

LOADING AND BRACING (CL & LCL) IN BOX CARS OF CDU ITEMS PACKED TEN PER SKIDDED WOODEN BOX

INDEX

<u>ITEM</u>	PAGE(S)
GENERAL NOTES, AND MATERIAL SPECIFICATIONS	2
UNITIZATION AND HANDLING PROCEDURES	3
LOAD FOR BOX CARS EQUIPPED WITH MECHANICAL BRACING	
HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS:	
52-UNIT LOAD IN A 50'-6" LONG BY 8'-6" WIDE CAR	4,5
LOADS FOR CONVENTIONAL BOX CARS:	
52-UNIT LOAD IN A 50'-6" LONG BY 9'-2" WIDE CAR	6,7
TYPICAL LCL (PARTIAL LAYER BRACING)	8
TYPICAL LCL (5-UNIT LOAD)	9
DETAILS	10-12

- INCLUDES PROCEDURES FOR CONVENTIONAL BOX CARS AND FOR BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES OF VARIOUS DESIGN AND MANUFACTURE.
- PROCEDURES SPECIFIED HEREIN ARE
 APPLICABLE TO THE CDU/4 AND CDU/IO
 SERIES RELOAD KITS AND OTHER
 SIMILAR KITS.

THIS DRAWING SUPERSEDES
"INTERIM PROCEDURES" DRAWING
AMXSV-4136.

DO NOT SCALE

TRS	RHA hell	APSA PJS	SUBMITTED	21/	1 1	- 0.0
WE TO	S ANC ANNO CTR] W	CONNY	HOING OFFICER.	T, Cal.
REVISIONS			MD APPROVED		,	
				Pealph ANNU	IITION PROCURENT	INT & SUPPLY AGENC
			U. S. ARMY	NATIONEL COM	AMO SERE	
				Mhas	west	
			U. S. ARMY MATERIEL COMMAND			
			JUNE 1968			
			CLASS	DIVISION	DRAWING	FILE
			19	48	4070	5AI002
			'5	40	70/0	SAICUZ

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO THE CDU/4 AND CDU/10 SERIES RELOAD KITS, AND OTHER SIMILAR KITS, WHEN THEY ARE PACKAGED IN THE DEPICTED SKIDDED WOODEN BOX. REFERENCE TO CONTAINER HEREIN MEANS THE SKIDDED WOODEN BOX WITH CONTENTS.
- C. LOADS AS SHOWN HEREIN ARE BASED ON BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS, OR ARE BASED ON CONVENTIONAL BOX CARS.
- D. BOX CARS EQUIPPED WITH CONVENTIONAL SLIDING DOORS HAVE BEEN SHOWN.
 HOWEVER, THE DEPICTED OUTLOADING PROCEDURES ARE ALSO APPLICABLE FOR CARS
 EQUIPPED WITH PLUG DOORS. CAUTION: DUNNAGE MATERIAL MUST NOT BE NAILED
 TO ANY PLUG DOOR, WHETHER AUXILIARY OR MAIN.
- E. OUTLOADING PROCEDURES SPECIFIED ON PAGES 4 AND 5 ARE FOR BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES, AND MAY BE ADAPTED AS REQUIRED TO FACILITATE THE USE OF BOX CARS EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES. HOWEVER, FIXED OR ADJUSTABLE WALL MEMBERS AND DOORWAY MEMBERS WITHIN THESE CARS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED HEREIN. CAUTION: BOX CARS EQUIPPED WITH MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED.
 - 1. FOR BLOCKING THE LOADS WHICH ARE DEPICTED HEREIN, A CROSS MEMBER WILL NOT BE RELIED UPON TO RETAIN MORE LADING ON EITHER SIDE THAN AS SHOWN. VOIDS LENGTHWISE WITHIN THE LOAD MUST BE HELD TO A MINIMUM AND CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE SPACING OF THE LOCKING HOLES IN THE WALL MEMBERS PERMITS, LOCKING BARS (LEVER JACKS) SHOULD BE USED FOR THIS PURPOSE. AN ADDITIONAL 1/2" OF ADJUSTMENT CAN BE MADE BY TURNING A CROSS MEMBER END-FOR-END WHEN LOCKING PINS ON THE MEMBER ARE OFF-CENTER. NOTE: IT IS RECOMMENDED THAT EACH CROSS MEMBER BE INSTALLED WITH THE ENDS ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS (AT EQUAL HEIGHTS AND AT EQUAL DISTANCES FROM THE END OF THE CAR).
 - 2. CAUTION: ALL BLOCKING AND BRACING COMPONENTS IN EMPTY CARS AND ALL UNUSED COMPONENTS IN LOADED CARS MUST BE "SECURED" FOR SHIPMENT ---- ADJUSTABLE WALL MEMBERS TO VERTICAL WALL ATTACHMENT RAILS, AND CROSS MEMBERS TO ADJUSTABLE WALL MEMBERS OR TO FIXED HORIZONTAL WALL MEMBERS OR TO DOORWAY MEMBERS, AND DOORWAY MEMBERS TO DOOR POSTS. COMPONENTS ASSIGNED TO EACH CAR MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS.
 - 3. IF A CAR HAS A "BOWED END", RATHER THAN SQUARING OFF THE END BY INSTALLING DUNNAGE, ADDITIONAL CROSS MEMBERS CAN BE INSTALLED NEAR THE END WALL OF THE CAR TO PROVIDE A "SQUARED" END. THESE CROSS MEMBERS SHOULD BE INSTALLED IN THE SAME QUANTITY AND AT THE SAME HEIGHTS AS THE CROSS MEMBERS USED THROUGHOUT THE LOAD AS BLOCKING MEMBERS.
- F. OUTLOADING PROCEDURES SPECIFIED ON PAGES 6 THROUGH 9 ARE FOR CONVEN-TIONAL TYPE BOX CARS OF VARIOUS LENGTH AND WIDTH COMBINATIONS.
- G. FOR DETAILS OF THE RELOAD KIT CONTAINER, SEE DRAWING NO. 9226267.
 CONTAINER DIMENSIONS ---- 43-1/8" LONG X 39" WIDE X 26-3/4" HIGH.
 GROSS WEIGHT (MAX) ----- 800 POUNDS (APPROX).
- H. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE BOX CAR BEING LOADED OR THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN FOR FULL OR PARTIAL CARLOADS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACTING, AND STAYING OF THE DESIGNATED ITEM.
- J. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN A CAR WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEM, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, THE MONITORING DEVICES AND SIDE PANELS ON THE CONTAINERS ARE ACCESSIBLE FOR IN-TRANSIT OPERATIONS, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.
- K. CAUTION: WHEN LOADING CONTAINER STACKS ABOARD A CAR, THEY WILL BE POSITIONED SO THAT ALL THE "PLUG-IN" MONITORING RECEPTACLES ON THE CONTAINERS WILL FACE TOWARD THE SAME SIDE OF THE CAR.

