

LOADING AND BRACING (TL & LTL) ON FLATBED TRAILERS[⊕] OF 750 POUND HIGH EXPLOSIVE OR MC-1 CHEMICAL BOMB, PACKED TWO PER WOODEN PALLET

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

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND 	ENGINEER	BASIC		DO NOT SCALE				
			REV.	MICHAEL SARDONE	WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN		BASIC	RALPH ARNOLD	OCTOBER 1993			
			REV.		REVISION NO. 1		JANUARY 1997	
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND DEFENSE AMMUNITION CENTER	TRANSPORTATION ENGINEERING DIVISION		<i>William R. Truitt</i>	SEE THE REVISION LISTING ON PAGE 2				
	VALIDATION ENGINEERING DIVISION		<i>Monroe H. Kuhn</i> TESTED	CLASS	DIVISION	DRAWING	FILE	
	LOGISTICS ENGINEERING OFFICE		<i>William F. Ernst</i>	19	48	4260	11PB1002	

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO PALLETIZED T54 SERIES 750-POUND HE BOMBS AND PALLETIZED MC-1 TYPE 750-POUND CHEMICAL BOMBS. SEE THE PALLET UNIT DETAILS ON PAGE 3.
- C. DETAILS OF HE BOMB PALLET UNIT (TPO 1325-926-1868):
DIMENSIONS - - - 52-1/4" LONG (55" WITH CONICAL NOSE PLUGS) BY 32-1/4" WIDE BY 22-7/8" HIGH.
GROSS WEIGHT - - 1,575 POUNDS (APPROX).
DETAILS OF MC-1 BOMB PALLET UNIT:
DIMENSIONS - - - 55" LONG BY 32" WIDE BY 22-7/8" HIGH.
GROSS WEIGHT - - 1,500 POUNDS (APPROX).
- D. 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.
- E. THE LOADS AS SHOWN HEREIN ARE BASED ON 8'-0" WIDE BY 42'-0" AND 45'-0" LONG AND 8'-6" WIDE BY 45'-0" AND 48'-0" LONG FLATBED TRAILERS. TRAILERS MUST HAVE WOOD OR WOOD AND METAL FLOORS. TRAILERS HAVING ALL METAL FLOORS CANNOT BE USED. CAUTION: IF THE TRAILER FLOOR IS EQUIPPED WITH EXPOSED METAL DECKING ABOVE THE BOGIE ASSEMBLY, OR ELSEWHERE, FIELD MEASUREMENTS SHOULD BE MADE TO ENSURE THAT THE METAL DECKING DOES NOT INTERFERE WITH THE PROPER POSITIONING AND NAILING OF THE DUNNAGE AS SPECIFIED BY THE PROCEDURES SHOWN HEREIN.
- F. SELECTION OF A VEHICLE TO BE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 29, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- G. THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.
- H. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH STATE WEIGHT LAWS.
- J. OTHER TYPES OF LADING ITEMS MAY BE LOADED ON TRAILERS WHICH ARE PARTIALLY LOADED WITH THE DESIGNATED ITEM, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.
- K. CAUTION: REGARDLESS OF THE TYPE OF TRAILERS INVOLVED, ONLY THOSE TRAILERS HAVING TIEDOWN ANCHORING FACILITIES WHICH PROVIDE HOLDING STRENGTH EQUAL TO OR GREATER THAN THE STRENGTH OF THE HOLD-DOWN STRAPS OR CHAINS AND WHICH ALIGN NEAR THE INDICATED LOCATIONS FOR THE HOLD-DOWN STRAPS OR CHAINS SHOULD BE USED. IF TRAILER ANCHOR DEVICES ARE NOT PROPERLY POSITIONED TO RECEIVE 1-1/4" STRAPPING OR CHAINS AS SHOWN, OR IF THE ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE HOLD-DOWN STRAPS OR CHAINS, THE STRAPS MAY BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED. THE FIFTH WHEEL PLATE, TRAILER WHEELS, CONTROLS, AND OTHER ACCESSORIES SHOULD BE AVOIDED, AND EDGE PROTECTORS SHOULD BE USED ON ALL SHARP EDGES. THE CHAINS AND/OR WEB STRAPS WILL NOT BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED.
- L. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- M. 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 SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN 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.
- N. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO SEALS, BUTTED TOGETHER, WITH TWO PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP-TYPE SEALER IS BEING USED. REFER TO THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 15.
- O. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED, AND COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED HEREIN MAY BE USED. THE APPROVED METHODS SHOWN HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- P. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.

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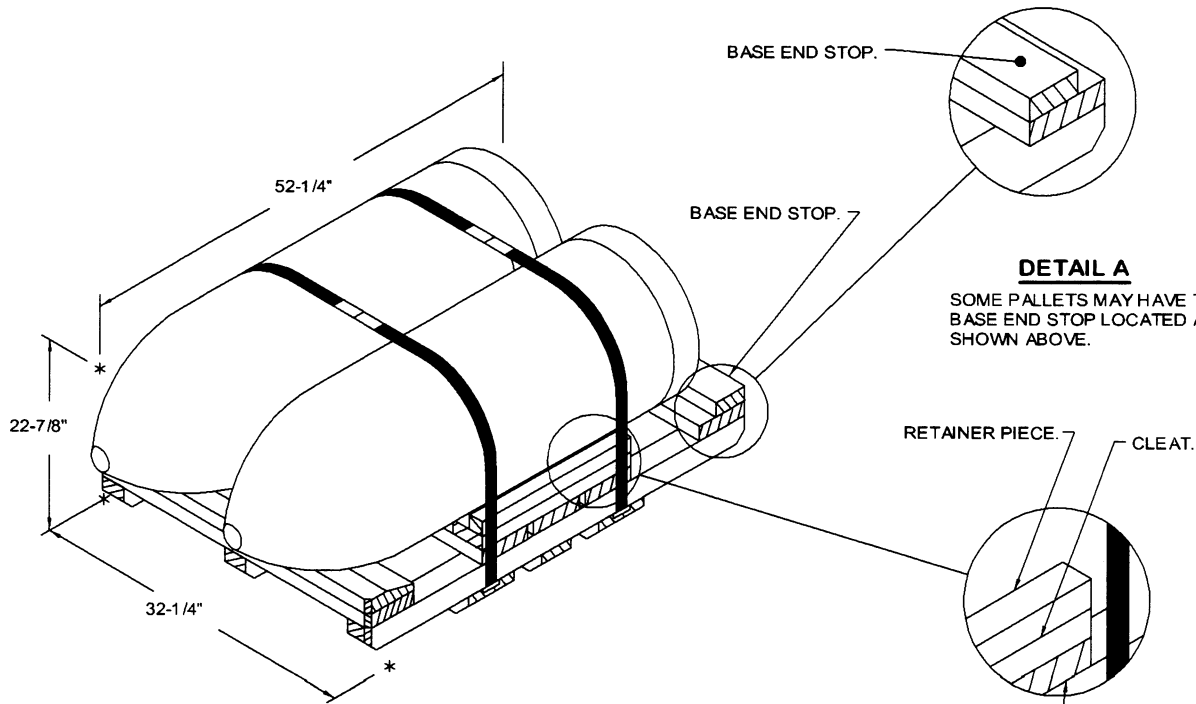
MATERIAL SPECIFICATIONS

- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS - - - - - : FED SPEC FF-N-105; COMMON.
- STRAPPING, STEEL - - - - - : ASTM D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.
- SEAL, STRAP - - - - - : ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV.
- STRAP, WEB - - - - - : WEB SLING AND TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1991.
- WIRE, CARBON STEEL - - - - - : ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .800" DIA, GRADE 1006 OR BETTER.
- CHAIN - - - - - : NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
- LOAD BINDER - - - - - : FED SPEC GGG-B-325.

REVISION

REVISION NO. 1, DATED JANUARY 1997, CONSISTS OF:

1. ADDING WEB STRAP TIEDOWN METHOD.
2. INCLUDING PROVISIONS FOR THE USE OF FIRE HOSE.
3. UPDATING DRAWING FORMAT.

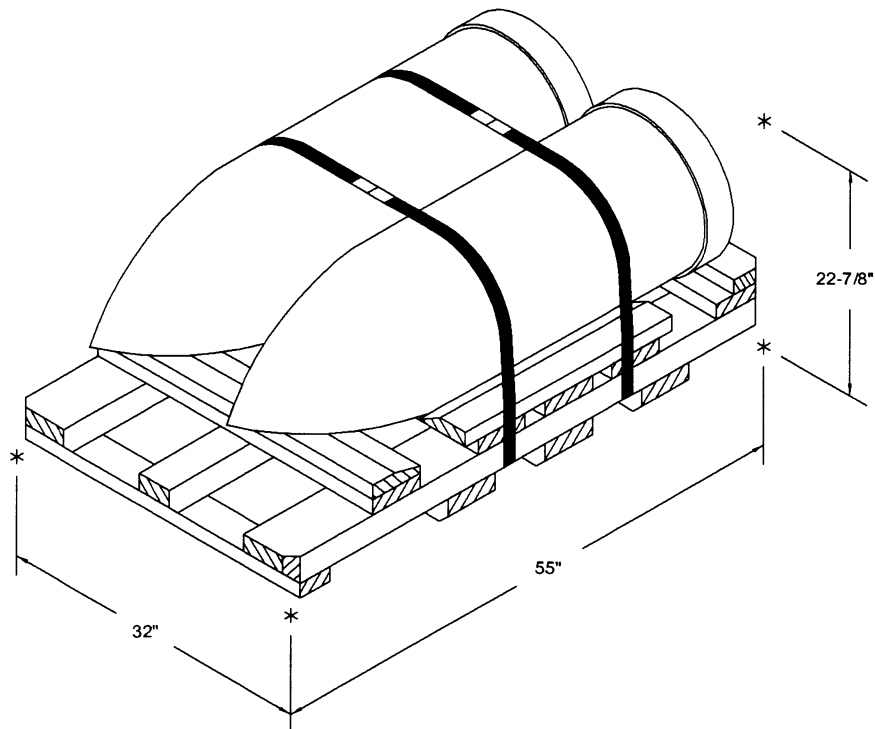


PALLET UNIT
 HIGH EXPLOSIVE BOMB
 GROSS WEIGHT - - 1,575 LBS (APPROX)

DETAIL A
 SOME PALLETS MAY HAVE THE
 BASE END STOP LOCATED AS
 SHOWN ABOVE.

