

LOADING AND BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS OF PALLETIZED PROPELLING CHARGES PACKED IN CYLINDRICAL METAL CONTAINERS

PA 91 SERIES CONTAINER

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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 CONTAINER/TRAILER-ON-FLAT-CAR MOVEMENTS.

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JULY 1987							
				CLASS	DIVISION	DRAWING	FILE
				19	48	4042C/ 12	11 PM 1000

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.
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE FOR THE PA91 SERIES PROPELLING CHARGE CONTAINER ASSEMBLED ON THE 35" X 45-1/2" 4-WAY ENTRY PALLET. SEE THE PICTORIAL VIEWS ON PAGE 3 FOR SIZES AND WEIGHTS. REFER TO U.S. ARMY AMC (DARCOM) DRAWING 19-48-4042A/13-20PM1001 FOR UNITIZATION PROCEDURES FOR THE PA91 SERIES CONTAINERS.
- 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'-6" TO 7'-8-1/2" WIDE (INSIDE DIMENSION) HAVE BEEN SHOWN. HOWEVER, THE PROCEDURES ARE ALSO APPLICABLE FOR TRAILERS WHICH ARE EIGHTY-NINE INCHES (89") THRU NINETY-NINE INCHES (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 (1) 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.
- F. 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. THE TOTAL WEIGHT OF THE LADING, OF THE DUNNAGE, OF THE TRACTOR AND OF THE SEMI-TRAILER 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 OR AXLE WEIGHT EXCEEDS THE MAXIMUM ALLOWED, WEIGHT SHOULD BE VERIFIED BY ACTUALLY WEIGHING THE LOADED VEHICLE.
- G. **NOTE:** 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.

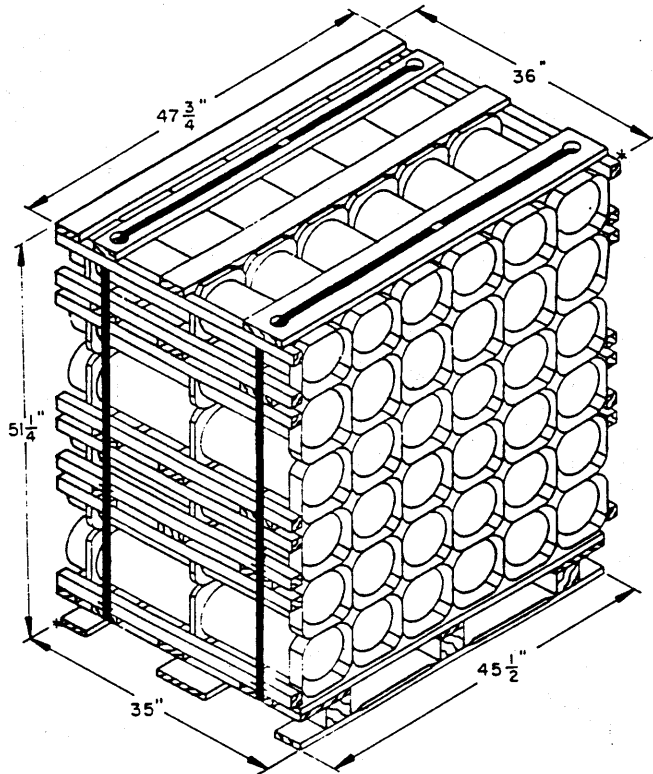
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MATERIAL SPECIFICATIONS

LUMBER -----	: FED SPEC MM-L-751; DUNNAGE LUMBER, SEE TM 743-200-1.
NAILS -----	: FED SPEC FF-N-105; COMMON.
STRAPPING, STEEL -----	: FED SPEC QQ-5-781; CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH A, B, (GRADE 2), OR C.
SEAL, STRAP -----	: FED SPEC QQ-S-781; TYPE D, STYLE I, II, OR IV, CLASS H, FINISH A, B (GRADE 2), OR C.
PLYWOOD -----	: GROUP B, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D, FED SPEC NN-P-530. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
WIRE -----	: FED SPEC QQ-W-461.
TYGARD -----	: POLYESTER YARN, 1,100 POUNDS/INCH OF WIDTH STRENGTH.
ADHESIVE -----	: TYGARD ADHESIVE.

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.

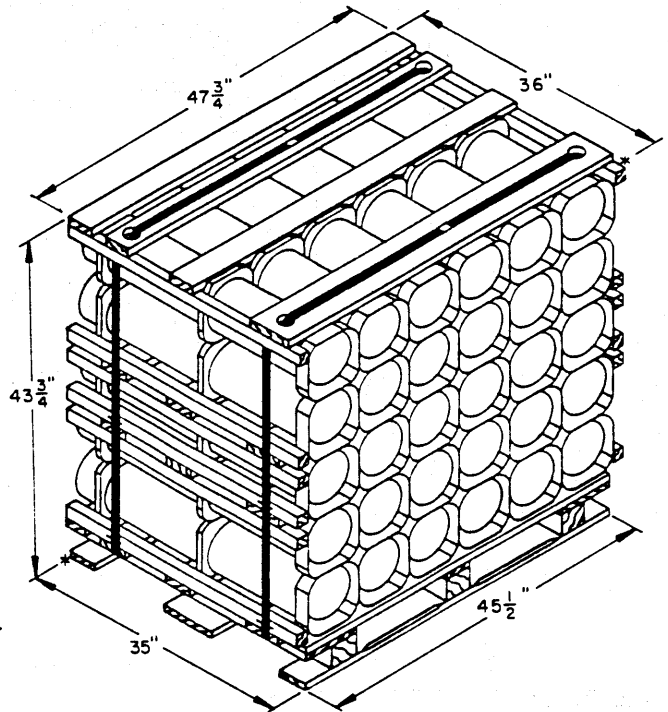
- H. THE "LOAD AS SHOWN" FOR MOST OF THE FULL LOADS DEPICTED HEREIN IS BASED ON AN APPROXIMATE LADING WEIGHT OF 42,000 POUNDS. THE SPECIFIED BLOCKING AND BRACING FOR THE FULL LOADS IS ADEQUATE FOR THE RETENTION OF HEAVIER LOADS, IF IT IS DESIRED TO INCREASE THE LADING WEIGHT.
- J. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE PARTIALLY LOADED WITH PALLET UNITS OF PROPELLING CHARGES, 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. ALL 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. SEE THE "SHIPMENT OF A PARTIAL PALLET UNIT" DETAIL AND SPECIAL NOTES ON PAGE 23. FOR "SHIPMENT OF LEFTOVER CONTAINERS", SEE THE DETAILS AND SPECIAL NOTES ON PAGE 24.
- M. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE (1) SEAL WITH TWO (2) PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) 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 29 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. **NOTE:** 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.
- P. 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 SENGCO PRODUCTS INCORPORATED. **NOTE:** STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- Q. LONGITUDINALLY ADJACENT PALLET UNITS IN A TRAILER WILL BE POSITIONED WITH THE BASE END AGAINST BASE END OR BELL END AGAINST BELL END. THE FRONT LOAD UNIT IN A TRAILER, WILL BE POSITIONED WITH THE BASE END OF THE CONTAINERS TOWARD THE FRONT WALL OF THE TRAILER.
- 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.
- T. 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.
- U. THE PALLET UNITS DEPICTED ON PAGE 3 MAY BE LOADED AS A MIXED LOAD IN THE SAME TRAILER. FOR MIXED-HEIGHT LOADS, POSITION ALL PALLET UNITS OF ONE HEIGHT IN ONE LAYER, WITH THE TALLER UNITS BEING IN THE BOTTOM LAYER. IF FULL LAYERS OF ONE-HEIGHT UNITS ARE NOT POSSIBLE FOR THE QUANTITY OF EACH SIZE TO BE SHIPPED, THE TALLER UNITS WILL BE LOADED IN THE FORWARD PORTION OF THE TRAILER WITH THE SHORTER HEIGHT UNITS IN THE REAR PORTION. CARE MUST BE EXERCISED WHEN SHIPPING MIXED HEIGHT UNITS IN TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES TO ENSURE THAT THE CROSS MEMBERS CONTACT THE PALLET DUNNAGE AND/OR INTERMEDIATE DUNNAGE ASSEMBLY OF A UNIT BY AT LEAST ONE-HALF THE SURFACE OF THE HEIGHT OF THE CROSS MEMBER. LOAD BEARING GATES MUST BE INSTALLED BETWEEN THE CROSS MEMBERS AND THE PALLET UNITS IF THE CROSS MEMBERS DO NOT ALIGN PROPERLY.



6-LAYER PALLET UNIT

CONTAINER-----36 EACH @ 52 LBS (APPROX)
 CUBE-----51.0 CUBIC FEET (APPROX)
 GROSS WEIGHT-----2,025 LBS (APPROX)

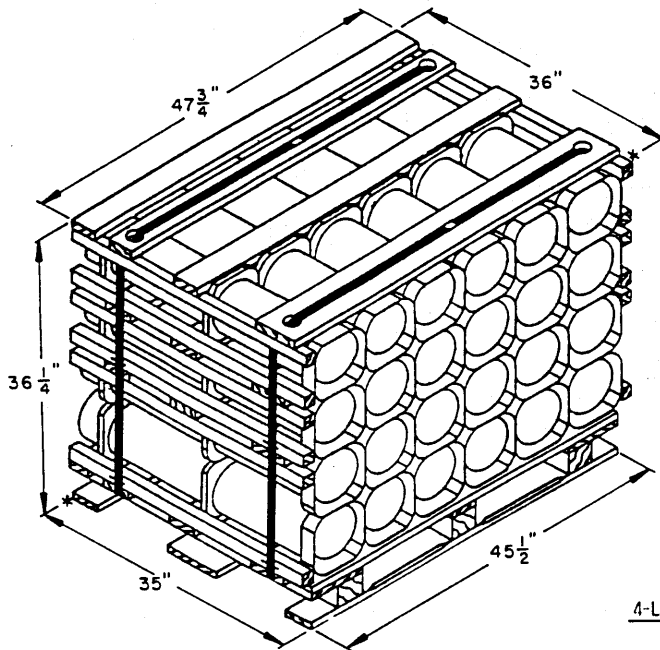
REFER TO PAGES 4 THRU 9 AND PAGES 18 AND 19 FOR
 OUTLOADING PROCEDURES.



5-LAYER PALLET UNIT

CONTAINER-----30 EACH @ 52 LBS (APPROX)
 CUBE-----43.5 CUBIC FEET (APPROX)
 GROSS WEIGHT-----1,697 LBS (APPROX)

REFER TO PAGES 10 THRU 13 AND PAGES 18 AND 19 FOR OUTLOADING
 PROCEDURES.

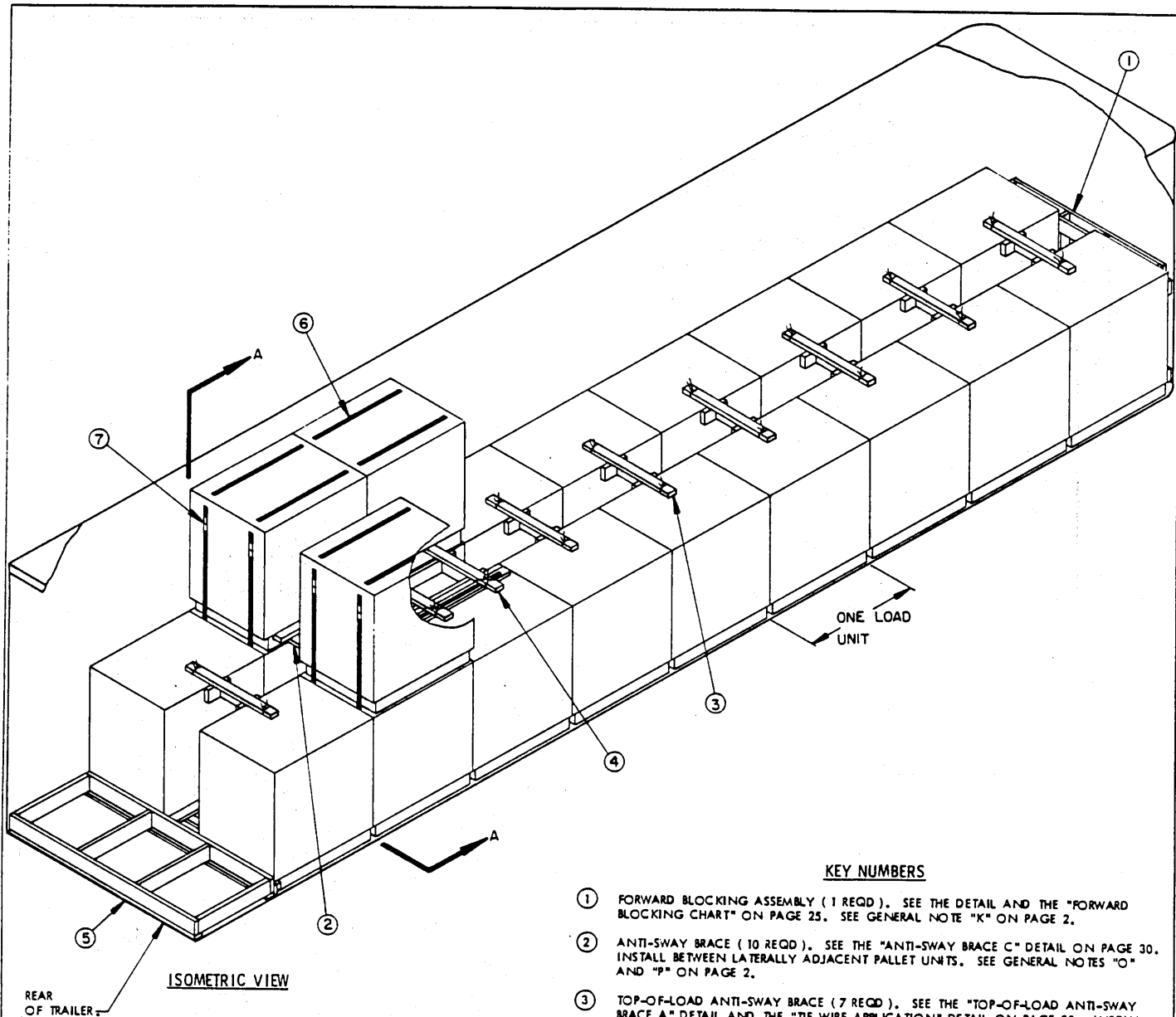


4-LAYER PALLET UNIT

CONTAINER-----24 EACH @ 52 LBS (APPROX)
 CUBE-----36.1 CUBIC FEET (APPROX)
 GROSS WEIGHT-----1,385 LBS (APPROX)

REFER TO PAGES 14 THRU 19 FOR OUTLOADING PROCEDURES.

PALLET UNIT DETAILS

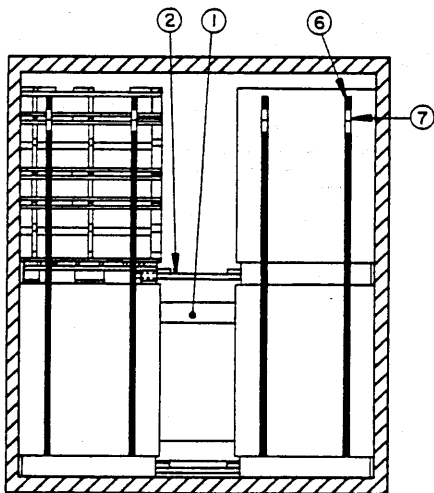


ISOMETRIC VIEW

REAR OF TRAILER

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE "FORWARD BLOCKING CHART" ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② ANTI-SWAY BRACE (10 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (7 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 3 ON PAGE 5.
- ④ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 30. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER END OF SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑤ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 28. SEE SPECIAL NOTE 5 ON PAGE 5.
- ⑥ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (6 REQD). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 5.
- ⑦ SEAL FOR 1-1/4" STRAPPING (12 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION A-A

(6-LAYER PALLET UNIT)

21-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HI-VOLUME VAN TRAILER

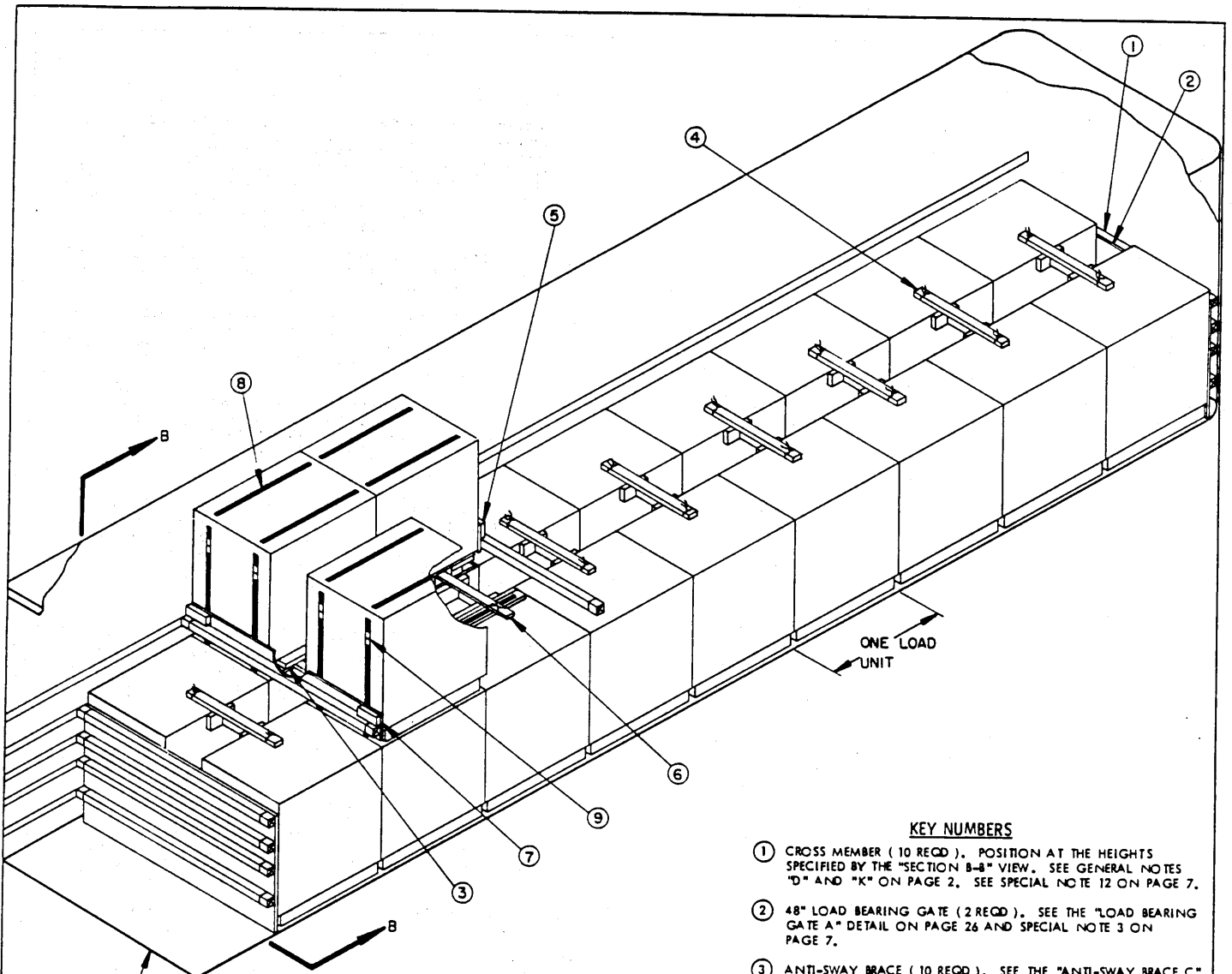
SPECIAL NOTES:

1. A 21-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) HI-VOLUME VAN TYPE TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 8'-9" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT. IF A TRAILER WHICH IS 8'-1" OR WIDER IS FURNISHED FOR LOADING, THE LOADING PATTERN DEPICTED ON PAGE 8 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 4.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 4 IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 51-1/4" HIGH AND WEIGHING APPROXIMATELY 2,025 POUNDS.
3. TOP-OF-LOAD ANTI-SWAY BRACES SHOWN AS PIECES MARKED (3) IN THE LOAD ON PAGE 4 ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP PALLET UNITS IN EACH LAYER UNLESS THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER.
4. THE TOP-OF-LOAD ANTI-SWAY BRACE "B", 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 "C" WILL BE INSTALLED IN LIEU OF PIECE MARKED (4); THEN, TWO (2) ADDITIONAL UNITIZING STRAPS MARKED (6) WILL BE REQUIRED.
5. IF THE VOID AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE "REAR BLOCKING ASSEMBLY D" AS DETAILED ON PAGE 29. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE "REAR BLOCKING ASSEMBLY A" AS SHOWN. SEE SPECIAL NOTE 12.
6. A PALLET UNIT AT EACH END OF THE SECOND LAYER PORTION OF THE LOAD MUST BE UNITIZED TO A PALLET UNIT IN THE FIRST LAYER, UNLESS THE STACKED UNITS ARE AGAINST THE FRONT WALL OF A SQUARE-FRONT TRAILER, AGAINST THE FORWARD BLOCKING ASSEMBLY, OR AT THE VERY REAR OF THE LOAD. THE STACK UNITIZING STRAPS, PIECE MARKED (6), MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
7. 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 PIECE MARKED (7) ON PAGE 10 FOR A TYPICAL INSTALLATION.
8. 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, PIECE MARKED (6). PROVIDE LATERAL BRACING BY INSTALLING A TOP-OF-THE-LOAD ANTI-SWAY BRACE "B" SHOWN AS PIECE MARKED (4) IN THE LOAD VIEW ON PAGE 4.
9. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
10. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
11. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.
12. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL		
LUMBER	LIN. FEET	DOZ. FEET
1" X 4"	2	1
2" X 3"	2	1
2" X 4"	86	124
2" X 6"	89	89
NAILS	NO. REQD	POUNDS
6d (2")	6	NIL
10d (3")	306	4-3/4
STEEL STRAPPING, 1-1/4" X .035" OR .031"-----156' REQD----- 23 LBS		
SEAL FOR 1-1/4" STRAPPING-----12 REQD-----NIL		
WIRE, NO. 14 GAGE-----40' REQD----- 1 LB		