- L. 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 IN THE OUTLOADING PROCEDURES HEREIN. IF THE CAPACITY OF THE MATERIALS 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. IN SOME INSTANCES, CONTAINERS WILL ALREADY BE UNITIZED INTO STACKS WHEN OFFERED FOR LOADING. THESE UNITIZED STACKS SHOULD BE INSPECTED, AND AS REQUIRED, LOOSE UNITIZING STEEL STRAPPING MUST BE REPLACED.
- M. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- N. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-5/8" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" 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. 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. 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 TO THE NAILING OF THE DEPICTED FLOOR-LINE BLOCKING. IF A NAIL SIZE IS NOT SPECIFIED IN THE CAR, 30d NAILS SHOULD BE USED.
- Q. THROUGHOUT THIS PROCEDURAL DRAWING PORTIONS OF THE BLOCKING COM-PONENTS AND OF THE DEPICTED CARS, SUCH AS A CAR SIDE WALL, HAVE BEEN OMITTED FROM THE LOAD VIEWS FOR CLARITY PURPOSES.
- R. 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 THE DEPICTED OUTLOADING METHODS.

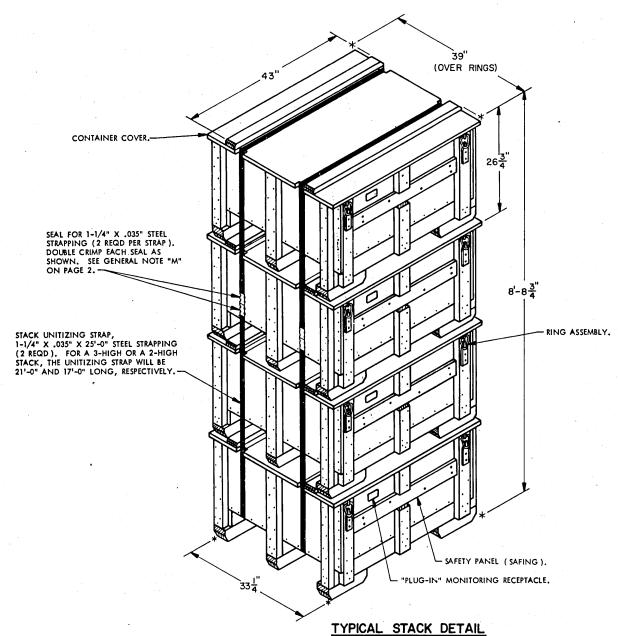
MATERIAL SPECIFICATIONS

LUMBER-----: SEE TM 715-5500-1, 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-S-781.

