

LOADING AND BRACING (TL & LTL) ON FLATBED TRAILERS OF T55 3,000-POUND BOMBS PACKED ONE PER WOODEN PALLET

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

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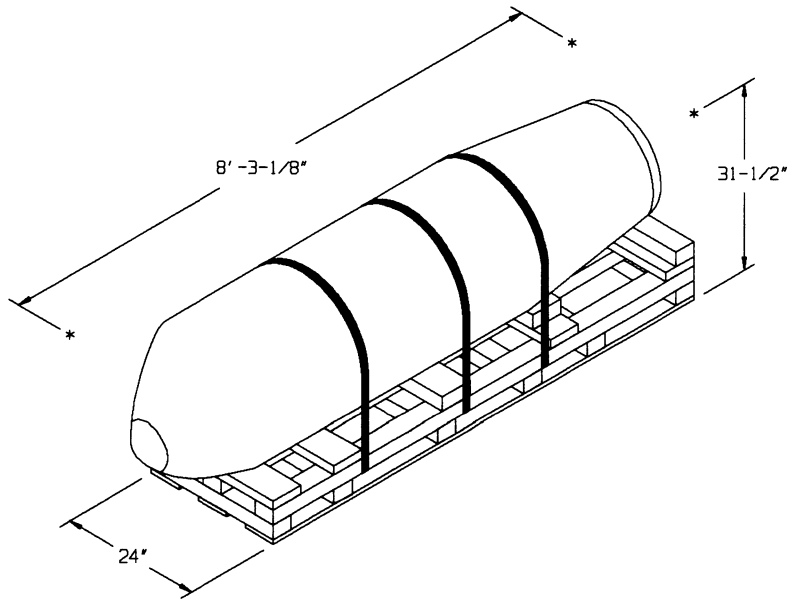
GENERAL NOTES

(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 T55 SERIES 3,000-POUND BOMBS. SEE THE PALLET UNIT DETAIL ON PAGE 3.
- C. DETAILS OF T55 BOMB PALLET UNIT (U.S. AIR FORCE DRAWING TPO 1325-028-5273).
- DIMENSIONS -- 99-1/8" LONG BY 24" WIDE BY 31-1/2" HIGH.
- GROSS WEIGHT -- 3,100 POUNDS (APPROX).
- D. THE LOADS AS SHOWN HEREIN ARE BASED ON 8'-0" WIDE BY 40'-0" LONG 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.
- (CONTINUED AT RIGHT)
- J. CAUTION: REGARDLESS OF THE TYPE OF TRAILER INVOLVED, ONLY THOSE TRAILERS HAVING TIE-DOWN 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 TWO INCH STRAPPING OR CHAINS, AS SHOWN, OR IF THE ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIE-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. CAUTION: AVOID TRAILER WHEELS, FIFTH WHEEL PLATE, CONTROLS AND OTHER APPURTENANCES. USE EDGE PROTECTORS ON ALL SHARP EDGES. THE CHAINS WILL NOT BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED.
- 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 12.
- 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.

