

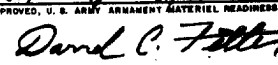
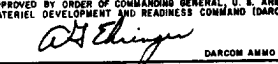
# LOADING AND BRACING ON FLAT BED OR "LOW-BOY" TRAILER OF 155 MM HOWITZER, M198

## INDEX

<u>ITEM</u>	<u>PAGE (S)</u>
GENERAL NOTES, AND MATERIAL SPECIFICATIONS -----	2
LOADING AND BRACING PROCEDURES FOR ONE HOWITZER ( WHEELS OFF ) ON A 42'-0" LONG BY 8'-0" WIDE FLAT BED TRAILER -----	3-5
LOADING AND BRACING PROCEDURES FOR ONE HOWITZER HAVING WIDE TIRES ( WHEELS ON ) ON A 42'-0" LONG BY 8'-0" WIDE FLAT BED TRAILER ----	7-9
LOADING AND BRACING PROCEDURES FOR ONE AND/OR TWO HOWITZERS HAVING NARROW TIRES ( WHEELS ON ) ON A 48'-0" LONG BY 8'-0" WIDE FLAT BED TRAILER -	10, 11
DETAILS -----	6, 12, 13

**CAUTION:** THE PROCEDURES SHOWN HEREIN ARE ONLY APPLICABLE FOR HIGHWAY MOVEMENTS, NOT FOR TRAILER-ON-FLAT-CAR MOVEMENTS.

**CAUTION:** THE LOAD AS SHOWN ON PAGES 8 AND 10 MAY REQUIRE "CLEARANCE" CONSIDERATION BECAUSE OF EXCESSIVE LADING WIDTH.

REVISIONS				<small>DEPARTMENT</small> <small>OF THE ARMY</small> <small>HEADQUARTERS</small> <small>WASHINGTON, D.C.</small>	<small>PROJ. ENG.</small> <small>LOG BRANCH OFFICE</small>
1	MAY 81	ADD WIRE	FOR	<small>APPROVED, U. S. ARMY ARMAMENT MATERIEL READINESS COMMAND</small> 	
2	APR 85	WIRE WIDE	FOR		
				<small>APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND (DARCOM)</small> 	
				DARCOM AMMO CENTER	
				U. S. ARMY DARCOM DRAWING	
				AUGUST 1977	
				CLASS	DIVISION
				19	48
				DRAWING	FILE
				8103	11WE2

**DO NOT SCALE**

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- B. THE LOADS SHOWN ARE BASED ON FLAT BED OR "LOW-BOY" TRAILERS 8'-0" WIDE WITH A WOOD OR A WOOD AND METAL FLOOR. TRAILERS WITH ALL METAL FLOORS WILL NOT BE USED. ONE OR TWO HOWITZERS CAN BE LOADED ON A TRAILER, HOWEVER, OTHER ITEMS DISSIMILAR IN NATURE, MAY BE LOADED ON THE TRAILER, WITH THE VIEW OF FULL UTILIZATION OF CARRIER EQUIPMENT.
- C. ONLY TRAILERS CAPABLE OF SAFELY TRANSPORTING THE LADING TO DESTINATION WITHOUT DAMAGE WILL BE SELECTED. TRAILERS SELECTED MUST HAVE "SOUND" FLOORS WHICH PROVIDE NAIL RETENTION PROPERTIES EQUAL TO OR BETTER THAN THE SPECIFIED DUNNAGE LUMBER, AND A SUFFICIENT NUMBER OF TIEDOWN FACILITIES OF A STRENGTH EQUAL TO OR BETTER THAN SPECIFIED LADING TIEDOWN ASSEMBLIES.
- D. SHIPMENT GROSS WEIGHT, AXLE DISTRIBUTION OF THE LADING WEIGHT AND OVERALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.
- E. LADING DATA FOR THE 155MM M198 HOWITZER (WIDE TIRES)

TUBE ON

ITEM DIMENSIONS-----24'-8" LONG BY 9'-2" WIDE BY 7'-0" HIGH  
ITEM GROSS WEIGHT-----15,760 LBS (APPROX).

TUBE OFF

ITEM DIMENSIONS-----24'-3" LONG BY 9'-2" WIDE BY 7'-0" HIGH  
ITEM GROSS WEIGHT-----8,689 LBS (APPROX)

LADING DATA FOR THE 155MM M198 HOWITZER (NARROW TIRES)

TUBE ON

ITEM DIMENSIONS-----24'-8" LONG BY 8'-2" WIDE BY 7'-0" HIGH  
ITEM GROSS WEIGHT-----15,678 LBS (APPROX)

TUBE OFF

ITEM DIMENSIONS-----24'-3" LONG BY 8'-2" WIDE BY 7'-0" HIGH  
ITEM GROSS WEIGHT-----8,607 LBS (APPROX)

- F. REFER TO ORD DWG 19-48-C-ORDJU-588, "WIRE ROPE AND ANNEALED WIRE APPLICATION METHODS FOR SECURING LADING ON RAIL AND MOTOR CARRIER EQUIPMENT," FOR PROPER TIEDOWN APPLICATION, EXCEPT NUTS ON 1/2" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 75 TO 90 FOOT POUNDS. NOTE: IF A TORQUE WRENCH IS NOT AVAILABLE FOR TIGHTENING CLIP NUTS, THE PROPER TORQUE CAN BE ACHIEVED BY USING BOX AND/OR OPEN-END OR SOCKET WRENCHES THAT HAVE 15" LONG HANDLES. CAUTION: DURING WIRE ROPE INSTALLATION, AVOID CONTACT WITH ALL VEHICLE CONTROLS AND OTHER APPURTENANCES. METAL FILLERS OR COMPARABLE CUSHIONING MATERIALS MUST BE USED BETWEEN TIEDOWN CABLES AND ALL SHARP EDGES. ADDITIONALLY, LADING TIRES WILL BE INFLATED TO 45 PSI HIGHWAY OPERATING PRESSURE AND ALL HAND BRAKES MUST BE "SET" WITH THE HAND LEVERS WIRE-TIED.
- G. SEE THE "SPECIAL PROVISIONS" ON THIS PAGE FOR SPECIFICATIONS WHICH MUST BE APPLIED IF CHAINS AND LOAD BINDERS ARE USED.
- H. CAUTION: IT IS RECOMMENDED THAT STEEL WIRE ROPE TIEDOWNS BE INSTALLED TO APPROXIMATE THE ANGLE SHOWN, HOWEVER, IF PLACEMENT OF TRANSPORTER TIEDOWN FACILITIES PREVENTS THIS, CARE MUST BE EXERCISED TO ENSURE THAT TIEDOWNS ON THE SAME SIDE OF THE LADING ARE INSTALLED SO THEIR RETENTION FORCES ACT IN OPPOSITE LONGITUDINAL DIRECTIONS.  
(CONTINUED AT RIGHT)

- J. STEEL WIRE ROPE MUST BE TENSIONED SUFFICIENTLY TO CAUSE MODERATE VEHICLE BODY DEPRESSION WHEN USED ON THE "WHEELS ON" METHOD, SHOWN ON PAGE 8 AND TENSIONED TAUT WHEN USED ON THE "WHEELS OFF" METHOD, SHOWN ON PAGE 4. TENSIONING OF STEEL WIRE ROPE CAN BE ACCOMPLISHED BY EMPLOYING TWO (2) CABLE "GRIPPERS" AND AN APPLICABLE SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- K. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN THE FLOOR BOARDS. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- L. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE UNLESS OTHERWISE DIMENSIONED. FOR EXAMPLE, 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE AND 4" X 4" MATERIAL IS ACTUALLY 3-1/2" THICK BY 3-1/2" WIDE.
- M. THE LOADS AS SHOWN IN THIS DRAWING DEPICT THE HOWITZER WITH THE TUBE ON, HOWEVER, THE SAME LOADING AND BRACING PROCEDURES WILL APPLY IF THE HOWITZER IS SHIPPED WITHOUT THE TUBE. SEE "CRADLE SECUREMENT DETAIL", "CRADLE SUPPORT ASSEMBLY" AND "VARIABLE RECOIL MECHANISM YOKE SECUREMENT DETAIL" ON PAGE 12 IF THE HOWITZER IS TO BE SHIPPED WITHOUT THE TUBE, THESE SECUREMENT PROCEDURES MUST BE USED.
- N. CONVERSION TO METRIC EQUIVALENTS:

DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENT MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4 MM AND ONE POUND EQUALS 0.454 KG.

SPECIAL PROVISIONS:

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED WIRE ROPE CABLE TIE DOWN DUNNAGE MATERIALS, AS SHOWN IN THE LOAD ON PAGES 10 AND 11, PROVIDING THE FOLLOWING CONDITIONS ARE MET.

- 1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED. CAUTION: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PREVENT DAMAGE TO THE LADING OR DEFORMATION OF LADING TIE DOWN FACILITIES.
- 2. TWO (2) LINES OF 3/8" CHAIN, OR FOUR (4) LINES OF 1/4" CHAIN, MAY BE SUBSTITUTED FOR EACH WIRE ROPE CABLE TIE DOWN, MARKED (C) ON PAGE 4 AND MARKED (B) ON PAGE 8. CHAINS SHALL BE INSTALLED AT THE SAME LOCATIONS SHOWN FOR WIRE ROPE TIEDOWNS AND IN THE SAME MANNER AS DIRECTED IN GENERAL NOTE "H".
- 3. IF DESIRED, CHAINS OF A LARGER SIZE THEN SPECIFIED ABOVE MAY BE USED.
- 4. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR AND ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION.
- 5. THE TENSIONING DEVICE OF EACH LOAD BINDER MUST BE SAFETY-WIRED TO PREVENT ACCIDENTAL OPENING, OR LOOSENING IN TRANSIT.
- 6. ANTI-CHAFING MATERIAL MUST BE PLACED AND SECURED BETWEEN CHAINS AND THE LADING AT ALL POINTS OF CONTACT, EXCEPT AT DEFINITIVE TIE DOWN POINTS.

