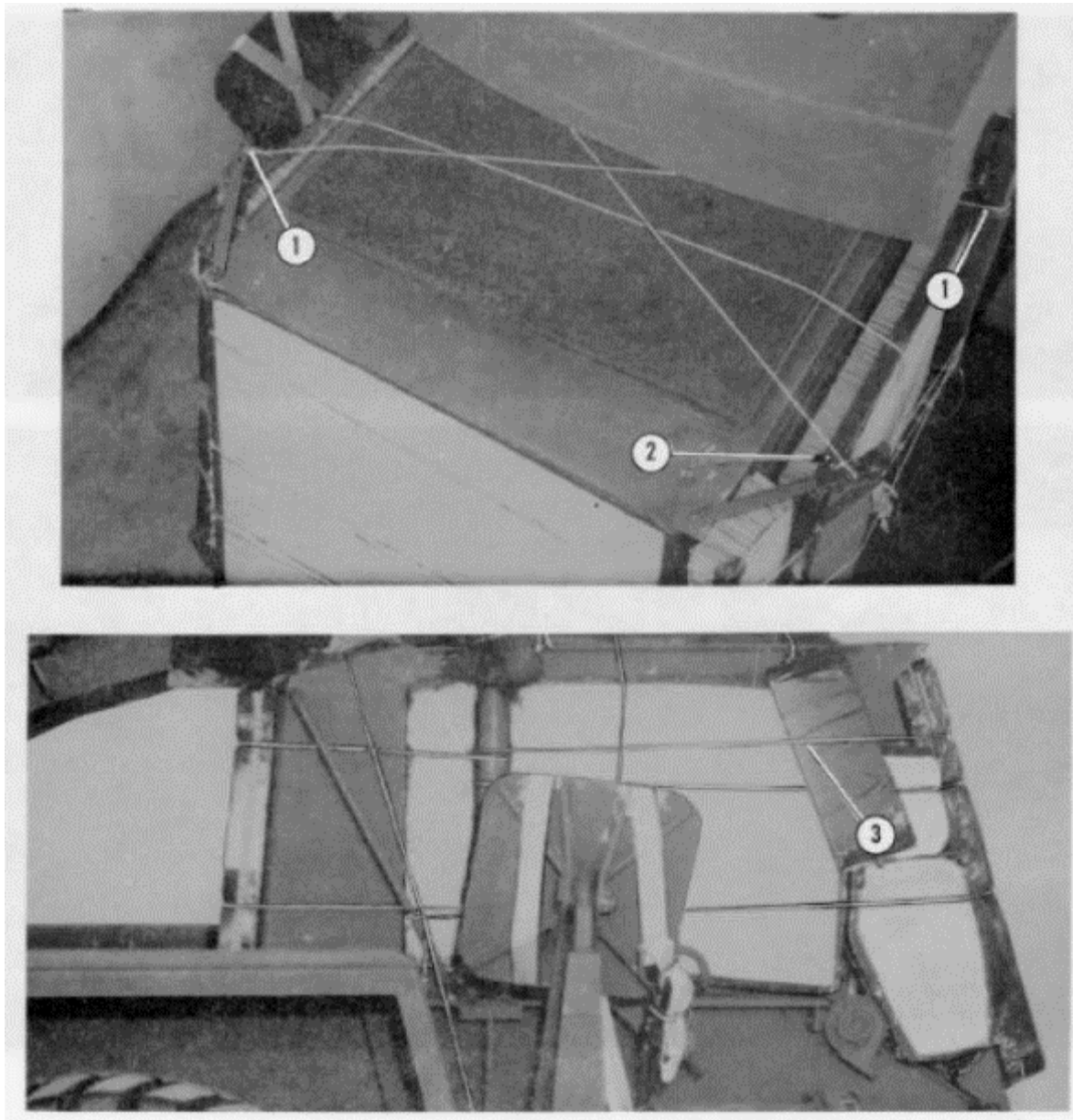
- ④ Place a piece of honeycomb cut to fit the contour of the right front side window.
- ⑤ Place a 36-by 41-inch piece of honeycomb on the front of the windshield
- ⑥ Place a piece of honeycomb cut to fit the contour of the left rear side window (not shown).
- ⑦ Place a 27-by 45-inch piece of honeycomb on the left side window (not shown).
- ⑧ Repeat the procedure in step 3 for the left side window (not shown).
- ⑨ Place a piece of honeycomb cut to fit the contour of the front and rear side windows (not shown).
- ⑩ Secure the honeycomb in place with type III nylon cord.
- ⑪ Wrap the right and left side mirrors with cellulose wadding, and tape the cellulose wadding place.

Figure 5-18. Cab prepared (continued)



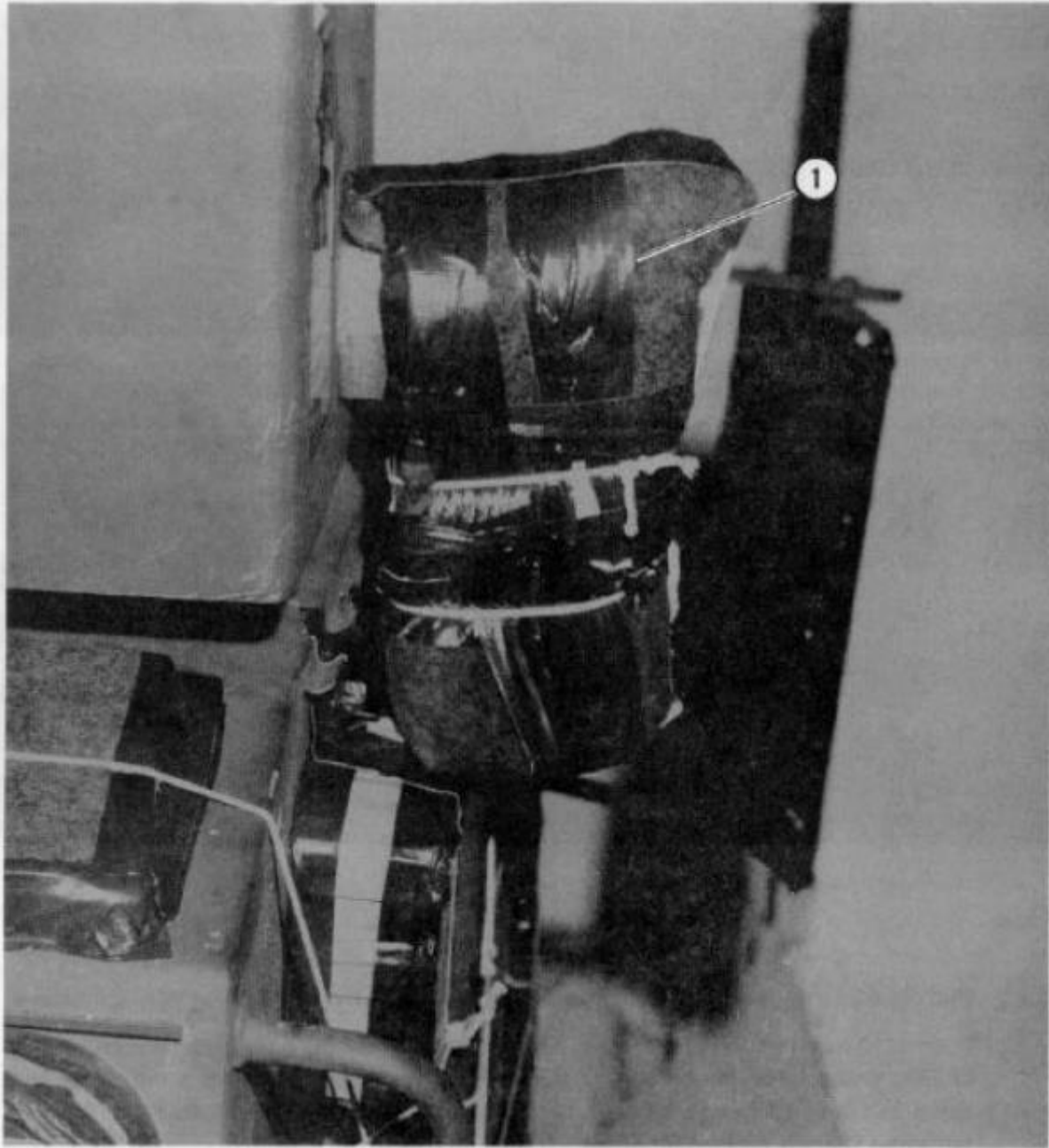
- ⑫ Place three 30-by 36 ½-inch pieces of felt on the roof of the cab. Secure them in place with type III nylon cord.
- ⑬ Place an 8-by 36-inch piece of felt on the top rear window of the cab. Secure it in place with tape and type III nylon cord.

Figure 5-18. Cab prepared (continued)



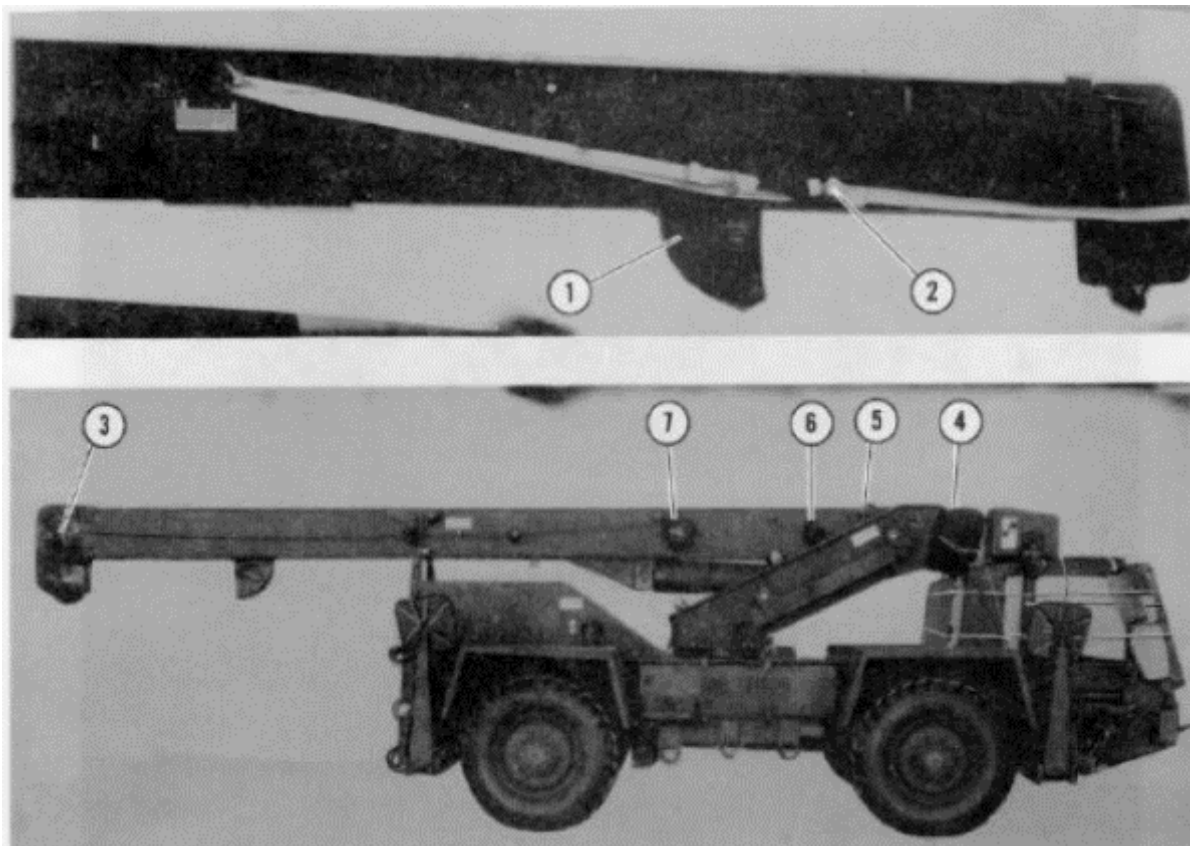
- ① Tie one end of a length of type III nylon cord to the top right mirror frame. Pass the free end over the roof of the cab, and tie it to the left boom support.
- ② Repeat the procedures in step 1 for the left mirror using the right boom support.
- ③ Tie one end of a length of type III nylon cord to the right counterweight support. Pass the free end around the front of the cab, and tie it to the left counterweight support.

Figure 5-19. Mirrors secured



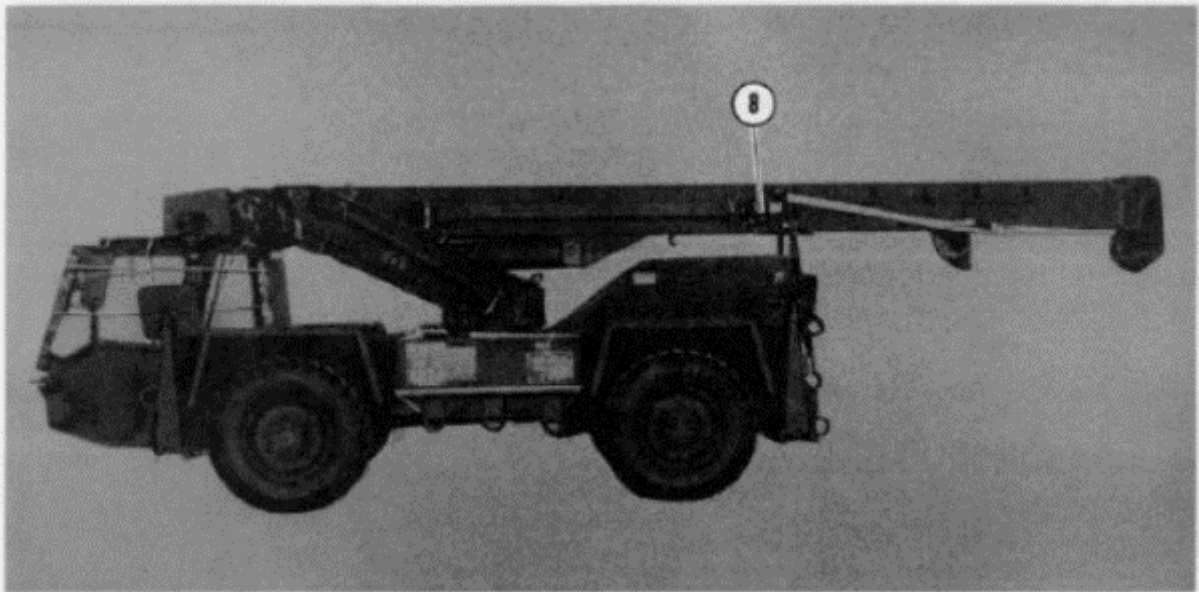
- ① Pad the top of the right counterweight support with felt or cellulose wadding. Secure the felt or cellulose wadding in place with tape and type III nylon cord.
- ② Repeat the procedures in step 1 for the left counterweight support (not shown).

Figure 5-20. Counterweight supports padded



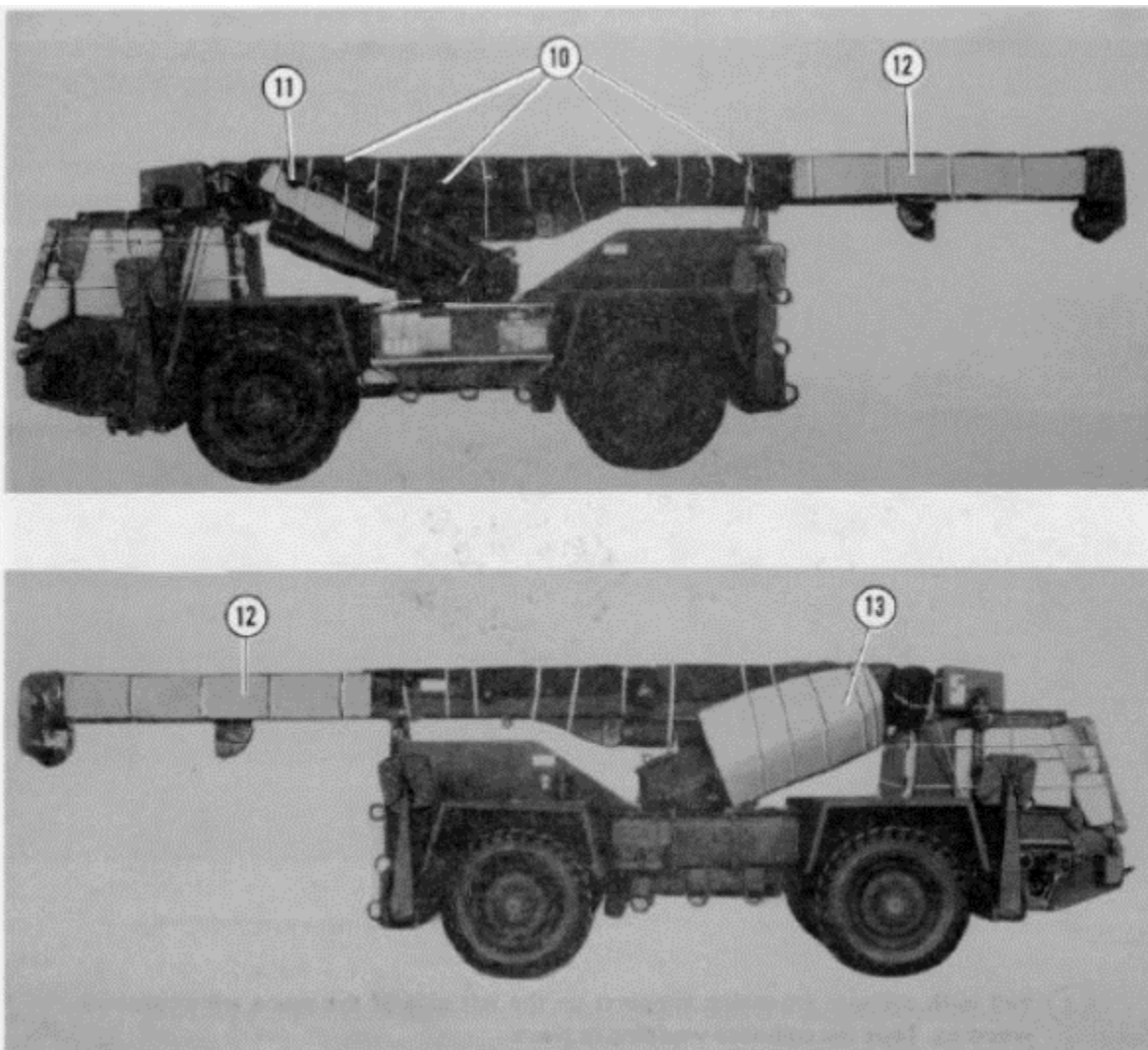
- ① Pad the angle finder with cellulose wadding, and tape the cellulose wadding in place.
- ② Form a 30-foot lashing according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Pass one end of the lashing around the lifting point located 10 feet from the end of the boom. Pass the other end of the lashing around the end of the boom. Secure the ends of the lashing with two D-rings and a load binder.
- ③ Pad the boom end with cellulose wadding or felt. Tape the cellulose wadding or felt in place.
- ④ Pad the winch cellulose wadding, and tape the cellulose wadding in place.
- ⑤ Pad the lifting eyes with cellulose wadding, and tape the cellulose wadding in place.
- ⑥ Pad the lights with cellulose wadding, and tape the cellulose wadding in place.
- ⑦ Pad the tag winder with cellulose wadding, and tape the cellulose in place.

Figure 5-21. Boom prepared



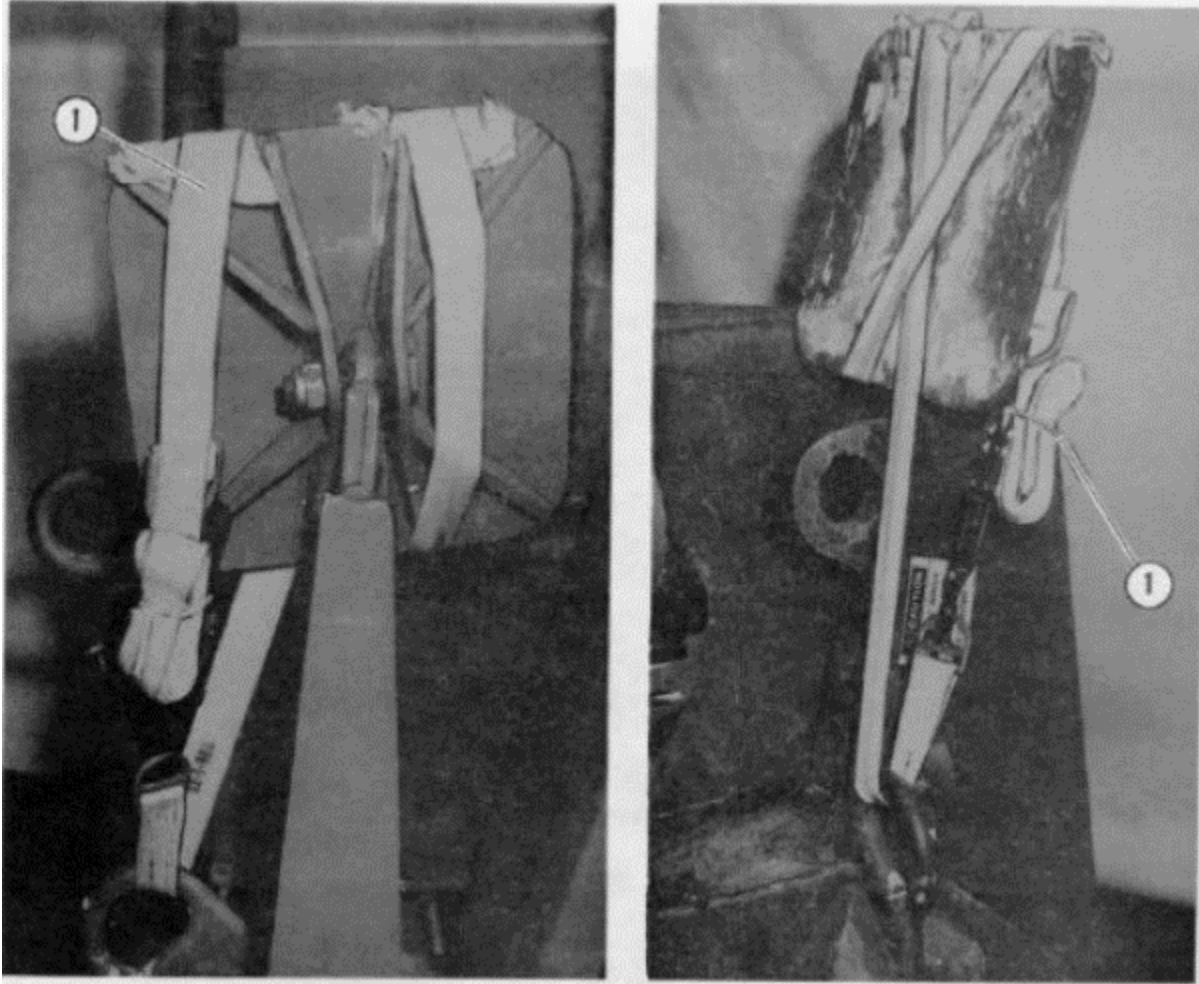
- ⑧ Pad both cylinder extension supports on the left side of the crane with cellulose wadding. Tape the cellulose wadding in place.
- ⑨ Pad sharp or protruding edges of the boom with cellulose wadding, and tape the cellulose wadding in place.

Figure 5-21. Boom prepared (continued)



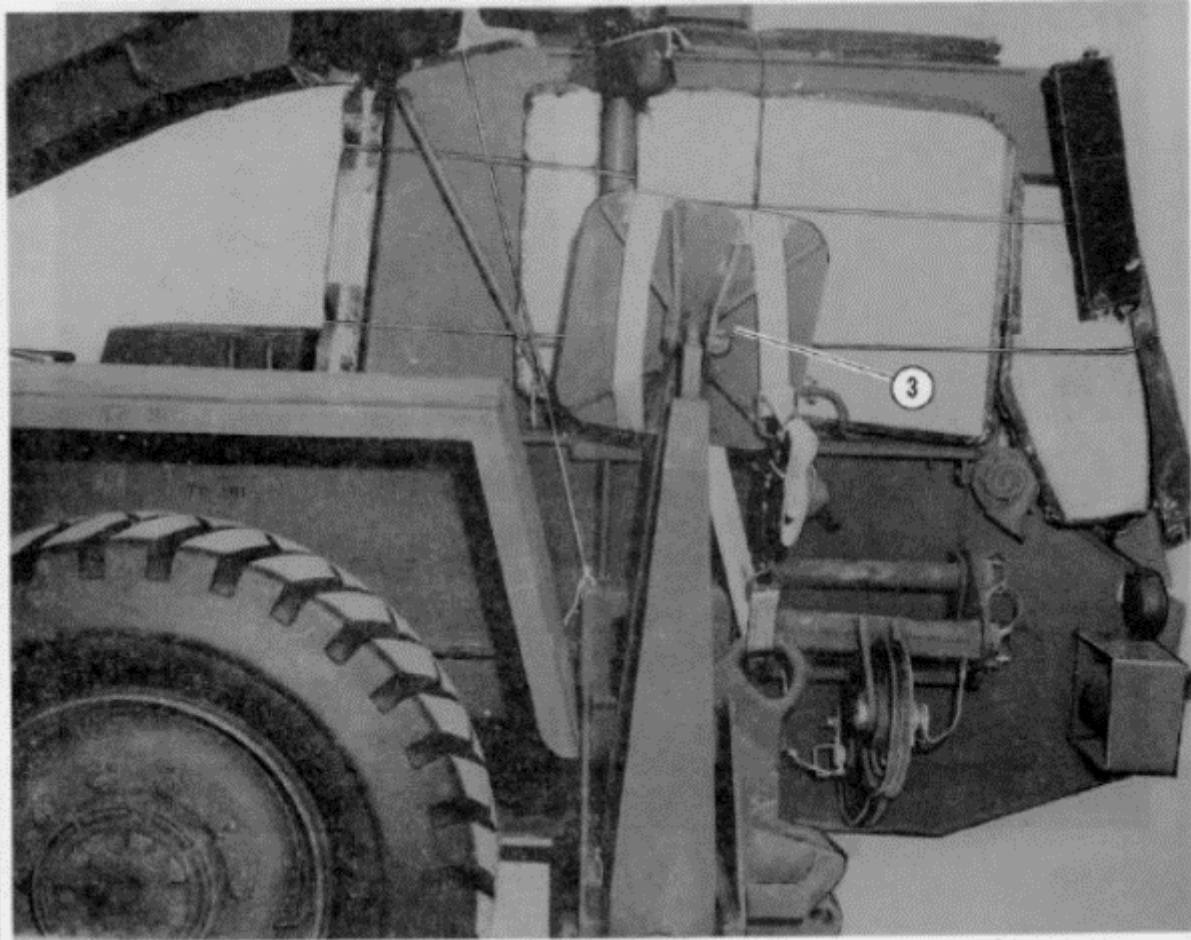
- ⑩ Place five 30- by 36-inch pieces of felt across the top of the boom. Secure the felt in place with type III nylon cord.
- ⑪ Place a 10-by 40-inch piece of honeycomb over the hydraulic lines below the cylinder extension. Secure the honeycomb in place with type III nylon cord.
- ⑫ Place a 14-by 96-inch piece of honeycomb on both sides of the end of the boom. Secure the honeycomb in place with type III nylon cord.
- ⑬ Place a 36-by 55-inch piece of honeycomb over the cylinder on the right side of the crane. Secure the honeycomb in place with type III nylon cord.

Figure 5-21. Boom prepared (continued)



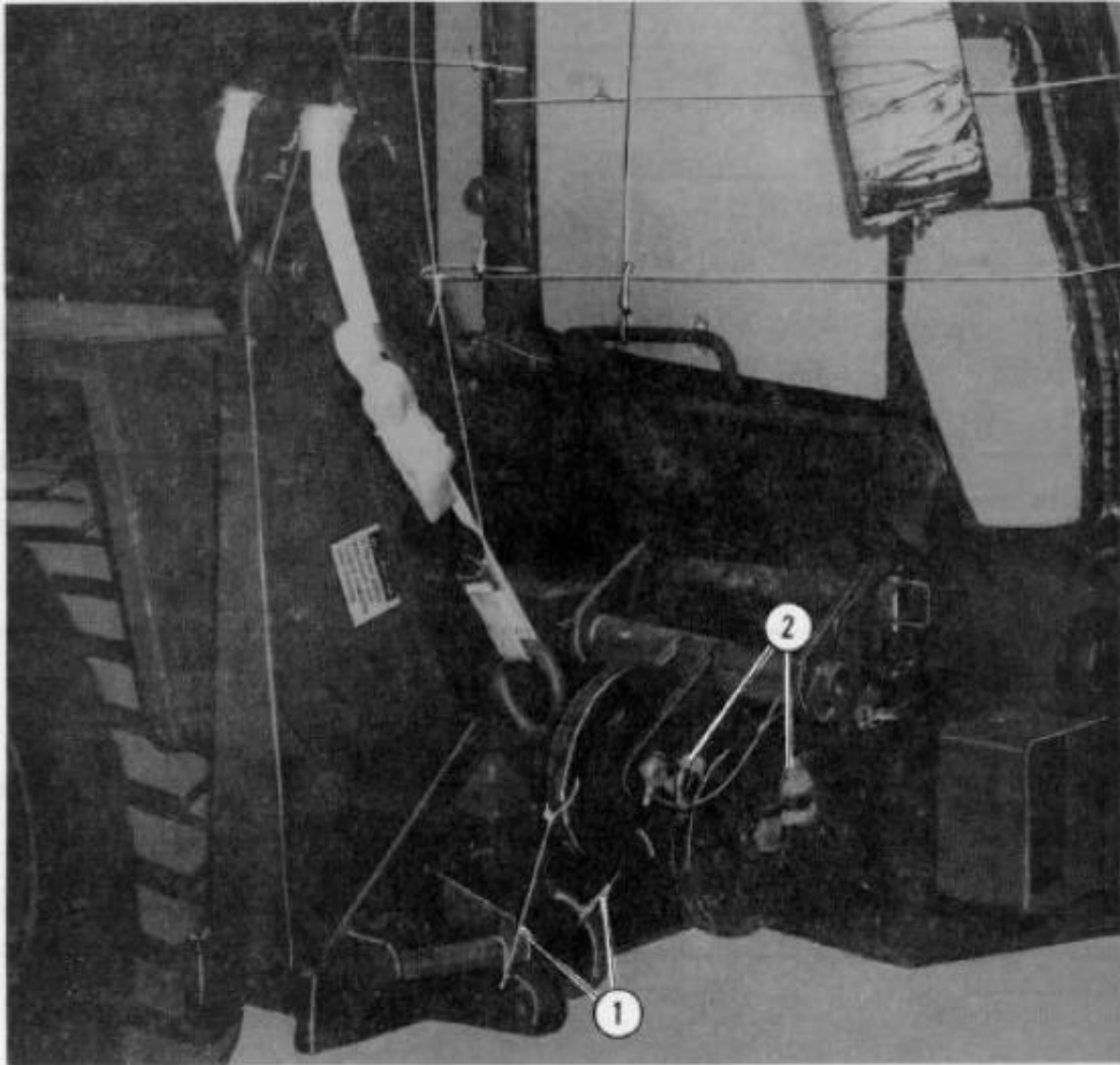
- ① To secure the right rear outrigger, pass a 15-foot lashing through the rear top right tiedown provision, up and over the far side of the outrigger pad, back over the top, and back down forming an X on the pad. Secure the ends of the lashing with a D-ring and a load binder.
- ② Repeat the procedures in step 1 for the left rear outrigger using the rear top left tiedown provision (not shown).

Figure 5-22. Outriggers secured



- ③ Repeat the procedure in step 1 for the right front outrigger using the front top right tiedown provision.
- ④ Repeat the procedure in step 1 for the left front outrigger using the front top left tiedown provision (not shown).

Figure 5-22. Outriggers secured (continued)



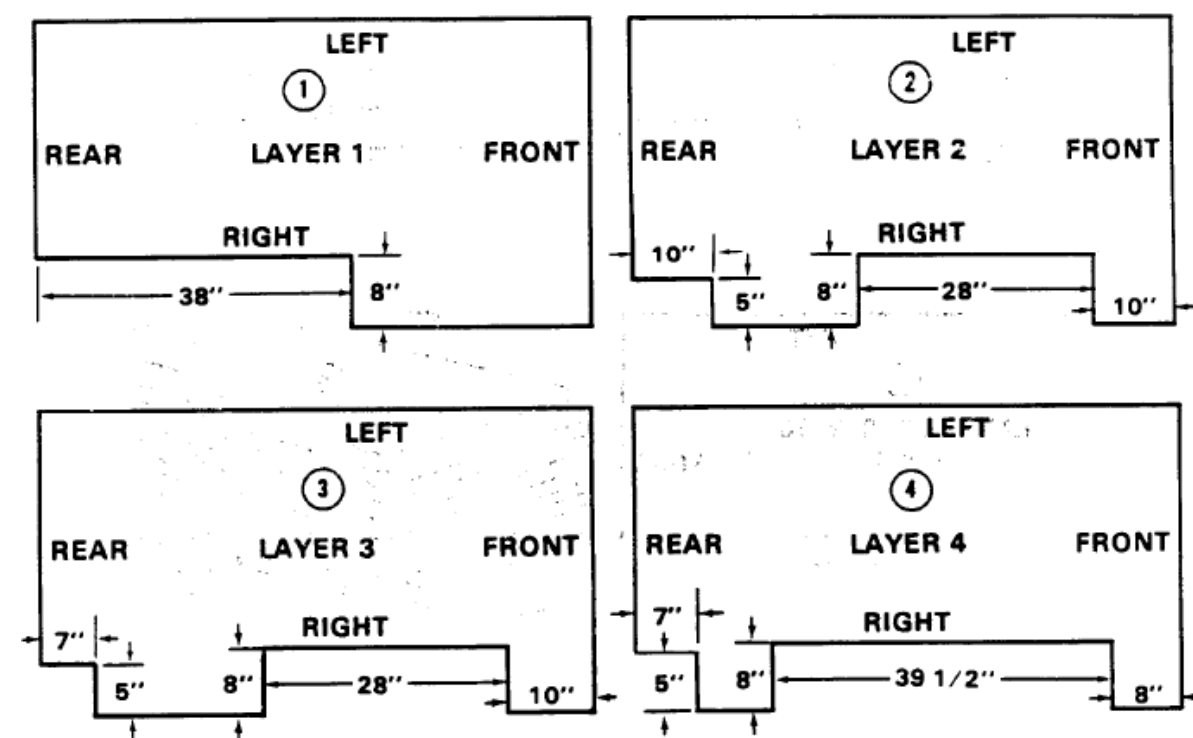
- ① Safety the sheaves on the right side of the cab with type III nylon cord.
- ② Pad any components with metal-to-metal contact using cellulose wadding, and tape the cellulose wadding in place.

Figure 5-23. Sheaves secured

BUILDING AND POSITIONING PARACHUTE RELEASE SUPPORT

5-5. Build a parachute release support using eleven 36-by 64 1/2-inch pieces of honeycomb as shown in Figure 5-24. Position the parachute release support as shown in Figure 5-24. Position release support as shown in Figure 5-25.

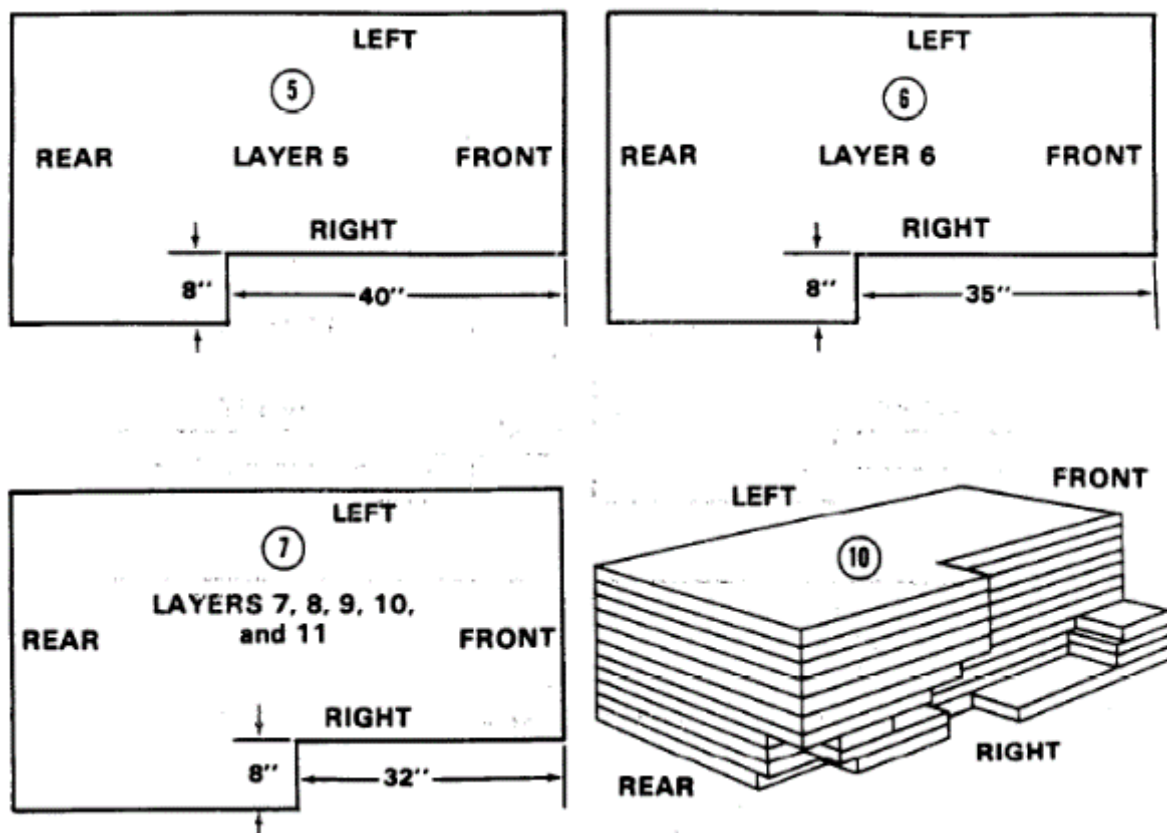
Note: These drawing are not drawn to scale.



- ① Make an 8-by 38-inch cutout in the right rear corner of the first layer.
- ② Make an 8-by 28-inch cutout in the right side 10 inches from the front and a 5-by 10-inch cutout in the right rear corner of the second layer.
- ③ Make an 8-by 28-inch cutout in the right side 10 inches from the front and a 5-by 7-inch cutout in the right rear corner of the third layer.
- ④ Make an 8-by 39 1/2-inch cutout in the right side 8 inches from the front and a 5-by 7-inch cutout in the right rear corner of the fourth layer.

Figure 5-24. Parachute release support prepared

Note: These drawing are not drawn to scale.



- ⑤ Make an 8- by 40-inch cutout in the right front corner of the fifth layer.
- ⑥ Make an 8- by 35-inch cutout in the right front corner of the sixth layer.
- ⑦ Make an 8- by 32-inch cutout in the right front corner of the seventh layer.
- ⑧ Repeat the procedure in step 7 for the eighth, ninth, tenth, and eleventh layers.
- ⑨ Tape the top and bottom edges of the stack (not shown).
- ⑩ Glue each layer of honeycomb together in numerical order.

Figure 5-24. Parachute release support prepared (continued)

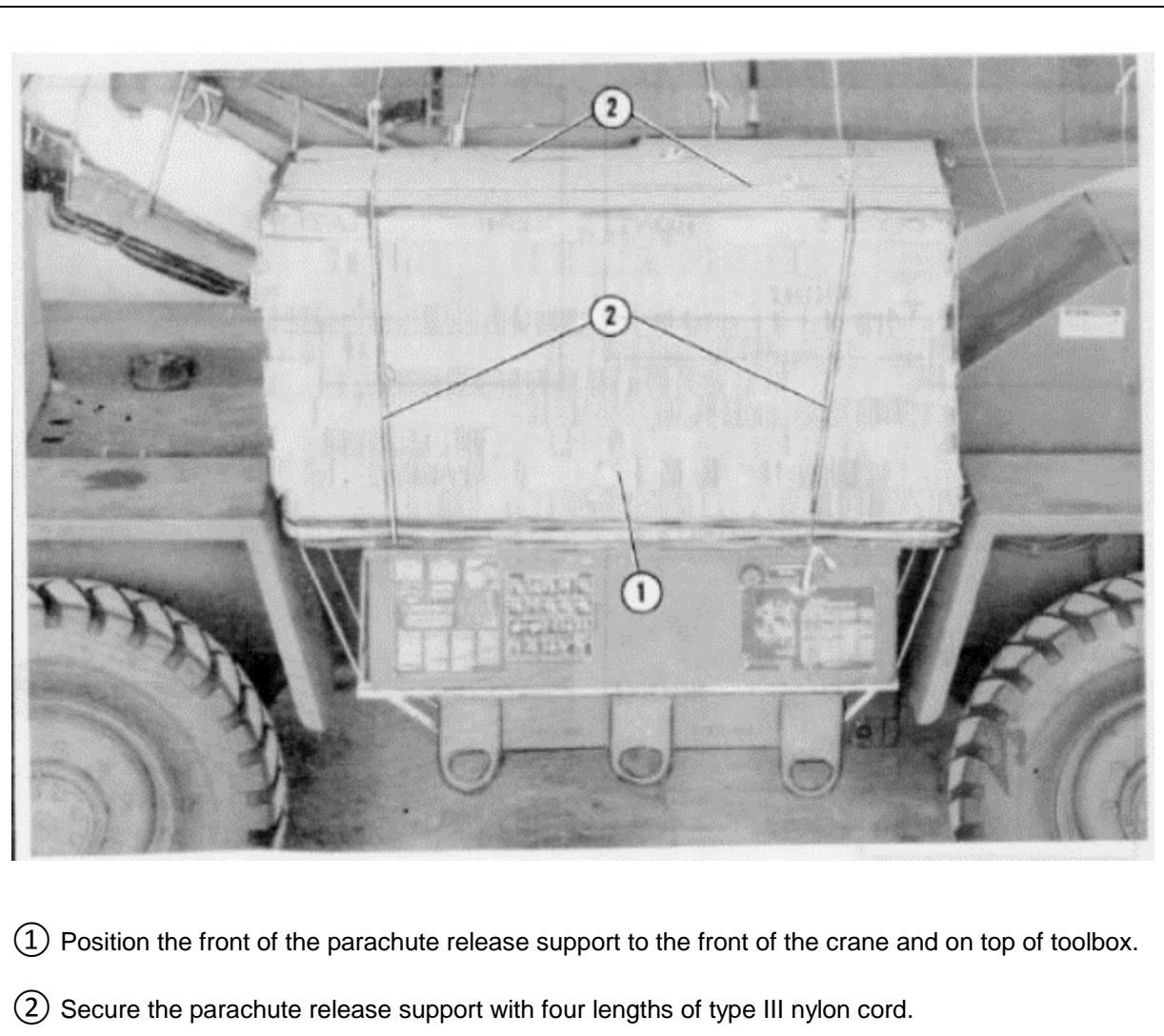
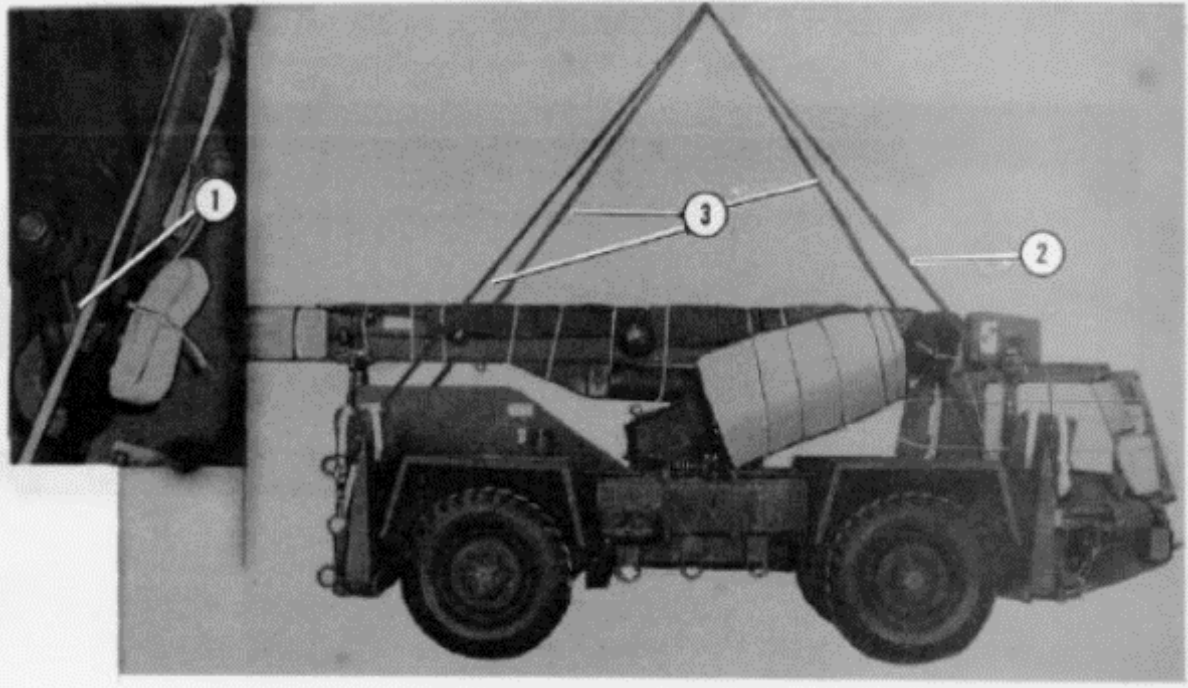


Figure 5-25. Parachute release support secured

5-6.

INSTALL LIFTING SLINGS

5-6. Install lifting slings as shown in Figure 5-26.

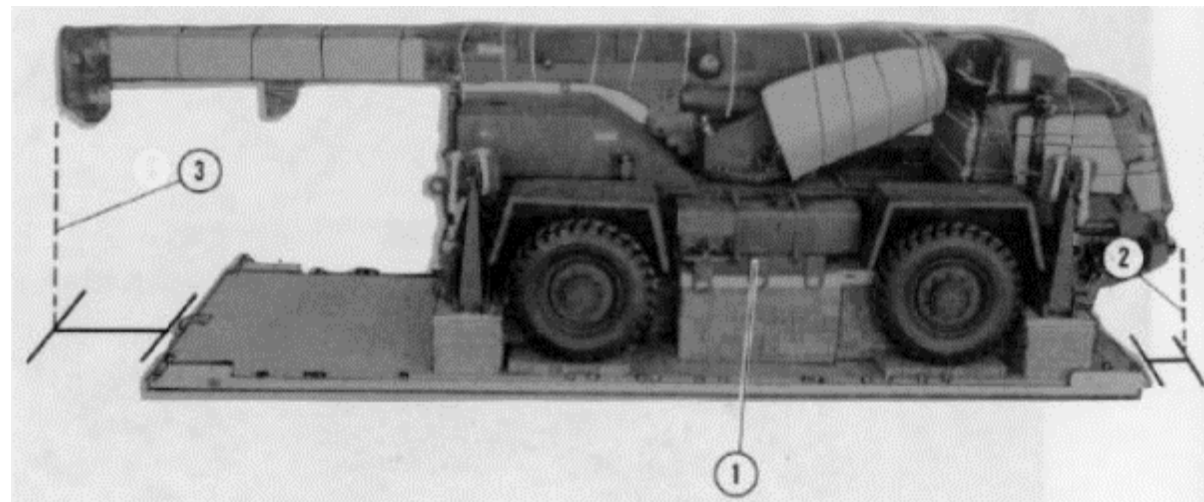


- ① Place a large clevis through the right front suspension on the outrigger.
- ② Bolt one end of a 16-foot (4-loop), type XXVI nylon sling to the large clevis.
- ③ Repeat the procedures in steps 1 and 2 for the other three lifting slings.

Figure 5-26. Lifting slings installed

POSITIONING CRANE

5-7. Position the crane on the honeycomb stacks as shown in Figure 5-27.

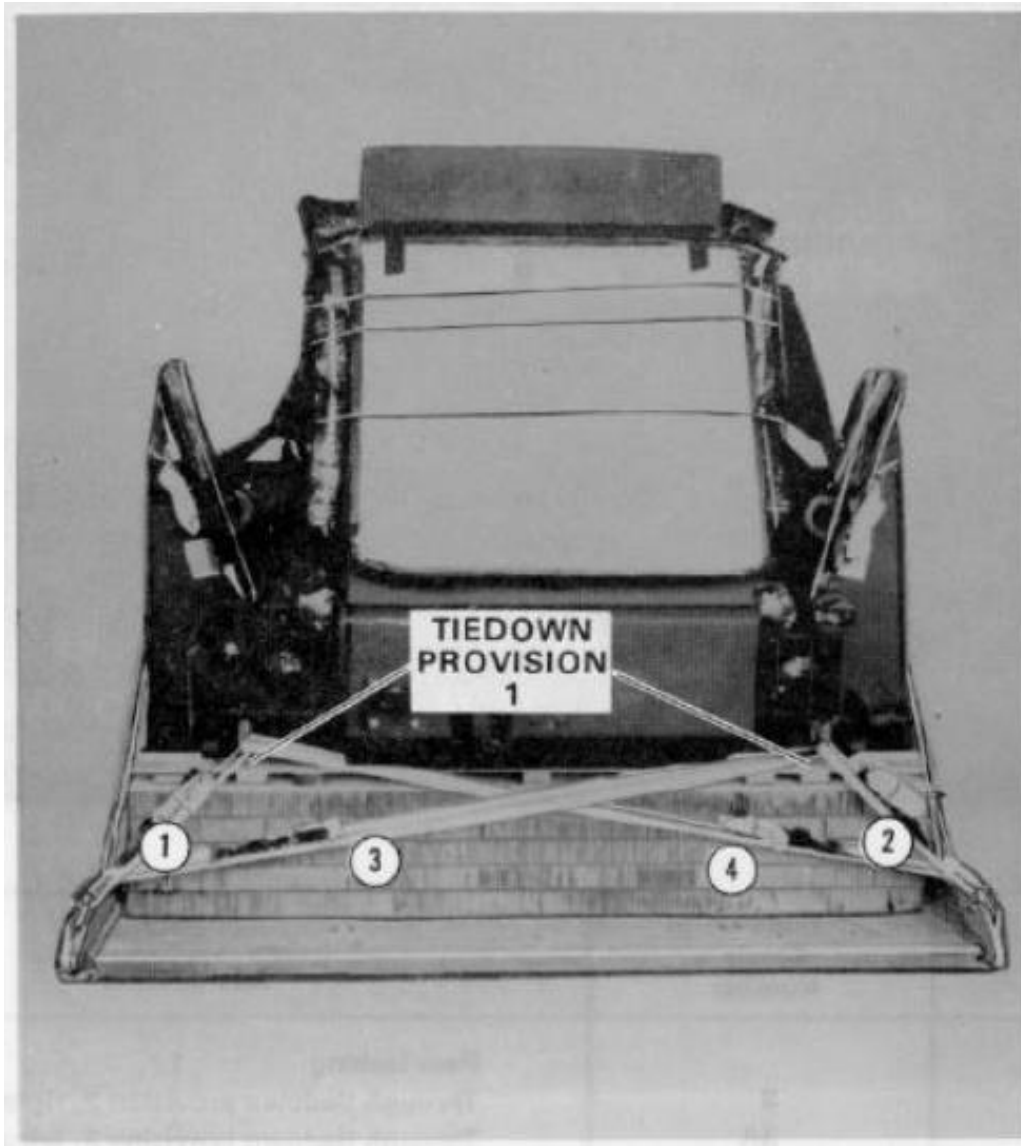


- ① Center the crane from side to side on the honeycomb stacks.
- ② Position the front of the crane so that there is a 21 $\frac{3}{4}$ -inch overhang from the front edge of the platform.
- ③ Position the rear of the crane so that the boom has a 32 $\frac{3}{4}$ -inch overhang from the rear edge of the platform.
- ④ Remove the lifting slings from the crane (not shown).

Figure 5-27. Crane positioned

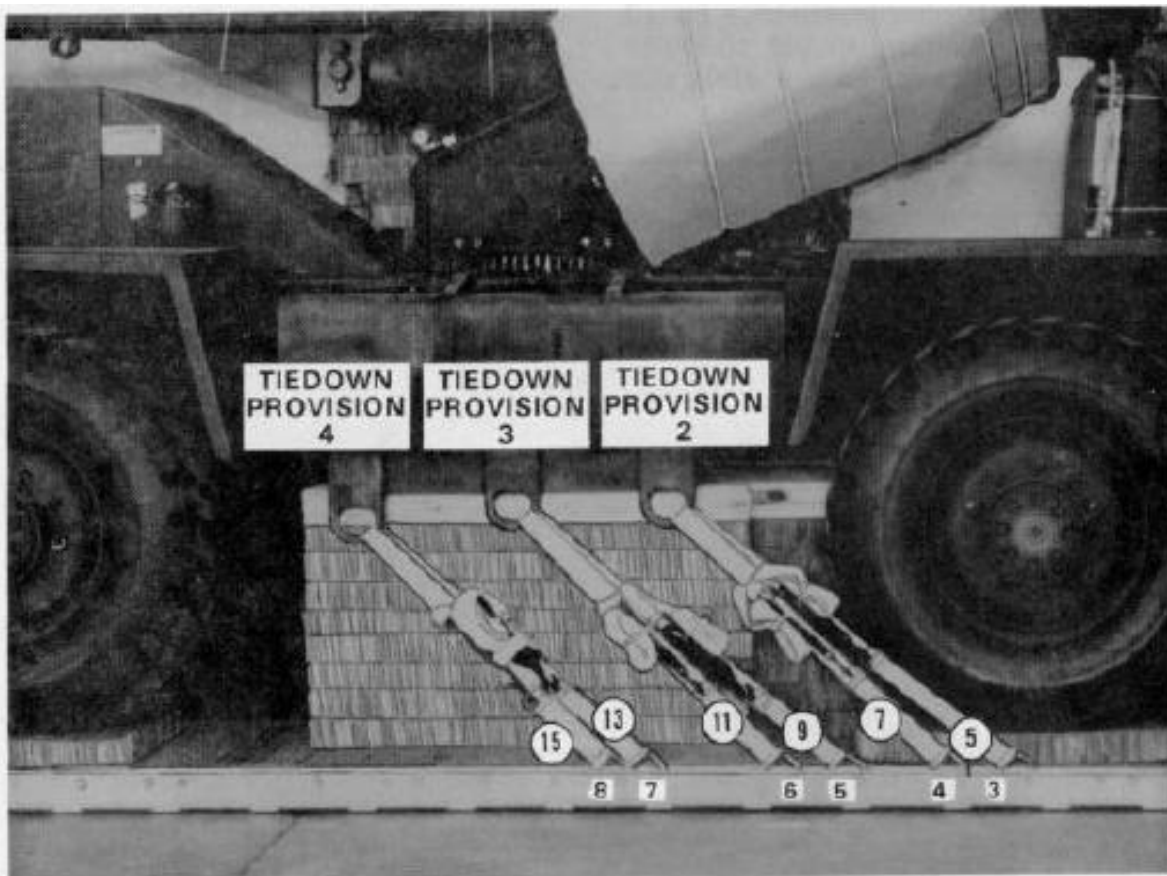
LASHING CRANE

5-8. Lash the crane to the platform using thirty-two 15-foot tiedown assemblies. Install the lashings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in figures 5-28 through 5-31.



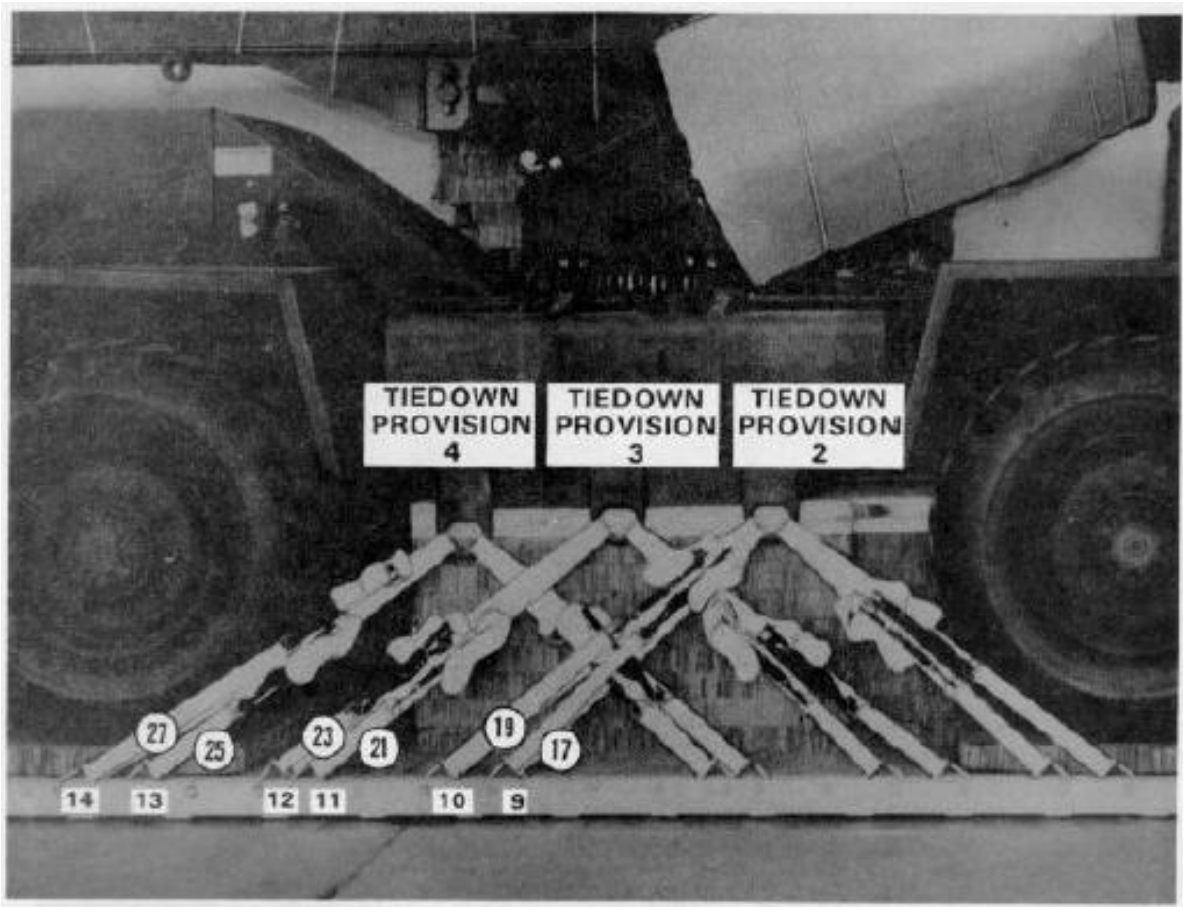
Lashing Number	Tiedown Clevis Number	Instructions
1	1	Pass lashing:
2	1A	Through tiedown provision 1, right side
3	2	Through tiedown provision 1, left side
4	2A	Through tiedown provision 1, right side

Figure 5-28. Lashings 1 through 4 installed



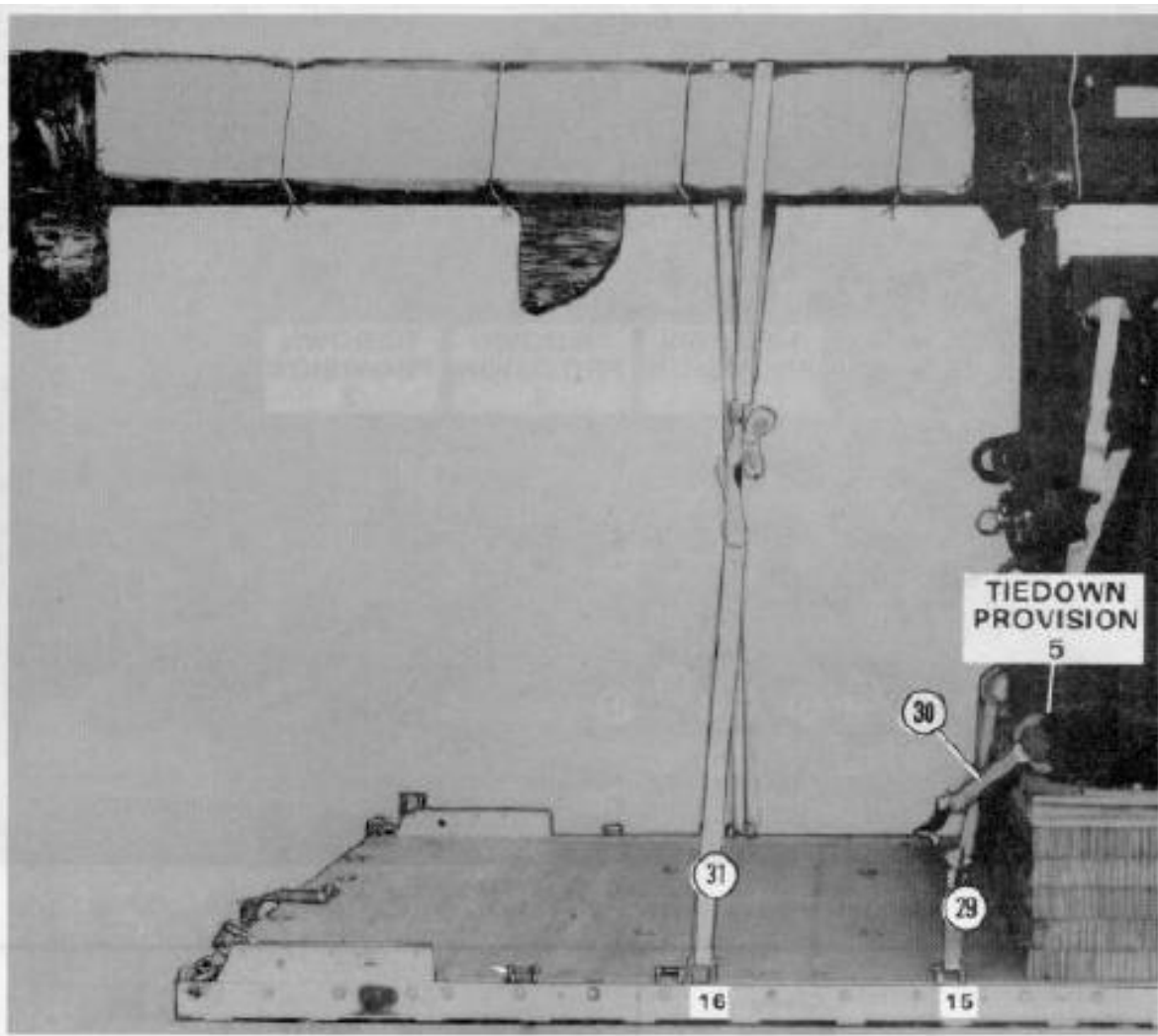
Lashing Number	Tiedown Clevis Number	Instructions
5	3	Pass lashing:
6	3A	Through tiedown provision 2, right side
7	4	Through tiedown provision 2, left side
8	4A	Through tiedown provision 2, right side
9	5	Through tiedown provision 2, left side
10	5A	Through tiedown provision 3, right side
11	6	Through tiedown provision 3, left side
12	6A	Through tiedown provision 3, right side
13	7	Through tiedown provision 3, left side
14	7A	Through tiedown provision 4, right side
15	8	Through tiedown provision 4, left side
16	8A	Through tiedown provision 4, right side

Figure 5-29. Lashings 5 through 16 installed



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
17	9	Pass lashing:
18	9A	Through tiedown provision 2, right side
19	10	Through tiedown provision 2, left side
20	10A	Through tiedown provision 2, right side
21	11	Through tiedown provision 2, left side
22	11A	Through tiedown provision 3, right side
23	12	Through tiedown provision 3, left side
24	12A	Through tiedown provision 3, right side
25	13	Through tiedown provision 3, left side
26	13A	Through tiedown provision 4, right side
27	14	Through tiedown provision 4, left side
28	14A	Through tiedown provision 4, right side

Figure 5-30. Lashings 17 through 28 installed

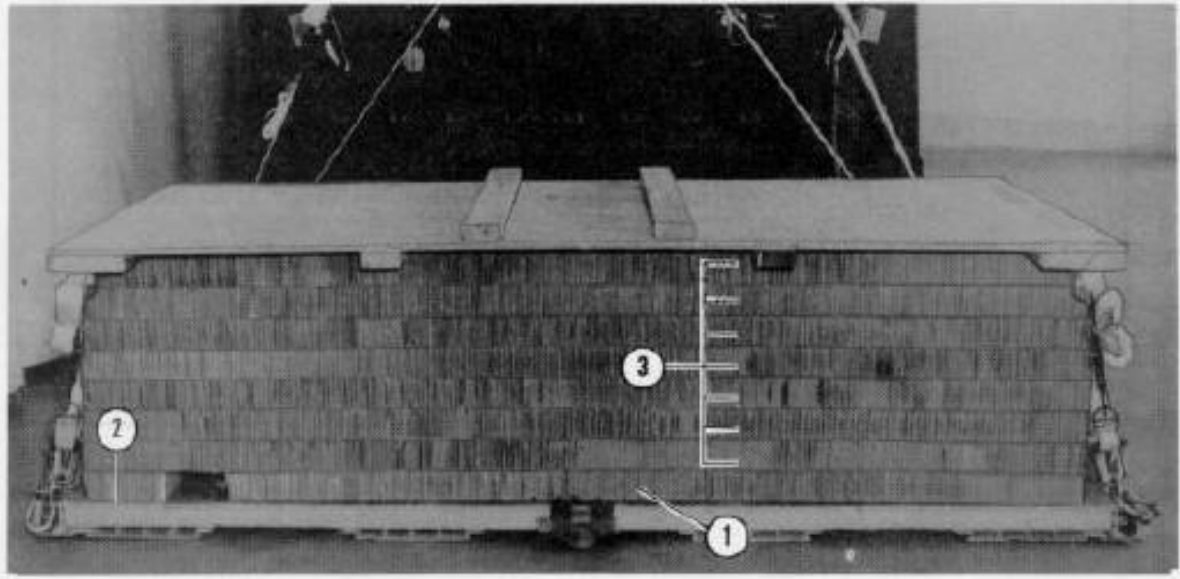


<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
29	15	Pass lashing:
30	15A	Through tiedown provision 5, left side
31	16	Through tiedown provision 5, right side
32	16A	Up and between the left side of the boom and honeycomb and over the top of the boom to clevis 16
		Up and between the right side of the boom and honeycomb and over the top of the boom to clevis 16A

Figure 5-31. Lashings 29 through 32 installed

BUILDING AND POSTIONING PARACHUTE STOWAGE PLATFORM

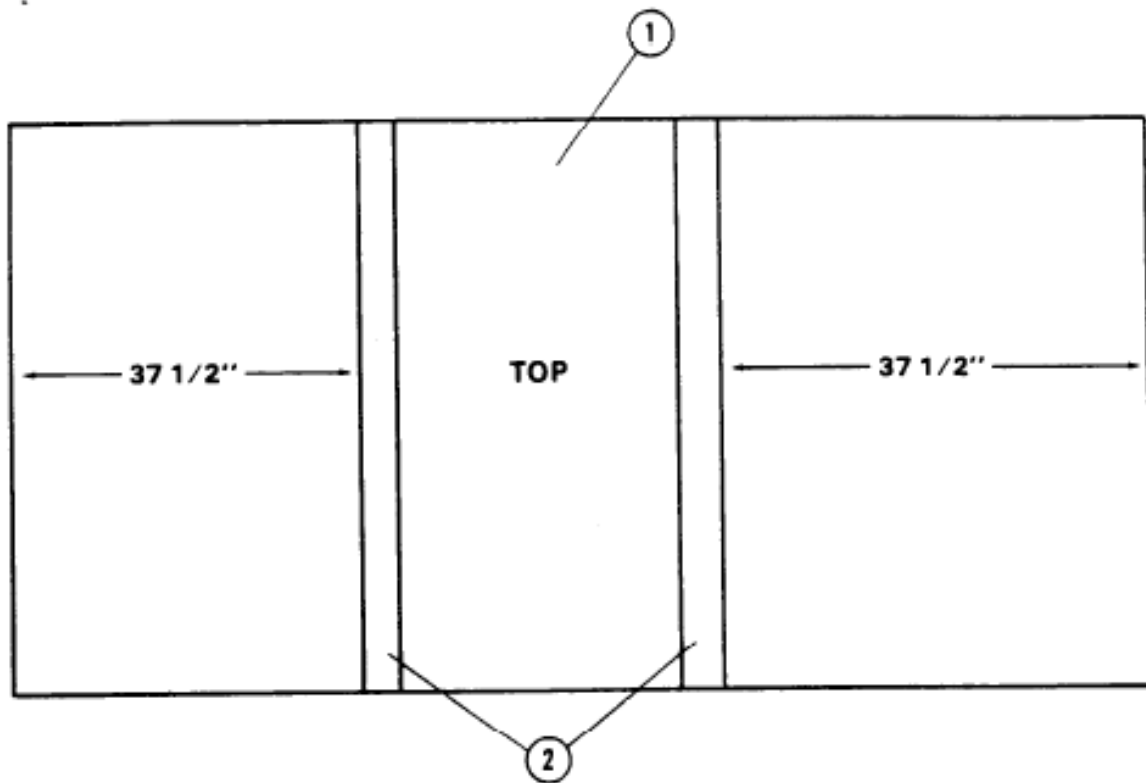
5-9. Build a honeycomb stack as shown in Figure 5-3 to support the parachute stowage platform. Build a parachute stowage platform as shown in Figure 5-33. Position the honeycomb stack and parachute stowage platform as shown in figure 5-34. Lash the parachute stowage platform as shown in Figure 5-34. Lash the parachute stowage platform as shown in Figure 5-35.



- ① Place a 36-by 80-inch piece of honeycomb on the floor.
- ② Place an 8-by 36-inch piece of my honeycomb 8 inches to the left of the 36-by 80-inch piece of honeycomb to form the base layer.
- ③ Glue seven 36- by 96-inch pieces of honeycomb on top of the base layer.

Figure 5-32. Honeycomb stack built

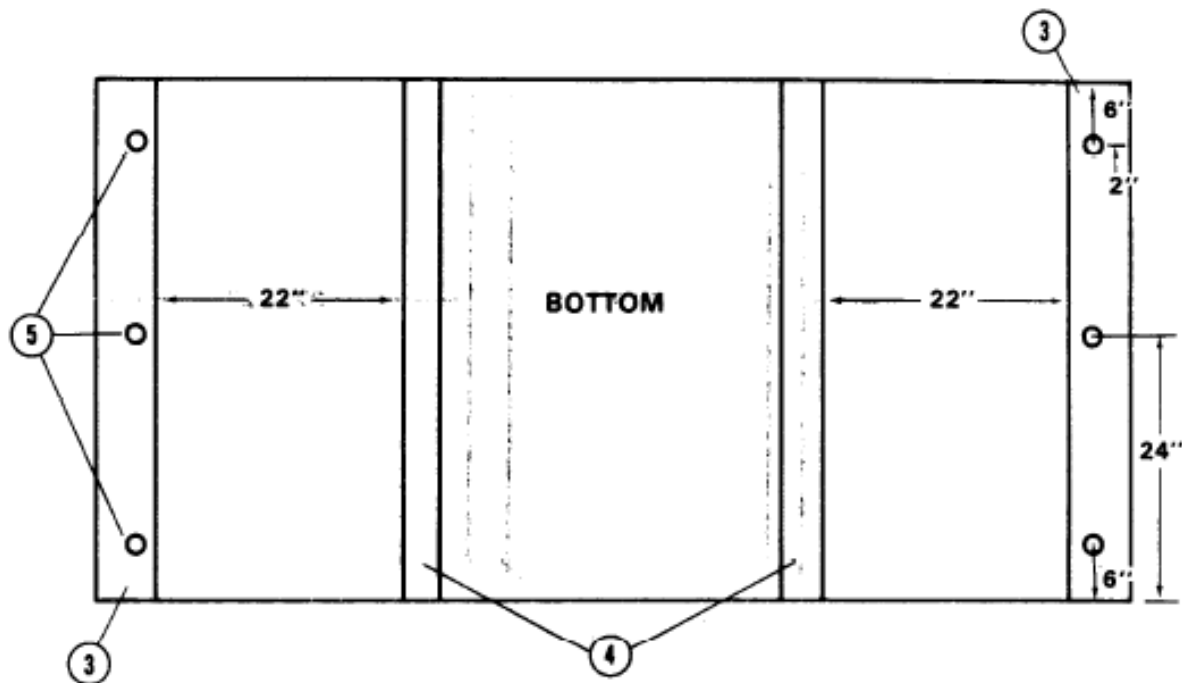
Note: This drawing is not drawn to scale.



- ① Use a $\frac{3}{4}$ - by 48- by 96-inch piece of plywood for the parachute stowage platform.
- ② Cut two 2- by 4- by 48-inch pieces of lumber. Place each 37 $\frac{1}{2}$ inches from each end of the plywood.

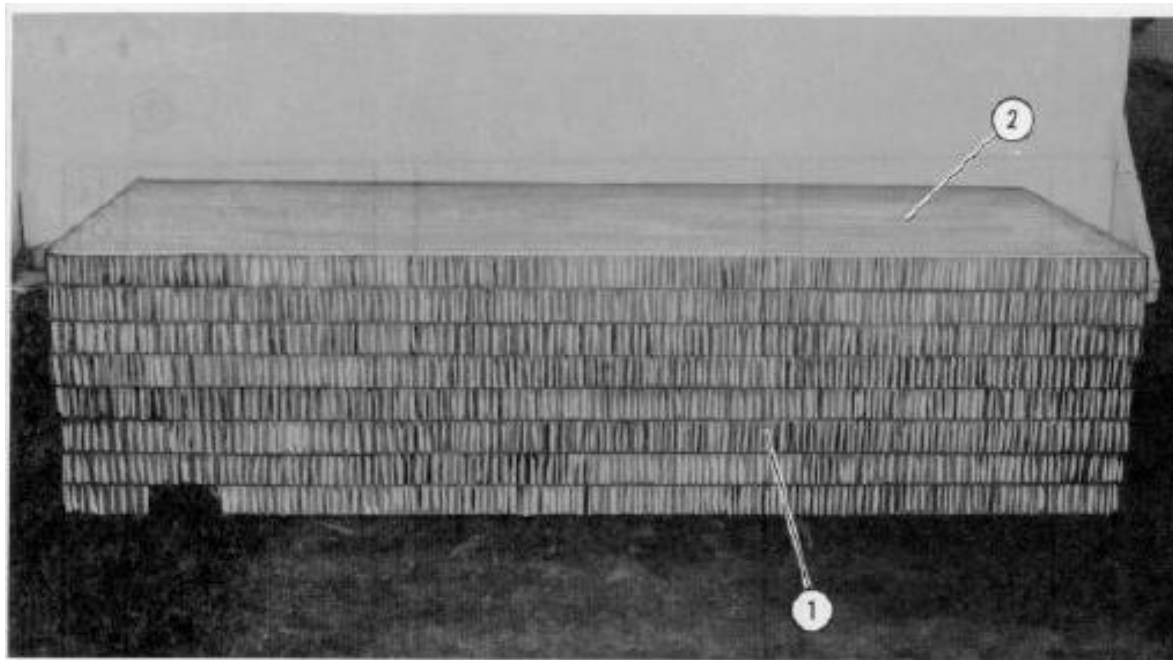
Figure 5-33. Honeycomb stack built

Note: This drawing is not drawn to scale.



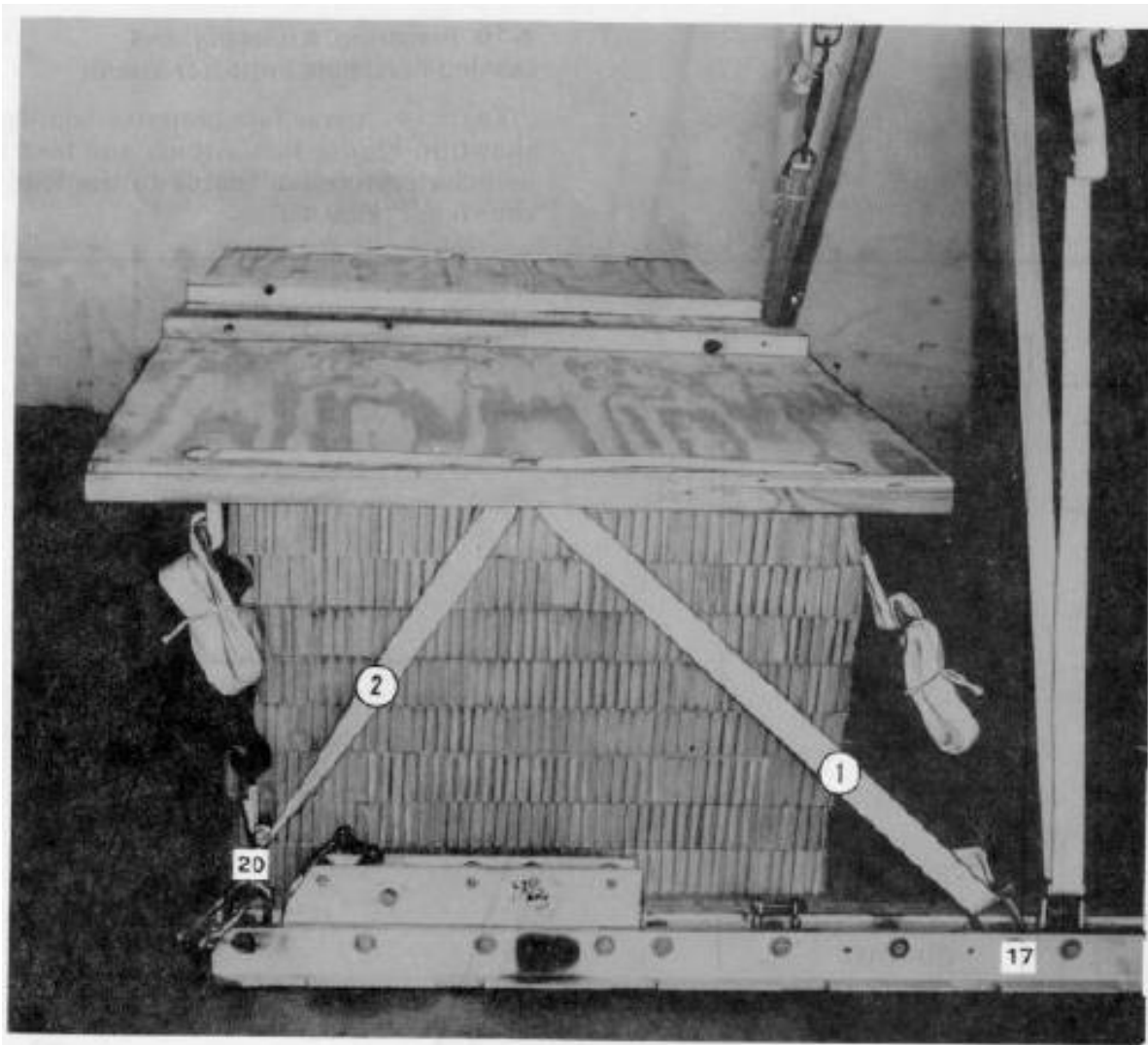
- ③ Cut two 2- by 6- by 48-inch pieces of lumber. Place one piece flush at each end on the bottom of the plywood.
- ④ Cut two 2- by 4- by 48-inch pieces of lumber. Place one piece 22 inches from the 2- by 6- by 48-inch lumber.
- ⑤ Drill three 2-inch holes on each 2- by 6- by 48-inch piece of lumber as shown.

Figure 5-33. Parachute stowage platform built (continued)



- ① Position the honeycomb stack flush with the rear edge of the platform with the 8-by 36-inch piece of honeycomb on the left side of the platform.
- ② Center the parachute stowage platform on top of the honeycomb stack with an 8-inch overhang on the rear of the platform.

Figure 5-34. Honeycomb stack and parachute stowage platform positioned



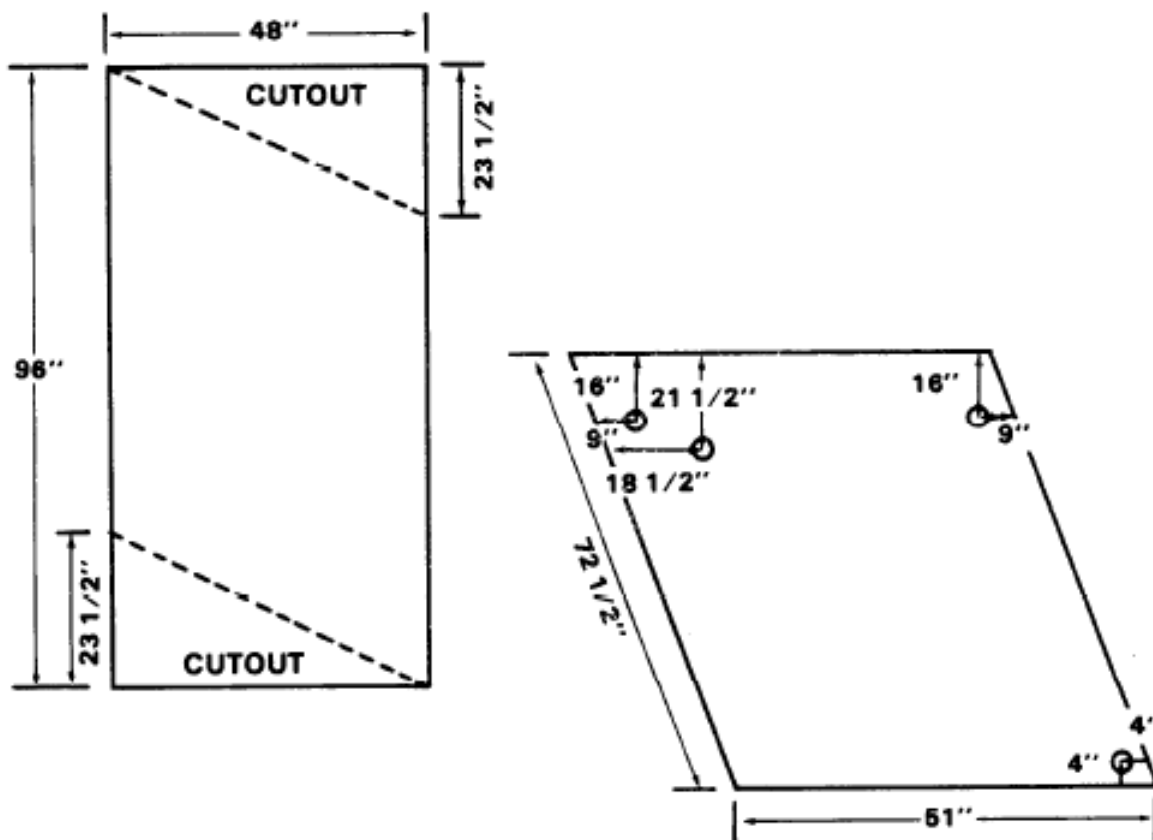
- ① Run a 15-foot lashing through tiedown clevis 17, up through the center hole of the parachute stowage platform, over the top and through the front hole of the platform, and back to tiedown clevis 17. Secure the ends with a D-ring and load binder
- ② Run a 15-foot lashing through tiedown clevis 20, up through the center hole of the parachute stowage platform, over the top and through the rear hole of the platform, and back to tiedown clevis 20. Secure the ends with a D-ring and load binder
- ③ Repeat the procedures in steps 1 and 2 for the left side of the parachute stowage platform using tiedown clevises 17A and 20A

Figure 5-35. Parachute stowage platform lashed

PREPARING, ATTACHING, AND LASHING PARACHUTE PROTECTOR BOARDS

5-10. Prepare two parachute protector boards as shown in Figure 5-36. Attach and lash the parachute protector boards to the load as shown in Figure 5-37.

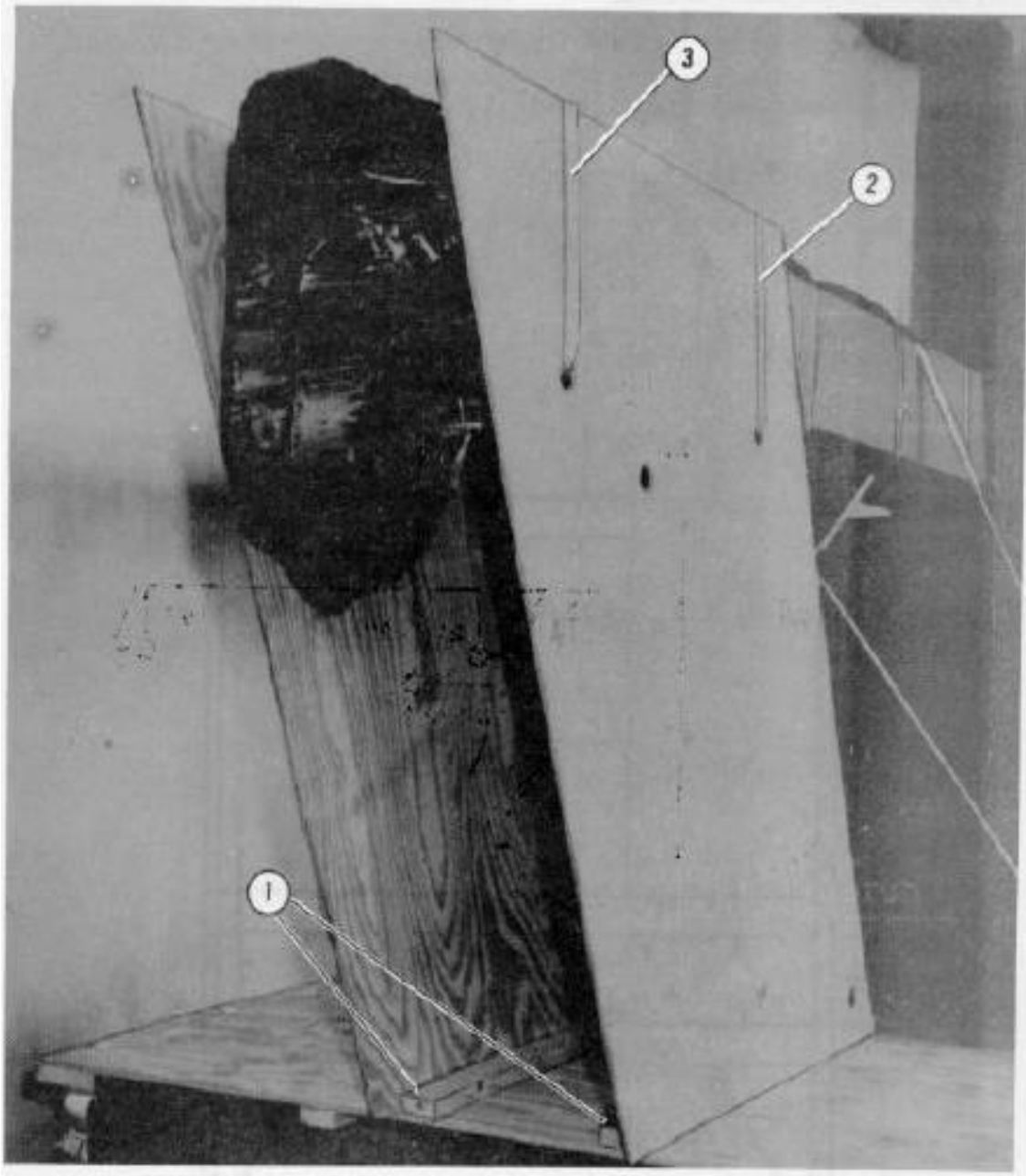
Note: This drawing is not drawn to scale.



STEP:

23. Cut two ½-by-48-by-96 inch pieces of plywood as shown
24. Drill four 2 inch holes through each piece of plywood as shown

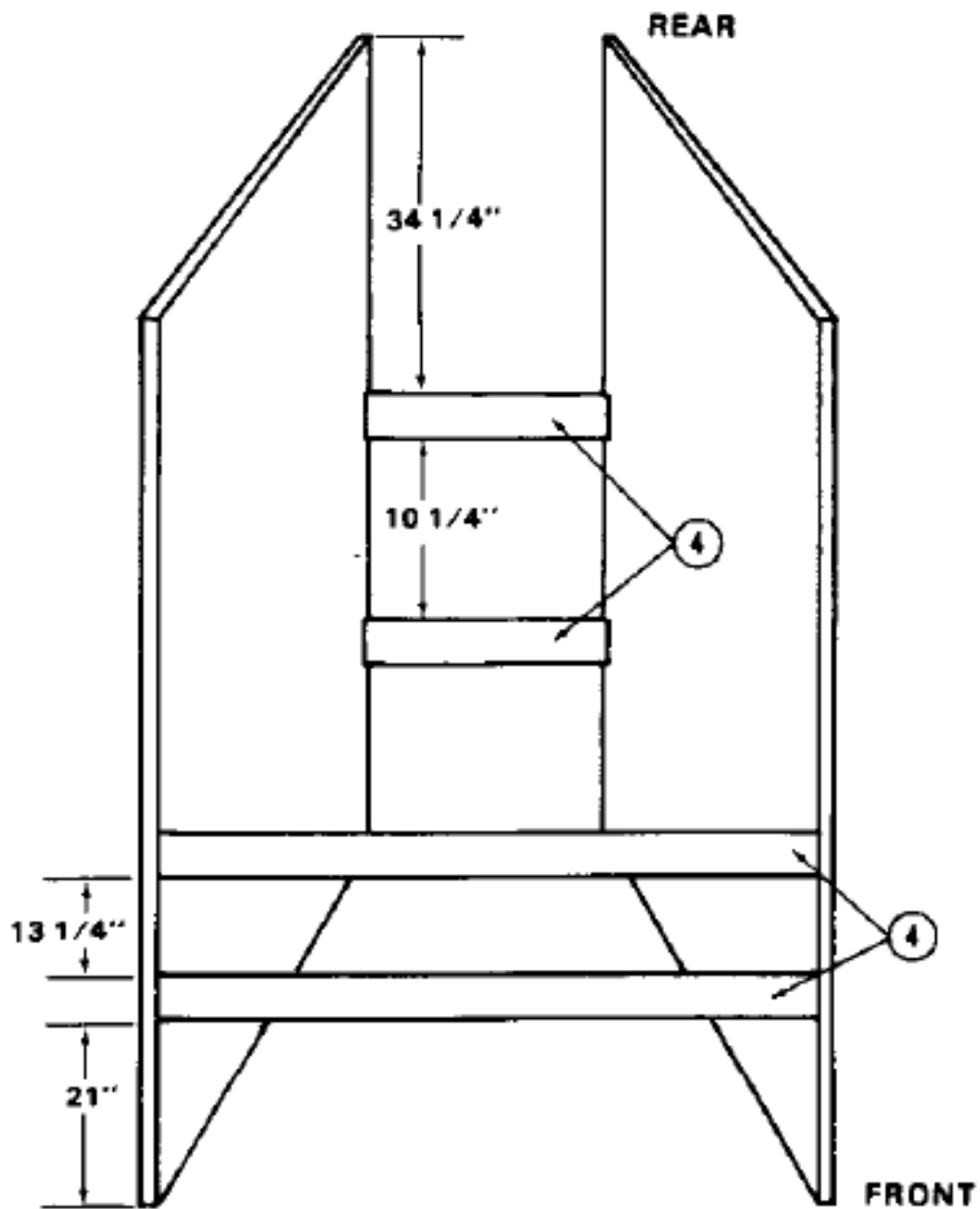
Figure 5-36. Parachute protector boards prepared



- ① Attach the parachute protector boards to the 2-by-4-by-48 inch pieces of lumber on the parachute stowage platform using sixpenny nails
- ② Starting between the two boards under the boom, run the free end of a 15-foot lashing through the top right front hole, up and over the top of the boom, and back through the top left front hole. Secure the ends with a D-ring and a load binder
- ③ Repeat the procedures in step 2 using the top rear holes

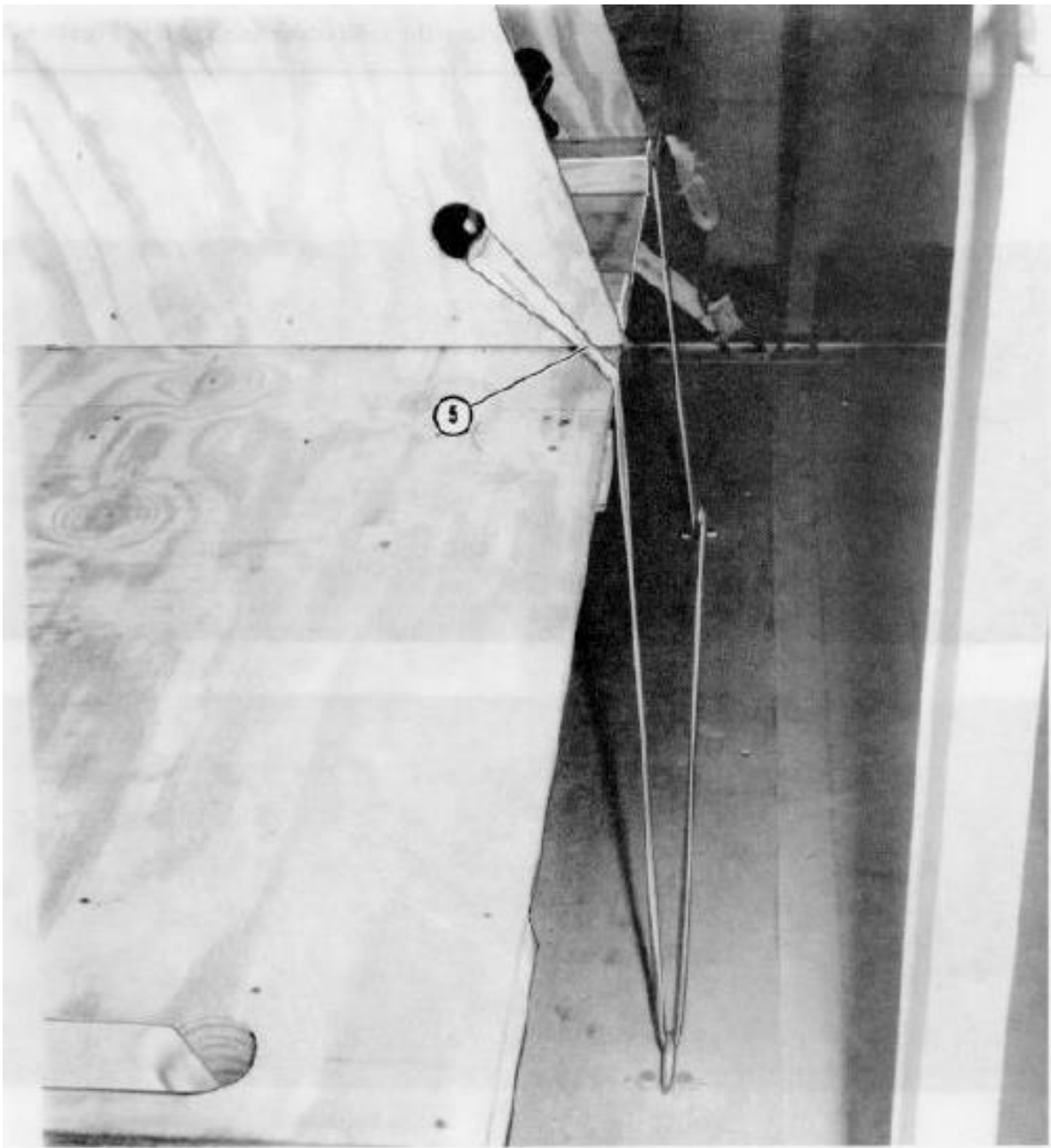
Figure 5-37. Parachute protector boards attached and lashed

Note: This drawing is not drawn to scale.



- ④ Attach four 2-by-4-by $20 \frac{3}{4}$ inch pieces of lumber to the parachute protector boards as shown

Figure 5-37. Parachute protector boards attached and lashed (continued)

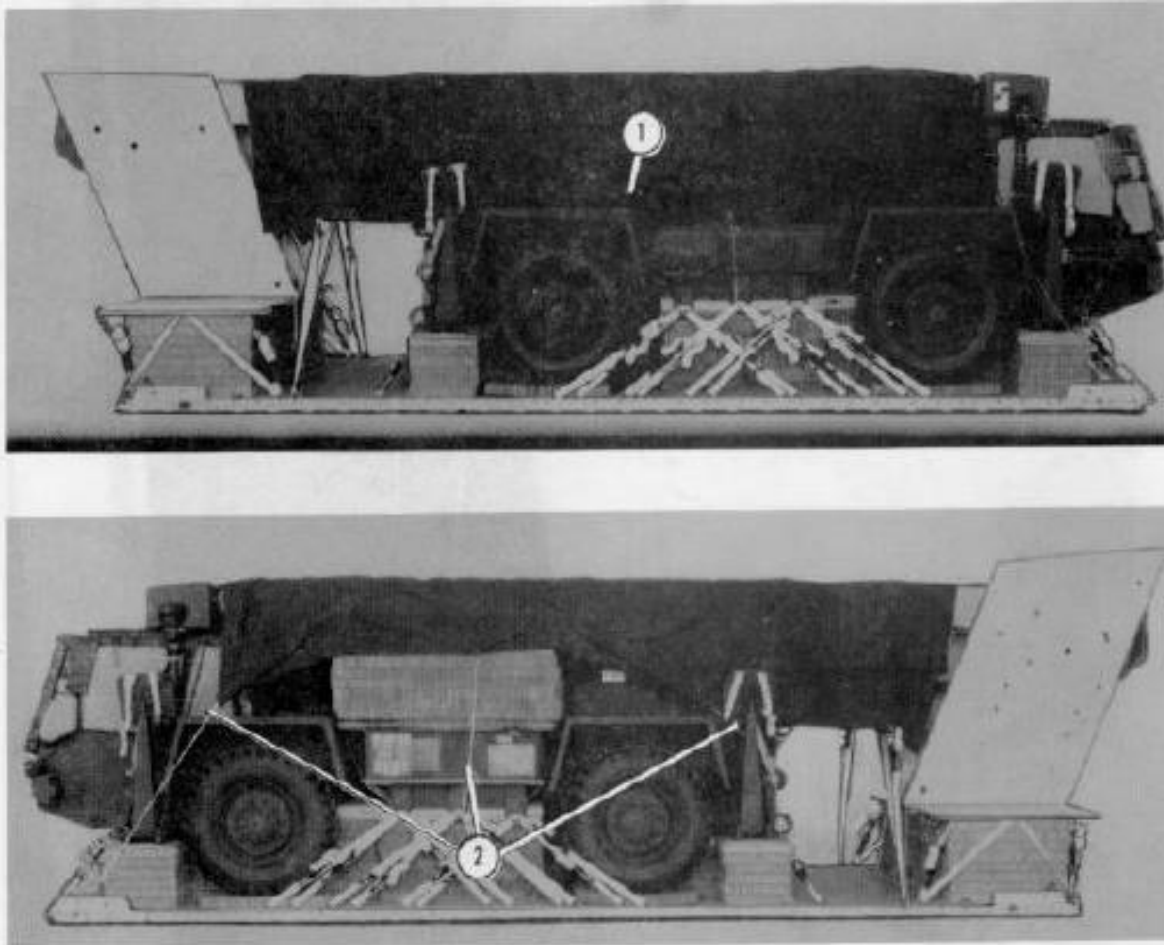


- ⑤ Starting at the bottom front end between the parachute protector boards, run the free end of a 15-foot lashing through the left board, down to tiedown ring B11, through tiedown ring A11, and up through the hole on the right board. Secure the ends with a D-ring and a load binder

Figure 5-37. Parachute protector boards attached and lashed (continued)

PLACING LOAD COVER

5-11. Place the load cover as shown in Figure 5-38.

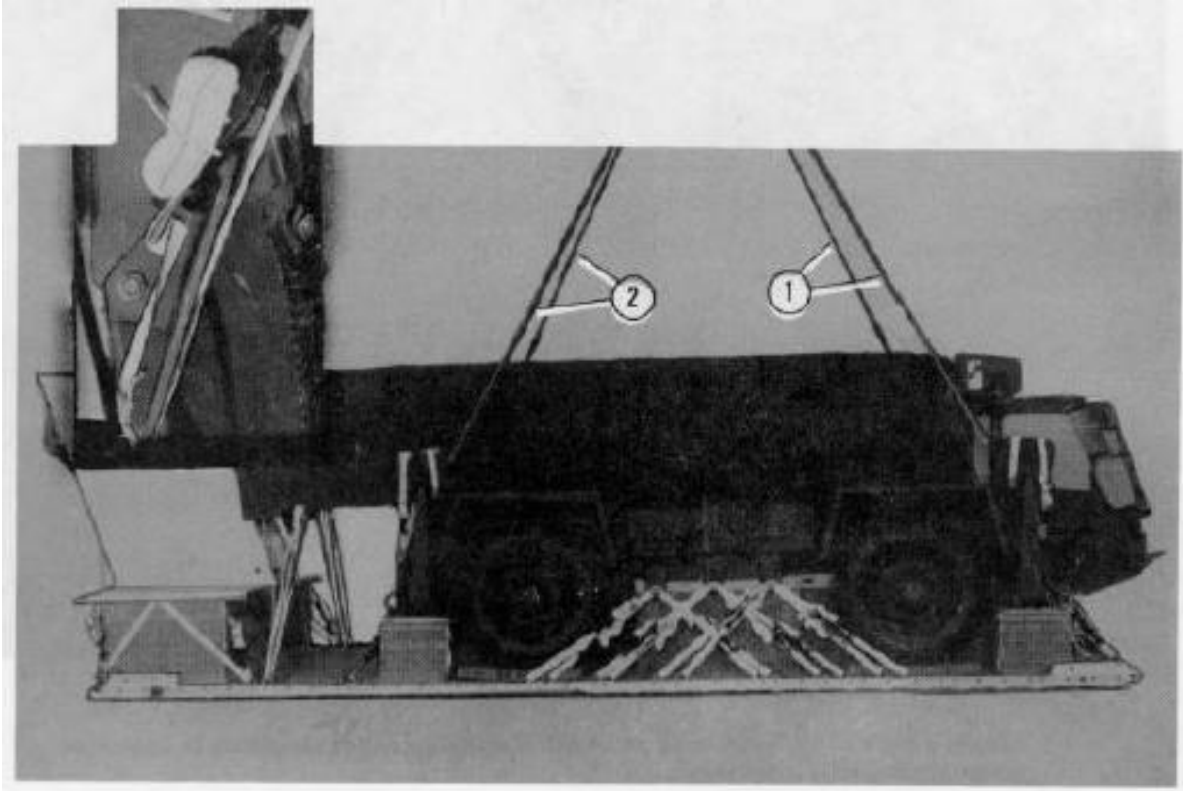


- ① Place a 10-by-19 foot canvas cover over the load.
- ② Secure the cover to convenient points on the load with type III nylon cord.

Figure 5-38. Load cover placed on the load

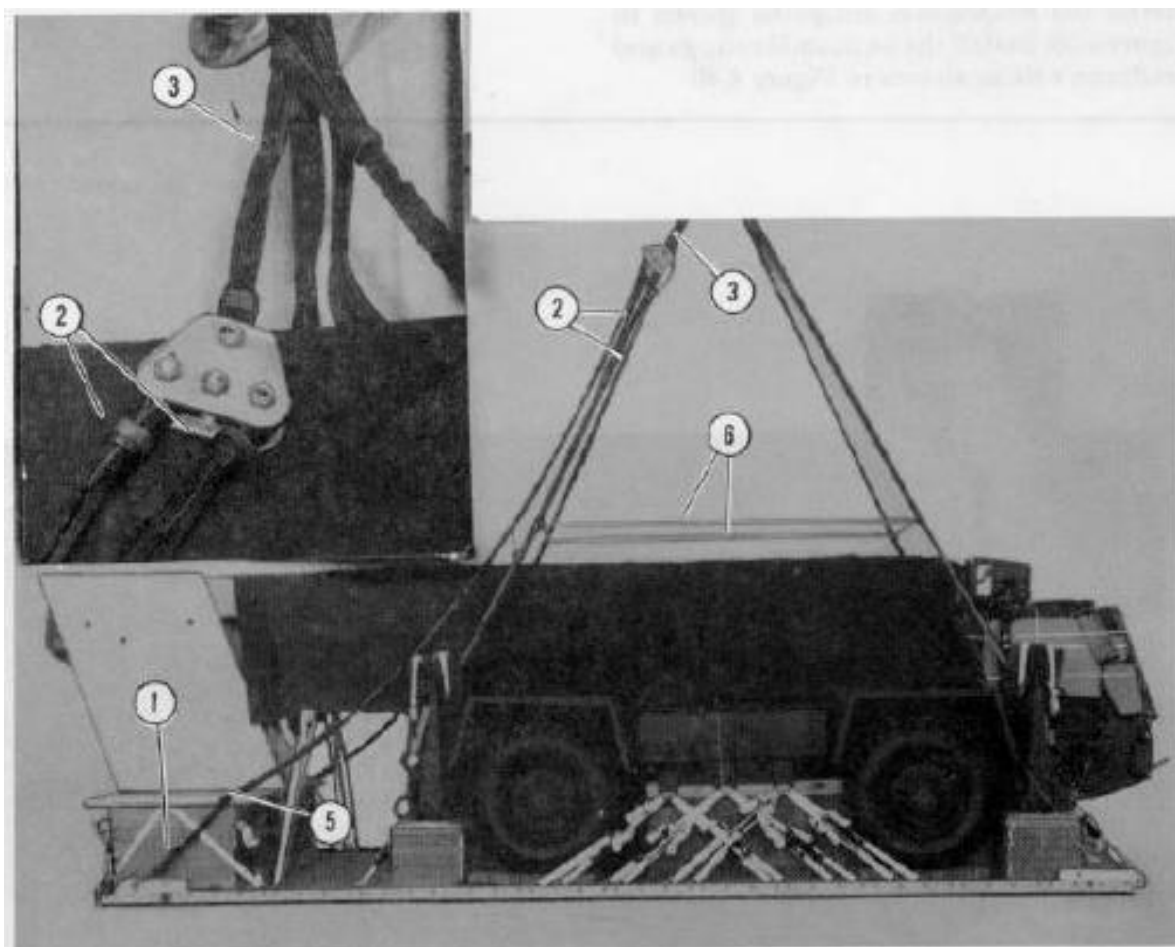
INSTALLING SUSPENSION SLINGS, ANTITUMBLE SLINGS, AND DEADMAN'S TIE

5-12. Install the suspension slings as shown in Figure 5-39. Install the antitumble slings and deadman's tie as shown in Figure 5-40.



- ① Attach a 16-foot (4-loop), type XXVI nylon suspension sling to the suspension point on each front outrigger with a large clevis.
- ② Attach a 12-foot (4-loop), type XXVI nylon suspension sling to the suspension point on each rear outrigger with a large clevis.

Figure 5-39. Suspension slings installed

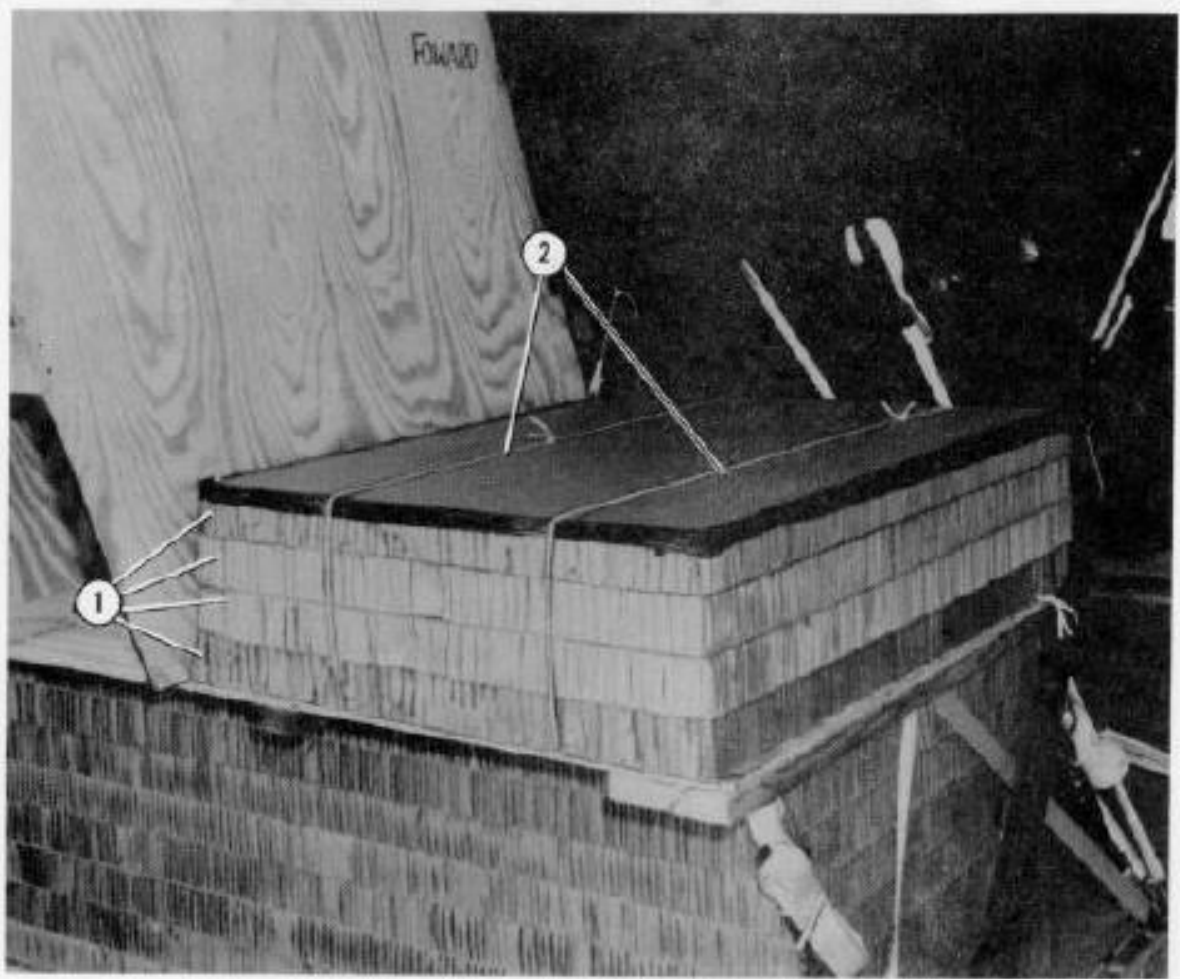


- ① Attach a 20-foot (2-loop), type XXVI nylon webbing antitumble sling to each rear tandem link with a large clevis.
- ② Attach the free end of the right rear suspension sling and the right antitumble sling to the outside pins of the four-point link assembly.
- ③ Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the top pin of the four-point link assembly.
- ④ Repeat the procedures in steps 2 and 3 for the left side.
- ⑤ Safety the antitumble slings to the first hole of the parachute stowage platform with type I, ¼-inch cotton webbing.
- ⑥ Safety the suspension slings with a deadman's tie according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 5-40. Antitumble slings and deadman's tie installed

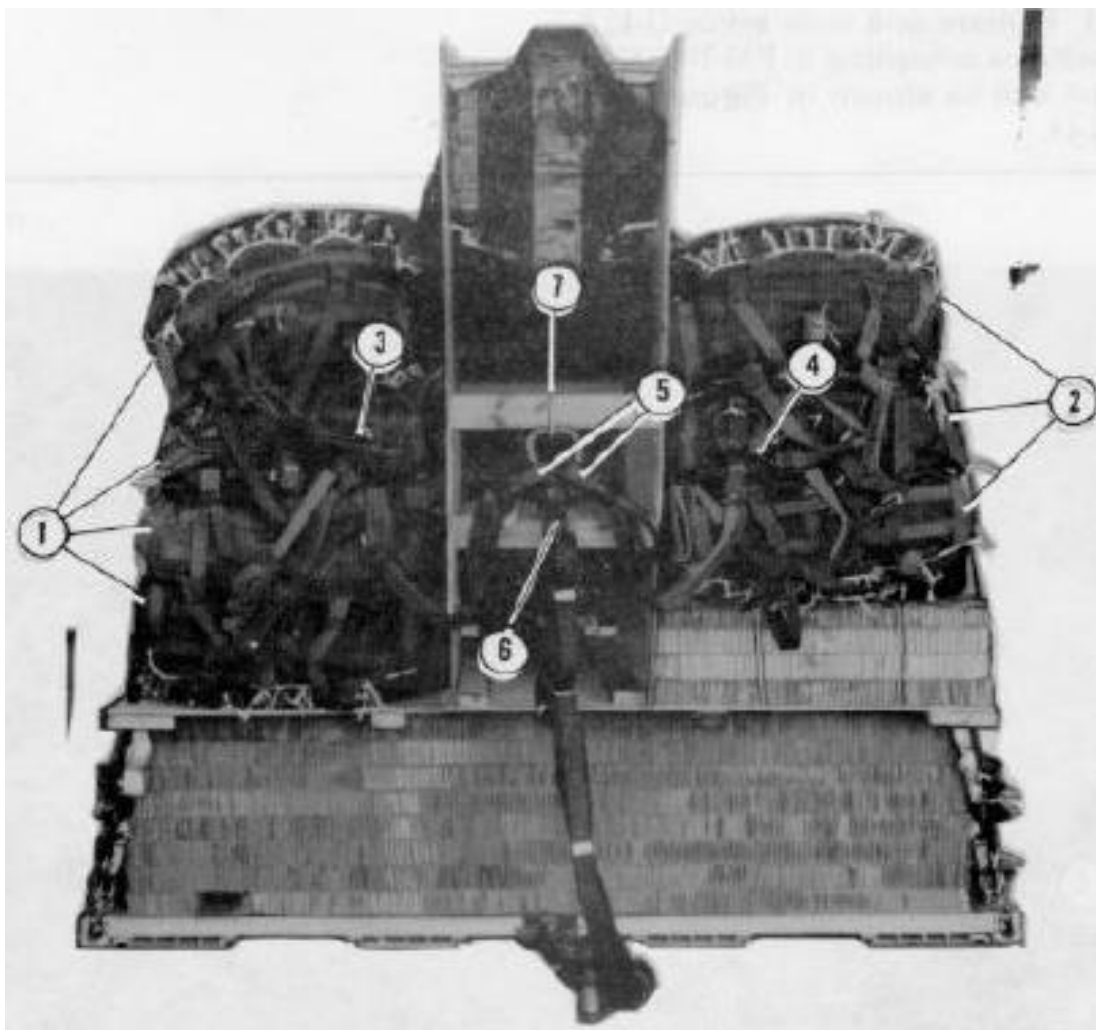
STOWING CARGO PARACHUTE

5-13. Build a parachute filler as shown in Figure 5-41. Prepare and stow seven G-11A cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figures 5-42, 5-43, and 5-44.



- ① Place four 36- by 48-inch pieces of honeycomb on the right side of the parachute stowage platform. Tape the edges of the top layer of honeycomb.
- ② Run two lengths of type III nylon cord around the honeycomb stack and under the parachute stowage platform. Tie the ends with a surgeon's knot and a locking knot.

Figure 5-41. Parachute filler prepared



- ① Place four G-11A cargo parachutes on the left side of the parachute stowage platform.
- ② Place three G-11A cargo parachute on the right side of the parachute stowage platform.
- ③ Group the deployment bag bridle loops of the four cargo parachutes on the left with a large clevis. Install a 3-foot (4-loop), type XXVI nylon webbing sling to the clevis bolt.
- ④ Repeat the procedures in step 3 for the three cargo parachutes on the right.
- ⑤ Group the two 3-foot (4-loop), type XXVI nylon webbing slings to a large clevis.
- ⑥ Install a 9-foot (4-loop), type XXVI nylon webbing deployment line to the clevis bolt.
- ⑦ Safety the large clevis to the top rear 2-by 4-by 20 $\frac{3}{4}$ -inch lumber on the parachute protector boards with a double length of type I, $\frac{1}{4}$ -inch cotton webbing.