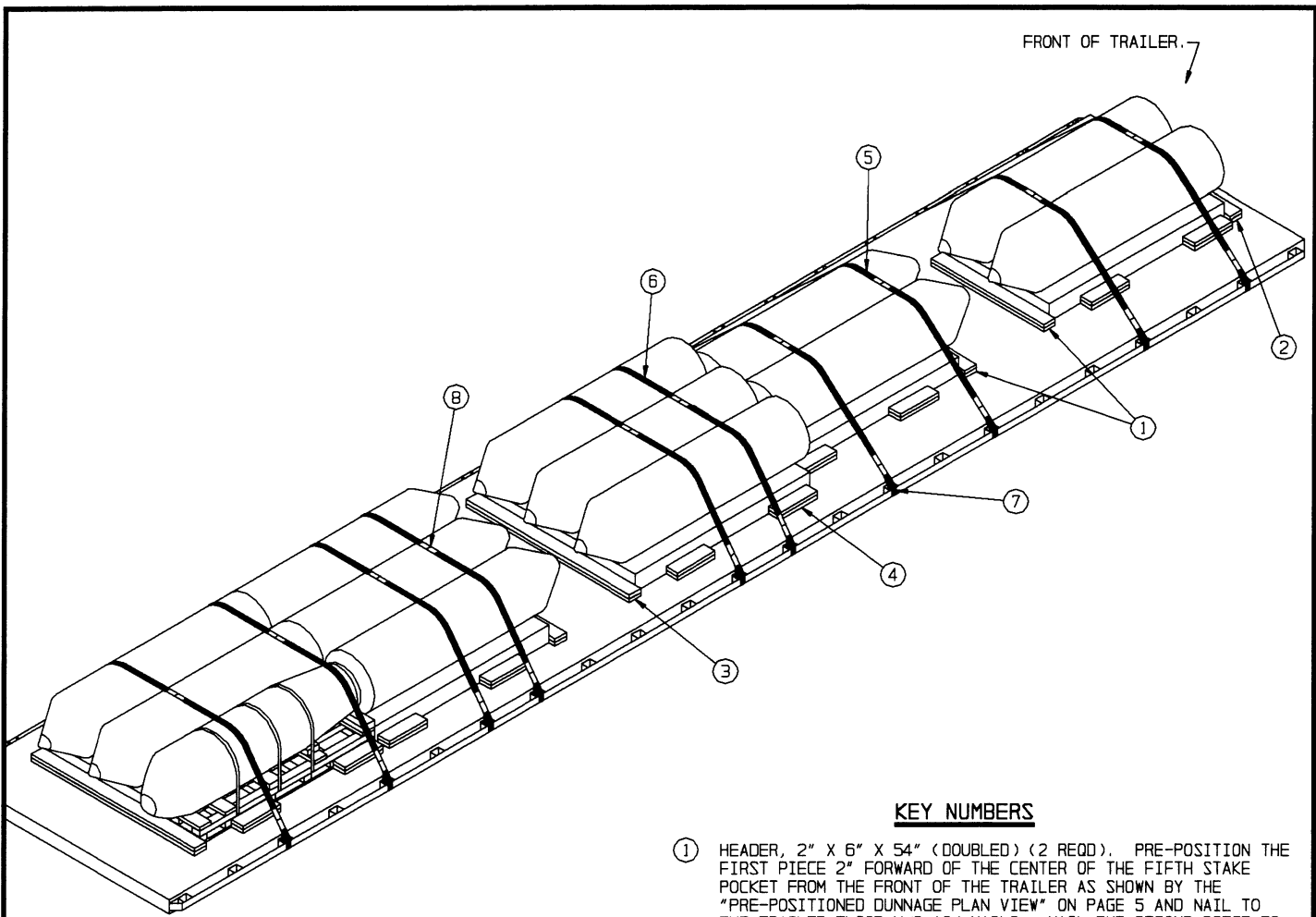
MATERIAL SPECIFICATIONS

- 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.



PALLET UNIT

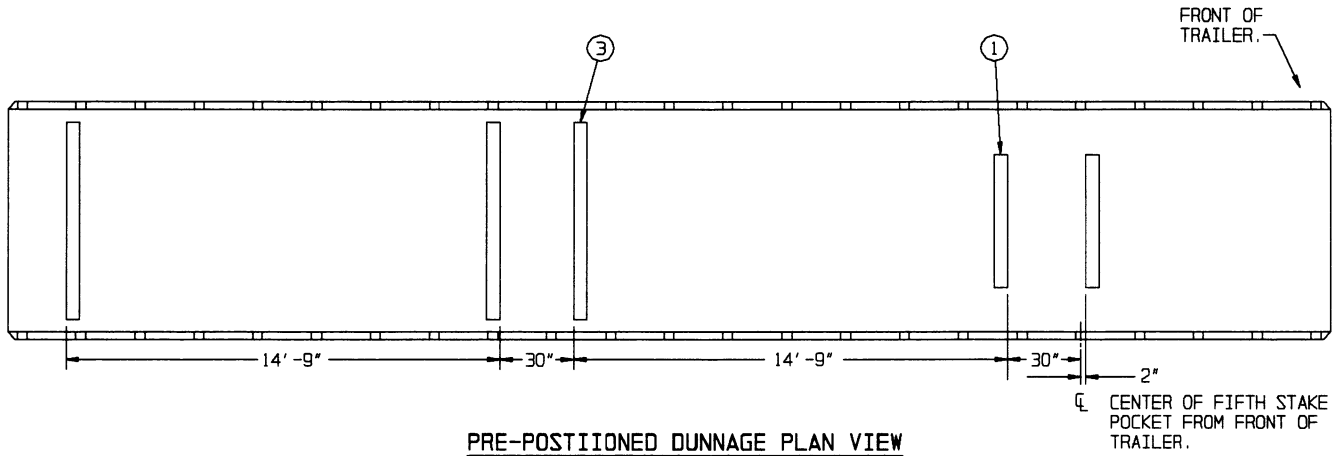
BOMB - - - - - 3,049 LBS (APPROX)
 PALLET UNIT CUBE - - - - - 43.4 CUBIC FT (APPROX)
 PALLET UNIT GROSS WEIGHT - - 3,100 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 54" (DOUBLED) (2 REQD). PRE-POSITION THE FIRST PIECE 2" FORWARD OF THE CENTER OF THE FIFTH STAKE POCKET FROM THE FRONT OF THE TRAILER AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 5 AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/6-20d NAILS. THE OTHER HEADER WILL BE LOCATED FROM THE FIRST HEADER, AS DIMENSIONED. SEE GENERAL NOTE "L" ON PAGE 2. SEE SPECIAL NOTE 5 ON PAGE 5.
- ② HEADER, 2" X 6" X 54" (DOUBLED) (1 REQD). POSITION THE FIRST PIECE AGAINST THE PALLET SKIDS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/6-10d NAILS.
- ③ HEADER, 2" X 6" X 6'-6" (DOUBLED) (3 REQD). PRE-POSITION THE FIRST PIECE 14'-9" FROM THE REARMOST PIECE MARKED ① AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 5 AND NAIL TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS. THE OTHER TWO HEADERS WILL BE LOCATED FROM THE FIRST HEADER AS DIMENSIONED.
- ④ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (20 REQD). POSITION TO CENTER ON THE TWO END SKIDS AT THE REAR OF THE PALLET AND/OR TO CENTER ON THE SECOND AND THIRD SKIDS FROM THE FRONT 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.
- ⑤ HOLD-DOWN STRAP, 2" X .050" OR .044" X 18'-6" LONG STEEL STRAPPING (4 REQD). INSTALL FROM TWO 9'-3" LONG PIECES. SEE GENERAL NOTE "M" ON PAGE 2.
- ⑥ HOLD-DOWN STRAP, 2" X .050" OR .044" X 22'-0" LONG STEEL STRAPPING (6 REQD). INSTALL FROM TWO 11'-0" LONG PIECES.
- ⑦ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (20 REQD). POSITION UNDER A STAKE POCKET OR THE RUB RAIL AND SEAL TO A HOLD-DOWN STRAP, PIECE MARKED ⑤ AND/OR ⑥, WITH ONE SEAL. ALT: STAKE POCKET PROTECTOR (40 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 12.
- ⑧ SEAL FOR 2" STEEL STRAPPING (60 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑦.



