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

PA100 SERIES CONTAINER

INDEX

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

DO NOT SCALE

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PROJECT FSA 43C/20-63

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 PA100 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/21-20PA1001 FOR UNITIZATION PROCEDURES FOR THE PA100 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 8'-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.

(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, 1100 POUNDS/INCH OF WIDTH STRENGTH.

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

(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 PROPELLING CHARGERS, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.

K. ALL LOADS ARE SHOWN IN TRAILERS HAVING ROUNDED CORNERS AT THE FORWARD END. IF THE CONVENTIONAL VAN TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT OR WITH AN INSTALLED BULKHEAD, OMIT THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ① , AND POSITION THE PALLET UNITS DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER; OMIT CROSS MEMBERS IN THE FORWARD END OF MECHANICAL VAN TRAILERS HAVING A SQUARE FRONT.

L. PALLET UNITS WHICH DO NOT CONTAIN A FULL QUANTITY OF ITEMS CAN BE TRANSPORTED. SEE THE "SHIPMENT OF A PARTIAL PALLET UNIT" DETAIL AND SPECIAL NOTES ON PAGE 23. FOR "SHIPMENT OF LEFTOVER CONTAINERS", SEE THE DETAILS AND SPECIAL NOTES ON PAGE 24.

M. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE (1) SEAL WITH TWO (2) PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP- TYPE SEALER IS BEING USED. REFER TO THE "STRAP JOINT A" AND "STRAP JOINT B" DETAILS ON PAGE 33 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.

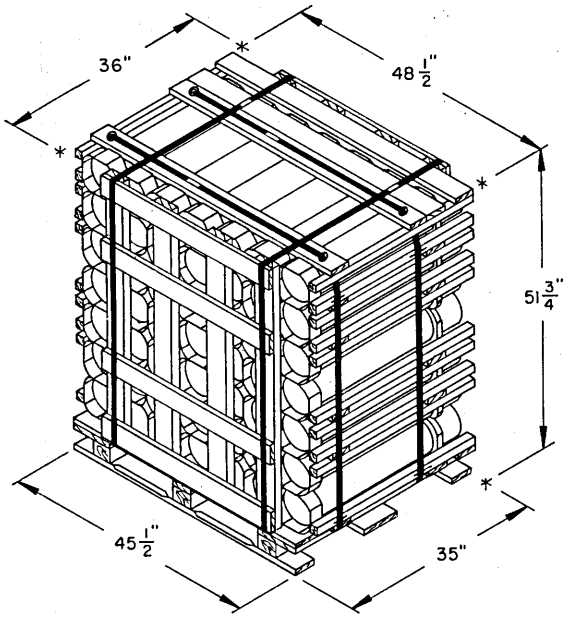
P. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES WHICH ARE TO BE USED IN THE DELINEATED TRAILER LOADS SHOWN THROUGHOUT THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIED NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE 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.

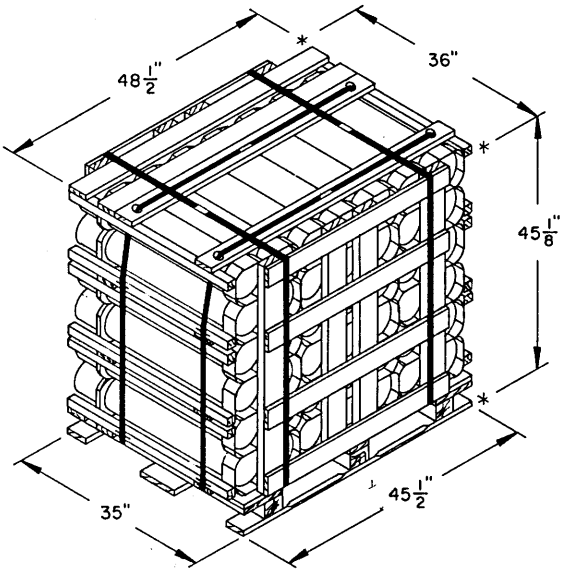
T. THE PALLET UNITS DEPICTED ON PAGE 3 MAY BE LOADED AS A MIXED LOAD IN THE SAME TRAILER. FOR MIXED-HEIGHT LOADS, POSITION ALL PALLET UNITS OF ONE HEIGHT IN ONE LAYER, WITH THE TALLER UNITS BEING IN THE BOTTOM LAYER. IF FULL LAYERS OF ONE HEIGHT UNIT ARE NOT POSSIBLE FOR THE QUANTITY OF EACH SIZE TO BE SHIPPED, THE TALLER UNITS WILL BE LOADED IN THE FORWARD PORTION OF THE TRAILER WITH THE SHORTER HEIGHT UNITS IN THE REAR PORTION. CARE MUST BE EXERCISED WHEN SHIPPING MIXED HEIGHT UNITS IN TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES TO ENSURE THAT THE CROSS MEMBERS CONTACT THE PALLET DUNNAGE AND/OR INTERMEDIATE DUNNAGE ASSEMBLY OF A UNIT BY AT LEAST ONE-HALF THE SURFACE OF THE HEIGHT OF THE CROSS MEMBER. LOAD BEARING GATES MUST BE INSTALLED BETWEEN THE CROSS MEMBERS AND THE PALLET UNITS IF THE CROSS MEMBERS DO NOT ALIGN PROPERLY.



7-LAYER UNIT

CONTAINER ---------- 49 EACH @ 26 LBS (APPROX)
CUBE---------- 52.3 CUBIC FEET (APPROX)
GROSS WEIGHT ---------- 1,483 LBS (APPROX)

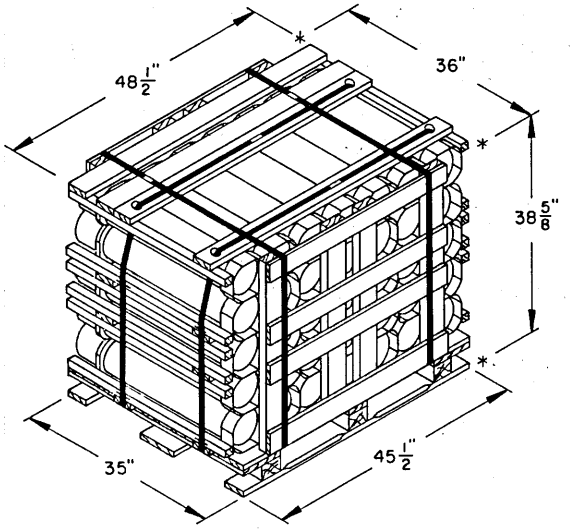
REFER TO PAGES 4 THRU 7 AND PAGES 18 AND 19 FOR OUTLOADING PROCEDURES.



6-LAYER UNIT

CONTAINER ---------- 42 EACH @ 26 LBS (APPROX)
CUBE ---------- 45.6 CUBIC FEET (APPROX)
GROSS WEIGHT ---------- 1,275 LBS (APPROX)

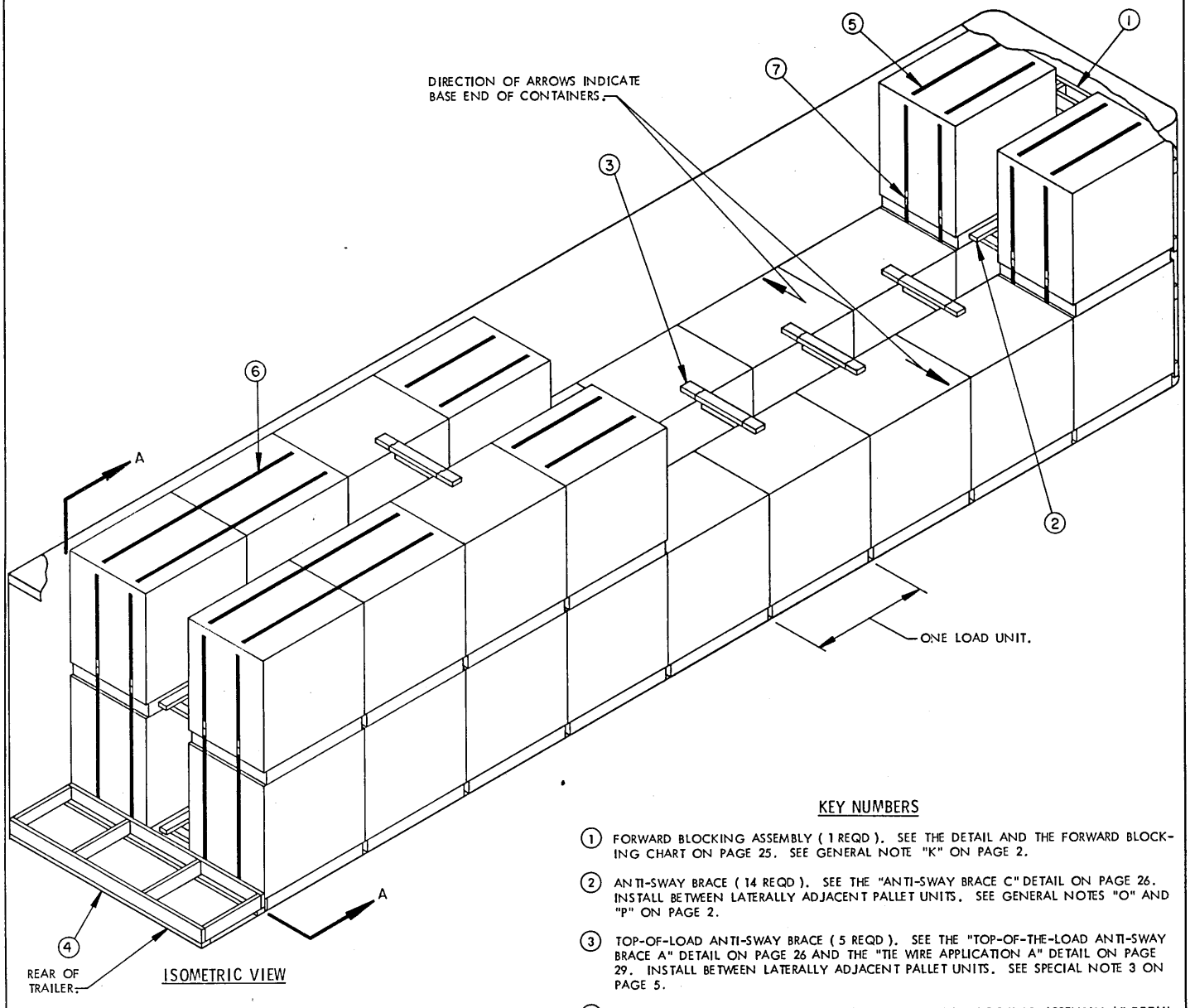
REFER TO PAGES 8 THRU 11 AND PAGES 18 AND 19 FOR OUTLOADING PROCEDURES.



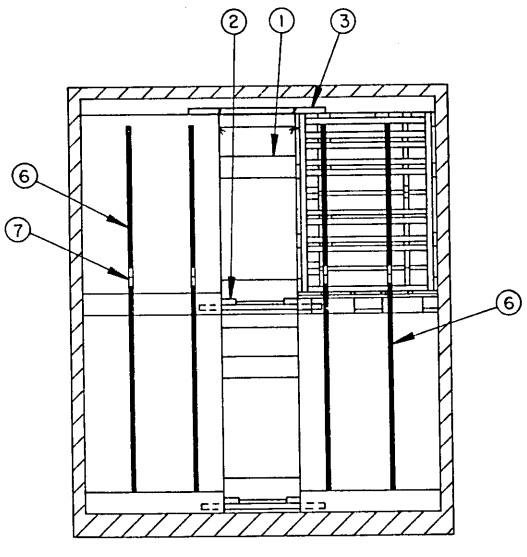
5-LAYER UNIT

CONTAINER ---------- 35 EACH @ 26 LBS (APPROX)
CUBE ---------- 39.0 CUBIC FEET (APPROX)
GROSS WEIGHT ---------- 1,081 LBS

REFER TO PAGES 12 THRU 19 FOR OUTLOADING PROCEDURES.



ISOMETRIC VIEW



SECTION A-A

KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.

(2) ANTI-SWAY BRACE (14 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 26. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.

(3) TOP-OF-LOAD ANTI-SWAY BRACE (5 REQD). SEE THE "TOP-OF-THE-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 26 AND THE "TIE WIRE APPLICATION A" DETAIL ON PAGE 29. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 3 ON PAGE 5.

(4) REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 30. SEE SPECIAL NOTE 4 ON PAGE 5.

(5) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 26'-6" LONG STEEL STRAPPING (8 REQD). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY. INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 5.

(6) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 34'-6" LONG STEEL STRAPPING (4 REQD). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS IN THE SECOND LAYER AND TWO (2) UNITS DIRECTLY BELOW. SEE SPECIAL NOTE 6 ON PAGE 5.

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

(7-LAYER PALLET UNIT)
28-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME VAN TYPE TRAILER

SMCAC FORM 6, 1 NOV 85

PROJECT FSA 43C/20-63

SPECIAL NOTES:

1. A 28-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 8'-8" , IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT. IF A TRAILER WHICH IS 8'-2" OR WIDER IS FURNISHED FOR LOADING, THE LOADING PATTERN DEPICTED ON PAGE 16 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 4.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 4 IS THE 7-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 51-3/4" HIGH AND WEIGHING APPROXIMATELY 1,483 POUNDS.

3. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED ③ IN THE LOAD ON PAGE 4, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER, A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED.

4. 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 31. IF THE SPACE IS LESS THAN 1-1/2" REAR BLOCKING IS NOT REQUIRED. SEE SPECIAL NOTE 11.

5. THE STACK UNITIZING STRAPS, PIECES MARKED ⑤ IN THE LOAD ON PAGE 4, WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER, EXCEPT AT THE VERY REAR OF THE LOAD.

6. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS , SHOWN AS PIECE MARKED ⑥ , MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS IN EACH APPLICABLE ROW.

7. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER OF EITHER ROW, IT MUST NOT BE POSITIONED ON TOP OF THE REARMOST PALLET UNIT IN THE FIRST LAYER. PROVIDE LONGITUDINAL BRACING BY INSTALLING UNITIZING STRAPS, PIECE MARKED ⑤ . PROVIDE LATERAL BRACING BY INSTALLING A TOP-OF-LOAD ANTI-SWAY BRACE "B" AS DETAILED ON PAGE 26 AND SHOWN IN THE LOAD VIEW ON PAGE 6 AS PIECE MARKED ⑥ . WIRE TIE AS SHOWN BY THE "TIE WIRE APPLICATION B" DETAIL ON PAGE 29.

8. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.

10. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.

11. 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 34 AND 35 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

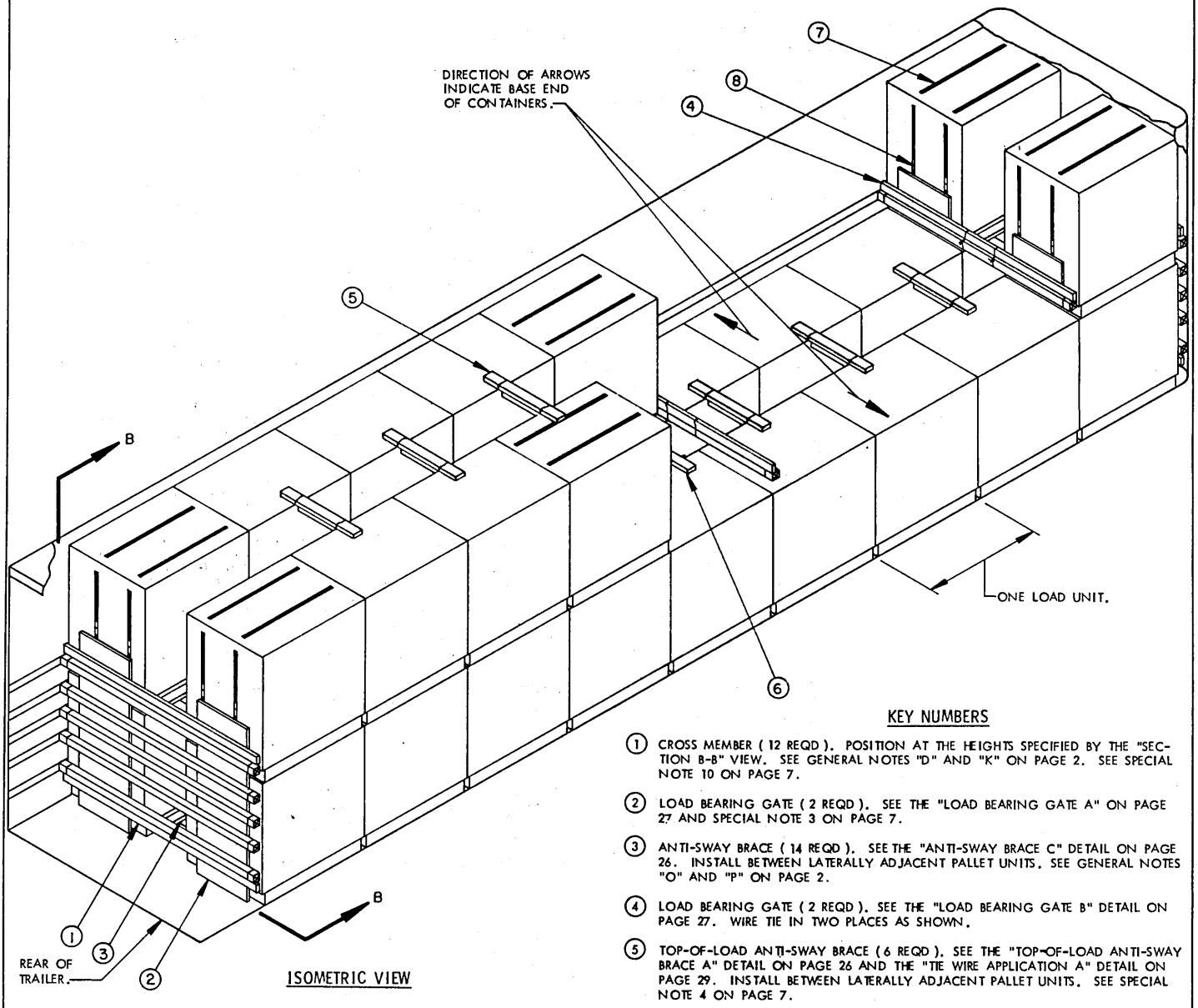
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	231	154
2" X 6"	81	81
NAILS	**NO. REQD**	**POUNDS**
10d (3")	302	4-3/4

STEEL STRAPPING, 1-1/4" X .035" OR .031" ---350' REQD ------ 50 LBS
SEAL FOR 1-1/4" STRAPPING ---------- 24 REQD ------ 1 LB
WIRE, NO. 14 GAGE ---------- 30' REQD ------ 1/2 LB

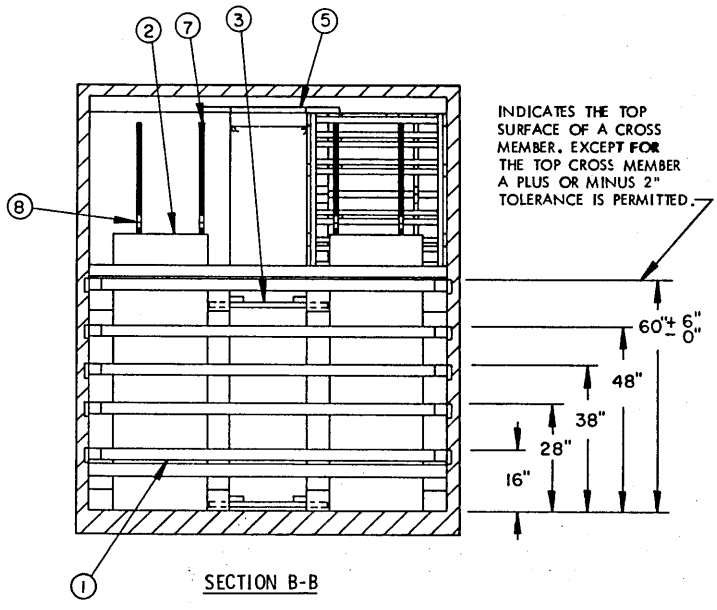
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	28	41,524 LBS
DUNNAGE		527 LBS
TOTAL WEIGHT		42,051 LBS

(7-LAYER PALLET UNIT)
28-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME VAN TYPE TRAILER



ISOMETRIC VIEW



SECTION B-B

KEY NUMBERS

(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. SEE SPECIAL NOTE 10 ON PAGE 7.

(2) LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE A" ON PAGE 27 AND SPECIAL NOTE 3 ON PAGE 7.

(3) ANTI-SWAY BRACE (14 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 26. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.

(4) LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 27. WIRE TIE IN TWO PLACES AS SHOWN.

(5) TOP-OF-LOAD ANTI-SWAY BRACE (6 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 26 AND THE "TIE WIRE APPLICATION A" DETAIL ON PAGE 29. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 7.