LOAD AS SHOWN		
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	21-----	42,525 LBS
DUNNAGE-----	-----	459 LBS
TOTAL WEIGHT-----		42,984 LBS (APPROX)

(6-LAYER PALLET UNIT)
 21-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HI-VOLUME VAN TRAILER

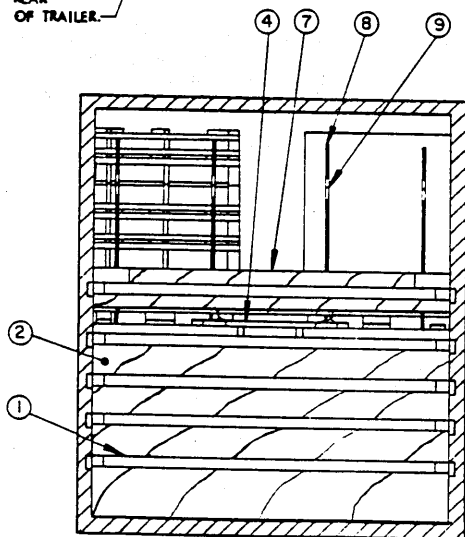


KEY NUMBERS

- ① CROSS MEMBER (10 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION B-B" VIEW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2. SEE SPECIAL NOTE 12 ON PAGE 7.
 - ② 48" LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE A" DETAIL ON PAGE 26 AND SPECIAL NOTE 3 ON PAGE 7.
 - ③ ANTI-SWAY BRACE (10 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 28. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS.
 - ④ TOP-OF-LOAD ANTI-SWAY BRACE (7 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 28. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 7.
 - ⑤ 9" LOAD BEARING GATE FOR 1 PALLET WIDE (1 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 26. SEE KEY NUMBER ⑩.
 - ⑥ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 30. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER END OF SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. SEE SPECIAL NOTE 5 ON PAGE 7.
 - ⑦ 9" LOAD BEARING GATE FOR 2 PALLETS WIDE (1 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 26.
 - ⑧ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (6 REQD). THREAD STRAP THRU HOLFS ON TOP DUNNAGE ASSEMBLY. INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 7.
 - ⑨ SEAL FOR 1-1/4" STRAPPING (12 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.
 - ⑩ TIE WIRE, NO. 14 GAGE WIRE 18" LONG (1 REQD). INSTALL AROUND A UNITIZING STRAP AND SECURE TO THE SUPPORT BLOCK OF PIECE MARKED ⑤ WITH A PARTIALLY-DRIVEN 10d NAIL BENT OVER THE WIRE, OR WITH A STRAP STAPLE.
- NOTE:** KEY NUMBER ⑩ IS NOT SHOWN.

ISOMETRIC VIEW

REAR OF TRAILER



SECTION B-B

INDICATES THE TOP SURFACE OF A CROSS MEMBER. EXCEPT FOR THE TOP CROSS MEMBER, PLUS OR MINUS 2" IS PERMITTED.

INDICATES TRAILER FLOOR.

(6-LAYER PALLET UNIT)

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

SPECIAL NOTES:

1. A 21-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) HI-VOLUME TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES (CROSS MEMBERS AND STATIONARY WALL MEMBERS) AND ROUNDED FRONT CORNERS. WIDER OR NARROWER HI-VOLUME TRAILERS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 6 IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 51-1/4" HIGH AND WEIGHING APPROXIMATELY 2,025 POUNDS.
3. IF PLYWOOD IS NOT AVAILABLE FOR THE CONSTRUCTION OF LOAD BEARING GATES, OR IF DESIRED, PIECES MARKED (2), (5), AND (9) MAY BE CONSTRUCTED FROM 1" AND/OR 2" LUMBER. SEE THE ALTERNATIVE LOAD BEARING GATE "A" AND "B" DETAILS ON PAGE 27. NOTE THAT LOAD BEARING GATES ARE NOT REQUIRED IF THE CROSS MEMBERS CONTACT THE PALLET DUNNAGE AND/OR INTERMEDIATE DUNNAGE ASSEMBLY OF A UNIT BY AT LEAST ONE-HALF THE SURFACE OF THE HEIGHT OF THE CROSS MEMBERS.
4. TOP-OF-LOAD ANTI-SWAY BRACES SHOWN AS PIECES MARKED (4) IN THE LOAD ON PAGE 6 ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER, A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED.
5. THE TOP-OF-LOAD ANTI-SWAY BRACE "B", SHOWN IN THE LOAD AS PIECE MARKED (6), 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 "C" WILL BE INSTALLED IN LIEU OF PIECE MARKED (6).
6. THE STACK UNITIZING STRAPS, PIECES MARKED (8) IN THE LOAD ON PAGE 6 WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER.
7. IF ONLY ONE PALLET UNIT IS LOADED IN THE SECOND LAYER, SPACER ASSEMBLY PROCEDURES AS SPECIFIED ON PAGE 22 MAY BE USED IN LIEU OF THE TOP-OF-LOAD ANTI-SWAY BRACE "B" SHOWN ON PAGE 6.
8. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLETIZED UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
10. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 22.
11. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 8'-9" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT, AS SHOWN.
12. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS AND THE LOAD BEARING GATE "A", PIECES MARKED (1) AND (2), RESPECTIVELY, WILL BE OMITTED FROM THE FRONT OF THE TRAILER.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	150	100
2" X 6"	29	29
NAILS	NO. REQD	POUNDS
6d (2")	12	NIL
10d (3")	230	3-3/4
STEEL STRAPPING, 1-1/4" X .035" OR .031"-----156' REQD-----23 LBS		
SEAL FOR 1-1/4" STRAPPING-----12 REQD-----NIL		
PLYWOOD, 1/2"-----70 SQ FT REQD-----97 LBS		
WIRE, NO. 14 GAGE-----40' REQD-----1 LB		
CROSS MEMBER-----10 REQD		

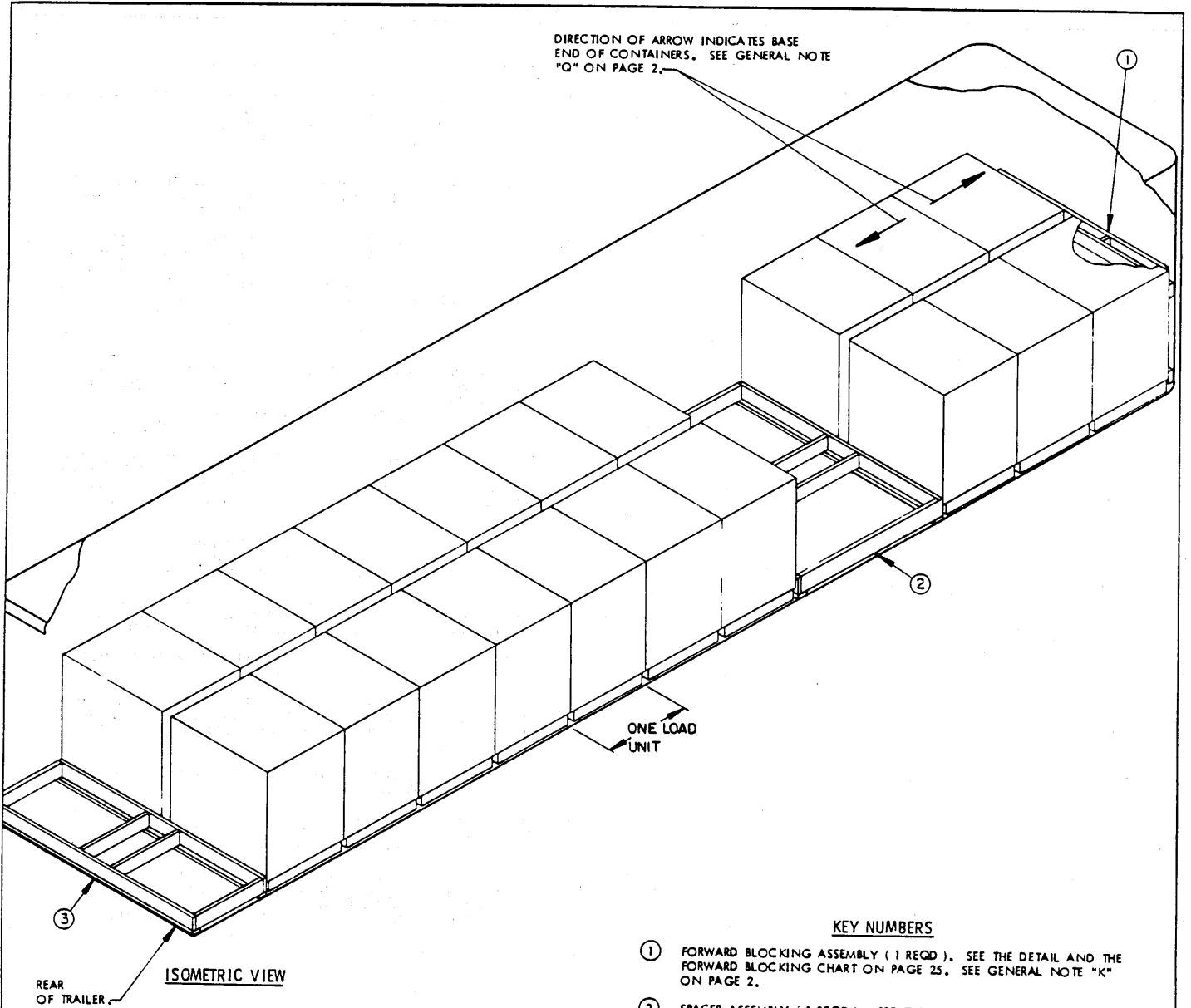
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	21-----	42,525 LBS
DUNNAGE-----	-----	383 LBS
TOTAL WEIGHT-----		42,908 LBS (APPROX)

(6-LAYER PALLET UNIT)

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

PAGE 7



KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD), SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② SPACER ASSEMBLY (1 REQD), SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 25. SEE SPECIAL NOTE 3 ON PAGE 9.
- ③ REAR BLOCKING ASSEMBLY (1 REQD), SEE THE "REAR BLOCKING ASSEMBLY B" DETAIL ON PAGE 28. SEE SPECIAL NOTE ON PAGE 9.

SPECIAL NOTES:

1. A 20-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 8'-3" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. TRAILERS AS NARROW AS 8'-1" MAY BE USED, HOWEVER, IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 8'-9" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 8 IS THE 6-LAYER UNIT, HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 51-1/4" HIGH AND WEIGHING APPROXIMATELY 2,025 POUNDS. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR THE 5-LAYER UNIT SHOWN ON PAGE 3 OF THIS DRAWING.
3. SPACER ASSEMBLY "A" SHOWN AS PIECE MARKED ② IN THE LOAD ON PAGE 8 IS USED FOR THE PURPOSE OF PROVIDING FOR PROPER WEIGHT DISTRIBUTION, AND IS SHOWN AS TYPICAL ONLY. IF THE TRAILER TO BE LOADED IS LONGER THEN 40', THE LOCATION OF THE ASSEMBLY, AND/OR THE STRUT LENGTHS, MAY BE DIFFERENT FROM 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. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOORS MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2", BUT LESS THAN 9", USE REAR BLOCKING ASSEMBLY "D" DETAILED ON PAGE 29. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "B" WILL BE USED AS SHOWN.
5. IF PALLET UNITS ARE TO BE LOADED IN THE TOP LAYER OF THE DEPICTED LOAD, REFER TO KEY NUMBERS ② THRU ⑤ ON PAGE 16, AND SPECIAL NOTES 3 THRU 5 ON PAGE 17 FOR DUNNAGE REQUIREMENTS NOT SHOWN HEREIN.
6. IF AN ODD NUMBER OF UNITS ARE TO BE LOADED, SPACER ASSEMBLY "C" DETAILED ON PAGE 32 MAY BE INSTALLED IN LIEU OF ONE (1) PALLET UNIT. NOTE THAT A 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 OR ADJACENT TO SPACER ASSEMBLY "A", PIECE MARKED ②.
7. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
9. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.
10. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

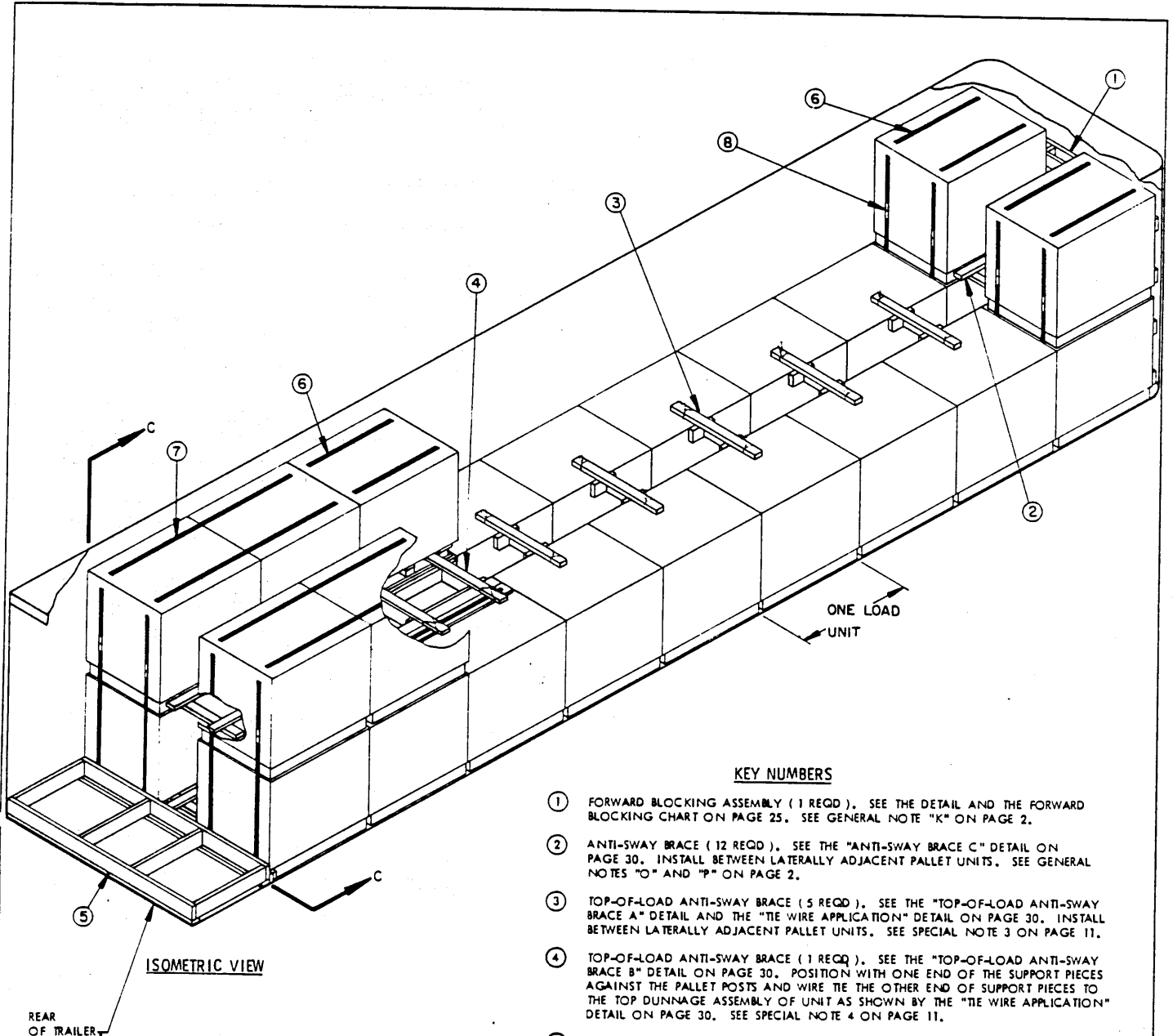
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	4	2
2" X 4"	32	22
2" X 6"	97	97
NAILS	NO. REQD	POUNDS
10d (3")	144	2-1/4

LOAD AS SHOWN

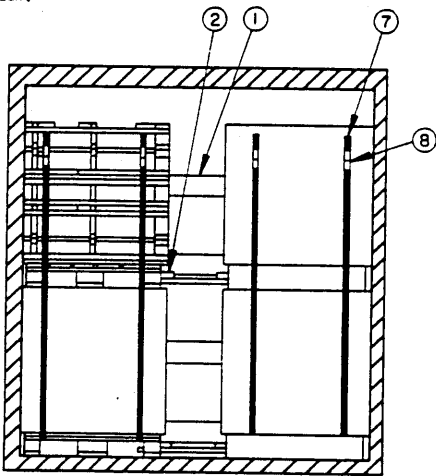
<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT	20	40,500 LBS
DUNNAGE		245 LBS
TOTAL WEIGHT		40,745 LBS (APPROX)

(6-LAYER PALLET UNIT)
20-UNIT LOAD IN A 40'-0" LONG BY 8'-3" WIDE CONVENTIONAL VAN TRAILER



ISOMETRIC VIEW

REAR OF TRAILER



SECTION C-C

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② ANTI-SWAY BRACE (12 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (5 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 3 ON PAGE 11.
- ④ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 30. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER END OF SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. SEE SPECIAL NOTE 4 ON PAGE 11.
- ⑤ REAR BLOCKING (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 28. SEE SPECIAL NOTE 5 ON PAGE 11.
- ⑥ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 23'-6" LONG STEEL STRAPPING (6 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 11.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 31'-0" LONG STEEL STRAPPING (4 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS IN THE SECOND LAYER AND TWO (2) PALLET UNITS DIRECTLY BELOW AS SHOWN. SEE SPECIAL NOTE 7 ON PAGE 11.
- ⑧ SEAL FOR 1-1/4" STRAPPING (20 REQD, 2 PER STRAP), DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

(5-LAYER PALLET UNIT)

25-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE CONVENTIONAL VAN TRAILER

SPECIAL NOTES:

1. A 25-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 10 IS THE 5-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 43-3/4" HIGH AND WEIGHING APPROXIMATELY 1,697 POUNDS.
3. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED ③ IN THE LOAD ON PAGE 10, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER, A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED.
4. TOP-OF-LOAD ANTI-SWAY BRACE "B", 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, THE ANTI-SWAY BRACE "C" WILL BE INSTALLED IN LIEU OF PIECE MARKED ④.
5. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOORS MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE REAR BLOCKING ASSEMBLY "C" DETAILED ON PAGE 29. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "A" WILL BE USED AS SHOWN. SEE SPECIAL NOTE 12.
6. A PALLET UNIT AT EACH END OF THE SECOND LAYER PORTION OF THE LOAD MUST BE UNITIZED TO A PALLET UNIT IN THE FIRST LAYER, UNLESS THE STACKED UNITS ARE AGAINST THE FRONT WALL OF A SQUARE-FRONT TRAILER, AGAINST THE FORWARD BLOCKING ASSEMBLY, OR AT THE VERY REAR OF THE LOAD. THE UNITIZING STRAPS, PIECE MARKED ⑥, MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
7. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, AS IN THE DEPICTED LOAD, BUNDLING STRAPS, SHOWN AS PIECE MARKED ⑦, MUST BE INSTALLED SO AS TO ENCIRCLE THE REAR MOST TWO (2) STACKS IN EACH APPLICABLE ROW.
8. 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 REAR MOST PALLET UNIT IN THE FIRST LAYER. PROVIDE LONGITUDINAL BRACING BY INSTALLING UNITIZING STRAPS, PIECE MARKED ⑥. PROVIDE LATERAL BRACING BY INSTALLING A TOP-OF-LOAD ANTI-SWAY BRACE "B", AS DETAILED ON PAGE 30, AND SHOWN IN THE LOAD VIEW ON PAGE 10 AS PIECE MARKED ④.
9. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
10. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
11. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.
12. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	2	1
2" X 3"	2	1
2" X 4"	199	133
2" X 6"	103	103
NAILS	NO. REQD	POUNDS
6d (2")	6	NIL
10d (3")	344	5-1/4
STEEL STRAPPING, 1-1/4" X .035" OR .031" ----- 267' REQD ----- 39 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 20 REQD ----- 1 LB		
WIRE, NO. 14 GAGE ----- 30' REQD ----- 1/2 LB		