Figure 5-42. Parachutes stowed

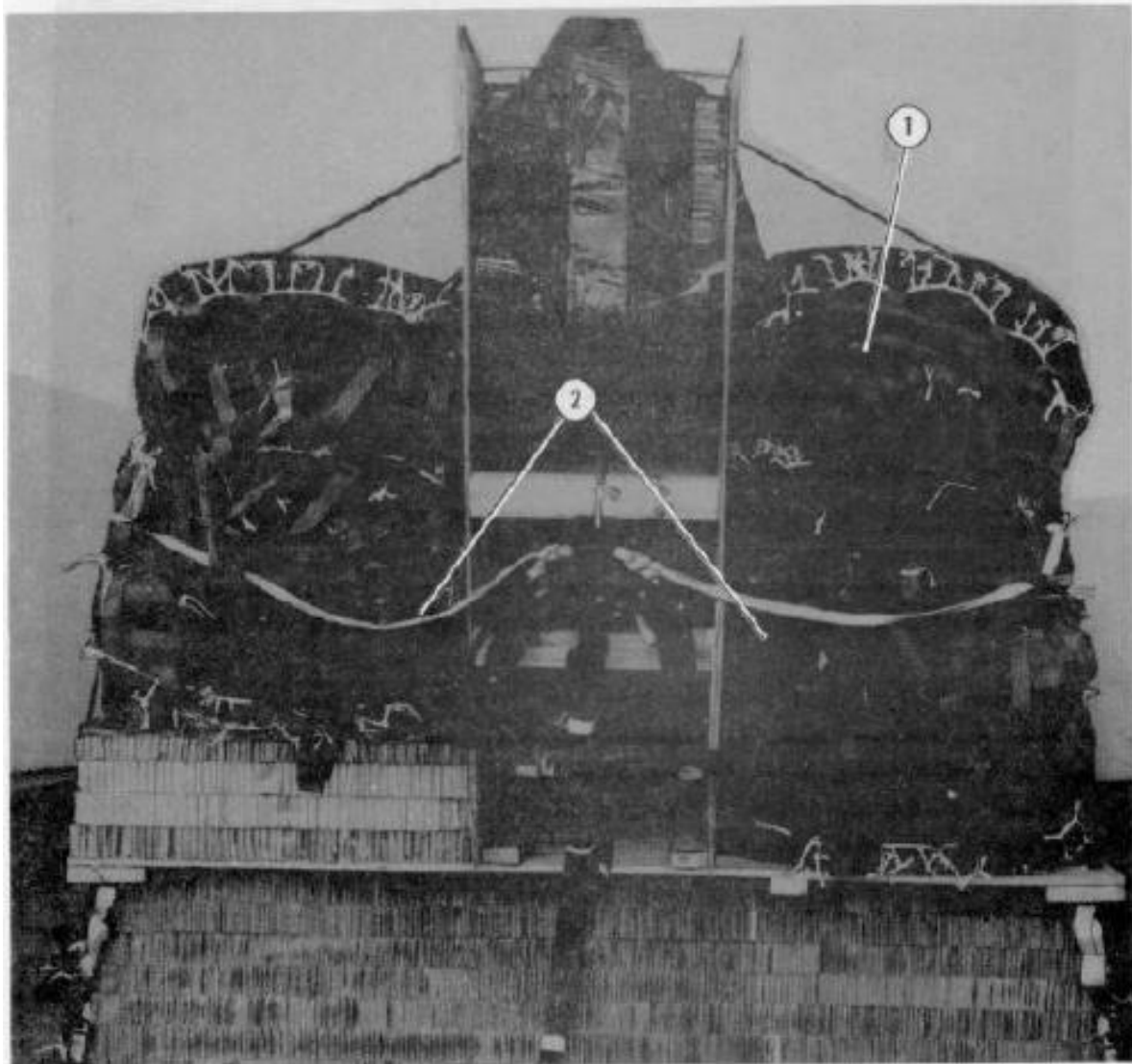
CAUTION

The load binders of the parachute restraint straps must be safetied to the clevis with type III nylon cord to prevent loss during airdrop



- ① Run a length of type X nylon webbing (restraint strap) through the right middle hole on the parachute stowage platform, through the middle outside carrying handles, over the parachute protector boards, through the left outside middle carrying handles, and through the middle hole on the parachute stowage platform. Secure both ends with D-rings and load binders to clevis 19 and 19A.
- ② Run a second restraint strap through the right front hole of the parachute stowage platform, through the top outside carrying handles and bag bridles, around the front of the parachute protector boards, through the bag bridles and the outside carrying handles, and through the left front hole of the parachute protector boards. Secure both ends with D-rings and load binders to clevises 18 and 18A.

Figure 5-43. Front and middle parachute restraint straps installed

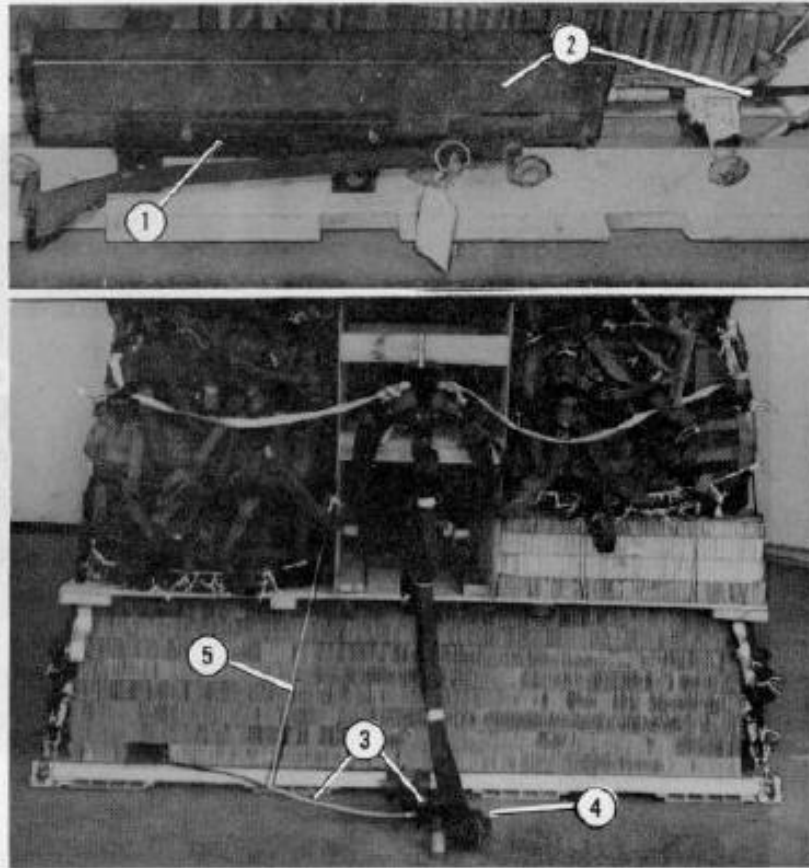


- ① Run a third restraint strap through the right rear hole of the parachute stowage platform, through the bottom outside carrying handles and bag bridles, and through the left rear hole of the parachute stowage platform. Secure both ends with D-rings and load binders to clevises 21 and 21A.
- ② Install two multicut parachute release straps with three release knives according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 5-44. Rear parachute restraint strap and multicut release knives installed

INSTALLING EXTRACTION SYSTEM

5-14. Install the components of the EFTC and the extraction parachute jettison system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 5-45.

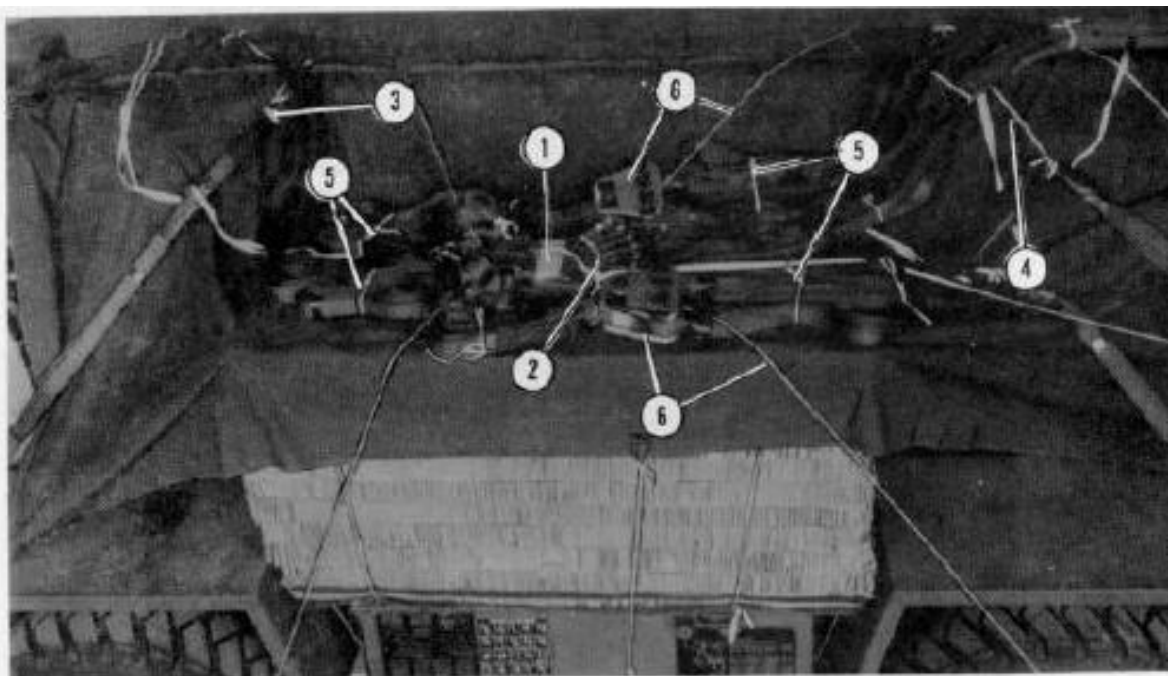


- ① Install the actuator brackets to the front mounting holes in the left platform side rail.
- ② Install the actuator, and attach a 24-foot cable. Route the cable to the inside of the lashings and under the parachute stowage platform. Install the extraction parachute jettison system platform cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 if applicable
- ③ Install the latch assembly, and attach the cable using the short extraction link.
- ④ Attach the free end of the 9-foot (4-loop), type XXVI nylon webbing deployment line to the top link assembly. S-fold the deployment line, and tape or tie the fold in two places with type I, ½-inch cotton webbing.
- ⑤ Safety the cable to the parachute protector board with a length of type III nylon cord.

Figure 5-45. Extraction force transfer coupling system installed

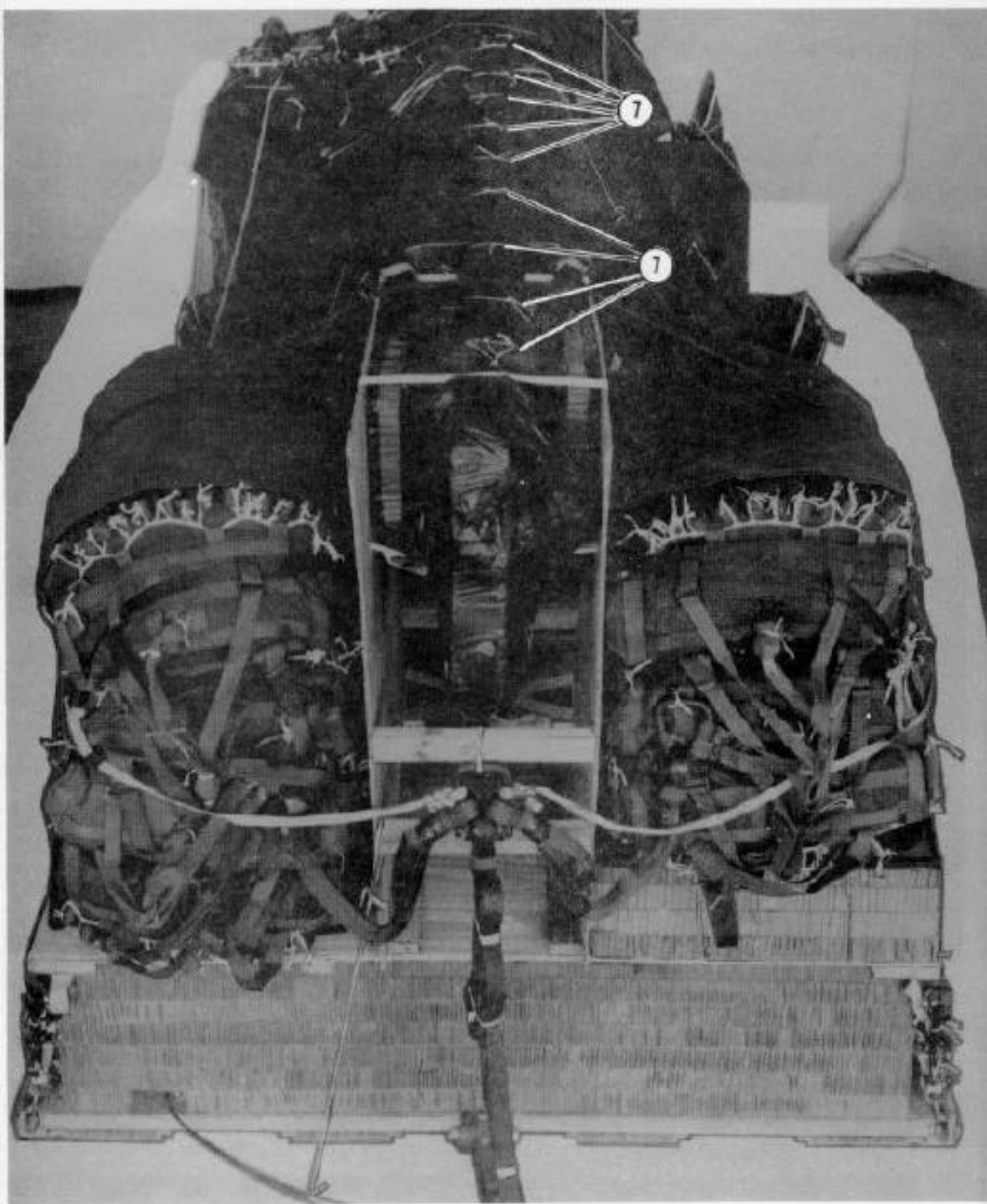
INSTALLING RELEASE SYTSEM

5-15. Prepare and attach an M-2 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 5-46.



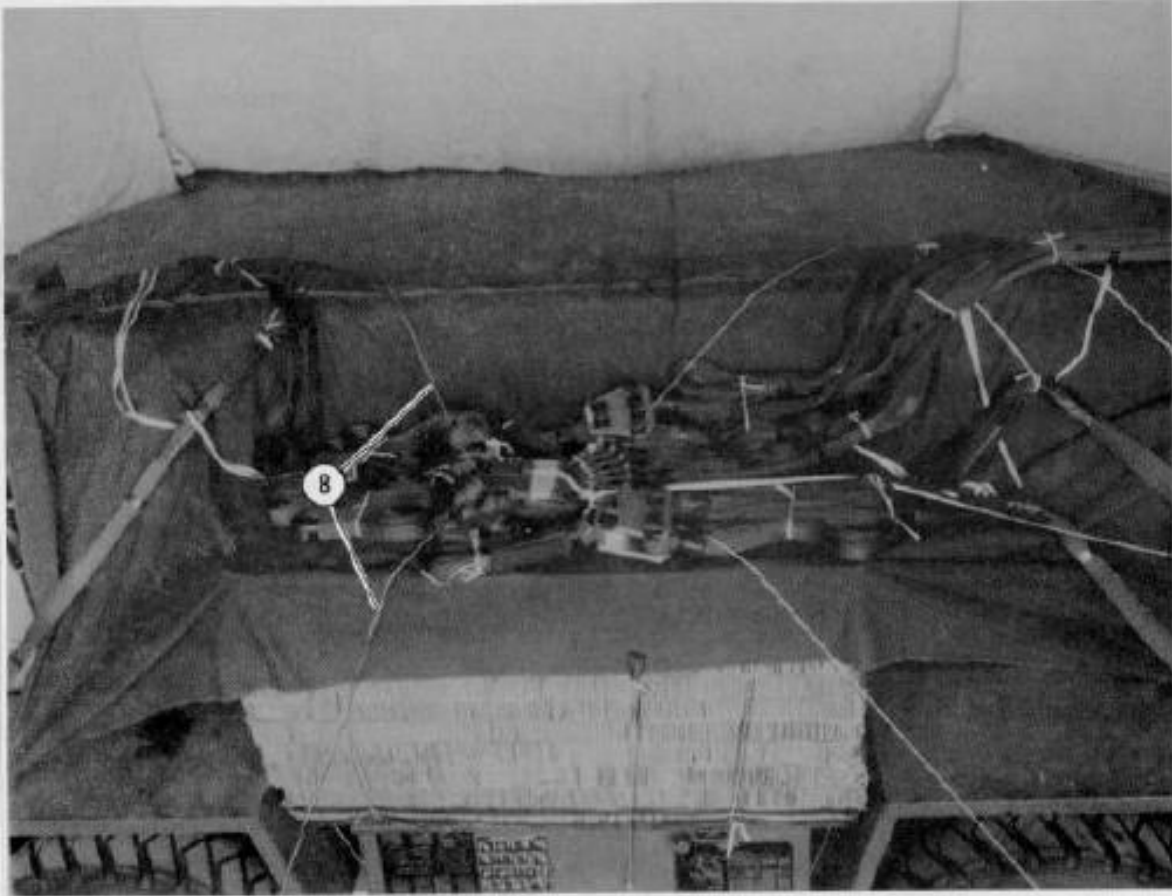
- ① Place the M-2 cargo parachute release on top of the parachute release support.
- ② Attach the parachute risers to the release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ③ Safety the front suspension slings to the upper lifting provision on the front of the vehicle.
- ④ Safety the antitumble slings with a length of type I, ¼-inch cotton webbing by tying it to the left sling, to the right sling, and over the top of the boom.
- ⑤ S-fold the excess, and tie it with type I, ¼-inch cotton webbing.
- ⑥ Place the four-point links on each side of the release. Secure the four-point links with the M-2 release with a length of type III nylon cord to the platform bushings.

Figure 5-46. M-2 release installed



- ⑦ Secure the risers on top of the boom with lengths of type I, ¼-inch cotton webbing.

Figure 5-46. M-2 release installed (continued)



- ⑧ Secure the M-2 release with a length of type III nylon cord to clevises 3 and 3A.

Figure 5-46. M-2 release installed (continued)

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

5-16. Install the emergency restraints according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTES

5-17. Place the extraction parachutes as described below.

- C-130 Aircraft. Place two 28-foot cargo extraction parachutes and a 60-foot (6-loop), type XXVI nylon webbing extraction line on the load for installation the aircraft.
- C-141 Aircraft. Place two 28-foot cargo extraction parachutes and a 120-foot (6-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

MARKING RIGGED LOAD

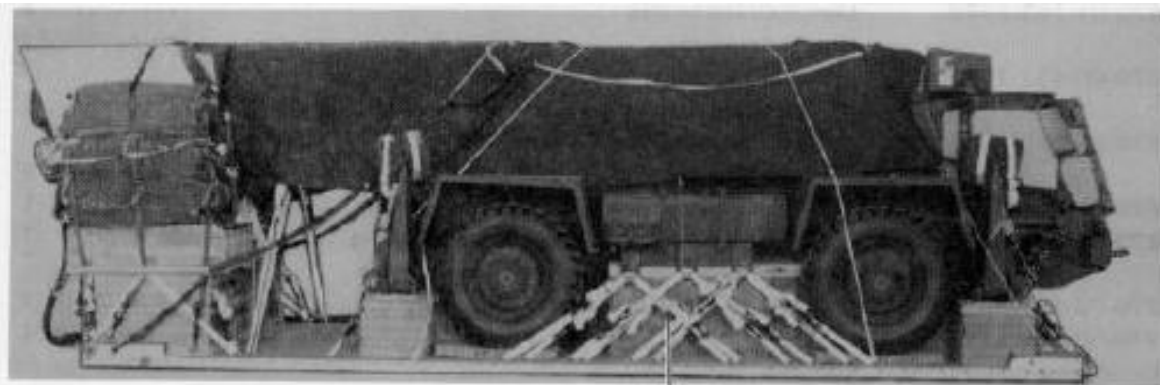
5-18. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 5-47. Complete DD Form 1387-2 (Special Handling Data/Certification), and securely attach it to the load. Indicate on DD Form 1387-2 that the fuel tank and battery have been prepared according to AFMAN 24-204/TM 38-250. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

5-19. Use the equipment listed in Table 5-2 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of balance

RIGGED LOAD DATA

WEIGHT	30,368 Pounds
MAXIMUM WEIGHT	30,400 Pounds
HEIGHT	100 Inches
WIDTH	108 Inches
LENGTH	347 Inches
OVERHANG	Front: 21 ³ / ₄ Inches
	Rear: 36 ³ / ₄ Inches
CENTER OF BALANCE (from the front edge of platform)	123 Inches
Extraction System (adds 18 inches to length of platform)	

Figure 5-47. Koehring 7½-ton crane rigged on a type V platform for low-velocity airdrop

Table 5-2. Equipment required for rigging the Koehring 7 ½-ton crane on a type V platform for low-velocity airdrop

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-00-162-4979	Adapter, link assembly	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-00-568-0323	Band, rubber, retainer	As required
3990-00-937-0272	Binder, load, 10,000-lb	55
	Clevis, suspension:	
4030-00-678-8562	¾-in (medium)	6
4030-00-090-5354	1-in (large)	9
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5782	Coupling, airdrop, extraction force transfer w 24-ft cable	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	55
8305-00-958-3685	Felt, ½-in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction	
1670-00-432-2513	60-ft (5-loop), type XXVI nylon webbing <i>or</i>	1
1670-00-003-1957	60-ft (6-loop), type XXVI nylon webbing <i>or</i>	1
1670-01-064-4454	60-ft (6-loop), type XXVI nylon webbing	1
1670-01-062-6312	120-ft (6loop), type XXVI nylon webbing	1
	Link assembly:	
1670-00-168-6067	Coupling, extraction force transfer coupling system	1
1670-00-006-2752	Four-point	1
	Lumber:	
5510-00-220-6146	2-by 4-in:	
	20-in	8
	20 ¾-in	4
	36-in	10
	48-in	4
	51 ½-in	2
	56-in	1
	63-in	1
	67-in	8
5510-00-220-6448	2-by 6-by 48-in	2
5510-00-220-6274	4-by 4-by 192-in	1
5315-00-010-4657	Nail, steel wire, common, 6d	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 5-2. Equipment required for rigging the Koehring 7 ½-ton crane on a type V platform for low-velocity airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3-by 36-by 96-in:	38 sheets
	6-by 26-in	(1)
	8-by 36-in	(1)
	10-by 40-in	(1)
	13 ½-by 9-in	(4)
	14-by 96-in	(2)
	16-by 9-in	(14)
	16-by 36-in	(4)
	18-by 6-in	(6)
	23-by 41-in	(1)
	25-by 26-in	(2)
	26-by 9-in	(1)
	27- by 45-in	(1)
	33-by 67-in	(16)
	36-by 41-in	(1)
	36-by 48-in	(4)
	36-by 55-in	(1)
	36-by 64 ½-in	(11)
	36-by 80-in	(1)
	53-by 9-in	(5)
	96-by 36-in	(17)
	Parachute:	
	Cargo:	
1670-00-269-1107	G-11A or	7
1670-01-016-7841	G-11B	7
1670-00-040-8135	Cargo extraction, 28-ft, heavy-duty	2
	Platform, AD, type V, 24-ft	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(44)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-247-2389	Suspension link	(2)
1670-01-162-2381	Tandem link	(2)
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 5-2. Equipment required for rigging the Koehring 7 ½-ton crane on a type V platform for low-velocity airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5530-00-129-7777	Plywood: ½-by 48-by 96-in	2
5530-00-128-4981	¾-in: 13 ½-by 9-in	2
	16-by 9-in	2
	18-by 6-in	1
	23 ½-by 51 ½-in	1
	26-by 9-in	1
	33-by 67-in	6
	48-by 96-in	1
	58-by 12-in	2
	96-by 12-in	2
	96-by 36-in	4
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop, type XXVI nylon webbing:	
	For antitumble sling:	
1670-01-062-6302	20-ft (2-loop)	2
	For deployment line:	
1670-00-432-2501	9-ft (4-loop) or	1
1670-01-062-6305	9-ft (4-loop)	1
	For extraction line:	
1670-01-062-6311	120-ft (2-loop)	8
	For lifting sling:	
1670-00-432-2507	16-ft (4-loop) or	4
1670-00-003-7237	16-ft (4-loop) or	4
1670-01-062-6308	16-ft (4-loop)	4
	For riser extension:	
	120-ft (2loop)	8
	For suspension sling:	
1670-00-432-2499	3-ft (4-loop) or	4
1670-01-062-6306	3-ft (4-loop)	4
1670-00-432-2506	12-ft (4-loop) or	2
1670-01-062-6307	12-ft (4-loop)	2
1670-00-432-2507	16-ft (4-loop) or	4
1670-00-003-7237	16-ft (4-loop) or	4
1670-01-062-6308	16-ft (4-loop)	4
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 5-2. Equipment required for rigging the Koehring 7 ½-ton crane on a type V platform for low-velocity airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-00-040-8219	Strap, parachute release, multicut comes w 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	55
1670-00-045-9974	Web, adapter, 9-ft (for 28-ft parachute)	2
8305-00-268-2411	Webbing:	As required
	Cotton, ¼-in, type I	
	Nylon:	
	Tubular:	
8305-00-082-5752	½-in <i>or</i>	As required
8305-00-268-2453	½-in	As required
8305-00-261-8584	Type X <i>or</i>	As required
ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism		

Chapter 6

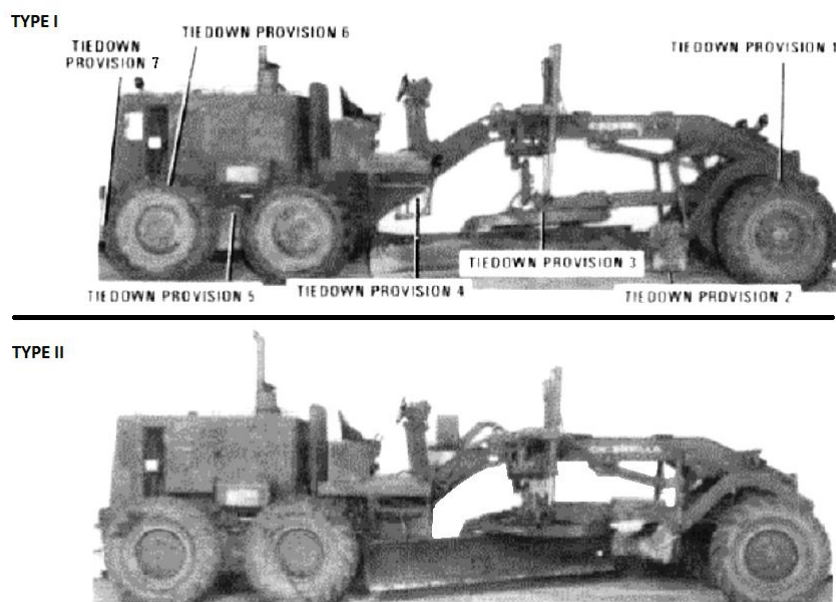
Rigging Type I and II, 130G Motor Graders for Airdrop on a 28-Foot Type V Platform

DESCRIPTION OF LOAD

6-1. The type I and II, 130G motor graders (Figure 6-1) are rigged on a 28-foot, type V platform for low-velocity airdrop from C-130 and C-141 aircraft. The graders are rigged with eight G-11C parachutes and other items of airdrop equipment. The type I and II graders are rigged the same, except where noted.

CAUTION

Close attention **MUST** be given to the rigging procedures in this manual. This load differs in many ways from other loads and has very close tolerances to meet airdrop requirements.



NOTES. 1 Tiedown provisions 1 A through 7A on the left side of the grader are in the same location as tiedown provisions 1 through 7 on the right side of the grader. Tiedown provisions for the type II grader are the same as the type I.
2 Tiedown own provisions 6 and 6A are located to the rear of the deferential housing.

Figure 6-1. Type I and II, 130G motor graders with tiedown provisions

PREPARING PLATFORM

6-2. Prepare a 28-foot, type V platform using two tandem links and 56 tiedown clevises as shown in Figure 6-2.

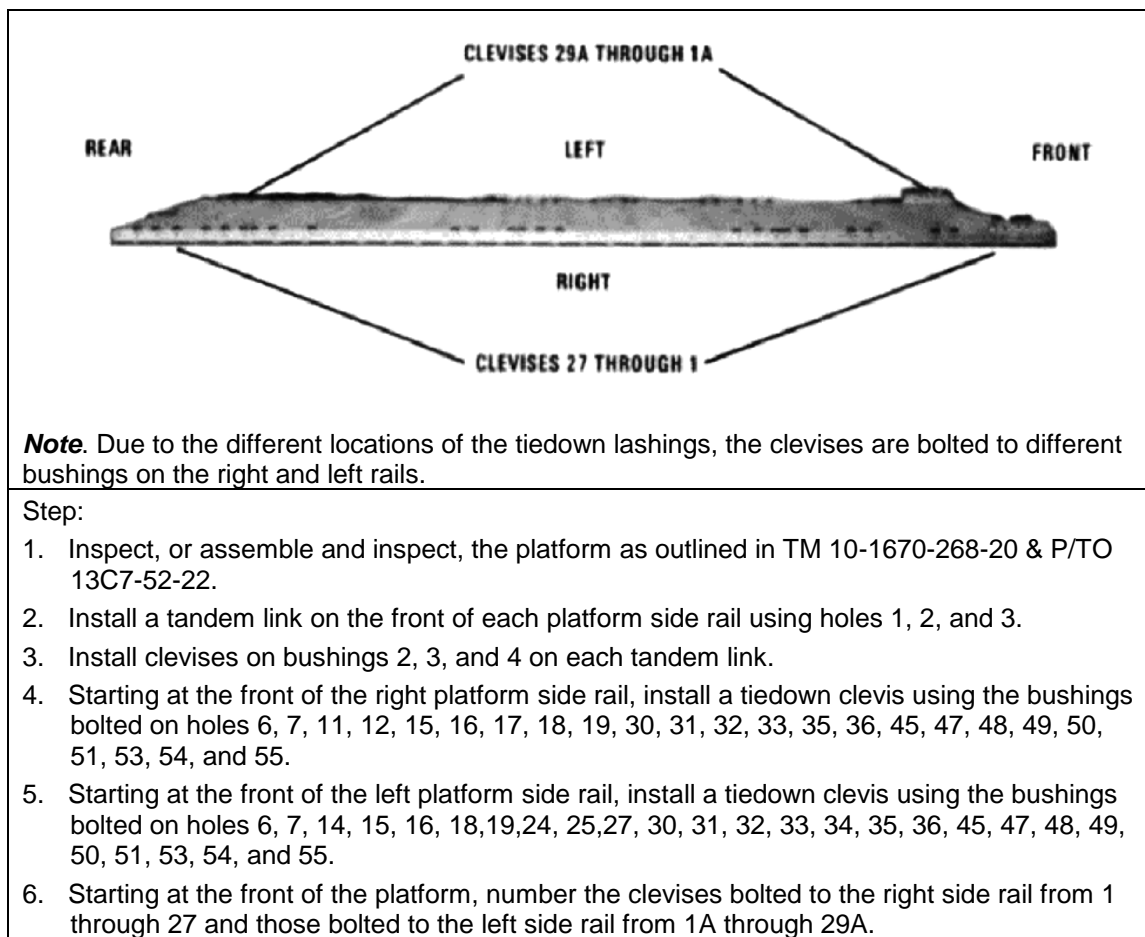


Figure 6-2. Platform prepared

BUILDING AND PLACING HONEYCOMB STACKS

6-3. Build 12 honeycomb stacks using the materials listed in Table 6-1 and as shown in Figures 6-3 through 6-8. Place the stacks on the platform as shown in Figures 6-9 and 6-10.

Note. Do NOT glue the stacks of honeycomb to the platform.

Table 6-1. Materials required to build honeycomb stacks

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	6	55	15	Honeycomb	See Figure 6-3.
	2	4	15	2- by 4-inch lumber	
	1	55	15	Honeycomb	
	1	55	15	¾-in plywood	
2	1	20	30	Honeycomb	See Figure 6-9.
3	1	20	30	Honeycomb	See Figure 6-9.
4	3	54	23	Honeycomb	See Figure 6-4.
	2	54	23	¾-inch plywood	See Figure 6-4.
	1	54	23	Honeycomb	
5	10	24	18	¾-inch plywood	See Figure 6-5.
	2	24	18	Honeycomb	
	1	24	18	Honeycomb	
6	3	96	14	Honeycomb	See Figure 6-6
	3	48	14	Honeycomb	
	1	96	14	¾-inch plywood	
	1	48	14	¾-inch plywood	
	2	4	144	2- by 4-inch lumber	
	10	4	14	2- by 4-inch lumber	
7	4	36	84	Honeycomb	See Figure 6-7.
	4	24	84	Honeycomb	
	4	4	84	2- by 4-inch lumber	
	1	36	84	Honeycomb	
	1	24	84	Honeycomb	
	1	18	10	Honeycomb	
	1	18	5	Honeycomb	
	2	24	8	2- by 8-inch lumber	
	2	8	18	¾-inch plywood	

Table 6-1. Materials required to build honeycomb stacks (continued)

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
8	1	20	36	Honeycomb	See Figure 6-9. See Figure 6-9. See Figure 6-9. See Figure 6-9. See Figure 6-9. See Figure 6-9. See Figure 6-9. See Figure 6-8.
9	1	20	36	Honeycomb	
10	1	20	36	Honeycomb	
11	1	20	36	Honeycomb	
12	9	42	25	Honeycomb	
	2	42	7	Honeycomb	
	6	7	7	¾-inch plywood	
	6	6	18	Honeycomb	
	2	6	15	¾-in plywood	

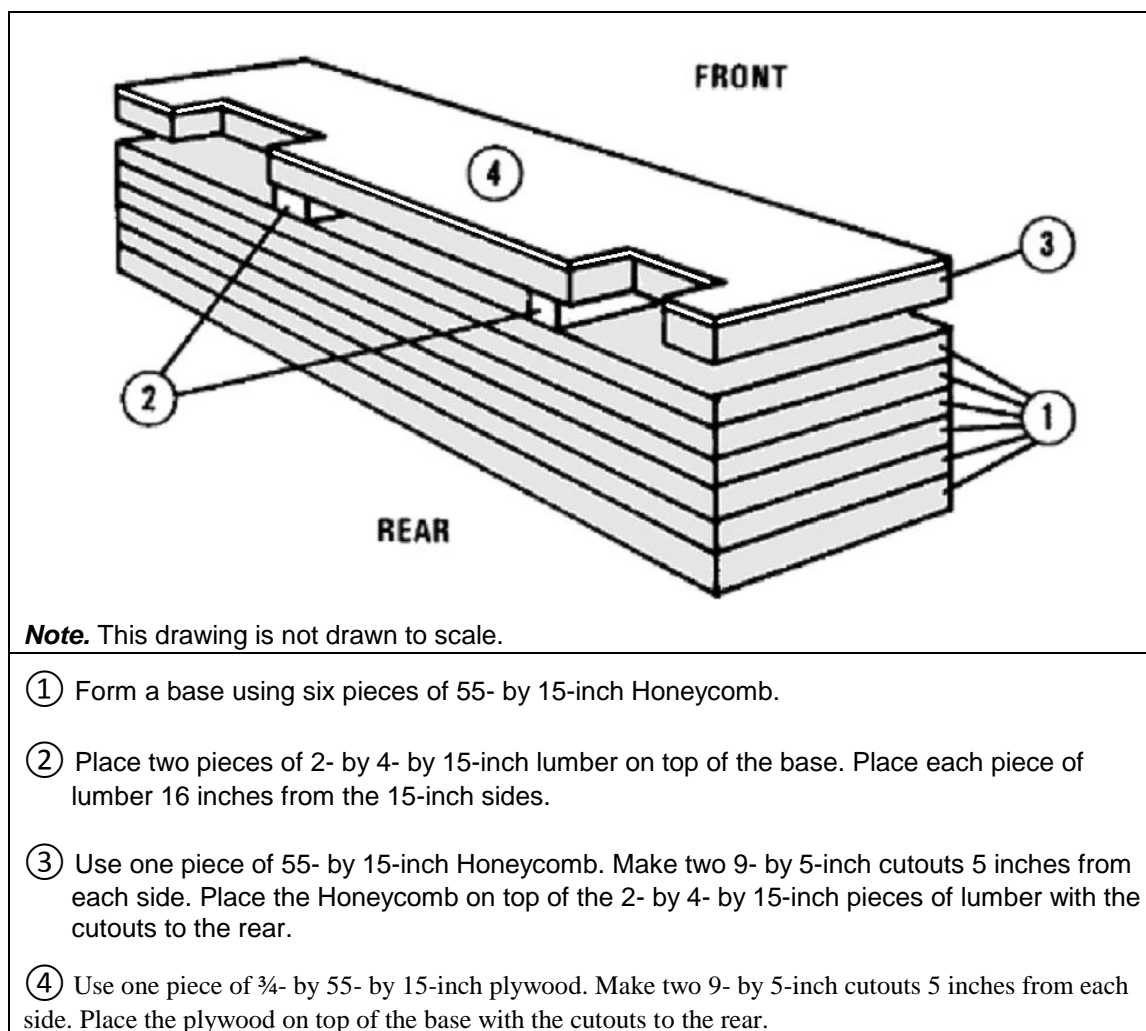


Figure 6-3. Stack 1 prepared

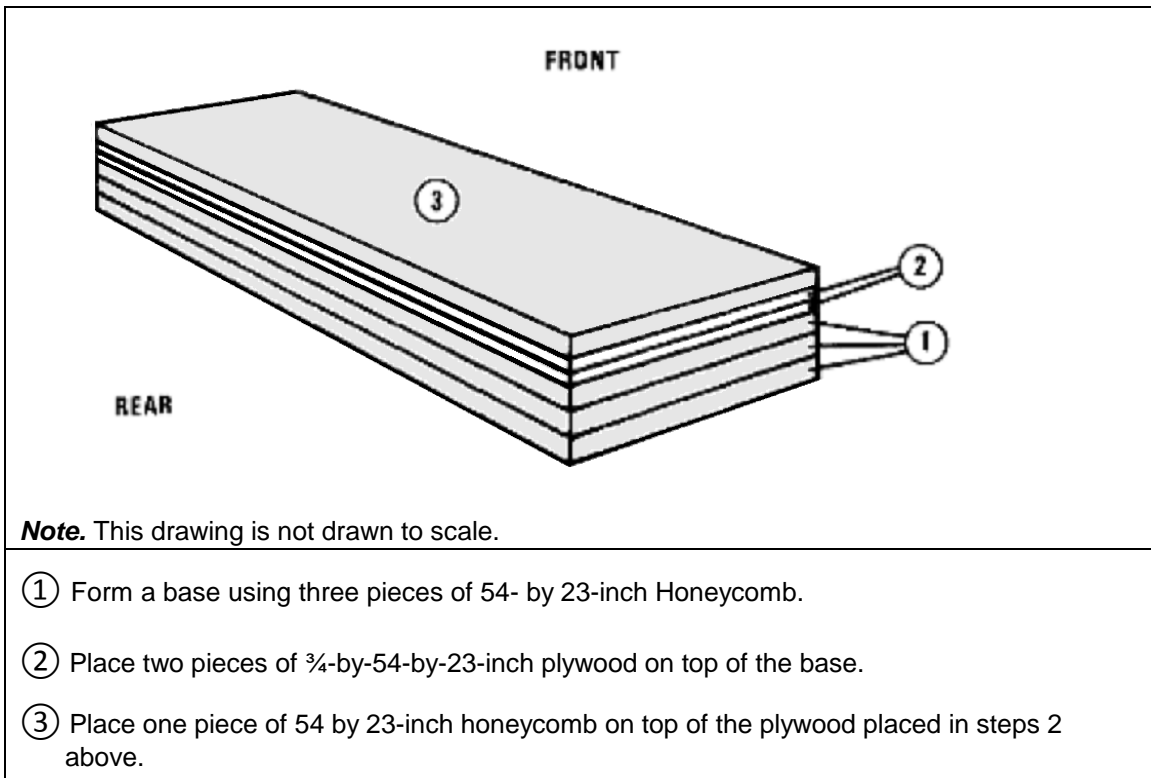


Figure 6-4. Stack 4 prepared

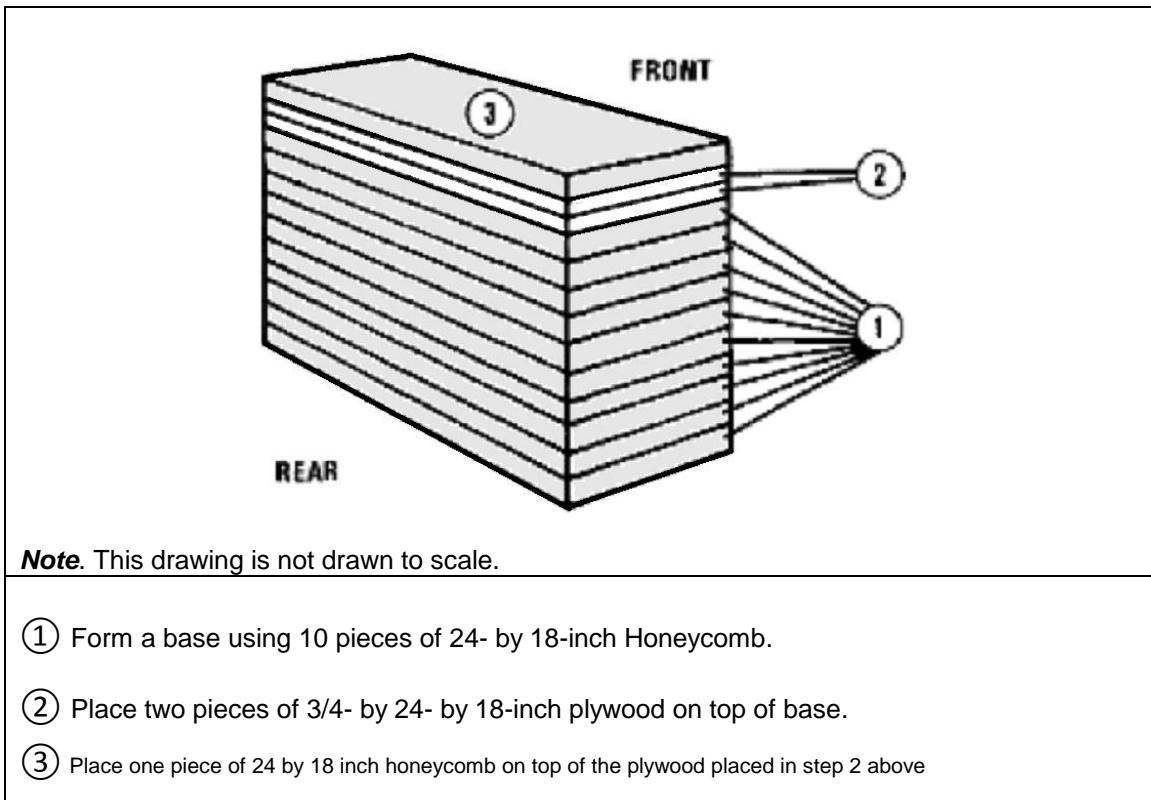
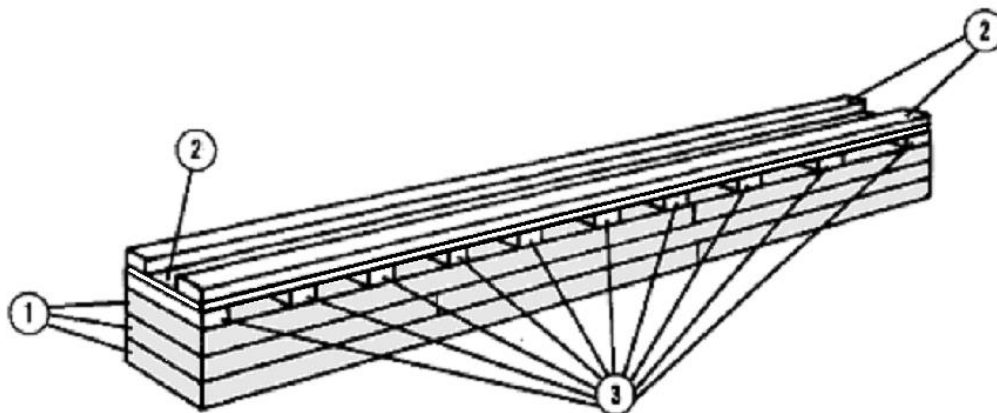


Figure 6-5. Stack 5 prepared



Note. This drawing is not drawn to scale.

- ① Form a base using three pieces of 14- by 96-inch honeycomb and three pieces of 14- by 48-inch honeycomb. Form each layer of honeycomb by using one piece of 14- by 96-inch and one piece of 14- by 48-inch honeycomb. Alternate the pieces of honeycomb in each layer.
- ② Place one piece of 3/4- by 96- by 14-inch plywood and one piece of 3/4- by 48- by 14-inch plywood side by side. Use eight penny nails to nail a piece of 2- by 4- by 144-inch lumber along each 144-inch edge of the plywood.
- ③ Use ten penny nails to nail 10 pieces of 2- by 4- by 14-inch lumber to the bottom of the plywood. Nail one piece on each 14-inch edge. Nail the other pieces 16 inches apart measuring from the center of each piece. Place this load spreader on top of the honeycomb stack.

Figure 6-6. Stack 6 prepared

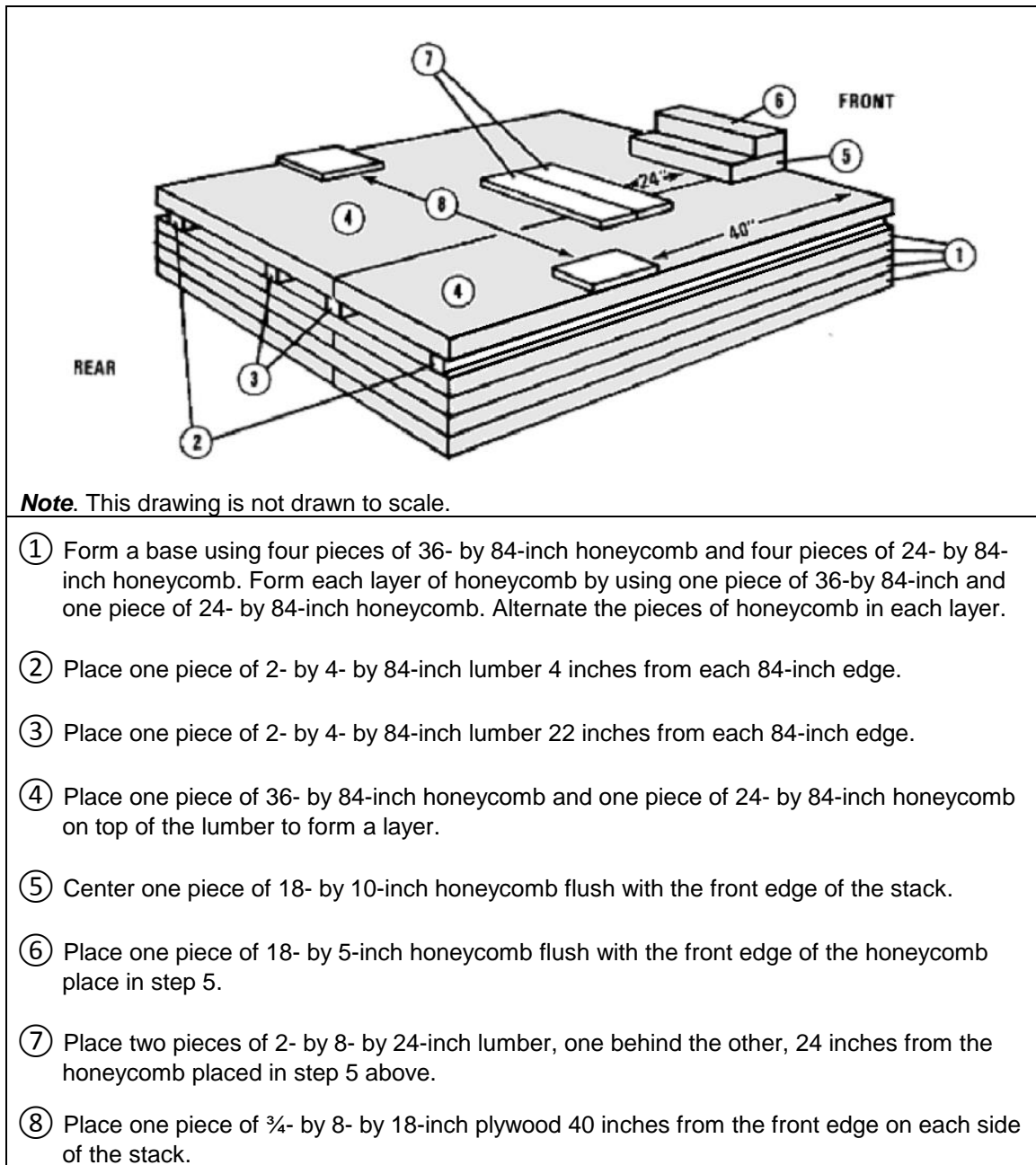
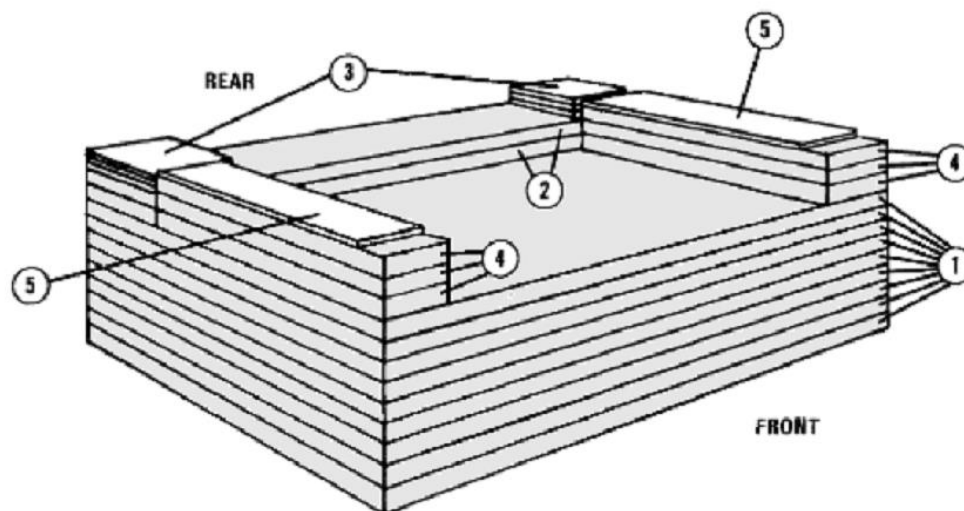


Figure 6-7. Stack 7 prepared



Notes. This drawing is not drawn to scale.

- ① Form a base using nine pieces of 42- by 25-inch honeycomb.
- ② Place two pieces of 42- by 7-inch honeycomb flush with the rear edge of the base.
- ③ Cut six pieces of $\frac{3}{4}$ - by 7- by 7-inch plywood. Stack three pieces on each end of the honeycomb placed in step 2 above.
- ④ Cut six pieces of 6- by 18-inch honeycomb. Stack three pieces flush with each 25-inch side of the base.
- ⑤ Cut two pieces of $\frac{3}{4}$ - by 6- by 15-inch plywood. Place each piece flush with the rear edge of each stack of honeycomb placed in step 4 above.

Figure 6-8. Stack 12 prepared

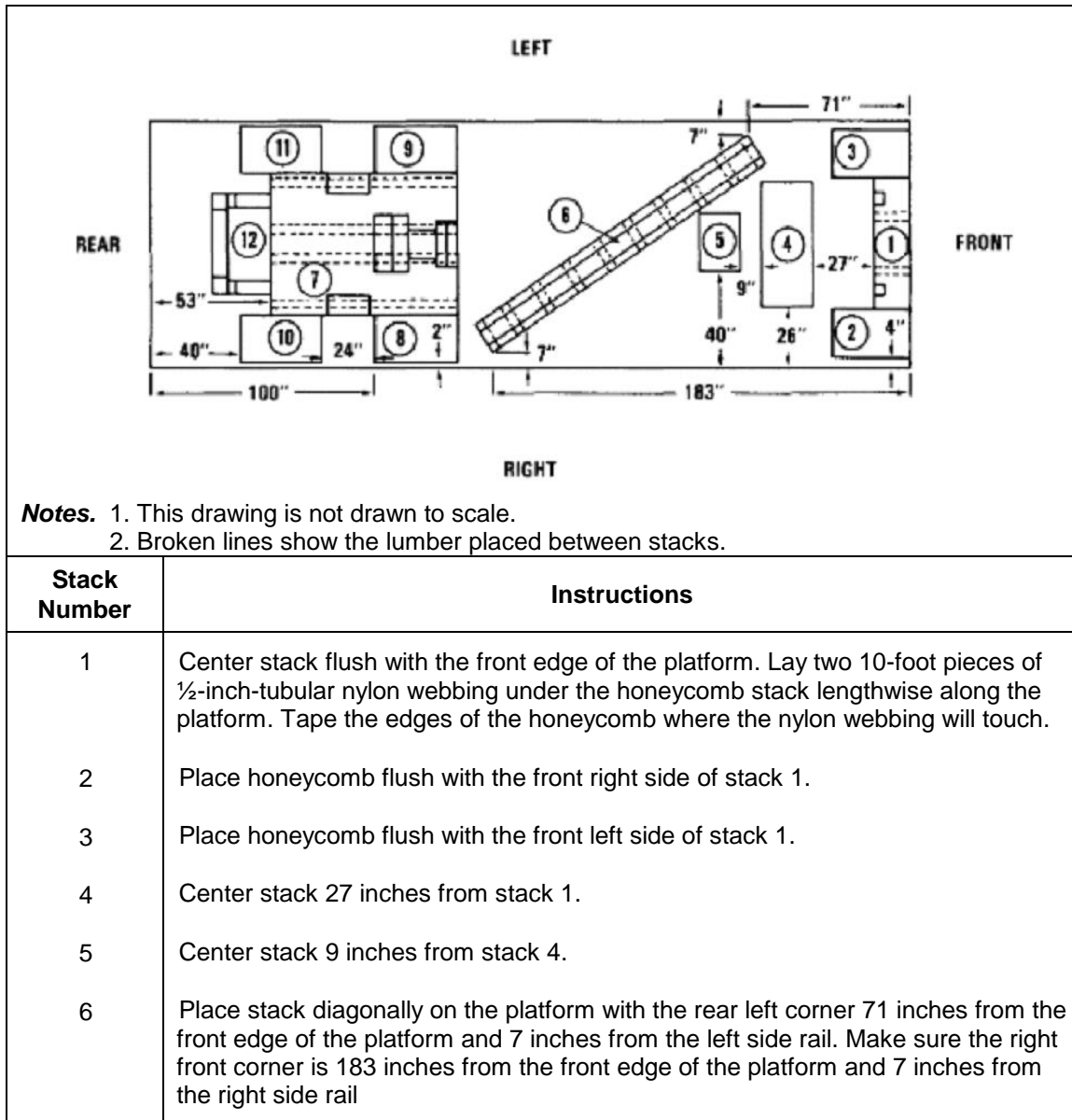


Figure 6-9. Honeycomb stacks and webbing placed on platform

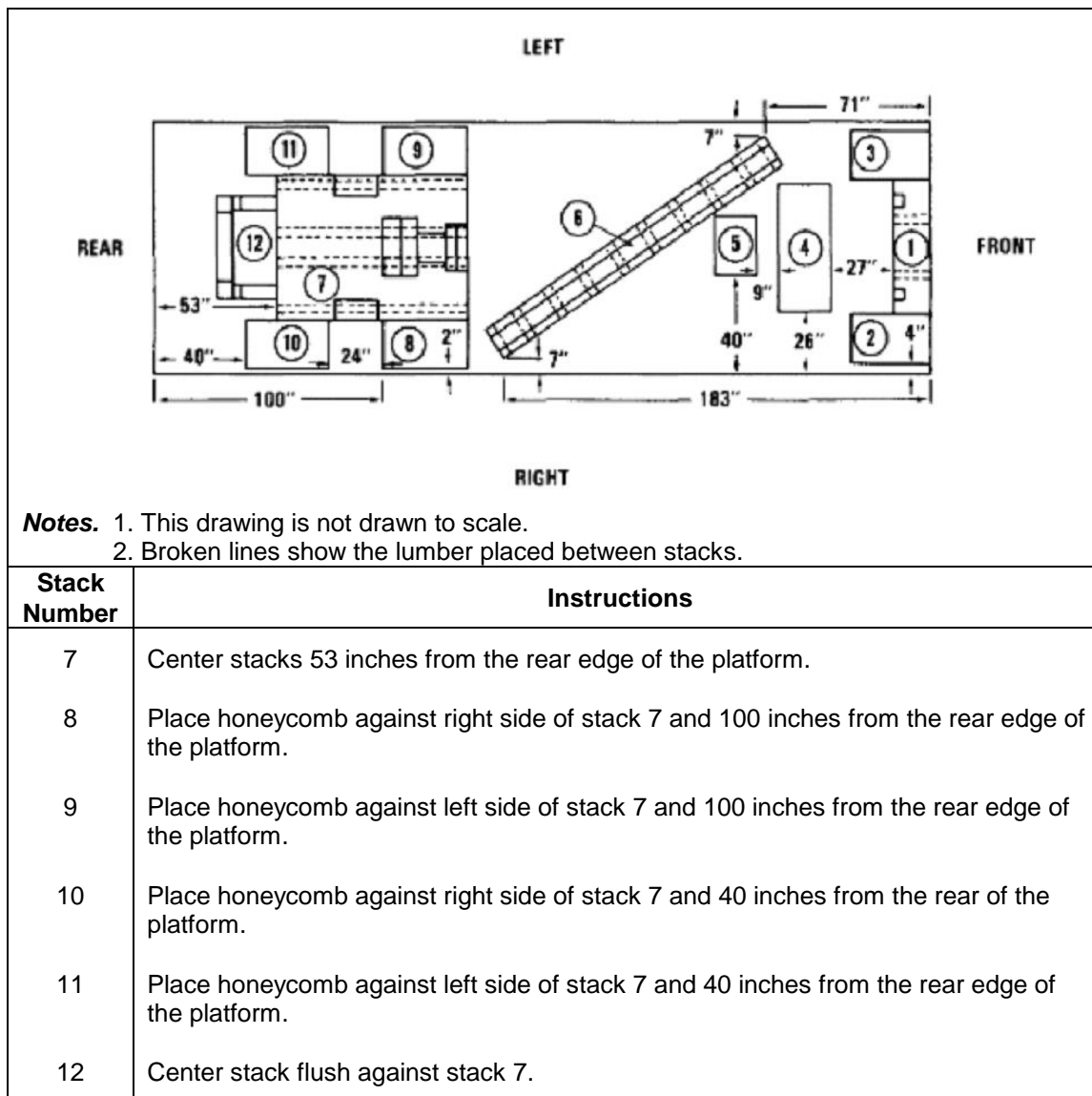


Figure 6-9. Honeycomb stacks and webbing placed on platform (continued)

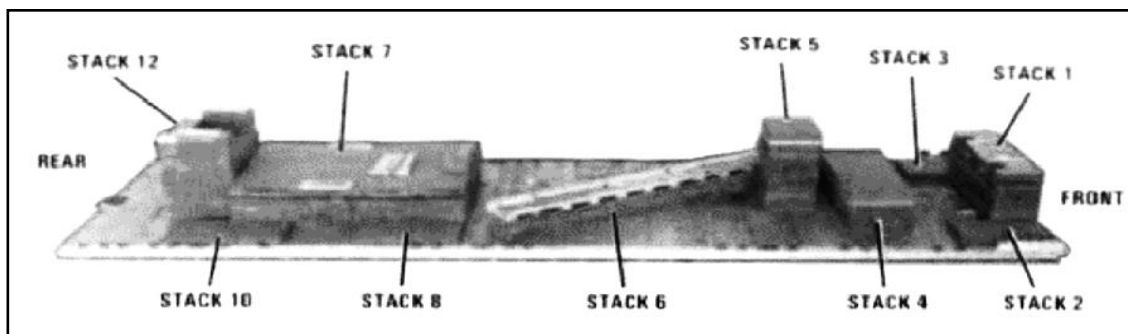


Figure 6-10. Side view of honeycomb stacks placed on platform

BUILD THE WOODEN SUPPORTS

6-4. Build the wooden supports as described in Figure 6-11.

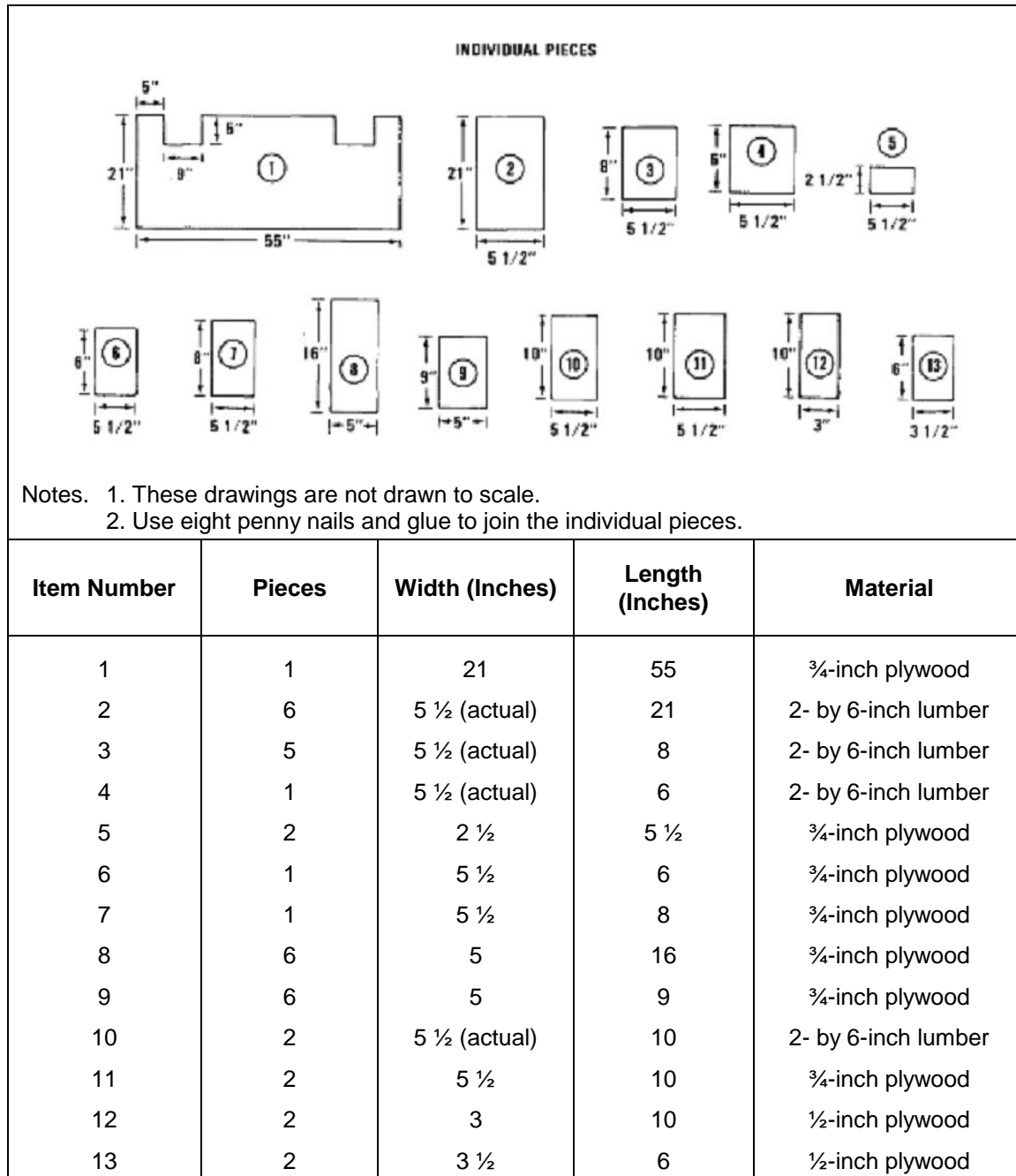


Figure 6-11. Construction details for front-end frame support

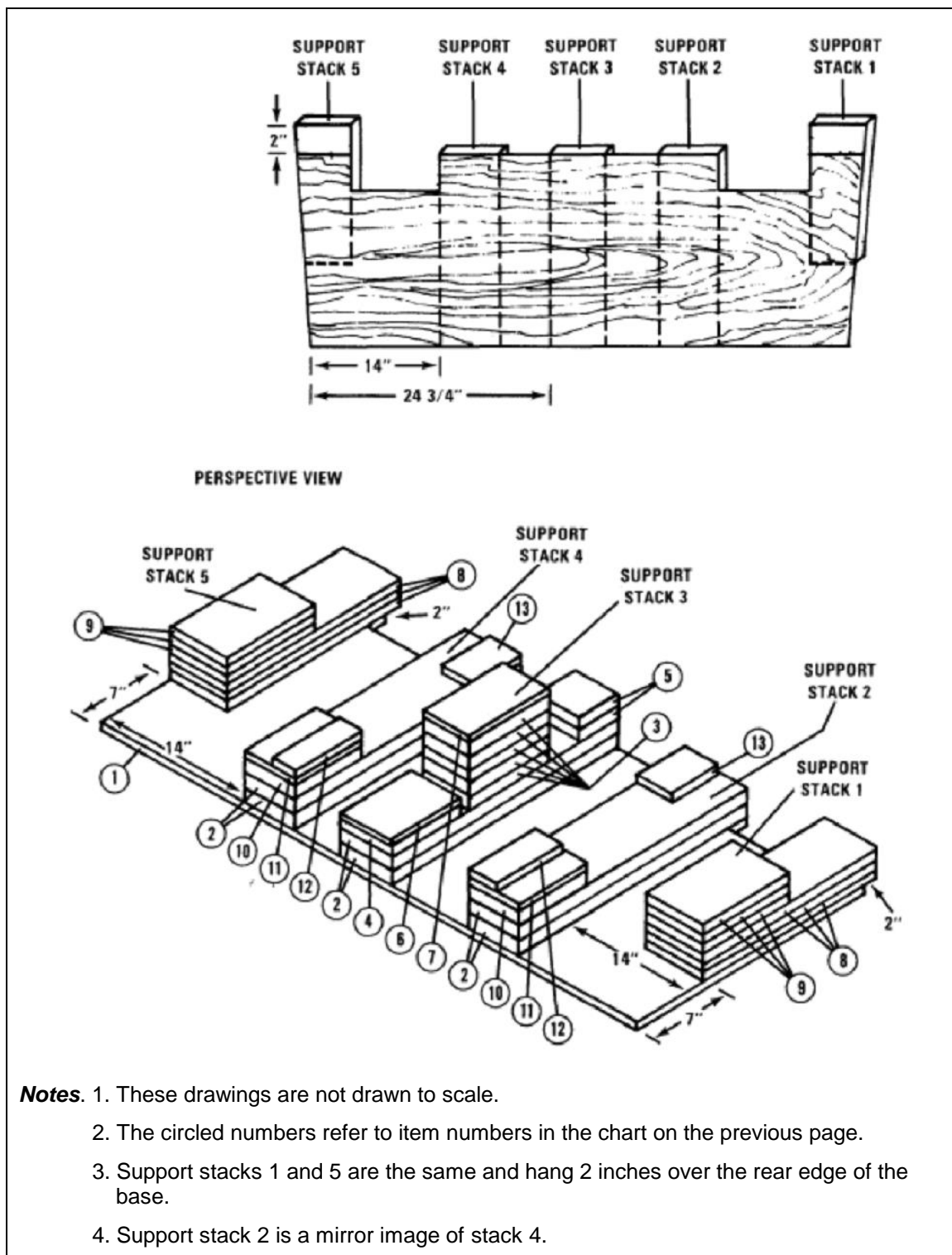


Figure 6-11. Construction details for front-end frame support (continued)

BUILDING DRAWBAR AND SCARIFIER SUPPORT.

6-5. Build the drawbar and scarifier support as shown in Figure 6-12.

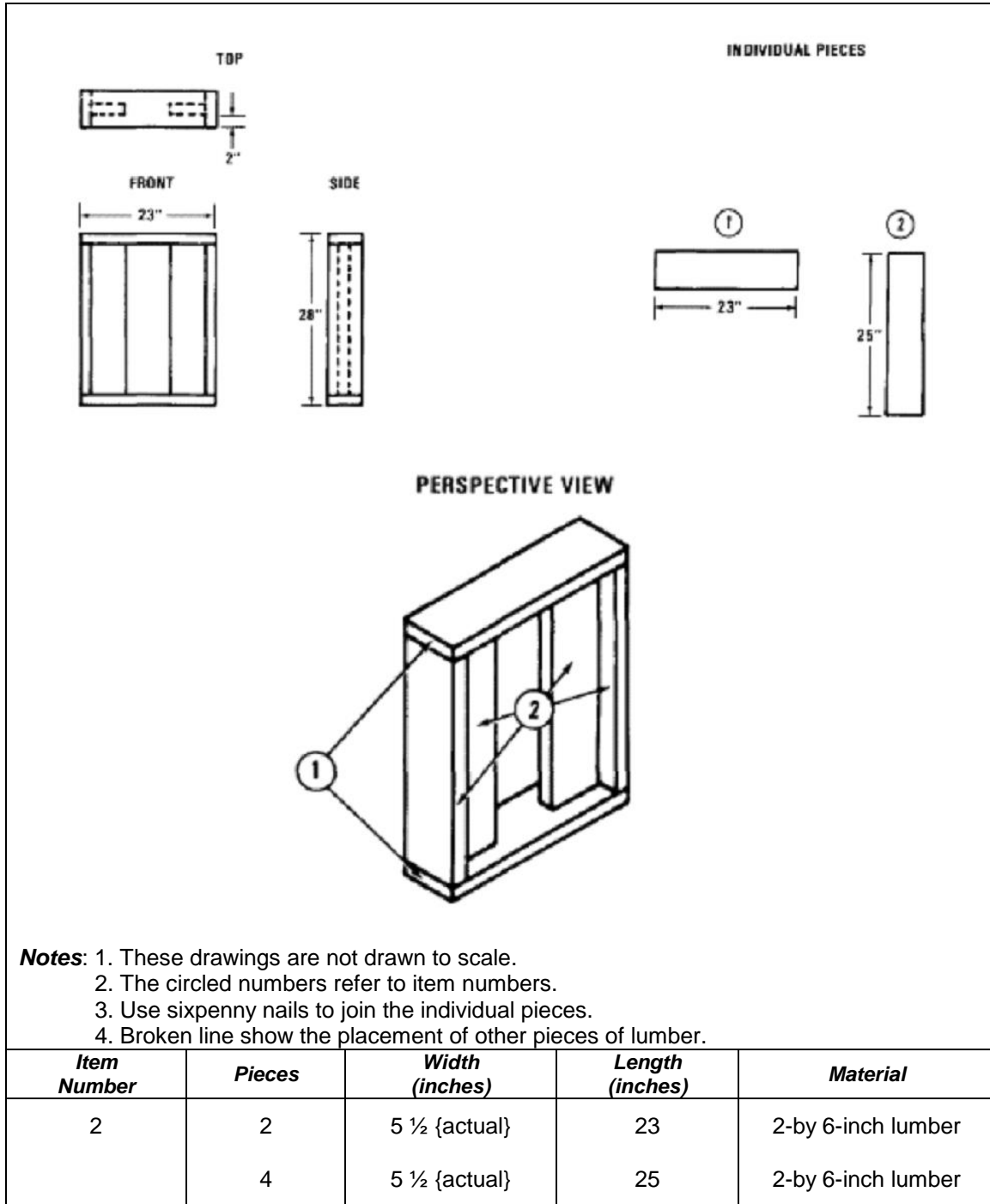


Figure 6-12. Construction details for drawbar and scarifier support

BUILDING FRONT FRAME AND DRAWBAR SUPPORT.

6-6. Build the front frame and drawbar support as shown in Figure 6-13.

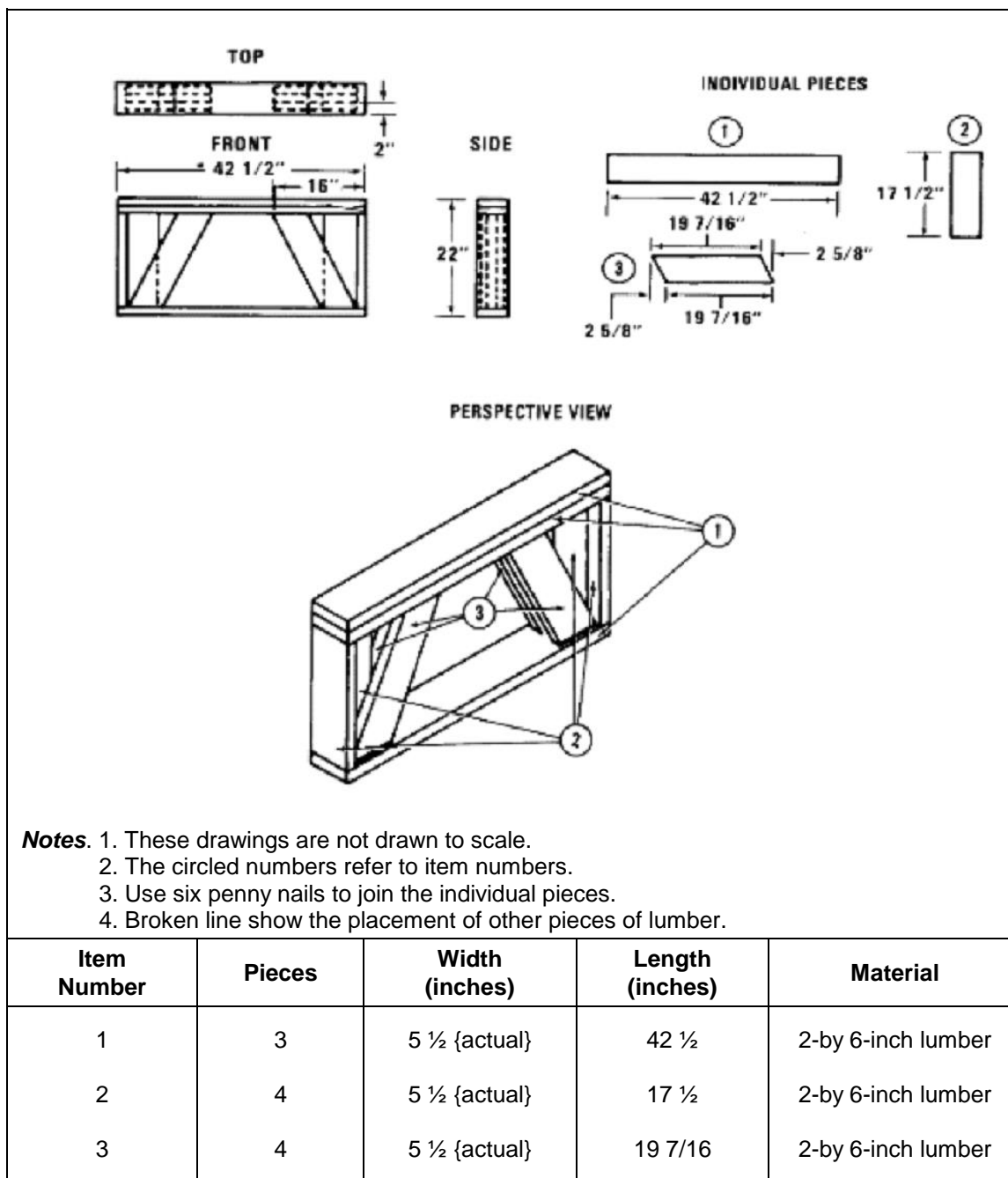
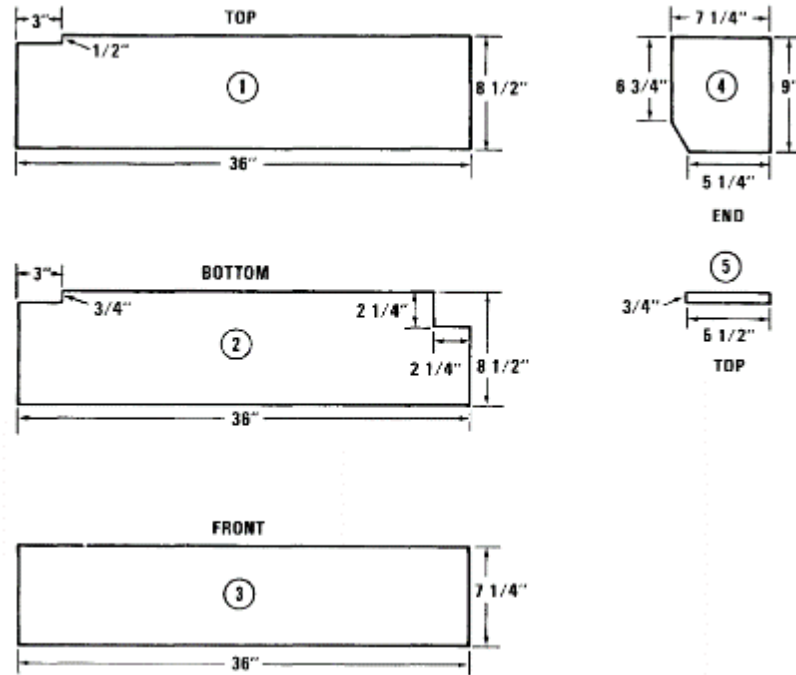


Figure 6-13. Construction details for front frame and drawbar support

BUILDING LEFT SIDE CONTROLS PROTECTOR.

6-7. Build the protector for the controls located on the left side of the operator compartment as shown in Figure 6-14.

- Note.** 1. These drawings are not drawn to scale.
2. The circled numbers refer to item numbers.
3. Use the eight penny nails to join the individual pieces.



<i>Item Number</i>	<i>Pieces</i>	<i>Width (inches)</i>	<i>Length (inches)</i>	<i>Material</i>
1	2	8 ½	36	¾-inch plywood
2	1	8 ½	36	¾-inch plywood
3	1	7 ¼	36	½ -inch plywood
4	1	7 ¼	9	½-inch plywood
5	1	¾	5 ½	¾-inch plywood

Figure 6-14. Construction details for left side controls protector

- Notes.** 1. These drawings are not drawn to scale.
 2. The circled numbers refer to item numbers
 3. Use eight penny nails to join the individual pieces.

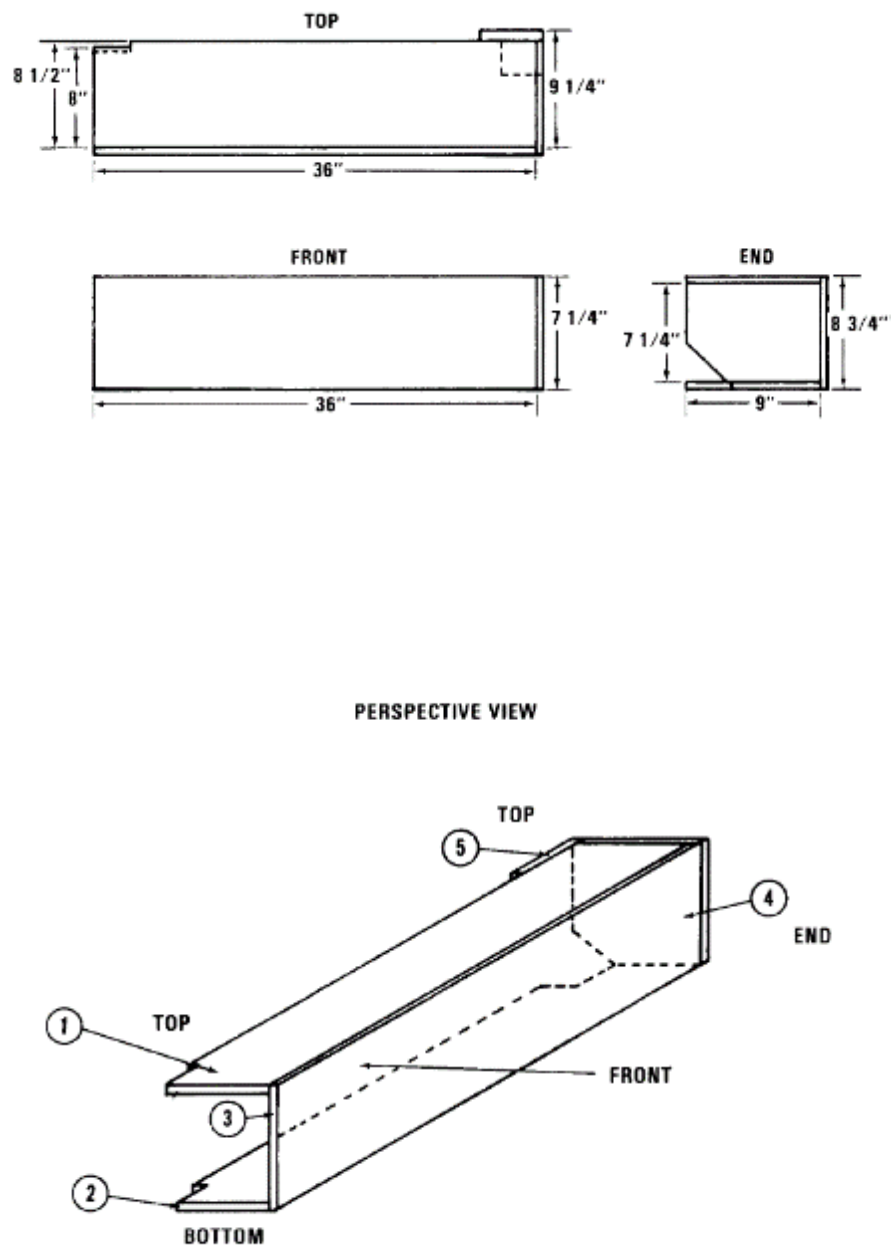
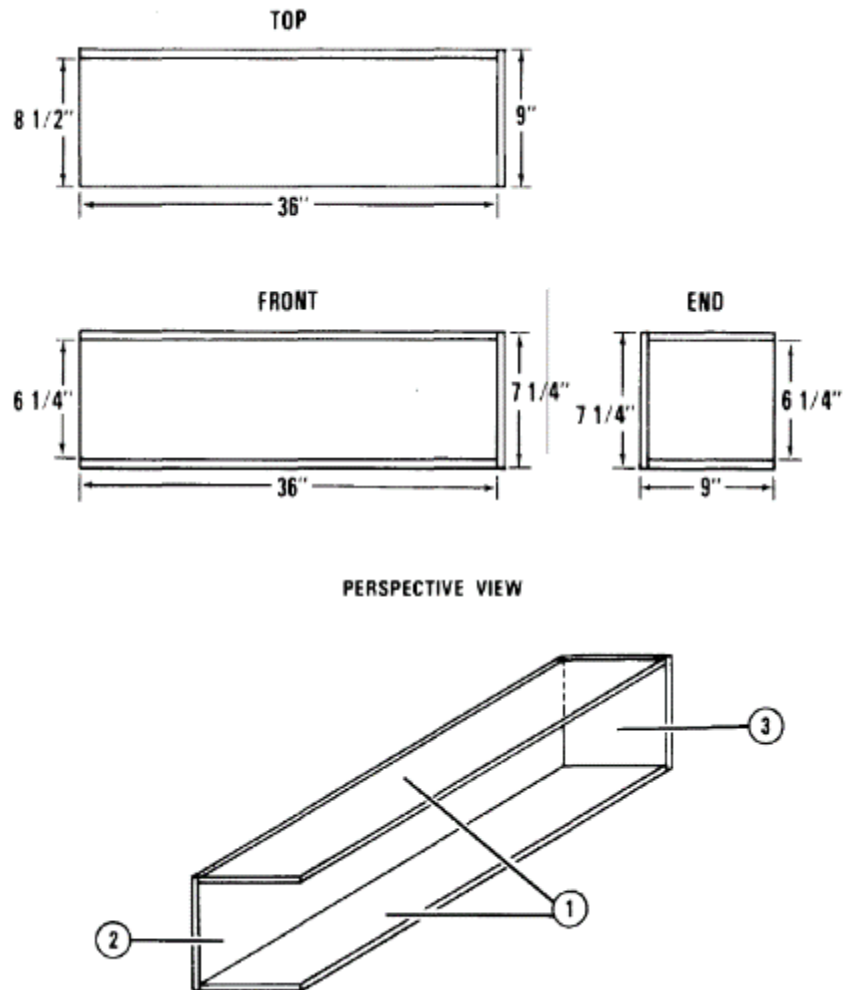


Figure 6-14. Construction details for left side controls protector (continued)

BUILDING RIGHT SIDE CONTROLS PROTECTOR.

6-8. Build the protector for the controls for the controls located on the right side of the operator compartment as shown in Figure 6-15.

- Notes.** 1. These drawings are not drawn to scale.
 2. The circled numbers refer to item numbers.
 3. Use eight penny nails to join the individual pieces.



<i>Item Number</i>	<i>Pieces</i>	<i>Width (inches)</i>	<i>Length (inches)</i>	<i>Material</i>
1	2	8 ½	36	½-inch plywood
2	1	7 ¼	36	½-inch plywood
3	1	7 ¼	9	½-inch plywood

Figure 6-15. Construction details for right side controls protector

PREPARING GRADER

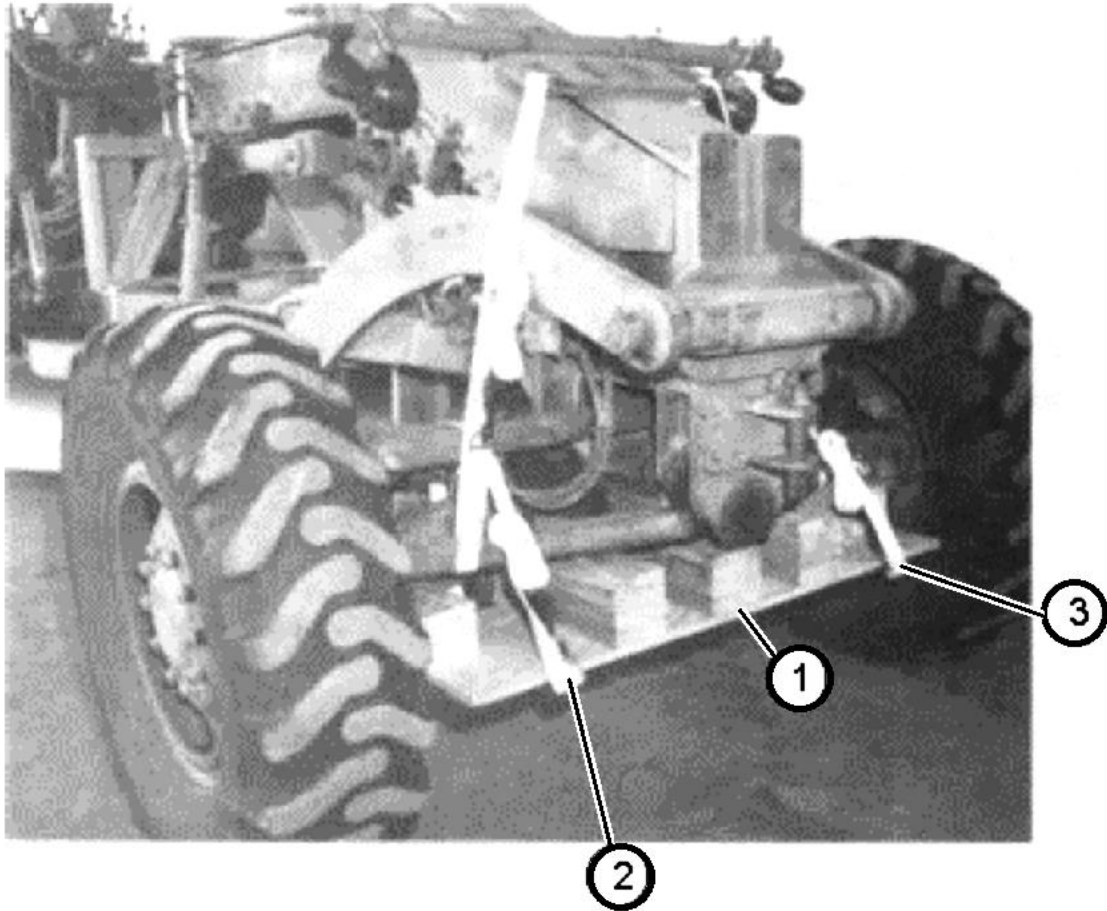
- 6-9. Prepare the grader as described below.
 - a. Removing Components. Remove the following items from the grader: ROPS, suspension brackets on front bolster, mounting bolt sleeves and spacers that are in the stowage compartment, and the rear lifting handles on the engine compartment side panels. These items will not be airdropped.
 - b. Prepare Grader Before Positioning. Make the following preparations before positioning the grader.

CAUTION

Steps one through nine listed below must be performed **ONLY** by qualified maintenance personnel.

25. Torque the scarifier hydraulic group mounting bracket bolts to 1,040 foot-pounds, plus or minus 75 foot-pounds.
26. Remove the scarifier teeth. Place them upside down in the block assembly. Tie each shank in place with type III nylon cord.
27. Place the center shift lock pin in the frame center hole. Move the center shift control to the locked position.
28. Place the antiarticulation pin, located behind the left side of the operator compartment, in the locked position.
29. Install the front axle antilean pin.
30. Make sure the remote control box mounting bolts are tight and that the hoses and control cables are secured to the top of the frame (type II grader only).
31. Make sure the fuel tank is no more than $\frac{1}{2}$ full.
32. Make sure the tire pressure is 35 pounds per square inch (psi).
33. Pad and tape all lights, except the rear light, with cellulose wadding. Loosen the U-clamps on the bar, rotate the front lights down, and rotate the bar 90°.
34. Install the pintle link on the rear towing pintle pin. Secure the pin in place with the safety bolt.
35. Install the front-end frame support and the antitilt straps as shown in Figure 6-16.

Note. The antitilt straps and antilean bar pin will be removed after the grader is positioned on the platform.



- ① Place the front-end frame support (Figure 6-11) under the front axle and oscillation arm.
- ② Holding the support in place, pass a 15-foot tiedown lashing around the axle, antilean bar, and oscillation arm on the right side. Fasten the lashing with a D-ring and a load binder. Repeat this step for the left side.
- ③ Install a front axle antitilt tiedown strap by passing a 15-foot tiedown lashing through the front right lifting provision, inside the tie rods and lean cylinders, and through the kingpin bracket. Fasten the lashing with a d-ring and a load binder. Repeat this step for the axle on the left side.

Figure 6-16. Front-end frame support and antitilt straps installed

INSTALLING DRAWBAR AND SCARIFIER SUPPORT

6-10. Install the drawbar and scarifier support as shown in Figure 6-17.

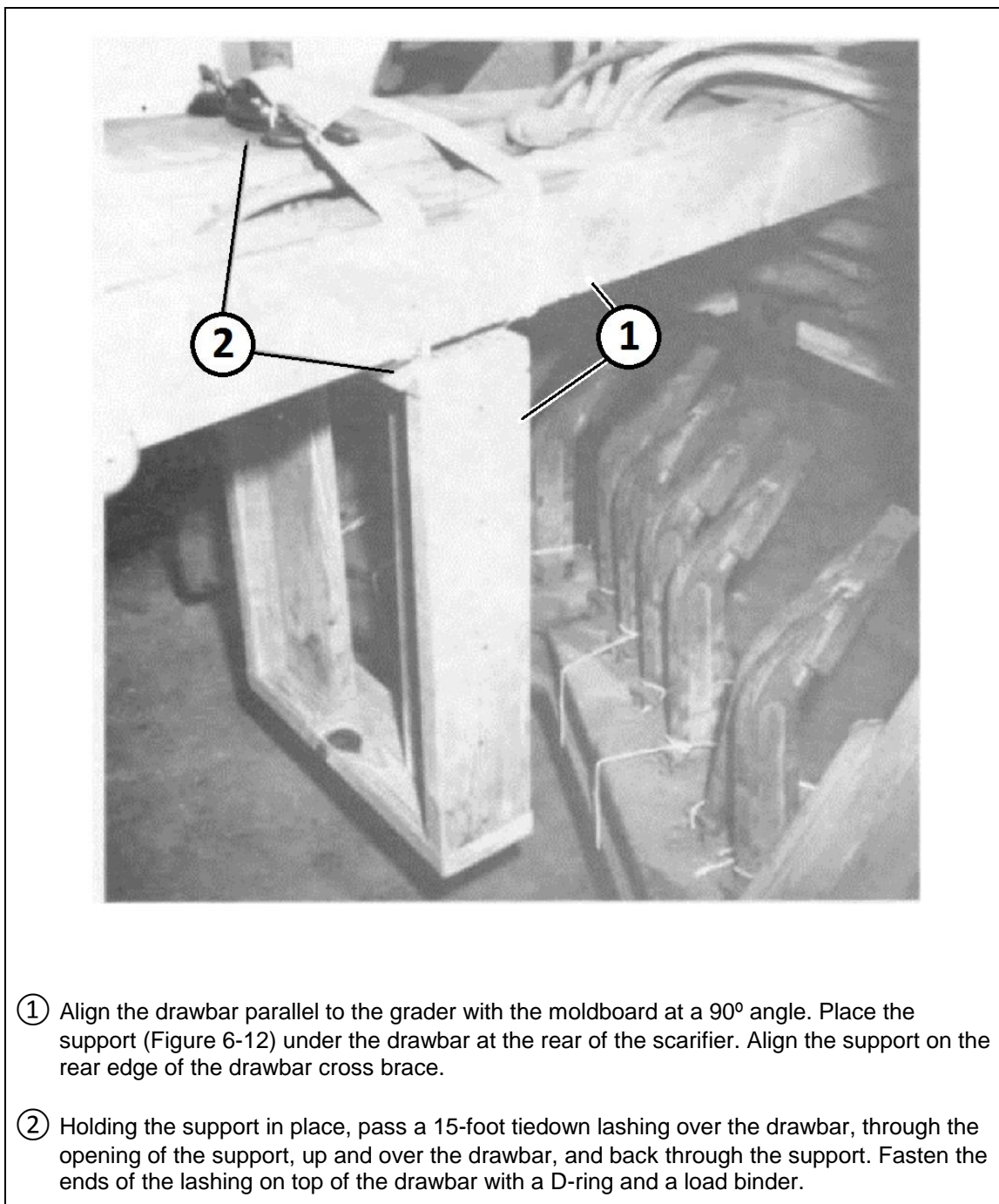
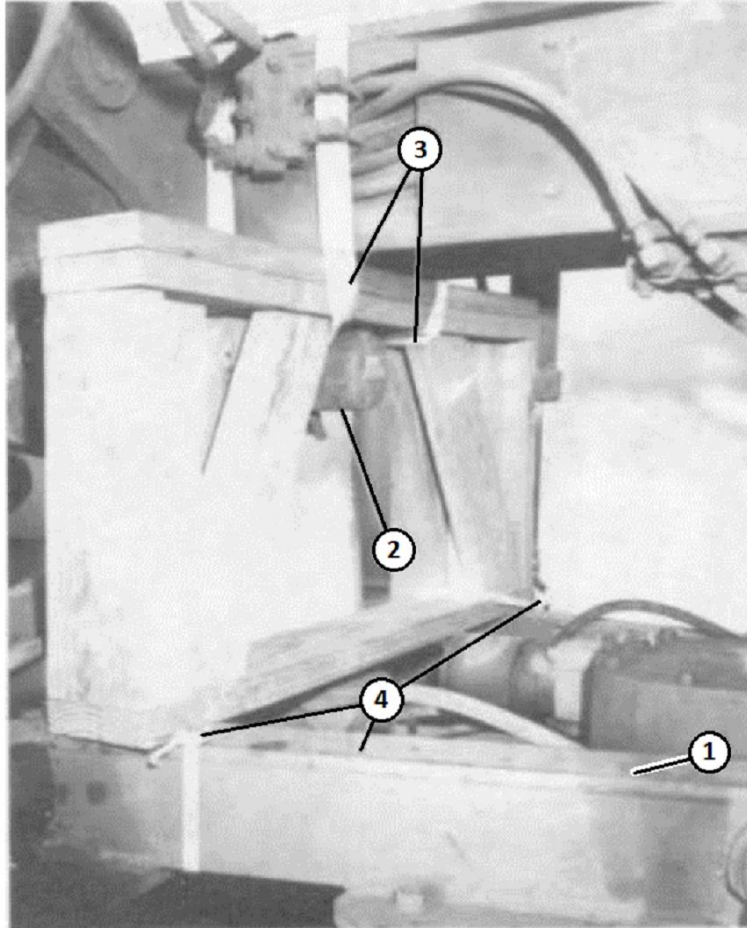


Figure 6-17. Drawbar and scarifier support installed

INSTALL THE FRONT FRAME AND DRAWBAR SUPPORT

6-11. Install the front frame and drawbar support as shown in Figure 6-18.



- ① Lower the drawbar until there is enough space between the drawbar and the front frame to fit the support (Figure 6-13).
- ② Place the support under the front frame and over the center shift locking pin housing.
- ③ Holding the support in place, pass a 15-foot tiedown lashing over the frame, through the opening of the support, up and over the frame, and through the support again. Fasten the ends of the lashing together on top of the frame with a D-ring and a load binder.
- ④ Raise the drawbar until it is firm against the bottom of the support. Tie the lower corners of the support to the drawbar with ½-inch tubular nylon webbing.

Figure 6-18. Front frame and drawbar support installed

POSITION THE SCARIFIER AND THE MOLD

6-12. Position the scarifier and moldboard a shown in Figure 6-19.

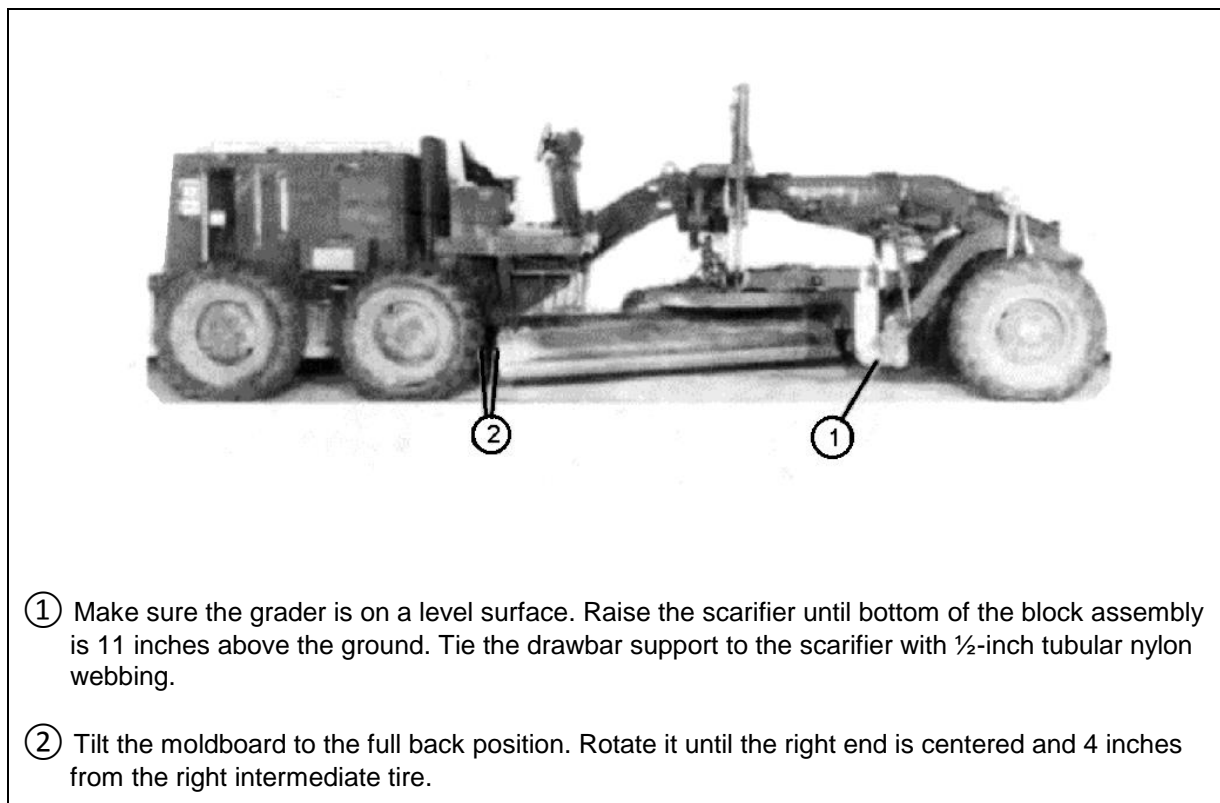


Figure 6-19. Scarifier and moldboard positioned

INSTALLING SUSPENSION SLINGS

6-13. Use four large screw-pin clevises and two 9-foot and two 16-foot (4-loop), type XXVI nylon webbing slings for suspension. Bolt and safety the slings to the grader as shown in Figure 6-20.

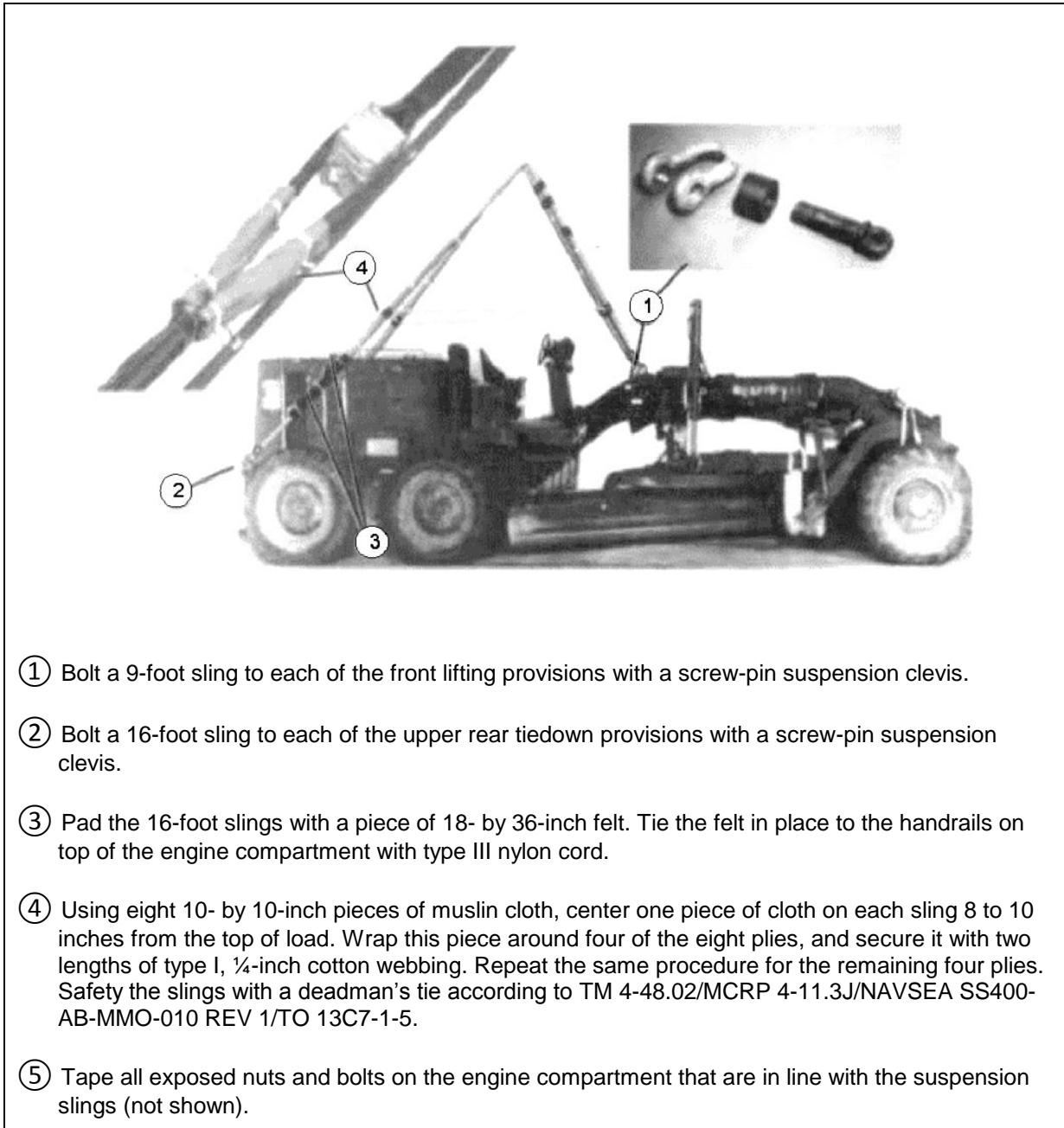


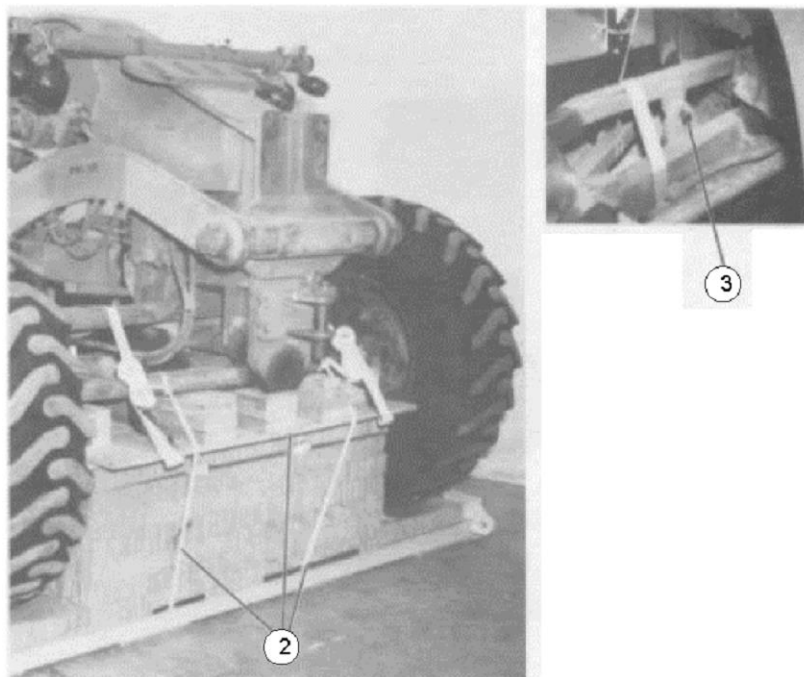
Figure 6-20. Suspension slings installed

POSTIONING GRADER

6-14. Position the grader on the platform as shown in Figure 6-21.

CAUTION

Make sure the grader overhang at the front of the platform is EXACTLY 14 inches.



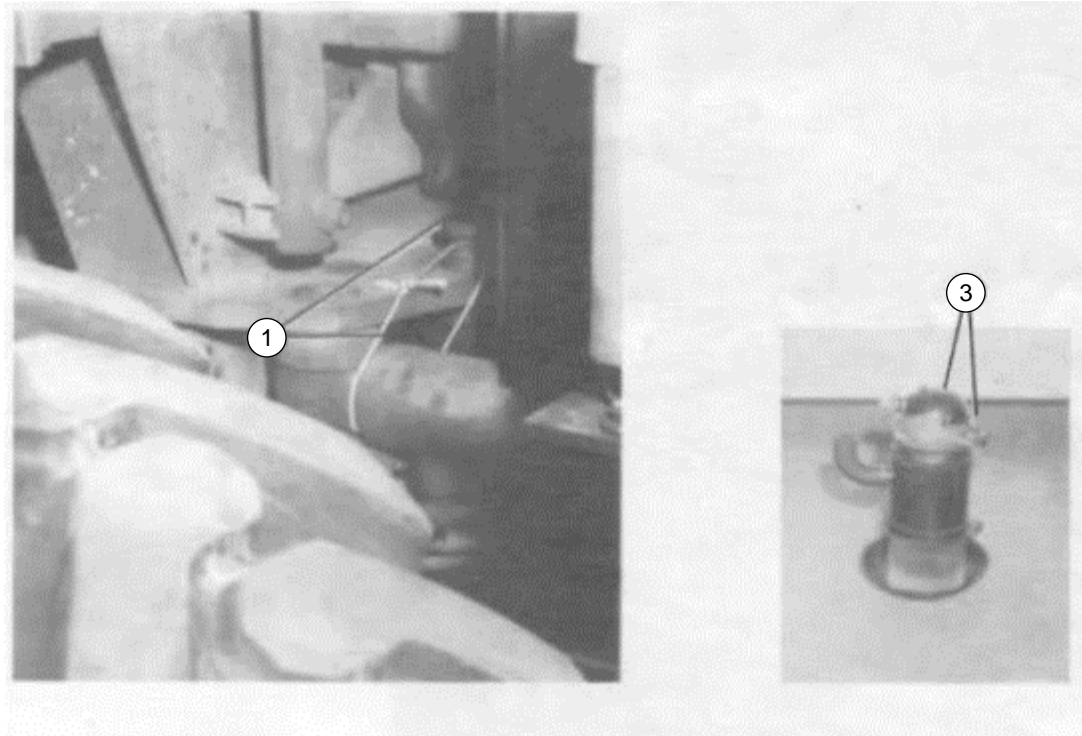
- ① Place the transmission control lever in neutral, and release the parking brake (not shown).
- ② Center the base of the front-end frame support on honeycomb stack 1. Tie the stack to the front axle with the pre-positioned lengths of tubular nylon webbing that were placed in Figure 6-9.
- ③ Remove the antilean pin. Place the pin in the toolbox.
- ④ Remove the antitilt straps (installed in Figure 6-16) (not shown).

Note. Make sure that the rear tiedown provisions are 1 inch from the rear edge of stack 12.

Figure 6-21. Grader positioned

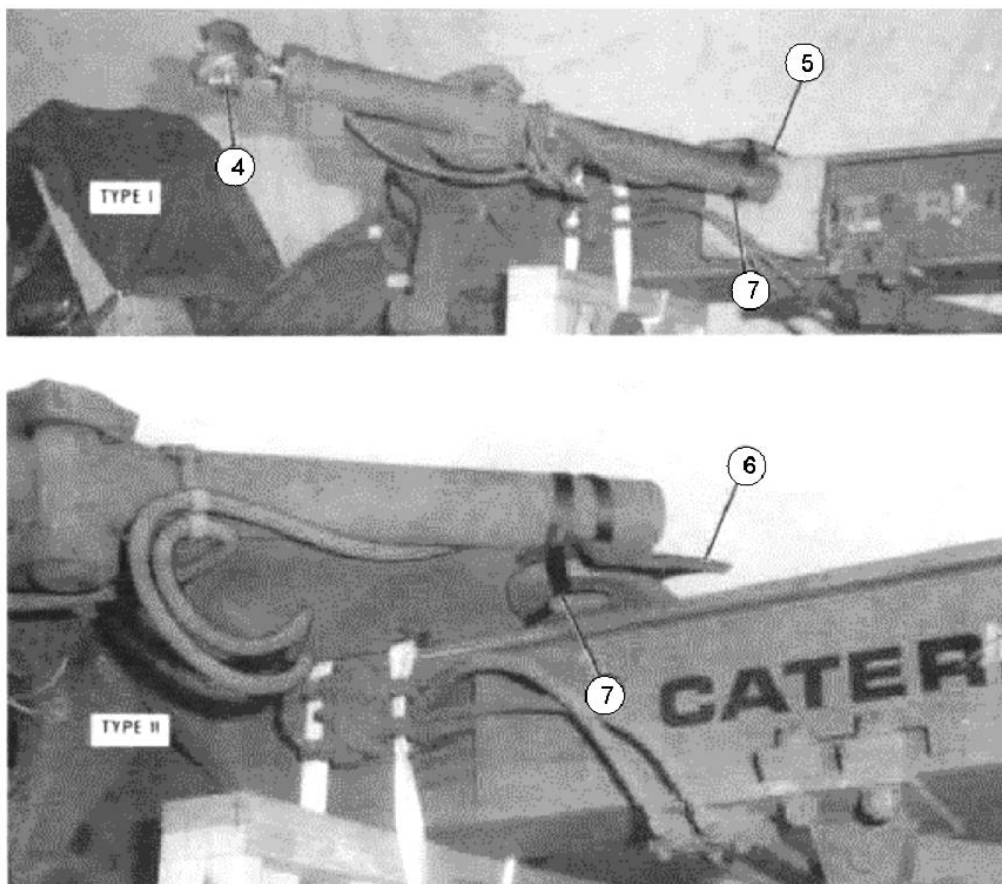
PREPARING GRADER AFTER POSITIONING

6-15. Finish preparing the grader after it has been positioned on the platform as shown in Figure 6-22.



- ① Safety the antiarticulation pin at the top and bottom with type III nylon cord. If the safety pin is missing on the antiarticulation pin, make a tie only at the top.
- ② Remove the exhaust pipe, muffler, air precleaner, and rear light. Tape over the openings (not shown).
- ③ Stow the rear light with the lens portion facing the bottom of the air precleaner. Tape the light in place.

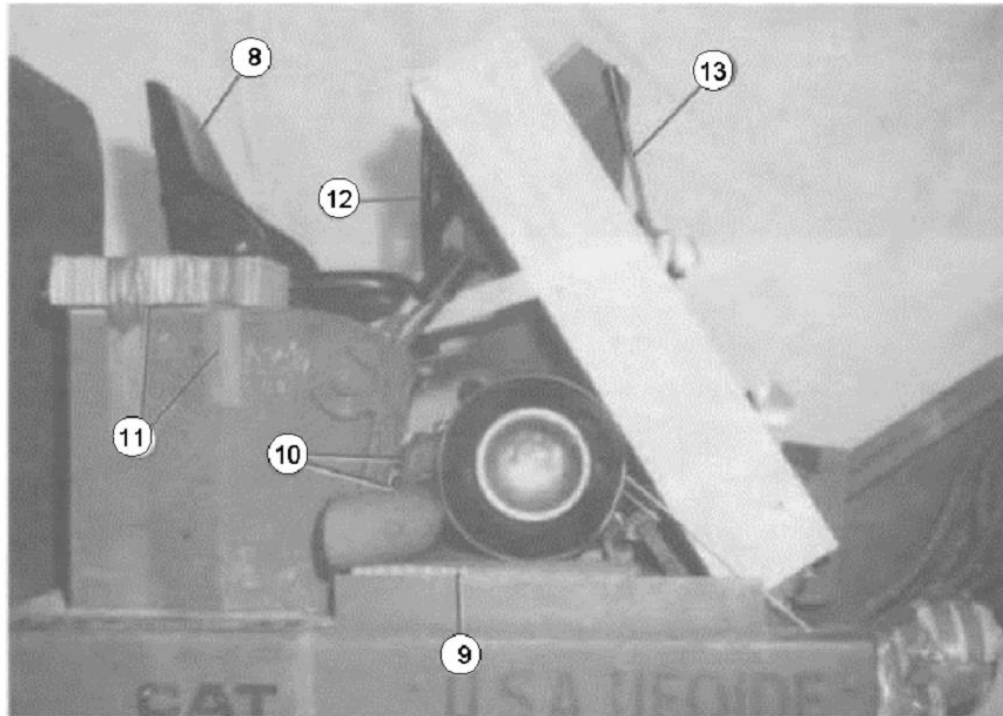
Figure 6-22. Grader prepared after positioning



- ④ Remove the left and right blade lifting cylinders from their ball joints. Reinstall spacers, caps, and bolts on their cylinder rods. Cover each ball and ball joint with plastic. Tape the plastic in place.
- ⑤ Place a piece of 8- by 8-inch honeycomb under the front frame tiedown provision of the type I grader. Rotate the cylinders to press against the honeycomb.
- ⑥ Place a piece of 6- by 8-inch felt on the front tiedown provisions of the type II grader. Rotate the cylinders to sit on top of the felt.
- ⑦ Tie the cylinders to the tiedown provisions with 1-inch tubular nylon webbing.

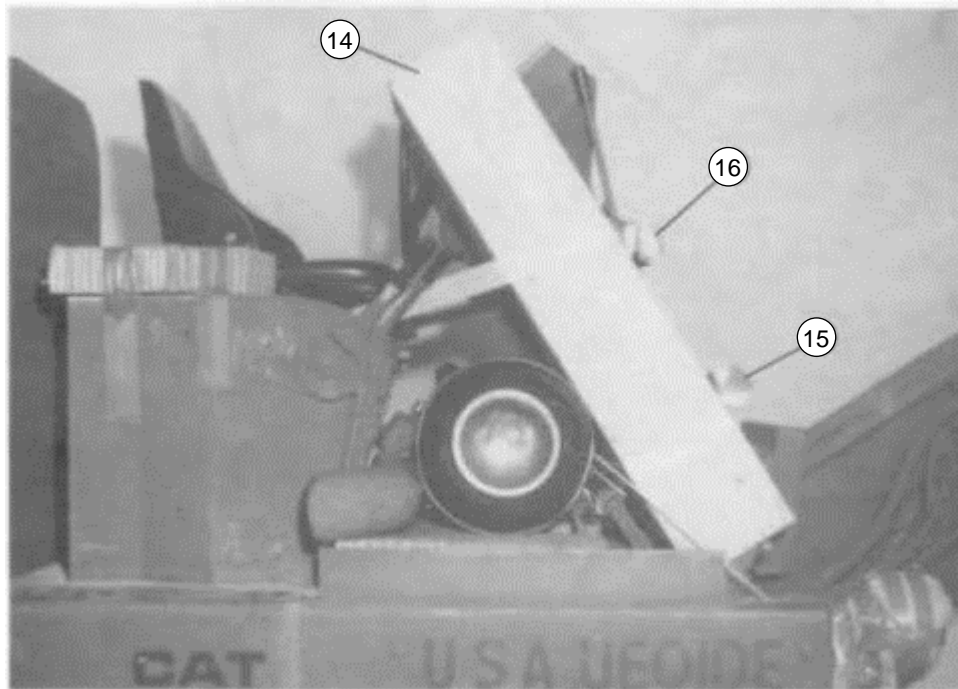
Note. Due to critical clearance in the aircraft, the cylinders must be properly positioned and securely restrained to prevent shifting.

