APPROVED BY
BUREAU OF EXPLOSIVES
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DATE 4/28/86

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

PA 104 SERIES CONTAINER (INTERLOCKING)

INDEX

THIS DOCUMENT INCLUDES OUTLOADING PROCEDURES FOR CONVENTIONAL TYPE TRAILERS AND FOR TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES AS APPROVED BY THE BUREAU OF EXPLOSIVES, ASSOCIATION OF AMERICAN RAILROADS. CAUTION: 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

REVISIONS			

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U.S. ARMY AMC DRAWING

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19	48	4213/7	11PM 1009

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GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).

B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE FOR THE PA104 SERIES COMPLETE ROUNDS ASSEMBLED ON A 44" X 40" 4-WAY ENTRY PALLET. SEE THE PICTORIAL VIEW ON PAGE 3 FOR SIZES AND WEIGHTS. REFER TO U.S. ARMY DARCOM DRAWING 19-48-4079/6A-20PM1002 FOR UNITIZATION PROCEDURES FOR THE PA104 SERIES CONTAINER.

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" AND 7'-8" 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 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 213, 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, WEIGHTS SHOULD BE VERIFIED BY ACTUALLY WEIGHING THE LOADED VEHICLE.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

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

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

PLYWOOD --------: GROUP B OR C, GRADE C-D (EXTERIOR), FED SPEC NN-P-530. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER EXTERIOR GRADE MAY BE SUBSTITUTED.

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

TYGARD ---------: POLYESTER YARN, 1100 POUNDS/INCH OF WIDTH STRENGTH.

ADHESIVE --------: TYGARD ADHESIVE.

STRAPPING, SEAL -: CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH A, B (GRADE 2), OR C; FED SPEC QQ-S-781.

SEAL, STRAP------: TYPE D, STYLE I, II, OR IV, CLASS H, FED SPEC QQ-S-781.

(GENERAL NOTES CONTINUED)

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 COMPLETE ROUNDS, 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 14. FOR "SHIPMENT OF LEFTOVER CONTAINERS" SEE THE DETAILS AND SPECIAL NOTES ON PAGE 13.

M. 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.

N. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHENEVER 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.

O. 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.

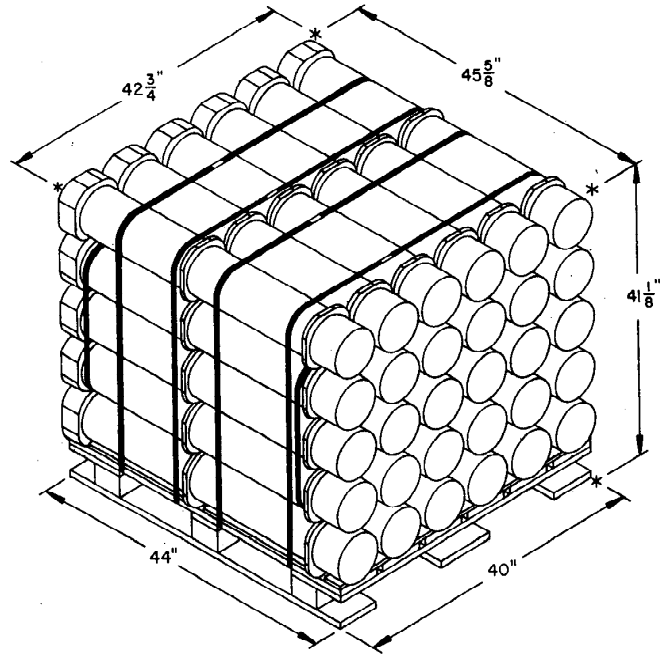
P. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, END WALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

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

R. 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.

S. WHEN LOADING THE CENTER LINE OF THE CONTAINERS PERPENDICULAR TO THE TRAILER SIDE WALLS, THE BASE END OF THE PALLETS MUST BE AGAINST THE TRAILER SIDE WALLS. WHEN LOADING THE CENTER LINE OF THE CONTAINERS PARALLEL TO THE TRAILER SIDE WALLS, THE PALLETS MUST BE LOADED BASE TO BASE, BELL TO BELL BEGINNING WITH THE BASE END OF THE PALLET FACING THE FRONT BULKHEAD OF THE TRAILER.

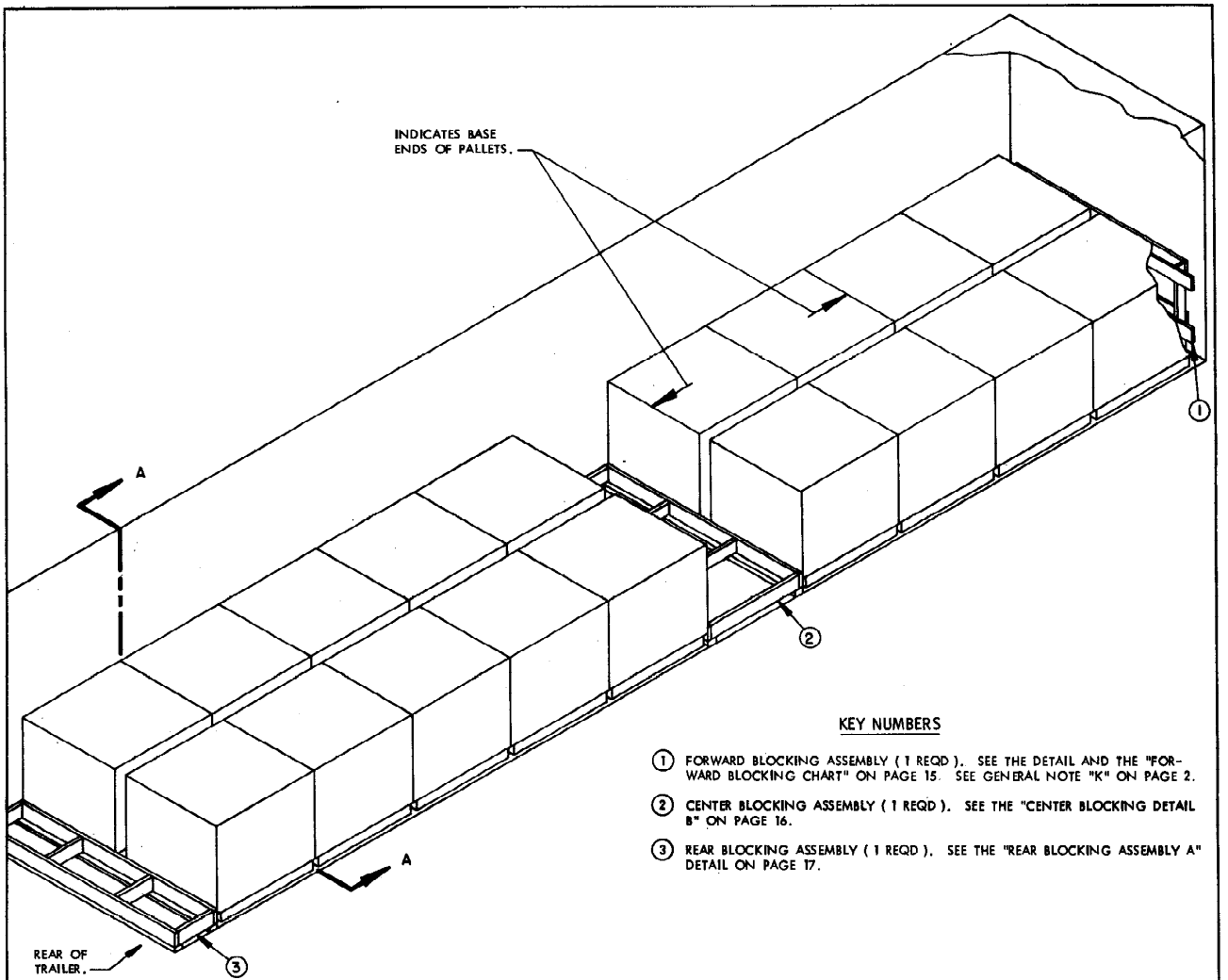
T. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE (1) SEAL, CRIMPED WITH TWO (2) PAIR OF NOTCHES MUST BE USED TO SEAL THE JOINT.



PALLET UNIT DETAIL

CONTAINER ---------- 30 EACH AT 75 LBS (APPROX)
CUBE ---------- 46.4 CUBIC FEET (APPROX)
GROSS WEIGHT ---------- 2,344 LBS (APPROX)

REFER TO PAGES 4 THRU 9 FOR OUTLOADING PROCEDURES.



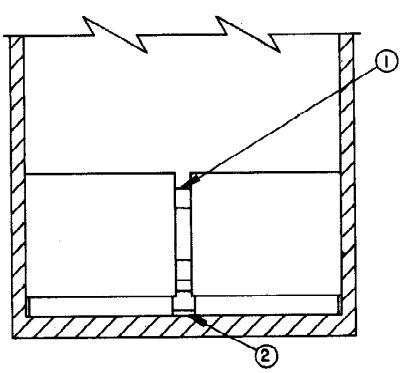
ISOMETRIC VIEW

KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE "FORWARD BLOCKING CHART" ON PAGE 15. SEE GENERAL NOTE "K" ON PAGE 2.

(2) CENTER BLOCKING ASSEMBLY (1 REQD). SEE THE "CENTER BLOCKING DETAIL B" ON PAGE 16.

(3) REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 17.



SECTION A-A

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

SPECIAL NOTES:

1. A 18-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER. TRAILERS OF OTHER DIMENSIONS MAY BE USED.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 4 HAS OVERALL DIMENSIONS OF 45-5/8" WIDE BY 42-3/4" LONG BY 41-1/8" HIGH AND A WEIGHT OF APPROXIMATELY 2,344 POUNDS.