MATERIAL SPECIFICATIONS

- LUMBER ----- : DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE OF MATERIAL DEFECTS. REF: FED SPEC MM-L-751.
- NAILS ----- : FED SPEC FF-N-105, COMMON.
- WIRE ----- : ANNEALED, BLACK. REF: FED SPEC QQ-W-461.
- ROPE ----- : STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 11.5 TONS, 6 X 19, FLEXIBLE IWRC MACWHYTE WIRE ROPE CO. (OR EQUAL), REF: FED SPEC RR-W-410.
- CLIP ----- : "U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL). REF: FED SPEC FF-C-450, TYPE I, CLASS 1.
- STRAPPING, STEEL ----- : CLASS I, TYPE I OR II, HEAVY DUTY, FINISH A, B, (GRADE 2) OR C, FED SPEC QQ-S-781.
- THIMBLE; STAKE POCKET PROTECTOR ----- : COMMERCIAL GRADE.
- SEAL, STRAP ----- : TYPE D, STYLE I, II, OR III, CLASS H, FED SPEC QQ-S-781.
- ANTI-CHAFING MATERIAL ----- : NEUTRAL BARRIER MATERIAL MIL-B-121 (OR EQUAL).

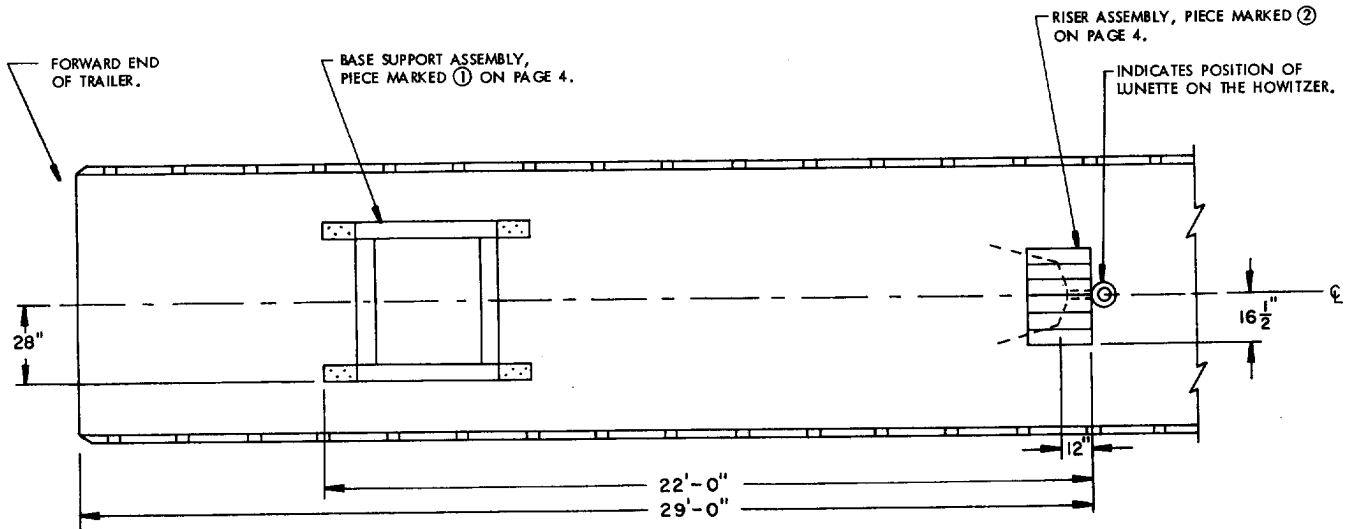
REVISIONS

REVISION NO. 1, DATED MAY 1981 CONSISTS OF:

- 1. ADDED LOADING AND BRACING PROCEDURES FOR TWO HOWITZERS (WHEELS ON).
- 2. UPDATED GENERAL NOTES, MATERIAL SPECIFICATIONS AND DRAWING FORMAT.

REVISION NO. 2, DATED APRIL 1985 CONSISTS OF:

- 1. ADDED LOADING AND BRACING PROCEDURES FOR TWO HOWITZERS, HAVING NARROW TIRES, LOADED ON A 48'-0" LONG BY 8'-0" WIDE FLAT BED TRAILER.
- 2. DELETED LOADING AND BRACING PROCEDURES FOR TWO HOWITZERS, HAVING WIDE TIRES, LOADED ON A 42'-0" LONG BY 8'-0" WIDE FLAT BED TRAILER.
- 3. UPDATED GENERAL NOTES, MATERIAL SPECIFICATIONS, AND DRAWING FORMAT.



**PRE-POSITIONED DUNNAGE**

PRIOR TO POSITIONING THE HOWITZER ON THE TRAILER, PRE-POSITION THE "BASE SUPPORT ASSEMBLY" AND THE "RISER ASSEMBLY", AS SHOWN ABOVE, AND NAIL IN PLACE.

SUPPORT PIECE, 2" X 6" X 48" ( 10 REQD ).  
NAIL THE FIRST PIECE TO THE BASE PIECE  
W/7-10d NAILS. NAIL EACH ADDITIONAL  
PIECE IN A LIKE MANNER.

TIE PIECE, 2" X 6" X 56" ( 2 REQD ). NAIL  
TO THE THIRD LAYER SUPPORT PIECE W/3-10d  
NAILS AT EACH END.

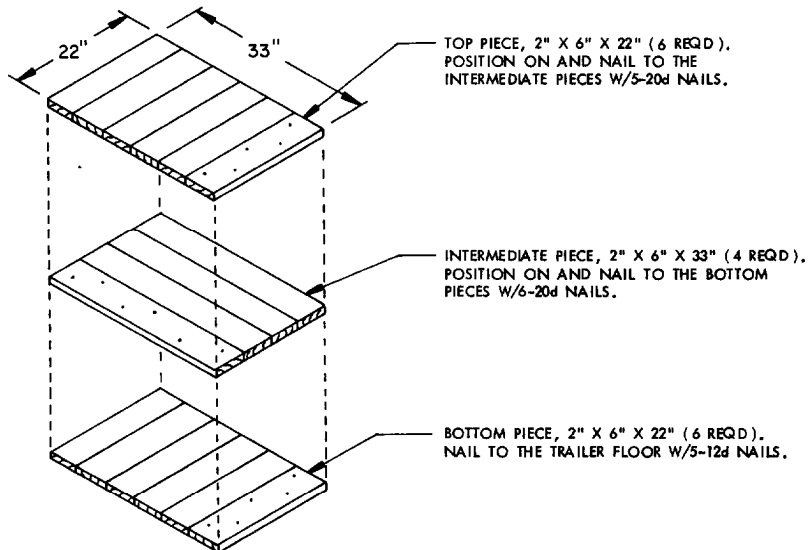
BASE PIECE, 2" X 6" X 72" ( 2 REQD ), NAIL  
TO THE TRAILER FLOOR W/4-12d NAILS AT  
EACH END.

SPACER PIECE,  
2" X 6" X 45"  
( 2 REQD ). NAIL TO  
THE TIE PIECE W/5-10d  
NAILS.

SUPPORT PIECE, 2" X 6" X 37" ( 2 REQD ).  
NAIL W/5-10d NAILS.

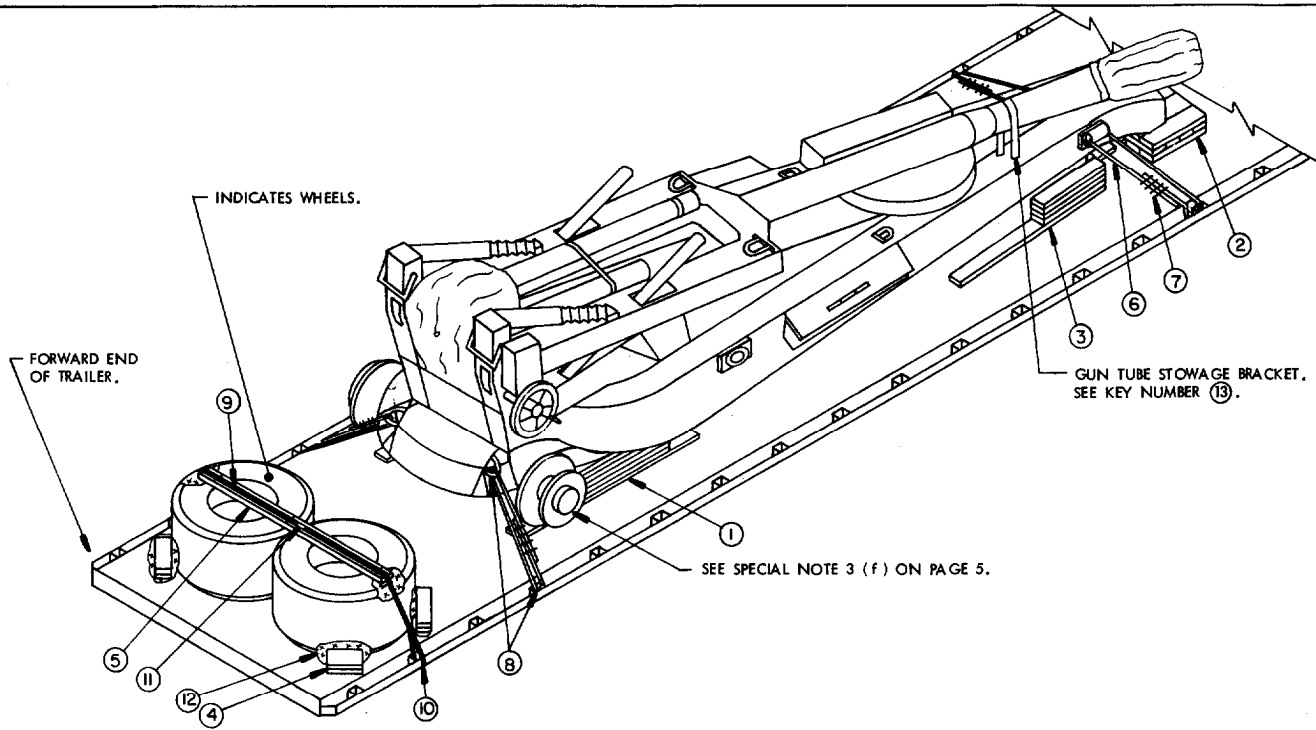
**BASE SUPPORT ASSEMBLY**

THIS ASSEMBLY MAY BE FABRICATED PRIOR TO POSITIONING IT  
ON THE TRAILER. PRE-POSITION AS SHOWN IN THE "PRE-POSITIONED  
DUNNAGE" VIEW ABOVE AND NAIL TO THE TRAILER  
FLOOR W/4-12d NAILS AT EACH END.



