

APPROVED	
BUREAU OF EXPLOSIVES	
<i>A. F. Brasamuck</i>	
DATE <i>1/26/68</i>	MILITARY ASSISTANT
REVISION, NO 1	
SIGNED <i>A. F. Brasamuck</i>	
DATE <i>10/30/69</i>	

LOADING & BRACING (CL & LCL) IN BOX CARS 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.

DESIGNER RSH	PROJ ENG <i>Diw/L/E</i>	APSA PTS	SUBMITTED <i>WRS Harding, Col</i>
CHECKER <i>WCH/RHA</i>	REC APPROV CTR <i>808</i>		COMMANDING OFFICER, SAVANNAH ARMY DEPOT
REVISIONS			EXAMINED AND APPROVED <i>Ralph Hill</i>
1	30 JUN 68	<i>WCH/RHA</i>	AMMUNITION PROCUREMENT & SUPPLY AGENCY U. S. ARMY MATERIEL COMMAND
			APPROVED BY ORDER OF COMMANDING GENERAL U. S. ARMY MATERIEL COMMAND <i>Ronald...</i>
			U. S. ARMY MATERIEL COMMAND
			14 MARCH 1968
			CLASS DIVISION DRAWING FILE
			19 48 7043 SP5JI

DO NOT SCALE

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. 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 "P" AND "Q".
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE FOR CONVENTIONAL TYPE BOXCARS OF VARIOUS LENGTH AND WIDTH COMBINATIONS.
- C. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 10'-0" WIDE DOORS OF THE CONVENTIONAL SLIDING TYPE; HOWEVER, CARS WITH DOORS OF OTHER WIDTHS CAN BE USED. THE DEPICTED OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO CARS WHICH ARE EQUIPPED WITH PLUG DOORS. CAUTION: DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER AUXILIARY OR MAIN. ALSO, AFTER THE PLUG DOORS ON A CAR ARE CLOSED AND READY FOR THE INSTALLATION OF "CAR SEALS", A PIECE OF WIRE OF SUITABLE SIZE WILL BE USED IN ADDITION TO, AND IN CONJUNCTION WITH, EACH CAR SEAL USED TO "SEAL" THE CAR. THE WIRE WILL BE THREADED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES, AND THE WIRE ENDS WILL BE TWISTED TOGETHER.
- D. 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).
- E. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE BOX-CAR BEING LOADED OR THE QUANTITY TO BE SHIPPED, AND COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED FOR THE VARIOUS LOADS SHOWN HEREIN MAY BE USED AS REQUIRED. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN FOR FULL OR PARTIAL CARLOADS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- F. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN BOXCARS WHICH ARE PARTIALLY LOADED WITH ITEMS PACKED IN THE CNU-79/E CONTAINER, 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.
- G. 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.
- 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 APPLICABLE OUTLOADING METHODS DEPICTED HEREIN. IF THE CAPACITY OF THE MATERIAL HANDLING EQUIPMENT USED TO LOAD THE CONTAINERS ABOARD A CAR PERMITS, IT IS RECOMMENDED THAT THE CONTAINERS BE UNITIZED PRIOR TO PLACEMENT WITHIN THE CAR. 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 STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT AS SHOWN, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- K. IF THE CAR BEING USED FOR A SHIPMENT IS EQUIPPED WITH A NAILABLE METAL FLOOR AND A NAIL SIZE FOR FLOOR NAILING IS MARKED ON THE SIDE WALL OF THE CAR, THAT GUIDANCE SHOULD BE APPLIED FOR THE NAILING OF THE APPLICABLE DUNNAGE PIECES. IF A NAIL SIZE IS NOT SPECIFIED, 30d NAILS SHOULD BE USED.
- 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. THROUGHOUT THIS PROCEDURAL DRAWING PORTIONS OF THE BLOCKING COMPONENTS AND OF THE DEPICTED CARS, SUCH AS A CAR SIDE WALL, HAVE BEEN OMITTED FROM 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" SECTION WHICH IS IMMEDIATELY ADJACENT TO DEPICTED OUTLOADING METHODS.
- O. THE "DOORWAY AREA" WITHIN A CAR IS DEFINED AS THE CARGO SPACE THAT IS ADJACENT TO A CONVENTIONAL TYPE AND/OR A PLUG TYPE DOOR. THE LENGTH OF A "DOORWAY AREA" CAN BE AS MUCH AS 24 FEET IN SOME CARS THAT ARE EQUIPPED WITH STAGGERED DOORS.
- P. 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.
- Q. 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).
- R. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 (CHAPTER 5).

(CONTINUED AT RIGHT)

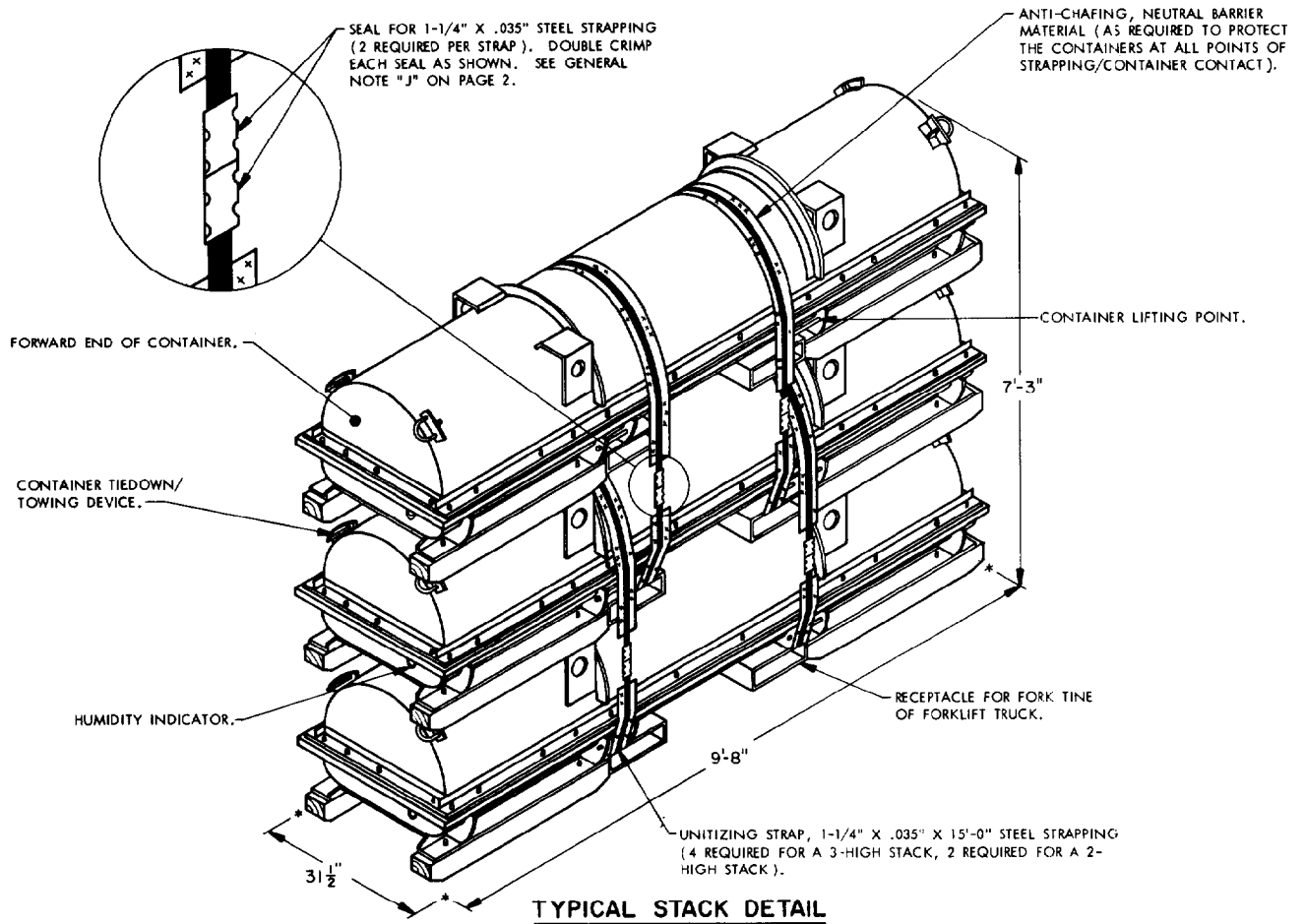
MATERIAL SPECIFICATIONS

- 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-B-121 (OR EQUAL).

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.



TYPICAL STACK DETAIL

UNITIZING AND HANDLING PROCEDURAL GUIDANCE

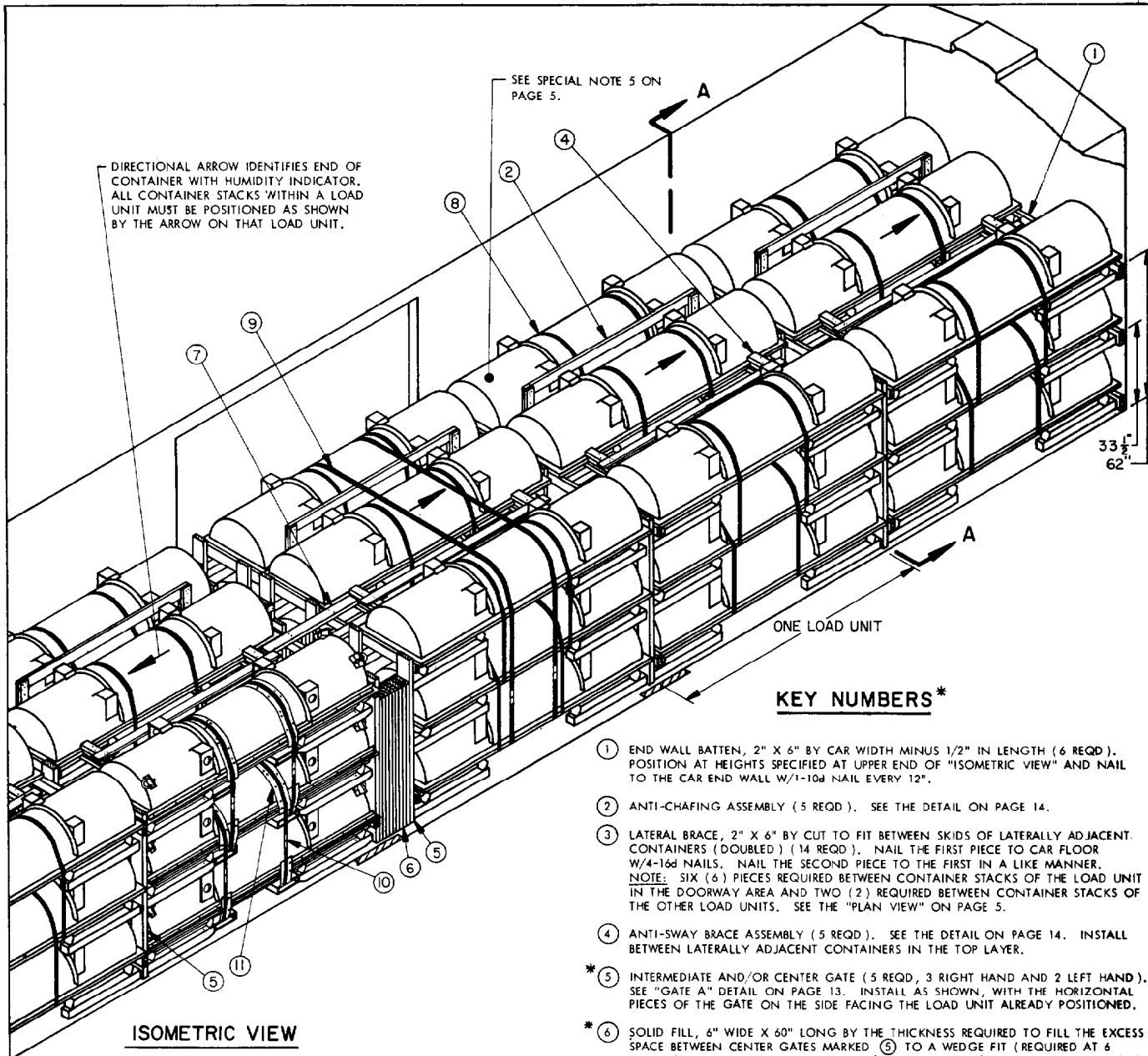
[UNITIZING AND HANDLING PROCEDURAL GUIDANCE CONTINUED]

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 AFT END OF AN UPPER CONTAINER ABOVE THE AFT END OF THE NEXT LOWER CONTAINER.
 - C. THE CONTAINER SKIDS OF AN UPPER CONTAINER SHOULD BE FULLY SEATED UPON THE STACKING PADS ON THE COVER 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; THREAD STRAPPING THROUGH THE RECEPTACLE FOR FORK TINE AND OVER THE COVER OF THE NEXT CONTAINER ABOVE, AS NEAR AS PRACTICAL TO THE INSIDE ENDS OF THE CONTAINER SKIDS. PLACE STRAPPING SO THAT IT LAYS FLAT AND STRAIGHT WITH THE BODY SURFACES OF THE CONTAINERS; I.E., VERTICAL ALONG SIDES AND STRAIGHT ACROSS 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 DISLODGE-MENT DURING AND AFTER STRAP APPLICATION. STRIPS OF ANTI-CHAFING MATERIAL MAY BE TAPED OR STRING-TIED TO THE CONTAINER OR 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 THE 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.
3. CONTAINER OR CONTAINER STACK HANDLING.

