

# LOADING AND BRACING (TL & LTL) ON FLATBED TRAILERS<sup>⊕</sup> OF GENERAL PURPOSE MK83 AND MODS 1,000-POUND BOMBS, PALLETIZED 3 BOMBS PER MK11 MOD 0 METAL PALLET

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

U.S. ARMY MATERIEL COMMAND DRAWING			
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MAY 1996			
CLASS	DIVISION	DRAWING	FILE
19	48	4266	11PB1005

DO NOT SCALE

## GENERAL NOTES

- 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 MK83 SERIES 1,000-POUND BOMBS, PACKED THREE PER MK11, MOD 0, METAL PALLET. SEE THE PALLET UNIT DETAIL ON PAGE 3.
- C. DETAILS OF THE MK83 BOMB PALLET UNIT (NAVAL WEAPONS HANDLING CENTER DRAWING WR-54/35)
- DIMENSIONS - - 74-1/2" LONG BY 43-1/2" WIDE BY 19" HIGH.
- GROSS WEIGHT - - 2,935 POUNDS (APPROX).
- D. THE LOADS AS SHOWN HEREIN ARE BASED ON 8'-0" WIDE AND 8'-6" WIDE BY 45'-0" LONG FLATBED TRAILERS. TRAILERS OF OTHER LENGTHS MAY BE USED. 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.
- E. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 29, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- F. GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.
- G. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH STATE WEIGHT LAWS.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED ON A TRAILER WHICH IS 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.
- J. CAUTION: REGARDLESS OF THE TYPE OF TRAILER 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 THE TRAILER ANCHOR DEVICES ARE NOT PROPERLY POSITIONED TO RECEIVE STRAPPING OR CHAINS, AS SHOWN, OR IF THE ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIEDOWN STRAPS OR CHAINS, STEEL STRAPS MAY BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED. CAUTION: AVOID TRAILER WHEELS, FIFTH WHEEL PLATE CONTROLS AND OTHER APPURTENANCES. USE EDGE PROTECTORS OR PADS ON ALL SHARP EDGES. NEITHER CHAINS NOR WEB STRAPS WILL BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED.

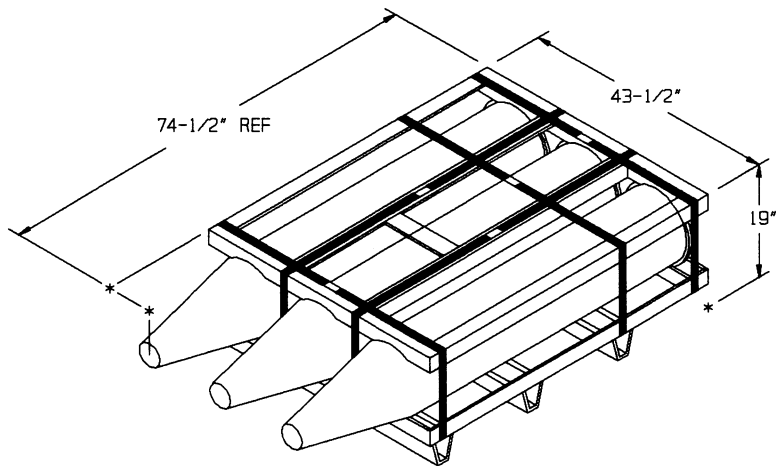
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## MATERIAL SPECIFICATIONS

- 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.
- WIRE, CARBON STEEL - : ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.
- STAPLE, STRAP - - - : COMMERCIAL GRADE.
- STAKE POCKET PROTECTOR - - : COMMERCIAL GRADE.
- CHAIN - - - - - : NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
- LOAD BINDER - - - - : FED SPEC GGG-B-325.

