

APPROVED BY BUREAU OF EXPLOSIVES <i>A. J. Brasenuck</i> MILITARY ASSISTANT
DATE <i>11/10/68</i>
REVISION NO 1
SIGNED <i>A. J. Brasenuck</i>
DATE <i>11/18/69</i>

LOADING & BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS OF CBU ITEMS PACKED IN THE CNU-79/E CONTAINER[●]

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● THIS DOCUMENT INCLUDES PROCEDURES APPLICABLE FOR BOTH THE 104" AND 116" LONG CONTAINERS.

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REVISIONS			AMMUNITION PROCUREMENT & SUPPLY AGENCY U. S. ARMY MATERIEL COMMAND
1	30 JUN 69	<i>W.B./Lew</i>	APPROVED BY ORDER OF COMMANDING GENERAL U. S. ARMY MATERIEL COMMAND <i>F. ...</i>
			U. S. ARMY MATERIEL COMMAND 12 DECEMBER 1967
			CLASS DIVISION DRAWING FILE
		19	48 7040 SPIIM5

DO NOT SCALE

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THE 24-UNIT LOAD SHOWN ON PAGES 4 AND 5 IS BASED ON A CLOSED OR OPEN TOP VAN TRAILER WHICH IS 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) AND HAS A WOOD, OR A WOOD AND METAL, OR A METAL FLOOR. THE DELINEATED OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO TRAILERS WHICH ARE FROM 86-INCHES THROUGH 93-INCHES WIDE.
- B. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO CBU ITEMS WHEN THEY ARE PACKAGED IN THE CNU-79/E CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CNU-79/E CONTAINER WITH CONTENTS. SEE GENERAL NOTES "O" AND "P".
- C. FOR DETAILS OF THE 116" LONG CONTAINER SEE DRAWING NO. 8887105. CONTAINER DIMENSIONS ---- 116" LONG X 31-1/2" WIDE X 31" HIGH. GROSS WEIGHT ----- 1,600 POUNDS (APPROX).
- D. 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.
- E. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED AND COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED HEREIN MAY BE USED. HOWEVER, THE APPROVED METHODS SHOWN HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- F. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEMS DESIGNATED WITHIN THE DRAWING TITLE.
- G. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE PARTIALLY LOADED WITH ITEMS PACKED IN THE CNU-79/E CONTAINERS, 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.
- H. ONE AND ONE-QUARTER INCH (1-1/4") STEEL STRAPPING WILL BE USED TO UNITIZE STACKED CONTAINERS AS SHOWN ON PAGE 3, AND AS SPECIFIED BY THE OUTLOADING METHODS ON PAGES 4 AND 5 AND ON PAGES 8 AND 9. IF THE CAPACITY OF THE MATERIALS HANDLING EQUIPMENT USED TO LOAD THE CONTAINERS ABOARD A TRAILER PERMITS, IT IS RECOMMENDED THAT THE CONTAINERS BE UNITIZED PRIOR TO PLACEMENT WITHIN THE TRAILER. NOTICE: IN SOME INSTANCES CONTAINERS WILL ALREADY BE UNITIZED WHEN OFFERED FOR LOADING. THESE UNITIZED STACKS SHOULD BE INSPECTED, AND AS REQUIRED, LOOSE UNITIZING STEEL STRAPPING MUST BE REPLACED.
- J. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) CRIMPS PER SEAL MUST BE USED. CAUTION: EXERCISE CARE DURING STRAP TENSIONING TO PREVENT DAMAGE TO CONTAINERS.
- K. FOR TRAILERS NOT EQUIPPED WITH REAR CORNER POSTS, THE REAR BLOCKING MUST BE EXTENDED TO CONTACT THE REAR DOORS WHEN THEY ARE CLOSED.
- L. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE AND 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-5/8" WIDE.
- M. PORTIONS OF THE TRAILER BODIES DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- N. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO DEPICTED OUTLOADING METHODS.
- O. THE 116" LONG CNU-79/E CONTAINER IS DEPICTED IN ALL THE LOAD VIEWS WITHIN THIS DRAWING. EXCEPT AS STATED WITHIN THE SPECIAL NOTES FOR A LOAD, THE PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENTS OF THE 104" LONG CONTAINER.
- P. FOR DETAILS OF THE 104" LONG CONTAINER SEE DRAWING NO. 9204363. CONTAINER DIMENSIONS ----- 104" LONG X 31-1/2" WIDE X 31" HIGH. GROSS WEIGHT ----- 1,656 POUNDS (APPROX).
- Q. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 (CHAPTER 5).

(CONTINUED AT RIGHT)

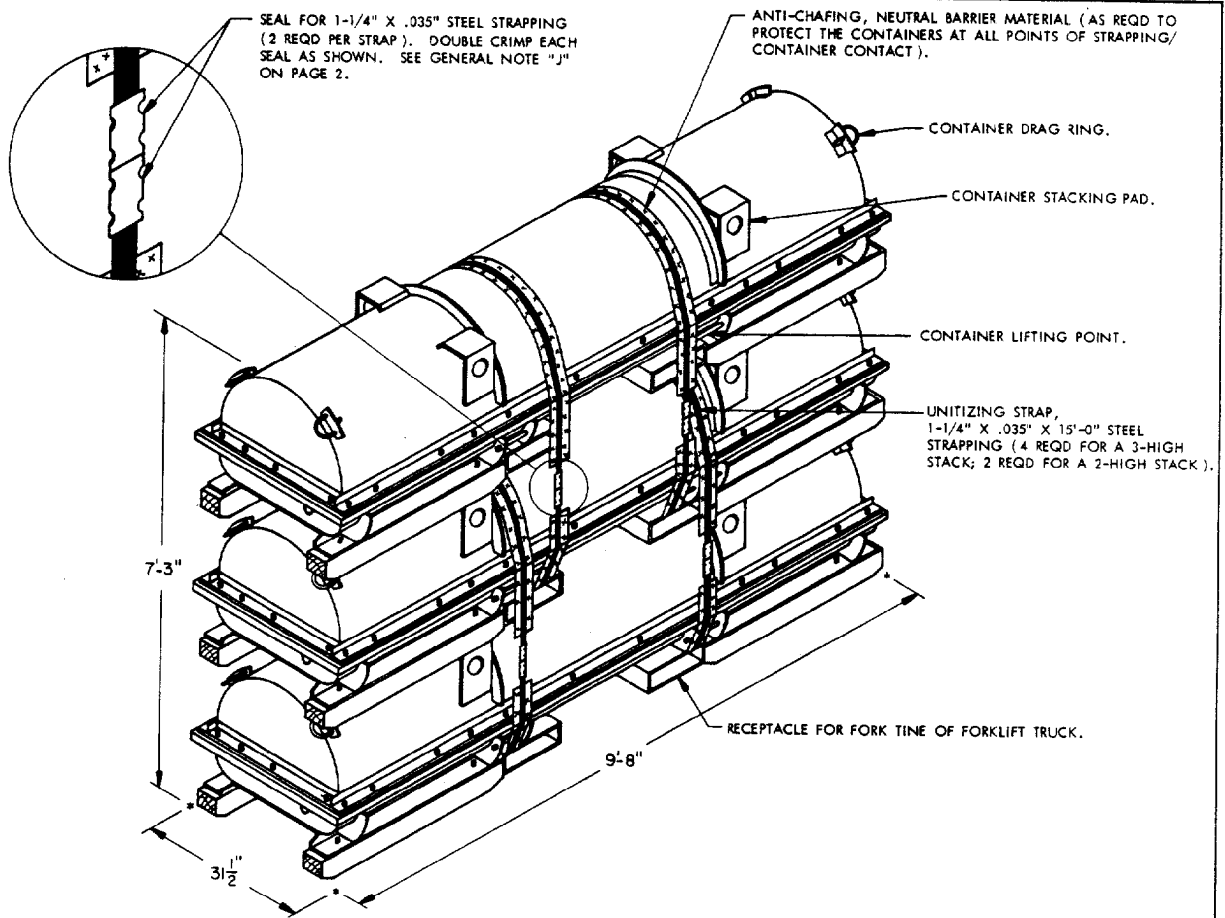
REVISIONS

REVISION NO. 1, DATED 30 JUNE 1969, CONSISTS OF:

1. ADDING PROCEDURES WITHIN THE GENERAL AND SPECIAL NOTES TO INCLUDE SHIPMENT OF THE 104" LONG CONTAINER.

MATERIAL SPECIFICATIONS

- LUMBER ----- :SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS ----- :COMMON, CEMENT COATED OR CHEMICALLY ETCHED,
FED SPEC FF-N-105.
ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.
- STRAPPING, STEEL ----- :TYPE I OR IV, CLASS A OR B, FED SPEC QQ-5-781.
- ANTI-CHAFING MATERIAL: NEUTRAL BARRIER MATERIAL, MIL-8-121 (OR EQUAL).



STACK DETAIL

UNITIZING AND HANDLING PROCEDURAL GUIDANCE

1. STACKING CONTAINERS FOR UNITIZING.
 - A. AN UPPER CONTAINER SHOULD BE PLACED AS CLOSE AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE NEXT LOWER CONTAINER.
 - B. POSITION THE FORWARD END OF AN UPPER CONTAINER ABOVE THE FORWARD END OF THE NEXT LOWER CONTAINER.
2. INSTALLATION OF 1-1/4" X .035" UNITIZING STEEL STRAPPING. SEE GENERAL NOTE "H" ON PAGE 2.
 - A. EACH OF THE TWO SETS OF UNITIZING STRAPS SHOULD BE POSITIONED AROUND THE CONTAINERS AS SHOWN. PLACE STRAPPING THROUGH THE RECEPTACLE FOR FORK TINE OF FORKLIFT TRUCK AND SO THAT STRAPPING LAYS FLAT AND STRAIGHT WITH THE CONTOUR OF THE CONTAINERS; I.E., VERTICAL ALONG SIDES AND STRAIGHT ACROSS THE TOP AND BOTTOM OF THE STACK.
 - B. PLACE ANTI-CHAFING MATERIAL UNDER THE STRAPPING AT ALL POINTS OF STRAPPING/CONTAINER CONTACT, AND SECURE TO PREVENT DISLODMENT DURING AND AFTER STRAP APPLICATION. STRIPS OF ANTI-CHAFING MATERIAL MAY BE TAPED OR STRING-TIED TO THE CONTAINERS OR TO THE STRAPPING, OR IT CAN BE FORMED INTO STRAP ENCIrcLING TUBES BY WINDING THE MATERIAL AROUND AND AROUND THE STRAPPING TO FORM A SELF-HOLDING UNIT.
 - C. STRAPPING WILL BE FIRMLY TENSIONED, AND EACH END-OVER-END LAP JOINT WILL BE SEALED WITH TWO DOUBLE CRIMPED STRAP SEALS AS SHOWN. THE LAP JOINTS WILL BE MADE ALONG THE SIDE OF A STACK SO THAT THE SEALS WILL NOT BE IN CONTACT WITH THE CONTAINERS. DURING STRAP TENSIONING, CARE SHOULD BE EXERCISED TO INSURE THAT THE CONTAINERS ARE NOT DAMAGED. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEALS.

