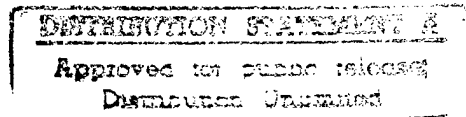


JANUARY 1996

# REPORT NO. 96-04

## 500-POUND BOMB ROAD TEST



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Prepared for:  
U.S. Army Defense Ammunition  
Center and School  
ATTN: SIOAC-DET  
Savanna, IL 61074-9639

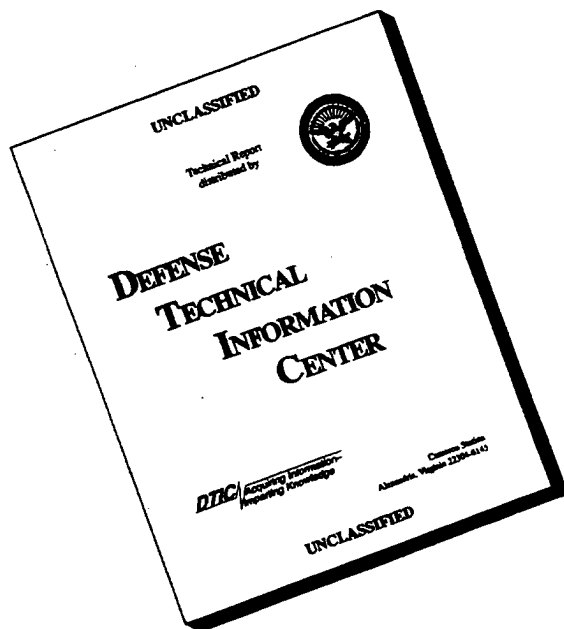
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<p>The U.S. Army Defense Ammunition Center and School (USADACS), Validation Engineering Division (SIOAC-DEV), was tasked by USADACS, Transportation Engineering Division (SIOAC-DET), to conduct evaluations on the on/off-highway transport of MK82 500-pound bombs. This report contains the procedures and results from the tests conducted. A validated restraint method for the on/off-highway transport of 500-pound bombs loaded on an M872 semitrailer was determined.</p>					
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VALIDATION ENGINEERING DIVISION  
SAVANNA, IL 61074-9639

REPORT NO. 96-04

500-POUND BOMB ROAD TEST

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## PART 1

### INTRODUCTION

A. BACKGROUND. The U.S. Army Defense Ammunition Center and School (USADACS), Validation Engineering Division (SIOAC-DEV), was tasked by USADACS, Transportation Engineering Division (SIOAC-DET), to perform transportability testing on palletized MK82 500-pound bombs loaded on an M872 semitrailer.

B. AUTHORITY. This test was conducted IAW mission responsibilities delegated by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM), Rock Island, IL.

C. OBJECTIVE. The objective of this test was to assess the ability of the M872 semitrailer to safely transport palletized MK82 500-pound bombs. These procedures will then be used to support planned FY 96 shipments during Operation Golden Cargo.

D. CONCLUSION. A validated restraint method for the on/off-highway transport of both full and partial pallets of MK82 500-pound bombs on an M872 semitrailer has been determined.

PART 2

18 - 19 OCTOBER 1995

ATTENDEES

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## PART 3

### TEST PROCEDURES

TRANSPORTABILITY TESTS. The test procedures outlined in this section were extracted from TP-94-01. This standard identifies six steps that a load must undergo if it is considered to be acceptable. The three tests that were conducted on the test specimen are synopsized below.

A. ROAD HAZARD COURSE. The test specimen was subjected to the road hazard course. Using a suitable truck/tractor or tactical vehicle, the vehicle/specimen in question was towed/driven over a hazard course two times prior to the road trip and two times following the road trip. The vehicle/specimen was towed/driven at a speed of approximately 5 mph. The speed may be increased or decreased, as appropriate, to produce the most violent load response (see Figure 1).

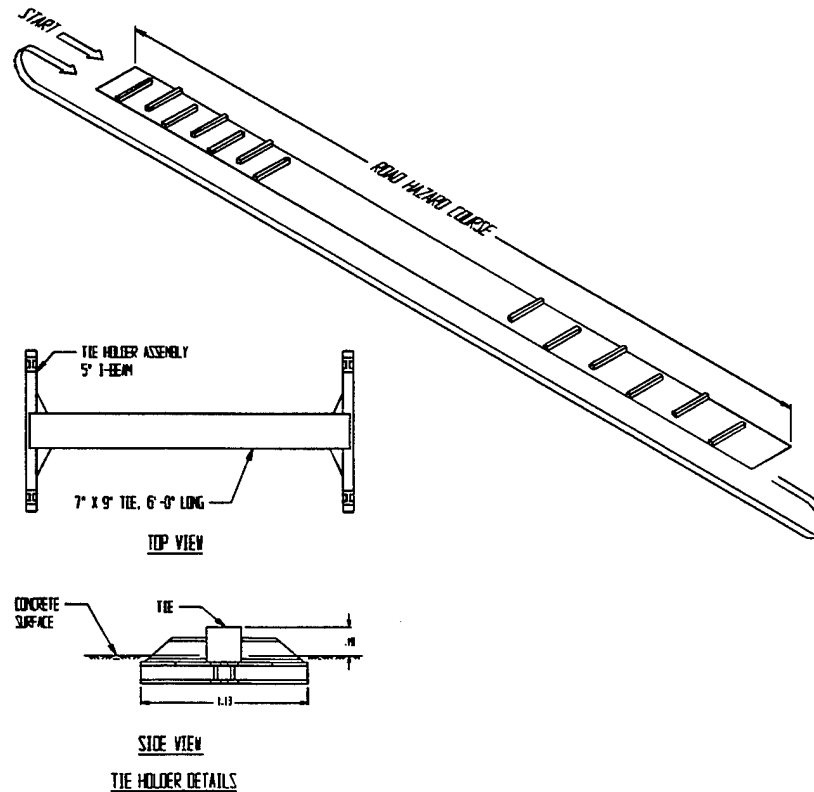


FIGURE 1



B. ROAD TRIP. Using a suitable truck/tractor and trailer, or tactical vehicle, the tactical vehicle/specimen load in question was driven/towed for a total distance of at least 30 miles over a combination of roads surfaced with gravel, concrete, and asphalt. The test route included curves, corners, railroad crossings, cattle guards, stops, and starts. The test vehicle traveled at the maximum speed suitable for the particular road being traversed, except as limited by legal restrictions. This step provides for the tactical vehicle/specimen load to be subjected to three full air brake stops while traveling in the forward direction and one in the reverse direction while traveling down a 7 degree grade. The first three stops were at 5, 10, and 15 mph, while the stop in the reverse direction was at approximately 5 mph.

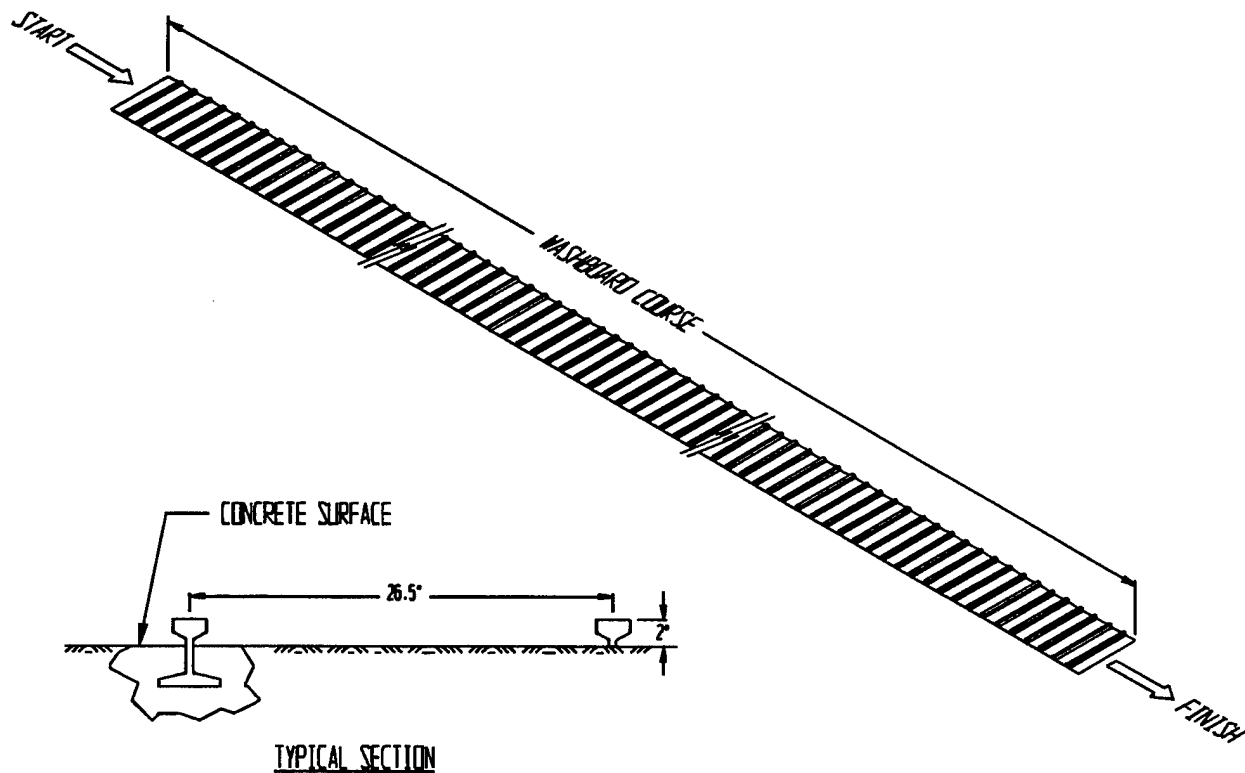


FIGURE 2

C. WASHBOARD COURSE. Using a suitable truck/tractor, and/or tactical vehicle, the specimen was towed/driven over the washboard course at a speed which produced the most violent response in the particular test load (see Figure 2).

## PART 4

### TEST EQUIPMENT

#### A. MK82 500-POUND BOMB PALLET.

- |                      |               |
|----------------------|---------------|
| 1. Quantity:         | 14 pallets    |
| 2. Bombs Per Pallet: | 6             |
| 3. Pallet Weight:    | 2,945 pounds  |
| 4. Width:            | 35-1/2 inches |
| 5. Length:           | 61-3/4 inches |
| 6. Height:           | 33-1/2 inches |

#### B. M872 SEMITRAILER.

- |              |                |
|--------------|----------------|
| 1. Capacity: | 34 tons        |
| 2. Length:   | 489-1/2 inches |
| 3. Width:    | 96 inches      |

## PART 5

### TEST RESULTS

#### TRANSPORTABILITY TESTS.

1. An M872 semitrailer was loaded with 14 pallets, each containing six 500-pound bombs. The bombs were loaded in two columns, end-to-end with the initial row secured against the forward bulkhead. The nose end of the bombs was pointed toward the rear of the trailer. A separator gate was placed between the rows of pallets. Side blocking was nailed to the floor of the trailer along the base of the pallet. The sixth row of pallets was shorter than the other six rows. Each row of pallets had two web straps extended over the top attached to removable tiedown anchors to secure them in place. The bombs were also secured by a retainer gate at the aft end, with two web straps attached to removable tiedown anchors holding the load in place.

The loaded trailer, towed by a semi-tractor, completed the railroad crosstie hazard course; the 30-mile road hazard course; the 5, 10, and 15 mph, and reverse 5 mph panic stops; and the washboard course as shown below. No damage resulted to the load.

<u>COURSE</u>	<u>TIME (min:sec)</u>	<u>SPEED (mph)</u>
HAZARD COURSE NO. 1	00:24.0	2.2
HAZARD COURSE NO. 2	00:24.0	2.2
30-MILE ROAD TRIP	47:57	37.5
PANIC STOPS		5, 10, 15, and Reverse 5
HAZARD COURSE NO. 3	00:22.8	2.3
HAZARD COURSE NO. 4	00:21.6	2.4
WASHBOARD COURSE	00:65.4	2.1

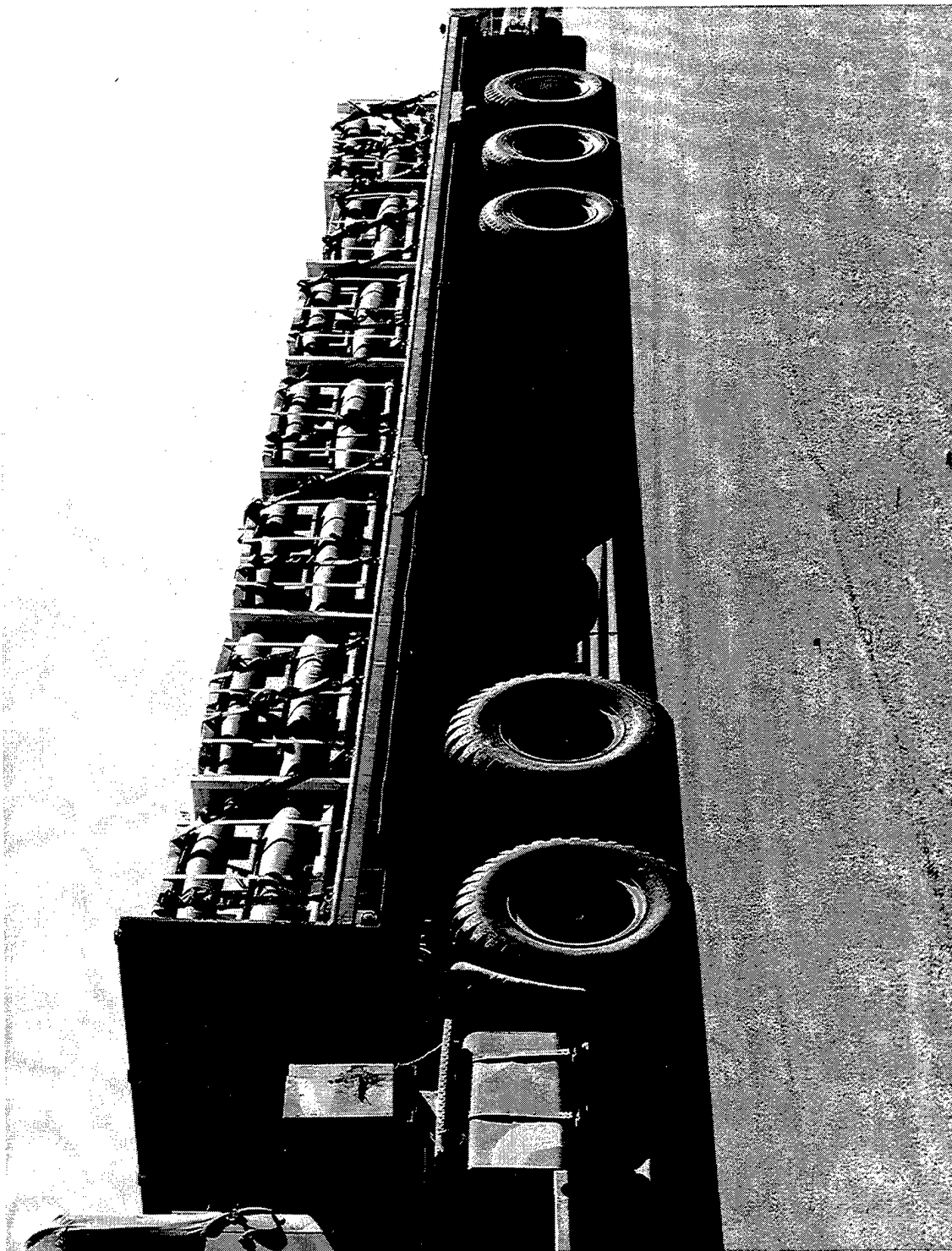
2. A partial load was constructed to simulate incomplete trailer loads and loads containing short pallets. Included in this load were six full pallets, one pallet containing three bombs, one pallet containing two bombs, and one pallet containing one bomb. No pallet top was used on the pallet containing one bomb. Three rows of pallets were secured against the forward bulkhead with a retainer gate at the aft end. The pallet with three bombs was in the second row and had a support assembly placed on top. A full single pallet was centered against the retainer gate that secured the two columns of bombs. An additional retainer gate was secured with two web straps against the single pallet. The pallets containing one and two bombs were strapped down separately and secured with end braces nailed to the floor at each end.