Figure 6-22. Grader prepared after positioning (continued)



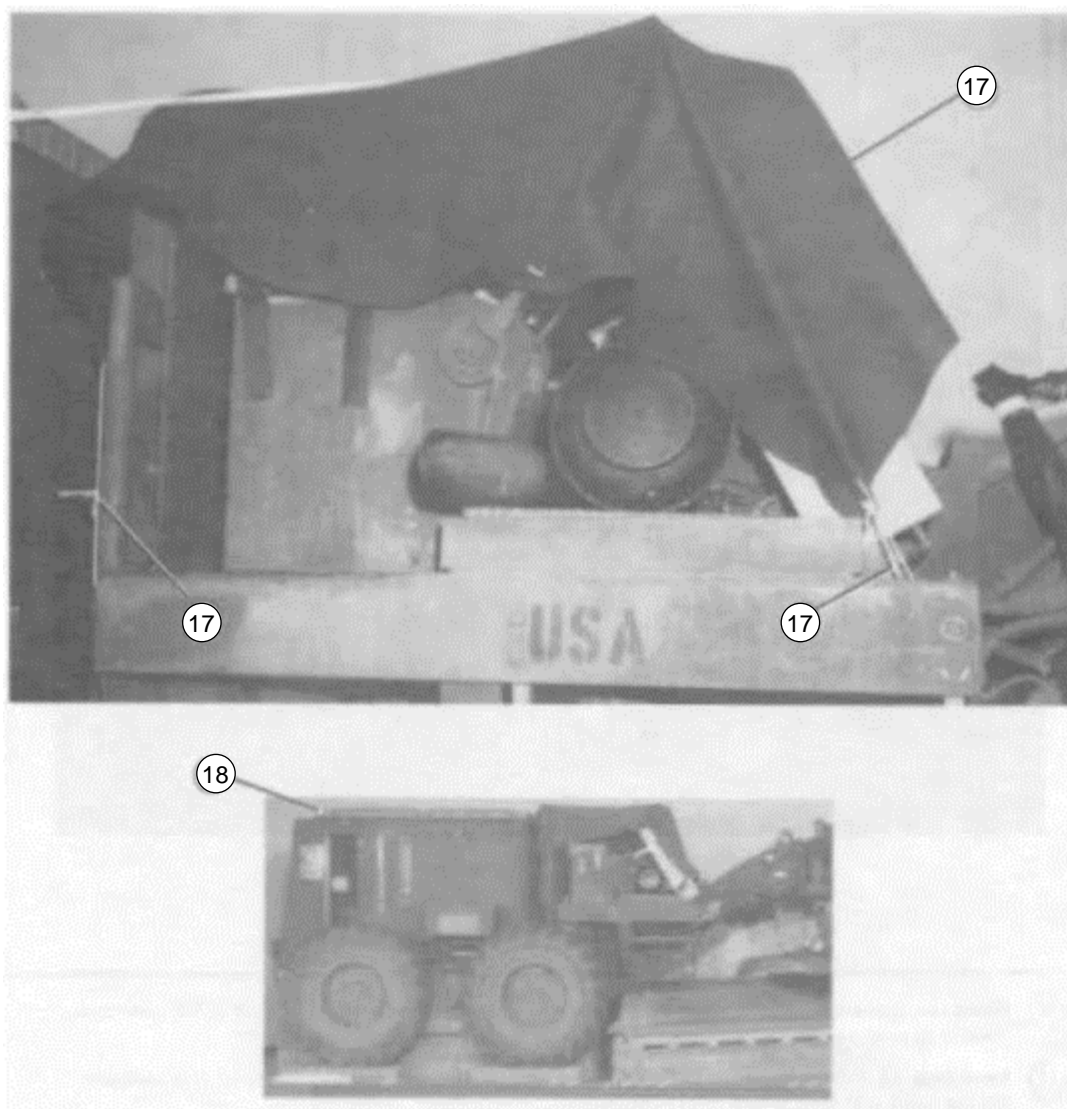
- ⑧ Slide the operator seat to the full rear position.
- ⑨ Make a cutout for the accelerator pedal in a piece of 16- by 45-inch honeycomb. Place the honeycomb on the floor of the operator compartment.
- ⑩ Place the exhaust pipe, muffler, and air precleaner on top of the honeycomb. Tie them in place with type III nylon cord.
- ⑪ Place a piece of 13- by 16-inch honeycomb over the control switches next to the operator seat. Make indents in the honeycomb to fit the switches. Tape the honeycomb in place.
- ⑫ Release the steering wheel lock pin (not shown). Move the steering wheel to the full down position. Lock the steering wheel pin.
- ⑬ Release the console locking levers. Move the console to the full rear position. Lock the locking levers.

Figure 6-22. Grader prepared after positioning (continued)



- ⑭ Place the protectors for the left and right side controls (Figure 6-14 and 6-15) over the control levers. Face the open end of the protectors toward the console.
- ⑮ Pass one 15-foot tiedown lashing around the protectors and the base of the console. Fasten with a D-ring and a load binder.
- ⑯ Pass one 15-foot tiedown lashing around the protectors and the rear of the operator seat. Fasten with a D-ring and a load binder.

Figure 6-22. Grader prepared after positioning (continued)



- ⑪ Use type III nylon cord to tie a piece of 5- by 8-foot cotton duck cloth over the operator compartment.
- ⑫ Make cutouts for the fuel cap and air precleaner in a piece of 33- by 74-inch honeycomb. Place the honeycomb on top of the engine compartment. Tie the honeycomb in place with type III nylon cord.

Figure 6-22. Grader prepared after positioning (continued)

LASHING GRADER

6-16. Lash the grader to the platform using 46 tiedown assemblies according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

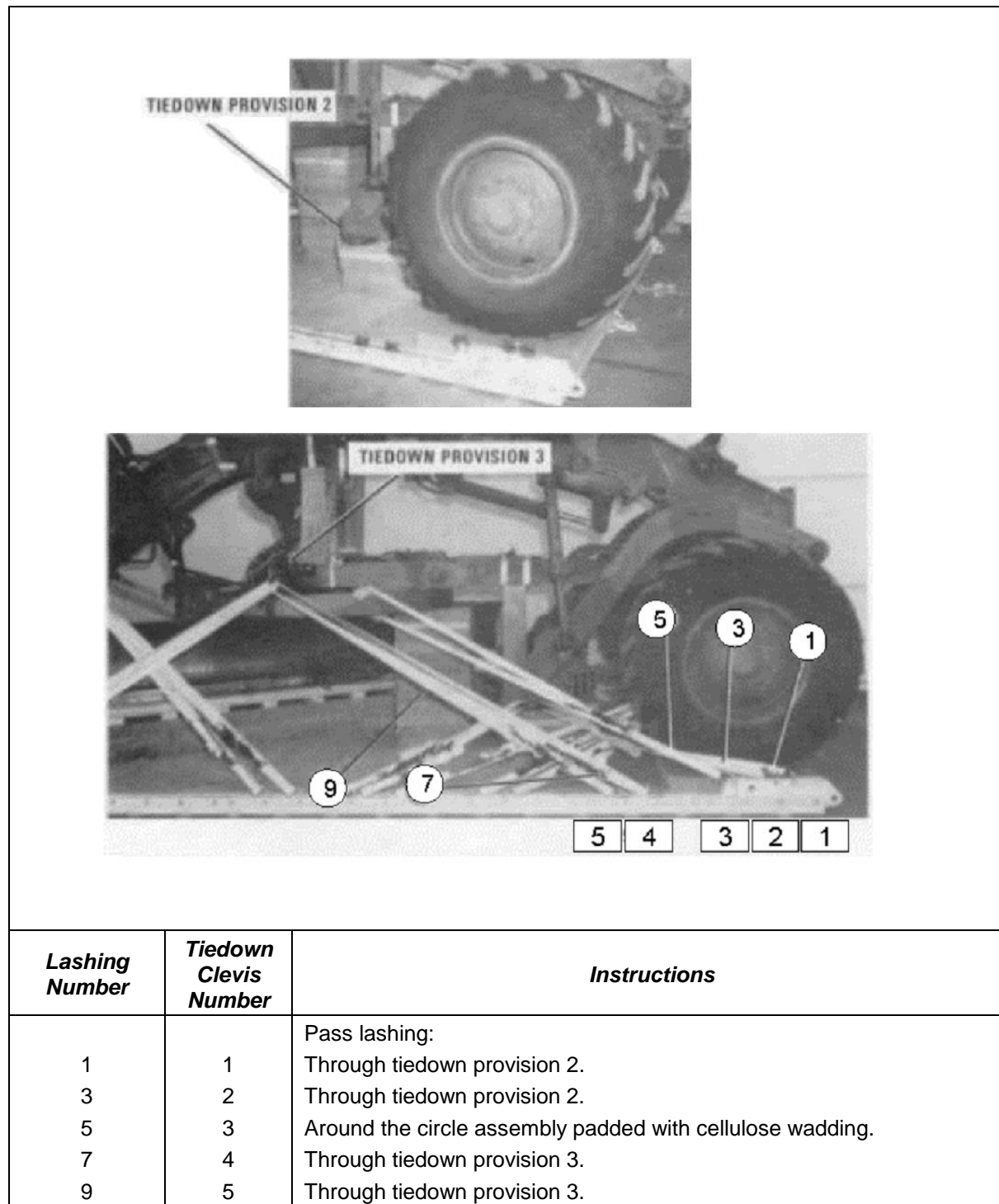
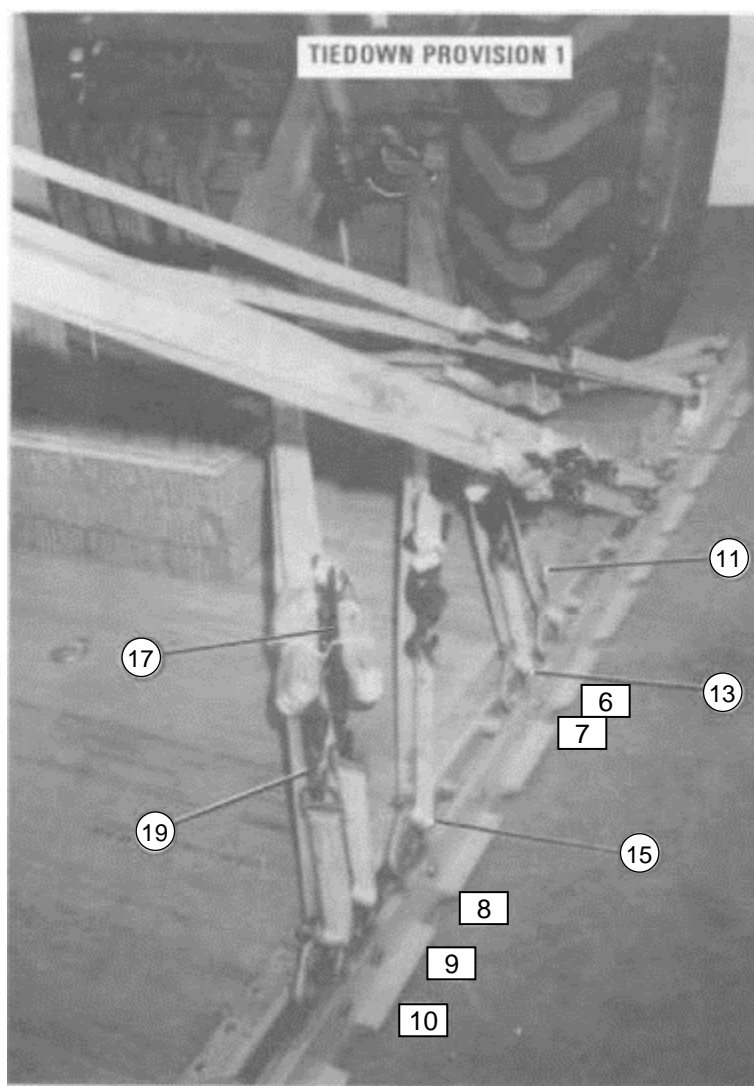
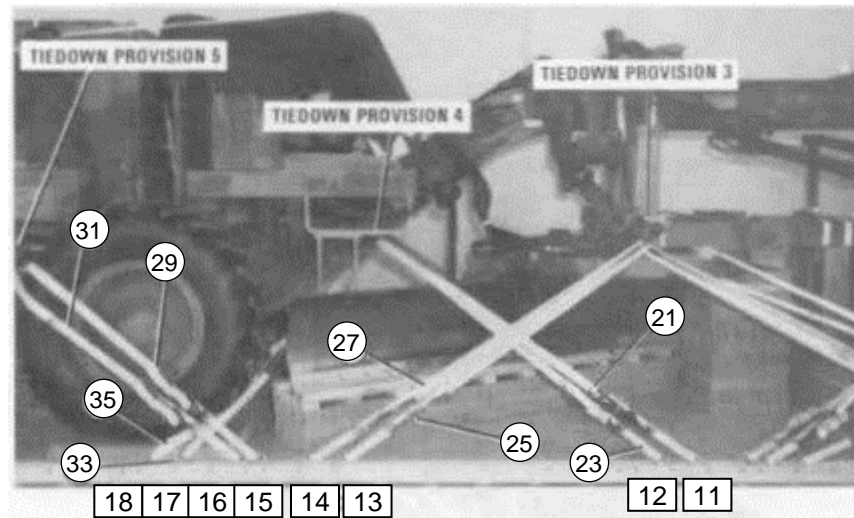


Figure 6-23. Lashings installed on right side



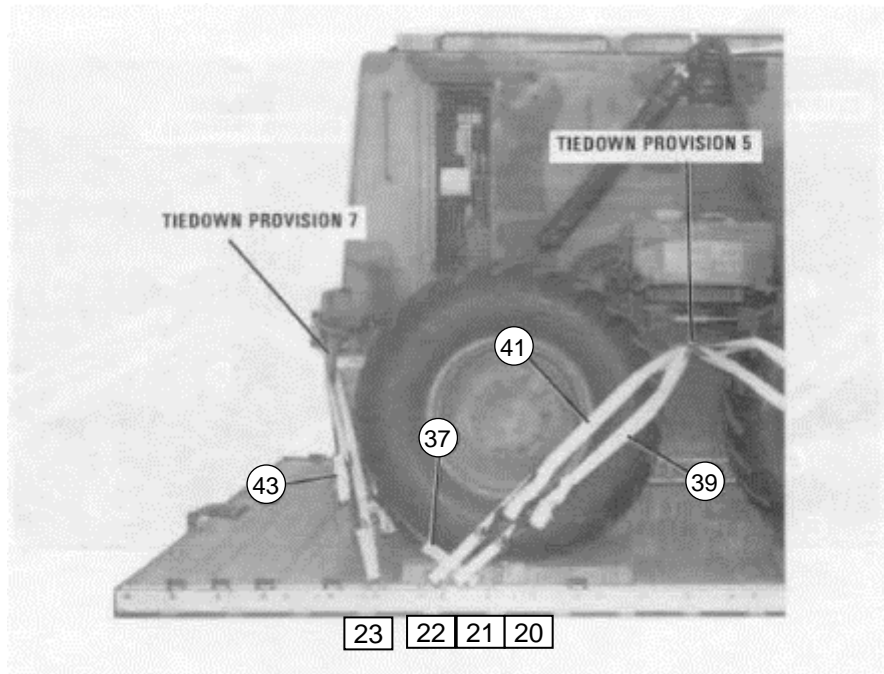
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
11	6	Pass lashing:
13	7	Through tiedown provision 1.
15	8	Through tiedown provision 1.
17	9	Through tiedown provision 2.
19	10	Through tiedown provision 2.

Figure 6-23. Lashings installed on right side (continued)



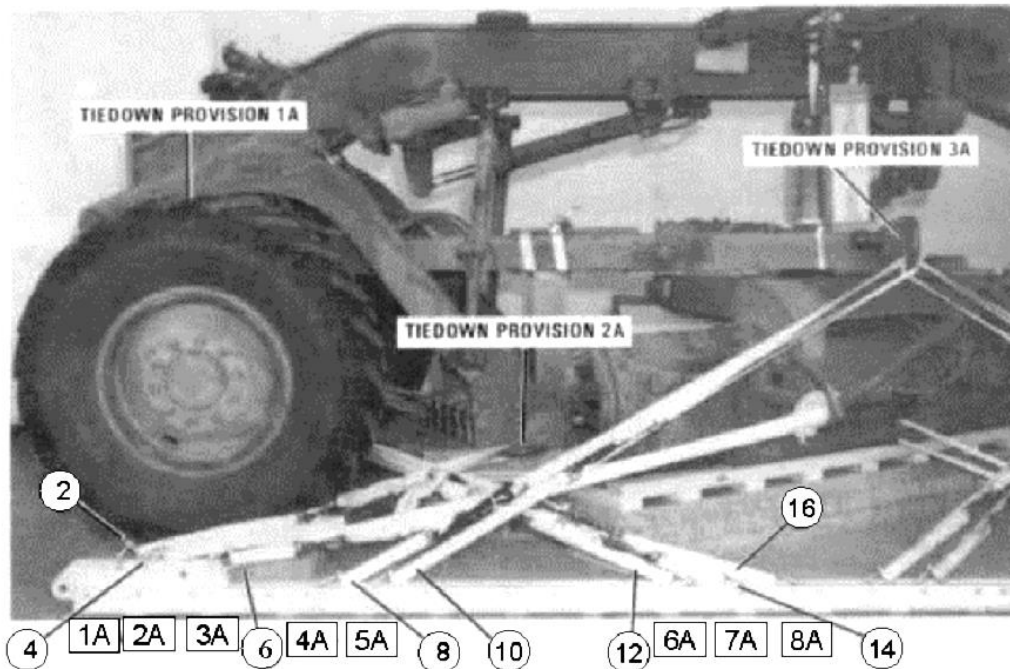
Lashing Number	Tiedown Clevis Number	Instructions
21	11	Pass lashing: Through tiedown provision 4.
23	12	Through tiedown provision 4.
25	13	Through tiedown provision 3.
27	14	Through tiedown provision 3.
29	15	Through tiedown provision 5.
31	16	Through tiedown provision 5.
33	17	Through tiedown provision 4.
35	18	Through tiedown provision 4.

Figure 6-23. Lashings installed on right side (continued)



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
37	20	Pass lashing: Through tiedown provision 7.
39	21	Through tiedown provision 5.
41	22	Through tiedown provision 5.
43	23	Through tiedown provision 7.

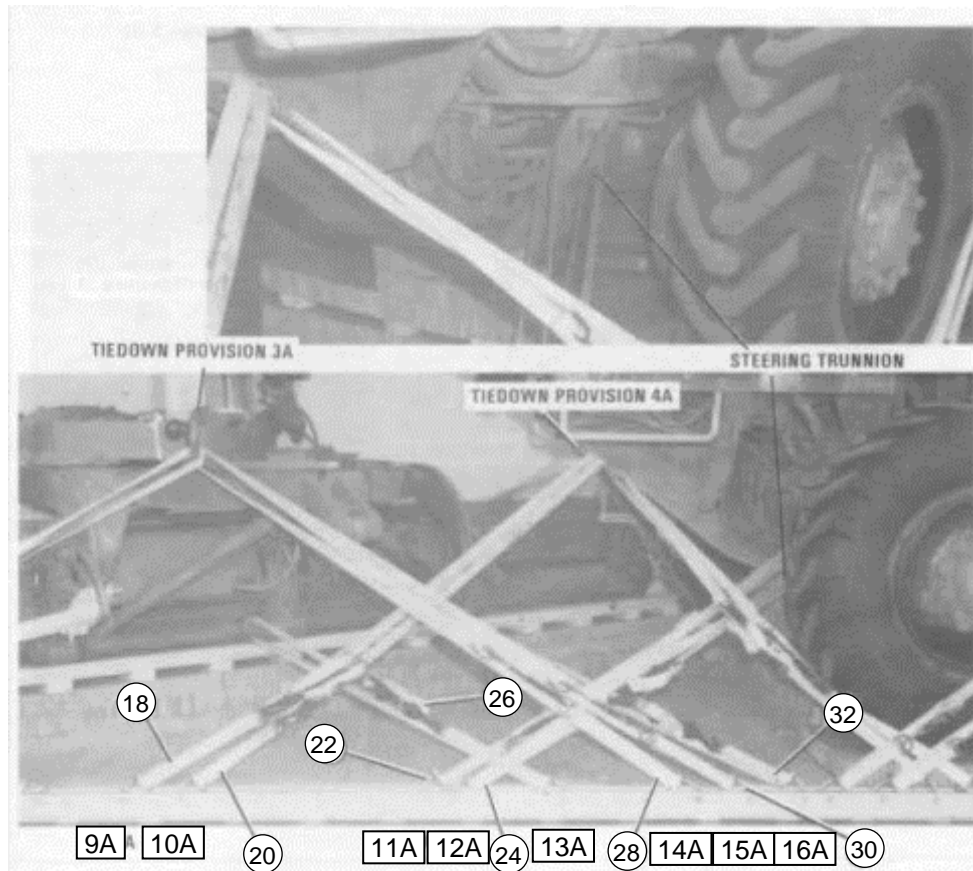
Figure 6-23. Lashings installed on right side (continued)



Note. Tiedown provision 1A is located behind the tire as shown on page 6-36.

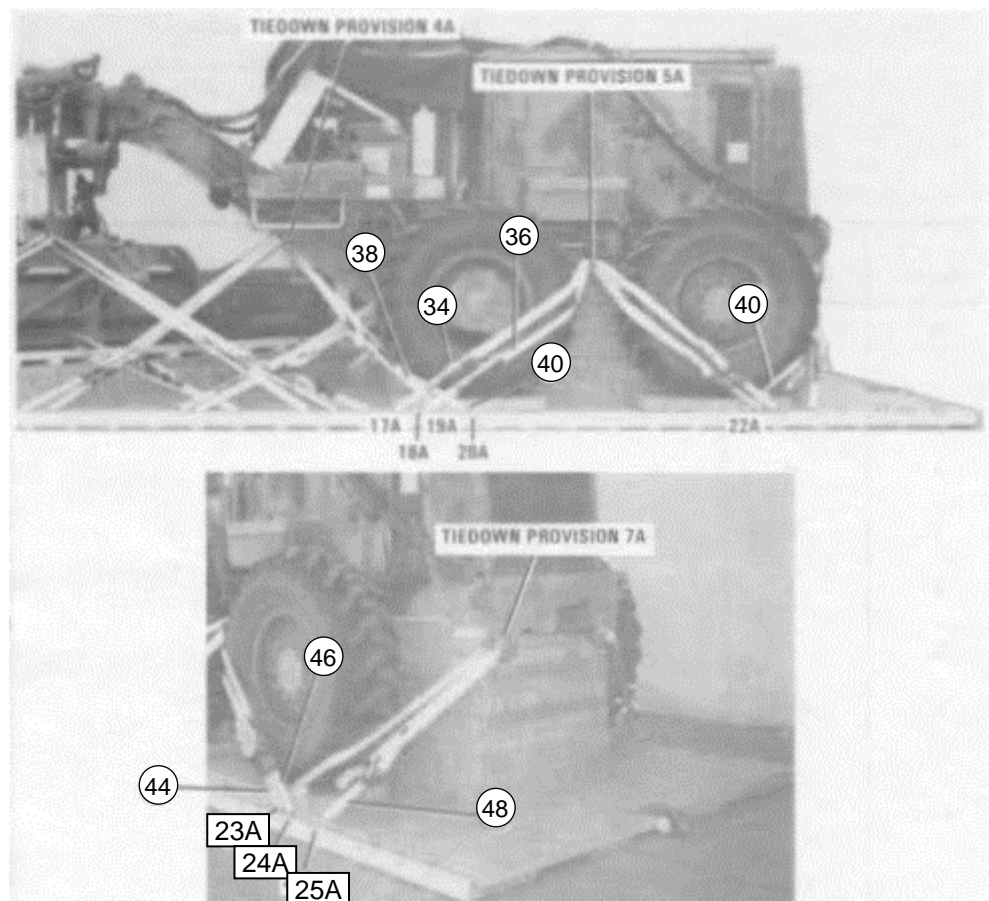
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
2	1A	Pass lashing: Through tiedown provision 2A.
4	2A	Through tiedown provision 2A.
6	3A	Through blade tilt bracket padded with cellulose wadding.
8	4A	Through tiedown provision 3A.
10	5A	Through tiedown provision 3A.
12	6A	Through tiedown provision 1A.
14	7A	Through tiedown provision 1A.
16	8A	Through tiedown provision 1A..

Figure 6-24. Lashings installed on left side.



Lashing Number	Tiedown Clevis Number	Instructions
18	9A	Pass lashing: Through tiedown provision 4A.
20	10A	Through tiedown provision 4A.
22	11A	Around front frame lower support brace in front of steering trunnion.
24	12A	Around front frame lower support brace in front steering trunnion.
26	13A	Around horizontal blade bracket and left of the center brace.
28	14A	Through tiedown provision 3A.
30	15A	Through tiedown provision 3A.
32	16A	Around horizontal blade bracket and left of the center brace (not shown).

Figure 6-24. Lashings installed on left side (continued)



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
34	17A	Pass lashing:
36	18A	Through tiedown provision 5A.
38	19A	Through tiedown provision 4A.
40	20A	Through tiedown provision 4A.
42	22A	Through tiedown provision 7A.
44	23A	Through tiedown provision 5A.
46	24A	Through tiedown provision 5A.
48	25A	Through tiedown provision 7A.

Figure 6-24. Lashings installed on left side (continued)

BUILDING AND INSTALLING CARGO PARACHUTE STOWAGE PLATFORM

6-17. Build the parachute stowage platform using the materials listed in Table 6-2 and as shown in Figure 6-25. Install the parachute stowage platform using four 15-foot tiedown assemblies as shown in Figure 6-26.

Table 6-2. Materials required to build parachute stowage platform

<i>Pieces</i>	<i>Width (Inches)</i>	<i>Length (Inches)</i>	<i>Material</i>	<i>Instructions</i>
9	29	88	Honeycomb	See Figure 6-25.
2	4	43 ½	4- by 4- inch lumber	See Figure 6-25
4	6	43 ½	2- by 6-inch lumber	
2	4	96	2- by 4-inch lumber	
1	4	38		
2	4	23	4- by 4-inch lumber	
2	4	14	2- by 4-inch lumber	
1	48	96	2- by 4-inch lumber	
			¾-inch plywood	

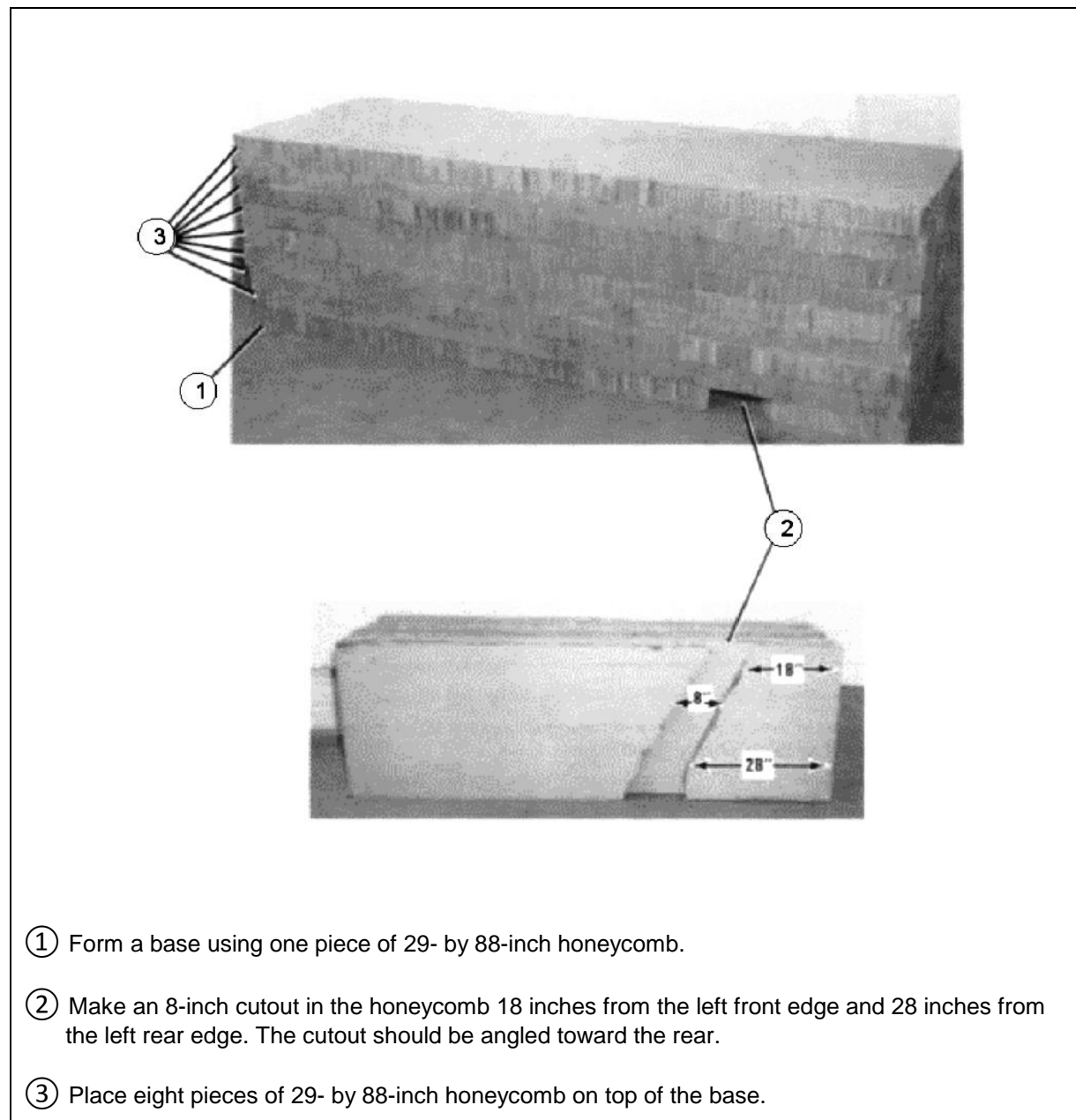
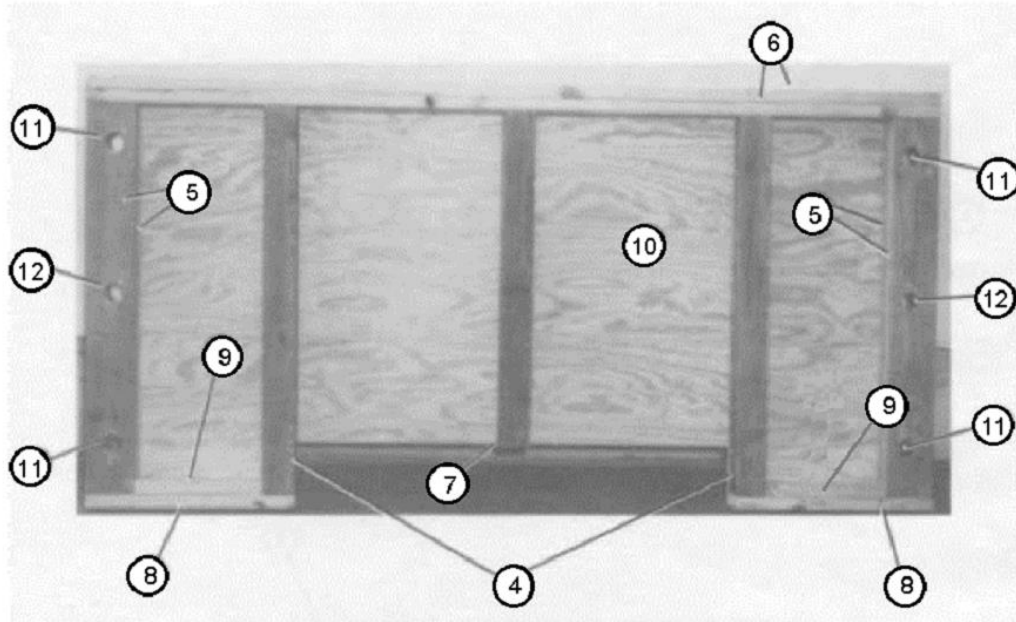


Figure 6-25. Parachute stowage platform constructed

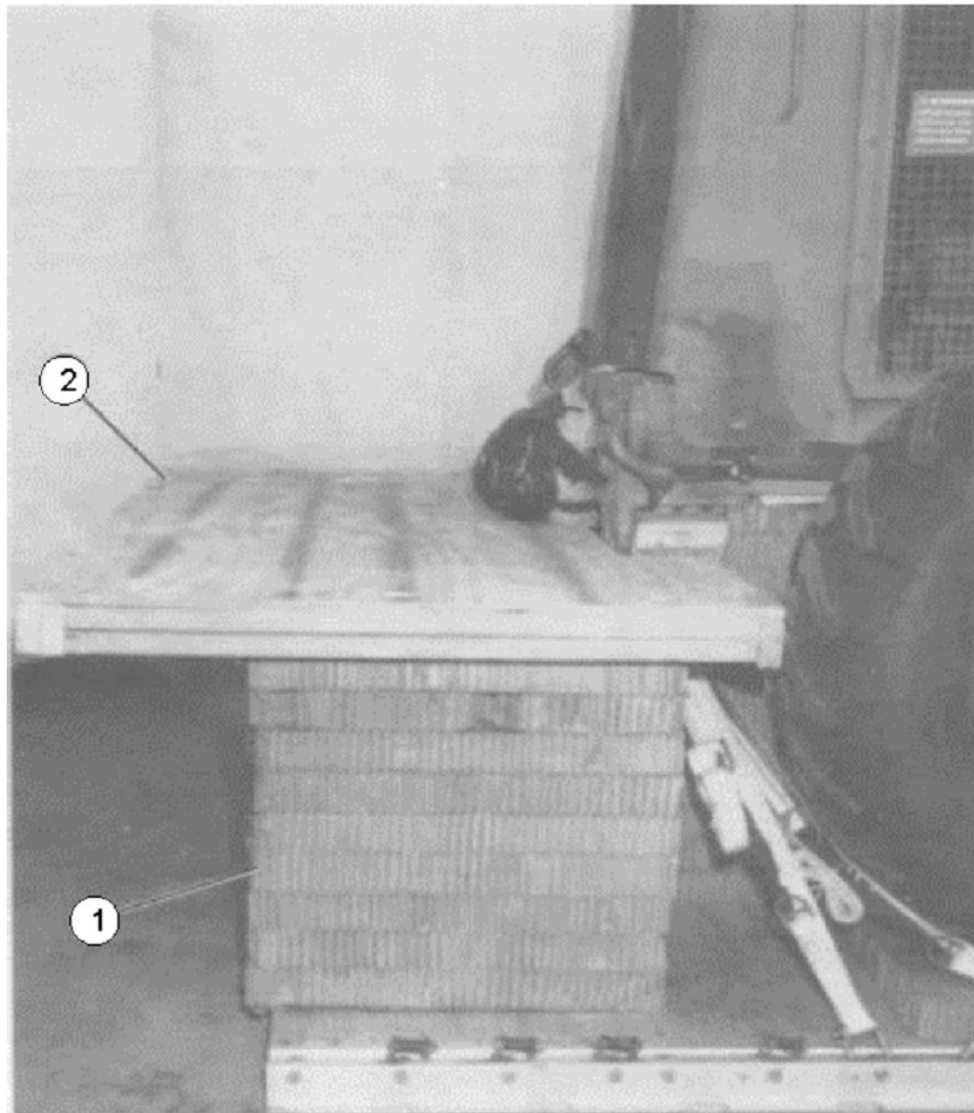
Note. Use either eight penny or ten penny nails.



- ④ Place two pieces of 4- by 4- by 43 ½-inch lumber 50 inches apart.
- ⑤ Nail two pieces of 2- by 6- by 43 ½-inch lumber together. Place these pieces 14 inches apart from the lumber placed in step 4 above.
- ⑥ Nail two pieces of 2- by 4- by 96-inch lumber together. Nail these pieces to the lumber placed in steps 4 and 5 above.
- ⑦ Center one piece of 4- by 4- by 38-inch lumber between the lumber placed in step 4 above, and nail it to the 96-inch lumber.
- ⑧ Nail a piece of 2- by 4- by 23-inch lumber to the ends of the lumber placed in steps 4 and 5 above.
- ⑨ Nail a piece of 2- by 4- by 14-inch lumber to the lumber placed in step 8 above.
- ⑩ Make a 7- by 50-inch cutout in a piece of ¾-by 48-by 96-inch plywood. Nail this piece of plywood on top of the constructed wood frame (steps 4 through 9 above).
- ⑪ Drill a 2 ¼-inch-diameter hole 8 inches from the outer edge of the 96-inch lumber and another 2 ¼-inch-diameter hole 8 inches from the outer edge of the 23-inch lumber.
- ⑫ Drill one 2 ¼-inch-diameter hole 24 inches from the outer edge of the 96-inch lumber.

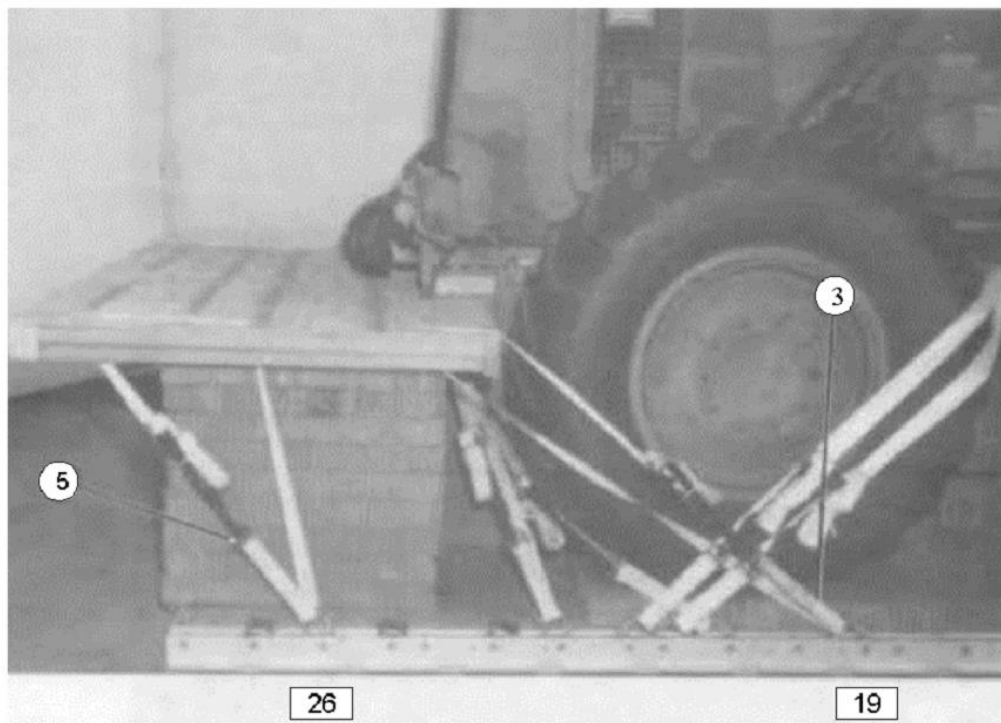
Figure 6-25. Parachute stowage platform constructed (continued)

Note. Pad the rear towing pintle link with cellulose wadding. Tape the wadding in place with cloth-backed tape.



- ① Center the honeycomb stack between the rails and overhanging the rear edge of the platform by 2 inches.
- ② Place the wooden parachute stowage platform on the honeycomb stack.

Figure 6-26. Parachute stowage platform installed

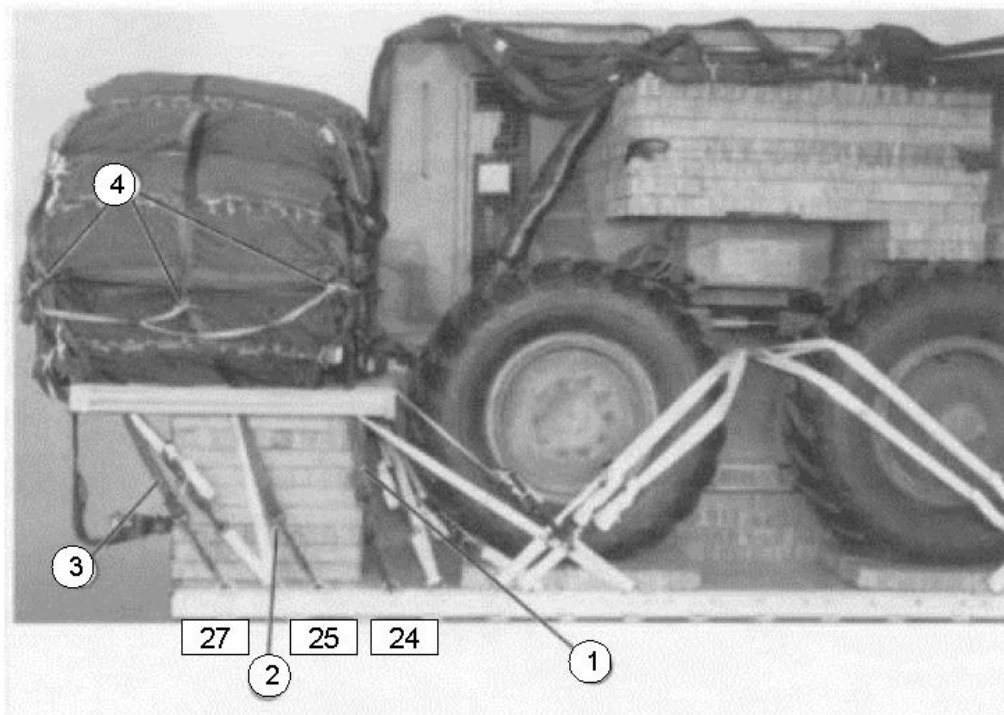


- ③ Pass a lashing from clevis 19 up through the front hole in the parachute stowage platform. Secure the lashing with a D-ring and a load binder.
- ④ Repeat step 3 for clevis 21A.
- ⑤ Pass a lashing from clevis 26 up through the center hole in the parachute stowage platform and back down through the rear hole. Secure the lashing with a D-ring and a load binder.
- ⑥ Repeat step 5 for clevis 28A.

Figure 6-26. Parachute stowage platform installed (continued)

STOWING CARGO PARACHUTES

6-18. Stow eight G-11C parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 6-27,



- ① Secure the parachutes using three lengths of type X nylon webbing, load binders, and D-rings. Attach the first strap from clevises 24 to 26A.
- ② Attach the second strap from clevises 25 to 27A.
- ③ Attach the third strap from clevises 27 to 29A.
- ④ Install the parachute release knives according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 6-27. Cargo parachutes stowed

INSTALLING EXTRACTION SYSTEM

6-19. Use the EFTC on this load. Install the components of the EFTC according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 6-28.

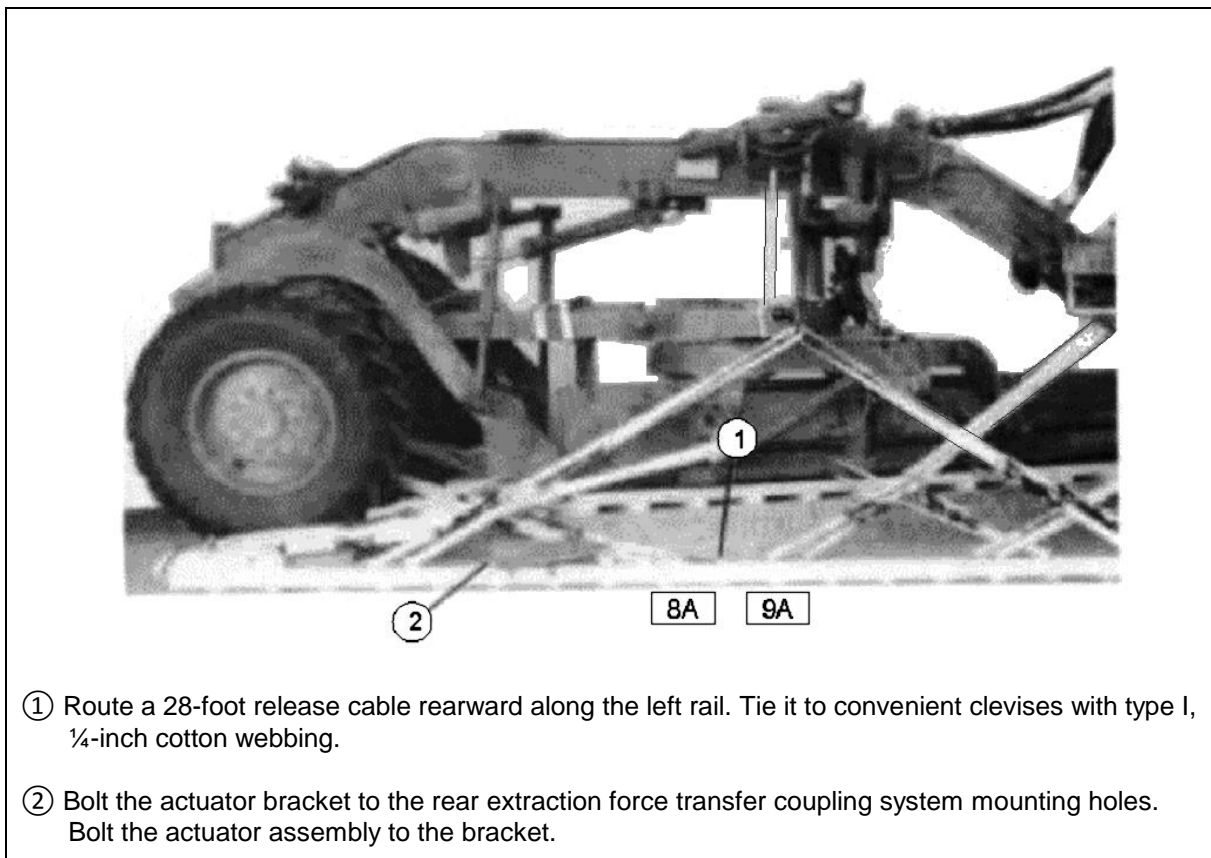
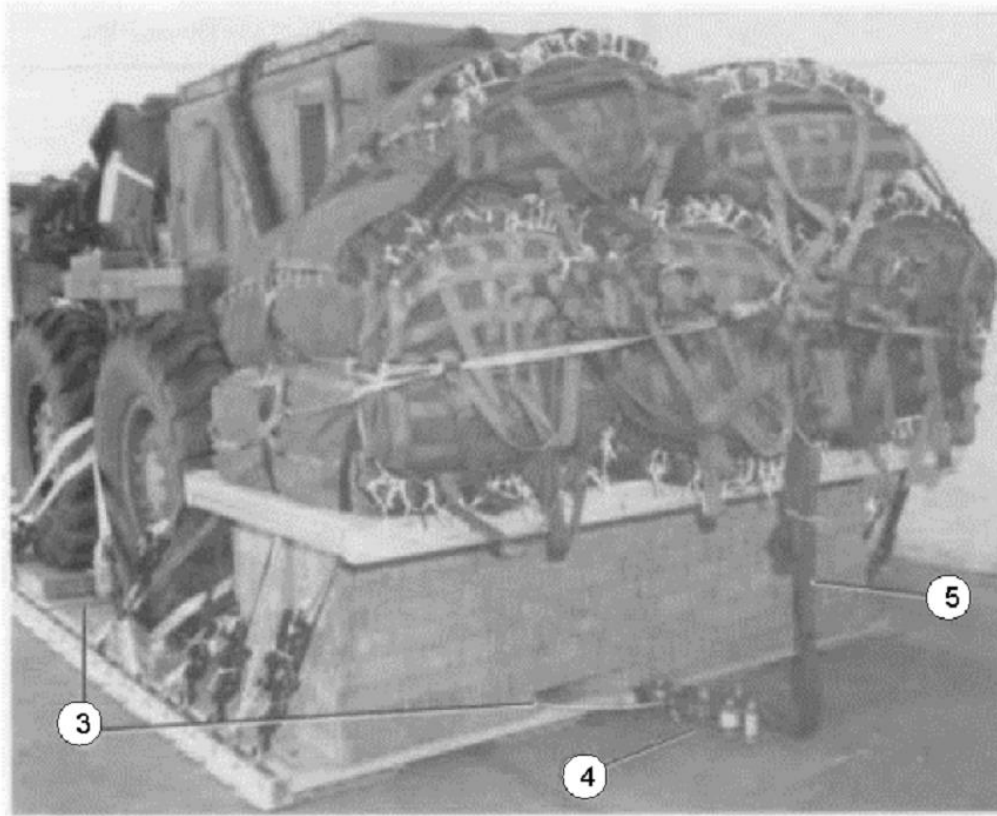


Figure 6-28. Extraction force transfer coupling system installed



- ③ Run the cable between the dual wheels, under the rear axle, through the cutout in the honeycomb parachute stowage tray, and to the extraction bracket system.
- ④ Bolt the latch assembly to the towing pintle extraction link.
- ⑤ Use a 12-foot (2-loop), type XXVI nylon webbing sling for the deployment line.

Note. For preparation and transportation purposes, secure the latch assembly to the large clevis on the parachute with a length of type I, ¼-inch cotton webbing (to be removed when the load is in the aircraft).

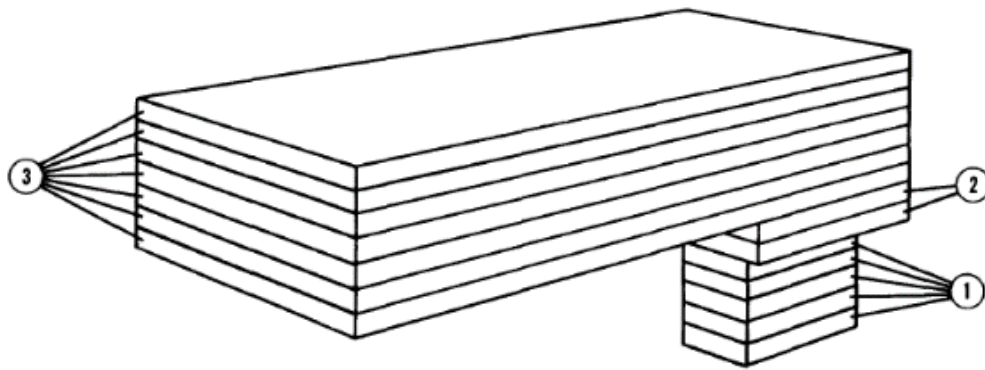
Figure 6-28. Extraction force transfer coupling system installed (continued)

INSTALLING RELEASE ASSEMBLY

6-20. Prepare the M-2 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Only the M-2 parachute release assembly may be used on this load.

- Prepare a honeycomb stack for the parachute release as shown in Figure 6-29.
- Position the M-2 parachute release as shown in Figure 6-30.
- Install the release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 6-30.

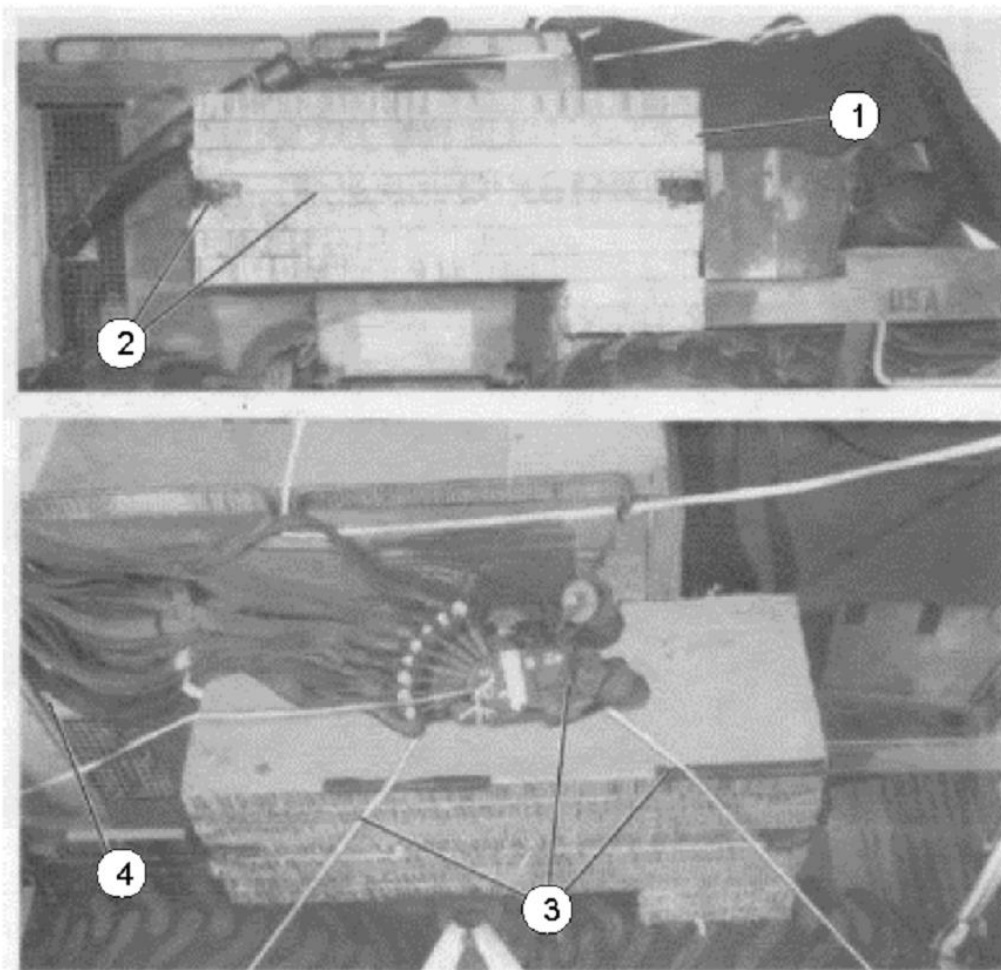
Note. This drawing is not drawn to scale.



- ① Form a base using five pieces of 12-by 15-inch honeycomb.
- ② Place two pieces of 15- by 20-inch honeycomb on top of the base. Place the honeycomb flush with the rear edge.
- ③ Place seven pieces of 20-by 56-inch honeycomb on top of the honeycomb placed in step 2 above.

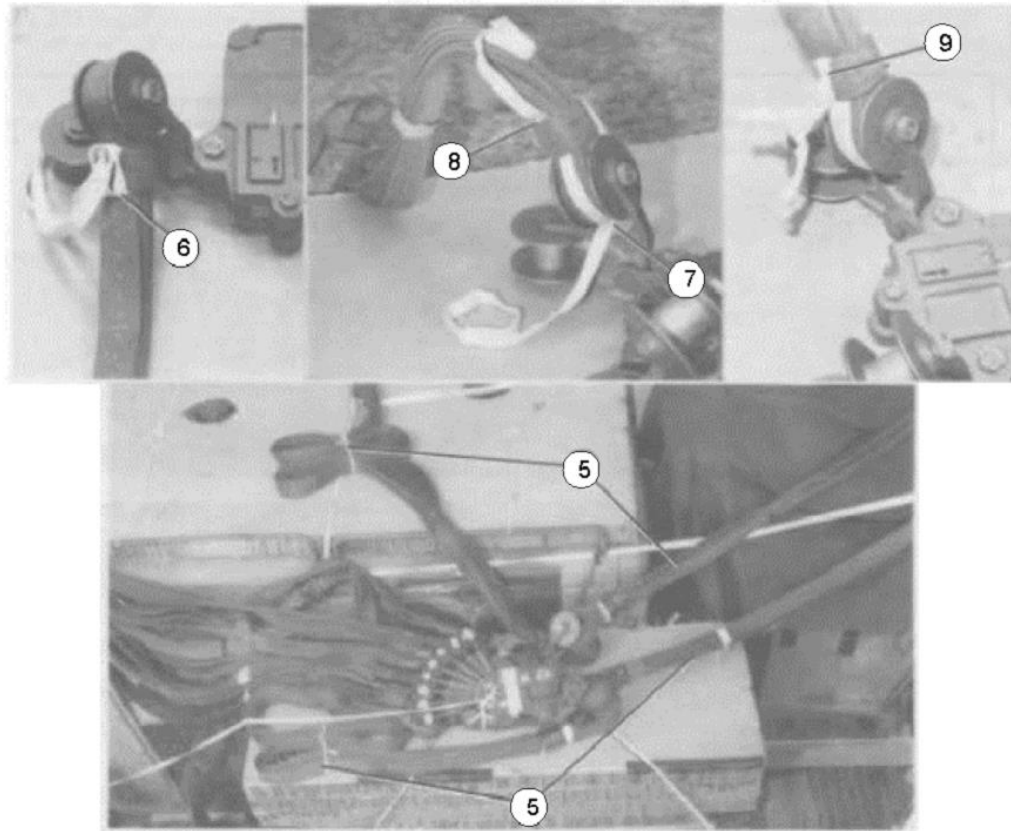
Figure 6-29. Honeycomb stack prepared for parachute release.

- Notes.** 1. The M-2 parachute release has the modified items for the 42K system.
2. Make sure the M-2 parachute release is not higher than the honeycomb layer on top of the engine compartment.



- ① Place the honeycomb stack on the right side of the grader above the battery box with the leg on the tandem housing.
- ② Place a piece of tape on the edges of the honeycomb where the type III nylon cord will touch. Tie the stack in place with type III nylon cord.
- ③ Place the release on top of the honeycomb stack. Tape the honeycomb where the type III nylon cord will touch. Tie the release in place with type III nylon cord.
- ④ Route the parachute riser extensions around the right side of the engine compartment (not shown). Connect them to the release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 6-30. M-2 parachute release installed



- ⑤ Route the suspension slings over the operator compartment and engine compartment. Connect them to the release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. S-fold and tie the rear slings in place with type I, ¼-inch cotton webbing.
- ⑥ Form a girth hitch around one side of a sliding keeper with a 60-inch length of ½-inch tubular nylon webbing. Make sure the ends are equal.
- ⑦ Route both ends around the looped end of the sling and through the lower suspension link.
- ⑧ Route one end of the ½-inch tubular nylon webbing through the sliding keeper.
- ⑨ Slide the keeper as close to the lower suspension link as possible using the ½-inch tubular nylon webbing. Tie the running ends of the webbing together with two alternating half hitches and an overhand knot.
- ⑩ Tie the risers to the engine compartment with type I, ¼-inch cotton webbing (not shown).

Figure 6-30. M-2 parachute release installed (continued)

POSITIONING EXTRACTION PARACHUTES

6-21. Place two heavy-duty, 28-foot cargo extraction parachutes on the load for installation in the aircraft. A 60-foot (6-loop), type XXVI nylon extraction line is required when the load is airdropped from a C-130 aircraft. A 120-foot (6-loop), type XXVI nylon extraction line is required when the load is airdropped from a C-141 aircraft. Attach the extraction parachutes and the extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

6-22. Install provisions for emergency restraints if the grader is airdropped from a C-141 aircraft. Attach a large clevis to each front multipurpose link as shown in Figure 6-31.

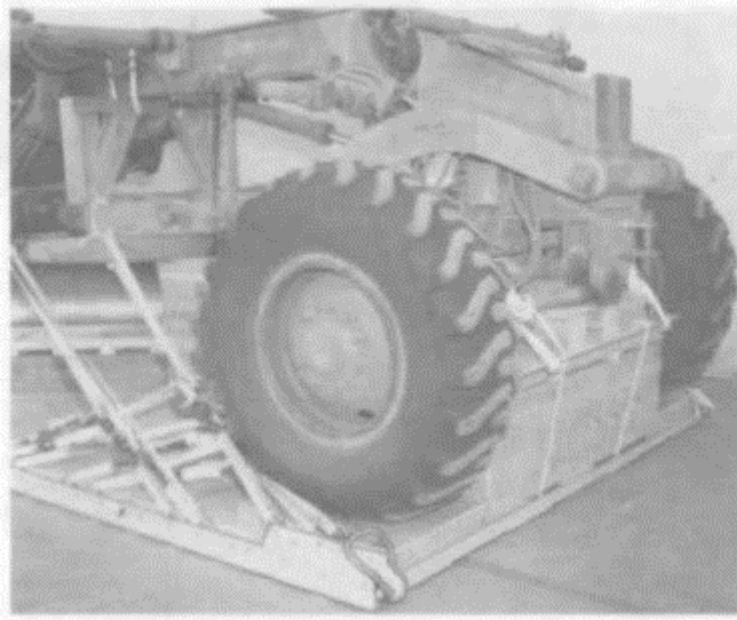


Figure 6-31. Provisions for emergency restraints installed

MARKING RIGGED LOAD

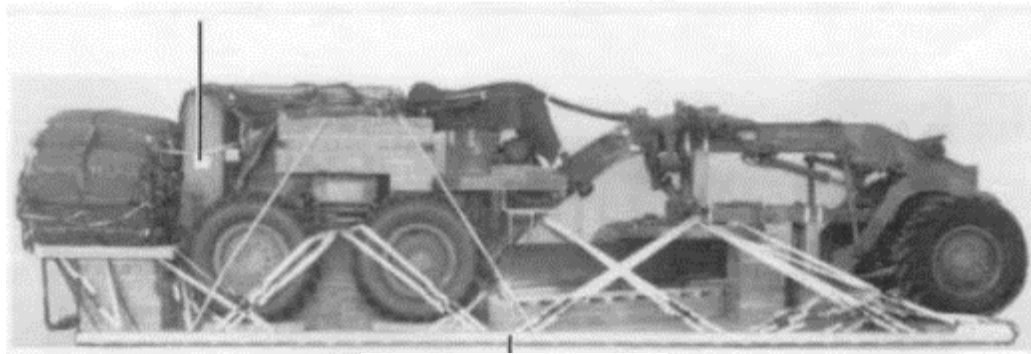
6-23. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 6-32. Complete DD Form 1387-2 (Special Handling Data/Certification), and securely attach it to the load. Indicate on DD Form 1387-2 that the vehicle fuel tank and the batteries have been prepared according to AFMAN 24-204/TM 38-250. If the load varies from the one shown in Figure 6-32, the weight, height, and CB must be recomputed.

EQUIPMENT REQUIRED

6-24. Use the equipment listed in Table 6-3 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of balance

RIGGED LOAD DATA

	Type I	Type II
Weight:		
Load shown.....	36,220 pounds	36,430 pounds
Maximum allowed.....	36,600 inches	37,000 pounds
Height.....	98 inches	98 inches
Width.....	108 inches	108 inches
Length.....	374 inches	374 inches
Overhang:		
Front.....	14 inches	14 inches
Rear.....	24 inches	24 inches
Center of balance (from front edge of platform).....	181 inches	181 inches

Figure 6-32. 130G Motor grader rigged for low-velocity airdrop (Type I shown)

Table 6-3. Equipment Required for Rigging the 130G Motor Grader on a Type V Airdrop Platform for Low-Velocity Airdrop.

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1-gal	As required
4030-00-432-2516	Clevis, screw-pin	4
4030-00-090-5354	Clevis, suspension, 1-in (large)	6
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-157-6527	Coupling, airdrop, extraction force transfer w 28-ft cable	1
8135-00-958-3685	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½-inch thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line, extraction:	
1670-00-003-1957	60-ft (6-loop), type XXVI nylon webbing (for C-130) (Use w 28-ft parachute) or	1
1670-01-064-4454	60-ft (6-loop), type XXVI nylon webbing (for C-130) (Use w 28-ft parachute.)	1
1670-01-062-6312	120-ft (6-loop), type XXVI nylon webbing (for C-141) (Use w 28-ft parachute.)	1
1670-00-006-2752	Link assembly, four-point	1
	Lumber:	
5510-00-220-6146	2- by 4-in:	
	14-in	12
	15-in	2
	23-in	2
	84-in	4
	96-in	2
	144-in	2
5510-00-220-6448	2- by 6-in:	
	6-in	1
	8-in	5
	10-in	2
	17 ½-in	4
	19 7/16-in	4
	21-in	8
	23 ½-in	3
	42 ½-in	4
	43 ½	4
5510-00-20-6246	2- by 8- by 24-in	2
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 6-3. Equipment Required for Rigging the 130G Motor Grader on a Type V Airdrop Platform for Low-Velocity Airdrop. (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5510-00-220-6274	4- By 4-in:	
	38-in	1
	43 ½-in	2
	Nail, steel wire, common:	
5315-00-010-4650	8d	As required
5510-00-220-6274	10d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- By 36- by 96-in:	32 sheets
	6- By 18-in	(6)
	8- by 8-in	(1)
	12- by 15-in	(5)
	13- by 16-in	(2)
	15- by 20-in	(1)
	16- by 45-in	(1)
	18- by 5-in	(1)
	20- by 30-in	(2)
	20- by 36-in	(4)
	20- by 56-in	(11)
	24- by 18-in	(5)
	24- by 84-in	(9)
	29- by 88-in	(1)
	33- by 74-in	(5)
	36- by 84-in	(2)
	42- by 7-in	(9)
	42- by 25-in	(3)
	48- by 14-in	(1)
	48- by 96-in	(4)
	54- by 23-in	(7)
	55- by 15-in	(3)
	96- by 14-in	
	Parachute:	
1670-01-016-7841	Cargo, G-11C	8
1670-00-040-8135	Cargo, extraction, 28-ft, heavy-duty	2
8135-00-579-6489	Plastic sheet, 12- by 100- by 6-ft	As required
	Platform, airdrop, type V, 28-ft:	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 6-3. Equipment Required for Rigging the 130G Motor Grader on a Type V Airdrop Platform for Low-Velocity Airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-162-2375	Bracket:	
	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis, load tiedown	(56)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(2)
	Plywood:	
5530-00-129-4981	½ -in:	
	3- By 10-in	2
	5 ½- by 6-in	2
	8 ½- by 36-in	2
	9- by 7 ¼-in	2
	36- by 7 ¼-in	2
5530-00-128-4981	¾-in:	
	3/4- by 5 ½-in	1
	5- By 9-in	6
	5- by 16-in	6
	5 ½- by 2 ½-in	2
	5 ½- by 6-in	1
	5 ½- by 8-in	1
	5 ½- by 10-in	2
	6- by 15-in	2
	7- by 7-in	3
	8 1/2- by 36-in	2
	24- by 18-in	2
	33- by 74-in	1
	48- by 14-in	1
	54- by 23-in	4
	55- by 15-in	1
	55- by 21-in	1
	96- by 14-in	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 6-3. Equipment Required for Rigging the 130G Motor Grader on a Type V Airdrop Platform for Low-Velocity Airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-097-8817	Release, cargo parachute, M-2 (with modified components):	1
	Bolts, clevis (w sleeve), hardened	(2)
	Bolts, sleeve, hardened	(4)
	Shaft, toggle, reinforced	(1)
	Spacers, steel, 2 3/8-in	(4)
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-753-3788	3-ft (3-loop), type X nylon webbing or	4
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	4
1670-00-823-5041	12-ft (3-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	1
	For lifting:	
1670-00-432-2501	9-ft (4-loop), type XXVI nylon webbing or	2
1670-01-062-6305	9-ft (4-loop), type XXVI nylon webbing	2
1670-00-432-2507	16-ft (4-loop), type XXVI nylon webbing or	2
1670-00-003-7237	16-ft 94-loop), type XXVI nylon webbing or	2
1670-01-062-6308	16-ft (4-loop), type XXVI nylon webbing	2
	For riser extension:	
1670-00-432-2494	120-ft (3-loop), type X nylon webbing or	8
1670-01-062-6311	120-ft (2-loop), type XXVI nylon webbing	8
1670-00-998-0116	Strap, parachute release, multicut (comes w 3 knives)	2
8125-00-074-5124	Tape, adhesive, cloth-backed, type IV, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	76
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, ½-in, 1,000-lb, natural	As required
8305-00-268-2453	Tubular, ½-in, 1,000-lb, olive drab	As required
8305-00-268-2455	Tubular, 1-in, 4,000-lb, olive drab	As required
8305-00-261-8584	Type X, treated, 8,700-lb, olive drab or	As required
8305-00-260-6890	Type X, untreated, 8,700-lb	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

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Chapter 7

Rigging 950B on a Type V Platform for Low-Velocity Airdrop

EQUIPMENT DESCRIPTION

7-1. The unrigged types I and II scoop-loaders (figure 7-1) are described below.

7-2. Type I, 950B Scoop-Loader. The unrigged type I, 950B scoop-loader weighs 32,275 pounds with the fuel tank three-fourths full. The weight can be reduced to 30,970 pounds by removing the roll-over protection structure (ROPS), the rear fender, and engine components to be specified in this manual. The length of the scoop-loader is 297 inches, reducible to 292 inches. Its height is 137 inches, reducible to 91 inches. It is 106 inches wide.

7-3. Type II, 950B Scoop-Loader. The unrigged type II, 950B scoop-loader weighs 32,880 pounds with the fuel tank three-fourths full. The weight can be reduced to 31,340 pounds by removing the ROPS, sectionalization kit, and engine compartment lower doors. The length of the scoop-loader is 297 inches, reducible to 292 inches. Its height is 137 inches, reducible to 91 inches. It is 106 inches wide. 8-1. The unrigged types I and II scoop-loaders (figure 7-1) are described below.



Figure 7-1. The Unrigged Types I and II, 950B Scoop-Loaders

SPECIAL CONSIDERATIONS

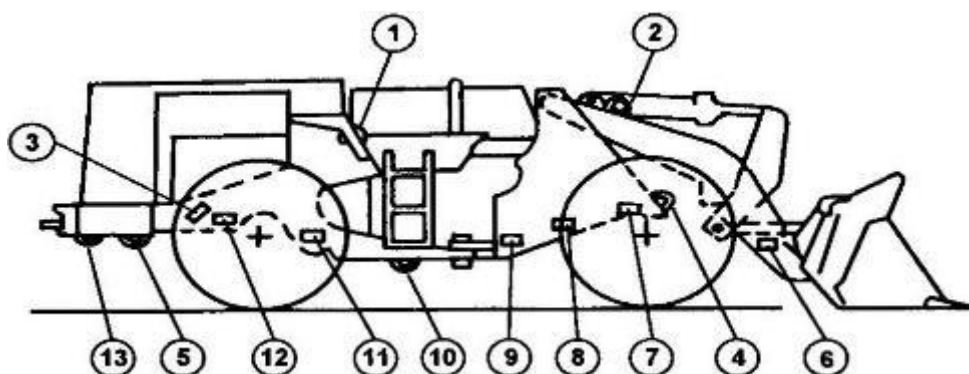
7-4. The loads covered in this manual include hazardous material as defined in AFMAN 24-204/TM 38-250. The hazardous materials must be packaged, marked and labeled as required by AFMAN 24-204/TM 38-250.

7-5. A copy of this manual must be available to the Joint Airdrop Inspectors during the before and after loading Inspection in accordance with AR 59-4/OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B

DESCRIPTION OF LOAD

7-6. The 950B scoop-loader is rigged on a 24-foot, type V platform for low-velocity airdrop. The load requires eight G-11 cargo parachutes with a line bag. A drawing of a 950 B scoop-loader with tiedown provisions is shown in Figure 7-2

Note: 1. This drawing is not drawn to scale



- | | |
|-------------------------------|-----------------------|
| ① Rear suspension point | ⑧ Tiedown provision 3 |
| ② Front suspension point | ⑨ Tiedown provision 4 |
| ③ Rear lift eye | ⑩ Tiedown provision 5 |
| ④ Front lift eye | ⑪ Tiedown provision 6 |
| ⑤ Air transport trailer hitch | ⑫ Tiedown provision 7 |
| ⑥ Tiedown provision 1 | ⑬ Tiedown provision 8 |
| ⑦ Tiedown provision 2 | |

Figure 7.2. 950 B scoop-loader

PREPARING PLATFORM

7-7. Prepare a 24-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22 using 50 tiedown clevis assemblies as shown in Figure 7-3.

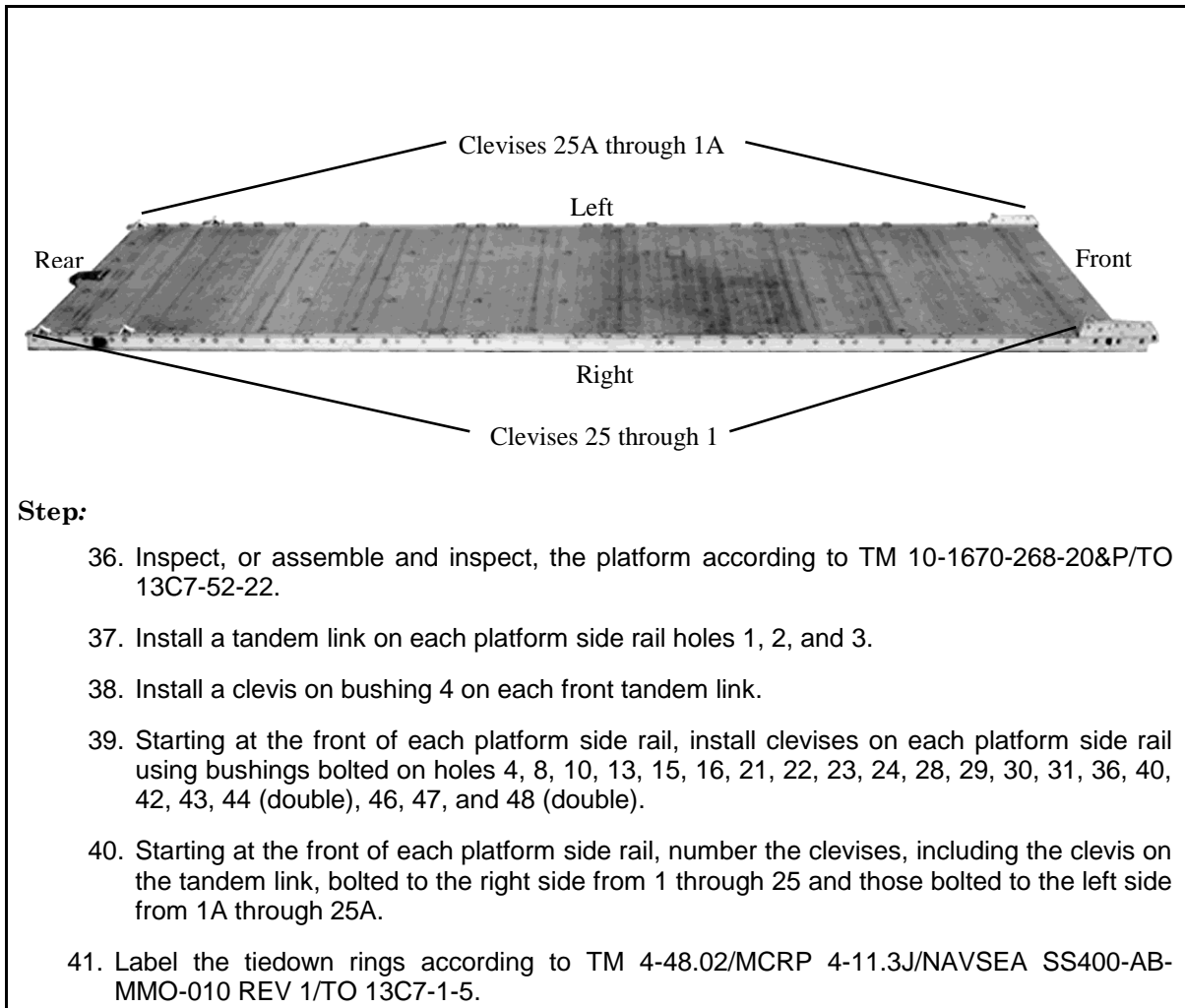


Figure 7-3. Platform Prepared

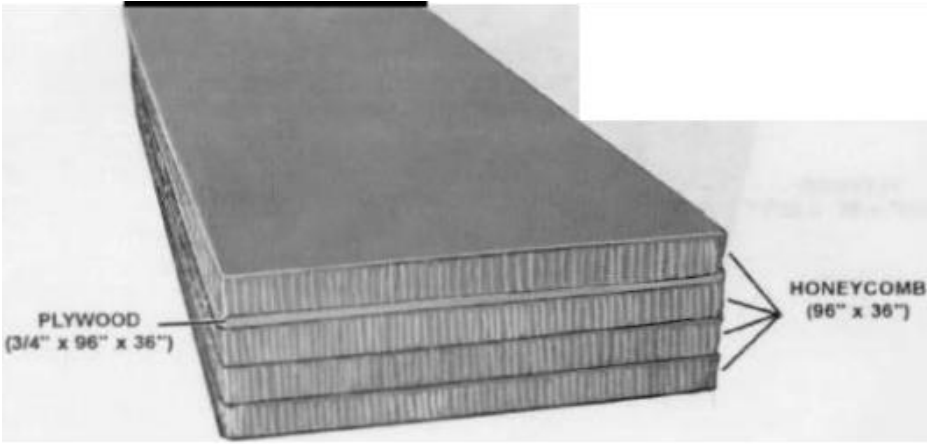
BUILDING AND POSITIONING HONEYCOMB STACKS

7-8. Build 13 honeycomb stacks using the materials listed in Table 7-1 and as shown in Figures 7-4 through 7-12. Position the honeycomb stacks on the platform as shown in Figure 7-13.

Table 7-1. Materials Required for Honeycomb Stacks

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	4	96	36	Honeycomb	See Figure 1-3.
	1	96	36	$\frac{3}{4}$ inch Plywood	
	1	96	26	$\frac{3}{4}$ inch Plywood	
	2	96	6	2- by 6-inch Lumber	
	4	4	26	4- by 4-inch Lumber	
2	5	48	12	Honeycomb	See Figure 1-4.
	10	12	39	Honeycomb	
	6	12	51	Honeycomb	
	3	24	12	Honeycomb	
	2	12	44	$\frac{3}{4}$ inch Plywood	
	2	12	39	Honeycomb	
	2	12	22	Honeycomb	
	2	12	13	Honeycomb	
	2	12	7	Honeycomb	
	2	12	5	$\frac{3}{4}$ inch plywood	
	2	12	34	$\frac{3}{4}$ inch Plywood	
	2	24	36	Honeycomb	
3	2	24	36	Honeycomb	See Figure 1-5.
4	7	48	28	Honeycomb	See Figure 1-6.
5	1	48	28	$\frac{3}{4}$ inch Plywood	
	2	6	28	2- by 6-inch Lumber	
	2	6	5	2- by 6-inch Lumber	
6	8	28	15	Honeycomb	See Figure 1-7.
	1	28	15	$\frac{3}{4}$ inch Plywood	

Table 7-1. Materials Required for Honeycomb Stacks (Continued)

					
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
7	6	4	48	2- by 4-inch Lumber	See Figure 1-8.
	2	28	48	¾ inch Plywood	
	2	6	28	¾ inch Plywood	
	6	28	48	Honeycomb	
	2	4	28	2- by 4-inch Lumber	
8	6	4	27	2- by 4-inch Lumber	See Figure 1-9.
	2	27	48	¾ inch Plywood	
	7	48	27	Honeycomb	
	1	48	10	Honeycomb	
	2	12	12	Honeycomb	
	2	4	12	2- by 4-inch Lumber	
9	3	4	48	2- by 4-inch Lumber	See Figure 1-10.
	2	14	48	¾ inch Plywood	
	10	48	14	Honeycomb	
	2	4	14	2- by 4-inch Lumber	
10	2	24	36	Honeycomb	See Figure 1-5.
11	2	24	36	Honeycomb	See Figure 1-5.
12	11	18	28	Honeycomb	See Figure 1-11.
	1	18	28	¾ inch Plywood	
	1	4	28	2- by 4-inch Lumber	
13	11	18	28	Honeycomb	See Figure 1-11.
	1	18	28	¾ inch Plywood	
	1	4	28	2- by 4-inch Lumber	

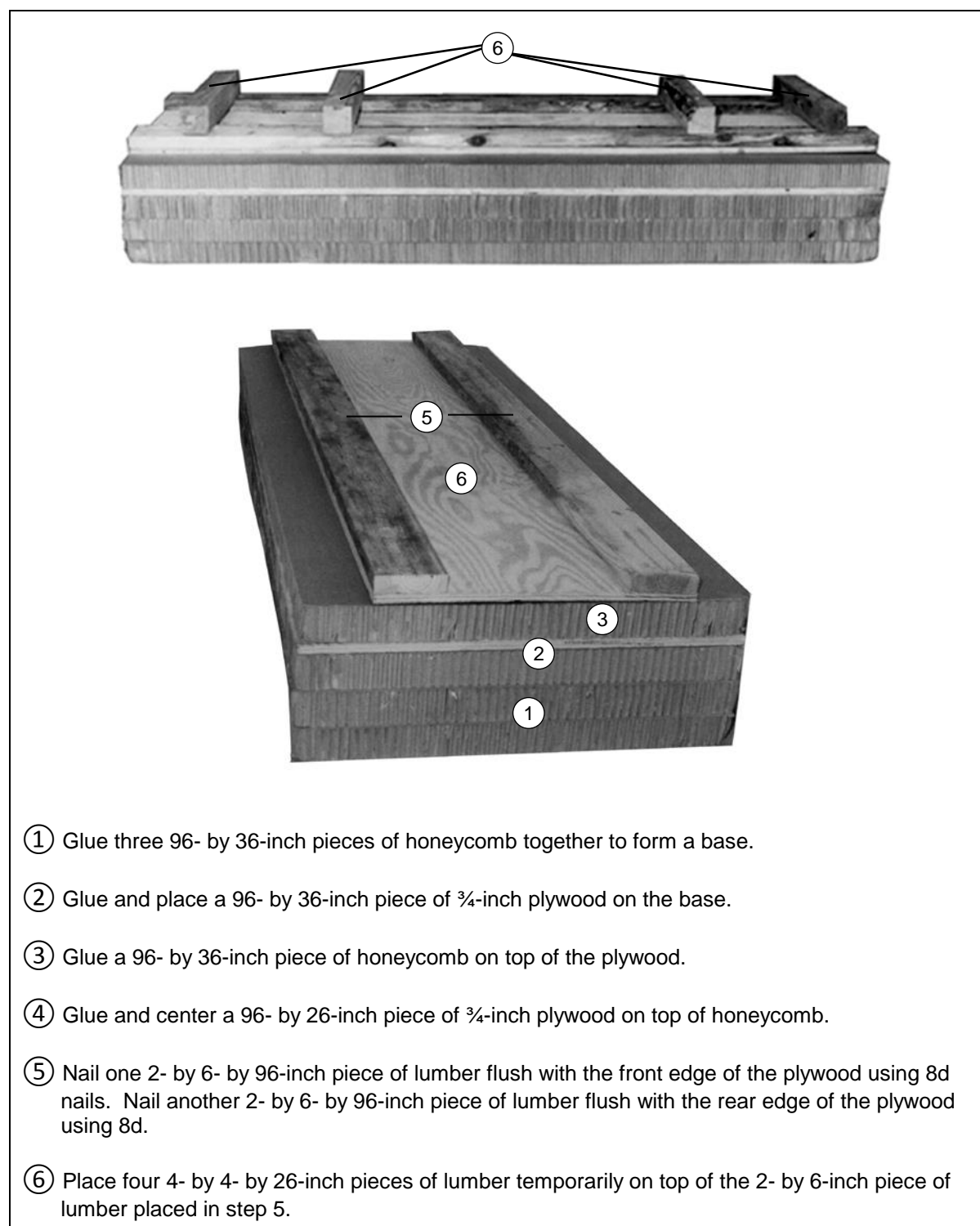


Figure 7-4. Honeycomb Stack 1 Prepared

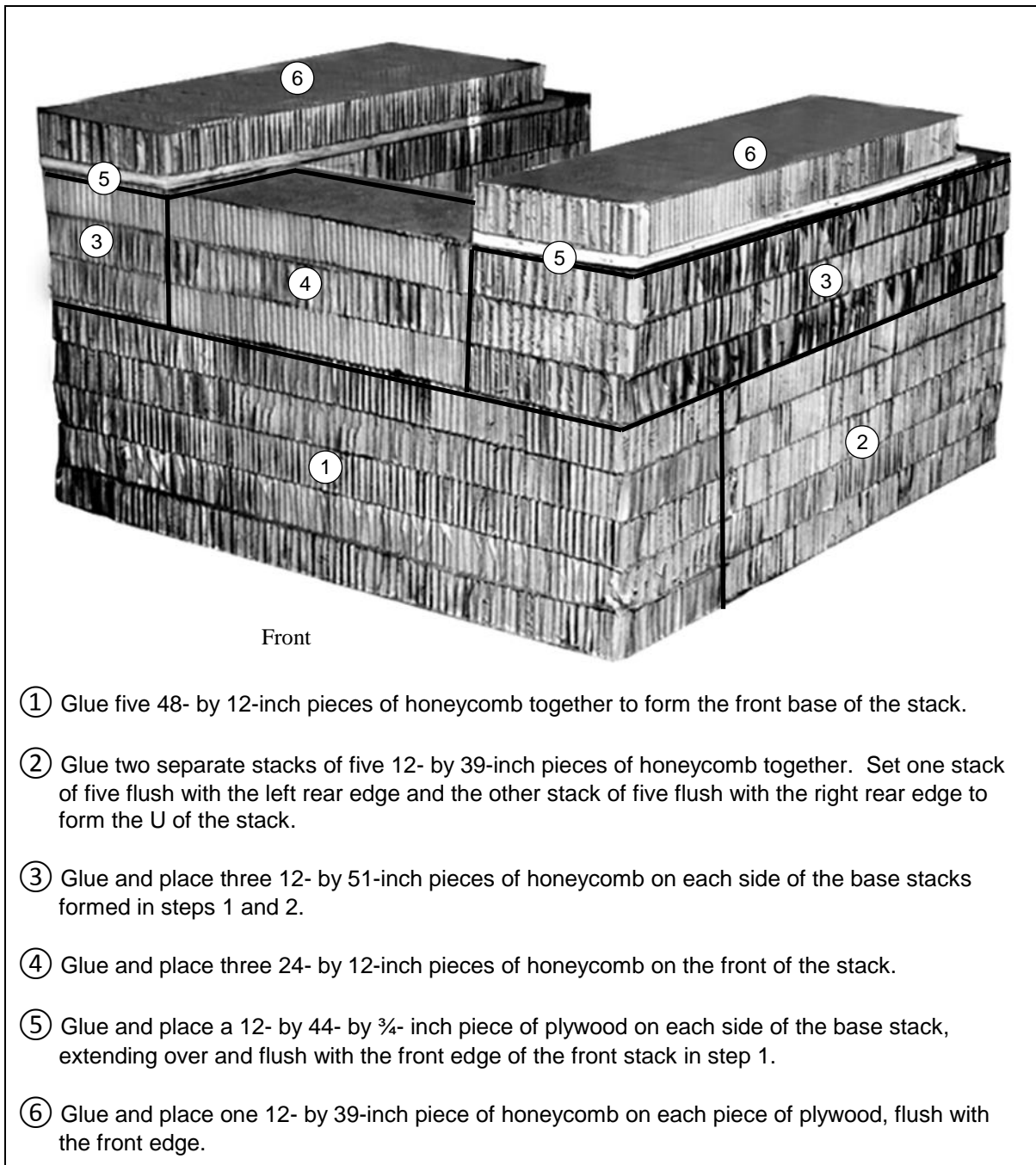
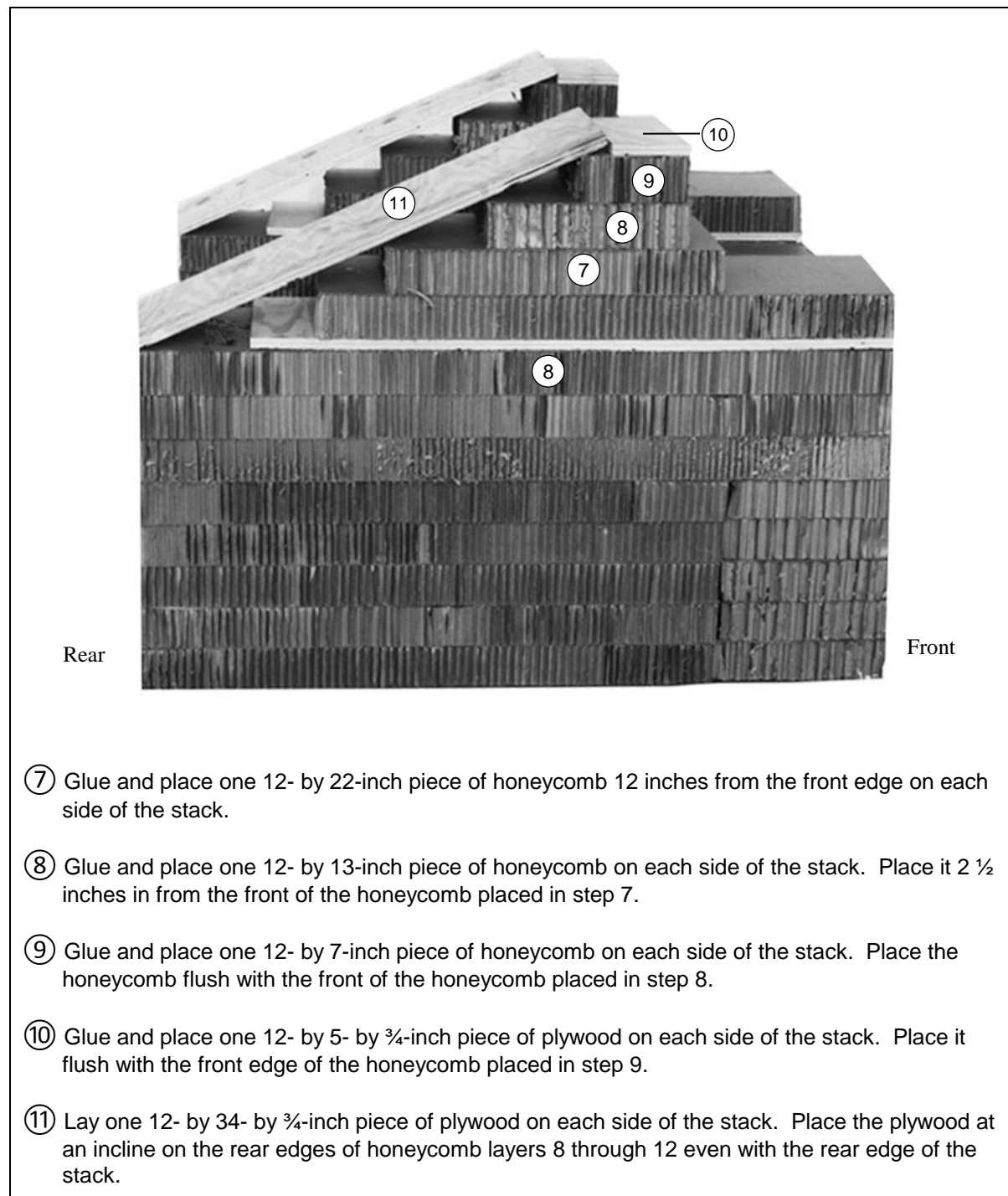
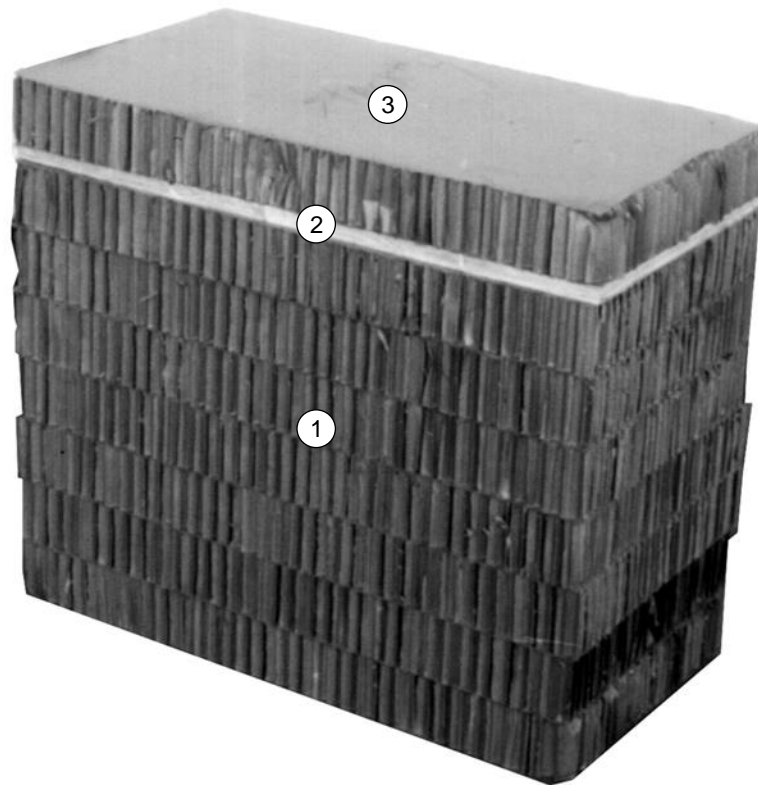


Figure 7-5. Honeycomb Stack 2 Prepared



- ⑦ Glue and place one 12- by 22-inch piece of honeycomb 12 inches from the front edge on each side of the stack.
- ⑧ Glue and place one 12- by 13-inch piece of honeycomb on each side of the stack. Place it 2 ½ inches in from the front of the honeycomb placed in step 7.
- ⑨ Glue and place one 12- by 7-inch piece of honeycomb on each side of the stack. Place the honeycomb flush with the front of the honeycomb placed in step 8.
- ⑩ Glue and place one 12- by 5- by ¾-inch piece of plywood on each side of the stack. Place it flush with the front edge of the honeycomb placed in step 9.
- ⑪ Lay one 12- by 34- by ¾-inch piece of plywood on each side of the stack. Place the plywood at an incline on the rear edges of honeycomb layers 8 through 12 even with the rear edge of the stack.

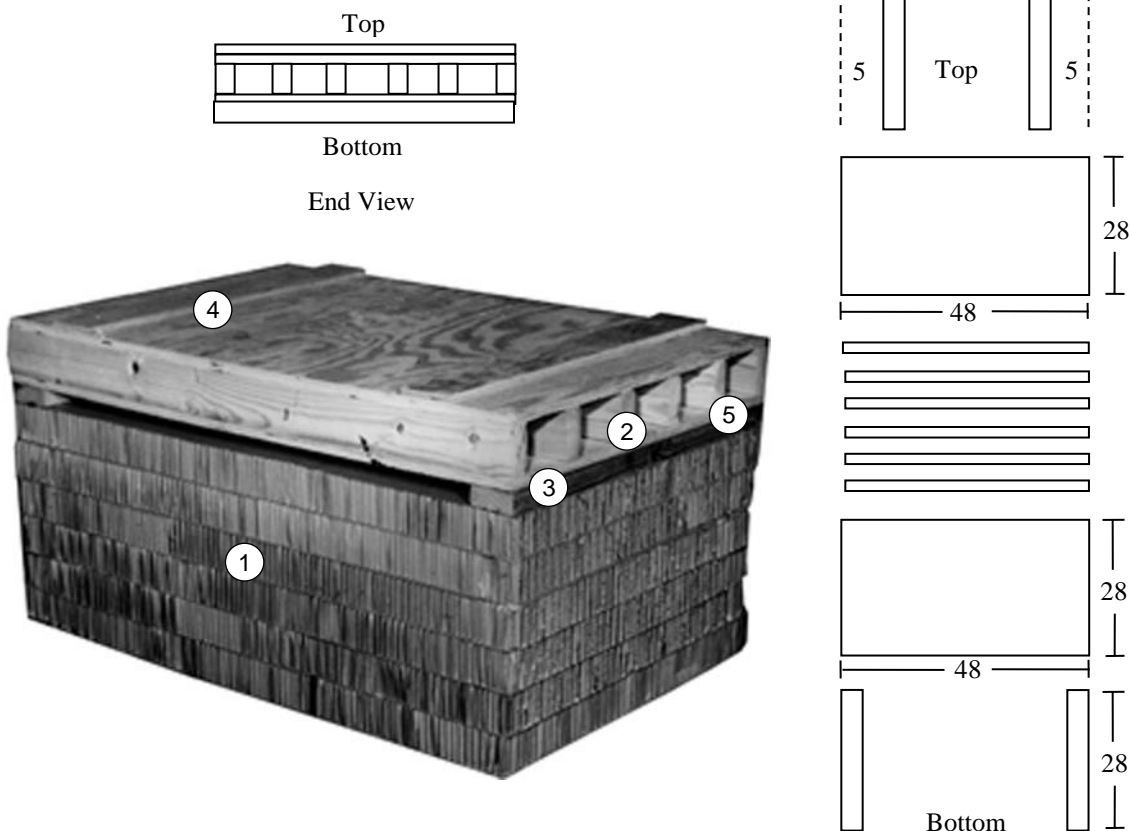
Figure 7-5. Honeycomb Stack 2 Prepared (Continued)



- ① Glue and place seven pieces of 28- by 15-inch honeycomb to form the base stack.
- ② Glue and place one piece of 28- by 15-by $\frac{3}{4}$ -inch plywood on top of the base stack.
- ③ Glue and place one piece of 28- by 15-inch honeycomb on top of the plywood.

Figure 7-6. Honeycomb Stack 6 Prepared

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



- ① Glue and place six pieces of 48- by 28-inch honeycomb to form the base.
- ② Evenly space six 2- by 4- by 28-inch pieces of lumber on the 2 inch side between two pieces of 28- by 48- by $\frac{3}{4}$ -inch plywood and nail using 8d nails.
- ③ On the outside frame, place two pieces of 2- by 4- by 28-inch lumber on the 4 inch side flush along the sides and nail with 8d nails.
- ④ Turn the frame over and nail two pieces of 6- by 28- by $\frac{3}{4}$ -inch plywood 5 inches in from each side. Nail using 8d nails.
- ⑤ Glue and place the frame on the honeycomb stack with the 2- by 4- by 28-inch piece of lumber on the bottom.

Figure 7-7. Honeycomb Stack 7 Prepared

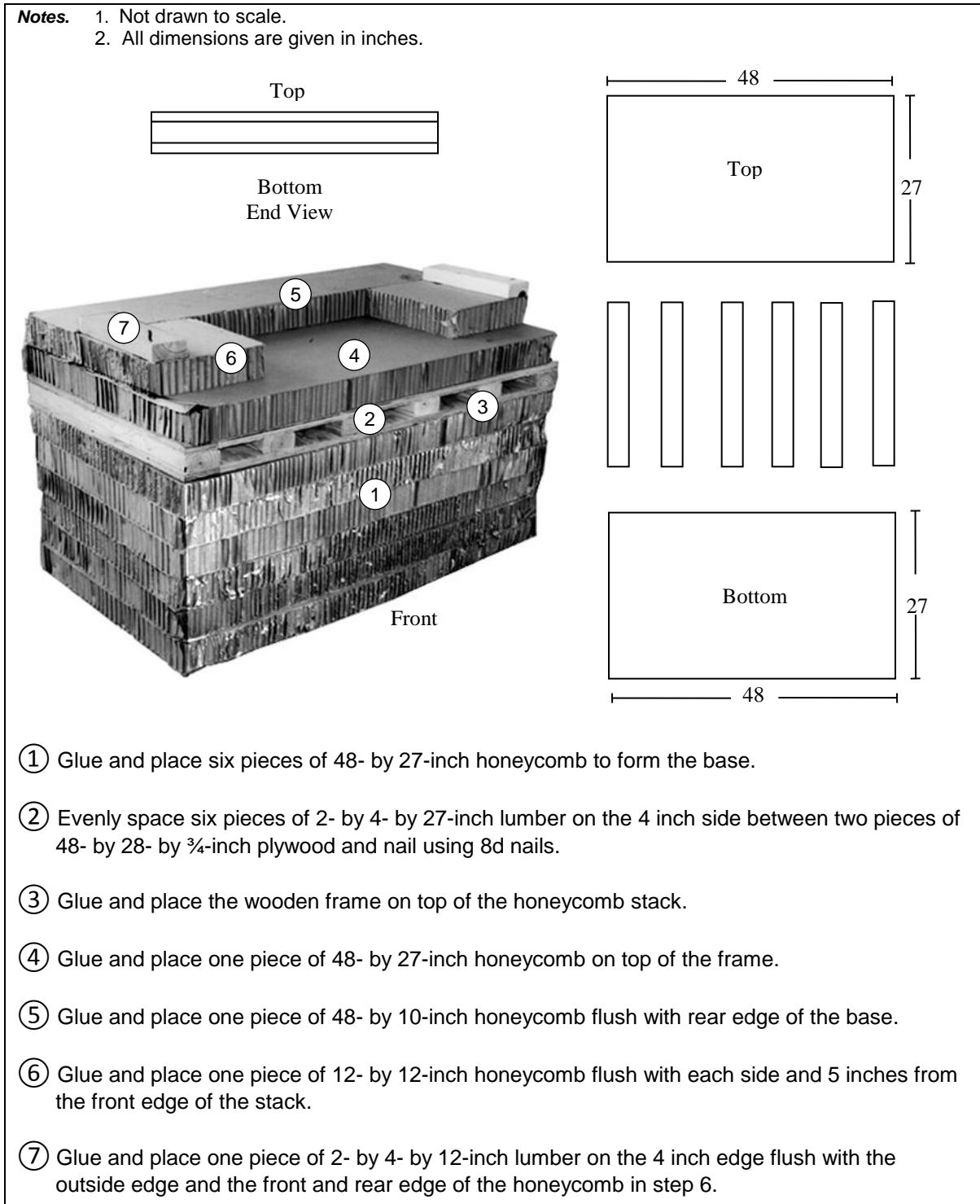


Figure 7-8. Honeycomb Stack 8 Prepared

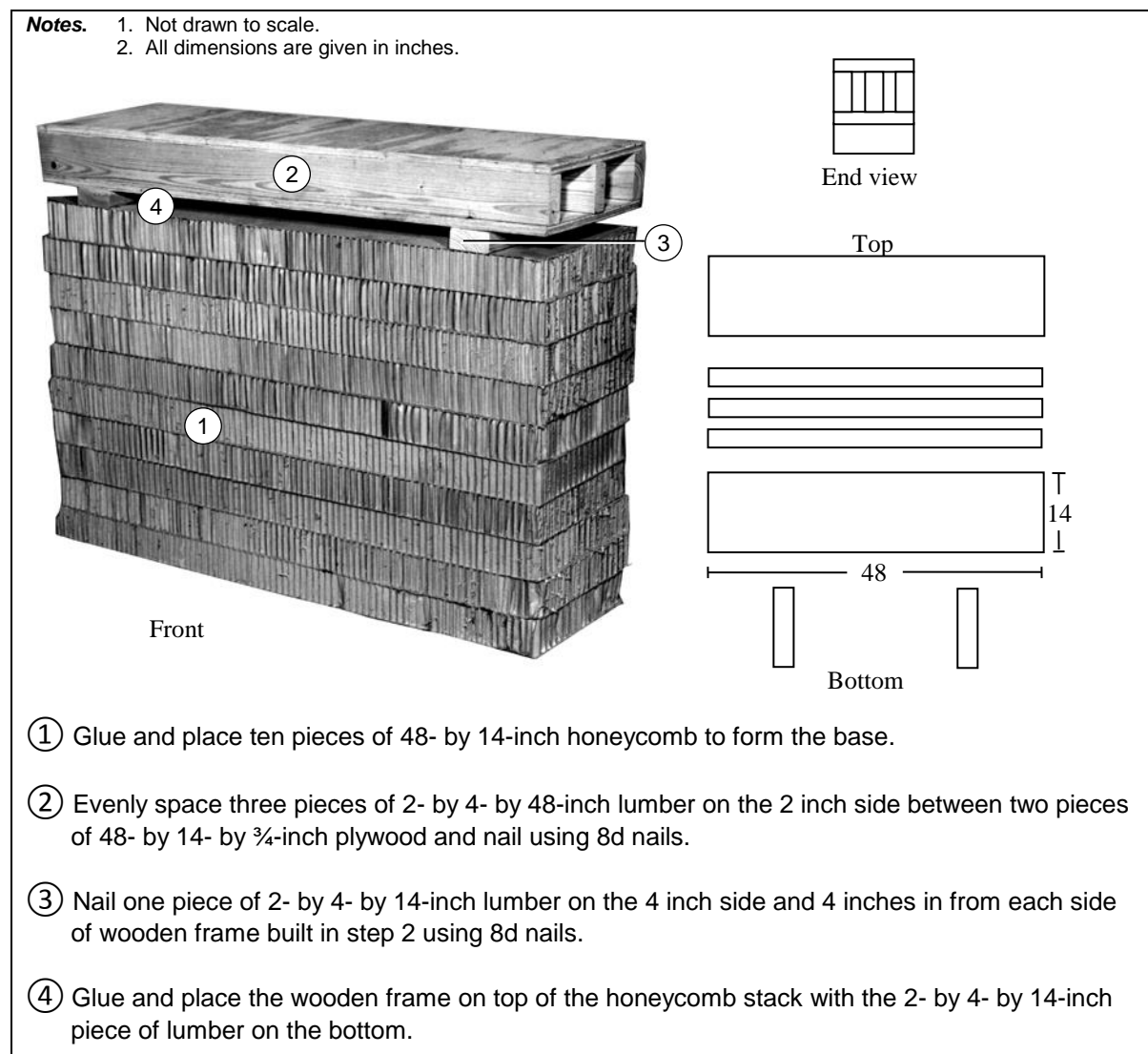
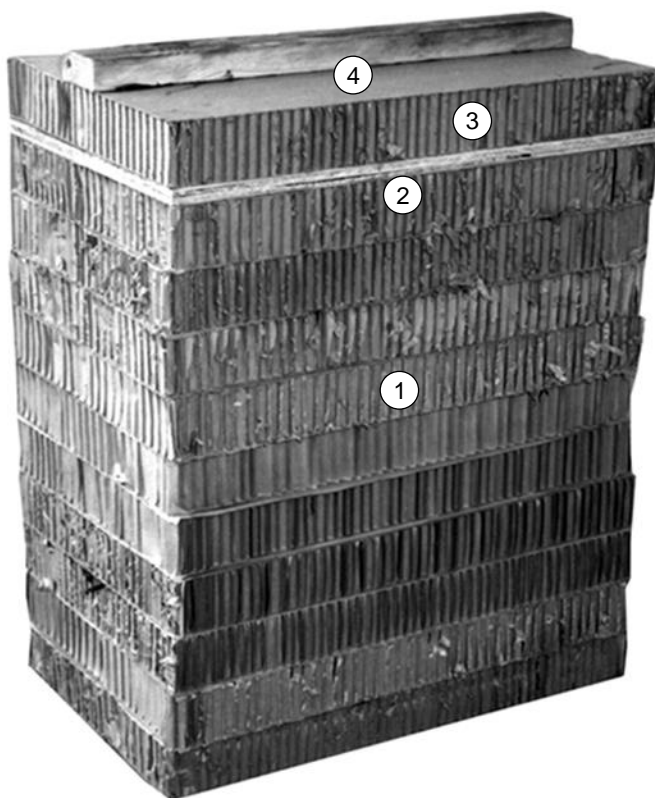


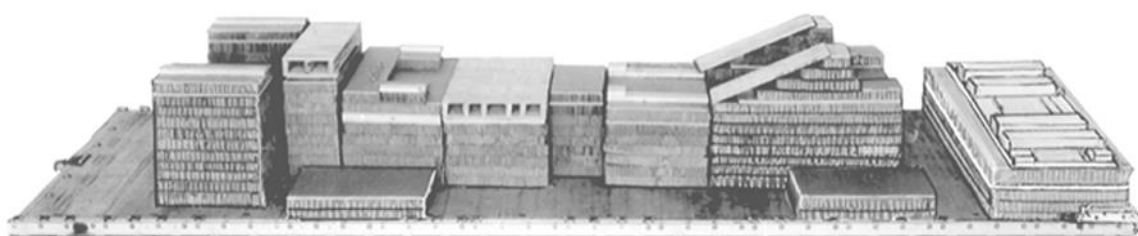
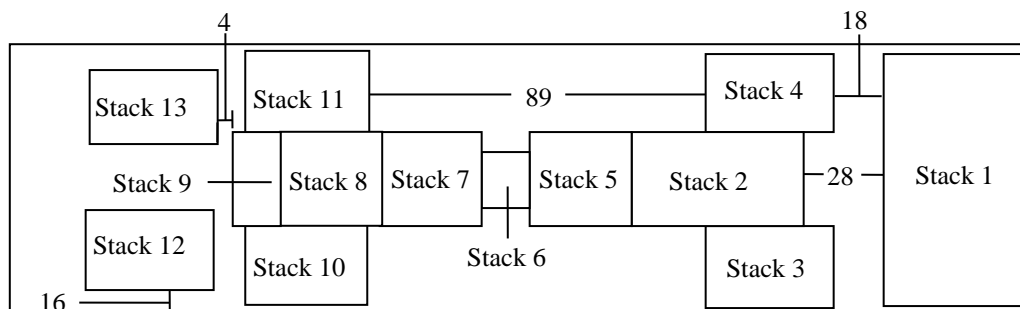
Figure 7-9. Honeycomb Stack 9 Prepared



- ① Glue ten pieces of 18- by 28-inch honeycomb to form the base.
- ② Glue and place one piece of 18- by 28- by $\frac{3}{4}$ -inch plywood on top of the base stack.
- ③ Glue and place one piece of 18- by 28-inch honeycomb on the plywood.
- ④ Glue and place one piece of 2- by 4- by 28-inch lumber centered on top of the stack.

Figure 7-10. Honeycomb Stacks 12 and 13 Prepared

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



Stack Number	Position of Stacks on the Platform
	Place stack:
1	Centered flush with the front edge of the platform.
2	Centered 28 inches from stack 1, 64 inches from the front edge of the platform.
3	18 inches from the rear edge of stack 1 and flush against the right side of stack 2, 54 inches from the front edge of the platform.
4	18 inches from the rear edge of stack 1 and flush against the left side of stack 2, 54 inches from the front edge of the platform.
5	Centered flush against stack 2, 115 inches from the front of the platform.
6	Centered flush against stack 5, 143 inches from the front of the platform.
7	Centered flush against stack 6, 158 inches from the front of the platform.
8	Centered flush against stack 7, 186 inches from the front of the platform.
9	Centered flush against stack 8, 213 inches from the front of the platform.
10	89 inches from stack 3, 179 inches from the front edge of the platform and flush against the right side of stacks 8 and 9.
11	89 inches from stack 4, 179 inches from the front edge of the platform and flush against the left side of stacks 8 and 9.
12	4 inches from stack 9, 217 inches from the front edge of the platform and 16 inches from the right rail.
13	4 inches from stack 9, 217 inches from the front edge of the platform and 16 inches from the left rail.

Figure 7-11. Honeycomb Stacks Positioned on the Platform

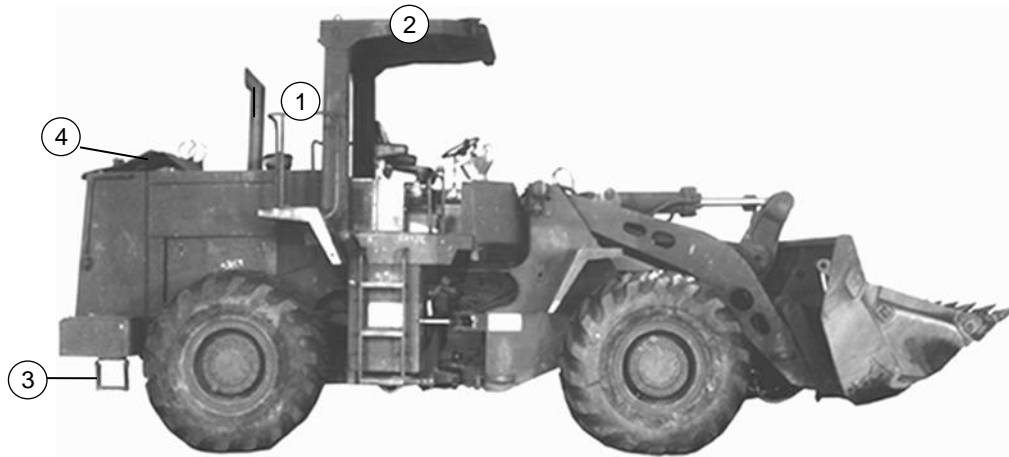
PREPARING THE SCOOP LOADER

7-9. Prepare the 950B scoop-loader as given below except do not remove the engine doors. . Adjust the tire pressure on all tires to 20 pounds per square inch (PSI). Remove the components as shown in Figure 7-14.

CAUTION

Make sure all equipment is removed by a qualified operators or maintenance personnel. Ensure the fuel tank is no more the $\frac{3}{4}$ full.

Note. Items 1 and 2 listed below will not be airdropped with the load.



- ① Remove the large handrails.
- ② Make sure all electrical wiring is disconnected and then remove the roll over protection kit.
- ③ Remove the rear step on each side of the scoop-loader. Store them in the equipment stowage box (shown in step 5).
- ④ Remove the component storage tray and triangle brace from the top rear of the vehicle. The component storage tray and triangle brace will be used later to store other vehicle components.

Figure 7-12. Components Removed

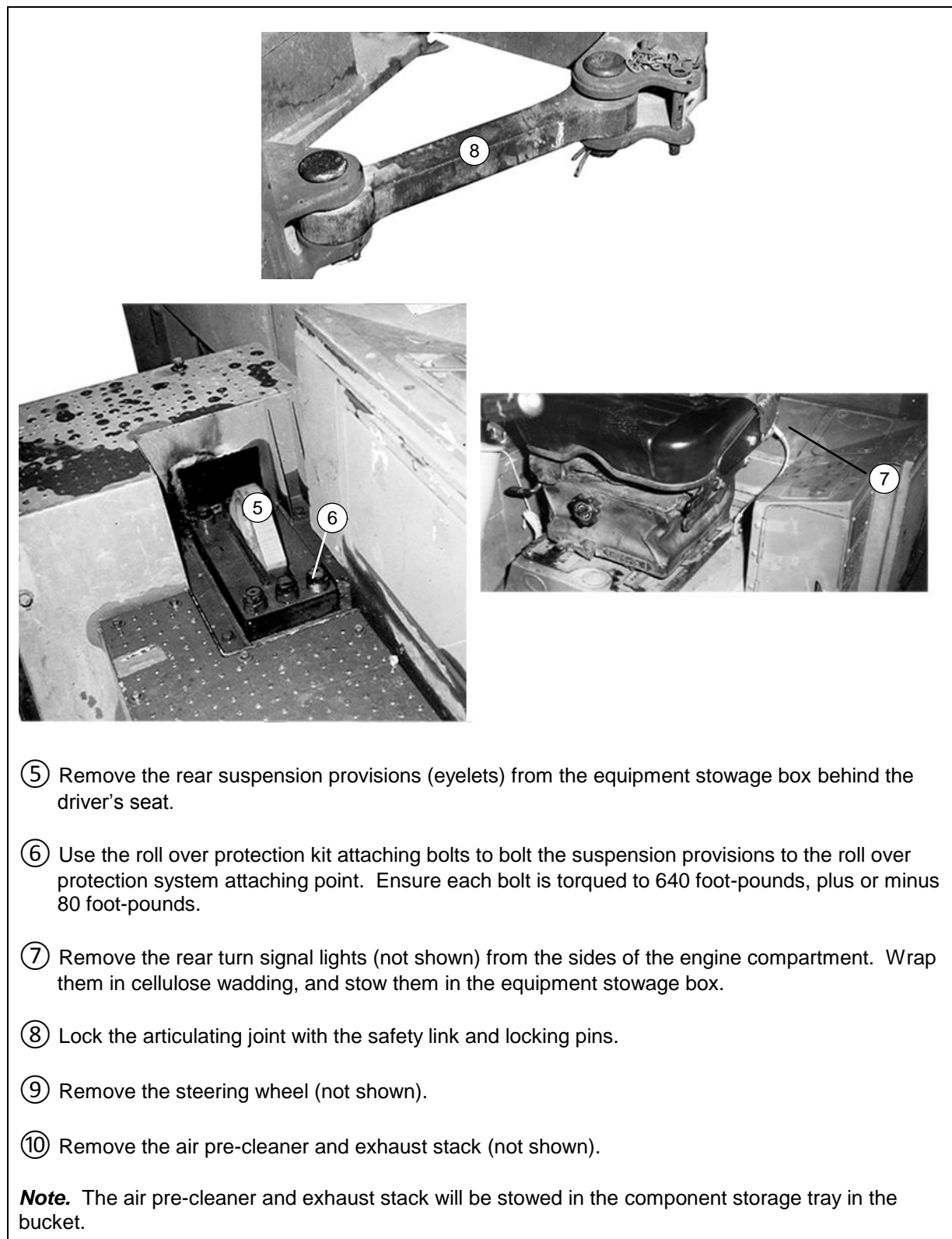
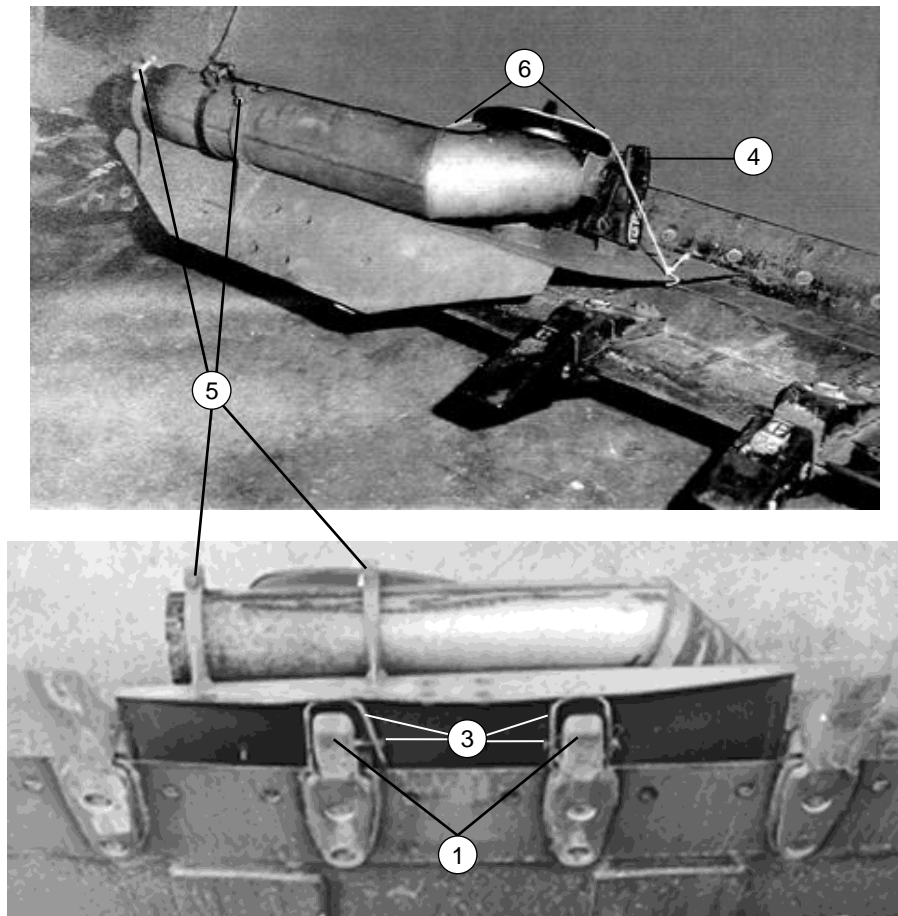


Figure 7-12. Components Removed (Continued)

STOWING COMPONENTS

7-10. Place and secure the component storage tray, exhaust stack, and air pre-cleaner as shown in Figure 7-15.



- ① Remove the two middle teeth from the bucket.
- ② Open the bucket slightly. Hook the rear of the component storage tray into the open bucket (not shown).
- ③ Align the component storage tray attaching brackets with the holes in the teeth. Insert the pins in the brackets and close the bucket.
- ④ Fit the two teeth tips on the component storage tray studs, and insert the locking pins.
- ⑤ Bolt the exhaust stack to the mounting brackets on the component storage tray.
- ⑥ Slide the air pre-cleaner on the mounting bracket. Tie the pre-cleaner to the component storage tray with type III nylon cord.