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



UNITIZING AND HANDLING PROCEDURAL GUIDANCE

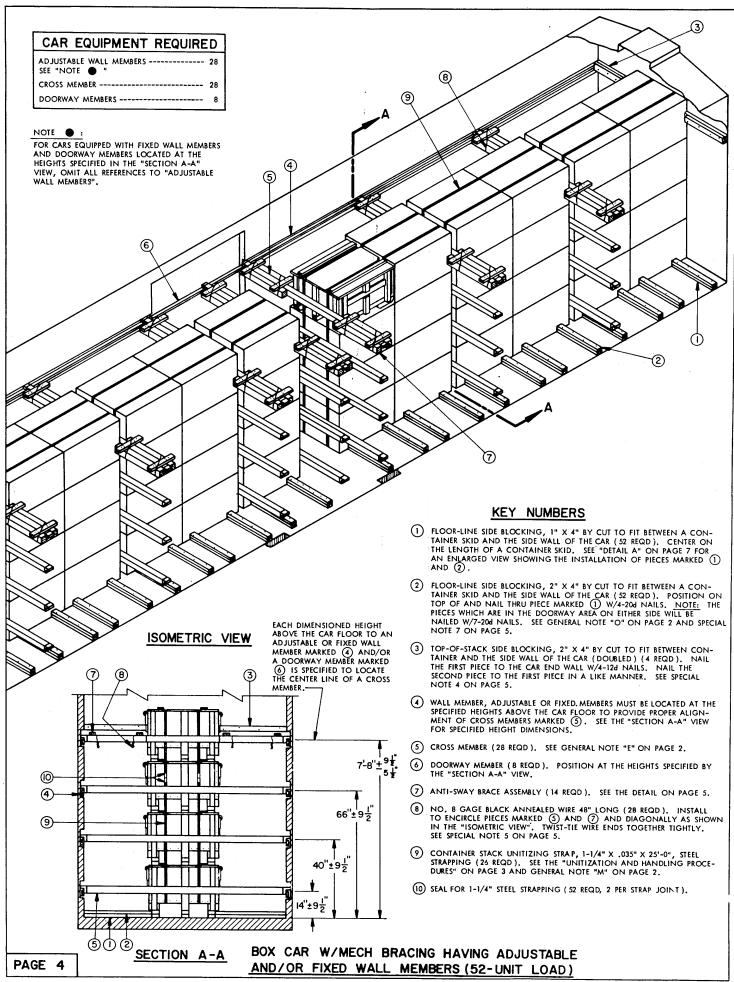
- 1. STACKING CONTAINERS FOR UNITIZING.
 - A. PLACE AN UPPER CONTAINER AS CLOSE AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE NEXT LOWER CONTAINER.
 - B. THE CONTAINERS WITHIN A STACK WILL BE POSITIONED SO THAT ALL OF THE "PLUG-IN" MONITORING RECEPTACLES ON THE CONTAINERS WILL BE ON THE SAME SIDE OF THE STACK.
- 2. INSTALLATION OF 1-1/4" X .035" UNITIZING STEEL STRAPPING. SEE GENERAL NOTE "L" ON PAGE 2.
 - A. PLACE STRAPPING THROUGH NOTCHES PROVIDED ON COVER OF CONTAINER AS SHOWN AND SO THAT STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SUR-FACES OF THE CONTAINERS; I.E., VERTICAL ALONG THE SIDES AND STRAIGHT ACROSS THE TOP AND BOTTOM OF THE STACK.
 - B. STRAPPING WILL BE FIRMLY TENSIONED, AND EACH END-OVER-END LAP JOINT WILL BE SEALED WITH TWO DOUBLE CRIMPED STRAP SEALS AS SHOWN. SEE GENERAL NOTE "M" ON PAGE 2. THE LAP JOINT WILL BE MADE ALONG THE SIDE OF THE STACK. DURING STRAP TENSIONING, CARE SHOULD BE EXERCISED TO ENSURE 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 THAN HEREIN.
 - (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 MAY BE HANDLED FROM AN END OR SIDE POSITION. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER TO PREVENT DAMAGING A CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. FOR VERY SHORT "INCHING" SPEED MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING CAR LOADING OPERATIONS, A UNITIZED STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK UNDER THE BODY OF AN UPPER CONTAINER.
 - C. EVEN IF ONLY ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MUST BE OF SUCH A DESIGN THAT THE LIFTING IS DONE ON THE BOTTOM OF THE CONTAINER. CAUTION: DO NOT ATTACH A SLING TO THE CONTAINER "RING ASSEMBLY". IF A UNITIZED STACK IS HANDLED BY SLINGING, THE SLING USED MUST BE OF SUCH A DESIGN THAT THE LIFTING IS DONE ON THE BOTTOM OF THE LOWEST CONTAINER.

UNITIZATION AND HANDLING PROCEDURES

PAGE 3



SPECIAL NOTES

- A \$2-UNIT LOAD IS SHOWN IN A 50'-0" LONG BY 8'-6" WIDE (IN-SIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS, AND WITH 6'-0" WIDE DOOR OPENINGS. A WIDER CAR MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD. ALSO, A CAR HAVING WIDER OR STAGGERED DOOR OPENINGS MAY BE USED.
- FORTY (40) CONTAINERS MAY BE LOADED INTO A 40'-6" LONG CAR. ADJUST THE QUANTITIES OF DUNNAGE PIECES AND CAR EQUIP-MENT REQUIREMENTS, AS NECESSARY.
- 3. CAUTION: CONTAINER STACKS MUST BE POSITIONED IN THE CAR SO THAT ALL OF THE "PLUG-IN" MONITORING RECEPTACLES ON THE CONTAINERS FACE TOWARD THE SAME SIDE OF THE CAR.
- 4. ANTI-SWAY BRACE ASSEMBLIES, PIECE MARKED (7), AND TOP-OF-STACK SIDE BLOCKING, PIECES MARKED (3), ARE REQUIRED FOR ALL STACKS WHICH ARE TWO OR MORE CONTAINERS IN HEIGHT.
- 5. IF DESIRED, NO. 14 GAGE BLACK ANNEALED WIRE MAY BE USED IN LIEU OF THE NO. 8 GAGE SPECIFIED. INSTALL THE WIRE DIA-GONALLY ACROSS THE TOP OF THE TIE-PIECE, ENCIRCLING THE STRUTS OF THE ANTI-SWAY BRACE AND THE CROSS MEMBER WITH TWO COMPLETE LOOPS. TWIST-TIE THE WIRE ENDS TOGETHER TIGHTLY.
- 6. IF IT IS NECESSARY TO USE CROSS MEMBERS AT THE END OF THE CAR DUE TO A "BOWED END" WALL, THE CROSS MEMBERS MUST BE INSTALLED AT LEAST 7" FROM THE CAR END WALL TO PROVIDE CLEARANCE FOR THE INSTALLATION AND SECUREMENT OF AN ANTI-SWAY BRACE ASSEMBLY, PIECE MARKED 7, ON EACH SIDE OF THE FIRST CONTAINER STACK. THE INSTALLATION OF ADDED CROSS MEMBERS IN THE END OF A CAR WILL ELIMINATE THE WALKWAY SPACE IN THE CENTER OF THE CAR, AND MAY POSSIBLY PREVENT THE LOADING OF A FULL LOAD OF THIRTEEN (13) CONTAINER STACKS AS DEPICTED. IF A SPACE FOR A WALKWAY BETWEEN OPPOSITE SIDES OF THE CAR IS DESIRED, IT WILL BE NECESSARY TO OMIT ONE CONTAINER STACK FROM THE DEPICTED LOAD. SEE GENERAL NOTE "E-3" ON PAGE 2.
- 7. IF THE CAR BEING USED FOR THE SHIPMENT OF THE DEPICTED LOAD IS EQUIPPED WITH A NAILABLE METAL FLOOR, REFER TO "DETAIL B" ON PAGE 7 FOR SPECIAL FLOOR-LINE SIDE BLOCKING PROCEDURES.
- 8. TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, THE DEPICTED LOAD MAY BE ADJUSTED BY MULTIPLES OF FOUR (4) CONTAINERS BY OMITTING ONE OR MORE CONTAINER STACKS. MULTIPLES OF TWO (2) CONTAINERS MAY BE OMITTED BY REDUCING THE CONTAINER STACKS WITHIN A "BAY" TO THREE LAYERS IN HEIGHT. NOTE THAT ADDITIONAL ANTI-SWAY BRACE ASSEMBLIES MUST BE INSTALLED TO BRACE AGAINST THE TOP LAYER OF THESE 3-HIGH STACKS IF THE ADJACENT "BAYS" ARE NOT ALSO STACKED THREE HIGH. ANY LOAD QUANTITY MAY BE ACCOMPLISHED BY USING A COMBINATION OF THESE PROCEDURES. CAUTION: IF ANY PORTION OF A SHIPMENT CONSISTS OF CONTAINERS LOADED ONLY ONE HIGH, THE CROSS MEMBERS AT EACH END OF THE 1-HIGH "BAY" MUST BE INSTALLED AT NOT LESS THAN 16" FROM THE CAR FLOOR.