The partial load of palletized MK82 500-pound bombs secured on the M872 semitrailer towed by a semi-tractor completed the cross-tie hazard course; the 30-mile road hazard course; the 5, 10, and 15 mph, and reverse 5 mph panic stops; and the washboard course as shown below. No damage to the load resulted.

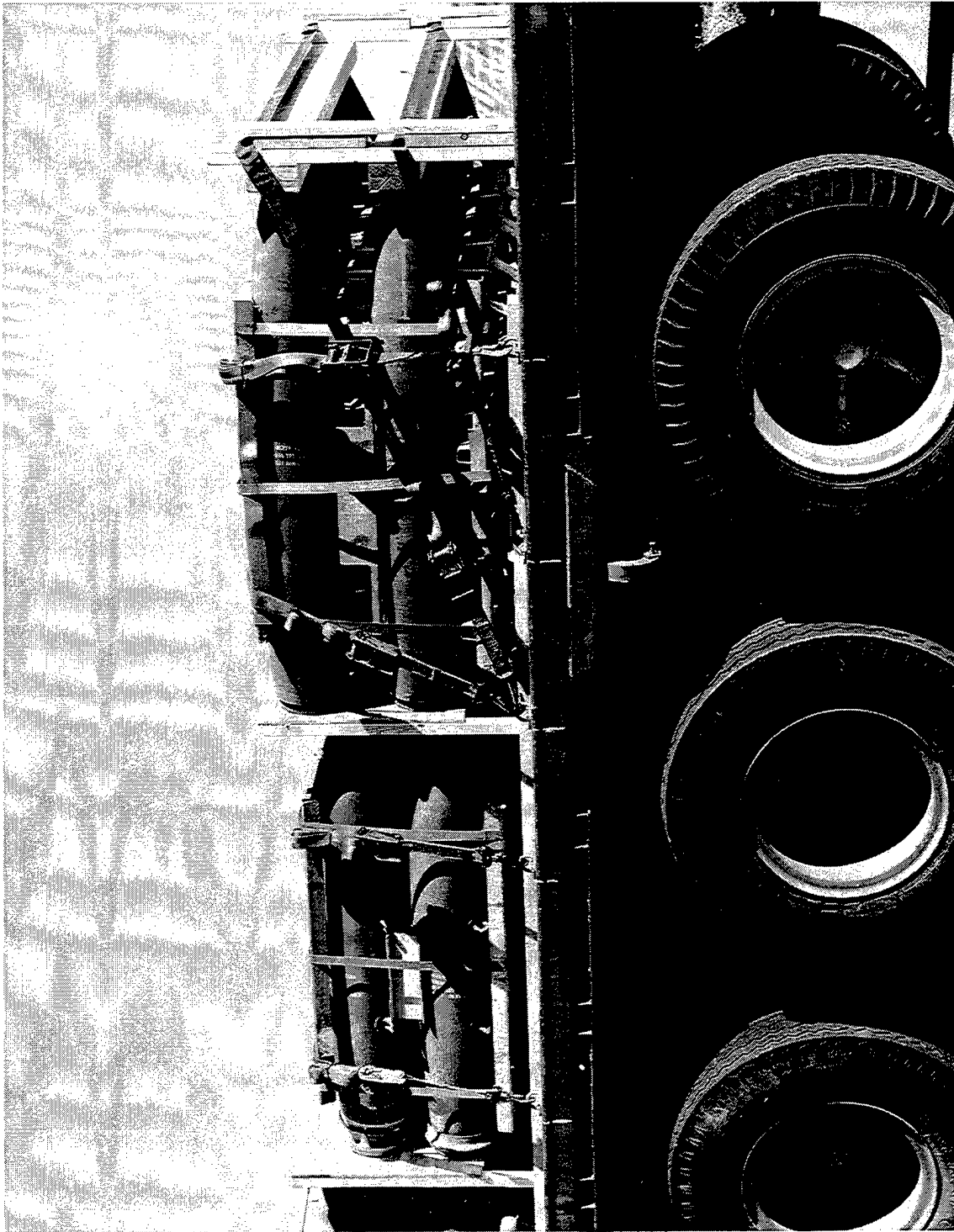
<u>COURSE</u>	<u>TIME (min:sec)</u>	<u>SPEED (mph)</u>
HAZARD COURSE NO. 1	00:22.8	2.3
HAZARD COURSE NO. 2	00:20.4	2.5
30-MILE ROAD TRIP	40:02	44.9
PANIC STOPS		5, 10, 15 and reverse 5
HAZARD COURSE NO. 3	00:21.6	2.4
HAZARD COURSE NO. 4	00:20.4	2.6
WASHBOARD COURSE	00:52.2	2.6

PART 6

PHOTOGRAPHS

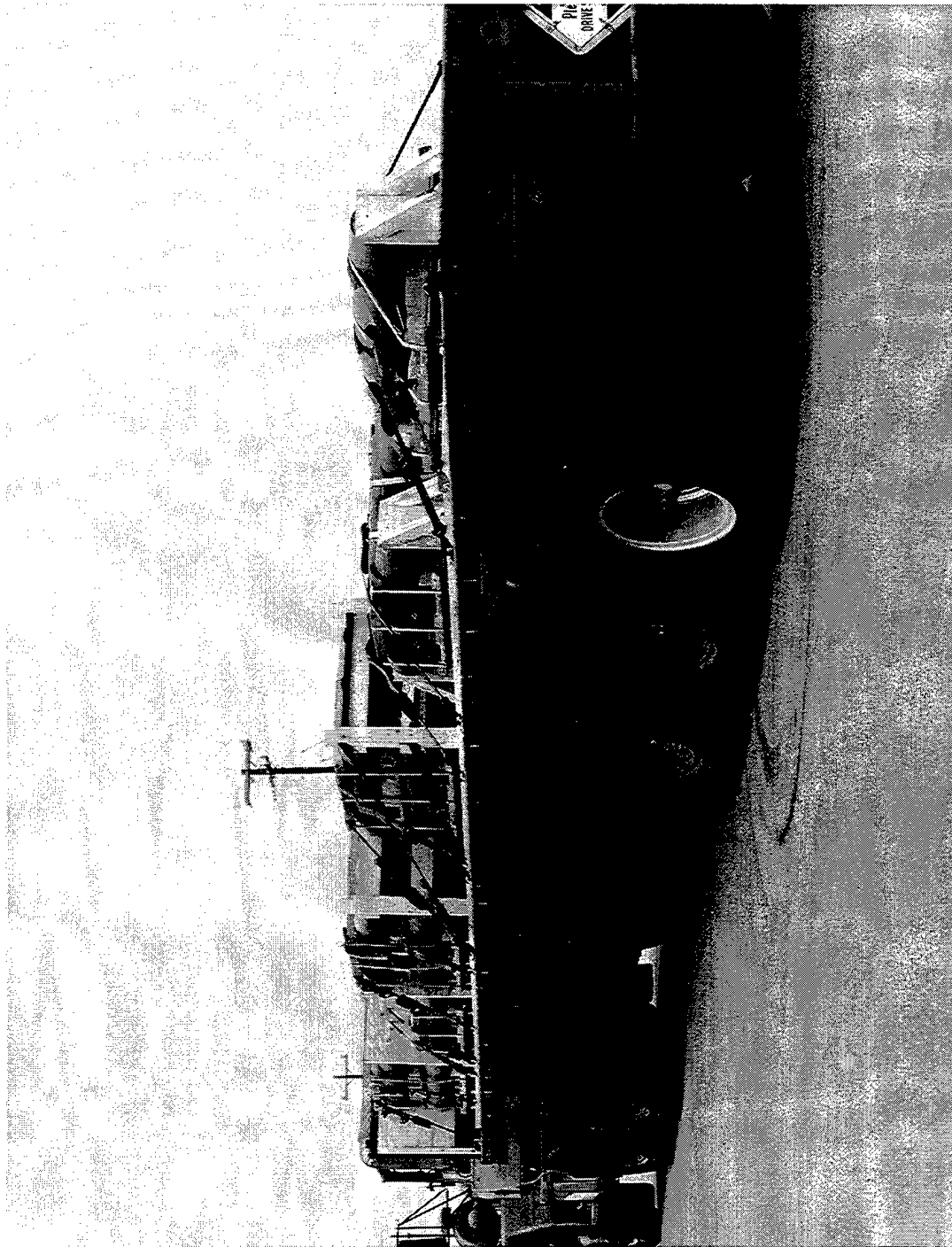


	U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	
AO317-SCN96-15-255. This photo shows the full load of pallets. Note the height of the sixth row of pallets.		



	U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	
AO317-SCN96-15-254. This photo shows the end gate and strapping method used at the aft end of the trailer.		





	U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	
AO317-SCN96-15-313.	This photo shows pallets containing the following: a single bomb, two bombs, three bombs with a spacer, and an odd number of pallets secured on the M872 semitrailer.	

PART 7

DRAWING

# LOADING AND TIEDOWN PROCEDURES<sup>⊕</sup> FOR THE MK82 500 LB BOMB LOADED ON THE 34-TON M872 SEMITRAILER

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⊕THE PROCEDURES DEPICTED  
WITHIN THIS DRAWING ARE  
FOR ON/OFF HIGHWAY  
USE ONLY.

Prepared during December 1995 by:  
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*William R. Frerichs*

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Chief, Transportation Engineering Division

## GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR-740-1.
- B. THIS DRAWING CONTAINS PROCEDURES APPLICABLE TO THE TRANSPORT OF THE MK82 500-LB BOMB, SIX PER PALLET UNIT, LOADED ON THE 34-TON M872 SEMITRAILER EQUIPPED WITH THE 10,000 POUND TYPE I (MICKEY MOUSE) TIEDOWN ANCHORS AND HAVING AN EMPTY WEIGHT OF 16,800 LBS (APPROX). THE MAXIMUM LOAD WEIGHT ON THE KINGPIN IS 27,600 LBS AND THE MAXIMUM LOAD WEIGHT ON THE THREE REAR AXLES IS 56,400 LBS.
- C. FOR DETAIL OF THE MK82 500-LB BOMB PALLET UNIT SEE PAGE 12 OF THIS DRAWING.
- DIMENSIONS - - - : 61.75" LONG BY 35.50" WIDE BY 33.50" HIGH.  
GROSS WEIGHT - - : 3,035 POUNDS (APPROX).  
CUBE - - - - - : 42.7 CUBIC FEET (APPROX).
- D. ALL LOADS SHOWN HEREIN ARE TYPICAL AND ARE BASED ON TESTED PROCEDURES FOR ON AND/OR OFF HIGHWAY TRANSPORT OF FULL AND/OR LESS THAN FULL PALLET UNITS. COMBINATIONS OF PROCEDURES MAY BE USED. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE.
- E. WEB STRAP TIEDOWN ASSEMBLIES MUST BE SECURELY HOOKED INTO ANCHORING DEVICES ON THE TRANSPORTING VEHICLE AND FIRMLY TENSIONED. FIRMLY TENSIONED MEANS, WHEN THE OPERATOR PULLS ON THE RATCHET HANDLE BY HAND, THE RATCHET WILL NOT ADVANCE ANOTHER NOTCH. NO TYPE OF MECHANICAL EXTENSION OR LEVER WILL BE USED. EXERCISE CARE DURING STRAP APPLICATION, AVOID TWISTS IN THE STRAP TO THE EXTENT POSSIBLE (IF TIME PERMITS) BUT ENSURE THERE ARE NO KNOTS IN THE STRAP. ON THE TAKE-UP SPOOL OF THE RATCHET, ENSURE STRAIGHT LAY OF THE STRAP WHEN TENSIONING. AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, BY ROTATING THE TAKE-UP SPOOL UNTIL NO METAL ON THE SPOOL IS SHOWING AND THE STRAP HAS MADE CONTACT WITH ITSELF. THE TENSIONED STRAP MUST FORM AT LEAST 1/2 BUT NOT MORE THAN 1-1/2 WRAPS OF STRAP ON THE TAKE-UP SPOOL OF THE TENSIONING RATCHET. AFTER TENSIONING IS COMPLETED ENSURE THAT THE SPOOL LOCKING LATCH IS FULLY SEATED AT BOTH ENDS OF THE SPOOL IN MATCHING LOCKING NOTCHES. TIE BACK THE LOOSE ENDS OF THE STRAP AFTER TENSIONING IS COMPLETED (LOOSE ENDS MAY BE FOLDED AND TAPED OR TIED TO THE TENSIONING STRAP IF TIME PERMITS). FOR ADDITIONAL GUIDANCE, SEE "RATCHET/ RATCHETING DETAILS" ON PAGES 18 AND 19.
- F. ADJUSTABLE SCUFF SLEEVES PROVIDED ON WEB STRAP TIEDOWN ASSEMBLIES WILL BE LOCATED TO PROVIDE A PAD WHERE STRAPS PASS OVER SHARP EDGES, OR RATCHETS AND HOOKS ON PREVIOUSLY INSTALLED WEB STRAP TIEDOWN ASSEMBLIES.
- G. IF THE SIDERACKS FOR A SEMITRAILER ARE TO BE TRANSPORTED ON THE LOADED TRAILER, THEY WILL BE STACKED ON THE TRAILER AND SECURED WITH A SUFFICIENT QUANTITY OF WEB STRAP TIEDOWN ASSEMBLIES TO PREVENT LOSS DURING TRANSPORT. NOTE: IF DESIRED, THE SIDE RACKS FOR THE M872 SEMITRAILER MAY BE POSITIONED IN PLACE AFTER THE LOAD HAS BEEN SECURED. AFTER ALL SIDE PANELS AND REAR PANELS ARE IN POSITION, THE STAKES MUST BE SECURELY "PINNED" OR "WIRE-TIED" TO THE STAKE POCKETS TO PREVENT VERTICAL DISPLACEMENT DURING TRANSPORT. ALSO, THE SIDE PANELS MUST BE SECURED AT THE TOP WITH THE CROSS-CHAINS WHICH ARE PROVIDED WITH THE VEHICLE.