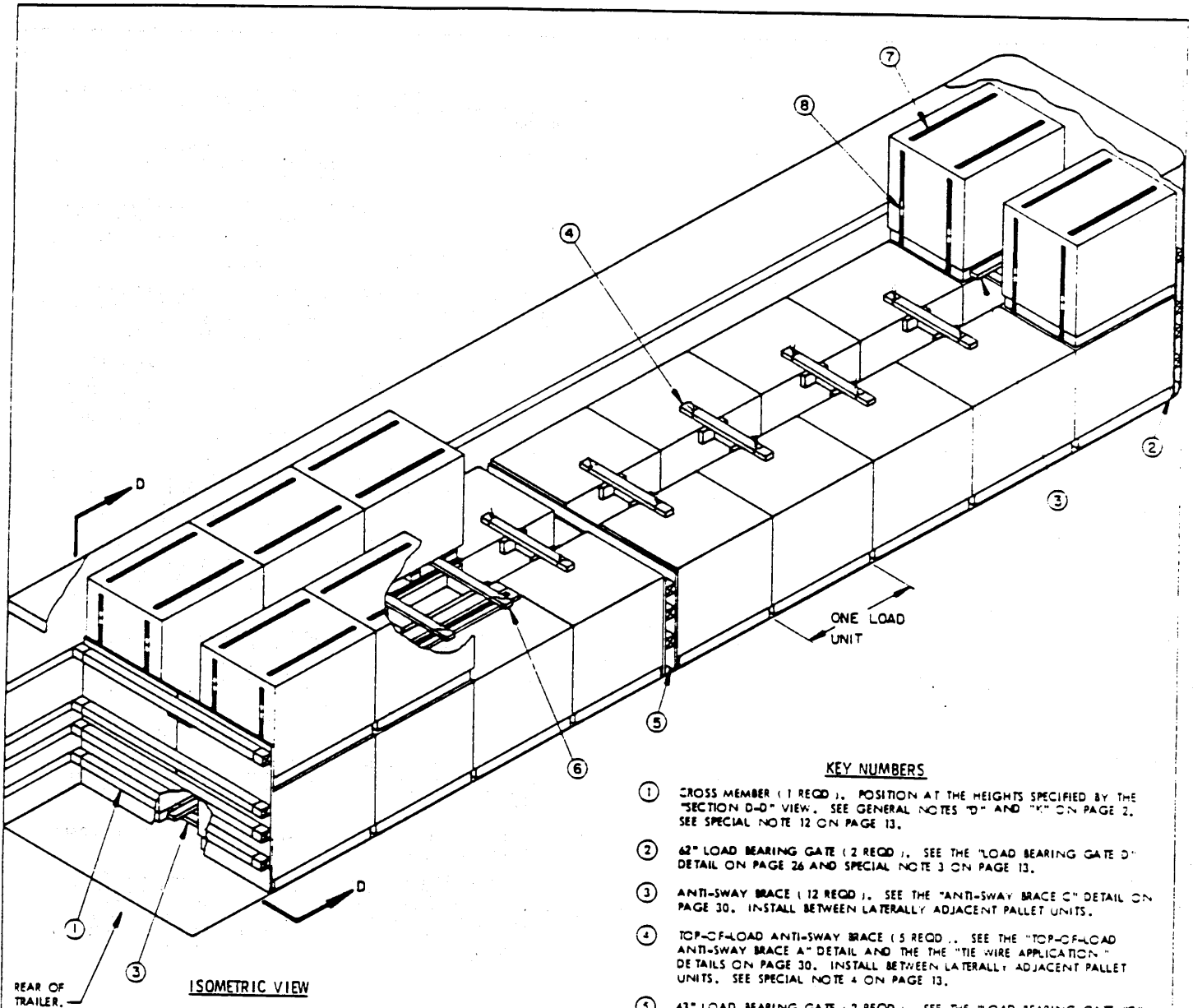
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	25-----	42,425 LBS
DUNNAGE-----		522 LBS
TOTAL WEIGHT-----		42,947 LBS (APPROX)

(5-LAYER PALLET UNIT)

25-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE CONVENTIONAL VAN TRAILER

PAGE 11

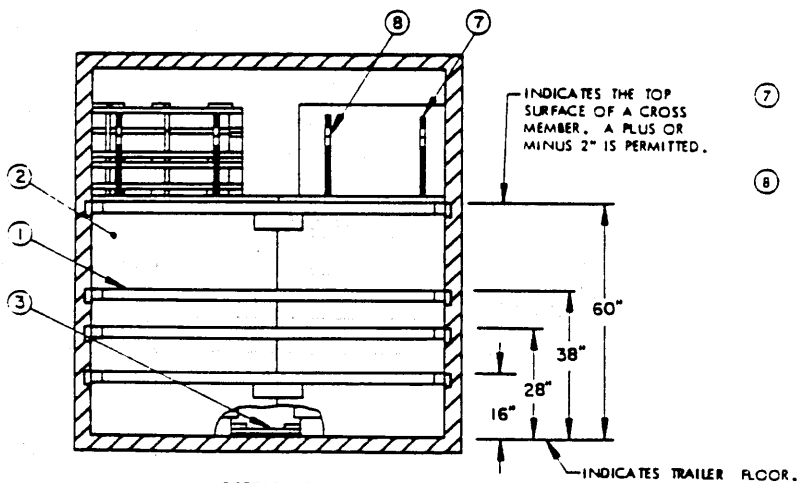


ISOMETRIC VIEW

REAR OF TRAILER.

KEY NUMBERS

- ① CROSS MEMBER (1 REQD.). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION D-D" VIEW. SEE GENERAL NOTES "D" AND "M" ON PAGE 2. SEE SPECIAL NOTE 12 ON PAGE 13.
- ② 62" LOAD BEARING GATE (2 REQD.). SEE THE "LOAD BEARING GATE D" DETAIL ON PAGE 26 AND SPECIAL NOTE 3 ON PAGE 13.
- ③ ANTI-SWAY BRACE (12 REQD.). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS.
- ④ TOP-OF-LOAD ANTI-SWAY BRACE (5 REQD.). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL AND THE "TIE WIRE APPLICATION" DETAILS ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 13.
- ⑤ 43" LOAD BEARING GATE (2 REQD.). SEE THE "LOAD BEARING GATE C" DETAIL ON PAGE 26.
- ⑥ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD.). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 30. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER END OF SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. SEE SPECIAL NOTE 5 ON PAGE 13.
- ⑦ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 23'-6" LONG STEEL STRAPPING (14 REQD.). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY. INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 13.
- ⑧ SEAL FOR 1-1/4" STRAPPING (28 REQD., 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION D-D

INDICATES THE TOP SURFACE OF A CROSS MEMBER. A PLUS OR MINUS 2" IS PERMITTED.

INDICATES TRAILER FLOOR.

(5-LAYER PALLET UNIT)

25-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES

SPECIAL NOTES:

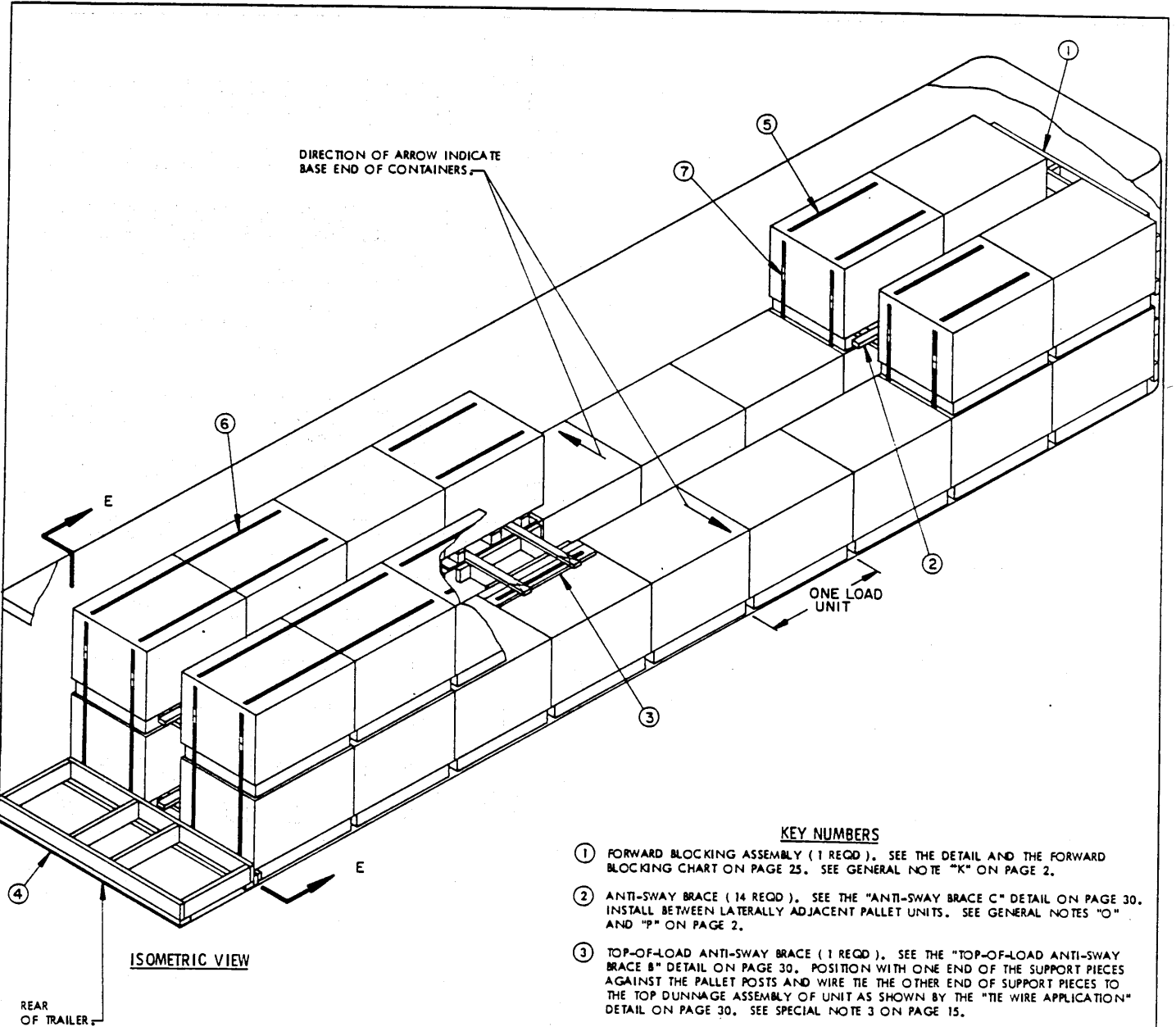
1. A 25-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES (CROSS MEMBERS AND STATIONARY WALL MEMBERS) AND ROUNDED FRONT CORNERS. WIDER OR NARROWER TRAILERS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 12 IS THE 5-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 43-3/4" HIGH AND WEIGHING APPROXIMATELY 1,697 POUNDS.
3. IF PLYWOOD IS NOT AVAILABLE FOR THE CONSTRUCTION OF LOAD BEARING GATES, OR IF DESIRED, PIECES MARKED ② AND ⑤ MAY BE CONSTRUCTED FROM 1" LUMBER. SEE THE ALTERNATIVE LOAD BEARING GATE "C" AND "D" DETAILS ON PAGE 27. NOTE THAT LOAD BEARING GATES WILL NOT BE REQUIRED IF THE CROSS MEMBERS CONTACT THE PALLET DUNNAGE AND/OR INTERMEDIATE DUNNAGE ASSEMBLY OF A UNIT BY AT LEAST ONE-HALF THE SURFACE OF THE HEIGHT OF THE CROSS MEMBER.
4. TOP-OF-LOAD ANTI-SWAY BRACES SHOWN AS PIECES MARKED ④ IN THE LOAD ON PAGE 12 ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER, A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED.
5. THE TOP-OF-LOAD ANTI-SWAY BRACE "B", SHOWN IN THE LOAD AS PIECE MARKED ⑥, 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 "C" WILL BE INSTALLED IN LIEU OF PIECE MARKED ⑥.
6. THE STACK UNITIZING STRAPS, PIECES MARKED ⑦ IN THE LOAD ON PAGE 12, WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER.
7. IF ONLY ONE PALLET UNIT IS LOADED IN THE SECOND LAYER, SPACER ASSEMBLY PROCEDURES AS SPECIFIED ON PAGE 22, MAY BE USED IN LIEU OF THE TOP-OF-LOAD ANTI-SWAY BRACE "B" SHOWN ON PAGE 12.
8. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLETIZED UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
10. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 22.
11. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 7'-6" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT.
12. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS AND THE LOAD BEARING GATES "C", PIECES MARKED ① AND ⑤, RESPECTIVELY, WILL BE OMITTED FROM BETWEEN THE FIFTH AND SIXTH LOAD UNITS. ALSO OMIT THE CROSS MEMBERS AND LOAD BEARING GATE "D", PIECES MARKED ① AND ②, FROM THE FRONT OF THE TRAILER. AT THE REAR OF THE LOAD, INSTALL AN ADDITIONAL CROSS MEMBER AT THE 48" HEIGHT.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	4	2
2" X 4"	159	106
2" X 6"	22	22
NAILS	NO. REQD	POUNDS
6d (2")	24	1/4
10d (3")	230	3-3/4
STEEL STRAPPING, 1-1/4" X .035" OR .031"----- 329' REQD----- 47 LBS		
SEAL FOR 1-1/4" STRAPPING----- 28 REQD----- 1 LBS		
PLYWOOD, 1/2"----- 132 SQ FT REQD----- 182 LBS		
WIRE, NO. 14 GAGE----- 30' REQD----- 1/2 LB		
CROSS MEMBER		11 REQD

LOAD AS SHOWN

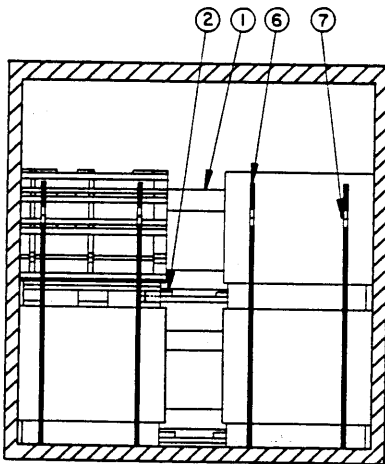
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	25-----	42,425 LBS
DUNNAGE-----	-----	495 LBS
TOTAL-----	-----	42,920 LBS (APPROX)

(5-LAYER PALLET UNIT)
 25-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② ANTI-SWAY BRACE (14 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 30. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER END OF SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. SEE SPECIAL NOTE 3 ON PAGE 15.
- ④ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 28 AND SPECIAL NOTE 4 ON PAGE 15.
- ⑤ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 21'-0" LONG STEEL STRAPPING (8 REQD). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL AS SHOWN TO ENCIRCLE TWO PALLET UNITS. SEE SPECIAL NOTE 5 ON PAGE 15.
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 29'-0" LONG STEEL STRAPPING (4 REQD). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL AS SHOWN TO SECURE TWO PALLET UNITS IN THE SECOND LAYER TO TWO PALLET UNITS IN THE FIRST LAYER. SEE SPECIAL NOTE 6 ON PAGE 15.
- ⑦ SEAL FOR 1-1/4" STRAPPING (24 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



(4-LAYER PALLET UNIT)

29-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE CONVENTIONAL VAN TRAILER

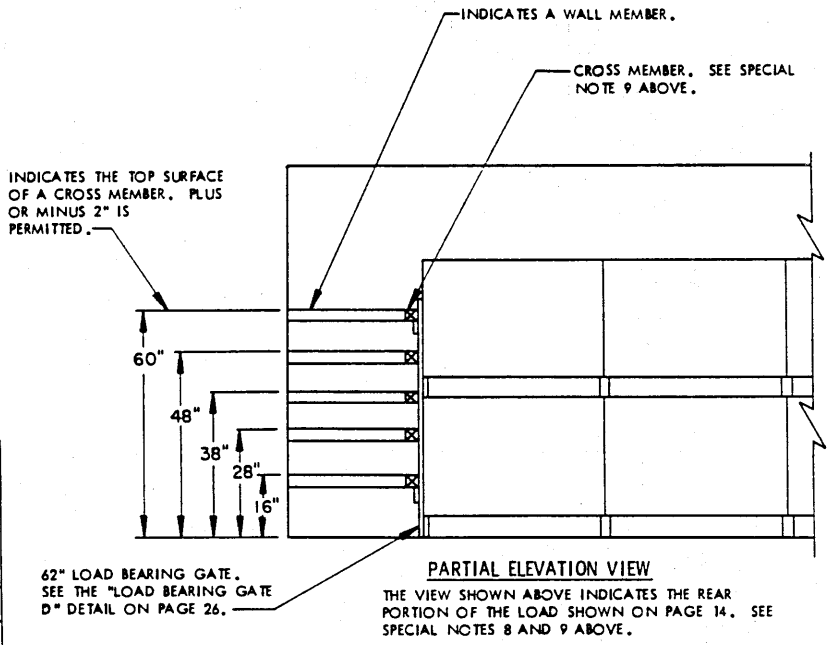
(SPECIAL NOTES CONTINUED)

8. IF THE TRAILER BEING OUTLOADED CONTAINS MECHANICAL BRACING DEVICES, SUCH AS WALL BELT RAILS AND LOAD BLOCKING CROSS MEMBERS, WHICH CONFORM TO SPECIFICATIONS SET FORTH WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C AND APPENDICES THERETO, THEY MAY BE USED AT THE REAR OF THE LOAD AS SHOWN IN THE "PARTIAL ELEVATION VIEW" ON THIS PAGE. THE MECHANICAL BRACING DEVICE SYSTEM OF A TRAILER MUST HAVE A LENGTH OF AT LEAST 36'-0" AS MEASURED FROM THE FRONT WALL OF THE TRAILER. SEE GENERAL NOTES "D" AND "K" ON PAGE 2.
9. IF THE TRAILER BEING OUTLOADED CONTAINS MECHANICAL BRACING DEVICES, A LOAD BEARING GATE "D" AS SHOWN IN THE "PARTIAL ELEVATION VIEW" ON THIS PAGE MUST BE USED BETWEEN THE CROSS MEMBERS AND THE REAR PALLET UNITS. IF THE TRAILER HAS ROUNDED FRONT CORNERS, INSTALL CROSS MEMBERS AT THE FRONT OF THE LOAD IN LIEU OF USING THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①. A LOAD BEARING GATE "D" MUST BE USED BETWEEN THE CROSS MEMBERS AND THE FRONT PALLET UNITS. NOTE THAT CROSS MEMBERS ARE REQUIRED AT THE 60" HEIGHT IN THE MID-SECTION OF THE SECOND LAYER, UNLESS THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO A CORRESPONDING UNIT IN THE FIRST LAYER.
10. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
11. LEFT-OVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFT-OVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
12. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21, OR PAGE 22.
13. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED IN CONVENTIONAL VAN TRAILERS. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

SPECIAL NOTES:

1. A 29-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS ROUNDED FRONT CORNERS. WIDER OR NARROWER TRAILERS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 14 IS THE 4-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 36-1/4" HIGH AND WEIGHING APPROXIMATELY 1,385 POUNDS.
3. IN LIEU OF USING A TOP-OF-LOAD ANTI-SWAY BRACE "B" FOR THE BRACING OF A PALLET UNIT IN THE SECOND LAYER THAT DOES NOT HAVE A PALLET UNIT DIRECTLY OPPOSITE, THE ODD PALLET MAY BE SECURED BY ENCIRCLING THAT STACK AND AN IMMEDIATELY ADJACENT STACK WITH BUNDLING STRAPS, PIECES MARKED ④.
4. IF THE VOID AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE "REAR BLOCKING ASSEMBLY C" AS DETAILED ON PAGE 29. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE "REAR BLOCKING ASSEMBLY A" AS SHOWN. SEE SPECIAL NOTE 13.
5. A PALLET UNIT AT EACH END OF THE SECOND LAYER PORTION OF THE LOAD MUST BE UNITIZED TO A PALLET UNIT IN THE FIRST LAYER, UNLESS THE STACKED UNITS ARE AGAINST THE FRONT WALL OF A SQUARE-FRONT TRAILER, AGAINST THE FORWARD BLOCKING ASSEMBLY, OR AT THE VERY REAR OF THE LOAD. THE UNITIZING STRAPS, PIECE MARKED ⑤, MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
6. IF A STACK IN THE LOAD UNIT AT THE REAR OF THE LOAD IN A CONVENTIONAL VAN TRAILER IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS, SHOWN AS PIECE MARKED ⑥, MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS IN EACH APPLICABLE ROW.
7. 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, PIECES MARKED ⑤. PROVIDE LATERAL BRACING BY INSTALLING PIECES MARKED ③.