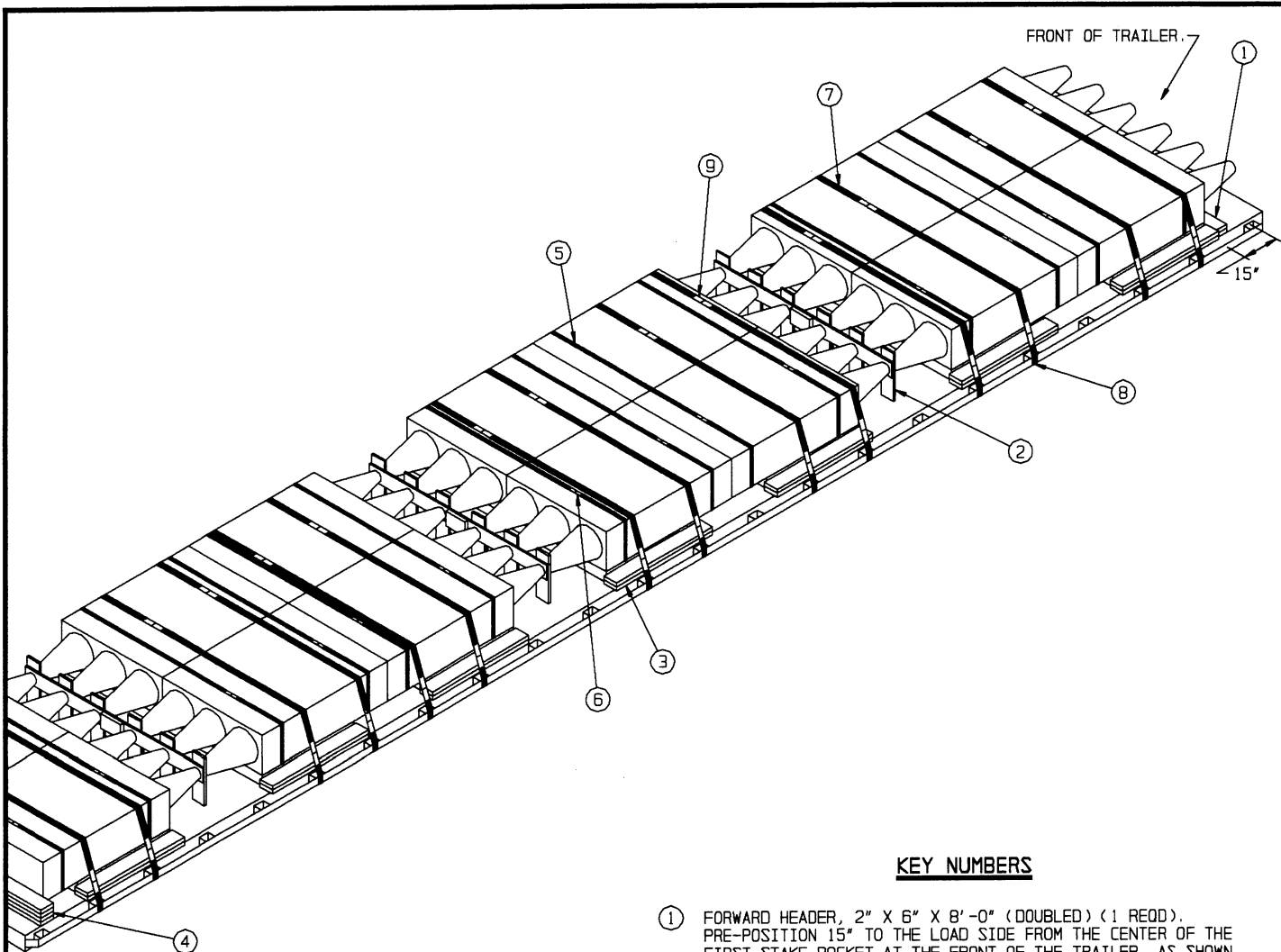
## (GENERAL NOTES CONTINUED)

- K. 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.
- L. 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.
- M. 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 10.
- N. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED. THE APPROVED METHODS SHOWN HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEM.
- O. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSIT AND TIGHTEN IF NECESSARY.
- P. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.