**RISER ASSEMBLY**

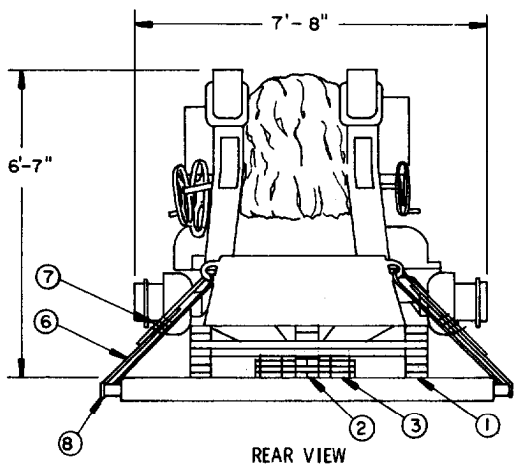
THIS ASSEMBLY MUST BE FABRICATED IN PLACE ON  
THE TRAILER.



ISOMETRIC VIEW

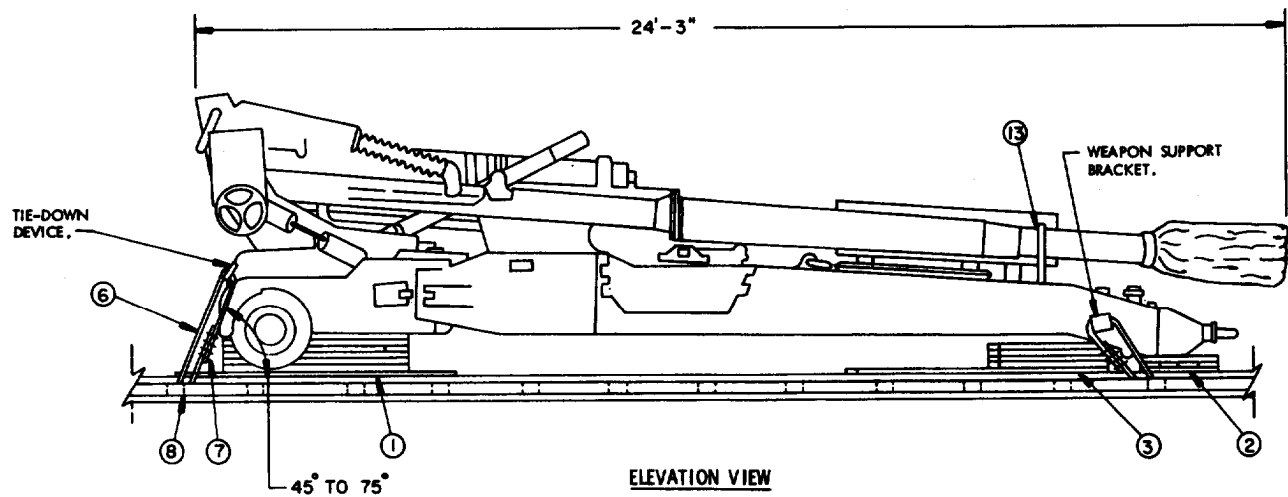
KEY NUMBERS

- ① BASE SUPPORT ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 3. PRE-POSITION AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" DETAIL ON PAGE 3. NAIL TO THE TRAILER FLOOR W/4-12d NAILS AT EACH END. SEE SPECIAL NOTE 3 (a) ON PAGE 5.
- ② RISER ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 3. PRE-POSITION AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" DETAIL ON PAGE 3. SEE SPECIAL NOTE 3 (a) ON PAGE 5.
- ③ LONGITUDINAL BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6. POSITION AS SHOWN IN THE "POSITIONING OF LONGITUDINAL BLOCKING ASSEMBLY" DETAIL ON PAGE 6. NAIL TO THE TRAILER FLOOR W/7-12d NAILS.
- ④ WHEEL BLOCK, 2" X 6" X 12" (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-12d NAILS.
- ⑤ STRAPPING BOARD, 2" X 4" X 6'-0" (1 REQD).
- ⑥ STEEL WIRE ROPE, 1/2" DIA, 11.5 TONS (4 REQD). INSTALL CABLE TO APPROXIMATE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM TIEDOWN FACILITY ON TRAILER THRU TIEDOWN DEVICE AND/OR WEAPON SUPPORT BRACKET ON HOWITZER AND BACK TO TRAILER TIEDOWN FACILITY. SEE GENERAL NOTES "F", "H", AND "J" ON PAGE 2. SEE SPECIAL NOTE 3 (c) ON PAGE 5 AND "CABLE JOINT" DETAIL ON PAGE 6. NOTE: CABLE OF A LARGER SIZE MAY BE USED, IF AVAILABLE, WHEN SPECIFIED CABLE IS NOT AVAILABLE. SEE SPECIAL PROVISIONS ON PAGE 2 IF CHAINS AND LOAD BINDERS ARE TO BE USED.
- ⑦ CLIP, WIRE ROPE, SIZE 1/2" HEAVY DUTY (22 REQD). USE FOUR (4) PER EACH CABLE JOINT AND ONE (1) TO SECURE EACH THIMBLE.
- ⑧ THIMBLE, STANDARD, SIZE 1/2" (6 REQD). USE ONE (1) PER TRAILER TIEDOWN FACILITY AND ONE (1) PER REAR TIEDOWN DEVICE ON HOWITZER. SECURE TO CABLE, PIECE MARKED ⑥, W/1-CLIP PER THIMBLE. A STANDARD THIMBLE, AS SPECIFIED, CAN BE SECURED TO A CABLE WITH A 1/2" CLIP. HOWEVER, IF DESIRED, OR IF THE 1/2" THIMBLE BEING USED IS OF A TYPE WHICH CANNOT BE SECURED TO A CABLE WITH A 1/2" CLIP, A 5/8" CLIP MAY BE USED. NOTE THAT AN "OPEN PATTERN" THIMBLE IS RECOMMENDED. SEE GENERAL NOTE "F" ON PAGE 2.
- ⑨ HOLD-DOWN STRAP, 1-1/4" X .035" X 14'-0" LONG STEEL STRAPPING (1 REQD). INSTALL FROM TWO (2) 7'-0" LONG PIECES. STAPLE TO PIECE MARKED ⑤ W/3-1-1/4" STAPLES.
- ⑩ PAD, 1-1/4" X .035", 18" LONG (2 REQD). POSITION UNDER AND SEAL TO PIECE MARKED ⑨. SEE "DETAIL A" ON PAGE 6. ALT: STAKE POCKET PROTECTOR (4 REQD). USE TWO (2) UNDER EACH STAKE POCKET WITH PIECES MARKED ⑩. SEE "DETAIL B" ON PAGE 6.
- ⑪ SEAL FOR 1-1/4" STRAPPING (5 REQD). EXCEPT FOR SEALS USED TO SECURE THE PADS, DOUBLE CRIMP EACH SEAL.
- ⑫ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" ABOVE PIECE MARKED ④, ALSO POSITION UNDER PIECE MARKED ⑨ AT POINTS OF CONTACT WITH THE TIRES.
- ⑬ WIRE, NO. 14 GAGE, SOFT ANNEALED, (AS REQD). WIRE TIE THE PIN WHICH LOCKS THE GUN TUBE STORAGE BRACKET IN SUCH A MANNER THAT THE PIN CAN NOT COME OUT DURING TRANSIT.



REAR VIEW

NOTE: THE WHEELS HAVE BEEN OMITTED FOR CLARITY.



**SPECIAL NOTES:**

1. THE HOWITZER MAY BE SHIPPED WITH THE WHEELS OFF BY USING THE PROCEDURES DEPICTED ON PAGES 3, 4, AND 5 OR WITH THE WHEELS ON BY USING THE PROCEDURES DEPICTED ON PAGES 7, 8, AND 9 OR PAGES 10, 11, AND 12 (CAUTION: THE HOWITZER WIDTH IS 9'-0" WITH THE WHEELS ON).

2. THE HOWITZER MAY BE POSITIONED ON THE TRAILER WITH THE TUBE POINTING TO THE REAR OR FORWARD END.

**3. LOADING PROCEDURES:**

- (a) PRE-POSITION PIECES MARKED ① AND ② AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" DETAIL ON PAGE 3.
- (b) REMOVE THE WHEELS AND POSITION THE HOWITZER BY CENTERING IT ACROSS THE WIDTH OF THE TRAILER AND LOCATING IT LONGITUDINALLY BY THE DIMENSIONS GIVEN IN THE "PRE-POSITIONED DUNNAGE" VIEW ON PAGE 3 AND THE "POSITIONING OF LONGITUDINAL BLOCKING ASSEMBLY" DETAIL ON PAGE 6.
- (c) AFTER THE HOWITZER IS PROPERLY LOCATED ON THE FLAT BED TRAILER, POSITION PIECES MARKED ④, ⑦, AND ⑧, MAKING SURE THAT THE CABLES ARE INSTALLED AT THE PROPER ANGLE AND THAT THE HOWITZER REMAINS CENTERED ACROSS THE WIDTH OF THE TRAILER. SEE GENERAL NOTES "F", "H", AND "J", ON PAGE 2 AND THE "ELEVATION VIEW" ON THIS PAGE.
- (d) POSITION PIECES MARKED ③ AS SHOWN IN THE "POSITIONING OF LONGITUDINAL BLOCKING ASSEMBLY" DETAIL ON PAGE 6.
- (e) POSITION AND SECURE THE WHEELS AS SHOWN IN THE "ISOMETRIC VIEW" ON PAGE 4.
- (f) REPLACE THE WHEEL LUG NUTS BACK ON THE WHEEL BOLTS AND TURN TIGHT. TAPE OR WIRE TIE THE NUTS IN SUCH A MANNER THAT THEY WILL NOT WORK LOOSE DURING TRANSIT.