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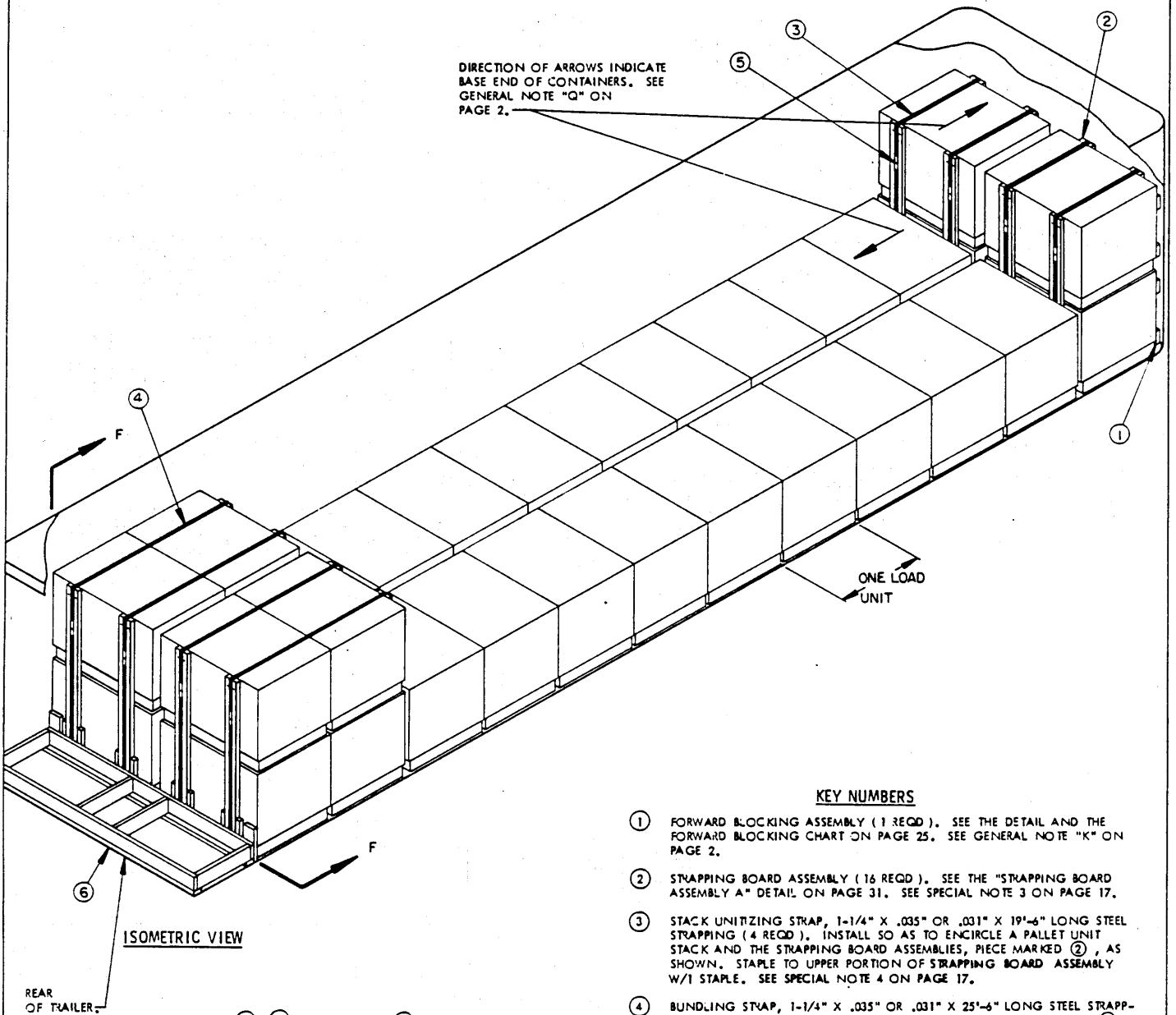


BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	2	1
2" X 3"	2	1
2" X 4"	201	134
2" X 6"	90	90
NAILS	NO. REQD	POUNDS
6d (2")	6	NIL
10d (3")	308	4-3/4
STEEL STRAPPING, 1-1/4" X .035" OR .031" --- 284' REQD --- 4 LBS		
SEAL FOR 1-1/4" STRAPPING --- 24 REQD --- 1 LB		
WIRE, NO. 14 GAGE --- 5' REQD --- NIL		

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	29	40,165 LBS
DUNNAGE		500 LBS
TOTAL WEIGHT		40,665 LBS (APPROX)

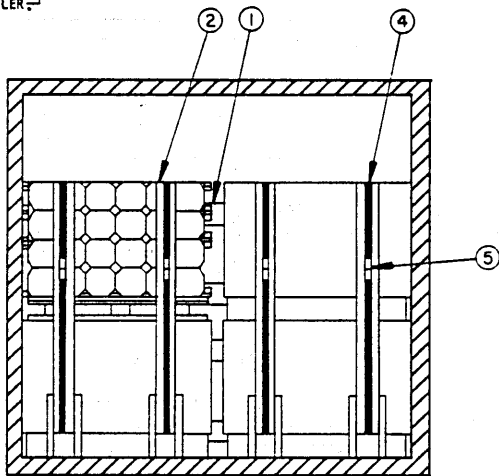
(4-LAYER PALLET UNIT)
29-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE CONVENTIONAL VAN TRAILER

DIRECTION OF ARROWS INDICATE
BASE END OF CONTAINERS. SEE
GENERAL NOTE "Q" ON
PAGE 2.



ISOMETRIC VIEW

REAR
OF TRAILER.



SECTION F-F

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② STRAPPING BOARD ASSEMBLY (16 REQD). SEE THE "STRAPPING BOARD ASSEMBLY A" DETAIL ON PAGE 31. SEE SPECIAL NOTE 3 ON PAGE 17.
- ③ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 19'-6" LONG STEEL STRAPPING (4 REQD). INSTALL SO AS TO ENCIRCLE A PALLET UNIT STACK AND THE STRAPPING BOARD ASSEMBLIES, PIECE MARKED ②, AS SHOWN. STAPLE TO UPPER PORTION OF STRAPPING BOARD ASSEMBLY W/I STAPLE. SEE SPECIAL NOTE 4 ON PAGE 17.
- ④ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-6" LONG STEEL STRAPPING (4 REQD). INSTALL AS SHOWN TO ENCIRCLE PIECES MARKED ②, AND TWO PALLET UNITS IN THE SECOND LAYER TO TWO PALLET UNITS IN THE FIRST LAYER. SEE SPECIAL NOTE 5 ON PAGE 17.
- ⑤ SEAL FOR 1-1/4" STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.
- ⑥ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY C" ON PAGE 29 AND SPECIAL NOTE 6 ON PAGE 17.

(4-LAYER PALLET UNIT)

30-UNIT LOAD IN A 40'-0" LONG BY 8'-3" WIDE CONVENTIONAL VAN TRAILER

SPECIAL NOTES:

1. A 30-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 8'-3" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. TRAILERS AS NARROW AS 8'-1" WIDE MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 16 IS THE 4-LAYER UNIT, HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 36-1/4" HIGH AND WEIGHING APPROXIMATELY 1,385 POUNDS. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR THE 5-LAYER UNIT SHOWN ON PAGE 3 OF THIS DRAWING.
3. FOR EASE OF INSTALLATION, A STRAPPING BOARD ASSEMBLY "B" MAY BE USED IN LIEU OF EACH PAIR OF STRAPPING BOARD ASSEMBLIES, PIECE MARKED (2). SEE THE "STRAPPING BOARD ASSEMBLY B" DETAIL ON PAGE 31.
4. A PALLET UNIT AT EACH END OF THE SECOND LAYER PORTION OF THE LOAD MUST BE UNITIZED TO A PALLET UNIT IN THE FIRST LAYER, UNLESS THE STACKED UNITS ARE AGAINST THE FRONT WALL OF A SQUARE-FRONT TRAILER, AGAINST THE FORWARD BLOCKING ASSEMBLY, OR AT THE VERY REAR OF THE LOAD. NOTE THAT WHEN THERE IS ONLY ONE FULL LOAD UNIT IN THE SECOND LAYER OF THE LOAD, EACH STACK IN THE LOAD UNIT MUST BE UNITIZED.
5. IF A STACK IN THE LOAD UNIT AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS, SHOWN AS PIECE MARKED (4), MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS AND TWO PAIR OF STRAPPING BOARD ASSEMBLIES, PIECE MARKED (2), IN EACH APPLICABLE ROW.
6. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOORS MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE REAR BLOCKING ASSEMBLY "D", DETAILED ON PAGE 29. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "C" WILL BE USED AS SHOWN.
7. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
9. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.
10. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED IN CONVENTIONAL VAN TRAILERS. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	43	15
2" X 4"	39	26
2" X 6"	179	179
NAILS	NO. REQD	POUNDS
10d (3")	212	3-1/4
STEEL STRAPPING, 1-1/4" X .035" OR .031" --- 180' REQD --- 26 LBS		
SEAL FOR 1-1/4" STRAPPING --- 18 REQD --- 1 LB		
STAPLES FOR STEEL STRAPPING --- 8' REQD --- NIL		

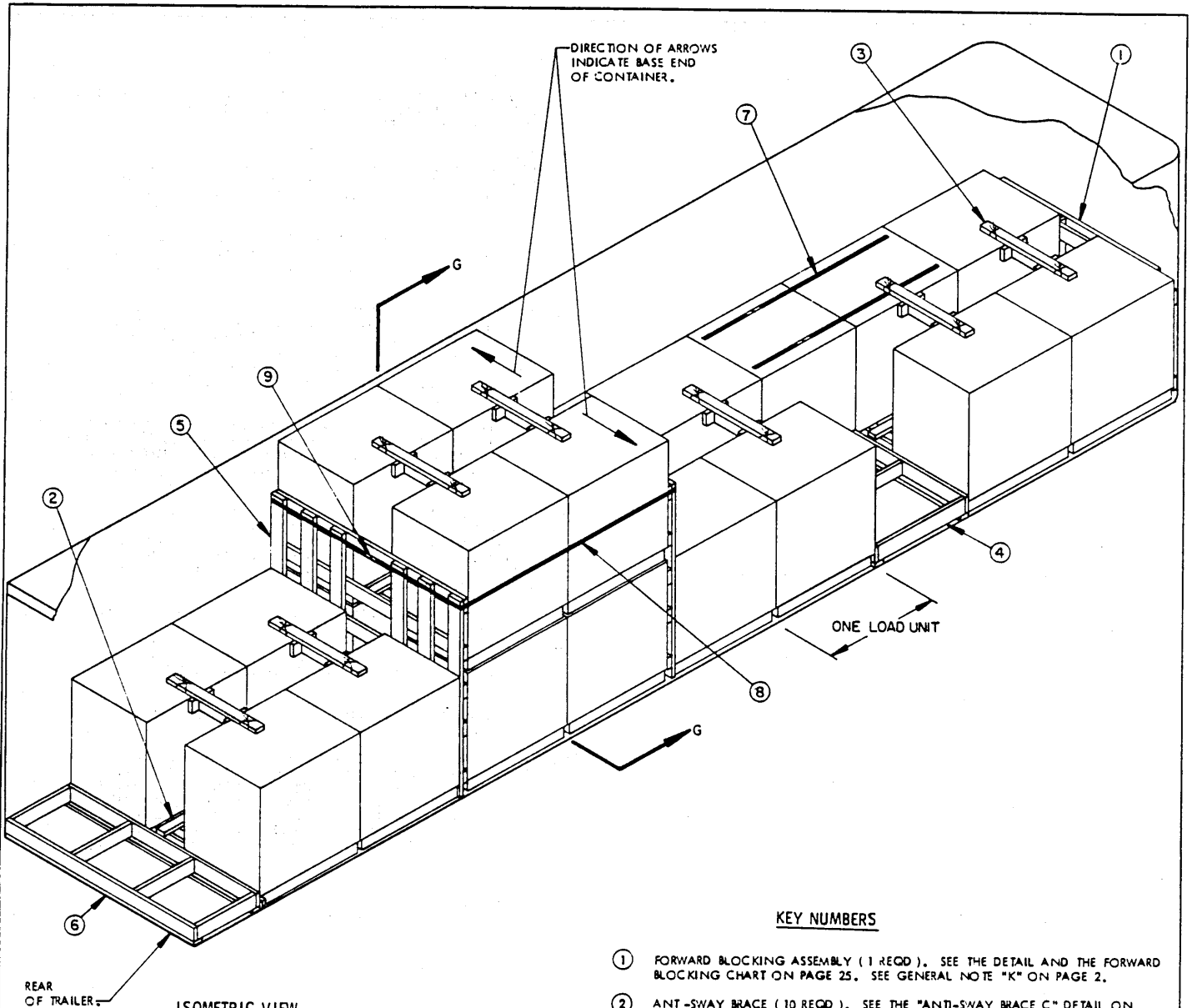
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	30	41,550 LBS
DUNNAGE		471 LBS
TOTAL WEIGHT		42,021 LBS (APPROX)

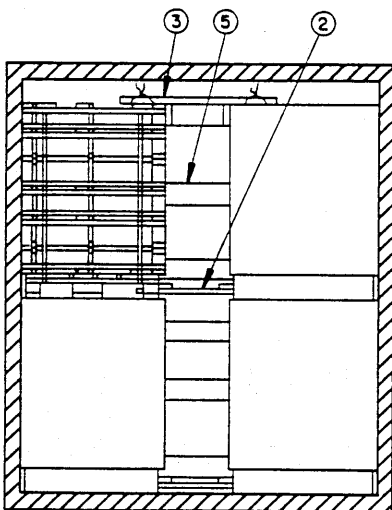
(4-LAYER PALLET UNIT)

30-UNIT LOAD IN A 40'-0" LONG BY 8'-3" WIDE CONVENTIONAL VAN TRAILER

PAGE 17



ISOMETRIC VIEW



SECTION G-G

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② ANTI-SWAY BRACE (10 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS IN EACH LAYER.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (8 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL, AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 30. INSTALL BETWEEN LATERALLY ADJACENT UNITS. SEE SPECIAL NOTE 3 ON PAGE 19.
- ④ SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY C" DETAIL ON PAGE 32. SEE SPECIAL NOTE 4 ON PAGE 19.
- ⑤ BULKHEAD GATE (2 REQD). SEE THE DETAIL AND THE "BULKHEAD GATE CHART" ON PAGE 32.
- ⑥ REAR BLOCKING (1 REQD). SEE THE REAR BLOCKING ASSEMBLY "A" DETAIL ON PAGE 28. SEE SPECIAL NOTES 5 AND 10 ON PAGE 19.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-6" LONG STEEL STRAPPING (2 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY AS SHOWN. INSTALL SO AS TO ENCIRCLE TWO PALLET UNITS. SEE SPECIAL NOTE 6 ON PAGE 19.
- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 34'-0" LONG STEEL STRAPPING (1 REQD). INSTALL TO ENCIRCLE FOUR UPPER-LAYER PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 7 ON PAGE 19.
- ⑨ SEAL FOR 1-1/4" STRAPPING (6 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

SPECIAL NOTES:

1. A 21-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED. HIGH VOLUME-TRAILERS MAY BE REQUIRED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 18 IS THE 6-LAYER UNIT, HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 51-1/4" HIGH AND WEIGHING APPROXIMATELY 2,025 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3.
3. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED ③ IN THE LOAD ON PAGE 18, ARE TO BE POSITIONED BETWEEN ALL Laterally ADJACENT PALLET UNITS IN EACH LAYER FOR 5-LAYER AND 6-LAYER UNITS.
4. THE SPACER ASSEMBLY, SHOWN IN THE LOAD VIEW AS PIECE MARKED ④ IS ONLY SHOWN TO DEPICT A TYPICAL INSTALLATION. IF A PALLET UNIT IS LOADED IN PLACE OF THE SPACER ASSEMBLY, THE BUNDLING STRAPS, SHOWN AS PIECE MARKED ⑦, WILL NOT BE REQUIRED. NOTE THAT A 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 OR A BULKHEAD GATE, PIECES MARKED ① AND ⑤.
5. IF THE VOID AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOORS MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE REAR BLOCKING ASSEMBLY "D" DETAILED ON PAGE 29. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "A" WILL BE USED AS SHOWN. SEE SPECIAL NOTE 10.
6. A PALLET UNIT THAT DOES NOT HAVE A PALLET UNIT DIRECTLY OPPOSITE MUST BE SECURED BY INSTALLING BUNDLING STRAPS, SHOWN AS PIECE MARKED ⑦ IN THE LOAD ON PAGE 18 AROUND THE PALLET UNIT AND THE PALLET UNIT IMMEDIATELY ADJACENT; A PALLET UNIT WILL NOT BE OMITTED FROM THE SECOND LAYER PORTION OF THE LOAD.
7. WHEN ONLY ONE (1) BUNDLING STRAP, PIECE MARKED ⑧, IS APPLIED, THE SECOND LAYER PORTION OF THE LOAD IS LIMITED TO NOT MORE THAN FOUR (4) 6-LAYER PALLET UNITS, FOUR (4) 5-LAYER UNITS, OR SIX (6) 4-LAYER PALLET UNITS. IF AN ADDITIONAL BUNDLING STRAP IS APPLIED AROUND THE SECOND LAYER PORTION (POSITIONED SO AS TO EXTEND OVER THE NEXT LOWER LEVEL BULKHEAD GATE HORIZONTAL PIECE), NOT MORE THAN EIGHT (8) 6-LAYER PALLET UNITS, TEN (10) 5-LAYER UNITS, OR FOURTEEN (14) 4-LAYER UNITS MAY BE LOADED IN THE SECOND LAYER.
8. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.
10. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

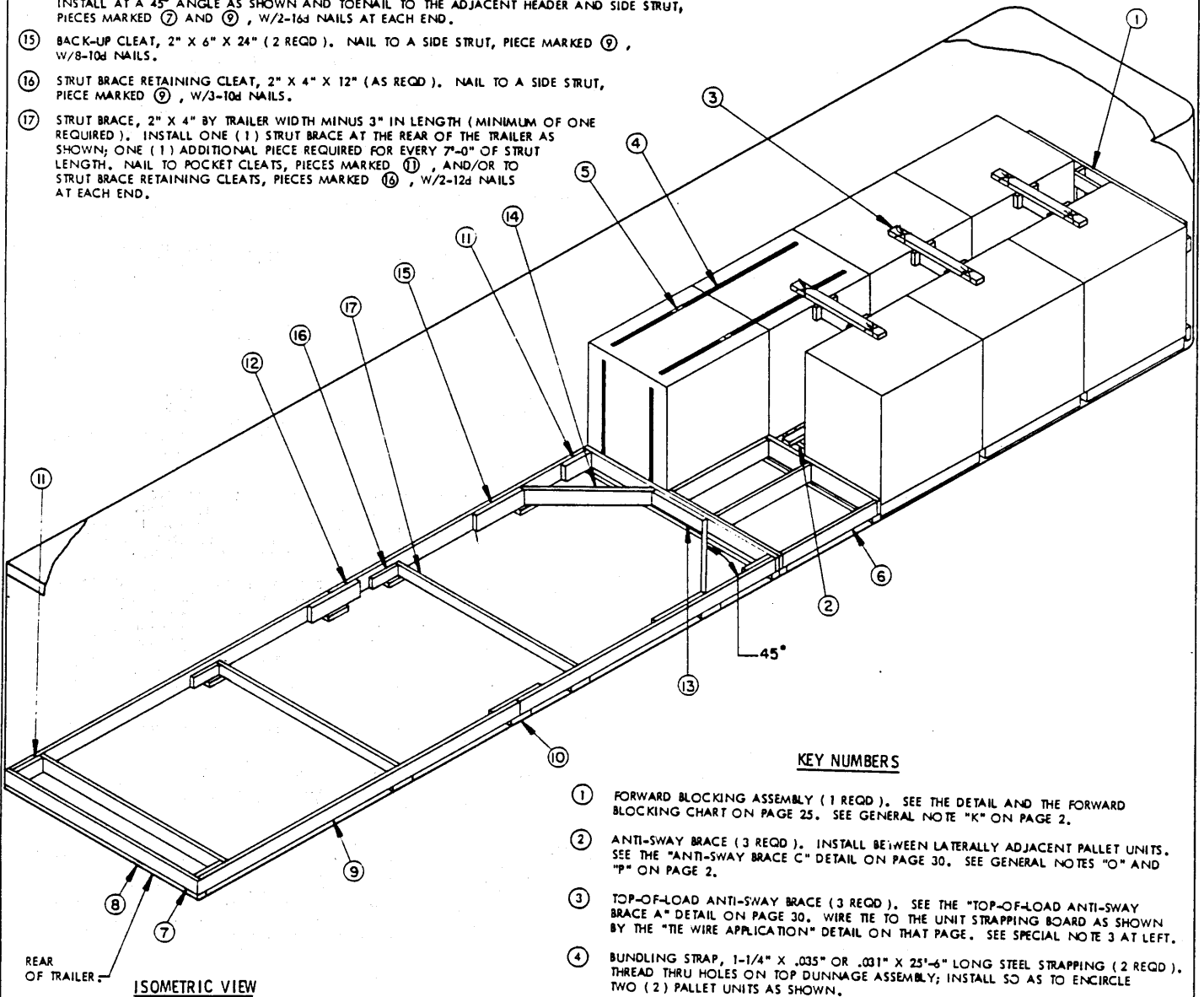
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	2	1
2" X 3"	2	1
2" X 4"	185	124
2" X 6"	254	254
NAILS	NO. REQD	POUNDS
6d (2")	6	NIL
10d (3")	516	8
STEEL STRAPPING, 1-1/4" X .035" OR .031" ----- 119' REQD ---- 17 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 6 REQD ---- NIL		
WIRE, NO. 14 GAGE ----- 40' REQD ---- 1 LB		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	21-----	42,525 LBS
DUNNAGE-----	-----	786 LBS
TOTAL WEIGHT-----		43,311 LBS (APPROX)

(KEY NUMBERS CONTINUED)

- ⑭ 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 ⑦ AND ⑨, W/2-16d NAILS AT EACH END.
- ⑮ BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑨, W/8-10d NAILS.
- ⑯ STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑨, W/3-10d NAILS.
- ⑰ STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQUIRED). INSTALL ONE (1) STRUT BRACE AT THE REAR OF THE TRAILER AS SHOWN; ONE (1) ADDITIONAL PIECE REQUIRED FOR EVERY 7'-0" OF STRUT LENGTH. NAIL TO POCKET CLEATS, PIECES MARKED ⑪, AND/OR TO STRUT BRACE RETAINING CLEATS, PIECES MARKED ⑯, W/2-12d NAILS AT EACH END.