Figure 7-13. Components Stowed

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PREPARING THE OPERATOR'S COMPARTMENT

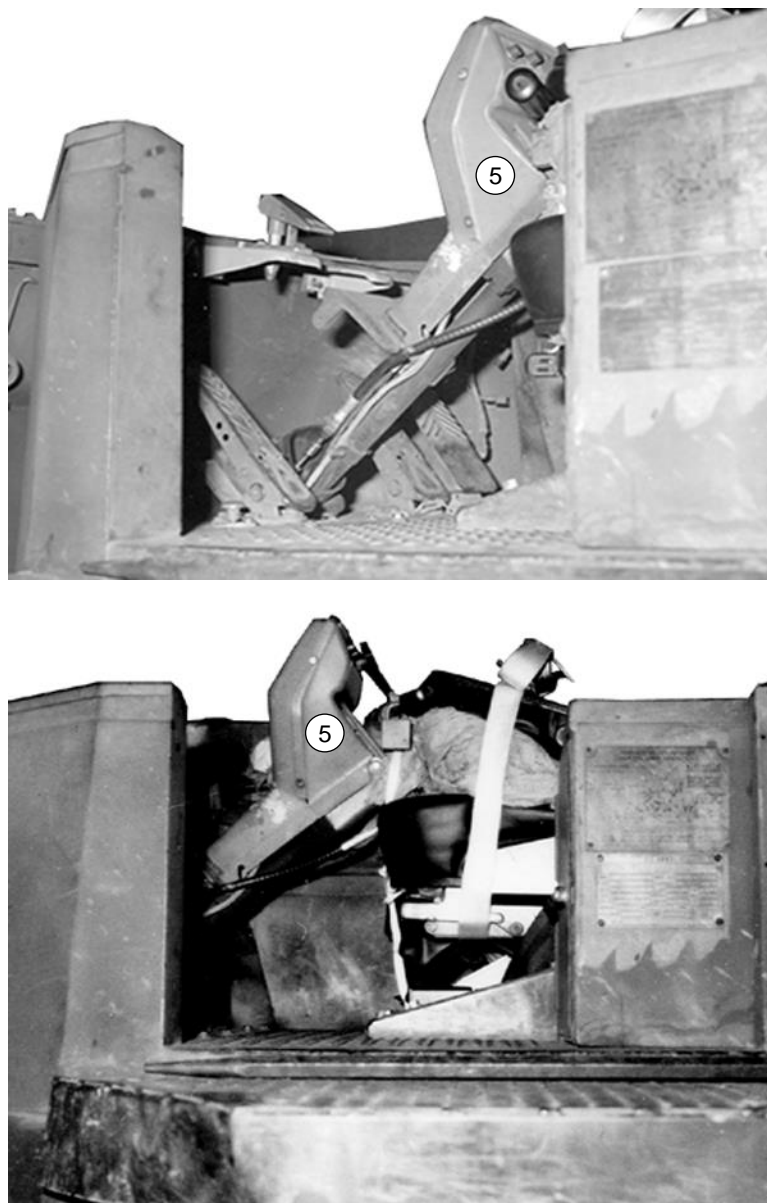
7-11. Prepare the operator's compartment as shown in Figure 7-14.



Note. When securing the operator's seat in the operator's compartment, the final rigged load must not exceed the maximum allowable height according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

- ① Place cushioning material in the operator's seat.
- ② Fold the operator's seat down and tie it with ½-inch tubular nylon webbing.
- ③ Secure the seat with a lashing and load binder.

Figure 7-14. Operator's Compartment Prepared

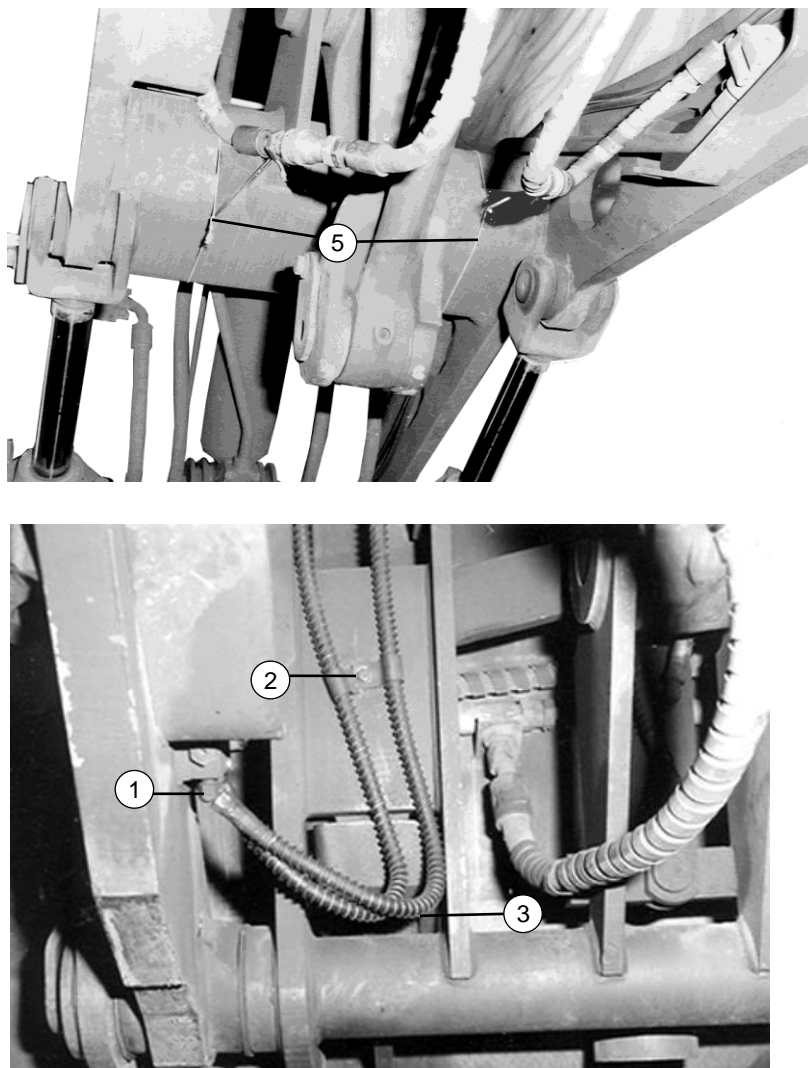


- ④ Remove the bolts from the steering column bracket assembly. Stow them in the stowage box on the left side of the operator's platform (not shown).
- ⑤ Fold the steering column down.
- ⑥ Secure the steering wheel to the top of the steering column with type III nylon cord (not shown).

Figure 7-14. Operator's Compartment Prepared (Continued)

PREPARING HYDRAULIC HOSES

7-12. Prepare hydraulic hoses as shown in Figure 7-15.



- ① Loosen the bolt securing the hoses (left side, behind bucket).
- ② Loosen the bracket securing the hoses.
- ③ Raise the hoses above the bottom of the bucket.
- ④ Retighten the bolt and bracket from steps 1 and 2 (not shown).
- ⑤ Raise the main hydraulic hoses to the cross member, and tie them with type III nylon cord.

Figure 7-15. Hydraulic Hoses Prepared

INSTALLING SUSPENSION SLINGS AND POSITIONING BUCKET

7-13. Install the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 7-16.

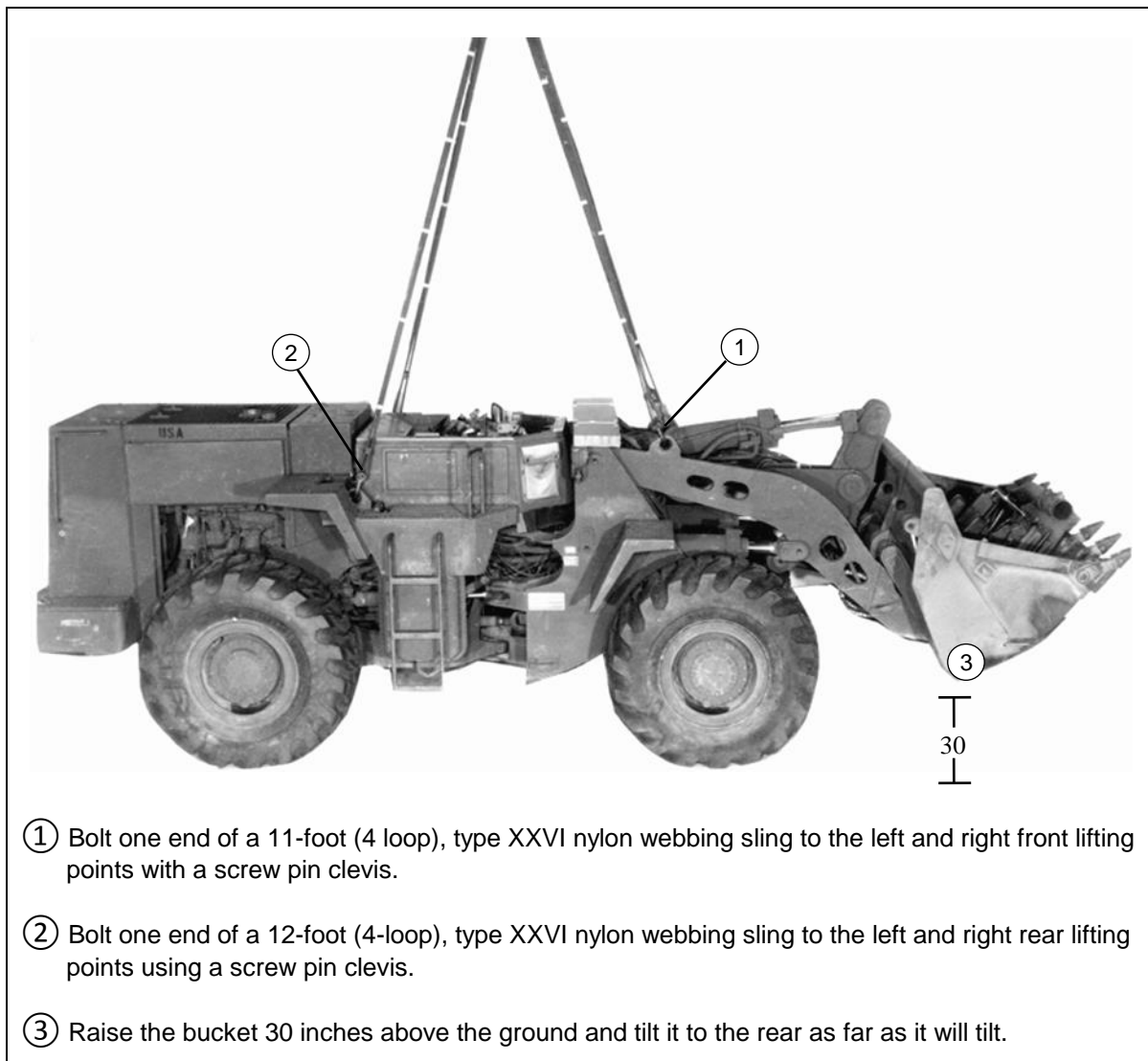
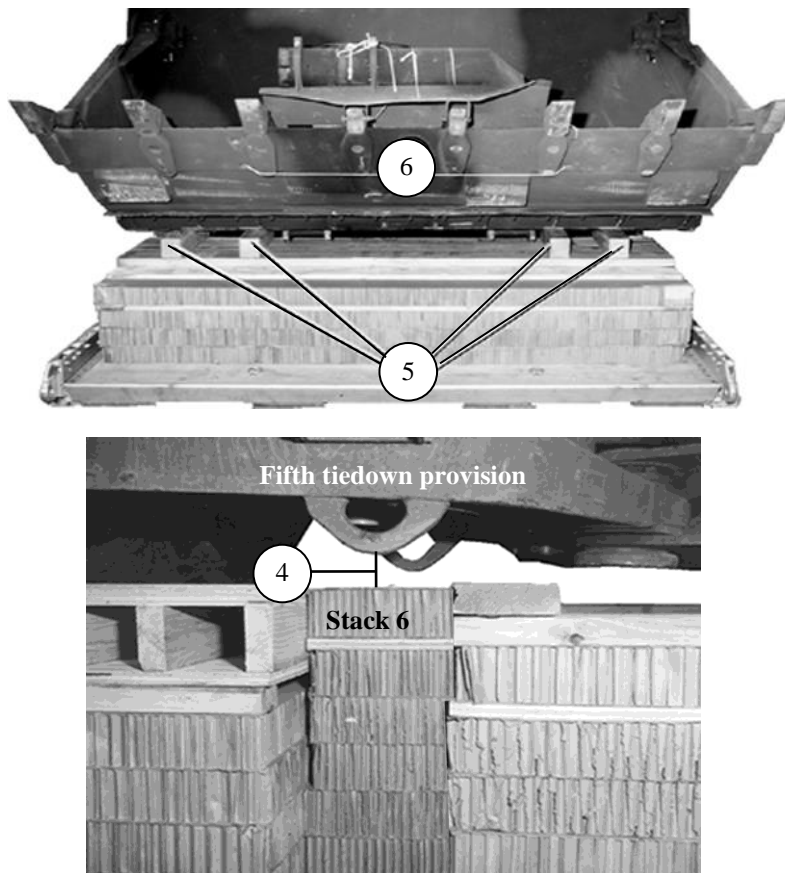


Figure 7-16. Suspension Slings Installed and Bucket Positioned



CAUTION

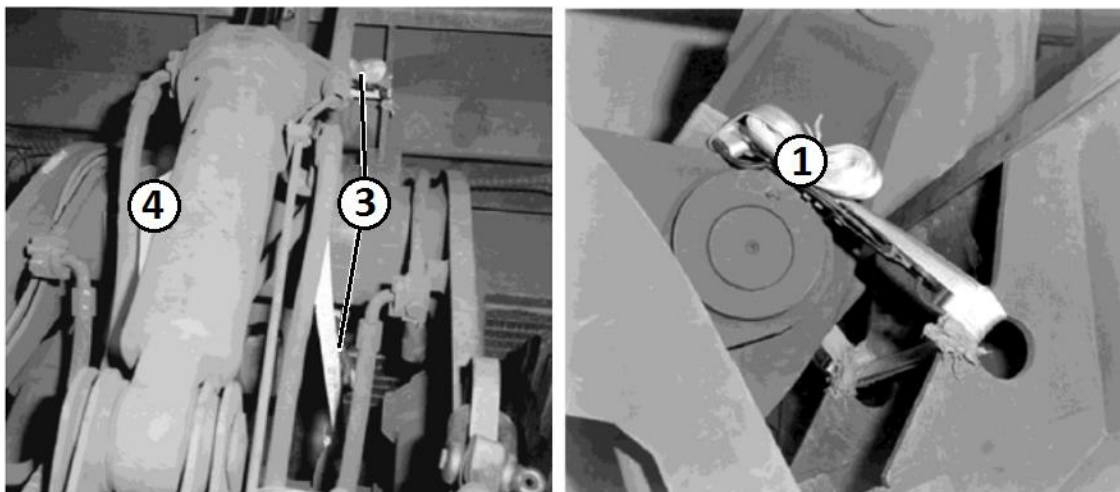
The bucket must be centered between the platform side rails and have a 27-inch overhang on the front.

- ④ Center the fifth tiedown provision on honeycomb stack 6.
- ⑤ Adjust and position the four pieces of 4- by 4- by 26-inch lumber on stack 1 as shown above.
- ⑥ Lower the bucket onto stack 1. Make sure the bucket is moved to the rear as far as it can go.
- ⑦ Toenail the 4- by 4- by 26-inch pieces of lumber with 8d nails after the bucket is positioned (not shown).

Figure 7-16. Scoop-Loader Positioned (Continued)

PREPARING SCOOP-LOADER AFTER POSITIONING

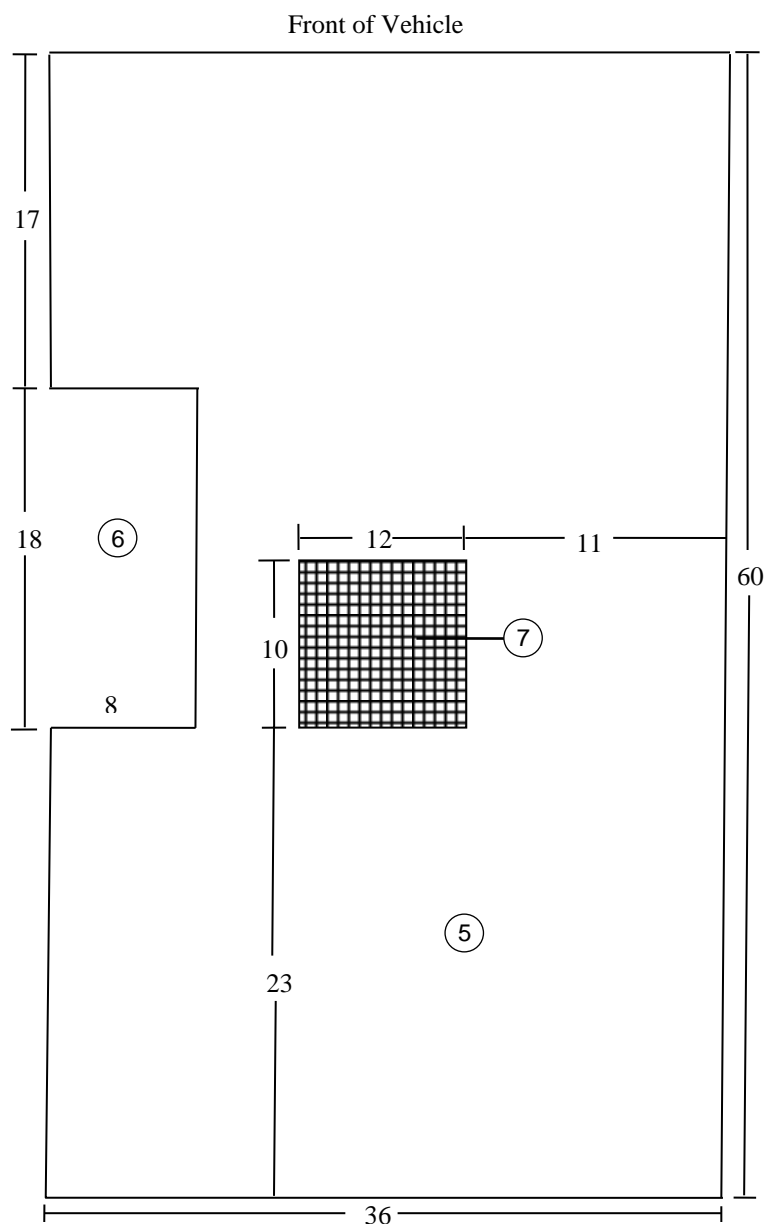
7-14. After the scoop-loader has been positioned, prepare it as shown in Figure 7-17. Use four 15-foot tiedown assemblies to secure the bucket and the lift-arm cross member.



- ① Run a 15-foot tiedown lashing through the holes in the brace at the rear of the bucket and around the tilt arm. Secure the ends with a D-ring and load binder.
- ② Run a second 15-foot tiedown lashing as shown in step 1 (not shown).
- ③ Run a 15-foot lashing through the lower front lifting point and around the lift-arm cross member. Secure the ends with a D-ring and load binder.
- ④ Run another 15-foot lashing (as in step 3) on the other side of the vehicle.

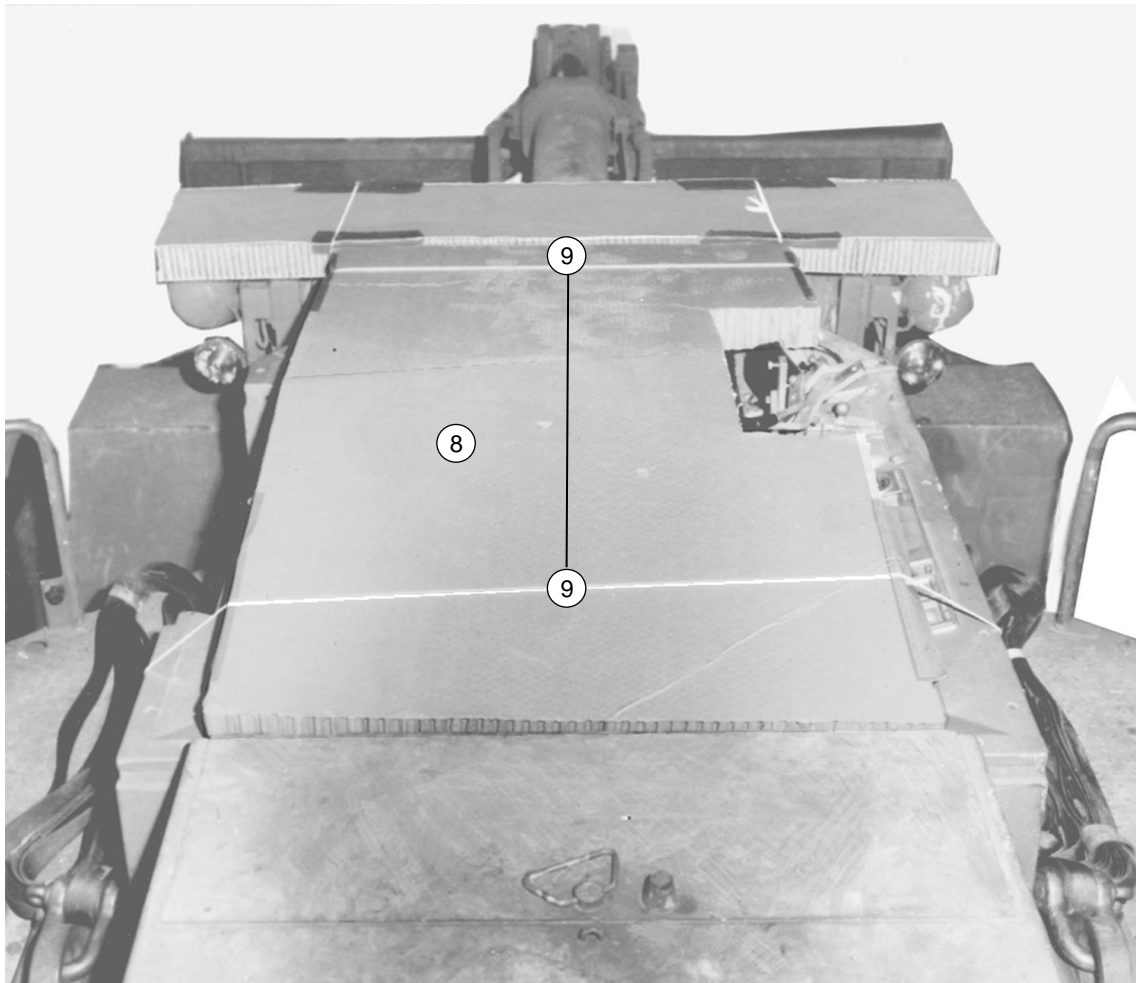
Figure 7-17. Scoop-loader Prepared after Positioning

Notes. 1. Not drawn to scale.
2. All dimensions are given in inches.



- ① Prepare a 36- by 60-inch piece of honeycomb to cover the operator's compartment.
- ② Make an 8- by 18-inch cutout in one side of the honeycomb.
- ③ Crush a 10- by 12-inch area in the center of the honeycomb.

Figure 7-17. Scoop-loader Prepared after Positioning (Continued)



- ④ Set the honeycomb on the operator's compartment with the crushed area over the steering column and the side cutout over the hydraulic control handles.
- ⑤ Tie the honeycomb in place with type III nylon cord and tape the edges of the honeycomb where the nylon cord touches.

Figure 7-17. Scoop-loader Prepared after Positioning (Continued)

LASHING SCOOP-LOADER

7-15. Lash the scoop-loader to the platform with thirty-six 15-foot tiedown assemblies according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figures 7-22 through 7-25. Pad all sharp edges the lashings may come into contact with.

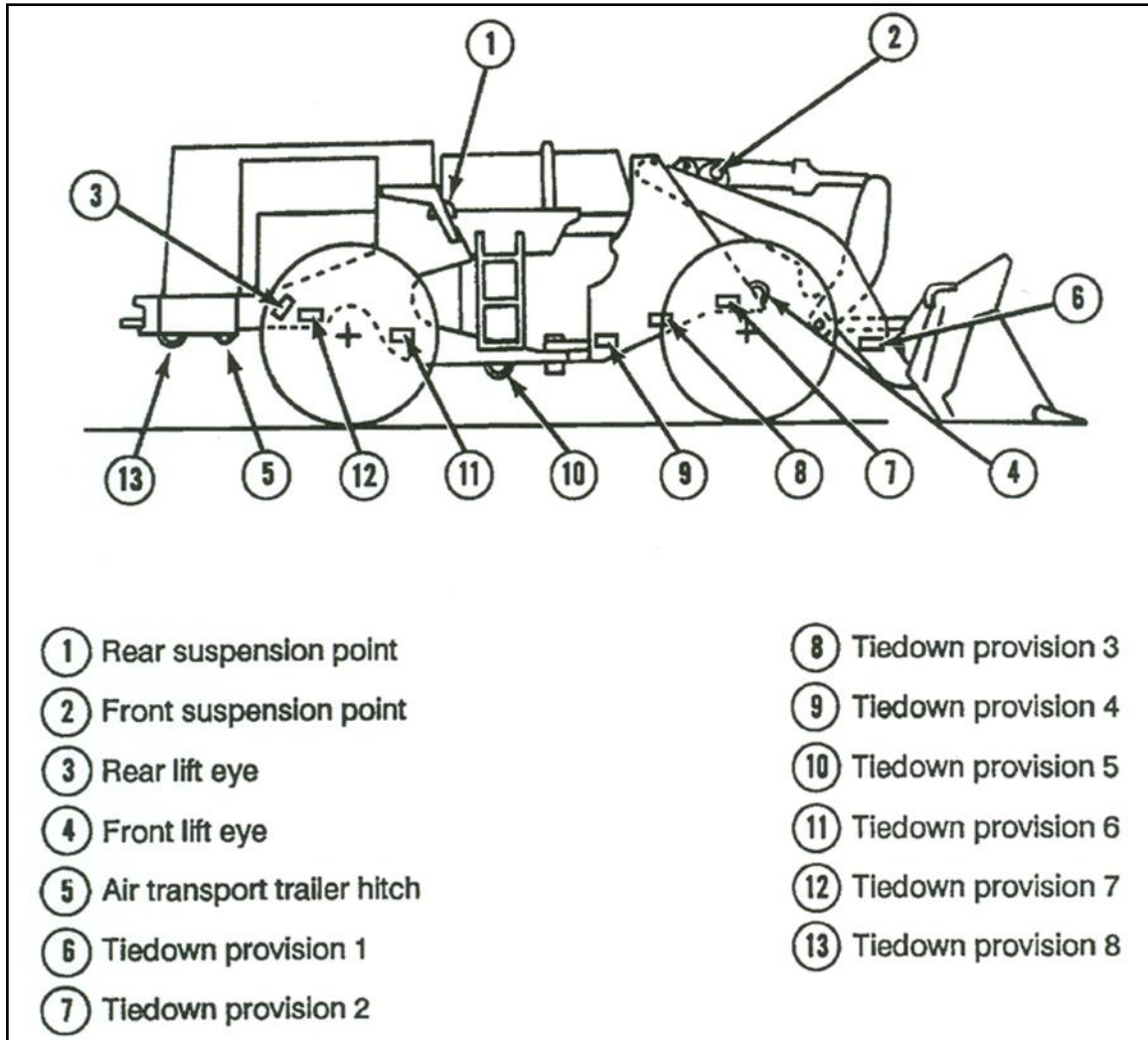


Figure 7-18. Tiedown Provisions

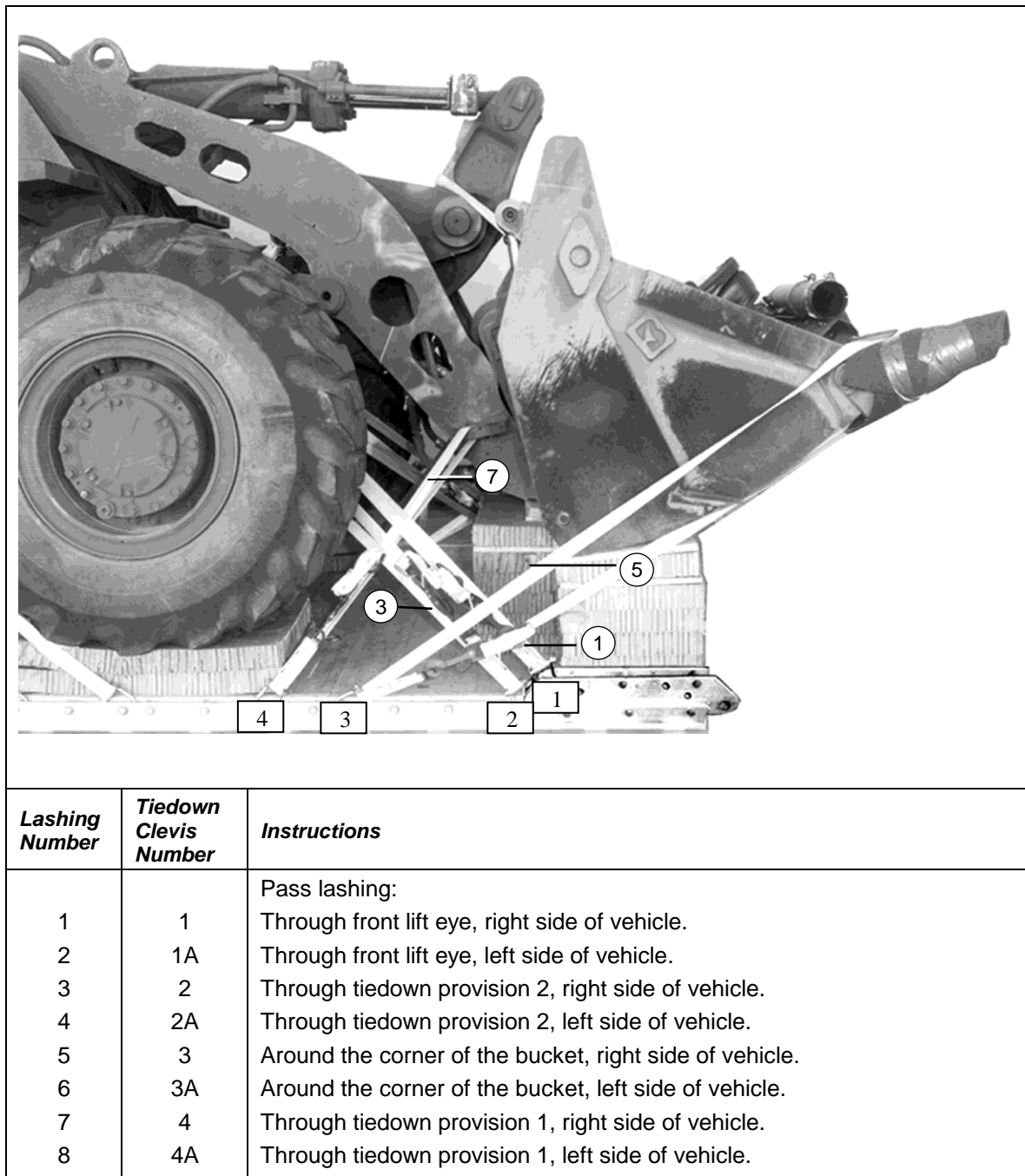
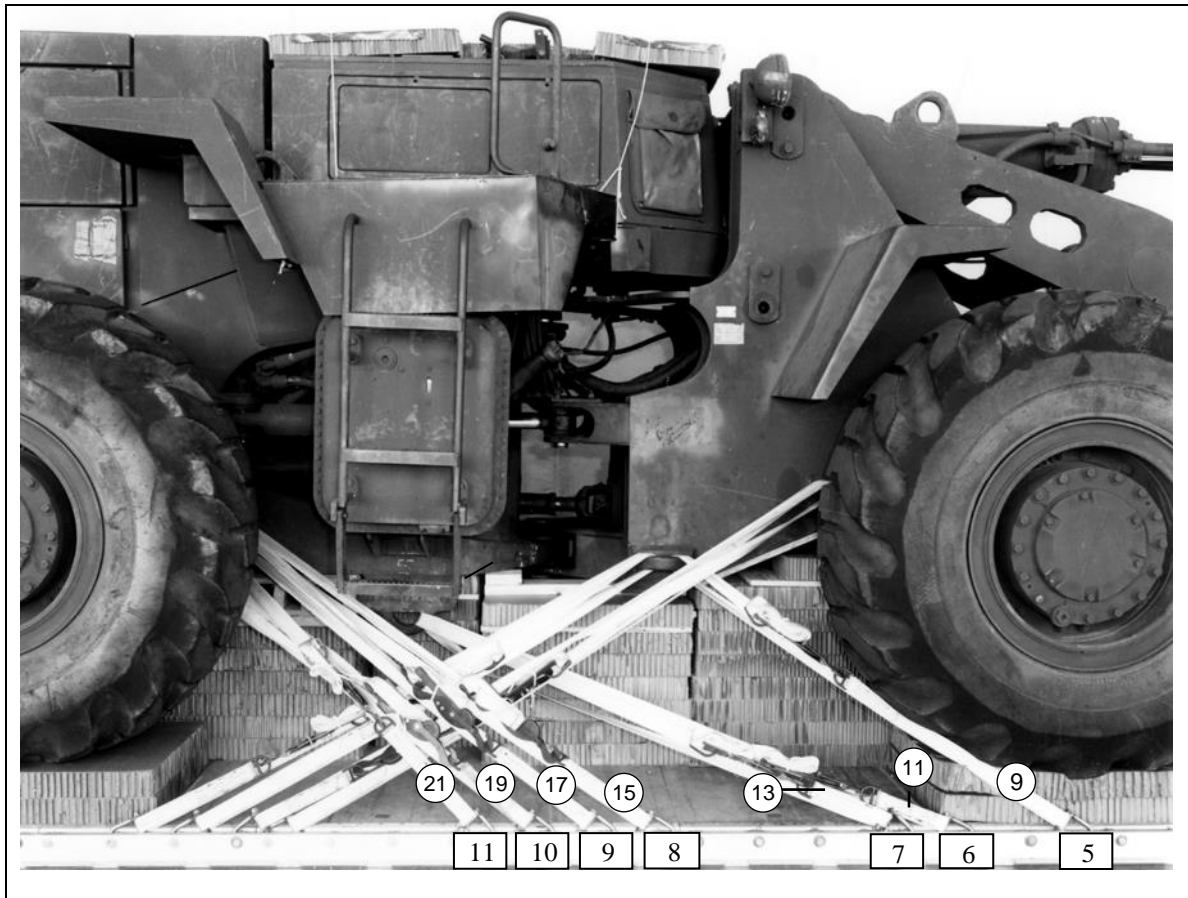


Figure 7-19. Lashings 1 Through 8 Installed



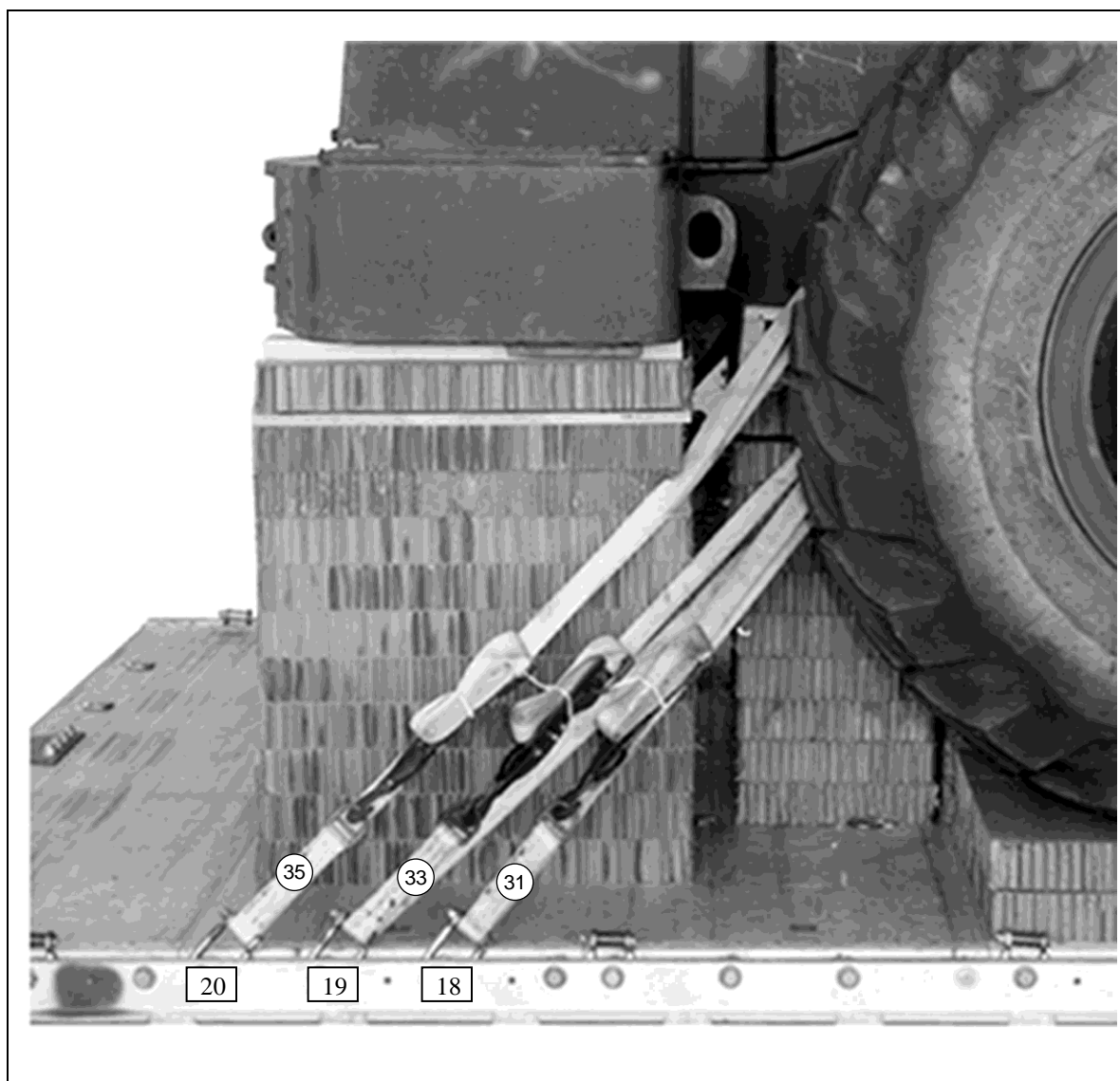
Lashing Number	Tiedown Clevis Number	Instructions
9	5	Pass lashing:
10	5A	Through tiedown provision 4, right side of vehicle.
11	6	Through tiedown provision 4, left side of vehicle.
12	6A	Through tiedown provision 5, right side of vehicle.
13	6A	Through tiedown provision 5, left side of vehicle.
14	7	Through tiedown provision 5, right side of vehicle.
15	7A	Through tiedown provision 5, left side of vehicle.
16	8	Through tiedown provision 6, right side of vehicle.
17	8A	Through tiedown provision 6, left side of vehicle.
18	9	Through tiedown provision 6, right side of vehicle.
19	9A	Through tiedown provision 6, left side of vehicle.
20	10	Through tiedown provision 7, right side of vehicle.
21	10A	Through tiedown provision 7, left side of vehicle.
22	11	Through tiedown provision 7, right side of vehicle.
	11A	Through tiedown provision 7, left side of vehicle.

Figure 7-20. Lashings 9 Through 22 Installed



Lashing Number	Tiedown Clevis Number	Instructions
23	12	Pass lashing:
24	12A	Through tiedown provision 3, right side of vehicle.
25	13	Through tiedown provision 3, left side of vehicle.
26	13A	Through tiedown provision 3, right side of vehicle.
27	14	Through tiedown provision 3, left side of vehicle.
28	14A	Through tiedown provision 4, right side of vehicle.
29	15	Through tiedown provision 4, left side of vehicle.
30	15A	Through tiedown provision 4, right side of vehicle.

Figure 7-21. Lashings 23 Through 30 Installed



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
31	18	Pass lashing:
32	18A	Through tiedown provision 7, right side of vehicle.
33	19	Through tiedown provision 7, left side of vehicle.
34	19A	Through tiedown provision 7, right side of vehicle.
35	20	Through tiedown provision 7, left side of vehicle.
36	20A	Through rear lift eye (provision), right side of vehicle.
		Through rear lift eye (provision), left side of vehicle.

Figure 7-22. Lashings 31 Through 36 Installed

SAFETYING SUSPENSION SLINGS

7-16. Safety the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 7-26.

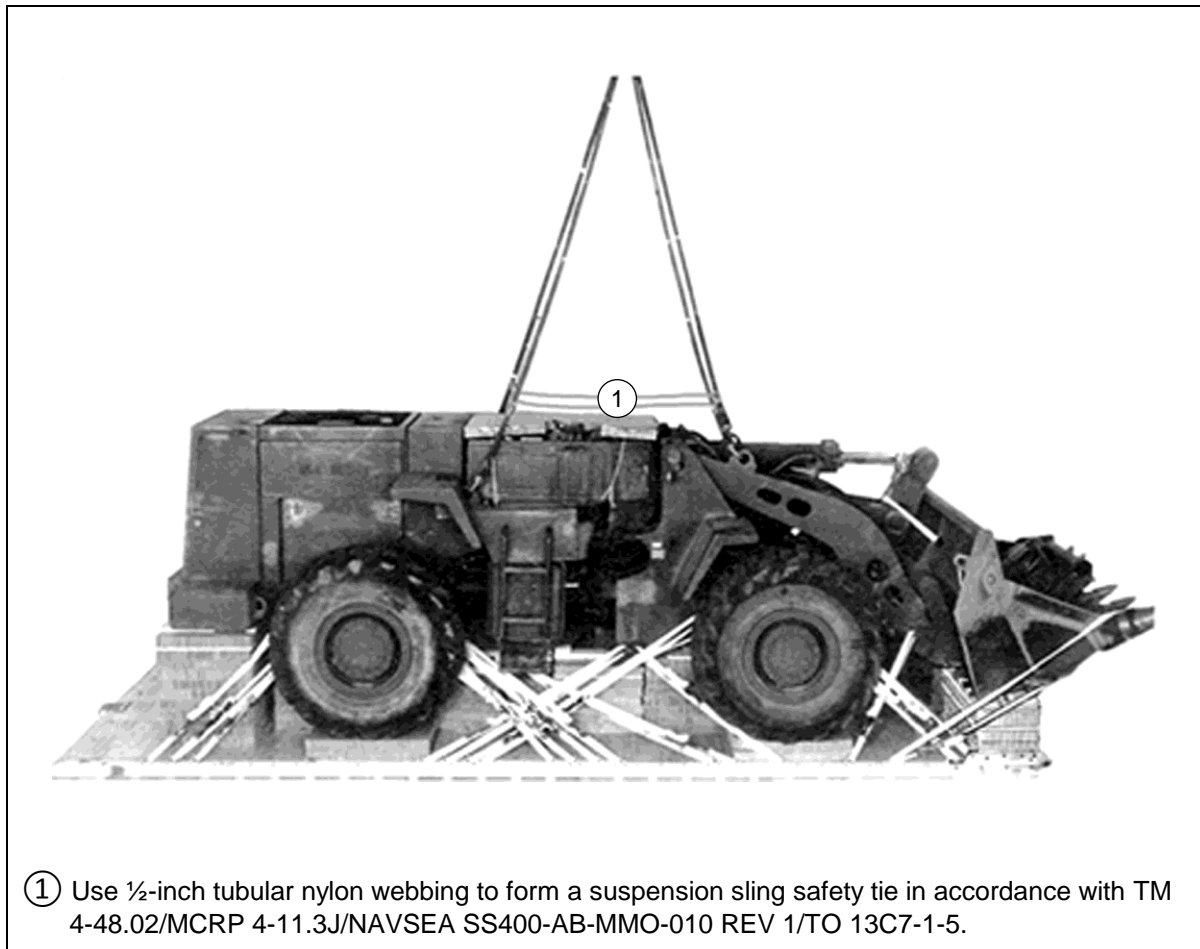


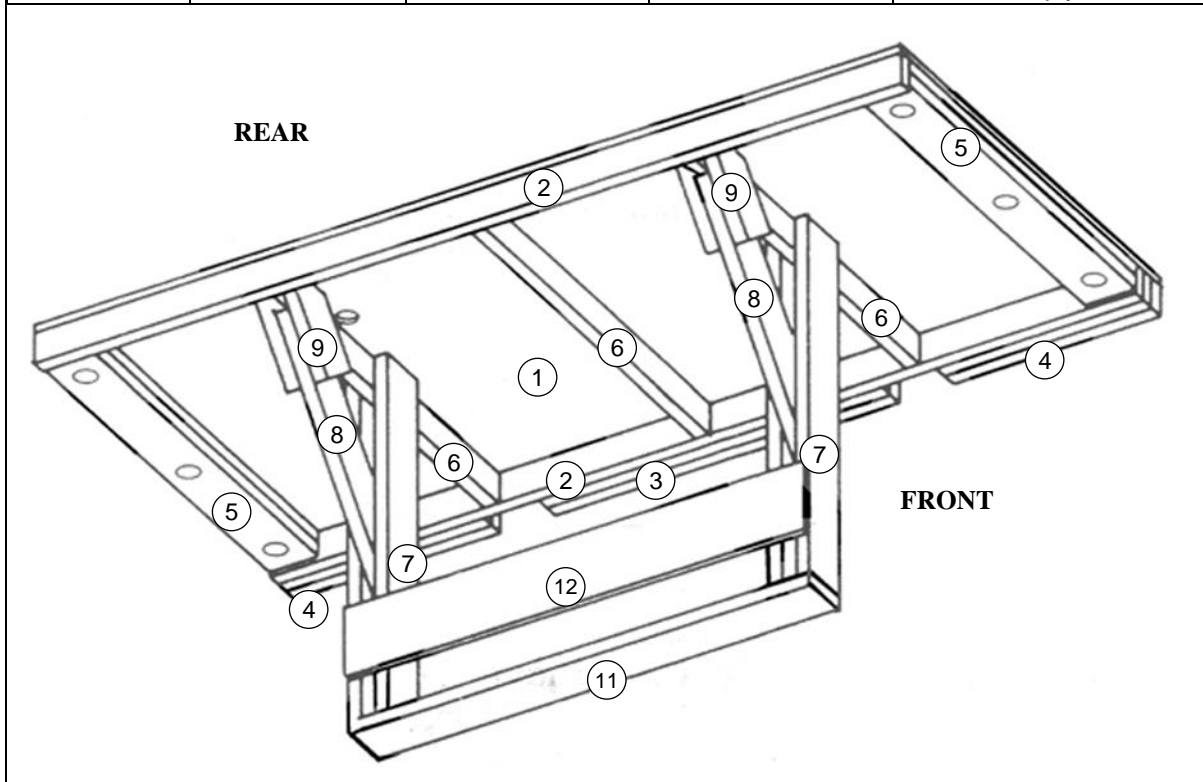
Figure 7-23. Suspension Slings Safetied

BUILDING THE PARACHUTE STOWAGE PLATFORM

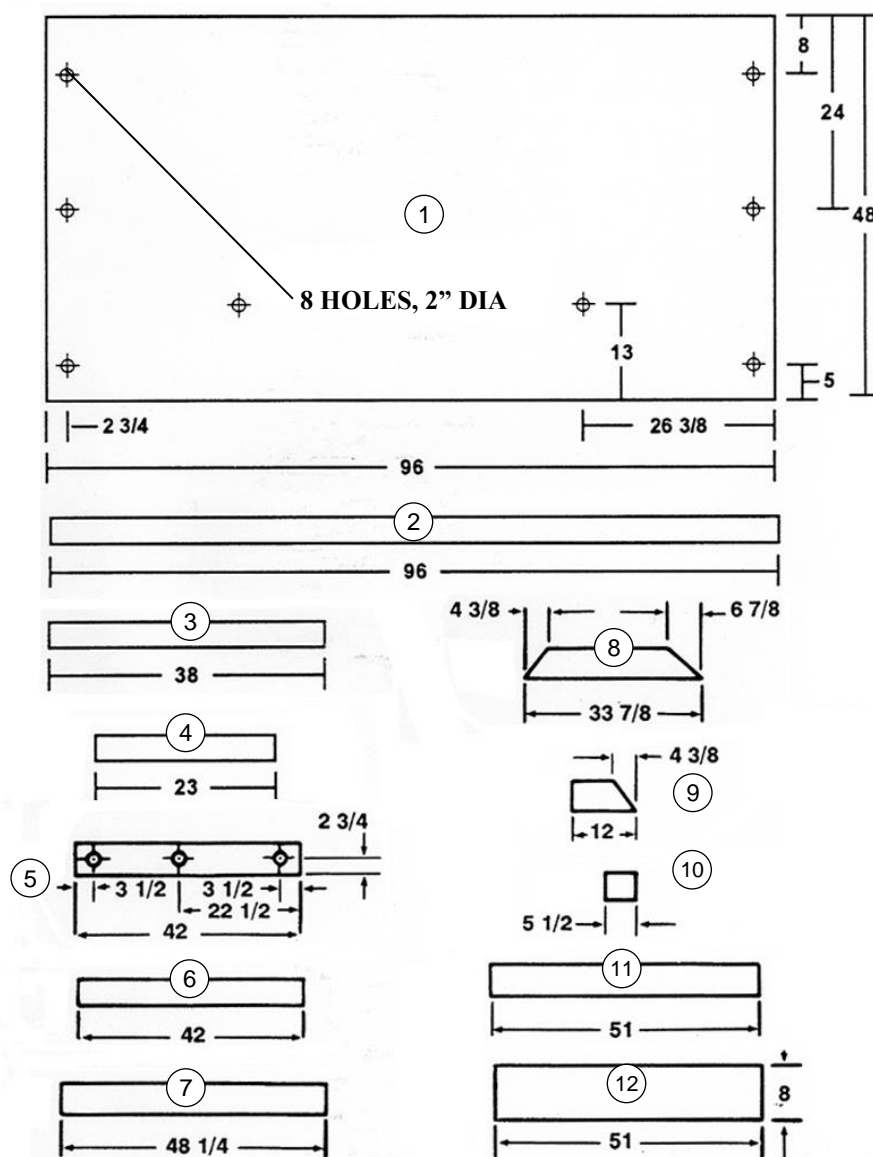
7-17. Build a parachute stowage platform using the materials listed in Table 7-2 and as shown in Figure 7-27.

Table 7-2. Materials Required for the Parachute Stowage Platform

<i>Item Number</i>	<i>Pieces</i>	<i>Width</i>	<i>Length</i>	<i>Material</i>
1	1	48	96	$\frac{3}{4}$ -inch plywood
2	2	4	96	2- by 4-inch lumber
3	2	4	38	2- by 4-inch lumber
4	4	4	23	2- by 4-inch lumber
5	4	6	42	2- by 6-inch lumber
6	3	4	42	2- by 4-inch lumber
7	4	6	48 $\frac{1}{4}$	2- by 6-inch lumber
8	2	6	33 $\frac{7}{8}$	2- by 6-inch lumber
9	4	6	12	2- by 6-inch lumber
10	2	4	5 $\frac{1}{2}$	2- by 4-inch lumber
11	1	6	51	2- by 6-inch lumber
12	1	8	51	$\frac{3}{4}$ -inch plywood



- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.
 3. Circled numbers refer to item numbers shown in Table 7-2.



Step:

42. Use 8d nails in the plywood; 10d and 16d nails in the lumber
43. Drill holes in the stowage platform after it has been assembled.

Figure 7-24. Parachute Stowage Platform Built

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.

CAUTION

This stowage platform supports 2,240 pounds of parachutes. Use a generous amount of nails during construction.

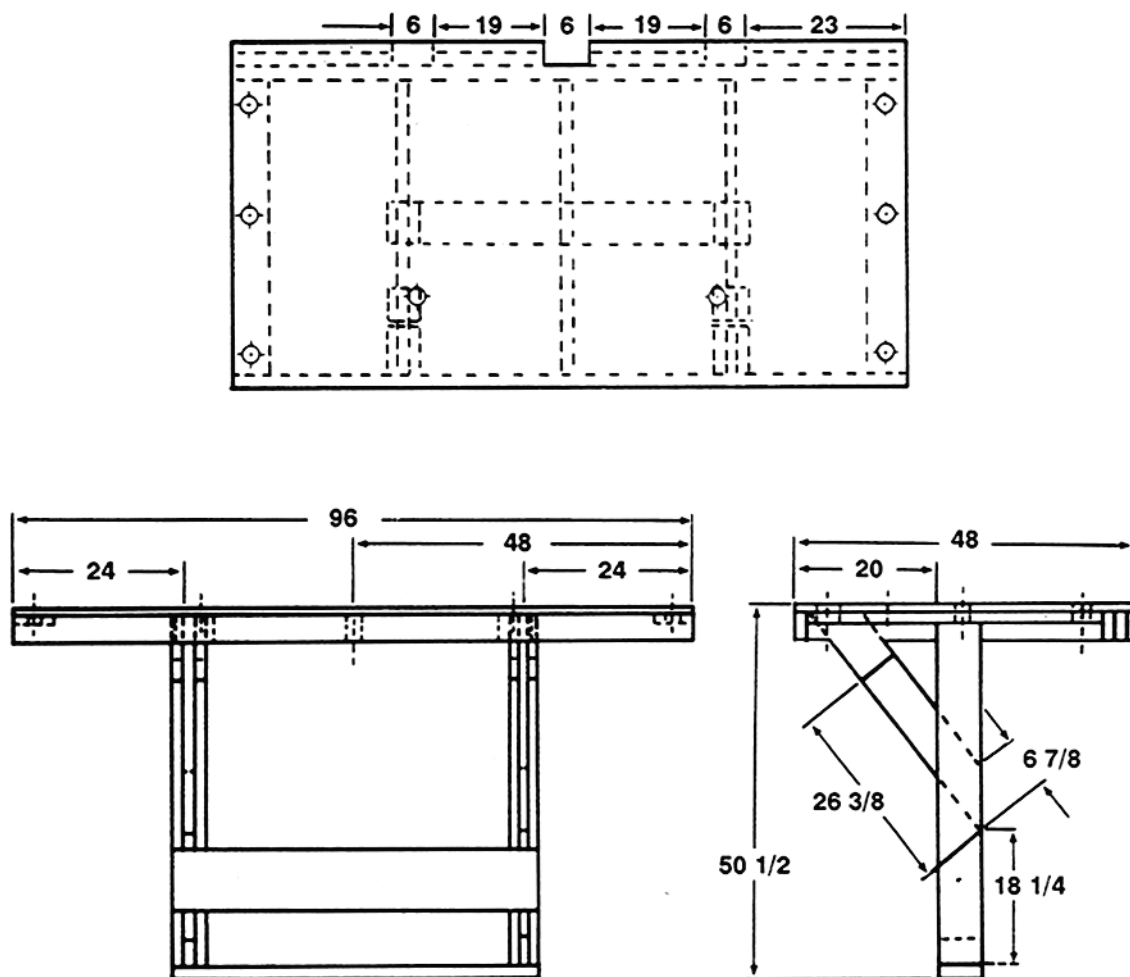


Figure 7-24. Parachute Stowage Platform Built (Continued)

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.

TOP VIEW

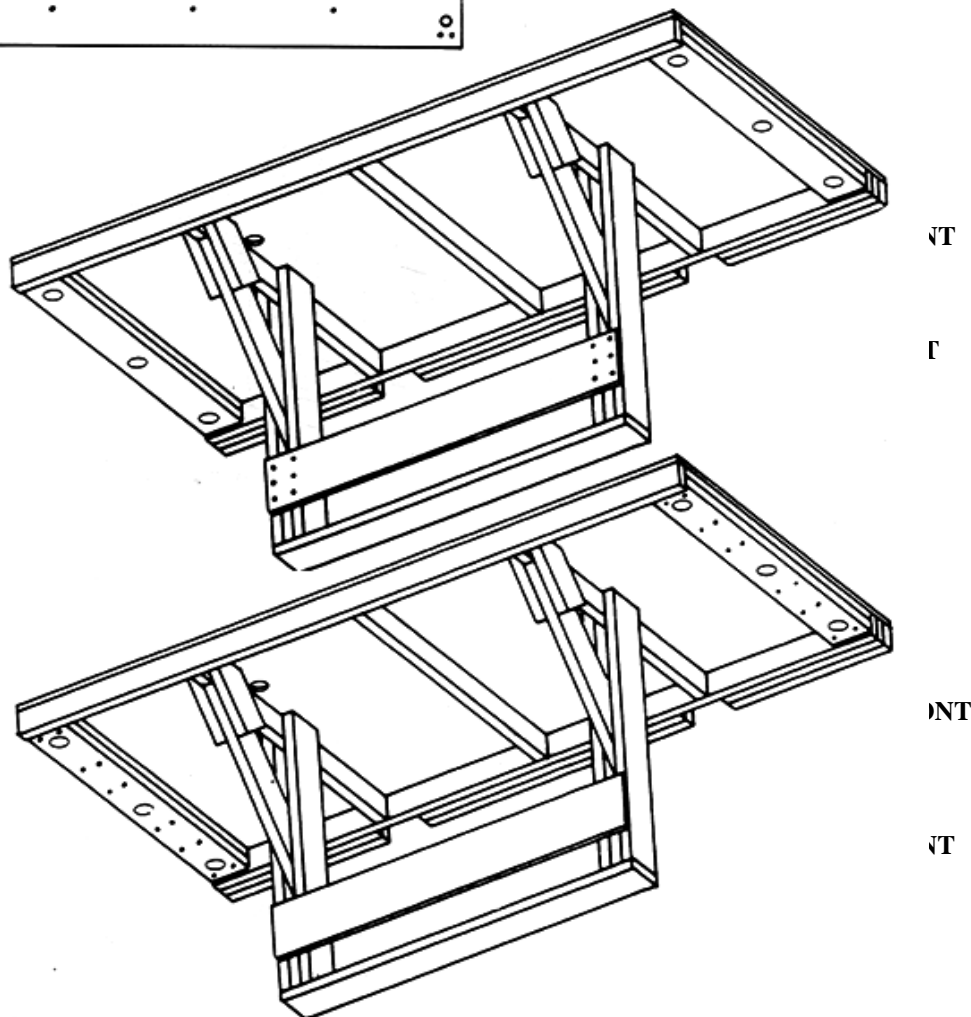
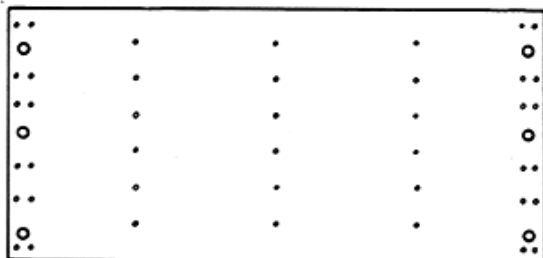


Figure 7-24. Parachute Stowage Platform Built (Continued)

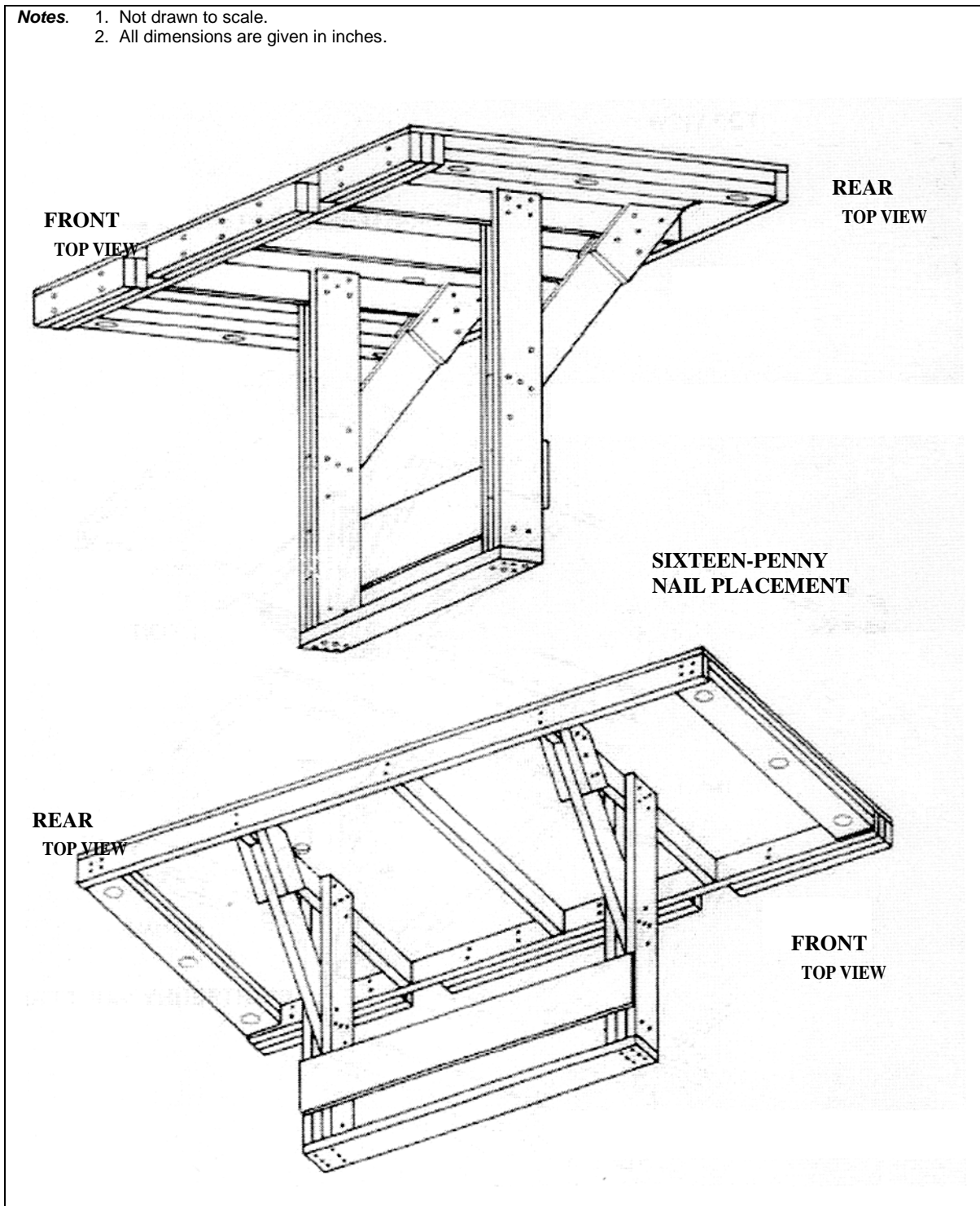


Figure 7-24. Parachute Stowage Platform Built (Continued)

INSTALLING AND SECURING THE PARACHUTE STOWAGE PLATFORM

7-18. Install and secure the parachute stowage platform as shown in Figure 7-28.

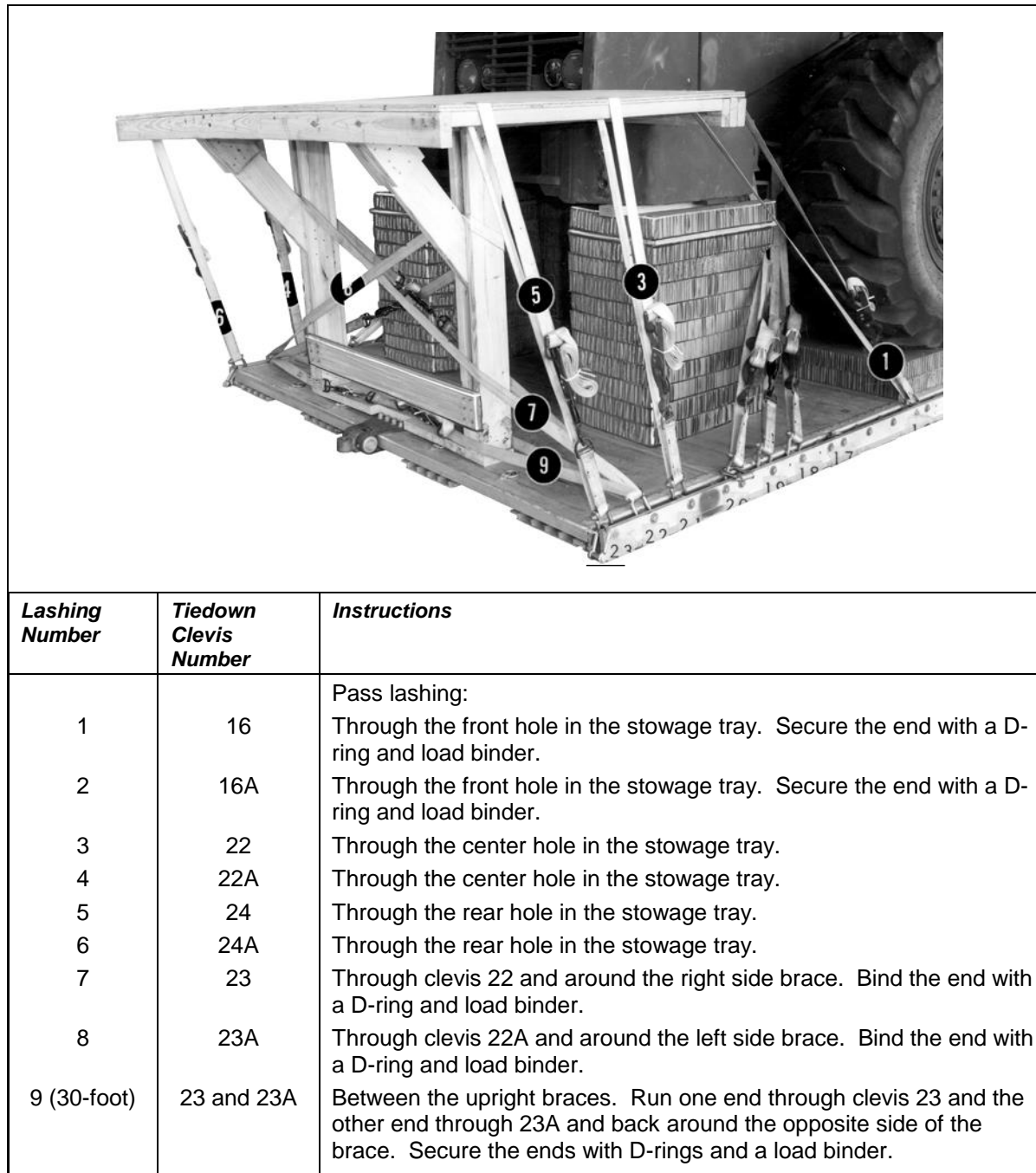


Figure 7-25. Parachute Stowage Platform Installed and Secured

STOWING CARGO PARACHUTES

7-19. Prepare, stow, cluster, and secure eight G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 7-29.

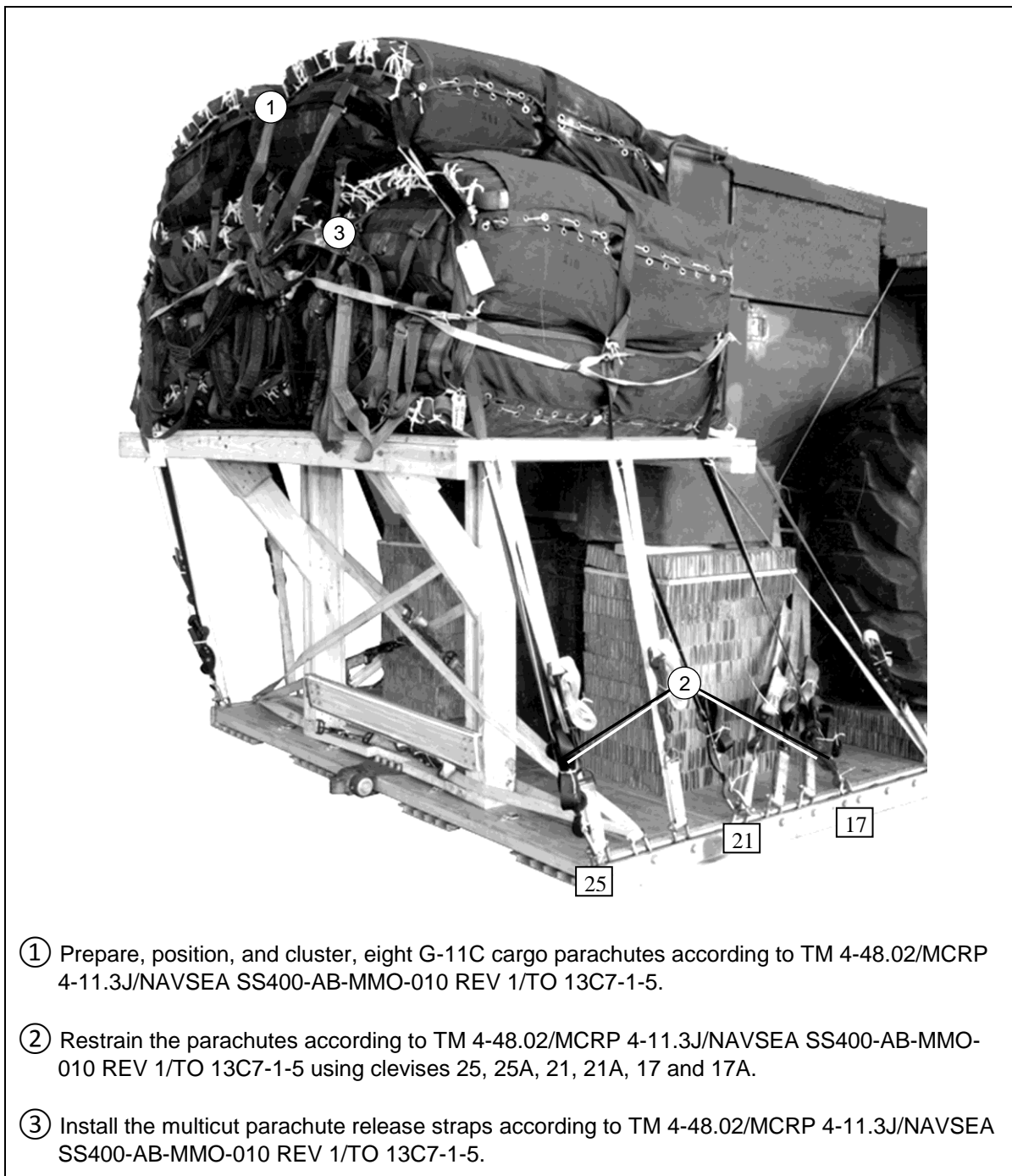
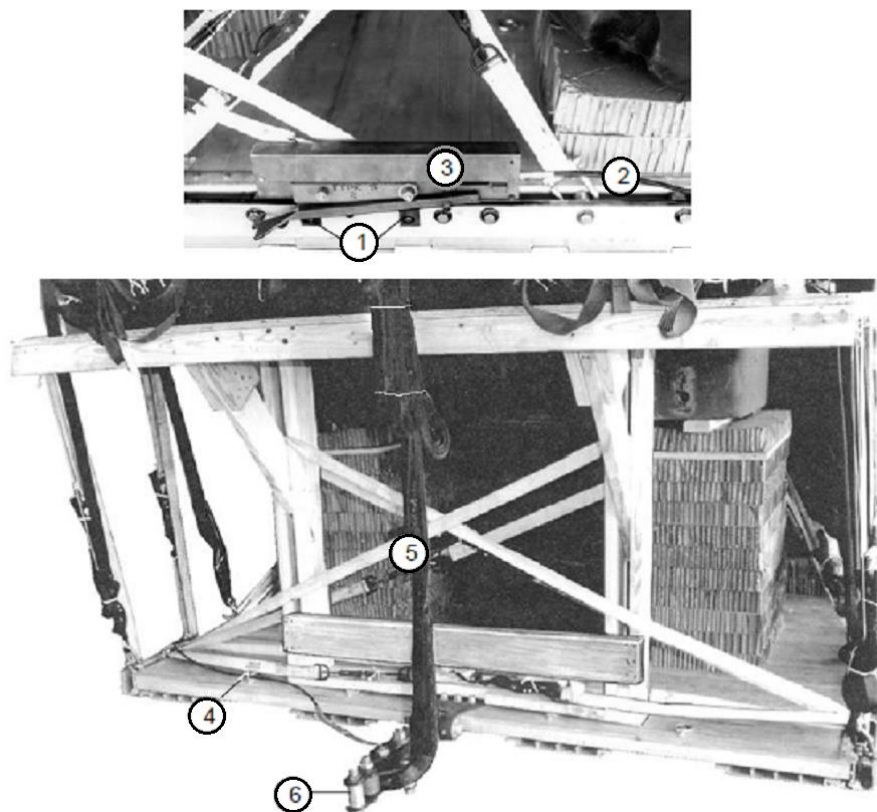


Figure 7-26. Cargo Parachutes Stowed and Secured

INSTALLING EXTRACTION SYSTEM

7-20. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 7-30. Install the extraction parachute jettison system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 if applicable.

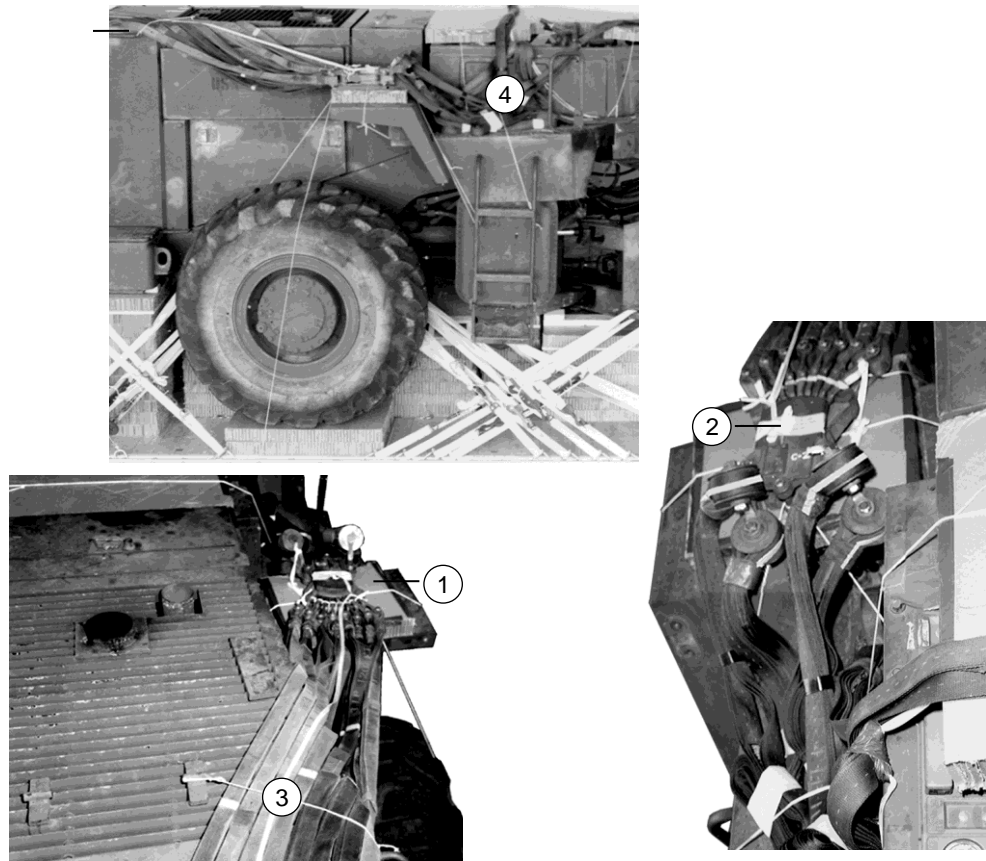


- ① Install the extraction force transfer coupling system actuator mounting brackets using the front mounting holes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ② Install a 24-foot release cable.
- ③ Install the actuator assembly to the actuator mounting bracket.
- ④ Safety tie the cable in convenient places with one turn type I, ¼ -inch cotton webbing.
- ⑤ Attach a 9-foot (2 loop), type XXVI nylon sling as the deployment line. Fold and secure the excess line with type I, ¼ -inch cotton webbing.
- ⑥ Install an adapter link assembly to the coupling link assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 7-27. Extraction System Installed

INSTALLING M-2 RELEASE ASSEMBLY

7-21. Install the M-2 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 7-28.

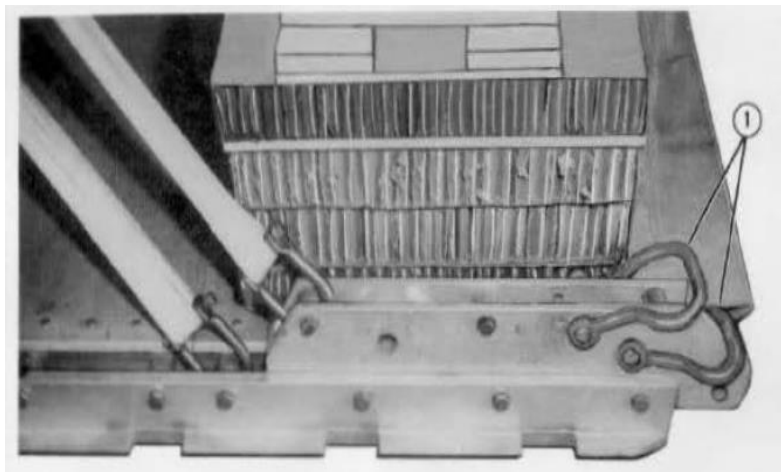


- ① Tie a piece of honeycomb on the right rear fender as a base for the M-2 release assembly.
 - ② Prepare, Install and secure an M-2 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- Note.** This platform configuration requires a 25-foot arming lanyard.
- ③ Secure the riser extensions between the rear handle with type I, ¼-inch cotton webbing.
- Note.** A riser extension stow may be cut to allow the riser extensions to meet the release.
- ④ Route the suspension slings to the right side of the scoop-loader. Secure the slings with type I, ¼-inch cotton webbing.

Figure 7-28. M-2 Parachute Release Assembly Installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

7-22. Install the provisions for the emergency restraints on the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as seen in Figure 7-29.



① Install two medium clevises in the emergency restraint holes of each tandem link

Figure 7-29. Provisions for Emergency Restraints Installed

PLACING EXTRACTION PARACHUTE

7-23. Select the extraction parachute and extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the load for installation in the aircraft as well.

MARKING RIGGED LOAD

7-24. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 7-30. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB and parachute requirements must be recomputed

EQUIPMENT REQUIRED

7-25. Use the equipment listed in Table 7-3 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.



RIGGED LOAD DATA

WEIGHT	37,200 Pounds
MAXIMUM WEIGHT	38,200 Pounds
HEIGHT	100 Inches
WIDTH.....	108 Inches
LENGTH	349 Inches
OVERHANG	13-17 Inches
Front.....	27 Inches
Rear: Parachute Platform.....	21 Inches
Rear: extraction parachute jettison system.....	30 Inches
CENTER OF BALANCE (from the front edge of platform).....	135 Inches

Figure 7-30. 950B Scoop-loader rigged for low-velocity airdrop

Table 7-3. Equipment Required for Rigging the 950B Scoop-Loader for a Low-V Airdrop

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-00-162-4979	Adapter, link assembly	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
4030-00-432-2516	Clevis, screw-pin	4
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00--434-5782	Coupling, airdrop, extraction force transfer w/4-ft cable	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Frame support for honeycomb stack 7:	1
5510-00-220-6146	Lumber, 2- by 4- by 48-in	(6)
5530-00-128-4981	Plywood, 3/4- by 6- by 28-in	(2)
5530-00-128-4981	Plywood, 3/4- by 28- by 48-in	(2)
	Frame support for honeycomb stack 8:	1
5510-00-220-6146	Lumber, 2- by 4- by 27-in	(6)
5530-00-128-4981	Plywood, 3/4- by 27- by 48-in	(2)
	Frame support for honeycomb stack 9:	1
5510-00-220-6146	Lumber, 2- by 4- by 48-in	(3)
5530-00-128-4981	Plywood, 3/4- by 14- by 48-in	(2)
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line extraction:	
1670-01-064-4454	60-ft (6-loop), type XXVI nylon (C-130 aircraft)	1
1670-01-062-6312	120-ft (6-loop), type XXVI nylon (C-141 aircraft)	1
5510-00-220-6146	Lumber, 2- by 4-in:	
	12-in	2
	14-in	2
	28-in	4
5510-00-220-6148	Lumber, 2- by 6-in:	
	12-in	2
	14-in	2
	28-in	4
5510-00-220-6148	Lumber, 2- by 6-in:	
	5-in	2
	28-in	2
	96-in	2
5510-00-220-6274	Lumber, 4- by 4- by 26-	4

**Table 7-3. Equipment Required for Rigging the 950B Scoop-Loader for a Low-V Airdrop
(Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
315-00-01 0-4659	Nail common: 8d	As required
5315-00-010-4661	10d	As required
5315-00-010-4663	16d	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	
1670-00-753-3928	Pad, energy-dissipating, honeycomb, Parachute, cargo:	31 sheets
1670-01-016-7841	G-11C	8
1670-00-040-8135	28-ft, extraction, heavy-duty	2
	Parachute stowage platform:	1
5510-00-220-6146	Lumber, 2- by 4-in:	
	5 1/2-in	(2)
	18-in	(2)
	23-in	(4)
	38-in	(2)
	42-in	(3)
	96-in	(2)
5510-00-220-6148	Lumber, 2- by 6-in:	
	12-in	(4)
	33 7/8-in	(2)
	42-in	(2)
	48 1/4-in	(4)
	51-in	(1)
5530-00-128-4981	Plywood, 3/4-in:	
	8-by 51-in	(1)
	8- by 96-in	
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	(1)

**Table 7-3. Equipment Required for Rigging the 950B Scoop-Loader for a Low-V Airdrop
(Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Platform, airdrop, type V, 24-ft:	1
1670-01-162-2372	Clevis, load tiedown	(54)
1670-01-162-2376	Extraction bracket assembly	(1)
5530-00-128-4981	Plywood, 3/4-in:	
1670-01-097-8817	Release, cargo parachute, M-2, modified	1
	Reinforced toggle shaft	(1)
	Hardened sleeve bolts	(4)
	2 3/8-in steel spacers	(4)
	Hardened clevis bolts w sleeves	(2)
	Sling, cargo, airdrop:	
	For deployment line:	
1670-00-753-3631	9-ft (3-loop), type X nylon webbing <u>or</u>	1
	120-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
	120-ft (3-loop), type X nylon webbing <u>or</u>	8
	120-ft (2-loop), type XXVI nylon webbing	8
	For suspension:	
	11-ft (4-loop), type XXVI nylon webbing <u>or</u>	2
1670-01-062-6310	11-ft (4-loop), type XXVI nylon webbing	2
1670-00-432-2506	12-ft (4-loop), type XXVI nylon webbing <u>or</u>	2
1670-01-062-6307	12-ft (4-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release, multicut, comes w 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	58
	Webbing:	
8305-00-268-2411	Cotton, type I, 1/4-inch	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, natural	As required
	Nylon, type X, treated, olive drab	
8305-00-261-8584	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	As required

Chapter 8

Rigging 950B Scoop-Loader with a 5 Ft Forklift Attachment on Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

8-1. The 950B scoop-loaders, type I and type II are described in the introduction and Figure 8-1. Chapter 8 explains how to rig the scoop-loader with a 5-foot forklift attachment on a 28-foot platform using eight G-11 cargo parachutes.

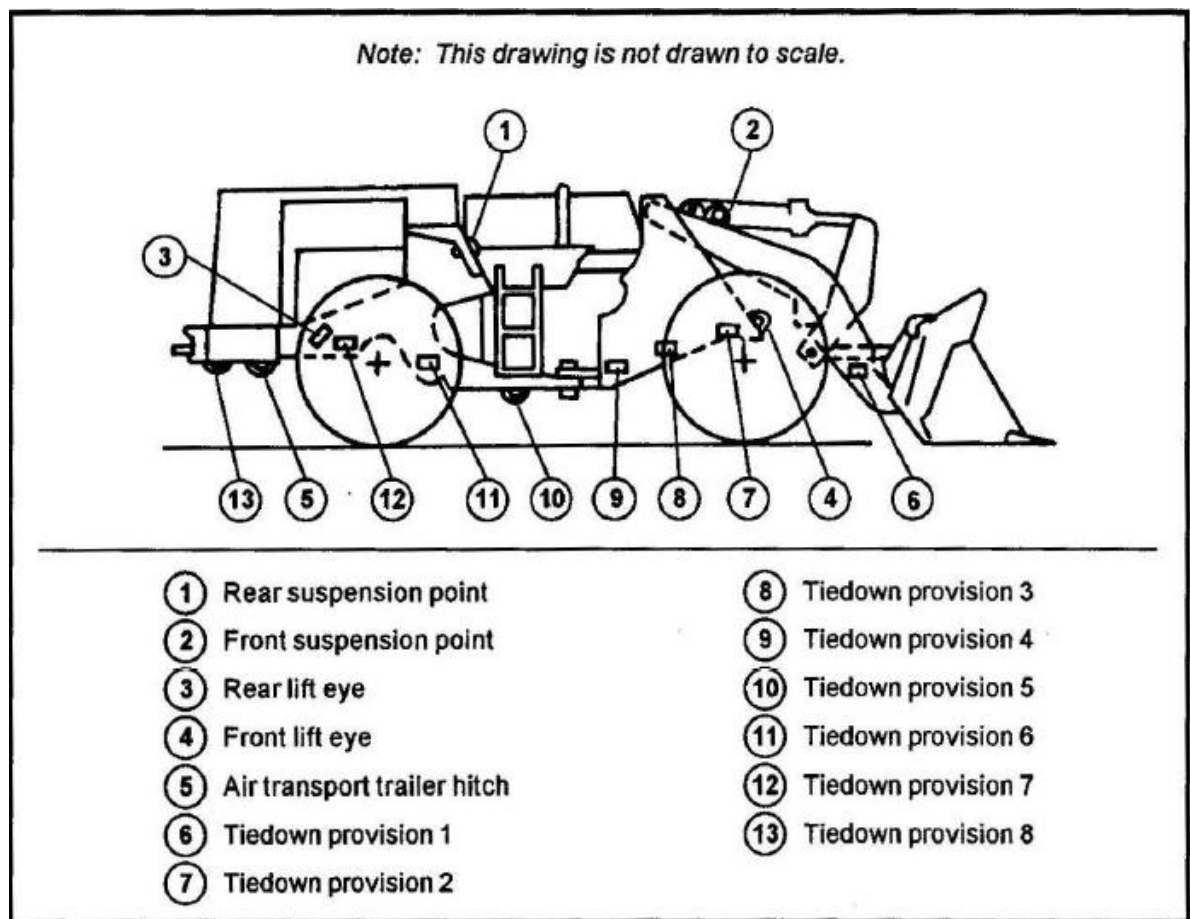
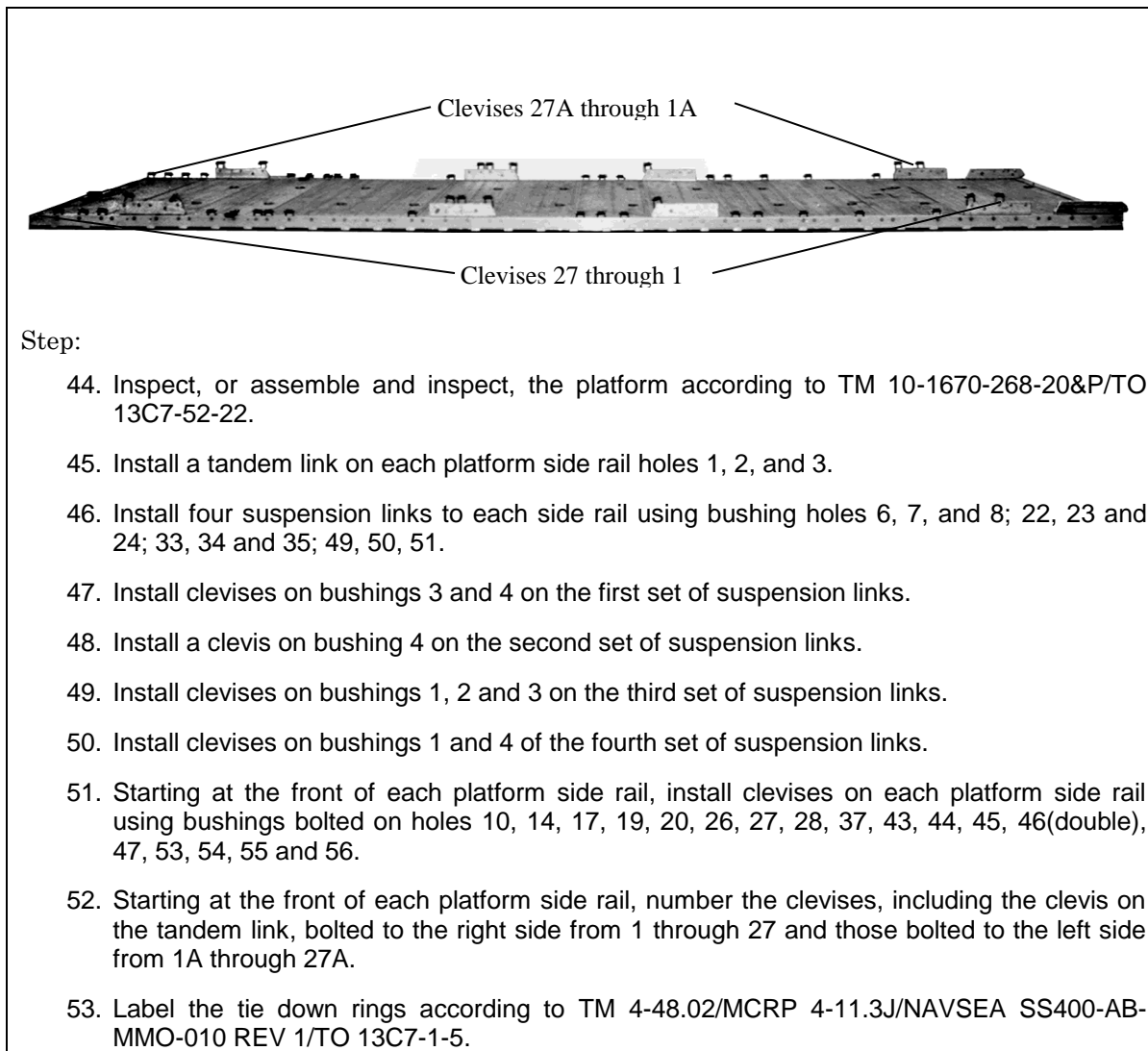


Figure 8-1. Scoop-loader with tiedown provisions

PREPARING PLATFORM

8-2. Prepare a 28-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22 using 54 tiedown clevis assemblies and as shown in Figure 8-2.



Step:

44. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
45. Install a tandem link on each platform side rail holes 1, 2, and 3.
46. Install four suspension links to each side rail using bushing holes 6, 7, and 8; 22, 23 and 24; 33, 34 and 35; 49, 50, 51.
47. Install clevises on bushings 3 and 4 on the first set of suspension links.
48. Install a clevis on bushing 4 on the second set of suspension links.
49. Install clevises on bushings 1, 2 and 3 on the third set of suspension links.
50. Install clevises on bushings 1 and 4 of the fourth set of suspension links.
51. Starting at the front of each platform side rail, install clevises on each platform side rail using bushings bolted on holes 10, 14, 17, 19, 20, 26, 27, 28, 37, 43, 44, 45, 46(double), 47, 53, 54, 55 and 56.
52. Starting at the front of each platform side rail, number the clevises, including the clevis on the tandem link, bolted to the right side from 1 through 27 and those bolted to the left side from 1A through 27A.
53. Label the tie down rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 8-2. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB STACKS

8-3. Build 13 honeycomb stacks using the materials listed in Table 8-1 on page 8-4, and as shown in Figures 8-4 through 8-12. Position the honeycomb stacks on the platform as shown in Figure 8-3.

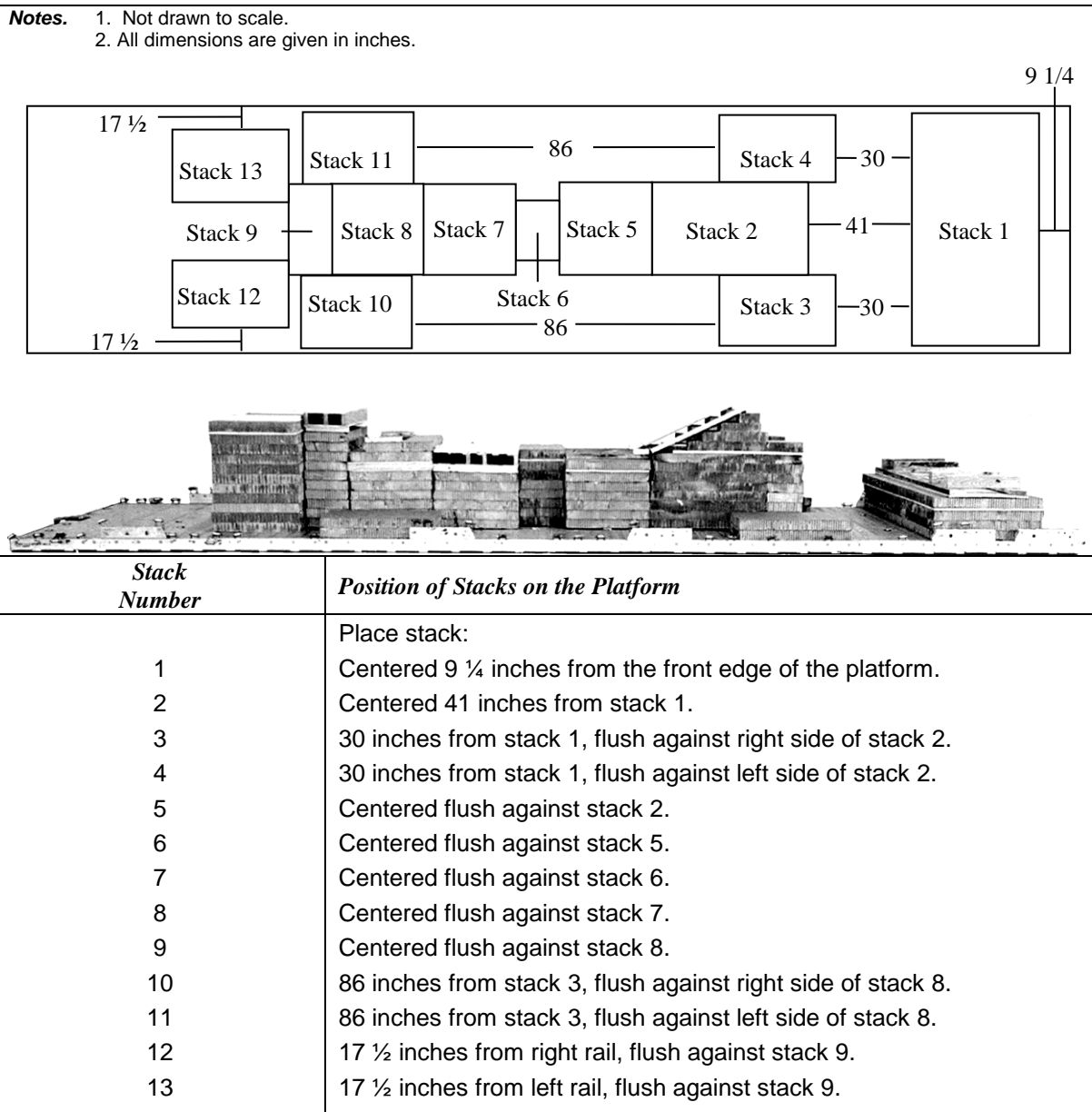


Figure 8-3. Honeycomb Stacks Positioned on Platform

PREPARING SCOOP-LOADERPREPARE THE 950B TYPE I AND TYPE II SCOOP-LOADERS ACCORDING TO PARAGRAPHS 7-4 THROUGH 7-14.

INSTALLING SUSPENSION SLINGS AND POSITIONING BUCKET

8-4. Install the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Chapter 7, Paragraph 7-13.

POSITIONING SCOOP-LOADER

8-5. Position the scoop-loader on the platform as shown in Paragraph 7-14 with the bucket centered between the platform side rails with a 9 inch overhang.

PREPARING SCOOP-LOADER AFTER POSITIONING

8-6. After the scoop-loader has been positioned, prepare it as shown in Paragraph 7-15. Use four 15-foot tiedown assemblies to secure the bucket and the lift-arm cross member.

PREPARING AND POSITIONING HONEYCOMB STACKS FOR LIFTING FORKS

8-7. Prepare and position the honeycomb stacks for the lifting forks as shown in Table 8-1 and Figure 8-4.

Table 8-1. Materials Needed for Honeycomb Stacks Built for Lifting Forks

<i>Stack Number</i>	<i>Pieces</i>	<i>Width (Inches)</i>	<i>Length (Inches)</i>	<i>Material</i>
1	8	28	36	Honeycomb
	2	28	36	$\frac{3}{4}$ inch plywood
2	8	28	36	Honeycomb
	2	28	36	$\frac{3}{4}$ inch plywood
3	8	12	36	Honeycomb
	2	8	36	$\frac{3}{4}$ inch plywood

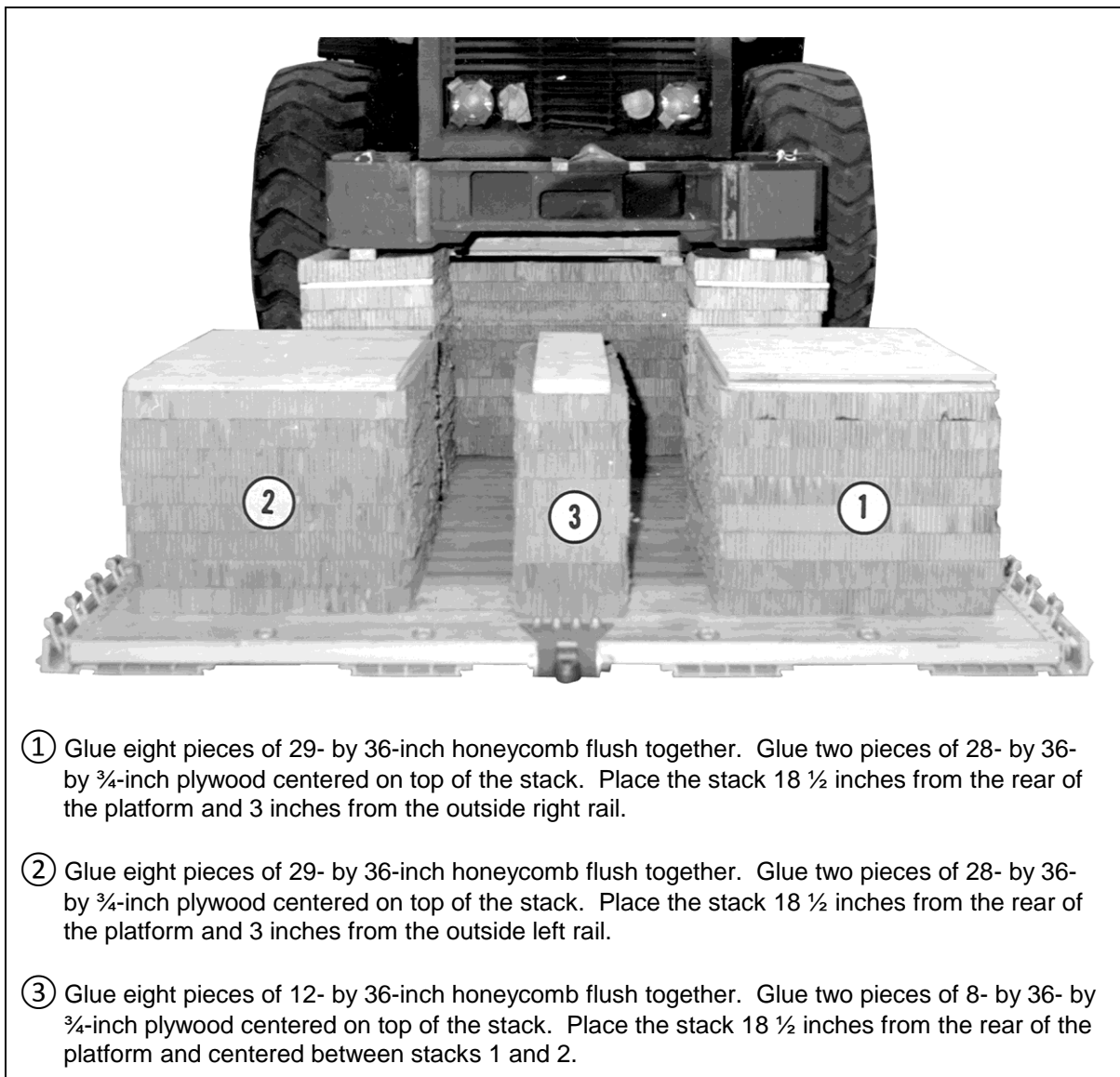
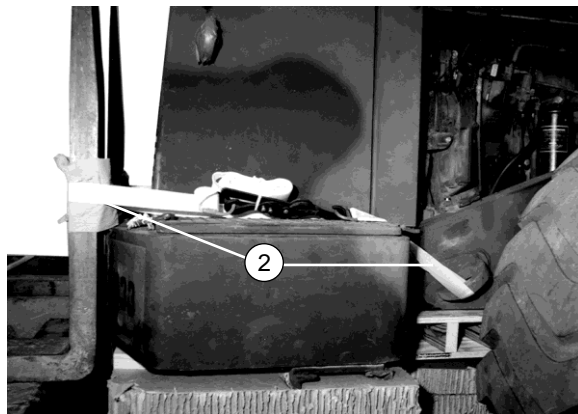
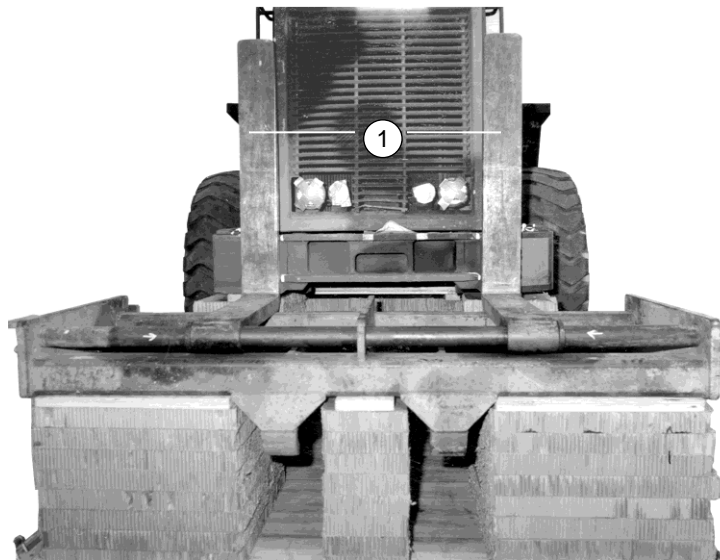


Figure 8-4. Honeycomb Stacks for Lifting Forks Prepared and Positioned

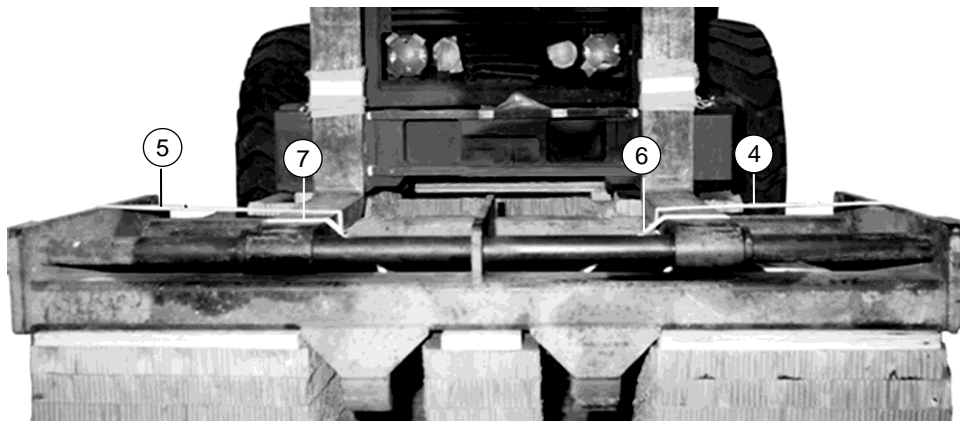
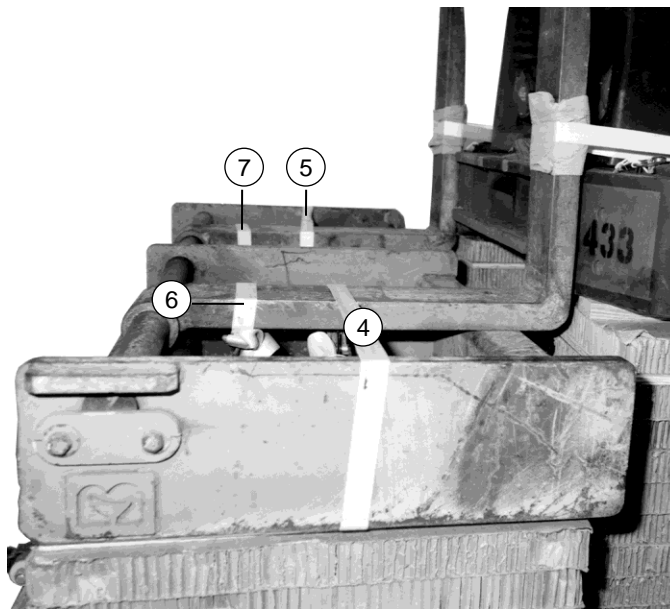
POSITIONING AND SECURING LIFTING FORKS

8-8. Position and secure the lifting forks on the rear honeycomb stacks as shown in Figure 8-5.



- ① Position the lifting forks on the honeycomb stacks with the forks in the upright position against the rear of the scoop-loader. The forks must be adjusted inward and vertically aligned with the outer edge of the engine compartment.
- ② Pad the right fork with cellulose wadding approximately 10 inches from the bottom. Run a 15-foot lashing around the fork and through the rear lift eye provision. Secure lashing with a D-ring and load binder.
- ③ Repeat step 2 for the left fork (not shown).

Figure 8-5. Lifting Forks Positioned and Secured



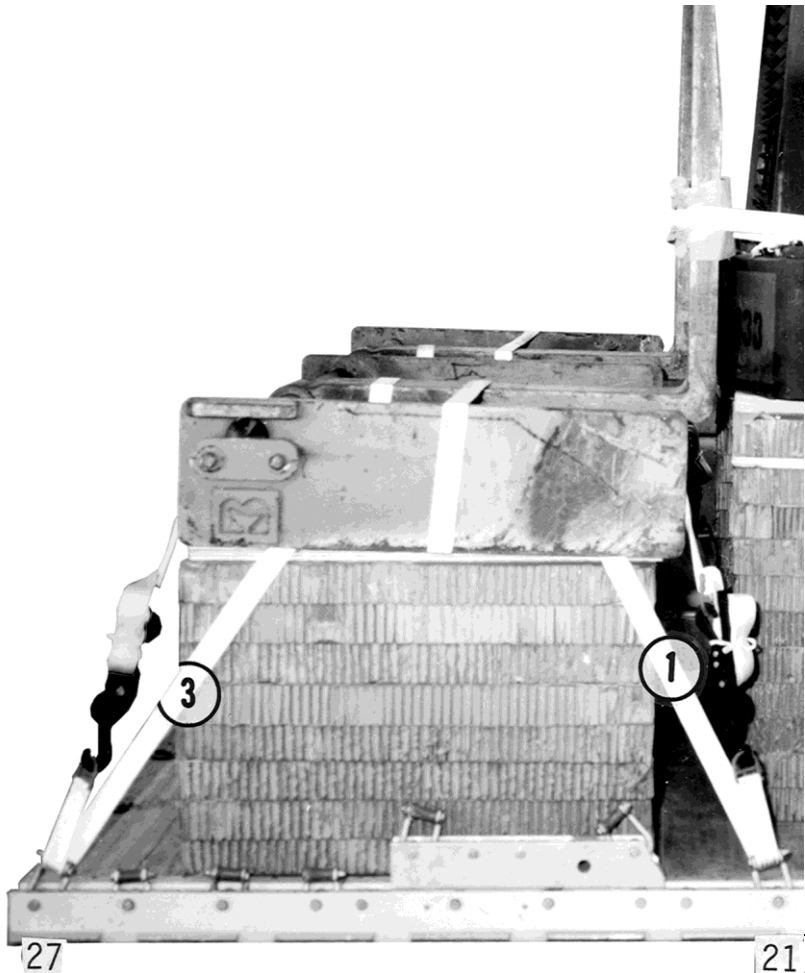
- ④ Run a 15-foot lashing around the right fork and around the outside fork frame. Secure the lashing on the inside with a D-ring and load binder.
- ⑤ Repeat step 4 for the left fork.
- ⑥ Run a 15-foot lashing around the right fork and around the inside fork frame. Secure the lashing on the inside with a D-ring and load binder.
- ⑦ Repeat step 6 for the left fork.

Note. Pad all sharp edges where the lashing will contact the forks.

Figure 8-5. Lifting Forks Positioned and Secured (Continued)

LASHING LIFTING FORKS TO THE PLATFORM

8-9. Lash the lifting forks to the platform using four 15-foot tiedown assemblies as shown in Figure 8-6.

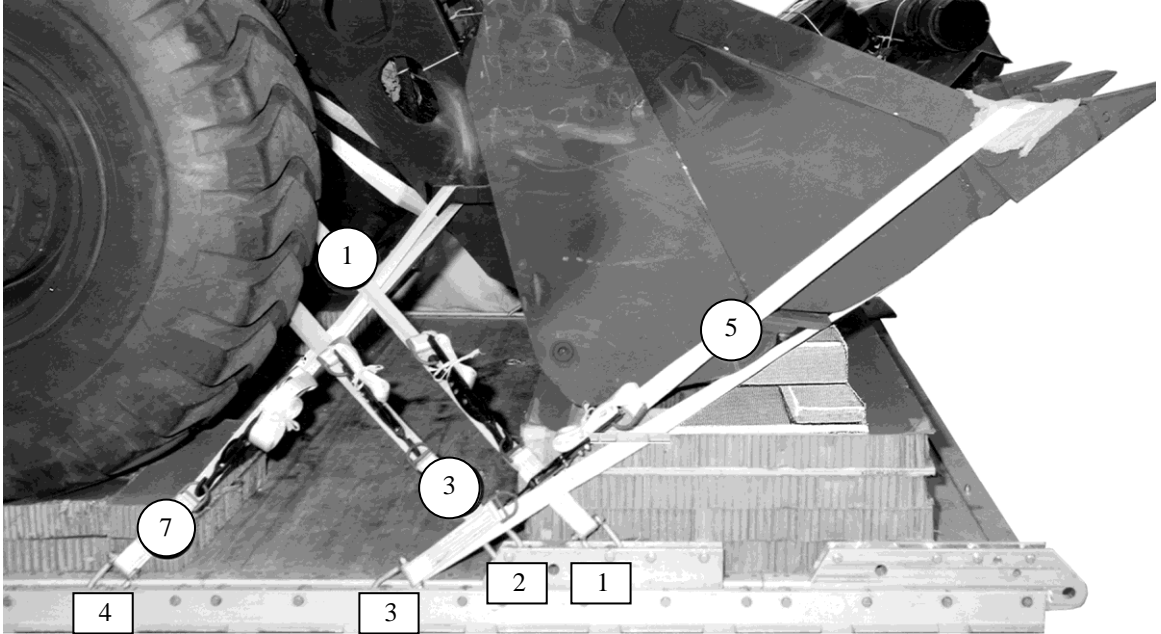


Lashing Number	Tiedown Clevis Number	Instructions
1	21	Pass lashing: Around fork frame, front right side.
2	21A	Around fork frame, front left side.
3	27	Around fork frame, rear right side.
4	27A	Around fork frame, rear left side.

Figure 8-6. Lifting Forks Lashed to Platform

LASHING SCOOP-LOADER

8-10. Lash the scoop-loader to the platform with forty 15-foot tiedown assemblies as shown in Figures 8-7 through 8-11.



Lashing Number	Tiedown Clevis Number	Instructions
1	1	Pass lashing: Through front lift eye, right side of vehicle.
2	1A	Through front lift eye, left side of vehicle.
3	2	Through tiedown provision 2, right side of vehicle.
4	2A	Through tiedown provision 2, left side of vehicle.
5	3	Around the corner of the bucket, right side of vehicle.
6	3A	Around the corner of the bucket, left side of vehicle.
7	4	Through tiedown provision 1, right side of vehicle.
8	4A	Through tiedown provision 1, left side of vehicle.

