LOADING & BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS● OF 40MM CARTRIDGES PACKED IN PA120 METAL BOXES, UNITIZED ON A 45-1/2" X 35" METAL PALLET

INDEX

● THIS DOCUMENT INCLUDES OUTLOADING PROCEDURES FOR CONVENTIONAL TYPE TRAILERS AND FOR TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES AS APPROVED BY THE BUREAU OF EXPLOSIVES, ASSOCIATION OF AMERICAN RAILROADS. CAUTION: THE PROCEDURES SHOWN HEREIN FOR BOTH TYPES OF TRAILERS, ARE ONLY APPLICABLE FOR HIGHWAY MOVEMENTS; NOT FOR TRAILER-ON-FLAT-CAR MOVEMENTS.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND

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PROJECT CA 259/21-88

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 IN THIS DRAWING ARE APPLICABLE FOR THE PA125 METAL BOXES ASSEMBLED ON THE 45-1/2" X 35" 4-WAY ENTRY PALLET. SEE THE PICTORIAL VIEW ON PAGE 3 FOR SIZE AND WEIGHT. REFER TO U.S. ARMY AMC DRAWING 19-48-4232/21-20PM1007 FOR UNITIZATION PROCEDURES FOR THE PA125 METAL AMMUNITION BOXES.

C. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS IN CONVENTIONAL TYPE VAN TRAILERS, AND FOR SHIPMENTS IN VAN TRAILERS EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES (CROSS MEMBERS AND WALL MEMBERS) AND APPLY TO TRAILERS HAVING WOOD, OR WOOD AND METAL, OR ALL METAL FLOORS. VAN TRAILERS WHICH ARE 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) HAVE BEEN SHOWN. HOWEVER, THE PROCEDURES ARE ALSO APPLICABLE FOR TRAILERS WHICH ARE 89" THRU 99" IN WIDTH AND FOR TRAILERS OF OTHER LENGTHS FROM THE SHORTEST TO THE LONGEST AVAILABLE (REF: 24' TO 53'), AND FOR STRAIGHT TRUCK VANS. THE LOADING AND BRACING PROCEDURES SPECIFIED HEREIN ARE ALSO ADEQUATE (CONFIGURATION WISE AND STRENGTH WISE) FOR LOADS IN SHORTER OR LONGER VANS AND IN NARROWER OR WIDER VANS THAN SHOWN. THE SPECIFIED BRACING IS ADEQUATE FOR LOADS WEIGHING UP TO AND INCLUDING THE MAXIMUM WEIGHTS PERMITTED BY LAW.

D. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT FOR TRAILERS EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES ARE LIMITED TO HIGHWAY MOVEMENTS ONLY. THE HEIGHT REQUIREMENTS SPECIFIED WITHIN THIS DRAWING FOR THE INSTALLATION OF CROSS MEMBERS ARE IDENTICAL WITH THOSE RECOMMENDED BY THE BUREAU OF EXPLOSIVES PAMPHLET 6C, AND APPENDICES THERETO. CAUTION: TRAILERS EQUIPPED WITH WALL MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED.

1. PALLET UNITS SHOULD BE LOADED TIGHTLY AGAINST EACH OTHER AND/OR AGAINST INSTALLED CROSS MEMBERS. VOIDS LENGTHWISE WITHIN A LOAD SHOULD BE MINIMUM. CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE WALL MEMBER LOCKING HOLE SPACING PERMITS. EACH CROSS MEMBER WILL BE INSTALLED WITH EACH END ATTACHED AS NEARLY AS POSSIBLE IN A "MATED" POSITION (AT EQUAL HEIGHTS, AND AT EQUAL DISTANCES FROM THE END OF THE TRAILER).

2. CROSS MEMBERS IN EMPTY TRAILERS AND THOSE UNUSED IN LOADED TRAILERS MUST BE "SECURED" FOR SHIPMENT. COMPONENTS ASSIGNED TO EACH TRAILER MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS.

3. ONE CROSS MEMBER WILL BE REQUIRED FOR EACH 10,000 POUNDS OF LADING AND SHOULD NOT BE RELIED UPON TO RETAIN A GREATER WEIGHT. CROSS MEMBERS WILL NOT BE DOUBLED, THAT IS, TWO CROSS MEMBERS AT THE SAME HEIGHT LOCATION WILL NOT BE PLACED SIDE BY SIDE.

E. 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.

MATERIAL SPECIFICATIONS

LUMBER - - - - - - - -: FED SPEC MM-L-751. SEE TM 743-200-1, (DUNNAGE LUMBER).

NAILS - - - - - - - -: FED SPEC FF-N-105; COMMON.

PLYWOOD - - - - - - -: FED SPEC NN-P-530; GROUP B, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.

STRAPPING, STEEL - -: ASTM D 3953; FLAT STRAPPING, TYPE 1 OR 2, HEAVY DUTY, COATED FINISH (ORGANIC), ZINC-COATED (GRADE 2), OR UNCOATED.

SEAL, STRAP - - - -: ASTM D 3953; CLASS H, FINISH A, B (GRADE 2), OR C, TYPE D, STYLE I, II, OR IV.

STAPLE, STRAP - - -: COMMERCIAL GRADE.

WIRE - - - - - - - - -: FED SPEC QQ-W-461.

(GENERAL NOTES CONTINUED)

F. THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OFF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY. THE TOTAL WEIGHT OF THE LADING, OF THE DUNNAGE, OF THE TRACTOR, AND OF THE SEMITRAILER CARRYING THE LADING MUST NOT EXCEED THE MAXIMUM GROSS WEIGHT ALLOWED FOR THE STATE OR STATES THRU WHICH THE LOAD IS TO BE TRANSPORTED BY MOTOR CARRIER. LIKEWISE, THE GROSS WEIGHT ON A SINGLE OR TANDEM AXLE MUST NOT EXCEED THE MAXIMUM ALLOWABLE WEIGHT. IF THERE IS ANY DOUBT AS TO WHETHER THE TOTAL GROSS WEIGHT OF AXLE WEIGHT EXCEEDS THE MAXIMUM ALLOWED, WEIGHT SHOULD BE VERIFIED BY ACTUALLY WEIGHING THE LOADED VEHICLE.

G. NOTICE: A SHIPMENT WILL BE POSITIONED IN THE TRAILER CONSISTENT WITH STATE WEIGHT LAWS. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED. COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED MAY BE USED, HOWEVER, THE APPROVED METHODS SHOWN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.

H. THE "LOAD AS SHOWN" FOR MOST OF THE FULL LOADS DEPICTED HEREIN IS BASED ON AN APPROXIMATE LADING WEIGHT OF 42,000 POUNDS. THE SPECIFIED BLOCKING AND BRACING FOR THE FULL LOADS IS ADEQUATE FOR THE RETENTION OF HEAVIER LOADS. IF IT IS DESIRED TO INCREASE THE LADING WEIGHT.

J. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE PARTIALLY LOADED WITH PALLET UNITS OF CARTRIDGES, 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. SOME LOADS ARE SHOWN IN TRAILERS HAVING ROUNDED CORNERS AT THE FORWARD END. IF THE CONVENTIONAL VAN TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT OR WITH AN INSTALLED BULKHEAD, OMIT THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①, AND POSITION THE PALLET UNITS DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER, OMIT CROSS MEMBERS IN THE FORWARD END OF MECHANICAL VAN TRAILERS HAVING A SQUARE FRONT.

L. PALLET UNITS WHICH DO NOT CONTAIN A FULL QUANTITY OF ITEMS CAN BE TRANSPORTED. REFER TO U.S. ARMY AMC DRAWING 19-48-4232/21-20PM1007 FOR LESS THAN FULL PALLET UNITS, AND "SHIPMENT OF PARTIAL PALLET UNIT" DETAIL AND SPECIAL NOTES ON PAGE 14.

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 "STRAP JOINT A" AND "STRAP JOINT B" DETAILS ON PAGE 15 FOR GUIDANCE.

N. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.

O. 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.

P. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN 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.

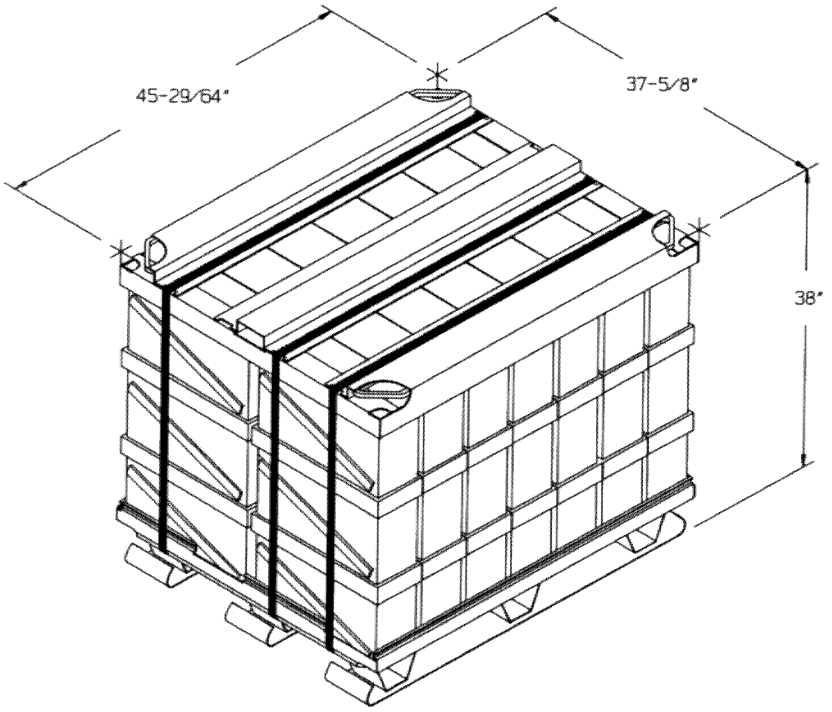
(CONTINUED ON PAGE 3)

(GENERAL NOTES CONTINUED FROM PAGE 2)

Q. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES WHICH ARE TO BE USED IN THE DELINEATED TRAILER LOADS SHOWN THROUGHOUT THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIED NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS. STAPLES WHICH ARE 2-1/2" OR LESS IN LENGTH SHOULD BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-N-105 AS NEARLY AS PRACTICABLE. STAPLES WHICH ARE LONGER THAN 2-1/2" WILL BE A COMMERCIAL GRADE, OF A QUALITY EQUIVALENT TO THOSE MANUFACTURED BY SENCO PRODUCTS INCORPORATED.
NOTE: STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.

R. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, END WALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

S. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.



PALLET UNIT

BOX - - - - - - - - - 42 EACH @ 50 LBS (APPROX)
CUBE - - - - - - - - - 37.61 CUBIC FEET (APPROX)
GROSS WEIGHT - - - - 2,200 LBS (APPROX)

PALLET UNIT DETAIL

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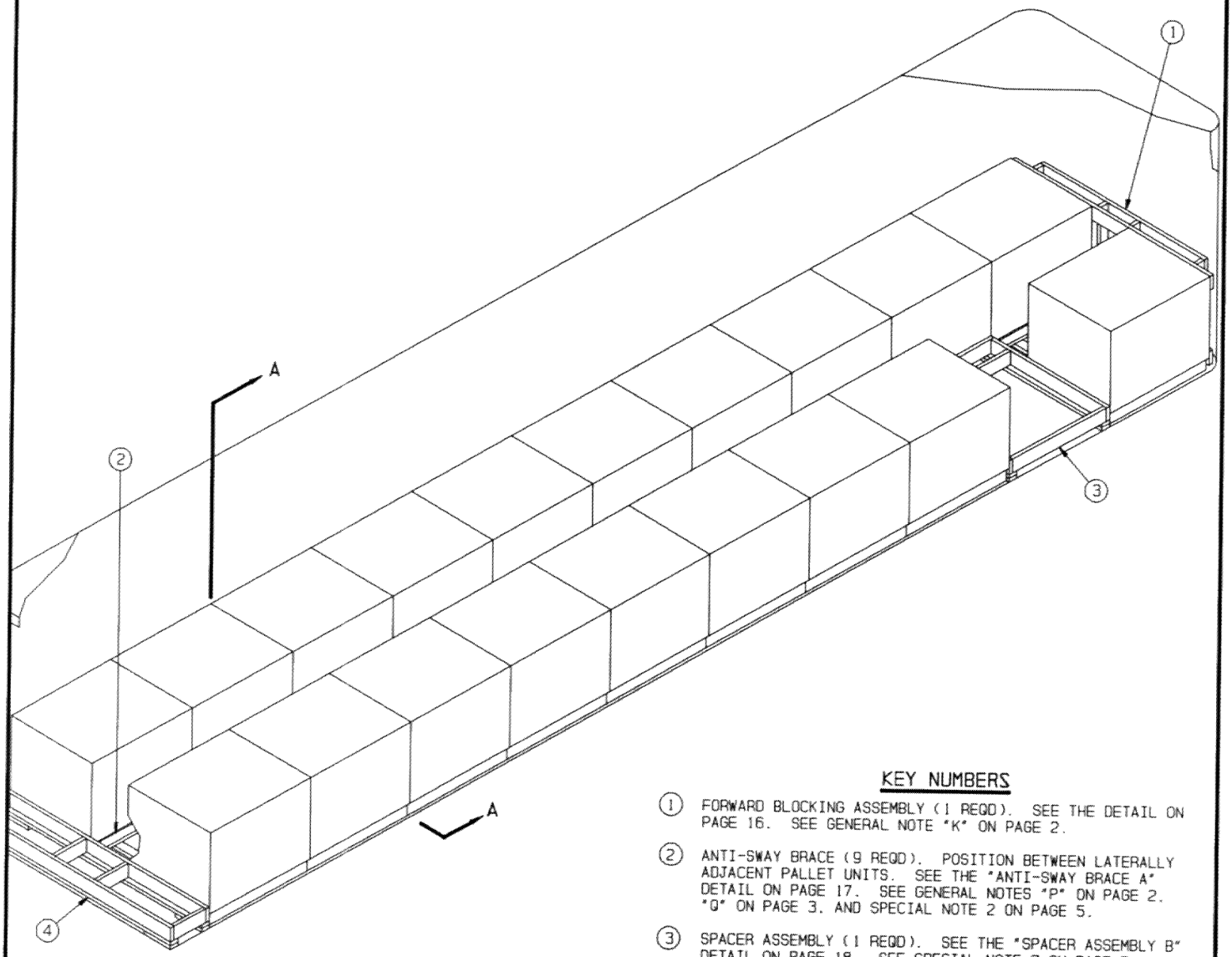


