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**FM 10-524/TO 13C7-14-471, FM 10-562/TO 13C7-34-1)**  
**April 2012**

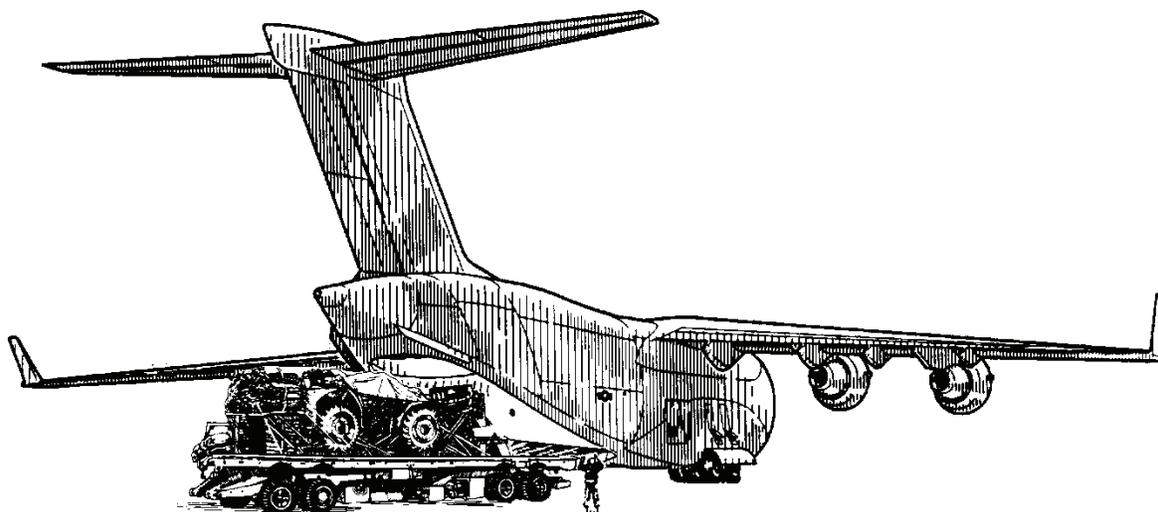
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**Airdrop of Supplies and Equipment:  
Rigging Forklift Trucks; Whole Blood;  
Communication Shelters; Tracked Vehicles**

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# **Airdrop of Supplies and Equipment: Rigging Forklift Trucks; Whole Blood; Communication Shelters; Tracked Vehicles**

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# Preface

## SCOPE

This manual tells and shows how to rig the following items for low-velocity airdrop from a C-130 or C-17 aircraft.

- The S-318/G shelter with AN/GRC or An/GRC-142 communications equipment on a type V platform.
- The PU-620M trailer-mounted power unit on a type V platform.
- The S-502 shelter with AN/GRC-142 communications equipment a type V platform.
- The S-250/G shelter with AN/GRC-142 communications equipment on the type V platform.
- The PU-619M trailer-mounted power unit on the type V platform.
- The 4,000 pound capacity forklift truck on a type V platform.
- The 6,000 pound capacity forklift truck on a type V platform.
- Packets of whole blood. The packets come in various sizes and are of varying weights.
- The IC45 crawler carrier on a type V platform.
- The IC45-2 IHI crawler carrier on a type V platform.
- The M973A, 1 ½ ton cargo carrier small unit support vehicle (SUSV).

## USER INFORMATION

This publication applies to the Active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the United States Army Reserve (USAR), U.S. Air Force, Air National Guard (ANG), Air Force Reserve Command (AFRC).

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# Chapter 1

## Introduction

### DESCRIPTION OF LOADS

- The items covered in this manual are the S-318/G shelter with AN/GRC-122 communications equipment installed weighs 2,150 pounds. The shelter weighs 2,010 pounds with AN/GRC-142 communications equipment installed. It is 89 inches long, 76 inches high and 72 inches wide. The length can vary, depending upon the air conditioner and vents installed.
- The S-502 shelter with AN/GRC-142 equipment installed weighs 2,110 pounds. It is 98 inches long, 70 inches high and 79 inches wide. The unrigged S-250/G shelter with AN/GRC-142 equipment installed weighs 2,410 pounds. It is 97 inches long, 71 inches high and 83 inches wide.
- Two 10 kilowatt generators mounted on a 1 ½ ton (M103A3) trailer make up the PU-619M power unit (line number J42100) (Figure 3-1). The unrigged power unit weighs 4,580 pounds. It is 174 inches long and 83 inches wide. Its height is 94 ½ inches (reducible to 63 inches).
- Two kilowatt generators mounted on a ¾ ton trailer make up the PU-620M power unit (line number J47617) (Figure 3-18). Eight filled fuel cans and three AB-155 antenna kits are dropped with the power unit. The unrigged power unit with eight filled fuel cans weighs 2,680 pounds. It is 147 inches long and 75 inches wide. Its height is 80 inches (reducible to 56 inches).
- Packets of whole blood. The packets come in various sizes and are of varying weights. The special considerations given below must be followed when rigging packets of whole blood.
- The IC45 crawler carrier is a small commercial off the shelf tracked dump truck. The IC45 crawler carrier is 98 ½ inches high (reducible to 77 ½ inches with the removal of the roll over protection system (ROPS) and canopy cover), 175 inches long, 101 ½ inches wide (reducible to 88 ½ inches with removal of the side mirrors) and weighs 12,790 pounds.
- The IC45-2 IHI crawler carrier is a small commercial off the shelf tracked dump truck with an attachment assembly. The IC45-2 IHI crawler carrier is 97 ½ inches in height (reducible to 81 ½ inches with the removal of the roll over protection system and canopy cover), 103 inches in width, 200 inches long, and weighs 16,500 pounds.
- The M973A, 1 ½ ton cargo carrier small unit support vehicle (SGSV) is a tracked vehicle with a driver's compartment and a cargo-troop carrier compartment attached to the rear. The vehicle is 271 inches long, 74 inches wide, 90 ½ inches high, and weighs 10,000 pounds. The vehicle must be rigged with an accompanying load that weighs at least 2,000 pounds but not more than 2,100 pounds. The accompanying load shown in this manual is 105-millimeter ammunition rigged on the front end of the platform; however other equipment may be used.

### SPECIAL CONSIDERATIONS

#### CAUTION

Only ammunition listed in FM 4-20.153/MCRP 4-11.3B/TO 13C7-18-41 may be air dropped.

- Whole blood must be placed in ice and packaged into cardboard containers by medical personnel in the presence of a 68K lab NCO or a medical officer.

## Chapter 1

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- The whole blood containers must be replenished with ice every 48 hours in the presence of a 68K lab NCO or a medical officer.
- Because of the re-icing restrictions, all wooden boxes should be constructed and lashed to the platform before the whole blood containers are transported to the rigging site.
- The loads covered in this manual include hazardous material as defined in AFMAN 24-204(I)/TM 38-250/NAVSUP PUB 505/MCO P4030.19I. The hazardous materials must be packaged, marked and labeled as required by AFMAN 24-204(I)/TM 38-250/NAVSUP PUB 505/MCO P4030.19I.
- 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/OPNAVIST 4630.24D/AFJ 13-210(I)/MCO 13480.1C.

## Chapter 2

# Rigging the S-318/G with AN/GRC-122 or AN/GRC-142 Communications Equipment Installed For Low-Velocity Airdrop on the Type V Platform

## DESCRIPTION OF LOAD

2-1. The S-318/G shelter (line number not available) is rigged on an 8-foot, type V platform for low-velocity airdrop. The load requires one G-11B cargo parachute. The rigged shelter with AN/GRC-122 communications equipment installed weighs 2,150 pounds. The shelter weighs 2,010 pounds with AN/GRC-142 communications equipment installed. It is 89 inches long, 76 inches high and 72 inches wide. The length can vary, depending upon the air conditioner and vents installed.

## PREPARING PLATFORM

2-2. Prepare an 8-foot, type V airdrop platform using four tandem links and eight clevis assemblies as shown in Figure 2-1.

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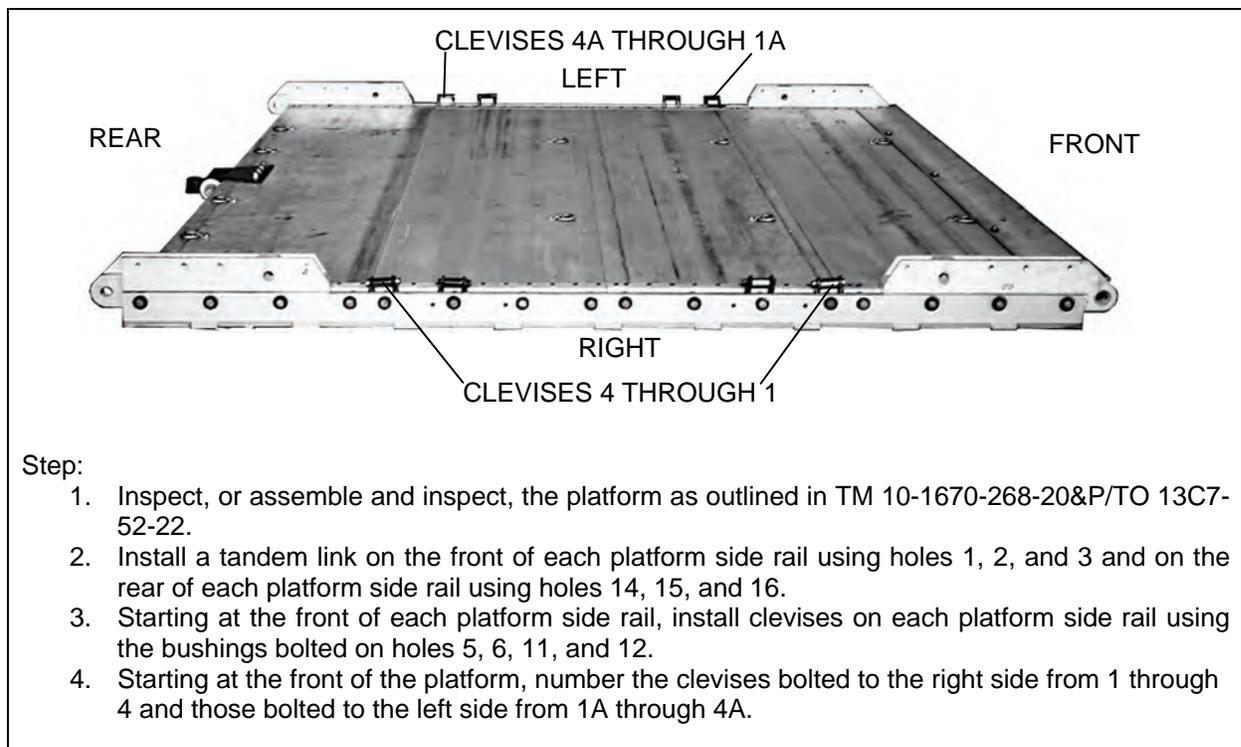


Figure 2-1. Platform Prepared

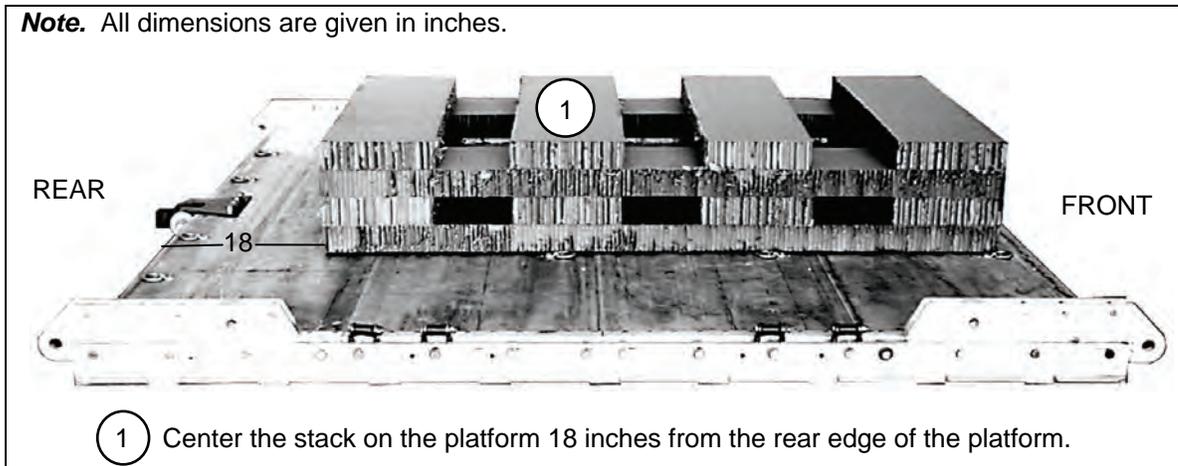
## PREPARING AND POSITIONING HONEYCOMB STACK

2-3. Prepare the honeycomb stack as shown in Figure 2-2. Position the stack on the platform as shown in Figure 2-3.



<b>Stack Number</b>	<b>Pieces</b>	<b>Width (Inches)</b>	<b>Length (Inches)</b>	<b>Material</b>	<b>Instructions</b>
1	2	12	72	Honeycomb	Lay honeycomb parallel and 20 inches apart.
	4	44	12	Honeycomb	Glue a piece of honeycomb perpendicular to the base pieces even with each. Glue two pieces of honeycomb perpendicular to the base and evenly spaced between the two end pieces.
	2	12	72	Honeycomb	Glue honeycomb flush over the long edges of the stack.
	4	44	12	Honeycomb	Glue honeycomb to the top of the stack, flush with the 44- by 12-inch pieces placed previously.

Figure 2-2. Honeycomb Stack Prepared



**Figure 2-3. Honeycomb Stack Positioned on Platform**

## PREPARING SHELTER

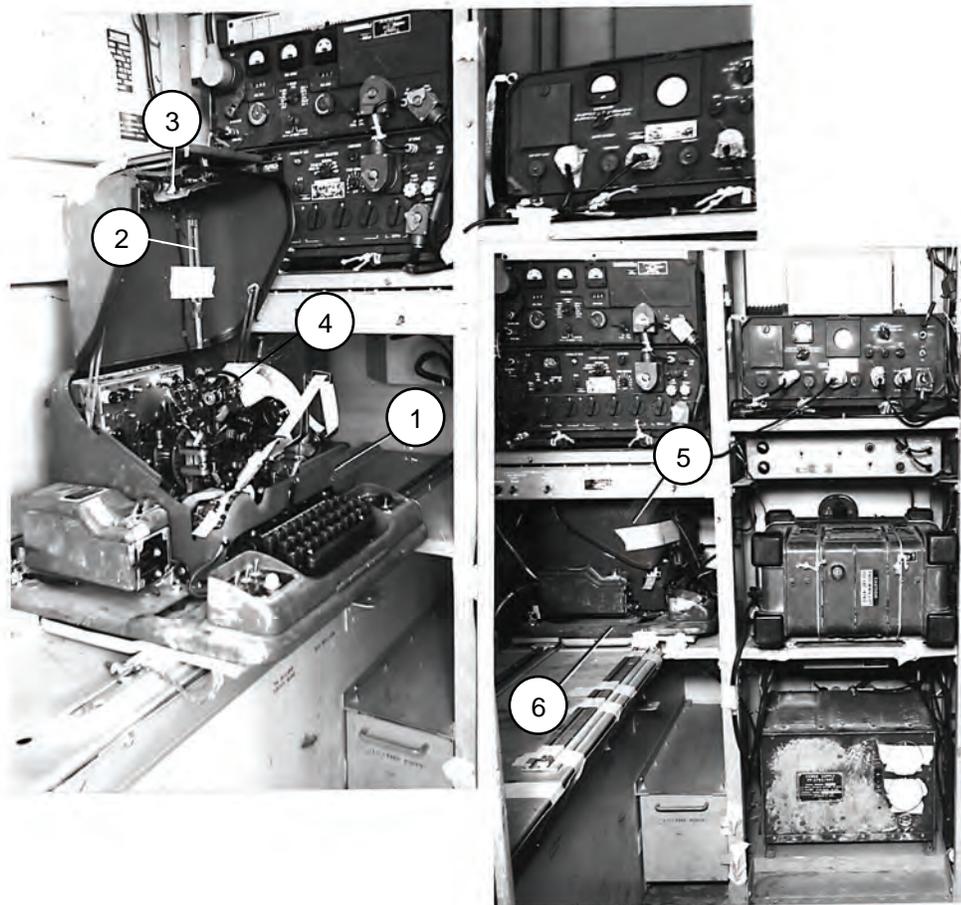
2-4. Prepare the shelter as shown in Figures 2-4 through 2-11. Use Figure 2-4 as a guide for locating specific items of communications equipment.

**Note.** AN/GRC-122 equipment is shown. AN/GRC-142 communications equipment arrangement is similar.

1	4	7
2	5	8
3	6	9

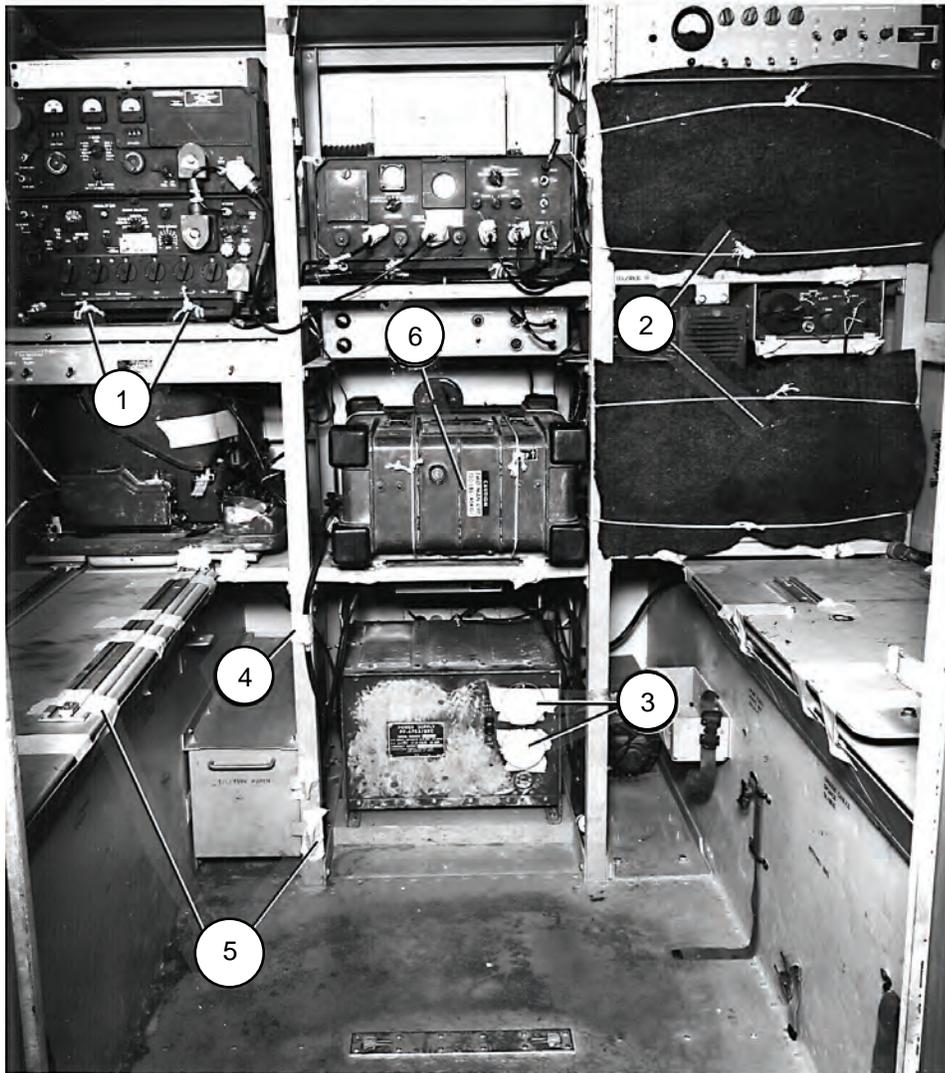
- 1 AN/GRC 106 and RT-662/GRC
- 2 TT-76 Teletypewriter
- 3 Storage Drawer
- 4 RT-662/GRC and MD 522A/GRC
- 5 TT-98 Teletypewriter
- 6 Power Supply
- 7 KW-7 Crypto Device
- 8 KW-7 Crypto Device
- 9 Stowage Space

**Figure 2-4. Typical Layout of Communications Equipment in Shelter**



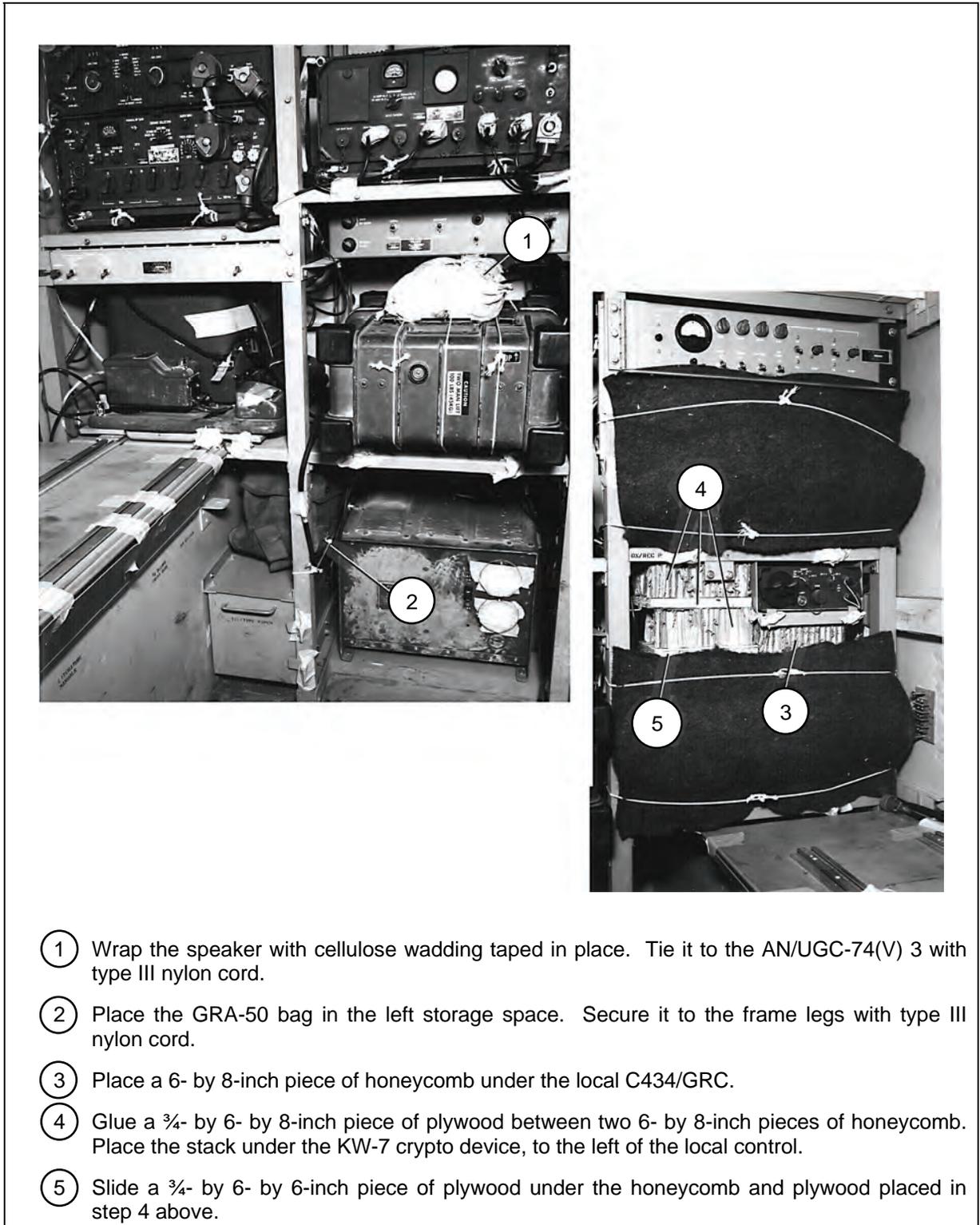
- ① Move the TT-76 teletypewriter out on its slide, and open the cover.
- ② Tape the tuning fork in its rack on the cover.
- ③ Tape the light bulb in the cover.
- ④ Secure the spool in place with tape.
- ⑤ Close and latch the cover. Tape the latch.
- ⑥ Slide the teletypewriter back into its storage area, and secure its locking pins.

**Figure 2-5. Teletypewriter Prepared**



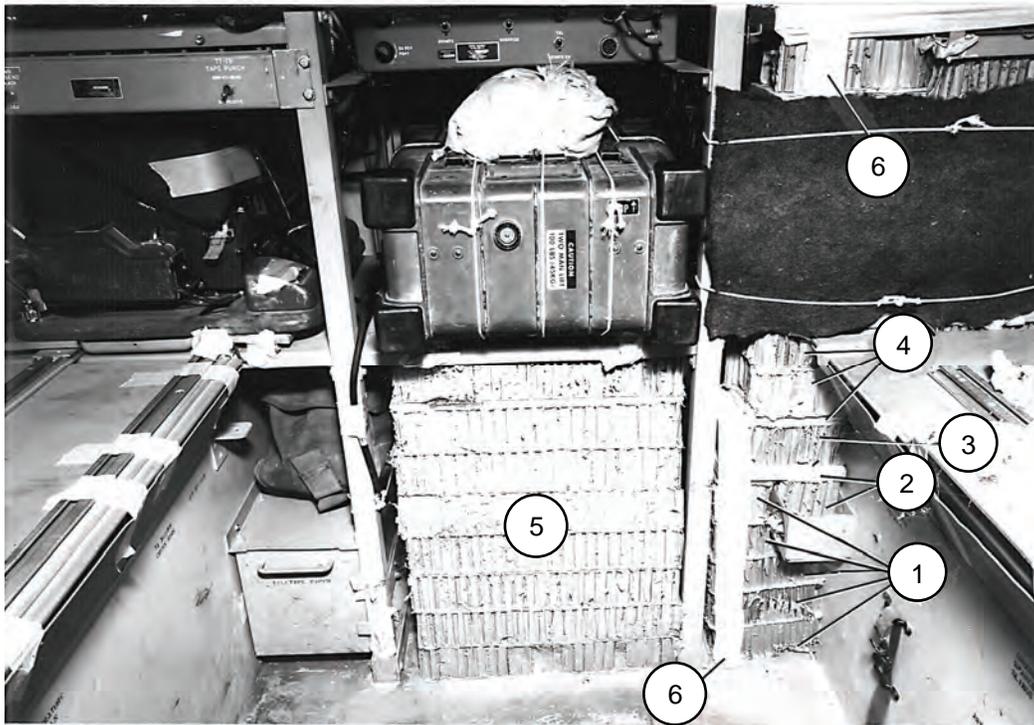
- ① Secure the radio receiving and transmitting equipment (AN/GRC-106, RT-662/GRC. MD-522A/GRC) release handles to the mounting frame bases with type III nylon cord.
- ② Tie felt to the front of the KW-7 crypto devices with type III nylon cord.
- ③ Tape the gauges on the power supply. Tape the clock face.
- ④ Tape loose cables to convenient points on the racks.
- ⑤ Close, lock, and tape storage compartments.
- ⑥ Have the operator install the cover on the AN/UGC-74(V) 3. Tie the cover in place with the type III nylon cord. Prepare the AN/UGC-74(V) 3, if present, on the right shelf in the same way.

**Figure 2-6. Radio Equipment, Gauges, Clock, Cables, and Storage Compartments Secured**



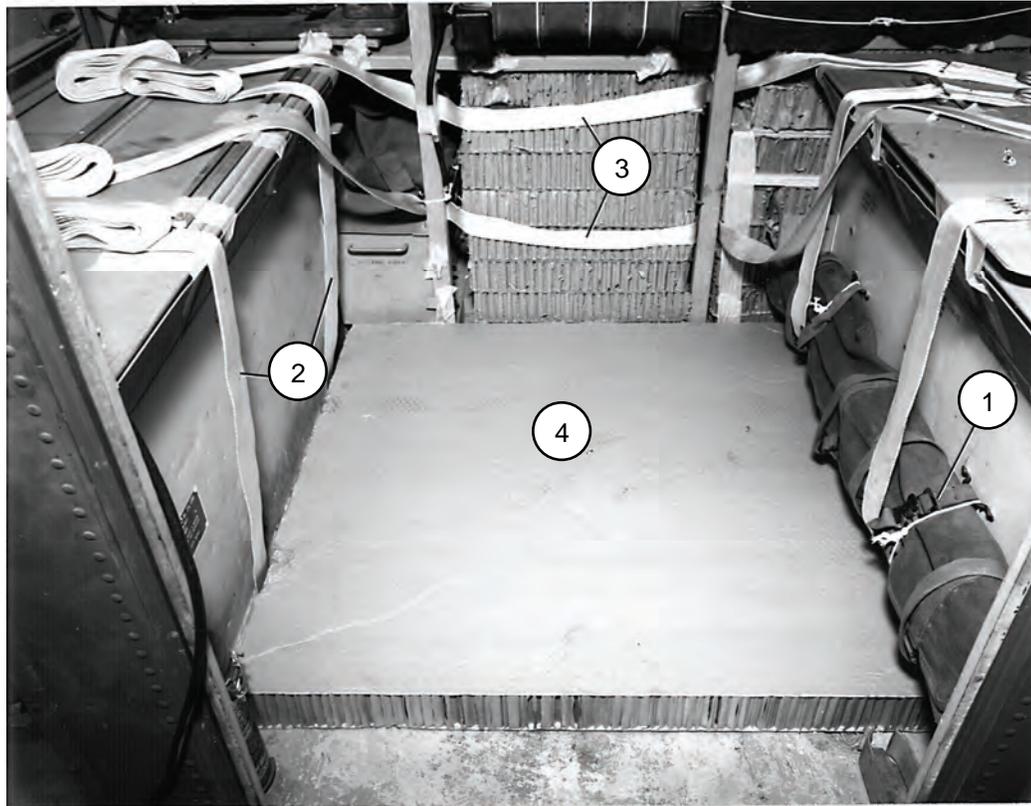
- ① Wrap the speaker with cellulose wadding taped in place. Tie it to the AN/UGC-74(V) 3 with type III nylon cord.
- ② Place the GRA-50 bag in the left storage space. Secure it to the frame legs with type III nylon cord.
- ③ Place a 6- by 8-inch piece of honeycomb under the local C434/GRC.
- ④ Glue a  $\frac{3}{4}$ - by 6- by 8-inch piece of plywood between two 6- by 8-inch pieces of honeycomb. Place the stack under the KW-7 crypto device, to the left of the local control.
- ⑤ Slide a  $\frac{3}{4}$ - by 6- by 6-inch piece of plywood under the honeycomb and plywood placed in step 4 above.

**Figure 2-7. GRA-50 Bag and Speaker Stowed and Control Unit Padded**



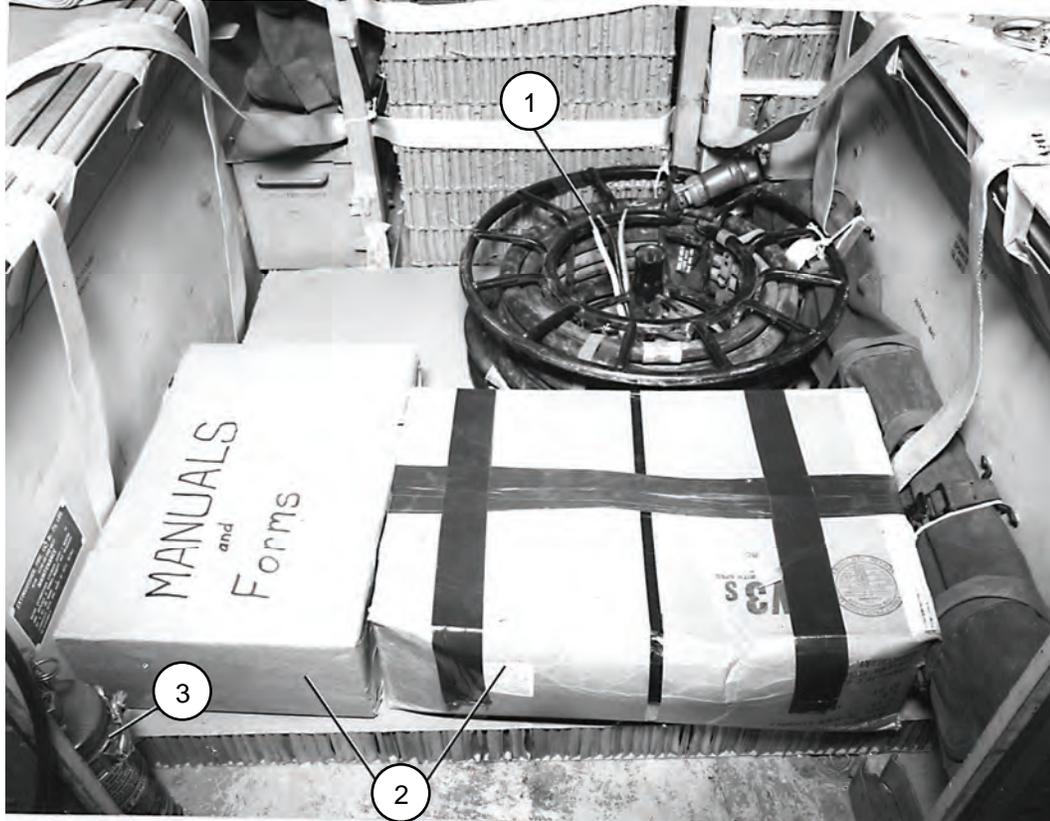
- ① Fill the area under and to the left of the phone box with three 6- by 8-inch pieces of honeycomb and two 4- by 6-inch pieces of honeycomb.
- ② Place cellulous wadding and a 4- by 6-inch piece of honeycomb in the phone box to level the fifth honeycomb layer. Lay a ¾- by 6- by 8-inch piece of plywood flush on the honeycomb.
- ③ Lay a 6- by 8-inch piece of honeycomb over the plywood placed in step 2 above. Force a ¼- by 6- by 8-inch piece of plywood over the plywood placed in step 2 above for a snug fit.
- ④ Glue two pieces of 6- by 18-inch honeycomb to a ¼- by 6- by 18-inch piece of plywood. Place it under the KW-7 shelf with the 6-inch edge to the outside and the plywood facing down. Place a second piece of ¼- by 6- by 18-inch plywood under these pieces.
- ⑤ Support a 6- by 18-inch piece of honeycomb and a ¼- by 6- by 18-inch piece of plywood under the center shelf. Fit seven 6- by 18-inch pieces of honeycomb over the front of the power supply between the floor and the plywood.
- ⑥ Tape the edges of the honeycomb placed in Figure 2-7 and the honeycomb under the KW-7.

**Figure 2-8. Honeycomb and Plywood Supports Placed Under Shelf**



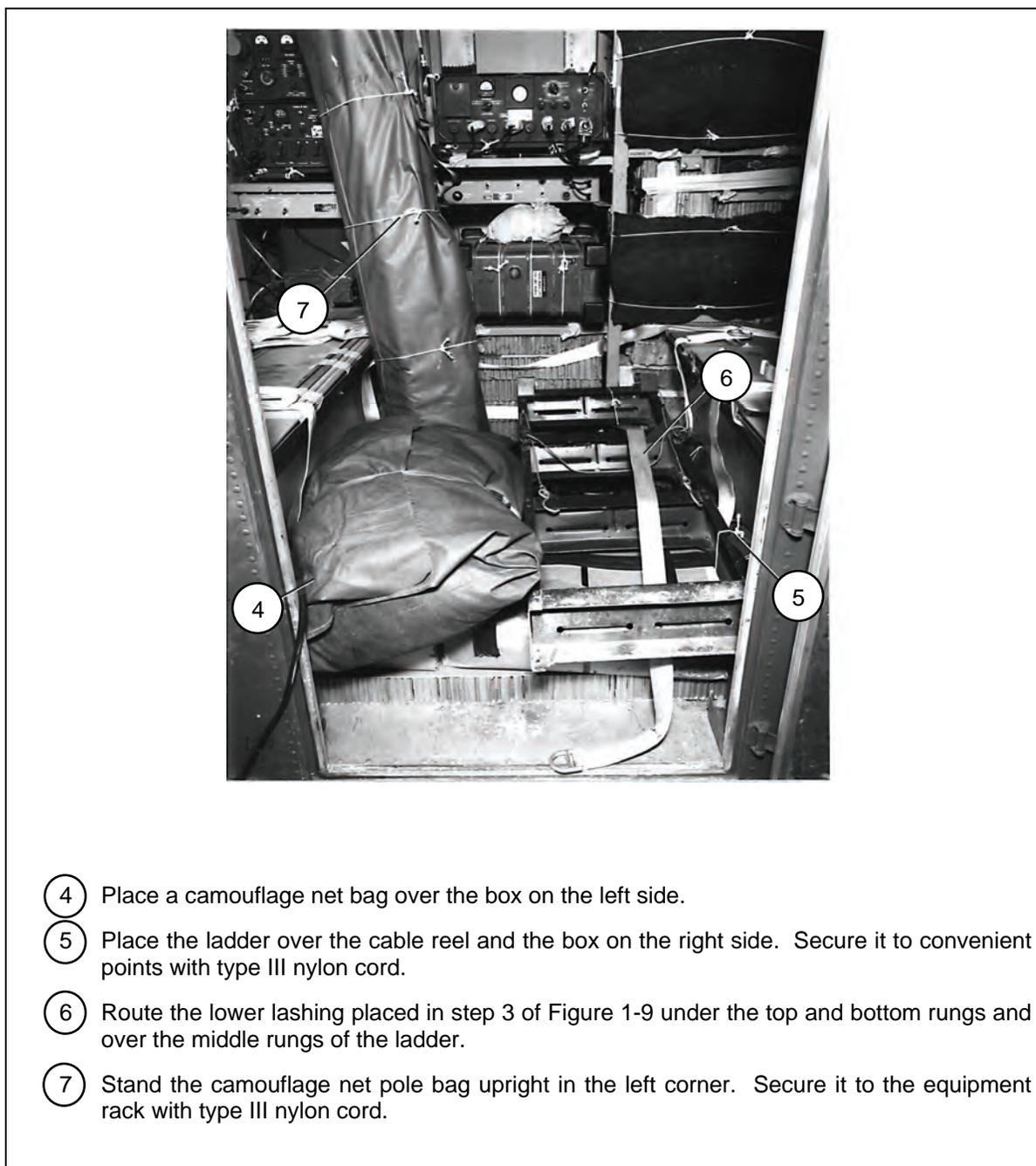
- ① Stow the sledgehammer in its rack near the floor on the right (Not Shown). Secure the antenna bag with the straps provided and with type III nylon cord.
- ② Lay two 15 foot lashings across the floor from side to side.
- ③ Pass two 15 foot lashings behind the shelf supports and in front of the honeycomb stack.
- ④ Place a 36- by 38-inch piece of honeycomb on the floor and on top of the lashings.

**Figure 2-9. Floor of Shelter Prepared**



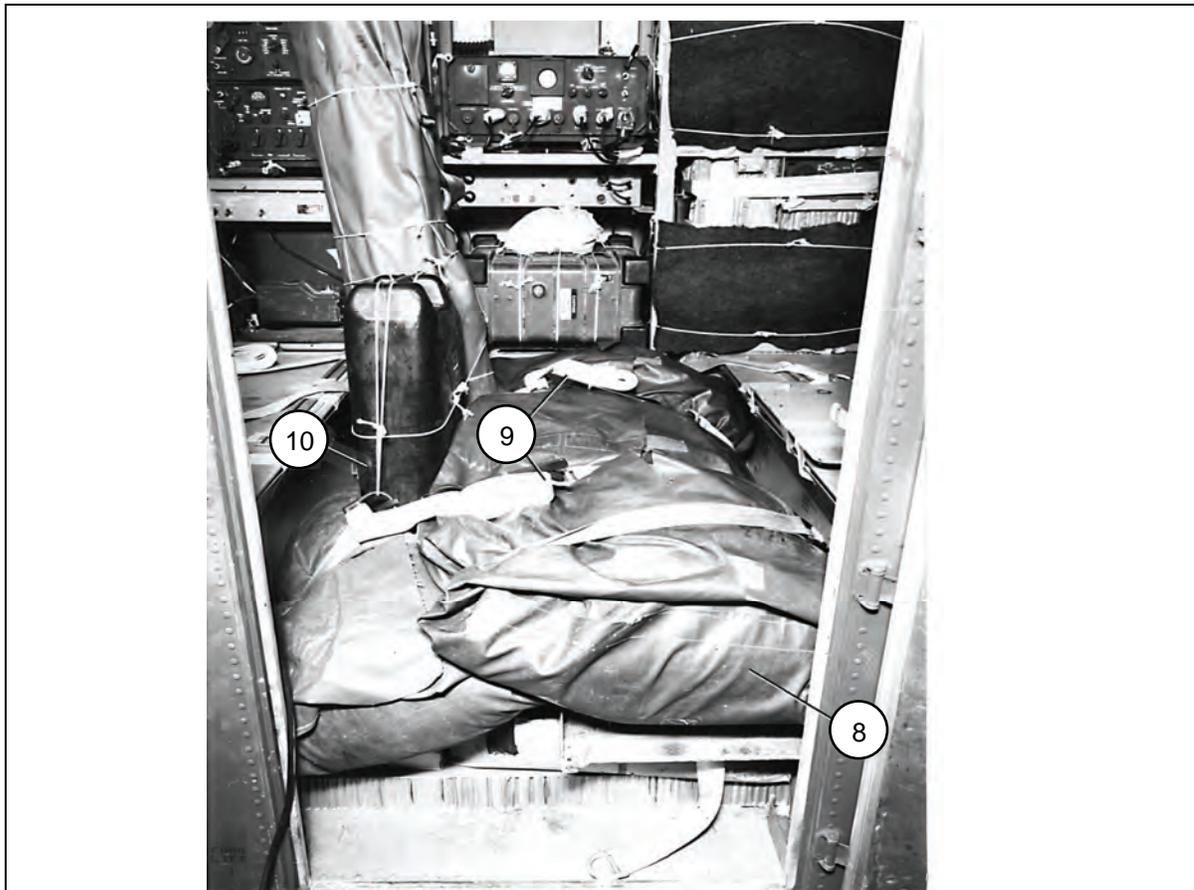
- ① Place the power cable in the right front corner. Secure it to convenient points with type III nylon cord.
- ② Place the boxes of manuals and spare parts along the rear edge of the honeycomb.
- ③ Tie the fire extinguisher in its bracket with type III nylon cord.

**Figure 2-10. Shelter Equipment Placed on Floor**



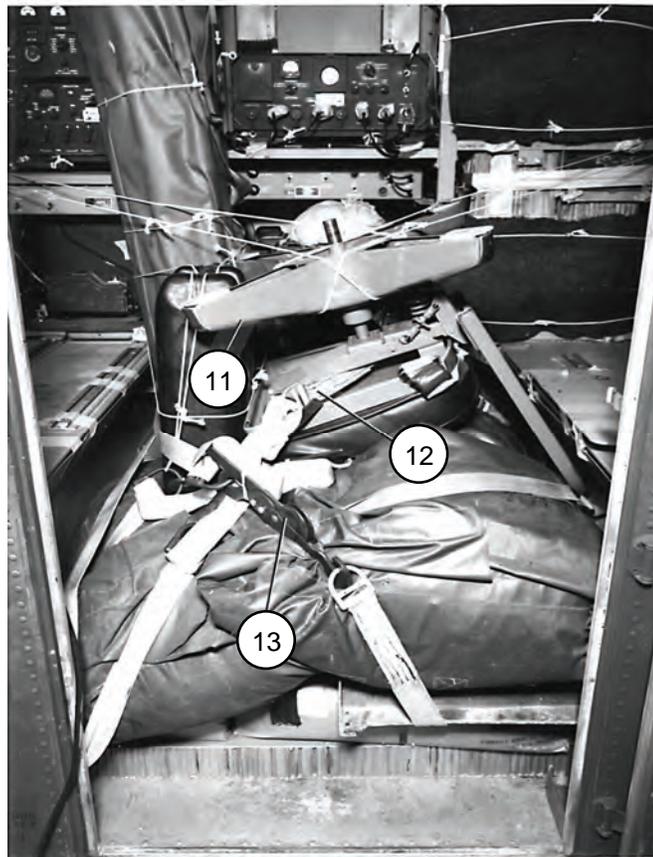
- ④ Place a camouflage net bag over the box on the left side.
- ⑤ Place the ladder over the cable reel and the box on the right side. Secure it to convenient points with type III nylon cord.
- ⑥ Route the lower lashing placed in step 3 of Figure 1-9 under the top and bottom rungs and over the middle rungs of the ladder.
- ⑦ Stand the camouflage net pole bag upright in the left corner. Secure it to the equipment rack with type III nylon cord.

**Figure 2-10. Shelter Equipment Placed on Floor (Continued)**



- ⑧ Place the second camouflage net bag over the ladder.
- ⑨ Secure the two lashings placed in step 2 of Figure 2-9 over both camouflage net bags with D-rings and load binders.
- ⑩ Place a water can in front of the camouflage net pole bag. Secure it to the camouflage net pole bag and to the D-ring of the front lashing with a type III cord.

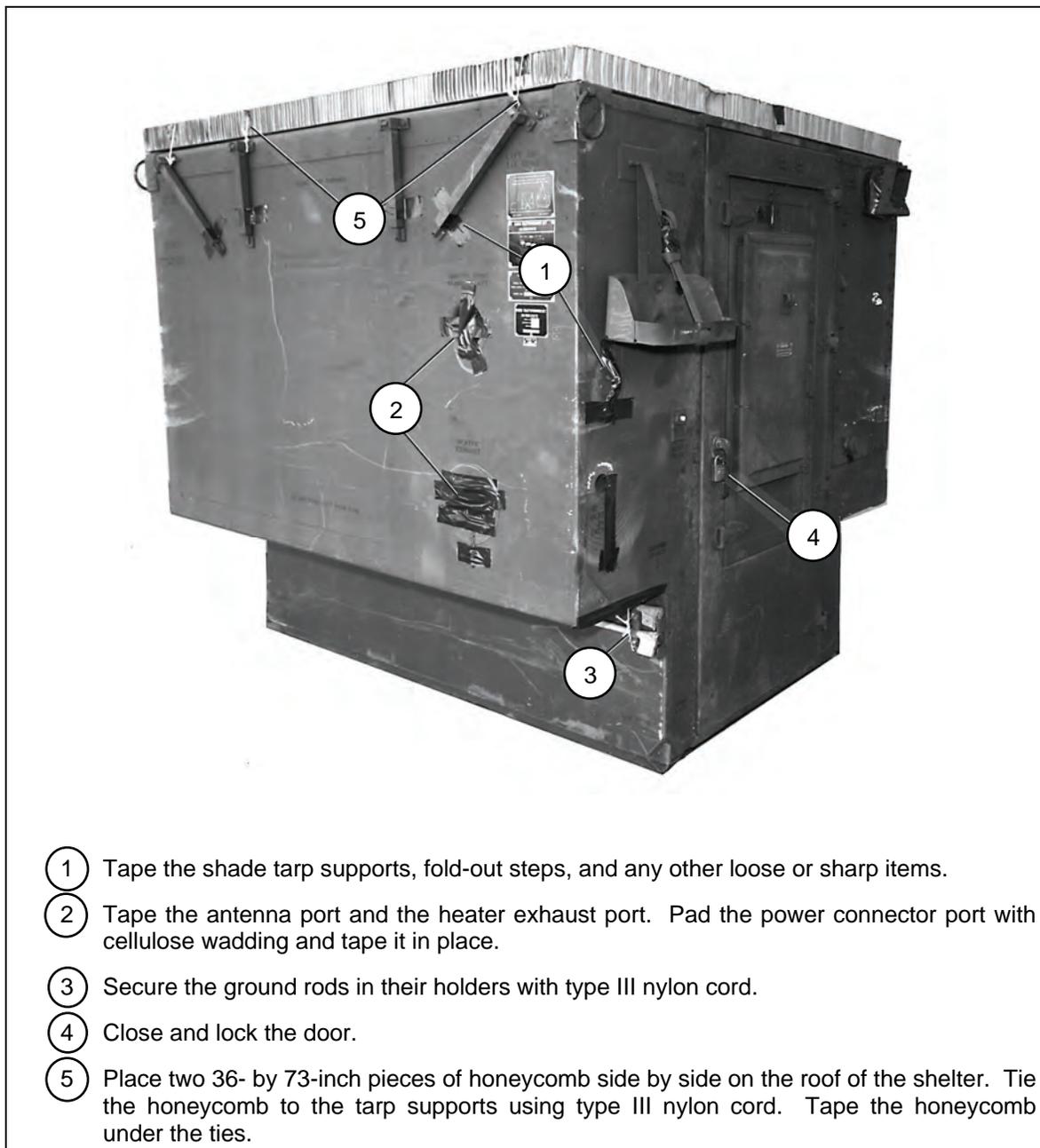
**Figure 2-10. Shelter Equipment Placed on Floor (Continued)**



- ① Place the chair with its back down against the right shelf. Tie the chair to convenient points with type III nylon cord.
- ② Route the upper lashing placed in step 3 of Figure 2-9 between the chair seat and frame. Pass it through the lower door hatch and fasten it on top of the equipment with a D-ring and a load binder.
- ③ Route the lower lashing placed in step 3 of Figure 2-9 around the pole bag and water can. Bring the end of the lashing up from the ladder and fasten the lashing on top of the net bag with a D-ring and a load binder.

**Note.** Adapt these procedures for shelters with AN/GRC-122 equipment to allow for the teletypewriter on the right shelf.

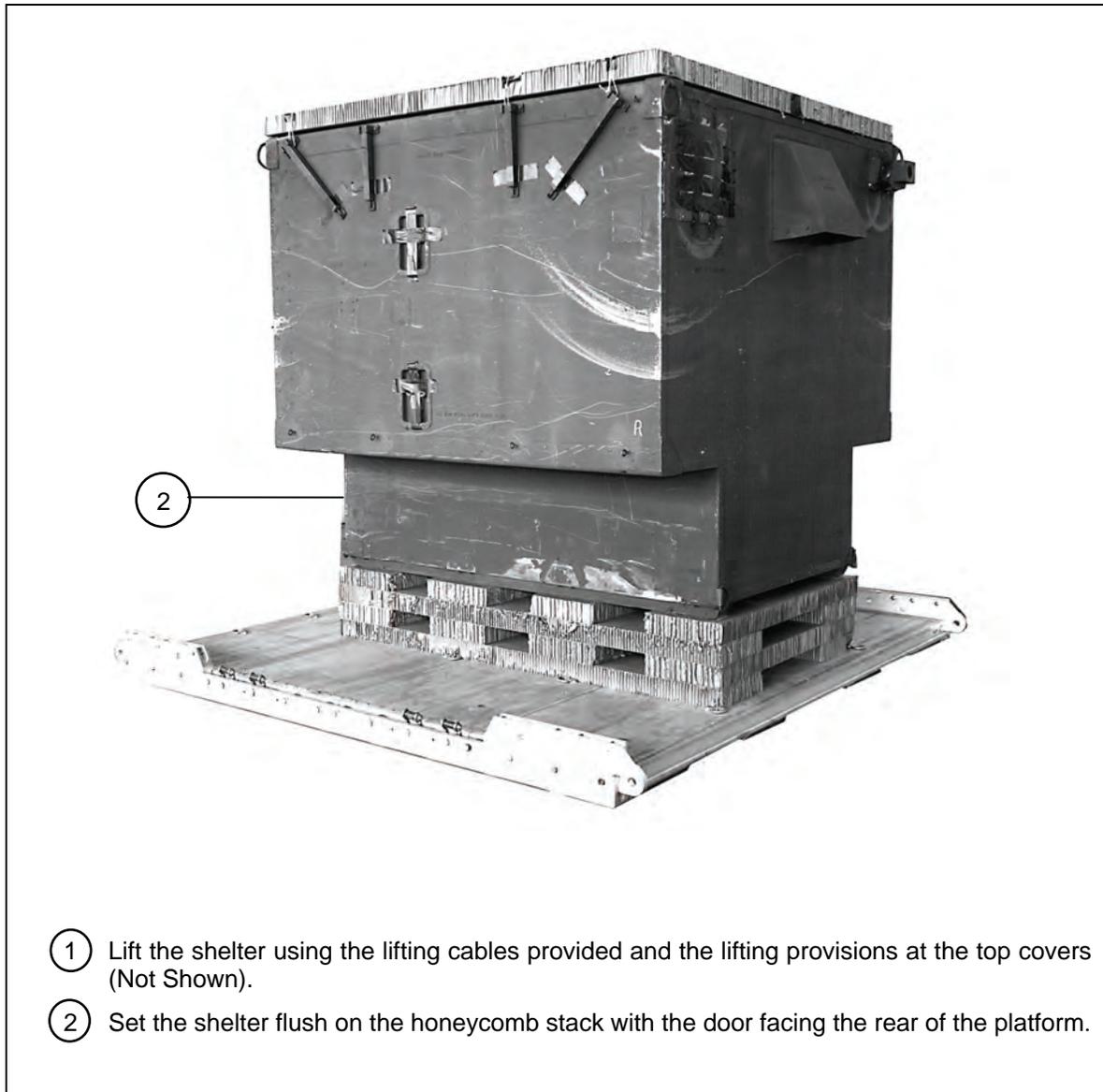
**Figure 2-10. Shelter Equipment Placed on Floor (Continued)**



**Figure 2-11. Outside of Shelter Prepared**

## POSITIONING SHELTER

2-5. Position the shelter on the platform as shown in Figure 2-12.



**Figure 2-12. Shelter Positioned on Platform**

## LASHING SHELTER

2-6. Lash the shelter to the platform as shown in Figure 2-13.

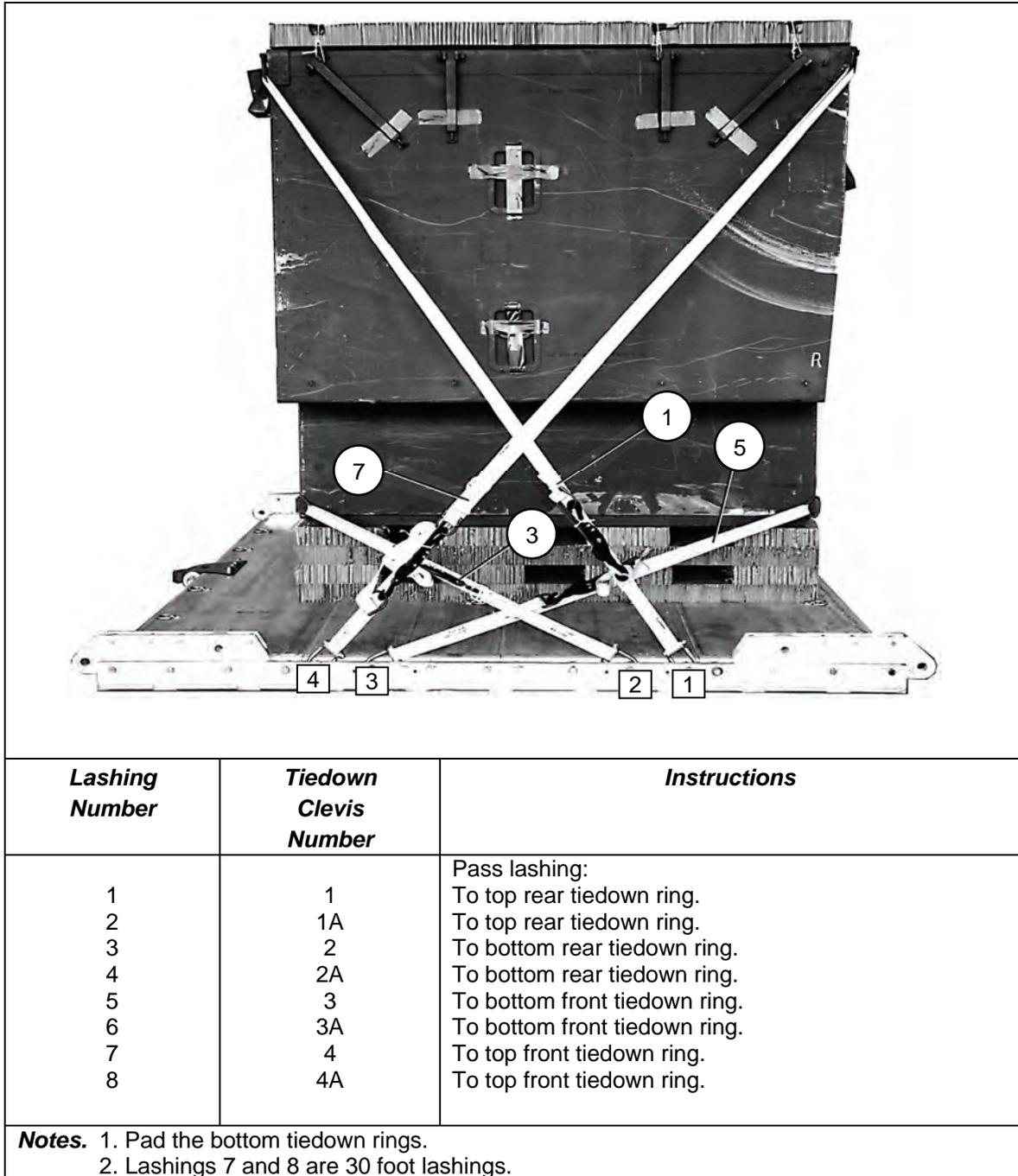
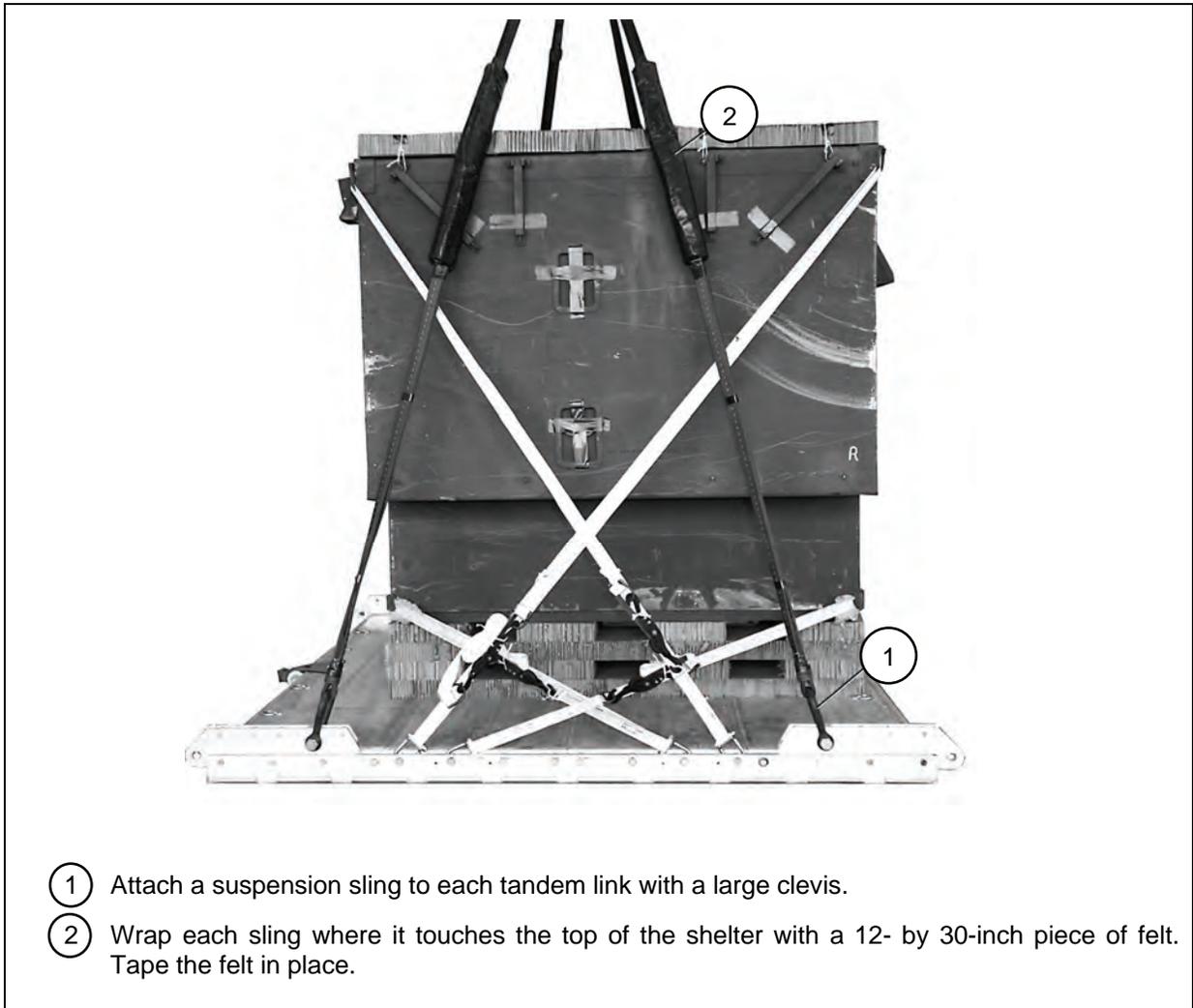


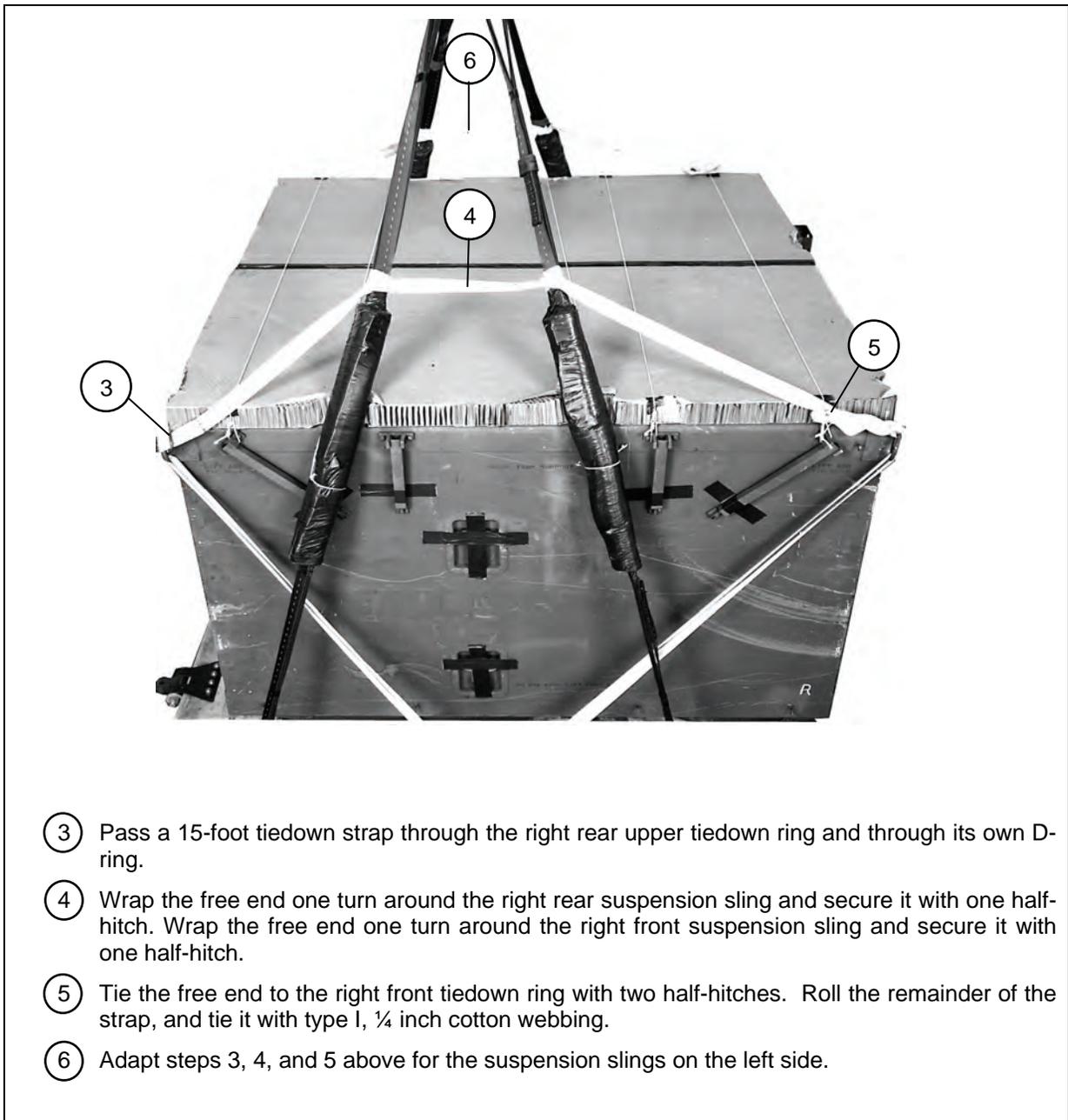
Figure 2-13. Lashings Installed

## INSTALLING AND SAFETYING SUSPENSION SLINGS

2-7. Install and safety four 11-foot, (2 loop), type XXVI nylon suspension slings in Figure 2-14.



**Figure 2-14. Suspension Slings Installed and Safety Tied**

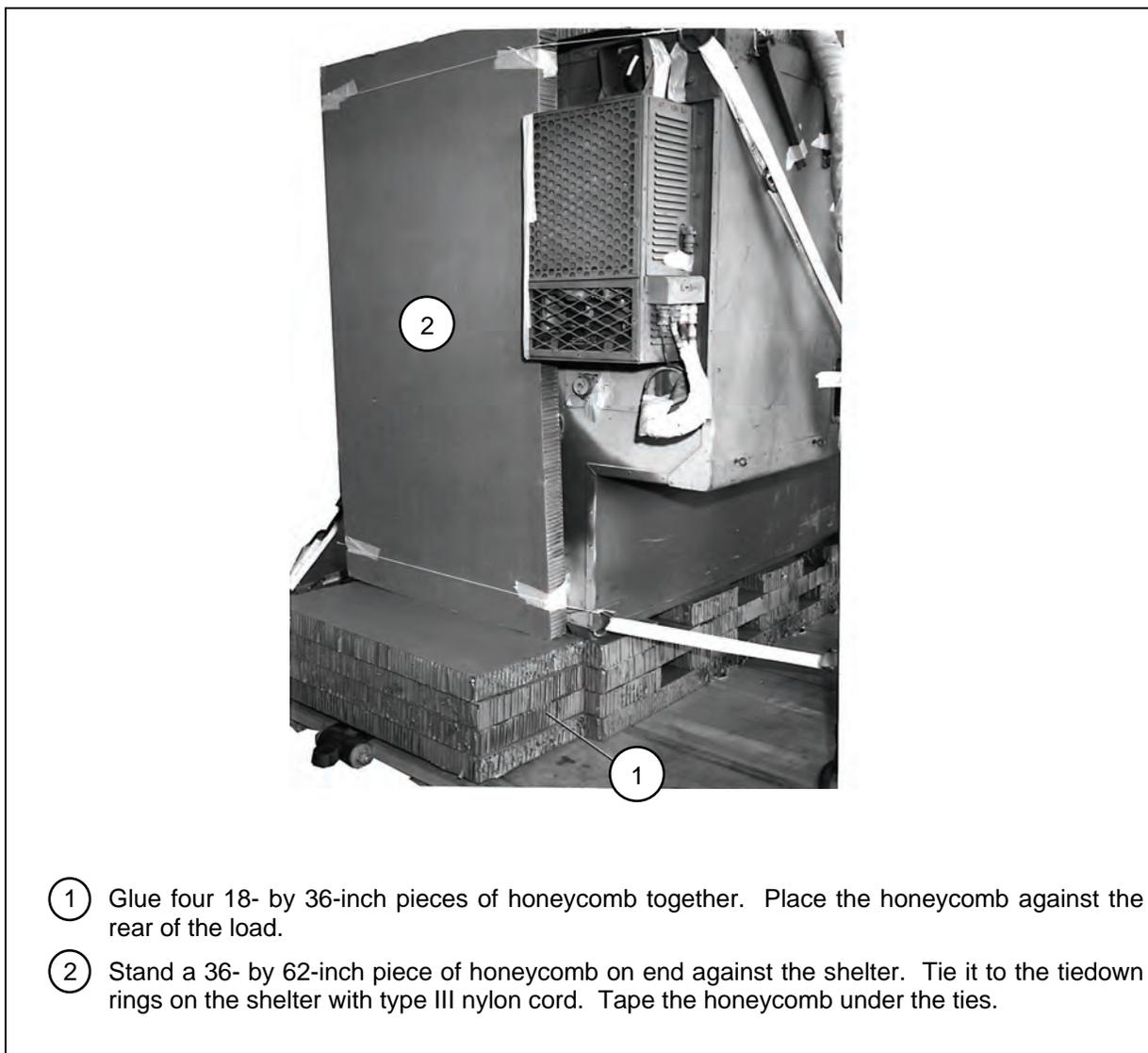


- ③ Pass a 15-foot tiedown strap through the right rear upper tiedown ring and through its own D-ring.
- ④ Wrap the free end one turn around the right rear suspension sling and secure it with one half-hitch. Wrap the free end one turn around the right front suspension sling and secure it with one half-hitch.
- ⑤ Tie the free end to the right front tiedown ring with two half-hitches. Roll the remainder of the strap, and tie it with type I, ¼ inch cotton webbing.
- ⑥ Adapt steps 3, 4, and 5 above for the suspension slings on the left side.

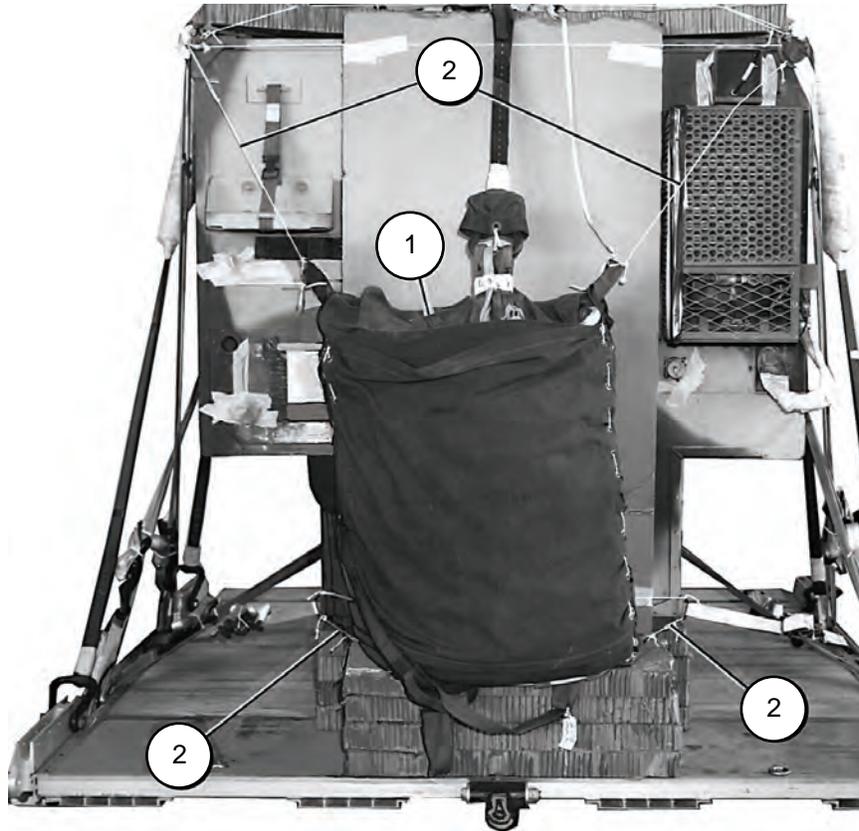
**Figure 2-14. Suspension Slings Installed and Safety Tied (Continued)**

## STOWING CARGO PARACHUTE

2-8. Place honeycomb for stowing the cargo parachute as shown in Figure 2-15. Stow a G-11B cargo parachute as shown in Figure 2-16.



**Figure 2-15. Honeycomb Placed for Parachute**

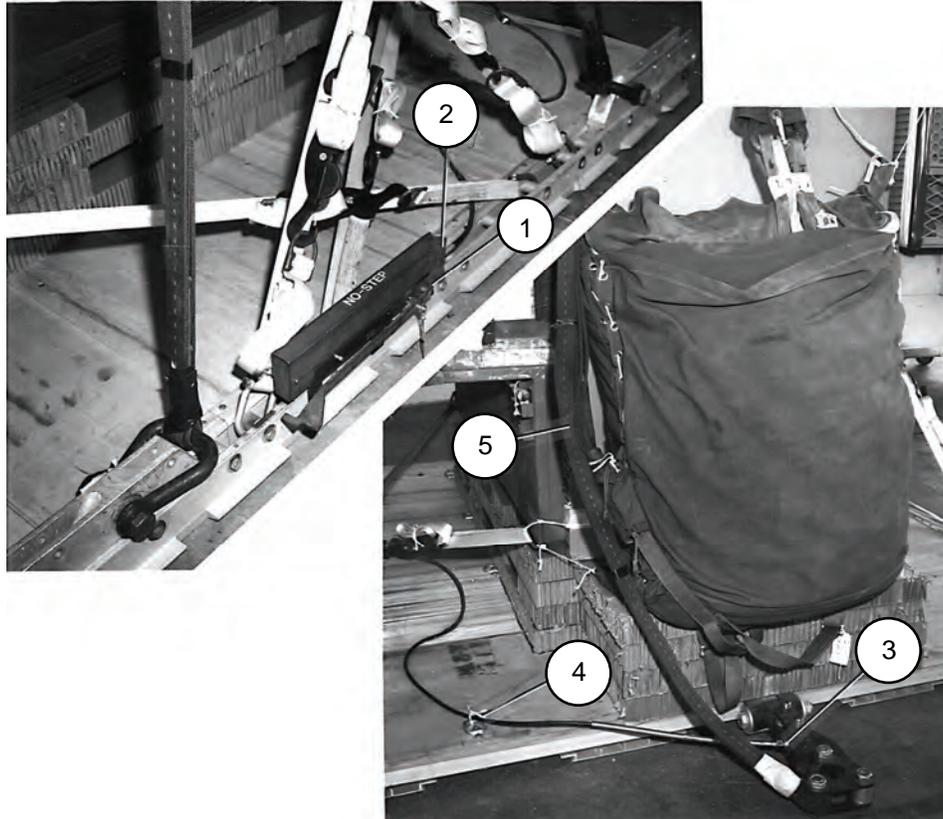


- ① Place the parachute on the honeycomb stack with the bridle loop assembly facing down and the riser compartment facing out.
- ② Secure the parachute to the top and bottom tiedown rings with type III nylon cord.

**Figure 2-16. Parachute Stowed**

## INSTALLING EXTRACTION SYSTEM

2-9. Install the EFTC according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-17.

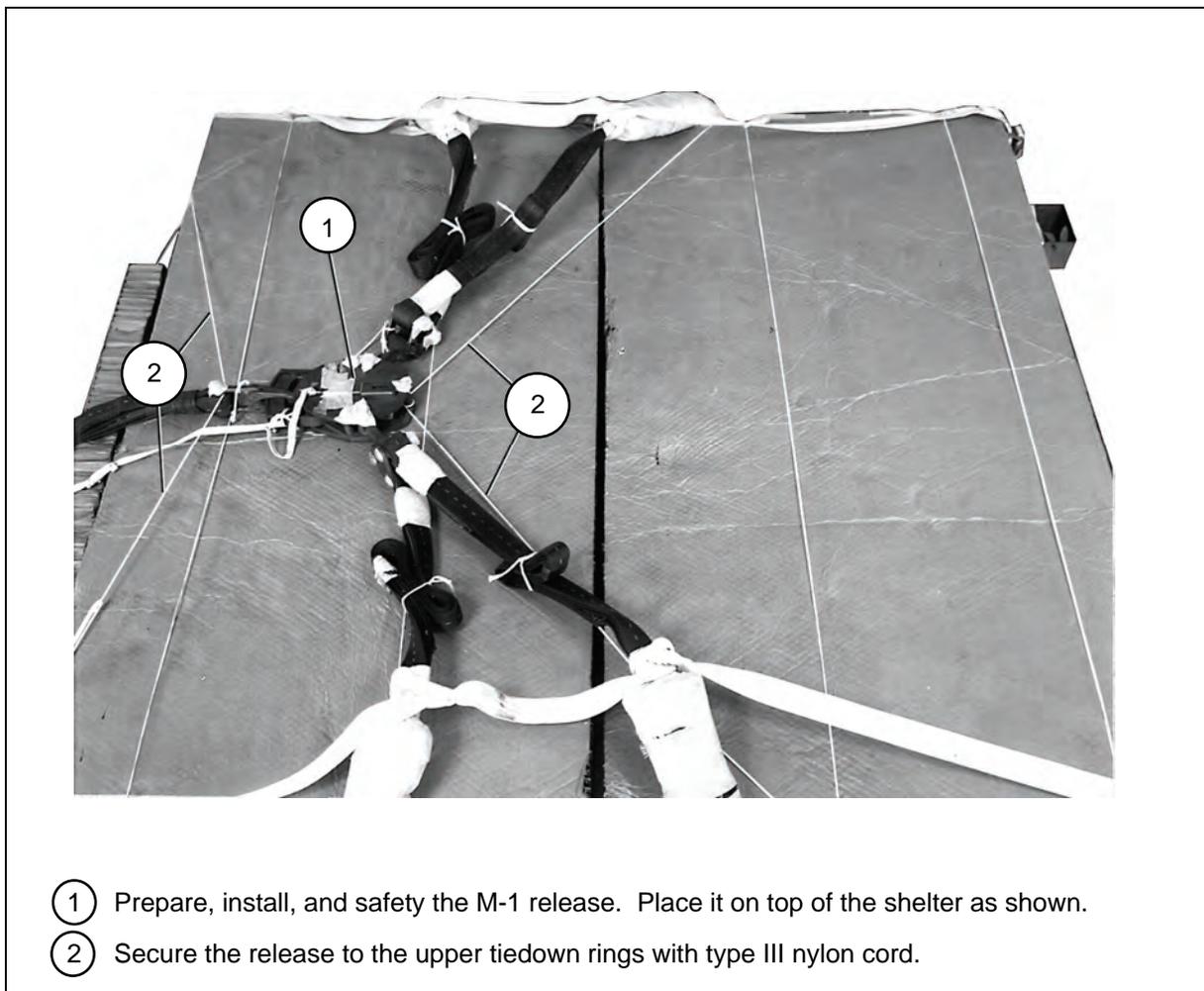


- ① Install the EFTC mounting brackets in the front mounting holes on the left platform rail.
- ② Attach a 12-foot cable to the actuator. Install the actuator to the EFTC mounting brackets.
- ③ Install the latch assembly and attach the cable.
- ④ Tie the cable to the left tiedown ring on the rear platform panel with type I, ¼ inch cotton webbing.
- ⑤ Install a 9-foot, (2-loop), type XXVI nylon deployment line on the load. S-fold the deployment line, and secure it to the left parachute bag carrying handles with ¼ inch cotton webbing.

Figure 2-17. EFTC Installed

## INSTALLING PARACHUTE RELEASE

2-10. Prepare and install an M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-18.



**Figure 2-18. M-1 Cargo Parachute Release Installed**

## **PLACING EXTRACTION PARACHUTE**

2-11. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

2-12. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **MARKING RIGGED LOAD**

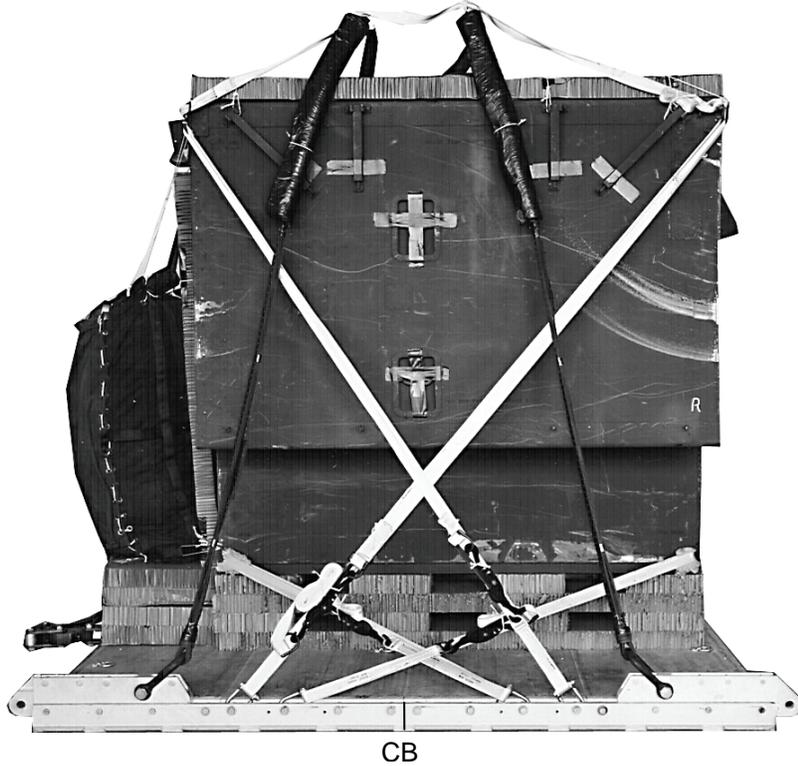
2-13. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5, and as shown in Figure 2-19. Complete Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

2-14. Use the equipment listed in Table 2-1 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 131210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight Load shown.....	3,630 pounds
Maximum load allowed.....	4,500 pounds
Height.....	95 ½ inches
Width.....	108 inches
Length.....	120 ½ inches
Overhang Front.....	5 ½ inches
Rear.....	19 inches
CB (from front edge of platform).....	49 inches

**Figure 2-19. S-318/G Shelter with AN/GRC-122 Communications Equipment Rigged for Low-Velocity Airdrop on the Type V Platform**

**Table 2-1. Equipment Required for Rigging the S-318/G Shelter with AN/GRC-122 or AN/GRC-142 Communications Equipment for low-Velocity Airdrop on the Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-9-8773	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	¾-inch (medium)	2
4030-00-090-5354	1 inch (large)	5
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12 ft cable	1
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½ in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-064-4452	60-ft, (1 loop), type XXVI nylon webbing	1
1670-00-064-0265	160-ft, (1 loop), type XXVI nylon webbing	1
1670-01-107-7652	Link assembly, 3 ¾-inch	1
1670-00-008-1953	Pad, energy dissipating, honeycomb	6 sheets
1670-00-756-3928	Parachute, cargo, G-11B	1
1670-01-016-7841	Parachute, cargo, extraction, 15-ft	1
1670-01-063-3715	Platform, AD, type V, 8 ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(8)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
	Plywood:	
5530-00-129-7721	¼-in:	1 sheet
5530-00-128-4981	¾-in:	1 sheet

**Table 2-1. Equipment Required for Rigging the S-318/G Shelter with AN/GRC-122 or AN/GRC-142 Communications Equipment for Low-Velocity Airdrop on the Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop: For deployment line:	
1670-01-062-6304	9-ft, (2 loop), type XXVI nylon webbing	1
	For suspension slings:	
1670-01-063-7760	11-ft, (2 loop), type XXVI nylon webbing	4
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown, 15-ft	18
8305-00-268-2411	Webbing, cotton, type I, ¼-in	As required

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## Chapter 3

# Rigging the S-502 or S-250/G Shelters with AN/GRC-142 Communications Equipment on the Type V Platform

### DESCRIPTION OF LOAD

3-1. The S-502 shelter (line number S96381) or S-250/G shelter (line number S96381) is rigged on an 8 foot, type V platform for low velocity airdrop. The load requires G-11B cargo parachute. The S-502 and S-250/G shelters are rigged the same. The S-502 shelter is shown photographed throughout this section. The unrigged S-502 shelter with AN/GRC-142 equipment installed weighs 2,110 pounds. It is 98 inches long, 70 inches high and 79 inches wide. The unrigged S-250/G shelter with AN/GRC-142 equipment installed weighs 2,410 pounds. It is 97 inches long, 71 inches high and 83 inches wide.

### PREPARING PLATFORM

3-2. Prepare an 8 foot, type V airdrop platform using four tandem links and eight clevis assemblies as shown in Figure 2-1.

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

### PREPARING AND POSITIONING HONEYCOMB STACK

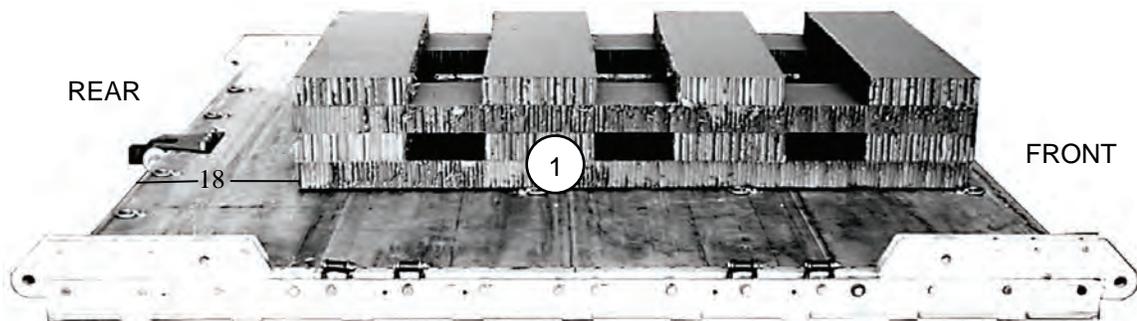
3-3. Prepare the honeycomb stack as shown in Figure 3-1. Position the stack on the platform as shown in Figure 3-2.



<b>Stack Number</b>	<b>Pieces</b>	<b>Width (Inches)</b>	<b>Length (Inches)</b>	<b>Materials</b>	<b>Instructions</b>
1	2	12	82	Honeycomb	Lay honeycomb parallel and 25 inches apart.
	4	49	12	Honeycomb	Glue a piece of honeycomb perpendicular to the base pieces even with each end. Glue two pieces of honeycomb perpendicular to the base and evenly spaced between the two end pieces.
	2	12	82	Honeycomb	Glue honeycomb flush over the long edges of the stack.
	4	49	12	Honeycomb	Glue honeycomb to the top of the stack, flush with the 49- by 12-inch pieces placed previously.

**Figure 3-1. Honeycomb Stack Prepared**

**Note.** All dimensions are given in inches.



- ① Center the stack on the platform 18 inches from the rear edge of the platform.

**Figure 3-2. Honeycomb Stack Positioned on Platform**

## PREPARING SHELTER

3-4. Prepare the shelter as described below.

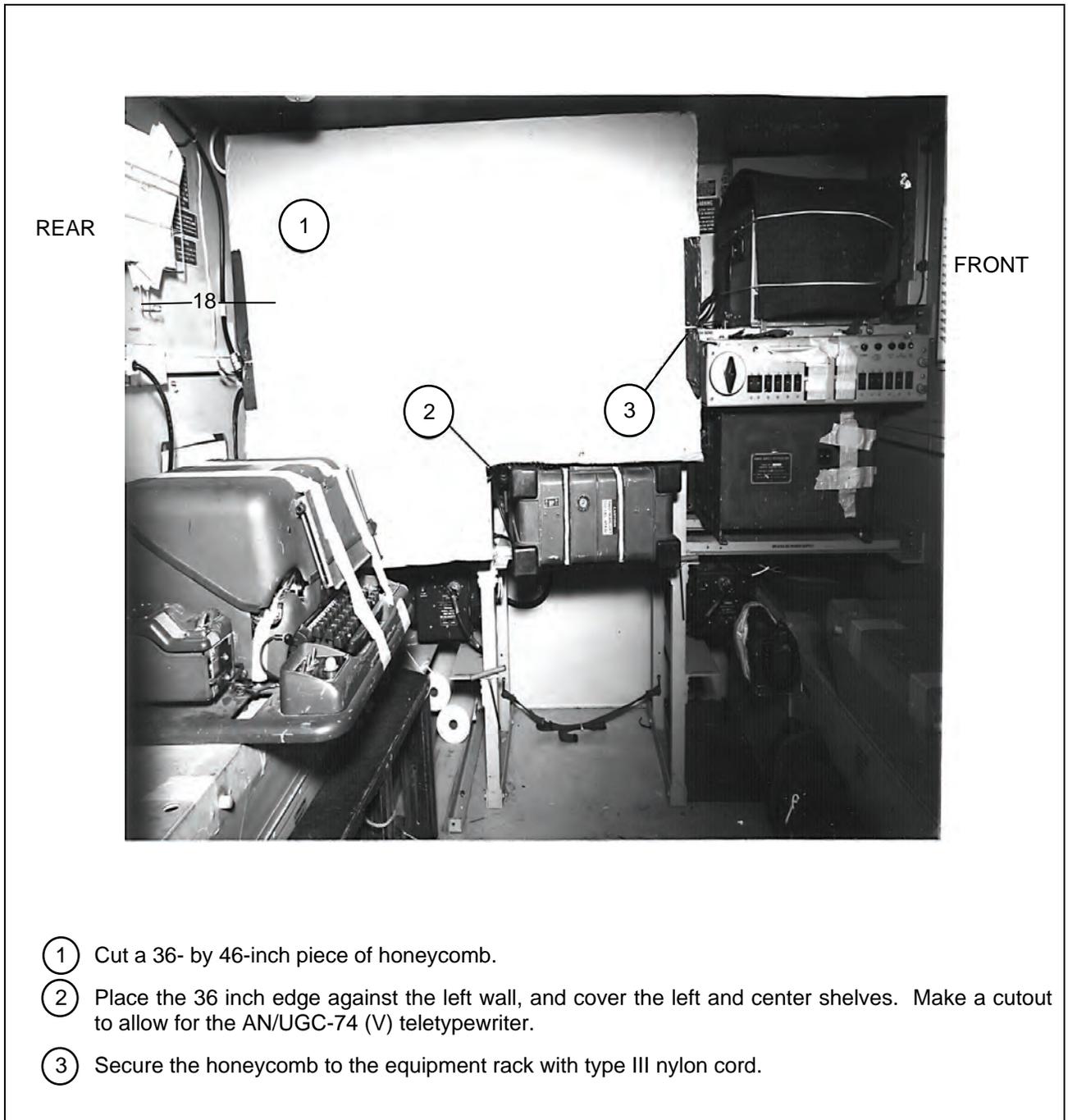
- If a TT-76 teletypewriter is present, prepare it as shown in Figure 2-5. Secure it in place with the pins provided.
- Secure the radio equipment in its racks as shown in Figure 2-6.
- Cover the radio equipment with honeycomb as shown in Figure 3-3.
- Prepare the floor of the shelter and stow shelter equipment as shown in Figure 3-4.

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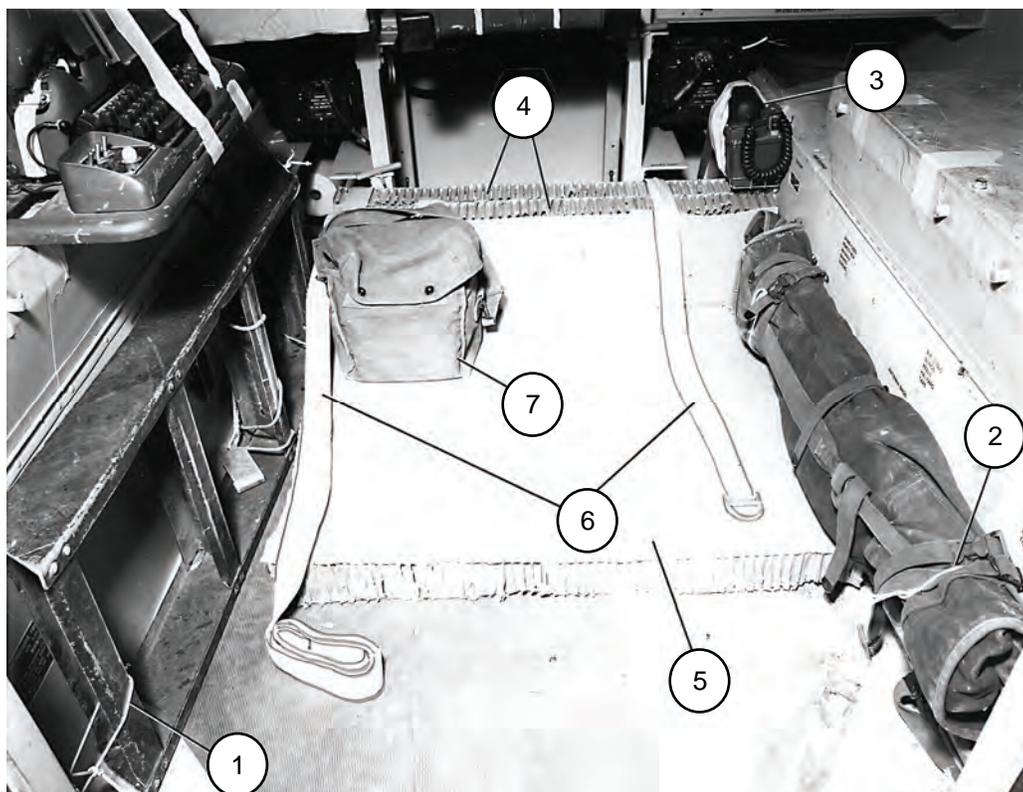
**Note.** The power supply may be located on the right center shelf.

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- Place honeycomb and plywood supports for the power supply and crypto equipment as shown in Figure 3-5.
- Stow the remaining shelter equipment on the floor as shown in Figure 3-6.
- Prepare the outside of the shelter as shown in Figure 2-11, but use two pieces of 82- by 36-inch honeycomb to cover the shelter roof.

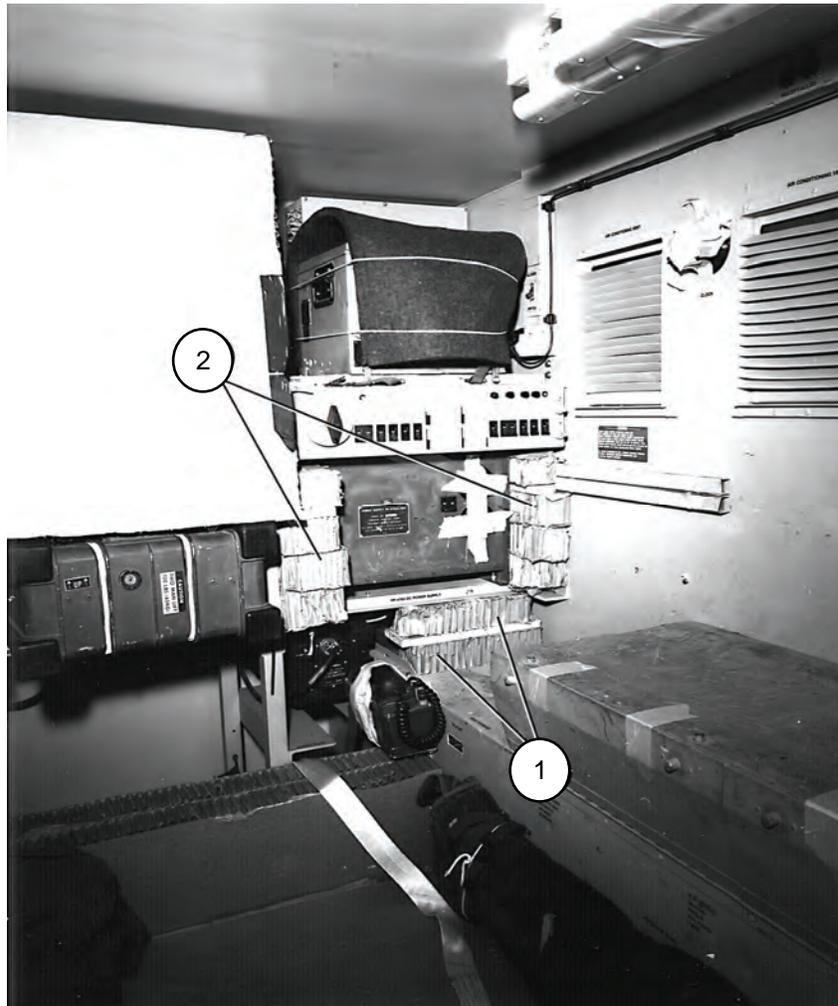


**Figure 3-3. Honeycomb Cover Placed Over Radio Equipment**



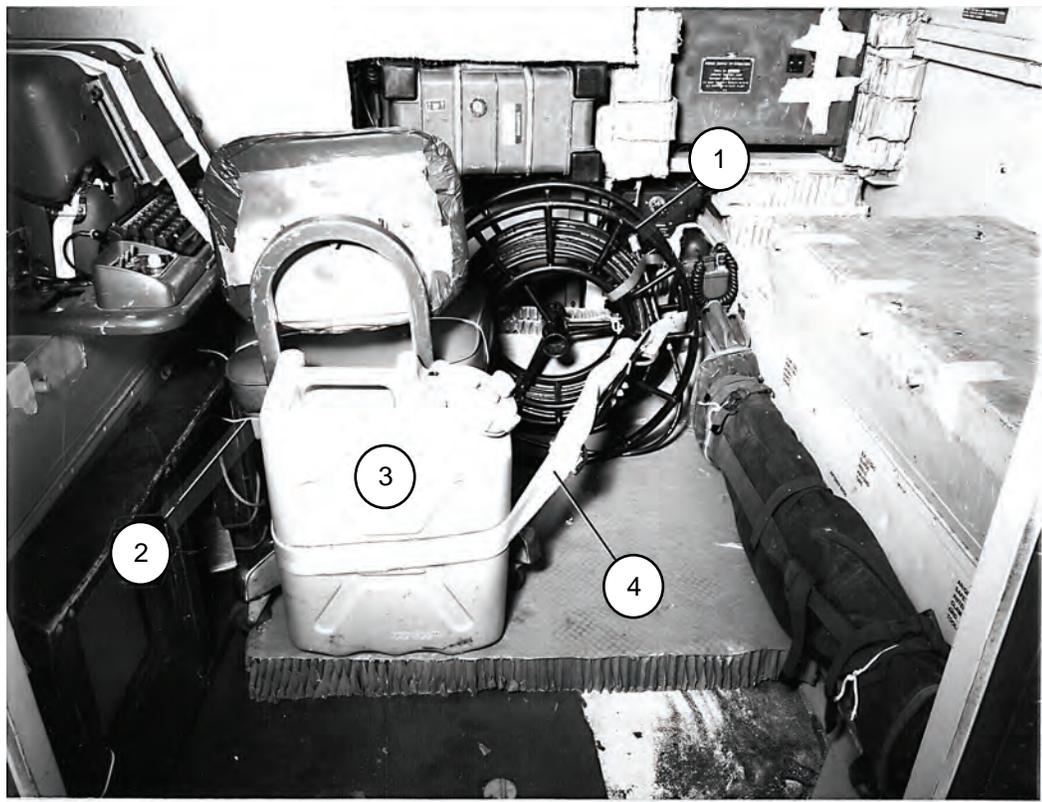
- ① Secure the ladder in its bracket with type III nylon cord.
- ② Stow the sledgehammer in its rack near the floor on the right. Secure the antenna bag with the straps provided and with type III nylon cord.
- ③ Tape the telephone and its handset in the proper rack.
- ④ Set two 12- by 36-inch pieces of honeycomb on the floor against the equipment rack.
- ⑤ Lay a 32- by 36-inch piece of honeycomb on the floor against the pieces placed in step 4 above.
- ⑥ Run a 15-foot tiedown strap behind the two center shelf supports and over the honeycomb.
- ⑦ Lay the GRA-50 bag in the left front corner.

**Figure 3-4. Floor of Shelter Prepared**



- ① Glue a  $\frac{3}{4}$ - by 4- by 13-inch piece of plywood between two 4- by 13-inch pieces of honeycomb. Fit the support lengthwise between the right storage cabinet and the bottom of the power supply shelf.
- ② Use eight  $3\frac{1}{2}$ - by 13-inch pieces of honeycomb to make two four layer stacks. Place a  $\frac{3}{4}$ - by  $3\frac{1}{2}$ - by 13-inch piece of plywood between the third and fourth layers in each stack. Fit a stack on each side of the power supply.

**Figure 3-5. Power Supply and Crypto Components Supported**



- ① Set the power cable reel on the honeycomb against the upright pieces placed in step 4 of Figure 3-4.
- ② Set the operator chair against the cable reel and the ladder. Tie the chair to the ladder with type III nylon cord.
- ③ Set a water can against the back of the chair.
- ④ Lash the items placed steps 1, 2, and 3 above with the pre-positioned lashing.

**Note.** Additional items, such as camouflage nets and poles, may be placed and secured by adapting these procedures and those in Figure 2-10.

Figure 3-6. Shelter Equipment Placed on Floor

## POSITIONING SHELTER

3-5. Position the shelter on the platform as shown in Figure 2-12.

## **LASHING SHELTER**

3-6. Lash the shelter to the platform as shown in Figure 2-13. The bottom tiedown rings need not be padded.

## **INSTALLING AND SAFETYING SUSPENSION SLINGS**

3-7. Install and safety four 12 foot, (2 loop), type XXVI nylon suspension slings as shown in Figure 2-14.

## **STOWING CARGO PARACHUTE**

3-8. Place honeycomb for stowing the cargo parachute as shown in Figure 2-15. Stow a G-11B cargo parachute as shown in Figure 2-16.

## **INSTALLING EXTRACTION SYSTEM**

3-9. Install the EFTC according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-17.

## **INSTALLING PARACHUTE RELEASE**

3-10. Prepare and install an M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-18.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

3-11. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **PLACING EXTRACTION PARACHUTE**

3-12. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

## **MARKING RIGGED LOAD**

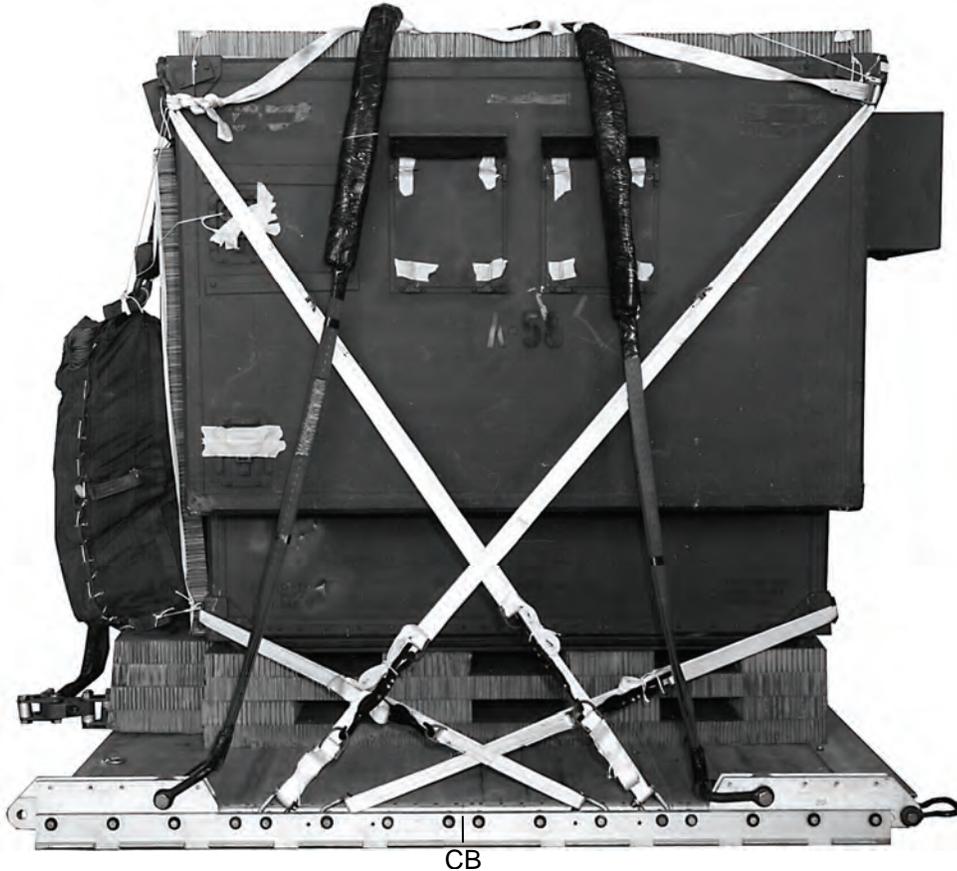
3-13. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 3-7. Comply with Shipper's Requirements for Declaration of Dangerous/Hazardous Goods in accordance with AFMAN 24-204(I)/TM 38-250/NAVSUP PUB 505/MCOP4030.191/DLAI 4145.3. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

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

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight: Load shown.....	3,450 pounds
Maximum load allowed.....	4,500 pounds
Height.....	95 ½ inches
Width.....	108 inches
Length (depending on ventilator installed).....	120 to 131 inches
Overhang: Front.....	16 inches
Rear.....	19 inches
CB (from front edge of platform).....	48 inches

**Figure 3-7. S-502 Shelter with AN/GRC-142 Communication Equipment Rigged for Low-Velocity Airdrop on the Type V Platform**

**Table 3-1. Equipment Required for Rigging the S-502 or S-250/G Shelter with AN/GRC-142 Communications Equipment for Low-Velocity Airdrop on the Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8773	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	¾ in (medium)	2
4030-00-090-5354	1 inch (large)	5
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12-ft cable	1
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½ in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-064-4452	60-ft, (1 loop), type XXVI nylon webbing	1
1670-00-064-0265	160-ft, (1 loop), type XXVI nylon webbing	1
1670-01-107-7652	Link assembly, 3 ¾-inch	1
1670-00-008-1953	Pad, energy dissipating, honeycomb	6 sheets
1670-00-756-3928	Parachute, cargo, G-11B	1
1670-01-016-7841	Parachute, cargo, extraction, 15-ft	1
1670-01-063-3715	Platform, AD, type V, 8 ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(8)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
	Plywood:	
5530-00-129-7721	¼-in	1 sheet
5530-00-128-4981	¾-in:	1 sheet

**Table 3-1. Equipment Required for Rigging the S-502 or S-250/G Shelter with AN/GRC-142 Communications Equipment for Low-Velocity Airdrop on the Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft, (2 loop), type XXVI nylon webbing	1
	For suspension slings:	
1670-01-063-7760	11-ft, (2 loop), type XXVI nylon webbing	4
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown, 15-ft	18
8305-00-268-2411	Webbing, cotton, type I, ¼-in	As required

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## Chapter 4

# Rigging the PU-619M and PU-620M Trailer-Mounted Power Units on the Type V Platform

## SECTION I - RIGGING THE PU-619M POWER UNIT FOR LOW-VELOCITY AIRDROP

### DESCRIPTION OF LOAD

4-1. Two 10 kilowatt generators mounted on a 1 ½ ton (M103A3) trailer make up the PU-619M power unit (line number J42100) (Figure 4-1). The power unit is rigged on a 12 foot, type V airdrop platform for low velocity airdrop. The load requires two G-11A or G-11B cargo parachutes. The unrigged power unit weighs 4,580 pounds. It is 174 inches long and 83 inches wide. Its height is 94 ½ inches (reducible to 63 inches).

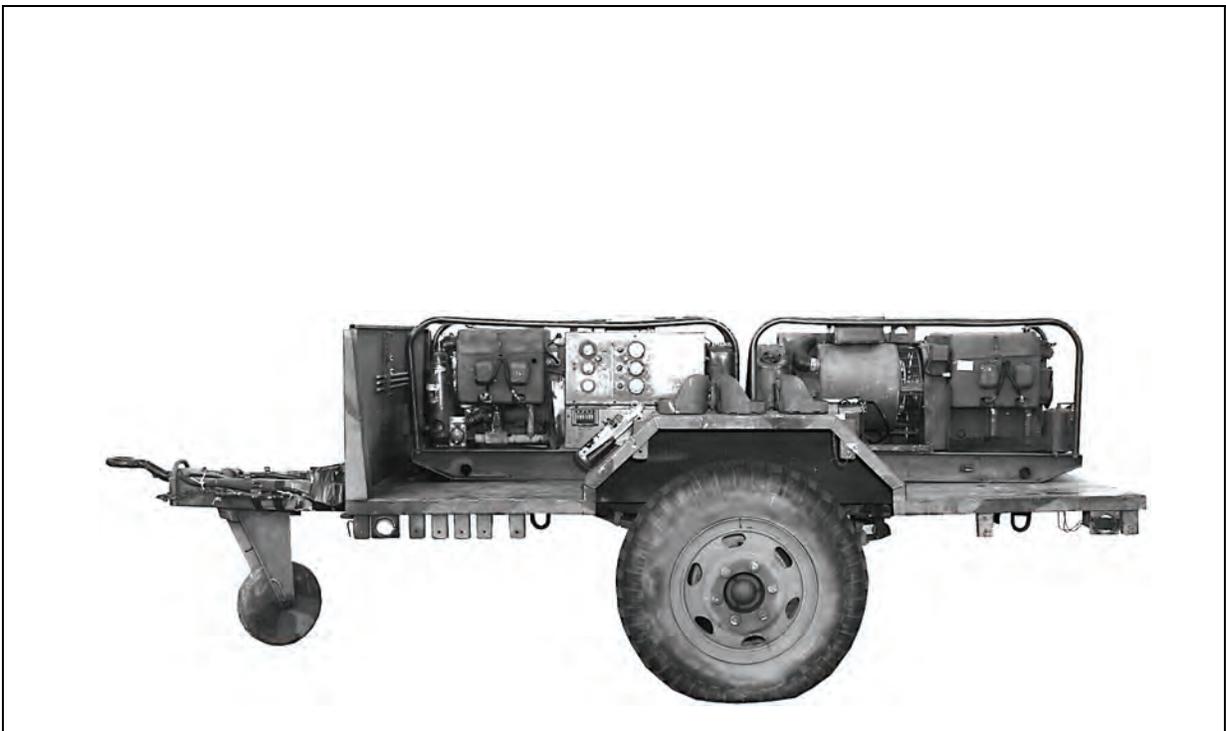
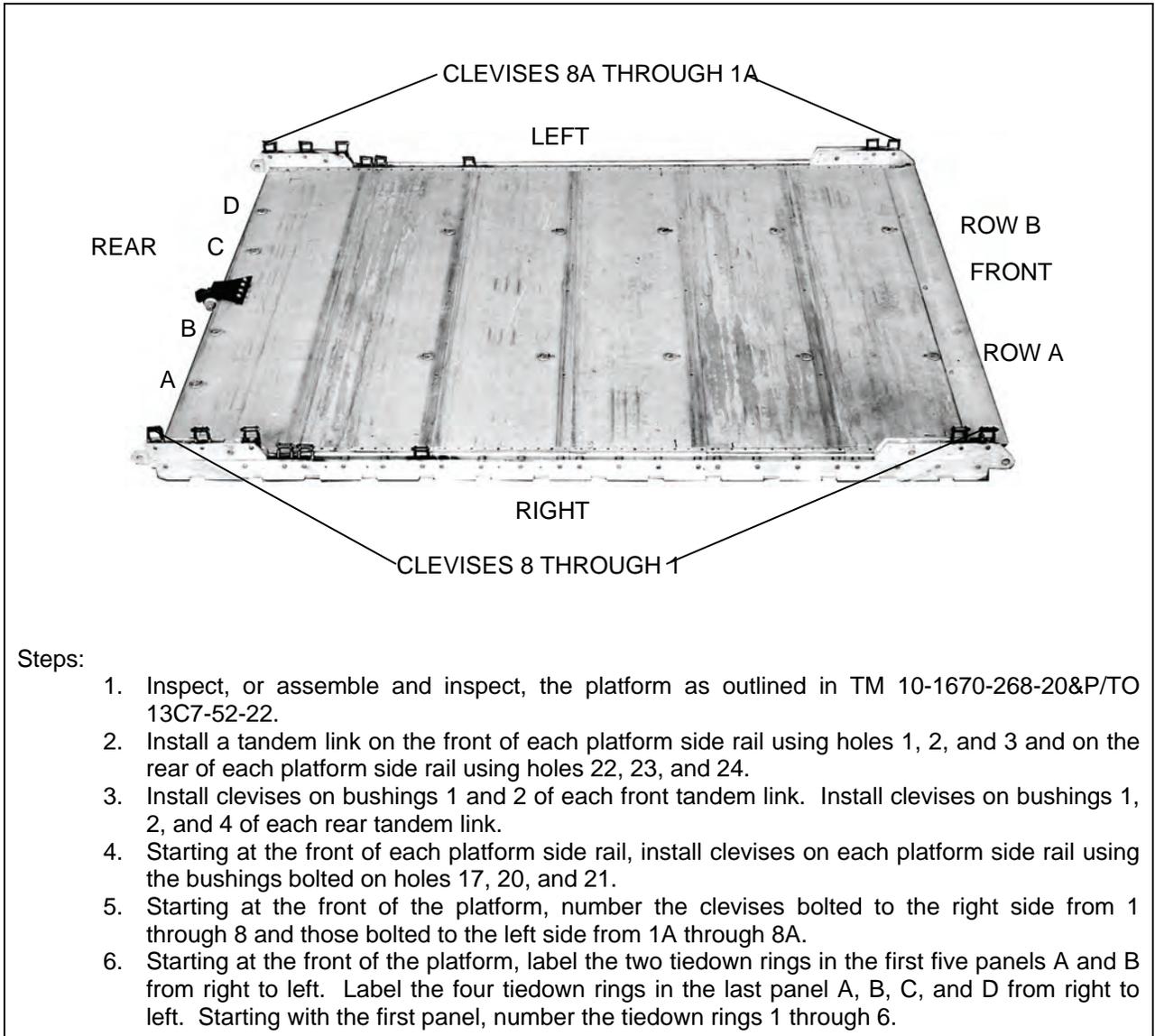


Figure 4-1. PU-619M Power Unit with Bows and Cover Removed

## PREPARING PLATFORM

4-2. Prepare a 12 foot, type V airdrop platform using four tandem links and 16 clevis assemblies as shown in Figure 4-2.

- 
- 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.
- 



**Steps:**

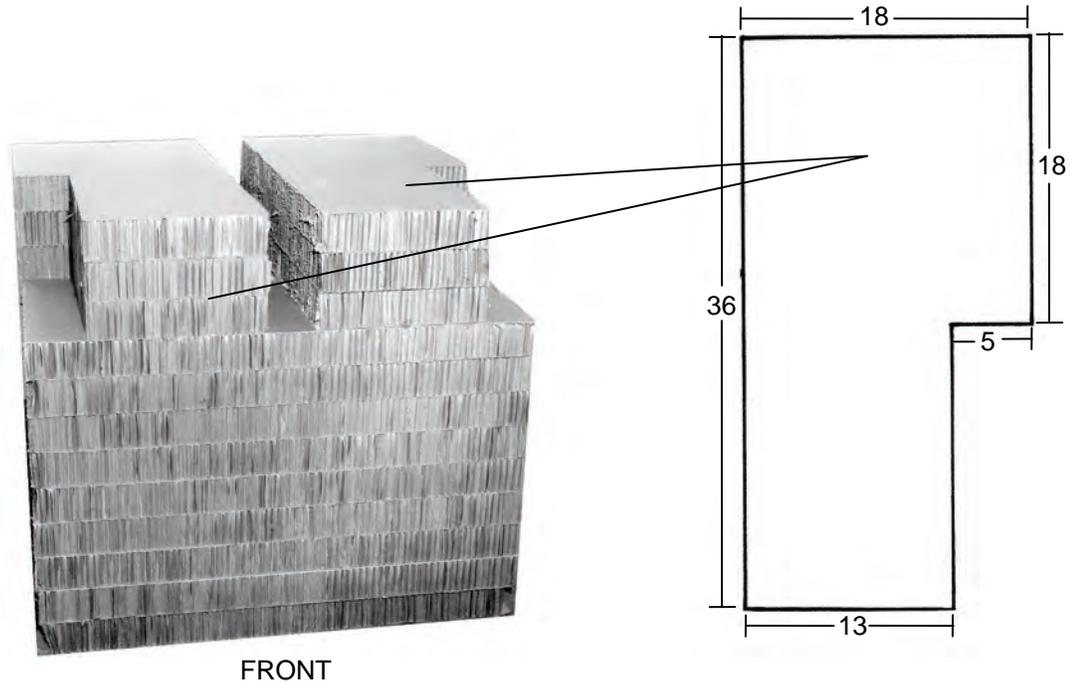
1. Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3 and on the rear of each platform side rail using holes 22, 23, and 24.
3. Install clevises on bushings 1 and 2 of each front tandem link. Install clevises on bushings 1, 2, and 4 of each rear tandem link.
4. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 17, 20, and 21.
5. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 8 and those bolted to the left side from 1A through 8A.
6. Starting at the front of the platform, label the two tiedown rings in the first five panels A and B from right to left. Label the four tiedown rings in the last panel A, B, C, and D from right to left. Starting with the first panel, number the tiedown rings 1 through 6.

**Figure 4-2. Platform Prepared**

## PREPARING AND POSITIONING HONEYCOMB STACKS

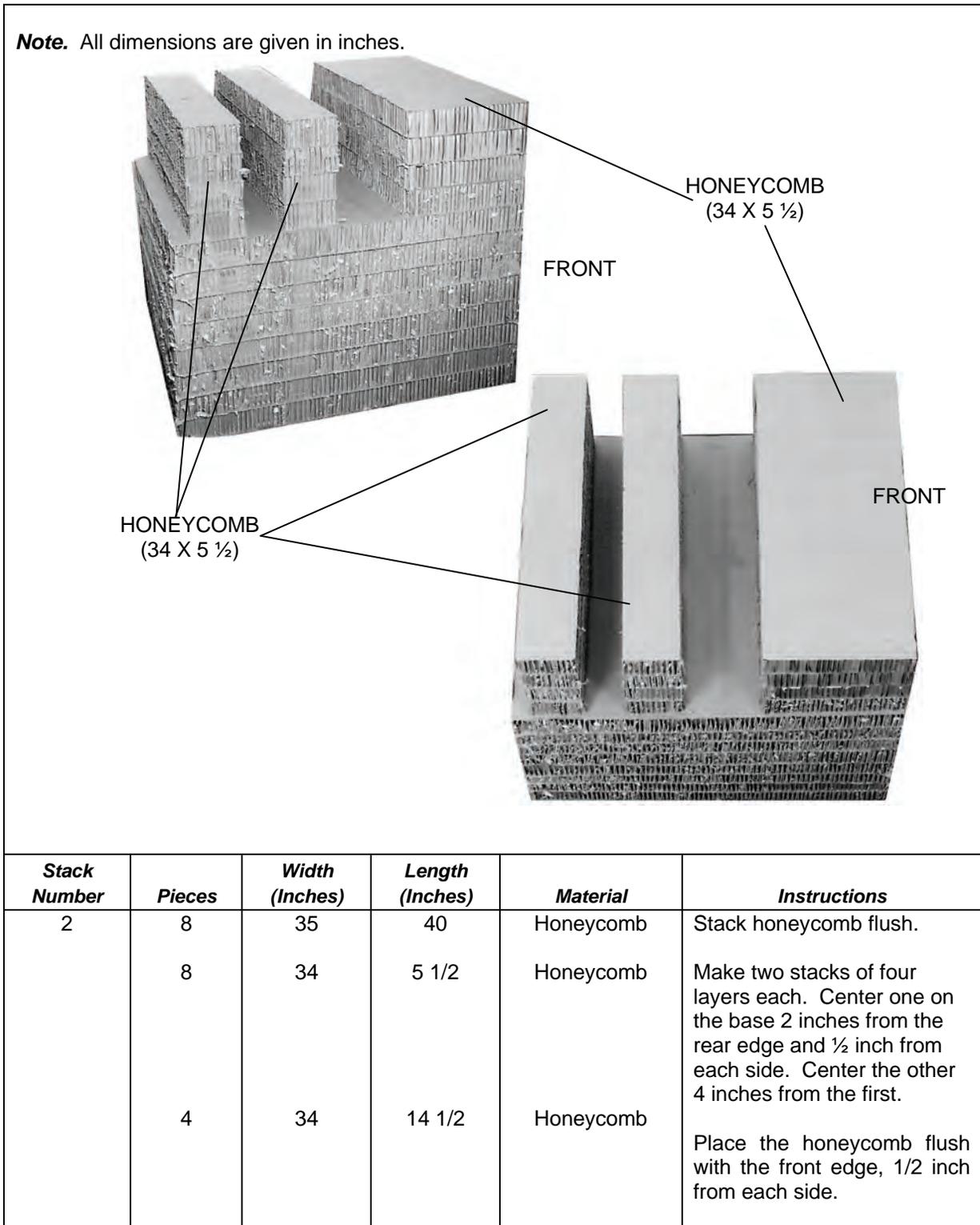
4-3. Prepare the honeycomb stacks as shown in Figures 4-3, 4-4, and 4-5. Position the stacks on the platform as shown in Figure 4-6.

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



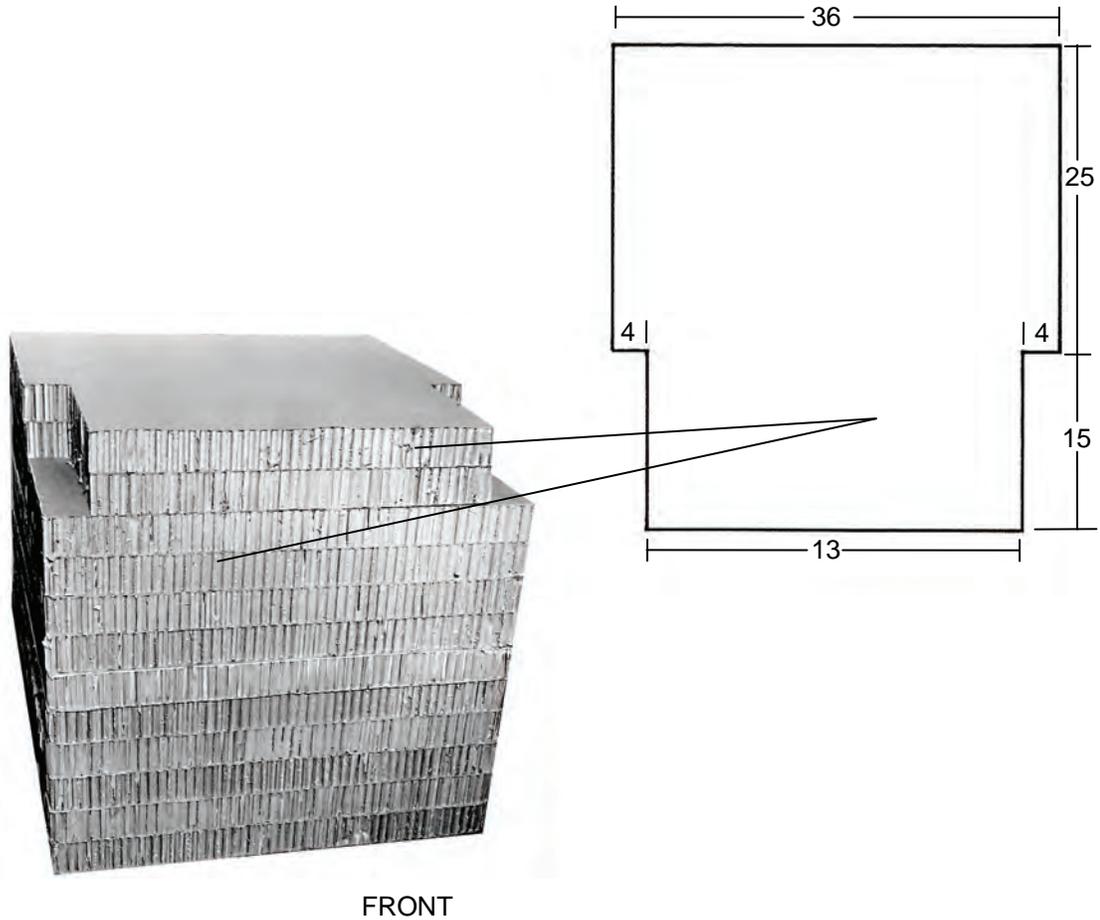
<b>Stack Number</b>	<b>Pieces</b>	<b>Width (Inches)</b>	<b>Length (Inches)</b>	<b>Material</b>	<b>Instructions</b>
1	9	40	36	Honeycomb	Stack honeycomb flush.
	6	18	36	Honeycomb	Make cutout as shown in all six pieces of honeycomb. Make two stacks of three layers each. Place them 4 inches apart on the base and flush with the base. Place the cutouts to the front of the base.

Figure 4-3. Honeycomb Stack 1 Prepared



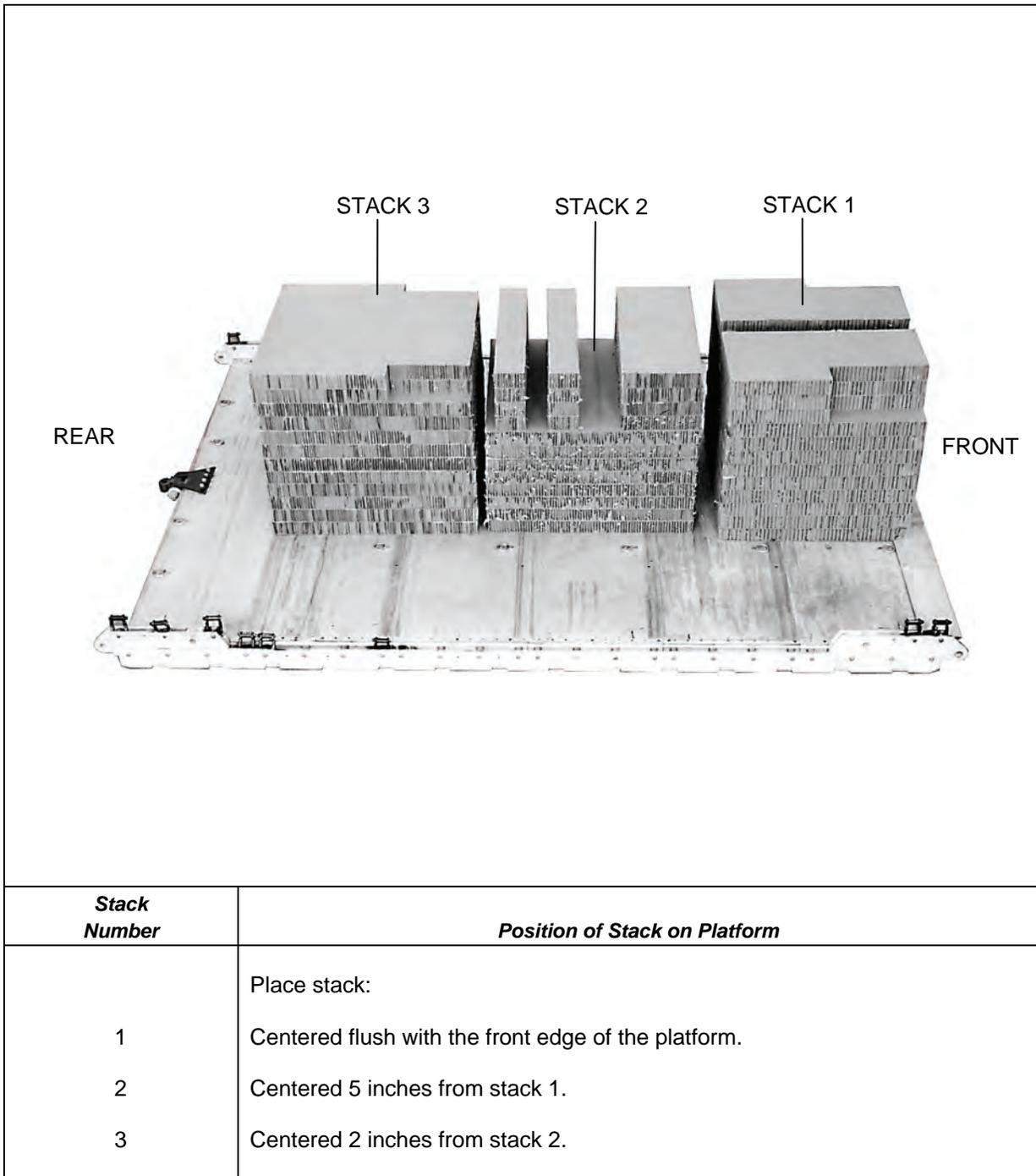
**Figure 4-4. Honeycomb Stack 2 Prepared**

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



<i>Stack Number</i>	<i>Pieces</i>	<i>Width (Inches)</i>	<i>Length (Inches)</i>	<i>Material</i>	<i>Instructions</i>
3	10	36	40	Honeycomb	Stack honeycomb flush.
	2	36	40	Honeycomb	Make cutouts as shown. Stack honeycomb flush on the base with the cutouts to the front.

Figure 4-5. Honeycomb Stack 3 Prepared



**Figure 4-6. Honeycomb Stacks Positioned on Platform**

## PREPARING POWER UNIT

- 4-4. Prepare the power unit as described below.
- Remove the canvas cover and bows from the trailer.
  - Make sure that the fuel tanks on the generators are  $\frac{1}{2}$  full. Fill any fuel cans to be dropped with this load to within 1 inch of the filler opening.
  - Prepare the drawbar and splash shield as shown in Figure 4-7.
  - Prepare the trailer and generators as shown in Figure 4-8.

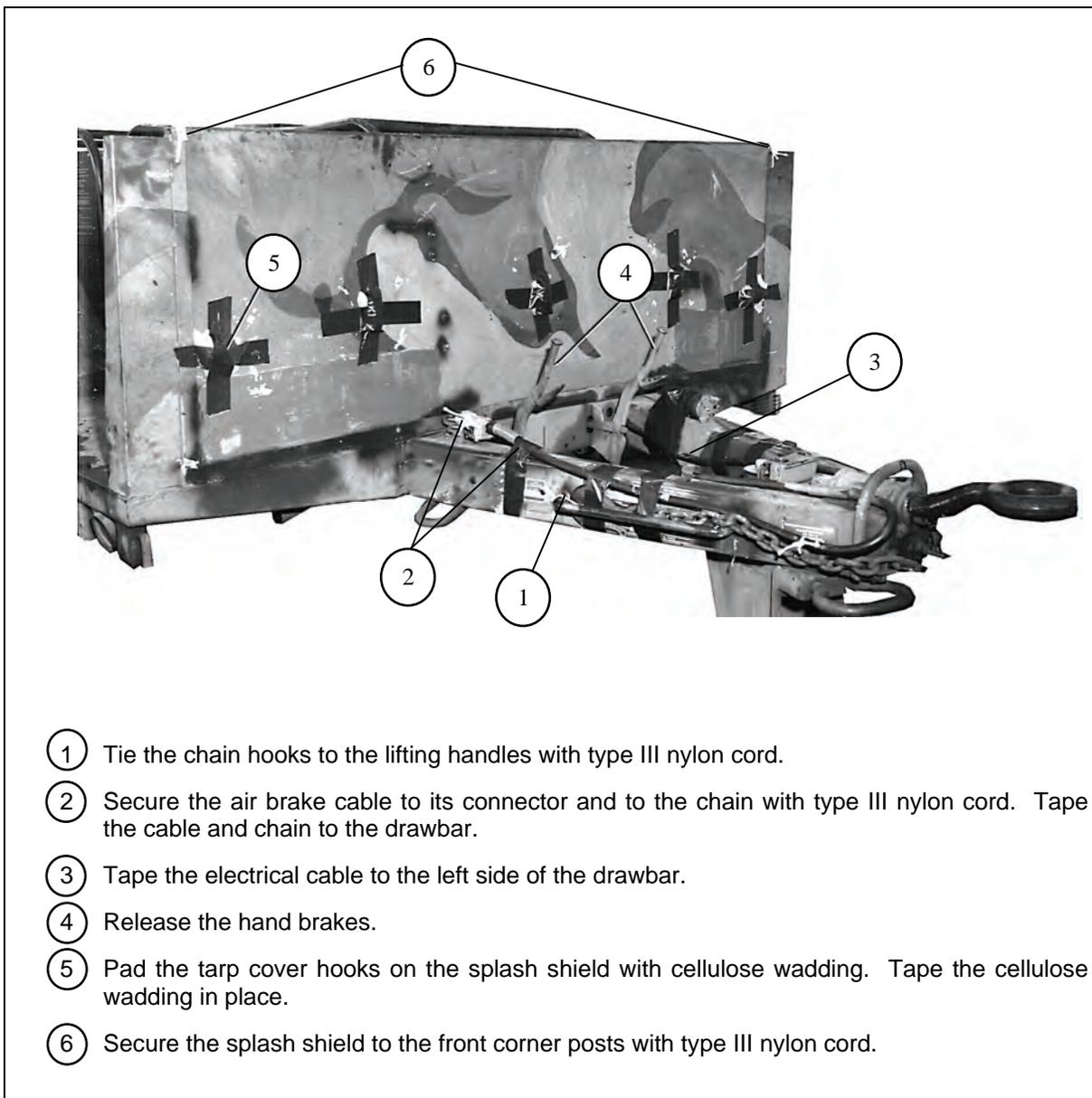
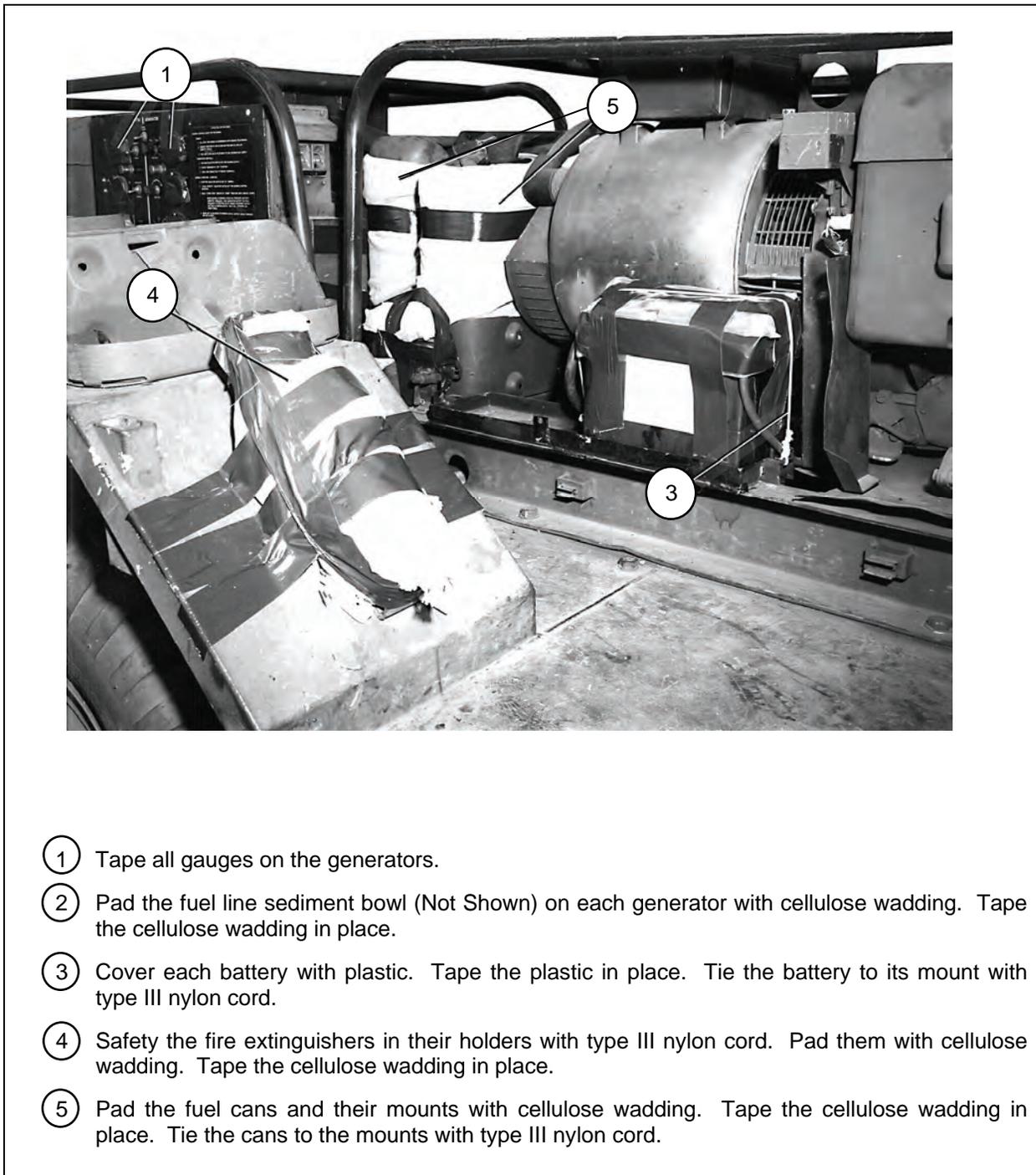


Figure 4-7. Front of Trailer Prepared



- ① Tape all gauges on the generators.
- ② Pad the fuel line sediment bowl (Not Shown) on each generator with cellulose wadding. Tape the cellulose wadding in place.
- ③ Cover each battery with plastic. Tape the plastic in place. Tie the battery to its mount with type III nylon cord.
- ④ Safety the fire extinguishers in their holders with type III nylon cord. Pad them with cellulose wadding. Tape the cellulose wadding in place.
- ⑤ Pad the fuel cans and their mounts with cellulose wadding. Tape the cellulose wadding in place. Tie the cans to the mounts with type III nylon cord.

**Figure 4-8. Trailer and Generators Prepared**

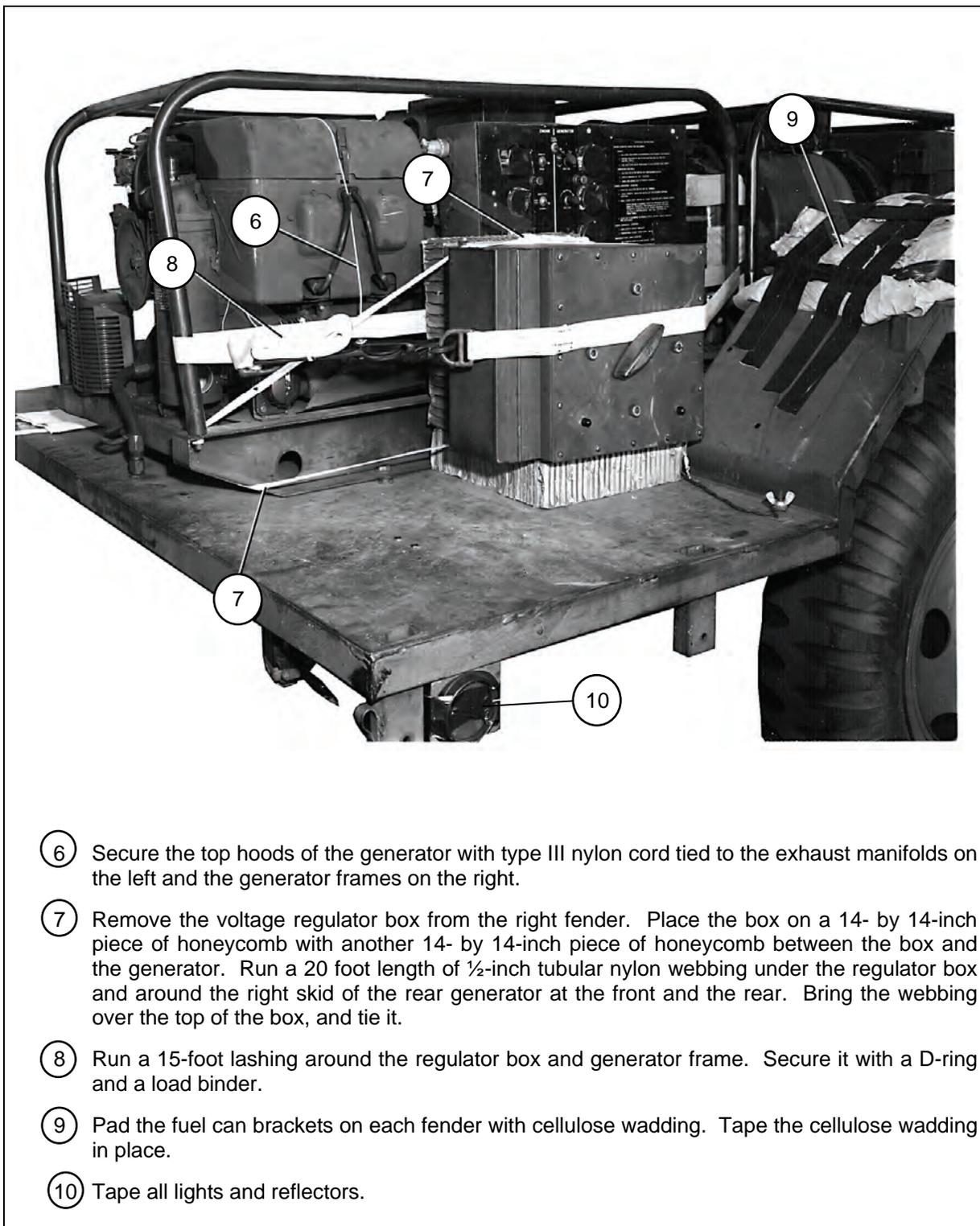
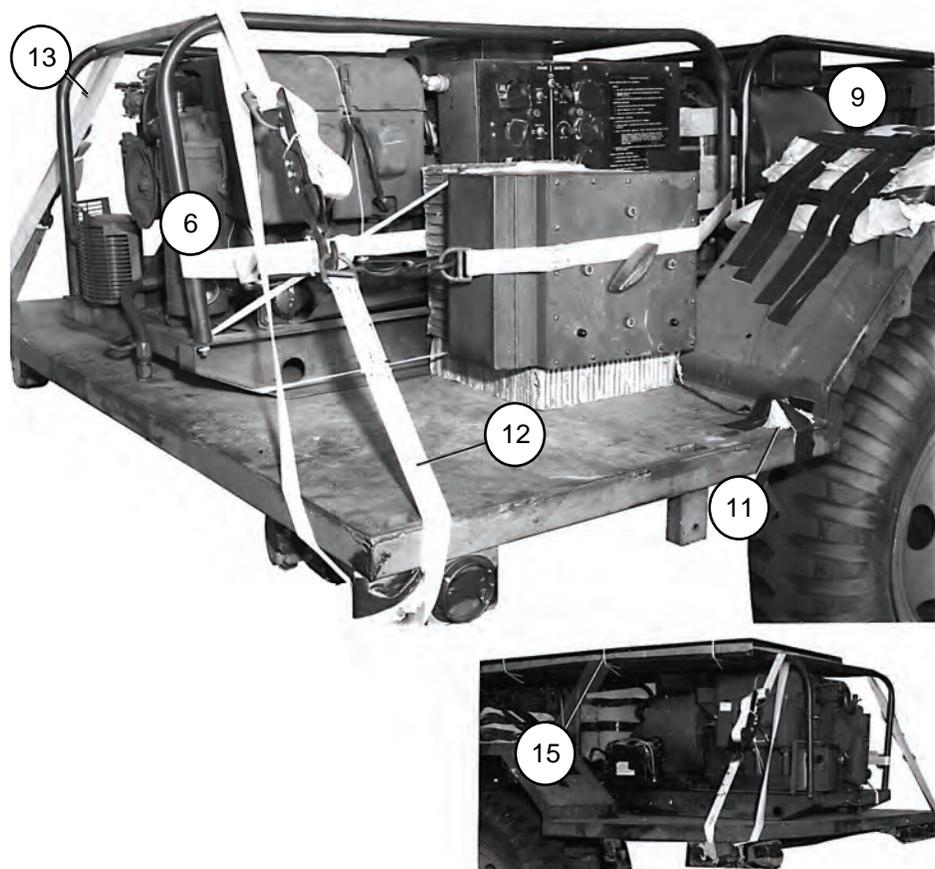


Figure 4-8. Trailer and Generators Prepared (Continued)

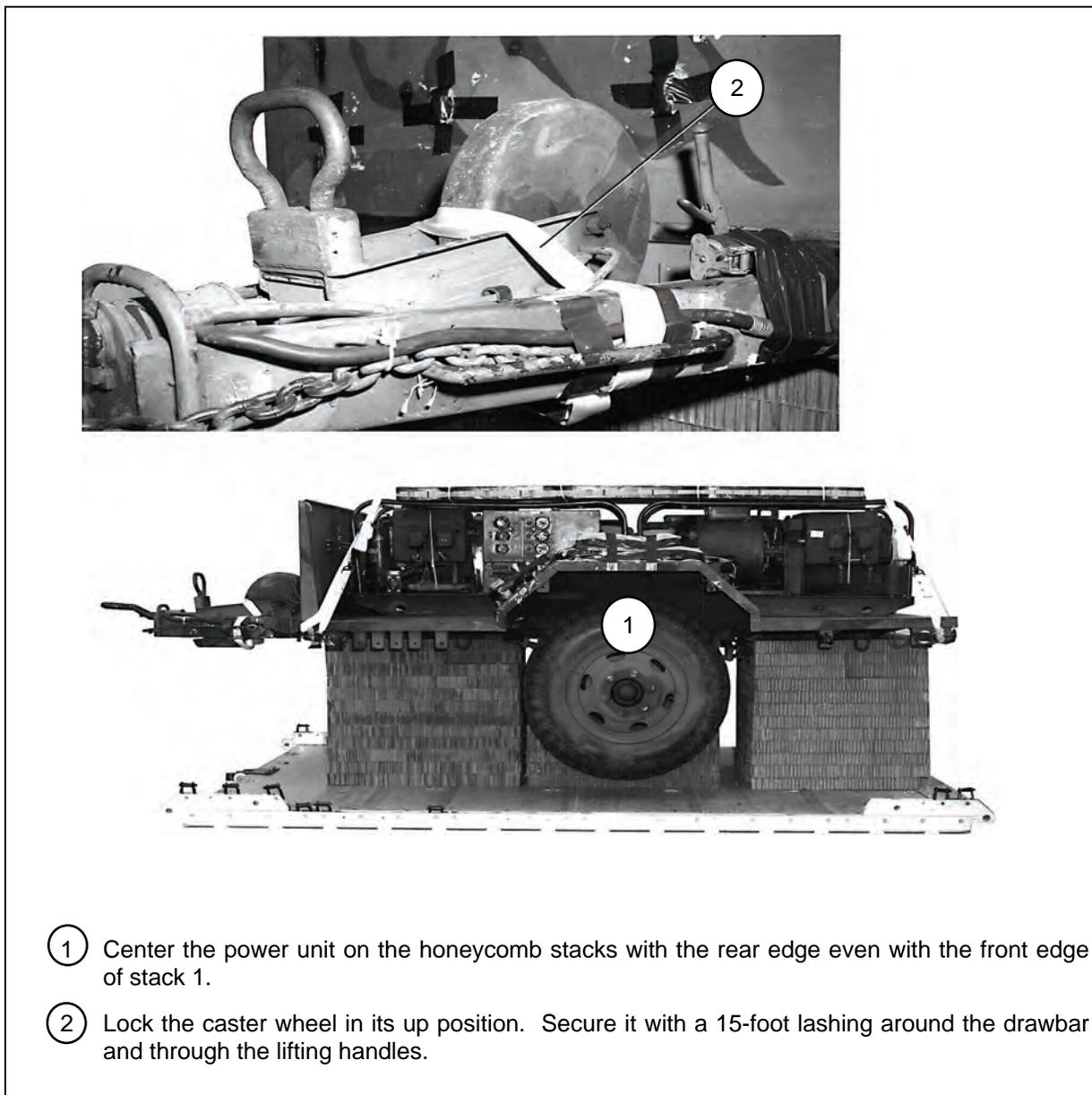


- ⑪ Cover the ground connection with cellulose wadding. Tape the cellulose wadding in place.
- ⑫ Pass a 15-foot lashing through the rear generator frame in front of the crossbar and down to the right rear corner of the trailer. Pad sharp edges at the trailer corner. Secure the lashing with a D-ring and a load binder.
- ⑬ Lash the generator frame to the left corner of the trailer, as described in step 12 above.
- ⑭ Lash the generator frame to the front corners (Not Shown) of the trailer as described above.
- ⑮ Tape the edges of a 36- by 96-inch sheet of honeycomb. Tie the honeycomb to the top of the generator frames with type III nylon cord.

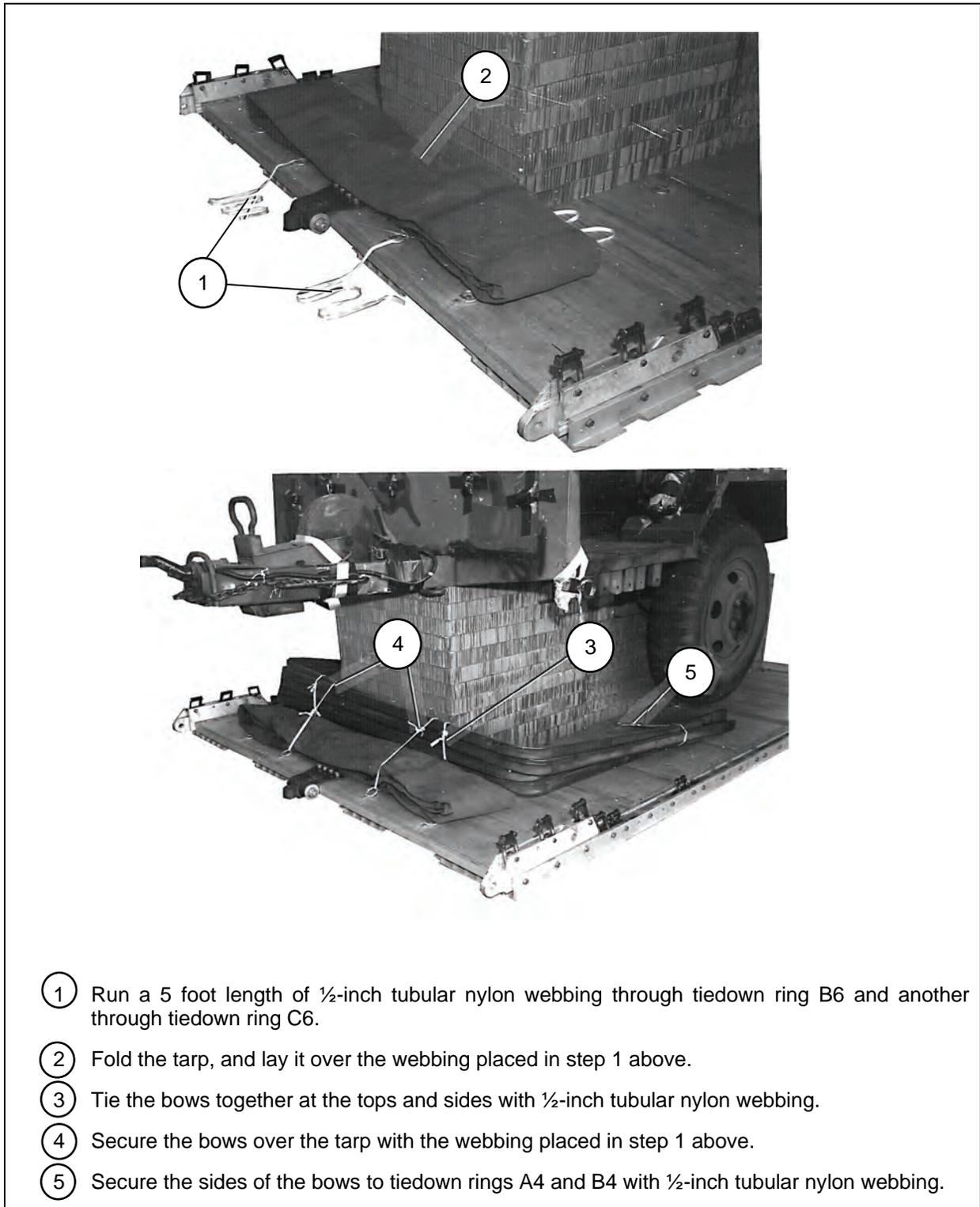
**Figure 4-8. Trailer and Generators Prepared (Continued)**

## POSITIONING POWER UNIT AND TRAILER EQUIPMENT ON PLATFORM

4-5. Position the power unit on the platform and secure the caster wheel as shown in Figure 4-9. Stow the trailer equipment on the platform as shown in Figure 4-10.



**Figure 4-9. Power Unit Positioned on Platform and Caster Wheel Secured**

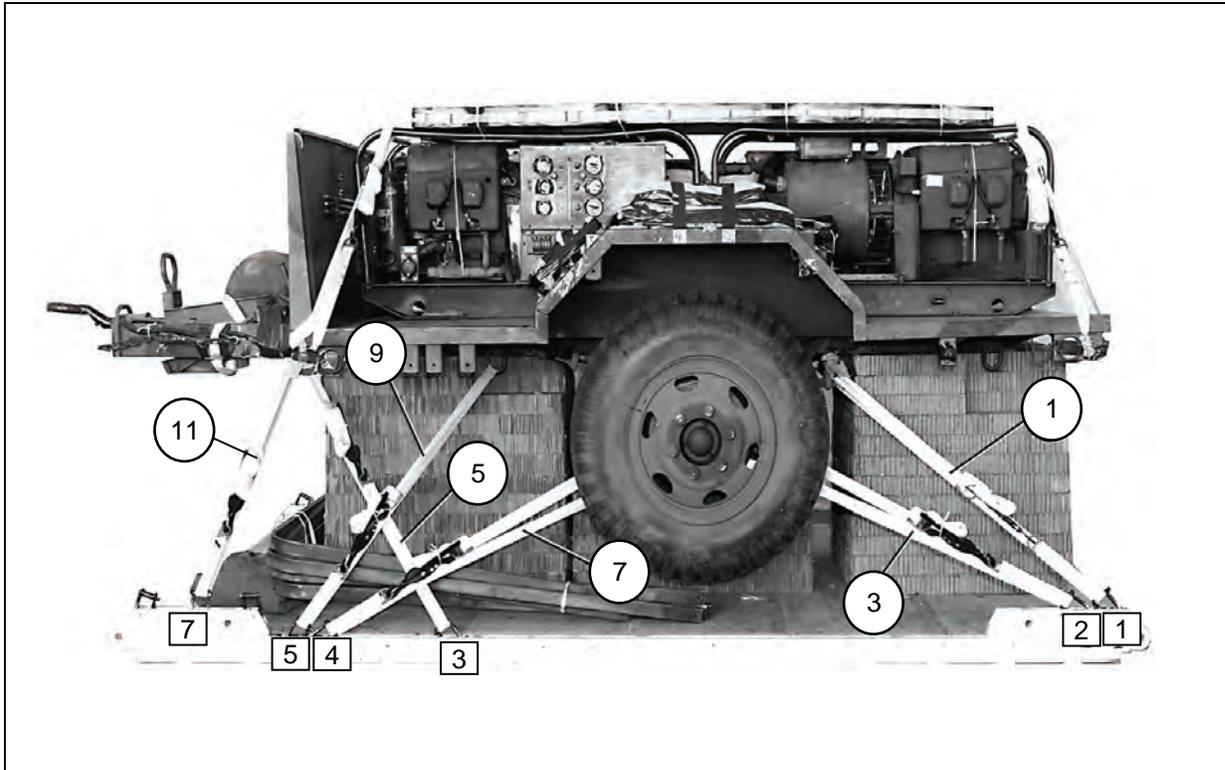


- ① Run a 5 foot length of ½-inch tubular nylon webbing through tiedown ring B6 and another through tiedown ring C6.
- ② Fold the tarp, and lay it over the webbing placed in step 1 above.
- ③ Tie the bows together at the tops and sides with ½-inch tubular nylon webbing.
- ④ Secure the bows over the tarp with the webbing placed in step 1 above.
- ⑤ Secure the sides of the bows to tiedown rings A4 and B4 with ½-inch tubular nylon webbing.

