

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

PA 95 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.

DO NOT SCALE

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FEBRUARY 1988			
CLASS	DIVISION	DRAWING	FILE
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GENERAL NOTES

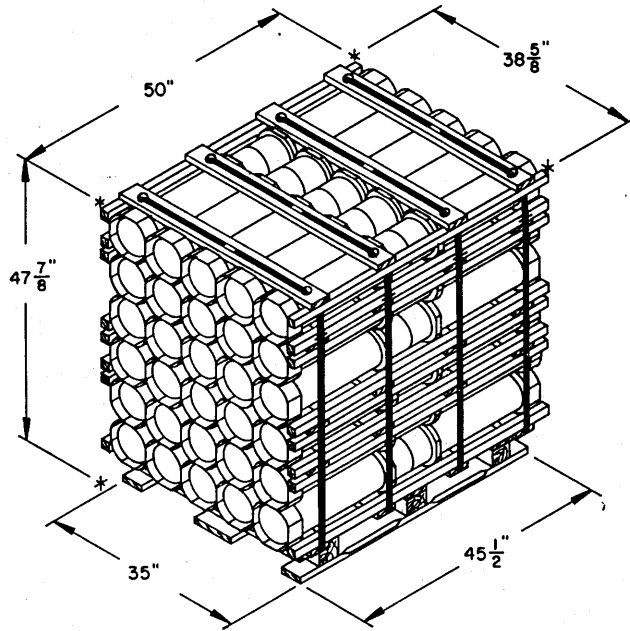
(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE FOR THE PA95 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/17-20PM1001 FOR UNITIZATION PROCEDURES FOR THE PA95 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 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 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 19. FOR "SHIPMENT OF LEFTOVER CONTAINERS", SEE THE DETAILS AND SPECIAL NOTES ON PAGE 20.
- 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 26 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. **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.
- 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 Senco PRODUCTS INCORPORATED. **NOTE:** STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- Q. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, END WALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- R. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.
- S. 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.
- T. 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 BASIC HEIGHT 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 BASIC HEIGHT UNITS WILL BE LOADED IN THE FORWARD PORTION OF THE TRAILER WITH THE DECREASED HEIGHT UNITS IN THE REAR PORTION.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

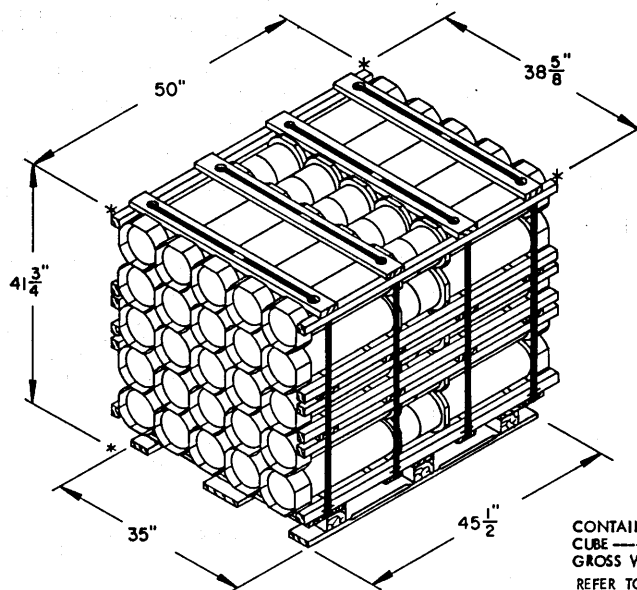
- LUMBER----- : SEE TM 743-200-1; DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS----- : FED SPEC FF-N-105; COMMON.
- STRAPPING, STEEL----- : FED SPEC QQ-S-781; CLASS 1, TYPE I OR IV, HEAVY DUTY, FINISH A, b (GRADE 2), OR C.
- SEAL, STRAP----- : FED SPEC QQ-S-781; TYPE D, STYLE I, II, OR IV, CLASS H, FINISH 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 OR WIDTH STRENGTH.
- ADHESIVE----- : TYGARD ADHESIVE.



PALLET UNIT (BASIC HEIGHT)

CONTAINER ----- 60 EACH @ 28 LBS (APPROX)
 CUBE ----- 54.6 CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 1,844 LBS (APPROX)

REFER TO PAGES 4 THRU 7 AND 14 AND 15 FOR UNLOADING PROCEDURES.

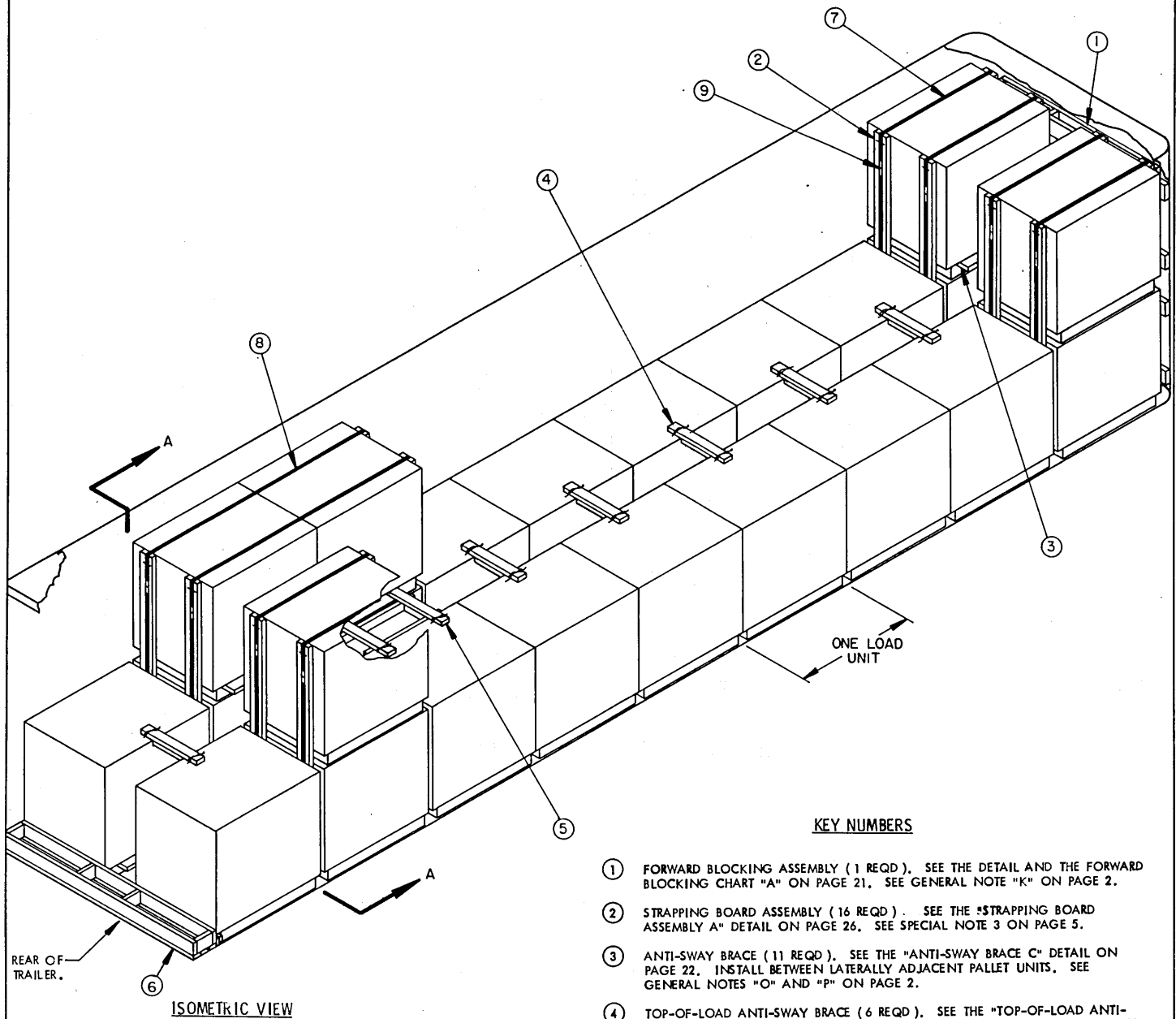


PALLET UNIT (DECREASED HEIGHT)

CONTAINER ----- 50 EACH @ 28 LBS (APPROX)
 CUBE ----- 46.7 CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 1,543 LBS (APPROX)

REFER TO PAGES 8 THRU 13 AND 14 AND 15 FOR UNLOADING PROCEDURES.

PALLET UNIT DETAILS

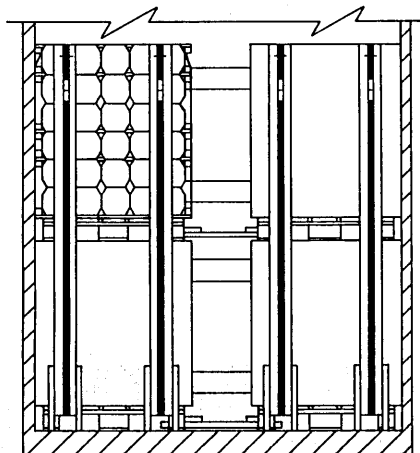


ISOMETRIC VIEW

REAR OF TRAILER.

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART "A" ON PAGE 21. SEE GENERAL NOTE "K" ON PAGE 2.
- ② STRAPPING BOARD ASSEMBLY (16 REQD). SEE THE "STRAPPING BOARD ASSEMBLY A" DETAIL ON PAGE 26. SEE SPECIAL NOTE 3 ON PAGE 5.
- ③ ANTI-SWAY BRACE (11 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 22. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ④ TOP-OF-LOAD ANTI-SWAY BRACE (6 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑤ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 22. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER ENDS OF THE SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT. SEE THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22. SEE SPECIAL NOTE 5 ON PAGE 5.
- ⑥ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 23. SEE SPECIAL NOTE 6 ON PAGE 5.
- ⑦ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (6 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 7 ON PAGE 5.
- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 34'-6" LONG STEEL STRAPPING (2 REQD). INSTALL AS SHOWN, TO SECURE TWO PALLET UNITS IN THE SECOND LAYER TO TWO PALLET UNITS IN THE FIRST LAYER. STAPLE TO A STRAPPING BOARD ASSEMBLY, PIECE MARKED ② W/I STAPLE. SEE SPECIAL NOTE 8 ON PAGE 5.
- ⑨ SEAL FOR 1-1/4" STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION A-A

PALLET UNIT (BASIC HEIGHT)
23-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME VAN TRAILER

SPECIAL NOTES:

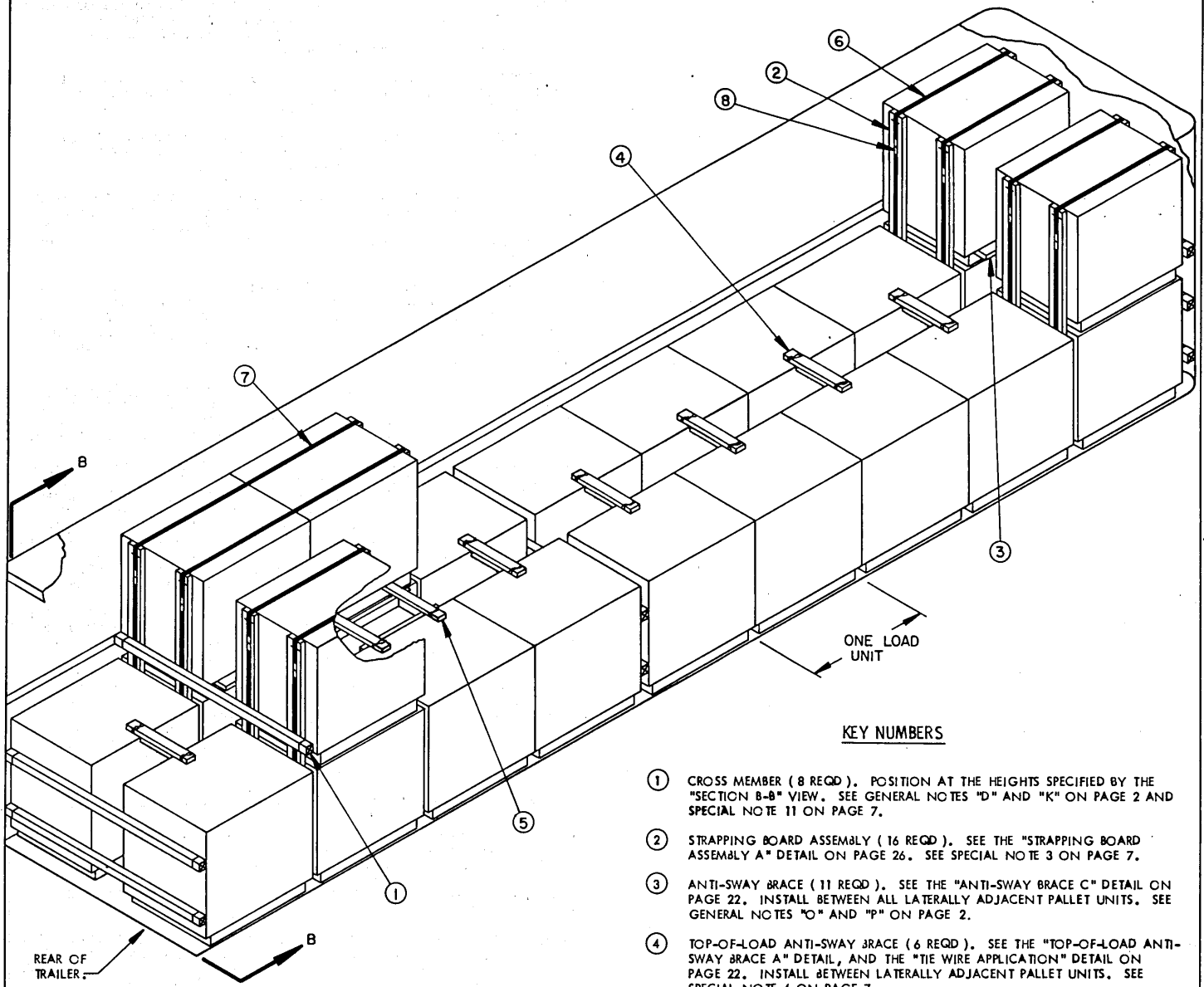
1. A 23-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. NARROWER TRAILERS, OR TRAILERS UP TO 8'-3" WIDE MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD. SEE PAGE 8 FOR AN ALTERNATIVE LOADING PROCEDURE.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 4 IS THE BASIC HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 48-7/8" HIGH AND WEIGHING APPROXIMATELY 1,844 POUNDS.
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 26.
4. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED (4) IN THE LOAD ON PAGE 4, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNUNITIZED 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 (5), 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 (5); THEN, TWO (2) ADDITIONAL BUNDLING STRAPS MARKED (6) WILL BE INSTALLED IN LIEU OF TWO (2) UNITIZING STRAPS MARKED (7).
6. IF THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS LESS THAN 9" SOLID FILL REAR BLOCKING WILL BE USED IN LIEU OF THE DEPICTED REAR BLOCKING ASSEMBLY. SEE THE "REAR BLOCKING ASSEMBLY D" DETAIL ON PAGE 24. IF THE SPACE IS LESS THAN 1-1/2" REAR BLOCKING IS NOT REQUIRED. SEE SPECIAL NOTE 13.
7. A PALLET UNIT AT EACH END OF THE SECOND LAYER PORTION OF THE LOAD MUST BE UNUNITIZED 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 FRONT PORTION OF THE LOAD, EACH STACK IN THE LOAD UNIT MUST BE UNUNITIZED. FOR THE DEPICTED LOAD, ONE STACK IS BUNDLED TO AN ADJACENT STACK IN LIEU OF UNUNITIZING. THE UNUNITIZING STRAPS, PIECE MARKED (7), AND THE STRAPPING BOARD ASSEMBLIES, PIECE MARKED (2), MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
8. 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 (8), 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.
9. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER OF EITHER ROW IT MUST NOT BE POSITIONED ON THE REARMOST PALLET UNIT IN THE FIRST LAYER. PROVIDE LONGITUDINAL BRACING BY INSTALLING STRAPPING BOARD ASSEMBLIES AND UNUNITIZING STRAPS, PIECES MARKED (2) AND (7). PROVIDE LATERAL BRACING BY INSTALLING A TOP-OF-LOAD ANTI-SWAY BRACE "B", SHOWN IN THE LOAD AS PIECE MARKED (5). WIRE TIE AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22.
10. REFER TO PAGE 19 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
11. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED NINE (9) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 20 FOR GUIDANCE.
12. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 16 AND 17.
13. 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 27 AND 28 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 TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	43	11
2" X 3"	2	1
2" X 4"	172	115
2" X 6"	231	231
NAILS	NO. REQD	POUNDS
10d (3")	342	5-1/4
STEEL STRAPPING, 1-1/4" X .035" OR .031" ---225' REQD ----- 33 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 16 REQD ----- 1 LB		
WIRE, NO. 14 GAGE ----- 48' REQD ----- NIL		
STAPLE ----- 8 REQD ----- NIL		