**SPECIAL NOTES (CONTINUED):**

4. FOR AN ALTERNATIVE METHOD OF SHIPPING ONE OR TWO HOWITZERS ON A FLAT BED TRAILER, SEE THE PROCEDURES ON PAGES 10, 11, AND 12.

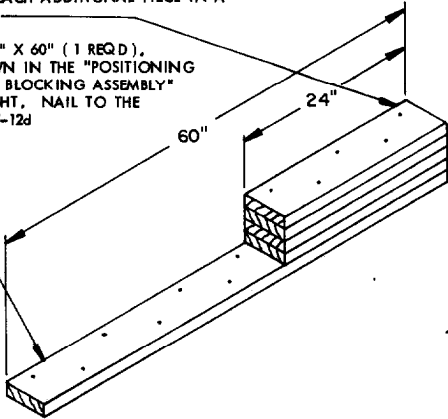
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	6	4
2" X 6"	142	142
NAILS	NO. REQD	POUNDS
10d (3")	102	1-3/4
12d (3-1/4")	84	1-1/2
20d (4")	84	3
ROPE, STEEL WIRE, 1/2" DIA	60' REQD	15 LBS
CLIP, HEAVY DUTY, 1/2"	22 REQD	8 LBS
THIMBLE, STANDARD, 1/2"	6 REQD	2 LBS
STEEL STRAPPING, 1-1/4" X .035"	17' REQD	3 LBS
SEAL FOR 1-1/4" STRAPPING	5 REQD	1/4 LB
STAPLE FOR 1-1/4" STRAPPING	3 REQD	NIL
WATERPROOF PAPER OR BURLAP	AS REQD	NIL

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
155MM HOWITZER	1	15,760 LBS
DUNNAGE		327 LBS
<b>TOTAL WEIGHT</b>		<b>16,087 LBS</b>

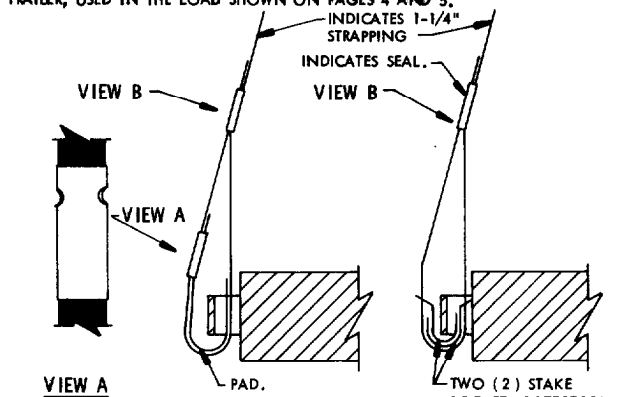
RISER PIECE, 2" X 6" X 24" (4 REQD). NAIL THE FIRST PIECE TO THE BASE PIECE W/5-10d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.

BASE PIECE, 2" X 6" X 60" (1 REQD). POSITION AS SHOWN IN THE "POSITIONING OF LONGITUDINAL BLOCKING ASSEMBLY" DETAIL TO THE RIGHT. NAIL TO THE TRAILER FLOOR W/7-12d NAILS.



**LONGITUDINAL BLOCKING ASSEMBLY**

THIS ASSEMBLY MAY BE FABRICATED PRIOR TO POSITIONING IT ON THE TRAILER, USED IN THE LOAD SHOWN ON PAGES 4 AND 5.



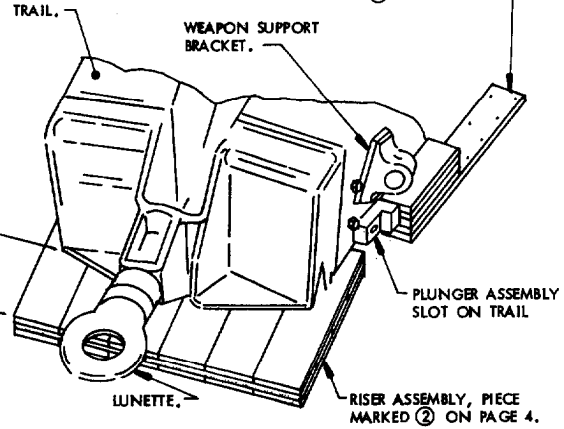
**VIEW A**  
ONE SEAL WITH ONE PAIR OF CRIMPS.

**DETAIL A**  
METHOD OF INSTALLING 1-1/4" STRAPPING AND PAD AT ANCHORING FACILITY.

**DETAIL B**  
METHOD OF INSTALLING 1-1/4" STRAPPING AND STAKE POCKET PROTECTORS (ALT PAD).

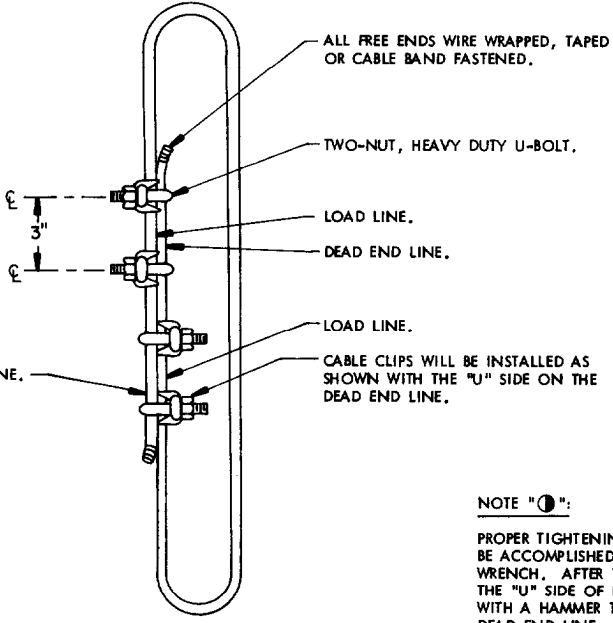
**VIEW B**  
ONE SEAL WITH TWO PAIR OF CRIMPS.

LONGITUDINAL BLOCKING ASSEMBLY, PIECE MARKED ③ ON PAGE 4.



**POSITIONING OF LONGITUDINAL BLOCKING ASSEMBLY**

POSITION THE LONGITUDINAL BLOCKING ASSEMBLY AGAINST THE PLUNGER ASSEMBLY SLOT ON THE TRAIL AS SHOWN ABOVE.



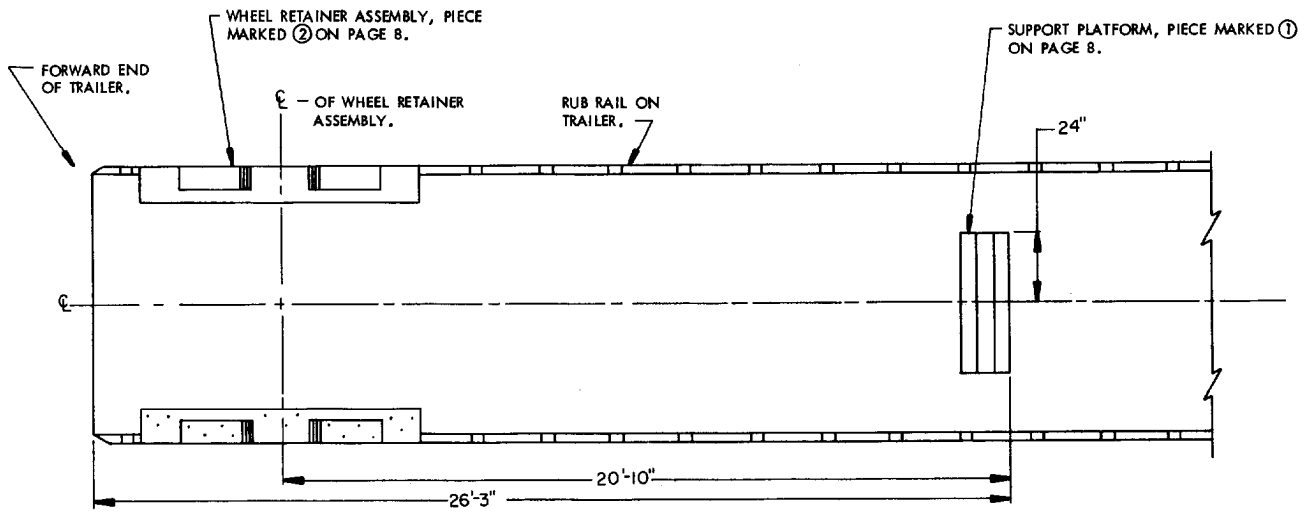
**CABLE JOINT**

SEE "NOTE ①" ON THIS PAGE.

**NOTE ①:**

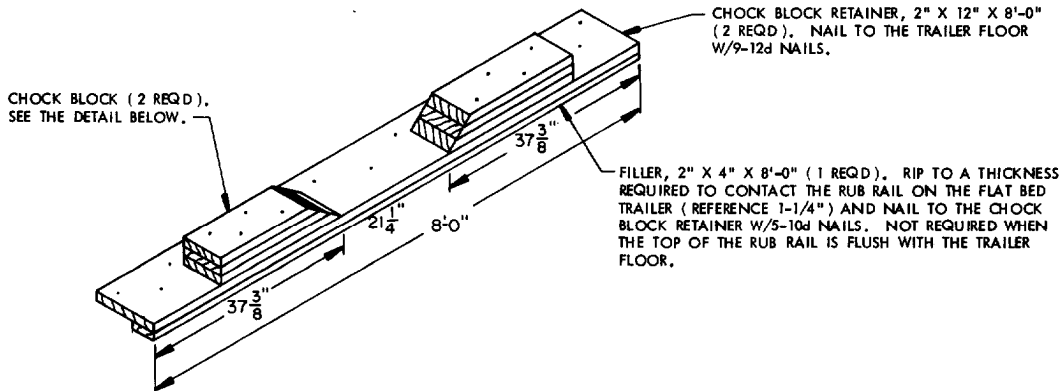
PROPER TIGHTENING OF THE WIRE ROPE CLIP NUTS CAN BE ACCOMPLISHED BY UTILIZING A PROPER SIZED TORQUE WRENCH. AFTER THE NUTS HAVE BEEN INITIALLY TIGHTENED, THE "U" SIDE OF EACH CLIP MUST BE STRUCK SEVERAL TIMES WITH A HAMMER TO INSURE PROPER SEATING INTO THE DEAD END LINE. FINAL TORQUE WILL BE ACQUIRED BY REPEATEDLY AND ALTERNATELY TIGHTENING EACH CLIP NUT.