Figure 8-7. Lashings 1 Through 8 Installed

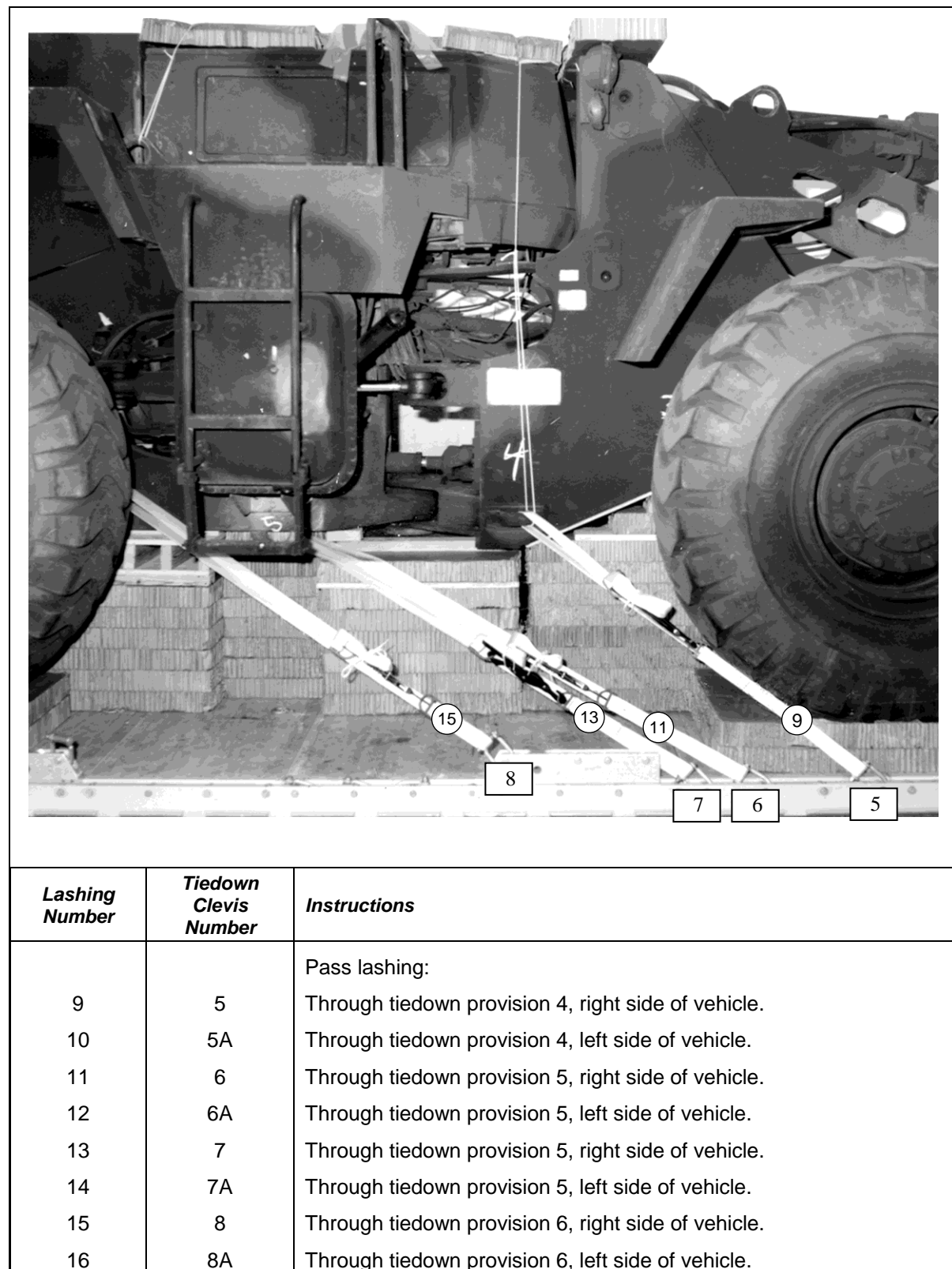


Figure 8-8. Lashings 9 Through 16 Installed

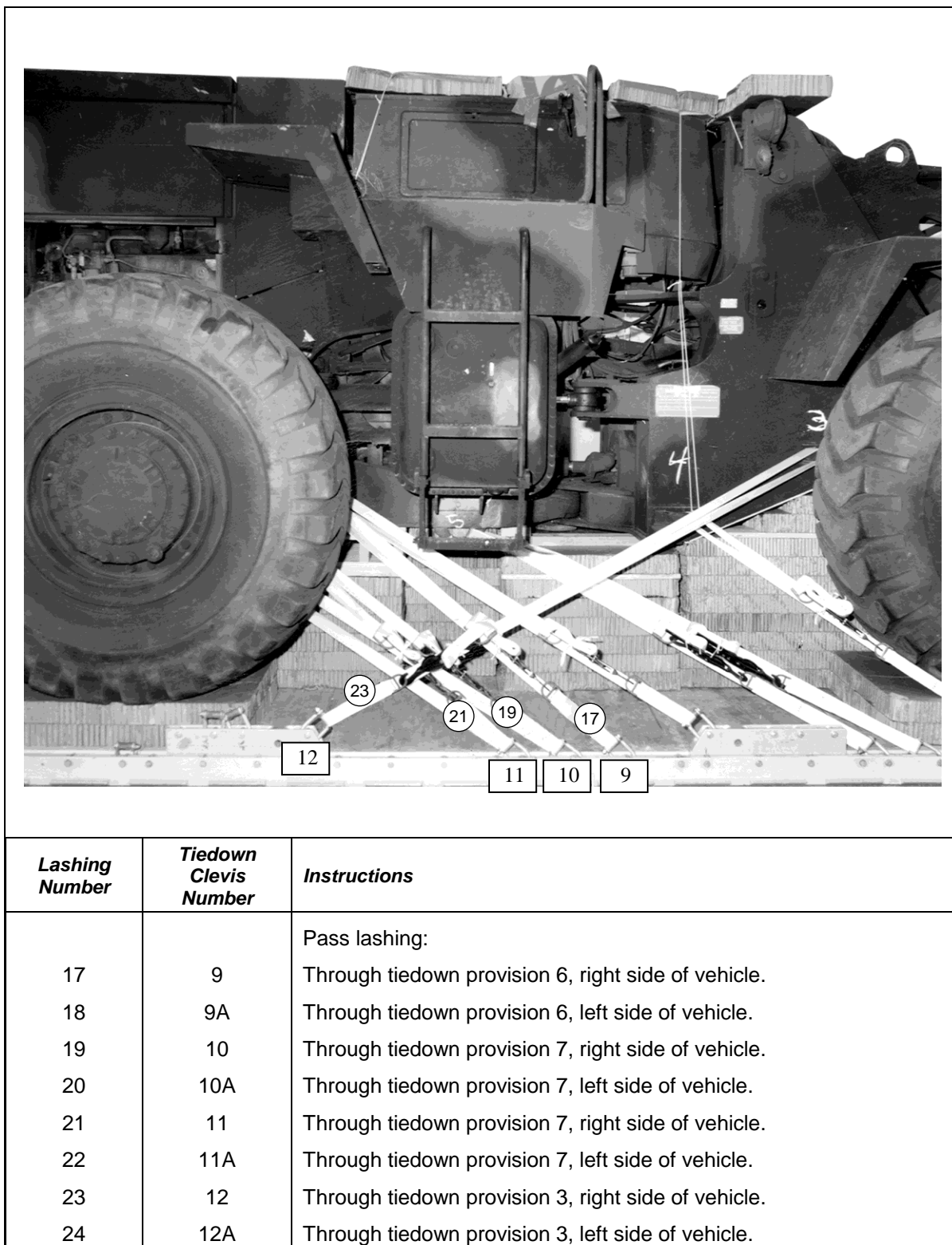


Figure 8-9. Lashings 17 Through 24 Installed

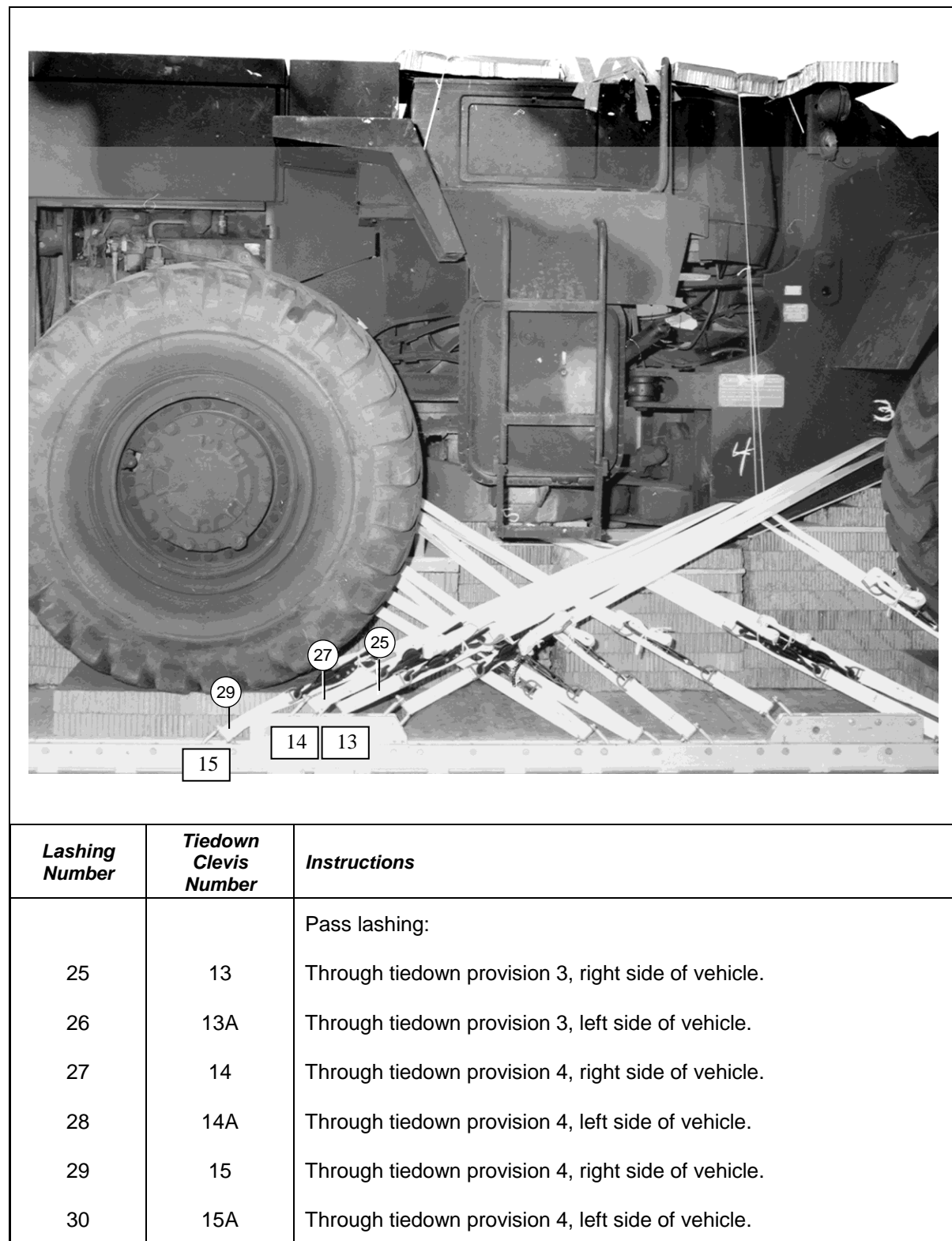


Figure 8-10. Lashings 25 Through 30 Installed



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
31	16	Through tiedown provision 7, right side of vehicle.
32	16A	Through tiedown provision 7, left side of vehicle.
33	17	Through tiedown provision 7, right side of vehicle.
34	17A	Through tiedown provision 7, left side of vehicle.
35	18	Through rear lift eye, right side of vehicle
36	18A	Through rear lift eye, left side of vehicle
37	19	Through rear lift eye, right side of vehicle
38	19A	Through rear lift eye, left side of vehicle
39	23	Through tiedown provision 7, right side of vehicle.
40	23A	Through tiedown provision 7, left side of vehicle.

Figure 8-11. Lashings 31 Through 40 Installed

SAFETYING SUSPENSION SLINGS

8-11. Safety the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 8-12.

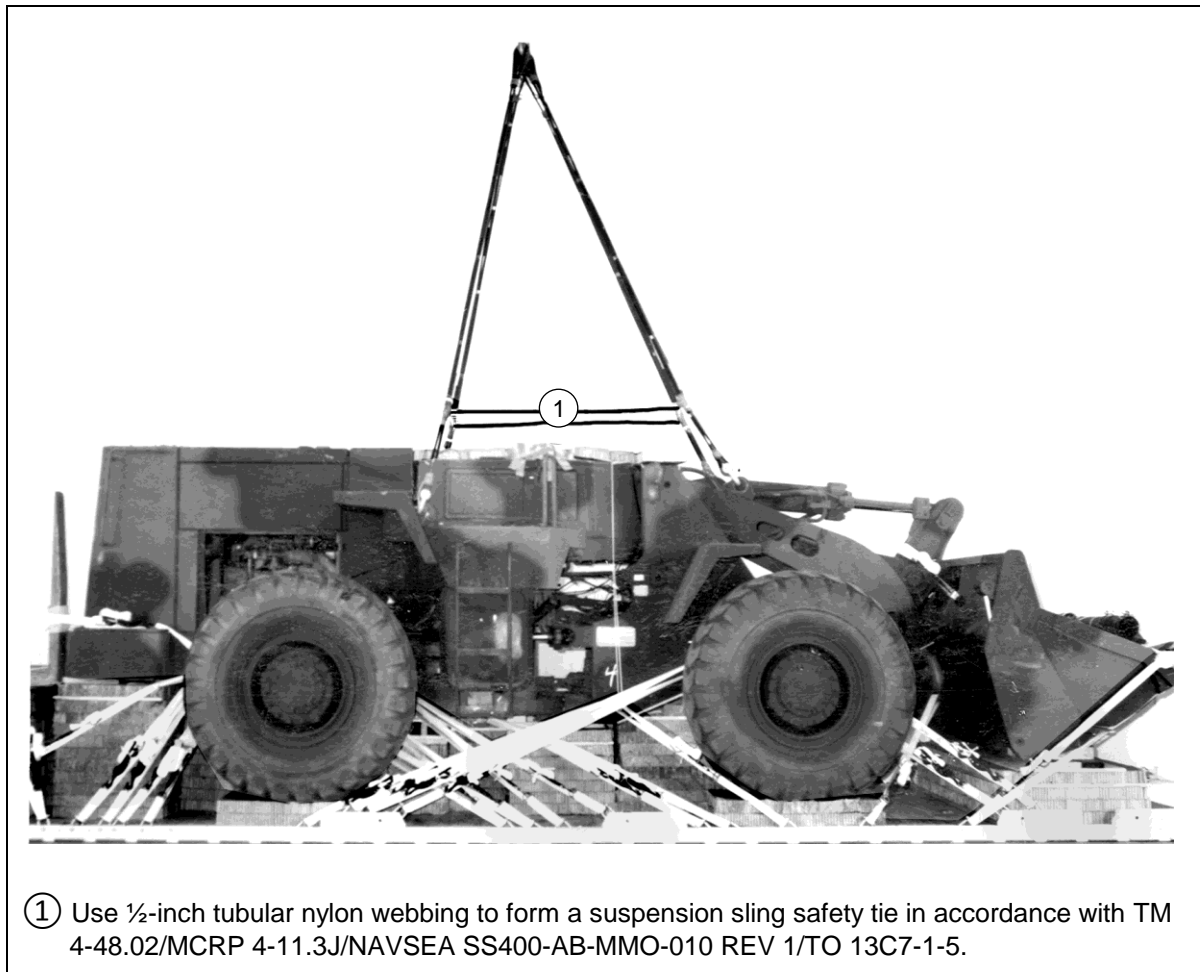


Figure 8-12. Suspension Slings Safety Tied

BUILDING PARACHUTE STOWAGE PLATFORM

8-12. Build the parachute stowage platform as shown in Figure 8-13.

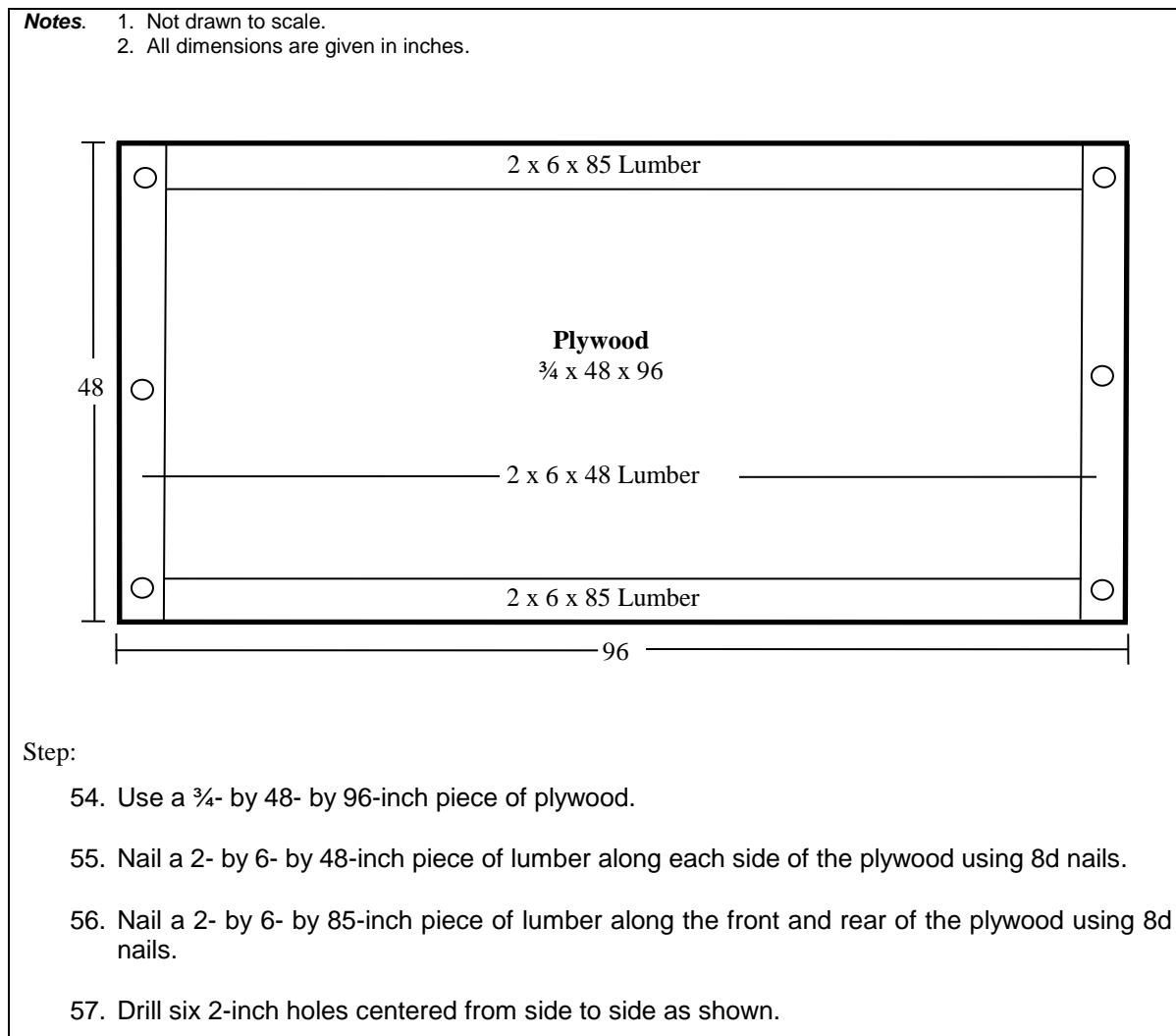


Figure 8-13. Parachute Stowage Platform Built

INSTALLING PARACHUTE STOWAGE PLATFORM

8-13. Install the parachute stowage platform as shown in Figure 8-14.

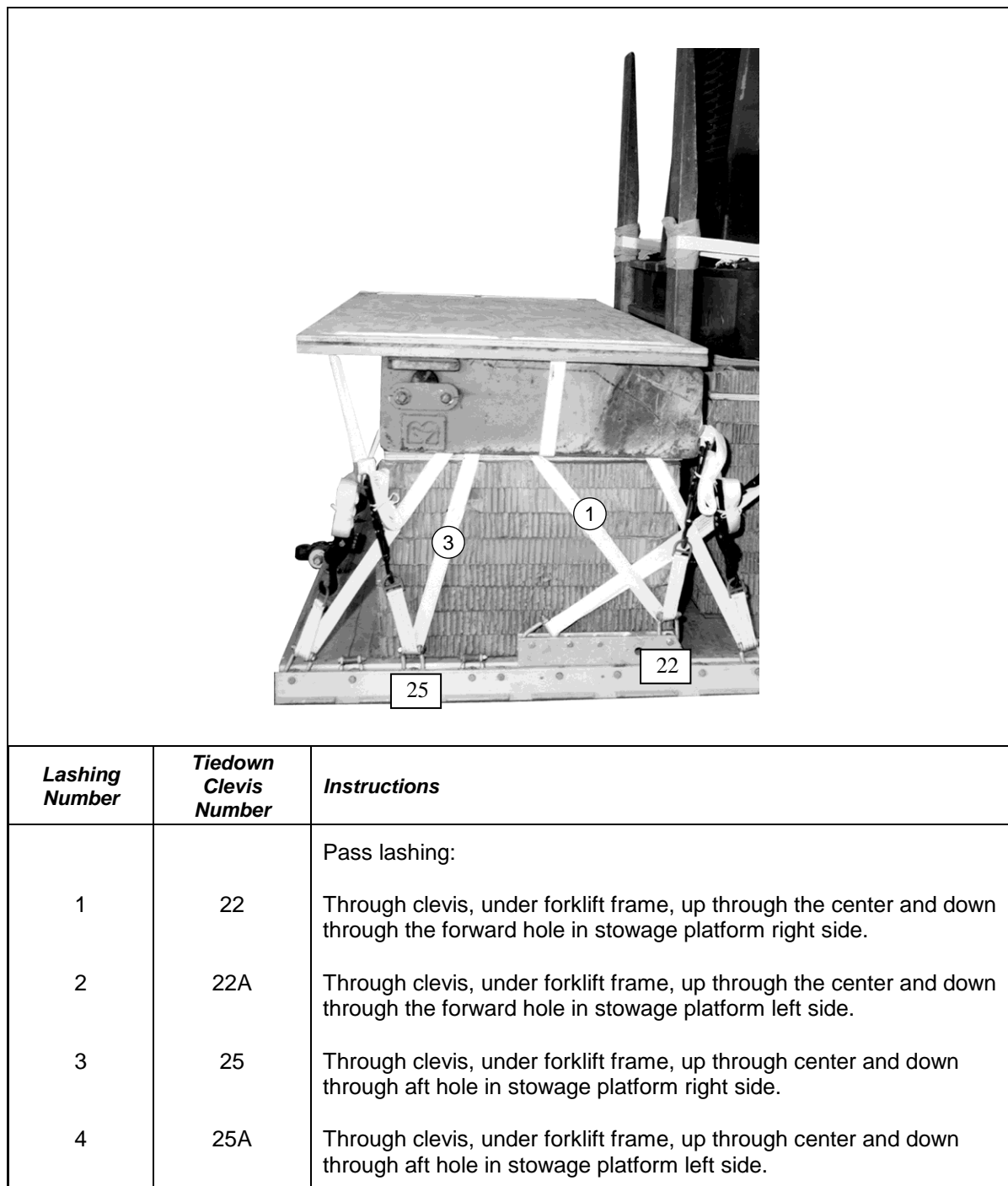


Figure 8-14. Parachute Stowage Platform Installed

STOWING CARGO PARACHUTES

8-14. Prepare, stow, and restrain eight G-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 8-15. Install the extraction parachute jettison system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 if applicable.

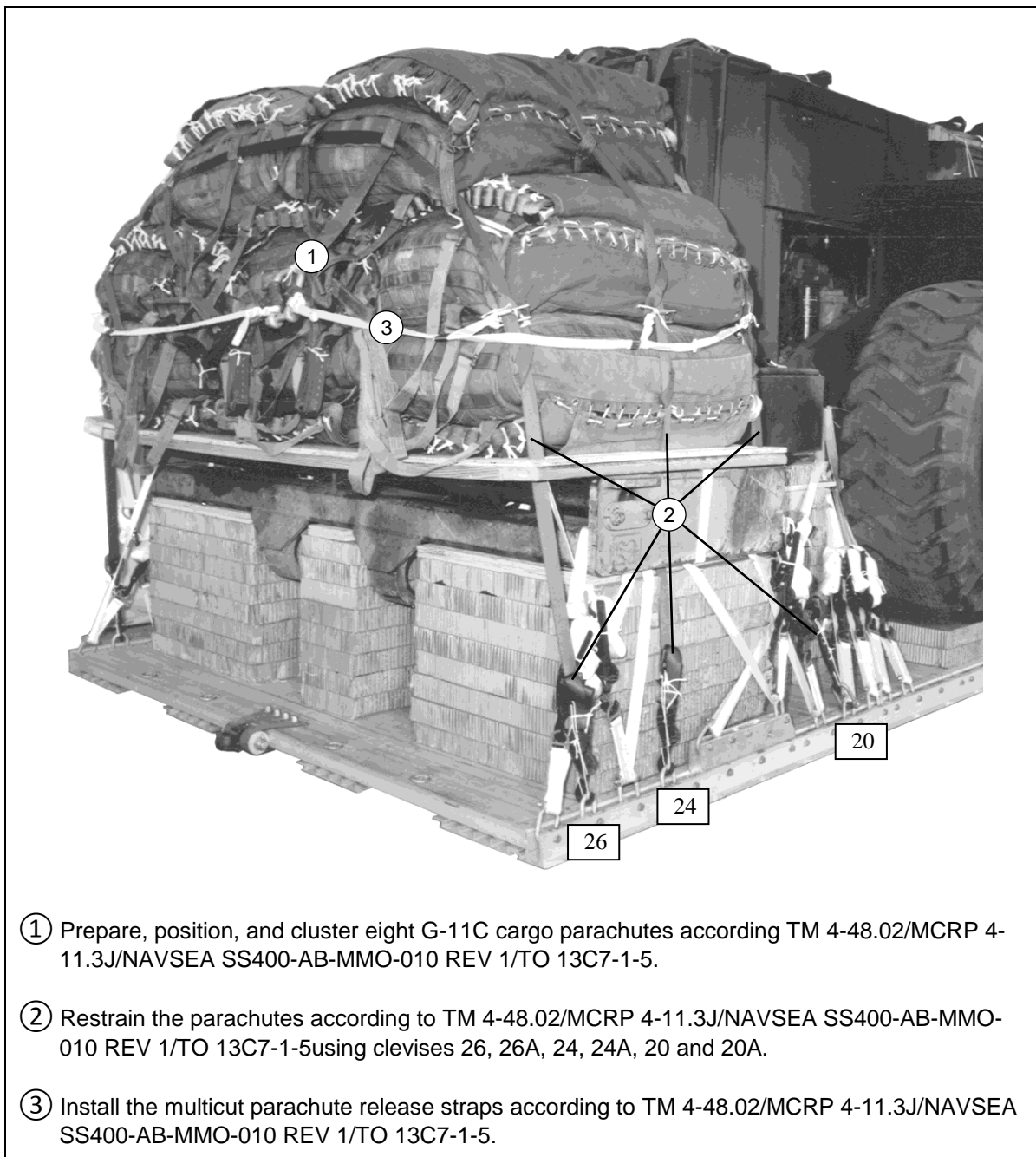
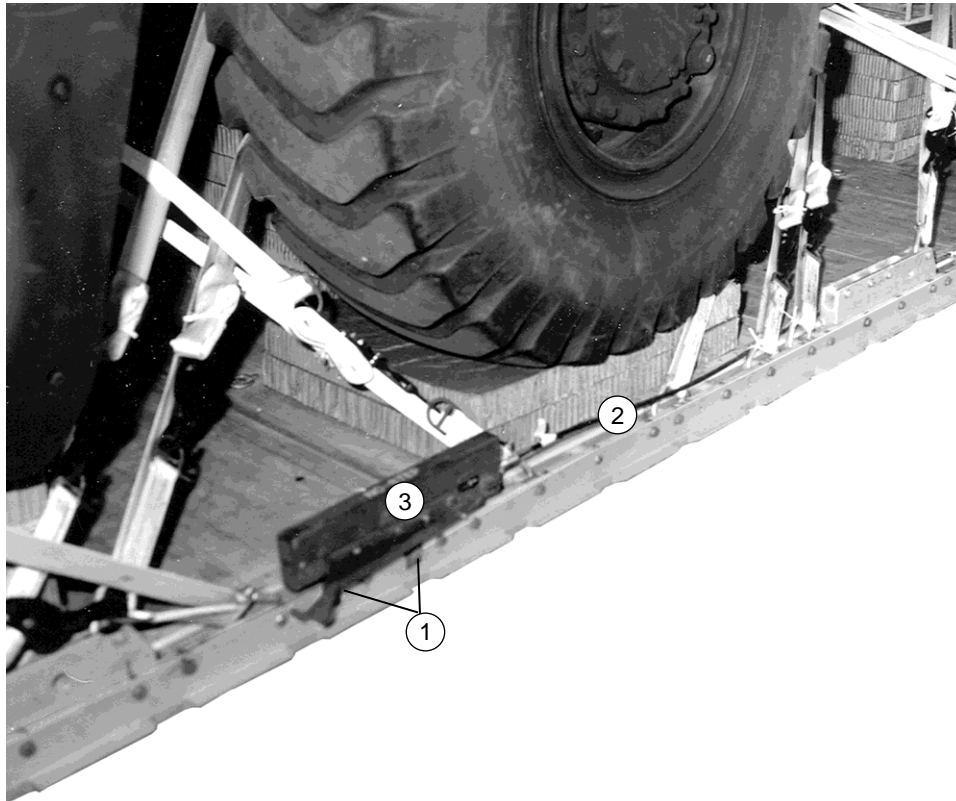


Figure 8-15. Cargo Parachutes Stowed and Secured

INSTALLING EXTRACTION SYSTEM

8-15. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 8-16.



- ① Bolt the actuator bracket to the second set of extraction force transfer coupling system bracket holes on the left platform side rail.
- ② Attach a 28-foot release cable to the actuator assembly.
- ③ Install the actuator assembly to the actuator bracket.

Figure 8-16. Extraction System Installed

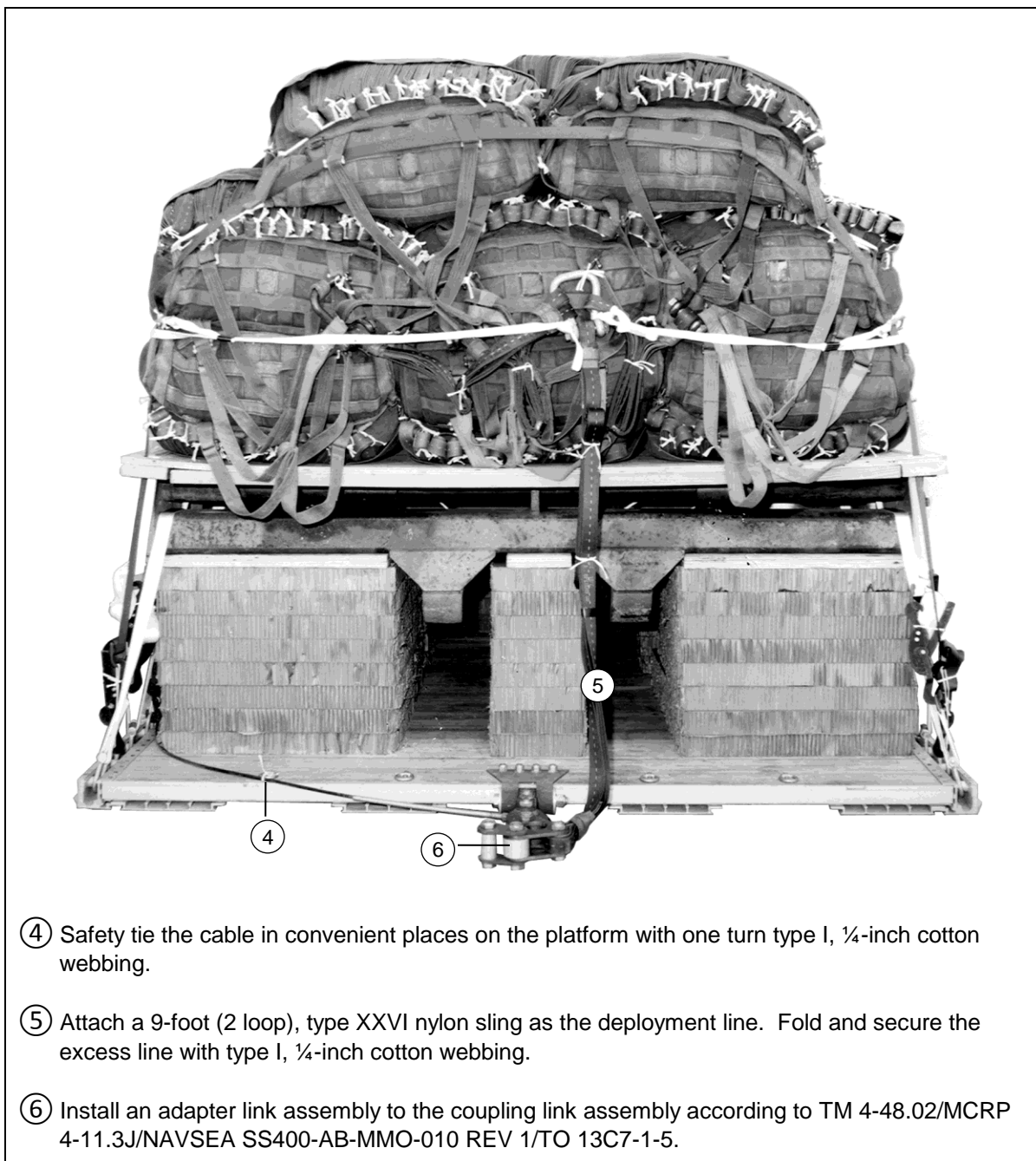


Figure 8-16. Extraction System Installed (Continued)

INSTALLING M-2 PARACHUTE RELEASE ASSEMBLY

8-16. Install the M-2 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as described in Figure 8-17.

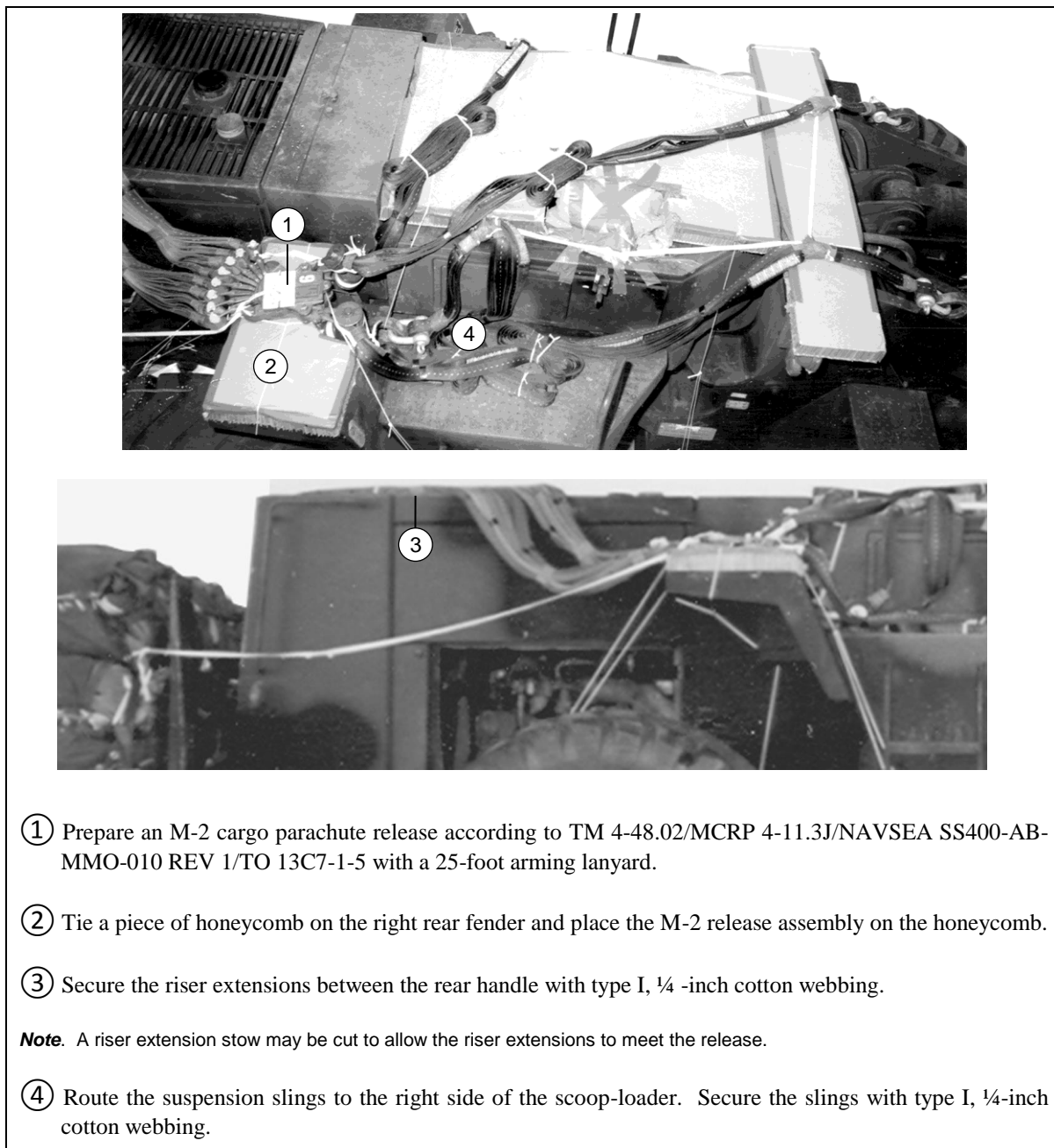


Figure 8-17. M-2 Parachute Release Assembly Installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

8-17. Install the provisions for the emergency restraints on the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

8-18. Select the extraction parachute and extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the load for installation in the aircraft as well.

MARKING RIGGED LOAD

8-19. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 8-18. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

8-20. Use the equipment listed in Table 8-2 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.

RIGGED LOAD DATA

Weight.....	39,940 pounds
Maximum Weight	40,500 pounds
Height.....	100 inches
Width.....	108 inches
Length	347 inches
Overhang: Front	9 inches
Rear extraction force transfer coupling system	18 inches
Rear extraction parachute jettison system	30 inches
Center of Balance (CB) (from front edge of platform)	168 inches

Figure 8-18. 950B Scoop-Loader with a Five-Foot Forklift Attachment Rigged on a Type V Platform for Low-Velocity Airdrop

Table 8-2 Equipment for Rigging the 950B Scoop-Loader with a Five Foot Forklift Attachment

National Stock Number	Item	Quantity
1670-00-162-4979	Adapter, link assembly	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-432-2516	Screw-pin	4
4030-00-678-8562	3 1/4-in (medium)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-157-652	Coupling, airdrop, extraction force	1
	Transfer w 28-ft cable	
1670-00-360-0328	Cover, clevis, large	8
8135-0-64-6958	Cushioning material, packaging, cellulose wadding	As required
	Frame support for honeycomb stack 7:	
5510-00-220-6146	Lumber, 2- by 4- by 48-in	(6)
5530-00-128-4981	Plywood, 3/4- by 6- by 28-in	(2)
5530-00-128-4981	Plywood, 3/4- by 28- by 48-in	(2)
	Frame support for honeycomb stack 8:	1
5510-00-220-6146	Lumber, 2- by 4- by 27-in	(6)
5530-00-128-4981	Plywood, 3/4- by 27- by 48-in	(2)
	Frame support for honeycomb stack 9:	1
5510-00-220-6146	Lumber, 2- by 4- by 48-in	(3)
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line extraction:	
1670-01-064-4454	60-ft (6-loop), type XXVI nylon (C-130 aircraft)	1
1670-01-062-6312	120-ft (6-loop), type XXVI nylon (C-141 aircraft)	1
1670-00-006-2752	Link assembly, four-point	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	
5510-00-220-6146	Lumber, 2- by 4-in:	
	12-in	2
	14-in	2
	28-in	4
5510-00-220-6148	Lumber, 2- by 6-in:	
	5-in	2
	28-in	2
	96-in	2
5510-00-220-6274	Lumber, 4- by 4- by 26-in	4
	Nail, steel wire, common:	
5315-00-01 0-4659	8d	As required
5315-00-010-4661	10d	As required
5315-00-010-4663	16d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	39 sheets

**Table 8-2 Equipment for Rigging the 950B Scoop-Loader with a Five Foot Forklift Attachment
(Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Parachute, cargo	
1670-01-016-7841	G-11C	8
1670-00-040-8135	28-ft, extraction, heavy-duty	2
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	
	Platform, AD, type V, 28-ft:	
	Bracket:	
1670-01-162-2375	Inside EFTA	1
1670-01-162-2374	Outside EFTA	1
1670-01-162-2372	Clevis, load tiedown	54
1670-01-162-2376	Extraction bracket assembly	1
1670-01-247-2389	Suspension link	8
1670-01-162-2381	Tandem link	2
5530-00-128-4981	Plywood, 3/4-in:	
1670-01-097-8817	Release, cargo parachute, M-2, modified	1
	Reinforced toggle shaft	(1)
	Hardened sleeve bolts	(4)
	2 3/8-in steel spacers	(4)
	Hardened clevis bolts w sleeves	(2)
	Sling, cargo, airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	
	For riser extensions:	
1670-01-062-6311	120-ft (2-loop), type XXVI nylon webbing <u>or</u>	8
1670-00-432-2494	120-ft (3-loop), type X nylon webbing	8
	For suspension:	
1670-01-062-6310	11-ft (4-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap, parachute release, multicut,	2
8305-00-074-5124	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	56
	Webbing:	As required
8305-00-268-2411	Cotton, type I, 1/4-inch	
8305-00-082-5752	Nylon, tubular, 1/2-in, natural	As required
8305-00-261-8584	Nylon, type X, treated, olive drab	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Chapter 9

Rigging 950B Scoop-Loader with 7 Ft Forklift Attachment on a Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

9-1. The 950B scoop-loaders, type I and type II are described in the introduction and figure 9-1. Chapter 10 explains how to rig the scoop-loader is rigged with a 7-foot forklift attachment on a 28-foot platform using eight G-11 cargo parachutes. A drawing of a 950 B scoop-loader with tiedown provisions is shown in Figure 9-1

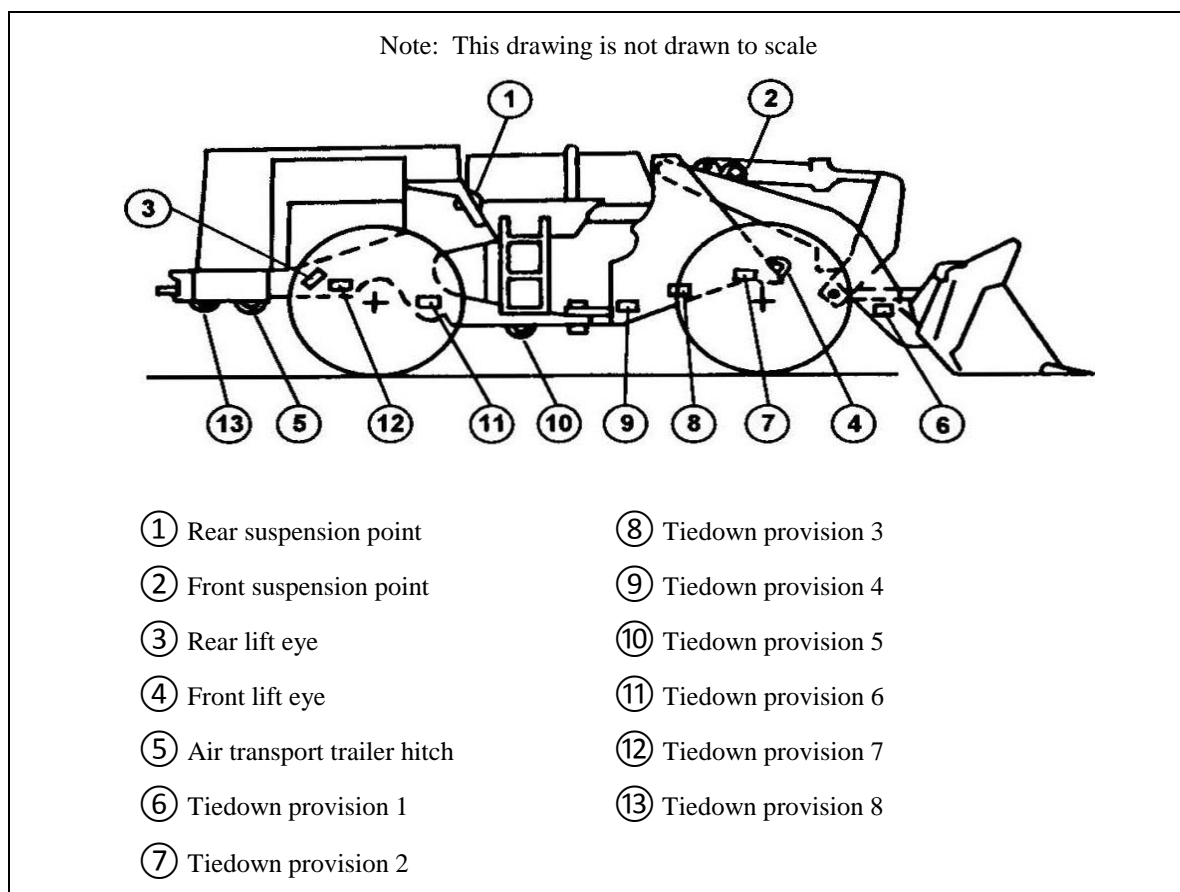


Figure 9-1. Scoop-Loader with Tiedown Provisions

PREPARING PLATFORM

9-2. Prepare a 28-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22 using 58 tiedown clevises and as shown in Figure 9-2.

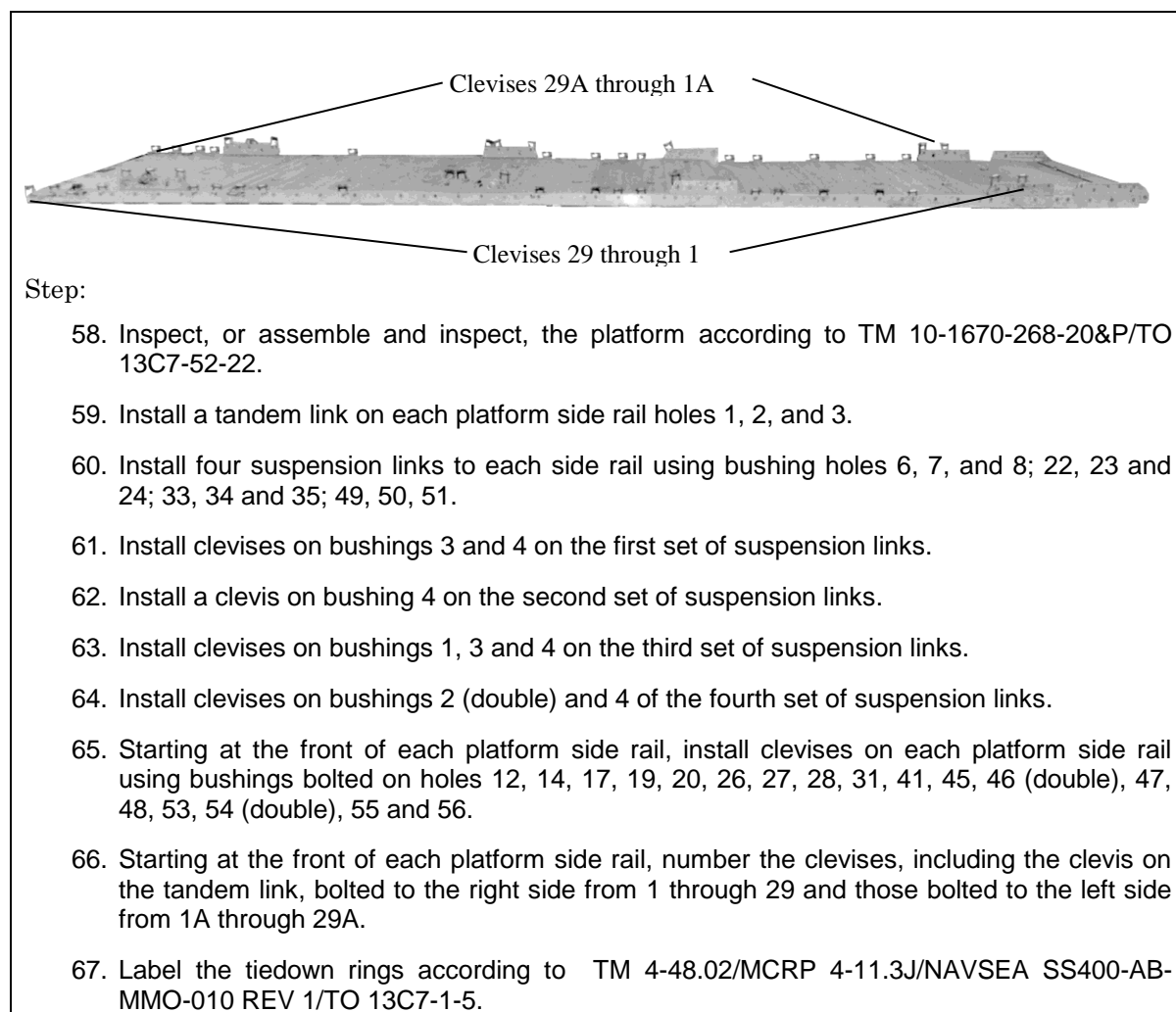
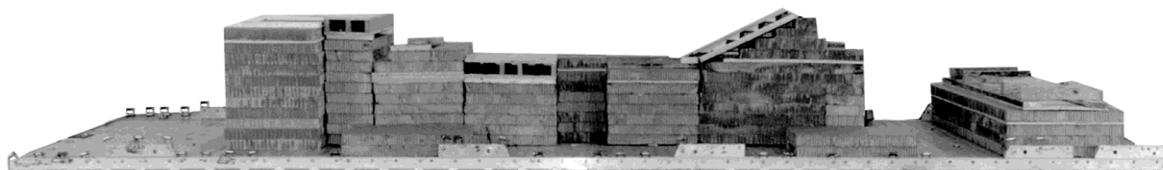
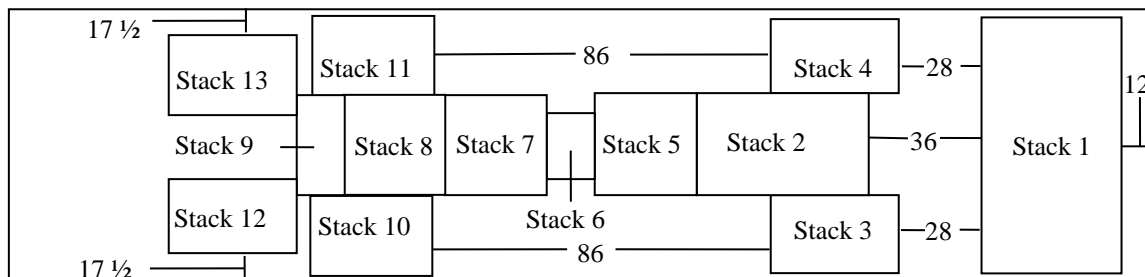


Figure 9-2. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB STACKS

9-3. Build 13 honeycomb stacks using the materials listed in Table 9-1 and as shown in Figures 9-4 through 9-12. Position honeycomb stacks 1 through 13 on the platform as shown in Figure 9-2. Build honeycomb stacks 14 through 16 using material, listed in Table 9-1 and as shown in Figures 9-3, 9-4 and 9-4b..

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.

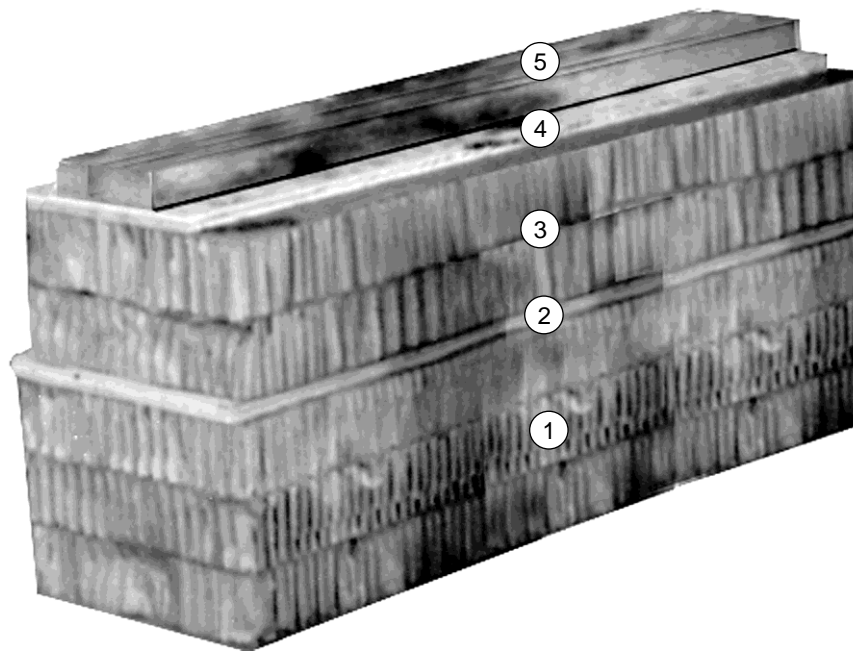


<i>Stack Number</i>	<i>Position of Stacks on the Platform</i>
1	Place stack: Centered 12 inches from the front edge of the platform.
2	Centered 36 inches from stack 1.
3	28 inches from stack 1, flush against right side of stack 2.
4	28 inches from stack 1, flush against left side of stack 2.
5	Centered flush against stack 2.
6	Centered flush against stack 5.
7	Centered flush against stack 6.
8	Centered flush against stack 7.
9	Centered flush against stack 8.
10	86 inches from stack 3, flush against right side of stack 8.
11	86 inches from stack 3, flush against left side of stack 8.
12	17 1/2 inches from right rail, flush against stack 9.
13	17 1/2 inches from left rail, flush against stack 9.

Figure 9-3. Honeycomb Stacks Positioned on Platform

Table 9-1. Materials Required for Lifting Forks Honeycomb Stacks

<i>Stack Number</i>	<i>Pieces</i>	<i>Width (Inches)</i>	<i>Length (Inches)</i>	<i>Material</i>
14	3	12	41	Honeycomb
	1	12	41	$\frac{3}{4}$ inch plywood
	2	12	41	Honeycomb
	1	8	41	$\frac{3}{4}$ inch plywood
	1	2X6	41	Lumber
15 and 16	6	28	41	Honeycomb
	2	28	41	$\frac{3}{4}$ inch plywood
	4	28	41	Honeycomb
	2	28	41	$\frac{3}{4}$ inch plywood
	4	2 x 6	41	Lumber
	4	2 x 6	12	Lumber



- ① Glue three 41- by 12-inch pieces of honeycomb together to form a base.
- ② Glue one 41- by 12-inch piece of $\frac{3}{4}$ -inch piece of plywood on the base.
- ③ Glue two 41- by 12-inch pieces of honeycomb to the plywood.
- ④ Glue one 41- by 8-inch piece of $\frac{3}{4}$ -inch piece of plywood on the honeycomb.
- ⑤ Center one 2- by 6- 41-inch piece of lumber on the plywood and nail in place.

Figure 9-4. Honeycomb Stack 14 Built

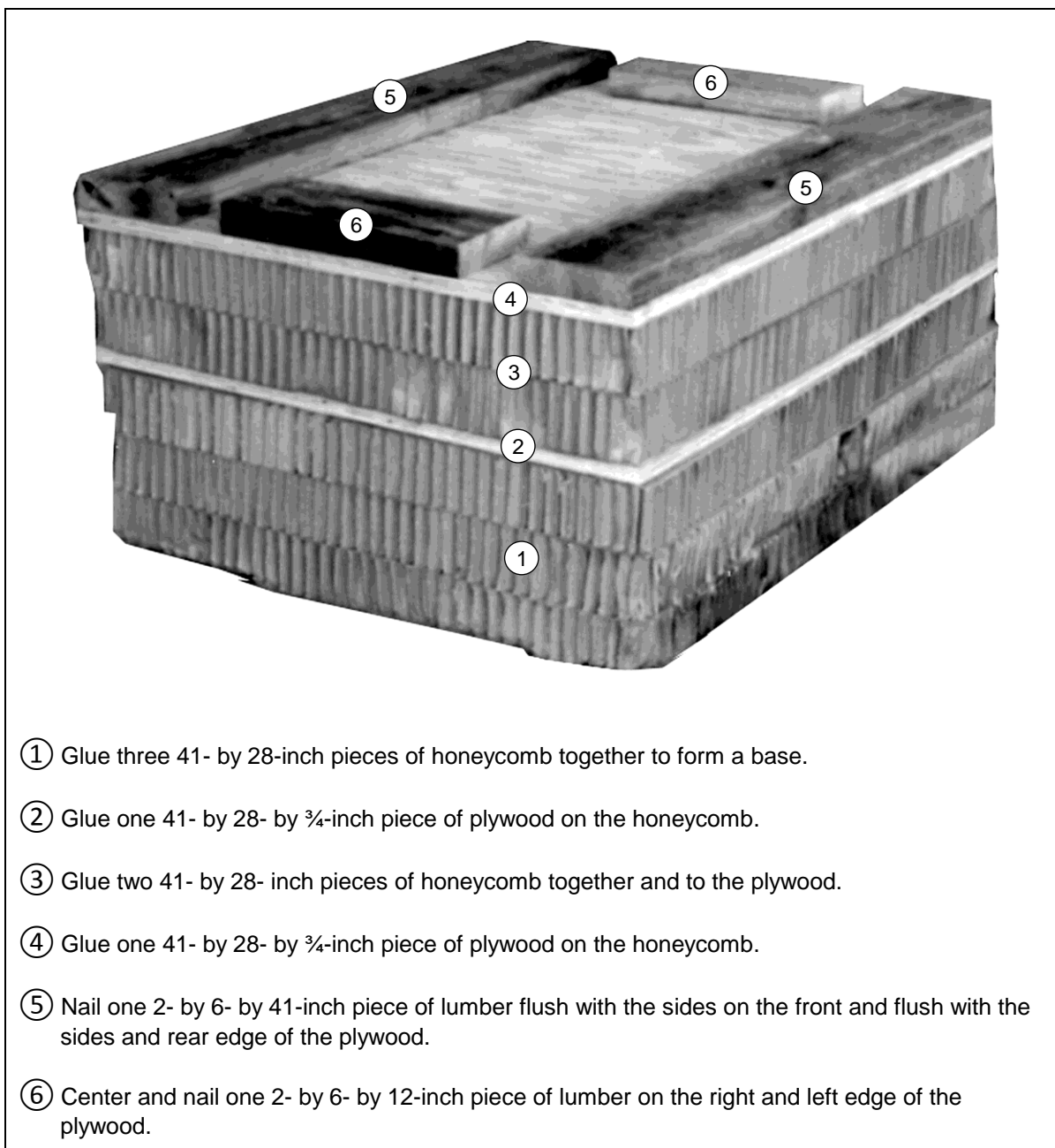


Figure 9-4b. Honeycomb Stacks 15 and 16 Built

PREPARING SCOOP-LOADER

9-4. Prepare the 950B scoop-loader, type I and type II, according to Paragraphs 7-4 through 7-14.

INSTALLING SUSPENSION SLINGS AND POSITIONING BUCKET

9-5. Install the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in, Paragraph 7-15.

POSITIONING SCOOP-LOADER

9-6. Position the scoop-loader on the platform as shown in Paragraph 7-16 with the bucket centered between the platform side rails with a 13 to 17 inch overhang.

PREPARING SCOOP-LOADER AFTER POSITIONING

9-7. After the scoop-loader has been positioned, prepare it as shown in Paragraph 7-17, using four 15-foot tiedown assemblies to secure the bucket and the lift-arm cross member.

POSITIONING HONEYCOMB STACKS AND LASHINGS FOR LIFTING FORKS

9-8. Position honeycomb stacks 14, 15 and 16 and lashings for the lifting forks as shown in Figure 9-5.

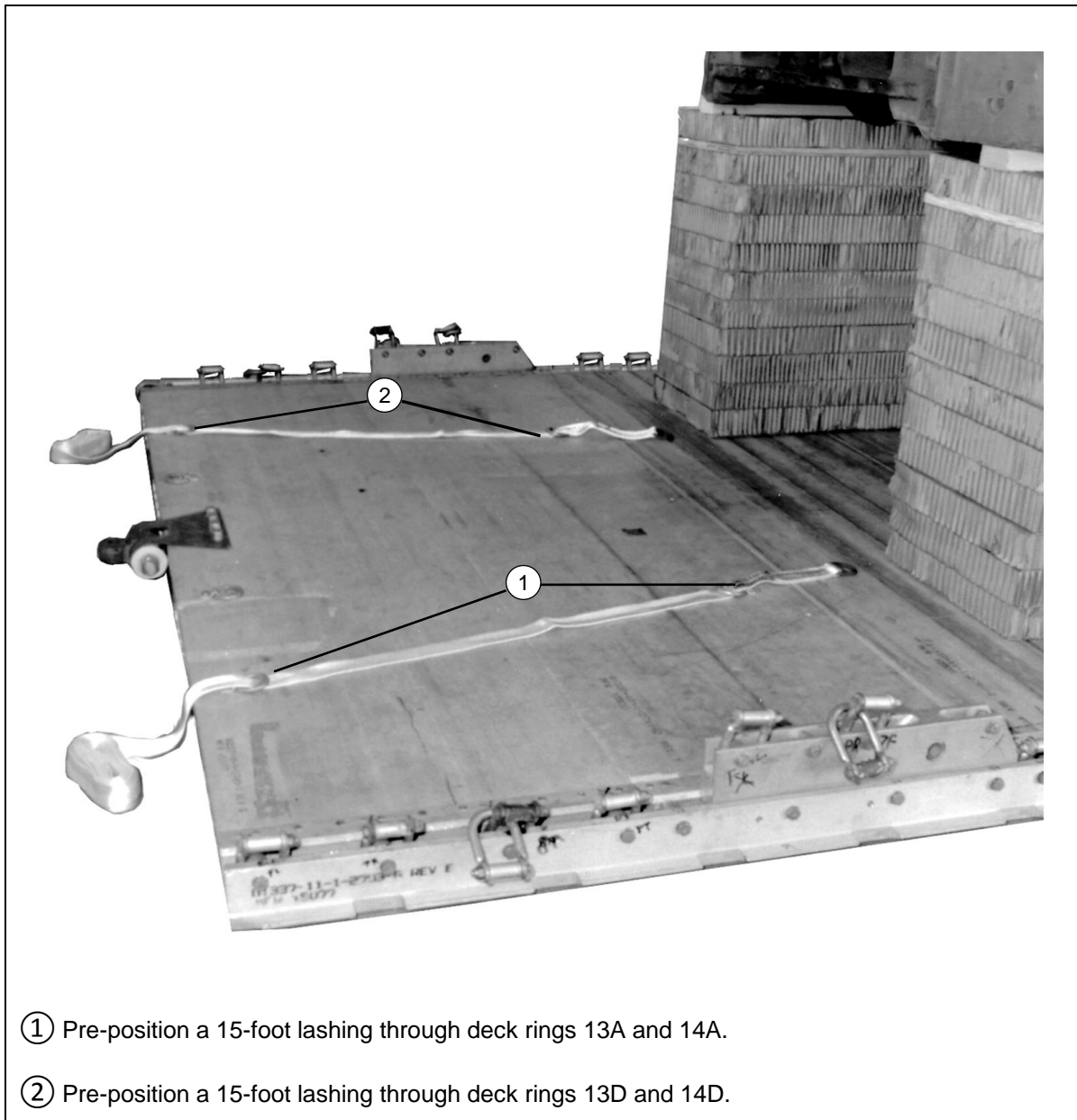


Figure 9-5. Honeycomb and Lashings Positioned for Lifting Forks

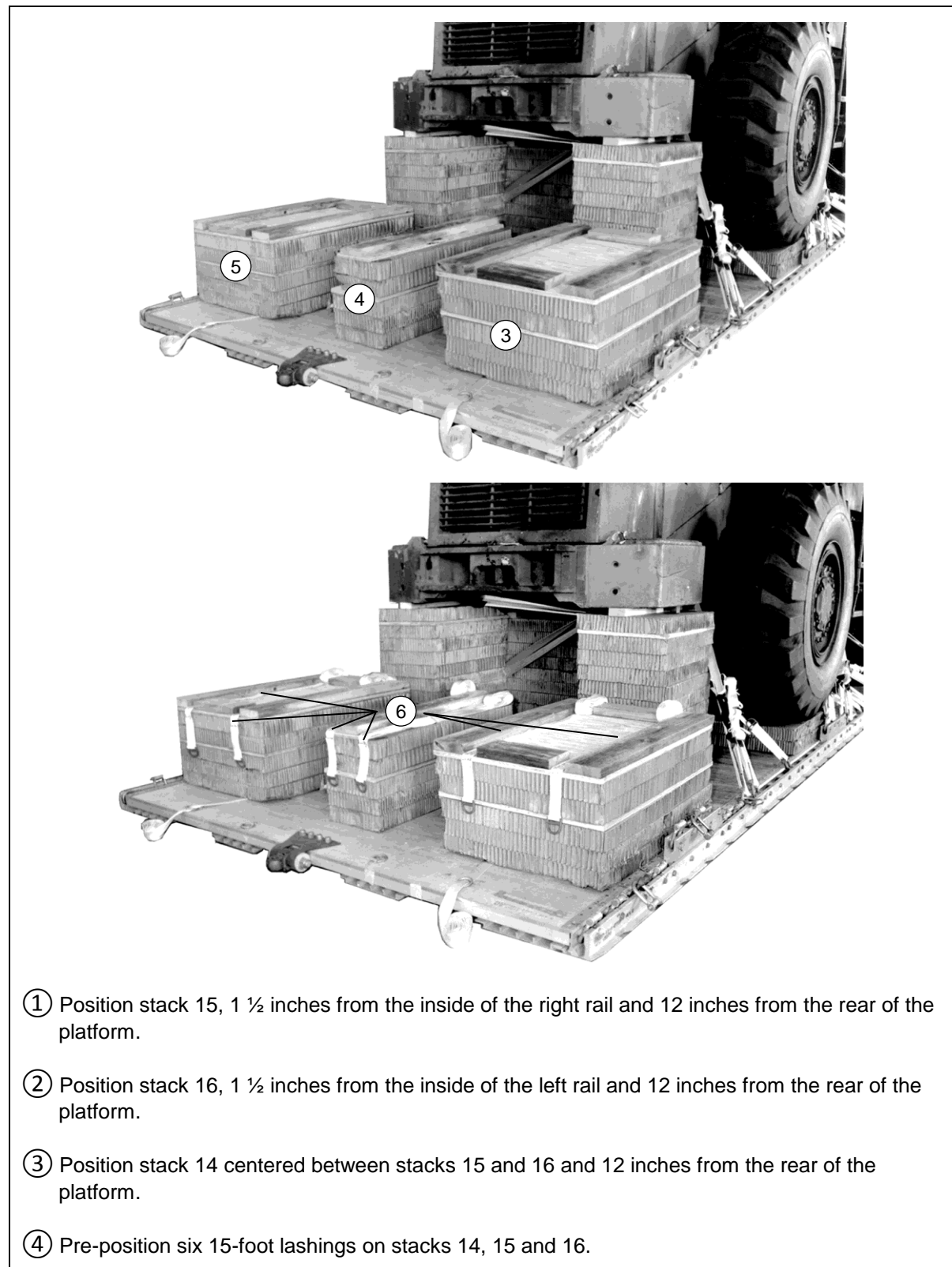


Figure 9-5. Honeycomb and Lashings Positioned for Lifting Forks (Continued)

POSITIONING LASHINGS AND LIFTING FORK FRAME

9-9. Position lashings and lifting fork frame on the honeycomb stacks as shown in Figure 9-6.

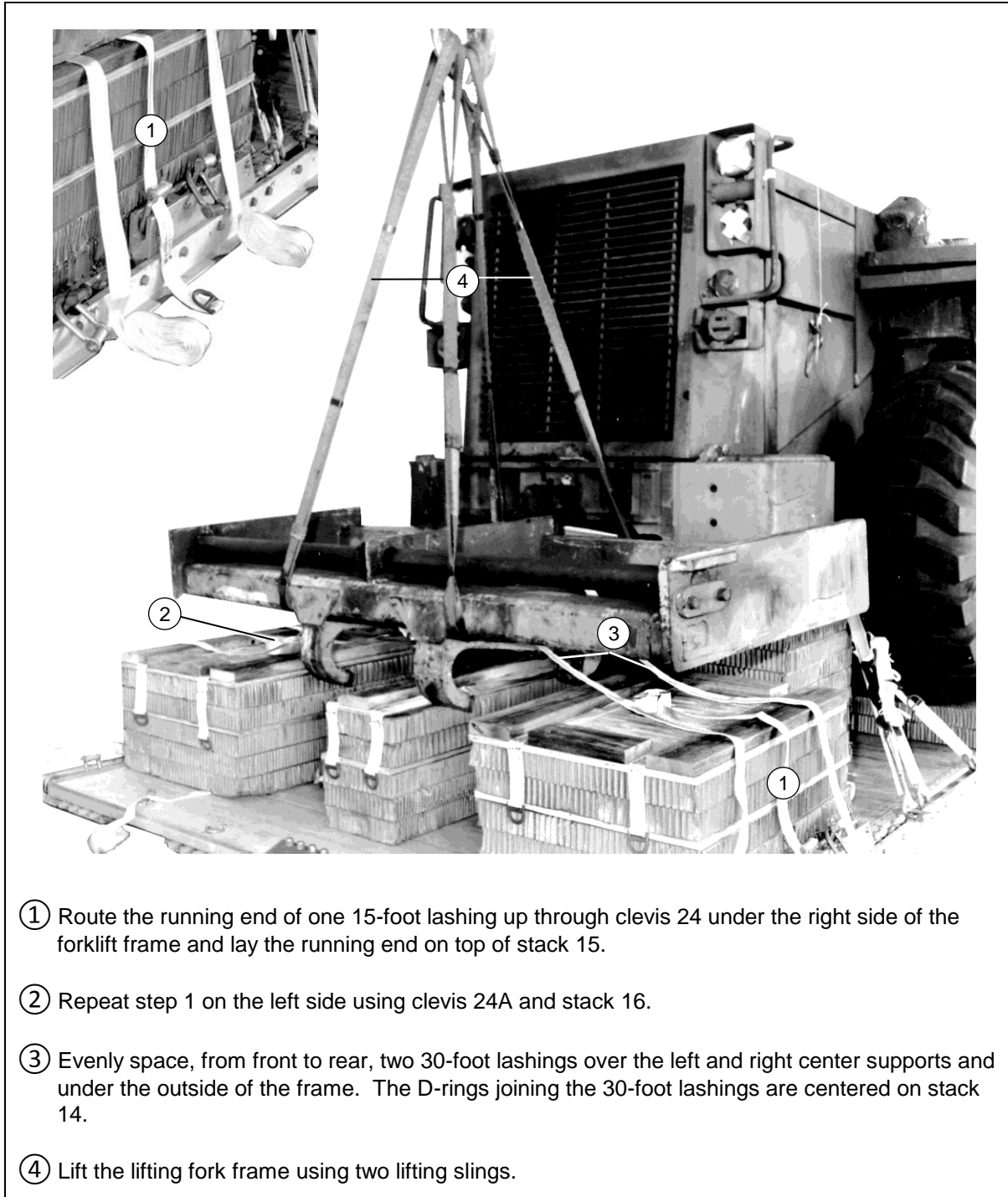
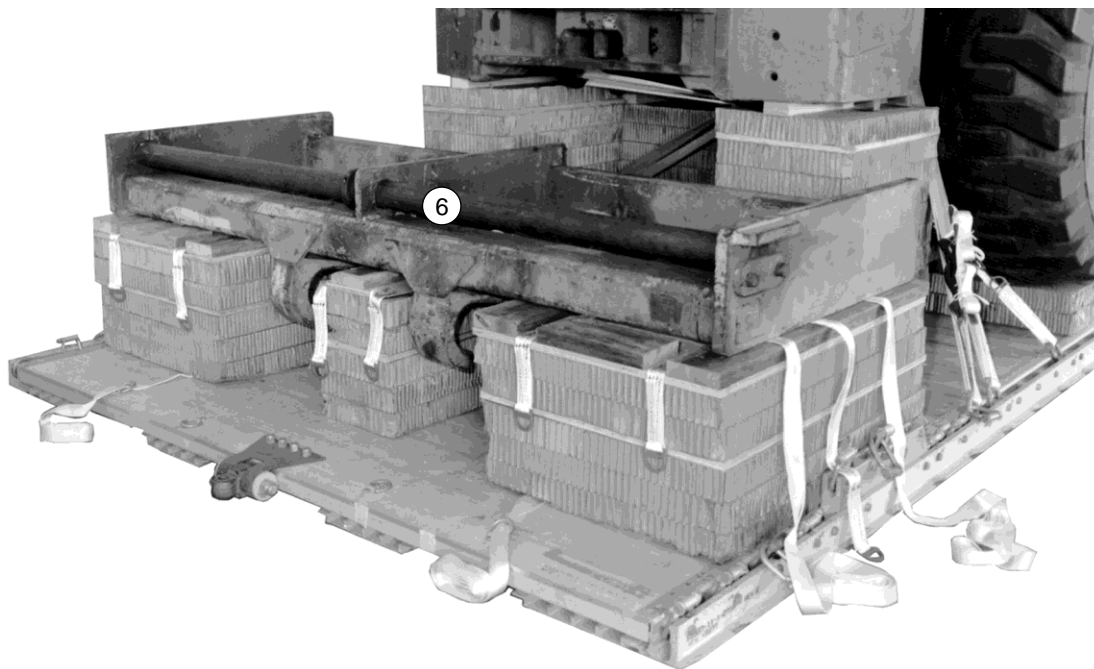


Figure 9-6. Lashings and Lifting Fork Frame Positioned



- ⑤ Ensure the two 30-foot lashings are routed over the permanent steel beam, under the moveable metal support and under the outside frames.
- ⑥ Position the lifting fork frame on stacks 14, 15, and 16.

Figure 9-6. Lashings and Lifting Fork Frame Positioned (Continued)

LASHING LIFTING FORK FRAME

9-10. Lash the lifting fork frame as shown in Figure 9-7.

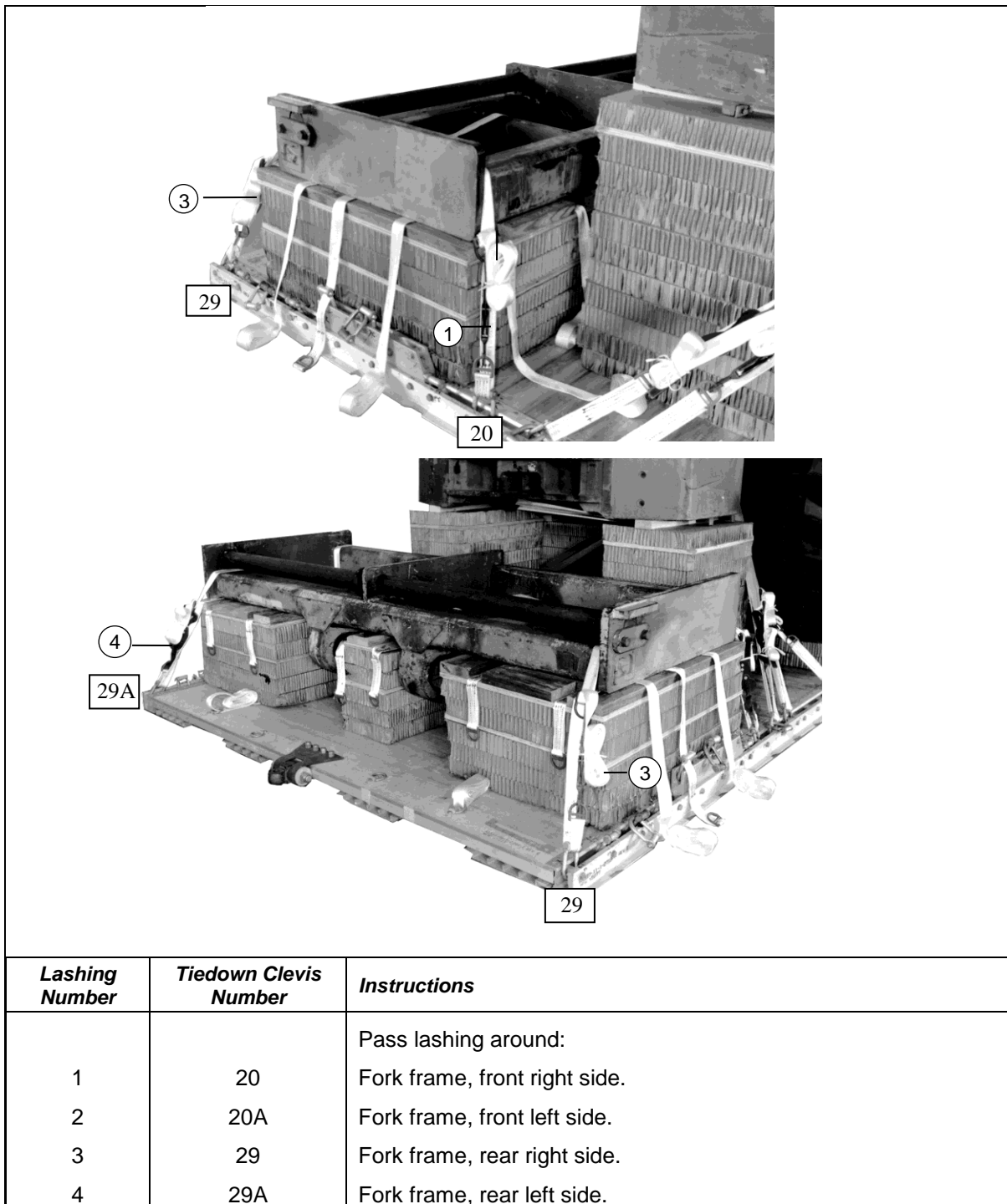
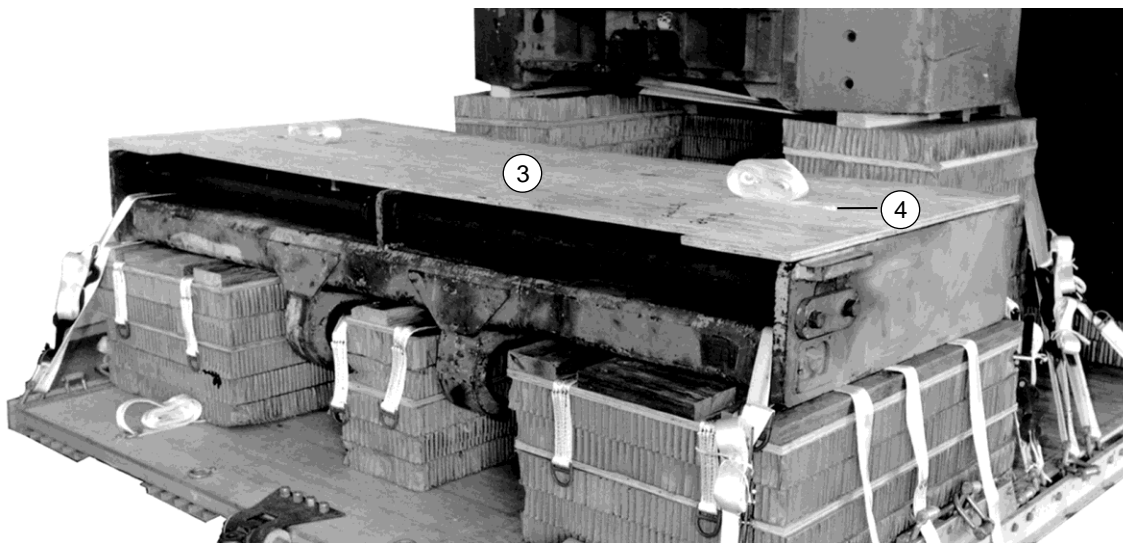
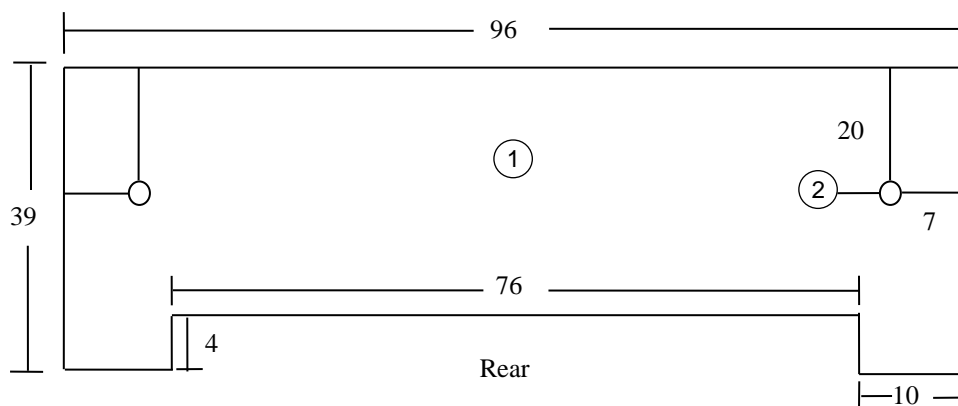


Figure 9-7. Lifting Fork Frame Lashed

BUILDING AND PLACING THE FORK SUPPORT BOARD

9-11. Build and place the fork support board as shown in Figure 9-8.

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



Step:

68. Cut a 39- by 96- by $\frac{3}{4}$ -inch piece of plywood to the dimensions shown above.
69. Drill two 2-inch holes to run the lashings through.
70. Place the support board on top of the frame.
71. Run the pre-positioned 15-foot lashings up through the right and left holes in the support board.

Figure 9-8. Fork Support Board Built and Placed

POSITIONING LIFTING FORKS

9-12. Lift and place the lifting forks using three 15-foot lashings as shown in Figure 9-9.

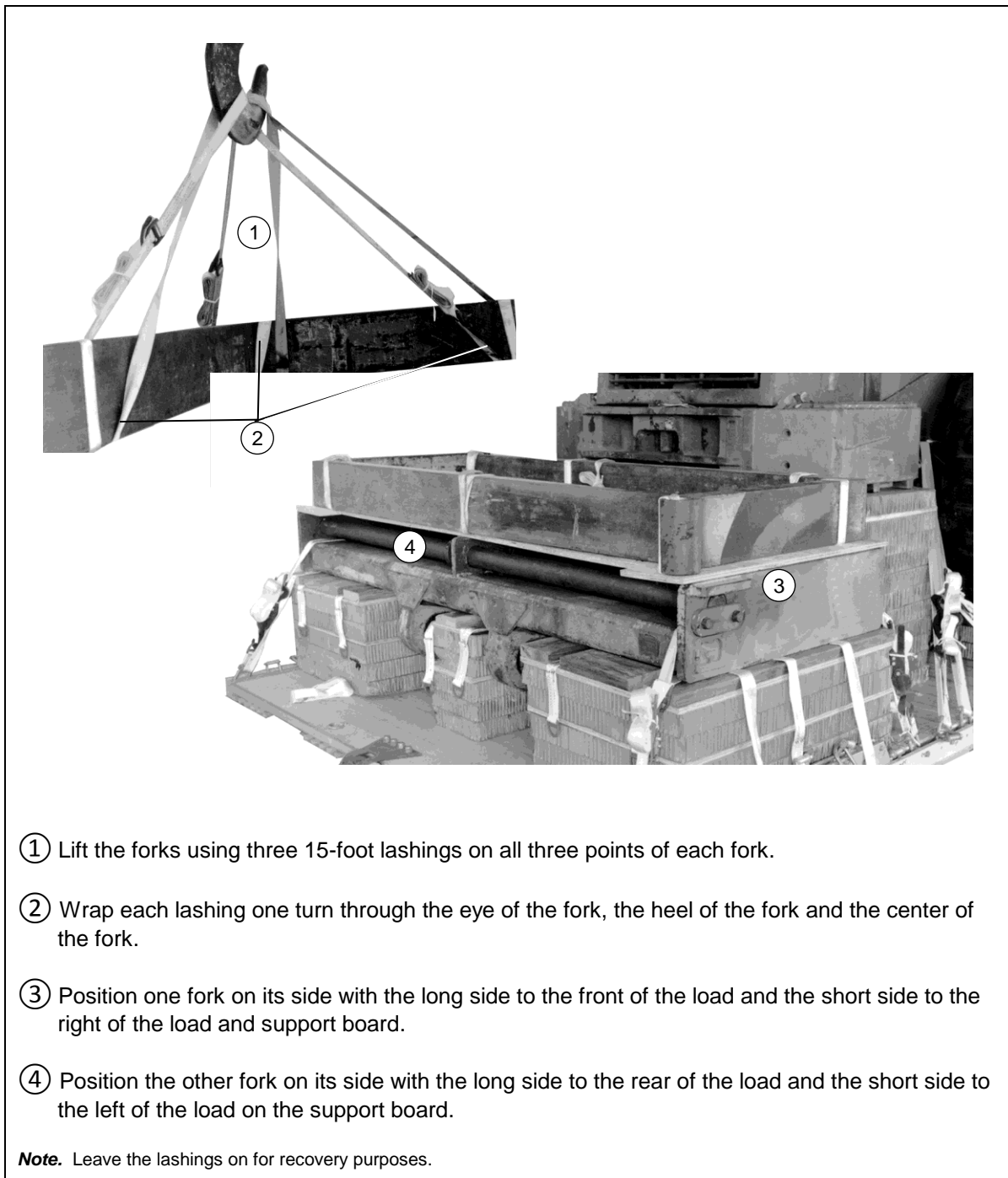


Figure 9-9. Lifting Forks Positioned

SECURING THE LIFTING FORKS

9-13. Secure the lifting forks as shown in Figure 9-10.

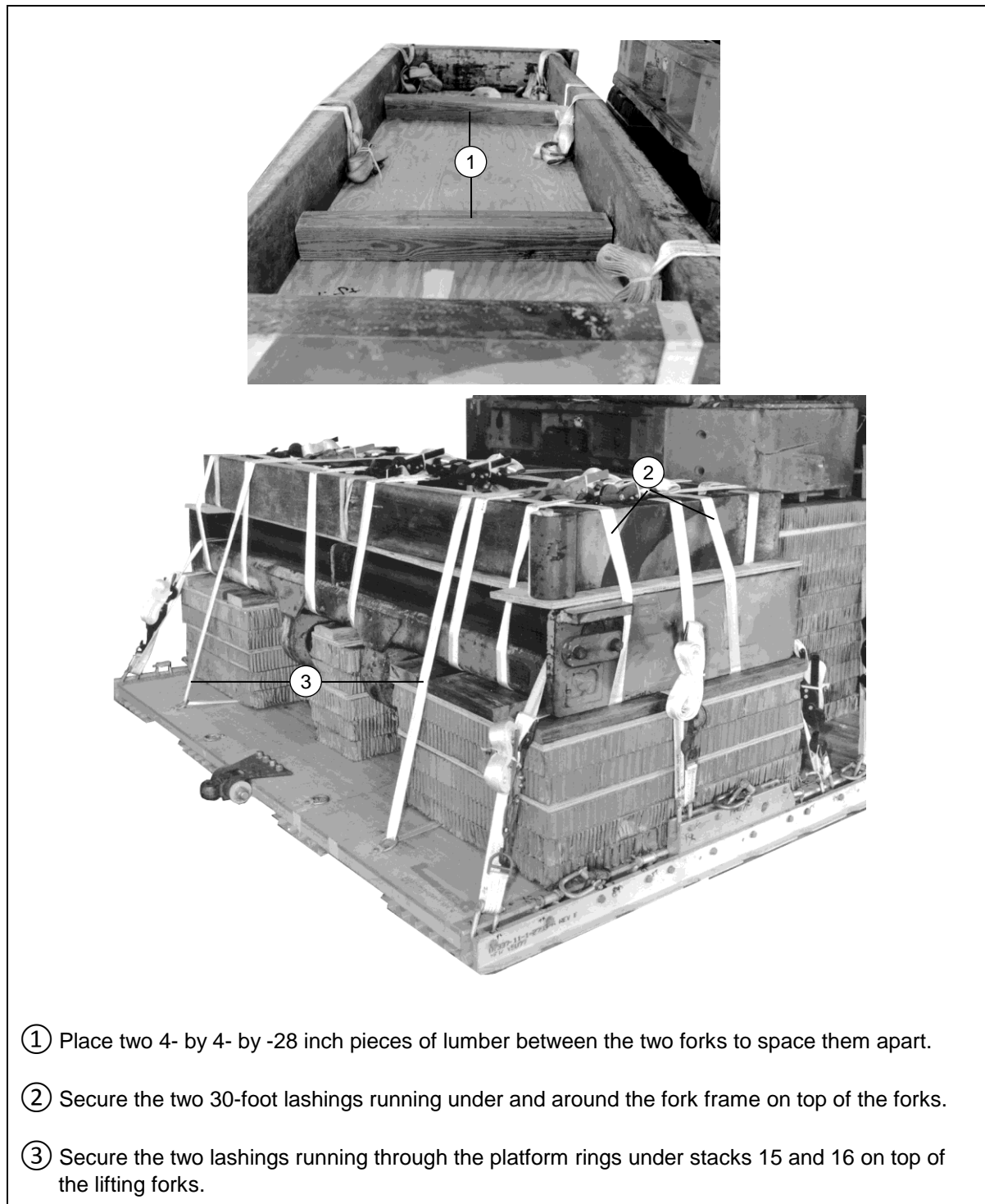


Figure 9-10. Lifting Forks Secured

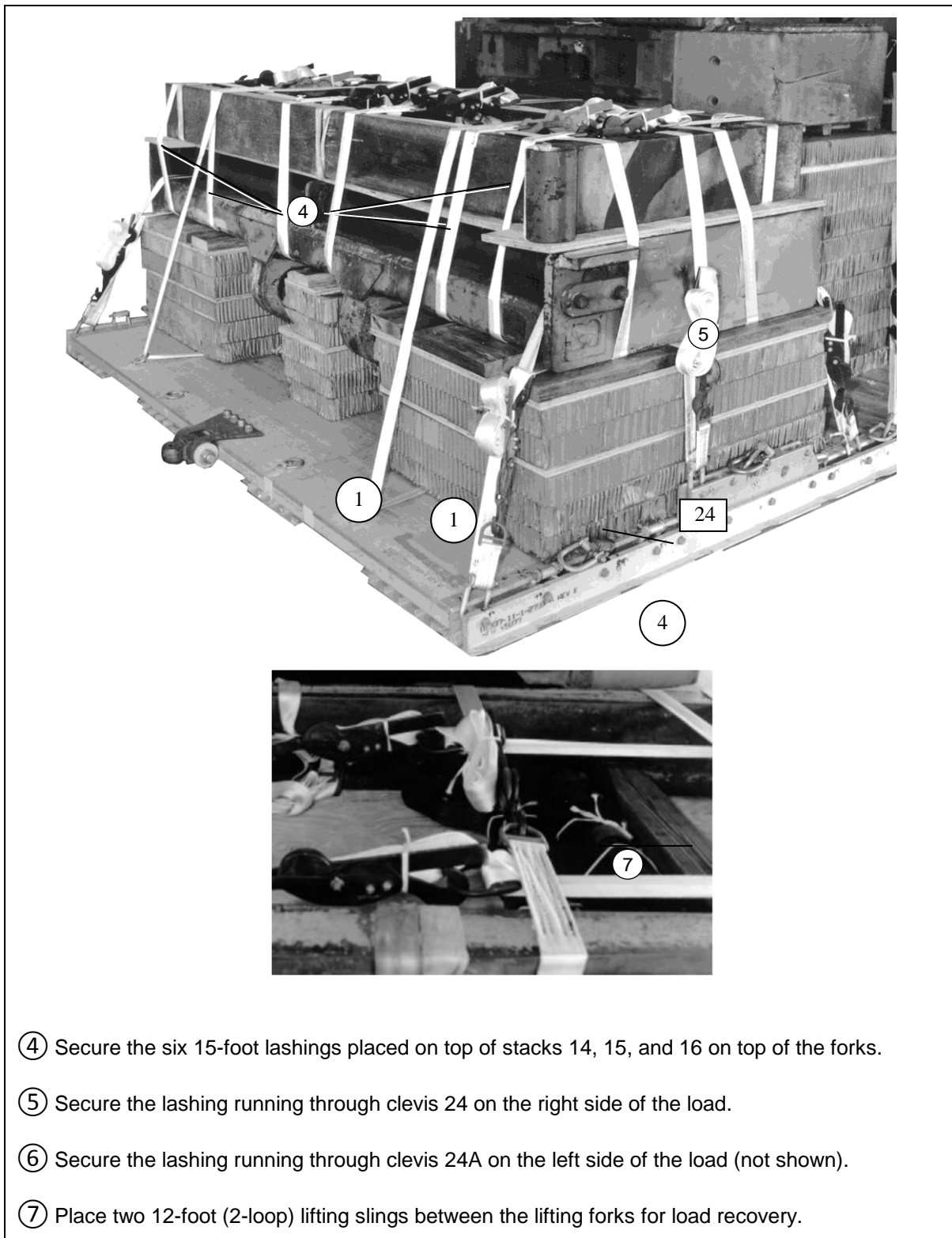
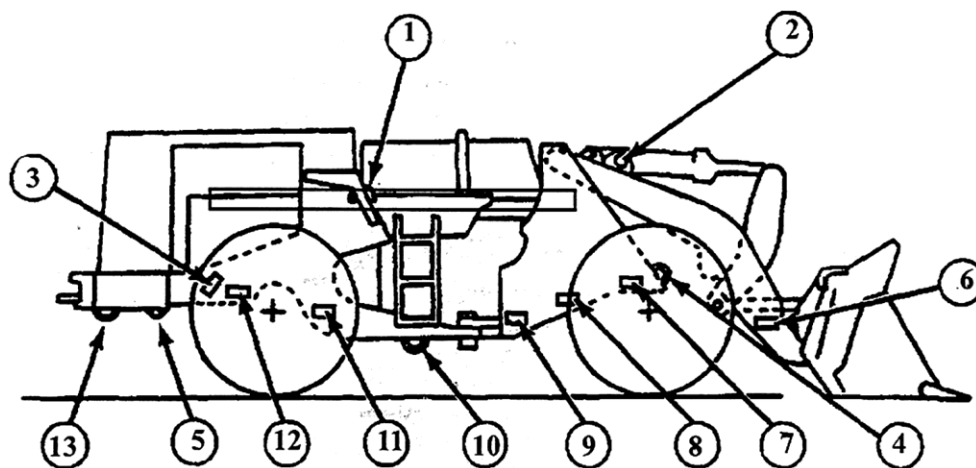


Figure 9-10. Lifting Forks Secured (Continued)

LASHING THE SCOOP-LOADER TO THE PLATFORM

9-14. Lash the scoop-loader to the platform using the tiedown provisions shown in Figure 9-11 and fifty-eight 15-foot tiedown assemblies as shown Figures 9-12 through 9-14.

Note. Not drawn to scale.



- | | |
|-------------------------------|-----------------------|
| ① Rear suspension point | ⑧ Tiedown provision 3 |
| ② Front suspension point | ⑨ Tiedown provision 4 |
| ③ Rear lift eye | ⑩ Tiedown provision 5 |
| ④ Front lift eye | ⑪ Tiedown provision 6 |
| ⑤ Air transport trailer hitch | ⑫ Tiedown provision 7 |
| ⑥ Tiedown provision 1 | ⑬ Tiedown provision 8 |
| ⑦ Tiedown provision 2 | |

Figure 9-11. Tiedown Provisions

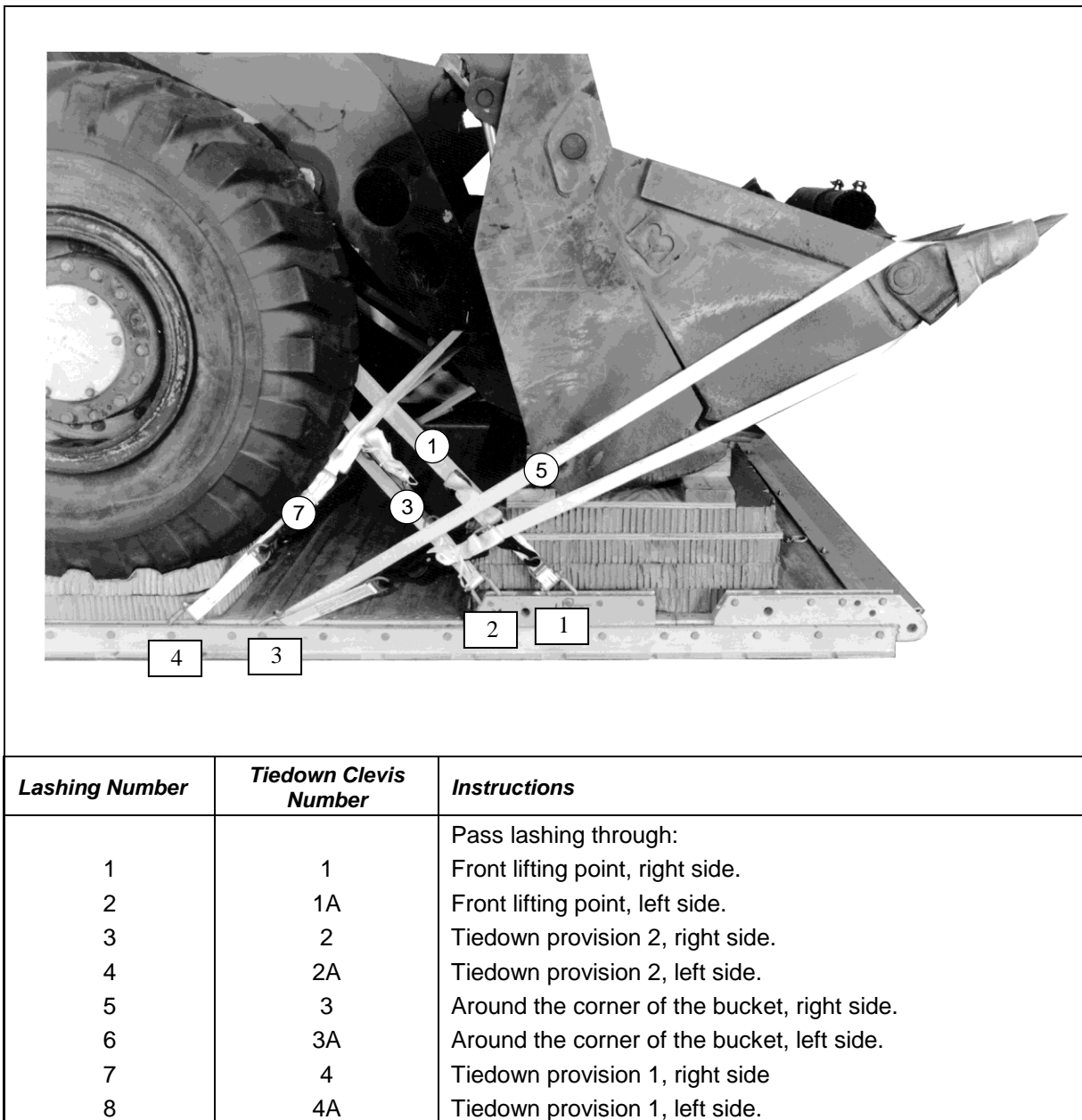


Figure 9-12. Lashings 1 Through 8 Installed

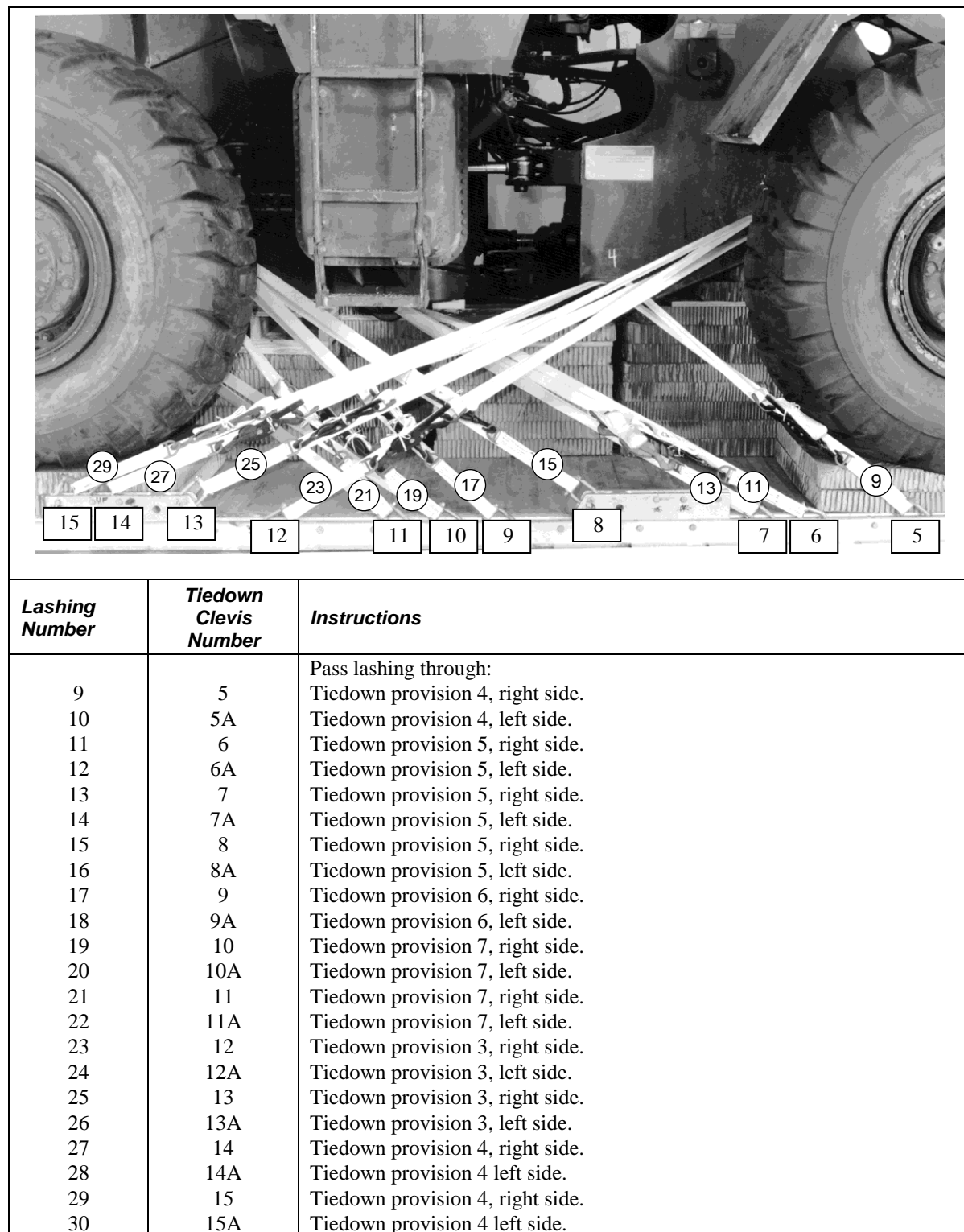


Figure 9-13. Lashings 9 Through 29 Installed

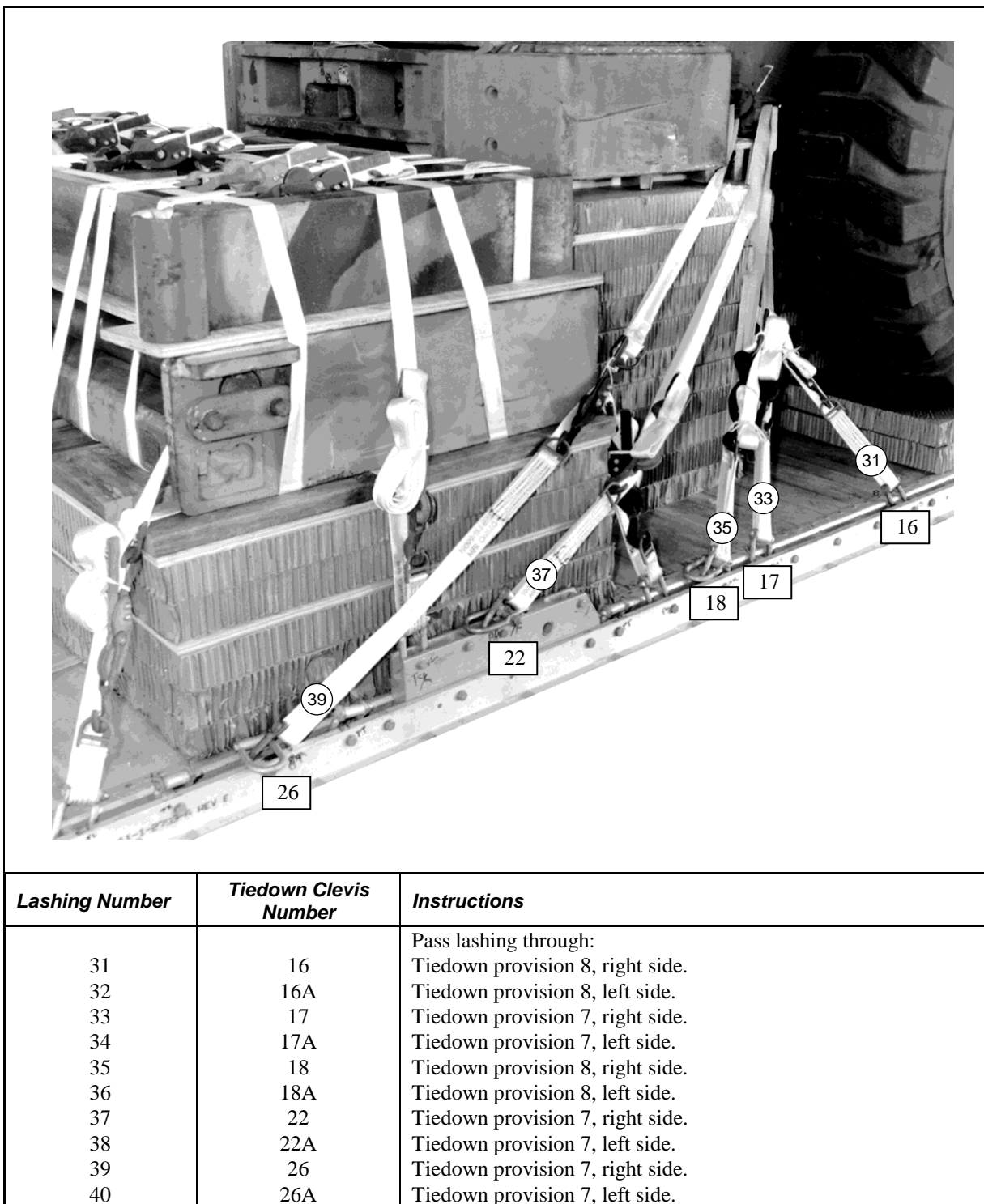
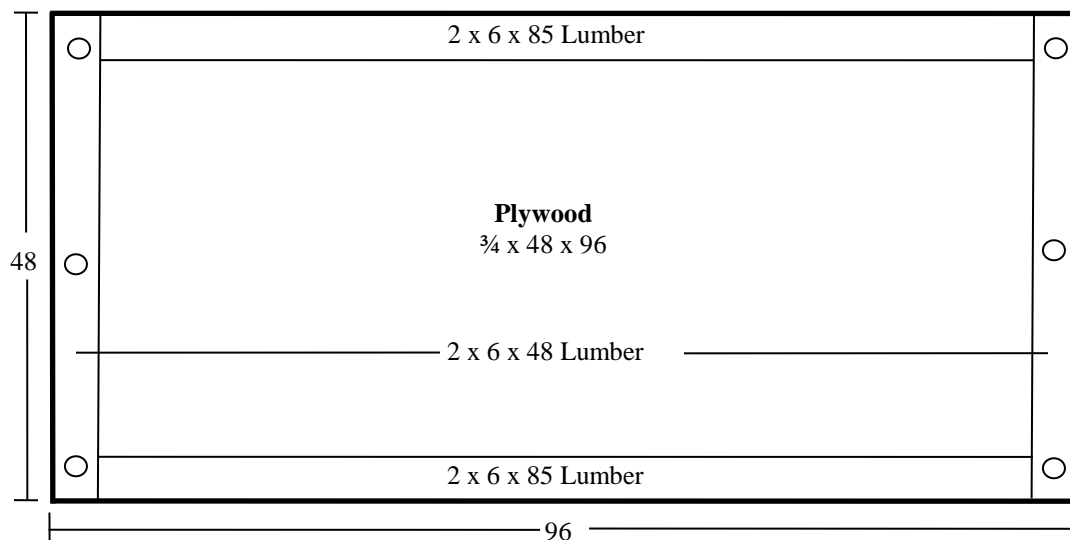


Figure 9-14. Lashings 31 Through 40 Installed

BUILDING PARACHUTE STOWAGE PLATFORM

9-15. Build the parachute stowage platform as shown in Figure 9-15.

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



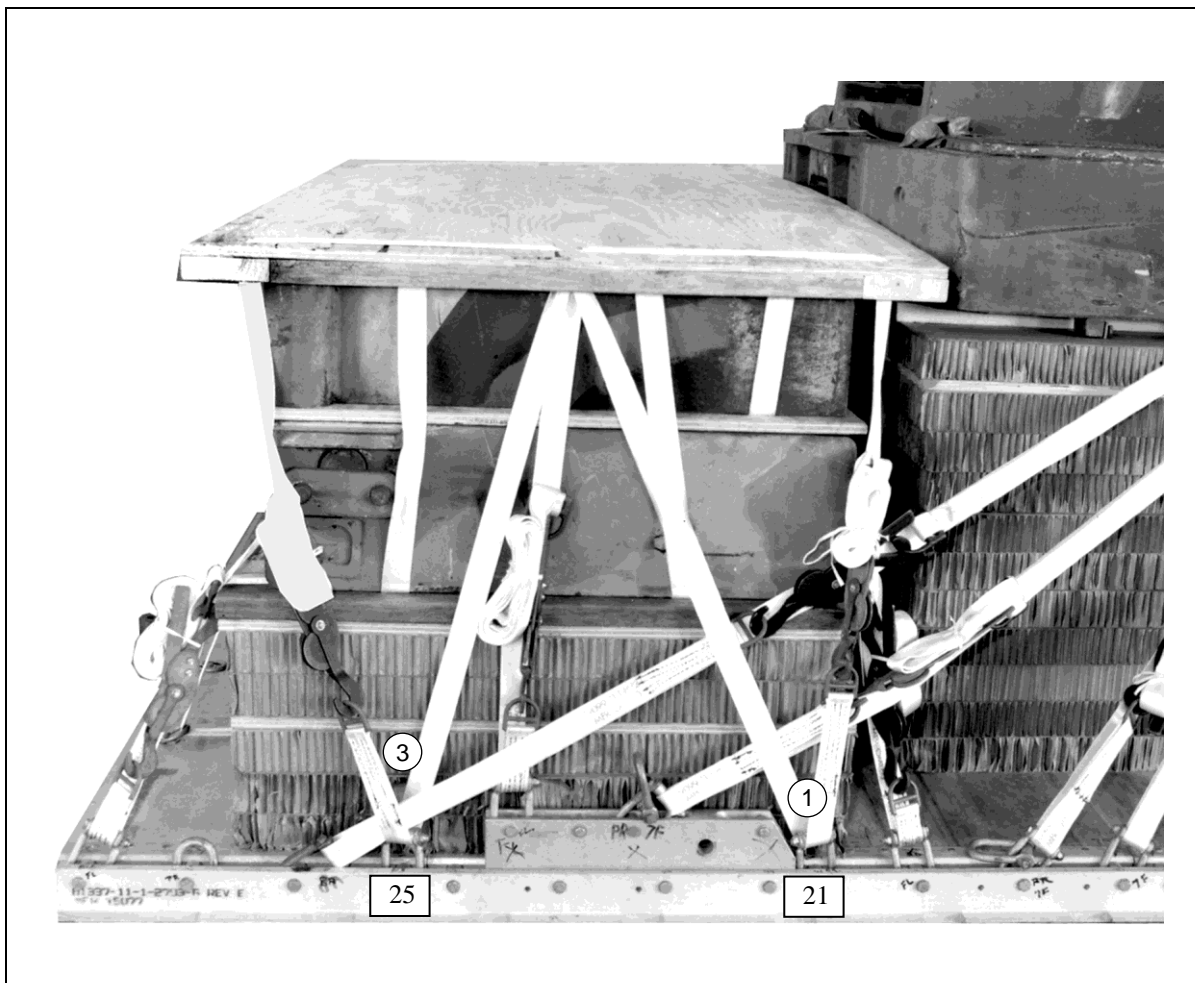
Step:

72. Use a 48- by 96- by 3/4-inch piece of plywood.
73. Nail a 2- by 6- by 48-inch piece of lumber along each side of the plywood using 8d nails.
74. Nail a 2- by 6- by 85-inch piece of lumber along the front and rear of the plywood using 8d nails.
75. Drill six 2-inch holes as shown.

Figure 9-15. Parachute Stowage Platform Built

INSTALLING PARACHUTE STOWAGE PLATFORM

9-16. Install the parachute stowage platform as shown in Figure 9-16.



Lashing Number	Tiedown Clevis Number	Instructions
1	21	Pass lashing:
2	21A	Through center and forward hole in stowage platform, right side.
3	25	Through center and forward hole in stowage platform, left side.
4	25A	Through center and aft hole in stowage platform, right side.
		Through center and aft hole in stowage platform, left side.

Figure 9-16. Parachute Stowage Platform Installed

STOWING CARGO PARACHUTES

9-17. Prepare, stow, and restrain eight G-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 9-17.

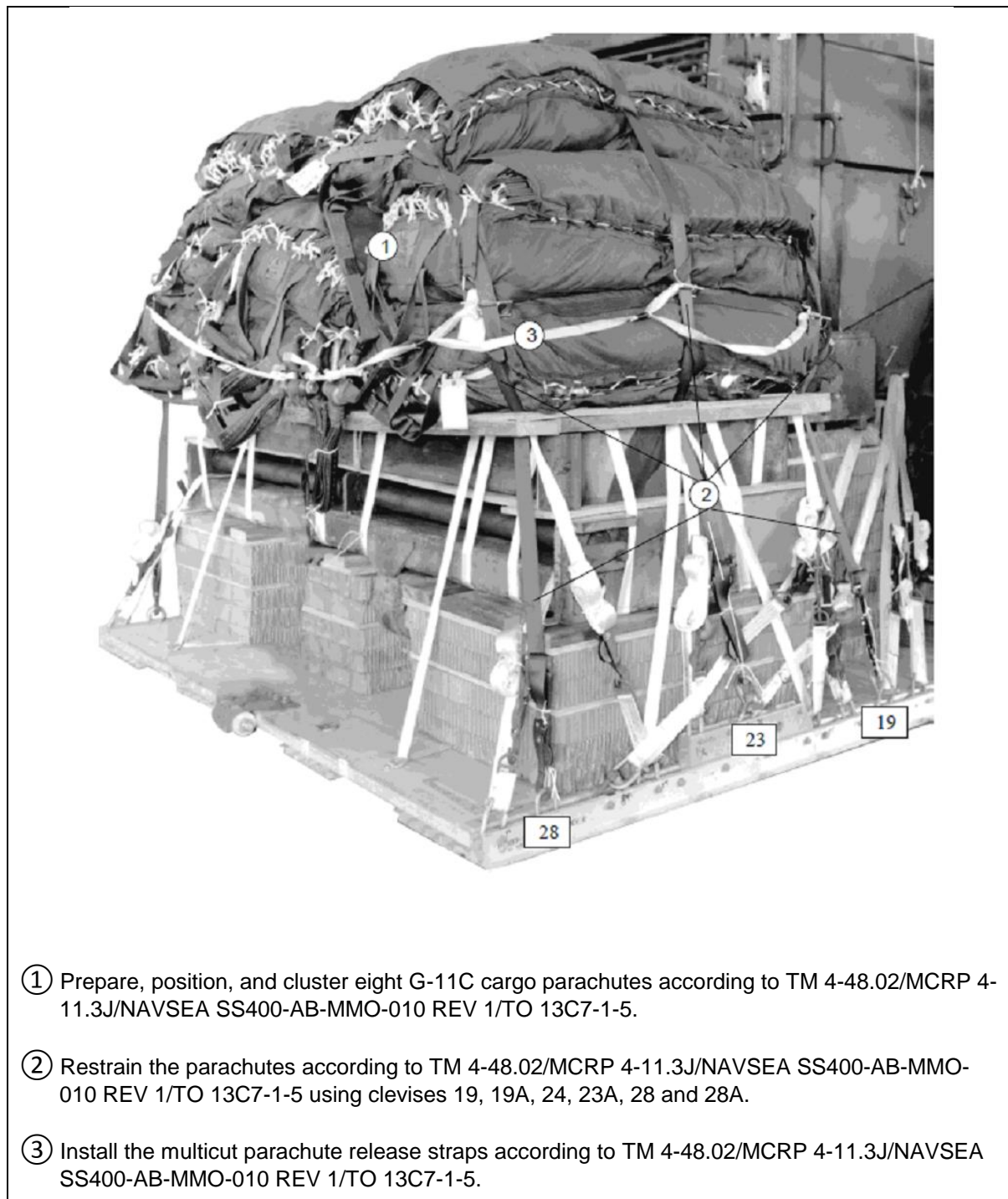


Figure 9-17. Cargo Parachutes Stowed

INSTALLING EXTRACTION SYSTEM

9-18. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 9-18.

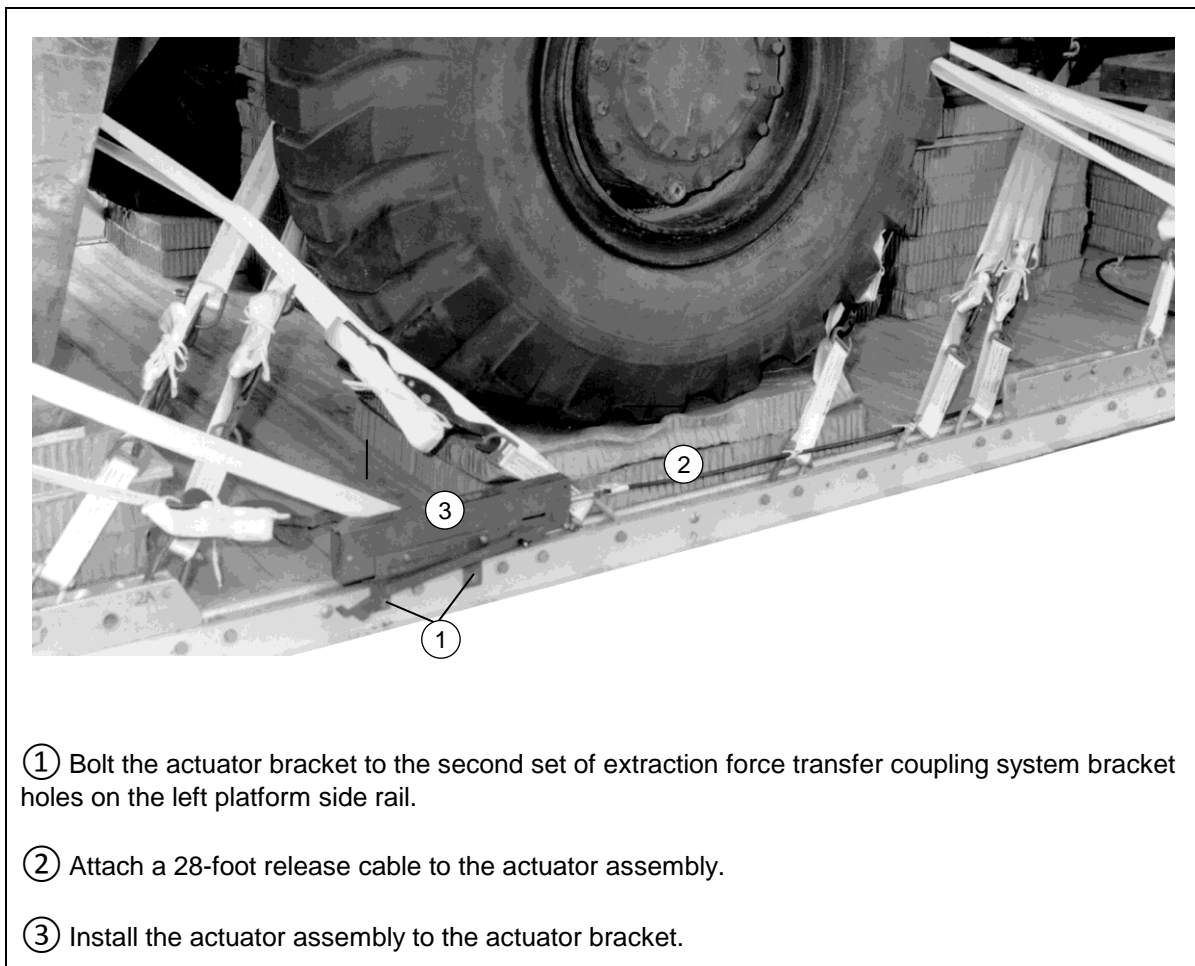
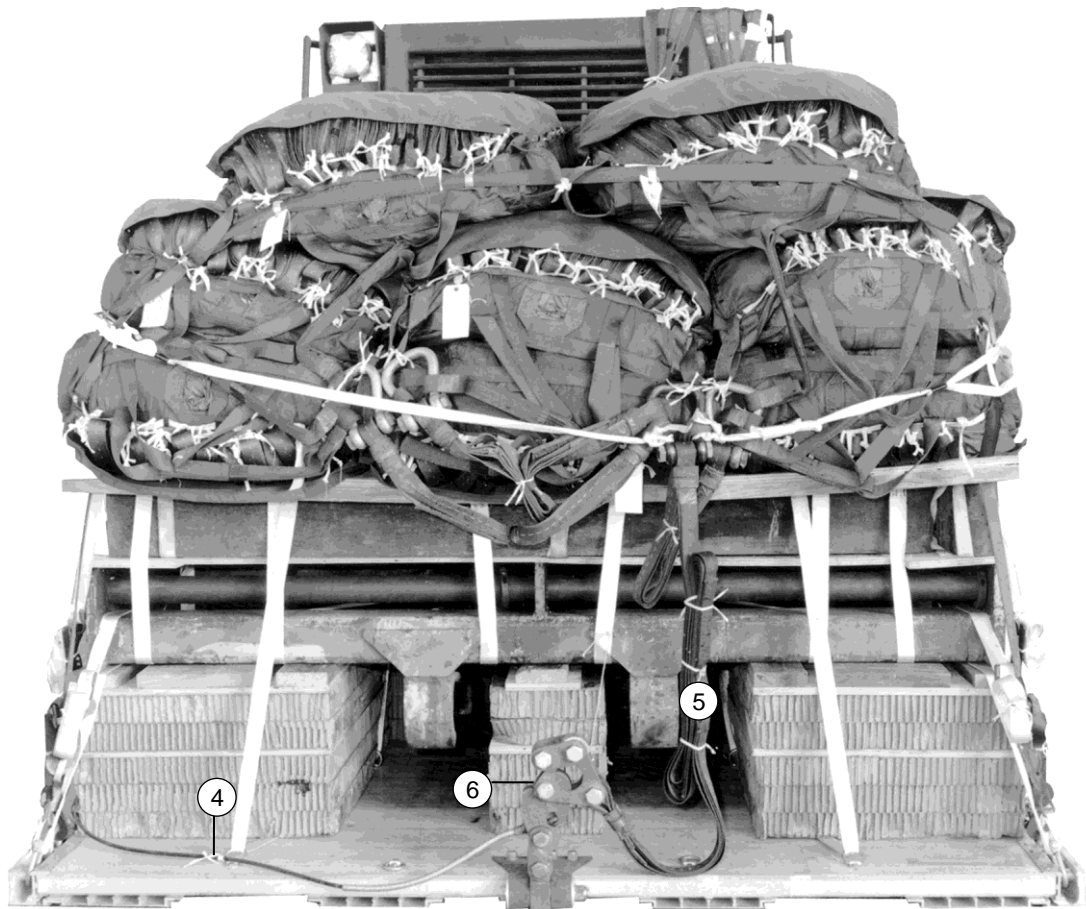


Figure 9-18. Extraction System Installed

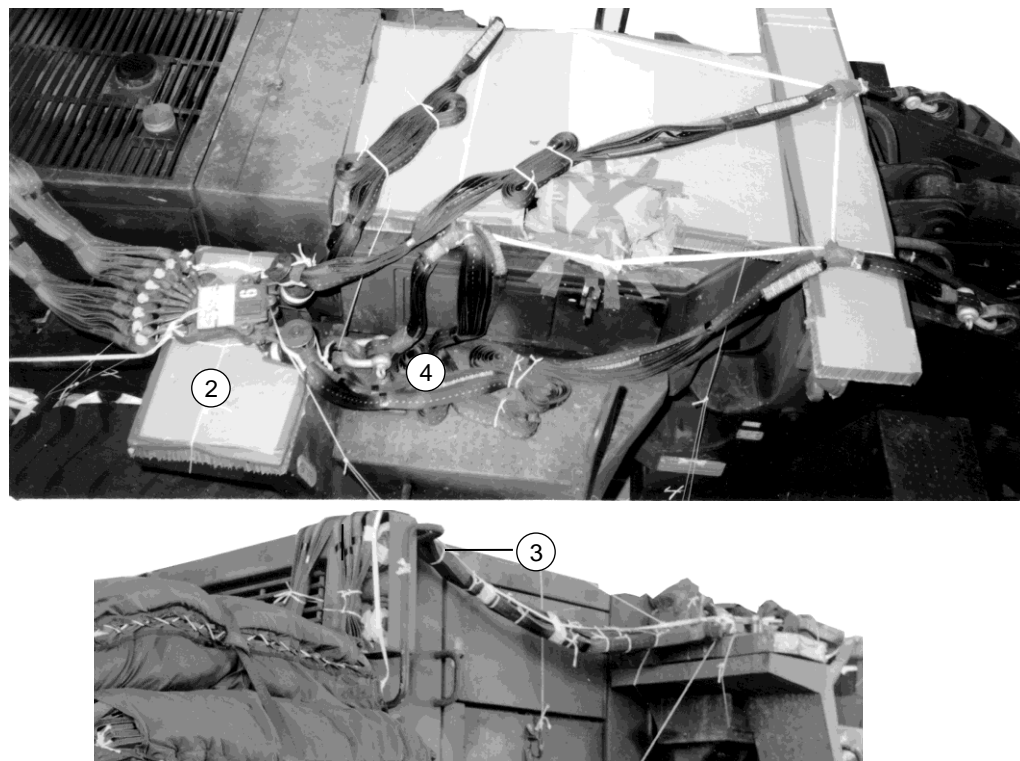


- ④ Safety tie the cable in convenient places on the platform with one turn type I, ¼-inch cotton webbing.
- ⑤ Attach a 9-foot (2 loop), type XXVI nylon sling as the deployment line. Fold and secure the excess line with type I, ¼-inch cotton webbing.
- ⑥ Install an adapter link assembly to the coupling link assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 9-18. Extraction System Installed (Continued)

INSTALLING M-2 PARACHUTE RELEASE ASSEMBLY

9-19. Install the M-2 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as described in Figure 9-19.