NOTES: (1) APPROVED MATERIAL 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. CAUTION: THE USUALLY APPLIED END-HANDLING IS NOT PERMITTED; HOWEVER, FORK TINES MAY BE PLACED UNDER THE SKIDS FROM AN END POSITION. 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 CAR LOADING, A UNITIZED TWO OR THREE-HIGH CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK UNDER THE SECOND LAYER CONTAINER.
 - C. IF ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING POINTS ON THE CONTAINER. HOWEVER, IF A TWO OR THREE-HIGH STACK IS HANDLED BY SLINGING, DO NOT ATTACH THE SLING TO THE LIFTING POINTS ON A CONTAINER. THE SLING USED MUST BE OF SUCH A DESIGN THAT THE LIFTING IS DONE ON THE BOTTOM OF THE LOWEST CONTAINER.



DIRECTIONAL ARROW IDENTIFIES END OF CONTAINER WITH HUMIDITY INDICATOR. ALL CONTAINER STACKS WITHIN A LOAD UNIT MUST BE POSITIONED AS SHOWN BY THE ARROW ON THAT LOAD UNIT.

SEE SPECIAL NOTE 5 ON PAGE 5.

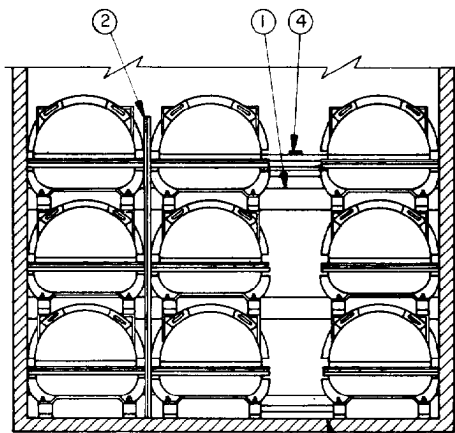
ONE LOAD UNIT

KEY NUMBERS*

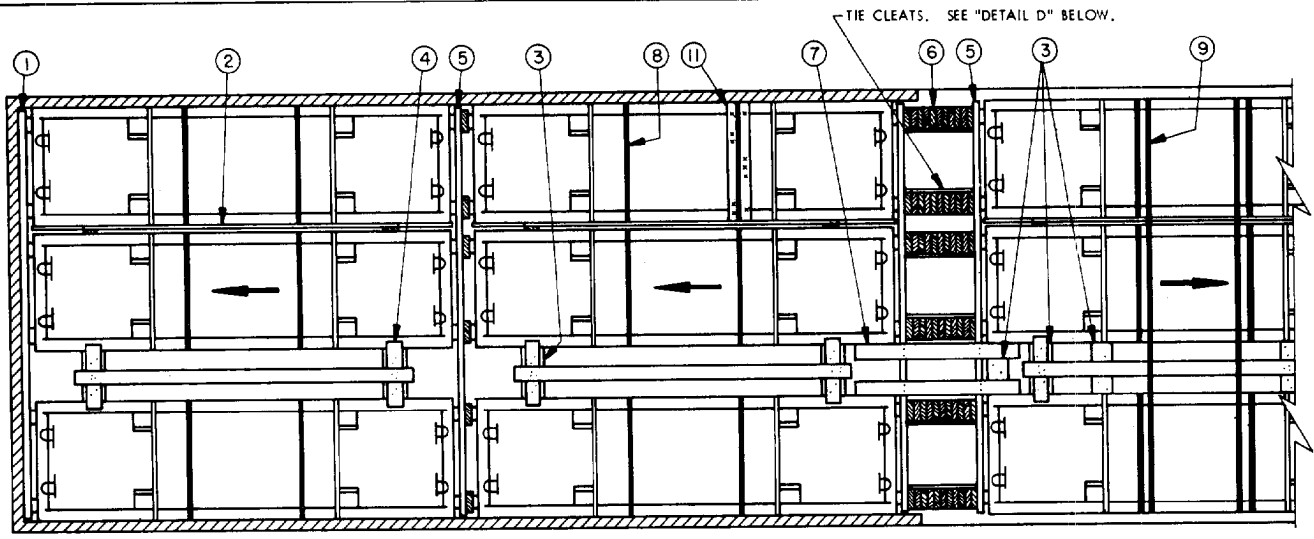
- ① END WALL BATTEN, 2" X 6" BY CAR WIDTH MINUS 1/2" IN LENGTH (6 REQD). POSITION AT HEIGHTS SPECIFIED AT UPPER END OF "ISOMETRIC VIEW" AND NAIL TO THE CAR END WALL W/1-10d NAIL EVERY 12".
- ② ANTI-CHAFING ASSEMBLY (5 REQD). SEE THE DETAIL ON PAGE 14.
- ③ LATERAL BRACE, 2" X 6" BY CUT TO FIT BETWEEN SKIDS OF LATERALLY ADJACENT CONTAINERS (DOUBLED) (14 REQD). NAIL THE FIRST PIECE TO CAR FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. NOTE: SIX (6) PIECES REQUIRED BETWEEN CONTAINER STACKS OF THE LOAD UNIT IN THE DOORWAY AREA AND TWO (2) REQUIRED BETWEEN CONTAINER STACKS OF THE OTHER LOAD UNITS. SEE THE "PLAN VIEW" ON PAGE 5.
- ④ ANTI-SWAY BRACE ASSEMBLY (5 REQD). SEE THE DETAIL ON PAGE 14. INSTALL BETWEEN LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER.
- * ⑤ INTERMEDIATE AND/OR CENTER GATE (5 REQD, 3 RIGHT HAND AND 2 LEFT HAND). SEE "GATE A" DETAIL ON PAGE 13. INSTALL AS SHOWN, WITH THE HORIZONTAL PIECES OF THE GATE ON THE SIDE FACING THE LOAD UNIT ALREADY POSITIONED.
- * ⑥ SOLID FILL, 6" WIDE X 60" LONG BY THE THICKNESS REQUIRED TO FILL THE EXCESS SPACE BETWEEN CENTER GATES MARKED ⑤ TO A WEDGE FIT (REQUIRED AT 6 PLACES). NAIL TO CENTER GATE AND/OR TOGETHER W/1-10d NAIL EVERY 12" AND
- * ⑦ SECURE WITH TIE CLEATS AS SHOWN IN "PLAN VIEW" AND "DETAIL D" ON PAGE 5. GATE RETAINING CLEAT, 2" X 4" BY A LENGTH TO EXTEND 12" BEYOND ENDS OF CONTAINERS (2 REQD). POSITION AGAINST CONTAINERS AND NAIL TO THE TOP HORIZONTAL PIECES ON CENTER GATES MARKED ⑤ W/2-12d NAILS AT EACH JOINT.
- ⑧ UNITIZING STRAP, 1-1/4" X .35" X 15'-0" STEEL STRAPPING (60 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTES "H" AND "J" ON PAGE 2.
- * ⑨ DOORWAY PROTECTION STEEL STRAPPING, 1-1/4" X .035" X 34'-0" (2 REQD). INSTALL AS SHOWN TO ENCIRCLE THOSE LOAD UNITS WHICH EXTEND INTO THE DOORWAY AREA MORE THAN ONE-HALF THE LENGTH OF A CONTAINER. SEE GENERAL NOTE "O" ON PAGE 2.
- ⑩ SEAL FOR 1-1/4" STRAPPING (124 REQD; 2 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.
- ⑪ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPPING MARKED ⑧ AND ⑨ AT ALL POINTS OF STRAPPING/CONTAINER CONTACT.

* SEE SPECIAL NOTES 6 THRU 9 ON PAGE 5 FOR GUIDANCE APPLICABLE FOR THE SHIPMENT OF THE 104" LONG CONTAINER, OR MIXED LOADS.

ISOMETRIC VIEW



SECTION A-A



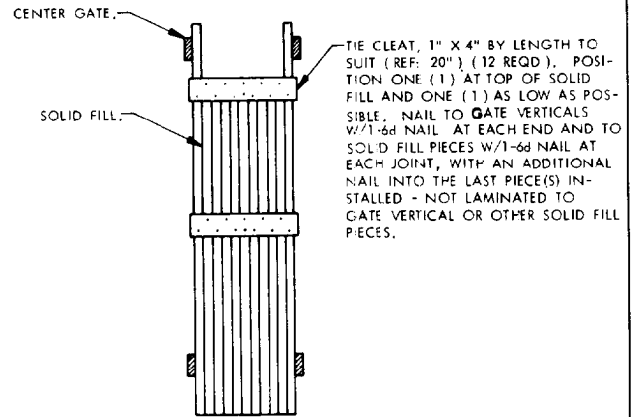
PLAN VIEW

(SPECIAL NOTES CONTINUED.)

SPECIAL NOTES:

1. A 50'-6" LONG BY 9'-2" WIDE BOXCAR EQUIPPED WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. A WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD; HOWEVER, A CAR OF LESSER WIDTH IS NOT RECOMMENDED.
2. A CAR WITH THROUGH DOORS WHICH ARE WIDER THAN SHOWN OR A CAR WITH STAGGERED DOORS CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD. NOTE: FOUR (4) LOAD UNITS CAN BE LOADED INTO A CAR EQUIPPED WITH 8'-0" WIDE DOOR OPENINGS. IF THE CAR BEING USED IS EQUIPPED WITH STAGGERED DOORS, IT WILL BE NECESSARY TO ENCIRCLE THE END OF EACH LOAD UNIT WHICH EXTENDS INTO THE DOORWAY AREA FROM EITHER SIDE WITH AN ADDITIONAL DOORWAY PROTECTION STEEL STRAP, MARKED AS PIECE (9). ALSO, TWO (2) ADDITIONAL LATERAL BRACES, MARKED AS PIECE (3), MUST BE USED AT EACH OF THESE LOCATIONS.
3. IF FOUR (4) LOAD UNITS ARE TO BE SHIPPED IN A 50'-6" LONG CAR, OMIT PIECES MARKED (6) AND (7) AND THREE (3) PIECES MARKED (3). INSTALL BLOCKING AND BRACING SHOWN AS PIECES MARKED (7) THROUGH (14) ON PAGE 6. ADJUST QUANTITIES OF OTHER PIECES AS NECESSARY.
4. IF THE DELINEATED OUTLOADING METHOD IS USED FOR THE SHIPMENT OF A LOAD WHICH CONTAINS A LOAD UNIT OF ONE LESS CONTAINER THAN IS SHOWN, TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, IT WILL BE NECESSARY TO SUBSTITUTE A "FILLER ASSEMBLY" IN PLACE OF THE OMITTED CONTAINER. SEE THE "APPLICATION OF FILLER ASSEMBLY" DETAIL ON PAGE 10 AND "DETAIL B" ON PAGE 11.
5. FOR SOME LESS-THAN-FULL-LOAD SHIPMENTS IT MAY BE MORE DESIRABLE TO USE A K-BRACE TYPE BLOCKING, AS DETAILED ON PAGE 12 AND AS DEPICTED WITHIN THE LCL LOAD ON PAGE 8, IN LIEU OF, OR IN ADDITION TO, USING FILLER ASSEMBLIES. NOTE: ONE-HALF OF THE K-BRACE ASSEMBLY SHOWN BY THE DETAIL MAY BE USED IN THE BRACING OF A SINGLE PARTIAL LAYER. IT MAY BE BEST TO OMIT A COMPLETE LOAD UNIT OR LAYER TO ADJUST THE QUANTITY TO BE SHIPPED. THE METHOD WHICH IS THE MOST PRACTICAL FOR THE SIZE OF THE LOAD BEING SHIPPED SHOULD BE USED.
6. THIS OUTLOADING PROCEDURE IS ALSO APPLICABLE FOR SHIPMENTS OF THE 104" LONG CONTAINER. FIVE (5) LOAD UNITS CAN BE LOADED INTO A CAR EQUIPPED WITH 6'-0" WIDE DOOR OPENINGS. HOWEVER, 7'-0" OR WIDER DOORS WILL FACILITATE HANDLING. THE CRITERIA WITHIN SPECIAL NOTE 2 FOR CARS EQUIPPED WITH STAGGERED DOORS WILL ALSO APPLY FOR THE 104" CONTAINER.
7. THE KEY NUMBERS LISTED ON PAGE 4, WITHOUT CHANGE EXCEPT FOR THOSE NUMBERS PRECEDED BY AN ASTERISK (*), ARE ALSO APPLICABLE FOR OUTLOADING OF THE 104" LONG CONTAINER. THOSE ASTERISK-MARKED NUMBERS WILL BE CHANGED AS FOLLOWS:
 - A. PIECE MARKED (5) ---- 3 REQD, 2 RIGHT HAND AND 1 LEFT.
 - B. PIECE MARKED (6) ---- OMIT
 - C. PIECE MARKED (7) ---- OMIT
 - D. PIECE MARKED (9) ---- 1 REQD, 2 REQD IF A STAGGERED DOOR CAR IS USED.