	- TIE-PIECE, 2" X 4" X 18" (2 REQD), NAIL TO STRUTS W/3-12d NAILS AT EACH JOINT.
	STRUT, 4" X 4" MATERIAL (2 REQD).
CUT TO FIT BETWEEN	
A CONTAINER AND A WALL MEMBER	
NOTE :	
FIELD CHECK DIMENSIONS OF CROSS MEMBER TO INSURE A "SNUG" FIT.	2" SEE"NOTE ⊕"
	7

ANTI-SWAY BRACE ASSEMBLY

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	214	143
4" X 4"	77 103	
NAILS	NO. REQD	POUNDS
12d (3-1/4")	190	3-1/4
20d (4")	220	8

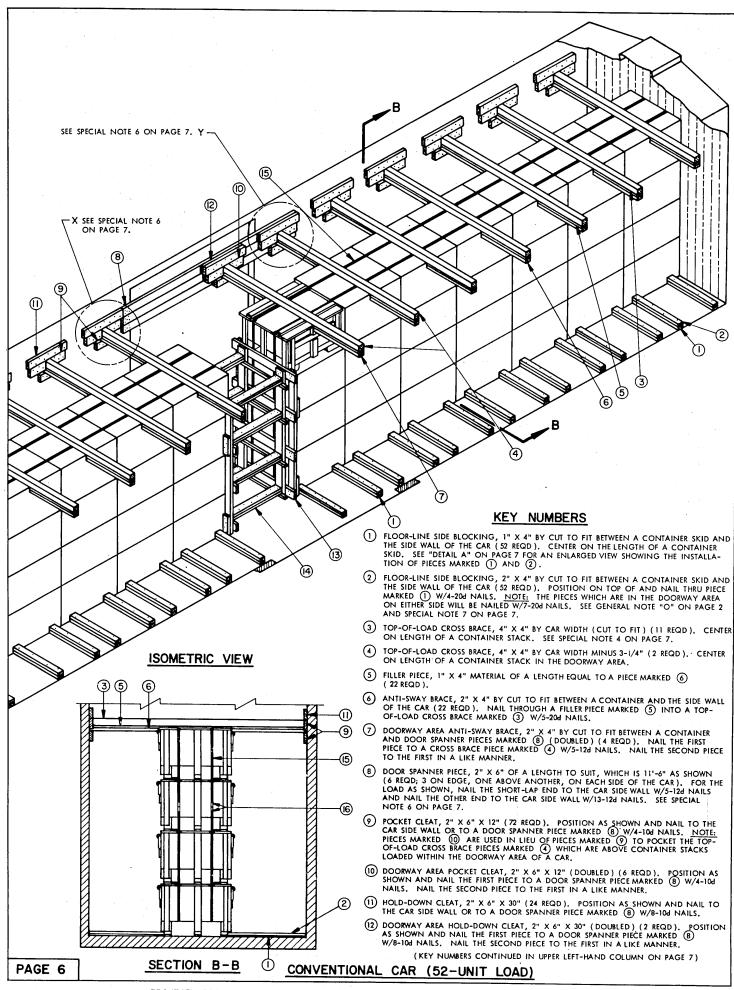
LOAD AS SHOWN

ITEM.	QUANTITY	WEIGHT (APPROX)
CONTAINER	52	41,600 LBS	
		- 859 LBS	

BOX CAR W/MECH BRACING HAVING ADJUSTABLE

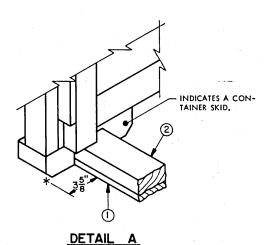
AND/OR FIXED WALL MEMBERS (52-UNIT LOAD)