- ① Prepare an M-2 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 with a 25-foot arming lanyard.
 - ② Tie a piece of honeycomb on the right rear fender and place the M-2 release assembly on the honeycomb.
 - ③ Secure the riser extensions between the rear handle with type I, 1/4-inch cotton webbing.
- Note.** A riser extension stow may be cut to allow the riser extensions to meet the release.
- ④ Route the suspension slings to the right side of the scoop-loader. Secure the slings with type I, 1/4-inch cotton webbing.

Figure 9-19. M-2 Parachute Release Assembly Installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

9-20. Install the provisions for emergency restraints on the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. These restraints are used to restrain a loose platform only for this load. On the C-130 aircraft, no load using two 28-foot extraction parachutes will be restrained with the extraction parachutes deployed outside the C-130 aircraft

PLACING EXTRACTION PARACHUTE

9-21. Select the extraction parachute and extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the load for installation in the aircraft as well.

MARKING RIGGED LOAD

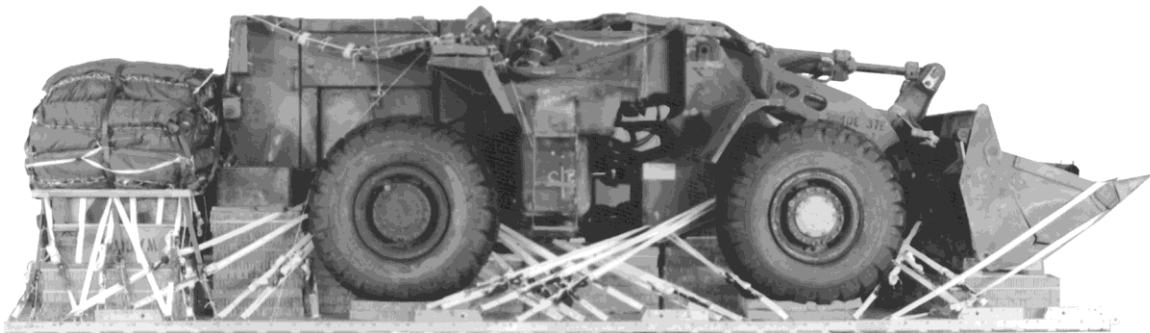
9-22. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 9-20. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

9-23. Use the equipment listed in Table 9-2 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.



RIGGED LOAD DATA

WEIGHT	39,860 Pounds
MAXIMUM WEIGHT	41,060 Pounds
HEIGHT	100 Inches
WIDTH.....	108 Inches
LENGTH	349 Inches
OVERHANG	13-17 Inches
Rear: extraction force transfer coupling system	18 Inches
Rear: extraction parachute jettison system.....	30 Inches
CENTER OF BALANCE (from the front edge of platform).....	166 Inches

Figure 9-20. 950B Scoop-loader with seven-foot forklift attachment rigged on a type V platform for low-velocity airdrop

Table 9-2. Equipment Required for Rigging the 950B Scoop-Loader with a Seven-Foot Fork Lift Attachment on a Type V Platform for Low-Velocity Airdrop

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-00-162-4979	Adapter, link assembly	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-00-162-4979	Adapter, link assembly	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-432-2516	Screw-pin	4
4030-00-678-8562	3 1/4-in (medium)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-157-652	Coupling, airdrop, extraction force	1
	Transfer w 28-ft cable	
1670-00-360-0328	Cover, clevis, large	8
8135-0-64-6958	Cushioning material, packaging, cellulose wadding	As required
	Frame support for honeycomb stack 7:	1
5510-00-220-6146	Lumber, 2- by 4- by 48-in	6
5530-00-128-4981	Plywood, 3/4- by 6- by 28-in	2
5530-00-128-4981	Plywood, 3/4- by 28- by 48-in	2
	Frame support for honeycomb stack 8:	1
5510-00-220-6146	Lumber, 2- by 4- by 27-in	6
5530-00-128-4981	Plywood, 3/4- by 27- by 48-in	2
	Frame support for honeycomb stack 9:	1
5510-00-220-6146	Lumber, 2- by 4- by 48-in	3
5530-00-128-4981	Plywood, 3/4- by 14- by 48-in	2
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line extraction:	
1670-01-064-4454	60-ft (6-loop), type XXVI nylon (C-130 aircraft)	1
1670-01-062-6312	120-ft (6-loop), type XXVI nylon (C-141 aircraft)	1
1670-00-006-2752	Link assembly, four-point	1
5510-00-220-6146	Lumber, 2- by 4-in:	
	12-in	4
	14-in	2
	28-in	4
5510-00-220-6148	Lumber, 2- by 6-in:	
	5-in	2
	8-in	2
	96-in	2
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 9-2. Equipment Required for Rigging the 950B Scoop-Loader with a Seven-Foot Fork Lift Attachment on a Type V Platform for Low-Velocity Airdrop (Continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5510-00-220-6274	Lumber, 4- by 4- by 26-in	4
	Nail, steel wire, common:	
5315-00-01 0-4659	8d	As required
5315-00-010-4661	10d	As required
5315-00-010-4663	16d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in:	39 sheets
	Parachute, cargo:	
1670-00-040-8135	28-ft, extraction, heavy- duty	2
	Parachute stowage platform:	
5530-00-128-4981	Plywood, 3/4-in:	
	48- by 96-in	1
5510-00-220-6148	Lumber, 2- by 6-in:	
	2- by 48-in	2
	2- by 85-in	2
	Platform, AD, type V, 28-ft:	
	Bracket:	
1670-01-162-2375	Inside EFTA	1
1670-01-162-2374	Outside EFTA	1
1670-01-162-2372	Clevis, load tiedown	56
1670-01-162-2376	Extraction bracket assembly	1
1670-01-247-2389	Suspension link	8
1670-01-162-2381	Tandem link	2
5530-00-128-4981	Plywood, 3/4-in:	5 Sheets
1670-01-097-8816	Release, cargo parachute, M-2, modified	1
	Reinforced toggle shaft	1
	Hardened sleeve bolts	4
	2 3/8-in steel spacers	4
	Hardened clevis bolts w sleeves	2
	Sling, cargo, airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extensions:	
	120-ft (2-loop), type XXVI nylon webbing	8
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 9-2. Equipment Required for Rigging the 950B Scoop-Loader with a Seven-Foot Fork Lift Attachment on a Type V Platform for Low-Velocity Airdrop (Continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-062-6310	For suspension: 11-ft (4-loop), type XXVI nylon webbing	4
1670-00-040-8319	Strap, parachute release, multicut	
8305-00-074-5124	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft 78	78
	Webbing:	
8305-00-268-2411	Cotton, type I, 1/4-inch	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, natural	As required
	ft = feet, in = inch, lb = pound, d = penny, gal = gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Chapter 10

Rigging 613WD Water Distributors on a Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

10-1. The 613WD water distributors (type I and II) are rigged on a 32-foot, type V airdrop platform for airdrop from C-130 and C-17 aircraft. The total rigged weight of the load is 37,350 for the type I and 37,800 for the type II water distributors. These loads require eight G-11 cargo parachutes. The 613WD water distributor is shown in Figure 10-1.

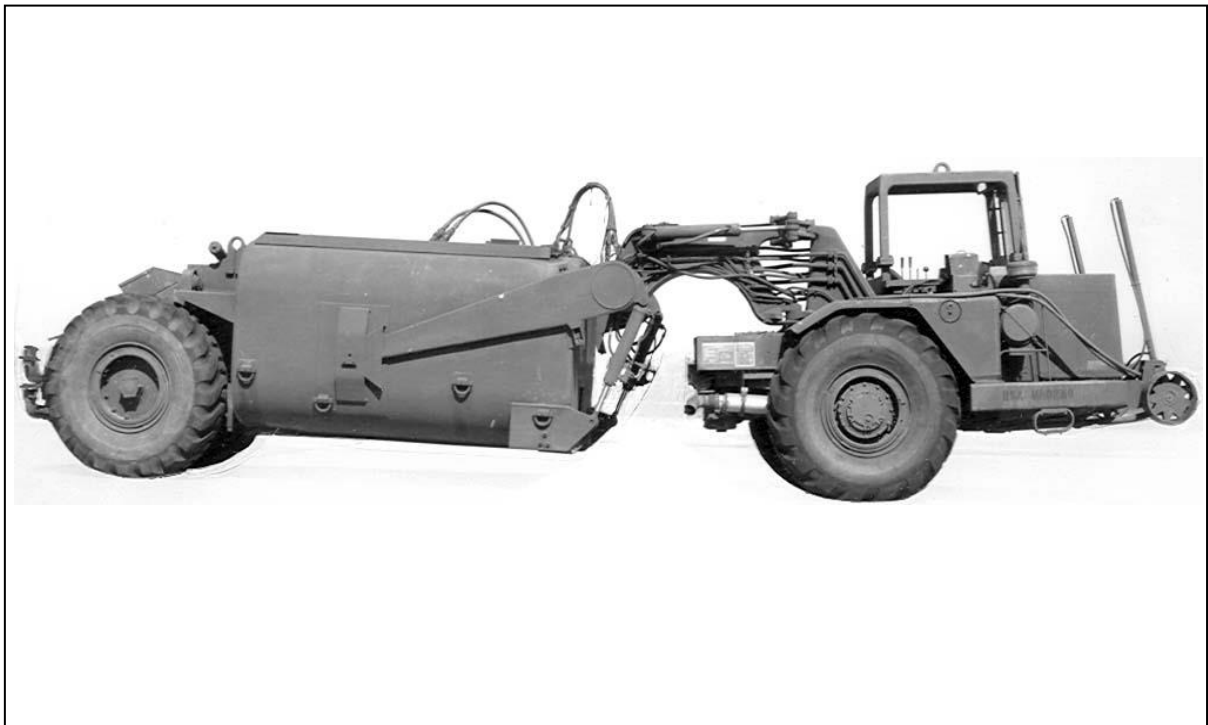


Figure 10-1. 613 Water Distributor

PREPARING PLATFORM

10-2. Prepare a 32-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22. Install 2 tandem links and 64 tiedown clevis assemblies as shown in Figure 10-2.

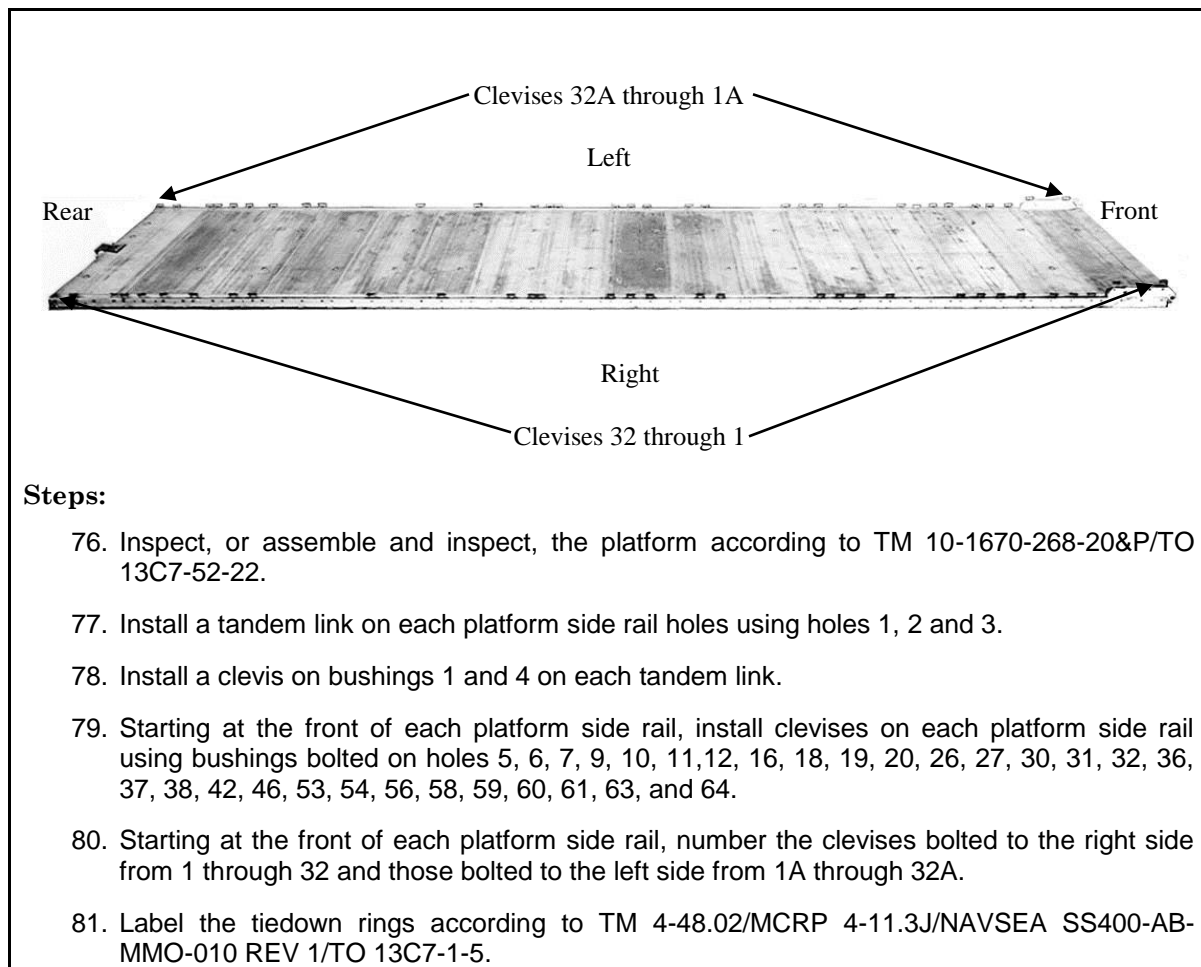


Figure 10-2. Platform Prepared

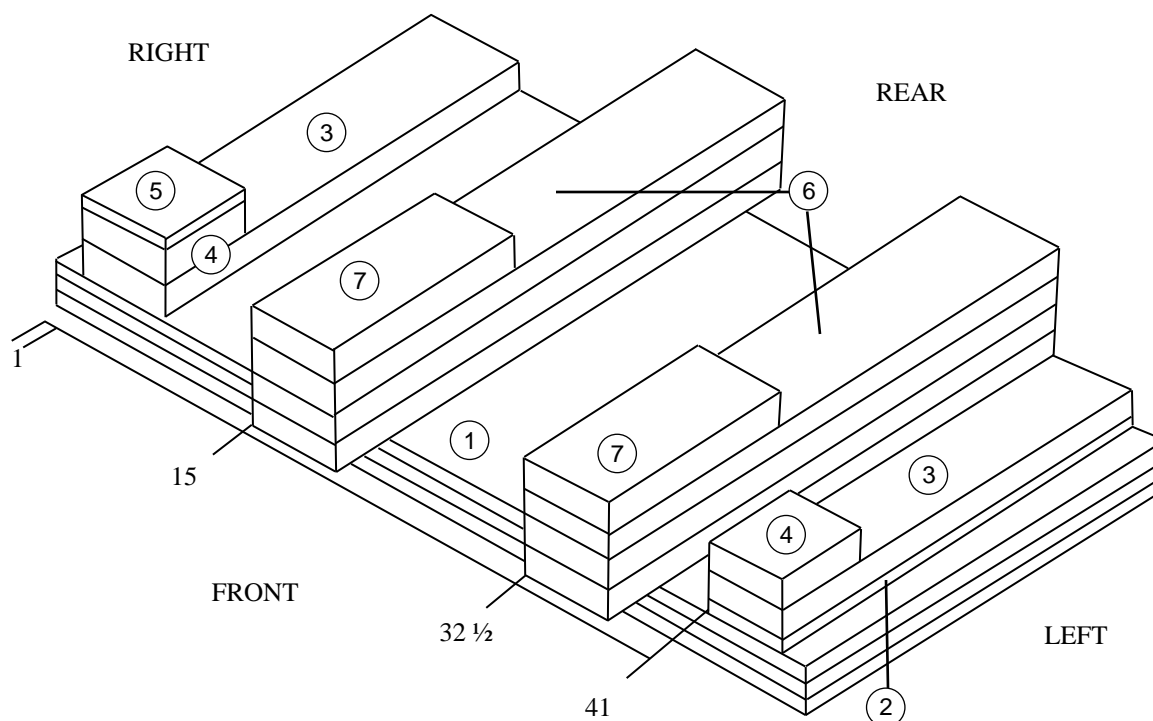
BUILDING AND POSITIONING HONEYCOMB STACKS

10-3. Build honeycomb stacks as shown in Figures 10-3 through 10-7 using the materials listed in Table 10-1. Position the honeycomb stacks on the platform as shown in Figure 10-8.

Table 10-1. Materials Needed for Honeycomb Stacks

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	3	48	24	¾ inch Plywood	See Figure 10-3
	1	6	24	¾ inch Plywood	
	2	2 X 6	24	Lumber	
	2	2 X 6	6	Lumber	
	1	6	6	¾ inch Plywood	
	6	2 X 6	30	Lumber	
	2	2 X 6	12	Lumber	
	5	48	24	Honeycomb	
2	6	24	118	¾ inch Plywood	See Figure 10-4
	1	24	118	Honeycomb	
3	6	24	118	¾ inch Plywood	See Figure 10-4
	1	24	118	Honeycomb	
4	1	37½	24	¾ inch Plywood	See Figure 10-5
	2	40	32	¾ inch Plywood	
	1	40	32	¼ inch Plywood	
	3	24 7/8	19	¾ inch Plywood	
	3	24	19	¾ inch Plywood	
	1	32½	5½	2- by 6-inch Lumber	
	1	37½	5½	2- by 6-inch Lumber	
	1	18	5½	2- by 6-inch Lumber	
	1	29 3/8	5½	2- by 6-inch Lumber	
	6	40	33	Honeycomb	
5	7	18	18	Honeycomb	See Figure 10-6
6	3	48	60	¾ inch Plywood	See Figure 10-7
	4	7¼	50	2- by 6-inch Lumber	
	1	7¼	33	2- by 6-inch Lumber	
	6	48	60	Honeycomb	
	1	48	30	Honeycomb	
	2	12	30	Honeycomb	

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



- ① Glue and nail three 48- by 24-inch pieces of $\frac{3}{4}$ -inch plywood together.
- ② Glue, place and nail a 6-by 24- by $\frac{3}{4}$ -inch piece of plywood 41 inches from the right side, flush with the front and rear.
- ③ Glue, place and nail two 2-by 6- by 24-inch pieces of lumber, one 41 inches from the right and the other 1 inch from the right side flush with the front and rear.
- ④ Glue, place and nail two 2- by 6- by 6-inch pieces of lumber on top of the lumber in step 3 flush with the front edge.
- ⑤ Glue, place and nail one 6- by 6-inch piece of $\frac{3}{4}$ -inch plywood on top of the right side piece of lumber in step 4.
- ⑥ Glue, place and nail two stacks of three 2- by 6- by 30-inch pieces of lumber, one 32 $\frac{1}{2}$ inches from the right side and the other 15 inches from the right side with 3 inches overhang on the front and rear end.
- ⑦ Glue, place and nail two 2- by 6- by 12-inch pieces of lumber on top of the lumber in step 6 flush with the front end.

Figure 10-3. Honeycomb Stack 1 Prepared

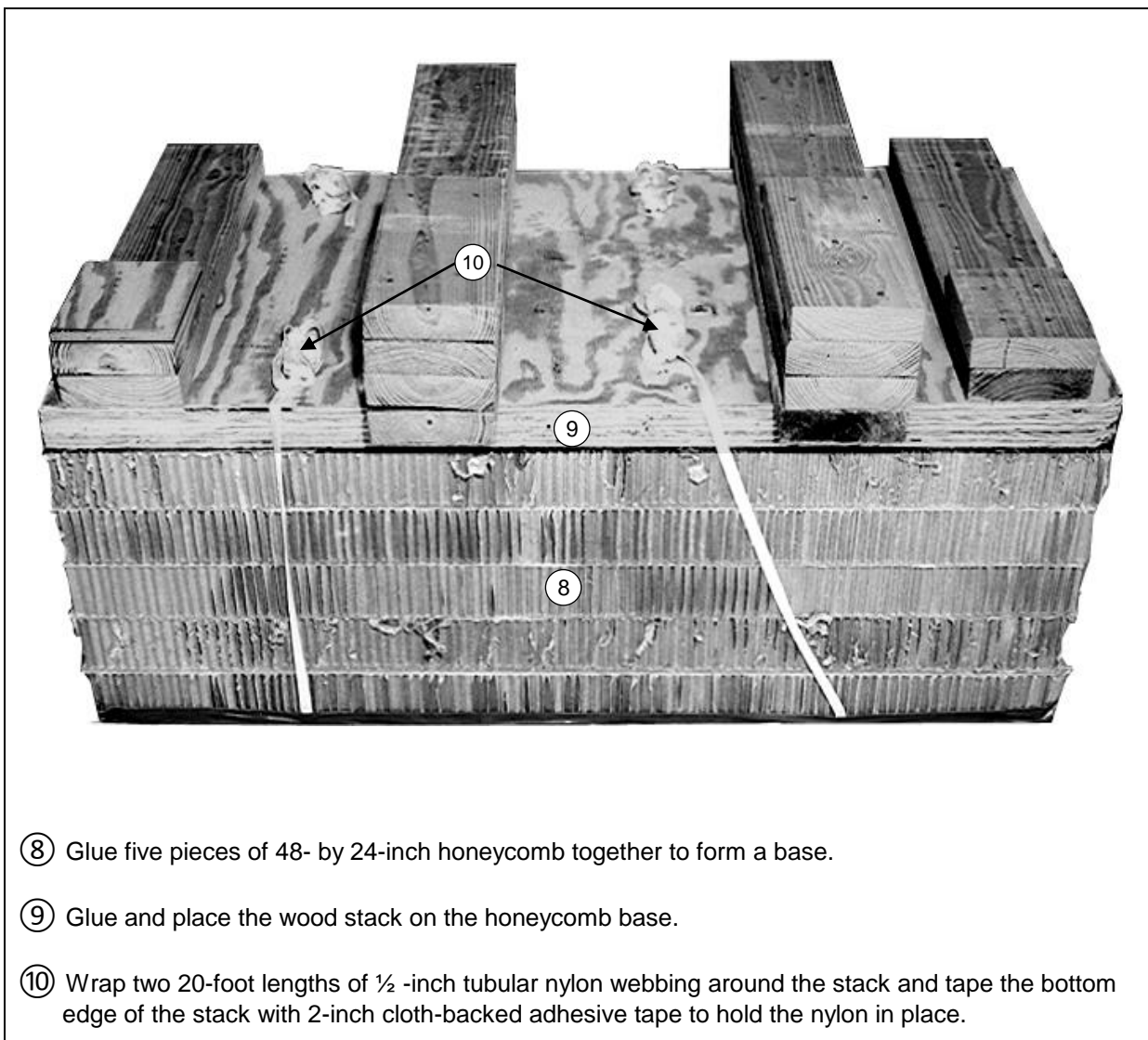


Figure 10-3. Honeycomb Stack 1 Prepared (Continued)

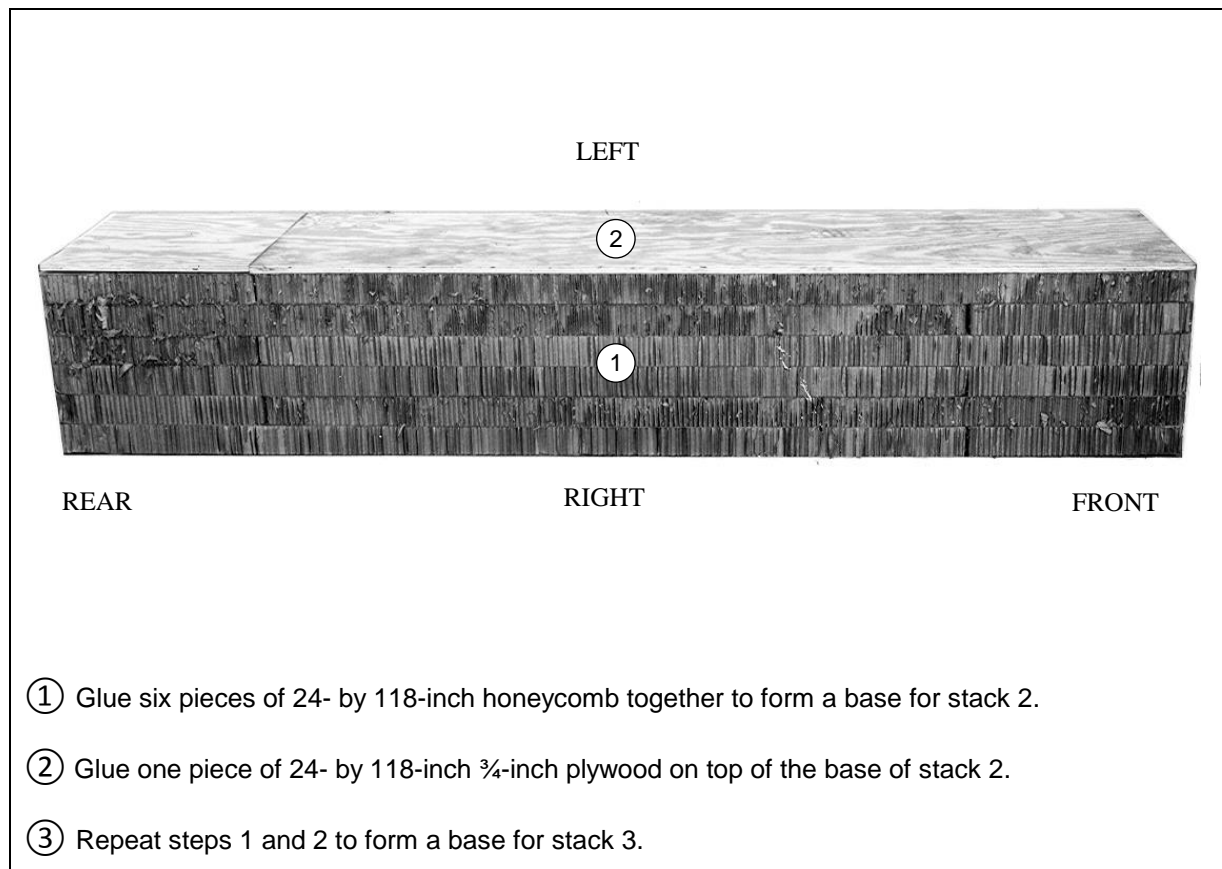
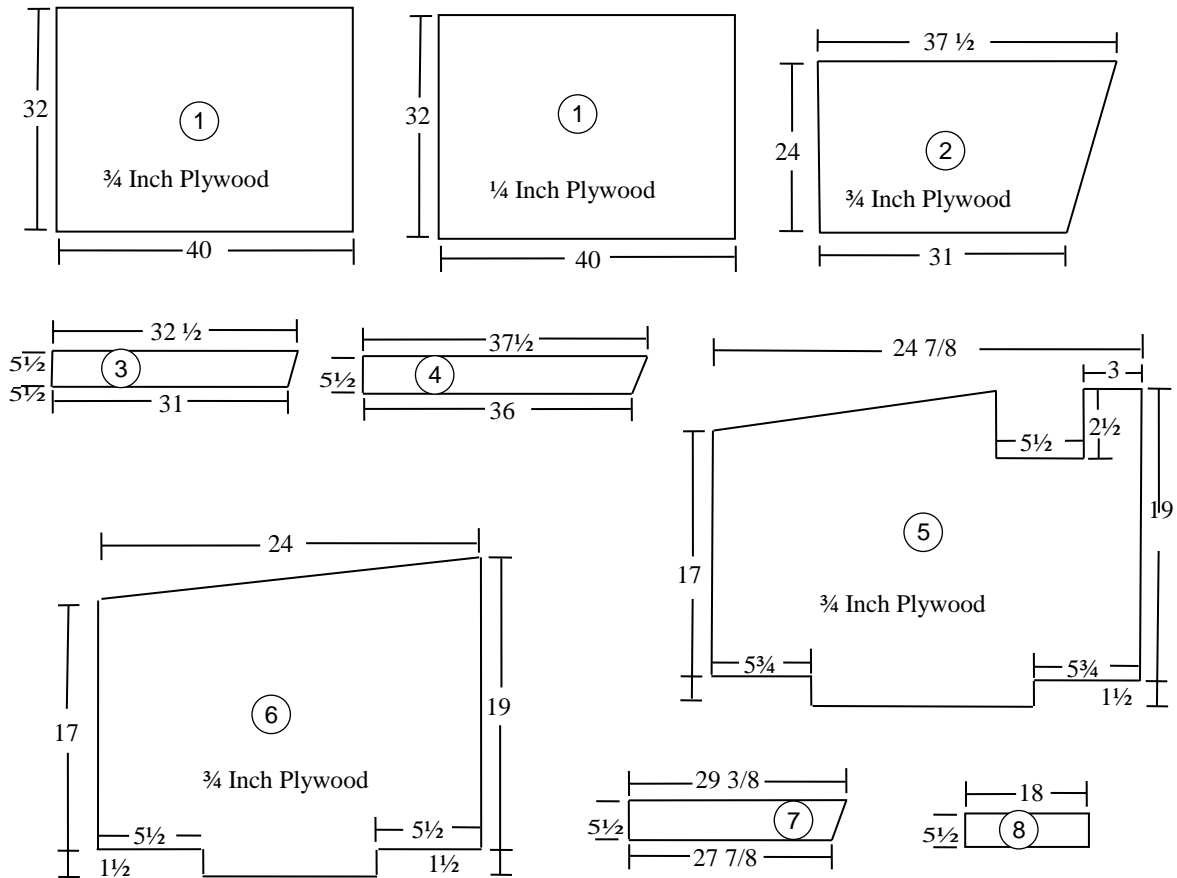


Figure 10-4. Honeycomb Stacks 2 and 3 Prepared

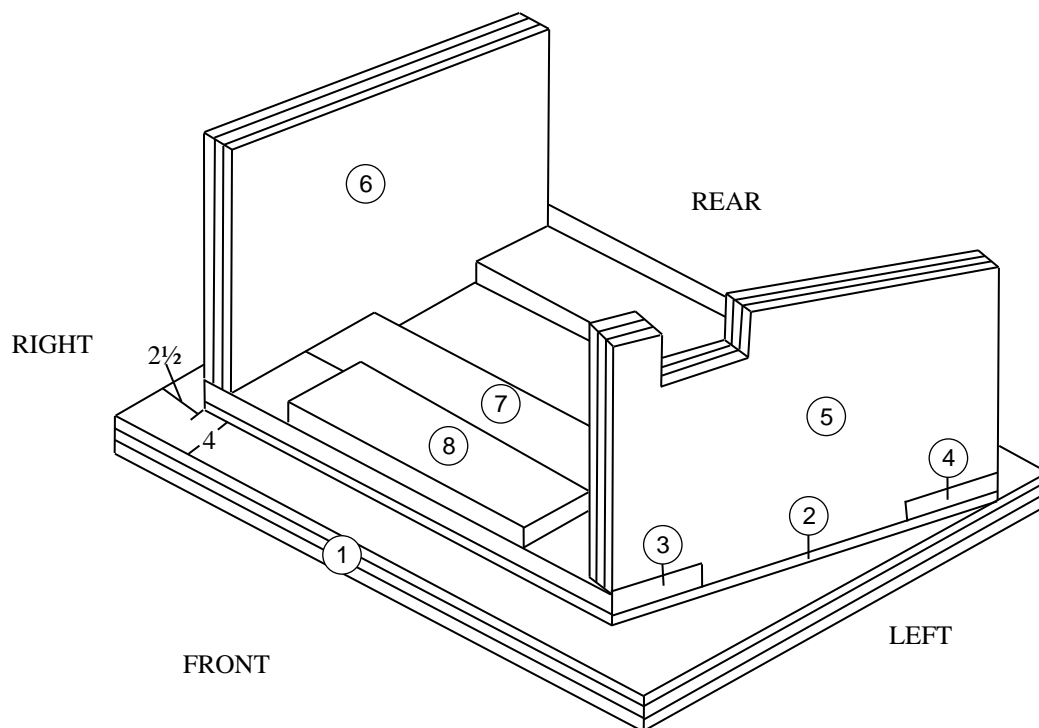
- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



ITEM NUMBER	PIECES	WIDTH	LENGTH	MATERIAL
1	2	40	32	3/4-inch Plywood
1	1	40	32	1/4-inch Plywood
2	1	31 / 37 1/2	24	3/4-inch Plywood
3	1		31 / 32 1/2	2- by 6-inch Lumber
4	1		36 / 37 1/2	2- by 6-inch Lumber
5	3	24 7/8	17 / 19	3/4-inch Plywood
6	3	24	17 / 19	3/4-inch Plywood
7	1		27 7/8 / 29 3/8	2- by 6-inch Lumber
8	1		18	2- by 6-inch Lumber

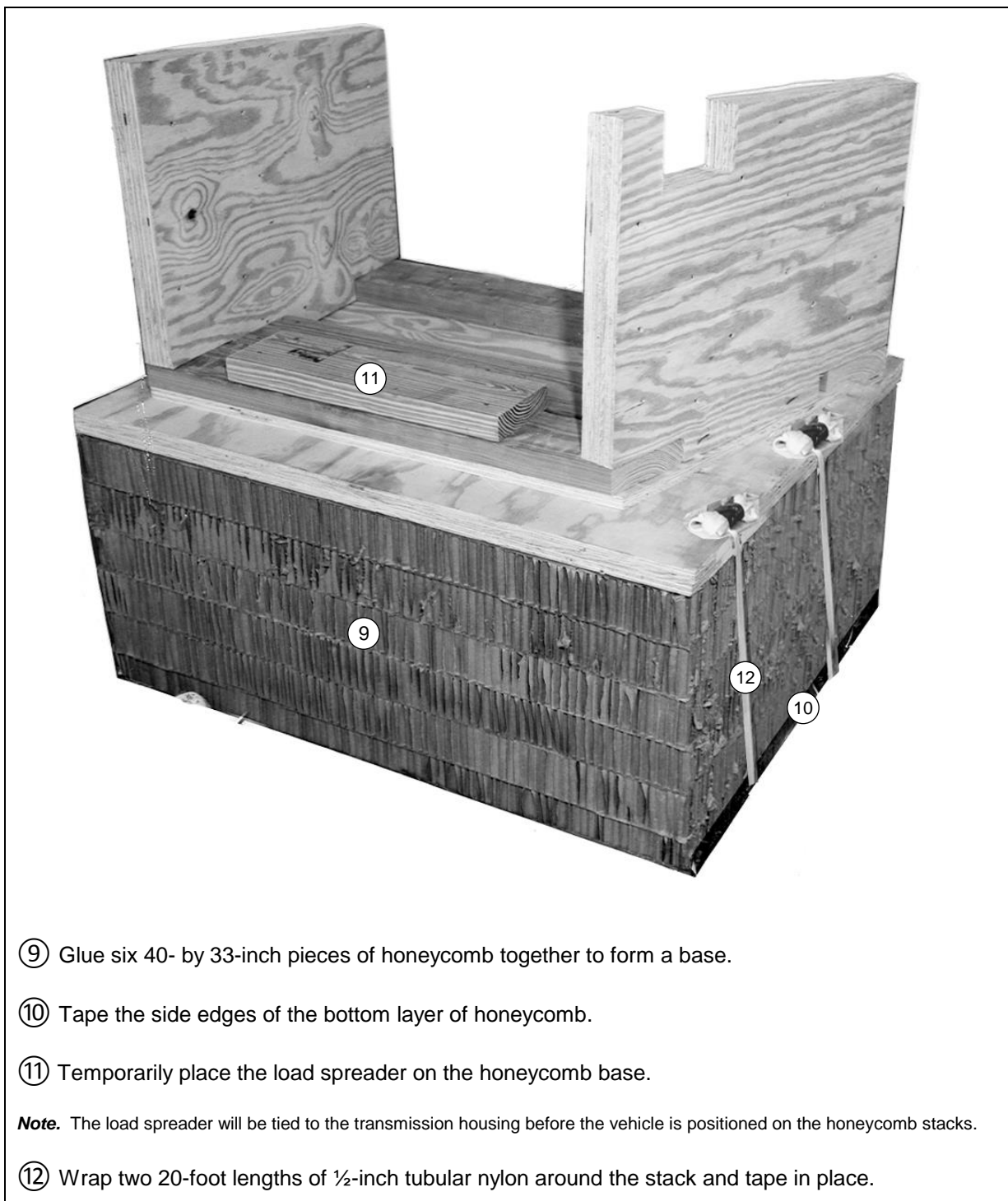
Figure 10-5. Honeycomb Stack 4 Prepared

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



- ① Glue two 32- by 40- by $\frac{3}{4}$ -inch pieces of plywood and one 32- by 40- by $\frac{1}{4}$ -inch piece plywood to form the base.
- ② Glue and nail one 24- by 31- by $37\frac{1}{2}$ - by $\frac{3}{4}$ -inch piece of plywood with the 31 inch side $2\frac{1}{2}$ inches from the right side and 4 inches from the front.
- ③ Glue and nail one 2- by 6- by 31- by $32\frac{1}{2}$ inch piece of lumber flush with the front and side of step 2 plywood.
- ④ Glue and nail one 2- by 6- by 36- by $37\frac{1}{2}$ -inch inch piece of lumber flush with the rear and sides of plywood.
- ⑤ Glue three pieces of 17- by 19- by $24\frac{7}{8}$ - by $\frac{3}{4}$ - inch plywood together, place the left side on top and flush with the left side of the lumber in step 3 and 4 and nail in place.
- ⑥ Glue three pieces of 17- by 19- by 24- by $\frac{3}{4}$ - inch plywood together, place the right side on top and flush with the right side of the lumber in step 3 and 4 and nail in place.
- ⑦ Place and nail one 2- by 6- by $27\frac{7}{8}$ (front)- by $29\frac{3}{8}$ (rear)- inch piece of lumber against the rear of the 2- by 6-inch lumber in step 3.
- ⑧ Center and nail one 2- by 6- by 18- inch piece of lumber on top of lumber in step 3 and between the plywood in steps 5 and 6.

Figure 10-5. Honeycomb Stack 4 Prepared (Continued)



⑨ Glue six 40- by 33-inch pieces of honeycomb together to form a base.

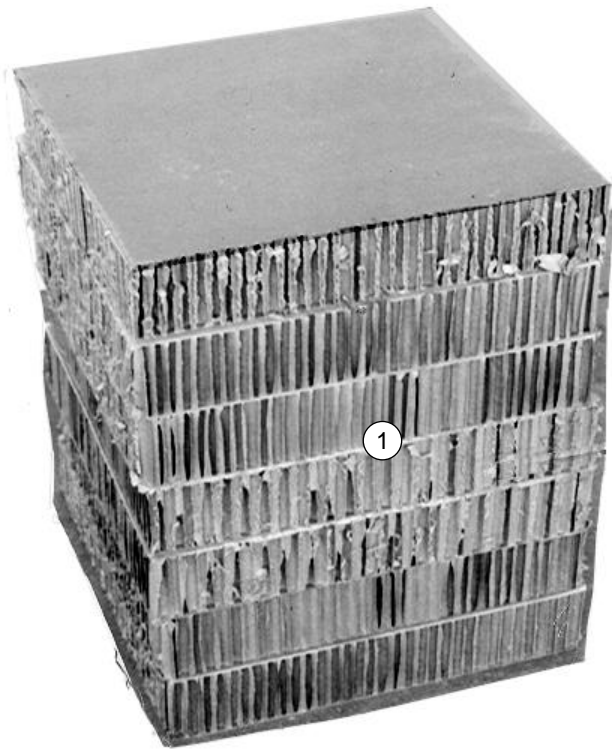
⑩ Tape the side edges of the bottom layer of honeycomb.

⑪ Temporarily place the load spreader on the honeycomb base.

Note. The load spreader will be tied to the transmission housing before the vehicle is positioned on the honeycomb stacks.

⑫ Wrap two 20-foot lengths of ½-inch tubular nylon around the stack and tape in place.

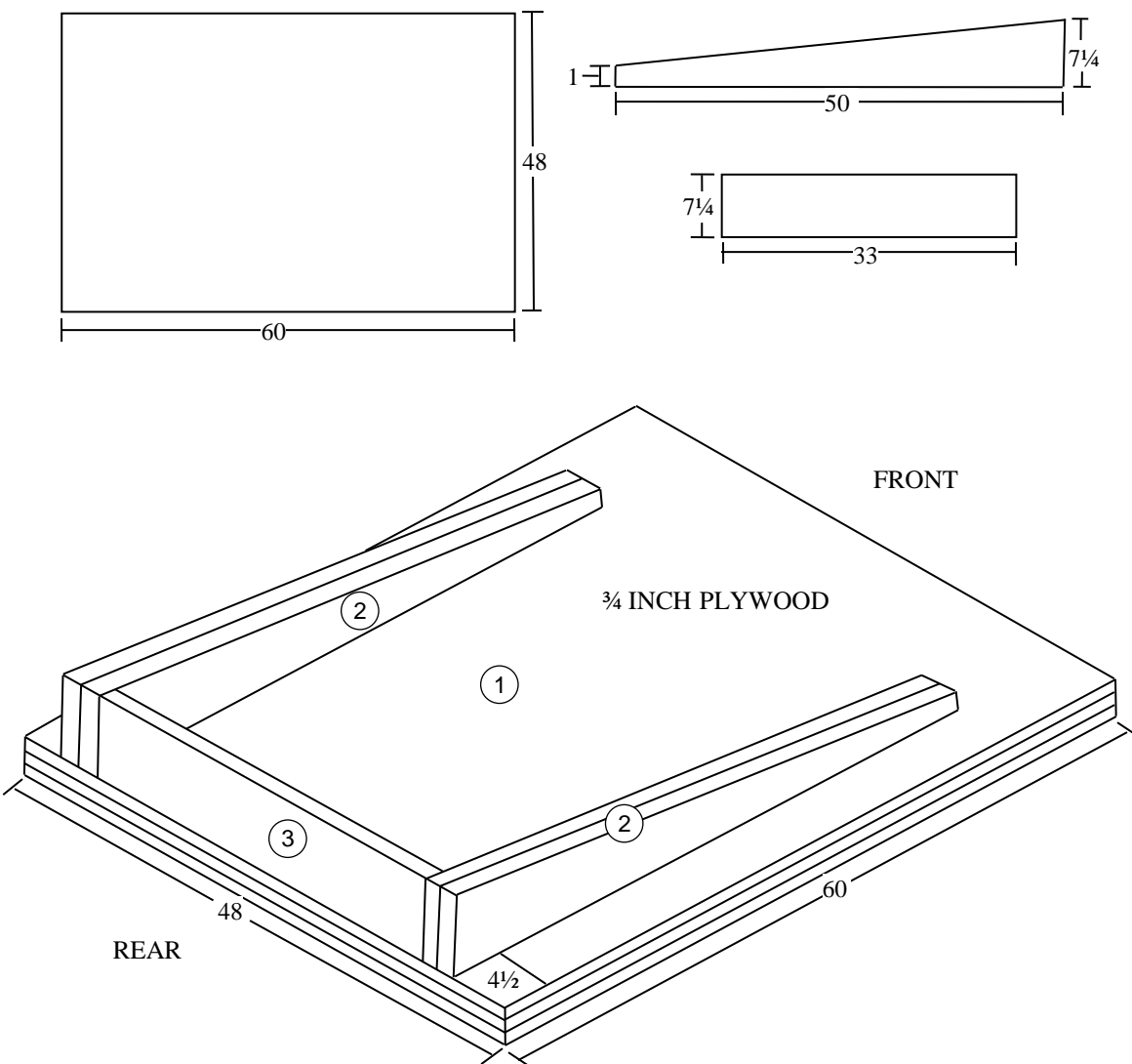
Figure 10-5. Honeycomb Stack 4 Prepared (Continued)



- ① Glue seven pieces of 18- by 18-inch honeycomb together to form a base for stack 5.

Figure 10-6. Honeycomb Stack 5 Prepared

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



- ① Glue and nail three 48- by 60- by $\frac{3}{4}$ -inch pieces of plywood together to form a base.
- ② Glue and nail two 1- by 7 $\frac{1}{4}$ - by 33-inch piece of lumber together. Glue and nail to the plywood with the 7 $\frac{1}{4}$ -inch side flush with the front and 4 $\frac{1}{2}$ inches in from each sides.
- ③ Glue and nail one 7 $\frac{1}{4}$ - by 33-inch piece of lumber flush with the rear and between the lumber in steps 2.

Figure 10-7. Honeycomb Stack 6 Prepared

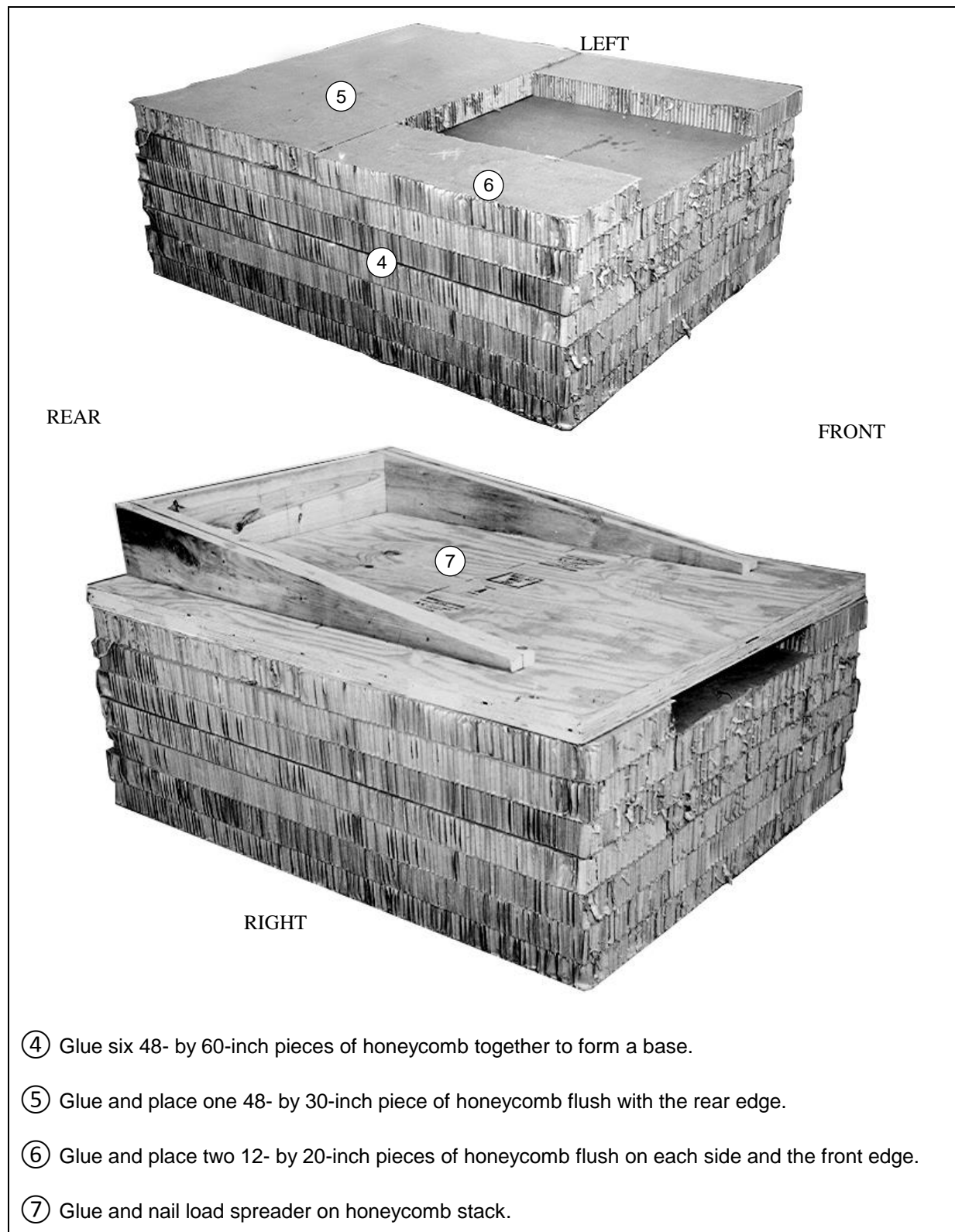


Figure 10-7. Honeycomb Stack 6 Prepared (Continued)

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.

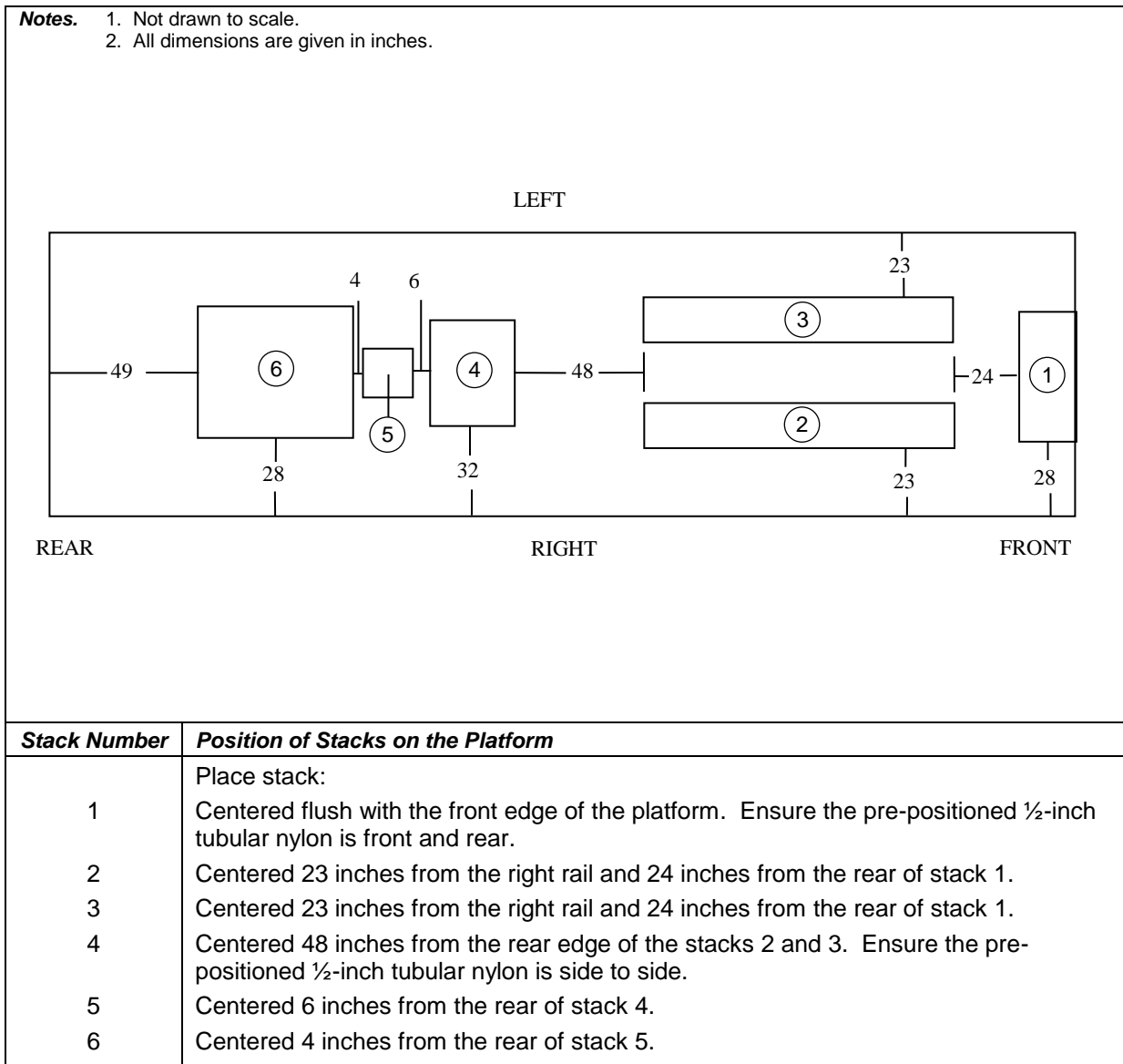


Figure 10-8. Honeycomb Stacks Positioned on the Platform

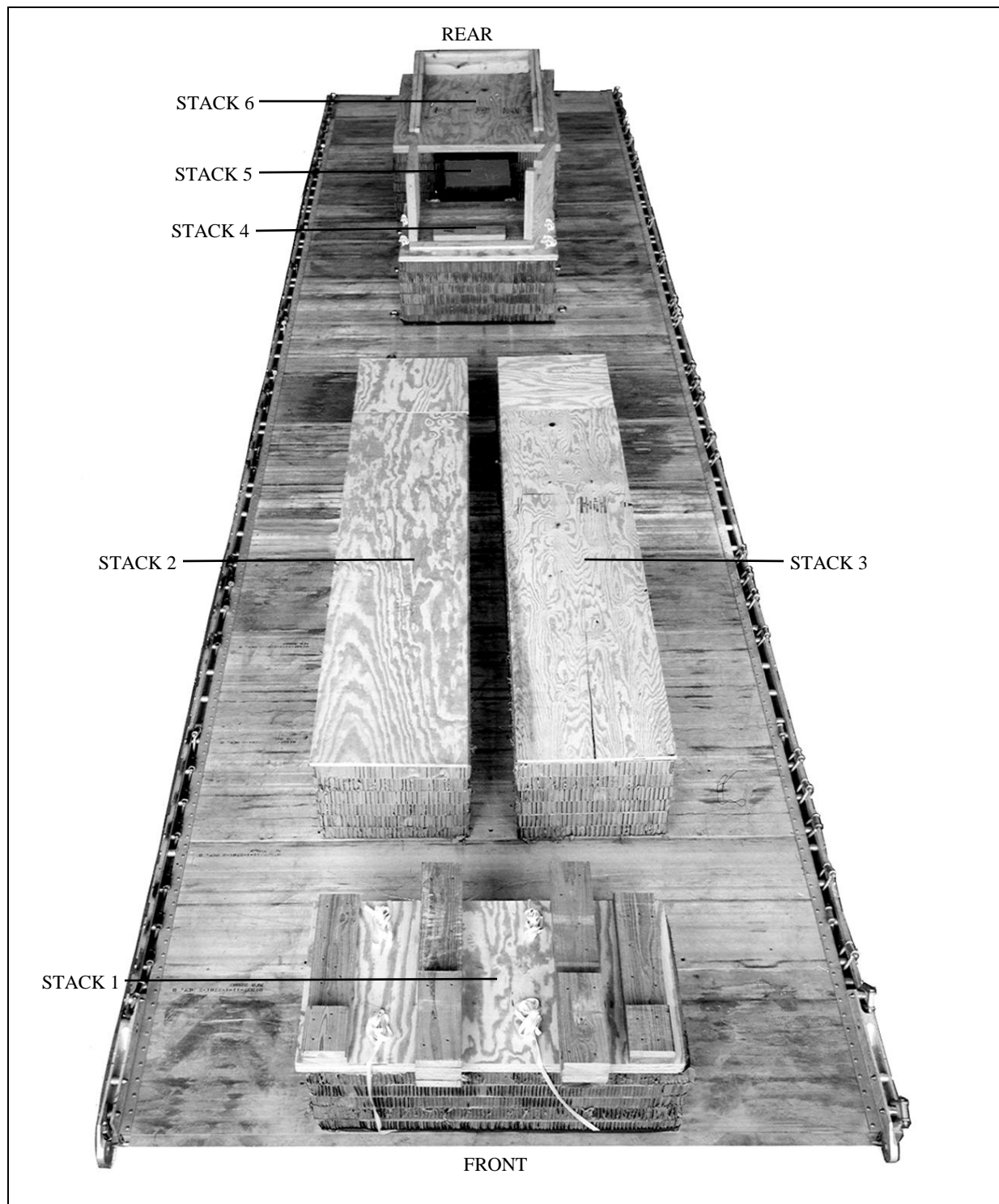


Figure 10-8. Honeycomb Stacks Positioned on the Platform (Continued)

PREPARING THE 613WD TYPE I AND TYPE II WATER DISTRIBUTOR BEFORE DELIVERY TO THE RIGGING SITE

10-4. Prepare the 613WD type I and type II water distributor before delivery to the rigging site as follows: Drain all water from the unit to include the main and priming tanks and distribution lines. Make sure the fuel tank is no more than ½ full. Adjust the tire pressure to 17 psi in the front tires and 24 psi in the rear tires. Make sure the battery and battery compartment complies with AFMAN 24-204/TM 38-250.

10-5. For the type I distributor: Remove the IAT kit, the front load transfer axle, hydraulic cylinders, control valve, hose assemblies, auxiliary load transfer wheels, windshield and ROPS.

10-6. For the type II distributor: Remove the EAT kit, steering axle, axle mounting brackets, auxiliary fuel tanks, jack stands, skid plate, mounts, and mounting brackets on each side of the transmission.

CAUTION

Support the transmission during removal of the transmission mounting brackets and reinstallation of the mounting bolts. Also, place 3/8-inch spacers under the bolt heads before they are reinstalled.

PREPARING THE 613WD TYPE I AND TYPE II WATER DISTRIBUTOR AT THE RIGGING SITE

10-7. Prepare the 613WD type I and type II water distributor at the rigging site as shown in Figures 10-9 through 10-17.

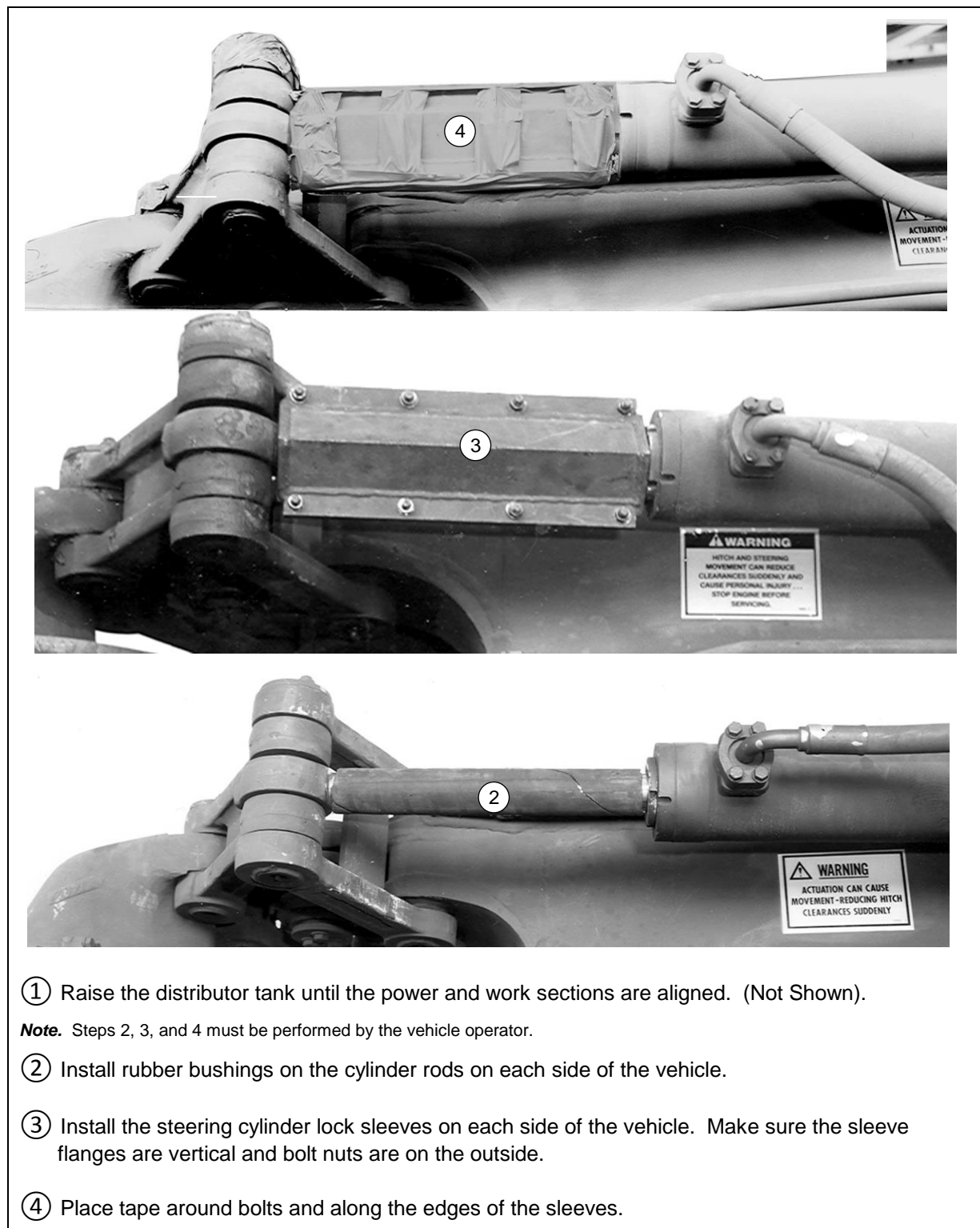
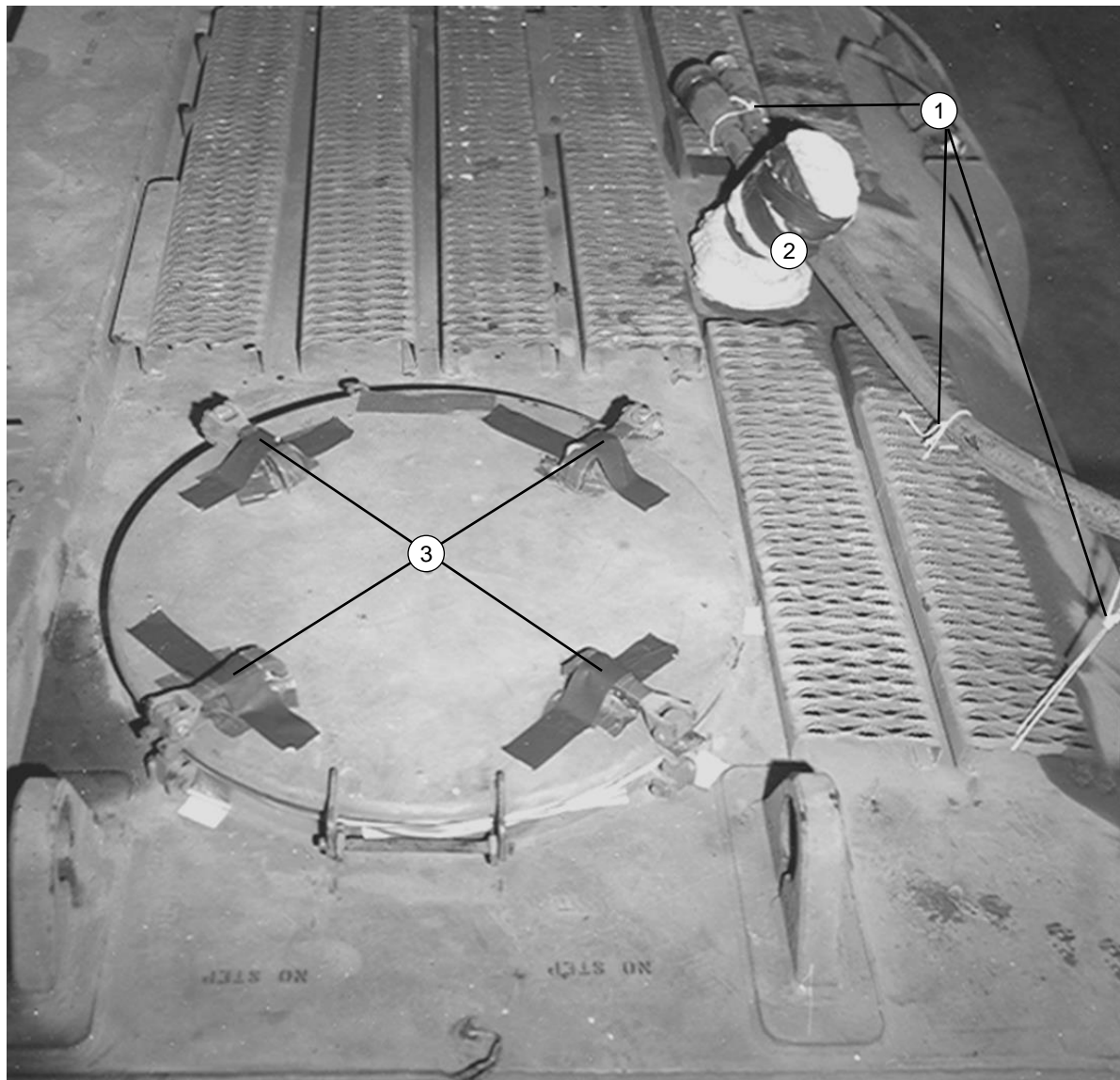
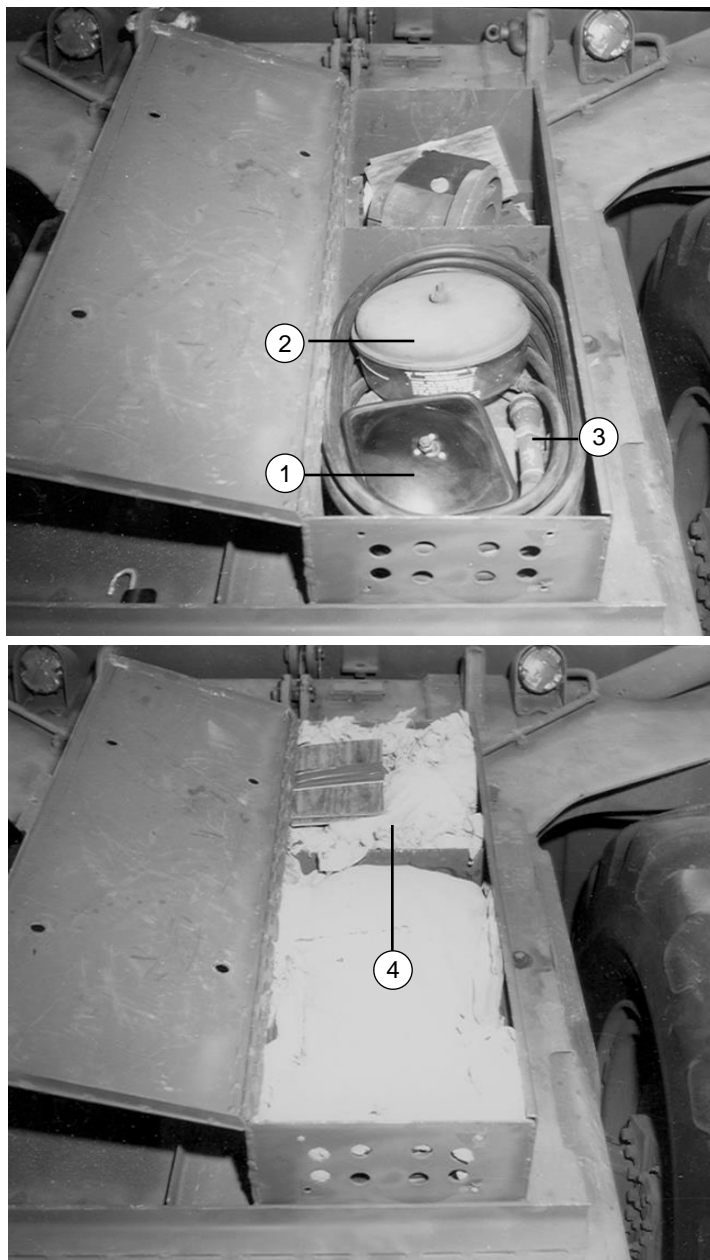


Figure 10-9. Steering Cylinder Rod Lock Sleeves Installed and Taped



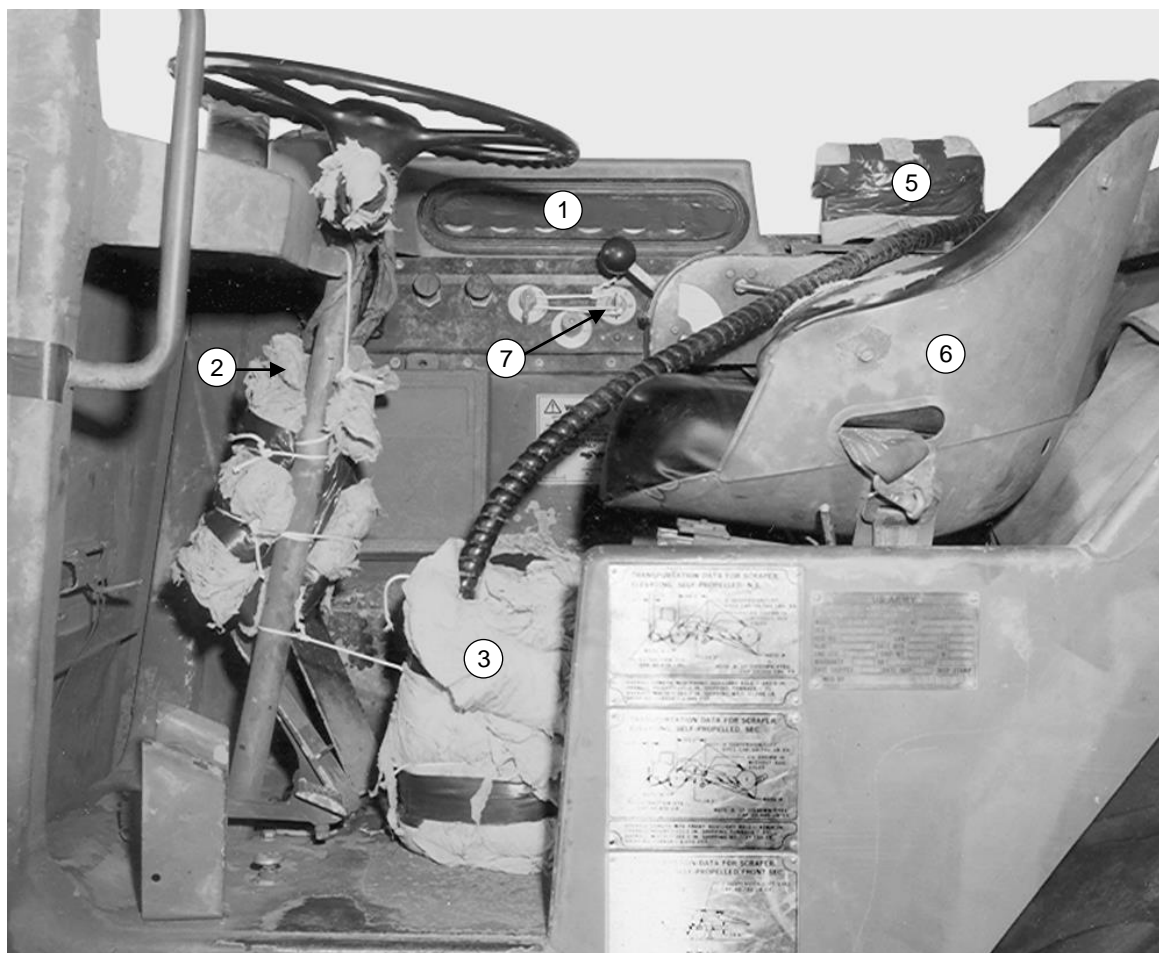
- ① Remove the vacuum hoses from the connectors on tip of the tank. Tie the hoses to the grid with type III nylon cord.
- ② Pad the connectors with cellulose wadding, and tape them.
- ③ Tape the tank hatch locks closed.

Figure 10-10. Vacuum Hoses, Connectors, and Hatch Locks Prepared



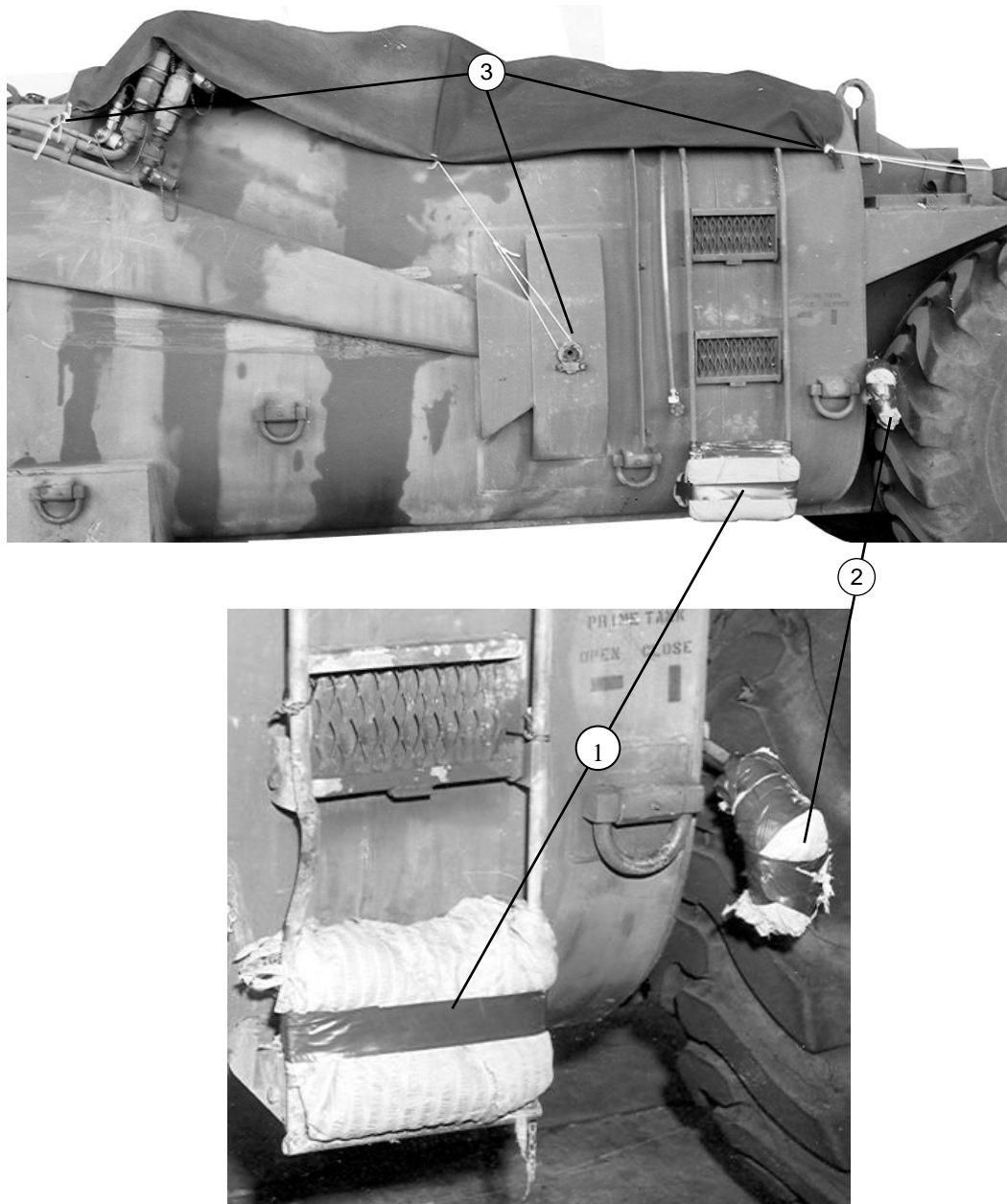
- ① Remove the rearview mirror. Pad with cellulose wadding and tape. Stow it in the toolbox.
- ② Remove the air pre-cleaner and its entire shaft. Pad with cellulose wadding. Stow them in the tool box.
- ③ Remove the air gages, hoses, and nozzle from the sprayer hose. Pad them with cellulose wadding, and stow them in the toolbox.
- ④ Pad the toolbox with cellulose wadding.

Figure 10-11. Equipment Stowed in Toolbox



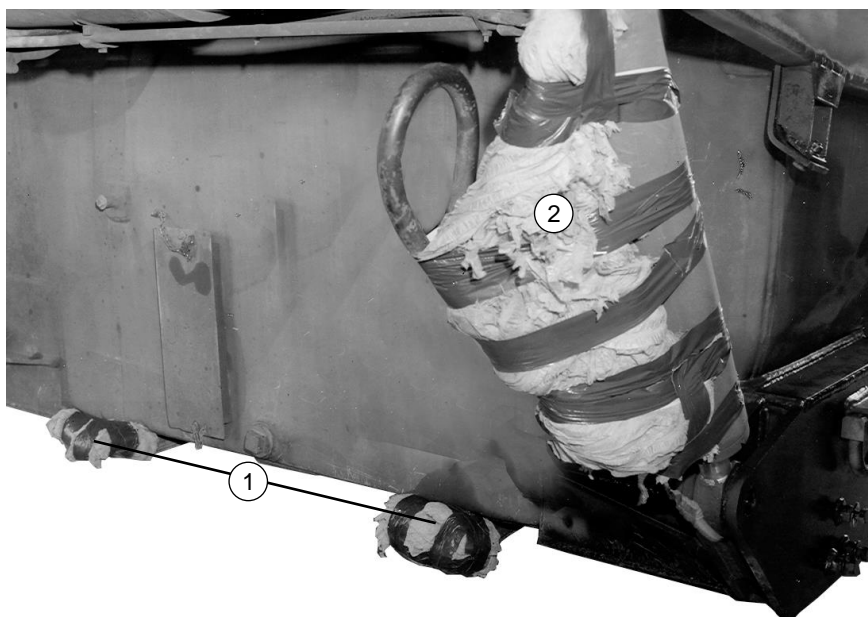
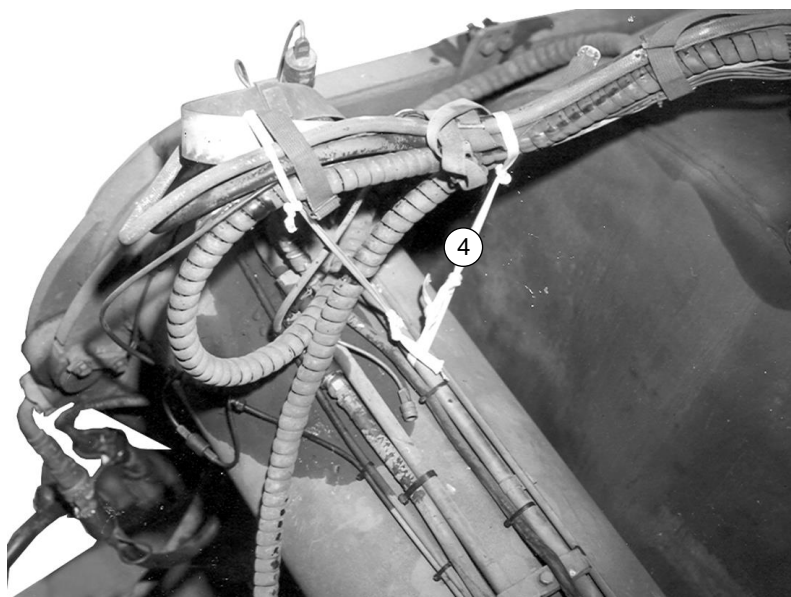
- ① Tape the instrument panel.
- ② Pad the windshield wiper controls with cellulose wadding, and tape them. Tie the padded controls to the steering column with type III nylon cord.
- ③ Remove the water distributor control box. Do not disconnect the wires. Pad the control box with cellulose wadding, and tape it. Tie the control box to the floor of the operator compartment with type III nylon cord.
- ④ Remove the plastic control handles and place them in the operator compartment toolbox. (Not Shown)
- ⑤ Pad and tape the area where the control handles were located.
- ⑥ Lower the seat, and move it to the rearmost position.
- ⑦ Tie the ignition key in place with type IIII nylon cord.

Figure 10-12. Operator Compartment Prepared



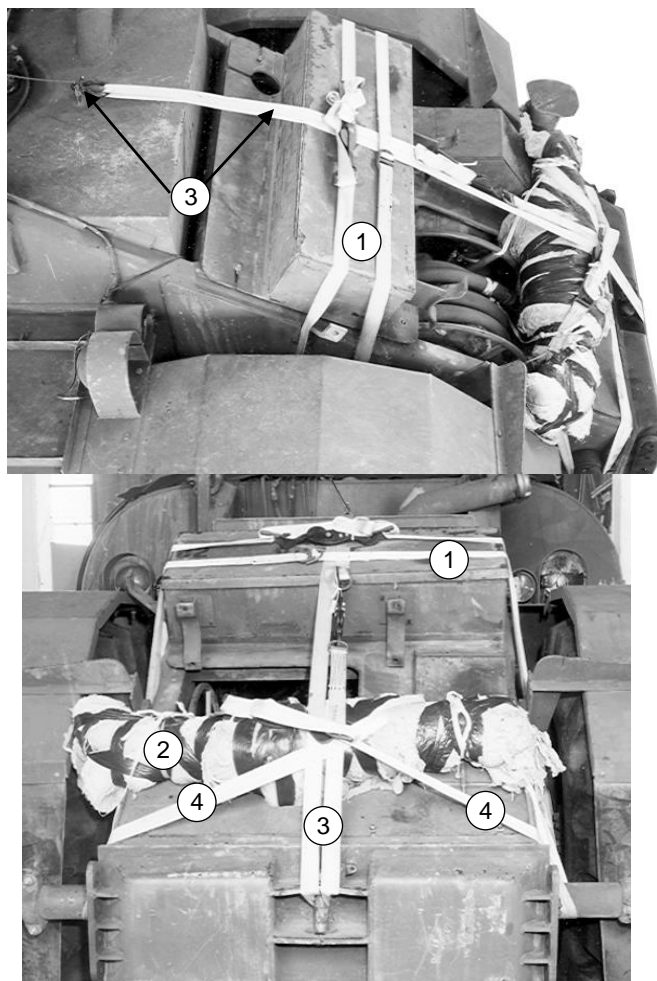
- ① Fold the steps, and lock them in place with the restraint pins. Pad the bottom step with tape.
- ② Pad the tank primer control handle with cellulose wadding and tape.
- ③ Place a 6- by 8-foot piece of cotton duck cloth over the tank. Make sure the walk grids are covered. Tie the cover in place with type III nylon cord.

Figure 10-13. Steps, Tank Primer Control Handle Prepared and Tank Covered



- ① Pad the skid plates on each side of the drain plug with cellulose wadding and tape.
- ② Pad the hydraulic cylinders on each side of the vehicle with cellulose wadding and tape.
- ③ Tape all lights and gauges. (Not Shown)
- ④ Lower the hydraulic and electrical lines to the vehicle body. Tie the lines in place with ½-inch tubular nylon.

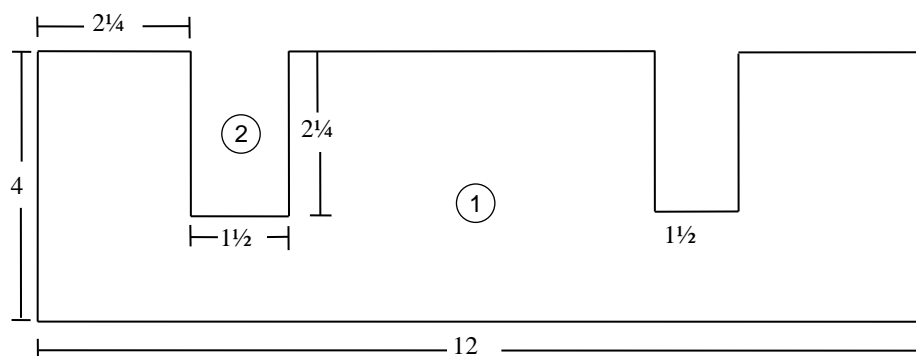
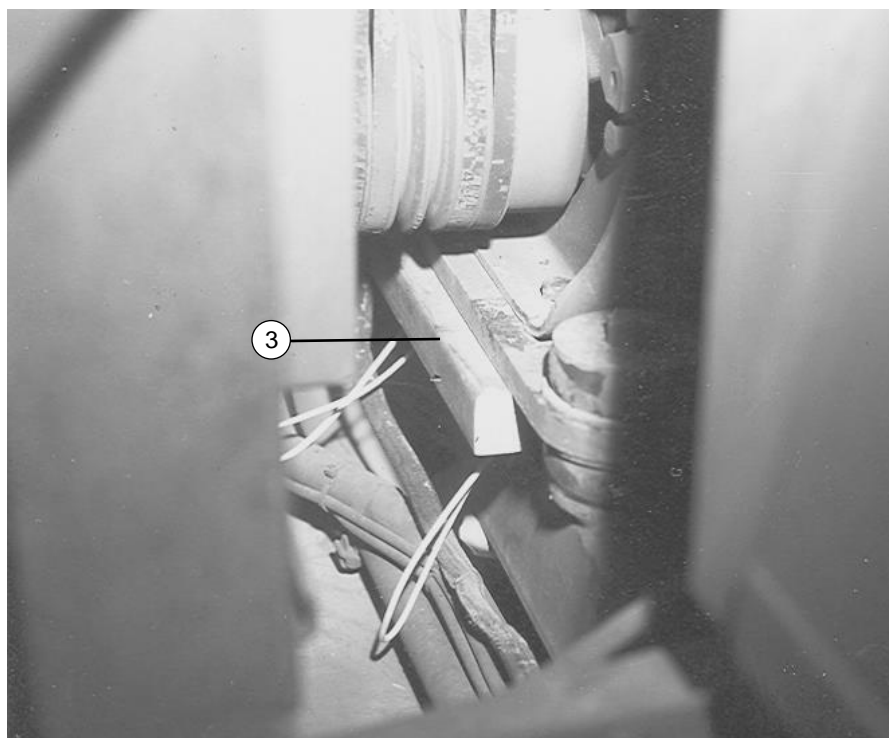
Figure 10-14. Skid Plates, Hydraulic Cylinders, Lights and Gauges Prepared



- ① Pass a 15-foot tiedown strap across the toolbox and down and around its left and right side axle. Fasten the strap in the center of the toolbox lid with a D-ring and a load binder.
- ② Remove the muffer (Not Shown). Pad it with cellulose wadding and tape. Place the muffer on the rear of the vehicle.
- ③ Install a platform clevis in the rear center ring (Not Shown). Pass a 15-foot tiedown strap through the clevis, over the toolbox and muffer, and around the pintle. Secure with a D-ring and load binder.
- ④ Pass a 15-foot tiedown strap around the tip sprayer pipe on the left side of the vehicle, over the muffer, and around the sprayer pipe on the right side of the vehicle. Secure the strap over the muffer with a D-ring and load binder.
- ⑤ Secure the hose reel with ½-inch tubular nylon. (Not Shown)
- ⑥ Tape the adjustment handles wand spray valve on the rear of the distributor. (Not Shown)

Figure 10-15. Rear of Vehicle Prepared

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



- ① Cut one 2- by 4- by 12-inch piece of lumber.
- ② Make two 1 ½- by 2 ¼ -inch cutouts.
- ③ Place the motor support between the motor support mount and the frame. Align the cutouts with the bolts, and tie the support in place with two lengths of type III nylon cord.

Note. For viewing purposes, the motor support is not fully seated.

Figure 10-16. Motor Support Constructed and Installed

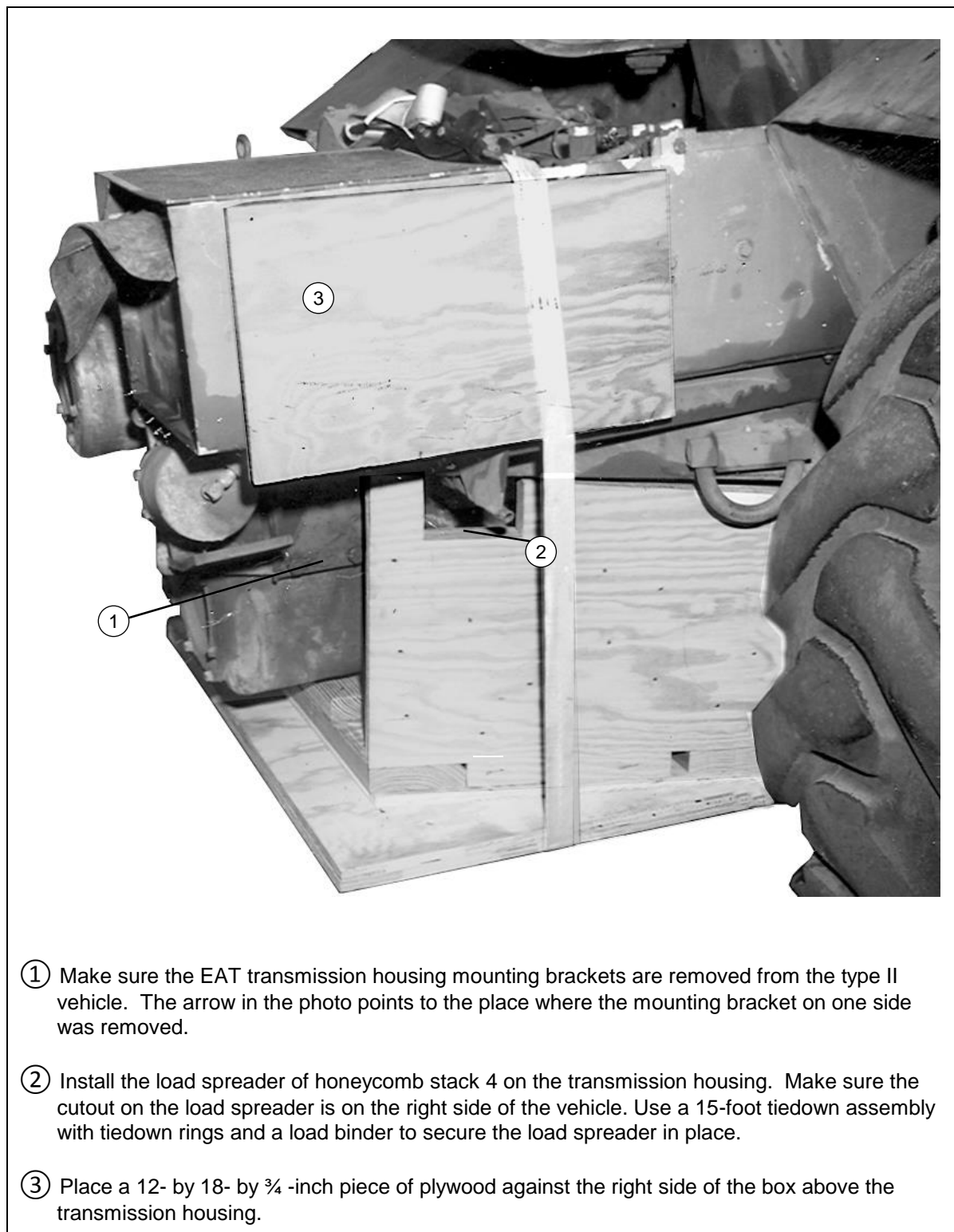
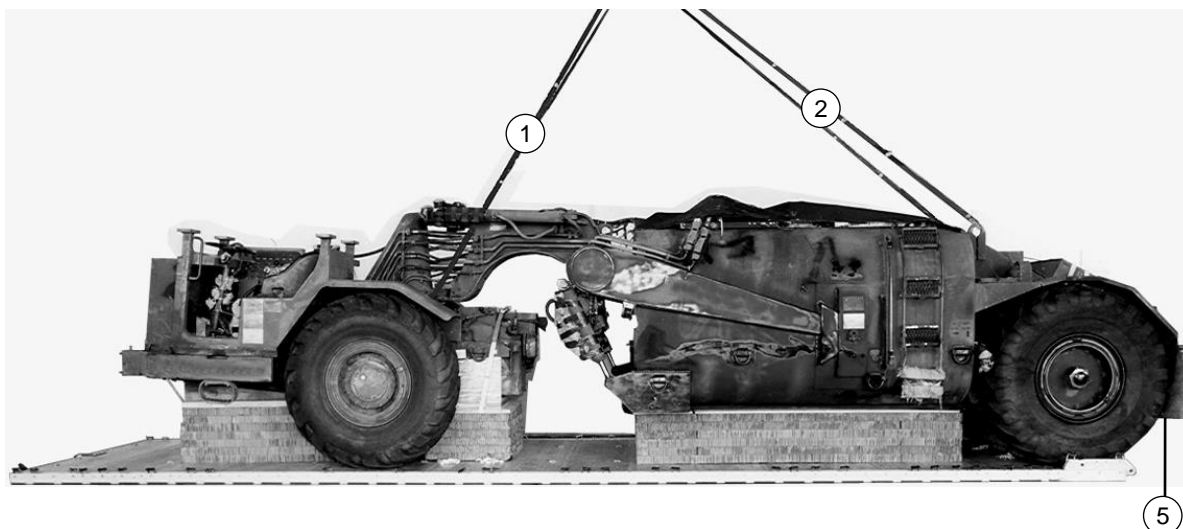


Figure 10-17. Mounting Brackets Removed and Load Spreader Installed on Transmission Housing

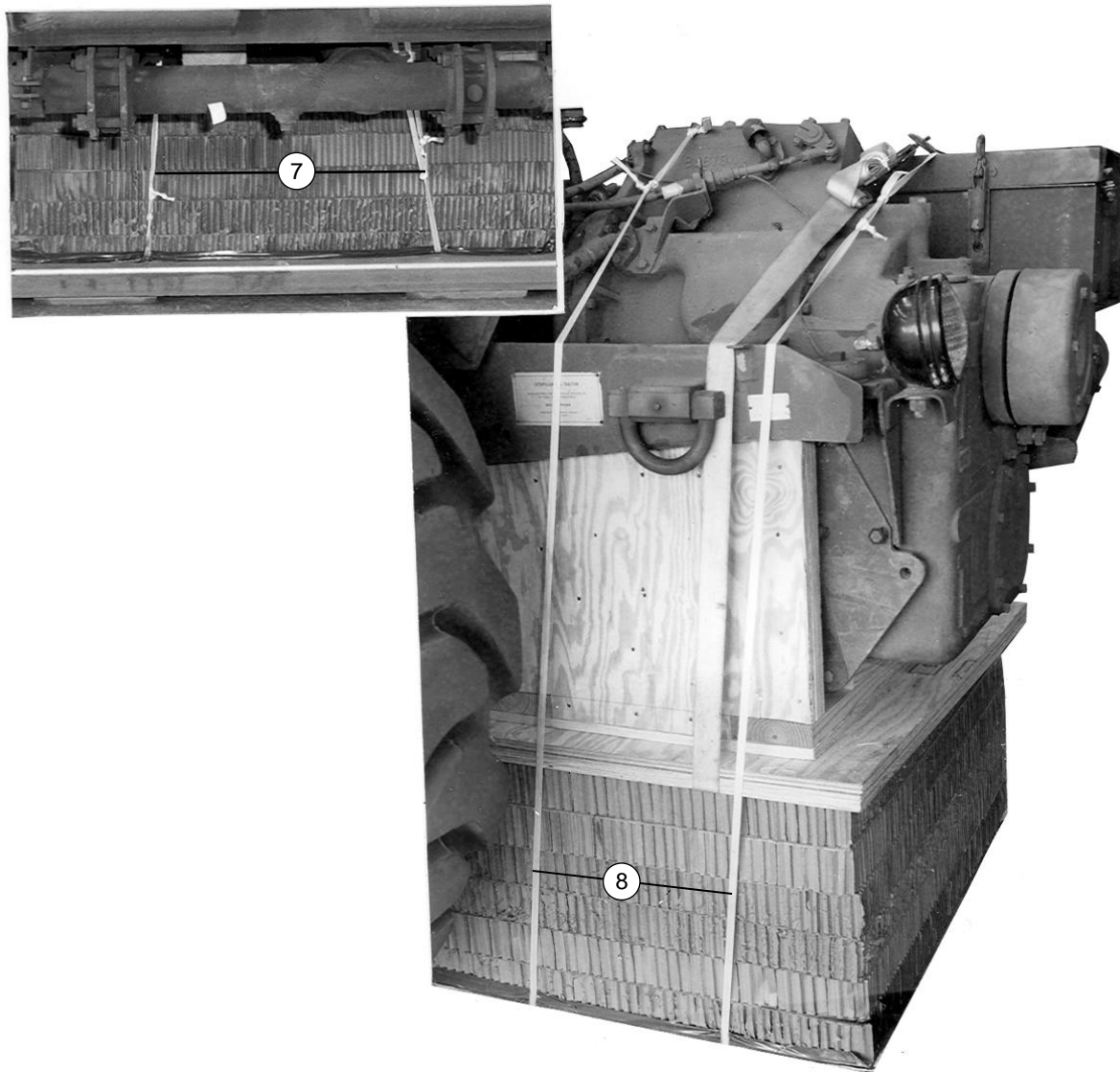
INSTALLING LIFTING SLINGS AND POSITIONING THE WATER DISTRIBUTOR

10-8. Install lifting slings and position the water distributor as shown in Figure 10-18.



- ① Bolt two 9-foot (four loop), type XXVI nylon slings to the vehicle front lifting points with screw-pin clevises. Pass the slings up between the steering cylinders and frame.
- ② Bolt two 9-foot (four loop), type XXVI nylon sling to the vehicle rear lifting points with screw-pin clevises.
- ③ Pass a 3-foot sling through the end loops of each 9-foot sling. Fasten the end of each 3-foot sling together with a $3\frac{3}{4}$ -inch, two point link to form a loop. (Not Shown)
- ④ Raise the distributor tank above the horizontal plane. (Not Shown)
- ⑤ Lift and position the water distributor on the platform with the rear of the vehicle overhanging the front of the platform by no more than 36 inches or less than 35 inches.
- ⑥ Lower the distributor tank onto the honeycomb by cycling the controls of the distributor. (Not Shown)

Figure 10-18. Lifting Slings Installed, Water Distributor Positioned, and Lifting Slings Removed



- ⑦ Tie honeycomb stack 1 to the vehicle frame using the two lengths of ½-inch tubular nylon webbing pre-positioned in Figure 12-3.
- ⑧ Tie honeycomb stack 4 to the transmission housing using the two lengths of ½-inch tubular nylon webbing pre-positioned in Figure 12-5.
- ⑨ Remove the lifting slings. (Not Shown)

Figure 10-18. Lifting Slings Installed, Water Distributor Positioned, and Lifting Slings Removed (Continued)

LASHING THE WATER DISTRIBUTOR

10-9. Lash the water distributor to the platform with fifty-two 15-foot tiedown assemblies according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Use the tiedown provisions on the vehicle shown in Figure 10-19 and lash as shown in Figures 10-20 through 10-23. Pad all sharp edges the lashings may come into contact with.

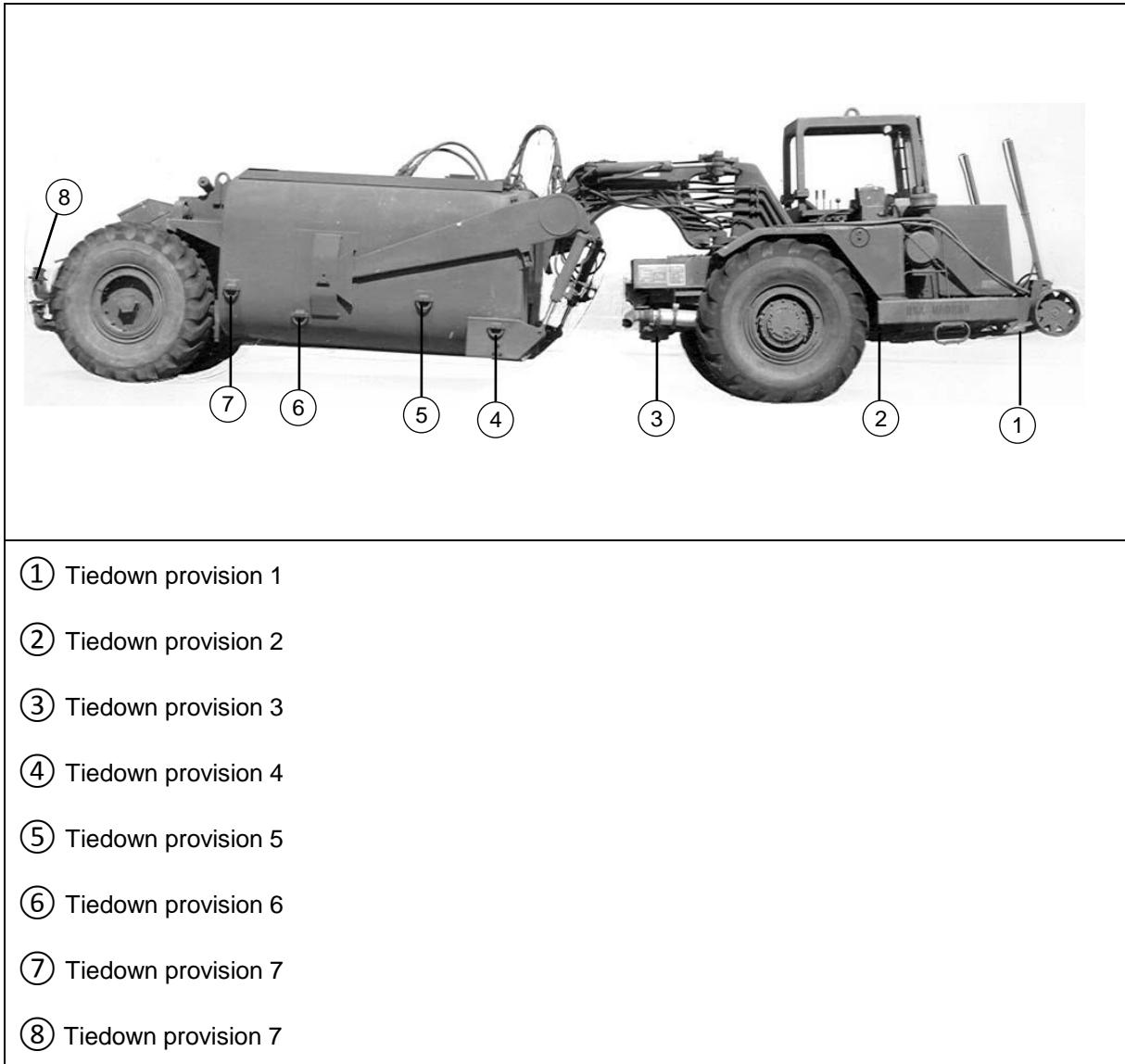
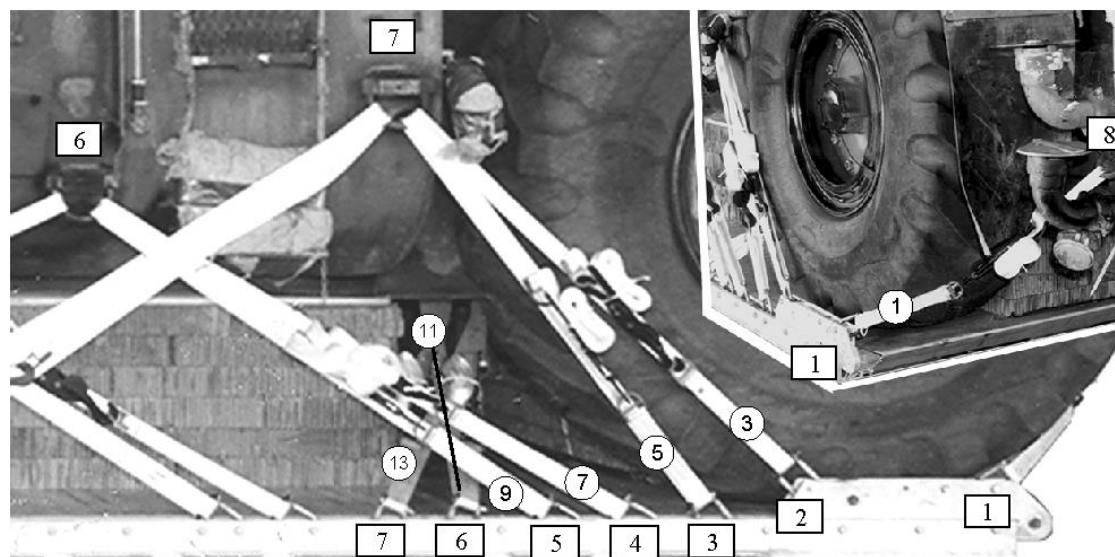


Figure 10-19. 613 Water Distributor Tiedown Provisions



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
1	1	Pass lashing:
2	1A	Through tiedown provision 8.
3	2	Through tiedown provision 8.
4	2A	Through tiedown provision 7.
5	3	Through tiedown provision 7.
6	3A	Through tiedown provision 7.
7	4	Through tiedown provision 7.
8	4A	Through tiedown provision 6.
9	5	Through tiedown provision 6.
10	5A	Through tiedown provision 6.
11	6	Around mainframe on right side of vehicle.
12	6A	Around mainframe on left side of vehicle.
13	7	Around mainframe on left side of vehicle.
14	7A	Around mainframe on right side of vehicle.

Figure 10-20. Lashings 1 Through 14 Installed

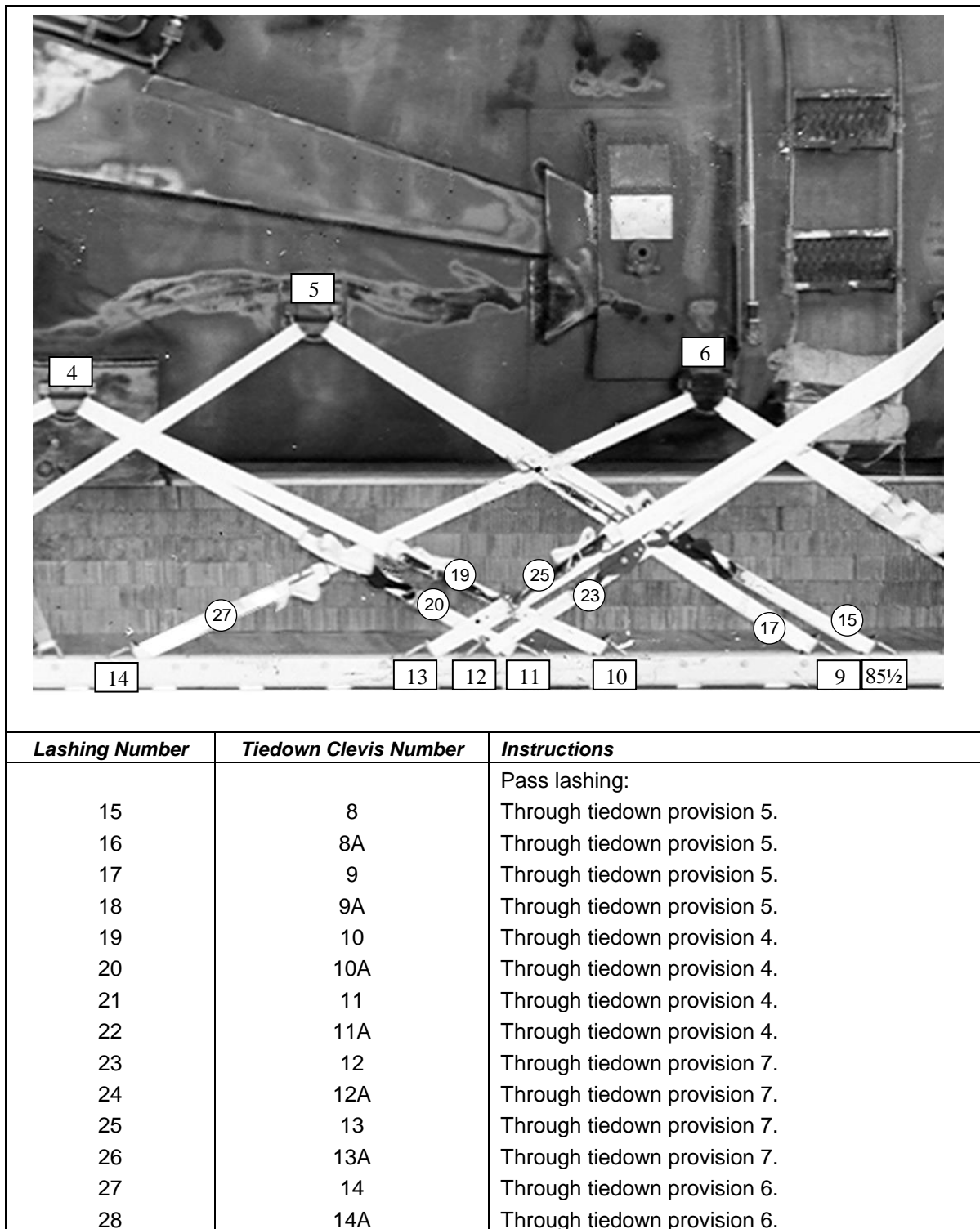


Figure 10-21. Lashings 15 Through 28 Installed

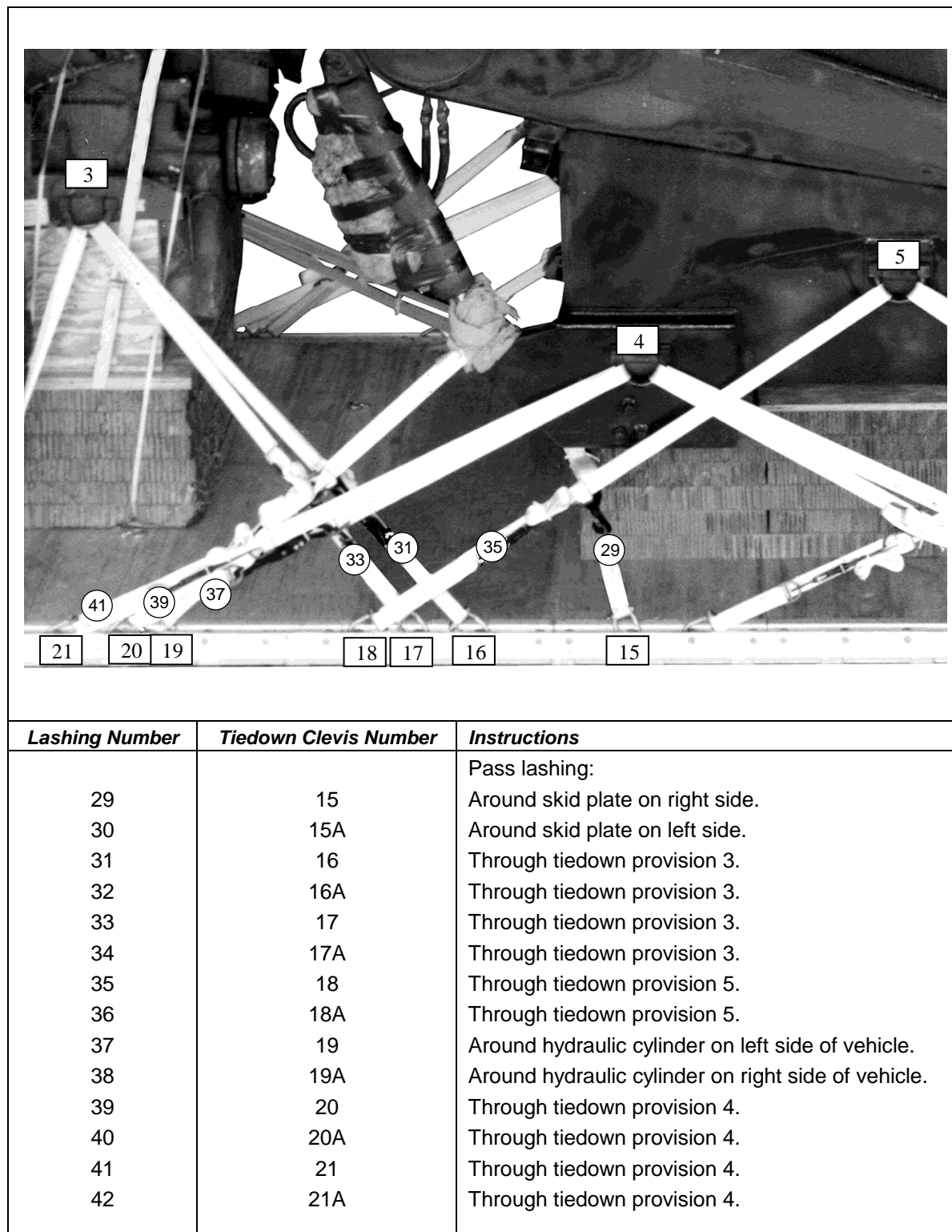


Figure 10-22. Lashings 29 Through 42 Installed

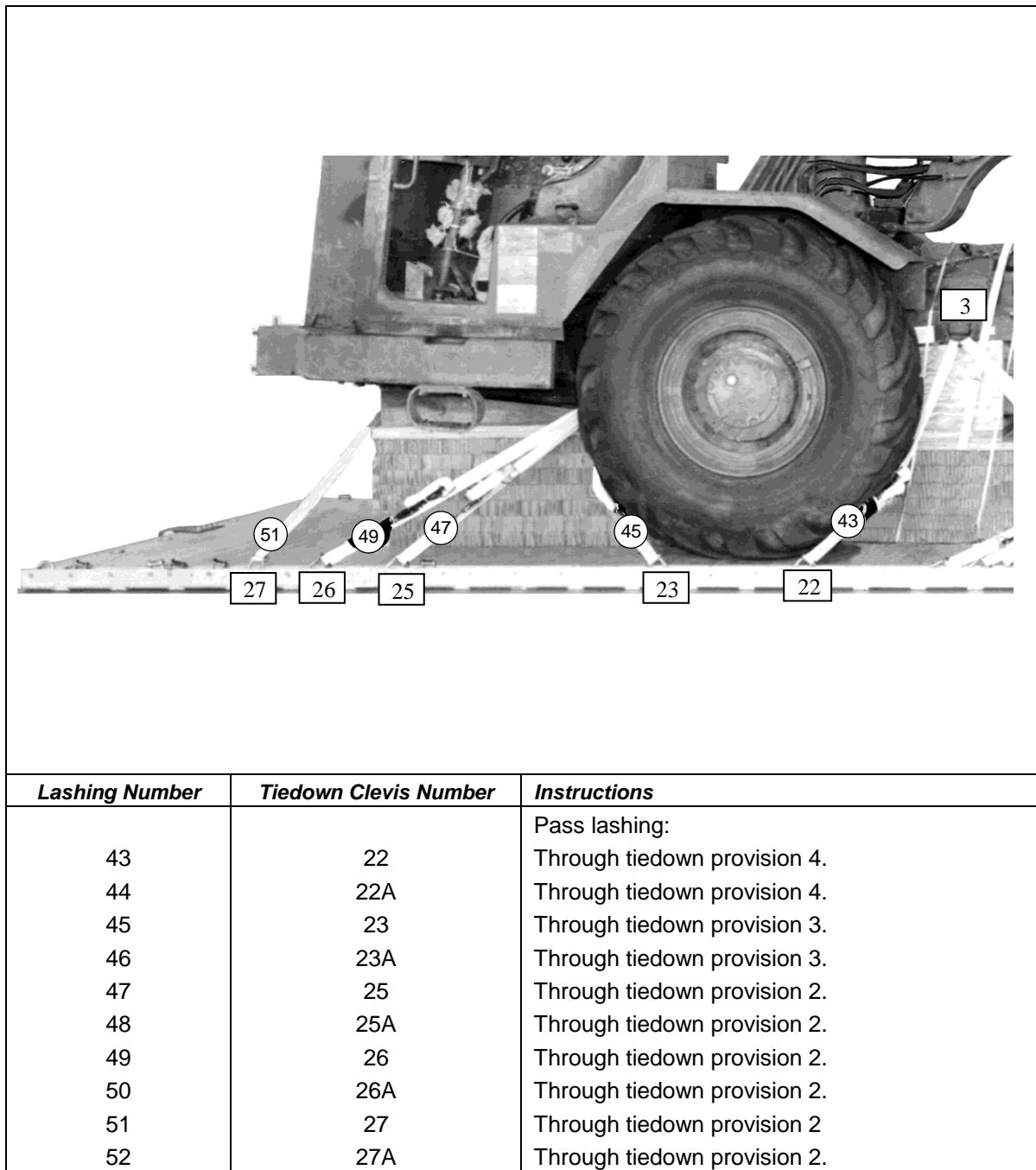
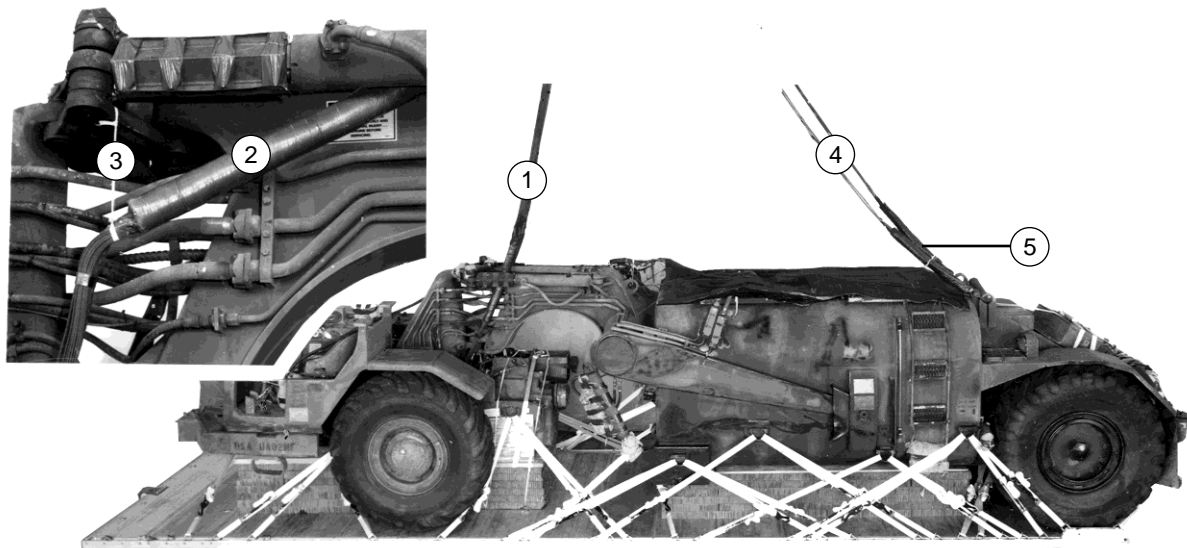


Figure 10-23. Lashings 43 Through 52 Installed

INSTALLING AND PADDING SUSPENSION SLINGS

10-10. Install and pad the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 10-24.