(UNITIZING AND HANDLING PROCEDURAL GUIDANCE CONTINUED)

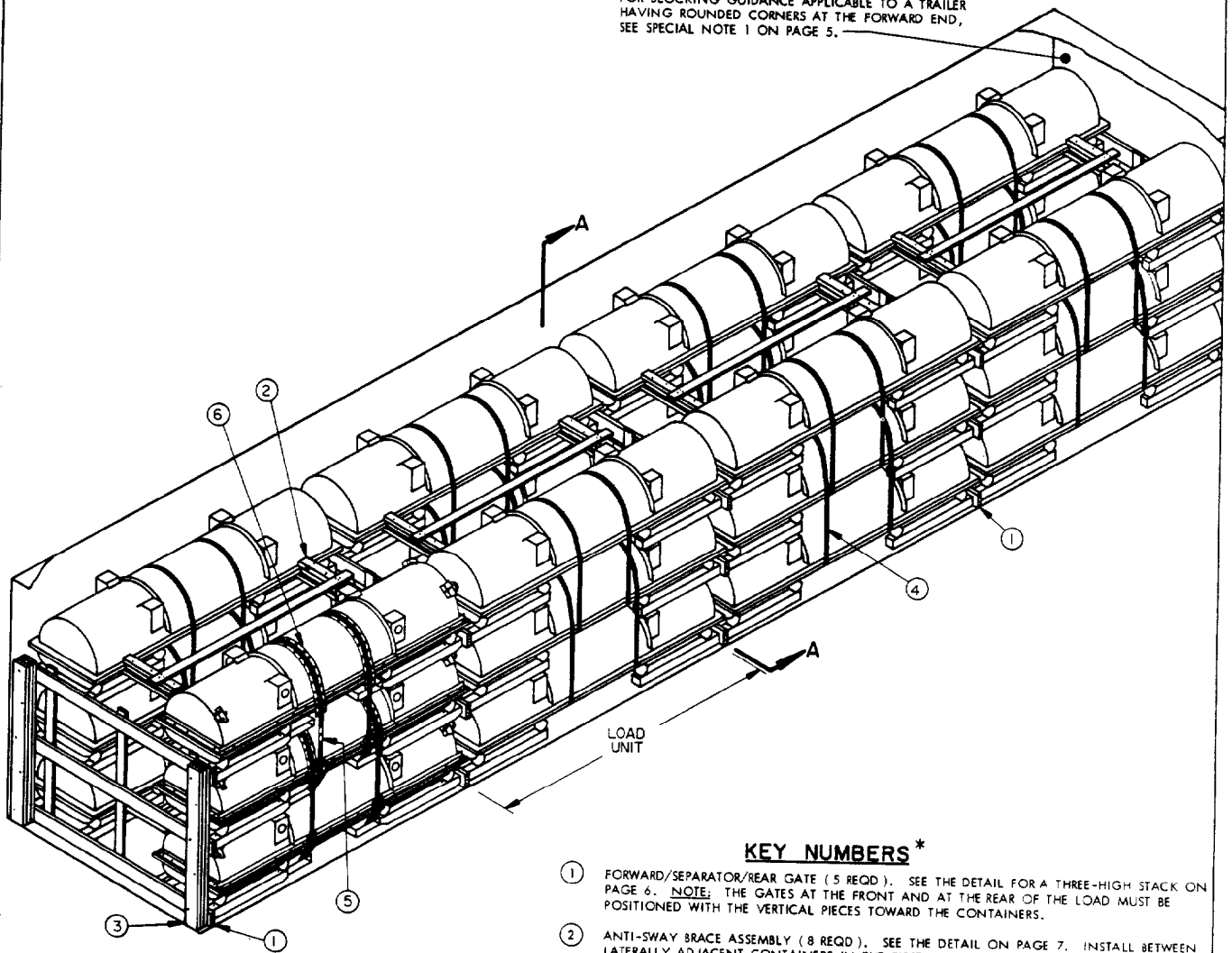
3. CONTAINER OR CONTAINER STACK HANDLING.

NOTES: (1) APPROVED MATERIALS HANDLING EQUIPMENT (FORKLIFT, TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, SPREADER BARS, ETC.) IS SPECIFIED ELSEWHERE.

(2) PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

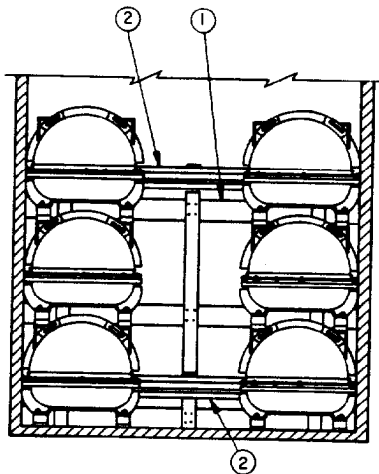
- A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.
- B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. **CAUTION:** THE USUALLY APPLIED END-HANDLING IS NOT PERMITTED; FORK TINES MAY BE PLACED UNDER THE SKIDS. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER TO PREVENT DAMAGE TO THE CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. FOR VERY SHORT "INCHING" SPEED MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING TRAILER LOADING, A UNITIZED TWO OR THREE-HIGH CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF THE FORKLIFT TRUCK UNDER THE BODY OF AN UPPER CONTAINER.
- C. IF ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING POINTS OF THE CONTAINER. HOWEVER, IF A TWO OR THREE-HIGH CONTAINER STACK IS HANDLED BY SLINGING, DO NOT ATTACH THE SLING TO THE LIFTING POINTS ON A CONTAINER. THE SLING MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE ON THE BOTTOM OF THE LOWEST CONTAINER.

FOR BLOCKING GUIDANCE APPLICABLE TO A TRAILER HAVING ROUNDED CORNERS AT THE FORWARD END, SEE SPECIAL NOTE 1 ON PAGE 5.



ISOMETRIC VIEW

SEE THE "SPECIAL NOTES" ON PAGE 5.

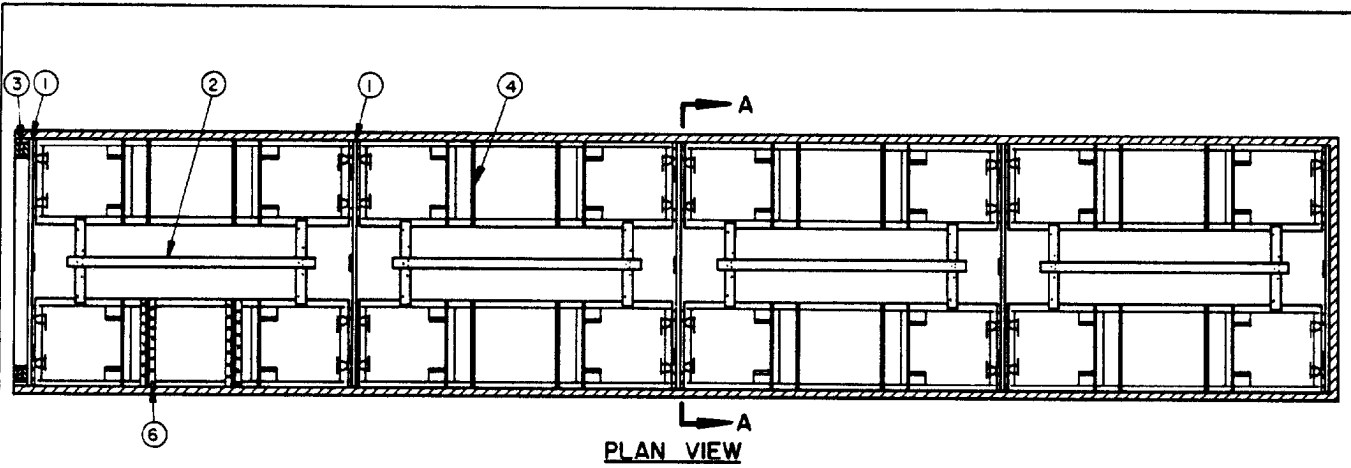


SECTION A-A

KEY NUMBERS *

- ① FORWARD/SEPARATOR/REAR GATE (5 REQD). SEE THE DETAIL FOR A THREE-HIGH STACK ON PAGE 6. NOTE: THE GATES AT THE FRONT AND AT THE REAR OF THE LOAD MUST BE POSITIONED WITH THE VERTICAL PIECES TOWARD THE CONTAINERS.
- ② ANTI-SWAY BRACE ASSEMBLY (8 REQD). SEE THE DETAIL ON PAGE 7. INSTALL BETWEEN LATERALLY ADJACENT CONTAINERS IN THE FIRST AND IN THE THIRD LAYERS. SEE SPECIAL NOTE 4 ON PAGE 5.
- ③ SOLID FILL, 6" WIDE MATERIAL BY 64" LONG BY THE THICKNESS REQUIRED TO CONTACT THE INSIDE SURFACE OF THE REAR DOORS WHEN THEY ARE CLOSED (REQD AT 2 PLACES). ALIGN WITH SKIDS OF CONTAINERS AS SHOWN. NAIL THE FIRST PIECE TO THE HORIZONTAL PIECES OF THE REAR GATE MARKED ① W/2-10d NAILS AT EACH JOINT. LAMINATE EACH ADDITIONAL PIECE W/1-10d NAIL EVERY 12". CAUTION: WHEN LAMINATING SOLID FILL MATERIAL TO THE GATE, THE NAILS WHICH ARE USED MUST BE SIZED TO THE THICKNESS OF THE FILL MATERIAL BEING INSTALLED, SO THAT THE NAILS CANNOT BE DRIVEN THROUGH THE GATE AND DAMAGE THE CONTAINERS. SEE SPECIAL NOTE 2 ON PAGE 5.
- ④ UNITIZING STRAP, 1-1/4" X .035" X 15'-0" STEEL STRAPPING (32 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3, AND GENERAL NOTES "H" AND "J" ON PAGE 2.
- ⑤ SEAL FOR 1-1/4" STRAPPING (64 REQD; 2/STRAP JOINT). DOUBLE CRIMP EACH SEAL.
- ⑥ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPPING AT ALL POINTS OF STRAPPING/CONTAINER CONTACT.

* THE KEY NUMBERS LISTED ABOVE ARE APPLICABLE FOR BOTH THE 104" AND 116" LONG CONTAINERS, WITH THE POSSIBLE EXCEPTION OF THE BLOCKING AT THE REAR OF THE TRAILER, PIECES MARKED ① AND ③. SEE SPECIAL NOTES 5 AND 6.