**PALLET UNIT**

BOMB - - - - - 912 LBS (APPROX)  
 PALLET UNIT CUBE - - - - - 35.6 CUBIC FT (APPROX)  
 PALLET UNIT GROSS WEIGHT - - 2,935 LBS (APPROX)



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① FORWARD HEADER, 2" X 6" X 8'-0" (DOUBLED) (1 REQD). PRE-POSITION 15" TO THE LOAD SIDE FROM THE CENTER OF THE FIRST STAKE POCKET AT THE FRONT OF THE TRAILER, AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/9-20d NAILS. SEE GENERAL NOTE "L" ON PAGE 2. SEE SPECIAL NOTE 3 ON PAGE 5.
- ② SEPARATOR GATE A (3 REQD). SEE THE DETAIL ON PAGE 9.
- ③ SIDE BLOCKING, 2" X 6" X 42" (DOUBLED) (14 REQD). ALIGN WITH THE SKIDS OF THE PALLET. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 2 ON PAGE 5.
- ④ REAR HEADER, 2" X 6" X 8'-0" (4 HIGH) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/9-20d NAILS. NAIL EACH ADDITIONAL PIECE W/9-20d NAILS.
- ⑤ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 18'-6" LONG STEEL STRAPPING (14 REQD). INSTALL TO ENIRCLE LATERALLY ADJACENT PALLET UNITS.
- ⑥ SEAL FOR 1-1/4" STEEL STRAPPING (28 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 10.
- ⑦ HOLD-DOWN STRAP, 2" X .050" OR .044" X 19'-6" LONG STEEL STRAPPING (14 REQD). INSTALL EACH STRAP FROM TWO 9'-9" LONG PIECES. SEE SPECIAL NOTES 5 AND 6 ON PAGE 5.
- ⑧ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (28 REQD). POSITION UNDER A STAKE POCKET OR THE RUB RAIL AND SEAL TO A HOLD-DOWN STRAP, PIECE MARKED ⑦, WITH ONE SEAL. ALT: STAKE POCKET PROTECTOR (56 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 10.
- ⑨ SEAL FOR 2" STEEL STRAPPING (84 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑧.

**SPECIAL NOTES:**

1. A 14-UNIT LOAD IS SHOWN ON A 45'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED. SEE SPECIAL NOTE 2.
2. IF AN 8'-0" WIDE TRAILER IS FURNISHED FOR LOADING, LATERAL BRACING MUST BE INSTALLED AT THE CENTER OF THE TRAILER WIDTH BETWEEN THE PALLET UNITS IN LIEU OF ON THE OUTSIDE OF THE PALLETS AS SHOWN BY PIECES MARKED ③ ON PAGE 4. SEE PIECES MARKED ② AND ③ ON PAGE 6 FOR GUIDANCE.
3. IF A 48'-0" LONG TRAILER IS FURNISHED FOR LOADING, THE PRE-POSITIONED HEADER, PIECE MARKED ①, SHOULD BE LOCATED 15" TO THE LOAD SIDE FROM THE SECOND STAKE POCKET FROM THE FRONT OF THE TRAILER IN LIEU OF FROM THE FIRST STAKE POCKET, AS SHOWN FOR A 45'-0" LONG TRAILER. THIS PLACEMENT SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION. LOADING WILL PROGRESS FROM THE FRONT OF THE TRAILER TO THE REAR.
4. IF A 40'-0" LONG TRAILER IS FURNISHED FOR LOADING, 12 PALLET UNITS CAN BE SHIPPED. SEE SPECIAL NOTE 4 ON PAGE 7 FOR LOADING GUIDANCE.
5. IF CHAINS AND LOAD BINDERS ARE TO BE USED FOR LOAD SECUREMENT, REFER TO THE PROCEDURES ON PAGES 6 AND 7 FOR GUIDANCE. NOTE THAT STAKE POCKETS MUST BE USED FOR ATTACHMENT OF THE CHAINS. CHAINS WILL NOT BE ATTACHED TO A RUB RAIL ON THE TRAILER.
6. WEB STRAP TIEDOWNS MAY BE USED IN LIEU OF THE STEEL HOLD-DOWN STRAPS, PIECES MARKED ⑦, IF DESIRED. ONE WEB STRAP WILL BE USED IN THE PLACE OF ONE STEEL STRAP, USING TWO PER LOAD UNIT. POSITION AT THE APPROXIMATE LOCATIONS SHOWN FOR THE STEEL STRAPS. SEE THE "SPECIAL PROVISIONS FOR WEB STRAP TIE DOWN" AT RIGHT FOR FURTHER GUIDANCE.
7. IF THE DEPICTED LOAD IS TO BE REDUCED BY ONE PALLET UNIT, ONE PALLET UNIT WILL BE OMITTED FROM THE REAR LOAD UNIT. THE SIX LOAD UNITS AT THE FRONT OF THE LOAD WILL BE BRACED AT THE REAR OF THE SIXTH LOAD UNIT. A DOUBLED 2" X 6" X 8'-0" HEADER MUST BE POSITIONED (REF: 54") FROM THE REAR OF THE SIXTH LOAD UNIT PRIOR TO LOADING OF THE TWO PALLETS IN LOAD UNIT NUMBER SIX. THE ONE PALLET UNIT IN THE REAR LOAD UNIT WILL BE SEPARATELY BLOCKED AND BRACED AS SHOWN BY THE PROCEDURES ON PAGE 8.