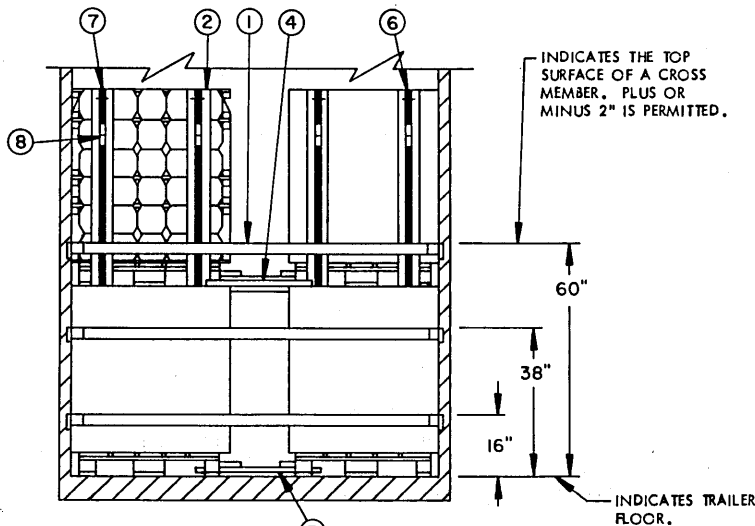
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	23	42,412 LBS
DUNNAGE		756 LBS
TOTAL WEIGHT		43,168 LBS (APPROX)

PALLET UNIT (BASIC HEIGHT)
23-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME VAN TRAILER



ISOMETRIC VIEW



SECTION B-B

PALLET UNIT (BASIC HEIGHT)

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

KEY NUMBERS

- ① CROSS MEMBER (8 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION B-B" VIEW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2 AND SPECIAL NOTE 11 ON PAGE 7.
- ② STRAPPING BOARD ASSEMBLY (16 REQD). SEE THE "STRAPPING BOARD ASSEMBLY A" DETAIL ON PAGE 26. SEE SPECIAL NOTE 3 ON PAGE 7.
- ③ ANTI-SWAY BRACE (11 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 22. INSTALL BETWEEN ALL LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ④ TOP-OF-LOAD ANTI-SWAY BRACE (6 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL, AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 7.
- ⑤ TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 22. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER ENDS OF THE SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT. SEE THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22. SEE SPECIAL NOTE 5 ON PAGE 7.
- ⑥ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (6 REQD). INSTALL SO AS TO ENCLOSE A PALLET UNIT STACK AND THE STRAPPING BOARD ASSEMBLIES, PIECES MARKED ②, AS SHOWN. STAPLE TO UPPER PORTION OF STRAPPING BOARD ASSEMBLY W/1 STAPLE. SEE SPECIAL NOTE 6 ON PAGE 7.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 34'-6" LONG STEEL STRAPPING (2 REQD). INSTALL AS SHOWN, TO SECURE TWO PALLET UNITS IN THE SECOND LAYER TO TWO PALLET UNITS IN THE FIRST LAYER. STAPLE TO A STRAPPING BOARD ASSEMBLY, PIECE MARKED ②, W/1 STAPLE.
- ⑧ SEAL FOR 1-1/4" STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

SPECIAL NOTES:

1. A 23- UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) HI-VOLUME TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES. WIDER OR NARROWER TRAILERS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 6 IS THE BASIC HEIGHT UNIT, HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 48-7/8" HIGH AND WEIGHING APPROXIMATELY 1,844 POUNDS.
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 26.
4. TOP-OF-LOAD ANTI-SWAY BRACES SHOWN AS PIECE MARKED ④ ARE TO BE POSITIONED BETWEEN ALL UPPER-LAYER PALLET UNITS UNLESS THE PALLET UNITS IN THE SECOND LAYER ARE UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER.
5. THE TOP-OF-LOAD ANTI-SWAY BRACE "B", SHOWN IN THE LOAD AS PIECE MARKED ⑤, 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 ⑤, THEN TWO (2) ADDITIONAL BUNDLING STRAPS, MARKED ⑦, WILL BE INSTALLED IN LIEU OF TWO (2) UNITIZING STRAPS MARKED ⑥.
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 USING STRAPPING BOARD ASSEMBLIES, PIECE MARKED ②, AND EITHER STACK UNITIZING STRAPS OR BUNDLING STRAPS, PIECES MARKED ⑥ OR ⑦.
7. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER, THE SPACER ASSEMBLY PROCEDURES DEPICTED ON PAGE 18 MAY BE USED. NOTE THAT CROSS MEMBERS ARE REQUIRED AT BOTH ENDS OF THE UNIT. IN LIEU OF THE SPACER ASSEMBLY, A TOP-OF-LOAD ANTI-SWAY BRACE "B", MAY BE USED IN CONJUNCTION WITH STRAPPING BOARDS AND STACK UNITIZING STRAPS, PIECES MARKED ② AND ⑥ ON PAGE 6. NOTE THAT CROSS MEMBERS ARE NOT REQUIRED AT BOTH ENDS OF THE UNIT WHEN USING THE TOP-OF-LOAD ANTI-SWAY BRACE "B".
8. REFER TO PAGE 19 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED NINE (9) MAY BE SECURED TO THE TOP OF A FULL OR PARTIAL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 20 FOR GUIDANCE.
10. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 18.
11. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS LOCATED AT THE FRONT OF THE TRAILER AND THOSE LOCATED BETWEEN THE FIFTH AND SIXTH LOAD UNITS WILL BE OMITTED. TWO ADDITIONAL CROSS MEMBERS MUST BE INSTALLED AT THE REAR OF THE LOAD; INSTALL AT THE 28" AND 48" HEIGHTS.
12. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 8'-3", IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT.

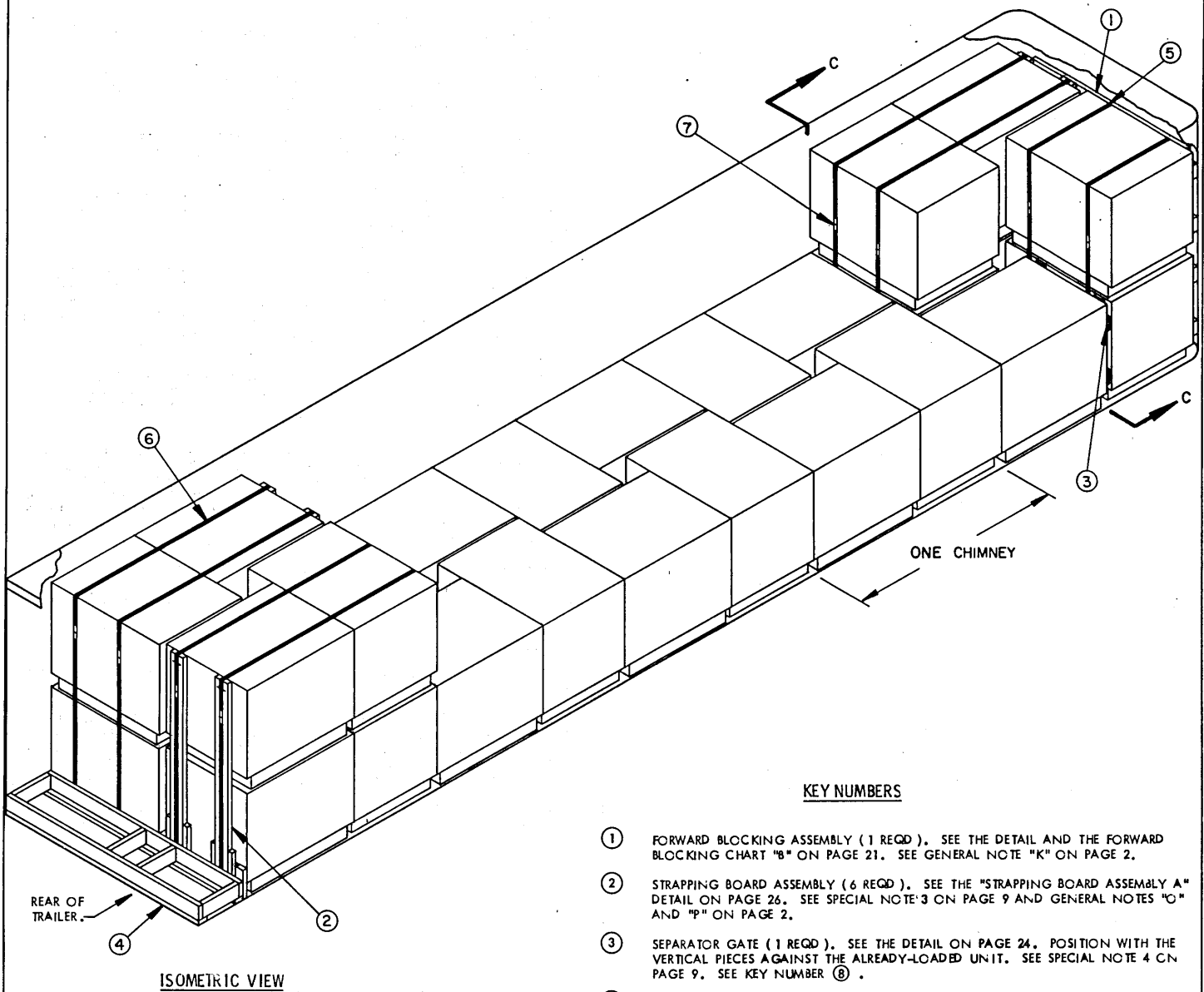
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	43	15
2" X 4"	125	84
2" X 6"	158	158
NAILS	NO. REQD	POUNDS
10d (3")	274	4-1/4
STEEL STRAPPING, 1-1/4" X .035" OR .031"-----225' REQD----- 32 LBS		
SEAL FOR 1-1/4" STRAPPING-----16 REQD----- 1 LB		
WIRE, NO. 14 GAGE-----35' REQD----- NIL		
CROSS MEMBER-----8 REQD-----		

LOAD AS SHOWN

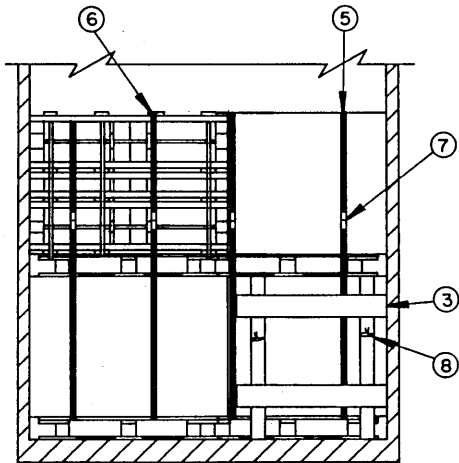
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	23	42,412 LBS
DUNNAGE		552 LBS
TOTAL WEIGHT		42,964 LBS (APPROX)

PALLET UNIT (BASIC HEIGHT)

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



ISOMETRIC VIEW



SECTION C-C

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART "B" ON PAGE 21. SEE GENERAL NOTE "K" ON PAGE 2.
- ② STRAPPING BOARD ASSEMBLY (6 REQD). SEE THE "STRAPPING BOARD ASSEMBLY A" DETAIL ON PAGE 26. SEE SPECIAL NOTE 3 ON PAGE 9 AND GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ SEPARATOR GATE (1 REQD). SEE THE DETAIL ON PAGE 24. POSITION WITH THE VERTICAL PIECES AGAINST THE ALREADY-LOADED UNIT. SEE SPECIAL NOTE 4 ON PAGE 9. SEE KEY NUMBER ⑧.
- ④ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY C" DETAIL ON PAGE 24. SEE SPECIAL NOTE 5 ON PAGE 9.
- ⑤ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (2 REQD). INSTALL SO AS TO ENCIRCLE A TOP-LAYER PALLET AND THE UNIT DIRECTLY BELOW. SEE SPECIAL NOTE 6 ON PAGE 9.
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 31'-0" LONG STEEL STRAPPING (6 REQD). INSTALL SO AS TO ENCIRCLE TWO (2) COMPLETE STACKS. SEE SPECIAL NOTE 8 ON PAGE 9.
- ⑦ SEAL FOR 1-1/4" STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.
- ⑧ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (2 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS PIECE OF AN INTERMEDIATE DUNNAGE ASSEMBLY ON THE PALLET UNIT AND A VERTICAL PIECE OF THE SEPARATOR GATE, PIECE MARKED ③, AND TWIST TAUT.

PALLET UNIT (DECREASED HEIGHT)

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

SPECIAL NOTES:

1. A 27-UNIT CHIMNEY PATTERN LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER HAVING ROUNDED FRONT CORNERS; TRAILERS WIDER THAN 7'-8" WILL NOT BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 8 IS THE DECREASED HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 41-3/4" HIGH AND WEIGHING APPROXIMATELY 1,543 POUNDS.
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 26.
4. THE SEPARATOR GATE, PIECE MARKED ③, IS ONLY REQUIRED WHEN A PALLET UNIT IS OMITTED FROM THE CHIMNEY PATTERN AT THE FRONT OF THE SECOND LAYER. IF A FOURTH PALLET UNIT IS ADDED, STRAPPING BOARD ASSEMBLIES WILL BE REQUIRED, AND WILL NEGATE THE NEED FOR PIECE MARKED ③.
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" AS DETAILED ON PAGE 24. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY C" PIECE MARKED ④ ON PAGE 8. SEE SPECIAL NOTE 14.
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 ⑤, AND THE STRAPPING BOARD ASSEMBLIES, PIECE MARKED ②, MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK. SEE SPECIAL NOTE 7.
7. WHEN THE SECOND LAYER AT THE FRONT OF THE TRAILER CONSISTS OF ONLY THREE PALLET UNITS INSTEAD OF A FULL CHIMNEY OR FOUR PALLET UNITS, BUNDLING STRAPS, PIECE MARKED ⑥, WILL BE USED IN LIEU OF STACK UNITIZING STRAPS, PIECE MARKED ⑤, FOR THE SECUREMENT OF THE ODD PALLET UNIT AT THE REAR OF THE SECOND LAYER PORTION AT THE FRONT OF THE TRAILER.
8. 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 STRAPPING BOARD ASSEMBLIES, PIECE MARKED ②, IN EACH APPLICABLE ROW.
9. IF ONLY ONE PALLET UNIT IS TO BE LOADED ON THE SECOND LAYER OF EITHER ROW, IT MUST NOT BE POSITIONED ON THE REARMOST PALLET UNIT IN THE FIRST LAYER, IT MUST BE POSITIONED ON A FIRST LAYER PALLET WHICH HAS THE 50" DIMENSION OF THE PALLET CROSSWISE IN THE TRAILER. PROVIDE LONGITUDINAL BRACING BY INSTALLING TWO (2) UNITIZING STRAPS, PIECES MARKED ⑤.
10. REFER TO PAGE 19 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
11. LEFTOVER CONTAINERS, IN AN AMOUNT NOT TO EXCEED NINE (9), MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 20 FOR GUIDANCE.
12. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 16 AND 17.
13. REFER TO PAGE 10 FOR GUIDANCE IN SHIPPING THIS ITEM BY AN ALTERNATIVE METHOD.
14. 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 27 AND 28 FOR GUIDANCE. THE NAILED-HEADER METHOD IS SHOWN ON PAGE 27 AND THE TYGARD METHOD IS SHOWN ON PAGE 28. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.