**Figure 4-10. Trailer Equipment Stowed and Secured on Platform**

## LASHING POWER UNIT

4-6. Lash the power unit to the platform as shown in Figure 4-11.



<b>Lashing Number</b>	<b>Tiedown Clevis Number</b>	<b>Instructions</b>
1	1	Pass lashing: Around leaf spring, left side.
2	1A	Around leaf spring, right side.
3	2	Around left side axle, under the brake line.
4	2A	Around right side axle, under the brake line.
5	3	Through left front tiedown provision.
6	3A	Through right front tiedown provision.
7	4	Around left side axle, under the brake line.
8	4A	Around right side axle, under the brake line.
9	5	Around left center tiedown provision.
10	5A	Around right center tiedown provision.
11	7	Through left front tiedown provision.
12	7A	Through right front tiedown provision.

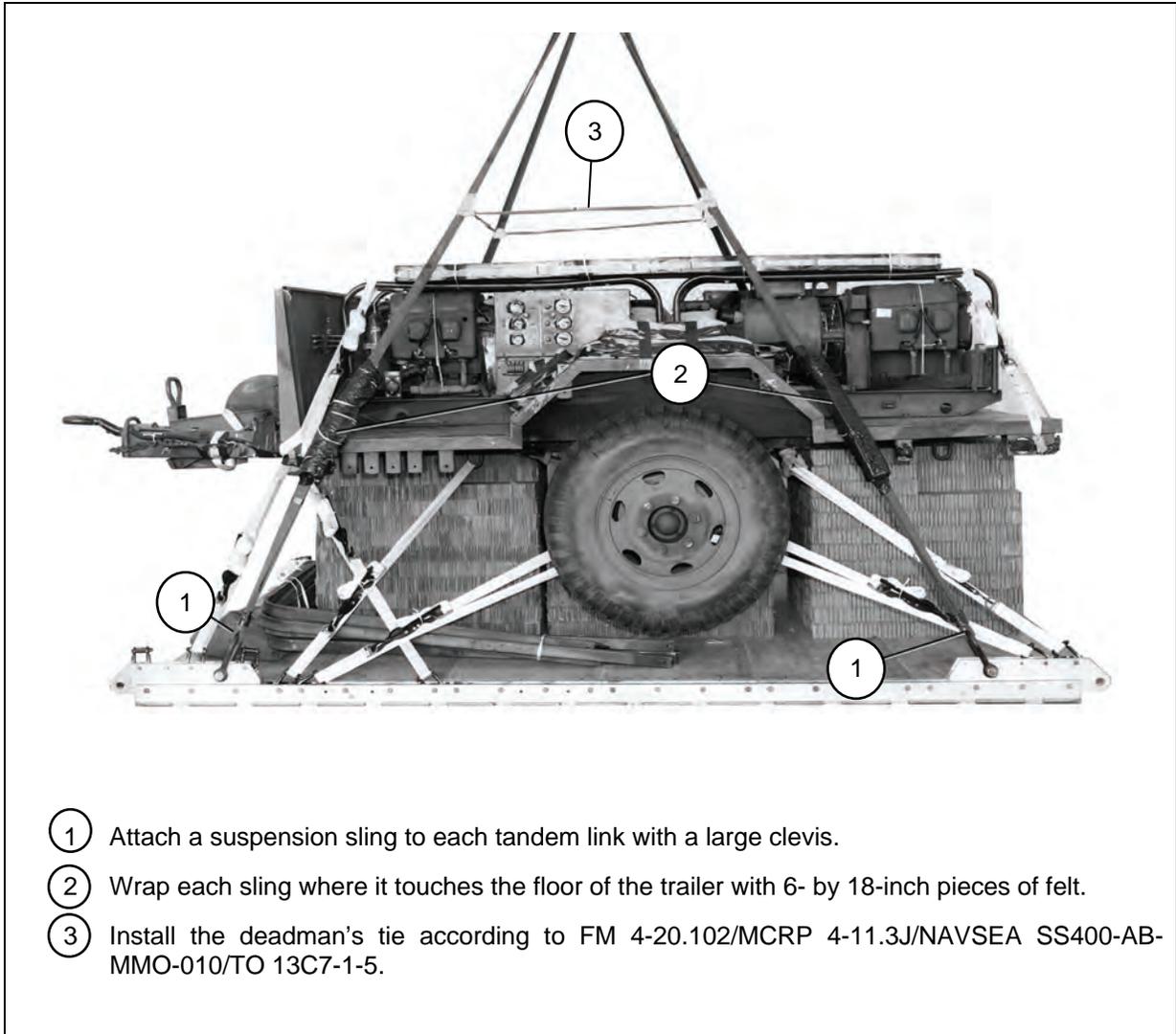
**Figure 4-11. Lashing Installed**

## INSTALLING AND SAFETYING SUSPENSION SLINGS

4-7. Install and safety four 12-foot, (2 loop), type XXVI nylon suspension slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 4-12.

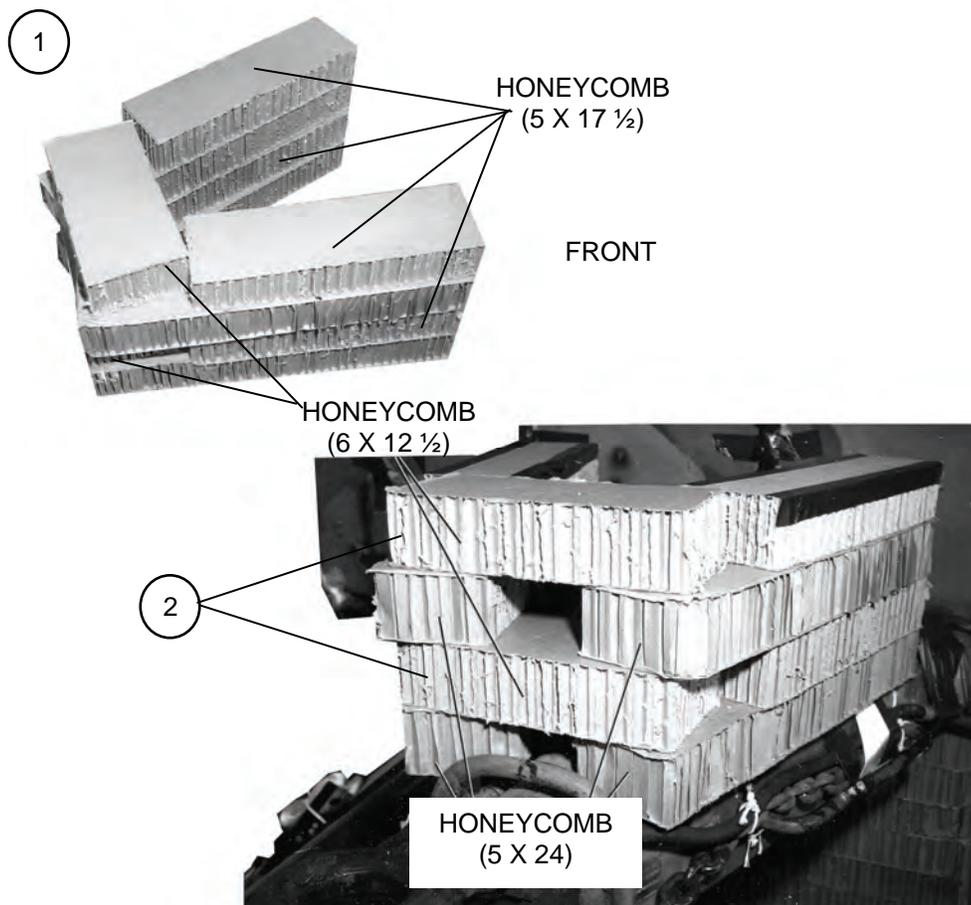
## STOWING CARGO PARACHUTES

4-8. Prepare and install the parachute stowage platform as shown in Figure 4-13. Stow two G-11B cargo parachutes on the load as shown in Figure 4-14.



**Figure 4-12. Suspension Slings Installed and Safetied**

**Note.** All dimensions are given in inches.

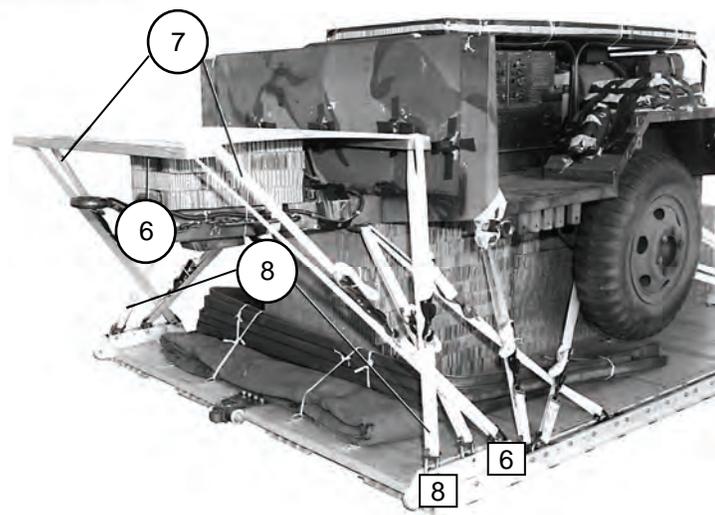
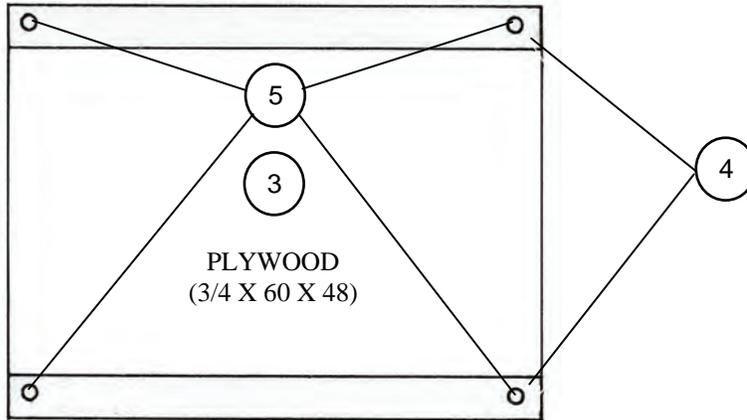


- ① Alternate four 5- by 24-inch and four 5- by 17 ½-inch pieces of honeycomb to make the sides of the platform support as shown.
- ② Bridge the two sides of the stack as shown using two 12 ½-inch by 6-inch pieces of honeycomb.

**Note.** Assemble the stack on the drawbar of the trailer to ensure correct alignment.

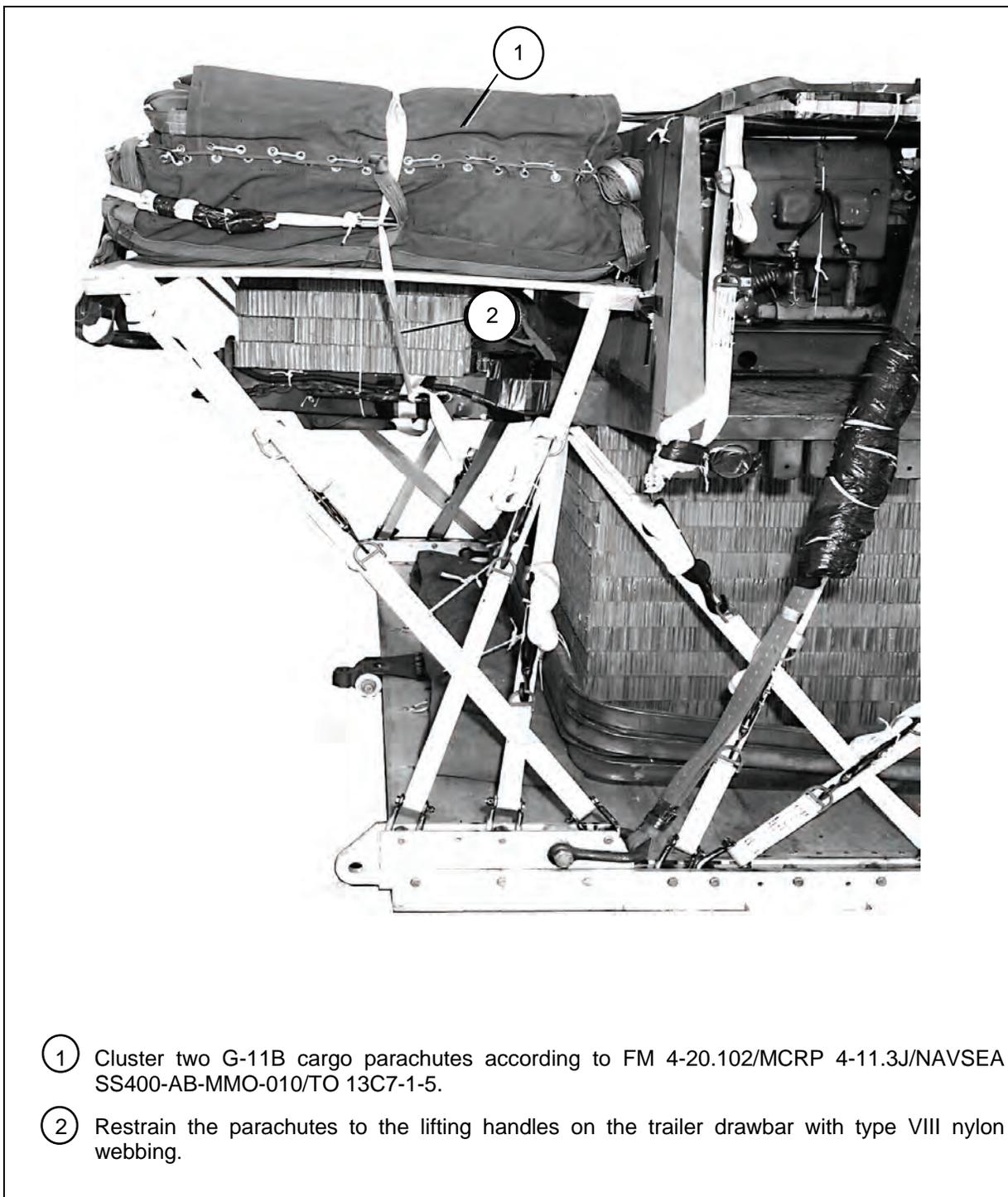
**Figure 4-13. Parachute Stowage Platform Prepared**

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



- ③ Cut one piece of 3/4- by 60- by 48-inch plywood.
- ④ Nail one 2- by 4- by 60-inch lumber flush with each 60 inch side of plywood. Use the eightpenny nails.
- ⑤ Drill 2 inch holes in each corner 2 inches from each edge through the plywood and the 2- by 4-inch lumber as shown.
- ⑥ Center the parachute stowage platform on the honeycomb support as shown.
- ⑦ Run 15-foot lashings from clevises 6 and 6A through the rear holes of the parachute stowage platform. Secure the each lashing with a D-ring and a load binder.
- ⑧ Run 15-foot lashings from clevises 8 and 8A through the front holes of the parachute stowage platform. Secure each lashing with a D-ring and a load binder.

**Figure 4-13. Parachute Stowage Prepared (Continued)**



**Figure 4-14. Parachutes Stowed**

## INSTALLING EXTRACTION SYSTEM

4-9. Install the EFTC according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 4-15.

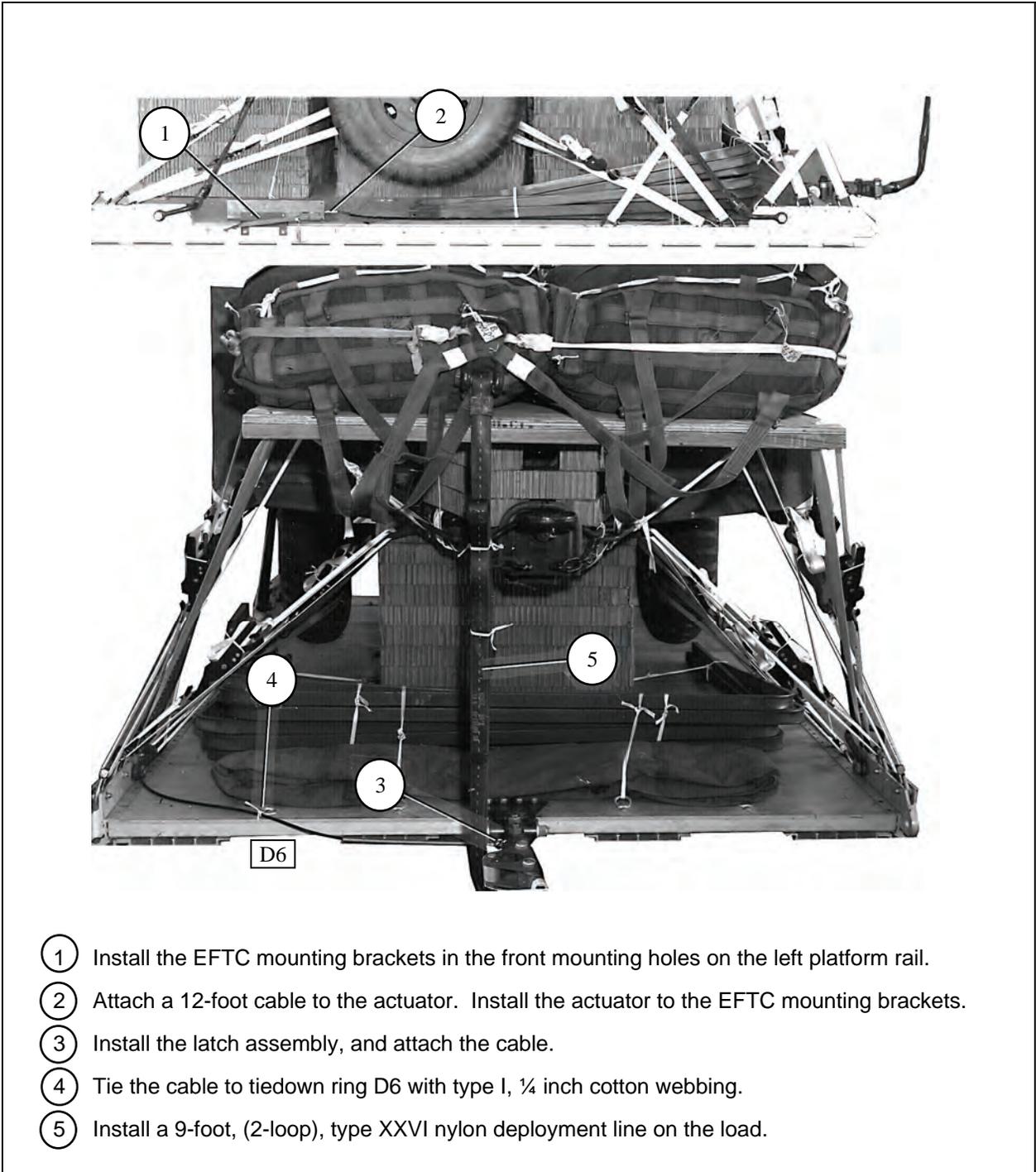
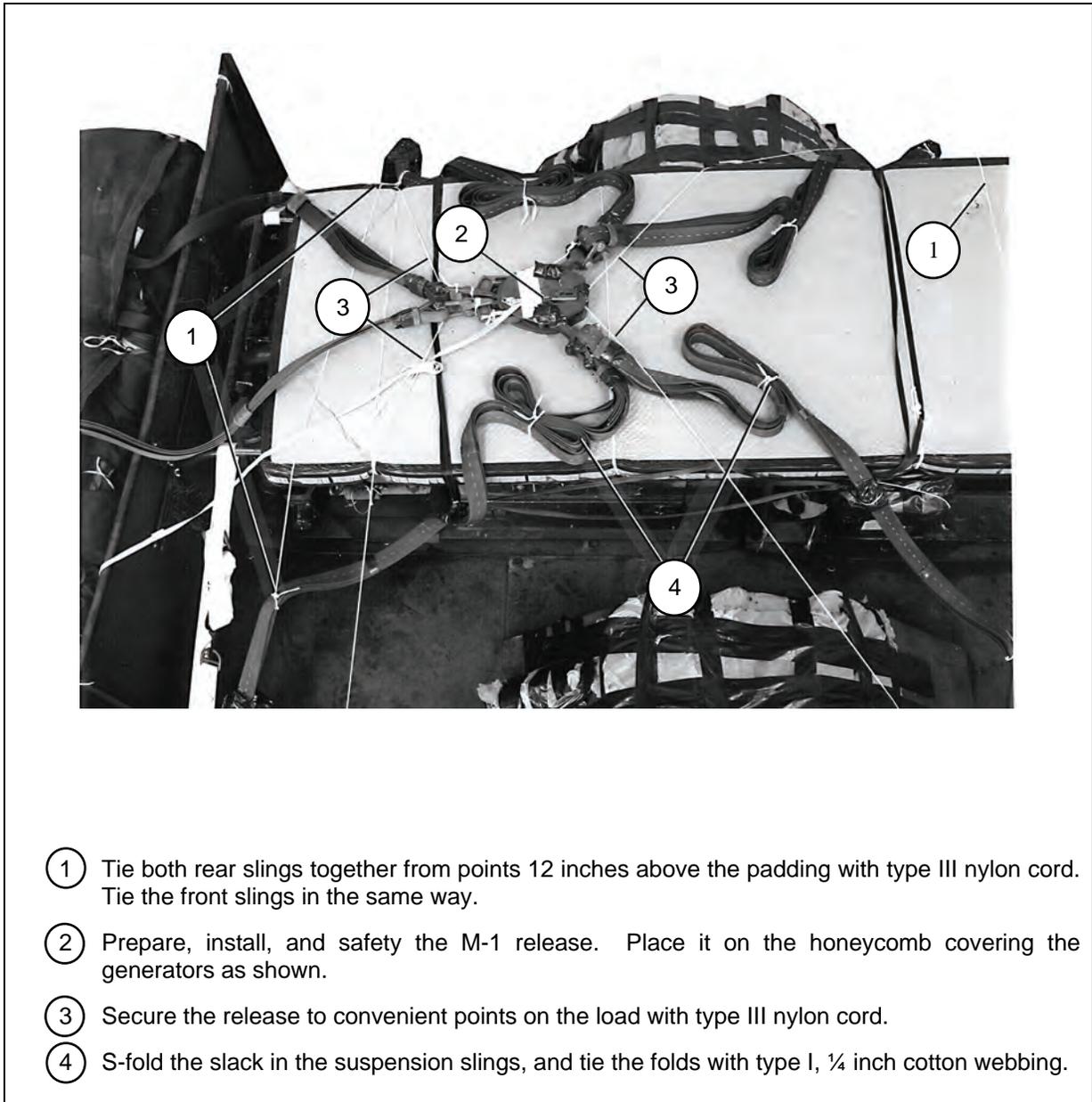


Figure 3-15. EFTC Installed

## INSTALLING PARACHUTE RELEASE

4-10. Prepare and install an M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 4-16.



**Figure 4-16. M-1 Cargo Parachute Release Installed**

## PLACING EXTRACTION PARACHUTE

4-11. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

4-12. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **MARKING RIGGED LOAD**

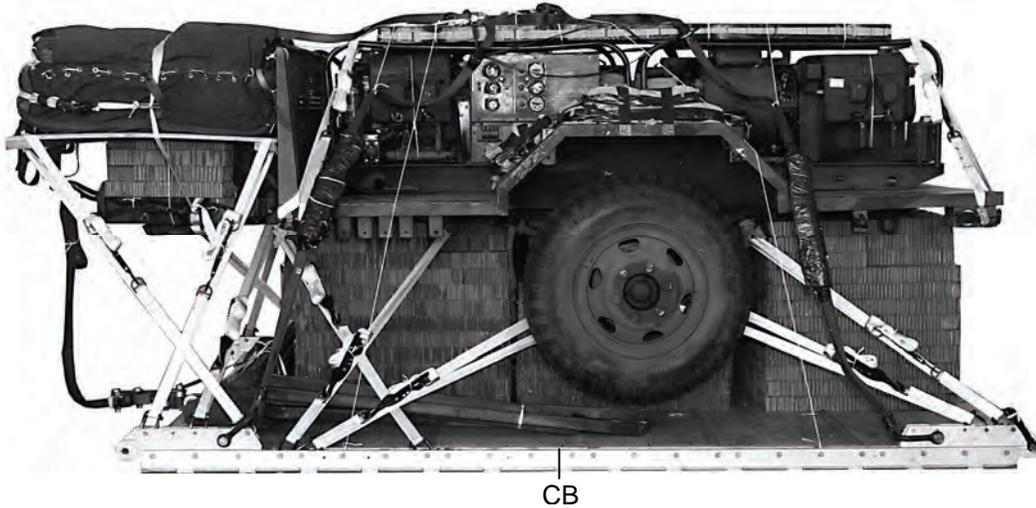
4-13. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5, and as shown in Figure 4-17. Complete Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

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

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight: Load shown.....	6,680 pounds
Maximum load allowed.....	7,080 pounds
Height.....	76 inches
Width.....	108 inches
Length.....	180 inches
Overhang: Front.....	5 ½ inches
Rear.....	30 ½ inches
CB (from front edge of platform).....	74 ½ inches

**Figure 4-17. PU-619M Power Unit Rigged for Low-Velocity Airdrop on the Type V Platform**

**Table 4-1. Equipment Required for Rigging the PU-619M Power Unit for Low-Velocity Airdrop on the Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1 gal	As required
	Clevis, suspension:	
4030-00-678-8562	¾-in (medium)	2
4030-00-090-5354	1-in (large)	5
4020-00-240-2146	Cord, nylon, type III, 550lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12 ft cable	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½ in thick	As required
1670-01-183-2678	Leaf, extraction line2	2
	Line, extraction:	
1670-01-064-4452	60-ft, (1 loop), type XXVI nylon webbing	1
1670-00-856-0265	160-ft, (1 loop), type XXVI nylon webbing	1
1670-01-107-7652	Link assembly, type IV	3
1670-00-783-5988	Lumber, 2-by-4-by-60 in	2
5510-00-220-6146	Nail, steel wire, common, 8d	As required
5315-00-010-4659	Pad, energy-dissipating, honeycomb,	16 sheets
1670-00-753-3928	3-by-36-by-96 in	
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo extraction:	1
1670-00-052-1548	15 ft or	1
1670-01-063-3715	15 ft	
	Platform, AD, type V, 12 ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(16)
1670-01-162-2376	Extraction bracket assembly	1
1670-01-162-2381	Tandem link	(4)
5530-00-128-4981	Plywood, ¾-by-60-by-48-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1

**Table 4-1. Equipment Required for Rigging the PU-619M Power Unit for Low-Velocity Airdrop on the Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-062-6304	Sling, cargo airdrop: For deployment line: 9-ft, (2 loop), type XXVI nylon webbing	1
1670-01-062-6302	For riser extension: 20-ft, (2 loop), type XXVI nylon webbing	2
1670-01-062-6303	For suspension slings: 12-ft, (2 loop), type XXVI nylon webbing	4
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 Webbing:	22
8305-00-268-2411	Cotton, type I, ¼-in	As required
8305-00-082-5752	Nylon, tubular, ½-in, natural	As required
8305-00-263-3591	Nylon, type VIII	As required

## SECTION II - RIGGING THE PU-620M POWER UNIT FOR LOW-VELOCITY AIRDROP

### DESCRIPTION OF LOAD

4-15. Two kilowatt generators mounted on a ¾ ton trailer make up the PU-620M power unit (line number J47617) (Figure 4-18). The power unit is rigged on a 12 foot type V airdrop platform for low-velocity airdrop. Eight filled fuel cans and three AB-155 antenna kits are dropped with the power unit. The load requires one G-11B cargo parachute. The unrigged power unit with eight filled fuel cans weighs 2,680 pounds. It is 147 inches long and 75 inches wide. Its height is 80 inches (reducible to 56 inches).



Figure 4-18. PU-620M Power Unit with Bows, Cover, and Splash Shield Removed

## PREPARING PLATFORM

4-16. Prepare a 12-foot, type V airdrop platform using four tandem links and 22 clevis assemblies as shown in Figure 4-19.

- 
- 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.
- 

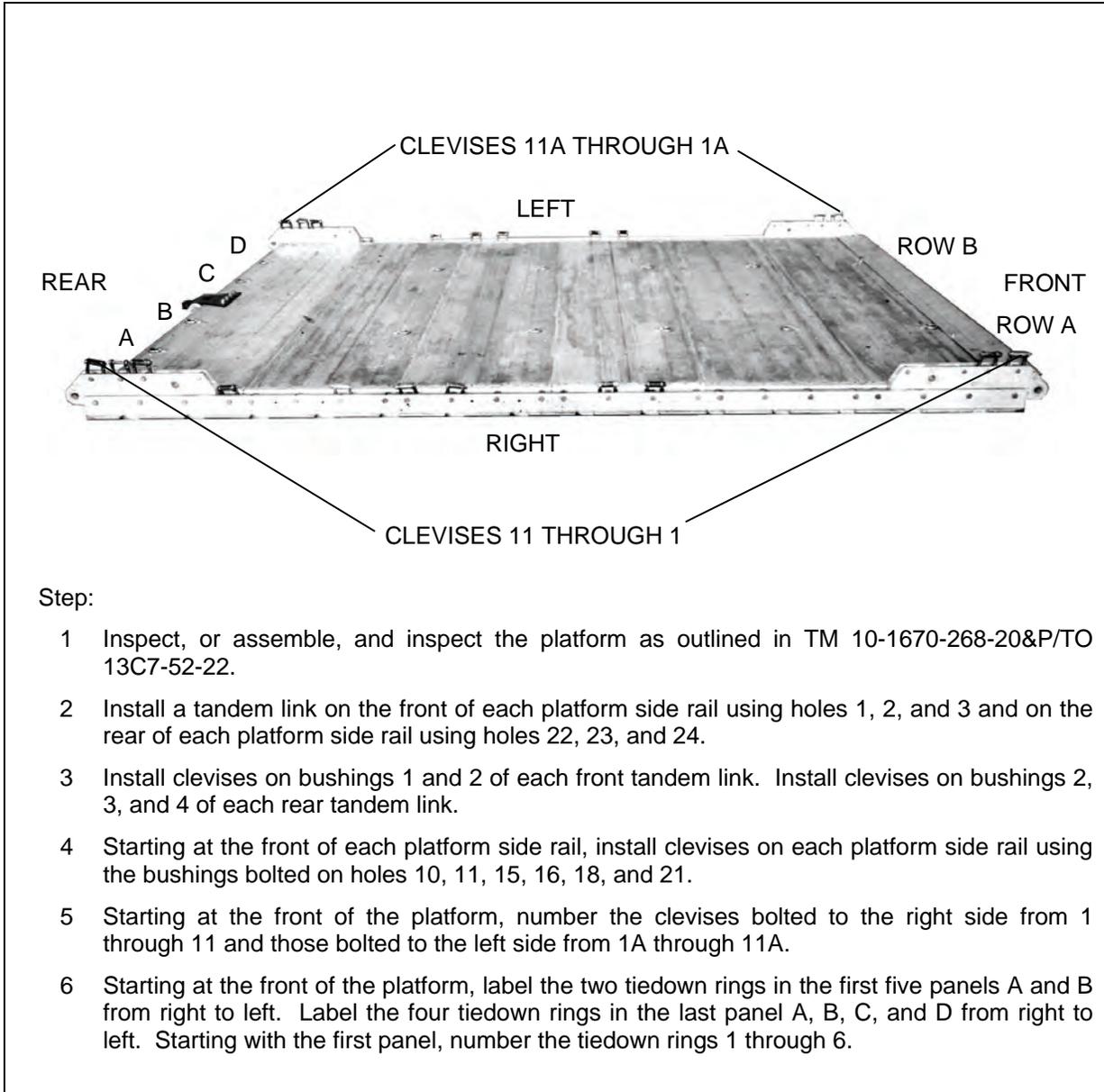


Figure 4-19. Platform Prepared

## PLACING ACCOMPANYING LOAD ON PLATFORM

4-17. Remove the trailer canvas and bows. Place eight fuel cans, the trailer bows, and the antenna sections on the platform, and secure them as shown in Figure 4-20.

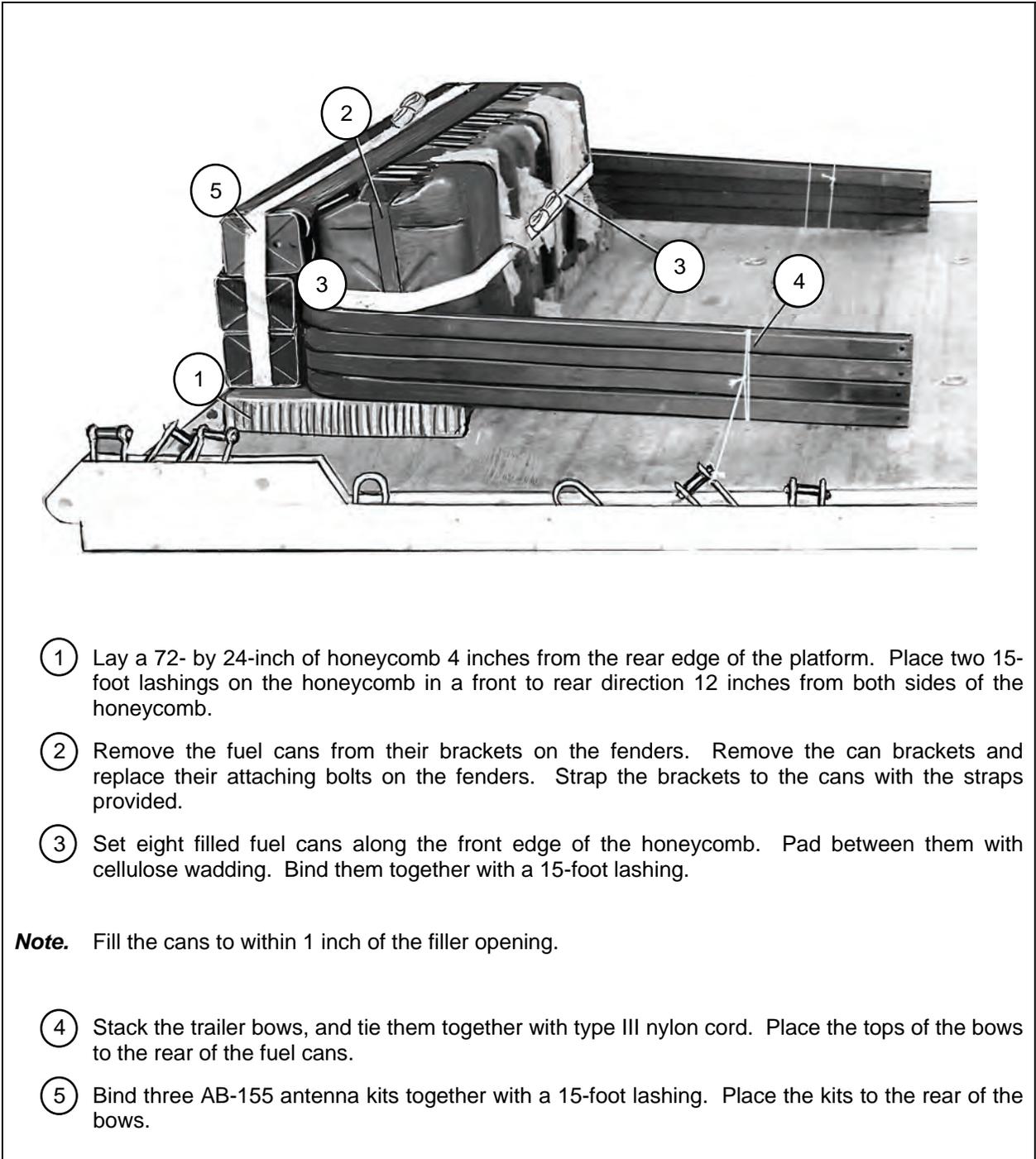
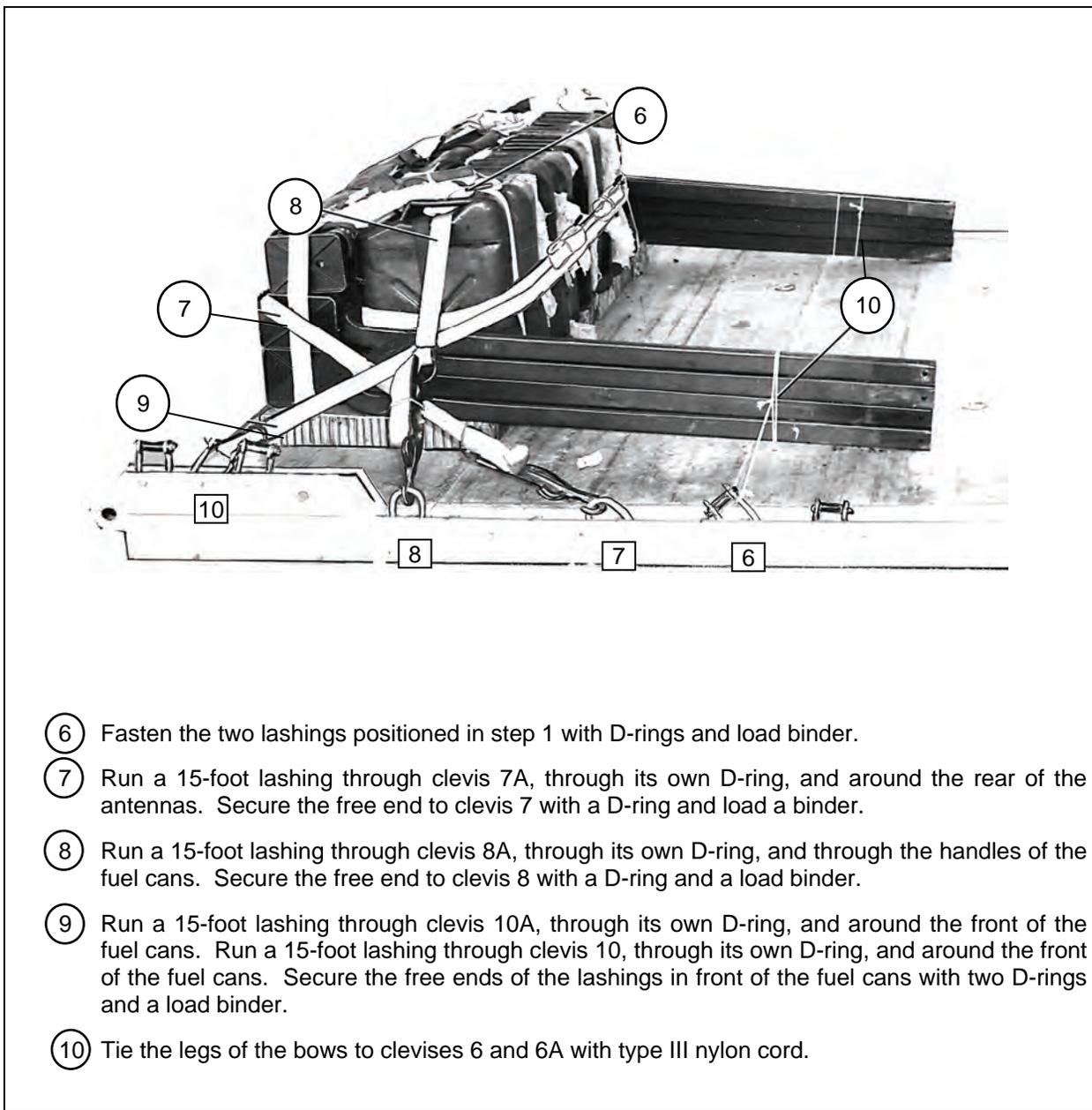


Figure 4-20. Power Unit Equipment Placed on Platform



- ⑥ Fasten the two lashings positioned in step 1 with D-rings and load binder.
- ⑦ Run a 15-foot lashing through clevis 7A, through its own D-ring, and around the rear of the antennas. Secure the free end to clevis 7 with a D-ring and load a binder.
- ⑧ Run a 15-foot lashing through clevis 8A, through its own D-ring, and through the handles of the fuel cans. Secure the free end to clevis 8 with a D-ring and a load binder.
- ⑨ Run a 15-foot lashing through clevis 10A, through its own D-ring, and around the front of the fuel cans. Run a 15-foot lashing through clevis 10, through its own D-ring, and around the front of the fuel cans. Secure the free ends of the lashings in front of the fuel cans with two D-rings and a load binder.
- ⑩ Tie the legs of the bows to clevises 6 and 6A with type III nylon cord.

**Figure 4-20. Power Unit Equipment Placed on Platform (Continued)**

## PREPARING AND POSITIONING HONEYCOMB STACKS

4-18. Prepare the honeycomb stacks as shown in Figure 4-21 and 4-22. Position the stacks on the platform as shown in Figure 4-23.

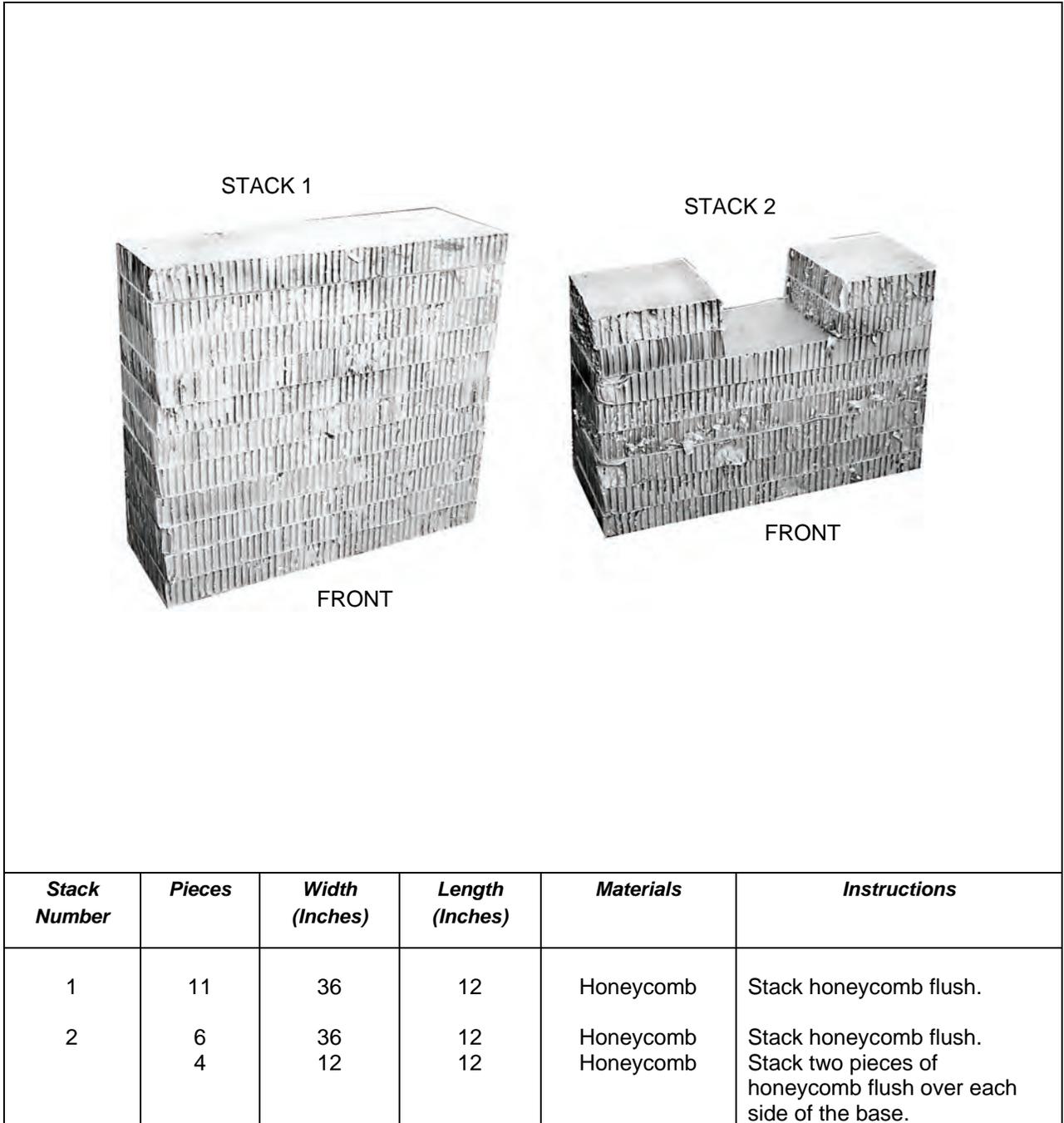
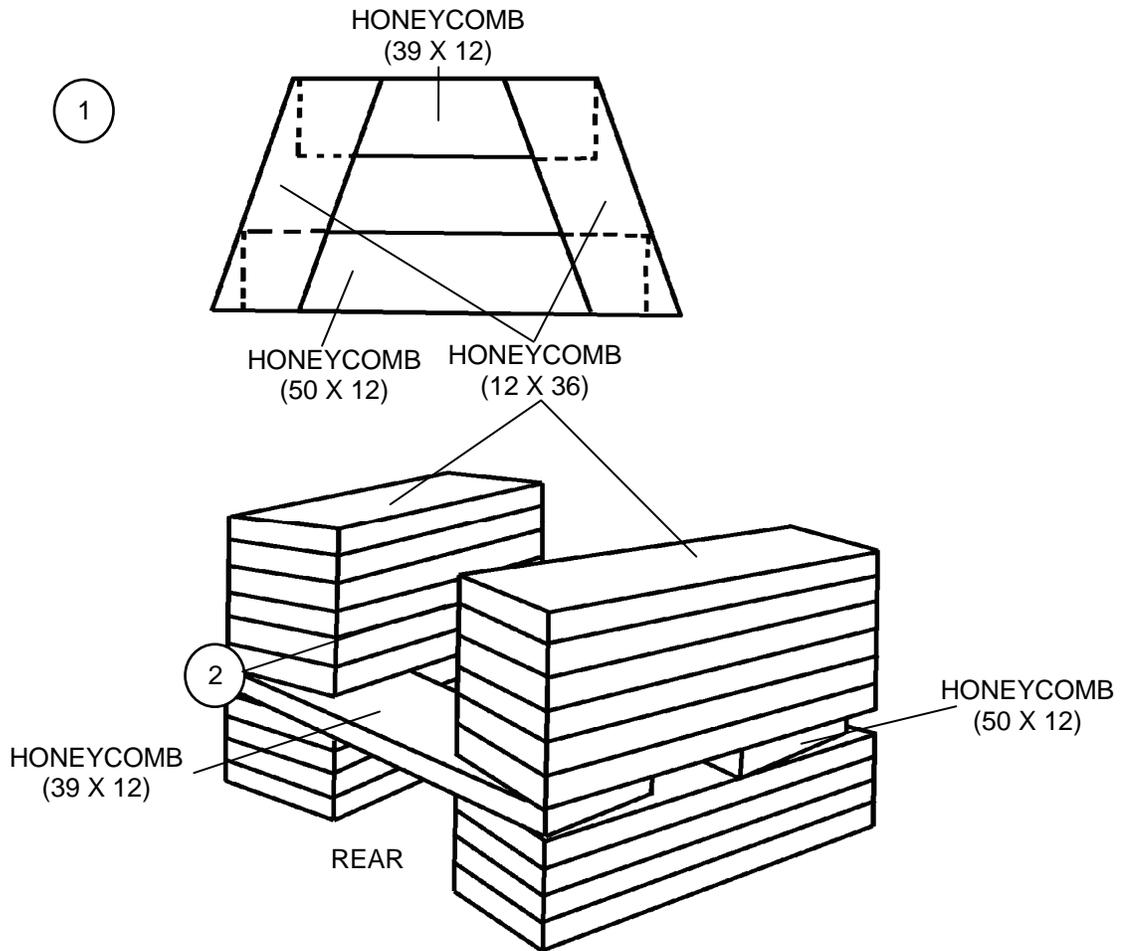


Figure 4-21. Honeycomb Stacks 1 and 2 Prepared

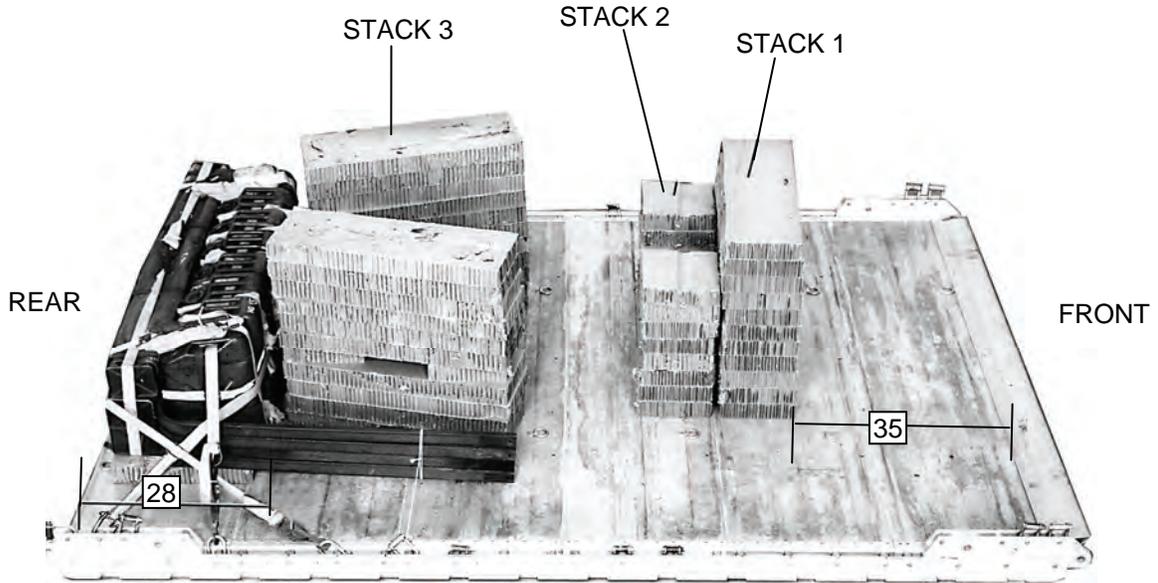
- Notes.** 1. This drawing is not drawn to scale.  
2. All dimensions are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	8	12	36	Honeycomb	Make two stacks of four layers each. Place them at an angle as shown.
	1	39	12	Honeycomb	Bridge the two stacks as shown.
	1	50	12	Honeycomb	
	12	12	36	Honeycomb	Make two stacks of six layers. Place each stack flush over each side of the base.

Figure 4-22. Honeycomb Stack 3 Prepared

**Notes.** All dimensions are given in inches.



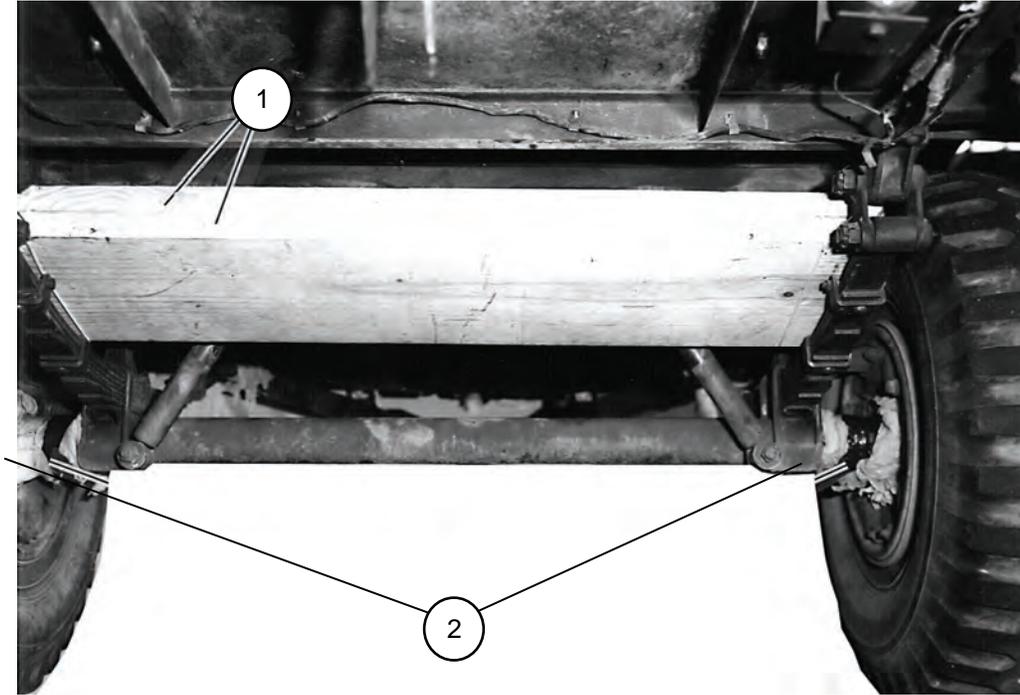
<b>Stack Number</b>	<b>Position of stack on platform</b>
1	Place stack: Centered 35 inches from the front edge of the platform.
2	
3	

**Figure 4-23. Honeycomb Stacks Positioned on Platform**

## PREPARING POWER UNIT

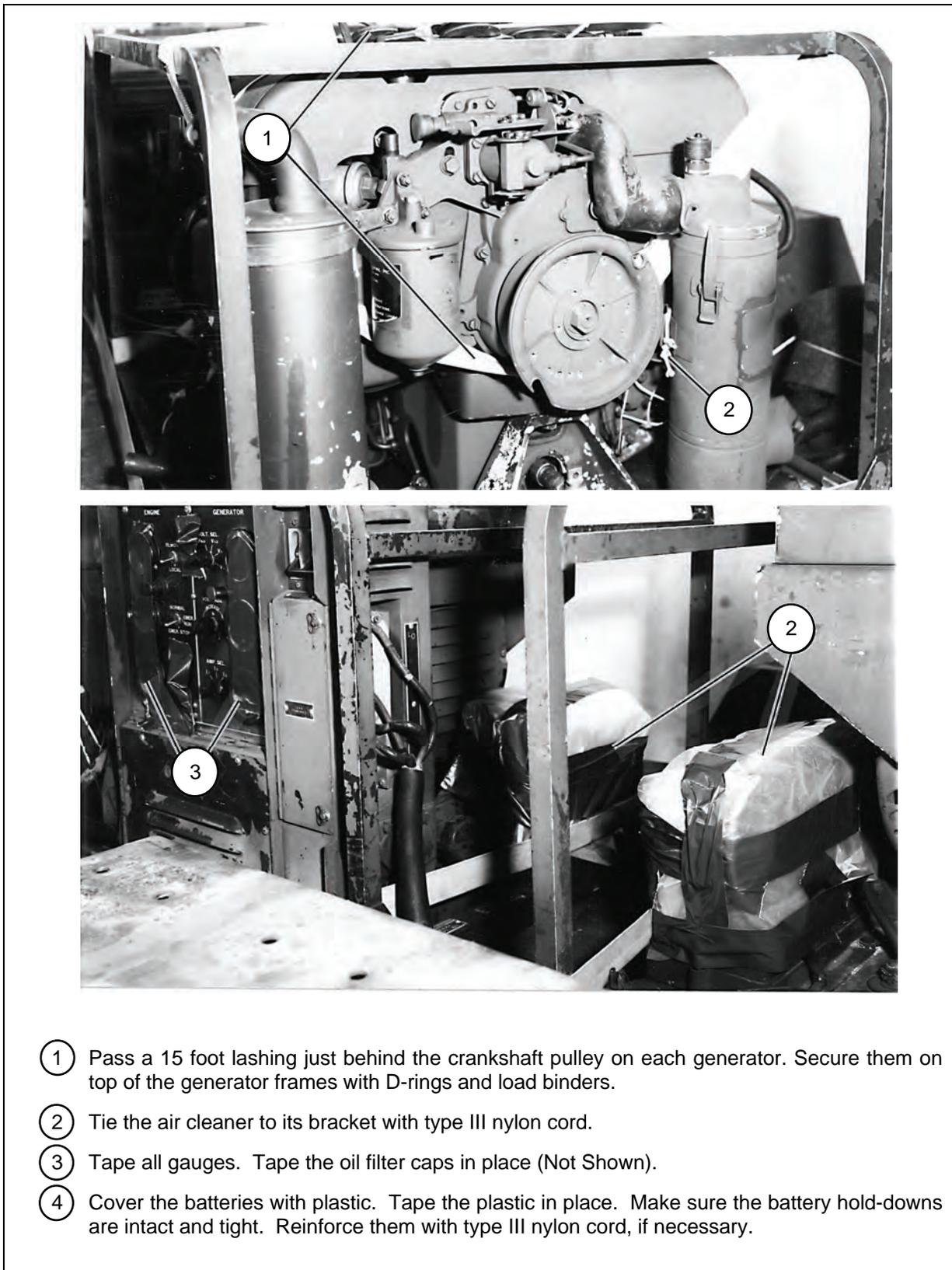
4-19. Prepare the power unit as described below and as shown in Figure 4-24 through 4-28.

- Remove the splash shield from the trailer.
- Make sure the generator fuel tanks are ½ full.



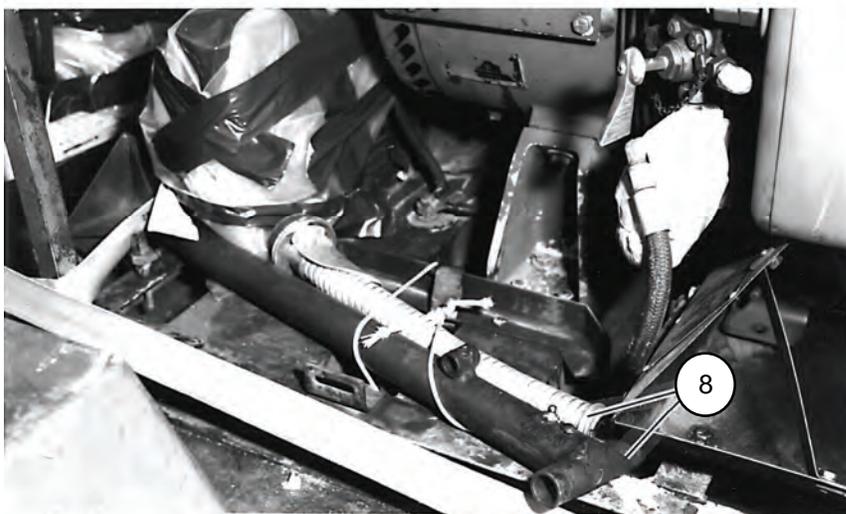
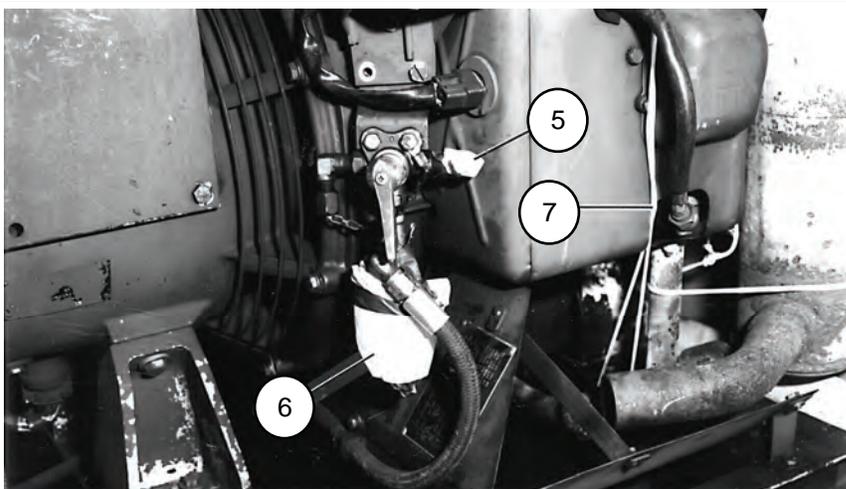
- ① Secure two pieces of 2- by 12- by 46-inch lumber under the trailer frame behind the shock absorbers with type III nylon cord.
- ② Pad the axles between the springs and the wheels with cellulose wadding. Tape the cellulose wadding in place.

**Figure 4-24. Underside of Trailer Prepared**



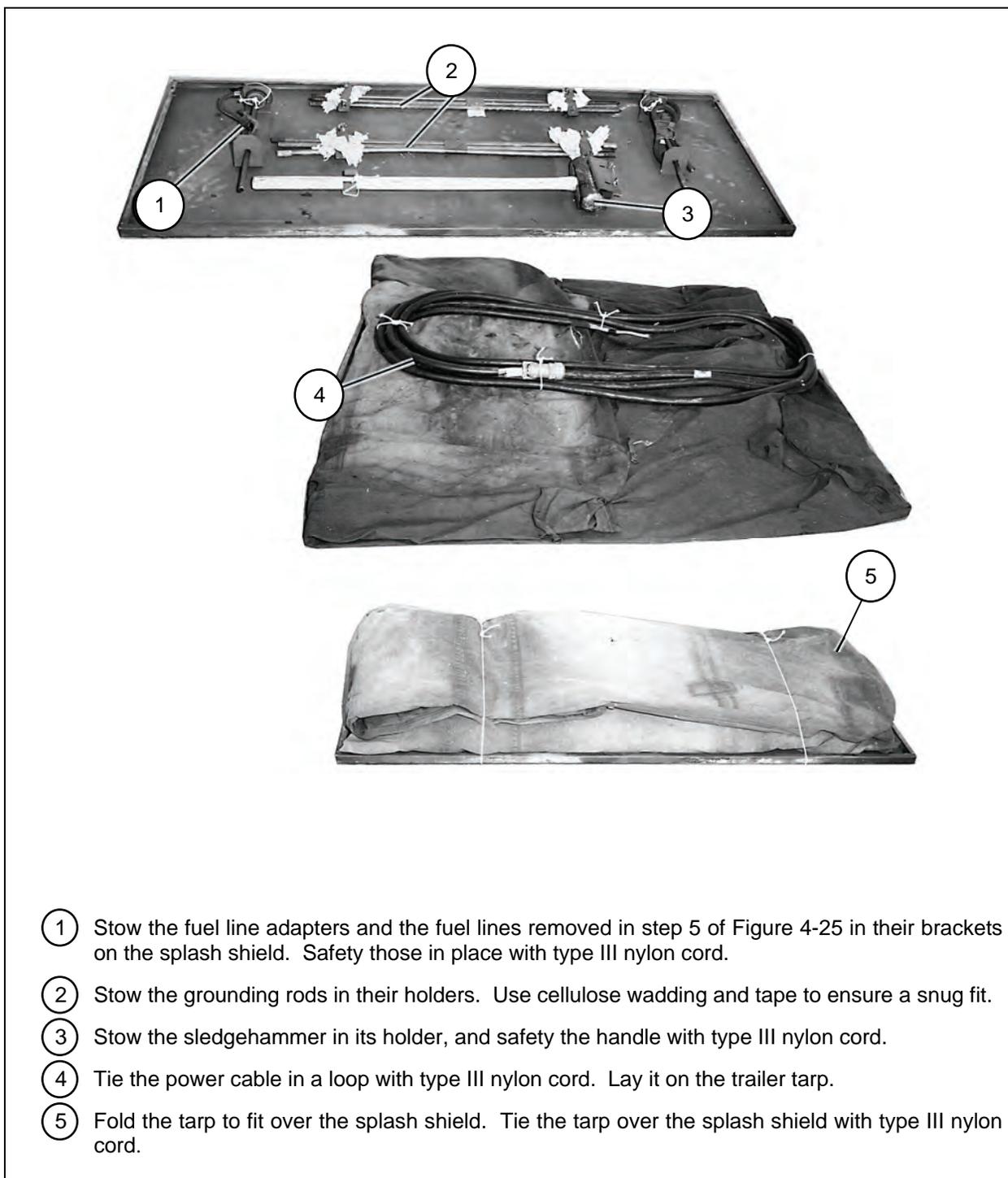
- ① Pass a 15 foot lashing just behind the crankshaft pulley on each generator. Secure them on top of the generator frames with D-rings and load binders.
- ② Tie the air cleaner to its bracket with type III nylon cord.
- ③ Tape all gauges. Tape the oil filter caps in place (Not Shown).
- ④ Cover the batteries with plastic. Tape the plastic in place. Make sure the battery hold-downs are intact and tight. Reinforce them with type III nylon cord, if necessary.

Figure 4-25. Generators Prepared



- ⑤ Remove the fuel lines and adapters (Not Shown). Tape the threaded fuel line connector.
- ⑥ Pad the fuel sediment bowl with cellulose wadding. Tape the cellulose wadding in place.
- ⑦ Pass type III nylon cord over the engine covers. Tie it to the convenient points on both sides of the generators.
- ⑧ Tie a fuel can nozzle and the trailer leveling strut to the generator skid with type III nylon cord.

**Figure 4-25. Generators Prepared (Continued)**



**Figure 4-26. Generator Equipment Stowed on Splash Shield**

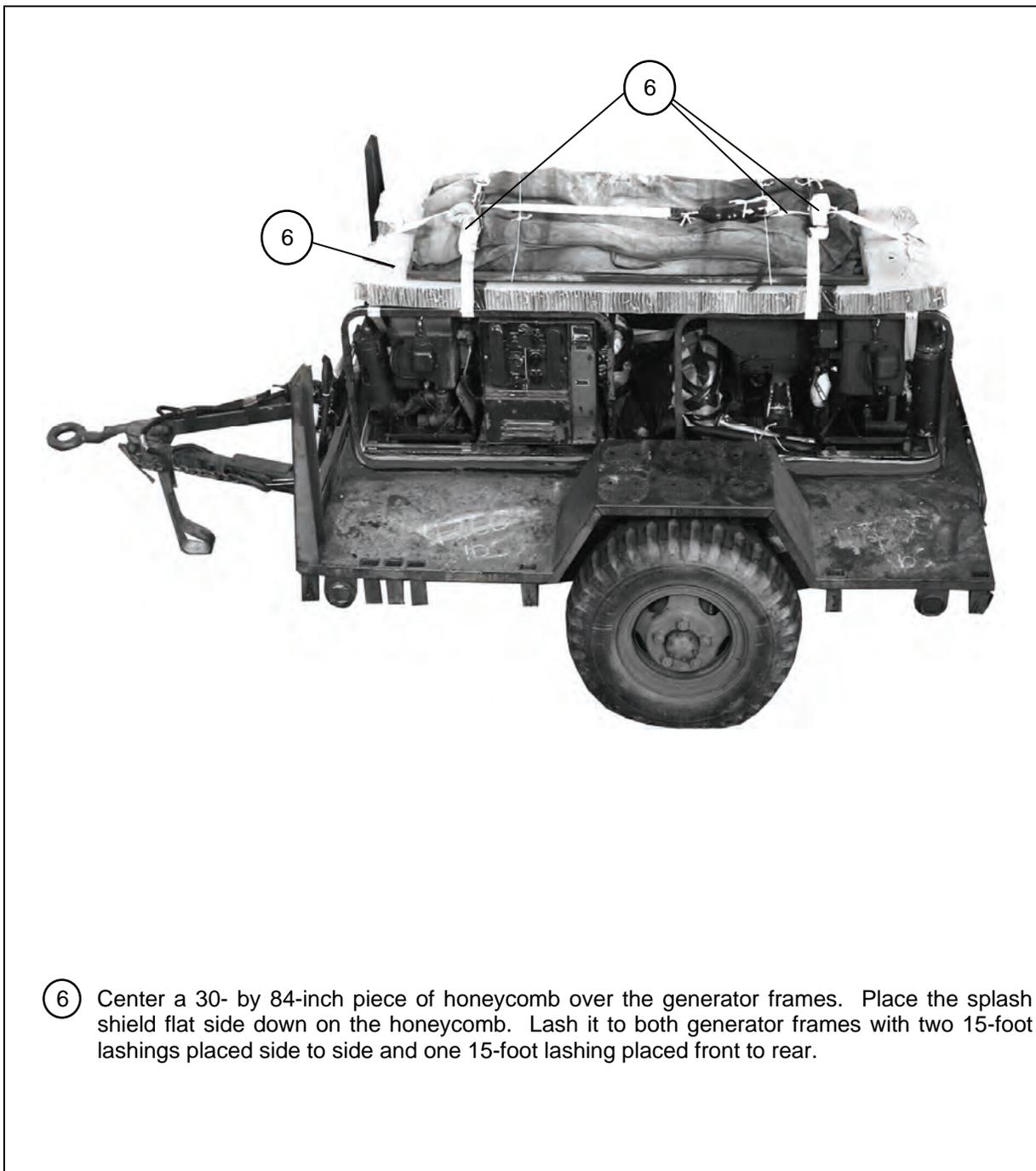
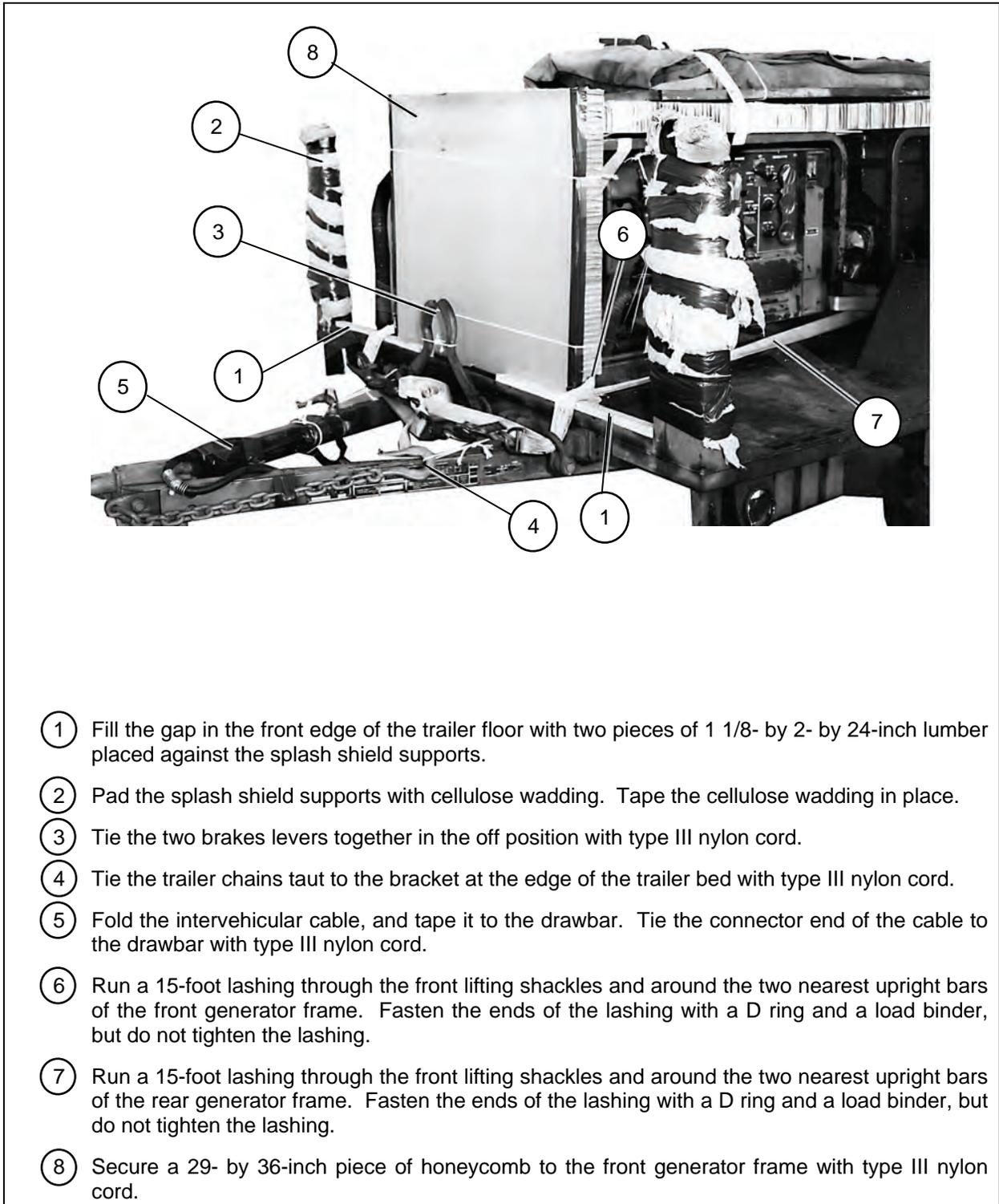


Figure 4-26. Generator Equipment Stowed on Splash Shield (Continued)



- ① Fill the gap in the front edge of the trailer floor with two pieces of 1 1/8- by 2- by 24-inch lumber placed against the splash shield supports.
- ② Pad the splash shield supports with cellulose wadding. Tape the cellulose wadding in place.
- ③ Tie the two brakes levers together in the off position with type III nylon cord.
- ④ Tie the trailer chains taut to the bracket at the edge of the trailer bed with type III nylon cord.
- ⑤ Fold the intervehicular cable, and tape it to the drawbar. Tie the connector end of the cable to the drawbar with type III nylon cord.
- ⑥ Run a 15-foot lashing through the front lifting shackles and around the two nearest upright bars of the front generator frame. Fasten the ends of the lashing with a D ring and a load binder, but do not tighten the lashing.
- ⑦ Run a 15-foot lashing through the front lifting shackles and around the two nearest upright bars of the rear generator frame. Fasten the ends of the lashing with a D ring and a load binder, but do not tighten the lashing.
- ⑧ Secure a 29- by 36-inch piece of honeycomb to the front generator frame with type III nylon cord.

**Figure 4-27. Front of Trailer Prepared**

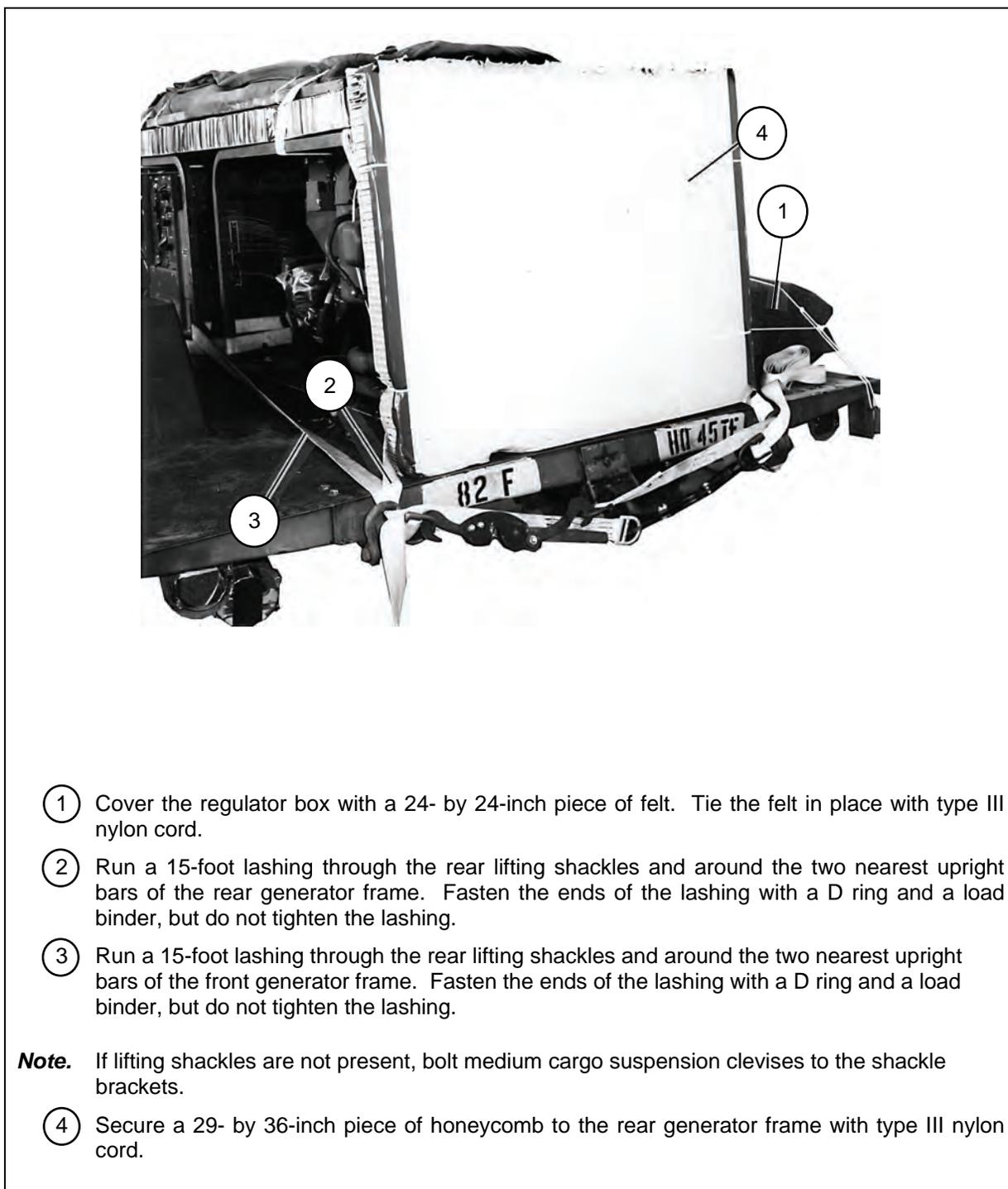


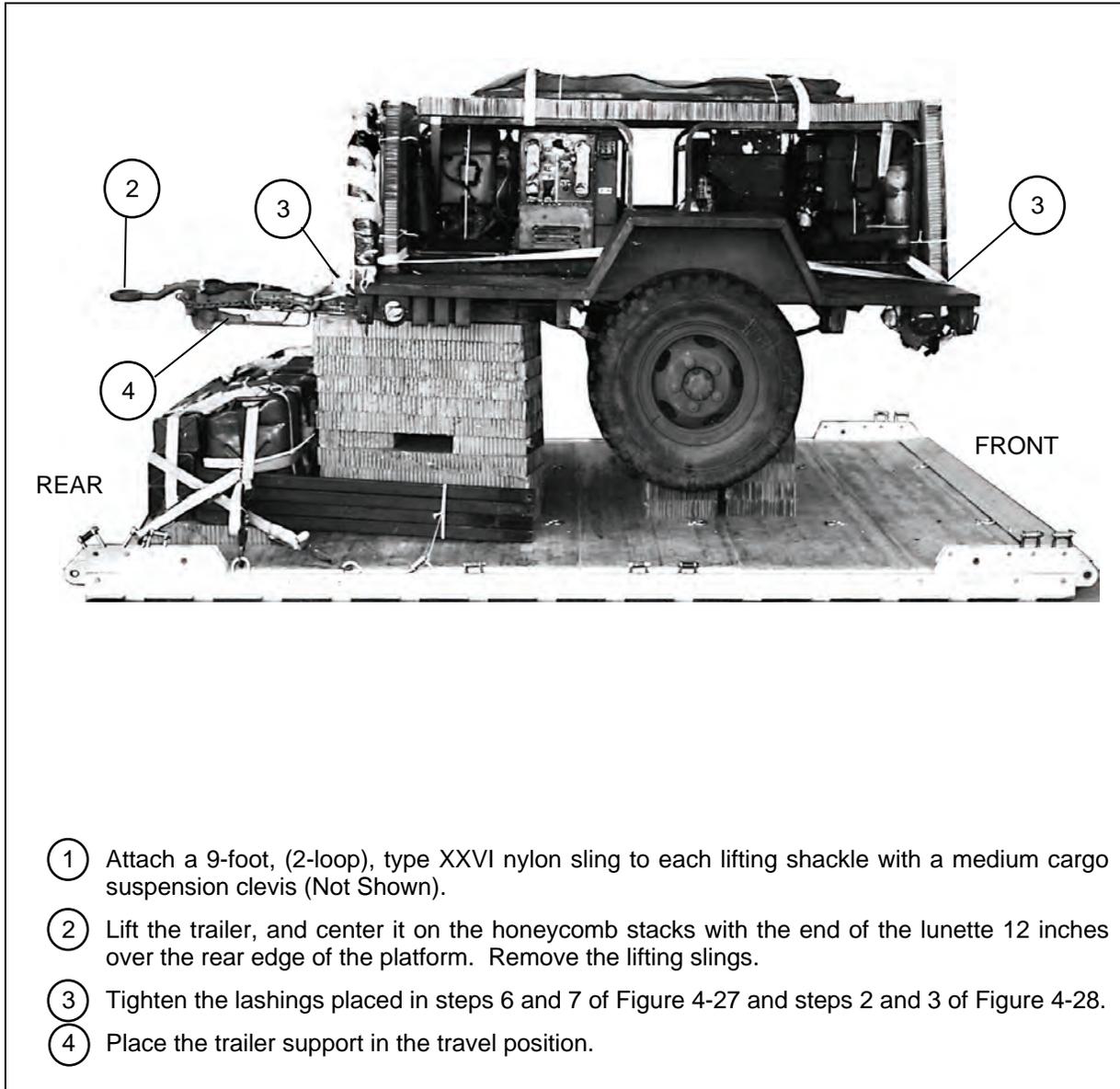
Figure 4-28. Rear and Top of Trailer Prepared

## POSITIONING POWER UNIT ON PLATFORM

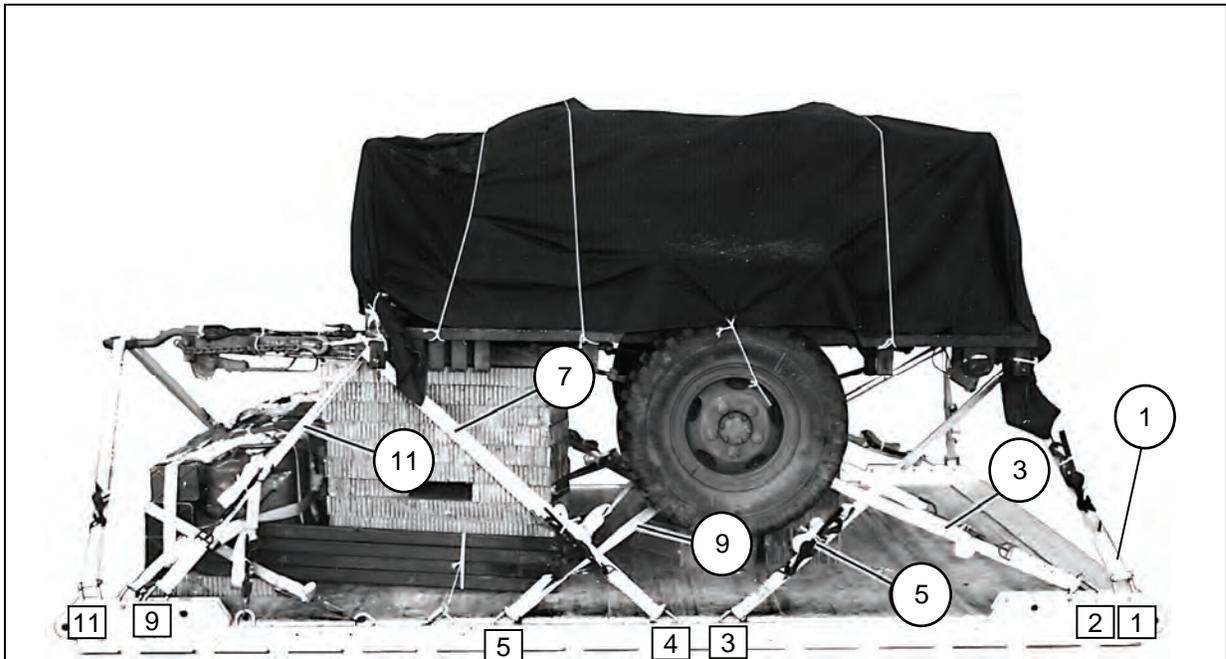
4-20. Position the power unit on the platform as shown in Figure 4-29.

## COVERING AND LASHING POWER UNIT

4-21. Cover the power unit and lash it to the platform as shown in Figure 4-30.



**Figure 4-29. Power Unit Positioned on Platform**



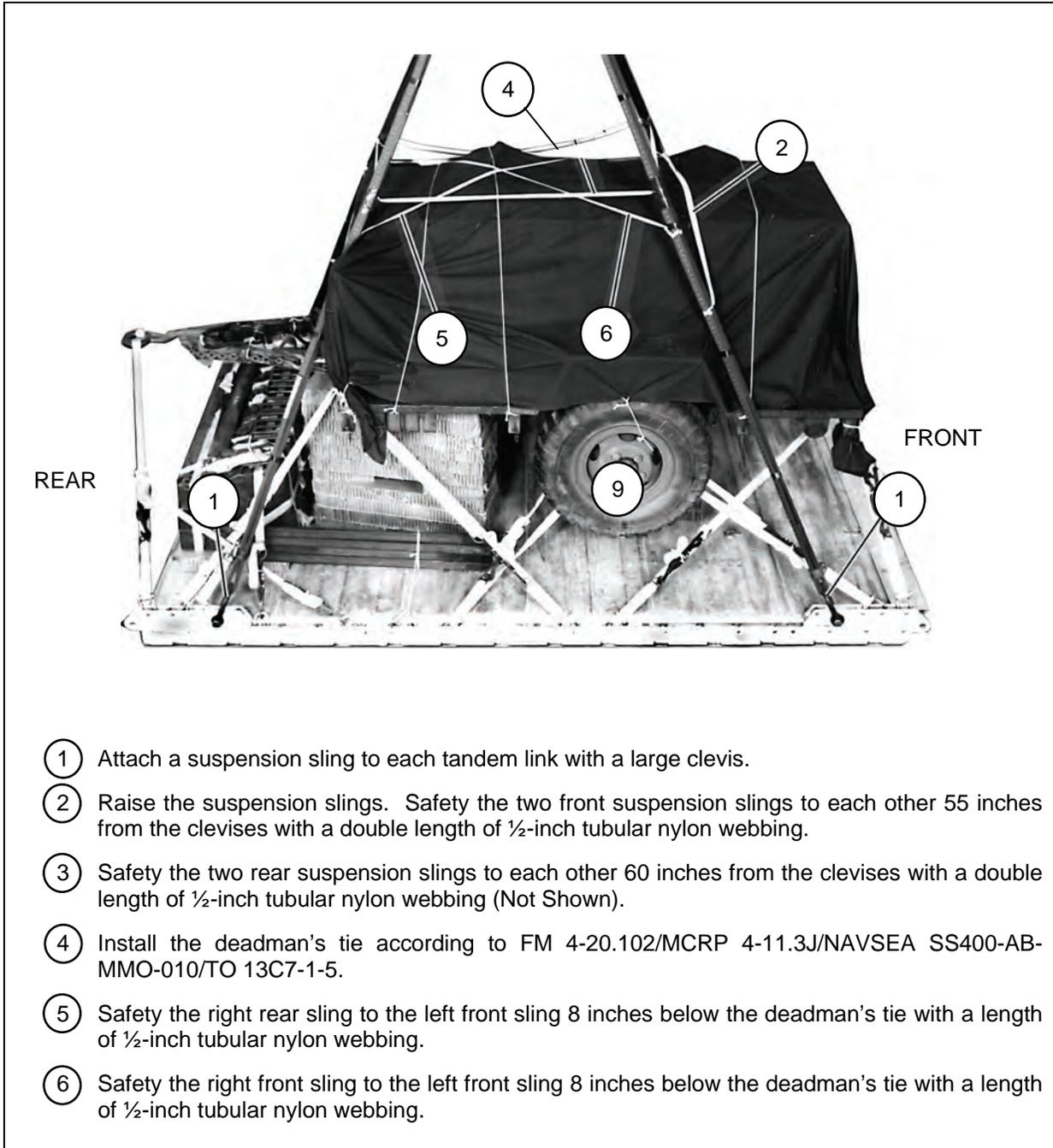
**Note.** Place a 10- by 15-foot canvas load cover over the load. Tie it at each corner. Secure the cover with three lengths of type III nylon cord.

<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
1	1	Through left rear lifting shackle.
2	1A	Through right rear lifting shackle.
3	2	Around left side of axle.
4	2A	Around right side of axle.
5	3	Through left rear lifting shackle.
6	3A	Through right rear lifting shackle.
7	4	Through left front lifting shackle.
8	4A	Through right front lifting shackle.
9	5	Around left side of axle.
10	5A	Around right side of axle.
11	9	Through left front lifting shackle.
12	9A	Through right front lifting shackle.
13	11	Through lunette.
14	11A	Through lunette

**Figure 4-30. Power Unit Covered and Lashings Installed**

## INSTALLING AND SAFETYING SUSPENSION SLINGS

4-22. Install and safety four 12-foot, (2 loop), type XXVI nylon suspension slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 4-31.

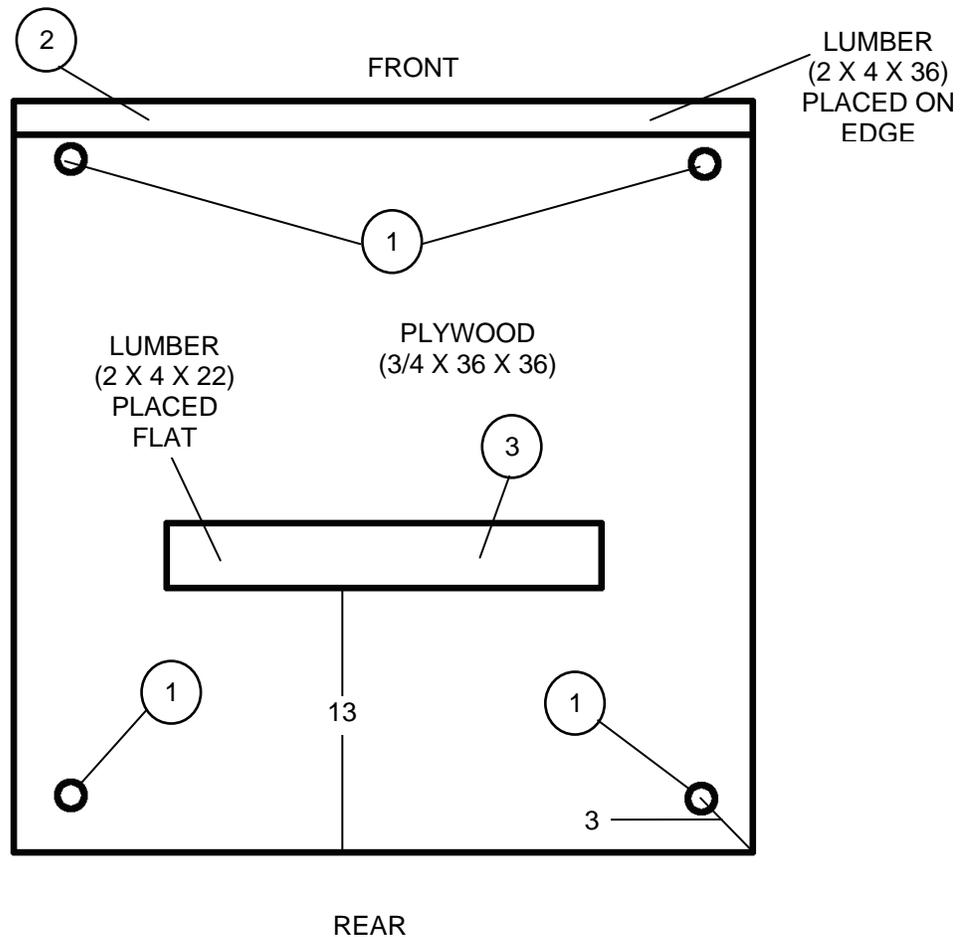


**Figure 4-31. Suspension Slings Installed and Safetied**

## CARGO PARACHUTES

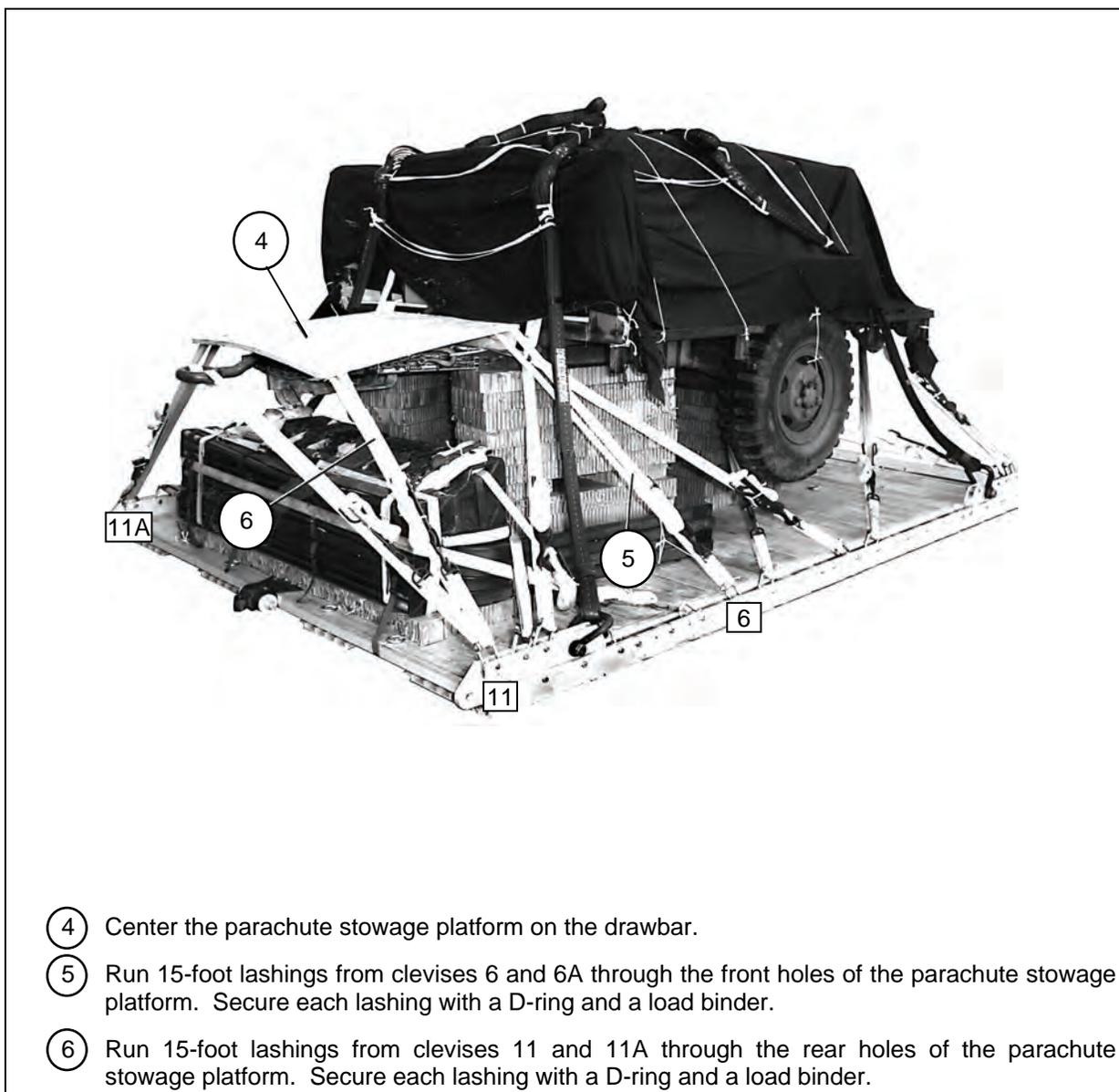
4-23. Prepare and install the parachute stowage platform as shown in Figure 4-32. Prepare and install one G-11B cargo parachute on the load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Figure 4-33 shows one G-11B cargo parachute installed.

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

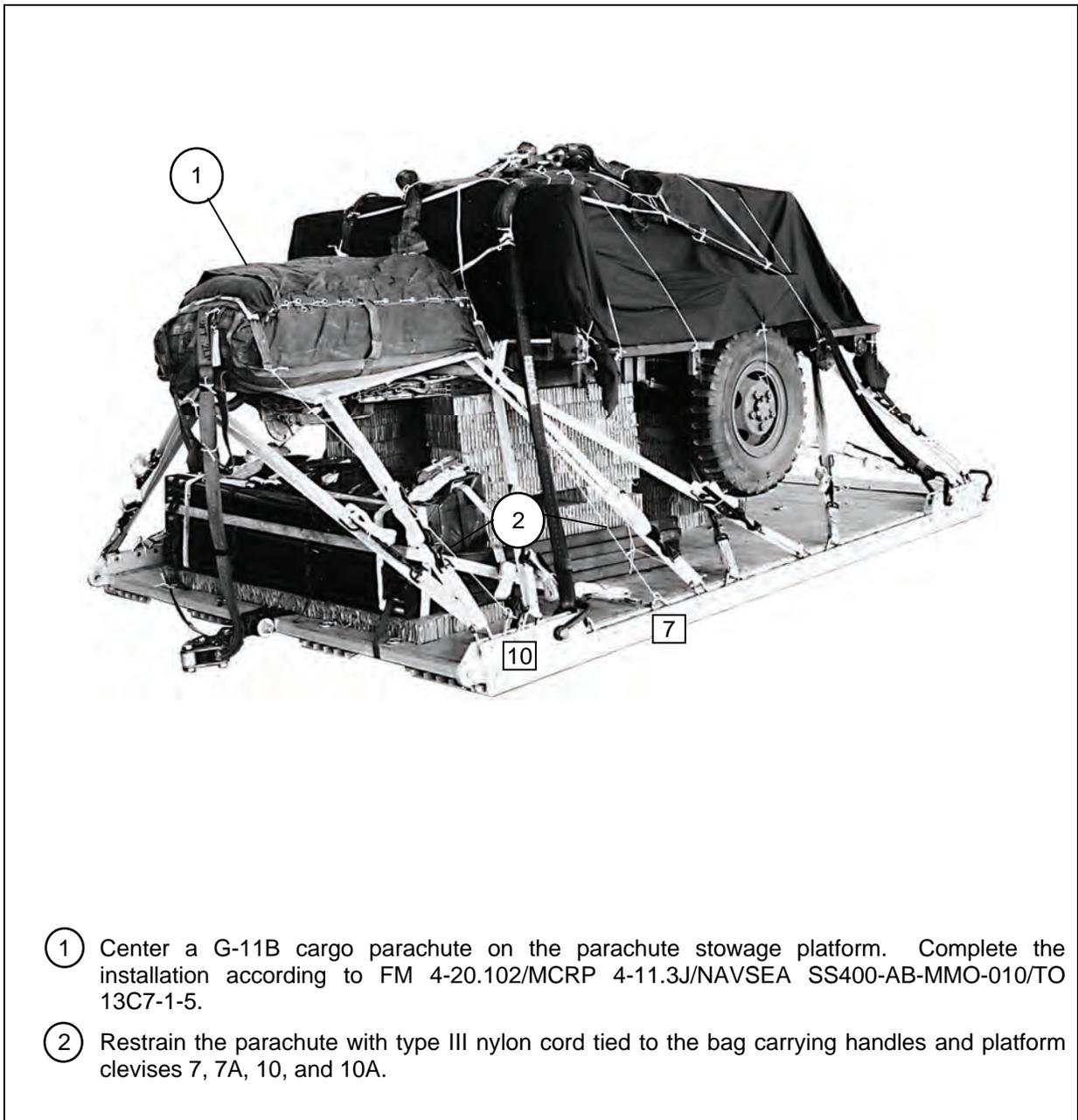


- ① Drill a 2-inch hole 3 inches from each corner (measured from the center of hole) of a  $\frac{3}{4}$ -by 36-by 36-inch piece of plywood.
- ② Nail a 2- by 4- by 36-inch piece of lumber on edge along the front edge. Use eightpenny nails.
- ③ Center and nail a 2- by 4- by 22-inch piece of lumber 13 inches from and parallel to the rear edge of the plywood.

**Figure 4-32. Parachute Stowage Platform Prepared and Installed**



**Figure 4-32. Parachute Stowage Platform Prepared and Installed (Continued)**

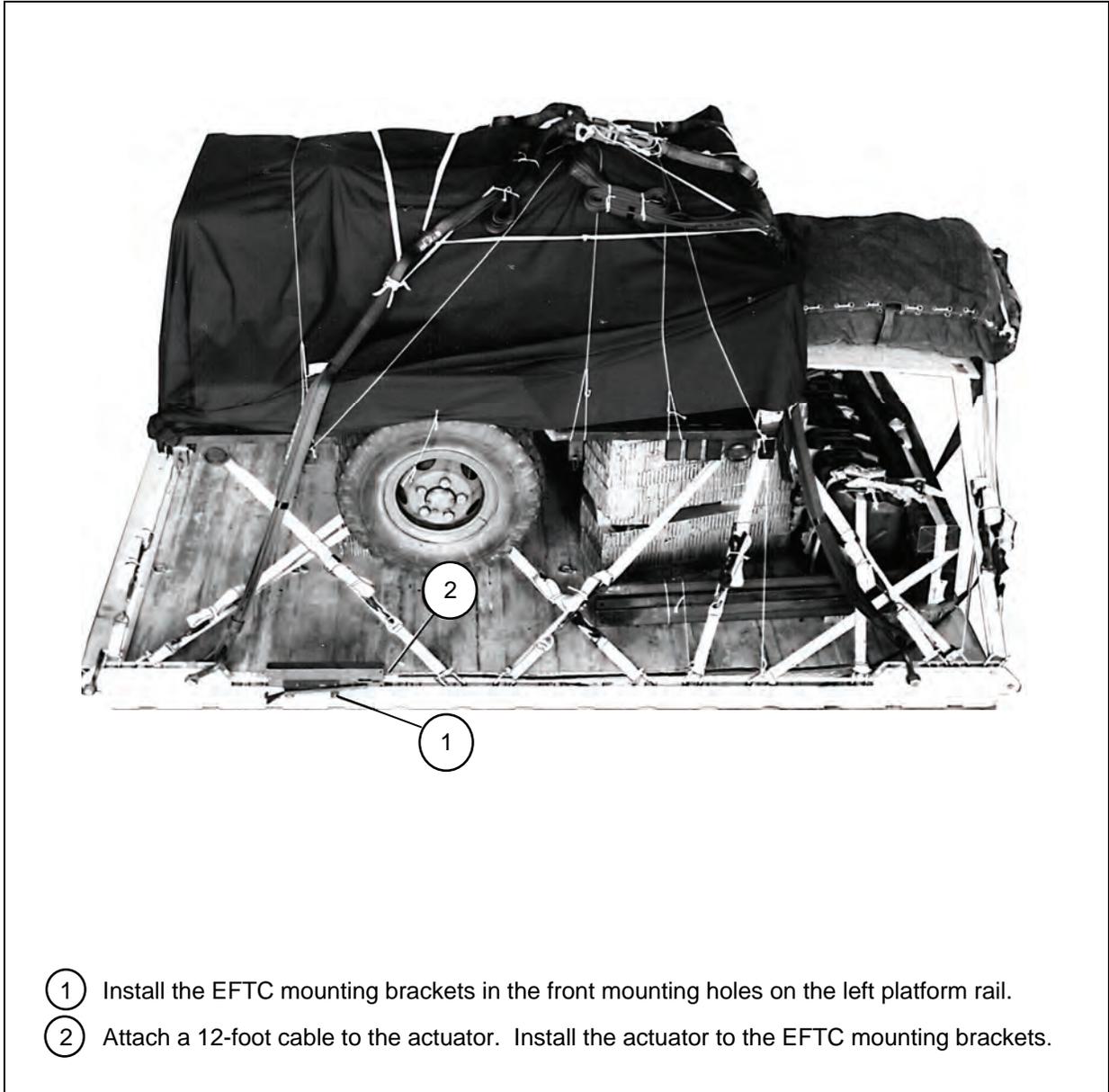


- ① Center a G-11B cargo parachute on the parachute stowage platform. Complete the installation according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② Restrain the parachute with type III nylon cord tied to the bag carrying handles and platform clevises 7, 7A, 10, and 10A.

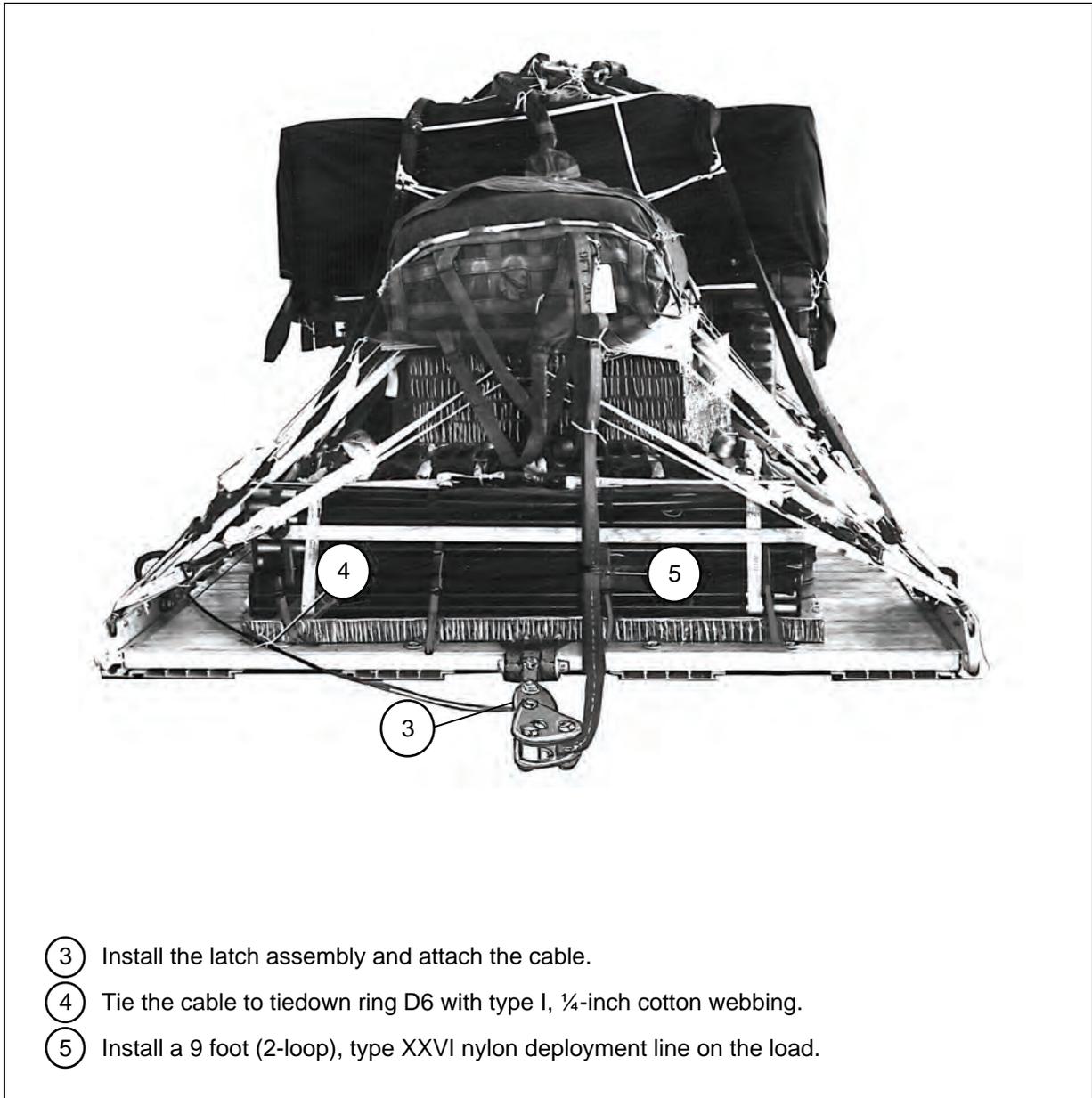
**Figure 4-33. One G-11B Cargo Parachute Installed**

## INSTALLING EXTRACTION SYSTEM

4-24. Install the EFTC according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 4-34.



**Figure 4-34. EFTC Installed**



**Figure 4-34. EFTC Installed (Continued)**

## **PLACING EXTRACTION PARACHUTE**

4-25. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

4-26. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **MARKING RIGGED LOAD**

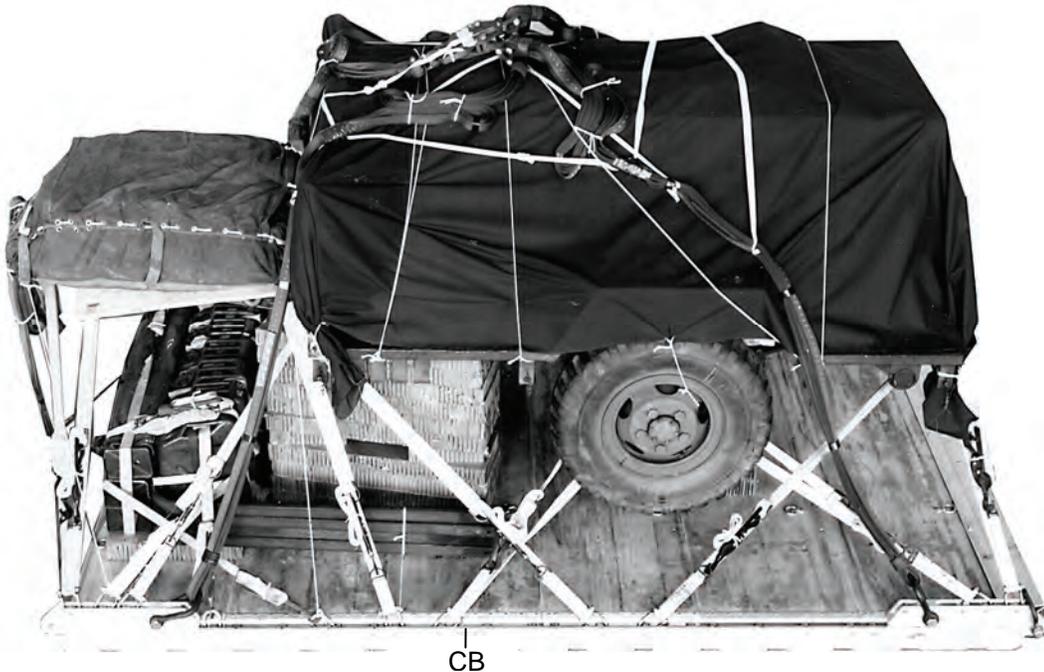
4-27. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5, and as shown in Figure 4-35. Complete Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

4-28. Use the equipment listed in Table 4-2 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 131210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight: Load shown.....	4,750 pounds
Maximum load allowed.....	5,250 pounds
Height.....	81 inches
Width.....	108 inches
Length.....	169 inches
Overhang: Front.....	4 ½ inches
Rear.....	19 inches
CB (from front edge of platform).....	82 ½ inches

**Figure 4-35. PU-620M Power Unit Rigged for Low-Velocity Airdrop on Type V Platform**

**Table 4-2. Equipment Required for Rigging the PU-620M Power Unit for Low-Velocity Airdrop on the Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	¾-in (medium)	2
4030-00-090-5354	1-in (large)	5
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose adding	As required
8305-00-958-3685	Felt, ½ in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-064-4452	60-ft, (1- loop), type XXVI nylon webbing	1
1670-01-107-7652	160-ft, (1 loop), type XXVI nylon webbing	1
1670-00-783-5988	Link assembly, type IV	3
	Lumber:	
5510-00-220-6146	2- by 4-in:	
	22-in	1
	24-in	2
	36-in	1
5510-00-220-6250	2- by 12- by 46-in	2
5315-00-010-4659	Nail, steel wire, common, 8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-insheets	7
	Parachute:	
1670-01-016-7841	Cargo:	
	G-11B	1
	Cargo extraction:	
1670-00-052-1548	15 ft <u>or</u>	1
1670-00-063-3715	15 ft	1
	Platform, AD, type V, 12-ft	1

**Table 4-2. Equipment Required for Rigging the PU-620M Power Unit Low-Velocity Airdrop on the Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Bracket:	
1670-01-162-1275	Inside EFTA	(1)
1670-01-162-1274	Outside EFTA	(1)
1670-01-162-1272	Clevis assembly	(22)
1670-01-162-1276	Extraction bracket assembly	(1)
1670-01-162-1281	Tandem link	(4)
5530-00-128-4981	Plywood, ¾- by 36- by 36-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft, (2-loop), type XXVI nylon webbing	1
	For lifting:	
1670-01-062-6304	9-ft, (2-loop), type XXVI nylon webbing	4
	For riser extension:	
1670-01-062-6302	20-ft, (2-loop), type XXVI nylon webbing	2
	For suspension:	
1670-00-040-8219	12-ft, (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap, parachute release, multicut comes w knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	33
	Webbing:	
8205-00-268-2411	Cotton, type I, ¼-in	As required
8305-00-082-5752	Nylon tubular, ½-in, natural	As required
8305-00-263-3591	Nylon, type VIII	As required

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## Chapter 5

# Rigging Whole Blood on a 16-Foot, Type V Airdrop Platform

### SECTION I – RIGGING BLOOD FOR LOW-VELOCITY AIRDROP

#### DESCRIPTION OF LOAD

5-1. Whole blood is rigged on a 16 foot, type V airdrop platform with two G-11B cargo parachutes for C-130 or C-17 aircraft.

#### PREPARING PLATFORM

5-2. Prepare a 16 foot, type V platform as described below.

- Assembling and Inspecting Platform. Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
- Installing Tandem Links. Install a tandem link on the front and rear of each rail as shown in Figure 5-1.
- Attaching and Numbering Clevises. Bolt 44 tiedown clevises to the side rail bushings and tandem links according to TM 10-1670-268-20&P/TO 13C7-52-22 and as shown in Figure 5-1. Number the clevises as shown in Figure 5-1.

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

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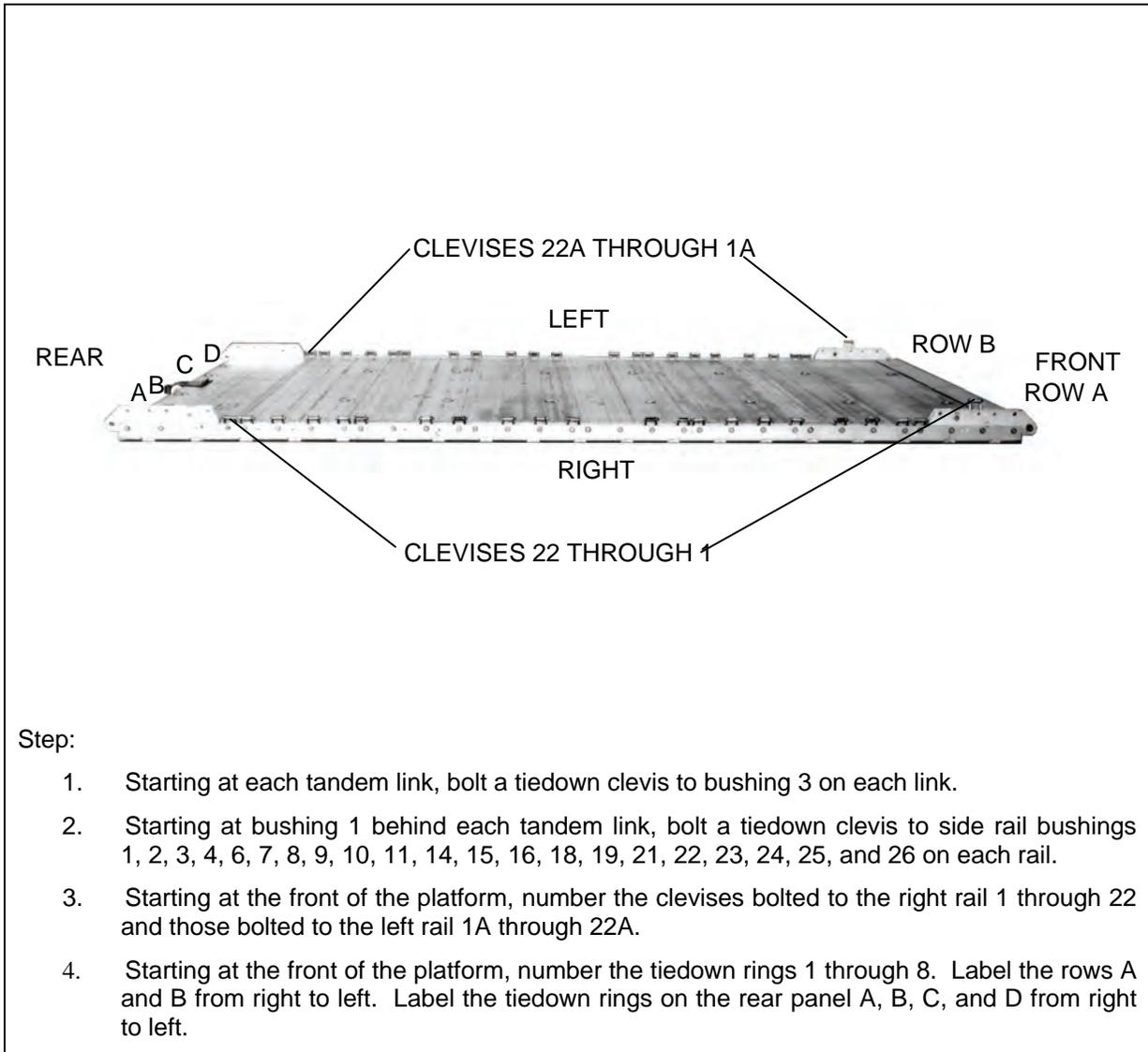
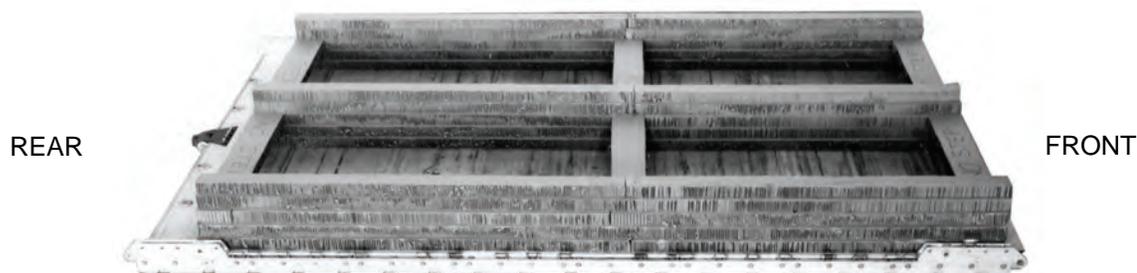


Figure 5-1. Platform Prepared

## PREPARING AND PLACING HONEYCOMB LAYERS

5-3. Prepare and place the honeycomb layers as shown in Figure 5-2 and 5-3.

**Note.** Glue all honeycomb layers together. Do not glue the layers to the platform.



Layer Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	6	12	90	Honeycomb	Lay two pieces of honeycomb end to end forming a 180 inch row. Prepare two more 180 inch rows. Lay each row 29 ¾ inches apart and 13 inches from the rear edge of the platform. Outside rows are 2 ¾ inches from the side rails.
2	6	10	90	Honeycomb	Center two pieces of honeycomb end to end on top of Each row in layer 1.
3	3	91 ½	8	Honeycomb	Use honeycomb as bridges. Lay one piece across layer 2 flush with front edge of the honeycomb. Lay the second piece across layer 2, 79 ½ inches from front edge of the honeycomb. Lay the third piece across layer 2 flush with the rear edge of the honeycomb.
	3	8	71 ½	Honeycomb	Use honeycomb as fillers between the front and middle bridges.
	3	8	84 ½	Honeycomb	Use honeycomb as fillers between the middle and rear bridges.
4	6	6	90	Honeycomb	Center two pieces of honeycomb end to end on top of each 180 inch row in layer 3.
5	6	4	90	Honeycomb	Center two pieces of honeycomb end to end on top of each row in layer 4.

Figure 5-2. Honeycomb Layers Prepared and Placed on Platform

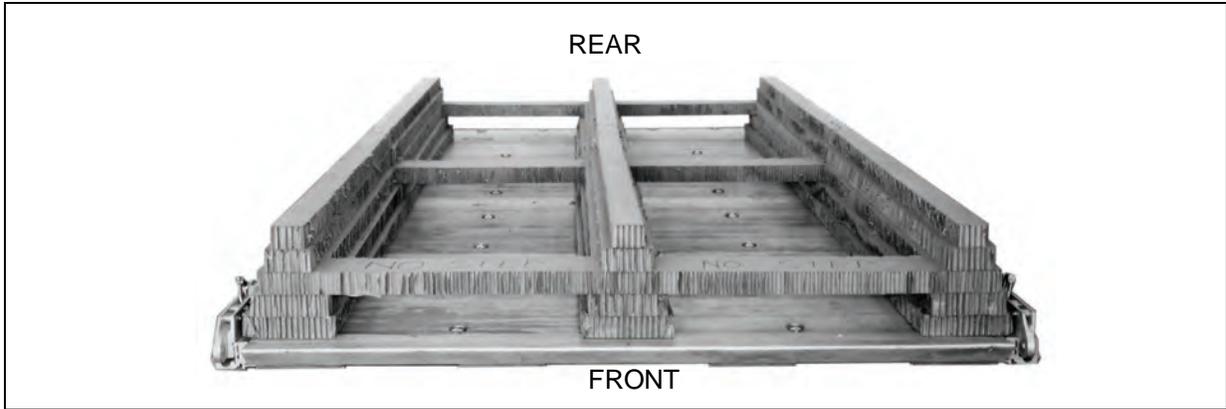
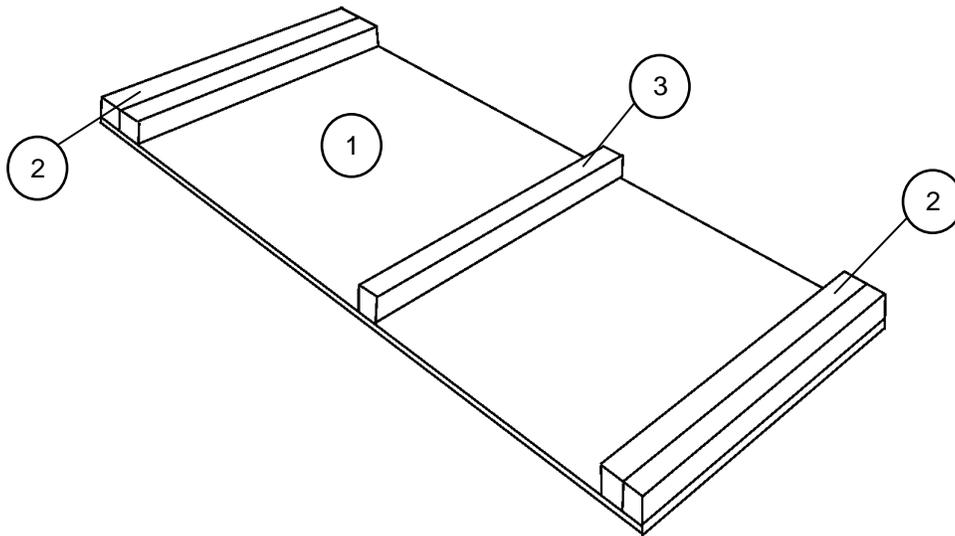


Figure 5-3. Front View of Honeycomb Layers Placed on Platform

## PREPARING WOODEN BOXES

5-4. Prepare four wooden boxes. An example is shown in Figure 5-4.

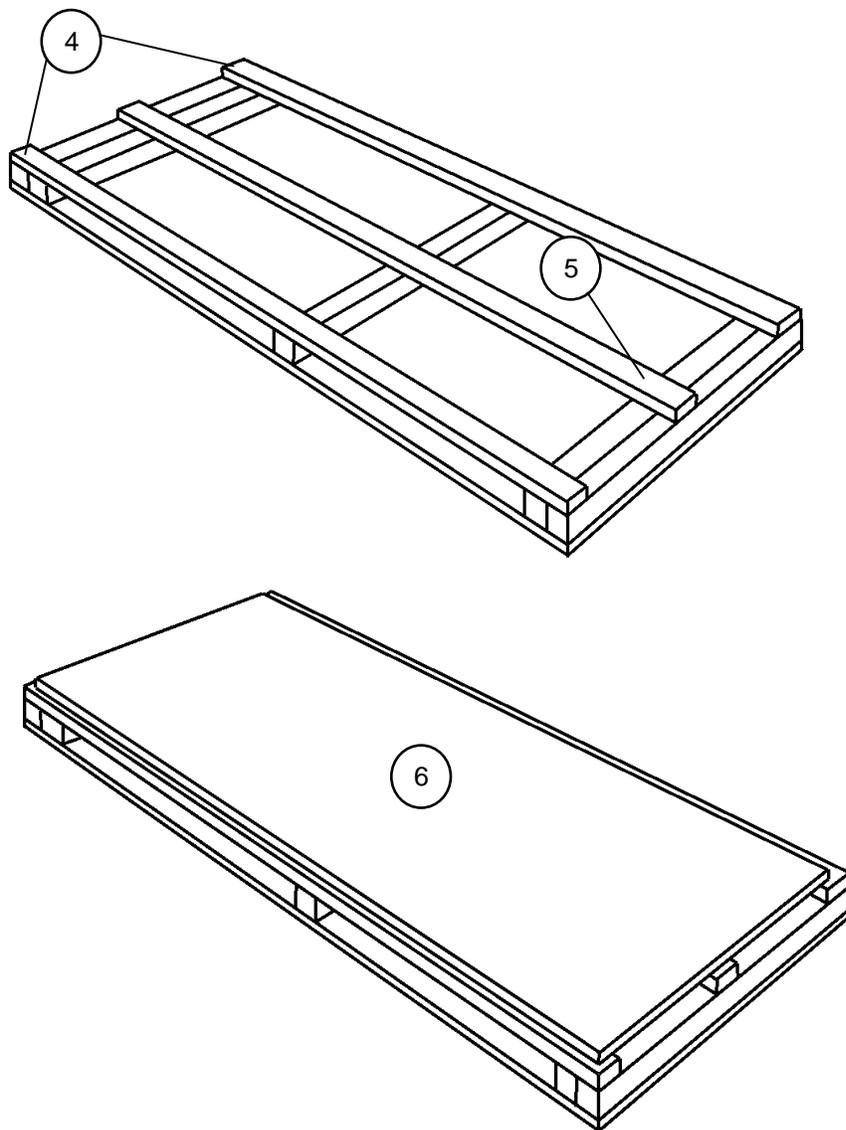
- Notes.**
1. This drawing is not drawn to scale.
  2. Use fourpenny or sixpenny nails.
  3. The nails must not enter the inside dimensions of the box.
  4. Make sure the nails do not penetrate the 4- by 4-inch lumber.



- ① Lay one piece of  $\frac{3}{4}$ - by  $43\frac{1}{2}$ - by  $95\frac{1}{2}$ -inch plywood on a flat surface to form a base.
- ② Nail two pieces of 4- by 4- by  $43\frac{1}{2}$ -inch lumber to each end of the base.
- ③ Nail one piece of 4- by 4- by  $43\frac{1}{2}$ -inch lumber in the center of the base.

Figure 5-4. Wooden Box Prepared

**Note.** These drawings are not drawn to scale.



- ④ Nail one piece of 2- by 4- by 95½-inch lumber on top of the 4- by 4- by 43½-inch lumber and flush with each 95½-inch side of the base.
- ⑤ Nail one piece of 2- by 4- by 95½-inch lumber centered between the lumber installed in step 4 above.
- ⑥ Center one piece of ¾- by 42- by 94-inch plywood on top of the 2- by 4-inch lumber. Nail it in place.

**Figure 5-4. Wooden Box Prepared (Continued)**

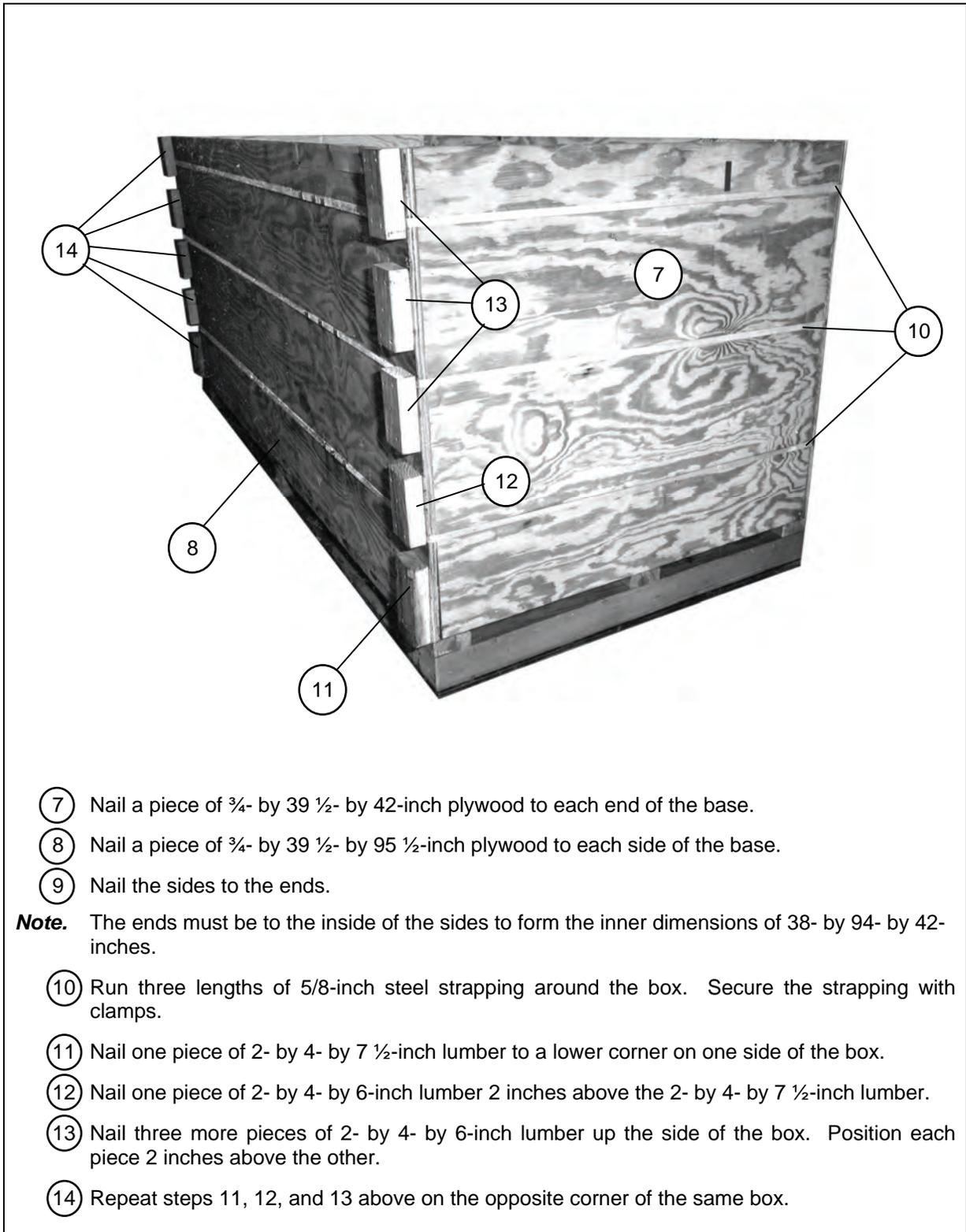


Figure 5-4. Wooden Box Prepared (Continued)

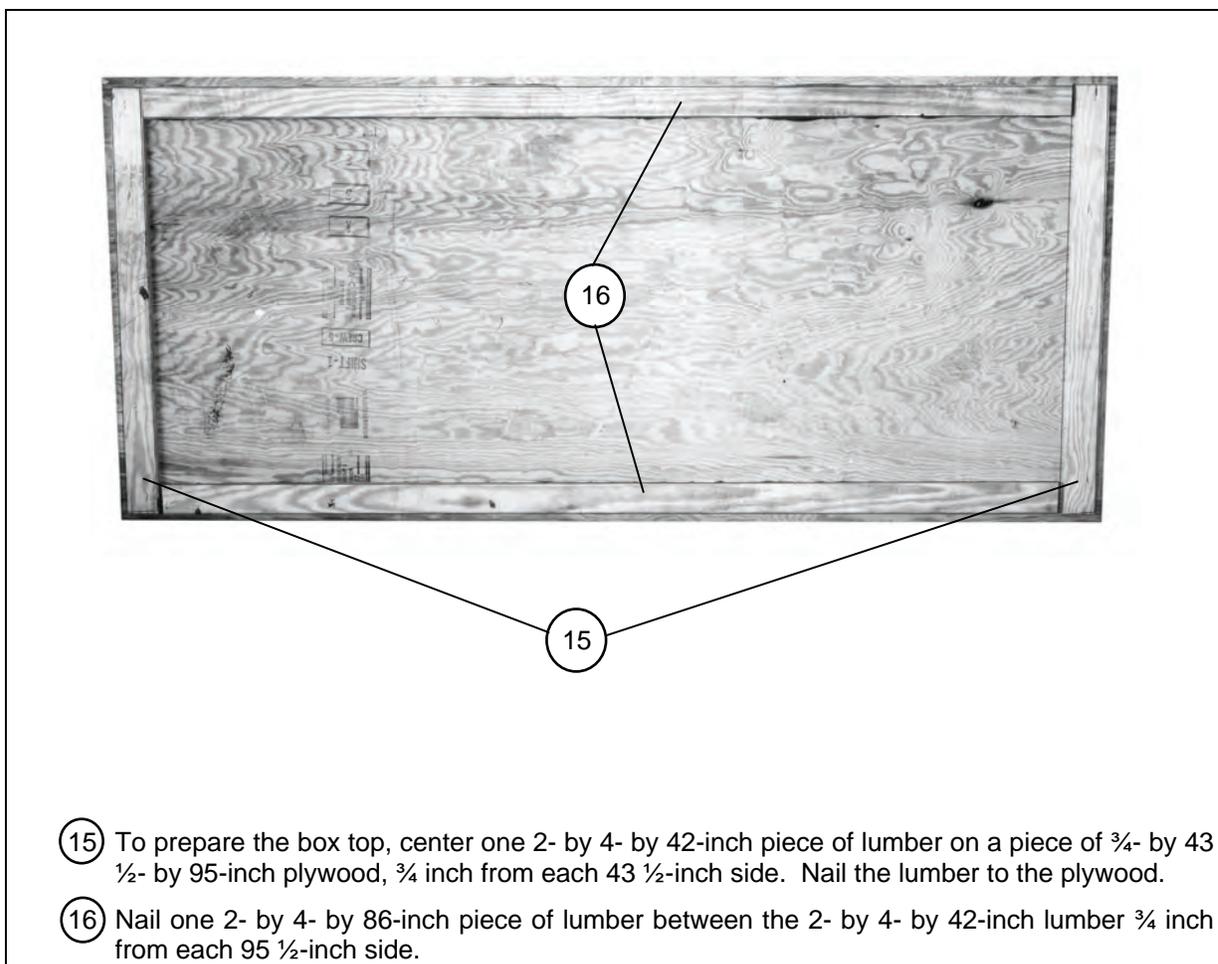


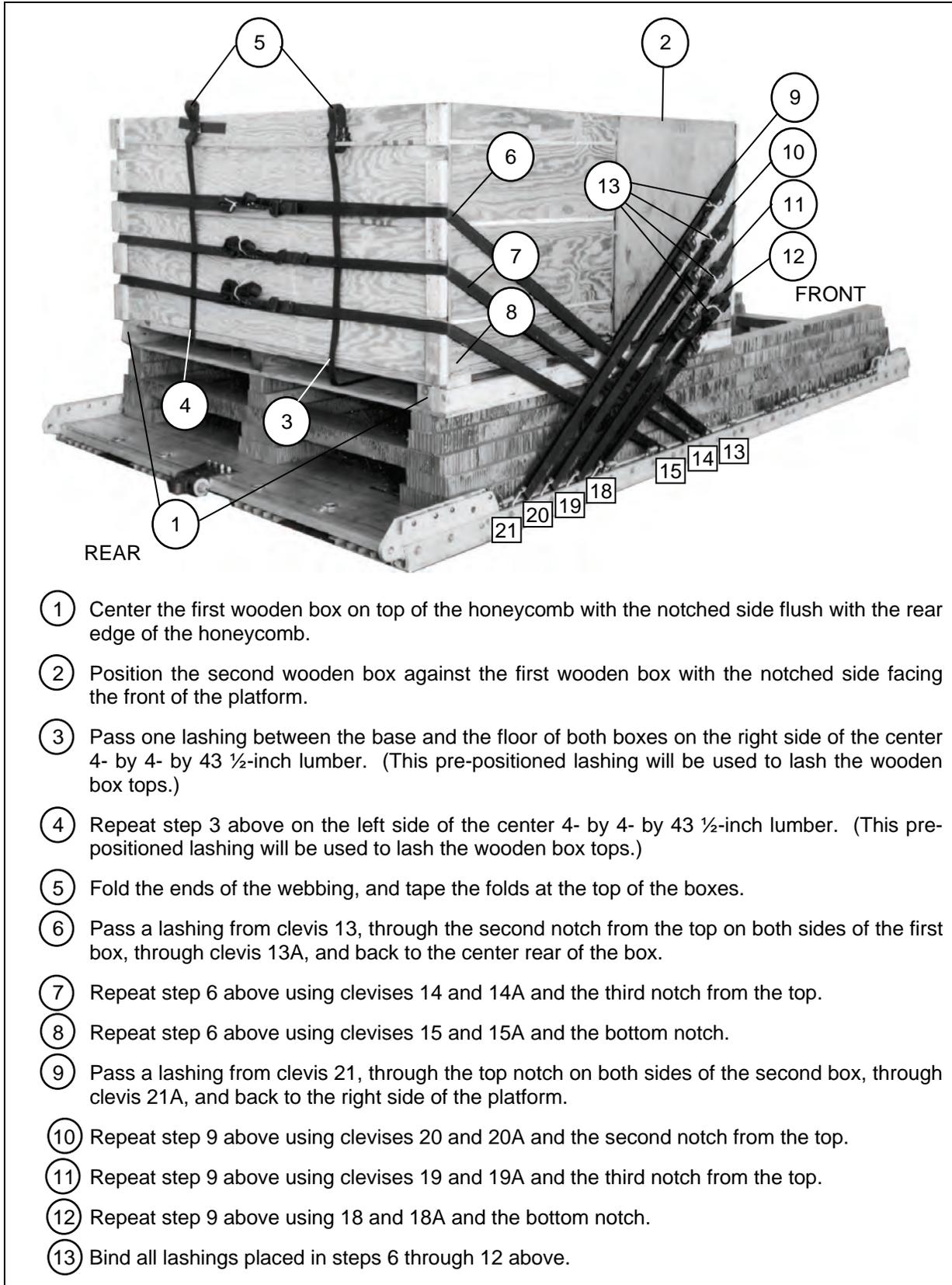
Figure 5-4. Wooden Box Prepared (Continued)

## POSITIONING AND LASHING WOODEN BOXES

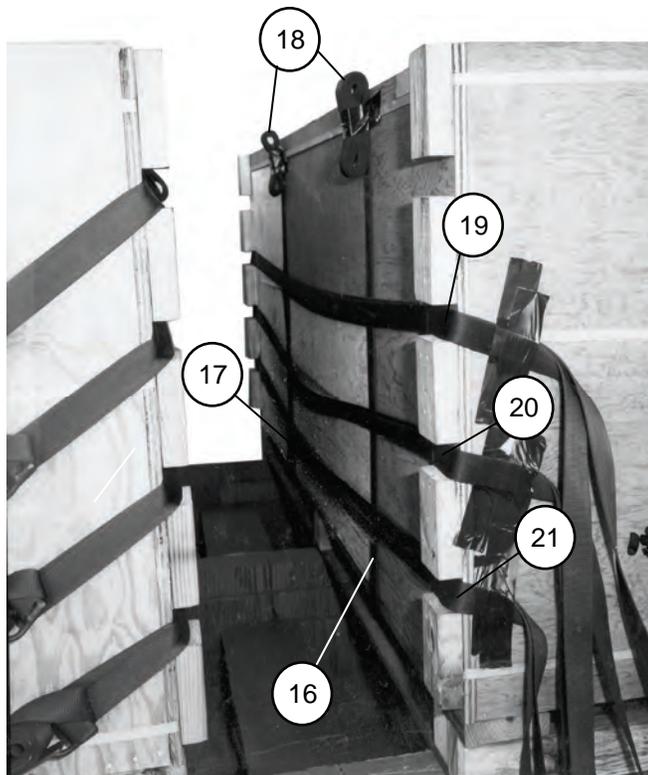
5-5. Position and lash four wooden boxes on the honeycomb as shown in Figure 5-5. Lash the boxes in pairs using eighteen 48-foot lengths of type X nylon webbing, 36 D-rings, and 18 load binders. Position four lashings to be used later for securing the wooden box tops. Position the remaining 14 lashings, and fasten them immediately after they have been positioned on each pair of boxes. Fit all D-rings and close all load binders according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

### CAUTION

Positioning of the load binders is critical. Place the load binders exactly where shown.

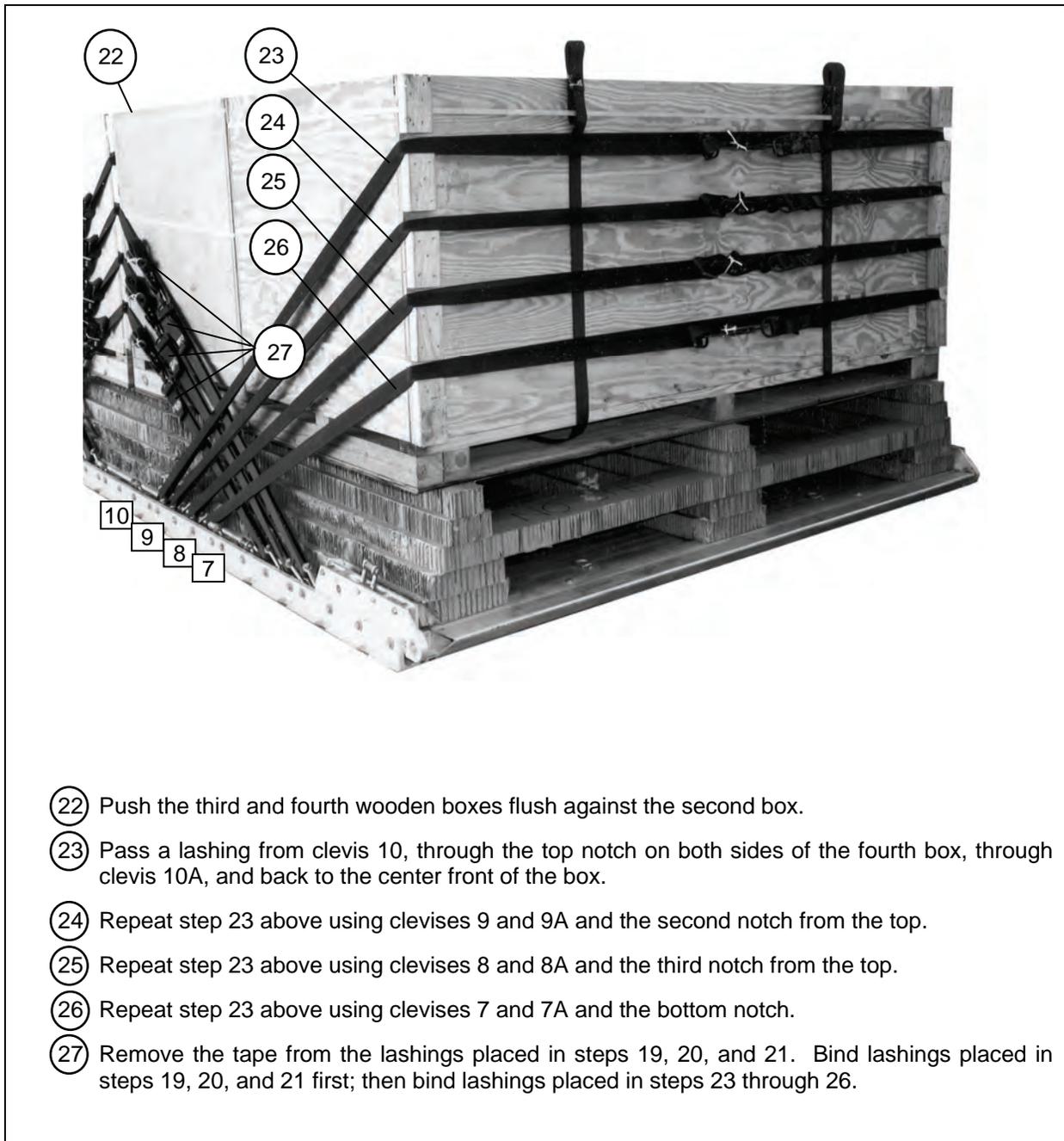


**Figure 5-5. Wooden Boxes Positioned and Lashed**



- ⑭ Position the third wooden box on top of the honeycomb with the notched side 24 inches from the front of the second box.
- ⑮ Position the fourth wooden box against the third box with the notched side facing the front of the platform (Not Shown).
- ⑯ Pass one lashing between the base and the floor of both boxes on the right side of the center 4- by 4- by 43 ½-inch lumber. (This pre-positioned lashing will be used to lash the wooden box tops.)
- ⑰ Repeat step 3 on the left side of the center 4- by 4- by 43 ½-inch lumber. (This pre-positioned lashing will be used to lash the wooden box tops.)
- ⑱ Fold the ends of the webbing, and tape the folds at the tops of the boxes.
- ⑲ Pass a lashing from clevis 2, through the second notch from the top on both sides of the third box, through clevis 2A, and back to the right side of the platform. Tape the lashing to the side of the box.
- ⑳ Repeat step 19 above using clevises 3 and 3A and the third notch from the top.
- ㉑ Repeat step 19 above using clevises 4 and 4A and the bottom notch.

**Figure 5-5. Wooden Boxes Positioned and Lashed (Continued)**



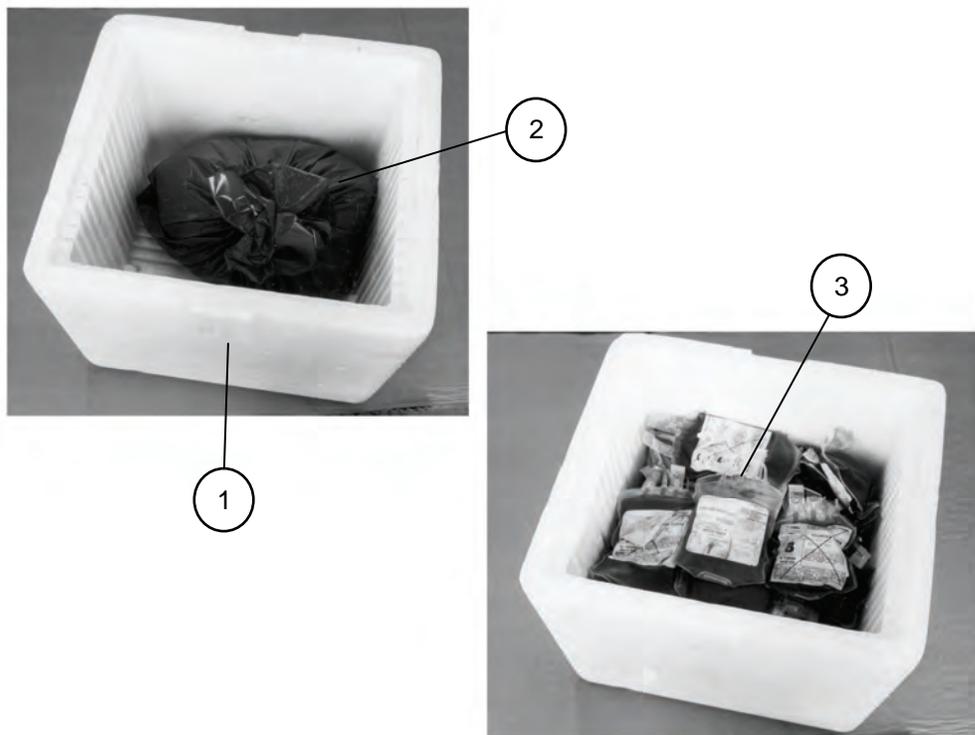
**Figure 5-5. Wooden Boxes Positioned and Lashed (Continued)**

## PACKING BLOOD IN CARDBOARD CONTAINERS

5-6. Pack whole blood in cardboard containers as shown in Figure 5-6. Eighty containers are required for this load.

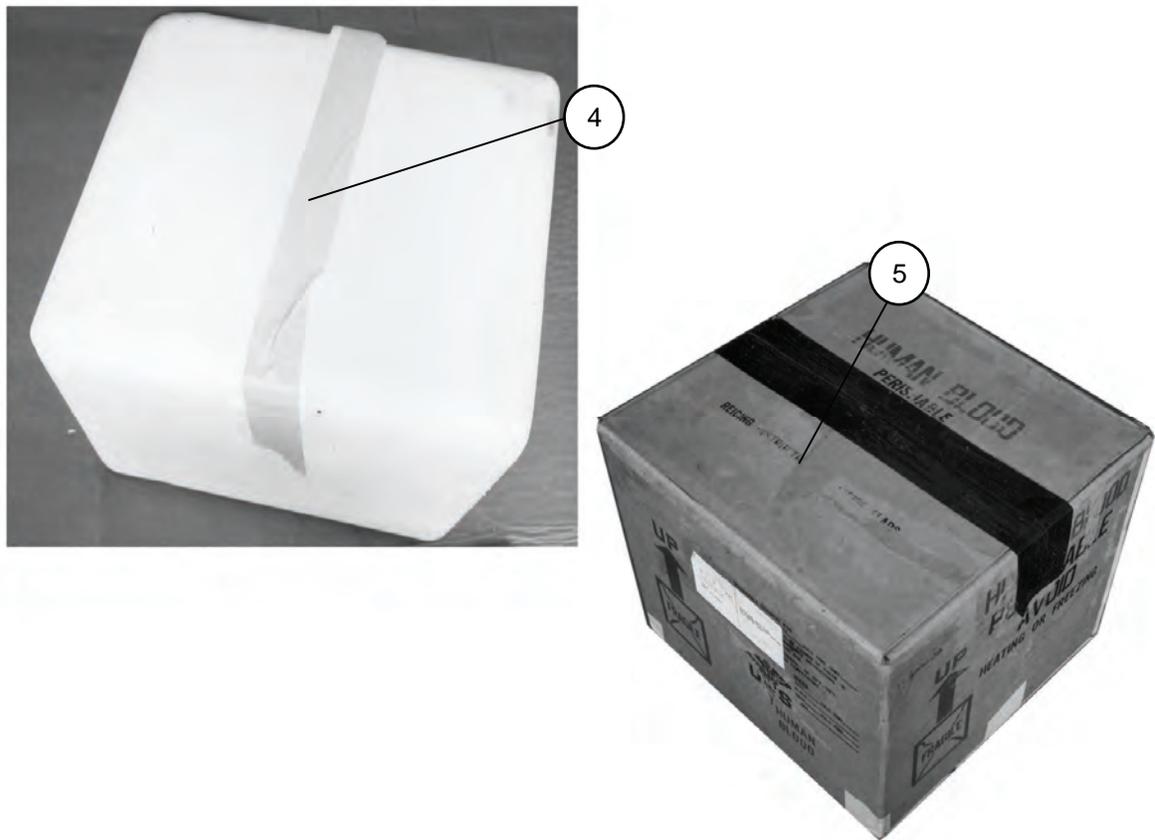
**CAUTION**

Because whole blood is a perishable item, there must be coordination between rigging personnel and medical personnel before the blood is shipped to the rigging site.



- ① Place one Styrofoam cooler on a flat, dry surface. Remove the cooler top.
- ② Put 12 to 14 pounds of ice in a double plastic bag. Seal the bag, and lay it in the bottom of the cooler.
- ③ Place 25 to 35 units of blood into the cooler on top of the ice.

**Figure 5-6. Blood Packed in Cardboard Containers**



- ④ Replace the cooler top. Secure the top with tape.
- ⑤ Place the cooler into a cardboard container. Tape the top closed at the seams.

**Note.** Hereafter, the cardboard containers packed with blood will be referred to as blood containers.

**Figure 5-6. Blood Packed in Cardboard Containers (Continued)**

## PACKING BLOOD CONTAINERS IN WOODEN BOXES

5-7. Once the blood containers are delivered to the rigging site, pack them in the wooden boxes as shown in Figure 5-7.

- Filling Wooden Boxes. Fill the wooden boxes with blood containers as shown in Figure 5-7.