## MATERIAL SPECIFICATIONS

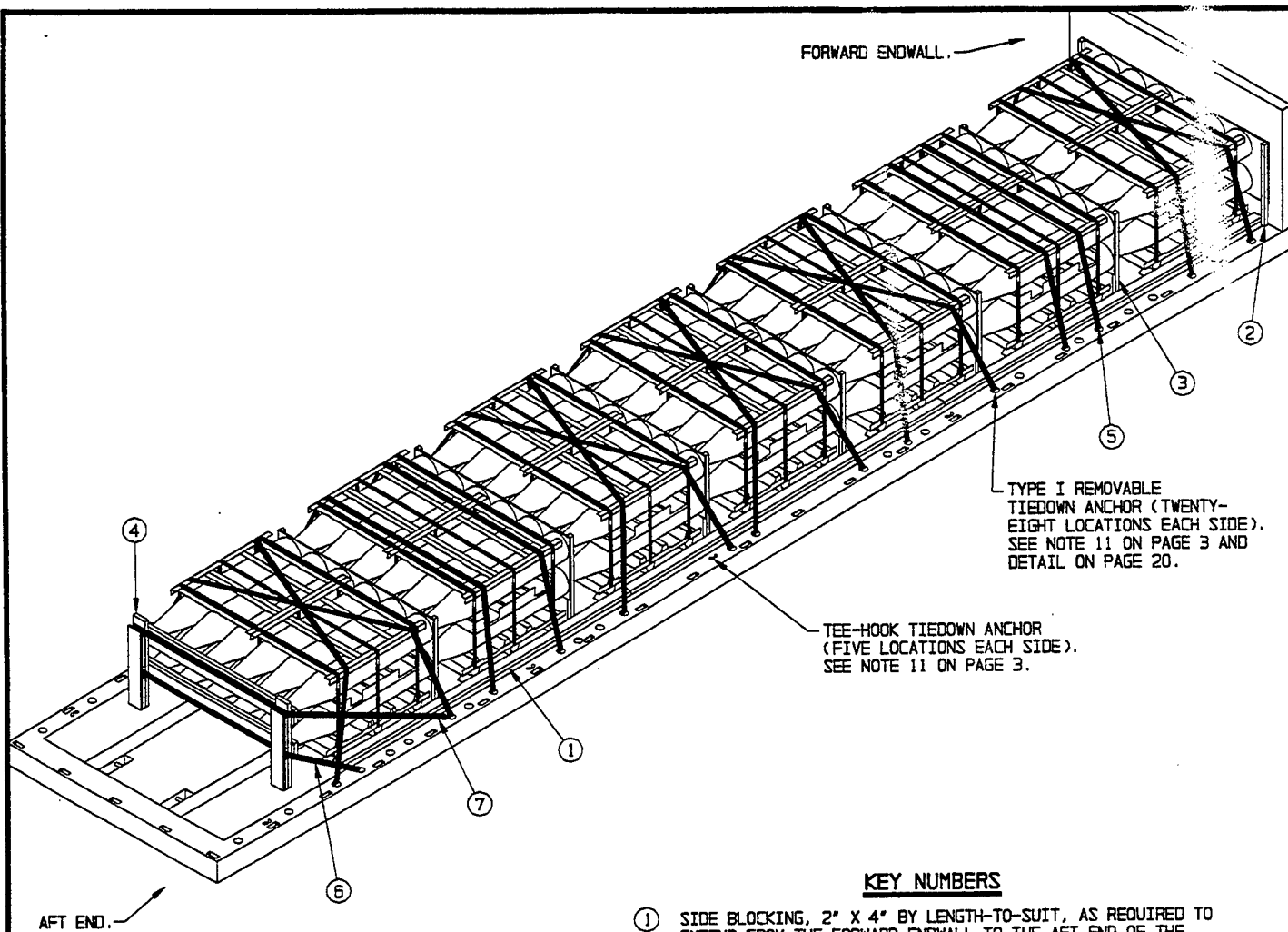
- STRAP - - - - - : WEBBING, UNIVERSAL TIEDOWN,  
NSN 5340-01-204-3009, PN9392419;  
NSN 5340-01-089-4997, PN11669588;  
NSN 1670-00-725-1437, PN1376-013; OR  
NSN 5340-00-980-9277, PN10900880.
- ANTI-CHAFING  
MATERIAL - - - - - : CANVAS, BURLAP, TAPE OR ANY OTHER  
SUITABLE MATERIAL.
- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND  
FED SPEC MM-L-751.
- NAILS - - - - - : FED SPEC FF-N-105; COMMON.

## (GENERAL NOTES CONTINUED)

- H. PROCEDURES DEPICTED HEREIN ARE TYPICAL IN NATURE RELATIVE TO ITEM LOCATION IN/ON THE VEHICLE AND THE QUANTITIES SHOWN. ITEM LOCATION AND QUANTITIES OF THE DESIGNATED ITEM MAY BE VARIED TO SATISFY OPERATIONAL REQUIREMENTS, PROVIDED LOADING AND TIEDOWN PRINCIPLES SPECIFIED HEREIN ARE RETAINED.
- J. WHEN ONE WEB STRAP TIEDOWN ASSEMBLY IS NOT LONG ENOUGH TO SPAN THE DISTANCE DEPICTED, TWO ASSEMBLIES MAY BE HOOKED TOGETHER TO GAIN THE NECESSARY LENGTH.
- K. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454KG.
- L. SOME TIEDOWN METHODS WITHIN THIS DRAWING SHOW TWO HOOKS TO BE CONNECTED TO ONE TIEDOWN EYE. THIS IS AUTHORIZED AS SPECIFIED HEREIN.
- M. DURING LONG HAULS, WHEN POSSIBLE, STRAPS SHOULD BE CHECKED DURING VEHICLE STOPS AND TIGHTENED IF NECESSARY.
- N. ONLY THE BED OF THE M872 SEMITRAILER IS SHOWN HEREIN TO PREVENT DISTRACTION FROM THE DELINEATED LOADING AND TIEDOWN PROCEDURES, AND IS SHOWN IN OUTLINE FORM WITH THE STRUCTURAL PORTIONS OMITTED AS NECESSARY TO IMPROVE THE CLARITY OF THE DEPICTED PROCEDURES.
- O. DUE TO VARIOUS REASONS, SUCH AS ROUGH TERRAIN DURING OFF HIGHWAY TRANSPORT, PANIC STOPS, AND NORMAL STRETCH OF WEB STRAPS, LOADED ITEMS MAY SLIDE SLIGHTLY Laterally AND/OR LONGITUDINALLY DURING TRANSPORT. THIS IS AN ACCEPTABLE CHARACTERISTIC AND IS NOT DETRIMENTAL TO LOAD SECUREMENT.
- P. IF THE TIEDOWN ANCHORS ON THE SIDE OF THE VEHICLE ARE TOO CLOSE TOGETHER, TOO FAR APART, OR ARE NOT IN A LOCATION THAT WILL ALLOW ADEQUATE HOLD DOWN OF LOAD WHEN WEB STRAPS ARE POSITIONED STRAIGHT OVER TOP, THE LOAD HOLD DOWN STRAPS MAY BE CROSSED OVER THE TOP OF THE LOAD AS SHOWN IN THE LOAD ON PAGE 4.
- Q. FOR ADDITIONAL GUIDANCE SEE THE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES" ON PAGE 3, AND THE "SPECIAL NOTES" ON EACH LOAD PAGE.

## LOADING, TIEDOWN, AND UNLOADING PROCEDURES:

1. PRIOR TO LOADING AND/OR UNLOADING THE TRAILER, SET BRAKES ON THE VEHICLE AND REMOVE SIDE RACKS AND/OR TARPS, IF INSTALLED. ASSURE THAT THE TRAILER FLOOR IS FREE OF EXCESSIVE AMOUNTS OF DIRT, SAND AND GRAVEL.
2. PRIOR TO LOADING THE TRAILER, DETERMINE THE QUANTITY OF PALLETS TO BE LOADED, SELECT THE BEST METHOD TO SECURE THE ITEMS FROM THE METHODS SHOWN WITHIN THIS DRAWING. NOTE: A COMBINATION OF THE METHODS SHOWN WITHIN THIS DRAWING MAY BE USED IN/ON THE SAME TRAILER.
3. THE LOADS WITHIN THIS DRAWING SHOW THE NOSE END OF THE BOMBS POINTING TOWARD THE AFT END OF THE TRAILER. IF DESIRED, THE NOSE END MAY POINT TOWARD THE FORWARD END OF THE TRAILER. HOWEVER, ALL PALLET UNITS WITHIN A LOAD MUST HAVE THE NOSE END POINTING IN THE SAME DIRECTION.
4. ALL PALLETS OF BOMBS FROM ONE THROUGH SIX MUST BE LOADED WITH THE NOSE END POINTING TOWARDS THE AFT END OR FORE END OF THE TRAILER AND MUST BE BLOCKED AT EACH END TO KEEP THE BOMBS FROM "INCHING" OUT OF POSITION DURING TRANSPORT. DO NOT POSITION PALLET UNITS WITH THE NOSE END POINTING TOWARD THE SIDE OF THE TRAILER.
5. FOR PALLETIZATION OF ONE THROUGH SIX BOMBS SEE PAGES 12 AND 13. FOR LOADING AND SECUREMENT OF LESS-THAN-FULL PALLETS SEE THE LOADS ON PAGES 10 AND 11.
6. PRIOR TO LOADING THE PALLET UNITS ON THE TRAILER ASSURE THAT ALL SIX BOMBS ARE IN VERTICAL AND HORIZONTAL ALIGNMENT.
7. ASSURE THAT ALL STEEL STRAPPING ON EACH PALLET IS IN POSITION AND IS TIGHT. MISSING AND/OR LOOSE STEEL STRAPPING SHOULD BE REPLACED.
8. NOTE THAT AFTER THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING SHOWN AS PIECE MARKED ①, HAS BEEN NAILED IN PLACE ON EACH SIDE OF THE LOAD, THE PALLET UNITS CAN BE REMOVED AND/OR LOADED WITHOUT REMOVING THE SIDE BLOCKING.
9. ASSURE THAT ALL PALLET UNITS ARE POSITIONED TIGHTLY AGAINST EACH OTHER Laterally AND LONGITUDINALLY AS LOADING PROGRESSES. THIS WILL REDUCE LOAD MOVEMENT AND THE QUANTITY OF WEB STRAPS REQUIRED TO SECURE THE LOAD. VOID SPACES BETWEEN PALLET UNITS WILL FILL IN DURING TRANSPORT CAUSING WEB STRAPPING TO BECOME LOOSE.
10. AFTER ALL LOADING PROCEDURES ARE COMPLETE, CHECK ALL WEB STRAPS FOR MAXIMUM TIGHTNESS AND RATCHET TIGHTER IF REQUIRED, PRIOR TO FOLDING UP AND TAPING THE LOOSE ENDS OF STRAPS AS INSTRUCTED IN GENERAL NOTE "E" ON PAGE 2.
11. THE M872 SEMITRAILER IS EQUIPPED WITH TWO DIFFERENT TYPES OF TIEDOWN ANCHORS AS INDICATED IN THE LOAD ON PAGE 4. TYPE I IS A REMOVABLE TIEDOWN ANCHOR THAT HAS ONE RING AND IS POSITIONED BY REACHING UNDER THE FLOOR OF THE TRAILER, INSERTING IT UP THROUGH THE HOLE AND ROTATING IT INTO POSITION. THERE ARE 28 LOCATIONS FOR THESE TIEDOWN ANCHORS ON EACH SIDE OF THE M872 SEMITRAILERS, THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. THE SECOND TYPE OF TIEDOWN ANCHOR IS THE "TEE-HOOK". THIS IS A REMOVABLE TIEDOWN ANCHOR EQUIPPED WITH ONE ELONGATED RING AND IS POSITIONED BY INSERTING IT IN TO ONE OF THE ELONGATED SLOTTED HOLES WHICH ARE AT A 45° ANGLE TO THE SIDE OF THE TRAILER. THERE ARE FIVE LOCATIONS FOR THESE TIEDOWN ANCHORS ON EACH SIDE OF THE M872 SEMITRAILERS. THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. ASSURE THAT THE TIEDOWN ANCHOR IS FIRMLY SEATED AND ROTATED APPROXIMATELY 45° TO ENGAGED POSITION BEFORE ATTACHING THE WEB STRAP TIEDOWN ASSEMBLY. THE LOADS WITHIN THIS DRAWING REQUIRE THE USE OF TYPE I TIEDOWN ANCHORS ONLY. NO TEE-HOOK TIEDOWN ANCHORS ARE REQUIRED, HOWEVER, THEY MAY BE USED IF DESIRED. SEE "TIEDOWN ANCHOR DETAIL" ON PAGE 20.



**ISOMETRIC VIEW**

#### KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" BY LENGTH-TO-SUIT, AS REQUIRED TO EXTEND FROM THE FORWARD ENDWALL TO THE AFT END OF THE REARMOST PALLET BASE, WHICH IS A LENGTH OF 35'-0" (2 REOD). FOR POSITIONING AND INSTALLATION SEE LOADING SEQUENCE NOTES 1 AND 7 ON PAGE 5.
- ② SEPARATOR GATE A (1 REOD). POSITION WITH THE PLYWOOD SURFACE TIGHT AGAINST THE FORWARD END WALL. SEE THE DETAIL ON PAGE 14.
- ③ SEPARATOR GATE B (6 REOD). POSITION THE SIDE WITH THE 2" X 2" LEGS TIGHT AGAINST THE NOSE ENDS OF THE BOMBS. SEE THE DETAIL ON PAGE 14.
- ④ RETAINER GATE A (1 REOD). POSITION WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST THE NOSE ENDS OF THE BOMBS AT THE AFT END OF THE LOAD. SEE THE DETAIL ON PAGE 15.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (14 REOD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, OVER TOP OF TWO LATERALLY ADJACENT PALLET UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 4 ON PAGE 5 AND GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (1 REOD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND BOTTOM OF RETAINER GATE A, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: THIS STRAP MUST BE THREADED THROUGH THE OPENING ON EACH SIDE OF THE RETAINER GATE A. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑦ WEB STRAP TIEDOWN ASSEMBLY (1 REOD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND TOP OF RETAINER GATE A, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.

**SPECIAL NOTES:**

1. A TYPICAL LOAD OF 14 PALLETS OF MK82 500-LB BOMBS IS SHOWN LOADED ON THE M872 SEMITRAILER HAVING DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.
2. PRIOR TO LOADING THE 500-LB BOMB PALLETS ON THE SEMITRAILER, READ THE "LOADING SEQUENCE" NOTES ON THIS PAGE.
3. THE LOAD ON PAGE 4 IS SHOWN POSITIONED AGAINST THE FORWARD ENDWALL. IF DESIRED, THE LOAD MAY BE POSITIONED ANYWHERE ON THE TRAILER LENGTH BY OMITTING THE SEPARATOR GATE A AND POSITIONING A SECOND RETAINER GATE A WITH TWO ADDITIONAL WEB STRAPS MARKED ⑥ AND ⑦ AT THE FORWARD END OF THE LOAD. SEE THE 12 PALLET LOAD ON PAGES 8 AND 9 FOR ADDITIONAL GUIDANCE.
4. EACH LATERAL ROW OF TWO PALLETS MUST BE SECURED WITH TWO WEB STRAPS OVER THE TOP AS SHOWN. THESE TWO STRAPS MAY BE CROSSED AND/OR POSITIONED STRAIGHT ACROSS THE TOP OF A ROW, DEPENDING ON THE LOCATION OF THE TIEDOWN ANCHORS. ASSURE THAT THE STRAPS ARE POSITIONED OVER THE PALLET FRAME. DO NOT POSITION THE STRAPS ON/OVER THE BOMBS.
5. THE PROCEDURES SHOWN ON PAGE 4 MAY ALSO BE USED FOR TRANSPORTING 2, 4, 6, 8, 10, OR 12 PALLETS BY DELETING PALLETS FROM THE AFT END OF THE LOAD SHOWN AND REDUCING THE LENGTH OF THE SIDE BLOCKING MARKED ① AS REQUIRED.
6. A TOTAL OF 30 TYPE I (MICKEY MOUSE) TIEDOWN ANCHORS ARE REQUIRED FOR THE LOAD SHOWN. SEE LOADING SEQUENCE NOTE 9 ON THIS PAGE AND TIEDOWN ANCHOR DETAIL ON PAGE 20.
7. A TOTAL OF 16 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**LOADING SEQUENCE:**

1. PRIOR TO LOADING PALLET UNITS, POSITION THE 2" X 4" LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, ON ONE SIDE OF THE TRAILER ONLY. POSITION ONE END AGAINST THE FORWARD END WALL WITH THE OUTER EDGE 9" IN FROM THE OUTSIDE EDGE OF THE TRAILER. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 35'-0".
2. POSITION THE SEPARATOR GATE A, PIECE MARKED ②, WITH THE PLYWOOD SURFACE TIGHT AGAINST THE FORWARD END WALL.
3. POSITION ONE 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END TIGHT AGAINST THE SEPARATOR GATE A AND PALLET BASE TIGHT AGAINST THE 2" X 4" SIDE BLOCKING. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE SEPARATOR GATE A.
4. POSITION THE SECOND 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END TIGHT AGAINST THE SEPARATOR GATE A AND TIGHT AGAINST THE ADJACENT PALLET. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE SEPARATOR GATE A.
5. POSITION A SEPARATOR GATE B, PIECE MARKED ③, TIGHT AGAINST THE NOSE END OF THE BOMBS IN THE FIRST TWO PALLETS. NOTE THAT THE SIDE WITH THE 2" X 2" LEGS IS POSITIONED AGAINST THE NOSE END OF THE BOMBS.
6. REPEAT STEPS 3, 4, AND 5 UNTIL ALL 14 PALLETS OF 500 LB BOMBS ARE LOADED.
7. AFTER ALL PALLETS ARE LOADED, POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, 1/2" AWAY FROM THE PALLET BASE AND AGAINST THE FORWARD END WALL. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 35'-0". NOTE THAT THE PALLETS CAN BE REMOVED AND/OR LOADED WITHOUT REMOVING THE SIDE BLOCKING.
8. POSITION THE RETAINER GATE A, PIECE MARKED ④, AGAINST THE AFT END OF THE LOAD.
9. INSTALL 15 MICKEY MOUSE TIEDOWN ANCHORS ON EACH SIDE OF THE TRAILER AT EACH LOCATION A WEB STRAP TIEDOWN ASSEMBLY IS REQUIRED.
10. INSTALL WEB STRAP TIEDOWN ASSEMBLIES AS INSTRUCTED IN KEY NUMBERS ⑤, ⑥, AND ⑦ ON PAGE 4.