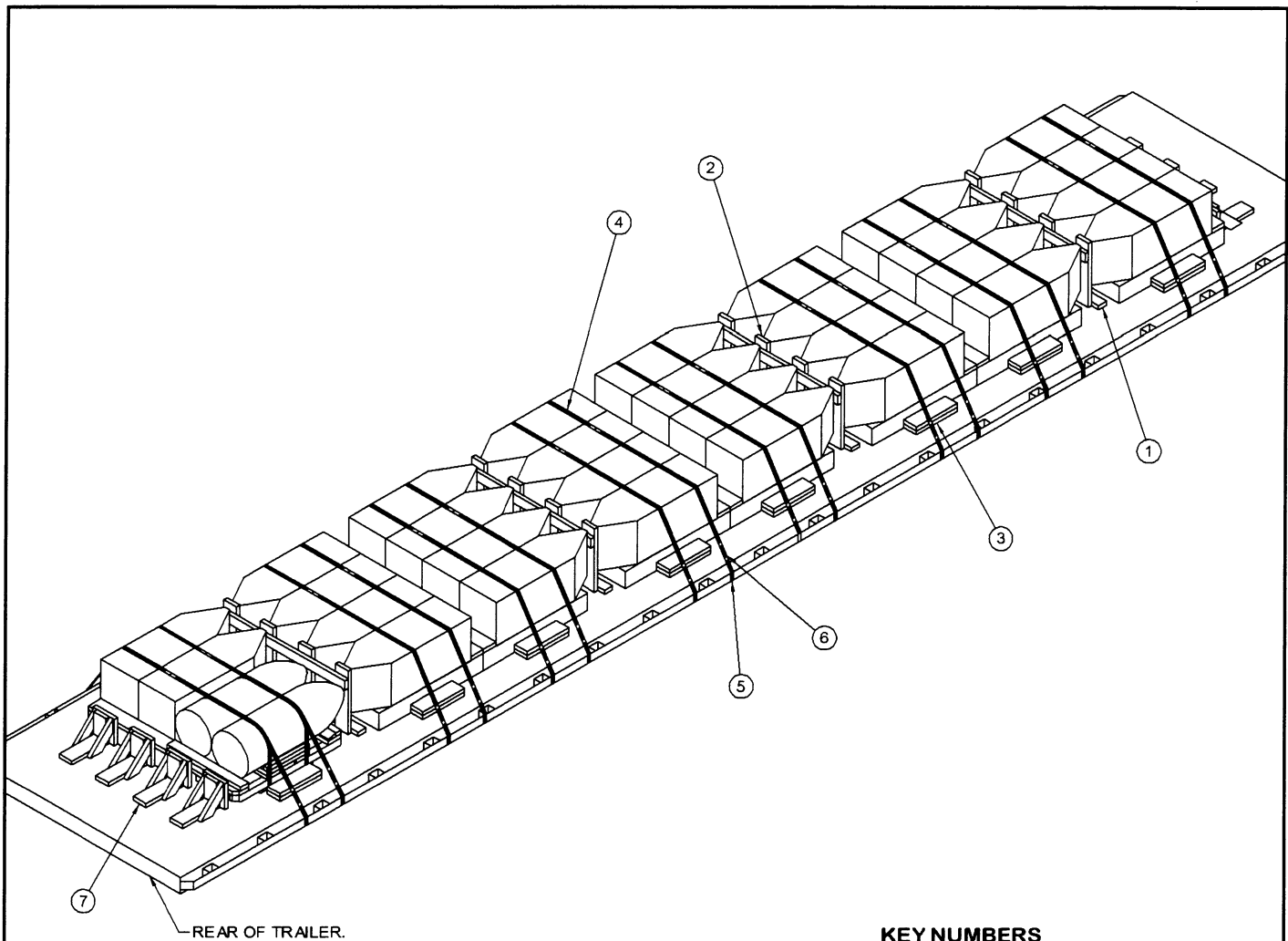
RETAINER PIECE. CLEAT.
 DECK BOARD.

DETAIL B
 SOME PALLETS MAY HAVE THE
 CLEATS FLUSH WITH THE DECK
 BOARD AND A 2" X 2" X 21-1/4"
 RETAINER PIECE NAILED TO THE
 CLEAT AS SHOWN ABOVE.



PALLET UNIT
 MC-1 CHEMICAL BOMB
 GROSS WEIGHT - - 1,500 LBS (APPROX)

PALLET UNIT DETAILS



ISOMETRIC VIEW

KEY NUMBERS

- ① SEPARATOR GATE RETAINER PIECE, 2" X 4" X 12" (8 REQD). POSITION SO AS TO EXTEND OUTWARD FROM A POINT APPROXIMATELY 18" FROM THE CENTER OF THE TRAILER AND LOCATE LONGITUDINALLY SO AS TO PROVIDE A BLOCK FOR SECUREMENT OF THE SEPARATOR GATE. NAIL TO THE TRAILER FLOOR W/2-10d NAILS. SEE GENERAL NOTE "M" ON PAGE 2. SEE SPECIAL NOTE 2 ON PAGE 5.
- ② SEPARATOR GATE (4 REQD). SEE THE "SEPARATOR GATE A" DETAIL ON PAGE 16. NAIL TO PIECES MARKED ① W/2-10d NAILS AT EACH JOINT.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (16 REQD). POSITION SO AS TO CENTER ON THE PALLET SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ HOLD-DOWN STRAP, 1-1/4" X .031" OR .035" X 19'-0" LONG STEEL STRAPPING (16 REQD). POSITION SO AS TO EXTEND OVER THE BOMBS AT THE APPROXIMATE LOCATION OF THE UNIT STRAPS. INSTALL FROM TWO 9'-6" LONG PIECES. SEE GENERAL NOTE "N" ON PAGE 2.
- ⑤ PAD, 1-1/4" X .031" OR .035" X 18" LONG STEEL STRAPPING (32 REQD). POSITION UNDER A STAKE POCKET OR THE RUB RAIL AND SEAL TO THE HOLD-DOWN STRAP, PIECE MARKED ④, WITH ONE SEAL. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 15.
- ⑥ SEAL FOR 1-1/4" STRAPPING (96 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 15.
- ⑦ END BRACE (8 REQD). SEE THE DETAIL ON PAGE 16. POSITION SO AS TO ALIGN WITH THE BOMBS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS.

SPECIAL NOTES:

1. A 16-UNIT LOAD OF HIGH EXPLOSIVE BOMBS HAVING A FLAT NOSE PLUG AND PALLETIZED ON A 45-1/2" LONG PALLET IS SHOWN ON A 42'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. TRAILERS OF OTHER SIZES MAY BE USED. THE NAILABLE LENGTH OF THE TRAILER FLOOR MUST BE AT LEAST 39'-3" LONG FOR SHIPMENT OF A 16-UNIT LOAD.
2. LOADING OF THE TRAILER MAY BE FROM FRONT TO REAR, FROM REAR TO FRONT, OR MAY BEGIN AT THE CENTER AND LOAD IN BOTH DIRECTIONS. THE DIRECTION OF LOADING WILL DETERMINE ON WHICH SIDE OF THE SEPARATOR GATE, PIECE MARKED ②, THE SEPARATOR GATE RETAINER PIECE, PIECE MARKED ①, WILL BE PLACED. THE LOCATION SHOWN IS APPLICABLE WHEN LOADING PROGRESSES FROM FRONT TO REAR. ADDITIONALLY, THE SEPARATOR GATES MAY BE POSITIONED WITH THE HORIZONTAL PIECE ON THE FRONT SIDE IN LIEU OF ON THE REAR SIDE AS SHOWN.