3. 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 B" AS DETAILED ON PAGE 17. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A" PIECE MARKED (3) ON PAGE 4. SEE SPECIAL NOTE 8.

4. IF A TRAILER WHICH IS 7'-8" OR WIDER IS FURNISHED FOR LOADING, ONE ANTI-SWAY BRACE "B" AS DETAILED ON PAGE 19, MUST BE POSITIONED BETWEEN EACH LATERALLY ADJACENT PAIR OF PALLET UNITS.

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

6. 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 13 FOR GUIDANCE.

7. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 10 AND 11.

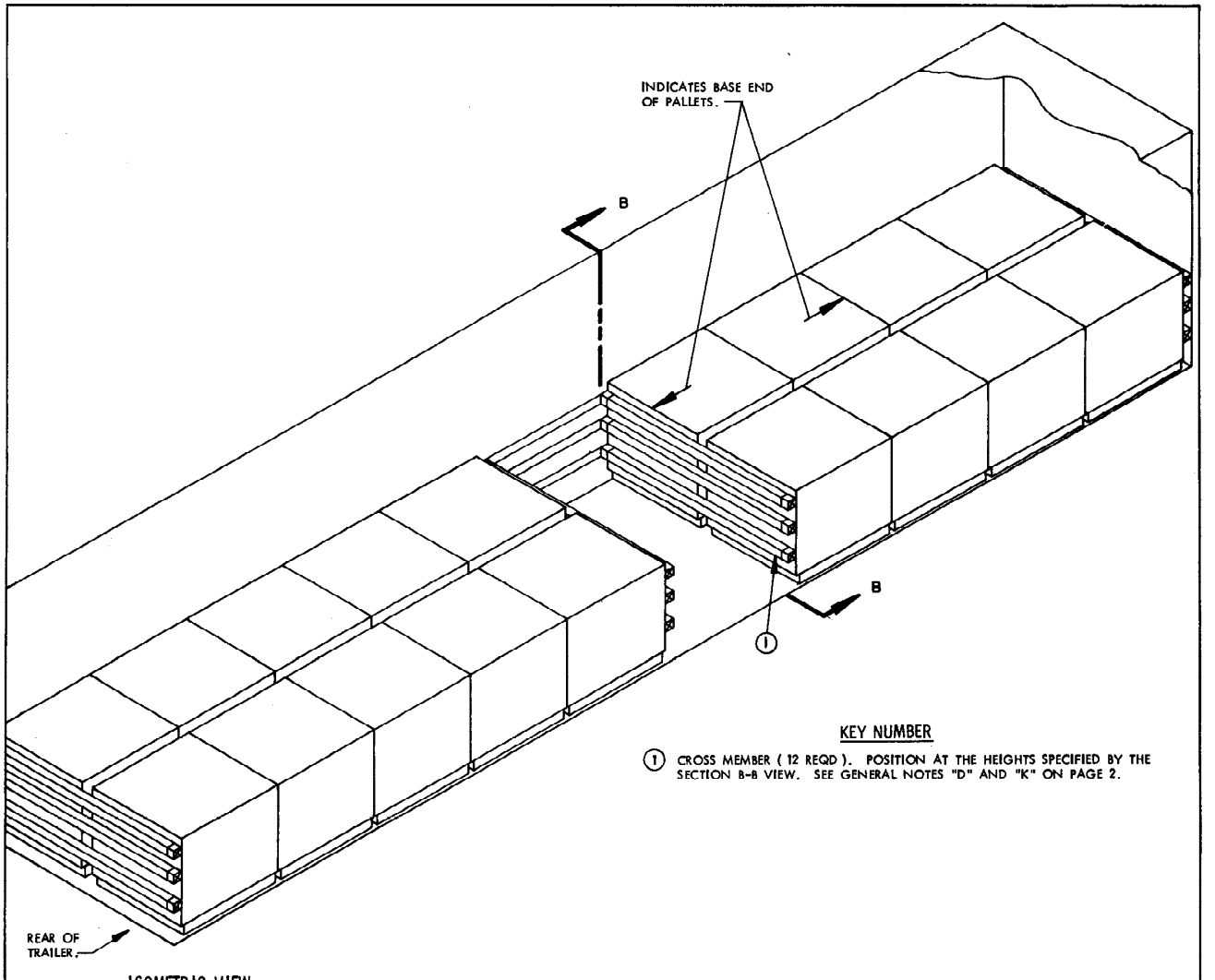
8. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS", ON PAGES 20 AND 21 FOR GUIDANCE. THE NAILED-HEADER METHOD IS SHOWN ON PAGE 20 AND THE TYGARD METHOD IS SHOWN ON PAGE 21. 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 4" 2" X 6"	44 78	30 78
NAILS	NO. REQD	POUNDS
10d	128	2

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	18	42,192 LBS
DUNNAGE		218 LBS
TOTAL WEIGHT		42,410 LBS

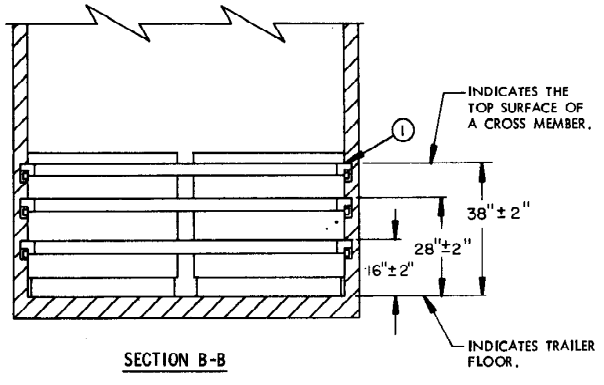
18-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE CONVENTIONAL VAN TRAILER



ISOMETRIC VIEW

KEY NUMBER

(1) CROSS MEMBER (12 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE SECTION B-B VIEW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2.



SECTION B-B

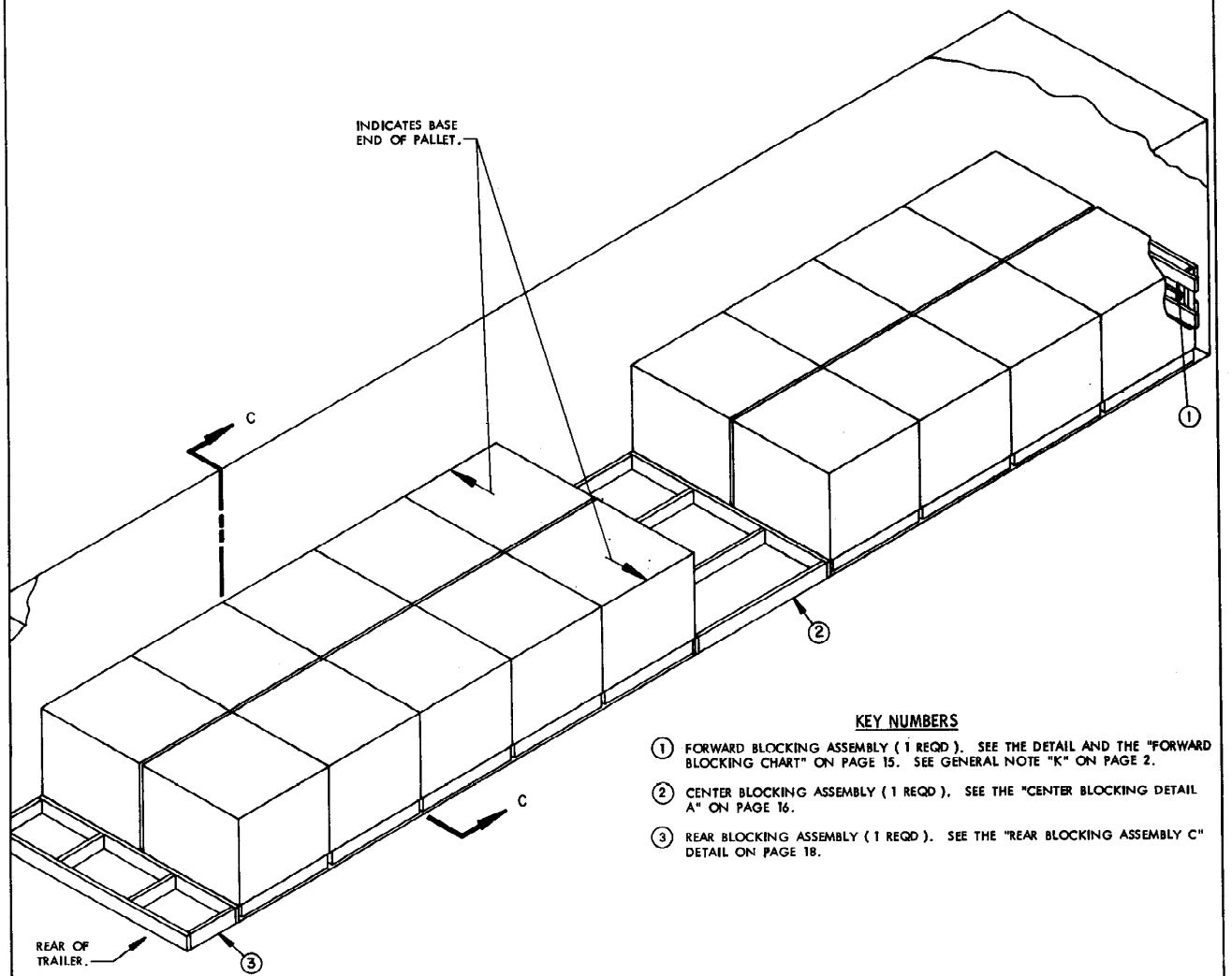
18-UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES

SPECIAL NOTES:

1. A 18-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" 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 6 HAS OVERALL DIMENSIONS OF 45-5/8" WIDE BY 42-3/4" LONG BY 41-1/8" HIGH AND A WEIGHT OF APPROXIMATELY 2,344 POUNDS.
3. IF A PALLET UNIT IS TO BE ADDED TO OR OMITTED FROM A DEPICTED LOAD, THE SPACER ASSEMBLY B DEPICTED ON PAGE 19 MUST BE USED. NOTE THAT CROSS MEMBERS ARE REQUIRED AT BOTH ENDS OF THE ODD UNIT, SEE "TYPICAL LTL (1-UNIT LOAD)" DETAIL ON PAGE 12.
4. IF A TRAILER 7'-8" OR WIDER IS FURNISHED FOR LOADING, ONE ANTI-SWAY BRACE "B" AS DETAILED ON PAGE 19, WILL BE USED BETWEEN EACH LATERALLY ADJACENT PAIR OF PALLET UNITS WITH ADDITIONAL CROSS MEMBERS AS REQUIRED AT 4" PLUS OR MINUS 1" TO RESTRAIN THE MOVEMENT OF ANTI-SWAY BRACE.
5. REFER TO PAGE 14 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
6. 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 13 FOR GUIDANCE.
7. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 12.
8. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE FULL LOAD SHOULD BE LOADED TO THE FRONT OF THE TRAILER WITHOUT THE USE OF CROSS MEMBERS OR SPACE BETWEEN THE LOAD, PROVIDED THE WEIGHT LIMITATIONS ARE NOT EXCEEDED. INSTALL FOUR (4) CROSS MEMBERS AT 4" PLUS OR MINUS 1", 16" PLUS OR MINUS 2", 28" PLUS OR MINUS 2", 38" PLUS OR MINUS 2" WITH 1" X 6" X TRAILER LENGTH MINUS 1/2" FILL PIECE BEING USED TO FILL THE VOID BETWEEN THE LOWER CROSS MEMBER AND THE PALLET.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	18	42,192 LBS



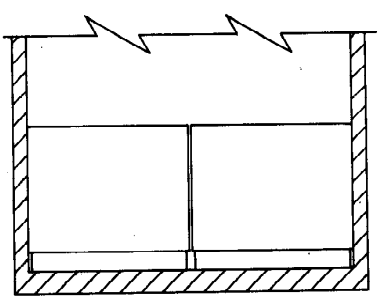
ISOMETRIC VIEW

KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE "FORWARD BLOCKING CHART" ON PAGE 15. SEE GENERAL NOTE "K" ON PAGE 2.

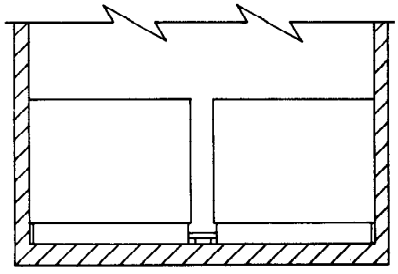
(2) CENTER BLOCKING ASSEMBLY (1 REQD). SEE THE "CENTER BLOCKING DETAIL A" ON PAGE 16.

(3) REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY C" DETAIL ON PAGE 18.



SECTION C-C

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



SECTION D-D

SPECIAL NOTES:

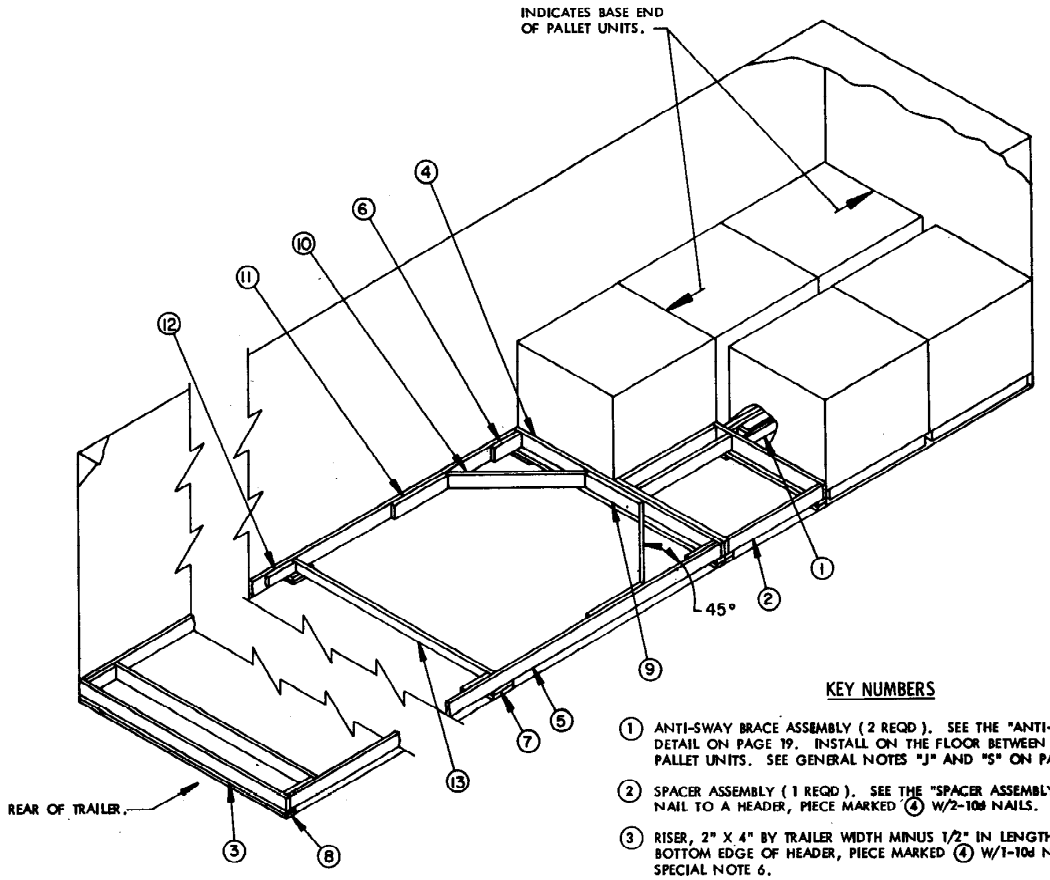
1. A 18-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER. TRAILERS OF OTHER DIMENSIONS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 8 HAS OVERALL DIMENSIONS OF 45-5/8" WIDE BY 42-3/4" LONG BY 41-1/8" HIGH AND A WEIGHT OF APPROXIMATELY 2,344 POUNDS.
3. IF THE VOID BETWEEN LATERALLY ADJACENT PALLET UNITS IS 6" OR GREATER, ANTI-SWAY BRACE ASSEMBLIES "A" WILL BE REQUIRED TO BE PLACED BETWEEN THE PALLET UNITS. FOR ADDITIONAL GUIDANCE, SEE THE "ANTI-SWAY BRACE A" DETAIL ON PAGE 19 AND THE SECTION D-D VIEW AT LEFT.
4. 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 B" AS DETAILED ON PAGE 17. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", PIECE MARKED (3) ON PAGE 8.
5. REFER TO PAGE 14 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
6. 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 13 FOR GUIDANCE.
7. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 10 AND 11.
8. 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 20 AND 21 FOR GUIDANCE. THE NAILED-HEADER METHOD IS SHOWN ON PAGE 20 AND THE TYGARD METHOD IS SHOWN ON PAGE 21. 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 4" 2" X 6"	12 86	8 86
NAILS	NO. REQD	POUNDS
10d	80	1-1/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	18	42,192 LBS
DUNNAGE		189 LBS
TOTAL WEIGHT		42,381 LBS

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



ISOMETRIC VIEW

SPECIAL NOTES:

1. A 5-UNIT LOAD IS SHOWN IN A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER. TRAILERS OF OTHER WIDTHS CAN BE USED.

2. THE PALLET UNIT SHOWN HAS OVERALL DIMENSIONS OF 45-5/8" LONG BY 42-3/4" WIDE BY 41-1/8" HIGH AND WEIGHS APPROXIMATELY 2,344 POUNDS.

3. THE TRAILER IS SHOWN HAVING A SQUARE FRONT; HOWEVER, IF THE TRAILER BEING LOADED HAS ROUNDED CORNERS, A FORWARD BLOCKING ASSEMBLY, AS DETAILED ON PAGE 15 MUST BE USED.

4. THE "K-BRACE BLOCKING", SHOWN AS PIECES MARKED (4) THRU (13) 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 20 AND 21 FOR GUIDANCE. THE NAILED-HEADER METHOD IS SHOWN ON PAGE 20 AND THE TYGARD METHOD IS SHOWN ON PAGE 21. 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 (3) THRU (13) WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS.

6. FOR PALLET UNITS LOADED CROSSWISE IN THE VAN TRAILER, DELETE PIECES MARKED (3), (7), AND (8) AND INSTALL ONE (1) 2" X 4" BY TRAILER WIDTH MINUS 1/2" TO THE HEADER FACING THE LOAD AND NAIL AT FLOOR LEVEL TO THE HEADER W/1-10d NAIL EVERY 8". IF SPACER ASSEMBLY, PIECE MARKED (2) IS REQUIRED REMOVE RISER PIECES AND INSTALL ONE (1) 2" X 4" BY A WIDTH-TO-SUIT TO THE HEADER FACING THE LOAD AND NAIL AT FLOOR LEVEL TO THE HEADER W/1-10d NAIL EVERY 8". SEE GENERAL NOTE "N".