(6) TOP-OF-LOAD ANTI-SWAY BRACE "B" (1 REQD). SEE THE DETAIL ON PAGE 26. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER ENDS OF THE SUPPORT PIECES TO THE END DUNNAGE ASSEMBLY OF UNIT. SEE THE "TIE WIRE APPLICATION B" DETAIL ON PAGE 29. SEE SPECIAL NOTE 5 ON PAGE 7.

(7) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 26'-6" LONG STEEL STRAPPING (12 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY OF THE UPPER PALLET UNITS. INSTALL TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 7.

(8) SEAL FOR 1-1/4" STRAPPING (24 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

(7-LAYER PALLET UNIT)

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

SMCAC FORM 6, 1 NOV 85

PROJECT FSA 43C/20-63

SPECIAL NOTES:

1. A 29-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES (CROSS MEMBERS AND STATIONARY WALL MEMBERS) AND ROUNDED CORNERS. WIDER OR NARROWER TRAILERS MAY BE USED.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 6 IS THE 7-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 51-3/4" HIGH AND WEIGHING APPROXIMATELY 1,483 POUNDS.

3. IF PLYWOOD IS NOT AVAILABLE FOR THE CONSTRUCTION OF LOAD BEARING GATES, OR IF DEISRED, PIECES MARKED (2) AND (4) MAY BE CONSTRUCTED FROM 1" AND/OR 2" LUMBER. SEE THE ALTERNATIVE LOAD BEARING GATE "A" AND "B" DETAILS ON PAGE 28.

4. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED (5) IN THE LOAD ON PAGE 6, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER, A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED. NOTE THAT TEN (10) ADDITIONAL UNITIZING STRAPS MAY BE USED IN LIEU OF THREE (3) SECOND-LAYER PIECES MARKED (5)

5. IF ONLY ONE PALLET UNIT IS LOADED IN THE SECOND LAYER, SPACER ASSEMBLY PROCEDURES AS SPECIFIED ON PAGE 22 MAY BE USED, OR THE TOP-OF-LOAD ANTI-SWAY BRACE "B" AND STACK UNITIZING STRAPS,SHOWN AS PIECES MARKED (6) AND (7) , MAY BE USED.

6. A STACK UNITIZING STRAP, PIECE MARKED (7) , WILL BE APPLIED AROUND THE REARMOST COMPLETE STACK AND AROUND THE MOST FORWARD COMPLETE STACK IN EACH ROW WHERE THE NUMBER OF TIERS (LAYERS IN THE LOAD) CHANGES.

7. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FIVE (5) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.

9. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 22.

10. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS AND LOAD BEARING GATE "A" PIECES MARKED (1) AND (2) , WILL BE OMITTED FROM THE FRONT OF THE LOAD; UNLESS THE TRAILER HAS A SQUARE FRONT, A FORWARD BLOCKING ASSEMBLY WILL BE REQUIRED. SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25.

BILL OF MATERIAL

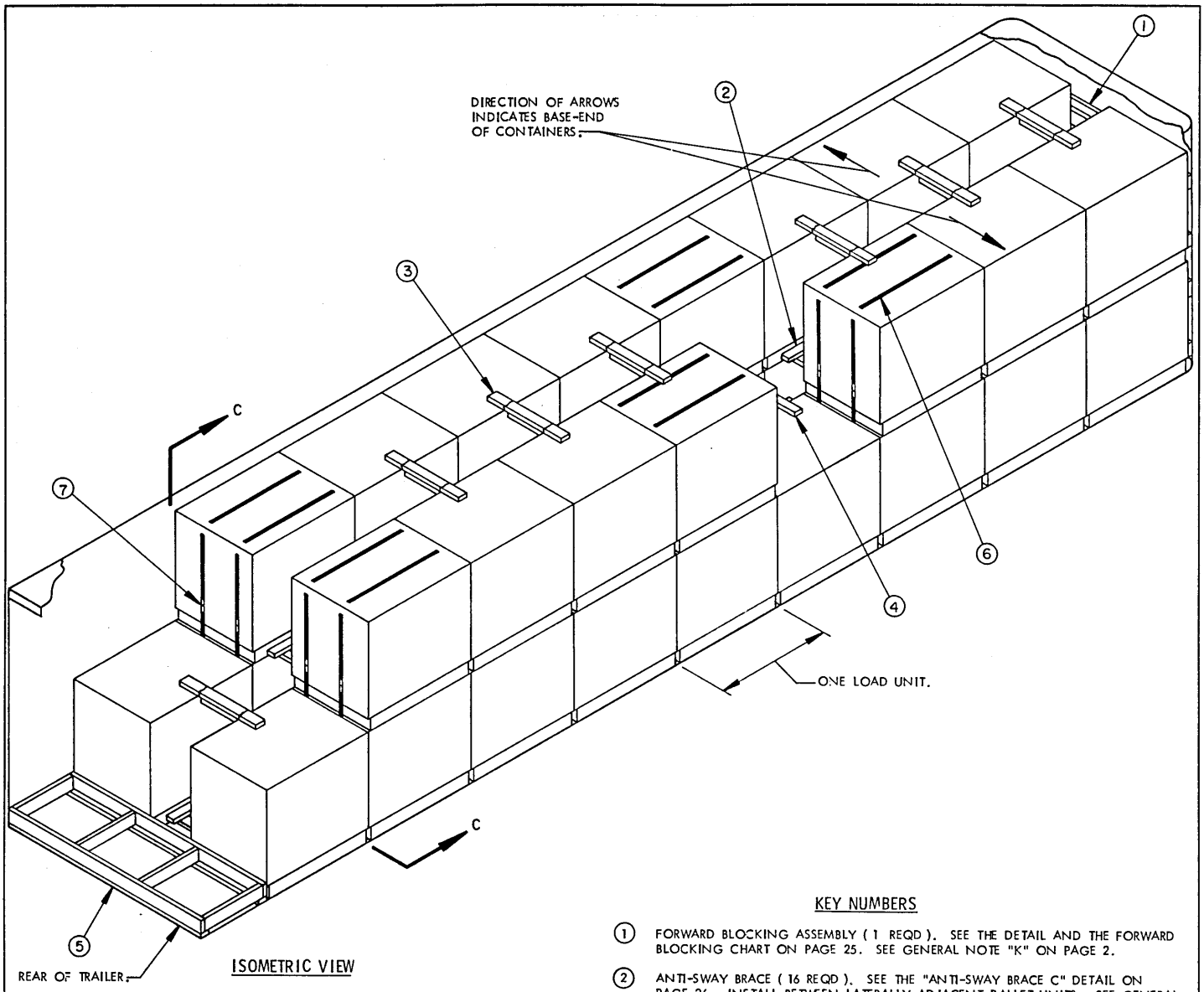
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	31	11
2" X 4"	217	145
NAILS		
6d (2")	66	1/2
10d (3")	214	3-1/4

STEEL STRAPPING, 1-1/4" X .035" OR .031" --318' REQD -------- 46 LBS
SEAL FOR 1-1/4" STRAPPING ---------- 24 REQD -------- 1 LB
PLYWOOD. 1/2" ----------31 SQ FT REQD --------43 LBS
WIRE, NO. 14 GAGE ---------- 36' REQD ------ 112 LBS
CROSS MEMBER ---------- 12 REQD

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	29	43,007 LBS
DUNNAGE		407 LBS
TOTAL WEIGHT		43,414 LBS

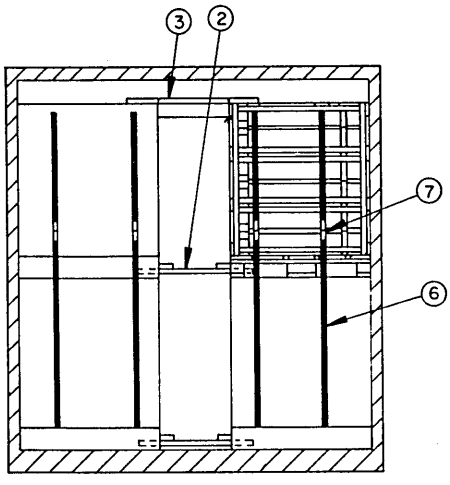
(7-LAYER PALLET UNIT)
29-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE HIGH-VOLUME TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



ISOMETRIC VIEW

KEY NUMBERS

1. FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
2. ANTI-SWAY BRACE (16 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 26. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.
3. TOP-OF-LOAD ANTI-SWAY BRACE (7 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 26 AND THE "TIE WIRE APPLICATION A" DETAIL ON PAGE 29. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 3 ON PAGE 9.
4. TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE B" DETAIL ON PAGE 26. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER ENDS OF THE SUPPORT PIECES TO THE END DUNNAGE ASSEMBLY OF UNIT. SEE THE "TIE WIRE APPLICATION B" DETAIL ON PAGE 29. SEE SPECIAL NOTE 4 ON PAGE 9.
5. REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 30. SEE SPECIAL NOTE 5 ON PAGE 9.
6. STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 24'-6" LONG STEEL STRAPPING (10 REQD). THREAD STRAP THRU HOLES ON TOP DUNNAGE ASSEMBLY; INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 9.
7. SEAL FOR 1-1/4" STRAPPING (20 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION C-C

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

SMCAC FORM 6, 1 NOV 85

PROJECT FSA 43C/20-63

SPECIAL NOTES:

1. A 33-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD. IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 7'-8" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT. IF A TRAILER WHICH IS 8'-2" OR WIDER IS FURNISHED FOR LOADING, THE LOADING PATTERN DEPICTED ON PAGE 16 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 8.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 8 IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 45-1/8" HIGH AND WEIGHING APPROXIMATELY 1,275 POUNDS.

3. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED ③ IN THE LOAD ON PAGE 8, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER , A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED.

4. THE TOP-OF-LOAD ANTI-SWAY BRACE "B", SHOWN IN THE LOAD AS PIECE MARKED ④ , IS ONLY REQUIRED FOR THE BRACING OF AN ODD UNIT IN THE SECOND LAYER. IF ANOTHER PALLET UNIT IS POSITIONED OPPOSITE THE ODD UNIT, ANTI-SWAY BRACE "C" WILL BE INSTALLED IN LIEU OF PIECE MARKED ④ ; THEN, TWO (2) ADDITIONAL UNITIZING STRAPS MARKED ⑥ WILL BE REQUIRED.

5. IF THE 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 31. IF THE SPACE IS LESS THAN 1-1/2" REAR BLOCKING IS NOT REQUIRED. SEE SPECIAL NOTE 12.

6. THE STACK UNITIZING STRAPS, PIECES MARKED ⑥ IN THE LOAD ON PAGE 8, WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER , EXCEPT AT THE VERY REAR OF THE LOAD. SEE SPECIAL NOTE 7.

7. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS IN EACH APPLICABLE ROW. SEE PIECE MARKED ⑥ ON PAGE 4 FOR TYPICAL INSTALLATION.

8. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER OF EITHER ROW, IT MUST NOT BE POSITIONED ON TOP OF THE REARMOST PALLET UNIT IN THE FIRST LAYER.

9. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

10. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS: ON PAGE 24 FOR GUIDANCE.

11. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.

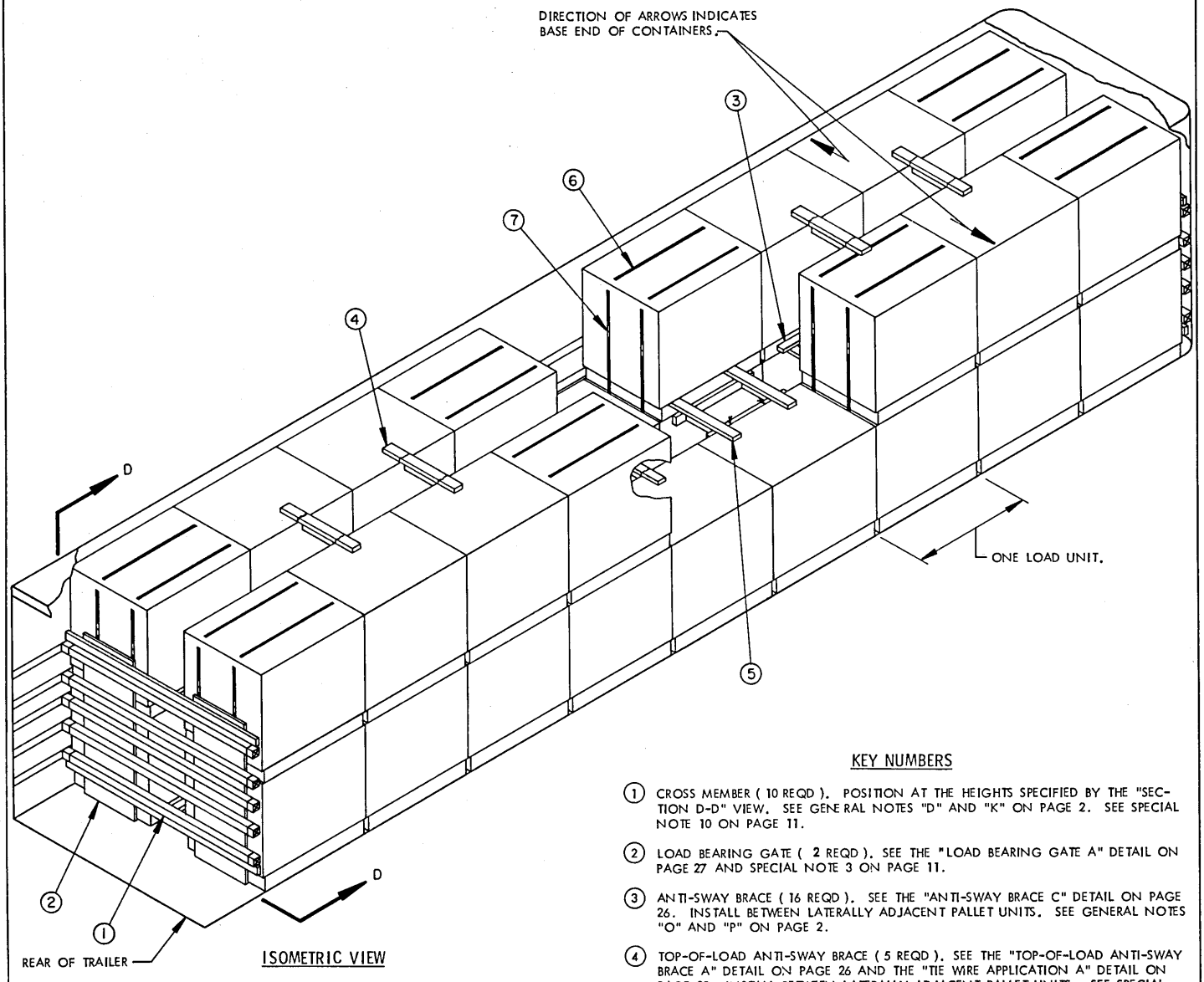
12. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 34 AND 35 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL 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 4" 2" X 6"	273 81	182 81
NAILS	NO. REQD	POUNDS
10d (3")	356	5-1/2
STEEL STRAPPING, 1-1/4" X .035" OR .031" ----200 REQD ----- 35 LBS SEAL FOR 1-1/4" STRAPPING ---------- 20 REQD ----- 1 LB WIRE, NO. 14 GAGE ---------- 42' REQD ----- 1 LB		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT ---------	33 ----------	42,075 LBS
DUNNAGE ----------		5,69 LBS
TOTAL WEIGHT ----------		42,644 LBS

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



ISOMETRIC VIEW

KEY NUMBERS

(1) CROSS MEMBER (10 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION D-D" VIEW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2. SEE SPECIAL NOTE 10 ON PAGE 11.

(2) LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE A" DETAIL ON PAGE 27 AND SPECIAL NOTE 3 ON PAGE 11.

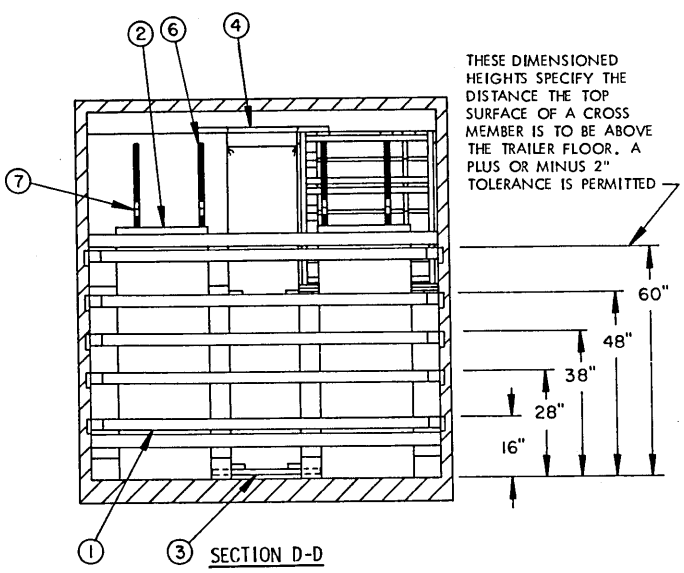
(3) ANTI-SWAY BRACE (16 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 26. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE GENERAL NOTES "O" AND "P" ON PAGE 2.

(4) TOP-OF-LOAD ANTI-SWAY BRACE (5 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 26 AND THE "TIE WIRE APPLICATION A" DETAIL ON PAGE 29. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 11.

(5) TOP-OF-LOAD ANTI-SWAY BRACE "B" (1 REQD). SEE THE DETAIL ON PAGE 26. POSITION WITH ONE END OF THE SUPPORT PIECES AGAINST THE PALLET POSTS AND WIRE TIE THE OTHER ENDS OF THE SUPPORT PIECES TO THE END DUNNAGE ASSEMBLY OF UNIT. SEE THE "TIE WIRE APPLICATION B" DETAIL ON PAGE 29. SEE SPECIAL NOTE 5 ON PAGE 11.

(6) STACK UNITIZING STRAP, 1-1/4" X .035" X 24'-6" LONG STEEL STRAPPING (16 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY OF THE UPPER PALLET UNITS. INSTALL TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 11.

(7) SEAL FOR 1-1/4" STRAPPING (32 REQD , 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION D-D

(6-LAYER PALLET UNIT)

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

SPECIAL NOTES:

1. A 33-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES (CROSS MEMBERS AND STATIONARY WALL MEMBERS) AND ROUNDED CORNERS. WIDER OR NARROWER TRAILERS MAY BE USED.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 10 IS THE 6-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 45-1/8" HIGH AND WEIGHING APPROXIMATELY 1,275 POUNDS.

3. IF PLYWOOD IS NOT AVAILABLE FOR THE CONSTRUCTION OF LOAD BEARING GATES, OR IF DESIRED, PIECES MARKED ② , MAY BE CONSTRUCTED FROM 1" LUMBER. SEE THE ALTERNATIVE LOAD BEARING GATE "A" DETAIL ON PAGE 28.

4. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECES MARKED ④ IN THE LOAD ON PAGE 10, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT TOP-LAYER PALLET UNITS; HOWEVER, IF THE PALLET UNIT IN THE SECOND LAYER IS UNITIZED TO THE CORRESPONDING PALLET UNIT IN THE FIRST LAYER A TOP-OF-LOAD ANTI-SWAY BRACE WILL NOT BE REQUIRED.

5. IF ONLY ONE PALLET UNIT IS LOADED IN THE SECOND LAYER, SPACER ASSEMBLY PROCEDURES, AS SPECIFIED ON PAGE 22 MAY BE USED, OR THE TOP-OF-LOAD ANTI-SWAY BRACE "B" AND STACK UNITIZING STRAPS AS SHOWN ON PAGE 10 MAY BE USED.

6. STACK UNITIZING STRAPS, PIECES MARKED ⑥ , WILL BE APPLIED AROUND THE REARMOST COMPLETE STACK AND AROUND THE MOST FORWARD COMPLETE STACK IN EACH ROW WHERE THE NUMBER OF TIERS (LAYERS IN THE LOAD) CHANGES.

7. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.

9. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 22.

10. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS AND LOAD BEARING GATE "A" PIECES MARKED ① AND ② , WILL BE OMITTED FROM THE FRONT OF THE TRAILER; UNLESS THE TRAILER HAS A SQUARE FRONT, A FORWARD BLOCKING ASSEMBLY WILL BE REQUIRED. SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25.