ISOMETRIC VIEW

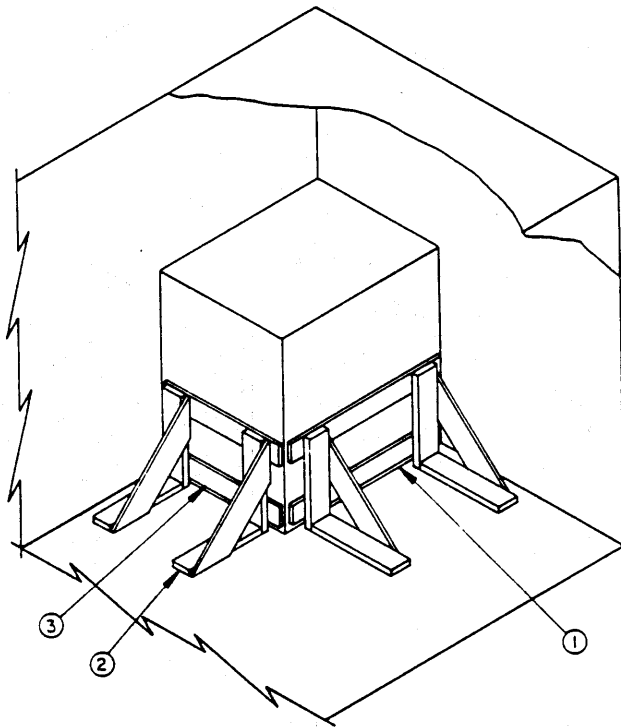
KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
- ② ANTI-SWAY BRACE (3 REQD). INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 30. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (3 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 30. WIRE TIE TO THE UNIT STRAPPING BOARD AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON THAT PAGE. SEE SPECIAL NOTE 3 AT LEFT.
- ④ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-6" LONG STEEL STRAPPING (2 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN.
- ⑤ SEAL FOR 1-1/4" STRAPPING (4 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.
- ⑥ SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY C" DETAIL ON PAGE 32. NAIL TO A HEADER, PIECE MARKED ⑦, W/2-10d NAILS.
- ⑦ HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). SEE SPECIAL NOTES 4 AND 5 AT LEFT.
- ⑧ 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 ⑦, W/1-10d NAIL EVERY 8".
- ⑨ SIDE STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN THE FORWARD AND REAR HEADERS, PIECE MARKED ⑦ (2 REQD).
- ⑩ RISER PIECE, 2" X 4" X 9" (AS REQD). CENTER UNDER THE JOINTS OF PIECES MARKED ④ AND ⑮, ⑬ AND ⑰, AND UNDER THE SPLICE OF PIECES MARKED ⑫ IF APPLICABLE. NAIL TO SIDE STRUT MARKED ⑨ W/2-10d NAILS.
- ⑪ POCKET CLEAT, 2" X 6" X 12" (4 REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑨, W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER, PIECE MARKED ⑦, W/3-12d NAILS.
- ⑫ SPLICE PIECE, 2" X 6" X 24" (AS REQD). CENTER ON JOINT OF PIECES MARKED ⑨ AND NAIL W/4-10d NAILS AT EACH END.
- ⑬ CENTER CLEAT, 2" X 6" X 24" (1 REQD). NAIL TO A HEADER, PIECE MARKED ⑦, W/6-10d NAILS.

(CONTINUED AT LEFT ABOVE)

SPECIAL NOTES:

- 1. A 7-UNIT LOAD IS SHOWN IN A 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER. TRAILERS OF OTHER WIDTHS CAN BE USED.
- 2. THE PALLET UNIT SHOWN IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 42-3/4" WIDE BY 51-1/4" HIGH AND WEIGHING APPROXIMATELY 2,025 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE TO THE OTHER UNITS DEPICTED ON PAGE 3.
- 3. TOP-OF-LOAD ANTI-SWAY BRACES AND BUNDLING STRAPS, PIECES MARKED ③ AND ④, ARE ONLY REQUIRED WHEN SHIPPING THE 6-LAYER OR 5-LAYER UNITS.
- 4. THE "K-BRACE BLOCKING", SHOWN AS PIECES MARKED ⑦ THRU ⑰, IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 20,000 POUNDS.
- 5. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 33 AND 34 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS AND MAY BE USED IN LIEU OF PIECES MARKED ⑦ THRU ⑰ WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS.



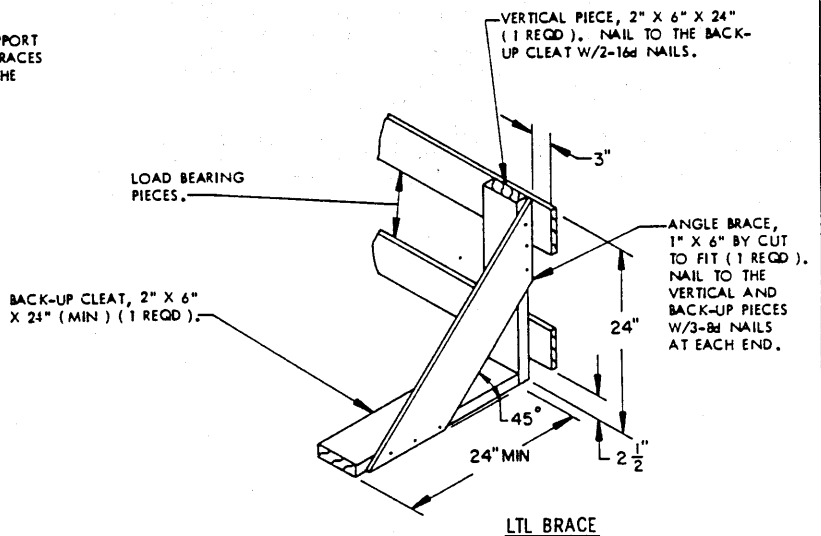
ISOMETRIC VIEW

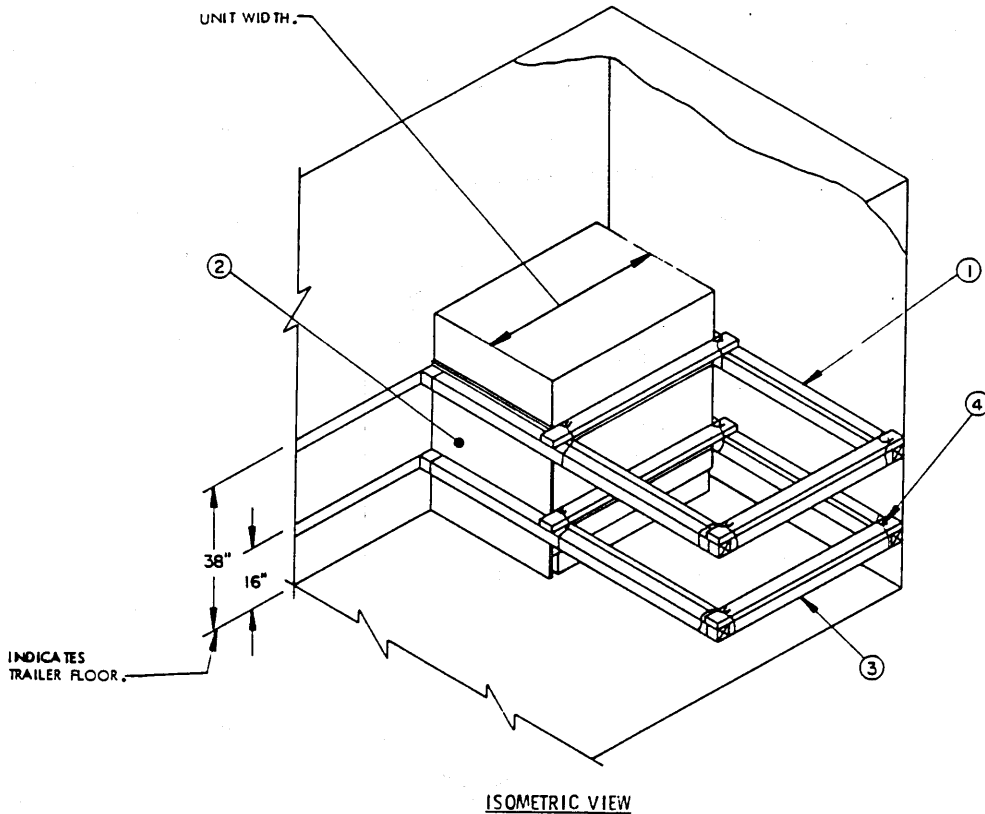
SPECIAL NOTES:

1. A ONE-PALLET UNIT LOAD IS SHOWN DEPICTING THE USE OF LTL BRACES IN A CONVENTIONAL TYPE VAN TRAILER EQUIPPED WITH NAILABLE FLOORS. TRAILERS WITH ALL METAL FLOORS CANNOT BE USED.
2. THE PALLET UNIT SHOWN IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 51-1/4" HIGH AND WEIGHING APPROXIMATELY 2,025 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3.
3. IF THE TRAILER BEING LOADED HAS ROUNDED FRONT CORNERS, TWO (2) ADDITIONAL LTL BRACES, AND TWO (2) ADDITIONAL LOAD BEARING PIECES MAY BE POSITIONED AT THE FORWARD END OF THE LADING OR A FORWARD BLOCKING ASSEMBLY, SHOWN AS KEY NUMBER ① ON PAGE 20 MAY BE USED.
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.

KEY NUMBERS

- ① LOAD BEARING PIECE, 1" X 6" X 45" (2 REQD). LOCATE AT HEIGHTS SPECIFIED IN "LTL BRACE" DETAIL. NAIL TO THE VERTICAL PIECES OF THE LTL BRACE W/4-6d NAILS AT EACH JOINT.
- ② LTL BRACE (4 REQD). SEE THE DETAIL BELOW. NAIL EACH LTL BRACE TO TRAILER FLOOR W/7-10d NAILS. SEE SPECIAL NOTE 4 AT LEFT.
- ③ LOAD BEARING PIECE, 1" X 6" X 36" (2 REQD). LOCATE AT HEIGHTS SPECIFIED IN "LTL BRACE" DETAIL BELOW. NAIL TO THE VERTICAL PIECES OF THE LTL BRACE W/4-6d NAILS AT EACH JOINT.



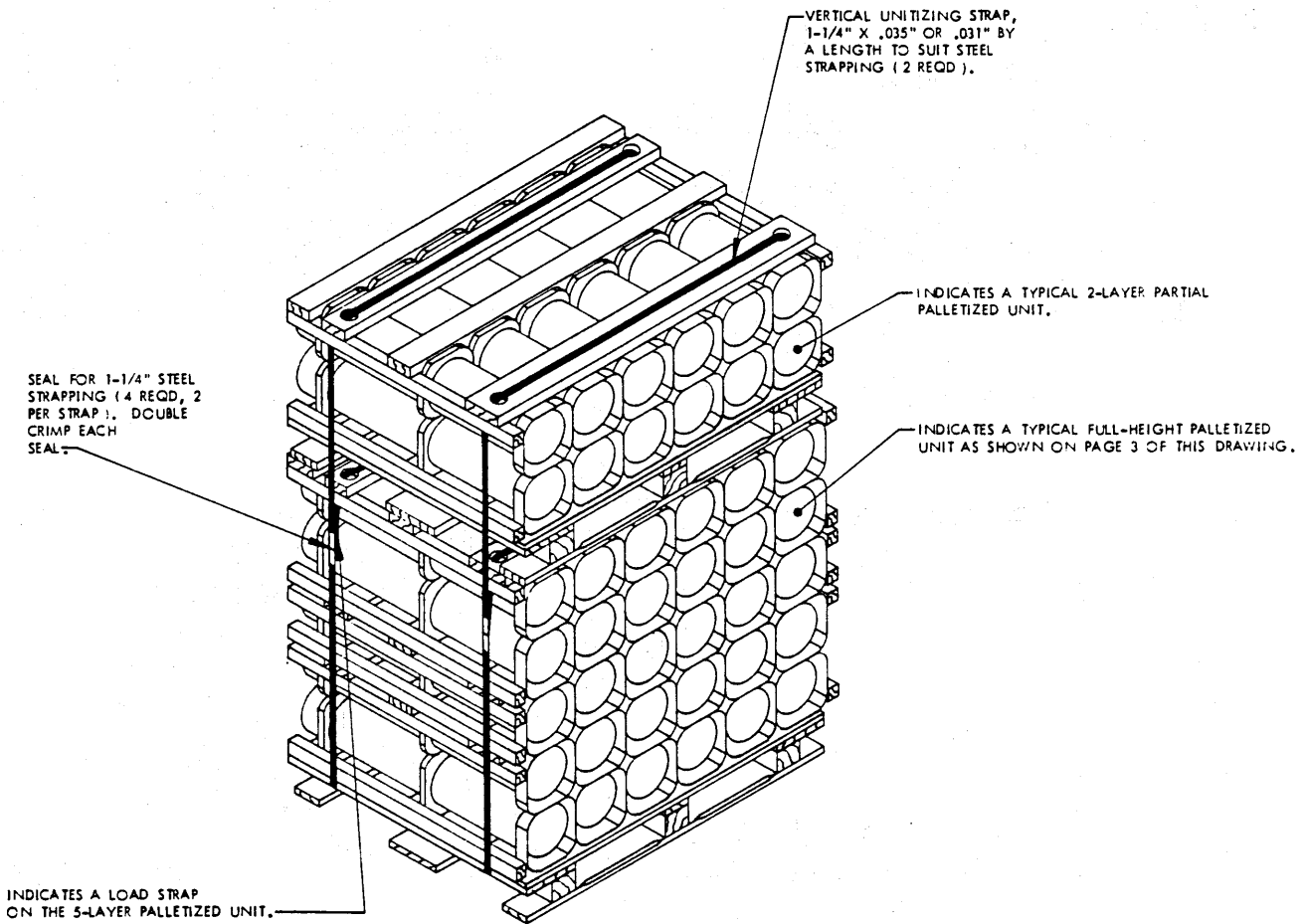


SPECIAL NOTES:

1. THESE OUTLOADING PROCEDURES DEPICT A VAN TRAILER WHICH IS EQUIPPED WITH MECHANICAL BRACING DEVICES.
2. THE PALLET SHOWN IN THE TYPICAL LTL LOAD IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 47-3/4" WIDE BY 51-1/4" HIGH. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER PALLET UNITS DEPICTED ON PAGE 3.
3. THE SPECIFIED CROSS MEMBER LOCATION DIMENSIONS ARE APPLICABLE FOR THE 6-LAYER UNIT SHOWN ABOVE, OR THE 5-LAYER UNIT DEPICTED ON PAGE 3. POSITION THE UPPER LEVEL CROSS MEMBERS AT THE 28" HEIGHT WHEN TRANSPORTING THE 4-LAYER UNIT.
4. A TYPICAL LTL LOAD OF ONE (1) PALLETIZED UNIT IS SHOWN; IF TWO (2) PALLETIZED UNITS ARE TO BE TRANSPORTED, POSITION THE UNITS TWO 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 TRAILER HAS ROUNDED CORNERS) AND OMIT THE TWO CROSS MEMBERS AT THE FORWARD END. INSTALL AN ANTI-SWAY BRACE BETWEEN UNITS, AND ALSO A TOP-OF-LOAD ANTI-SWAY BRACE IF APPLICABLE FOR THE UNIT BEING SHIPPED. REPLACE THE PLYWOOD WITH THE PROPER LOAD BEARING GATE, IF APPLICABLE.
5. TWO (2) SPACER ASSEMBLIES, PIECE MARKED ③, ARE REQUIRED WHEN LOADING THE 6-LAYER OR 5-LAYER UNITS. WHEN LOADING THE OTHER UNIT DEPICTED ON PAGE 3, A SPACER ASSEMBLY IS REQUIRED AT ONLY ONE LEVEL.

KEY NUMBERS

- ① CROSS MEMBER (4 REQD). POSITION AT THE HEIGHTS AS SPECIFIED BY THE ISOMETRIC VIEW ABOVE. SEE GENERAL NOTES "D" AND "E" ON PAGE 2. SEE SPECIAL NOTE 3 ON THIS PAGE.
- ② PLYWOOD, 1/2" X 35" X 40" (2 REQD). POSITION BETWEEN THE PALLET UNIT AND THE CROSS MEMBERS.
- ③ SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY B" DETAIL ON PAGE 31. SEE SPECIAL NOTE 5.
- ④ TIE WIRE, NO. 14 GAGE WIRE (8 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBER AND SPACER ASSEMBLY. BRING THE ENDS TOGETHER AND TWIST TAUT.



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

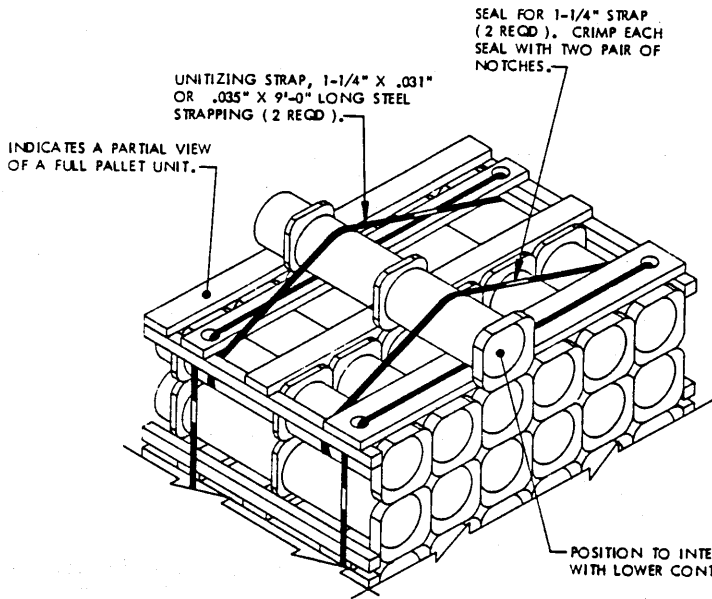
SPECIAL NOTES:

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 WITHIN A GROUP WHICH IS BUNDLED TOGETHER OR WITHIN A STACK WHICH IS UNITIZED. THE PREFERRED LOCATION WOULD BE WITHIN A ONE-HIGH PORTION OF A LOAD (NOT IN THE REAR LOAD UNIT) IF AVAILABLE, OR WITHIN THE TOP LAYER OF A LOAD IF TRAILER HEIGHT PERMITS.
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 LESS-THEN-FULL PALLET UNITS WITHIN A LOAD.
3. THE "SHIPMENT OF A PARTIAL PALLET UNIT" PROCEDURES ON THIS PAGE ARE APPLICABLE FOR LOADS IN CONVENTIONAL TYPE VAN TRAILERS AND TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES.
4. FOR SHIPMENT OF ONE THROUGH FIVE "LEFTOVER" CONTAINERS, SEE THE PROCEDURES ON PAGE 24 OF THIS DRAWING.