ISOMETRIC VIEW

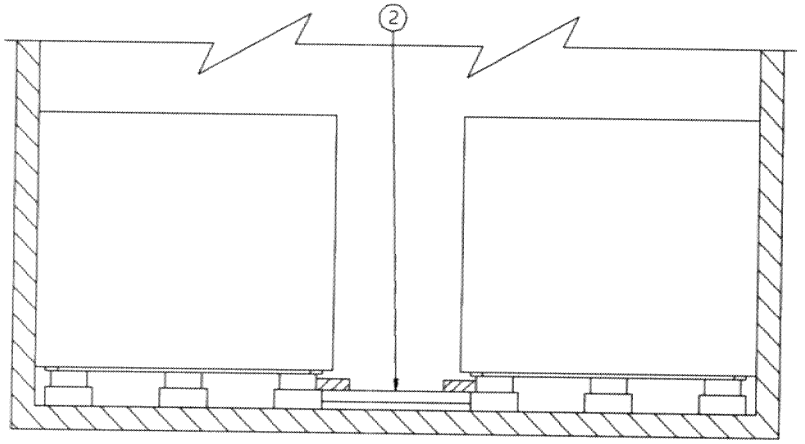
KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 16. SEE GENERAL NOTE "K" ON PAGE 2.

(2) ANTI-SWAY BRACE (9 REQD). POSITION BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE "ANTI-SWAY BRACE A" DETAIL ON PAGE 17. SEE GENERAL NOTES "P" ON PAGE 2. "Q" ON PAGE 3. AND SPECIAL NOTE 2 ON PAGE 5.

(3) SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY B" DETAIL ON PAGE 18. SEE SPECIAL NOTE 3 ON PAGE 5.

(4) REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 19. SEE SPECIAL NOTE 6 ON PAGE 5.



SECTION A-A

19-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

PROJECT CA 259/21-88

SPECIAL NOTES:

1. A 19-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL TYPE VAN TRAILER. TRAILERS OF OTHER DIMENSIONS CAN BE USED. NOTE THAT THE LOADING PATTERN SHOWN ON PAGE 6 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 4.

2. ANTI-SWAY BRACES, SHOWN AS PIECE MARKED ② IN THE LOAD ON PAGE 4 ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT PALLET UNITS.

3. IF THE QUANTITY OF UNITS IS DIFFERENT FROM WHAT IS SHOWN, OR IF THE TRAILER TO BE LOADED IS LONGER THAN 40' SPACER ASSEMBLY "A" DETAILED ON PAGE 16, AND/OR SPACER ASSEMBLY "B" SHOWN AS PIECE MARKED ③ IN THE LOAD VIEW CAN BE USED FOR THE PURPOSE OF PROVIDING FOR PROPER WEIGHT DISTRIBUTION, OR MAY BE USED IN LIEU OF ONE AND/OR TWO OMITTED UNITS. NOTE THAT A SPACER ASSEMBLY MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①, AND THEY MUST BE POSITIONED WHERE THERE WILL BE A PALLET UNIT AT EACH END OF EACH ASSEMBLY.

4. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER OF EITHER ROW, IT MUST NOT BE POSITIONED ON TOP OF THE REARMOST PALLET UNIT IN THE FIRST LAYER. PROVIDE LONGITUDINAL BRACING BY INSTALLING UNITIZING STRAPS. PROVIDE LATERAL BRACING BY INSTALLING A TOP-OF-LOAD ANTI-SWAY BRACE. SEE PIECES MARKED ④ AND ⑤ ON PAGE 8 FOR A TYPICAL INSTALLATION.

5. IF A STACK IN THE LOAD UNIT AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS IN EACH APPLICABLE ROW. SEE THE "ALTERNATIVE LOADING PROCEDURES" DETAIL ON PAGE 15 FOR A TYPICAL INSTALLATION.

6. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE "REAR BLOCKING ASSEMBLY C" AS DETAILED ON PAGE 20. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", AS SHOWN. IF THE VOID AT THE REAR OF THE LOAD MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED.

7. REFER TO PAGE 14 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

8. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, THE NAILED-HEADER METHOD OF REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGE 21 FOR GUIDANCE. NOTE THAT THE NAILED-HEADER METHOD OF REAR BLOCKING MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4" 2" X 6"	154 66	103 66
NAILS	NO. REQD	POUNDS
10d (3")	232	3-1/2

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	19	41,800 LBS
DUNNAGE		342 LBS
TOTAL WEIGHT		42,142 LBS (APPROX)

19-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

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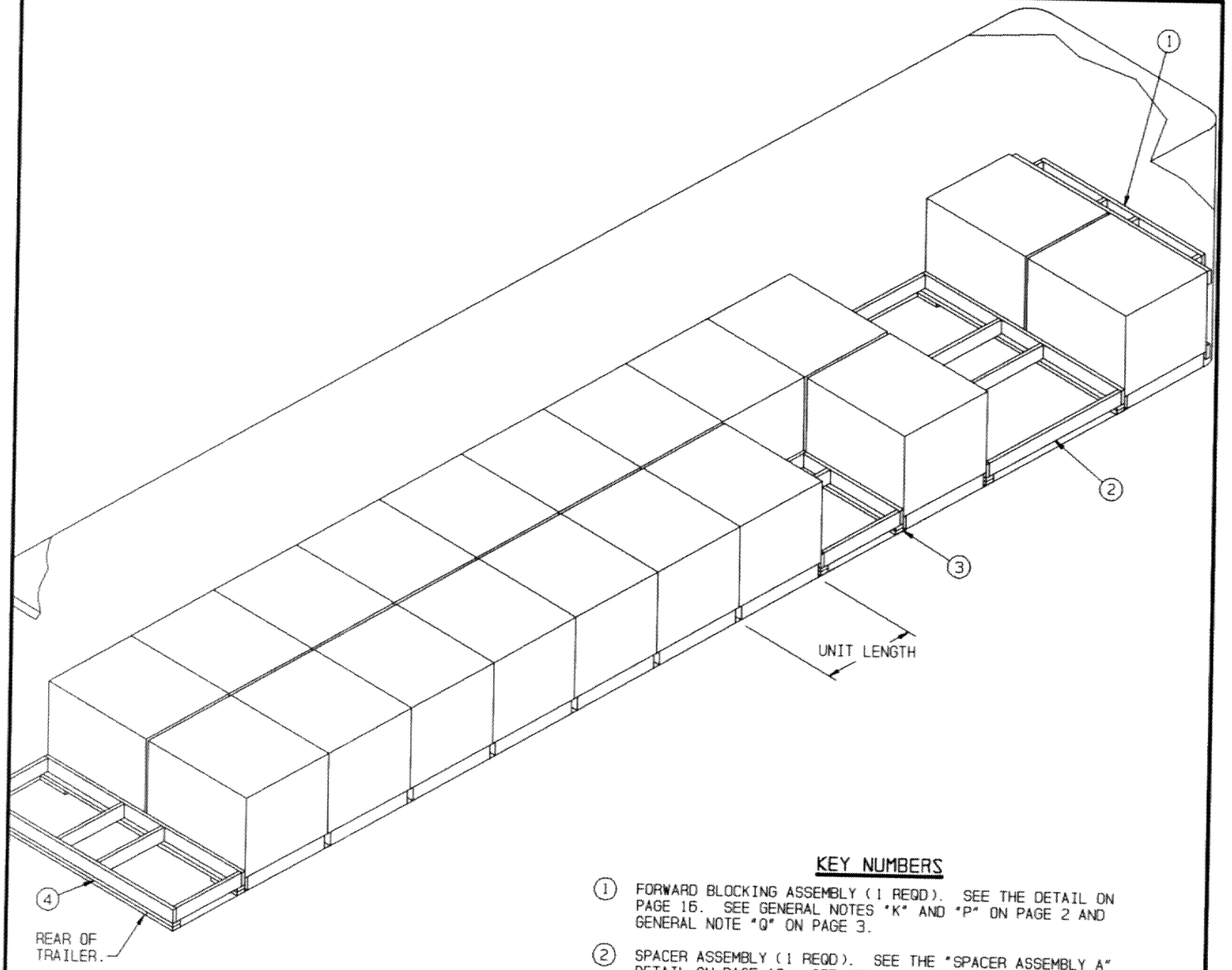


ISOMETRIC VIEW

KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 16. SEE GENERAL NOTES "K" AND "P" ON PAGE 2 AND GENERAL NOTE "Q" ON PAGE 3.

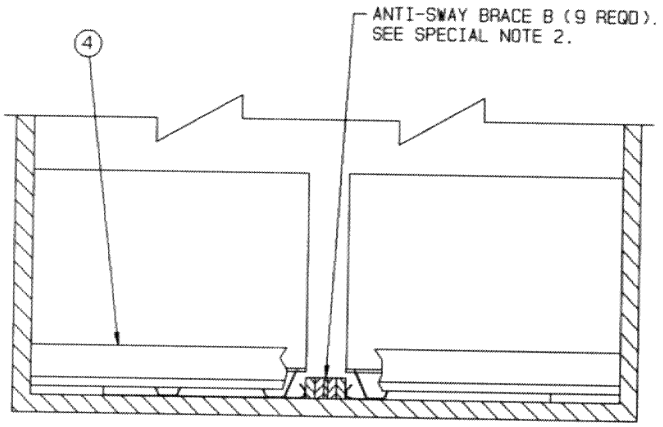
(2) SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 16. SEE SPECIAL NOTE 3 ON PAGE 7.

(3) SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY B" DETAIL ON PAGE 18. SEE SPECIAL NOTE 4 ON PAGE 7.

(4) REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY B" DETAIL ON PAGE 20. SEE SPECIAL NOTE 5 ON PAGE 7.

19-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

PROJECT CA 259/21-88



TYPICAL REAR VIEW OF AN 8'-2" WIDE VAN

SPECIAL NOTES:

1. A 19-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL TYPE VAN TRAILER. TRAILERS OF OTHER DIMENSIONS CAN BE USED. SEE SPECIAL NOTE 2.

2. IF A TRAILER WHICH IS WIDER THAN 7'-10" IS TO BE LOADED ANTI-SWAY BRACES WILL BE REQUIRED BETWEEN ALL LATERALLY ADJACENT PALLET UNITS. SEE THE "TYPICAL REAR VIEW OF AN 8'-2" WIDE VAN" AT LEFT, AND THE "ANTI-SWAY BRACE B" DETAIL ON PAGE 19.

3. SPACER ASSEMBLY "A" SHOWN AS PIECE MARKED ② IN THE LOAD ON PAGE 6 IS USED FOR THE PURPOSE OF PROVIDING FOR PROPER WEIGHT DISTRIBUTION, AND CAN ALSO BE USED TO ADJUST THE QUANTITY OF THE LOAD. IF THE TRAILER TO BE LOADED IS LONGER THAN 40' THE LOCATION OF THE ASSEMBLY, AND/OR THE STRUT LENGTHS, MAY BE DIFFERENT THAN WHAT IS SHOWN. IF A SHORTER TRAILER IS USED FOR THE DEPICTED LOAD, THIS ASSEMBLY MAY NOT BE REQUIRED. NOTE THAT A SPACER ASSEMBLY MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①.

4. SPACER ASSEMBLY "B" SHOWN AS PIECE MARKED ③ IN THE LOAD VIEW, IS ONLY SHOWN TO DEPICT A TYPICAL INSTALLATION. IF A PALLET UNIT IS LOADED IN PLACE OF THE SPACER ASSEMBLY, PIECE MARKED ③ WILL NOT BE REQUIRED. NOTE THAT THE SPACER ASSEMBLY MUST BE POSITIONED WHERE THERE WILL BE A PALLET UNIT AT EACH END; A SPACER ASSEMBLY MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①.

5. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE "REAR BLOCKING ASSEMBLY C" AS DETAILED ON PAGE 20. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B", AS SHOWN. IF THE VOID AT THE REAR OF THE LOAD MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED.

7. REFER TO PAGE 14 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

8. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, THE NAILED-HEADER METHOD OF REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLLUP TYPE DOORS" ON PAGE 21 FOR GUIDANCE. NOTE THAT THE NAILED-HEADER METHOD OF REAR BLOCKING MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.

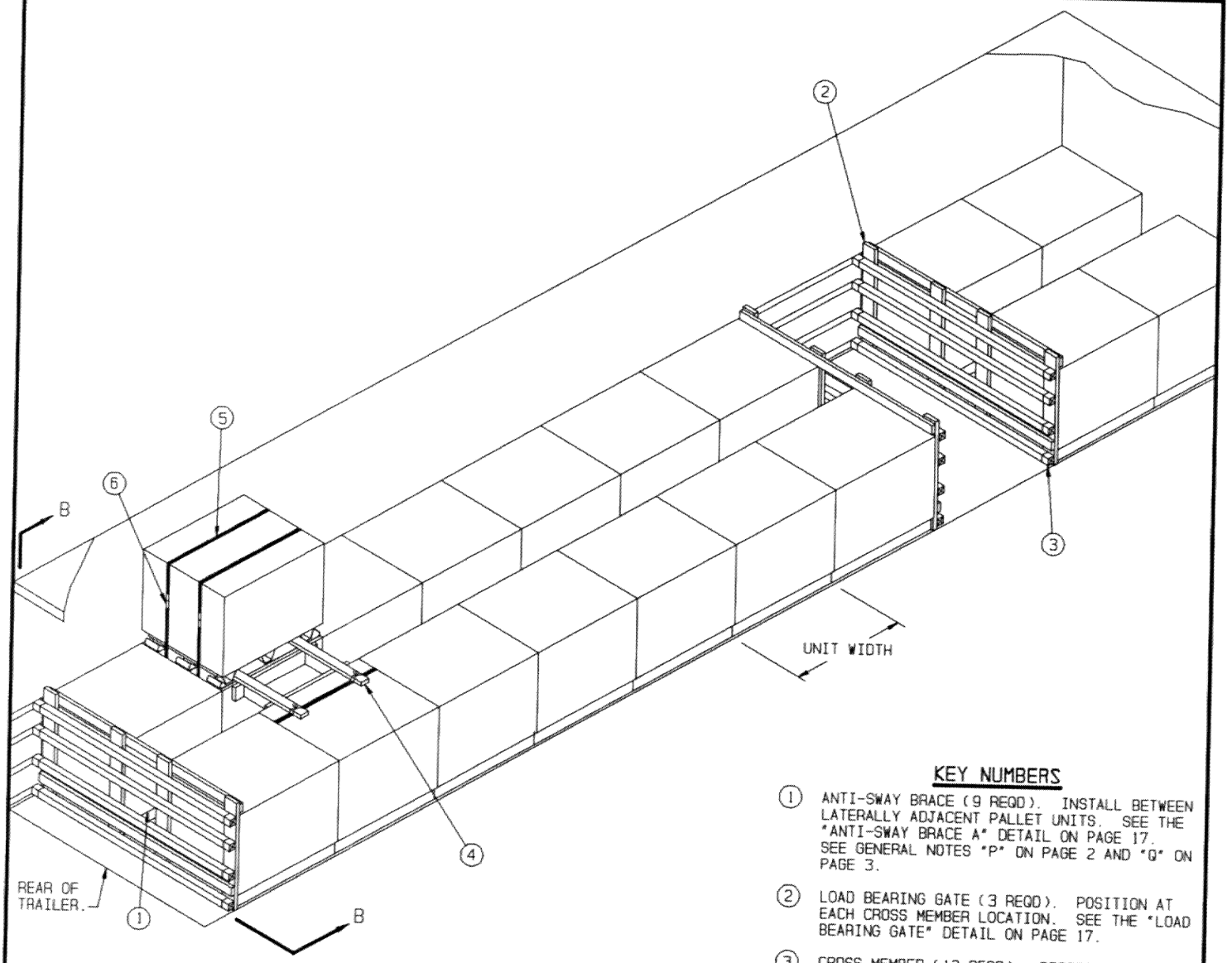
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4" 2" X 6"	62 103	42 103
NAILS	NO. REQD	POUNDS
10d (3")	170	2-3/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	19	41,800 LBS
DUNNAGE		293 LBS
TOTAL WEIGHT		42,093 LBS (APPROX)

19-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

PROJECT CA 259/21-88



ISOMETRIC VIEW

KEY NUMBERS

(1) ANTI-SWAY BRACE (9 REQD). INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE "ANTI-SWAY BRACE A" DETAIL ON PAGE 17. SEE GENERAL NOTES "P" ON PAGE 2 AND "Q" ON PAGE 3.

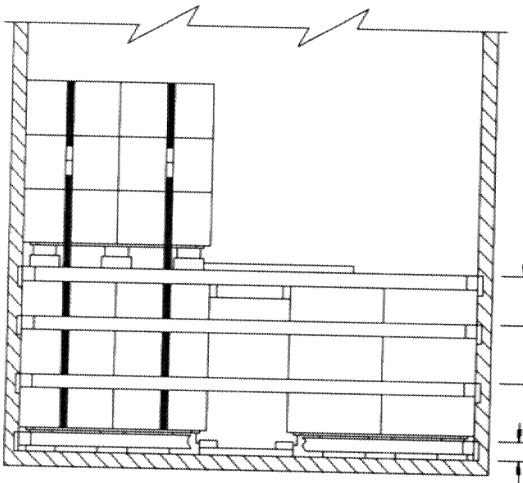
(2) LOAD BEARING GATE (3 REQD). POSITION AT EACH CROSS MEMBER LOCATION. SEE THE "LOAD BEARING GATE" DETAIL ON PAGE 17.

(3) CROSS MEMBER (12 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION B-B" VIEW BELOW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2, AND SPECIAL NOTE 5 ON PAGE 9.

(4) TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE DETAIL ON PAGE 18. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POST AND WIRE THE OTHER ENDS OF THE SUPPORT PIECES TO THE UNIT LOAD STRAP. SEE THE "TIE WIRE APPLICATION" DETAIL ON PAGE 18. SEE SPECIAL NOTE 2 ON PAGE 9.

(5) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 21'-6" LONG STEEL STRAPPING (2 REQD). INSTALL TO ENCIRCLE ONE COMPLETE STACK AS SHOWN. SEE SPECIAL NOTE 3 ON PAGE 9.

(6) SEAL FOR 1-1/4" STRAPPING (4 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION B-B

19-UNIT LOAD
IN A 40'-0" LONG BY 7'-8" WIDE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES

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(SPECIAL NOTES CONTINUED)

5. IF THE TRAILER BEING LOADED IS EQUIPPED WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, PIECES MARKED ② AND ③, RESPECTIVELY, WILL BE OMITTED FROM BETWEEN THE SECOND AND THIRD LOAD UNITS. TWO (2) PALLET UNITS CAN BE TRANSFERRED TO THE SECOND LAYER OF THE REAR LOAD UNIT, AND UNITIZED AS SHOWN IN THE "TYPICAL REAR VIEW" BELOW. A 2-HIGH LOAD BEARING GATE WILL BE INSTALLED IN LIEU OF PIECE MARKED ② AT THE REAR OF THE LOAD, AND "ANTI-SWAY BRACE A" DETAILED ON PAGE 17 WILL BE INSTALLED BETWEEN LATERALLY ADJACENT UNITS IN THE TOP LAYER. A SPACER ASSEMBLY, SHOWN AS PIECE MARKED ② ON PAGE 6, WILL BE REQUIRED TO PROVIDE FOR PROPER WEIGHT DISTRIBUTION. ADJUST THE LOCATION AND/OR STRUT LENGTHS OF THE SPACER ASSEMBLY, AS SPECIFIED BY SPECIAL NOTE 3 ON PAGE 7.

6. THE LOADING PATTERN ON PAGE 6 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 8. OMIT PIECES MARKED ①, ② AND ④ ON PAGE 6 AND INSTALL PIECES MARKED ② AND ③ ON PAGE 8 WITHIN THE MID-SECTION AND AT THE REAR OF THE LOAD. NOTE THAT CROSS MEMBERS MUST NOT BE INSTALLED ADJACENT TO PIECES MARKED ③ ON PAGE 6. INSTALL AT THE NEXT FORWARD OR REARWARD PALLET LOCATION. SEE SPECIAL NOTE 2 ON PAGE 7.

SPECIAL NOTES:

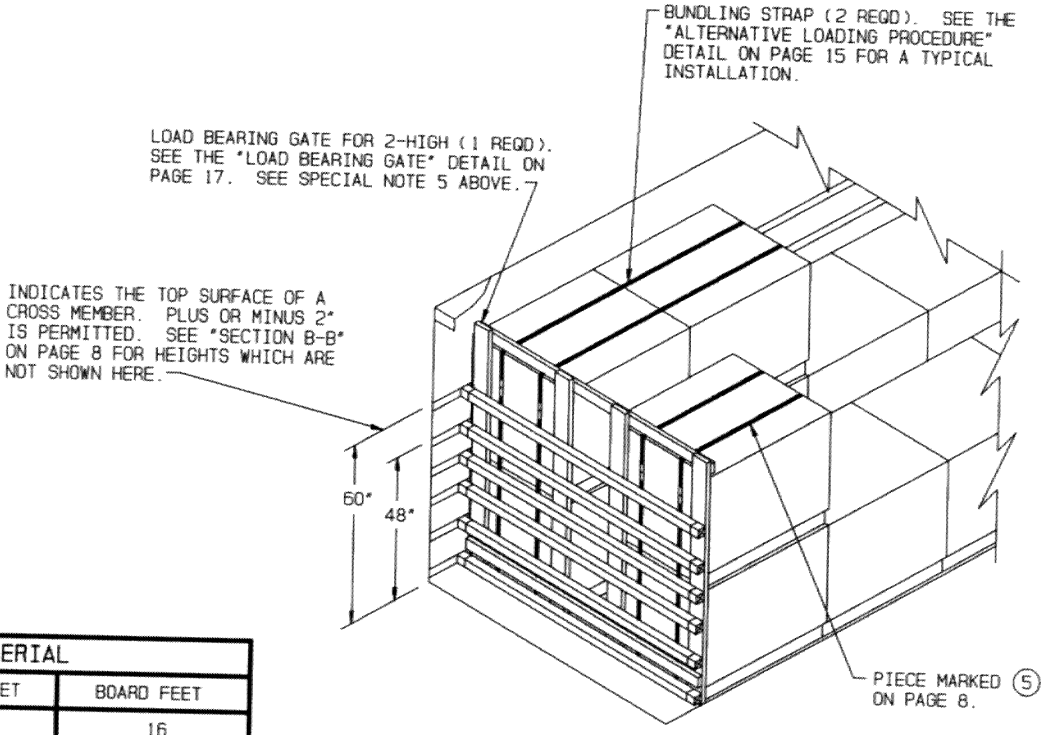
1. A 19-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES. TRAILERS OF OTHER DIMENSIONS CAN BE USED. SEE SPECIAL NOTES.

2. THE "TOP-OF-LOAD ANTI-SWAY BRACE" SHOWN IN THE LOAD AS PIECE MARKED ④, IS ONLY REQUIRED FOR THE BRACING OF AN ODD UNIT IN THE SECOND LAYER. IF ANOTHER PALLET UNIT IS POSITIONED OPPOSITE THE ODD UNIT, "ANTI-SWAY BRACE A", DETAILED ON PAGE 17, WILL BE INSTALLED IN LIEU OF PIECE MARKED ④; THEN, TWO (2) ADDITIONAL UNITIZING STRAPS MARKED ⑤ WILL BE REQUIRED.

3. THE STACK UNITIZING STRAPS, PIECES MARKED ⑤ IN THE LOAD ON PAGE 8 WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER, EXCEPT AT THE VERY REAR OF THE LOAD. PALLET UNITS MUST NOT BE POSITIONED ON TOP OF THE REARMOST PALLET UNIT IN THE FIRST LAYER UNLESS THEY ARE SUPPORTED BY CROSS MEMBERS AS SHOWN IN THE "TYPICAL REAR VIEW" DETAILED BELOW.

4. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE GUIDANCE ON PAGE 13.