BILL OF MATERIAL

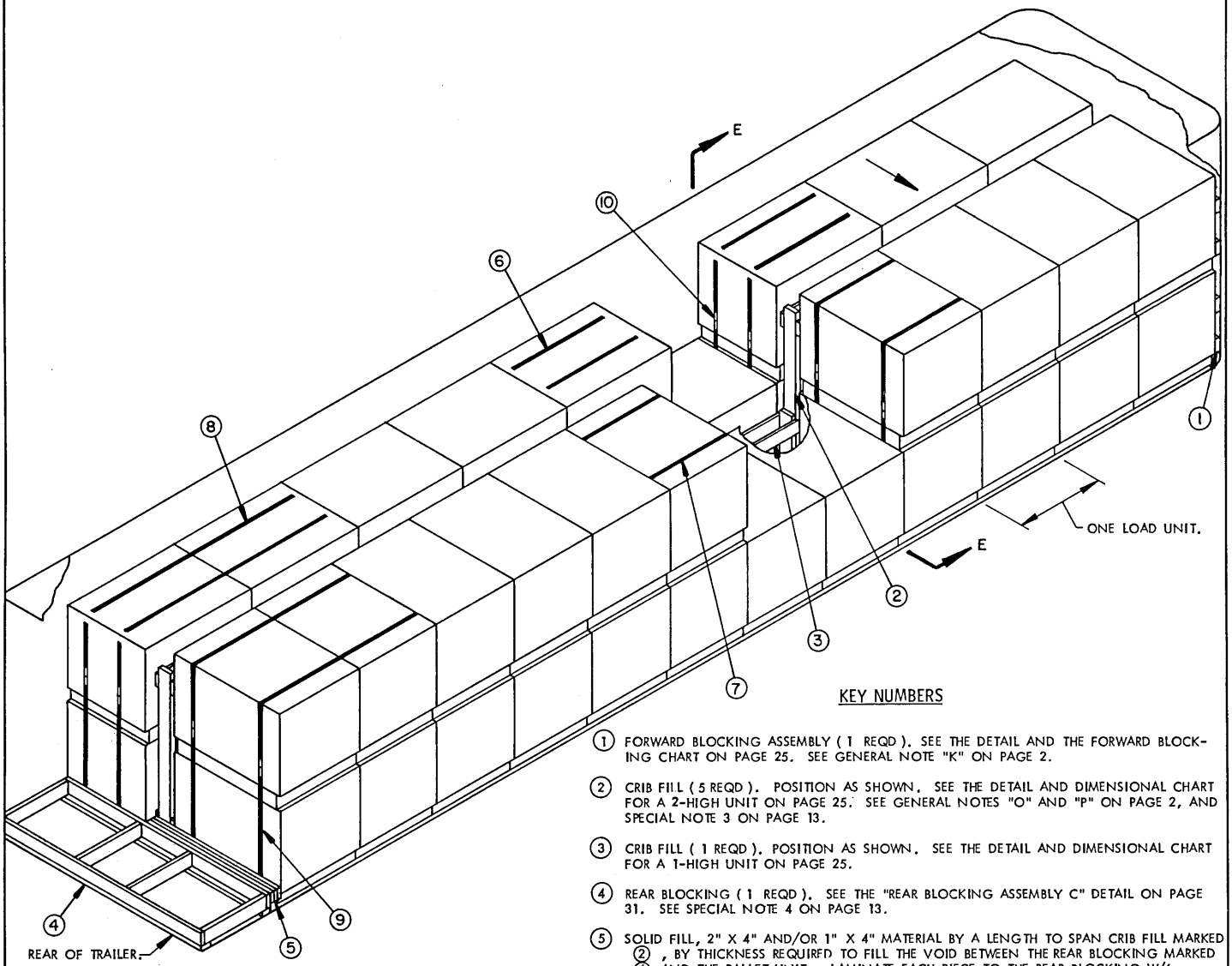
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	30	10
2" X 4"	212	142
NAILS	**NO. REQD**	**POUNDS**
6d (2")	48	1/4
10d (3")	234	3-1/2

STEEL STRAPPING, 1-1/4" X .035" OR .031" --- 392' REQD ----- 56 LBS
SEAL FOR 1-1/4" STRAPPING ---------- 32 REQD ----- 1 LB
PLYWOOD, 1/2" ---------- 44 SQ FT REQD ------ 6 LBS
WIRE, NO. 14 GAGE ---------- 36' REQD ----- 1/2 LB
CROSS MEMBER ---------- 10 REQD

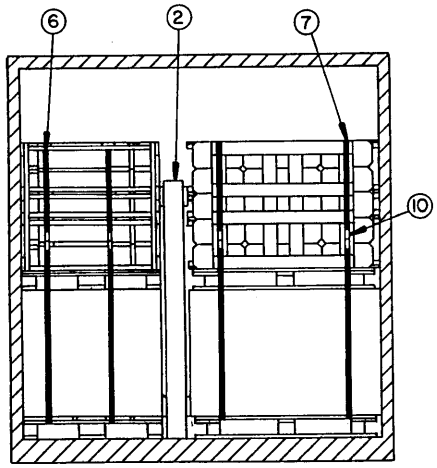
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	33	42,075 LBS
DUNNAGE		475 LBS
TOTAL WEIGHT		42,502 LBS

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



ISOMETRIC VIEW



SECTION E-E

KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.

(2) CRIB FILL (5 REQD). POSITION AS SHOWN. SEE THE DETAIL AND DIMENSIONAL CHART FOR A 2-HIGH UNIT ON PAGE 25. SEE GENERAL NOTES "O" AND "P" ON PAGE 2, AND SPECIAL NOTE 3 ON PAGE 13.

(3) CRIB FILL (1 REQD). POSITION AS SHOWN. SEE THE DETAIL AND DIMENSIONAL CHART FOR A 1-HIGH UNIT ON PAGE 25.

(4) REAR BLOCKING (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY C" DETAIL ON PAGE 31. SEE SPECIAL NOTE 4 ON PAGE 13.

(5) SOLID FILL, 2" X 4" AND/OR 1" X 4" MATERIAL BY A LENGTH TO SPAN CRIB FILL MARKED (2), BY THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE REAR BLOCKING MARKED (4) AND THE PALLET UNIT. LAMINATE EACH PIECE TO THE REAR BLOCKING W/6 APPROPRIATELY SIZED NAILS.

(6) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (4 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY OF THE UPPER PALLET UNIT. INSTALL TO ENCIRCLE TWO (2) PALLET UNITS. SEE SPECIAL NOTE 5 ON PAGE 13.

(7) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (4 REQD). INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS.

(8) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 30'-0" LONG STEEL STRAPPING (2 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY OF THE UPPER PALLET UNITS. INSTALL TO ENCIRCLE TWO (2) UNITS IN THE SECOND LAYER AND TWO (2) UNITS DIRECTLY BELOW AS SHOWN. SEE SPECIAL NOTE 6 ON PAGE 13.

(9) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (2 REQD). INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS IN THE SECOND LAYER AND TWO (2) UNITS DIRECTLY BELOW.

(10) SEAL FOR 1-1/4" STRAPPING (24 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

(5-LAYER PALLET UNIT)
39-UNIT LOAD (COMBINATION) IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

SPECIAL NOTES:

1. A 39-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER TRAILERS MAY BE USED. HOWEVER, IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 6'-8" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT. IF A TRAILER WHICH IS 8'-2" OR WIDER IF FURNISHED FOR LOADING THE LOADING PATTERN DEPICTED ON PAGE 16 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 12.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 12 IS THE 5-LAYER UNIT, HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 38-5/8" HIGH AND WEIGHING APPROXIMATELY 1,081 POUNDS. IF 36 UNITS OR LESS ARE TO BE TRANSPORTED THE PROCEDURES SHOWN ON PAGE 8 CAN BE USED IN LIEU OF THE DEPICTED PROCEDURES. TOP-OF-LOAD ANTI-SWAY BRACES SHOWN AS PIECE MARKED ③ ON THAT PAGE, WILL BE OMITTED; THE BALANCE OF THE LOAD WILL REMAIN THE SAME.

3. IF A PALLET UNIT IS ADDED OR OMITTED FROM THE DEPICTED LOAD, THE HEIGHT AND/OR LENGTH OF THE CRIB FILL, PIECES MARKED ② AND ③ MAY HAVE TO BE ADJUSTED. REFER TO THE DETAIL AND DIMENSIONAL CHART ON PAGE 25 FOR CONSTRUCTION GUIDANCE.

4. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOORS MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE REAR BLOCKING ASSEMBLY "D" DETAILED ON PAGE 31. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "C" WILL BE USED AS SHOWN. SEE SPECIAL NOTE 11.

5. THE STACK UNITIZING STRAPS, PIECES MARKED ⑥ AND ⑦ , IN THE LOAD ON PAGE 12, WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER , EXCEPT AT THE VERY REAR OF THE LOAD.

6. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS, SHOWN AS PIECES MARKED ⑧ AND ⑨ , MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS IN EACH APPLICABLE ROW.

7. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER OF EITHER ROW, IT MUST NOT BE POSITIONED ON TOP OF THE REARMOST PALLET UNIT IN THE FIRST LAYER.

8. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.

10. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.

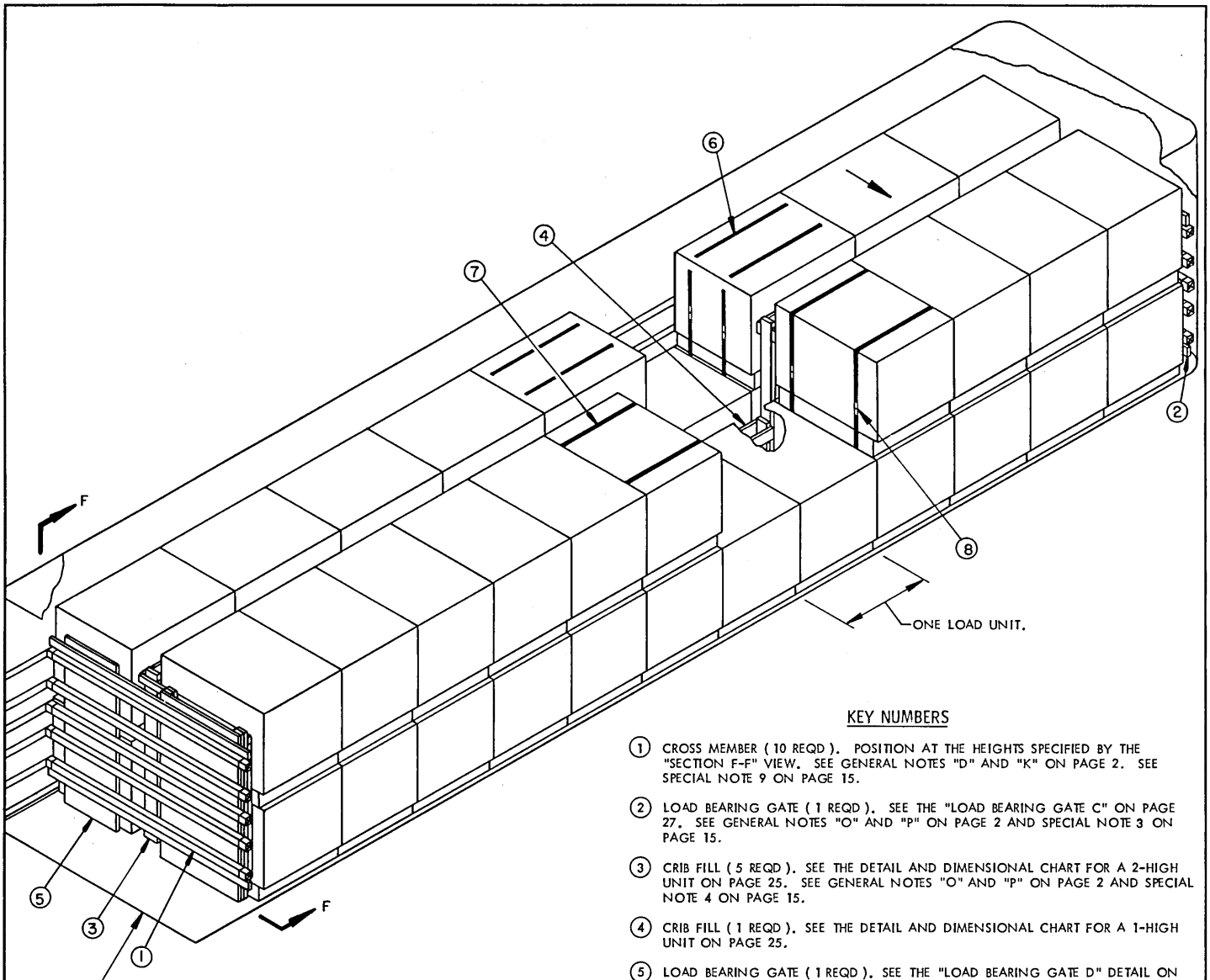
11. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED: HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 34 AND 35 FOR GUIDANCE. A NAILED-HEADER METHOD AND A TYGARD METHOD ARE SHOWN. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN CONVENTIONAL VAN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	144	72
2" X 3"	6	3
2" X 4"	52	35
2" X 6"	175	175
NAILS	NO. REQD	POUNDS
6d (2")	216	1-1/4
10d (3")	130	2
STEEL STRAPPING, 1-1/4" X .035" OR .031" --- 280 REQD --- 40 LBS		
SEALS FOR 1-1/4" STRAPPING ---------- 24 REQD --- 1 LB		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT ---------	39 ----------	42,159 LBS
DUNNAGE ----------		614 LBS
TOTAL WEIGHT ----------		42,773 LBS

(5-LAYER PALLET UNIT)
39-UNIT LOAD (COMBINATION) IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER



ISOMETRIC VIEW

KEY NUMBERS

(1) CROSS MEMBER (10 REQD). POSITION AT THE HEIGHTS SPECIFIED BY THE "SECTION F-F" VIEW. SEE GENERAL NOTES "D" AND "K" ON PAGE 2. SEE SPECIAL NOTE 9 ON PAGE 15.

(2) LOAD BEARING GATE (1 REQD). SEE THE "LOAD BEARING GATE C" ON PAGE 27. SEE GENERAL NOTES "O" AND "P" ON PAGE 2 AND SPECIAL NOTE 3 ON PAGE 15.

(3) CRIB FILL (5 REQD). SEE THE DETAIL AND DIMENSIONAL CHART FOR A 2-HIGH UNIT ON PAGE 25. SEE GENERAL NOTES "O" AND "P" ON PAGE 2 AND SPECIAL NOTE 4 ON PAGE 15.

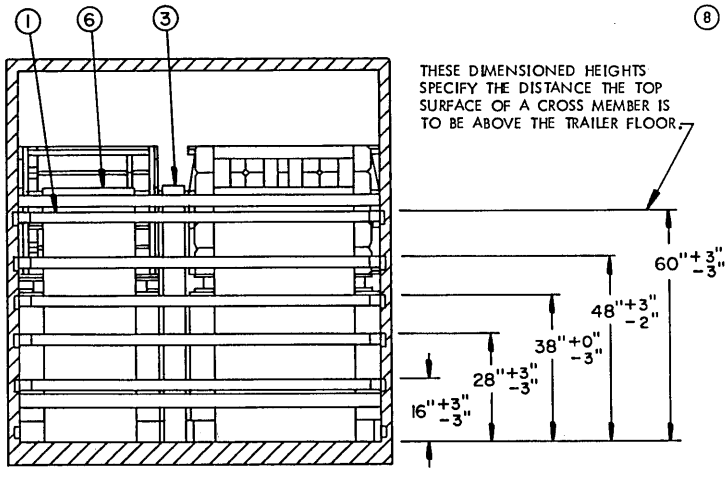
(4) CRIB FILL (1 REQD). SEE THE DETAIL AND DIMENSIONAL CHART FOR A 1-HIGH UNIT ON PAGE 25.

(5) LOAD BEARING GATE (1 REQD). SEE THE "LOAD BEARING GATE D" DETAIL ON PAGE 29.

(6) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (4 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY OF THE UPPER PALLET UNITS. INSTALL TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 5 ON PAGE 15.

(7) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (4 REQD). INSTALL TO ENCIRCLE TWO (2) PALLET UNITS AS SHOWN.

(8) SEAL FOR 1-1/4" STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION F-F

(5-LAYER PALLET UNIT)

39-UNIT LOAD (COMBINATION) IN A 40'-0" LONG BY 7'-8" WIDE VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES

PROJECT FSA 43C/20-63

SPECIAL NOTES:

1. A 39-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES (CROSS MEMBERS AND STATIONARY WALL MEMBERS) AND ROUNDED CORNERS. WIDER OR NARROWER TRAILERS MAY BE USED.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 14 IS THE 5-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 38-5/8" HIGH AND WEIGHING APPROXIMATELY 1,081 POUNDS. IF 36 UNITS OR LESS ARE TO BE TRANSPORTED THE LOADING PATTERN DEPICTED ON PAGE 10 MAY BE USED IN LIEU OF THE PROCEDURES DEPICTED ON PAGE 14. PIECES MARKED (4) AND FOUR (4) PIECES MARKED (6) AT THE FORWARD END AND THE REAR END OF THE LOAD CAN BE OMITTED. THE BALANCE OF THE LOAD WILL REMAIN THE SAME.

3. IF PLYWOOD IS NOT AVAILABLE FOR THE CONSTRUCTION OF LOAD BEARING GATES, OR IF DESIRED, PIECE MARKED (2) MAY BE CONSTRUCTED FROM 1" LUMBER. SEE THE ALTERNATIVE LOAD BEARING, GATE "C" DETAIL ON PAGE 27.

4. IF A PALLET UNIT IS ADDED OR OMITTED FROM THE DEPICTED LOAD, THE HEIGHT AND/OR LENGTH OF THE CRIB FILL, PIECES MARKED (3) AND (4) MAY HAVE TO BE ADJUSTED. REFER TO THE CRIB FILL DETAIL AND DIMENSIONAL CHART ON PAGE 25 FOR CONSTRUCTION GUIDANCE.

5. THE STACK UNITIZING STRAPS, PIECES MARKED (6) AND (7) IN THE LOAD ON PAGE 14, WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER.

6. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

7. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6) 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 24 FOR GUIDANCE.

8. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGE 22.

9. IF THE TRAILER BEING LOADED IS EQUIPPED ONLY WITH SHORT WALL MEMBERS AT THE REAR FOR ATTACHMENT OF THE CROSS MEMBERS, THE CROSS MEMBERS AND LOAD BEARING GATE "C" PIECES MARKED (1) AND (2) WILL BE OMITTED FROM THE FRONT OF THE LOAD; THEN, A FORWARD BLOCKING ASSEMBLY WILL BE REQUIRED, UNLESS THE TRAILER HAS A SQUARE FRONT. SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25.

BILL OF MATERIAL

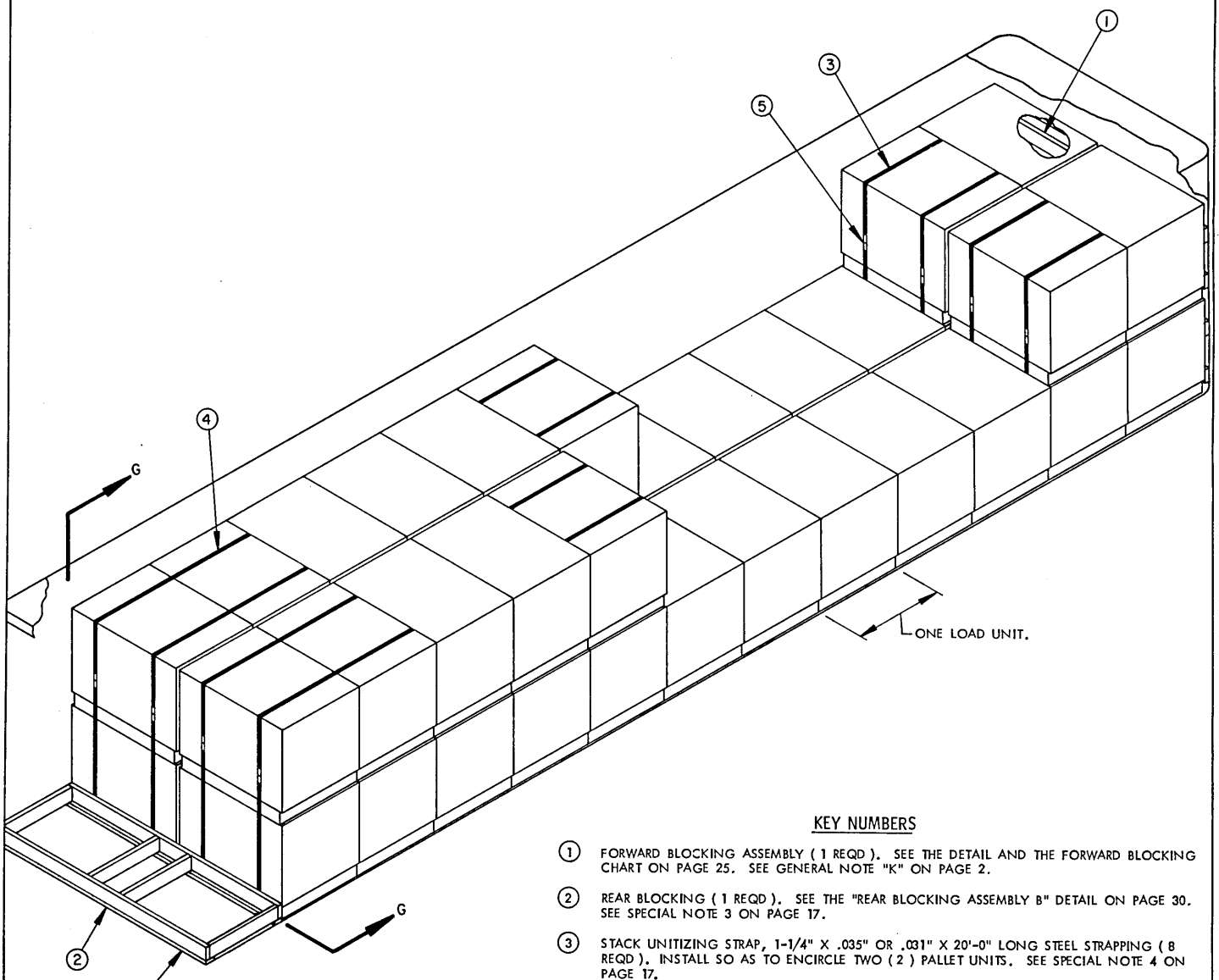
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	31	11
1" X 6"	144	72
2" X 4"	40	27
2" X 6"	94	94
NAILS	**NO. REQD**	**POUNDS**
6d (2")	272	1-3/4
10d (3")	32	1/2

PLYWOOD 1/2" (2 SHEETS) --- 55 SQ FT REQD --------- 76 LBS
STEEL STRAPPING, 1-1/4" ----168' REQD ---------- 24 LBS
SEAL FOR 1-1/4" STRAPPING -------- 16 REQD --------- 1 LB
CROSS MEMBER ---------- 10 REQD --------- NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	39	42,159 LBS
DUNNAGE		512 LBS
TOTAL WEIGHT		42,671 LBS

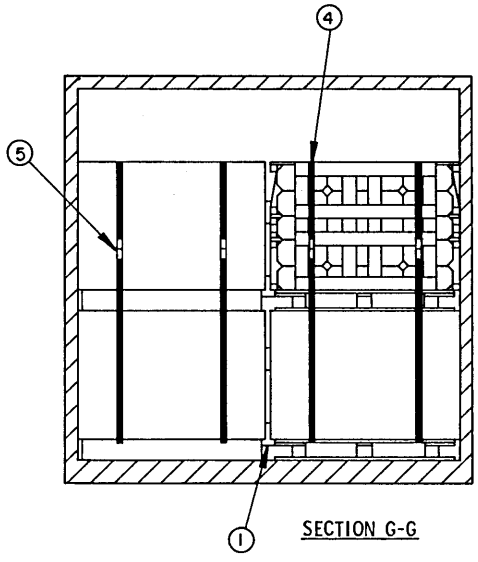
(5-LAYER PALLET UNIT)
39-UNIT LOAD (COMBINATION) IN A 40'-0" LONG BY 7'-8" WIDE VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES



ISOMETRIC VIEW

KEY NUMBERS

1. FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.
2. REAR BLOCKING (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY B" DETAIL ON PAGE 30. SEE SPECIAL NOTE 3 ON PAGE 17.
3. STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (8 REQD). INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 17.
4. BUNDLING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (4 REQD). INSTALL SO AS TO ENCIRCLE TWO (2) PALLET UNITS IN THE SECOND LAYER AND TWO (2) UNITS DIRECTLY BELOW. SEE SPECIAL NOTE 5 ON PAGE 17.
5. SEAL FOR 1-1/4" STRAPPING (24 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.