8. CAUTION: CROSSWISE LOADING OF THE 104" LONG CONTAINERS IS NOT PERMITTED.
9. THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME CAR. 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 15.



DETAIL D

THIS VIEW SHOWS THE TYPICAL APPLICATION OF TIE CLEATS, AS REQUIRED TO RETAIN THE VERTICAL ALIGNMENT OF THE SOLID FILL PIECES WITH THE CENTER GATE VERTICAL PIECES.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	45	72,000 LBS
(W/CBU ITEM)		
DUNNAGE		2,040 LBS
TOTAL WEIGHT		74,040 LBS

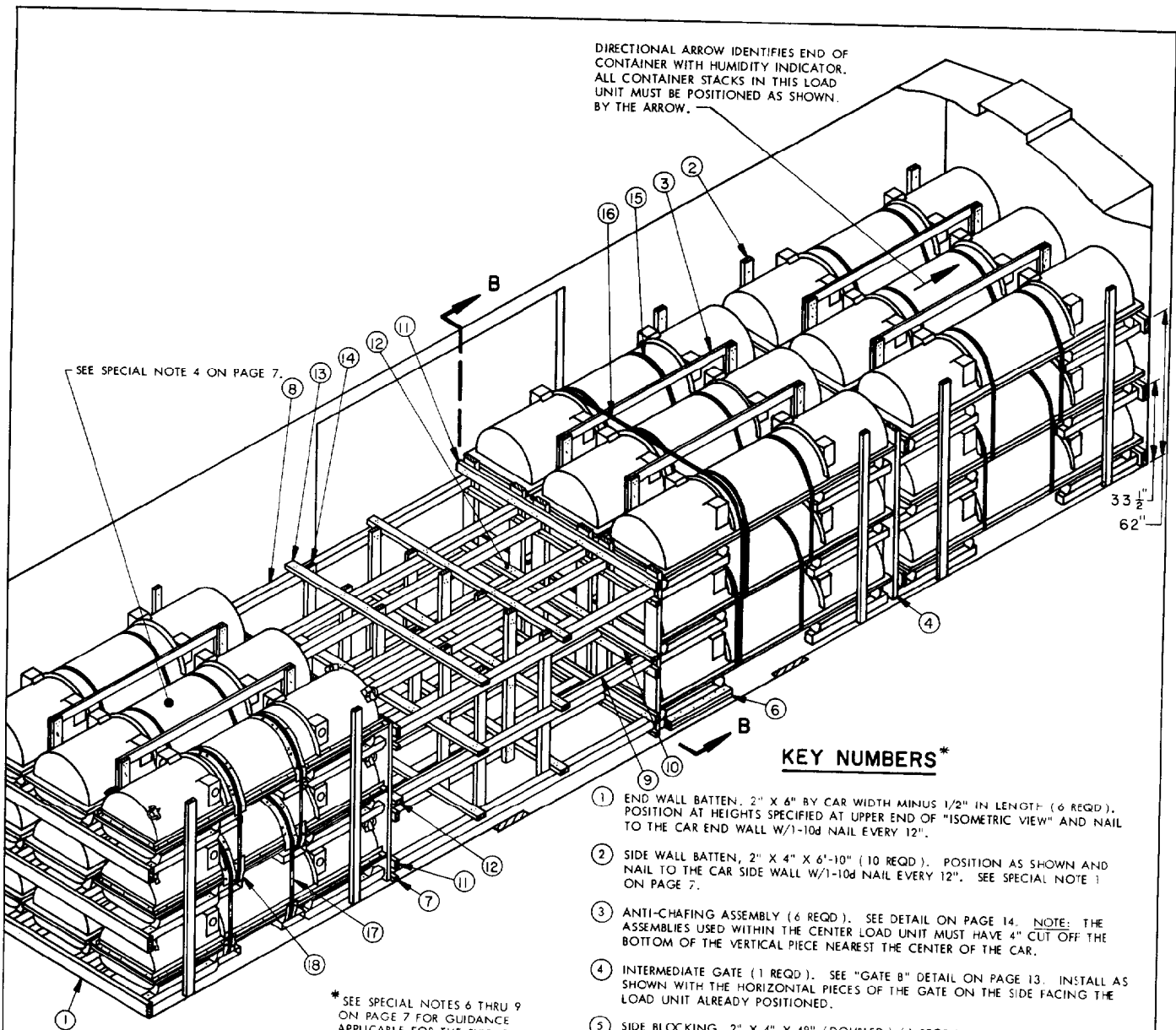
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	293	98
2" X 4"	140	94
2" X 6"	559	559
NAILS	NO. REQD	POUNDS
6d (2")	456	2-3/4
10d (3")	614	9-1/2
12d (3-1/4")	8	1/4
16d (3-1/2")	112	2-1/2
STEEL STRAPPING, 1-1/4" X 1035"	968 REQD	139 LBS
SEAL FOR 1-1/4" STRAPPING	124 REQD	7 LBS
ANTI-CHAFING MATERIAL	AS REQD	NIL

45-UNIT LOAD IN A 50'-6" LONG BY 9'-2" WIDE CAR

PAGE 5

DIRECTIONAL ARROW IDENTIFIES END OF CONTAINER WITH HUMIDITY INDICATOR. ALL CONTAINER STACKS IN THIS LOAD UNIT MUST BE POSITIONED AS SHOWN BY THE ARROW.

SEE SPECIAL NOTE 4 ON PAGE 7.

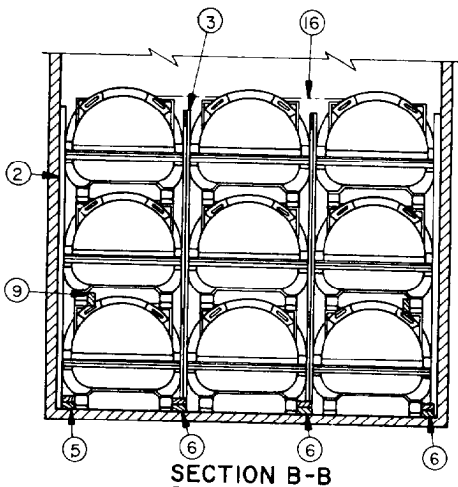


ISOMETRIC VIEW

* SEE SPECIAL NOTES 6 THRU 9 ON PAGE 7 FOR GUIDANCE APPLICABLE FOR THE SHIPMENT OF THE 104" LONG CONTAINER, OR MIXED LOADS.

KEY NUMBERS*

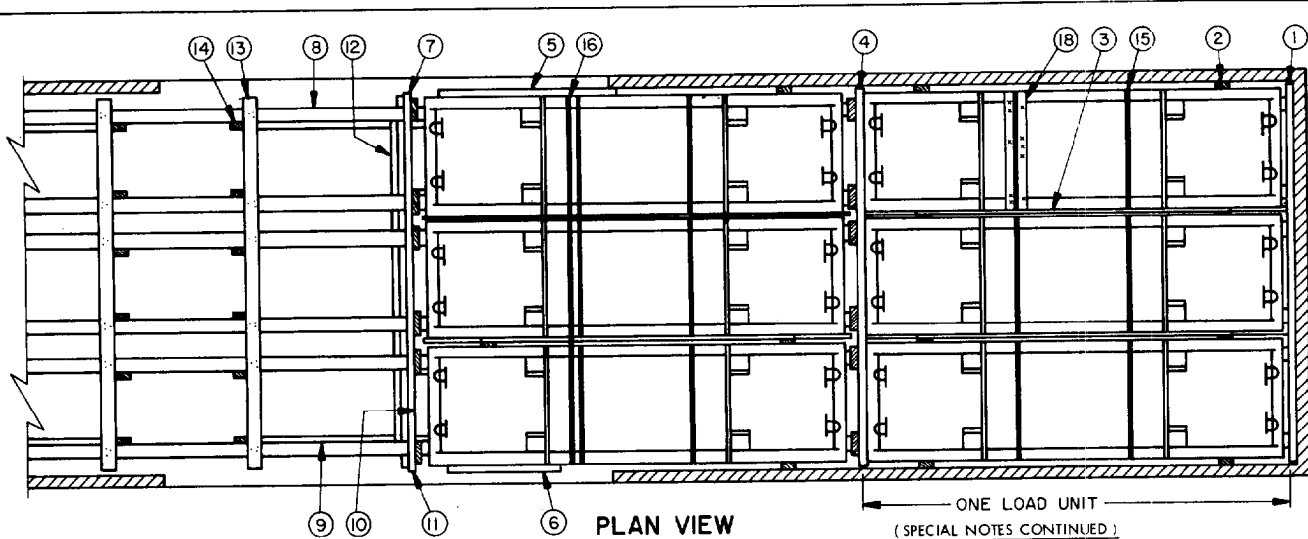
- 1 END WALL BATTEN, 2" X 6" BY CAR WIDTH MINUS 1/2" IN LENGTH (6 REQD.). POSITION AT HEIGHTS SPECIFIED AT UPPER END OF "ISOMETRIC VIEW" AND NAIL TO THE CAR END WALL W/1-10d NAIL EVERY 12".
- 2 SIDE WALL BATTEN, 2" X 4" X 6'-10" (10 REQD.). POSITION AS SHOWN AND NAIL TO THE CAR SIDE WALL W/1-10d NAIL EVERY 12". SEE SPECIAL NOTE 1 ON PAGE 7.
- 3 ANTI-CHAFING ASSEMBLY (6 REQD.). SEE DETAIL ON PAGE 14. NOTE: THE ASSEMBLIES USED WITHIN THE CENTER LOAD UNIT MUST HAVE 4" CUT OFF THE BOTTOM OF THE VERTICAL PIECE NEAREST THE CENTER OF THE CAR.
- 4 INTERMEDIATE GATE (1 REQD.). SEE "GATE B" DETAIL ON PAGE 13. INSTALL AS SHOWN WITH THE HORIZONTAL PIECES OF THE GATE ON THE SIDE FACING THE LOAD UNIT ALREADY POSITIONED.
- 5 SIDE BLOCKING, 2" X 4" X 48" (DOUBLED) (1 REQD.). PRE-POSITION SO AS TO CONTACT THE OUTSIDE EDGE OF SKID OF THE CONTAINER STACK OPPOSITE THE LOADING SIDE AND SO AS TO BE 4" FROM CENTER GATE. NAIL FIRST PIECE TO CAR FLOOR W/10-15d NAILS. NAIL SECOND PIECE TO FIRST IN A LIKE MANNER. SEE "SECTION B-B".
- 6 SIDE BLOCKING, 2" X 4" X 30" (DOUBLED) (3 REQD.). AFTER EACH CONTAINER STACK IS POSITIONED IN THE CAR, INSTALL SIDE BLOCKING AGAINST CONTAINER SKID AND 4" FROM CENTER GATE. NAIL FIRST PIECE TO CAR FLOOR W/7-16d NAILS. NAIL SECOND PIECE TO FIRST IN A LIKE MANNER.
- 7 CENTER GATE (2 REQD.). SEE "GATE C" DETAIL ON PAGE 15.
- 8 STRUT, 4" X 4" BY CUT TO FIT (18 REQD.). ALIGN WITH A CONTAINER SKID. TOE-NAIL TO CENTER GATES MARKED 7 W/2-16d NAILS AT EACH END. NOTE: THE THREE (3) STRUTS AT EACH SIDE MUST BE INSTALLED FLUSH WITH THE INSIDE EDGE OF A CENTER GATE VERTICAL TO PROVIDE FOR NAILING OF PIECES MARKED 9 AND 14. SEE "DETAIL C" ON PAGE 16.
- 9 GATE HOLD DOWN CLEAT, 2" X 4" X 54" (4 REQD.). INSTALL ON THE INSIDE EDGE OF EACH OUTWARD STRUT IN THE MIDDLE LAYER. EXTEND PIECE 12" UNDER CONTAINER AND NAIL TO STRUT MARKED 8 W/7-12d NAILS. SEE "DETAIL C" ON PAGE 16 FOR LOCATION GUIDANCE.
- 10 BRACE FOR HOLD DOWN CLEAT, 2" X 6" BY CUT TO FIT BETWEEN PIECE MARKED 7 (4 REQD.). NAIL TO 2" X 4" STRUT LEDGER W/4-12d NAILS. SEE "DETAIL C" ON PAGE 16 FOR LOCATION GUIDANCE.
- 11 STRUT HOLD DOWN AND GATE STIFFENER PIECE, 2" X 4" BY CAR WIDTH MINUS 1/2" (4 REQD.). POSITION ON TOP AND BOTTOM LAYER OF STRUTS AND NAIL TO VERTICAL PIECES OF CENTER GATE MARKED 7 W/3-10d NAILS AT EACH JOINT.
- 12 REINFORCING PIECE, 2" X 4" BY CAR WIDTH MINUS 1/2" (2 REQD.). POSITION AGAINST CENTER GATE VERTICAL AND NAIL TO STRUTS MARKED 8 W/3-12d NAILS AT EACH JOINT. NAIL TO GATE HOLD DOWN CLEAT MARKED 9 W/2-12d NAILS AT EACH JOINT.