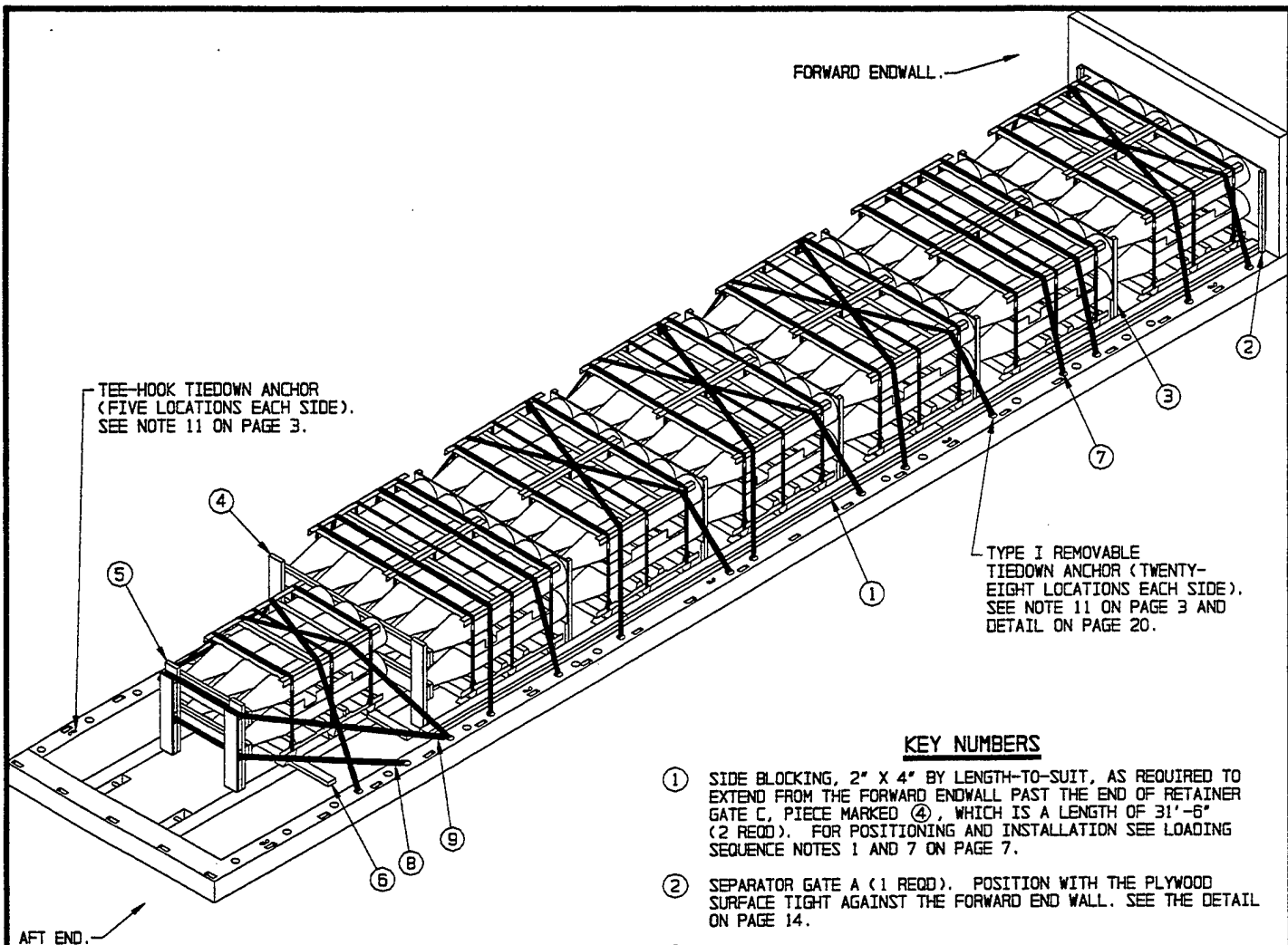
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	5	2
2" X 2"	38	13
2" X 4"	80	54
2" X 6"	24	24
NAILS	NO. REQD	POUNDS
6d (2")	98	3/4
10d (3")	168	2-3/4
PLYWOOD, 1/2"	85 SQ FT REQD	117 LBS
WEB STRAPS	16 REQD	80 LBS

**LOAD AS SHOWN (SEE NOTE BELOW)**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET	14	42,490 LBS
DUNNAGE		387 LBS
TOTAL WEIGHT		42,877 LBS

NOTE: THE LOAD WEIGHT ON THE KINGPIN IS 14,847 LBS (APPROX), AND THE LOAD WEIGHT ON THE THREE REAR AXLES IS 28,030 LBS (APPROX). SEE GENERAL NOTE 8 ON PAGE 2.



ISOMETRIC VIEW

#### KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" BY LENGTH-TO-SUIT, AS REQUIRED TO EXTEND FROM THE FORWARD ENDWALL PAST THE END OF RETAINER GATE C, PIECE MARKED ④, WHICH IS A LENGTH OF 31'-6" (2 REQD). FOR POSITIONING AND INSTALLATION SEE LOADING SEQUENCE NOTES 1 AND 7 ON PAGE 7.
- ② SEPARATOR GATE A (1 REQD). POSITION WITH THE PLYWOOD SURFACE TIGHT AGAINST THE FORWARD END WALL. SEE THE DETAIL ON PAGE 14.
- ③ SEPARATOR GATE B (5 REQD). POSITION THE SIDE WITH THE 2" X 2" LEGS TIGHT AGAINST THE NOSE ENDS OF THE BOMBS. SEE THE DETAIL ON PAGE 14.
- ④ RETAINER GATE C (1 REQD). POSITION WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST THE NOSE ENDS OF THE BOMBS AT THE AFT END OF THE TWO-WIDE LOAD. SEE THE DETAIL ON PAGE 16.
- ⑤ RETAINER GATE B (1 REQD). POSITION WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST THE NOSE ENDS OF THE BOMBS IN THE ONE PALLET UNIT AT THE REAR OF THE LOAD. SEE THE DETAIL ON PAGE 15.
- ⑥ SIDE BLOCKING, 2" X 4" X 18" (4 REQD). POSITION TIGHT AGAINST THE PALLET BASE AND NAIL TO THE TRAILER FLOOR W/5-10d NAILS.
- ⑦ WEB STRAP TIEDOWN ASSEMBLY (14 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, OVER ONE AND/OR TWO LATERALLY ADJACENT PALLET UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 4 ON PAGE 7 AND GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑧ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND BOTTOM OF RETAINER GATE B, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: THIS STRAP MUST BE THREADED THROUGH THE OPENING ON EACH SIDE OF THE RETAINER GATE B. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑨ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND TOP OF RETAINER GATE B, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.



**SPECIAL NOTES:**

1. A TYPICAL LOAD OF 13 PALLETS OF MK82 500-LB BOMBS IS SHOWN LOADED ON THE 34-TON M872 SEMITRAILER HAVING DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.
2. PRIOR TO LOADING THE 500-LB BOMB PALLETS ON THE SEMITRAILER, READ THE "LOADING SEQUENCE" NOTES ON THIS PAGE.
3. THE LOAD ON PAGE 6 IS SHOWN POSITIONED AGAINST THE FORWARD ENDWALL. IF DESIRED, THE LOAD MAY BE POSITIONED ANYWHERE ON THE TRAILER LENGTH BY OMITTING THE SEPARATOR GATE A AND POSITIONING A RETAINER GATE A AS SHOWN ON PAGE 15, WITH TWO ADDITIONAL WEB STRAPS MARKED ⑧ AND ⑨ AT THE FORWARD END OF THE LOAD. SEE THE 12 PALLET LOAD ON PAGES 8 AND 9 FOR ADDITIONAL GUIDANCE.
4. EACH LATERAL ROW OF ONE OR TWO PALLETS MUST BE SECURED WITH TWO WEB STRAPS OVER THE TOP AS SHOWN. THESE TWO STRAPS MAY BE CROSSED AND/OR POSITIONED STRAIGHT ACROSS THE TOP OF A ROW, DEPENDING ON THE LOCATION OF THE TIEDOWN ANCHORS. ASSURE THAT THE STRAPS ARE POSITIONED OVER THE PALLET FRAME. DO NOT POSITION THE STRAPS ON/OVER THE BOMBS.
5. THE PROCEDURES SHOWN ON PAGE 6 MAY ALSO BE USED FOR TRANSPORTING 1 THROUGH 12 PALLETS BY DELETING PALLETS FROM THE AFT END OF THE LOAD SHOWN AND REDUCING THE LENGTH OF THE SIDE BLOCKING MARKED ① AS REQUIRED.
6. A TOTAL OF 30 TYPE I (MICKEY MOUSE) TIEDOWN ANCHORS ARE REQUIRED FOR THE LOAD SHOWN. SEE LOADING SEQUENCE NOTE 11 ON THIS PAGE AND TIEDOWN ANCHOR DETAIL ON PAGE 20.
7. A TOTAL OF 16 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**LOADING SEQUENCE:**

1. PRIOR TO LOADING PALLET UNITS, POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, ON ONE SIDE OF THE TRAILER ONLY. POSITION ONE END AGAINST THE FORWARD END WALL WITH THE OUTER EDGE 9" IN FROM THE OUTSIDE EDGE OF THE TRAILER. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 31'-6".
2. POSITION THE SEPARATOR GATE A, PIECE MARKED ②, WITH THE PLYWOOD SURFACE TIGHT AGAINST THE FORWARD END WALL.
3. POSITION ONE 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END TIGHT AGAINST THE SEPARATOR GATE A AND THE PALLET BASE TIGHT AGAINST THE 2" X 4" SIDE BLOCKING. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE SEPARATOR GATE A.
4. POSITION THE SECOND 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END TIGHT AGAINST THE SEPARATOR GATE A AND TIGHT AGAINST THE ADJACENT PALLET. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE SEPARATOR GATE A.
5. POSITION A SEPARATOR GATE B, PIECE MARKED ③, TIGHT AGAINST THE NOSE END OF THE BOMBS IN THE FIRST TWO PALLETS. NOTE THAT THE SIDE WITH THE 2" X 2" LEGS IS POSITIONED AGAINST THE NOSE END OF THE BOMBS.
6. REPEAT STEPS 3, 4, AND 5 UNTIL ALL 12 TWO-WIDE PALLETS OF 500-LB BOMBS ARE LOADED.
7. AFTER ALL 12 TWO-WIDE PALLETS ARE LOADED POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, 1/2" AWAY FROM THE PALLET BASE AND AGAINST THE FORWARD END WALL. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 31'-6". NOTE THAT THE PALLETS CAN BE REMOVED AND/OR LOADED WITHOUT REMOVING THE SIDE BLOCKING.
8. POSITION THE RETAINER GATE C, PIECE MARKED ④, WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST NOSE ENDS OF THE BOMBS.
9. POSITION ONE 500-LB BOMB PALLET IN THE CENTER OF THE TRAILER WIDTH WITH THE BASE END TIGHT AGAINST THE RETAINER GATE C. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE RETAINER GATE C.
10. POSITION THE SIDE BLOCKING, PIECES MARKED ⑥, AGAINST THE AFT END PALLET BASE AND NAIL IN PLACE AS INSTRUCTED IN KEY NUMBER ⑥ ON PAGE 6.
11. POSITION RETAINER GATE B, PIECE MARKED ⑤, AGAINST THE AFT END OF THE LOAD.
12. INSTALL 15 MICKEY MOUSE TIEDOWN ANCHORS ON EACH SIDE OF THE TRAILER AT EACH LOCATION A WEB STRAP TIEDOWN ASSEMBLY IS REQUIRED.
13. INSTALL WEB STRAP TIEDOWN ASSEMBLIES AS INSTRUCTED IN KEY NUMBERS ⑦, ⑧, AND ⑨ ON PAGE 6.

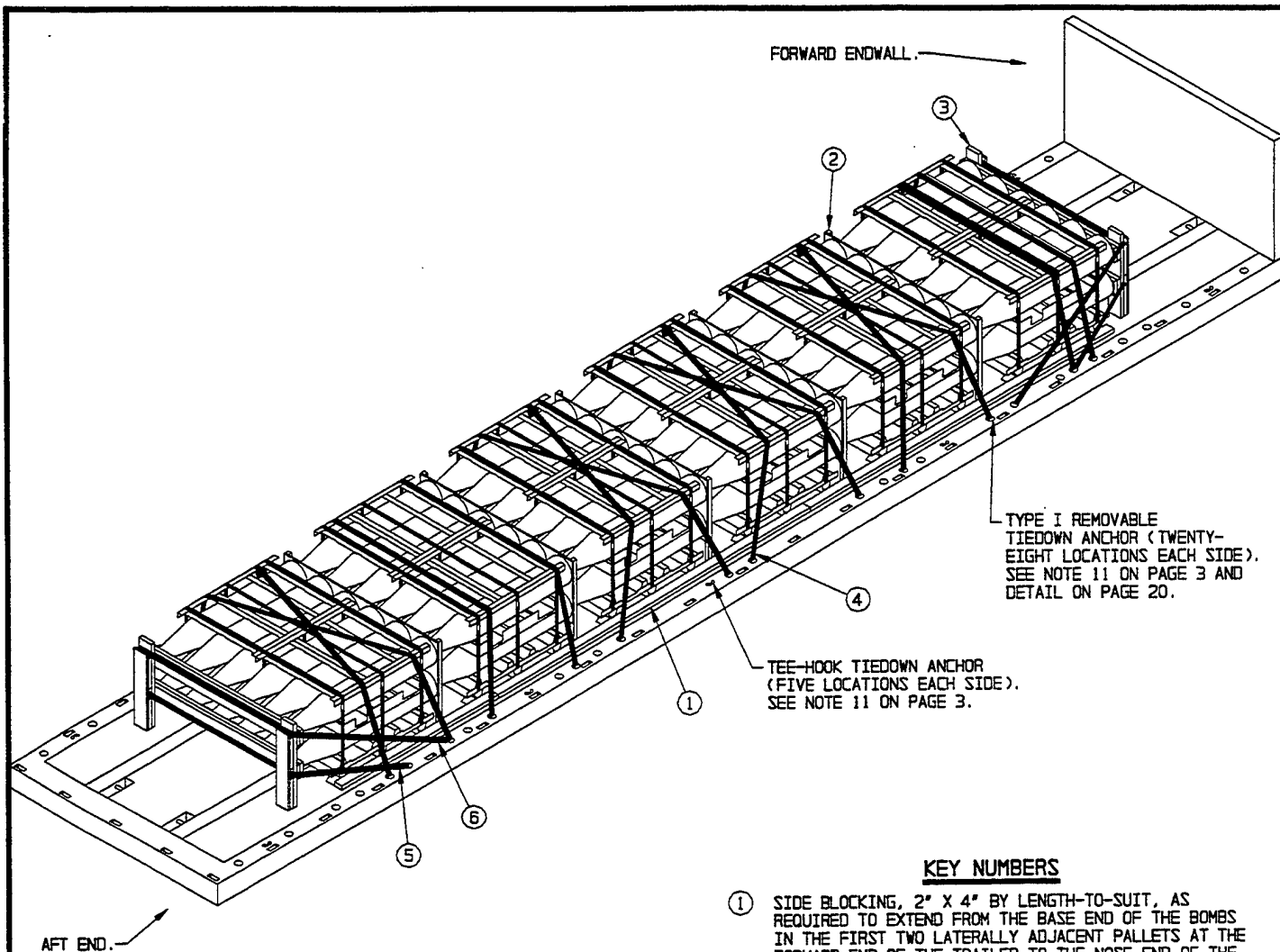
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	5	2
2" X 2"	32	11
2" X 4"	75	50
2" X 6"	36	36
NAILS	NO. REQD	POUNDS
6d (2")	84	1/2
10d (3")	200	3-1/4
PLYWOOD, 1/2"	73' SQ FT REQD	101 LBS
WEB STRAPS	16 REQD	80 LBS

**LOAD AS SHOWN (SEE NOTE BELOW)**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET - - - - -	13 - - - - -	39,455 LBS
DUNNAGE - - - - -	- - - - -	383 LBS
TOTAL WEIGHT - - - - -		39,838 LBS

NOTE: THE LOAD WEIGHT ON THE KINGPIN IS 18,909 LBS (APPROX), AND THE LOAD WEIGHT ON THE THREE REAR AXLES IS 20,930 LBS (APPROX). SEE GENERAL NOTE B ON PAGE 2.