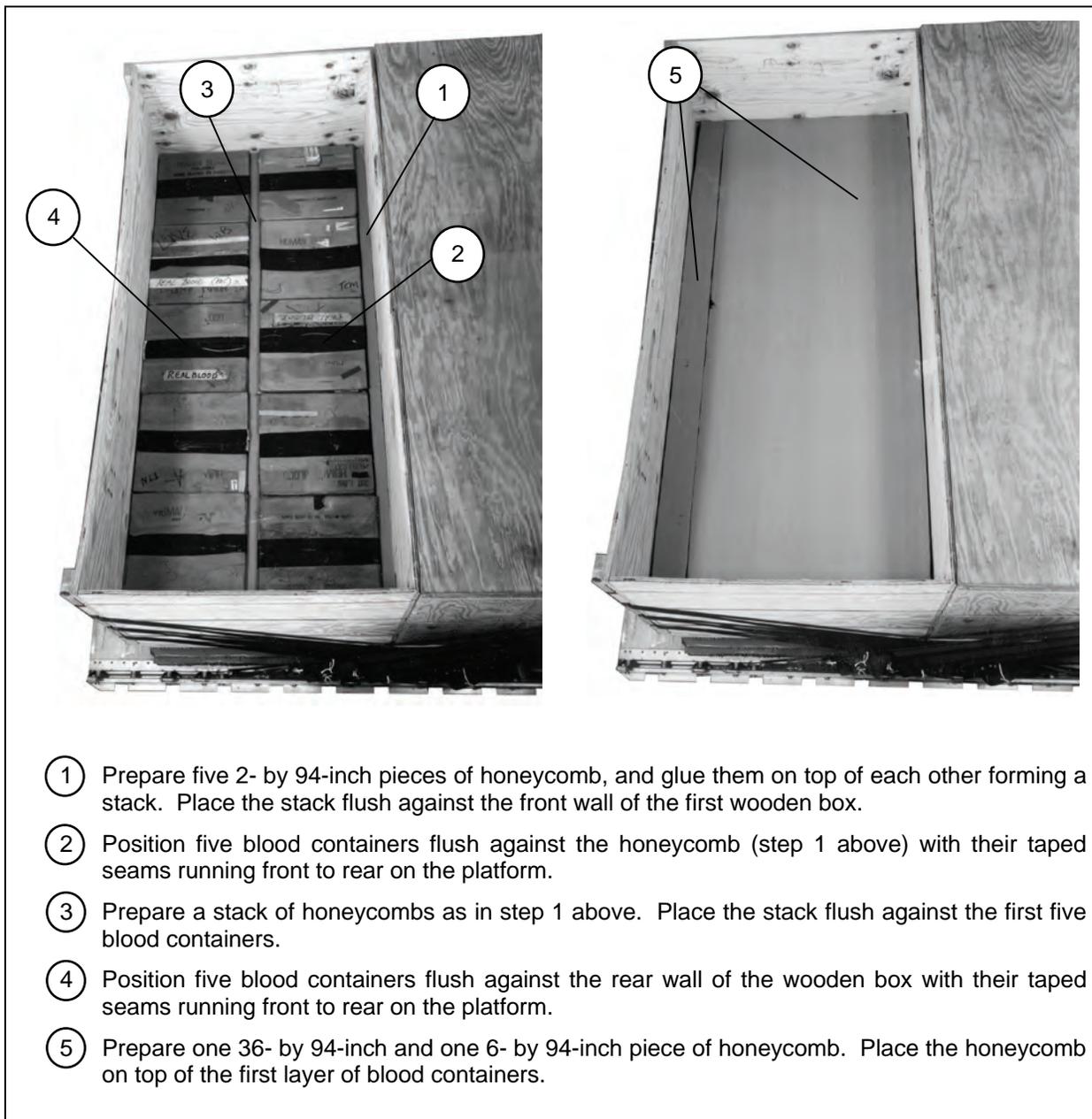


Figure 5-7. Wooden Box Filled with Blood Containers

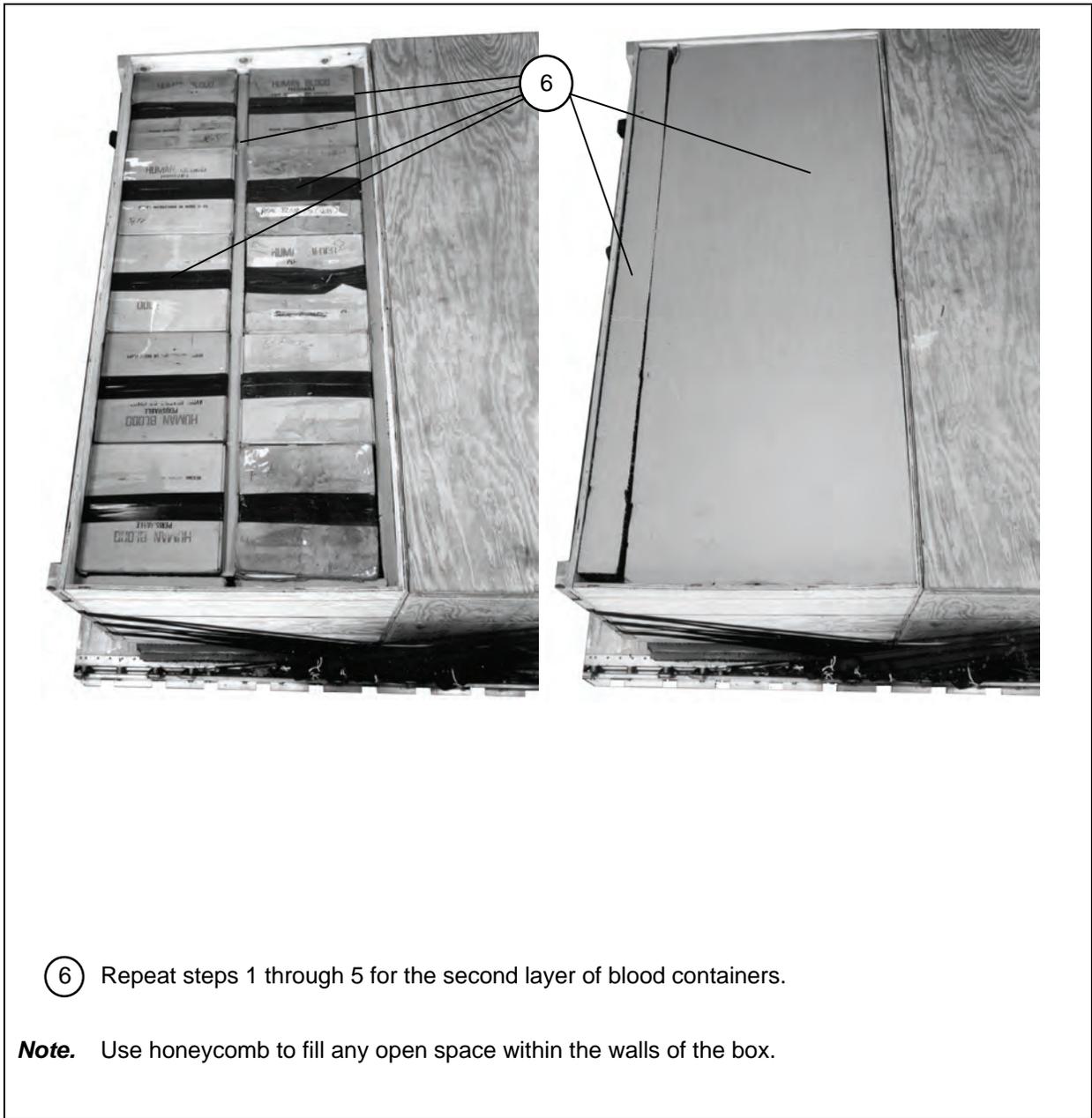
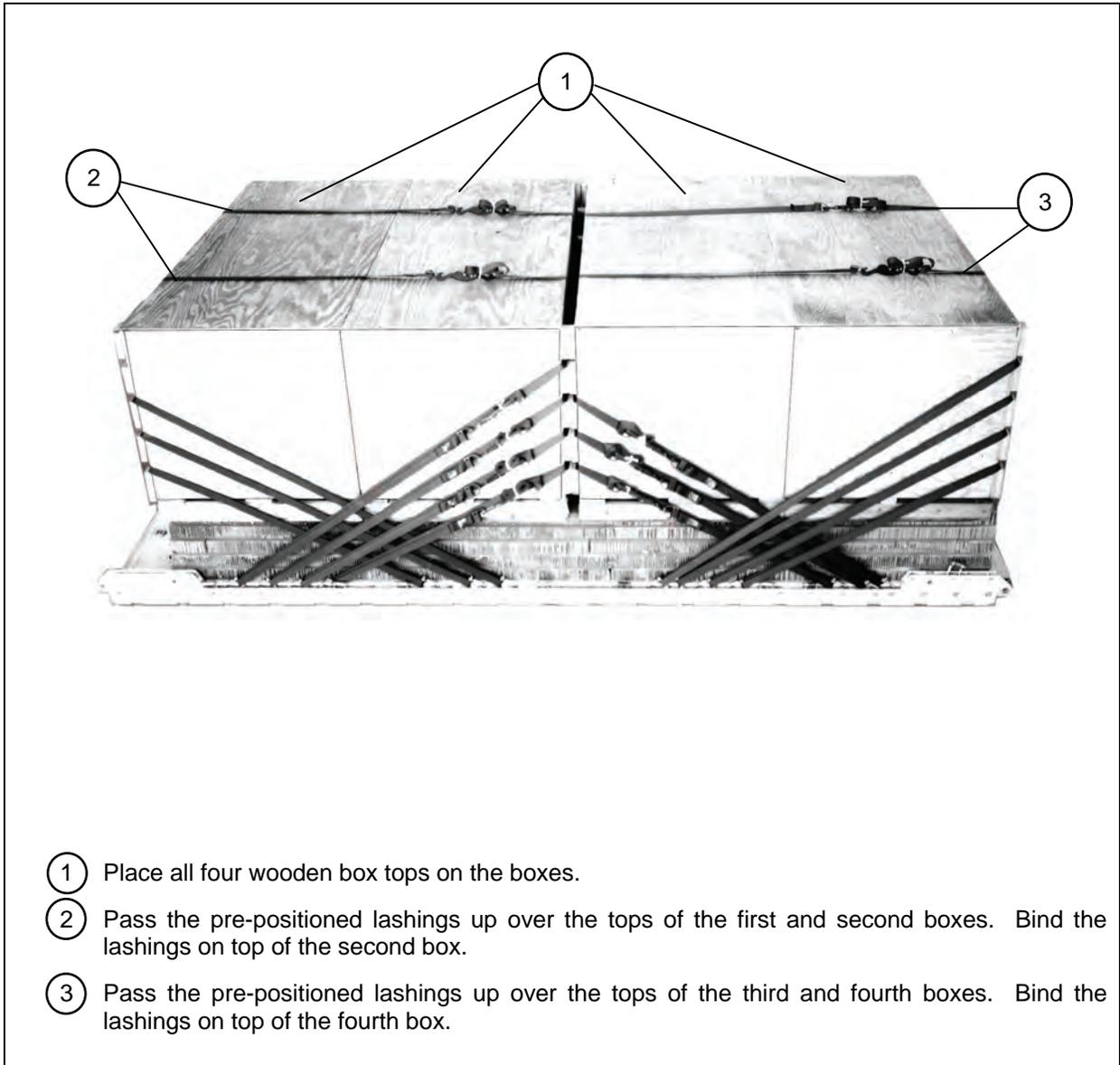


Figure 5-7. Wooden Box Filled with Blood Containers (Continued)

- Positioning and Lashing Wooden Box Tops. Position and lash the wooden box tops prepared as shown in Figure 5-8. Lash the wooden box tops in pairs using the four pre-positioned lashings from Figure 5-5. Fit all D-rings and close all load binders according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.



**Figure 5-8. Wooden Box Tops Positioned and Lashed**

- Positioning and Fastening Vertical Lashings. Position and fasten the vertical lashings as shown in Figure 5-9. Use eight 48 foot lengths of type X nylon webbing, and 16 D-rings, and 8 load binders. Fit all D-rings and close all load binders according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

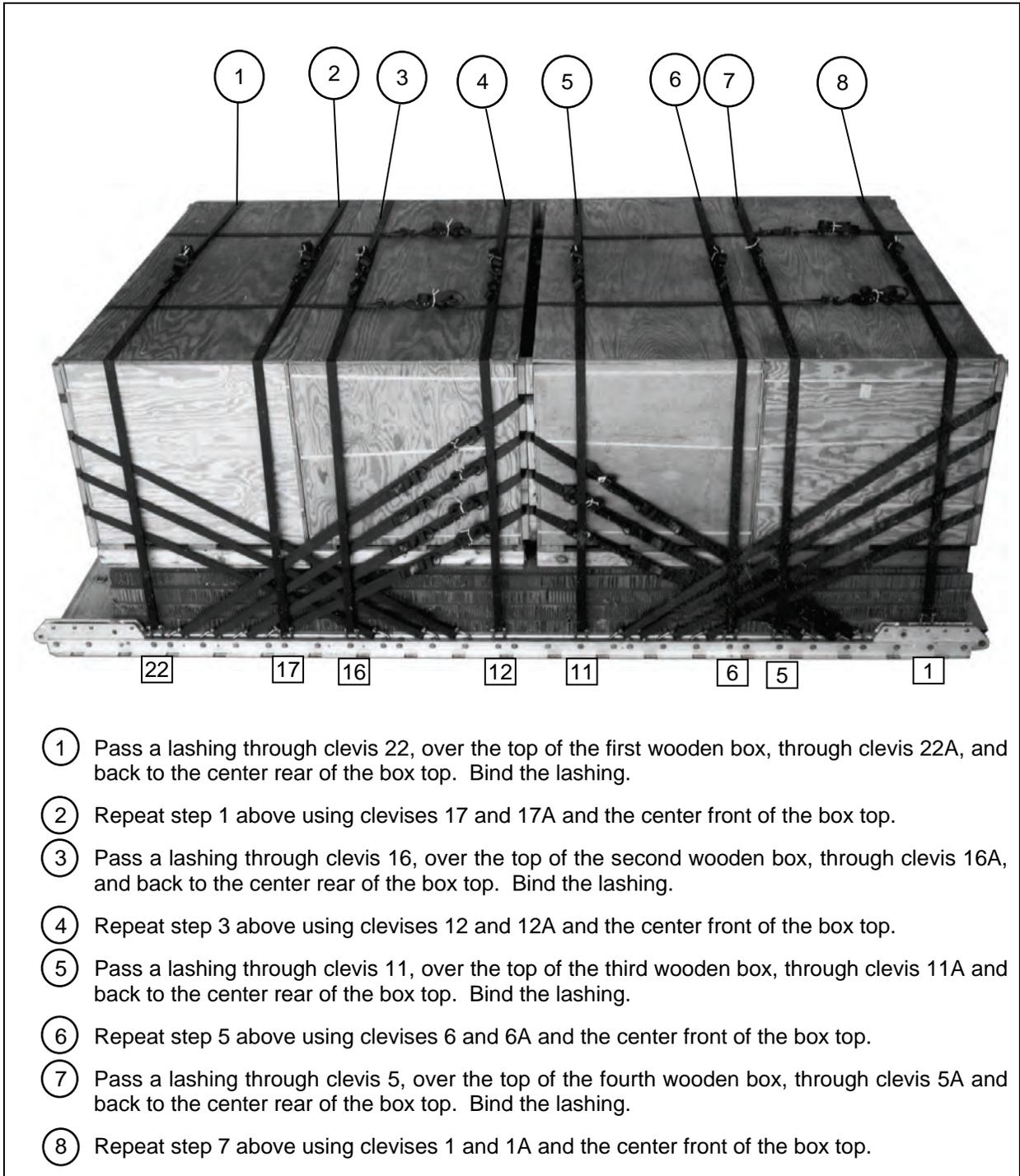


Figure 5-9. Vertical Lashings Positioned and Fastened

## INSTALLING SUSPENSION SLINGS

5-8. Use for large clevises and four 20-foot, (2-loop), type XXVI nylon webbing slings for suspension. Bolt and safety the slings as shown in Figure 5-10.

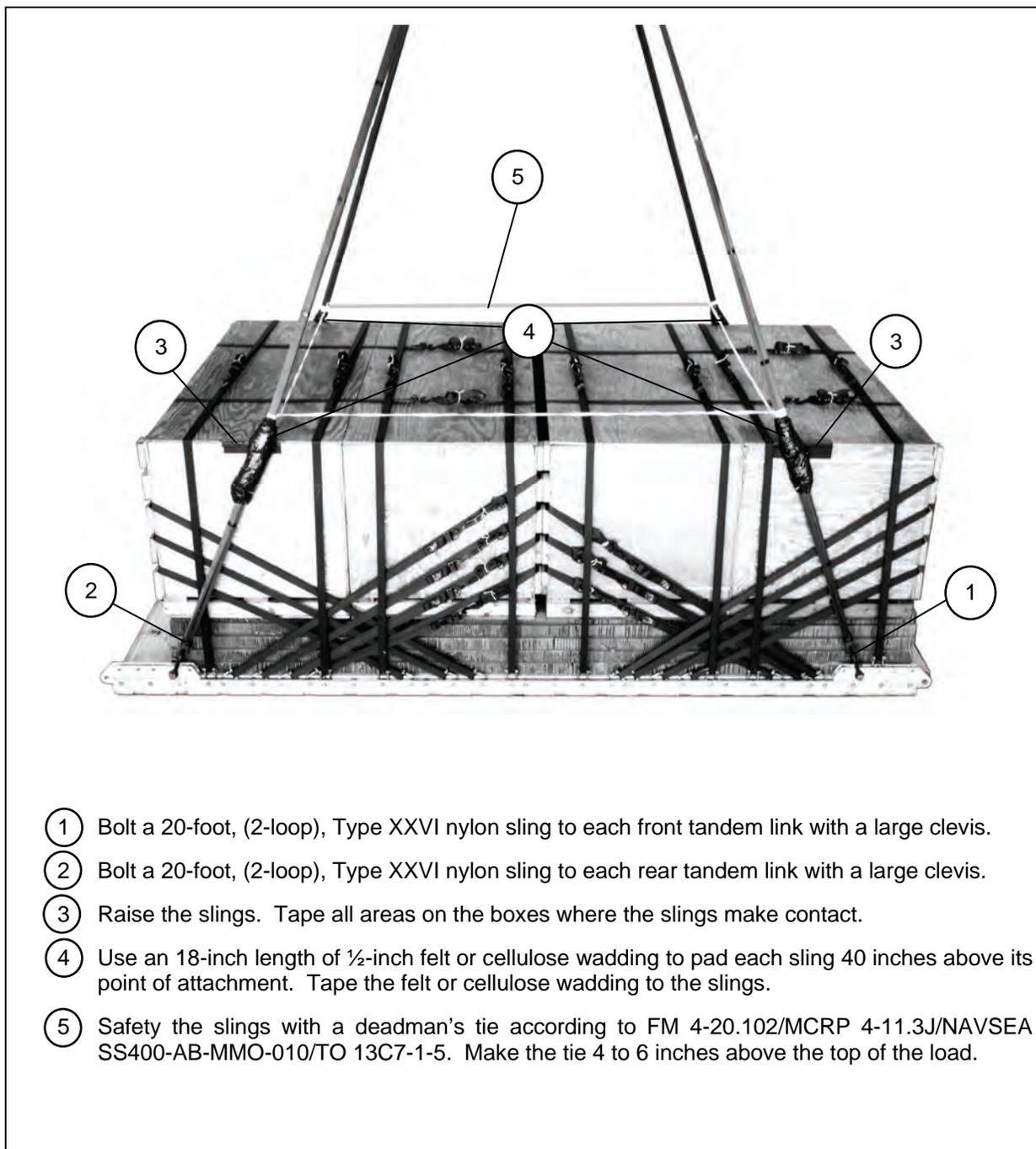
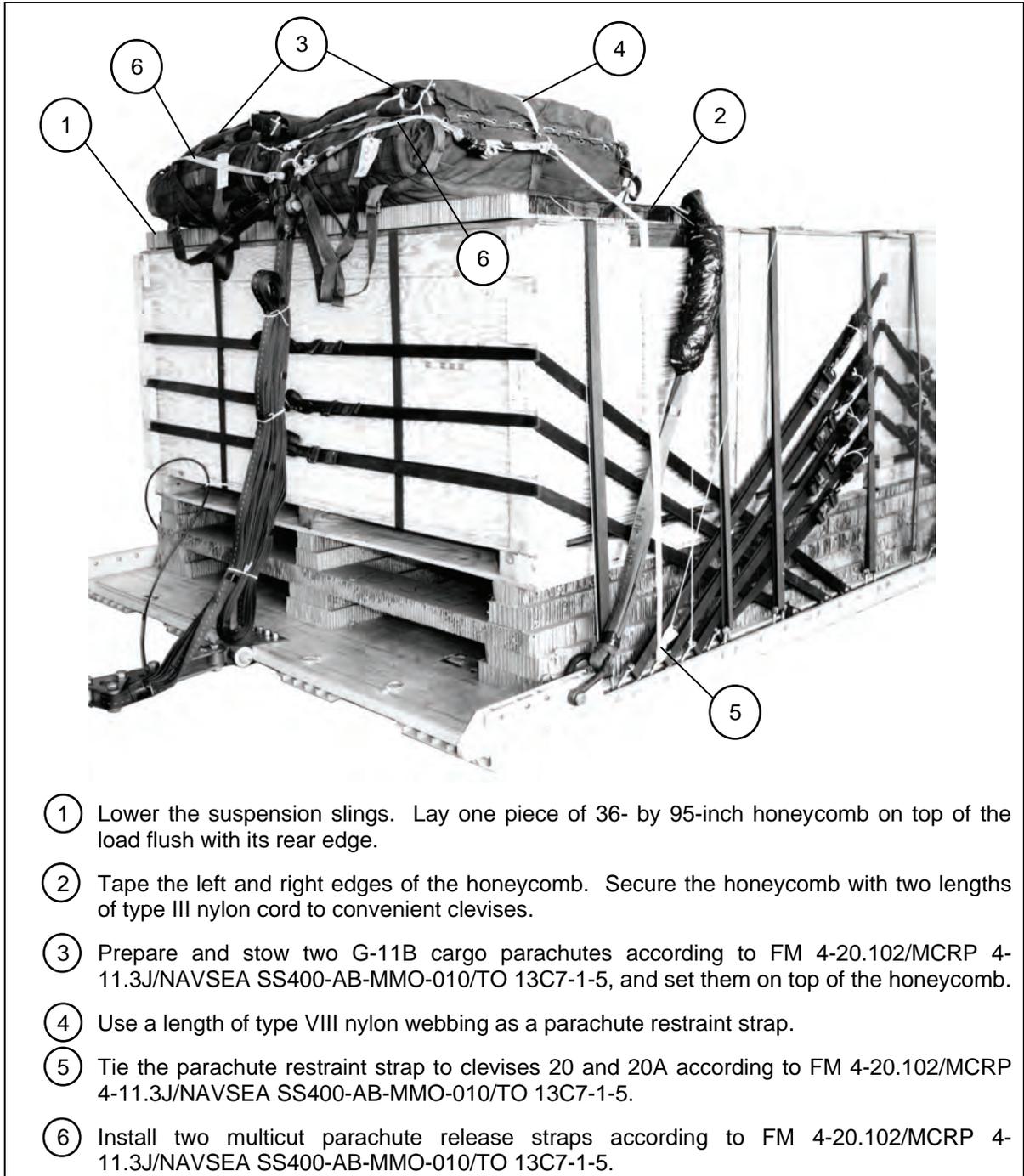


Figure 5-10. Suspension Slings Installed

## STOWING CARGO PARACHUTES

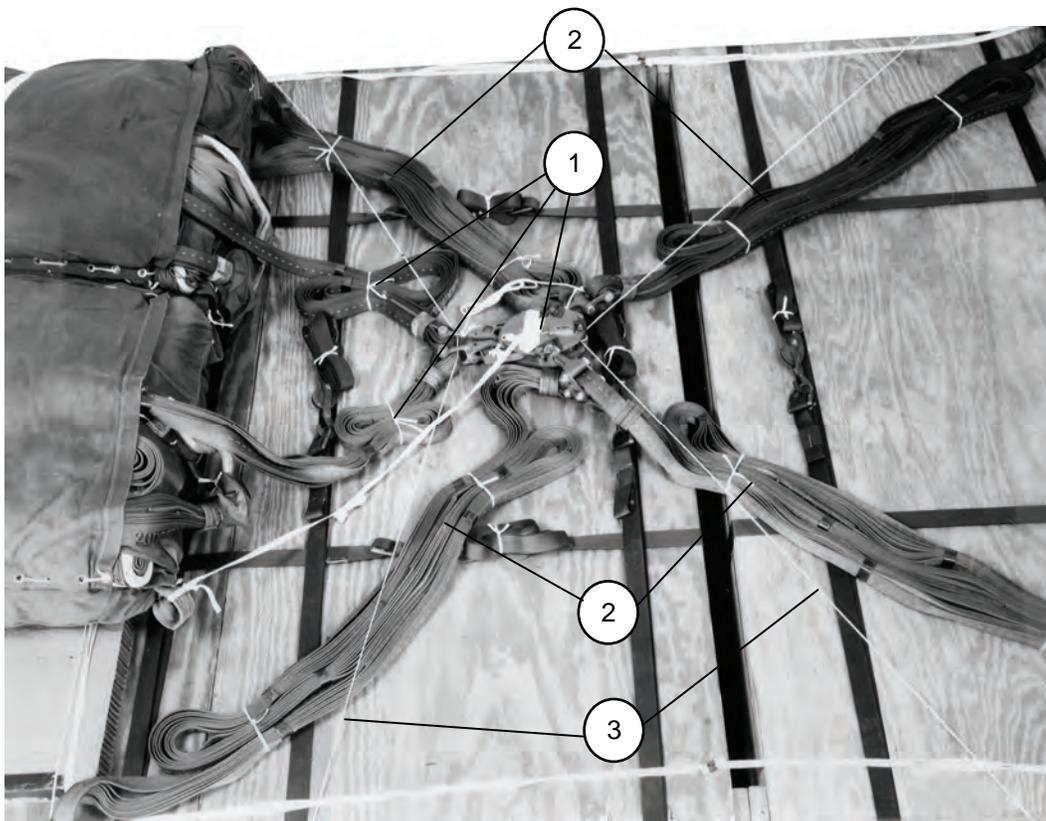
5-9. Stow the cargo parachutes as shown in Figure 5-11.



**Figure 5-11. Cargo Parachutes Stowed**

## INSTALLING RELEASE SYSTEM

5-10. Prepare, attach, and safety an M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 5-12.

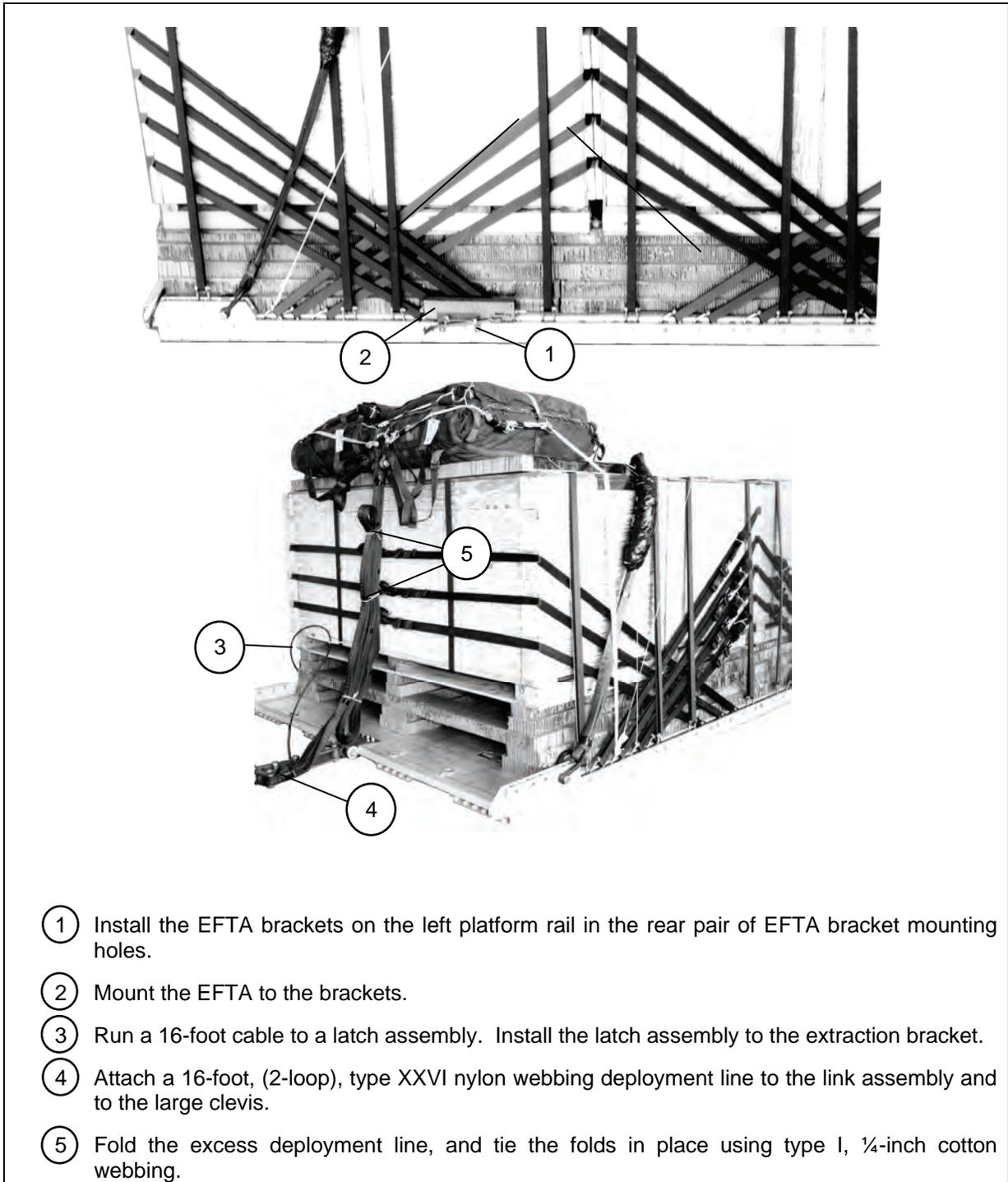


- ① Place the M-1 cargo parachute release on the plywood. S-fold the excess parachute risers and tie the folds in place with 80-pound cotton webbing according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② S-fold the excess suspension slings, and tie the folds in place with 80-pound cotton webbing.
- ③ Safety the M-1 release to clevises 2, 2A, 21, and 21A with type III nylon cord.

**Figure 5-12. M-1 Cargo Parachute Release Installed**

## INSTALLING EXTRACTION SYSTEM

5-11. Use the EFTC extraction system for this load. Install the system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 5-13.



**Figure 5-13. EFTC Extraction System and Emergency Restraint Clevises Installed**

## **PLACING EXTRACTION PARACHUTE**

5-12. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the extraction parachute and line on the road for installation in the aircraft.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

5-13. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **MARKING RIGGED LOAD**

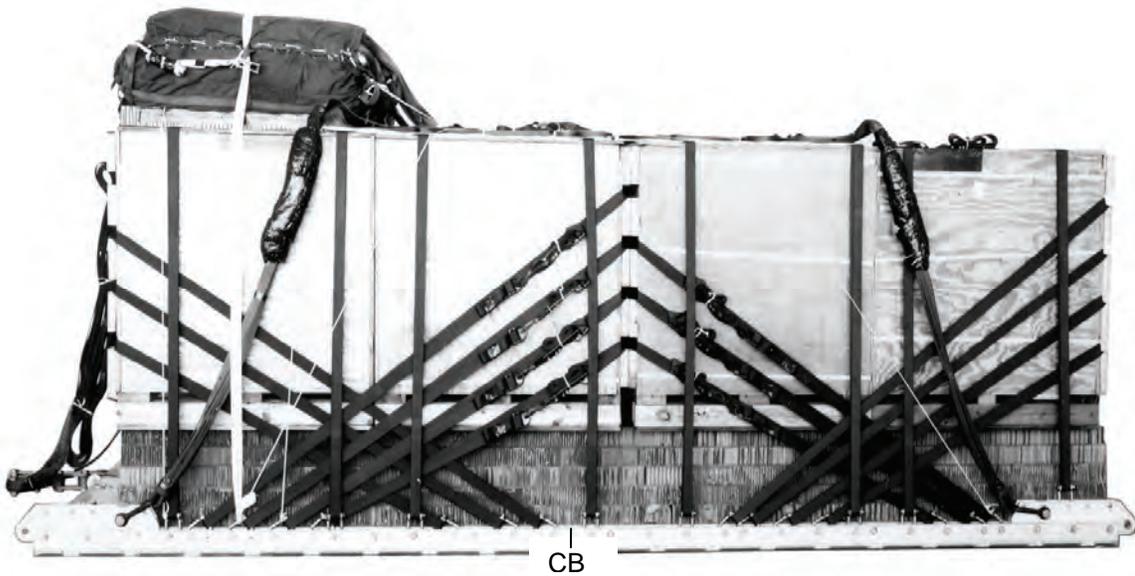
5-14. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5, and as shown in Figure 5-14. Complete Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

5-15. Use the equipment listed in Table 5-1 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight: Load shown.....	7,680 pounds
Maximum allowed.....	7,906 pounds
Height.....	80 inches
Width.....	108 inches
Length.....	212 inches
Overhang: Rear.....	20 inches
CB (from front edge of platform).....	100 inches

**Figure 5-14. Whole Blood Rigged for Low-Velocity Airdrop on a Type V Airdrop Platform**

**Table 5-1. Equipment Required for Rigging Whole Blood for Low-Velocity Airdrop on a Type V Platform**

<b>National Stock Number</b>	<b>Item</b>	<b>Quantity</b>
8040-00-273-8713	Adhesive, paste, 1-gal	As required
3990-00-937-0272	Binder, load, 10,000-lb	26
	Clevis, suspension:	
4030-00-678-8562	¾-in (medium)	2
4030-00-090-5354	1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer, w 16 f cable	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy duty, 10,000 lb	52
8305-00-958-3685	Felt, ½-in thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	1
	Line, extraction, type XXVI nylon webbing:	
1670-01-064-4452	60-ft, (1-loop)	1
1670-00-783-5988	Link assembly, type IV (for extraction line)	1
1610-00-220-6146	Lumber, 2- by 4-in by 8-ft	22
5510-00-220-6274	Lumber, 4-by 4- by 43 ½-in	20
	Nail, steel wire, common:	
5315-00-162-3151	4d	As required
5315-00-010-4657	6d	As required
5315-00-010-4659	8d	As required
5315-00-010-4661	10d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in:	22 sheets
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-00-052-1548	15-ft <u>or</u>	1
1670-01-063-3715	15-ft	1

**Table 5-1. Equipment Required for Rigging Whole Blood for Low-Velocity Airdrop on a Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Platform, airdrop, type V, 16-ft:	1
1670-01-162-2375	Bracket, inside EFTA	(1)
1670-01-162-2374	Bracket, outside EFTA	(1)
1670-01-162-2372	Clevis, load tiedown	(46)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-128-4981	Plywood, ¾-in:	
	39 ½- by 42-in	8
	39 ½- by 95 ½-in	8
	42- by 94-in	4
	43 ½- by 95 ½-in	8
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For deployment line:	
1670-01-063-7761	16-ft, (2-loop), type XXVI nylon webbing	1
	For riser extensions:	
1670-01-062-6302	20-ft, (2-loop), type XXVI nylon webbing	2
1670-01-062-6302	20-ft, (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap, parachute release, multicut, comes w 3 knives	2
8135-00-283-0667	Strapping, steel, 5/8-in	As required
7510-00-266-5016	Tape, adhesive, 2-in	As required
	Webbing:	
8305-00-268-2411	Cotton, 80 lb	As required
8305-00-082-2411	Nylon, tubular, ½-in, 1,000-lb, natural	As required
8305-00-263-3591	Nylon, type VIII, 3,600-lb	As required
8305-00-261-8584	Nylon, type X, treated, 8,700-lb, olive drab	As required

## SECTION II – RIGGING ONE BLOOD CONTAINER IN AN A-7A OR A-21 CONTAINER FOR DOOR DROP

### DESCRIPTION OF LOAD

5-16. Whole blood is rigged in a two-strap, A-7A container. The load is rigged on a skid board and two layers of honeycomb.

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*Note.* If an A-7A container is unavailable, substitute an A-21 container. Secure the container according to FM 4-20.103/TO 13C-1-11.

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### PACKING BLOOD IN CARDBOARD CONTAINER

5-17. Pack whole blood in a cardboard container as described in paragraph 5-6. Only one container is required for this load.

### RIGGING LOAD

5-18. Rig one blood container as shown in Figure 5-15.

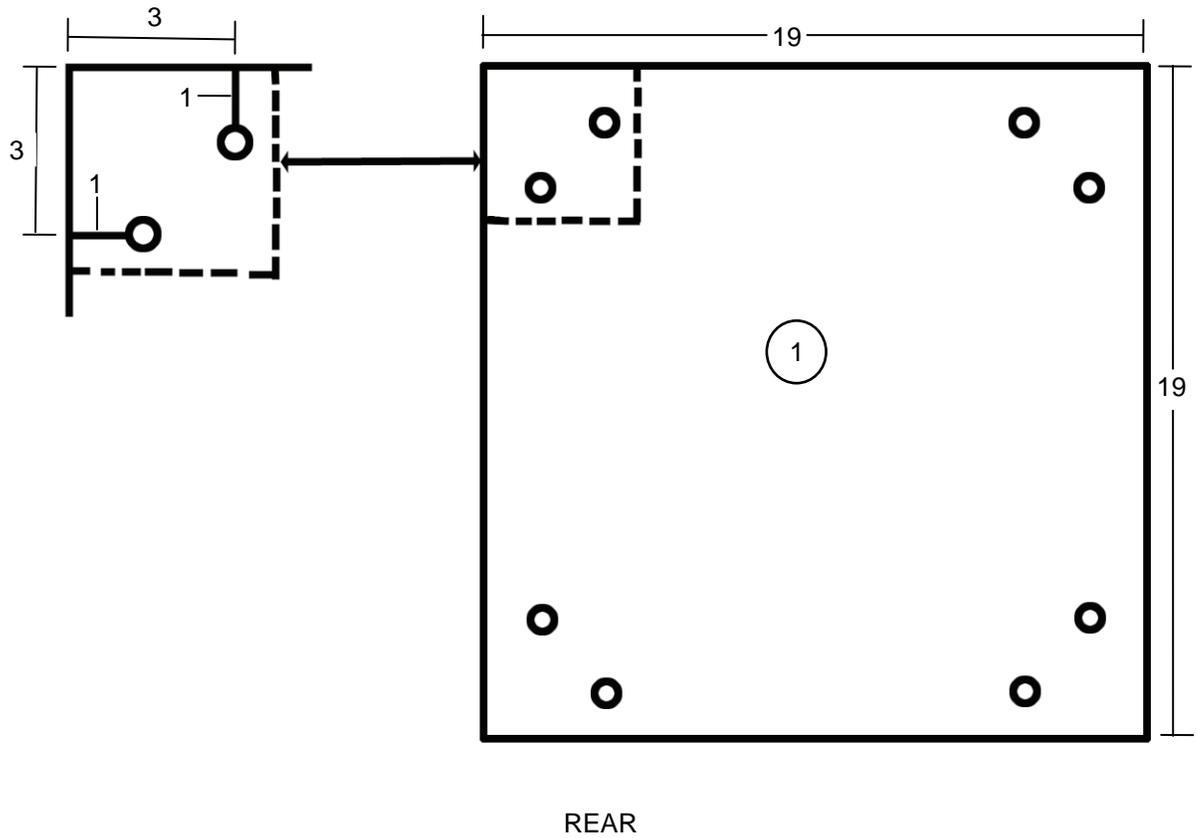
#### CAUTION

Make sure the load meets the 11-pounds-per-square foot requirements according to FM 4-20.103/TO 13C-1-11.

### STOWING CARGO PARACHUTES

5-19. Weigh the rigged container. Select, pack, and stow the correct cargo parachutes for this load as described in FM 4-20.103/TO 13C-1-11.

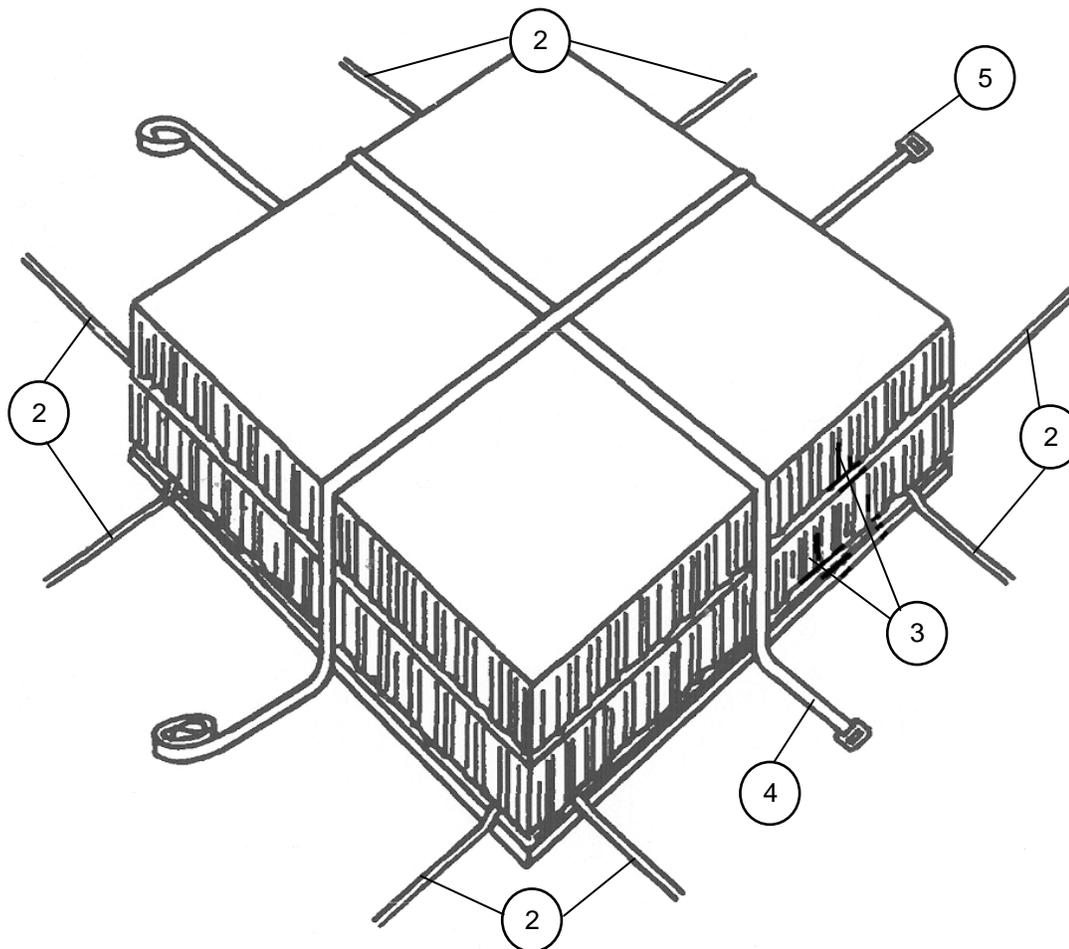
- Notes.** 1. This drawing is not drawn to scale.  
2. All holes are ½ inch in diameter.  
3. All dimensions are given in inches.



- ① Prepare a skid board as shown using ½-inch plywood.

**Figure 5-15. One Blood Container Rigged**

**Note.** This drawing is not drawn to scale.



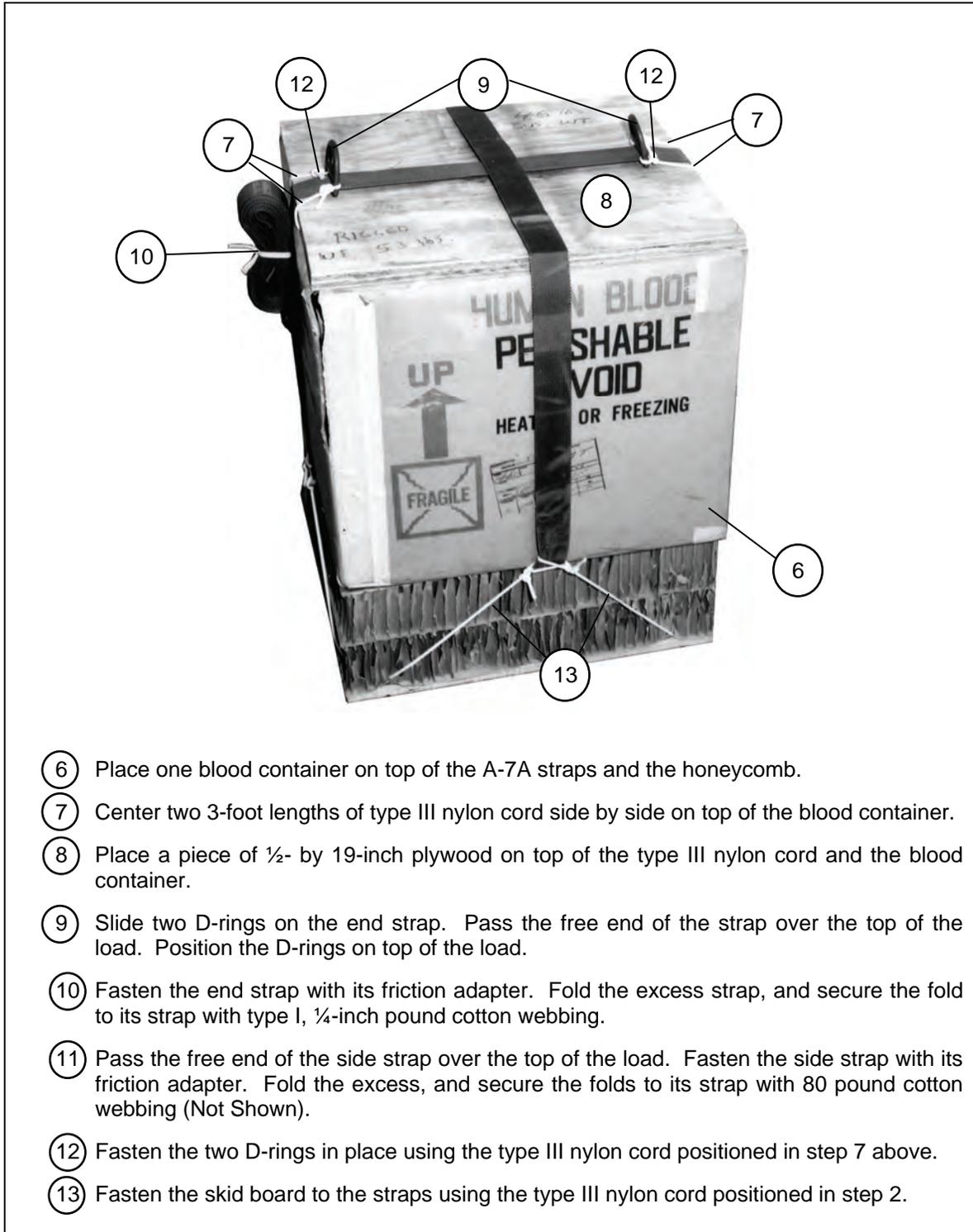
- ② Pass one 3-foot length of type III nylon cord through each set of holes in each corner of the skid board.
- ③ Cut two 19- by 19-inch pieces of honeycomb, and glue them together forming two layers. Glue the honeycomb to the skid board.

**CAUTION**

Make sure the honeycomb is glued to the skid board to prevent the blood container from sliding off the pallet upon impact and causing damage to the Styrofoam container.

- ④ Lay one A-7A strap across the center of the honeycomb. Make sure the large lip portion of the friction adapter is down.
- ⑤ Lay a second A-7A strap across the opposite side of the honeycomb in the center. Make sure the lip portion of the friction adapter is down.

**Figure 5-15. One Blood Container Rigged (Continued)**



- ⑥ Place one blood container on top of the A-7A straps and the honeycomb.
- ⑦ Center two 3-foot lengths of type III nylon cord side by side on top of the blood container.
- ⑧ Place a piece of ½- by 19-inch plywood on top of the type III nylon cord and the blood container.
- ⑨ Slide two D-rings on the end strap. Pass the free end of the strap over the top of the load. Position the D-rings on top of the load.
- ⑩ Fasten the end strap with its friction adapter. Fold the excess strap, and secure the fold to its strap with type I, ¼-inch pound cotton webbing.
- ⑪ Pass the free end of the side strap over the top of the load. Fasten the side strap with its friction adapter. Fold the excess, and secure the folds to its strap with 80 pound cotton webbing (Not Shown).
- ⑫ Fasten the two D-rings in place using the type III nylon cord positioned in step 7 above.
- ⑬ Fasten the skid board to the straps using the type III nylon cord positioned in step 2.

**Figure 5-15. One Blood Container Rigged (Continued)**

## MARKING RIGGED LOAD

5-20. Mark the rigged load according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11. The rigged load data must be computed for this load. The rigged weight range for this load is 75 to 100 pounds.

### CAUTION

Make the final rigger inspection required by FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11 before the load leaves the rigging site.

## EQUIPMENT REQUIRED

5-21. Use the equipment listed in Table 5-2 to rig this load.

**Table 5-2. Equipment Required for Rigging One Blood Container for Low-Velocity Airdrop in an A-7A Container**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1 gal	As required
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in:	1 sheet
5530-00-129-7777	19- by 19-in	(2)
1670-00-251-0053	Parachute cargo	As required
7510-00-266-5016	Plywood, ½- by 19- by 19-in	2
8305-00-268-2411	*Sling assembly, cargo, airdrop, A-7A	1
	Tape, adhesive, 2-in	As required
	Webbing, cotton, 80 lb	As required

\*If the A-7A sling assembly is not available, use the A-21 cargo bag (NSN 1670-00-242-9173).

## SECTION III – RIGGING TWO BLOOD CONTAINERS IN AN A-7A OR A-21 CONTAINER FOR DOOR DROP

### DESCRIPTION OF LOAD

5-22. Whole blood is rigged in a three-strap, A-7A container. The load is rigged on a skid board and two layers of honeycomb.

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*Note.* If an A-7A container is unavailable, substitute an A-21 container. Secure the container according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

---

### PACKING BLOOD IN CARDBOARD CONTAINERS

5-23. Pack whole blood in cardboard containers as described in paragraph 5-6. Two containers are required for this load.

### RIGGING LOAD

5-24. Rig two blood containers as shown in Figure 5-16.

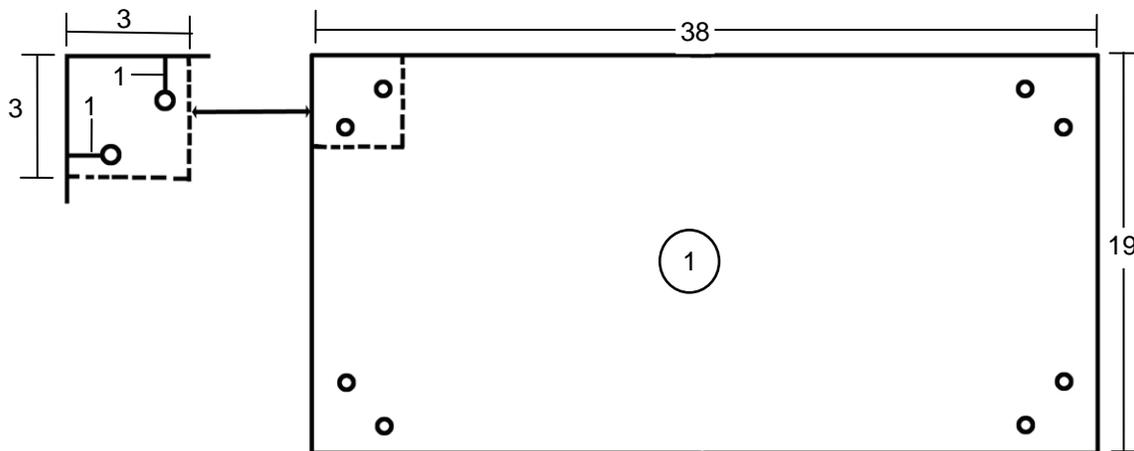
#### CAUTION

Make sure the load meets the 28 pounds-per-square-foot requirement according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

### STOWING CARGO PARACHUTES

5-25. Weigh the rigged blood containers. Select, pack, and stow the correct cargo parachutes for this load as described in FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

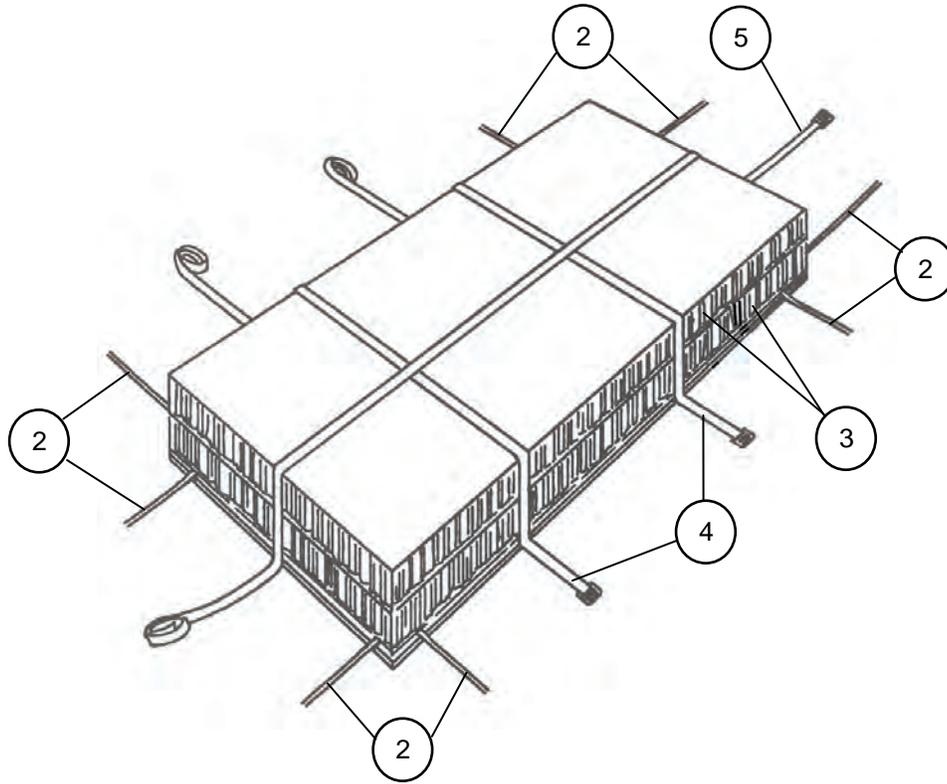
- Notes.** 1. This drawing is not drawn to scale.  
2. All holes are ½ inch in diameter.  
3. All dimensions are given in inches.



- ① Prepare a skid board as shown using ½-inch plywood.

**Figure 5-16. Two Blood Containers Rigged**

**Note.** This drawing is not drawn to scale.



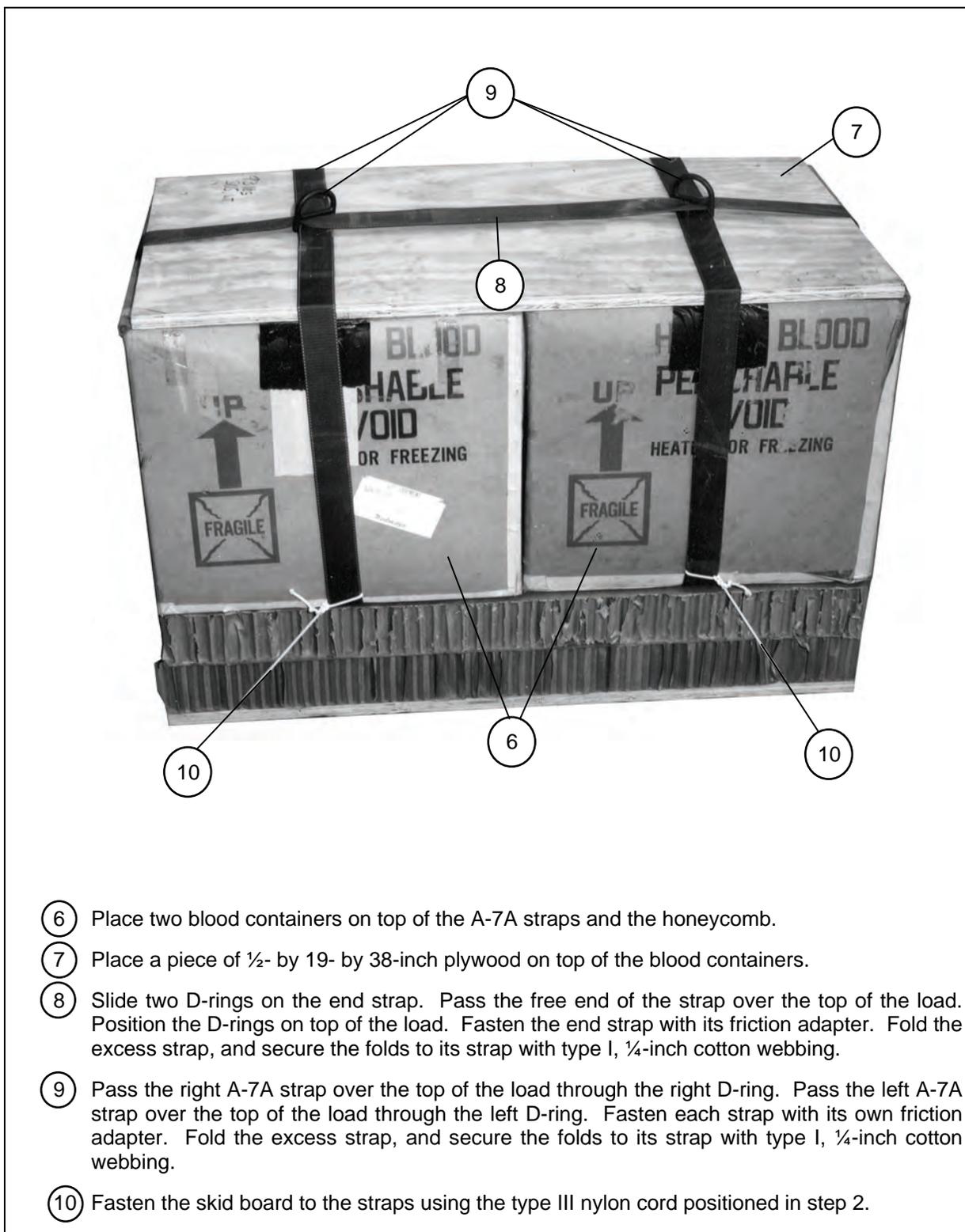
- ② Pass one 3-foot length of type III nylon cord through each set of holes in each corner of the skid board.
- ③ Cut two 19- by 38-inch pieces of honeycomb, and glue them together by forming two layers. Glue the honeycomb to the skid board.

**CAUTION**

Make sure the honeycomb is glued to the skid board to prevent the blood containers from sliding off the pallet upon impact and causing damage to the Styrofoam containers.

- ④ Place two A-7A straps across the 38 inch sides of the honeycomb with the straps parallel to each other (16 inches apart). Make sure the lip portions of the friction adapters are down.
- ⑤ Lay a third A-7A strap across the opposite sides of the honeycomb in the center.

**Figure 5-16. Two Blood Containers Rigged (Continued)**



- ⑥ Place two blood containers on top of the A-7A straps and the honeycomb.
- ⑦ Place a piece of ½- by 19- by 38-inch plywood on top of the blood containers.
- ⑧ Slide two D-rings on the end strap. Pass the free end of the strap over the top of the load. Position the D-rings on top of the load. Fasten the end strap with its friction adapter. Fold the excess strap, and secure the folds to its strap with type I, ¼-inch cotton webbing.
- ⑨ Pass the right A-7A strap over the top of the load through the right D-ring. Pass the left A-7A strap over the top of the load through the left D-ring. Fasten each strap with its own friction adapter. Fold the excess strap, and secure the folds to its strap with type I, ¼-inch cotton webbing.
- ⑩ Fasten the skid board to the straps using the type III nylon cord positioned in step 2.

Figure 5-16. Two Blood Containers Rigged (Continued)

## MARKING RIGGED LOAD

5-26. Mark the rigged load according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11. The rigged load data must be computed for this load. The rigged weight range for this load is 150 to 175 pounds.

### CAUTION

Make the final rigger inspection required by FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11 before the load leaves the rigging site.

## EQUIPMENT REQUIRED

5-27. Use the equipment listed in Table 5-3 to rig this.

**Table 5-3. Equipment required for rigging two blood containers for low-velocity airdrop in an A-7A container**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1 gal	As required
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-753-3925	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in: 19- by 38-in	1 sheet (2)
	Parachute, cargo	As required
5530-00-129-7777	Plywood, ½- by 19- by 38-in	2
1670-00-251-1153	*Sling assembly, cargo, airdrop, A-7A	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
8305-00-268-2411	Webbing, cotton, 80 lb	As required
*If the A-7A sling assembly is not available, use the A-21 cargo bag (NSN 1670-00-242-9173).		

## SECTION IV – RIGGING FOUR BLOOD CONTAINERS IN AN A-71 OR A-21 CONTAINER FOR DOOR DROP

### DESCRIPTION OF LOAD

5-28. Whole blood is rigged in a three-strap, A-7A container. The load is rigged on a skid board and two layers of honeycomb.

---

*Note.* If an A-7A container is unavailable, substitute an A-21 container. Secure the container according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

---

### PACKING BLOOD IN CARDBOARD CONTAINERS

5-29. Pack whole blood in cardboard containers as described in paragraph 5-6. Four containers are required for this load.

### RIGGING LOAD

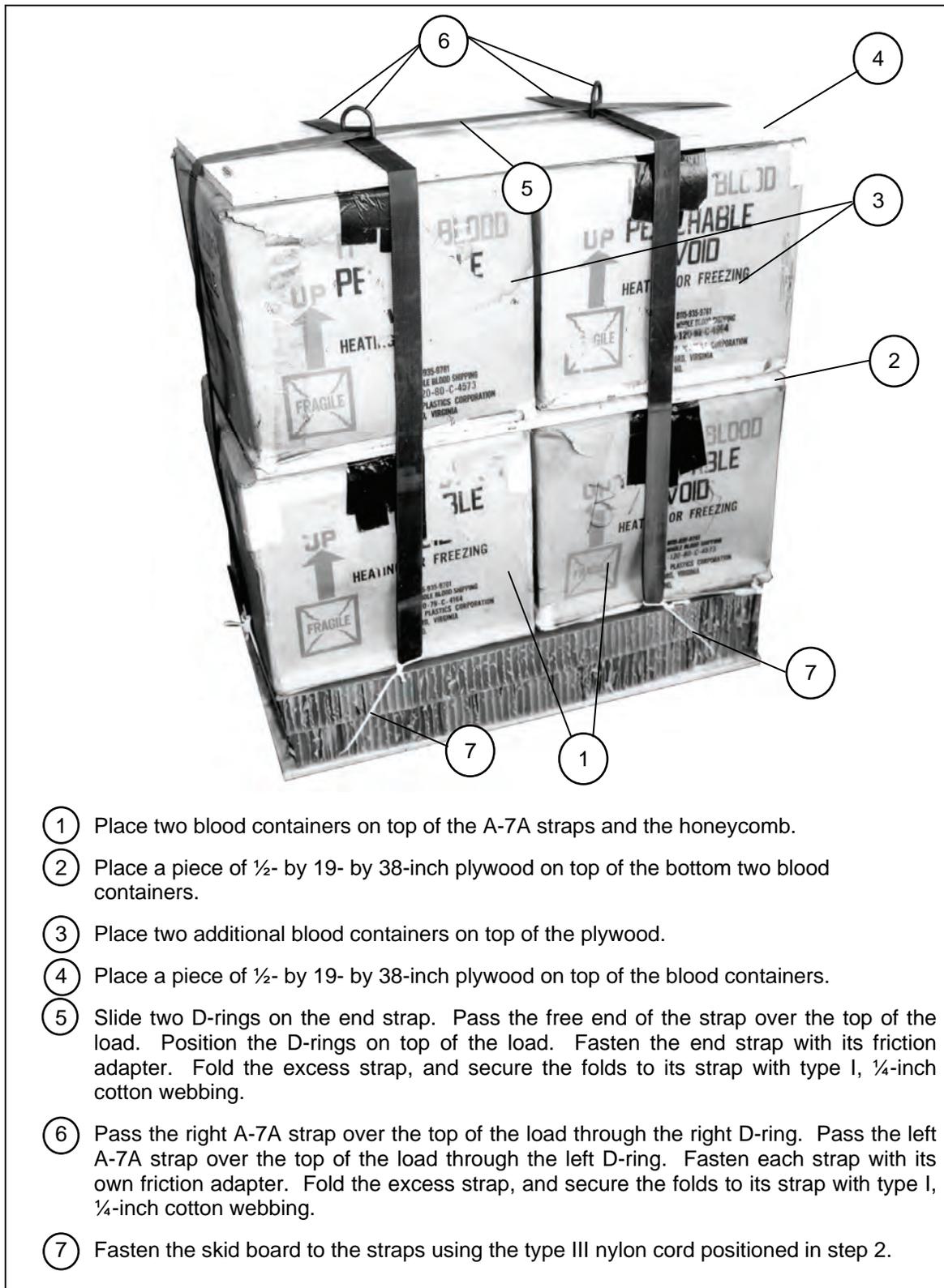
5-30. Prepare the skid board and honeycomb as shown in Figure 5-16, steps 1 through 5 and rig four blood containers as shown in Figure 5-17.

#### CAUTION

Make sure the load meets the 11-pounds-per-square-foot requirement according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

### STOWING CARGO PARACHUTES

5-31. Weigh the rigged blood container. Select, pack, and stow the correct cargo parachutes for this load as described in FM 4-20.103/MCRP 4-11.3C TO 13C-1-11.



**Figure 5-17. Four Blood Containers Rigged**

## MARKING RIGGED LOAD

5-32. Mark the rigged load according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11. The rigged load data must be computed for this load. The rigged weight range for this load is 290 to 300 pounds.

### CAUTION

Make the final rigger inspection required by FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11 before the load leaves the rigging site.

## EQUIPMENT REQUIRED

5-33. Use the equipment listed in Table 5-4 to rig this load.

**Table 5-4. Equipment required for rigging four blood containers for low-velocity airdrop in an A-7A container**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive, paste, 1 gal	As required
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in: 19- by 38-in	1 sheet (2)
	Parachute, cargo	As required
5530-00-129-7777	Plywood, 1/2- by 19- by 38-in	3
1670-00-251-1153	*Sling assembly, cargo, airdrop, A-7A	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
8305-00-268-2411	Webbing, cotton, 80 lb	As required

\*If the A-7A sling assembly is not available, use the A-21 cargo bag (NSN 1670-00-242-9173).

## **SECTION V – RIGGING TWELVE BLOOD CONTAINERS IN AN A-22 CONTAINER**

### **CAUTION**

See FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11 for CVR information and procedures.

### **DESCRIPTION OF LOAD**

5-34. Whole blood is rigged in an A-22 container. The load is rigged with one G-12 cargo parachute.

### **PACKING BLOOD IN CARDBOARD CONTAINERS**

5-35. Pack whole blood in cardboard containers as described in paragraph 5-6. Twelve containers are required for this load.

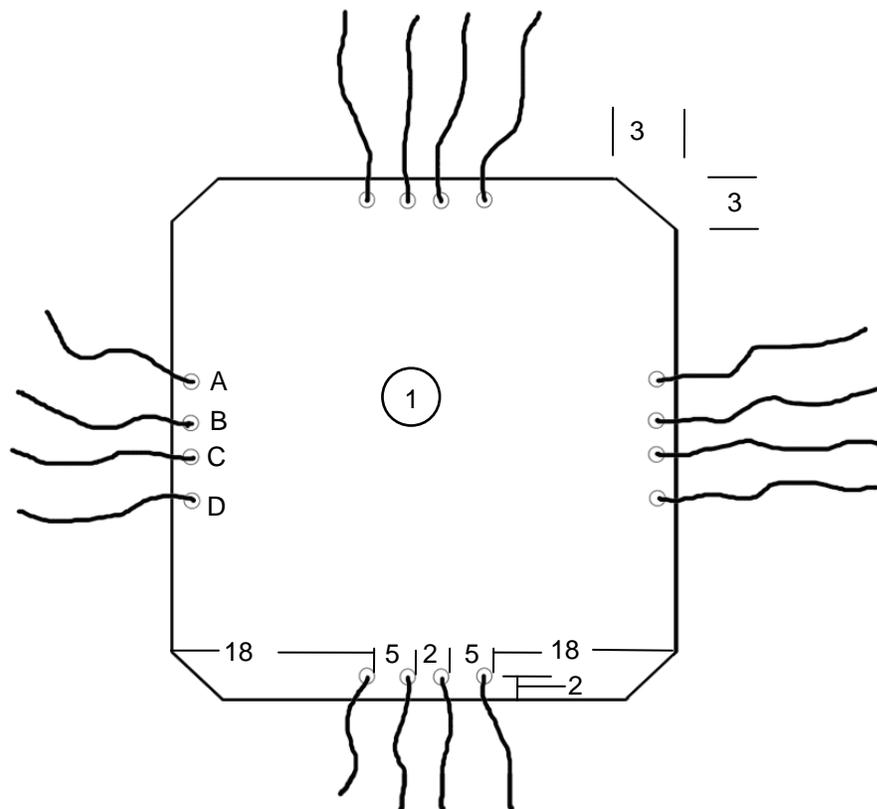
### **RIGGING LOAD**

5-36. Rig twelve blood containers as shown in Figure 5-18.

### **CAUTION**

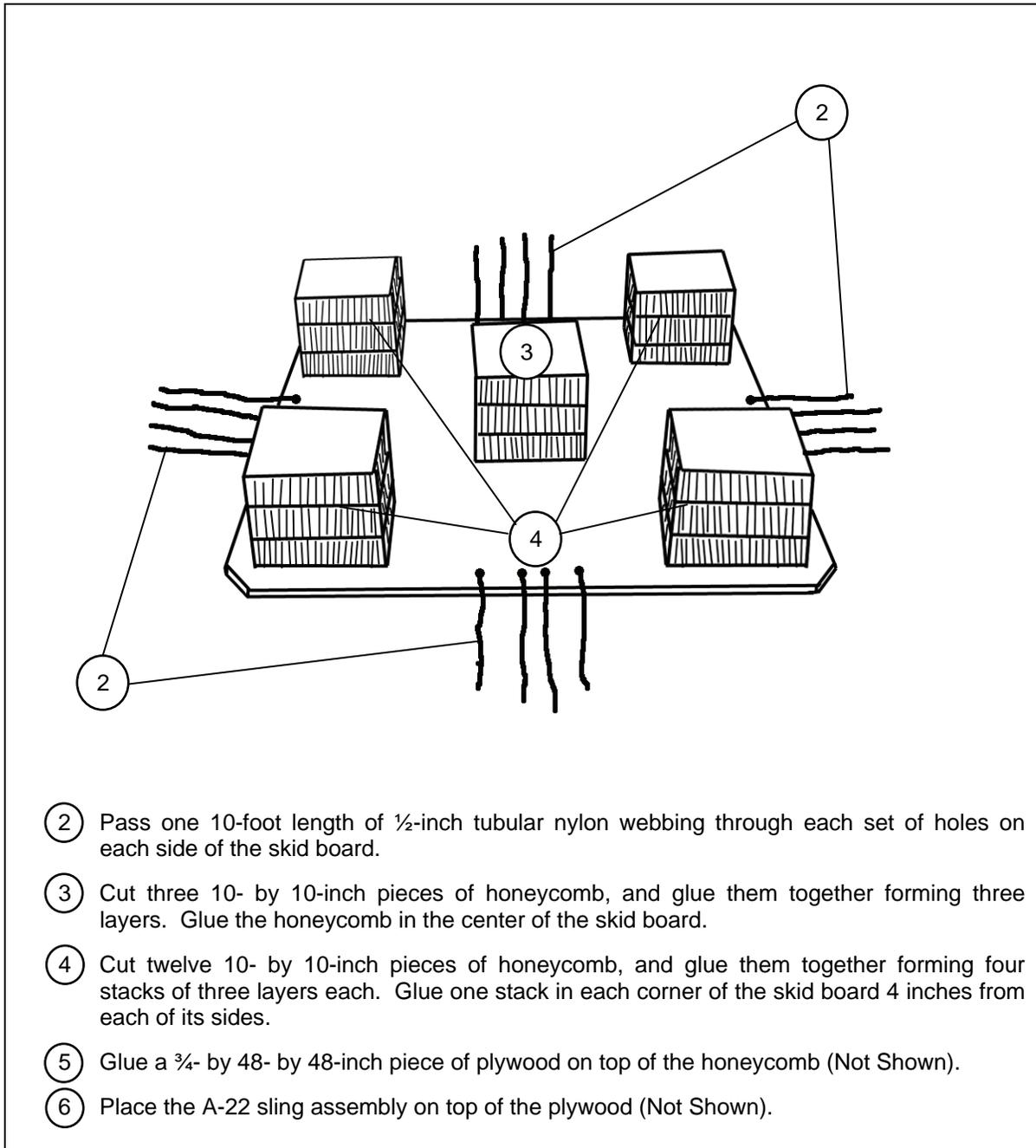
Make sure the load meets the 28-pounds-per-square-foot requirement according to FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

- Notes.**
1. This drawing is not drawn to scale.
  2. All holes are  $\frac{1}{2}$  inch in diameter.
  3. All dimensions are given in inches.



- ① Prepare a skid board as shown in FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11 using  $\frac{3}{4}$  inch plywood.

**Figure 5-18. Twelve Blood Containers Rigged**



**Figure 5-18. Twelve Blood Containers Rigged (Continued)**

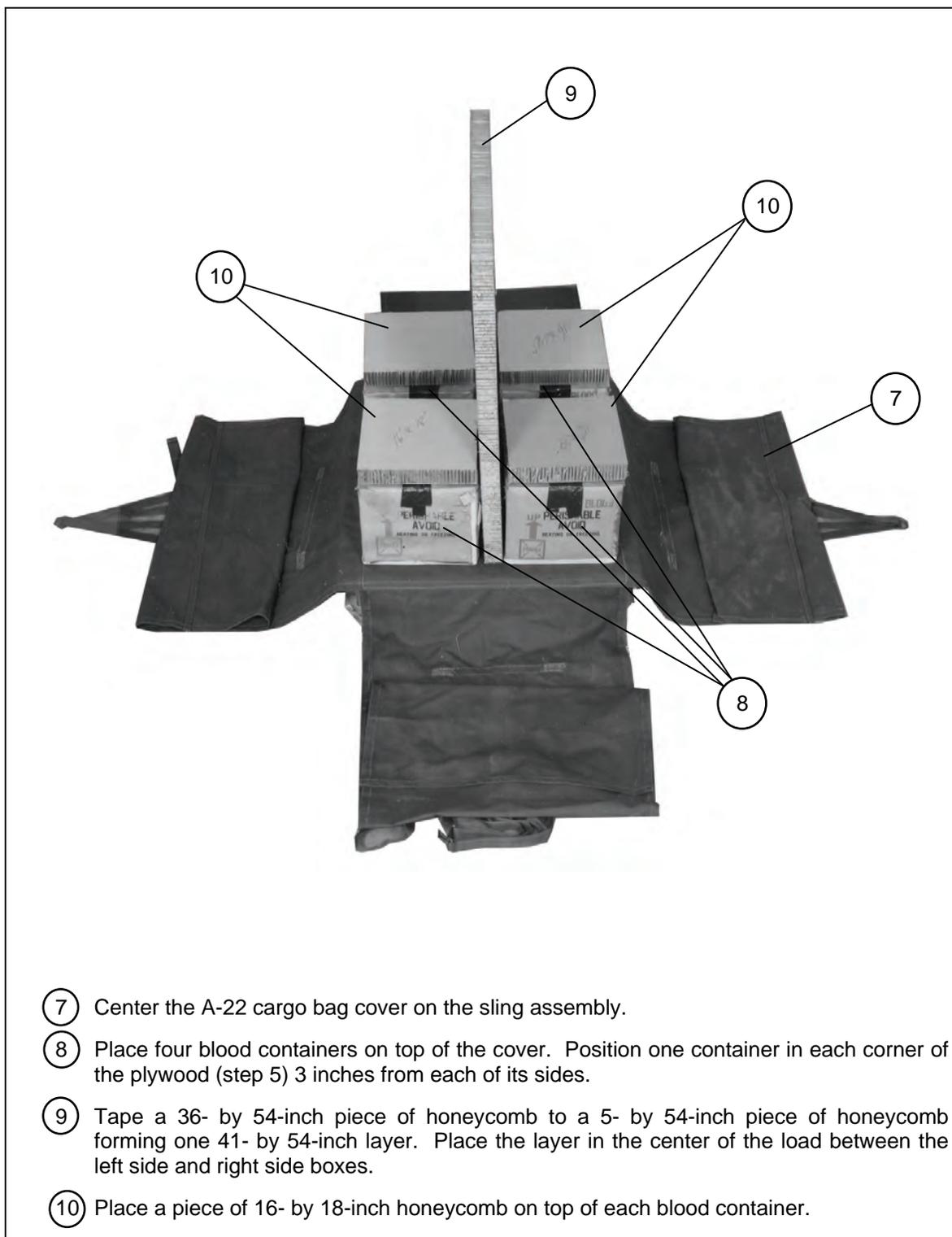
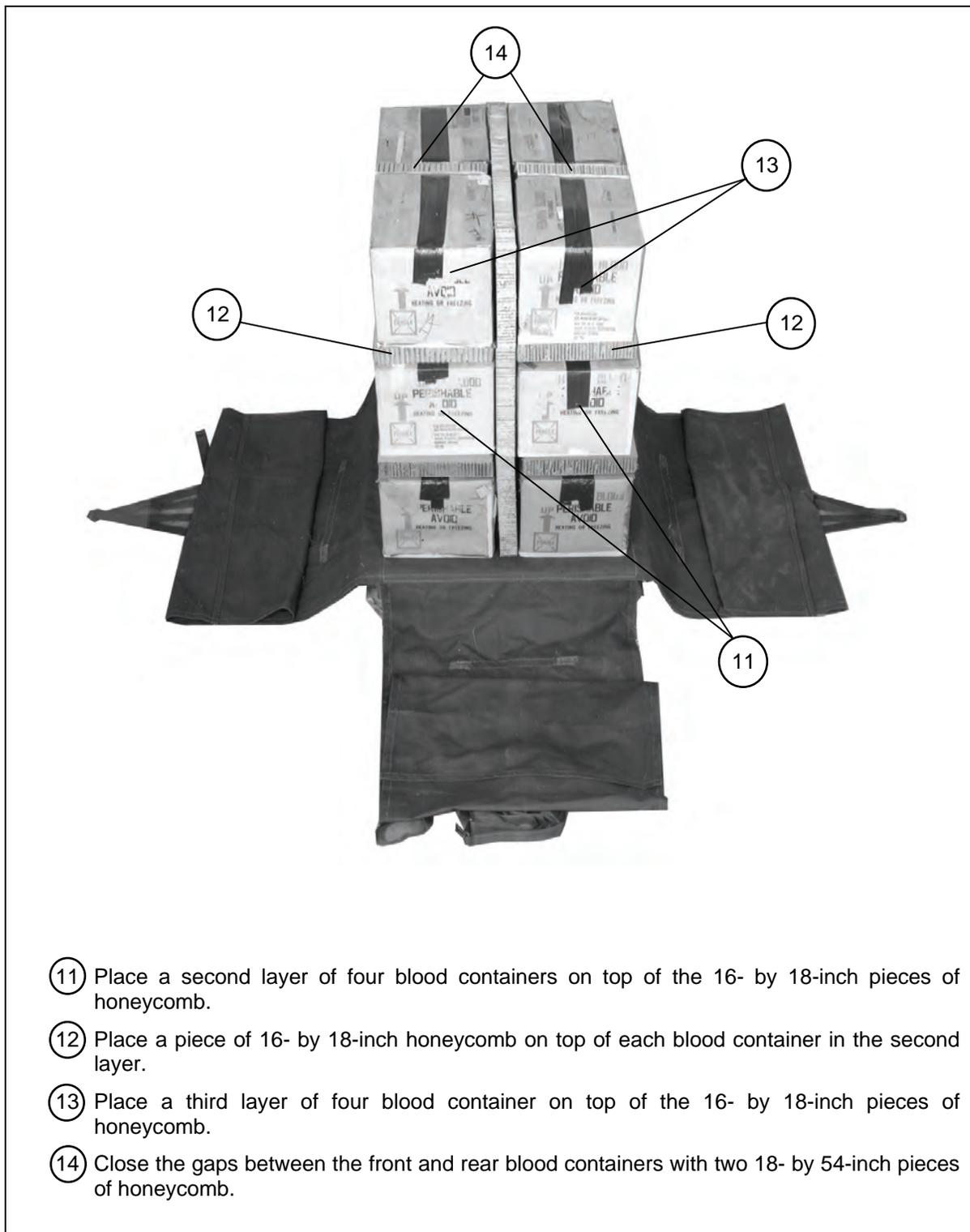
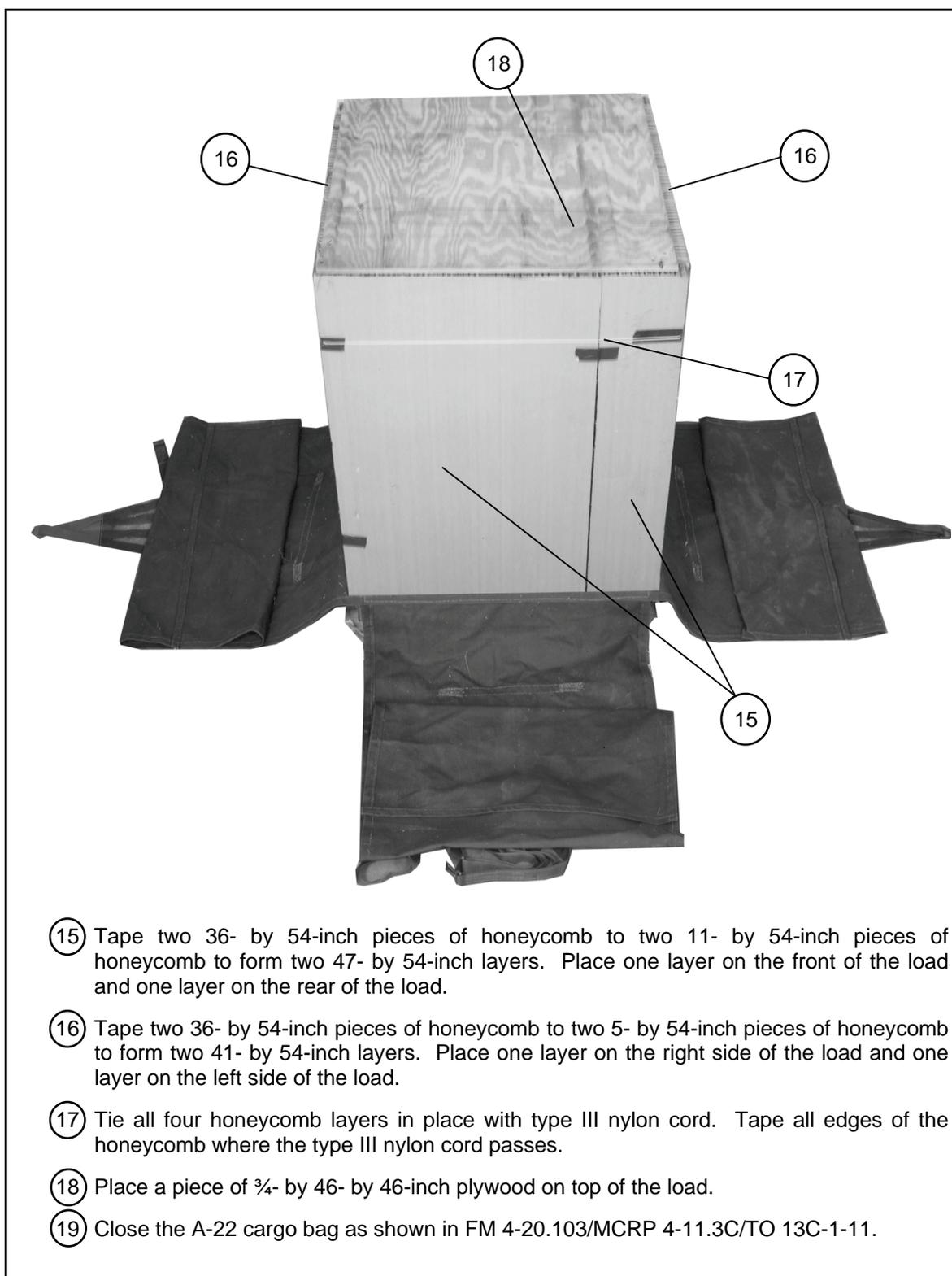


Figure 5-18. Twelve Blood Containers Rigged (Continued)



**Figure 5-18. Twelve Blood Containers Rigged (Continued)**

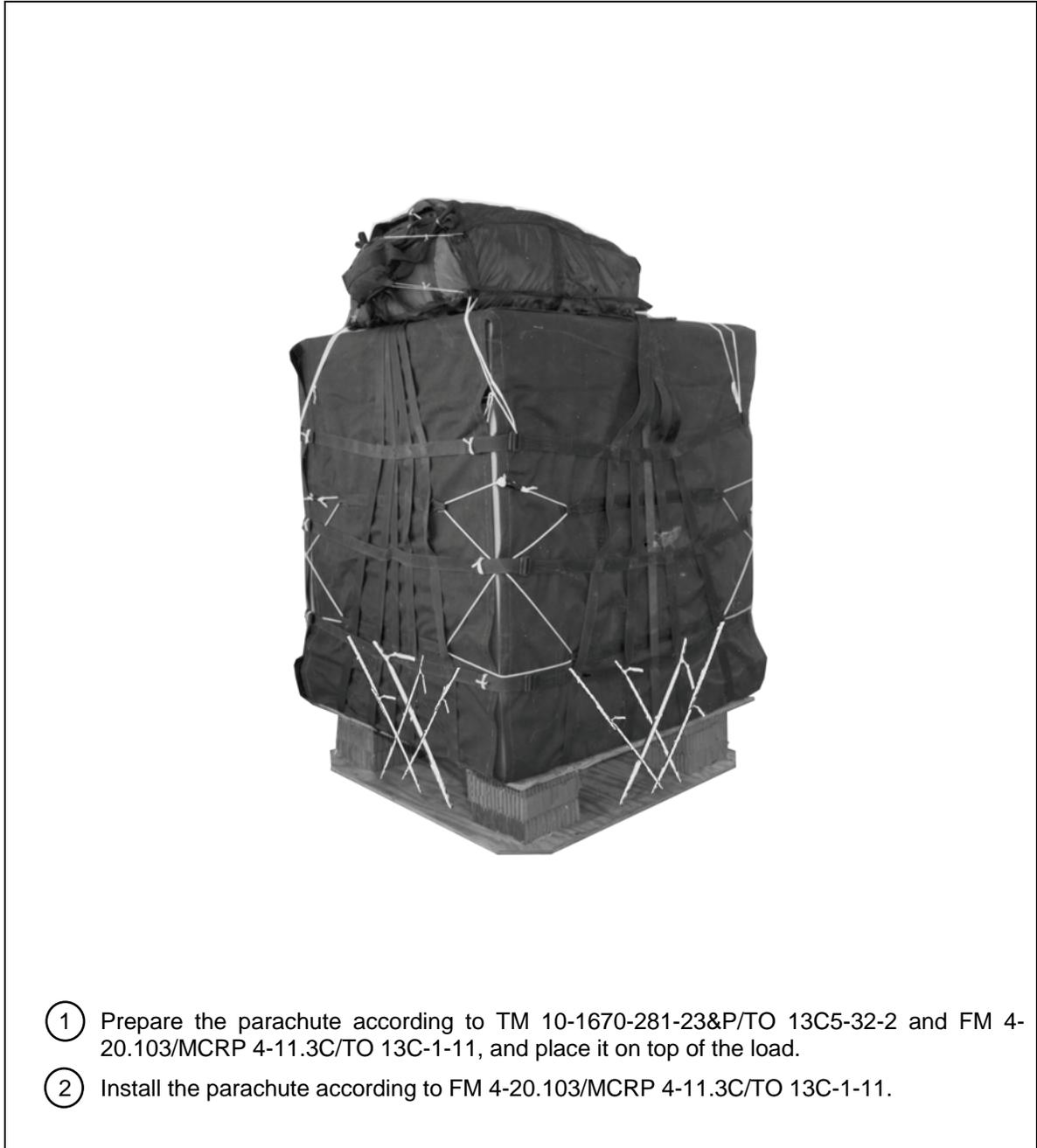


- ⑮ Tape two 36- by 54-inch pieces of honeycomb to two 11- by 54-inch pieces of honeycomb to form two 47- by 54-inch layers. Place one layer on the front of the load and one layer on the rear of the load.
- ⑯ Tape two 36- by 54-inch pieces of honeycomb to two 5- by 54-inch pieces of honeycomb to form two 41- by 54-inch layers. Place one layer on the right side of the load and one layer on the left side of the load.
- ⑰ Tie all four honeycomb layers in place with type III nylon cord. Tape all edges of the honeycomb where the type III nylon cord passes.
- ⑱ Place a piece of  $\frac{3}{4}$ - by 46- by 46-inch plywood on top of the load.
- ⑲ Close the A-22 cargo bag as shown in FM 4-20.103/MCRP 4-11.3C/TO 13C-1-11.

Figure 5-18. Twelve Blood Containers Rigged (Continued)

## STOWING CARGO PARACHUTES

5-37. Stow one G-12E cargo parachute on the load as shown in Figure 5-19.



**Figure 5-19. One G-12E Cargo Parachute Stowed**

## MARKING RIGGED LOAD

5-38. Mark the rigged load according to FM 4-20.103/TO 13C-1-11 and as shown in Figure 5-20. The rigged load data must be computed for this load.

### CAUTION

Make the final rigger inspection required by FM 4-20.103/TO 13C-1-11 before the load leaves the rigging site.



Weight (with parachute).....800 to 850 pounds  
Parachute.....G-12E

**Figure 5-20. Whole Blood Rigged for Low-Velocity Airdrop in an A-22 Container**

## EQUIPMENT REQUIRED

5-39. Use the equipment listed in Table 5-5 to rig this.

**Table 5-5. Equipment required for rigging twelve blood containers for low-velocity airdrop in an A-22 container**

<i>National Stock Number</i>	<i>Quantity</i>	<i>Item</i>
8040-00-273-8713	Adhesive, paste, 1 gal	As required
1670-00-587-3421	Bag, cargo, A-22	1
4030-00-678-8562	Clevis, suspension, 3/4-in (medium)	1
4020-00-240-2146	Cord, nylon, type III, 550 lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	4 sheets
	5- by 54-in	(3)
	10- by 10-in	(15)
	11- by 54-in	(2)
	16- by 18-in	(8)
	18- by 54-in	(2)
	36- by 54-in	(5)
	Parachute. Cargo:	
1670-00-893-2371	G-12D <i>or</i>	1
1670-01-065-3755	G-12E	1
5530-00-128-4981	Plywood, 3/4-in:	
	46- by 46-in	1
	48- by 48-in	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
8310-01-102-4478	Thread, cotton, ticket 8/7	As required
	Webbing:	
8305-00-268-2411	Cotton, 80-lb	As required
8305-00-268-2453	Nylon, tubular, 1/2-in, 1,000-lb, Olive drab	As required

## Chapter 6

# Rigging the M4K, 4,000-Pound Capacity Forklift Truck on a Type V Platform

## DESCRIPTION OF LOAD

6-1. The 4,000-pound capacity forklift truck (Figure 6-1) is rigged on a 16-foot, type V platform for low-velocity airdrop. The forklift truck is rigged with three G-11 cargo parachutes. The unrigged vehicle weighs approximately 9,725 pounds, reducible to 9,320 pounds. Its length is 205 inches, reducible to 166 inches. Its height is 80 inches reducible to 77 inches. Its width is 79 inches.

## PREPARING PLATFORM

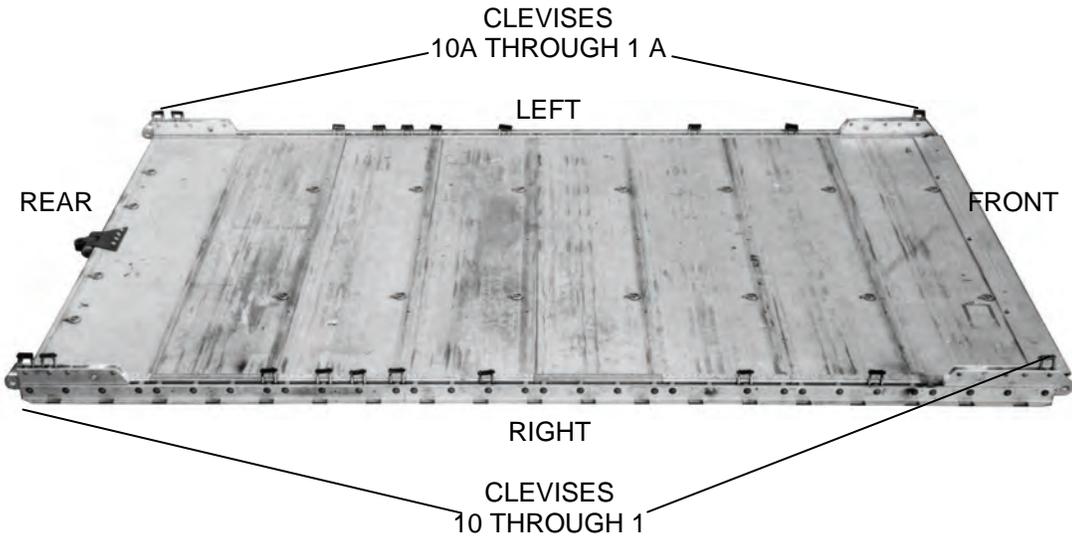
6-2. Prepare a 16-foot, type V platform using four tandem links and 20 clevis assemblies as described below and as shown in Figure 6-2.

- **Inspecting Platform.** Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- **Installing Tandem Links.** Install tandem links as shown in Figure 6-2.
- **Attaching and Numbering Clevises.** Attach and number 20 clevis assemblies as shown in Figure 6-2.



Figure 6-1. M4K, 4,000-Pound Capacity Forklift Truck

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



**Step:**

1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link on the rear of each platform side rail using holes 30, 31, and 32.
3. Install a clevis on bushing 1 on each front tandem link.
4. Install a clevis on bushings 3 and 4 on each rear tandem link.
5. Starting at the front of each platform side rail, install clevises to bushings bolted on holes 6, 10, 18, 21, 22, 23, and 25.
6. Starting at the front of the platform side rail, number the clevises bolted on the right side from 1 through 10 and those bolted on the left side from 1A to 10A.

**Figure 6-2. Platform Prepared**

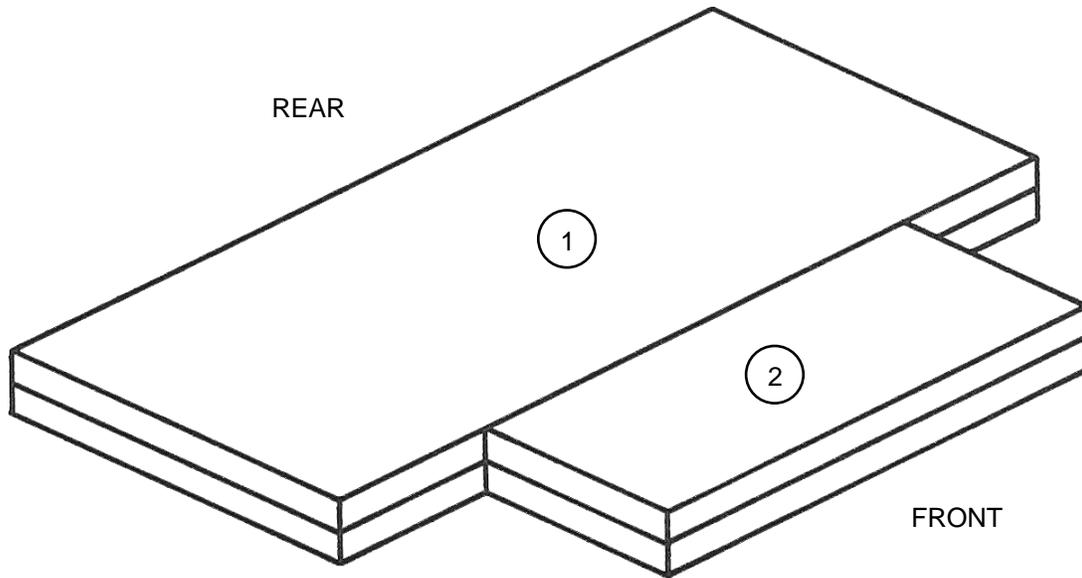
## PREPARING AND POSITIONING HONEYCOMB STACKS

6-3. Use the material in Table 6-1 to prepare three honeycomb stacks as shown in Figures 6-3 through 6-5. Position the stacks on the platform according to FM 9-20.102/MCRP 9-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 6-6.

**Table 6-1. Material Required to Build Honeycomb Stacks**

<b>Stack Number</b>	<b>Pieces</b>	<b>Width (inches)</b>	<b>Length (inches)</b>	<b>Material</b>	<b>Instructions</b>
1	2	80	36	Honeycomb	See Figure 6-3.
	2	48	21	Honeycomb	
	8	18	28	Honeycomb	
	2	18	28	¾-inch Plywood	
	4	12	14	¾-inch Plywood	
	4	4	12	7- by 9-inch Lumber	
	3	42	10	Honeycomb	
	1	42	10	¾-inch Plywood	
	4	10	10	Honeycomb	
	2	10	10	¾-inch Plywood	
2	6	32	40	Honeycomb	See Figure 6-4.
	1	32	40	¾-inch Plywood	
	1	32	17	¾-inch Plywood	
	2	32	7	¾-inch Plywood	
	2	4	12	7- by 9-inch Lumber	
3	2	80	36	Honeycomb	See Figure 6-5.
	2	36	18	Honeycomb	
	2	36	24	Honeycomb	
	8	9	24	Honeycomb	
	2	9	24	¾-inch Plywood	
	3	42	10	Honeycomb	
	1	42	10	¾-inch Plywood	
	4	10	10	Honeycomb	
	1	10	10	¾-inch Plywood	

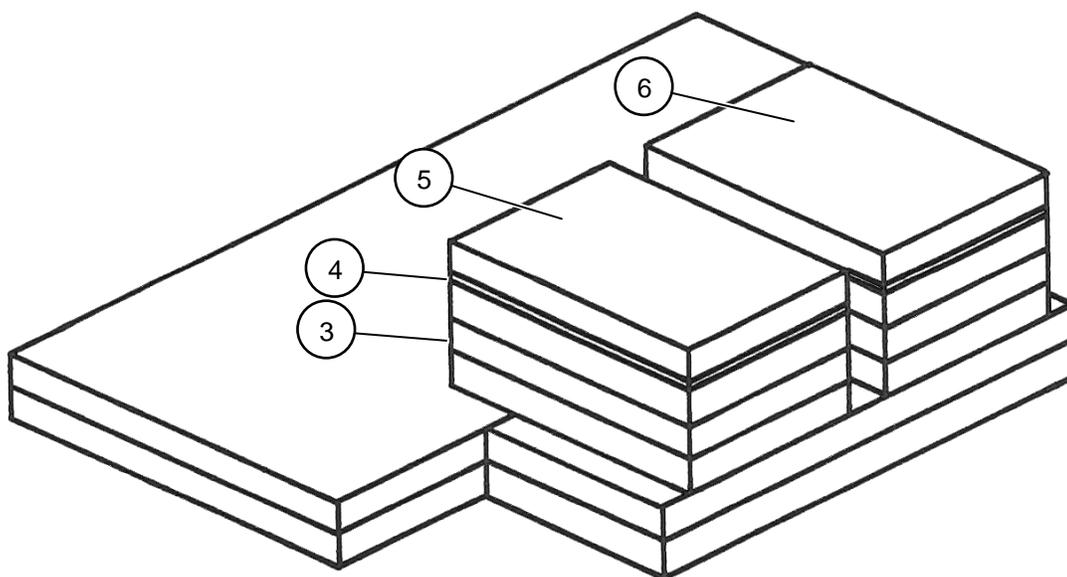
**Note.** This drawing is not drawn to scale.



- ① Place two 80- by 36-inch pieces of honeycomb as the rear base of the stack.
- ② Glue two 48- by 26-inch pieces of honeycomb as the front base of the stack, centered against the front of the honeycomb placed in step 1.

**Figure 6-3. Honeycomb Stack 1 Prepared**

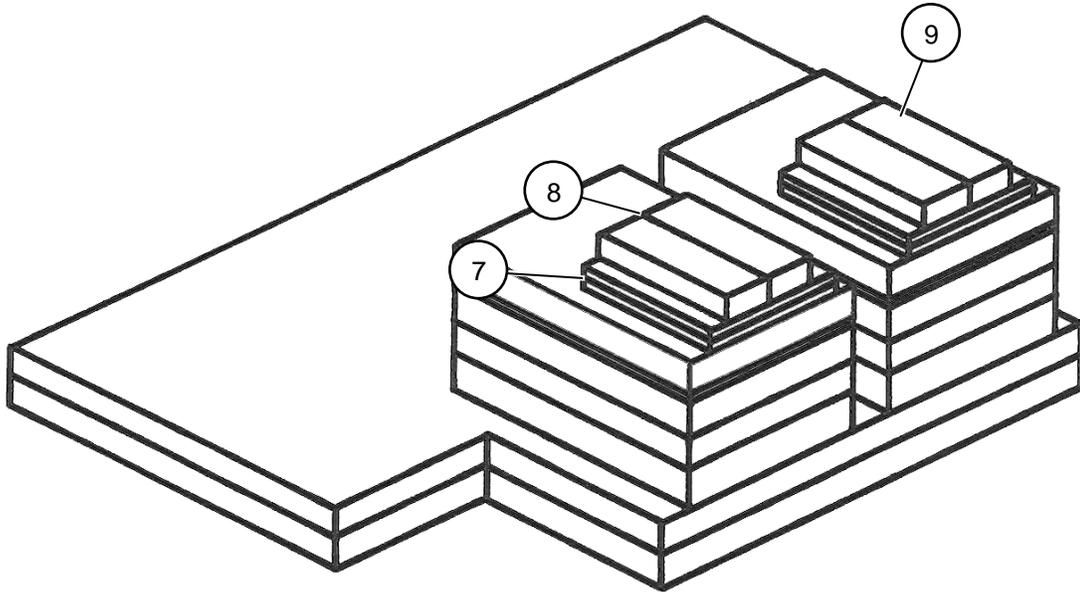
**Note.** This drawing is not drawn to scale.



- ③ Glue three 18- by 28-inch pieces of honeycomb 3 inches from the right side of the 48- by 26-inch honeycomb and flush with the front of the base.
- ④ Glue a  $\frac{3}{4}$ - by 18- by 28-inch piece of plywood on top of the 18- by 28-inch pieces of honeycomb.
- ⑤ Glue an 18- by 28-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 18- by 28-inch piece of plywood.
- ⑥ Repeat steps 3 through 5 for the left side.

**Figure 6-3. Honeycomb Stack 1 Prepared (Continued)**

**Note.** This drawing is not drawn to scale.



⑦ Center and glue two  $\frac{3}{4}$ - by 17- by 19-inch pieces of plywood on top of the 18- by 28-inch piece of honeycomb flush with the front of the stack.

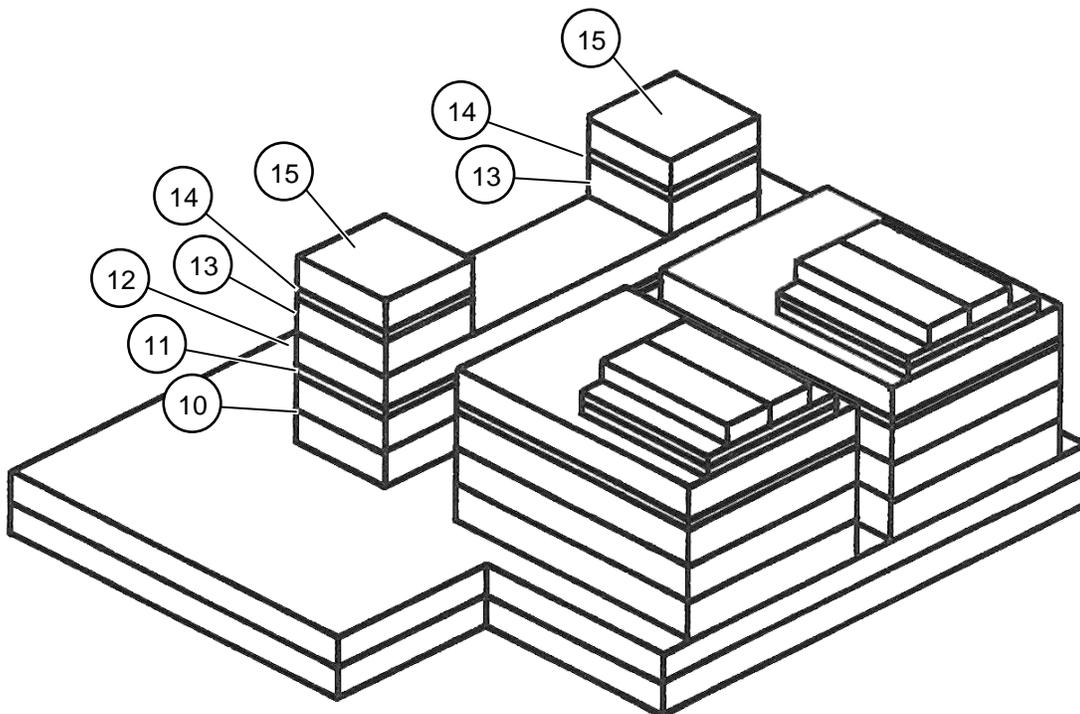
⑧ Center two 7- by 9- by 12-inch pieces of lumber side by side on top of the  $\frac{3}{4}$ - by 17- by 19-inch piece of plywood.

**Note.** Do not fasten the lumber to the plywood.

⑨ Repeat steps 7 and 8 for the left side.

**Figure 6-3. Honeycomb Stack 1 Prepared (Continued)**

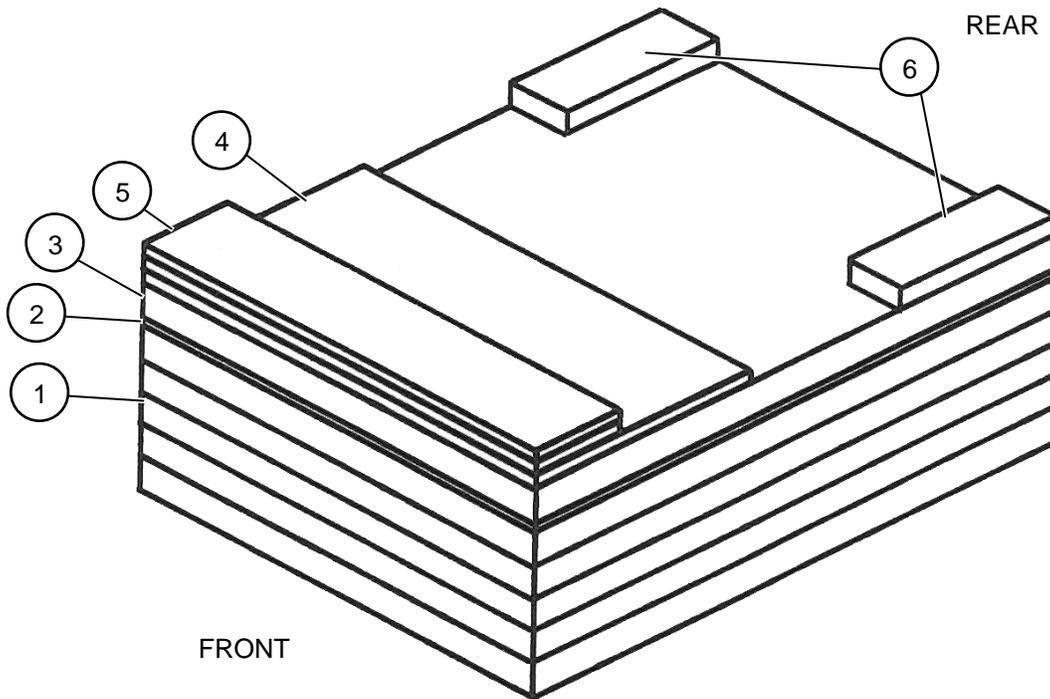
**Note.** This drawing is not drawn to scale.



- ⑩ Glue two 47- by 10-inch pieces of honeycomb 12 inches from the rear of the base and 19 inches from the right and left sides.
- ⑪ Glue a  $\frac{3}{4}$ - by 47- by 10-inch piece of plywood on top of the 47- by 10-inch pieces of honeycomb.
- ⑫ Glue a 47- by 10-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 47- by 10-inch piece of plywood.
- ⑬ Glue a 10- by 10-inch piece of honeycomb on top of each end of the 47- by 10-inch pieces of honeycomb.
- ⑭ Glue a  $\frac{3}{4}$ - by 10- by 10-inch piece of plywood on top of each 10- by 10-inch piece of honeycomb.
- ⑮ Glue a 10- by 10-inch piece of honeycomb on top of each  $\frac{3}{4}$ - by 10- by 10-inch piece of plywood.

**Figure 6-3. Honeycomb Stack 1 Prepared (Continued)**

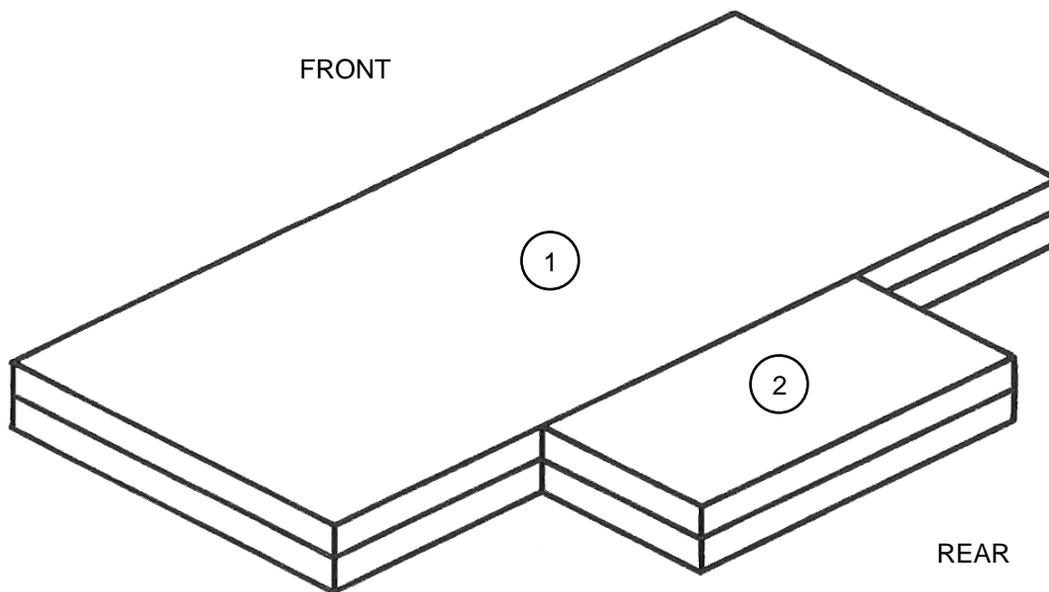
**Note.** This drawing is not drawn to scale.



- ① Glue five 37- by 40-inch pieces of honeycomb as the base.
- ② Glue a  $\frac{3}{4}$ - by 37- by 40-inch piece of plywood on top of the fifth layer of honeycomb.
- ③ Glue a 37- by 40-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 37- by 40-inch piece of plywood.
- ④ Glue a  $\frac{3}{4}$ - by 37- by 17-inch piece of plywood on top of the sixth layer of honeycomb flush with the front of the stack.
- ⑤ Glue two  $\frac{3}{4}$ - by 37- by 7-inch pieces of plywood on top of the  $\frac{3}{4}$ - by 37- by 17-inch piece of plywood flush with the front of the stack.
- ⑥ Glue one 7- by 9- by 17-inch piece of lumber on each rear corner of the stack.

**Figure 6-4. Honeycomb Stack 2 Prepared**

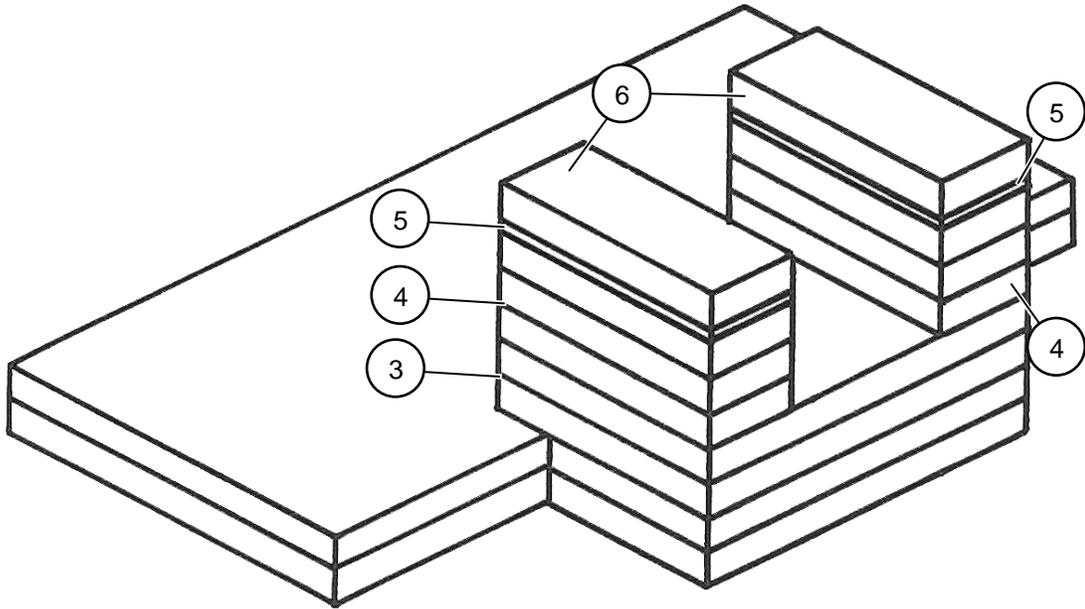
**Note.** This drawing is not drawn to scale.



- ① Place two 80- by 36-inch pieces of honeycomb as the rear base of the stack.
- ② Glue two 36- by 18-inch pieces of honeycomb as the rear base of the stack, centered against the rear of the honeycomb placed in step 1.

**Figure 6-5. Honeycomb Stack 3 Prepared**

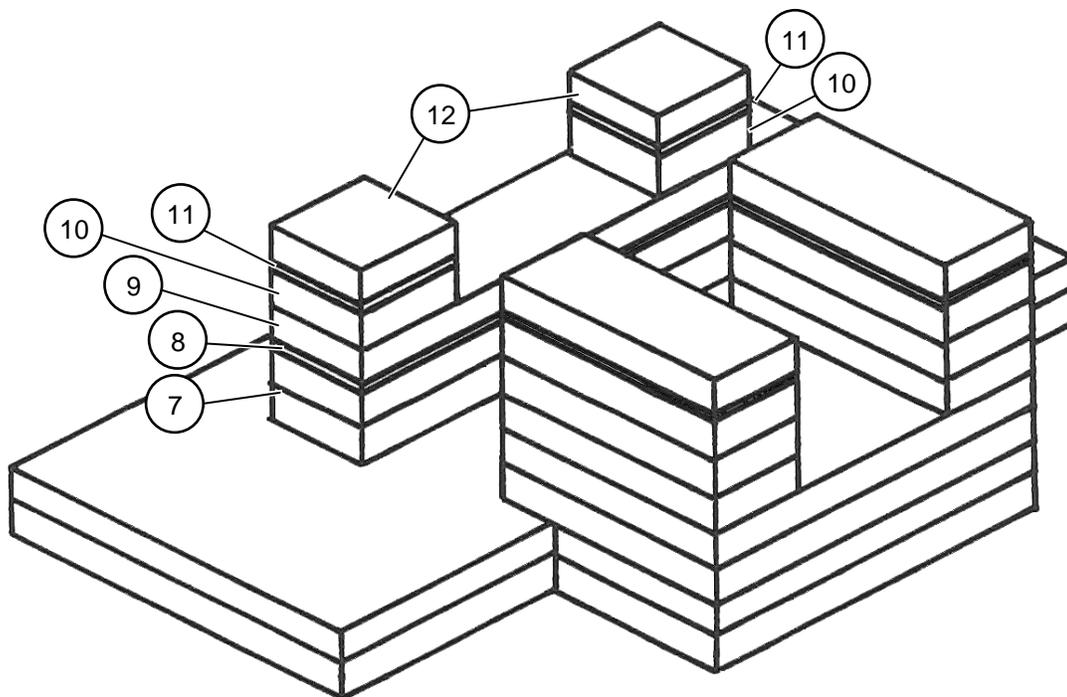
**Note.** This drawing is not drawn to scale.



- ③ Glue two 36- by 29-inch pieces of honeycomb flush with the rear of the base.
- ④ Glue three 9- by 29-inch pieces of honeycomb flush with the rear edge on each side of the stack.
- ⑤ Glue a  $\frac{3}{4}$ - by 9- by 29-inch piece of plywood on top of the 9- by 29-inch pieces of honeycomb.
- ⑥ Glue a 9- by 29-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 9- by 29-inch piece of plywood.

**Figure 6-5. Honeycomb Stack 3 Prepared (Continued)**

**Note.** This drawing is not drawn to scale.



- ⑦ Glue and center two 47- by 10-inch pieces of honeycomb 10 inches from the front edge of the stack.
- ⑧ Glue a  $\frac{3}{4}$ - by 47- by 10-inch piece of plywood on top of the 47- by 10-inch pieces of honeycomb.
- ⑨ Glue a 47- by 10-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 47- by 10-inch piece of plywood.
- ⑩ Glue a 10- by 10-inch piece of honeycomb on top of each end of the 47- by 10-inch piece of honeycomb.
- ⑪ Glue a  $\frac{3}{4}$ - by 10- by 10-inch piece of plywood on top of each 10- by 10-inch piece of honeycomb.
- ⑫ Glue a 10- by 10-inch piece of honeycomb on top of each  $\frac{3}{4}$ - by 10- by 10-inch piece of plywood.

**Figure 6-5. Honeycomb Stack 3 Prepared (Continued)**

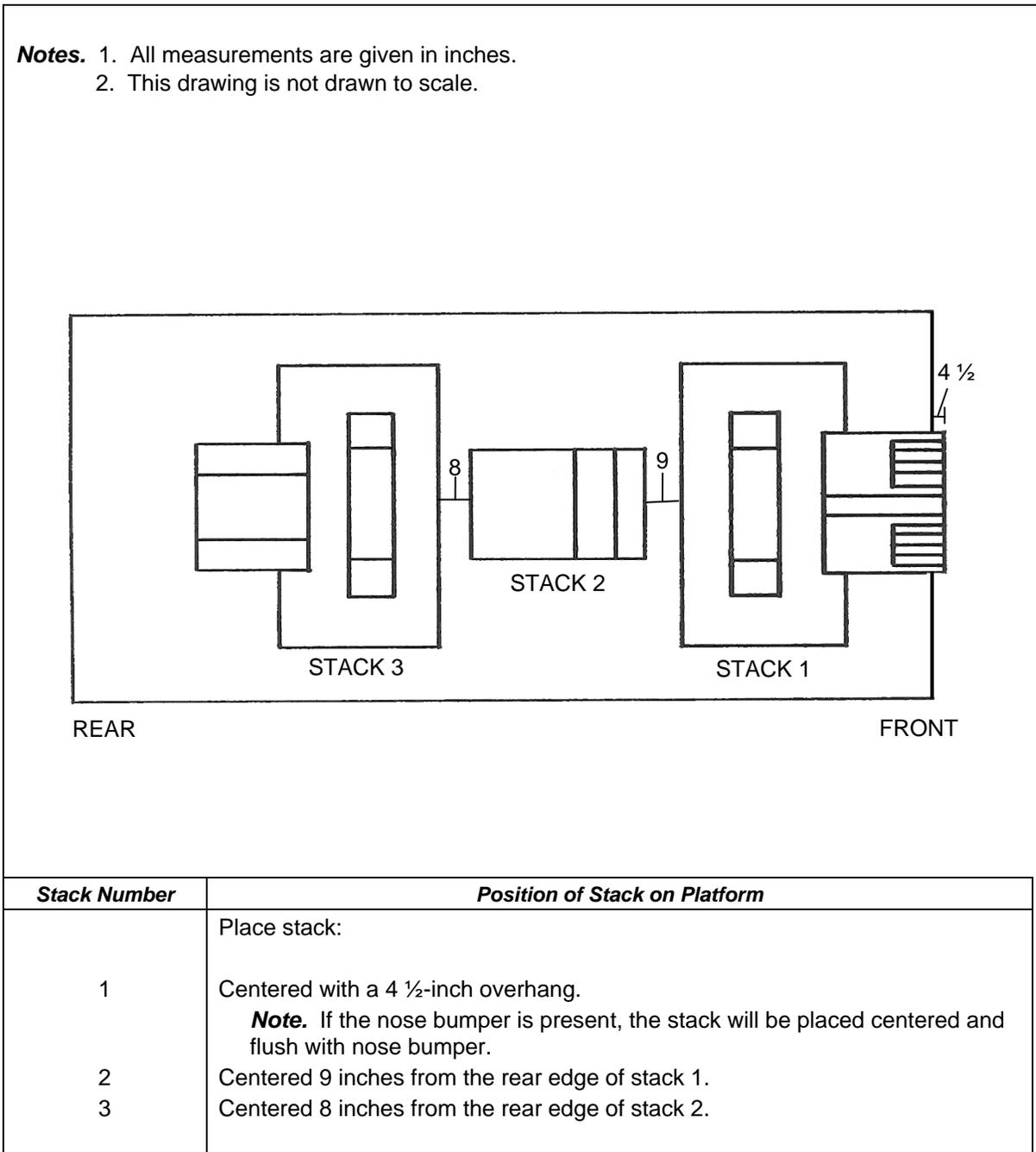


Figure 6-6. Honeycomb Stacks Placed on Platform

## PREPARING FORKLIFT BEFORE POSITIONING

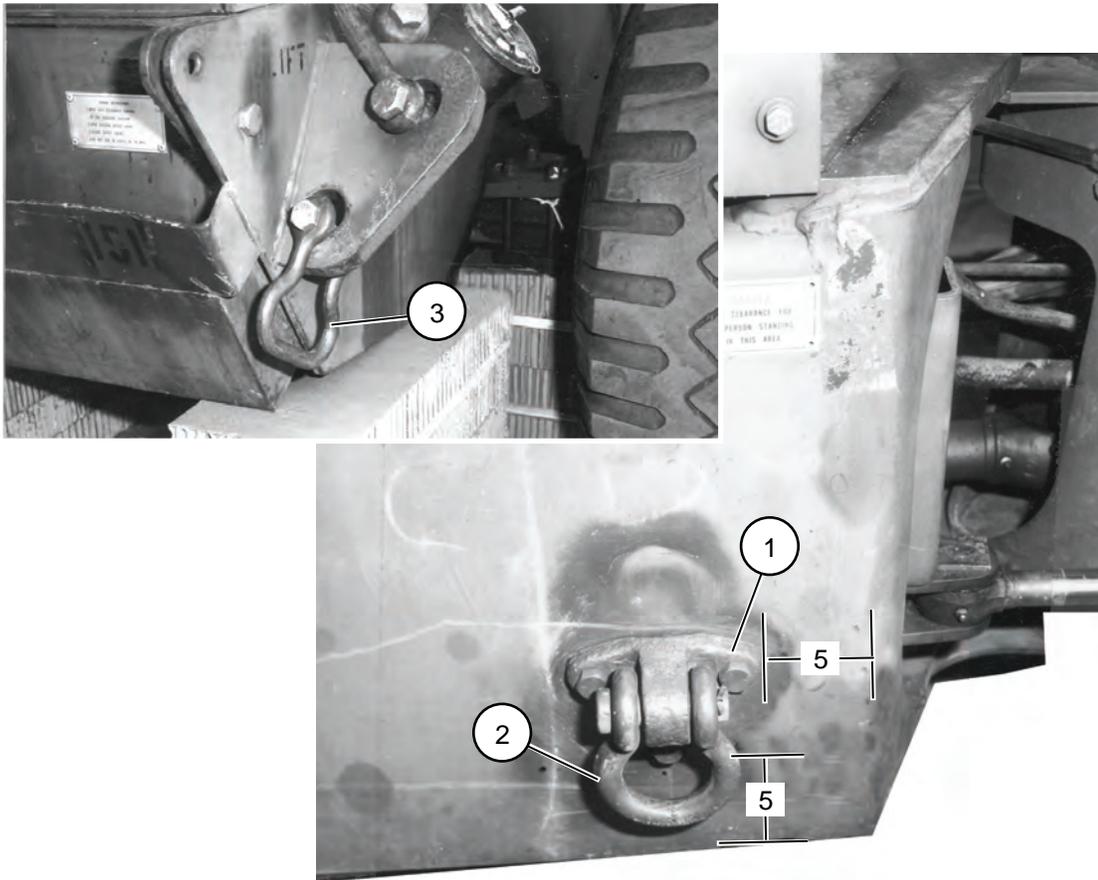
6-4. Prepare the forklift before positioning it on the platform as described below and shown in Figures 6-7 through 6-15.

- Make sure the fuel tank is no more than  $\frac{3}{4}$  full.
- Remove the roll-over protection structure (ROPS) and fenders.
- Tape all lights, reflectors, mirrors, and gauges.



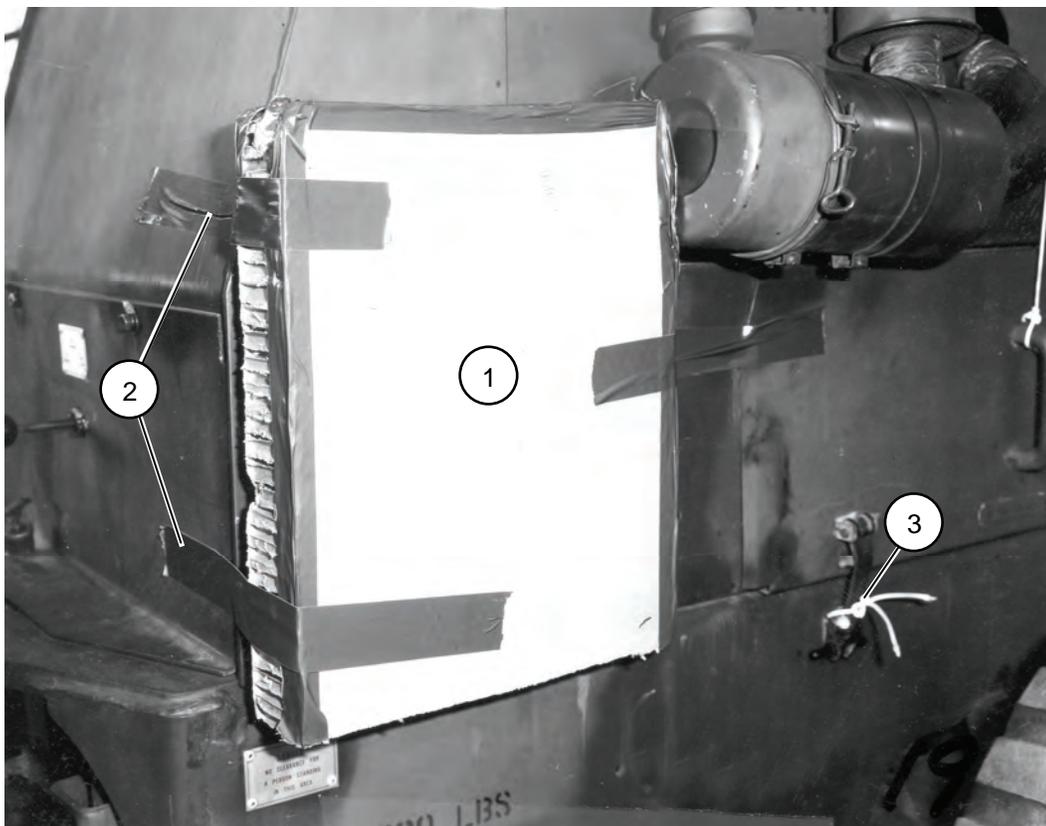
**Figure 6-7. Forks Aligned with the Mast**

**Note.** All measurements are given in inches.



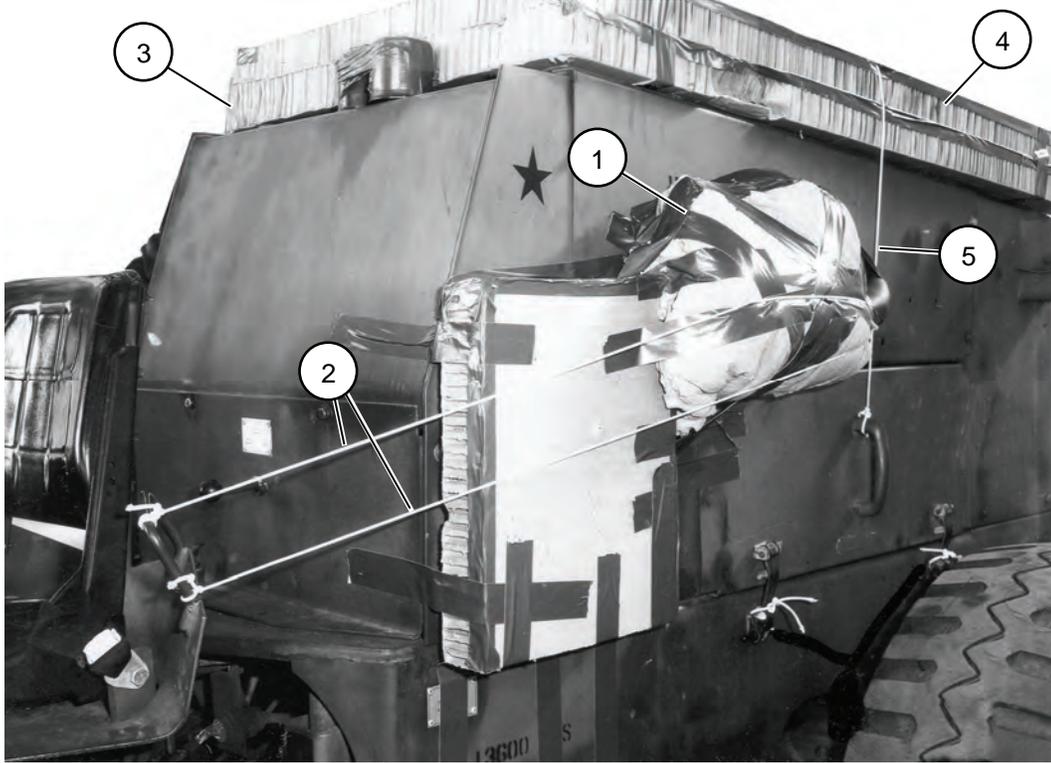
- ① Install a 5-ton truck lifting shackle support bracket on the right and left side of the forklift. Use components from the front lifting shackle kit (correct nomenclature: Parts kit, lifting shackle). Position the support bracket 5 inches from the swivel point and 5 inches from the bottom.
- ② Install a 5-ton truck lifting shackle to each support bracket.
- ③ Install a medium clevis on the lower right rear and lower left rear lifting points.

**Figure 6-8. 5-Ton Truck Lifting Shackle Support Bracket Installed**



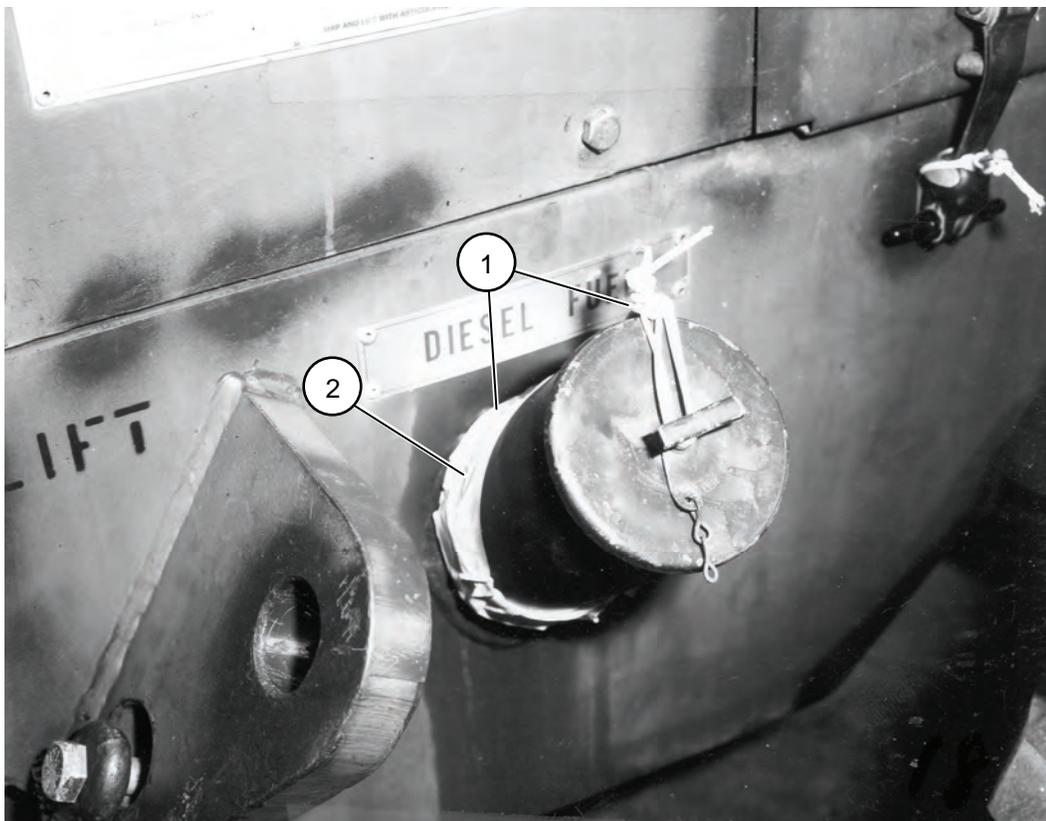
- ① Place a 15- by 19-inch piece of honeycomb with indents to fit over the air cleaner indicator, quick start control, and slave receptacle. Make sure the honeycomb is flush with the body.
- ② Tape around the edges of the honeycomb, and tape the honeycomb to the body.
- ③ Secure the engine's compartment cover handles with type III nylon cord.

**Figure 6-9. Air Cleaner Indicator, Quick Start Control, and Slave Receptacle Prepared**



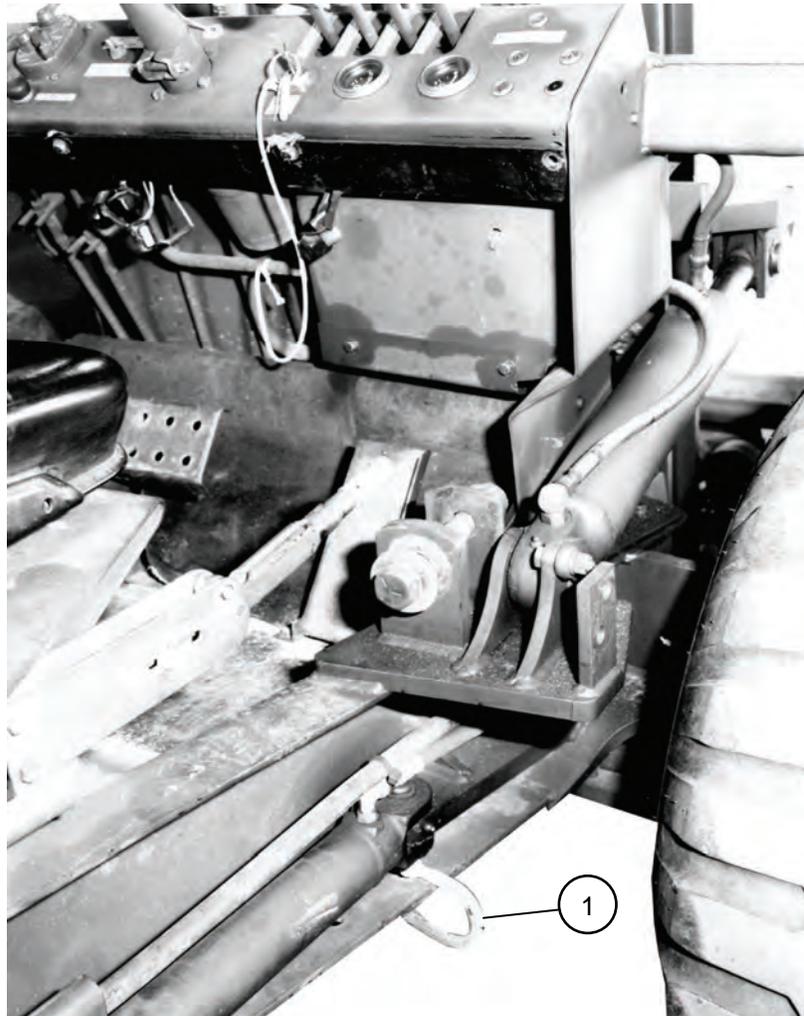
- ① Wrap the air cleaner with cellulose wadding and tape it in place.
- ② Secure the honeycomb (placed in Figure 6-9) and cellulose wadding in place with type III nylon cord.
- ③ Place a 36- by 58-inch piece of honeycomb with a cutout on top of the engine compartment to fit over the exhaust pipe.
- ④ Place a 36- by 59-inch piece of honeycomb on top of the honeycomb placed in step 3.
- ⑤ Tape the edges of the honeycomb and secure the honeycomb in place with type III nylon cord.

**Figure 6-10. Air Cleaner and Exhaust Pipe Prepared**



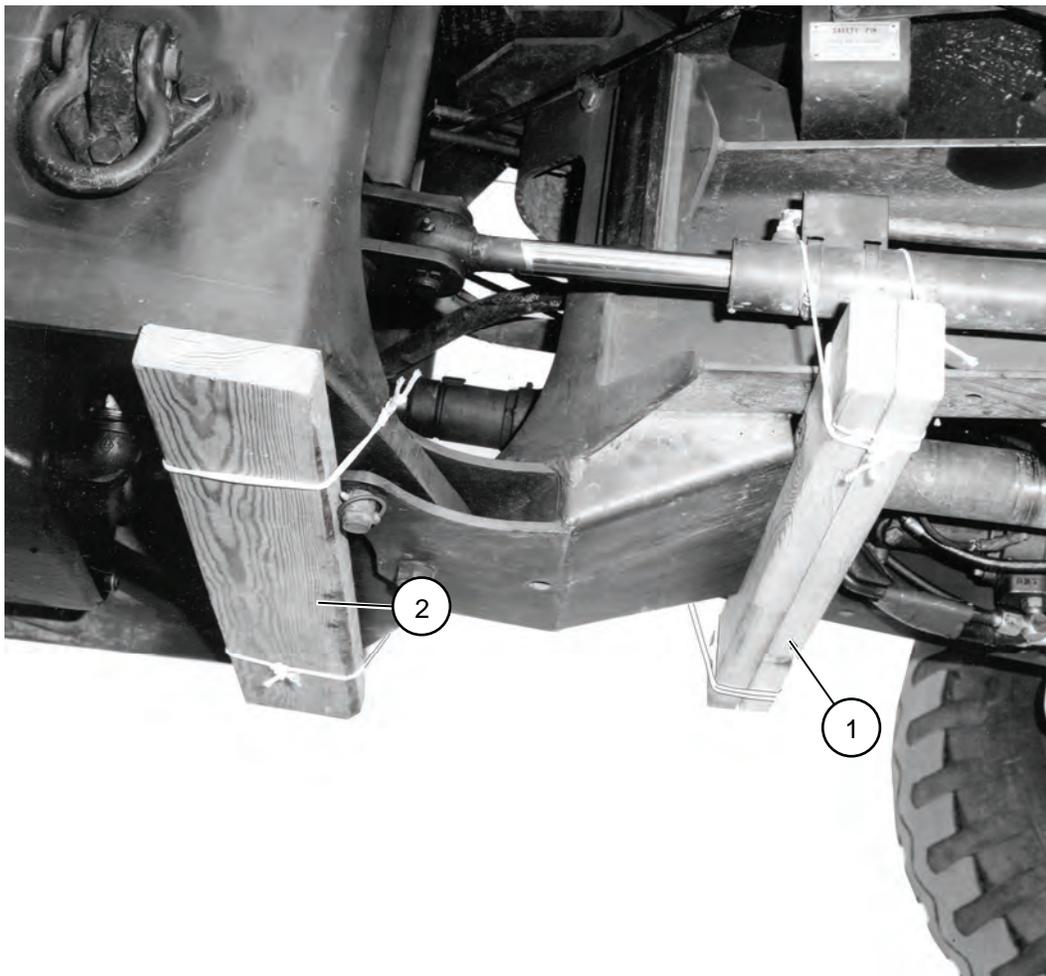
- ① Secure the fuel pipe with a double length of type III nylon cord by tying the base of the fuel tank cap with a surgeon's knot and locking knot. Pass the free ends of the cord over the fuel cap and around the T-bar. Secure the ends with a surgeon's knot and locking knot.
- ② Tape the type III nylon cord at the base of the fuel tank filler pipe in place.

**Figure 6-11. Fuel Cap Secured**



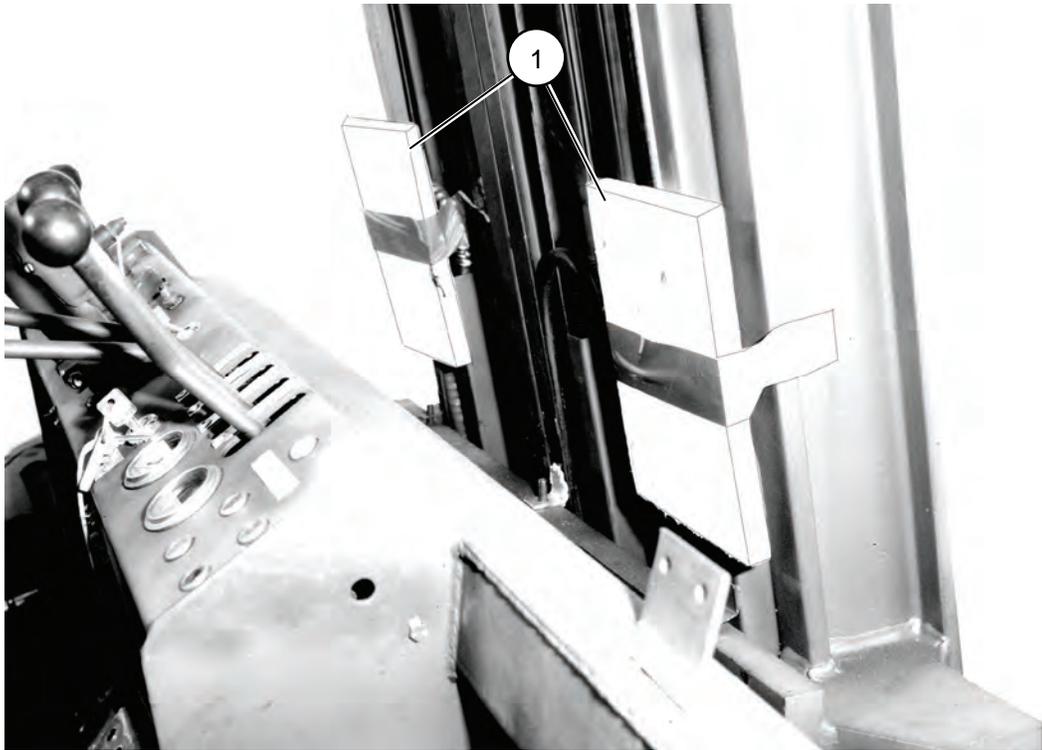
- ① Install a type V tie-down clevis without a spacer in the forward holes of the driver's support chassis on the right and left side of the forklift.

**Figure 6-12. Type V Tie-Down Clevis Installed**



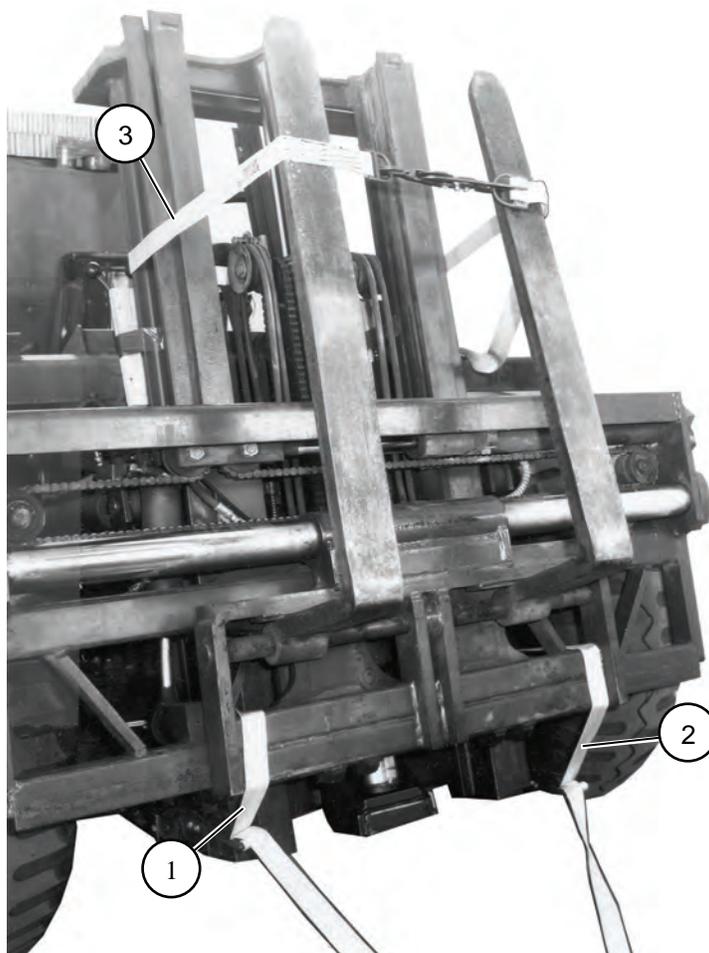
- ① Place two 7- by 9- by 37-inch pieces of lumber under the frame, flush with the articulating link lip. Secure the lumber in place with type III nylon cord.
- ② Place a 7- by 6- by 37-inch piece of lumber under the frame, flush with the edge of the engine compartment. Secure the lumber in place with type III nylon cord.

**Figure 6-13. Lumber Positioned Under Forklift**



- ① Temporarily secure a  $\frac{3}{4}$ - by 7- by 10-inch piece of plywood on both sides at the rear of the mast where it comes in contact with the front of the operator's compartment when tilted back with a length of 7-inch cloth backed tape.
- ② Raise the carriage 21 inches from the ground (Not Shown).
- ③ Raise the forks in the upright position (Not Shown).

**Figure 6-14. Plywood Placed on Mast**



- ① Pass a 15-foot lashing around the right front axle, and through the lower fork carrier side shift frame. Attach the ends with a D-ring and a load binder.
- ② Repeat step 1 for the left side of the forklift.

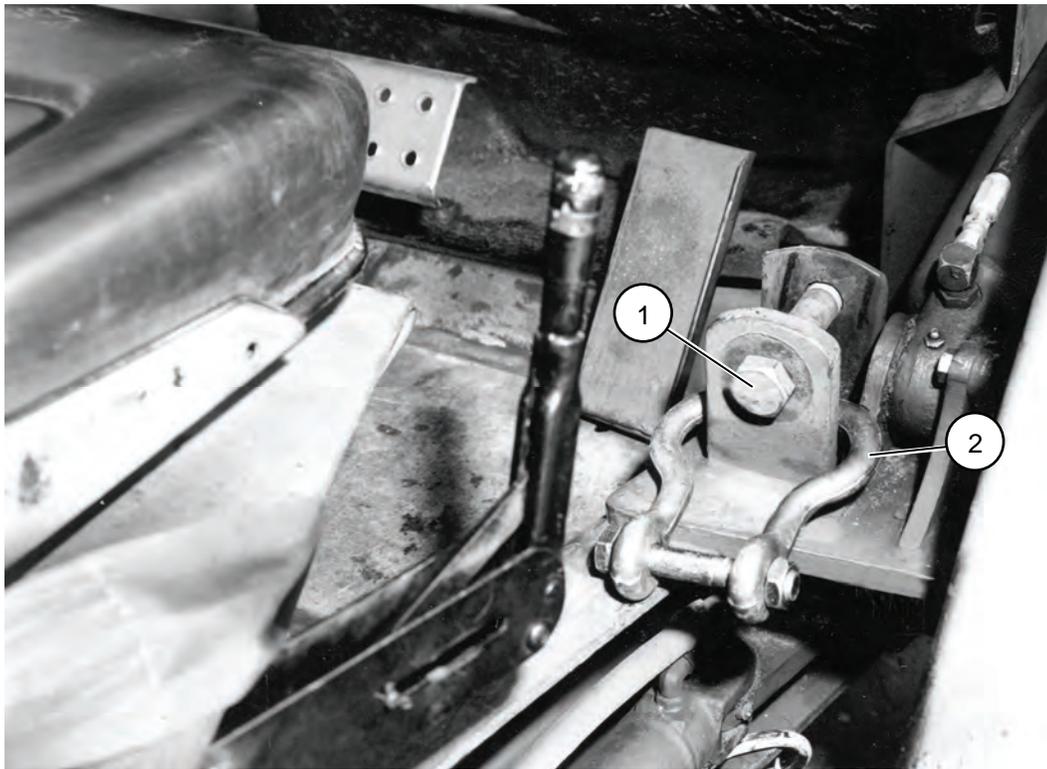
**Note.** Do not close load binders at this time. The lashing will be tightened after the forklift is positioned on the platform.

- ③ Pass a 15-foot lashing around the mast and forks. Attach the ends with a D-ring and load binder. Tighten the lashing but do not close the load binder at this time.

**Figure 6-15. Carriage and Forks Secured**

## INSTALLING LIFTING SLINGS

6-5. Install the lifting slings as shown and described in Figure 6-16.



- ① Install a large clevis bolt to the right and left lower ROPS support brackets.
- ② Attach a medium clevis to the brackets.

**Figure 6-16. Lifting Slings Installed**

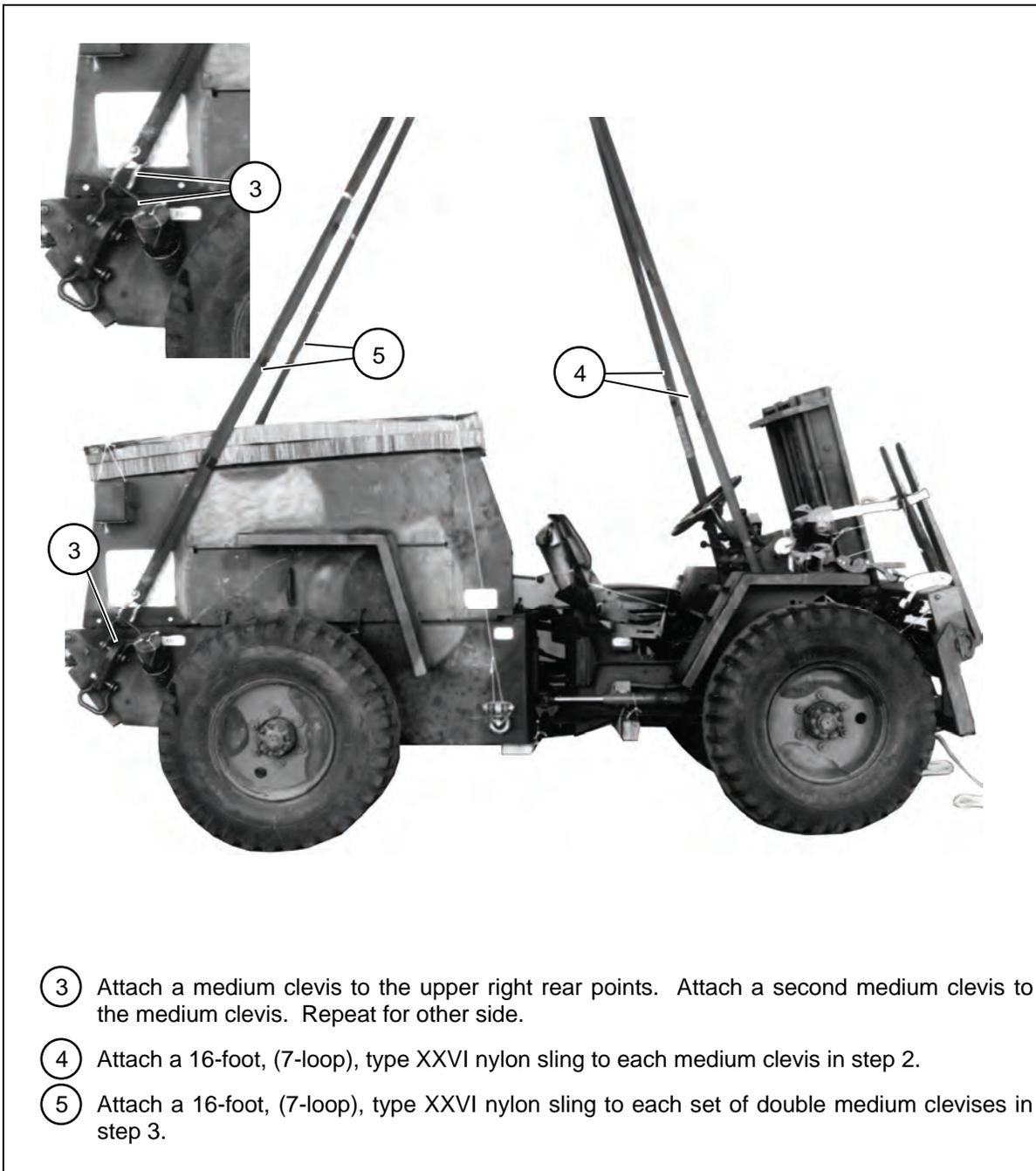


Figure 6-16. Lifting Slings Installed (Continued)

## POSITIONING FORKLIFT

6-6. Position the forklift on the platform as follows.

- Position and center the forklift on the platform to make sure that the front and rear axles are centered on top of honeycomb stacks 1 and 3.
- Lower the carriage until it rests on the 7- by 9- by 17-inch lumber on stack 1.

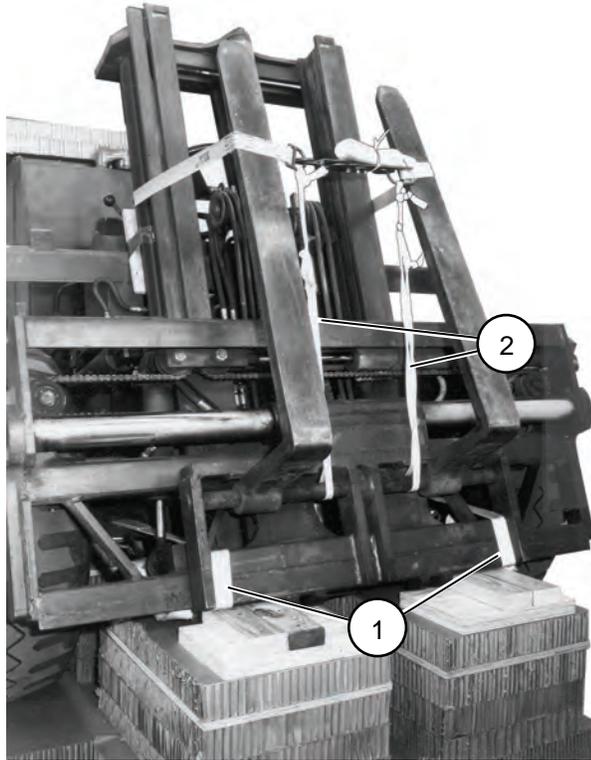
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*Note.* Adjust the 7- by 9- by 17-inch lumber to fit between the sides and the first notch of the fork carriage assembly, nail the lumber in place.

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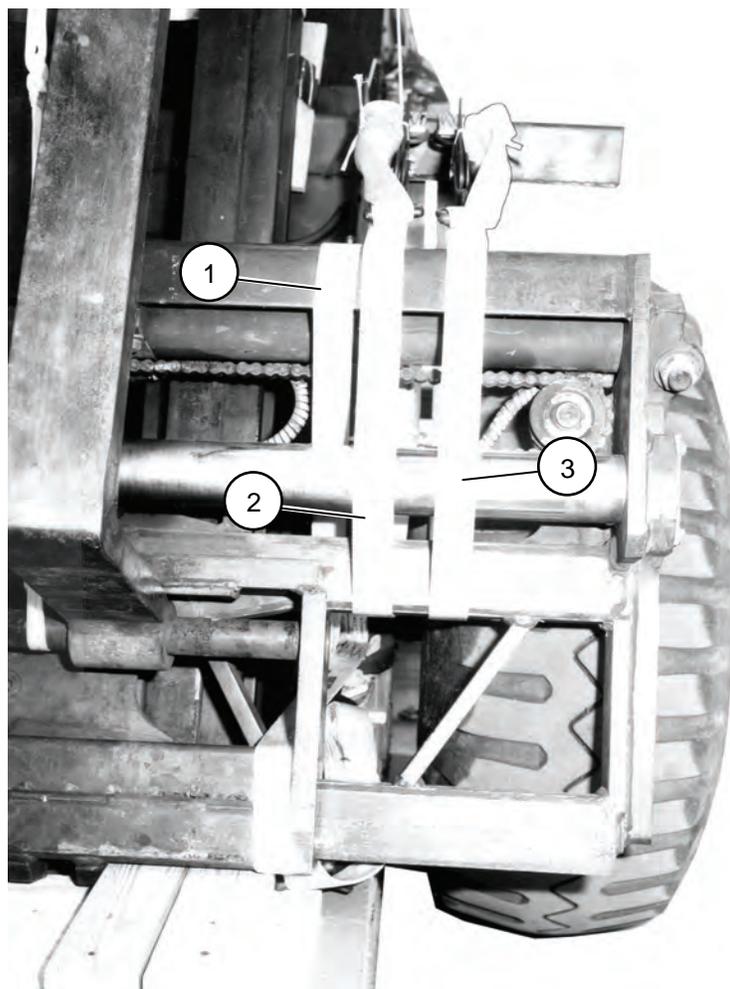
## PREPARING FORKLIFT AFTER POSITIONING

6-7. Finish preparing the forklift as shown in Figures 6-17 through 6-19.