KEY NUMBERS

(1) ANTI-SWAY BRACE ASSEMBLY (2 REQD). SEE THE "ANTI-SWAY BRACE ASSEMBLY B" DETAIL ON PAGE 19. INSTALL ON THE FLOOR BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "J" AND "S" ON PAGE 2.

(2) SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 19. NAIL TO A HEADER, PIECE MARKED (4) W/2-10d NAILS. SEE SPECIAL NOTE 6.

(3) RISER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO BOTTOM EDGE OF HEADER, PIECE MARKED (4) W/1-10d NAIL EVERY 12". SEE SPECIAL NOTE 6.

(4) HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). SEE SPECIAL NOTE 6.

(5) SIDE STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN FORWARD AND REAR HEADERS PIECES MARKED (4) (2 REQD).

(6) POCKET CLEAT, 2" X 6" X 12" (2 REQD). NAIL TO A SIDE STRUT, PIECE MARKED (5) W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER, PIECE MARKED (4) W/3-12d NAILS.

(7) FILLER PIECE, 2" X 4" X 9" (AS REQD). POSITION SO AS TO BE CENTERED UNDER THE JOINT OF THE STRUT BRACE AND THE STRUT BRACE RETAINING CLEAT, PIECES MARKED (12) AND (13). NAIL TO A SIDE STRUT, PIECE MARKED (5) W/2-10d NAILS. SEE SPECIAL NOTE 6.

(8) RISER PIECE, 2" X 4" X 9" (AS REQD). NAIL TO THE BOTTOM EDGE OF THE RISER PIECE MARKED (3), AND/OR TO A FILLER PIECE, PIECE MARKED (7) W/2-10d NAILS. SEE SPECIAL NOTE 6.

(9) CENTER CLEAT, 2" X 6" X 24" (1 REQD). NAIL TO THE HEADER, PIECE MARKED (4) W/6-10d NAILS.

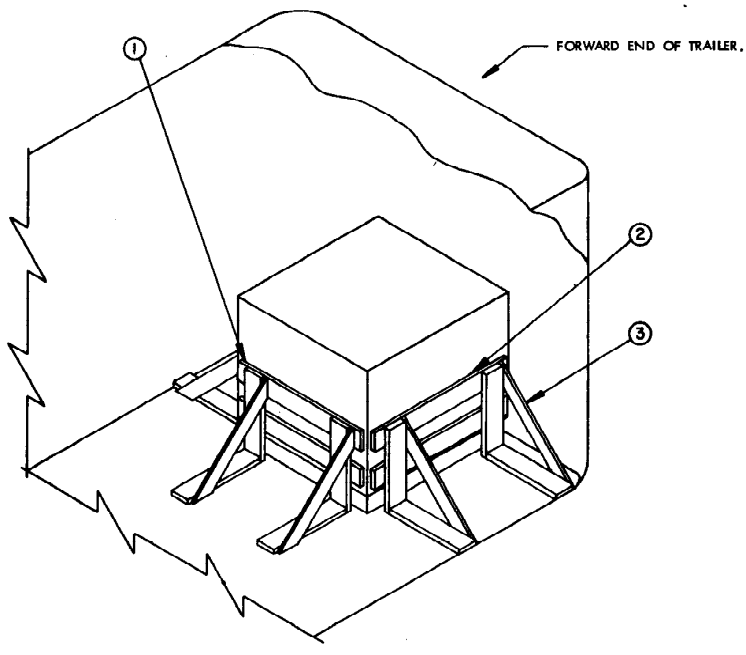
(10) DIAGONAL BRACE, 2" X 6" BY CUT-TO-FIT (2 REQD). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT A 45° ANGLE AS SHOWN AND TOENAIL TO THE ADJACENT HEADER AND SIDE STRUT, PIECES MARKED (4) AND (5) W/2-16d NAILS AT EACH END.

(11) SIDE CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO THE SIDE STRUT, PIECE MARKED (5) W/8-10d NAILS.

(12) STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT, PIECE MARKED (5) W/3-10d NAILS.

(13) STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQUIRED). INSTALL ONE (1) NEAR THE REAR OF THE TRAILER AS SHOWN. ONE (1) ADDITIONAL PIECE REQUIRED FOR EVERY 7'-0" OF STRUT LENGTH. NAIL TO THE STRUT BRACE RETAINING CLEATS, PIECES MARKED (12) W/2-12d NAILS AT EACH END.

TYPICAL LTL (5-UNIT LOAD) IN A CONVENTIONAL VAN TRAILER WITH PALLETS LOADED LENGTHWISE



ISOMETRIC VIEW

SPECIAL NOTES:

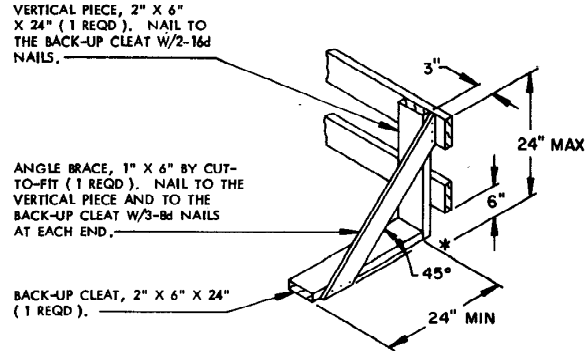
1. A 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. THE PALLET UNIT SHOWN HAS OVERALL DIMENSIONS OF 45-5/8" WIDE BY 42-3/4" LONG BY 4T-1/8" HIGH AND WEIGHS APPROXIMATELY 2,344 POUNDS.
3. THE POSITIONING OF A UNIT IS 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 OR LENGTH OF THE TRAILER.

KEY NUMBERS

(1) LOAD BEARING PIECE, 1" X 6" X 40" (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 "N" AND "O" ON PAGE 2.

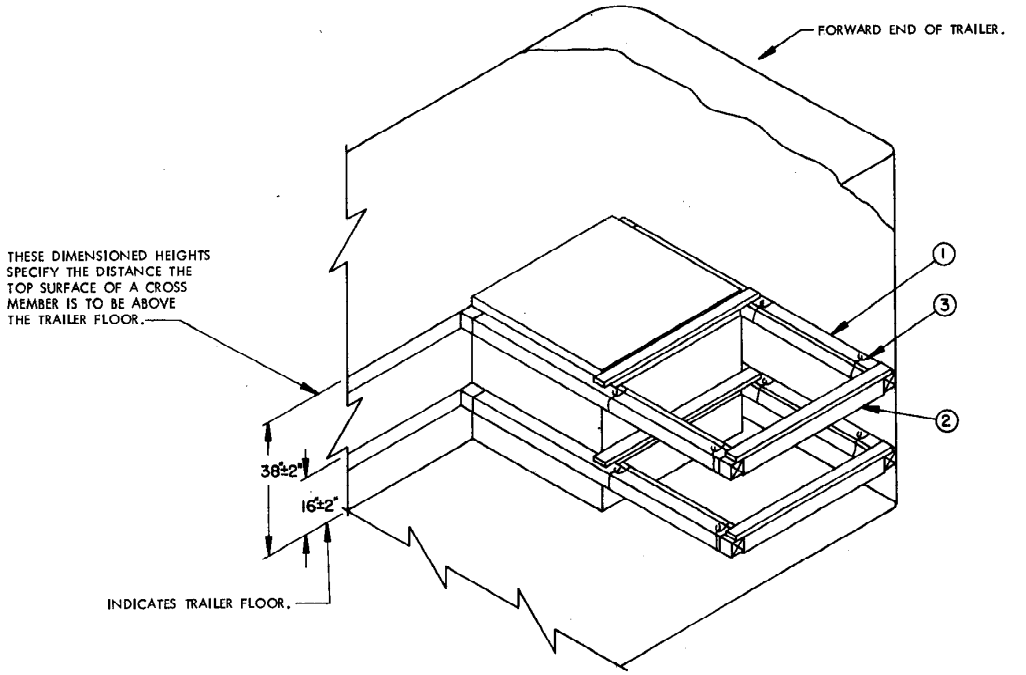
(2) LOAD BEARING PIECE, 1" X 6" X 44" (4 REQD). LOCATE AT THE HEIGHTS AS SPECIFIED IN THE "LTL BRACE" DETAIL BELOW. NAIL TO THE LTL BRACES W/4-6d NAILS AT EACH JOINT. SEE GENERAL NOTES "N" AND "O" ON PAGE 2.

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



LTL BRACE

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



ISOMETRIC VIEW

SPECIAL NOTES:

1. A 7'-6" WIDE (INSIDE DIMENSION) VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES IS SHOWN. TRAILERS OF OTHER WIDTHS MAY BE USED.
2. THE PALLET UNIT SHOWN IN THE TYPICAL LTL LOAD HAS OVERALL DIMENSIONS OF 42-3/4" LONG BY 45-5/8" WIDE BY 41-1/8" HIGH AND WEIGHS APPROXIMATELY 2,344 POUNDS.
3. THE SPECIFIED CROSS MEMBER LOCATION DIMENSIONS ARE APPLICABLE FOR ALL PALLET UNITS DEPICTED HEREIN.
4. A TYPICAL LTL LOAD OF ONE (1) PALLET UNIT IS SHOWN. IF TWO (2) PALLET 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) PALLET UNITS ACROSS THE WIDTH OF THE TRAILER, POSITION THE UNITS AGAINST THE FORWARD END WALL (UNLESS THE TRAILER HAS ROUNDED CORNERS) AND OMIT THE TWO CROSS MEMBERS AT THE FORWARD END. INSTALL AN ANTI-SWAY BRACE BETWEEN UNITS, IF TRAILER WIDTH IS 7'-8" OR WIDER.