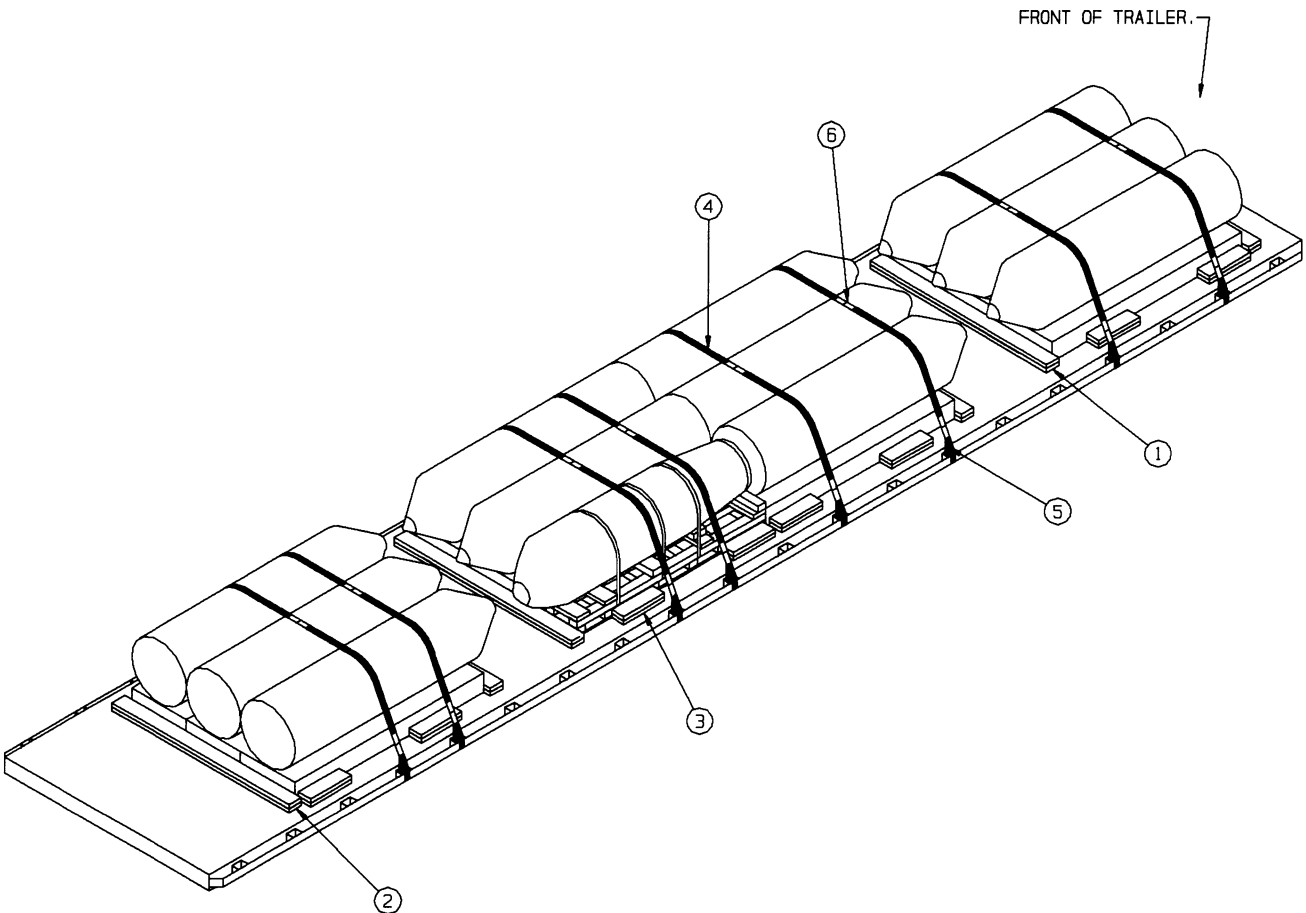
SPECIAL NOTES:

1. A 13-UNIT LOAD IS SHOWN ON A 45'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. EIGHT-FOOT WIDE TRAILERS MAY BE USED AND LONGER TRAILERS MAY BE USED. THE TRAILER MUST BE AT LEAST 45'-0" LONG FOR SHIPMENT OF A 13-UNIT LOAD.
2. THE HEADERS, PIECE MARKED ① AND ③, AT THE NOSE END OF THE PALLET UNITS MUST BE PRE-POSITIONED AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ABOVE. LOADING WILL PROGRESS FROM THE FRONT OF THE TRAILER TO THE REAR.
3. THE DEPICTED LOADING PATTERN IS APPLICABLE FOR TRAILERS HAVING THE REAR TANDEM LOCATED IN THE "WESTERN" POSITION. FOR TRAILERS HAVING THE REAR TANDEM LOCATED IN OTHER THAN IN THE "WESTERN" POSITION, THE SECOND LOAD UNIT FROM THE FRONT OF THE TRAILER SHOULD BE LOADED THREE PALLET UNITS WIDE IN LIEU OF TWO WIDE AND THE REAR LOAD UNIT SHOULD BE LOADED TWO PALLET UNITS WIDE IN LIEU OF THREE WIDE. THE REARMOST PIECE MARKED ① WILL BE REPLACED WITH A PIECE MARKED ③ AND THE REARMOST PIECE MARKED ③ WILL BE REPLACED WITH A PIECE MARKED ①.
4. IF CHAINS AND LOAD BINDERS ARE TO BE USED FOR LOAD SECUREMENT, REFER TO THE PROCEDURES ON PAGES 8 AND 9 FOR GUIDANCE.
5. IF A 48'-0" LONG TRAILER IS FURNISHED FOR LOADING, THE FIRST HEADER SHOULD BE LOCATED AT THE SAME DIMENSION AS THE FIRST HEADER ON A 45'-0" LONG TRAILER, 2" FORWARD OF THE CENTER OF THE FIFTH STAKE POCKET FROM THE FRONT OF THE TRAILER. HOWEVER, THE FIRST LOAD UNIT SHOULD BE JUST ONE PALLET UNIT IN LIEU OF TWO, AND THE HEADERS WILL BE 30" LONG INSTEAD OF 54" AS SPECIFIED FOR PIECES MARKED ① AND ②. THE SECOND LOAD UNIT SHOULD THEN CONSIST OF THREE PALLET UNITS IN LIEU OF TWO AND AN ADDITIONAL HEADER, PIECE MARKED ③, WILL BE REQUIRED IN PLACE OF THE REARMOST PIECE MARKED ①. OMIT THE STEEL STRAPPING HOLD-DOWNS, PIECE MARKED ⑤, ADD TWO PIECES MARKED ⑥ AND ADD TWO 17'-0" LONG HOLD-DOWN STRAPS FOR THE FIRST LOAD UNIT. THIS LOADING PATTERN AND DUNNAGE PLACEMENT IS FURNISHED AS GUIDANCE IN OBTAINING PROPER WEIGHT DISTRIBUTION. IT IS NOT MANDATORY AND MAY BE ADJUSTED TO SUIT THE TRAILER BEING LOADED.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	126	126
NAILS	NO. REQD	POUNDS
10d (3")	242	3-3/4
20d (4")	42	1-1/2
STEEL STRAPPING, 2" -----	236' REQD -----	79 LBS
SEAL FOR 2" STRAPPING -----	60 REQD -----	12 LBS

LOAD AS SHOWN

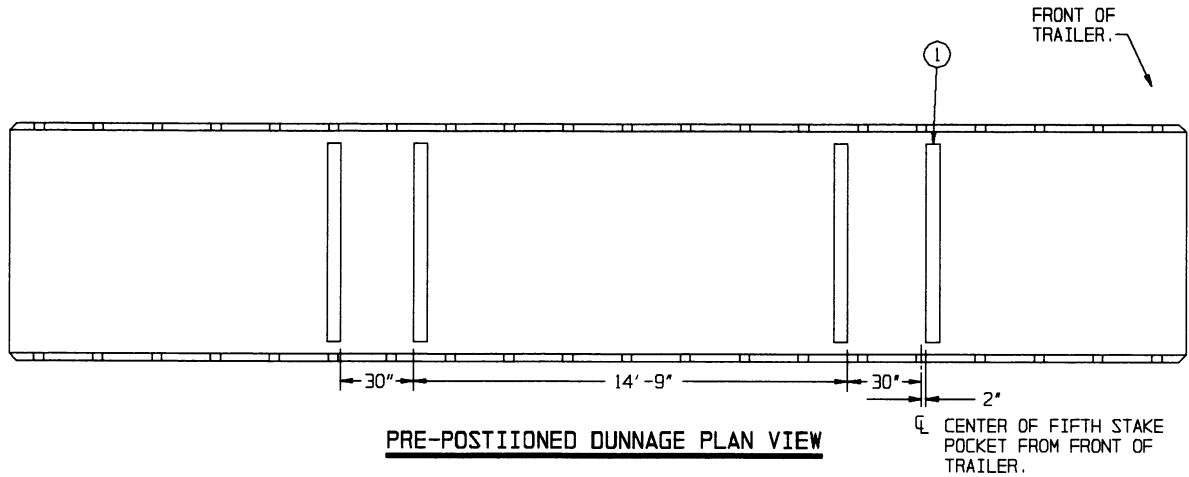
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -----	13 -----	40,300 LBS
DUNNAGE -----	-----	348 LBS
TOTAL WEIGHT -----		40,648 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 6'-6" (DOUBLED) (4 REQD). PRE-POSITION THE FIRST PIECE 2" FORWARD OF THE CENTER OF THE FIFTH STAKE POCKET FROM THE FRONT OF THE TRAILER AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 7 AND NAIL TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS. THE OTHER THREE HEADERS WILL BE LOCATED FROM THE FIRST HEADER, AS DIMENSIONED. SEE GENERAL NOTE "L" ON PAGE 2. SEE SPECIAL NOTES 5 AND 6 ON PAGE 7.
- ② HEADER, 2" X 6" X 6'-6" (DOUBLED) (2 REQD). POSITION THE FIRST PIECE AGAINST THE PALLET SKIDS AND NAIL TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (16 REQD). POSITION TO CENTER ON THE TWO END SKIDS AT THE REAR OF THE PALLET AND/OR TO CENTER ON THE SECOND AND THIRD SKIDS FROM THE FRONT 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.
- ④ HOLD-DOWN STRAP, 2" X .050" OR .044" X 22'-0" LONG STEEL STRAPPING (8 REQD). INSTALL FROM TWO 11'-0" LONG PIECES. SEE GENERAL NOTE "M" ON PAGE 2.
- ⑤ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (16 REQD). POSITION UNDER A STAKE POCKET OR THE RUB RAIL AND SEAL TO THE HOLD-DOWN STRAP, PIECE MARKED ④, WITH ONE SEAL. ALT: STAKE POCKET PROTECTOR (32 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 12.
- ⑥ SEAL FOR 2" STEEL STRAPPING (48 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤.