SECTION B-B

PIECES MARKED 1 AND 4 HAVE BEEN OMITTED FOR CLARITY PURPOSES.

(KEY NUMBERS CONTINUED ON PAGE 7)



PLAN VIEW

(SPECIAL NOTES CONTINUED)

SPECIAL NOTES:

1. A 40'-6" LONG BY 8'-6" WIDE BOXCAR EQUIPPED WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. A WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD BY INCREASING THE THICKNESS OF THE SIDE WALL BATTEN MATERIAL MARKED (2). IF THE CAR WIDTH IS 9'-2" OR GREATER, USE LATERAL AND ANTI-SWAY BRACING AS SHOWN ON PAGE 4 IN LIEU OF THE SPECIFIED ACROSS-THE-CAR BRACING.
2. ALTHOUGH 10'-0" WIDE DOOR OPENINGS ARE SHOWN, IT IS POSSIBLE TO POSITION THREE (3) LOAD UNITS IN A CAR HAVING 6'-0" WIDE OPENINGS. A CAR EQUIPPED WITH THROUGH DOOR OPENINGS OF OTHER WIDTHS, OR A CAR WITH STAGGERED DOOR OPENINGS CAN BE USED. IF A STAGGERED DOOR CAR IS USED FOR THE SHIPMENT OF THREE LOAD UNITS, THE FIRST CONTAINER STACK OF THE CENTER LOAD UNIT SHOULD BE POSITIONED ALONG A "LONG SECTION" CAR WALL. INSTALL A PIECE MARKED (5) AGAINST THE OUTSIDE SKID OF THE FIRST-PLACED CONTAINER STACK, WHICH EXTENDS INTO THE DOORWAY AREA. AFTER THE LAST CONTAINER STACK OF THE CENTER LOAD UNIT IS POSITIONED IN THE CAR, INSTALL A PIECE MARKED (5) AGAINST EACH OF THE LOADING SIDE SKIDS OF THAT STACK. TWO (2) EACH DOORWAY PROTECTION STEEL STRAPPING PIECES MARKED (18), ARE REQUIRED AROUND THIS LOAD UNIT.
3. TO SHIP FOUR (4) LOAD UNITS IN A 40'-6" LONG CAR IT WILL BE NECESSARY TO OBTAIN A CAR WITH STAGGERED DOOR OPENINGS AT LEAST 14'-0" IN WIDTH. THE CENTER AREA BLOCKING WILL BE OF THE SOLID FILL TYPE SIMILAR TO THAT SHOWN BY PIECES MARKED (5), (6), AND (7) ON PAGE 4. THE SIDE BLOCKING FOR THE CENTER LOAD UNITS IN THE DOORWAY AREA ON EITHER SIDE WILL BE AS SPECIFIED WITHIN SPECIAL NOTE 2.
4. IF THE DELINEATED OUTLOADING METHOD IS USED FOR THE SHIPMENT OF A LOAD WHICH CONTAINS A LOAD UNIT OF ONE LESS CONTAINER THAN IS SHOWN, TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, IT WILL BE NECESSARY TO SUBSTITUTE A "FILLER ASSEMBLY" IN PLACE OF THE OMITTED CONTAINER. SEE THE "APPLICATION OF FILLER ASSEMBLY" DETAIL ON PAGE 10 AND "DETAIL A" ON PAGE 11.
5. FOR SOME LESS-THAN-FULL-LOAD SHIPMENTS IT MAY BE MORE DESIRABLE TO USE A K-BRACE TYPE BLOCKING, AS DETAILED ON PAGE 12 AND AS DEPICTED WITHIN THE LCL LOAD ON PAGE 8, IN LIEU OF, OR IN ADDITION TO, USING FILLER ASSEMBLIES. NOTE: ONE-HALF OF THE K-BRACE ASSEMBLY SHOWN BY THE DETAIL MAY BE USED IN THE BRACING OF A SINGLE PARTIAL LAYER. IT MAY BE BEST TO OMIT A COMPLETE LOAD UNIT OR LAYER TO ADJUST THE QUANTITY TO BE SHIPPED. THE METHOD WHICH IS THE MOST PRACTICAL FOR THE SIZE OF THE LOAD BEING SHIPPED SHOULD BE USED.
6. THIS OUTLOADING PROCEDURE IS ALSO APPLICABLE FOR SHIPMENT OF THE 104" LONG CONTAINER. FOUR (4) LOAD UNITS CAN BE LOADED INTO A 40'-6" LONG BY 8'-6" WIDE CAR, PROVIDING THE CAR IS EQUIPPED WITH DOOR OPENINGS 10'-0" OR GREATER IN WIDTH. AN 8'-0" WIDE DOOR IS ADEQUATE IF THE CAR IS 9'-2" OR WIDER.
7. QUANTITIES OF DUNNAGE PIECES WILL BE ADJUSTED AS NECESSARY WHEN SHIPPING FOUR (4) LOAD UNITS. NOTE THAT ONLY ONE (1) SET OF STRUT BRACING, PIECES MARKED (13) AND (14), IS REQUIRED. ALSO, DOORWAY PROTECTION, PIECES MARKED (18), IS NOT REQUIRED UNLESS A CAR EQUIPPED WITH STAGGERED DOORS IS USED, AT WHICH TIME FOUR (4) PIECES MARKED (18) AND THREE (3) ADDITIONAL PIECES MARKED (6) WILL BE REQUIRED. INSTALL THE PIECES MARKED (6) SO AS TO BE 4" AWAY FROM A CENTER GATE AND AGAINST THE DOOR-OPENING-SIDE SKIDS OF EACH CONTAINER-STACK ADJACENT TO A CENTER GATE.
8. CAUTION: CROSSWISE LOADING OF THE 104" LONG CONTAINER IS NOT PERMITTED.
9. THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME CAR. 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 15.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	261	87
2" X 2"	37	13
2" X 4"	310	207
2" X 6"	159	159
4" X 4"	195	260
NAILS	NO. REQD	POUNDS
6d (2")	220	1-1/2
10d (3")	310	5
12d (3-1/4")	304	5-1/4
16d (3-1/2")	134	3
STEEL STRAPPING, 1-1/4" X .035" -----	573 FT REQD	82 LBS
SEAL FOR 1-1/4" STRAPPING -----	72 REQD	4 LBS
ANTI-CHAFING MATERIAL -----	AS REQD	NIL

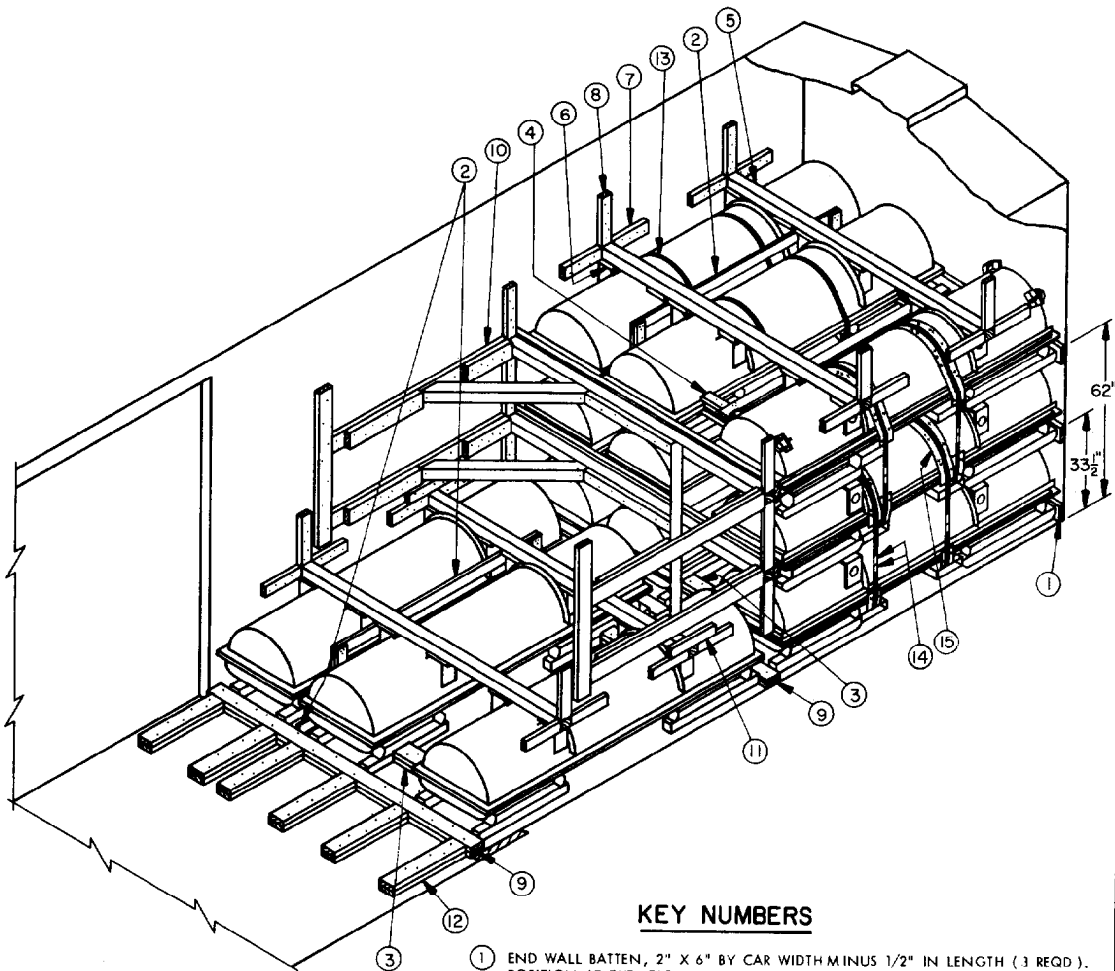
(KEY NUMBERS CONTINUED FROM PAGE 6)

- (13) LATERAL STRUT BRACING, 2" X 4" X 8'-4" (6 REQD). NAIL TO STRUTS MARKED (8) W/3-12d NAILS AT EACH JOINT. NAIL TO GATE HOLD DOWN CLEATS MARKED (9) W/2-12d NAILS AT EACH JOINT.
- (14) VERTICAL STRUT BRACING, 2" X 4" X 64" (12 REQD). NAIL TO STRUTS MARKED (8) W/3-12d NAILS AT EACH JOINT. SEE SPECIAL NOTE 3 ABOVE.
- (15) UNITIZING STRAP, 1-1/4" X .035" X 15'-0" STEEL STRAPPING (36 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTES "H" AND "J" ON PAGE 2.
- (16) DOORWAY PROTECTION STEEL STRAPPING, 1-1/4" X .035" X 33'-0" (1 REQD). INSTALL AS SHOWN TO ENIRCLE THE END OF THE LOAD UNIT WHICH EXTENDS INTO THE DOORWAY AREA. THIS STRAPPING IS ONLY REQUIRED IF THE DOOR OPENING WIDTH IS 10'-0" OR GREATER. SEE GENERAL NOTE "O" ON PAGE 2.
- (17) SEAL FOR 1-1/4" STRAPPING (72 REQD; 2 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.
- (18) ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPPING MARKED (13) AND (16) AT ALL POINTS OF STRAPPING/CONTAINER CONTACT.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER -----	27	43,200 LBS
(W/CBU ITEM)		
DUNNAGE -----		1,916 LBS
		TOTAL WEIGHT --- 45,116 LBS