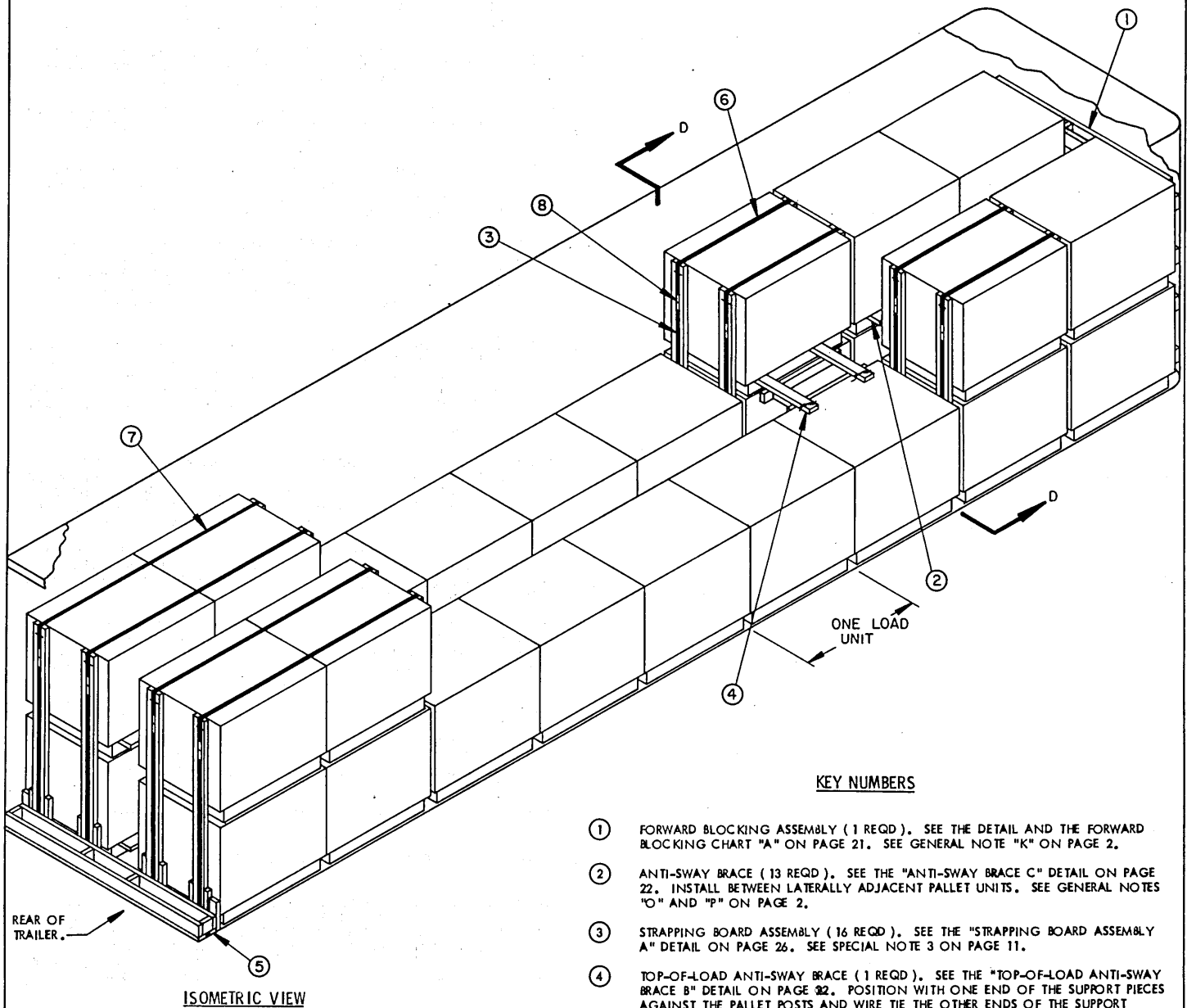
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	7	3
1" X 6"	7	4
2" X 2"	16	6
2" X 3"	1	1
2" X 4"	44	30
2" X 6"	116	116
NAILS	NO. REQD	POUNDS
6d (2")	12	1/4
10d (3")	150	2-1/2
STEEL STRAPPING, 1-1/4" X .035" OR .031" — 230' REQD		33 LBS
SEAL FOR 1-1/4" STRAPPING	16 REQD	3/4 LB
NO. 14 GAGE WIRE	4' REQD	NIL
STAPLE	12 REQD	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	27	41,661 LBS
DUNNAGE		857 LBS
TOTAL WEIGHT		42,018 LBS (APPROX)

PALLET UNIT (DECREASED HEIGHT)

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

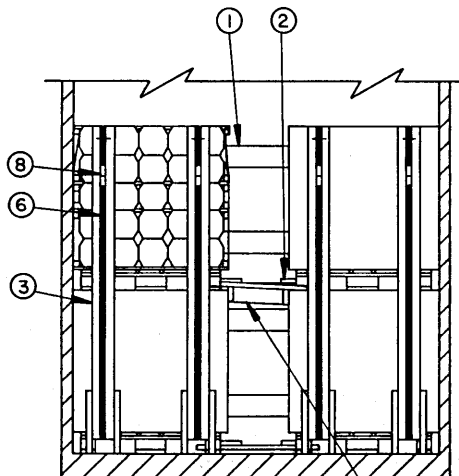


ISOMETRIC VIEW

REAR OF TRAILER

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART "A" ON PAGE 21. SEE GENERAL NOTE "K" ON PAGE 2.
- ② ANTI-SWAY BRACE (13 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 22. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ STRAPPING BOARD ASSEMBLY (16 REQD). SEE THE "STRAPPING BOARD ASSEMBLY A" DETAIL ON PAGE 26. 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 22. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER ENDS OF THE SUPPORT PIECES TO THE TOP DUNNAGE ASSEMBLY OF UNIT. SEE THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22. SEE SPECIAL NOTE 4 ON PAGE 11.
- ⑤ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY B" ON PAGE 23 AND SPECIAL NOTE 5 ON PAGE 11.
- ⑥ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 24'-6" LONG STEEL STRAPPING (4 REQD). INSTALL SO AS TO ENCIRCLE A PALLET UNIT STACK AND THE STRAPPING BOARD ASSEMBLIES, PIECE MARKED ③, AS SHOWN. STAPLE TO UPPER PORTION OF STRAPPING BOARD ASSEMBLY W/1 STAPLE. SEE SPECIAL NOTE 6 ON PAGE 11.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 32'-0" LONG STEEL STRAPPING (4 REQD). INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNIT STACKS AND THE STRAPPING BOARD ASSEMBLIES, PIECE MARKED ③, AS SHOWN. STAPLE TO UPPER PORTION OF STRAPPING BOARD ASSEMBLY W/1 STAPLE. SEE SPECIAL NOTE 7 ON PAGE 11.
- ⑧ SEAL FOR 1-1/4" STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION D-D

PALLET UNIT (DECREASED HEIGHT)
27-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

SPECIAL NOTES:

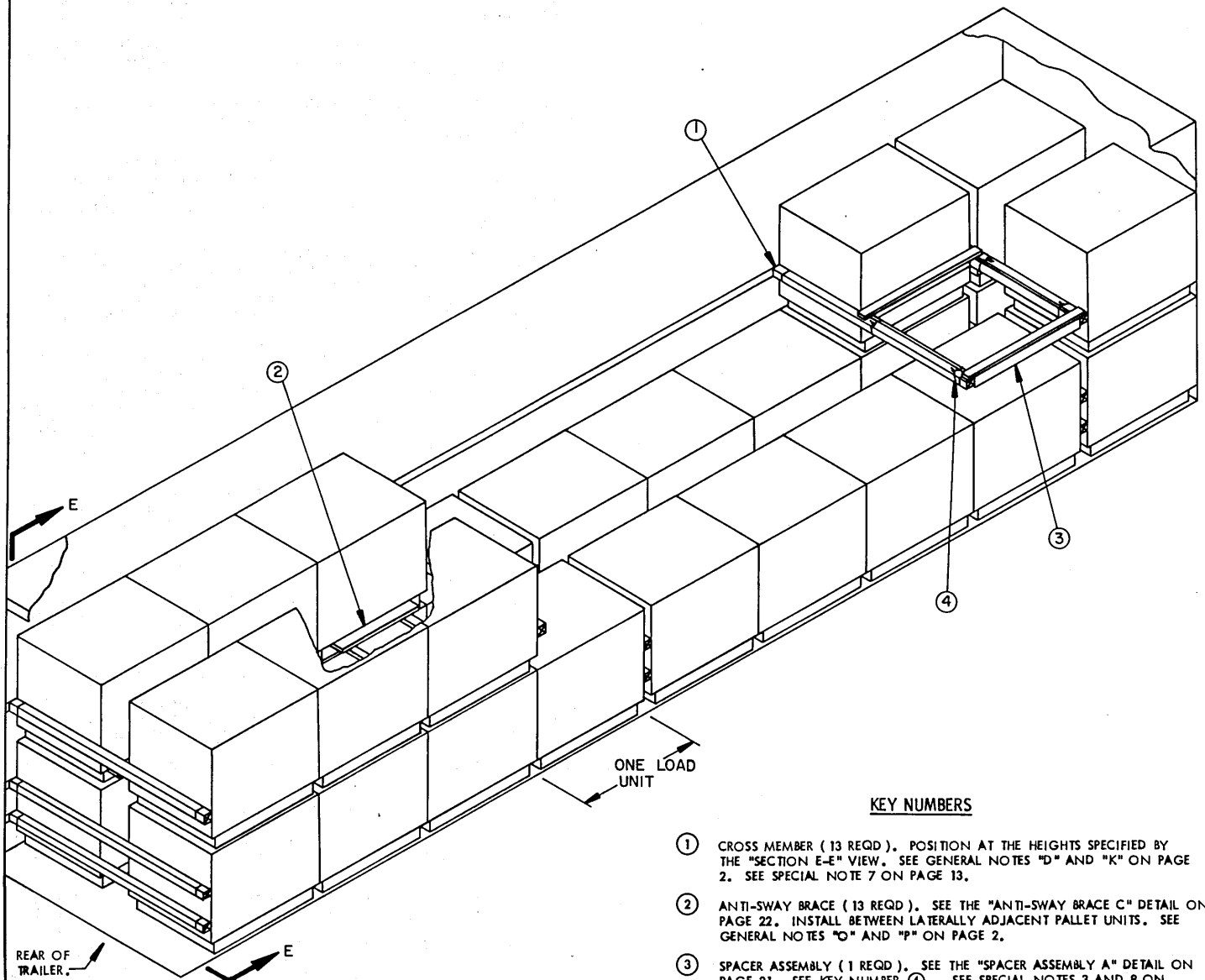
1. A 27-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER. TRAILERS OF OTHER DIMENSIONS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 10 IS THE DECREASED HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 41-3/4" HIGH AND WEIGHING APPROXIMATELY 1,543 POUNDS.
3. FOR EASE OF INSTALLATION, A STRAPPING BOARD ASSEMBLY "B" MAY BE USED IN LIEU OF EACH PAIR OF STRAPPING BOARD ASSEMBLIES, PIECE MARKED ③. SEE THE "STRAPPING BOARD ASSEMBLY B" DETAIL ON PAGE 26.
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. STRAPPING BOARDS AND STACK UNITIZING STRAPS WILL BE REQUIRED.
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" AS DETAILED ON PAGE 24. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B", PIECE MARKED ⑤ ON PAGE 10. SEE SPECIAL NOTE 13.
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. NOTE THAT WHEN THERE IS ONLY ONE FULL LOAD UNIT IN THE FRONT PORTION OF THE LOAD, EACH STACK IN THE LOAD UNIT MUST BE UNITIZED. THE UNITIZING STRAPS, PIECE MARKED ⑥, AND THE STRAPPING BOARD ASSEMBLIES, PIECE MARKED ③, 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, SHOWN AS PIECE MARKED ⑦, MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS AND TWO PAIR OF STRAPPING BOARD ASSEMBLIES, PIECE MARKED ③, 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 THE REARMOST PALLET UNIT IN THE FIRST LAYER. PROVIDE LONGITUDINAL BRACING BY INSTALLING STRAPPING BOARD ASSEMBLIES AND UNITIZING STRAPS, PIECES MARKED ③ AND ⑥. PROVIDE LATERAL BRACING BY INSTALLING A TOP-OF-LOAD ANTI-SWAY BRACE "B", PIECE MARKED ④. WIRE TIE AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22.
9. REFER TO PAGE 19 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
10. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED NINE (9) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 20 FOR GUIDANCE.
11. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 16 AND 17.
12. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 7'-1", IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT. IF THE SECOND LAYER AT THE REAR OF THE LOAD IS MOVED FORWARD, REAR BLOCKING ASSEMBLY "A", AS DETAILED ON PAGE 23, WILL BE USED IN LIEU OF PIECE MARKED ⑤.
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 27 AND 28 FOR GUIDANCE. THE NAILED-HEADER METHOD IS SHOWN ON PAGE 27 AND THE TYGARD METHOD IS SHOWN ON PAGE 28. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	43	15
2" X 4"	149	100
2" X 6"	223	223
NAILS	NO. REQD	POUNDS
10d (3")	388	6
STEEL STRAPPING, 1-1/4" X .035" OR .031"-----226' REQD-----33 LBS		
SEAL FOR 1-1/4" STRAPPING -----16 REQD-----1 LB		
WIRE, NO. 14 GAGE -----5' REQD-----NIL		
STAPLE -----8 REQD-----NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	27-----	41,661 LBS
DUNNAGE-----	-----	716 LBS
TOTAL WEIGHT-----	-----	42,377 LBS (APPROX)

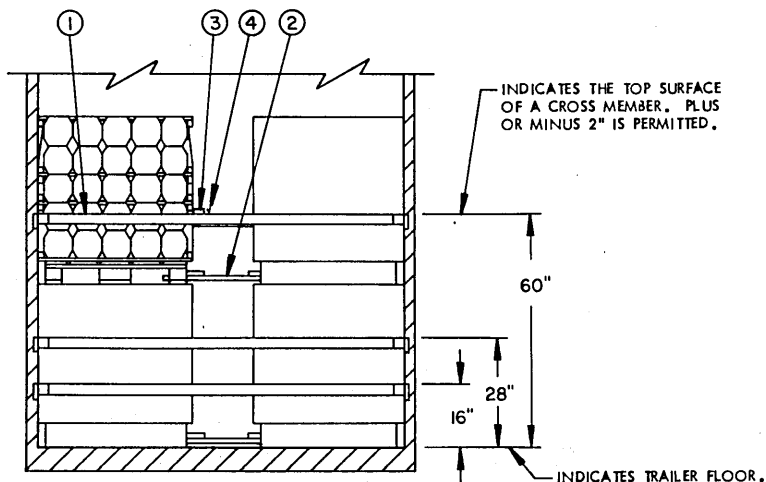
PALLET UNIT (DECREASED HEIGHT)
 27-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE CONVENTIONAL VAN TRAILER



ISOMETRIC VIEW

KEY NUMBERS

- ① CROSS MEMBER (13 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION E-E" VIEW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2. SEE SPECIAL NOTE 7 ON PAGE 13.
- ② ANTI-SWAY BRACE (13 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 22. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ③ SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 21. SEE KEY NUMBER ④. SEE SPECIAL NOTES 3 AND 8 ON PAGE 13.
- ④ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (4 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBER AND THE STRUT OF PIECE MARKED ③. 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.



SECTION E-E

PALLET UNIT (DECREASED HEIGHT)

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

SPECIAL NOTES:

1. A 27-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 12 IS THE METHOD UNIT (DECREASED HEIGHT) HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 41-3/4" HIGH AND WEIGHING APPROXIMATELY 1,543 POUNDS.
3. THE SPACER ASSEMBLY "A", PIECE MARKED ③, IS ONLY REQUIRED WHEN A PALLET UNIT DOES NOT HAVE A PALLET UNIT DIRECTLY OPPOSITE IT IN THE SECOND LAYER. IF THE LOAD IS EITHER INCREASED OR DECREASED BY ONE PALLET UNIT THE SPACER ASSEMBLY "A" WILL BE OMITTED, AND AN ADDITIONAL PIECE MARKED ② WILL BE REQUIRED.
4. REFER TO PAGE 19 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
5. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED NINE (9) MAY BE SECURED TO THE TOP OF A FULL OR PARTIAL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 20 FOR GUIDANCE.
6. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 18.
7. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS LOCATED AT THE FRONT OF THE TRAILER AND THOSE LOCATED BETWEEN THE FOURTH AND FIFTH LOAD UNITS IN THE FIRST LAYER WILL BE OMITTED. A LOAD BEARING GATE, DETAILED ON PAGE 25, WILL BE REQUIRED AT THE REAR OF THE LOAD, AND ADDITIONAL CROSS MEMBERS SHOULD BE INSTALLED AT THE REAR OF THE LOAD. INSTALL AT THE 38" AND 48" HEIGHTS. A PLUS OR MINUS 2" TOLERANCE IS PERMITTED. SEE SPECIAL NOTE 8.
8. TOP-OF-LOAD ANTI-SWAY BRACE "B", SHOWN AS PIECE MARKED ④ ON PAGE 10, MUST BE USED IN LIEU OF PIECE MARKED ③. THEN, THE FOUR CROSS MEMBERS AT EACH END OF THE SECOND LOAD UNIT WILL NOT BE REQUIRED. NOTE THAT STRAPPING BOARDS, AND UNITIZING STRAPS, PIECES MARKED ③ AND ⑥ ON PAGE 10 WILL ALSO BE REQUIRED.