PAGE 5

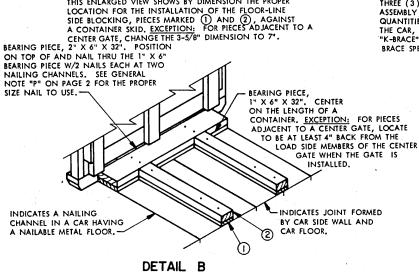


(KEY NUMBERS CONTINUED FROM PAGE 6)

- (13) CENTER GATE (2 REQD), SEE THE DETAIL ON PAGE 11.
- STRUT, 2" X 6" BY CUT FOR A WEDGE FIT (DOUBLED) (8 REQD). LAMINATE W/1-104 NAIL EVERY 6". TOENAIL THE TOP PIECE TO PIECES MARKED (3) W/2-124 NAILS AT EACH END. SEE THE "STRUT BRACING" DETAIL ON PAGE 11 FOR THE ADDITIONAL BRACING WHICH MUST BE APPLIED WHEN THE STRUTS ARE OR GREATER IN LENGTH.
- CONTAINER STACK UNITIZING STRAP, 1-1/4" X .035" X 25'-0" STEEL STRAPPING (26 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- SEAL FOR 1-1/4" STEEL STRAPPING (52 REQD, 2 PER STRAP JOINT).



THIS ENLARGED VIEW SHOWS BY DIMENSION THE PROPER



THIS DETAIL DEPICTS THE SPECIAL FLOOR-LINE SIDE BLOCKING PROCEDURES WHICH ARE APPLICABLE FOR A CAR EQUIPPED WITH A NAILABLE METAL FLOOR.

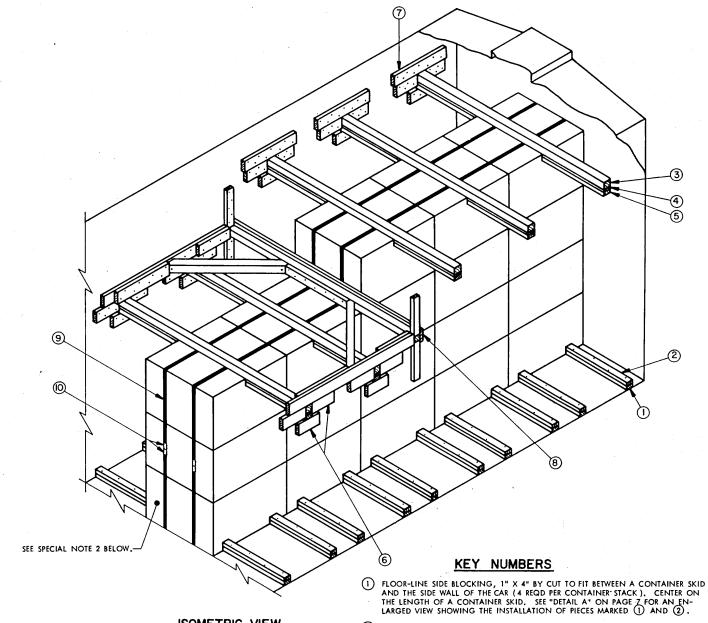
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
1" X 4"	223	75	
2" X 2"	28	10	
2" X 4"	289	193	
2" X 6"	379	379	
4" × 4"	119	159	
NAILS	NO, REQD	POUNDS	
10d (3")	816	12-3/4	
12d (3-1/4")	196	3-1/2	
20d (4")	330	12	

SPECIAL NOTES

- A 52-UNIT LOAD IS SHOWN IN A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL TYPE BOX CAR HAVING 8'-0" WIDE DOOR OPENINGS. A NARROWER OR A WIDER CAR MAY BE USED. ALSO, A CAR HAVING NARROWER OR WIDER DOORS, OR A CAR HAVING STAGGERED DOOR OPENINGS MAY BE USED. SEE SPECIAL NOTE 6
- FORTY (40) CONTAINERS MAY BE LOADED INTO A 40'-6" LONG CAR. ADJUST THE QUANTITIES OF DUNNAGE PIECES, AS NECESSARY.
- 3. CAUTION: CONTAINER STACKS MUST BE POSITIONED IN THE CAR SO THAT ALL OF THE "PLUG-IN" MONITORING RECEPTACLES ON THE CONTAINERS FACE TOWARD THE SAME SIDE OF THE CAR.
- TOP-OF-LOAD CROSS BRACES, PIECES MARKED 3 AND 4, ARE REQUIRED FOR ALL STACKS WHICH ARE TWO OR MORE CONTAINERS IN HEIGHT.
- IF THE CAR BEING LOADED HAS PLUG DOORS, NO SPECIAL CHANGES TO THE SPECIFIED PROCEDURES ARE REQUIRED; HOWEVER, THE CRITERIA SET FORTH IN GENERAL NOTE "D" ON PAGE 2 WILL BE OBSERVED.
- 6. A DOOR SPANNER, PIECE MARKED (a), MUST MEASURE AT LEAST 24" LONGER THAN THE WIDTH OF THE DOOR OPENING TO PROVIDE FOR 12" OF NAILABLE AREA AT EACH END OF THE PIECE. IF THE DISTANCE FROM THE END OF A HOLD-DOWN CLEAT, PIECE MARKED (i), TO THE SIDE OF THE DOOR OPENING MEASURES 12" OR MORE, THE TOP-OF-LOAD CROSS BRACE PIECES WILL BE SECURED AS SHOWN WITHIN THE ENCIRCLED AREA DESIGNATED "X". IF THE DISTANCE FROM THE END OF A HOLD-DOWN CLEAT, PIECE MARKED (i), TO THE SIDE OF THE DOOR OPENING MEASURES LESS THAN 12", THE TOP-OF-LOAD CROSS BRACE PIECES WILL BE SECURED AS SHOWN WITHIN THE FNCIRCLED AREA DESIGNATED "Y". SECURED AS SHOWN WITHIN THE ENCIRCLED AREA DESIGNATED "Y
- IF THE CAR BEING USED FOR THE SHIPMENT OF THE DEPICTED LOAD IS EQUIPPED WITH A NAILABLE METAL FLOOR, REFER TO "DETAIL B" BELOW FOR SPECIAL FLOOR-LINE SIDE BLOCKING PROCEDURES.
- 8. TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, THE DEPICTED LOAD MAY BE ADJUSTED BY OMITTING A STACK OF FOUR (4) CONTAINERS, OR BY OMITTING AN ENTIRE LAYER. FURTHER ADJUSTMENT CAN BE ACCOMPLISHED BY SUBSTITUTING A "FILLER ASSEMBLY" IN THE PLACE OF AN OMITTED CONTAINER. SEE THE "FILLER ASSEMBLY" BETAIL AND THE "APPLICATION OF FILLER ASSEMBLY" DETAIL ON PAGE 12 FOR GUIDANCE. FILLER ASSEMBLIES MAY BE USED FOR ONE (1) THRU THREE (3) LESS CONTAINERS THAN SHOWN, OMIT ONE STACK AND USE ONE FILLER ASSEMBLY FOR FIVE (5) CONTAINERS THAN SHOWN, FOR OTHER LOAD QUANTITIES, "K-BRACE" ASSEMBLIES MAY BE INSTALLED IN ONE OR IN BOTH ENDS OF THE CAR, AS NECESSARY. REFER TO PAGE 8 FOR A TYPICAL INSTALLATION OF A "K-BRACE" ASSEMBLY AND TO THE DETAIL OF THE "K-BRACE" ON PAGE 10 FOR BRACE SPECIFICATIONS. BRACE SPECIFICATIONS.