**DETAILS**



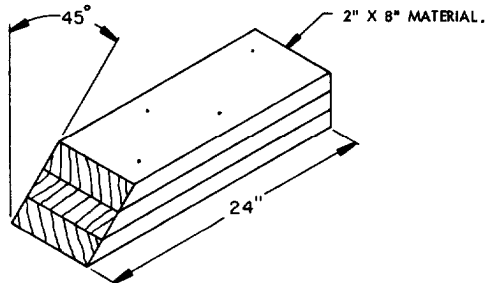
**PRE-POSITIONED DUNNAGE**

PRIOR TO POSITIONING THE HOWITZER ON THE TRAILER, PRE-POSITION THE "WHEEL RETAINER ASSEMBLY" AND THE "SUPPORT PLATFORM", AS SHOWN ABOVE, AND NAIL IN PLACE.



**WHEEL RETAINER ASSEMBLY**

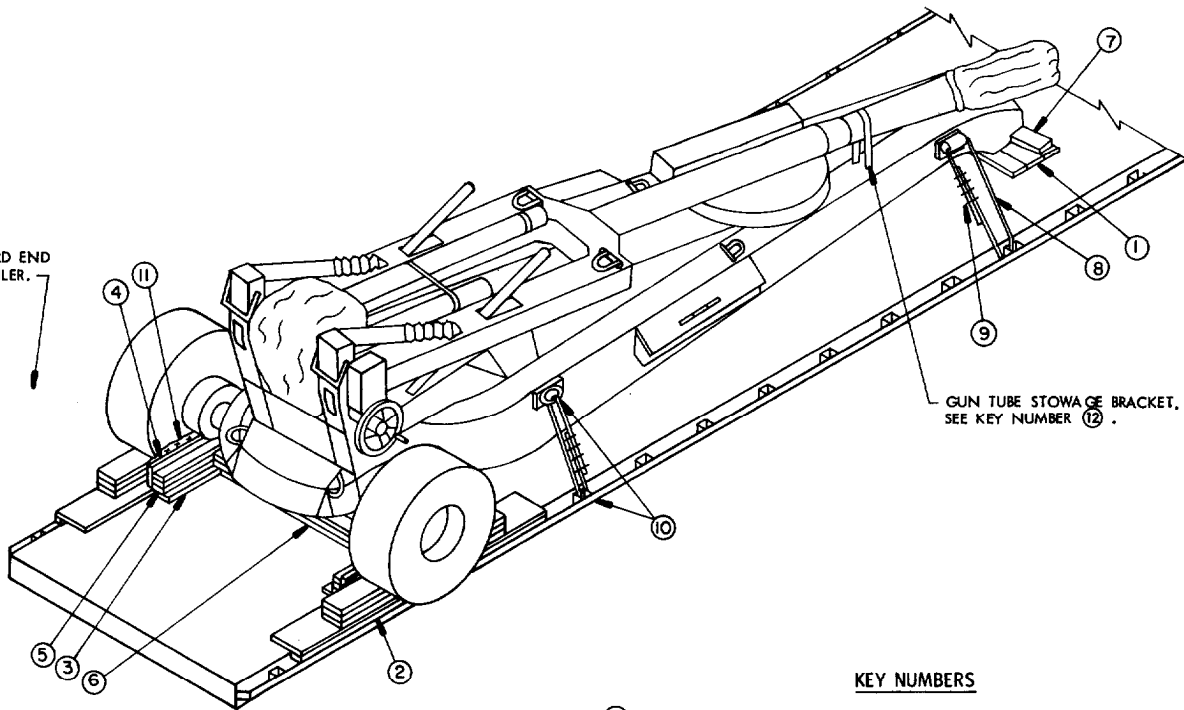
THIS ASSEMBLY MAY BE FABRICATED PRIOR TO POSITIONING ON THE TRAILER. PRE-POSITION AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" VIEW ABOVE AND NAIL TO THE TRAILER FLOOR W/9-12d NAILS. IF THE CHOCK BLOCK IS BEING USED WITHOUT THE "WHEEL RETAINER ASSEMBLY" SEE KEY NUMBER ① ON PAGE 10.



**CHOCK BLOCK**

POSITION ON THE CHOCK BLOCK RETAINER AS SHOWN IN THE "WHEEL RETAINER ASSEMBLY" DETAIL ABOVE. NAIL THE FIRST PIECE TO THE CHOCK BLOCK RETAINER W/4-10d NAILS. NAIL EACH ADDITIONAL PIECE W/4-20d NAILS. IF THE CHOCK BLOCK IS BEING USED WITHOUT THE "WHEEL RETAINER ASSEMBLY", SEE KEY NUMBER ① ON PAGE 10.

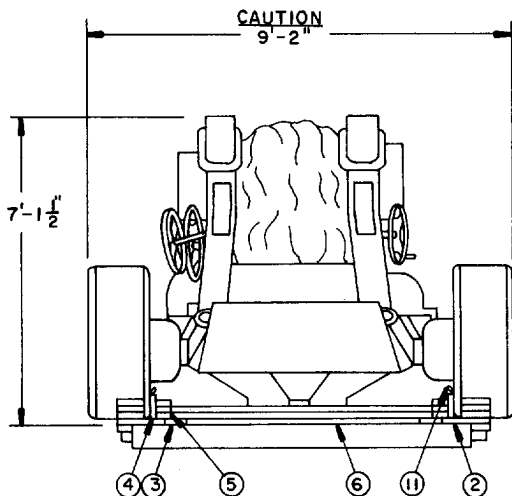
FORWARD END OF TRAILER.