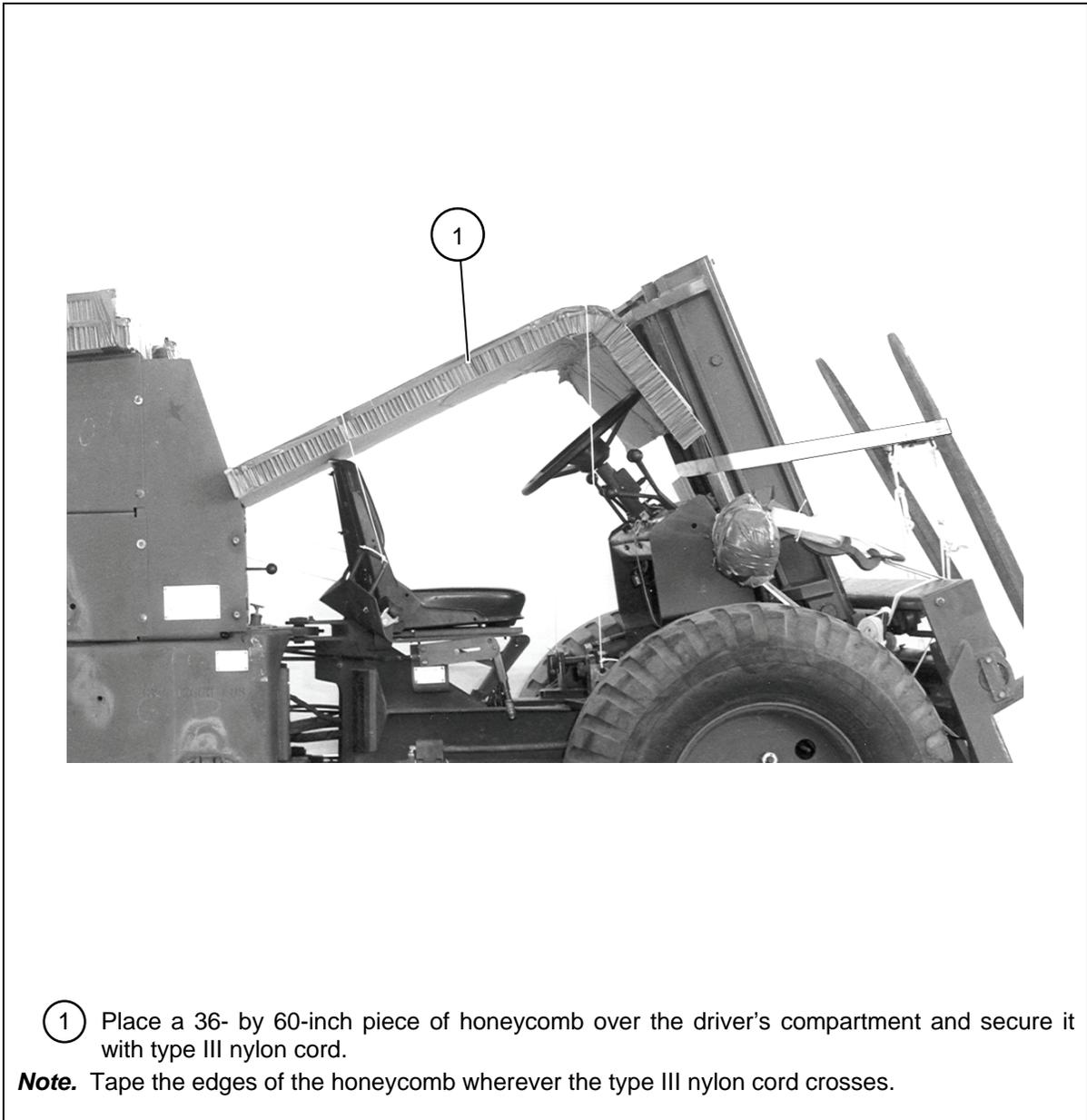
- ① Tighten and secure the lashings installed in Figure 6-15.
- ② Safety the lashing, installed on the carriage assembly in Figure 6-15, with two 5-foot lengths of  $\frac{1}{2}$ -inch tubular nylon webbing.

**Figure 6-17. Lashings Secured**



- ① Pass a 15-foot lashing through the left front lifting bracket and up around the carriage frame. Secure the ends of the lashing with a D-ring and a load binder.
- ② Pass a 15-foot lashing around the light support bracket and around the carriage frame. Secure the ends of the lashing with a D-ring and a load binder.
- ③ Repeat step 2.
- ④ Repeat steps 1 through 3 for the right side of the forklift (Not Shown).

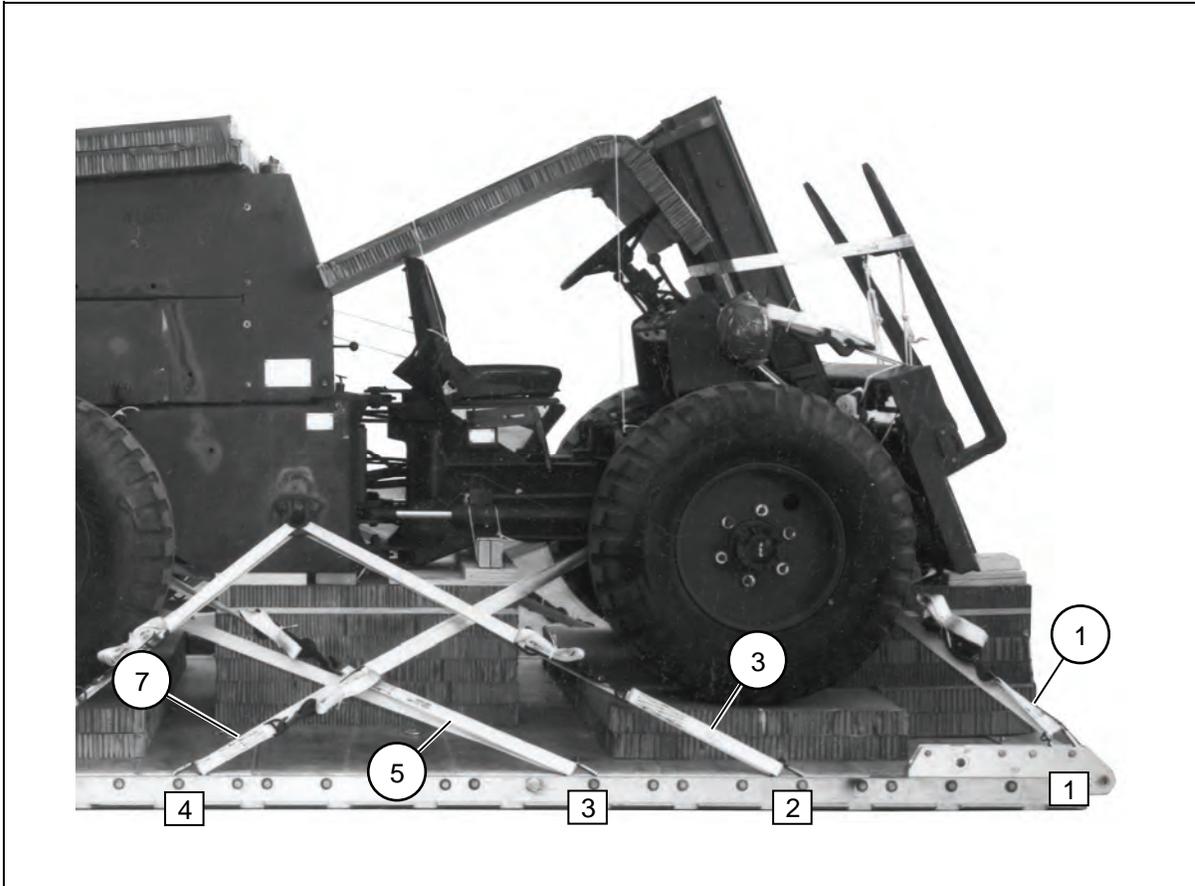
**Figure 6-18. Carriage Secured**



**Figure 6-19. Honeycomb Secured Over Driver's Compartment**

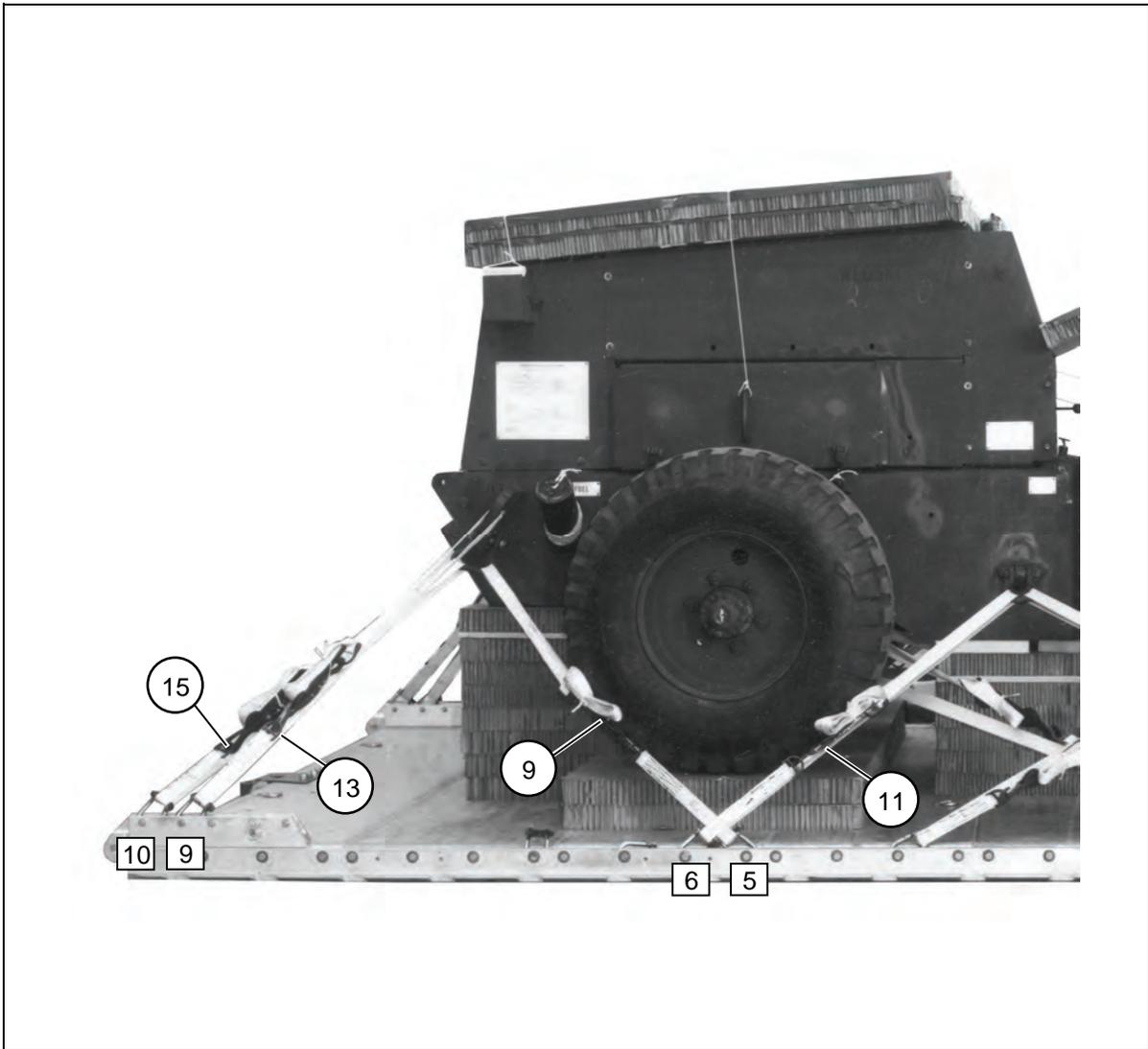
## LASHING FORKLIFT

6-8. Lash the forklift to the platform using sixteen 15-foot tie-down assemblies. Install the lashings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 6-20 and 6-21.



<b>Lashing Number</b>	<b>Tiedown Clevis Number</b>	<b>Instructions</b>
		Pass lashing:
1	1	Through the tie-down point, right side.
2	1A	Through the tie-down point, left side.
3	2	Through the 5-ton lifting shackle, right side.
4	2A	Through the 5-ton lifting shackle, left side.
5	3	Around the rear axle, right side.
6	3A	Around the rear axle, left side.
7	4	Through the tie-down clevis, right side.
8	4A	Through the tie-down clevis, left side.

Figure 6-20. Lashings 1 Through 8 Installed



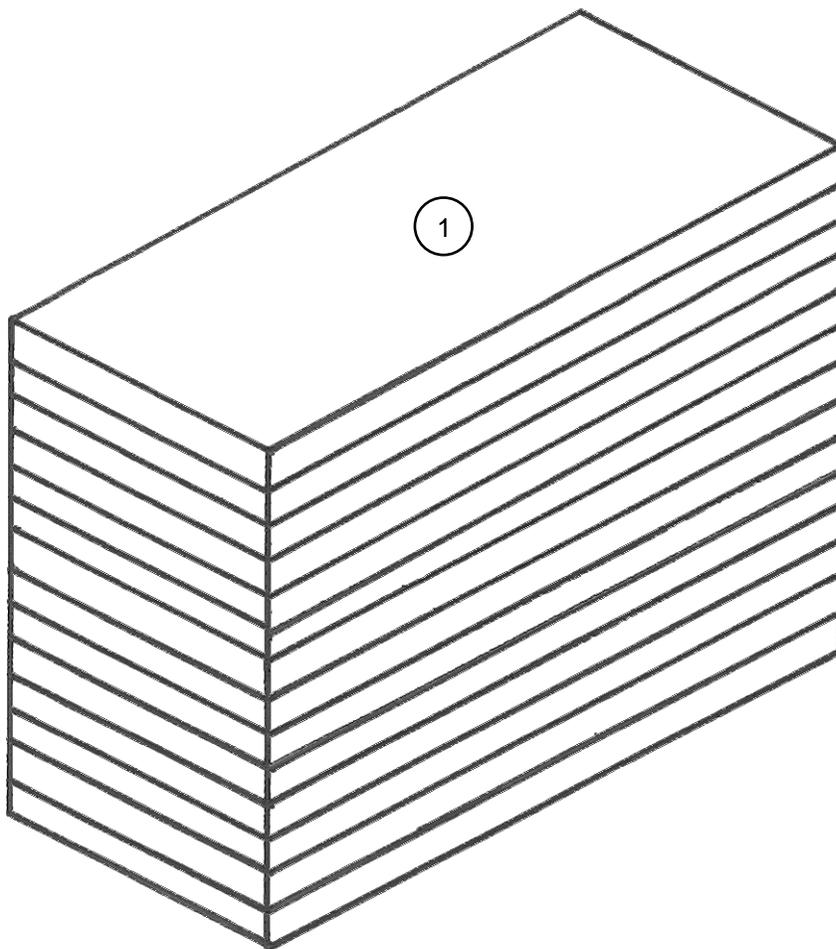
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
9	5	Through medium clevis at the rear lifting point, right side.
10	5A	Through medium clevis at the rear lifting point, left side.
11	6	Through the 5-ton lifting shackle, right side.
12	6A	Through the 5-ton lifting shackle, left side.
13	9	Through the rear lifting point, right side.
14	9A	Through the rear lifting point, left side.
15	10	Through the medium clevis at the rear lifting point, right side.
16	10A	Through the medium clevis at the rear lifting point, left side.

**Figure 6-21. Lashings 9 Through 16 Installed**

## BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

- 6-9. Build parachute stowage platform as described below.
- Build a honeycomb support as shown in Figure 6-22.
  - Build a parachute stowage platform as shown in Figure 6-23.
  - Position the honeycomb support and parachute stowage platform and lash the parachute stowage platform as shown in Figure 6-24.

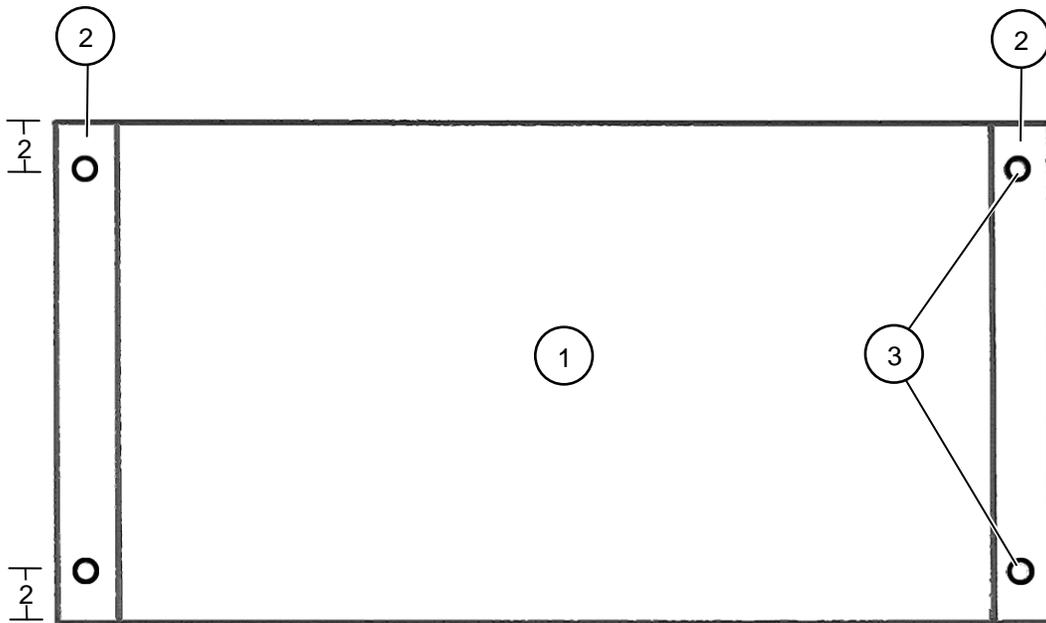
**Note.** This drawing is not drawn to scale.



- ① Glue fourteen 60- by 29-inch pieces of honeycomb as the parachute platform support base.

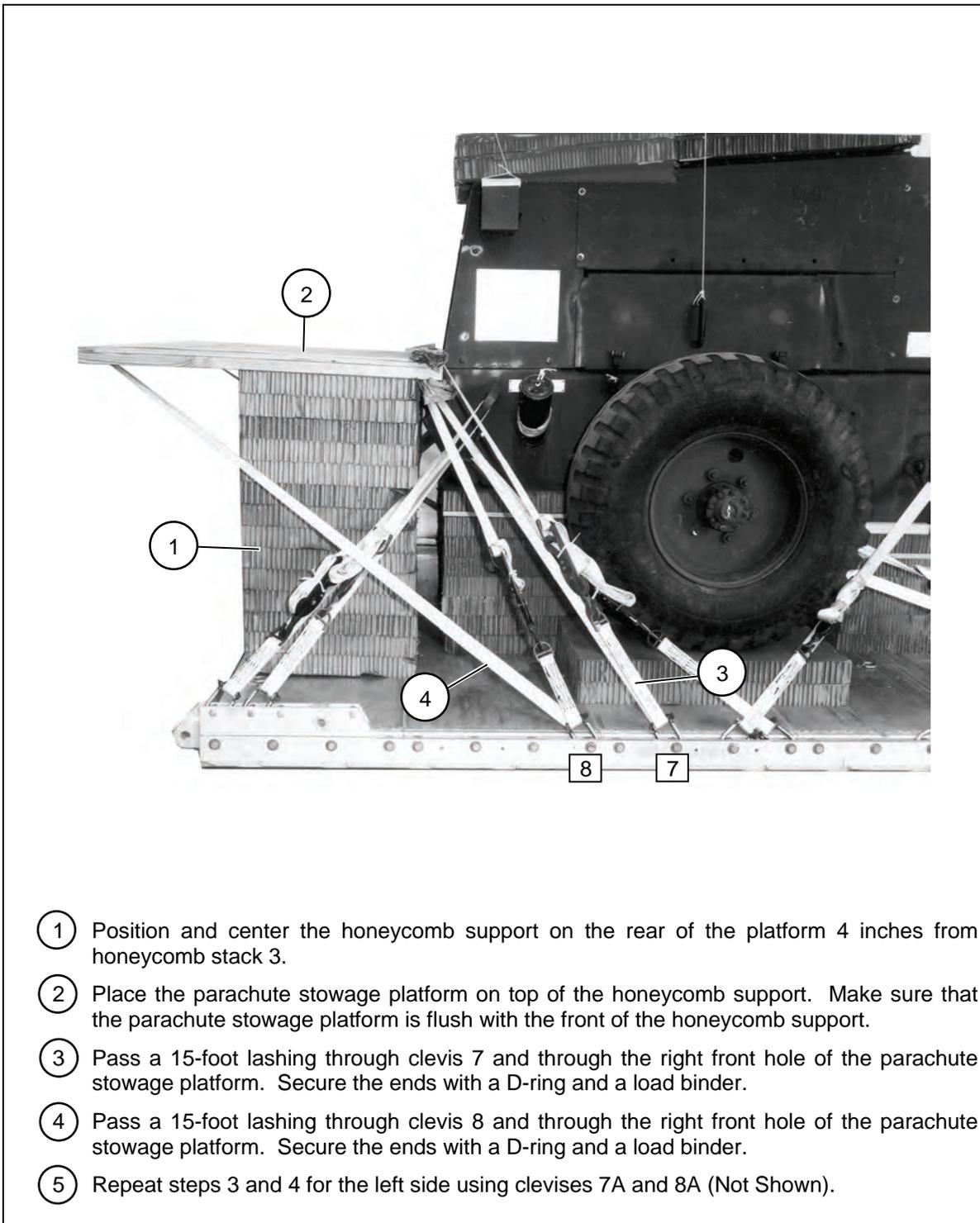
**Figure 6-22. Parachute Support Base Built**

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



- ① Cut a  $\frac{3}{4}$ - by 60- by 48-inch piece of plywood.
- ② Cut two 7- by 6- by 48-inch pieces of lumber. Place each piece flush at each end of the plywood and secure with 10d nails.
- ③ Drill 7-inch holes as shown.

**Figure 6-23. Parachute Stowage Platform Built**

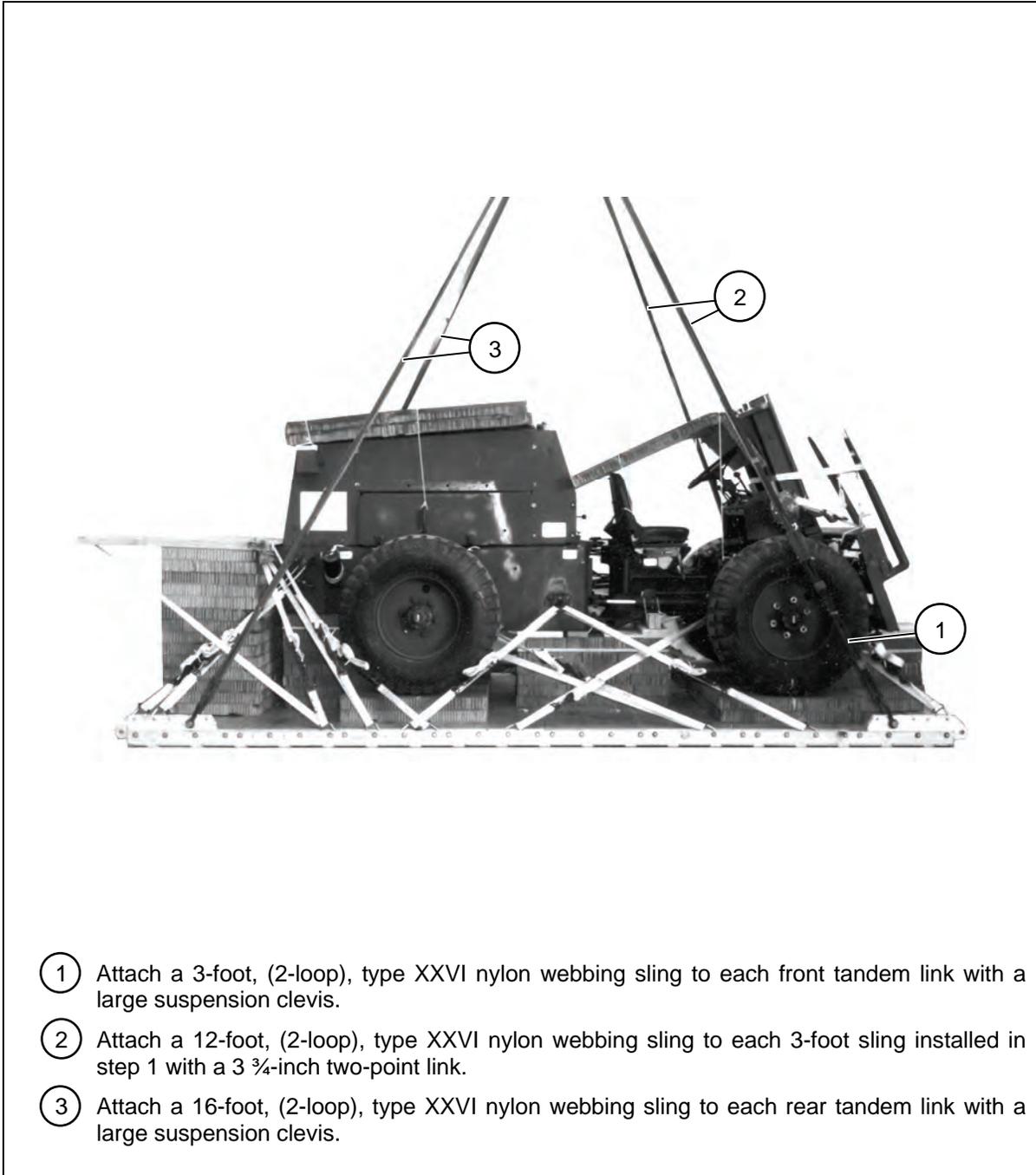


- ① Position and center the honeycomb support on the rear of the platform 4 inches from honeycomb stack 3.
- ② Place the parachute stowage platform on top of the honeycomb support. Make sure that the parachute stowage platform is flush with the front of the honeycomb support.
- ③ Pass a 15-foot lashing through clevis 7 and through the right front hole of the parachute stowage platform. Secure the ends with a D-ring and a load binder.
- ④ Pass a 15-foot lashing through clevis 8 and through the right front hole of the parachute stowage platform. Secure the ends with a D-ring and a load binder.
- ⑤ Repeat steps 3 and 4 for the left side using clevises 7A and 8A (Not Shown).

**Figure 6-24. Parachute Stowage Platform Secured**

## INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

6-10. Install the suspension slings and deadman's tie as shown in Figures 6-25 and 6-26.



**Figure 6-25. Suspension Slings Installed**

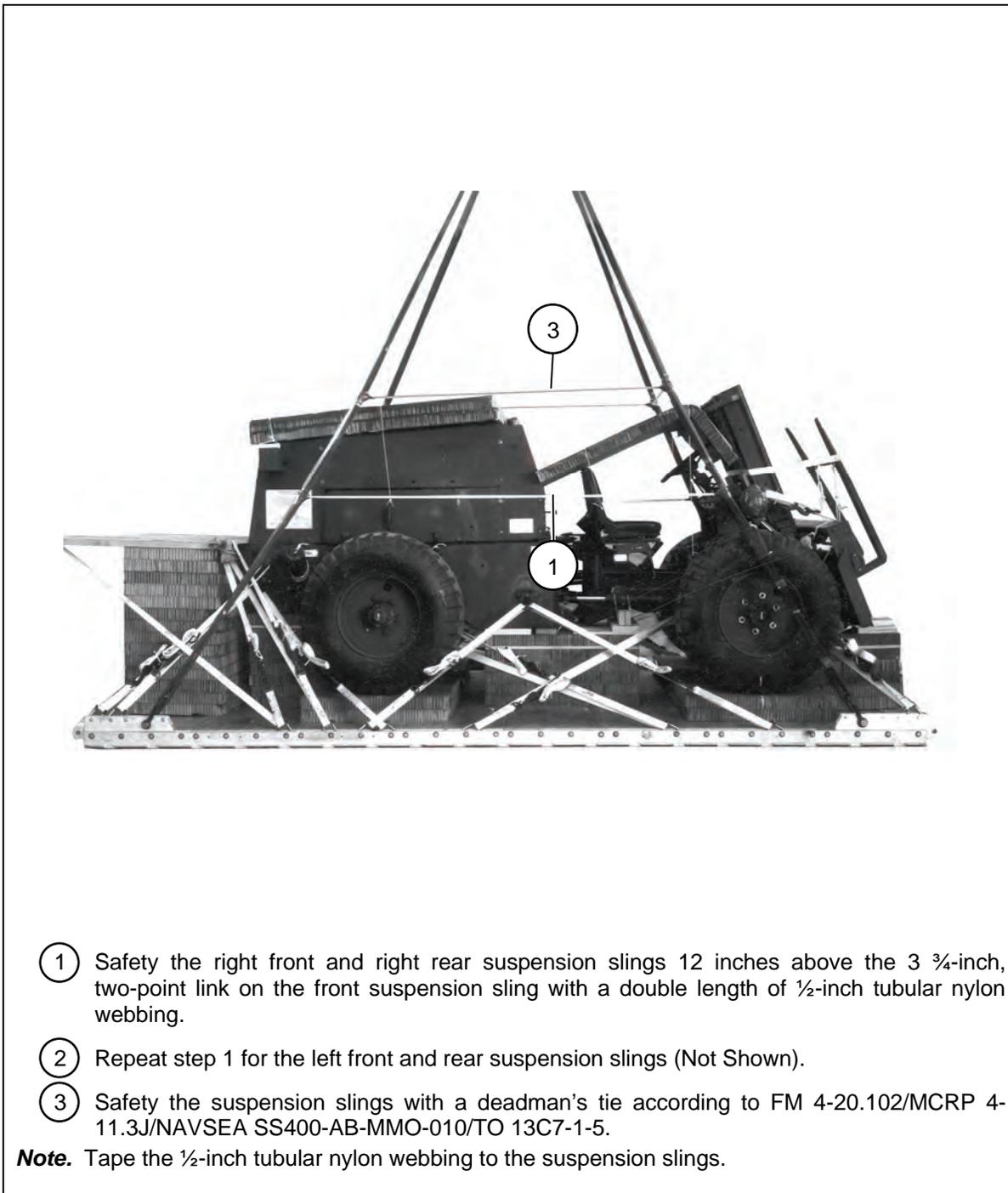


Figure 6-26. Suspension Slings Safety Tied

## STOWING CARGO PARACHUTES

6-11. Prepare and stow three G-11 cargo parachutes on the parachute stowage platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as described below.

- Install the parachute restraint straps according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 using clevises 8 and 8A, and 9 and 9A.
- Install the multicut parachute release straps according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## INSTALLING EXTRACTION SYSTEM

6-12. Install the extraction force transfer coupling (EFTC) according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as described below.

- Install the actuator brackets to the front mounting holes on the left platform side rail.
- Attach a 16-foot cable to the actuator.
- Install a 9-foot, (2-loop or 4-loop), type XXVI nylon webbing sling as the deployment line according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- If applicable, install the extraction parachute jettison system (EPJS) according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## INSTALLING RELEASE SYSTEM

6-13. Install the M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 6-27.

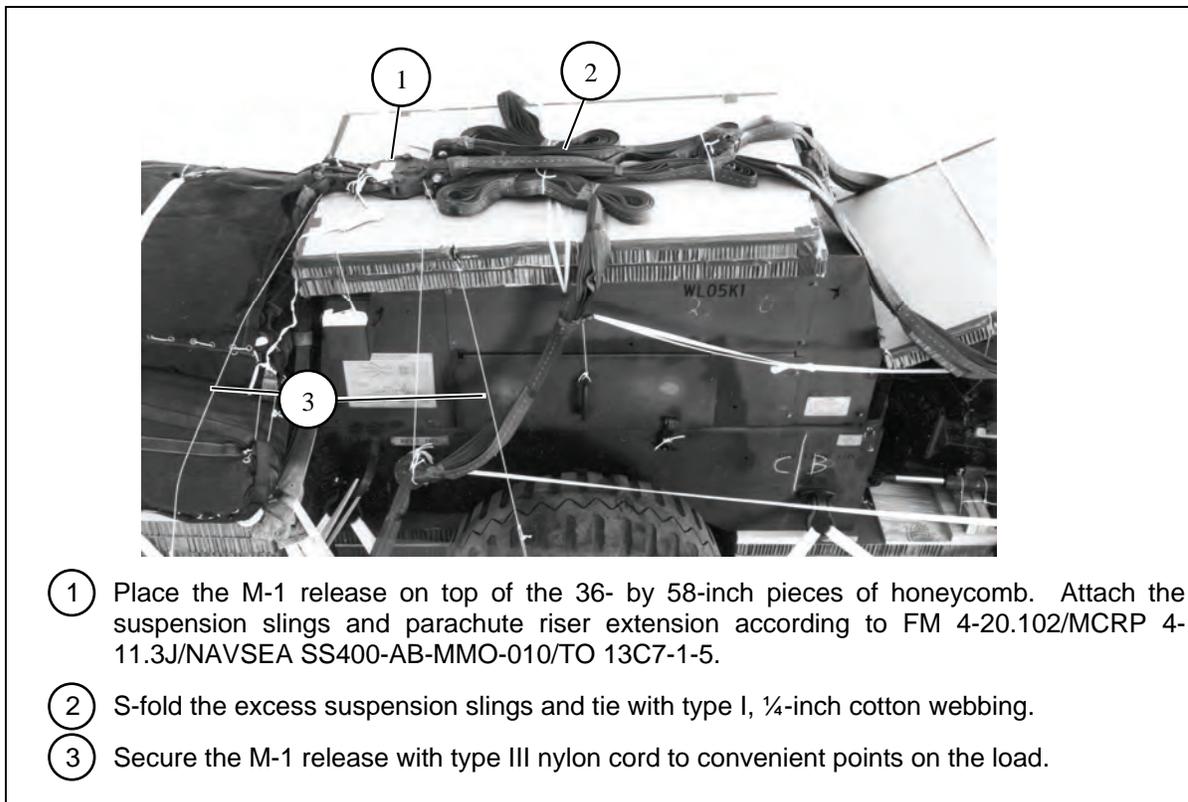


Figure 6-27. M-1 Release Installed

## INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

6-14. Install the provisions for the emergency restraints on the load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## PLACING EXTRACTION PARACHUTE

6-15. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. 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 platform for installation in the aircraft as well.

## MARKING RIGGED LOAD

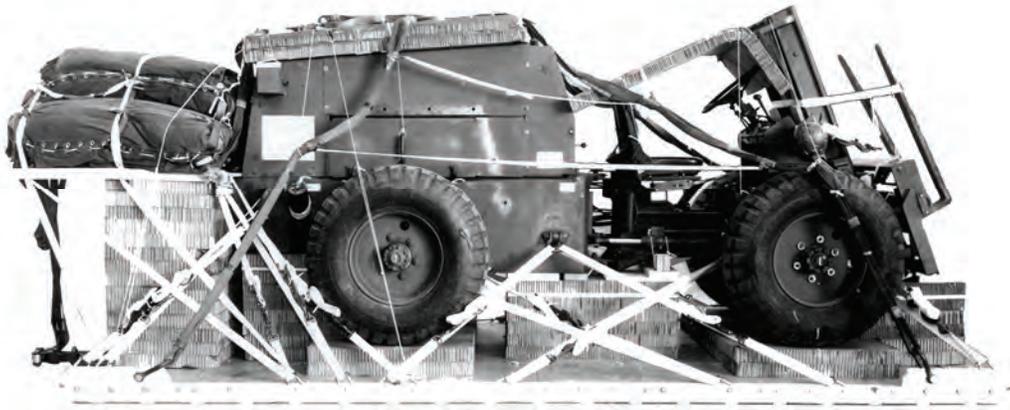
6-16. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 6-28. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## EQUIPMENT REQUIRED

6-17. Use the equipment listed in Table 6-2 to rig this load.

### CAUTION

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



### RIGGED LOAD DATA

Weight: Load shown.....	12,370 pounds
Maximum load allowed .....	13,000 pounds
Height .....	86 inches
Width .....	108 inches
Overall Length.....	220 inches
Overhang: Front .....	4 ½ inches
Rear (parachute stowage platform).....	24 inches
Rear (EPJS) .....	30 inches
Center of Balance (from front edge of platform) .....	82 inches

**Figure 6-28. M4K, 4,000-Pound Capacity Forklift Truck Rigged on a Type V Platform**

**Table 6-2. Equipment Required for Rigging the M4K, 4,000-Pound Capacity Forklift Truck on a Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-278-8713	Adhesive, paste, 6-gallon	As required
5305-00-177-5617	Bolt, 6-inch (large clevis)	2
	Clevis, suspension:	
4030-00-678-8562	¾-inch (medium)	8
4030-00-090-5354	6-inch (large)	8
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-439-5785	Coupling, airdrop, extraction force transfer with cable, 16-foot	1
1670-00-360-0328	Cover, clevis, large	4
8135-00-669-6958	Cushioning material, packaging, cellulose wadding	As required
1670-06-188-2678	Leaf, extraction line (line bag)	2
1670-06-069-4452	Line, drogue, 60-foot, (6-loop), type XXVI (for C-17)	1
	Line, extraction	
1670-06-067-6313	60-foot, (8-loop), type XXVI (for C-130)	1
1670-06-107-7651	140-foot, (8-loop), type XXVI (for C-17)	1
1670-00-008-1953	Link assembly, two-point, 3 ¾-inch	4
	Lumber:	
5510-00-220-6274	7- by 9-inch	As required
5510-00-220-6148	7- by 6-inch	As required
	Nail, steel wire:	
5315-00-010-4659	8d	As required
	10d	As required
1670-00-758-3928	Pad, energy-dissipating (honeycomb)	20
	Parachute:	
	Cargo:	
1670-06-016-7841	G-11	3
	Cargo extraction:	
1670-06-068-3716	22-foot	1
1670-06-068-3715	15-foot (drogue for C-17)	1
9030-06-227-6087	Parts kit, lifting shackle (5-ton truck)	2
	Platform, airdrop, type V, 16-foot	
1670-06-358-8425	Bracket assembly, coupling	1
1670-06-167-2372	Clevis assembly, type V	22
1670-06-358-8424	Extraction bracket assembly	1
1670-06-167-2381	Tandem link assembly (multipurpose link)	4
5530-00-128-4981	Plywood, ¾-inch	As required
1670-06-097-8816	Release, cargo parachute, M-1	1

**Table 6-2. Equipment Required for Rigging the M4K, 4,000-Pound Capacity Forklift Truck on a Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Sling, cargo, airdrop:	
	For suspension:	
1670-06-067-6301	8-foot, (2-loop), type XXVI nylon webbing	2
1670-06-067-6303	17-foot, (2-loop), type XXVI nylon webbing	2
1670-06-068-7761	16-foot, (2-loop), type XXVI nylon webbing	2
	For lifting:	
1670-06-068-7761	16-foot, (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-06-067-6304	9-foot, (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-06-067-6313	60-foot, (8-loop), type XXVI nylon webbing	3
5340-00-040-8219	Strap, parachute release multi-cut, with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tie-down assembly, 15-foot	30
1670-06-488-8259	Tow release mechanism (H-block for C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
8305-00-087-5752	Nylon, tubular, ½-inch	As required
8305-00-268-3591	Type VIII	As required

## Chapter 7

# Rigging the M-270, 4,000-Pound Capacity Forklift Truck on a Type V Platform

## DESCRIPTION OF LOAD

7-1. The M-270, 4,000-pound capacity forklift truck (Figure 7-1) has an unrigged weight of 12,000 pounds which is not reducible. The length is 205 inches (reducible to 165 inches), width is 80 inches which is not reducible, and the height is 80 inches reducible to 78 inches. The forklift is rigged with three G-11 cargo parachutes on a 16-foot type V platform with a total rigged weight of 15,400 pounds, height of 98 ½ inches, width of 108 inches, and a length of 266 inches with a 15-inch front overhang, a 16-inch rear overhang and a center of balance of 83 inches.

## PREPARING PLATFORM

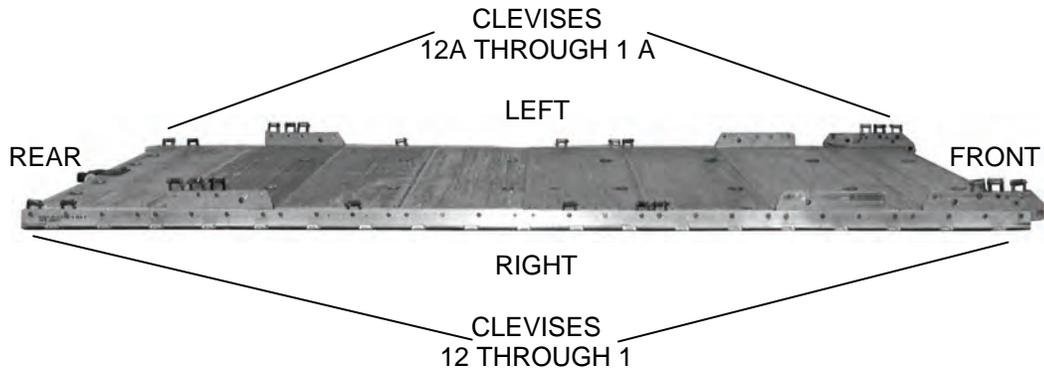
7-2. Prepare a 16-foot, type V platform using two tandem links, four suspension links and 24 clevis assemblies as described below and as shown in Figure 7-2.

- **Inspecting Platform.** Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- **Installing Tandem Links.** Install tandem links as shown in Figure 7-2.
- **Installing Suspension Links.** Install suspension links as shown in Figure 7-2.
- **Attaching and Numbering Clevises.** Attach and number 24 clevis assemblies as shown in Figure 7-2.



Figure 7-1. M-270, 4,000-Pound Capacity Forklift Truck

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



**Step:**

1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install two suspension links on each platform side rail using holes 6, 7, and 8, and 25, 26, and 27.
3. Install a clevis on bushings 1, 2, and 3 on each front tandem link.
4. Install a clevis on each rear suspension link on bushings 2, 3, and 4.
5. Starting at the front of each platform side rail, install clevises to bushings bolted on holes 12, 13, 15, 22, 31, and 32.
6. Starting at the front of the platform side rail, number the clevises bolted on the right side from 1 through 12 and those bolted on the left side from 1A to 12A.

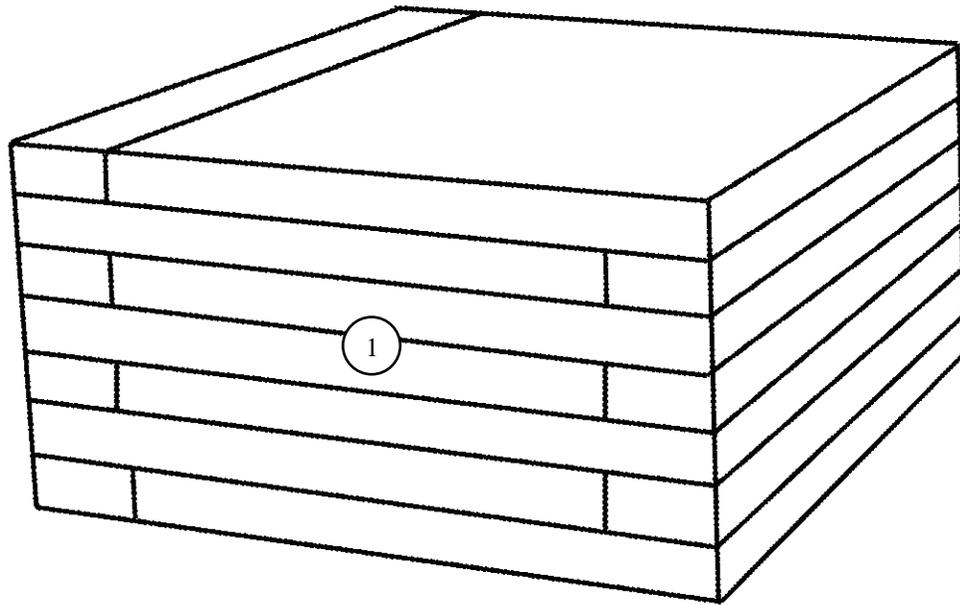
**Figure 7-2. Platform Prepared**

## PREPARING AND POSITIONING HONEYCOMB STACKS

7-3. Use the materials in Table 7-1 to prepare seven honeycomb stacks as shown in Figures 7-3 through 7-12. Position the stacks on the platform as shown in Figures 7-13 and 7-14.

**Table 7-1. Material Required to Build Honeycomb Stacks**

<b>Stack Number</b>	<b>Pieces</b>	<b>Width (inches)</b>	<b>Length (inches)</b>	<b>Material</b>	<b>Instructions</b>
1	7	36	44	Honeycomb	See Figures 7-3 through 7-5.
	7	6	44	Honeycomb	
	2	42	44	¾-inch Plywood	
	1	42	37 ½	¾-inch Plywood	
	2	2 by 4	22 ½	Lumber	
	3	2 by 4	37 ½	Lumber	
	1	42	37 ½	¾-inch Plywood	
	2	4 by 4	10	Lumber	
	2	2 by 6	38	Lumber	
	1	38	4	¾-inch Plywood	
	2	36	4	½-inch Plywood	
2	7	36	24	Honeycomb	See Figures 7-6 through 7-8.
	1	34	24	¾-inch Plywood	
	4	2 by 6	24	Lumber	
	1	34	24	¾-inch Plywood	
	1	16	24	¾-inch Plywood	
3	7	42	32	Honeycomb	See Figures 7-9 through 7-11.
	1	42	32	¾-inch Plywood	
	4	2 by 4	32	Lumber	
	1	42	32	¾-inch Plywood	
	1	42	18	¾-inch Plywood	
	2	2 by 6	18	Lumber	
	1	4	6	¾-inch Plywood	
	1	42	6	¾-inch Plywood	
4, 5, 6, and 7	3	27	68	Honeycomb	See Figure 7-12.



- 1 Glue seven 36- by 49-inch and seven 6- by 49-inch pieces of honeycomb together making a 47- by 49-inch honeycomb base. Alternate the 6- by 49-inch pieces of honeycomb on either side as shown.

**Figure 7-3. Honeycomb Stack 1 Base Prepared**

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

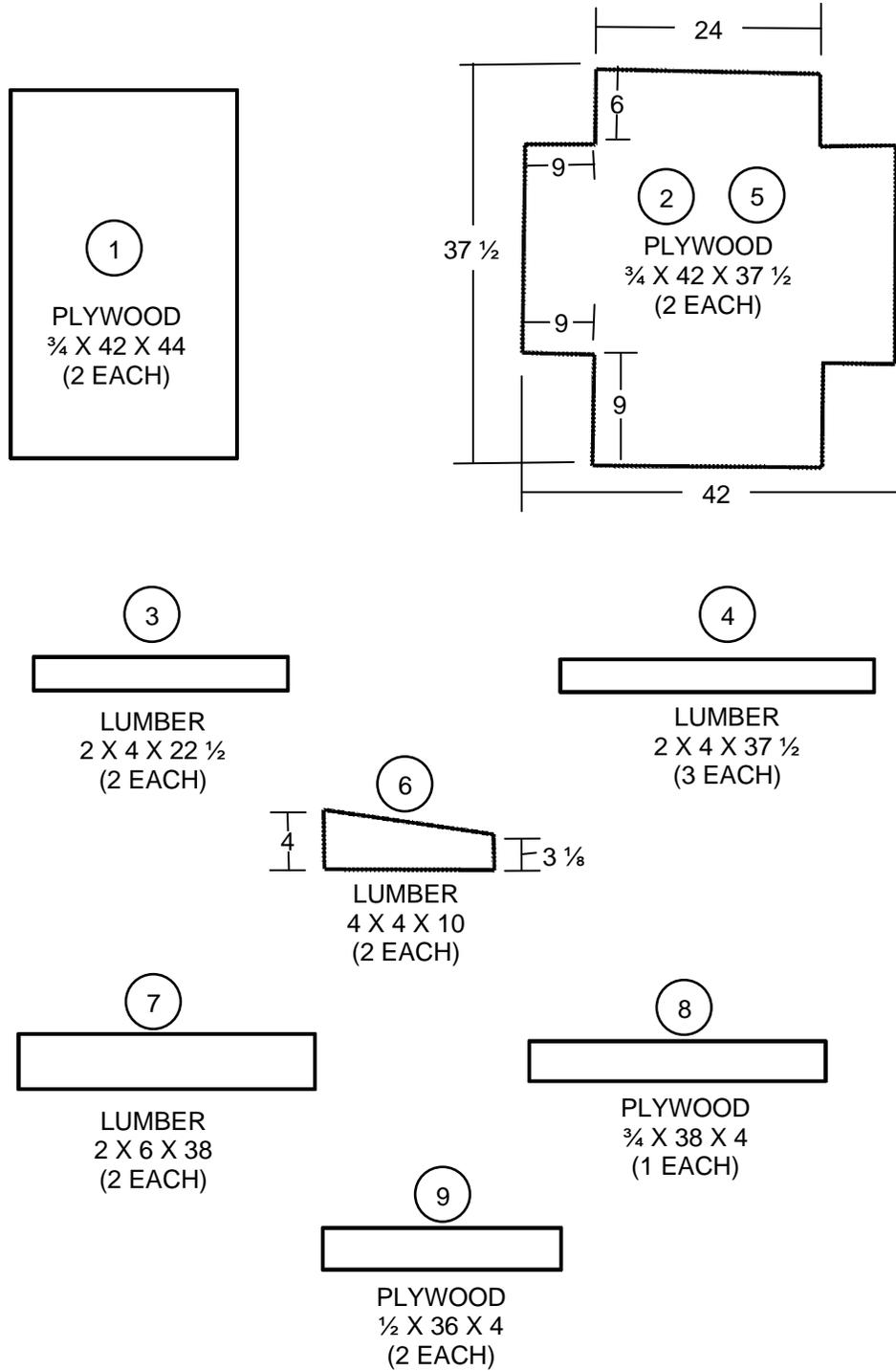
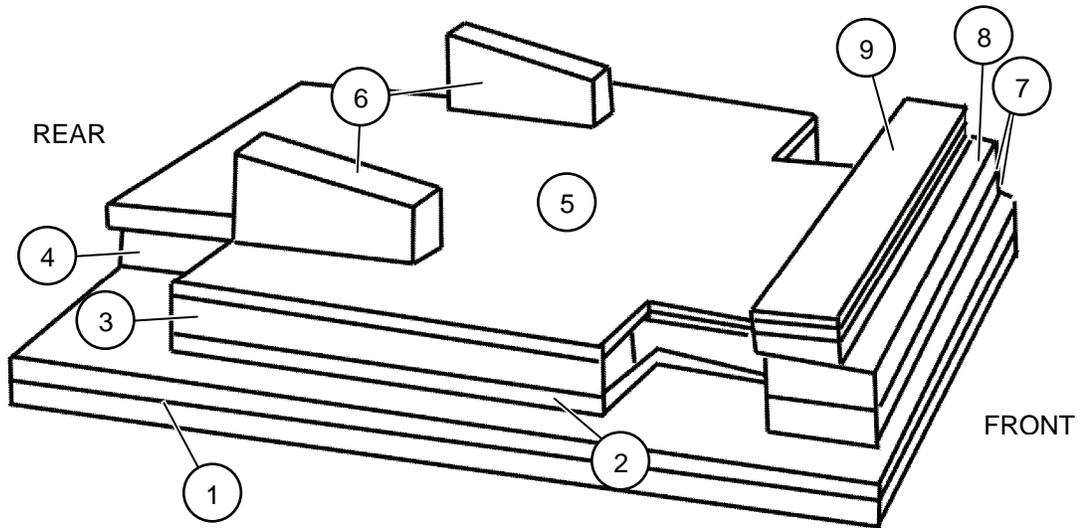


Figure 7-4. Pieces for Stack 1 Frame Support

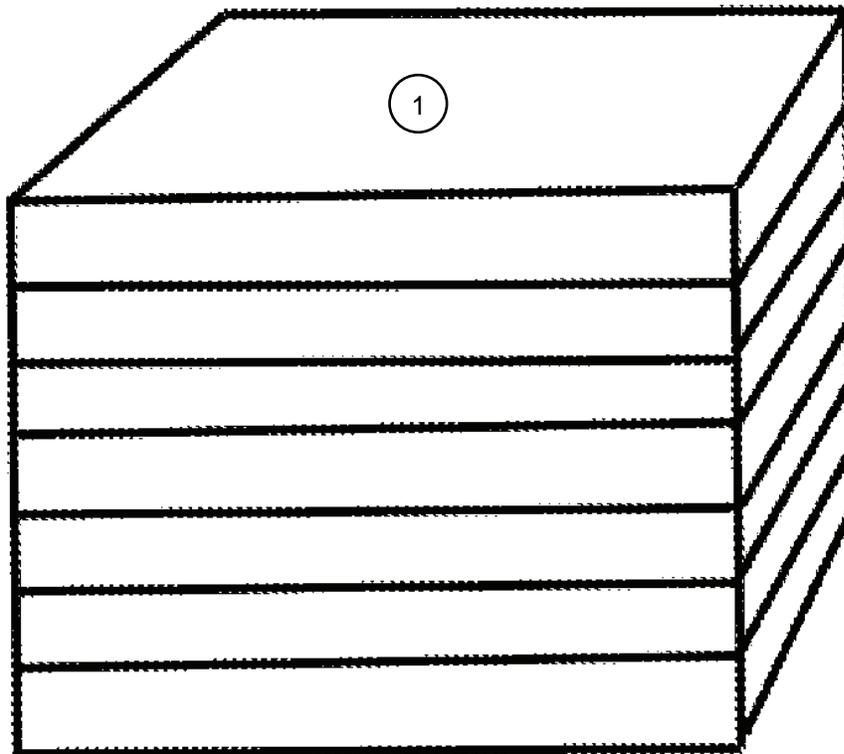
**Note.** This drawing is not drawn to scale.



- ① Glue and nail two  $\frac{3}{4}$ - by 47- by 49-inch pieces of plywood together. Do not glue to base.
- ② Cut one  $\frac{3}{4}$ - by 47- by 37  $\frac{1}{2}$ -inch piece of plywood. Glue and nail to a  $\frac{3}{4}$ - by 47- by 49-inch piece of plywood with 29-inch side flush with rear edge.
- ③ Glue and nail the 7- by 9- by 22  $\frac{1}{2}$ -inch pieces of lumber flush with right and left sides of plywood.
- ④ Glue and nail three 7- by 9- by 37  $\frac{1}{2}$ -inch pieces of lumber.
- ⑤ Cut one  $\frac{3}{4}$ - by 47- by 37  $\frac{1}{2}$ -inch piece of plywood. Glue and nail to the 7- by 9-inch pieces of lumber.
- ⑥ Cut two 9- by 9- by 10-inch pieces of lumber measuring 4 inches high on one end and 3  $\frac{1}{8}$  inches high on the other. Glue and nail flush with rear edge of plywood 6 inches from right and left sides as shown above.
- ⑦ Glue and nail two 7- by 6- by 38-inch pieces of lumber together flush against the plywood and a 7- by 6-inch piece of lumber centered from right to left.
- ⑧ Glue and nail one  $\frac{3}{4}$ - by 38- by 9-inch piece of plywood flush with the rear edge of a 7- by 6- by 38-inch piece of lumber and centered.
- ⑨ Glue and nail two  $\frac{1}{2}$ - by 36- by 9-inch pieces of plywood on top of the  $\frac{3}{4}$ - by 38- by 9-inch piece of plywood.

**Figure 7-5. Stack 1 Frame Support Built**

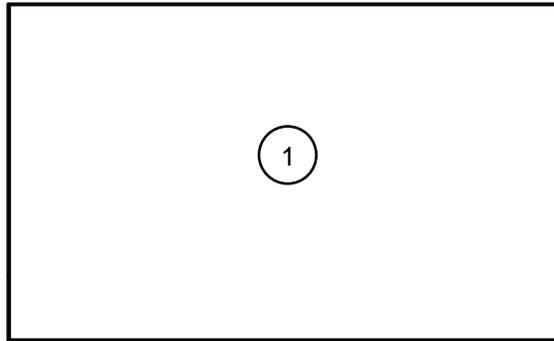
**Note.** This drawing is not drawn to scale.



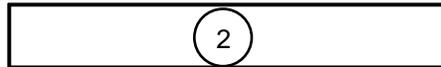
① Glue seven 36- by 29-inch pieces of honeycomb to form base.

**Figure 7-6. Stack 2 Base Prepared**

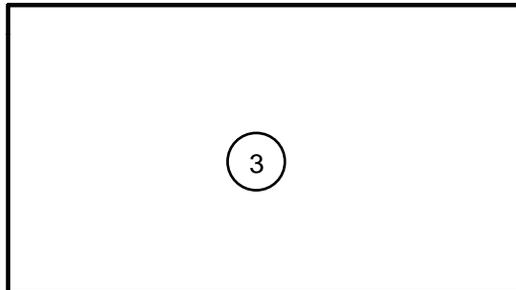
- Notes.** 1. All measurements are given in inches.  
2. This drawing is not drawn to scale.



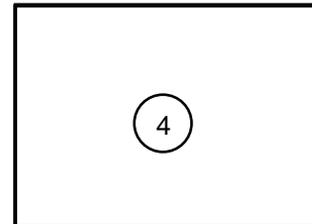
PLYWOOD  
 $\frac{3}{4}$  X 34 x 24  
(1 EACH)



LUMBER  
2 X 6 X 24  
(4 EACH)



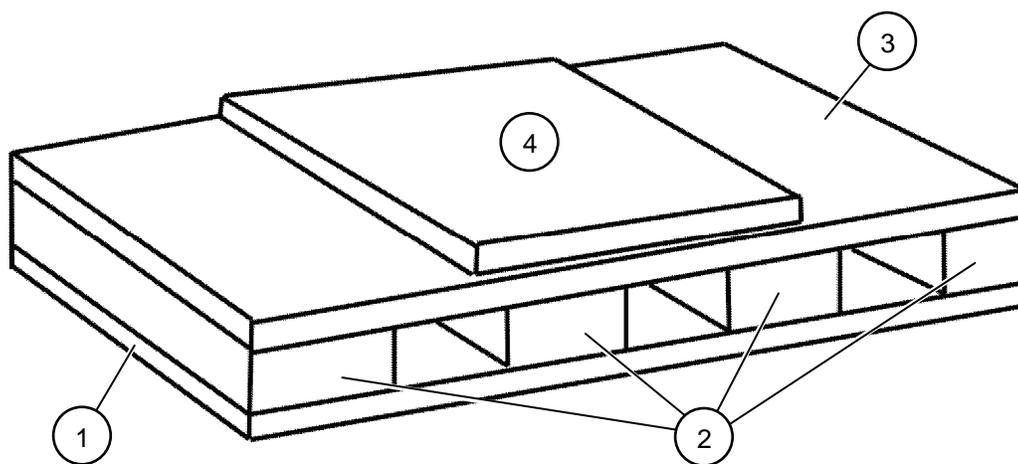
PLYWOOD  
 $\frac{3}{4}$  X 34 X 24  
(1 EACH)



PLYWOOD  
 $\frac{3}{4}$  X 16 X 24  
(1 EACH)

**Figure 7-7. Pieces for Stack 2 Frame Support**

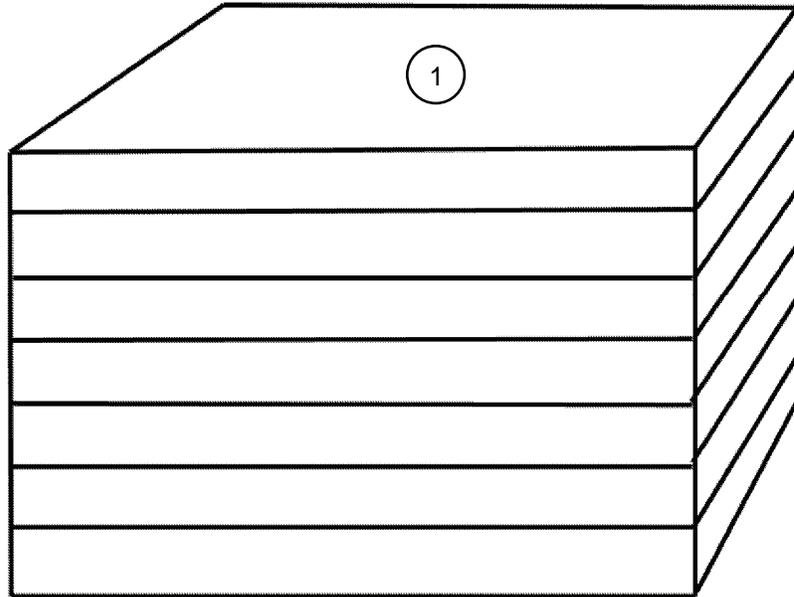
**Note.** This drawing is not drawn to scale.



- ① Place a  $\frac{3}{4}$ - by 39- by 29-inch piece of plywood on the base. Do not glue to base.
- ② Glue and nail four 7- by 6- by 29-inch pieces of lumber to plywood, one piece flush with right and left edge. Center the other two pieces and space them 4 inches apart.
- ③ Glue and nail one  $\frac{3}{4}$ - by 39- by 29-inch piece of plywood on top of lumber.
- ④ Glue and nail one  $\frac{3}{4}$ - by 16- by 29-inch piece of plywood centered on plywood.

**Figure 7-8. Stack 2 Frame Support Built**

**Note.** This drawing is not drawn to scale.



① Glue seven 47- by 37-inch pieces of honeycomb to form base.

**Figure 7-9. Stack 3 Base Prepared**

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

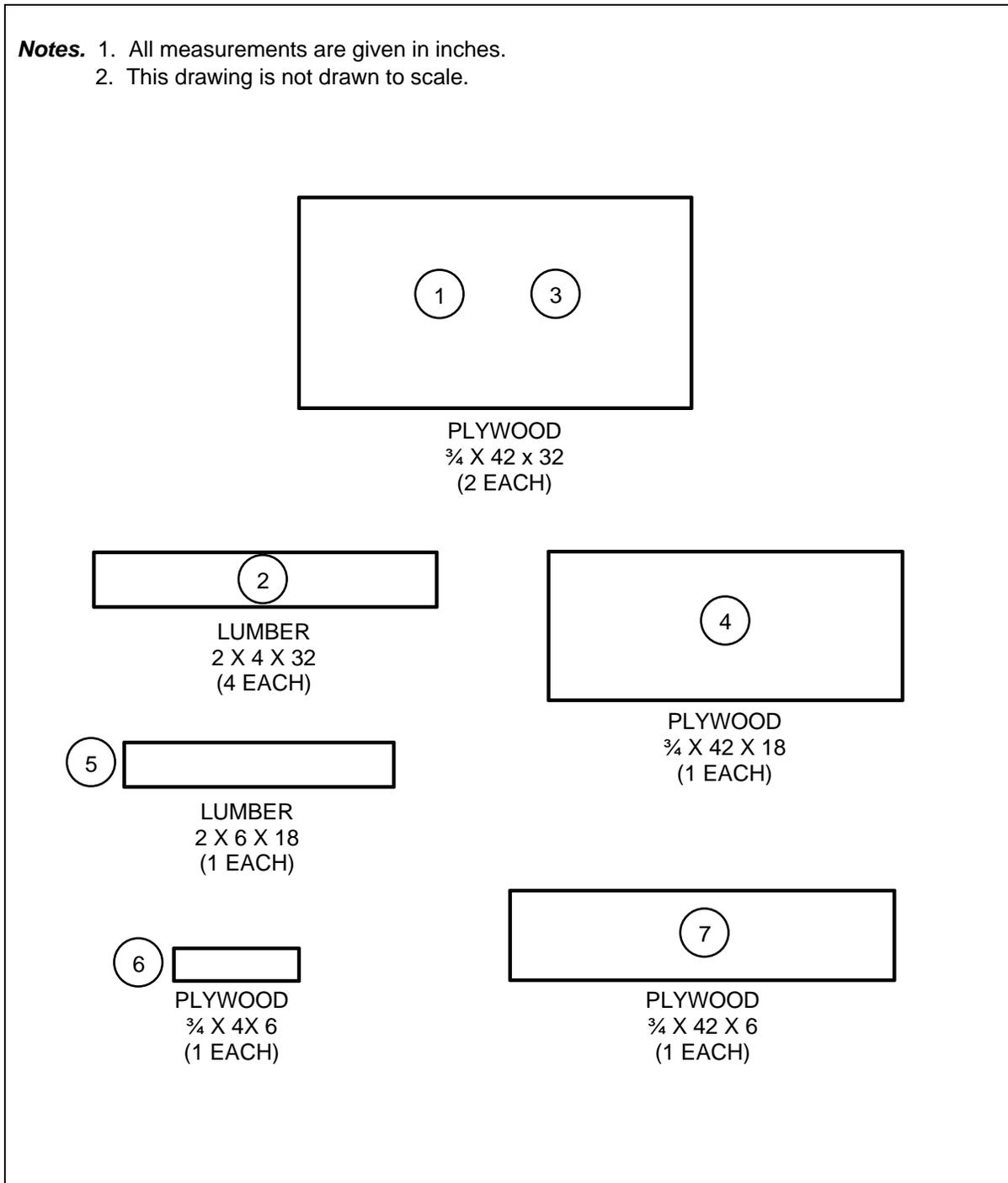
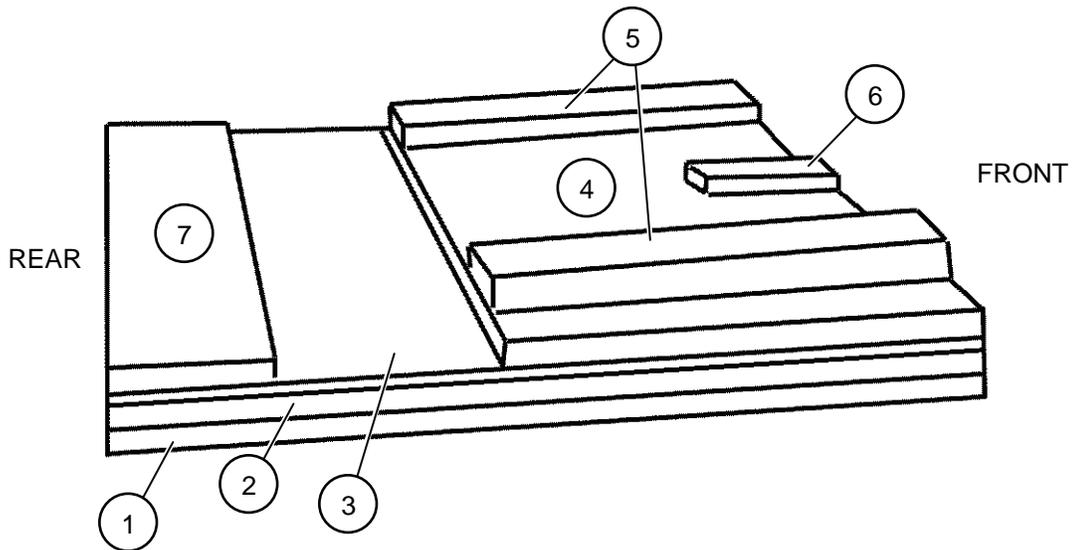


Figure 7-10. Pieces for Stack 3 Frame Support

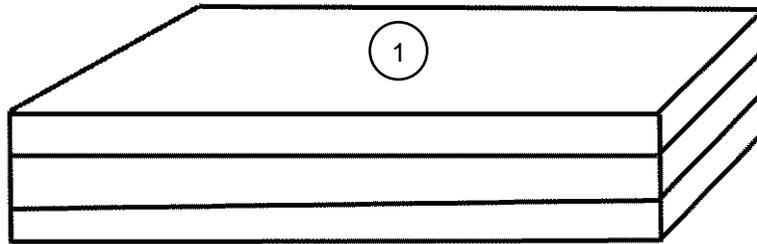
**Note.** This drawing is not drawn to scale.



- ① Place one  $\frac{3}{4}$ - by 47- by 37-inch piece of plywood on the base. Do not glue to base.
- ② Glue and nail four 7- by 9- by 37-inch pieces of lumber to the  $\frac{3}{4}$ - by 47- by 37-inch piece of plywood, one piece flush with right edge and one piece flush with left edge. Place one piece 8  $\frac{1}{2}$  inches from the right piece and one piece 8  $\frac{1}{2}$  inches from the left piece.
- ③ Glue and nail one  $\frac{3}{4}$ - by 47- by 37-inch piece of plywood on top of the 7- by 9- by 37-inch piece of lumber.
- ④ Glue and nail one  $\frac{3}{4}$ - by 47- by 18-inch piece of plywood on a  $\frac{3}{4}$ - by 47- by 37-inch piece of plywood flush with the front edge.
- ⑤ Glue and nail two 7- by 6- by 18-inch pieces of lumber, one piece 3 inches from right edge of  $\frac{3}{4}$ - by 47- by 18-inch piece of plywood and one piece 3 inches from left side.
- ⑥ Glue and nail one  $\frac{3}{4}$ - by 9- by 6-inch piece of plywood with the 9-inch side centered on the front edge of stack.
- ⑦ Glue and nail one  $\frac{3}{4}$ - by 47- by 6-inch piece of plywood flush with rear edge of stack.

**Figure 7-11. Stack 3 Frame Support Built**

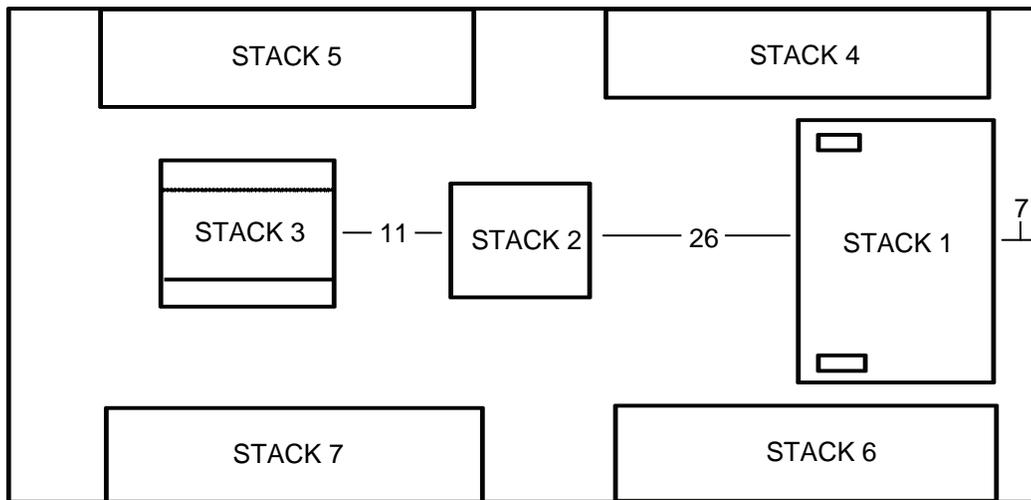
**Note.** This drawing is not drawn to scale.



① Glue three 27- by 68-inch pieces of honeycomb to form base.

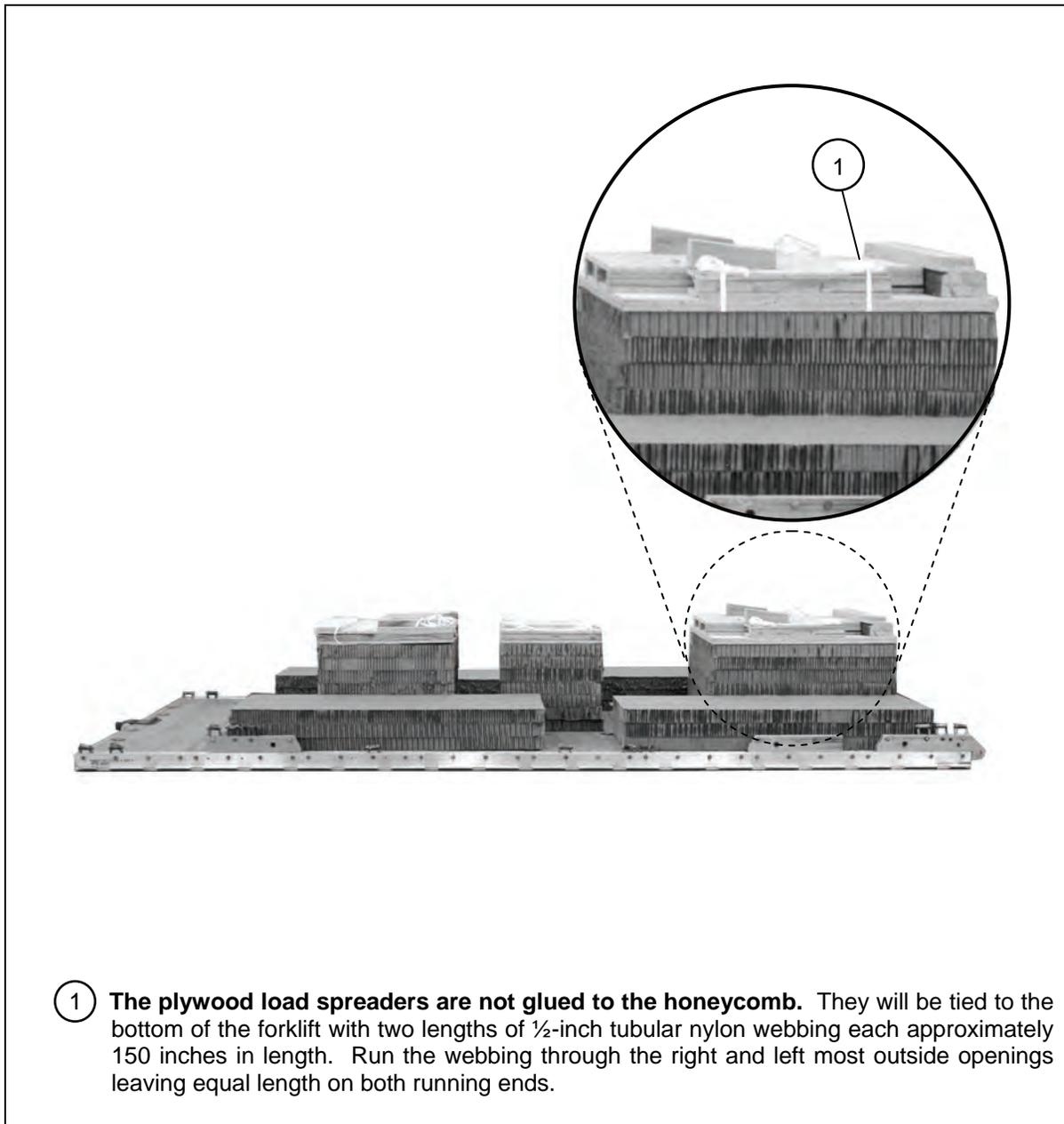
**Figure 7-12. Stacks 4, 5, 6, and 7 Prepared**

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



Stack Number	Position of Stack on Platform
	Place stack:
1	Centered 7 inches from the front edge of the platform.
2	Centered 26 inches from stack 1.
3	Centered 11 inches from stack 2.
4, 5, 6, & 7	Position one under each tire of the forklift. Position each stack so that the larger surface area is to the rear of the tires to aid in backing the vehicle off the platform.

**Figure 7-13. Honeycomb Stacks Placed on Platform**



- ① **The plywood load spreaders are not glued to the honeycomb.** They will be tied to the bottom of the forklift with two lengths of ½-inch tubular nylon webbing each approximately 150 inches in length. Run the webbing through the right and left most outside openings leaving equal length on both running ends.

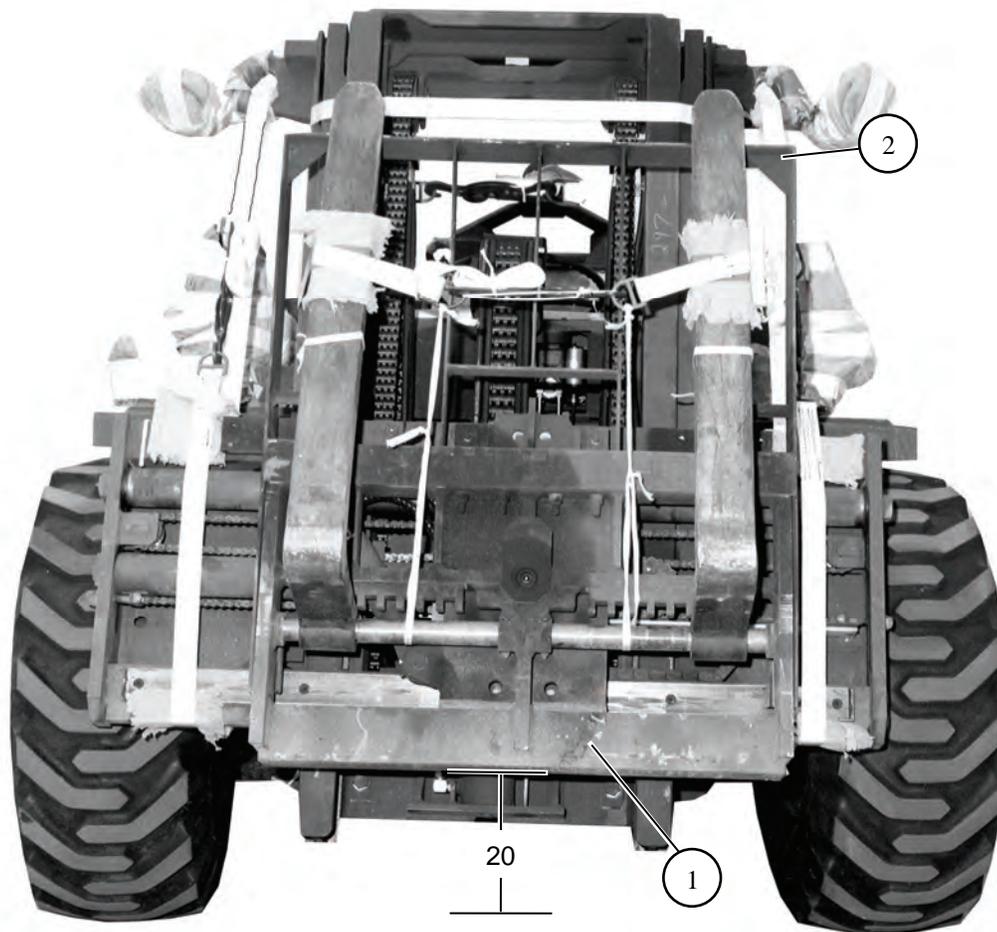
**Figure 7-14. Load Spreaders Positioned on Platform**

## PREPARING FORKLIFT

7-4. Prepare the forklift before positioning it on the platform as described below and as shown in Figures 7-15 through 7-18.

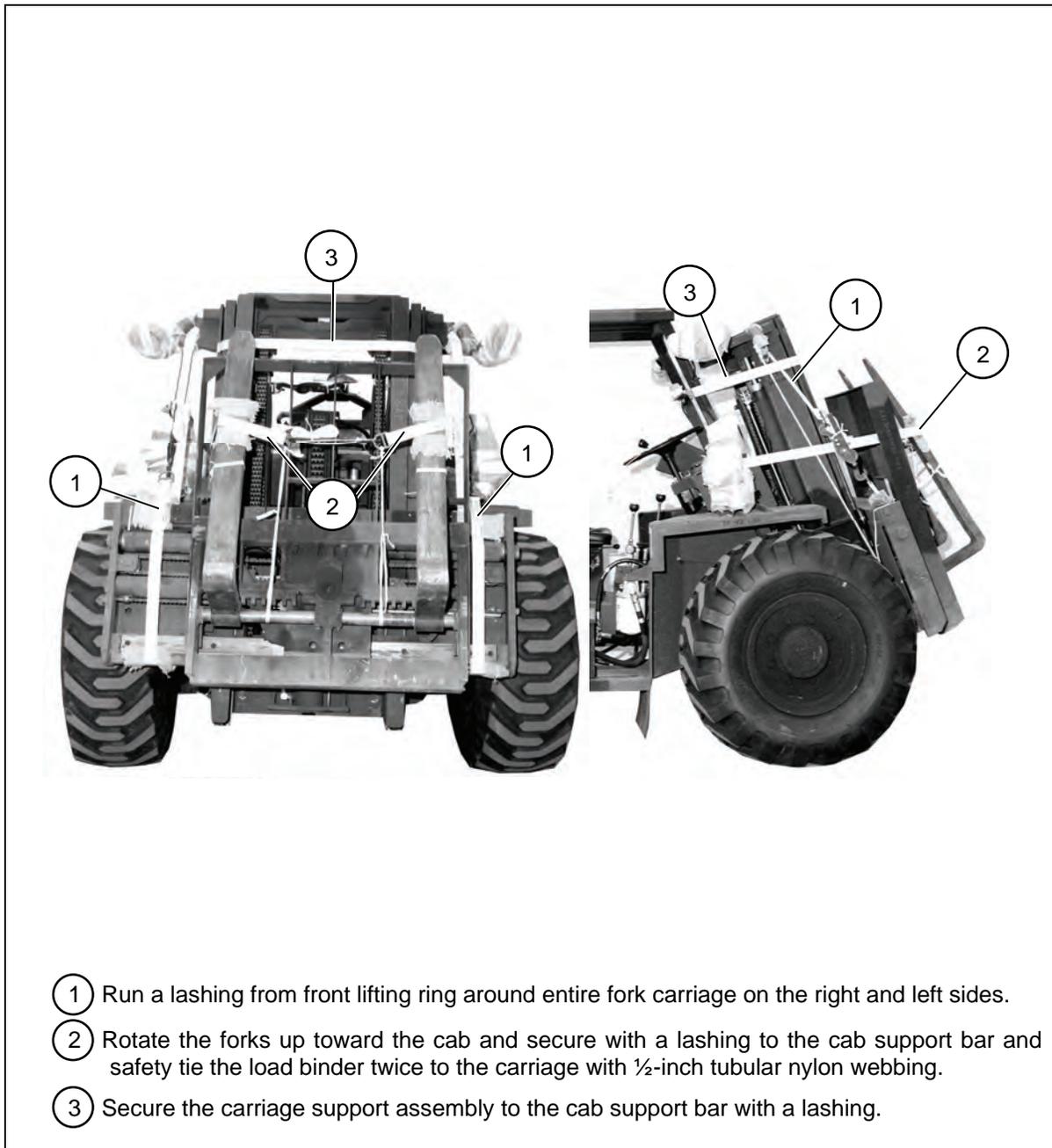
- Make sure the fuel tank is not more than  $\frac{3}{4}$  full.
- Pad and tape all light, reflectors, and gauges.

**Note.** All measurements are given in inches.

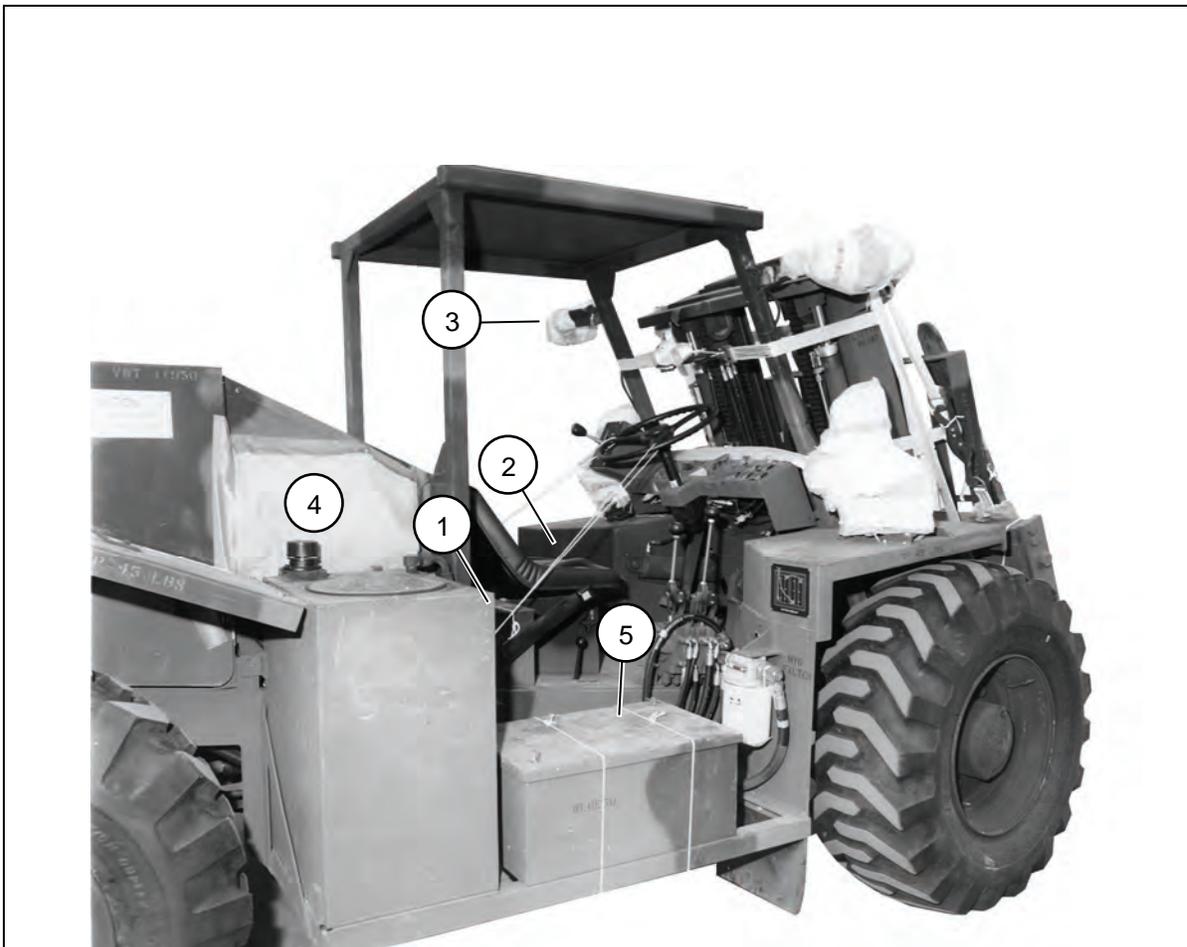


- ① Raise the front forks approximately 20 inches off the ground measuring from the carriage assembly.
- ② Tilt carriage toward the cab.

**Figure 7-15. Front Forks Prepared**

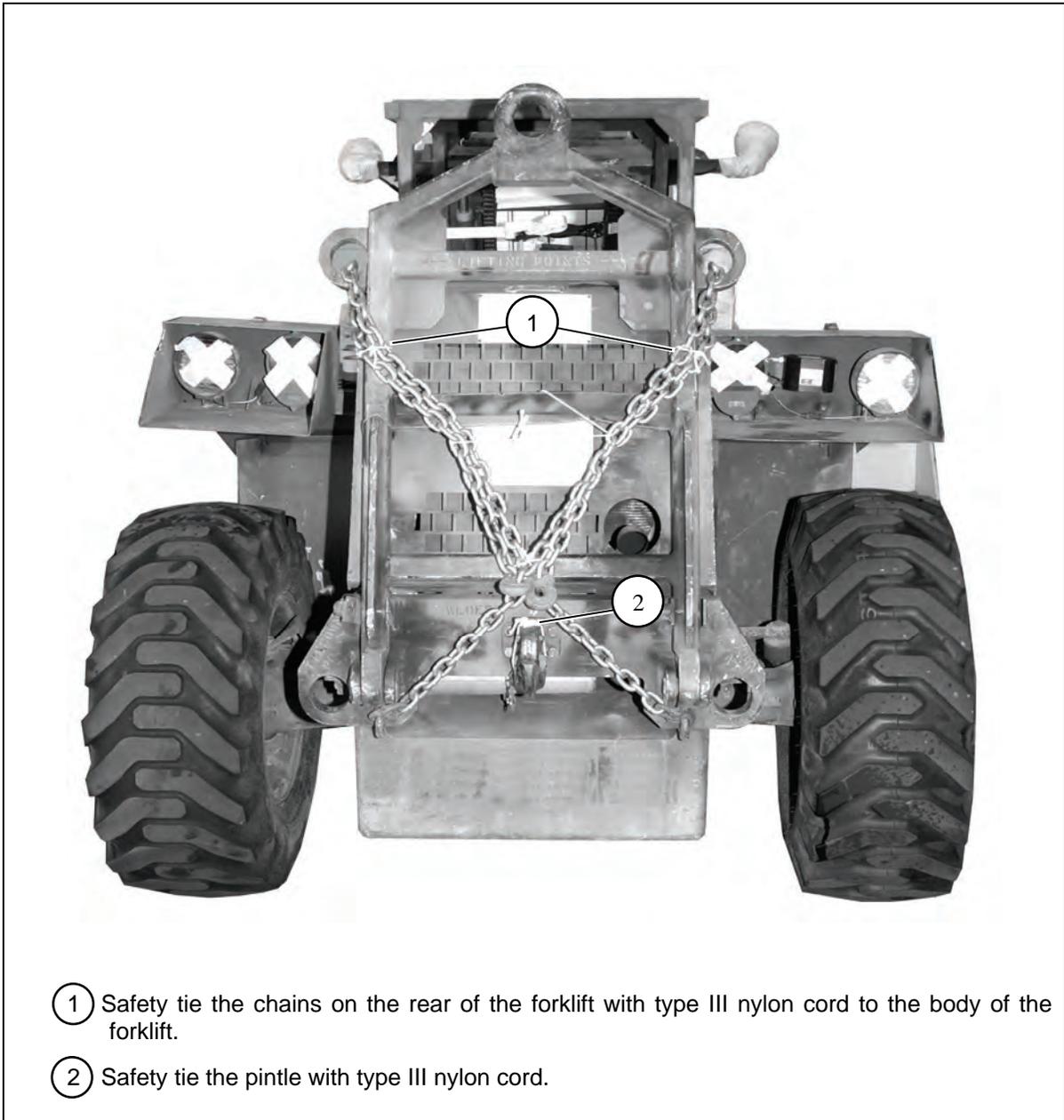


**Figure 7-16. Fork Carriage Prepared**



- ① Remove mirrors. Pad and place them in tool box behind the driver's seat and secure the box closed with type III nylon cord.
- ② Secure the steering wheel with type III nylon cord.
- ③ Pad and tape all lights.
- ④ Pad and tape right side electrical panel.
- ⑤ Safety tie battery box closed with type III nylon cord.
- ⑥ Safety tie the fuel filter with type III nylon cord (Not Shown).

**Figure 7-17. Mirrors, Steering Wheel, Lights, Electrical Panel, Battery Box and Fuel Filter Secured**



**Figure 7-18. Rear of Forklift Prepared**

## BUILDING AND POSITIONING THE FENDER PROTECTION KIT

7-5. Build and position the fender protection kits as described below.

- Build two honeycomb fender protection kits as shown in Figures 7-19 and 7-20.
- Position the fender protection kits on the appropriate fender as shown in Figure 7-21.
- Secure the fender protection kits on forklift as shown in Figures 7-22 and 7-23.

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

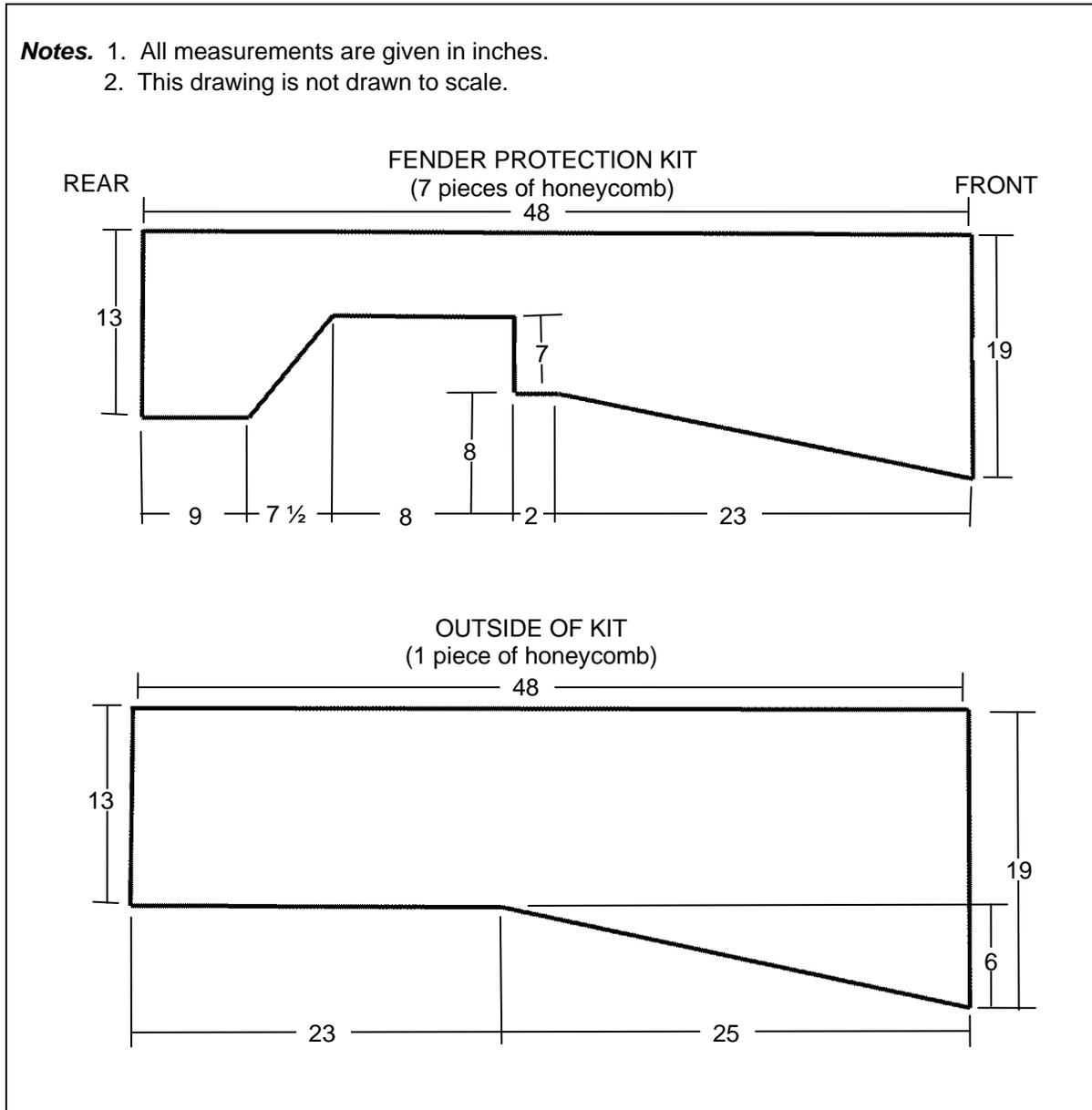
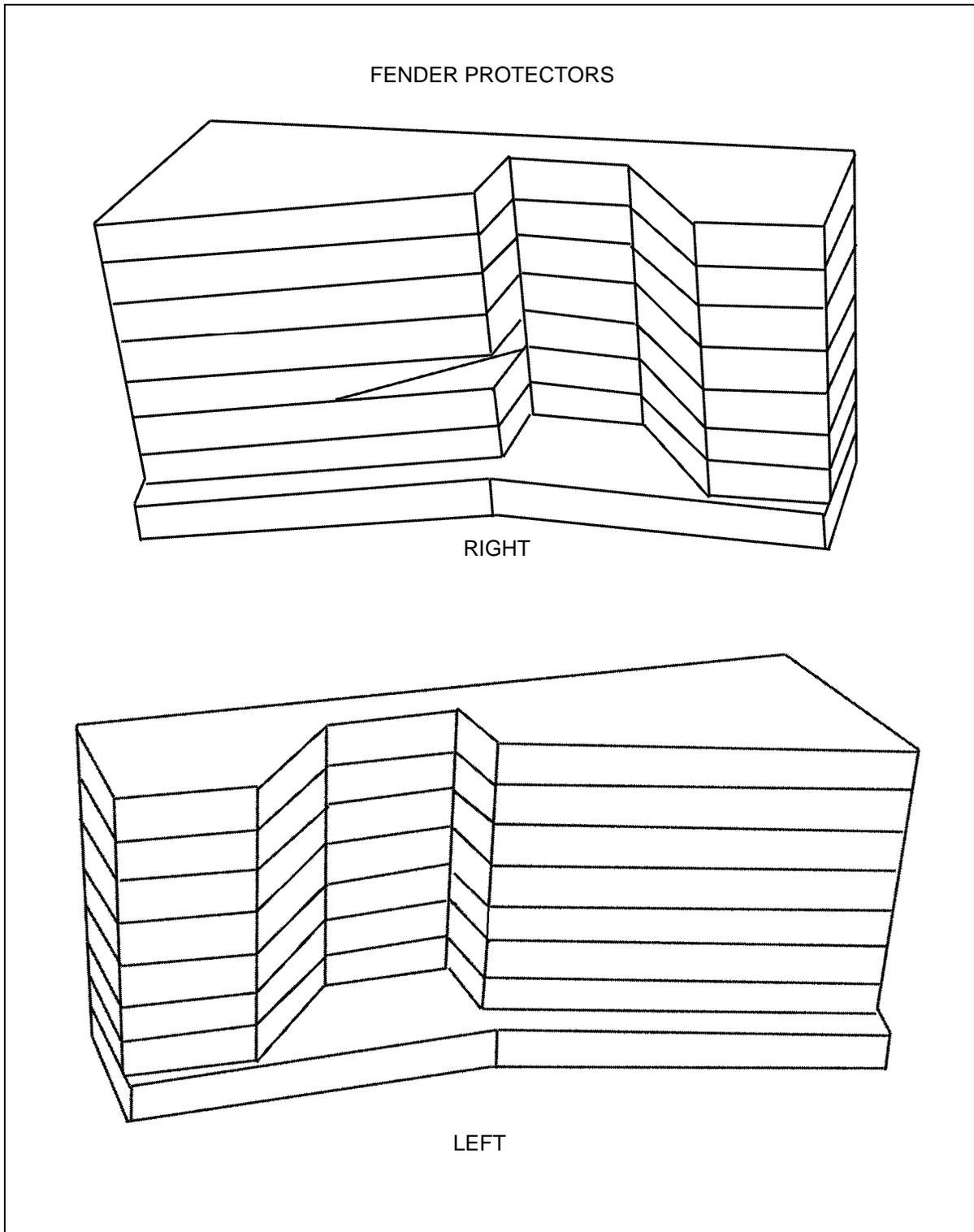
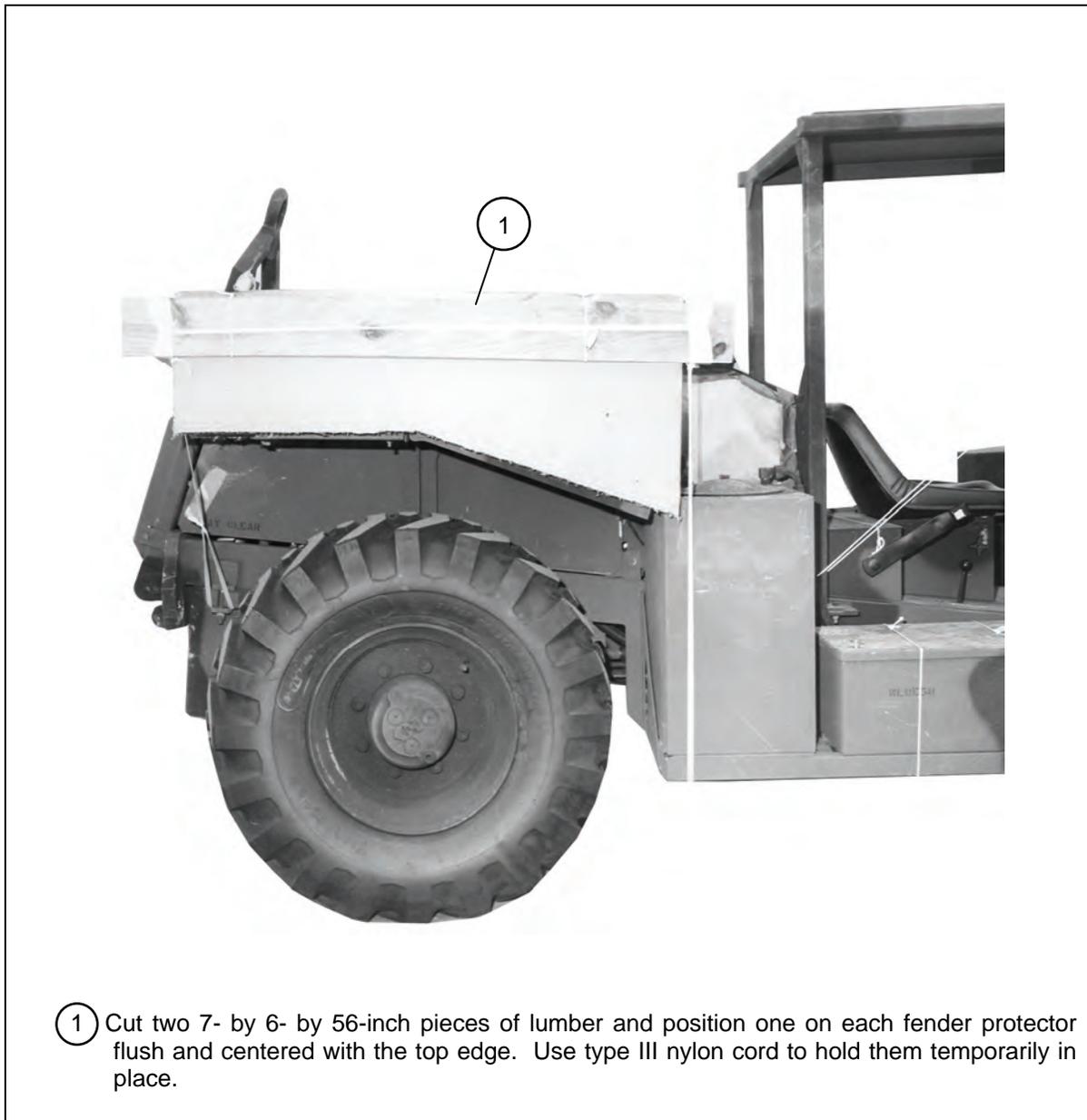


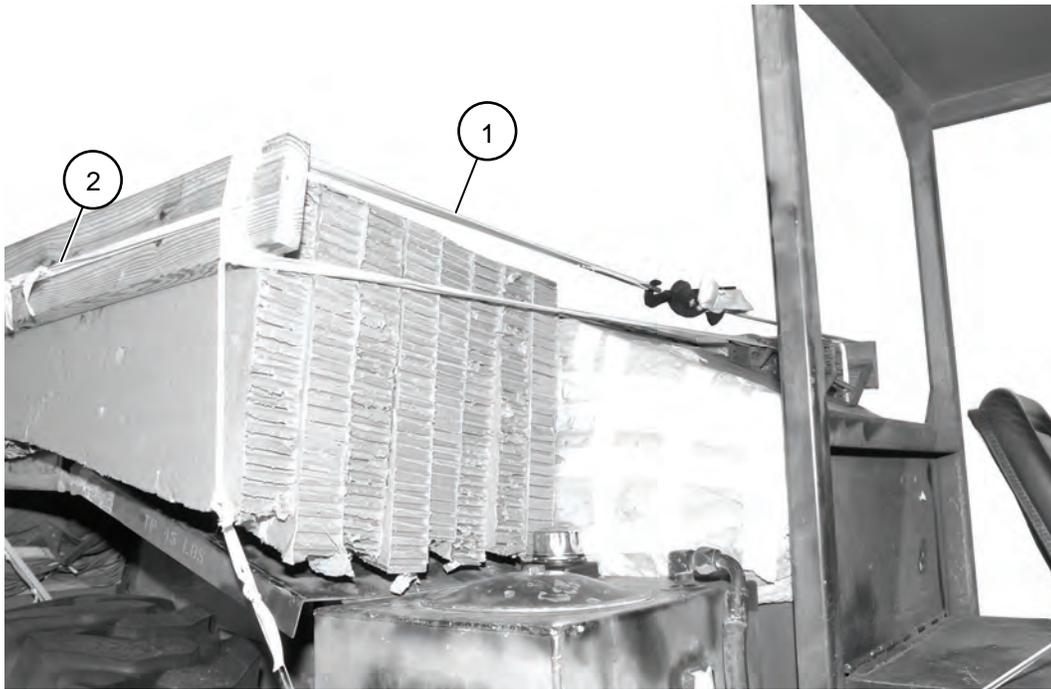
Figure 7-19. Details for Honeycomb Fender Protection



**Figure 7-20. Honeycomb Fender Protectors Completed**

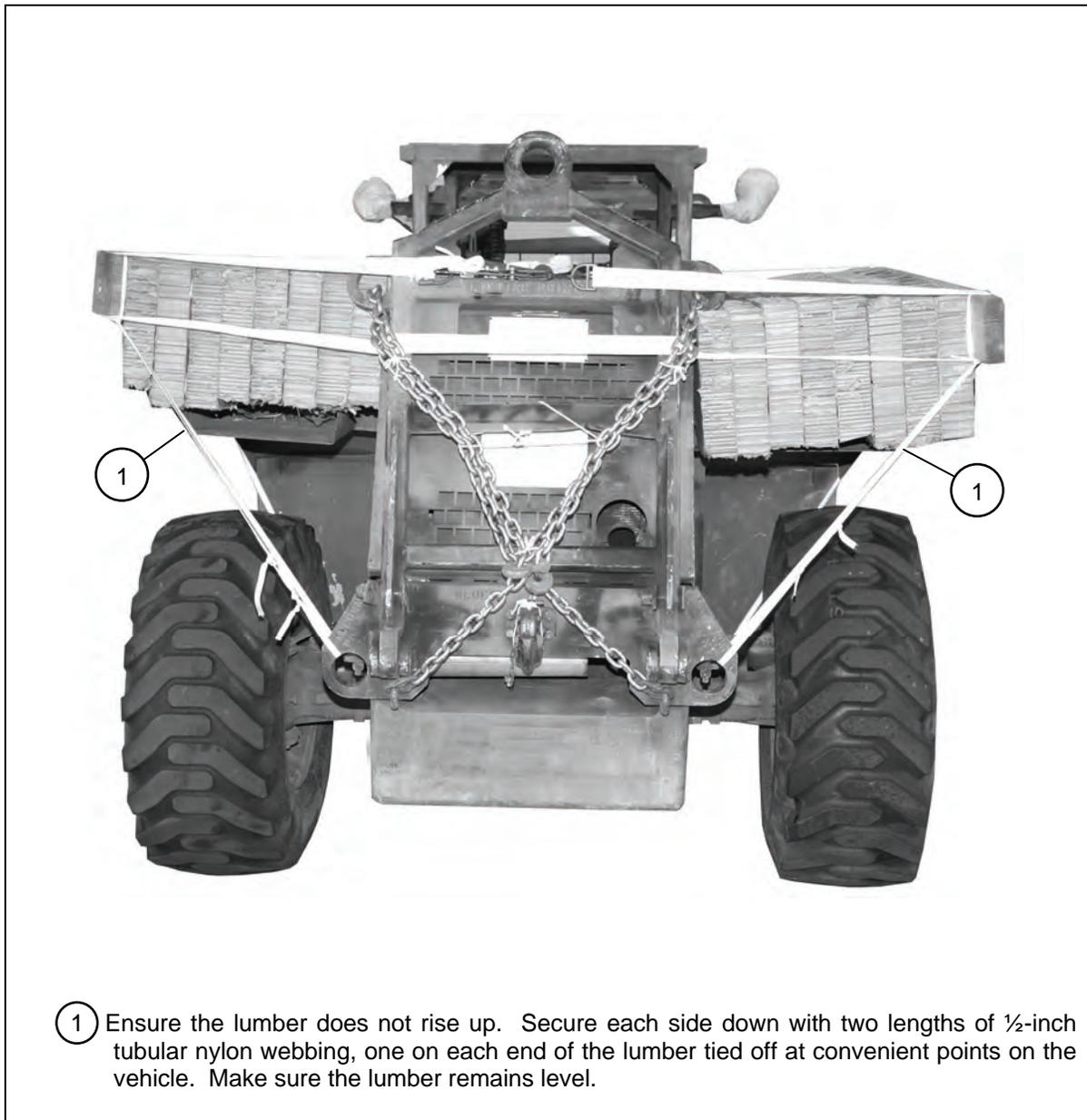


**Figure 7-21. Honeycomb Fender Protectors Positioned**



- ① Secure the lumber in place with a lashing on the front and the rear of the lumber as shown above.
- ② Safety the lashings together with a length of ½-inch tubular nylon webbing.

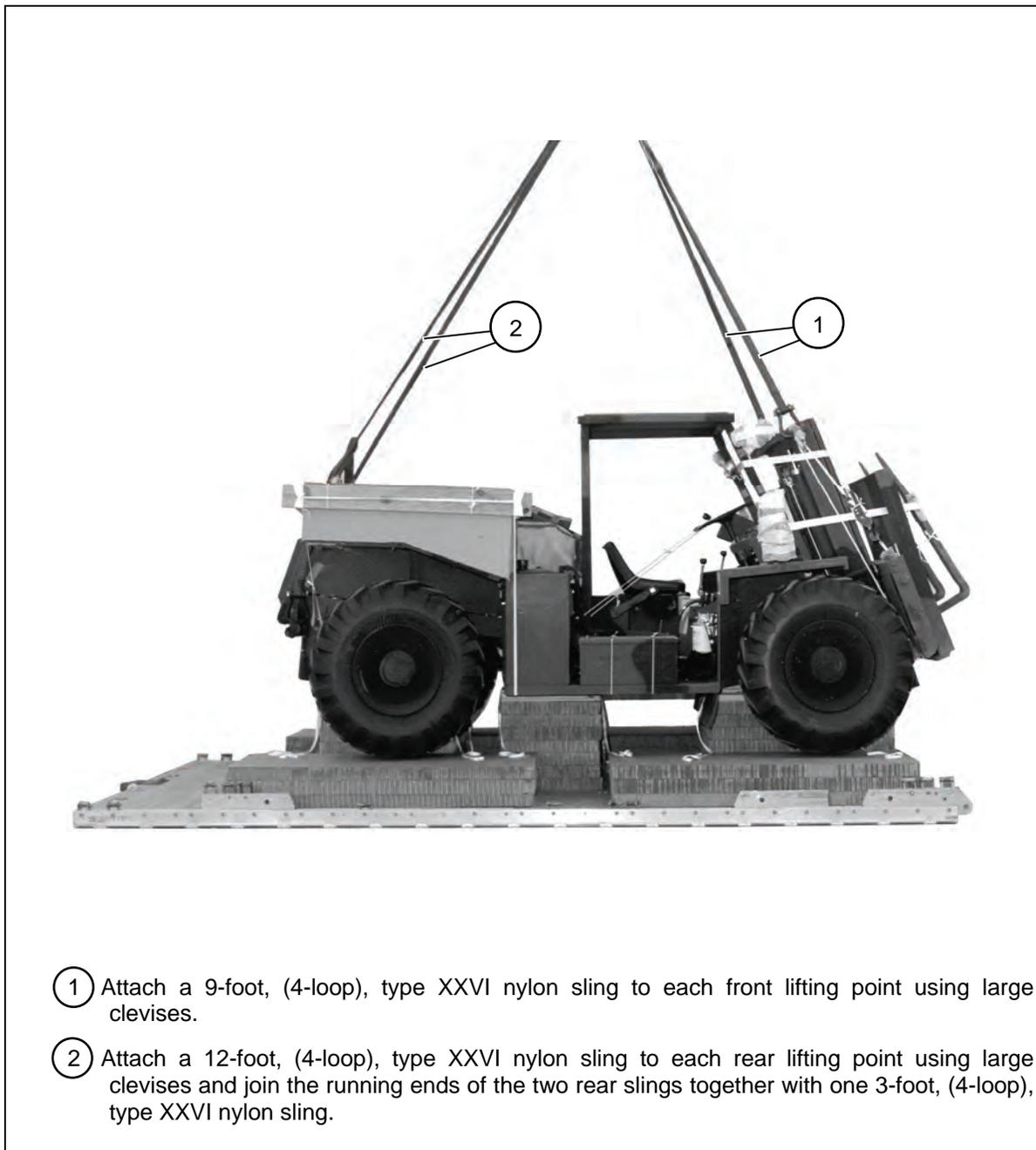
**Figure 7-22. Honeycomb Fender Protectors Secured**



**Figure 7-23. Honeycomb Fender Protectors Prepared**

## INSTALLING LIFTING SLINGS AND POSITIONING DRIVE-OFF AIDS

7-6. Install the lifting slings as shown and described in Figure 7-24. Position the drive-off aids as shown and described in Figures 7-25 and 7-26.



**Figure 7-24. Lifting Slings Installed**

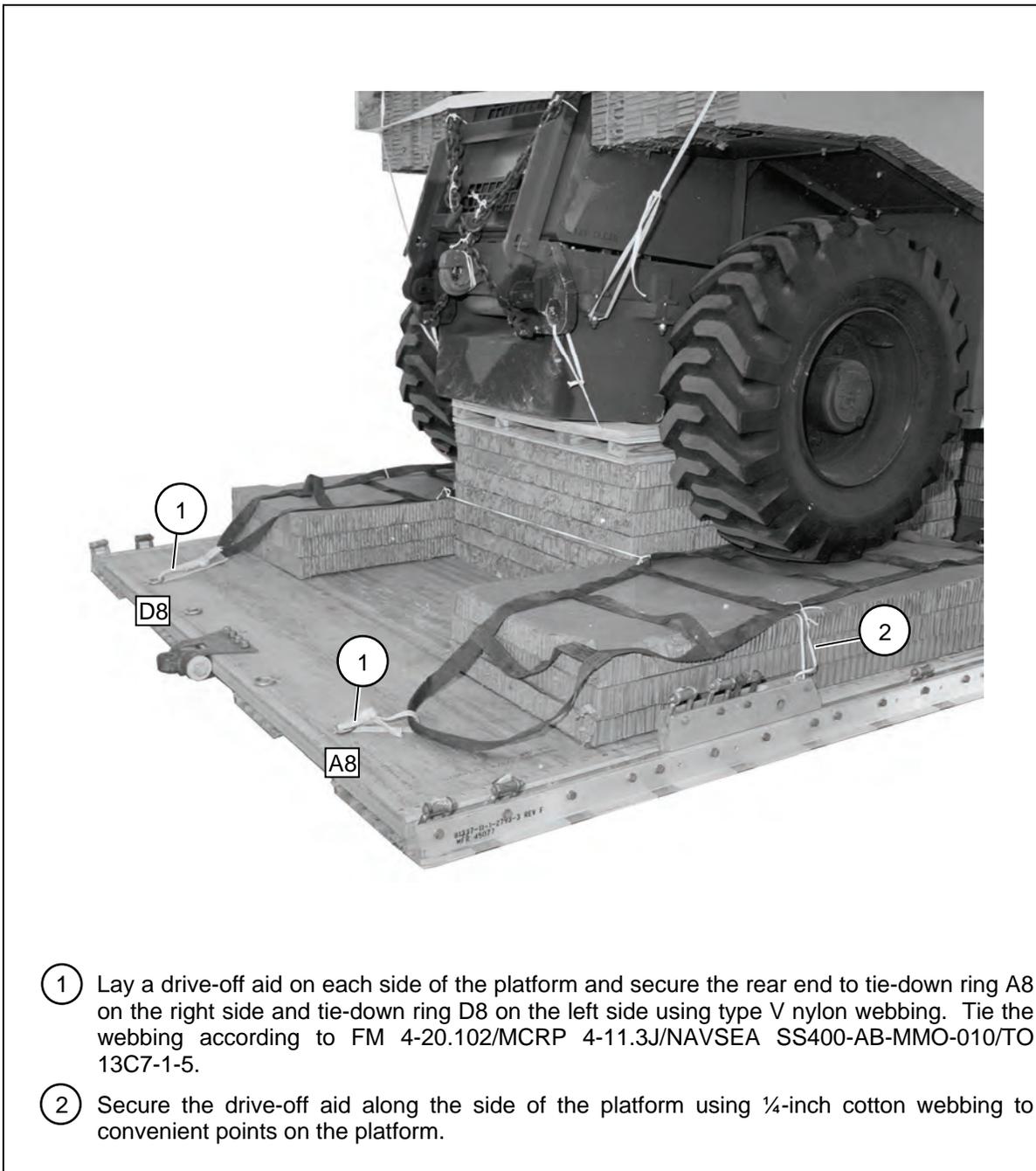
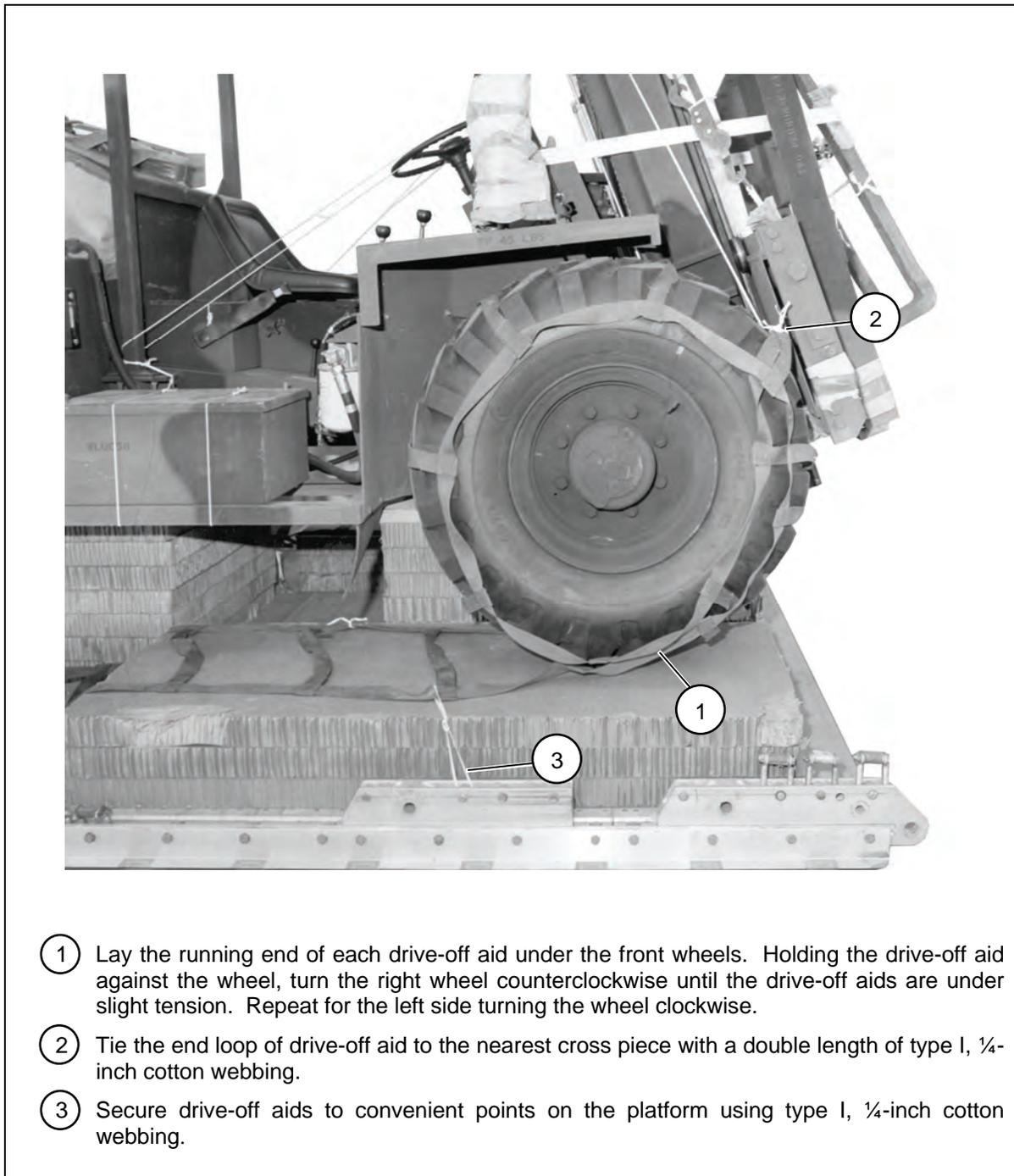


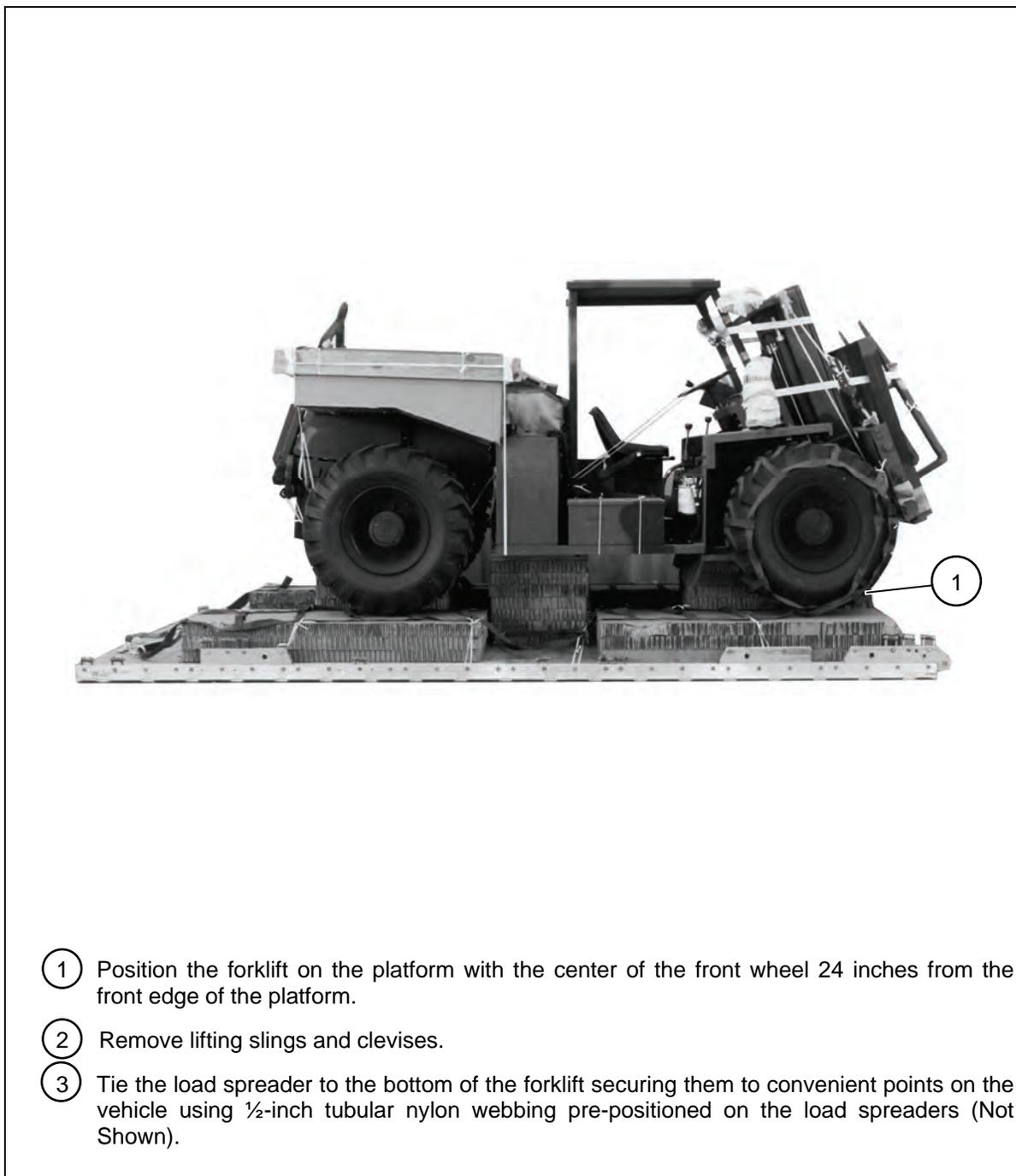
Figure 7-25. Drive-Off Aids Positioned



**Figure 7-26. Drive-Off Aids Installed**

## POSITIONING FORKLIFT

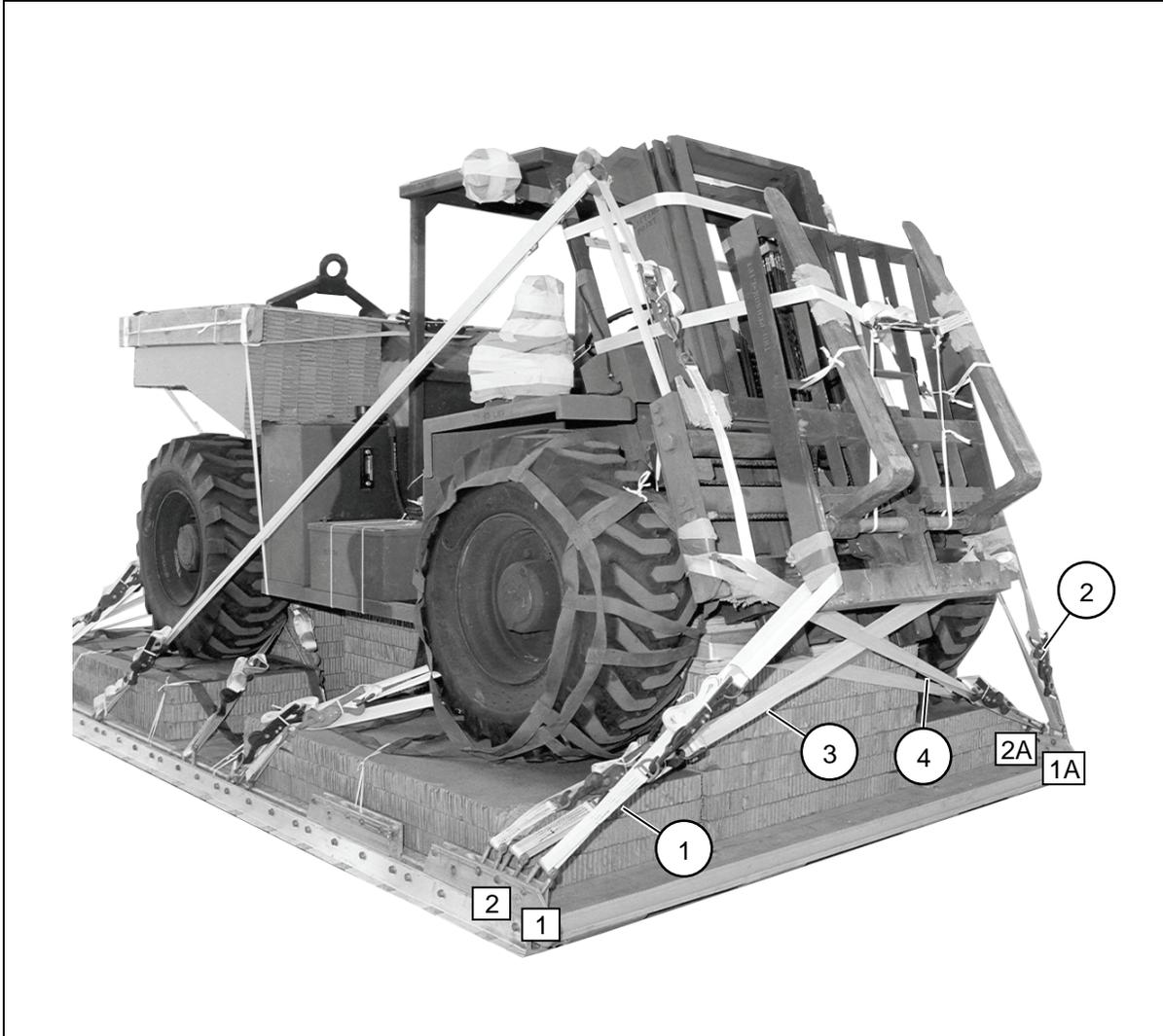
7-7. Position the forklift on the platform as shown and described in Figure 7-27.



**Figure 7-27. Forklift Positioned on Platform**

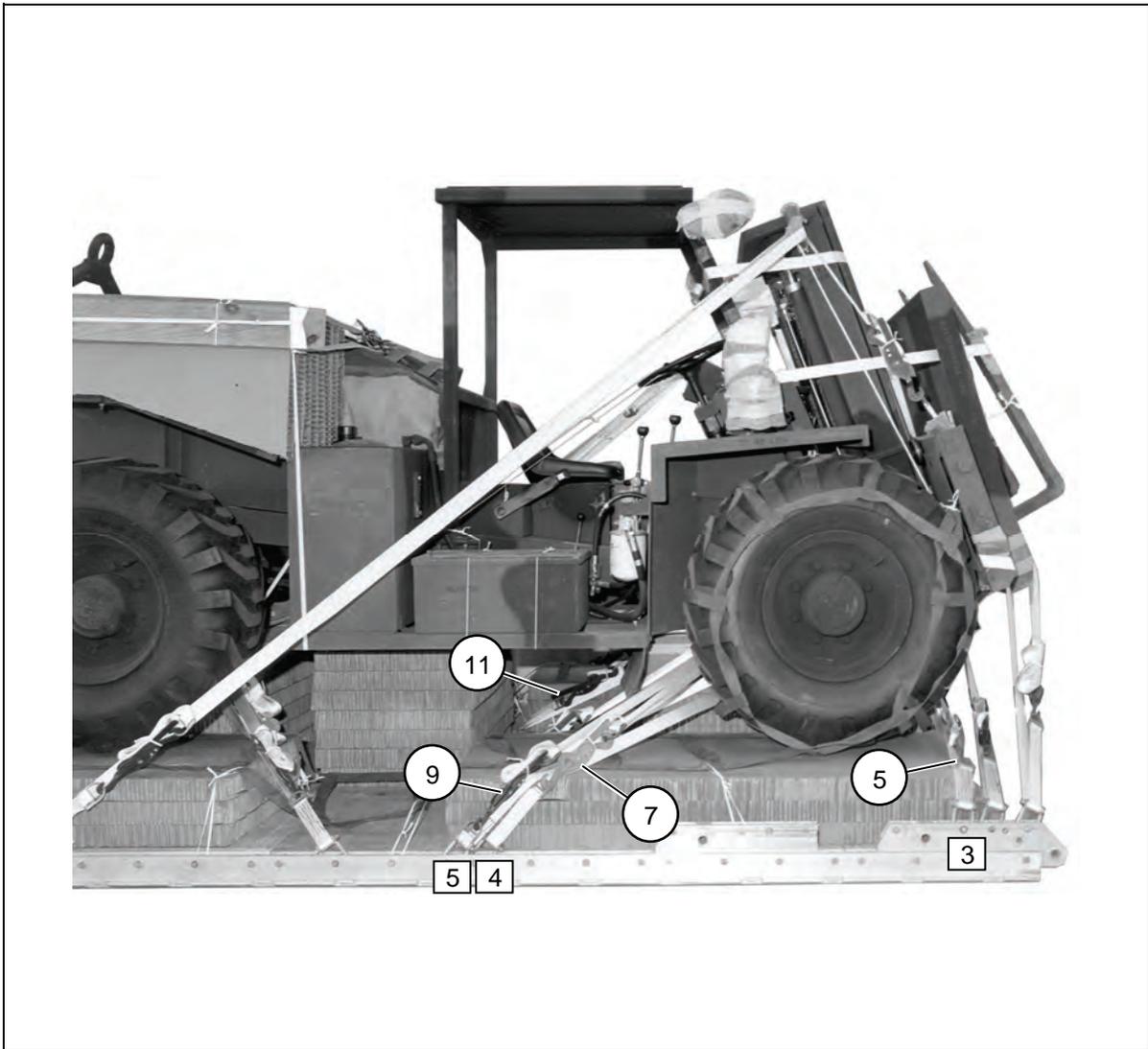
## LASHING FORKLIFT

7-8. Lash the forklift to the platform using twenty-six 15-foot tie-down assemblies. Install the lashings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 7-28 through 7-31.



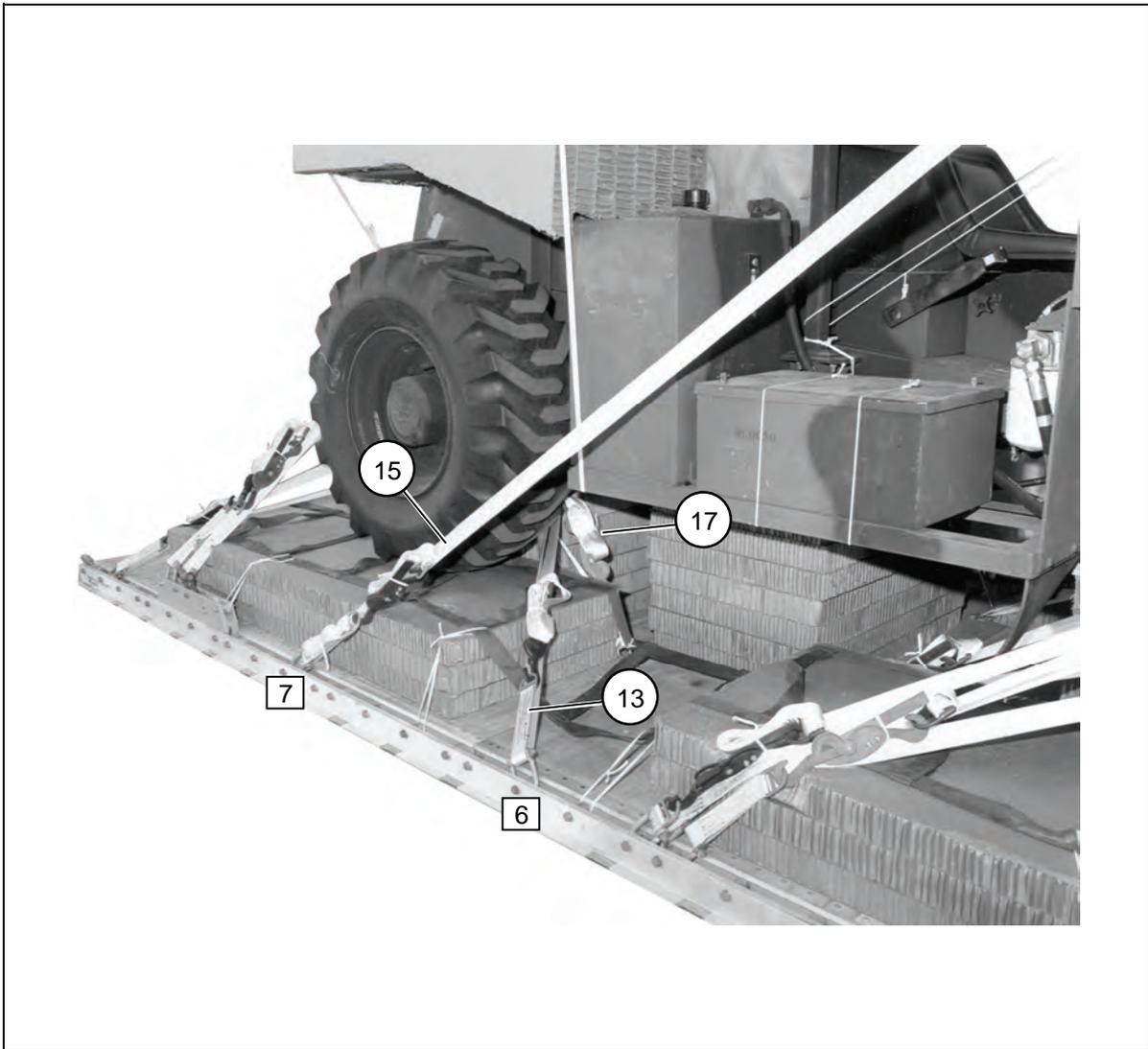
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
1	1	Pass lashing: Around fork's right side.
2	1A	Around fork's left side.
3	2	Around fork's carriage left side.
4	2A	Around fork's carriage right side.

**Figure 7-28. Lashings 1 Through 4 Installed**



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
5	3	Through front axle ring left side.
6	3A	Through front axle ring right side.
7	4	Around front axle right side.
8	4A	Around front axle left side.
9	5	Around front axle right side.
10	5A	Around front axle left side.
11	A4	Around front axle right side.
12	B4	Around front axle left side.

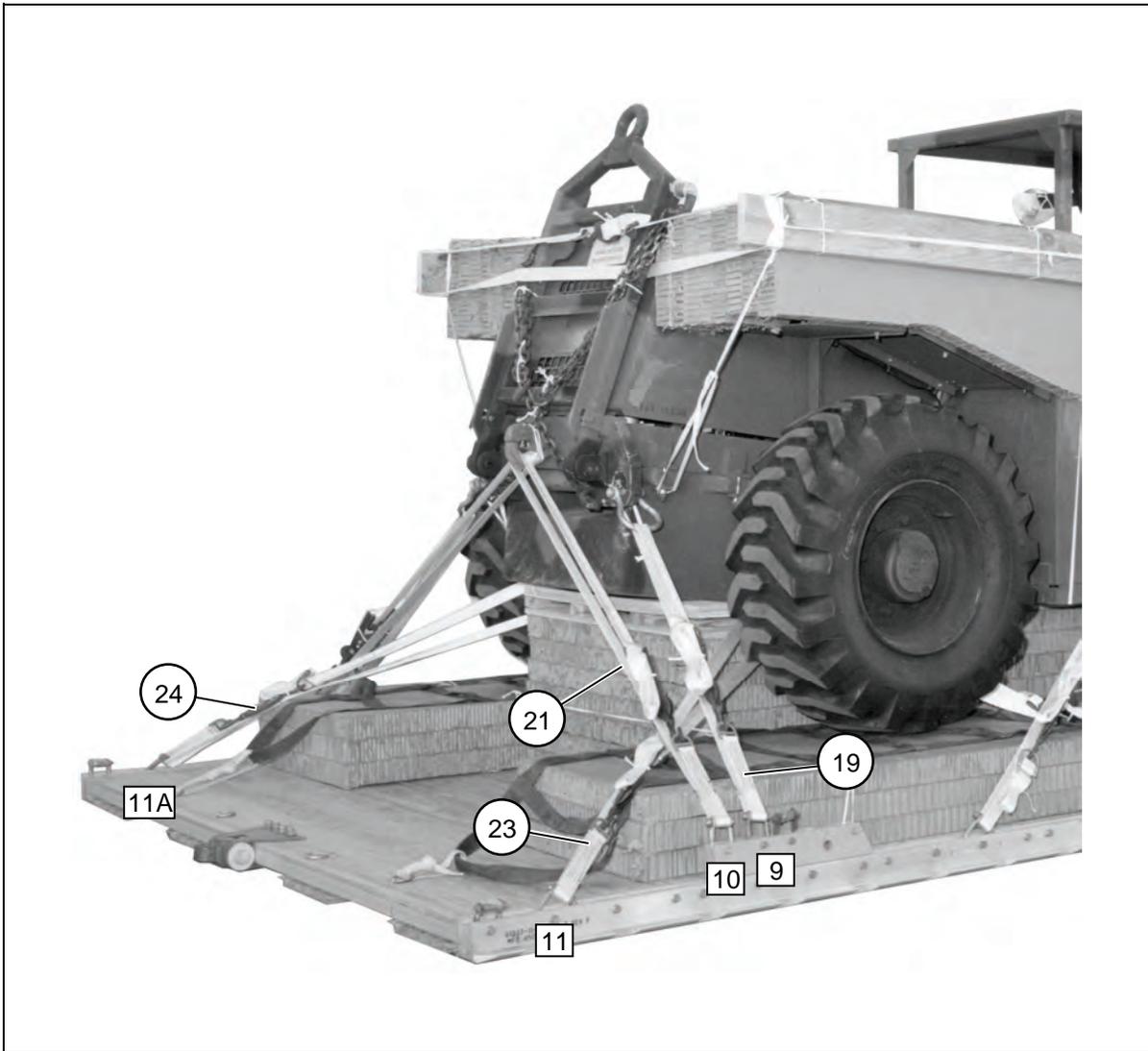
Figure 7-29. Lashings 5 Through 12 Installed



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
13	6	Pass lashing: Around rear axle right side.
14	6A	Around rear axle left side.
*15	7	Through top lifting ring on fork's right side.
*16	7A	Through top lifting ring on fork's left side.
17	A5	Around rear axle right side.
18	B5	Around rear axle left side.

**Note.** \* Annotates 30-foot lashings.

**Figure 7-30. Lashings 13 Through 18 Installed**



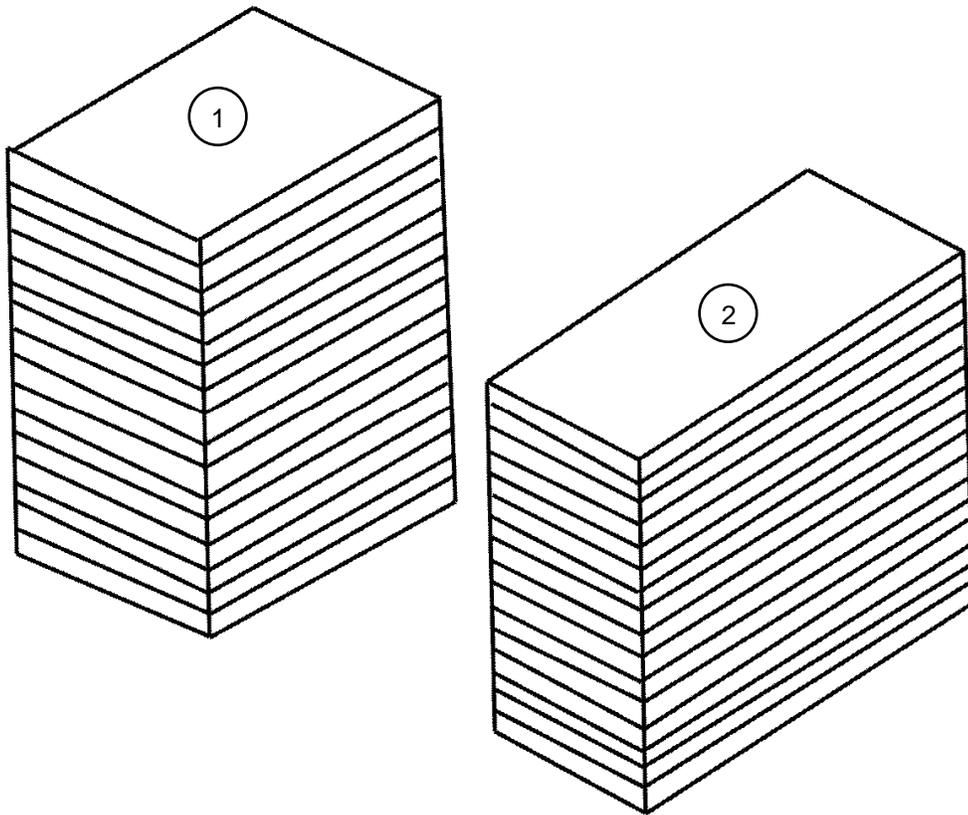
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
19	9	Pass lashing: Through medium clevis attached to right rear tie down point.
20	9A	Through medium clevis attached to left rear tie down point.
21	10	Through towing pintle.
22	10A	Through towing pintle.
23	11	Around rear axle right side.
24	11A	Around rear axle left side.

**Figure 7-31. Lashings 19 Through 24 Installed**

## BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

- 7-9. Build and position the parachute stowage platform as described below.
- Build the honeycomb support stacks as shown in Figure 7-32.
  - Build a parachute stowage platform as shown in Figure 7-33.
  - Position the honeycomb support and parachute stowage platform. Lash the parachute stowage platform as shown in Figure 7-34.

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



- ① Build two honeycomb support stacks by gluing sixteen 15- by 15-inch pieces of honeycomb together in each stack.
- ② Build a third honeycomb support stack by gluing sixteen 15- by 36-inch pieces of honeycomb together.

**Figure 7-32. Honeycomb Support Built**

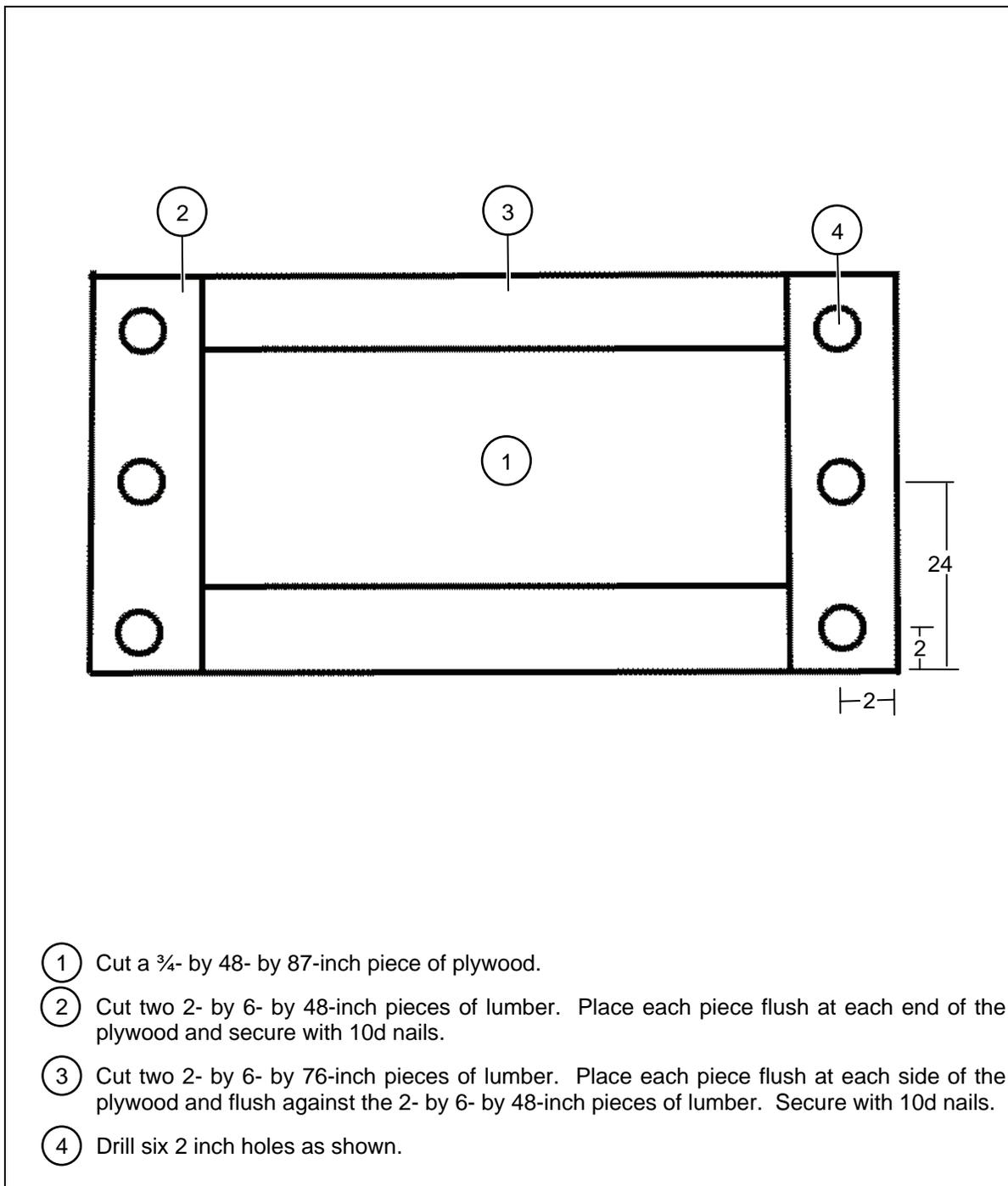
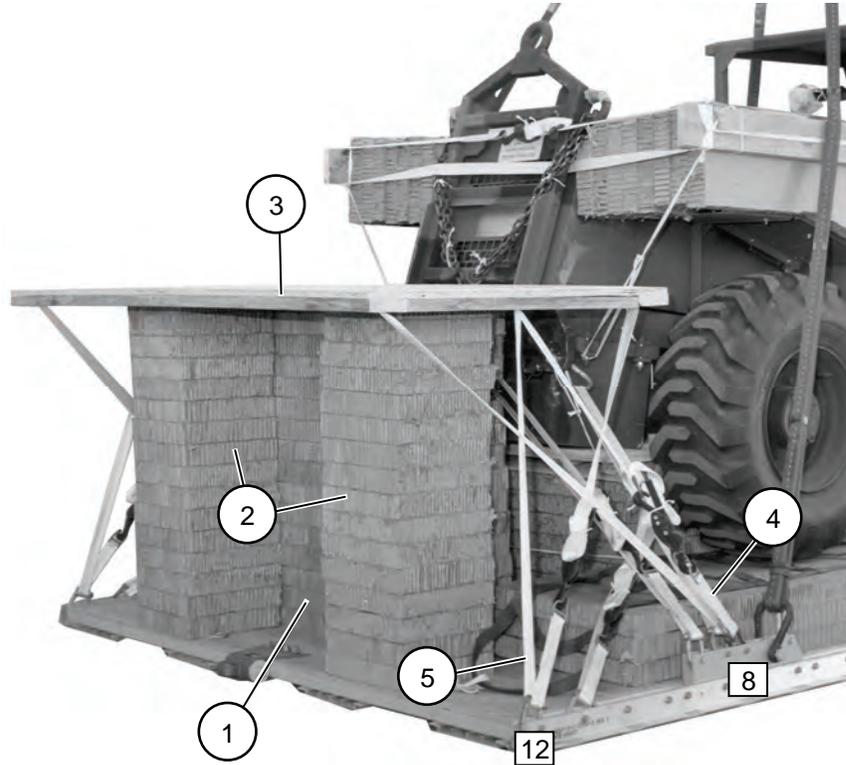


Figure 7-33. Detail of Parachute Stowage Platform Built

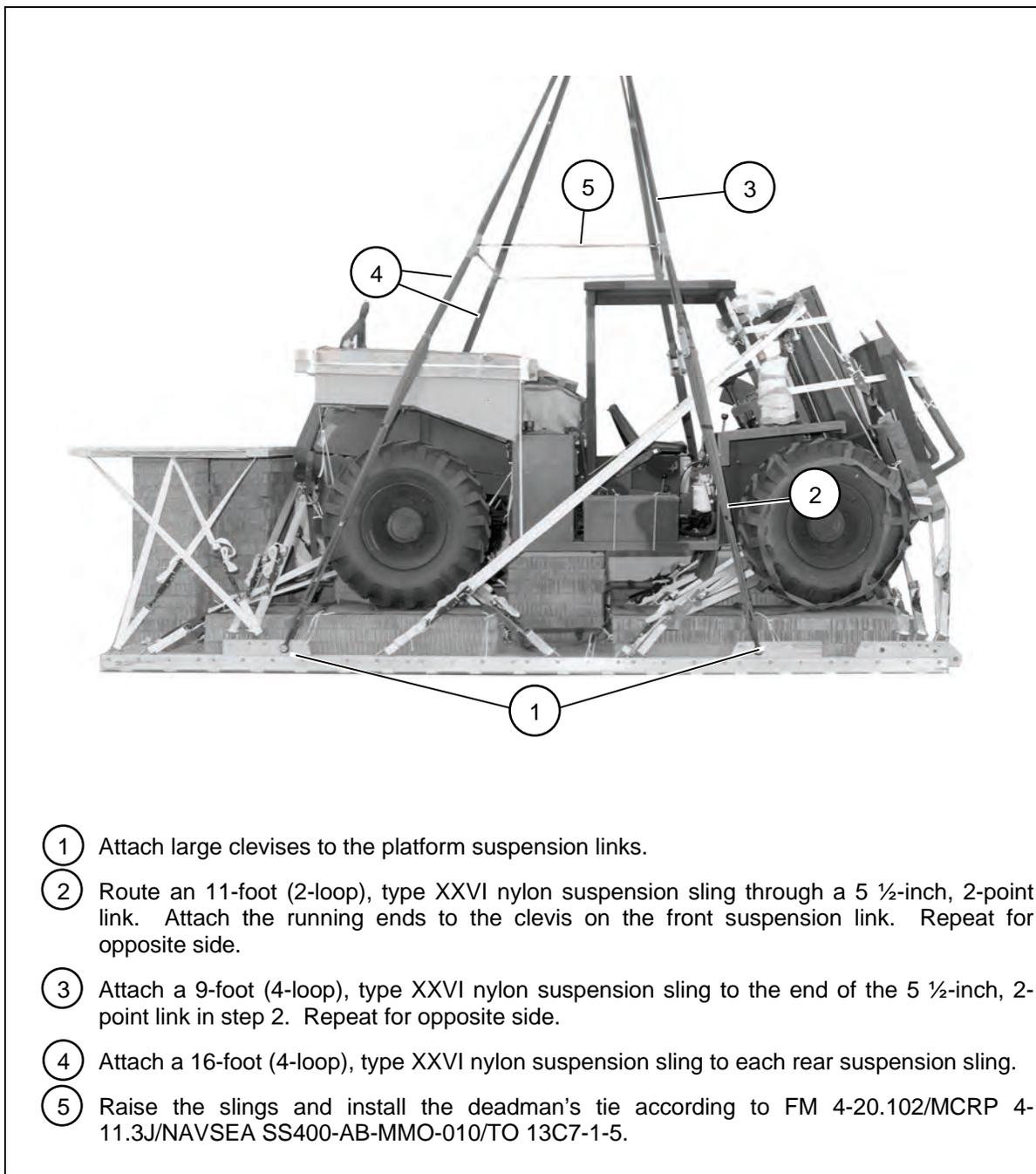


- ① Position the 15- by 36-inch honeycomb support 15 inches and centered from the rear of the platform.
- ② Position the 15- by 15-inch honeycomb supports flush with the rear of the platform and 36 inches apart.
- ③ Position the parachute stowage platform on top of honeycomb supports.
- ④ Pass a 15-foot lashing through clevis 8 and up through the right rear parachute stowage platform hole and down through the center right parachute stowage platform hole. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 8A.
- ⑤ Pass a 15-foot lashing through clevis 12 and up through the right center parachute stowage platform hole and down through the right front parachute stowage platform hole. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 12A.

**Figure 7-34. Parachute Stowage Platform Positioned and Secured**

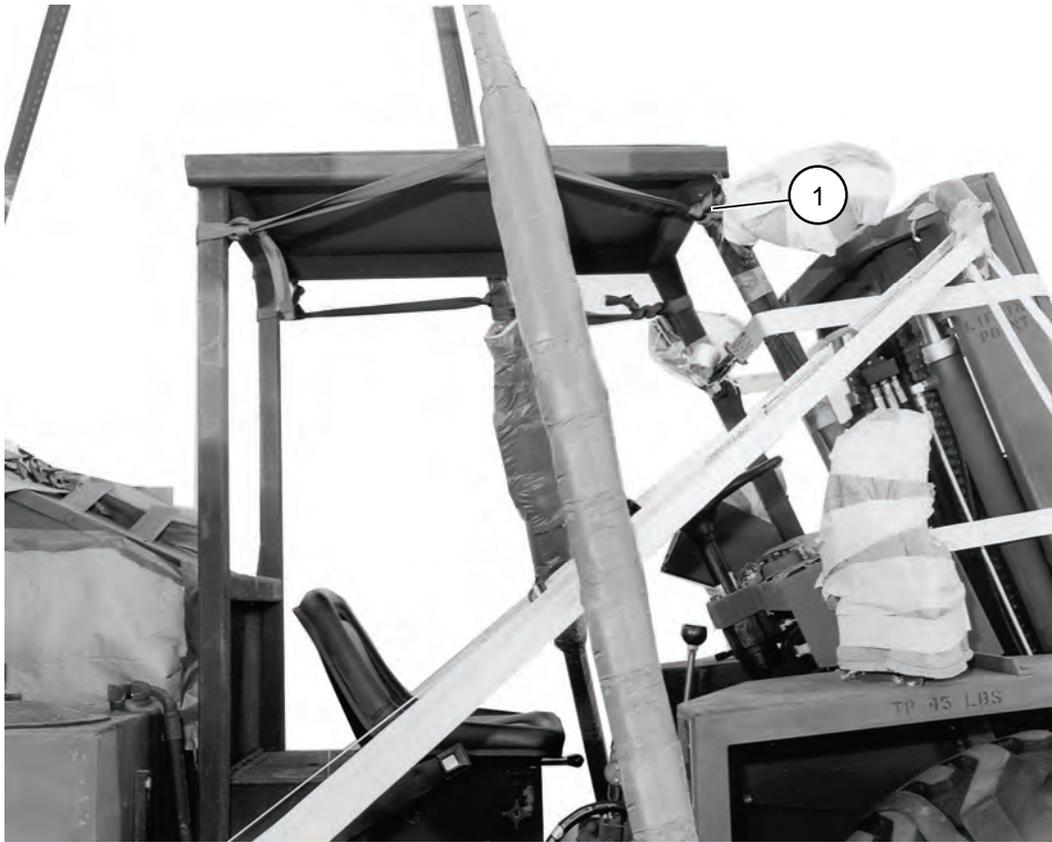
## INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

7-10. Install the suspension slings and deadman's tie as shown in Figures 7-35 through 7-37.