ISOMETRIC VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" BY LENGTH-TO-SUIT, AS REQUIRED TO EXTEND FROM THE BASE END OF THE BOMBS IN THE FIRST TWO LATERALLY ADJACENT PALLETS AT THE FORWARD END OF THE TRAILER TO THE NOSE END OF THE BOMBS IN THE REARMOST TWO LATERALLY ADJACENT PALLETS, WHICH IS A LENGTH OF 31'-1" (2 REOD). FOR POSITIONING AND INSTALLATION SEE LOADING SEQUENCE NOTES 1 AND 6 ON PAGE 9.
- ② SEPARATOR GATE B (5 REOD). POSITION THE SIDE WITH THE 2" X 2" LEGS TIGHT AGAINST THE NOSE ENDS OF THE BOMBS. SEE THE DETAIL ON PAGE 14.
- ③ RETAINER GATE A (2 REOD). POSITION WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST THE NOSE AND/OR AFT END OF THE BOMBS. SEE THE DETAIL ON PAGE 15.
- ④ WEB STRAP TIEDOWN ASSEMBLY (12 REOD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, OVER TOP OF TWO LATERALLY ADJACENT PALLET UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 4 ON PAGE 9 AND GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REOD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND BOTTOM OF RETAINER GATE A, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: THIS STRAP MUST BE THREADED THROUGH THE OPENING ON EACH SIDE OF THE RETAINER GATE A. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (2 REOD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND TOP OF RETAINER GATE A, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.

**SPECIAL NOTES:**

1. A TYPICAL LOAD OF 12 PALLETS OF MK82 500-LB BOMBS IS SHOWN LOADED ON THE 34-TON M872 SEMITRAILER HAVING DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.
2. PRIOR TO LOADING THE 500-LB BOMB PALLETS ON THE SEMITRAILER, READ THE "LOADING SEQUENCE" NOTES ON THIS PAGE.
3. THE LOAD ON PAGE 8 SHOWS THE FORWARD END POSITIONED 60" FROM THE FORWARD ENDWALL. HOWEVER, THE LOAD MAY BE POSITIONED ANYWHERE ON THE TRAILER LENGTH BY USING A RETAINER GATE A WITH WEB STRAPS MARKED ⑤ AND ⑥ AT EACH END OF THE LOAD AS SHOWN.
4. EACH LATERAL ROW OF TWO PALLETS MUST BE SECURED WITH TWO WEB STRAPS OVER THE TOP AS SHOWN. THESE TWO STRAPS MAY BE CROSSED AND/OR POSITIONED STRAIGHT ACROSS THE TOP OF A ROW, DEPENDING ON THE LOCATION OF THE TIEDOWN ANCHORS. ASSURE THAT THE STRAPS ARE POSITIONED OVER THE PALLET FRAME. DO NOT POSITION THE STRAPS ON/OVER THE BOMBS.
5. THE PROCEDURES SHOWN ON PAGE 8 MAY ALSO BE USED FOR TRANSPORTING 2, 4, 6, 8, OR 10 PALLETS BY DELETING PALLETS FROM THE AFT END OF THE LOAD SHOWN AND REDUCING THE LENGTH OF THE SIDE BLOCKING MARKED ① AS REQUIRED.
6. A TOTAL OF 28 TYPE I (MICKEY MOUSE) TIEDOWN ANCHORS ARE REQUIRED FOR THE LOAD SHOWN. SEE LOADING SEQUENCE NOTE 8 ON THIS PAGE AND TIEDOWN ANCHOR DETAIL ON PAGE 20.
7. A TOTAL OF 16 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

**LOADING SEQUENCE:**

1. PRIOR TO LOADING PALLET UNITS, POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, ON ONE SIDE OF THE TRAILER ONLY. AFTER DETERMINING HOW FAR THE BASE ENDS OF THE BOMBS ON THE FORWARD TWO PALLETS ARE TO BE FROM THE FORWARD ENDWALL, MAKE A MARK ON THE TRAILER FLOOR. POSITION ONE END ON THE MARK WITH THE OUTER EDGE 9" IN FROM THE OUTSIDE EDGE OF THE TRAILER. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 31'-1".
2. POSITION ONE 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END IN LINE WITH THE FORWARD END OF THE 2" X 4" SIDE BLOCKING AND THE PALLET BASE TIGHT AGAINST THE SIDE BLOCKING.
3. POSITION THE SECOND 500-LB BOMB PALLET ON THE TRAILER FLOOR IN LINE WITH AND TIGHT AGAINST THE FIRST PALLET.
4. POSITION A SEPARATOR GATE B, PIECE MARKED ②, TIGHT AGAINST THE NOSE END OF THE BOMBS IN THE FIRST TWO PALLETS. NOTE THAT THE SIDE WITH THE 2" X 2" LEGS IS POSITIONED AGAINST THE NOSE END OF THE BOMBS.
5. REPEAT STEPS 2, 3, AND 4 UNTIL ALL 12 TWO-WIDE PALLETS OF 500-LB BOMBS ARE LOADED.
6. AFTER ALL 12 PALLETS ARE LOADED, POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, 1/2" AWAY FROM THE PALLET BASE AND IN LINE WITH THE SIDE BLOCKING ON THE OPPOSITE SIDE OF THE TRAILER. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8".
7. POSITION A RETAINER GATE A, PIECE MARKED ③, AT EACH END OF THE LOAD. NOTE THAT THE 2" X 6" BEARING PIECE IS POSITIONED AGAINST THE NOSE AND/OR BASE END OF THE BOMBS.
8. INSTALL 14 MICKEY MOUSE TIEDOWN ANCHORS ON EACH SIDE OF THE TRAILER AT EACH LOCATION A WEB STRAP TIEDOWN ASSEMBLY IS REQUIRED.
9. INSTALL WEB STRAP TIEDOWN ASSEMBLIES AS INSTRUCTED IN KEY NUMBERS ④, ⑤, AND ⑥ ON PAGE 8.

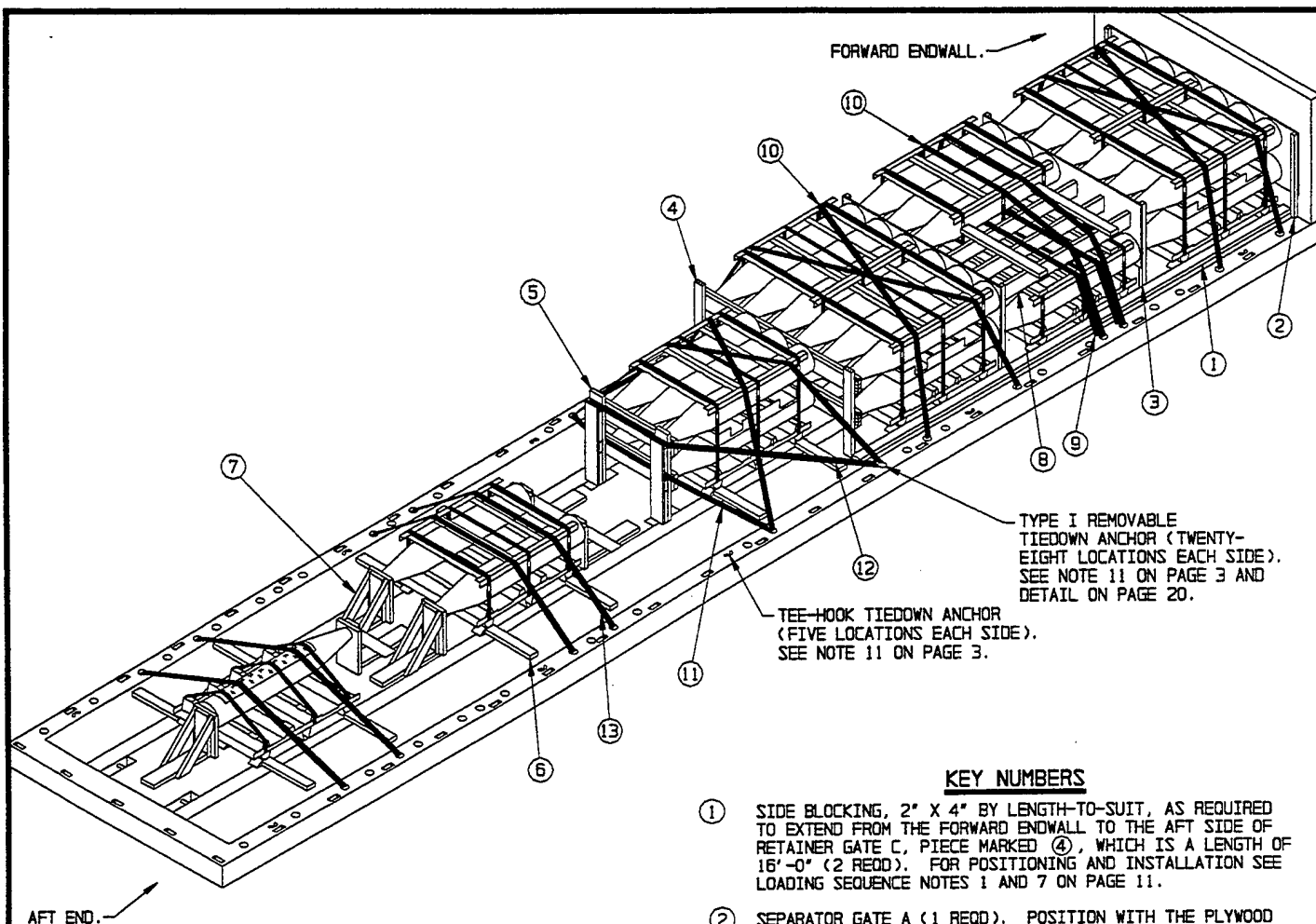
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	10	4
2" X 2"	27	9
2" X 4"	82	55
2" X 6"	47	47
NAILS	NO. REQD	POUNDS
6d (2")	70	1/2
10d (3")	218	3-1/4
PLYWOOD, 1/2"	59' SQ FT REQD	82 LBS
WEB STRAPS	16 REQD	80 LBS

**LOAD AS SHOWN (SEE NOTE BELOW)**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET - - - - -	12 - - - - -	36,420 LBS
DUNNAGE - - - - -	- - - - -	395 LBS
TOTAL WEIGHT - - - - -		36,815 LBS

NOTE: THE LOAD WEIGHT ON THE KINGPIN IS 12,708 LBS (APPROX), AND THE LOAD WEIGHT ON THE THREE REAR AXLES IS 24,108 LBS (APPROX). SEE GENERAL NOTE 8 ON PAGE 2.



**ISOMETRIC VIEW**

**(KEY NUMBERS CONTINUED)**

- ⑩ WEB STRAP TIEDOWN ASSEMBLY (8 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, OVER TOP OF TWO LATERALLY ADJACENT PALLET UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: POSITION THESE STRAPS OVER TOP OF THE SUPPORT ASSEMBLY, PIECE MARKED ⑧. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑪ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND BOTTOM OF RETAINER GATE B, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: THIS STRAP MUST BE THREADED THROUGH THE OPENING ON EACH SIDE OF THE RETAINER GATE B. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑫ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, AROUND TOP OF RETAINER GATE B, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
- ⑬ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, OVER TOP OF THE ONE AND/OR TWO-BOMB PALLET, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES AND POSITION ONE STRAP SCUFF SLEEVE ON TOP OF THE ONE BOMB AT EACH STRAP LOCATION. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.

**KEY NUMBERS**

- ① SIDE BLOCKING, 2" X 4" BY LENGTH-TO-SUIT, AS REQUIRED TO EXTEND FROM THE FORWARD ENDWALL TO THE AFT SIDE OF RETAINER GATE C, PIECE MARKED ④, WHICH IS A LENGTH OF 16'-0" (2 REQD). FOR POSITIONING AND INSTALLATION SEE LOADING SEQUENCE NOTES 1 AND 7 ON PAGE 11.
- ② SEPARATOR GATE A (1 REQD). POSITION WITH THE PLYWOOD SURFACE TIGHT AGAINST THE FORWARD END WALL. SEE THE DETAIL ON PAGE 14.
- ③ SEPARATOR GATE B (2 REQD). POSITION THE SIDE WITH THE 2" X 2" LEGS TIGHT AGAINST THE NOSE ENDS OF THE BOMBS. SEE THE DETAIL ON PAGE 14.
- ④ RETAINER GATE C (1 REQD). POSITION WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST THE NOSE ENDS OF THE BOMBS AT THE AFT END OF THE TWO-WIDE LOAD. SEE THE DETAIL ON PAGE 16.
- ⑤ RETAINER GATE B (1 REQD). POSITION WITH THE 2" X 6" BEARING PIECES TIGHT AGAINST THE NOSE ENDS OF THE BOMBS IN THE ONE PALLET UNIT AT THE REAR OF THE TWO-WIDE PALLET UNITS. SEE THE DETAIL ON PAGE 15.
- ⑥ SIDE BLOCKING, 2" X 4" X 18" (12 REQD). POSITION TIGHT AGAINST THE PALLET BASE AND NAIL TO THE TRAILER FLOOR W/5-10d NAILS.
- ⑦ END BRACE (6 REQD). POSITION THE LOAD BEARING PIECE TIGHT AGAINST THE NOSE AND/OR BASE END OF THE BOMB AND NAIL TO THE TRAILER FLOOR W/7-10d NAILS. SEE THE DETAIL ON PAGE 17.
- ⑧ SUPPORT ASSEMBLY (1 REQD). POSITION ON TOP OF THE THREE-BOMB PALLET. ASSURE THAT THE BOTTOM TIE-PIECES ARE SITTING ON THE TOP OF THE PALLET FRAME. SEE THE DETAIL ON PAGE 16.
- ⑨ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF TRAILER, OVER TOP OF THE 3-BOMB PALLET AND THREADED THROUGH AND OVER THE TOP OF THE BOTTOM 3 BOMBS IN THE LATERALLY ADJACENT 6-BOMB PALLET, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE TRAILER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. NOTE: DO NOT POSITION THESE STRAPS OVER TOP OF THE SUPPORT ASSEMBLY, PIECE MARKED ⑧. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.