LOAD AS SHOWN

ITEM	QUANTITY	WE	IGHT (APPROX)
CONTAINER	52	41,600	LBS
DUNNAGE		2,165	LBS
TC	TAL WEIGHT	42 745	100



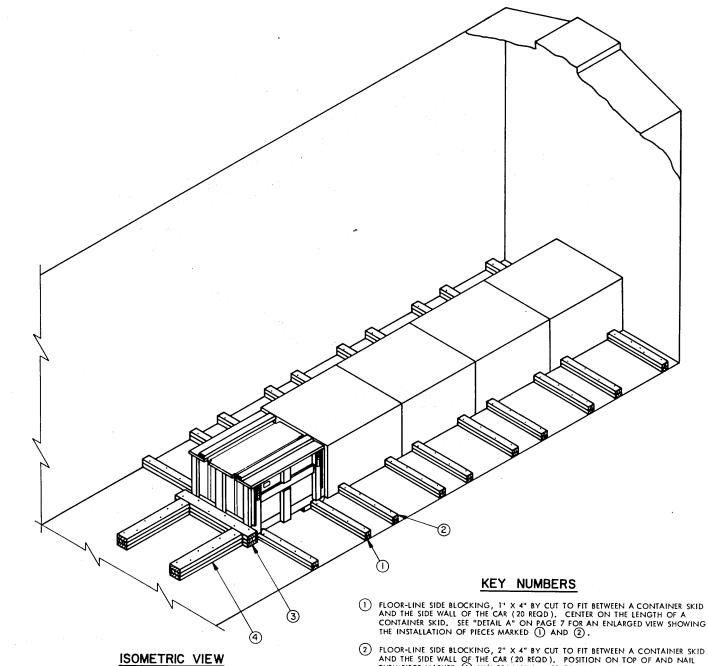
ISOMETRIC VIEW

SPECIAL NOTES

- A PARTIAL VIEW OF A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL TYPE BOX CAR
 IS SHOWN TO DEPICT THE TYPICAL INSTALLATION OF A K-BRACE ASSEMBLY FOR THE
 BRACING OF A PARTIAL LAYER.
- FOR BLOCKING SPECIFICATIONS APPLICABLE TO THE OMITTED PORTION OF THE LOAD, REFER TO THE LOAD DEPICTED ON PAGES 6 AND 7.
- 3. A K-BRACE ASSEMBLY AS SHOWN IS ADEQUATE FOR RETAINING A PARTIAL-LAYER LOAD OF NOT MORE THAN FOUR (4) CONTAINERS. <u>CAUTION</u>: 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), (B), (C), (D) AND (G) MUST BE SUPPORTED AT THE SIDES OF A CAR BY A CAR SIDE WALL, IT IS ALRIGHT FOR THE END OF A DIAGONAL BRACE TO BEAR IN FRONT OF A DOOR OPENING; HOWEVER, THE ADJACENT PIECE MARKED (E) MUST BE DOUBLED AND EXTENDED ACROSS AND FAR ENOUIGH PAST THE DOOR OPENING TO PROVIDE FOR THE SPECIFIED NAILING OF EACH PIECE.
- PIECES MARKED (E) OF THE K-BRACE ASSEMBLY ON PAGE 10 ARE POSITIONED ON TOP OF THE PIECES MARKED (3) ON THIS PAGE.
- 5. A K-BRACE ASSEMBLY MAY BE USED AT EACH END OF THE CAR, AS NECESSARY TO ACHIEVE THE QUANTITY IT IS DESIRED TO SHIP.