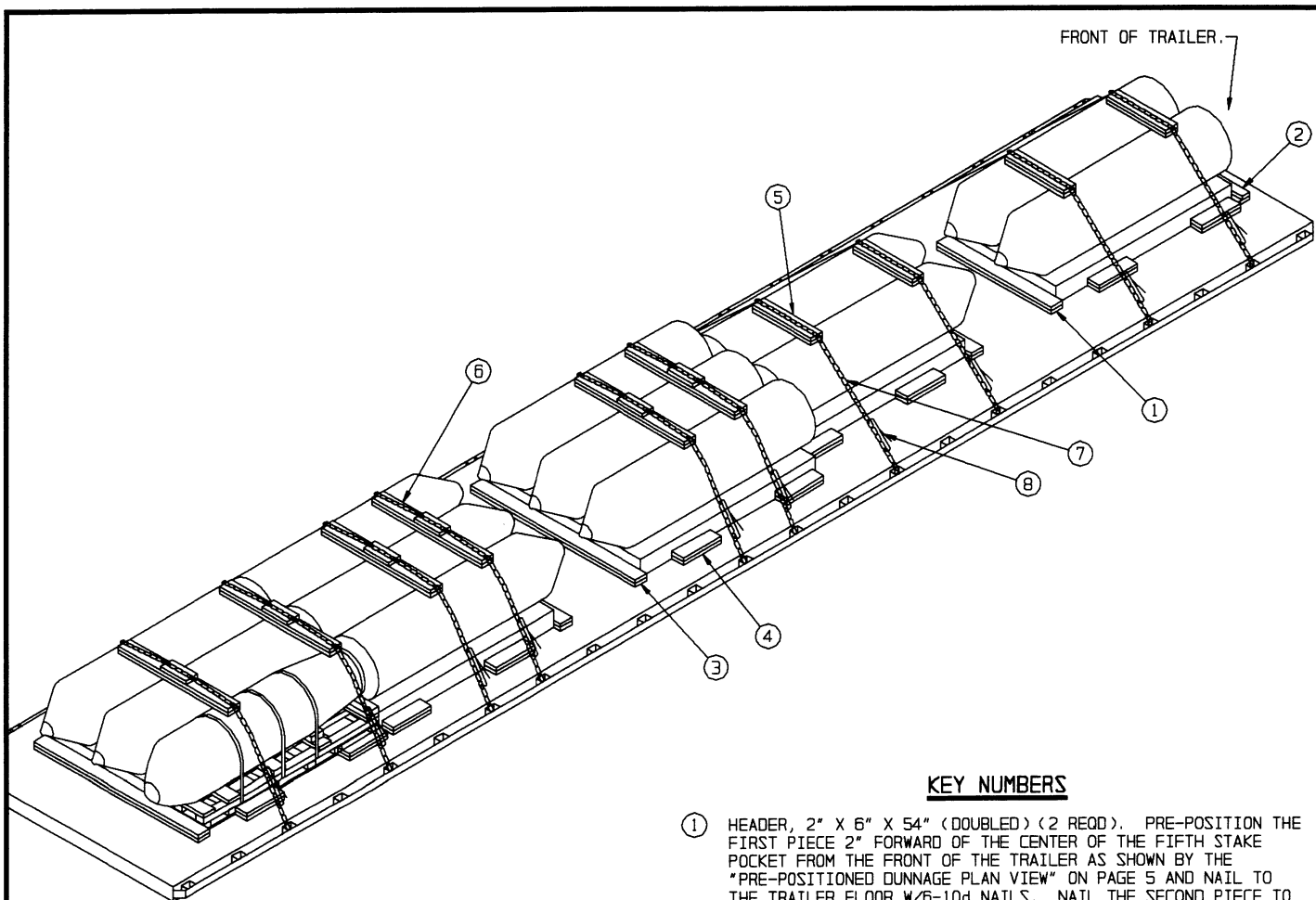
SPECIAL NOTES:

1. A 12-UNIT LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. WIDE AND LONGER TRAILERS MAY BE USED. SEE SPECIAL NOTES 5 AND 6.
2. THE HEADERS, PIECES MARKED ①, AT THE NOSE END OF THE PALLET UNITS MUST BE PRE-POSITIONED AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ABOVE. LOADING WILL PROGRESS FROM THE FRONT OF THE TRAILER TO THE REAR.
3. THE DEPICTED LOADING PATTERN IS APPLICABLE FOR TRAILERS HAVING THE REAR TANDEM LOCATED IN THE "WESTERN" POSITION, AND FOR TRAILERS WITH THE REAR TANDEM LOCATED IN OTHER THAN IN THE "WESTERN" POSITION.
4. IF CHAINS AND LOAD BINDERS ARE TO BE USED FOR LOAD SECUREMENT, THE CHAINS WILL BE APPLIED AT THE SAME LOCATIONS SHOWN FOR THE STEEL STRAPPING. CHAIN BOARDS MUST BE USED UNDER THE CHAINS. REFER TO THE PROCEDURES ON PAGES 8 AND 9 FOR GUIDANCE.
5. IF A 12-UNIT LOAD IS TO BE SHIPPED ON A 45'-0" LONG TRAILER HAVING THE REAR TANDEM LOCATED IN THE "WESTERN" POSITION, IT IS RECOMMENDED THAT THE FIRST LOAD UNIT BE POSITIONED THE SAME AS ON A 40'-0" TRAILER, WITH THE FIRST HEADER, PIECE MARKED ①, LOCATED 2" FORWARD OF THE FIFTH STAKE POCKET FROM THE FRONT OF THE TRAILER. THE SECOND HEADER, PIECE MARKED ②, SHOULD BE LOCATED 4" TO THE REAR OF THE TENTH STAKE POCKET FROM THE FRONT OF THE TRAILER. THE THIRD AND FOURTH HEADERS WILL BE LOCATED FROM THE SECOND HEADER AS DIMENSIONED ABOVE. THESE SAME LOCATIONS SHOULD PROVIDE PROPER WEIGHT DISTRIBUTION ON A TRAILER HAVING THE REAR TANDEM LOCATED IN OTHER THAN THE "WESTERN" POSITION. THIS LOADING PATTERN AND DUNNAGE PLACEMENT IS FURNISHED AS GUIDANCE IN OBTAINING PROPER WEIGHT DISTRIBUTION. IT IS NOT MANDATORY AND MAY BE ADJUSTED TO SUIT THE TRAILER BEING LOADED.
6. IF A 12-UNIT LOAD IS TO BE SHIPPED ON A 48'-0" LONG TRAILER, IT IS RECOMMENDED THAT THE FIRST LOAD UNIT BE POSITIONED THE SAME AS ON A 40'-0" TRAILER, WITH THE FIRST HEADER, PIECE MARKED ①, LOCATED 2" FORWARD OF THE FIFTH STAKE POCKET FROM THE FRONT OF THE TRAILER. THE SECOND HEADER, PIECE MARKED ② SHOULD BE LOCATED 4" TO THE REAR OF THE TWELFTH STAKE POCKET FROM THE FRONT OF THE TRAILER. THE THIRD AND FOURTH HEADERS WILL BE LOCATED FROM THE SECOND HEADER AS DIMENSIONED ABOVE. THIS LOADING PATTERN AND DUNNAGE PLACEMENT IS FURNISHED AS GUIDANCE IN OBTAINING PROPER WEIGHT DISTRIBUTION. IT IS NOT MANDATORY AND MAY BE ADJUSTED TO SUIT THE TRAILER BEING LOADED.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	126	126
NAILS	NO. REQD	POUNDS
10d (3")	208	3-1/4
20d (4")	48	1-3/4
STEEL STRAPPING, 2" - - - -	200' REQD - - - -	67 LBS
SEAL FOR 2" STRAPPING - - - -	48 REQD - - - -	10 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	12 - - - - -	37,200 LBS
DUNNAGE - - - - -	- - - - -	334 LBS
TOTAL WEIGHT - - - - -		37,534 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 54" (DOUBLED) (2 REQD). PRE-POSITION THE FIRST PIECE 2" FORWARD OF THE CENTER OF THE FIFTH STAKE POCKET FROM THE FRONT OF THE TRAILER AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 5 AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/6-20d NAILS. THE OTHER HEADER WILL BE LOCATED FROM THE FIRST HEADER, AS DIMENSIONED. SEE GENERAL NOTE "L" ON PAGE 2. SEE SPECIAL NOTES 2 AND 5 ON PAGE 9.
- ② HEADER, 2" X 6" X 54" (DOUBLED) (1 REQD). POSITION THE FIRST PIECE AGAINST THE PALLET SKIDS AND NAIL TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/6-20d NAILS.
- ③ HEADER, 2" X 6" X 6'-6" (DOUBLED) (3 REQD). PRE-POSITION THE FIRST PIECE 14'-9" FROM THE REARMOST PIECE MARKED ① AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 5 AND NAIL THE 2" X 6" PIECE TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS. THE OTHER TWO HEADERS WILL BE LOCATED FROM THE FIRST HEADER AS DIMENSIONED.
- ④ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (20 REQD). POSITION TO CENTER ON THE TWO END SKIDS OF THE PALLET AND/OR TO CENTER ON THE SECOND AND THIRD SKIDS FROM THE FRONT 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.
- ⑤ CHAIN BOARD, 2" X 6" X 28" (DOUBLED) (4 REQD). LAMINATE W/4-10d NAILS.
- ⑥ CHAIN BOARD ASSEMBLY (6 REQD). SEE THE DETAIL ON PAGE 11.
- ⑦ CHAIN, BINDING, 5/16", GRADE 70 BY A LENGTH TO SUIT (10 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.
- ⑧ LOAD BINDER, 5/16", OVER-CENTER TYPE (10 REQD, 1 PER CHAIN). WIRE TIE HANDLE TO PREVENT OPENING DURING TRANSPORT. FASTEN THE TENSIONED CHAIN, PIECE MARKED ⑦, TO A CHAIN BOARD, PIECE MARKED ⑤, AND/OR TO A CHAIN BOARD ASSEMBLY, PIECE MARKED ⑥, W/1-20d NAIL AT EACH END BY DRIVING EACH NAIL INTO THE CHAIN BOARD OR CHAIN BOARD ASSEMBLY 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 PAGE 8 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.