(CONTINUED AT LEFT)

**FULL PALLETS AND LESS-THAN-FULL PALLETS OF THE  
MK82 500-LB BOMB ON THE 34-TON M872 SEMITRAILER**

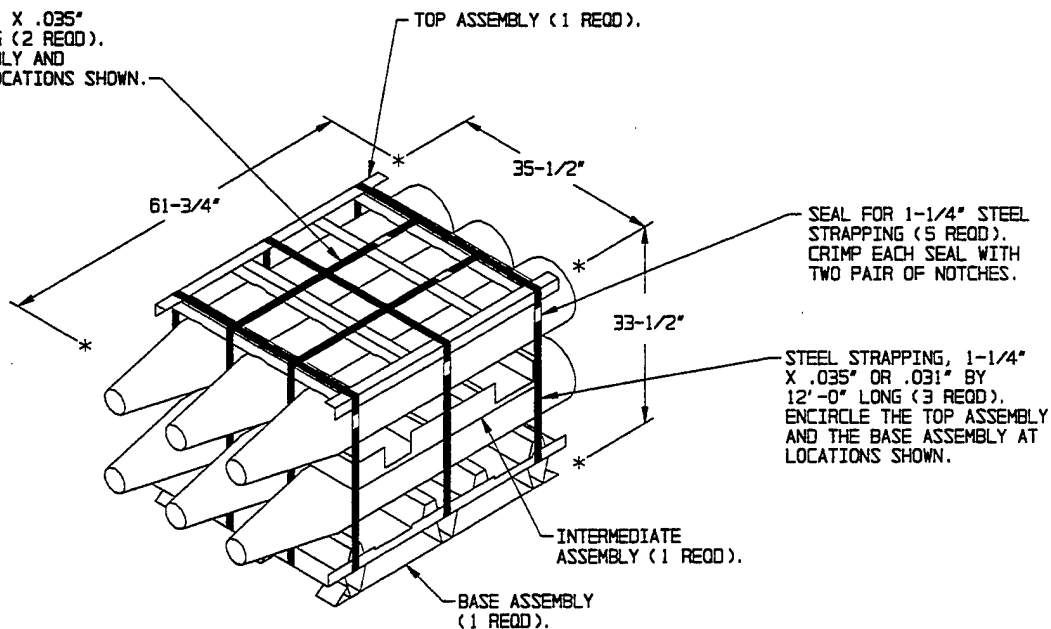
#### SPECIAL NOTES:

1. A TYPICAL LOAD DEPICTING FULL PALLETS AND LESS-THAN-FULL PALLETS OF THE 500-LB BOMB IS SHOWN LOADED ON THE 34-TON M872 SEMITRAILER HAVING DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.
2. PRIOR TO LOADING THE 500-LB BOMB PALLETS ON THE SEMITRAILER, READ THE "LOADING SEQUENCE" NOTES ON THIS PAGE.
3. THE PURPOSE OF THIS LOAD IS TO DEPICT METHODS OF SECURING LESS-THAN-FULL PALLETS OF BOMBS AS SHOWN ON PAGES 12 AND 13:
  - (A) PALLETS CONTAINING ONE, TWO, OR THREE BOMBS CAN BE POSITIONED ON THE TRAILER FLOOR AND SECURED WITH SIDE BLOCKING, END BRACES, AND WEB STRAPS AS SHOWN ON PAGE 10.
  - (B) PALLETS CONTAINING TWO OR THREE BOMBS CAN ALSO BE POSITIONED WITHIN A LOAD OF SIX-BOMB PALLETS AS SHOWN IN THE LOAD ON PAGE 10.
  - (C) PALLETS CONTAINING FOUR AND/OR FIVE BOMBS CAN BE POSITIONED WITHIN A LOAD AND SECURED IN THE SAME MANNER AS FULL SIX-BOMB PALLETS.
4. EACH LATERAL ROW OF ONE OR TWO PALLETS MUST BE SECURED WITH TWO WEB STRAPS OVER THE TOP AS SHOWN. THESE TWO STRAPS MAY BE CROSSED AND/OR POSITIONED STRAIGHT ACROSS THE TOP OF A ROW, DEPENDING ON THE LOCATION OF THE TIEDOWN ANCHORS. ASSURE THAT THE STRAPS ARE POSITIONED OVER THE PALLET FRAME. DO NOT POSITION THE STRAPS ON/OVER THE BOMBS UNLESS A ONE-BOMB PALLET IS BEING LOADED.
5. A TOTAL OF 24 TYPE I (MICKEY MOUSE) TIEDOWN ANCHORS ARE REQUIRED FOR THE LOAD SHOWN. SEE LOADING SEQUENCE NOTE 15 ON THIS PAGE AND TIEDOWN ANCHOR DETAIL ON PAGE 20.
6. A TOTAL OF 16 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

#### LOADING SEQUENCE:

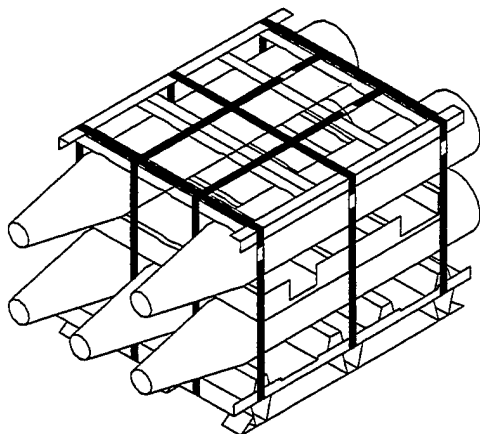
1. PRIOR TO LOADING THE TWO WIDE PALLET UNITS, POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, ON ONE SIDE OF THE TRAILER ONLY. POSITION ONE END AGAINST THE FORWARD END WALL WITH THE OUTER EDGE 9" IN FROM THE OUTSIDE EDGE OF THE TRAILER. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 16'-0".
2. POSITION THE SEPARATOR GATE A, PIECE MARKED ②, WITH THE PLYWOOD SURFACE TIGHT AGAINST THE FORWARD ENDWALL.
3. POSITION ONE 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END TIGHT AGAINST THE SEPARATOR GATE A AND THE PALLET BASE TIGHT AGAINST THE 2" X 4" SIDE BLOCKING. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE SEPARATOR GATE A.
4. POSITION THE SECOND 500-LB BOMB PALLET ON THE TRAILER FLOOR WITH THE BASE END TIGHT AGAINST THE SEPARATOR GATE A AND TIGHT AGAINST THE ADJACENT PALLET. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE SEPARATOR GATE A.
5. POSITION A SEPARATOR GATE B, PIECE MARKED ③, TIGHT AGAINST THE NOSE END OF THE BOMBS IN THE FIRST TWO PALLETS. NOTE THAT THE SIDE WITH THE 2" X 2" LEGS IS POSITIONED AGAINST THE NOSE END OF THE BOMBS.
6. REPEAT STEPS 3, 4, AND 5 UNTIL ALL 6 TWO-WIDE PALLETS OF 500-LB BOMBS ARE LOADED.
7. AFTER ALL 6 TWO-WIDE PALLETS ARE LOADED, POSITION THE 2" X 4" BY LENGTH-TO-SUIT SIDE BLOCKING, PIECE MARKED ①, 1/2" AWAY FROM THE PALLET SKIDS AND AGAINST THE FORWARD ENDWALL. NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 8". THE SIDE BLOCKING WILL CONSIST OF AVAILABLE LENGTHS OF 2" X 4" LUMBER FOR A DISTANCE OF 16'-0". NOTE THAT THE PALLETS CAN BE REMOVED AND/OR LOADED WITHOUT REMOVING THE SIDE BLOCKING.
8. POSITION A RETAINER GATE C, PIECE MARKED ④, WITH THE 2" X 6" BEARING PIECE TIGHT AGAINST THE NOSE ENDS OF THE BOMBS AT THE AFT END OR THE TWO-WIDE LOAD.
9. POSITION THE SUPPORT ASSEMBLY, PIECE MARKED ⑧, ON TOP OF THE 3-BOMB PALLET AS INSTRUCTED IN KEY NUMBER ⑧.
10. POSITION ONE 500-LB BOMB PALLET IN THE CENTER OF THE TRAILER WIDTH WITH THE BASE END TIGHT AGAINST THE RETAINER GATE C. ASSURE THAT THE BASE ENDS OF ALL SIX BOMBS ARE TIGHT AGAINST THE RETAINER GATE C.
11. POSITION THE RETAINER GATE B, PIECE MARKED ⑤, WITH THE LOAD BEARING PIECES TIGHT AGAINST THE NOSE END OF THE BOMBS IN THE ONE PALLET UNIT AT THE REAR OF THE TWO-WIDE PALLET UNITS.
12. POSITION THE ONE-BOMB AND TWO-BOMB PALLETS ON THE TRAILER FLOOR AT A LOCATION THAT WILL ALLOW ROOM FOR THE END BRACE, PIECE MARKED ⑦, TO BE POSITIONED AT EACH END OF THE BOMBS.
13. POSITION THE END BRACES, PIECES MARKED ⑦, AS INSTRUCTED IN KEY NUMBER ⑦.
14. POSITION THE SIDE BLOCKING, PIECES MARKED ⑥, AS INSTRUCTED IN KEY NUMBER ⑥.
15. INSTALL 12 TYPE I (MICKEY MOUSE) TIEDOWN ANCHORS ON EACH OF SIDE THE TRAILER AT EACH LOCATION A WEB STRAP TIEDOWN ASSEMBLY IS REQUIRED.
16. INSTALL WEB STRAP TIEDOWN ASSEMBLIES AS INSTRUCTED IN KEY NUMBERS ⑨, ⑩, ⑪, ⑫, AND ⑬.

STEEL STRAPPING, 1-1/4" X .035"  
OR .031" BY 12'-0" LONG (2 REQD).  
ENCIRCLE THE TOP ASSEMBLY AND  
THE BASE ASSEMBLY AT LOCATIONS SHOWN.



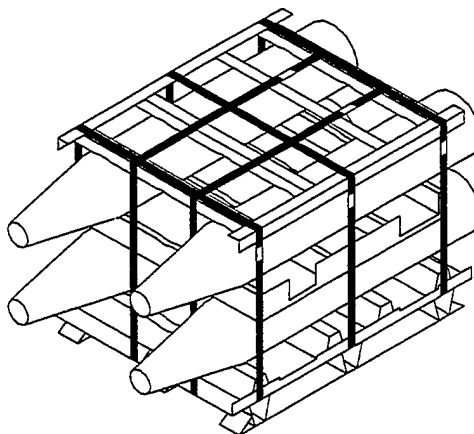
### 6-BOMB PALLET UNIT

GROSS WEIGHT - - - - 3,035 LBS (APPROX)  
CUBE - - - - - 42.7 CU FT (APPROX)



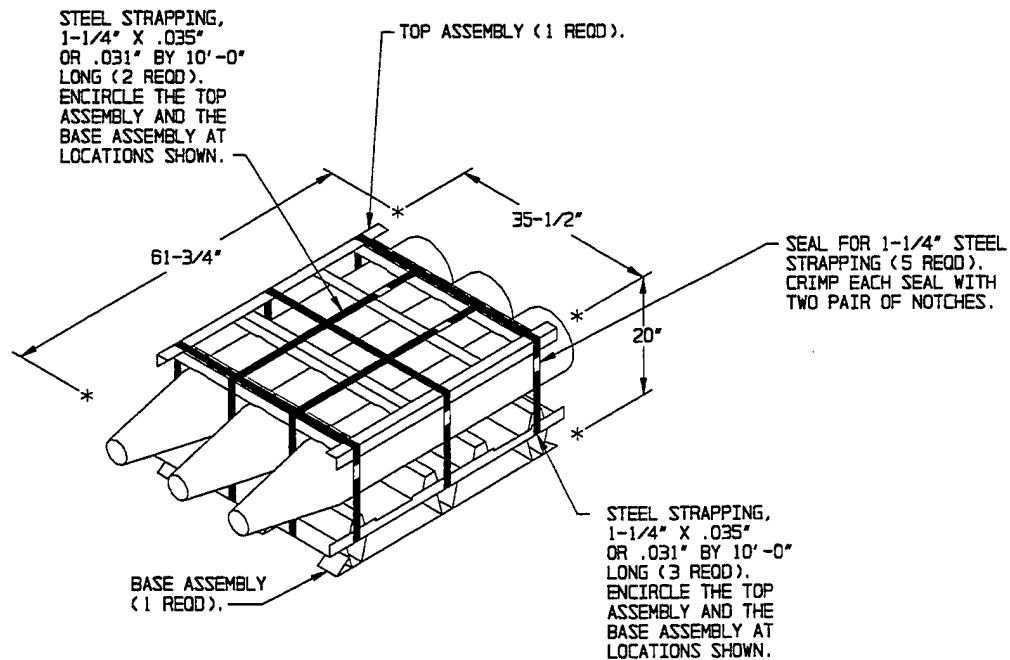
### 5-BOMB PALLET UNIT

OMIT CENTER BOMB IN  
THE TOP LAYER FROM  
6-BOMB PALLET UNIT.

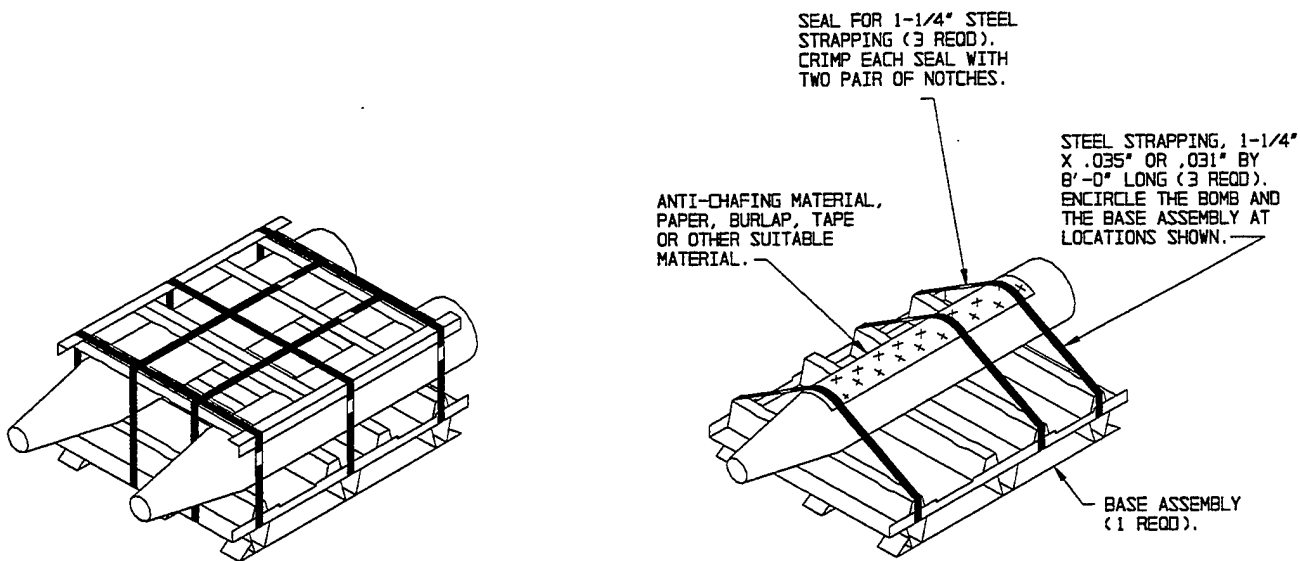


### 4-BOMB PALLET UNIT

OMIT CENTER BOMBS IN THE  
TOP AND BOTTOM LAYER  
FROM 6-BOMB PALLET UNIT.