PLAN VIEW

SPECIAL NOTES:

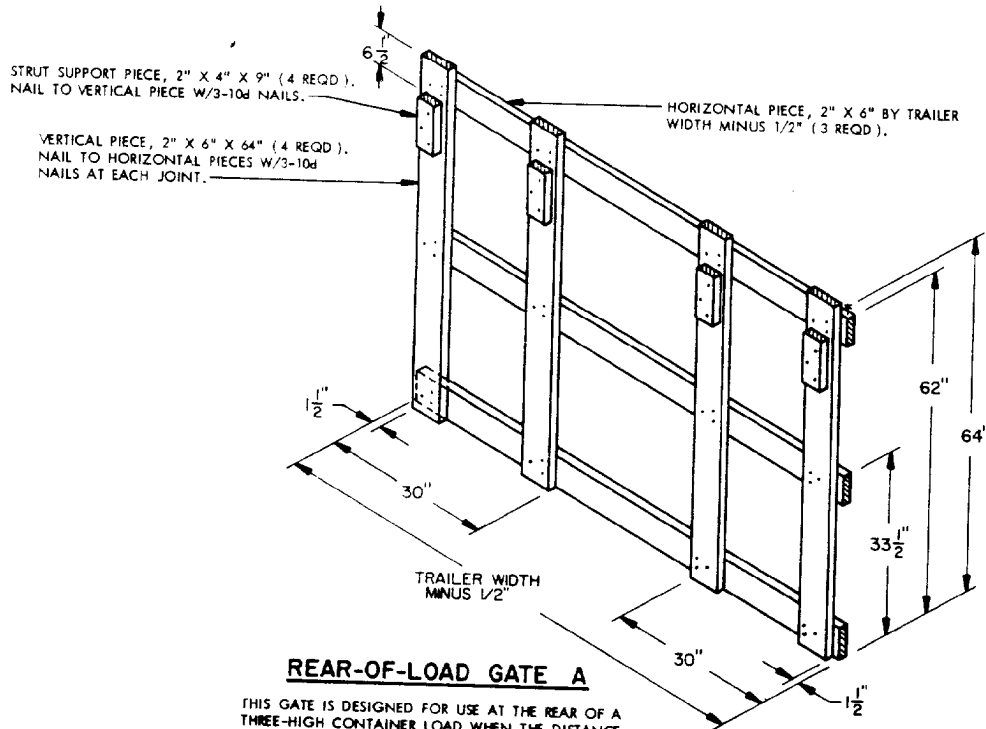
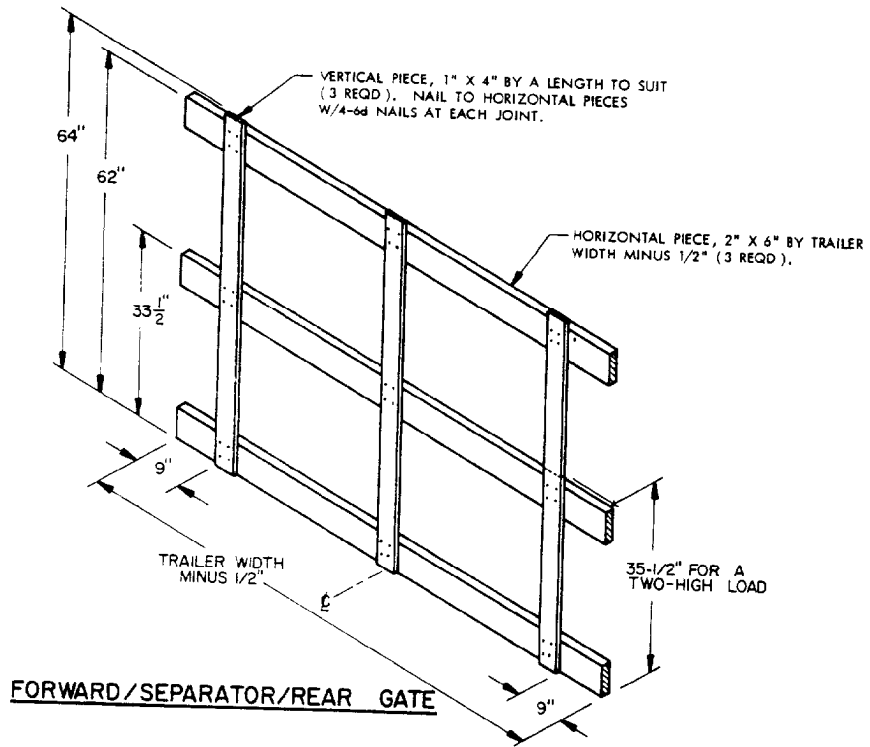
1. A 24-UNIT LOAD IS SHOWN IN A SQUARE-FRONT TRAILER WHICH IS 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION). NOTE: THE LENGTH OF THE TRAILER FROM THE INSIDE OF THE FRONT WALL TO THE INNER SURFACE OF THE REAR DOORS WHEN THEY ARE CLOSED MUST BE AT LEAST 39'-4-1/2" FOR THE SHIPMENT OF THE DEPICTED 24-UNIT LOAD. IF THE TRAILER TO BE LOADED WITH 24 UNITS HAS ROUNDED FRONT CORNERS, THE INSIDE LENGTH MUST BE AT LEAST 39'-6". REFER TO THE "PARTIAL PLAN VIEW" AND THE OTHER DETAILS SHOWN ON PAGES 14 AND 15 FOR GUIDANCE IN THE LOADING AND BRACING OF THE LOAD UNIT IN THE FORWARD END OF A TRAILER HAVING ROUNDED CORNERS. SEE SPECIAL NOTES 5 AND 6.
2. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED BY OMITTING A COMPLETE LAYER OR AN ENTIRE LOAD UNIT. AN 18-UNIT LOAD SHIPMENT (3 LOAD UNITS) WILL REQUIRE A TRAILER THAT IS AT LEAST 31'-0" LONG. REAR BLOCKING IN A 31'-0" LONG TRAILER WILL BE SIMILAR TO THAT SHOWN IN THE LOAD VIEW ON PAGE 4. FOR THE BLOCKING OF A LOAD IN A LONGER TRAILER, REPLACE THE REAR GATE SHOWN WITH A "REAR-OF-LOAD GATE A", AS DETAILED ON PAGE 6, AND INSTALL STRUT-TYPE BRACING SIMILAR TO THAT SHOWN AS PIECES MARKED (8) THROUGH (11) ON PAGE 8. SEE THE "STRUT BRACING" DETAIL ON PAGE 9 IF THE STRUTS ARE 7'-0" OR GREATER IN LENGTH.
3. IF IT IS NECESSARY FOR A LOAD UNIT TO CONTAIN ONE LESS CONTAINER THAN SHOWN TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, A "FILLER ASSEMBLY" MUST BE SUBSTITUTED IN PLACE OF EACH OMITTED CONTAINER. SEE THE "FILLER ASSEMBLY" AND "APPLICATION OF FILLER ASSEMBLY" DETAILS ON PAGE 16.
4. IF ONE OR TWO CONTAINERS ARE OMITTED FROM A SIX-CONTAINER LOAD UNIT, THE ANTI-SWAY BRACE ASSEMBLY MARKED (2) MUST BE INSTALLED BETWEEN THE LATERALLY ADJACENT CONTAINERS IN THE SECOND LAYER.
5. THESE OUTLOADING PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENT OF THE 104" LONG CONTAINER. A 24-UNIT LOAD WILL REQUIRE A TRAILER THAT IS AT LEAST 36'-0" LONG. REAR BLOCKING IN A 36'-0" OR 37'-0" LONG TRAILER WILL BE SIMILAR TO THAT SHOWN IN THE LOAD VIEW ON PAGE 4. FOR THE BLOCKING OF A LOAD IN A LONGER TRAILER, REPLACE THE REAR GATE SHOWN WITH A "REAR-OF-LOAD GATE A", AS DETAILED ON PAGE 6, AND INSTALL STRUT TYPE BRACING SIMILAR TO THAT SHOWN AS PIECES MARKED (8) THROUGH (11) ON PAGE 8.
6. THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME TRAILER. A LOAD SHOULD BE PLANNED SO THE TWO DIFFERENT LENGTH CONTAINERS WILL NOT BE MIXED IN ONE LOAD UNIT. IF THIS IS NOT POSSIBLE, A SPACER ASSEMBLY MUST BE INSTALLED TO PROVIDE AN EVEN LOAD. SEE THE "SPACER ASSEMBLY" DETAIL ON PAGE 9.

BILL OF MATERIAL

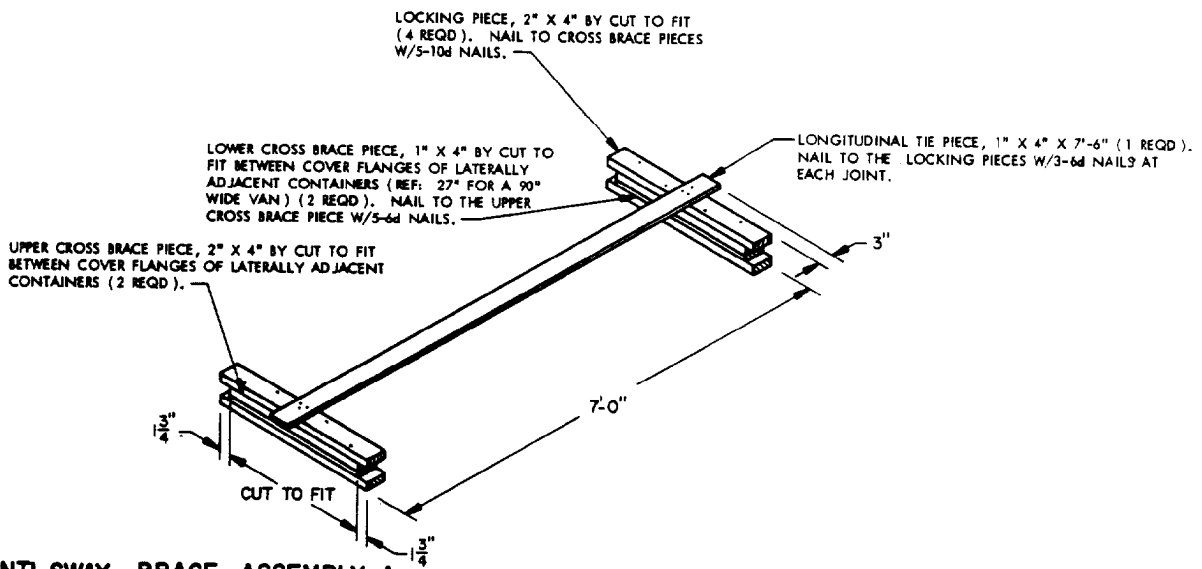
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	176	59
2" X 4"	119	80
2" X 6"	144	144
NAILS	NO. REQD	POUNDS
6d (2")	308	2
10d (3")	192	3
STEEL STRAPPING, 1-1/4" X .035"	480' REQD	69 LBS
SEAL FOR 1-1/4" STRAPPING	64 REQD	4 LBS
ANTI-CHAFING MATERIAL	AS REQD	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	24	38,400 LBS
(W/CBU ITEM)		
DUNNAGE		786 LBS
TOTAL WEIGHT		39,186 LBS

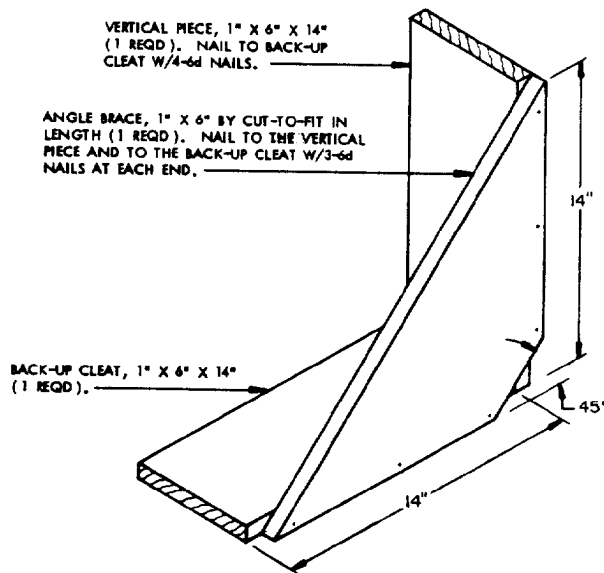


THIS GATE IS DESIGNED FOR USE AT THE REAR OF A THREE-HIGH CONTAINER LOAD WHEN THE DISTANCE BETWEEN THE REAR OF THE LOAD AND THE REAR DOORS OF THE TRAILER, WHEN THEY ARE CLOSED, MEASURES 12" OR MORE. INSTALL REAR BLOCKING SIMILAR TO PIECES MARKED (8) THROUGH (11) ON PAGE 8. NOTE: IF IT IS NECESSARY TO USE STRUTS 7'-0" OR LONGER FOR THE BRACING OF A LOAD, SEE THE "STRUT BRACING" DETAIL ON PAGE 9.