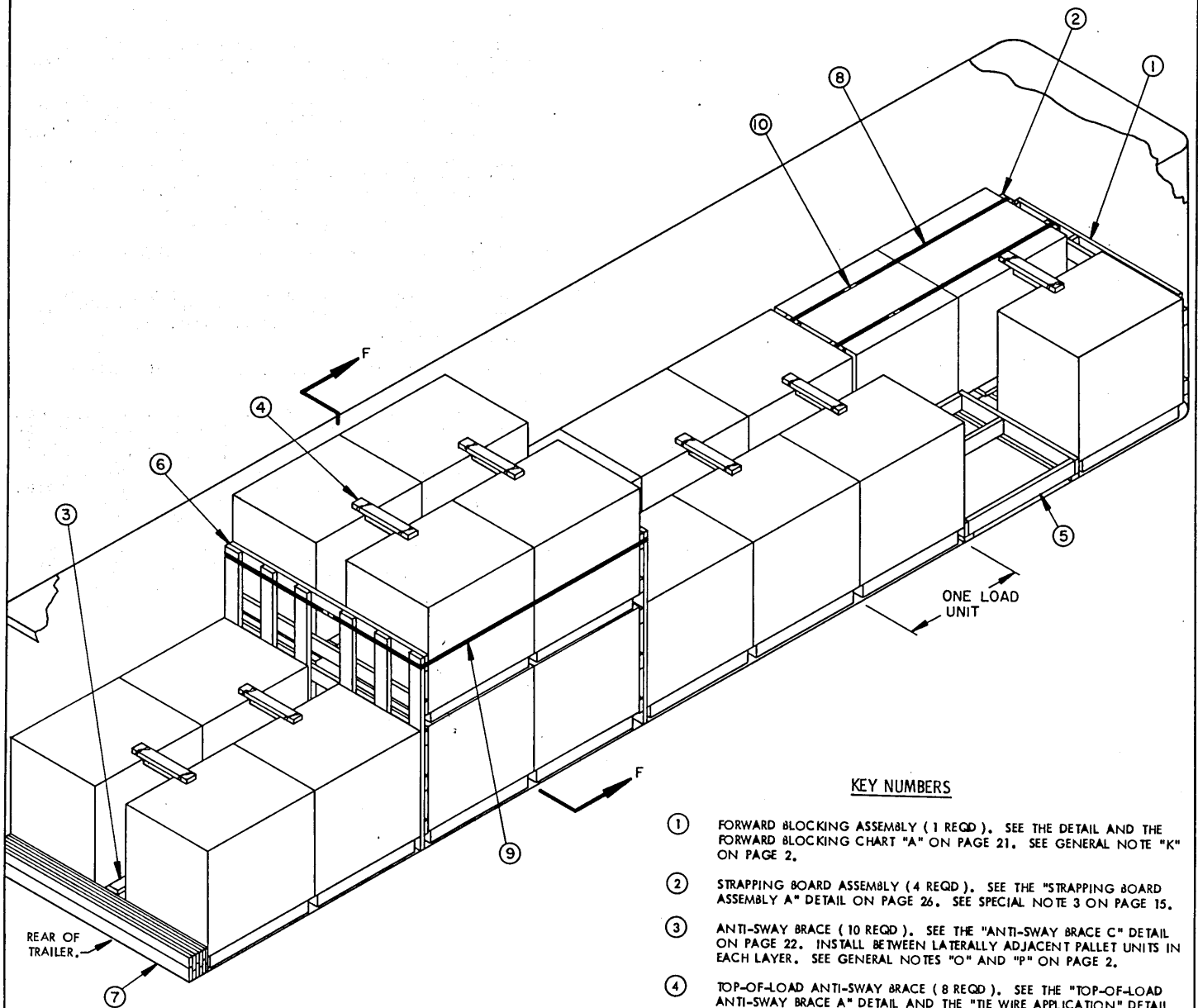
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	126	84
2" X 6"	39	39
NAILS	NO. REQD	POUNDS
10d (3")	180	3
WIRE, NO. 14 GAGE	8' REQD	NIL
CROSS MEMBER		13 REQD

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	27	41,661 LBS
DUNNAGE		257 LBS
TOTAL WEIGHT		41,918 LBS (APPROX)

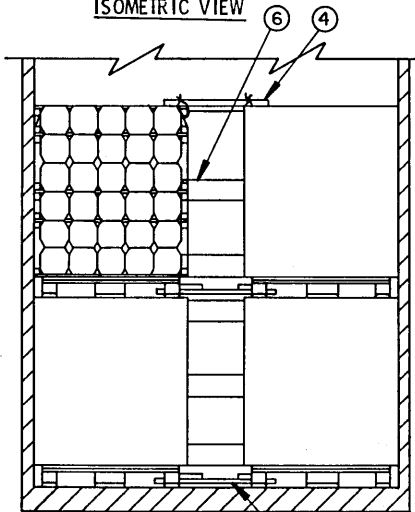
27-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART "A" ON PAGE 21. SEE GENERAL NOTE "K" ON PAGE 2.
- ② STRAPPING BOARD ASSEMBLY (4 REQD). SEE THE "STRAPPING BOARD ASSEMBLY A" DETAIL ON PAGE 26. SEE SPECIAL NOTE 3 ON PAGE 15.
- ③ ANTI-SWAY BRACE (10 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 22. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS IN EACH LAYER. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ④ 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 22. INSTALL BETWEEN LATERALLY ADJACENT UNITS. SEE SPECIAL NOTE 4 ON PAGE 15.
- ⑤ SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY B" DETAIL ON PAGE 25. SEE SPECIAL NOTE 5 ON PAGE 15.
- ⑥ BULKHEAD GATE (2 REQD). SEE THE DETAIL AND THE "BULKHEAD GATE CHART" ON PAGE 25.
- ⑦ REAR BLOCKING (1 REQD). SEE THE REAR BLOCKING ASSEMBLY "D" DETAIL ON PAGE 24. SEE SPECIAL NOTES 6 AND 7 ON PAGE 15.
- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 26'-6" LONG STEEL STRAPPING (2 REQD). INSTALL SO AS TO ENCIRCLE TWO PALLET UNITS. SEE SPECIAL NOTE 8 ON PAGE 15.
- ⑨ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 34'-6" LONG STEEL STRAPPING (1 REQD). INSTALL TO ENCIRCLE FOUR UPPER-LAYER PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 9 ON PAGE 15.
- ⑩ SEAL FOR 1-1/4" STRAPPING (6 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

ISOMETRIC VIEW



SECTION F-F

ALTERNATIVE LOADING PROCEDURES FOR ALL UNITS
21-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME VAN TRAILER

SPECIAL NOTES:

1. A 21-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) HIGH-VOLUME VAN TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 14 IS THE BASIC HEIGHT UNIT; HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 48-7/8" HIGH AND WEIGHING APPROXIMATELY 1,844 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE DECREASED HEIGHT UNIT.
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 26.
4. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECE MARKED ④ IN THE LOAD ON PAGE 14, ARE TO BE POSITIONED BETWEEN ALL Laterally ADJACENT PALLET UNITS IN EACH LAYER OF BASIC HEIGHT UNITS ONLY.
5. THE SPACER ASSEMBLY, SHOWN IN THE LOAD VIEW AS PIECE MARKED ⑤, 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 ⑧, 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 ⑥.
6. 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", AS SHOWN. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "A" DETAILED ON PAGE 23 WILL BE USED.
7. 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 27 AND 28 FOR GUIDANCE. THE NAILED-HEADER METHOD IS SHOWN ON PAGE 27 AND THE TYGARD METHOD IS SHOWN ON PAGE 28. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.
8. A PALLET UNIT THAT DOES NOT HAVE A PALLET UNIT DIRECTLY OPPOSITE MUST BE SECURED BY INSTALLING BUNDLING STRAPS, SHOWN AS PIECES MARKED ⑧ IN THE LOAD ON PAGE 14, AROUND THAT PALLET UNIT AND THE PALLET UNIT IMMEDIATELY ADJACENT. NOTE THAT ONLY ONE BUNDLING STRAP IS REQUIRED WHEN A PALLET UNIT IS OMITTED FROM A LOAD OF DECREASED HEIGHT PALLET UNITS. A PALLET UNIT WILL NOT BE OMITTED FROM THE SECOND LAYER PORTION OF THE LOAD.
9. 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) BASIC HEIGHT UNITS OR SIX (6) DECREASED HEIGHT 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 TEN (10) BASIC HEIGHT UNITS OR TWELVE (12) DECREASED HEIGHT UNITS MAY BE LOADED IN THE SECOND LAYER WHEN THE ADDITIONAL BUNDLING STRAP IS APPLIED.
10. REFER TO PAGE 19 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
11. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED NINE (9), MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 20 FOR GUIDANCE.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	8	4
2" X 2"	11	4
2" X 4"	170	114
2" X 6"	288	288
NAILS	NO. REQD	POUNDS
6d (2")	14	NIL
10d (3")	478	7-1/2
STEEL STRAPPING, 1-1/4" X .035" OR .031" — 88' REQD ——— 13 LBS		
SEAL FOR 1-1/4" STRAPPING ————— 6 REQD ——— NIL		
WIRE, NO. 14 GAGE ————— 40' REQD ——— NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	21	38,724 LBS
DUNNAGE		847 LBS
TOTAL WEIGHT		39,571 LBS (APPROX)

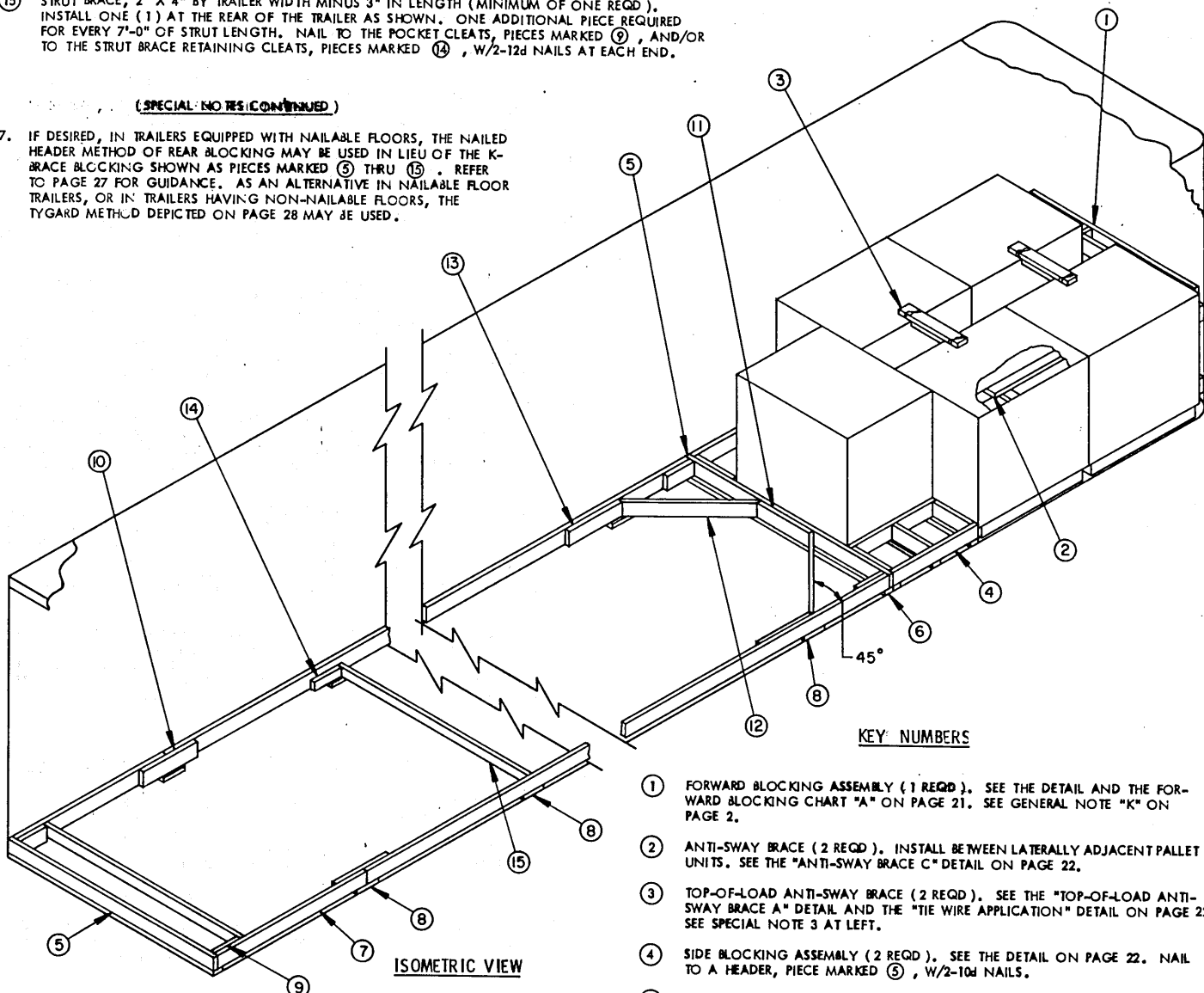
ALTERNATIVE LOADING PROCEDURES FOR ALL UNITS
 21-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME VAN TRAILER

(KEY NUMBERS CONTINUED FROM RIGHT)

- 15 STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQD). INSTALL ONE (1) AT THE REAR OF THE TRAILER AS SHOWN. ONE ADDITIONAL PIECE REQUIRED FOR EVERY 7'-0" OF STRUT LENGTH. 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.

(SPECIAL NOTES CONTINUED)

- 7. IF DESIRED, IN TRAILERS EQUIPPED WITH NAILABLE FLOORS, THE NAILED HEADER METHOD OF REAR BLOCKING MAY BE USED IN LIEU OF THE K-BRACE BLOCKING SHOWN AS PIECES MARKED 5 THRU 15. REFER TO PAGE 27 FOR GUIDANCE. AS AN ALTERNATIVE IN NAILABLE FLOOR TRAILERS, OR IN TRAILERS HAVING NON-NAILABLE FLOORS, THE TYGARD METHOD DEPICTED ON PAGE 28 MAY BE USED.