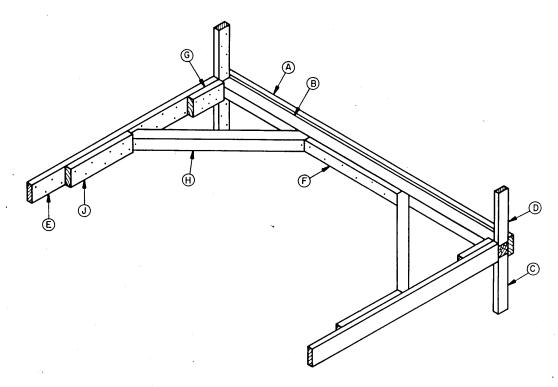
- (2) FLOOR-LINE SIDE BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN A CONTAINER SKID AND THE SIDE WALL OF THE CAR (4 REQD PER CONTAINER STACK). POSITION ON TOP OF AND NAIL THRU PIECE MARKED (1) W/4-20J NAILS, SEE GENERAL NOTE "O" ON PAGE 2 AND SPECIAL NOTE 5 ON PAGE 9.
- (3) TOP-OF-LOAD CROSS BRACE, 4" X 4" BY CAR WIDTH (CUT TO FIT) (1 REQD PER CONTAINER STACK). CENTER ON LENGTH OF A CONTAINER STACK.
- 4 FILLER PIECE, 1" X 4" MATERIAL OF A LENGTH EQUAL TO A PIECE MARKED (3) (2 REQD PER CONTAINER STACK).
- (3) ANTI-SWAY BRACE, 2" X 4" BY CUT TO FIT BETWEEN A CONTAINER AND THE SIDE WALL OF THE CAR (2 REQD PER CONTAINER STACK). NAIL THROUGH A FILLER PIECE MARKED (4) INTO A TOP-OF-LOAD CROSS BRACE MARKED (3) W/5-20d NAILS.
- 6 POCKET CLEAT, 2" X 6" X 12" (6 REQD PER CONTAINER STACK). POSITION ASSHOWN AND NAIL TO THE CAR SIDE WALL W/4-104 NAILS.
- \bigcirc Hold-down cleat, 2" x 6" x 30" (as reqd). Position as shown and nail to the car side wall w/8-104 nails.
- B K-BRACE ASSEMBLY (AS REQD), SEE THE DETAIL ON PAGE 10. SEE SPECIAL NOTES 3 AND 4 AT THE LEFT.
- (9) CONTAINER STACK UNITIZING STRAP, 1-1/4" X .035" STEEL STRAPPING OF A LENGTH TO SUIT (2 REQD PER CONTAINER STACK). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- 10 SEAL FOR 1-1/4" STEEL STRAPPING (2 REQD PER STRAP).

TYPICAL LCL (PARTIAL LAYER BRACING)



- A PARTIAL VIEW OF AN 8'-6" WIDE CONVENTIONAL TYPE BOX CAR IS SHOWN TO DEPICT THE LOADING AND BRACING OF A TYPICAL ONE-LAYER LOAD.
- TWO (2) BACK-UP CLEATS, SHOWN AS PIECES MARKED (4), ARE ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 7,500 POUNDS.
- THE LOAD BLOCKING PIECES MARKED (3) AND (4) MAY BE POSITIONED AT EACH END OF A LOAD, IF DESIRED.
- 4. CAUTION: CONTAINER STACKS MUST BE POSITIONED SO THAT ALL OF THE "PLUG-IN" MONITORING RECEPTACLES ON THE CONTAINERS FACE TOWARD THE SAME SIDE OF THE CAR.
- IF THE CAR BEING USED FOR THE SHIPMENT OF THE DEPICTED LOAD IS EQUIPPED WITH A NAILABLE METAL FLOOR, REFER TO "DETAIL B" ON PAGE 7 FOR SPECIAL FLOOR-LINE SIDE BLOCKING PROCEDURES.

- 2 FLOOR-LINE SIDE BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN A CONTAINER SKID AND THE SIDE WALL OF THE CAR (20 REQD). POSITION ON TOP OF AND NAIL THRU PIECE MARKED () W/4-204 NAILS. SEE GENERAL NOTE "O" ON PAGE 2 AND SPECIAL NOTE 5 AT THE LEFT.
- (3) HEADER, 2" X 6" X 42" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/6-16d NAILS. NAIL THE SECOND AND THIRD PIECES TO THE PREVIOUSLY APPLIED PIECE W/6-40d NAILS. SEE SPECIAL NOTES 2 AND 3 ON THIS PAGE.
- 4 BACK-UP CLEAT, 2' X 6" X 30" (TRIPLED) (2 REQD), ALIGN WITH OUTSIDE SKIDS ON THE CONTAINER AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/6-16d NAILS. NAIL THE SECOND AND THIRD PIECES TO THE PREVIOUSLY APPLIED PIECE W/6-40d. NAILS. SEE SPECIAL NOTES 2 AND 3 ON THIS PAGE.

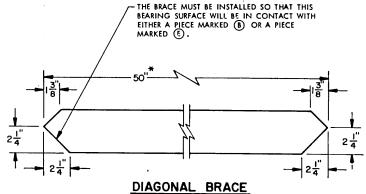


K-BRACE ASSEMBLY

THE K-BRACE ASSEMBLY AS SHOWN IS ADEQUATE FOR RETAINING A PARTIAL-LAYER LOAD OF NOT MORE THAN FOUR (4) CONTAINERS. SEE SPECIAL NOTE 3 ON PAGE 8.