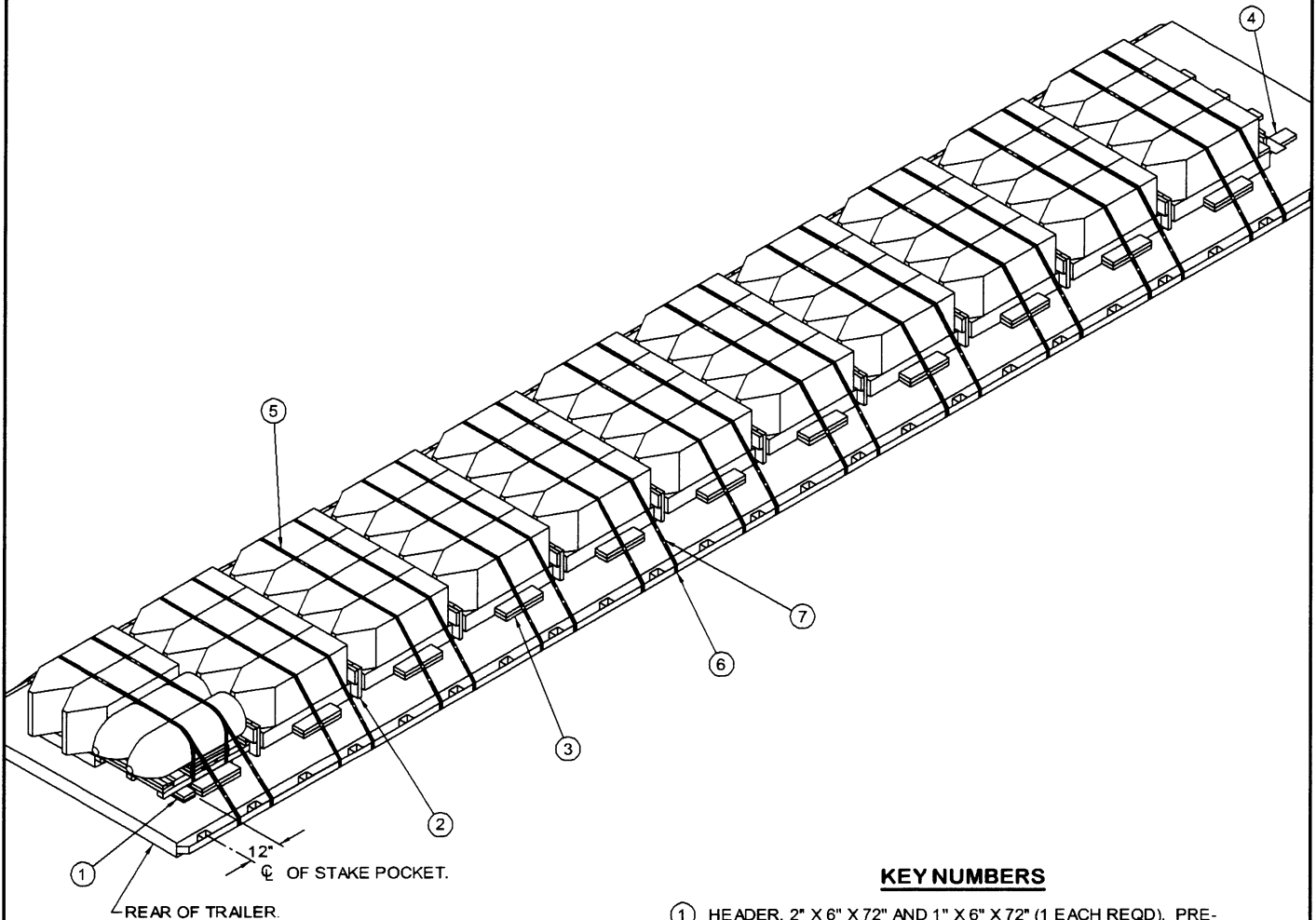
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	46	31
2" X 6"	97	97
2" X 10"	7	12
NAILS	NO. REQD	POUNDS
10d (3")	384	6
16d (3-1/2")	24	1/2
STEEL STRAPPING, 1-1/4" ---- 352' REQD -----		51 LBS
SEAL FOR 1-1/4" STRAPPING -- 96 REQD -----		5 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -----	16 -----	25,200 LBS
DUNNAGE -----		343 LBS
TOTAL WEIGHT -----		25,543 LBS (APPROX)

**16-UNIT LOAD OF HE BOMBS (WITH FLAT NOSE PLUGS)
ON 45-1/2" LONG PALLETS ON A 42'-0" LONG BY 8'-0" WIDE FLATBED TRAILER**



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 72" AND 1" X 6" X 72" (1 EACH REQD). PRE-POSITION WITH THE LOAD SIDE 12" FROM THE CENTER OF THE FIRST STAKE POCKET AT THE REAR OF THE TRAILER. POSITION THE 2" X 6" PIECE ON TOP OF THE 1" X 6" PIECE AND NAIL THRU BOTH PIECES AND INTO THE TRAILER FLOOR W/9-16d NAILS. SEE GENERAL NOTE "M" ON PAGE 2.
- ② SEPARATOR GATE (10 REQD). SEE THE "SEPARATOR GATE B" DETAIL ON PAGE 16. POSITION ON THE BASE END STOP PIECES ON THE BOMB PALLETS AND WITH THE BEARING PIECE AGAINST THE BASE OF THE BOMBS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (22 REQD). POSITION SO AS TO CENTER ON THE PALLET SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ END BRACE (4 REQD). SEE THE DETAIL ON PAGE 16. POSITION SO AS TO ALIGN WITH THE BOMBS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS.
- ⑤ HOLD-DOWN STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (22 REQD). POSITION SO AS TO EXTEND OVER THE BOMBS AT THE APPROXIMATE LOCATION OF THE UNIT STRAPS. INSTALL FROM TWO 10'-0" LONG PIECES. SEE GENERAL NOTE "N" ON PAGE 2. SEE SPECIAL NOTE 3 ON PAGE 7.
- ⑥ PAD, 1-1/4" X .035" OR .031" X 18" LONG STEEL STRAPPING (44 REQD). POSITION UNDER A STAKE POCKET OR THE RUB RAIL AND SEAL TO THE HOLD-DOWN STRAP, PIECE MARKED ⑤, WITH ONE SEAL. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 15.
- ⑦ SEAL FOR 1-1/4" STRAPPING (132 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑥. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 15.

**22-UNIT LOAD OF HE BOMBS (WITH FLAT NOSE PLUGS)
ON 45-1/2" LONG PALLETS ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER**

SPECIAL NOTES:

1. A 22-UNIT LOAD OF HIGH EXPLOSIVE BOMBS HAVING A FLAT NOSE PLUG AND PALLETIZED ON A 45-1/2" LONG PALLET IS SHOWN ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. SHORTER AND NARROWER TRAILERS CAN BE USED, HOWEVER, SHORTER TRAILERS CANNOT BE USED FOR SHIPMENT OF A 22-UNIT LOAD.
2. THE DEPICTED PROCEDURES CAN BE UTILIZED FOR THE SHIPMENT OF A 20-UNIT LOAD ON A 45'-0" LONG TRAILER, OR AN 18-UNIT LOAD ON A 40'-0" LONG TRAILER.
3. CHAINS AND LOAD BINDERS CAN BE USED FOR LOAD SECUREMENT IN LIEU OF USING THE DEPICTED STEEL STRAPPING. REFER TO PIECES MARKED (5) THRU (7) ON PAGE 8 FOR GUIDANCE IN THE INSTALLATION OF CHAIN BOARDS, CHAIN, AND LOAD BINDERS. THE 12" DIMENSION SHOWN ON THE ISOMETRIC VIEW FOR THE LOCATION OF THE HEADER, PIECE MARKED (1), WILL LOCATE THE PALLET UNITS PROPERLY SO THAT THE CHAIN FOR EACH LOAD UNIT CAN BE ATTACHED TO THE STAKE POCKET WHICH IS LOCATED BETWEEN THE HOLD-DOWN STRAPS FOR THE LOAD UNIT. THE 12" DIMENSION IS APPLICABLE FOR THE 48'-0" LONG TRAILER SHOWN AND FOR A 40'-0" LONG TRAILER, BASED ON THE FIRST STAKE POCKET BEING 12" FROM THE END OF THE TRAILER. NOTE THAT FOR A 20-UNIT LOAD ON A 45'-0" LONG TRAILER, THE HEADER, PIECE MARKED (1), WILL BE LOCATED WITH THE LOAD SIDE 36" FORWARD FROM THE CENTER OF THE FIRST STAKE POCKET AT THE REAR OF THE TRAILER, BASED ON THE FIRST POCKET BEING 6" FROM THE END OF THE TRAILER.