27-UNIT LOAD IN A 40'-6" LONG BY 8'-6" WIDE CAR



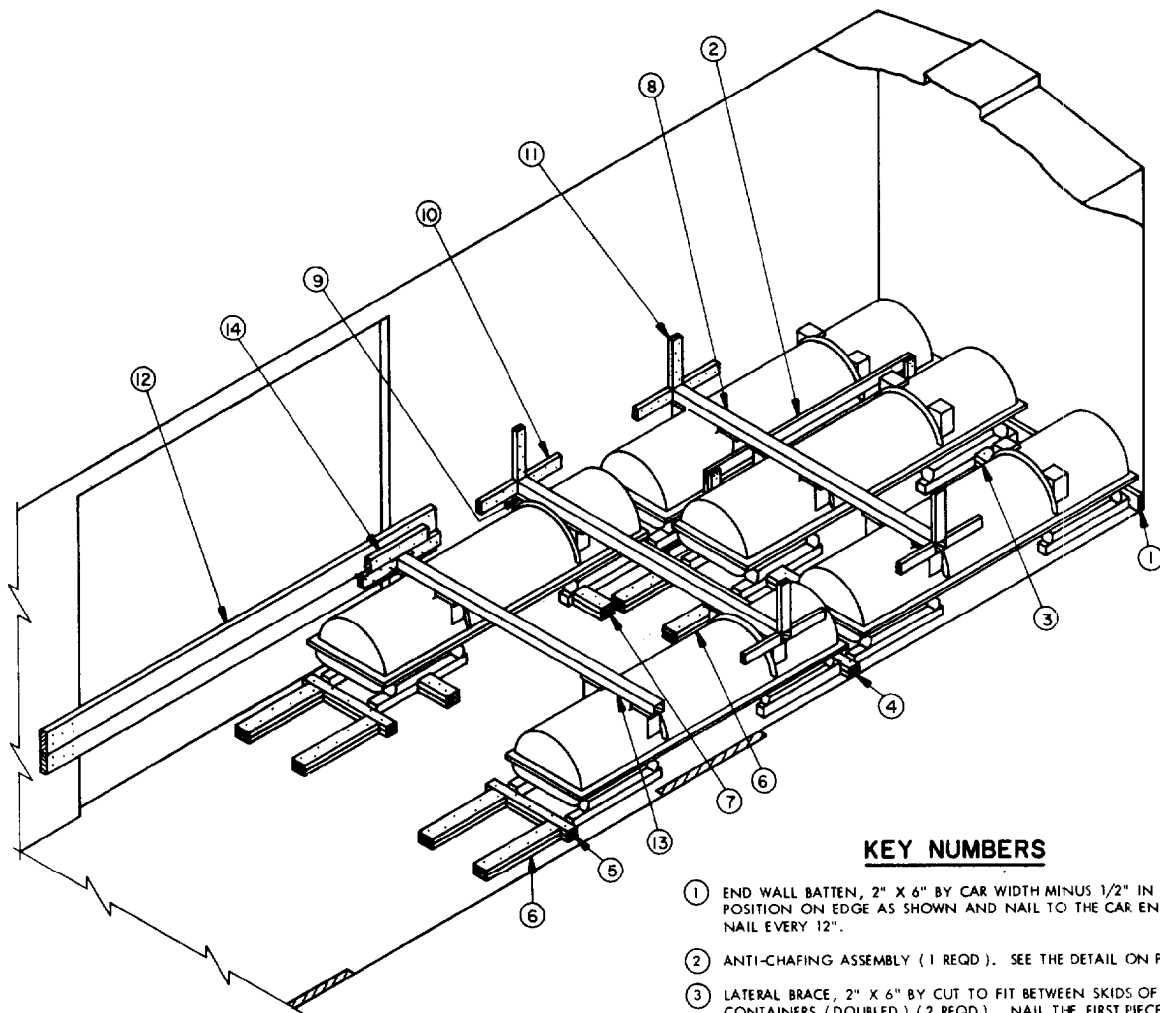
ISOMETRIC VIEW

KEY NUMBERS

SPECIAL NOTES:

1. A PORTION OF A 50'-6" LONG BY 9'-2" WIDE CAR WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. A 40'-6" LONG CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD; HOWEVER, THE CONTAINER HOLD DOWN OVER THE NEAR END OF THE SECOND LOAD UNIT FROM THE END OF THE CAR WILL BE IN THE DOORWAY AND MUST BE BLOCKED AS SHOWN BY PIECES MARKED ⑫, ⑬, AND ⑭ ON PAGE 9. IF THE DOOR OPENING IS WIDER THAN 7'-0" IN A 40'-6" CAR, OR IF A 50'-6" CAR WITH A STAGGERED DOOR IS BEING USED, REFER TO THE "CAUTION" NOTE ON PAGE 12 FOR PROVISIONS WHICH WILL APPLY.
2. IF THE CAR BEING USED IS EQUIPPED WITH A NAILABLE METAL FLOOR AND THE LOCATION OF PIECES MARKED ⑤ IS SUCH THAT PROPER NAILING INTO THE NAILING CHANNELS IN THE CAR FLOOR CANNOT BE ACHIEVED, THE WIDTH OF THESE PIECES MAY BE INCREASED AS NECESSARY.
3. SIX (6) BACK-UP CLEATS, SHOWN AS PIECES MARKED ⑫, ARE ADEQUATE FOR RETAINING A MAXIMUM FIRST-LAYER LCL LOAD.
4. THE COMPLETE "K-BRACE" ASSEMBLY, SHOWN AS PIECE ⑩, IS TYPICAL ONLY AND IS ADEQUATE FOR RETAINING 14,000 POUNDS IN TWO (2) PARTIAL LAYERS. ONE-HALF OF THE DEPICTED ASSEMBLY, MINUS THE 2" X 6" X 54" VERTICAL PIECE AT THE END OF THE HORIZONTAL WALL CLEATS, MAY BE USED INDEPENDENTLY FOR THE BRACING OF ONE (1) PARTIAL LAYER OF NOT MORE THAN 6,500 POUNDS.
5. THIS LCL OUTLOADING PROCEDURE IS ALSO APPLICABLE FOR SHIPMENT OF THE 104" LONG CONTAINER, OR, THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME LOAD. WHEN SHIPPING A MIXED LOAD, OTHER THAN A THREE AND NINE COMBINATION, IT WILL BE NECESSARY TO INSTALL A SPACER ASSEMBLY TO PROVIDE AN EVEN LOAD. SEE THE "SPACER ASSEMBLY" DETAIL ON PAGE 15.
6. **CAUTION:** CROSSWISE LOADING OF THE 104" LONG CONTAINER IS NOT PERMITTED.

- ① END WALL BATTEN, 2" X 6" BY CAR WIDTH MINUS 1/2" IN LENGTH (3 REQD.). POSITION AT THE HEIGHTS SPECIFIED AND NAIL TO THE CAR END WALL W/1-10d NAIL EVERY 12".
- ② ANTI-CHAFING ASSEMBLY (1 REQD FOR THE 3-HIGH LOAD UNIT, 1 REQD FOR THE 1-HIGH LOAD UNIT). SEE THE DETAIL ON PAGE 14.
- ③ LATERAL BRACE, 2" X 6" BY CUT TO FIT BETWEEN SKIDS OF LATERALLY ADJACENT CONTAINERS (DOUBLED) (4 REQD.). NAIL THE FIRST PIECE TO THE CAR FLOOR W/4-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ ANTI-SWAY BRACE ASSEMBLY (1 REQD.). SEE THE DETAIL ON PAGE 14.
- ⑤ CONTAINER HOLD DOWN, 4" X 4" BY CAR WIDTH IN LENGTH (CUT TO FIT) (4 REQD.). POSITION ABOVE STACKING PADS ON THE CONTAINERS AS SHOWN.
- ⑥ FILLER CLEAT, 2" X 4" X 8" (24 REQD.). POSITION SO AS TO CONTACT THE STACKING PAD ON A CONTAINER AND NAIL TO A PIECE MARKED ⑤ W/2-12d NAILS.
- ⑦ HORIZONTAL POCKET CLEAT, 2" X 4" X 15" (16 REQD.). NAIL TO A CAR SIDE WALL W/4-10d NAILS.
- ⑧ VERTICAL POCKET CLEAT, 2" X 4" X 18" (6 REQD.). NAIL TO CAR SIDE WALL W/5-10d NAILS.
- ⑨ HEADER, 2" X 4" BY CAR WIDTH IN LENGTH (DOUBLED) (2 REQD.). NAIL THE FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST W/1-40d NAIL EVERY 8". SEE SPECIAL NOTE 2.
- ⑩ K-BRACE ASSEMBLY (1 REQD.). SEE THE DETAIL ON PAGE 12 AND SPECIAL NOTE 4 AT THE LEFT.
- ⑪ HOLD DOWN POCKET CLEAT, 2" X 4" X 18" (2 REQD.). NAIL TO A CAR SIDE WALL W/5-10d NAILS.
- ⑫ BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (6 REQD.). ALIGN WITH A CONTAINER SKID AS SHOWN, AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/6-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/6-40d NAILS.
- ⑬ UNITIZING STRAP, 1-1/4" X .035" X 15'-0" STEEL STRAPPING (12 REQD.). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTES "H" AND "J" ON PAGE 2.
- ⑭ SEAL FOR 1-1/4" STRAPPING (24 REQD; 2 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.
- ⑮ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD.). POSITION UNDER ALL STRAPPING MARKED ⑬ AT ALL POINTS OF STRAPPING/CONTAINER CONTACT.



ISOMETRIC VIEW

SPECIAL NOTES:

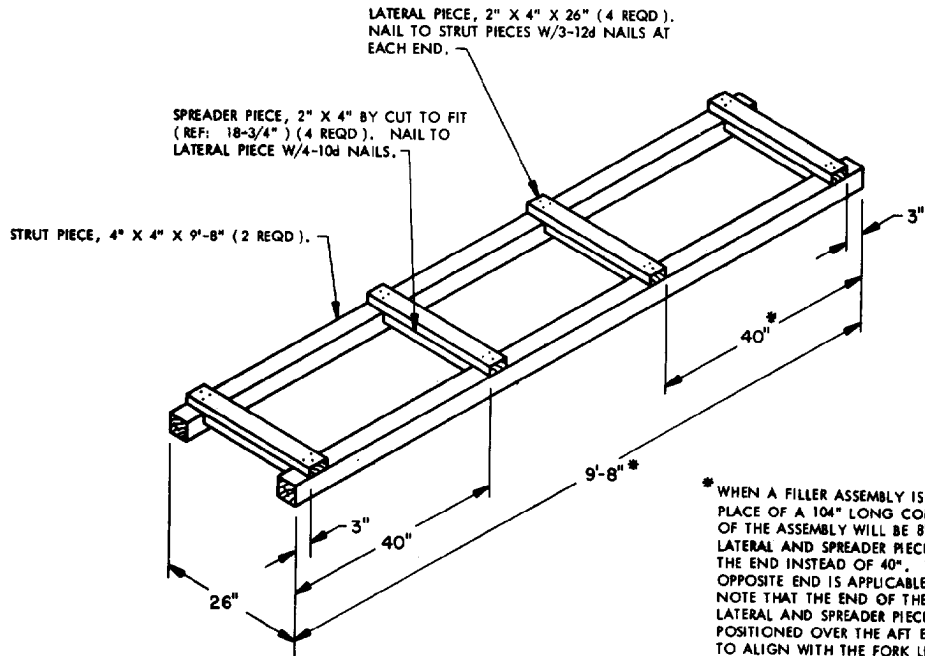
1. A PORTION OF A 40'-6" LONG BY 9'-2" WIDE CAR WITH 8'-0" WIDE DOOR OPENINGS IS SHOWN. A LONGER CAR OR A CAR OF DIFFERENT WIDTH CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD. ALSO, THE DOOR OPENING WIDTH CAN BE OTHER THAN 8'-0".
2. IF THE CAR BEING USED IS EQUIPPED WITH A NAILABLE METAL FLOOR AND THE LOCATION OF PIECES MARKED (4) AND (5) IS SUCH THAT PROPER NAILING INTO THE NAILING CHANNELS IN THE CAR FLOOR CANNOT BE ACHIEVED, THE WIDTH OF THESE PIECES MAY BE INCREASED AS NECESSARY.
3. TWO (2) BACK-UP CLEATS, SHOWN AS PIECES MARKED (6), ARE ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 9,000 POUNDS.
4. THIS LCL OUTLOADING PROCEDURE IS ALSO APPLICABLE FOR SHIPMENT OF THE 104" LONG CONTAINER. OR, THE 104" LONG AND 116" LONG CONTAINERS MAY BE SHIPPED IN THE SAME LOAD. WHEN SHIPPING A 5-CONTAINER MIXED LOAD, IF ONE CONTAINER IS DIFFERENT FROM THE REST IT SHOULD BE THE MIDDLE CONTAINER IN THE FIRST LOAD UNIT, IF TWO CONTAINERS ARE DIFFERENT THEY SHOULD COMPRISE THE SECOND LOAD UNIT, AND IF THREE ARE DIFFERENT THEY SHOULD MAKE UP THE FIRST LOAD UNIT. IN SOME INSTANCES IT MAY BE NECESSARY TO INSTALL ONE OR TWO SPACER ASSEMBLIES TO PROVIDE AN EVEN LOAD. SEE THE "SPACER ASSEMBLY" DETAIL ON PAGE 15.
5. **CAUTION:** CROSSWISE LOADING OF THE 104" LONG CONTAINER IS NOT PERMITTED.