(CONTINUED AT LEFT)



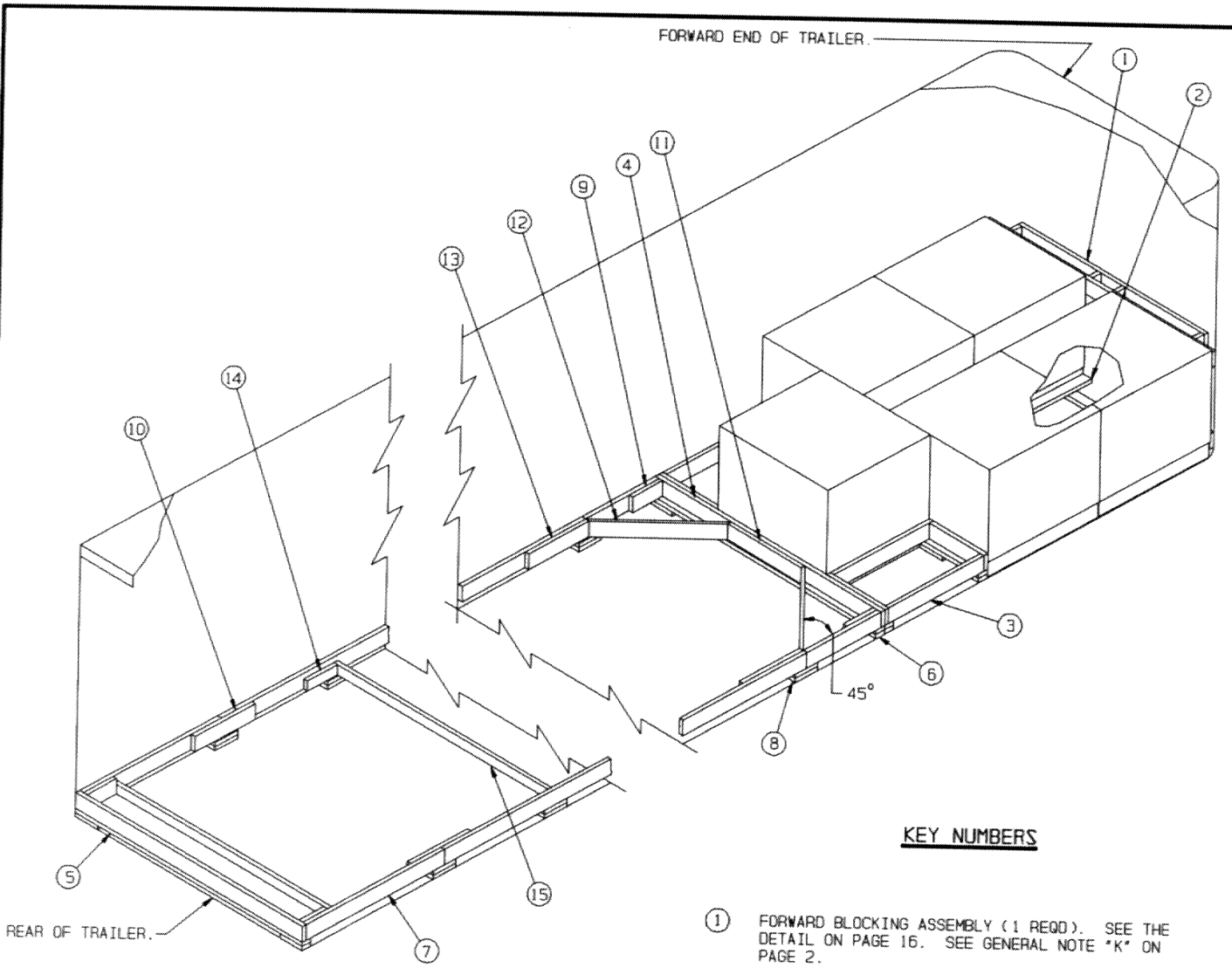
TYPICAL REAR VIEW

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 2" X 4" 2" X 6"	46 114 52	16 76 52
NAILS	NO. REQD	POUNDS
6d (2") 10d (3")	72 134	1/2 2
STEEL STRAPPING, 1-1/4" - - 43' REQD - - - - - 7 LBS SEAL FOR 1-1/4" STRAPPING - - 4 REQD - - - - - NIL WIRE, NO. 14 GAGE - - - - - - 4' REQD - - - - - NIL		
CROSS MEMBER - - - - - - - - - - - - - - - - - 12 REQD		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	19 - - - - - -	41,800 LBS
DUNNAGE - - - - - - - - - - - - - - - - -		288 LBS
TOTAL WEIGHT - - - - - - - -		42,088 LBS (APPROX)

19-UNIT LOAD
IN A 40'-0" LONG BY 7'-8" WIDE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



ISOMETRIC VIEW

KEY NUMBERS

① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 16. SEE GENERAL NOTE "K" ON PAGE 2.

② ANTI-SWAY BRACE (2 REQD). INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE "ANTI-SWAY BRACE DETAIL A" ON PAGE 17.

③ SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY D" DETAIL ON PAGE 19. NAIL TO A HEADER, PIECE MARKED ④, W/2-10d NAILS. SEE SPECIAL NOTE 2 ON PAGE 11.

④ HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). SEE SPECIAL NOTE 5 THRU 7 ON PAGE 11.

⑤ HEADER AND SIDE STRUT SUPPORT, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER, PIECE MARKED ④, W/1-10d NAIL EVERY 8".

⑥ RISER PIECE, 2" X 4" X 9" (4 REQD). POSITION UNDER EACH END OF HEADER AND SIDE STRUT SUPPORT PIECES MARKED ⑤. NAIL TO PIECE MARKED ⑤ W/2-10d NAILS.

⑦ SIDE STRUT, 2" X 6" BY CUT TO FIT BETWEEN THE FORWARD AND REAR HEADERS PIECE MARKED ④ (2 REQD). SEE SPECIAL NOTE 3 ON PAGE 11.

⑧ RISER PIECE, 2" X 4" X 9" (DOUBLED) (AS REQD). LAMINATE W/2-10d NAILS. CENTER UNDER THE JOINTS OF PIECES MARKED ⑫ AND ⑬, ⑭, AND ⑤ AND UNDER THE SPLICE OF PIECES MARKED ⑦ IF APPLICABLE. NAIL TO SIDE STRUT MARKED ⑦ W/2-10d NAILS.

(CONTINUED AT LEFT)

(KEY NUMBERS CONTINUED)

⑨ POCKET CLEAT, 2" X 6" X 12" (4 REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑦, W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER, PIECE MARKED ④, W/2-12d NAILS.

⑩ SPLICE PIECE, 2" X 6" X 24" (AS REQD). CENTER ON JOINT OF PIECES MARKED ⑦ AND NAIL TO SIDE STRUT MARKED ⑦ W/4-10d NAILS AT EACH END. SEE SPECIAL NOTE 3 ON PAGE 11.

⑪ CENTER CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO A HEADER, PIECE MARKED ④, W/6-10d NAILS.

⑫ DIAGONAL BRACE, 2" X 6" BY CUT TO FIT (2 REQD). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT A 45° ANGLE AS SHOWN AND TOENAIL TO THE ADJACENT HEADER AND SIDE STRUT, PIECES MARKED ④ AND ⑦, W/2-16d NAILS AT EACH END.

⑬ BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑦, W/8-10d NAILS.

⑭ STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑦, W/3-10d NAILS. SEE SPECIAL NOTE 4 ON PAGE 11.

⑮ STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQD). NAIL TO THE POCKET CLEATS, PIECES MARKED ⑨ AND/OR TO THE STRUT BRACE RETAINING CLEATS, PIECES MARKED ⑭, W/2-12d NAILS AT EACH END. SEE SPECIAL NOTE 4 ON PAGE 11.

TYPICAL LTL (5-UNIT LOAD) IN A CONVENTIONAL VAN TRAILER

PROJECT CA 259/21-88

SPECIAL NOTES:

1. A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.

2. THE SPACER ASSEMBLIES, PIECE MARKED ③, ARE SHOWN ONLY TO DEPICT A TYPICAL INSTALLATION. SPACER ASSEMBLIES WILL BE USED WHEN A PALLET UNIT IS OMITTED. THEY MAY OR MAY NOT BE REQUIRED, DEPENDING ON THE QUANTITY OF PALLET UNITS TO BE SHIPPED.

3. DEPENDING ON THE NUMBER OF UNITS BEING LOADED, EACH OF THE SIDE STRUTS, PIECES MARKED ⑦, MAY NEED TO BE FORMED FROM MORE THAN ONE PIECE OF MATERIAL. IF SUCH IS THE CASE, THE SIDE STRUTS MUST BE SPLICED. SPLICING CAN BE ACCOMPLISHED BY CENTERING A 2" X 6" X 24" PIECE ON THE JOINT OF THE SIDE STRUTS AND NAILING IT TO THE SIDE STRUTS W/4-10d NAILS AT EACH END. CAUTION: A RISER PIECE, PIECE MARKED ⑧, MUST BE POSITIONED UNDER EACH SPLICE JOINT. NOTE: IF DESIRED, THE STRUT BRACING PIECE(S), PIECE MARKED ⑮, MAY BE NAILED TO THE SPLICE PIECES IN LIEU OF USING ADDITIONAL STRUT BRACE RETAINING CLEATS, PIECES MARKED ⑭.

4. ALL LTL LOADS, REGARDLESS OF THEIR SIZE, REQUIRE ONE STRUT BRACE POSITIONED AT THE REAR OF THE TRAILER AND NAILED TO PIECE MARKED ⑨. IF THE SIDE STRUTS, PIECE MARKED ⑦, ARE LONGER THAN 7'-0", AN ADDITIONAL STRUT BRACE, PIECE MARKED ⑮, AND TWO (2) STRUT BRACE RETAINING CLEATS, PIECE MARKED ⑭, AND TWO (2) RISER PIECES MARKED ⑧, MUST BE APPLIED FOR EVERY 7'-0" OF SIDE STRUT LENGTH.

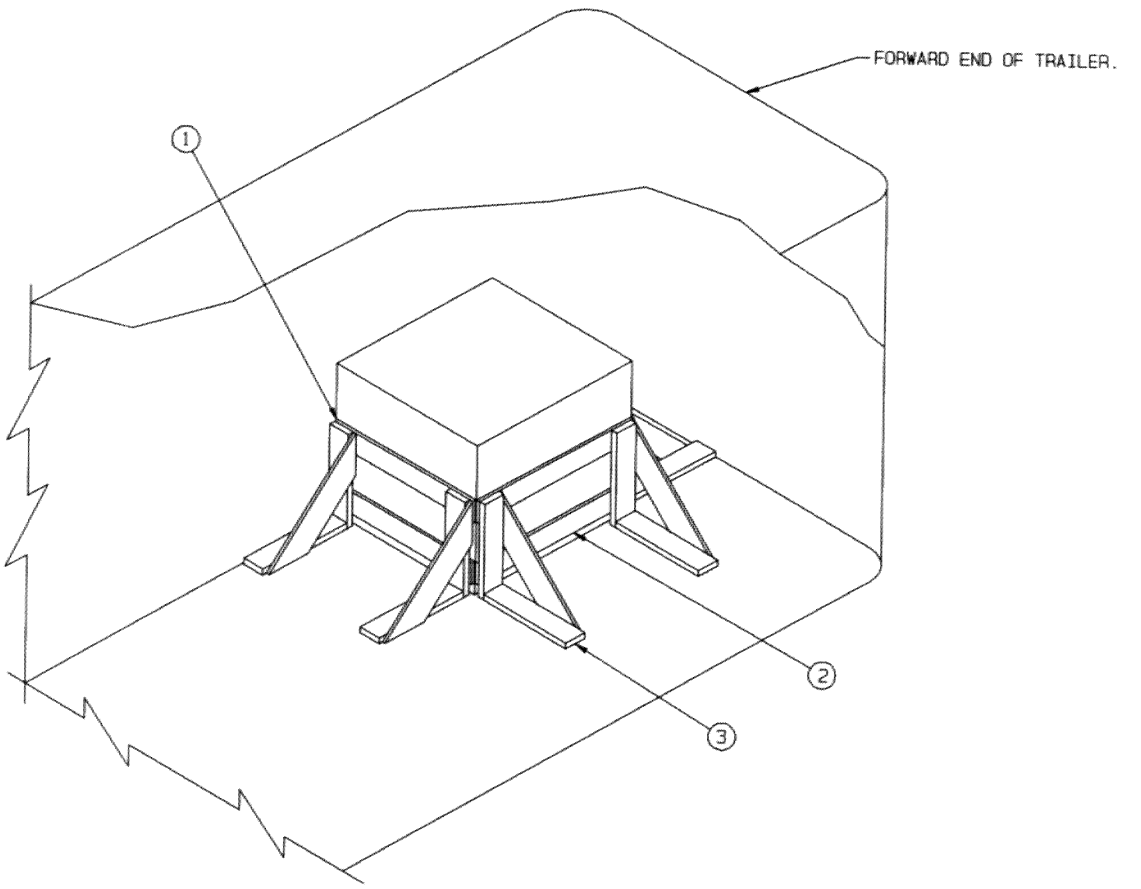
5. THE "K-BRACE" BLOCKING, SHOWN AS PIECE MARKED ④ THRU ⑮, IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 20,000 POUNDS.

6. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, THE NAILED-HEADER METHOD OF REAR BLOCKING MUST BE INSTALLED IN LIEU OF THE "K-BRACE" TYPE BLOCKING. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOOR" ON PAGE 21 FOR GUIDANCE. NOTE THAT THE NAILED-HEADER METHOD OF REAR BLOCKING MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS, AND MAY BE USED IN LIEU OF PIECES MARKED ④ THRU ⑮ WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS.

7. IF DESIRED, IN TRAILERS EQUIPPED WITH NAILABLE FLOORS, THE NAILED-HEADER METHOD OF REAR BLOCKING MAY ALSO BE USED IN LIEU OF THE K-BRACE BLOCKING SHOWN AS PIECES MARKED ④ THRU ⑮. REFER TO PAGE 21 FOR GUIDANCE.

8. REFER TO PAGE 14 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

TYPICAL LTL (5-UNIT LOAD) IN A CONVENTIONAL VAN TRAILER



ISOMETRIC VIEW

SPECIAL NOTES:

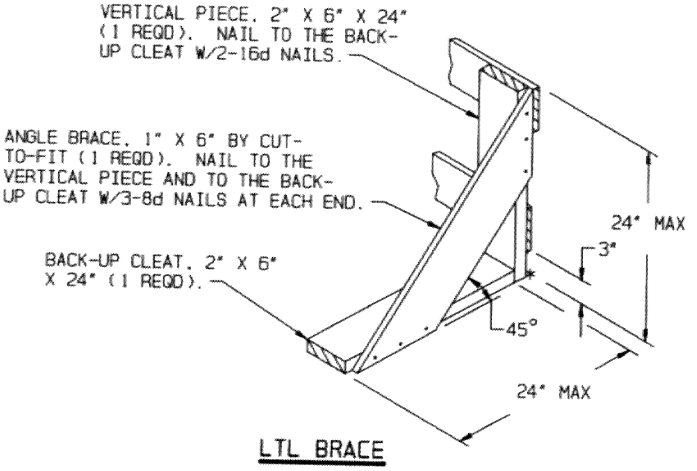
1. A 7'-6" WIDE (INSIDE DIMENSION) TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. THE POSITIONING OF A SINGLE PALLET UNIT IS OPTIONAL. IF THE TRAILER HAS A SQUARE FRONT, THE TWO (2) FORWARD LTL BRACES MAY BE OMITTED AND THE UNIT POSITIONED AGAINST THE END WALL.
3. MORE THAN ONE PALLET UNIT CAN BE SHIPPED PROVIDING THE CAPACITY OF THE LTL BRACES IS NOT EXCEEDED. THE LOAD SHOULD BE FORMED IN ROWS, WITH THE UNITS POSITIONED AGAINST OPPOSITE SIDEWALLS. ANTI-SWAY BRACE "A" DETAILED ON PAGE 17 MUST BE INSTALLED BETWEEN LATERALLY ADJACENT UNITS.
4. EACH LTL BRACE AS APPLIED FOR LONGITUDINAL BRACING WILL SUPPORT 2,000 POUNDS OF LADING. HOWEVER NOT LESS THAN TWO (2) BRACES WILL BE USED AGAINST EACH PALLET UNIT ACROSS THE WIDTH OF THE TRAILER. ADDITIONAL BRACES MAY BE INSTALLED FOR THE RETENTION OF A HEAVIER LOAD.

KEY NUMBERS

(1) LOAD BEARING PIECE, 1" X 6" X 37" (4 REQD). LOCATE AT THE HEIGHTS AS SPECIFIED IN THE "LTL BRACE" DETAIL BELOW. NAIL TO THE LTL BRACES W/4-6d NAILS AT EACH JOINT. SEE GENERAL NOTE "P" ON PAGE 2.

(2) LOAD BEARING PIECE, 1" X 6" X 45" (2 REQD). LOCATE AT THE HEIGHTS AS SPECIFIED IN THE "LTL BRACE" DETAIL BELOW. NAIL TO THE LTL BRACES W/4-6d NAILS AT EACH JOINT.

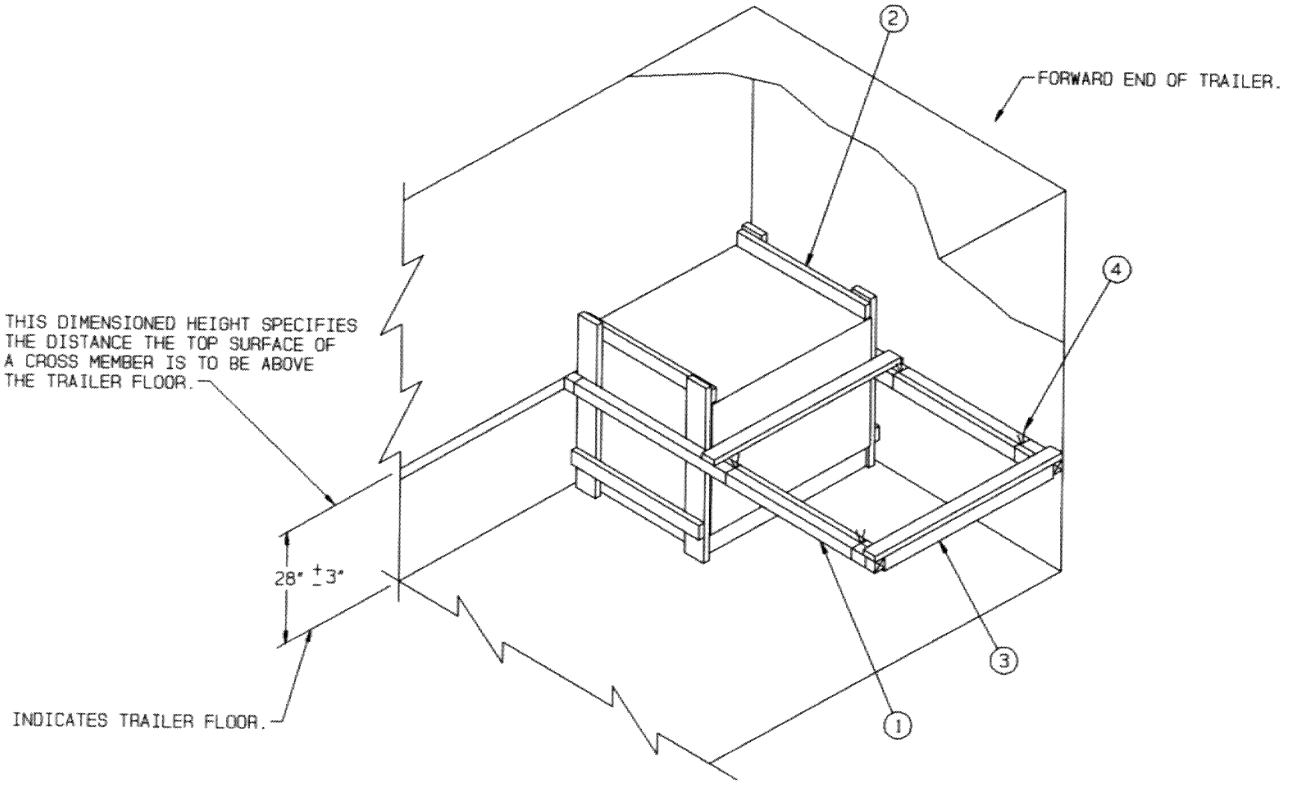
(3) LTL BRACE (6 REQD). SEE THE "LTL BRACE" DETAIL BELOW. NAIL TO THE TRAILER FLOOR W/10-10d NAILS.



LTL BRACE

TYPICAL LTL (1-UNIT LOAD) IN A CONVENTIONAL VAN TRAILER

PROJECT CA 259/21-88



ISOMETRIC VIEW

SPECIAL NOTES:

1. A 7'-6" WIDE (INSIDE DIMENSION) VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.

2. A TYPICAL LTL LOAD OF ONE (1) PALLETIZED UNIT IS SHOWN. IF TWO (2) PALLETIZED UNITS ARE TO BE TRANSPORTED, POSITION THE TWO UNITS ACROSS THE WIDTH OF THE TRAILER. OMIT THE SPACER ASSEMBLIES AND TIE WIRES SHOWN AS PIECES MARKED ③ AND ④. NOTE: WHEN LOADING TWO (2) PALLETIZED UNITS ACROSS THE WIDTH OF THE TRAILER, POSITION THE UNITS AGAINST THE FORWARD END WALL (UNLESS THE TRAILER HAS ROUNDED CORNERS) AND OMIT THE CROSS MEMBER AT THE FORWARD END. AN "ANTI-SWAY BRACE A" DETAILED ON PAGE 17, WILL BE REQUIRED BETWEEN LATERALLY ADJACENT UNITS.

KEY NUMBERS

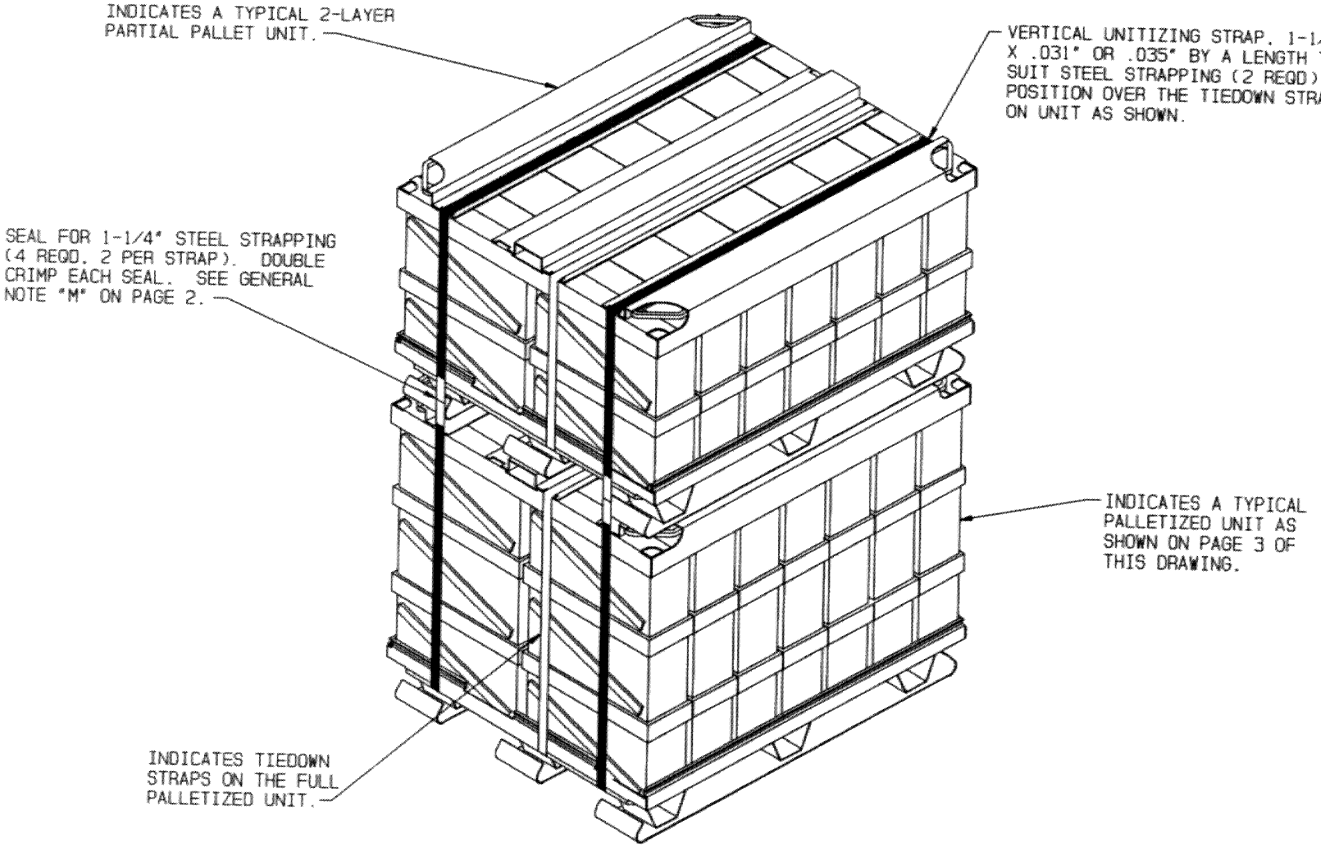
① CROSS MEMBER (2 REQD). POSITION AT THE HEIGHT AS SPECIFIED BY THE ISOMETRIC VIEW ABOVE. SEE GENERAL NOTE "D" AND "K" ON PAGE 2.

② LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE" DETAIL ON PAGE 17.

③ SPACER ASSEMBLY (1 REQD). SEE THE SPACER ASSEMBLY "C" DETAIL ON PAGE 17.

④ TIE WIRE, NO. 14 GAGE WIRE 30" LONG (4 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBER AND THE SPACER ASSEMBLY. BRING ENDS TOGETHER AND TWIST TAUT. SECURE TO THE SPACER ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE, OR WITH A STRAP STAPLE.