**LOAD AS SHOWN**

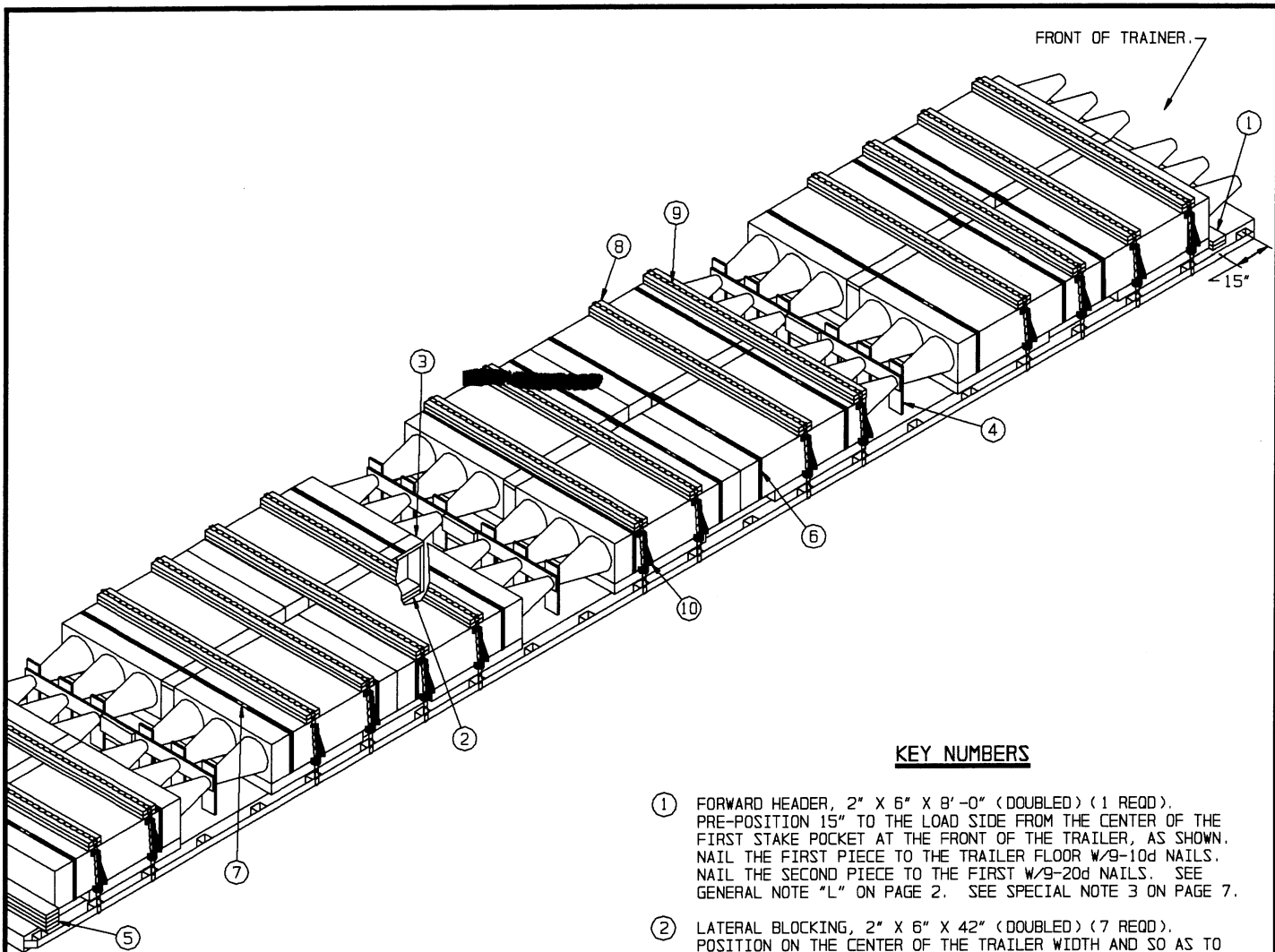
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	14	41,090 LBS
DUNNAGE		519 LBS
<b>TOTAL WEIGHT</b>		<b>41,609 LBS (APPROX)</b>