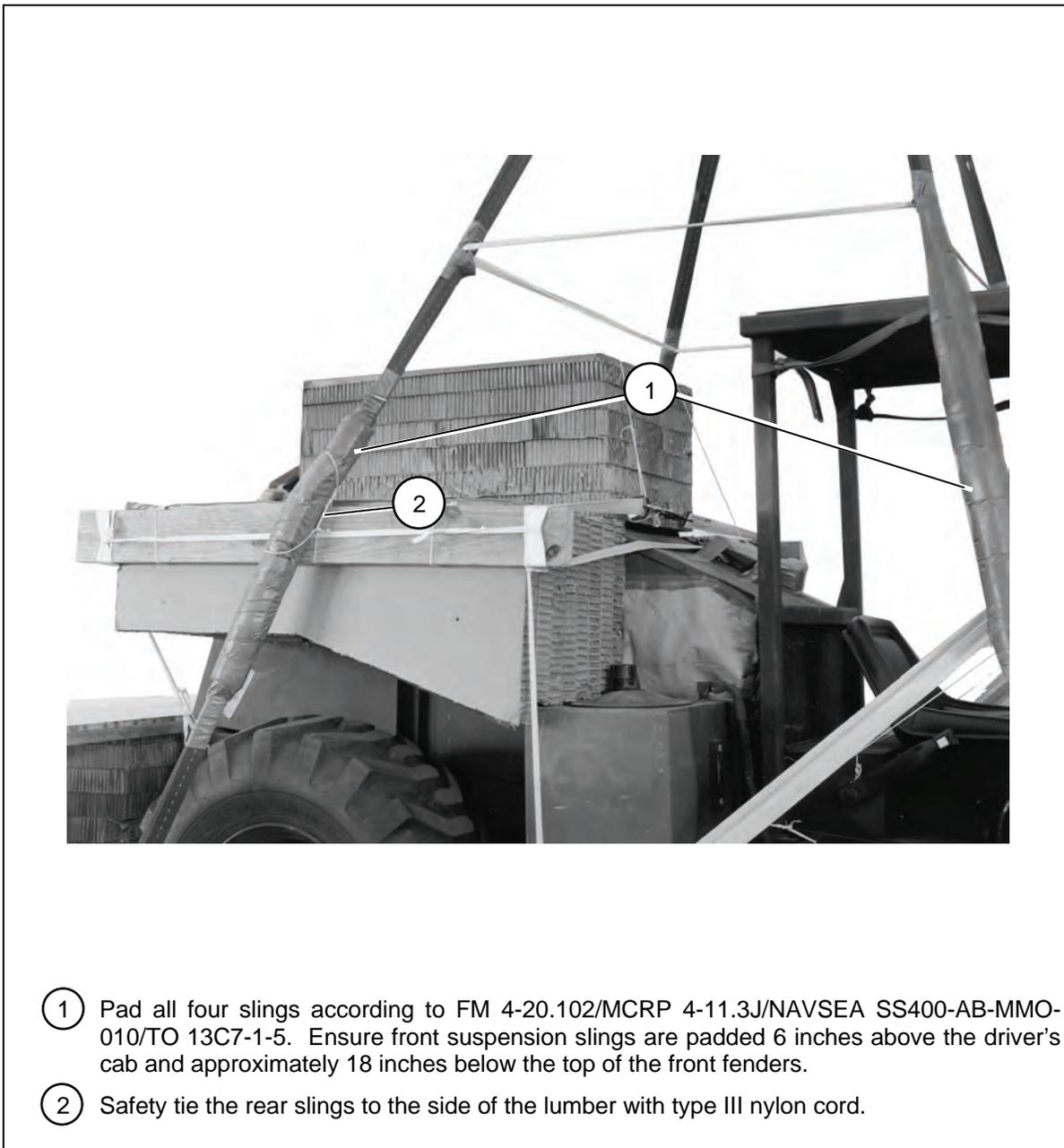
**Figure 7-35. Suspension Slings and Deadman's Tie Installed**

**Note.** Do not safety tie to the light brackets.



- ① With tension on slings, place a safety tie to each front sling using double 1-inch tubular nylon webbing and secure it to the driver's cab. Do not safety tie to the light brackets.

**Figure 7-36. Front Suspension Sling Safety Tied**

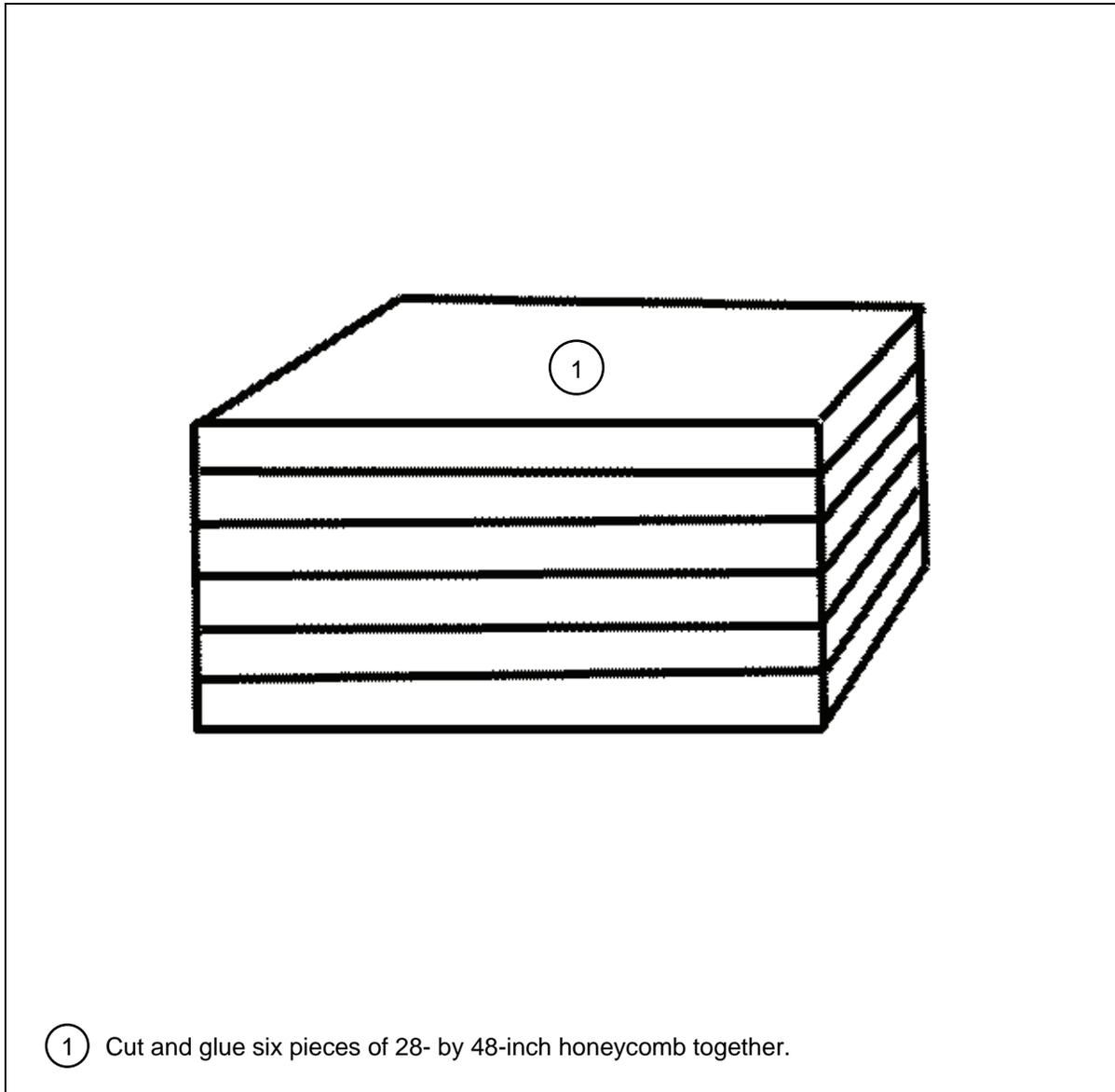


- ① Pad all four slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Ensure front suspension slings are padded 6 inches above the driver's cab and approximately 18 inches below the top of the front fenders.
- ② Safety tie the rear slings to the side of the lumber with type III nylon cord.

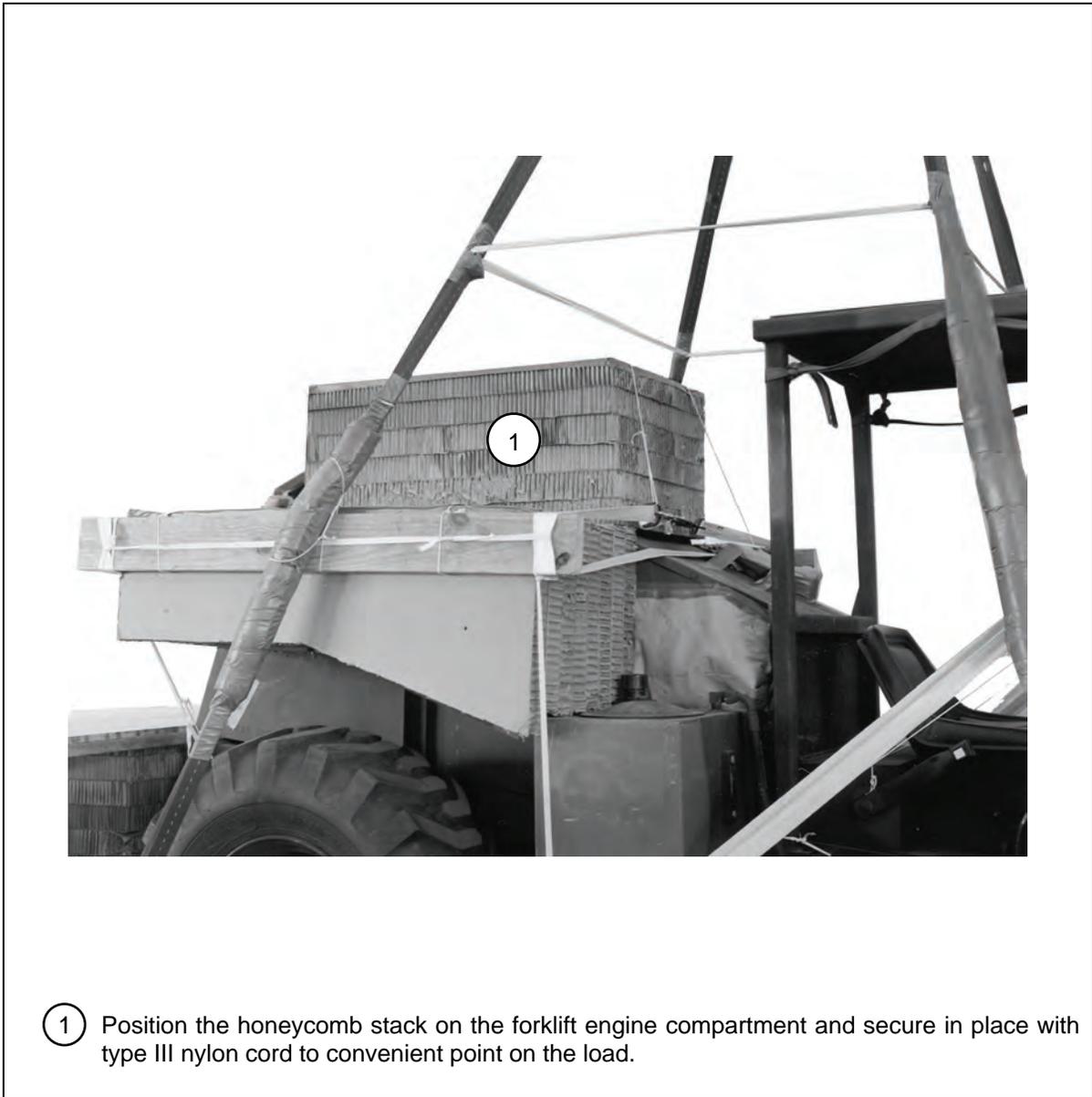
**Figure 7-37. Rear Suspension Sling Safety Tied and Padded**

## BUILDING AND POSITIONING PARACHUTE RELEASE TRAY

7-11. Build a parachute release tray as shown in Figure 7-38 and position the parachute release tray as shown in Figure 7-39.



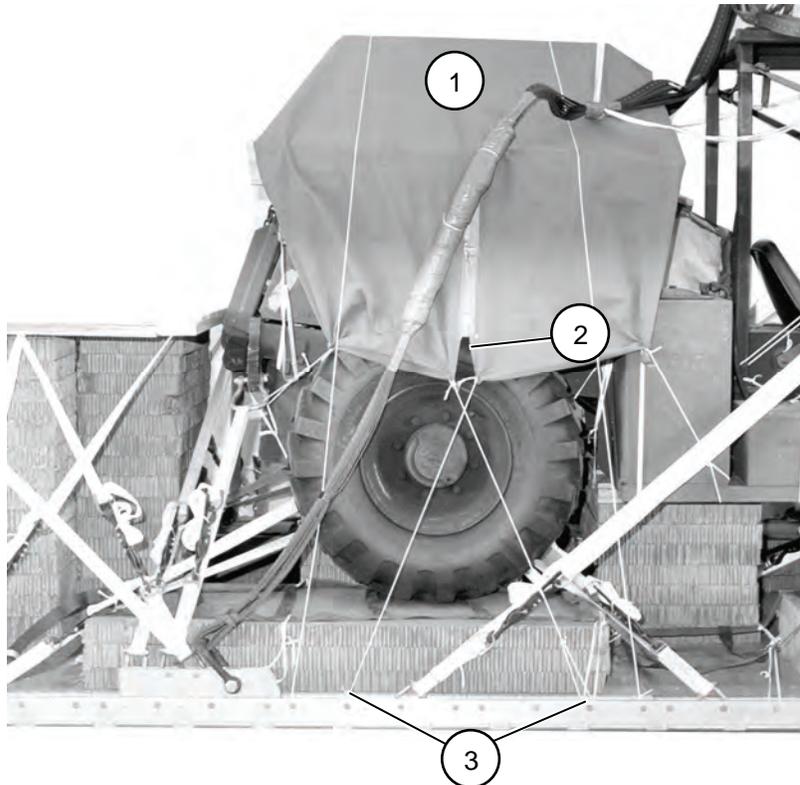
**Figure 7-38. Parachute Release Tray Built**



**Figure 7-39. Parachute Release Tray Positioned**

## POSITIONING LOAD COVER

7-12. Position a 12-foot canvas load cover over the parachute release tray as shown in Figure 7-40.



- ① Position a 12-foot canvas load cover over the honeycomb.
- ② Cut the side to allow for the safety tying of the rear slings.
- ③ Secure the cover in place with type III nylon cord tied to convenient points on the load.

**Figure 7-40. Parachute Release Tray Covered**

## STOWING CARGO PARACHUTE

7-13. Prepare, stow and restrain three G-11 cargo parachutes on the parachute stowage platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 7-41 and 7-42.

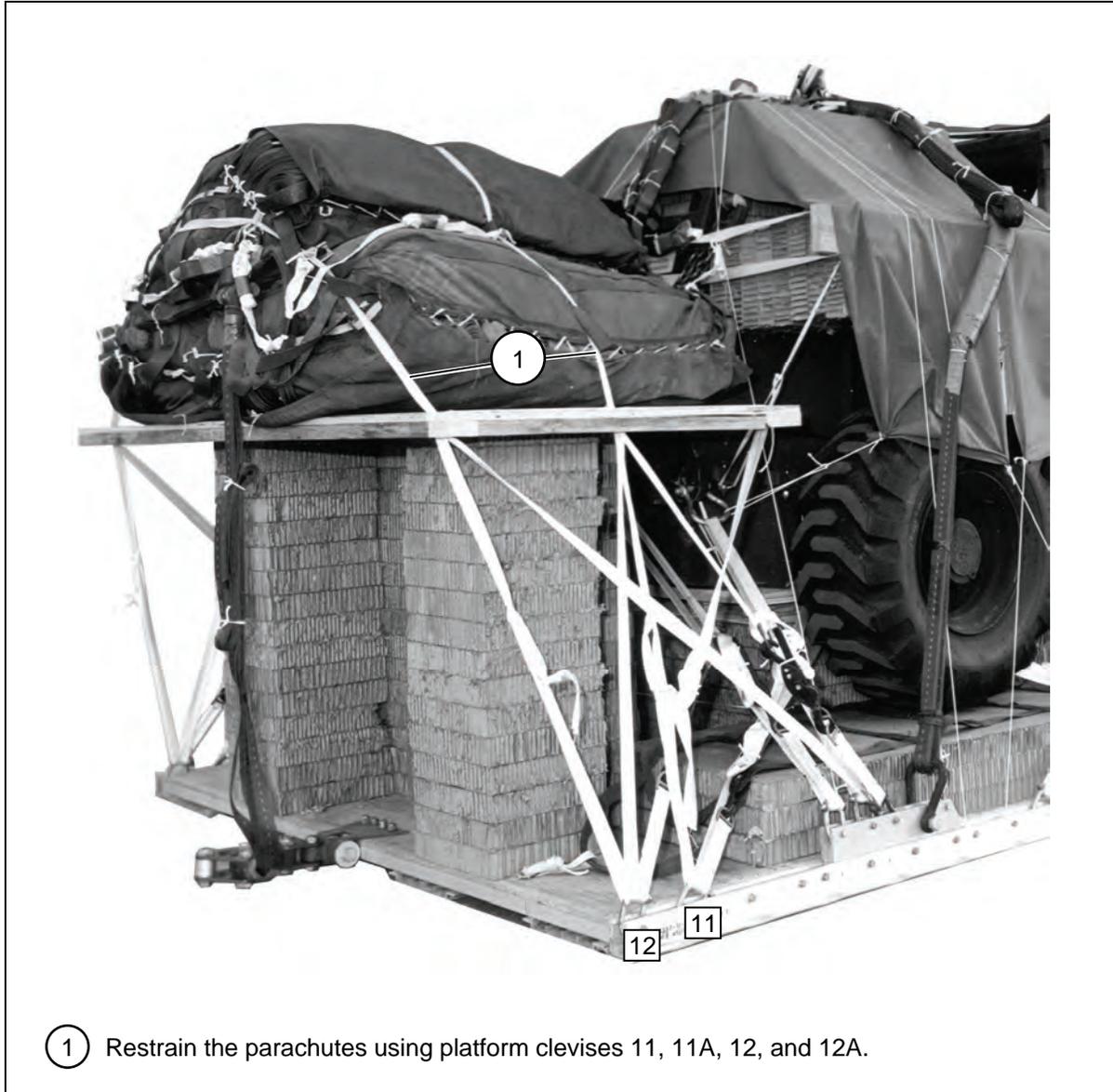
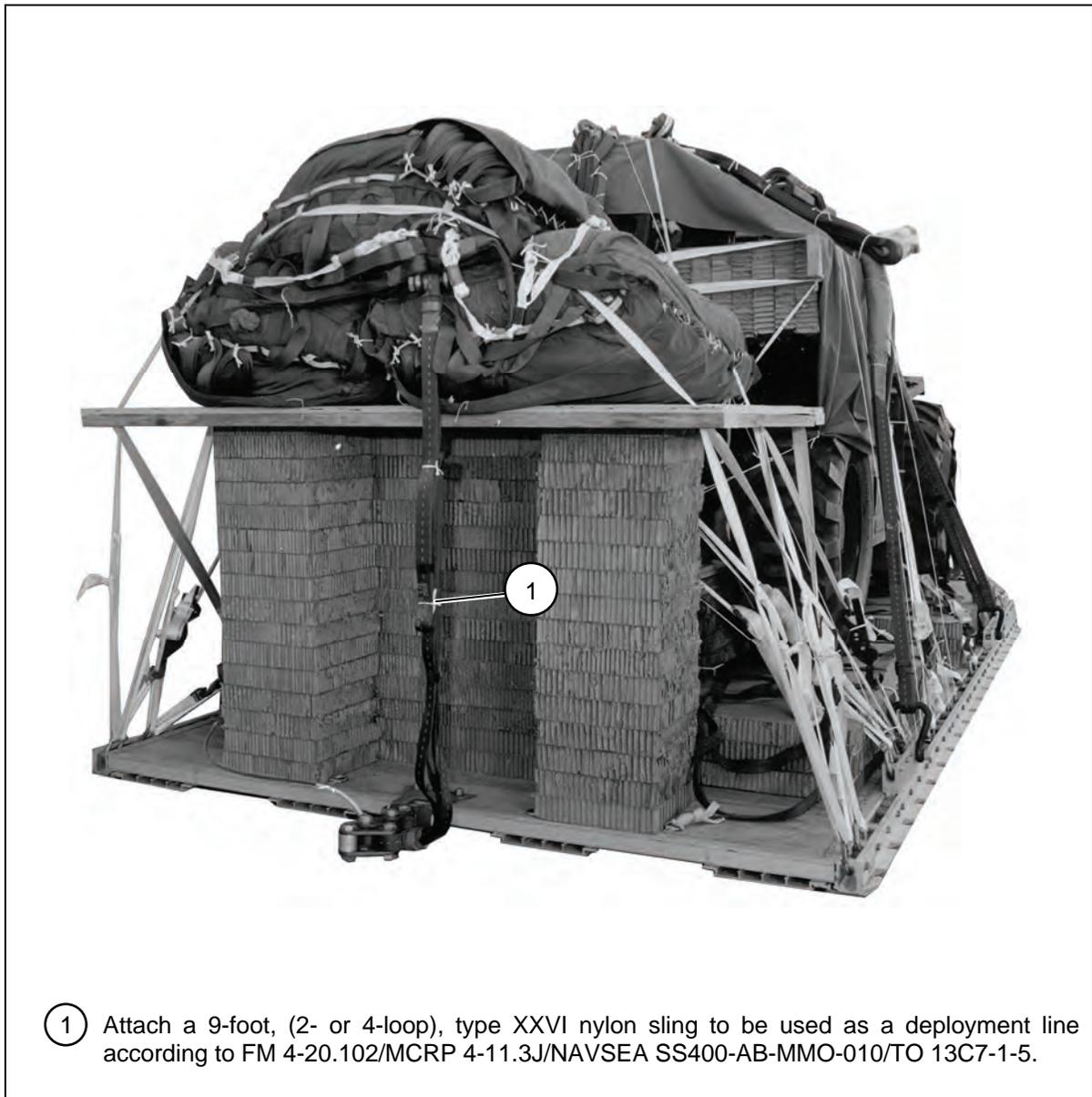


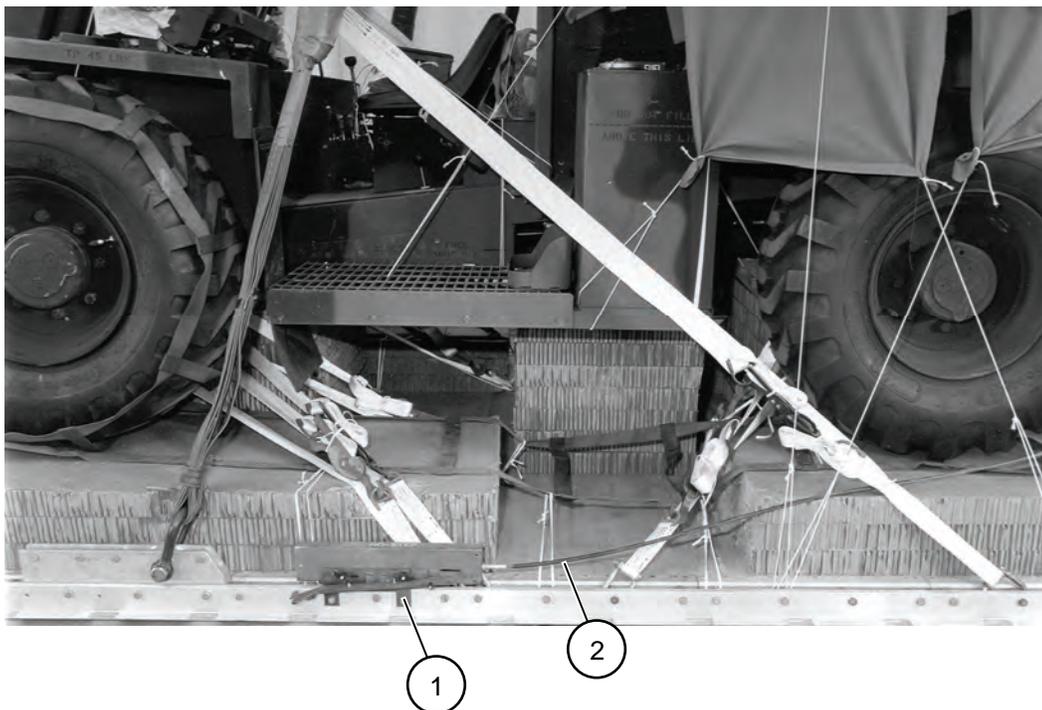
Figure 7-41. Cargo Parachute Stowed



**Figure 7-42. Deployment Line Installed**

## INSTALLING EXTRACTION SYSTEM

7-14. Install the extraction system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 7-43. If applicable, install the EPJS according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

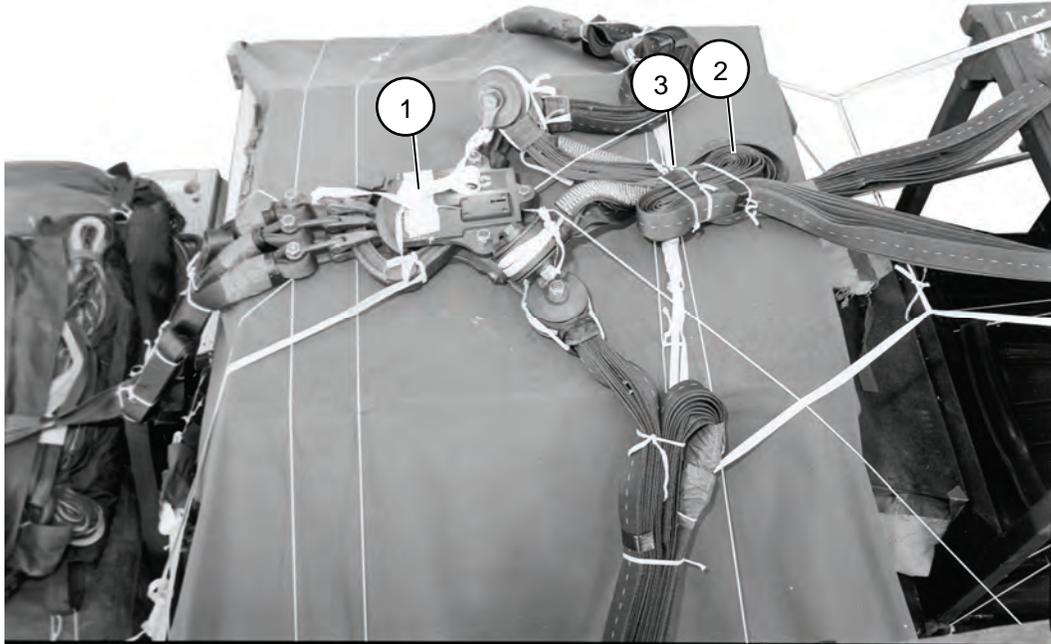


- ① Install the EFTC mounting brackets in the rear mounting holes on the platform left rail.
- ② Install a 16-foot, EFTC cable assembly to the actuator and latch assembly.
- ③ Secure the cable according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 (ties not shown).

**Figure 7-43. EFTC Extraction System Installed**

## INSTALLING PARACHUTE RELEASE

7-15. Prepare, attach, and safety an M-2 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 7-44.



- ① Place the M-2 release on top of the load cover and safety tie it to a convenient point on the load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② Attach the suspension slings and parachute riser extensions according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ③ S-fold the excess suspension slings and secure them with type I, ¼-inch cotton webbing.

**Figure 7-44. M-2 Release Installed**

## **PLACING EXTRACTION PARACHUTE**

7-16. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. 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 platform for installation in the aircraft as well.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

7-17. Install the provisions for the emergency restraints on the load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **MARKING RIGGED LOAD**

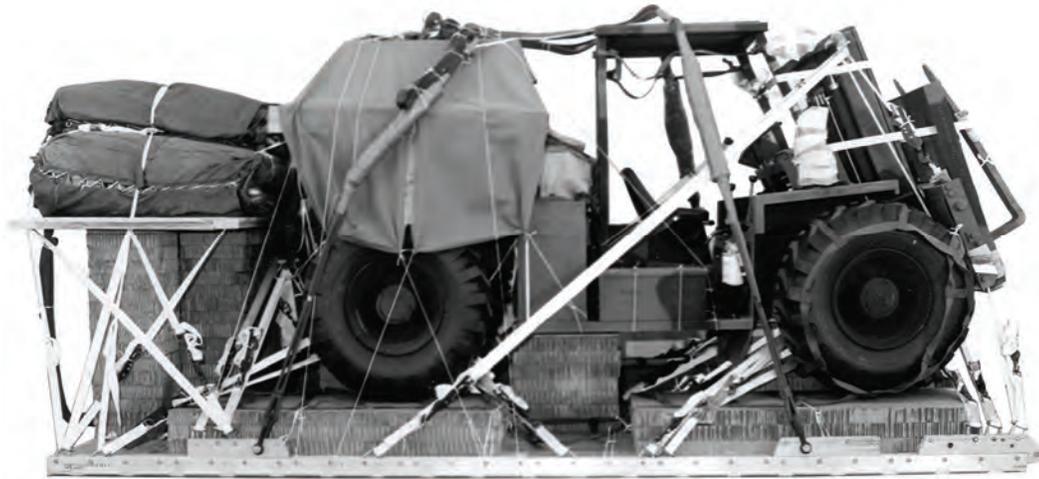
7-18. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 7-45. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

7-19. Use the equipment listed in Table 7-2 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight: Load shown.....	15,400 pounds
Maximum load allowed .....	15,600 pounds
Height .....	98 ½ inches
Width .....	108 inches
Overall Length.....	228 inches
Overhang: Front (forks).....	15 inches
Rear (EFTC).....	18 inches
Rear (EPJS).....	30 inches
Center of Balance (from front edge of platform) .....	83 inches

**Figure 7-45. M-270, 4,000-Pound Capacity Forklift Truck Rigged on a Type V Platform**

**Table 7-2. Equipment Required for Rigging the M-270, 4,000-Pound Capacity Forklift Truck on a Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-278-8713	Adhesive, paste, 6-gallon	As required
	Clevis, suspension:	
4030-00-678-8562	¾-inch (medium)	2
4030-00-090-5354	6-inch (large)	8
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-439-5783	Coupling, airdrop, extraction force transfer with cable, 12-foot	1
1670-00-360-0328	Cover, clevis, large	3
8135-00-669-6958	Cushioning material, packaging, cellulose wadding	As required
1670-06-188-2678	Leaf, extraction line (line bag)	2
1670-06-069-4452	Line, drogue, 60-foot (1-loop), type XXVI (for C-17)	1
	Line, extraction	
1670-06-067-6313	60-foot (3-loop), type XXVI (for C-130)	1
1670-06-107-7651	140-foot (3-loop), type XXVI (for C-17)	1
	Link assembly, two-point:	
1670-00-008-1953	3 ¾-inch	7
1670-06-498-6420	5 ½-inch	2
	Lumber:	
5510-00-220-6146	2- by 4-inch	As required
5510-00-220-6148	2- by 6-inch	As required
5510-00-220-6274	4- by 4-inch	As required
	Nail, steel wire:	
5315-00-010-4659	8d	As required
5315-00-010-6611	10d	As required
1670-00-758-3928	Pad, energy-dissipating (honeycomb)	26
	Parachute:	
	Cargo:	
1670-06-016-7841	G-11	3
	Cargo extraction:	
1670-06-068-3716	22-foot	1
1670-06-068-3715	15-foot (drogue for C-17)	1
9030-06-227-6087	Parts kit, lifting shackle (5-ton truck)	2
	Platform, airdrop, type V, 16-foot	
1670-06-358-8425	Bracket assembly, coupling	1
1670-06-167-2372	Clevis assembly, type V	24
1670-06-358-8424	Extraction bracket assembly	1
1670-06-167-2381	Tandem link assembly (multipurpose link)	2
1670-06-247-2389	Suspension link assembly	4

**Table 7-2. Equipment Required for Rigging the M-270, 4,000-Pound Capacity Forklift Truck on a Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5530-00-129-7777	Plywood: ½-inch	As required
5530-00-128-4981	¾-inch	As required
1670-06-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop:	
	For suspension:	
1670-06-067-6305	9-foot (4-loop), type XXVI nylon webbing	2
1670-06-067-7760	11-foot (2-loop), type XXVI nylon webbing	2
1670-06-067-6308	16-foot (4-loop), type XXVI nylon webbing	2
	For lifting:	
1670-06-067-6306	3-foot (4-loop), type XXVI nylon webbing	1
1670-06-067-6305	9-foot (4-loop), type XXVI nylon webbing	2
1670-06-067-6306	12-foot (4-loop), type XXVI nylon webbing	2
	For deployment:	
1670-06-067-6304	9-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-06-067-6313	60-foot (3-loop), type XXVI nylon webbing	3
5340-00-040-8219	Strap, parachute release multi-cut, with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tie-down assembly, 15-foot	36
1670-06-488-8259	Tow release mechanism (H-block for C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
8305-00-087-5752	Nylon, tubular, ½-inch	As required
8305-00-268-3591	Type VIII	As required

## Chapter 8

# Rigging the M-271, 4,000-Pound Capacity Forklift Truck on a Type V Platform

### DESCRIPTION OF LOAD

8-1. The M-271, 4,000-pound capacity forklift truck with foam filled tires (Figure 8-1) has an unrigged weight of 13,730 pounds. The forklift is rigged with four G-11 cargo parachutes on a 16-foot, type V platform with a total rigged weight of 17,380 pounds, height of 98 ½ inches, width of 108 inches, and a length of 226 inches.

### PREPARING PLATFORM

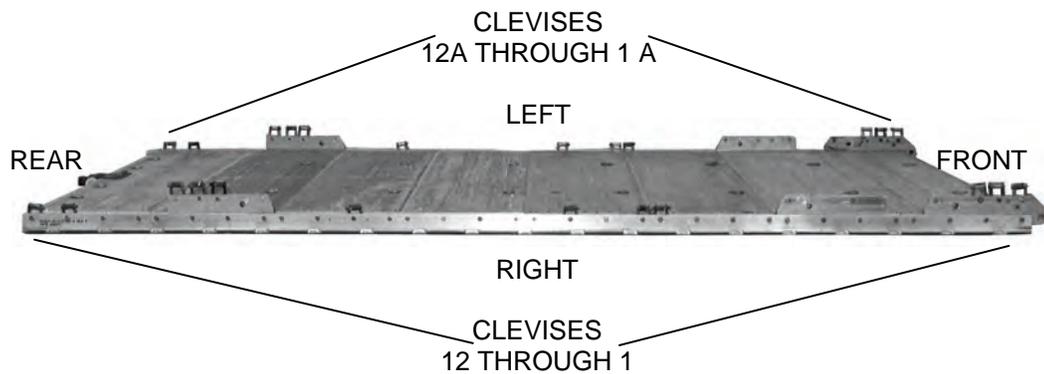
8-2. Prepare a 16-foot, type V platform using two tandem links, four suspension links and 24 clevis assemblies as described below and as shown in Figure 8-2.

- **Inspecting Platform.** Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- **Installing Tandem Links.** Install tandem links as shown in Figure 8-2.
- **Installing Suspension Links.** Install suspension links as shown in Figure 8-2.
- **Attaching and Numbering Clevises.** Attach and number 24 clevis assemblies as shown in Figure 8-2.



Figure 8-1. M-271, 4,000-Pound Capacity Forklift Truck with Foam Filled Tires

**Note.** The nose bumper may or may not be installed.



**Step:**

1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a suspension link on each platform side rail using holes 6, 7, and 8, and 25, 26, and 27.
3. Install a clevis on bushings 1, 2, and 3 on each front tandem link.
4. Install a clevis on each rear suspension link on bushings 2, 3, and 4.
5. Starting at the front of each platform side rail, install clevises to bushings bolted on holes 12, 13, 15, 22, 31, and 32.
6. Starting at the front of the platform side rail, number the clevises bolted on the right side from 1 through 12 and those bolted on the left side from 1A to 12A.

**Figure 8-2. Platform Prepared**

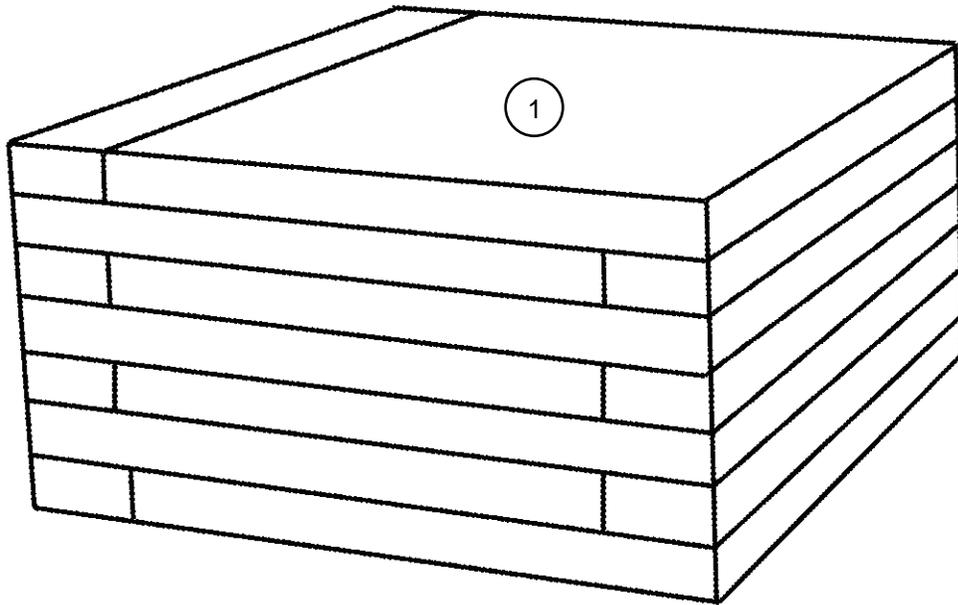
## PREPARING AND POSITIONING HONEYCOMB STACKS

8-3. Use the materials in Table 8-1 to prepare seven honeycomb stacks as shown in Figures 7-6 through 7-12 and Figures 8-3 through 8-5. Position the stacks on the platform as shown in Figures 7-13 and 7-14.

**Table 7-1. Material Required to Build Honeycomb Stacks**

<b>Stack Number</b>	<b>Pieces</b>	<b>Width (inches)</b>	<b>Length (inches)</b>	<b>Material</b>	<b>Instructions</b>
1	7	36	44	Honeycomb	See Figures 8-3 through 8-5.
	7	6	44	Honeycomb	
	2	42	44	¾-inch Plywood	
	1	42	37 ½	¾-inch Plywood	
	2	2 by 4	22 ½	Lumber	
	3	2 by 4	28 ½	Lumber	
	1	42	28 ½	¾-inch Plywood	
	2	4 by 4	10	Lumber	
	2	2 by 6	38	Lumber	
	1	38	4	¾-inch Plywood	
	2	36	4	½-inch Plywood	
2	7	36	24	Honeycomb	See Figures 7-6 through 7-8.
	1	34	24	¾-inch Plywood	
	4	2 by 6	24	Lumber	
	1	34	24	¾-inch Plywood	
	1	16	24	¾-inch Plywood	
3	7	42	32	Honeycomb	See Figures 7-9 through 7-11.
	1	42	32	¾-inch Plywood	
	4	2 by 4	32	Lumber	
	1	42	32	¾-inch Plywood	
	1	42	18	¾-inch Plywood	
	2	2 by 6	18	Lumber	
	1	4	6	¾-inch Plywood	
	1	42	6	¾-inch Plywood	
4, 5, 6, and 7	3	27	68	Honeycomb	See Figure 7-12.

**Note.** This drawing is not drawn to scale.



- ① Glue seven 36- by 49-inch and seven 6- by 49-inch pieces of honeycomb together making a 47- by 49-inch honeycomb base. Alternate the 6- by 49-inch pieces of honeycomb on either side as shown.

**Figure 8-3. Honeycomb Stack 1 Base Prepared**

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

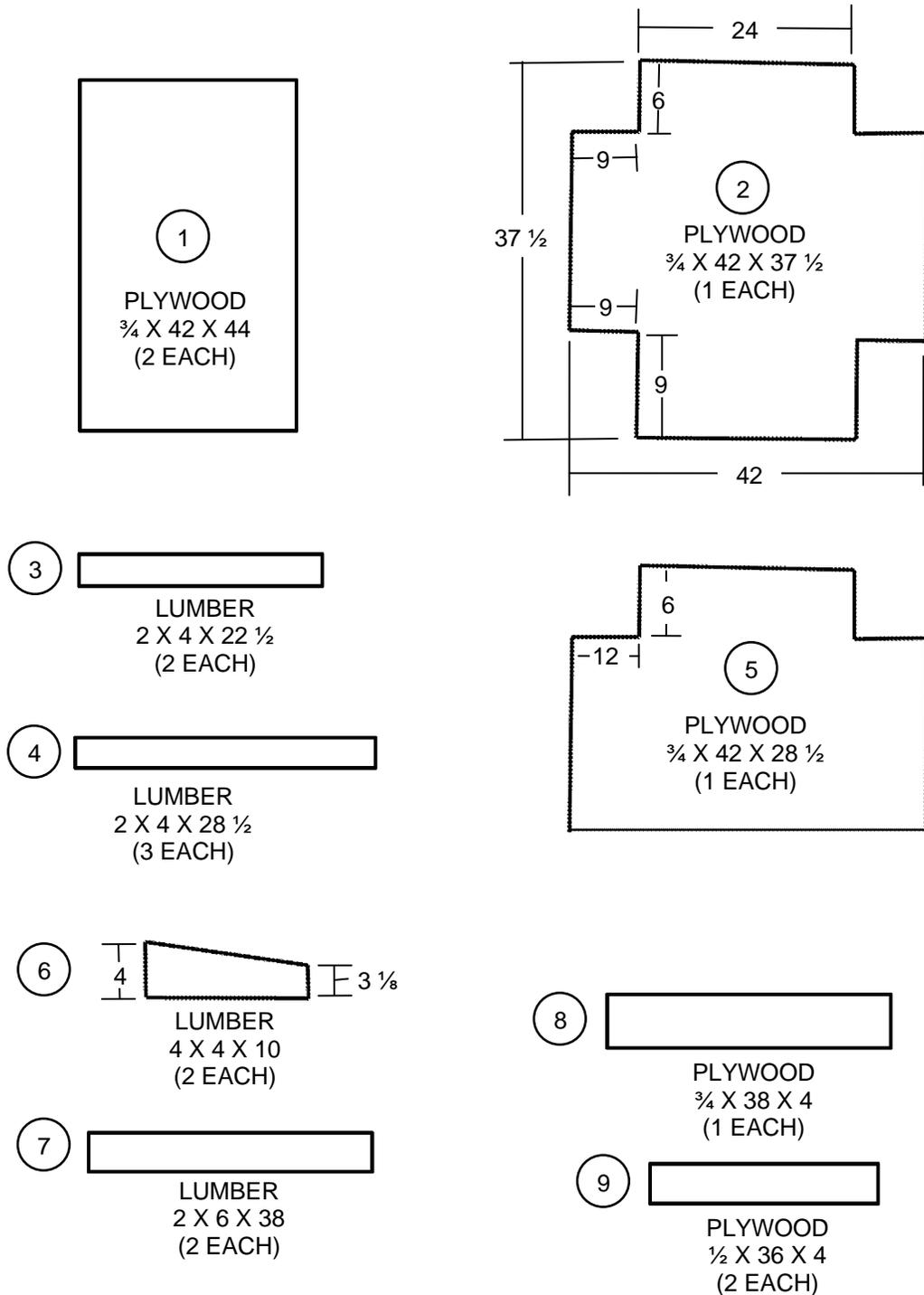
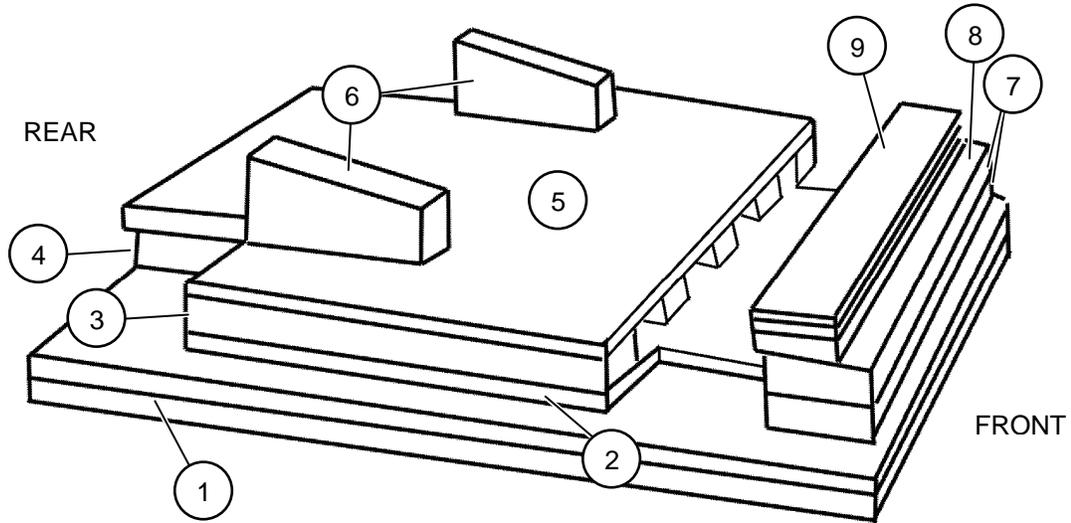


Figure 8-4. Pieces for Stack 1 Frame Support

**Note.** This drawing is not drawn to scale.



- ① Glue and nail two  $\frac{3}{4}$ - by 47- by 49-inch pieces of plywood together. Do not glue to base.
- ② Cut one  $\frac{3}{4}$ - by 47- by 37  $\frac{1}{2}$ -inch piece of plywood. Glue and nail to a  $\frac{3}{4}$ - by 47- by 49-inch piece of plywood with 29-inch side flush with rear edge.
- ③ Glue and nail the 2- by 4- by 22  $\frac{1}{2}$ -inch pieces of lumber flush with right and left sides of plywood.
- ④ Glue and nail three 2- by 4- by 37  $\frac{1}{2}$ -inch pieces of lumber.
- ⑤ Cut one  $\frac{3}{4}$ - by 47- by 37  $\frac{1}{2}$ -inch piece of plywood. Glue and nail to the 2- by 4-inch pieces of lumber.
- ⑥ Cut two 4- by 4- by 10-inch pieces of lumber measuring 4 inches high on one end and 3  $\frac{1}{8}$  inches high on the other. Glue and nail flush with rear edge of plywood 6 inches from right and left sides as shown above.
- ⑦ Glue and nail two 2- by 6- by 38-inch pieces of lumber together flush against the plywood and a 7- by 6-inch piece of lumber centered from right to left.
- ⑧ Glue and nail one  $\frac{3}{4}$ - by 38- by 9-inch piece of plywood flush with the rear edge of a 2- by 6- by 38-inch piece of lumber and centered.
- ⑨ Glue and nail two  $\frac{1}{2}$ - by 36- by 9-inch pieces of plywood on top of the  $\frac{3}{4}$ - by 38- by 9-inch piece of plywood.

**Figure 8-5. Stack 1 Frame Support Built**

## **PREPARING FORKLIFT**

8-4. Prepare the forklift before positioning it on the platform as described below and as shown in Figures 7-15 through 7-18.

- Make sure the fuel tank is no more than  $\frac{3}{4}$  full.
- Pad and tape all lights, reflectors, and gauges.

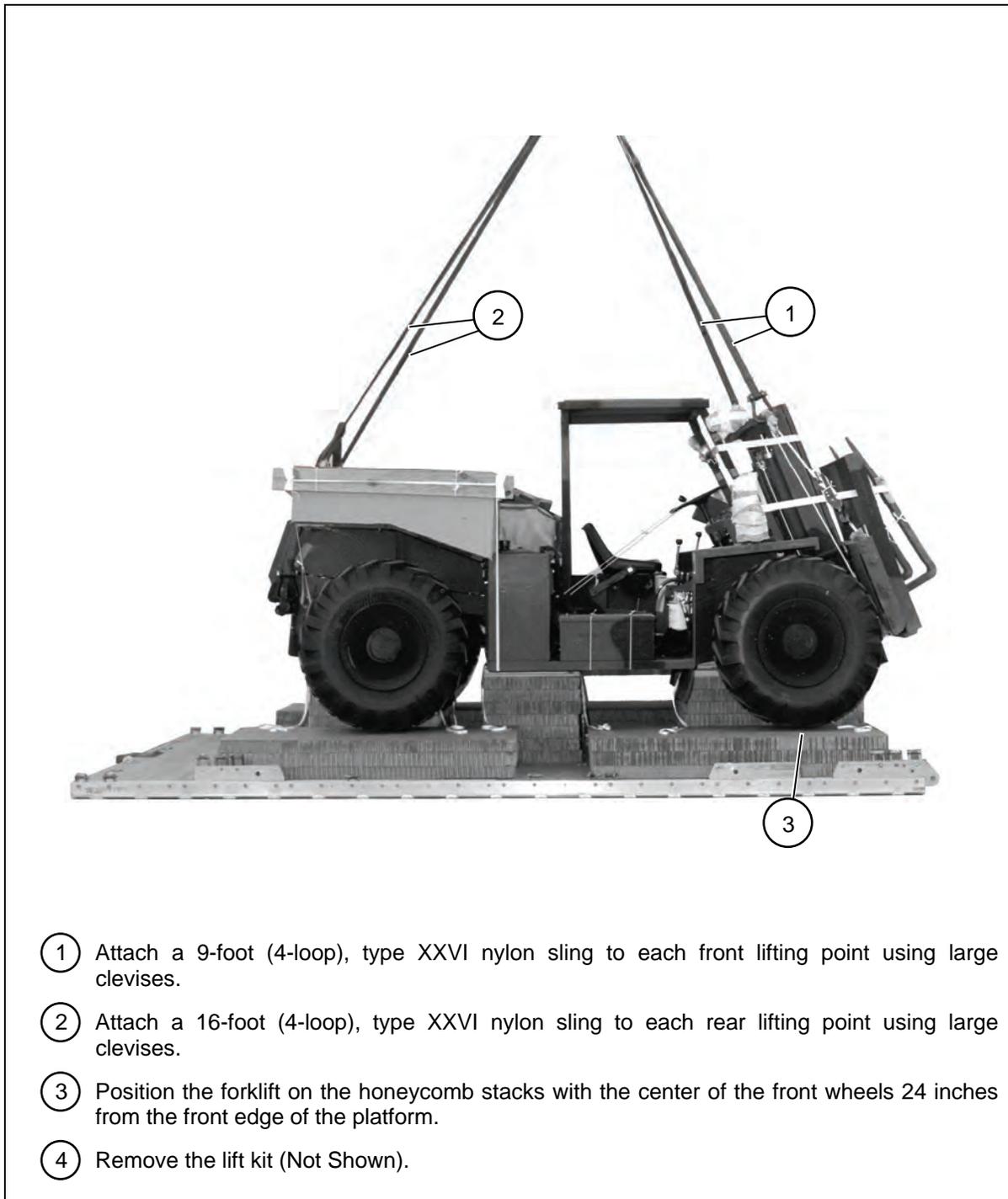
## **BUILDING AND POSITIONING THE FENDER PROTECTION KIT**

8-5. Build and position the fender protection kits as described below.

- Build two honeycomb fender protection kits as shown in Figures 7-19 and 7-20.
- Position the fender protection kits on the appropriate fender as shown in Figure 7-21.
- Secure the fender protection kits on forklift as shown in Figures 7-22 and 7-23.

## **POSITIONING THE FORKLIFT**

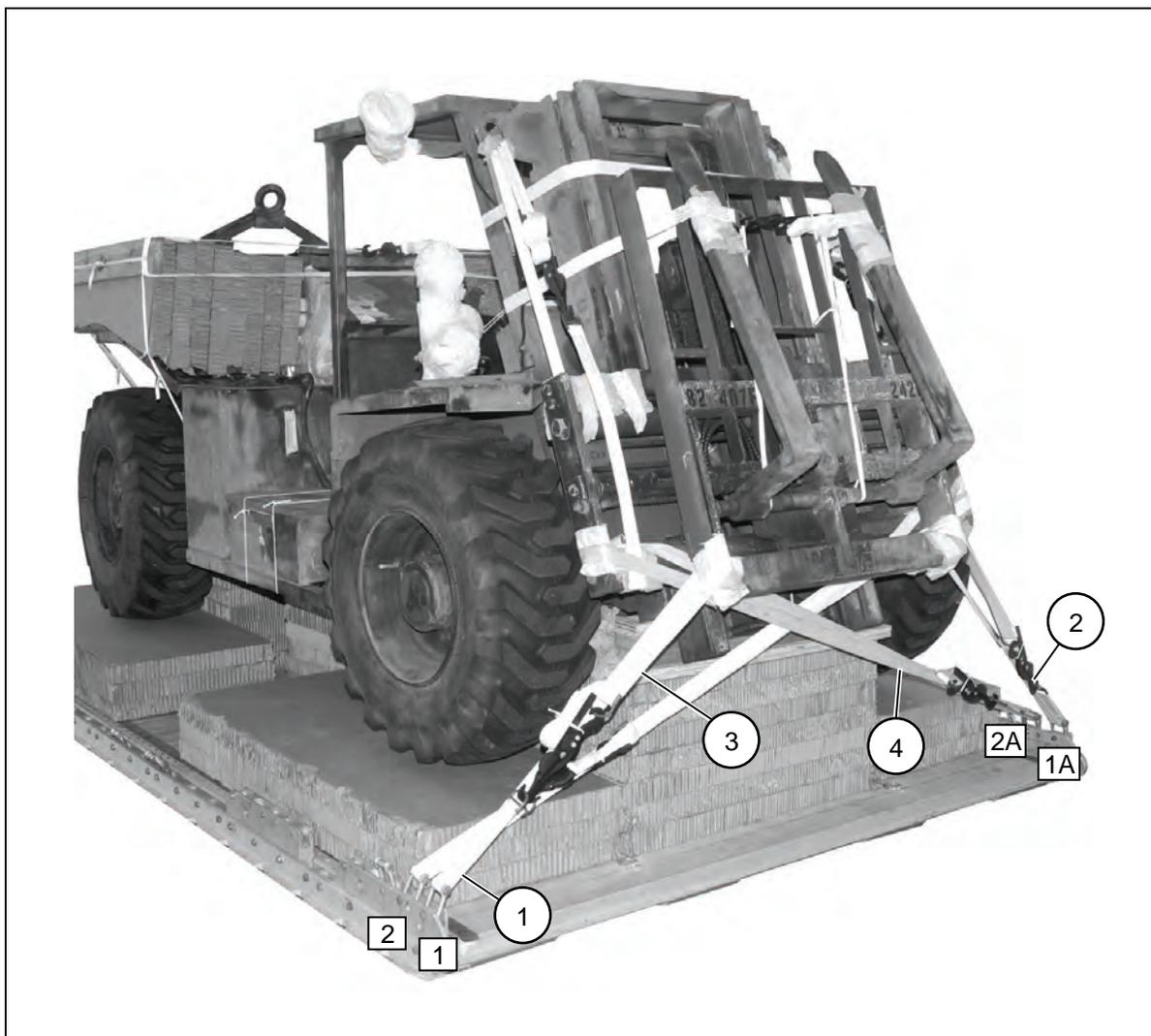
8-6. Install the lifting slings and position the forklift as shown in Figure 8-6.



**Figure 8-6. Forklift Positioned**

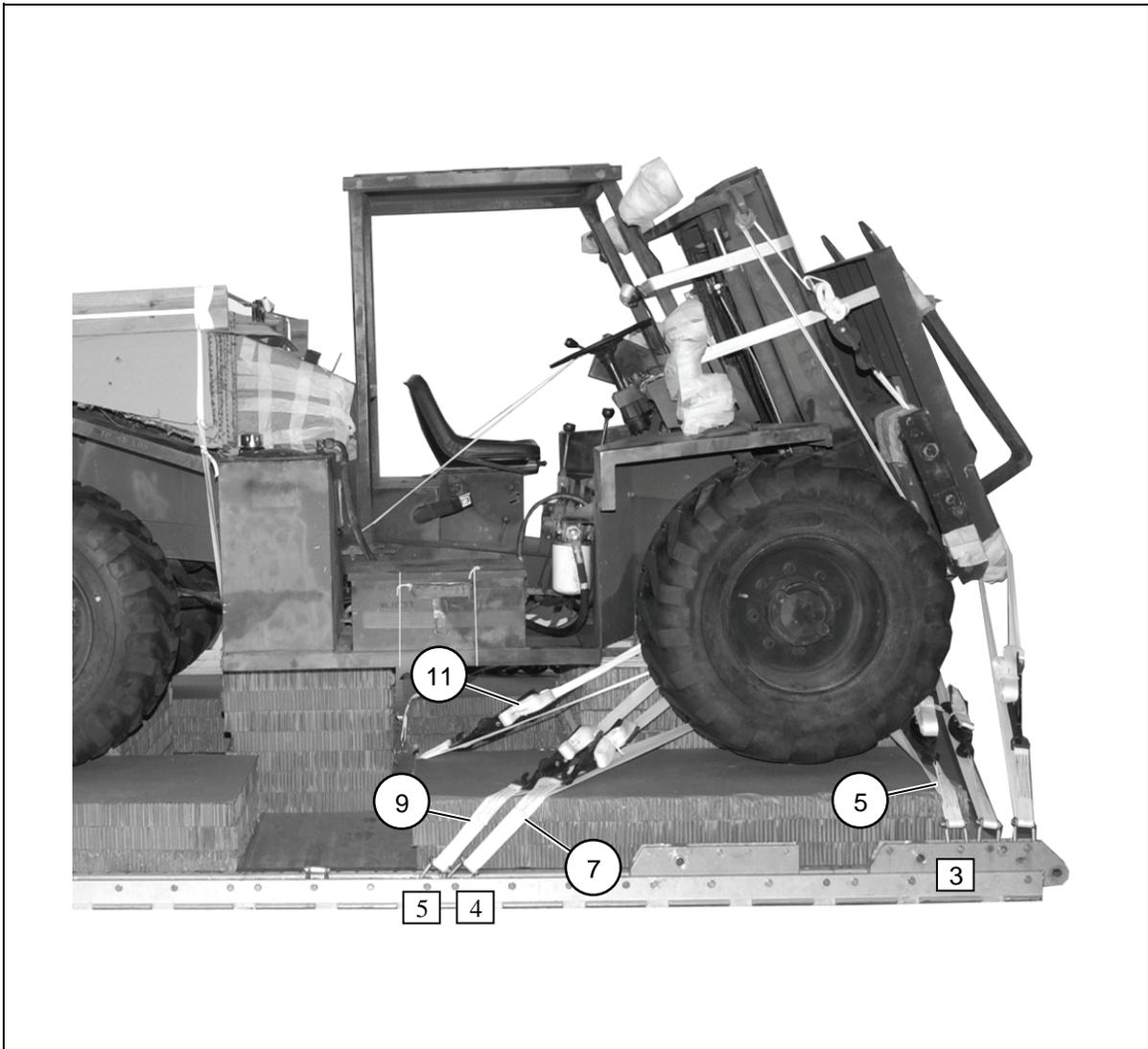
## LASHING FORKLIFT

8-7. Lash the forklift to the platform using twenty-six 15-foot tie-down assemblies. Install the lashings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 8-7 through 8-10.



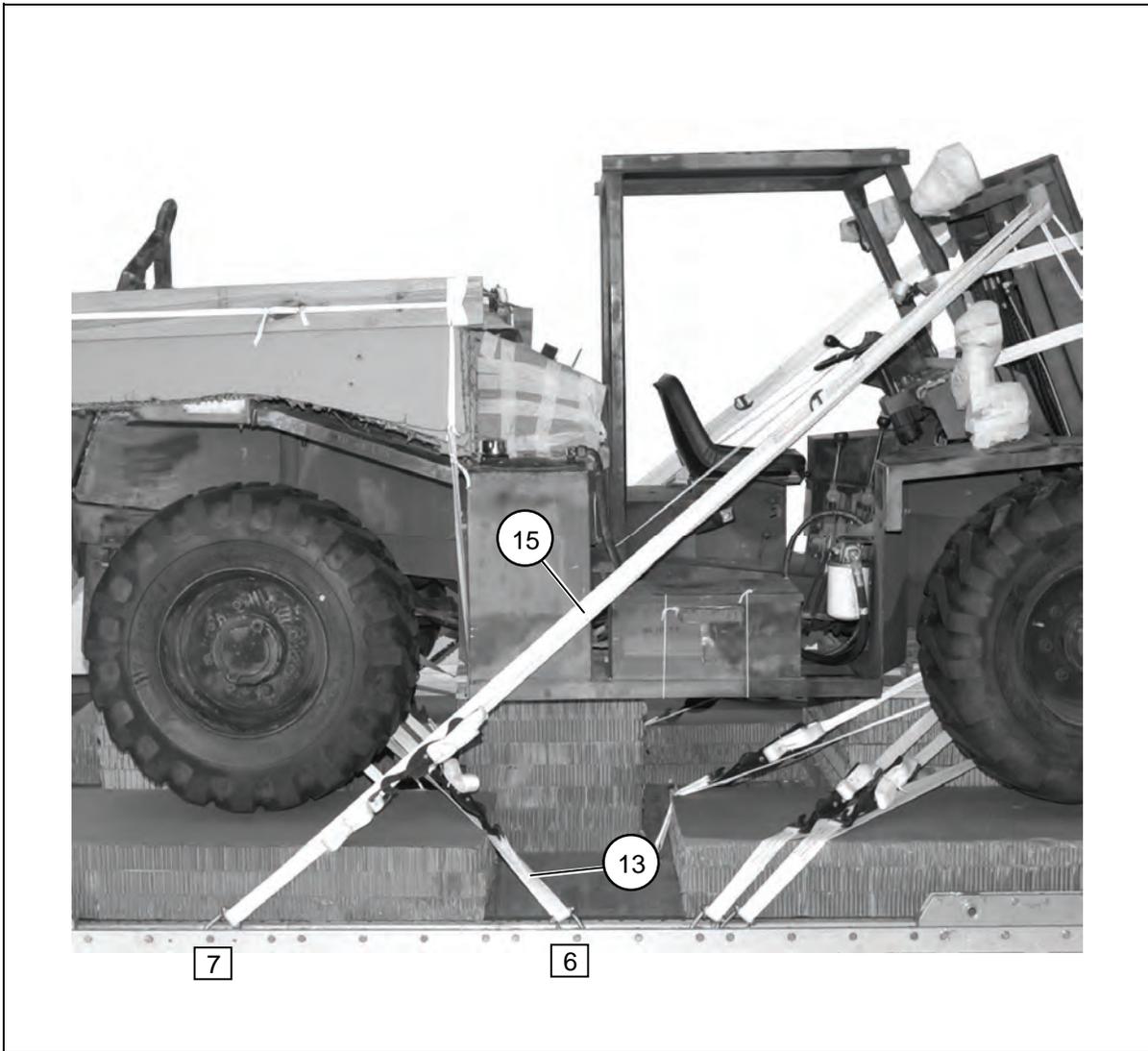
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
1	1	Around the right front of the carriage.
2	1A	Around the left front of the carriage.
3	2	Around the left front of the carriage.
4	2A	Around the right front of the carriage.

**Figure 8-7. Lashings 1 Through 4 Installed**



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
5	3	Through front axle ring left side.
6	3A	Through front axle ring right side.
7	4	Around front axle right side.
8	4A	Around front axle left side.
9	5	Around front axle right side.
10	5A	Around front axle left side.
11	A4	Around front axle right side.
12	B4	Around front axle left side.

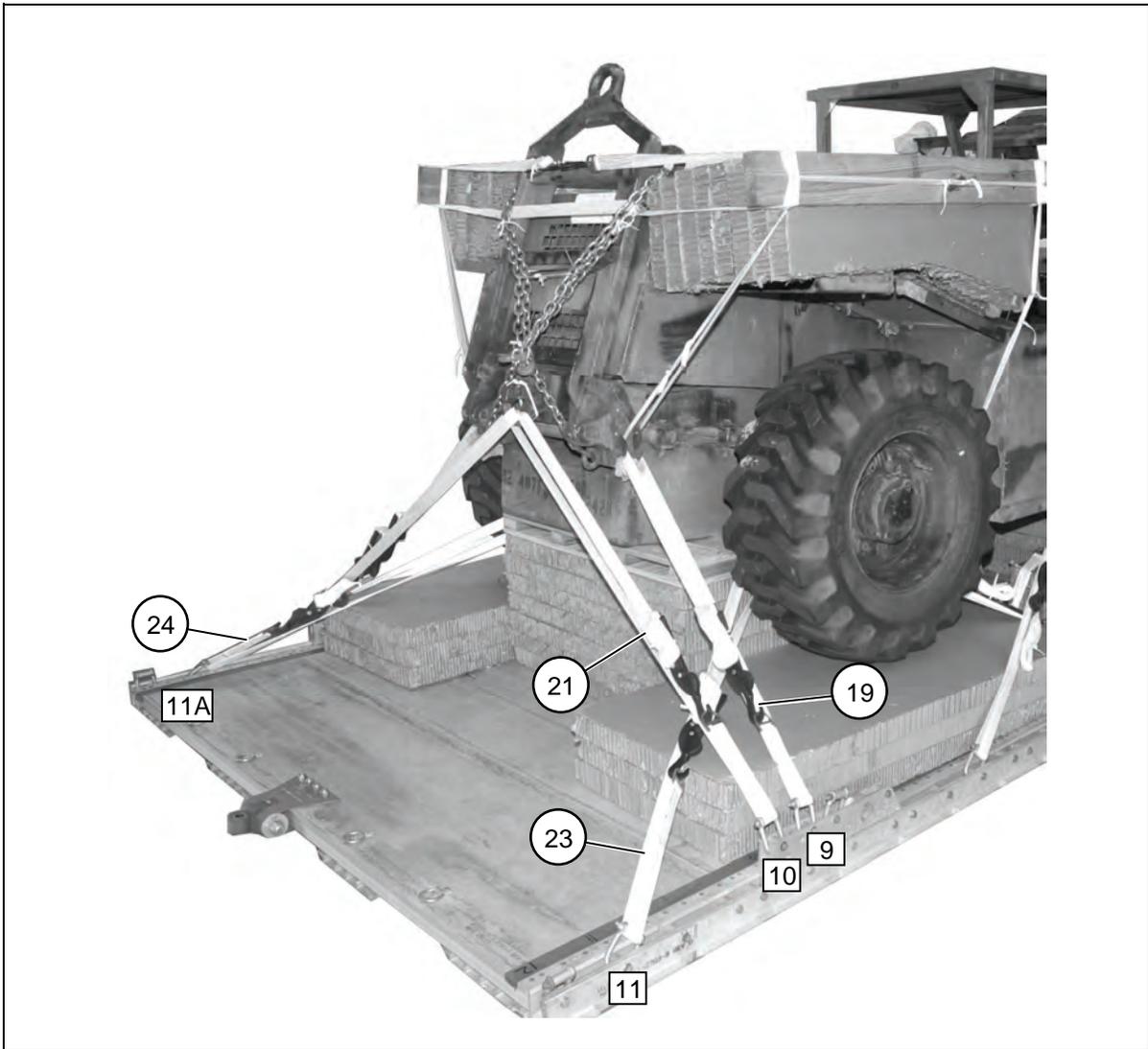
Figure 8-8. Lashings 5 Through 12 Installed



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
13	6	Pass lashing: Around rear axle right side.
14	6A	Around rear axle left side.
*15	7	Through top lifting ring on forks right side.
*16	7A	Through top lifting ring on forks left side.
17	A5	Around rear axle right side (Not Shown).
18	B5	Around rear axle left side (Not Shown).

**Note.** \* Annotates 30-foot lashings.

**Figure 8-9. Lashings 13 Through 18 Installed**



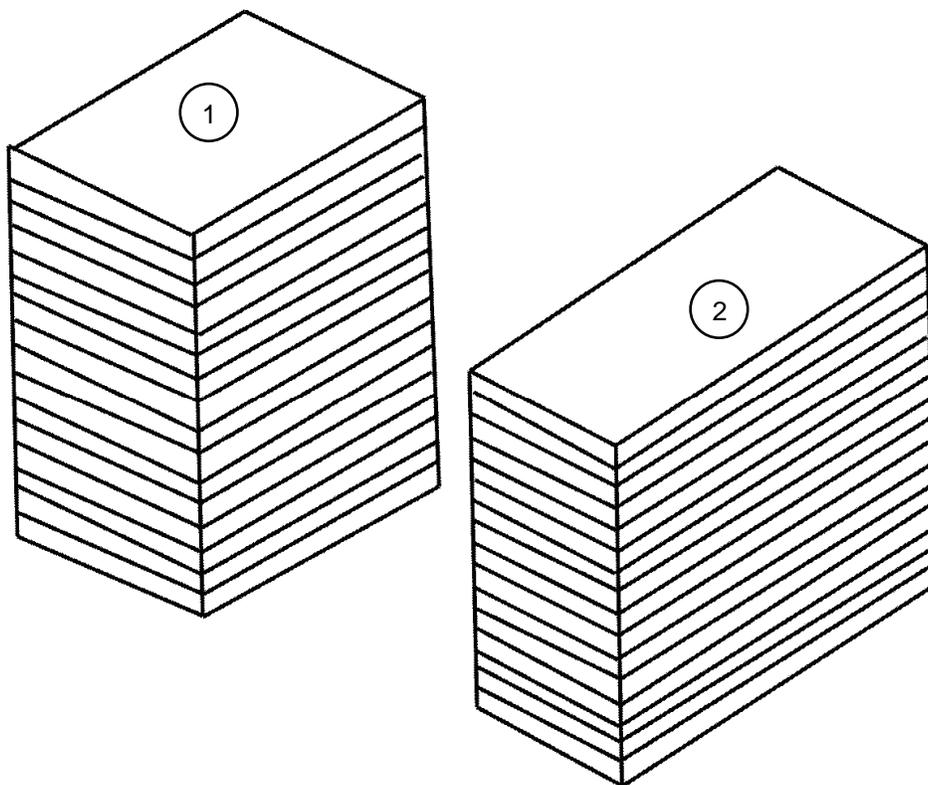
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
19	9	Pass lashing: Through right rear tie down point.
20	9A	Through left rear tie down point.
21	10	Through towing pintle.
22	10A	Through towing pintle.
23	11	Around rear axle right side.
24	11A	Around rear axle left side.

**Figure 8-10. Lashings 19 Through 24 Installed**

## BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

- 8-8. Build and position the parachute stowage platform as described below.
- Build the honeycomb support stacks as shown in Figure 8-11.
  - Build a parachute stowage platform as shown in Figure 8-12.
  - Position the honeycomb support and parachute stowage platform. Lash the parachute stowage platform as shown in Figure 8-13.

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



- ① Build two honeycomb support stacks by gluing sixteen 15- by 15-inch pieces of honeycomb together in each stack.
- ② Build a third honeycomb support stack by gluing sixteen 15- by 36-inch pieces of honeycomb together.

**Figure 8-11. Honeycomb Support Built**

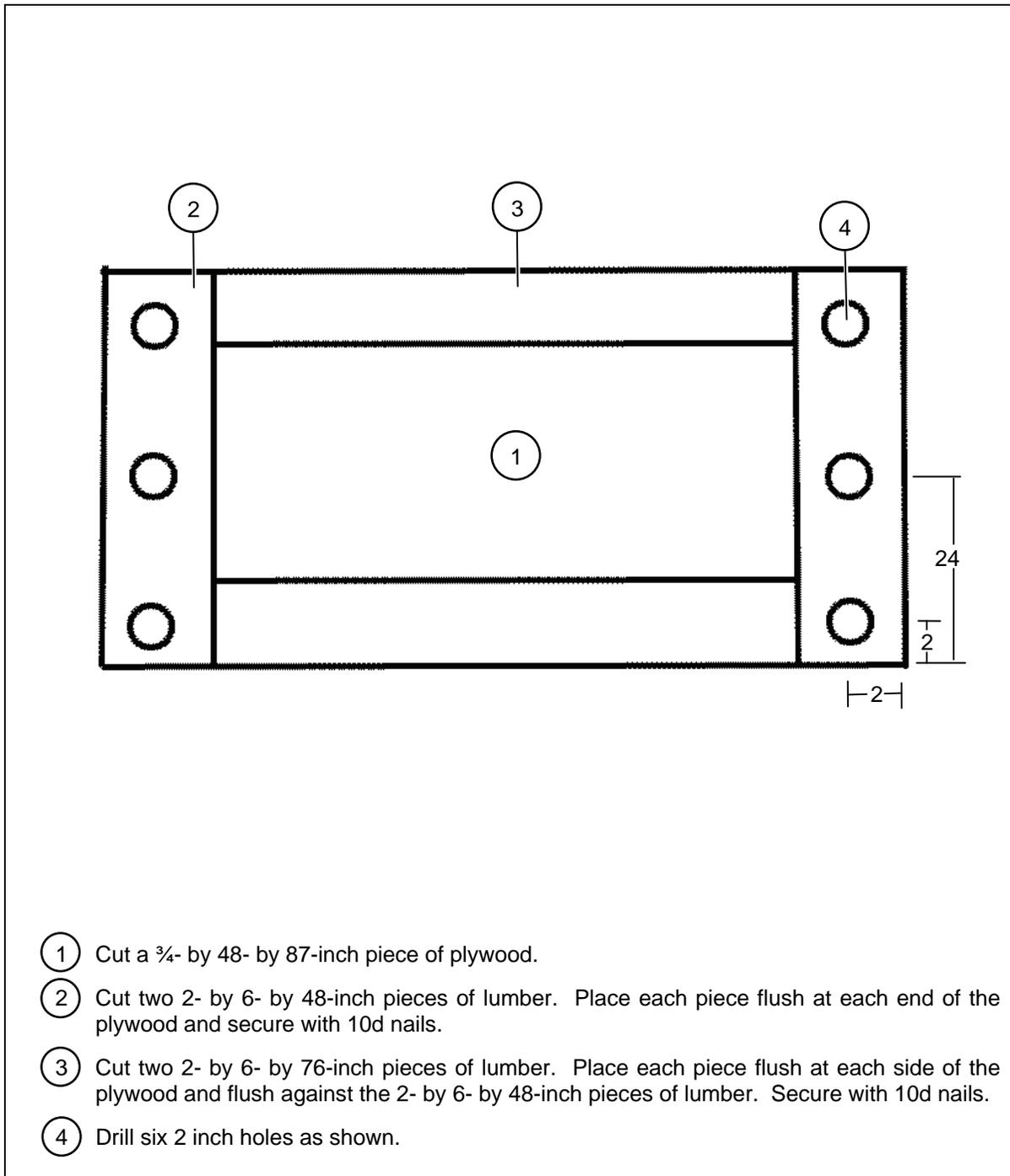
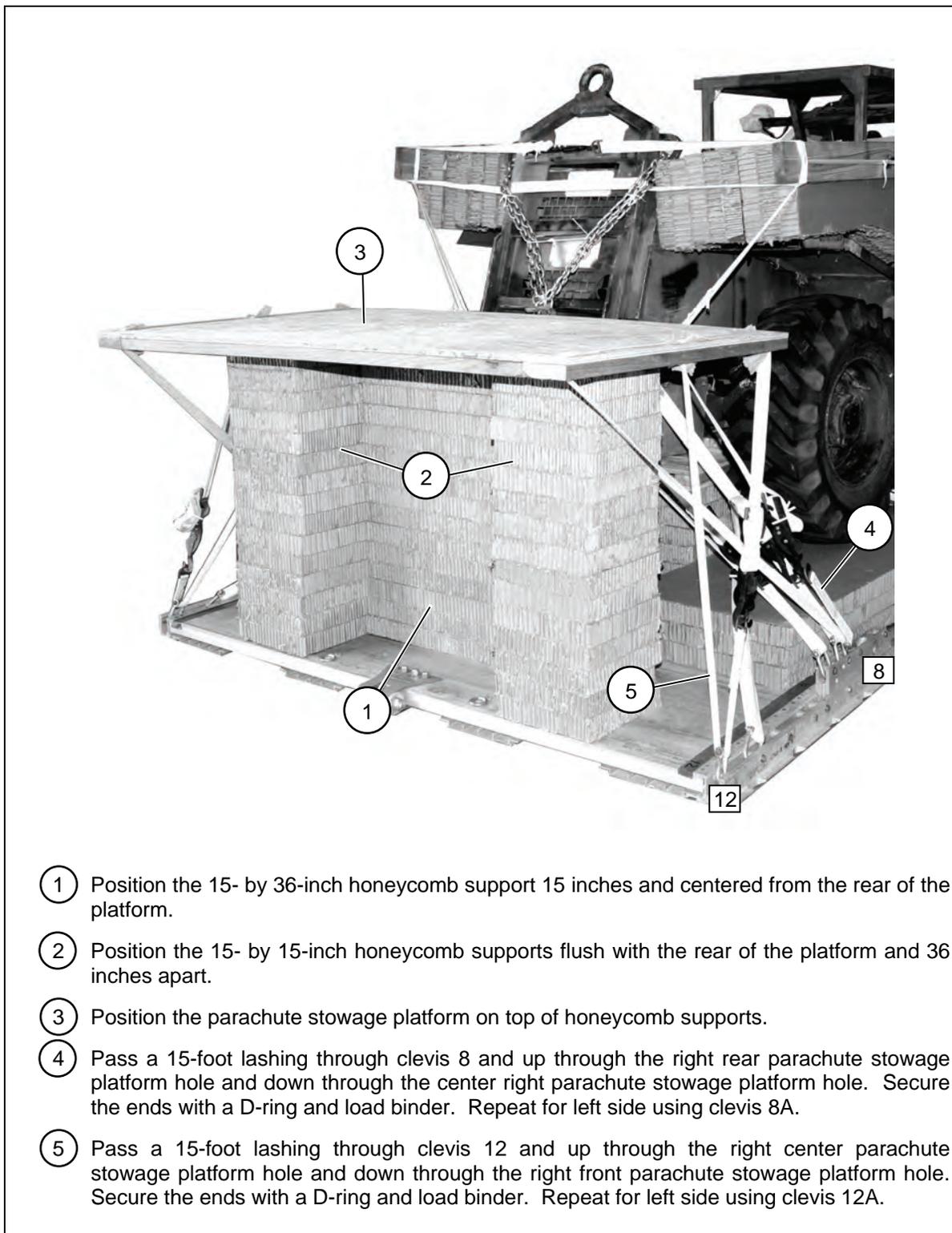


Figure 8-12. Details of Parachute Stowage Platform Built

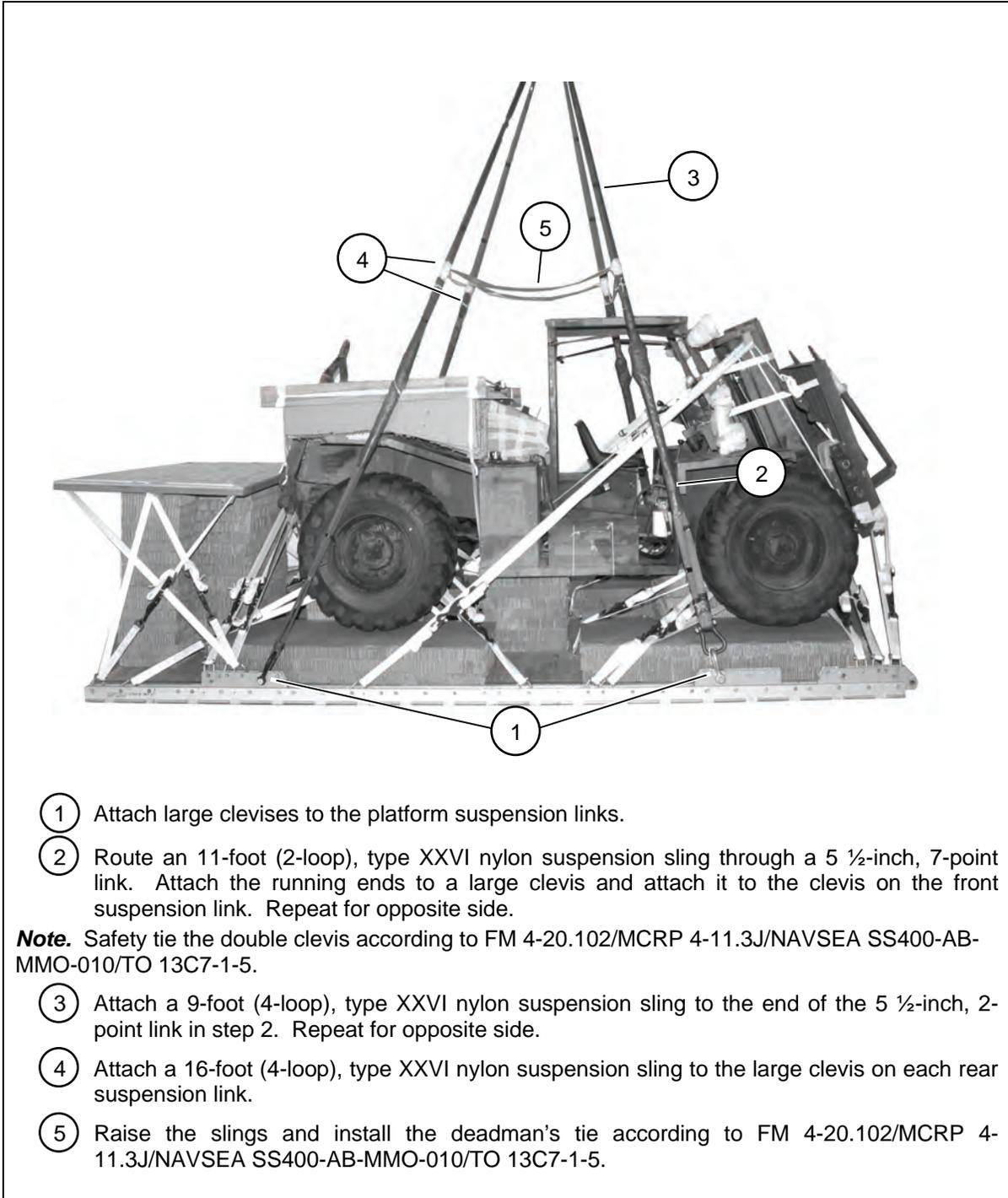


- ① Position the 15- by 36-inch honeycomb support 15 inches and centered from the rear of the platform.
- ② Position the 15- by 15-inch honeycomb supports flush with the rear of the platform and 36 inches apart.
- ③ Position the parachute stowage platform on top of honeycomb supports.
- ④ Pass a 15-foot lashing through clevis 8 and up through the right rear parachute stowage platform hole and down through the center right parachute stowage platform hole. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 8A.
- ⑤ Pass a 15-foot lashing through clevis 12 and up through the right center parachute stowage platform hole and down through the right front parachute stowage platform hole. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 12A.

**Figure 8-13. Parachute Stowage Platform Positioned and Secured**

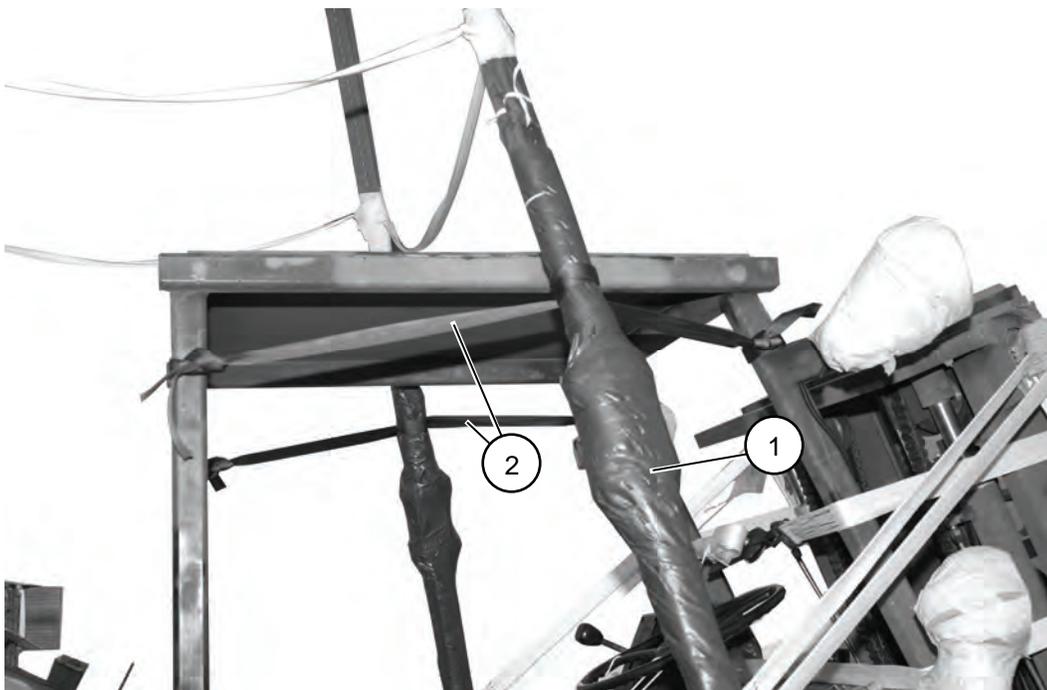
## INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

8-9. Install the suspension slings and deadman's tie as shown in Figures 8-14 through 8-16.



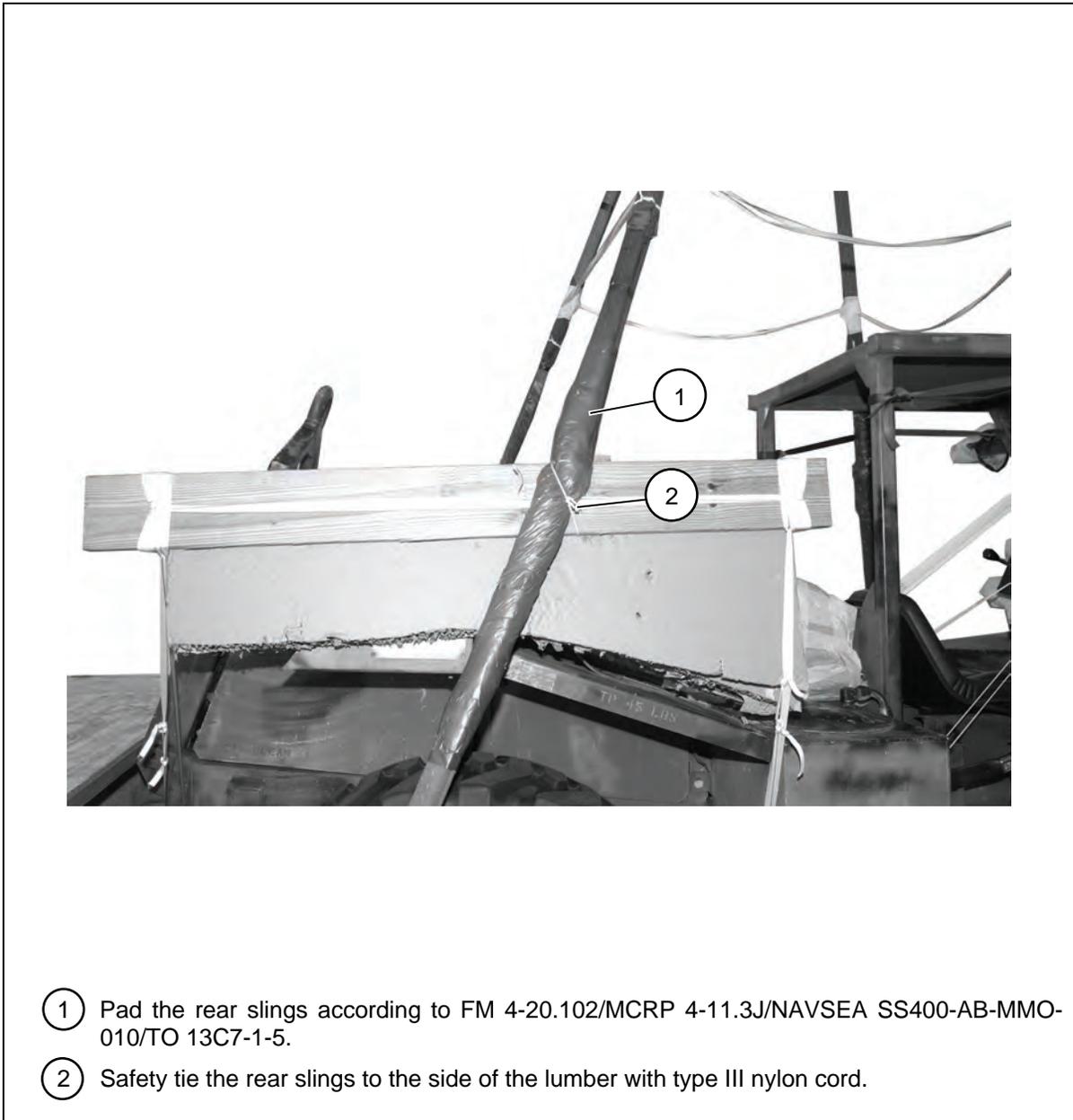
**Figure 8-14. Suspension Slings and Deadman's Tie Installed**

**Note.** Do not safety tie to the light brackets.



- ① Pad the front slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Ensure the suspension slings are padded 6 inches above the driver's cab and approximately 18 inches below the top of the front fenders.
- ② With tension on slings, place a safety tie to each front sling using double 6-inch tubular nylon webbing and secure it to the driver's cab. Do not safety tie to the light brackets.

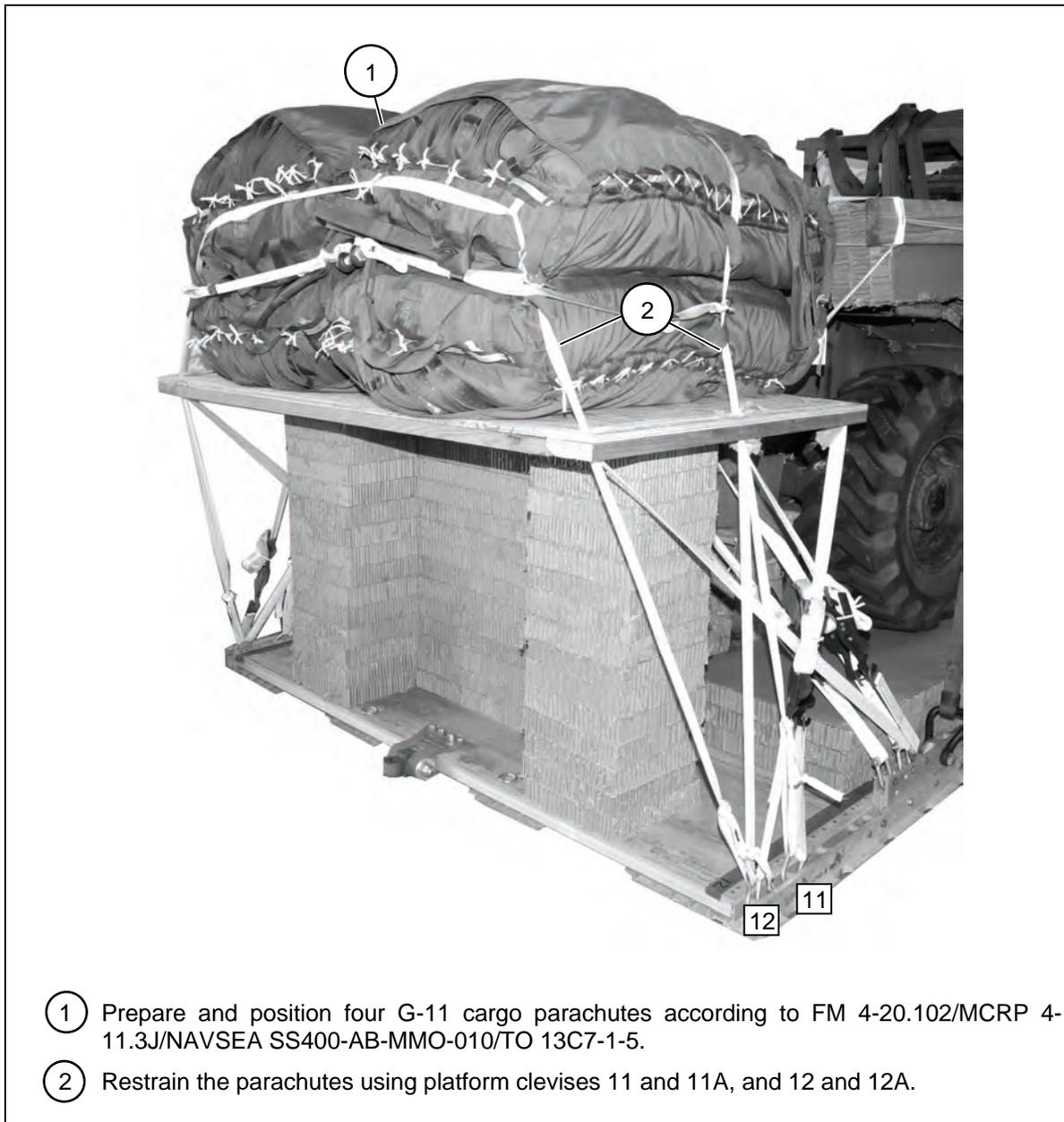
**Figure 8-15. Front Suspension Sling Safety Tied**



**Figure 8-16. Rear Suspension Sling Safety Tied and Padded**

## STOWING CARGO PARACHUTE

8-10. Prepare, stow and restrain four G-11 cargo parachutes on the parachute stowage platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 8-17.

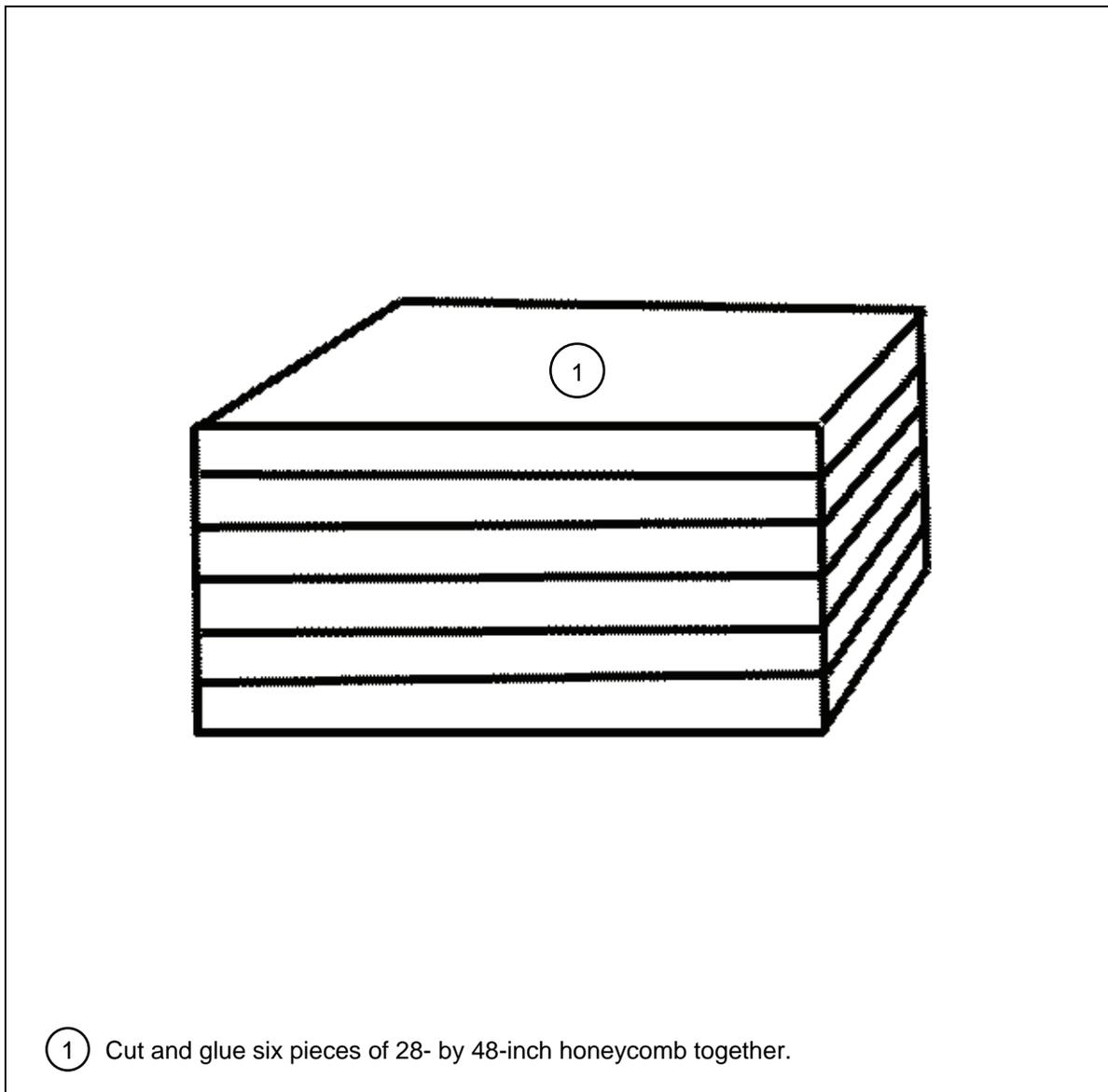


**Figure 8-17. Cargo Parachute Stowed**

## INSTALLING PARACHUTE RELEASE

8-11. Prepare and install M-2 parachute release assembly according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as described below.

- Build a parachute release tray as shown in Figure 8-18.
- Position the parachute release tray as shown in Figure 8-19.
- Cover the parachute release tray as shown in Figure 8-20.
- Install the M-2 parachute release as shown in Figure 8-21.

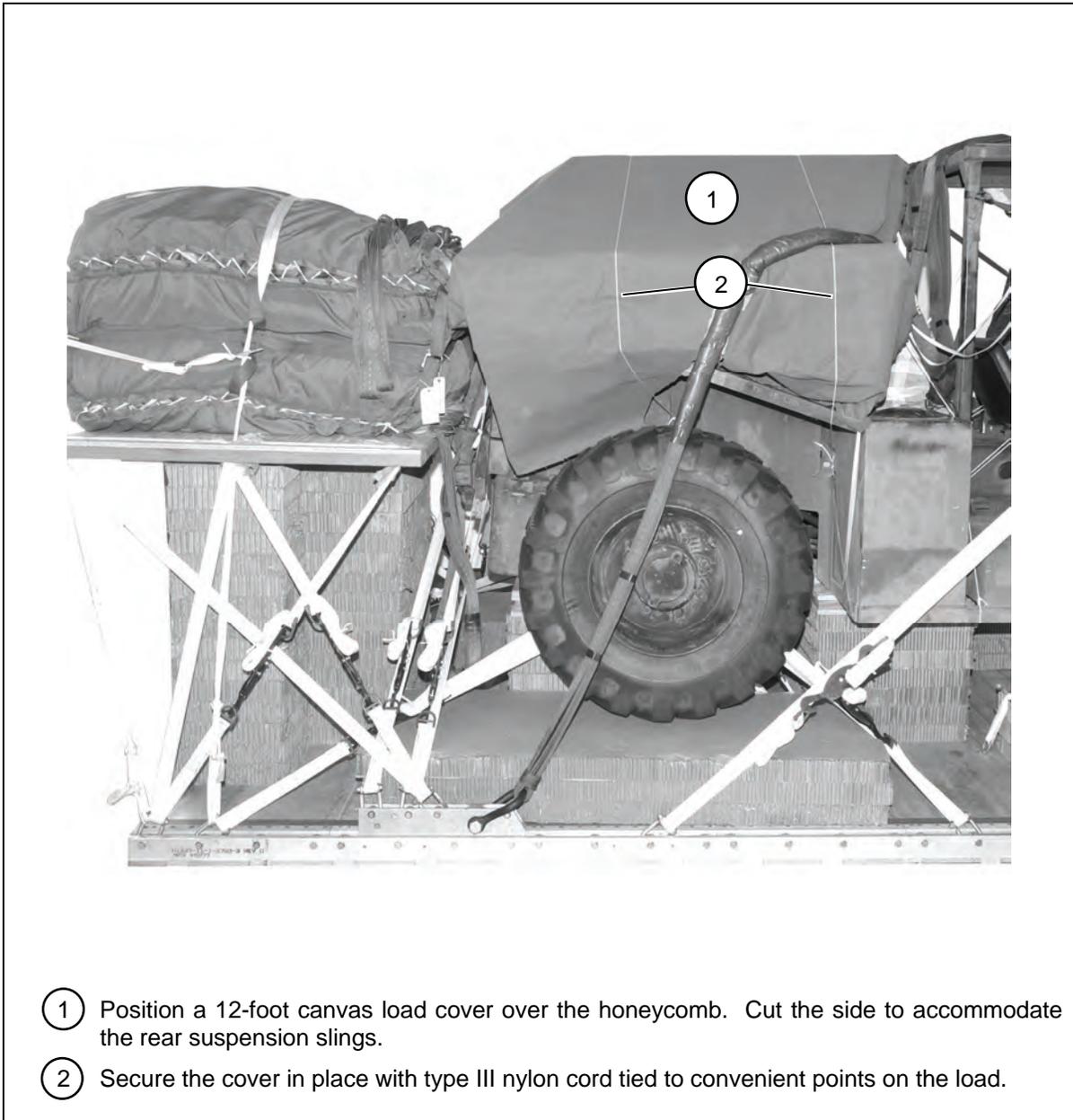


**Figure 8-18. Parachute Release Tray Built**

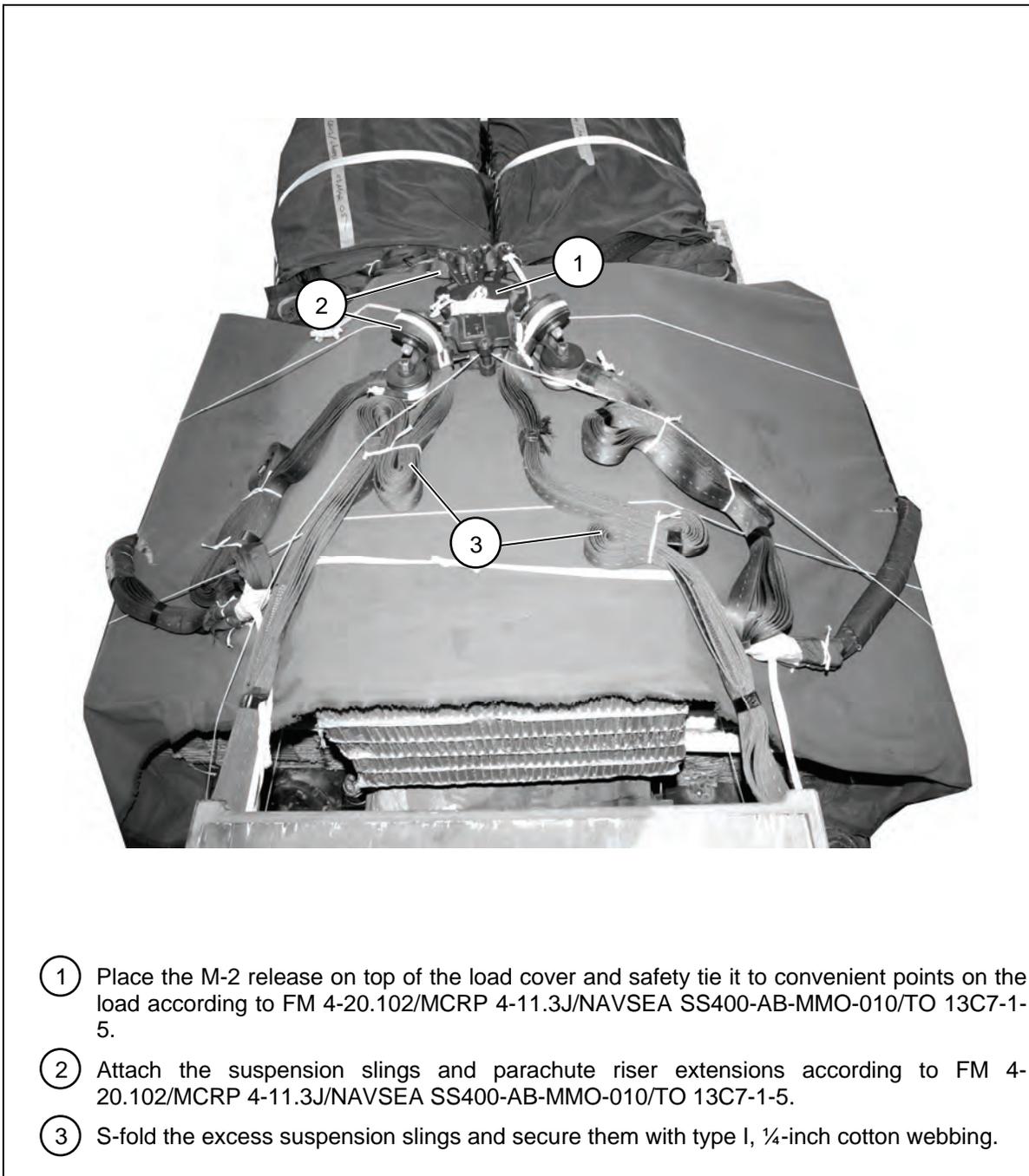


- ① Position the honeycomb stack on the forklift engine compartment and secure in place with type III nylon cord to convenient point on the load.

**Figure 8-19. Parachute Release Tray Positioned**



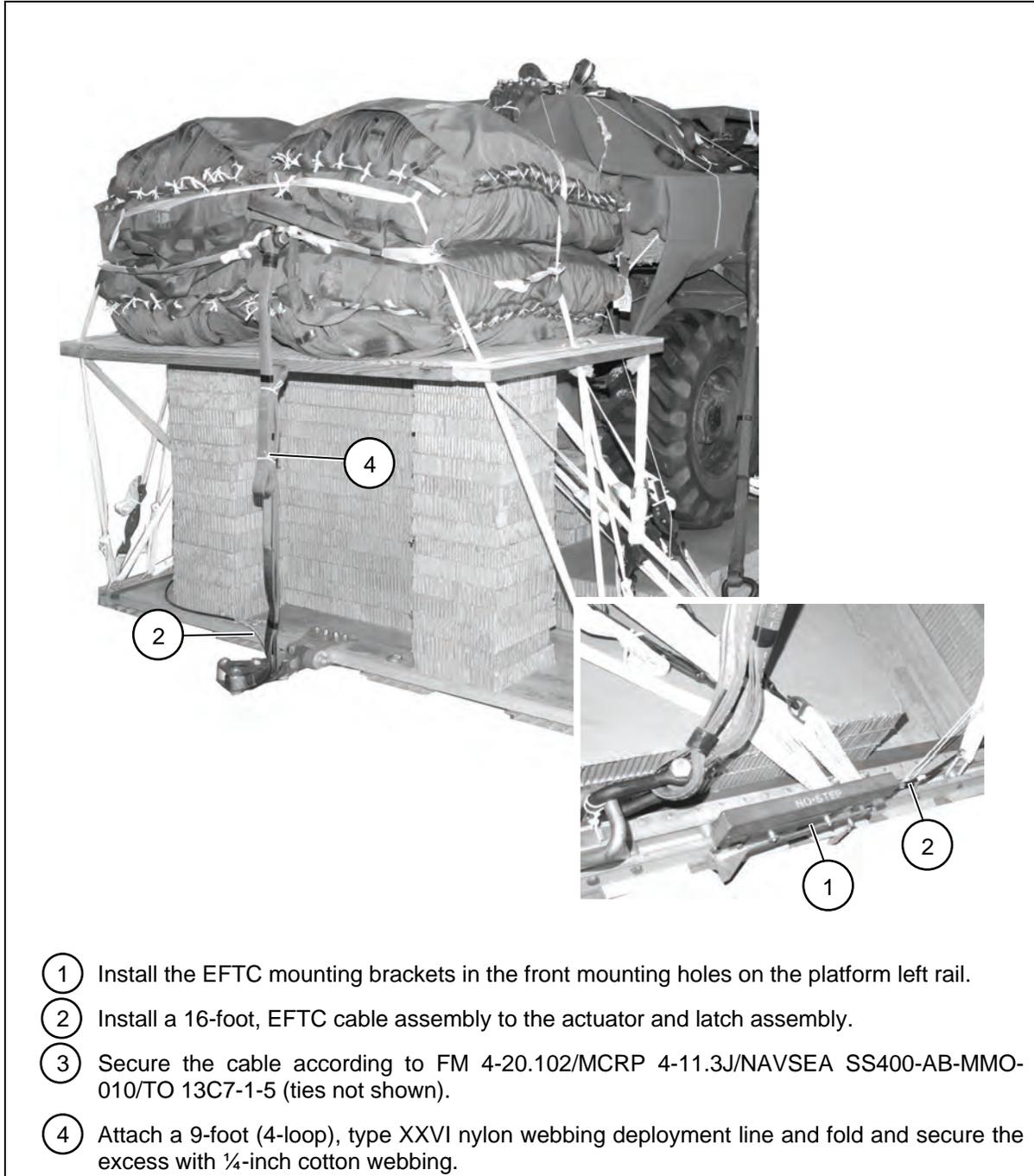
**Figure 8-20. Parachute Release Tray Covered**



**Figure 8-21. M-2 Release Installed**

## INSTALLING EXTRACTION SYSTEM

8-12. Install the extraction system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 8-22. If applicable, install the extraction parachute jettison system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.



**Figure 8-22. EFTC Extraction System Installed**

## **PLACING EXTRACTION PARACHUTE**

8-13. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. 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 platform for installation in the aircraft as well.

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

8-14. Install the provisions for the emergency restraints on the load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **MARKING RIGGED LOAD**

8-15. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 8-23. 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**

8-16. Use the equipment listed in Table 8-2 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight: Load shown.....	17,380 pounds
Maximum load allowed .....	21,000 pounds
Height .....	98 ½ inches
Width .....	108 inches
Overall Length.....	226 inches
Overhang: Front (forks).....	15 inches
Rear (EFTC).....	18 inches
Rear (EPJS) .....	30 inches
Center of Balance (from front edge of platform) .....	82 inches

**Figure 8-23. M-271, 4,000-Pound Capacity Forklift Truck Rigged on a Type V Platform**

**Table 8-2. Equipment Required for Rigging the M-271, 4,000-Pound Capacity Forklift Truck on a Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-278-8713	Adhesive, paste, 6-gallon	As required
	Clevis, suspension:	
4030-00-678-8562	¾-inch (medium)	2
4030-00-090-5354	6-inch (large)	8
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-439-5798	Coupling, airdrop, extraction force transfer with cable, 16-foot	1
1670-00-360-0328	Cover, clevis, large	3
8135-00-669-6958	Cushioning material, packaging, cellulose wadding	As required
1670-06-188-2678	Leaf, extraction line (line bag)	2
1670-06-069-4452	Line, drogue, 60-foot (6-loop), type XXVI (for C-17)	1
	Line, extraction	
1670-06-067-6313	60-foot (8-loop), type XXVI (for C-130)	1
1670-06-107-7651	140-foot (8-loop), type XXVI (for C-17)	1
	Link assembly, two-point:	
1670-00-008-1953	3 ¾-inch	7
1670-06-498-6420	5 ½-inch	2
	Lumber:	
5510-00-220-6146	2- by 4-inch	As required
5510-00-220-6148	2- by 6-inch	As required
5510-00-220-6274	4- by 4-inch	As required
	Nail, steel wire:	
5315-00-010-4659	8d	As required
5315-00-010-6611	10d	As required
1670-00-758-3928	Pad, energy-dissipating (honeycomb)	26
	Parachute:	
	Cargo:	
1670-06-016-7841	G-11	4
	Cargo extraction:	
1670-06-068-3716	22-foot	1
1670-06-068-3715	15-foot (drogue for C-17)	1
9030-06-227-6087	Parts kit, lifting shackle (5-ton truck)	2
	Platform, airdrop, type V, 16-foot	
1670-06-358-8425	Bracket assembly, coupling	1
1670-06-167-2372	Clevis assembly, type V	24
1670-06-358-8424	Extraction bracket assembly	1
1670-06-247-2389	Suspension link assembly	4
1670-06-167-2381	Tandem link assembly (multipurpose link)	2

**Table 8-2. Equipment Required for Rigging the M-271, 4,000-Pound Capacity Forklift Truck on a Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5530-00-129-7777	Plywood: ½-inch	As required
5530-00-128-4981	¾-inch	As required
1670-06-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop:	
	For suspension:	
1670-06-067-6305	9-foot (4-loop), type XXVI nylon webbing	2
1670-06-067-7760	11-foot (2-loop), type XXVI nylon webbing	2
1670-06-067-6308	16-foot (4-loop), type XXVI nylon webbing	2
	For lifting:	
1670-06-067-6305	9-foot (4-loop), type XXVI nylon webbing	2
1670-06-067-6310	16-foot (4-loop), type XXVI nylon webbing	2
	For deployment:	
1670-06-067-6304	9-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-06-067-6313	60-foot (8-loop), type XXVI nylon webbing	4
5340-00-040-8219	Strap, parachute release multi-cut, with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tie-down assembly, 15-foot	36
1670-06-488-8259	Tow release mechanism (H-block for C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
8305-00-087-5752	Nylon, tubular, ½-inch	As required
8305-00-268-3591	Type VIII	As required

## Chapter 9

# Rigging the 6,000-Pound Capacity Forklift Truck on a Type V Platform

### DESCRIPTION OF LOAD

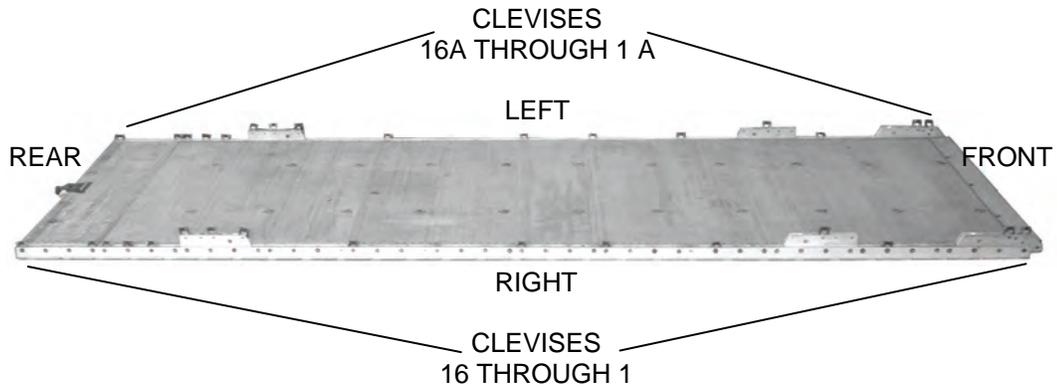
9-1. The 6,000-pound capacity forklift truck is rigged on a 24-foot, type V platform with six G-11 cargo parachutes for low-velocity airdrop from a C-130 or C-17 aircraft. The forklift weighs 23,000 pounds. It is 102 inches wide, 228 inches long and 124 inches high (reducible to 89 inches).

### PREPARING PLATFORM

9-2. Inspect, or assemble and inspect, a 24-foot, type V platform as outlined in TM 10-1670-268-20&P. The platform will use two tandem links, four suspension links, and 32 clevis assemblies as shown in Figure 9-1.

- **Inspecting Platform.** Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- **Installing Tandem Links.** Install tandem links as shown in Figure 9-1.
- **Installing Suspension Links.** Install suspension links as shown in Figure 9-1.
- **Attaching and Numbering Clevises.** Attach and number 32 clevis assemblies as shown in Figure 9-1.

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



**Step:**

1. Install a suspension link to each platform side rail using holes 9, 10, and 11.
2. Install a suspension link to each platform side rail using holes 38, 39, and 40.
3. Install a tandem link on each platform side rail using holes 1, 2, and 3.
4. Install clevises on bushings 1 and 2 of each front tandem link.
5. Install a clevis on bushing 3 of each front suspension link.
6. Install clevises on bushings 1, 2, and 4 of each rear suspension link.
7. Starting at the front of each platform side rail, install clevises to bushings bolted on holes 7, 15, 20, 24, 32, 42, 43, 44, 45, and 48.
8. Starting at the front of each platform side rail, number the clevises bolted on the right side from 1 through 16 and those bolted on the left side from 1A through 16A.

**Figure 9-1. Platform Prepared**

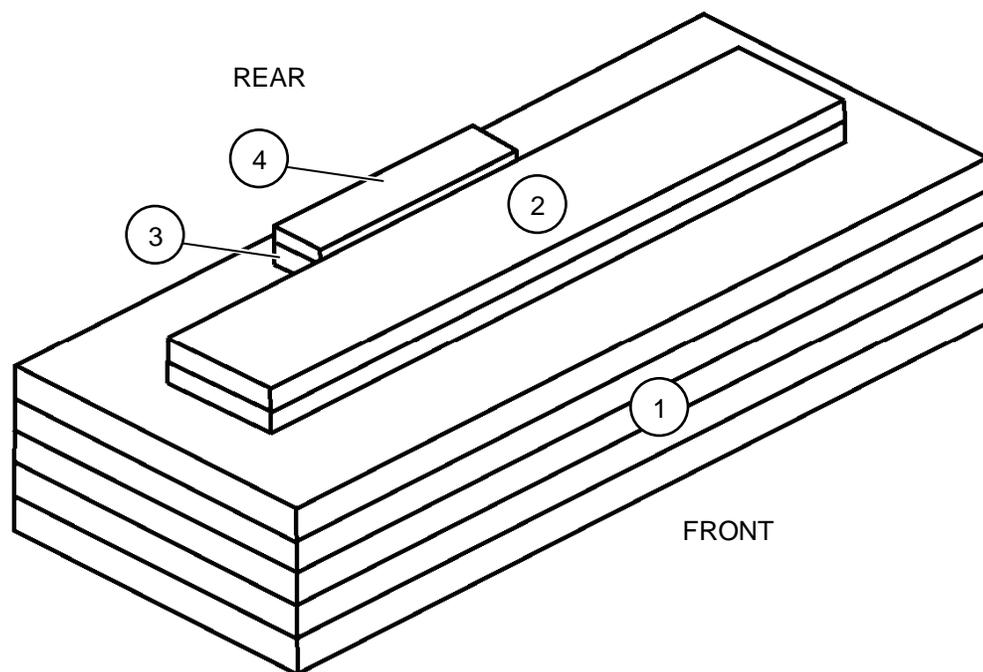
## PREPARING AND POSITIONING HONEYCOMB STACKS

9-3. Use the materials in Table 8-1 to prepare seven honeycomb stacks as shown in Figures 9-2 through 9-7. Position the stacks on the platform as shown in Figure 9-8.

**Table 9-1. Material Required to Build Honeycomb Stacks**

<b>Stack Number</b>	<b>Pieces</b>	<b>Width (inches)</b>	<b>Length (inches)</b>	<b>Material</b>	<b>Instructions</b>
1	5	36	86	Honeycomb	See Figure 9-2.
	2	12	72	7- by 17-inch Lumber	
	1	6	30	7- by 6-inch Lumber	
	1	6	30	¾-inch Plywood	
2	7	30	65	Honeycomb	See Figure 9-3.
	2	20	30	Honeycomb	
	5	20	30	¾-inch Plywood	
3	7	36	65	Honeycomb	See Figure 9-4.
4	6	36	65	Honeycomb	See Figure 9-5.
	4	12	18	Honeycomb	
	4	12	18	¾-inch Plywood	
5	8	36	65	Honeycomb	See Figure 9-6.
6	2	18	36	Honeycomb	See Figure 9-7.
7	2	18	36	Honeycomb	See Figure 9-7.
8	2	18	36	Honeycomb	See Figure 9-7.
9	2	18	36	Honeycomb	See Figure 9-7.

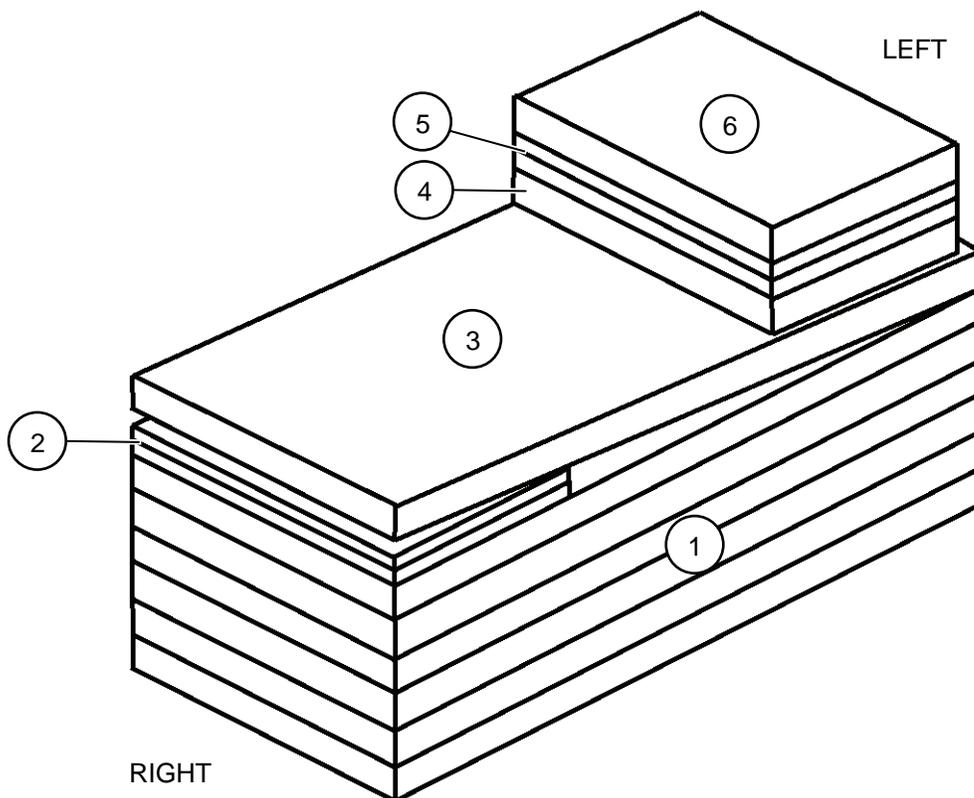
**Note.** This drawing is not drawn to scale.



- ① Glue five 36- by 86-inch pieces of honeycomb as the base.
- ② Center and glue two 2- by 12- by 72-inch pieces of lumber together, 10 inches from the front of the base.
- ③ Center and glue a 2- by 6- by 30-inch piece of lumber 2 inches from the 2- by 12- by 72-inch piece of lumber.
- ④ Glue a  $\frac{3}{4}$ - by 6- by 30-inch piece of plywood on top of the 2- by 6- by 30-inch piece of lumber.

**Figure 9-2. Honeycomb Stack 1 Prepared**

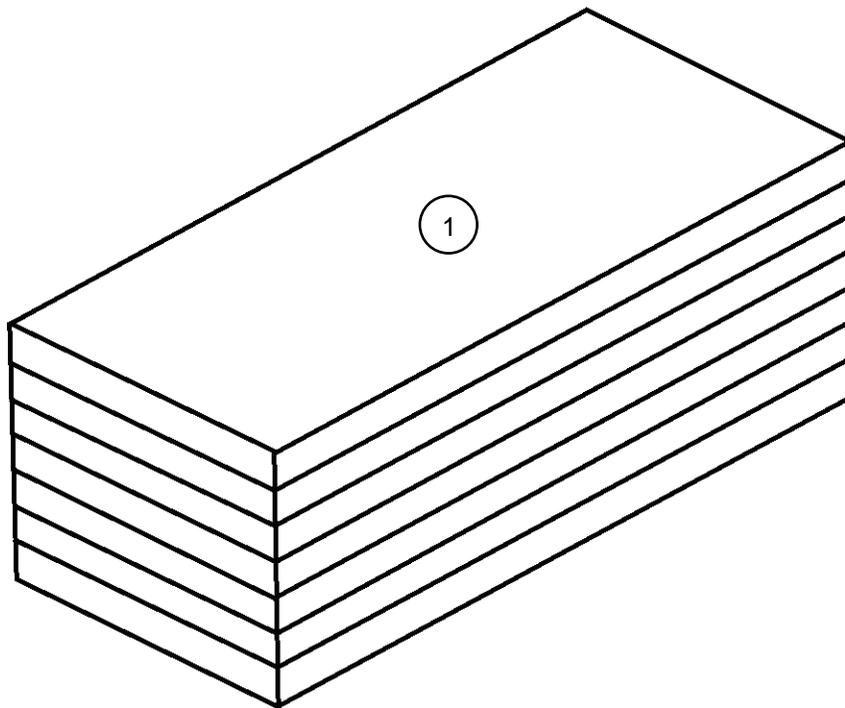
**Note.** This drawing is not drawn to scale.



- ① Glue six 30- by 65-inch pieces of honeycomb as the base.
- ② Glue two ¾- by 20- by 30-inch pieces of plywood flush with the right edge of the base.
- ③ Glue a 30- by 68-inch piece of honeycomb on top of the plywood and base.
- ④ Glue a 20- by 30-inch piece of honeycomb 3 inches from the left edge of the stack.
- ⑤ Glue two ¾- by 20- by 30-inch pieces of plywood on top of the 20- by 30-inch piece of honeycomb.
- ⑥ Glue a 20- by 30-inch piece of honeycomb on top of the ¾- by 20- by 30-inch piece of plywood.

**Figure 9-3. Honeycomb Stack 2 Prepared**

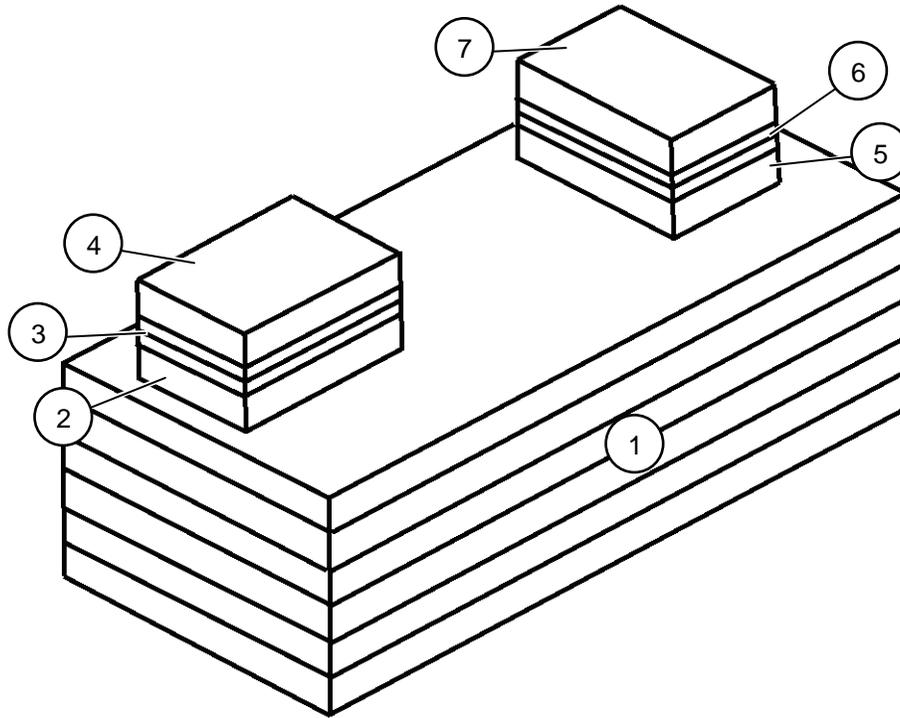
**Note.** This drawing is not drawn to scale.



① Place seven 36- by 65-inch pieces of honeycomb to form the stack.

**Figure 9-4. Honeycomb Stack 3 Prepared**

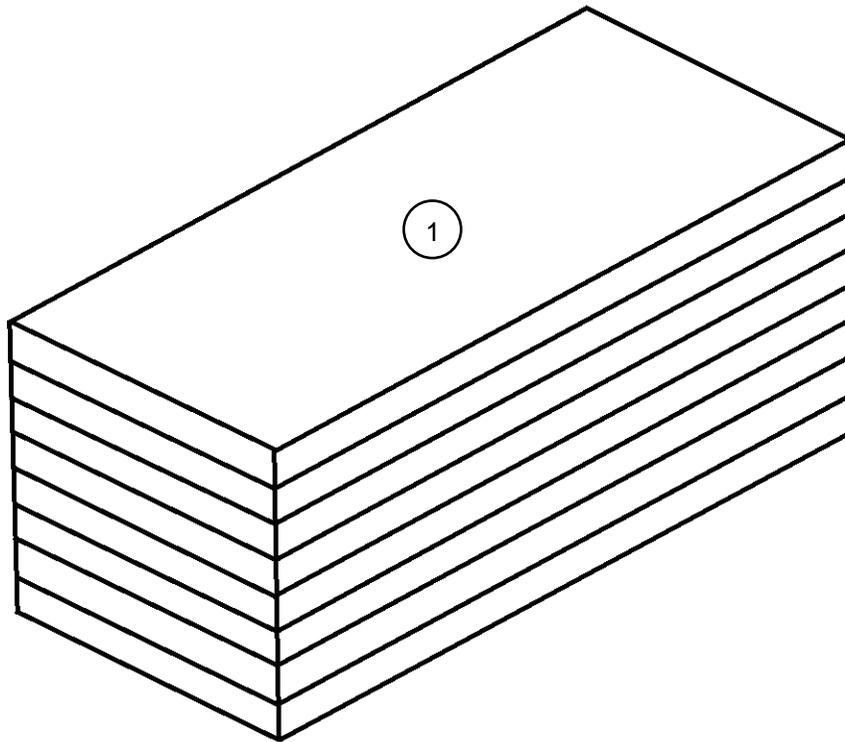
**Note.** This drawing is not drawn to scale.



- ① Glue six 36- by 65-inch pieces of honeycomb as the base.
- ② Glue an 18- by 12-inch piece of honeycomb 3 inches from the right edge of the base and 8 inches from the rear edge of the base.
- ③ Glue two  $\frac{3}{4}$ - by 18- by 12-inch pieces of plywood on top of the 18- by 12-inch piece of honeycomb.
- ④ Glue an 18- by 12-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 18- by 12-inch pieces of plywood.
- ⑤ Glue a 12- by 18-inch piece of honeycomb 5 inches from the left edge of the base and 8 inches from the rear edge of the base.
- ⑥ Glue two  $\frac{3}{4}$ - by 12- by 18-inch pieces of plywood on top of the 12- by 18-inch piece of honeycomb.
- ⑦ Glue a 12- by 18-inch piece of honeycomb on top of the  $\frac{3}{4}$ - by 12- by 18-inch pieces of plywood.

**Figure 9-5. Honeycomb Stack 4 Prepared**

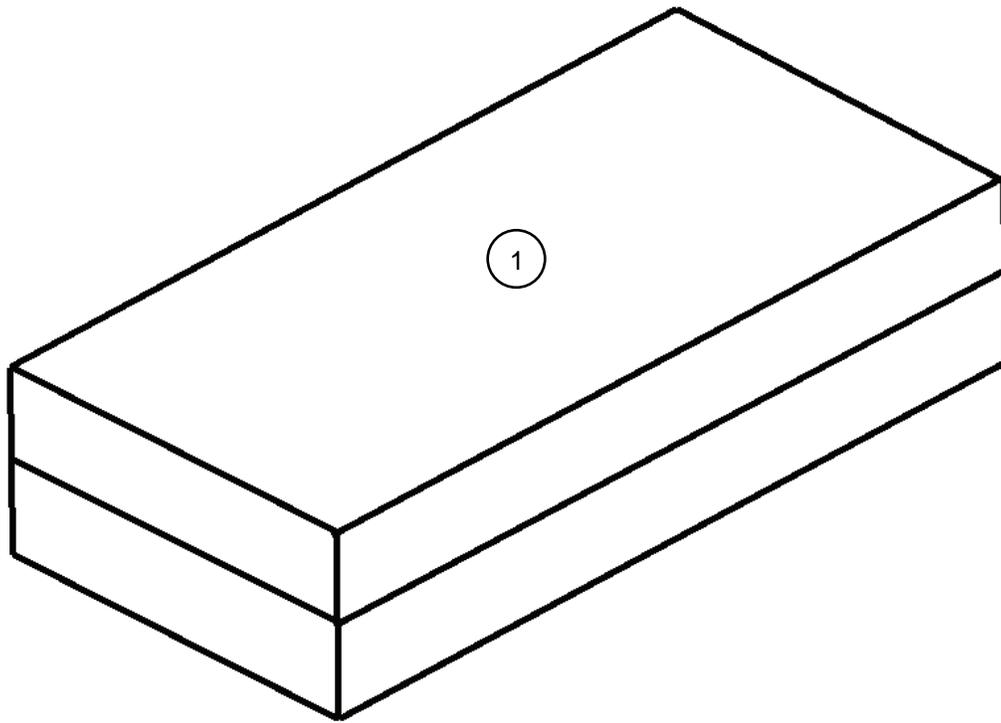
**Note.** This drawing is not drawn to scale.



① Glue eight 36- by 65-inch pieces of honeycomb to form the stack.

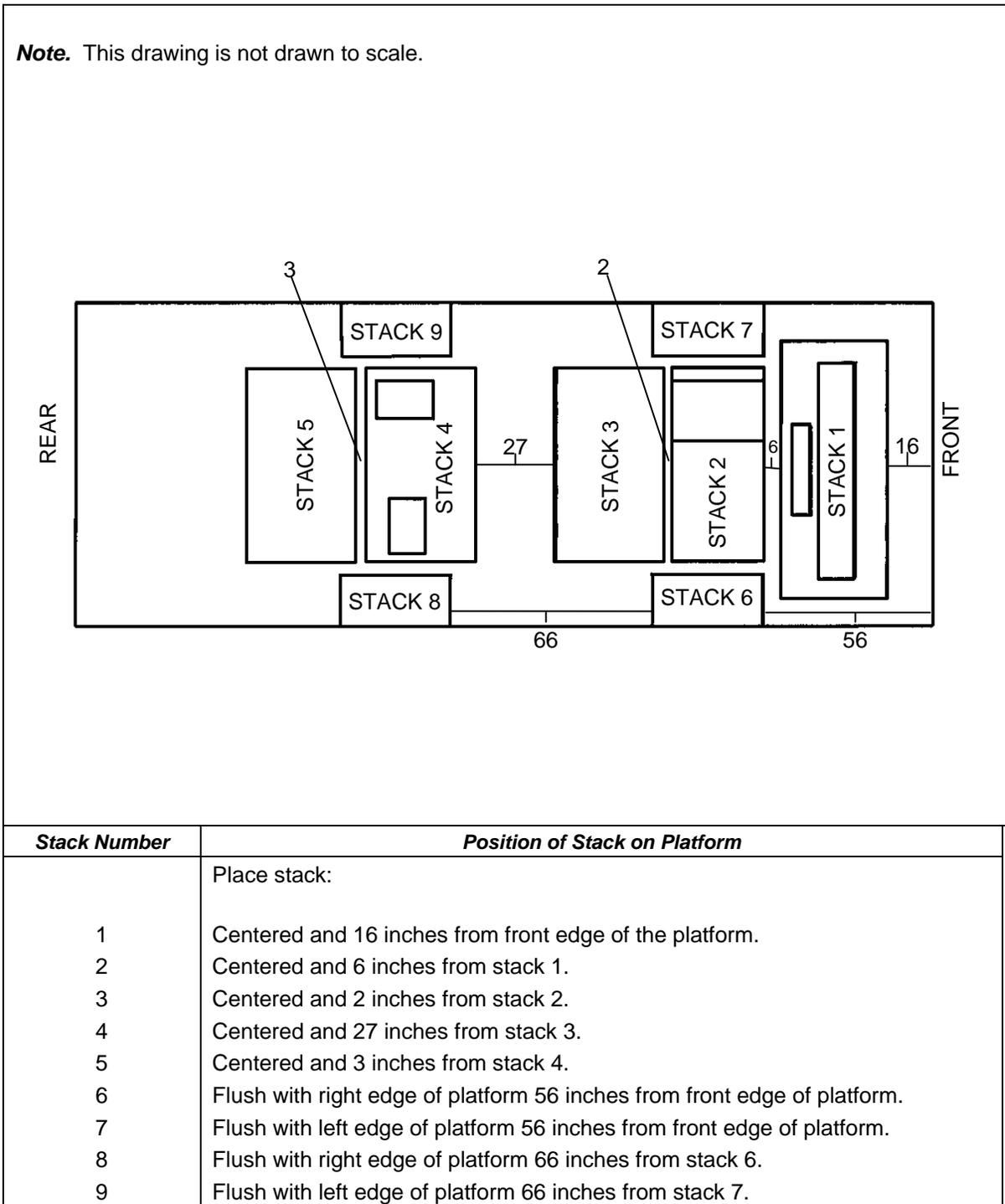
**Figure 9-6. Honeycomb Stack 5 Prepared**

**Note.** This drawing is not drawn to scale.



① Glue two 18- by 36-inch pieces of honeycomb to form the stack.

**Figure 9-7. Honeycomb Stacks 6, 7, 8, and 9 Prepared**



**Figure 9-8. Honeycomb Stacks Placed on Platform**

## BUILDING AND POSITIONING FRAME SUPPORTS

- 9-4. Build and position the frame supports as described below.
- Build the front frame support as shown in Figures 9-9 and 9-10.
  - Build the rear frame support as shown in Figures 9-11 and 9-12.
  - Position the front frame support by turning the front wheels to the left. Extend the forks to lift the front frame support into position from the right side. Secure the support in place as shown in Figure 9-13.
  - Position the rear frame support under the forklift with the rear of the frame support flush with the rear of the forklift. Secure the rear frame support as shown in Figure 9-14.

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

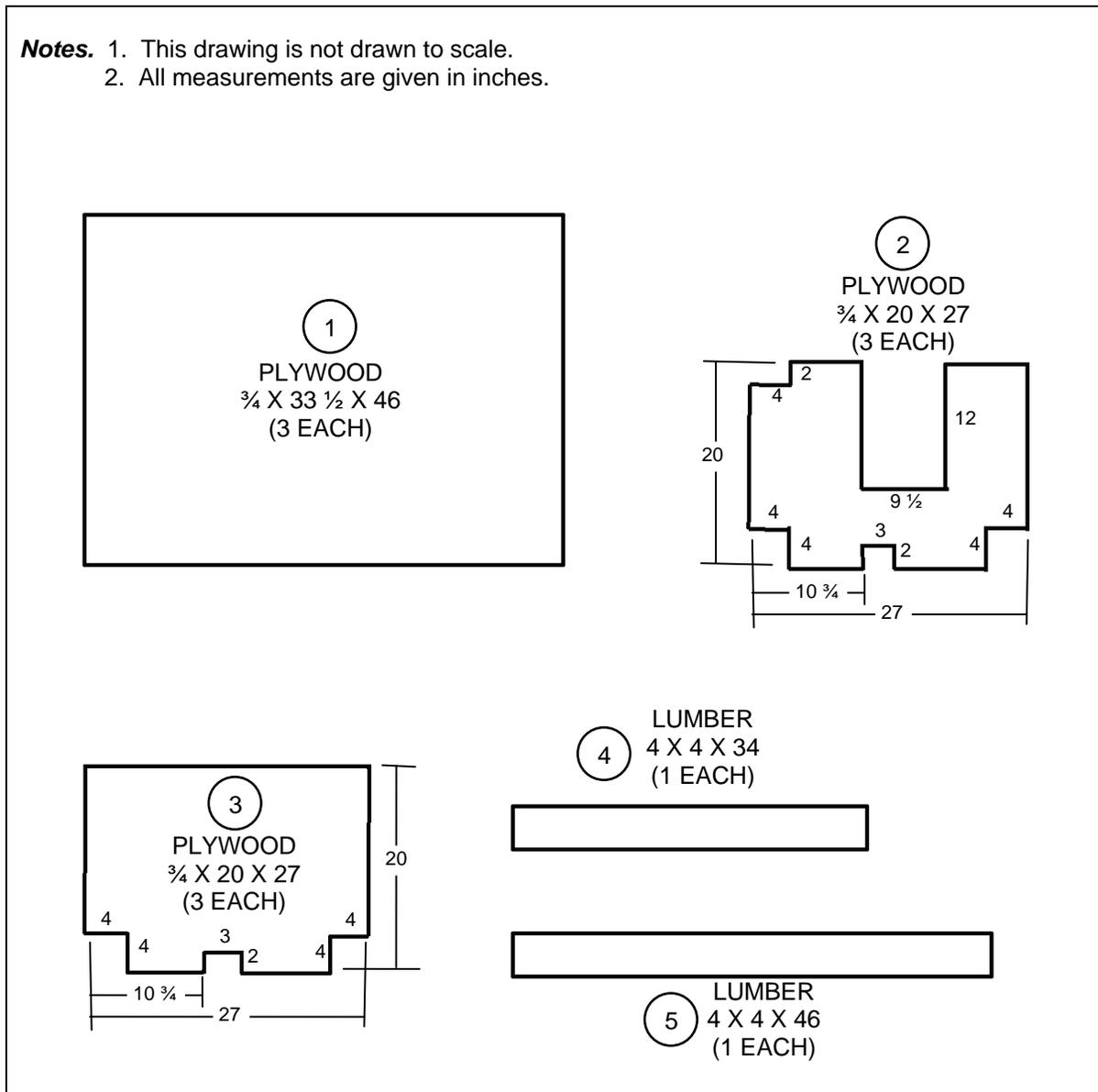


Figure 9-9. Rear Frame Support Installed

- Notes.** 1. This drawing is not drawn to scale.  
2. Use 6d and 16d nails.

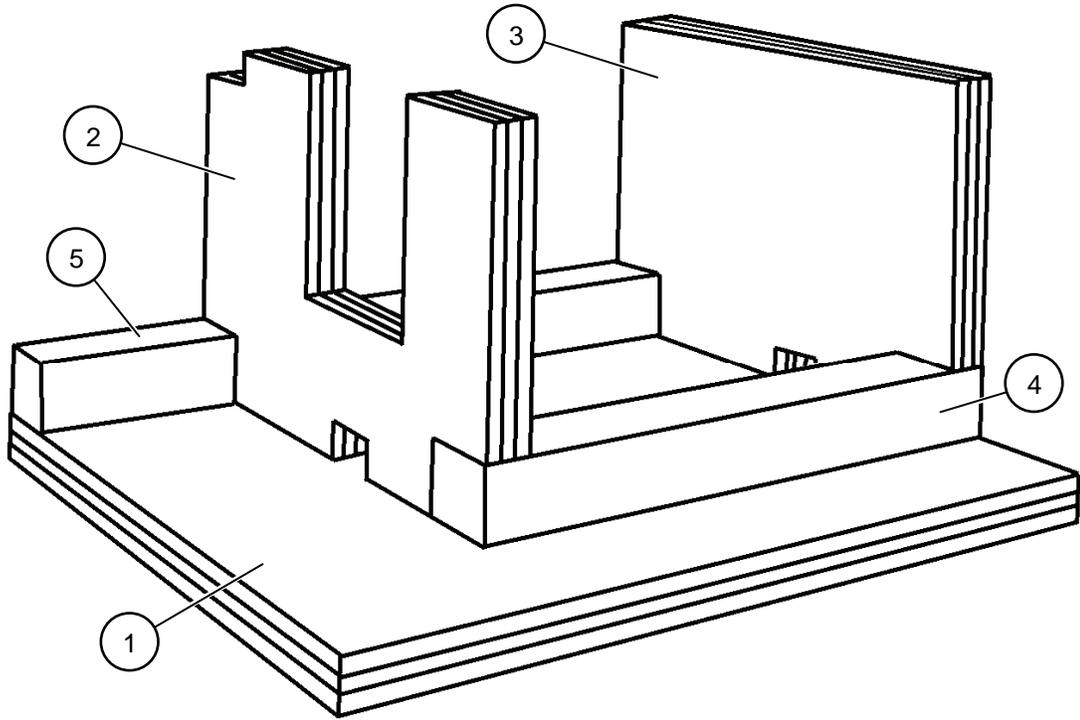
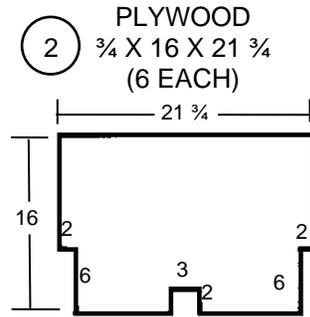
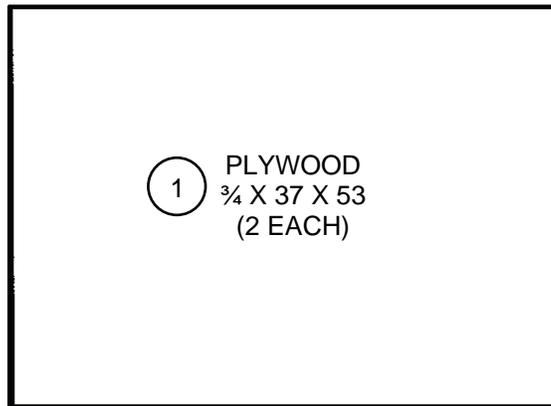


Figure 9-10. Front Frame Support Built

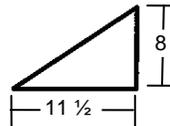
- Notes.** 1. This drawing is not drawn to scale.  
 2. All measurements are given in inches.



3 LUMBER  
 2 X 6 X 52  
 (2 EACH)



4 LUMBER  
 2 X 6 X  $29 \frac{1}{2}$   
 (2 EACH)



5 LUMBER  
 2 X 8 X  $11 \frac{1}{2}$   
 (8 EACH)

Figure 9-11. Pieces for Rear Frame Support

- Notes.** 1. This drawing is not drawn to scale.  
2. All measurements are given in inches.  
3. Use 6d and 16d nails.

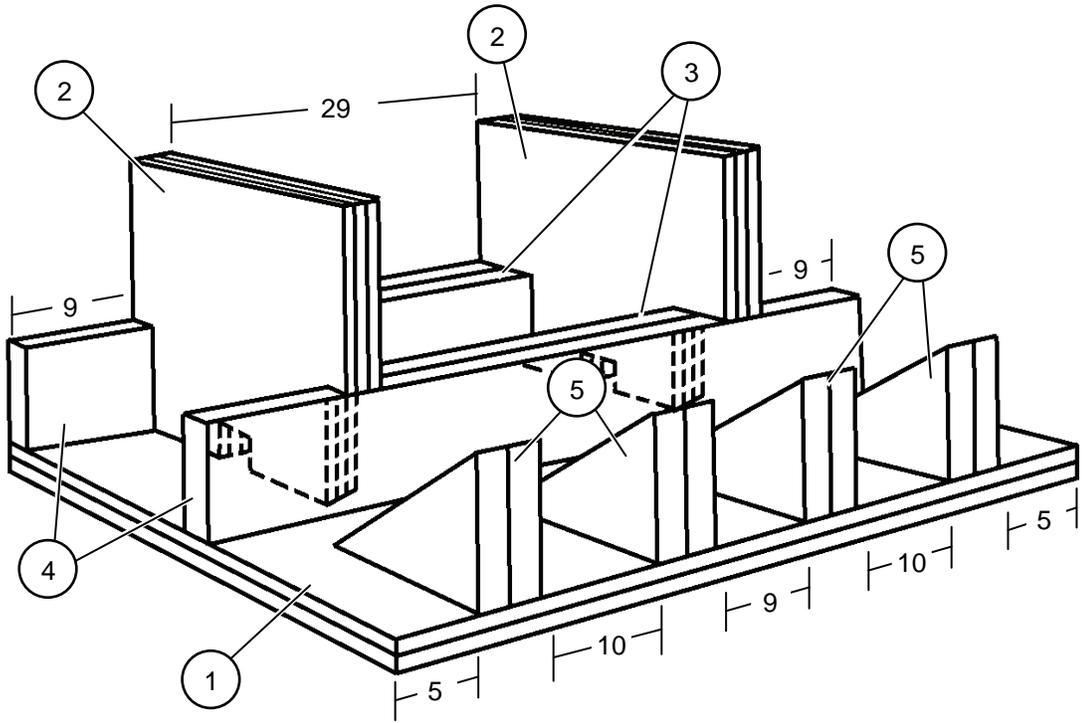
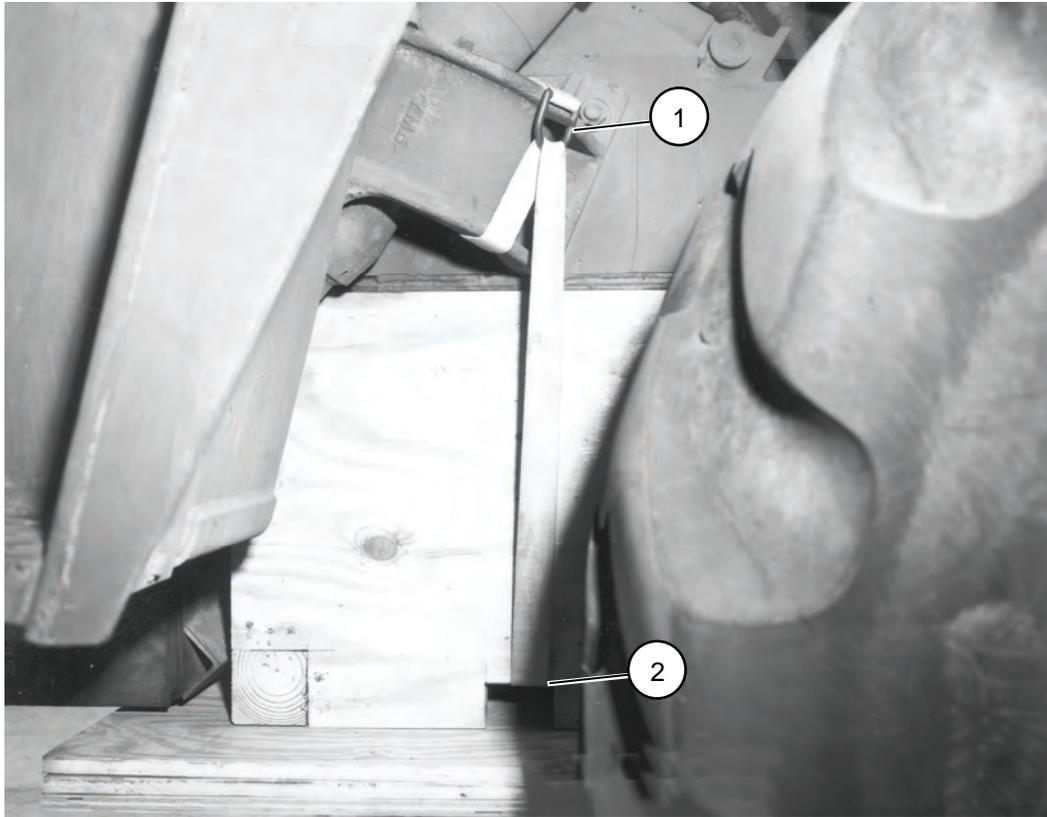
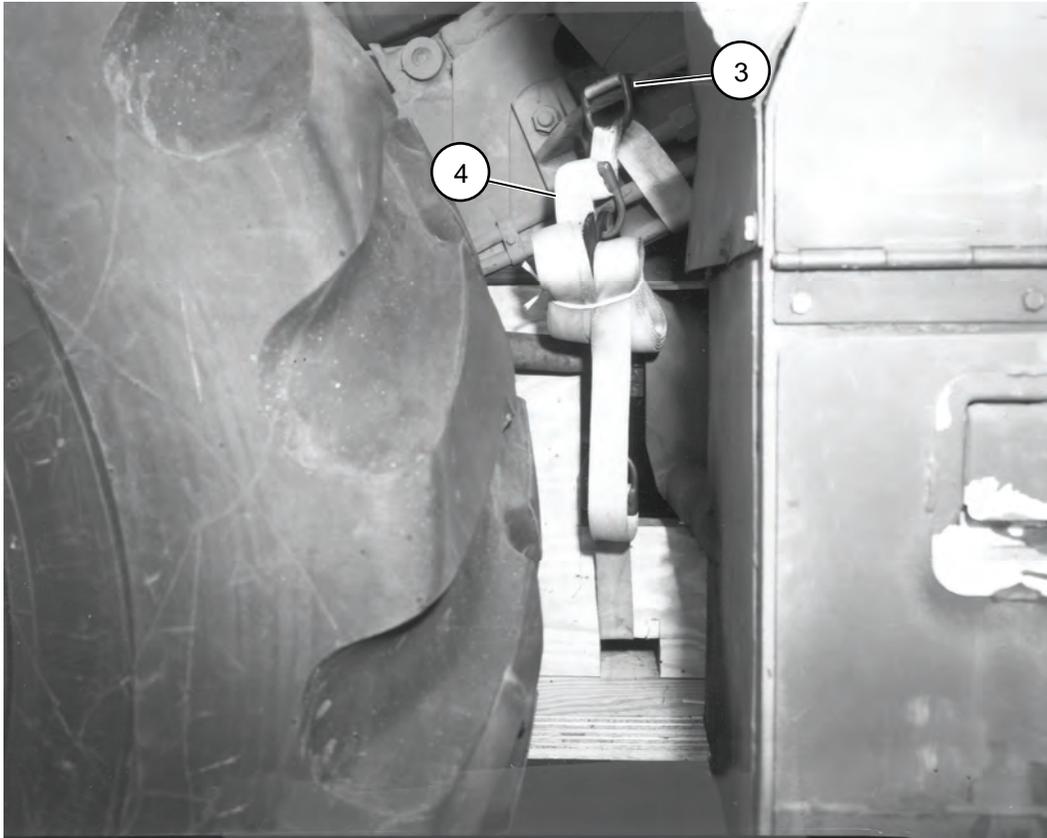


Figure 9-12. Rear Frame Support Built



- ① Pass a 15-foot lashing around the right cylinder guard and through its own D-ring.
- ② Pass the 15-foot lashing through the cutouts of the front frame support, from right to left.

**Figure 9-13. Front Frame Support Installed**



- ③ Pass a 15-foot lashing around the left cylinder guard and through its own D-ring.
- ④ Secure the two lashings with two D-rings and a load binder.