TYPICAL LTL (1-UNIT LOAD) IN A TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



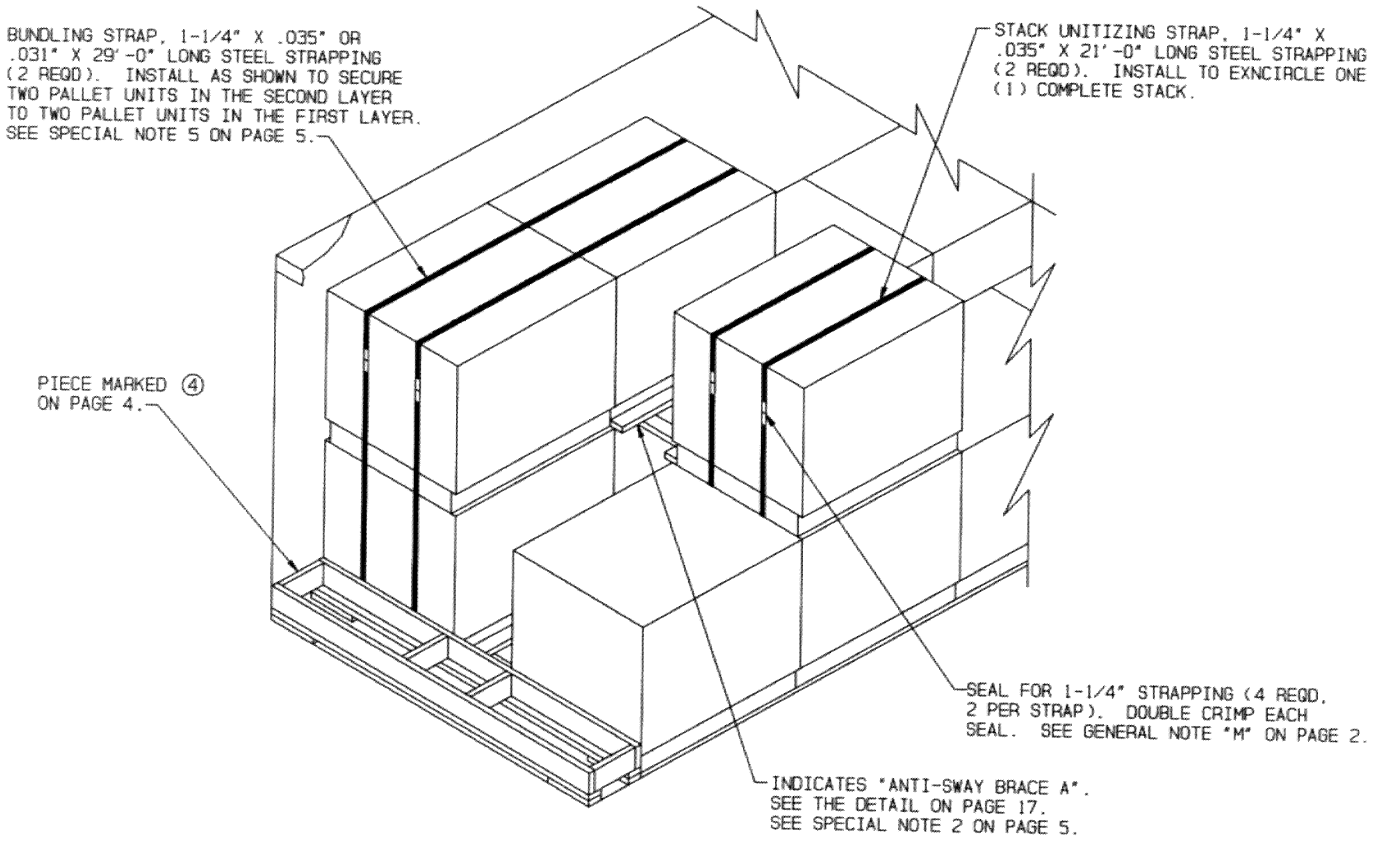
SECUREMENT OF A PARTIAL PALLET UNIT
ON TOP OF A FULL PALLET UNIT

SPECIAL NOTES:

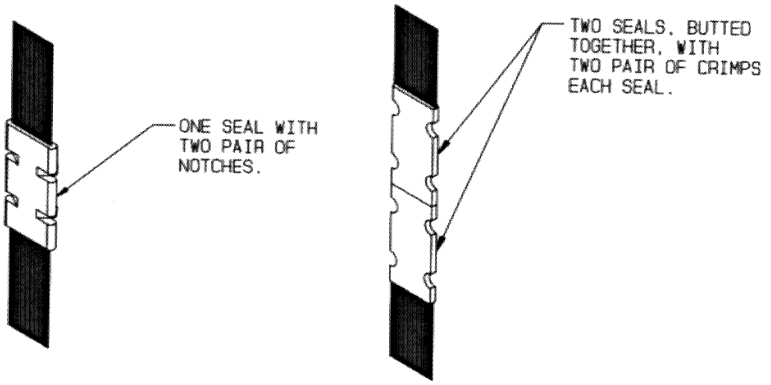
1. THE VIEW SHOWN ABOVE DEPICTS A PARTIAL 2-LAYER PALLET UNIT POSITIONED ON TOP OF A FULL-HEIGHT PALLET UNIT AND UNITIZED WITH TWO VERTICAL UNITIZING STRAPS. PLACEMENT WITHIN THE LOAD IS OPTIONAL, EXCEPT THAT IT WILL NOT BE POSITIONED IN THE REAR LOAD UNIT, OR ADJACENT TO THE SPACER ASSEMBLIES SPECIFIED BY SPECIAL NOTE 3 ON PAGES 5 AND 7.

2. SHIPMENTS OF PALLET UNITS SHOULD CONSIST OF FULL-HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT, OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LIGHT PALLET UNITS WITHIN A LOAD. REFER TO U.S. ARMY AMC DRAWING 19-48-4232/21-20PM1007 FOR UNITIZATION PROCEDURES.

3. THE "SHIPMENT OF A PARTIAL PALLET UNIT" PROCEDURES ON THIS PAGE ARE APPLICABLE FOR LOADS IN CONVENTIONAL TYPE VAN TRAILERS AND IN TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES.



ALTERNATIVE LOADING PROCEDURES



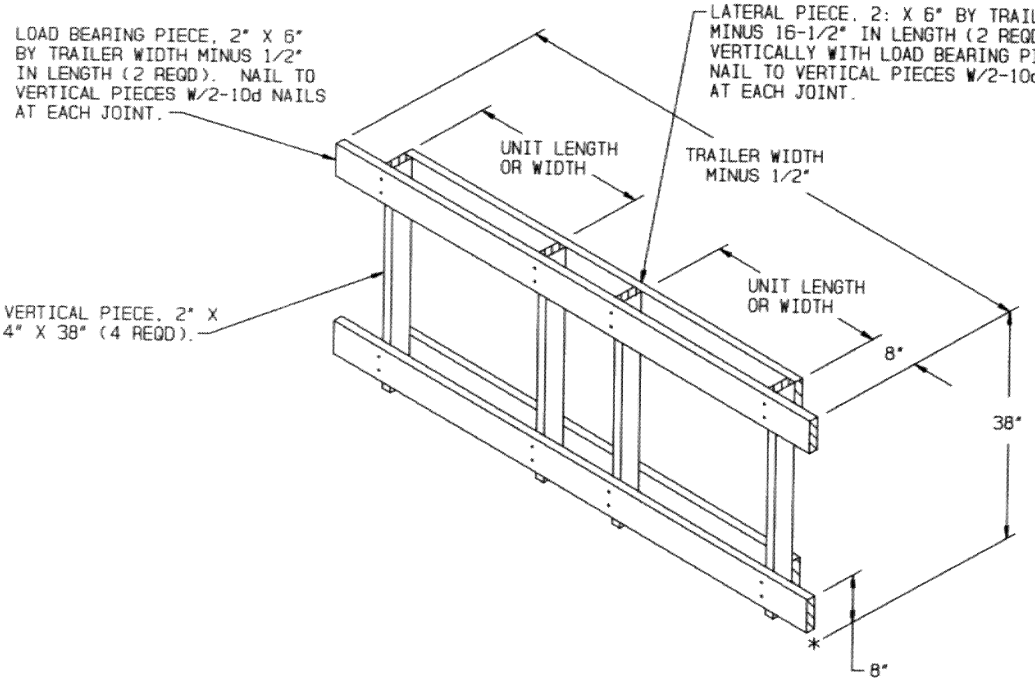
STRAP JOINT A

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

STRAP JOINT B

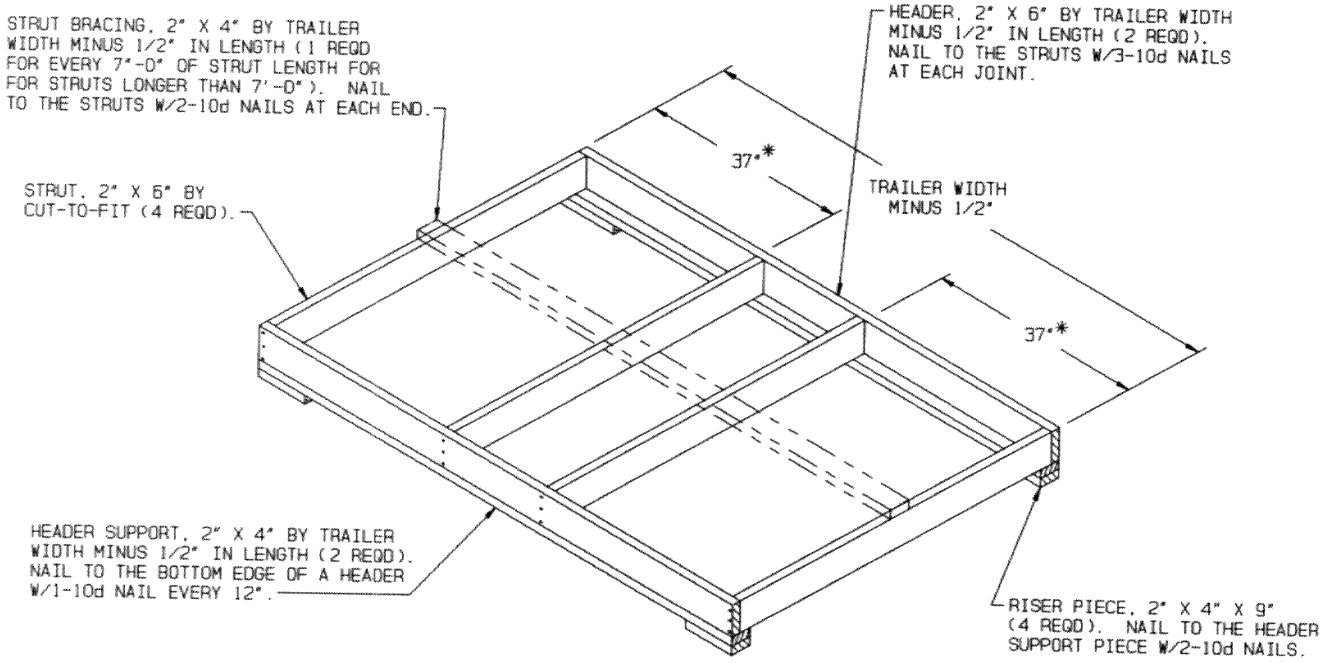
METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.

END-OVER-END LAP JOINT DETAILS



FORWARD BLOCKING ASSEMBLY

THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT END OF A TRAILER HAVING ROUNDED CORNERS, AND IS APPLICABLE FOR A CORNER RADIUS OF NOT MORE THAN 6-1/2". IF THE RADIUS IS FROM 6-1/2" TO 8", 2" X 6" VERTICAL PIECES WILL BE USED IN LIEU OF THE 2" X 4" PIECES. IF THE TRAILER TO BE LOADED HAS LARGE- ANGLED CORNERS AT THE FORWARD END, REFER TO PAGE 22 FOR GUIDANCE.



SPACER ASSEMBLY A

*THIS DIMENSION WILL BE 44" IF THE UNIT WIDTH IS POSITIONED CROSSWISE IN THE TRAILER.

LOAD BEARING PIECE, 2" X 6" BY A LENGTH TO SUIT (4 REQD FOR A 2-WIDE LOAD, 2 REQD FOR A 1-WIDE LOAD).

TIE PIECE, 1" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH FOR A 2-WIDE LOAD, 2" X 4" X 37" FOR A 1-WIDE LOAD (2 REQD). NAIL TO THE LOAD BEARING PIECES W/3-6d NAILS AT EACH JOINT.

* 31-1/2"

TRAILER WIDTH MINUS 1/2"

* 31-1/2"

1"

39" FOR 1 HIGH
77" FOR 2-HIGH

10"

* THE DIMENSION SHOWN IS FOR UNITS POSITIONED AS SHOWN ON PAGE 8. THIS DIMENSION WILL BE 39-1/2" FOR THE LOAD PATTERN SHOWN ON PAGE 6.

NOTE: DOTTED LINE ON TIE PIECES REPRESENTS A 1-WIDE GATE.

LOAD BEARING GATE

RETAINER PIECE, 2" X 4" BY A LENGTH TO SUIT (2 REQD). POSITION TO EXTEND UNDER THE LATERALLY ADJACENT PALLETS AND AGAINST THE PALLET POSTS.