**3-BOMB PALLET UNIT**



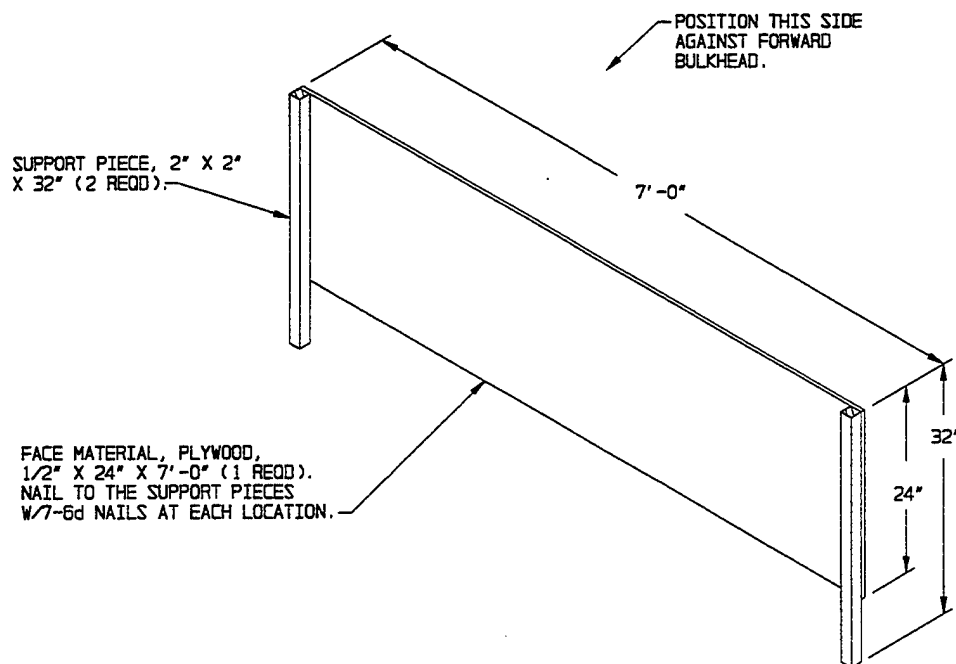
**2-BOMB PALLET UNIT**

OMIT CENTER BOMB FROM  
3-BOMB PALLET UNIT.

**1-BOMB PALLET UNIT**

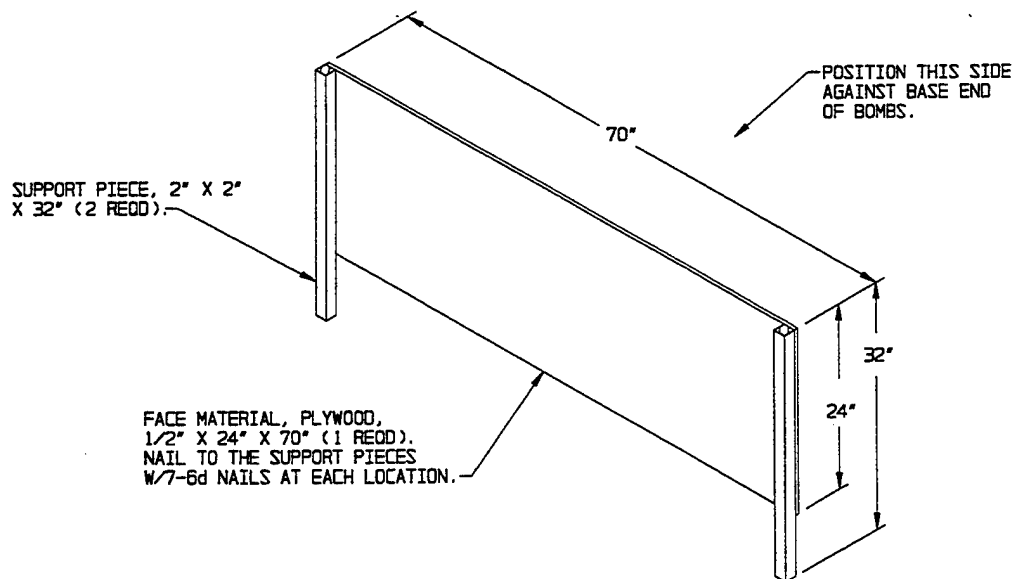
POSITION BOMB IN CENTER  
OF THE BASE ASSEMBLY.

NOTE:  
IF LOADING LESS-THAN-FULL PALLET UNITS SEE THE  
LOAD ON PAGE 10 AND SPECIAL NOTE 3 ON PAGE 11.



#### SEPARATOR GATE A

POSITION AGAINST FORWARD BULKHEAD AS  
SHOWN IN THE LOAD ON PAGES 4, 6, AND 10.

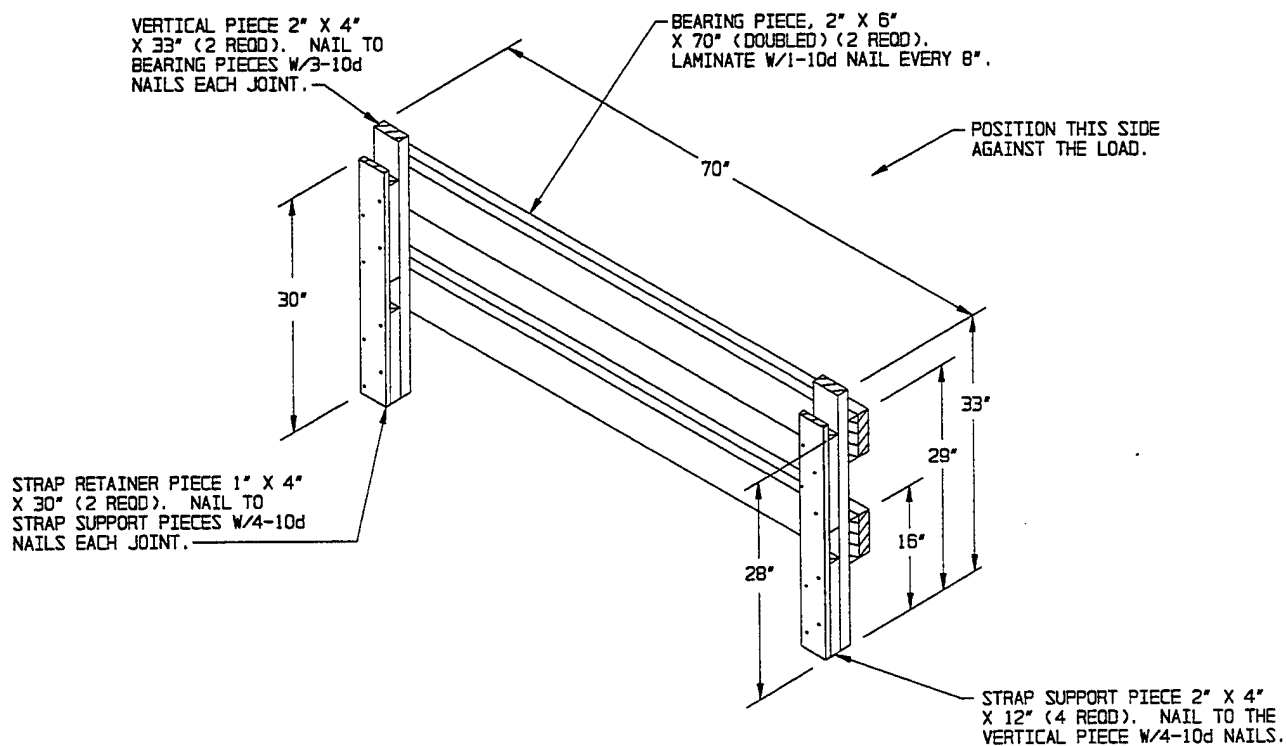


#### SEPARATOR GATE B

POSITION BETWEEN ROWS OF BOMBS AS SHOWN  
IN THE LOAD ON PAGES 4, 6, 8, AND 10.

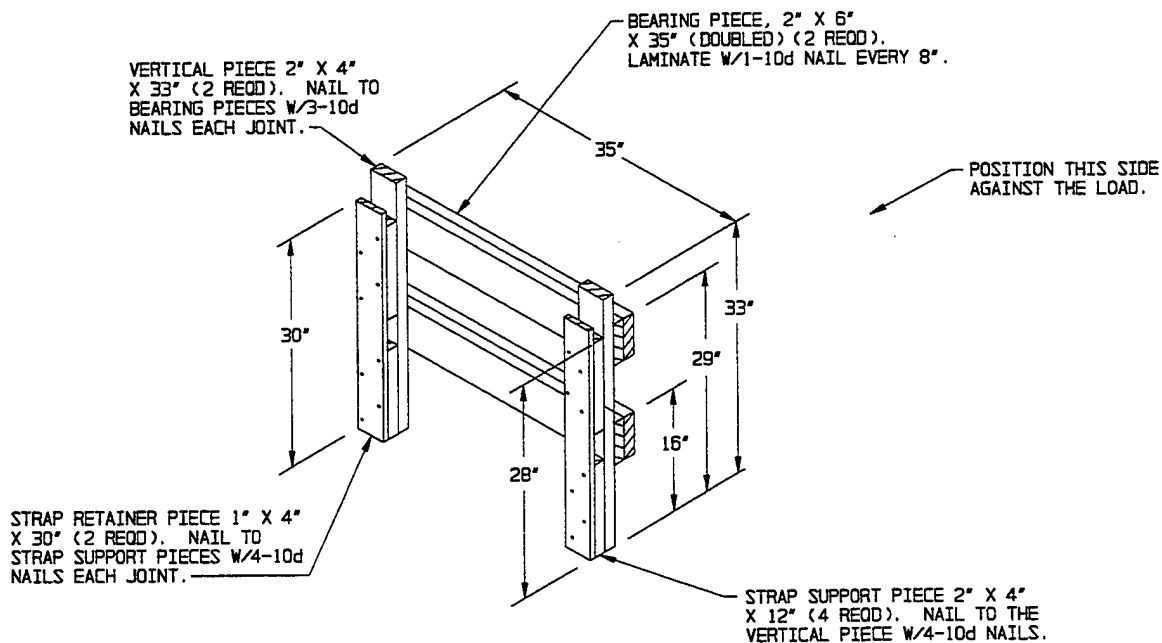
#### DETAILS





#### RETAINER GATE A

POSITION AGAINST TWO-WIDE PALLETS  
AT END OF LOAD AS SHOWN IN THE LOAD  
ON PAGES 4 AND 8.



#### RETAINER GATE B

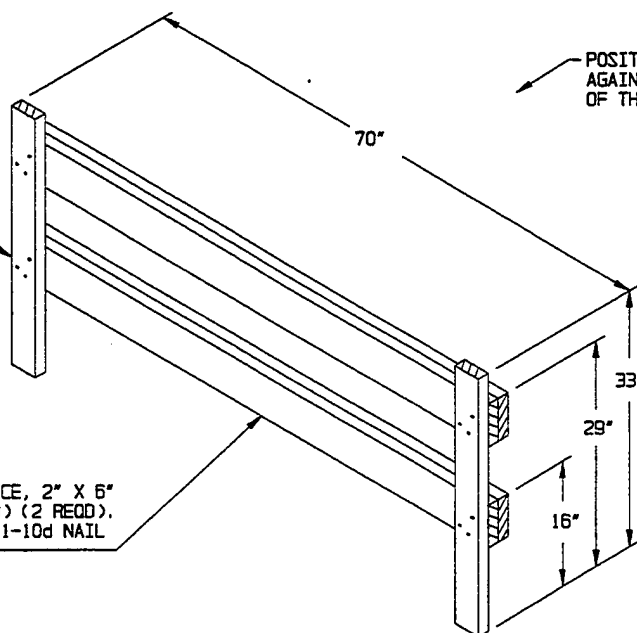
POSITION AGAINST ONE-WIDE PALLET  
AT END OF LOAD AS SHOWN IN THE LOAD  
ON PAGES 6 AND 10.

#### DETAILS

VERTICAL PIECE,  
2" X 4" X 33"  
(2 REQD). NAIL  
TO THE HORIZONTAL  
PIECES W/3-10d  
NAILS AT EACH JOINT.

HORIZONTAL PIECE, 2" X 6"  
X 70" (DOUBLED) (2 REQD).  
LAMINATE WITH 1-10d NAIL  
EVERY 8".

POSITION THIS SIDE  
AGAINST THE NOSE END  
OF THE TWO-WIDE PALLETS.

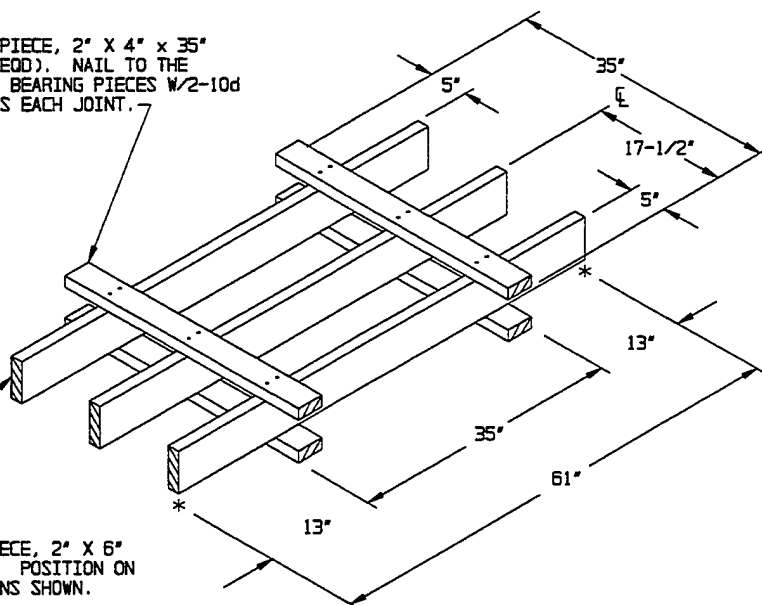


### RETAINER GATE C

POSITION AGAINST TWO-WIDE PALLETS AS  
SHOWN IN THE LOAD ON PAGES 6 AND 10.

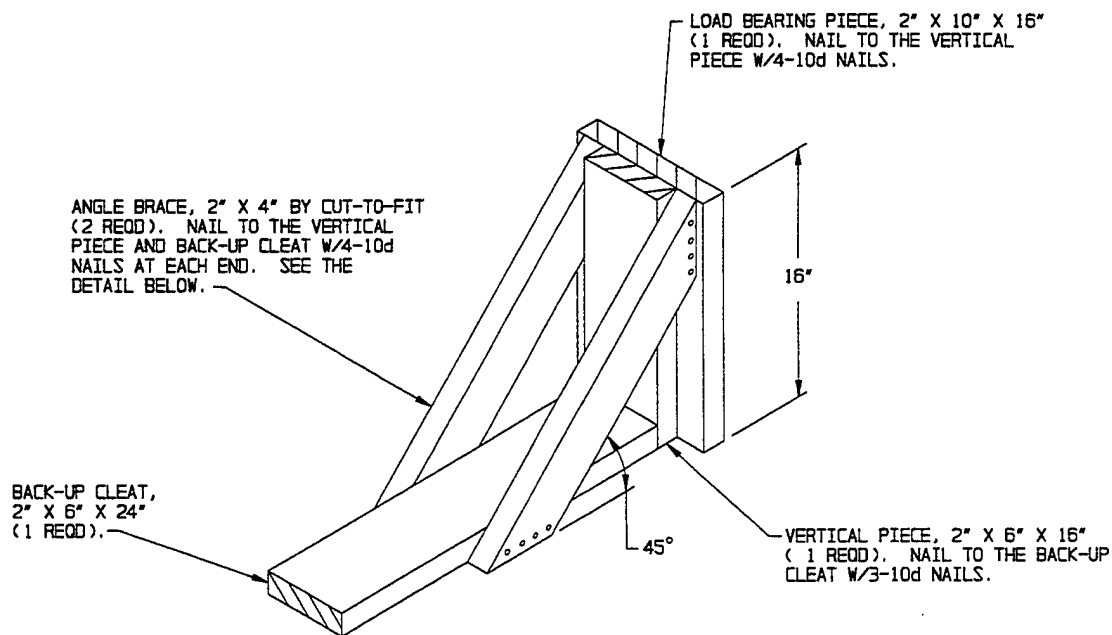
TIE-PIECE, 2" X 4" X 35"  
(4 REQD). NAIL TO THE  
LOAD BEARING PIECES W/2-10d  
NAILS EACH JOINT.