ISOMETRIC VIEW

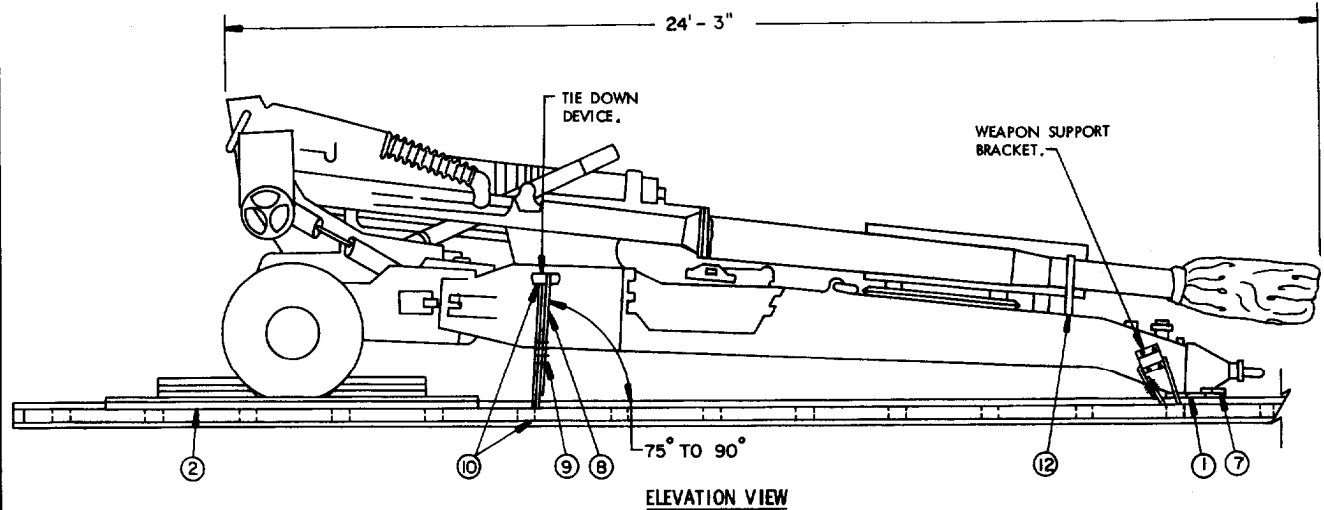
KEY NUMBERS

- ① SUPPORT PLATFORM, 2" X 6" X 48" (3 REQD). PRE-POSITION AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" DETAIL ON PAGE 7. NAIL TO THE TRAILER FLOOR W/5-12d NAILS. SEE SPECIAL NOTE 3 (a) ON PAGE 9.
- ② WHEEL RETAINER ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 7. PRE-POSITION AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" DETAIL ON PAGE 7. SEE SPECIAL NOTE 3 (a) ON PAGE 9.
- ③ RISER, 2" X 6" X 48" (2 REQD). CENTER ON WHEEL AND POSITION AGAINST PIECE MARKED ②. NAIL TO THE TRAILER FLOOR W/5-12d NAILS.
- ④ RUBBING STRIP, 2" X 6" X 48" (2 REQD). POSITION ON EDGE AND NAIL TO LOWER PIECE OF SIDE BLOCKING MARKED ⑤ W/5-12d NAILS.
- ⑤ SIDE BLOCKING, 2" X 4" X 48" (TRIPLED) (2 REQD). CENTER ON AND POSITION AGAINST A WHEEL. NAIL THE FIRST PIECE TO THE RISER W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.
- ⑥ SPANNER, 2" X 4" BY CUT-TO-FIT (3 REQD). ONE (1) PIECE CUT-TO-FIT BETWEEN PIECES MARKED ③ AND TWO (2) PIECES CUT-TO-FIT BETWEEN PIECES MARKED ③. NAIL THE BOTTOM PIECE TO THE TRAILER FLOOR W/12-12d NAILS. LAMINATE THE SECOND AND THIRD PIECES TO THE FIRST W/12-12d NAILS.
- ⑦ SIDE BLOCKING, 2" X 6" X 10" (2 REQD). POSITION AGAINST THE TRAILS AFTER THE CABLES ARE TENSIONED AND NAIL TO PIECE MARKED ① W/3-12d NAILS.
- ⑧ STEEL WIRE ROPE, 1/2" DIA, 11.5 TONS (4 REQD). INSTALL CABLE TO APPROXIMATE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM TIE DOWN FACILITY ON TRAILER THRU TIE DOWN DEVICE AND/OR WEAPON SUPPORT BRACKET ON HOWITZER AND BACK TO TRAILER TIEDOWN FACILITY. SEE GENERAL NOTES "F", "H", AND "J" ON PAGE 2. SEE SPECIAL NOTE 3 (d) ON PAGE 9 AND "CABLE JOINT" DETAIL ON PAGE 6. NOTE: CABLE OF A LARGER SIZE MAY BE USED, IF AVAILABLE, WHEN SPECIFIED CABLE IS NOT AVAILABLE. SEE SPECIAL PROVISIONS ON PAGE 2 IF CHAINS AND LOAD BINDERS ARE TO BE USED.
- ⑨ CLIP, WIRE ROPE, SIZE 1/2" HEAVY DUTY (22 REQD). USE FOUR (4) PER EACH CABLE JOINT AND ONE (1) TO SECURE EACH THIMBLE.
- ⑩ THIMBLE, STANDARD, SIZE 1/2" (6 REQD). USE ONE (1) PER TRAILER TIE DOWN FACILITY AND ONE (1) PER REAR TIE DOWN DEVICE ON HOWITZER. SECURE TO CABLE PIECE MARKED ⑧ W/1-CLIP PER THIMBLE. A STANDARD THIMBLE AS SPECIFIED, CAN BE SECURED TO A CABLE WITH A 1/2" CLIP. HOWEVER, IF DESIRED, OR IF THE 1/2" THIMBLE BEING USED IS OF A TYPE WHICH CANNOT BE SECURED TO A CABLE WITH A 1/2" CLIP, A 5/8" CLIP MAY BE USED. NOTE THAT AN "OPEN PATTERN" THIMBLE IS RECOMMENDED. SEE GENERAL NOTE "F" ON PAGE 2.
- ⑪ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" ABOVE PIECE MARKED ④.
- ⑫ WIRE, NO. 14 GAGE, SOFT ANNEALED, (AS REQD). WIRE TIE THE PIN WHICH LOCKS THE GUN TUBE STOWAGE BRACKET IN SUCH A MANNER THAT THE PIN CANNOT COME OUT DURING TRANSIT.



REAR VIEW





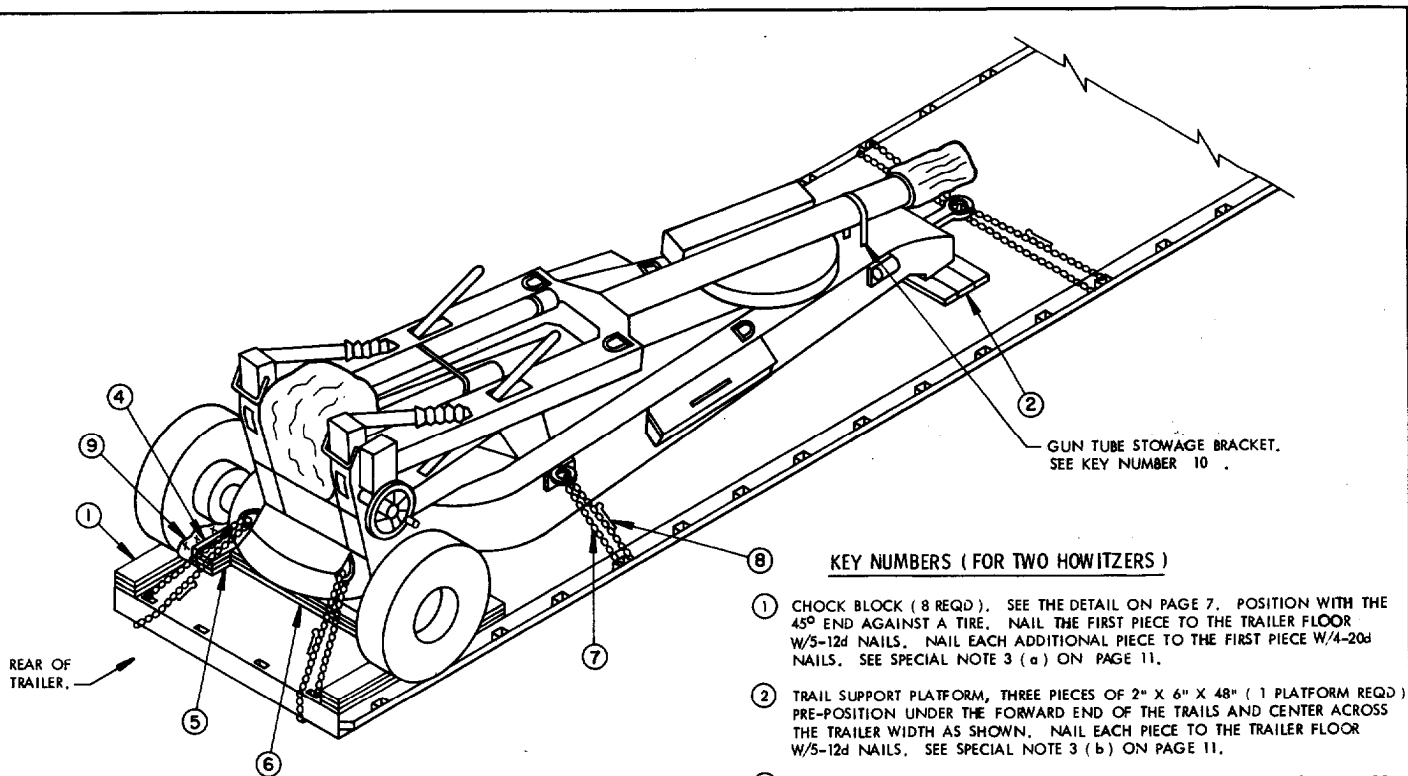
**SPECIAL NOTES:**

1. THE HOWITZER MAY BE SHIPPED WITH THE WHEELS ON BY USING THE PROCEDURES DEPICTED ON PAGES 7, 8, AND 9 OR PAGES 10, 11, AND 12 (CAUTION: THE HOWITZER WIDTH IS 9'-2" WITH THE WHEELS ON) OR WITH THE WHEELS OFF BY USING THE PROCEDURES DEPICTED ON PAGES 3, 4, AND 5.
2. THE HOWITZER MAY BE POSITIONED ON THE TRAILER WITH THE TUBE POINTING TO THE REAR OR FORWARD END.
3. **LOADING PROCEDURES:**
  - (a) PRE-POSITION PIECES MARKED ① AND ② AS SHOWN IN THE "PRE-POSITIONED DUNNAGE" DETAIL ON PAGE 7.
  - (b) POSITION THE HOWITZER WITH THE WHEELS SEATED BETWEEN THE CHOCK BLOCKS AND CENTERED BETWEEN THE WIDTH OF THE TRAILER. THE END OF THE TRAILS WILL REST ON THE SUPPORT PLATFORM AND WILL BE CENTERED ACROSS THE WIDTH OF THE TRAILER.
  - (c) AFTER THE HOWITZER IS PROPERLY LOCATED ON THE FLAT BED TRAILER, POSITION PIECES MARKED ③, ④, ⑤, AND ⑥, AND NAIL IN PLACE.
  - (d) POSITION PIECES MARKED ⑧, ⑨, AND ⑩, MAKING SURE THAT THE CABLES ARE INSTALLED AT THE PROPER ANGLE AND THAT THE HOWITZER REMAINS CENTERED ACROSS THE WIDTH OF THE TRAILER. SEE GENERAL NOTES "F", "H", AND "J" ON PAGE 2 AND THE ELEVATION VIEW ON THIS PAGE.
4. FOR AN ALTERNATIVE METHOD OF SHIPPING ONE OR TWO HOWITZERS ON A FLAT BED TRAILER, SEE THE PROCEDURES ON PAGES 10, 11, AND 12.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	56	38
2" X 6"	30	30
2" X 8"	24	32
2" X 12"	16	32
NAILS	NO. REQD	POUNDS
10d (3")	26	1/4
12d (3-1/4")	128	2-1/4
20d (4")	32	2
ROPE, STEEL WIRE, 1/2" DIA	45' REQD	27 LBS
CLIP, HEAVY DUTY, 1/2"	22 REQD	11 LBS
THIMBLE, STANDARD, 1/2"	6 REQD	2 LBS
WATERPROOF PAPER OR BURLAP	AS REQD	NIL

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
155MM HOWITZER	1	15,760 LBS
DUNNAGE		309 LBS
<b>TOTAL WEIGHT</b>		<b>16,069 LBS</b>

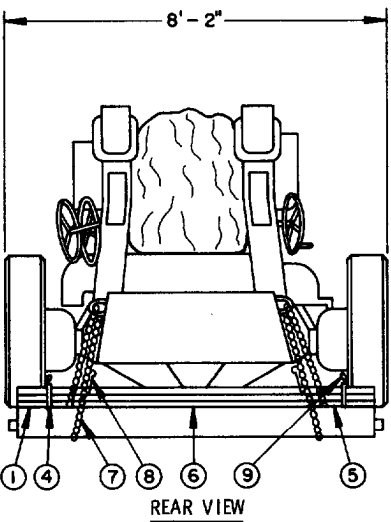


**ISOMETRIC VIEW**

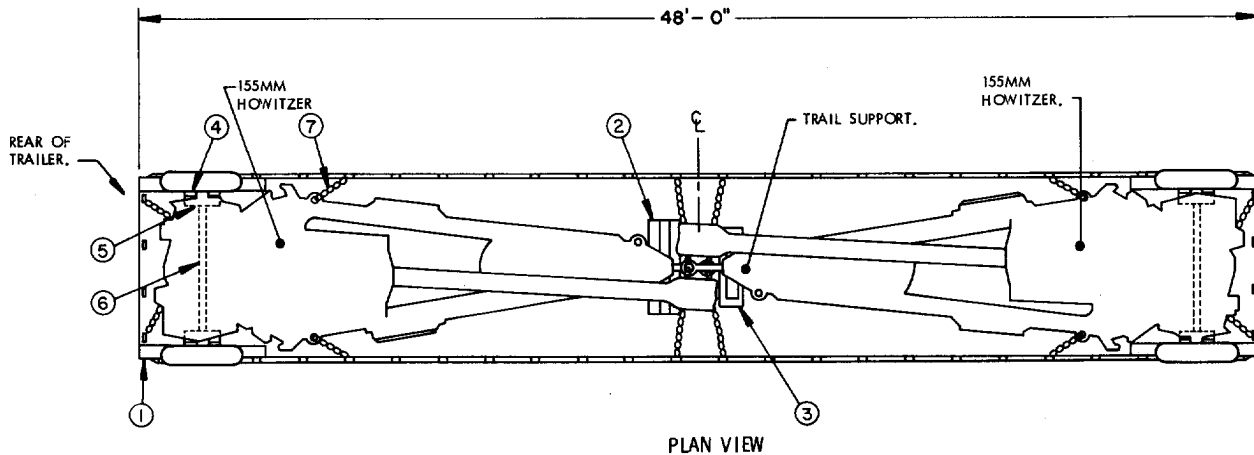
SEE SPECIAL NOTES 1 AND 2 ON PAGE 11.