BUFFER PIECE, 2" X 4" X 40" (2 REQD). POSITION AGAINST THE PALLET AND NAIL TO THE RETAINER PIECES W/3-10d NAILS AT EACH JOINT.

FABRICATE TO FIT BETWEEN THE POSTS OF LATERALLY ADJACENT PALLETS.

6"

6"

FABRICATE TO FIT AGAINST THE PALLET POSTS (REF: 28").

ANTI-SWAY BRACE A

IF DESIRED, THE ANTI-SWAY BRACE CAN BE PARTIALLY PRE-ASSEMBLED: ONE BUFFER PIECE CAN BE NAILED TO BOTH RETAINER PIECES. THE LONG ENDS OF THE ASSEMBLY CAN BE INSTALLED INTO THE FORKLIFT OPENING OF A LOADED PALLET PRIOR TO POSITIONING THE LATERALLY ADJACENT PALLET.

FABRICATE TO FIT BETWEEN TRAILER SIDEWALL AND PALLET UNIT.

SUPPORT PIECE, 2" X 4" BY A LENGTH TO SUIT (2 REQD). NAIL TO THE BUFFER PIECE W/4-10d NAILS AND TO THE LATERAL PIECES W/1-10d NAILS AT EACH JOINT.

2-1/2"

FABRICATE TO FIT BETWEEN INSTALLED CROSS MEMBERS.

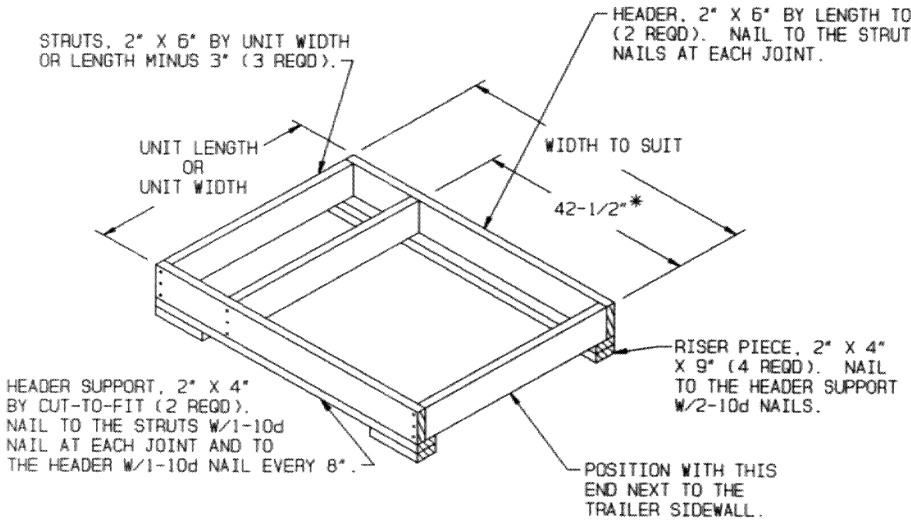
LATERAL PIECE, 2" X 6" BY CUT TO FIT (2 REQD).

2-1/2"

BUFFER PIECE, 2" X 6" BY CUT TO FIT (2 REQD). NAIL TO THE LATERAL PIECE W/2-10d NAILS AT EACH END.

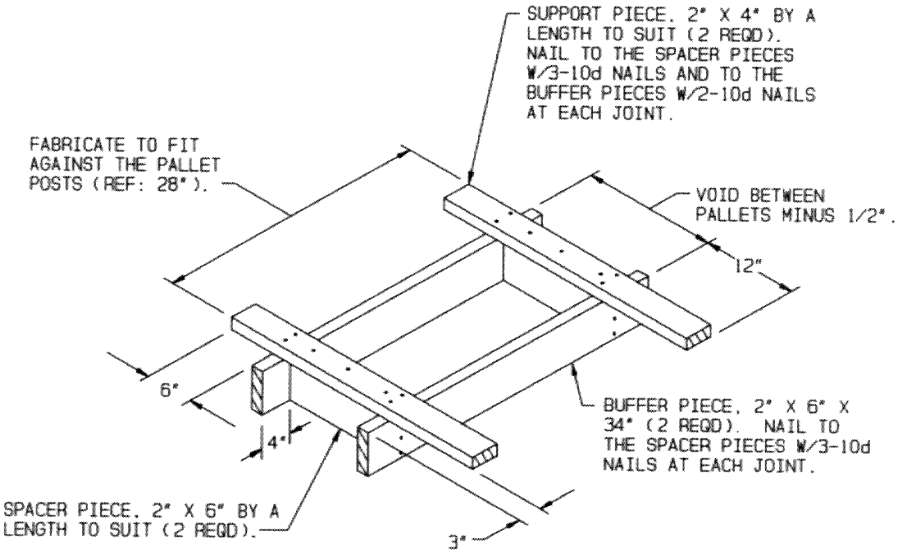
SPACER ASSEMBLY C

THIS ASSEMBLY IS DESIGNED FOR USE AS LATERAL BRACING IN A TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES AS SHOWN IN THE TYPICAL LTL LOAD ON PAGE 13.



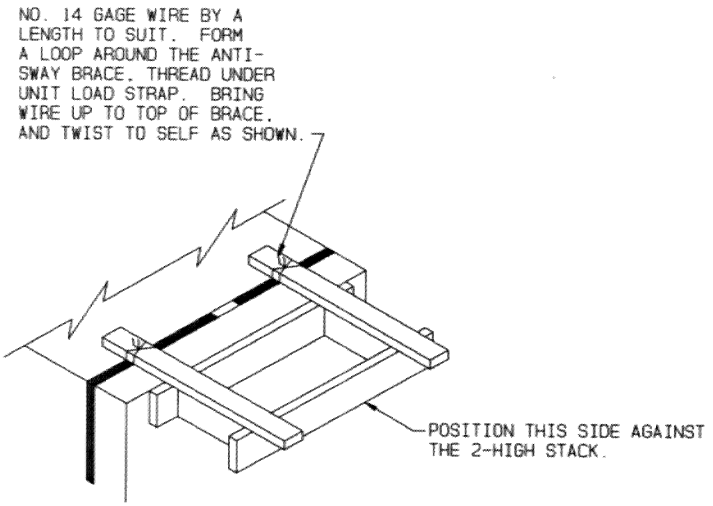
SPACER ASSEMBLY B

*THE DIMENSION SHOWN IS FOR THE LOAD ON PAGE 6. THIS DIMENSION WILL BE 36" WHEN THE PALLET LENGTH (35") IS POSITIONED ACROSS THE WIDTH OF THE TRAILER AS IN THE LOAD ON PAGE 4.

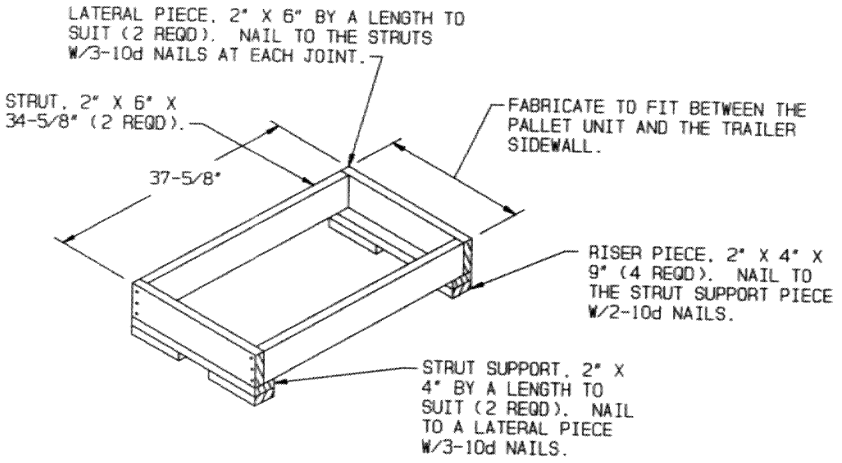


TOP-OF-LOAD ANTI-SWAY BRACE

THIS ASSEMBLY IS DESIGNED FOR THE LATERAL BRACING OF A PALLET UNIT IN THE SECOND LAYER WHEN THERE IS NOT A PALLET UNIT DIRECTLY OPPOSITE IT.

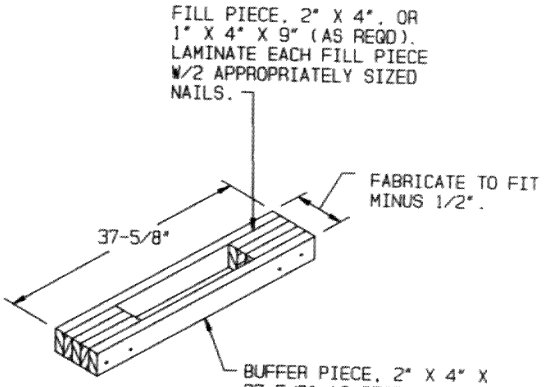


TIE WIRE APPLICATION

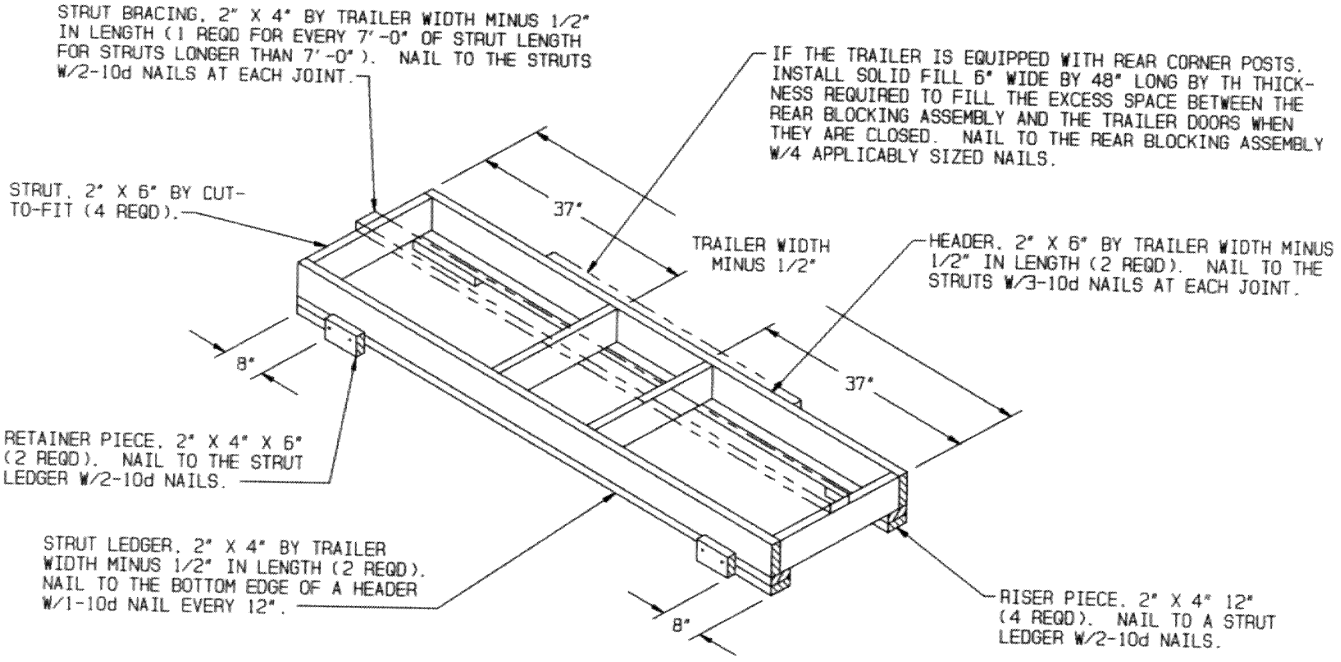


SPACER ASSEMBLY D

THIS ASSEMBLY IS DESIGNED FOR USE AS LATERAL BRACING OF A SINGLE PALLET UNIT AS SHOWN IN THE LOAD ON PAGE 10.