ISOMETRIC VIEW

KEY NUMBERS

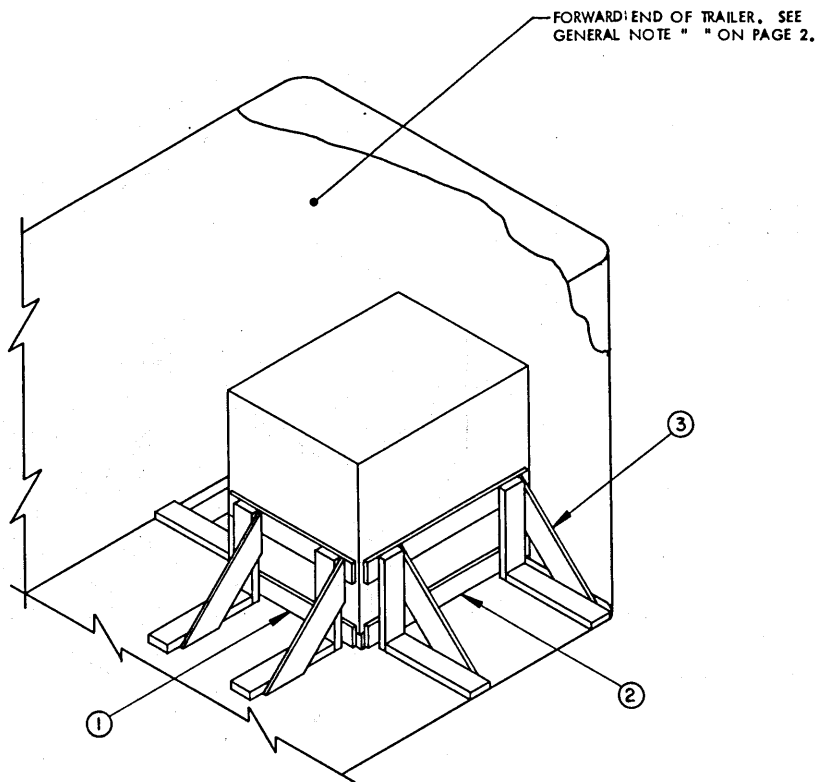
- 1 FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART "A" ON PAGE 21. SEE GENERAL NOTE "K" ON PAGE 2.
- 2 ANTI-SWAY BRACE (2 REQD). INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 22.
- 3 TOP-OF-LOAD ANTI-SWAY BRACE (2 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL AND THE "TIE WIRE APPLICATION" DETAIL ON PAGE 22. SEE SPECIAL NOTE 3 AT LEFT.
- 4 SIDE BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 22. NAIL TO A HEADER, PIECE MARKED 5, W/2-10d NAILS.
- 5 HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). SEE SPECIAL NOTES 4 THRU 7 AT LEFT.
- 6 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 5, W/1-10d NAIL EVERY 8".
- 7 SIDE STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN THE FORWARD AND REAR HEADERS, PIECES MARKED 5 (2 REQD).
- 8 RISER PIECE, 2" X 4" X 9" (AS REQD). CENTER UNDER THE JOINTS OF PIECES MARKED 12 AND 13, 14 AND 15, AND UNDER THE SPLICE OF PIECES MARKED 7, IF APPLICABLE. NAIL TO SIDE STRUT MARKED 7 W/2-10d NAILS.
- 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, PIECES MARKED 5, W/3-12d 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.
- 11 CENTER CLEAT, 2" X 6" X 24" (1 REQD). NAIL TO A HEADER, PIECE MARKED 5, 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 5 AND 7, W/2-10d 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.

SPECIAL NOTES:

- 1. THESE OUTLOADING PROCEDURES COVER THE USE OF BOTH "K-BRACE" AND NAILED FLOOR LINE BLOCKING IN A 7'-6" WIDE (INSIDE DIMENSION) VAN TRAILER WHICH IS EQUIPPED WITH OR WITHOUT NAILABLE FLOORS AND REAR CORNER POSTS. WIDER OR NARROWER TRAILERS MAY BE USED. SEE SPECIAL NOTES 5 THRU 7.
- 2. THE PALLET UNIT SHOWN IS THE BASIC HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 48-7/8" HIGH AND WEIGHING APPROXIMATELY 1,844 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE DECREASED HEIGHT UNIT DEPICTED ON PAGE 3.
- 3. TOP-OF-LOAD ANTI-SWAY BRACES WILL BE POSITIONED BETWEEN ALL LATERALLY ADJACENT BASIC HEIGHT PALLET UNITS. BRACES ARE NOT REQUIRED FOR THE DECREASED HEIGHT UNITS.
- 4. THE K-BRACE BLOCKING SHOWN AS PIECES MARKED 5 THRU 15 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 IN LIEU OF THE "K-BRACE" TYPE BLOCKING. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 27 AND 28. 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 TRAILERS EQUIPPED WITH HINGED DOORS, AND MAY BE USED IN LIEU OF PIECES MARKED 5 THRU 15 WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS.
- 6. WHEN THE NAILED-HEADER METHOD OF BRACING SHOWN ON PAGE 27 IS APPLIED FOR THE BRACING OF THE DEPICTED 5-UNIT LOAD OR ANY ODD NUMBERED QUANTITY, OMIT THE REAR BLOCKING ASSEMBLY AND SUBSTITUTE 2" X 6" MATERIAL FOR THE 2" X 4" HEADER MATERIAL TO FACILITATE NAILING. NOTE THAT THE LENGTH OF THE SIDE BLOCKING, PIECE MARKED 4 WILL HAVE TO BE ADJUSTED TO ACCOMMODATE THE 2" X 6" HEADERS. WHEN SHIPPING AN EVEN NUMBERED QUANTITY, THE NAILED-HEADER METHOD WILL APPLY AS SHOWN.

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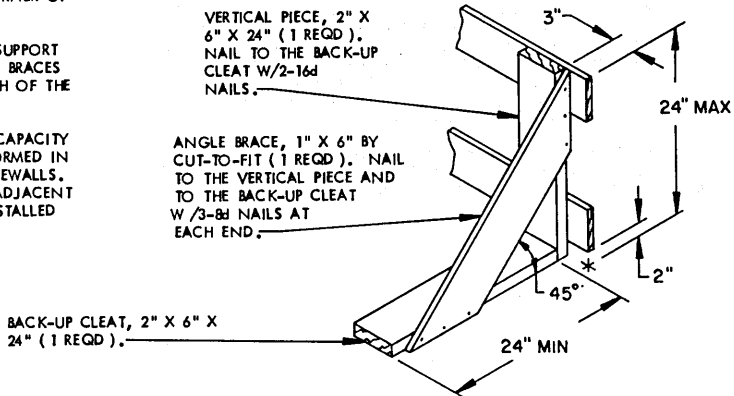
ISOMETRIC VIEW

SPECIAL NOTES:

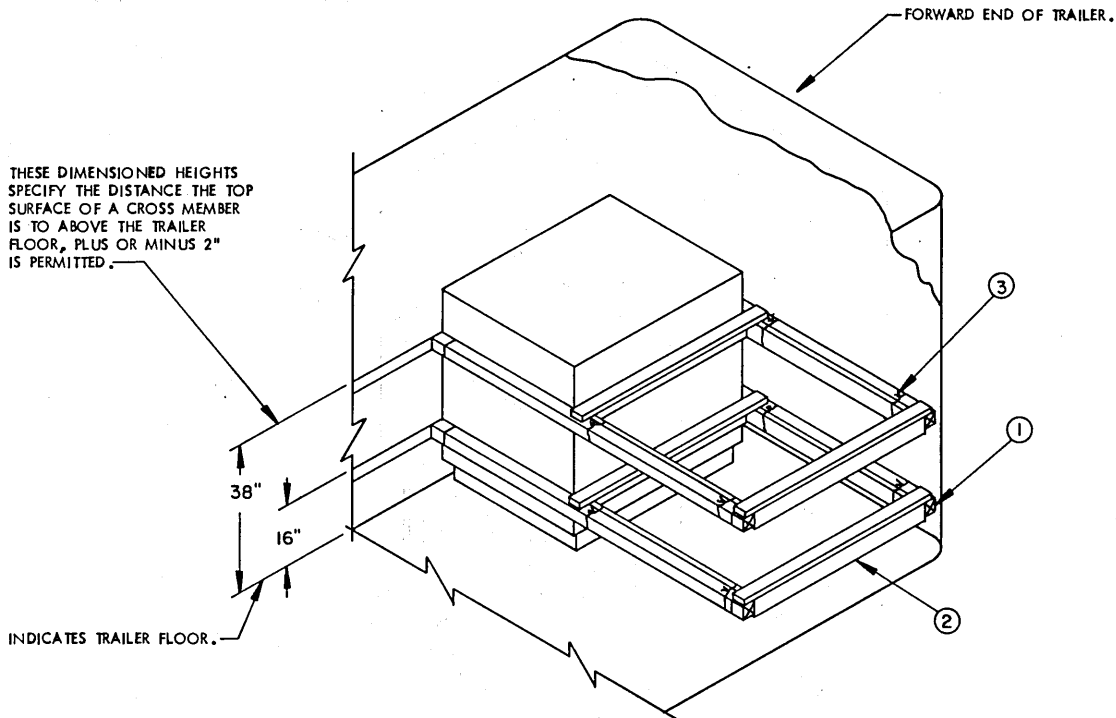
1. A 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. THE PALLET UNIT SHOWN IN THE TYPICAL LTL LOAD IS THE BASIC HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 48-7/8" HIGH AND WEIGHING APPROXIMATELY 1,844 POUNDS. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR THE DECREASED HEIGHT UNIT DEPICTED ON PAGE 3.
3. THE POSITIONING OF A UNIT IS OPTIONAL. IF THE TRAILER BEING USED HAS A SQUARE FRONT, THE PALLET UNIT MAY BE LOCATED IN THE CORNER OF THE TRAILER.
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 PALLETIZED UNIT ACROSS THE WIDTH OF THE TRAILER.
5. MORE THAN ONE PALLET UNIT CAN BE SHIPPED PROVIDING THE CAPACITY OF THE LTL BRACES IS NOT EXCEEDED. THE LOAD SHOULD BE FORMED IN TWO ROWS, WITH THE UNITS POSITIONED AGAINST OPPOSITE SIDEWALLS. ANTI-SWAY BRACES WILL BE INSTALLED BETWEEN THE LATERALLY ADJACENT UNITS, AND TOP-OF-LOAD ANTI-SWAY BRACES WILL ALSO BE INSTALLED WHEN SHIPPING THE BASIC HEIGHT UNITS.

KEY NUMBERS

- ① LOAD BEARING PIECE, 1" X 6" X 36" (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. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
- ② LOAD BEARING PIECE, 1" X 6" X 48" (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.
- ③ LTL BRACE (6 REQD). SEE THE "LTL BRACE" DETAIL BELOW. NAIL TO THE TRAILER FLOOR W/7-10d NAILS.



LTL BRACE



ISOMETRIC VIEW

SPECIAL NOTES:

1. THESE OUTLOADING PROCEDURES DEPICT A VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES.
2. THE PALLET UNIT SHOWN IN THE TYPICAL LTL LOAD IS THE BASIC HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 38-5/8" LONG BY 50" WIDE BY 48-7/8" HIGH. THE PROCEDURES ARE ALSO APPLICABLE FOR THE DECREASED HEIGHT PALLET UNIT DEPICTED ON PAGE 3.
3. THE SPECIFIED CROSS MEMBER LOCATION DIMENSIONS ARE APPLICABLE FOR THE BASIC AND DECREASED HEIGHT PALLET UNITS WITH A PLUS OR MINUS 2" BEING ACCEPTABLE.
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 ② AND ③. 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. POSITION ONE ANTI-SWAY BRACE ASSEMBLY, SHOWN AS PIECE MARKED ② ON PAGE 4, BETWEEN THE TWO PALLETIZED UNITS, AND ALSO A TOP-OF-LOAD ANTI-SWAY BRACE IF APPLICABLE FOR THE UNIT BEING SHIPPED.
5. TWO (2) SPACER ASSEMBLIES, PIECE MARKED ②, ARE REQUIRED WHEN LOADING THE BASIC HEIGHT UNITS. WHEN LOADING THE DECREASED HEIGHT UNIT DEPICTED ON PAGE 3, ONE (1) SPACER ASSEMBLY IS REQUIRED AT ONE LEVEL.

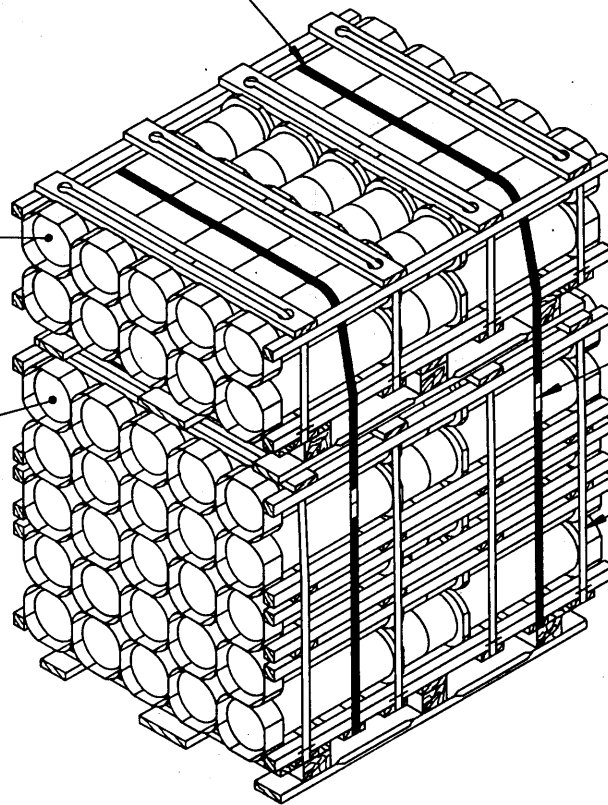
KEY NUMBERS

- ① CROSS MEMBER (4 REQD). POSITION AT THE HEIGHT AS SPECIFIED BY THE ISOMETRIC VIEW ABOVE. SEE GENERAL NOTES "D" AND "K" ON PAGE 2. SEE SPECIAL NOTE 3 ON THIS PAGE.
- ② SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 21. SEE GENERAL NOTES "O" AND "P" ON PAGE 2 AND SPECIAL NOTE 5 AT LEFT.
- ③ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (8 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBER AND THE SPACER ASSEMBLY. BRING THE 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.

VERTICAL UNITIZING STRAP, 1-1/4" X .035" OR .031" BY
A LENGTH TO SUIT STEEL STRAPPING (2 REQD).

INDICATES A TYPICAL
2-LAYER PARTIAL
PALLETIZED UNIT.

INDICATES A TYPICAL FULL-HEIGHT
PALLETIZED UNIT AS SHOWN ON
PAGE 3 OF THIS DRAWING.



SEAL FOR 1-1/4" STEEL
STRAPPING (4 REQD/2 PER
STRAP). DOUBLE CRIMP
EACH SEAL.

INDICATES A TIEDOWN STRAP
ON THE DECREASED HEIGHT
PALLETIZED UNIT.

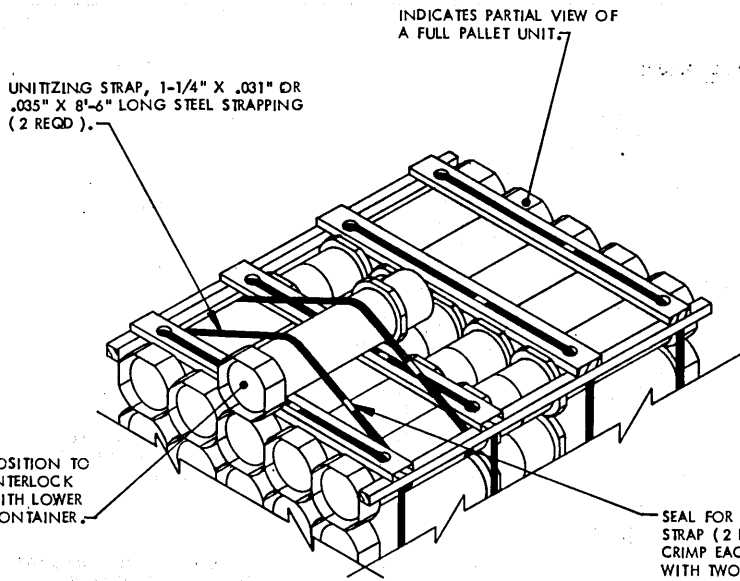
**SECUREMENT OF A PARTIAL PALLET UNIT
ON TOP OF A FULL PALLET UNIT**

SPECIAL NOTES:

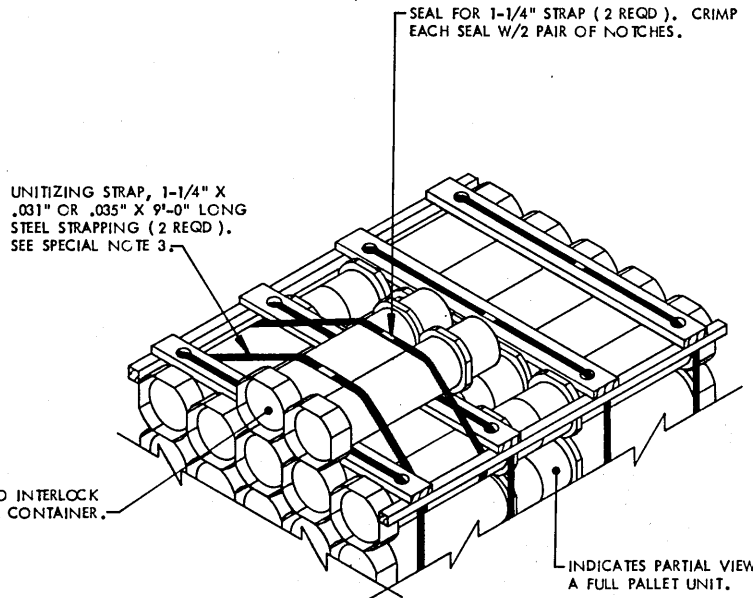
1. THE VIEW SHOWN ABOVE DEPICTS A PARTIAL 2-LAYER PALLET UNIT POSITIONED ON TOP OF A FULL-HEIGHT PALLET UNIT AND UNITIZED WITH TWO VERTICAL UNITIZING STRAPS. PLACEMENT WITHIN THE LOAD IS OPTIONAL, EXCEPT THAT IT WILL NOT BE POSITIONED WITHIN A GROUP WHICH IS BUNDLED TOGETHER OR WITHIN A STACK WHICH IS UNITIZED (AT THE END OF A ROW). 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 THE 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-THAN-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 IN TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES.
4. FOR SHIPMENT OF ONE THROUGH NINE "LEFTOVER" CONTAINERS, SEE THE PROCEDURES ON PAGE 20 OF THIS DRAWING.