SECTION G-G

(5-LAYER PALLET UNIT)
39-UNIT LOAD IN A 40'-0" LONG BY 8'-2" WIDE CONVENTIONAL VAN TYPE TRAILER

PROJECT FSA 43C/20-63

SPECIAL NOTES:

1. A 39-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER TRAILERS MAY BE USED. HOWEVER, IF THE TRAILER BEING LOADED DOES NOT HAVE A DOOR OPENING HEIGHT OF AT LEAST 6'-6" IT WILL BE NECESSARY TO LIMIT THE REARMOST LOAD UNIT TO ONE PALLET UNIT IN HEIGHT.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 16 IS THE 5-LAYER UNIT, HAVING OVER ALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 38-5/8" HIGH AND WEIGHING APPROXIMATELY 1,081 POUNDS.

3. IF THE SPACE 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 SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9" USE REAR BLOCKING ASSEMBLY "D" DETAILED ON PAGE 31. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, REAR BLOCKING ASSEMBLY "B" WILL BE USED AS SHOWN.

4. THE STACK UNITIZING STRAPS MARKED ③ IN THE LOAD ON PAGE 16, WILL BE INSTALLED TO SECURE AN UNSUPPORTED PALLET UNIT IN THE SECOND LAYER TO A CORRESPONDING UNIT IN THE FIRST LAYER, EXCEPT AT THE VERY REAR OF THE LOAD.

5. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, BUNDLING STRAPS, PIECES MARKED ④ , MUST BE INSTALLED SO AS TO ENCIRCLE THE REARMOST TWO (2) STACKS IN EACH APPLICABLE ROW. AS SHOWN.

6. IF ONLY ONE PALLET UNIT IS TO BE LOADED IN THE SECOND LAYER OF EITHER ROW, IT MUST NOT BE POSITIONED ON TOP OF THE REARMOST PALLET UNIT IN THE FIRST LAYER.

7. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6) MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.

9. FOR SHIPMENT OF LESS THAN FULL LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 20 AND 21.

10. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 34 AND 35 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.

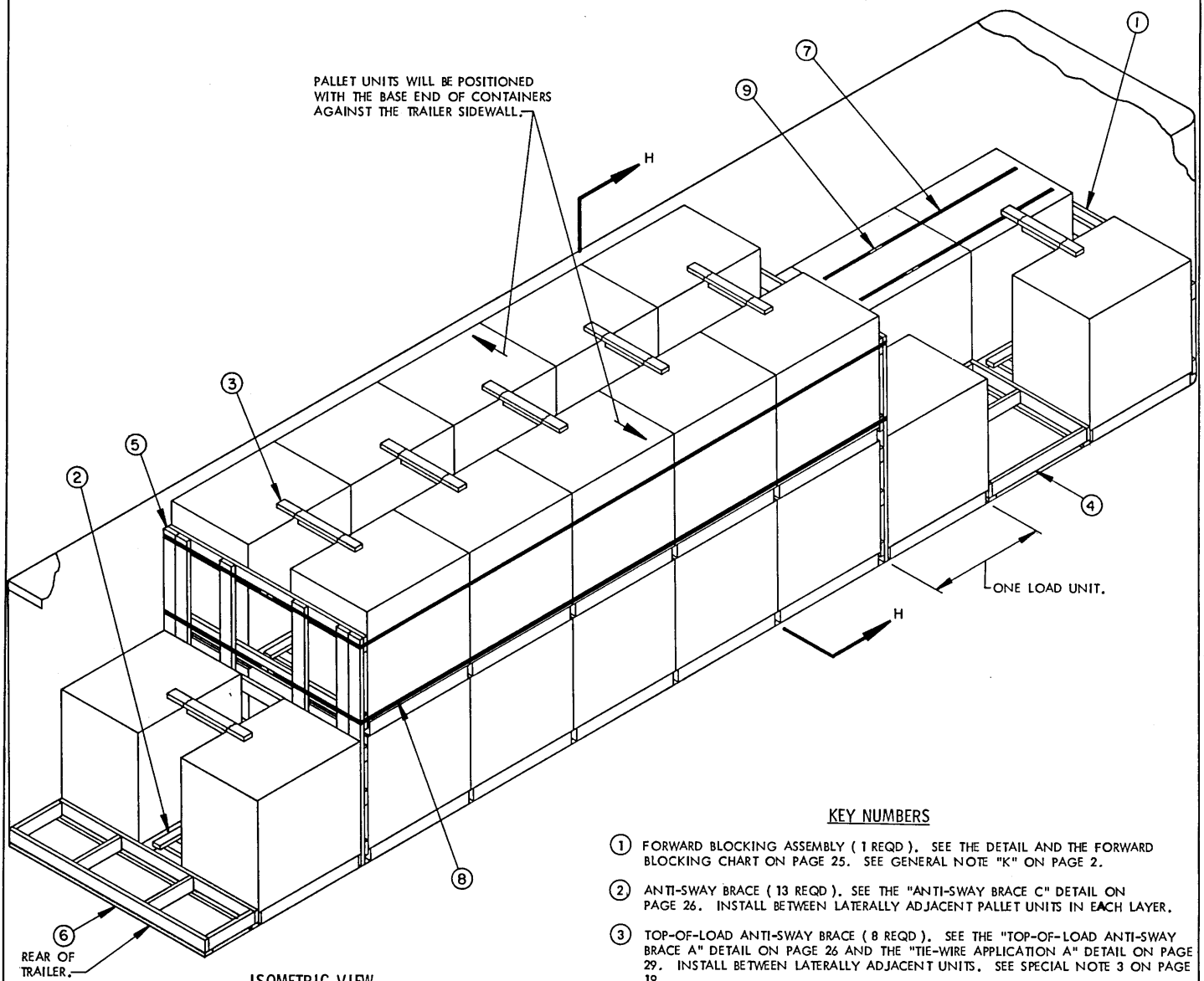
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 3" 2" X 4" 2" X 6"	4 39 87	2 26 87
NAILS	NO. REQD	POUNDS
10d (3")	116	1-3/4
STEEL STRAPPING, 1-1/4" ------ 264' REQD ---------- 38 LBS SEAL FOR 1-1/4" STRAPPING --- 24 REQD ---------- 1 LB		

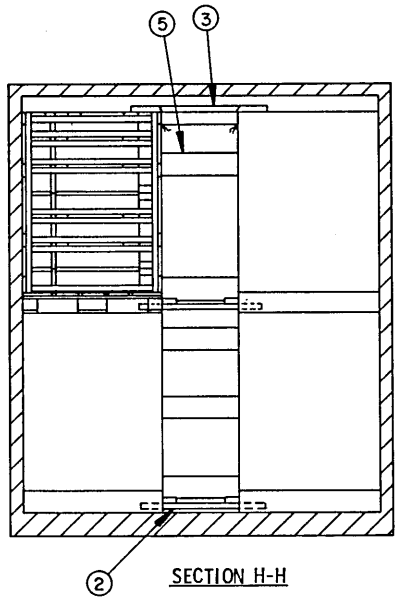
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT ---------	39 ----------	42,159 LBS
DUNNAGE ----------		271 LBS
	TOTAL WEIGHT --------	42,430 LBS

(5-LAYER PALLET UNIT)
39-UNIT LOAD IN A 40'-0" LONG BY 8'-2" WIDE CONVENTIONAL VAN TYPE TRAILER



ISOMETRIC VIEW



SECTION H-H

KEY NUMBERS

(1) FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.

(2) ANTI-SWAY BRACE (13 REQD). SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 26. INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS IN EACH LAYER.

(3) TOP-OF-LOAD ANTI-SWAY BRACE (8 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 26 AND THE "TIE-WIRE APPLICATION A" DETAIL ON PAGE 29. INSTALL BETWEEN LATERALLY ADJACENT UNITS. SEE SPECIAL NOTE 3 ON PAGE 19.

(4) SPACER ASSEMBLY (1 REQD). SEE THE "SPACER ASSEMBLY C" DETAIL ON PAGE 32. SEE SPECIAL NOTE 4 ON PAGE 19.

(5) BULKHEAD GATE (2 REQD). SEE THE DETAIL AND THE "BULKHEAD GATE CHART" ON PAGE 32.

(6) REAR BLOCKING (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 30. SEE SPECIAL NOTES 5 AND 10 ON PAGE 19.

(7) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 26'-0" LONG STEEL STRAPPING (2 REQD). THREAD THRU HOLES ON TOP DUNNAGE ASSEMBLY AS SHOWN. INSTALL SO AS TO ENCIRCLE TWO PALLET UNITS. SEE SPECIAL NOTE 6 ON PAGE 19.

(8) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 58'-6" LONG STEEL STRAPPING (2 REQD). INSTALL TO ENCIRCLE TEN UPPER-LAYER PALLET UNITS AS SHOWN. SEE SPECIAL NOTE 7 ON PAGE 19.

(9) SEAL FOR 1-1/4" STRAPPING (8 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "M" ON PAGE 2.

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

SMCAC FORM 6, 1 NOV 85

PROJECT FSA 43C/20-63

SPECIAL NOTES:

1. A 27-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TYPE TRAILER. WIDER OR NARROWER TRAILERS MAY BE USED. HIGH VOLUME-TRAILERS MAY BE REQUIRED.

2. THE PALLET UNIT SHOWN IN THE LOAD ON PAGE 18 IS THE 7-LAYER UNIT, HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 51-3/4" HIGH AND WEIGHING APPROXIMATELY 1,483 ROUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3.

3. TOP-OF-LOAD ANTI-SWAY BRACES, SHOWN AS PIECE MARKED ③ IN THE LOAD ON PAGE 18, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT PALLET PALLET UNITS IN EACH LAYER.

4. THE SPACER ASSEMBLY, SHOWN IN THE LOAD VIEW AS PIECE MARKED ④ , IS ONLY SHOWN TO DEPICT A TYPICAL INSTALLATION. IF A PALLET UNIT IS LOADED IN PLACE OF THE SPACER ASSEMBLY, THE BUNDLING STRAPS, SHOWN AS PIECE MARKED ⑦ , WILL NOT BE REQUIRED. NOTE THAT A SPACER ASSEMBLY MUST BE POSITIONED WHERE THERE WILL BE A PALLET UNIT AT EACH END; A SPACER ASSEMBLY MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY OR A BULKHEAD GATE, PIECES MARKED ① AND ⑤ .

5. IF THE VOID AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOORS MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE THE REAR BLOCKING ASSEMBLY "D" DETAILED ON PAGE 31. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER , REAR BLOCKING ASSEMBLY "A" WILL BE USED AS SHOWN.

6. A PALLET UNIT THAT DOES NOT HAVE A PALLET UNIT DIRECTLY OPPOSITE MUST BE SECURED BY INSTALLING BUNDLING STRAPS, SHOWN AS PIECE MARKED ⑦ IN THE LOAD ON PAGE 18, AROUND THAT PALLET UNIT AND THE PALLET UNIT IMMEDIATELY ADJACENT; A PALLET UNIT WILL NOT BE OMITTED FROM THE SECOND LAYER PORTION OF THE LOAD.

7. WHEN ONLY ONE (1) BUNDLING STRAP, PIECE MARKED ⑧ IS APPLIED, THE SECOND LAYER PORTION OF THE LOAD IS LIMITED TO NOT MORE THAN SIX (6) 7-LAYER PALLET UNITS, OR SIX (6) 6-LAYER PALLET UNITS, OR EIGHT (8) 5-LAYER PALLET UNITS. IF AN ADDITIONAL BUNDLING STRAP IS APPLIED AROUND THE SECOND LAYER PORTION (POSITIONED SO AS TO EXTEND OVER THE NEXT LOWER LEVEL BULKHEAD GATE HORIZONTAL PIECE). NOT MORE THAN TWELVE (12) 7-LAYER PALLET UNITS, OR FOURTEEN (14) 6-LAYER UNITS, OR SIXTEEN (16) 5-LAYER UNITS MAY BE LOADED IN THE SECOND LAYER.

8. REFER TO PAGE 23 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

9. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED SIX (6), MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 24 FOR GUIDANCE.

10. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED. HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGES 34 AND 35 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 (TYPICAL)

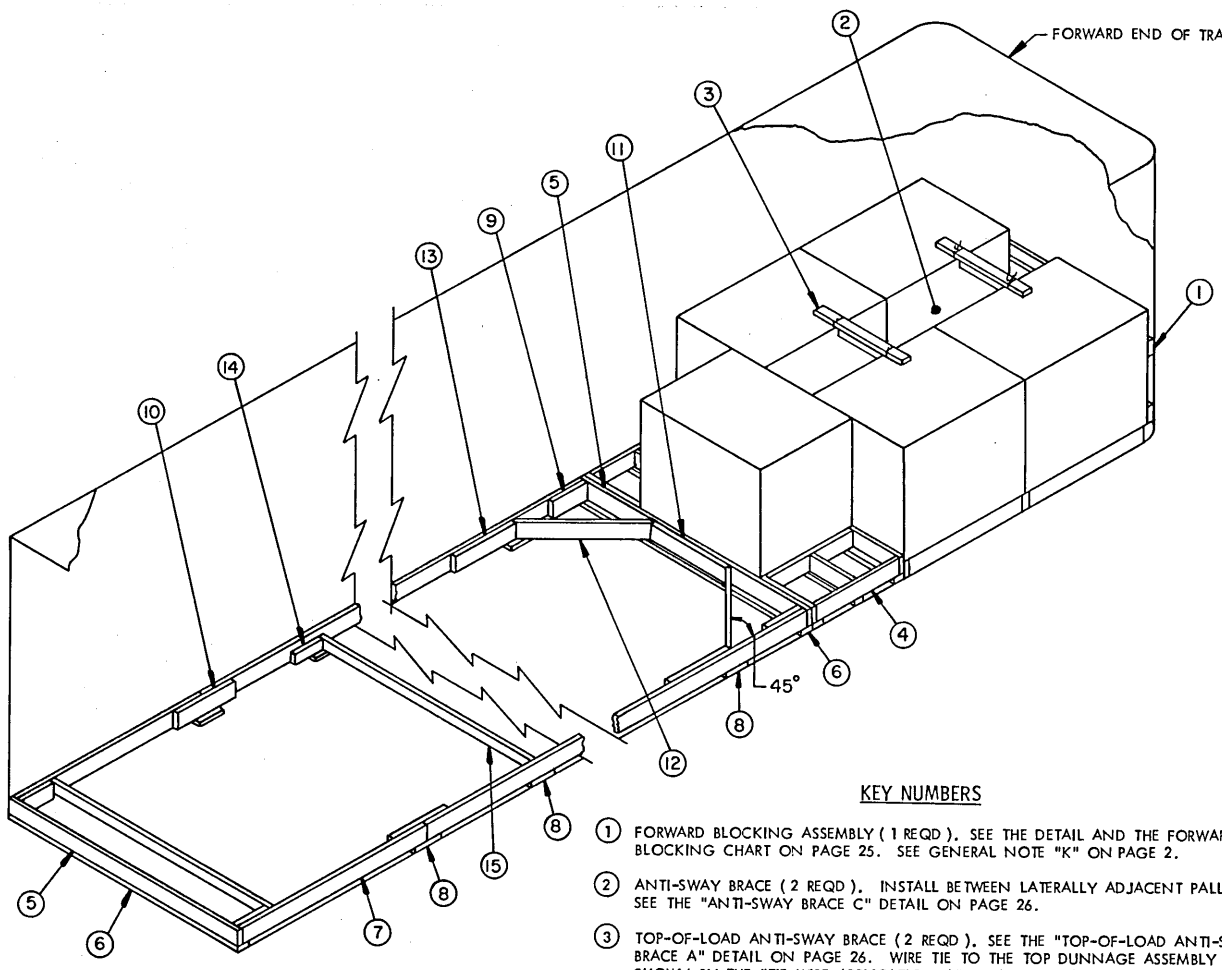
LUMBER	LINEAR FEET	BOARD FEET
2" X 4" 2" X 6"	223 242	149 242
NAILS	NO. REQD	POUNDS
10d (3")	482	7-1/2

STEEL STRAPPING, 1-1/4" X .035" OR .031" -- 169' REQD ------- 25 LBS
SEAL FOR 1-1/4" STRAPPING ---------- 8 REQD -------NIL
WIRE, NO. 14 GAGE ---------- 48' REQD -------- 1 LB

LOAD AS SHOWN (TYPICAL)

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	27	40,041 LBS
DUNNAGE		816 LBS
TOTAL WEIGHT		40,857 LBS

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



ISOMETRIC VIEW

SPECIAL NOTES:

1. THESE OUTLOADING PROCEDURES COVER THE USE OF BOTH "K-BRACE AND NAILED FLOOR LINE BLOCKING IN A 7'-8" 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 AND 6.

2. THE PALLET UNIT SHOWN IS THE 7-LAYER UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 51-3/4" HIGH AND WEIGHING APPROXIMATELY 1,483 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3.

3. TOP-OF-LOAD ANTI-SWAY BRACES WILL BE POSITIONED BETWEEN ALL LATERALLY ADJACENT PALLET 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 34 AND 35. 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. SEE SPECIAL NOTE 6.

6. WHEN THE NAILED-HEADER METHOD OF BRACING SHOWN ON PAGE 35 IS APPLIED FOR THE BRACING OF THE DEPICTED 5-UNIT LOAD OR ANY ODD NUMBERED QUANTITY, ONLY THE DOUBLED 2" X 4" PIECES ARE REQUIRED. OMIT THE REAR BLOCKING ASSEMBLY; WHEN SHIPPING AN EVEN NUMBERED QUANTITY, THE NAILED-HEADER METHOD WILL APPLY AS SHOWN.

KEY NUMBERS

① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL AND THE FORWARD BLOCKING CHART ON PAGE 25. SEE GENERAL NOTE "K" ON PAGE 2.

② ANTI-SWAY BRACE (2 REQD). INSTALL BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE "ANTI-SWAY BRACE C" DETAIL ON PAGE 26.