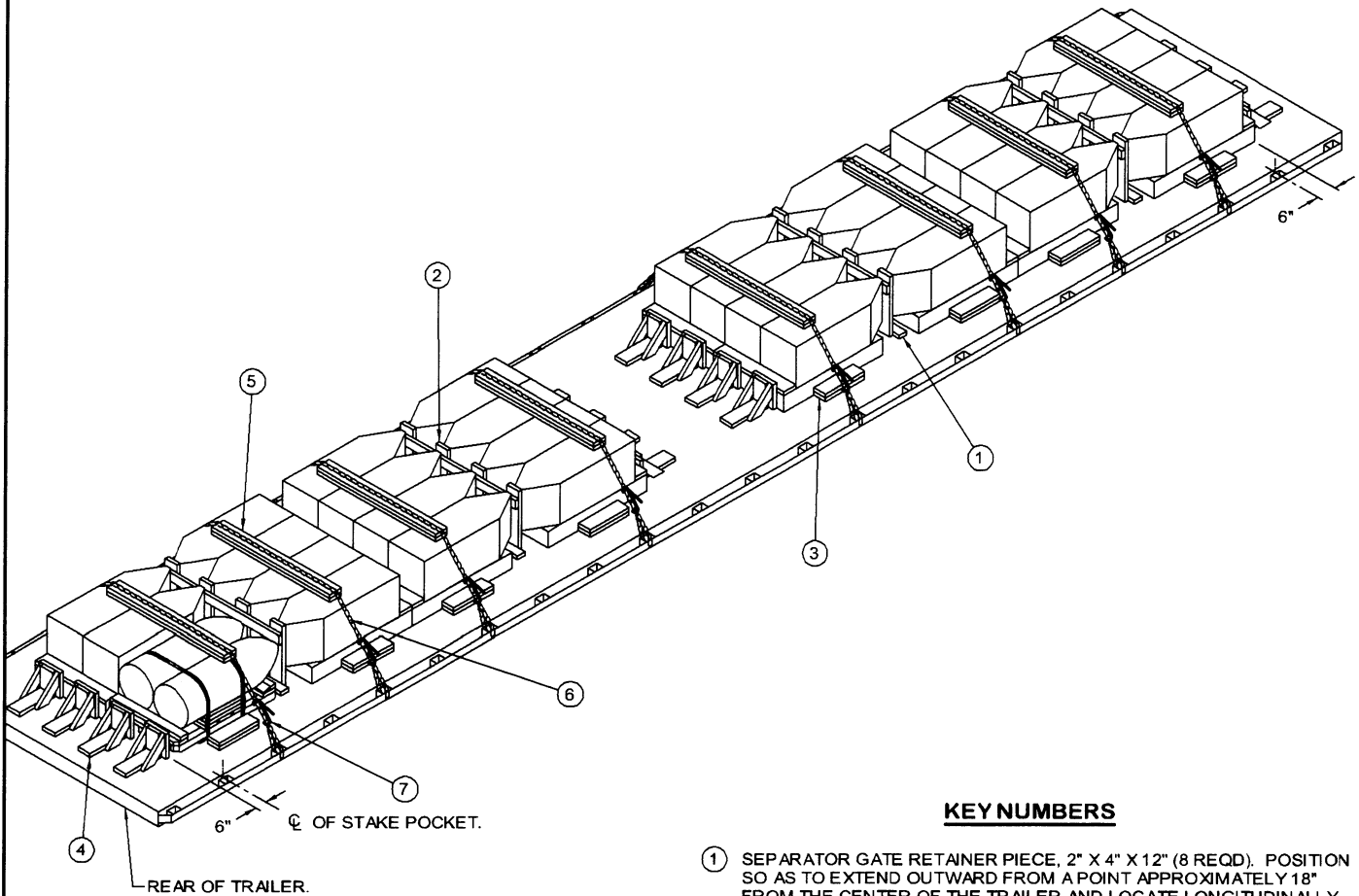
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 4"	43	29
2" X 6"	141	141
2" X 10"	4	7
NAILS	NO. REQD	POUNDS
10d (3")	360	5-3/4
16d (3-1/2")	21	1/2
STEEL STRAPPING, 1-1/4" ---- 506' REQD -----		73 LBS
SEAL FOR 1-1/4" STRAPPING - 132 REQD -----		6 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -----	22 -----	34,650 LBS
DUNNAGE -----	-----	446 LBS
TOTAL WEIGHT -----		35,096 LBS (APPROX)

**22-UNIT LOAD OF HE BOMBS (WITH FLAT NOSE PLUGS)
ON 45-1/2" LONG PALLETS ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER**



ISOMETRIC VIEW

KEY NUMBERS

- ① SEPARATOR GATE RETAINER PIECE, 2" X 4" X 12" (8 REQD). POSITION SO AS TO EXTEND OUTWARD FROM A POINT APPROXIMATELY 18" FROM THE CENTER OF THE TRAILER AND LOCATE LONGITUDINALLY AS SHOWN (TOWARD THE ALREADY-LOADED PALLETS) SO AS TO PROVIDE A BLOCK FOR SECUREMENT OF THE SEPARATOR GATE. NAIL TO THE TRAILER FLOOR W/2-10d NAILS.
- ② SEPARATOR GATE (4 REQD). SEE THE "SEPARATOR GATE A" DETAIL ON PAGE 16. NAIL TO PIECES MARKED ① W/2-10d NAILS AT EACH JOINT.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (16 REQD). POSITION SO AS TO CENTER ON THE PALLET SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTE "M" ON PAGE 2.
- ④ END BRACE (16 REQD). SEE THE DETAIL ON PAGE 16. POSITION SO AS TO ALIGN WITH THE BOMBS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS.
- ⑤ CHAIN BOARD, 2" X 6" X 54" (DOUBLED) (8 REQD). LAMINATE W/7-10d NAILS.
- ⑥ CHAIN, BINDING, 5/16", GRADE 70 BY A LENGTH TO SUIT (8 REQD). POSITION AS SHOWN. ATTACH TO A TRAILER STAKE POCKET. DO NOT ATTACH TO A RUB RAIL. SEE THE "SPECIAL PROVISIONS FOR CHAIN TIE DOWN" ON PAGE 9.
- ⑦ LOAD BINDER, 5/16", OVER-CENTER TYPE (8 REQD, 1 PER CHAIN). WIRE TIE HANDLE TO PREVENT OPENING DURING TRANSPORT. FASTEN THE TENSIONED CHAIN, PIECE MARKED ⑥, TO THE CHAIN BOARD, PIECE MARKED ⑤, W/1-20d NAIL AT EACH END BY DRIVING EACH NAIL INTO THE CHAIN BOARD THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.

SPECIAL PROVISIONS FOR CHAIN TIE DOWN

LADING MAY BE SECURED TO THE FLATBED TRAILER BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED STRAPPING, PROVIDED THE FOLLOWING CONDITIONS ARE MET AND THE PROCEDURES CONTAINED ON PAGES 8 AND 9 ARE FOLLOWED.

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY WILL BE USED. ALL CHAINS AND LOAD BINDERS SHALL CONFORM TO THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
2. ALL CHAINS SHALL BE MARKED AS PRESCRIBED BY THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975. AT LEAST ONE LINK IN EVERY 36 LINKS SHALL CARRY THE MANUFACTURER'S PERMANENT AND DISTINCTIVE MARK IDENTIFYING THE GRADE OF CHAIN. CHAINS NOT MARKED IN THIS MANNER SHALL NOT BE USED. IN ADDITION TO THE GRADE MARKING, THE CHAIN MAY ALSO CARRY LETTER MARKINGS OR SYMBOLS IDENTIFYING THE CHAIN MANUFACTURER. THE PRESENCE OF THE MANUFACTURER'S IDENTIFICATION MARKING IS NOT MANDATORY.
3. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR, OR ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION. CAUTION: EXTREME CARE MUST BE EXERCISED WHEN TENSIONING CHAINS TO PREVENT DAMAGE OR PERMANENT DEFORMATION TO THE LADING.
4. CHAIN SIZES AND GRADES APPROVED FOR USE WITH FLATBED TRAILER LOADS ARE AS FOLLOWS:
 - A. 3/8", GRADE 43 HIGH TEST CHAIN
 - B. 5/16", GRADE 70 BINDING CHAIN
 - C. 3/8", GRADE 70 BINDING CHAIN
 - D. 5/16", GRADE 80 ALLOY STEEL CHAIN
 - E. 3/8", GRADE 80 ALLOY STEEL CHAIN
5. THE GRABHOOKS ON THE ENDS OF THE CHAIN MAY BE OF THE FOLLOWING TYPES WITH GRADE MARKINGS AS INDICATED.
 - A. CLEVIS GRABHOOKS, 3/8" SIZE, DO NOT REQUIRE GRADE MARKING. ALLOY GRABHOOKS, 5/16" SIZE, SHALL CARRY THE MANUFACTURER'S GRADE MARK OF 7, 70, OR 700. THE HOOKS SHALL BE USED ON THE APPROPRIATE SIZE CHAIN.
 - B. CLOSED EYE GRABHOOKS, 3/8" AND 5/16" SIZE, MAY BE USED ON THE APPROPRIATE SIZE CHAIN IF THEY ARE A PART OF A CHAIN ASSEMBLY WHICH WAS PROVIDED BY A CHAIN MANUFACTURER, AND THE CHAIN ASSEMBLY CARRIES THE CORRECT GRADE IDENTIFICATION MARKING AS PREVIOUSLY STATED. CLOSED EYE GRABHOOKS THAT FORM A PART OF THE CHAIN ASSEMBLY ARE EXEMPT FROM GRADE MARKINGS.
6. CONNECTING LINKS USED FOR CHAIN REPAIR MUST BE CORRECTLY MARKED AND BE EQUAL TO OR GREATER IN STRENGTH THAN THE CHAIN THEY ARE REPAIRING. CHAINS WITH UNMARKED CONNECTING LINKS SHALL NOT BE USED.
7. CHAIN AND FITTING OF A HIGHER GRADE MAY BE SUBSTITUTED FOR THE GRADES SPECIFIED IN NOTE 4 ABOVE.
8. LOAD BINDERS SHALL BE 5/16" TO 3/8" SIZE AND HAVE A MINIMUM BREAKING STRENGTH OF 16,200 POUNDS (WORKING LOAD LIMIT OF 5,400 POUNDS). OVERCENTER TYPE LOAD BINDERS SHALL BE SAFETY WIRED TO PREVENT ACCIDENTAL OPENING DURING TRANSPORT. LOAD BINDER SIZE SHALL BE COMPATIBLE WITH THE SIZE OF THE CHAIN BEING USED.