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	47	24
2" X 4"	6	4
2" X 6"	149	149
NAILS	NO. REQD	POUNDS
6d (2")	84	1/2
10d (3")	158	2-1/2
20d (4")	36	1-1/2
STEEL STRAPPING, 1-1/4"	259' REQD	37 LBS
SEAL FOR 1-1/4" STRAPPING	28 REQD	1-1/2 LBS
STEEL STRAPPING, 2"	315' REQD	105 LBS
SEAL FOR 2" STRAPPING	84 REQD	17 LBS

**SPECIAL PROVISIONS FOR WEB STRAP TIE DOWN**

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, WITH A MINIMUM OF TWO STRAPS POSITIONED OVER EACH LOAD UNIT ON A TRAILER. 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.
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.



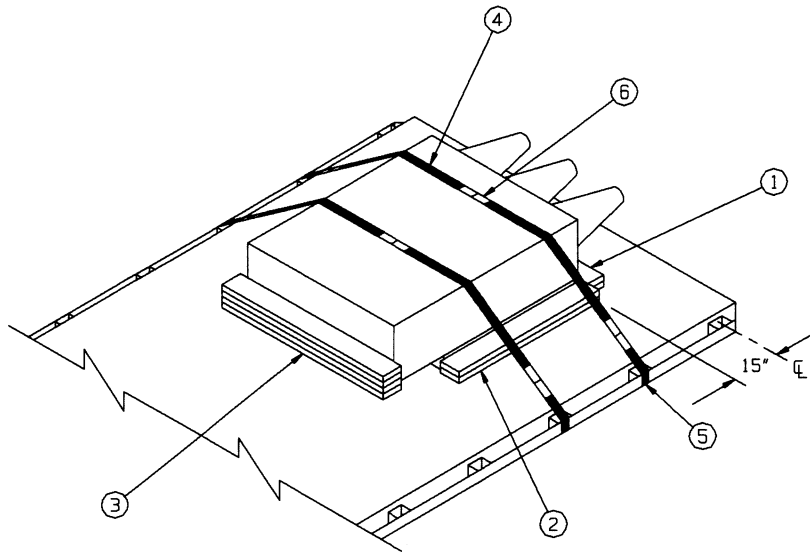
**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① FORWARD HEADER, 2" X 6" X 8'-0" (DOUBLED) (1 REQD). PRE-POSITION 15" TO THE LOAD SIDE FROM THE CENTER OF THE FIRST STAKE POCKET AT THE FRONT OF THE TRAILER, AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/9-20d NAILS. SEE GENERAL NOTE "L" ON PAGE 2. SEE SPECIAL NOTE 3 ON PAGE 7.
- ② LATERAL BLOCKING, 2" X 6" X 42" (DOUBLED) (7 REQD). POSITION ON THE CENTER OF THE TRAILER WIDTH AND SO AS TO ALIGN WITH THE SKIDS OF THE PALLET. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 2 ON PAGE 7.
- ③ SPACER ASSEMBLY (7 REQD). SEE THE DETAIL ON PAGE 9. POSITION TO SPAN THE LATERAL BLOCKING, PIECE MARKED ②, AND NAIL THE SPACER ASSEMBLY TO THE LATERAL BLOCKING W/3-10d NAILS AT EACH JOINT.
- ④ SEPARATOR GATE B (3 REQD). SEE THE DETAIL ON PAGE 9.
- ⑤ REAR HEADER, 2" X 6" X 8'-0" (4 HIGH) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/9-20d NAILS. NAIL EACH ADDITIONAL PIECE W/9-20d NAILS.
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 18'-6" LONG STEEL STRAPPING (14 REQD). INSTALL TO ENCIRCLE LATERALLY ADJACENT PALLET UNITS.
- ⑦ SEAL FOR 1-1/4" STEEL STRAPPING (28 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 10.
- ⑧ CHAIN BOARD, 2" X 6" X 7'-8-1/2" (DOUBLED) (14 REQD). LAMINATE W/5-10d NAILS.
- ⑨ CHAIN, BINDING, 5/16", GRADE 70, BY A LENGTH TO SUIT (14 REQD). POSITION AS SHOWN. ATTACH TO A STAKE POCKET. DO NOT ATTACH TO A RUB RAIL. SEE THE "SPECIAL PROVISIONS FOR CHAIN TIEDOWN" ON PAGE 7.
- ⑩ LOAD BINDER, 5/16", OVER-CENTER TYPE (14 REQD, 1 PER CHAIN). WIRE TIE HANDLE TO PREVENT OPENING DURING TRANSPORT. FASTEN THE TENSIONED CHAIN, PIECE MARKED ⑨, TO A CHAIN BOARD, PIECE MARKED ⑧, W/4-20d NAILS BY DRIVING EACH NAIL INTO THE CHAIN BOARD THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.