**Figure 9-13. Front Frame Support Installed (Continued)**

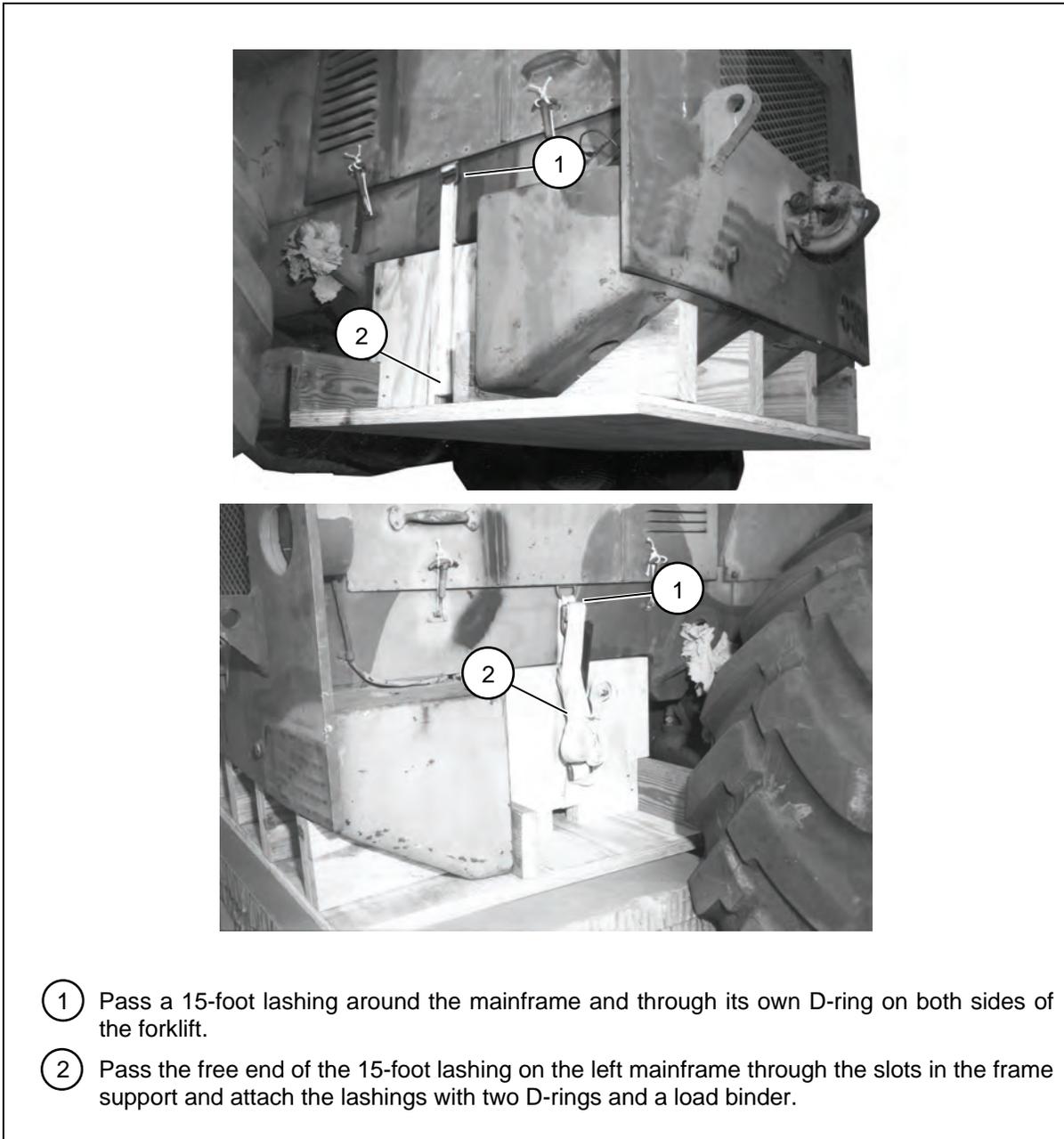
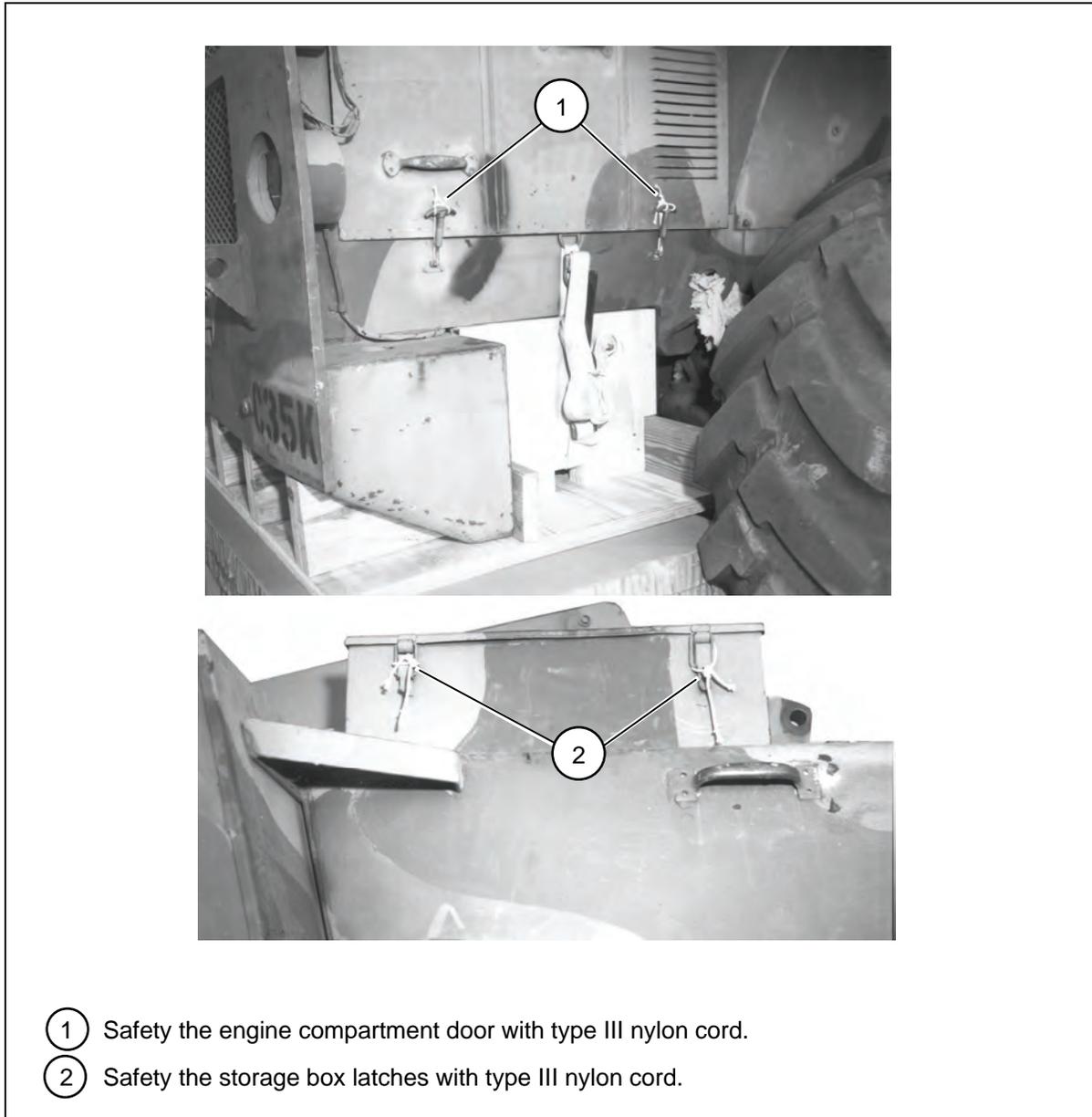


Figure 9-14. Rear Frame Support Installed

## PREPARING FORKLIFT

9-5. Prepare the forklift as described below and as shown in Figure 9-15.

- Make sure the fuel tank is not more than  $\frac{3}{4}$  full.
- Make sure the front tires are inflated to 30 psi and the rear tires are inflated to 20 psi of air pressure.
- Remove the ROPS guard, the air intake stack with support bracket, and the steering wheel.



**Figure 9-15. Forklift Prepared**

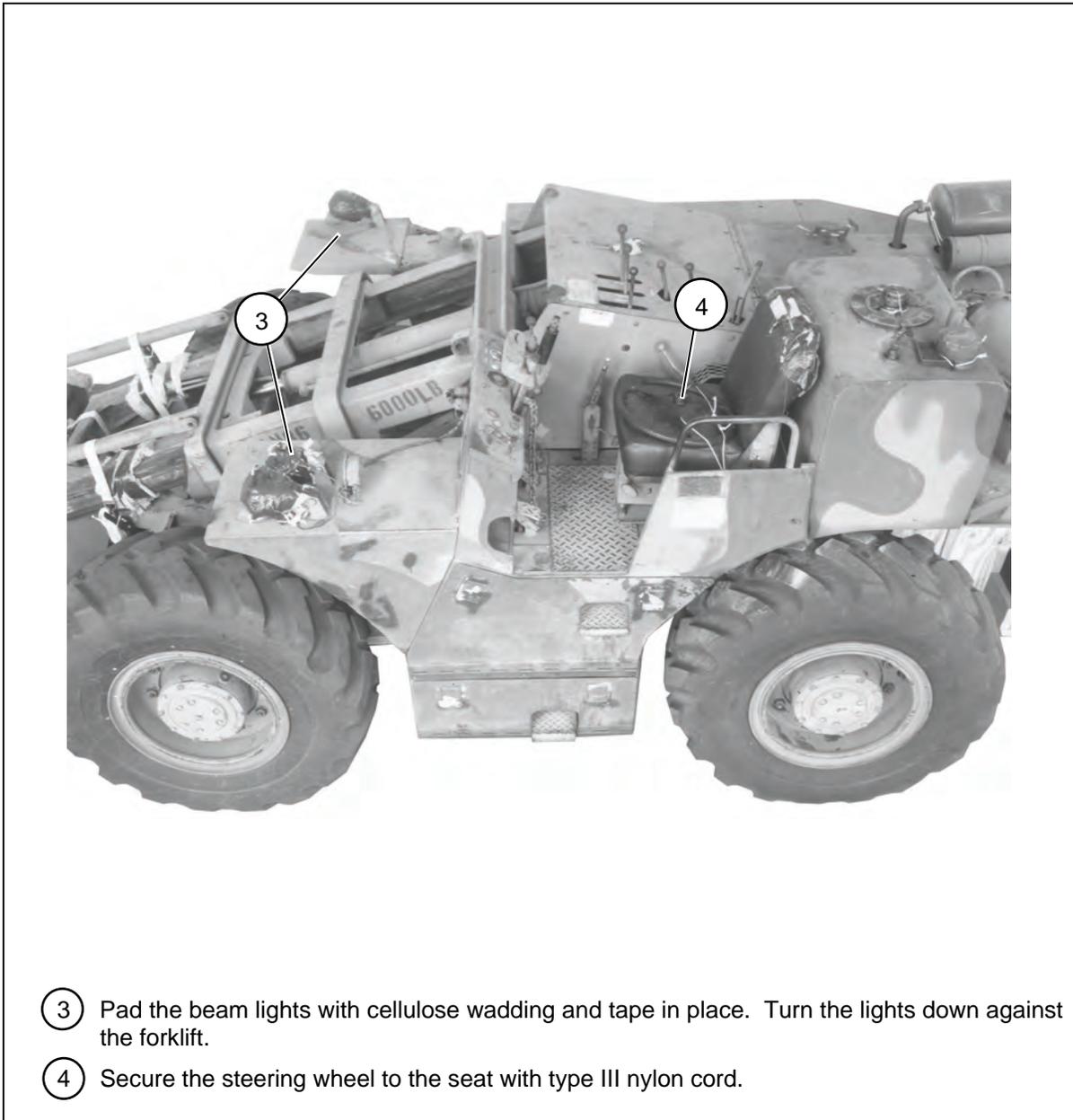
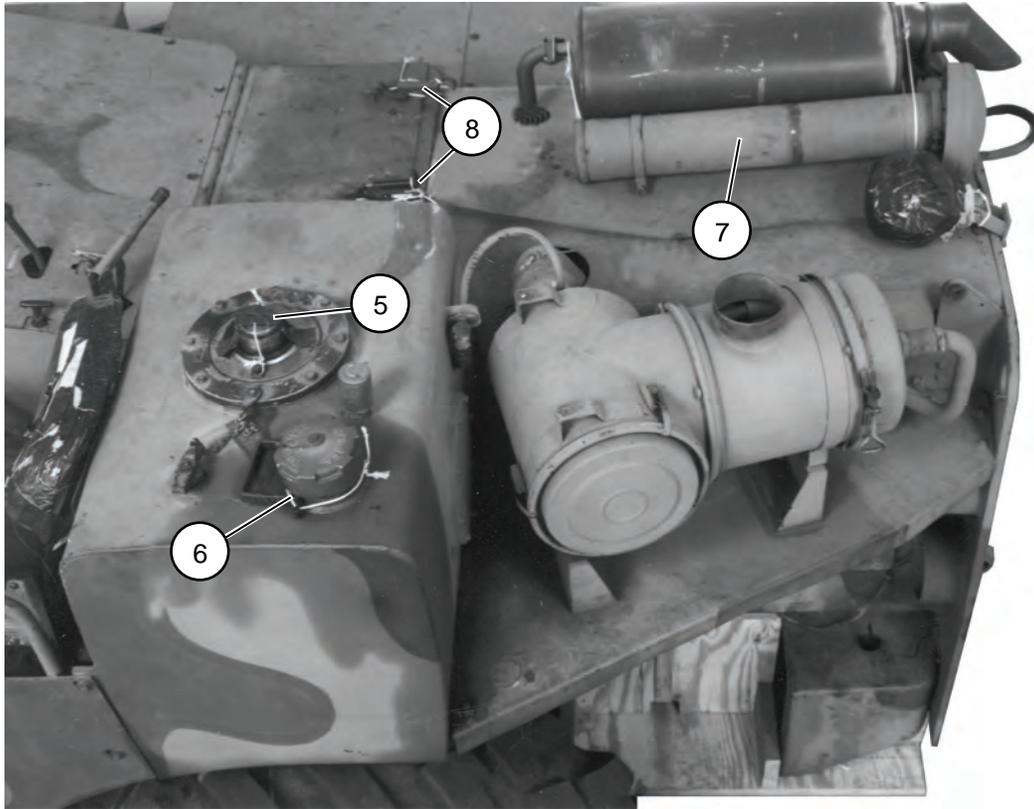


Figure 9-15. Forklift Prepared (Continued)



- ⑤ Remove the bracket above the hydraulic warning indicator. Safety the indicator with tape and type III nylon cord.
- ⑥ Secure the hydraulic warning indicator bracket to the hydraulic fluid filler cap with tape and type III nylon cord.
- ⑦ Remove the air intake stack, lay it beside the muffler, and tie it in place with type III nylon cord.
- ⑧ Safety the battery box with type III nylon cord.

**Figure 9-15. Forklift Prepared (Continued)**

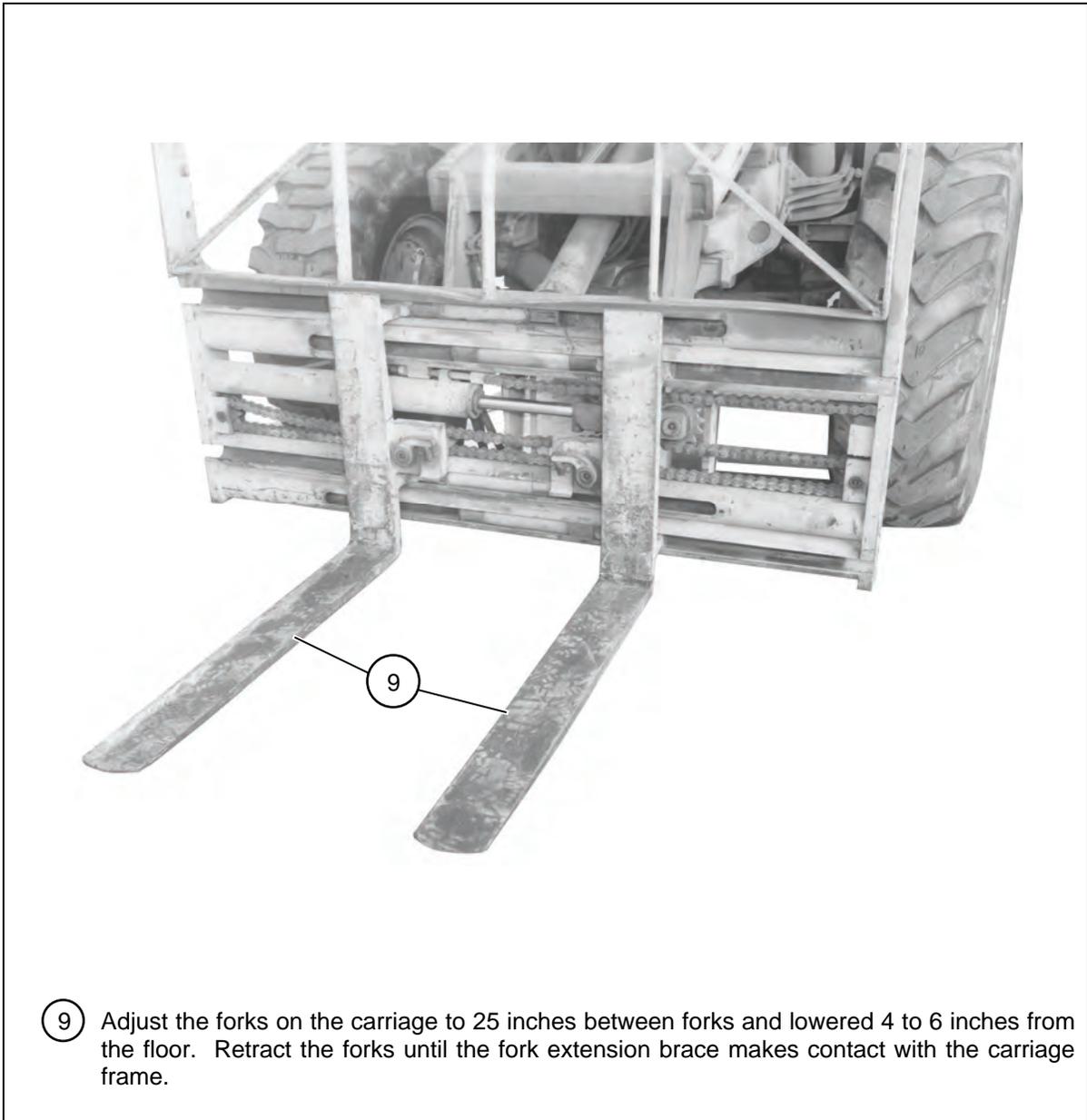
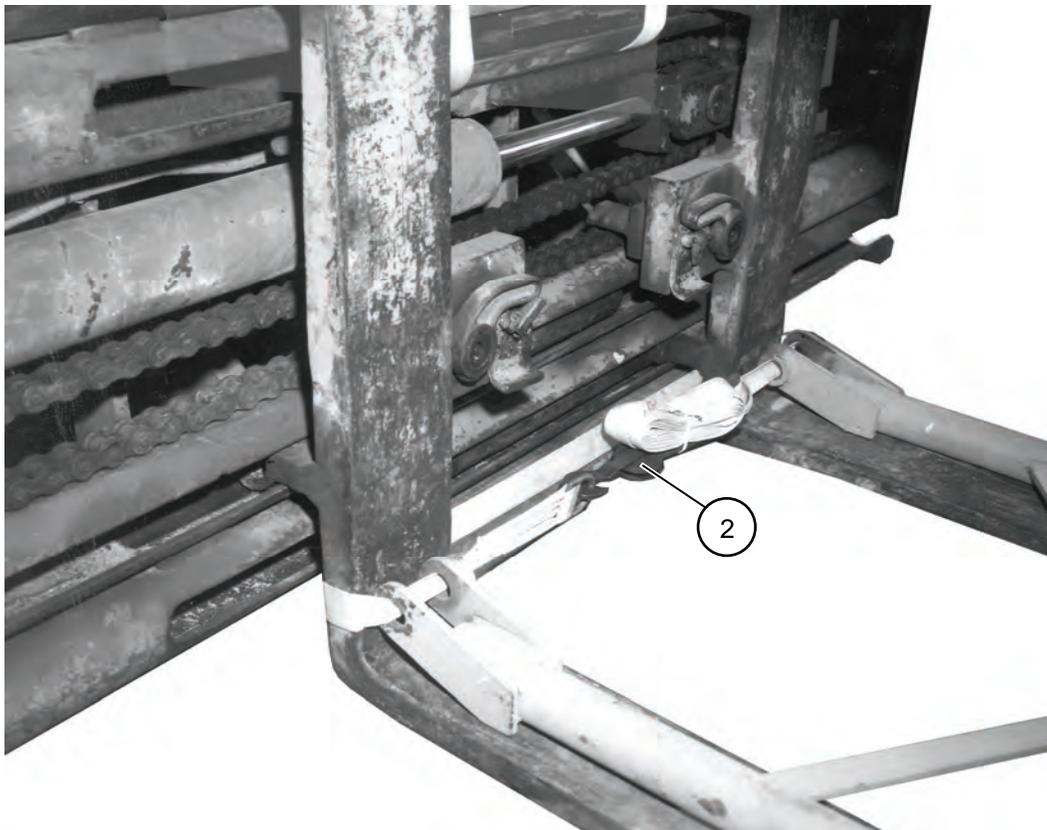
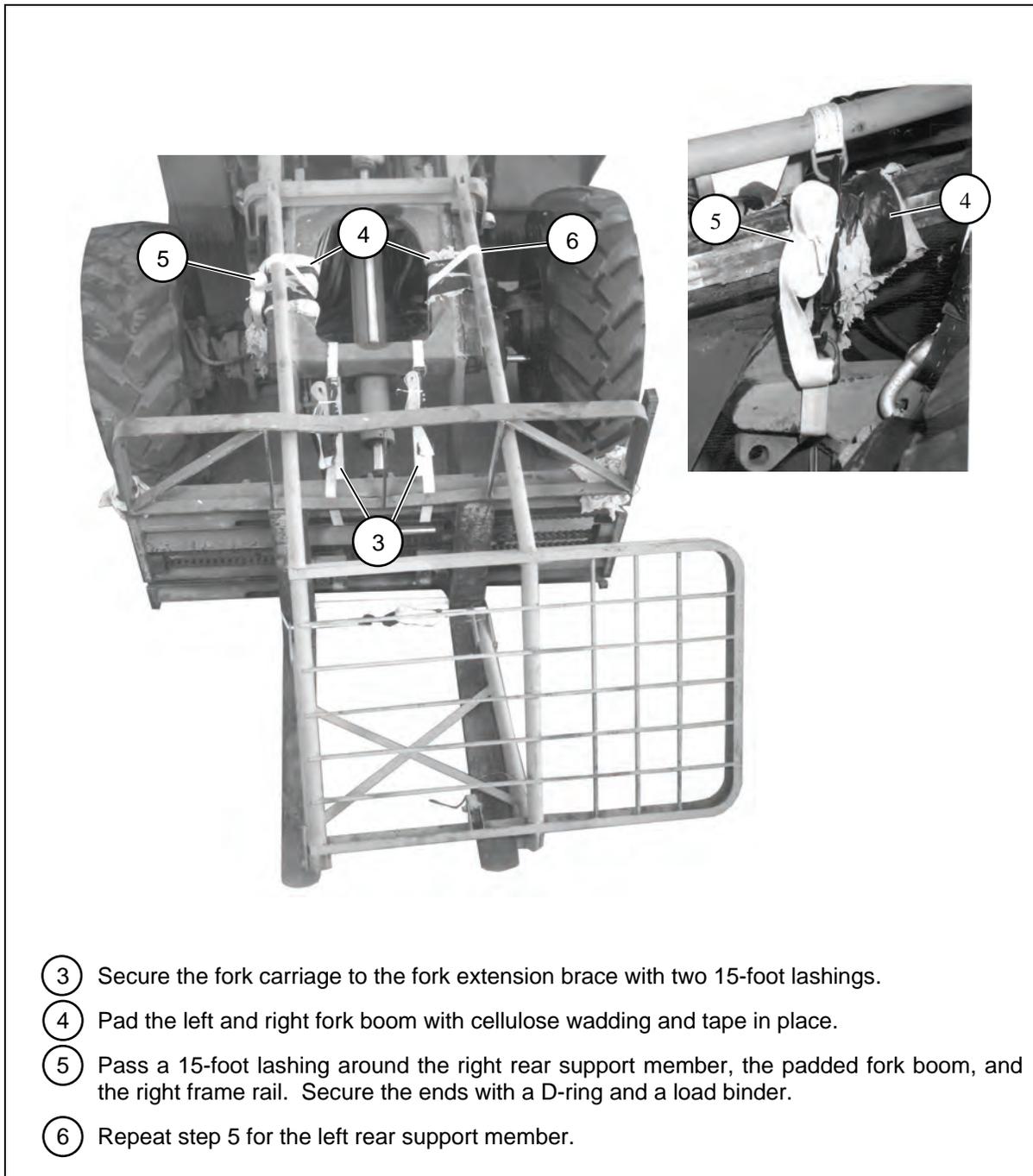


Figure 9-15. Forklift Prepared (Continued)



- ① Pass the rear support members of the ROPS through the carriage backrest. Lay the guard support members on the forks (Not Shown).
- ② Pass a 15-foot lashing through the pin holes in the ROPS support members and around the forks. Secure the ends with a D-ring and a load binder.

**Figure 9-16. ROPS Secured to Forks**

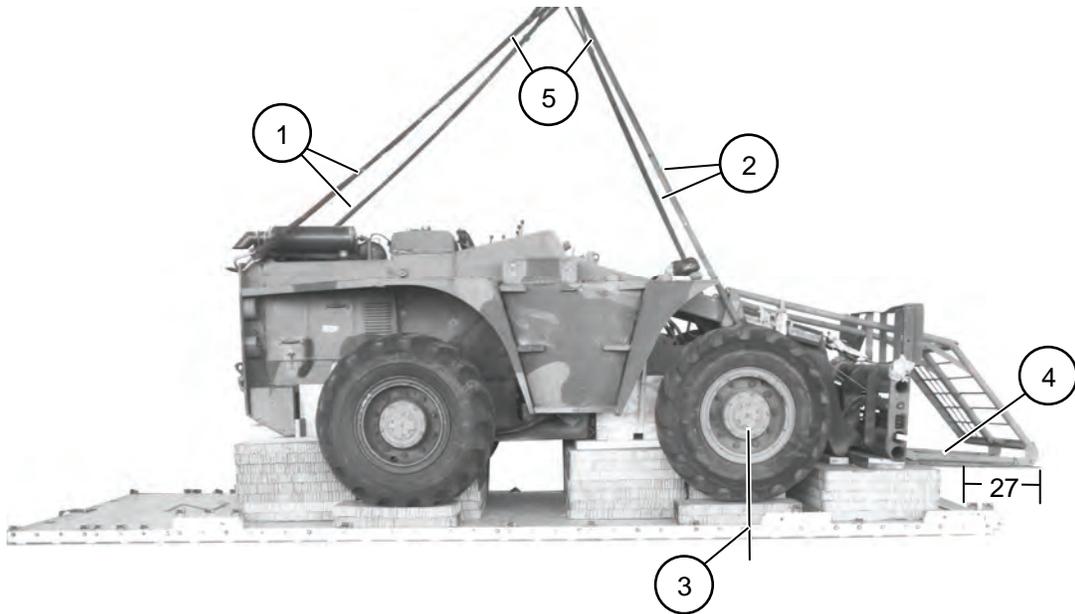


**Figure 9-16. ROPS Secured to Forks (Continued)**

## POSITIONING FORKLIFT

9-6. Install the lifting slings and position the forklift on the platform as shown and described in Figure 9-17.

**Note.** All measurements given in inches.

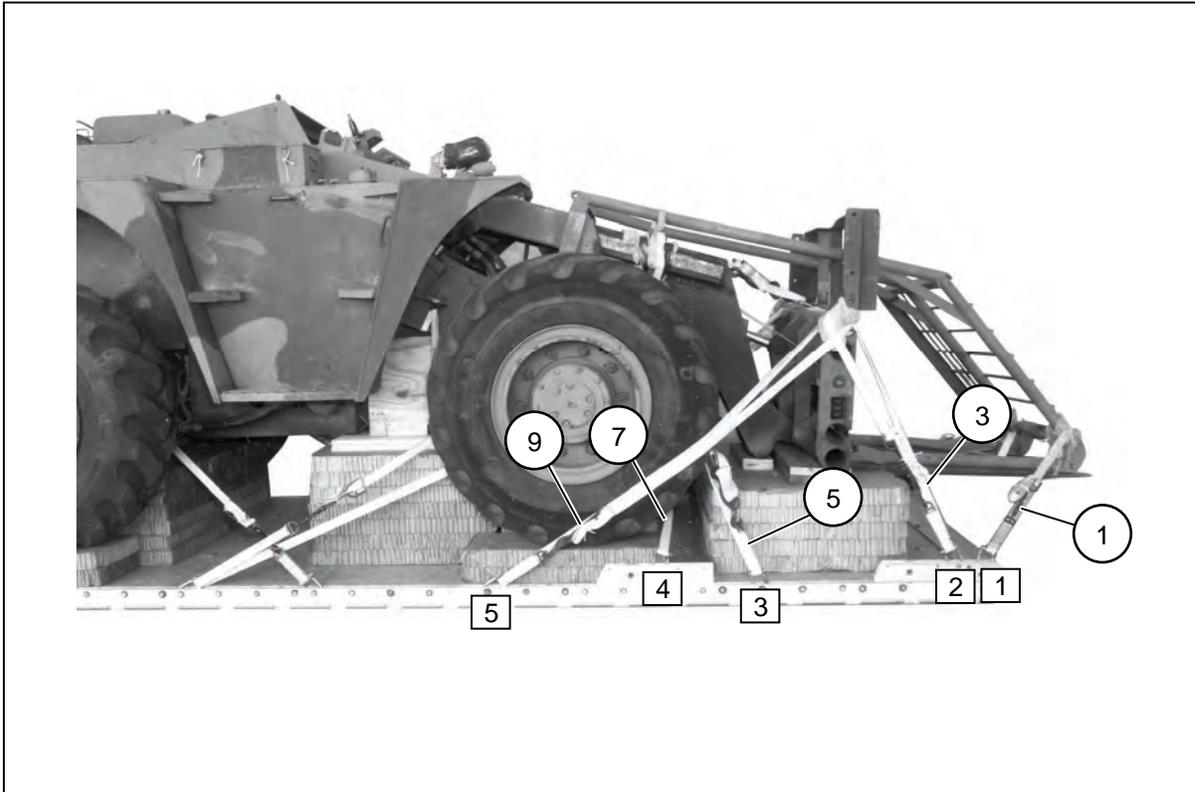


- ① Attach a 16-foot (4-loop), type XXVI nylon sling to each rear lifting point with a large clevis.
- ② Attach a 16-foot (4-loop), type XXVI nylon sling to each front lifting point with a large clevis.
- ③ Set the forklift on the platform with the center of the front wheel 74 inches from the front edge of the platform.
- ④ Lower the forks on top of the honeycomb stacks so the fork carriage is centered on the 17-by 77-inch lumber of stack 1. The forks should overhang the front of the platform 27 inches.
- ⑤ Remove the lifting slings after forklift is positioned.

**Figure 9-17. Forklift Positioned**

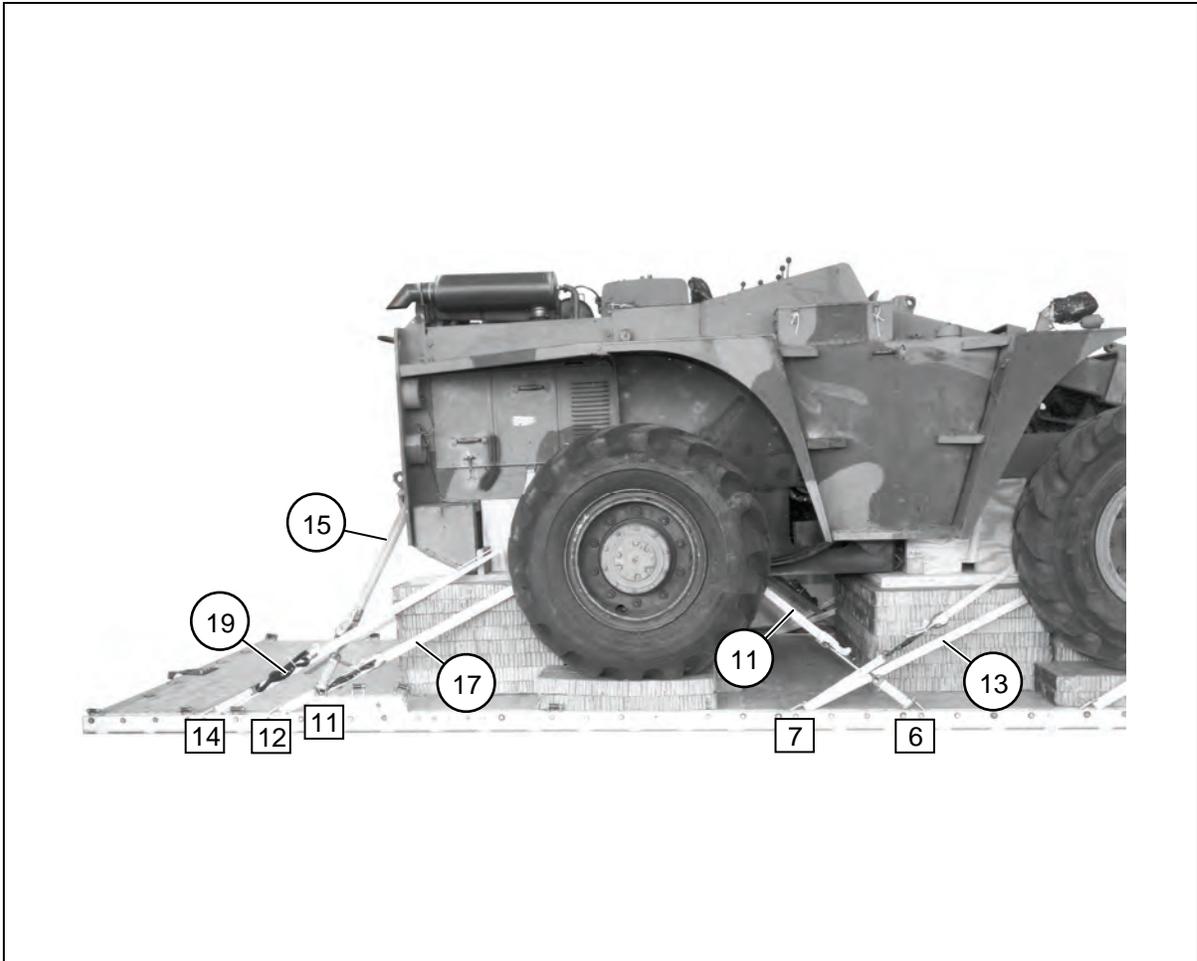
## LASHING FORKLIFT

9-7. Lash the forklift to the platform with twenty, 15-foot tie-down assemblies. Install the lashings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 9-18 and 9-19.



<b>Lashing Number</b>	<b>Tiedown Clevis Number</b>	<b>Instructions</b>
		Pass lashing:
1	1	Around operator's guard and fork, right side.
2	1A	Around operator's guard and fork, left side.
3	2	Around padded fork carriage, right side.
4	2A	Around padded fork carriage, left side.
5	3	Through padded front lifting point, right side.
6	3A	Through padded front lifting point, left side.
7	4	Around front mainframe cross brace, right side.
8	4A	Around front mainframe cross brace, left side.
9	5	Around padded fork carriage, right side.
10	5A	Around padded fork carriage, left side.

Figure 9-18. Lashings 1 Through 10 Installed

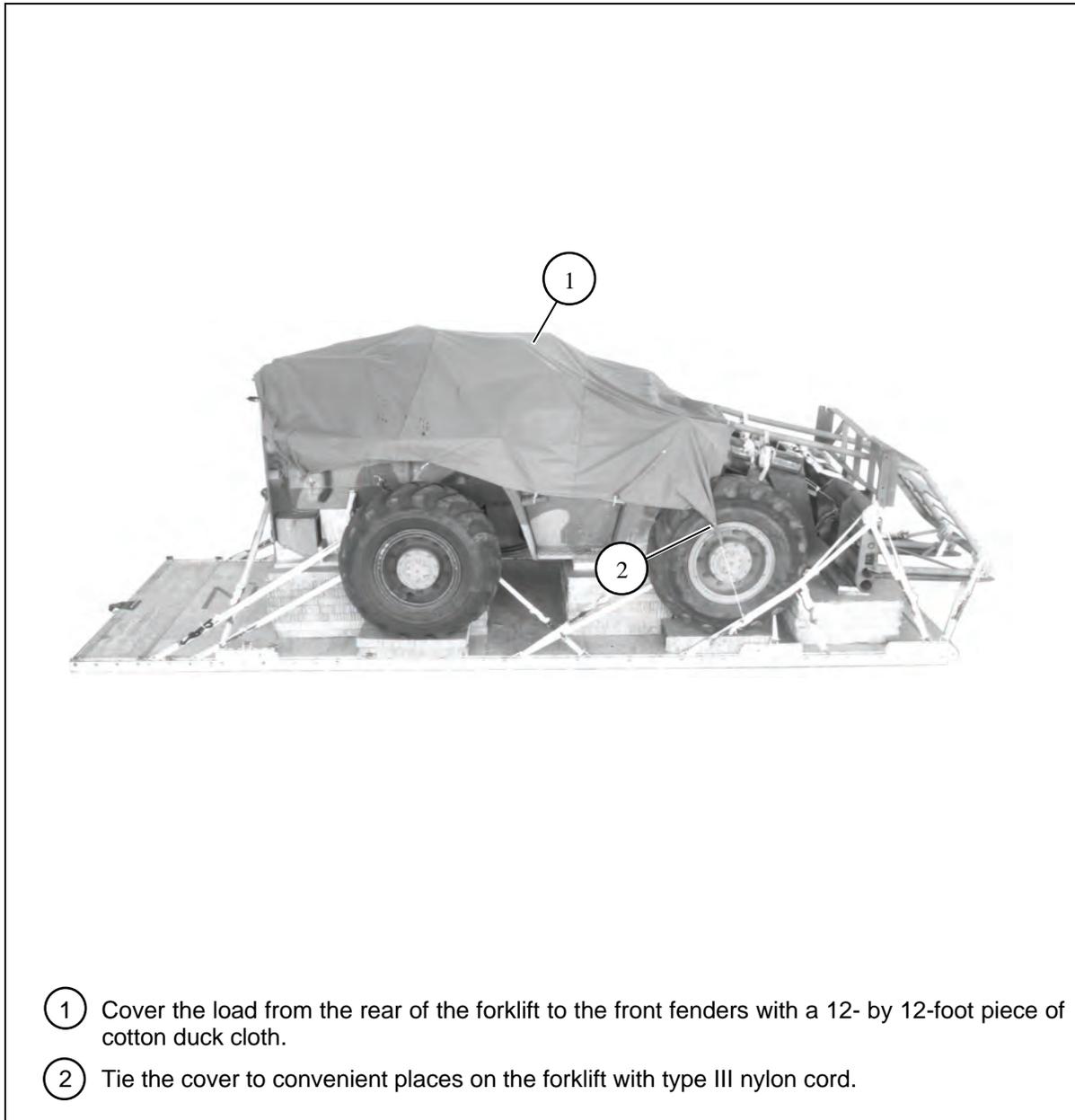


<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
		Pass lashing:
11	6	Through padded rear tie-down point, right side.
12	6A	Through padded rear tie-down point, left side.
13	7	Around front axle, right side.
14	7A	Around front axle, left side.
15	11	Through towing pintle.
16	11A	Through towing pintle.
17	12	Around rear axle, right side.
18	12A	Around rear axle, left side.
19	14	Through padded rear tie-down point, right side.
20	14A	Through padded rear tie-down point, left side.

**Figure 9-19. Lashings 11 Through 20 Installed**

## COVERING LOAD

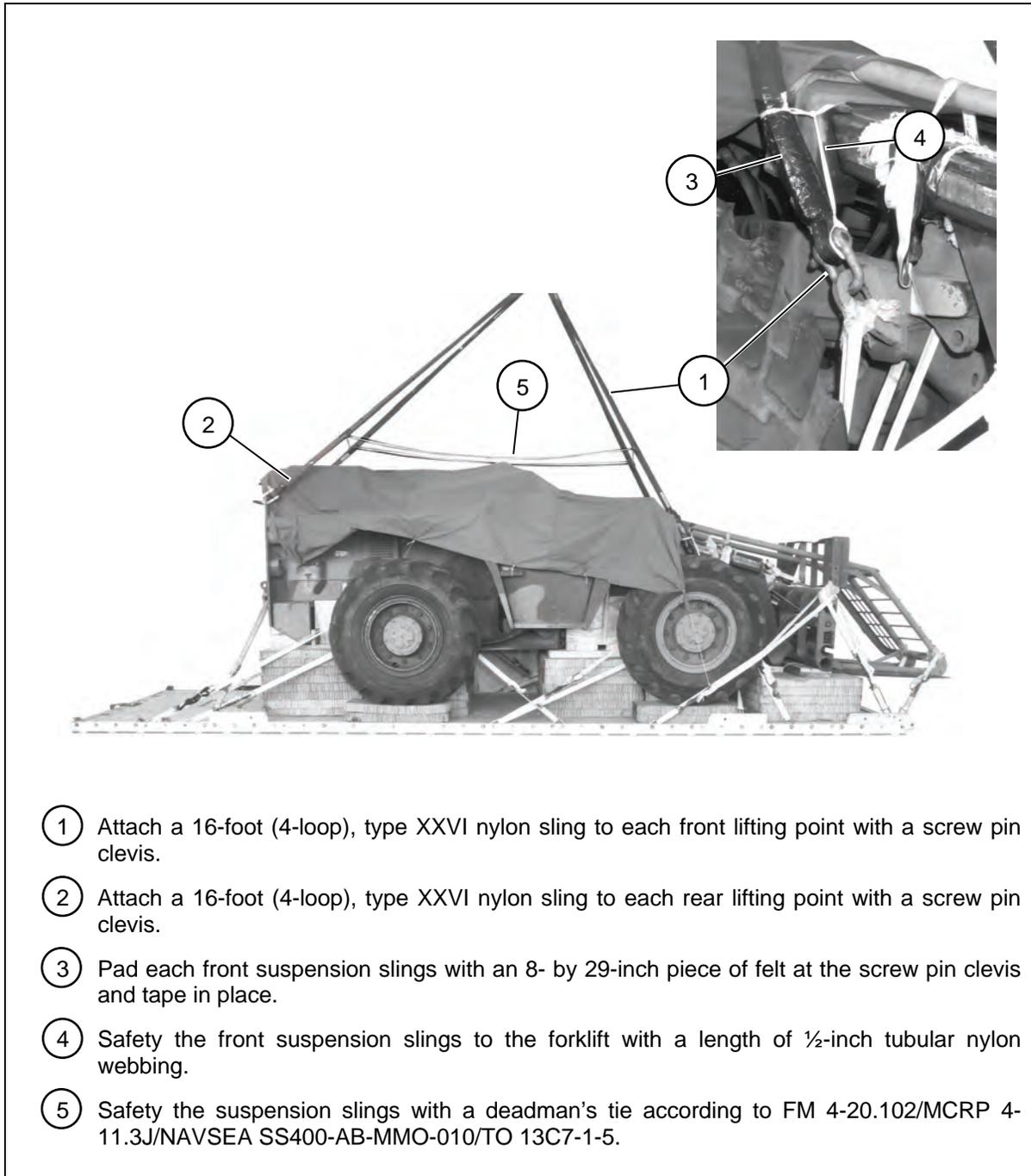
9-8. Cover the load as shown in Figure 9-20.



**Figure 9-20. Load Covered**

## INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

9-9. Install the suspension slings and the deadman's tie as shown in Figure 8-21.

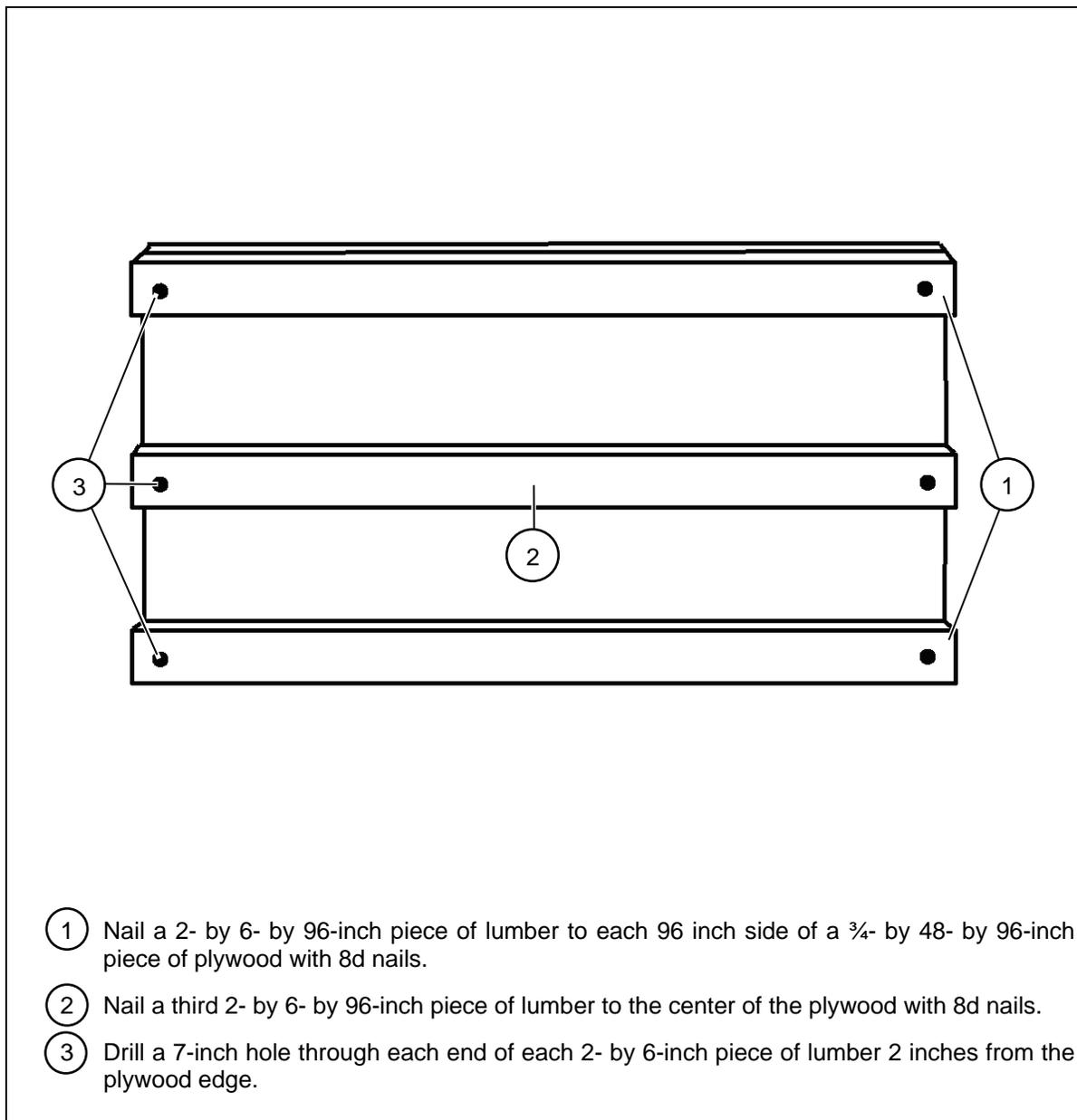


**Figure 9-21. Suspension Slings and Deadman's Tie Installed**

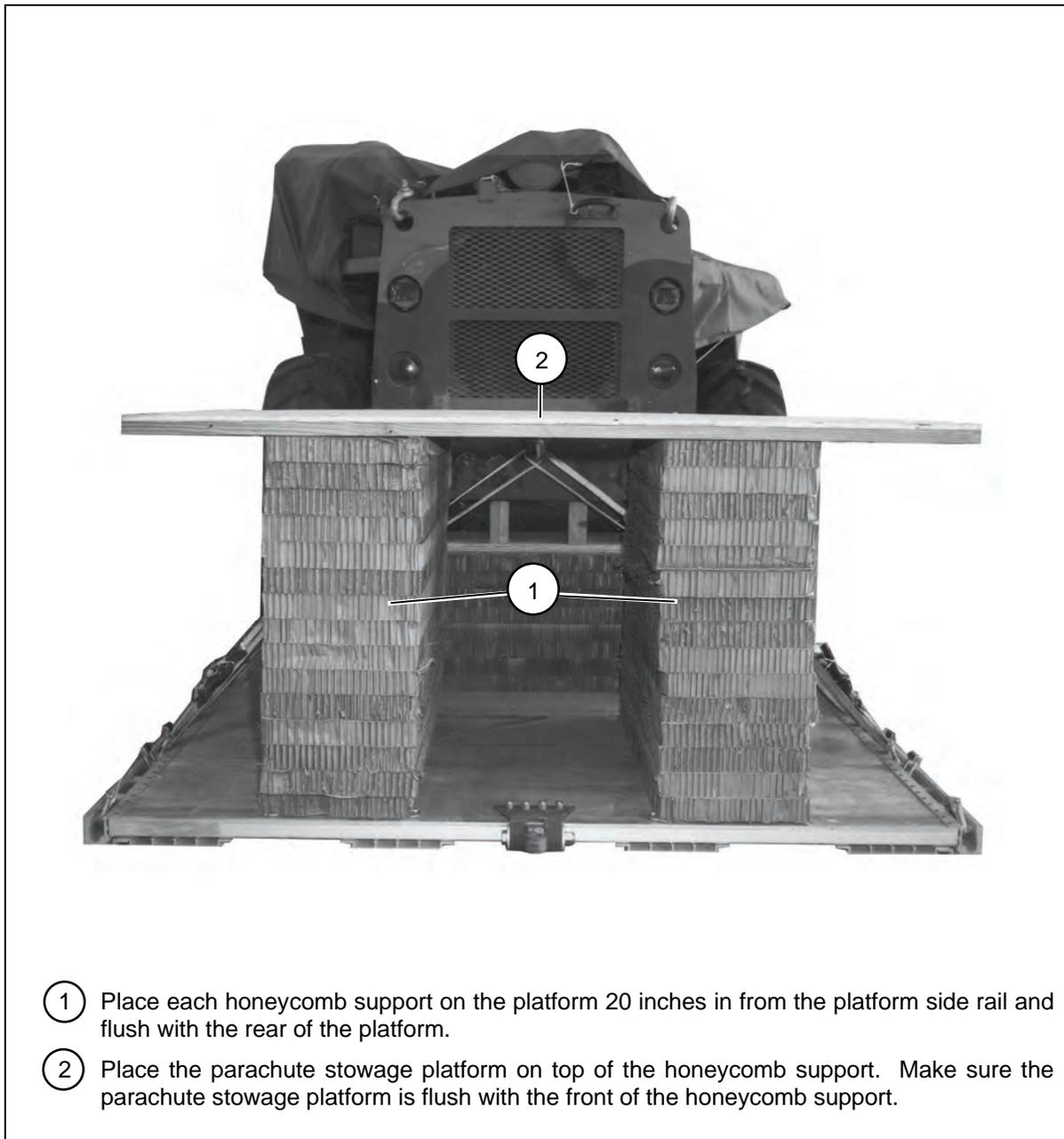
## BUILDING AND POSITIONING PARACHUTE STOWAGE PLATFORM

9-10. Build and position the parachute stowage platform as described below.

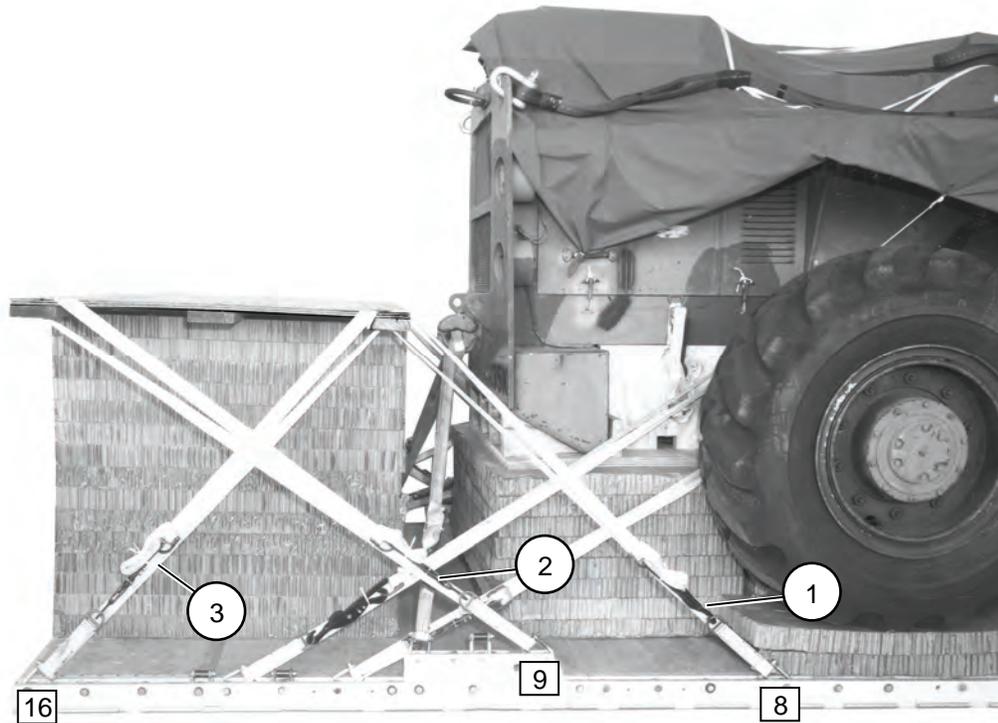
- Build two honeycomb supports with thirty 18- by 48-inch pieces of honeycomb, 15 pieces for each stack.
- Build a parachute stowage platform as shown in Figure 9-22.
- Position the honeycomb support as shown in Figure 9-23.
- Position and lash the parachute stowage platform as shown in Figure 9-24.



**Figure 9-22. Parachute Stowage Platform Built**



**Figure 9-23. Honeycomb Support Positioned**

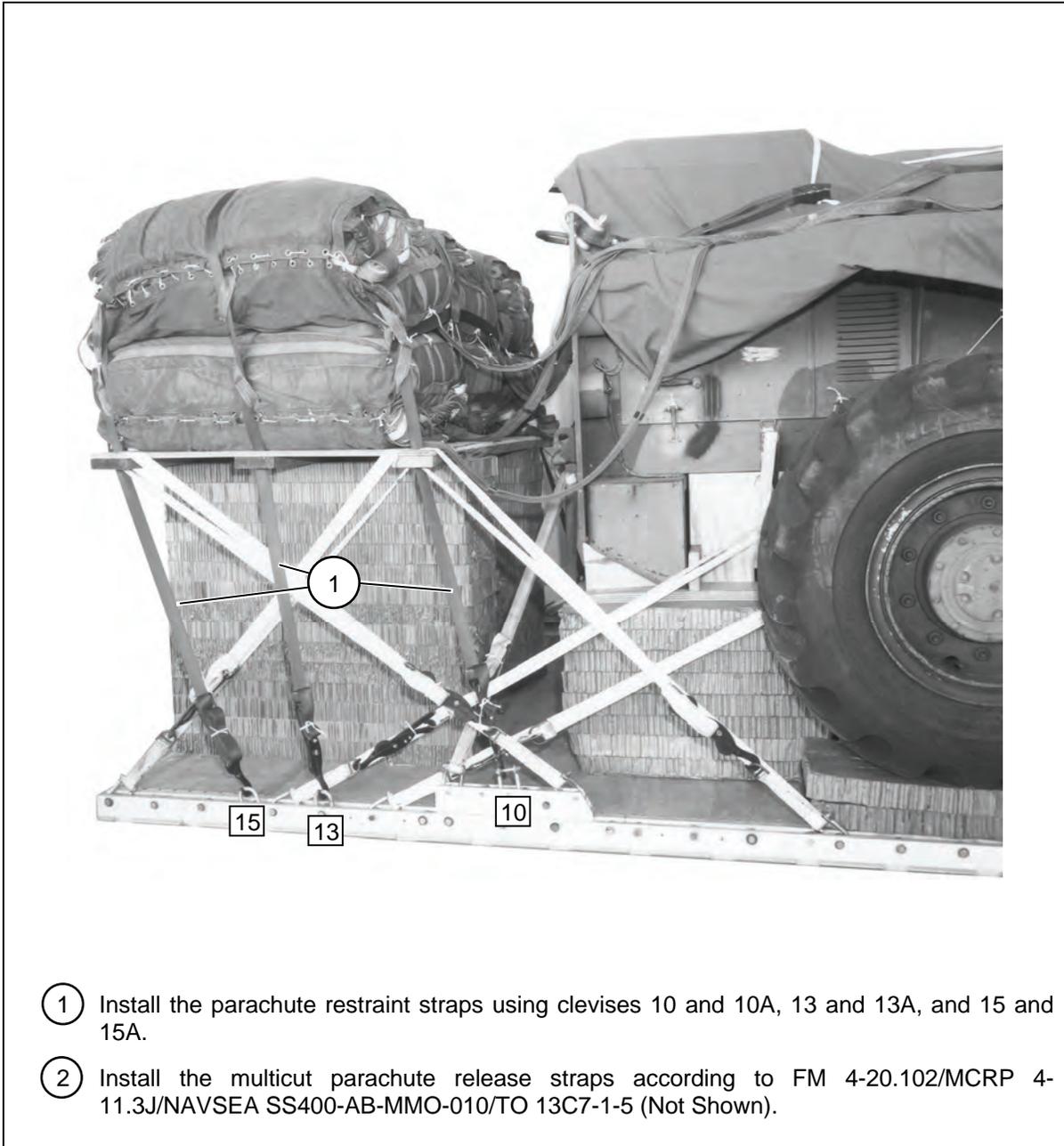


- ① Pass a 15-foot lashing through clevis 8 and through the right front hole of the parachute stowage platform. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 8A.
- ② Pass a 15-foot lashing through clevis 9 and through the right rear hole of the parachute stowage platform. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 9A.
- ③ Pass a 15-foot lashing through clevis 16 and through the right front hole of the parachute stowage platform. Secure the ends with a D-ring and load binder. Repeat for left side using clevis 16A.

**Figure 9-24. Parachute Stowage Platform Lashed to Platform**

## STOWING CARGO PARACHUTE

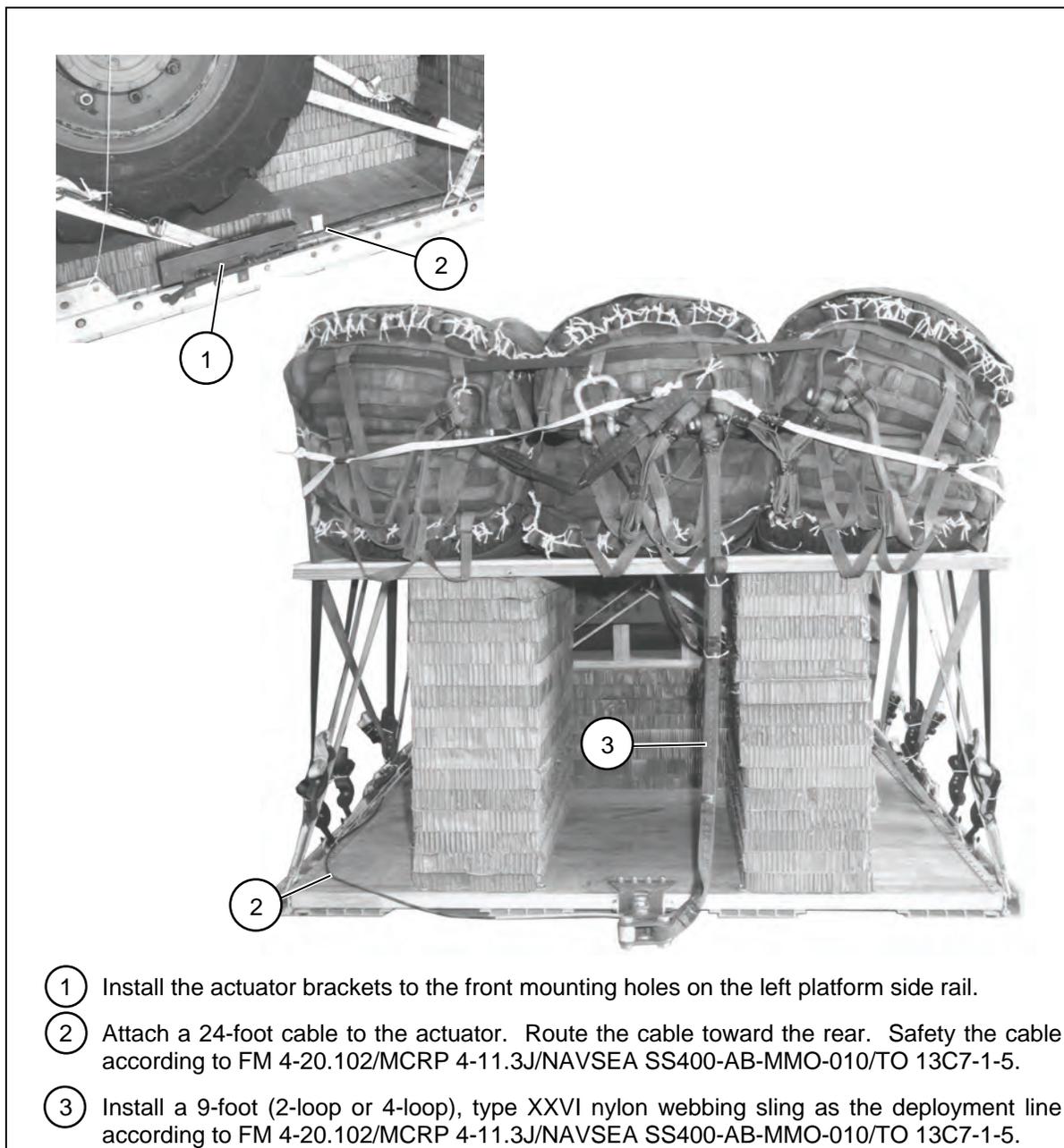
9-11. Prepare, stow and restrain six G-11 cargo parachutes on the parachute stowage platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 9-25.



**Figure 9-25. Cargo Parachutes Stowed**

## INSTALLING EXTRACTION SYSTEM

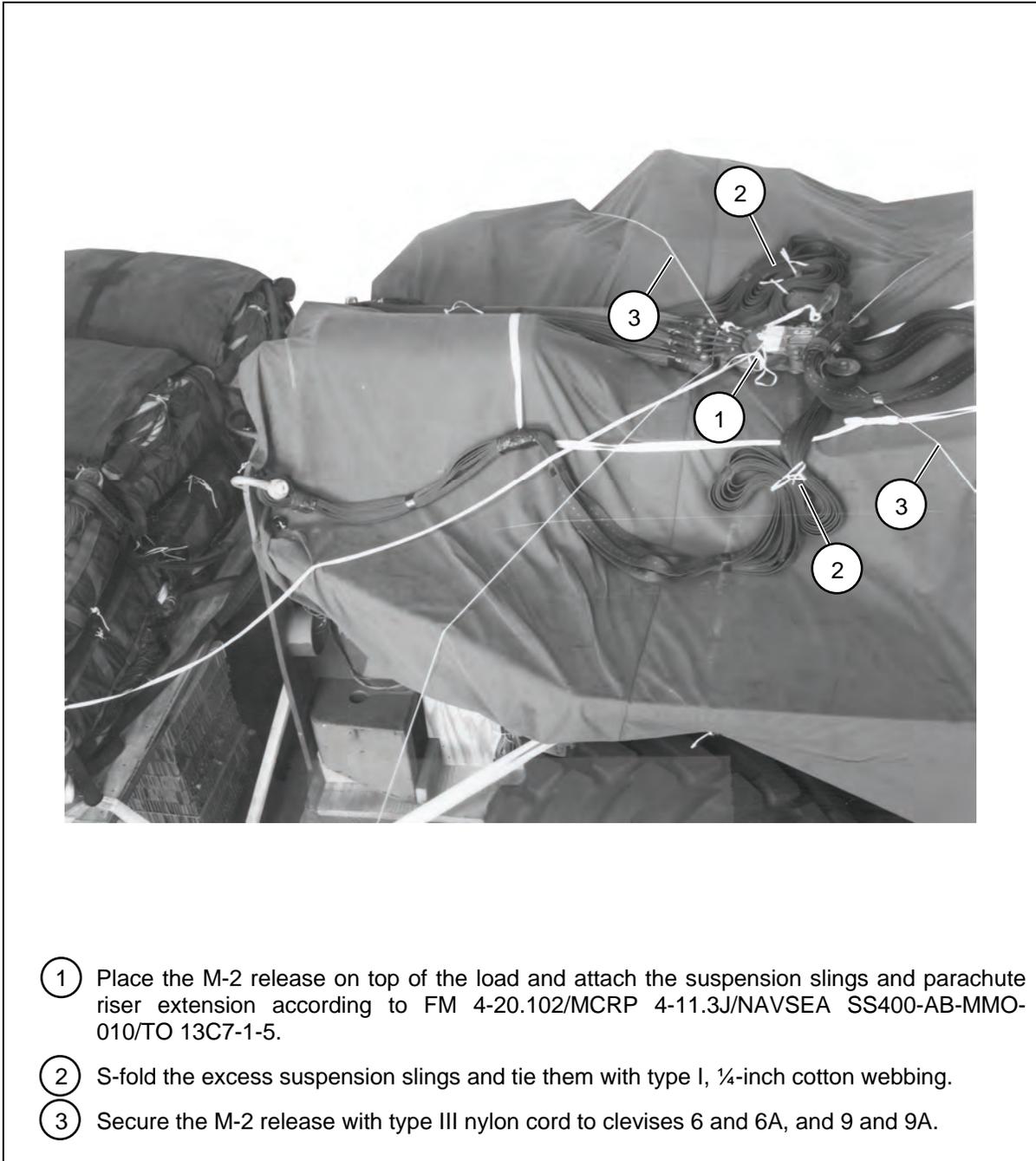
9-12. Install the EFTC extraction system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 9-26. If applicable, install the EPJS according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.



**Figure 9-26. EFTC Installed**

## INSTALLING PARACHUTE RELEASE

9-13. Install an M-2 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 9-27.



**Figure 9-27. M-2 Cargo Parachute Release Installed**

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

9-14. Install the provision for the emergency restraints on the load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **PLACING EXTRACTION PARACHUTE**

9-15. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. 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 platform for installation in the aircraft as well.

## **MARKING RIGGED LOAD**

9-16. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 9-28. 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.

## **INSTALLING LOAD LIFTING SLINGS**

- 9-17. Install lifting slings as described below to lift the rigged load onto the transport vehicle.
- Attach a 16-foot (4-loop), type XXVI nylon sling to each front lifting point with a large clevis.
  - Attach a 16-foot (4-loop), type XXVI nylon sling to each rear lifting point with a large clevis.

## **EQUIPMENT REQUIRED**

9-18. Use the equipment listed in Table 9-2 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.

**NOTICE OF EXCEPTION**

The rigged height is greater than 100 inches. The location of the maximum height is behind the seat.



**RIGGED LOAD DATA**

Weight: Load shown.....	28,660 pounds
Maximum load allowed .....	29,500 pounds
Height .....	100 ¾ inches
Width .....	108 inches
Overall Length.....	343 inches
Overhang: Front (forks).....	27 inches
Rear (EFTC).....	18 inches
Rear (EPJS) .....	30 inches
Center of Balance (from front edge of platform) .....	141 inches

**Figure 9-28. 6,000-Pound Capacity Forklift Truck Rigged on a Type V Platform**

**Table 9-2. Equipment Required for Rigging the 6,000-Pound Capacity Forklift Truck on a Type V Platform**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-278-8713	Adhesive, paste, 6-gallon	As required
	Clevis, suspension:	
4030-00-090-5354	6-inch (large)	4
4030-00-437-2516	Screw-pin	4
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-439-5782	Coupling, airdrop, extraction force transfer with cable, 24-foot	1
1670-00-360-0328	Cover, clevis, large	6
8135-00-669-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½-inch	As required
1670-06-188-2678	Leaf, extraction line (line bag)	2
1670-06-069-4452	Line, drogue, 60-foot (6-loop), type XXVI (for C-17)	1
	Line, extraction	
1670-06-069-4454	60-foot (6-loop), type XXVI (for C-130)	1
1670-06-468-9178	140-foot (6-loop), type XXVI (for C-17)	1
	Link assembly:	
1670-00-006-2752	Four point	1
1670-00-008-1953	Two-point: 3 ¾-inch	2
	Lumber:	
5510-00-220-6146	2- by 4-inch	As required
5510-00-220-6148	2- by 4-inch	As required
5510-00-220-6274	4- by 4-inch	As required
	Nail, steel wire:	
5315-00-010-4657	6d	As required
5315-00-010-4659	8d	As required
5315-00-758-3885	16d	As required
1670-00-758-3928	Pad, energy-dissipating (honeycomb)	26
	Parachute:	
	Cargo:	
1670-06-016-7841	G-11	6
	Cargo extraction:	
1670-00-040-8135	28-foot	2
1670-06-068-3715	15-foot (drogue for C-17)	1
	Platform, airdrop, type V, 28-foot	
1670-06-358-8425	Bracket assembly, coupling	1
1670-06-167-2372	Clevis assembly, type V	32
1670-06-358-8424	Extraction bracket assembly	1
1670-06-247-2389	Suspension link assembly	4
1670-06-167-2381	Tandem link assembly (multipurpose link)	2

**Table 9-2. Equipment Required for Rigging the 6,000-Pound Capacity Forklift Truck on a Type V Platform (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5530-00-128-4981	Plywood, ¾-inch	As required
1670-06-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop:	
	For suspension:	
1670-06-067-6310	11-foot (4-loop), type XXVI nylon webbing	2
	For lifting:	
1670-06-067-6310	16-foot (4-loop), type XXVI nylon webbing	4
	For deployment:	
1670-06-067-6304	9-foot (2-loop), type XXVI nylon webbing or	1
1670-06-067-6305	9-foot (4-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-06-067-6313	120-foot (2-loop), type XXVI nylon webbing	6
5340-00-040-8219	Strap, parachute release multi-cut, with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tie-down assembly, 15-foot	39
1670-06-488-8259	Tow release mechanism (H-block for C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
8305-00-087-5752	Nylon, tubular, ½-inch	As required
8305-00-268-2455	Nylon, tubular, 1-inch	As required
8305-00-268-3591	Type X	As required

## Chapter 10

# Rigging IC45 Crawler Carrier on a Type V Platform for Low-Velocity Airdrop

### DESCRIPTION OF LOAD

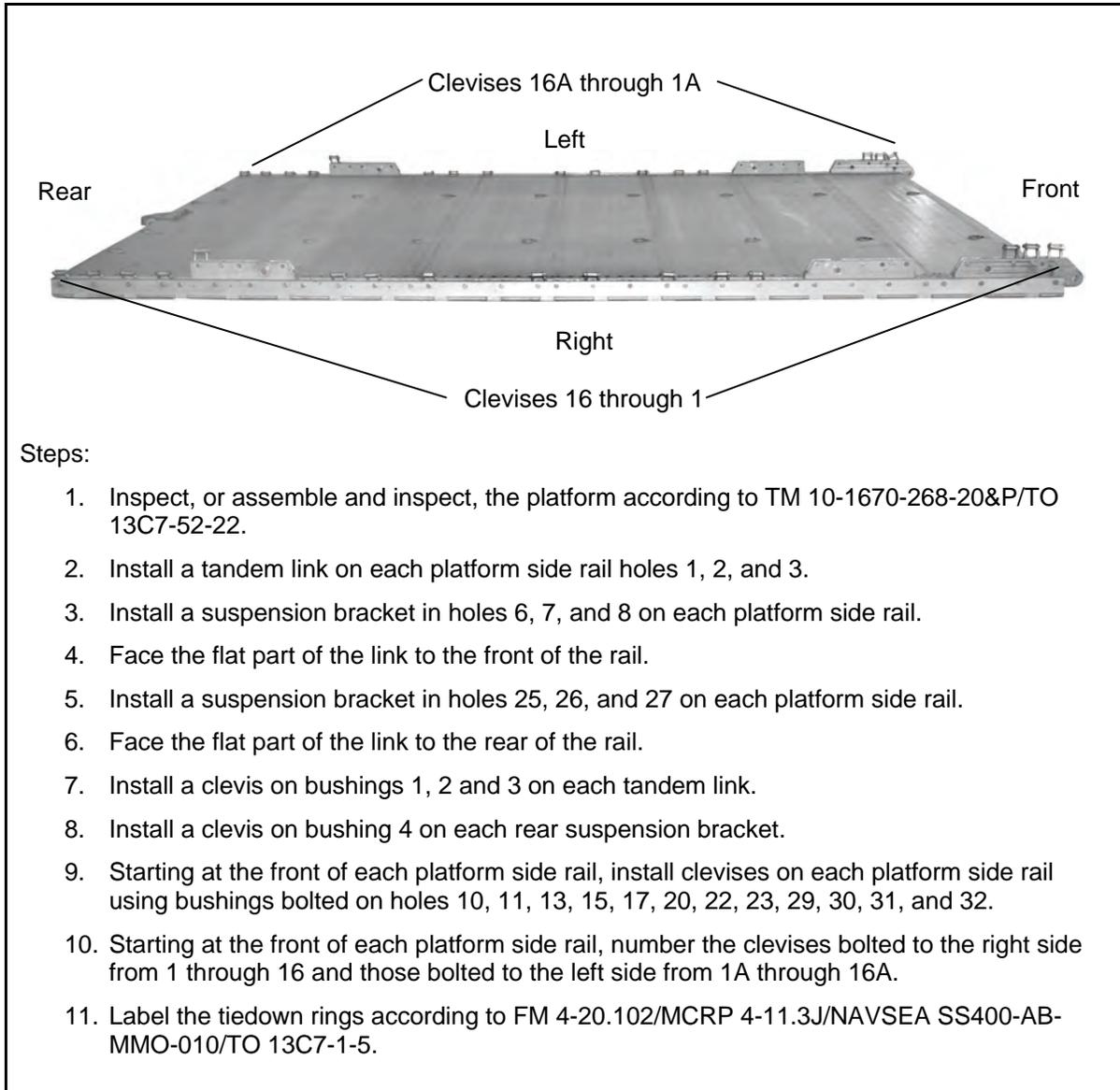
10-1. The IC45 crawler carrier is described in the introduction. The IC45 crawler carrier is rigged on a 16-foot, type V airdrop platform. The total rigged weight of the load is 17,480 pounds and this load requires four G-11 cargo parachutes. The IC45 crawler carrier is shown in Figure 10-1.



Figure 10-1. IC45 Crawler Carrier

## PREPARING PLATFORM

10-2. Prepare a 16-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22. Install 2 tandem links, 4 suspension brackets and 32 tiedown clevis assemblies as shown in Figure 10-2.



**Steps:**

1. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on each platform side rail holes 1, 2, and 3.
3. Install a suspension bracket in holes 6, 7, and 8 on each platform side rail.
4. Face the flat part of the link to the front of the rail.
5. Install a suspension bracket in holes 25, 26, and 27 on each platform side rail.
6. Face the flat part of the link to the rear of the rail.
7. Install a clevis on bushings 1, 2 and 3 on each tandem link.
8. Install a clevis on bushing 4 on each rear suspension bracket.
9. Starting at the front of each platform side rail, install clevises on each platform side rail using bushings bolted on holes 10, 11, 13, 15, 17, 20, 22, 23, 29, 30, 31, and 32.
10. Starting at the front of each platform side rail, number the clevises bolted to the right side from 1 through 16 and those bolted to the left side from 1A through 16A.
11. Label the tiedown rings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

**Figure 10-2. Platform Prepared**

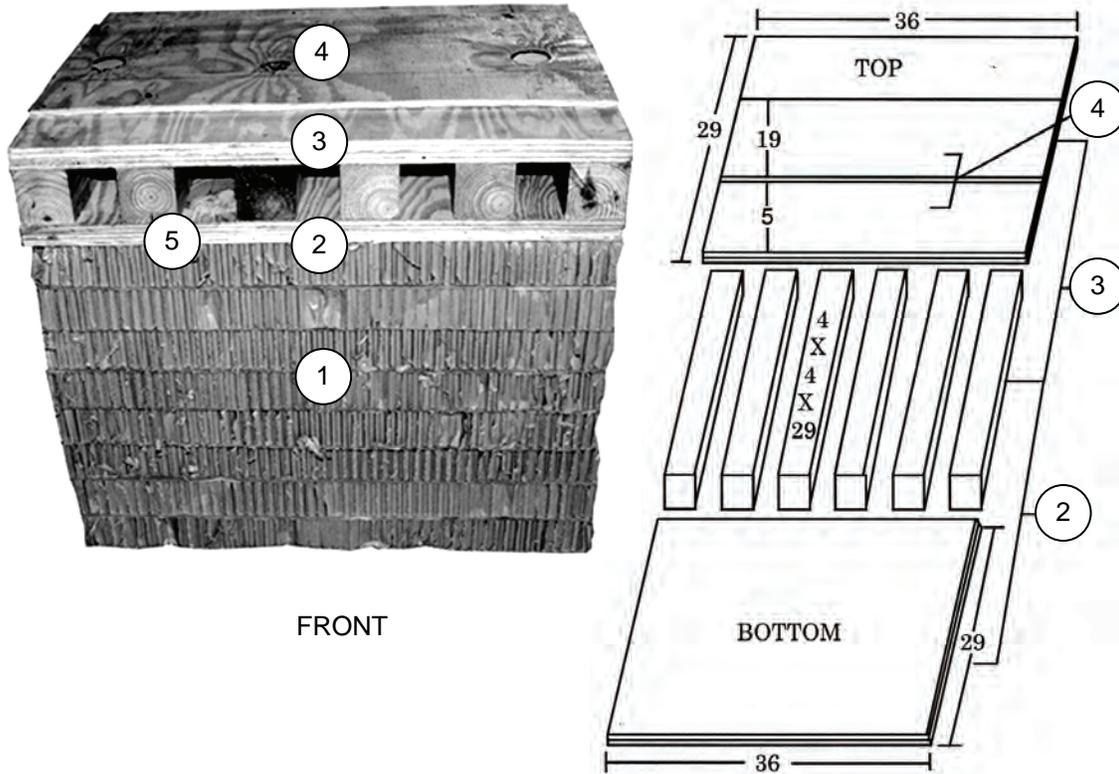
## BUILDING AND POSITIONING HONEYCOMB STACKS

10-3. Build honeycomb stacks as shown in Figures 10-3 through 10-5 using the materials listed in Table 10-1. Position the honeycomb stacks on the platform as shown in Figure 10-6.

**Table 10-1. Materials Needed for Honeycomb Stacks**

<b>Stack Number</b>	<b>Pieces</b>	<b>Width (Inches)</b>	<b>Length (Inches)</b>	<b>Material</b>	<b>Instructions</b>
1	8	36	29	Honeycomb	See Figure 10-3.
	4	36	29	¾ inch Plywood	
	6	4 X 4	29	Lumber	
	1	36	19	½ inch Plywood	
2	8	36	19	Honeycomb	See Figure 10-4.
	4	36	19	¾ inch Plywood	
	6	4 X 4	19	Lumber	
	2	2 X 4	19	Lumber	
	2	2 X 6	19	Lumber	
3	8	36	19	Honeycomb	See Figure 10-5.
	3	36	19	¾ inch Plywood	
	6	4 X 4	19	Lumber	
	1	36	19	½ inch Plywood	
	2	2 X 8	19	Lumber	
	1	21	19	½ inch Plywood	
	1	21	19	¾ inch Plywood	
4 and 5	8	18	96	Honeycomb	See Figure 10-5.

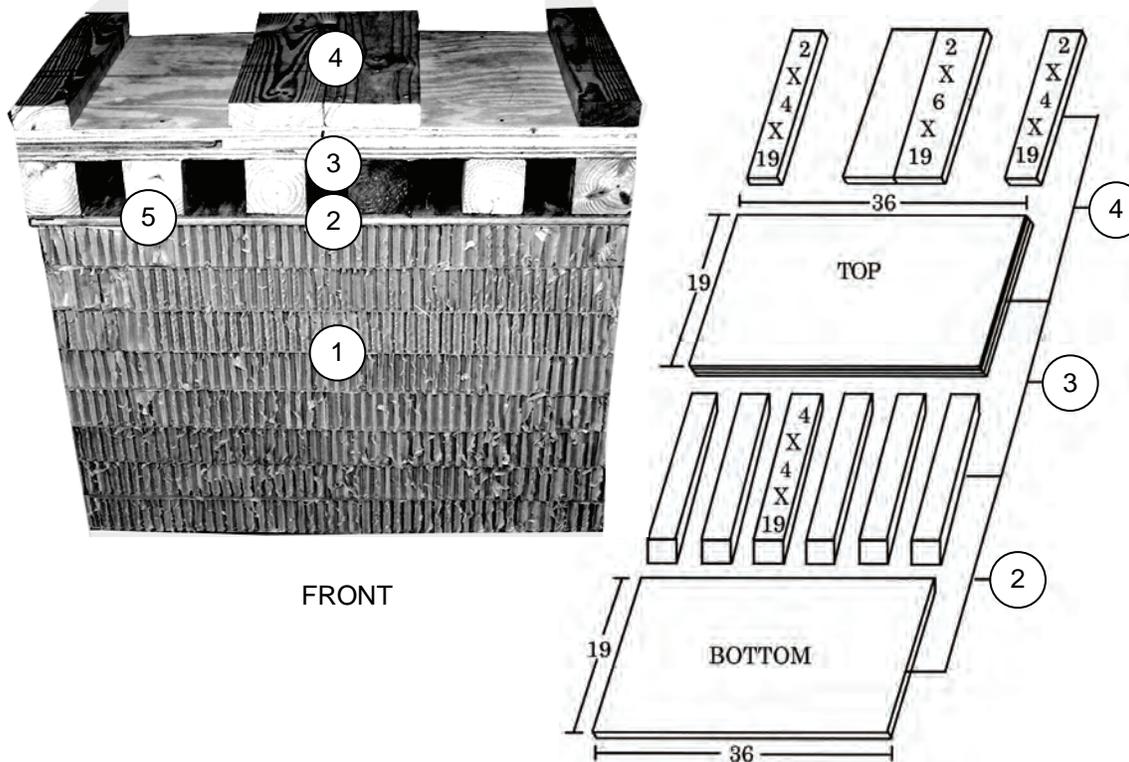
- Notes.** 1. Not drawn to scale.  
 2. All dimensions are given in inches.



- ① Glue eight 29- by 36-inch pieces of honeycomb together to form a base.
- ② Place and nail six 4 -by 4- by 29-inch pieces of lumber on top of two 29- by 36- by ¼-inch pieces of plywood. Place the 4- by 4-inch pieces of lumber flush with sides, front, back and evenly spaced.
- ③ Nail two 29- by 36- by ½-inch pieces of plywood flush on top of the six 4- by 4-inch pieces of lumber.
- ④ Place and nail a 19- by 36- by ½-inch piece of plywood flush with the sides and 5 inches from the front on top of the plywood placed in step 3.
- ⑤ Glue the wood stack on the honeycomb stack made in step 1.

**Figure 10-3. Honeycomb Stack 1 Prepared**

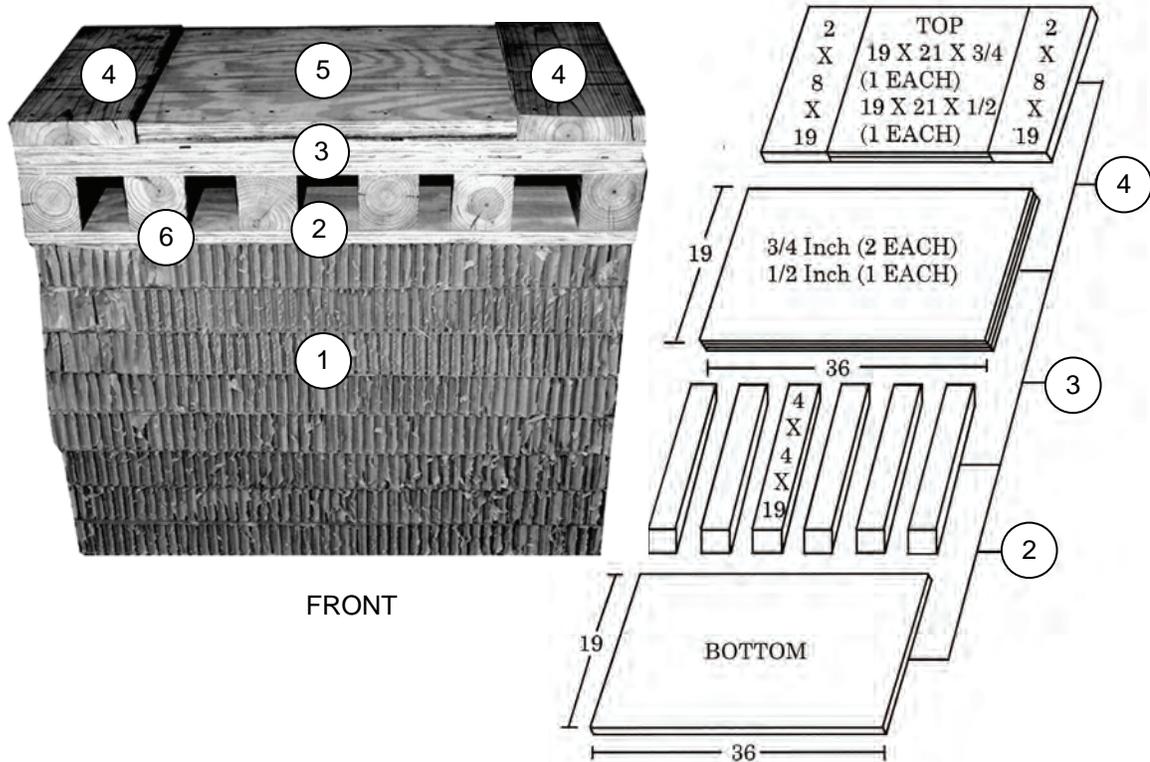
- Notes.** 1. Not drawn to scale.  
2. All dimensions are given in inches.



- ① Glue eight pieces of 19- by 36-inch honeycomb together to form a base.
- ② Place and nail six 4- by 4- by 19-inch pieces of lumber on top of one 19- by 36- by 3/4-inch piece of plywood. Place the 4 by 4 pieces of lumber flush with sides, front, back and evenly spaced.
- ③ Nail three 19- by 36- by 3/4-inch pieces of plywood flush on top of the six 4- by 4-inch pieces of lumber.
- ④ Place and nail one 2- by 4- by 19-inch piece of lumber on the left and right edge, flush with the front and back. Place and nail two 2- by 6- by 19-inch pieces of lumber side by side in the center on top of the 19- by 36- by 3/4-inch piece of plywood placed in step 3.
- ⑤ Glue and place wood stack on honeycomb stack made in step 1.

**Figure 10-4. Honeycomb Stack 2 Prepared**

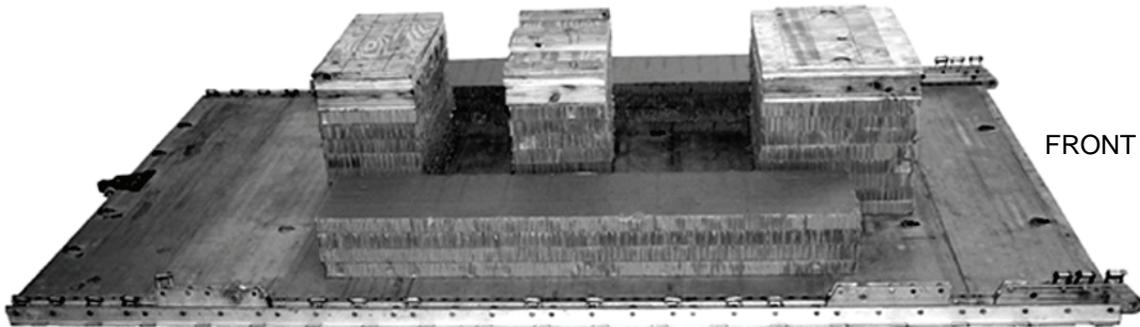
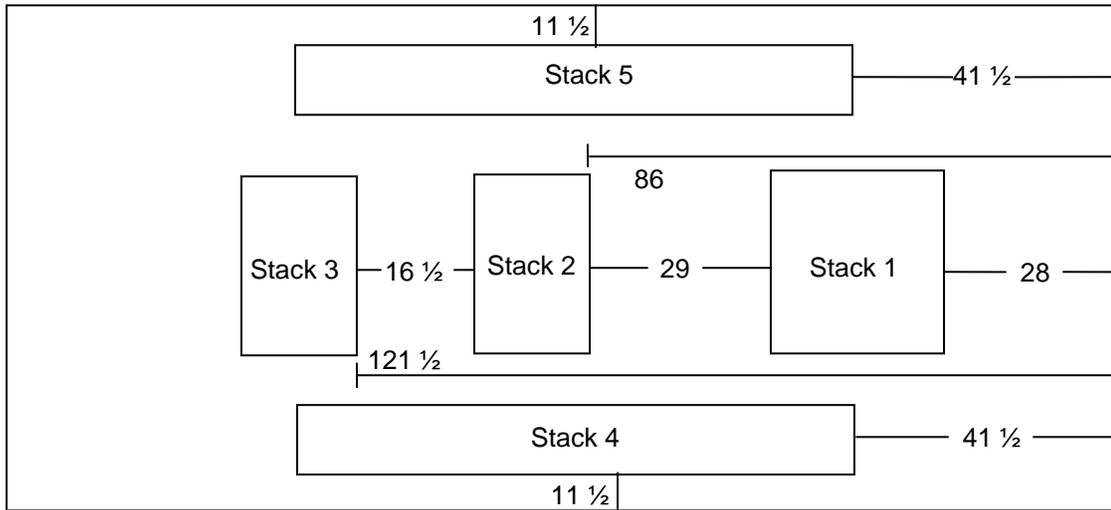
- Notes.** 1. Not drawn to scale.  
2. All dimensions are given in inches.



- ① Glue eight pieces of 19- by 36-inch honeycomb together to form a base.
- ② Place and nail six 4- by 4- by 19-inch pieces of lumber on top of one 19- by 36- by 3/4-inch piece of plywood. Place the 4 by 4's flush with sides, front, back and evenly spaced.
- ③ Nail two 19- by 36- by 3/4-inch pieces and one 19- by 36- by 1/2-inch piece of plywood flush on top of the six 4- by 4-inch pieces of lumber.
- ④ Place and nail one 2- by 8- by 19-inch piece of lumber on the left and right edge, flush with the front and back on top of the plywood positioned in step 3.
- ⑤ Place and nail one piece of 19- by 21- by 1/2-inch plywood and one piece of 19- by 21- by 3/4-inch plywood on top of the 19- by 36- by 3/4-inch piece of plywood in step 3 and in between the lumber in step 4 flush with the front and back.
- ⑥ Glue and place wood stack on top of the honeycomb stack made in step 1.
- ⑦ To form stack 4, glue four 18- by 96-inch pieces of honeycomb together (Not Shown).
- ⑧ To form stack 5, glue four 18- by 96-inch pieces of honeycomb together (Not Shown).

**Figure 10-5. Honeycomb Stack 3, 4 and 5 Prepared**

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



<b>Stack Number</b>	<b>Position of Stacks on the Platform</b>
1	Place stack: Centered 28 inches from the front edge of the platform.
2	Centered 29 inches from stack 1 or 86 inches from the front edge of the platform.
3	Centered 16 1/2 inches from the rear edge of stack 2 or 121 1/2 inches from the front edge of the platform.
4	41 1/2 inches from the front edge of the platform and 11 1/2 inches from the right side of the platform.
5	41 1/2 inches from the front edge of the platform and 11 1/2 inches from the left side of the platform.

**Figure 10-6. Honeycomb Stacks Positioned on the Platform**

## PREPARING THE IC45 CRAWLER CARRIER

10-4. Prepare the IC45 crawler carrier as follows: Make sure the fuel tank is no more than  $\frac{3}{4}$  full. Make sure the battery and battery compartment complies with AFMAN 24-204(I)/ TM 38-250. Prepare the rest of the IC45 crawler carrier using Table 10-2 and as shown in Figures 10-7 through 10-11.

### CAUTION

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

**Table 10-2. Materials Required to Prepare the Bed and Build the Canopy Cover and Cab Protective box**

<i>Pieces</i>	<i>Width</i>	<i>Length</i>	<i>Material</i>	<i>Instruction</i>
1	6	18	Honeycomb	See Figure 10-7
1	6	18	$\frac{3}{4}$ " Plywood	See Figure 10-7
1	32	75	Honeycomb	See Figure 10-9
1	36	75	Honeycomb	See Figure 10-9
1	22	75	Honeycomb	See Figure 10-9
1	31 $\frac{1}{2}$	51	$\frac{3}{4}$ " Plywood	See Figure 10-9
2	3	20	Honeycomb	See Figure 10-9
2	32	33	$\frac{3}{4}$ " Plywood	Cut a 6 $\frac{1}{2}$ - by 21-inch piece out of each side. See Figure 10-10
1	33	50 $\frac{1}{2}$	2 X 4 Lumber	See Figure 10-10
2	2 X 4	33	2 X 4 Lumber	See Figure 10-10
2	2 X 4	12	$\frac{3}{4}$ " Plywood	See Figure 10-10
1	12	50 $\frac{1}{2}$	$\frac{3}{4}$ " Plywood	See Figure 10-10
1	32	52	$\frac{3}{4}$ " Plywood	See Figure 10-10

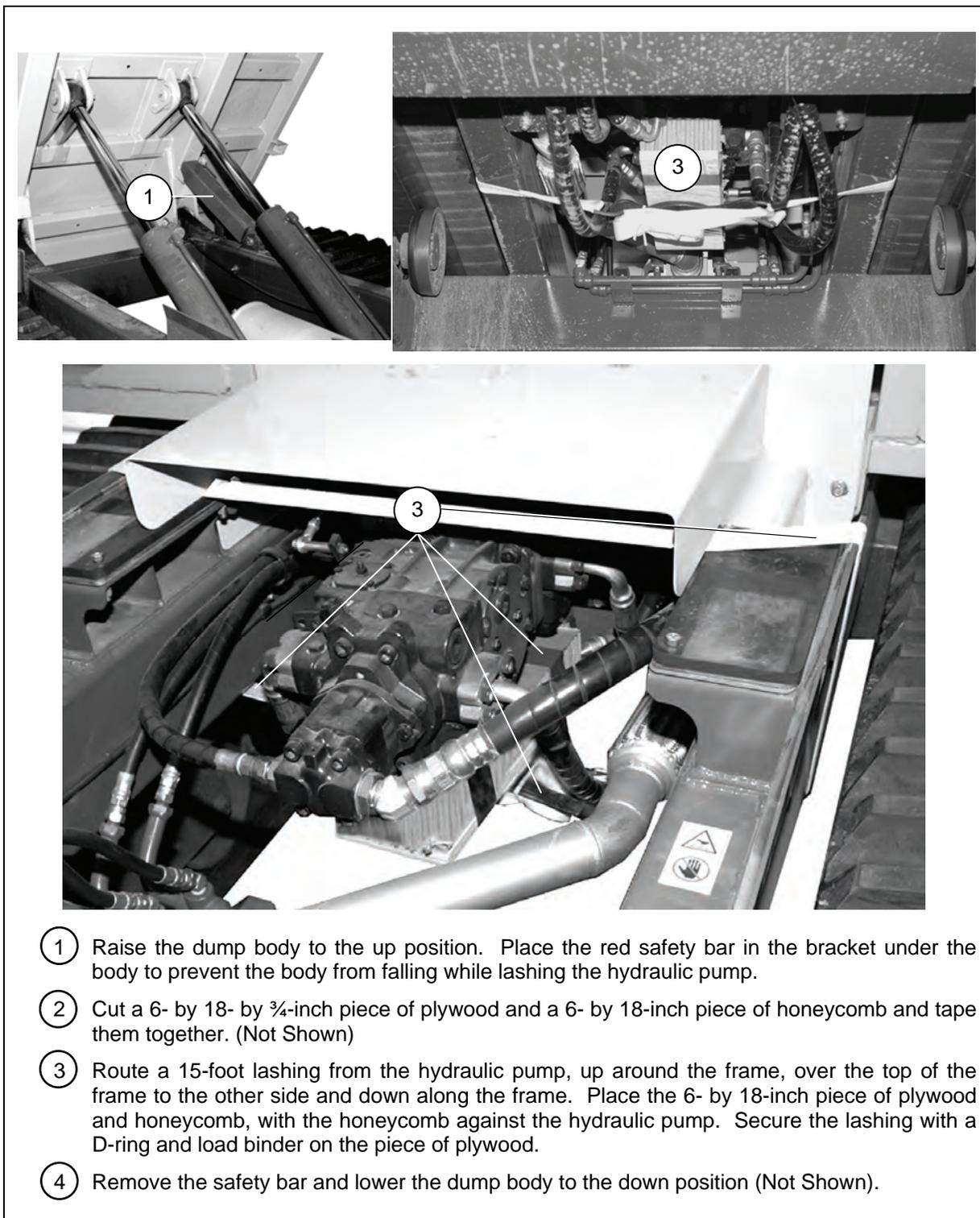
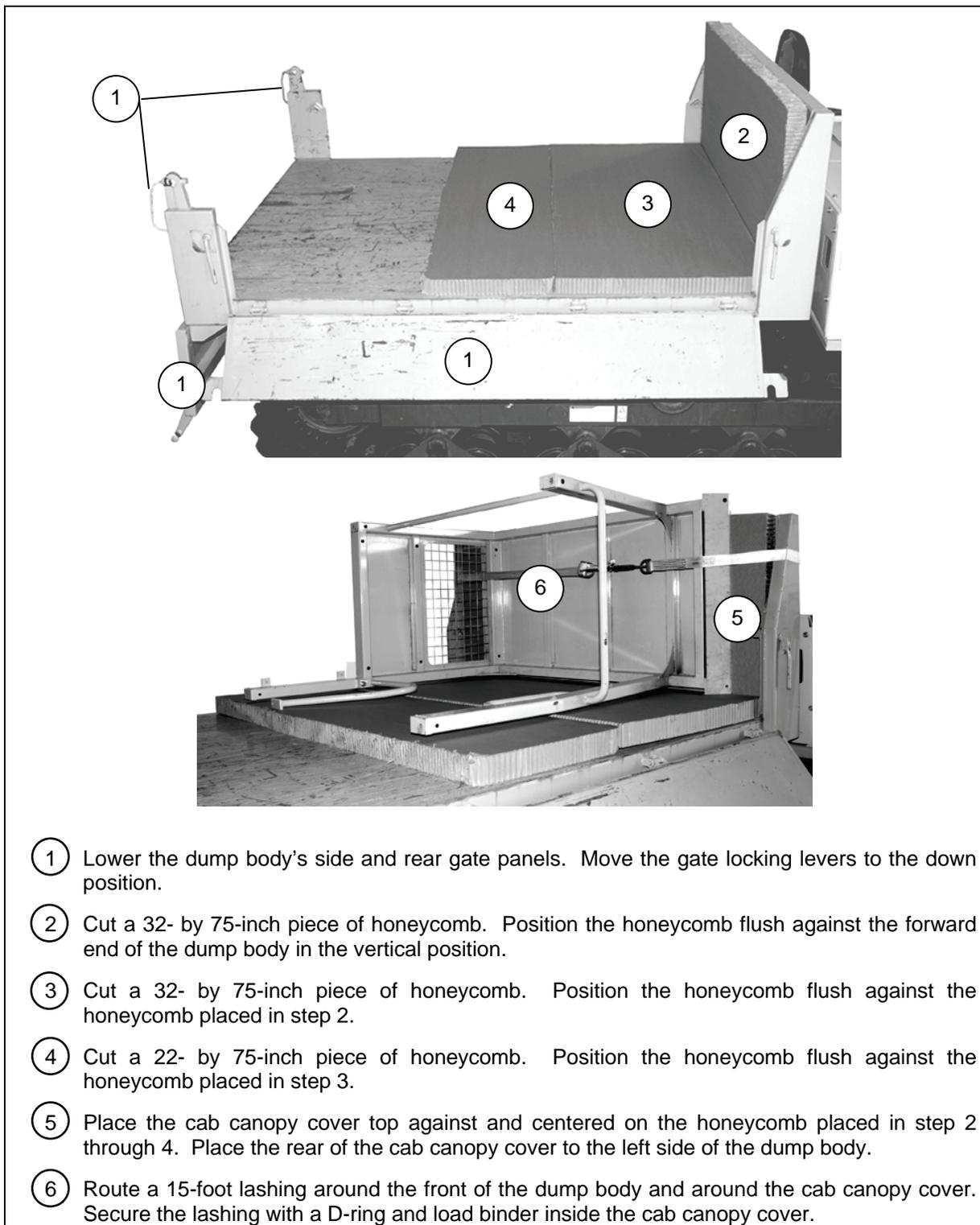


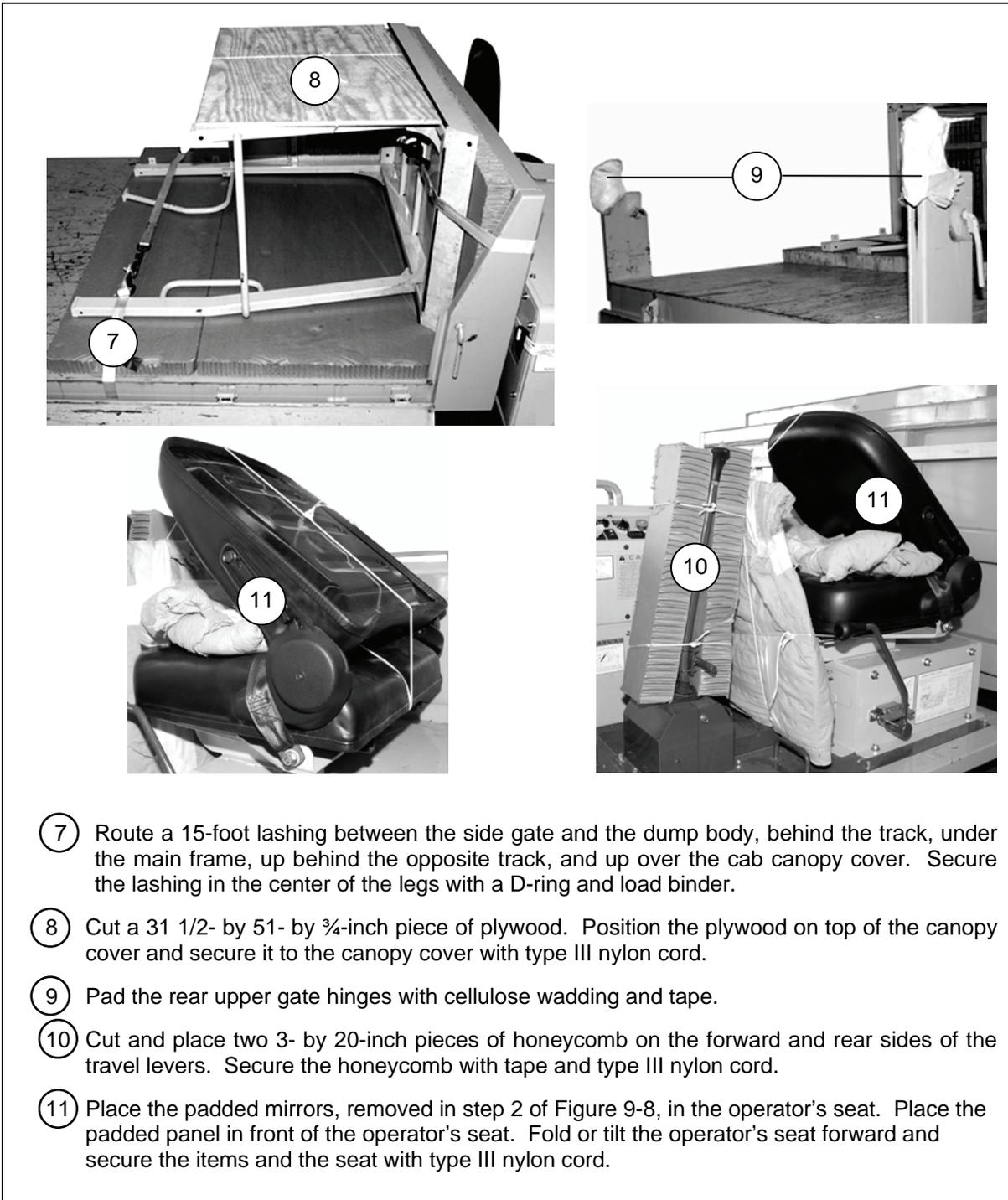
Figure 10-7. Dump Body Prepared



Figure 10-8. Components Stowed



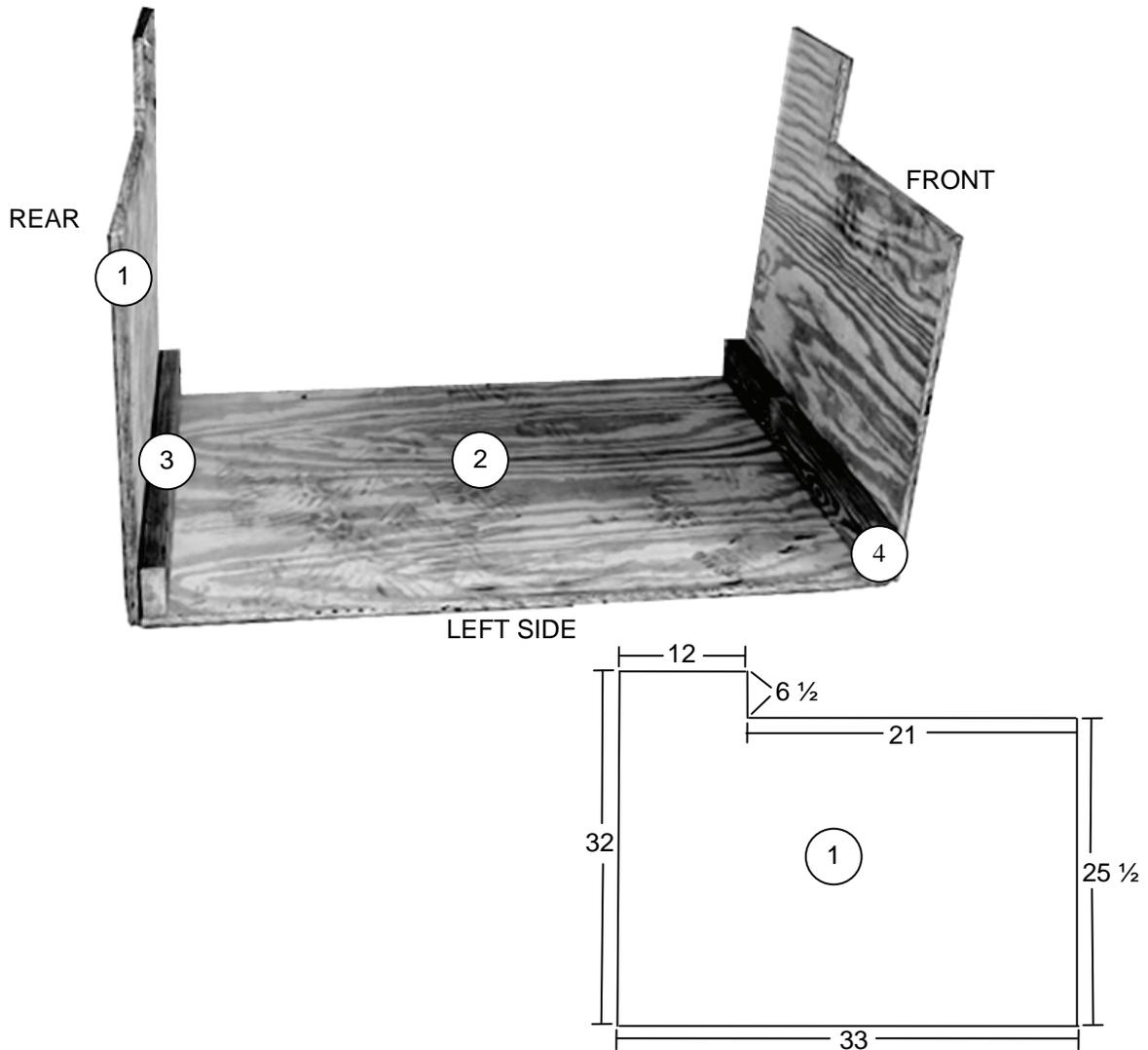
**Figure 10-9. Dump Body, Gates, and Cab Canopy Cover Prepared**



- ⑦ Route a 15-foot lashing between the side gate and the dump body, behind the track, under the main frame, up behind the opposite track, and up over the cab canopy cover. Secure the lashing in the center of the legs with a D-ring and load binder.
- ⑧ Cut a 31 1/2- by 51- by 3/4-inch piece of plywood. Position the plywood on top of the canopy cover and secure it to the canopy cover with type III nylon cord.
- ⑨ Pad the rear upper gate hinges with cellulose wadding and tape.
- ⑩ Cut and place two 3- by 20-inch pieces of honeycomb on the forward and rear sides of the travel levers. Secure the honeycomb with tape and type III nylon cord.
- ⑪ Place the padded mirrors, removed in step 2 of Figure 9-8, in the operator's seat. Place the padded panel in front of the operator's seat. Fold or tilt the operator's seat forward and secure the items and the seat with type III nylon cord.

**Figure 10-9. Dump Body, Gate's, and Cab Canopy Cover Prepared (Continued)**

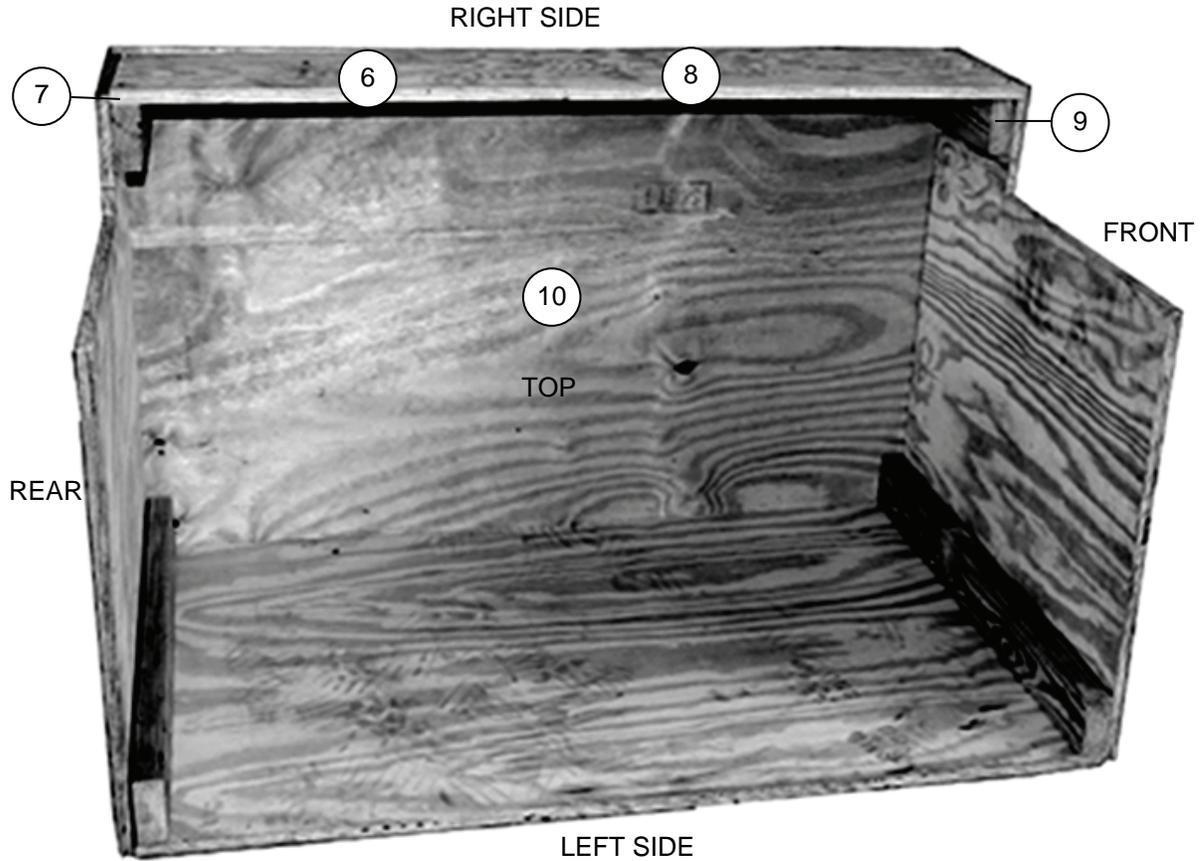
- Notes.**
1. Not drawn to scale.
  2. All dimensions are given in inches.
  3. The box is shown on its side for building clarification.



- ① Cut two 32- by 33- by  $\frac{3}{4}$ -inch pieces of plywood as shown above for the front and rear.
- ② Cut one 33- by 50  $\frac{1}{2}$ - by  $\frac{3}{4}$ -inch piece of plywood for the left side.
- ③ Cut two 2- by 4- by 33-inch pieces of lumber. Nail lumber to the left side on the front and rear ends with 8d nails.
- ④ Nail the front and rear to the 2- by 4-inch lumber on the left side.

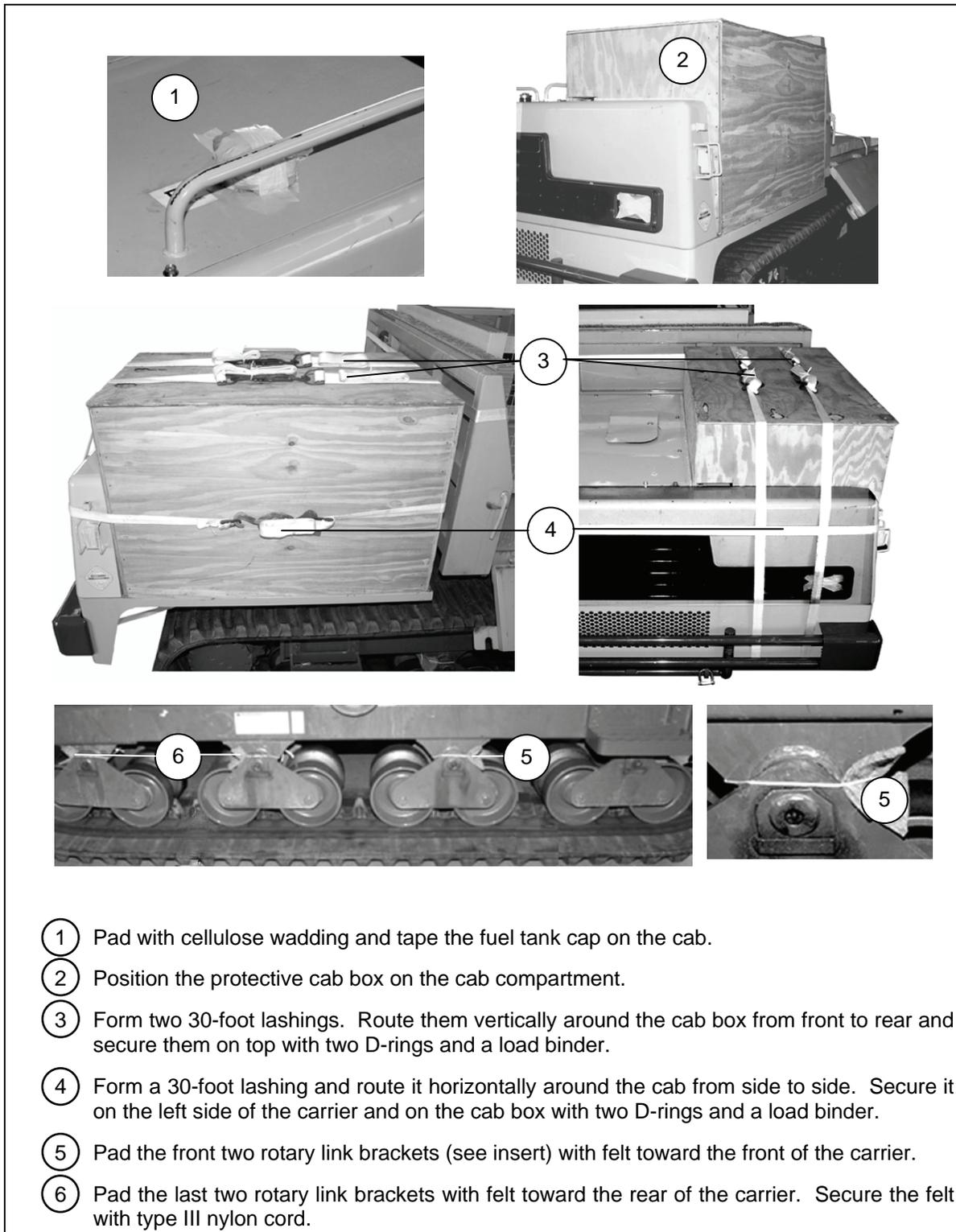
**Figure 10-10. Protective Cab Box Built**

- Notes.**
1. Not drawn to scale.
  2. All dimensions are given in inches.
  3. The box is shown on its side for building clarification.



- ⑤ Cut two 2- by 4- by 12-inch pieces of lumber (Not Shown).
- ⑥ Cut a 12- by 50 ½- by ¾-inch piece of plywood for the right side.
- ⑦ Nail the right side to the 2- by 4- by 12- inch piece of lumber with 8d nails.
- ⑧ Place the right side in between the front and rear pieces.
- ⑨ Nail the front and rear to the right side with 8d nails.
- ⑩ Cut a 32- by 52- by ¾-inch piece of plywood for the top. Nail the top to the sides, the front and the rear with 8d nails.

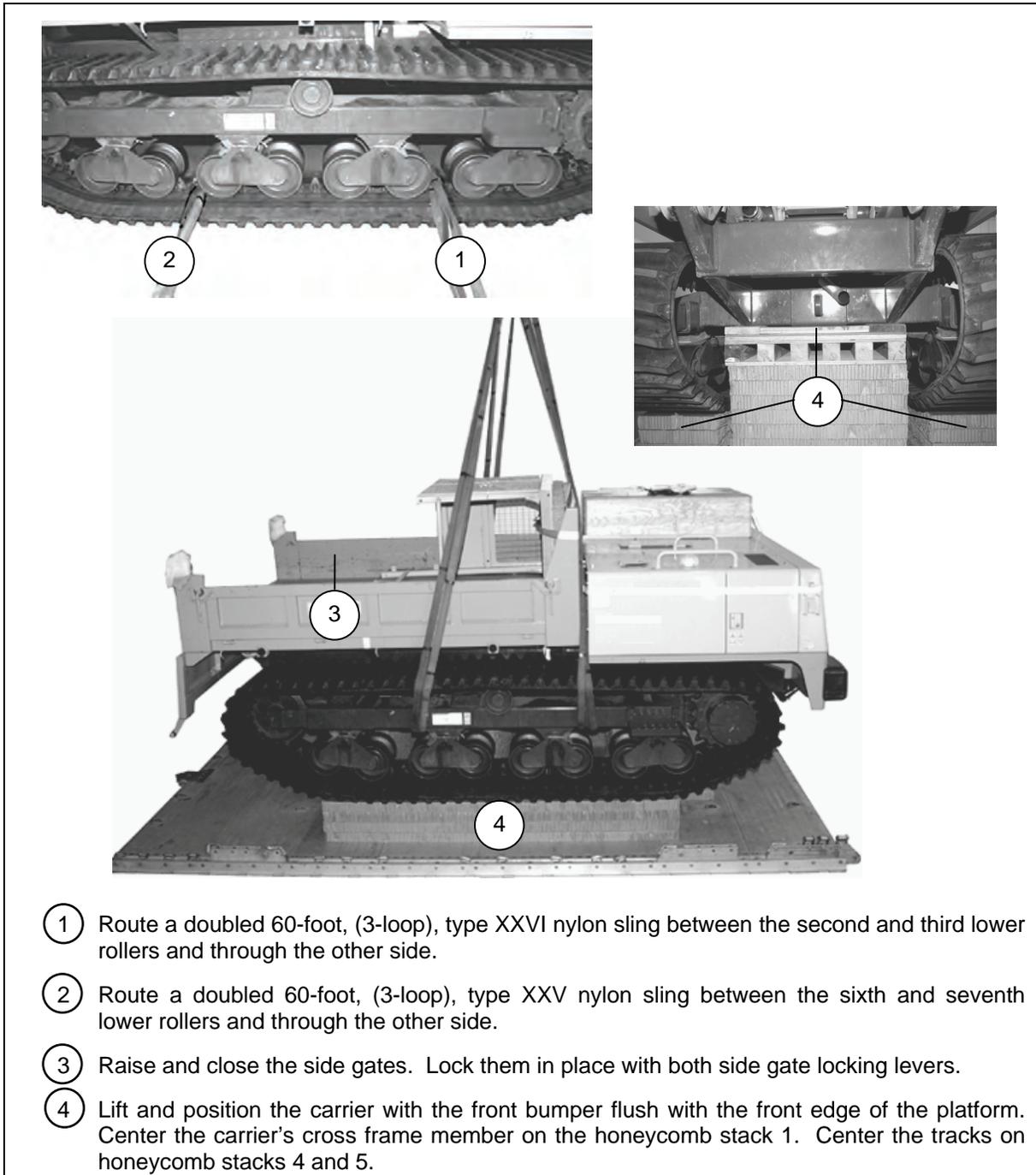
**Figure 10-10. Protective Cab Box Built (Continued)**



**Figure 10-11. Protective Cab Box, Fuel Cap and Brackets Prepared**

## INSTALLING LIFTING SLINGS AND POSITIONING THE CARRIER

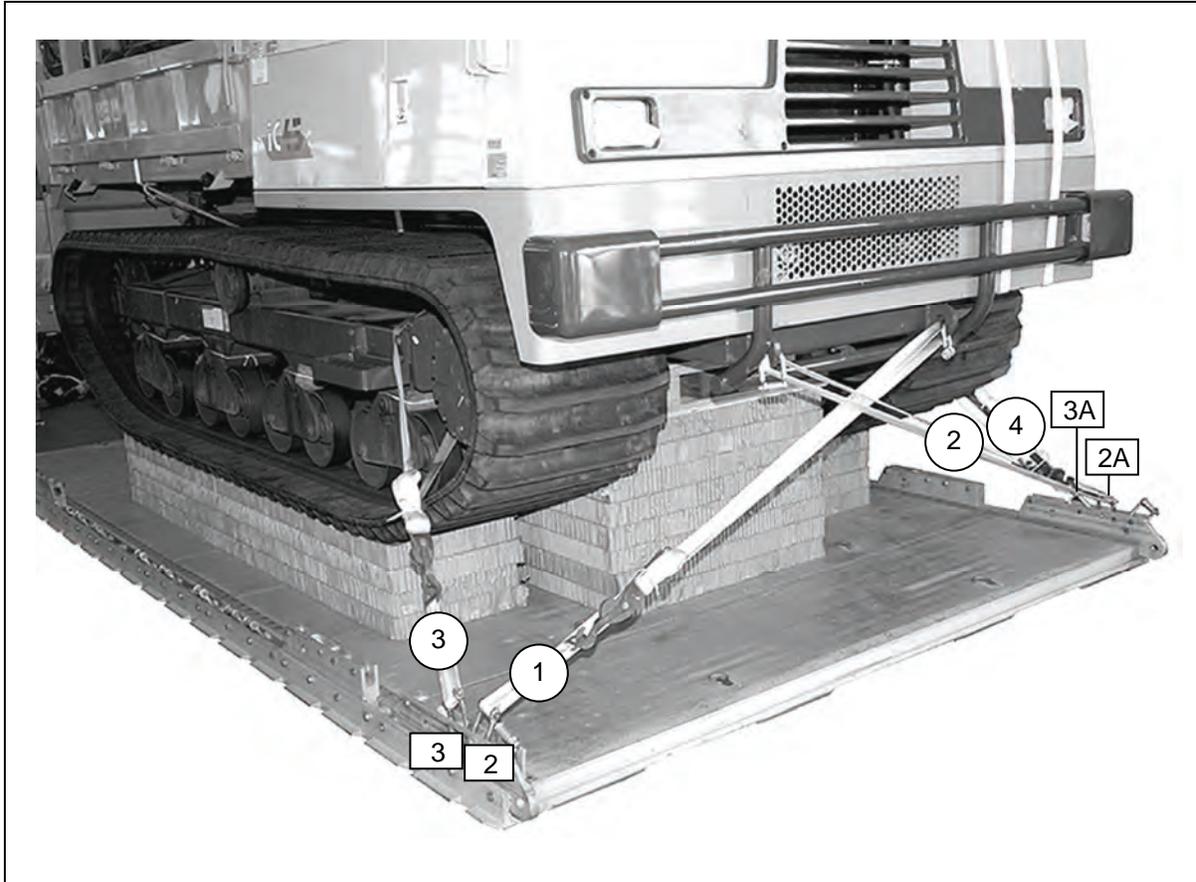
10-5. Install lifting slings and position the IC45 crawler carrier as shown in Figure 10-12.



**Figure 10-12. Carrier Positioned**

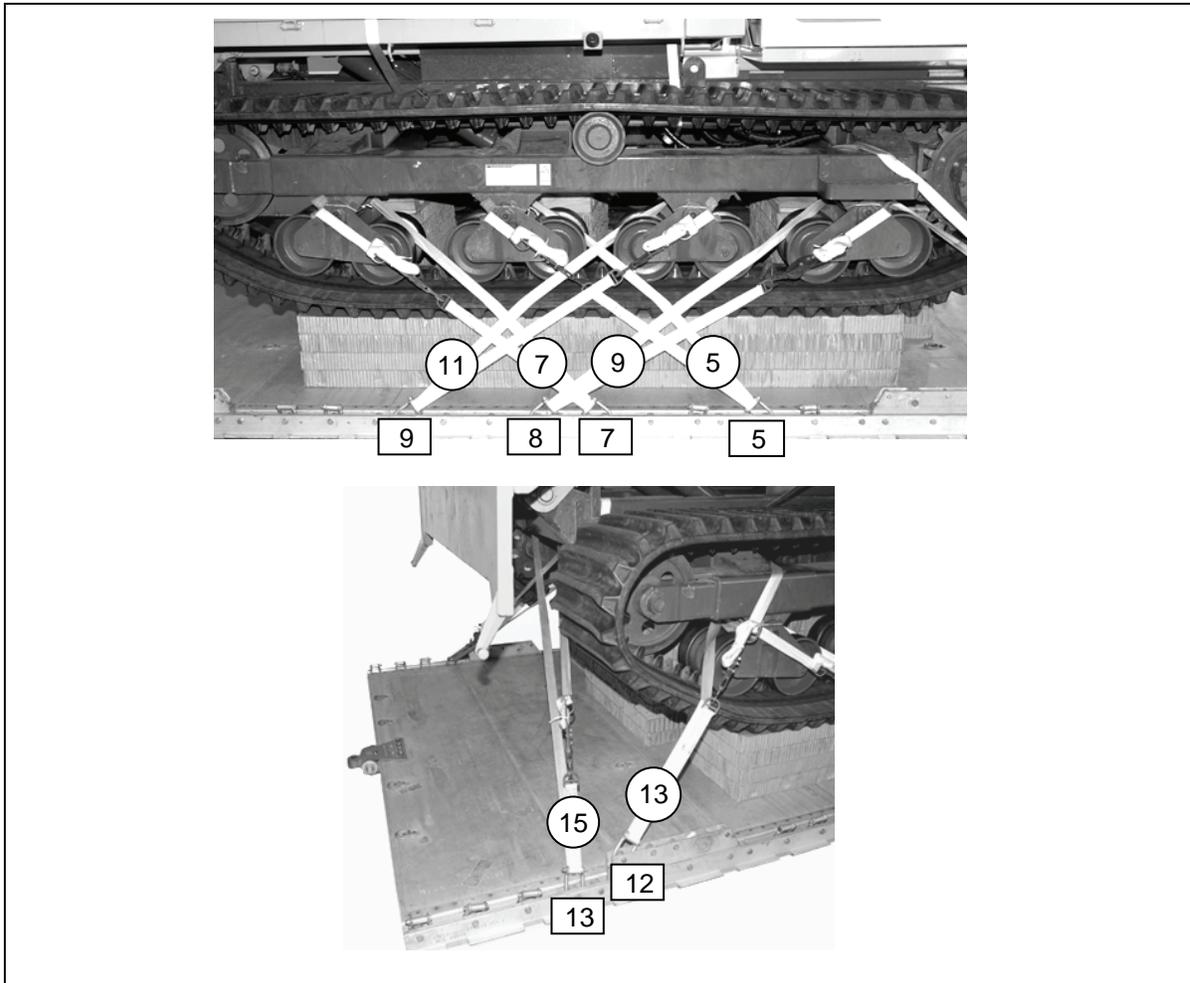
## LASHING THE CRAWLER CARRIER

10-6. Lash the IC45 crawler carrier to the platform with sixteen 15-foot tiedown assemblies according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 10-13 and 10-14. Pad all sharp edges the lashings may come into contact with.



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
1	2	Pass lashing: Through the carrier's left front towing hook. Make sure the platform clevis is forward of the lashing.
2	2A	Through the carrier's right front towing hook. Make sure the platform clevis is forward of the lashing.
3	3	Around the carrier's right front track frame.
4	3A	Around the carrier's left front track frame.

**Figure 10-13. Lashings 1 Through 4 Installed**



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
5	5	Pass lashing: Around the carrier's right side third rotary link bracket.
6	5A	Around the carrier's left side third rotary link bracket.
7	7	Around the carrier's right side fourth rotary link bracket.
8	7A	Around the carrier's left side fourth rotary link bracket.
9	8	Around the carrier's right side first rotary link bracket.
10	8A	Around the carrier's left side first rotary link bracket.
11	9	Around the carrier's right side second rotary link bracket.
12	9A	Around the carrier's left side second rotary link bracket.
13	12	Around the carrier's right rear track frame.
14	12A	Around the carrier's left rear track frame.
15	13	To the carrier's left side main frame.
16	13A	To the carrier's right side main frame.

**Figure 10-14. Lashings 5 Through 16 Installed**

## INSTALLING AND LASHING THE FRONT ATTITUDE CONTROL BAR (ACB)

10-7. Install and lash the front ACB to the platform using eight 15-foot tiedown assemblies. Install the lashings as shown in Figure 10-15.

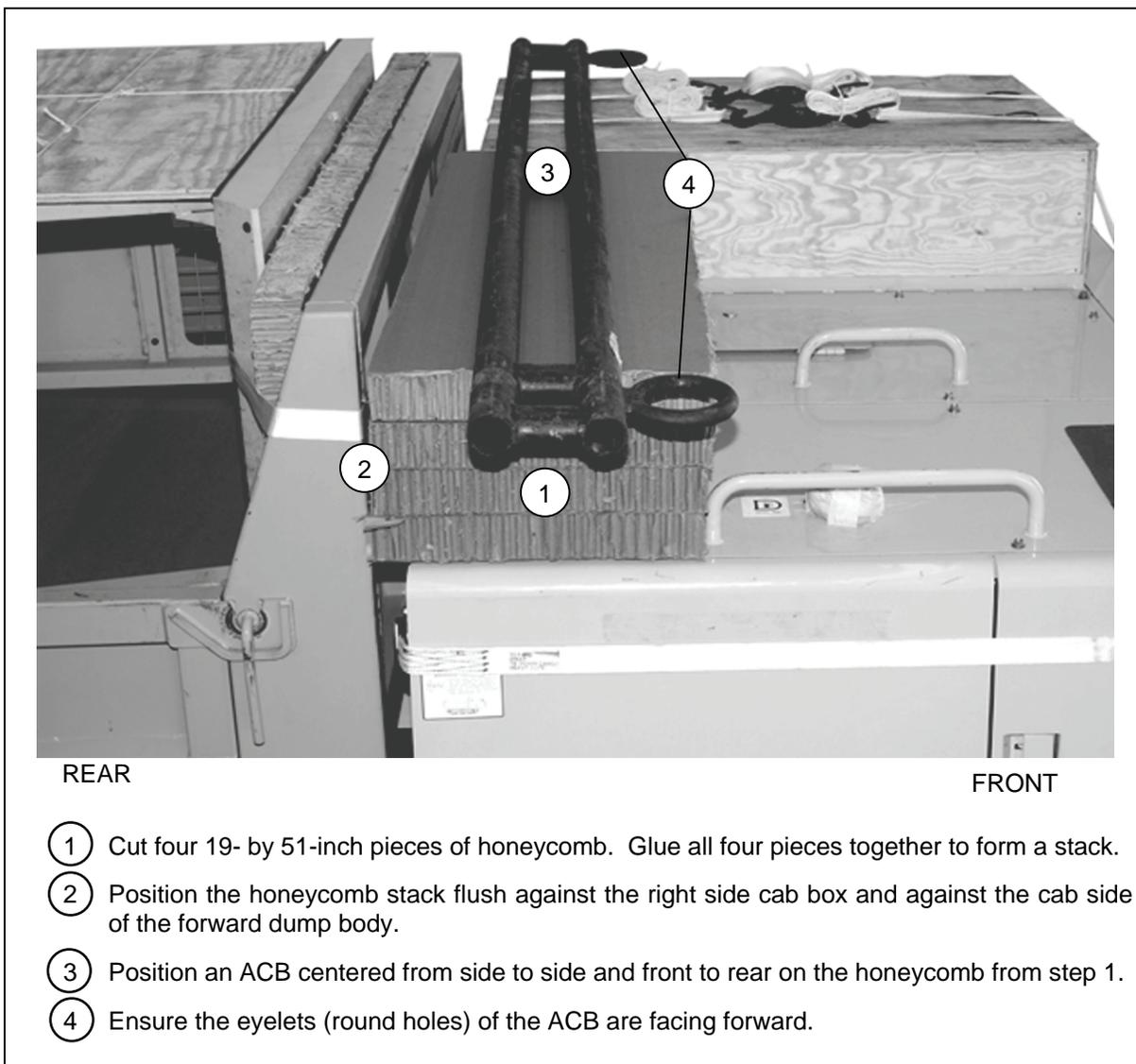
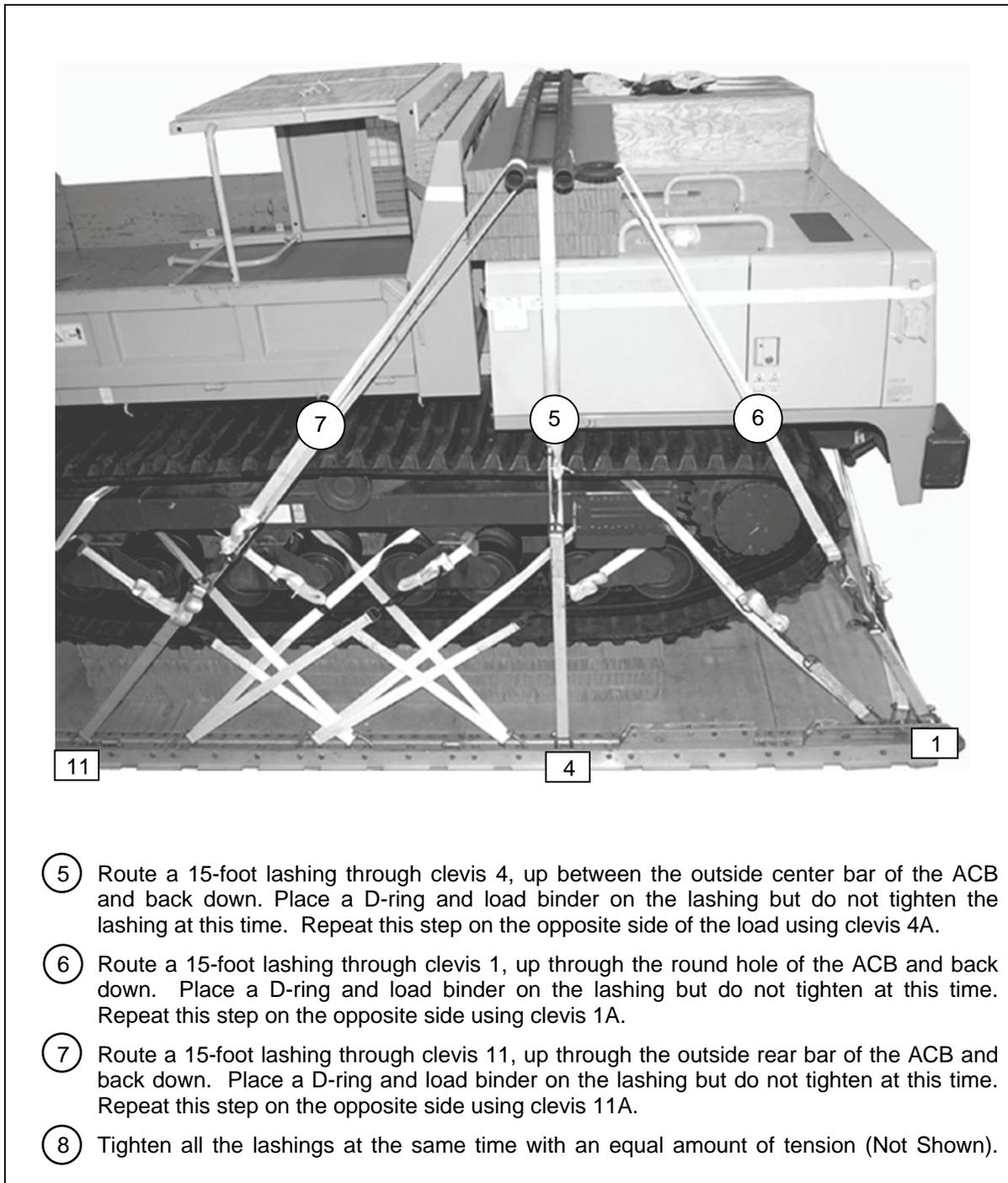
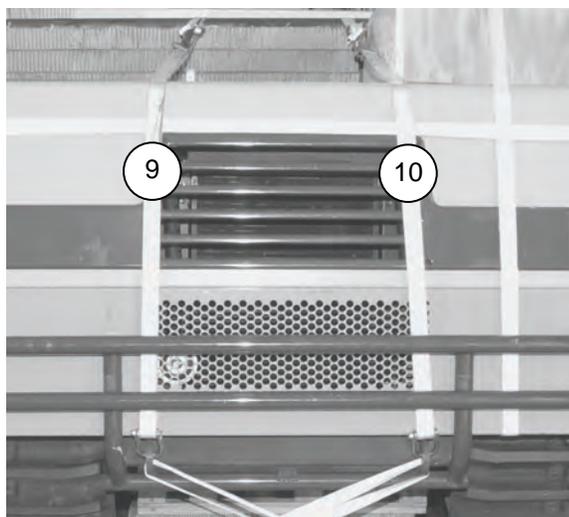
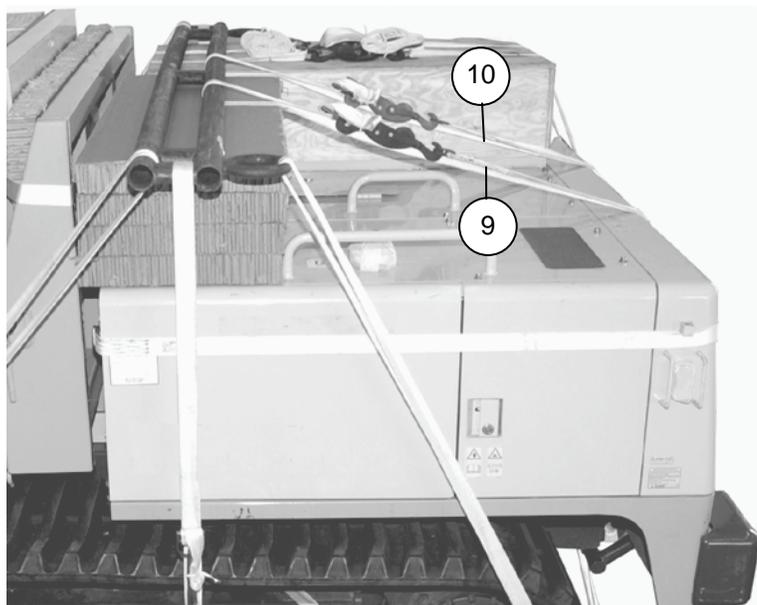


Figure 10-15. Front ACB Lashed



- ⑤ Route a 15-foot lashing through clevis 4, up between the outside center bar of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten the lashing at this time. Repeat this step on the opposite side of the load using clevis 4A.
- ⑥ Route a 15-foot lashing through clevis 1, up through the round hole of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten at this time. Repeat this step on the opposite side using clevis 1A.
- ⑦ Route a 15-foot lashing through clevis 11, up through the outside rear bar of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten at this time. Repeat this step on the opposite side using clevis 11A.
- ⑧ Tighten all the lashings at the same time with an equal amount of tension (Not Shown).

**Figure 10-15. Front ACB Lashed (Continued)**



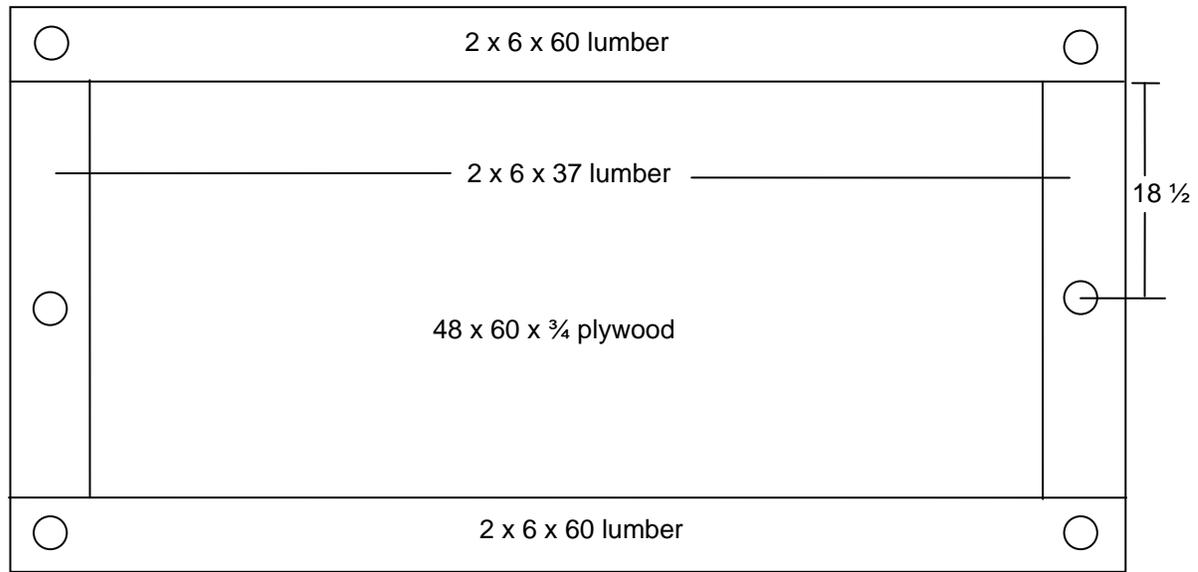
- ⑨ Route a 15-foot lashing through the platform clevis attached to the right front towing hook. Route the lashing between the engine cover and the front bumper around the front bar of the ACB. Place the D-ring and load binder on the lashing, but do not tighten at this time. The load binder will be on top of the engine cover.
- ⑩ Repeat step 9 on the left side using the clevis attached to the left front towing hook.
- ⑪ Tighten both lashings equally (Not Shown).

**Figure 10-15. Front ACB Lashed (Continued)**

## BUILDING THE PARACHUTE STOWAGE PLATFORM

10-8. Build a parachute stowage platform as shown in Figure 10-16.

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



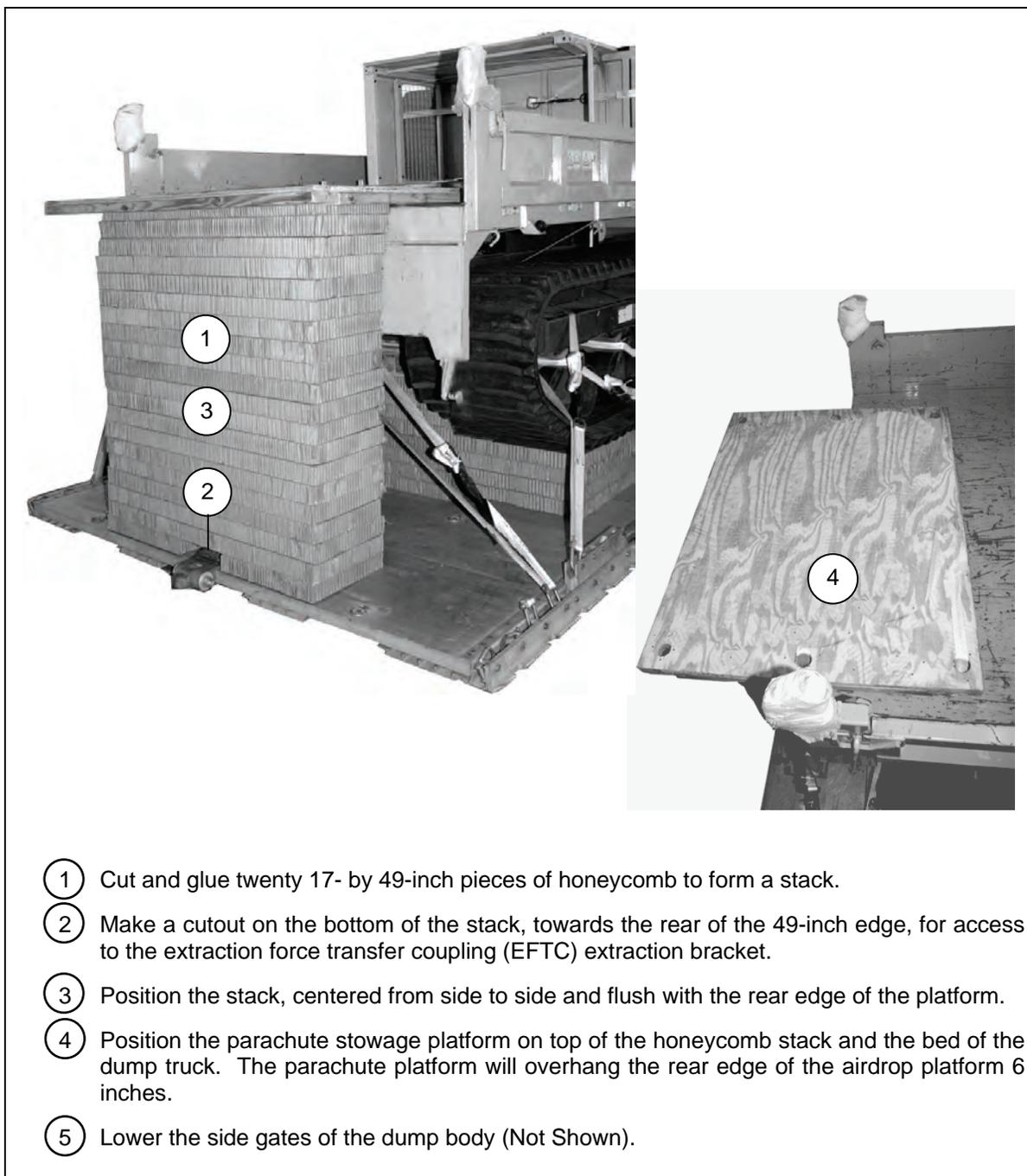
**Steps:**

1. Use a 48- by 60- by  $\frac{3}{4}$ -inch sheet of plywood as a base.
2. Cut two 2- by 6- by 60-inch pieces of lumber. Nail each piece of lumber flush with the front, rear and sides using 8d nails.
3. Cut two 2- by 6- by 37-inch pieces of lumber. Nail the lumber flush with one piece on each side between the front and rear pieces using 8d nails.
4. Drill six 2-inch holes centered in the 2- by 6-inch lumber as shown above.

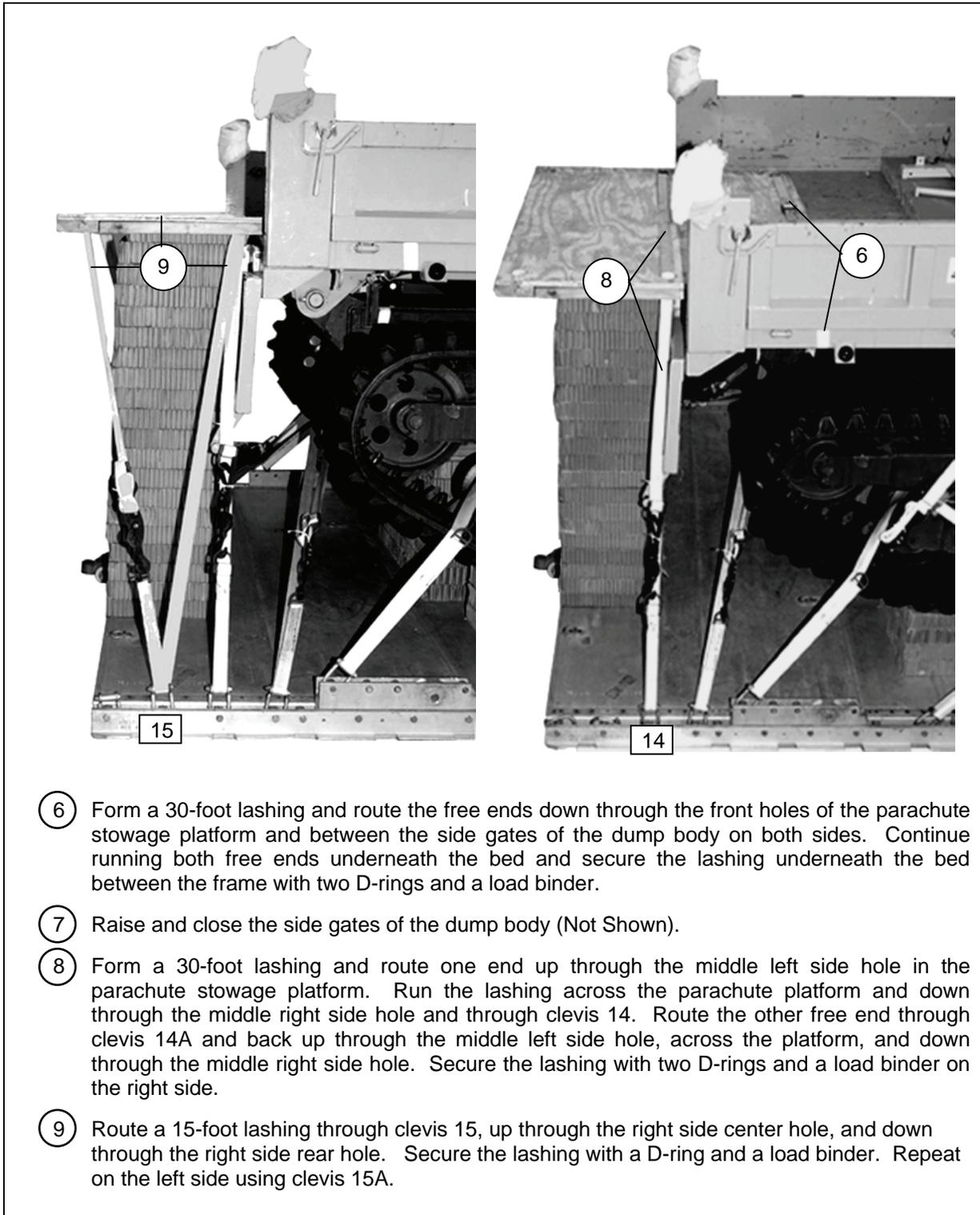
**Figure 10-16. Parachute Stowage Platform Built**

## INSTALLING AND RESTRAINING THE PARACHUTE STOWAGE PLATFORM

10-9. Install the parachute stowage platform as shown in Figure 10-17.