SPECIAL NOTES:

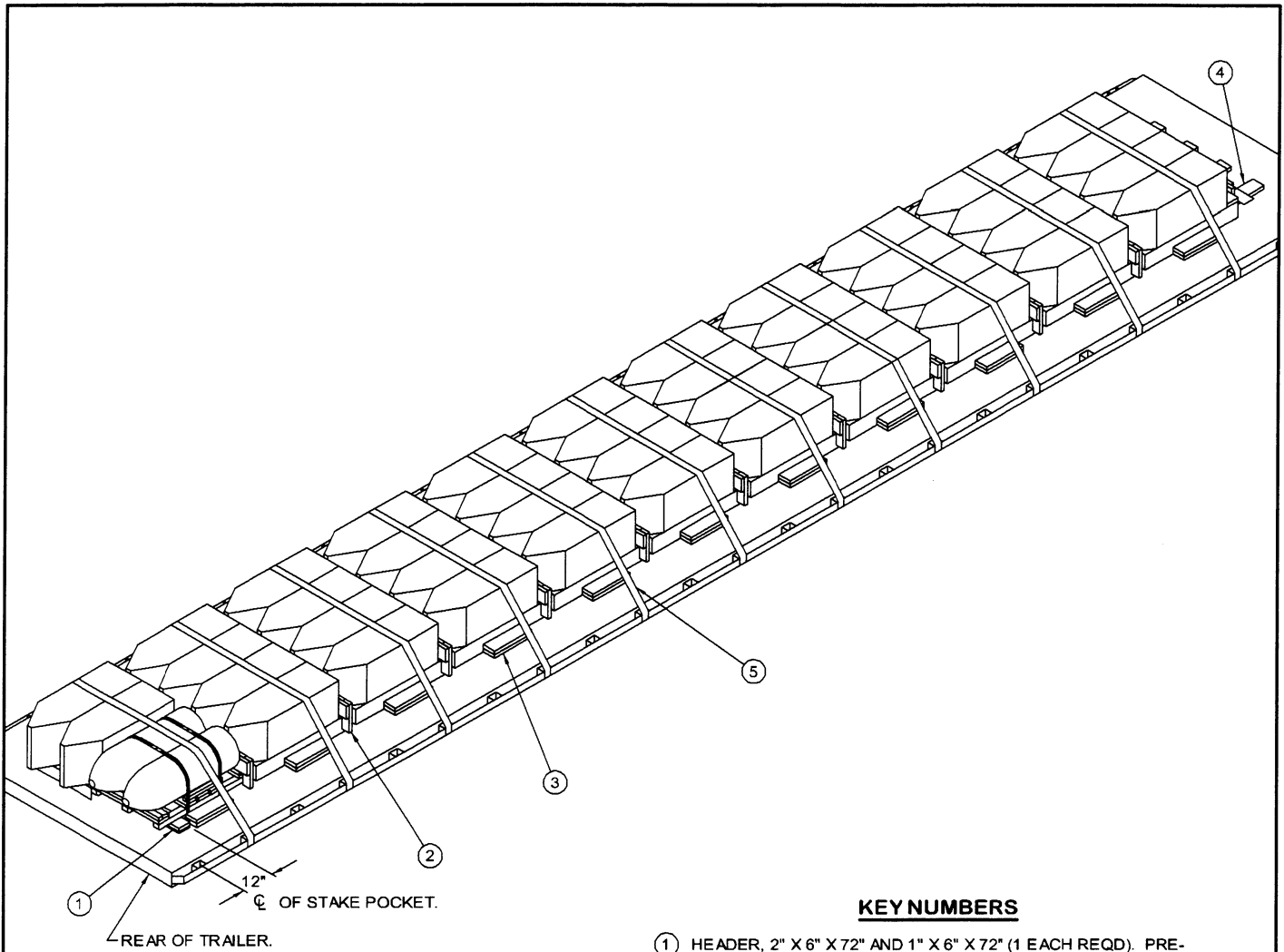
1. A 16-UNIT LOAD OF HIGH EXPLOSIVE BOMBS HAVING A FLAT NOSE PLUG AND PALLETIZED ON A 45-1/2" LONG PALLET IS SHOWN ON A 45'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. LONGER AND WIDER TRAILERS CAN BE USED, HOWEVER, SHORTER TRAILERS CANNOT BE USED FOR SHIPMENT OF A 16-UNIT LOAD.
2. THE 6" DIMENSION FOR THE LOCATION OF THE END BRACES AT THE ENDS OF THE LOAD ARE TOWARD THE END OF THE TRAILER AS MEASURED FROM THE CENTER OF THE SECOND STAKE POCKET FROM THE END. IF A 48'-0" LONG TRAILER IS TO BE LOADED, THE END BRACES WILL ALSO BE LOCATED 6" TOWARD THE END OF THE TRAILER FROM THE SECOND STAKE POCKET.
3. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSIT AND TIGHTEN IF NECESSARY.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	66	44
2" X 6"	186	186
2" X 10"	141	24
NAILS	NO. REQD	POUNDS
10d (3")	552	8-1/2
16d (3-1/2")	48	1
20d (4")	16	3/4
CHAIN, BINDING, 5/16" --- 110' REQD -----		132 LBS
BINDER, LOAD ----- 8 REQD -----		48 LBS

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT -----	16 -----	25,200 LBS
DUNNAGE -----		699 LBS
<hr/>		
TOTAL WEIGHT -----		25,899 LBS (APPROX)

**16-UNIT LOAD OF HE BOMBS (WITH FLAT NOSE PLUGS) ON 45-1/2" LONG
PALLET ON A 45'-0" LONG BY 8'-0" WIDE FLATBED TRAILER (CHAIN TIEDOWN METHOD)**



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 72" AND 1" X 6" X 72" (1 EACH REQD). PRE-POSITION WITH THE LOAD SIDE 12" FROM THE CENTER OF THE FIRST STAKE POCKET AT THE REAR OF THE TRAILER. POSITION THE 2" X 6" PIECE ON TOP OF THE 1" X 6" PIECE AND NAIL THRU BOTH PIECES AND INTO THE TRAILER FLOOR W/9-16d NAILS. SEE GENERAL NOTE "M" ON PAGE 2.
- ② SEPARATOR GATE (10 REQD). SEE THE "SEPARATOR GATE B" DETAIL ON PAGE 16. POSITION ON THE BASE END STOP PIECES ON THE BOMB PALLETS AND WITH THE BEARING PIECE AGAINST THE BASE OF THE BOMBS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (22 REQD). POSITION SO AS TO CENTER ON THE PALLET SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ END BRACE (4 REQD). SEE THE DETAIL ON PAGE 16. POSITION SO AS TO ALIGN WITH THE BOMBS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS.
- ⑤ WEB STRAP ASSEMBLY (11 REQD). POSITION TO EXTEND FROM A WINCH ON ONE SIDE OF THE TRAILER, OVER THE CONTAINERS, TO AN ATTACHMENT POINT ON THE OPPOSITE SIDE. SEE THE "SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN" ON PAGE 11.

22-UNIT LOAD OF HE BOMBS (WITH FLAT NOSE PLUGS) ON 45-1/2" LONG PALLETS ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER (WEB STRAP TIEDOWN METHOD)

SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN

LADING MAY BE SECURED TO A FLATBED TRAILER BY WEB STRAP ASSEMBLIES IN LIEU OF STEEL STRAPPING OR CHAINS AND LOAD BINDERS, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. ONLY WEB STRAPS OF GOOD QUALITY WILL BE USED. ALL WEB STRAPS AND ASSOCIATED HARDWARE SHALL CONFORM TO THE WEB SLING & TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1991.
2. ALL WEB STRAP TIEDOWN ASSEMBLIES SHALL BE PERMANENTLY LABELED WITHIN 18" OF ONE END TO SHOW:
 - A. NAME OR TRADEMARK OF MANUFACTURER
 - B. WORKING LOAD LIMIT (WLL)
 - C. DATE OF MANUFACTURE (MONTH AND YEAR)
3. WEB STRAP ASSEMBLY MINIMUM BREAKING STRENGTH WILL BE AT LEAST THREE TIMES THE WLL MARKED ON THE STRAP.
4. THE TOTAL MINIMUM BREAKING STRENGTH (MBS) OF THE STRAPS USED TO RESTRAIN AMMUNITION ITEMS WILL BE AT LEAST 1-1/2 TIMES THE TOTAL WEIGHT OF THE ITEMS. WRITTEN PROOF OF THE MBS OF THE STRAPS SHALL BE PROVIDED BY THE CARRIER TO THE SHIPPING ACTIVITY IF REQUESTED.
5. CARRIERS MUST COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS APPLICABLE TO CARGO RESTRAINT USING WEB STRAPS.
6. WHEN USING STRAPS AND WINCHES FOR CARGO RESTRAINT, THE STRAPS WILL BE TENSIONED UNTIL TIGHT WITHOUT CAUSING DAMAGE TO THE CARGO. ONLY WINCH BARS WILL BE USED FOR OPERATING THE STRAP WINCHES.
7. BEFORE AND DURING INSTALLATION, THE WEB STRAP ASSEMBLIES SHALL BE INSPECTED FOR DEFECTS. STRAPS HAVING ANY OF THE FOLLOWING DEFECTS WILL NOT BE USED FOR THE RESTRAINT OF ANY AMMUNITION LOAD, WITH THE EXCEPTION OF ONE WITH FRAYED ENDS. A STRAP HAVING FRAYED ENDS CAN BE USED IF THE FRAYED END IS TRIMMED AND MELTED WITH HEAT OR FLAME UNTIL ALL STRANDS ARE SEIZED.
 - A. STRAP ASSEMBLY HARDWARE: SHALL BE INSPECTED FOR BENT HOOKS, GOUGES, CORROSION, SIGNS OF REPAIR, BENT RATCHETS OR WINCHES, WEAR, OR ANY OTHER NOTICEABLE DEFECTS.
 - B. STRAP WEBBING: SHALL BE INSPECTED FOR KNOTS, EXCESSIVE ABRASIVE WEAR, TEARS, PUNCTURES, CUTS, ACID OR CAUSTIC BURNS, BROKEN STITCHES, FRAYED ENDS, OIL OR GREASE SPOTS EXCEEDING 6 SQUARE INCHES, BLEACHING OF COLOR, INCREASED STIFFNESS, SPLICES, VISIBLE WEAR INDICATOR THREADS, OR ANY OTHER NOTICEABLE DEFECTS.
8. RATCHET HANDLES MUST BE IN THE LOCKED POSITION AND/OR WINCH LOCKING DEVICES MUST BE FULLY SEATED IN THE TEETH OF THE WINCH.
9. IF THE WINCHES BEING USED ARE THE REMOVABLE TYPE HAVING BOLTS FOR ATTACHMENT TO THE TRAILER, CARE MUST BE EXERCISED WHEN ATTACHING THE WINCHES TO THE TRAILER. IF EXCESSIVE FORCE IS EXERTED ON THE BOLT DURING TENSIONING, DEFORMATION OF THE WINCH BRACKET MAY OCCUR, AND SUBSEQUENTLY CAUSE FAILURE OF THE WINCH BRACKET DURING TRANSPORT. WINCHES MUST BE FASTENED TO THE TRAILER WITH A MINIMUM OF TWO BOLTS.