LOAD BEARING PIECE, 2" X 6"  
X 61" (3 REQD). POSITION ON  
EDGE AT LOCATIONS SHOWN.



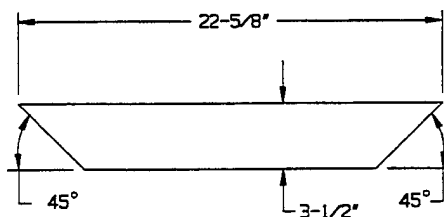
### SUPPORT ASSEMBLY

THIS ASSEMBLY IS FOR USE ON TOP OF A TWO  
OR THREE-BOMB PALLET UNIT POSITIONED IN  
BETWEEN TWO SIX-BOMB PALLET UNITS, AS  
SHOWN IN THE LOAD ON PAGE 10.



#### END BRACE

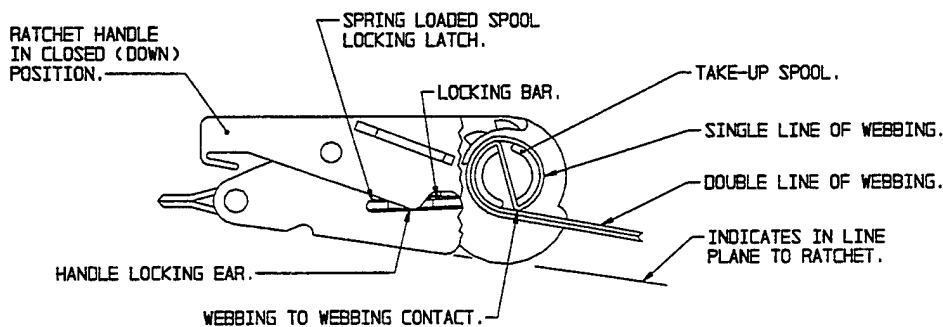
FABRICATE THIS BRACE PRIOR TO POSITIONING AGAINST THE BOMBS. POSITION WITH THE LOAD BEARING PIECE TIGHT AGAINST THE NOSE AND/OR BASE END OF THE BOMB AND NAIL TO THE TRAILER FLOOR W/7-10d NAILS. THIS BRACE IS FOR ONE, TWO, OR THREE-BOMB PALLETS ONLY. SEE THE LOAD ON PAGE 10 FOR ADDITIONAL GUIDANCE.



#### ANGLE BRACE

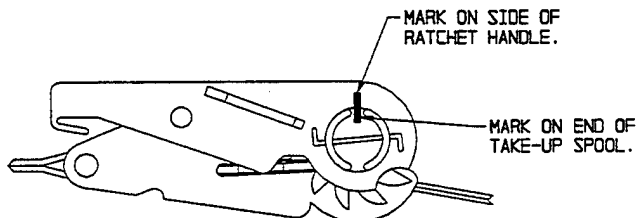
2 REQD PER EACH END  
BRACE SHOWN ABOVE.

#### DETAILS



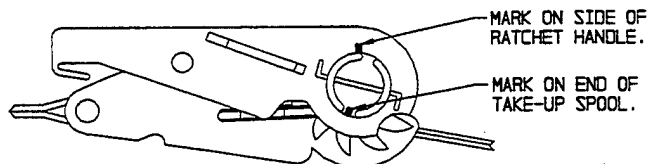
#### STEP 1

IN THIS VIEW PART OF THE RATCHET HOUSING IS SHOWN BROKEN AWAY TO DEPICT WEBBING-TO-WEBBING CONTACT ON THE TAKE-UP SPOOL OF THE RATCHET. WEBBING-TO-WEBBING CONTACT IS ACHIEVED WHEN THE OPERATOR HOLDS THE DOUBLE LINE OF WEBBING IN AN "IN LINE PLANE TO THE RATCHET" AND IT MAKES CONTACT WITH THE SINGLE LINE OF WEBBING.



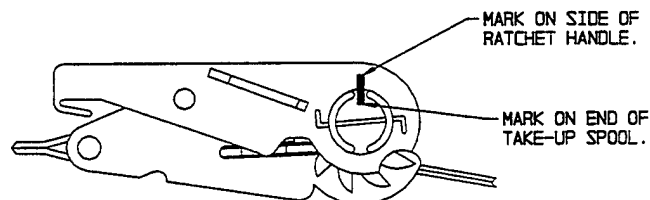
#### STEP 2

THIS VIEW DEPICTS THE LOCATION OF THE FIXED MARK ON THE RATCHETING HANDLE, WITH ANOTHER MATCHING MARK ON THE TAKE-UP SPOOL, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



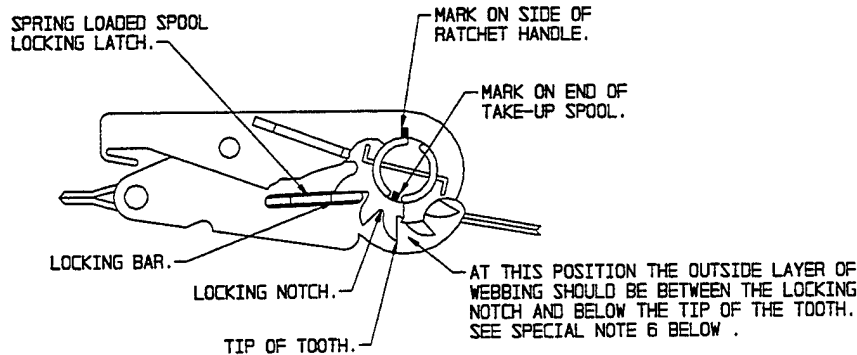
#### STEP 3

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE-HALF TURN, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



#### STEP 4

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE FULL TURN, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



### STEP 5

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE AND ONE-HALF TURNS, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE. ALSO IN THIS VIEW, PART OF THE RATCHET HANDLE IS BROKEN AWAY TO SHOW THE LOCKING BAR FULLY SEATED IN THE MATCHING LOCKING NOTCH (SPROCKET GEAR TEETH).

#### SPECIAL NOTES:

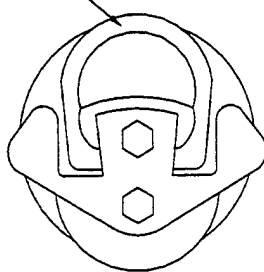
1. THE PURPOSE OF THE RATCHET DETAILS ON PAGE 18 AND THE DETAIL AND NOTES ON THIS PAGE ARE TO AUGMENT THE GUIDANCE SET FORTH WITHIN GENERAL NOTE "E" ON PAGE 2.
2. THE REQUIREMENTS FOR 1/2 BUT NOT MORE THAN 1-1/2 WRAPS OF STRAP ON THE TAKE-UP SPOOL OF THE TENSIONING RATCHET, AS SPECIFIED WITHIN GENERAL NOTE "E" ON PAGE 2, ACTUALLY MEANS 1/2 TO 1-1/2 WRAPS OF DOUBLE WEBBING. ALSO, THE 1/2 TO 1-1/2 WRAPS (TURNS) ARE TO BE ACCOMPLISHED ONLY AFTER ENOUGH WEBBING HAS BEEN WOUND ONTO THE SPOOL TO ACHIEVE A WEBBING-TO-WEBBING CONFIGURATION, AS SHOWN IN THE "STEP 1" DETAIL ON PAGE 18.
3. ONE METHOD THAT CAN BE USED TO ENSURE THAT THE 1/2 TO 1-1/2 WRAPS ARE WOUND ONTO THE TAKE-UP SPOOL, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO PLACE A FIXED MARK (PAINT OR SIMILAR MATERIAL) ON THE SIDE OF THE RATCHETING HANDLE, WITH THE HANDLE IN ITS CLOSED (DOWN) POSITION, AND ANOTHER SHORT MATCHING MARK ON THE END OF THE SPOOL, AS SHOWN IN THE "STEP 2" DETAIL ON PAGE 18. AS THE SPOOL IS ROTATED TO TENSION A TIEDOWN STRAP ASSEMBLY, THE NUMBER OF WRAPS (TURNS) CAN BE DETERMINED VISUALLY BY COMPARING THE "MARK" LOCATION ON THE SPOOL TO THE "MARK" LOCATION ON THE RATCHETING HANDLE WITH THE HANDLE IN CLOSED POSITION. SEE THE "STEP 3" AND "STEP 4" DETAILS ON PAGE 18, AND "STEP 5" ABOVE.
4. ANOTHER METHOD THAT CAN BE USED TO ENSURE THAT THE 1/2 TO 1-1/2 WRAPS ARE ACHIEVED, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO COUNT THE AUDIBLE CLICKS MADE BY THE RATCHET ASSEMBLY AS A WEB STRAP ASSEMBLY IS BEING TENSIONED. THE RATCHET ASSEMBLY ON MOST WEB STRAP ASSEMBLIES HAVE 11 TEETH ON THE GEARLIKE DEVICE ON EACH END OF THE TAKE-UP SPOOL; SOME OTHER STRAP ASSEMBLIES HAVE ONLY 9 TEETH. THEREFORE, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 6 TO A MAXIMUM OF 16 CLICKS (1/2 TO 1-1/2 WRAPS) WHEN THE GEAR HAS 11 TEETH, AND ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 5 TO A MAXIMUM OF 13 CLICKS (1/2 TO 1-1/2 WRAPS) IF THE GEAR HAS 9 TEETH.

(CONTINUED AT RIGHT)

#### (SPECIAL NOTES CONTINUED)

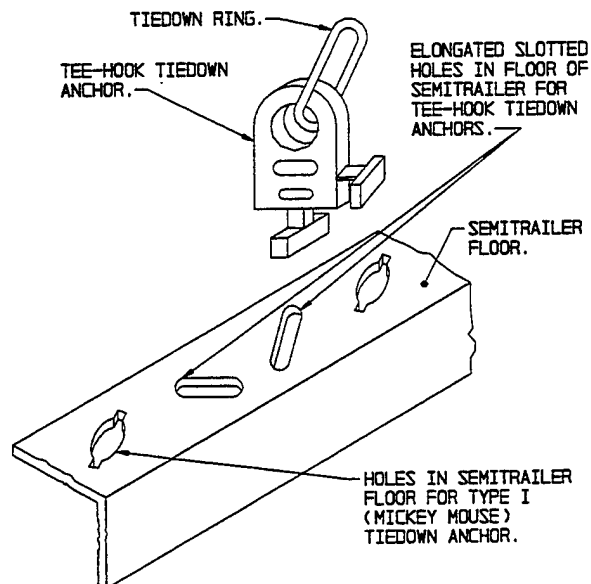
5. AFTER A STRAP ASSEMBLY HAS BEEN PROPERLY TENSIONED, CARE MUST BE EXERCISED TO ASSURE THAT THE TAKE-UP SPOOL LOCKING LATCH (SPRING LOADED DEVICE WITH A LOCKING BAR ON EACH SIDE OF THE RATCHET ASSEMBLY) IS FULLY SEATED ON BOTH SIDES IN MATCHING LOCKING NOTCHES, WHICH ARE SIMILAR TO SPROCKET GEAR TEETH, THAT ARE LOCATED ON EACH END OF THE TAKE-UP SPOOL. SEE "STEP 5" DETAIL ABOVE. THE LOCKING LATCH IS "FULLY SEATED" WHEN THE HANDLE WILL CLOSE AND THE LOCKING BAR, OR SIMILAR DEVICE ON THE HANDLE, PREVENTS THE ACCIDENTAL WITHDRAWAL OF THE LOCKING LATCH. SEE "STEP 1" DETAIL ON PAGE 18. IF THE FULLY SEATED CONDITION CANNOT BE ACHIEVED, THE STRAP MUST BE RELEASED AND HAND RETENSIONED AS TIGHT AS POSSIBLE TO ACHIEVE THE FULLY SEATED CONDITION.
6. ANOTHER VISUAL METHOD OF DETERMINING WHEN THERE IS 1/2 TO 1-1/2 WRAPS OF WEBBING ON THE TAKE-UP SPOOL, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO LOOK AT THE SPOOL. WHEN A TIEDOWN IS COMPLETE, THE STRAP WEBBING ON THE SPOOL OF THE RATCHET SHOULD BE ABOVE THE LOWER CURVE OF THE LOCKING NOTCH, AND SHOULD BE BELOW THE TIPS OF THE TEETH OF THE RATCHET AS IDENTIFIED IN "STEP 5" ABOVE. IT SHOULD BE NOTED THAT ANY PROCEDURES THAT ENSURE PROPER TENSIONING ARE ACCEPTABLE AND METHODS ON THE DRAWING ONLY PROVIDE SOME METHODS.

TIEDOWN RING.



#### REMOVABLE TIEDOWN ANCHOR (TOP VIEW)

THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS AND IS INSTALLED ON THE M872 SEMITRAILERS. IT IS COMMONLY REFERRED TO AS THE "MICKEY MOUSE" TIEDOWN ANCHOR. THERE ARE APPROXIMATELY TWENTY-EIGHT LOCATIONS IN EACH SIDE RAIL OF THE M872 SEMITRAILER. FOR INSTALLATION OF THIS TIEDOWN ANCHOR, IT IS POSITIONED BY REACHING UNDER THE FLOOR OF THE SEMITRAILER, INSERTING IT UP THROUGH THE HOLE AND ROTATING IT COUNTERCLOCKWISE UNTIL THE CENTER OF THE TIEDOWN RING POINTS DIRECTLY ACROSS THE TRAILER WIDTH. THIS TIEDOWN ANCHOR IS FURTHER IDENTIFIED AS NSN 2540-01-112-1732. SEE SPECIAL NOTE 11 ON PAGE 3.



#### TEE-HOOK TIEDOWN ANCHOR (ISOMETRIC VIEW)

THIS TIEDOWN ANCHOR IS RATED AT 5,000 POUNDS AND IS INSTALLED ON THE M872 SEMITRAILERS. IT IS COMMONLY REFERED TO AS THE "TEE-HOOK" TIEDOWN ANCHOR. THERE ARE FIVE TIEDOWN ANCHOR LOCATIONS IN EACH SIDE RAIL OF THE M872 SEMITRAILER. FOR INSTALLATION OF THIS TIEDOWN ANCHOR, IT IS POSITIONED BY INSERTING IT FROM THE TOP INTO ONE OF THE ELONGATED SLOTTED HOLES LOCATED IN THE SIDERAIL. ASSURE THAT THE TIEDOWN ANCHOR IS FIRMLY SEATED AND ROTATED APPROXIMATELY 45° TO ENGAGED POSITION BEFORE ATTACHING THE WEB STRAP TIEDOWN ASSEMBLY. THIS TIEDOWN ANCHOR IS FURTHER IDENTIFIED AS NSN 2540-01-113-9285. SEE SPECIAL NOTE 11 ON PAGE 3.

#### TIEDOWN ANCHOR DETAIL