③ TOP-OF-LOAD ANTI-SWAY BRACE (2 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE A" DETAIL ON PAGE 26. WIRE TIE TO THE TOP DUNNAGE ASSEMBLY AS SHOWN BY THE "TIE WIRE APPLICATION A" DETAIL ON PAGE 29.

④ SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 26. 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 NOTE 5 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, PIECE 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.

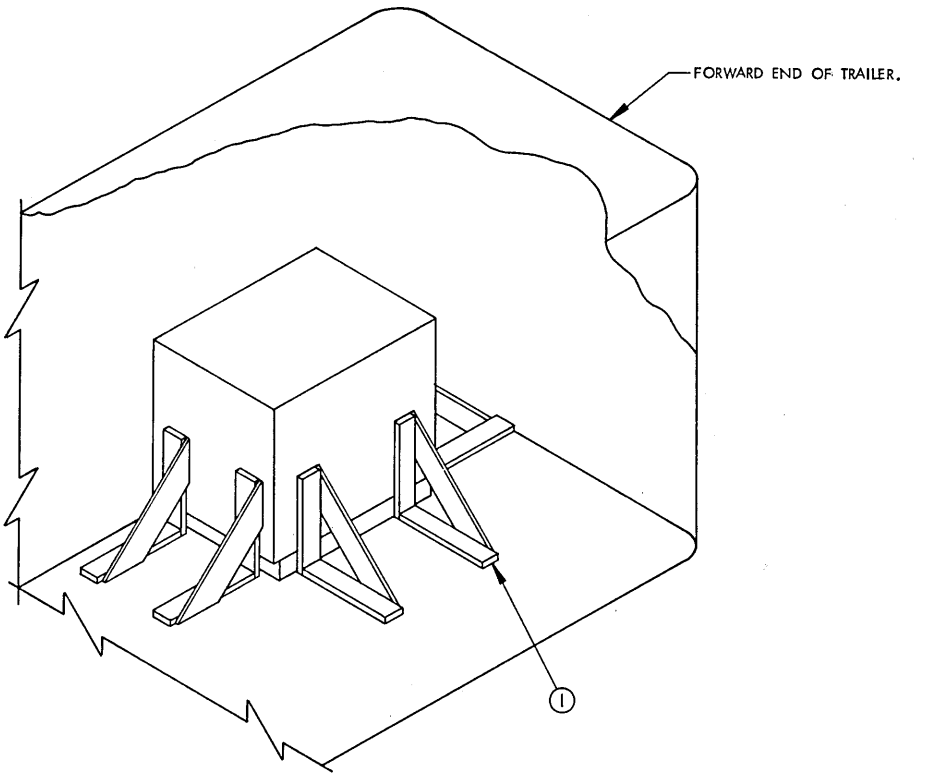
⑫ DIAGONAL BRACE, 2" X 6" BY CUT-TO-FIT (2 REQD). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT A 45° ANGLE AS SHOWN AND TOENAIL TO THE ADJACENT HEADER AND SIDE STRUT, PIECES MARKED ⑤ AND ⑦ , W/2-16d NAILS AT EACH END.

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

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

⑮ STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQUIRED). POSITION ONE STRUT BRACE AT THE REAR OF THE TRAILER AND NAIL TO THE POCKET CLEATS, PIECES MARKED ⑨ W/2-12d NAILS. IF THE SIDE STRUTS, PIECES MARKED ⑦ , ARE LONGER THAN 7'-0" , AN ADDITIONAL STRUT BRACE, PIECE MARKED ⑮ , AND TWO (2) STRUT BRACE RETAINING CLEATS, PIECES MARKED ⑭ , AND TWO (2) RISER PIECES MARKED ⑧ , MUST BE APPLIED FOR EVERY 7'-0" OF SIDE STRUT LENGTH.

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



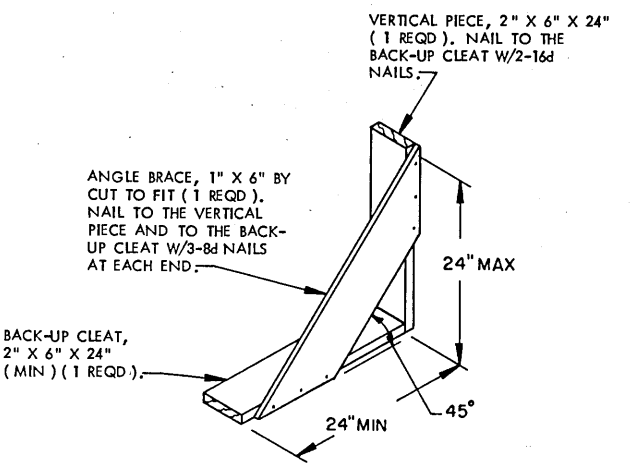
ISOMETRIC VIEW

SPECIAL NOTES:

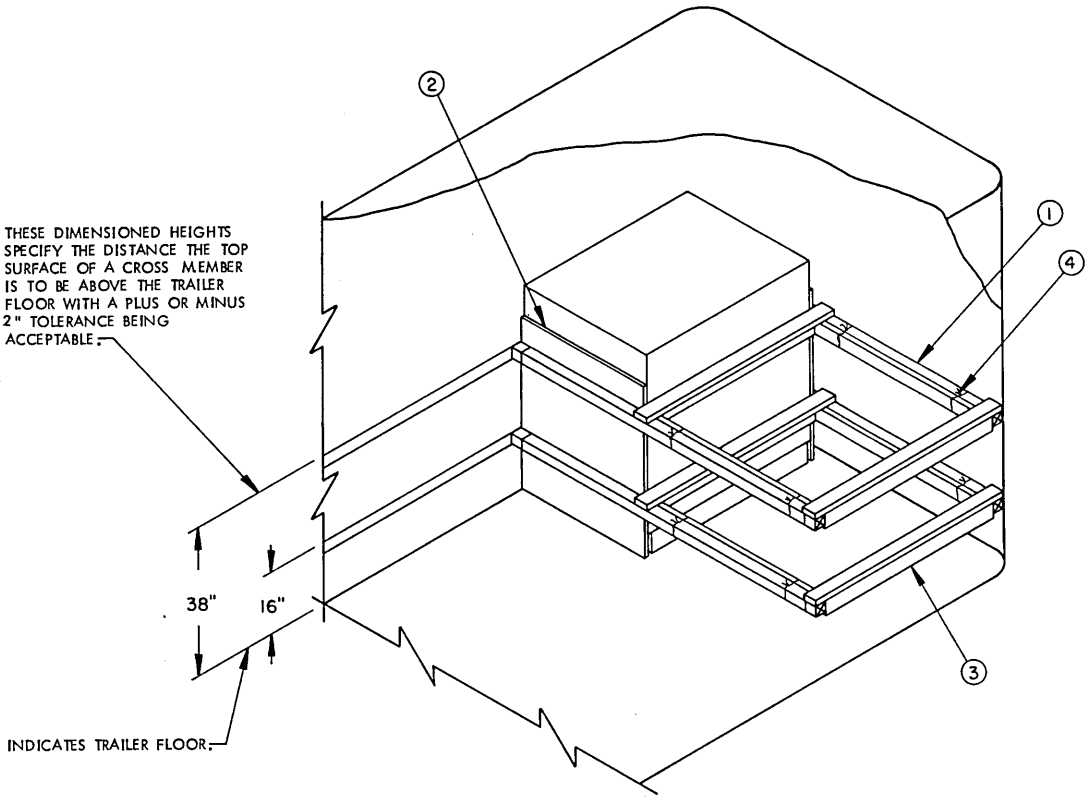
1. THESE OUTLOADING PROCEDURES DEPICT THE USE OF LTL BRACE BLOCKING IN A CONVENTIONAL TYPE VAN TRAILER EQUIPPED WITH A NAILABLE FLOOR.
2. THE PALLET UNIT SHOWN IS THE BASIC HEIGHT UNIT HAVING OVERALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 51-3/4" HIGH AND WEIGHING APPROXIMATELY 1,483 POUNDS. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3.
3. THE POSITIONING OF A UNIT IS OPTIONAL. IF THE TRAILER HAS A SQUARE FRONT THE TWO (2) FORWARD LTL BRACES MAY BE OMITTED, AND THE UNIT MAY BE POSITIONED AGAINST THE END WALL.
4. EACH LTL BRACE AS APPLIED FOR LONGITUDINAL BRACING WILL SUPPORT 2,000 POUNDS OF LADING; HOWEVER, NOT LESS THAN TWO (2) BRACES WILL BE USED AGAINST EACH PALLET UNIT ACROSS THE WIDTH OF THE TRAILER..
5. MORE THAN ONE PALLET UNIT CAN BE SHIPPED PROVIDING THE CAPACITY OF THE LTL BRACE 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, IF APPLICABLE.

KEY NUMBER

① LTL BRACE (6 REQD). SEE THE "LTL BRACE ASSEMBLY" DETAIL BELOW. NAIL EACH LTL BRACE TO TRAILER FLOOR W/7-10d NAILS. SEE SPECIAL NOTES 4 AND 5 AT LEFT.



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



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 (7-LAYER) UNIT HAVING OVER ALL DIMENSIONS OF 36" LONG BY 48-1/2" WIDE BY 51-3/4" HIGH. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3.

3. THE SPECIFIED CROSS MEMBER LOCATION DIMENSIONS ARE APPLICABLE FOR THE 7-LAYER AND THE 6-LAYER PALLET UNITS DEPICTED HEREIN. CROSS MEMBERS FOR THE 5-LAYER PALLET UNITS SHOULD BE LOCATED AT THE 28" HEIGHT, 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 ③ AND ④. NOTE: WHEN LOADING TWO (2) PALLETIZED UNITS ACROSS THE WIDTH OF THE TRAILER, POSITION THE UNITS AGAINST THE FORWARD END WALL (UNLESS TRAILER HAS ROUNDED CORNERS) AND OMIT THE TWO CROSS MEMBERS AT THE FORWARD END. POSITION ONE ANTI-SWAY BRACE ASSEMBLY, SHOWN AS PIECE MARKED ② ON PAGE 20, BETWEEN THE TWO PALLETIZED UNITS, AND ALSO A TOP-OF-LOAD ANTI-SWAY BRACE, IF APPLICABLE FOR THE UNIT BEING SHIPPED. REPLACE PIECE MARKED ② WITH THE APPLICABLE LOAD BEARING GATE.

5. TWO (2) SPACER ASSEMBLIES, PIECE MARKED ③, ARE REQUIRED WHEN LOADING THE 7-LAYER UNITS AND THE 6-LAYER UNITS. WHEN LOADING THE 5-LAYER UNIT DEPICTED ON PAGE 3, A SPACER ASSEMBLY IS REQUIRED AT ONLY ONE LEVEL.

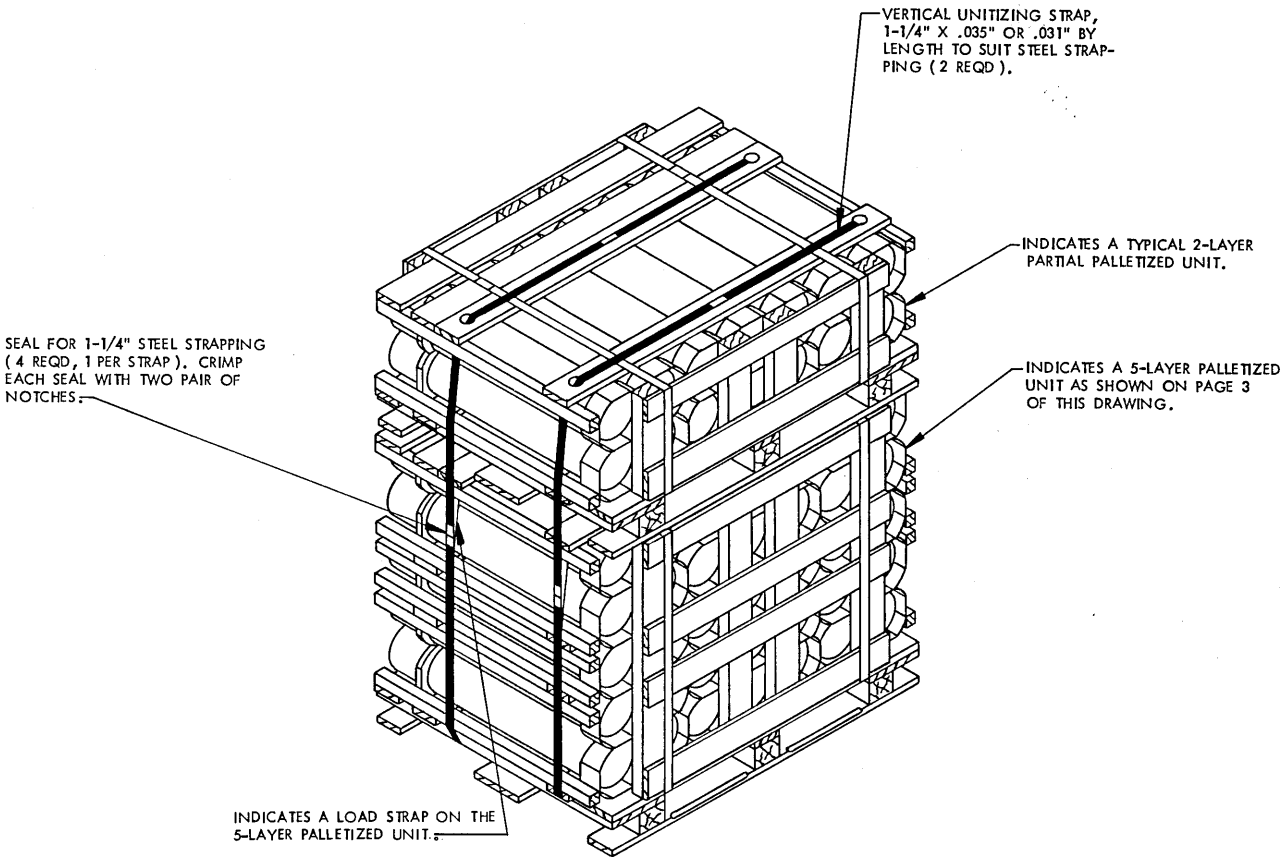
KEY NUMBERS

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 PLYWOOD, 1/2" X 36" X 44" (2 REQD). POSITION BETWEEN THE PALLET UNIT AND THE CROSS MEMBERS.

③ SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY B" DETAIL ON PAGE 31. SEE SPECIAL NOTE 5 AT LEFT.

④ 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 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.



SECUREMENT OF A PARTIAL PALLET UNIT
POSITIONED ON A FULL HEIGHT PALLET UNIT

SPECIAL NOTES:

1. THE VIEW SHOWN ABOVE DEPICTS A PARTIAL 2-LAYER PALLET UNIT POSITIONED ON TOP OF A 5-LAYER PALLET UNIT AND UNITIZED WITH TWO VERTICAL UNITIZING STRAPS. THESE PROCEDURES ARE ALSO APPLICABLE FOR THE OTHER UNITS DEPICTED ON PAGE 3. PLACEMENT WITHIN THE LOAD IS OPTIONAL, EXCEPT THAT IT WILL NOT BE POSITIONED WITHIN A GROUP WHICH IS BUNDLED TOGETHER OR WITHIN A STACK WHICH IS UNITIZED. THE PREFERRED LOCATION WOULD BE WITHIN A ONE-HIGH PORTION OF A LOAD (NOT IN THE REAR LOAD UNIT) IF AVAILABLE, OR WITHIN THE TOP LAYER OF A LOAD IF 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 TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES.

4. FOR SHIPMENT OF ONE THROUGH SIX "LEFTOVER" CONTAINERS, SEE THE PROCEDURES ON PAGE 24 OF THIS DRAWING.

SPECIAL NOTES:

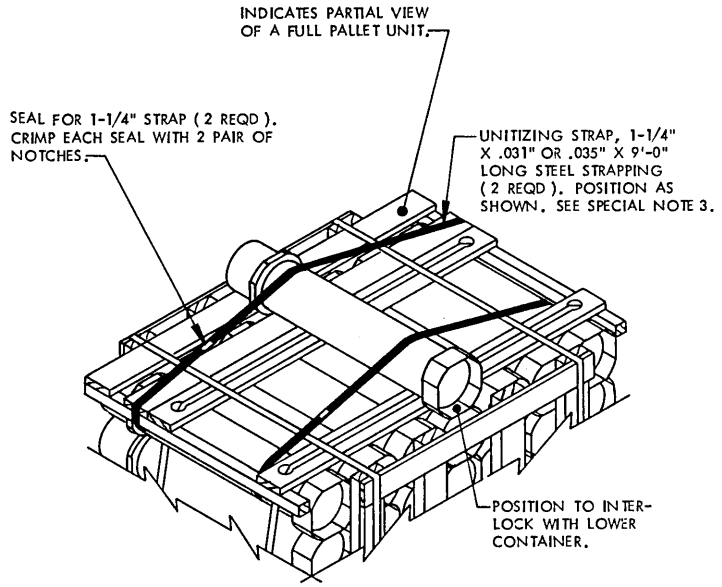
1. SHIPMENTS OF PROPELLING CHARGES SHOULD CONSISTS OF FULL-HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT, OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION, MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LEFTOVER CONTAINERS. LEFTOVER CONTAINERS ARE DESCRIBED AS A QUANTITY OF CONTAINERS WHICH IS INSUFFICIENT TO FORM A FULL-LAYERED PARTIAL UNIT FOR SECUREMENT ON TOP OF A FULL PALLET UNIT AS SHOWN ON PAGE 23.

2. SHIPMENT OF LEFTOVER CONTAINERS IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT OR FROM DEPOTS 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.

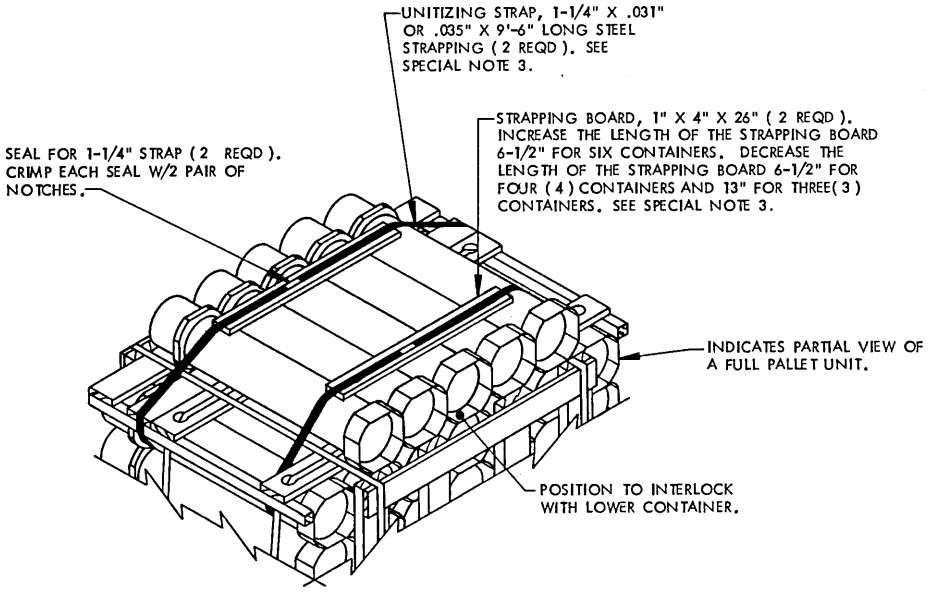
3. THE PROCEDURES ON THIS PAGE ARE PRESENTED AS GUIDANCE IN THE SECUREMENT OF LEFTOVER CONTAINERS FOR SHIPMENT. THE VIEW AT TOP LEFT DEPICTS ONE LEFTOVER CONTAINER SECURED TO A FULL-HEIGHT PALLET UNIT. THE VIEW BELOW DEPICTS FIVE LEFTOVER CONTAINERS SECURED TO A FULL-HEIGHT PALLET UNIT. WHEN THREE THRU SIX LEFTOVER CONTAINERS ARE BEING SHIPPED, A STRAPPING BOARD WILL BE NEEDED. LEFTOVER CONTAINERS MUST BE SECURED WITH A MINIMUM OF TWO (2) PIECES OF STEEL STRAPPING. NOTE THAT ONE (1) UNITIZING STRAP WILL GO OVER THE TOP DUNNAGE ASSEMBLY, AND THE OTHER WILL BE THREADED BEHIND THE 2" X 2" PIECE ON THE TOP DUNNAGE ASSEMBLY.

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.