14-UNIT LOAD ON A 45'-0" LONG BY  
8'-0" WIDE FLATBED TRAILER (CHAIN TIEDOWN METHOD)





**ISOMETRIC VIEW**

**SPECIAL NOTES:**

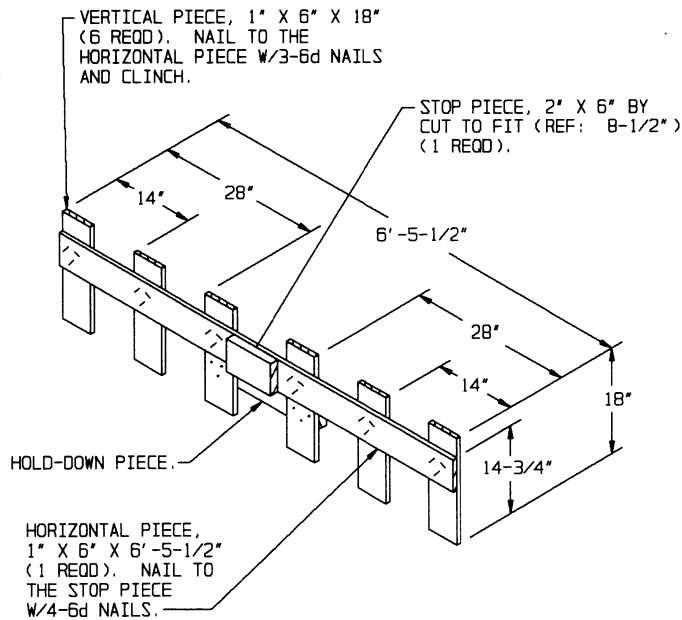
1. A 1-UNIT LOAD IS SHOWN ON AN 8'-0" WIDE FLATBED TRAILER. WIDER TRAILERS CAN BE USED.
2. THE PALLET UNIT SHOULD BE LOCATED ON THE TRAILER AS DIMENSIONED BY THE "ISOMETRIC VIEW" AND AS SPECIFIED WITHIN KEY NUMBER ①.
3. IF CHAINS AND LOAD BINDERS ARE TO BE USED FOR LOAD SECUREMENT IN LIEU OF THE 2" STEEL STRAPPING, A DOUBLED 2" X 6" X 43-1/2" CHAIN BOARD IS TO BE USED UNDER THE CHAIN. LAMINATE W/3-10d NAILS. FASTEN THE TENSIONED CHAIN TO A CHAIN BOARD 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.