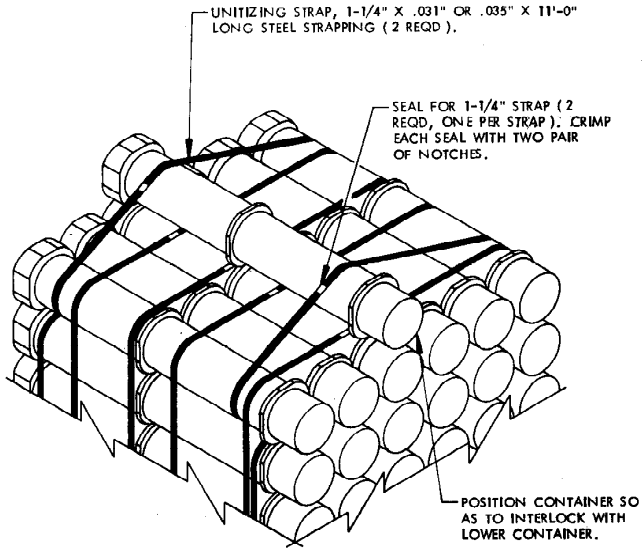
KEY NUMBERS

(1) CROSS MEMBER (4 REQD). POSITION AT THE HEIGHTS AS SPECIFIED BY THE ISOMETRIC VIEW ABOVE. SEE GENERAL NOTES "D" AND "K" ON PAGE 2.

(2) SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY B" DETAIL ON PAGE 19. SEE GENERAL NOTES "N" AND "O" ON PAGE 2.

(3) TIE WIRE, NO. 14 GAGE WIRE 30" LONG (8 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBER AND 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.

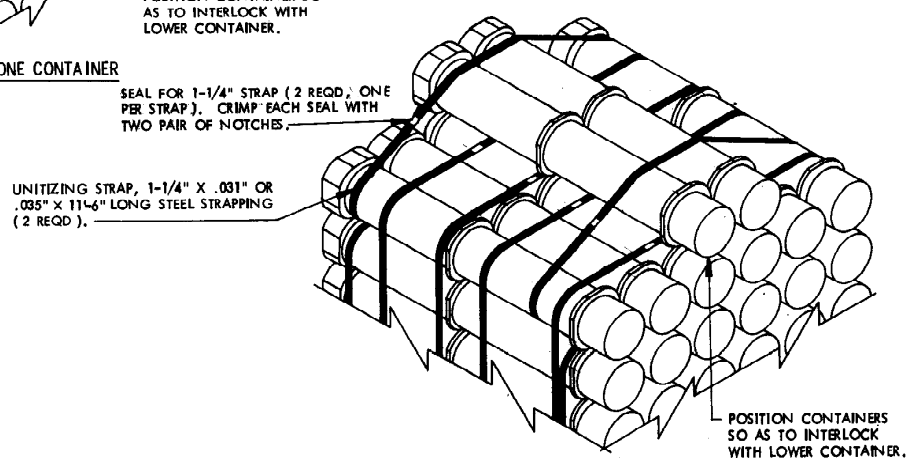
TYPICAL LTL (1-UNIT LOAD) IN A TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



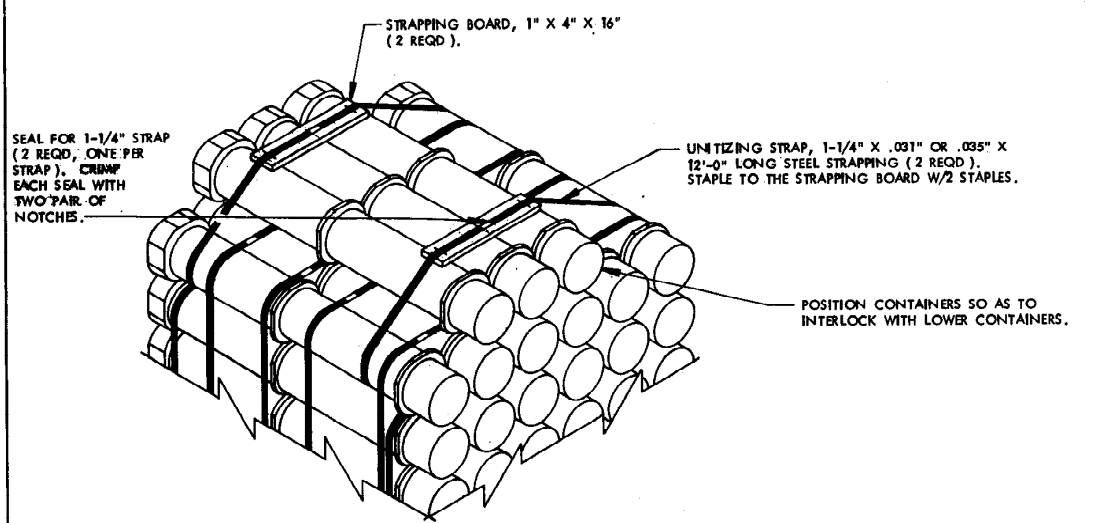
SECUREMENT OF ONE CONTAINER

SPECIAL NOTES:

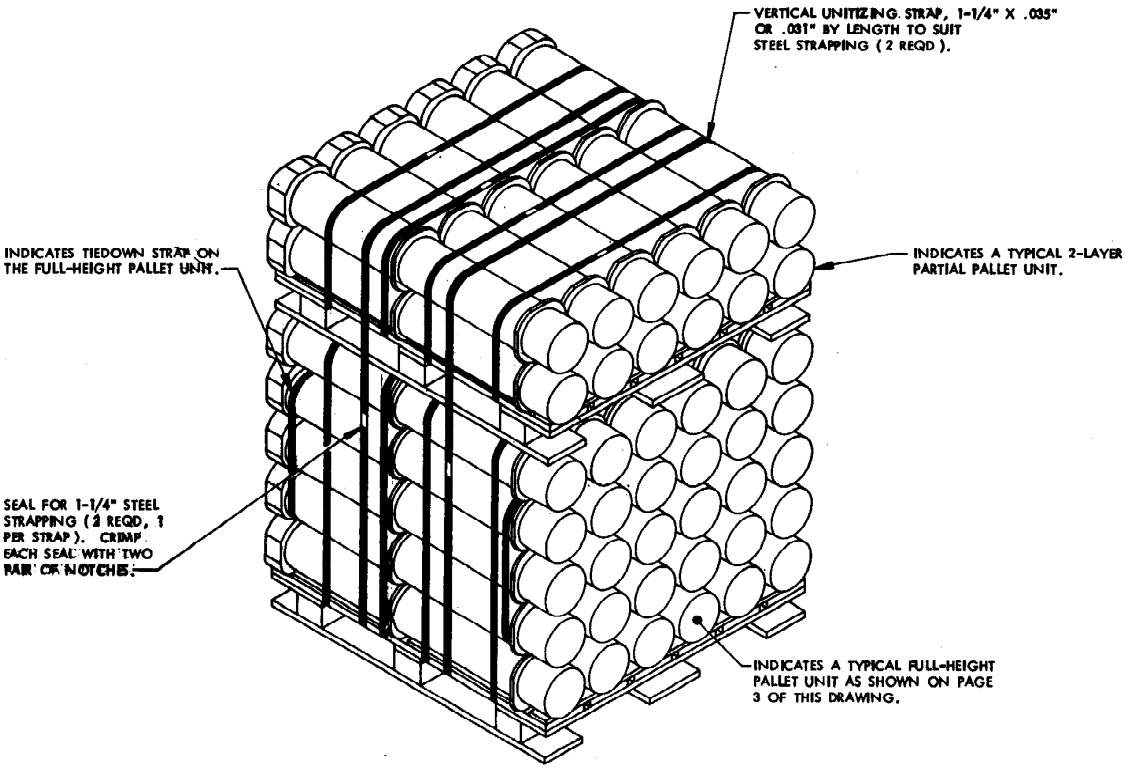
1. SHIPMENTS OF COMPLETE ROUNDS IN METAL CONTAINERS SHOULD CONSIST OF FULL-HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT, OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION, MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LEFTOVER CONTAINERS. LEFTOVER CONTAINERS 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 14.
2. SHIPMENT OF LEFTOVER CONTAINERS IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT OR DEPOT TO POSTS, CAMPS, AND STATIONS, OR, UPON APPROVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLE, 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. 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.
4. THE PROCEDURES ON THIS PAGE ARE APPLICABLE FOR THE SHIPMENT OF LEFTOVER CONTAINERS IN ANY OF THE LOADS DEPICTED HEREIN.