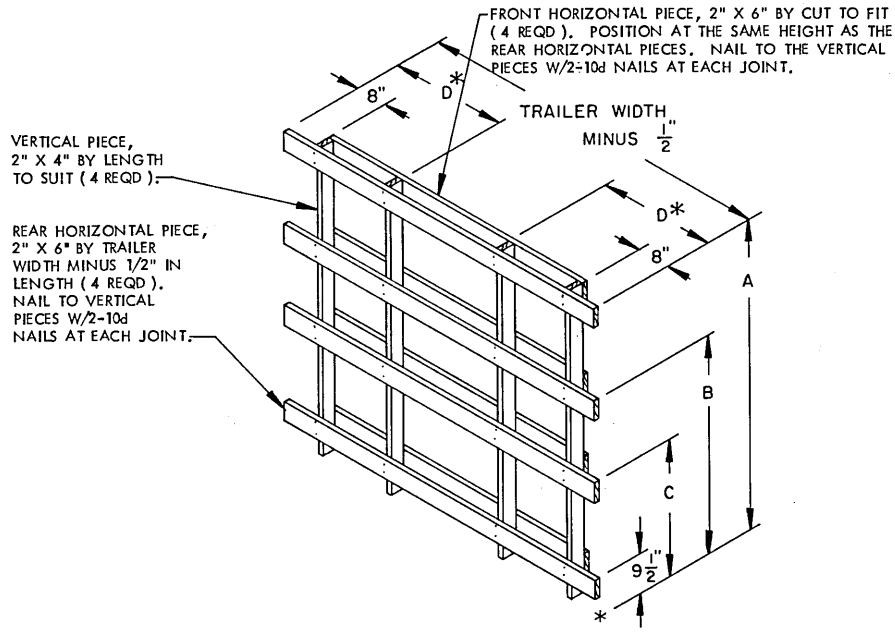
5. THE PROCEDURES ON THIS PAGE ARE APPLICABLE FOR THE SHIPMENT OF LEFTOVER CONTAINERS IN ANY OF THE LOADS DEPICTED HEREIN.



SECUREMENT OF ONE CONTAINER



SECUREMENT OF FIVE CONTAINERS

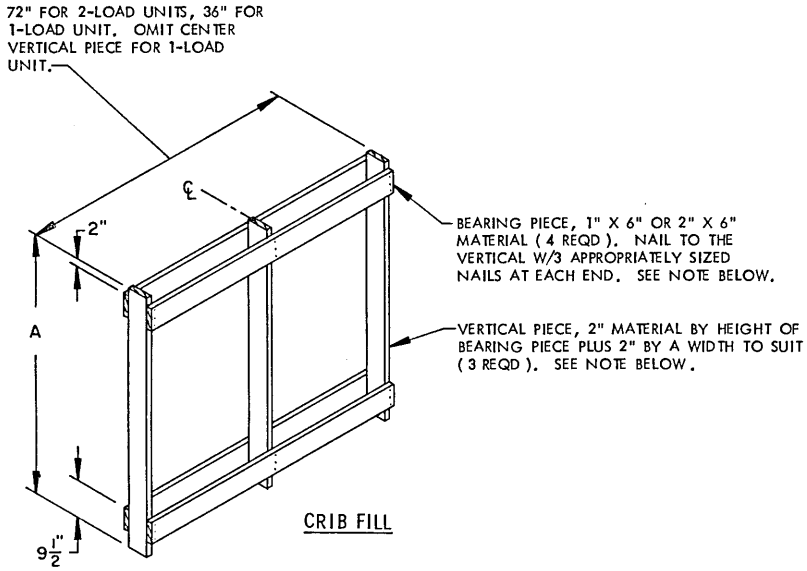


FORWARD BLOCKING ASSEMBLY

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 THE TRAILER HAS LARGE ANGLED FRONT CORNERS, REFER TO PAGE 36 FOR GUIDANCE.

FORWARD BLOCKING CHART				
PALLET UNIT TYPE	A	B	C	D*
7-LAYER UNIT	7'-9"	61"	41"	30"
6-LAYER UNIT	6'-8"	54"	35"	30"
5-LAYER UNIT	67"	48"	29"	30"
7-L W/6-L ON TOP	7'-2"	61"	41"	30"
7-L W/5-L ON TOP	6'-8"	61"	41"	30"
6-L W/5-L ON TOP	6'-2"	54"	35"	30"

*DIMENSION "D" WILL BE 41" IF THE UNITS ARE POSITIONED LENGTHWISE AS SHOWN IN THE LOAD ON PAGE 16. FOR THE "COMBINATION" LOAD ON PAGE 12, DIMENSION "D" ON THE LEFT SIDE WILL BE 30" AND DIMENSION "D" ON THE RIGHT WIDE WILL BE 41".

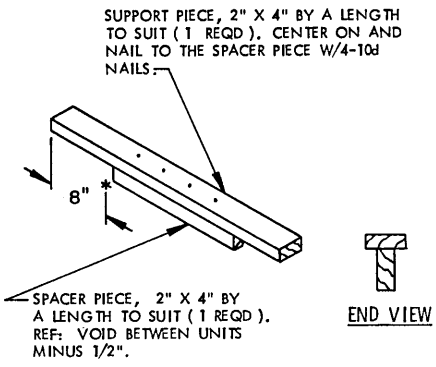


CRIB FILL

NOTE:

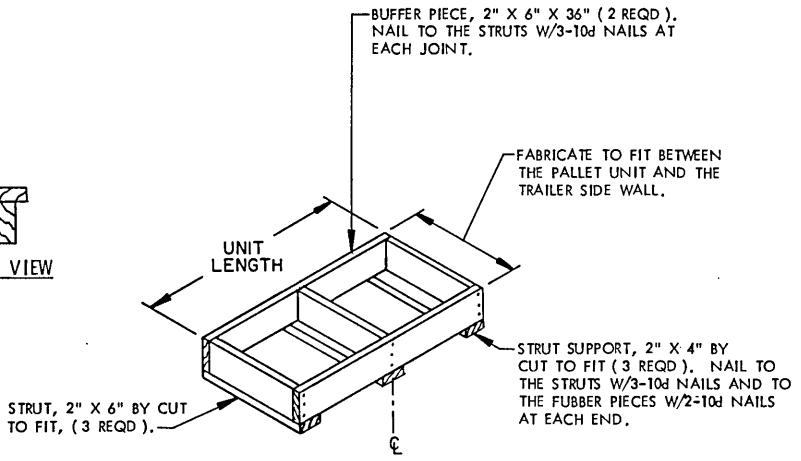
THE CRIB FILL ASSEMBLY CONSISTS OF 1" X 6" AND 2" X 6" MATERIAL, AND IS DESIGNED FOR USE IN THE LOAD VIEW ON PAGES 12 AND 14 WHERE THE VOID IS 7-1/2". THE WIDTH OF THE VERTICAL PIECES, AND/OR THE THICKNESS OF THE BEARING PIECES CAN BE ALTERED TO FILL THE LATERAL VOID BETWEEN UNITS. NOTE THAN AN ASSEMBLY NEED NOT BE CONSTRUCTED FOR A TIGHT FIT; UP TO ONE INCH (1") SPACE IS PERMITTED.

CRIB FILL CHART, DIMENSION "A"		
PALLET UNIT TYPE	2-HIGH	1-HIGH
5-LAYER UNIT	67"	28"
6-L W/5-L ON TOP	6'-2"	35"

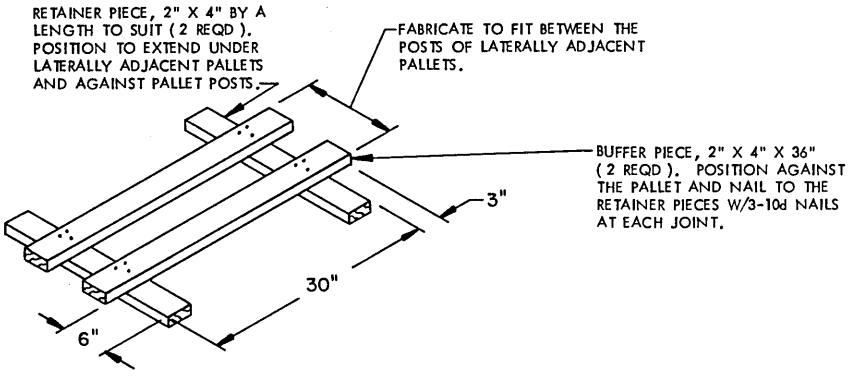


END VIEW

TOP-OF-LOAD ANTI-SWAY BRACE A

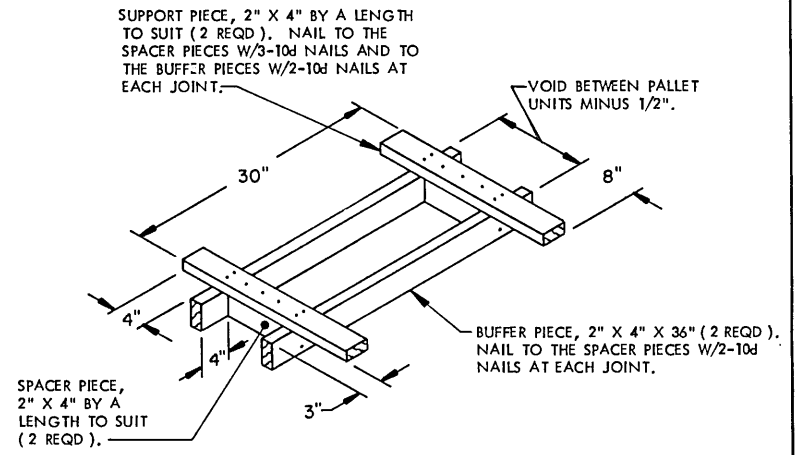


SPACER ASSEMBLY A



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.

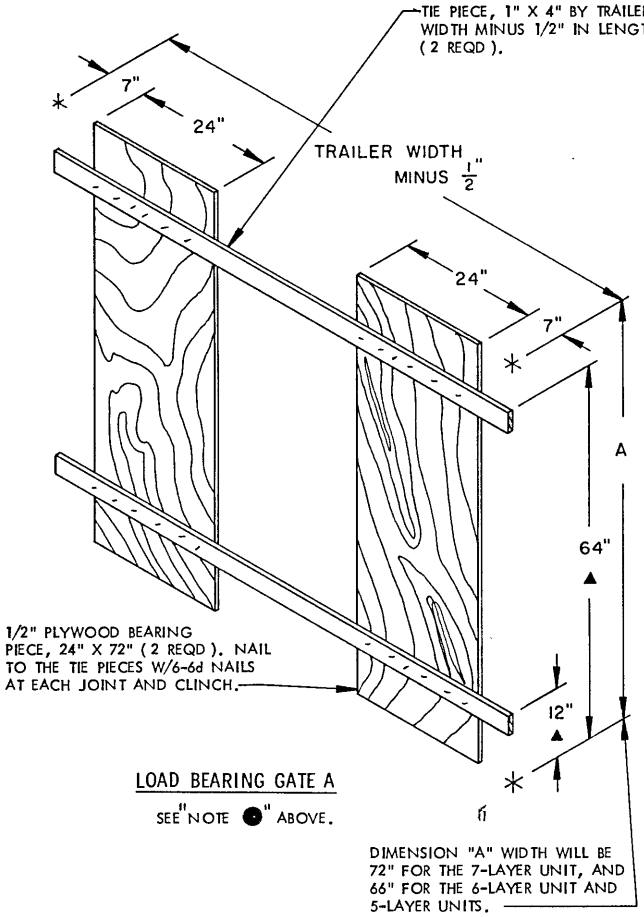


TOP-OF-LOAD ANTI-SWAY BRACE B

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.

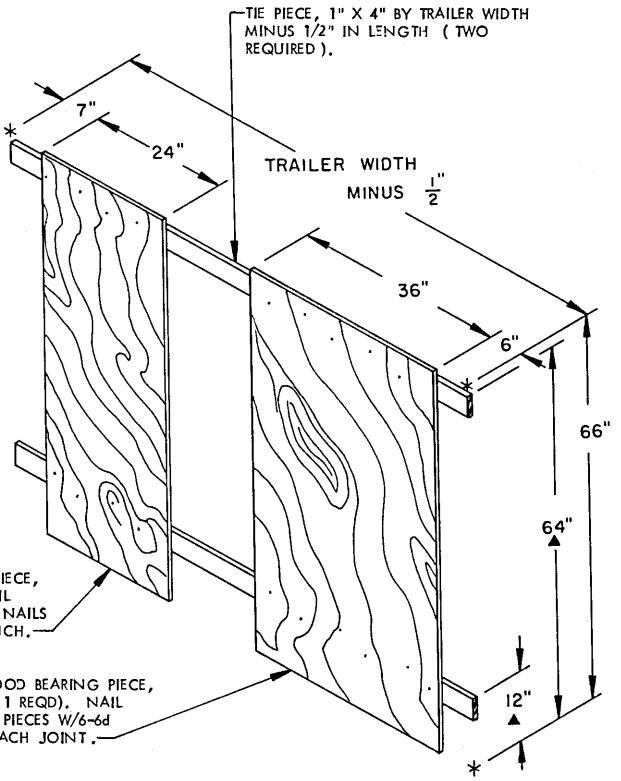
NOTE ●:

IF PLYWOOD IS NOT AVAILABLE, OR IF DESIRED, THE LOAD BEARING GATES MAY BE FABRICATED FROM NOMINAL ONE INCH AND/OR TWO INCH LUMBER. SEE THE ALTERNATIVE LOAD BEARING GATES ON PAGE 28.



LOAD BEARING GATE A

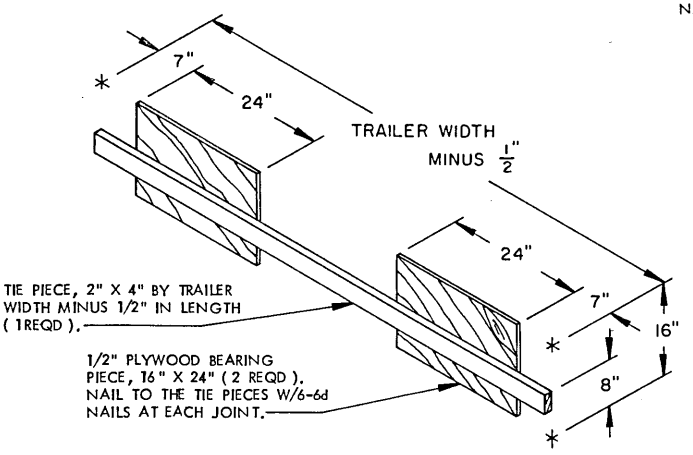
SEE "NOTE ●" ABOVE.



LOAD BEARING GATE C

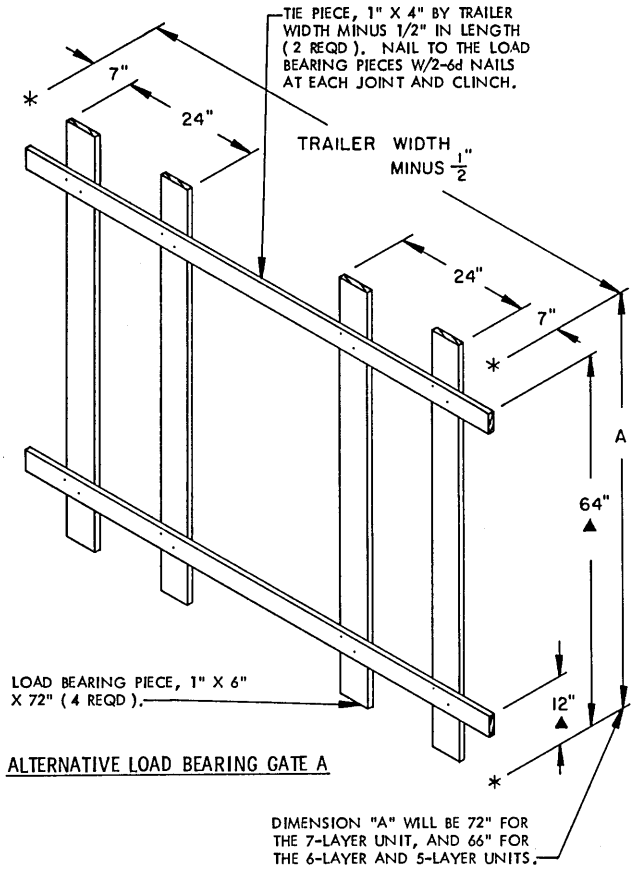
SEE "NOTE ●" ABOVE.

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



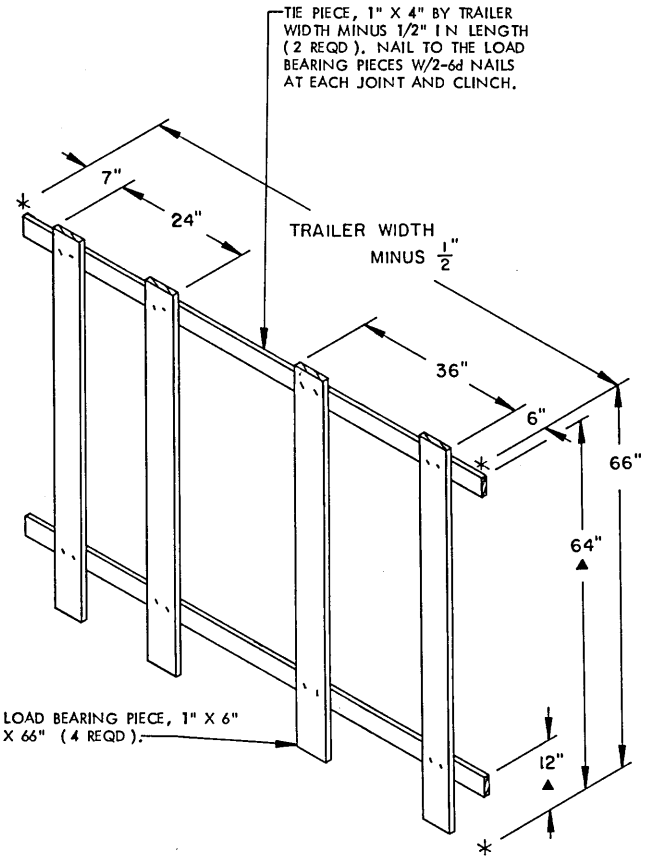
LOAD BEARING GATE B

IF A PALLET UNIT IN THE SECOND LAYER HAS NO PALLET UNIT LATERALLY ADJACENT TO IT, OMIT ONE (1) PLYWOOD BEARING PIECE. SEE "NOTE ●" ABOVE.

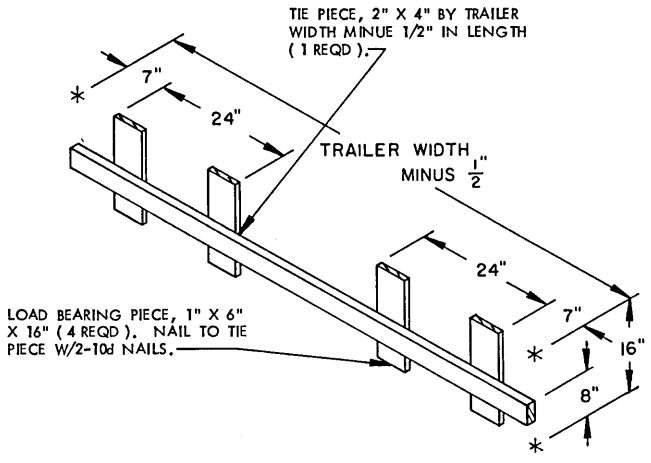


ALTERNATIVE LOAD BEARING GATE A

DIMENSION "A" WILL BE 72" FOR THE 7-LAYER UNIT, AND 66" FOR THE 6-LAYER AND 5-LAYER UNITS.