CAUTION

Padding all slings is critical. Padding must be installed in the locations shown and firmly secured in place with type I, ¼-inch cotton webbing and taped.

- ① Attach a 20-foot (4-loop), type XXVI nylon sling to each front vehicle lifting point using a screw pin clevis.
- ② Starting 30 inches up from the rear sling clevis, wrap a 8- by 36-inch piece of felt. Tie the felt in place with type I, ¼-inch cotton webbing, and tape. Repeat on the opposite side.
- ③ Just below the felt, safety tie the slings to the steering arm assembly with one double length of type I, ¼-inch cotton webbing. Pass the slings up between the steering cylinder and the steering assembly frame. Tape the top of the steering assembly frame and the bolt on each side of the vehicle.
- ④ Bolt a 20-foot (4-loop), type XXVI nylon sling to each rear vehicle lifting point with a screw-point clevis.
- ⑤ One inch up from the clevis end of the front slings, wrap a 8- by 36-inch piece of felt. Tie the felt in place with type I, ¼-inch cotton webbing, and tape. Repeat on the opposite side.

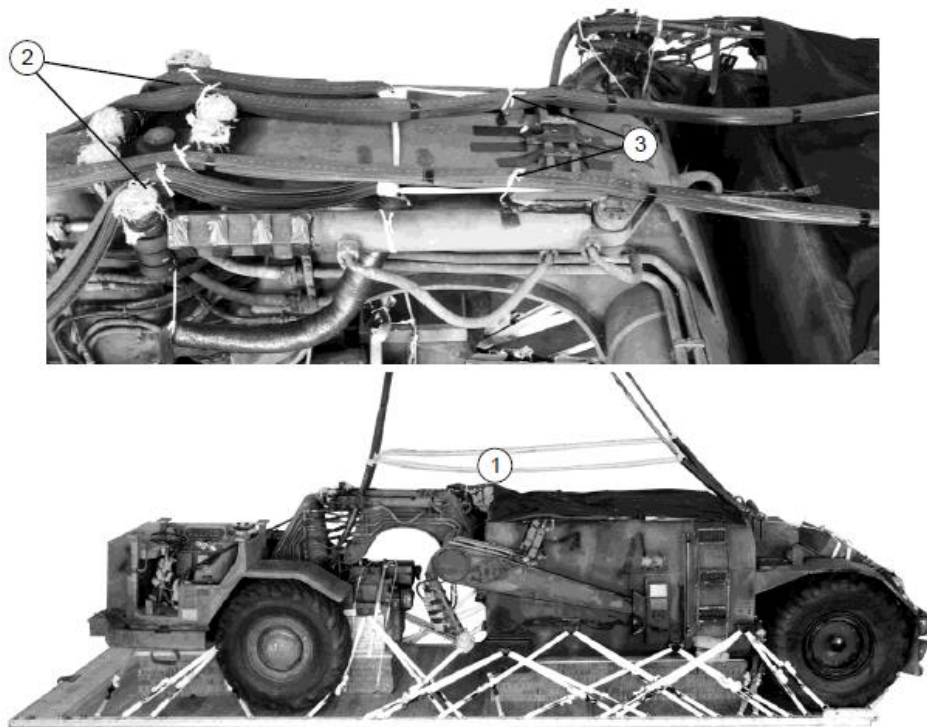
Figure 10-24. Suspension Slings Installed

SAFETY TIEING AND SECURING SUSPENSION SLINGS

10-11. Safety tie and secure the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 10-25.

NOTICE OF EXCEPTION

The procedures in this paragraph are different from those in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. An exception to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 is granted.



- ① Install the suspension sling safety tie 13 inches above the highest point of the load.
- ② Pass the rear suspension sling to the rear of the load. Make sure the padding does not come above the steering assembly. Keeping the slings as tight as possible, tie the slings to the hydraulic cylinders and the steering assembly arms with one turn double of type I, ¼-inch cotton webbing.
- ③ Pass the front suspension slings to the rear of the load and over the steering assembly. Tie the slings to the plate assembly and steering assembly arms with one turn double of type I, ¼-inch cotton webbing.

Figure 10-25. Suspension Slings Safety Tied and Secured

INSTALLING PARACHUTE RELEASE STOWAGE PLATFORM

10-12. Install the parachute release stowage platform as shown in Figure 10-26.

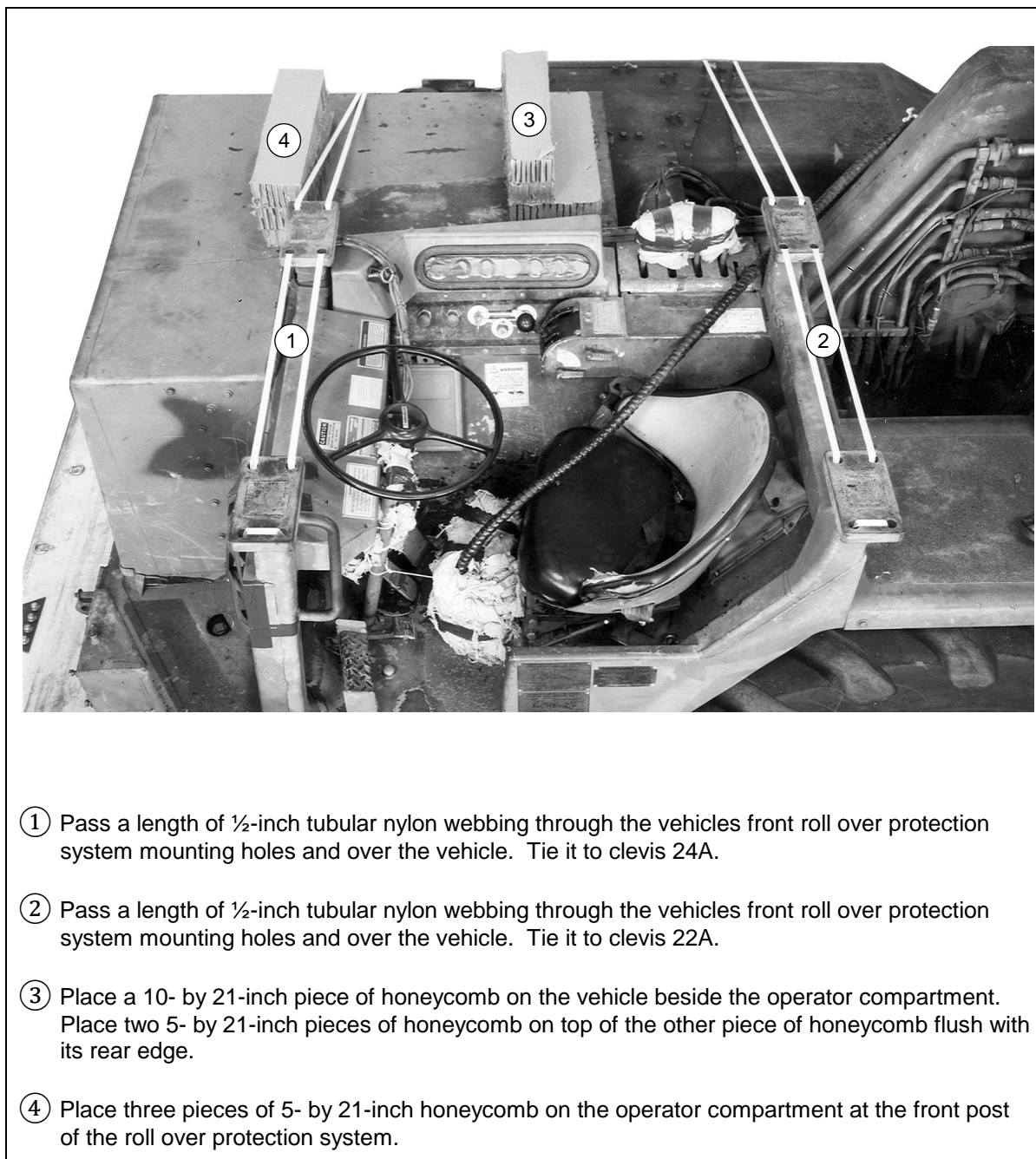
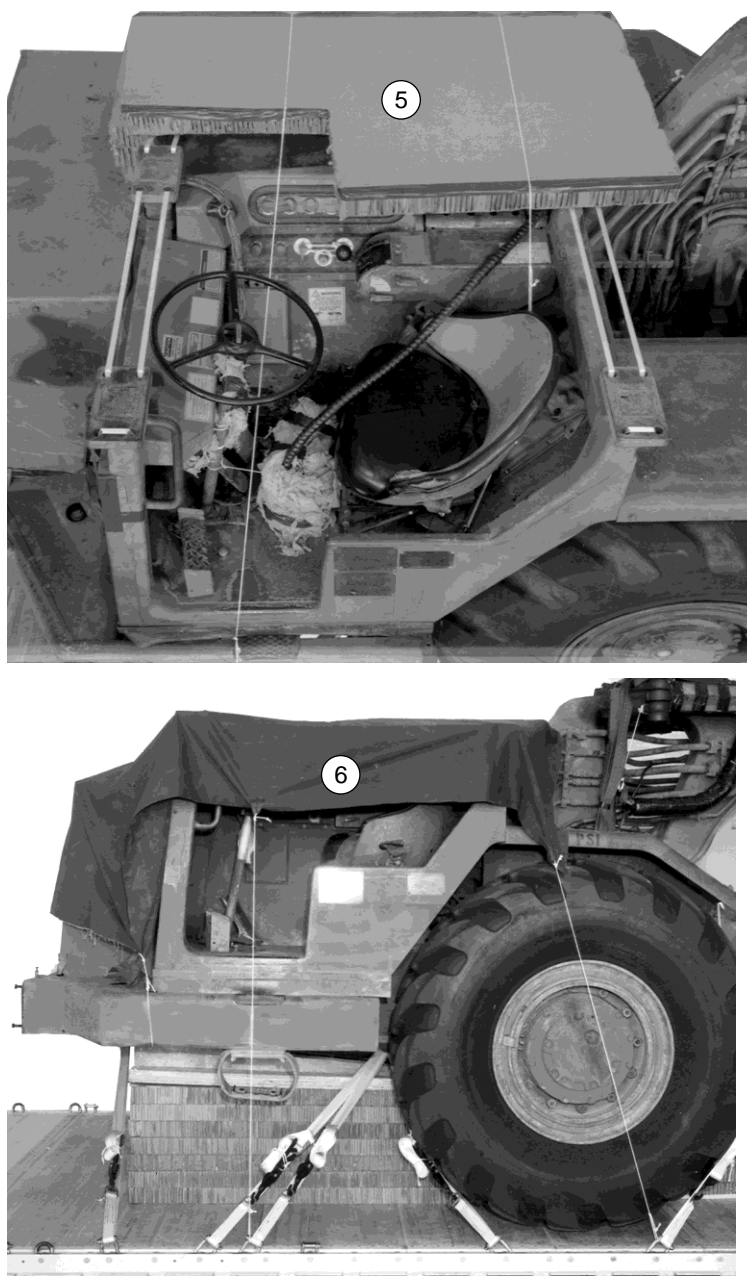


Figure 10-26. Parachute Release Stowage Platform Installed



- ⑤ Make a 15- by 24-inch cutout in the corner of a 36- by 62-inch piece of honeycomb. Place the honeycomb on top of the honeycomb positioned in steps 3 and 4. Tie the honeycomb in place with type III nylon cord. Tape the edges of the honeycomb where the type III nylon cord touches.
- ⑥ Place a 10- by 10-foot piece of cotton duck cloth over the operator compartment, tie it in place with type III nylon cord.

Figure 10-26. Parachute Release Stowage Platform Installed (Continued)

BUILDING THE PARACHUTE STOWAGE PLATFORM

10-13. Build a parachute stowage platform as shown in Figures 10-27 and 10-28.

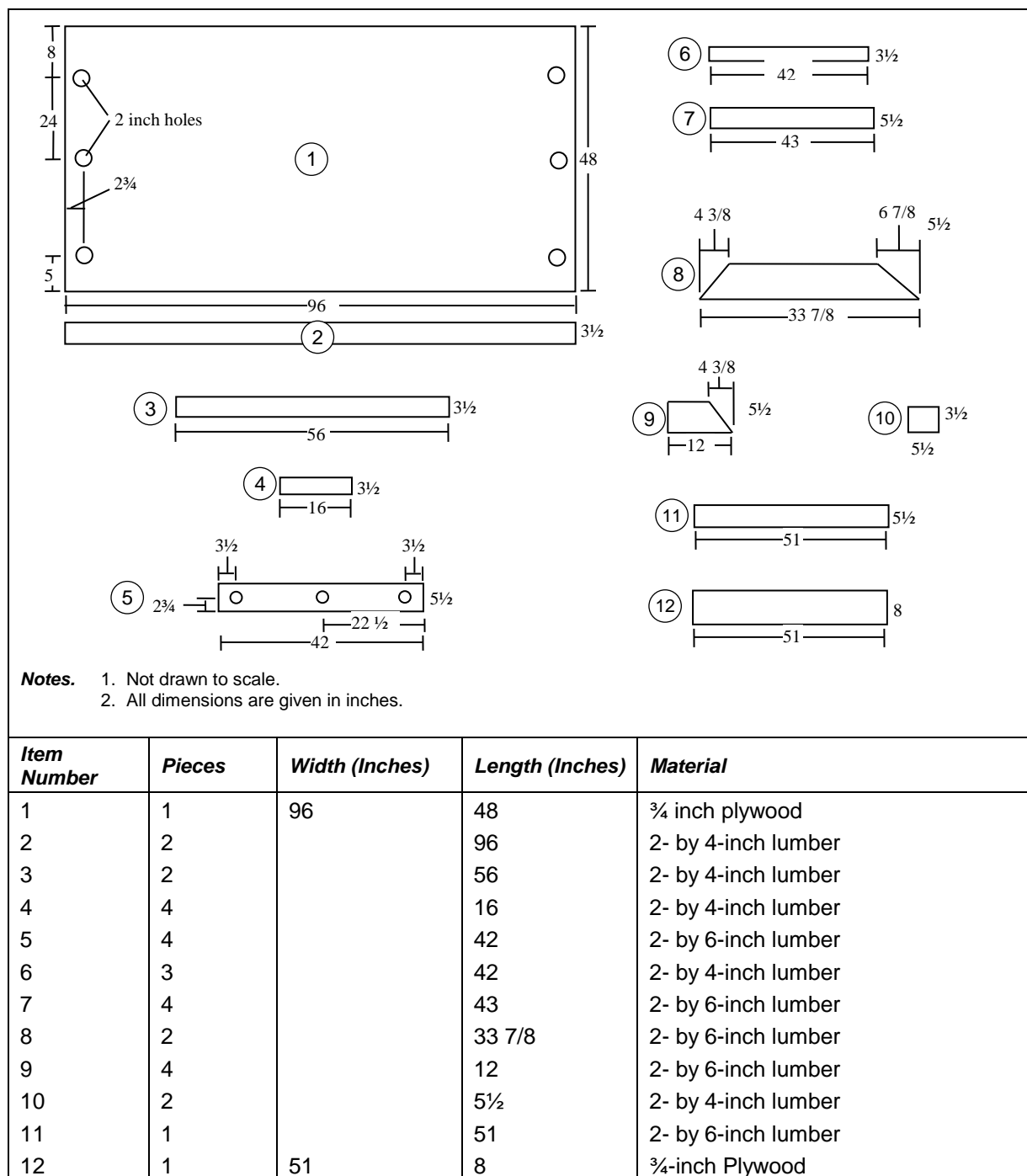


Figure 10-27. Material Required for Parachute Stowage Platform

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.

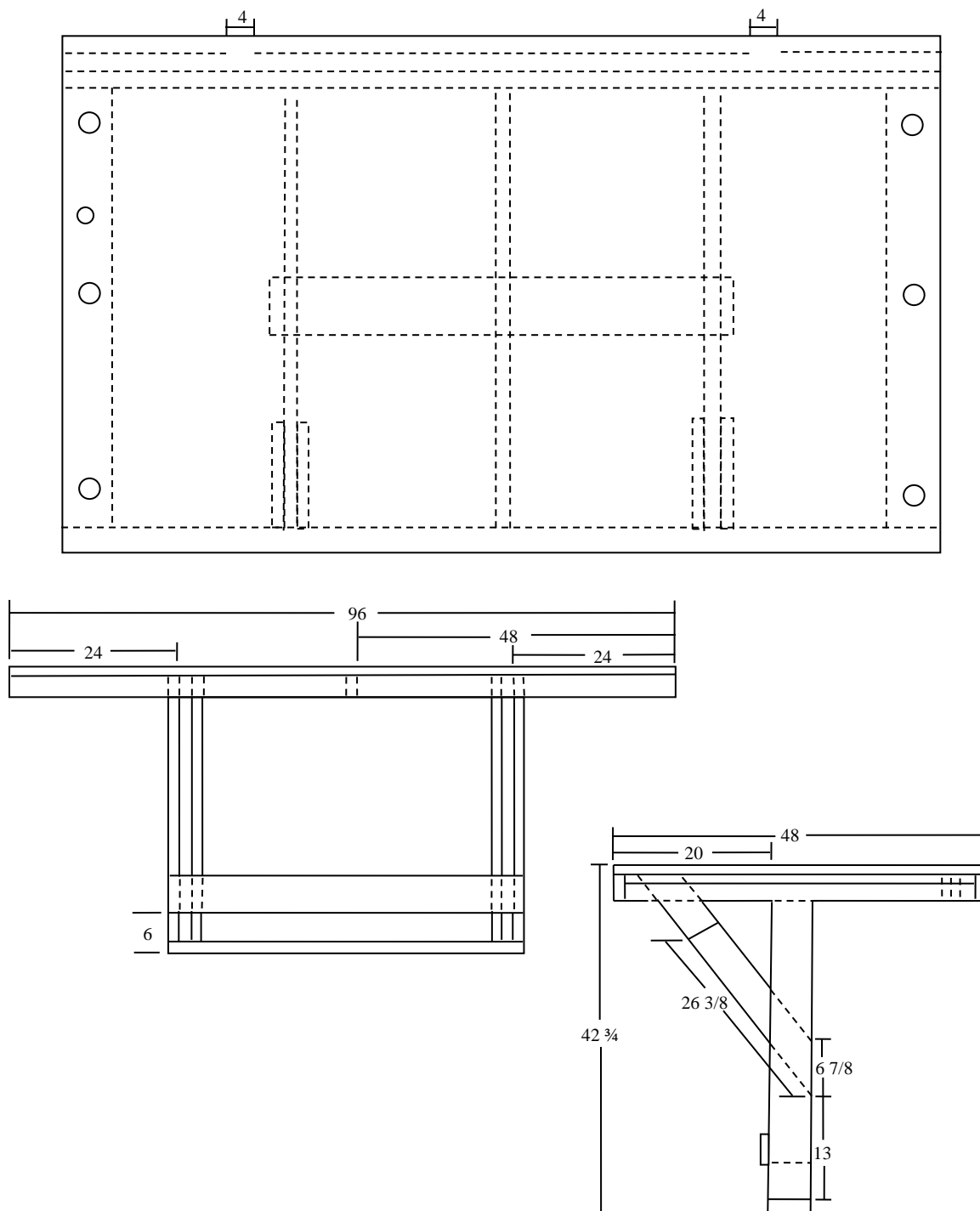
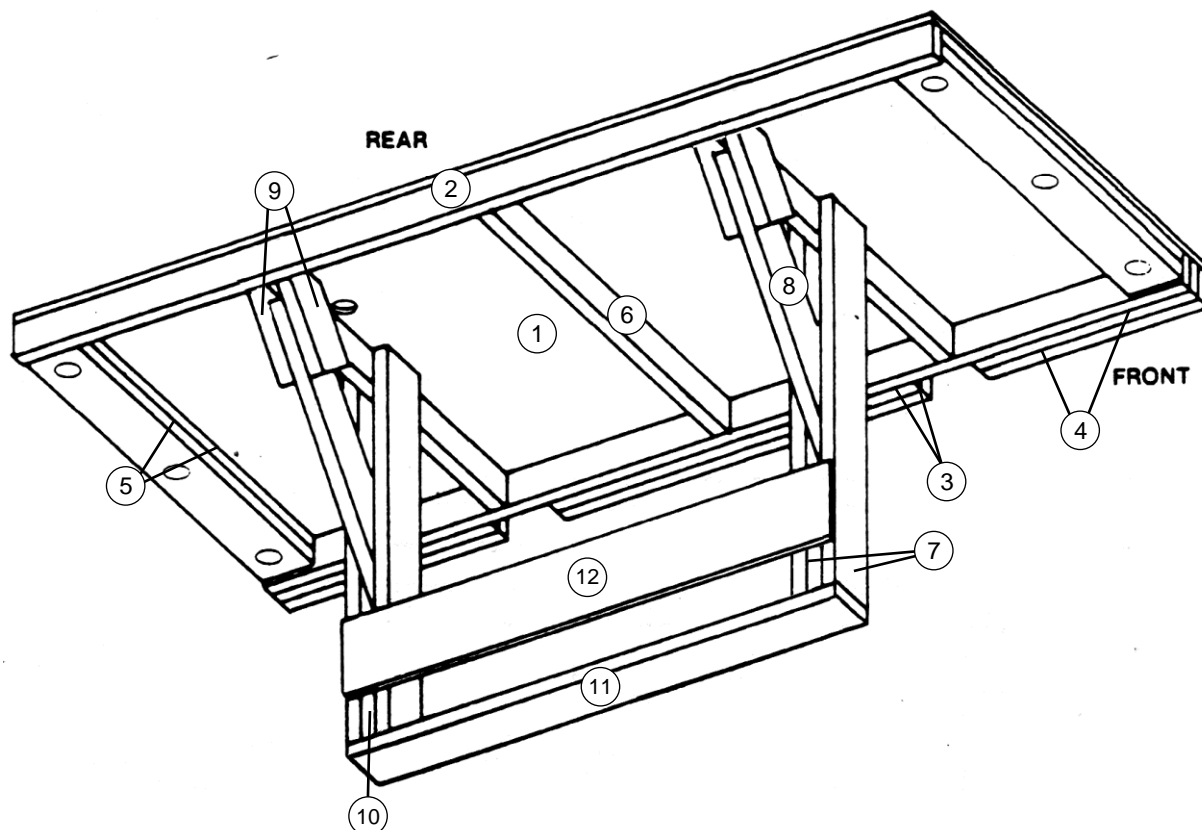


Figure 10-28. Parachute Stowage Platform Constructed

- Notes.**
1. Not drawn to scale.
 2. Parachute stowage platform legs may require adjustment.
 3. Circled numbers refer to item numbers in Figure 2-26.



Steps:

82. Construct the parachute stowage platform as shown.
83. Nail the plywood and lumber together with 8d, 10d, and 16d nails.

CAUTION

Be sure to use a generous amount of nails when constructing the parachute stowage platform. The stowage platform will be supporting 2,240 pounds of parachutes.

Figure 10-28. Parachute Stowage Platform Constructed (Continued)

Note. Not drawn to scale.

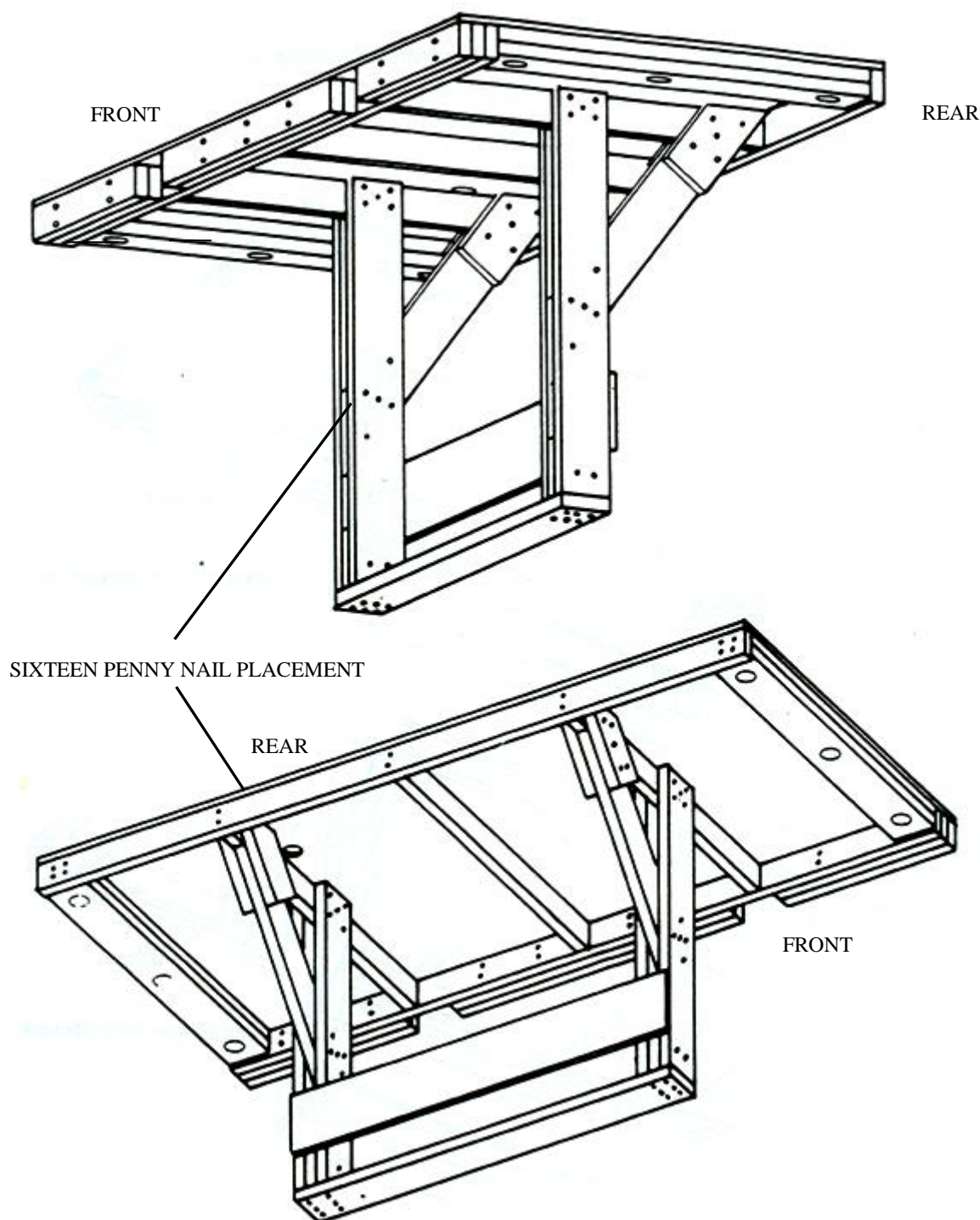


Figure 10-28. Parachute Stowage Platform Constructed (Continued)

Note. Not drawn to scale.

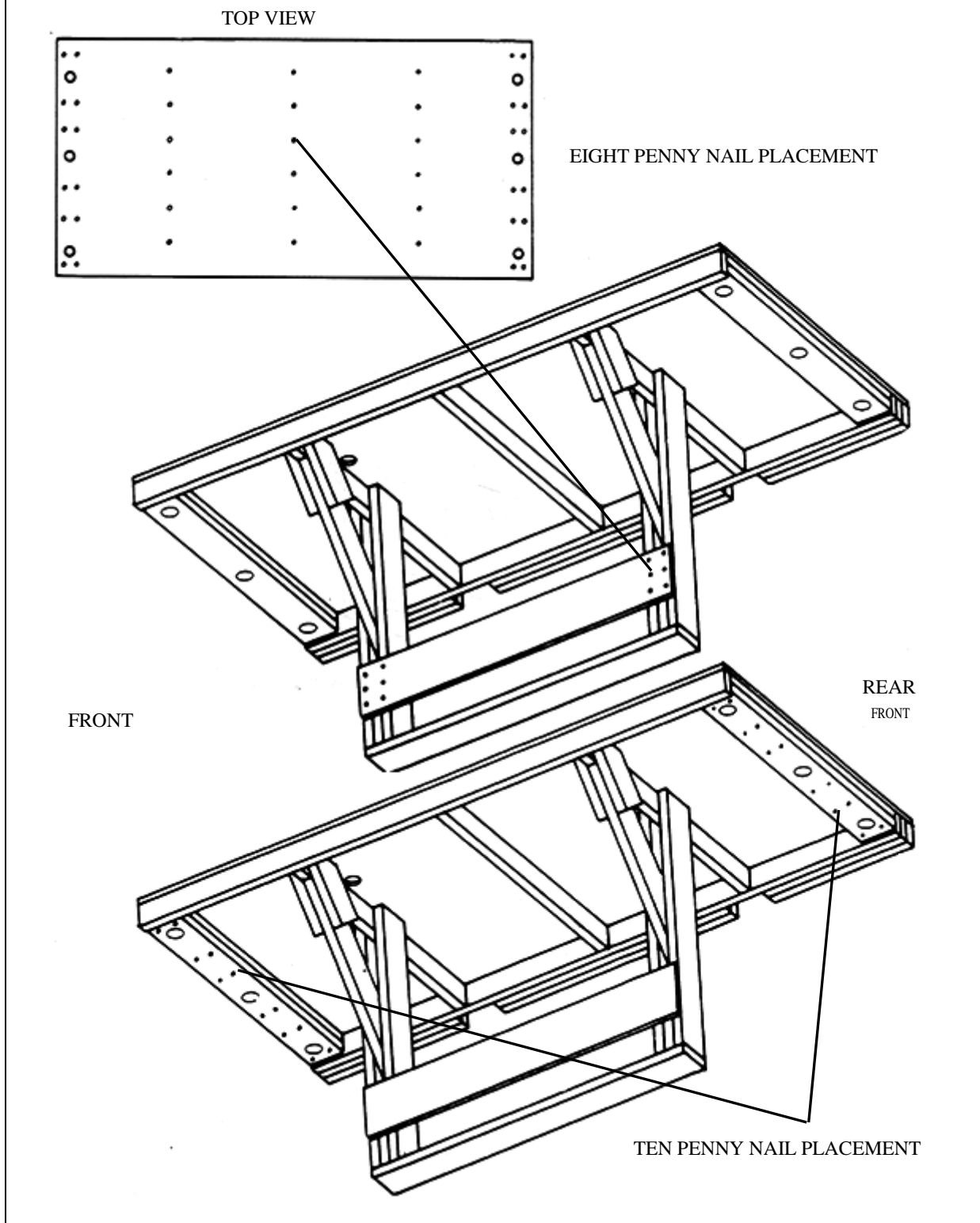


Figure 10-28. Parachute Stowage Platform Constructed (Continued)

INSTALLING AND RESTRAINING THE PARACHUTE STOWAGE PLATFORM

10-14. Install the parachute stowage platform as shown in Figure 10-29.

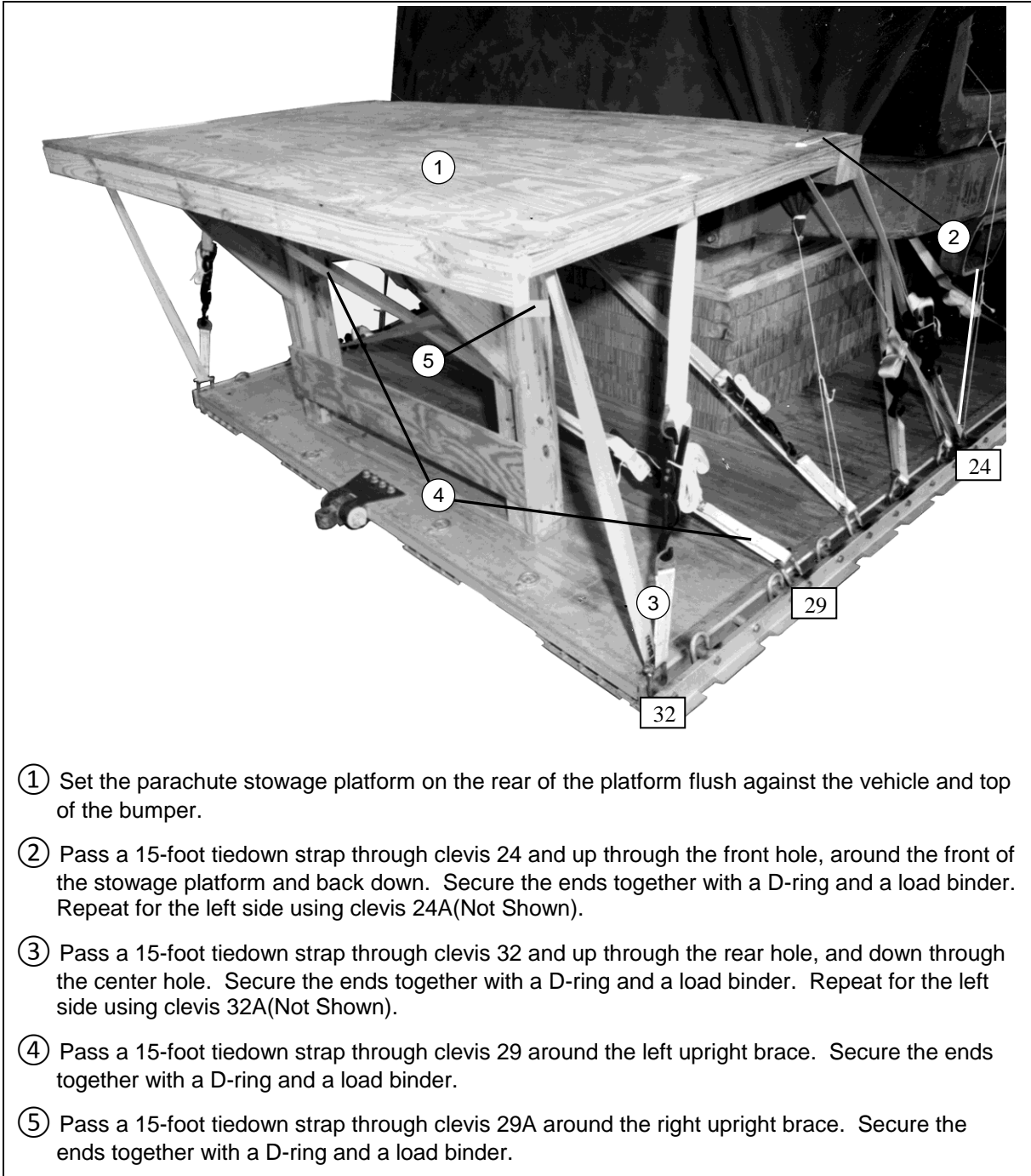


Figure 10-29. Parachute Stowage Platform Installed and Secured

STOWING CARGO PARACHUTES

10-15. Prepare, stow, cluster, and restrain eight G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 10-30.

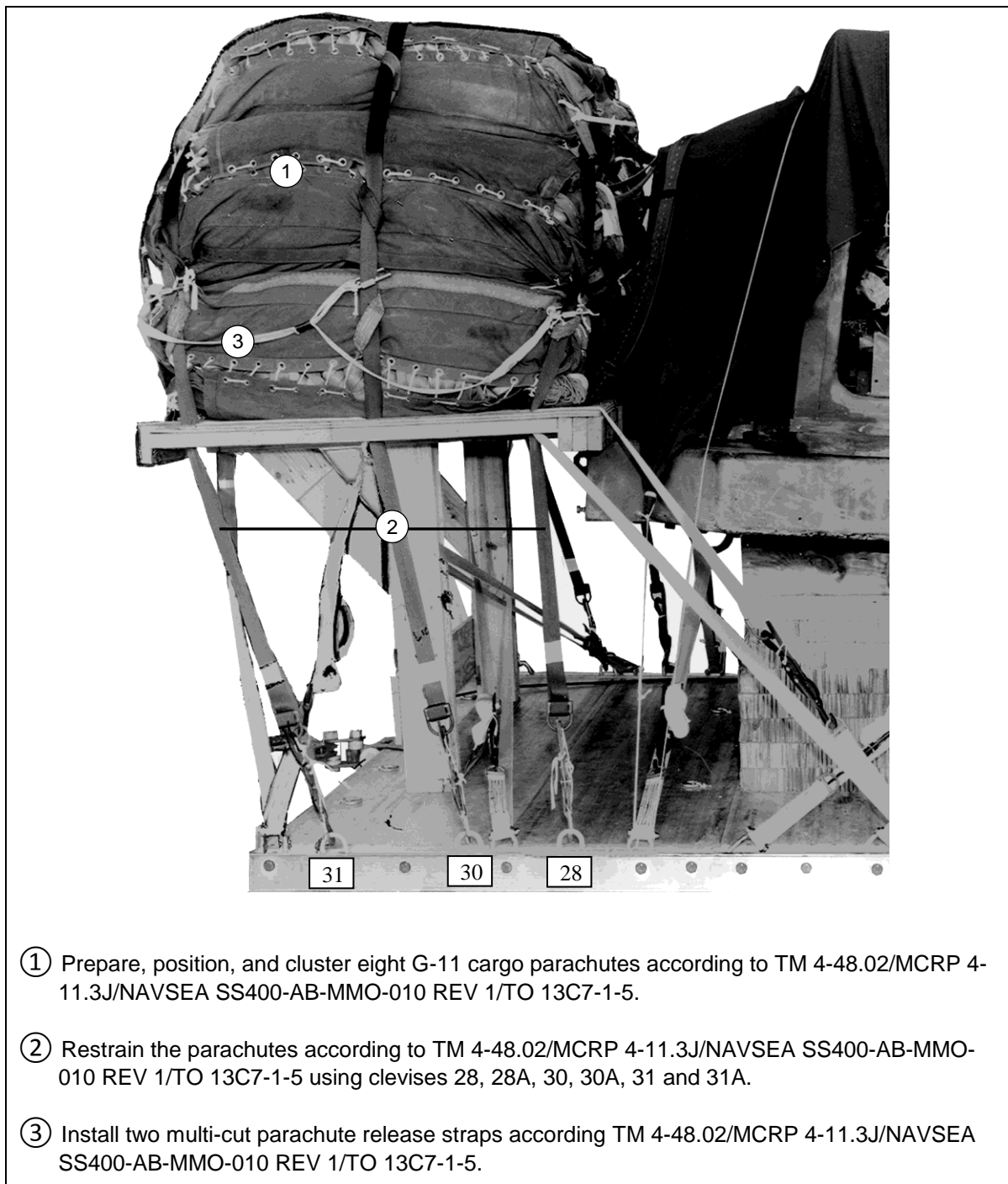
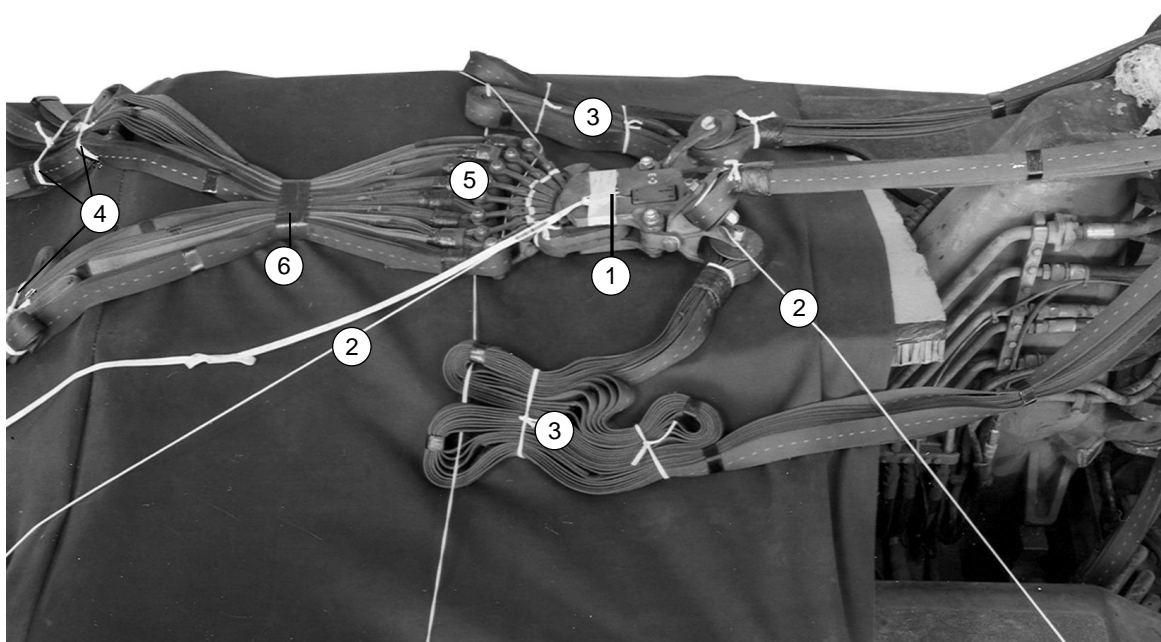


Figure 10-30. Cargo Parachutes Stowed and Restrained

INSTALLING M-2 RELEASE ASSEMBLY

10-16. Install the M-2 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 10-31.

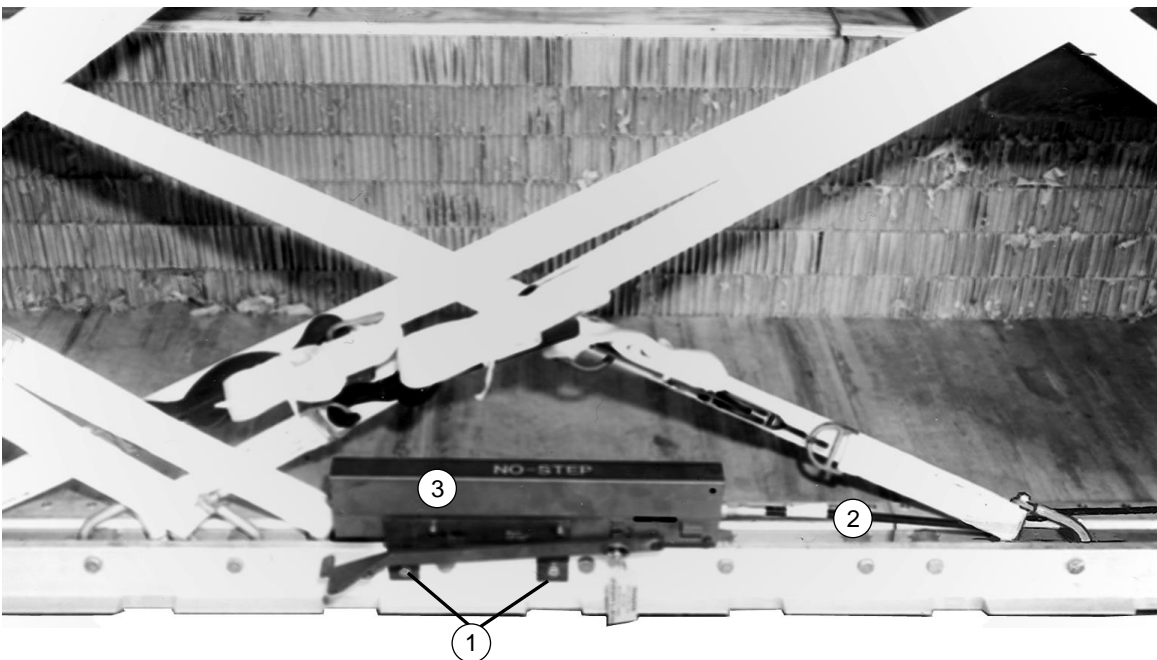


- ① Install an M-2 parachute release on the release platform. Attach the suspension slings and riser extensions according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ② Restrain the release with type III nylon cord routed through the parachute release connectors to bushings 21 and 21A of the rear suspension bracket and around the spacer using bushings 27 and 27A of the front suspension bracket.
- ③ S-fold the suspension slings and secure with a length of type I, ¼-inch cotton webbing.
- ④ Tie the exposed riser extensions with lengths of type I, ¼-inch cotton webbing.
- ⑤ Tape the loops of the parachute risers individually with three complete turns of cloth-backed tape.
- ⑥ Tape all the parachute risers together about 18 inches from the taped loops with three turns of cloth-backed tape.

Figure 10-31. M-2 Parachute Release Assembly Installed

INSTALLING EXTRACTION SYSTEM

10-17. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 10-32. Install the extraction parachute jettison system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 if applicable.



- ① Install the extraction force transfer coupling system actuator mounting brackets using the third set of mounting holes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

NOTE: This platform has three sets of mounting holes. The third set of holes is 120 inches from the front of the platform.

- ② Install a 24-foot release cable to the actuator.
- ③ Install the actuator assembly to the actuator mounting bracket.

Figure 10-32. Extraction System Installed

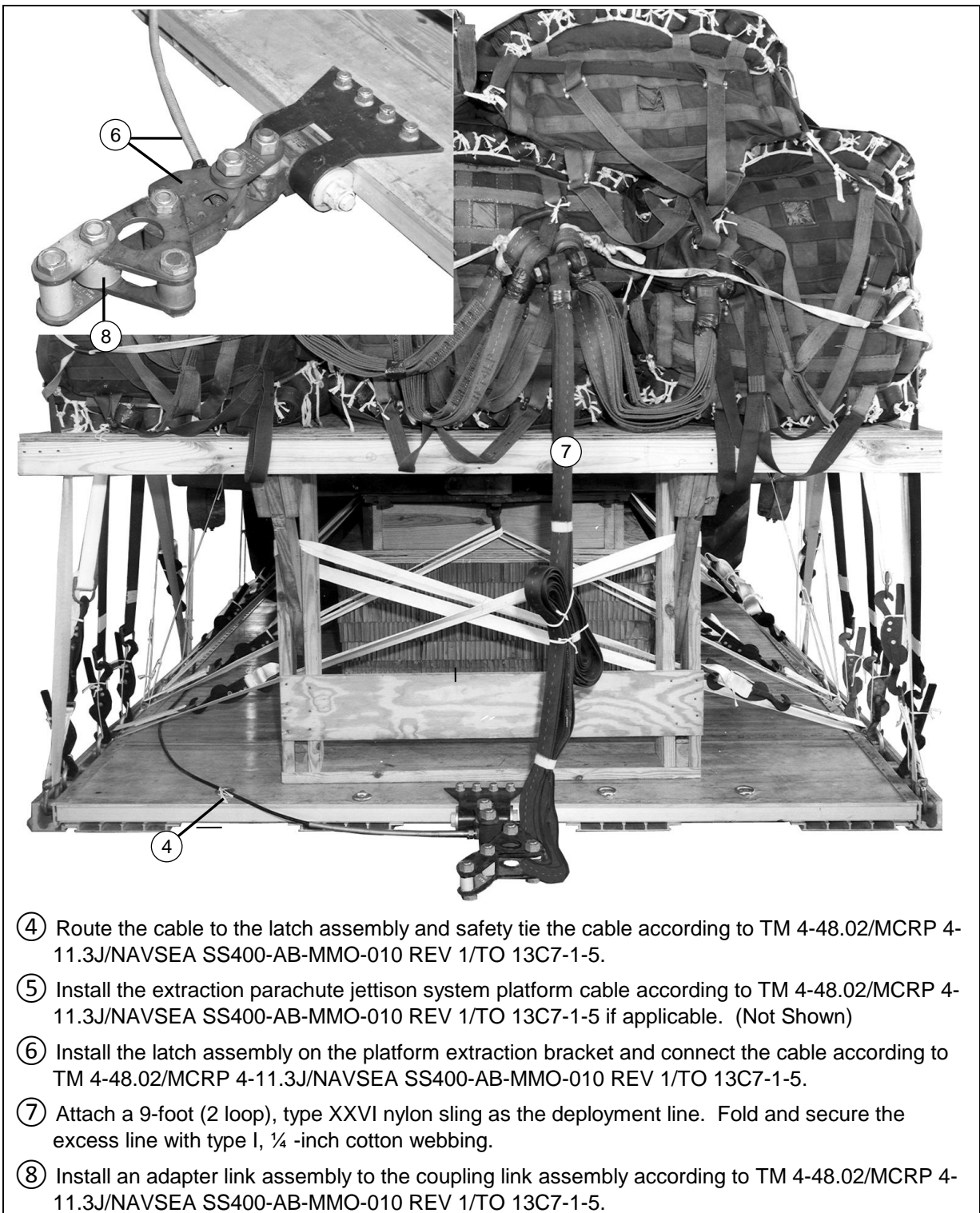


Figure 10-32. Extraction System Installed (Continued)

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

10-18. Install the provisions for the emergency restraints on the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

10-19. Select the extraction parachute and extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the load for installation in the aircraft as well. Install the extraction parachute jettison device on the extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, if applicable.

MARKING RIGGED LOAD

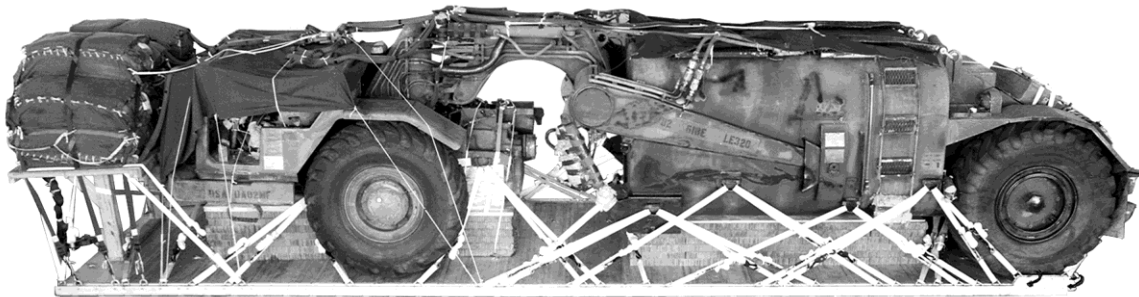
10-20. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 10-33. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

10-21. Use the equipment listed in Table 10-2 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and AR 59-4/ OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.



RIGGED LOAD DATA

	<i>TYPE I</i>	<i>TYPE II</i>
Weight.....	37,350	37,800
Height.....	100 inches	100 inches
Width.....	108 inches	108 inches
Length.....	436 inches	436 inches
Overhang: Front.....	36 inches	36 inches
Overhang: Rear (extraction force transfer coupling system).....	18 inches	18 inches
Overhang: Rear (extraction force transfer coupling system).....	30 inches	30 inches
Center of balance (from front edge of platform).....	177 inches	181 inches

Figure 10-33. 613S Water Distributor Rigged on a Type V Platform for Low-Velocity Airdrop

Table 10-2. Equipment Required for Rigging the 613WD Water Distributor on a Type V Platform for Low-Velocity Airdrop

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line lead, (line bag for DES)	1
	Clevis	
4030-00-432-2516	screw pin	4
4030-00-090-5354	large	6
4030-00-678-8562	medium	2
8305-00-184-2034	Cloth, cotton duck, 12.29oz, OD 60"	As required
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Extraction force transfer coupling (EFTC)	
1670-00-434-5782	Coupling assembly, airdrop, EFTC, w / 24-ft cable	1
1670-01-475-1990	Extraction parachute jettison system	1
1670-01-544-7425	Heavy extraction parachute jettison device	1
8305-00-290-5584	Felt, ½-inch	As required
1670-00-003-4391	Knife, parachute bag (for DES)	2
5340-00-040-8219	Knife, multi-parachute release strap, webbing	2
1670-01-183-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
	Line Multi-Loop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For drogue:	
1670-01-064-4452	60-ft (1-loop), type XXVI nylon webbing (DES)	1
	For extraction:	
1670-01-064-4454	60-ft (6-loop), type XXVI nylon (C-130 aircraft)	1
1670-01-468-9178	140-ft (6-loop), type XXVI nylon (C-17 aircraft)	1
	For riser extension:	
1670-01-062-6311	120-ft (2-loop), type XXVI nylon webbing	4
	For lifting:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6305	9-ft (4-loop), type XXVI nylon webbing	4
	For suspension:	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	4
	Link:	
1670-00-162-4979	Adapter, link assembly	1
1670-01-493-6418	Assembly small, two-point, 3 ¾-inch (drogue)	1
1670-00-006-2752	Four point, arm cluster assembly	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 10-2. Equipment Required for Rigging the 613WD Water Distributor on a Type V Platform for Low-Velocity Airdrop (Continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-072-5637	Jettison, C-130 (DES)	1
1670-01-483-8259	Link, Parachute connector (TRM H-block) (C-17)	1
	Lumber:	
5510-00-220-6146	2-by 4-inch	6
5510-00-220-6148	2-by 6-inch	10
5510-00-220-6246	2- by 8-inch	2
5530-00-128-4981	Plywood, ¾-inch sheet	7
5530-00-262-8195	Plywood, ½-inch sheet	1
5530-00-129-7721	Plywood, ¼-inch sheet	1
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	16 sheets
	Parachute:	
1670-01-016-7841	G-11	8
1670-00-040-8135	28-ft, extraction, heavy-duty	2
1670-01-063-3717	15-ft, Extraction Droque (DES)	1
	Platform, airdrop, type V, 32-ft:	1
1670-01-353-8425	Bracket assembly, component (EFTC)	1
1670-01-353-8424	Bracket, assembly, extraction	1
1670-01-162-2372	Clevis, load tiedown	65
1670-01-162-2381	Link, Tandem, link sups. assembly	2
1670-01-097-8817	Release, cargo parachute, M-2,	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft webbing	62
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	62
1670-00-937-0272	Binder, load, 10-000-lb	62
	Webbing:	
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8305-00-268-2411	Cotton, type I, ¼1/4-inch	As required
8305-00-082-5752	Nylon, tubular, ½-in, natural	As required
8305-00-263-3591	Nylon, type VIII	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

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Chapter 11

Rigging 613S Type I and II Scrapers on a Type V Platform for Low Velocity Airdrop

DESCRIPTION OF LOAD

11-1. The 613S type I and II and rebuy scrapers is described in the introduction. The load is rigged on a 32-foot, type V airdrop platform and requires eight G-11 cargo parachutes. The total rigged weight of the rebuy scraper is 37,880, the type I is 38,270, and the type II is 38,670. The maximum rigged weight for each scraper is 39,500 pounds. Each model overhangs the front of the platform by about 36 inches and the rear of the platform about 21 inches. The 613s scarper is shown in Figure 11-1.

CAUTION

Rigging of the 613S scraper for airdrop is critical. Deviations from the rigging procedures and materials covered in this manual may result in Air Force rejection of the load and or loss of the load.

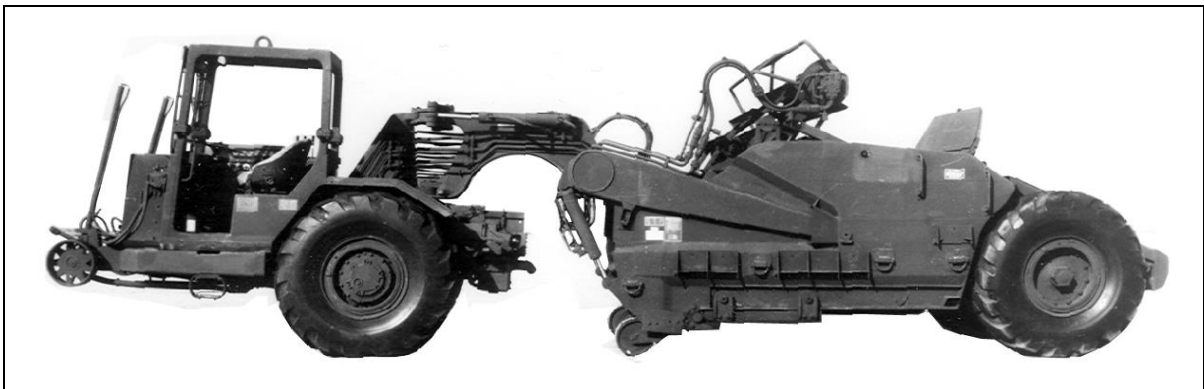
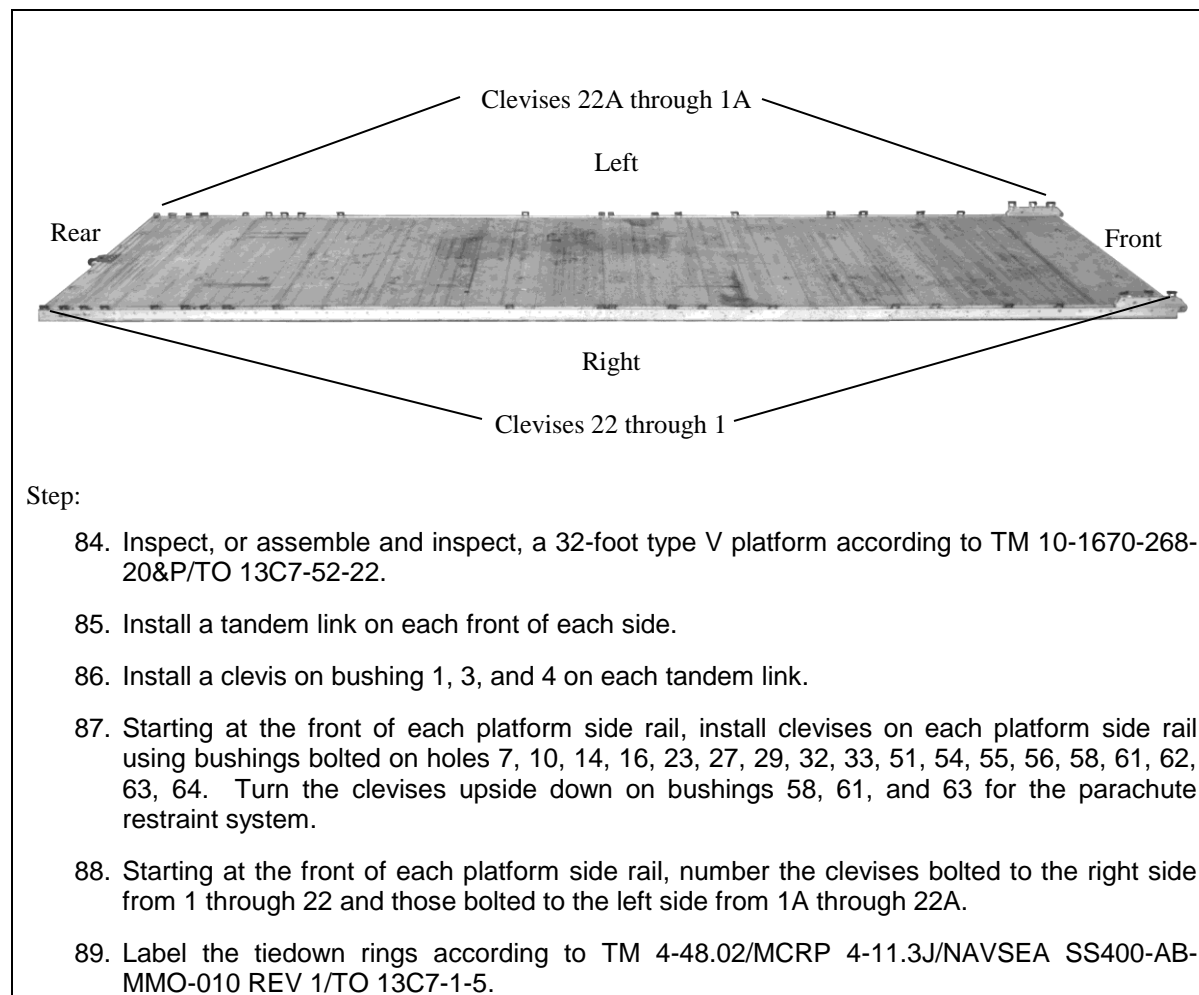


Figure 11-1. 613S Scraper

PREPARING PLATFORM

11-2. Prepare a 32-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22 using 34 tiedown clevises and as shown in Figure 11-2.



Step:

84. Inspect, or assemble and inspect, a 32-foot type V platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
85. Install a tandem link on each front of each side.
86. Install a clevis on bushing 1, 3, and 4 on each tandem link.
87. Starting at the front of each platform side rail, install clevises on each platform side rail using bushings bolted on holes 7, 10, 14, 16, 23, 27, 29, 32, 33, 51, 54, 55, 56, 58, 61, 62, 63, 64. Turn the clevises upside down on bushings 58, 61, and 63 for the parachute restraint system.
88. Starting at the front of each platform side rail, number the clevises bolted to the right side from 1 through 22 and those bolted to the left side from 1A through 22A.
89. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 11-2. Platform Prepared

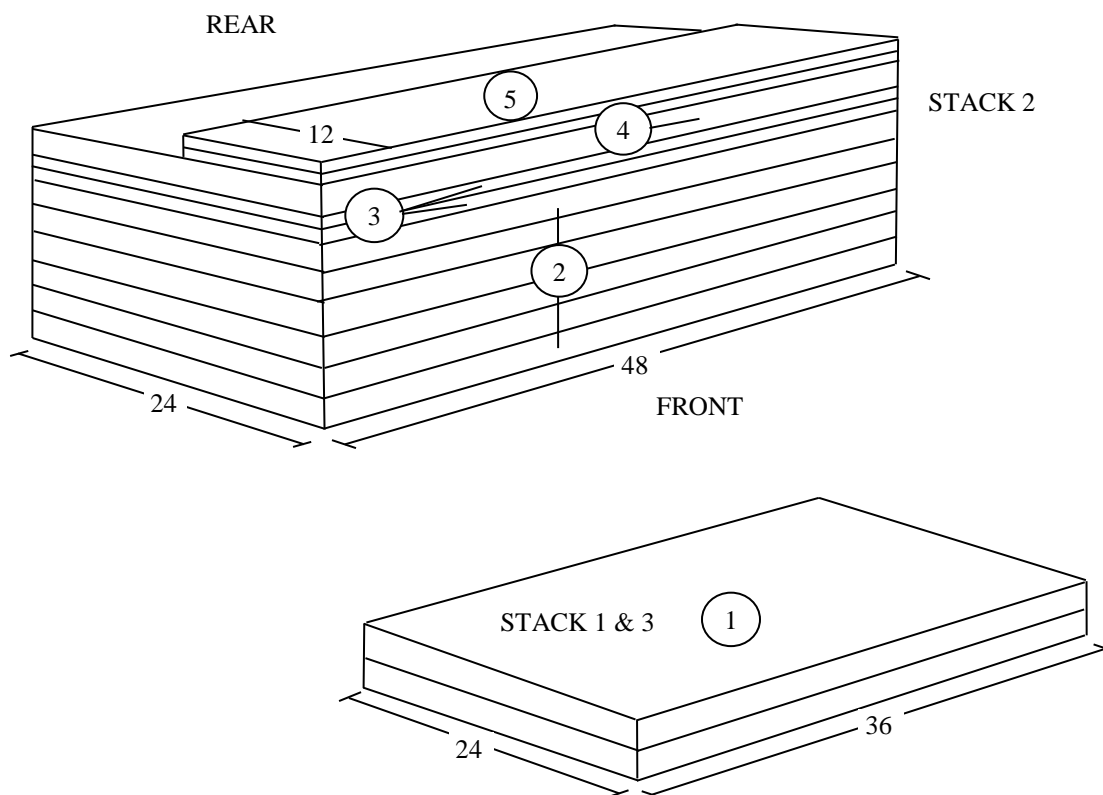
BUILDING AND POSITIONING HONEYCOMB STACKS

11-3. Build honeycomb stacks as shown in Figures 11-3 through 11-6 using the materials listed in Table 11-1. Position the honeycomb stacks on the platform as shown in Figure 11-7.

Table 11-1. Materials Needed for Honeycomb Stacks

<i>Stack Number</i>	<i>Pieces</i>	<i>Width (Inches)</i>	<i>Length (Inches)</i>	<i>Material</i>	<i>Instructions</i>
1	2	24	36	Honeycomb	See Figure 11-3
2	7	48	24	Honeycomb	See Figure 11-3
	2	48	24	¾-Inch Plywood	
	2	48	12	¾-Inch Plywood	
3	2	24	36	Honeycomb	See Figure 11-3
4	6	18	76	Honeycomb	See Figure 11-4
	2	18	36	Honeycomb	
	1	18	26	Honeycomb	
5	6	18	76	Honeycomb	See Figure 11-4
	2	18	36	Honeycomb	
	1	18	26	Honeycomb	
6	5	18	36	Honeycomb	See Figure 11-4
	1	18	30	Honeycomb	
	1	18	24	Honeycomb	
7	5	40	33	Honeycomb	See Figure 11-5
8	6	18	18	Honeycomb	See Figure 11-5
	1	18	18	¾-Inch Plywood	
9	6	48	60	Honeycomb	See Figure 11-6
	3	48	60	¾-Inch Plywood	
	4		50	2- by 6- Inch Lumber	
	1		33	2- by 6- Inch Lumber	

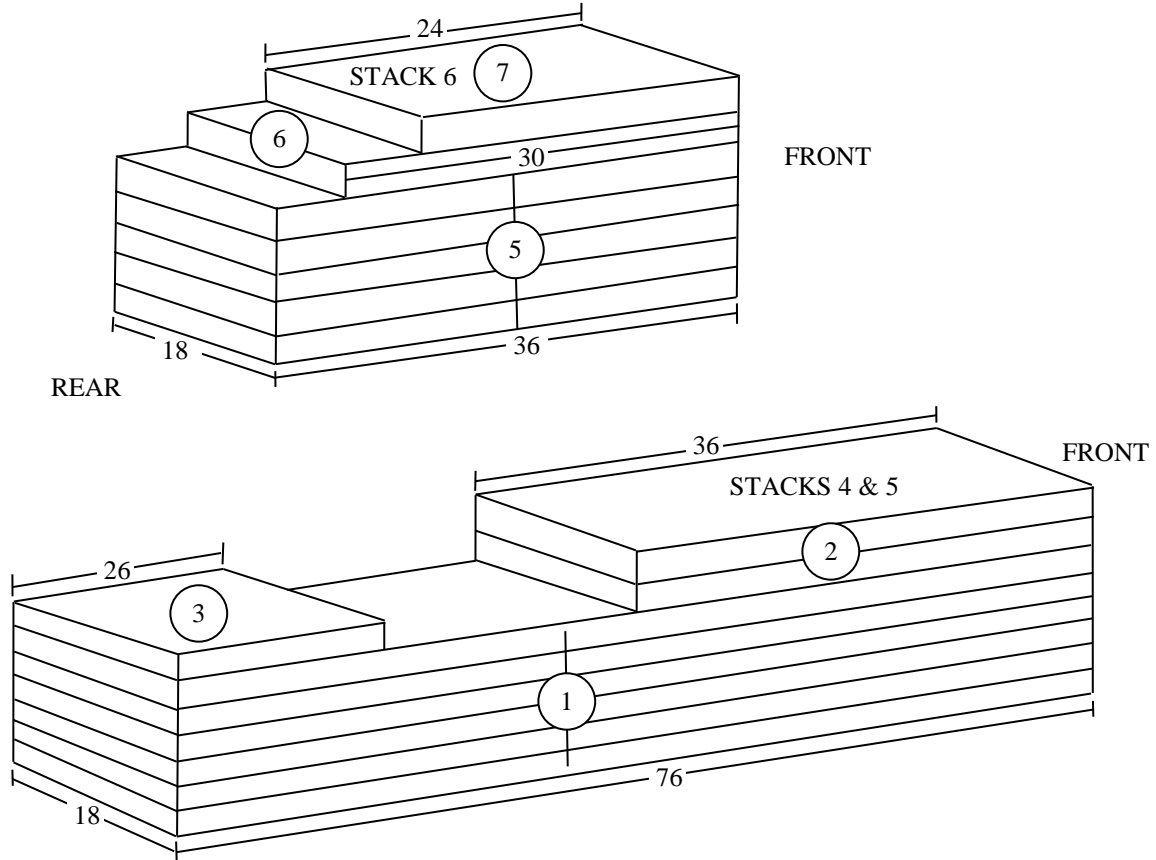
- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



- ① Glue two 24- by 36-inch pieces of honeycomb together to form a stack for stacks 1 and 3.
- ② Glue six 48- by 24-inch pieces of honeycomb together to form a base for stack 2.
- ③ Glue two 48- by 24-inch piece of $\frac{3}{4}$ -inch plywood on top of the base.
- ④ Glue one 48- by 24-inch pieces of honeycomb to the plywood.
- ⑤ Glue two 48- by 12- by $\frac{3}{4}$ -inch piece of plywood and glue it flush with the front edge of stack

Figure 11-3. Honeycomb Stacks 1, 2, and 3, Prepared

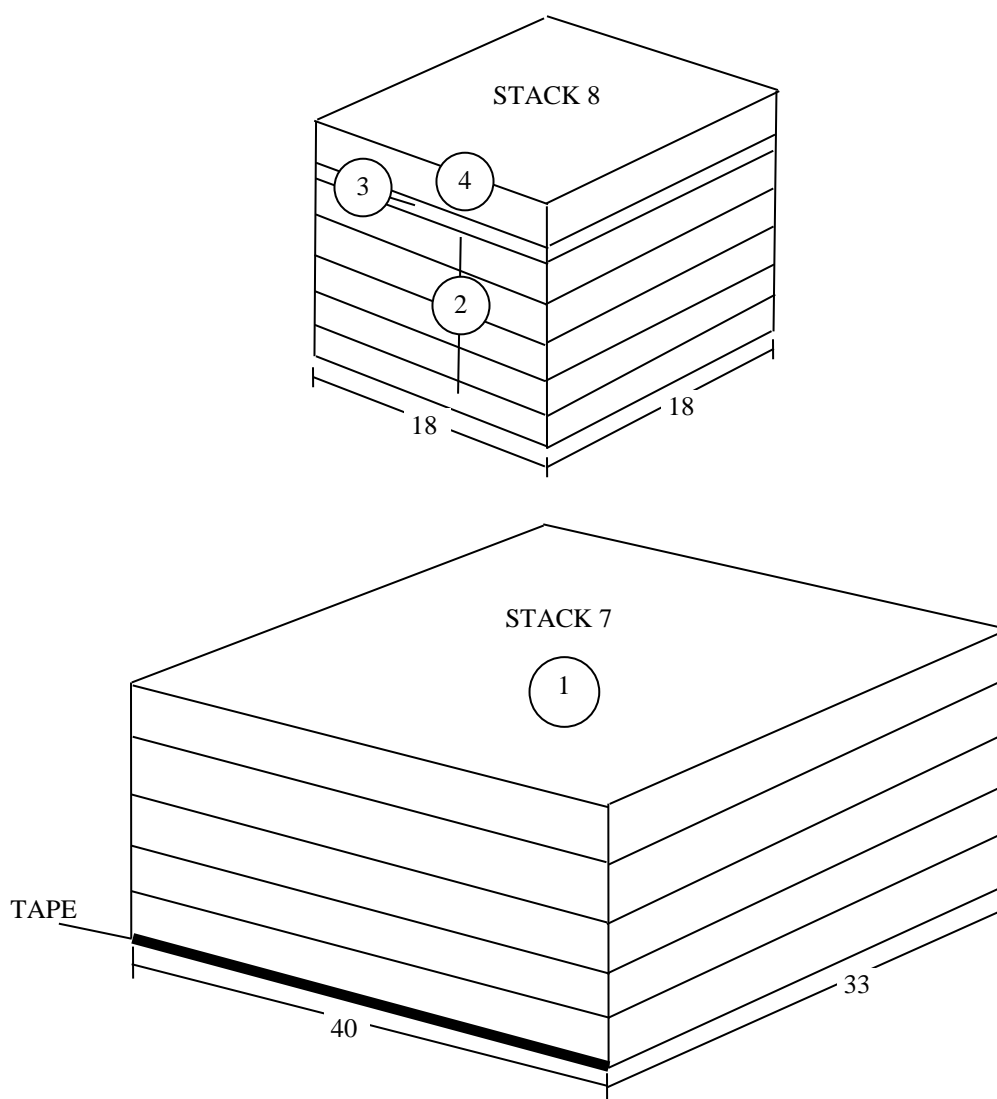
- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



- ① Glue six 18- by 76 pieces of honeycomb together to form a base for stacks 4.
- ② Glue two 18- by 36 inch pieces of honeycomb flush with the front edge of the stack.
- ③ Glue one 18- by 26- piece of honeycomb flush with the rear edge of the stack.
- ④ Repeat steps 1 through 3 for stack number 5. (Not Shown)
- ⑤ Glue five 18- by 36 inch pieces of honeycomb for the base of stack 6.
- ⑥ Glue one 18- by 30 inch piece of honeycomb flush with the front side.
- ⑦ Glue one 18- by 24 inch piece of honeycomb flush with the front side.

Figure 11-4. Honeycomb Stack 4, 5 and 6 Prepared

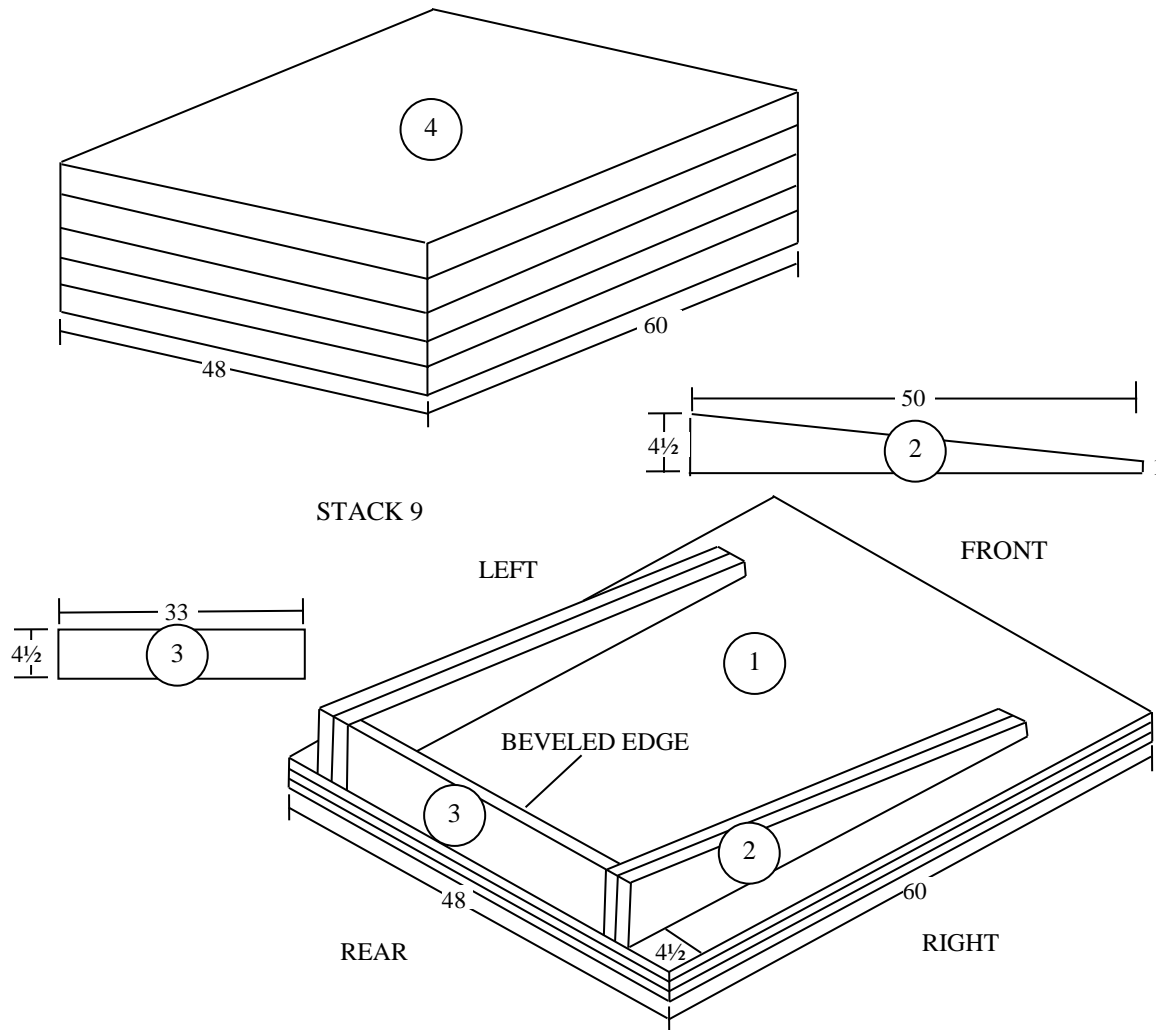
- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



- ① Glue five 40- by 33-inch pieces of honeycomb together for stack 7. Tape the bottom left and right edges.
- ② Glue five 18- by 18 pieces of honeycomb together for the base of stack 8.
- ③ Glue one 18- by 18- by $\frac{3}{4}$ -inch piece of plywood on top of the stack.
- ④ Glue one 18- by 18 piece of honeycomb on top of the plywood.

Figure 11-5. Honeycomb Stack 7 and 8 Prepared

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



- ① Nail three 48- by 60- by 3/4 inch pieces of plywood together with 8d nails to form a base.
- ② Place and nail two 50- by 4 1/2- by 1- inch pieces lumber 4 1/2 inches from the 60 inch side flush with the rear edge of the base with 16d nails. Repeat on the opposite side.
- ③ Bevel one side of a 4 1/2- by 33- by 2- by 6 inch piece of lumber 7 degrees and nail it flush with the rear edge with the beveled edge to the front between lumber in step 2 with 16d nails.
- ④ Glue six 48- by 60 inch piece of honeycomb to form the base.
- ⑤ Place the load spreader on top of the base. (Not Shown).

Figure 11-6. Honeycomb Stack 9 Prepared

BUILDING LOAD SPREADER AND SUPPORTS

11-4. Build the transmission housing load spreader and engine mount support as shown in Figures 11-7 through 11-10. The engine mount support will be installed in Figure 11-22 and the transmission load spreader will be installed in Figure 11-23.

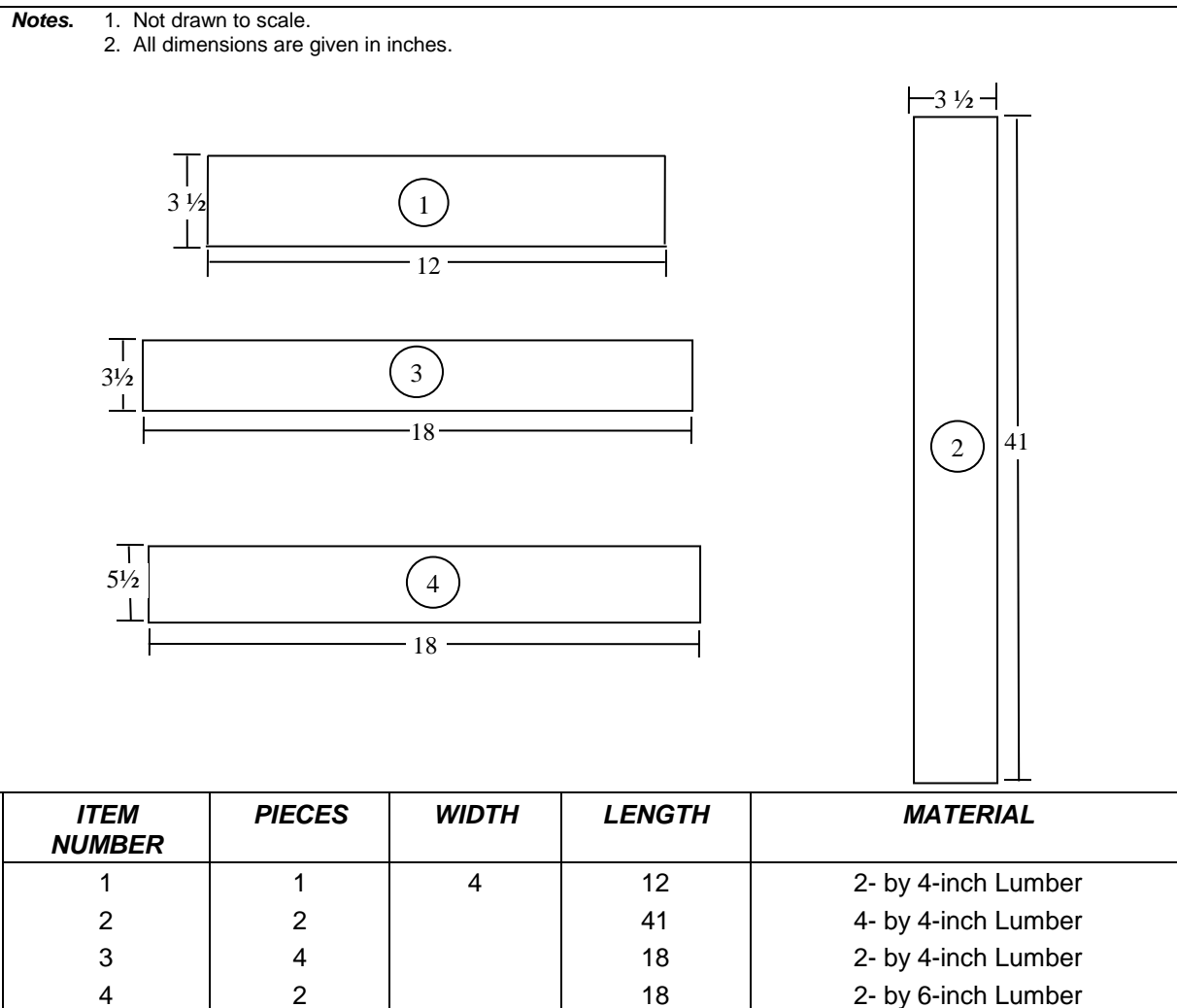
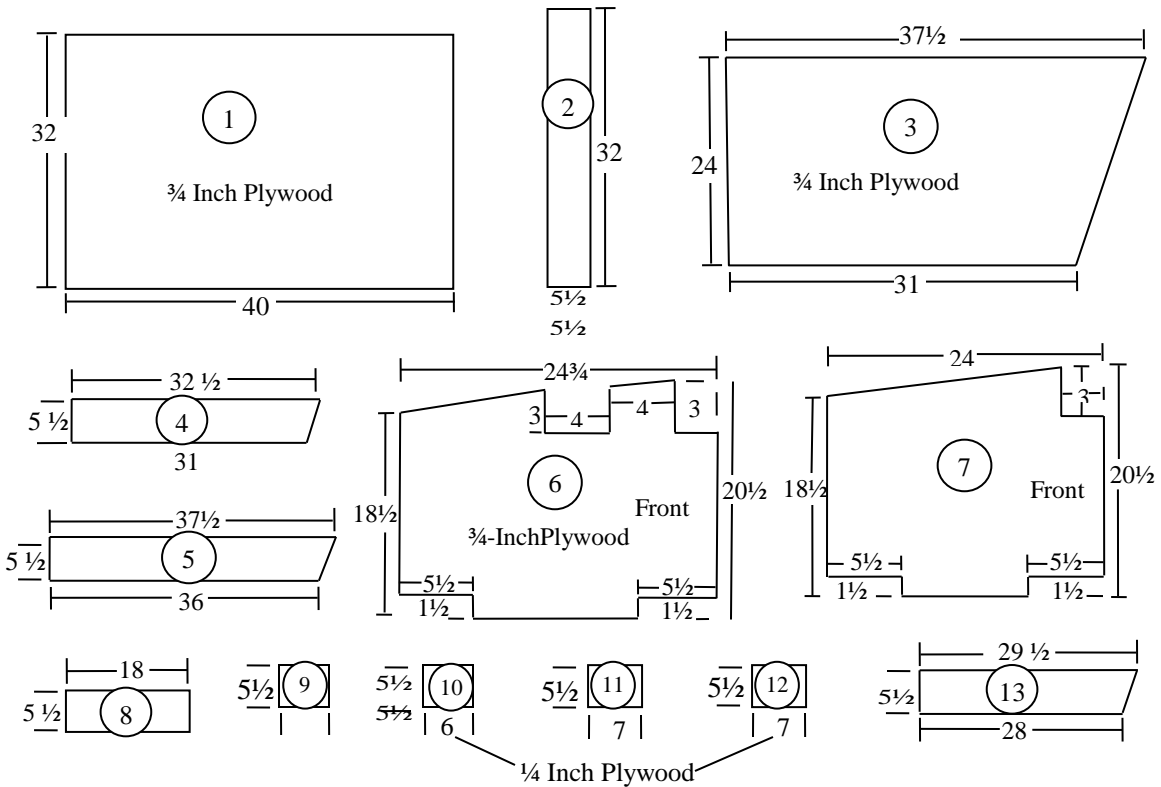


Figure 11-7. Materials Needed for Engine Mount, Elevator Supports

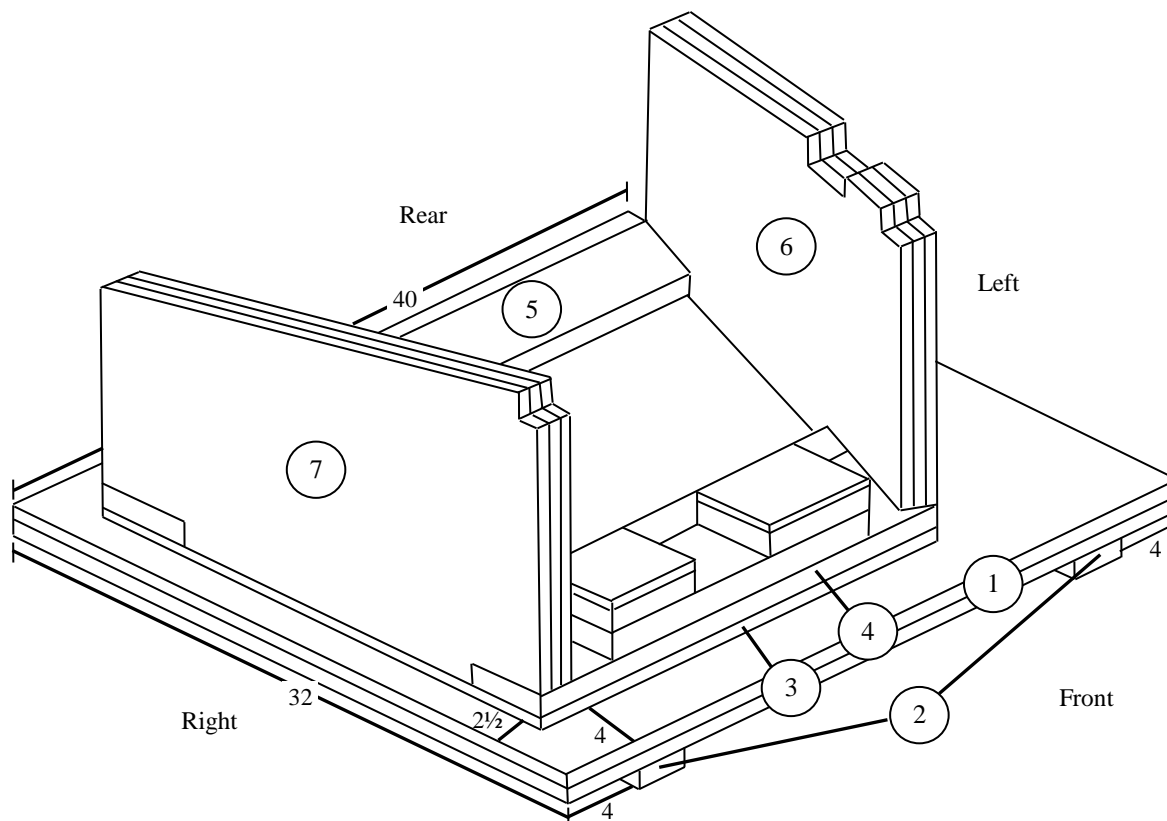
- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.



ITEM NUMBER	PIECES	WIDTH	LENGTH	MATERIAL
1	2	32	40	¾-inch Plywood
2	2		32	2- by 6-inch Lumber
3	1	37½ / 31	24	¾-inch Plywood
4	1		32½ / 31	2- by 6-inch Lumber
5	1		37½ / 36	2- by 6-inch Lumber
6	3	18½ / 20½	24¾	¾-inch Plywood
7	3	18½ / 20½	24	¾-inch Plywood
8	1		18	2- by 6-inch Lumber
9	1		6	2- by 6-inch Lumber
10	1	6	5½	¼-inch Plywood
11	1		7	2- by 6-inch Lumber
12	1	7	5½	¼-inch Plywood
13	1		29½ / 28	2- by 6-inch Lumber

Figure 11-8. Material Needed for Transmission Load Spreader Built

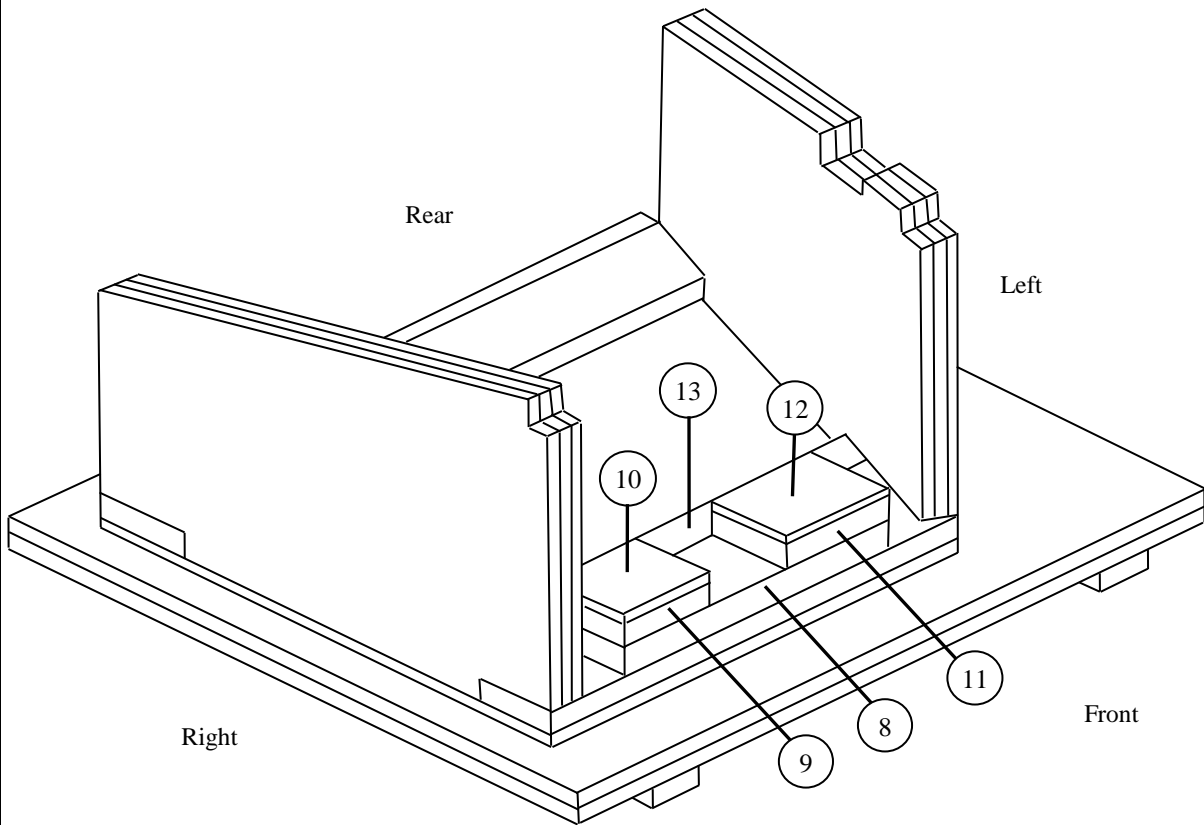
- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



- ① Glue two 32- by 40- by $\frac{3}{4}$ -inch pieces of plywood together to form a base.
- ② Turn the plywood over and glue and nail two 32- by 2- by 6 inch long piece of lumber 4 inches in from the left and right side.
- ③ Glue and nail one 24- by 31- by 37 $\frac{1}{2}$ -inch piece of plywood placed with the 31 inch side 2 $\frac{1}{2}$ -inches from the right side and 4 inches from the front side.
- ④ Glue and nail one 31- by 32 $\frac{1}{2}$ - by 2- by 6 inch piece of lumber flush with the front of step 2 plywood.
- ⑤ Glue and nail one 36- by 37 $\frac{1}{2}$ - by 2- by 6- by inch piece of lumber flush with the rear of step 2 plywood.
- ⑥ Glue three 18 $\frac{1}{2}$ - by 20 $\frac{1}{2}$ - by 24- by $\frac{3}{4}$ inch plywood cut as shown in Figure 2-7 together and nail with outside flush with the left side of the step 2 plywood and lumber in steps 3 and 4.
- ⑦ Glue three 18 $\frac{1}{2}$ - by 20 $\frac{1}{2}$ - by 24 $\frac{3}{4}$ - by $\frac{3}{4}$ inch plywood cut as shown in Figure 2-7 together and nail with outside flush with the right side of the step 2 plywood and lumber in steps 3 and 4.

Figure 11-9. Transmission Load Spreader Prepared

- Notes.** 1. Not drawn to scale.
2. All dimensions are given in inches.

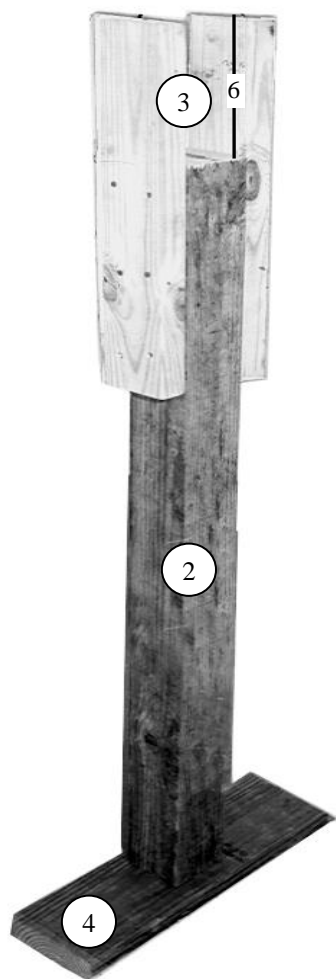
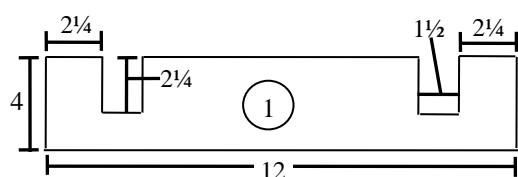


- ① Center and nail a 18- by 2- by 6-inch piece of lumber between steps 6 and 7 plywood and flush with the front of the lumber in step 4.
- ② Nail a 6- by 2- by 6 inch piece of lumber flush with the right side of the lumber in step 8.
- ③ Nail a 6- by 5½ ¼-inch piece of plywood on top of the lumber in step 9.
- ④ Nail a 7- by 2- by 6 inch piece of lumber flush with the right side of the lumber in step 8.
- ⑤ Nail a 7- by 5½ ¼-inch piece of plywood on top of the lumber in step 11.
- ⑥ Nail 28- by 29 ½ -by 2- by 6 inch piece of lumber flush against the lumber in step 8.

Note: The load spreader will be positioned during vehicle preparation.

Figure 11-9. Transmission Load Spreader Prepared (Continued)

- Notes.**
1. Not drawn to scale.
 2. All dimensions are given in inches.



- ① Cut a 12 by 2- by 4-inch piece of lumber as shown above to be used as an engine mount support.
- ② Nail two 18- by 2- by 4 inch pieces of lumber to a 4- by 4 inch piece of lumber with six inches of the 2- by 4 above the 4- by 4.
- ③ Nail one 18- by 2- by 6 inch piece of lumber to the bottom of the 4- by 4 inch lumber.
- ④ This will be used as an elevator support.
- ⑤ Repeat step 1 through 3 for a second elevator support.

Figure 11-10. Engine Mount and Two Elevator Supports Built

POSITIONING HONEYCOMB STACKS,

11-5. Place the honeycomb stacks and ½ inch tubular nylon as shown in Figure 11-11.

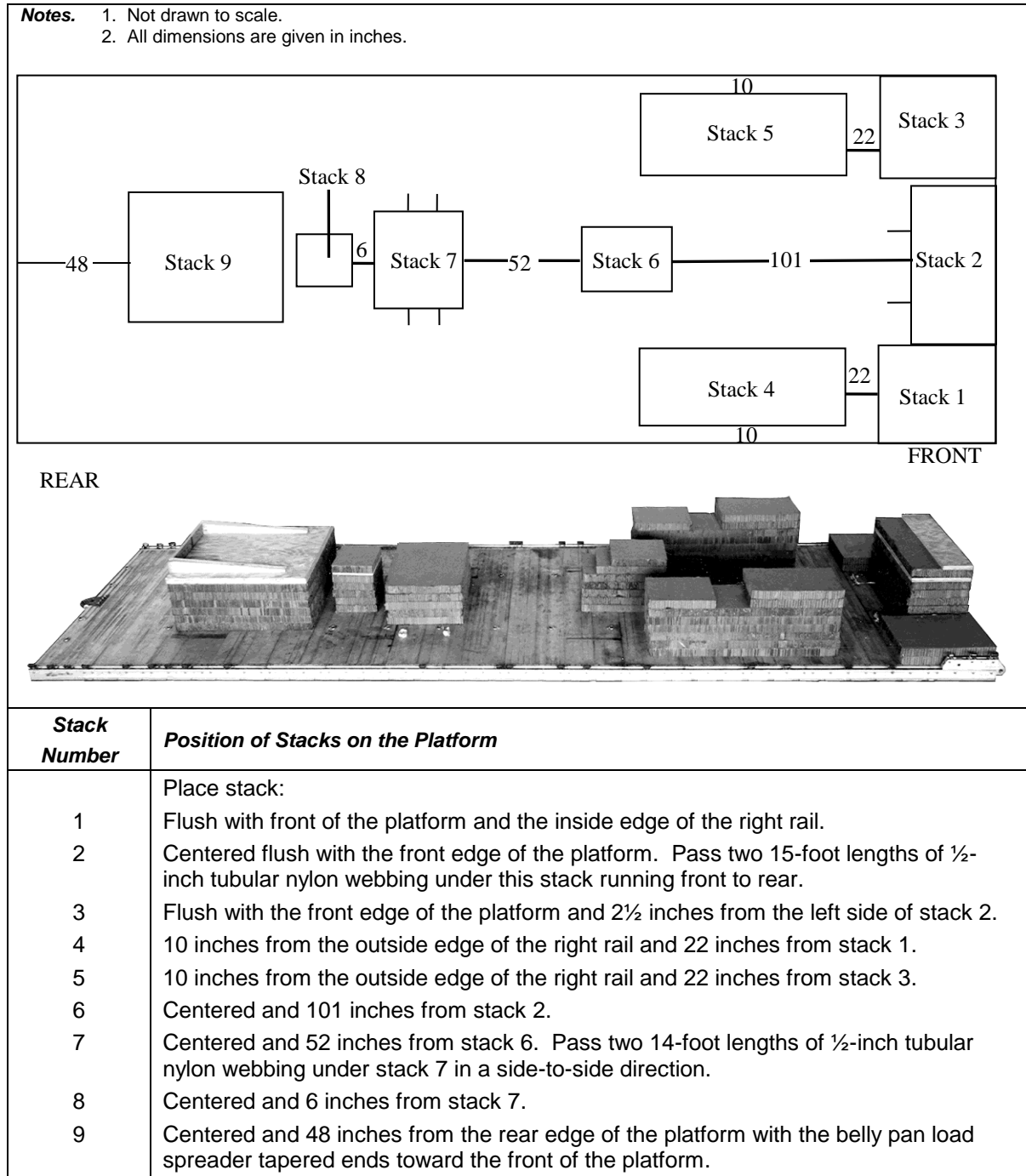


Figure 11-11. Honeycomb Stacks Positioned on the Platform

PREPARING THE 613S TYPE I AND TYPE II WATER DISTRIBUTOR BEFORE DELIVERY TO THE RIGGING SITE

11-6. Prepare the 613S type I and type II scrapers before delivery to the rigging site as follows: On the type I remove the following components; the ROPS; bowl cutting edge wheels; windshield; and the IAT kit consisting of the front load transfer axle, hydraulic cylinders, control valve, hose assemblies, and auxiliary load transfer wheel. Figure 11-12 shows the type I scraper with components removed.

11-7. On the type II remove the same items and in addition; the EAT kit consisting of the steering axle, axle mounting brackets, auxiliary fuel tank, skid plate, skid plate mounts, and jack stands. These components are not airdropped and stored at the unit's site.

11-8. On both type I and type II remove the cutting edge teeth and stow them in the tool box on the rear deck. Pad the wiper controls with cellulose wadding and secure them to the vent control arm with type III nylon cord. Make sure the fuel tank is no more than $\frac{1}{2}$ full. Adjust the tire pressure to 17 psi in the front tires and 24 psi in the rear tires; this is critical for meeting the height limitation. Safety the towing pintle on the front of the scraper as shown in Figure 11-13. If you cannot secure the towing pintle as shown, remove it and stow in the tool box. Make sure the battery and battery compartment complies with AFMAN 24-204/TM 38-250.

CAUTION

Make sure all equipment is removed by a qualified operator or qualified maintenance personnel.

Do not remove the skid mounting brackets on the transmission.

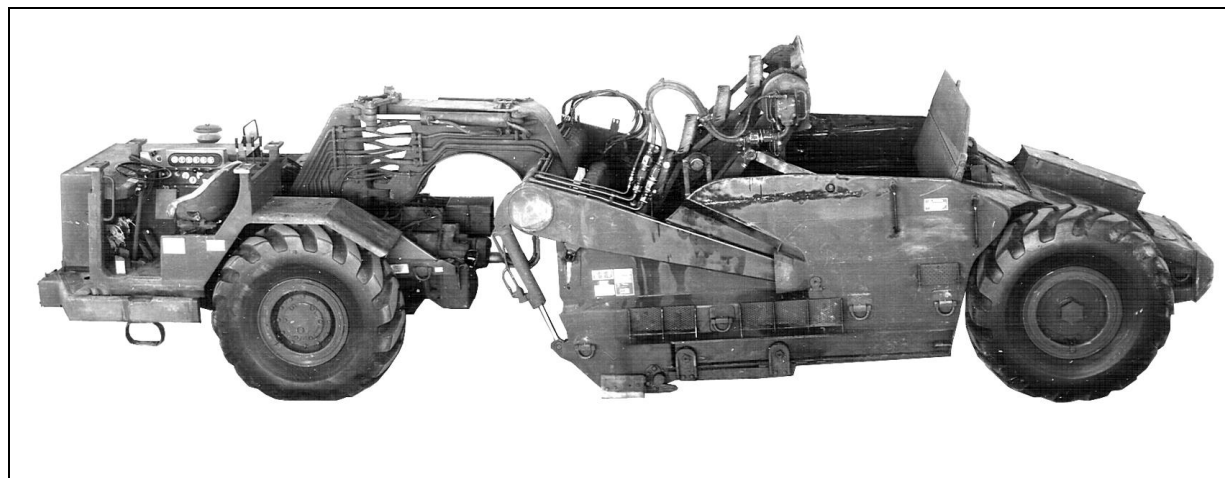
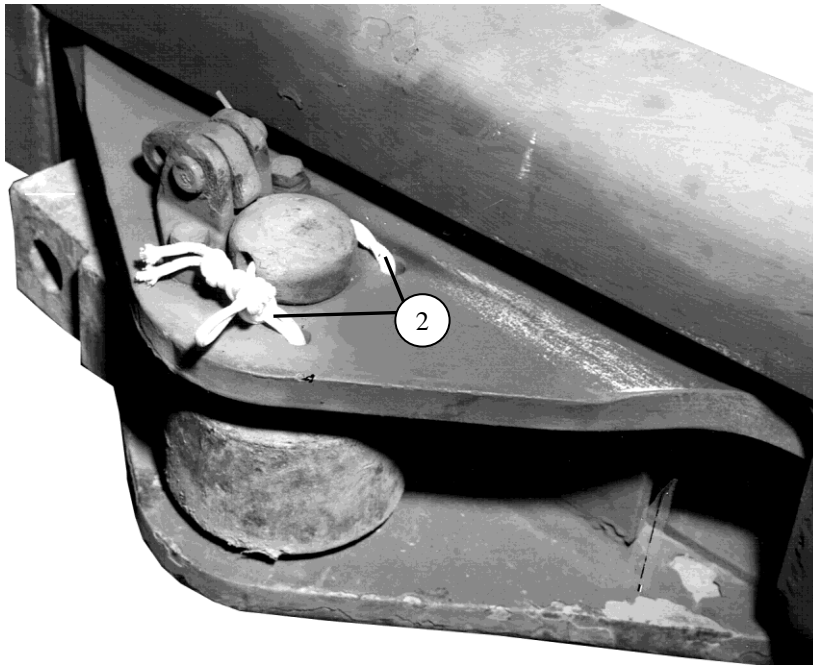


Figure 11-12. 613S Scraper

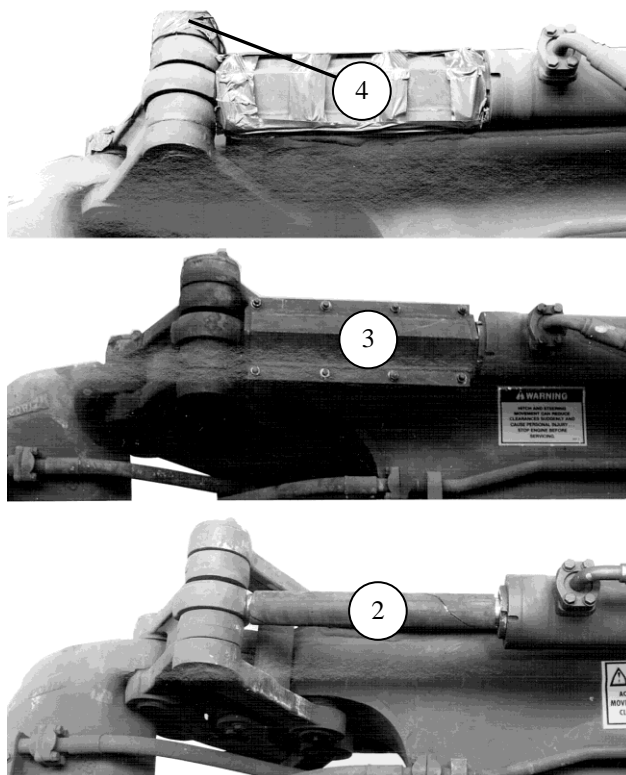


- ① Safety the pintle with a large cotter pin on the bottom. (Not Shown)
- ② Safety the top latch with 1 turn double type III nylon.

Figure 11-13. Pintle Hook Safety-tied

PREPARING THE 613S SCRAPER AT THE RIGGING SITE

11-9. Prepare the scraper after delivery to the rigging site as shown in Figures 11-14 through 11-20. Raise the scraper bowl and have the operator install the steering cylinder rod travel lock sleeves according to figure 11-14. Prepare the elevator motor assembly as shown in Figure 11-15. Install the elevator supports as described in Figure 11-16. Secure the ejector and remove the hanger arms as shown in Figure 11-17. Install medium clevises, secure the steps and remove components according to Figure 11-18. Secure the components on the rear deck as shown in Figure 11-19. Prepare the cab as shown in Figure 11-20. Remove and stow the muffler as shown in Figure 11-21. Install the engine mount support as shown in Figure 11-22. Install the transmission housing load spreader as shown in Figure 11-25.



Note. Steps 1, 2, 3, and 4 must be performed by the vehicle operator.

- ① Raise the scraper bowl to its maximum height. Make sure the power and scraper section of the vehicle are aligned in a straight-line position. (Not Shown).
- ② Wrap the rod with the rubber bushing provided in the steering cylinder rod travel lock sleeve kit.
- ③ Bolt on the steering cylinder lock sleeves. Make sure the sleeve flanges are vertical and bolt nuts are on the outside.
- ④ Tape nuts, bolts, edges of the sleeves, and tops of steering arm joints.

Figure 11-14. Scraper Bowl Raised and Steering Cylinder Rod Travel Lock Sleeve Installed

Note. The bottom photo shows the items before removal. The middle photo shows the items removed. The top photo is the view from inside the scraper bowl.

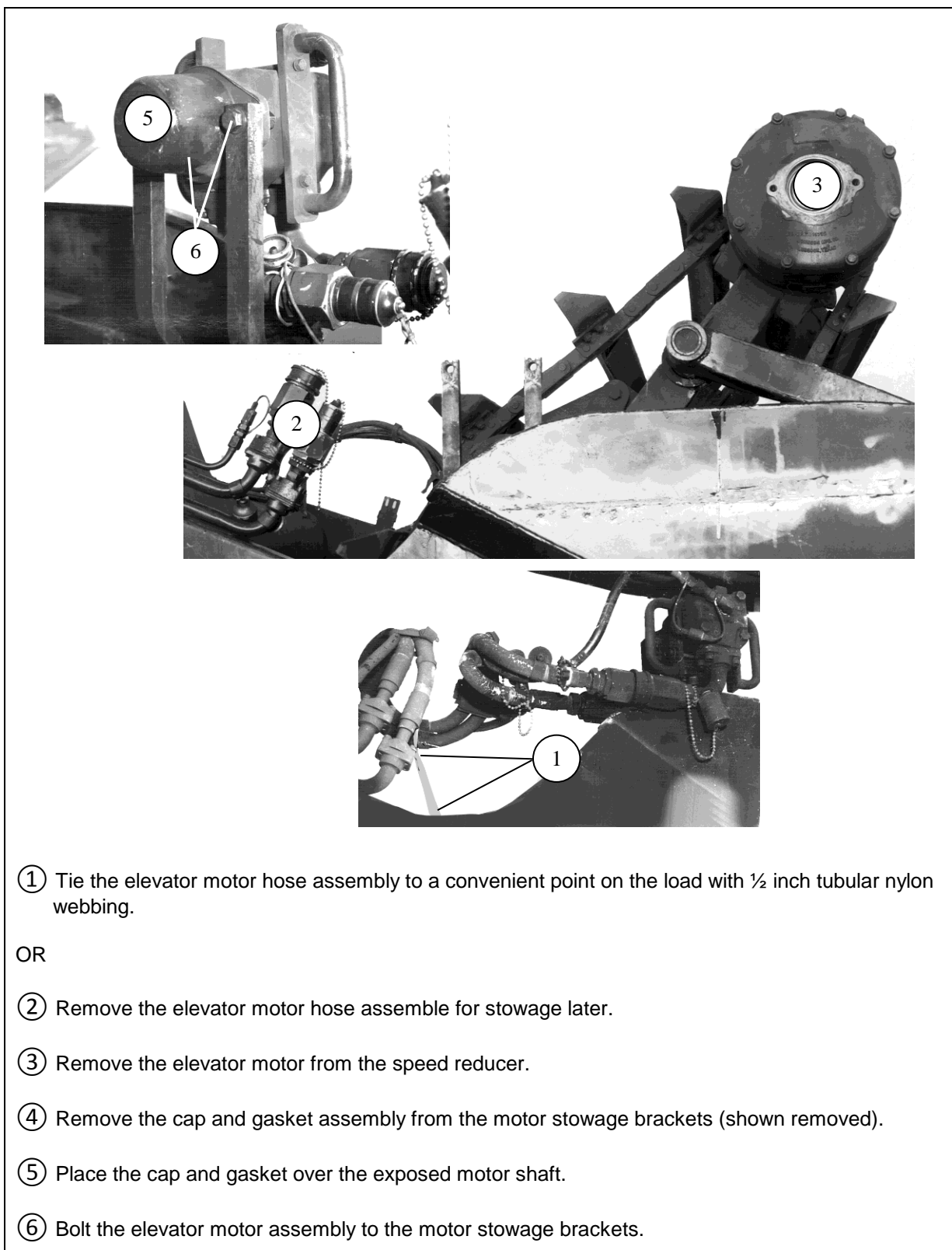
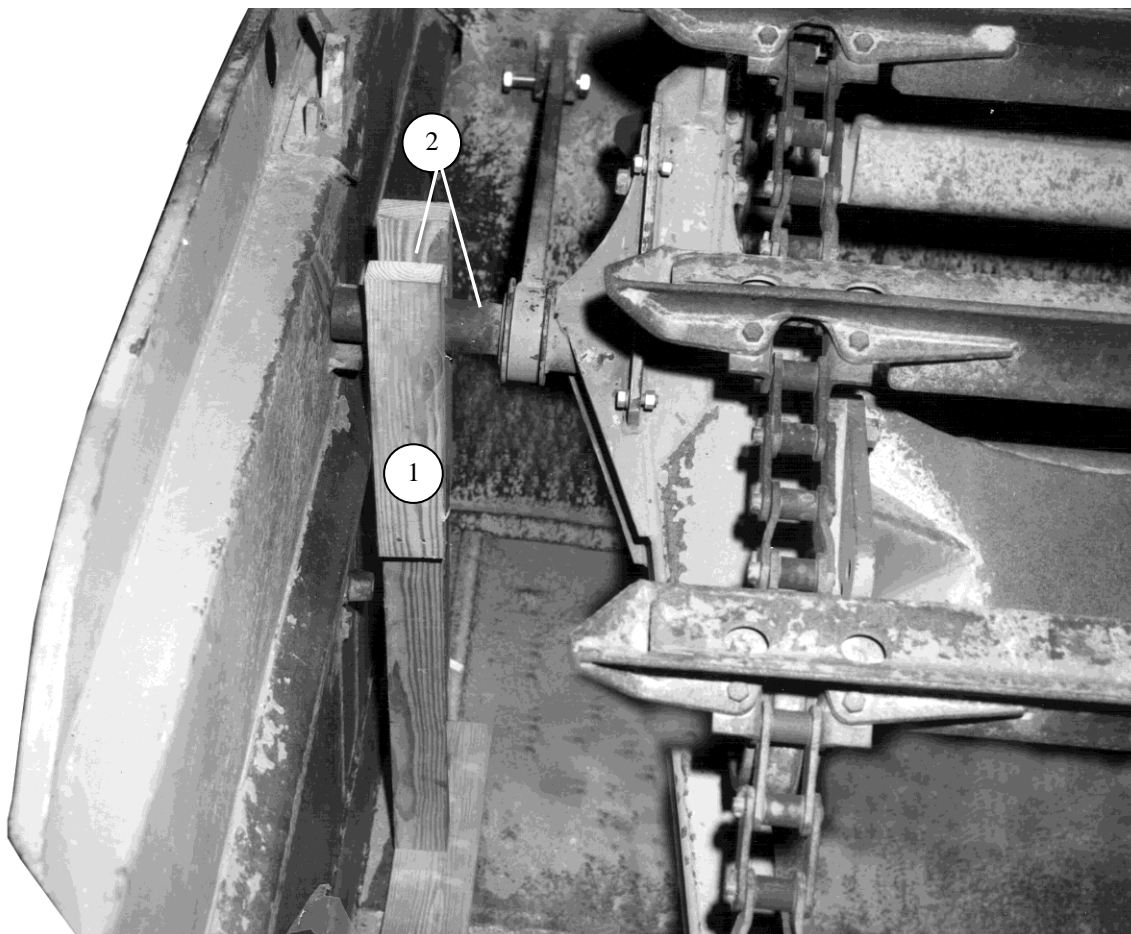


Figure 11-15. Elevator Motor Assembly Prepared

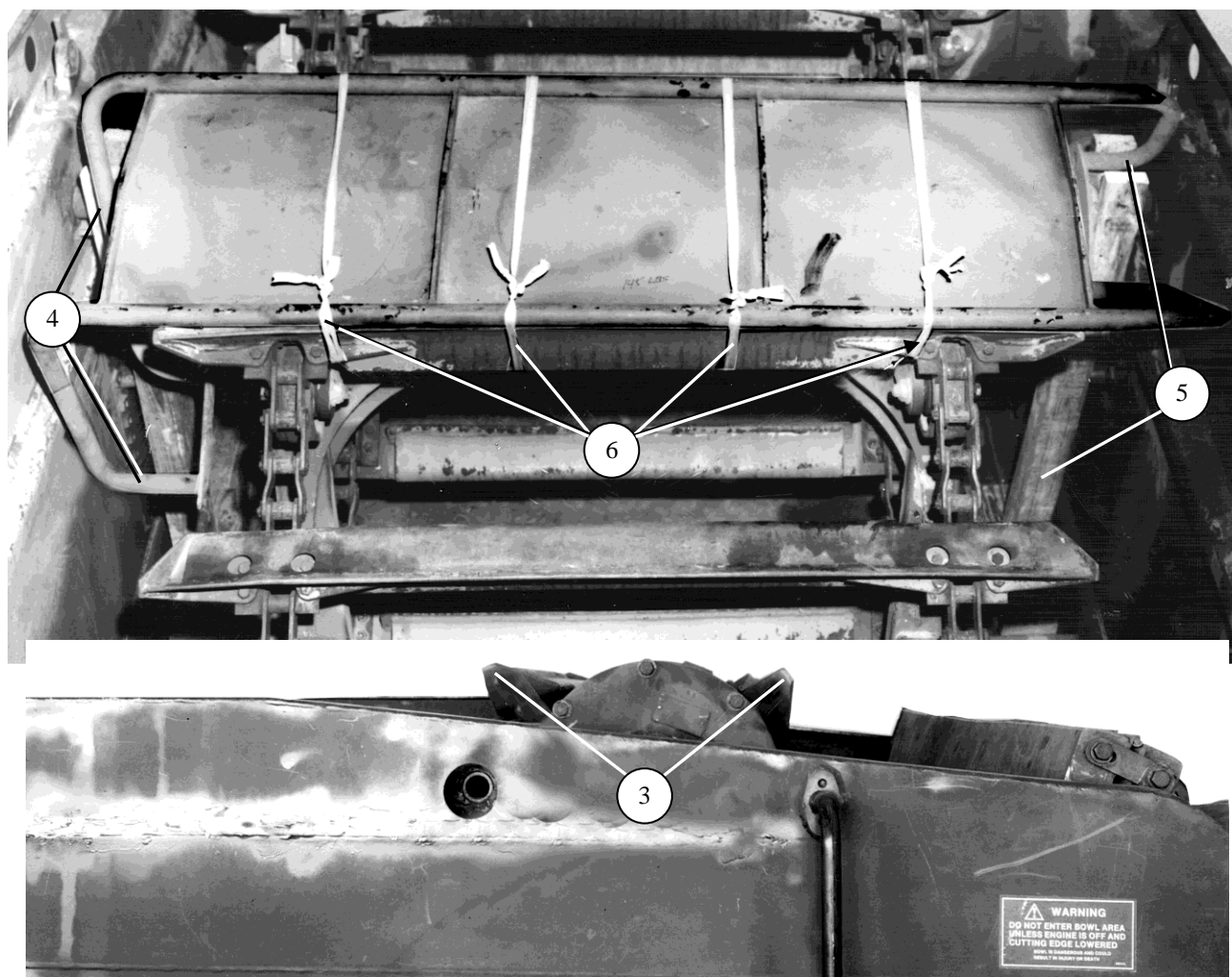


CAUTION

These steps in Figure 11-16 are a three-person operation. The driver maintains hydraulic pressure on the ejector while two assistants perform these tasks. The assistants must remain on the steps outside the scraper bowl.