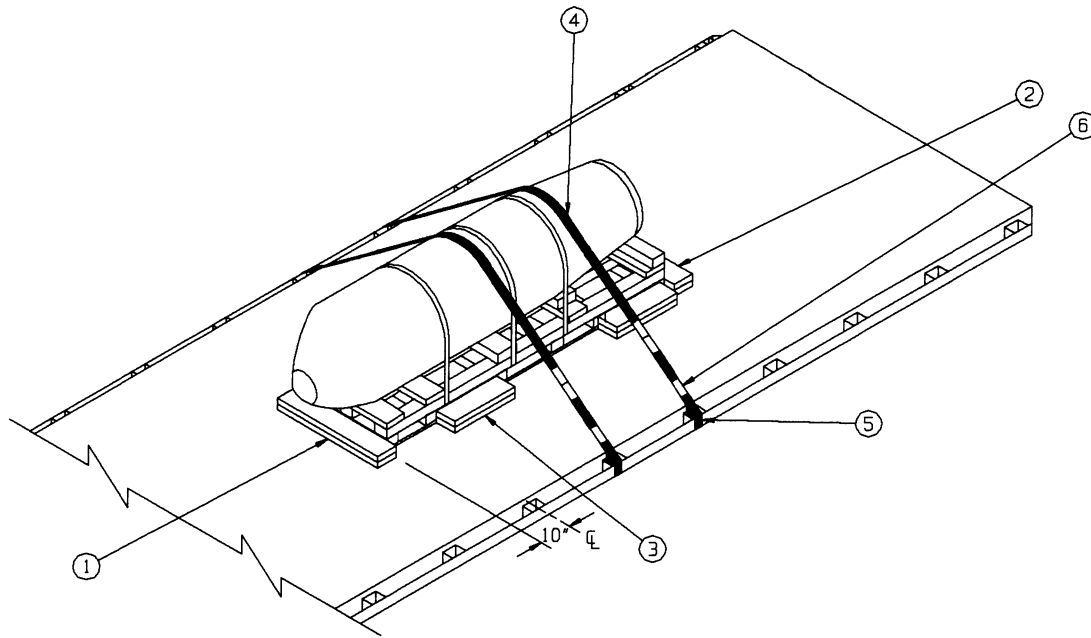
SPECIAL NOTES:

1. A 13-UNIT LOAD IS SHOWN ON A 45'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. EIGHT-FOOT WIDE TRAILERS MAY BE USED AND LONGER TRAILERS MAY BE USED. THE TRAILER MUST BE AT LEAST 45'-0" LONG FOR SHIPMENT OF A 13-UNIT LOAD.
2. THE HEADERS, PIECES MARKED ① AND ③, AT THE NOSE END OF THE PALLET UNITS MUST BE PRE-POSITIONED AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 5. LOADING WILL PROGRESS FROM THE FRONT OF THE TRAILER TO THE REAR.
3. THE DEPICTED LOADING PATTERN IS APPLICABLE FOR TRAILERS HAVING THE REAR TANDEM LOCATED IN THE "WESTERN" POSITION. FOR TRAILERS HAVING THE REAR TANDEM LOCATED IN OTHER THAN IN THE "WESTERN" POSITION, THE SECOND LOAD UNIT FROM THE FRONT OF THE TRAILER SHOULD BE LOADED THREE PALLET UNITS WIDE IN LIEU OF TWO WIDE AND THE REAR LOAD UNIT SHOULD BE LOADED TWO PALLET UNITS WIDE IN LIEU OF THREE WIDE.
4. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSIT AND TIGHTEN IF NECESSARY.
5. IF A 48'-0" LONG TRAILER IS FURNISHED FOR LOADING, REFER TO SPECIAL NOTE 5 ON PAGE 5 FOR GUIDANCE IN THE LOAD PATTERN AND DUNNAGE PLACEMENT WHICH WILL PROVIDE FOR PROPER WEIGHT DISTRIBUTION.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	203	203
NAILS	NO. REQD	POUNDS
10d (3")	312	3-1/2
20d (4")	62	2-1/4
BINDING CHAIN, 5/16"	170' REQD	204 LBS
LOAD BINDER	10 REQD	60 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	13	40,300 LBS
DUNNAGE		675 LBS
TOTAL WEIGHT		40,975 LBS (APPROX)



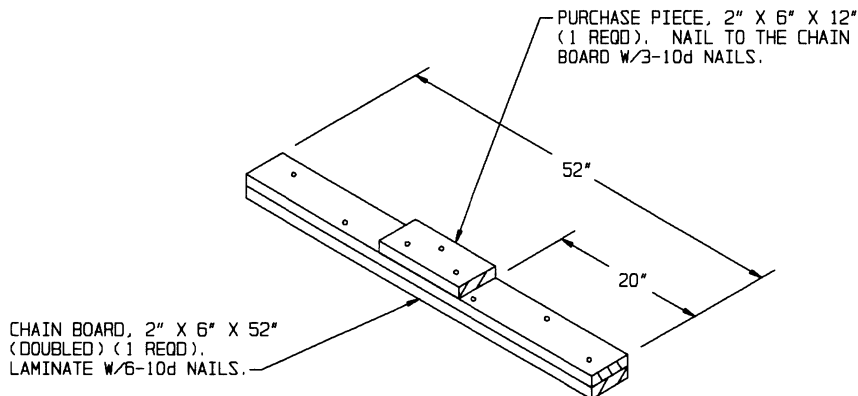
ISOMETRIC VIEW

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 ARE TO BE USED FOR LOAD SECUREMENT IN LIEU OF THE 2" STEEL STRAPPING, REJECT FIRE HOSE OR SIMILAR MATERIAL MUST BE POSITIONED UNDER AND SECURED TO THE CHAIN. SEE THE "PROVISIONS FOR THE USE OF FIRE HOSE IN LIEU OF CHAIN OR STRAPPING BOARDS" ON PAGE 11 FOR ADDITIONAL GUIDANCE.