SPECIAL NOTES:

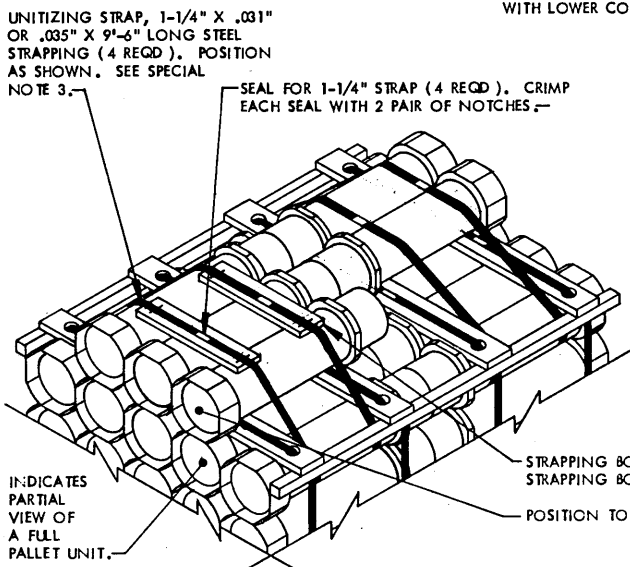
1. SHIPMENTS OF PROPELLING CHARGES SHOULD CONSIST OF FULL-HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE, HOWEVER, THE END OF A LOT, OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION, MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LEFTOVER CONTAINERS. LEFTOVER CONTAINERS ARE DESCRIBED AS 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 19.
2. SHIPMENT OF LEFTOVER CONTAINERS IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT OF DEPOT TO POSTS, CAMPS, AND STATIONS, OR, UPON APPROVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLY, AND PACK PLANTS TO DEPOTS. 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. LEFTOVER CONTAINERS MUST BE SECURED WITH A MINIMUM OF TWO (2) PIECES OF STEEL STRAPPING. NOTE THAT THE UNITIZING STRAP MUST NOT GO AROUND THE INTERMEDIATE OR TOP DUNNAGE ASSEMBLY. THE STRAP MUST BE THREADED BEHIND THE 2" X 2" PIECES OF THE ASSEMBLIES.
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.



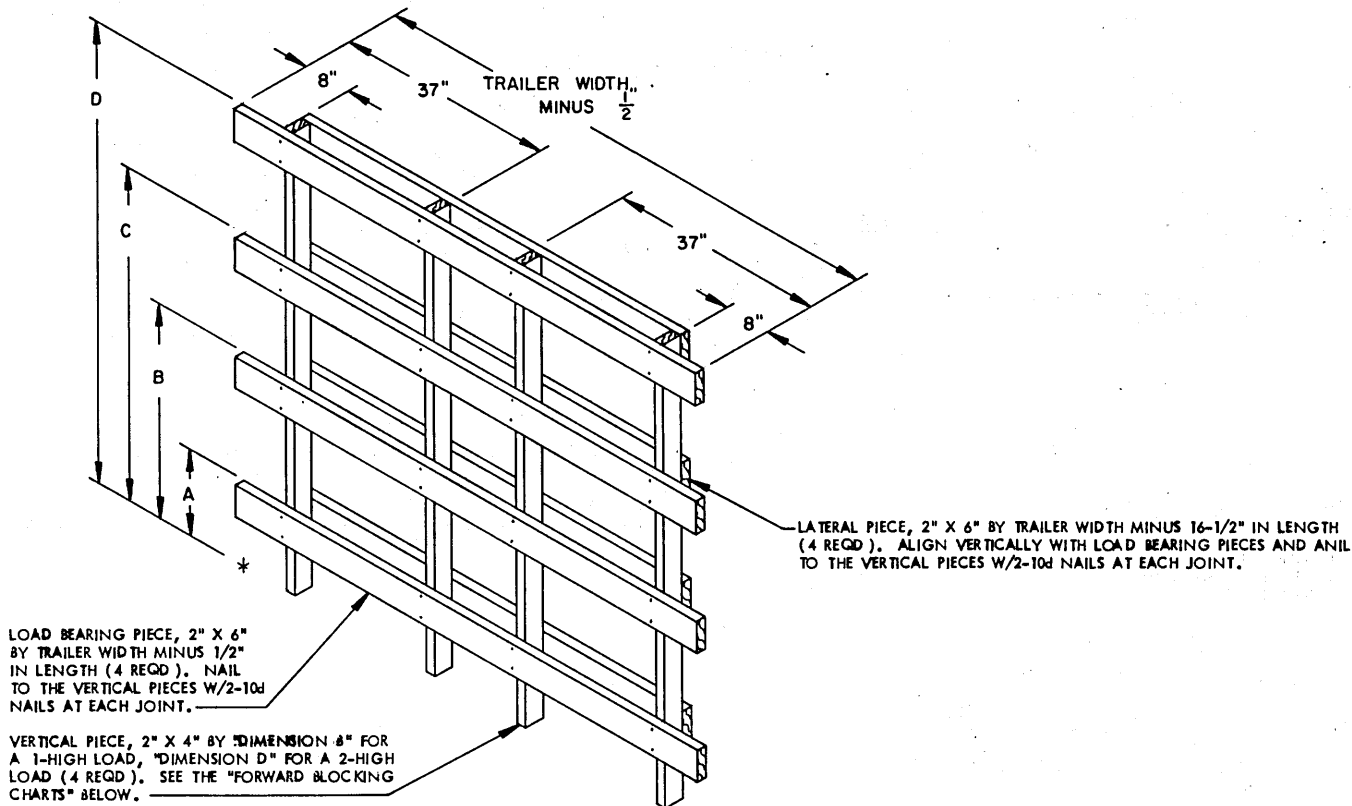
SECUREMENT OF ONE CONTAINER



SECUREMENT OF TWO CONTAINERS



SECUREMENT OF FIVE CONTAINERS



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 TRAILER TO BE LOADED HAS LARGE-ANGLED CORNERS AT THE FORWARD END, REFER TO PAGE 29 FOR GUIDANCE.

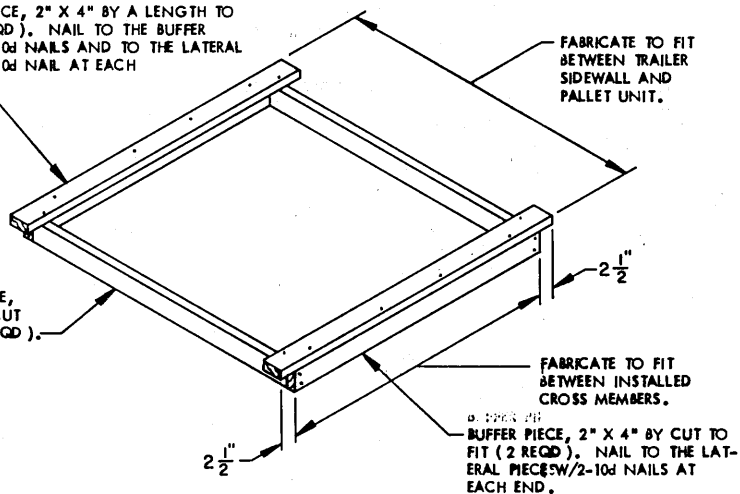
FORWARD BLOCKING CHART A *				
PALLET UNIT TYPE	A	B	C	D
BASIC HEIGHT	15"	44"	64"	7'-9"
DECREASED HEIGHT	15"	37"	57"	6'-7"
BASIC W/DECREASED HEIGHT ON TOP	15"	44"	64"	7'-2"

* FORWARD BLOCKING CHART "A" IS USED FOR LENGTHWISE POSITIONED CONTAINERS AS SHOWN IN THE LOAD ON PAGE 4. FOR THE CHIMNEY PATTERN LOAD SHOWN ON PAGE 8, USE FORWARD BLOCKING CHART "B" BELOW.

FORWARD BLOCKING CHART B				
PALLET UNIT TYPE	A	B	C	D
BASIC HEIGHT	10"	44"	64"	7'-9"
DECREASED HEIGHT	10"	42"	51"	7'-0"
BASIC W/DECREASED HEIGHT ON TOP	10"	44"	58"	7'-6"

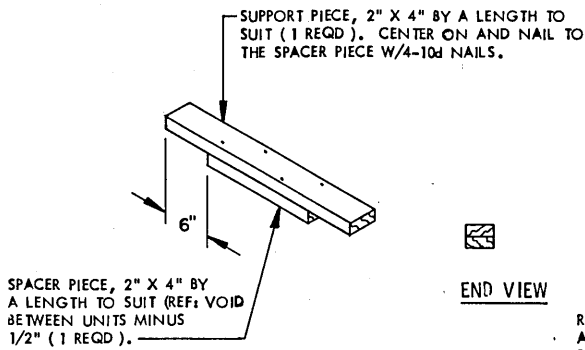
SUPPORT PIECE, 2" X 4" BY A LENGTH TO SUIT (2 REQD). NAIL TO THE BUFFER PIECE W/4-10d NAILS AND TO THE LATERAL PIECE W/1-10d NAIL AT EACH JOINT.

LATERAL PIECE, 2" X 4" BY CUT TO FIT (2 REQD).



SPACER ASSEMBLY A

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 18.



TOP-OF-LOAD ANTI-SWAY BRACE A

END VIEW

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

BUFFER PIECE, 2" X 6" X 36" (1 REQD). POSITION AGAINST THE PALLET POSTS AND NAIL TO THE RETAINER PIECES W/3-10d NAILS AT EACH JOINT.

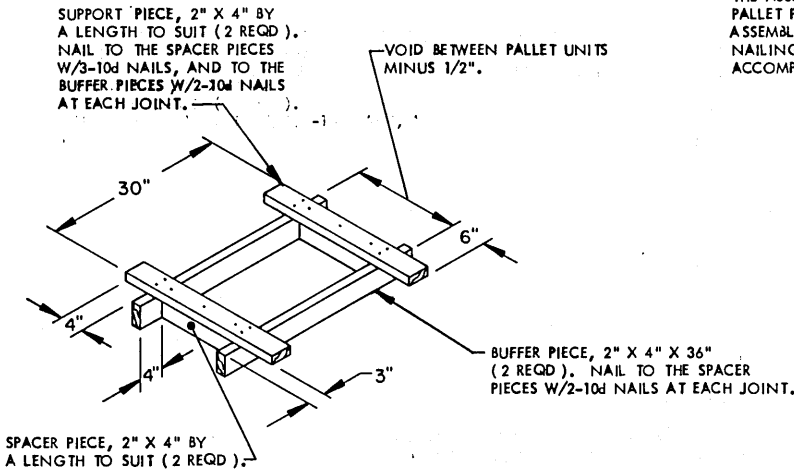
FABRICATE TO FIT BETWEEN THE POSTS OF LATERALLY ADJACENT PALLETS.

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

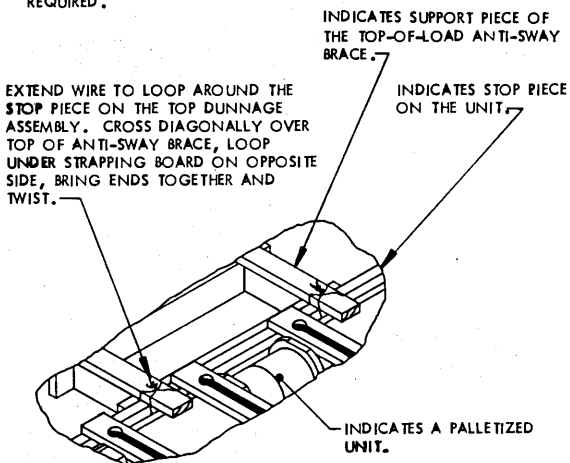
ANTI-SWAY BRACE C

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. THE ASSEMBLY HAS A 2" X 6" BUFFER PIECE (APPLY LAST) ON ONE SIDE TO FACILITATE NAILING. BOTH BUFFER PIECES MAY BE 2" X 4" MATERIAL IF NAILING CAN BE ACCOMPLISHED.



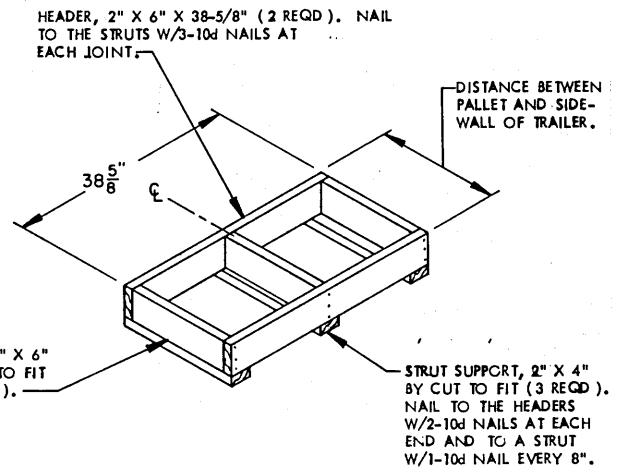
TOP-OF-LOAD ANTI-SWAY BRACE B

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 AND TOP-OF-LOAD ANTI-SWAY BRACING IS REQUIRED.



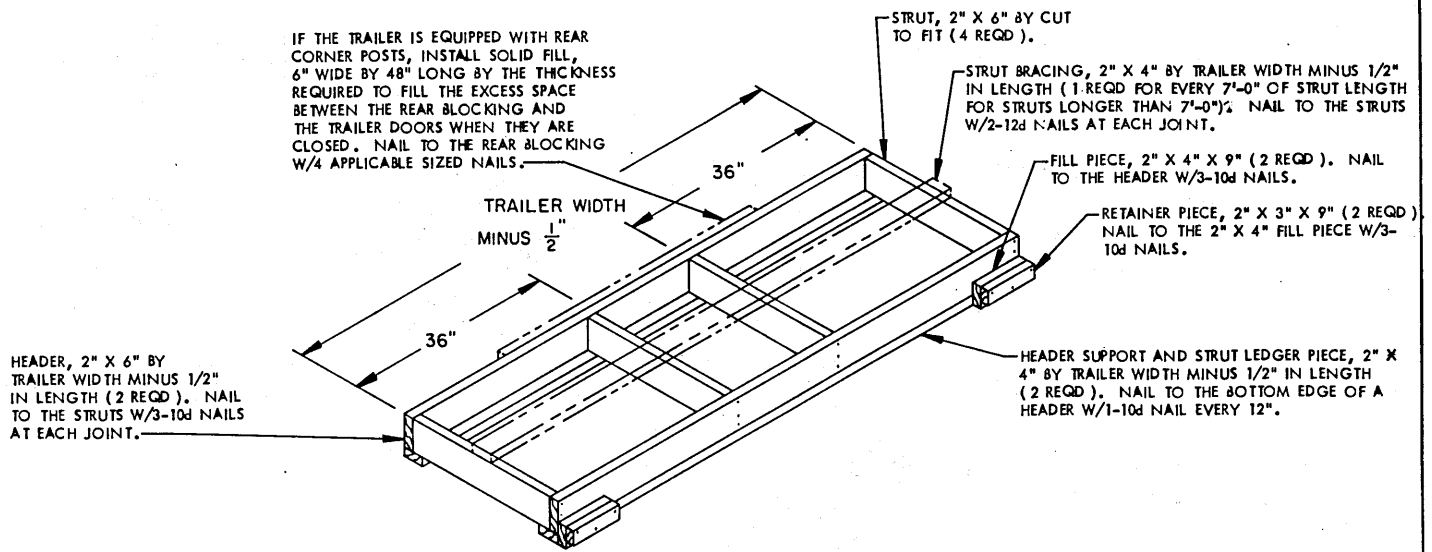
TIE WIRE APPLICATION

THIS VIEW DEPICTS THE SECUREMENT OF A TOP-OF-LOAD ANTI-SWAY BRACE TO THE TOP OF A PALLETIZED UNIT BY WIRE TYING TO THE TOP DUNNAGE ASSEMBLY OF UNIT WITH NO. 14 GAGE WIRE.