ANTI-SWAY BRACE ASSEMBLY A

ONE OF THE TWO LOCKING PIECES ON EACH END ASSEMBLY MUST BE APPLIED AFTER THE CROSS BRACES AND THE OTHER LOCKING PIECE HAVE BEEN ASSEMBLED AND POSITIONED BETWEEN THE CONTAINERS. THE LONGITUDINAL TIE PIECE WILL BE APPLIED AFTER THE END ASSEMBLIES HAVE BEEN INSTALLED.



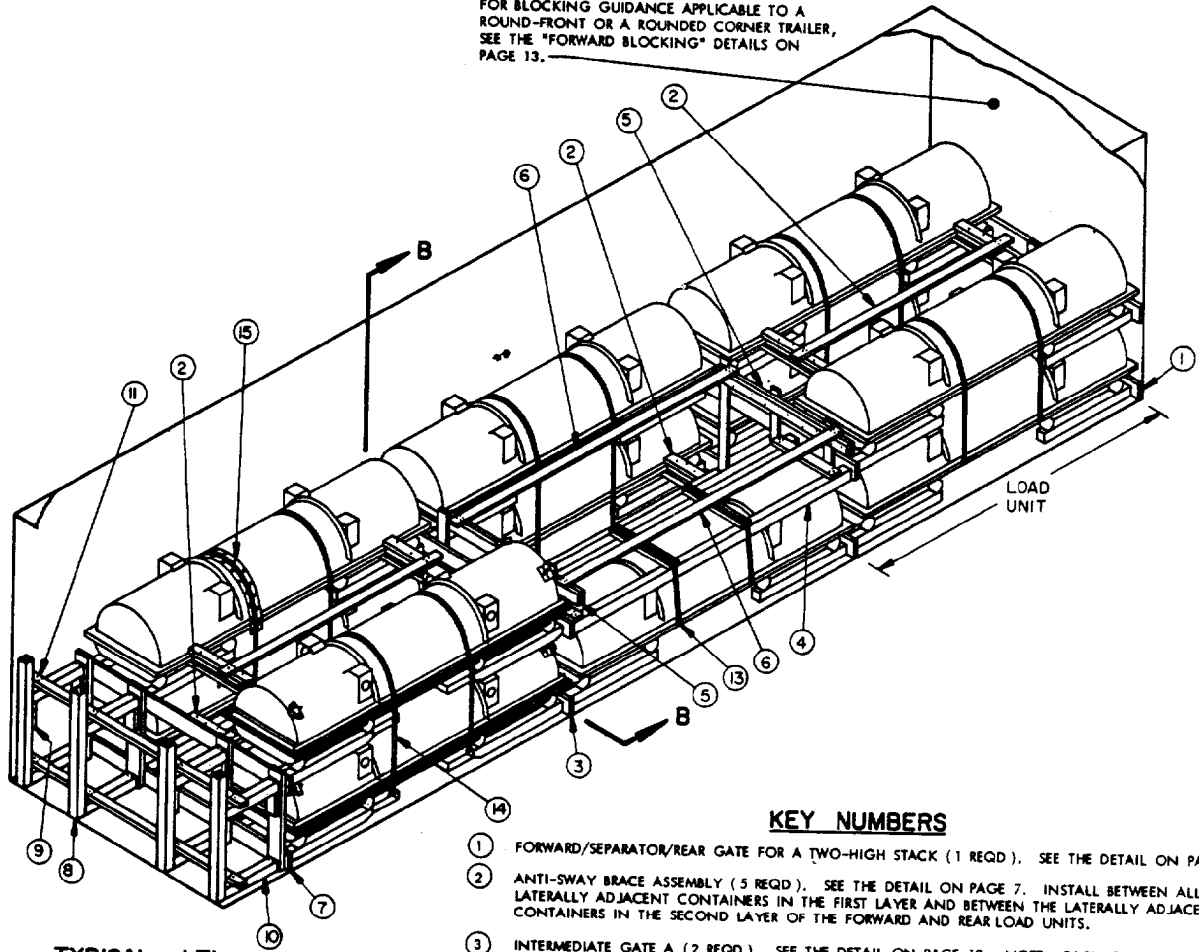
LTL BRACE

SEE THE "NOTE" TO THE RIGHT.

NOTE

EACH BRACE AS APPLIED FOR LATERAL BRACING WILL SUPPORT 2,000 POUNDS. ALSO, A MINIMUM OF TWO (2) BRACES MUST BE USED AGAINST A CONTAINER SIDE, AS SHOWN ON PAGE 12.

FOR BLOCKING GUIDANCE APPLICABLE TO A ROUND-FRONT OR A ROUNDED CORNER TRAILER, SEE THE "FORWARD BLOCKING" DETAILS ON PAGE 13.

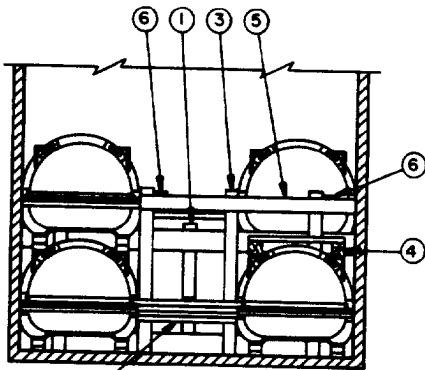


TYPICAL LTL

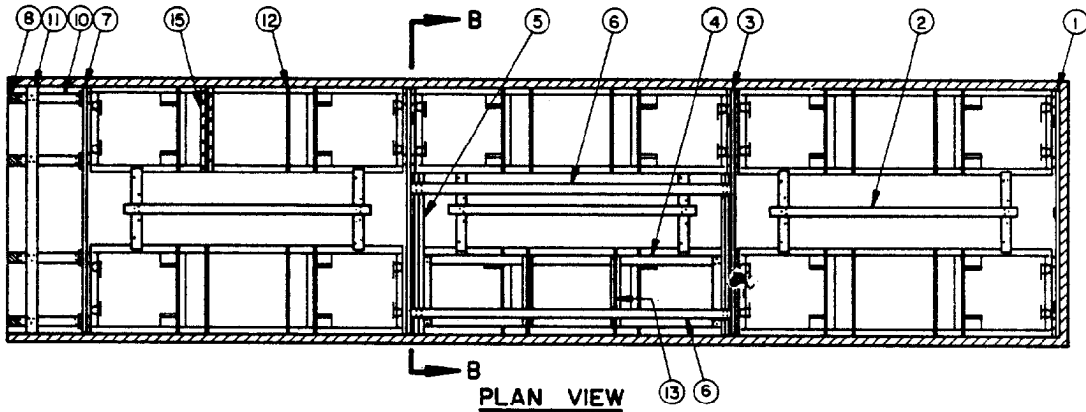
SEE THE "SPECIAL NOTES" ON PAGE 9.

KEY NUMBERS

- ① FORWARD/SEPARATOR/REAR GATE FOR A TWO-HIGH STACK (1 REQD). SEE THE DETAIL ON PAGE 6.
- ② ANTI-SWAY BRACE ASSEMBLY (5 REQD). SEE THE DETAIL ON PAGE 7. INSTALL BETWEEN ALL LATERALLY ADJACENT CONTAINERS IN THE FIRST LAYER AND BETWEEN THE LATERALLY ADJACENT CONTAINERS IN THE SECOND LAYER OF THE FORWARD AND REAR LOAD UNITS.
- ③ INTERMEDIATE GATE A (2 REQD). SEE THE DETAIL ON PAGE 10. **NOTE:** EACH GATE MUST BE INSTALLED SO THAT THE VERTICAL 1" X 4" PIECES ARE ON THE SIDE OF THE GATE THAT FACES THE CENTER LOAD UNIT. ALSO, PIECE MARKED ⑤ MUST BE APPLIED TO THE MOST FORWARD INTERMEDIATE GATE PRIOR TO INSTALLING IN THE LOAD. NAIL THE VERTICAL PIECES OF INTERMEDIATE GATE TO PIECE MARKED ③ W/3-10d NAILS AT EACH JOINT. SEE THE "INTERMEDIATE GATE A" DETAIL ON PAGE 10 FOR THE LOCATION DIMENSION.
- ④ FILLER ASSEMBLY (1 REQD). SEE THE DETAIL AND THE "APPLICATION OF FILLER ASSEMBLY" DETAIL ON PAGE 16.
- ⑤ SIDE BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN CONTAINER COVER FLANGE AND THE TRAILER SIDE WALL (DOUBLED) (2 REQD). LAMINATE W/8-10d NAILS.
- ⑥ TIE PIECE, 1" X 4" X 10'-0" (2 REQD). NAIL TO A PIECE MARKED ⑤ W/4-10d NAILS AT EACH END.
- ⑦ REAR GATE (1 REQD). SEE THE "REAR OF LOAD GATE B" DETAIL ON PAGE 10.
- ⑧ STRUT BEARING PIECE, 4" X 4" BY STRUT HEIGHT PLUS 9" (REF: 45" FOR A TWO-CONTAINER HIGH LOAD) (4 REQD).
- ⑨ STRUT SUPPORT PIECE, 2" X 4" X 9" (4 REQD). POSITION TO MATCH THE HEIGHT OF THE 2" X 4" X 9" PIECES SHOWN FOR THE "REAR-OF-LOAD GATE B" ON PAGE 10. NAIL TO A PIECE MARKED ⑧ W/3-10d NAILS.
- ⑩ STRUT, 4" X 4" BY CUT-TO-FIT IN LENGTH (9" MIN) (8 REQD). TOENAIL TO THE PIECES MARKED ⑦ AND ⑧ W/2-16d NAILS AT EACH END. SEE SPECIAL NOTE 2 ON PAGE 9.
- ⑪ SPREADER PIECE, 2" X 4" BY TRAILER WIDTH IN LENGTH (CUT TO FIT) (2 REQD). POSITION AS SHOWN AND NAIL TO THE PIECES MARKED ⑩ W/3-10d NAILS AT EACH JOINT.
- ⑫ UNITIZING STRAP, 1-1/4" X .035" X 15'-0" STEEL STRAPPING (10 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3, AND GENERAL NOTES "H" AND "J" ON PAGE 2.
- ⑬ STEEL STRAPPING, 1-1/4" X .035" X 12'-0" (2 REQD). SEE THE "FILLER ASSEMBLY" DETAIL ON PAGE 16.
- ⑭ SEAL FOR 1-1/4" STRAPPING (24 REQD; 2/STRAP JOINT). DOUBLE CRIMP EACH SEAL.
- ⑮ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER STEEL STRAPPING, PIECES MARKED ⑫ AND ⑬, AT ALL POINTS OF CONTAINER/STRAPPING CONTACT.