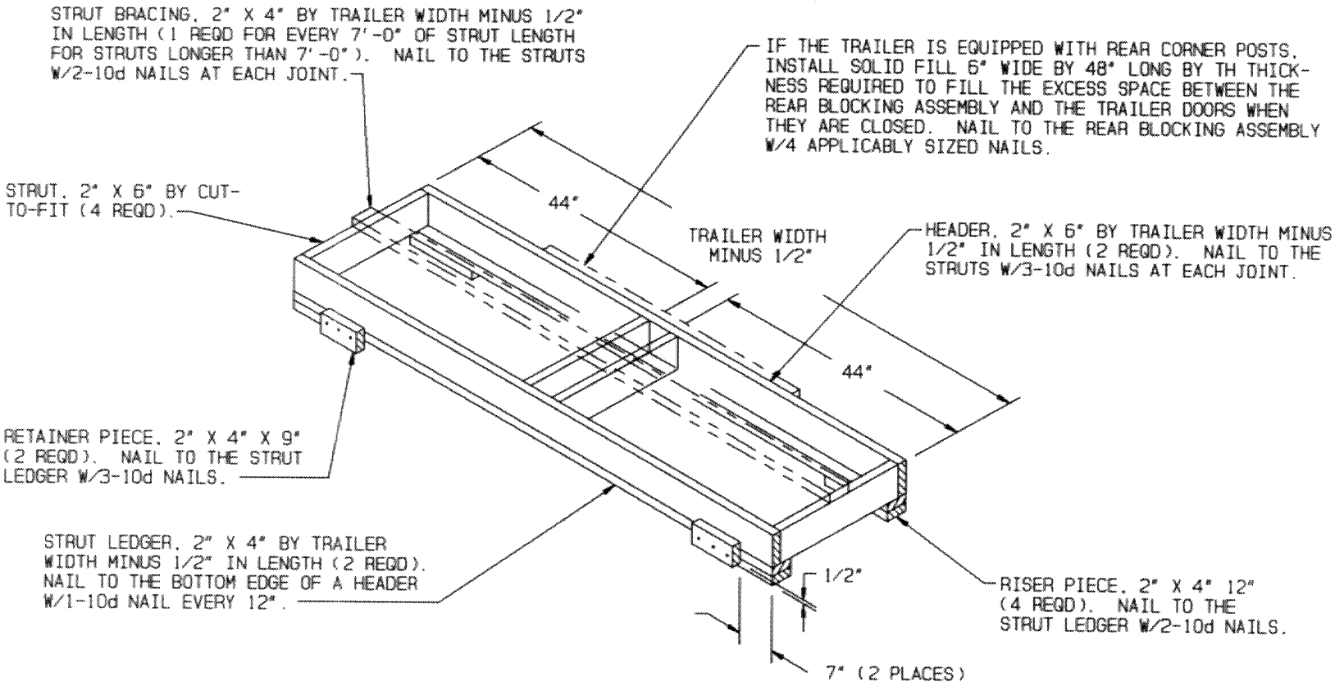


ANTI-SWAY BRACE B



REAR BLOCKING ASSEMBLY A

THIS ASSEMBLY IS FOR USE AT THE REAR END OF CROSSWISE POSITIONED PALLET UNITS AS SHOWN ON PAGE 4, WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS GREATER THAN 9". NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.



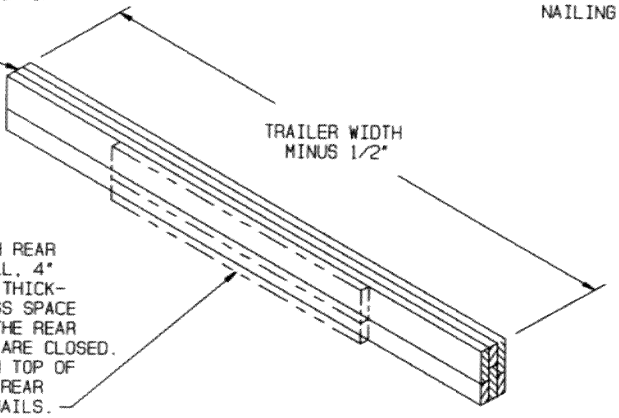
REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF LENGTHWISE POSITIONED PALLET UNITS AS SHOWN ON PAGE 6. WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOOR IS MORE THAN 9". NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.

SOLID FILL, 4" AND 6" WIDE MATERIAL BY TRAILER WIDTH MINUS 1/2" IN LENGTH BY THE THICKNESS REQUIRED TO CONTACT REAR CORNER POST OR TO CONTACT REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED. POSITION PIECES ON EDGE, ONE ON TOP OF THE OTHER AS SHOWN, AND LAMINATE W/1-10d NAIL EVERY 12".

NOTE *:

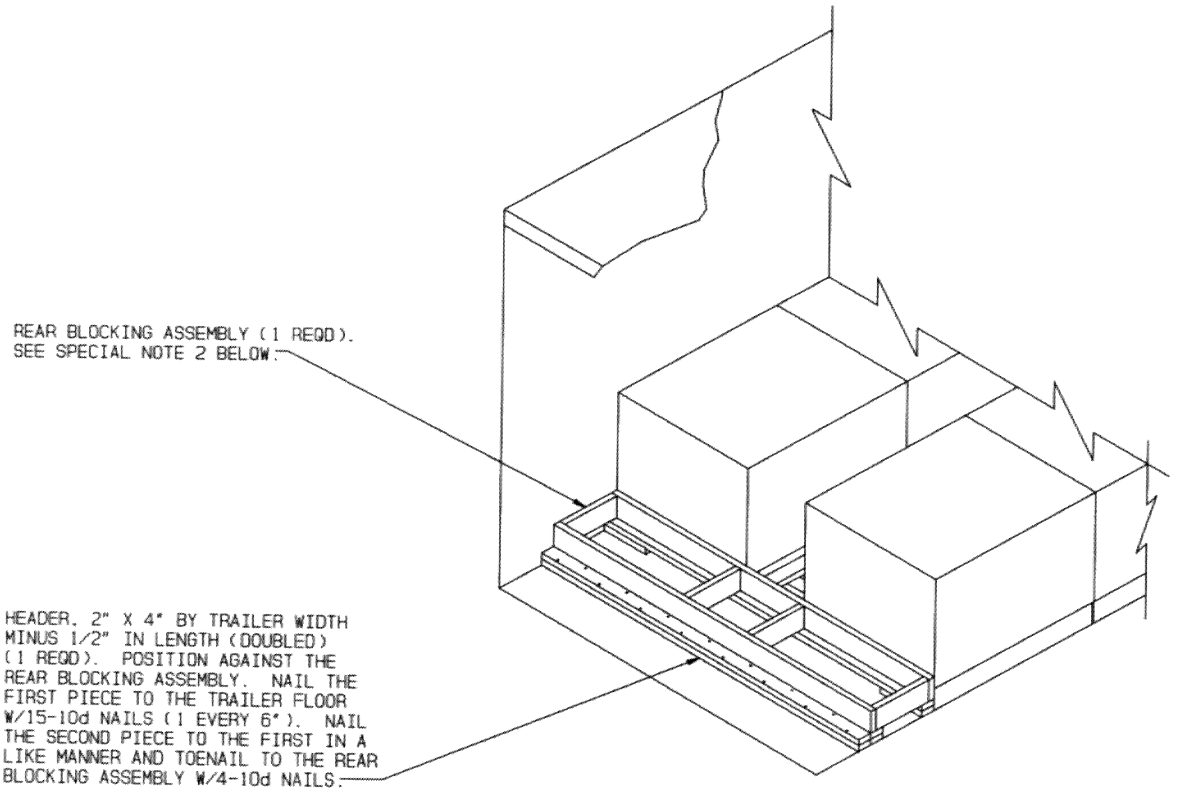
RETAINER PIECES WILL BE REQUIRED ON THE LOAD BEARING SIDE OF REAR BLOCKING ASSEMBLY "C". REFER TO REAR BLOCKING ASSEMBLY "A" ON PAGE 19 OR "B" ABOVE FOR LOCATION AND NAILING GUIDANCE.



IF THE TRAILER IS EQUIPPED WITH REAR CORNER POSTS, INSTALL SOLID FILL, 4" AND 6" WIDE BY 48" LONG BY THE THICKNESS REQUIRED TO FILL THE EXCESS SPACE BETWEEN THE REAR BLOCKING AND THE REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED. POSITION PIECES ON EDGE, ONE ON TOP OF THE OTHER AS SHOWN NAIL TO THE REAR BLOCKING W/4 APPLICABLY SIZED NAILS.

REAR BLOCKING ASSEMBLY C

THIS REAR BLOCKING IS DESIGNED FOR USE AT THE REAR END OF A LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS LESS THAN 9". SEE "NOTE * " ABOVE.



NAILED HEADER METHOD

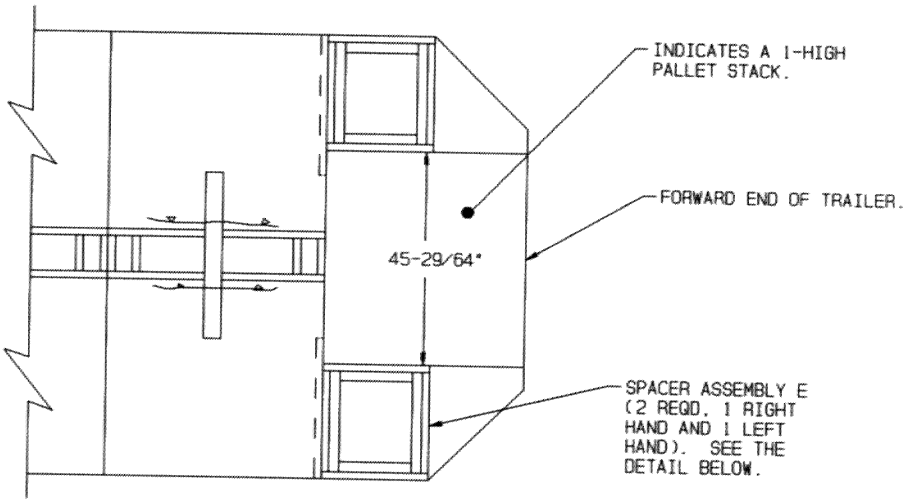
SPECIAL NOTES:

1. THE NAILED-HEADER METHOD OF REAR BLOCKING DEPICTED ABOVE CAN ONLY BE USED IN TRAILERS HAVING A NAILABLE FLOOR AREA BETWEEN THE LADING AND THE METAL THRESHOLD, OR A THRESHOLD PLATE IF THE TRAILER IS SO EQUIPPED, OF AT LEAST FOURTEEN (14") INCHES.

2. REAR BLOCKING ASSEMBLY "A" IS SHOWN FOR A TYPICAL INSTALLATION. CONSTRUCT THE ASSEMBLY USING 6" (MINIMUM) LONG STRUTS.

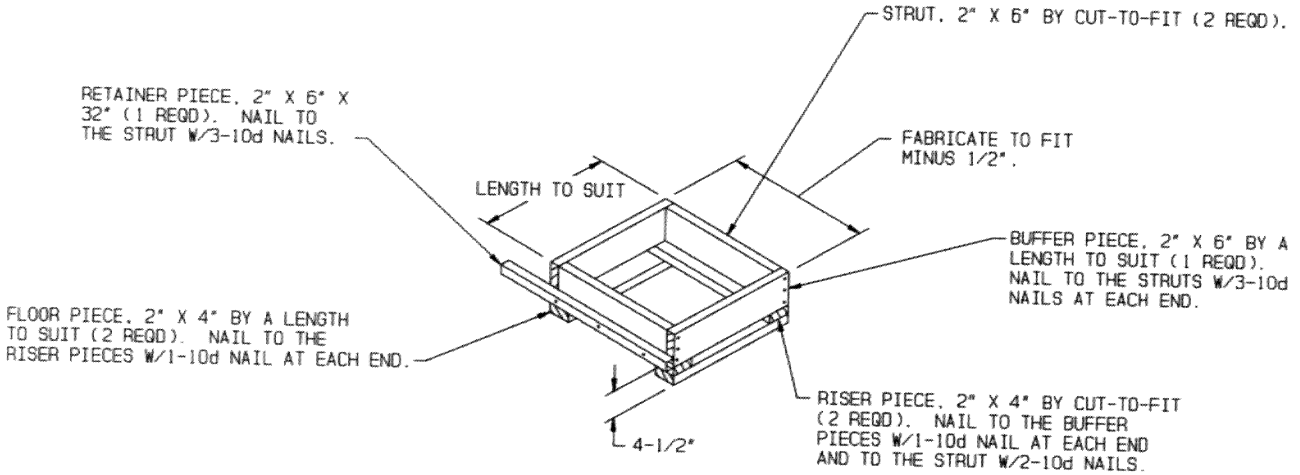
3. THE NAILED-HEADER METHOD OF REAR BLOCKING IS ADEQUATE FOR THE RETENTION OF THE MAXIMUM WEIGHT LOAD.

4. THE NAILED-HEADER METHOD, ALTHOUGH DESIGNED ESPECIALLY FOR TRAILERS HAVING ROLL-UP TYPE DOORS, MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.



ALTERNATIVE FORWARD LOADING PATTERN

THIS PROCEDURES IS APPLICABLE TO THE LOADING OF ONE (1) PALLET UNIT IN THE FORWARD END OF A CONVENTIONAL VAN TRAILER HAVING LARGE ANGLED FRONT CORNERS (REF: 18"). THE PROCEDURES MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE.



SPACER ASSEMBLY E

THIS ASSEMBLY IS DESIGNED FOR LATERAL BRACING OF A SINGLE PALLET UNIT WHICH IS TURNED 90° FROM THE NORMAL LOADING ORIENTATION AND POSITIONED IN THE FRONT OF AN ANGLED-CORNER CONVENTIOAL VAN TRAILER AS SHOWN IN THE "ALTERNATIVE LOADING PATTERN" VIEW ABOVE. RIGHT HAND AND LEFT HAND SPACER ASSEMBLIES ARE REQUIRED.