(CONTINUED AT RIGHT)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 4"	43	29
2" X 6"	141	141
2" X 10"	4	7
NAILS	NO. REQD	POUNDS
10d (3")	360	5-3/4
16d (3-1/2")	21	1/2
WEB STRAP ASSEMBLIES -----		11 REQD

SPECIAL NOTES:

1. A 22-UNIT LOAD OF HIGH EXPLOSIVE BOMBS HAVING A FLAT NOSE PLUG AND PALLETIZED ON A 45'-1/2" LONG PALLET IS SHOWN ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. SHORTER AND NARROWER TRAILERS CAN BE USED, HOWEVER, SHORTER TRAILERS CANNOT BE USED FOR SHIPMENT OF A 22-UNIT LOAD.
2. THE DEPICTED PROCEDURES CAN BE UTILIZED FOR THE SHIPMENT OF A 20-UNIT LOAD ON A 45'-0" LONG TRAILER, OR AN 18-UNIT LOAD ON A 40'-0" LONG TRAILER.

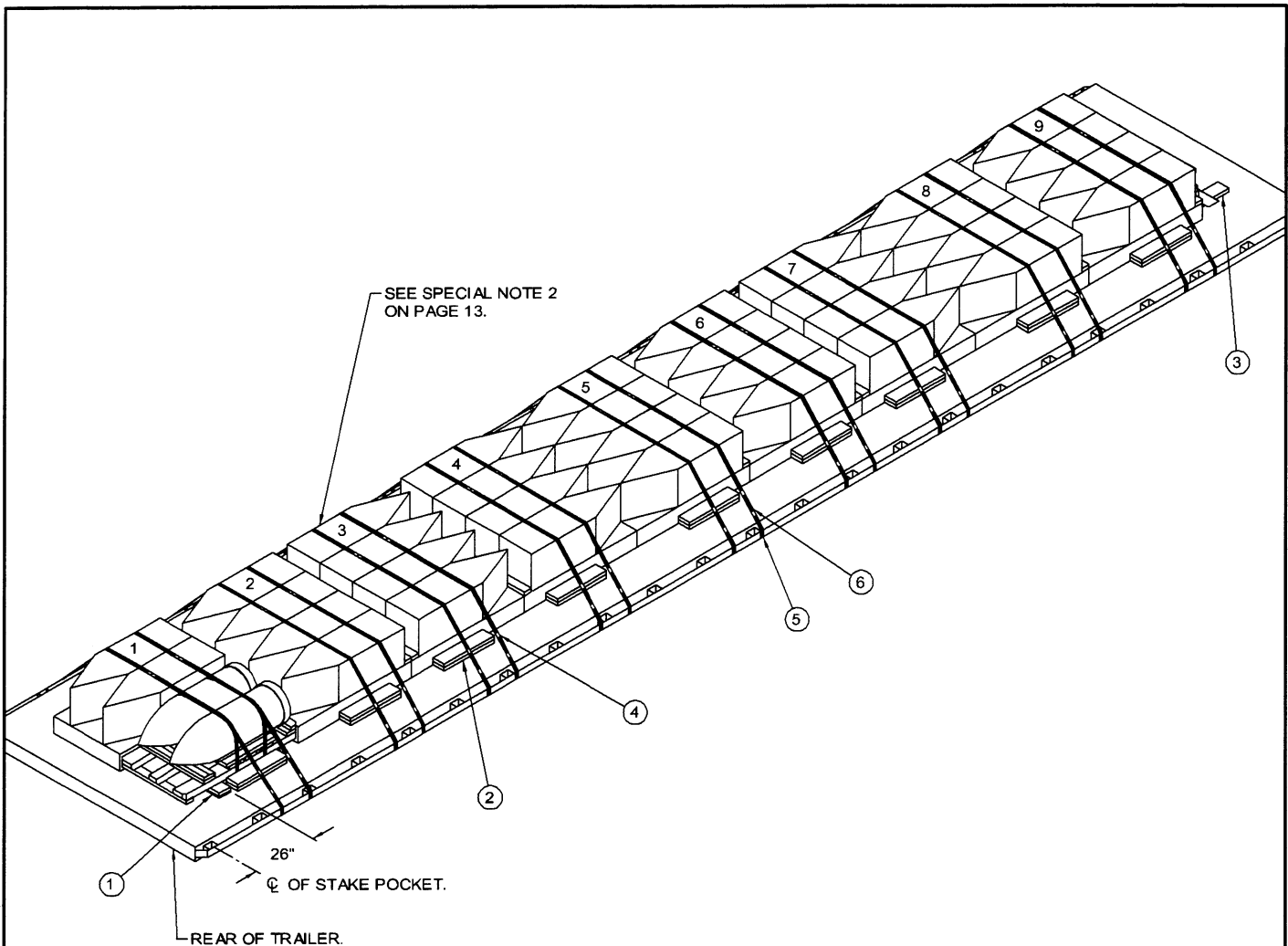
(SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN CONTINUED)

10. DRIVERS MUST BE INSTRUCTED TO PERIODICALLY CHECK THE TIGHTNESS OF THE WEB STRAP ASSEMBLIES AND RE-TIGHTEN, IF NECESSARY.
11. IF PROVIDED ON OR WITH THE WEB STRAP ASSEMBLIES, SCUFF SLEEVES/WEB PROTECTORS WILL BE USED WHEREVER THE STRAP PASSES OVER A SHARP CORNER OR IRREGULAR SURFACE. IF NOT PROVIDED, ANTI-CHAFING MATERIAL OF A SUITABLE THICKNESS WILL BE USED TO INSURE THAT THE STRAP WEBBING IS NOT DAMAGED DURING TRANSPORT OF THE LOAD.
12. THE HARDWARE FITTING OF THE TIEDOWN ASSEMBLIES MUST BE ATTACHED TO THE TRAILER IN SUCH A MANNER THAT THEY WILL REMAIN IN PLACE IF SLACK DEVELOPS IN THE STRAP DURING TRANSPORT.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -----	22	34,650 LBS
DUNNAGE -----		367 LBS
TOTAL WEIGHT -----		35,017 LBS (APPROX)

**22-UNIT LOAD OF HE BOMBS (WITH FLAT NOSE PLUGS)
ON 45'-1/2" LONG PALLETS ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER**



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 72" AND 1" X 6" X 72" (1 EACH REQD). PRE-POSITION WITH THE LOAD SIDE 26" FROM THE CENTER OF THE FIRST STAKE POCKET AT THE REAR OF THE TRAILER. POSITION THE 2" X 6" PIECE ON TOP OF THE 1" X 6" PIECE AND NAIL THRU BOTH PIECES AND INTO THE TRAILER FLOOR W/9-16d NAILS. SEE GENERAL NOTE "M" ON PAGE 2. SEE SPECIAL NOTE 3 ON PAGE 13.
- ② SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (18 REQD). POSITION SO AS TO CENTER ON THE PALLET SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ END BRACE (4 REQD). SEE THE DETAIL ON PAGE 16. POSITION SO AS TO ALIGN WITH THE BOMBS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS.
- ④ HOLD-DOWN STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (18 REQD). POSITION SO AS TO EXTEND OVER THE BOMBS AT THE APPROXIMATE LOCATION OF THE UNIT STRAPS. INSTALL FROM TWO 10'-0" LONG PIECES. SEE GENERAL NOTE "N" ON PAGE 2. SEE SPECIAL NOTE 4 ON PAGE 13.
- ⑤ PAD, 1-1/4" X .035" OR .031" X 18" LONG STEEL STRAPPING (36 REQD). POSITION UNDER A STAKE POCKET OR A RUB RAIL AND SEAL TO THE HOLD-DOWN STRAP, PIECE MARKED ④, WITH ONE SEAL. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 15.
- ⑥ SEAL FOR 1-1/4" STEEL STRAPPING (108 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 15.