② SECTION B-B



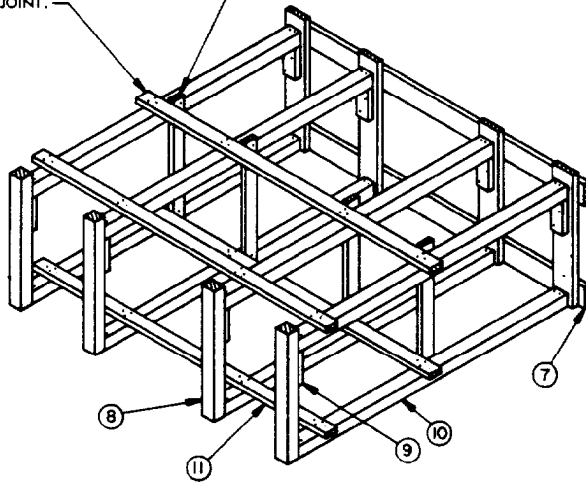
PLAN VIEW

SPECIAL NOTES:

1. THESE LTL OUTLOADING PROCEDURES DEPICT THE USE OF A "STRUT" TYPE OF REAR BLOCKING AND ALSO THE TYPICAL INSTALLATION OF A FILLER ASSEMBLY WITHIN A TWO LAYER LOAD. TWELVE CONTAINERS MAY BE SHIPPED IN ACCORDANCE WITH THE SPECIFIED PROCEDURES BY LOADING ANOTHER CONTAINER IN PLACE OF THE DEPICTED "FILLER ASSEMBLY."
2. THE TYPICAL 11-UNIT LOAD IS SHOWN IN A 32'-0" LONG TRAILER. A 31'-0" LONG TRAILER MAY BE USED IF REAR BLOCKING, SIMILAR TO THAT SHOWN FOR THE 24-UNIT LOAD DEPICTED ON PAGE 4, IS INSTALLED. IF THE TRAILER BEING USED IS 38'-0" OR LONGER, STRUT BRACING AS SHOWN IN THE DETAIL TO THE LEFT MUST BE USED.
3. THESE LTL OUTLOADING PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENT OF THE 104" LONG CONTAINER. THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME TRAILER. A LOAD SHOULD BE PLANNED SO THE TWO DIFFERENT LENGTH CONTAINERS WILL NOT BE MIXED IN ONE LOAD UNIT. IF THIS IS NOT POSSIBLE, A SPACER ASSEMBLY MUST BE INSTALLED TO PROVIDE AN EVEN LOAD. SEE THE "SPACER ASSEMBLY" DETAIL BELOW.

HORIZONTAL STRUT BRACING, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (2 REQD). NAIL TO STRUTS MARKED ⑩ W/3-12d NAILS AT EACH JOINT.

VERTICAL STRUT BRACING, 2" X 4" X 35" (4 REQD). NAIL TO STRUTS MARKED ⑩ W/3-12d NAILS AT EACH JOINT.



STRUT BRACING

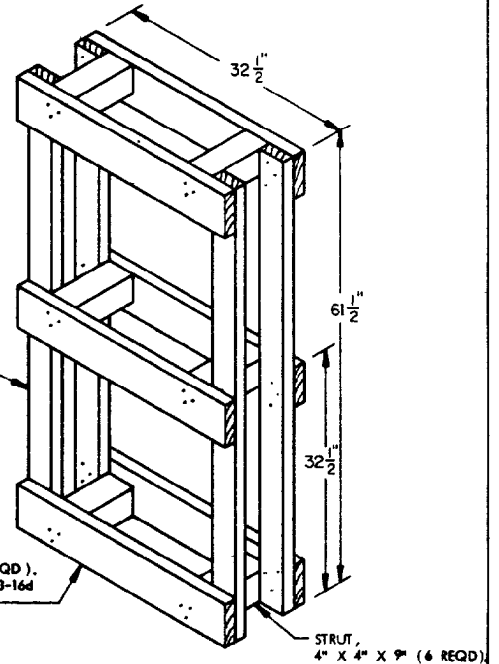
STRUT BRACING AS SHOWN ABOVE IS REQUIRED IF THE STRUTS, PIECES MARKED ⑩, ARE 7'-0" OR GREATER IN LENGTH. INSTALL ONE (1) SET FOR EVERY 7'-0" OF STRUT LENGTH.

NOTE ● :

IF THE TWO DIFFERENT LENGTH CONTAINERS ARE TO BE SHIPPED IN ONE TRAILER IN QUANTITIES OTHER THAN MULTIPLES OF A FULL LOAD UNIT, THE MIXED LOAD UNIT SHOULD BE POSITIONED SO THAT THE DEPICTED "SPACER ASSEMBLY" WILL BE ADJACENT TO A SEPARATOR OR A REAR GATE. THE "SPACER ASSEMBLY" IS DESIGNED TO PROVIDE A FLUSH PROFILE AT THE END OF THAT LOAD UNIT. ONE OR MORE ASSEMBLIES MAY BE USED WITHIN A LOAD, AS NECESSARY. INSTALL BETWEEN THE ENDS OF THE SHORT CONTAINERS IN A CONTAINER-STACK AND A SEPARATOR OR REAR GATE. SECURE THE SPACER ASSEMBLY BY NAILING THRU THE HORIZONTAL PIECES OF THE ADJACENT SEPARATOR OR REAR GATE INTO THE HORIZONTAL PIECES OF THE ASSEMBLY W/5-10d NAILS AT EACH LOCATION. **CAUTION:** A STACK OF MIXED CONTAINERS MUST BE ASSEMBLED WITH THE SHORTER CONTAINER(S) ON THE BOTTOM AND WITH THE "FORWARD" ENDS IN VERTICAL ALIGNMENT.

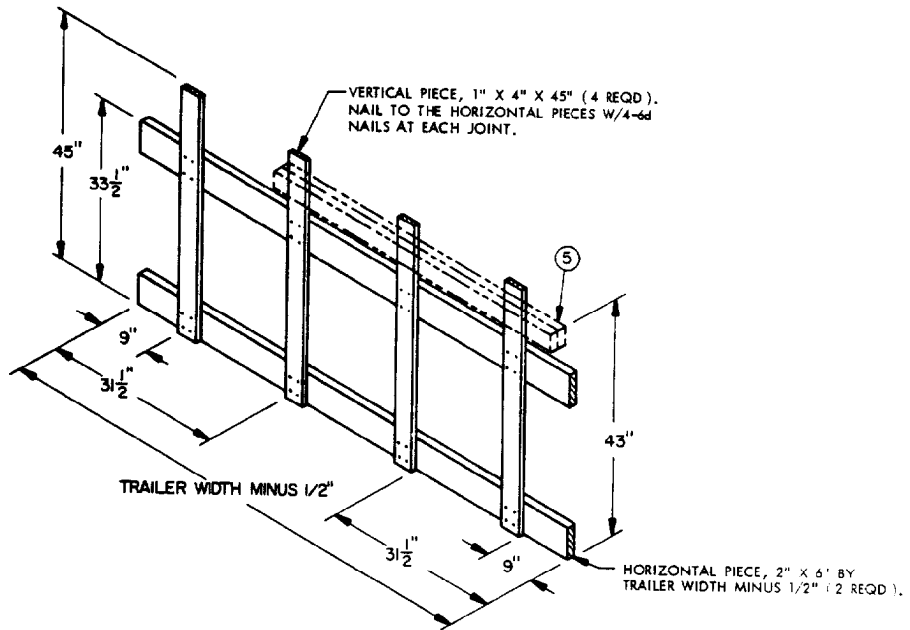
VERTICAL PIECE, 2" X 4" X 61-1/2" (4 REQD). NAIL TO THE HORIZONTAL PIECES W/3-10d NAILS AT EACH JOINT.

HORIZONTAL PIECE, 2" X 6" X 32-1/2" (6 REQD). NAIL TO THE STRUTS W/3-16d NAILS AT EACH JOINT.



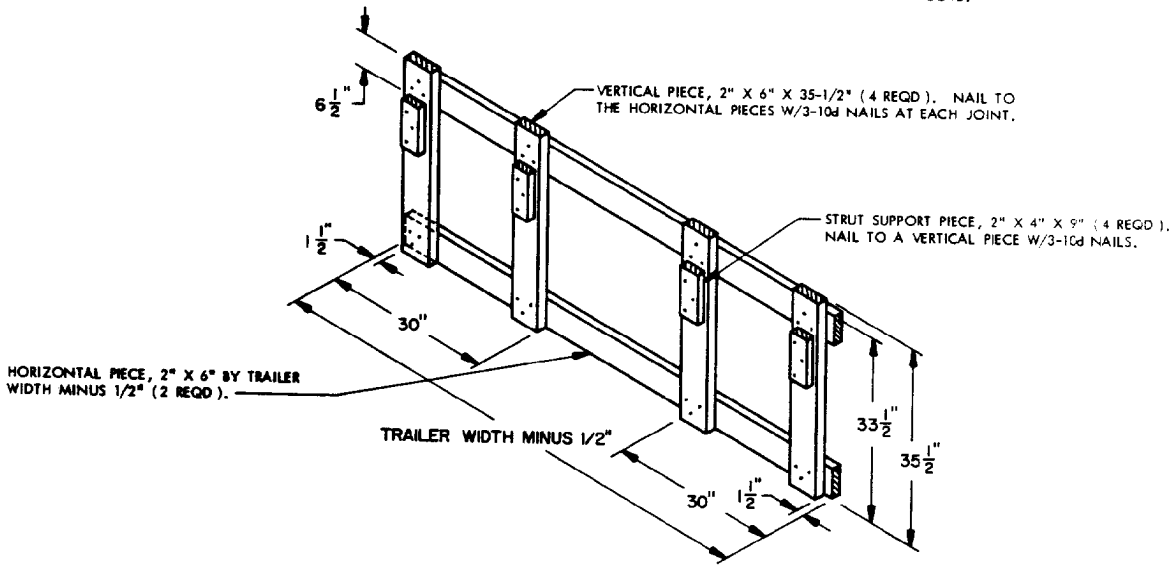
SPACER ASSEMBLY

THE ASSEMBLY AS SHOWN IS DESIGNED FOR USE WITH A 3-CONTAINER STACK OF THE 104" LONG CONTAINER. FOR A 2-CONTAINER STACK OF THE SHORT CONTAINERS OR FOR TWO SHORT CONTAINERS IN A 3-CONTAINER STACK THE ASSEMBLY WILL BE 32-1/2" HIGH. FOR A SINGLE CONTAINER, ONLY THE LOWER TWO STRUTS AND HORIZONTAL PIECES ARE REQUIRED. SEE "NOTE ●" AT THE LEFT FOR INSTALLATION GUIDANCE.