**KEY NUMBERS ( FOR TWO HOWITZERS )**

- ① CHOCK BLOCK ( 8 REQD ). SEE THE DETAIL ON PAGE 7. POSITION WITH THE 45° END AGAINST A TIRE. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE TO THE FIRST PIECE W/4-20d NAILS. SEE SPECIAL NOTE 3 ( a ) ON PAGE 11.
- ② TRAIL SUPPORT PLATFORM, THREE PIECES OF 2" X 6" X 48" ( 1 PLATFORM REQD ) PRE-POSITION UNDER THE FORWARD END OF THE TRAILS AND CENTER ACROSS THE TRAILER WIDTH AS SHOWN. NAIL EACH PIECE TO THE TRAILER FLOOR W/5-12d NAILS. SEE SPECIAL NOTE 3 ( b ) ON PAGE 11.
- ③ TRAIL SUPPORT ASSEMBLY ( 1 REQD ). SEE THE DETAIL ON PAGE 13. PRE-POSITION UNDER THE FORWARD END OF THE TRAILS AND CENTER ACROSS THE TRAILER WIDTH AS SHOWN. NAIL TO THE TRAILER FLOOR W/16-12d NAILS ( 5-12d NAILS ON EACH END AND 3-12d NAILS ON EACH SIDE. LOCATE NAILS AS SHOWN IN THE "TRAIL SUPPORT ASSEMBLY" DETAIL ON PAGE 13 ). SEE SPECIAL NOTE 3 ( c ) ON PAGE 11.
- ④ RUBBING STRIP, 2" X 6" X 18" ( 4 REQD ). POSITION ON EDGE AND NAIL TO BOTTOM PIECE OF SIDE BLOCKING MARKED ⑤ W/5-12d NAILS. SEE SPECIAL NOTE 3 ( f ) ON PAGE 11.
- ⑤ SIDE BLOCKING, 2" X 6" X 18" ( TRIPLED ) ( 4 REQD ). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 3 ( f ) ON PAGE 11.
- ⑥ SPANNER, 2" X 4" BY CUT-TO-FIT BETWEEN PIECES MARKED ⑤ ( TRIPLED ) ( 2 REQD ). CENTER ON PIECES MARKED ⑤ AND NAIL THE BOTTOM PIECE TO THE TRAILER FLOOR W/12-12d NAILS. NAIL EACH ADDITIONAL PIECE TO THE FIRST PIECE IN A LIKE MANNER. SEE SPECIAL NOTE 3 ( g ) ON PAGE 11.
- ⑦ CHAIN, 3/8" ( 12 REQD / 6 PER EACH HOWITZER ). INSTALL CHAIN TO APPROXIMATE ANGLE SHOWN AND TO FORM A COMPLETE LOOP THRU TIE DOWN FACILITY ON TRAILER, THRU TIE DOWN DEVICE ON HOWITZER, AND SECURE TO SELF. SEE "SPECIAL PROVISIONS" ON PAGE 2. NOTE: STEEL WIRE ROPE MAY BE USED IN LIEU OF CHAIN. SEE SPECIAL NOTE 4 ON PAGE 11 IF STEEL WIRE ROPE IS TO BE USED.
- ⑧ LOAD BINDER ( 12 REQD / 6 PER EACH HOWITZER ). SEE "SPECIAL PROVISIONS" ON PAGE 2 AND SPECIAL NOTE 4 ON PAGE 11. ONE LOAD BINDER MUST BE USED WITH EACH CHAIN TIE DOWN.
- ⑨ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" ABOVE PIECE MARKED ④ .
- ⑩ WIRE, NO. 14 GAGE, SOFT ANNEALED ( AS REQD ). WIRE TIE PIN WHICH LOCKS THE GUN TUBE STOWAGE BRACKET IN SUCH A MANNER THAT THE PIN CAN NOT COME OUT DURING TRANSIT. WIRE TIE THE TENSIONING DEVICE OF EACH LOAD BINDER.



**REAR VIEW**



**SPECIAL NOTES:**

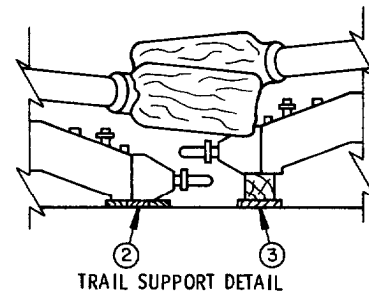
1. ONE OR TWO HOWITZERS HAVING NARROW TIRES CAN BE SHIPPED ON A FLAT BED TRAILER HAVING OVERALL DIMENSIONS OF 8'-0" WIDE BY 48'-0" LONG. HOWEVER, IF ONLY ONE HOWITZER IS TO BE SHIPPED A SHORTER TRAILER MAY BE USED. FOLLOW THE PROCEDURES SHOWN ON PAGES 10 AND 11 FOR LOADING AND SECURING ONE OR TWO HOWITZERS.
2. THE "ISOMETRIC VIEW" ON PAGE 10 DEPICTS ONE HOWITZER LOADED ON A 48'-0" LONG FLAT BED TRAILER. THE SECOND HOWITZER HAS BEEN OMITTED FOR CLARITY. SEE THE "PLAN VIEW" ON THIS PAGE WHEN LOADING TWO HOWITZERS ON A 48'-0" LONG FLAT BED TRAILER.
3. **LOADING PROCEDURES:**
  - (a) PRE-POSITION THE FOUR CHOCK BLOCKS MARKED ①, WHICH WILL BE AGAINST THE REAR OF THE HOWITZER TIRES, AT EACH END OF THE FLAT BED TRAILER AS SHOWN IN THE "PRE-POSITIONING OF CHOCK BLOCKS" DETAIL ON PAGE 13. NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ① ON PAGE 10. **NOTE:** THE REMAINING FOUR CHOCK BLOCKS THAT ARE POSITIONED IN FRONT OF THE HOWITZER TIRES WILL BE POSITIONED LATER.
  - (b) PRE-POSITION THE TRAIL SUPPORT PLATFORM MARKED ② UNDER THE FORWARD END OF THE TRAILS AND CENTERED ACROSS THE TRAILER WIDTH AS SHOWN IN THE "PLAN VIEW" AND "TRAIL SUPPORT DETAIL" ON THIS PAGE. NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ② ON PAGE 10. **NOTE:** THE PURPOSE OF THIS PLATFORM IS TO KEEP THE "TRAILS" FROM GOUGING THE FLOOR OF THE FLAT BED TRAILER.
  - (c) PRE-POSITION THE TRAIL SUPPORT ASSEMBLY MARKED ③ UNDER THE FORWARD END OF THE TRAILS AND CENTERED ACROSS THE TRAILER WIDTH AS SHOWN IN THE "PLAN VIEW" AND "TRAIL SUPPORT DETAIL" ON THIS PAGE. NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ③ ON PAGE 10. **NOTE:** THE PURPOSE OF THIS ASSEMBLY IS TO KEEP THE "TRAILS" FROM GOUGING THE FLOOR OF THE FLAT BED TRAILER AND ALSO PROVIDE HEIGHT ENOUGH TO PASS OVER THE TOP OF THE LUNETTE ON THE OTHER HOWITZER.
  - (d) POSITION EACH HOWITZER TO CENTER ACROSS THE TRAILER WIDTH WITH THE WHEELS TIGHT AGAINST THE TWO PRE-POSITIONED CHOCK BLOCKS MARKED ① AT EACH END OF THE TRAILER. CENTER THE TRAILS ON THE PRE-POSITIONED TRAIL SUPPORTS MARKED ② AND ③. **NOTE:** THE HOWITZER WHEELS WILL OVERHANG THE EDGE OF THE TRAILER.
  - (e) POSITION THE FOUR REMAINING CHOCK BLOCKS MARKED ① TIGHT AGAINST THE FRONT OF THE HOWITZER TIRES, IN LINE WITH THE PRE-

**( SPECIAL NOTES CONTINUED )**

- (f) POSITIONED CHOCK BLOCKS AGAINST THE REAR OF THE HOWITZER TIRES, AND NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ① ON PAGE 10.
- (f) POSITION THE RUBBING STRIPS MARKED ④, THE SIDE BLOCKING PIECES MARKED ⑤, AND THE WATERPROOF PAPER MARKED ⑥, AGAINST THE INSIDE OF THE TIRES AND NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ⑤ ON PAGE 10.
- (g) POSITION THE SPANNER PIECES MARKED ④ BETWEEN PIECES MARKED ⑤ AND NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ④ ON PAGE 10.
- (h) POSITION THE TIEDOWN CHAINS MARKED ⑦ AND THE LOAD BINDERS MARKED ⑧ AT THE LOCATIONS SHOWN. INSTALL THE CHAIN TIEDOWNS TO APPROXIMATE THE ANGLES SHOWN. ASSURE THAT THE LOAD BINDERS ARE TIGHT AND THE TENSIONING DEVICE ON EACH LOAD BINDER IS WIRE TIED TO PREVENT ACCIDENTAL OPENING. SECURE LOOSE END OF CHAIN WITH WIRE.
4. STEEL WIRE ROPE, WIRE ROPE CLIPS, AND THIMBLES SHOWN AS PIECES MARKED ⑧, ⑨, AND ⑩ IN THE LOAD ON PAGE 8, MAY BE USED IN LIEU OF EACH CHAIN TIEDOWN AND LOAD BINDER SHOWN AS PIECES MARKED ⑦ AND ⑧ IN THE LOAD ON PAGE 10. SEE GENERAL NOTES "F", "H", AND "J" ON PAGE 2.