KEY NUMBERS

- ① HEADER, 2" X 6" X 30" (DOUBLED) (1 REQD). PRE-POSITION THE FIRST PIECE 10" REARWARD OF THE CENTER OF A STAKE POCKET AND NAIL 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. SEE SPECIAL NOTE 2 AT LEFT.
- ② HEADER, 2" X 6" X 30" (DOUBLED) (1 REQD). POSITION THE FIRST PIECE AGAINST THE PALLET SKIDS AND NAIL TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-20d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (4 REQD). POSITION TO CENTER ON THE TWO END SKIDS AT THE REAR OF THE PALLET AND/OR TO CENTER ON THE SECOND AND THIRD SKIDS FROM THE FRONT OF THE PALLET. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ HOLD-DOWN STRAP, 2" X .050" OR .044" X 17'-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 HOLDD-DOWN STRAP. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 12.
- ⑥ SEAL FOR 2" STEEL STRAPPING (8 REQD, 4 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤.



CHAIN BOARD ASSEMBLY

PROVISIONS FOR THE USE OF FIRE HOSE 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 WITHIN APPROVED AMC 19-48 SERIES FLATBED TRAILER OUTLOADING DRAWINGS, 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.

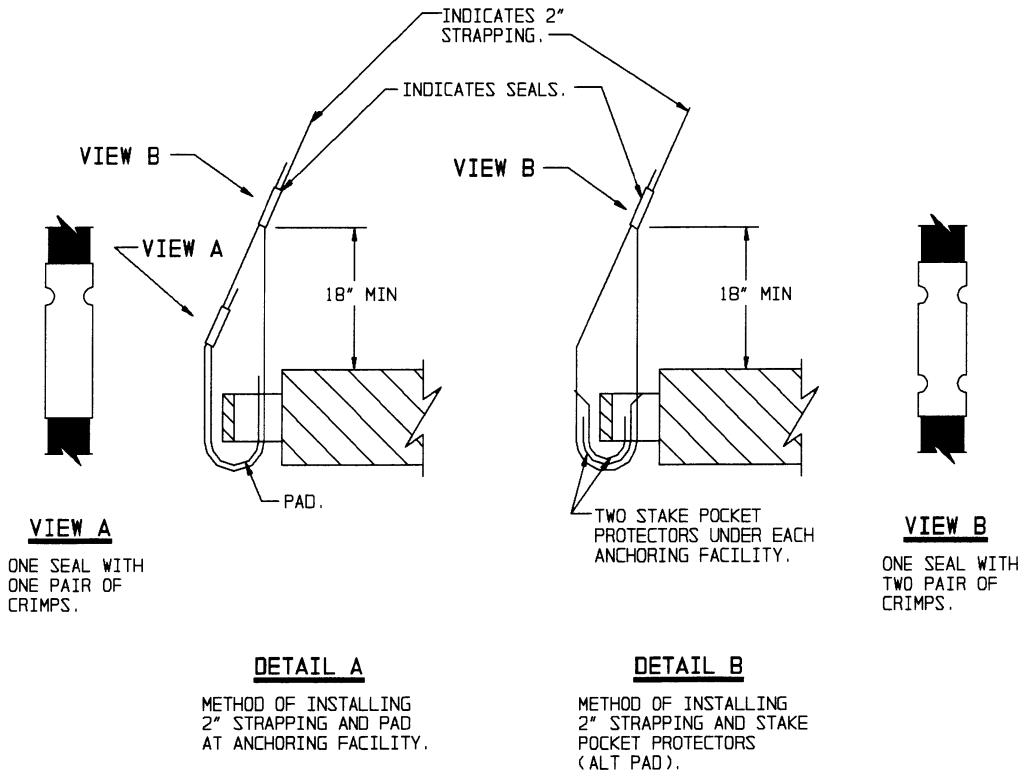
B. THE COLLAPSED WIDTH OF THE HOSE MUST BE A MINIMUM OF 2-1/2".

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.

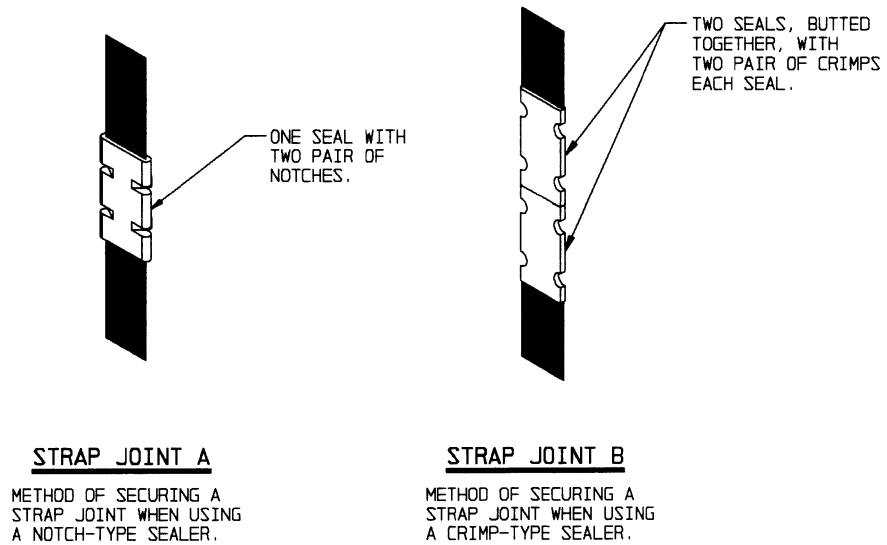
4. SECUREMENT TO CHAINS OR STRAPS

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.



HOLD-DOWN STRAP ANCHORING DETAILS



END-OVER-END LAP JOINT DETAILS

DETAILS