INTERMEDIATE GATE A

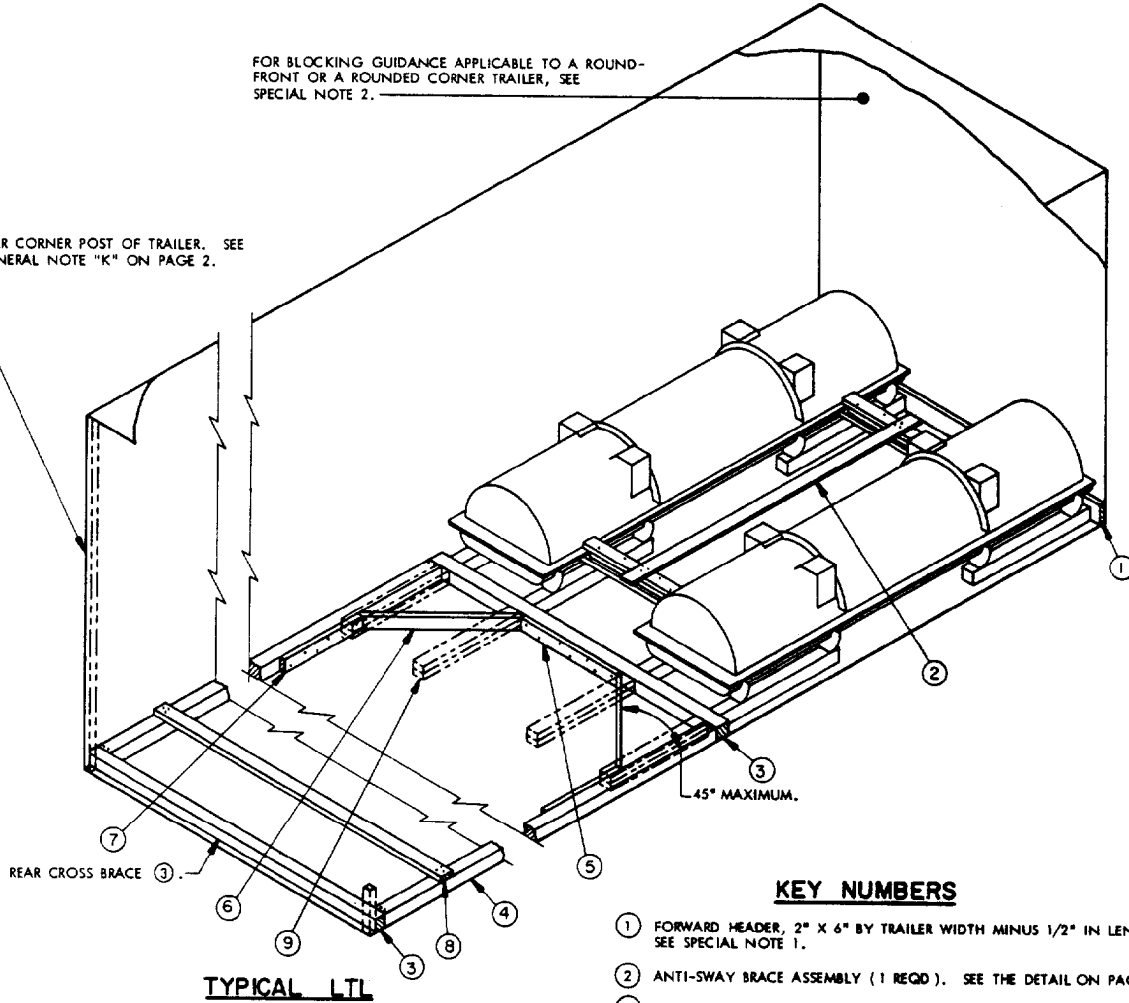
THIS GATE IS DESIGNED FOR USE AT EACH END OF A TWO-CONTAINER HIGH LOAD UNIT WITHIN WHICH A FILLER ASSEMBLY IS INSTALLED. IF A FILLER ASSEMBLY IS NOT REQUIRED, THE "FORWARD/SEPARATOR/REAR GATE" SHOWN ON PAGE 6 SHOULD BE USED IN LIEU OF THE GATE SHOWN ABOVE.



REAR-OF-LOAD GATE B

FOR BLOCKING GUIDANCE APPLICABLE TO A ROUND-FRONT OR A ROUNDED CORNER TRAILER, SEE SPECIAL NOTE 2.

REAR CORNER POST OF TRAILER. SEE GENERAL NOTE "K" ON PAGE 2.



TYPICAL LTL

KEY NUMBERS

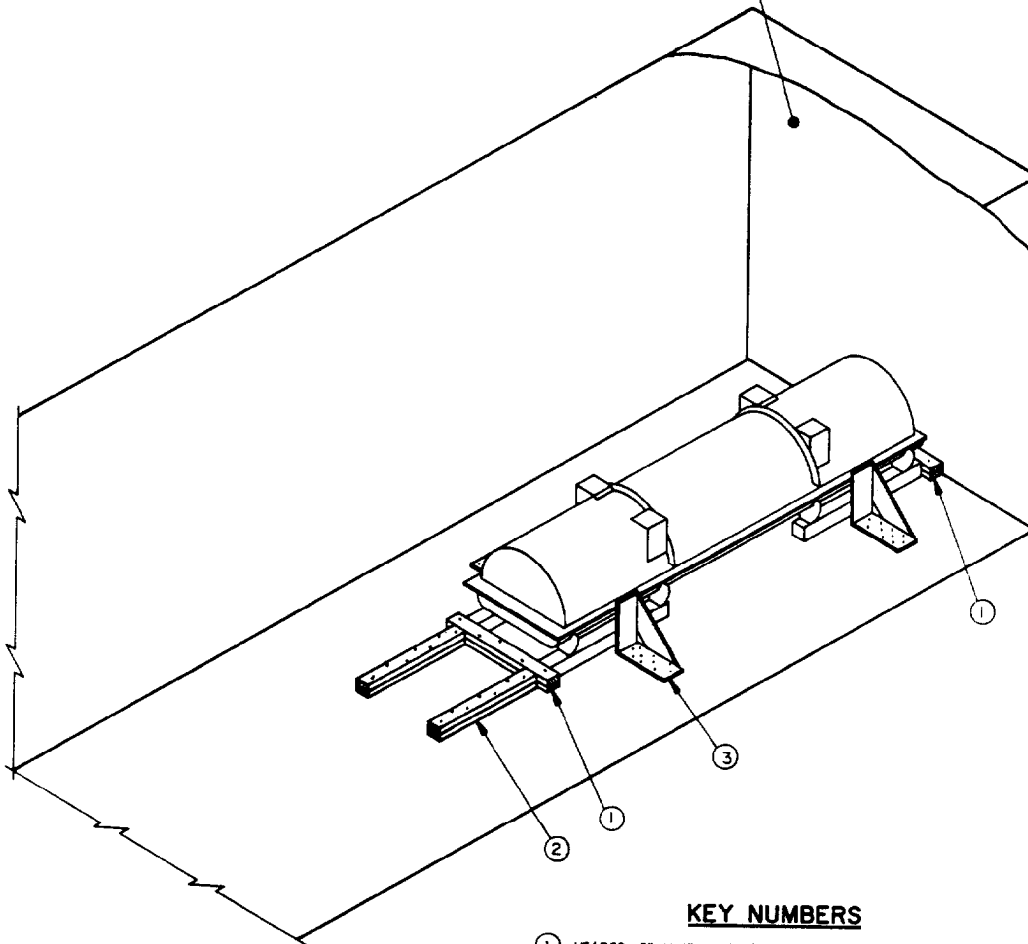
- ① FORWARD HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (1 REQD). SEE SPECIAL NOTE 1.
- ② ANTI-SWAY BRACE ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 7.
- ③ HEADER/REAR CROSS BRACE, 4" X 4" BY TRAILER WIDTH IN LENGTH (CUT-TO-FIT) (2 REQD).
- ④ SIDE STRUT, 4" X 4" BY CUT-TO-FIT IN LENGTH (2 REQD). TOENAIL TO THE PIECES MARKED ② W/2-16d NAILS AT EACH END.
- ⑤ SPACER CLEAT, 2" X 4" X 32" (1 REQD). NAIL TO THE FORWARD PIECE MARKED ③ W/7-12d NAILS.
- ⑥ DIAGONAL BRACE, 2" X 4" BY CUT-TO-FIT IN LENGTH (2 REQD). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT A 45° ANGLE AS SHOWN AND TOENAIL TO THE PIECES MARKED ③ AND ④ W/2-16d NAILS AT EACH END.
- ⑦ SIDE CLEAT, 2" X 4" X 24" (2 REQD). NAIL TO A PIECE MARKED ④ W/6-12d NAILS.
- ⑧ STRUT BRACING, 2" X 4" BY TRAILER WIDTH IN LENGTH (CUT TO FIT) (MINIMUM OF 1 REQD). INSTALL ONE (1) NEAR REAR END OF SIDE STRUTS MARKED ④ AS SHOWN. ONE (1) ADDITIONAL PIECE IS REQUIRED FOR EVERY 7'-0" OF STRUT LENGTH. NAIL TO STRUTS MARKED ④ W/3-12d NAILS AT EACH END.
- ⑨ BACK-UP CLEAT, 2" X 4" X 30" (DOUBLED) (4 REQD). ALIGN WITH A CONTAINER SKID AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 4.

SPECIAL NOTES:

- 1. THESE LTL OUTLOADING PROCEDURES DEPICT A "K-BRACE" TYPE OF BLOCKING AND A "NAILED-TO-FLOOR" TYPE OF BLOCKING IN A 7'-6" WIDE TRAILER. WIDER OR NARROWER TRAILERS CAN ALSO BE USED.
- 2. IF THE TRAILER TO BE LOADED HAS ROUNDED CORNERS AT THE FORWARD END, SEE THE "FORWARD BLOCKING-METHOD A" DETAIL ON PAGE 13 WHICH MAY BE USED. AS AN ALTERNATIVE METHOD, OR FOR USE IN A ROUND-FRONT TRAILER, THE HEADER AND BACK-UP CLEATS, PIECES MARKED ③ AND ⑨, MAY ALSO BE INSTALLED AT THE FORWARD END OF THE LADING, PROVIDING THE TRAILER HAS A NAILABLE FLOOR.
- 3. THE "K-BRACE" BLOCKING, SHOWN AS PIECES MARKED ③ THROUGH ⑧, IS ADEQUATE FOR RETAINING A MAXIMUM SIZE LTL LOAD OF 24,000 POUNDS.
- 4. PIECES MARKED ② ARE FOR USE IN A TRAILER WHICH HAS A NAILABLE FLOOR AND MAY BE USED IN LIEU OF REAR CROSS BRACE MARKED ③ AND PIECES MARKED ④ THROUGH ⑧ WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS. FOUR (4) BACK-UP CLEATS, SHOWN AS PIECES MARKED ⑨, ARE ADEQUATE FOR RETAINING A MAXIMUM SIZE LTL LOAD OF 20,000 POUNDS.
- 5. THE DEPICTED LTL LOAD MAY BE INCREASED BY MULTIPLES OF TWO (2) CONTAINERS. INSTALL A PIECE MARKED ① BETWEEN LONGITUDINALLY ADJACENT CONTAINERS. ONE (1) ADDITIONAL ANTI-SWAY BRACE ASSEMBLY WILL BE REQUIRED.
- 6. THESE LTL OUTLOADING PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENT OF THE 104" LONG CONTAINER. THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME TRAILER. A LOAD SHOULD BE PLANNED SO THE TWO DIFFERENT LENGTH CONTAINERS WILL NOT BE MIXED IN ONE LOAD UNIT. IF THIS IS NOT POSSIBLE, A SPACER ASSEMBLY MUST BE INSTALLED TO PROVIDE AN EVEN LOAD. SEE THE "SPACER ASSEMBLY" DETAIL ON PAGE 9.

TYPICAL LTL (2-UNIT LOAD)

FOR BLOCKING GUIDANCE APPLICABLE TO A
ROUND-FRONT TRAILER, SEE SPECIAL NOTE 2.