SECUREMENT OF TWO CONTAINERS



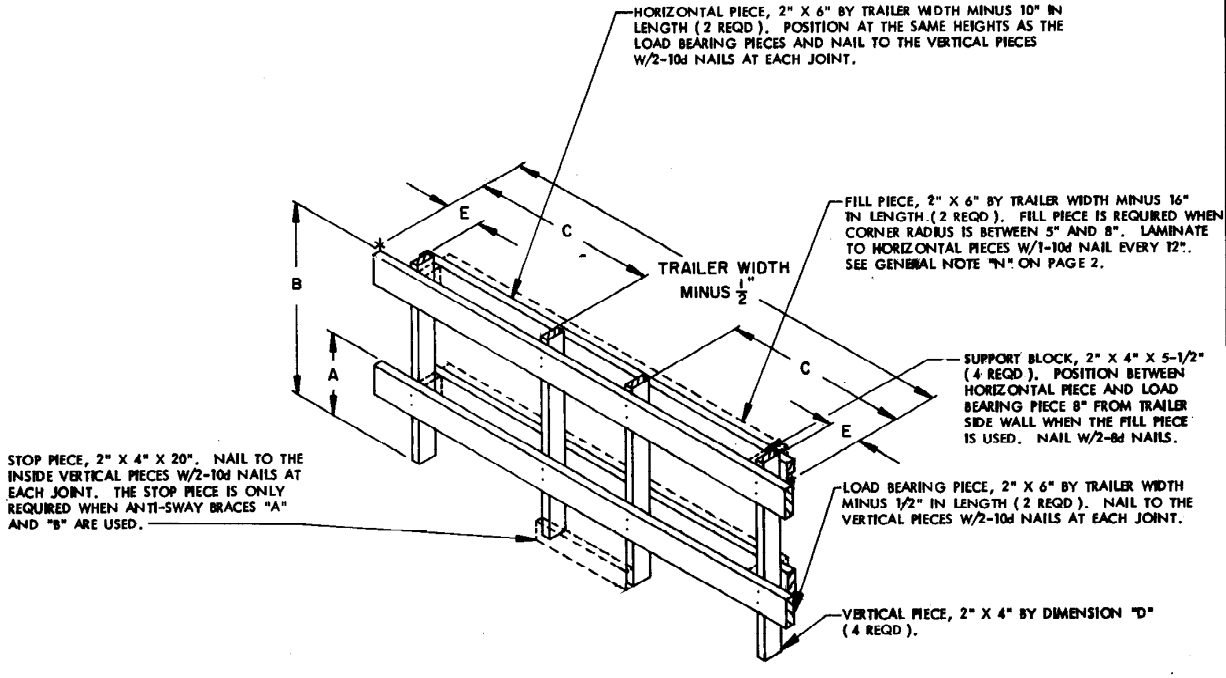
SECUREMENT OF THREE CONTAINERS



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

SPECIAL NOTES:

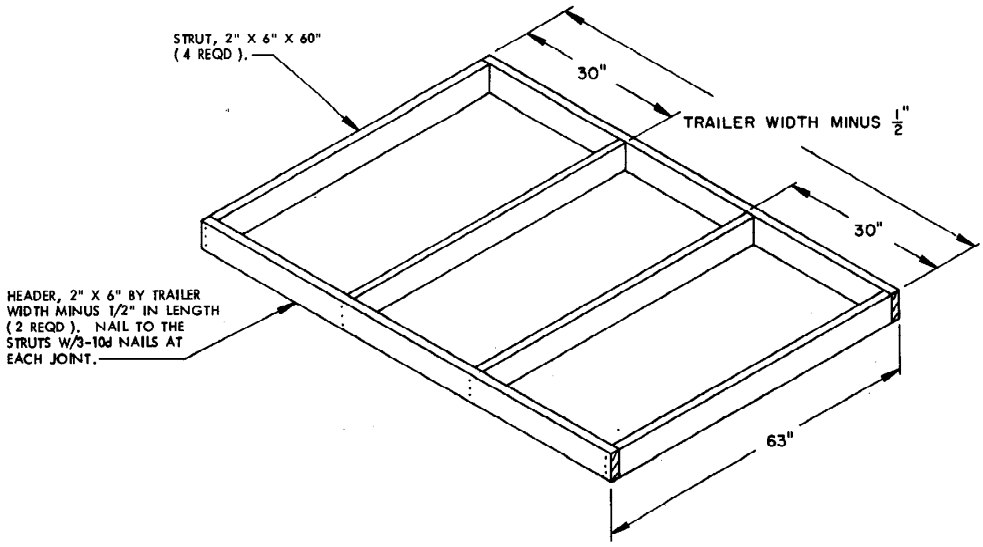
1. THE VIEW SHOWN ABOVE DEPICTS A PARTIAL 2-LAYER PALLET UNIT POSITIONED ON TOP OF A FULL-HEIGHT PALLET UNIT AND UNITIZED WITH TWO VERTICAL UNITIZING STRAPS. PLACEMENT WITHIN THE LOAD IS OPTIONAL.
2. SHIPMENT OF PALLET UNITS SHOULD CONSIST OF FULL-HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE. 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. THE PROCEDURES ON THIS PAGE AND ON PAGE 13 ARE PRESENTED AS GUIDANCE IN THE SHIPMENT OF THESE PARTIAL UNITS.
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 THREE "LEFTOVER" CONTAINERS, SEE THE PROCEDURES ON PAGE 13 OF THIS DRAWING.



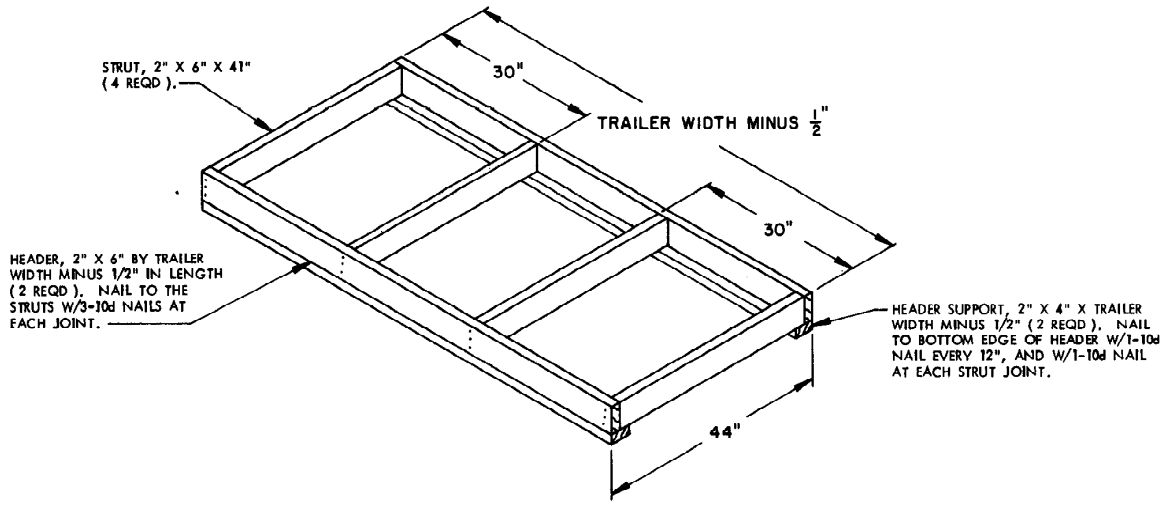
FORWARD BLOCKING ASSEMBLY

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 5". IF THE RADIUS IS FROM 5" TO 8", ADD THE FILL PIECE AND SUPPORT BLOCKS SHOWN ABOVE. IF THE TRAILER TO BE LOADED HAS LARGE ANGLED CORNERS AT THE FORWARD END REFER TO PAGE 22 FOR GUIDANCE.

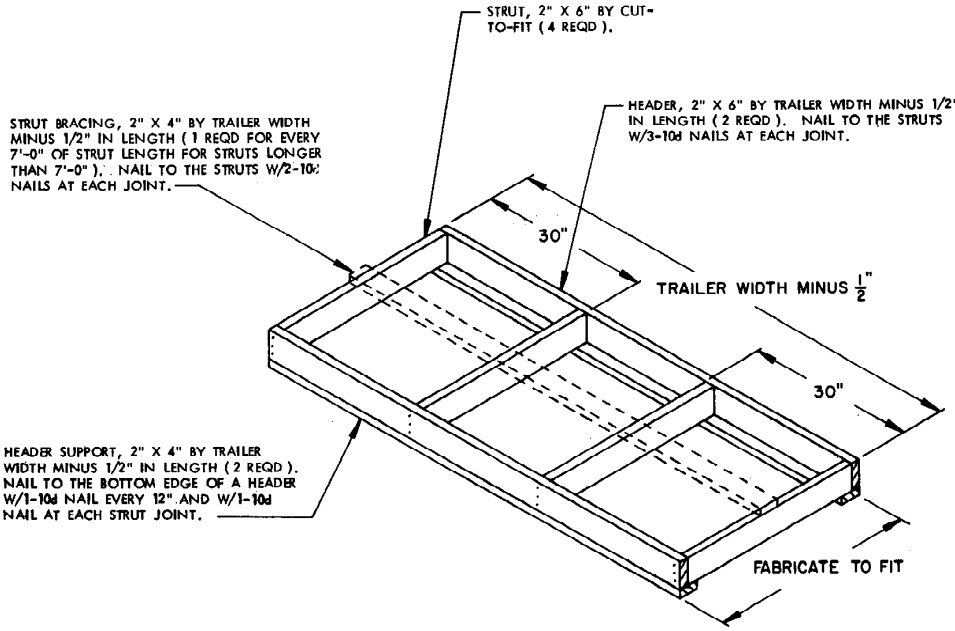
FORWARD BLOCKING CHART					
LOAD PAGE	A	B	C	D	E
4	15-3/4"	36-3/4"	35"	37-3/4"	6-1/2"
8	19-1/4"	33-1/4"	44"	34-1/4"	5"