- ① Position the two elevator supports inside the bowl between the elevator hanger arm support brackets and the hanger arm pivot points.
- ② Have the operator retract the ejector and lower the elevator into the bowl and onto the supports. Adjust the supports, if necessary, so that they are vertical.

Figure 11-16. Elevator Assembly Prepared and Supports Installed



CAUTION

Wait until the elevator supports are placed and the elevator slats are in the reduced height position before beginning this procedure.

- ③ Manually position the elevator slats as shown to reduce height. A pry bar may have to be used.
- ④ Place the straight portion of the guard supports in the left side of the scraper bowl just behind the left elevator support.
- ⑤ Place the right front curved part of the guard support into the right elevator support.
- ⑥ Tie the elevator rack guard to the two uppermost elevator slats with four lengths of ½ inch tubular nylon.

Figure 11-16. Elevator Assembly Prepared and Supports Installed (Continued)

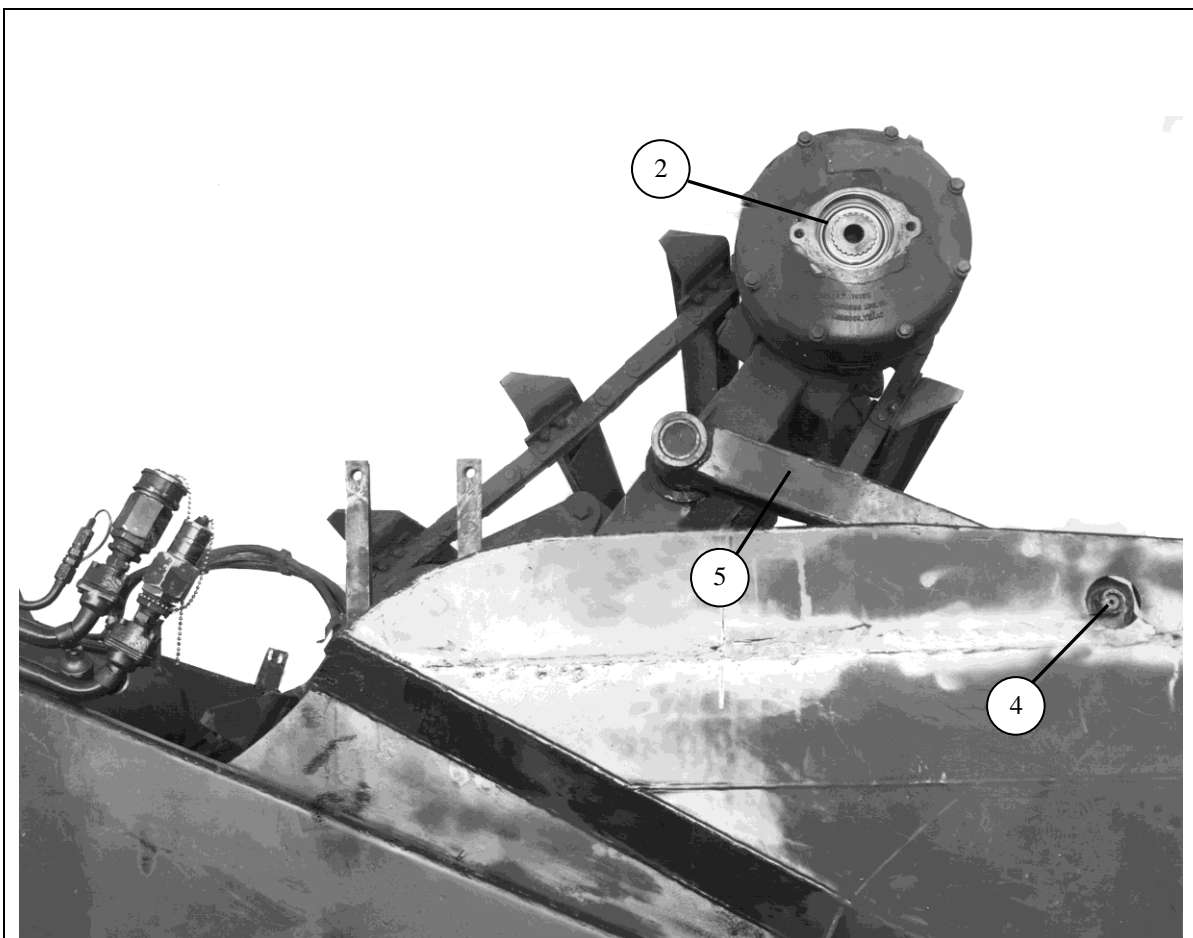


CAUTION

The operator must keep the engine running to maintain control of the ejector during this operation.

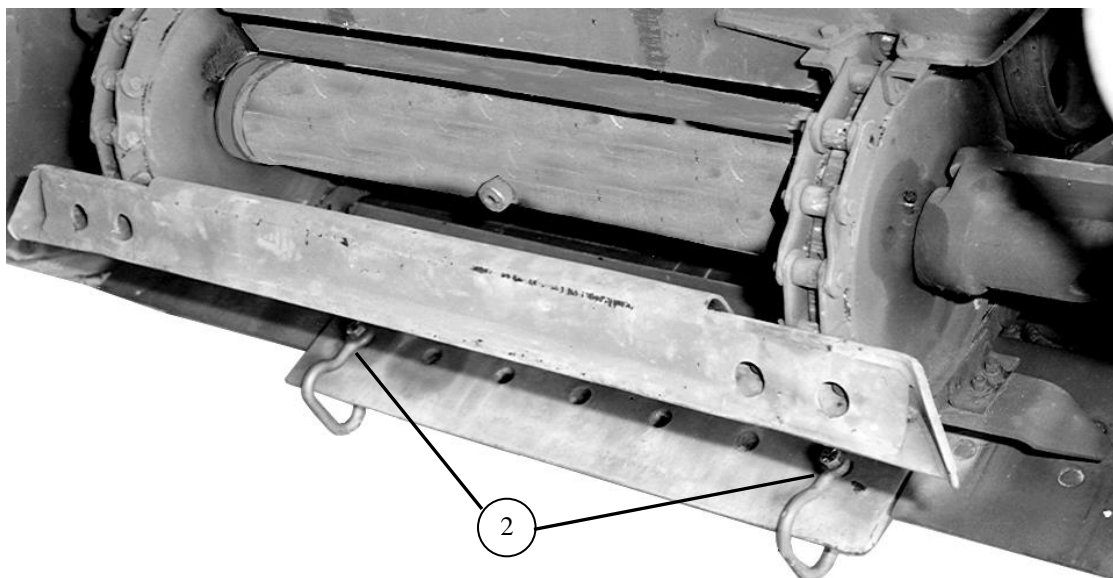
- ① Remove the bolts (not shown).
- ② Fold the tip section of the ejector, and secure it with the metal straps provided. Replace the bolts.

Figure 11-17. Ejector Secured and Hanger Arms Removed



- ③ Bolt the plate from the cap and gasket assembly (removed in Figure 2-15 step 4) over the speed reducer opening.
- ④ Have the operator move the ejector forward. Attach the reactor links to the ejector with the pins and eyes provided. (Not Shown)
- ⑤ Remove the hanger arm pin retaining nuts and bolts.
- ⑥ Remove the elevator hanger arms and pins. Replace the pins in the hanger arm holes for stowage later.

Figure 11-17. Ejector Secured and Hanger Arms Removed (Continued)



- ① Have the operator raise the bowl to the full UP position. Place safety chocks under the bowl cutting edge. (not shown).
- ② Bolt a medium suspension clevis to each outboard cutting edge hole.
- ③ Fold the front, rear, and center steps on both sides of the bowl section in the UP position. Secure them with the bolts provided. Pad the lower corners of the folded center steps. (Not Shown)
- ④ Remove the air pre-cleaner and its shaft. Tape the hole in the air cleaner. Stow the pre-cleaner in the toolbox on the rear deck of the scraper. (not shown)
- ⑤ Remove the rear view mirror. Pad the mirror and stow it in the toolbox. (not shown)
- ⑥ Stow the air hoses and the air gauges in the toolbox. Pad all items sufficiently to prevent damage. (not shown)

Figure 11-18. Medium Suspension Clevises Installed and Components Removed

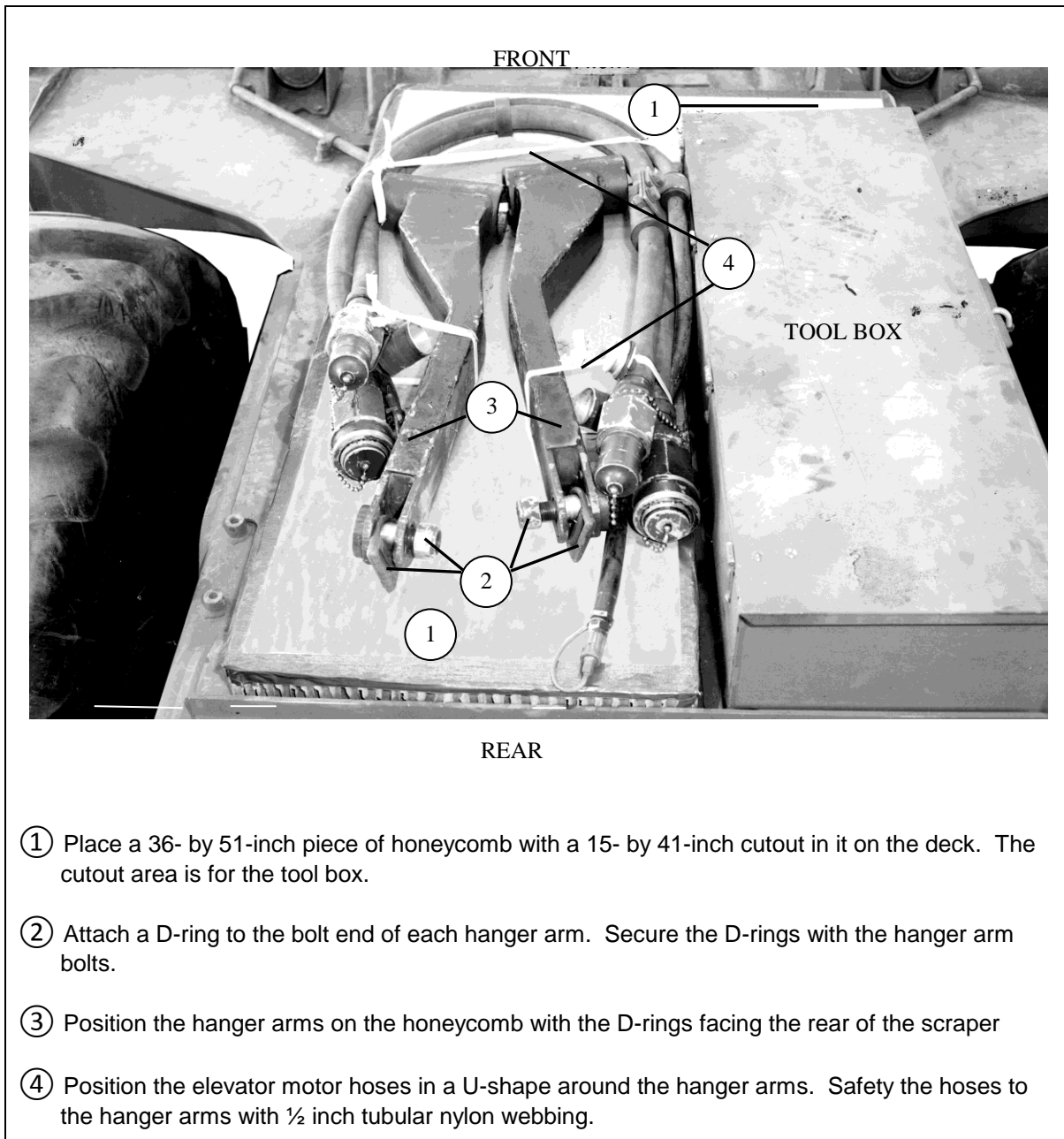
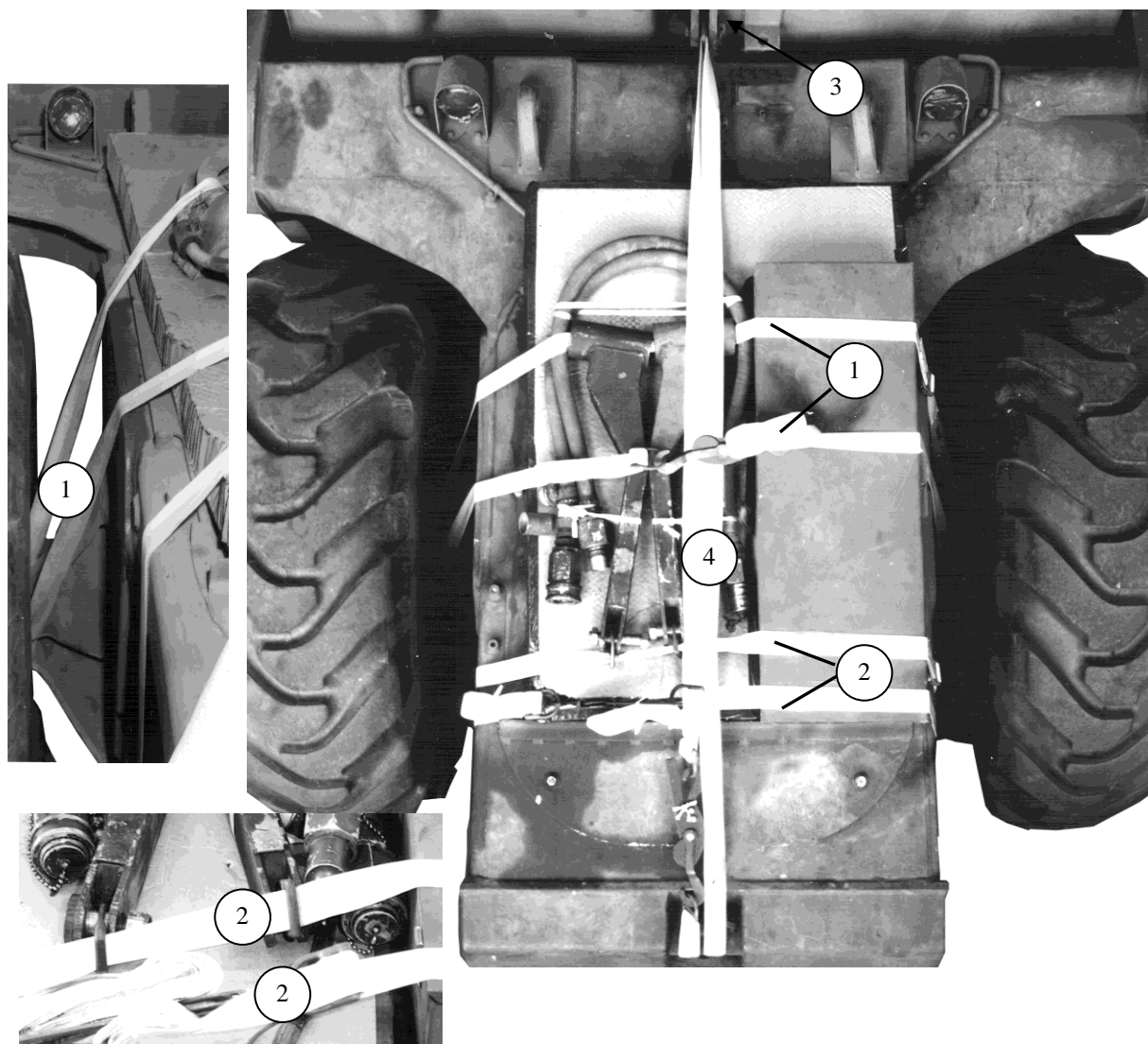
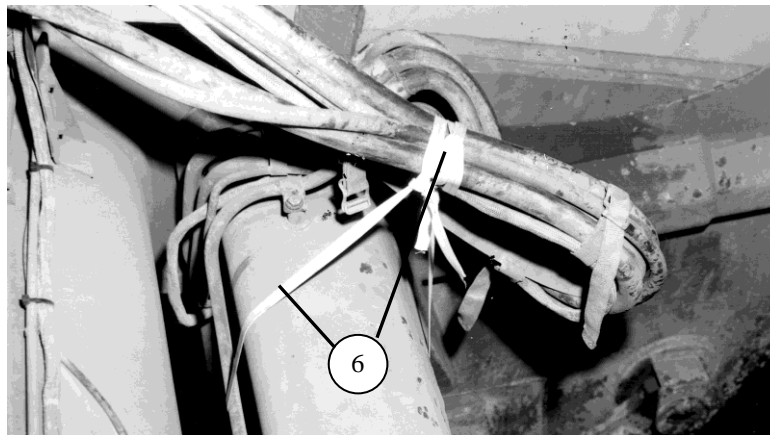
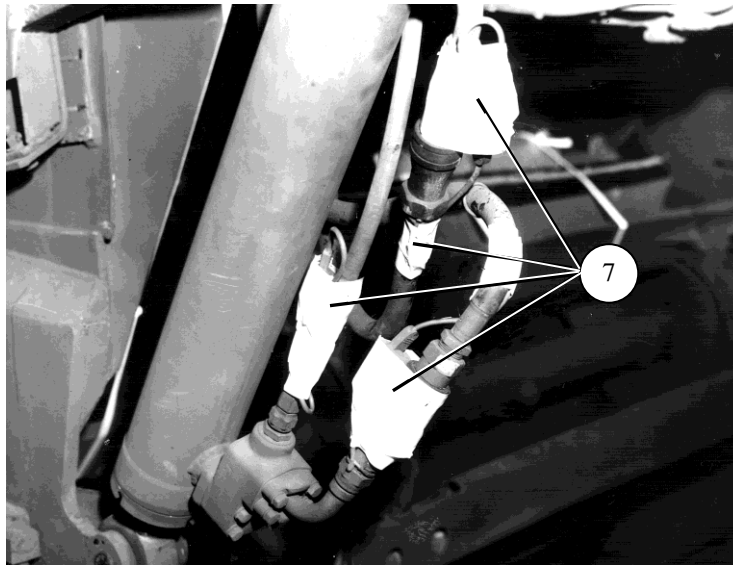


Figure 11-19. Hanger Arms and Elevator Motor Hoses Positioned on the Rear Deck



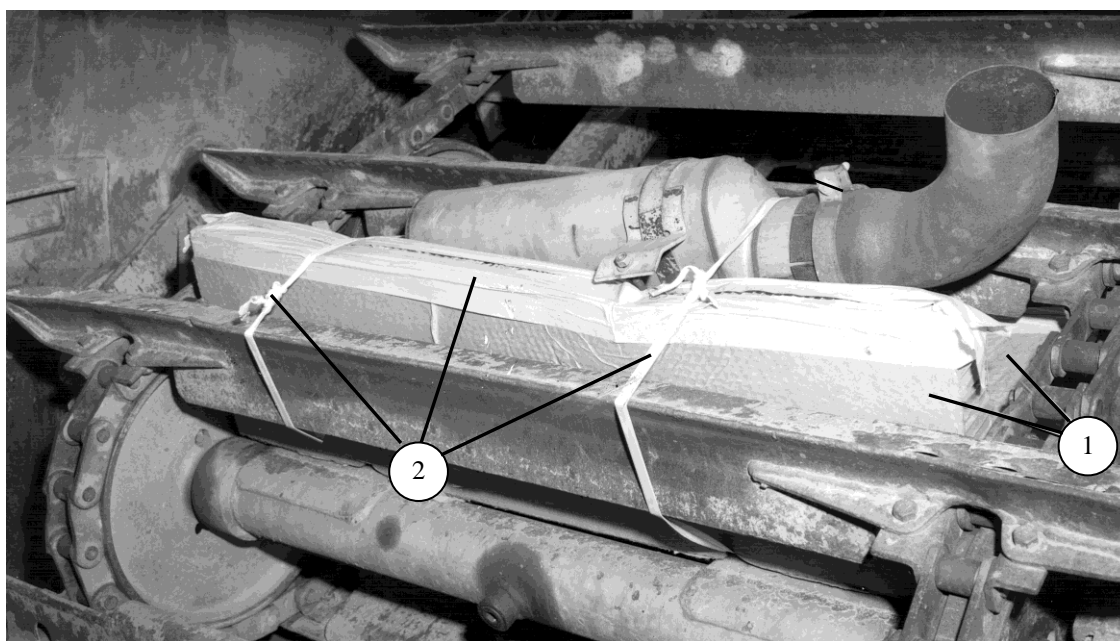
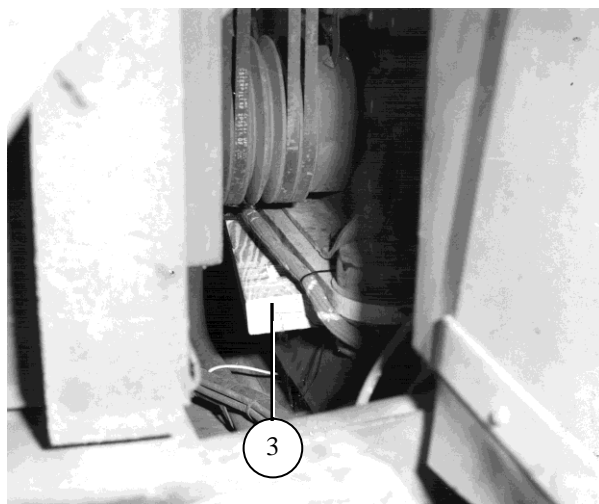
- ① Run a 30 foot lashing around the left axle between the axle and the brake line, up over the hoses, through the hanger arm holes, over the toolbox, and under the right axle. Fasten the lashing with a load binder and D-ring on top of the deck.
- ② Run a 30 foot lashing around the push bar frame on either side, through the D-rings in the hanger arms, and over the tool box. Fasten the lashing with a load binder and D-ring on top of the deck.
- ③ Attach a D-ring to the fitting on the rear of the ejector using the pin provided.
- ④ Run a 15 foot lashing through the D-ring on the ejector, down to the towing pintle, and back, passing it under the load binder portions of the side-to-side lashings. Fasten the lashing with a load binder and a D-ring on top of the deck.

Figure 11-20. Equipment Secured to Rear Deck



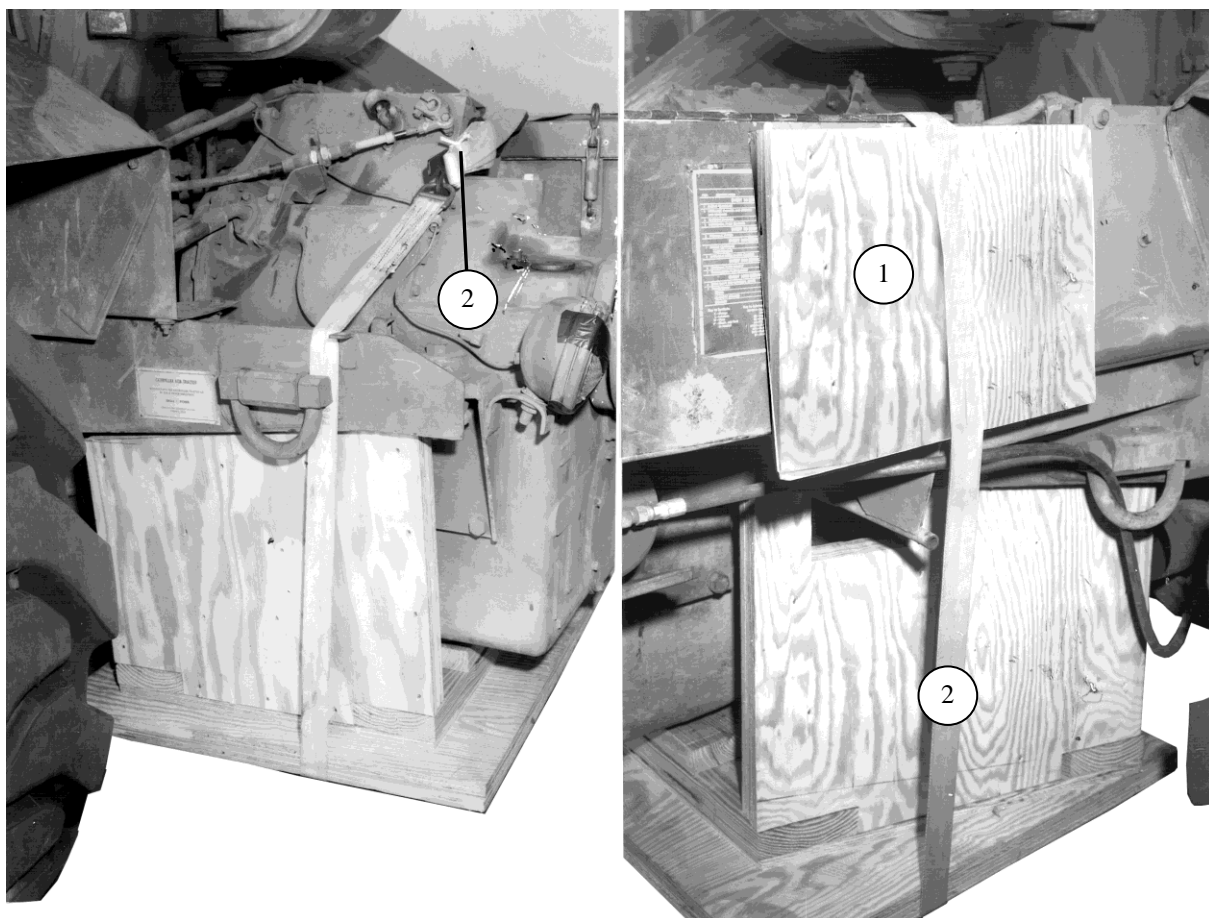
- ① Lower the seat and move it all the way to the rear. (not shown)
- ② Tape the ignition key in the off position and safety it to the transmission lock lever with type III nylon cord. (not shown)
- ③ Tape all lights and gauges. (not shown)
- ④ Remove the control arm handles. Place them in the storage box on the right side of the operator compartment. (not shown)
- ⑤ Pad the mirror bracket above the air cleaner with cellulose wadding and tape the cellulose wadding in place. (not shown)
- ⑥ Lower and secure the hose assembly on the scraper bowl as shown in Figure 11-21.
- ⑦ If equipped with quick disconnect couplers at the front of the bowl, tape them as shown.

Figure 11-21. Components Removed, Secured and Taped



- ① Place the muffler between two pieces of 12- by 43-inch honeycomb placed lengthwise between the elevator chains.
- ② Tape the outer edges of the honeycomb. Tie the muffler in place with ½ inch tubular nylon webbing.
- ③ Center the engine mount support under the crankshaft pulley between the motor support and frame. Put the engine mount support as far as possible toward the rear. (Shown partly installed)
- ④ Secure the engine mount support around the cross member on both sides of the pulley with type III nylon cord. (Not Shown).

Figure 11-22. Muffler Secured and Engine Mount Support Installed

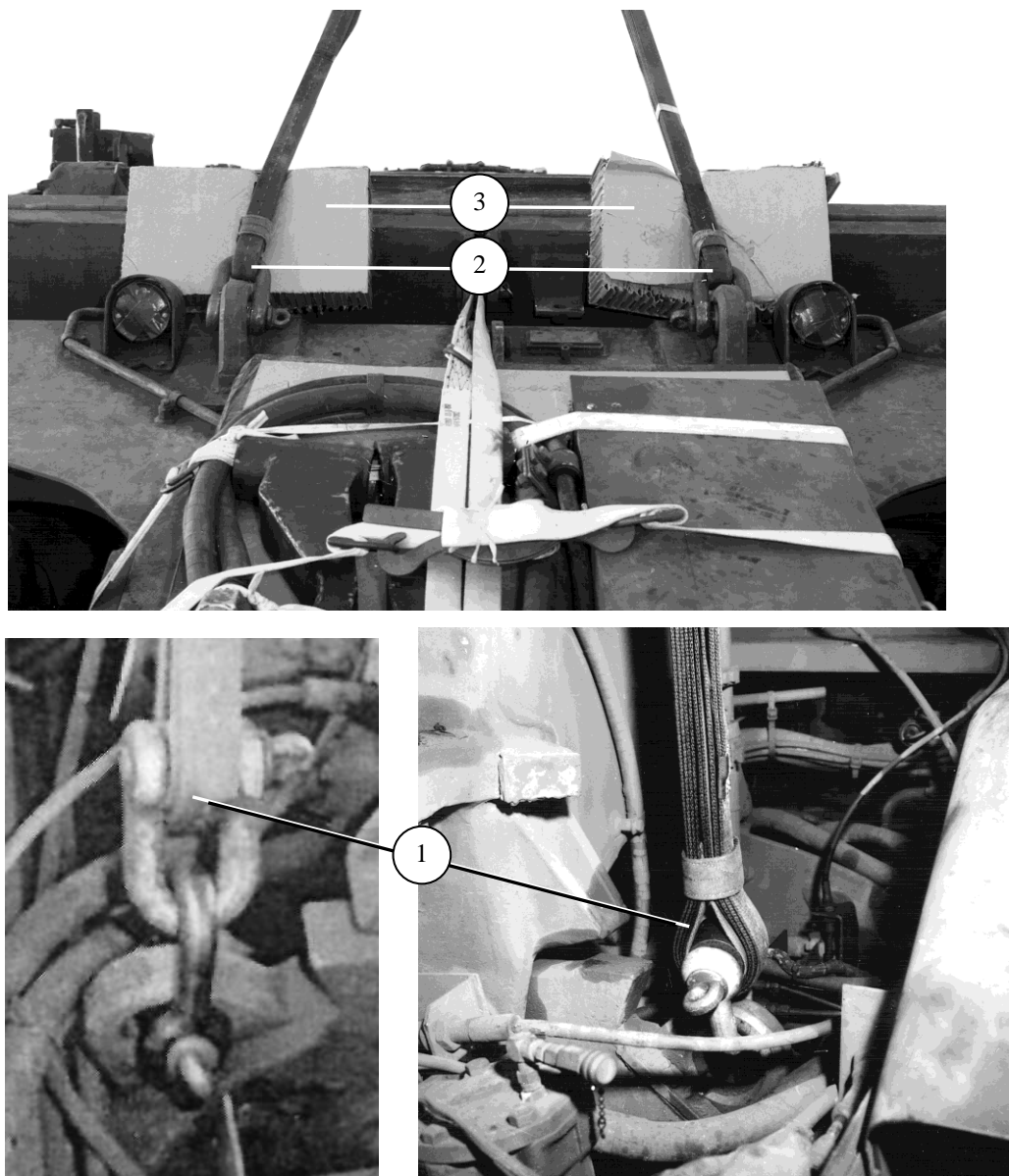


- ① Have an assistant hold a 12- by 18- by $\frac{3}{4}$ -inch piece of plywood against the right side of the battery box above the transmission.
- ② Support the transmission housing load spreader and secure it and the plywood with a 15-foot lashing a load binder and d-ring.

Figure 11-23. Transmission Load Spreader Installed

INSTALLING LIFTING SLINGS AND POSITIONING SCRAPER

11-10. Install lifting slings as shown in Figure 11-24 and position the scraper as shown in Figure 11-25.



- ① Bolt a 9 foot (4 loop) type XXVI nylon webbing sling to each front lifting provision using a screw pin suspension clevis. Pass the slings up between the steering cylinders and the frame.
- ② Bolt a 12 foot (4 loop), type XXXVI nylon webbing sling to each rear lifting provision with a screw pin suspension clevis.
- ③ Protect the slings with two pieces of 12- by 18-inch honeycomb.

Figure 11-24. Lifting Slings Installed

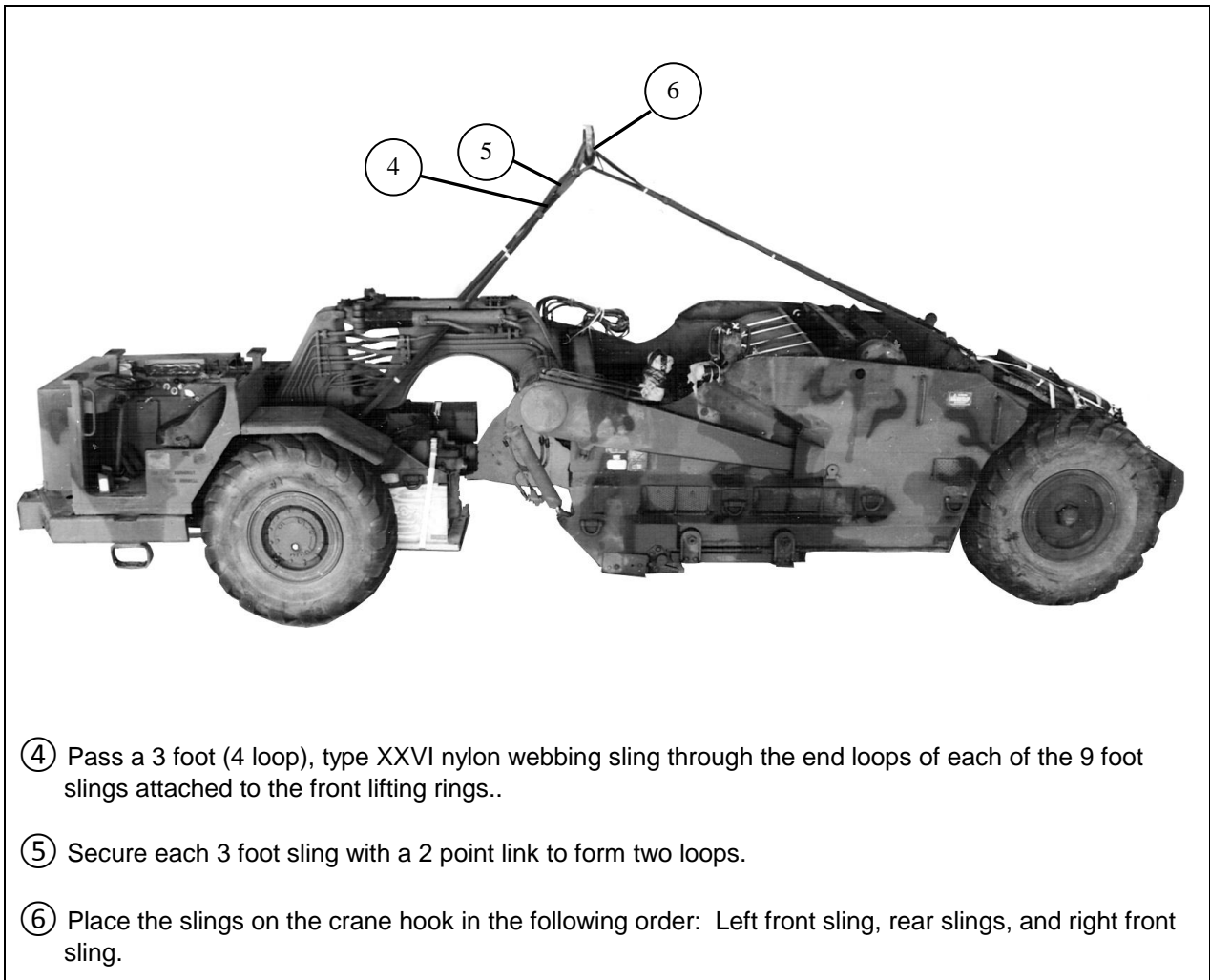
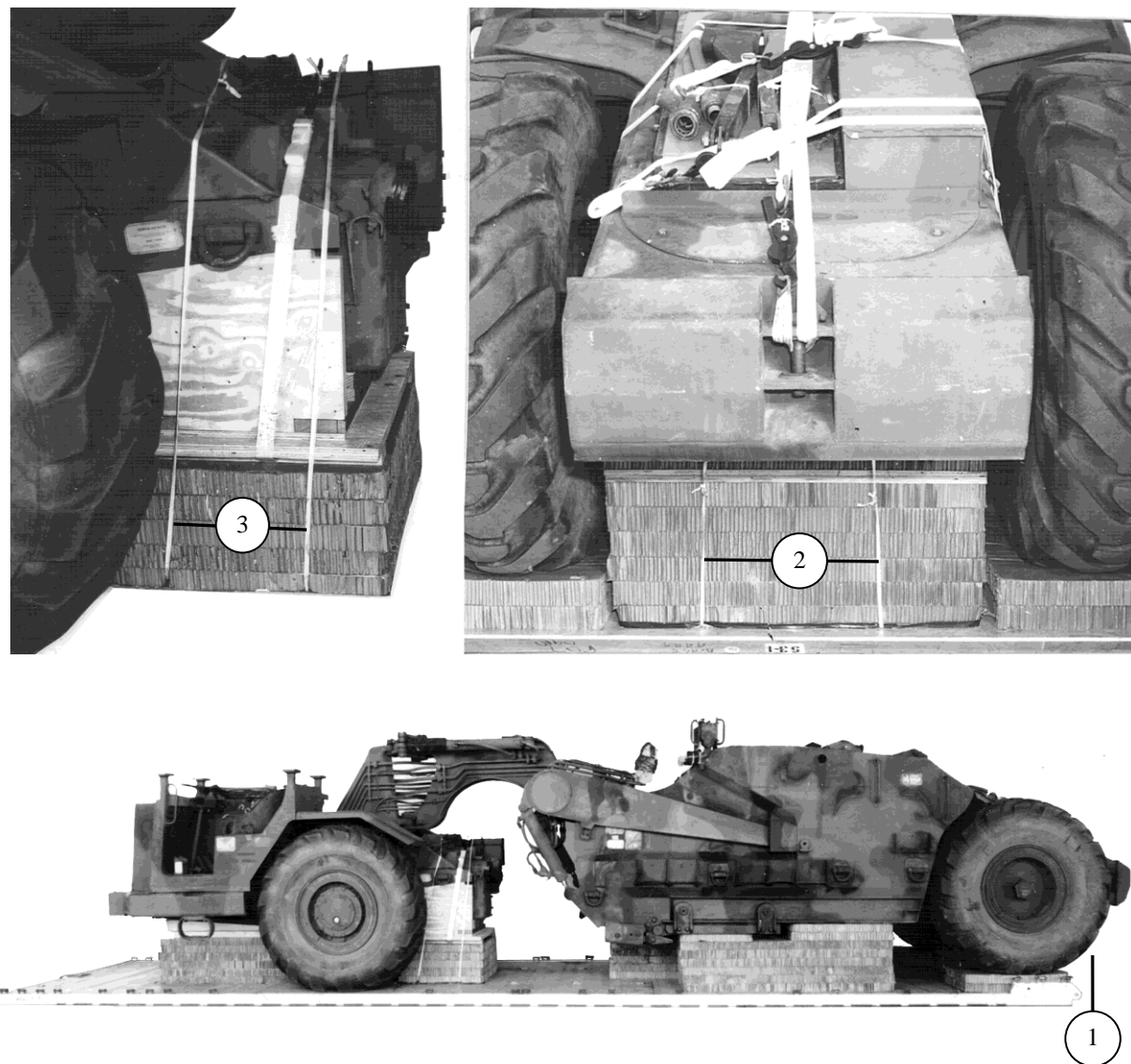


Figure 11-24. Lifting Slings Installed (Continued)



- ① Center the scraper on the honeycomb stacks with the rear end of the scraper overhanging the front of the platform 36 inches. The overhang must be at least 35 inches and must not exceed 36 inches. Lower the bowl to rest on the honeycomb by cycling the controls without running the engine.
- ② Tie the ½ inch tubular nylon webbing on stack 2 to the frame supports.
- ③ Tie the ½ inch tubular nylon webbing on stack 7 around the transmission housing.
- ④ Remove the lifting slings (not shown).

Figure 11-25. Scraper Positioned

LASHING THE SCRAPER

11-11. Lash the scraper to the platform with fifty-four 15-foot tiedown assemblies according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Use the tiedown provisions on the vehicle shown in Figure 11-26 and lash as shown in Figures 11-27 through 11-30. Pad all sharp edges the lashings may come into contact with.

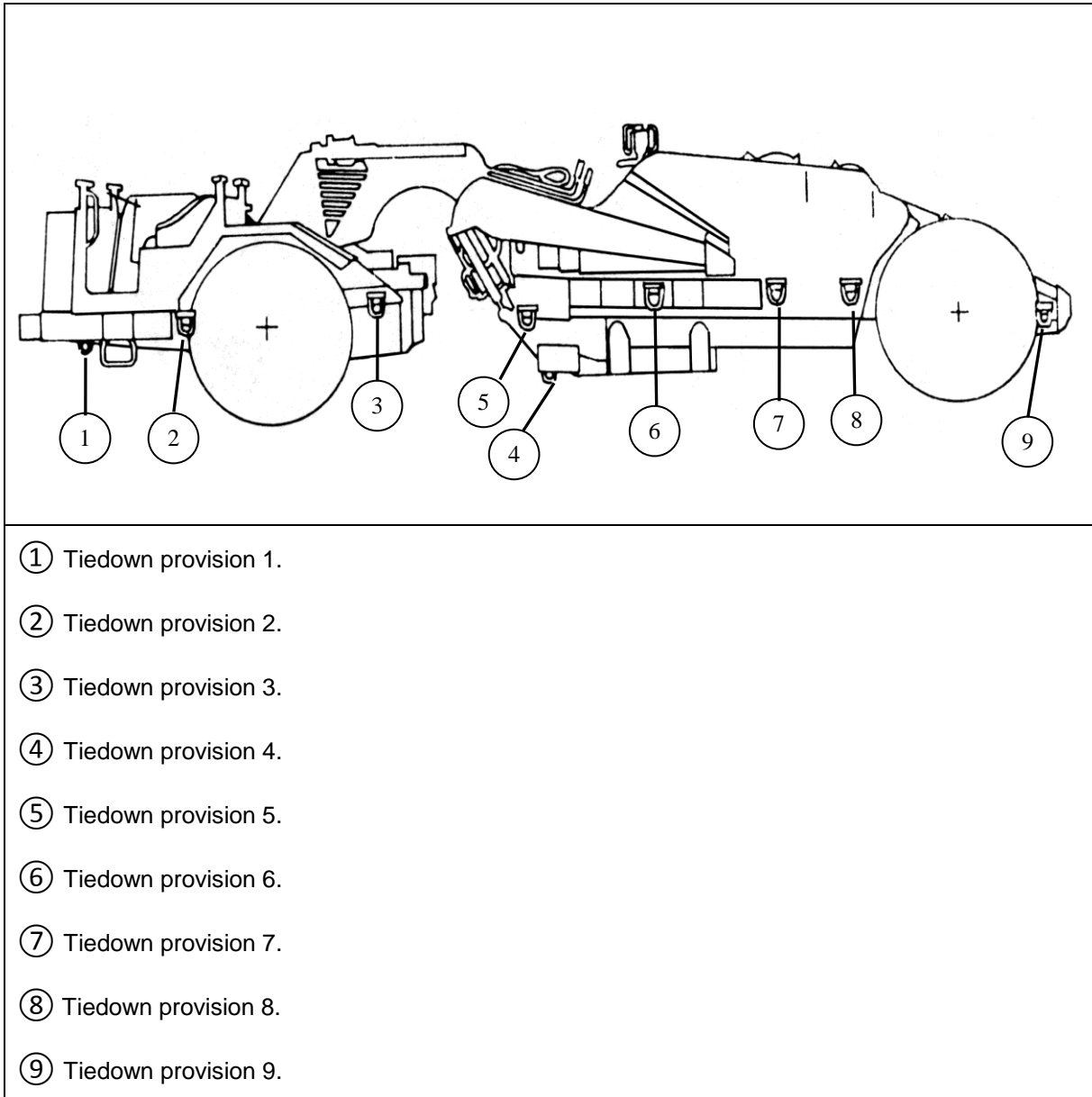
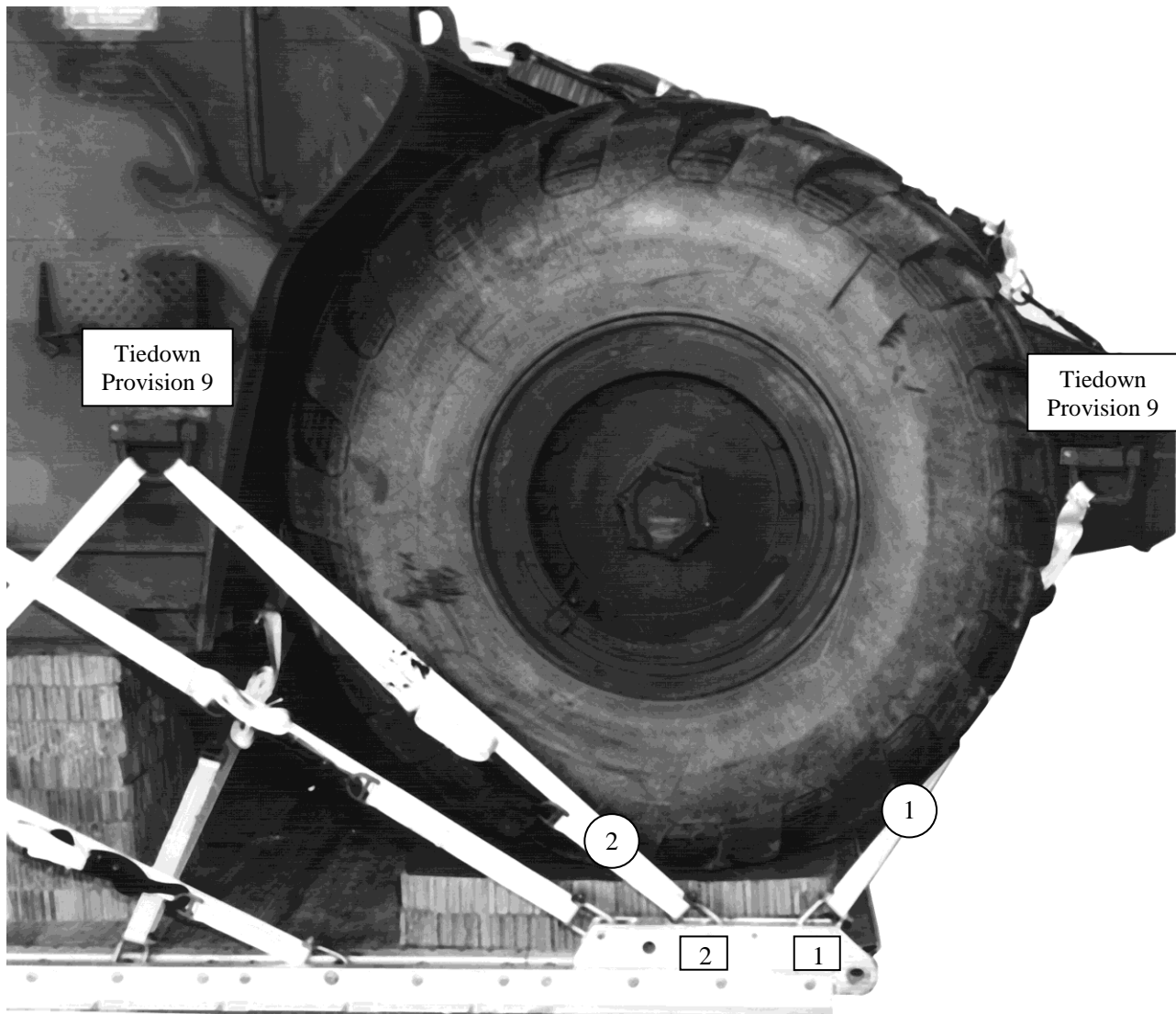


Figure 11-26. Tiedown Provisions on the 613S type I and II Scrapers



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
1	1	Pass lashing:
2	1A	Through tiedown provision 9. (Not Shown)
3	2	Through tiedown provision 8.
4	2A	Through tiedown provision 8. (Not Shown)

Figure 11-27. Lashings 1 Through 4 Installed

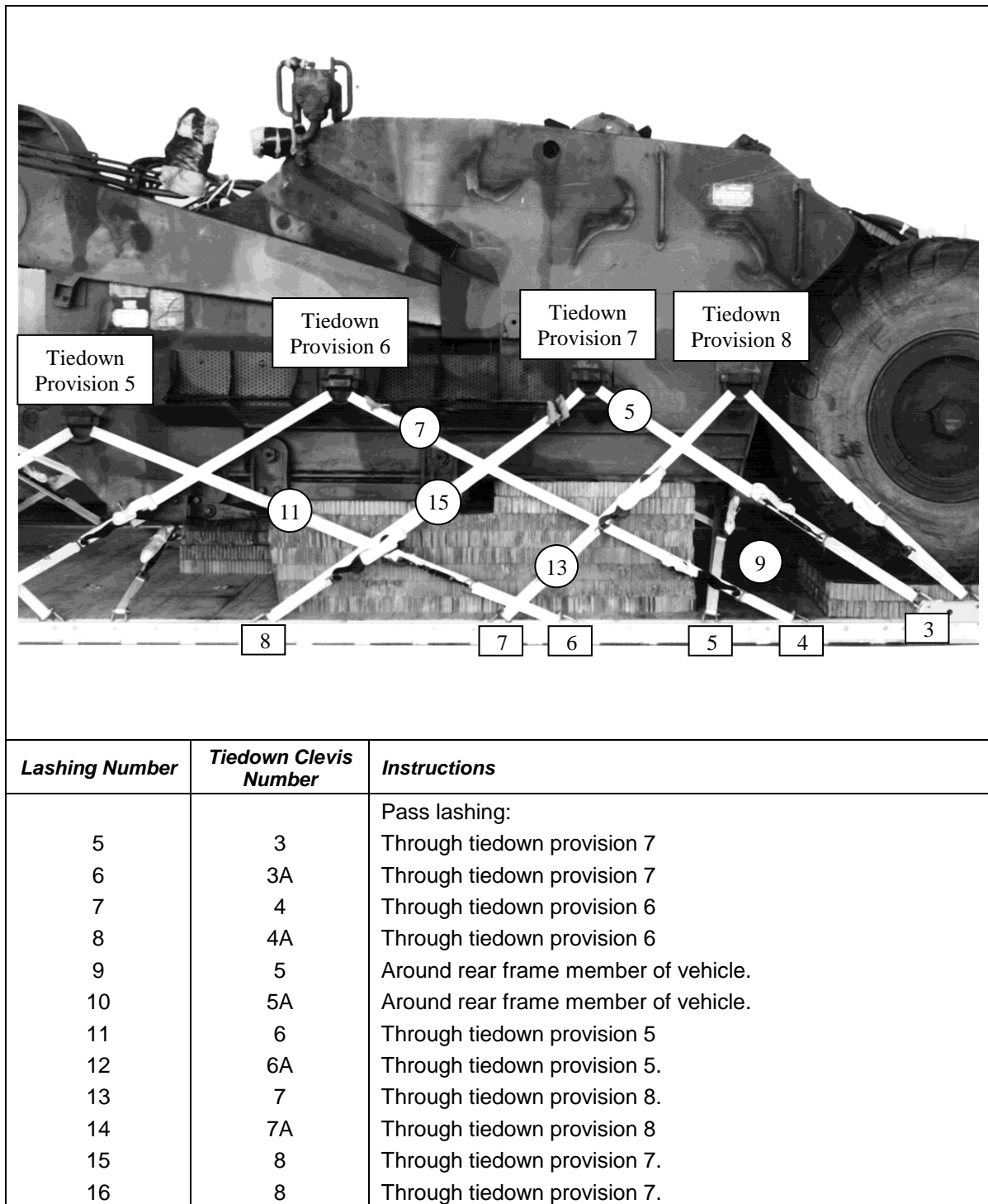


Figure 11-28. Lashings 5 Through 16 Installed

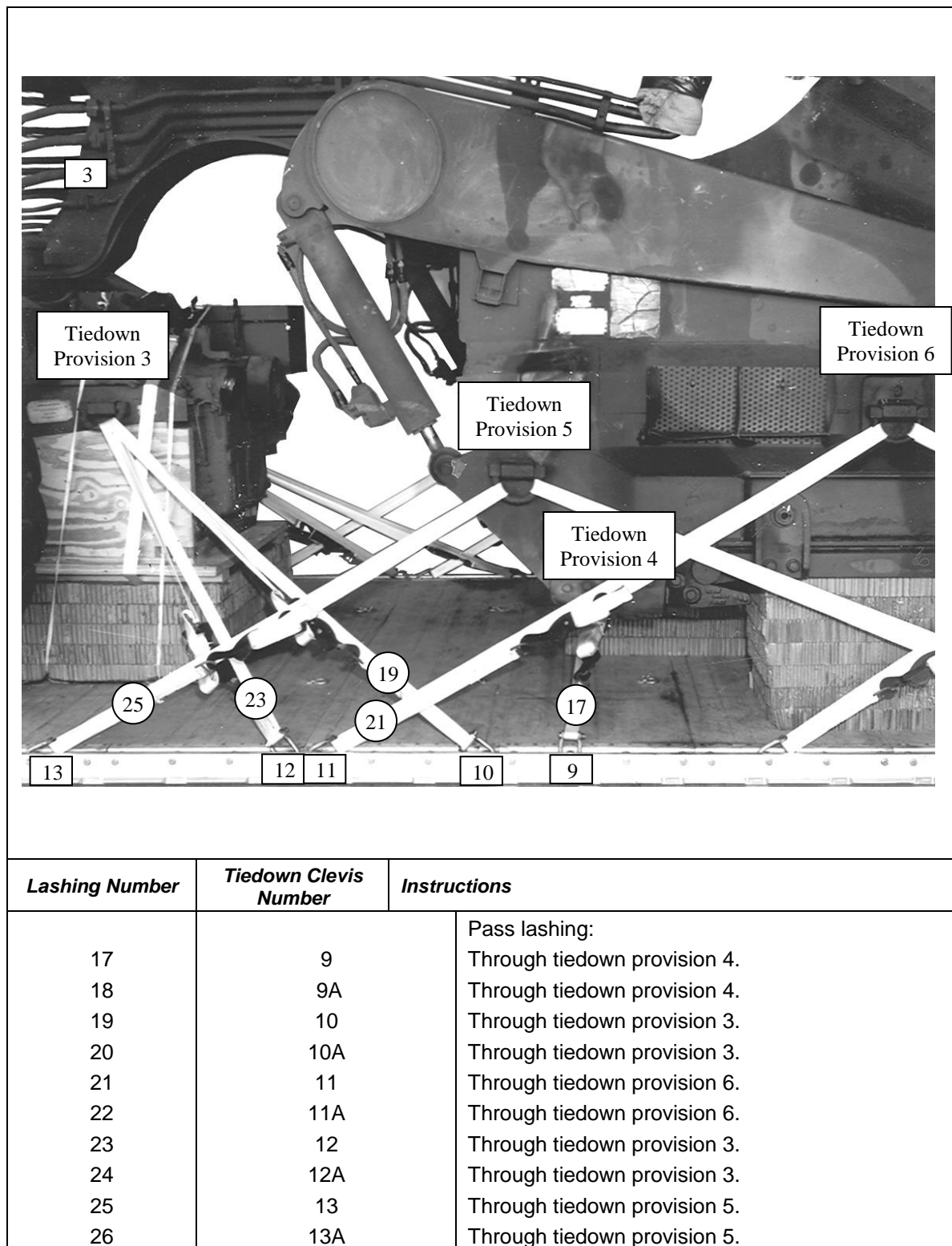


Figure 11-29. Lashings 17 Through 26 Installed

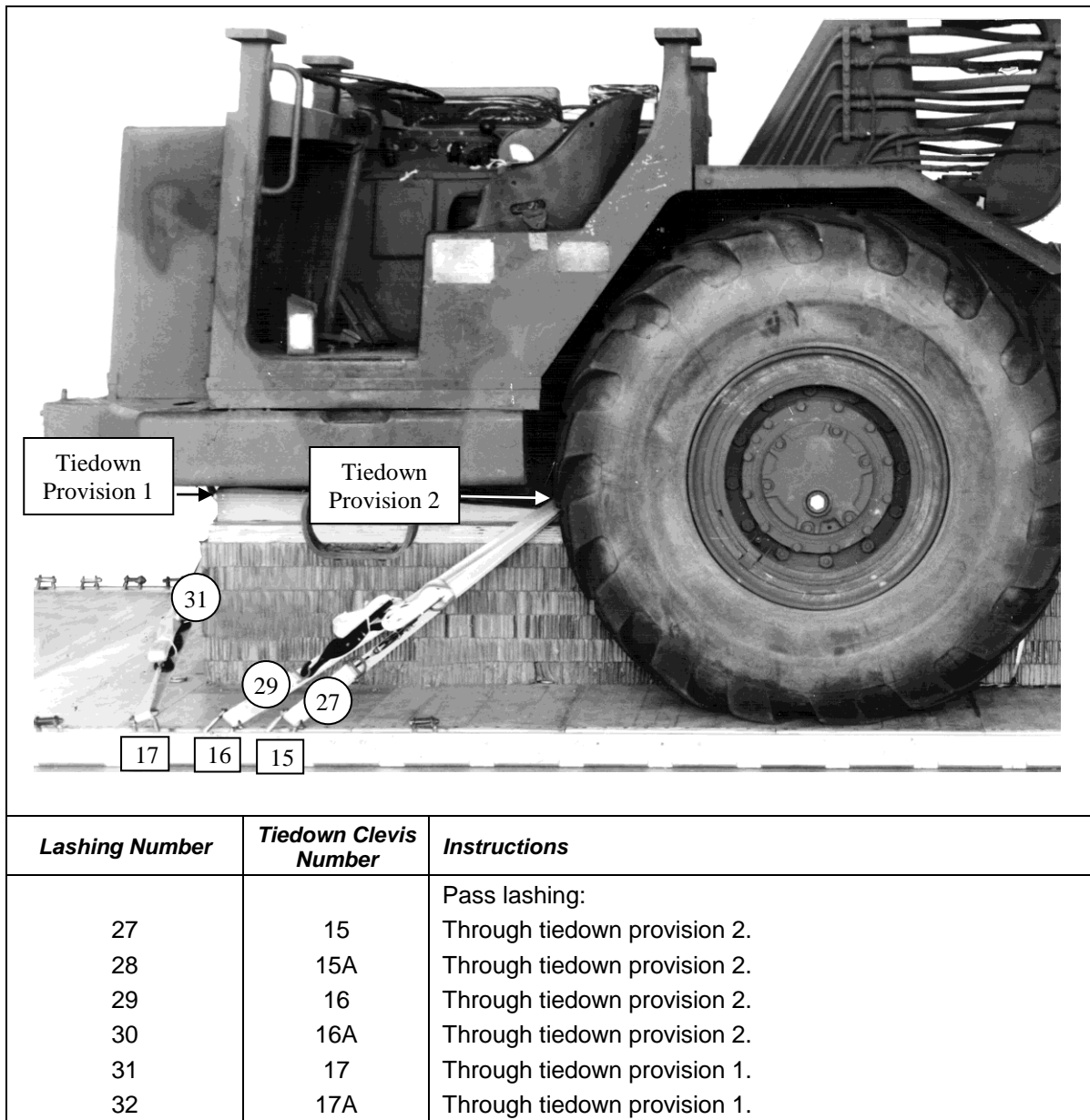
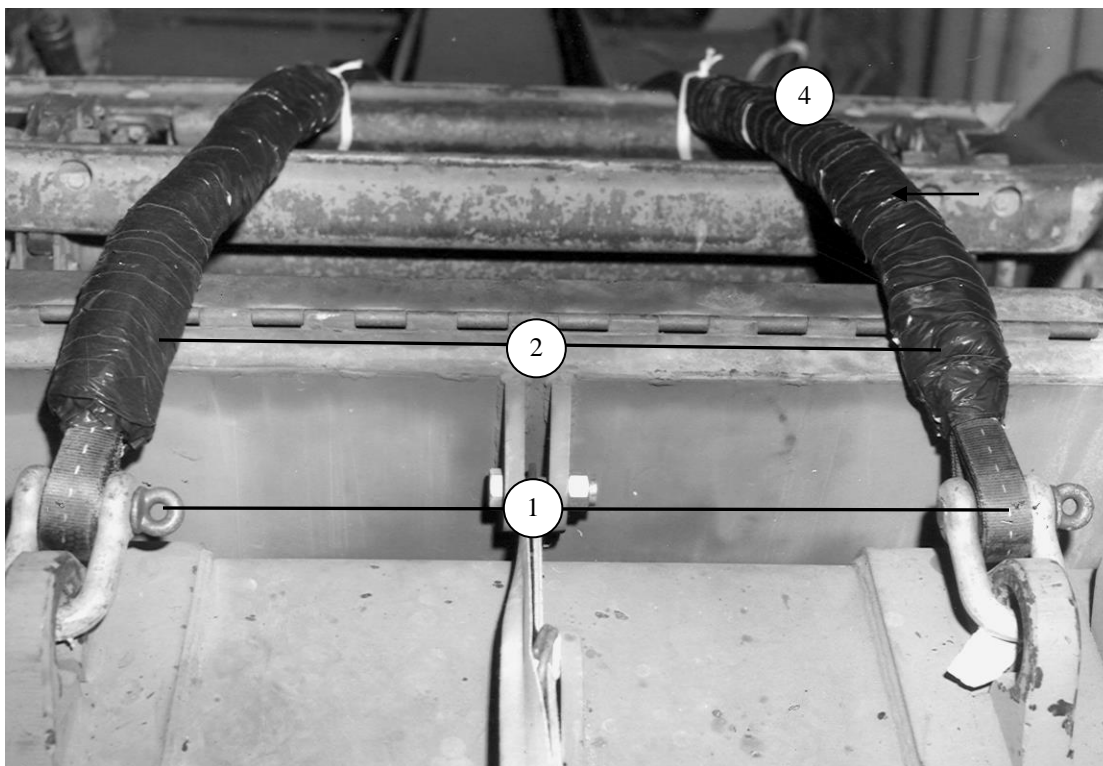


Figure 11-30. Lashings 27 Through 32 Installed

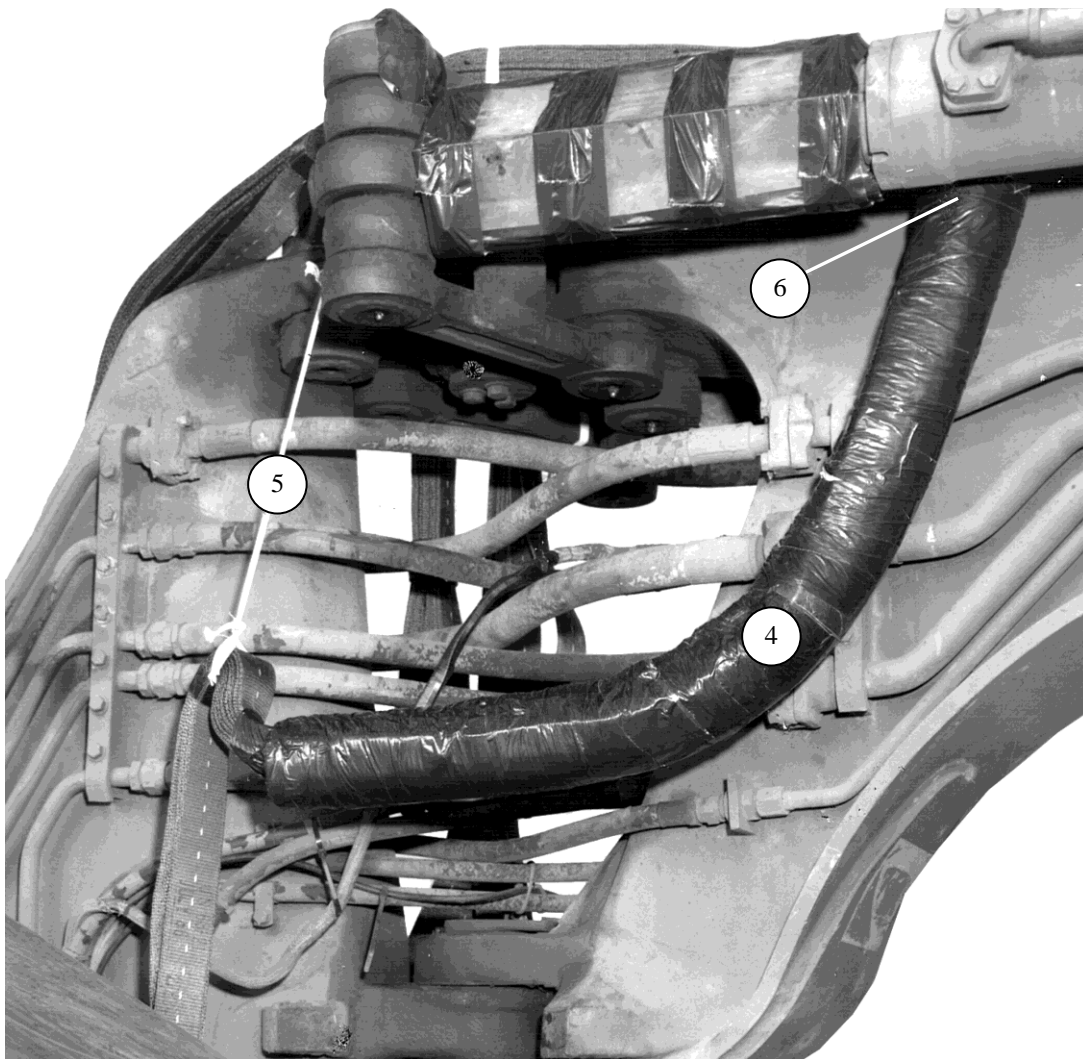
INSTALLING AND PADDING SUSPENSION SLINGS

11-12. Install and pad the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-31 through 11-34.



- ① Bolt a 20-foot (4-loop), type XXVI nylon sling to each lifting provisions at the rear of the scraper with a screw-pin suspension clevis. Install a 2 3/8 inch steel spacer on each clevis pin. These will be the front slings.
- ② Wrap each front sling with an 8- by 36-inch piece of felt. Tape the felt in place with pressure sensitive tape beginning 1 inch from the end loop of the sling.

Figure 11-31. Suspension Slings Installed and Padded

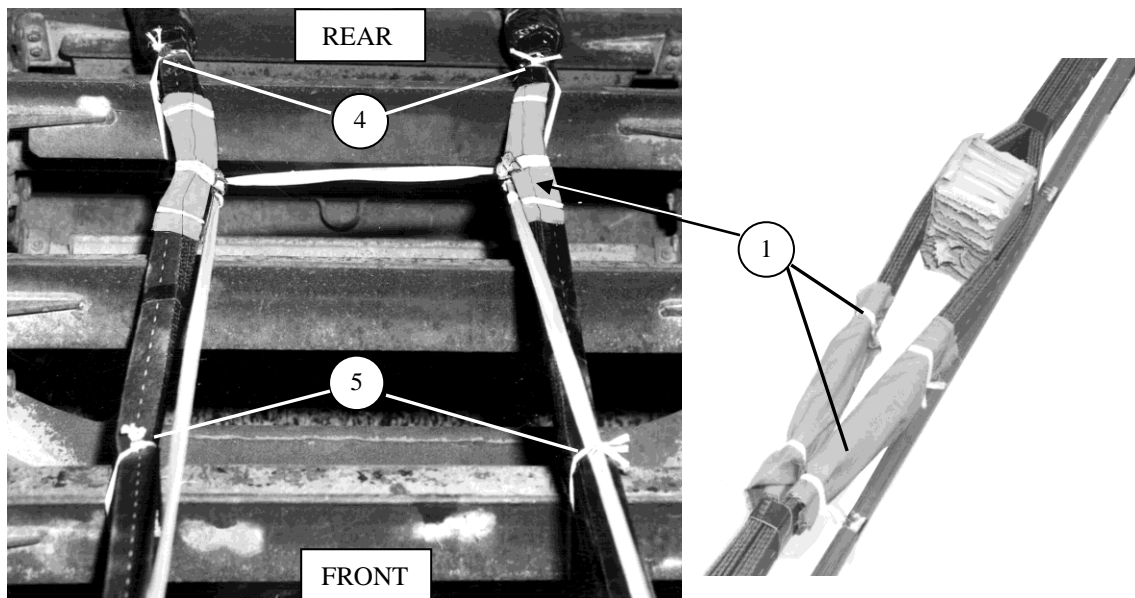


- ③ Bolt a 20-foot (4-loop), type XXVI nylon sling to each lifting provisions at the front of the scraper with a screw-pin suspension clevis. Install a 2 3/8 inch steel spacer on each clevis pin. These will be the rear slings. (Not Shown)
- ④ Wrap each front sling with an 8- by 36-inch piece of felt. Tape the felt in place with pressure sensitive tape beginning 30 inches from the end loop of the sling.
- ⑤ Safety the rear slings to the steering assembly arms with two lengths of type I, 1/4 inch cotton webbing. Tie the webbing 22 inches from the clevis.
- ⑥ Pass the slings between the steering cylinders and the frame.

Figure 11-31 Suspension Slings Installed and Padded (Continued)

SAFETY TIEING AND SECURING SUSPENSION SLINGS

11-13. Safety tie and secure the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-35.



NOTICE OF EXCEPTION

The procedures in this paragraph are different from those in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. An exception to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 is granted.

- ① Center a 12- by 12-inch piece of cotton muslin cloth on one of the suspension slings 12 inches above the highest point of the load. Wrap the cloth around four of the eight plies of the sling and tie it at the tip and bottom with type I ¼-inch cotton webbing. Wrap the other four plies of the sling in the same way. Prepare the other three slings using the same procedure.
- ② Raise the suspension slings and install the suspension sling safety tie 13 inches above the highest point of the load (not shown).
- ③ Lower the slings, passing them from the front of the load toward the rear (not shown)
- ④ Safety the lower part of the front slings to the elevator slats with one turn double of type I, ¼-inch cotton webbing.
- ⑤ Safety the upper part of the slings to the ½ inch tubular nylon with one turn double of type I, ¼-inch cotton webbing.
- ⑥ Secure the elevator guard with two lengths of type I, ¼-inch cotton webbing (not shown).

Figure 11-32. Suspension Slings Safety Tied and Secured

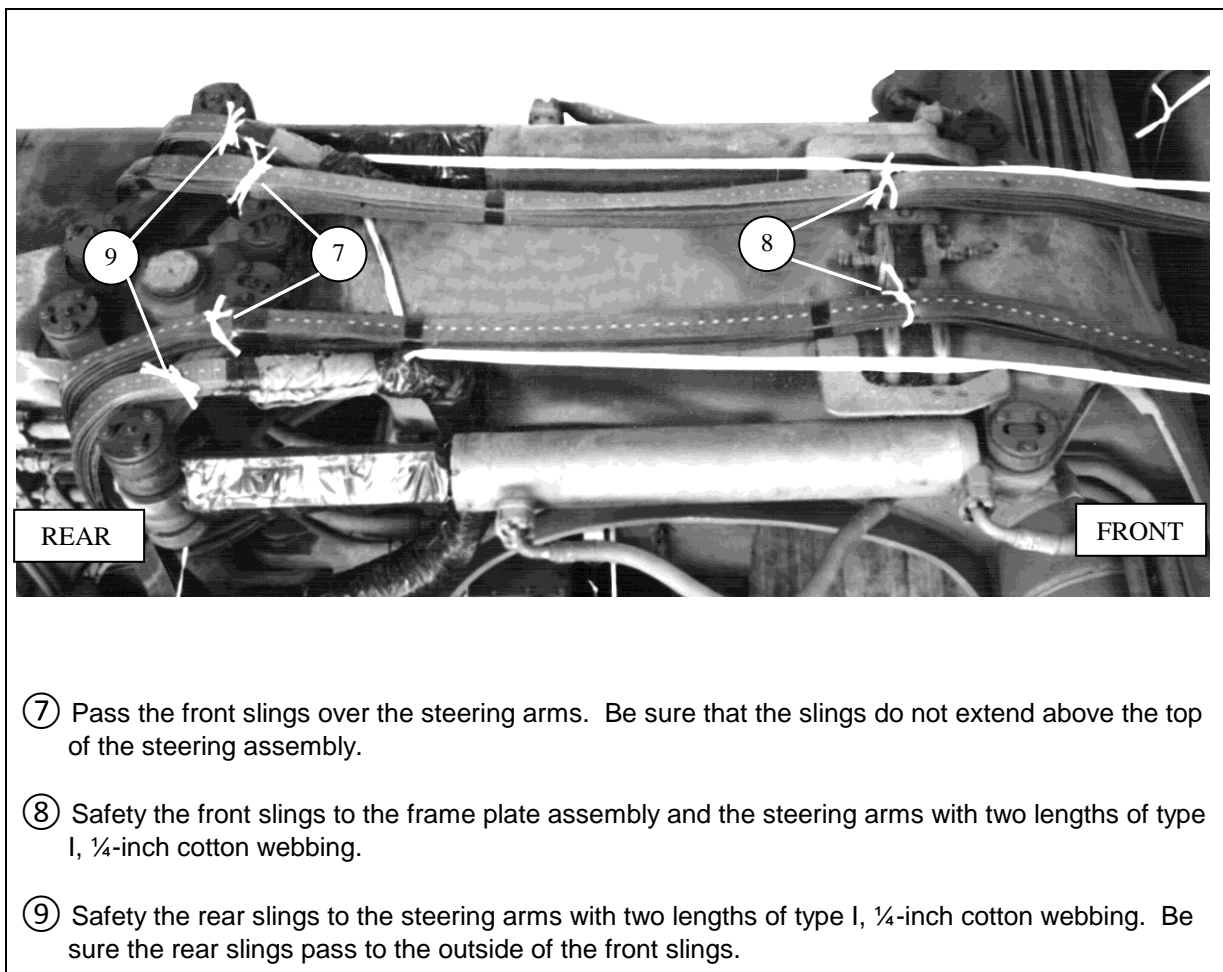


Figure 11-32. Suspension Slings Safety Tied and Secured (Continued)

INSTALLING PARACHUTE RELEASE STOWAGE PLATFORM.

11-14. Install the parachute release stowage platform as shown in Figure 11-33.

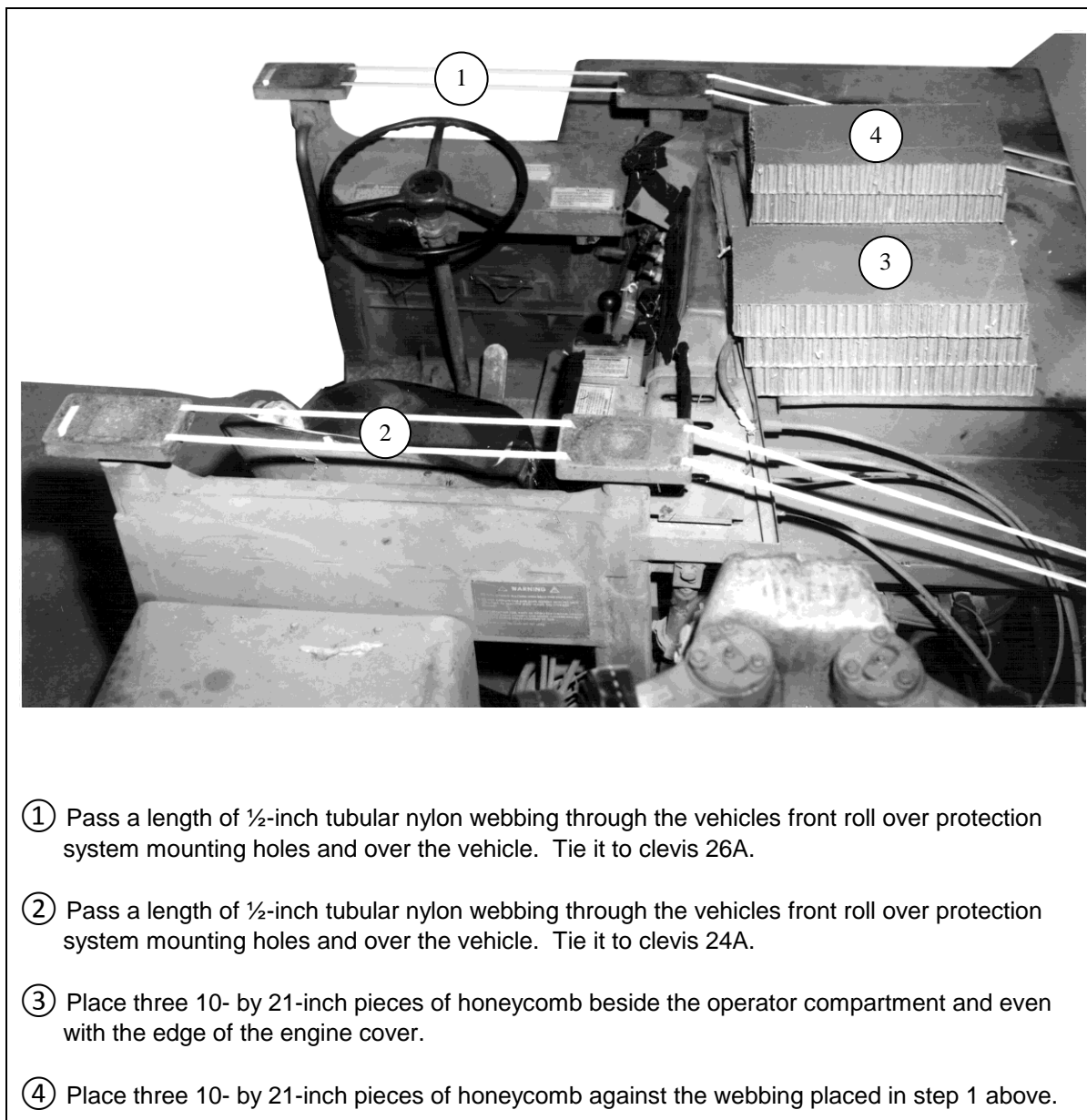


Figure 11-33. Parachute Release Stowage Platform Installed

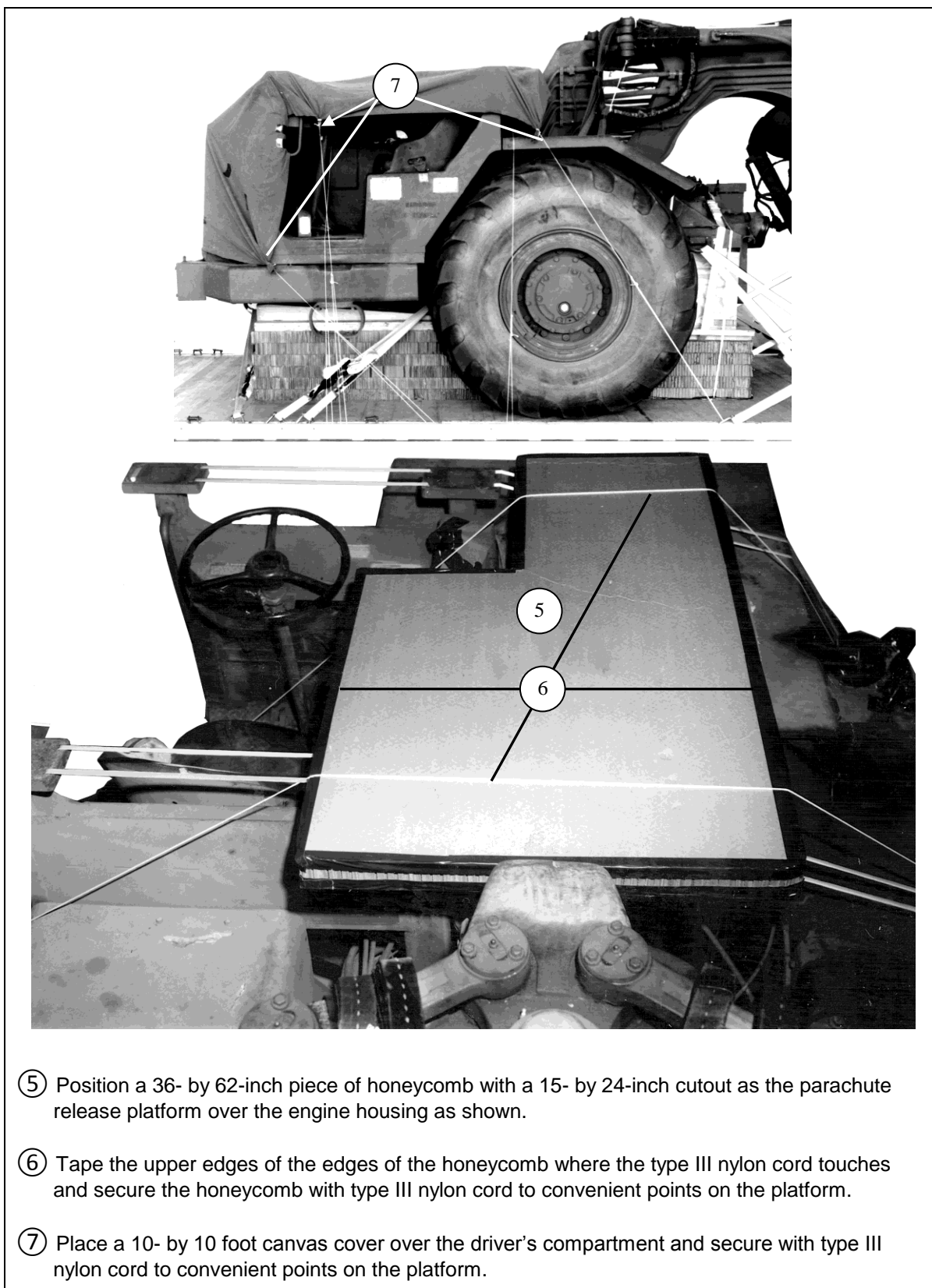


Figure 11-33. Parachute Release Stowage Platform Installed (Continued)

BUILDING, INSTALLING AND RESTRAINING THE PARACHUTE STOWAGE PLATFORM

11-15. Build, install, and restrain the parachute stowage platform as shown in Figure 11-34 through 11-36.

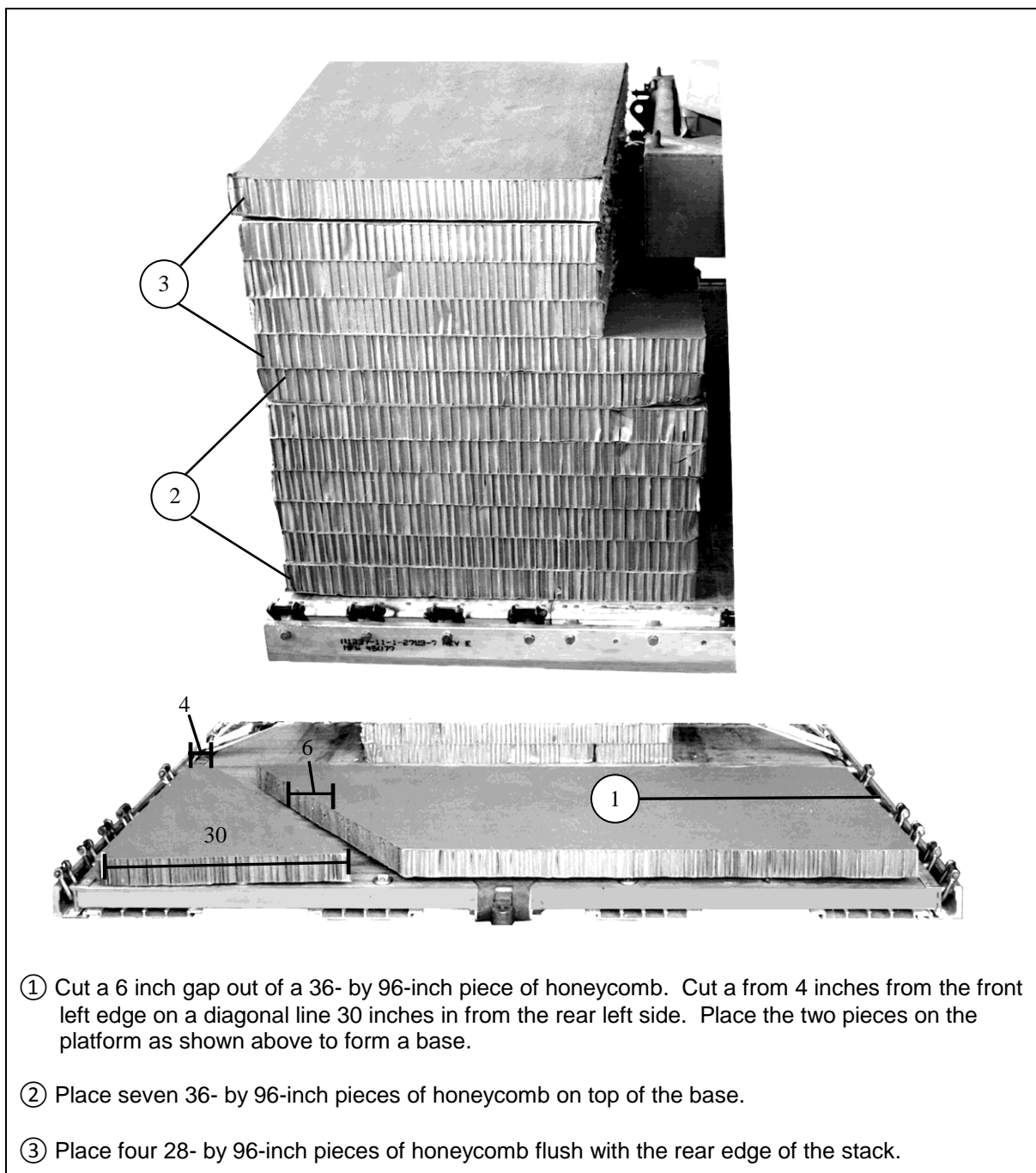


Figure 11-34. Parachute Stowage Platform Honeycomb stack built and Installed

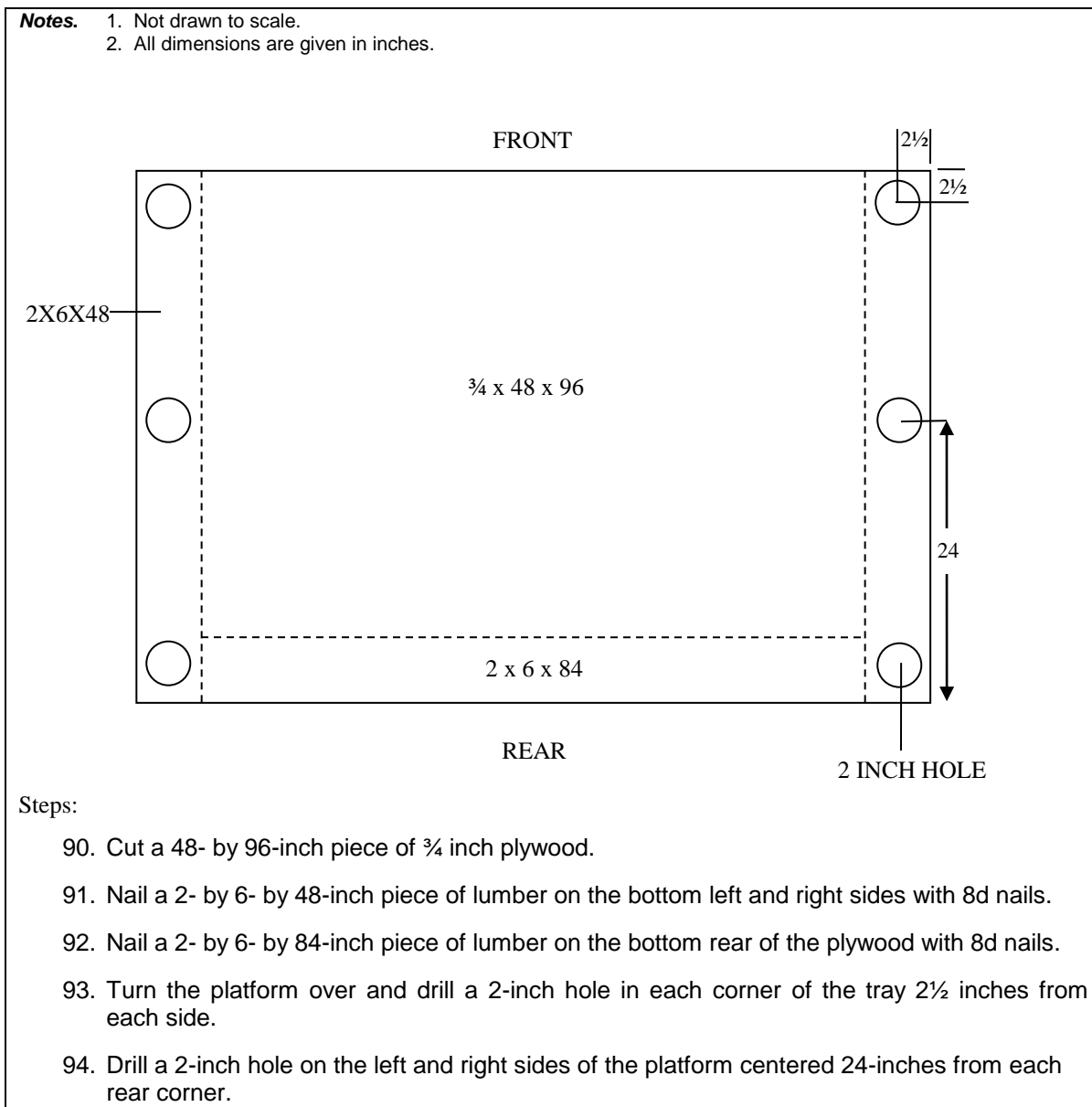


Figure 11-35. Parachute Stowage Platform Built

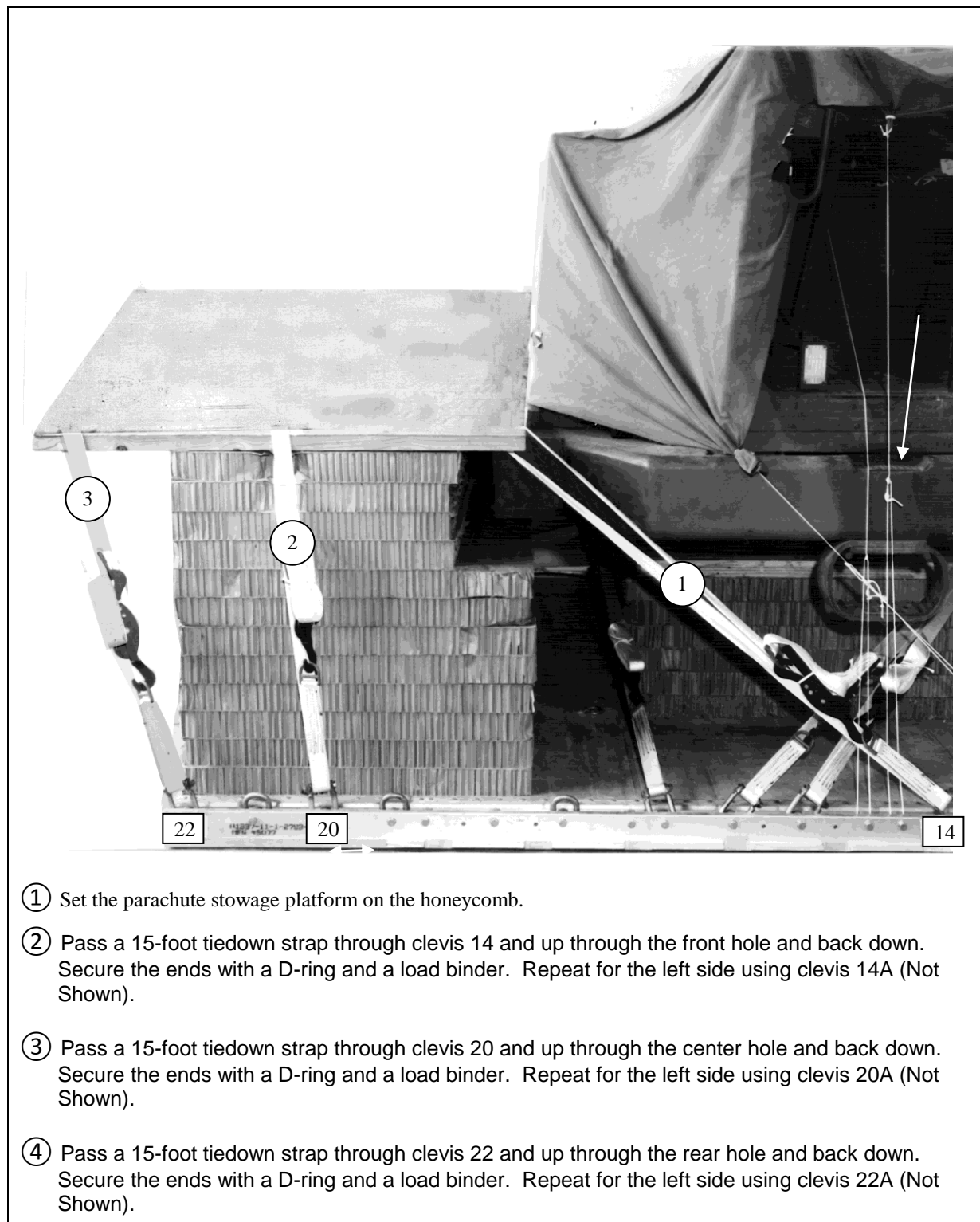


Figure 11-36. Parachute Stowage Platform Honeycomb stack built and Installed

STOWING CARGO PARACHUTES

11-16. Prepare, stow, cluster, and restrain eight G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-37.

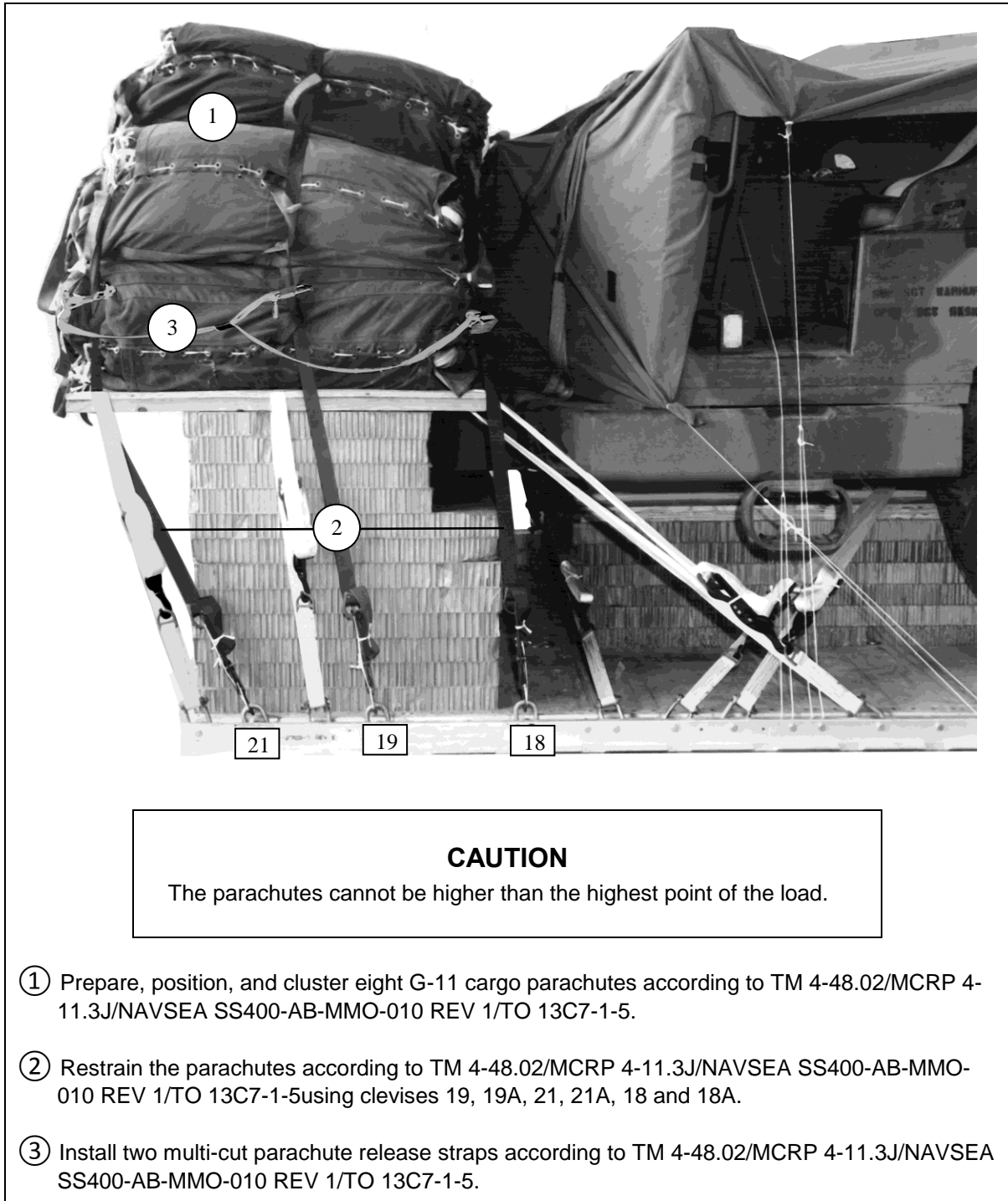
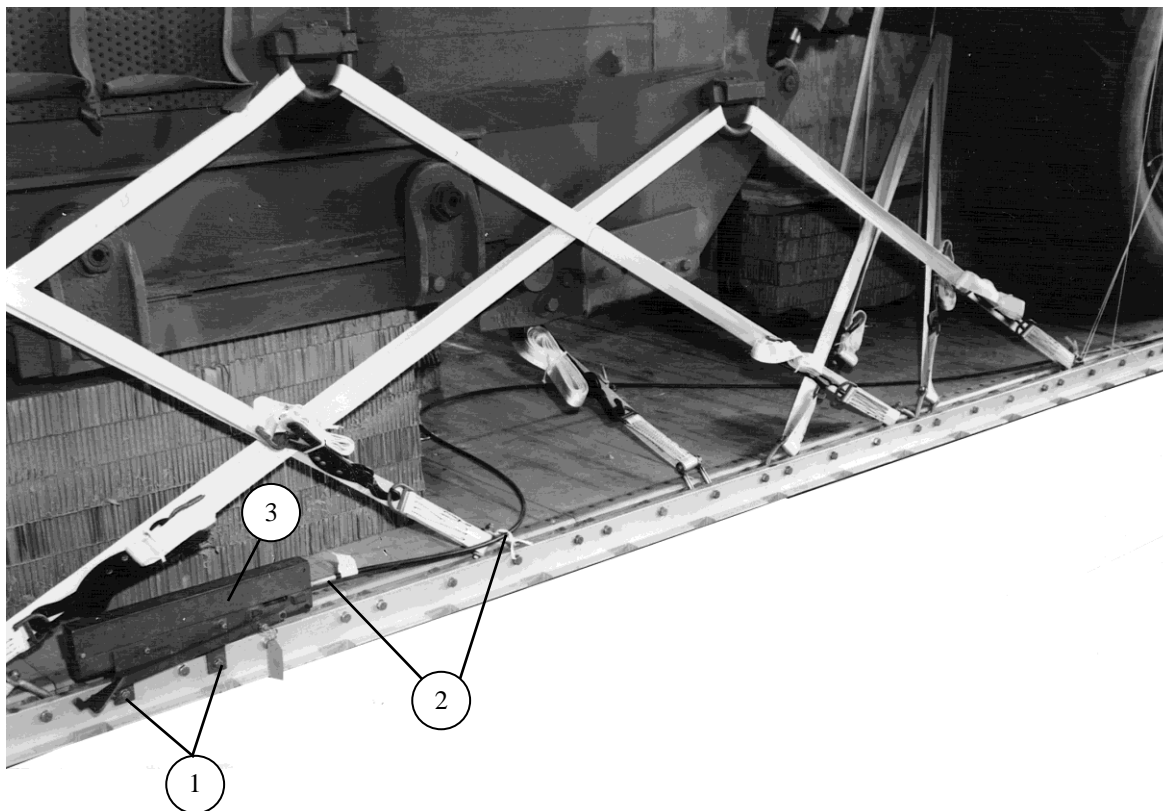


Figure 11-37. Cargo Parachutes Stowed and Restrained

INSTALLING EXTRACTION SYSTEM

11-17. Install the EFTC system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-38. Install the extraction parachute jettison system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 if applicable.

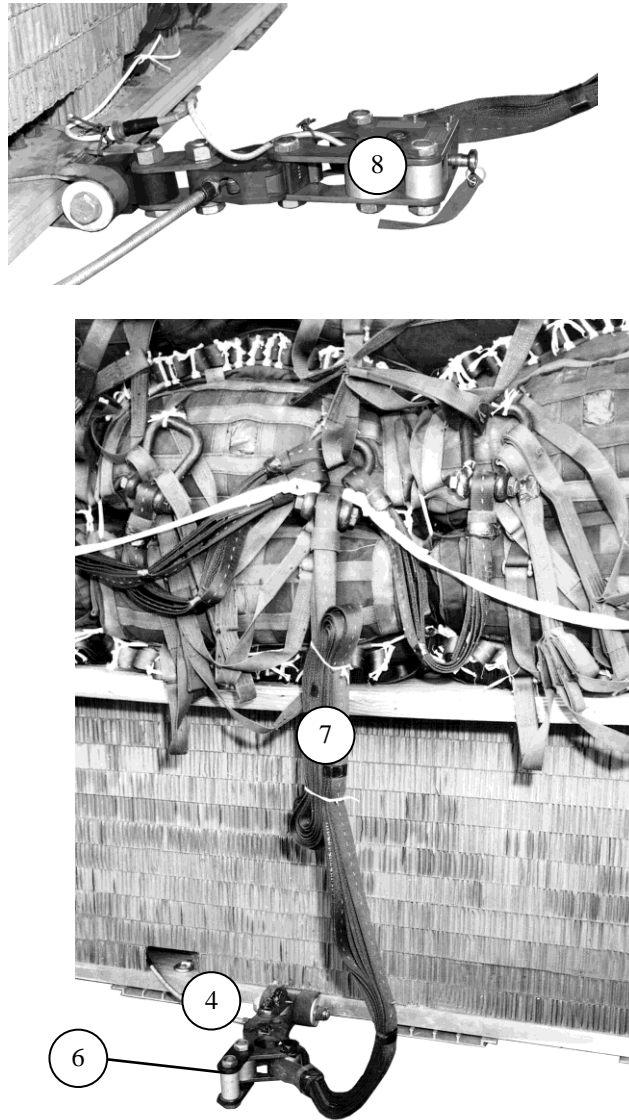


- ① Install the extraction force transfer coupling system actuator mounting brackets using the third set of mounting holes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

NOTE: This platform has three sets of mounting holes. The third set of holes is 120 inches from the front of the platform.

- ② Install a 24-foot release cable to the actuator. Tie the cable to the outside edge of clevis 8A with type I, ¼-inch cotton webbing.
- ③ Install the actuator assembly to the actuator mounting bracket.

Figure 11-38. Extraction System Installed

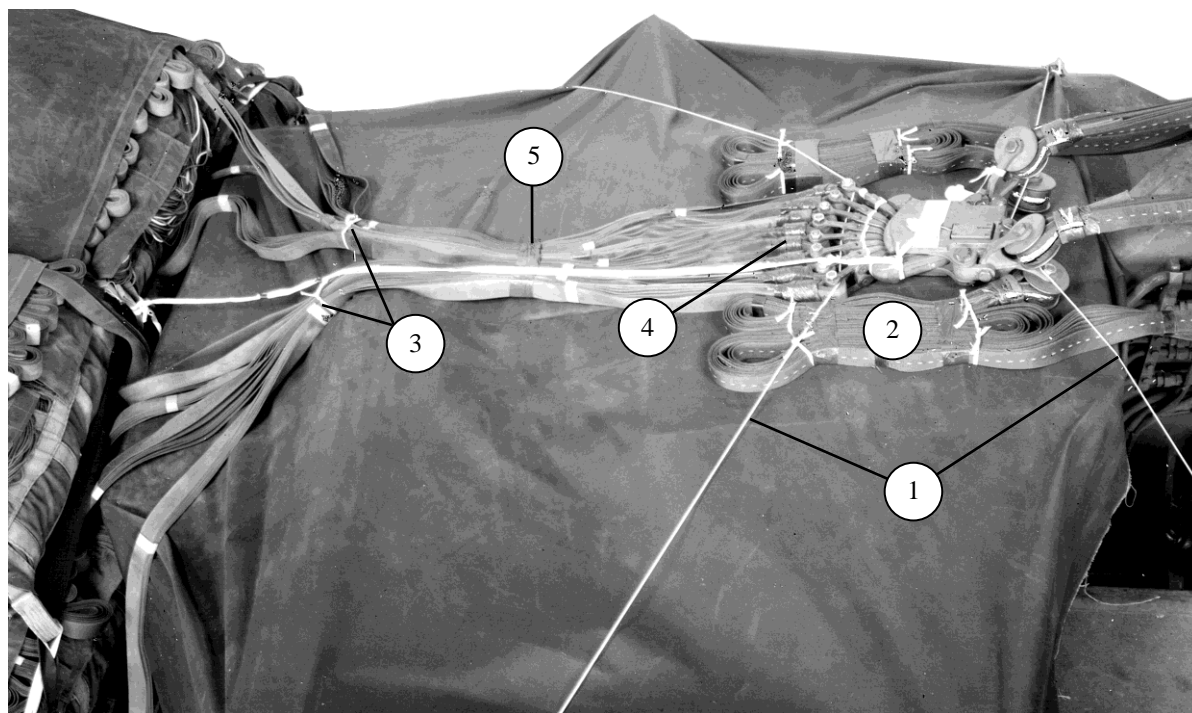


- ④ Route the cable to the latch assembly and safety tie the cable (not shown) according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ⑤ Install the latch assembly on the platform extraction bracket and connect the cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ⑥ Install an adapter link assembly to the coupling link assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ⑦ Attach a 9-foot (2 loop), type XXVI nylon sling as the deployment line. Fold and secure the excess line with type I, ¼-inch cotton webbing.
- ⑧ If needed install the extraction parachute jettison system and latch assembly on the platform extraction bracket and connect the cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 11-38. Extraction System Installed (Continued)

INSTALLING M-2 RELEASE ASSEMBLY

11-18. Install the M-2 parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-39.



- ① Install an M-2 parachute release on the release platform. Attach the suspension slings and riser extensions according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.
- ② Restrain the release with type III nylon cord routed through the parachute release connectors to bushings 39 and 39A of the rear suspension bracket and around the spacer using bushings 57 and 57A of the front suspension bracket.
- ③ S-fold the front suspension slings and secure in eight places a length of type I, ¼-inch cotton webbing.
- ④ Safety the parachute riser extensions about three feet in front to the parachute bags with two lengths of type I, ¼-inch cotton webbing.
- ⑤ Tape the loops of the parachute risers individually with three complete turns of cloth-backed tape.
- ⑥ Tape all the parachute risers together about 18 inches from the taped loops with three turns of cloth-backed tape.

Figure 11-39. M-2 Parachute Release Assembly Installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

11-19. Install the provisions for the emergency restraints on the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

11-20. Select the extraction parachute and extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the load for installation in the aircraft as well. Install the extraction parachute jettison device on the extraction line according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, if applicable.

MARKING RIGGED LOAD

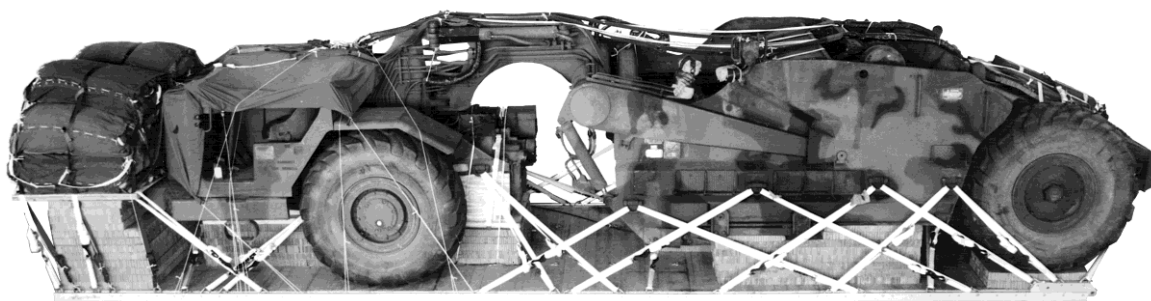
11-21. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-40. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

11-22. Use the equipment listed in Table 11-3 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.

**RIGGED LOAD DATA**

	<i>REBUY</i>	<i>TYPE I</i>	<i>TYPE II</i>
Weight: Load Shown	37,880	38,270	38,670
Maximum Load Allowed	39,500	39,500	39,500
Height.....	98.5 inches	98.5 inches	98.5 inches
Width.....	108 inches	108 inches	108 inches
Length.....	440 inches	440 inches	440 inches
Overhang: Front.....	35–36 inches	35–36 inches	35–36 inches
Overhang: Rear (extraction parachute jettison system).....	30 inches	30 inches	30 inches
Center of balance	181 inches	181 inches	181 inches

Figure 11-40. 613S, Type I Scrapper rigged on a Type V Platform for Low-Velocity Airdrop

Table 11-3. Equipment Required for Rigging the 613S Type I and II Scrapers on a Type V Platform for Low Velocity Airdrop

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line lead, (line bag for DES)	1
	Clevis:	
4030-00-090-5354	large	7
4030-00-678-8562	medium	6
8305-00-184-2034	Cloth, Cotton Duck, 12.29oz, OD 60"	As required
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-00-360-0328	Cover, clevis, large	5
	Extraction force transfer coupling system	
1670-00-434-5787	Coupling assembly, airdrop, EFTC, w / 20-ft cable	1
1670-01-475-1990	Extraction parachute jettison system	1
	Felt:	
8305-00-191-1101	½ inch	As required
8305-00-290-5584	¾ inch	As required
1670-00-003-4391	Knife, parachute bag (For DES)	2
5340-00-040-8219	Knife, multi-parachute release strap, webbing	2
1670-01-183-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
	Line Multi-Loop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For drogue:	
1670-01-064-4452	60-ft 1-loop, type XXVI nylon webbing (DES)	1
	For extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon (C-130 aircraft)	1
1670-01-107-7651	140-ft (6-loop), type XXVI nylon (C-17 aircraft)	1
	For riser extension:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	5
	For suspension:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6310	11-ft (4-loop), type XXVI nylon webbing	4
	Link:	
1670-01-493-6418	Assembly small, two-point, 3 ¾-inch (drogue)	1
1670-01-493-6420	Assembly large, two-point 5 ½-inch	1
1670-01-072-5637	Jettison, C-130 (DES)	1
1670-01-483-8259	Link, Parachute connector (TRM H-block) (C-17)	1
	Lumber:	
5510-00-220-6146	2-by 4-inch	3
5510-00-220-6148	2-by 6-inch	1
5510-00-220-6274	4-by 4-inch	5
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Table 11-3. Equipment Required for Rigging the 613S Type I and II Scrapers on a Type V Platform for Low Velocity Airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5530-00-128-4981	Plywood, ¾-inch sheet	9
5530-00-914-5118	Plywood, 1-inch sheet	1
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, Parachute:	29 sheets
1670-01-016-7841	G-11	5
1670-00-040-8135	28-ft, extraction, heavy-duty	1
1670-01-063-3717	15-ft, Extraction Drogue (DES)	1
	Platform, airdrop, type V, 20-ft:	1
1670-01-353-8425	Bracket assembly, component (EFTC)	1
1670-01-353-8424	Bracket, assembly, extraction	1
1670-01-162-2372	Clevis, load tiedown	34
1670-01-162-2381	Link, Tandem, link sups. assembly	2
1670-01-097-8817	Release, cargo parachute, M-2,	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft webbing	69
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	69
1670-00-937-0272	Binder, load, 10,000-lb	52
	Webbing:	
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8305-00-268-2411	Cotton, type I, ¼- inch	As required
8305-00-082-5752	Nylon, tubular, ½- in, natural	As required
8305-00-263-3591	Nylon, type VIII	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter, DES=drogue extraction system, TRM=tow release mechanism	

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

AFMAN	Air Force manual
CB	center of balance
EFTC	extraction force transfer coupling
FM	field manual
IAT	internal air transport
MCRP	Marine Corps Reference Publication
NAVSEA	Naval Sea Systems Command
ROPS	Roll Over Protection System
TM	technical manual
TO	technical order
AFMAN	Air Force manual

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References

REQUIRED PUBLICATIONS

These documents must be available to intended users of this publication.

ADRP 1-02. *Terms and Military Symbols*. 7 December 2015.

JP 1-02. *Department of Defense Dictionary of Military and Associated Terms*. 8 November 2010.

RELATED PUBLICATIONS

These documents contain relevant supplemental information.

MULTI-SERVICE PUBLICATIONS

Most Army doctrinal publications are available online: <http://www.apd.army.mil>. Most Air Force doctrinal publications are available online: <http://www.e-publishing.af.mil/>

AFMAN 24-204/TM 38-250/NAVSUP PUB505/MCO P4030.19J/DLAI 4145.3, *Preparing Hazardous Materials for Military Shipments*, 3 December 2012

AR 59-4/OPNAVINST 4630.24D/AFJ 13-210(I)/MCO 13480.1D, *Joint Airdrop Inspection Records, Malfunction/Incident Investigations, and Activity Reporting*, 8 April 2008.

TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. *Airdrop of Supplies and Equipment: Rigging Airdrop Platforms, Airdrop Derigging and Recovery Procedures, Reference Data for Airdrop Platform Loads*. 15 March 2016.

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TM 10-1670-268-20&P/TO 13C7-52-22, *Organizational Maintenance Manual Including Repair Parts and Special Tools List for Type V Airdrop Platform and Dual Row Airdrop Platform*, 15 September 2002.

PRESCRIBED FORMS

None.

REFERENCED FORMS

Unless otherwise indicated, DA Forms are available on the Army Publishing Directorate (APD) web site: <http://www.apd.army.mil>. DD forms are available on the OSD web site:

<http://www.dtic.mil/whs/directives/infomgt/forms/>. Air Force forms are available at <http://www.e-publishing.af.mil/>.

AF Form 847. Recommendation for Change of Publication.

DA Form 2028. Recommended Changes to Publication and Blank Forms.

DD Form 1387-2. Special Handling Data/Certification.

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15 March 2016

By Order of the Secretary of the Army:

MARK A. MILLEY
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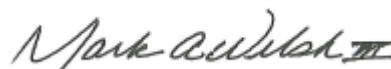
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