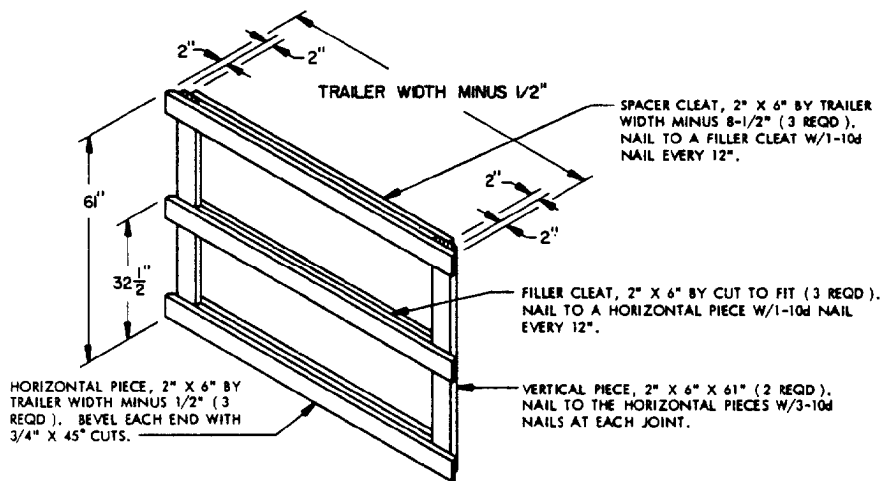
TYPICAL LTL

SPECIAL NOTES:

1. THESE LTL OUTLOADING PROCEDURES DEPICT THE SHIPMENT OF ONE (1) CONTAINER IN A 7'-6" WIDE TRAILER WHICH HAS A NAILABLE FLOOR. WIDER OR NARROWER TRAILERS MAY BE USED; HOWEVER, TRAILERS WITH A NON-NAILABLE FLOOR CANNOT BE USED.
2. IF THE TRAILER TO BE LOADED HAS A ROUND-FRONT, THE BACK-UP CLEATS MARKED (2) MAY ALSO BE INSTALLED AT THE FORWARD END OF THE LADING. A ROUNDED CORNER TRAILER MAY BE OUTLOADED AS SHOWN.
3. TWO (2) BACK-UP CLEATS, SHOWN AS PIECES MARKED (2), ARE ADEQUATE FOR RETAINING A MAXIMUM SIZE LTL LOAD OF 10,000 POUNDS.
4. NOT LESS THAN TWO (2) LTL BRACES MARKED (3) SHALL BE USED AGAINST A SIDE OF A CONTAINER. IF DESIRED, THE LADING ITEM MAY BE LOADED AGAINST ONE OF THE SIDE WALLS OF THE TRAILER AND THUS ELIMINATE THE NEED FOR TWO (2) OF THE SPECIFIED LTL BRACES.

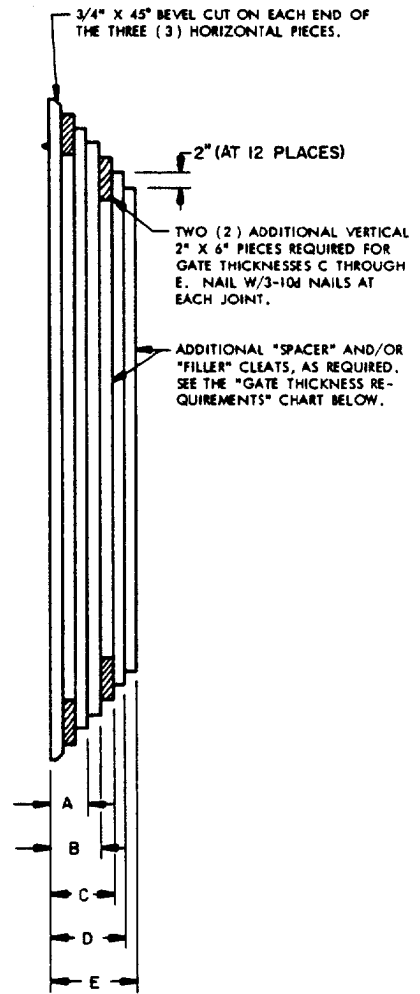
KEY NUMBERS

- (1) HEADER, 2" X 4" X 32" (DOUBLED) (2 REQD). POSITION THE FORWARD PIECE DIRECTLY AGAINST FRONT WALL OF A SQUARE-FRONT OR A ROUNDED CORNER TRAILER. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS, AND NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- (2) BACK-UP CLEAT, 2" X 4" X 30" (DOUBLED) (2 REQD). ALIGN WITH A CONTAINER SKID AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 3.
- (3) LTL BRACE (4 REQD). SEE THE DETAIL ON PAGE 7. NAIL TO THE TRAILER FLOOR W/10-6d NAILS. SEE SPECIAL NOTE 4.

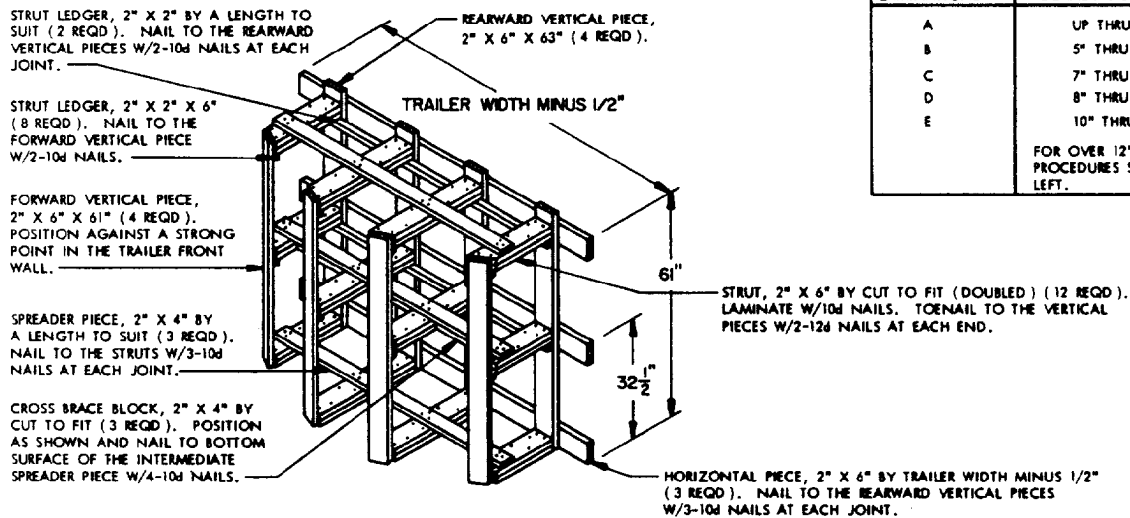


FORWARD BLOCKING - METHOD A

THIS "FORWARD BLOCKING" ASSEMBLY AS SHOWN IS DESIGNED FOR USE AT THE FORWARD END OF A THREE-LAYER LOAD WHICH IS TO BE SHIPPED IN A TRAILER HAVING ROUNDED CORNERS OF A RADIUS OF 5" OR LESS. AN ASSEMBLY FOR A TWO-LAYER LOAD WILL BE 32-1/2" HIGH. ADDITIONAL LAMINATIONS MUST BE ADDED TO THE BACK SIDE OF THE SPACER CLEATS TO COMPENSATE FOR LARGER-SIZE CORNERS. SEE THE "GATE THICKNESS REQUIREMENTS" CHART AND THE "PLAN VIEW" TO THE RIGHT FOR GUIDANCE. THIS GUIDANCE CAN ALSO BE APPLIED TO THE CONSTRUCTION OF A LAMINATED 2" X 6" ASSEMBLY WHICH IS TO BE USED AS THE FORWARD BLOCKING FOR A SINGLE LAYER LOAD.



PLAN VIEW

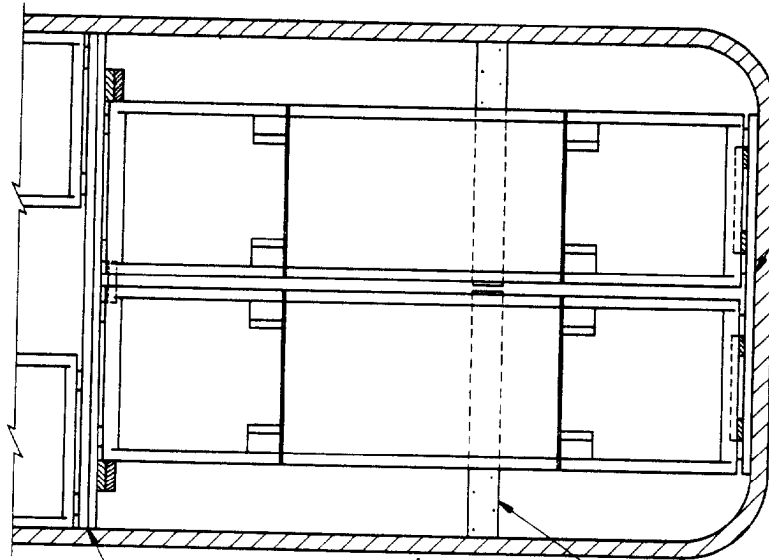


FORWARD BLOCKING-METHOD B

THIS "FORWARD BLOCKING" ASSEMBLY AS SHOWN IS DESIGNED FOR USE AT THE FORWARD END OF A THREE-LAYER LOAD WHICH IS TO BE SHIPPED IN A TRAILER HAVING A ROUND-FRONT OR HAVING ROUNDED CORNERS OF A RADIUS GREATER THAN 12". AN ASSEMBLY FOR A TWO-LAYER LOAD WILL BE 32-12" HIGH. FOR THE BLOCKING OF A SINGLE LAYER LOAD, SEE SPECIAL NOTE 2 ON PAGE 11 AND/OR SPECIAL NOTE 2 ON PAGE 12.

DETAILS

GATE THICKNESS REQUIREMENTS	
LAMINATIONS	CORNER RADIUS (INSIDE)
A	UP THRU 5"
B	5" THRU 7"
C	7" THRU 8"
D	8" THRU 10"
E	10" THRU 12"
FOR OVER 12" USE METHOD B PROCEDURES SHOWN TO THE LEFT.	



INTERMEDIATE GATE B (1 REQ'D).
SEE THE DETAIL ON PAGE 15.

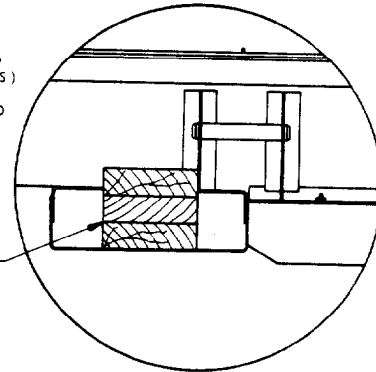
FORWARD GATE (1 REQ'D). SEE
THE DETAIL ON PAGE 15.

VIEW A

ANTI-SWAY BRACE ASSEMBLY B (4 REQ'D; 2 PER
CONTAINER STACK). SEE THE DETAIL AND
"VIEW A" BELOW.

PARTIAL PLAN VIEW

THIS VIEW DEPICTS THE LOADING PATTERN AND THE BRACING OF THE FORWARD MOST LOAD UNIT IN A TRAILER HAVING ROUNDED FRONT CORNERS. THE USE OF THIS PROCEDURE IS NECESSARY IN ORDER TO ATTAIN THE MAXIMUM CAPACITY (FOUR LOAD UNITS) IN A 40'-0" LONG TRAILER. WHEN THE TRAILER LENGTH DOES NOT POSE A PROBLEM, THE "FORWARD BLOCKING" SHOWN ON PAGE 13 MAY BE USED IN LIEU OF THE ABOVE PROCEDURE.