CENTER BLOCKING ASSEMBLY A

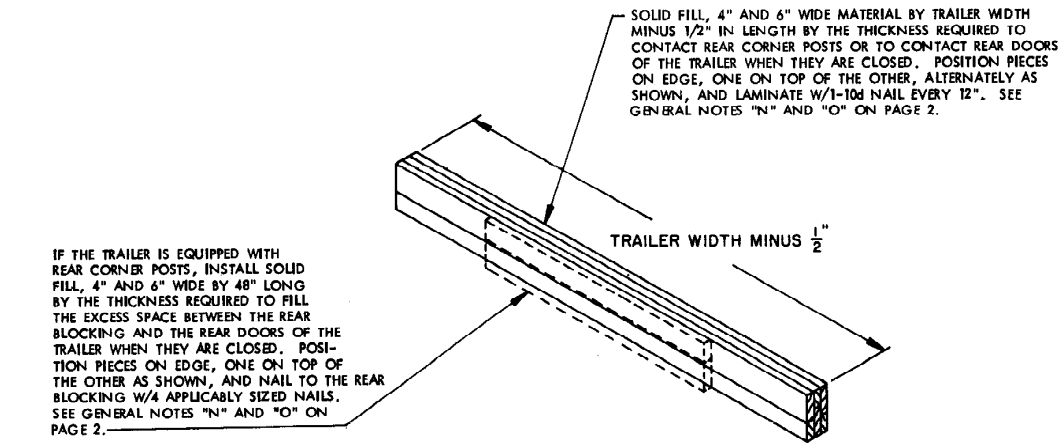


CENTER BLOCKING ASSEMBLY B



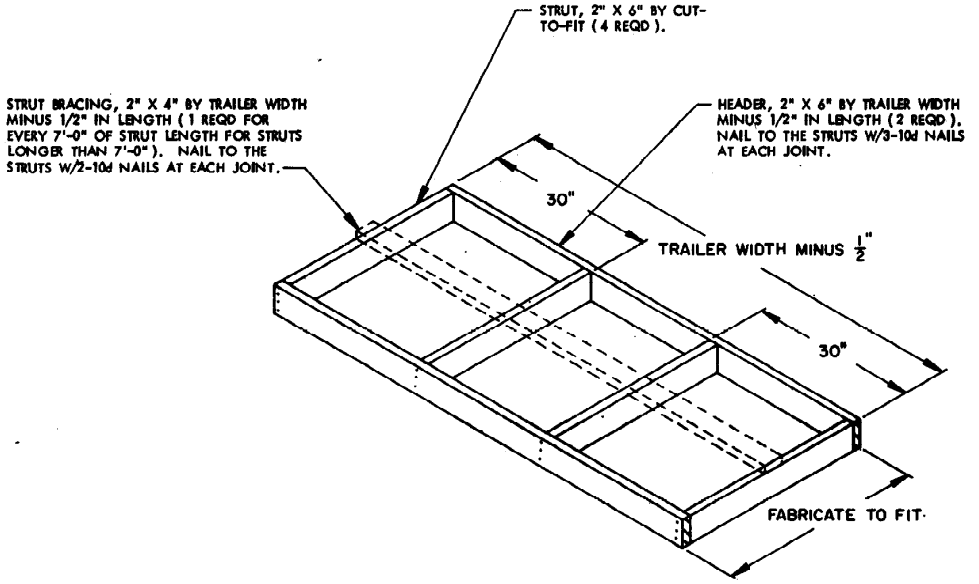
REAR BLOCKING ASSEMBLY A

THIS ASSEMBLY IS FOR USE AT THE REAR OF A LOAD IN A CONVENTIONAL VAN TRAILER WHEN THE EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS 9" OR GREATER.



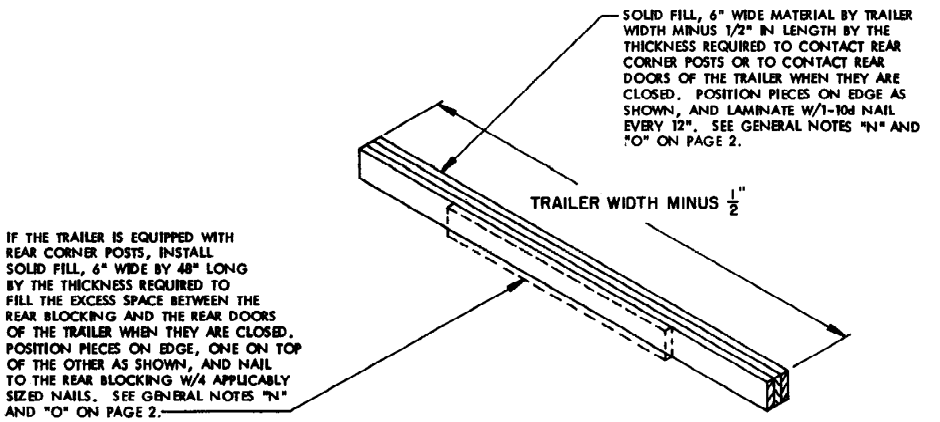
REAR BLOCKING ASSEMBLY B

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



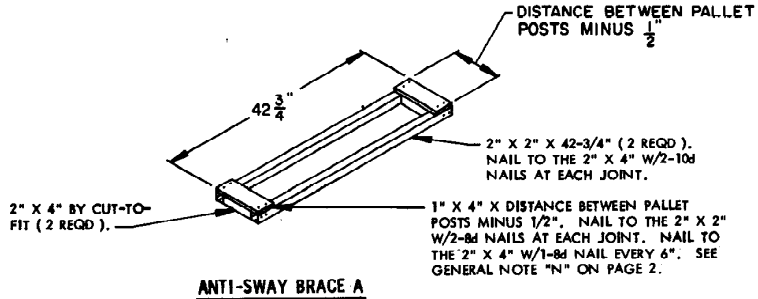
REAR BLOCKING ASSEMBLY C

THIS ASSEMBLY IS FOR USE AT THE REAR OF A LOAD IN A CONVENTIONAL VAN TRAILER WHEN THE REARMOST LOAD UNIT IS ONLY ONE UNIT IN HEIGHT AND THE EXCESS SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS 9" OR GREATER.



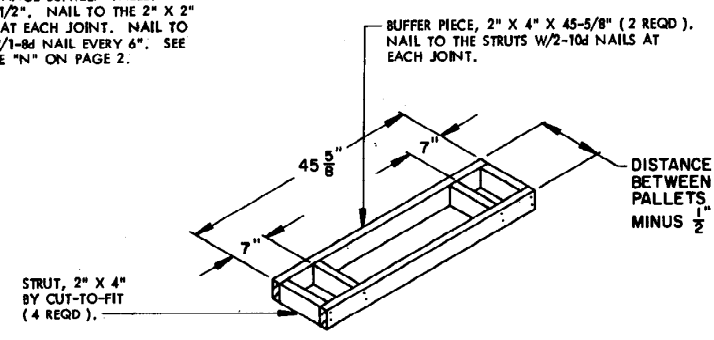
REAR BLOCKING ASSEMBLY D

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



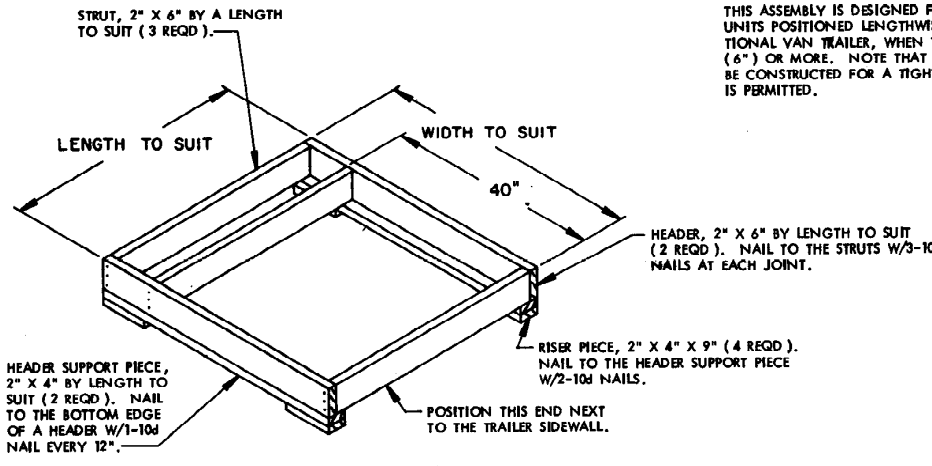
ANTI-SWAY BRACE A

THIS ASSEMBLY IS DESIGNED FOR USE BETWEEN PALLET UNITS POSITIONED CROSSWISE WITHIN A CONVENTIONAL VAN TRAILER, WHEN THE VOID IS SIX INCHES (6") OR MORE. NOTE THAT THE ASSEMBLY NEED NOT BE CONSTRUCTED FOR A TIGHT FIT, UP TO 1/2" SPACE IS PERMITTED.



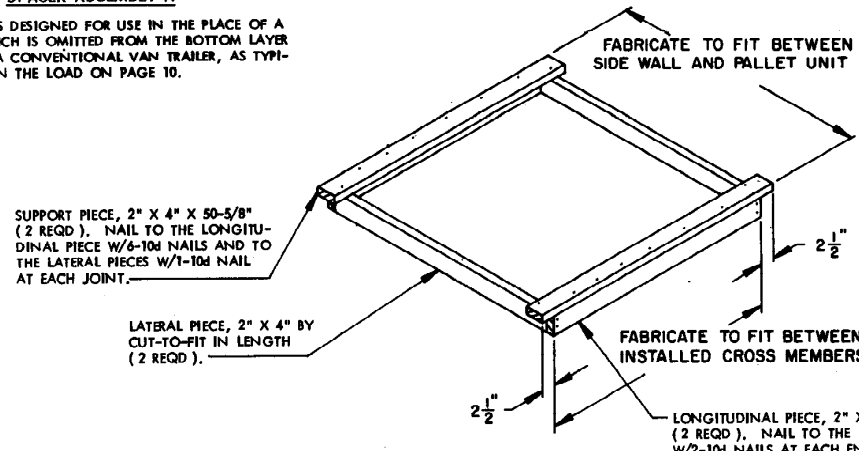
ANTI-SWAY BRACE B

THIS ASSEMBLY IS DESIGNED FOR USE BETWEEN PALLET UNITS POSITIONED LENGTHWISE WITHIN A CONVENTIONAL VAN TRAILER, WHEN THE VOID IS SIX INCHES (6") OR MORE. NOTE THAT THE ASSEMBLY NEED NOT BE CONSTRUCTED FOR A TIGHT FIT, UP TO 1/2" SPACE IS PERMITTED.