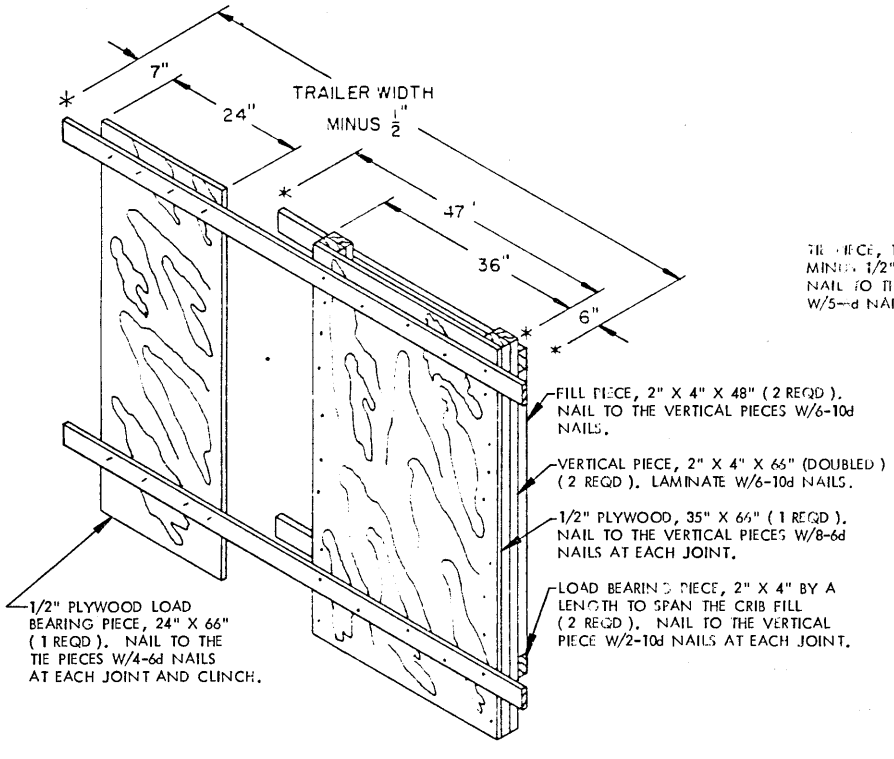


ALTERNATIVE LOAD BEARING GATE C

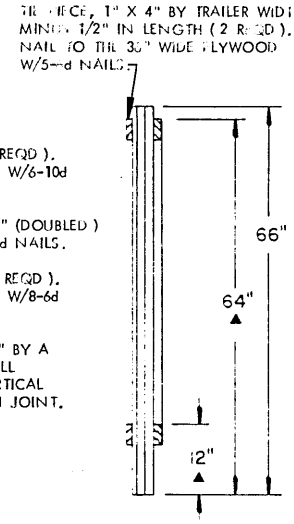


ALTERNATIVE LOAD BEARING GATE B

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

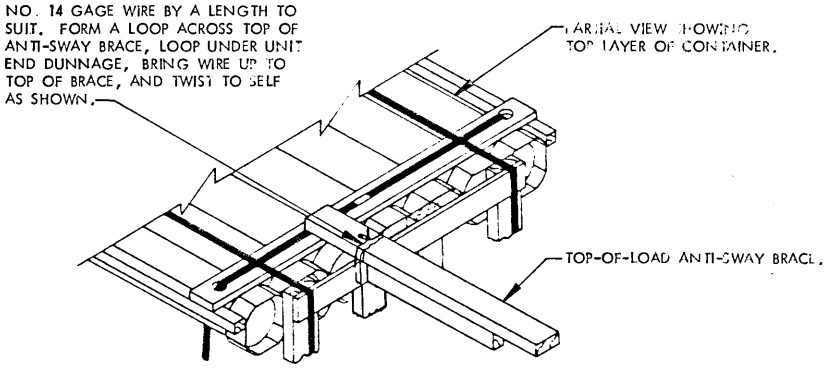


LOAD BEARING GATE D

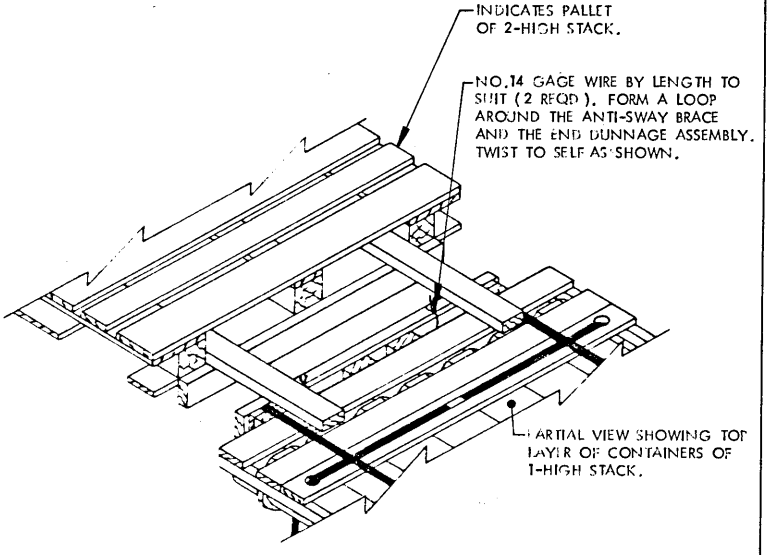


END VIEW

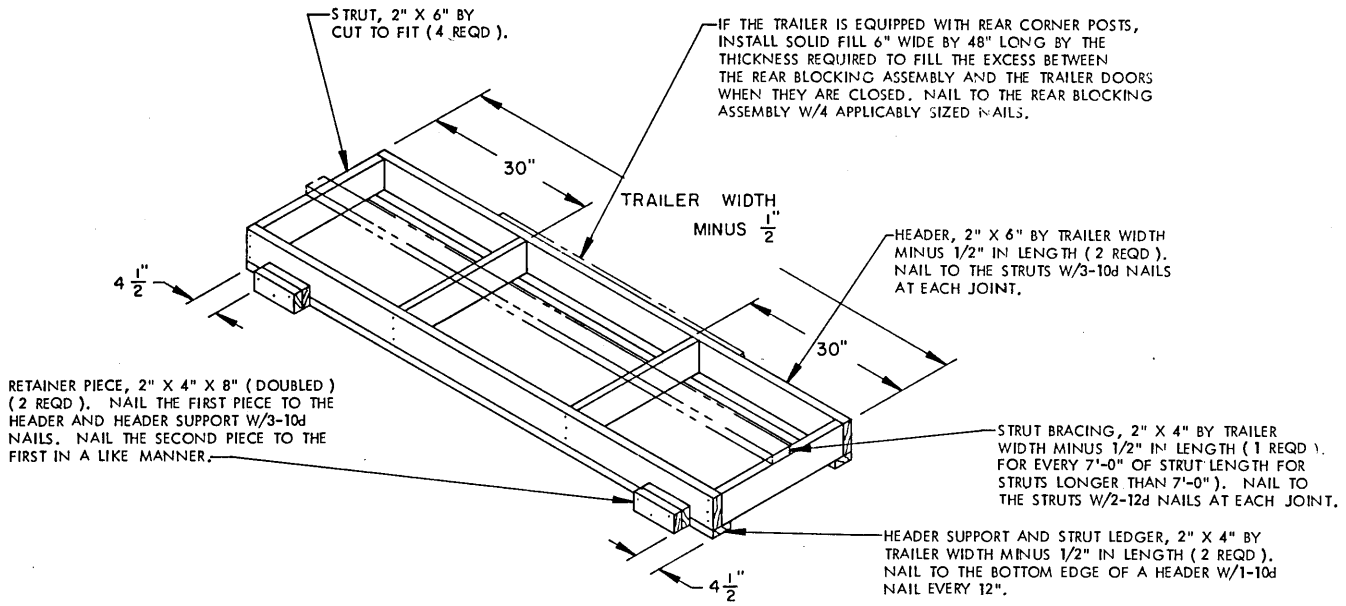
▲ THESE HEIGHTS MAY NEED TO BE ADJUSTED TO PROVIDE FOR CLEARANCE OF THE CROSS MEMBERS AT A MINUS TOLERANCE INSTALLATION.



TIE WIRE APPLICATION A

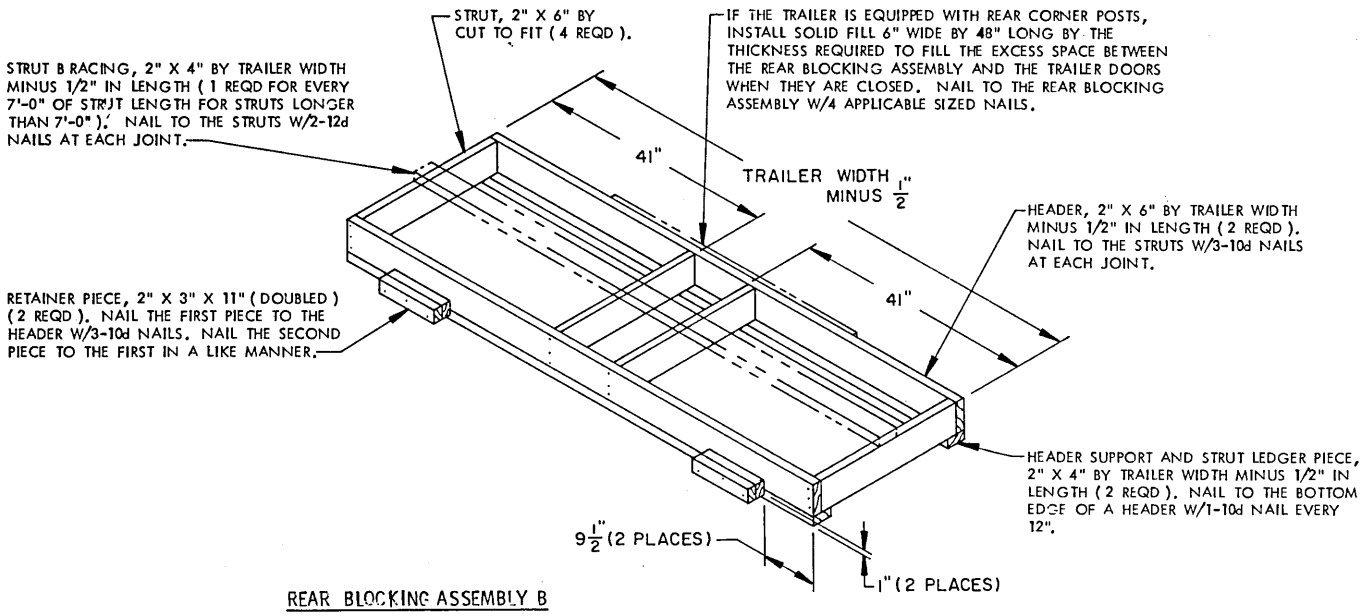


TIE WIRE APPLICATION B



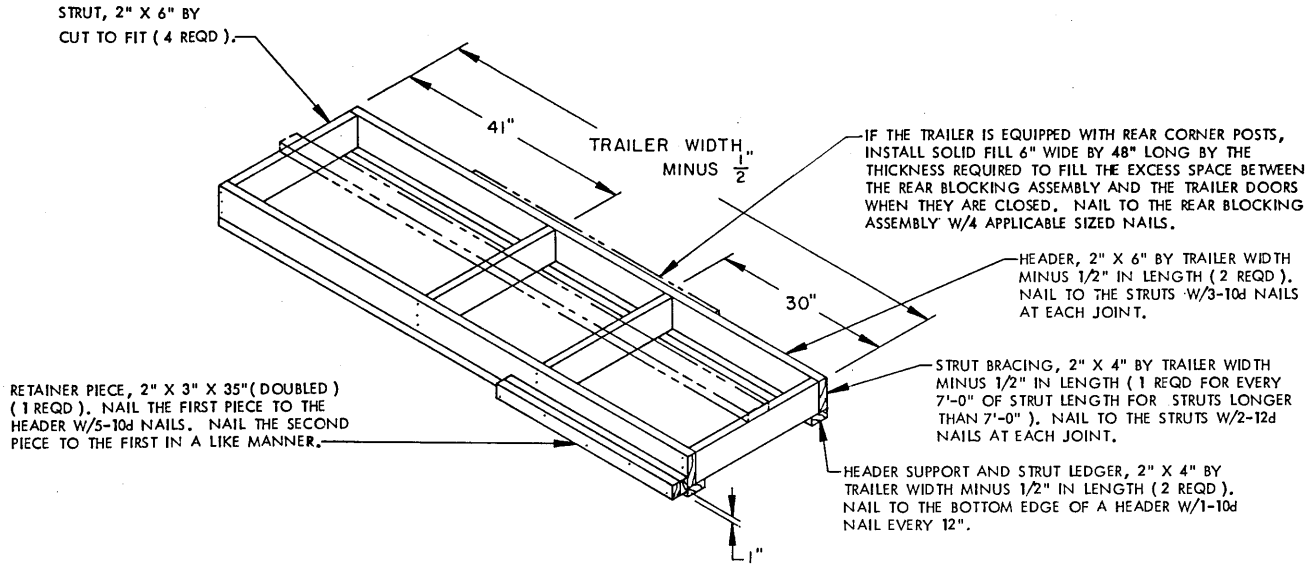
REAR BLOCKING ASSEMBLY A

THIS ASSEMBLY IS FOR USE AT THE REAR OF THE LOADS AS DEPICTED ON PAGES 4, 8, AND 18. NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.



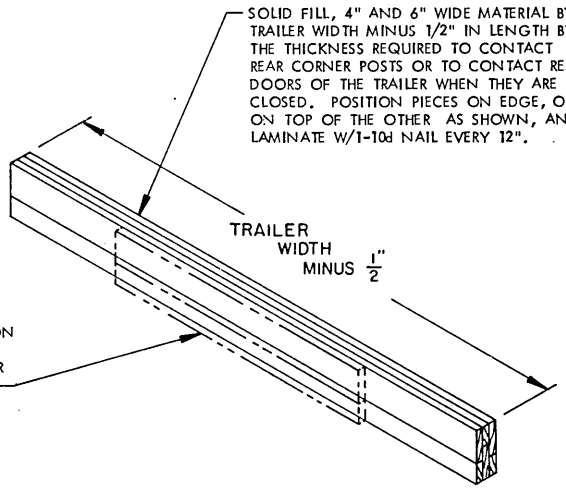
REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS FOR USE AT THE REAR OF THE LOAD AS DEPICTED ON PAGE 16. NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED..



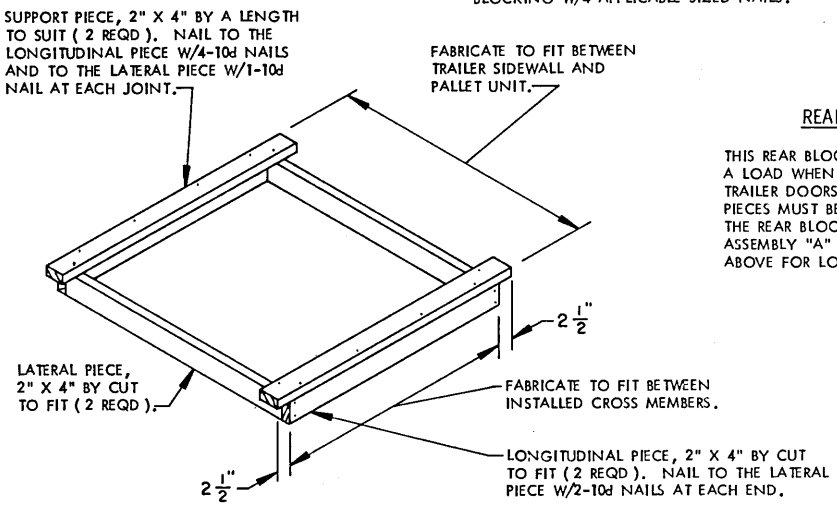
REAR BLOCKING ASSEMBLY C

THIS ASSEMBLY IS FOR USE AT THE REAR OF THE LOAD AS DEPICTED ON PAGE 12. NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.



REAR BLOCKING ASSEMBLY D

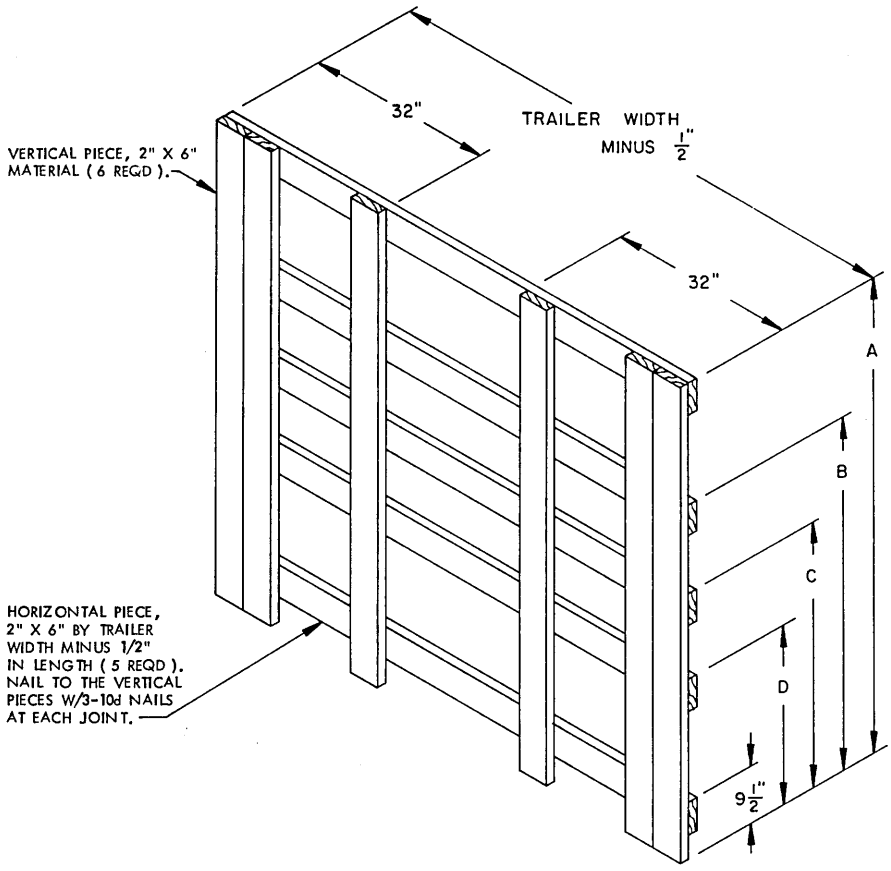
THIS REAR BLOCKING IS DESIGNED FOR USE AT THE REAR OF A LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS LESS THAN 9". NOTE THAT RETAINER PIECES MUST BE INSTALLED ON THE LOAD BEARING SIDE OF THE REAR BLOCKING ABOVE. REFER TO REAR BLOCKING ASSEMBLY "A" OR "B" ON PAGE 30, OR REAR BLOCKING "C" ABOVE FOR LOCATION AND NAILING GUIDANCE.



SPACER ASSEMBLY B

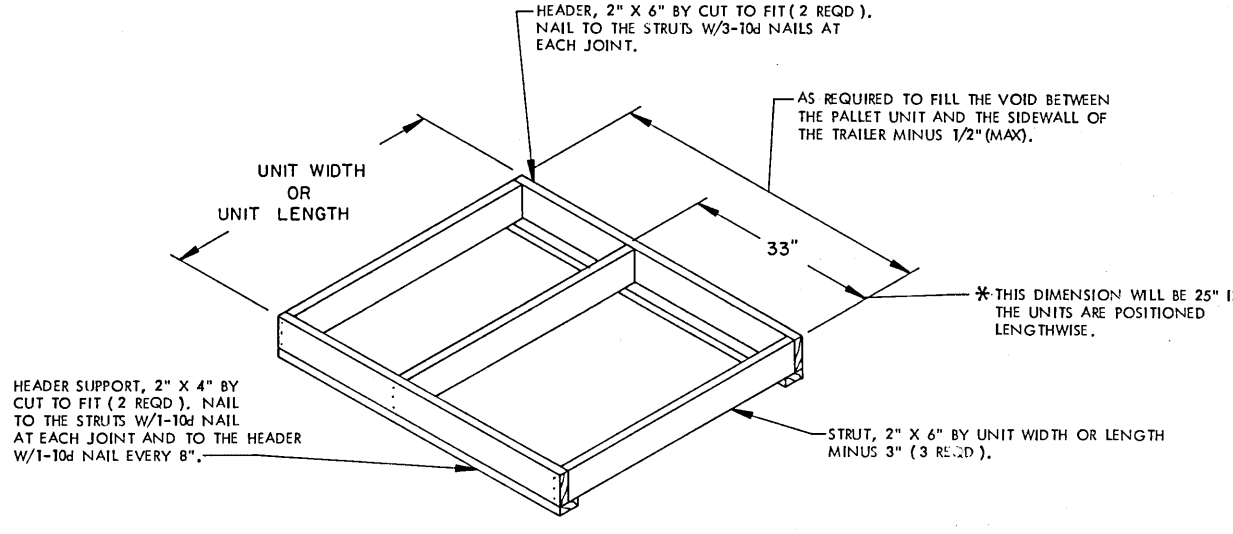
THIS ASSEMBLY IS DESIGNED FOR USE AS LATERAL BRACING IN A TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES AS SHOWN IN THE TYPICAL LTL LOAD ON PAGE 22.