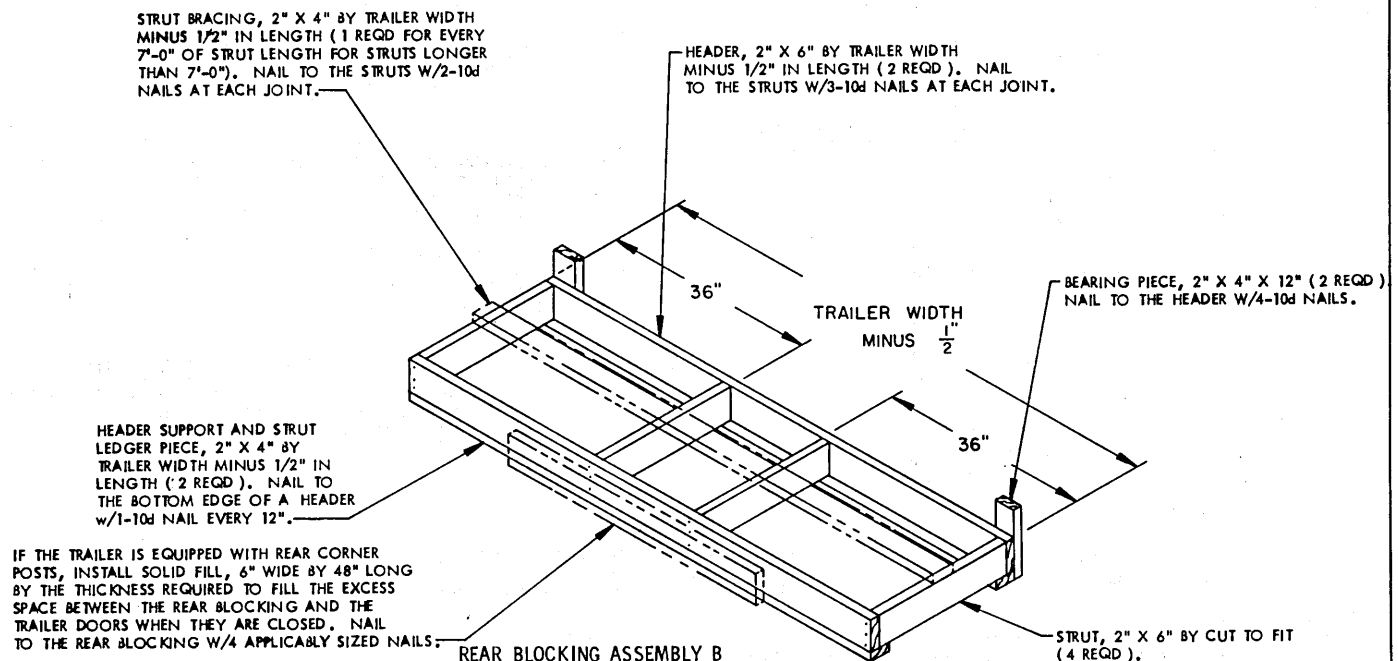
SIDE BLOCKING ASSEMBLY

THIS ASSEMBLY IS DESIGNED FOR USE AS LATERAL BRACING IN THE TYPICAL LTL LOAD SHOWN ON PAGE 16.



REAR BLOCKING ASSEMBLY A

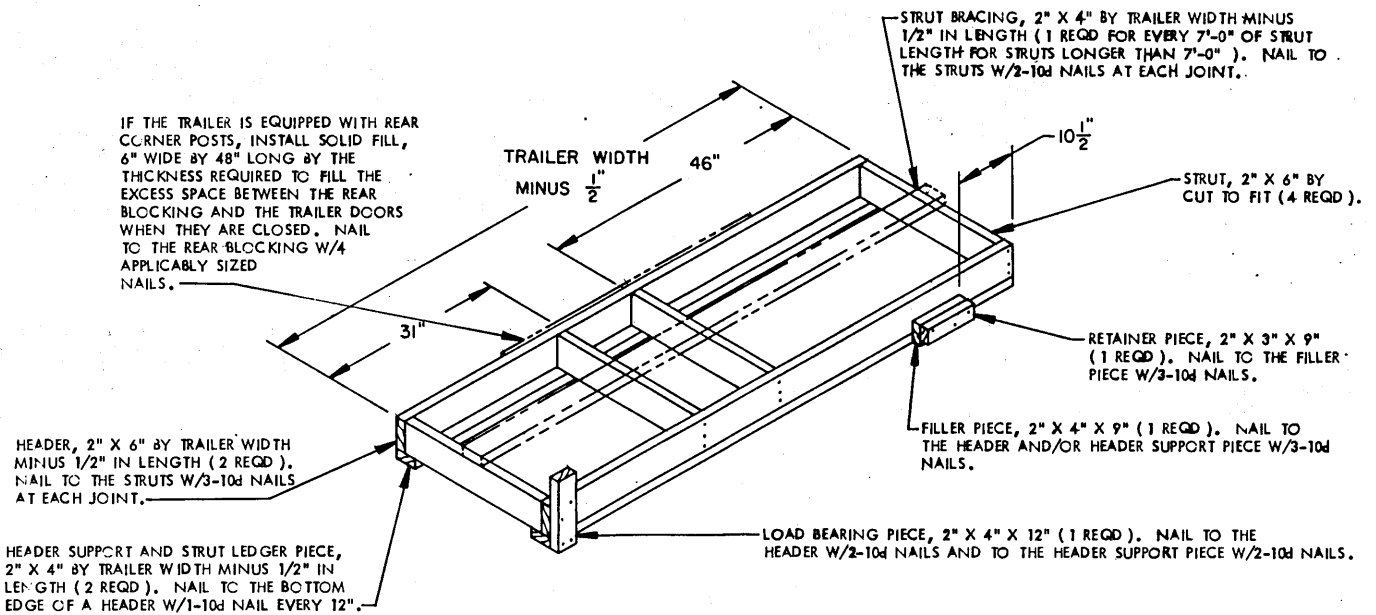
THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF THE LOAD SHOWN ON PAGE 4 WHEN THE REAR LOAD UNIT IS 1-HIGH AND EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS MORE THAN 9". NOTE THAT THIS DETAIL HAS BEEN ROTATED 90° TO MORE CLEARLY ILLUSTRATE THE PLACEMENT OF THE RETAINER PIECES ON THE ASSEMBLY.



REAR BLOCKING ASSEMBLY B

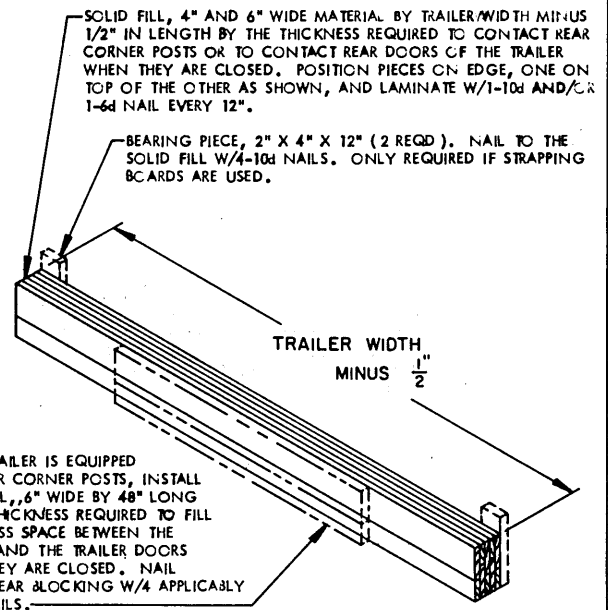
THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF THE LOAD SHOWN ON PAGE 10 WHEN THE REAR LOAD UNIT IS STACKED AND EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS MORE THAN 9".

DETAILS



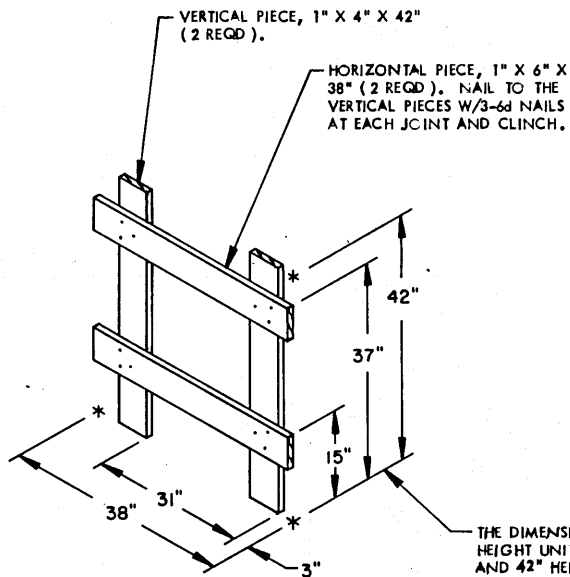
REAR BLOCKING ASSEMBLY C

THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF THE CHIMNEY PATTERN LOAD SHOWN ON PAGE 8 WHEN THE EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS MORE THAN 9". NOTE THAT THIS VIEW IS ROTATED 90° FROM THE POSITION IN WHICH THE ASSEMBLY WILL BE INSTALLED.



REAR BLOCKING ASSEMBLY D

THIS REAR BLOCKING IS DESIGNED FOR USE AT THE REAR OF ANY LOAD IN A CONVENTIONAL VAN TRAILER WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS LESS THAN 9" BUT MORE THAN 1-1/2".

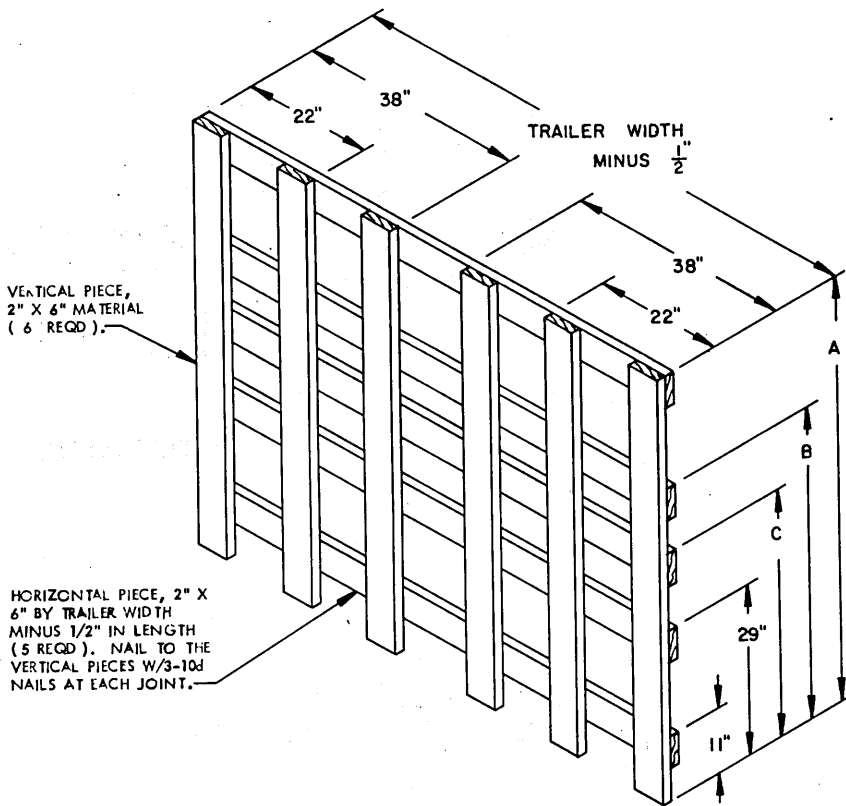


SEPARATOR GATE

THIS ASSEMBLY IS FOR USE IN THE "CHIMNEY PATTERN" LOAD SHOWN ON PAGE 8 WHEN A "CHIMNEY" CONTAINS LESS THAN 4 PALLET UNITS. INSTALL WITH THE VERTICAL PIECES TOWARD FRONT OF TRAILER.

DETAILS

BULKHEAD GATE CHART			
PALLET UNIT TYPE	DIMENSIONS		
	A	B	C
BASIC HEIGHT	6'-7"	60"	48"
DECREASED HEIGHT	72"	53"	42"
BASIC HT W/DECREASED HT UNIT ON TOP	6'-7"	60"	48"

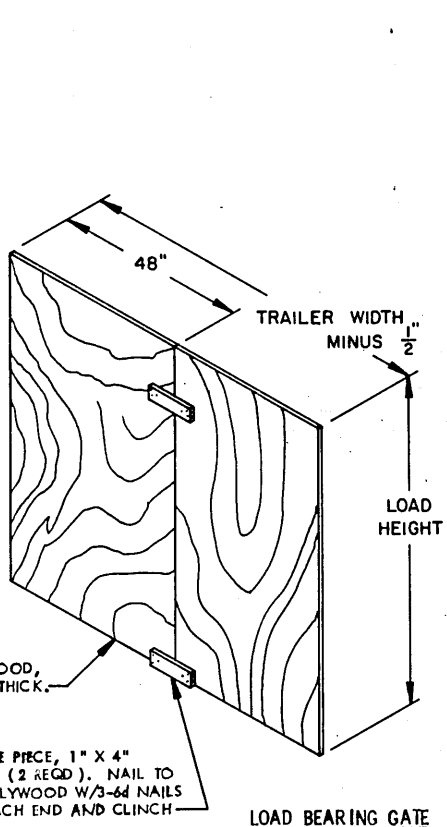


VERTICAL PIECE, 2" X 6" MATERIAL (6 REQD).

HORIZONTAL PIECE, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (5 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

BULKHEAD GATE

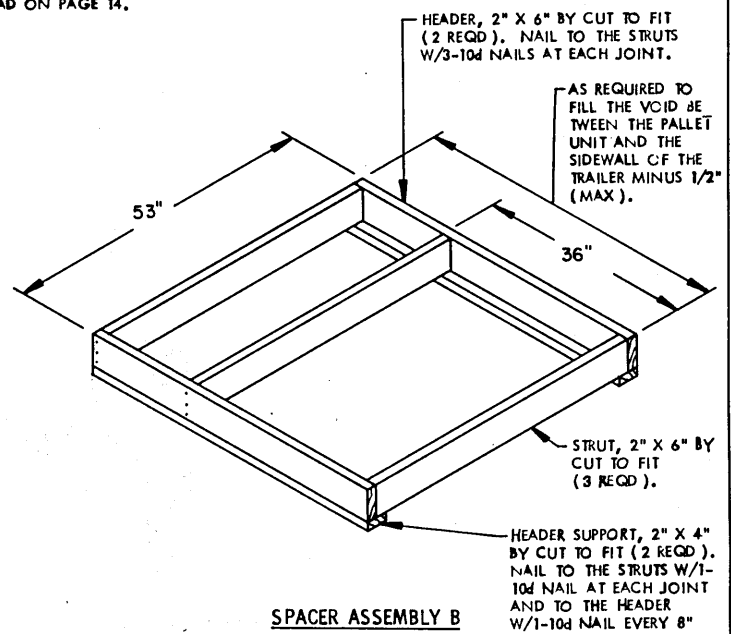
THIS GATE IS DESIGNED FOR USE IN THE ALTERNATIVE LOADING PROCEDURE LOAD ON PAGE 14.



PLYWOOD, 1/2" THICK.