KEY NUMBERS

- (1) END WALL BATTEN, 2" X 6" BY CAR WIDTH MINUS 1/2" IN LENGTH (1 REQD.). POSITION ON EDGE AS SHOWN AND NAIL TO THE CAR END WALL W/1-10d NAIL EVERY 12".
- (2) ANTI-CHAFING ASSEMBLY (1 REQD.). SEE THE DETAIL ON PAGE 14.
- (3) LATERAL BRACE, 2" X 6" BY CUT TO FIT BETWEEN SKIDS OF LATERALLY ADJACENT CONTAINERS (DOUBLED) (2 REQD.). NAIL THE FIRST PIECE TO THE CAR FLOOR W/4-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- (4) INTERMEDIATE HEADER, 2" X 4" BY CAR WIDTH MINUS 1/2" IN LENGTH (DOUBLED) (1 REQD.). NAIL THE FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST W/1-40d NAIL EVERY 8". SEE SPECIAL NOTE 2.
- (5) HEADER, 2" X 6" X 34" (DOUBLED) (2 REQD.). NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/5-40d NAILS.
- (6) BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (6 REQD.). ALIGN WITH A CONTAINER SKID AS SHOWN, AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/6-40d NAILS. SEE SPECIAL NOTE 3.
- (7) SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (4 REQD.). NAIL THE FIRST PIECE TO THE CAR FLOOR W/3-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- (8) CONTAINER HOLD DOWN, 4" X 4" BY CAR WIDTH IN LENGTH (CUT TO FIT) (2 REQD.). POSITION ABOVE STACKING PADS ON THE CONTAINERS AS SHOWN.
- (9) FILLER CLEAT, 2" X 4" X 8" (14 REQD.). POSITION SO AS TO CONTACT A STACKING PAD ON A CONTAINER AND NAIL TO A PIECE MARKED (8) AND/OR (13) W/2-12d NAILS.
- (10) HORIZONTAL POCKET CLEAT, 2" X 4" X 15" (12 REQD.). NAIL TO A CAR SIDE WALL AND/OR DOOR SPANNER PIECE MARKED (12) W/4-10d NAILS.
- (11) VERTICAL POCKET CLEAT, 2" X 4" X 18" (4 REQD.). NAIL TO A CAR SIDE WALL W/5-10d NAILS.
- (12) DOOR SPANNER, 2" X 6" BY DOORWAY OPENING WIDTH PLUS 24" (10'-0" MINIMUM) (4 REQD.). POSITION AS SHOWN AND NAIL TO THE CAR SIDE WALL W/5-12d NAILS AT EACH END.
- (13) CONTAINER HOLD DOWN, 4" X 4" BY CAR WIDTH MINUS 3-1/4" IN LENGTH (1 REQD.). POSITION ABOVE STACKING PADS ON THE CONTAINERS AS SHOWN.
- (14) DOORWAY AREA, HORIZONTAL POCKET CLEAT, 2" X 4" X 18" (2 REQD.). NAIL TO A DOOR SPANNER MARKED (12) W/5-10d NAILS.

TYPICAL LCL (5-UNIT LOAD)

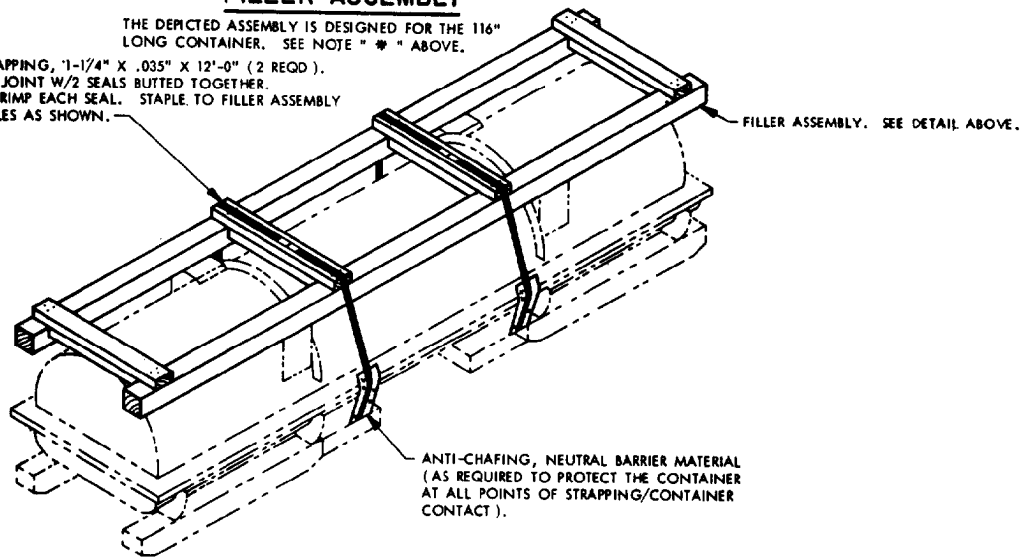
PAGE 9



FILLER ASSEMBLY

THE DEPICTED ASSEMBLY IS DESIGNED FOR THE 116" LONG CONTAINER. SEE NOTE "*" ABOVE.

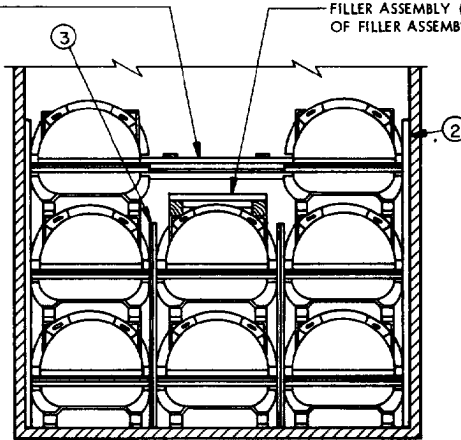
STEEL STRAPPING, 1-1/4" X .035" X 12'-0" (2 REQD).
SEAL THE JOINT W/2 SEALS BUTTED TOGETHER.
DOUBLE CRIMP EACH SEAL. STAPLE TO FILLER ASSEMBLY W/2 STAPLES AS SHOWN.



APPLICATION OF FILLER ASSEMBLY

ANTI-SWAY BRACE ASSEMBLY (1 REQD FOR EACH OMITTED CONTAINER). SEE DETAIL ON PAGE 14 AND THE TYPICAL INSTALLATION IN THE LOAD VIEW ON PAGE 4.

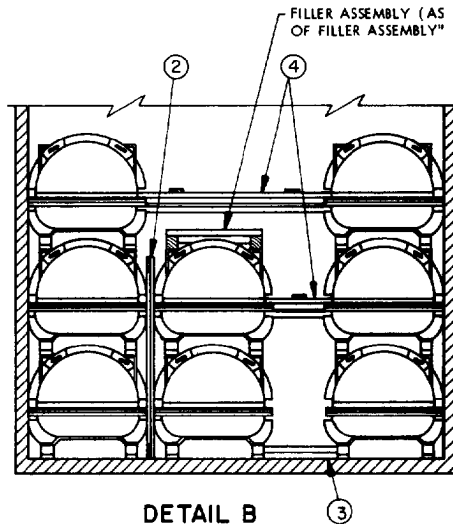
FILLER ASSEMBLY (AS REQD). SEE THE DETAIL AND THE "APPLICATION OF FILLER ASSEMBLY" VIEW ON PAGE 10.



DETAIL A

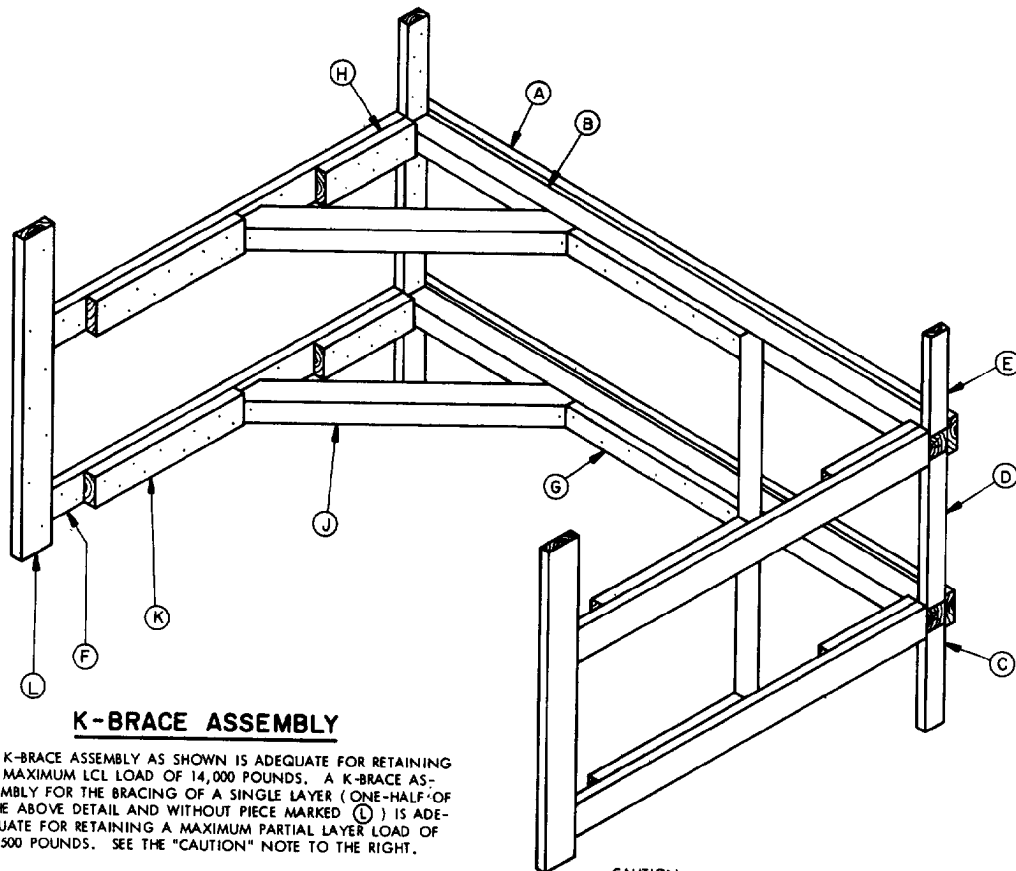
THIS VIEW DEPICTS A TYPICAL SECTION OF AN 8'-6" WIDE CAR, SHOWING THE USE OF A FILLER ASSEMBLY AS USED IN THE PLACE OF AN OMITTED CONTAINER. TWO ANTI-SWAY BRACE ASSEMBLIES MUST BE USED TO BRACE THE OUTSIDE ROWS OF CONTAINERS IN EACH LOAD UNIT FROM WHICH A CONTAINER IS OMITTED. NOTE: IF THE ENTIRE THIRD LAYER IS OMITTED FROM THE MIDDLE ROW, IT WILL NOT BE NECESSARY TO INSTALL FILLER ASSEMBLIES IN THAT ROW.

FILLER ASSEMBLY (AS REQD). SEE THE DETAIL AND THE "APPLICATION OF FILLER ASSEMBLY" VIEW ON PAGE 10.



DETAIL B

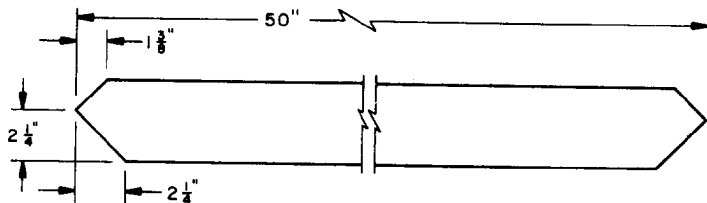
THIS VIEW DEPICTS A TYPICAL SECTION OF A 9'-2" WIDE CAR, SHOWING THE USE OF A FILLER ASSEMBLY AS USED IN THE PLACE OF AN OMITTED CONTAINER. IN EACH LOAD UNIT FROM WHICH A CONTAINER IS OMITTED, TWO ANTI-SWAY BRACE ASSEMBLIES MUST BE USED TO BRACE THE OUTSIDE ROWS OF CONTAINERS AND MUST ALSO BE USED BETWEEN THE SECOND LAYER OF CONTAINERS AS SHOWN. NOTE: IF THE ENTIRE THIRD LAYER IS OMITTED FROM THE MIDDLE ROW, IT WILL NOT BE NECESSARY TO INSTALL FILLER ASSEMBLIES IN THAT ROW.



K-BRACE ASSEMBLY

A K-BRACE ASSEMBLY AS SHOWN IS ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 14,000 POUNDS. A K-BRACE ASSEMBLY FOR THE BRACING OF A SINGLE LAYER (ONE-HALF OF THE ABOVE DETAIL AND WITHOUT PIECE MARKED (L)) IS ADEQUATE FOR RETAINING A MAXIMUM PARTIAL LAYER LOAD OF 6,500 POUNDS. SEE THE "CAUTION" NOTE TO THE RIGHT.