**18-UNIT LOAD OF MC-1 BOMBS
ON 55" LONG PALLETES ON A 45'-0" LONG BY 8'-6" WIDE FLATBED TRAILER**

SPECIAL NOTES:

1. AN 18-UNIT LOAD OF MC-1 CHEMICAL BOMBS PALLETIZED ON A 55" LONG PALLET IS SHOWN ON A 45'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. LONGER AND NARROWER TRAILERS CAN BE USED, HOWEVER, SHORTER TRAILERS CANNOT BE USED FOR SHIPMENT OF AN 18-UNIT LOAD.
2. ALL PALLET UNITS, EXCEPT THOSE IN LOAD UNITS 3, 4, AND 7 AS COUNTED FROM THE REAR OF THE TRAILER, ARE POSITIONED WITH THE NOSE END OF THE BOMBS FACING THE REAR OF THE TRAILER. IF DESIRED, WHEN USING STEEL STRAPPING FOR HOLD DOWN, ALL THE PALLET UNITS MAY BE POSITIONED WITH THE NOSE END OF THE BOMBS FACING THE REAR OF THE TRAILER. LOAD UNITS 3, 4, AND 7 ARE ROTATED SO AS TO BEST LOCATE THE CHAINS NEAR THE CENTER OF BALANCE OF THE UNITS WHEN CHAINS ARE USED FOR HOLD DOWN.
3. IF A TRAILER LONGER THAN 45'-0" IS FURNISHED FOR LOADING, OR IF LESS THAN NINE LOAD UNITS ARE BEING SHIPPED, END BRACES MAY ALSO BE USED AT THE REAR OF THE LOAD IN LIEU OF THE PRE-POSITIONED HEADER, PIECE MARKED ①.
4. CHAINS AND LOAD BINDERS CAN BE USED FOR LOAD SECUREMENT IN LIEU OF USING THE DEPICTED STEEL STRAPPING. REFER TO PIECES MARKED ⑤ THRU ⑦ ON PAGE 8 FOR GUIDANCE IN THE INSTALLATION OF CHAIN BOARDS, CHAIN, AND LOAD BINDERS. THE 26" DIMENSION SHOWN ON THE ISOMETRIC VIEW FOR THE LOCATION OF THE HEADER, PIECE MARKED ①, WILL LOCATE THE PALLET UNITS PROPERLY SO THAT THE CHAIN FOR EACH LOAD UNIT CAN BE ATTACHED TO THE STAKE POCKET WHICH WILL LOCATE THE CHAIN BETWEEN THE UNITIZING STRAPS FOR THE LOAD UNIT. THE 26" LOCATION DIMENSION IS ALSO APPLICABLE FOR OTHER LENGTH TRAILERS.

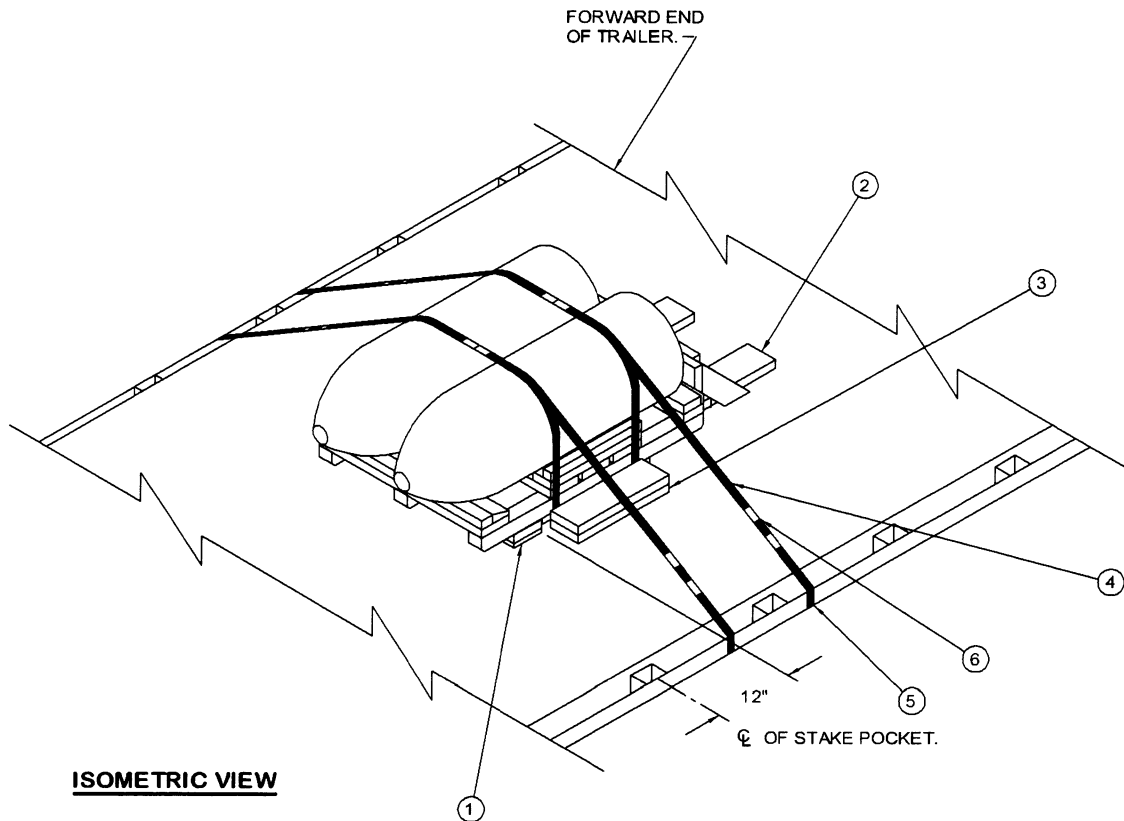
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 4"	10	7
2" X 6"	87	87
2" X 10"	4	7
NAILS	NO. REQD	POUNDS
10d (3")	248	4
16d (3-1/2")	21	1/2
STEEL STRAPPING, 1-1/4" -- 414' REQD -----		60 LBS
SEAL FOR 1-1/4" STRAPPING - 108 REQD -----		5 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	18	27,000 LBS
DUNNAGE		278 LBS
TOTAL WEIGHT		27,278 LBS (APPROX)

**18-UNIT LOAD OF MC-1 BOMBS
ON 55" LONG PALLETS ON A 45'-0" LONG BY 8'-6" WIDE FLATBED TRAILER**



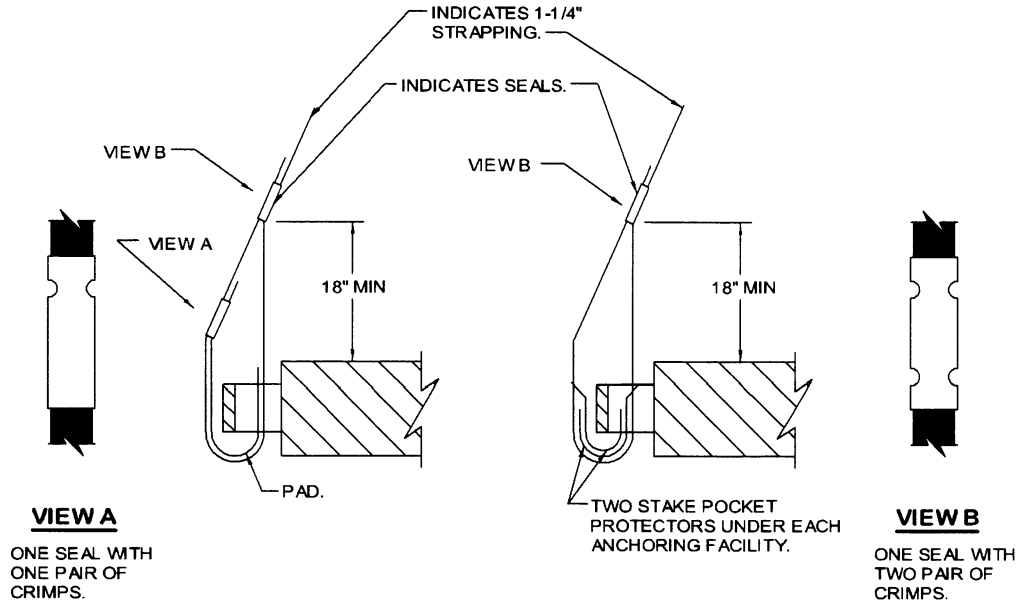
ISOMETRIC VIEW

SPECIAL NOTES:

1. A 1-UNIT LOAD OF HIGH EXPLOSIVE BOMBS HAVING A FLAT NOSE PLUG AND PALLETIZED ON A 45-1/2" LONG PALLET IS SHOWN ON AN 8'-0" WIDE FLATBED TRAILER. WIDER TRAILERS MAY BE USED.
2. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR LOADING OF THE MC-1 BOMBS.
3. A CHAIN AND LOAD BINDER CAN BE USED FOR LOAD SECUREMENT IN LIEU OF USING THE DEPICTED STEEL STRAPPING. THE CHAIN WILL BE ATTACHED TO THE STAKE POCKET LOCATED BETWEEN THE DEPICTED HOLD-DOWN STRAPS. A CHAIN BOARD, 2" X 6" X 20" (DOUBLED) AND LAMINATED W/3-10d NAILS, WILL BE PLACED ON THE BOMBS UNDER THE CHAIN. REFER TO PIECES MARKED ⑤ THRU ⑦ ON PAGE 8 FOR FURTHER GUIDANCE.
4. A WEB STRAP ASSEMBLY CAN ALSO BE USED FOR SECUREMENT IN LIEU OF THE DEPICTED STEEL STRAPPING. THE WEB STRAP WILL BE LOCATED BETWEEN THE DEPICTED HOLD-DOWN STRAPS. REFER TO PAGES 10 AND 11 FOR ADDITIONAL GUIDANCE.

KEY NUMBERS

- ① HEADER, 2" X 6" X 32" AND 1" X 6" X 32" (1 EACH REQD). PRE-POSITION WITH THE LOAD SIDE 12" FROM THE CENTER OF A STAKE POCKET. POSITION THE 2" X 6" PIECE ON TOP OF THE 1" X 6" PIECE AND NAIL THRU BOTH PIECES AND INTO THE TRAILER FLOOR W/3-16d NAILS. SEE GENERAL NOTE "M" ON PAGE 2.
- ② END BRACE (2 REQD). SEE THE DETAIL ON PAGE 16. POSITION SO AS TO ALIGN WITH THE BOMBS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (2 REQD). POSITION SO AS TO CENTER ON THE PALLET SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ HOLD-DOWN STRAP, 1-1/4" X .031" OR .035" X 18'-0" LONG STEEL STRAPPING (2 REQD). POSITION SO AS TO EXTEND OVER THE BOMBS AT THE APPROXIMATE LOCATION OF THE UNIT STRAPS. INSTALL FROM TWO 9'-0" LONG PIECES. SEE GENERAL NOTE "N" ON PAGE 2.
- ⑤ PAD, 1-1/4" X .031" OR .035" X 18" LONG STEEL STRAPPING (4 REQD). POSITION UNDER A STAKE POCKET OR RUB RAIL AND SEAL TO THE HOLD-DOWN STRAP, PIECE MARKED ④, WITH ONE SEAL. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 15.
- ⑥ SEAL FOR 1-1/4" STRAPPING (12 REQD. 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤.