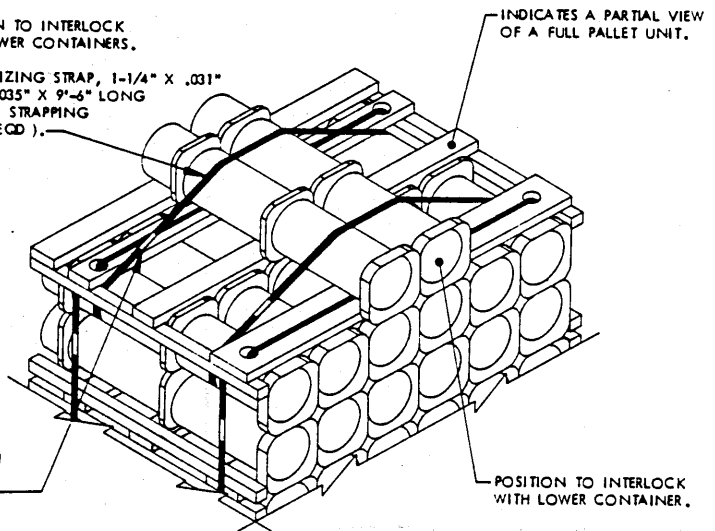
SPECIAL NOTES:

1. SHIPMENTS OF PROPELLING CHARGES 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 LEFTOVER CONTAINERS. LEFTOVER CONTAINERS ARE DESCRIBED AS A QUANTITY OF CONTAINERS WHICH IS INSUFFICIENT TO FORM A FULL-LAYERED PARTIAL UNIT FOR SECUREMENT ON TOP OF A FULL PALLET UNIT AS SHOWN ON PAGE 23.
2. SHIPMENT OF LEFTOVER CONTAINERS IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT OR FROM DEPOSITS TO POSTS, CAMPS, AND STATIONS, OR, UPON ARRIVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLY, AND PACK PLANTS TO DEPOSITS. **CAUTION:** A LOAD CONTAINING LEFTOVER CONTAINERS IN AN AMOUNT WHICH IS LESS THAN A FULL LAYER, AND SECURED TO THE TOP OF A FULL OR PARTIAL UNIT, MUST NOT BE DESTINED FOR SHIPMENT OVERSEAS BY WATER CARRIER.
3. THE PROCEDURES ON THIS PAGE ARE PRESENTED AS GUIDANCE IN THE SECUREMENT OF LEFTOVER CONTAINERS FOR SHIPMENT. THE VIEW AT TOP LEFT DEPICTS ONE LEFTOVER CONTAINER SECURED TO A FULL-HEIGHT PALLET UNIT. THE VIEWS BELOW DEPICT TWO AND THREE LEFTOVER CONTAINERS SECURED TO A FULL-HEIGHT PALLET UNIT. WHEN THREE THRU FIVE LEFTOVER CONTAINERS ARE BEING SHIPPED, A STRAPPING BOARD WILL BE NEEDED. LEFTOVER CONTAINERS MUST BE SECURED WITH A MINIMUM OF TWO (2) PIECES OF STEEL STRAPPING; NOTE THAT THE STRAPPING MUST NOT GO AROUND THE TOP DUNNAGE ASSEMBLY. THE STRAP MUST BE THREADED BEHIND THE 2" X 2" PIECES OF THE ASSEMBLY.

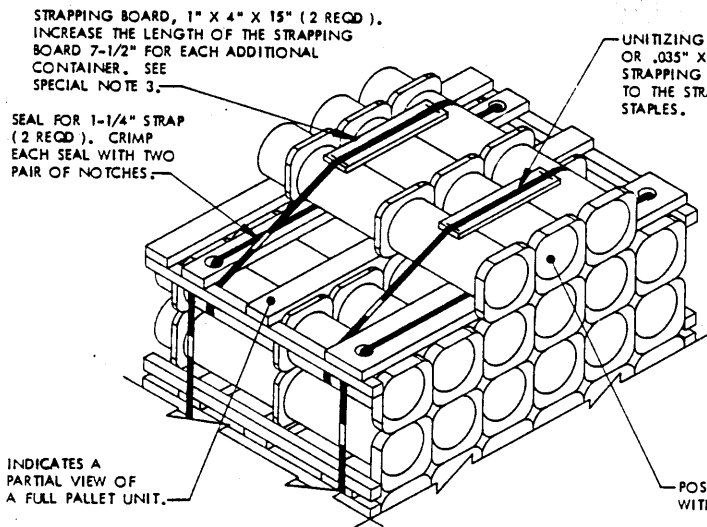
(CONTINUED BELOW)



SECUREMENT OF ONE CONTAINER



SECUREMENT OF TWO CONTAINERS



SECUREMENT OF THREE CONTAINERS

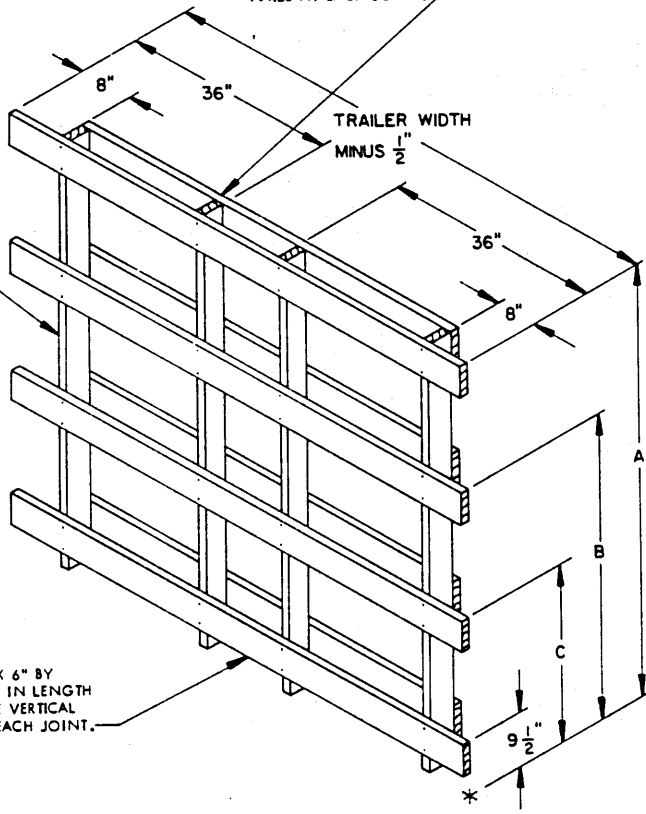
(SPECIAL NOTES CONTINUED)

4. THE PREFERRED LOCATION FOR THE POSITIONING OF A PALLET UNIT HAVING ONE OR MORE CONTAINERS STRAPPED TO THE TOP WOULD BE WITHIN THE ONE-HIGH PORTION OF THE LOAD; IT MUST NOT HAVE A PALLET UNIT STACKED ON TOP.
5. THE PROCEDURES ON THIS PAGE ARE APPLICABLE FOR THE SHIPMENT OF LEFTOVER CONTAINERS IN ANY OF THE LOADS DEPICTED HEREIN.

LATERAL PIECE, 2" X 6" BY CUT TO FIT (AS REQD). ALIGN VERTICALLY WITH THE LOAD BEARING PIECES AND NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 4" BY DIMENSION "A" FOR 2-HIGH UNIT, OR DIMENSION "C" FOR 1-HIGH UNIT (4 REQD).

LOAD BEARING PIECE, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (AS REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



FORWARD BLOCKING CHART			
PALLET UNIT TYPE	DIMENSION		
	A	B	C
6-LAYER UNIT	8'-0"	62"	46"
5-LAYER UNIT	6'-3"	54"	31"
4-LAYER UNIT	67"	46"	31"
6-L W/5-L ON TOP	6'-10"	62"	46"
6-L W/4-L ON TOP	6'-10"	62"	31"
5-L W/4-L ON TOP	6'-3"	54"	31"

FORWARD BLOCKING ASSEMBLY

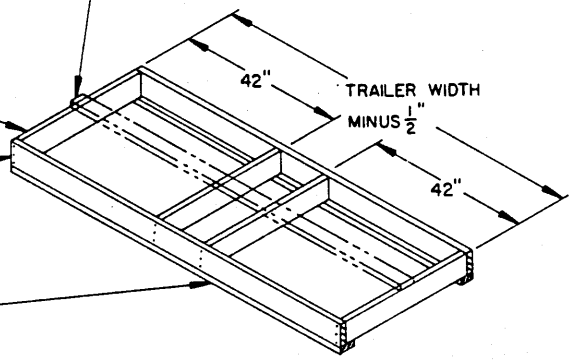
THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT END OF A TRAILER HAVING ROUNDED CORNERS, AND IS APPLICABLE FOR A CORNER RADIUS OF NOT MORE THAN 6-1/2". IF THE RADIUS IS FROM 6-1/2" TO 8", 2" X 6" VERTICAL PIECES WILL BE USED IN LIEU OF THE 2" X 4" PIECES. IF THE TRAILER IS EQUIPPED WITH LARGE-ANGLED FRONT CORNERS, REFER TO PAGE 35 FOR GUIDANCE.

STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (1 REQD FOR EVERY 7'-0" OF STRUT LENGTH FOR STRUTS LONGER THAN 7'-0"). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

STRUT, 2" X 6" BY CUT-TO-FIT (4 REQD).

HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

HEADER SUPPORT, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER W/1-10d NAIL EVERY 12".

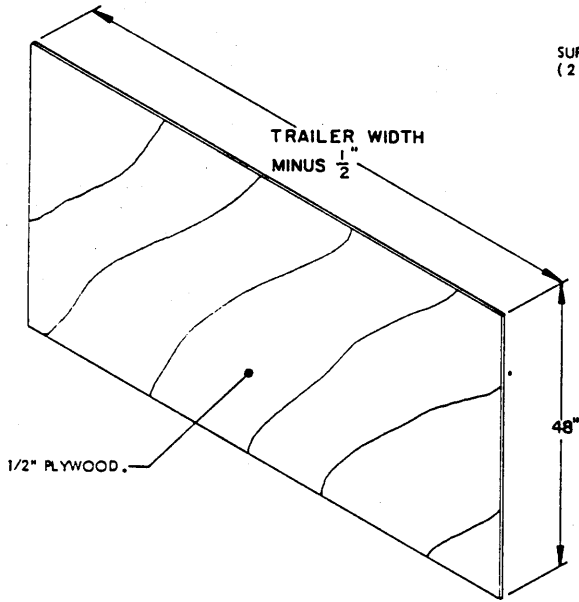


SPACER ASSEMBLY A

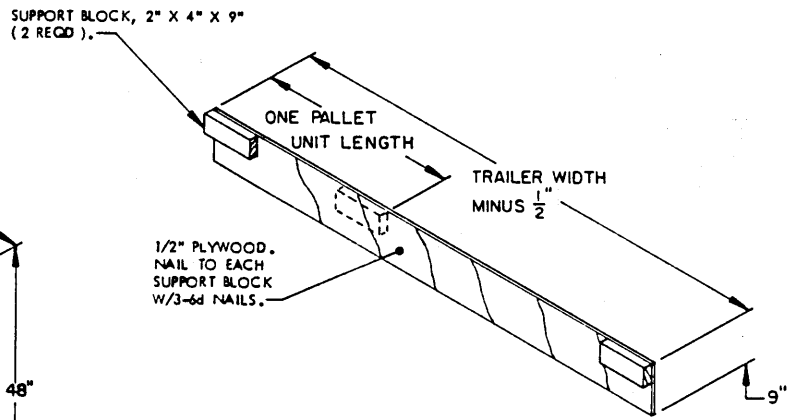
DETAILS

NOTE ●

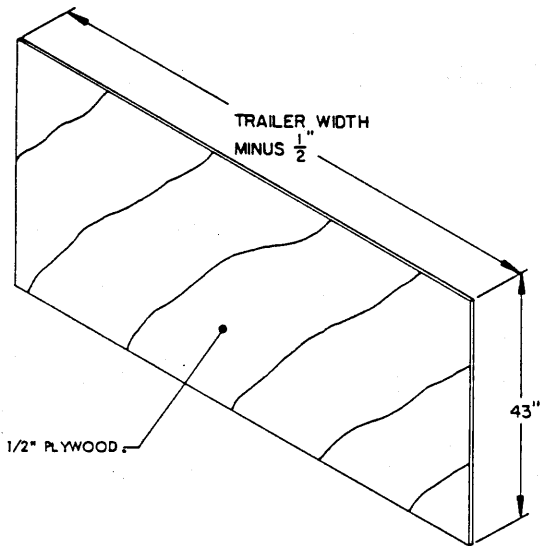
IF PLYWOOD IS NOT AVAILABLE, OR IF DESIRED, THE LOAD BEARING GATES MAY BE FABRICATED FROM NOMINAL ONE INCH AND/OR TWO INCH LUMBER. SEE THE ALTERNATIVE LOAD BEARING GATES ON PAGE 27.



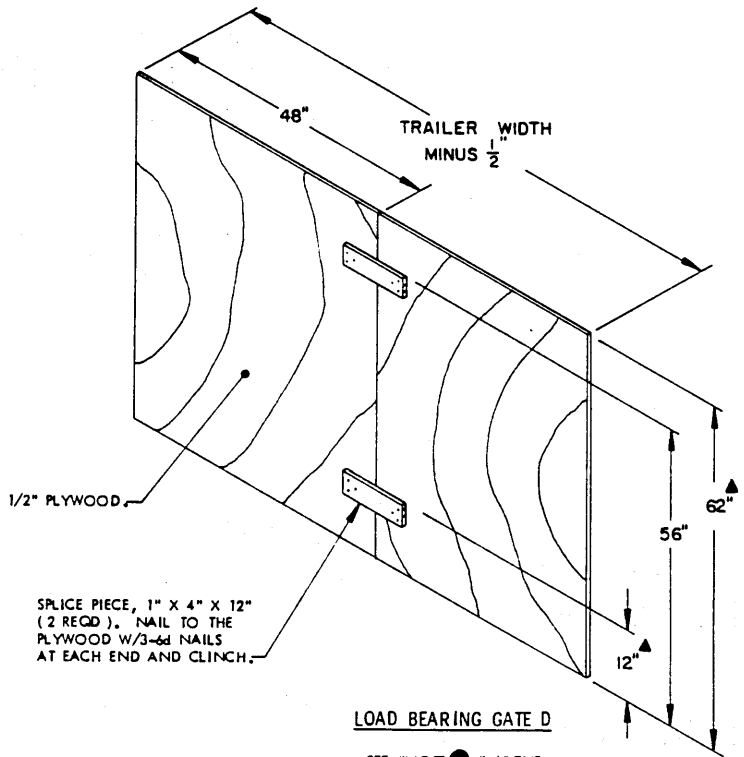
LOAD BEARING GATE A
SEE "NOTE ●" ABOVE



LOAD BEARING GATE B
SEE "NOTE ●" ABOVE

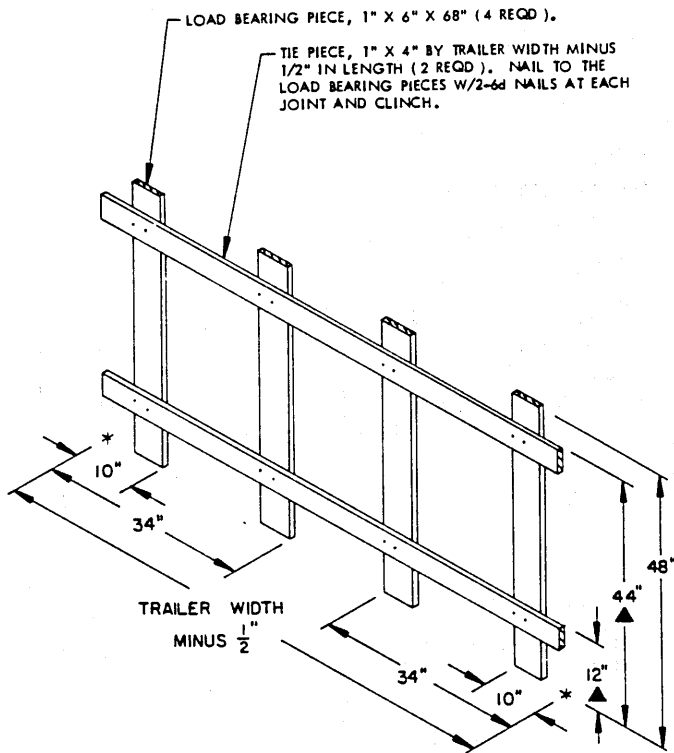


LOAD BEARING GATE C
SEE "NOTE ●" ABOVE

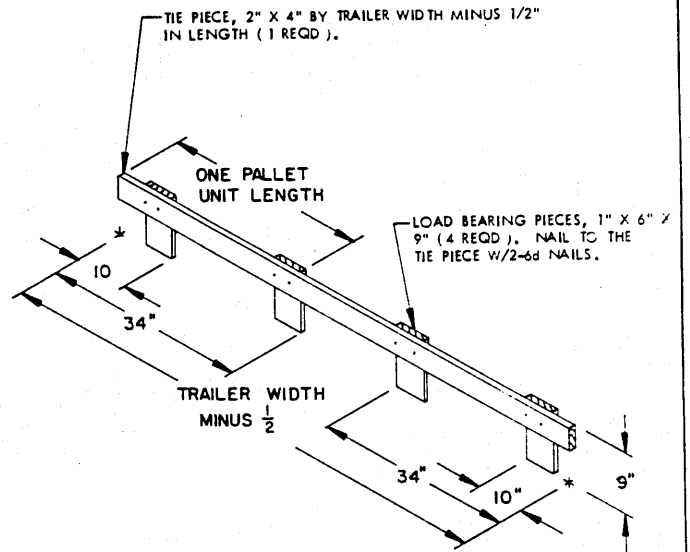


LOAD BEARING GATE D
SEE "NOTE ●" ABOVE

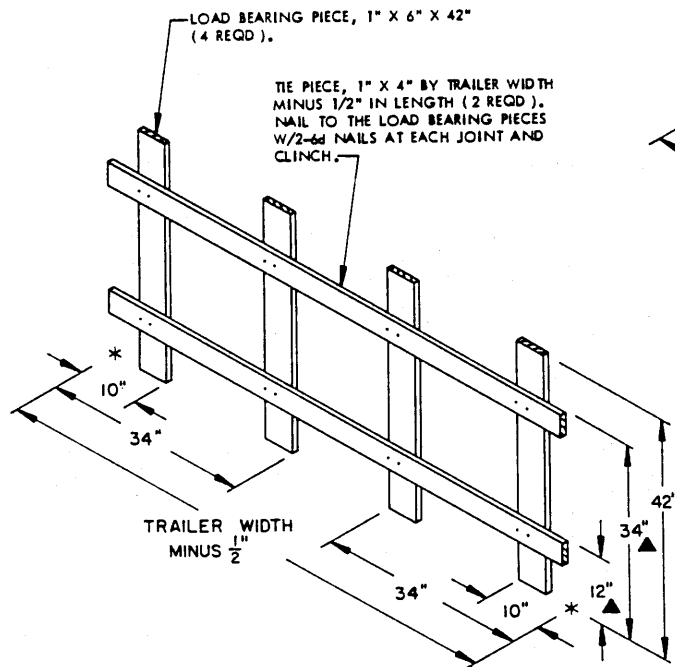
▲ THESE HEIGHTS MAY NEED TO BE ADJUSTED TO PROVIDE FOR CLEARANCE OF THE CROSS MEMBERS AT A MINUS TOLERANCE INSTALLATION.