**KEY NUMBERS**

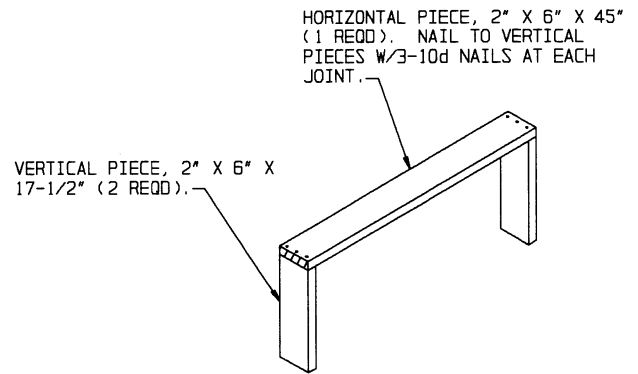
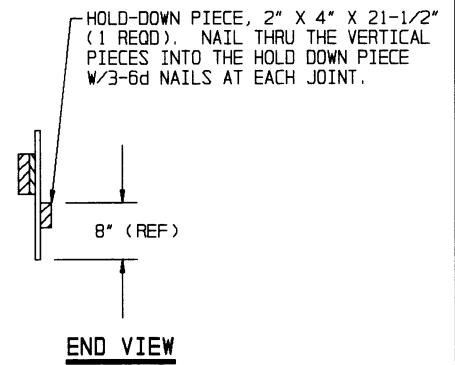
- ① FORWARD HEADER, 2" X 6" X 48" (DOUBLED) (1 REQD). PRE-POSITION 15" TO THE LOAD SIDE FROM THE CENTER OF A STAKE POCKET, AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-20d NAILS. SEE GENERAL NOTE "L" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 42" (DOUBLED) (2 REQD). ALIGN WITH THE SKIDS OF THE PALLET. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ REAR HEADER, 2" X 6" X 48" (4 HIGH) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-20d NAILS. NAIL EACH ADDITIONAL PIECE W/3-20d NAILS.
- ④ HOLD-DOWN STRAP, 2" X .050" OR .044" X 18'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM ONE PIECE OF STRAPPING. ANCHOR A STRAP TO A TIE DOWN FACILITY ON ONE SIDE OF THE TRAILER, RUN IT OVER THE LOAD, PASS IT THROUGH A TIE DOWN FACILITY ON THE OPPOSITE SIDE OF THE TRAILER, AND BRING IT BACK UP ABOVE THE TRAILER FLOOR WHERE IT CAN BE TENSIONED AND SEALED. SEE GENERAL NOTE "M" ON PAGE 2.
- ⑤ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (4 REQD). POSITION UNDER A STAKE POCKET OR THE RUB RAIL AND SEAL TO A HOLD-DOWN STRAP, PIECE MARKED ④, WITH ONE SEAL. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 10.
- ⑥ SEAL FOR 2" STEEL STRAPPING (12 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤.