( CONTINUED AT RIGHT )

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	38	26
2" X 6"	36	36
2" X 8"	48	64
2" X 12"	3	6
8" X 8"	3	16
NAILS	NO. REQD	POUNDS
12d ( 3-1/4" )	223	4
20d ( 4" )	64	3
CHAIN, 3/8"	12 REQD	359 LBS <sup>1</sup>
LOAD BINDER	12 REQD	96 LBS
WIRE, NO. 14 GAGE	AS REQD	NIL
WATERPROOF PAPER OR BURLAP	AS REQD	NIL



THIS SIDE VIEW DEPICTS THE OVERLAP OF THE HOWITZER LUNETTES AT THE CENTER OF THE TRAILER.

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT ( APPROX )
155MM HOWITZER	2	15,678 LBS
DUNNAGE		758 LBS
<b>TOTAL WEIGHT</b>		<b>16,436 LBS</b>

CRADLE SECUREMENT STRAPPING, 2" X .050" X 20'-0" LONG STEEL STRAPPING (1 REQD). ENCIRCLE CRADLE AND TRAILS NEAR TO CRADLE SUPPORT ASSEMBLY.

SEAL FOR 2" STRAPPING (2 REQD). DOUBLE CRIMP EACH SEAL.

CRADLE.

WATERPROOF PAPER OR BURLAP.

LIFTING EYE.

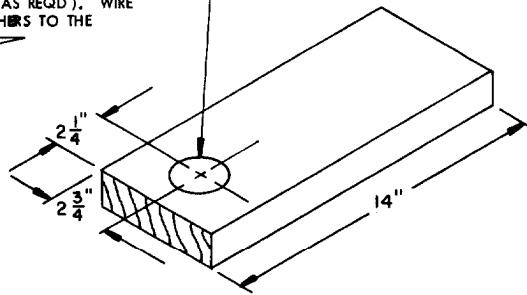
CRADLE SUPPORT ASSEMBLY (1 REQD). SEE THE DETAIL ON THIS PAGE.

ANTI-SWAY BLOCK, 2" X 6" X 8" (2 REQD). POSITION AGAINST THE CRADLE AND NAIL TO THE CRADLE SUPPORT ASSEMBLY W/3-12d NAILS.

WIRE, NO. 14 GAGE SOFT ANNEALED (AS REQD). WIRE TIE THE WASHERS TO THE CRADLE.

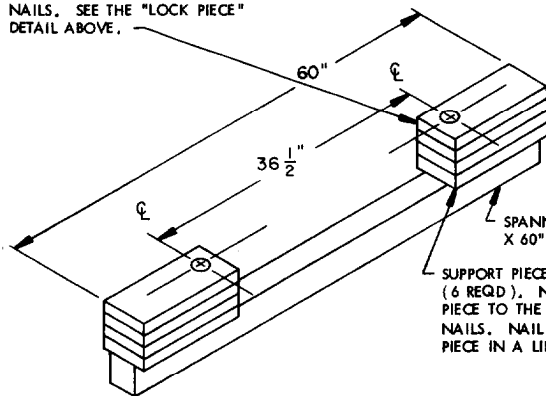
TRAIL.

DRILL ONE HOLE, 2" DIAMETER.



**LOCK PIECE**

LOCK PIECE, 2" X 6" X 14" (2 REQD). NAIL TO THE TOP SUPPORT PIECE W/3-12d NAILS. SEE THE "LOCK PIECE" DETAIL ABOVE.



SPANNER, 4" X 4" X 60" (1 REQD).

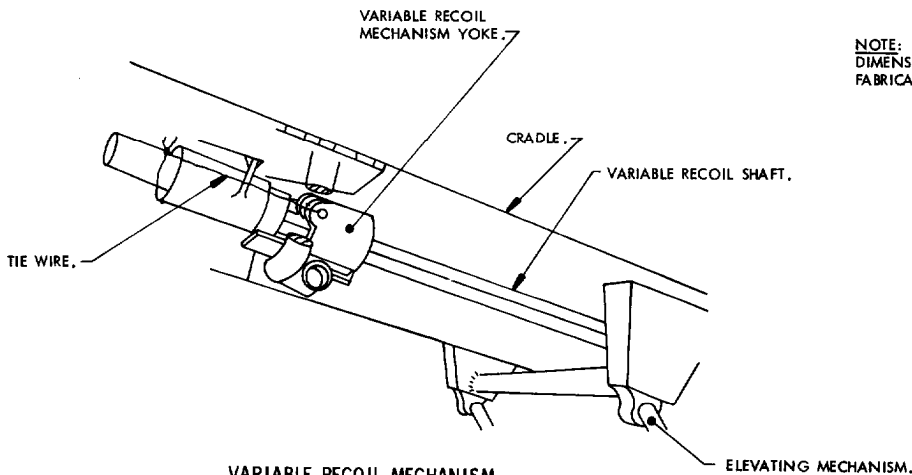
SUPPORT PIECE, 2" X 6" X 14" (6 REQD). NAIL THE FIRST PIECE TO THE SPANNER W/3-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.

**CRADLE SECUREMENT DETAIL**

CENTER THE CRADLE BETWEEN THE TRAILS. POSITION THE CRADLE SUPPORT ASSEMBLY AGAINST THE UNDERSIDE OF THE CRADLE, MAKING SURE THAT THE PROTRUDING BOLTS/NUTS ARE PROPERLY INSERTED INTO THE HOLES ON THE LOCK PIECES. LOWER THE CRADLE UNTIL THE SPANNER PIECE IS RESTING ACROSS THE TRAILS. POSITION THE ANTI-SWAY BLOCK AGAINST THE CRADLE AND NAIL IN PLACE. SEE GENERAL NOTE "M" ON PAGE 2.

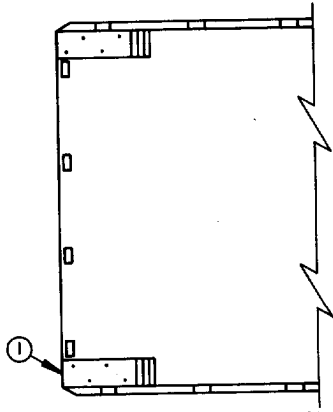
**CRADLE SUPPORT ASSEMBLY**

NOTE: FIELD CHECK THE 36-1/2" CENTER-TO-CENTER DIMENSION BETWEEN THE LIFTING EYE BOLTS PRIOR TO FABRICATING THE CRADLE SUPPORT ASSEMBLY.



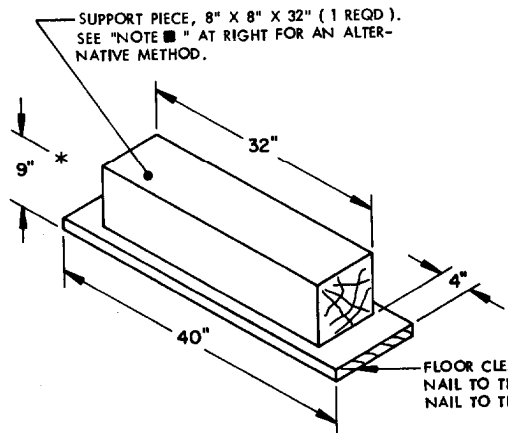
**VARIABLE RECOIL MECHANISM YOKE SECUREMENT DETAIL**

THE VIEW ABOVE DEPICTS THE UNDERSIDE OF THE CRADLE. SLIDE THE VARIABLE RECOIL MECHANISM YOKE ALONG THE VARIABLE RECOIL SHAFT, TOWARD THE MUZZLE END OF THE HOWITZER, AS FAR AS POSSIBLE AND WIRE TIE IN PLACE BY PASSING THE WIRE THROUGH THE BOLT HOLES IN THE VARIABLE RECOIL MECHANISM YOKE, BRING BOTH ENDS FORWARD, WRAP AROUND SHAFT END AND TWIST ENDS OF WIRE TOGETHER. SEE GENERAL NOTE "M" ON PAGE 2.



**PRE-POSITIONING OF CHOCK BLOCKS**

THIS PARTIAL VIEW DEPICTS THE LOCATION OF THE TWO "CHOCK BLOCKS" MARKED ① AT EACH END OF THE TRAILER, IN THE LOAD SHOWN ON PAGES 10 AND 11. ALIGN THE CHOCK BLOCKS WITH THE END AND SIDE OF THE TRAILERS AS SHOWN ABOVE AND NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ① ON PAGE 10. SEE SPECIAL NOTES 3 (a) AND 3 (e) ON PAGE 11.



**TRAIL SUPPORT ASSEMBLY**

THIS ASSEMBLY IS USED IN THE LOAD SHOWN ON PAGES 10 AND 11. THE ASSEMBLY MAY BE FABRICATED PRIOR TO POSITIONING ON THE TRAILER.

**NOTE ■ :**

IF 8" X 8" MATERIAL IS NOT AVAILABLE, OR IF DESIRED, SIX (6) PIECES OF 2" X 12" X 40" MAY BE USED IN LIEU OF THE 8" X 8" X 32" SUPPORT PIECE AND THE 2" X 12" X 40" FLOOR CLEAT. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-12d NAILS. NAIL EACH ADDITIONAL PIECE TO THE FIRST IN A LIKE MANNER.