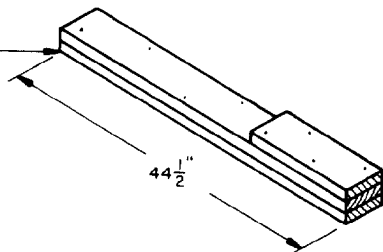


ANTI-SWAY BRACE ASSEMBLY B
(4 REQ'D; 2 PER CONTAINER
STACK). SEE THE DETAIL BELOW.

VIEW A

THIS VIEW SHOWS THE "ANTI-SWAY BRACE ASSEMBLY B" INSTALLED IN THE FORK TINE RECEPTACLE OF A CONTAINER.

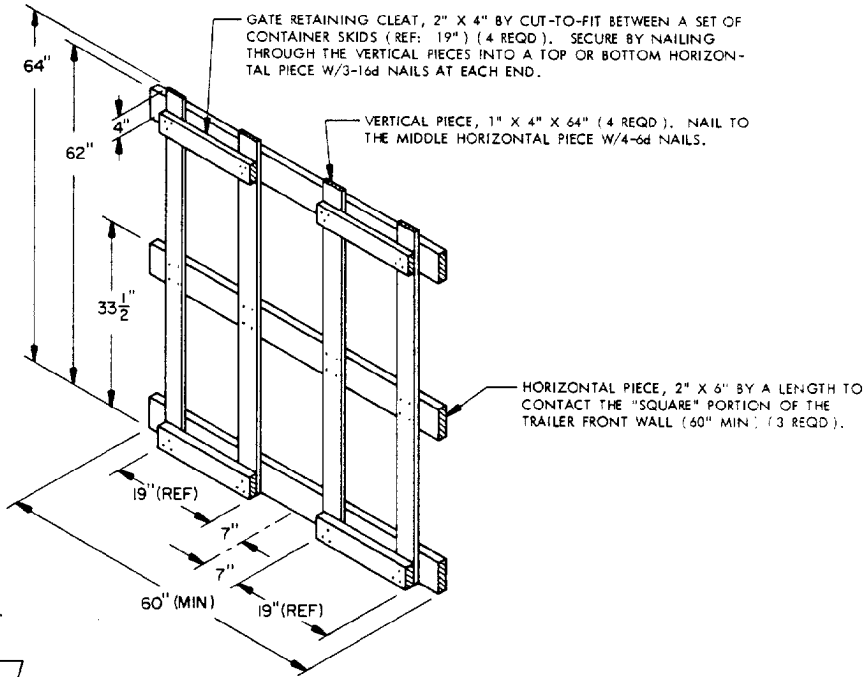
SUPPORT PIECE, 2" X 6" X 44-1/2"
(DOUBLED) (1 REQ'D). LAMINATE
W/6-10d NAILS.



LATERAL BRACE, 2" X 6" BY CUT-TO-FIT BETWEEN A TRAILER SIDE WALL AND THE RECEPTACLE FOR FORK TINE ON THE ADJACENT CONTAINER MINUS 1/4" (REF: 15" FOR A 90" WIDE VAN) (1 REQ'D). NAIL TO THE SUPPORT PIECE W/4-10d NAILS.

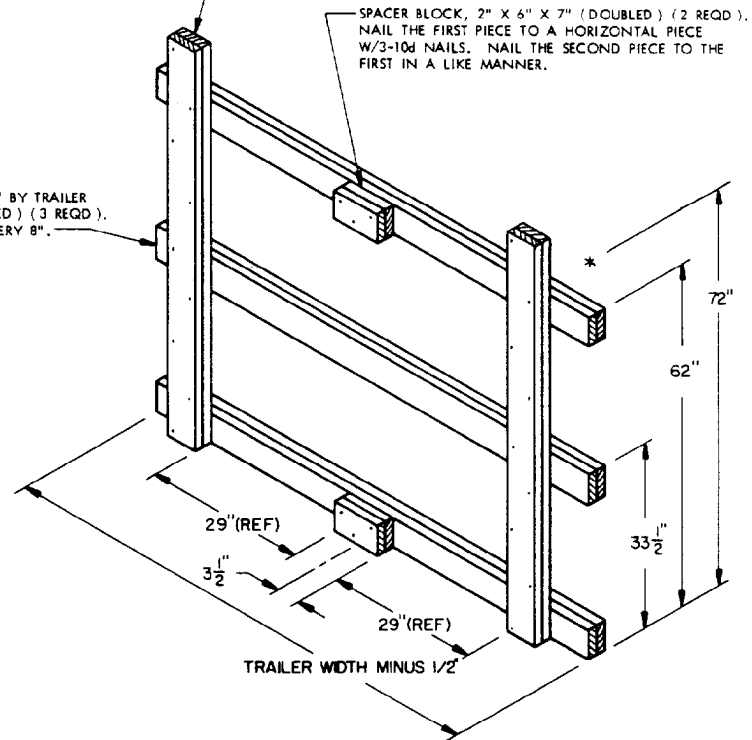
ANTI-SWAY BRACE ASSEMBLY B

THE LENGTH OF THE LATERAL BRACE PIECE OF THIS ASSEMBLY MUST BE PRE-DETERMINED AND THE PIECE NAILED TO THE SUPPORT PIECE. THE ASSEMBLIES (2 REQ'D PER CONTAINER STACK) MUST BE INSERTED INTO THE FORWARDMOST FORKLIFT OPENINGS OF THE TOP AND BOTTOM CONTAINERS OF A STACK PRIOR TO PLACEMENT OF EACH CONTAINER STACK ABOARD THE TRAILER.



VERTICAL PIECE, 2" X 6" X 72" (DOUBLED) (2 REQD).
 NAIL THE FIRST PIECE TO THE HORIZONTAL PIECES
 W/3-10d NAILS AT EACH JOINT. LAMINATE THE
 SECOND PIECE TO THE FIRST W/1-10d NAIL EVERY 8".

FORWARD GATE

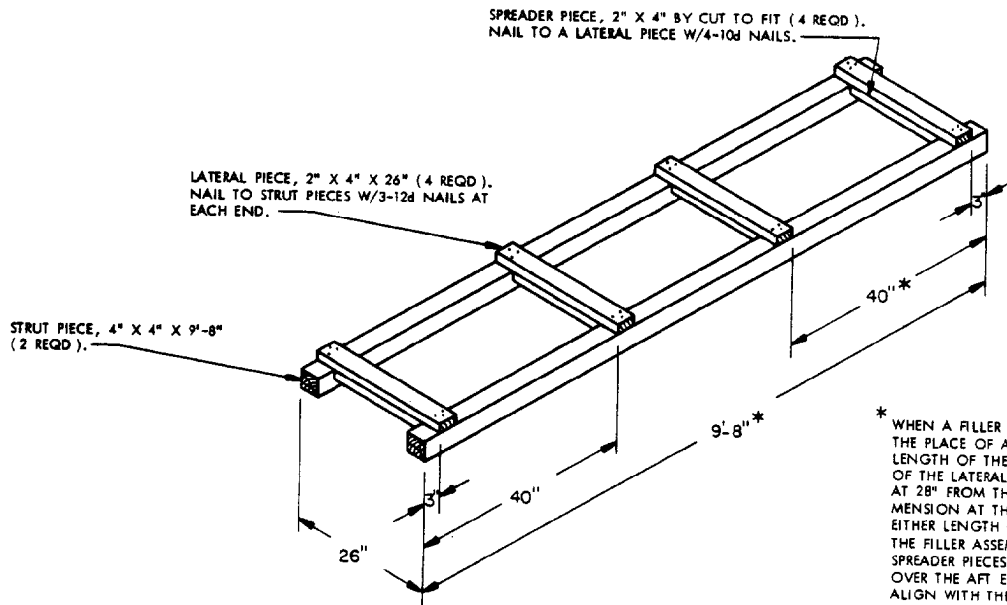


HORIZONTAL PIECE, 2" X 6" BY TRAILER
 WIDTH MINUS 1/2" (DOUBLED) (3 REQD).
 LAMINATE W/1-10d NAIL EVERY 8".

SPACER BLOCK, 2" X 6" X 7" (DOUBLED) (2 REQD).
 NAIL THE FIRST PIECE TO A HORIZONTAL PIECE
 W/3-10d NAILS. NAIL THE SECOND PIECE TO THE
 FIRST IN A LIKE MANNER.

INTERMEDIATE GATE B

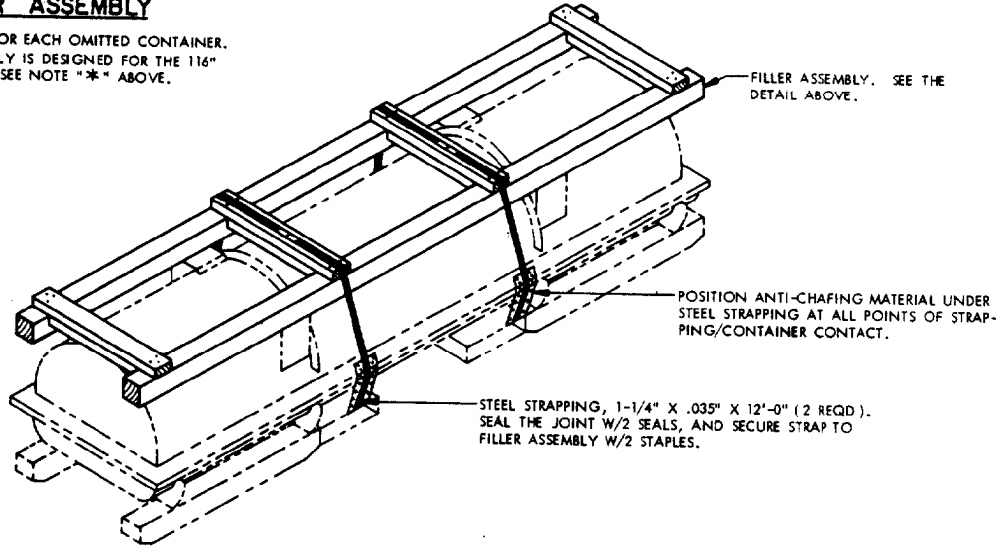
DETAILS



* WHEN A FILLER ASSEMBLY IS CONSTRUCTED FOR USE IN THE PLACE OF A 104" LONG CONTAINER, THE OVERALL LENGTH OF THE ASSEMBLY WILL BE 8'-8" AND ONE SET OF THE LATERAL AND SPREADER PIECES WILL BE PLACED AT 28" FROM THE END INSTEAD OF 40". THE 40" DIMENSION AT THE OPPOSITE END IS APPLICABLE FOR EITHER LENGTH CONTAINER. NOTE THAT THE END OF THE FILLER ASSEMBLY HAVING THE LATERAL AND SPREADER PIECES LOCATED AT 28" MUST BE POSITIONED OVER THE AFT END OF A CONTAINER IN ORDER TO ALIGN WITH THE FORK LIFT OPENINGS.

FILLER ASSEMBLY

ONE (1) REQUIRED FOR EACH OMITTED CONTAINER. THE DEPICTED ASSEMBLY IS DESIGNED FOR THE 116" LONG CONTAINER. SEE NOTE "*" ABOVE.



APPLICATION OF FILLER ASSEMBLY