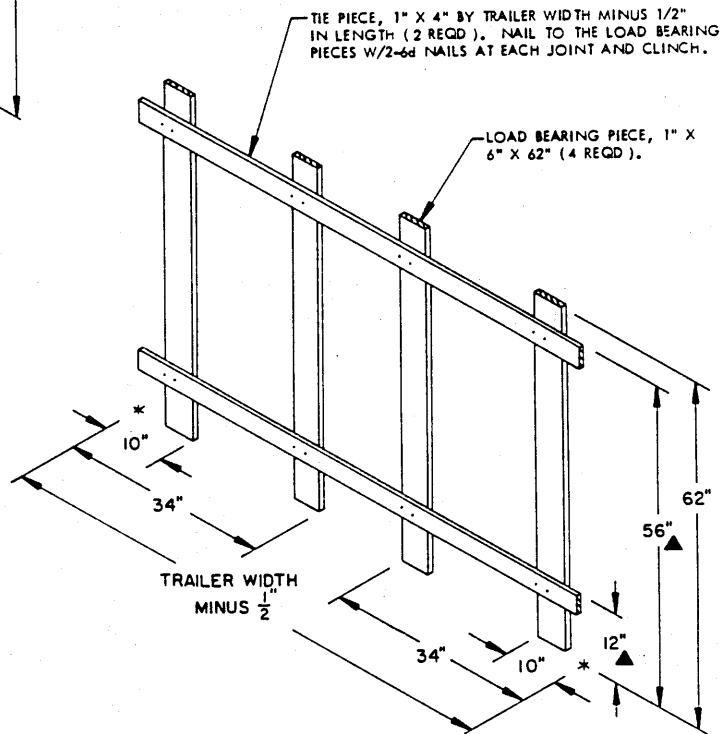
ALTERNATIVE LOAD BEARING GATE A



ALTERNATIVE LOAD BEARING GATE B

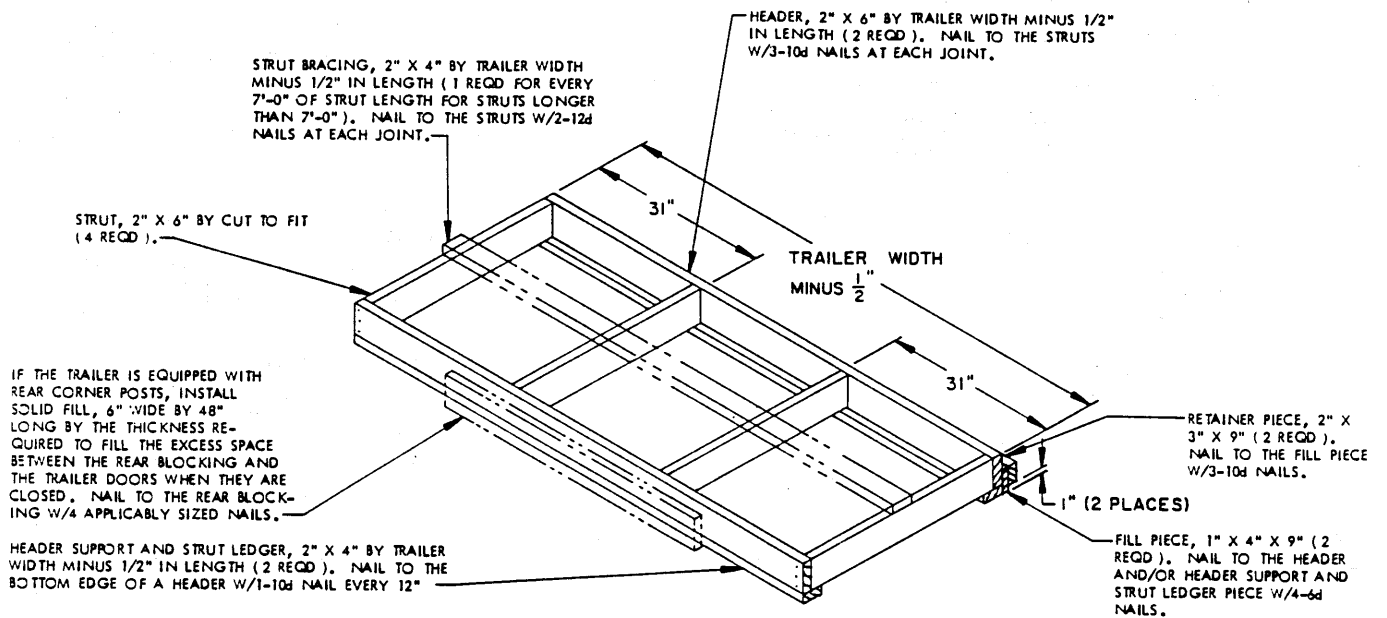


ALTERNATIVE LOAD BEARING GATE C



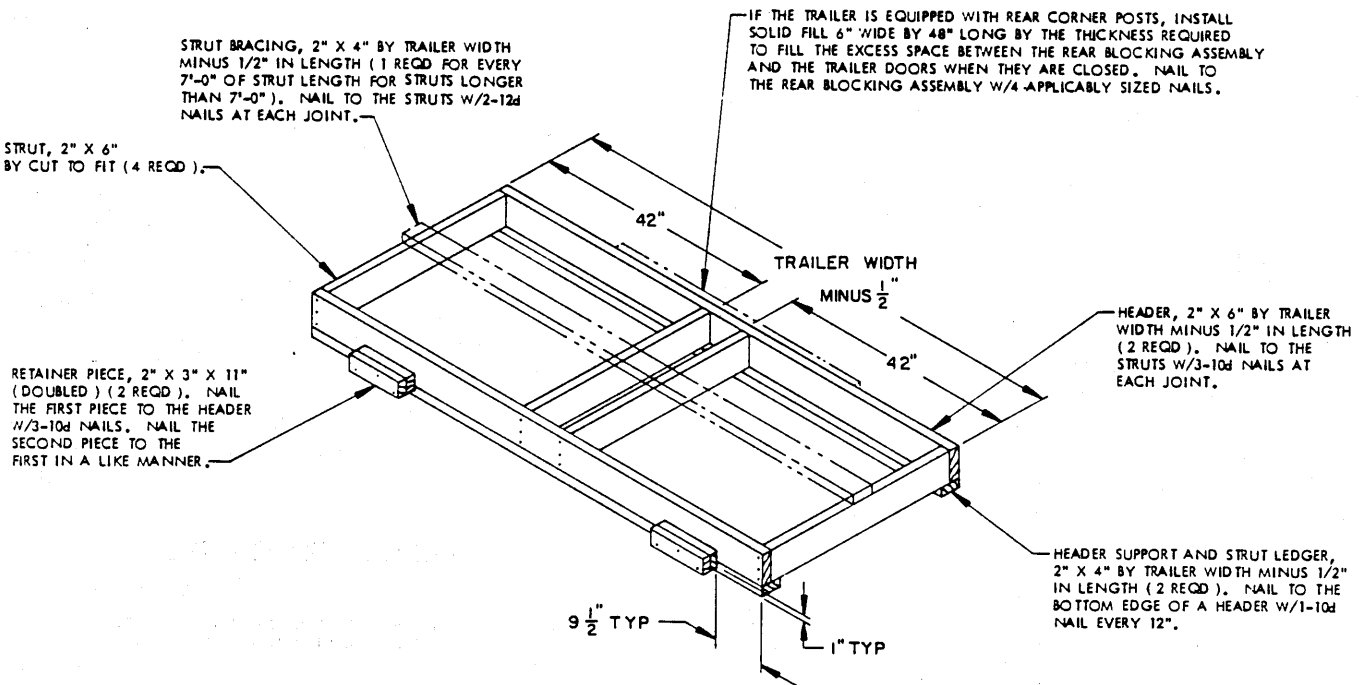
ALTERNATIVE LOAD BEARING GATE D

▲ THESE HEIGHTS MAY NEED TO BE ADJUSTED TO PROVIDE FOR CLEARANCE OF THE CROSS MEMBERS AT A MINUS TOLERANCE INSTALLATION.



REAR BLOCKING ASSEMBLY A

THIS REAR BLOCKING ASSEMBLY IS DESIGNED FOR USE AT THE REAR END OF A LOAD AS DEPICTED ON PAGES 4, 10, 14, AND 18, WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS 9" OR MORE.



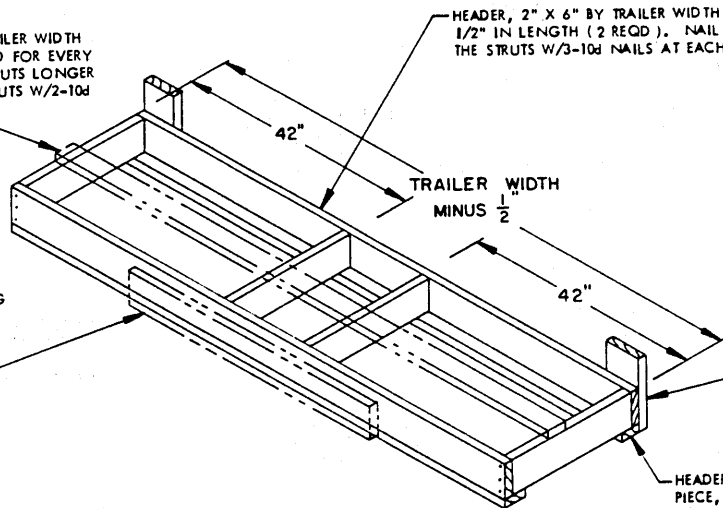
REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS FOR USE AT THE REAR OF A LOAD IN A CONVENTIONAL VAN TRAILER WHEN THE REAR MOST LOAD UNIT IS ONLY ONE UNIT IN HEIGHT AND THE EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS 9" OR GREATER AS SHOWN IN THE LOAD ON PAGE 8. NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.

STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (1 REQD FOR EVERY 7'-0" OF STRUT LENGTH FOR STRUTS LONGER THEN 7'-0"). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

IF THE TRAILER IS EQUIPPED WITH REAR CORNER POSTS, INSTALL SOLID FILL 6" WIDE BY 48" LONG BY THE THICKNESS REQUIRED TO FILL THE EXCESS SPACE BETWEEN THE REAR BLOCKING ASSEMBLY AND THE TRAILER DOORS WHEN THEY ARE CLOSED. NAIL TO THE REAR BLOCKING ASSEMBLY W/4 APPLICABLY SIZED NAILS.



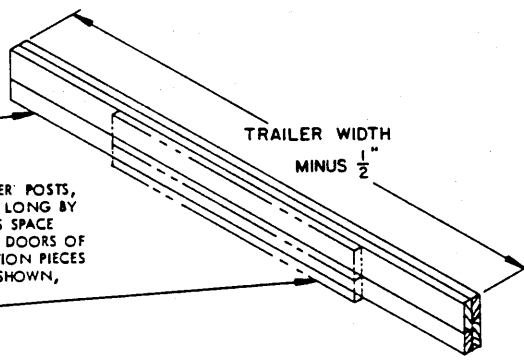
RETAINER PIECE, 2" X 6" X 12" (2 REQD). NAIL TO THE HEADER W/4-10d NAILS.

HEADER SUPPORT AND STRUT LEDGER PIECE, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER W/1-10d NAIL EVERY 12".

REAR BLOCKING ASSEMBLY C

THIS ASSEMBLY IS FOR USE AT THE REAR OF A LOAD IN A CONVENTIONAL VAN TRAILER WHEN THE REARMOST LOAD UNIT IS STACKED TWO UNITS IN HEIGHT AND THE EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS 9" OR GREATER, AS SHOWN IN THE LOAD ON PAGE 16.

SOLID FILL, 4" AND 6" WIDE MATERIAL BY TRAILER WIDTH MINUS 1/2" IN LENGTH BY THE THICKNESS REQUIRED TO CONTACT REAR CORNER POSTS 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".



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, AND NAIL TO THE REAR BLOCKING W/4 APPLICABLY SIZED NAILS.

REAR BLOCKING ASSEMBLY D

THIS REAR BLOCKING ASSEMBLY IS DESIGNED FOR USE AT THE REAR END OF A LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOOR IS LESS THAN 9". SEE "NOTE ●" AT RIGHT.

NOTE ● :

RETAINER PIECES WILL BE REQUIRED ON THE LOAD BEARING SIDE OF REAR BLOCKING ASSEMBLY "C". REFER TO REAR BLOCKING "A" OR "B" ON PAGE 28, OR REAR BLOCKING "C" ABOVE FOR LOCATION AND NAILING GUIDANCE.



ONE SEAL WITH TWO PAIR OF NOTCHES.

STRAP JOINT A

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



TWO SEALS, BUTTED TOGETHER, WITH TWO PAIR OF CRIMPS EACH SEAL.

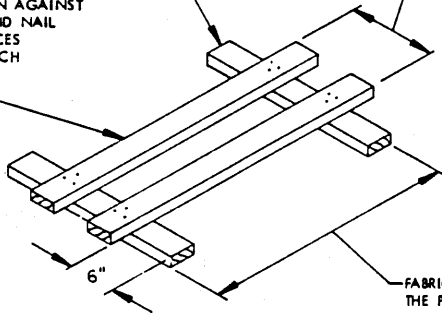
STRAP JOINT B

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

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 36" (2 REQD). POSITION AGAINST THE PALLET POSTS AND NAIL TO THE RETAINER PIECES W/3-10d NAILS AT EACH JOINT.

FABRICATE TO FIT BETWEEN THE POSTS OF LATERALLY ADJACENT PALLETS.



FABRICATE TO FIT AGAINST THE PALLET POSTS (REF: 30")

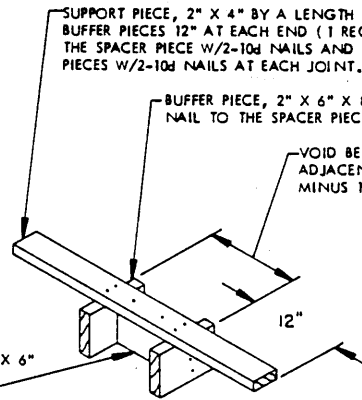
ANTI-SWAY BRACE C

SUPPORT PIECE, 2" X 4" BY A LENGTH TO EXTEND PAST BUFFER PIECES 12" AT EACH END (1 REQD). NAIL TO THE SPACER PIECE W/2-10d NAILS AND TO THE BUFFER PIECES W/2-10d NAILS AT EACH JOINT.

BUFFER PIECE, 2" X 6" X 8" (2 REQD). NAIL TO THE SPACER PIECES W/3-10d NAILS.

VOID BETWEEN LATERALLY ADJACENT PALLET UNITS MINUS 1/2".

SPACER PIECE, 2" X 6" BY CUT-TO-FIT (1 REQD).



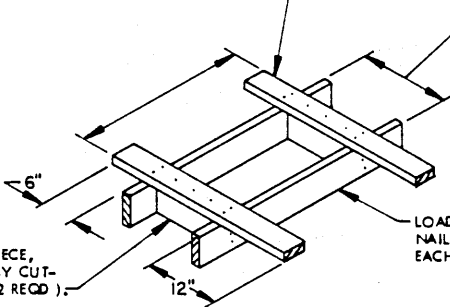
TOP-OF-LOAD ANTI-SWAY BRACE A

SUPPORT PIECE, 2" X 4" BY A LENGTH TO SUIT (2 REQD). NAIL TO THE LOAD BEARING PIECES W/2-10d NAILS AT EACH JOINT AND TO A SPACER PIECE W/3-10d NAILS.

FABRICATE TO FIT BETWEEN LATERALLY ADJACENT PALLET UNITS MINUS 1/2".

LOAD BEARING PIECE, 2" X 6" X 36" (2 REQD). NAIL TO THE SPACER PIECES W/3-10d NAILS AT EACH JOINT.

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

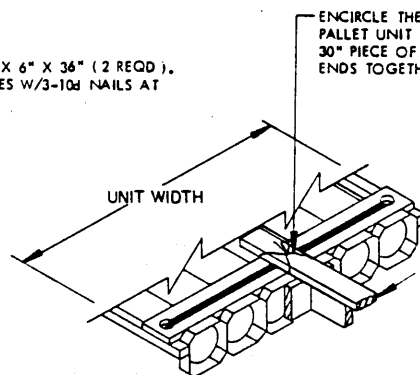


TOP-OF-LOAD ANTI-SWAY BRACE B

THIS ASSEMBLY IS DESIGNED FOR THE BRACING OF A PALLET UNIT IN THE SECOND LAYER WHEN THERE IS NOT A PALLET UNIT DIRECTLY OPPOSITE IT AND TOP-OF-LOAD ANTI-SWAY BRACING IS REQUIRED.

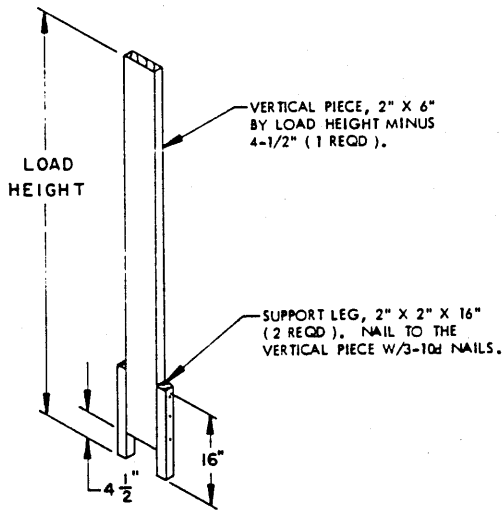
ENCIRCLE THE SUPPORT PIECE AND THE PALLET UNIT STRAPPING BOARD WITH A 30" PIECE OF NO. 14 GAGE WIRE, BRING ENDS TOGETHER AND TWIST.

INDICATES SUPPORT PIECE OF TOP-OF-LOAD ANTI-SWAY BRACE.



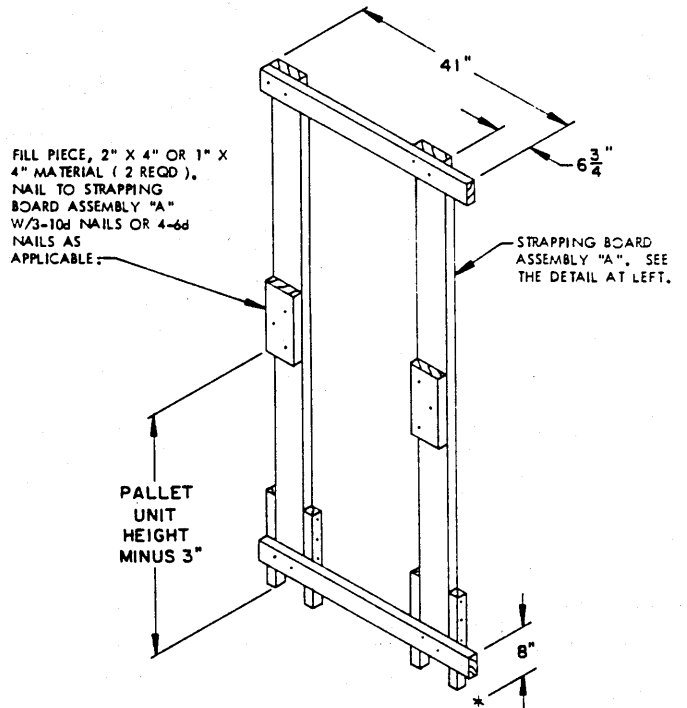
TIE WIRE APPLICATION

THIS VIEW DEPICTS THE SECUREMENT OF A TOP-OF-LOAD ANTI-SWAY BRACE TO THE TOP OF A PALLET UNIT BY WIRE TYING TO THE STRAPPING BOARD WITH NO. 14 GAGE WIRE.



STRAPPING BOARD ASSEMBLY A

THIS ASSEMBLY IS DESIGNED FOR USE IN THE LOAD SHOWN ON PAGES 16 AND 17.

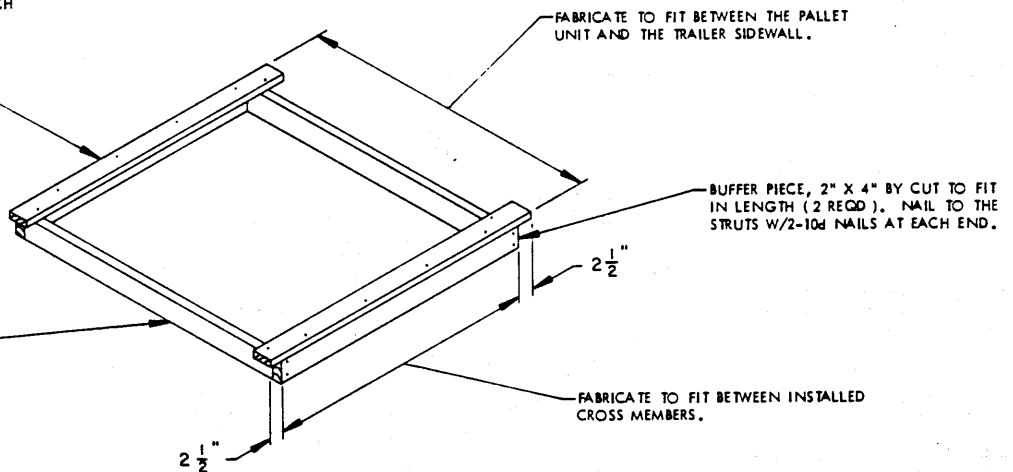


STRAPPING BOARD ASSEMBLY B

2 REQD, 1 AS SHOWN AND 1 OPPOSITE HAND, FOR USE UNDER PIECES MARKED ③ AND ④ ON PAGE 16. THIS ASSEMBLY IS AN ALTERNATIVE FOR A PAIR OF STRAPPING BOARD ASSEMBLIES "A".

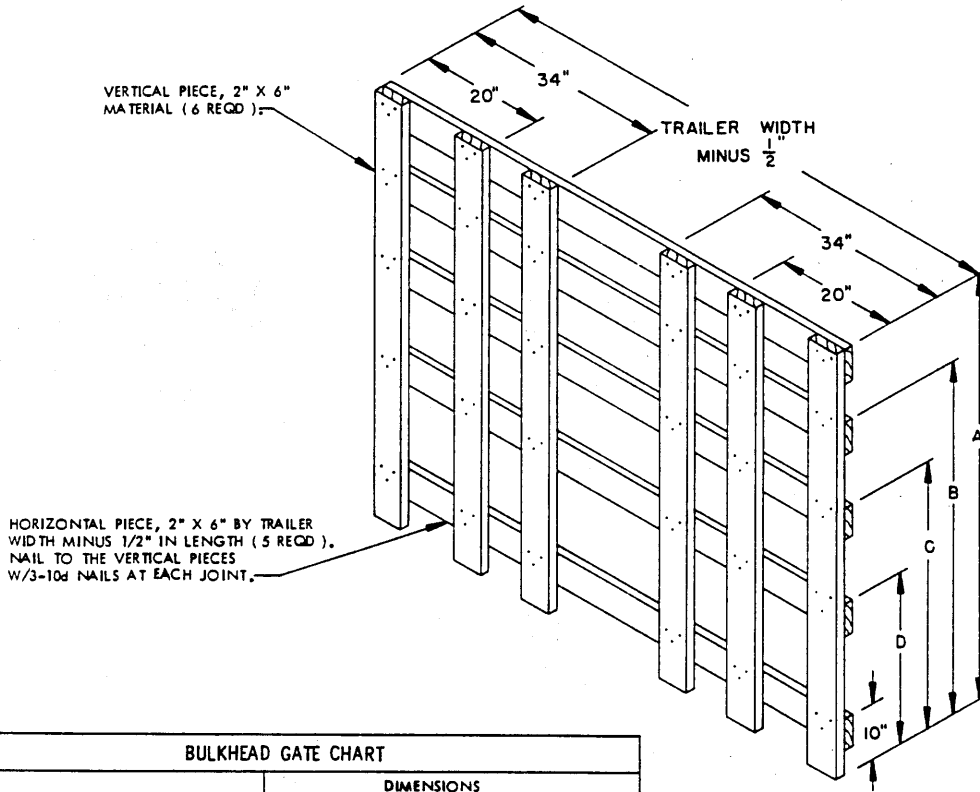
RETAINER PIECE, 2" X 4" BY CUT TO FIT IN LENGTH (2 REQD.). NAIL TO THE STRUTS W/1-10d NAILS AT EACH JOINT AND TO THE BUFFER PIECE W/4-10d NAILS.