BULKHEAD GATE CHART				
PALLET UNIT TYPE	DIMENSIONS			
	A	B	C	D
7-LAYER UNIT	7'-9"	61"	48"	30"
6-LAYER UNIT	6'-8"	54"	45"	34"
5-LAYER UNIT	67"	48"	39"	28"
7-L W/6-L ON TOP	7'-2"	61"	48"	28"
7-L W/5-L ON TOP	6'-8"	61"	48"	28"
6-L W/5-L ON TOP	6'-1"	54"	45"	34"



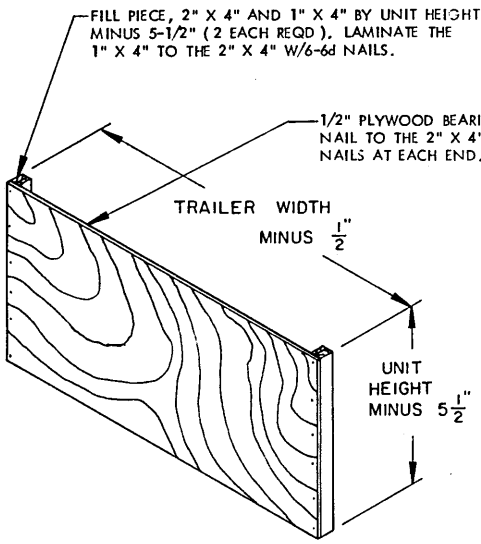
BULKHEAD GATE

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



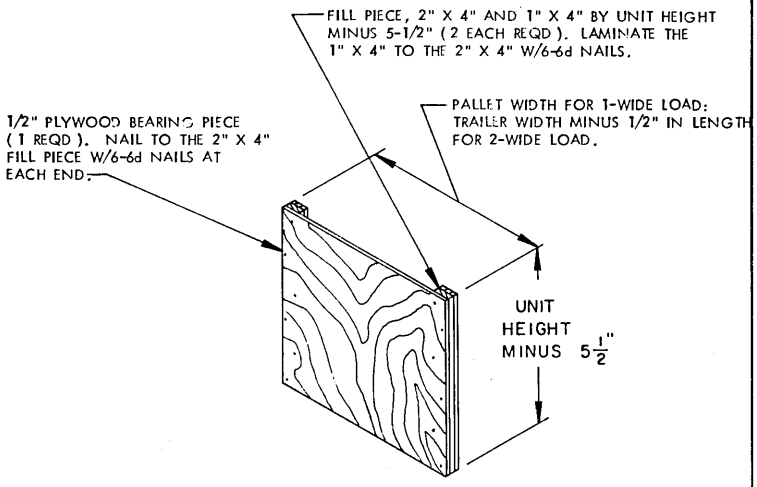
SPACER ASSEMBLY C

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



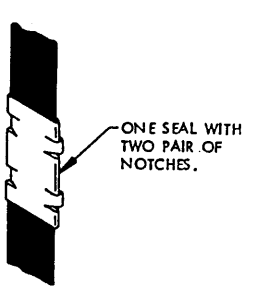
LOAD BEARING GATE E

NOTE THAT THE PLYWOOD PIECE IS NAILED TO THE 1-1/2" EDGE OF THE 2" X 4" FILL PIECE.



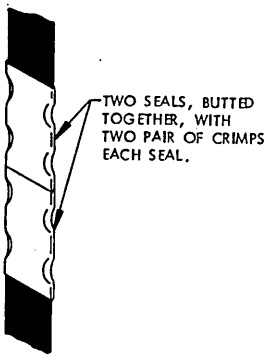
LOAD BEARING GATE F

NOTE THAT THE PLYWOOD BEARING PIECE IS NAILED TO THE 3-1/2" SURFACE OF THE 2" X 4" FILL PIECE.



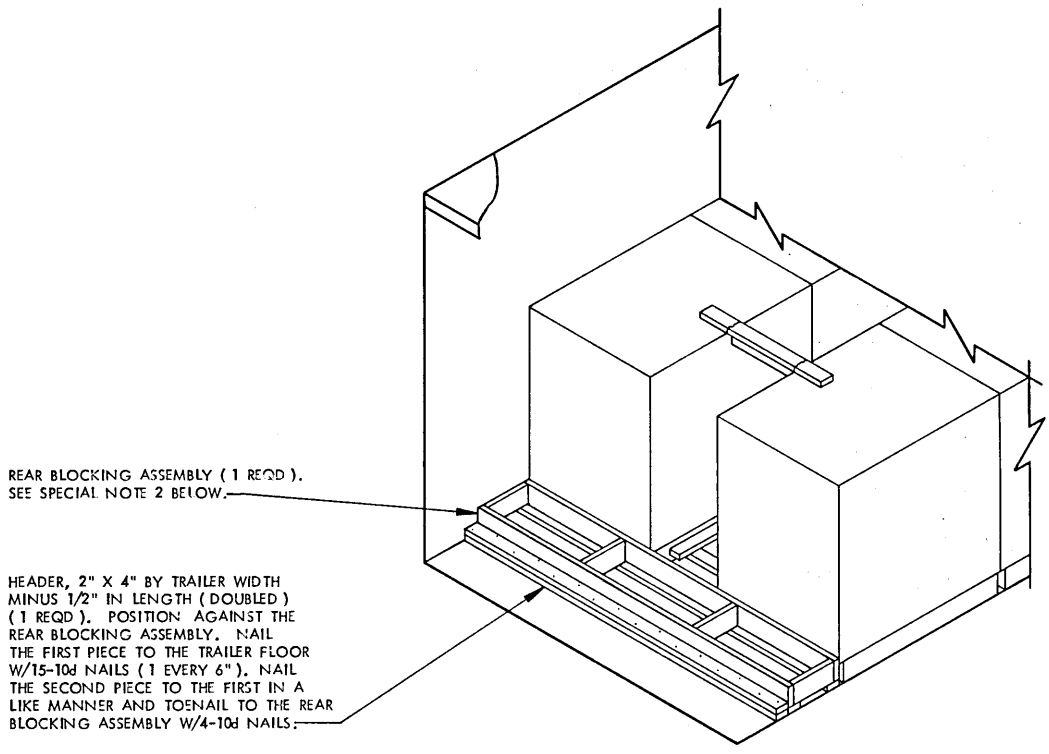
STRAP JOINT A

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



STRAP JOINT B

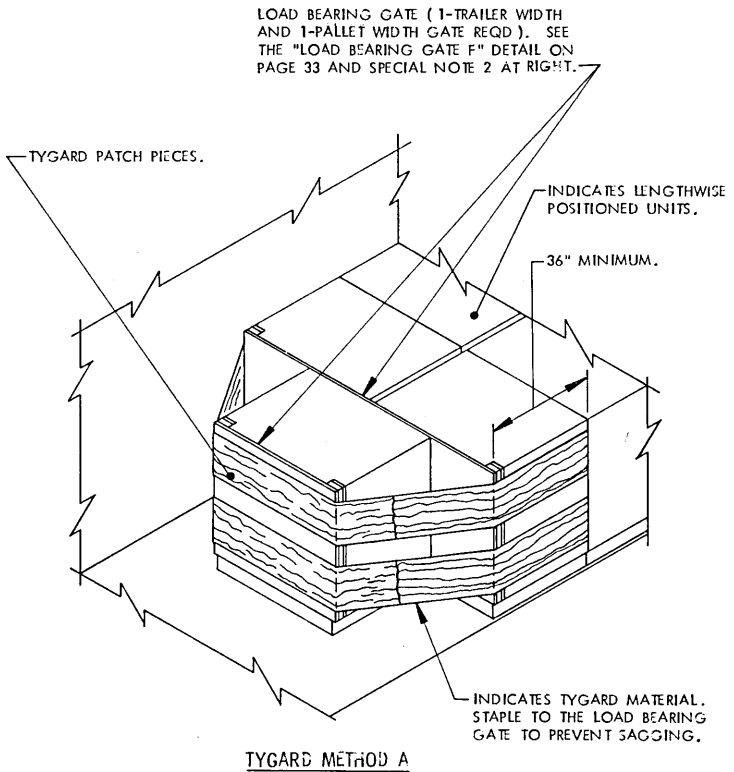
METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.



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.



TYGARD METHOD A

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. TYGARD MATERIAL MUST BE INSTALLED AT TWO LEVELS FOR FOR EACH LAYER OF THE REAR LOAD UNIT.

2. A PLYWOOD GATE MUST BE INSTALLED FOR EACH LAYER AT THE REAR OF THE LOAD TO PROVIDE A SMOOTH SURFACE FOR THE TYGARD MATERIAL TO EXTEND AROUND. IF THE REAR LOAD UNIT IS 2-WIDE, INSTALL A GATE WHICH IS TRAILER WIDTH MINUS 1/2" IN LENGTH. IF THE REAR LOAD UNIT IS 1-WIDE, ROTATE THE PALLET, INSTALL ONE (1) PALLET WIDTH GATE, AND ONE (1) TRAILER WIDTH MINUS 1/2" IN LENGTH GATE, AS SHOWN BY THE TYGARD METHOD "A" AND "B" DETAILS; NOTE THAT PALLET ROTATION IS NOT REQUIRED IN METHOD "A".

3. THE TYGARD MATERIAL AND THE ADHESIVE FOR ATTACHING IT ARE COMMERCIAL PRODUCTS. FOR A SOURCE OF SUPPLY, CONTACT WALNUT INDUSTRIES, INC., 1344 ADAMS ROAD, PO BOX "E", BENSALEM, PA 19020-0860, PHONE 1-800-523-6536. APPLICATION INSTRUCTIONS AND GUIDANCE CAN ALSO BE OBTAINED FROM THAT OFFICE.

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

5. NOTICE: IF THE AREA OF A SIDEWALL WHERE THE TYGARD SHOULD BE ATTACHED IS ROUGH AND/OR BROKEN, THE APPLICABLE PIECE (S) OF TYGARD CAN BE LENGTHENED A SUITABLE AMOUNT AND ATTACHED TO THE SIDEWALL AHEAD OF THE INDICATED PREFERRED LOCATION.

6. TYGARD MATERIAL MUST BE APPLIED TO THE WALL IN SUCH A LONGITUDINAL LOCATION THAT IT WILL HAVE A PALLET UNIT BEARING AGAINST IT. IF A SHIPMENT CONTAINS AN ODD NUMBER OF PALLET UNITS, THE ODD UNIT MUST BE TURNED 90° AND CENTERED ACROSS THE WIDTH OF THE TRAILER AS SHOWN IN THE LOAD ON PAGE 20, AND AS SHOWN BY THE TYGARD METHODS ON THIS PAGE. THE TYGARD MATERIAL WILL BE APPLIED TO DIRECTLY OPPOSITE PORTIONS OF THE TRAILER SIDEWALL; IT MUST BE APPLIED TO EXTEND AT LEAST 36" FORWARD OF THE LAST PALLET UNIT IN EACH LAYER ON EACH SIDE OF THE LOAD.

RECOMMENDED EQUIPMENT/INSTALLATION PROCEDURES

EQUIPMENT REQUIRED:

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

BASIC INSTALLATION GUIDANCE

1. CUT TO LENGTH THE REQUIRED NUMBER OF TYGARD PIECES (FROM 2 TO 8 DEPENDING UPON THE LOAD CONFIGURATION) FOR ATTACHMENT TO THE TRAILER SIDEWALL. PIECES WILL BE OF A LENGTH AS REQUIRED TO PROVIDE PROPER BONDING TO THE TRAILER SIDEWALL AND TO EXTEND 60" ACROSS THE REAR OF THE LOAD. ALSO, CUT 72" LONG "PATCH" PIECES OF TYGARD MATERIAL, ONE FOR EACH SET OF TWO PIECES PREVIOUSLY CUT.

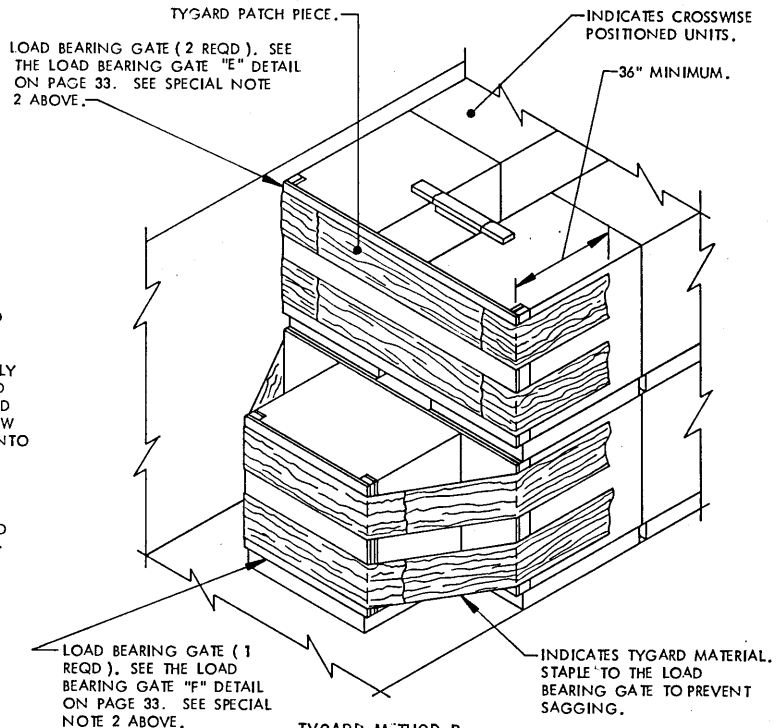
2. PRIOR TO POSITIONING OF THE PALLETS IN THE REARMOST LOAD UNIT, APPLY TYGARD ADHESIVE TO THE PROPER PORTIONS OF THE TRAILER SIDEWALLS AND TO THE CORD SIDE OF A CORRESPONDING LENGTH OF EACH OF THE TYGARD PIECES THAT ARE TO BE ATTACHED TO THE SIDEWALLS OF THE TRAILER. ALLOW TIME FOR THE ADHESIVE TO "CURE" BEFORE PLACING A STRIP OF TYGARD ONTO A SIDEWALL (ADHESIVE WILL FEEL ALMOST DRY WHEN TOUCHED). NOTE: APPLICATION OF TYGARD IS SIMILAR TO THE APPLICATION OF "FORMICA".

3. APPLY THE TYGARD PIECES TO EACH SIDEWALL OF THE TRAILER SO THAT THE PIECES ARE PARALLEL OR NEARLY PARALLEL TO THE FLOOR. ROLL THE TYGARD WITH PRESSURE ROLLER TO ENSURE PROPER BONDING IS ACHIEVED. TEMPORARILY SECURE THE LOOSE ENDS TO THE TRAILER SIDEWALL OR TO AN OPEN HINGED TYPE DOOR OR TO THE OUTSIDE WALL, AS APPLICABLE.

4. POSITION THE PALLETS OF THE REAMOST LOAD UNIT INTO THE TRAILER AND INSTALL THE SPECIFIED ANTI-SWAY BRACES, AS APPLICABLE.

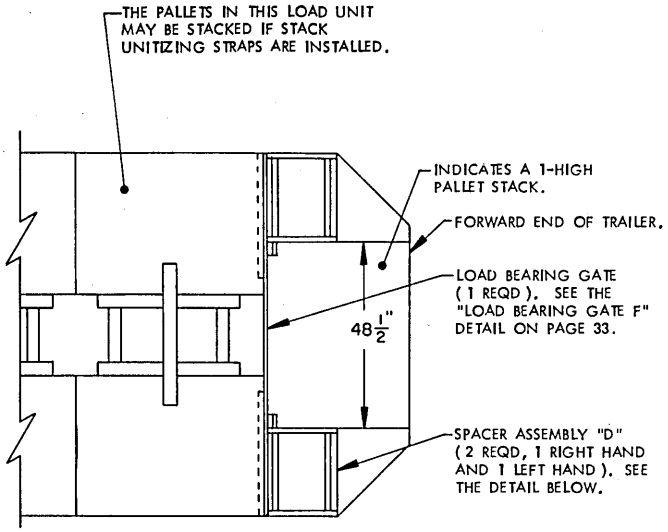
5. UNDO THE PREVIOUSLY SECURED LOOSE ENDS AND BRING A SET OF TWO PIECES TOGETHER ACROSS THE REAR OF THE LOAD. POSITION THE TENSIONING ROD SO THAT THE LOOSE ENDS OF THE TYGARD MATERIAL EXTEND THRU THE SLOT IN ROD. USING THE TWO WRENCHES, ROLL UP THE TYGARD TO TENSION IT ACROSS REAR OF THE LOAD. POSITION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

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



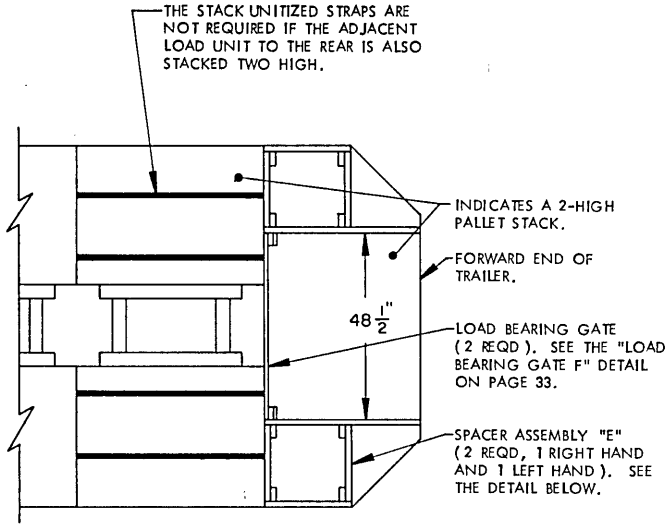
TYGARD METHOD B

TYGARD METHODS "A" OR "B" CAN BE USED IN A 1-LAYER LOAD CONTAINING AN ODD NUMBER OF UNITS, OR IN A 2-LAYER LOAD WHEN THE REAR LOAD UNIT IN EITHER LAYER IS CENTERED ACROSS THE WIDTH OF THE TRAILER AS SHOWN ON THE FIRST LAYER ABOVE.



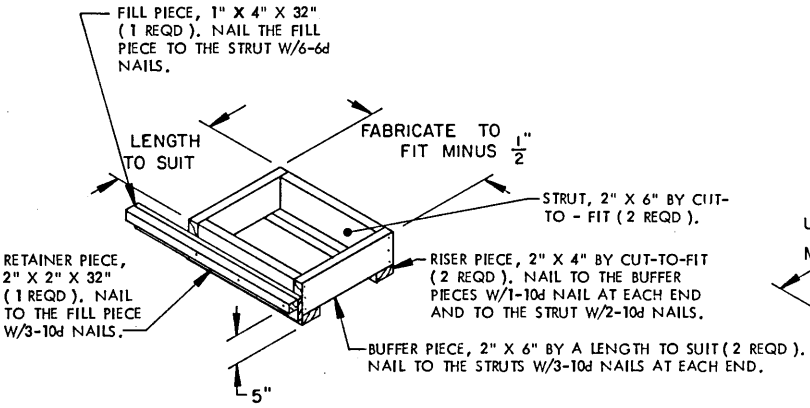
ALTERNATIVE FORWARD LOADING PATTERN A

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. THESE PROCEDURES ARE APPLICABLE FOR ALL OF THE UNITS DEPICTED ON PAGE 3.



ALTERNATIVE FORWARD LOADING PATTERN B

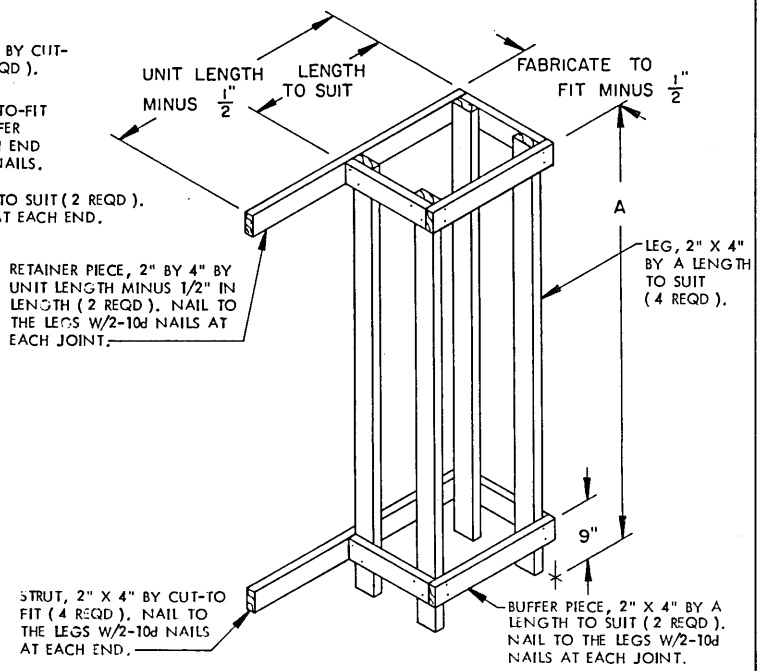
THIS PROCEDURE IS APPLICABLE TO THE LOADING OF A STACK OF TWO (2) PALLET UNITS IN THE FORWARD END OF A CONVENTIONAL VAN TRAILER HAVING LARGE ANGLED FRONT CORNERS (REF: 18"). THE PROCEDURES MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE.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



SPACER ASSEMBLY D

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

SPACER ASSEMBLY E CHART	
PALLET UNIT TYPE	DIM A
7-LAYER UNIT 6-LAYER UNIT 5-LAYER UNIT	72" 65-1/2" 59"
7-L W/6-L ON TOP 7-L W/5-L ON TOP 6-L W/5-L ON TOP	72" 72" 65-1/2"



SPACER ASSEMBLY E

THIS ASSEMBLY IS DESIGNED FOR LATERAL BRACING OF A 2-HIGH PALLET STACK WHICH IS TURNED 90° FROM THE NORMAL LOADING ORIENTATION AND POSITIONED IN THE FRONT OF AN ANGLED-CORNER CONVENTIONAL VAN TRAILER AS SHOWN IN THE "ALTERNATIVE FORWARD LOADING PATTERN B" VIEW ABOVE. NOTE THAT THIS VIEW DEPICTS THE ASSEMBLY POSITIONED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED IN A LOAD. RIGHT HAND AND LEFT HAND SPACER ASSEMBLIES ARE REQUIRED.

ITEMIZED INDEX