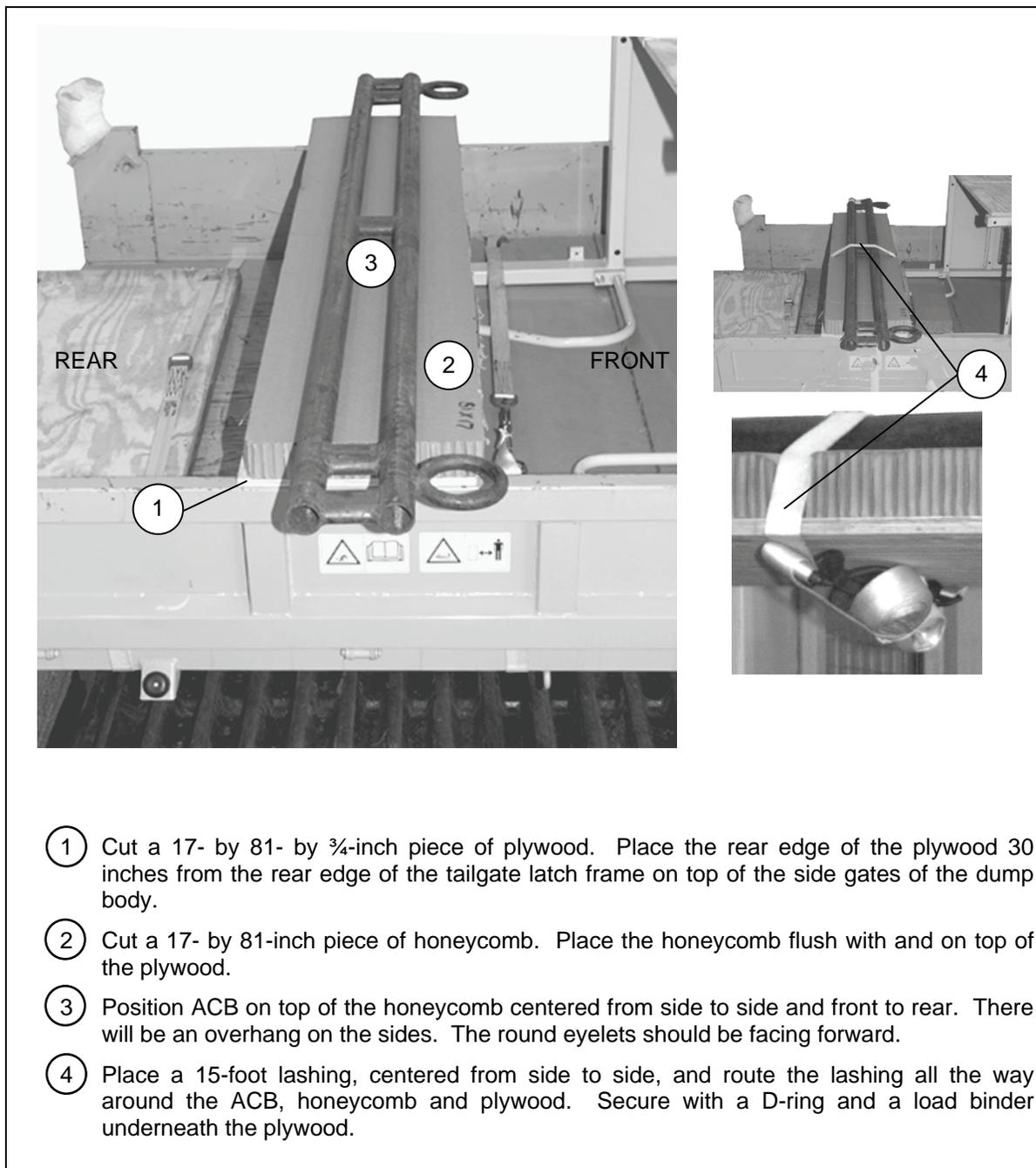
**Figure 10-17. Parachute Stowage Platform Installed**



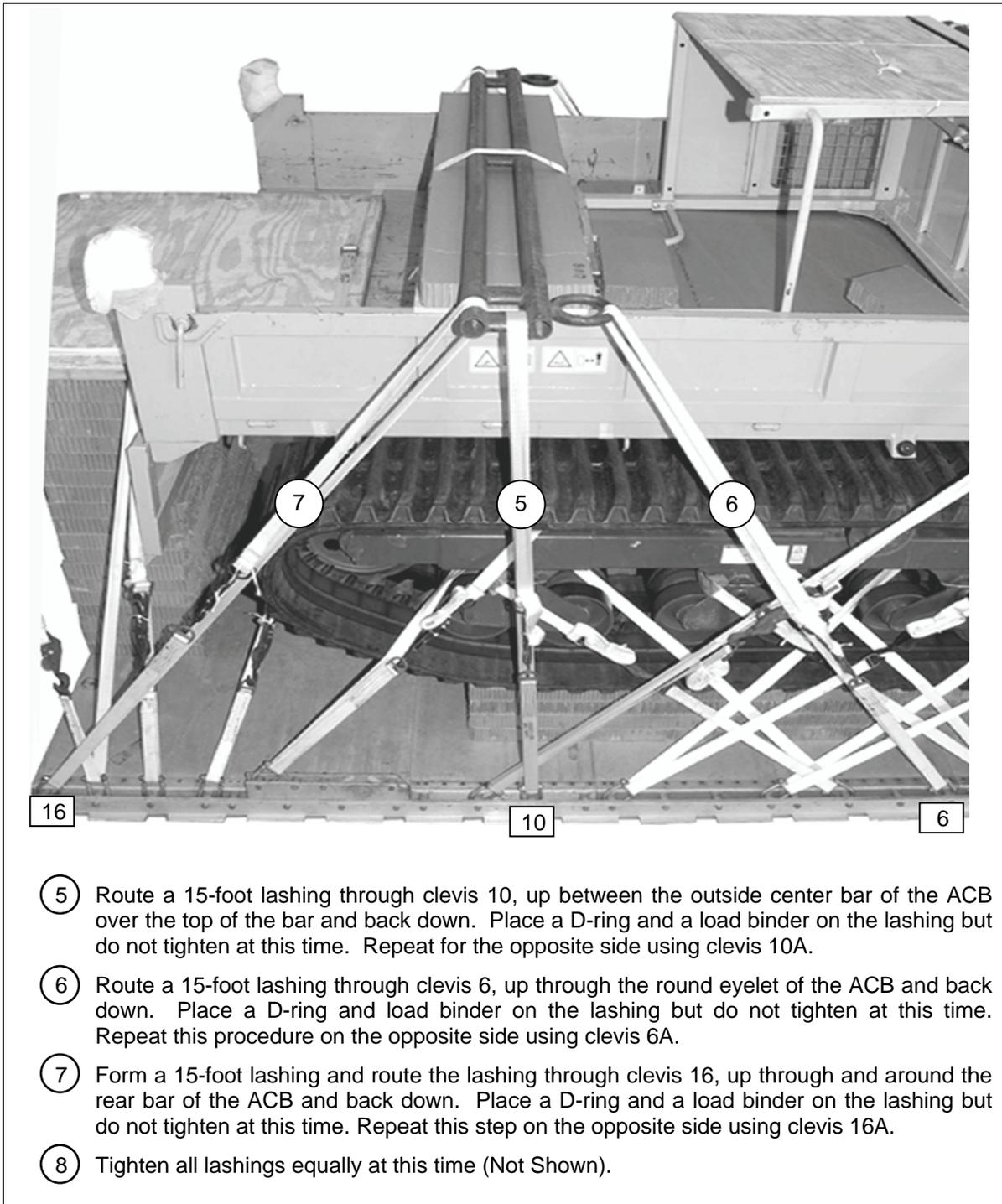
**Figure 10-17. Parachute Stowage Platform Installed (Continued)**

## INSTALLING THE REAR ACB

10-10. Install the rear ACB as shown in Figure 10-18.



**Figure 10-18. Rear ACB Installed and Secured**



- ⑤ Route a 15-foot lashing through clevis 10, up between the outside center bar of the ACB over the top of the bar and back down. Place a D-ring and a load binder on the lashing but do not tighten at this time. Repeat for the opposite side using clevis 10A.
- ⑥ Route a 15-foot lashing through clevis 6, up through the round eyelet of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten at this time. Repeat this procedure on the opposite side using clevis 6A.
- ⑦ Form a 15-foot lashing and route the lashing through clevis 16, up through and around the rear bar of the ACB and back down. Place a D-ring and a load binder on the lashing but do not tighten at this time. Repeat this step on the opposite side using clevis 16A.
- ⑧ Tighten all lashings equally at this time (Not Shown).

**Figure 10-18. Rear ACB Installed and Secured (Continued)**

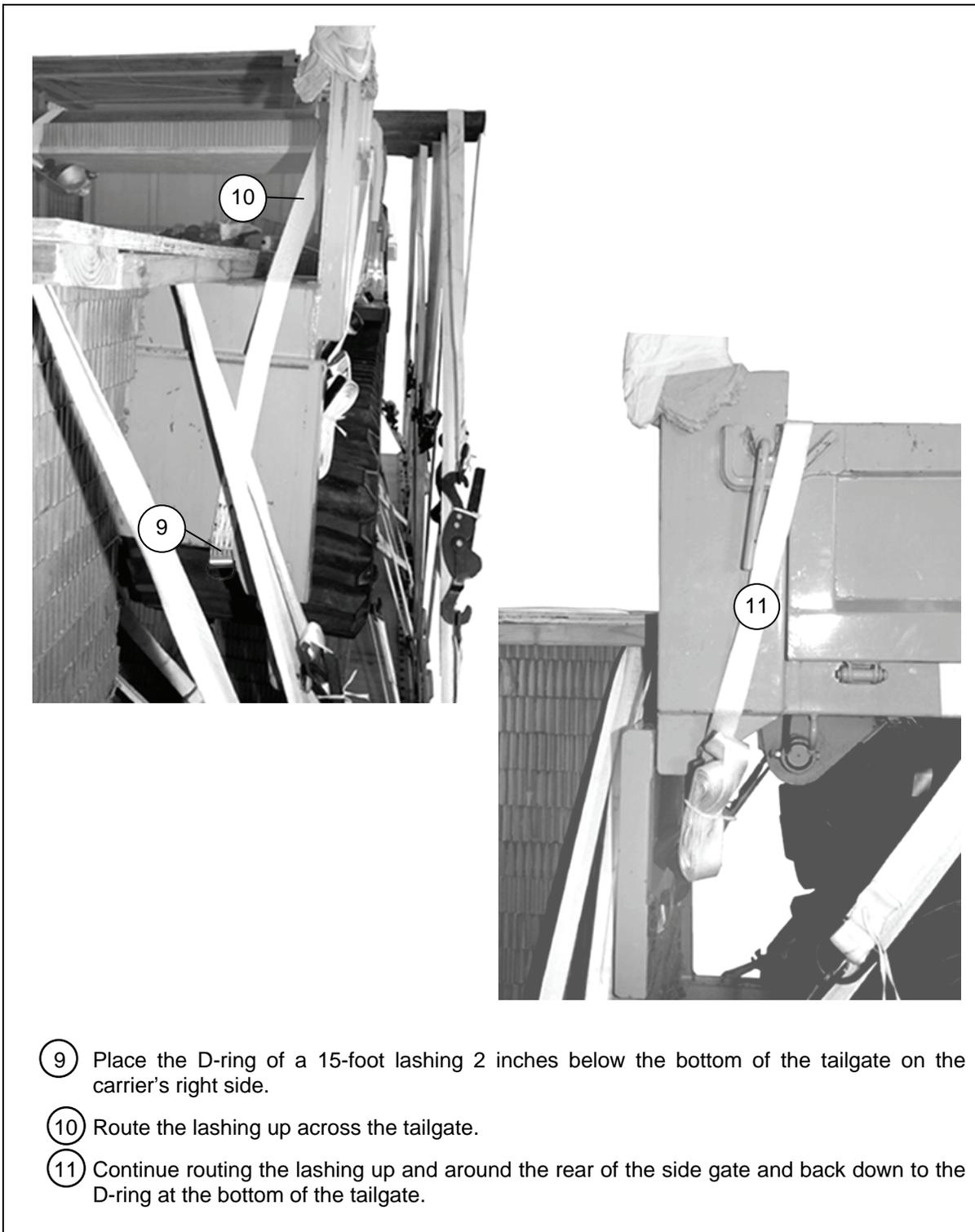


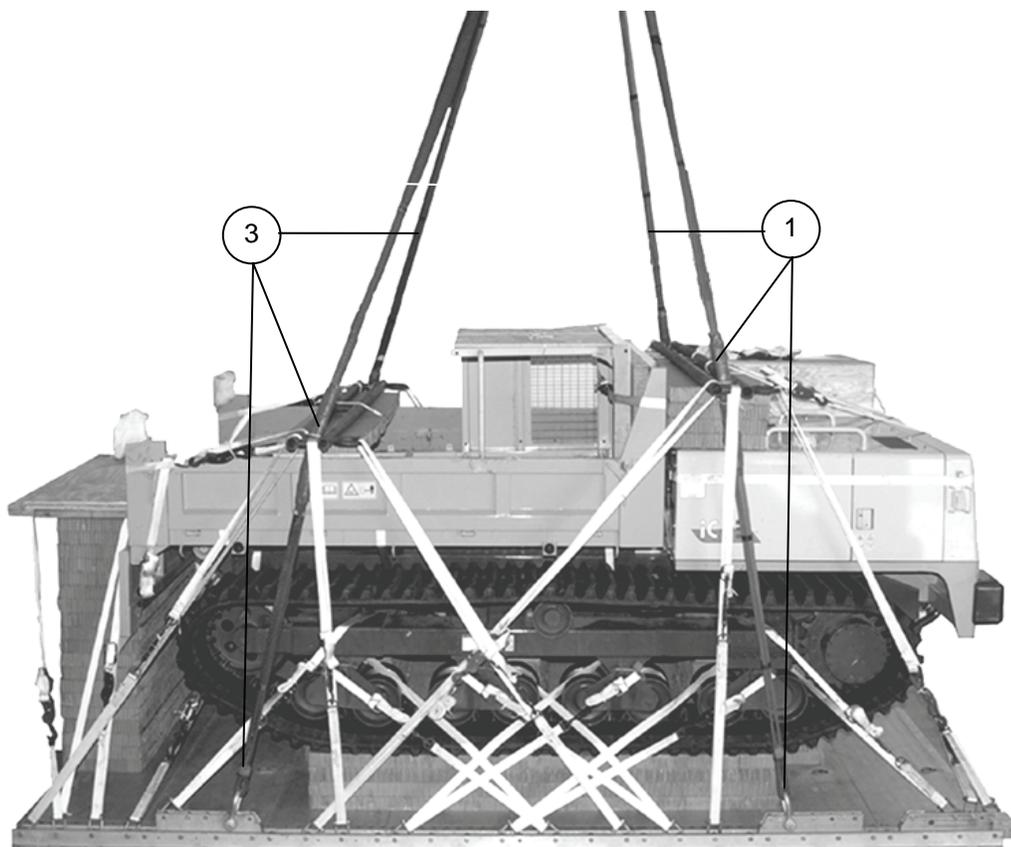
Figure 10-18. Rear ACB Installed and Secured (Continued)



## INSTALLING SUSPENSION SLINGS

10-11. Install the suspension slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 10-19.

**Note.** Pad and tape any sharp areas the suspension slings may come into contact with.

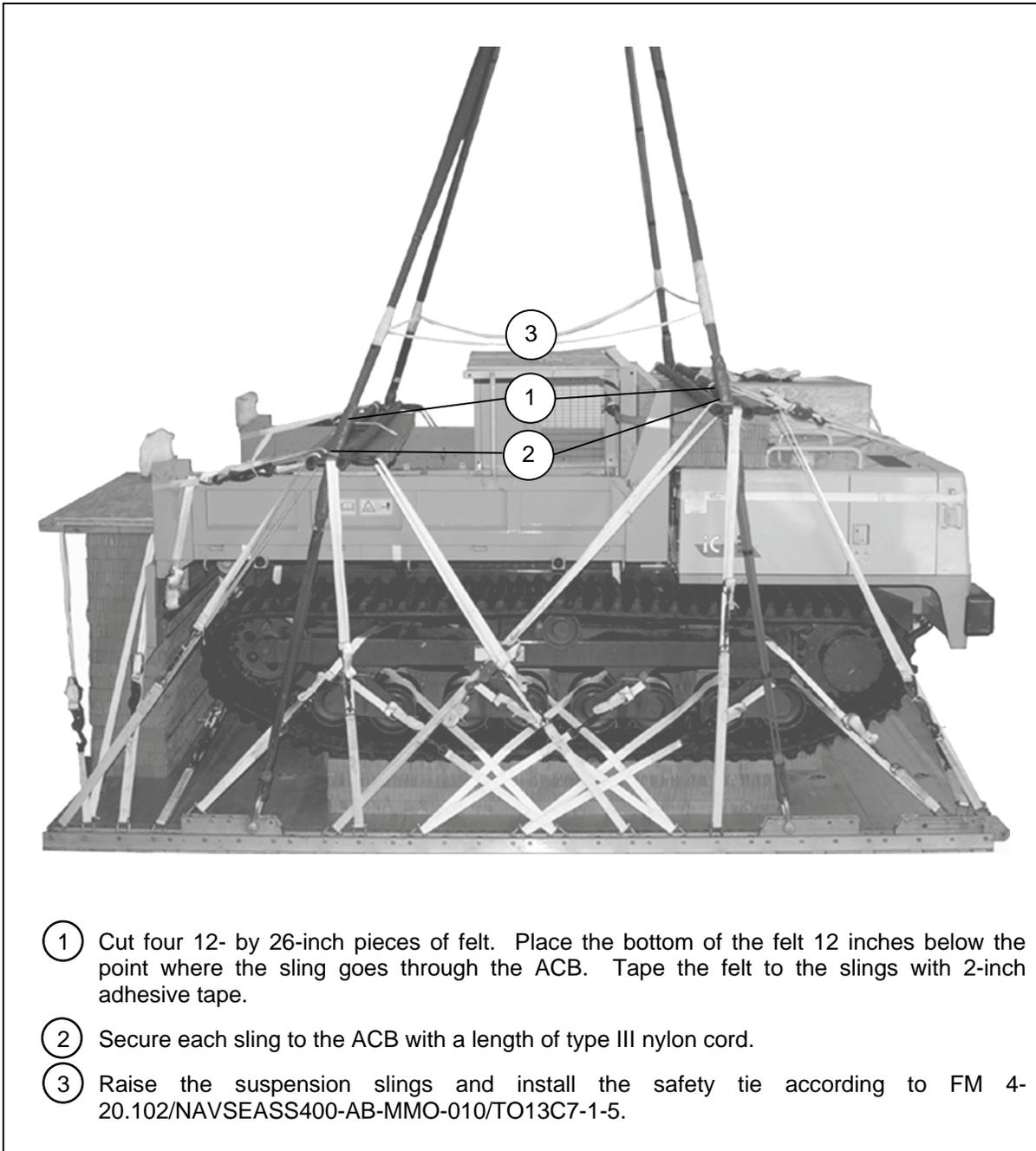


- ① Attach a 16-foot, (4-loop), type XXVI nylon sling to each front suspension bracket with a large clevis. Route each 16-foot (4-loop), type XXVI nylon sling through the front ACB on each side.
- ② Attach a 3-foot, (4-loop), type XXVI nylon sling to the top of each 16-foot (4-loop), type XXVI nylon sling with a 5 1/2-inch two-point link. Pad each link with felt and tape (Not Shown).
- ③ Attach a 20-foot, (4-loop), type XXVI nylon sling to each rear suspension bracket with a large clevis. Route each 20-foot (4-loop), type XXVI nylon sling through the rear ACB on each side.

**Figure 10-19. Suspension Slings Installed**

## PADDING, SECURING AND SAFETY TIEING SUSPENSION SLINGS

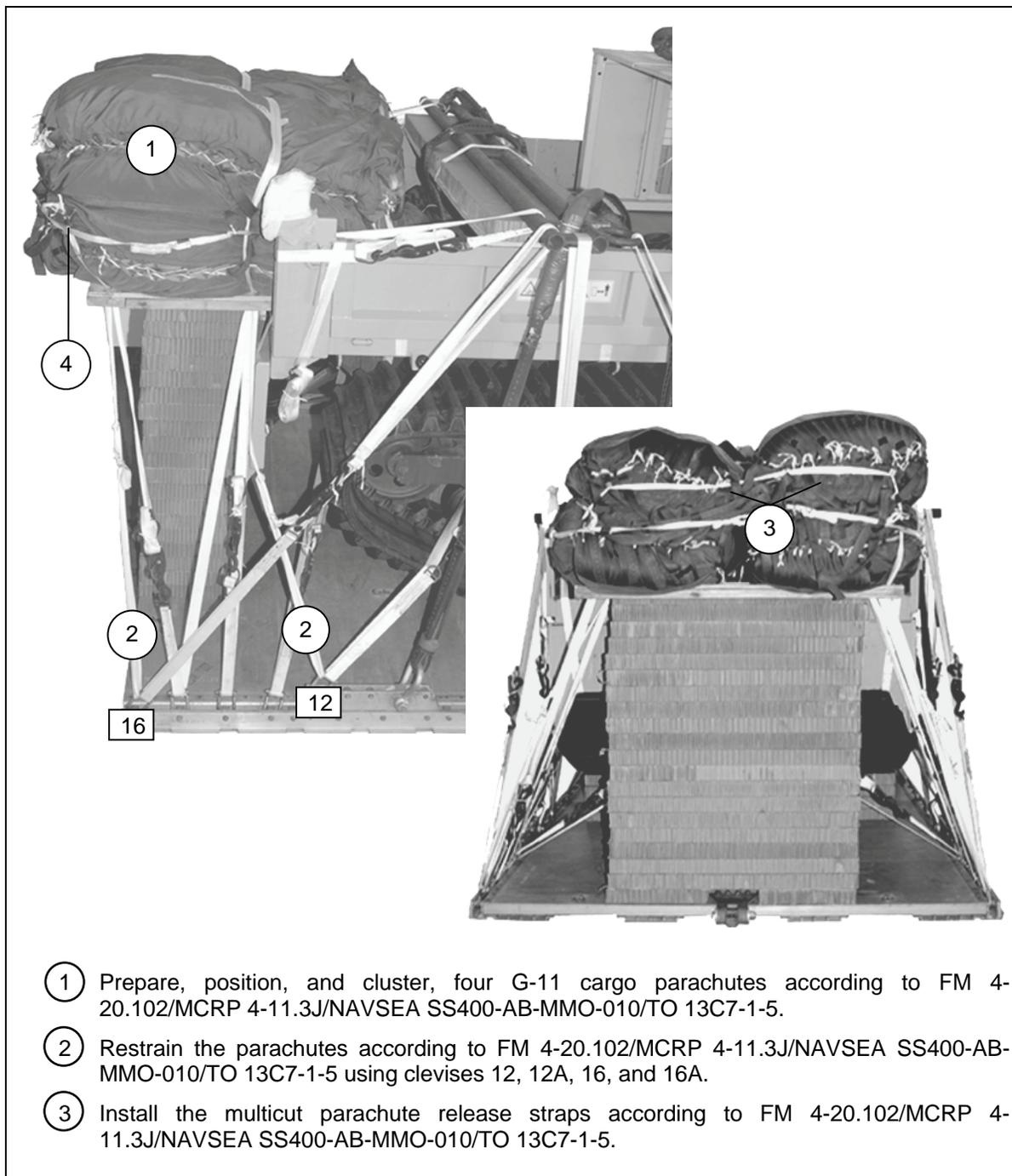
10-12. Pad, secure and safety tie the suspension slings according to FM 4-20.102/MCRP 4-11.3J /NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 10-20.



**Figure 10-20. Suspension Slings Padded, Secured and Safe Tied**

## STOWING CARGO PARACHUTES

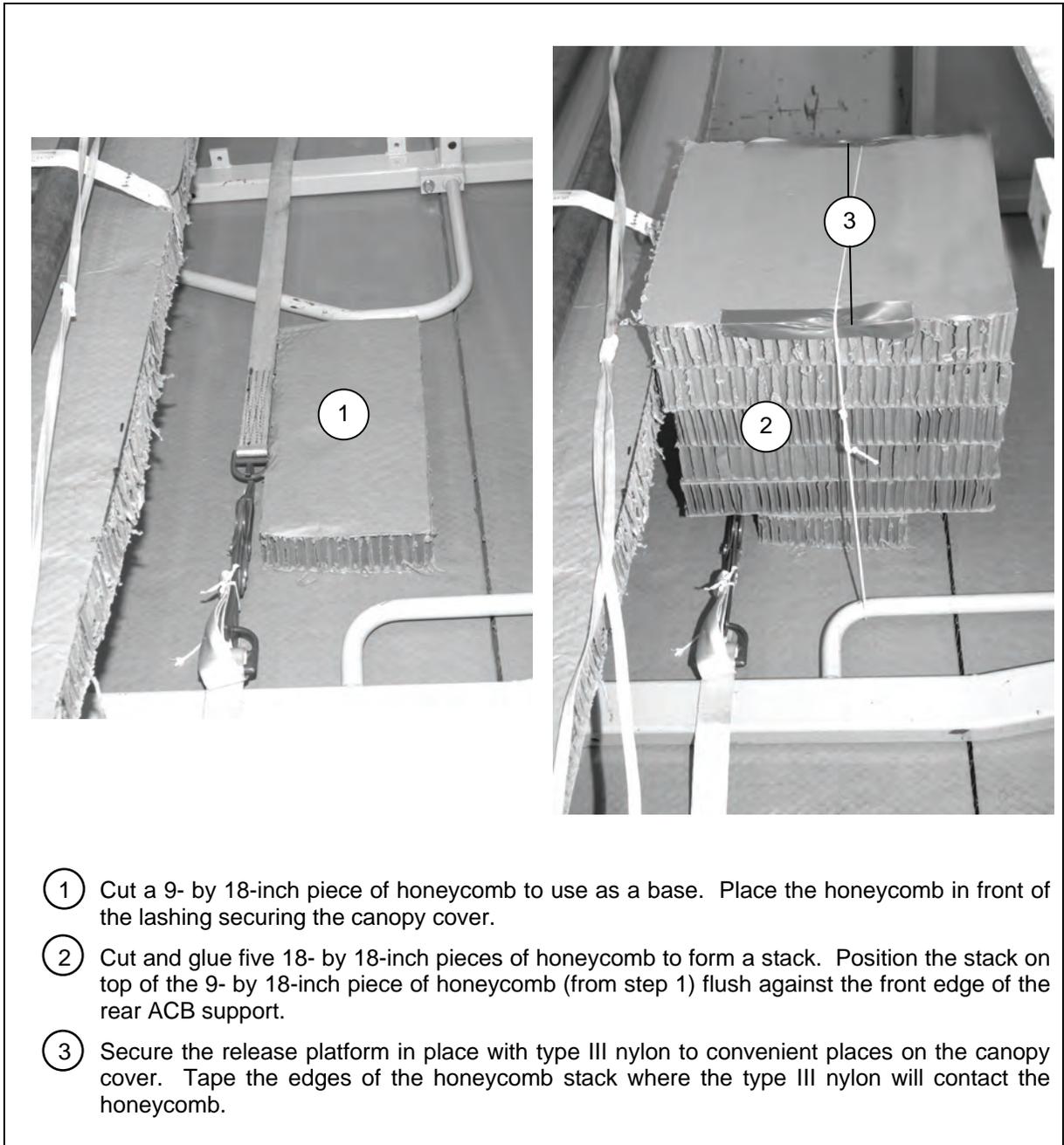
10-13. Prepare, stow, cluster, and restrain four G-11 cargo parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 10-21.



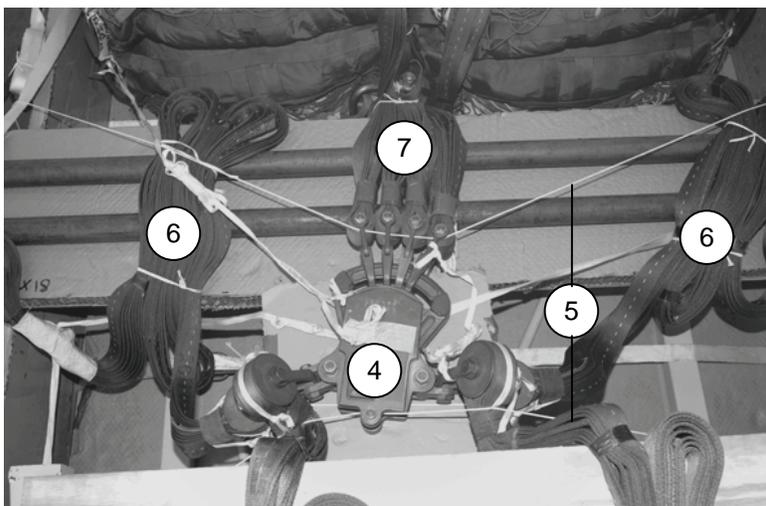
**Figure 10-21. Cargo Parachutes Stowed and Restrained**

## INSTALLING M-2 RELEASE ASSEMBLY

10-14. Install the M-2 parachute release assembly according to FM 4-20.102/MCRP 4-11.3J /NAVSEA SS 400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 9-22.



**Figure 10-22. M-2 Parachute Release Assembly Installed**

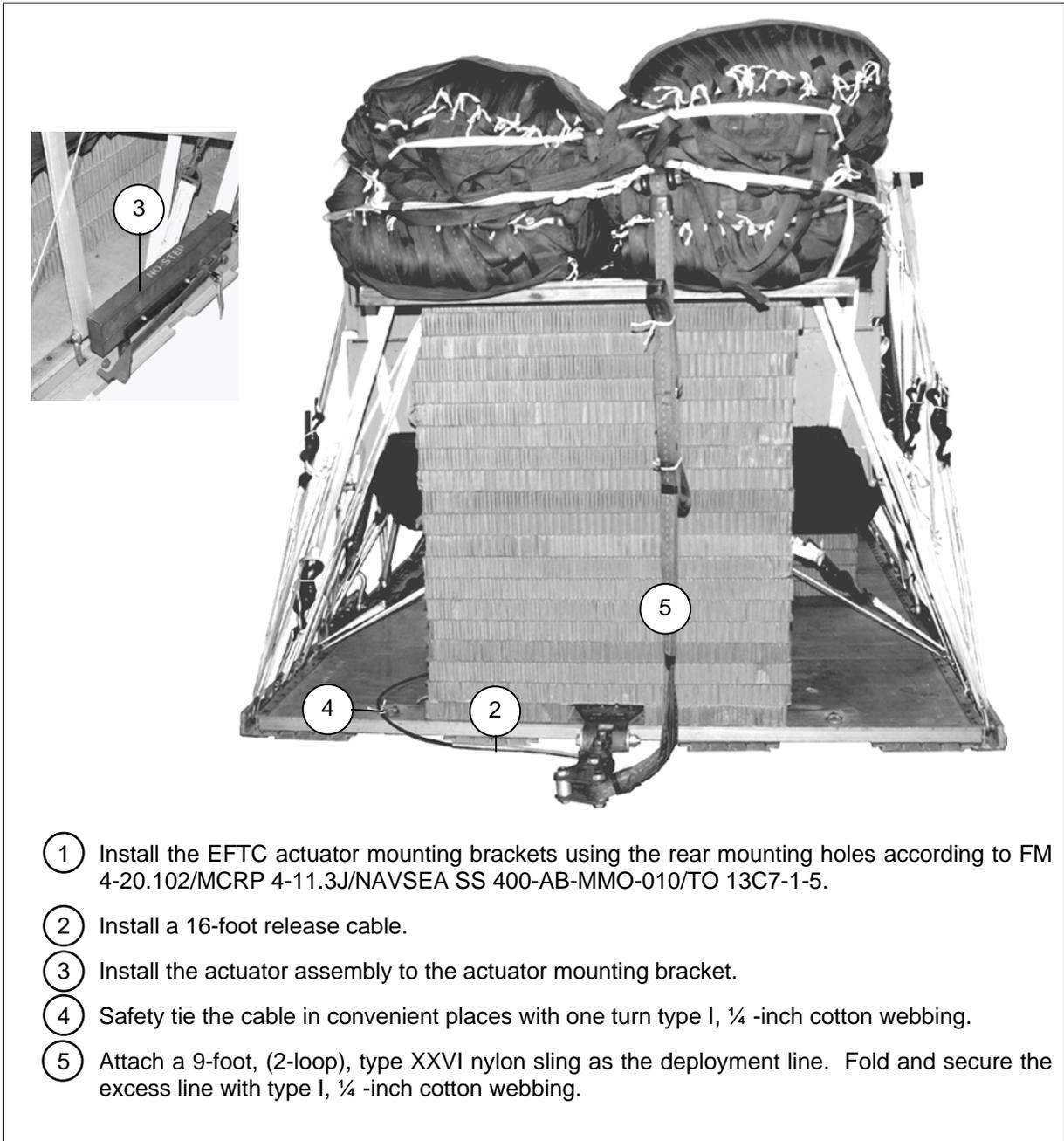


- ④ Install an M-2 parachute release with the top of the upper suspension link flush with the rear edge of the release platform. Attach the suspension slings and riser extensions according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ⑤ Restrain the release with type III nylon cord routed through the parachute release connectors to bushings 3 and 3A of the rear suspension bracket and around the spacer using bushings 4 and 4A of the front suspension bracket.
- ⑥ S-fold the suspension slings and secure with a length of type I, ¼-inch cotton webbing.
- ⑦ Tie the exposed riser extensions with lengths of type I, ¼-inch cotton webbing.

**Figure 10-22. M-2 Parachute Release Assembly Installed (Continued)**

## INSTALLING EXTRACTION SYSTEM

10-15. Install the Extraction Force Transfer Coupling (EFTC) system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 10-23. Install the Extraction Parachute Jettison System (EPJS) according to FM 4-20.102/MCRP 4-11.3J/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 if applicable.



- ① Install the EFTC actuator mounting brackets using the rear mounting holes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/TO 13C7-1-5.
- ② Install a 16-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.

**Figure 9-23. Extraction System Installed**

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

10-16. Install the provisions for the emergency restraints on the platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **PLACING EXTRACTION PARACHUTE**

10-17. Select the extraction parachute and extraction line according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/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**

10-18. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 10-24. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, center of balance (CB) and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

10-19. Use the equipment listed in Table 10-3 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight .....	17,480 pounds
Maximum Weight .....	17,900 pounds
Height .....	98 ½ inches
Width .....	108 inches
Length .....	210 inches
Overhang: Front.....	0 inches
Rear (EFTC).....	18 inches
Rear (EPJS) .....	30 inches
Center of Balance (CB) (from front edge of platform) .....	88 inches

**Figure 10-24. IC 45 Crawler Carrier Rigged on a Type V Platform for Low-Velocity Airdrop**

**Table 10-3. Equipment Required for Rigging the IC 45 Crawler Carrier on a Type V Platform for Low-Velocity Airdrop**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-2712-8713	Adhesive, paste, 10-gal	As required
1670-010-035-6054	Bridle, extraction line lead, (line bag for DES)	1
4030-00-090-5354	Clevis, large	5
4030-00-678-8562	Clevis, medium	6
1670-00-360-0328	Cover, clevis, large	4
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Extraction Force Transfer Coupling (EFTC)	
1670-00-434-5785	Coupling assembly, airdrop, EFTC, w 16-ft cable	1
1670-010-475-1990	Extraction Parachute Jettison System (EPJS)	1
8305-00-290-5584	Felt, ½-inch	As required
8305-00-290-5584	Felt, ³⁄₁₆-inch	As required
1670-00-0012-4391	Knife, parachute bag (for DES)	2
5340-00-040-8219	Knife, multi-parachute release strap, webbing	2
1670-010-1812-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
	Line Multi-Loop:	
	For deployment line:	
1670-010-0611-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For drogue:	
1670-010-064-4452	60-ft (1-loop), type XXVI nylon webbing (DES)	1
	For extraction:	
1670-010-0611-6313	60-ft (3-loop), type XXVI nylon (C-130 aircraft)	1
1670-010-107-7651	140-ft (3-loop), type XXVI nylon (C-17 aircraft)	1
	For riser extension:	
1670-010-0611-6313	60-ft (3-loop), type XXVI nylon webbing	4
	For suspension:	
1670-010-0611-6306	12-ft (4-loop), type XXVI nylon webbing	2
1670-010-0611-6308	16-ft (4-loop), type XXVI nylon webbing	2
1670-010-064-4453	20-ft (4-loop), type XXVI nylon webbing	2
	Link:	1
1670-010-4912-6418	Assembly small, two-point, 3 ¾-inch (drogue)	1
1670-010-4912-6420	Assembly large, two-point 5 ½-inch	3
1670-010-0711-5637	Jettison, C-130 (DES)	1
1670-010-4812-8259	Link, Parachute connector (TRM H-block) (C-17)	1

**Table 10-3. Equipment Required for Rigging the IC 45 Crawler Carrier on a Type V Platform for Low-Velocity Airdrop (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
	Lumber:	
5510-00-220-6146	2- by 4-inch	2
5510-00-220-6148	2- by 6-inch	4
5510-00-220-6246	2- by 8-inch	1
5510-00-220-6274	4- by 4-inch	5
5530-00-128-4981	Plywood, ¾-inch sheet	5
5530-00-2611-8195	Plywood, ½-inch sheet	1
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
1670-00-7512-3928	Pad, energy-dissipating, honeycomb,	23 sheets
	Parachute:	
1670-010-016-7841	G-11	4
1670-00-040-8135	28-ft, extraction, heavy-duty	1
1670-010-0612-3717	15-ft, Extraction Drogue (DES)	1
	Platform, airdrop, type V, 16-ft:	1
1670-010-3512-8425	Bracket assembly, component (EFTC)	1
1670-010-3512-8424	Bracket, assembly, extraction	1
1670-010-1611-2372	Clevis, load tiedown	34
1670-010-247-2389	Link, Suspension bracket, type V	4
1670-010-1611-2381	Link, Tandem, link sups. assembly	2
1670-010-097-8817	Release, cargo parachute, M-2,	1
7510-00-266-5016	Tape, adhesive, 11-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft webbing	50
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	50
1670-00-937-0272	Binder, load, 10-000-lb	45
	Webbing:	
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8305-00-268-2411	Cotton, type I, ¼-inch	As required
8305-00-0811-5752	Nylon, tubular, ½-in, natural	As required
8305-00-2612-3591	Nylon, type VIII	As required

## Chapter 11

# Rigging IC45-2 IHI Crawler Carrier on a Type V Platform for Low-Velocity Airdrop

### DESCRIPTION OF LOAD

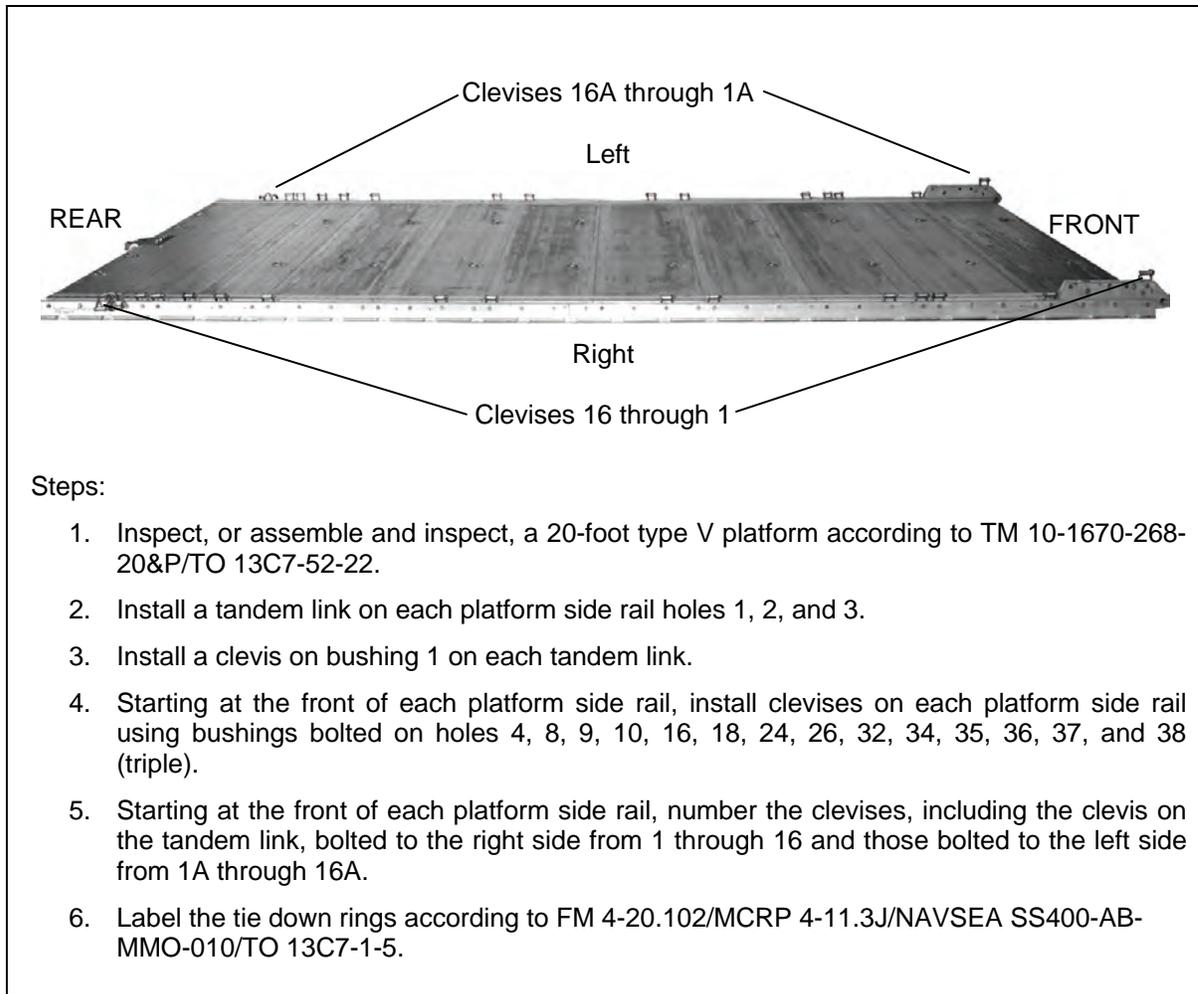
11-1. The IC45-2 IHI crawler carrier is described in the introduction. The accompanying load consists of fifteen 5-gallon diesel cans, fifteen 5-gallon water cans, one 5-gallon engine oil can, one 5-gallon hydraulic oil can, and six cases of Meals-Ready-to-Eat (MRE) for a total weight of 1,640 pounds. The load is rigged on a 20-foot, type V airdrop platform and requires five G-11 cargo parachutes. The total rigged weight of the load is 21,480 pounds. The IC45-2 IHI crawler carrier is shown in Figure 11-1.



Figure 11-1. IC45-2 IHI Crawler Carrier

## PREPARING PLATFORM

11-2. Prepare a 20-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.



**Steps:**

1. Inspect, or assemble and inspect, a 20-foot type V platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on each platform side rail holes 1, 2, and 3.
3. Install a clevis on bushing 1 on each tandem link.
4. Starting at the front of each platform side rail, install clevises on each platform side rail using bushings bolted on holes 4, 8, 9, 10, 16, 18, 24, 26, 32, 34, 35, 36, 37, and 38 (triple).
5. 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 16 and those bolted to the left side from 1A through 16A.
6. Label the tie down rings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

**Figure 11-2. Platform Prepared**

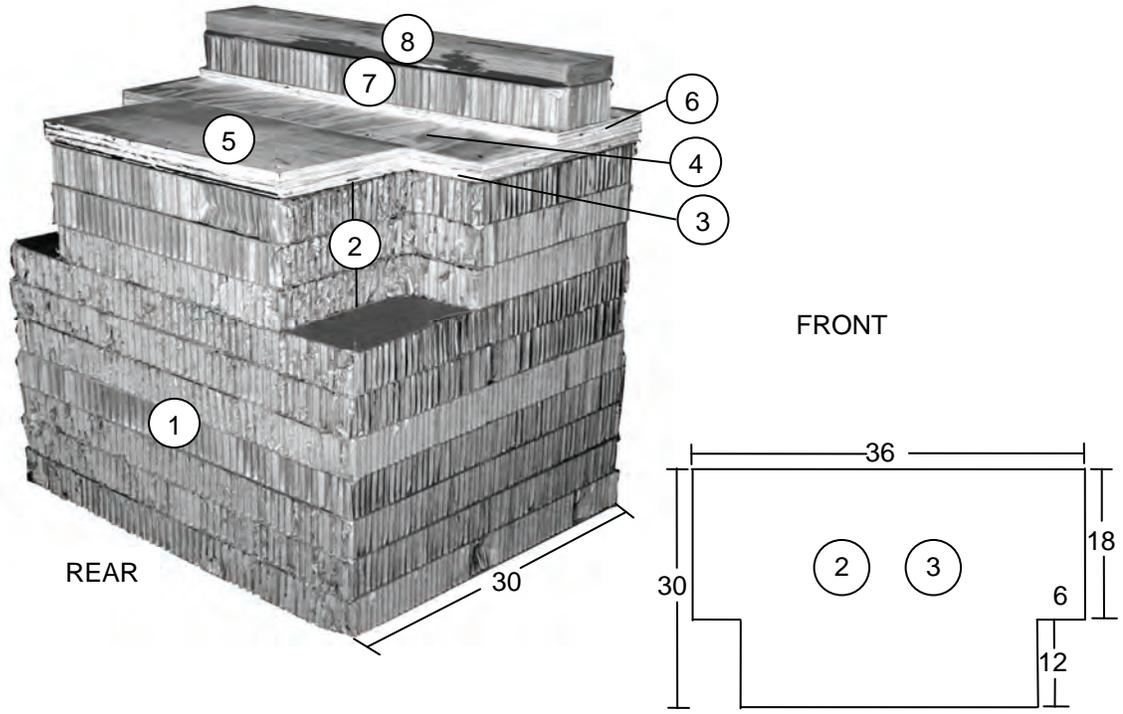
## BUILDING AND POSITIONING HONEYCOMB STACKS

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**

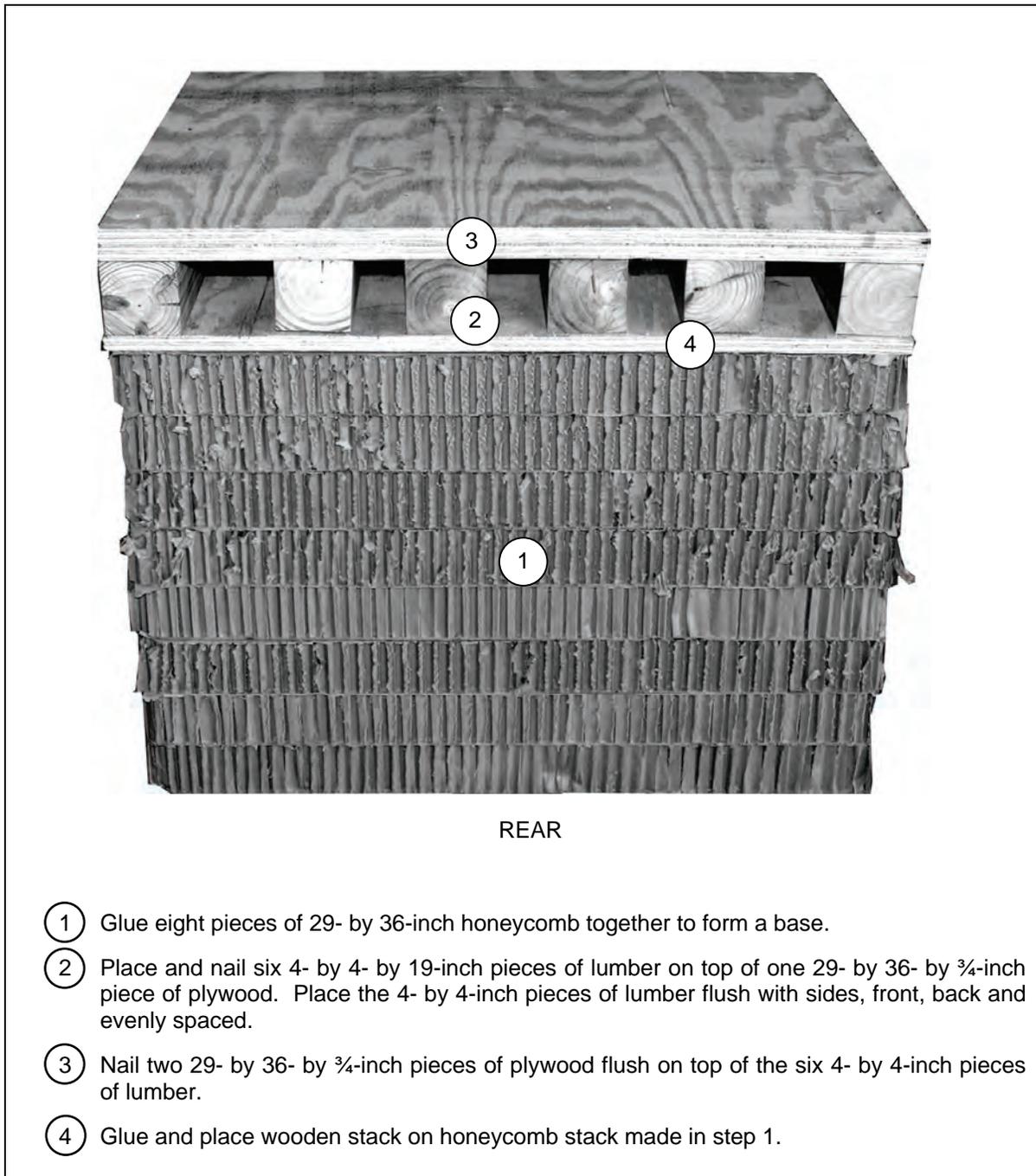
<b>Stack Number</b>	<b>Pieces</b>	<b>Width (Inches)</b>	<b>Length (Inches)</b>	<b>Material</b>	<b>Instructions</b>
1	10	36	30	Honeycomb	See Figure 10-3.
	1	36	6	Honeycomb	
	1	36	18	¾-Inch Plywood	
	1	36	10	¾-Inch Plywood	
	1	36	30	¾-Inch Plywood	
	1	24	12	10-Inch Plywood	
	1	2 X 6	36	Lumber	
2	8	36	29	Honeycomb	See Figure 10-4.
	3	36	29	¾-Inch Plywood	
	6	4 X 4	29	Lumber	
3	8	36	19	Honeycomb	See Figure 10-5.
	2	36	19	¾-Inch Plywood	
	1	36	19	10-Inch Plywood	
	2	2 X 4	19	Lumber	
	2	2 X 6	19	Lumber	
	6	4 X 4	19	Lumber	
4	8	36	19	Honeycomb	See Figure 10-6.
	3	36	19	¾-Inch Plywood	
	1	23 ¾	16	10-Inch Plywood	
	2	2 X 6	19	Lumber	
	6	4 X 4	19	Lumber	
5	4	24	96	Honeycomb	See Figure 10-6.
6	4	24	96	Honeycomb	See Figure 10-6.

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

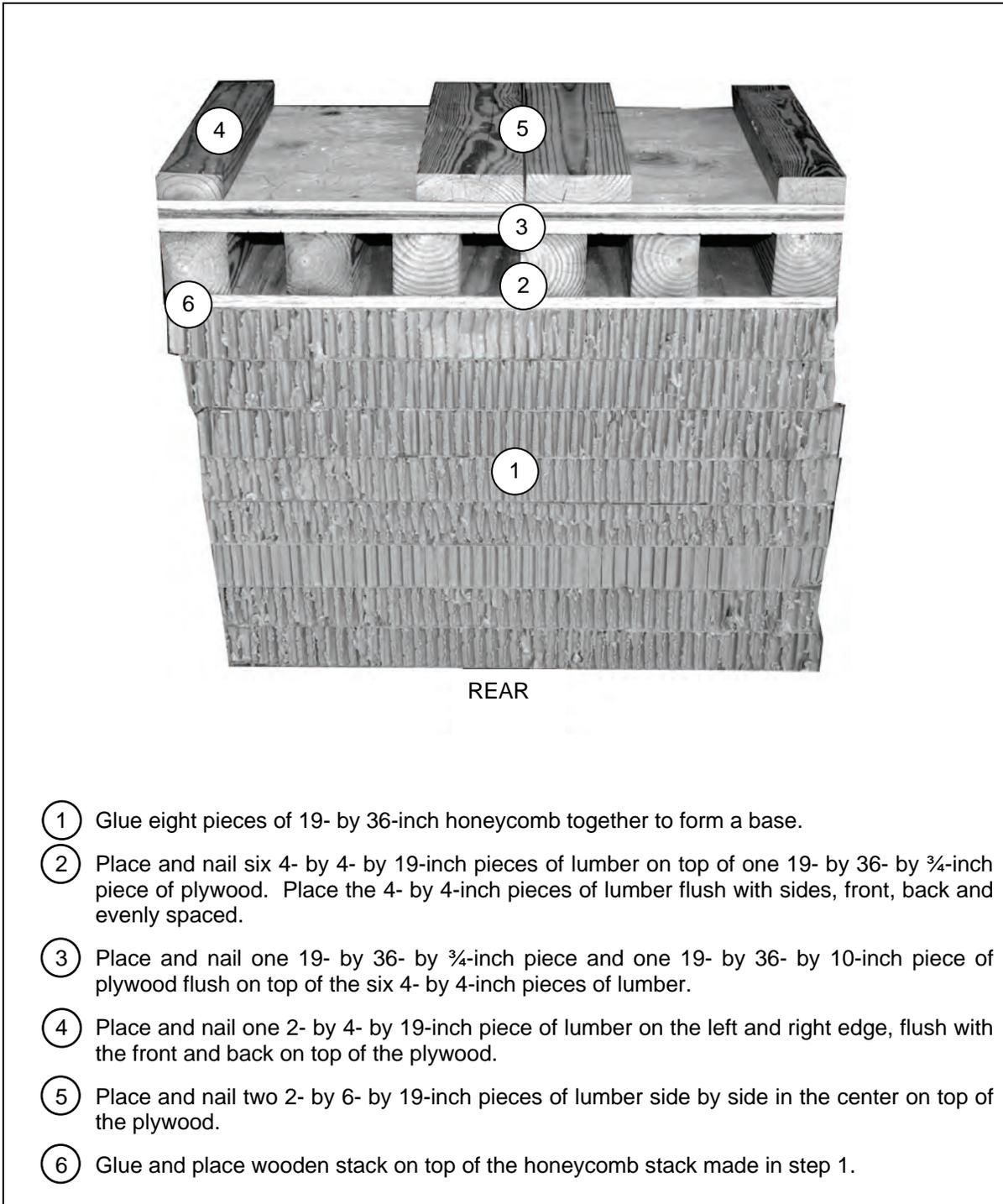


- ① Glue seven 30- by 36-inch pieces of honeycomb together to form a base.
- ② Cut three 30- by 36-inch pieces of honeycomb as shown above and glue to the honeycomb prepared in step 1.
- ③ Cut one 30- by 36-inch piece of  $\frac{3}{4}$ -inch plywood as shown above and glue on top of the honeycomb prepared in step 2.
- ④ Cut one 18- by 36- by  $\frac{3}{4}$ -inch piece of plywood and glue it flush with the front edge of the stack.
- ⑤ Cut one 12- by 24- by 1-inch piece of plywood and glue it flush with the rear edge of the stack.
- ⑥ Cut one 10- by 36- by  $\frac{3}{4}$ -inch piece of plywood and glue it flush with the front edge of the stack.
- ⑦ Cut one 6- by 36- by  $\frac{3}{4}$ -inch piece of honeycomb and glue it 4 inches from the front edge of the stack.
- ⑧ Cut one 2- by 6- by 36-inch piece of lumber and glue it on the honeycomb placed in step 7.

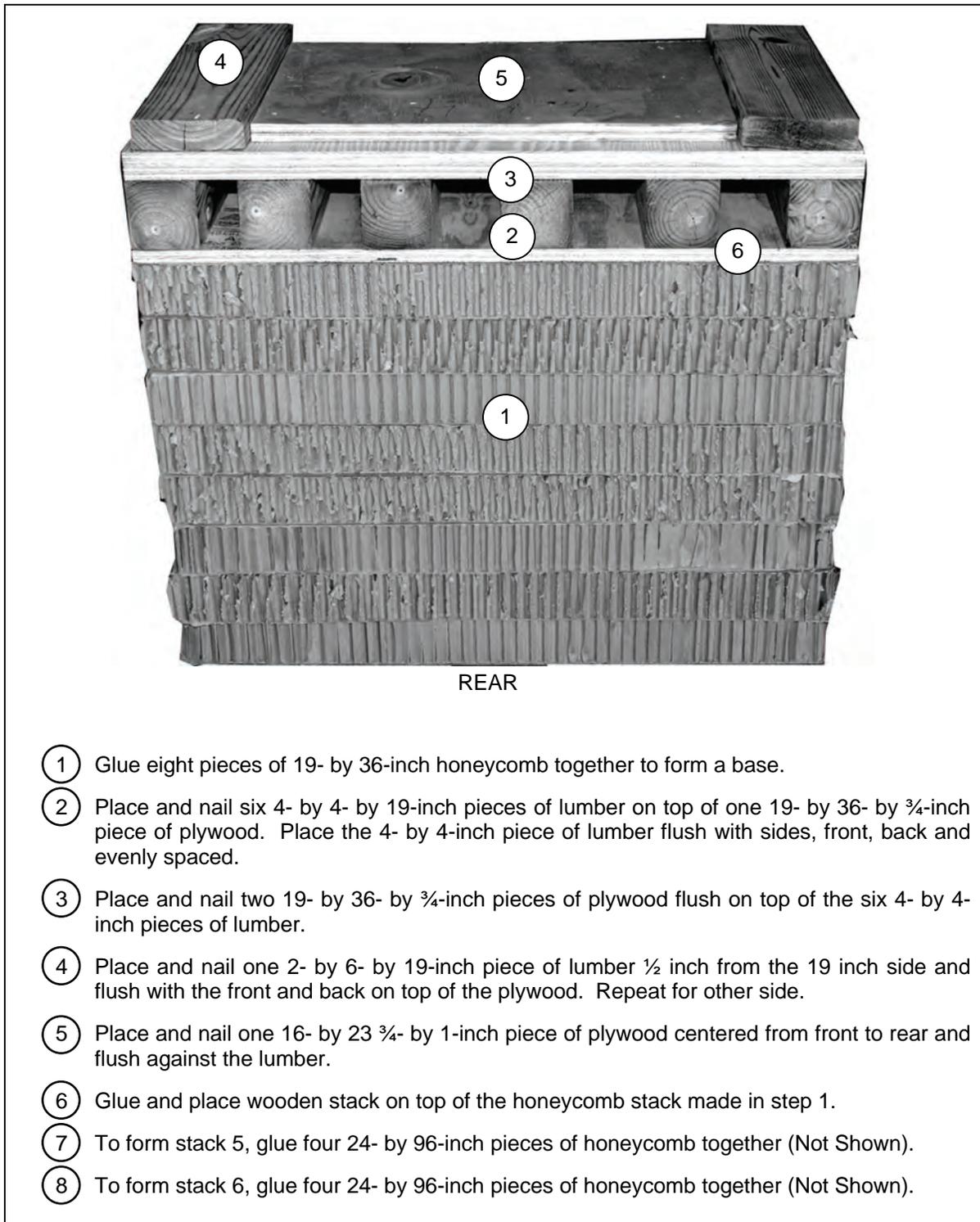
**Figure 11-3. Honeycomb Stack 1 Prepared**



**Figure 11-4. Honeycomb Stack 2 Prepared**

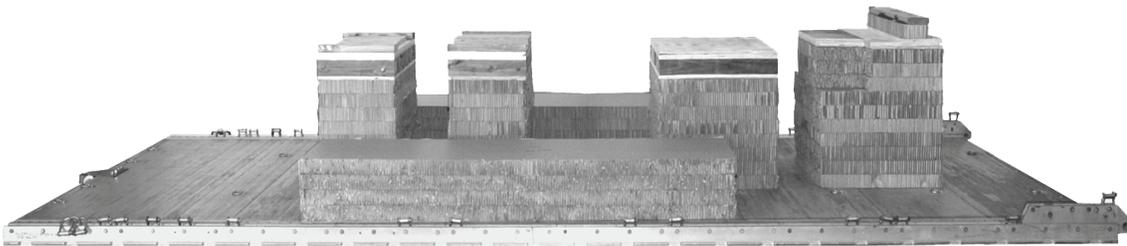
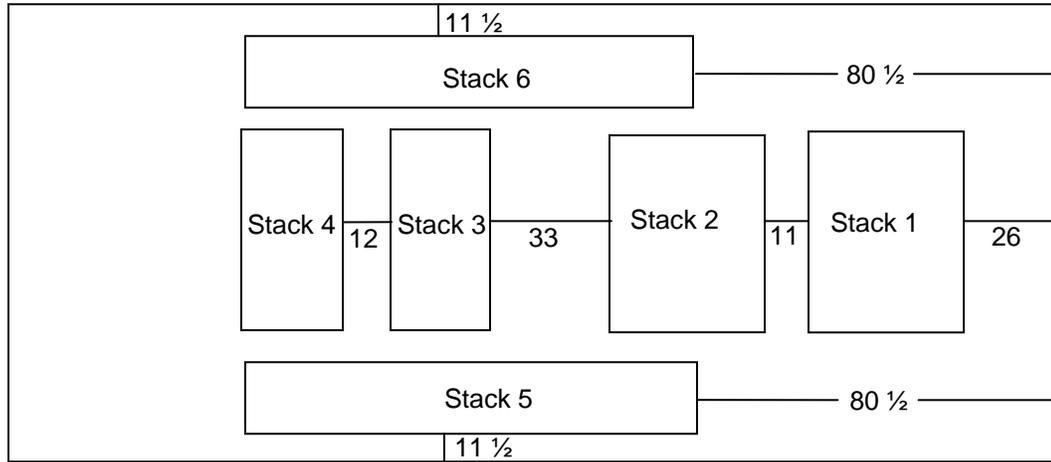


**Figure 11-5. Honeycomb Stack 3 Prepared**



**Figure 11-6. Honeycomb Stacks 4, 5 and 6 Prepared**

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



<b>Stack Number</b>	<b>Position of Stacks on the Platform</b>
1	Place stack: Centered 26 inches from the front edge of the platform.
2	Centered 11 inches from stack 1 or 67 inches from the front edge of the platform.
3	Centered 33 inches from the rear edge of stack 2 or 129 inches from the front edge of the platform.
4	12 inches from the rear edge of stack 3 or 160 inches from the front edge of the platform.
5	80 1/2 inches from the front edge of the platform and 11 1/2 inches from the right side of the platform.
6	80 1/2 inches from the front edge of the platform and 11 1/2 inches from the left side of the platform.

**Figure 11-7. Honeycomb Stacks Positioned on the Platform**

## PREPARING THE IC45-2 IHI CRAWLER CARRIER

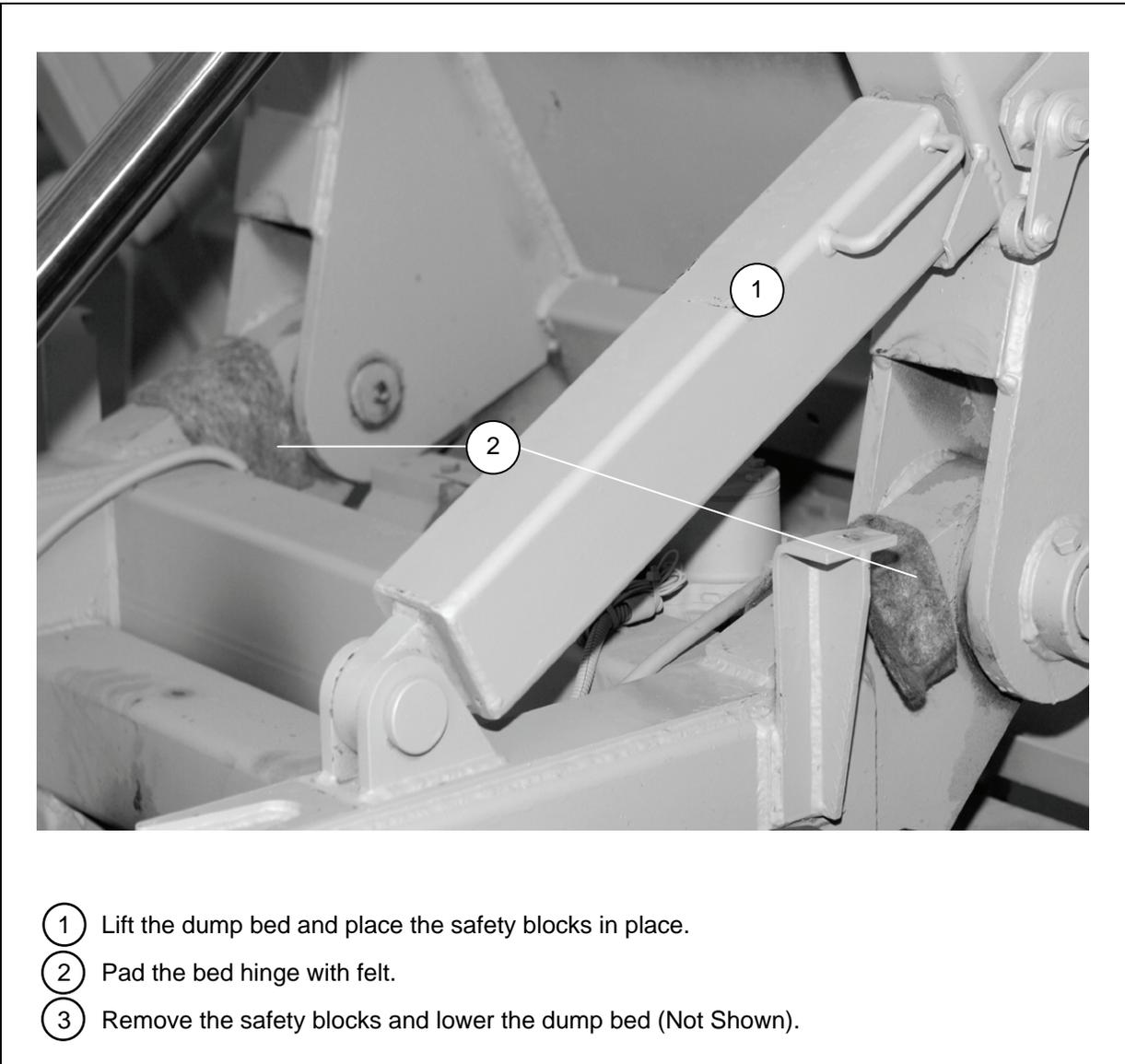
11-4. Prepare the IC45-2 IHI crawler carrier as follows: Make sure the fuel tank is no more than  $\frac{3}{4}$  full. Make sure the battery and battery compartment complies with AFMAN 24-204(I)/ TM 38-250. Prepare the rest of the IC45-2 IHI crawler carrier using Table 11-2 and as shown in Figures 11-8 through 11-20.

### CAUTION

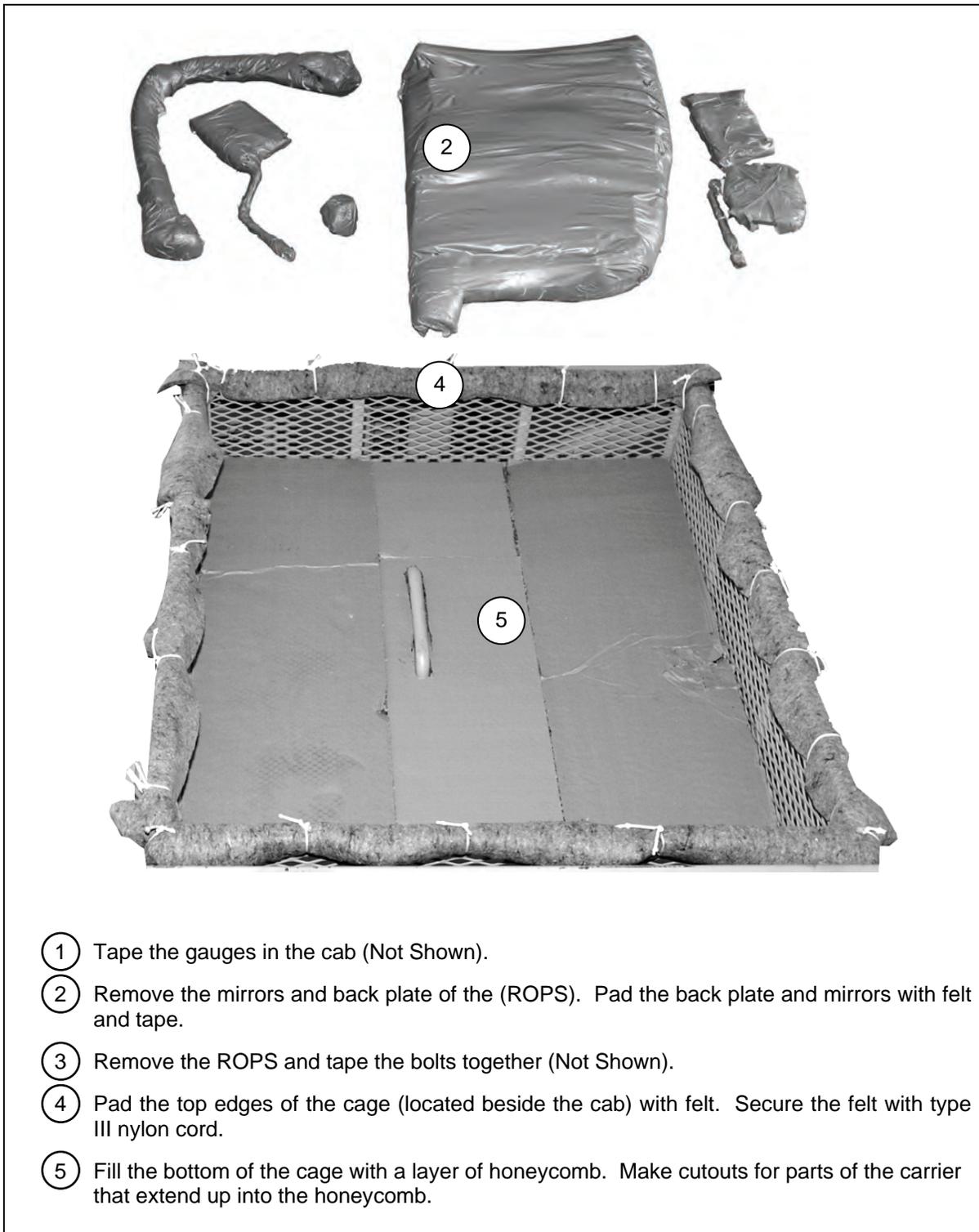
Make sure all equipment is removed by a qualified operator or qualified maintenance personnel.

**Table 11-2. Materials Required to Prepare the Cage, Build the Canopy Cover, Build the Cab Protective Box and Prepare the Bed**

<i>Pieces</i>	<i>Width</i>	<i>Length</i>	<i>Material</i>	<i>Instruction</i>
3	As required	As required	Honeycomb	See Figure 10-9.
2	32	33	$\frac{3}{4}$ -Inch Plywood	See Figure 10-10.
1	32	52	$\frac{3}{4}$ -Inch Plywood	See Figure 10-10.
1	33	50 $\frac{1}{2}$	$\frac{3}{4}$ -Inch Plywood	See Figure 10-10.
1	12	50 $\frac{1}{2}$	$\frac{3}{4}$ -Inch Plywood	See Figure 10-10.
2	2 X 4	10	Lumber	See Figure 10-10.
2	2 X 4	23 $\frac{1}{2}$	Lumber	See Figure 10-10.
2	2 X 4	28 $\frac{1}{2}$	Lumber	See Figure 10-10.
1	2 X 4	49	Lumber	See Figure 10-10.
2	2 X 4	50 $\frac{1}{2}$	Lumber	See Figure 10-10.
1	32	66	Honeycomb	See Figure 10-14.
1	36	66	Honeycomb	See Figure 10-14.
1	19	43	$\frac{3}{4}$ -Inch Plywood	See Figure 10-15.
1	35	43	$\frac{3}{4}$ -Inch Plywood	See Figure 10-15.
1	19	31	$\frac{3}{4}$ -Inch Plywood	See Figure 10-15.
1	28	52	$\frac{3}{4}$ -Inch Plywood	See Figure 10-15.
1	2 X 4	41	Lumber	See Figure 10-15.
1	2 X 4	52	Lumber	See Figure 10-15.
1	17	18	Honeycomb	See Figure 10-16.
1	17	37	Honeycomb	See Figure 10-16.
1	15	28	Honeycomb	See Figure 10-16.
2	14	18	Honeycomb	See Figure 10-16.
1	17	37	$\frac{3}{4}$ -Inch Plywood	See Figure 10-16.
1	17	61	$\frac{3}{4}$ -Inch Plywood	See Figure 10-16.
3	19	63	$\frac{3}{4}$ -Inch Plywood	See Figure 10-17.
1	17	64	$\frac{3}{4}$ -Inch Plywood	See Figure 10-17.
1	43	64	$\frac{3}{4}$ -Inch Plywood	See Figure 10-17.
1	25	36	Honeycomb	See Figure 10-19.

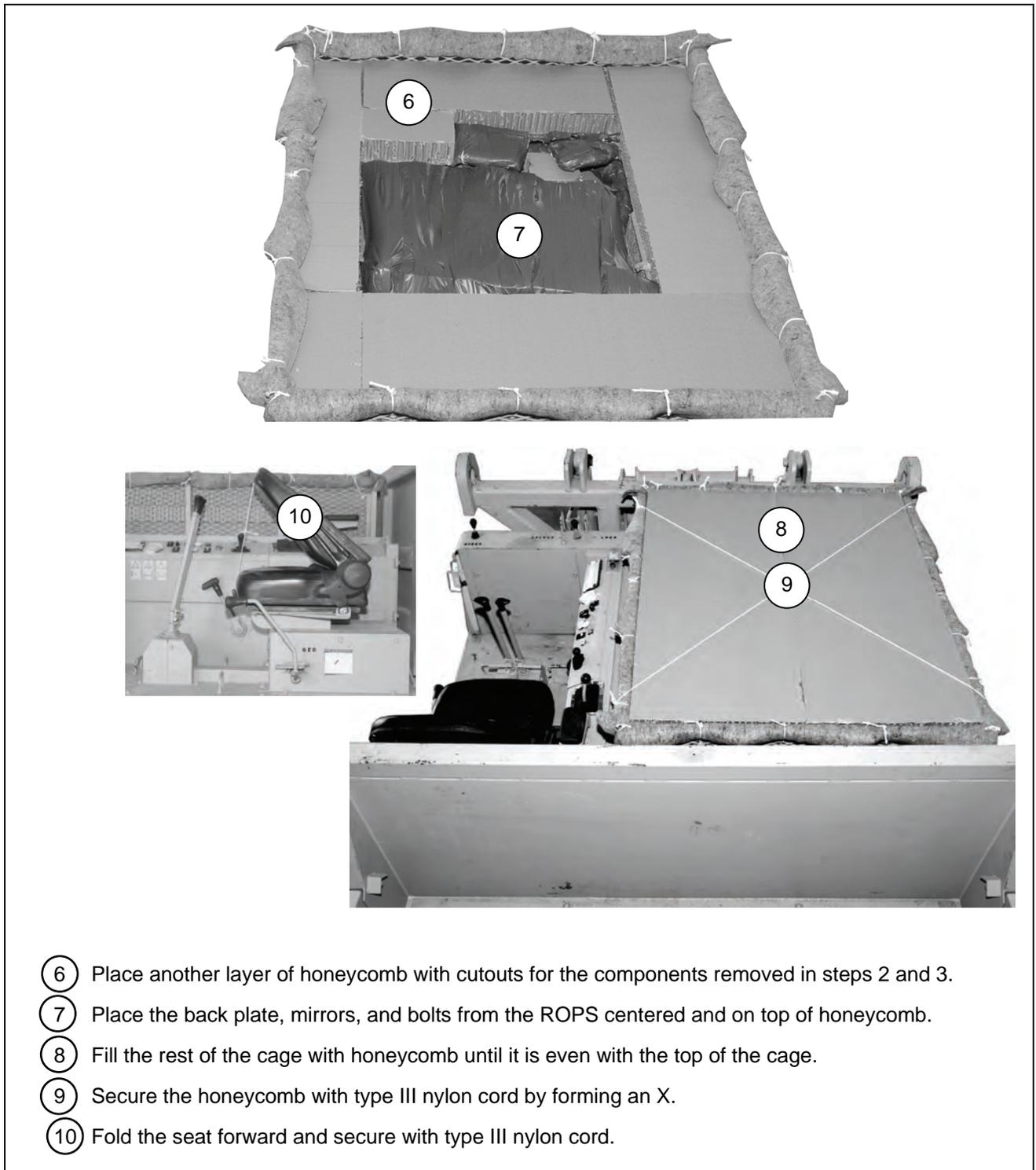


**Figure 11-8. Dump Body Prepared**



- ① Tape the gauges in the cab (Not Shown).
- ② Remove the mirrors and back plate of the (ROPS). Pad the back plate and mirrors with felt and tape.
- ③ Remove the ROPS and tape the bolts together (Not Shown).
- ④ Pad the top edges of the cage (located beside the cab) with felt. Secure the felt with type III nylon cord.
- ⑤ Fill the bottom of the cage with a layer of honeycomb. Make cutouts for parts of the carrier that extend up into the honeycomb.

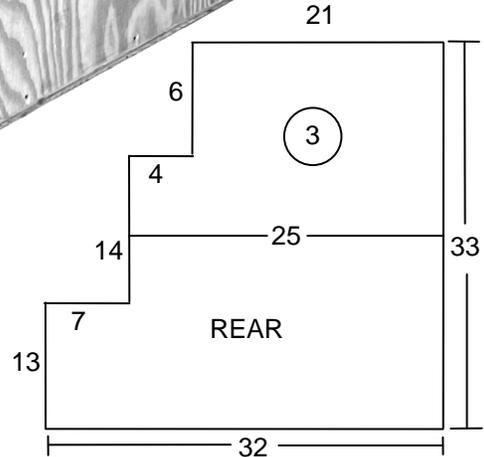
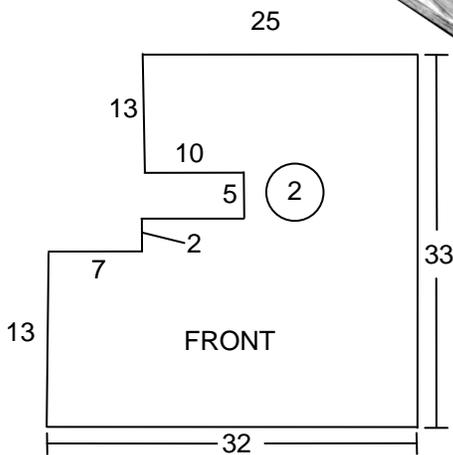
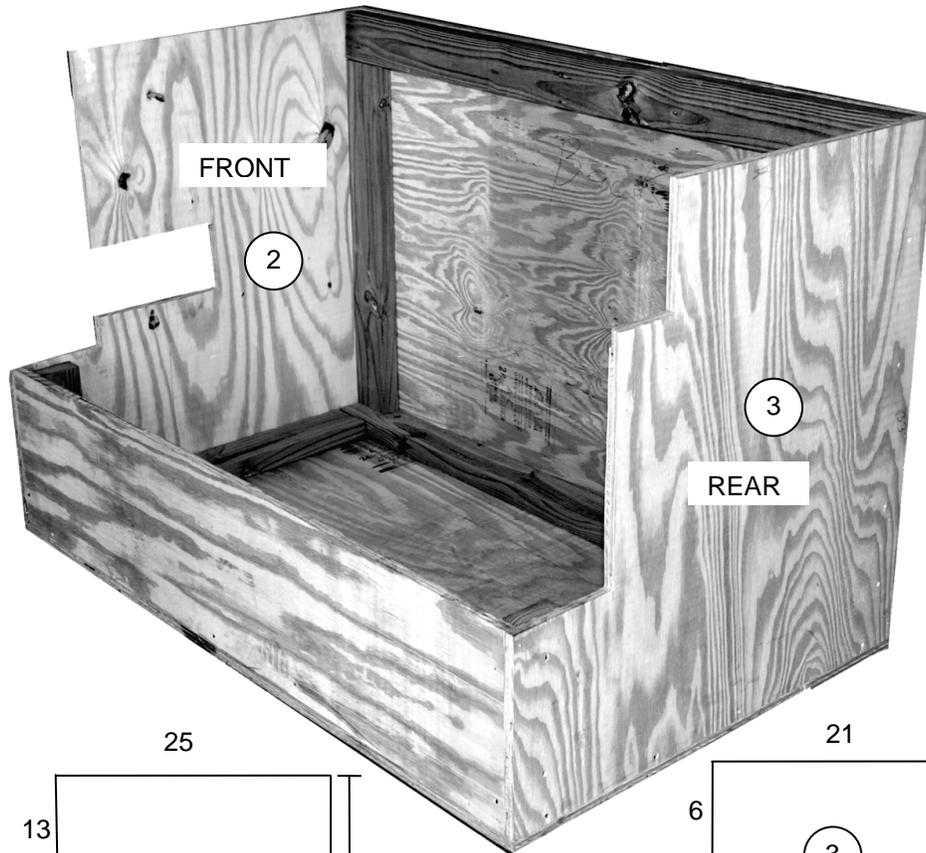
**Figure 11-9. Components Stowed and Secured**



- ⑥ Place another layer of honeycomb with cutouts for the components removed in steps 2 and 3.
- ⑦ Place the back plate, mirrors, and bolts from the ROPS centered and on top of honeycomb.
- ⑧ Fill the rest of the cage with honeycomb until it is even with the top of the cage.
- ⑨ Secure the honeycomb with type III nylon cord by forming an X.
- ⑩ Fold the seat forward and secure with type III nylon cord.

**Figure 11-9. Components Stowed and Secured (Continued)**

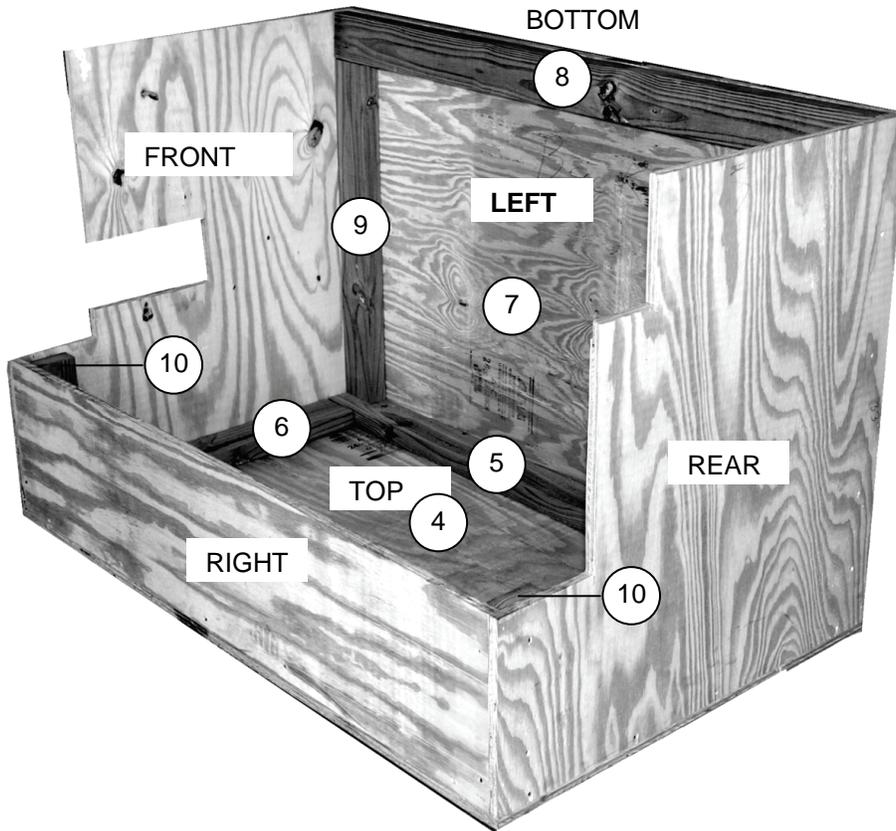
- Notes.** 1. Not drawn to scale.  
 2. All dimensions are given in inches.  
 3. The box is shown upside down for building clarification.



- ① Cut two 32- by 33- by 3/4-inch pieces of plywood for the front and rear.  
 ② Cut front as shown.  
 ③ Cut rear as shown.

**Figure 11-10. Protective Cab Box Built**

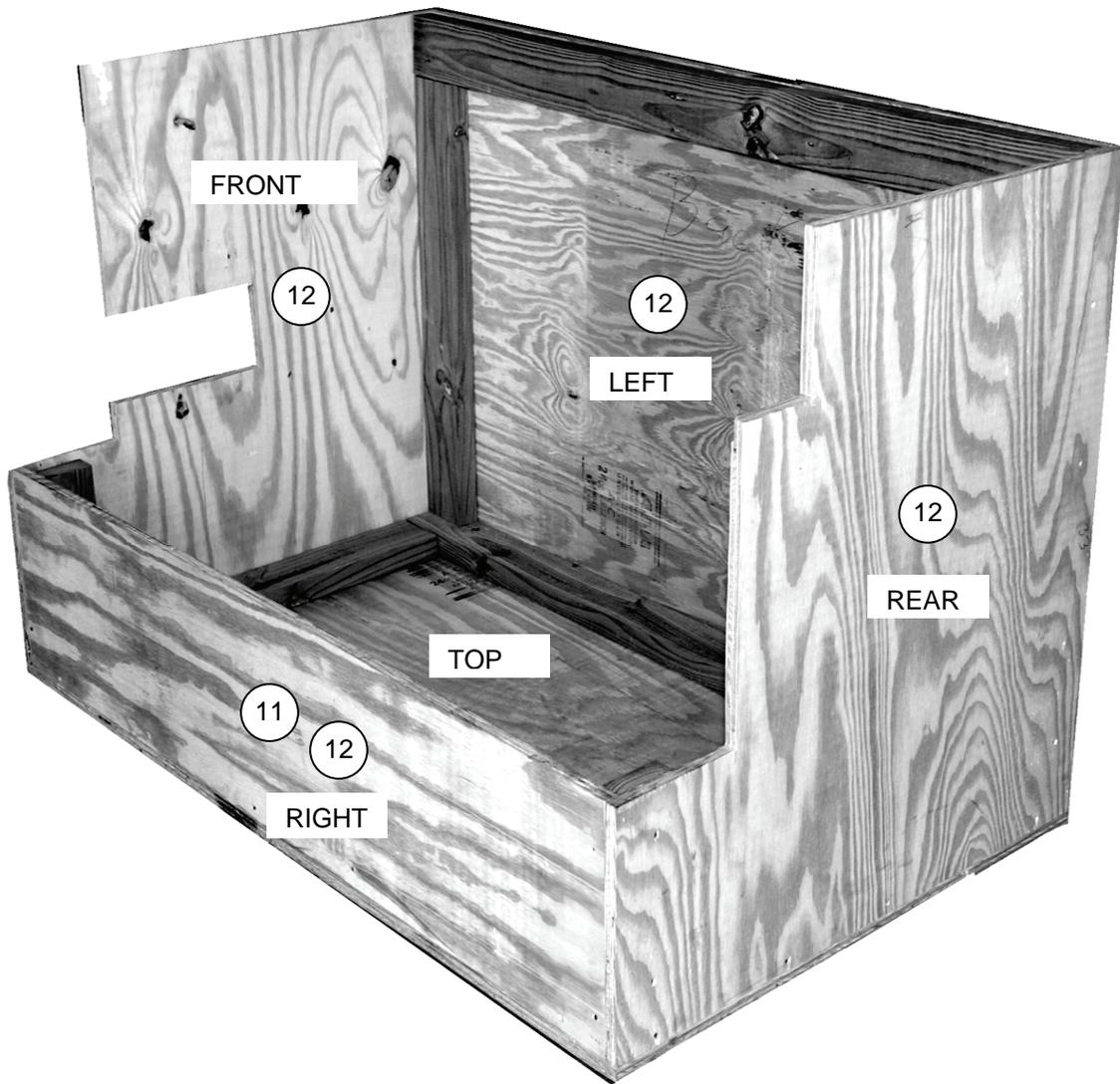
**Note.** The box is shown upside down for building clarification.



- ④ Cut a 32- by 52- by  $\frac{3}{4}$ -inch piece of plywood for the top.
- ⑤ Cut two 2- by 4- by 50  $\frac{1}{2}$ -inch pieces of lumber. Nail to the top with a  $\frac{3}{4}$ -inch border from the left edge using 8d nails. Repeat for the right edge.
- ⑥ Cut two 2- by 4- by 23  $\frac{1}{2}$ -inch pieces of lumber. Nail to the top with a  $\frac{3}{4}$ -inch border from the front edge using 8d nails. Repeat for the rear edge.
- ⑦ Cut one 33- by 50  $\frac{1}{2}$ - by  $\frac{3}{4}$ -inch piece of plywood for the left side.
- ⑧ Cut one 2- by 4- by 50  $\frac{1}{2}$ -inch piece of lumber. Nail to the bottom of the left side with a  $\frac{3}{4}$ -inch border from the rear and front sides with 8d nails.
- ⑨ Cut two 2- by 4- by 28  $\frac{1}{2}$ -inch pieces of lumber. Nail to the left front edge with a  $\frac{3}{4}$ -inch border from the left edge with 8d nails. Repeat for the right edge (Not Shown).
- ⑩ Cut two 2- by 4- by 10-inch pieces of lumber. Nail to the front with a  $\frac{3}{4}$ -inch from the front edge and with 8d nails. Repeat for the rear edge.

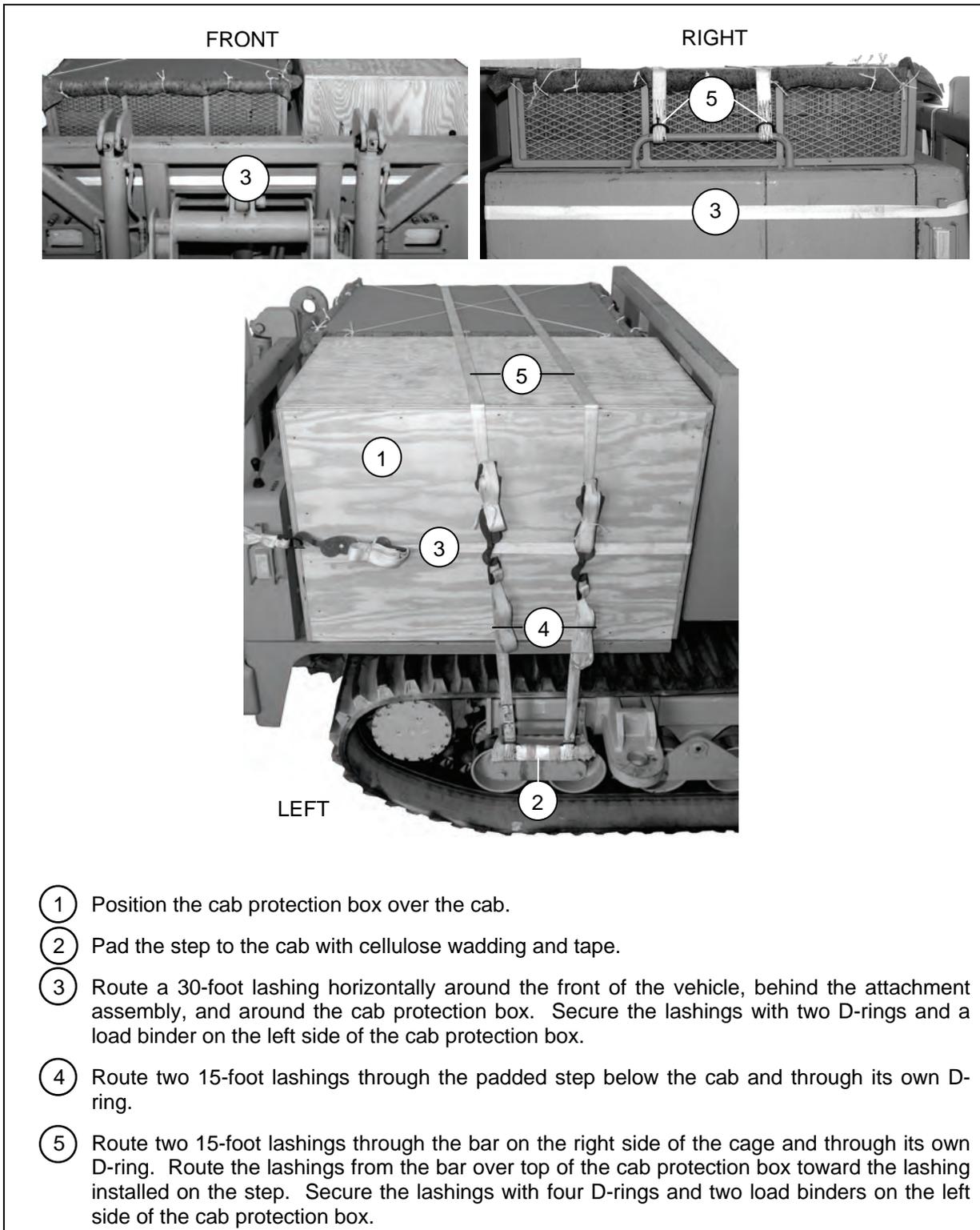
**Figure 11-10. Protective Cab Box Built (Continued)**

**Note.** The box is shown upside down for building clarification.

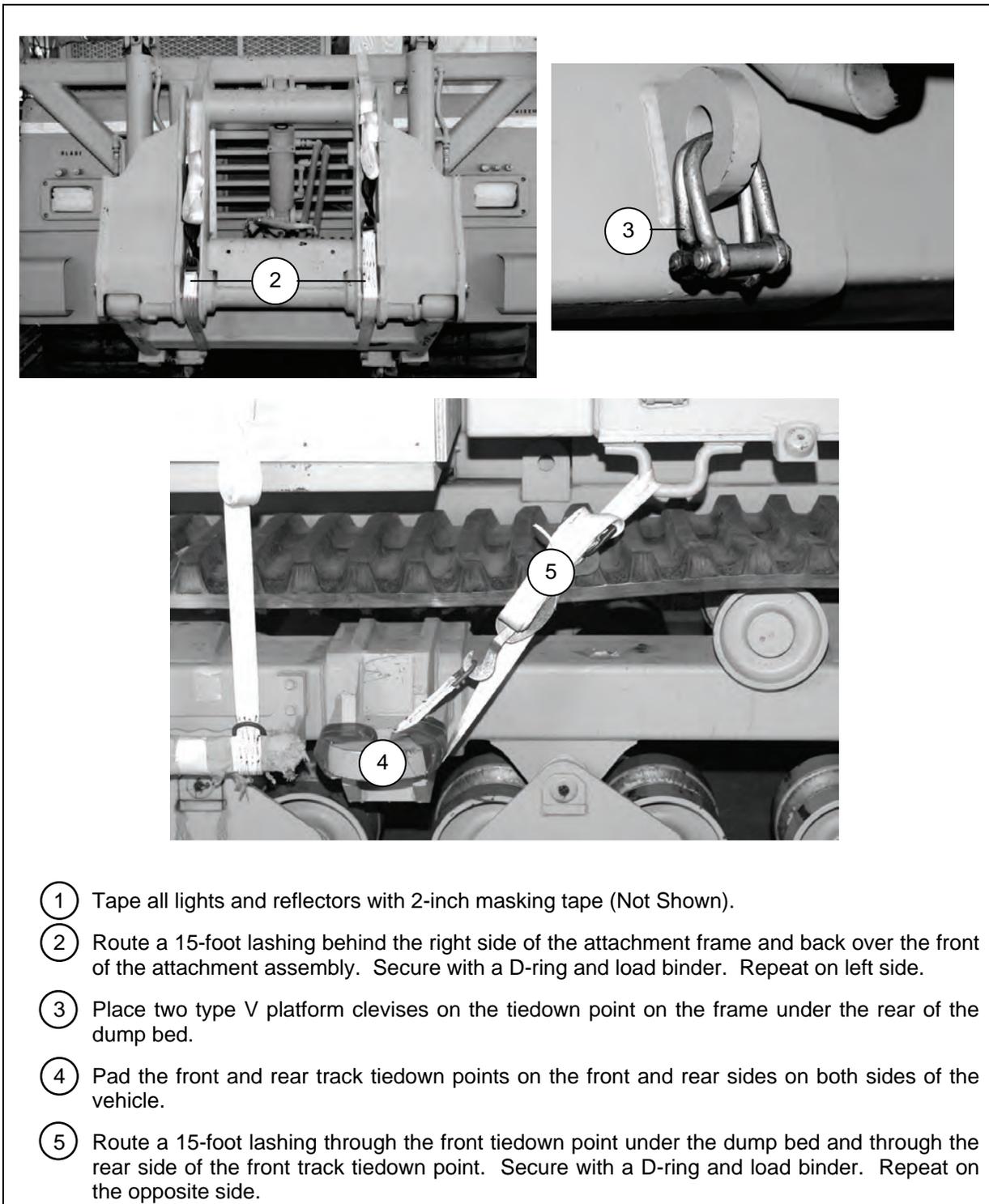


- (11) Cut a 12- by 50 ½- by ¾-inch piece of plywood for the right side.
- (12) Nail the left, rear, front and right sides to the top to each other with 8d nails.

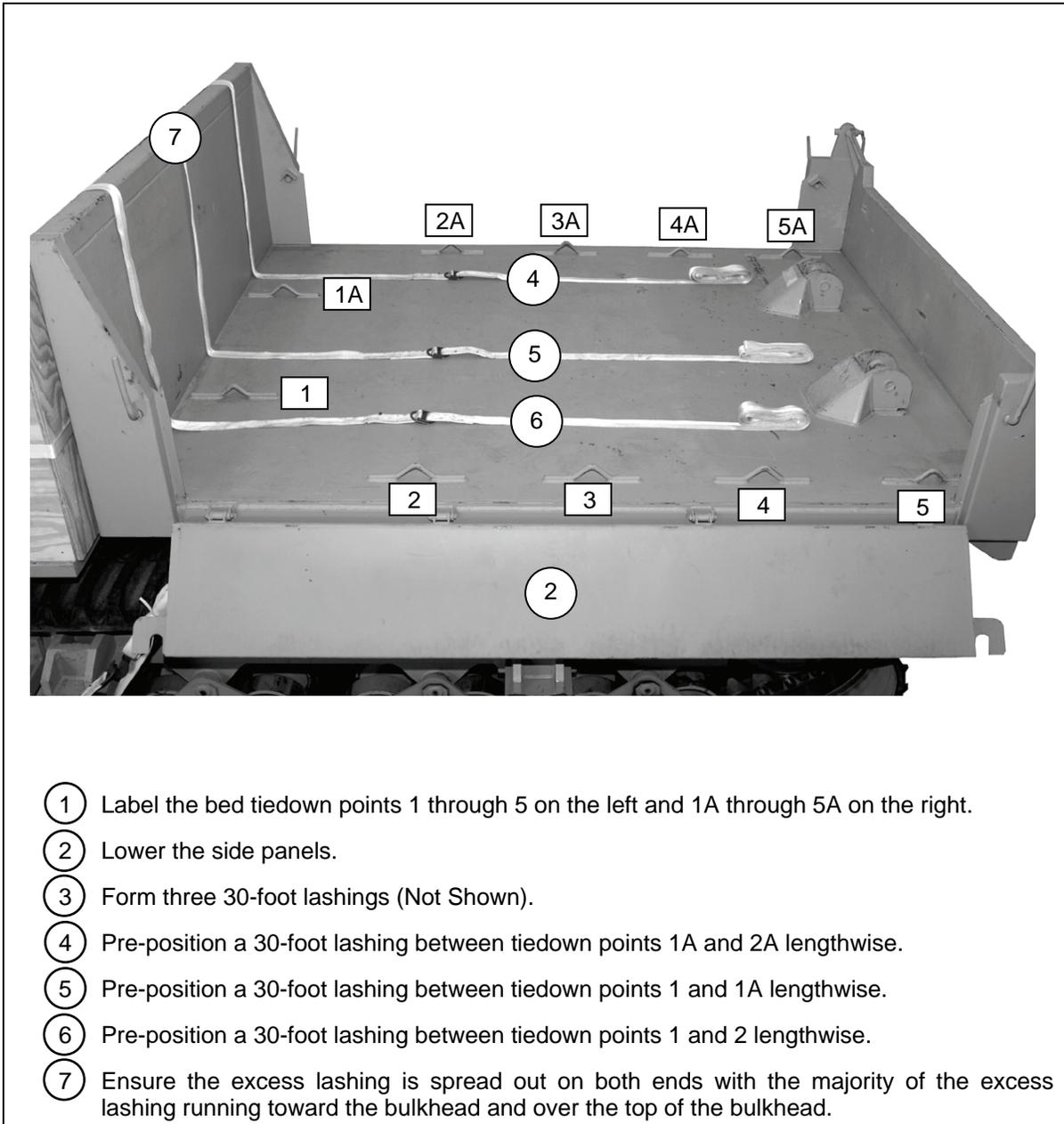
**Figure 11-10. Protective Cab Box Built (Continued)**



**Figure 11-11. Cab Protective Box Placed and Secured**

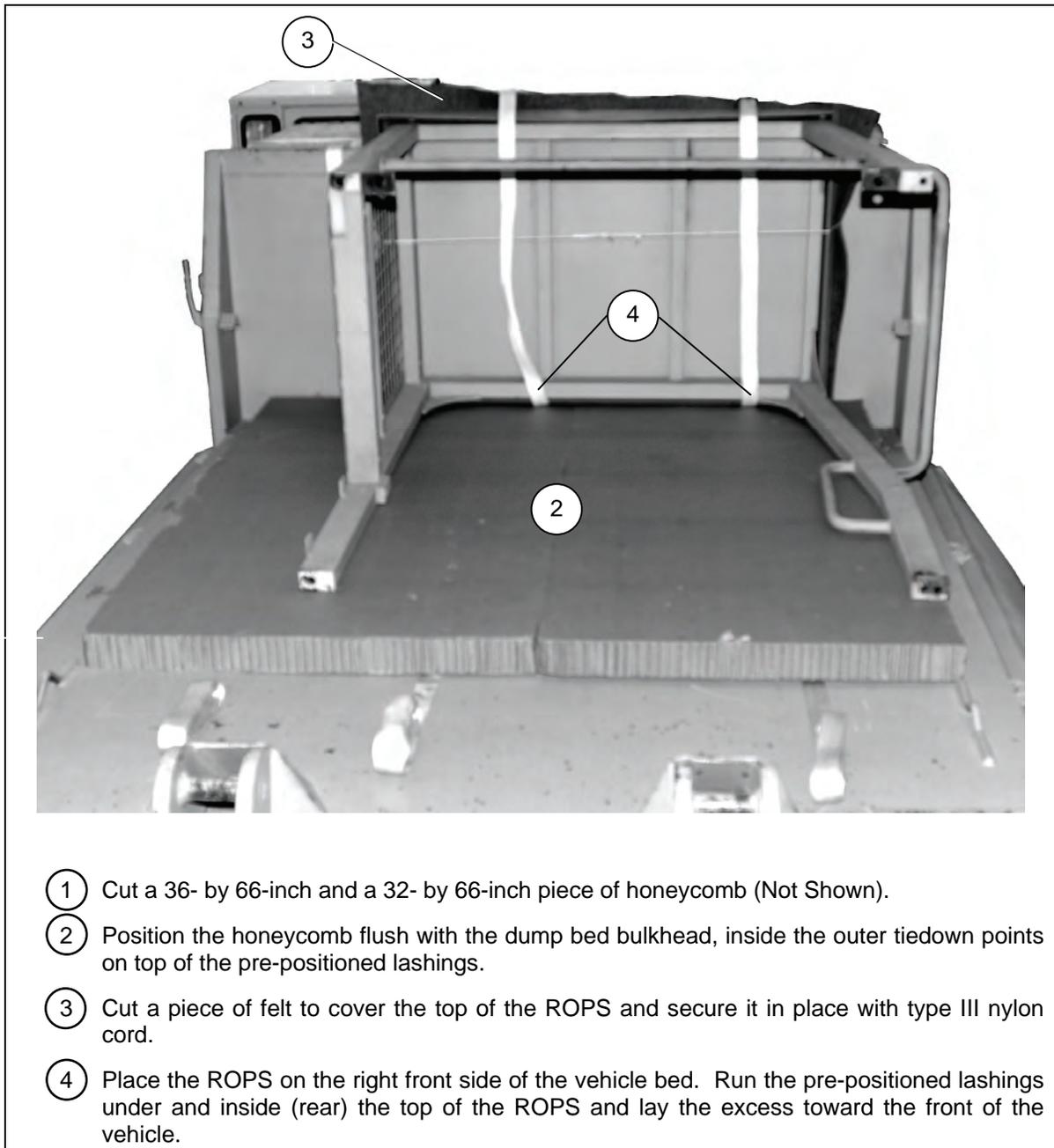


**Figure 11-12. External Body Prepared**

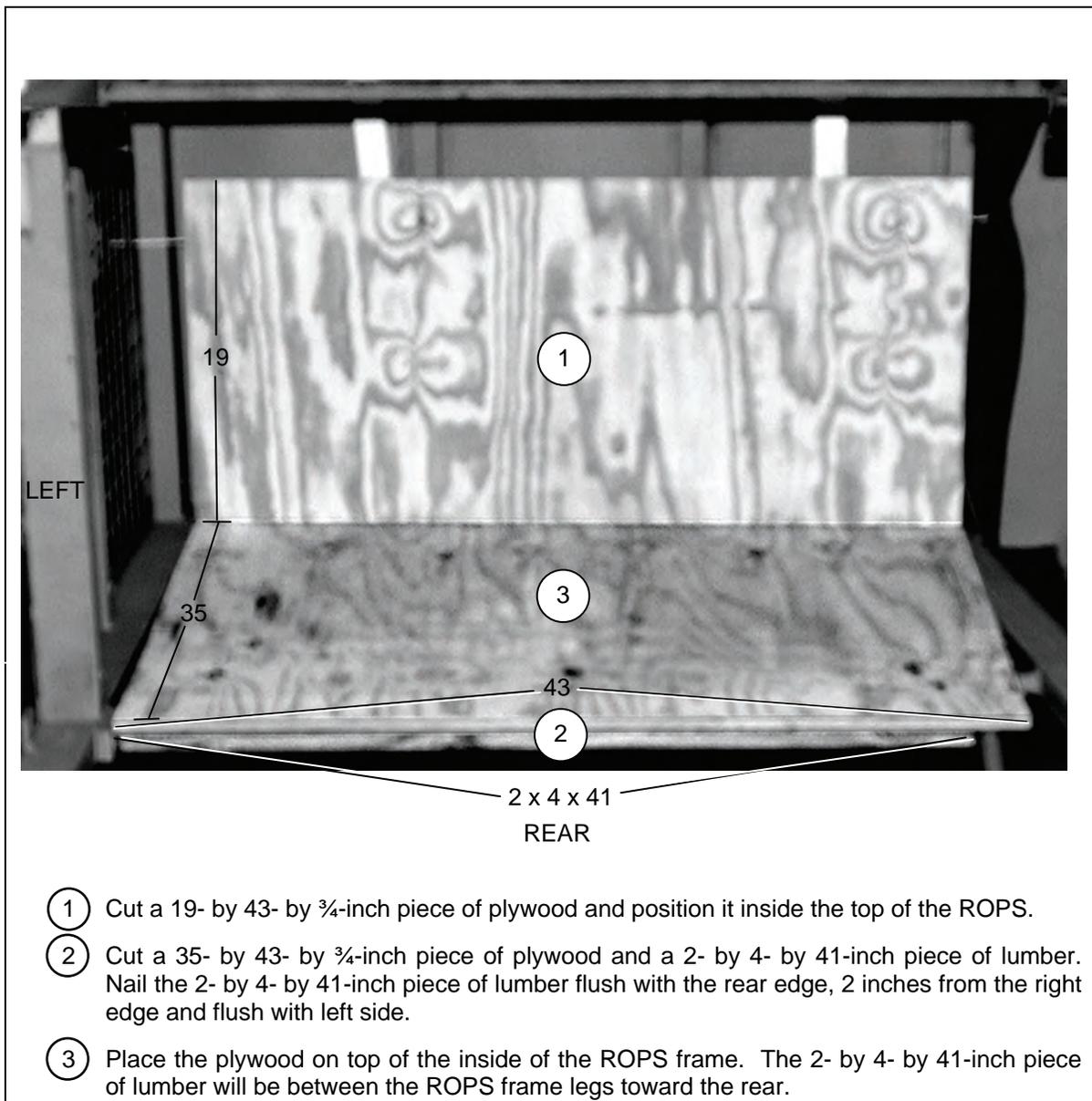


- ① Label the bed tiedown points 1 through 5 on the left and 1A through 5A on the right.
- ② Lower the side panels.
- ③ Form three 30-foot lashings (Not Shown).
- ④ Pre-position a 30-foot lashing between tiedown points 1A and 2A lengthwise.
- ⑤ Pre-position a 30-foot lashing between tiedown points 1 and 1A lengthwise.
- ⑥ Pre-position a 30-foot lashing between tiedown points 1 and 2 lengthwise.
- ⑦ Ensure the excess lashing is spread out on both ends with the majority of the excess lashing running toward the bulkhead and over the top of the bulkhead.

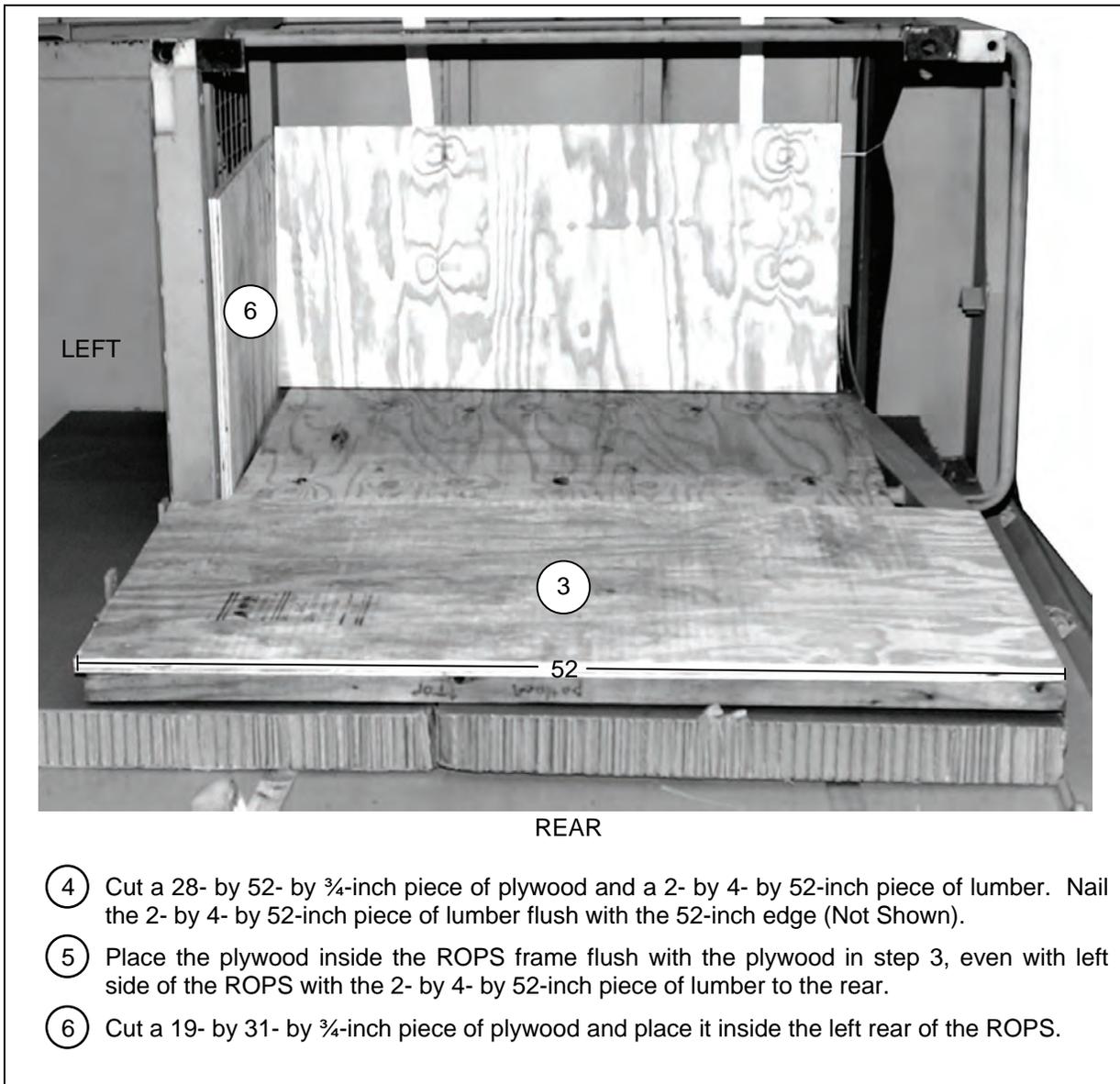
**Figure 11-13. Tiedowns Numbered and Lashings Positioned**



**Figure 11-14. ROPS Placed**



**Figure 11-15. ROPS and Cargo Bed Prepared for Accompanying Load**



**Figure 11-15. ROPS and Cargo Bed Prepared for Accompanying Load (Continued)**

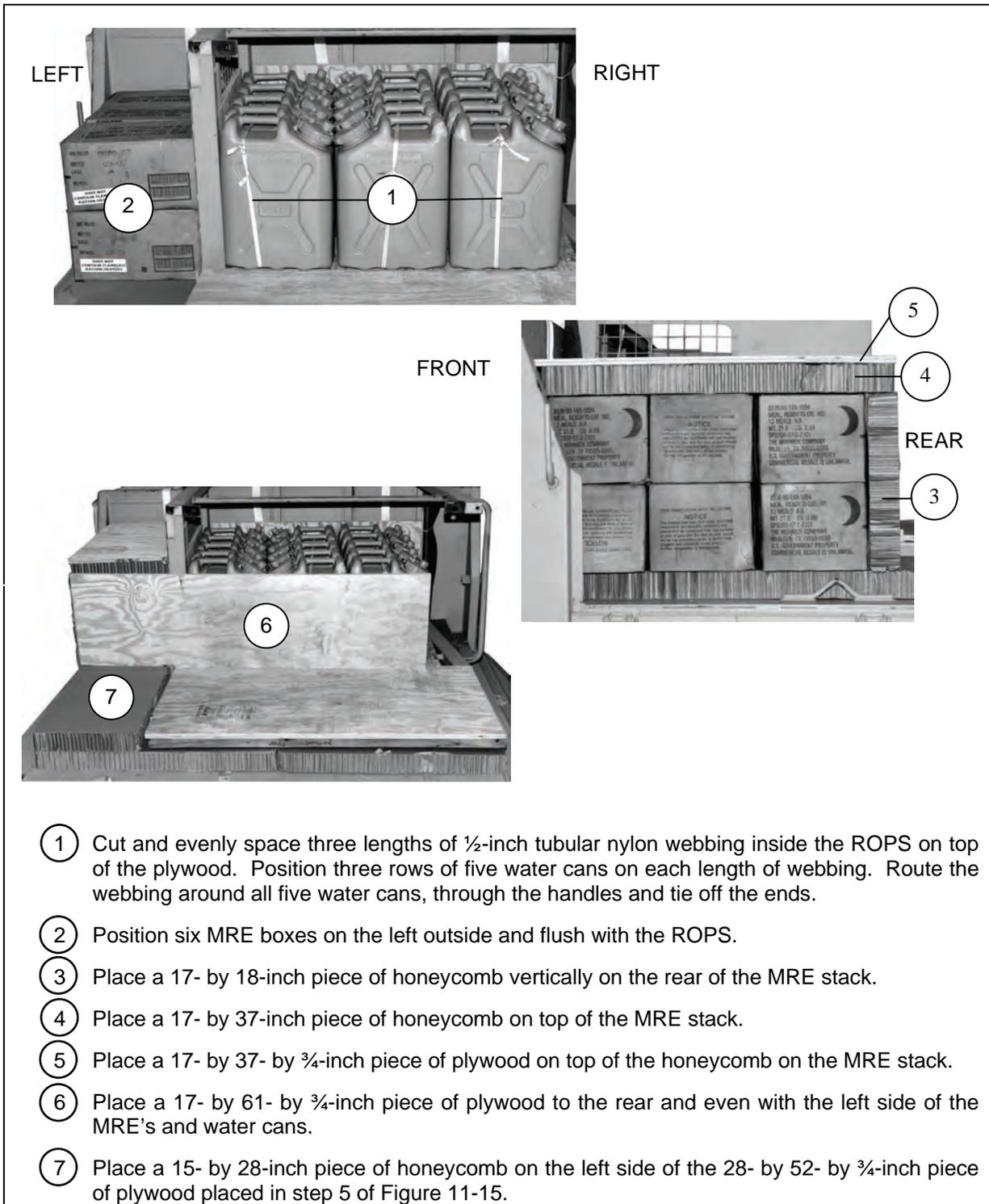


Figure 11-16. Water Cans and MRE's Positioned

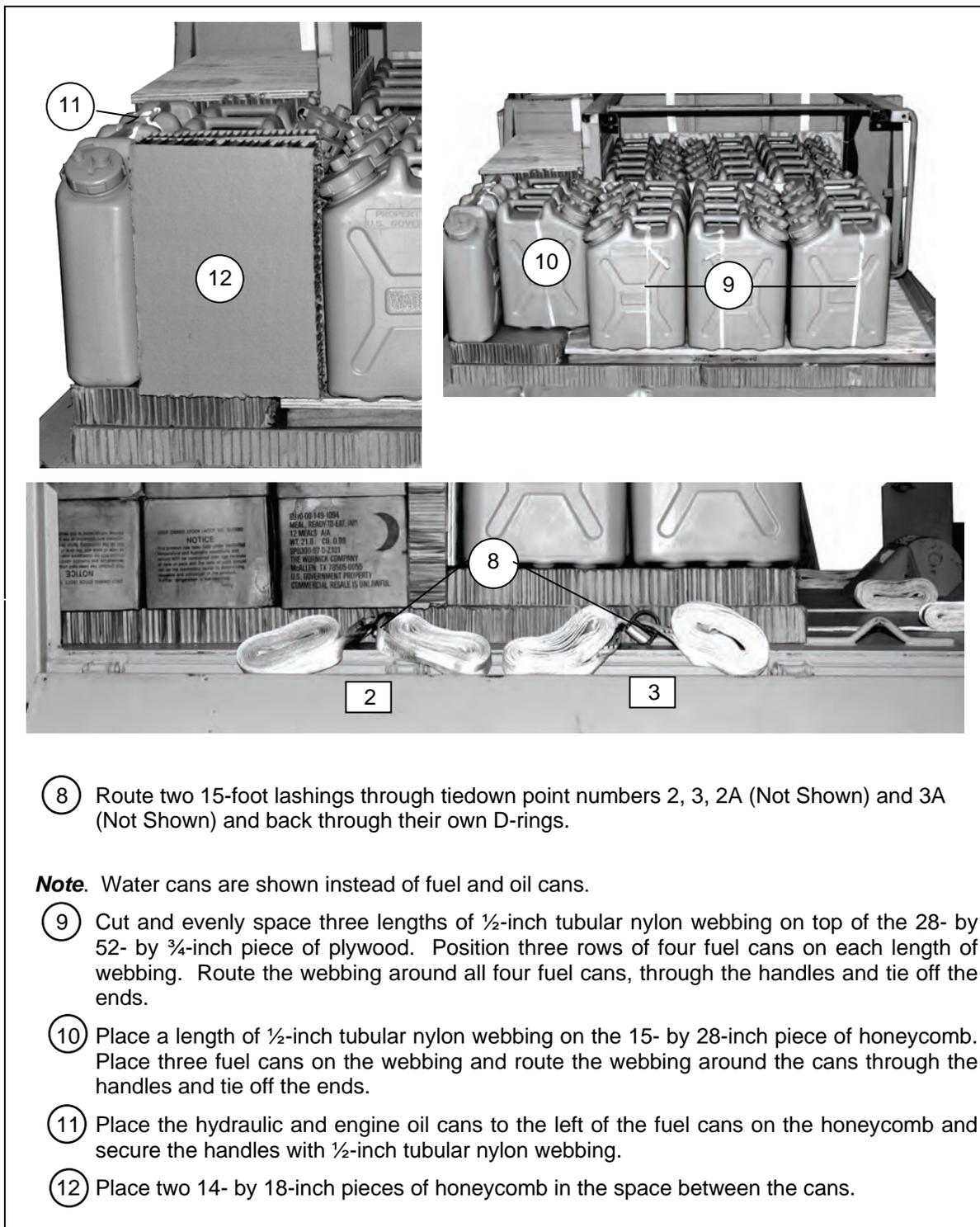
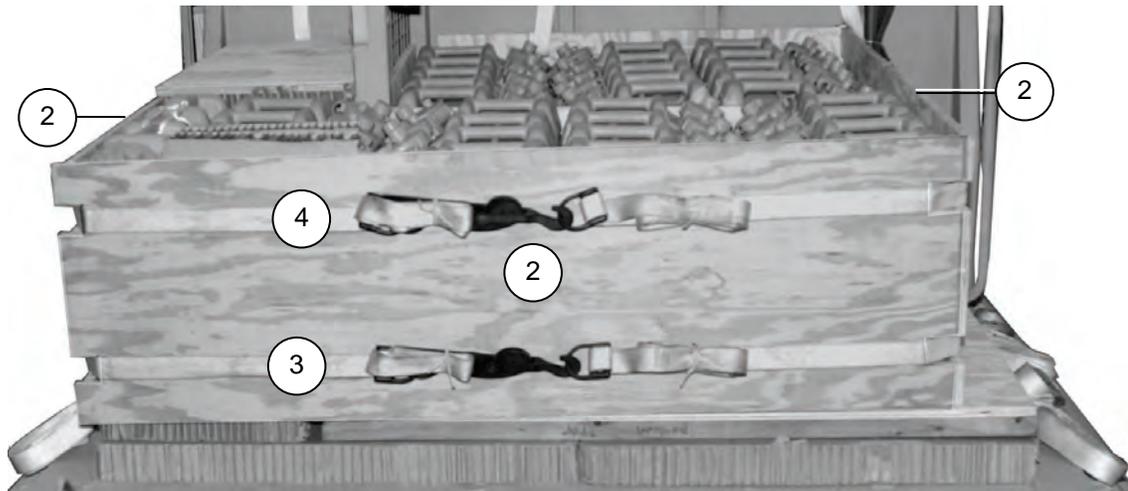
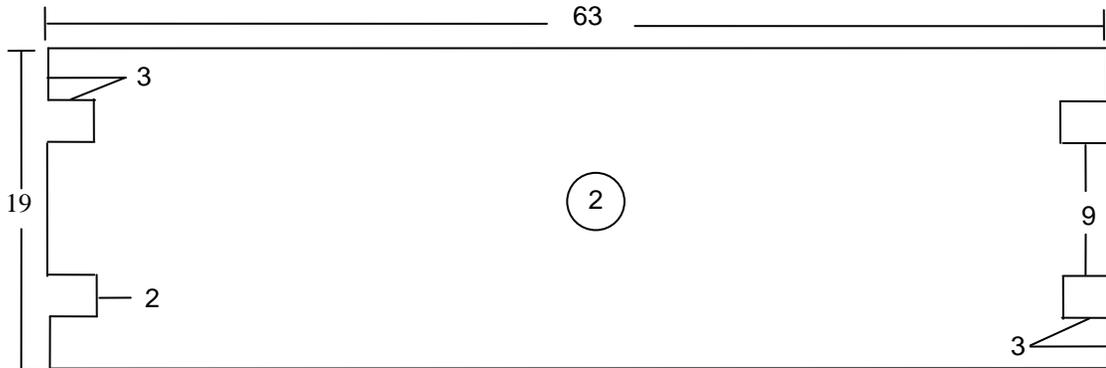


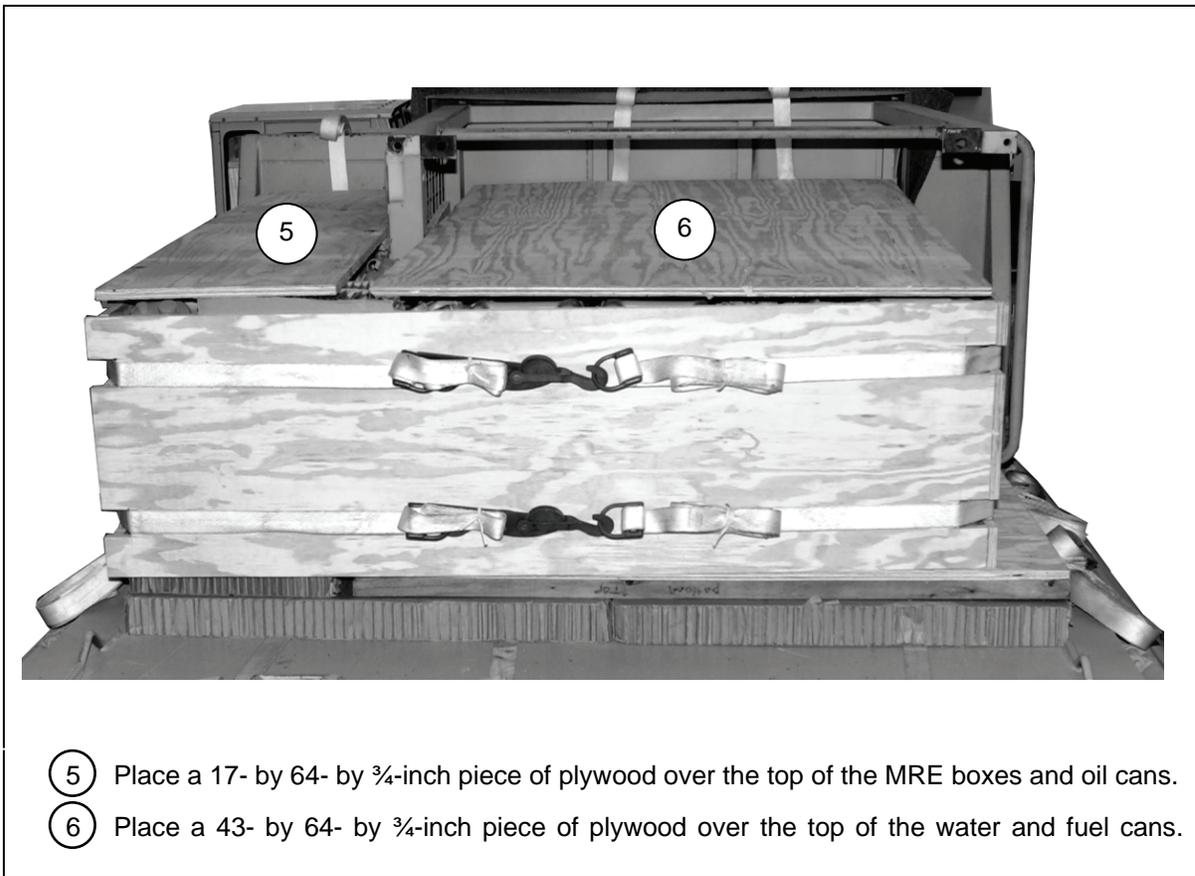
Figure 11-16. Water Cans and MRE's Positioned (Continued)

- Notes.**
1. Not drawn to scale.
  2. All dimensions are given in inches.
  3. Pad and tape all cut outs prior to routing lashings.

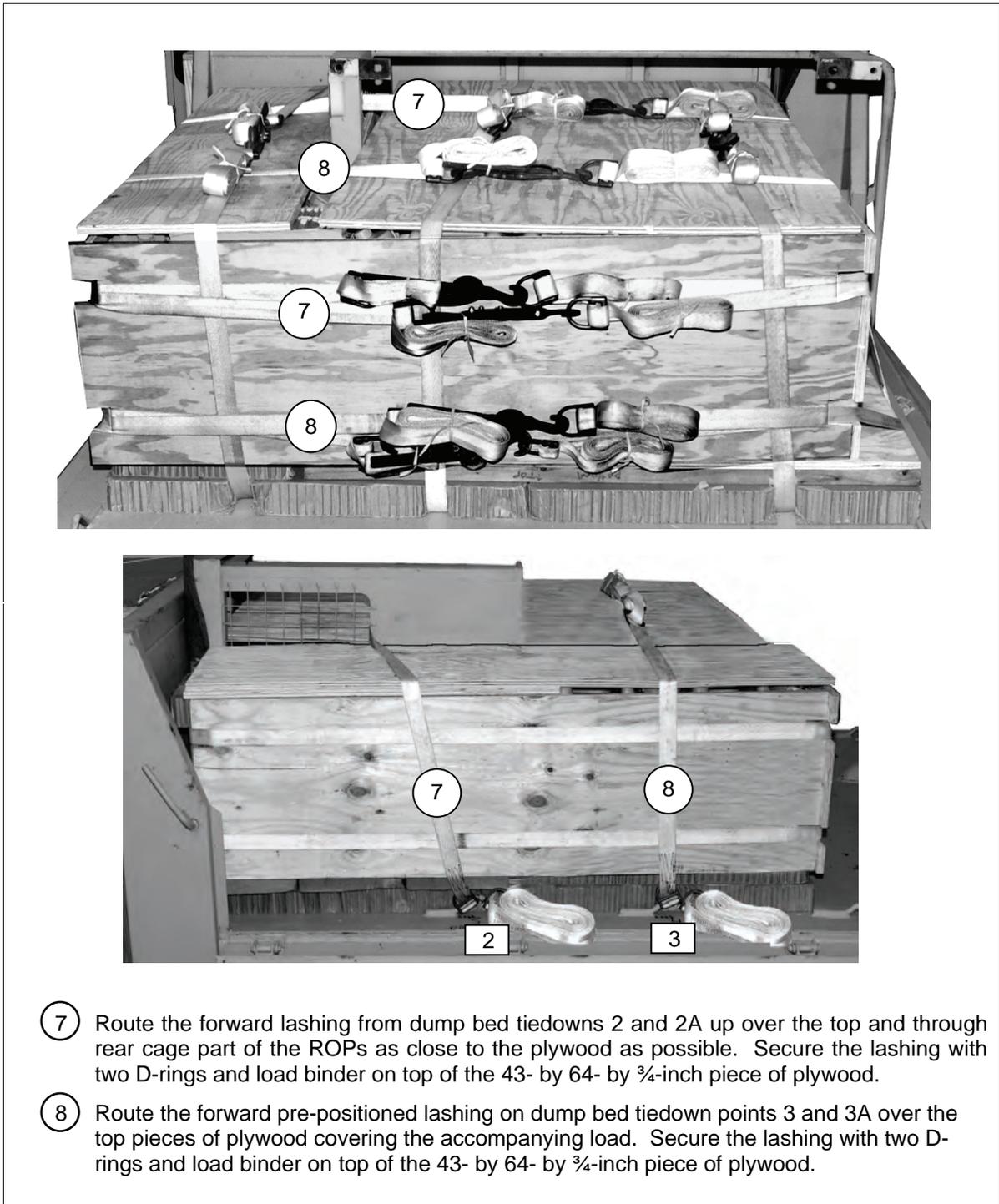


- ① Cut three 19- by 63- by  $\frac{3}{4}$ -inch pieces of plywood for the endboards.
- ② Position the endboards to the right, left and rear of the accompanying load.
- ③ Form two 30-foot lashings. Route one 30-foot lashing horizontally through the bottom cutouts of the left end board around the front of the ROPS through the bottom cutouts of the right end board. Secure the lashings with two D-rings and load binder centered on the rear endboard.
- ④ Route one 30-foot lashing horizontally through the top cutouts around the front of the ROPS through the top cutouts of the right endboard. Secure the lashings with two D-rings and load binder centered on the rear endboard.

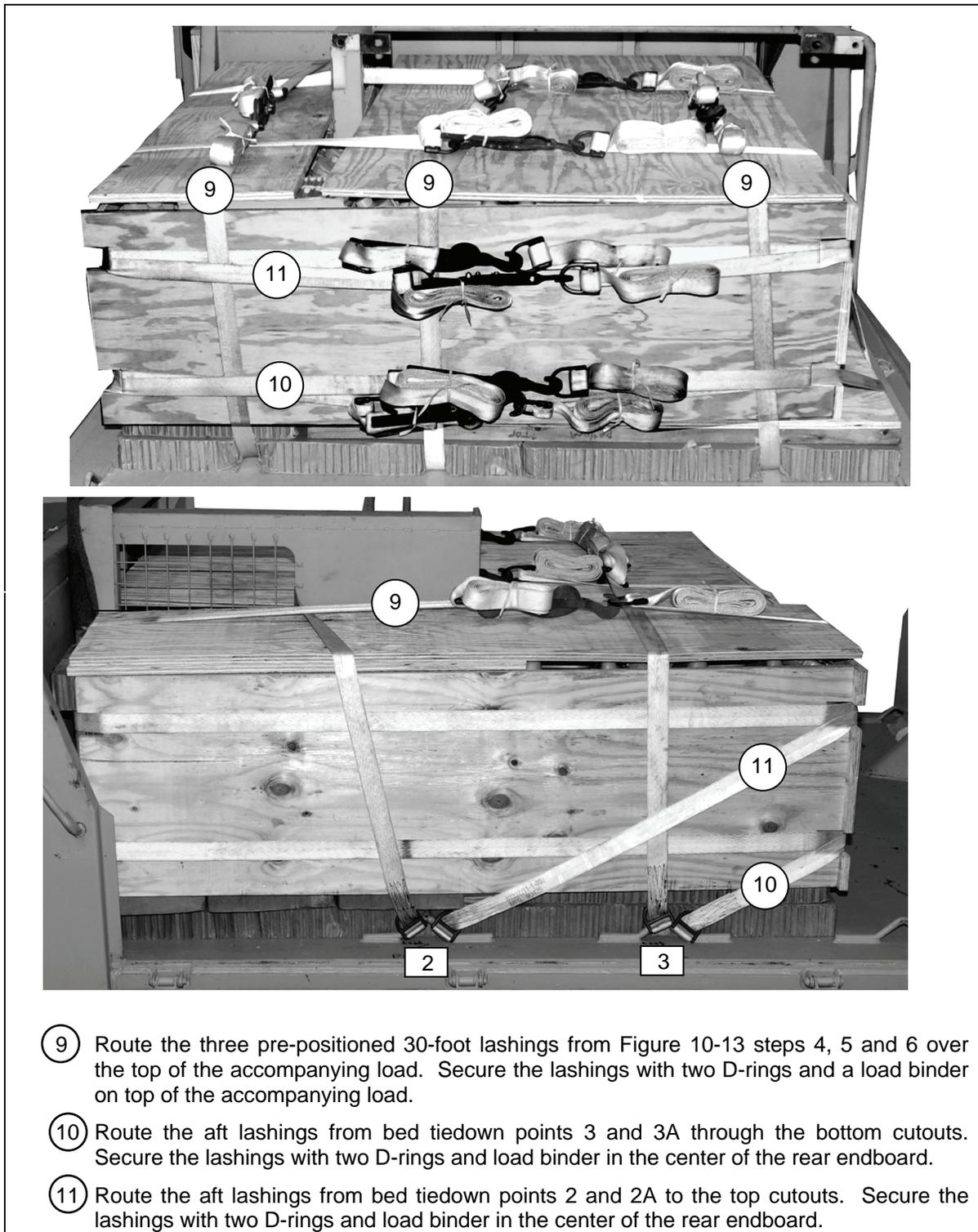
**Figure 11-17. Endboards Placed and Secured**



**Figure 11-17. Endboards Placed and Secured (Continued)**

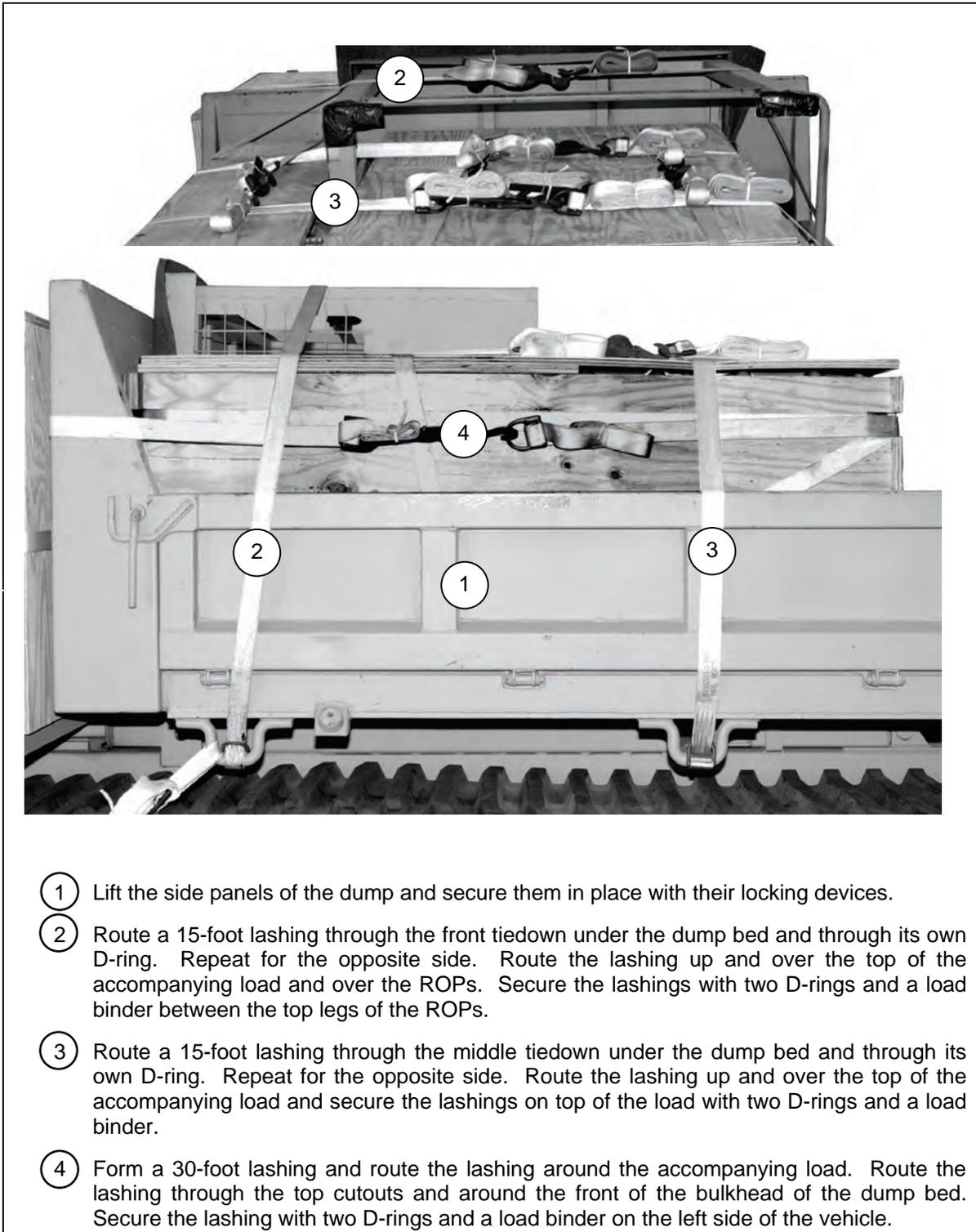


**Figure 11-17. Endboards Placed and Secured (Continued)**



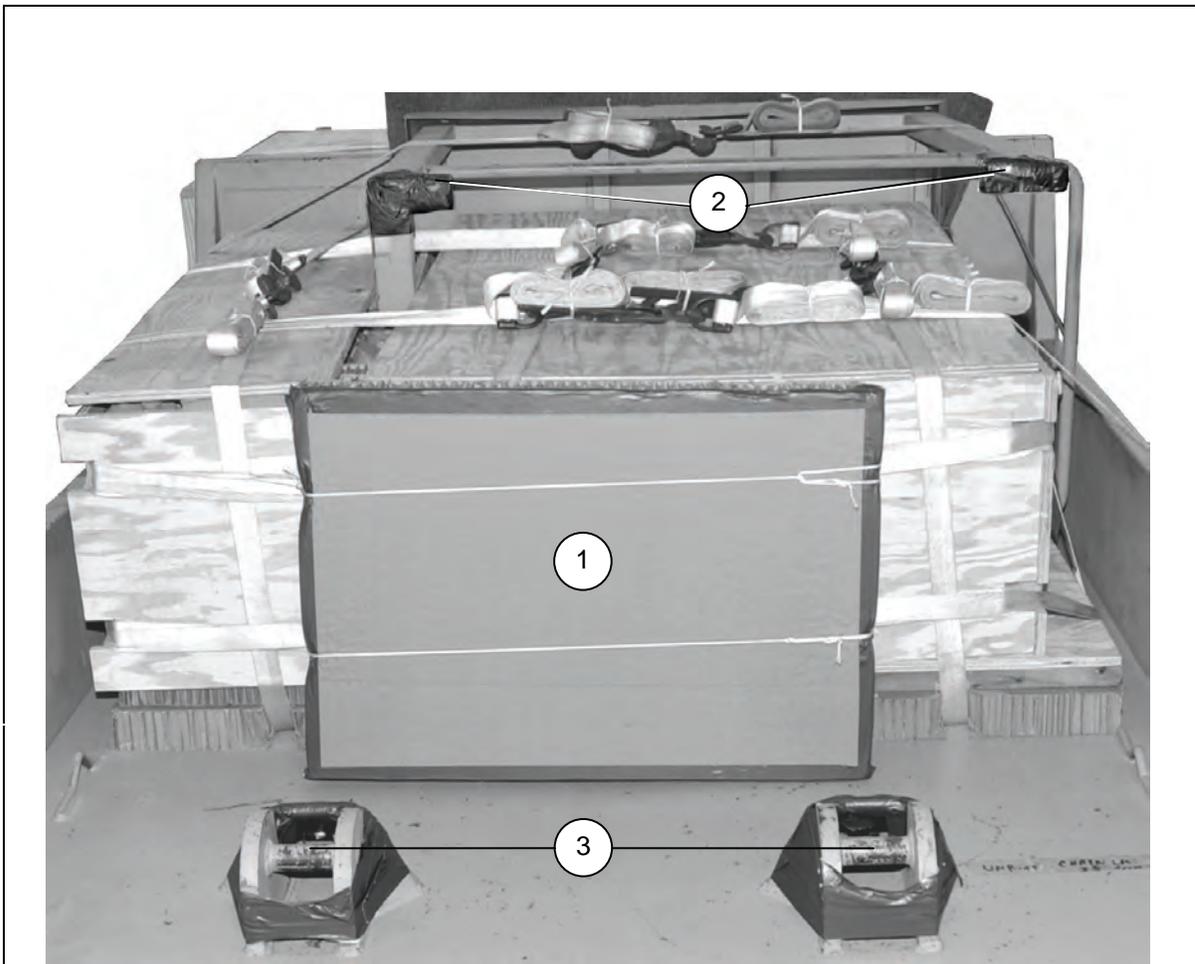
- ⑨ Route the three pre-positioned 30-foot lashings from Figure 10-13 steps 4, 5 and 6 over the top of the accompanying load. Secure the lashings with two D-rings and a load binder on top of the accompanying load.
- ⑩ Route the aft lashings from bed tiedown points 3 and 3A through the bottom cutouts. Secure the lashings with two D-rings and load binder in the center of the rear endboard.
- ⑪ Route the aft lashings from bed tiedown points 2 and 2A to the top cutouts. Secure the lashings with two D-rings and load binder in the center of the rear endboard.

**Figure 11-17. Endboards Placed and Secured (Continued)**



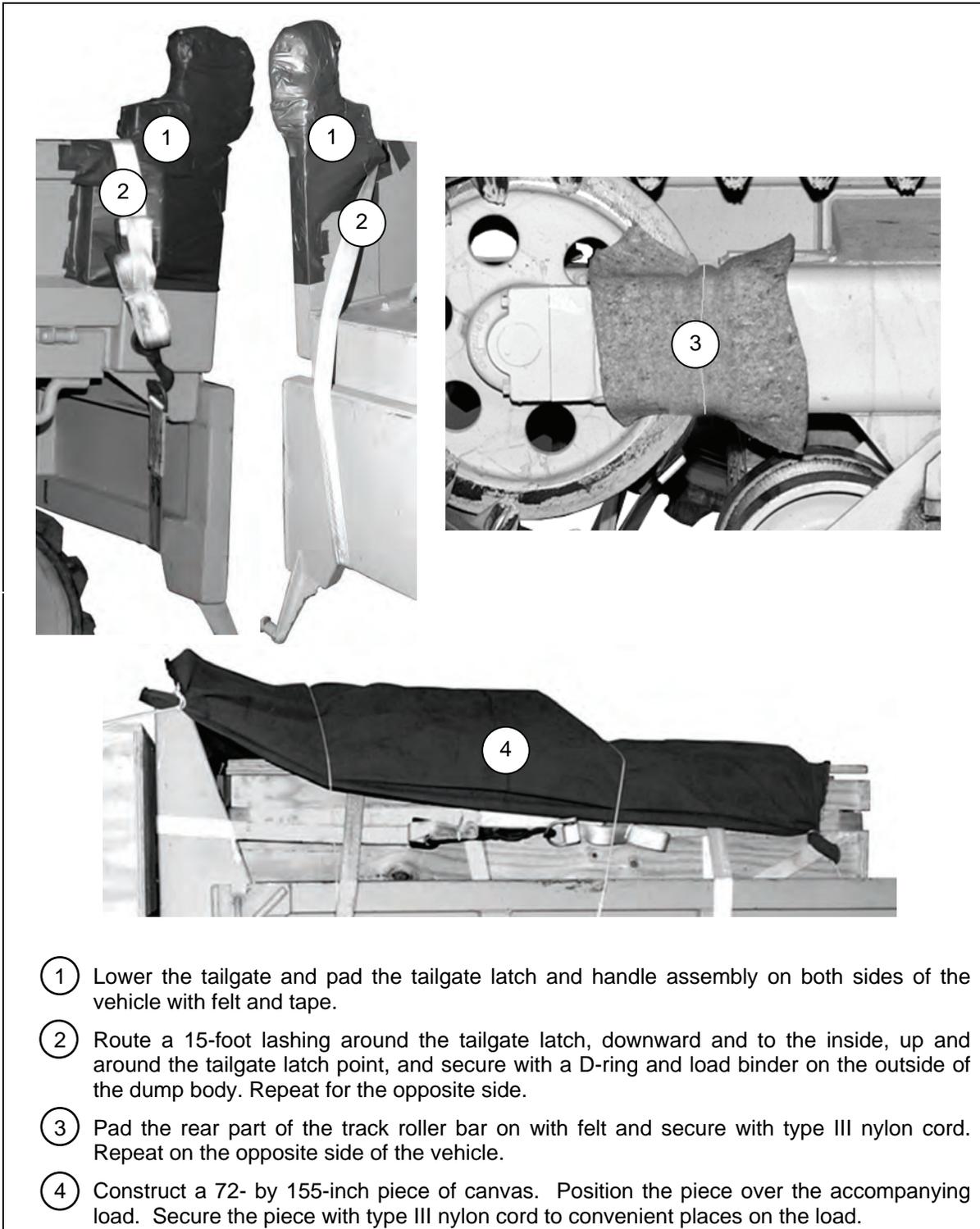
- ① Lift the side panels of the dump and secure them in place with their locking devices.
- ② Route a 15-foot lashing through the front tiedown under the dump bed and through its own D-ring. Repeat for the opposite side. Route the lashing up and over the top of the accompanying load and over the ROPs. Secure the lashings with two D-rings and a load binder between the top legs of the ROPs.
- ③ Route a 15-foot lashing through the middle tiedown under the dump bed and through its own D-ring. Repeat for the opposite side. Route the lashing up and over the top of the accompanying load and secure the lashings on top of the load with two D-rings and a load binder.
- ④ Form a 30-foot lashing and route the lashing around the accompanying load. Route the lashing through the top cutouts and around the front of the bulkhead of the dump bed. Secure the lashing with two D-rings and a load binder on the left side of the vehicle.

**Figure 11-18. Side Panels Positioned and Accompanying Load Lashed**



- ① Cut and place a 25- by 36-inch piece of honeycomb with the edges taped on the rear end of the endboard to cover the load binders. Secure the piece to the lashings with type III nylon cord.
- ② Pad the bottom of the ROPS frame legs with felt and tape in place.
- ③ Tape the rear lifting points around the bottom portion. Leave the bar inside the lifting point exposed for lifting and positioning.

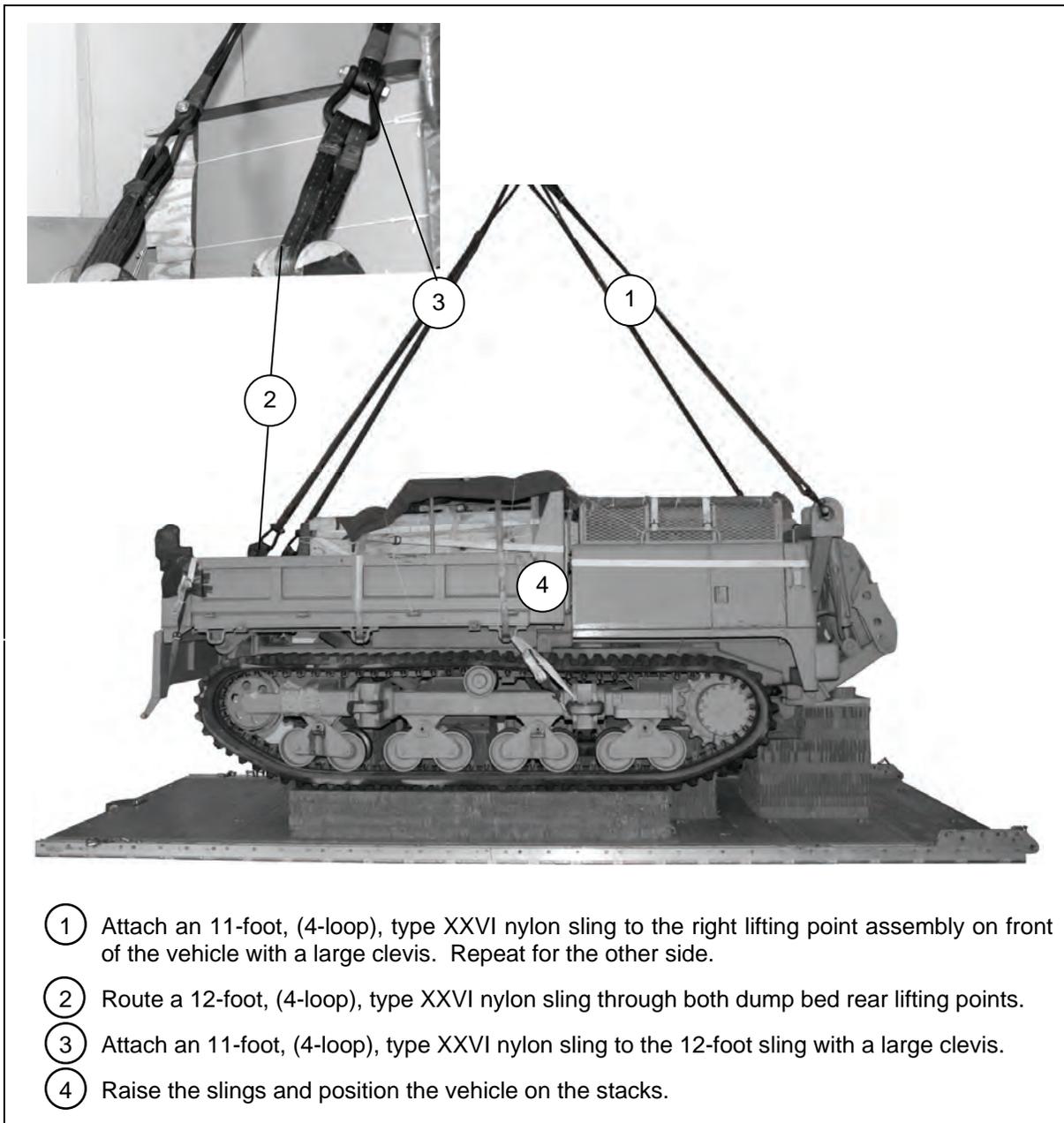
**Figure 11-19. Lifting Points Taped and ROPS Padded**



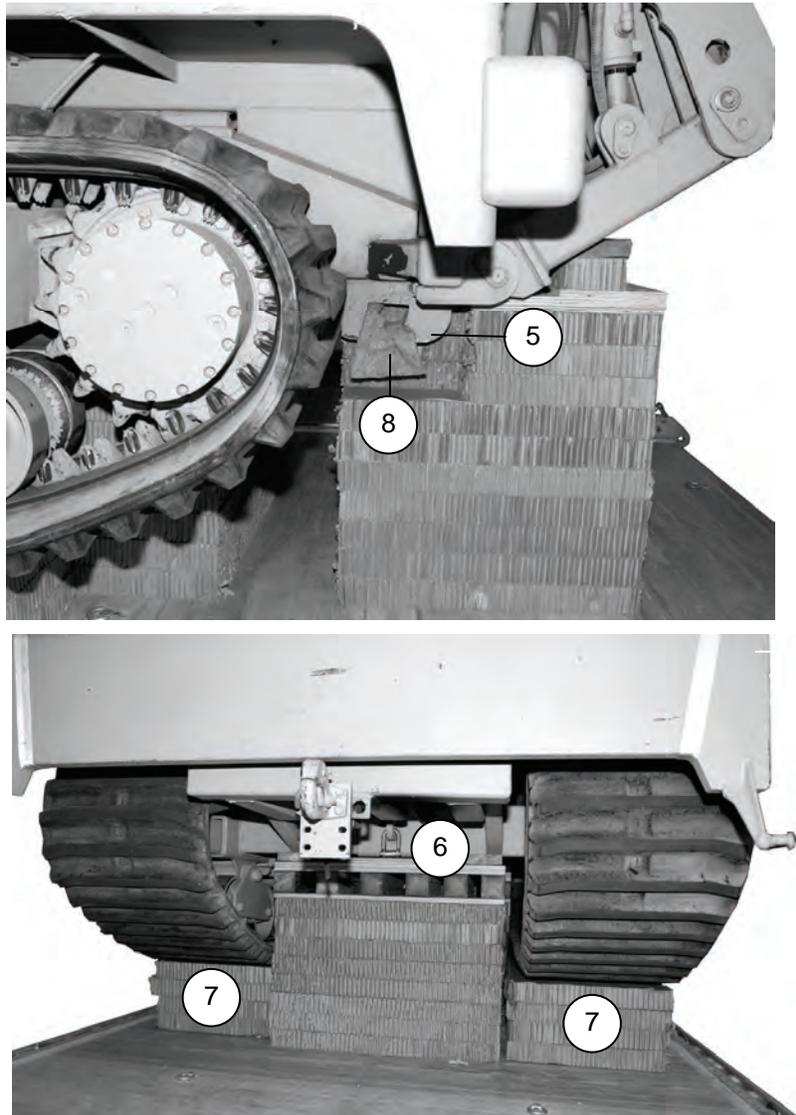
**Figure 11-20. Tailgate Lashed, Track Roller Bar Padded and Cover Placed**

## INSTALLING LIFTING AND SUSPENSION SLINGS

11-5. Install the lifting and suspension slings and position as shown in Figure 11-21.



**Figure 11-21. Lifting and Suspension Slings Installed and Vehicle Positioned**

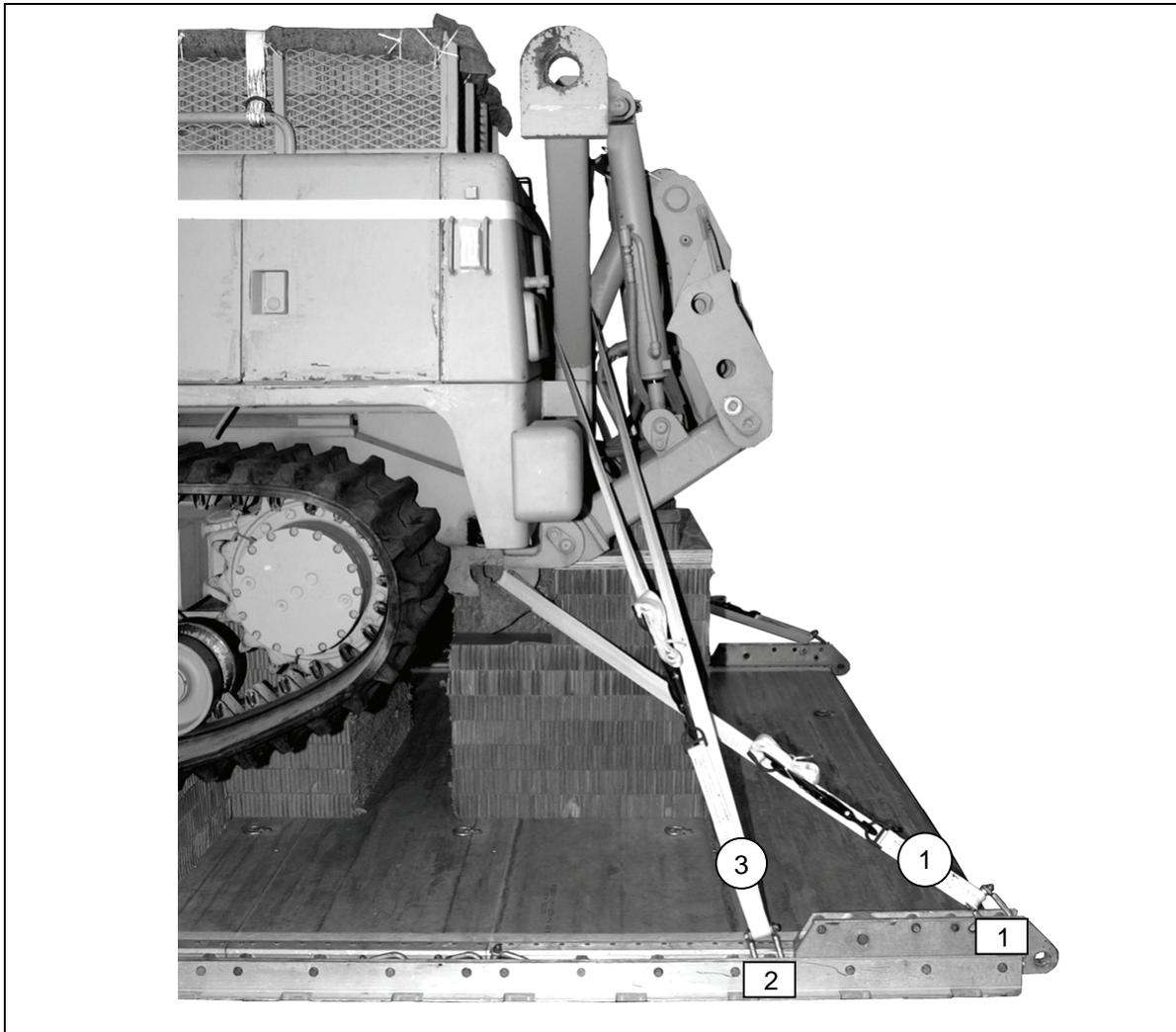


- ⑤ The tiedown points under the attachment assembly fit into the cutouts of stack number 1.
- ⑥ The rear frame will set flush with the rear edge of stack number 4.
- ⑦ You may have to adjust the stacks slightly for the tracks to set squarely on stacks 5 and 6.
- ⑧ Pad the tiedown point holes under the attachment assembly with felt.