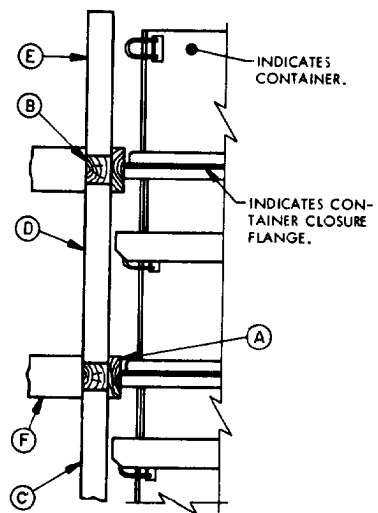
CAUTION:
SOME CARS ARE NOT SUITED FOR THE APPLICATION OF "PARTIAL" LAYER BRACING BECAUSE THE LENGTH OF THE PARTIAL LAYER TO BE SHIPPED AND/OR THE SIZE OR CONFIGURATION OF THE CAR DOORS WILL NOT PERMIT PROPER INSTALLATION OF THE SPECIFIED K-BRACE DUNNAGE. PIECES MARKED (A) THROUGH (E) AND PIECES MARKED (H) AND (L) OR THE COMPARABLE PIECES ON A HEAVIER BRACE MUST BE SUPPORTED AT THE SIDES OF A CAR BY A CAR SIDE WALL. IT IS ALLRIGHT FOR THE END OF A DIAGONAL BRACE TO BEAR IN FRONT OF A DOOR OPENING; HOWEVER, THE ADJACENT PIECE MARKED (F) OR THE COMPARABLE PIECE ON A HEAVIER BRACE MUST BE DOUBLED AND EXTENDED ACROSS AND FAR ENOUGH PAST THE DOOR OPENING TO PROVIDE FOR THE SPECIFIED NAILING OF EACH PIECE.



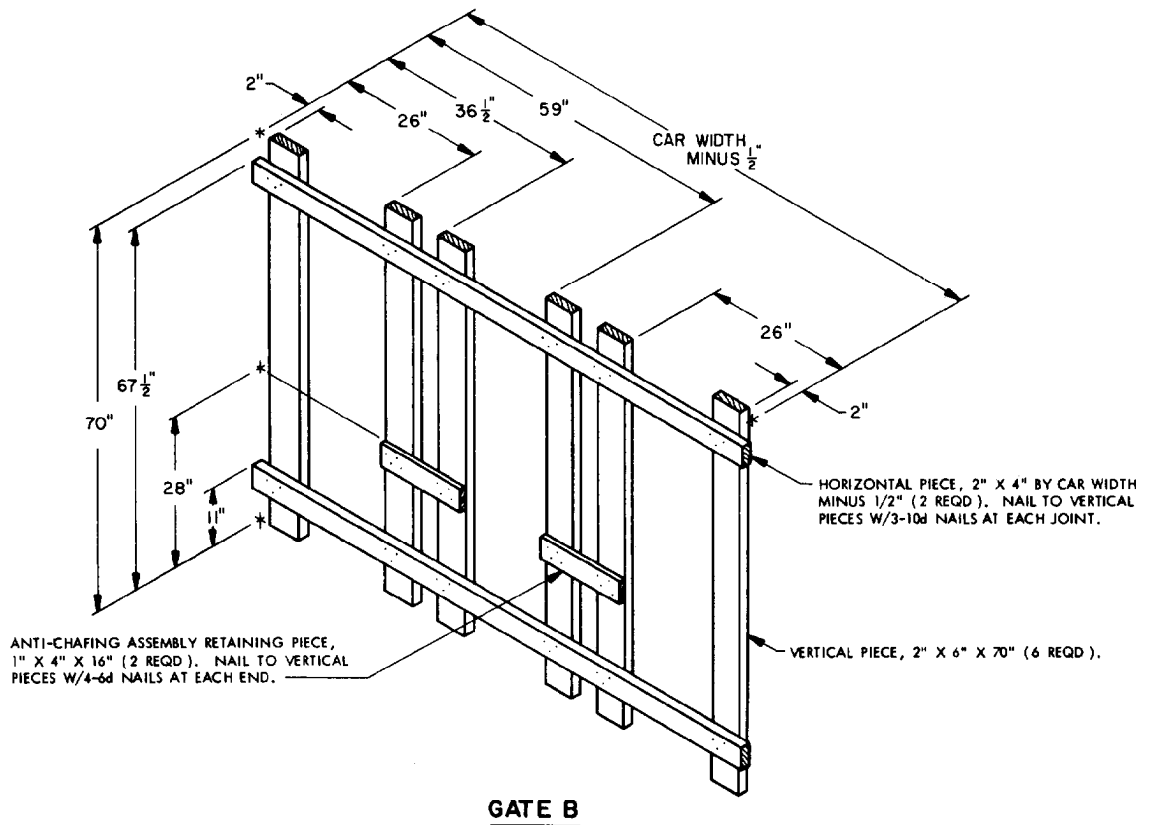
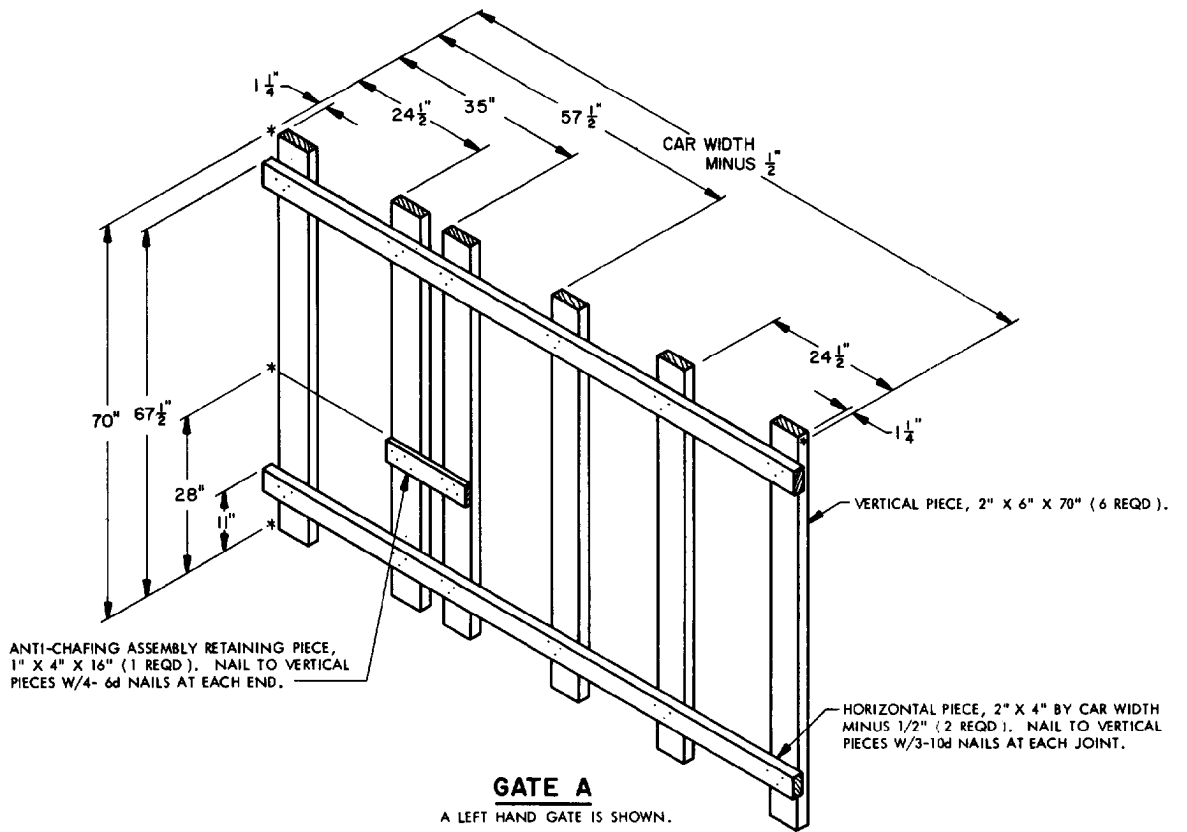
BRACE

PIECE MARKED (J)

LUMBER AND NAILING DATA				
PC MK	LUMBER SIZE	NO. REQD	NAIL TO	NUMBER AND SIZE OF NAILS
(A)	2" X 6" BY CAR WIDTH	2	(B)	1-12d EVERY 12"
(B)	4" X 4" BY CAR WIDTH	2	---	---
(C)	2" X 4" X 18"	2	CAR WALL	5-10d
(D)	2" X 4" X 28"	2	CAR WALL	6-10d
(E)	2" X 4" X 18"	2	CAR WALL	5-10d
(F)	2" X 6" X 72"	4	CAR WALL	16-12d
(G)	2" X 4" X 36"	2	(B)	7-12d
(H)	2" X 6" X 18"	4	(F)	7-16d
(J)	4" X 4" MATERIAL. SEE "BRACE" DETAIL ABOVE.	4	(B) & (F)	1-40d NAIL AT EACH END.
(K)	2" X 6" X 30"	4	(F)	10-16d
(L)	2" X 6" X 54"	2	CAR WALL	7-12d



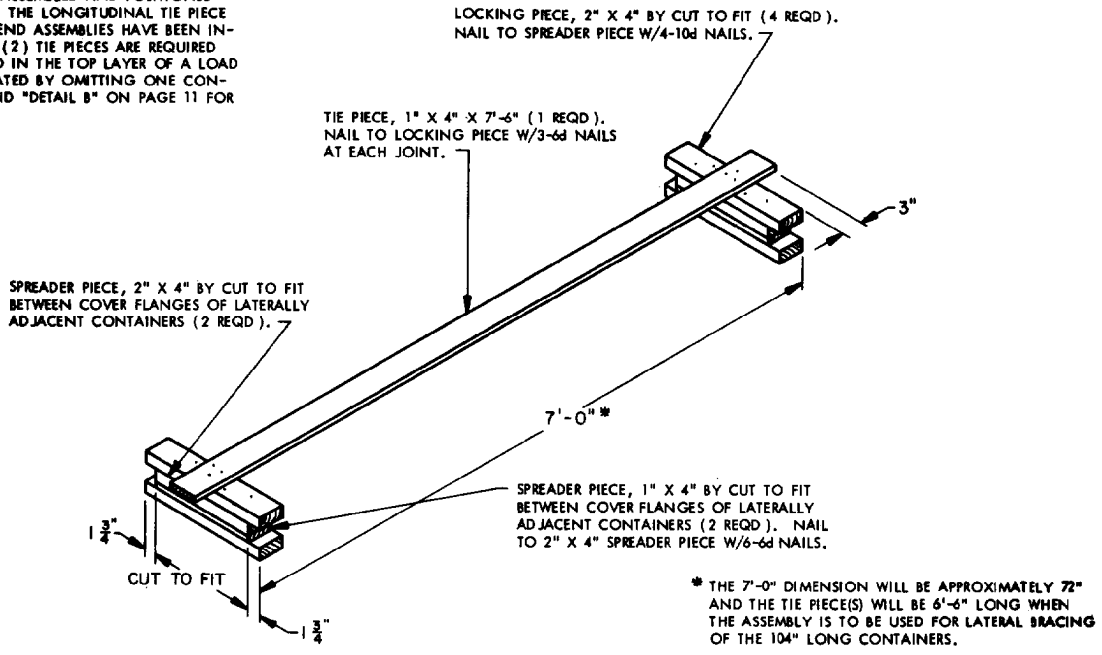
K-BRACE PLACEMENT



DETAILS

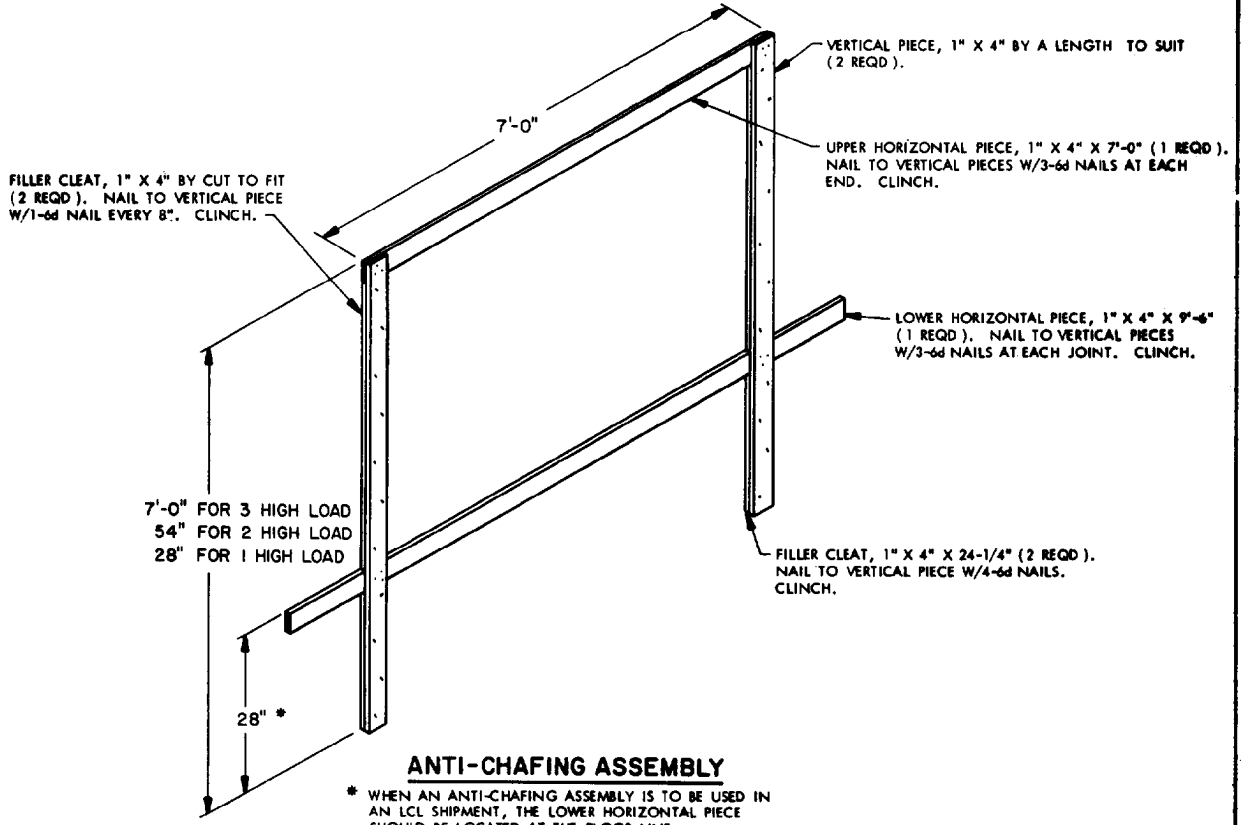
NOTE ☉:

ONE OF THE TWO LOCKING PIECES ON EACH END ASSEMBLY MUST BE APPLIED AFTER THE SPREADER PIECES 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. NOTE THAT TWO (2) TIE PIECES ARE REQUIRED WHEN AN ASSEMBLY IS USED IN THE TOP LAYER OF A LOAD UNIT TO SPAN A VOID CREATED BY OMITTING ONE CONTAINER. SEE "DETAIL A" AND "DETAIL B" ON PAGE 11 FOR TYPICAL INSTALLATIONS.



ANTI-SWAY BRACE ASSEMBLY

SEE "NOTE ☉" ABOVE.



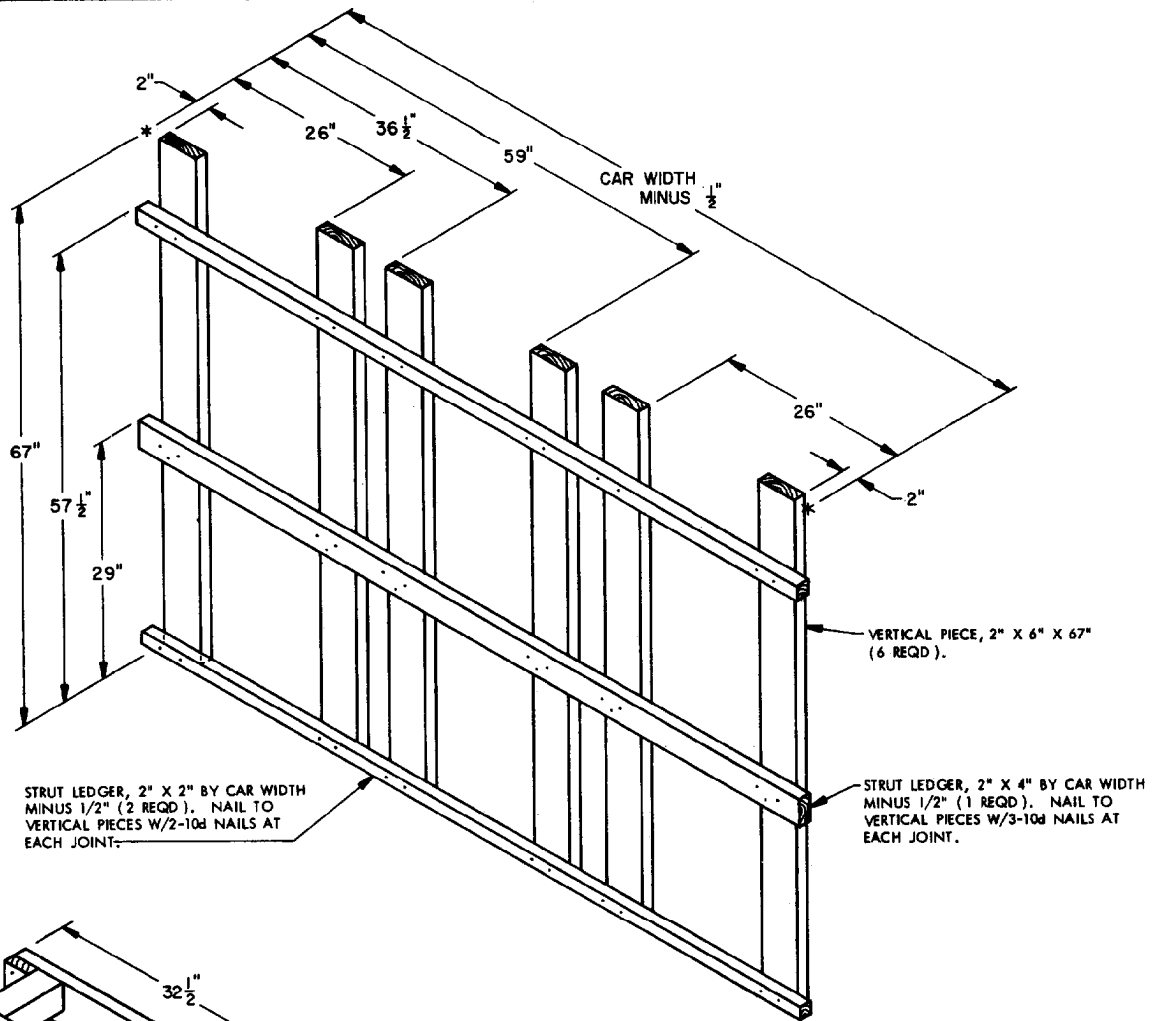
ANTI-CHAFING ASSEMBLY

* WHEN AN ANTI-CHAFING ASSEMBLY IS TO BE USED IN AN LCL SHIPMENT, THE LOWER HORIZONTAL PIECE SHOULD BE LOCATED AT THE FLOOR LINE.

NOTE:

THE LOWER HORIZONTAL PIECE WILL BE 8'-6" LONG WHEN THE ASSEMBLY IS TO BE USED WITHIN A LOAD UNIT OF THE 104" LONG CONTAINERS.

DETAILS

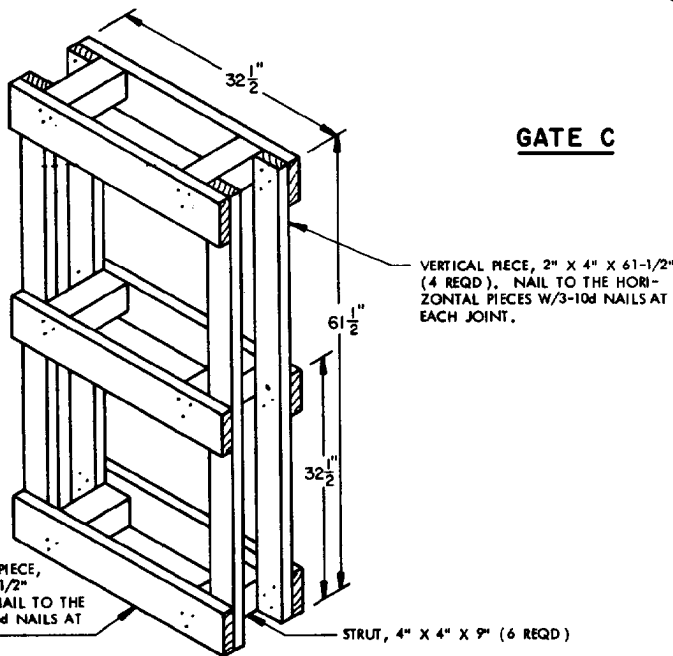


STRUT LEDGER, 2" X 2" BY CAR WIDTH MINUS 1/2" (2 REQD.). NAIL TO VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 67" (6 REQD.).

STRUT LEDGER, 2" X 4" BY CAR WIDTH MINUS 1/2" (1 REQD.). NAIL TO VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

GATE C



HORIZONTAL PIECE, 2" X 6" X 32-1/2" (6 REQD.). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

STRUT, 4" X 4" X 9" (6 REQD.)

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

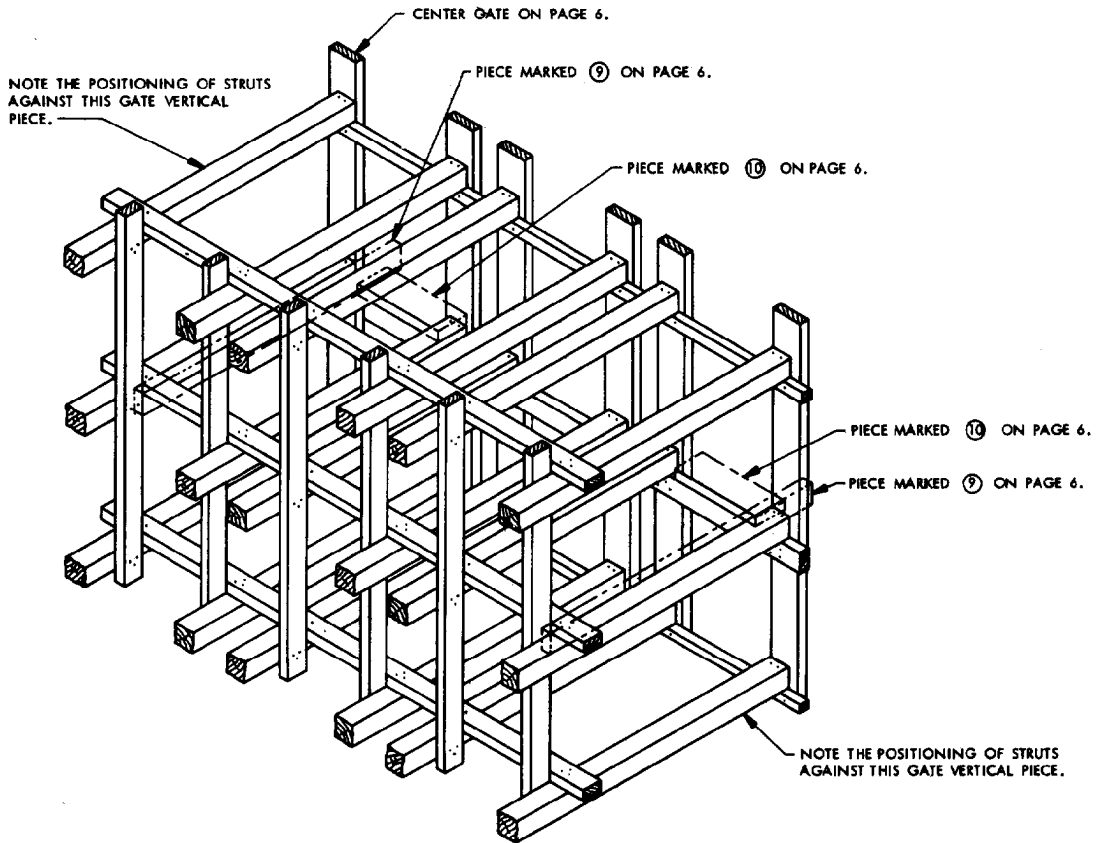
NOTE ●:

IF THE TWO DIFFERENT LENGTH CONTAINERS ARE TO BE SHIPPED IN ONE CAR 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 AN INTERMEDIATE 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 AN INTERMEDIATE GATE. SECURE THE SPACER ASSEMBLY BY NAILING THRU THE VERTICAL PIECES OF THE ADJACENT INTERMEDIATE GATE INTO THE HORIZONTAL PIECES OF THE ASSEMBLY W/3-10d NAILS AT EACH JOINT. 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.

SPACER ASSEMBLY

THE ASSEMBLY AS SHOWN IS DESIGNED FOR USE WITH A 3-CONTAINER STACK OF THE 104" LONG CONTAINERS. 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 RIGHT FOR INSTALLATION GUIDANCE.

DETAILS



DETAIL C

THIS ENLARGED VIEW OF A PORTION OF THE CENTER BLOCKING OF THE LOAD ON PAGE 6 IS SHOWN FOR THE SOLE PURPOSE OF CLARIFYING THE LOCATION OF THE OUTWARD PIECES MARKED 8, AND PIECES MARKED 9 AND 10. THE PIECES MARKED 11 AND 12 HAVE BEEN OMITTED FROM THE ABOVE VIEW FOR CLARITY PURPOSES.