STRUT, 2" X 4" BY CUT TO SUIT IN LENGTH (2 REQD.).



SPACER ASSEMBLY B

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 22.

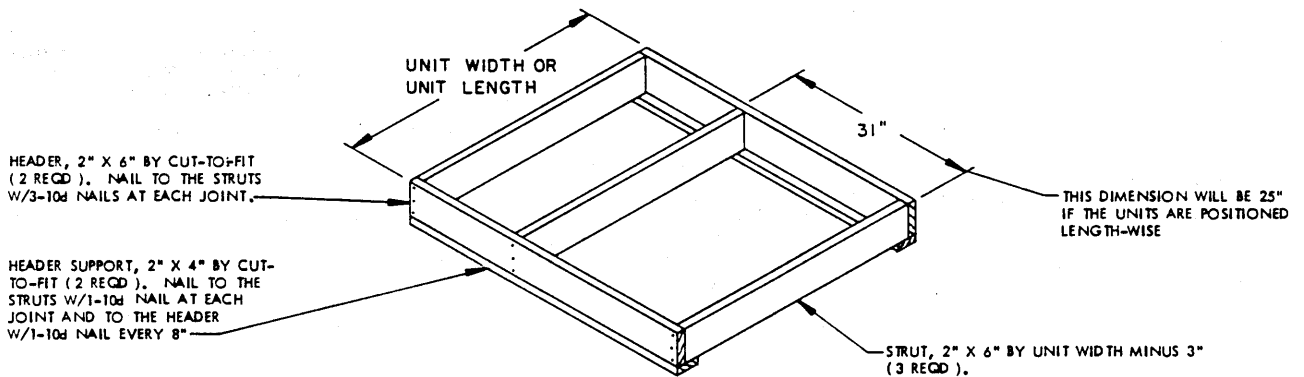


BULKHEAD GATE CHART

PALLET UNIT TYPE	DIMENSIONS			
	A	B	C	D
6-LAYER UNIT	6'-10"	62"	46"	31"
5-LAYER UNIT	6'-3"	54"	44"	31"
4-LAYER UNIT	60"	46"	36"	24"
6-L W/5-L ON TOP	6'-10"	62"	46"	31"
6-L W/4-L ON TOP	6'-3"	62"	46"	31"
5-L W/4-L ON TOP	67"	53"	44"	31"

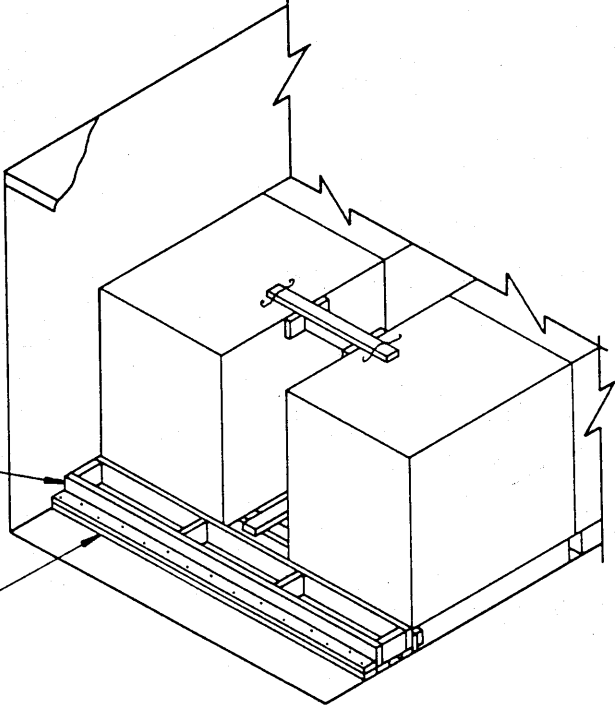
BULKHEAD GATE

THIS GATE IS DESIGNED FOR USE IN THE ALTERNATIVE LOADING PROCEDURE LOAD ON PAGE 18.



SPACER ASSEMBLY C

THIS ASSEMBLY IS DESIGNED FOR USE IN THE PLACE OF AN OMITTED PALLET UNIT, AS USED IN THE LOAD ON PAGES 18 OR 20.



REAR BLOCKING ASSEMBLY (1 REQD).
SEE SPECIAL NOTE 2 BELOW.

HEADER, 2" X 4" BY TRAILER WIDTH
MINUS 1/2" IN LENGTH (DOUBLED)
(1 REQD). POSITION AGAINST THE
REAR BLOCKING ASSEMBLY. NAIL
THE FIRST PIECE TO THE TRAILER FLOOR
W/15-10d NAILS (1 EVERY 6"). NAIL
THE SECOND PIECE TO THE FIRST IN A
LIKE MANNER AND TOENAIL TO THE REAR
BLOCKING ASSEMBLY W/4-10d NAILS.

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 INCHES (14").
2. REAR BLOCKING ASSEMBLY "A" IS SHOWN FOR A TYPICAL INSTALLATION. CONSTRUCT THE ASSEMBLY USING 6" (MINIMUM) LONG STRUTS.
3. THE NAILED-HEADER METHOD, ALTHOUGH DESIGNED ESPECIALLY FOR TRAILERS HAVING ROLL-UP TYPE DOORS, MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.
4. THE NAILED-HEADER METHOD OF REAR BLOCKING IS ADEQUATE FOR THE RETENTION OF THE MAXIMUM WEIGHT LOAD.

LOAD BEARING GATE (1 REQD.). SEE SPECIAL NOTE 2 AT RIGHT.

36" MINIMUM.

TYGARD PATCH PIECES

TYGARD METHOD

INDICATES TYGARD MATERIAL. STAPLE TO THE LOAD BEARING GATE TO PREVENT SAGGING. AS AN ALTERNATIVE, A 1" X 4" BY LOAD HEIGHT PIECE MAY BE NAILED THRU THE TYGARD MATERIAL INTO THE LOAD BEARING GATE. CAUTION: PLACE 1" X 4" SO AS TO BE ALIGNED WITH THE VOID BETWEEN THE ROWS.

SPECIAL NOTES:

1. THE TYGARD METHOD OF REAR BLOCKING CAN ONLY BE USED IN TRAILERS WHICH HAVE REASONABLE SMOOTH AND ADEQUATELY SECURED SIDEWALL PANELS IN THE AREA WHERE THE TYGARD MATERIAL IS TO BE APPLIED. TYGARD MATERIAL MUST BE INSTALLED AT TWO LEVELS FOR EACH LAYER OF THE REAR LOAD UNIT WHEN SHIPPING THE 5-LAYER OR 6-LAYER UNIT; ONLY ONE LEVEL OF TYGARD MATERIAL IS REQUIRED WHEN SHIPPING THE 4-LAYER UNIT DEPICTED ON PAGE 3. THE SINGLE LEVEL OF TYGARD MATERIAL SHOULD BE ALIGNED WITH THE UPPER PORTION OF A LAYER.
2. A LOAD HEIGHT PLYWOOD GATE MUST BE INSTALLED AT THE REAR OF THE LOAD TO PROVIDE A SMOOTH SURFACE FOR THE TYGARD MATERIAL TO EXTEND AROUND. A LOAD HEIGHT GATE CONSTRUCTED SIMILAR TO "LOAD BEARING GATE D", AS DETAILED ON PAGE 26, WILL BE USED WHEN THE REAR LOAD UNIT IS STACKED. A LOAD HEIGHT (48" MAXIMUM) BY TRAILER WIDTH MINUS 1/2" IN LENGTH PLYWOOD GATE WILL BE USED WHEN THE REAR LOAD UNIT IS ONLY ONE PALLET UNIT HIGH.
3. THE TYGARD MATERIAL AND THE ADHESIVE FOR ATTACHING IT ARE COMMERCIAL PRODUCTS. FOR A SOURCE OF SUPPLY, CONTACT WALNUT INDUSTRIES, INC., 1344 ADAMS ROAD, PO BOX "E", BENSLEM, PA 19020-0860, PHONE 1-800-523-6536. APPLICATION INSTRUCTIONS AND GUIDANCE CAN ALSO BE OBTAINED FROM THAT OFFICE.
4. THE TYGARD METHOD, ALTHOUGH ESPECIALLY FOR TRAILERS HAVING ROLL-UP TYPE DOORS, MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.
5. NOTICE: IF THE AREA OF A SIDEWALL WHERE THE TYGARD SHOULD BE ATTACHED IS ROUGH AND/OR BROKEN, THE APPLICABLE PIECE (S) OF TYGARD CAN BE LENGTHENED A SUITABLE AMOUNT AND ATTACHED TO THE SIDEWALL AHEAD OF THE INDICATED PREFERRED LOCATION.
6. TYGARD MATERIAL MUST BE APPLIED TO THE WALL IN SUCH A LONGITUDINAL LOCATION THAT IT WILL HAVE A PALLET UNIT BEARING AGAINST IT AS SHOWN BY THE TYGARD METHOD DETAIL AT LEFT. THE TYGARD MATERIAL WILL BE APPLIED TO DIRECTLY OPPOSITE PORTIONS OF THE TRAILER SIDEWALL; IT MUST BE APPLIED TO EXTEND AT LEAST 36" FORWARD OF THE LAST PALLET UNIT CONTACTING THE SIDEWALL ON EACH SIDE OF THE LOAD.

RECOMMENDED EQUIPMENT/INSTALLATION PROCEDURES

EQUIPMENT REQUIRED

- PAINT ROLLER, LATEX
- PAINT ROLLER PAN
- TENSIONING ROD/TOOL
- PRESSURE ROLLER
- RATCHET WRENCH (12" TO 15" HANDLE)
- OPEN END OR BOX WRENCH (12" TO 15" HANDLE)
- SCISSORS OR KNIFE
- TYGARD (15" WIDE ROLL)
- TYGARD ADHESIVE

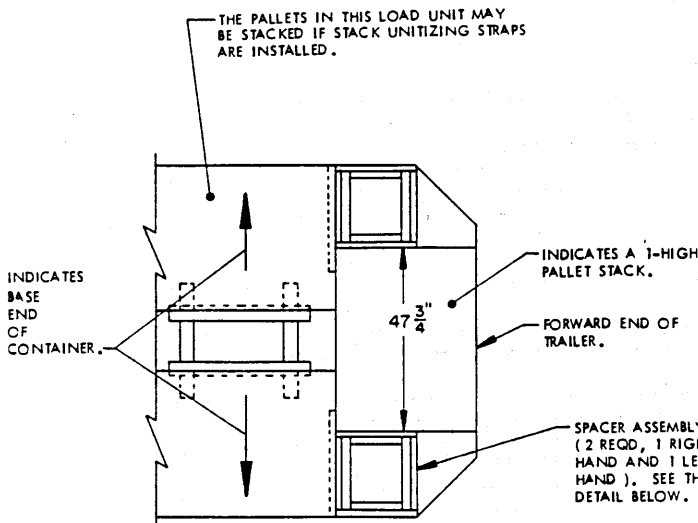
BASIC INSTALLATION GUIDANCE

1. CUT TO LENGTH THE REQUIRED NUMBER OF TYGARD PIECES (FROM 2 TO 8) DEPENDING UPON THE LOAD CONFIGURATION) FOR ATTACHMENT TO THE TRAILER SIDEWALL. PIECES WILL BE OF A LENGTH AS REQUIRED TO PROVIDE PROPER BONDING TO THE TRAILER SIDEWALL AND TO EXTEND 60" ACROSS THE REAR OF THE LOAD. ALSO, CUT 72" LONG "PATCH" PIECES OF TYGARD MATERIAL, ONE FOR EACH SET OF TWO PIECES PREVIOUSLY CUT.
2. PRIOR TO POSITIONING OF THE PALLETS IN THE REARMOST LOAD UNIT, APPLY TYGARD ADHESIVE TO THE PROPER PORTIONS OF THE TRAILER SIDEWALLS AND TO THE CORD SIDE OF A CORRESPONDING LENGTH OF EACH OF THE TYGARD PIECES THAT ARE TO BE ATTACHED TO THE SIDEWALLS OF THE TRAILER. ALLOW TIME FOR THE ADHESIVE TO "CURE" BEFORE PLACING A STRIP OF TYGARD ONTO A SIDEWALL (ADHESIVE WILL FEEL ALMOST DRY WHEN TOUCHED). **NOTE:** APPLICATION OF TYGARD IS SIMILAR TO THE APPLICATION OF "FORMICA".
3. APPLY THE TYGARD PIECES TO EACH SIDEWALL OF THE TRAILER SO THAT THE PIECES ARE PARALLEL OR NEARLY PARALLEL TO THE FLOOR. ROLL THE TYGARD WITH PRESSURE ROLLER TO ENSURE PROPER BONDING IS ACHIEVED. TEMPORARILY SECURE THE LOOSE ENDS TO THE TRAILER SIDEWALL OR TO AN OPEN HINGED TYPE DOOR OR TO THE OUTSIDE WALL, AS APPLICABLE.
4. POSITION THE PALLETS OF THE REARMOST LOAD UNIT INTO THE TRAILER AND INSTALL THE SPECIFIED ANTI-SWAY BRACES, AS APPLICABLE.
5. UNDO THE PREVIOUSLY SECURED LOOSE ENDS AND BRING A SET OF TWO PIECES TOGETHER ACROSS THE REAR OF THE LOAD. POSITION THE TENSIONING ROD SO THAT THE LOOSE ENDS OF THE TYGARD MATERIAL EXTEND THRU THE SLOT IN ROD. USING THE TWO WRENCHES, ROLL UP THE TYGARD TO TENSION IT ACROSS REAR OF THE LOAD. POSITION A WRENCH SO AS TO MAINTAIN THE TENSION IN THE TYGARD PIECES. CUT OFF AND DISCARD EXCESS MATERIAL FROM ONE PIECE OF THE TYGARD.

(SPECIAL NOTES CONTINUED)

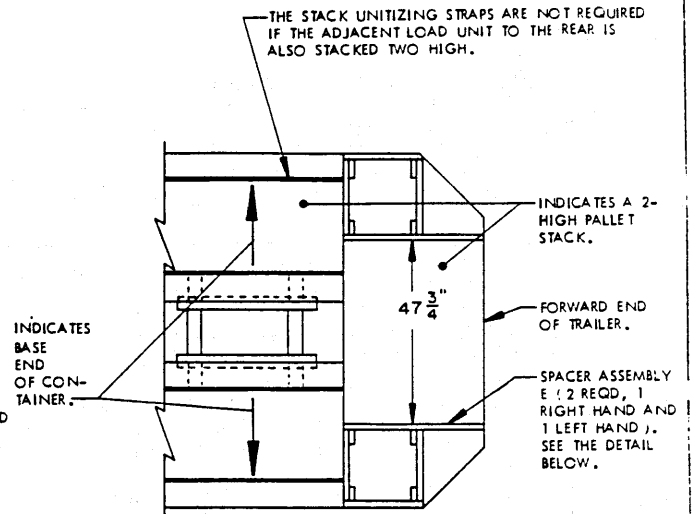
6. APPLY TYGARD ADHESIVE TO THE TENSIONED TYGARD PIECES AND ALSO TO THE CORD SIDE OF THE PREVIOUSLY CUT "PATCH" PIECES. APPLY THE "PATCH" AND ROLL WITH THE PRESSURE ROLLER TO ENSURE PROPER BONDING.

(CONTINUED AT RIGHT)



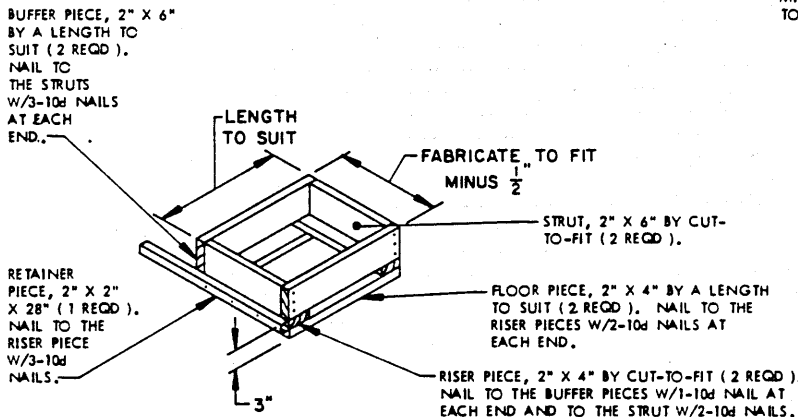
ALTERNATIVE FORWARD LOADING PATTERN A

THIS PROCEDURE 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"), AND MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE. THESE PROCEDURES ARE APPLICABLE FOR ALL UNITS DEPICTED ON PAGE 3.



ALTERNATIVE FORWARD LOADING PATTERN B

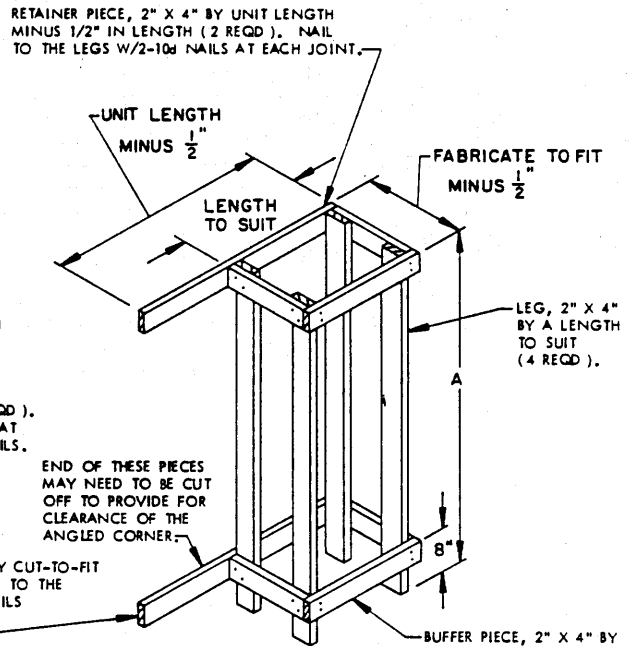
THIS PROCEDURE IS APPLICABLE TO THE LOADING OF A STACK OF TWO (2) PALLET UNITS IN THE FORWARD END OF A CONVENTIONAL VAN TRAILER HAVING LARGE-ANGLED FRONT CORNERS (REF: 18"). THE PROCEDURES MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE. NOTE THAT IF THE LOAD UNIT BEHIND THE STACKED PALLET UNITS IN THE FRONT OF THE TRAILER IS ONLY ONE HIGH, TWO (2) STACK UNITIZING STRAPS MUST BE INSTALLED AROUND THOSE PALLET UNITS IN THE FRONT STACK. THESE PROCEDURES ARE APPLICABLE FOR ALL UNITS DEPICTED ON PAGE 3.



SPACER ASSEMBLY D

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 CONVENTIONAL VAN TRAILER AS SHOWN IN THE "ALTERNATIVE FORWARD LOADING PATTERN A" VIEW ABOVE.

SPACER ASSEMBLY E CHART	
PALLET UNIT TYPE	DIM A
6-LAYER UNIT	62"
5-LAYER UNIT	53"
4-LAYER UNIT	46"
6-L W/5-L ON TOP	62"
6-L W/4-L ON TOP	62"
5-L W/4-L ON TOP	53"



SPACER ASSEMBLY E

THIS ASSEMBLY IS DESIGNED FOR LATERAL BRACING OF A 2-HIGH PALLET STACK WHICH IS TURNED 90° FROM THE NORMAL LOADING ORIENTATION AND POSITIONED IN THE FRONT OF AN ANGLED-CORNER CONVENTIONAL VAN TRAILER AS SHOWN IN THE "ALTERNATIVE FORWARD LOADING PATTERN B" VIEW ABOVE. NOTE THAT THIS VIEW DEPICTS THE ASSEMBLY POSITIONED 90° FROM THE POSITION IN WHICH IT WILL BE INSTALLED IN A LOAD.

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