**Figure 11-21. Lifting and Suspension Slings Installed and Vehicle Positioned (Continued)**

## LASHING IC45-2 IHI CRAWLER CARRIER

11-6. Lash the IC45-2 IHI crawler carrier with twenty-eight 15-foot tiedown assemblies as shown in Figures 11-22 through 11-26.



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
1	1	Pass lashing:
2	1A	Through the right front tiedown point under the attachment assembly.
3	2	Through the left front tiedown point under the attachment assembly.
4	2A	Around the attachment assembly adapter linkage in the Y shaped part on the right side.
		Around the attachment assembly adapter linkage in the Y shaped part on the left side.

**Figure 11-22. Lashings 1 Through 4 Installed**

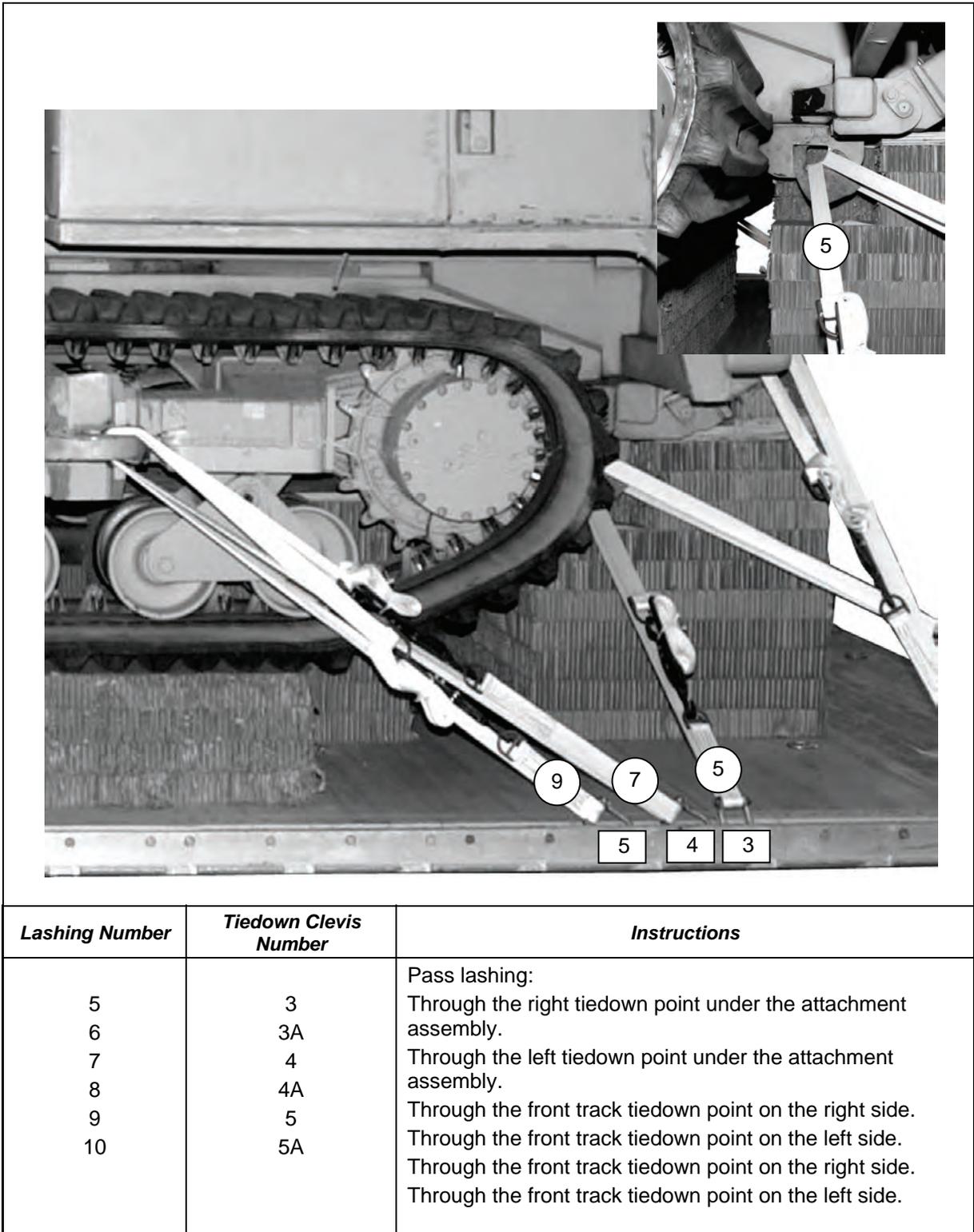


Figure 11-23. Lashings 5 Through 10 Installed

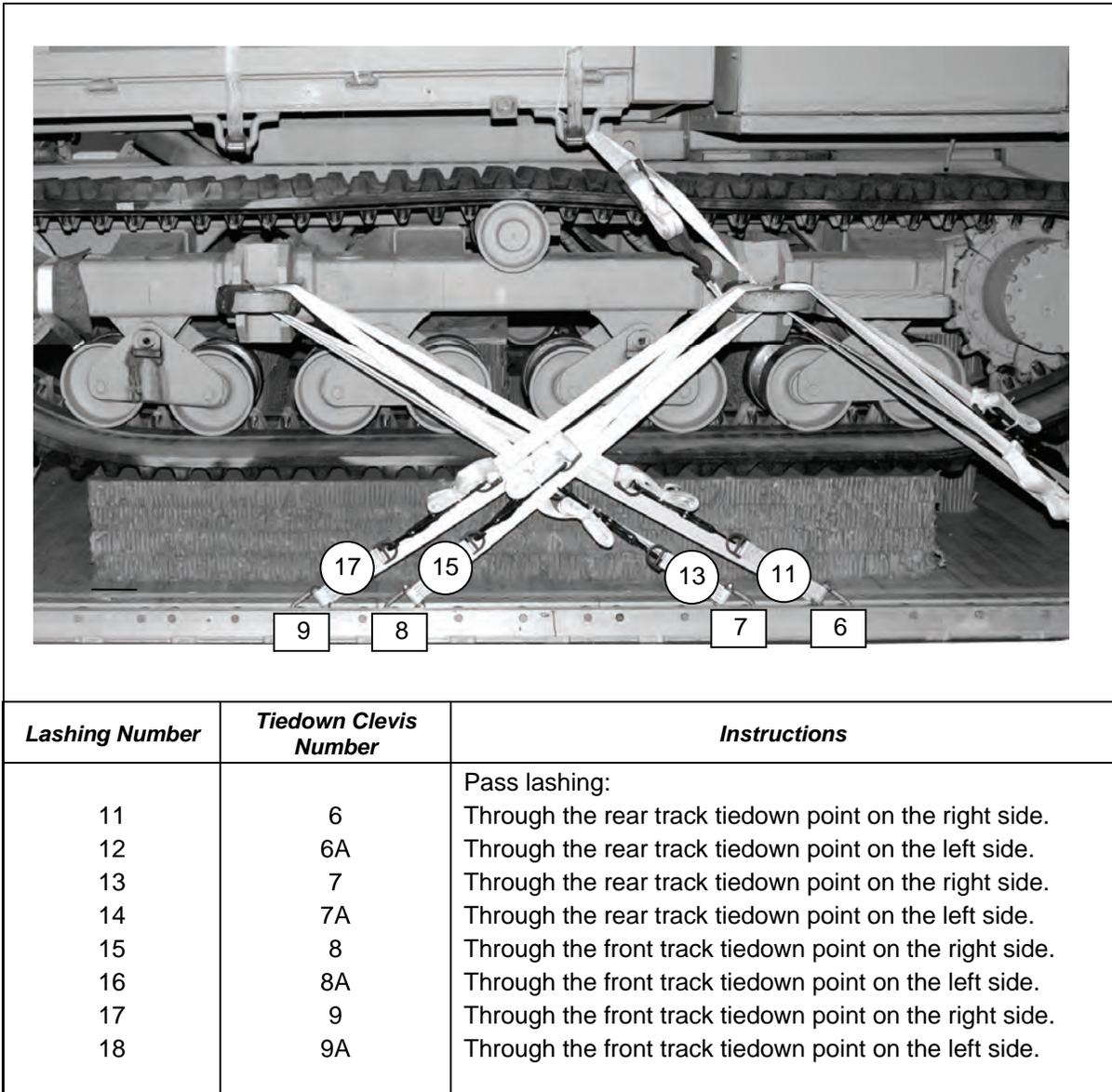
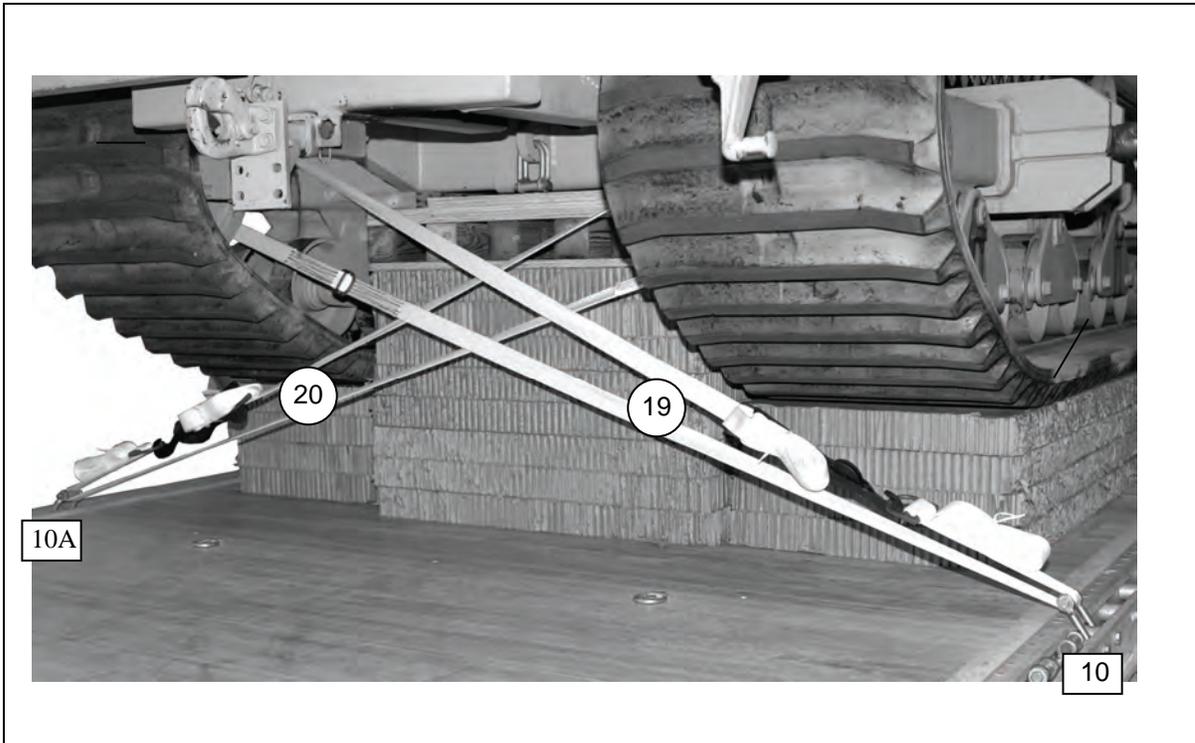
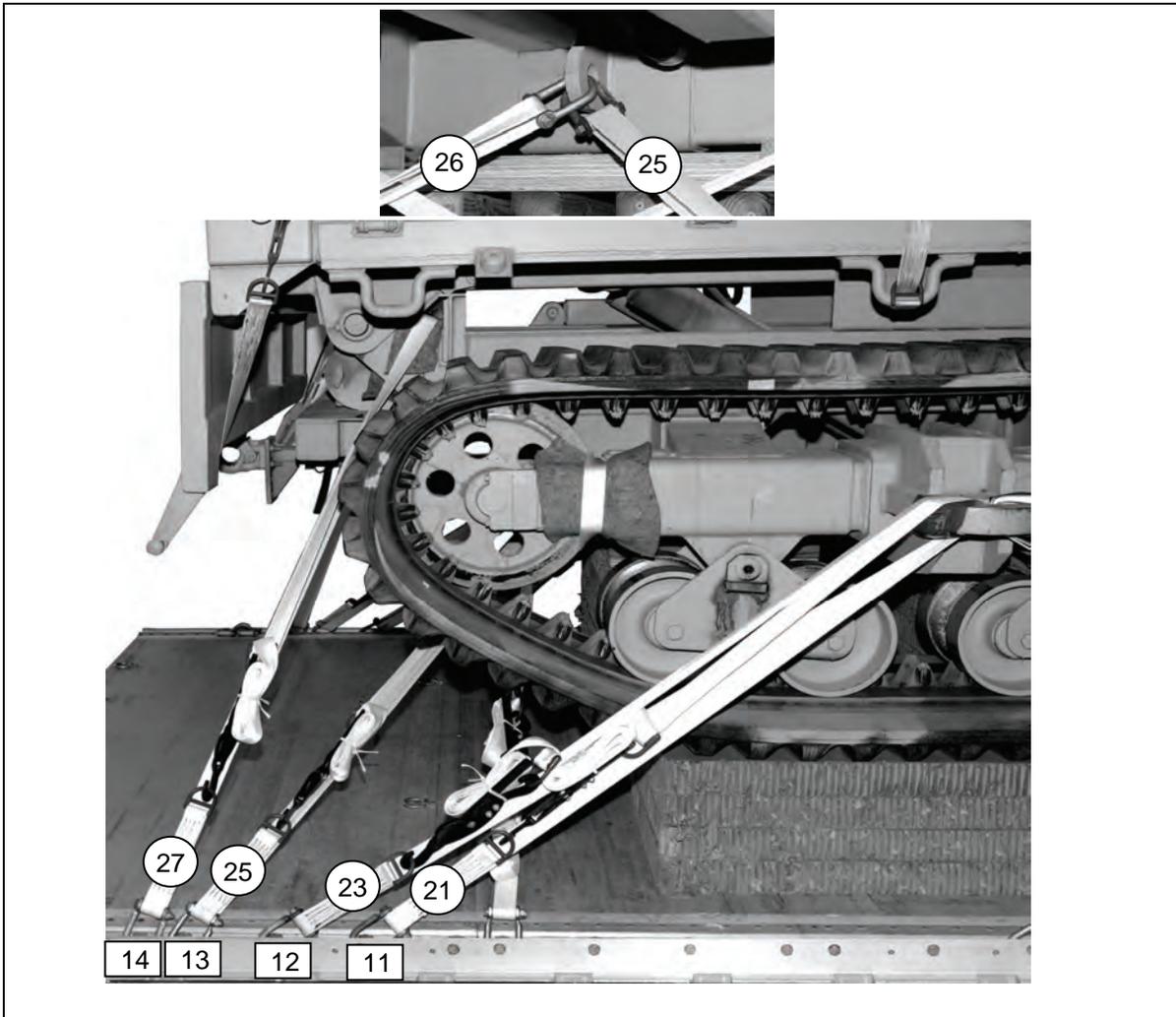


Figure 11-24. Lashings 11 Through 18 Installed



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
19	10	Pass a 30-foot lashing: Through clevis 10 and around the padded part of the track roller bar on the left side.
20	10A	Through clevis 10A and around the padded part of the track roller bar on the right side.

**Figure 11-25. Lashings 19 and 20 Installed**



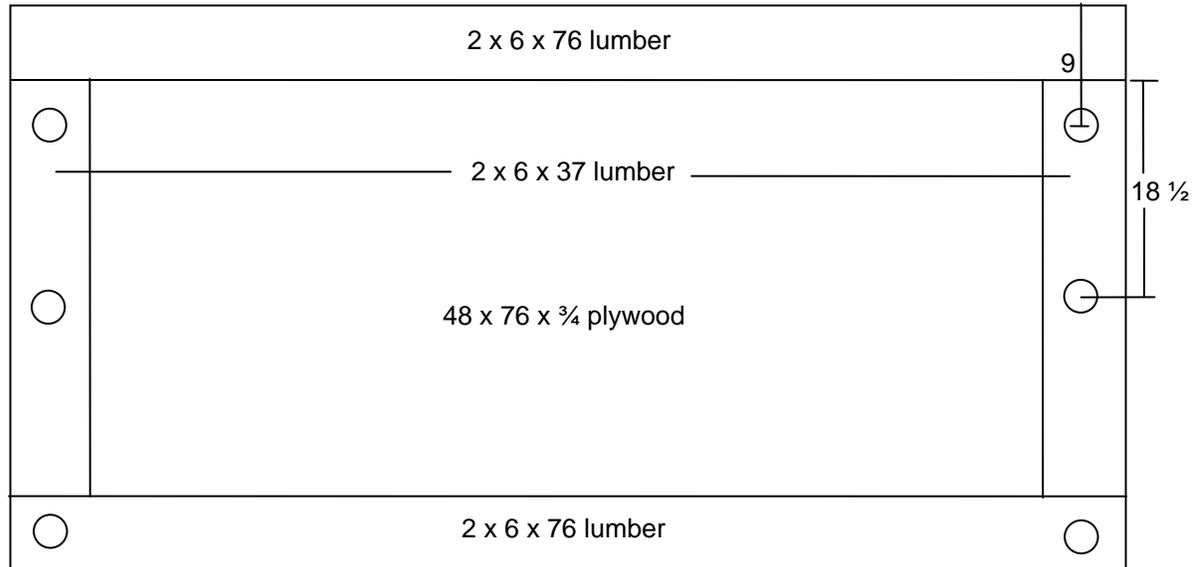
<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
21	11	Pass lashing: Through the rear track tiedown point on the right side. Through the rear track tiedown point on the left side. Through the rear track tiedown point on the right side. Through the rear track tiedown point on the left side. To one of the double clevises on the rear frame tiedown point. To the remaining double clevis on the rear frame tiedown point. To the tailgate hinge support previously padded on the right side. To the tailgate hinge support previously padded on the left side.
22	11A	
23	12	
24	12A	
25	13	
26	13A	
27	14	
28	14A	

Figure 11-26. Lashings 21 Through 28 Installed

## BUILDING THE PARACHUTE STOWAGE PLATFORM

11-7. Build a parachute stowage platform as shown in Figure 10-27.

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



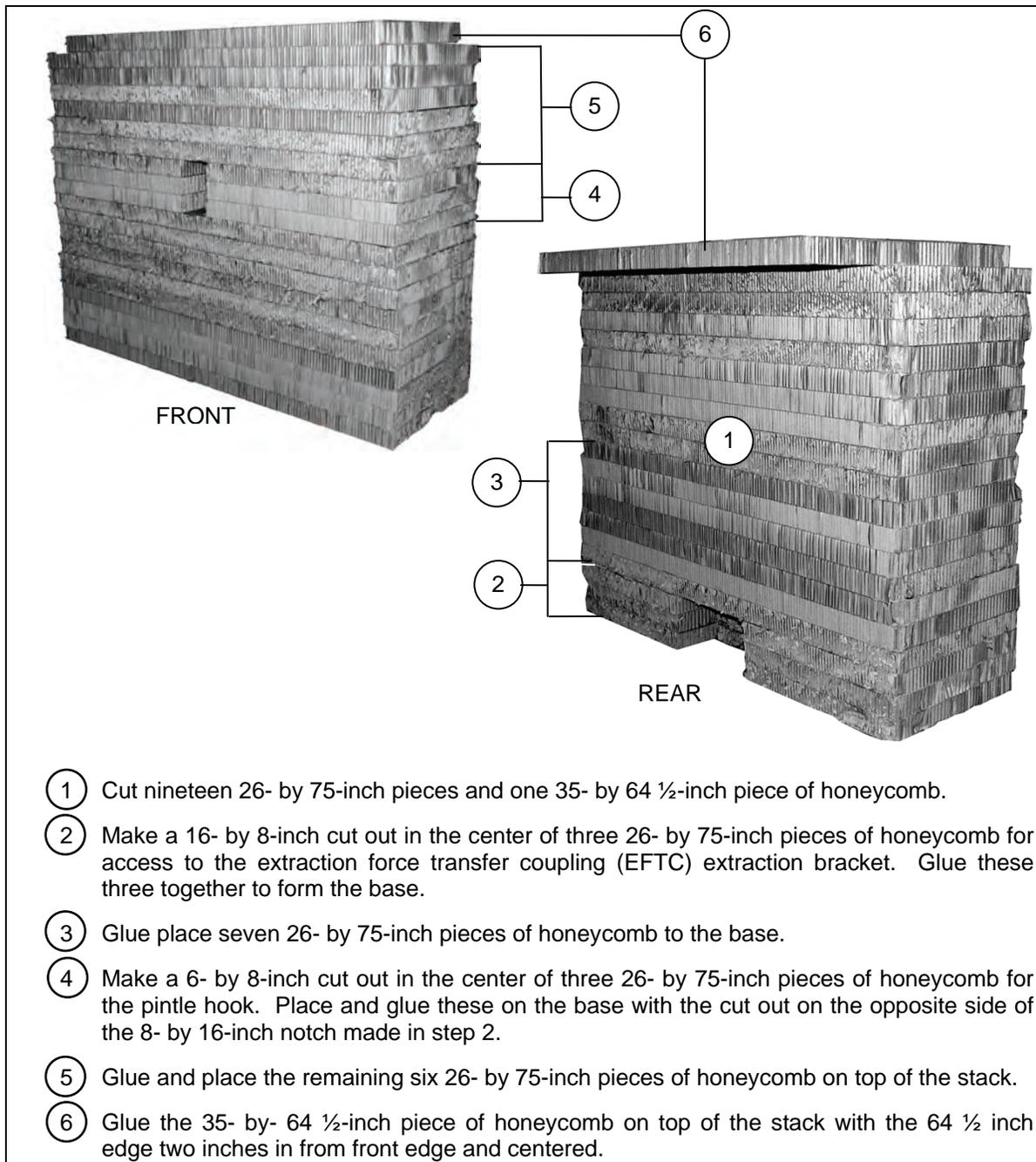
**Steps:**

1. Cut a 48- by 76- by 3/4-inch sheet of plywood as a base.
2. Cut two 2- by 6- by 76-inch pieces of lumber. Nail each piece of lumber flush with the front, rear and sides using 8d nails.
3. Cut two 2- by 6- by 37-inch pieces of lumber. Nail the lumber flush with one piece on each side between the front and rear pieces using 8d nails.
4. Drill six 2-inch holes centered as shown.

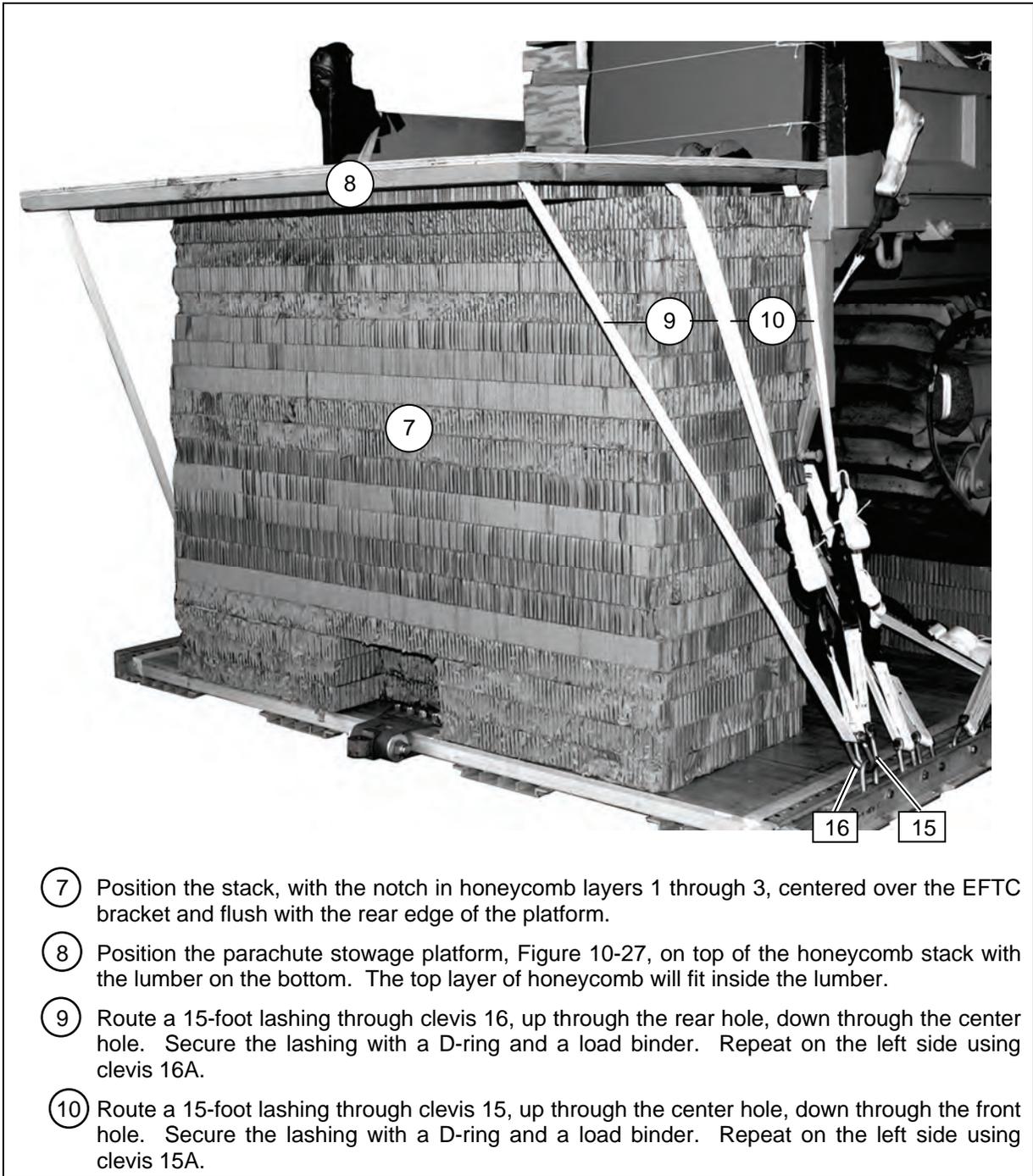
**Figure 11-27. Parachute Stowage Platform Built**

## INSTALLING AND RESTRAINING THE PARACHUTE STOWAGE PLATFORM

11-8. Install and restrain the parachute stowage platform as shown in Figure 11-28.



**Figure 11-28. Parachute Stowage Platform Installed and Restrained**

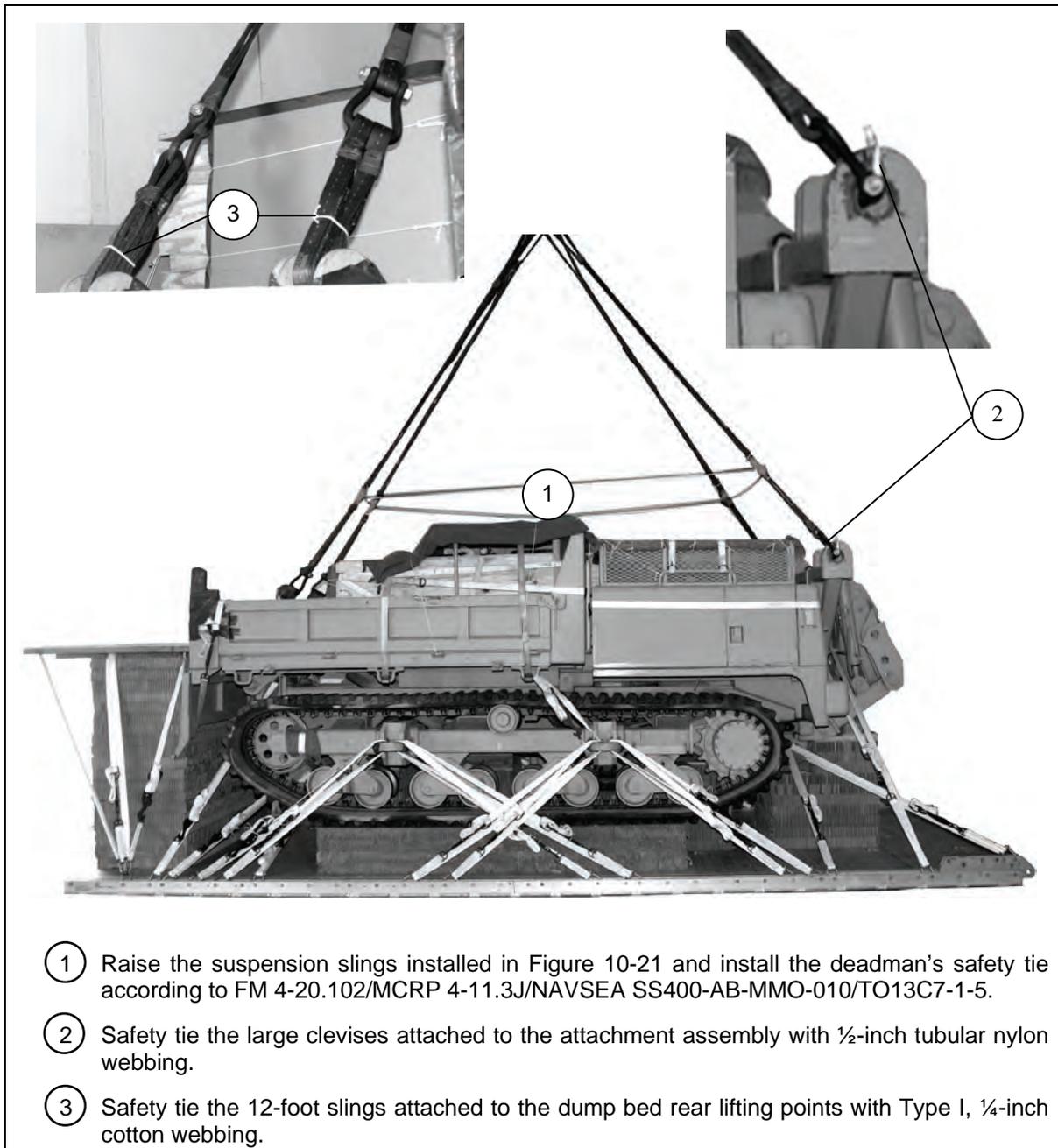


- ⑦ Position the stack, with the notch in honeycomb layers 1 through 3, centered over the EFTC bracket and flush with the rear edge of the platform.
- ⑧ Position the parachute stowage platform, Figure 10-27, on top of the honeycomb stack with the lumber on the bottom. The top layer of honeycomb will fit inside the lumber.
- ⑨ Route a 15-foot lashing through clevis 16, up through the rear hole, down through the center hole. Secure the lashing with a D-ring and a load binder. Repeat on the left side using clevis 16A.
- ⑩ Route a 15-foot lashing through clevis 15, up through the center hole, down through the front hole. Secure the lashing with a D-ring and a load binder. Repeat on the left side using clevis 15A.

**Figure 11-28. Parachute Stowage Platform Installed and Restrained (Continued)**

## PADDING, SECURING AND SAFETY TIEING SUSPENSION SLINGS

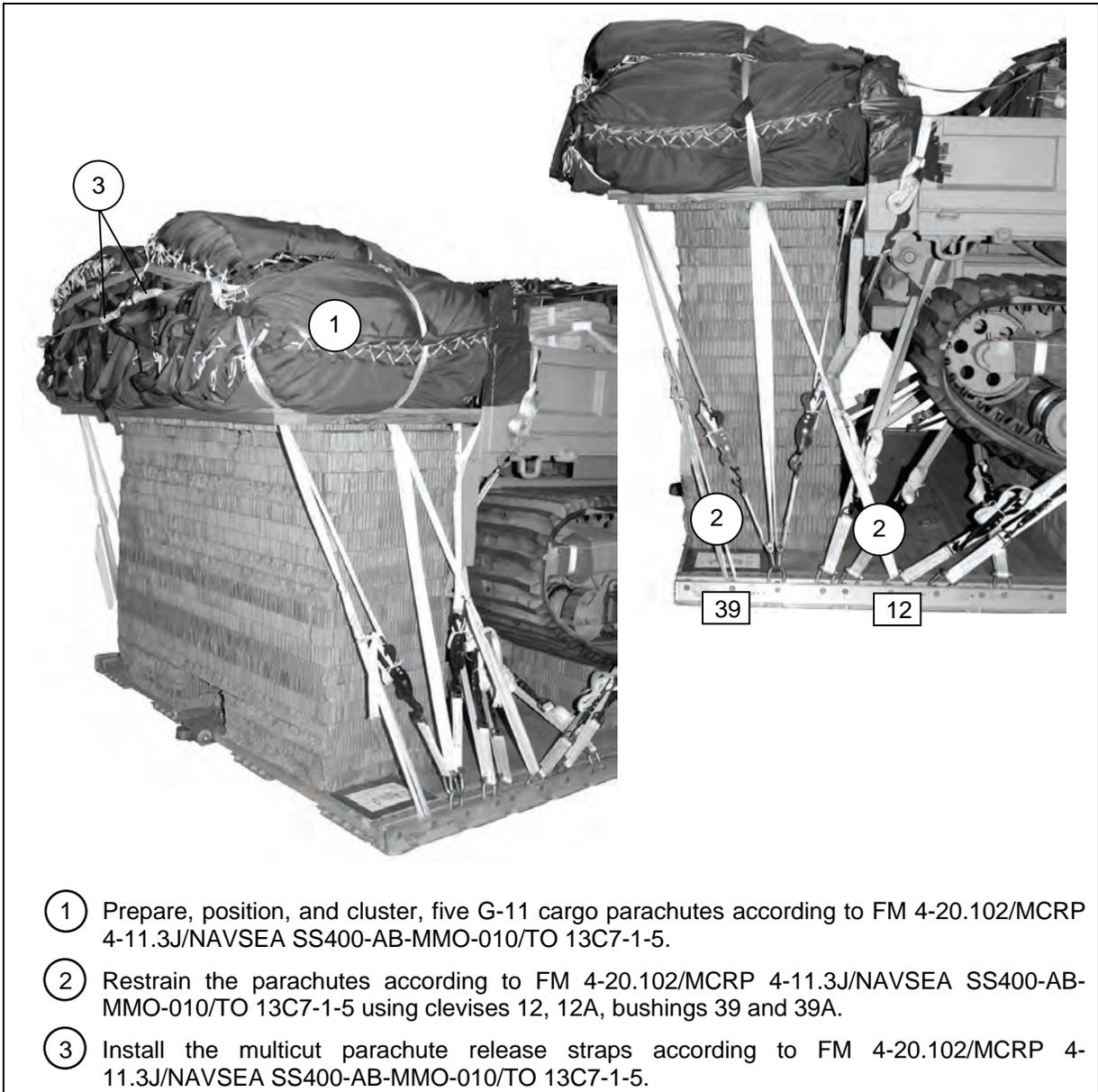
11-9. Pad, secure and safety tie the suspension slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 10-29.



**Figure 11-29. Suspension Slings Padded, Secured and Safety tied**

## STOWING CARGO PARACHUTES

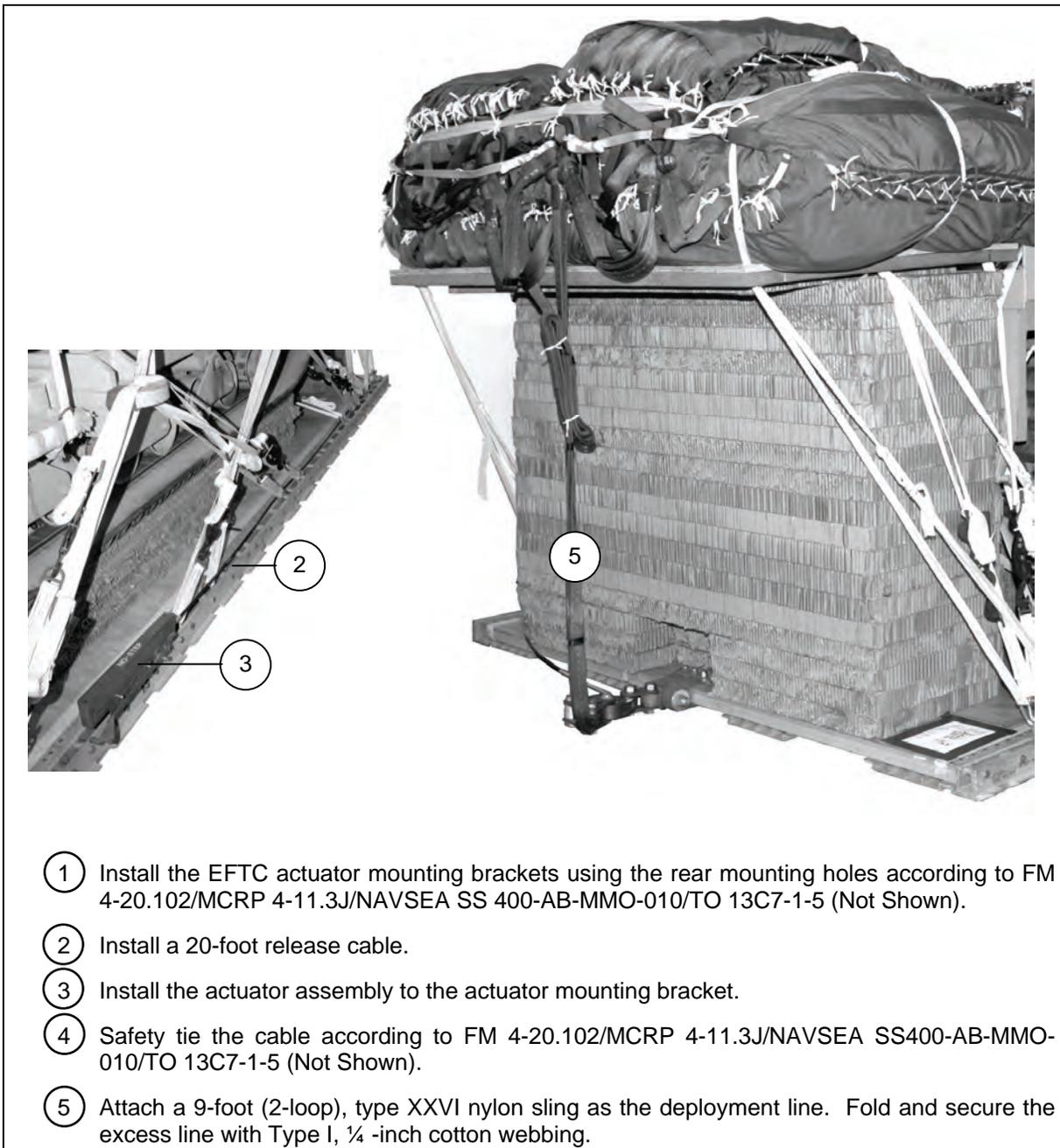
11-10. Prepare, stow, cluster, and restrain five G-11 cargo parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 11-30.



**Figure 11-30. Cargo Parachutes Stowed and Restrained**

## INSTALLING EXTRACTION SYSTEM

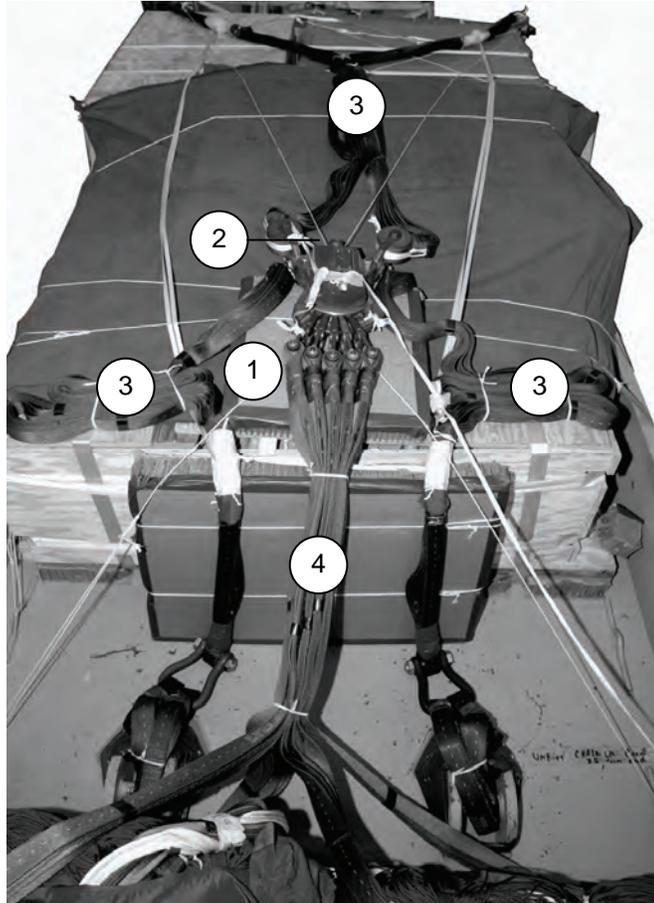
11-11. Install the EFTC system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 11-31. Install the EPJS according to FM 4-20.102/MCRP 4-11.3J/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 if applicable.



**Figure 11-31. Extraction System Installed**

## INSTALLING M-2 RELEASE ASSEMBLY

11-12. Install the M-2 parachute release assembly according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 11-32.



- ① Cut a 20- by 24-inch piece of honeycomb to use as a base. Tape the edges and place the honeycomb on the rear of the accompanying load. Secure the honeycomb with type III nylon cord routed under the suspension sling and safety tie to a convenient point on the load.
- ② Install an M-2 parachute release. Attach the suspension slings and riser extensions according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/TO 13C7-1-5. Restrain the release with type III nylon cord to convenient points on the load.
- ③ 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.

**Figure 11-32. M-2 Parachute Release Assembly Installed**

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

11-13. Install the provisions for the emergency restraints on the platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **PLACING EXTRACTION PARACHUTE**

11-14. Select the extraction parachute and extraction line according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO13C7-1-5. 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.

## **MARKING RIGGED LOAD**

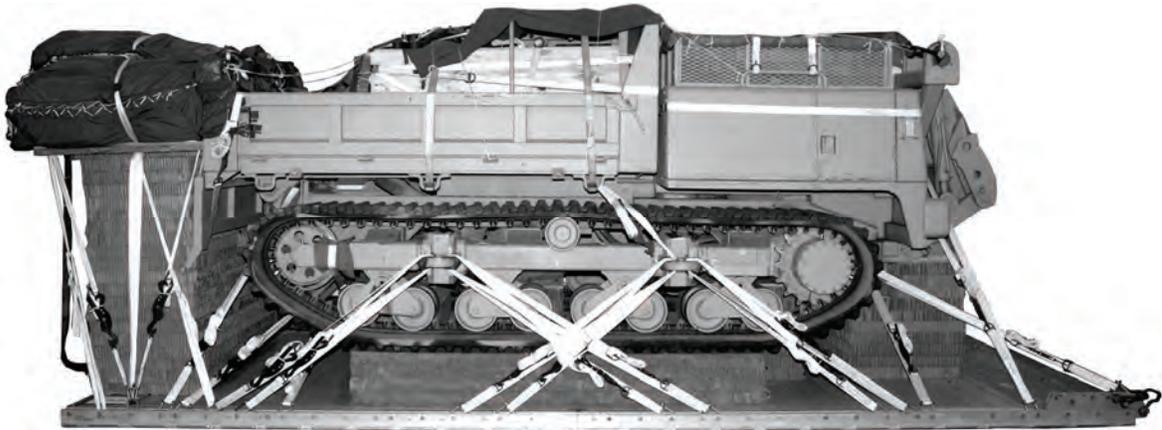
11-15. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 11-33. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, center of balance (CB) and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

11-16. Use the equipment listed in Table 11-3 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

Weight.....	21,480 pounds
Maximum Weight.....	22,900 pounds
Height .....	97 ½ inches
Width.....	108 inches
Length.....	262 inches
Overhang: Front .....	0 inches
Rear (Parachute platform) .....	22 inches
Rear (EPJS).....	30 inches
Center of Balance (from front edge of platform) .....	125 inches

Figure 11-33. IC45-2 IHI Crawler Carrier Rigged on a Type V Platform for Low-Velocity Airdrop

**Table 11-3. Equipment Required for Rigging the IC 45-2 IHI Crawler Carrier on a Type V Platform for Low-Velocity Airdrop**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-2712-8713	Adhesive, paste, 10-gal	As required
1670-010-035-6054	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
1670-010-475-1990	Extraction Parachute Jettison System (EPJS)	1
	Felt:	
8305-00-1910-1101	½-inch	As required
8305-00-290-5584	<sup>3</sup> / <sub>16</sub> -inch	As required
1670-00-0012-4391	Knife, parachute bag (For DES)	2
5340-00-040-8219	Knife, multi-parachute release strap, webbing	2
1670-010-1812-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
	Line Multi-Loop:	
	For deployment line:	
1670-010-0611-6304	9-ft, (11-loop), type XXVI nylon webbing	1
	For drogue:	
1670-010-064-4452	60-ft, (1-loop), type XXVI nylon webbing (DES)	1
	For extraction:	
1670-010-0611-6313	60-ft, (3-loop), type XXVI nylon (C-130 aircraft)	1
1670-010-107-7651	140-ft, (6-loop), type XXVI nylon (C-17 aircraft)	1
	For riser extension:	
1670-010-0611-6313	60-ft, (3-loop), type XXVI nylon webbing	5
	For suspension:	
1670-010-0611-6306	12-ft, (4-loop), type XXVI nylon webbing	2
1670-010-0611-6310	20-ft, (4-loop), type XXVI nylon webbing	4
	Link:	
1670-010-4912-6418	Assembly small, two-point, 3 <sup>3</sup> / <sub>4</sub> -inch (drogue)	1
1670-010-4912-6420	Assembly large, two-point 5 <sup>1</sup> / <sub>2</sub> -inch	1
1670-010-0711-5637	Jettison, C-130 (DES)	1
1670-010-4812-8259	Link, Parachute connector (TRM H-block) (C-17)	1
	Lumber:	
5510-00-220-6146	2- by 4-inch	3
5510-00-220-6148	12- by 6-inch	1
5510-00-220-6274	4- by 4-inch	5

**Table 11-3. Equipment Required for Rigging the IC 45 -2 IHI Crawler Carrier 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, 10-inch sheet	1
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
1670-00-7512-3928	Pad, energy-dissipating, honeycomb, Parachute:	29 sheets
1670-010-016-7841	G-11	5
1670-00-040-8135	28-ft, extraction, heavy-duty	1
1670-010-0612-3717	15-ft, Extraction Drogue (DES)	1
	Platform, airdrop, type V, 20-ft:	1
1670-010-3512-8425	Bracket assembly, component (EFTC)	1
1670-010-3512-8424	Bracket, assembly, extraction	1
1670-010-1611-2372	Clevis, load tiedown	34
1670-010-1611-2381	Link, Tandem, link sups. assembly	2
1670-010-097-8817	Release, cargo parachute, M-2	1
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tiedown assembly, 15-ft	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
8305-00-0811-5752	Nylon, tubular, ½-inch, natural	As required
8305-00-2612-3591	Nylon, type VIII	As required

## Chapter 12

# Rigging M973A, 1 ½-Ton Cargo Carrier Small Unit Support Vehicle (SUSV) on a Type V Platform for Low-Velocity Airdrop

### DESCRIPTION OF LOAD

12-1. The small unit support vehicle (SUSV), Figure 12-1, is a tracked vehicle with a driver's compartment and a cargo-troop carrier compartment attached to the rear. The vehicle is 271 inches long, 74 inches wide, 90 ½ inches high, and weighs 10,000 pounds. The SUSV is rigged on a 28-foot, type V airdrop platform using four G-11 cargo parachutes for low-velocity airdrop from C-130 and C-17 aircraft. The vehicle must be rigged with an accompanying load that weighs 2,000 pounds but not more than 2,100 pounds. The accompanying load is 105-millimeter ammunition rigged on the front end of the platform; however other equipment may be used.

#### CAUTION

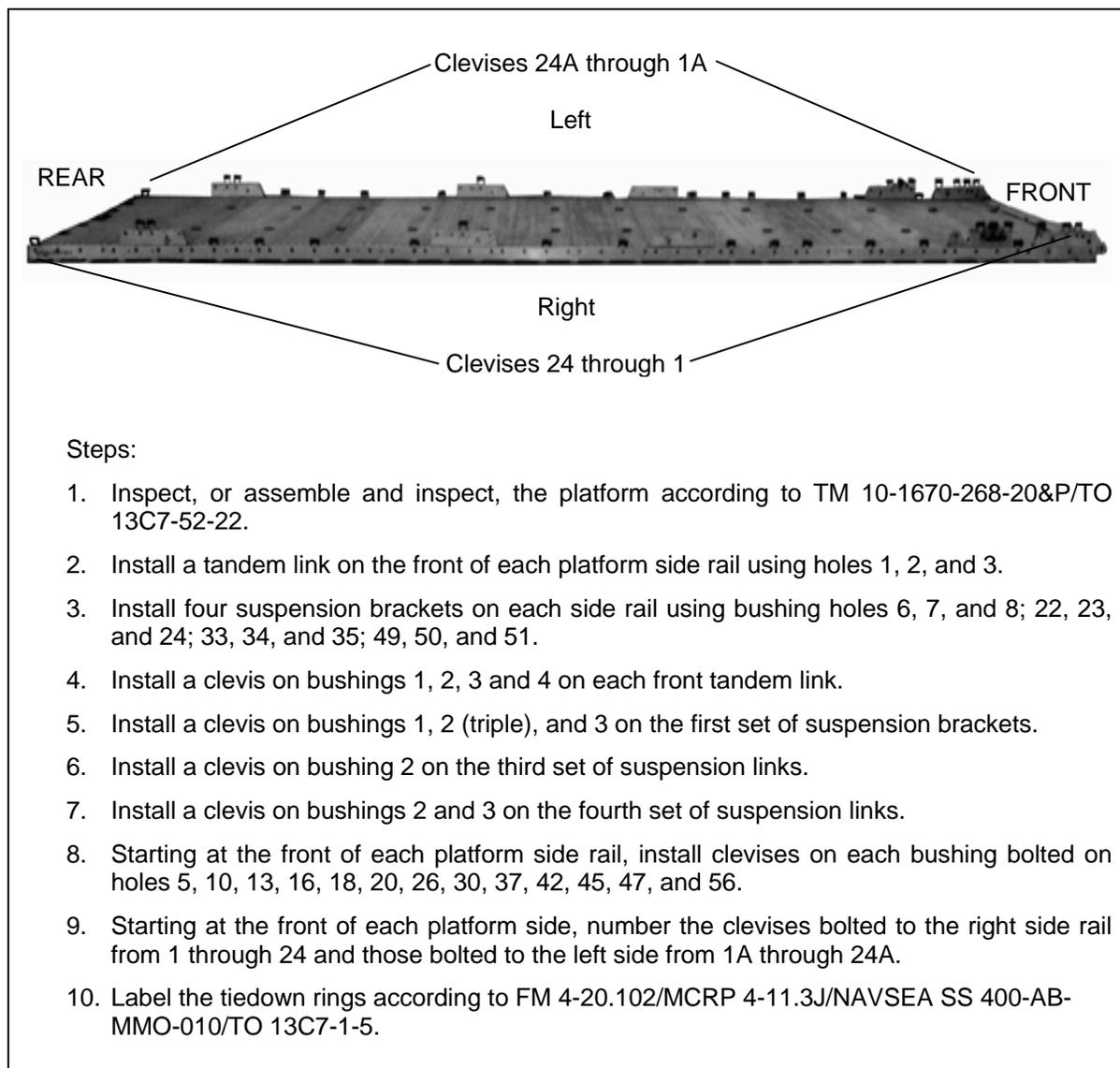
Only ammunition listed in FM 4-20.153/MCRP 4-11.3B/TO 13C7-18-41 may be air dropped.



Figure 12-1. SUSV

## PREPARING PLATFORM

12-2. Prepare a 28-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22. Install two tandem links, eight suspension brackets and 50 tiedown clevis assemblies as shown in Figure 12-2.

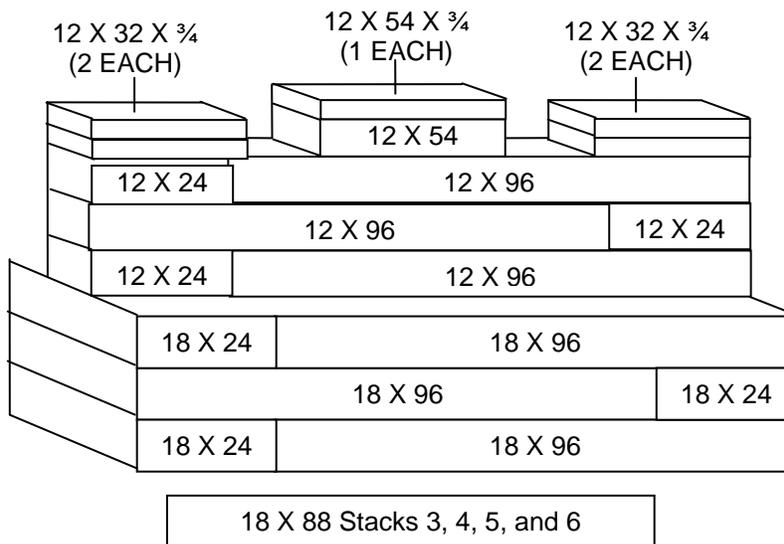


**Figure 12-2. Platform Prepared**

## BUILDING AND POSITIONING HONEYCOMB STACKS

12-3. Build six honeycomb stacks and place them on the platform as shown in Figures 12-3 and 12-4.

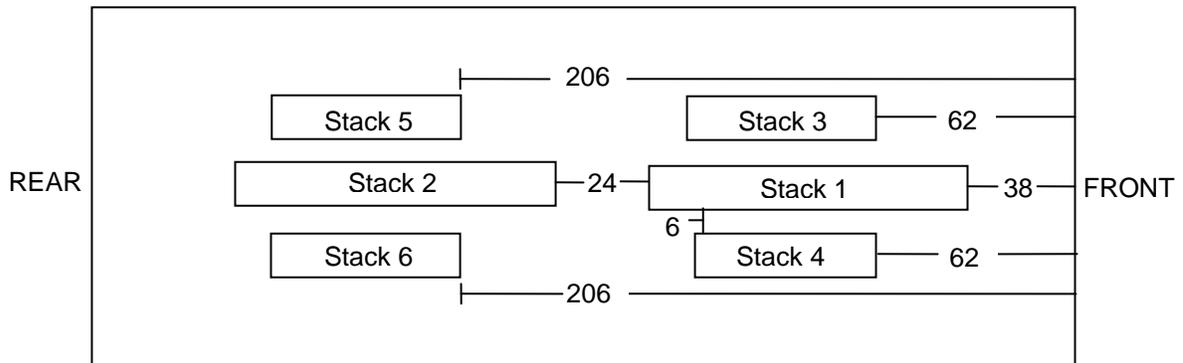
- Notes.** 1. Not drawn to scale.  
2. All dimensions are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 2	3	18	96	Honeycomb	Alternate pieces of honeycomb as shown to form a base. Center and alternate honeycomb pieces on base.
	3	18	24	Honeycomb	
	3	12	96	Honeycomb	
	3	12	24	Honeycomb	
	4	12	32	¾-Inch Plywood	
	1	12	54	Honeycomb	Center the piece of honeycomb between the 111- by 311-inch pieces of plywood.
	1	12	54	¾-Inch Plywood	Center the piece of plywood on the 111- by 54-inch piece of honeycomb.
3, 4, 5, and 6	1	18	88	Honeycomb	Stand alone stacks.

Figure 12-3. Honeycomb Stacks 1 through 6 Prepared

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

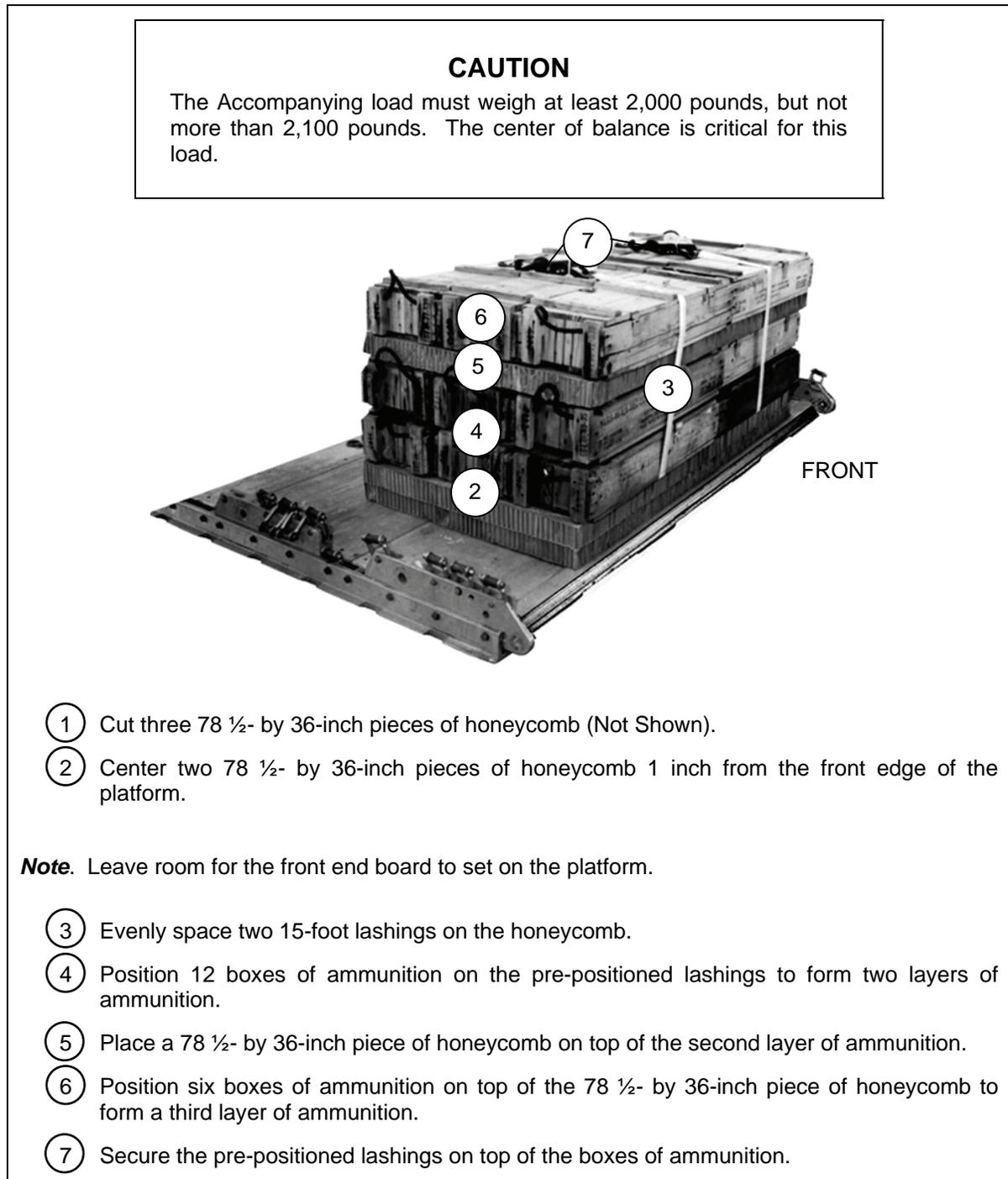


<b>Stack Number</b>	<b>Position of Stacks on the Platform</b>
1	Place stack: Centered 38 inches from the front edge of the platform.
2	Centered 24 inches from stack 1 or 182 inches from the front edge of the platform.
3	Centered 62 inches from the front edge of the platform and 6 inches left of stack 1.
4	Centered 62 inches from the front edge of the platform and 6 inches right of stack 1.
5	Centered 206 inches from the front edge of the platform and 6 inches left of stack 2.
6	Centered 206 inches from the front edge of the platform and 6 inches right of stack 2.

**Figure 12-4. Honeycomb Stacks Positioned on Platform**

## POSITIONING ACCOMPANYING LOAD ON THE PLATFORM

12-4. Position and secure 18 boxes of 105-MM ammunition on the platform as shown in Figure 12-5.



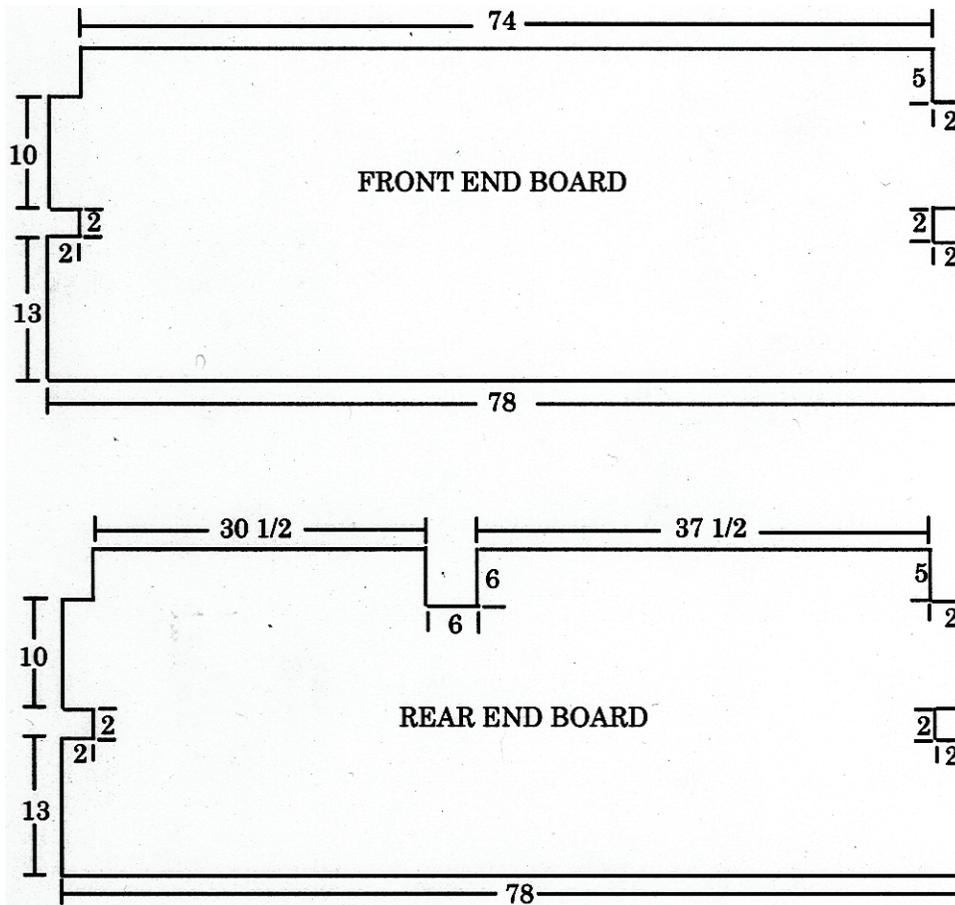
**Figure 12-5. Accompanying Load Positioned on the Platform**

## BUILDING END BOARDS AND LASHING THE ACCOMPANYING LOAD

12-5. Build the end boards for accompanying load as shown in Figure 12-6.

**Notes.** 1. Not drawn to scale.

2. All dimensions are given in inches.



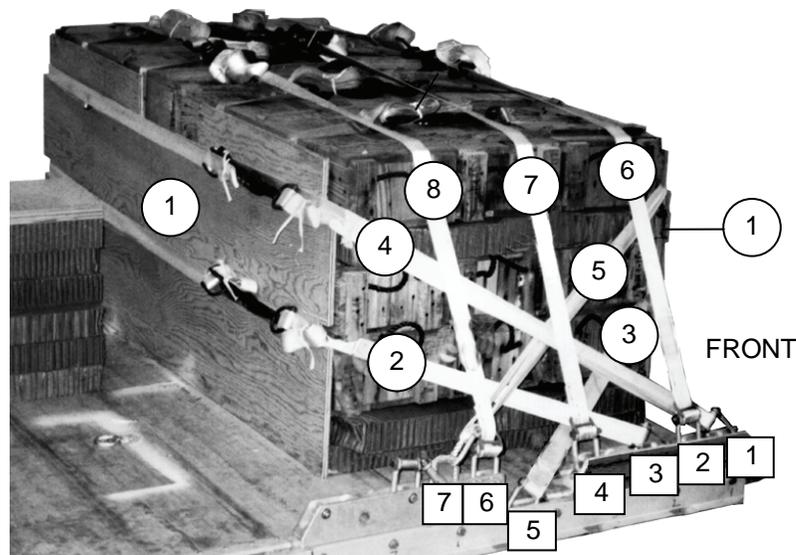
Step:

1. Construct two end boards using 30- by 78- by  $\frac{3}{4}$ -inch plywood.

Figure 12-6. End boards for Accompanying Load Built

## LASHING THE ACCOMPANYING LOAD

12-6. Lash the accompanying load as shown in Figure 12-7.

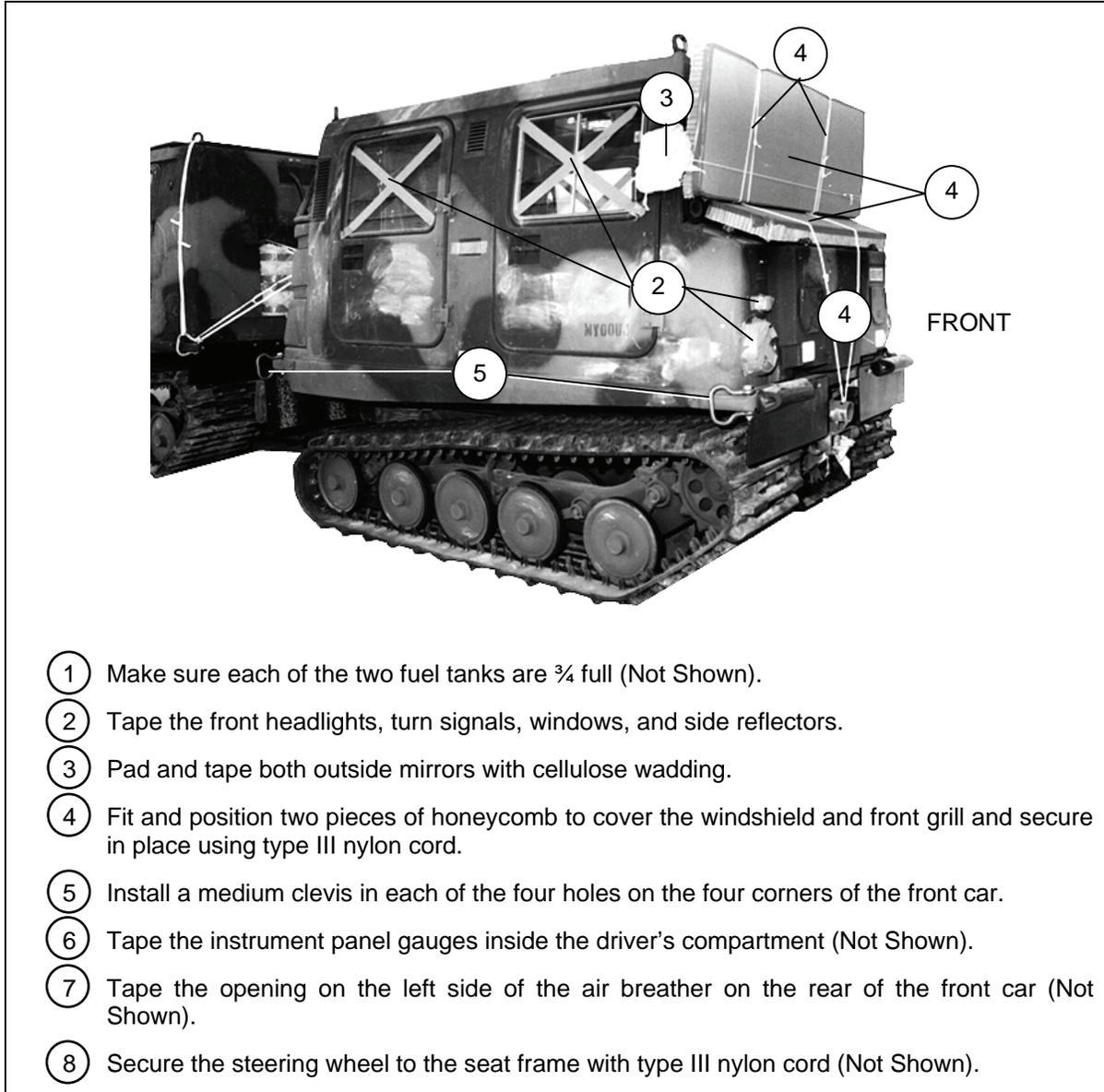


- ① Position the end boards against the front and rear of the ammunition boxes.
- ② Route a 30 foot lashing through the bottom notches of the rear end board, through clevises 3 and 3A. Secure the lashings with two D-rings and a load binder on the rear end board.
- ③ Route a 30 foot lashing through the bottom notches of the front end board, through clevises 5 and 5A. Secure the lashings with two D-rings and a load binder on the front end board.
- ④ Route a 30 foot lashing through the top notches of the rear end board, through clevises 1 and 1A. Secure the lashings with two D-rings and a load binder on the rear end board.
- ⑤ Route a 30 foot lashing through the top notches of the front end board, through clevises 7 and 7A. Secure the lashing with two D-rings and a load binder on the front end board.
- ⑥ Route two lashings, one through clevis 2, the other through clevis 2A, back through their own D-rings and up between the carrying handle and the box on the top layer of ammunition. Secure the lashings with two D-rings and a load binder on top of the load.
- ⑦ Route two lashings, one through clevis 4, the other through clevis 4A, then back through their own D-rings behind the carrying handle on the top layer of ammunition. Secure the lashings with two D-rings and a load binder on top of the load.
- ⑧ Route two lashings, one through clevis 6 and the other through clevis 6A, then back through their own D-rings behind the carrying handle on the top layer of ammunition. Secure the lashings with two D-rings and a load binder on top of the load.

**Figure 12-7. Accompanying Load Lashed**

## PREPARING THE SUSV

12-7. Prepare the SUSV as follows: Prepare the front car as shown in Figures 12-8 and 12-9. Prepare the rear car as shown in Figures 12-10 through 12-12. Prepare the inside of the rear car as shown in Figure 12-13.



- ① Make sure each of the two fuel tanks are  $\frac{3}{4}$  full (Not Shown).
- ② Tape the front headlights, turn signals, windows, and side reflectors.
- ③ Pad and tape both outside mirrors with cellulose wadding.
- ④ Fit and position two pieces of honeycomb to cover the windshield and front grill and secure in place using type III nylon cord.
- ⑤ Install a medium clevis in each of the four holes on the four corners of the front car.
- ⑥ Tape the instrument panel gauges inside the driver's compartment (Not Shown).
- ⑦ Tape the opening on the left side of the air breather on the rear of the front car (Not Shown).
- ⑧ Secure the steering wheel to the seat frame with type III nylon cord (Not Shown).

**Figure 12-8. Front Car Prepared**

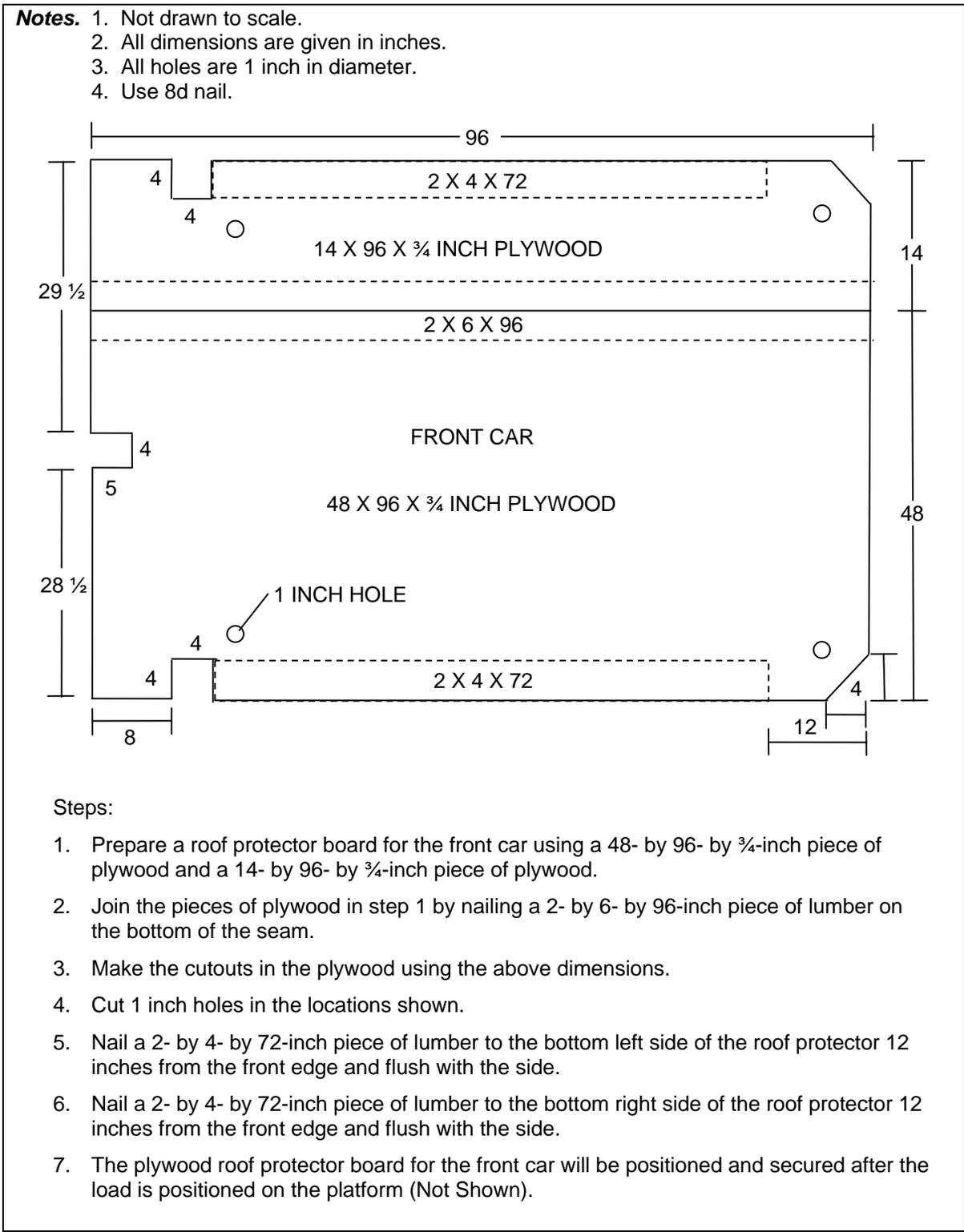
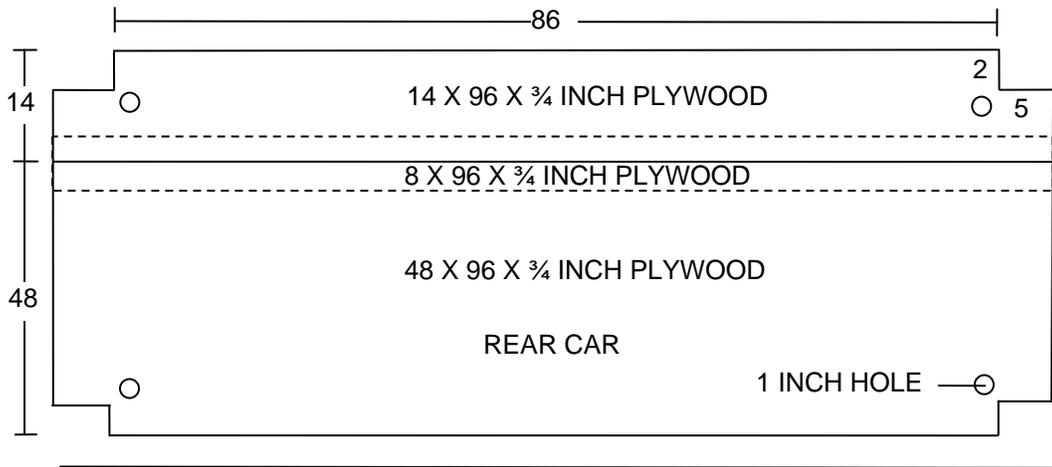


Figure 12-9. Front Car Roof Protector Board Built

**Notes.** 1. Not drawn to scale.

2. All dimensions are given in inches.

3. All holes are 1 inch in diameter.



**Steps:**

1. Build a roof protector board for the rear car using a 48- by 96- by  $\frac{3}{4}$ -inch piece and a 14- by 96- by  $\frac{3}{4}$ -inch piece of plywood.
2. Join the pieces of plywood in step 1 by nailing a 8- by 96- by  $\frac{3}{4}$ -inch piece of plywood on top of the seam.
3. Make cutouts on the corners of the plywood using dimensions given above.
4. Cut 1 inch holes in the locations shown.

**Figure 12-10. Rear Car Roof Protector Board Built**

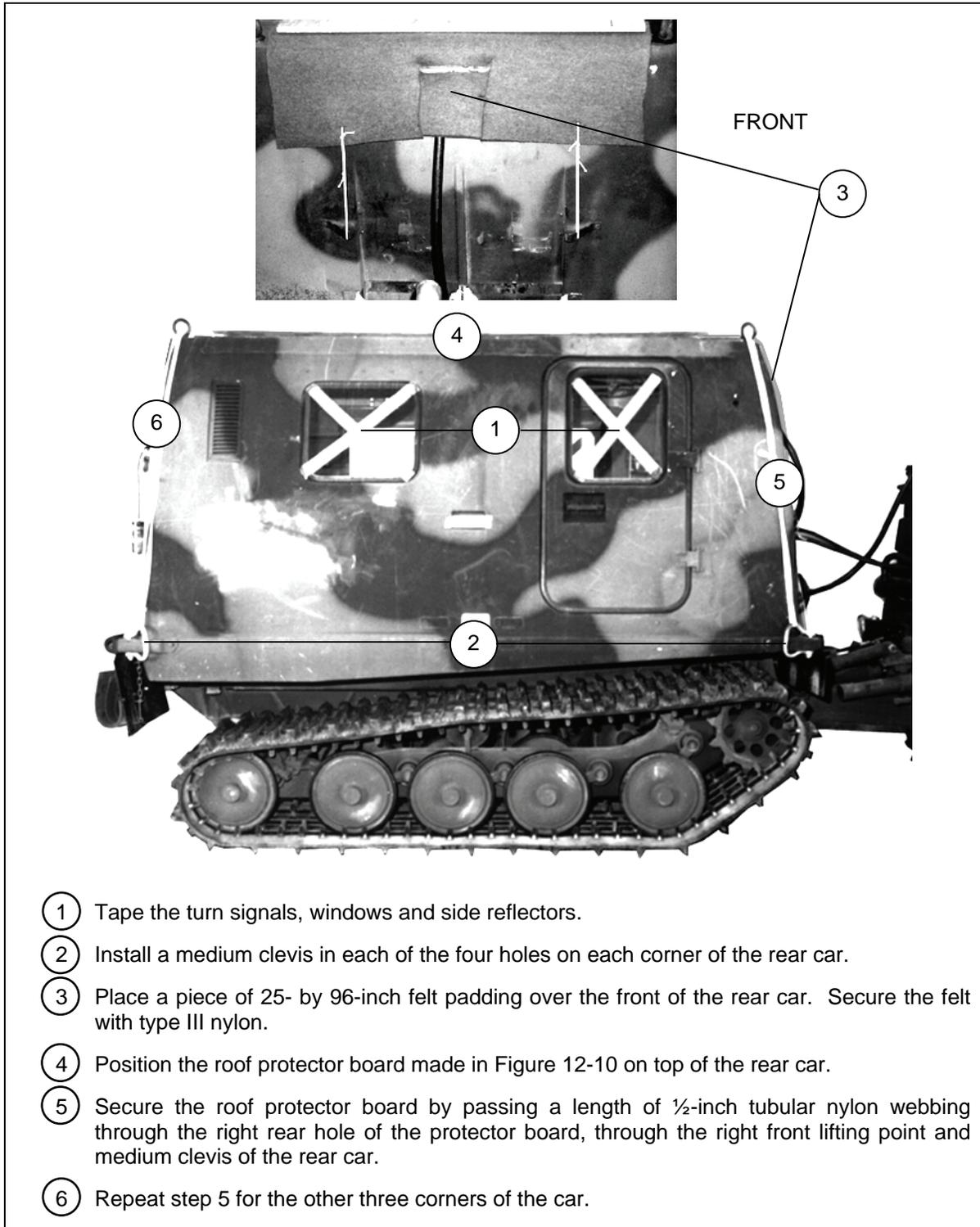


Figure 12-11. Rear Car Roof Protector Board Secured

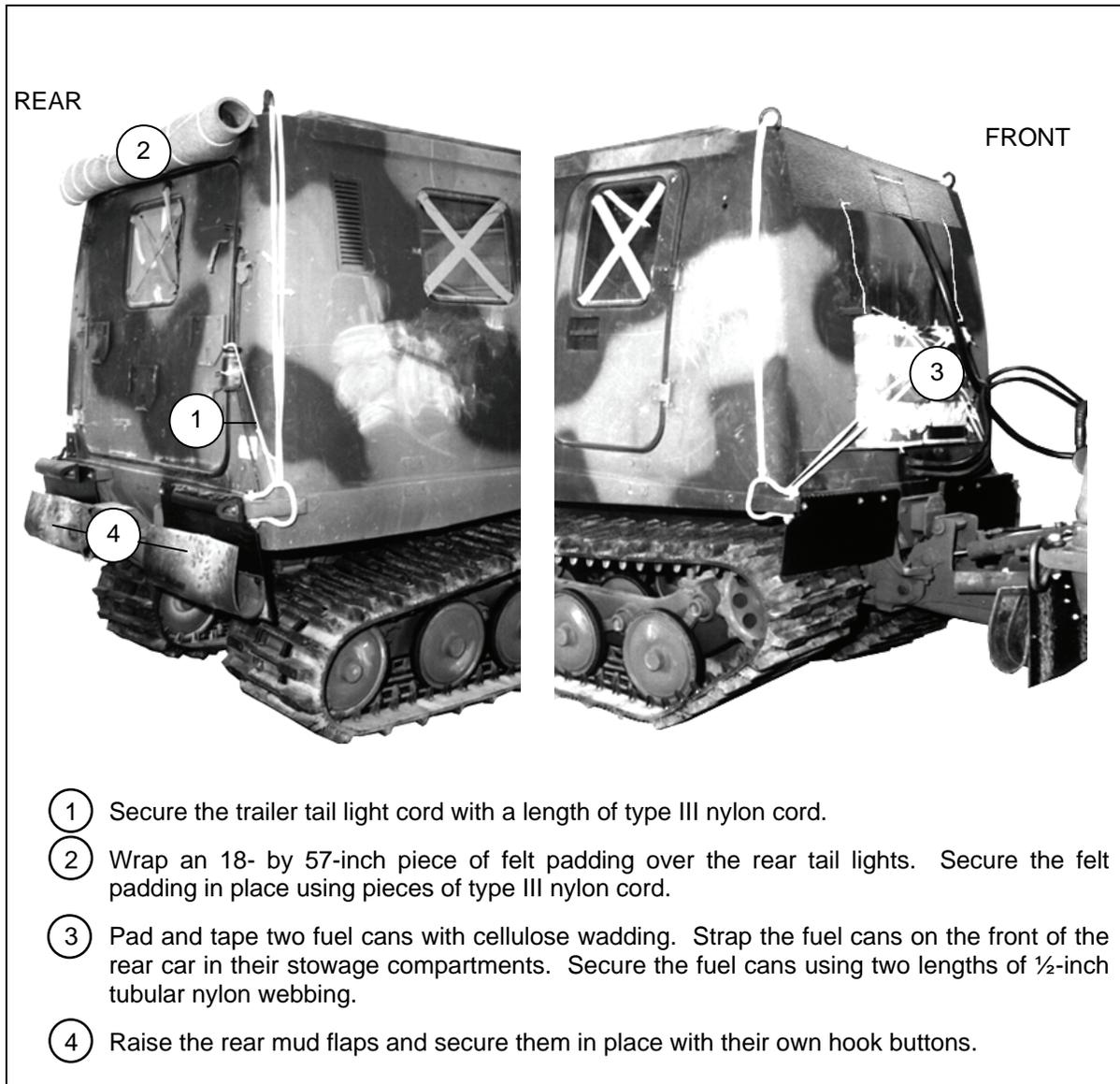


Figure 12-12. Rear Car Prepared

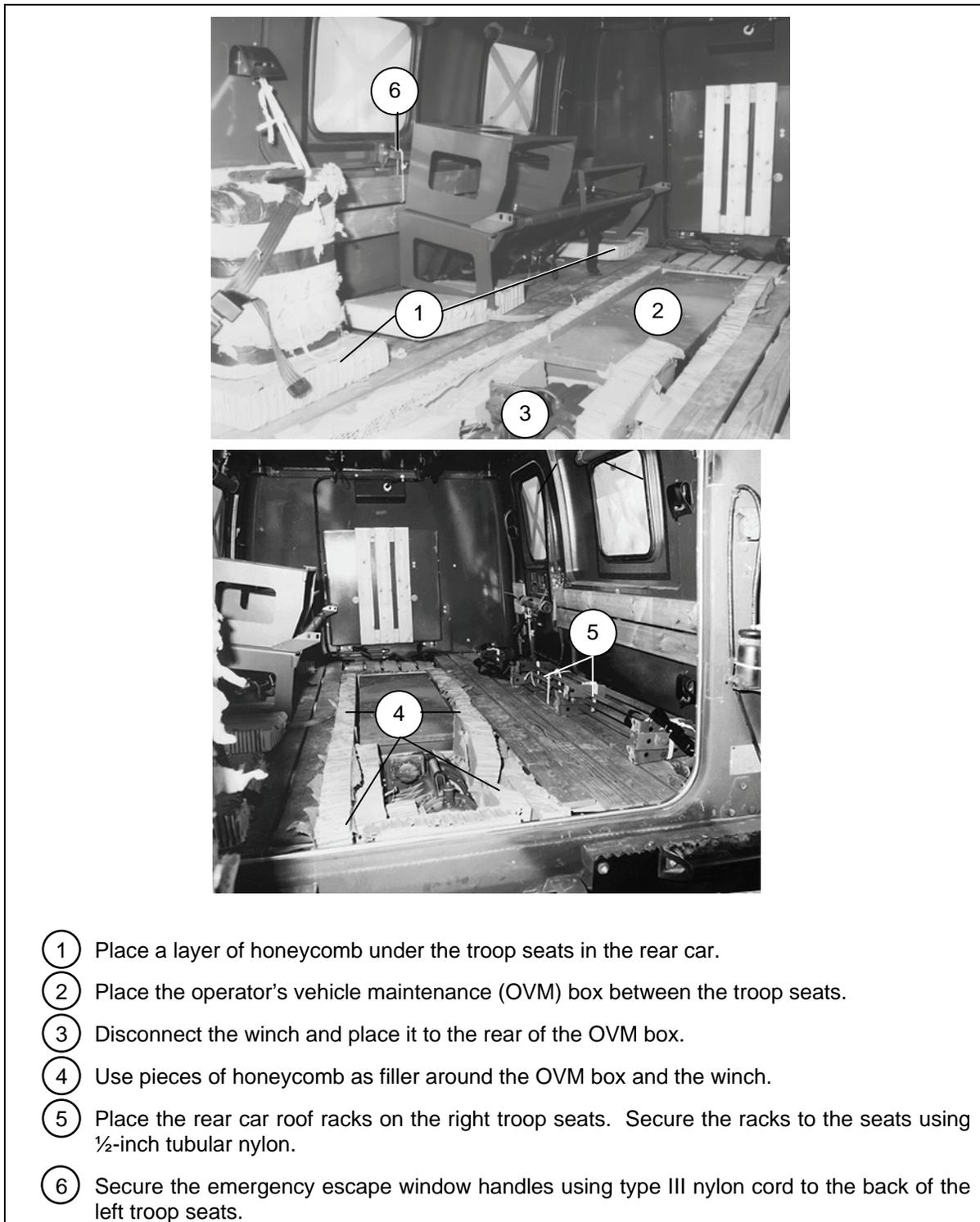
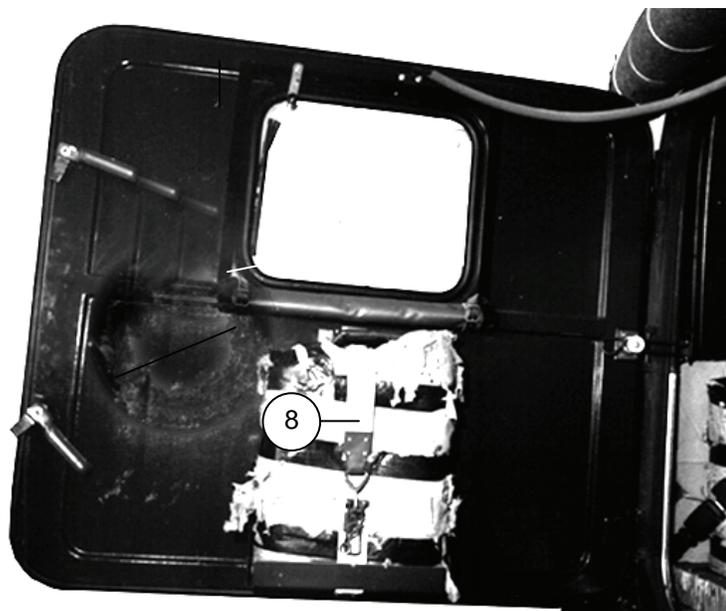
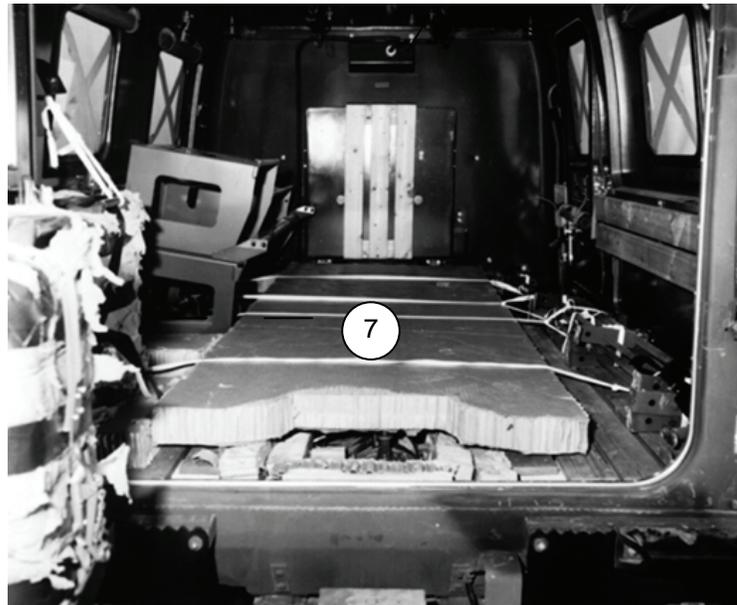


Figure 12-13. Inside of Rear Car Prepared



- ⑦ Place a layer of honeycomb on top of the OVM box and winch. Secure the honeycomb in place using four pieces of ½-inch tubular nylon webbing.
- ⑧ Pad and tape an additional fuel can with cellulose wadding. Place the fuel can on the inside of the rear door and secure it with the securing straps provided.

**Figure 12-13. Inside of Rear Car Prepared (Continued)**

## POSITIONING THE SUSV ON THE PLATFORM

12-8. Position the SUSV on the platform as shown in Figure 12-14.

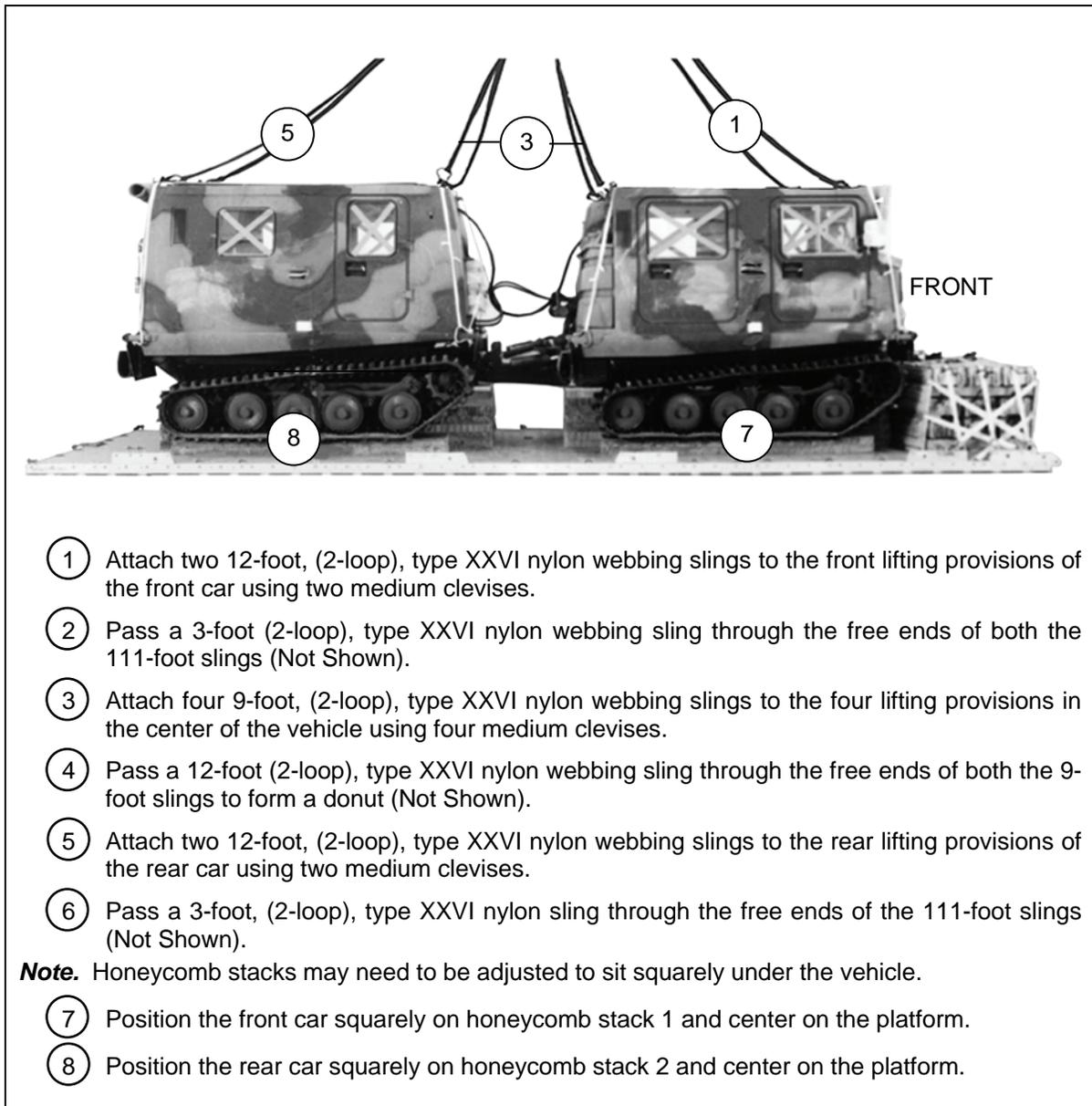
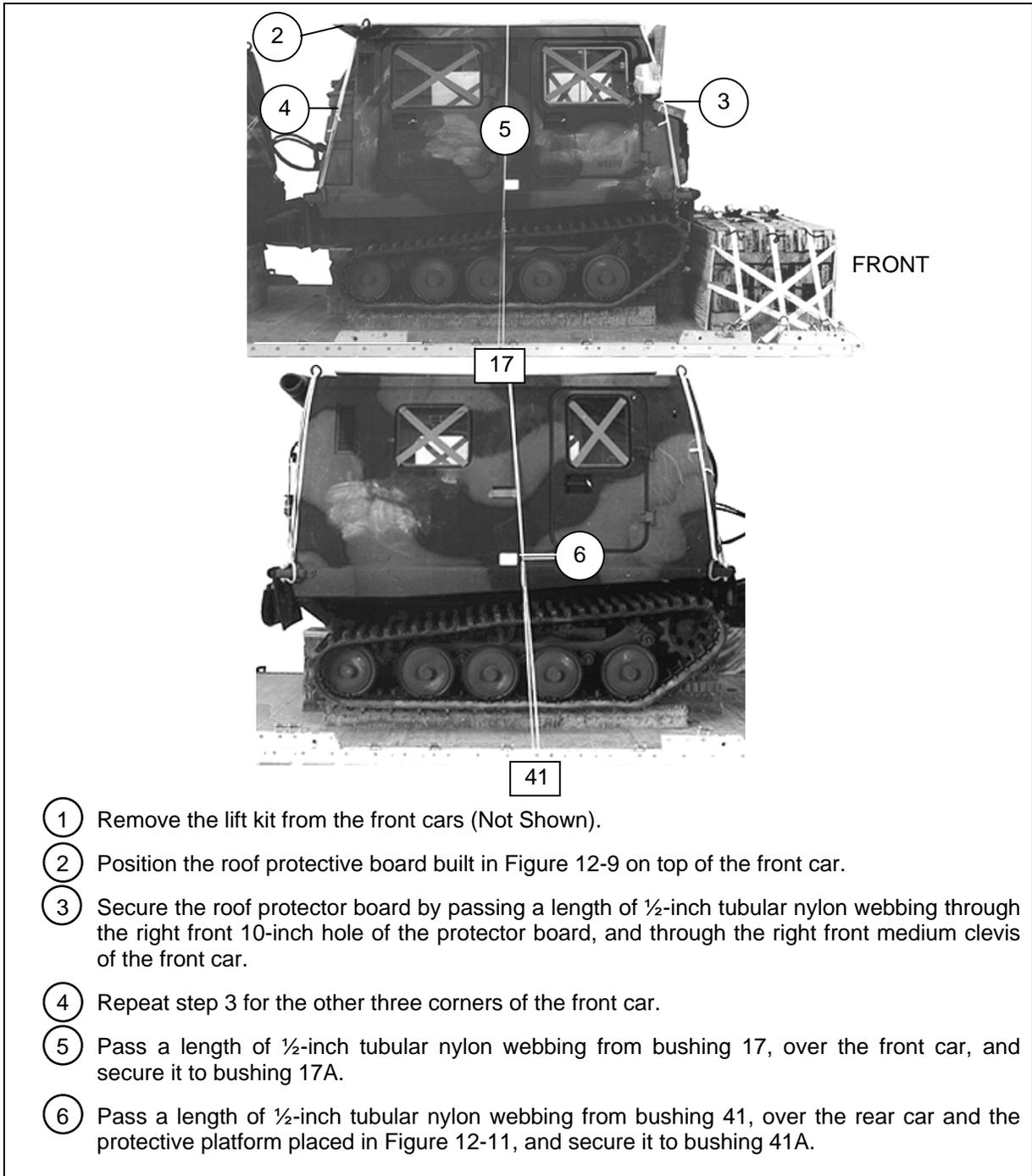


Figure 12-14. SUSV Positioned on Platform

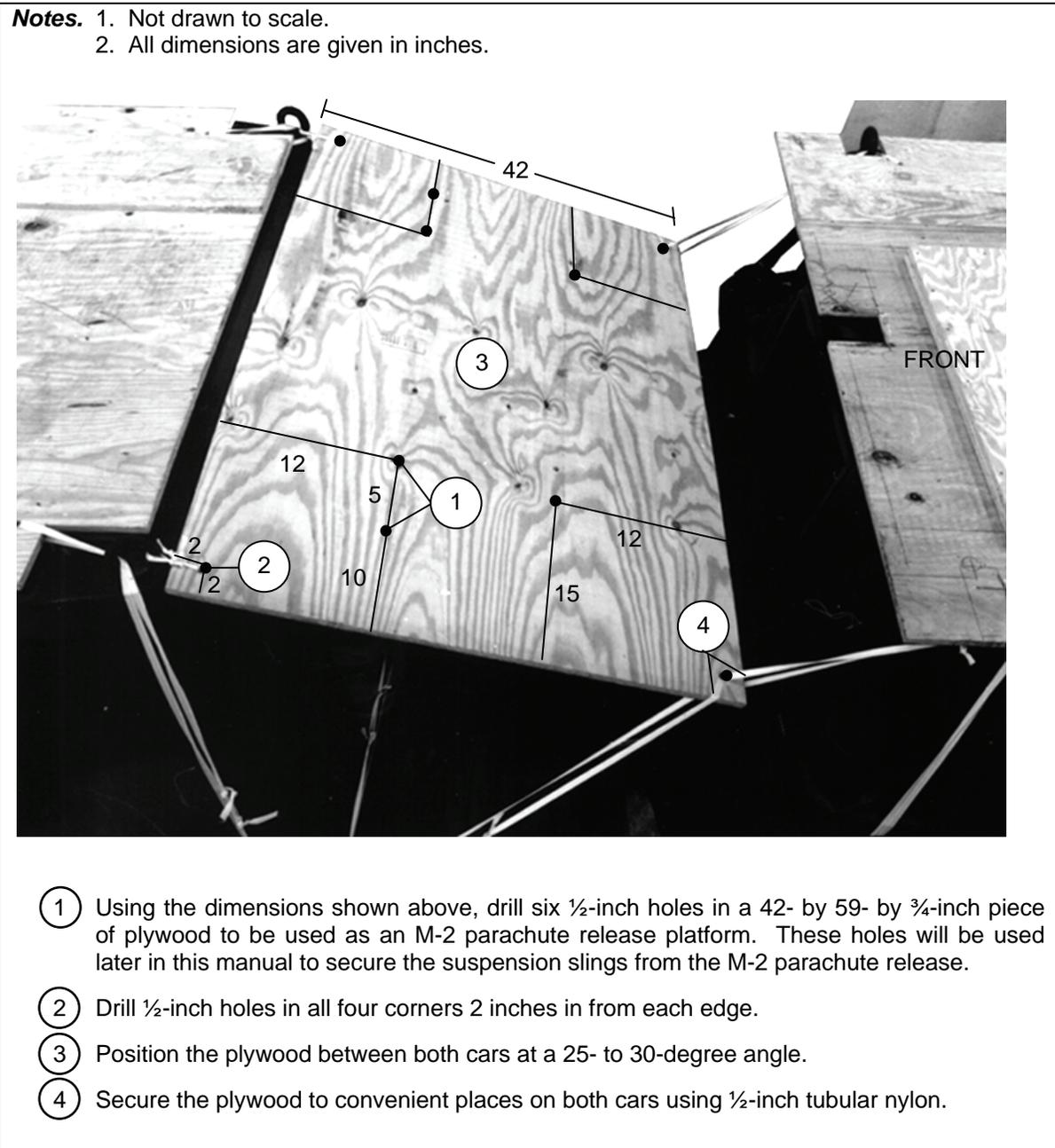
## PREPARING THE SUSV AFTER POSITIONING

12-9. Prepare the SUSV after positioning on the platform as shown in Figure 12-15.



- ① Remove the lift kit from the front cars (Not Shown).
- ② Position the roof protective board built in Figure 12-9 on top of the front car.
- ③ Secure the roof protector board by passing a length of ½-inch tubular nylon webbing through the right front 10-inch hole of the protector board, and through the right front medium clevis of the front car.
- ④ Repeat step 3 for the other three corners of the front car.
- ⑤ Pass a length of ½-inch tubular nylon webbing from bushing 17, over the front car, and secure it to bushing 17A.
- ⑥ Pass a length of ½-inch tubular nylon webbing from bushing 41, over the rear car and the protective platform placed in Figure 12-11, and secure it to bushing 41A.

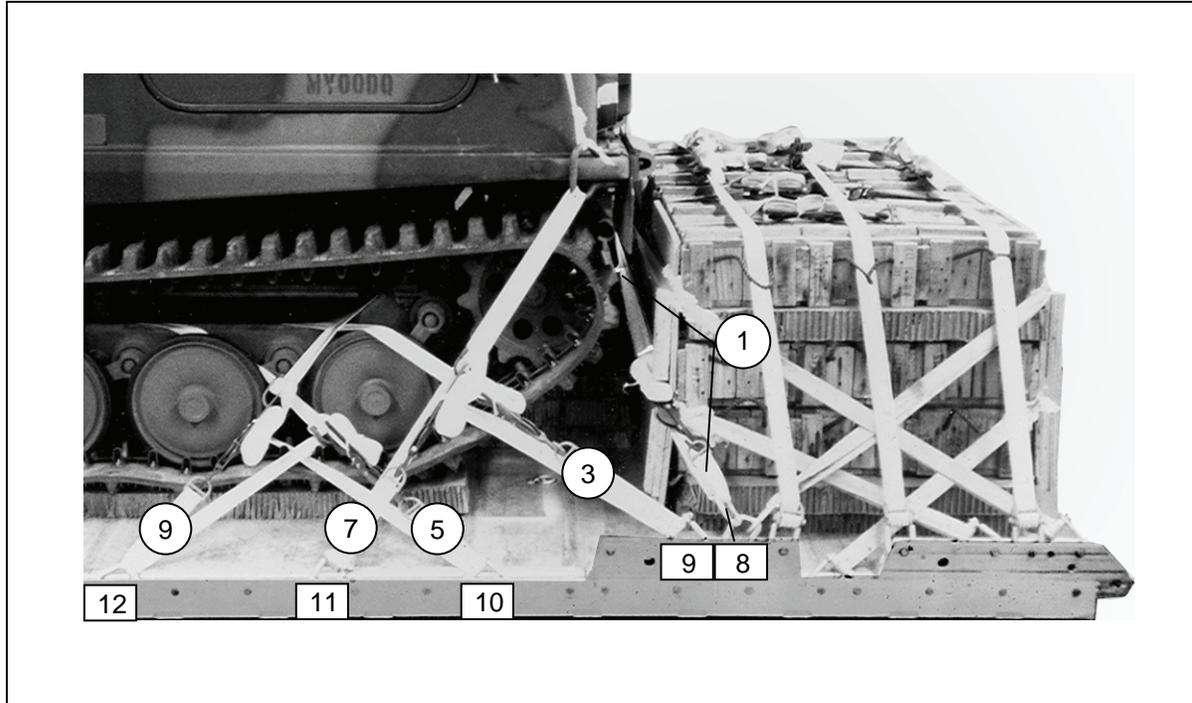
**Figure 12-15. SUSV Prepared after Positioning**



**Figure 12-16. SUSV M-2 Parachute Release Platform Positioned**

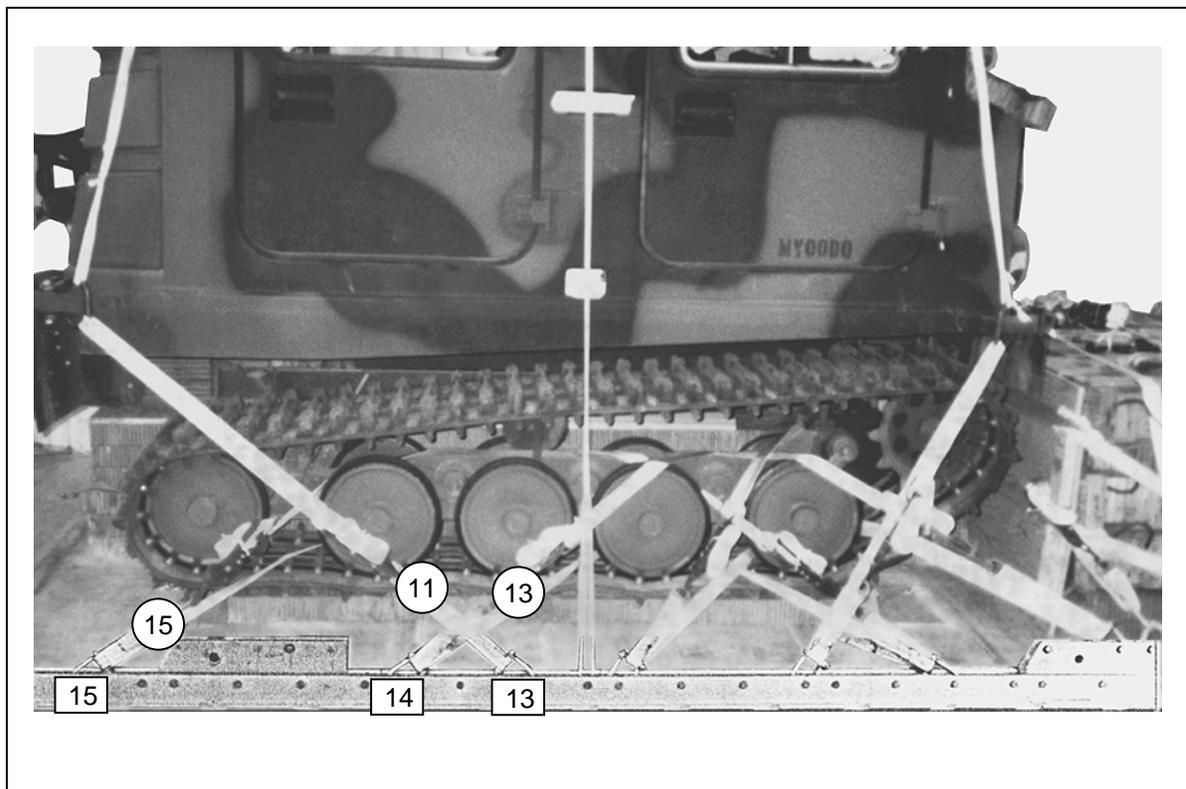
## LASHING THE SUSV

12-10. Lash the SUSV to the platform using 15-foot tiedown assemblies. Install the lashings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figures 12-17 through 12-20.



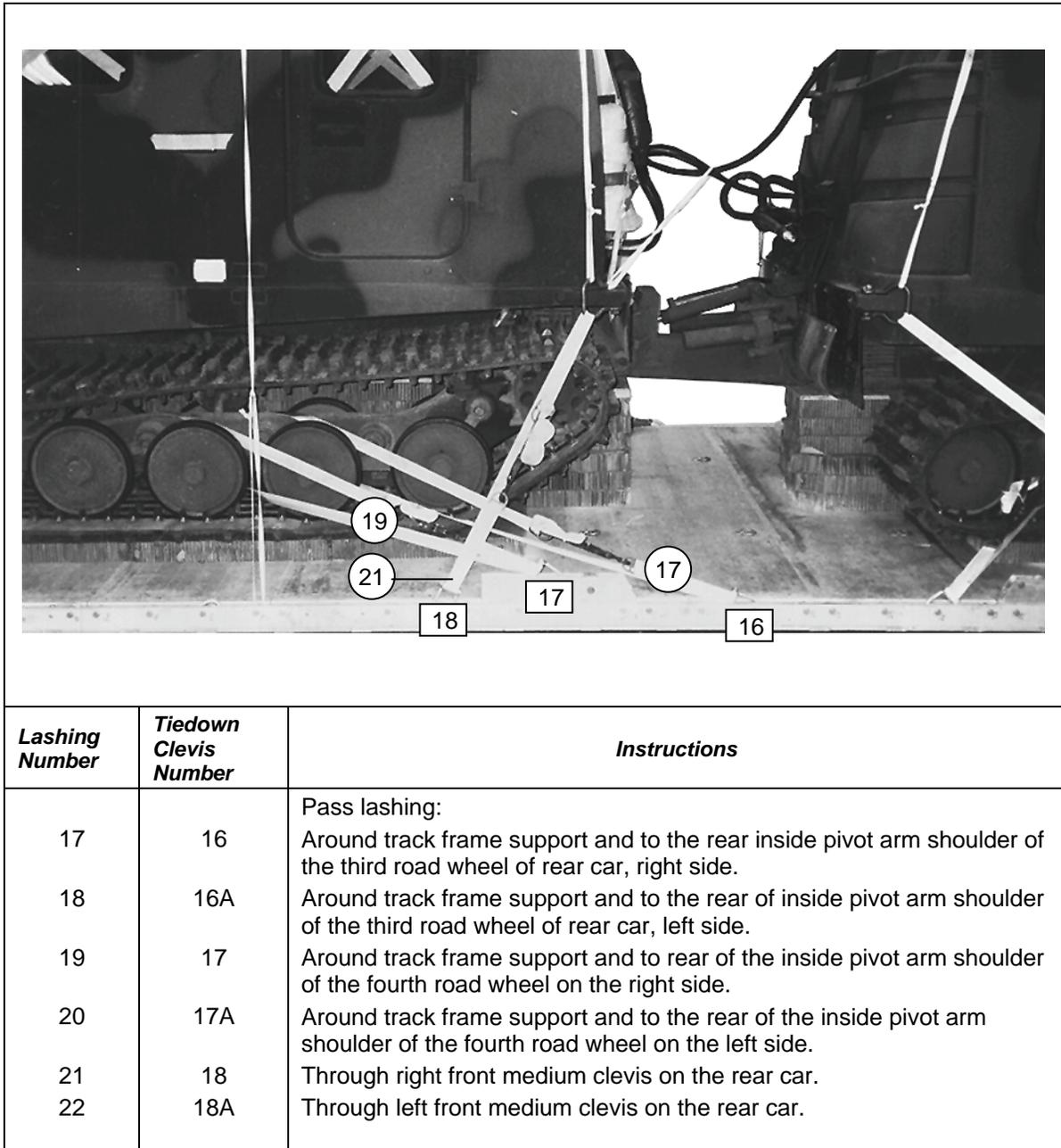
<b>Lashing Number</b>	<b>Tiedown Clevis Number</b>	<b>Instructions</b>
1	8	Pass lashing: Around towing pin.
2	8A	Around towing pin.
3	9	Over track frame and to the rear of inside pivot arm shoulder of the third road wheel on the right side.
4	9A	Over track frame and to the rear of inside pivot arm shoulder of the third road wheel on the left side.
5	10	Over track frame and to the rear of inside pivot arm shoulder of the fourth road wheel on the right side.
6	10A	Over track frame and to the rear of inside pivot arm shoulder of the fourth road wheel on the left side.
7	11	Through right front medium clevis.
8	11A	Through left front medium clevis.
9	12	Around track frame support and to the rear of the inside pivot arm shoulder of the first road wheel on the right side.
10	12A	Around track frame support and to the rear of inside pivot arm shoulder of first road wheel on the left side.

**Figure 12-17. Lashings 1 Through 10 Installed**

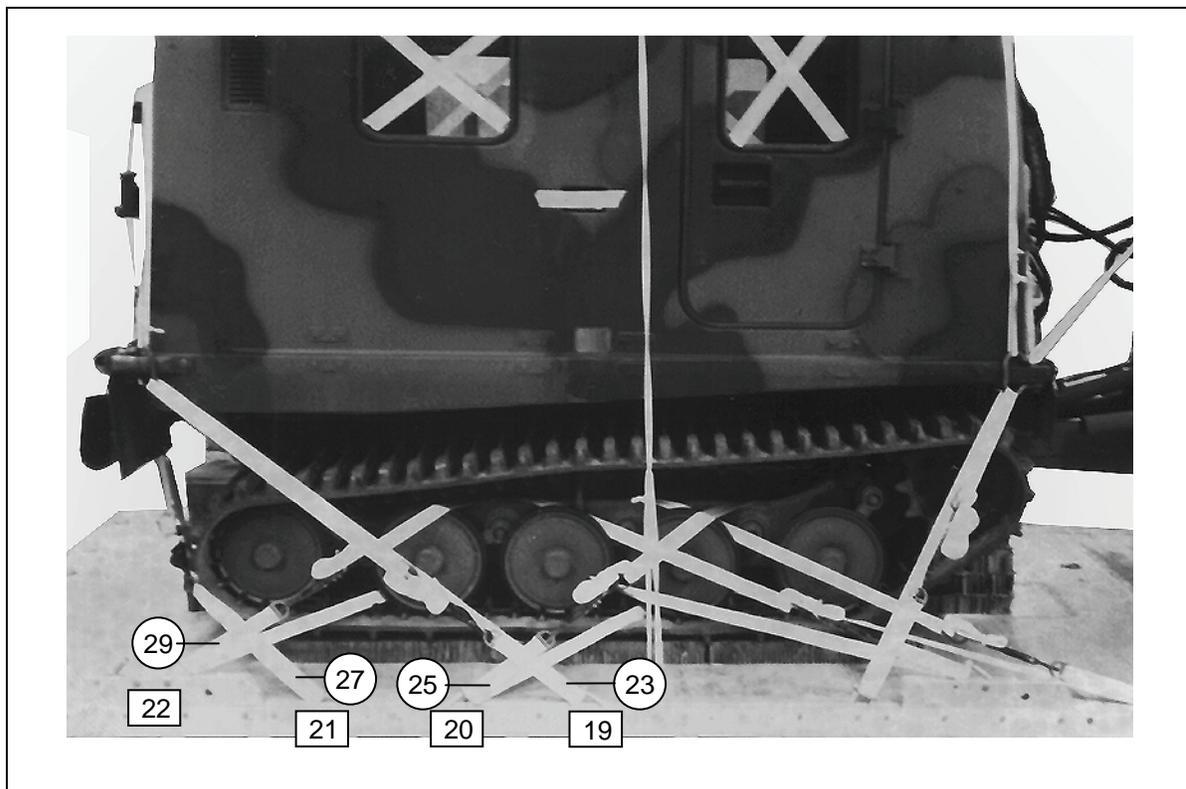


<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
11	13	Pass lashing:
12	13A	Through right rear medium clevis on front car.
13	14	Through left rear medium clevis on front car.
14	14A	Around track frame support and to the rear of the inside pivot arm shoulder of second road wheel on the right side.
15	15	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel on the left side.
16	15A	Around track frame support and to rear of the inside pivot arm shoulder of the fourth road wheel on the right side.
		Around track frame support and to the rear of the inside pivot arm shoulder of the fourth road wheel on the left side.

Figure 12-18. Lashings 11 Through 16 Installed



**Figure 12-19. Lashings 17 Through 22 Installed**



<i>Lashing Number</i>	<i>Tiedown Clevis Number</i>	<i>Instructions</i>
23	19	Pass lashing: Through right rear medium clevis on rear car.
24	19A	Through left rear medium clevis on rear car.
25	20	Around track frame support and to the rear of inside pivot arm shoulder of the second road wheel of rear car, right side.
26	20A	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel of rear car, left side.
27	21	Through tow pintle, right side.
28	21A	Through tow pintle, left side.
29	22	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, right side.
30	22A	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, left side.

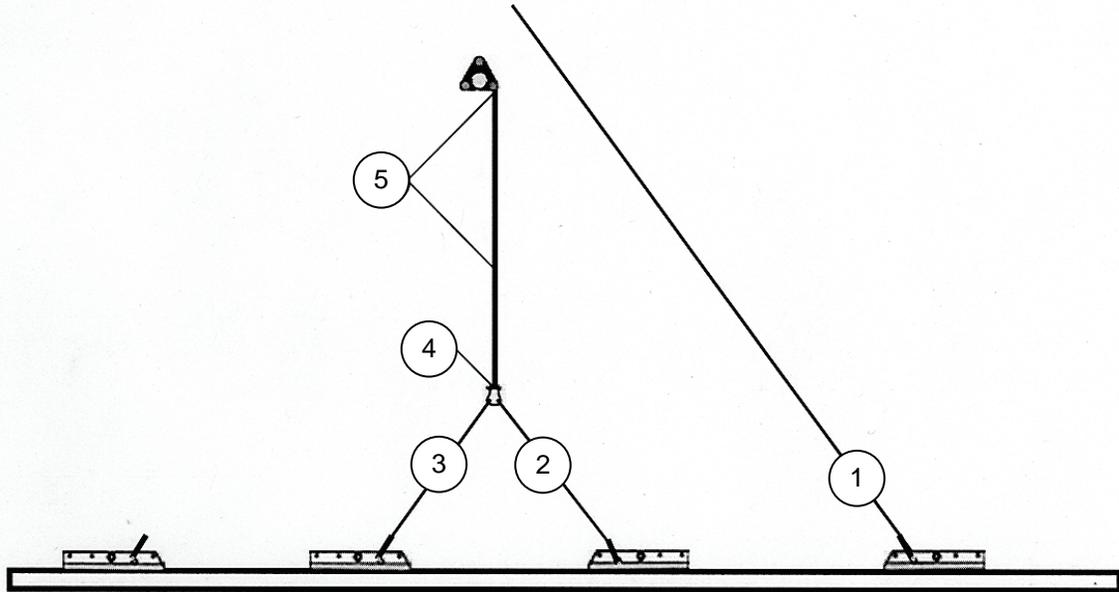
Figure 12-20. Lashings 23 Through 30 Installed

## INSTALLING SUSPENSION SLINGS

12-11. Install the suspension slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 12-21.

**Notes.** 1. Not drawn to scale.

2. Pad and tape any sharp areas the suspension slings may contact.

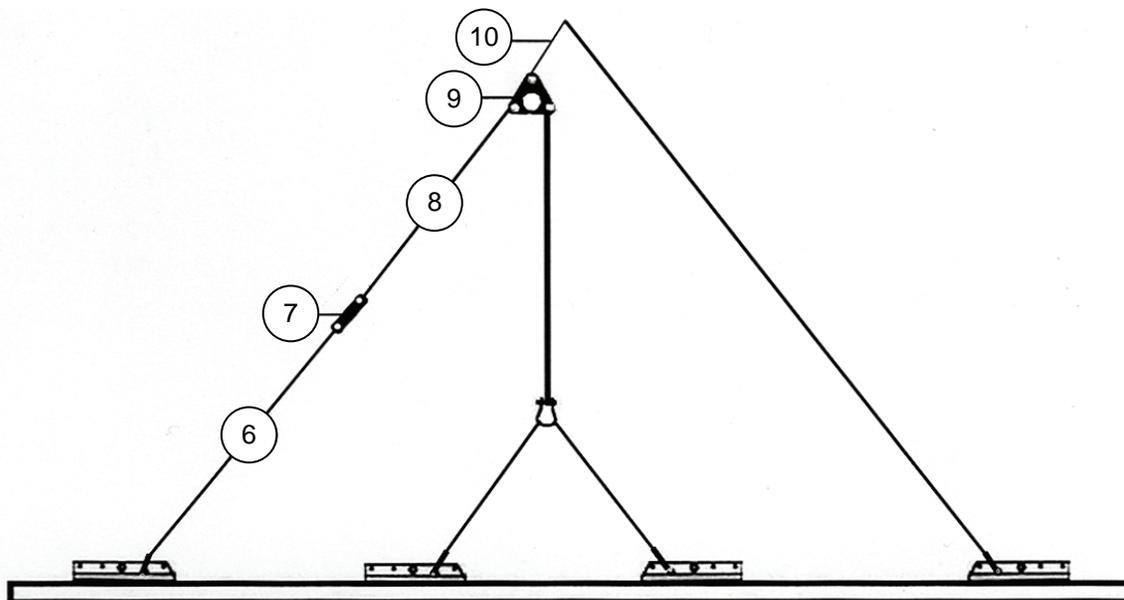


- ① Attach a 20-foot, (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the first suspension link on the right side of the platform.
- ② Attach a 12-foot, (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the second suspension link on the right side of the platform.
- ③ Attach a 12-foot, (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the third suspension link on the right side of the platform.
- ④ Attach the free ends of both 12-foot slings to the bell portion of a large suspension clevis on the right side of the platform.
- ⑤ Attach a 12-foot, (4-loop), type XXVI nylon webbing sling to the bolt of the large suspension clevis (used in step 4). Attach the free end of the sling to one end of a three-point link.

**Figure 12-21. Suspension Slings Installed**

**Notes.** 1. Not drawn to scale.

2. Pad and tape any sharp areas the suspension slings may contact.

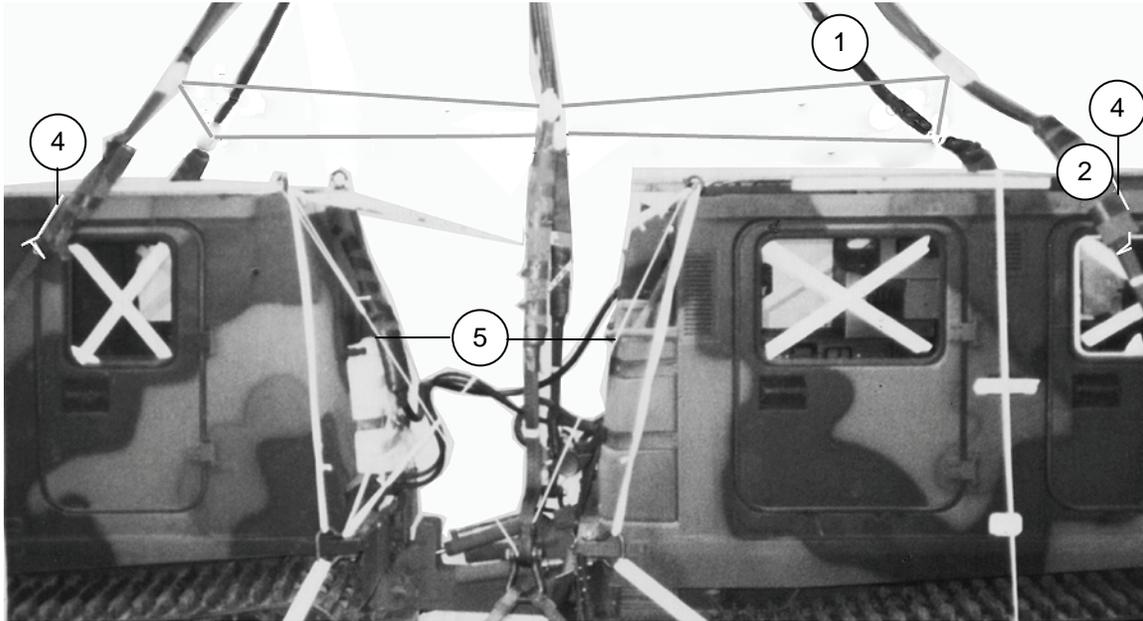


- ⑥ Attach a 9-foot, (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the fourth suspension link on the right side of the platform.
- ⑦ Attach the free end of the sling to a 5 ½-inch two-point link.
- ⑧ Attach the end of a 9-foot, (4-loop), type XXVI nylon webbing sling to the other point of the two-point link.
- ⑨ Attach the free end of the sling to the three-point link installed in step 5.
- ⑩ Attach a 3-foot, (4-loop), type XXVI nylon webbing sling to the top spacer of the three-point link. Pad the three-point link with felt. Tape the felt in place.
- ⑪ Repeat steps 1 through 10 for the left side of the platform (Not Shown).

**Figure 12-21. Suspension Slings Installed (Continued)**

## PADDING AND SECURING SUSPENSION SLINGS

12-12. Pad, secure and safety the suspension slings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 12-22.



- ① Raise the suspension slings and install the safety tie according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② Pad the front and rear suspension slings where they make contact with the sides of the front and rear cars.
- ③ Pad all link assemblies with felt and secure with type III nylon cord and tape (Not Shown).
- ④ Safety tie the front and rear slings, from right to left, across the top of the forward and aft car with type III nylon cord.
- ⑤ Safety the center sling assembly and large clevises with two lengths of type III nylon cord. Secure the cord to the bolt of the large clevises and to the center lifting provisions on the forward and rear cars.

**Figure 12-22. Suspension Slings Safetied, Padded and Secured**

## BUILDING THE PARACHUTE STOWAGE PLATFORM

12-13. Build the parachute stowage platform as shown in Figure 12-23.

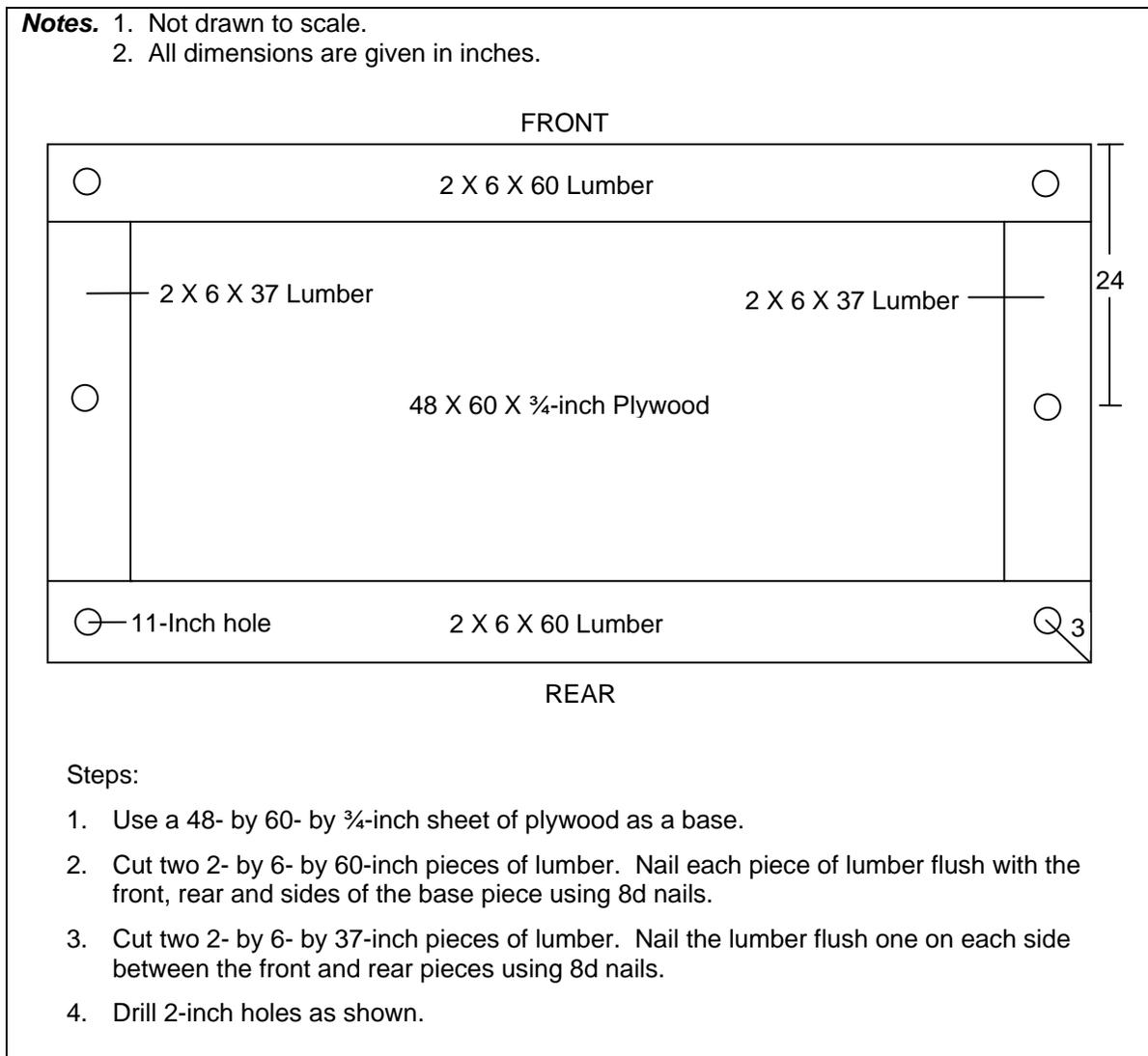
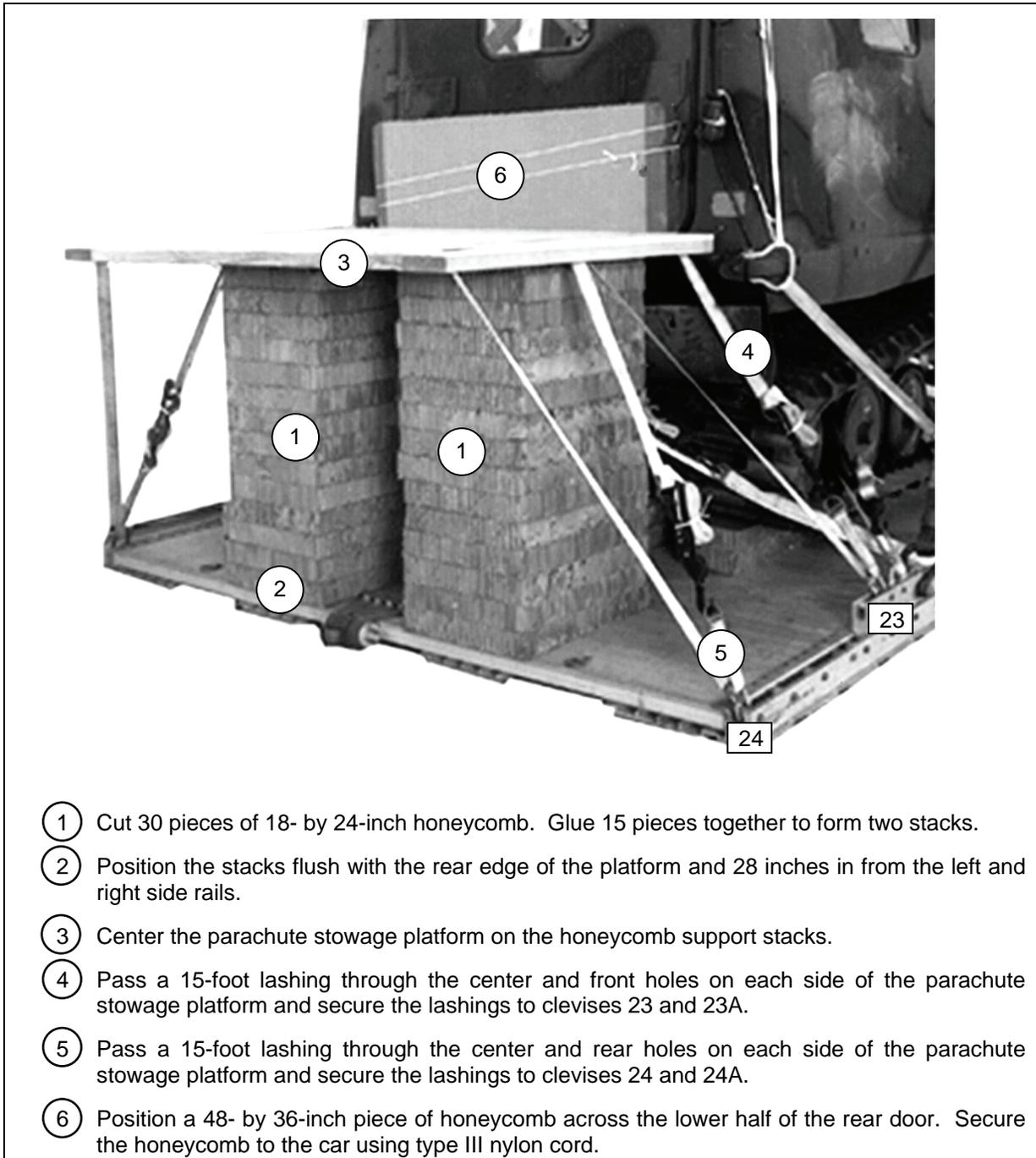


Figure 12-23. Parachute Stowage Platform Built

## INSTALLING PARACHUTE STOWAGE PLATFORM

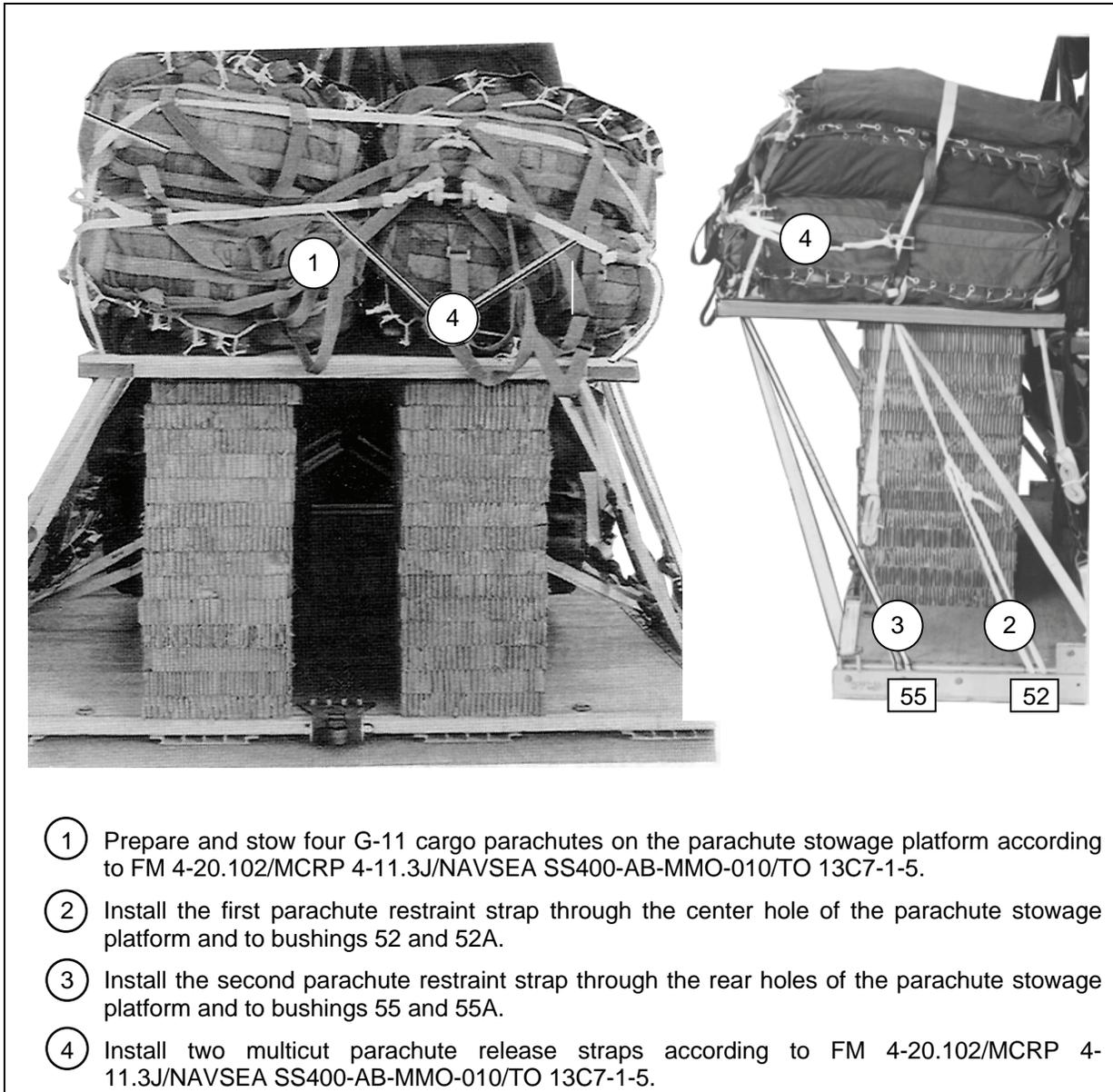
12-14. Install and secure the parachute stowage platform as shown in Figure 12-24.



**Figure 12-24. Parachute Platform Installed**

## STOWING CARGO PARACHUTES

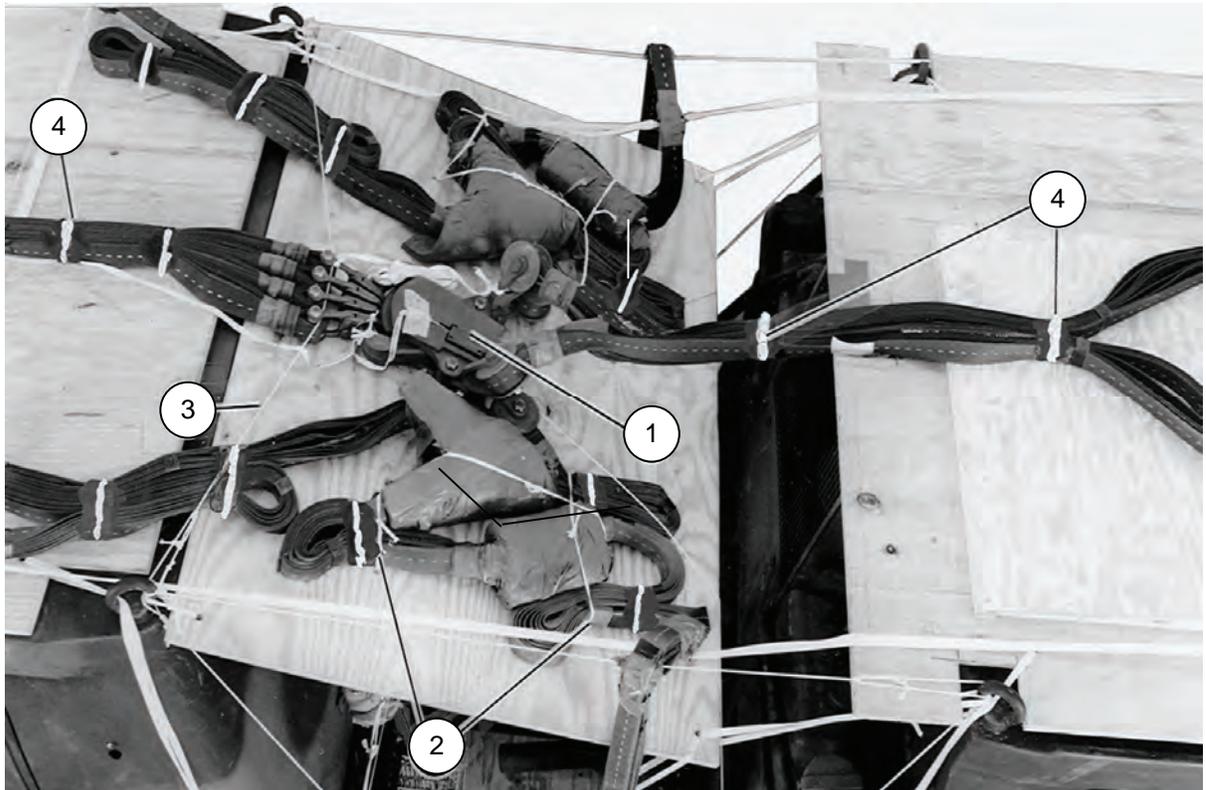
12-15. Prepare, stow and restrain four G-11 cargo parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 12-25.



**Figure 12-25. Cargo Parachutes Stowed and Restraint Installed**

## INSTALLING THE M-2 PARACHUTE RELEASE ASSEMBLY

12-16. Install an M-2 parachute release system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 12-26.

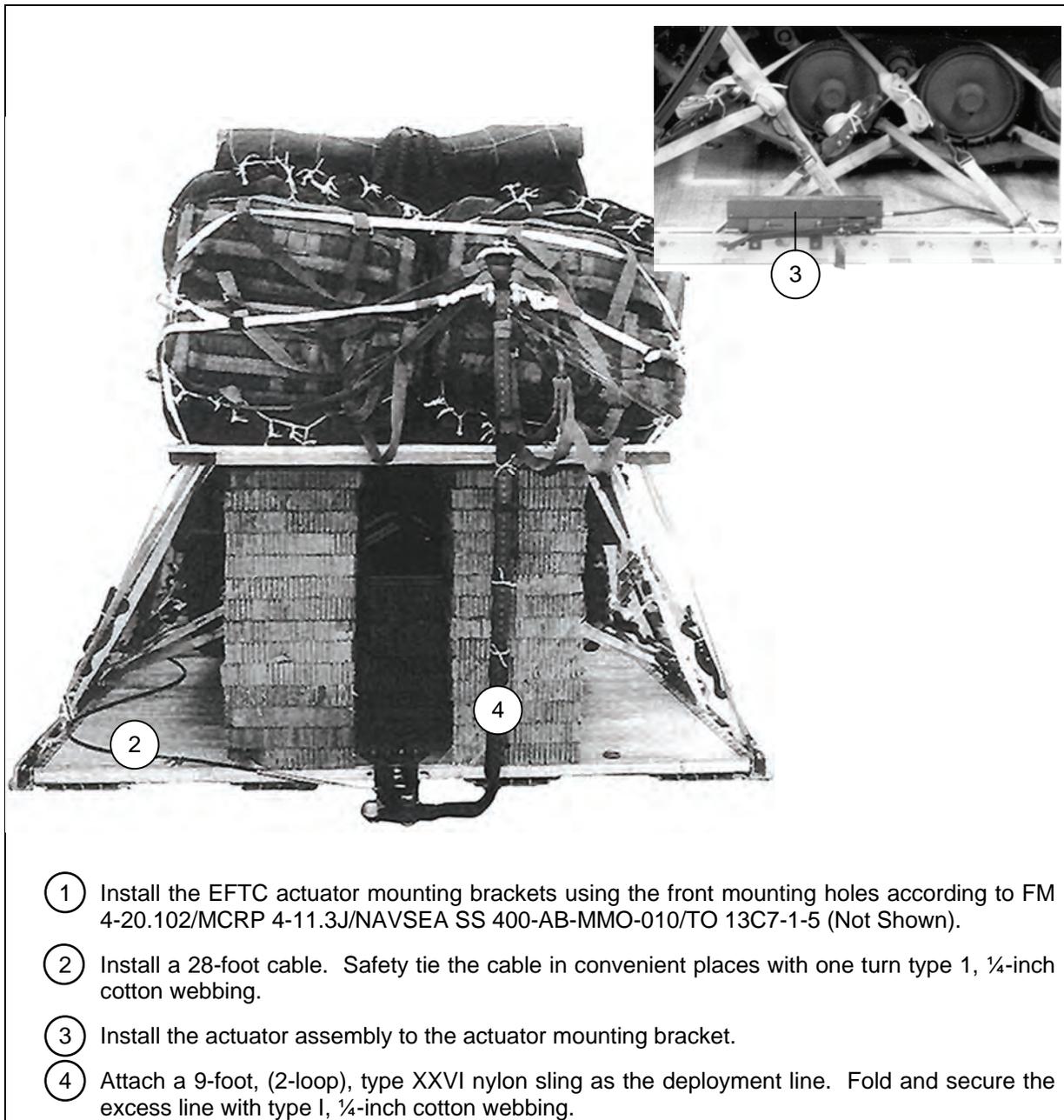


- ① Prepare an M-2 cargo release assembly according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the M-2 release on the 411- by 59- by ¾-inch piece of plywood positioned in Figure 12-16. Attach the release to the suspension slings and the cargo parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② Restrain the M-2 parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown.
- ③ Fold the suspension slings. Secure the folds to the plywood platform with lengths of type I, ¼-inch cotton webbing. Pass the webbing through the holes in the plywood and over the taped links.
- ④ Tie the exposed riser extensions and suspension slings along the roof protective board with lengths of type I, ¼-inch cotton webbing.

**Figure 12-26. M-2 Parachute Release Installed**

## INSTALLING EXTRACTION SYSTEM

12-17. Install the EFTC system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 12-27.



**Figure 12-27. Extraction System Installed**

## **INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS**

12-18. Install the provisions for the emergency restraints on the platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## **PLACING EXTRACTION PARACHUTE**

12-19. Select the extraction parachute and extraction line according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/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**

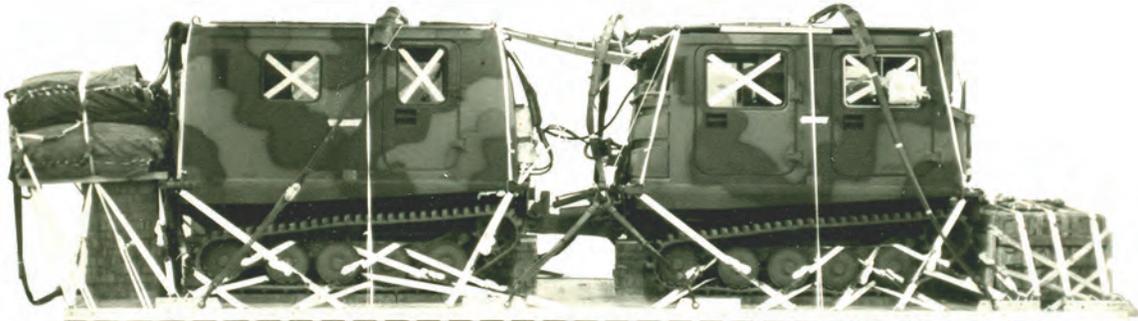
12-20. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS 400-AB-MMO-010/TO 13C7-10-5 and as shown in Figure 12-28. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, center of balance (CB) and parachute requirements must be recomputed.

## **EQUIPMENT REQUIRED**

12-21. Use the equipment listed in Table 12-3 to rig this load.

**CAUTION**

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/OPNAVINST 4630.24D/AFJ 13I210(I)/MCO 13480.1C before the load leaves the rigging site.



**RIGGED LOAD DATA**

<b>Weight .....</b>	<b>16,800 pounds</b>
<b>Maximum Weight.....</b>	<b>17,000 pounds</b>
<b>Height .....</b>	<b>97 inches</b>
<b>Width .....</b>	<b>108 inches</b>
<b>Length .....</b>	<b>353 inches</b>
<b>Overhang: Front.....</b>	<b>0 inches</b>
<b>Rear (Parachute platform).....</b>	<b>18 inches</b>
<b>Rear (EPJS) .....</b>	<b>30 inches</b>
<b>Center of Balance (from front edge of platform) .....</b>	<b>155 inches</b>

**Figure 12-28. SUSV Rigged on a Type V Platform for Low-Velocity Airdrop**

**Table 12-3. Equipment Required for Rigging the SUSV on a Type V Platform for Low-Velocity Airdrop**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-2712-8713	Adhesive paste, 10-gal	As required
1670-010-035-6054	Bridle, extraction line lead, (line bag for DES)	1
	Clevis:	
4030-00-090-5354	Large	11
4030-00-678-8562	Medium	20
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-360-0328	Cover, clevis, large	4
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Extraction Force Transfer Coupling System	
1670-00-326-7309	Coupling assembly, airdrop, EFTC, 28-ft cable	1
1670-010-475-1990	Extraction Parachute Jettison System (EPJS)	1
	Felt:	
8305-00-1910-1101	½-inch	As required
8305-00-290-5584	<sup>3</sup> / <sub>16</sub> -inch	As required
1670-00-0012-4391	Knife, parachute bag (for DES)	1
1670-010-1812-2678	Leaf, extraction line, (line bag) (add 2 for DES)	2
	Line Multi-loop	
	For lifting:	
1670-010-0611-6301	3-ft, (2-loop), type XXVI nylon webbing	3
1670-010-0611-6304	9-ft, (2-loop), type XXVI nylon webbing	4
1670-010-0611-6303	12-ft, (2-loop), type XXVI nylon webbing	4
	For drogue (DES):	
1670-010-064-4452	60-ft, (1-loop), type XXVI	1
	For extraction:	
1670-010-0611-6313	60-ft, (3-loop, type XXVI nylon webbing (C-130)	1
1670-010-107-7651	140-ft, (3-loop, type XXVI nylon webbing (C-17)	1
	For deployment:	
1670-010-0611-6304	9-ft, (2-loop), type XXVI nylon webbing	1
	For suspension:	
1670-010-0611-6306	3-ft, (4-loop), type XXVI nylon webbing	4
1670-010-0611-6305	9-ft, (4-loop), type XXVI nylon webbing	4
1670-010-0611-6307	12-ft, (4-loop), type XXVI nylon webbing	2
1670-010-064-4453	20-ft, (4-loop), type XXVI nylon webbing	2
	For riser extension:	
1670-010-0611-6313	60-ft, (3-loop), type XXVI nylon webbing	4
	Link	
1670-010-4912-6418	Assembly small, two-point, 3 ¾-in	2
1670-010-4912-6420	Assembly large, two-point, 5 ½-in	2

**Table 12-3. Equipment Required for Rigging the SUSV on a Type V Platform for Low-Velocity Airdrop (Continued)**

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-010-307-0155	Assembly, coupling, 3 point	2
1670-010-4812-8259	Link, Parachute connector (TRM H-block) (C-17)	1
	Lumber:	
5510-00-220-6146	2- by 4-inch	1
5510-00-220-6148	2- by 6-inch	3
	Plywood:	
5530-00-128-4981	¾-in by 48- by 96-inch sheet	5 sheets
5530-00-2611-8195	½-in by 48- by 96-inch sheet	1 sheet
	Nail, steel wire, common:	
5315-00-010-4657	6d	As required
5315-00-010-4659	8d	As required
1670-00-7512-3928	Pad, energy-dissipating, honeycomb,	16 sheets
	Parachute:	
1670-010-016-7841	G-11	4
1670-00-040-8135	28-ft, extraction, heavy-duty	1
1670-010-0612-3717	15-ft, Extraction Drogue (DES)	1
	Platform, airdrop Type V, 28-ft	
1670-010-3512-8425	Bracket, assembly, component (EFTC)	1
1670-010-3512-8424	Bracket, assembly, extraction	1
1670-010-1611-2372	Clevis assembly, Type V, tiedown clevis	50
1670-010-247-2389	Link, Suspension bracket, type V	8
1670-010-1611-2381	Link, Tandem, link sups. assembly	2
1670-010-097-8817	Release, cargo parachute, M-2	1
5340-00-040-8219	Strap, parachute release, multicut	2
7510-00-266-5016	Tape, adhesive, 2-inch, OD	As required
7510-00-266-6710	Tape, masking, 2-inch	As required
1670-00-937-0271	Tiedown assembly, 15-ft	50
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	50
1670-00-937-0272	Binder, load, 10,000-lb	43
	Webbing:	
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8305-00-268-2411	Cotton, type I, ¼-inch	As required
8305-00-0811-5752	Nylon, tubular, ½-inch, natural	As required
8305-00-2612-3591	Nylon, type VIII	As required

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# Glossary

<b>AD</b>	Airdrop
<b>AFB</b>	Air Force Base
<b>AFMAN</b>	Airforce Joint Manual
<b>AFR</b>	Air Force Regulation
<b>AFTO</b>	Air Force Technical order
<b>AMC</b>	Air Mobility Command
<b>ARNG</b>	Army National Guard
<b>Attn</b>	attention
<b>CB</b>	center of balance
<b>CVR</b>	Centerline Vertical Restraint
<b>CST</b>	Component Storage Tray
<b>d</b>	penny
<b>DA</b>	Department of the Army
<b>DC</b>	District of Columbia
<b>DOD</b>	Department of Defense
<b>diam</b>	diameter
<b>ea</b>	each
<b>EFTA</b>	extraction force transfer actuator
<b>EFTC</b>	extraction force transfer coupling
<b>EPJS</b>	Extraction Parachute Jettison System
<b>FM</b>	field manual
<b>ft</b>	foot/feet
<b>gal</b>	gallon
<b>HQ</b>	headquarters
<b>in</b>	inch
<b>JAI</b>	Joint Airdrop Inspection
<b>lb</b>	pound
<b>LV</b>	low velocity
<b>MAJCOM</b>	Major Command
<b>MCRP</b>	Marine Corps Reference Publication
<b>MD</b>	Maryland
<b>mm</b>	millimeter
<b>MRE</b>	Meals-Ready-to-Eat
<b>NAVSEA</b>	Naval Sea Command
<b>no</b>	number
<b>NSN</b>	national stock number
<b>OVM</b>	Operator's Vehicle Maintenance
<b>PSI</b>	Pounds per Square Inch
<b>qty</b>	quantity
<b>SUSV</b>	Small Unit Support Vehicle
<b>TM</b>	Technical Manual
<b>TO</b>	Technical Order
<b>TRADOC</b>	United States Army Training and Doctrine Command
<b>TRM</b>	Tow Release Mechanism
<b>US</b>	United States

## **Glossary**

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<b>USAR</b>	United States Army Reserve
<b>VA</b>	Virginia
<b>w</b>	with
<b>yd</b>	yard

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