VIEW A
ONE SEAL WITH ONE PAIR OF CRIMPS.

VIEW B
ONE SEAL WITH TWO PAIR OF CRIMPS.

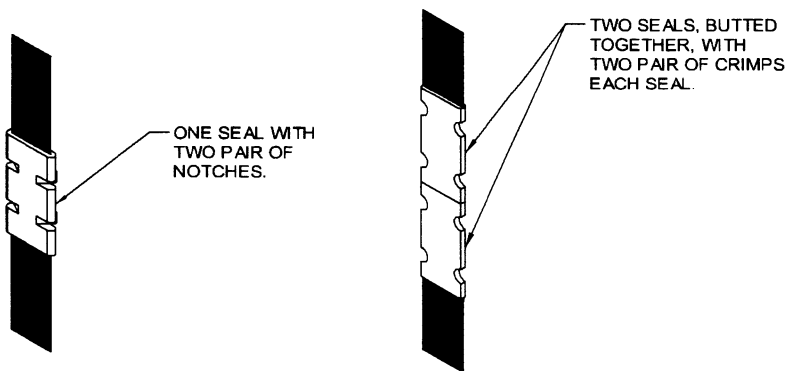
DETAIL A

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).

HOLD-DOWN STRAP ANCHORING DETAILS



STRAP JOINT A

METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.

STRAP JOINT B

METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.

END-OVER-END LAP JOINT DETAILS

PROVISIONS FOR THE USE OF FIREHOSE IN LIEU OF CHAIN BOARDS OR STRAPPING BOARDS

FIRE HOSE THAT IS NO LONGER SUITABLE FOR USE IN FIRE FIGHTING APPLICATIONS CAN BE SUBSTITUTED FOR THE DOUBLED 2" BY 6" WOODEN CHAIN BOARDS OR SINGLE 2" BY 6" STRAPPING BOARDS, AS SPECIFIED HEREIN, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. SUBSTITUTION AND APPLICATION GUIDANCE

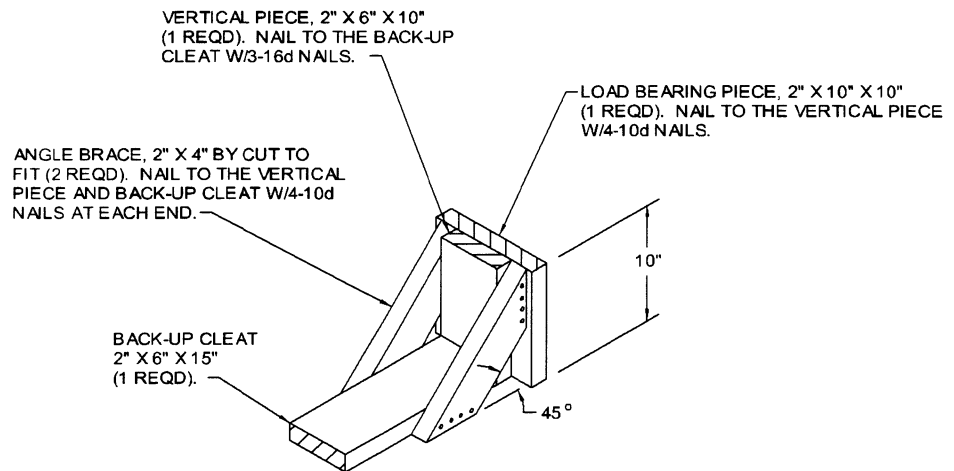
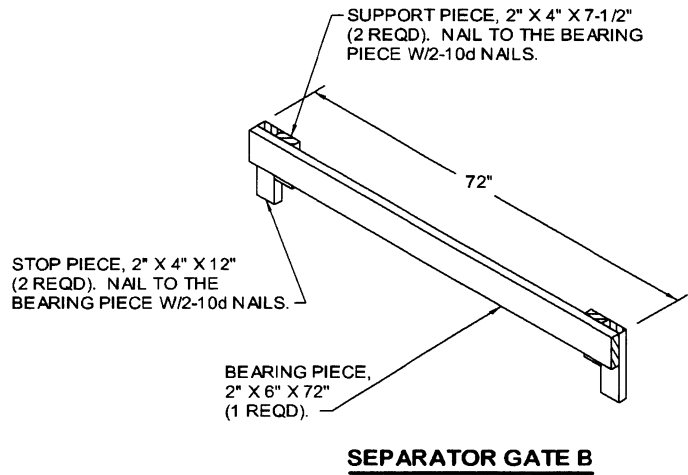
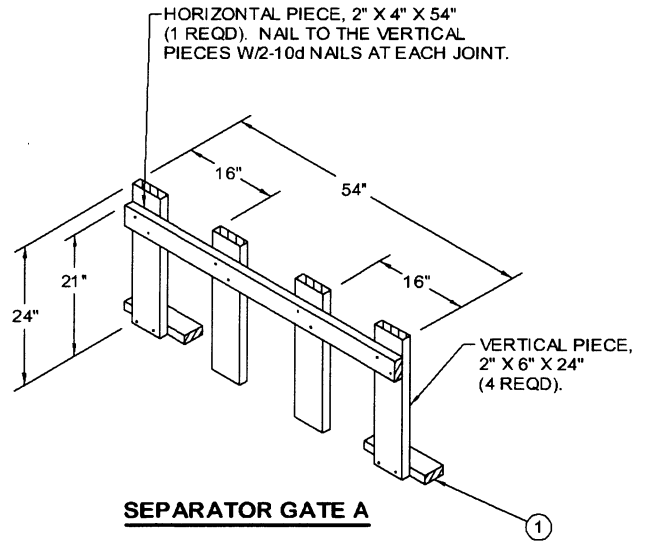
- A. FIRE HOSE MAY BE USED WHEREVER A CHAIN OR STRAPPING BOARD CONTACTS A RIGID SURFACE OF THE LOAD PROVIDED GOUGING, SCRATCHING, CRACKING, BENDING, CRUSHING, OR OTHER VISIBLE DAMAGE DOES NOT OCCUR TO THE LOAD.
- B. ONE OR MORE SEGMENTS OF FIRE HOSE MAY BE USED TO REPLACE EACH CHAIN OR STRAPPING BOARD PROVIDING LOAD PROTECTION DURING TENSIONING OF TIEDOWNS AND LOAD SHIPMENT; I.E., A CHAIN BOARD NEED NOT BE REPLACED BY A SINGLE SEGMENT OF HOSE, MULTIPLE SEGMENTS MAY BE USED INSTEAD, AS LONG AS THEY ARE SECURELY FASTENED TO THE TIEDOWN. REGARDLESS OF THE NUMBER OF SEGMENTS USED, THE HOSE LENGTH WILL BE SUCH THAT IT EXTENDS AT LEAST 6" BEYOND THE EDGE OF THE LOAD.
- C. FIRE HOSE CANNOT BE USED IN PLACE OF A PURCHASE BOARD ON A LOAD CONSISTING OF MORE THAN TWO PALLETS OR CONTAINERS ACROSS THE WIDTH OF THE TRAILER. THE FIRE HOSE CAN BE APPLIED TO THE OUTER STACKS, HOWEVER, A PURCHASE BOARD ASSEMBLY WILL STILL BE REQUIRED TO PROVIDE VERTICAL HOLD-DOWN ON THE CENTER STACK(S).

2. ACCEPTABLE FIRE HOSE

- A. FIRE HOSE TO BE USED WILL BE A RUBBER LINED SINGLE OR DOUBLE JACKETED TYPE; I.E., IT MUST HAVE A RUBBER LINING INSIDE A SINGLE OR DOUBLED FABRIC (COTTON, LINEN, ETC.) JACKET.
- B. THE COLLAPSED WIDTH OF THE HOSE MUST BE A MINIMUM OF 2-1/2".
- C. THE HOSE SEGMENTS USED MUST NOT CONTAIN DEFECTS THAT WILL ALLOW DIRECT CONTACT OF THE CHAIN OR LOAD BINDER WITH THE LOAD. THE HOSE THICKNESS MUST ALSO BE OF SUCH A THICKNESS THAT DENTING OR DAMAGE TO THE LOAD DOES NOT OCCUR DURING CHAIN OR STRAP TENSIONING.

4. SECUREMENT TO CHAINS OR STRAPS

- A. THE SEGMENTS OF HOSE USED UNDER EACH CHAIN OR STRAP WILL BE SECURED TO THE CHAIN OR STRAP WITH ONE FASTENER EVERY 12". WITH A MINIMUM OF TWO FASTENERS REQUIRED PER HOSE SEGMENT.
- B. FASTENERS CAN CONSIST OF PLASTIC ELECTRICAL TIES, NO. 14 GAGE WIRE, OR TAPE. REGARDLESS OF THE TYPE OF FASTENING USED, IT MUST PROVIDE A POSITIVE MEANS OF SECUREMENT OF THE HOSE TO THE CHAIN OR STRAP AND MUST NOT DAMAGE THE SURFACE OF THE CONTAINER, PALLET, OR ITEM IT CONTACTS.



DETAILS