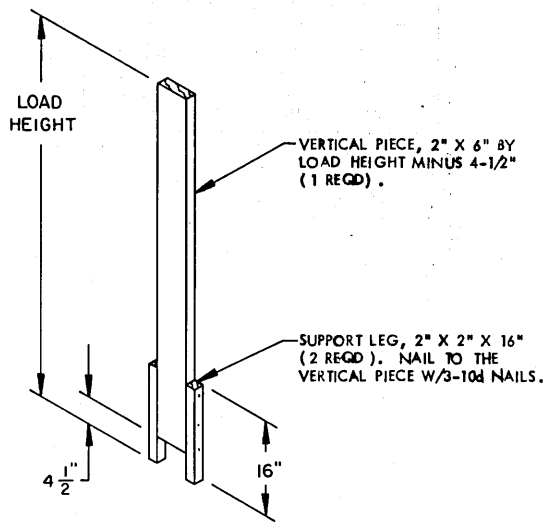
SPLICE PIECE, 1" X 4" X 12" (2 REQD). NAIL TO THE PLYWOOD W/3-6d NAILS AT EACH END AND CLINCH.

LOAD BEARING GATE

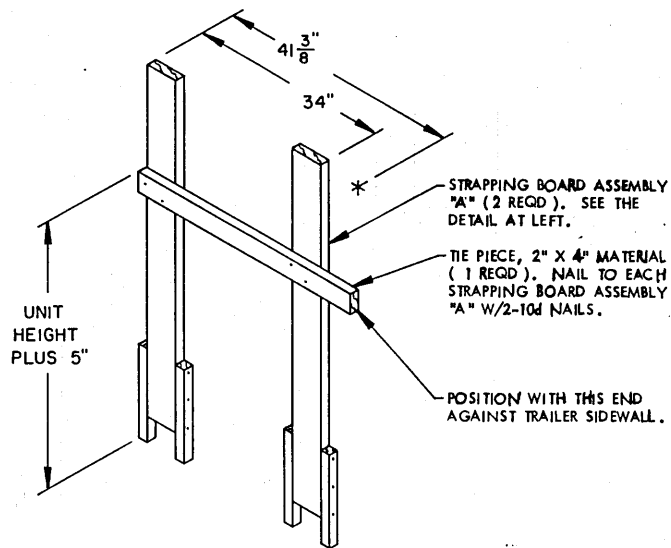


SPACER ASSEMBLY B

THIS ASSEMBLY IS DESIGNED FOR USE IN PLACE OF AN OMITTED UNIT, AS USED IN THE LOAD ON PAGE 14.

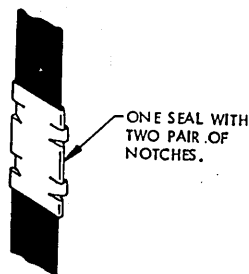


STRAPPING BOARD ASSEMBLY A



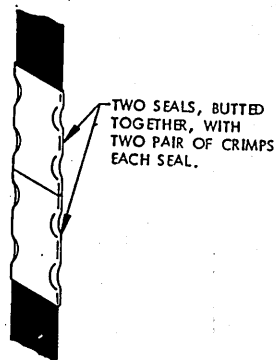
STRAPPING BOARD ASSEMBLY B

RIGHT HAND AND LEFT HAND ASSEMBLIES ARE REQUIRED. THIS ASSEMBLY IS AN ALTERNATIVE FOR A PAIR OF STRAPPING BOARD ASSEMBLIES "A".



STRAP JOINT A

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



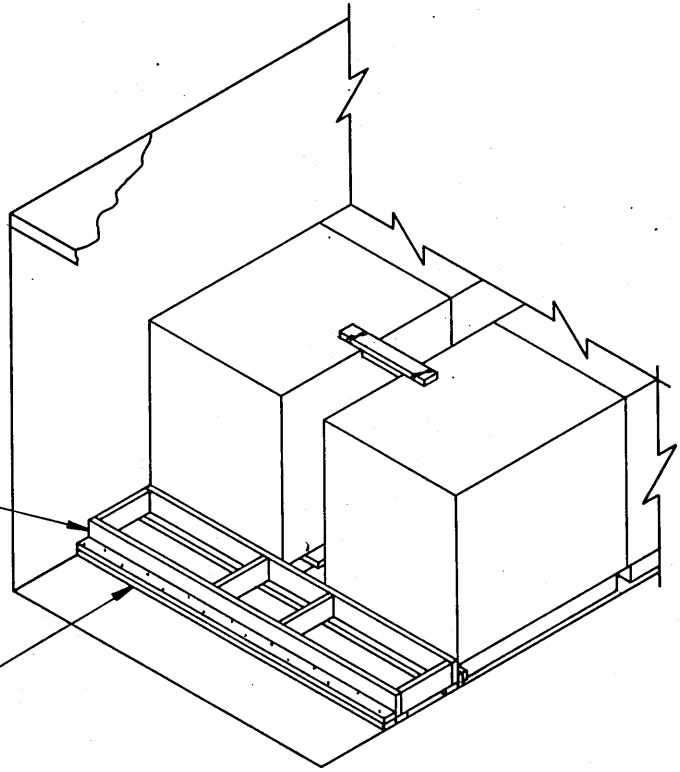
STRAP JOINT B

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

DETAILS

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.



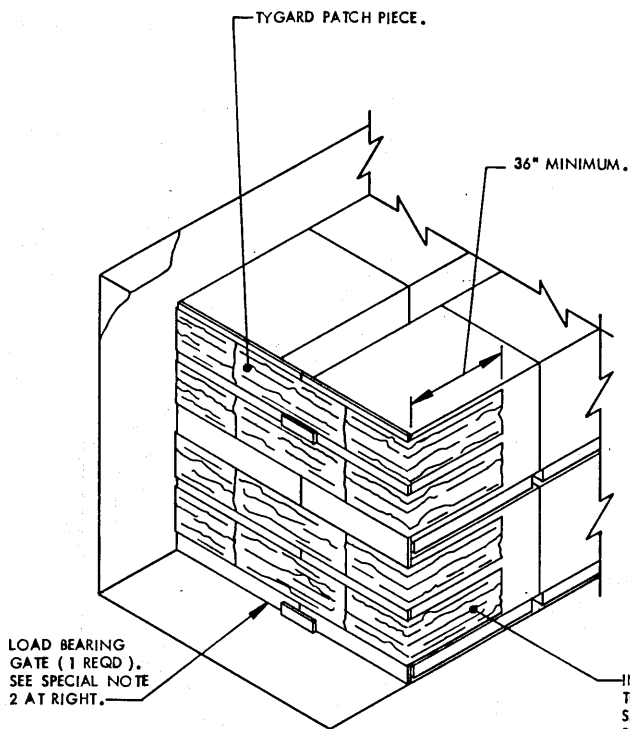
NAILED-HEADER METHOD

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 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.

SPECIAL NOTES:

1. THE TYGARD METHOD OF REAR BLOCKING CAN ONLY BE USED IN TRAILERS WHICH HAVE REASONABLY SMOOTH AND ADEQUATELY SECURED SIDEWALL PANELS IN THE AREA WHERE THE TYGARD MATERIAL IS TO BE APPLIED.
2. A LOAD HEIGHT (8'-0" MAX) 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 THE "LOAD BEARING GATE" DETAILED ON PAGE 25 WILL BE USED WHEN THE REAR LOAD UNIT IS STACKED. A LOAD HEIGHT (48" MAX.) BY TRAILER WIDTH MINUS 2" PLYWOOD LENS WITH WOOD GATE WILL BE USED WHEN THE REAR LOAD UNIT IS ONLY ONE PALLET UNIT HIGH. **NOTE:** FOR THE ODD UNIT, THE TYGARD METHOD B (DETAIL BELOW) A ONE (3) LOAD BEARING GATE WILL BE LOAD HEIGHT BY PALLET UNIT WIDTH IN LENGTH.
3. TYGARD MATERIAL MUST BE INSTALLED AT TWO LEVELS FOR EACH LAYER OF THE REAR LOAD UNIT WHEN SHIPPING THE UNITS DEPICTED ON PAGE 3 OF THIS DRAWING.
4. THE TYGARD MATERIAL AND THE ADHESIVE FOR ATTACHING IT ARE COMMERCIAL PRODUCTS. FOR A SOURCE OF SUPPLY, CONTACT WALNUT INDUSTRIES, INC., 1344 ADAMS ROAD, P.O. BOX "E", BENSALEM, PA 19020-0860, PHONE 1-800-523-6536. APPLICATION INSTRUCTIONS AND GUIDANCE CAN ALSO BE OBTAINED FROM THAT OFFICE.
5. THE TYGARD METHOD, ALTHOUGH ESPECIALLY FOR TRAILERS HAVING ROLL-UP TYPE DOORS, MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.
6. **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.



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 OF PALLET UNITS.

TYGARD METHOD A

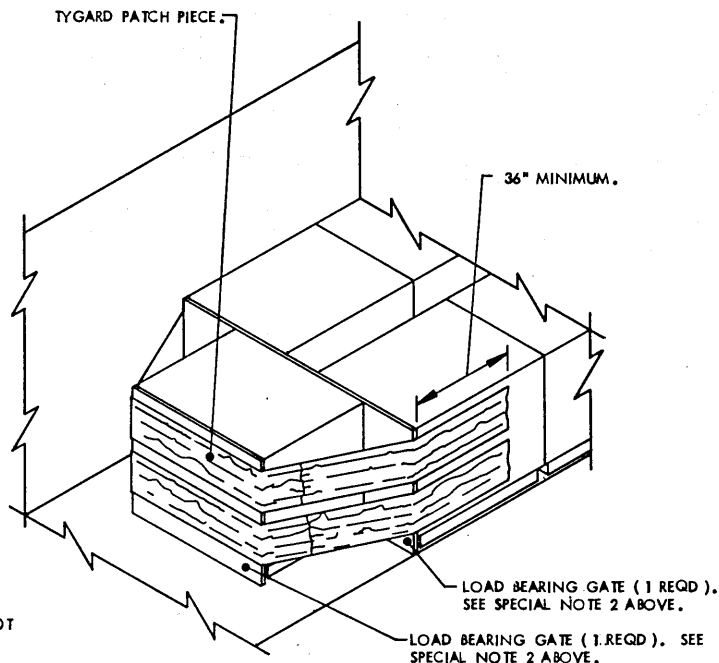
RECOMMENDED EQUIPMENT/INSTALLATION PROCEDURES

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 REAR MOST 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 REAR MOST LOAD UNIT INTO THE TRAILER AND INSTALL THE SPECIFIED ANTI-SWAY BRACES.
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.
6. APPLY TYGARD ADHESIVE TO THE TENSIONED TYGARD PIECES AND ALSO TO THE CORD SIDE OF THE PREVIOUSLY CUT "PATCH" PIECE. APPLY THE "PATCH" AND ROLL WITH THE PRESSURE ROLLER TO ENSURE PROPER BONDING.

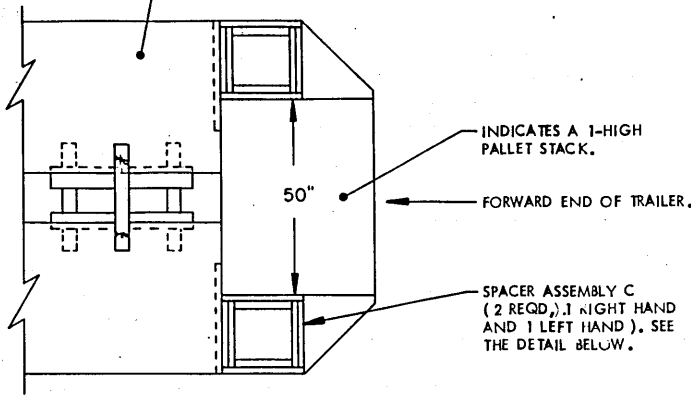


TYGARD METHOD B

TYGARD METHOD

PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS

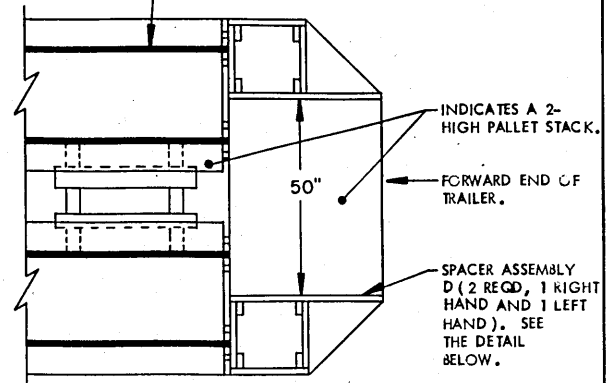
THE PALLETS IN THIS LOAD UNIT MAY BE STACKED IF STRAPPING BOARD ASSEMBLIES AND STACK UNITIZING STRAPS ARE INSTALLED. SEE NOTE "●" BELOW.



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"). THE PROCEDURES MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE. THE BASIC HEIGHT UNIT IS SHOWN. THE PROCEDURES ARE ALSO APPLICABLE FOR THE DECREASED HEIGHT UNIT DEPICTED ON PAGE 3.

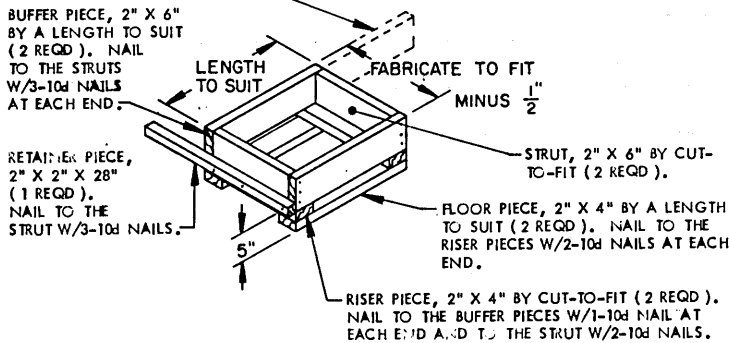
THE STRAPPING BOARD ASSEMBLIES AND STACK UNITIZING STRAPS ARE NOT REQUIRED IF THE ADJACENT LOAD UNIT TO THE REAR IS ALSO STACKED TWO HIGH.



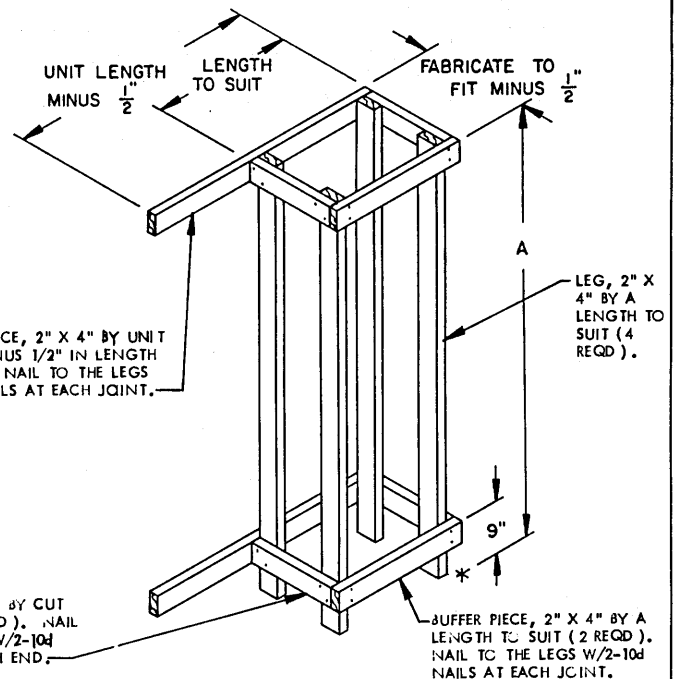
ALTERNATIVE FORWARD LOADING PATTERN B

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. THE BASIC HEIGHT UNIT IS SHOWN. THE PROCEDURES ARE ALSO APPLICABLE FOR THE DECREASED HEIGHT UNIT DEPICTED ON PAGE 3.

● IF THE LONGITUDINALLY ADJACENT LOAD UNIT IS STACKED AND SECURED WITH STRAPPING AND STRAPPING BOARD ASSEMBLIES, THIS BUFFER PIECE MUST BE EXTENDED TO WITHIN 1/2" OF THE FRONT WALL OF THE TRAILER IN LIEU OF USING THE RETAINER PIECE.



SPACER ASSEMBLY C



SPACER ASSEMBLY D

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 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED IN A LOAD. RIGHT HAND AND LEFT HAND SPACER ASSEMBLIES ARE REQUIRED.

SPACER ASSEMBLY D CHART	
PALLET UNIT TYPE	DIM A
BASIC HEIGHT	64"
DECREASED HEIGHT	57"
BASIC W/DECREASED ON TOP	64"

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