**TYPICAL LTL (1-UNIT LOAD)**

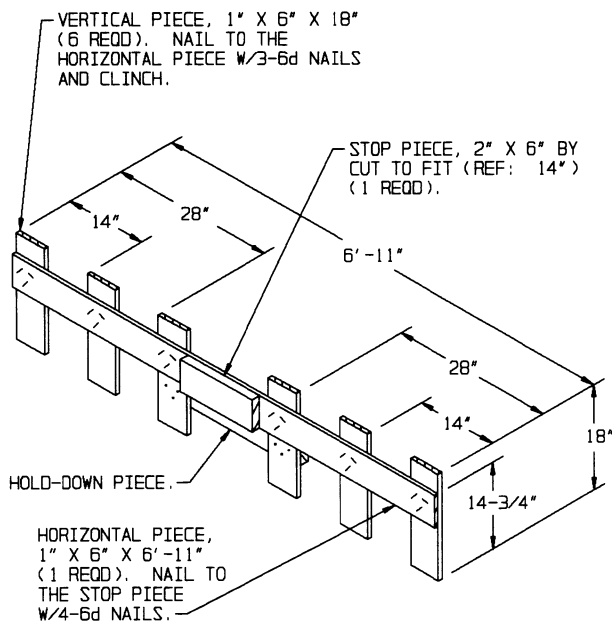




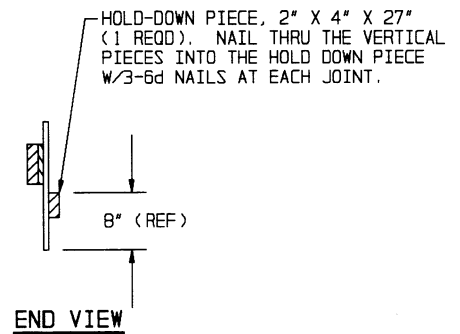
**SEPARATOR GATE A**

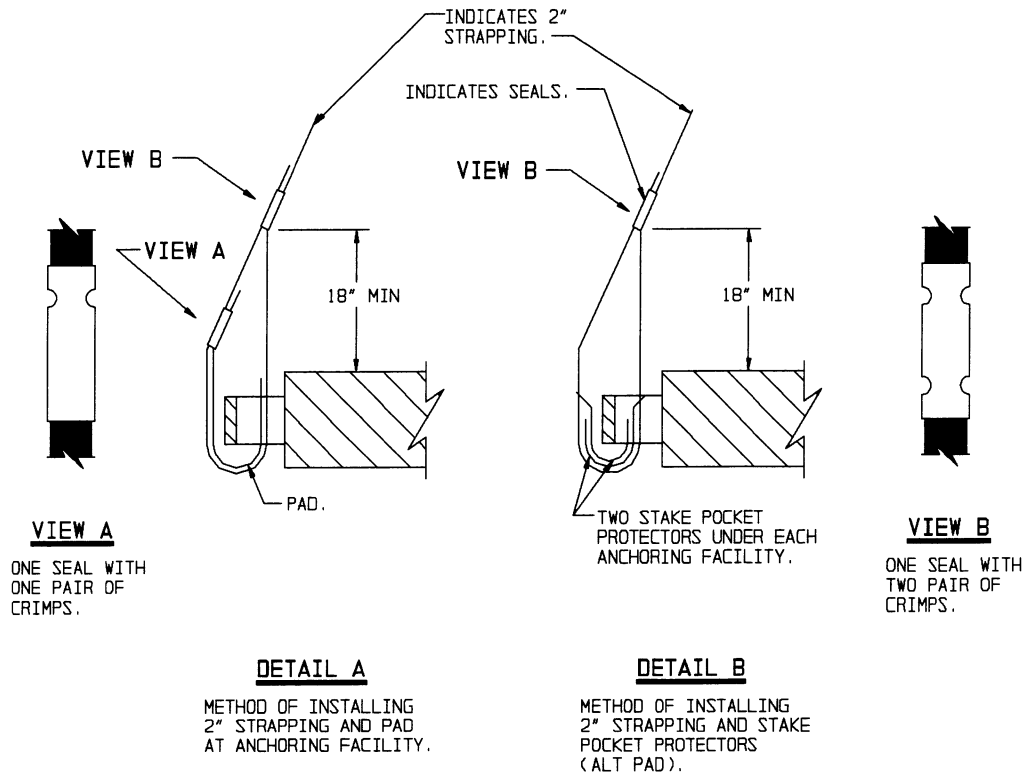


**SPACER ASSEMBLY**

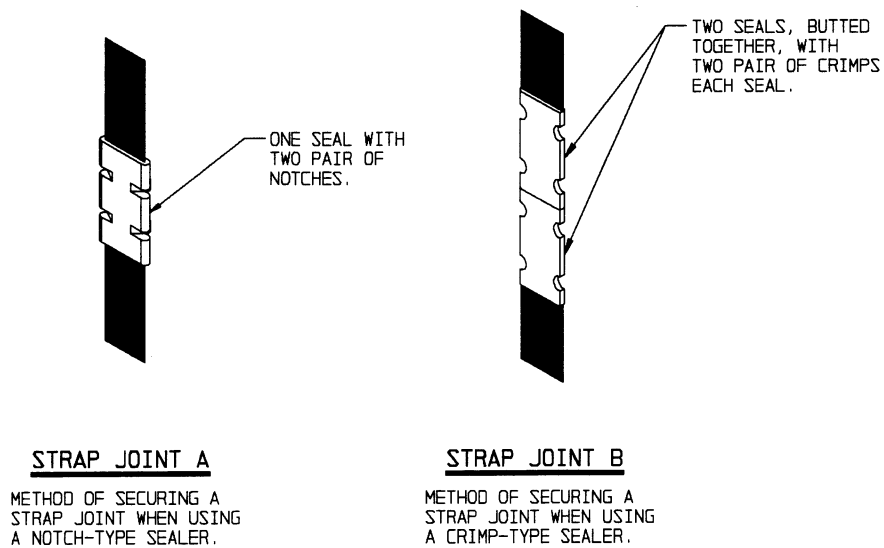


**SEPARATOR GATE B**





**HOLD-DOWN STRAP ANCHORING DETAILS**



**END-OVER-END LAP JOINT DETAILS**