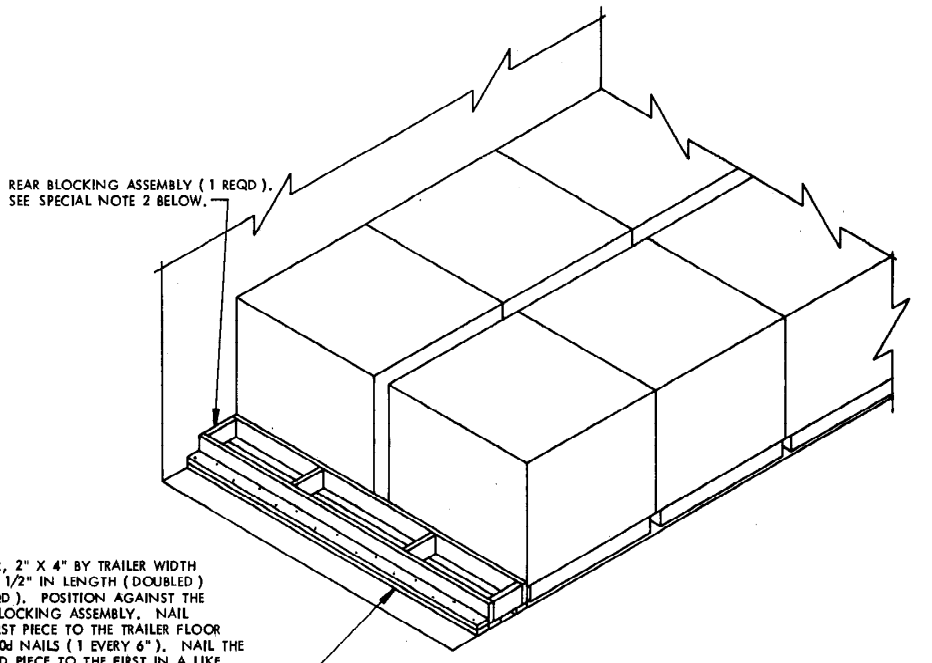
SPACER ASSEMBLY A

THIS ASSEMBLY IS DESIGNED FOR USE IN THE PLACE OF A PALLET UNIT WHICH IS OMITTED FROM THE BOTTOM LAYER OF A LOAD IN A CONVENTIONAL VAN TRAILER, AS TYPICALLY SHOWN IN THE LOAD ON PAGE 10.



SPACER ASSEMBLY B

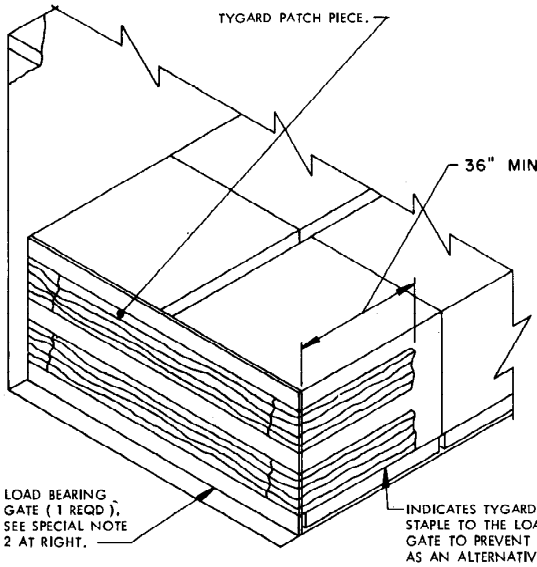
THIS ASSEMBLY IS DESIGNED FOR USE AS LATERAL BRACING IN A TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES.



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. THE REAR BLOCKING ASSEMBLY WHICH IS SPECIFIED WITHIN THE KEY NUMBERS FOR THE ITEM BEING LOADED WILL BE USED AT THE REAR OF THE LOAD. 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.



TYGARD METHOD

SPECIAL NOTES:

1. THE TYGARD METHOD OF REAR BLOCKING DEPICTED AT LEFT 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 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 BY TRAILER WIDTH MINUS 1/2" IN LENGTH PIECE OF PLYWOOD WILL BE USED FOR A GATE WHEN THE REAR LOAD UNIT IS ONLY ONE PALLET UNIT HIGH.

3. TYGARD MATERIAL MUST BE INSTALLED AT TWO LEVELS FOR EACH LAYER OF THE LOAD WHEN SHIPPING THE UNITS.

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.

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.

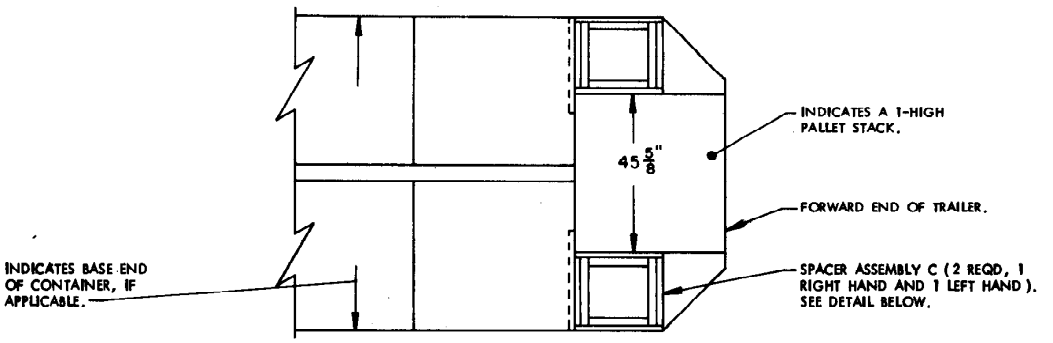
2. PRIOR TO POSITIONING OF THE PALLETS IN THE REARMOST LOAD UNIT, APPLY TYGARD ADHESIVE TO THE PROPER PORTIONS OF THE TRAILER SIDEWALLS AND TO THE CORD SIDE OF A CORRESPONDING LENGTH OF EACH OF THE TYGARD PIECES THAT ARE TO BE ATTACHED TO THE SIDEWALLS OF THE TRAILER. ALLOW TIME FOR THE ADHESIVE TO "CURE" 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 THE 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 OR CRIB FILL.

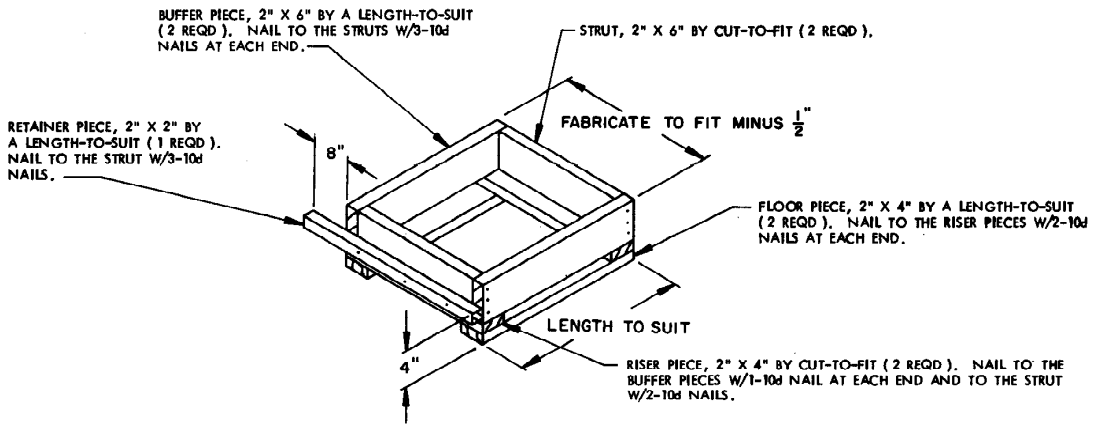
5. UNDO THE PREVIOUSLY SECURED LOOSE ENDS AND BRING A SET OF TWO PIECES TOGETHER ACROSS THE REAR OF THE LOAD. POSITION THE TENSIONING ROD SO THAT THE LOOSE ENDS OF THE TYGARD MATERIAL EXTEND THRU THE SLOT IN ROD. USING THE TWO WRENCHES, ROLL UP THE TYGARD TO TENSION IN THE TYGARD PIECES. CUT OFF AND DISCARD EXCESS MATERIAL FROM ONE PIECE OF THE TYGARD.

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



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.



SPACER ASSEMBLY C

THIS ASSEMBLY IS DESIGNED FOR LATERAL BRACING OF A SINGLE PALLET UNIT WHICH IS POSITIONED IN THE FRONT OF AN ANGLED-CORNER CONVENTIONAL VAN TRAILER AS SHOWN IN THE FORWARD LOADING PATTERN A VIEW. RIGHT HAND AND LEFT HAND ASSEMBLIES ARE REQUIRED.

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