KEY LETTERS

- (A) HORIZONTAL PIECE, 2" X 6" BY CAR WIDTH (CUT TO FIT) (1 REQD), NAIL TO PIECE MARKED (B) W/1-12d NAIL EVERY 6". SEE GENERAL NOTE "O" ON PAGE 2.
- (B) CROSS CAR BRACE, 4" X 4" BY CAR WIDTH (CUT TO FIT) (1 REQD).
- C SUPPORT CLEAT, 2" X 4" X 18" (2 REQD). NAIL TO CAR SIDE WALL W/5-12d NAILS.
- (D) HOLD-DOWN CLEAT, 2" X 4" X 18" (2 REQD). NAIL TO CAR SIDE WALL W/5-12d NAILS.
- (E) HORIZONTAL WALL CLEAT, 2" X 6" X 72" (2 REQD). NAIL TO CAR SIDE WALL W/16-12d NAILS.
- (F) CENTER CLEAT, 2" X 4" X 28" (1 REQD). NAIL TO PIECE MARKED (B) W/7-12d NAILS.
- G POCKET CLEAT, 2" X 6" X 12" (2 REQD). NAIL TO PIECE MARKED (E) W/7-16d NAILS.
- H) DIAGONAL BRACE, 4" X 4" BY A LENGTH TO SUIT (2 REQD). SEE THE DETAIL ON THIS PAGE. TOENAIL TO PIECES MARKED (B) AND (E) W/1-40d NAIL AT EACH END.
- BACK-UP CLEAT, 2" X 6" X 24" (2 REQD), NAIL TO PIECE MARKED (E) W/8-164 NAILS.

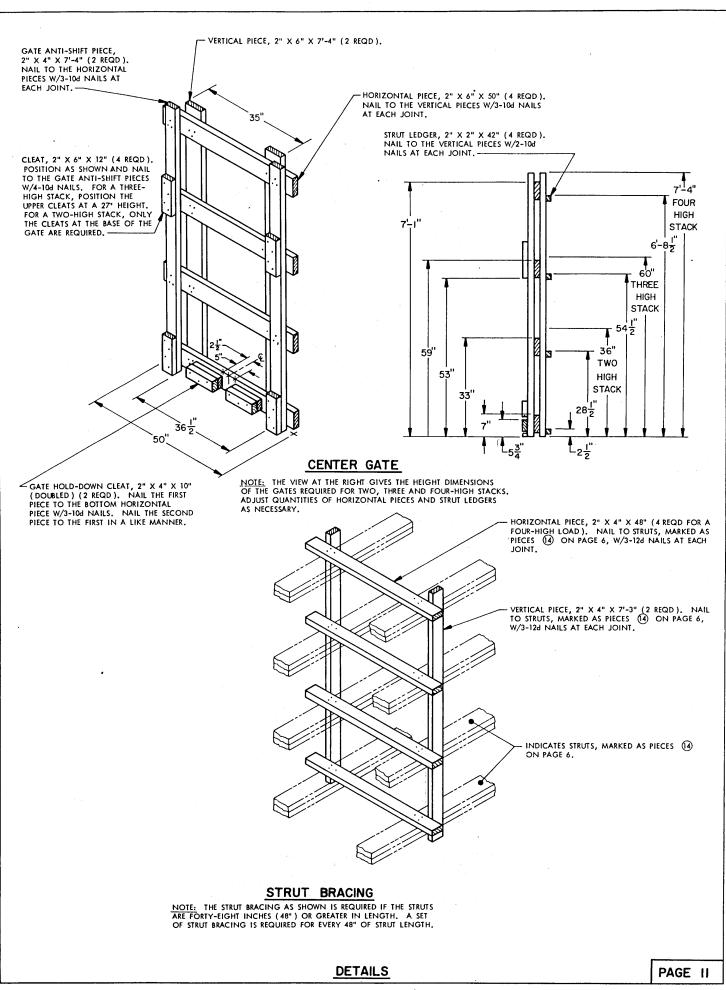


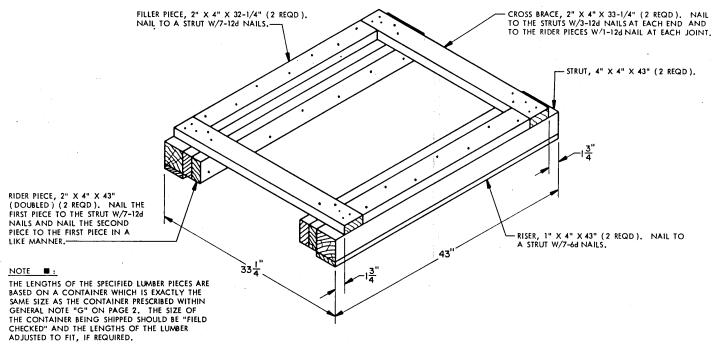
* 4" X 4" X 50" FOR AN 8'-6" WIDE CAR
4" X 4" X 55-3/4" FOR A 9'-2" WIDE CAR

4" X 4" X 57" FOR A 9'-4" WIDE CAR

PAGE 10

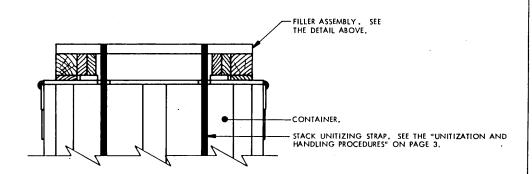
DETAILS





FILLER ASSEMBLY

A FILLER ASSEMBLY IS REQUIRED IN A LOAD IN PLACE OF AN OMITTED CONTAINER TO PROVIDE THE EFFECT OF CONTINUOUS CONTAINER TO CONTAINER CONTACT FROM THE CAR END WALL TO THE CENTER GATE. USE ON THE TOP LAYER ONLY, AND PREFERABLY BETWEEN CONTAINERS, A FILLER ASSEMBLY WILL NEVER BE USED IN A CAR WHICH IS EQUIPPED WITH MECHANICAL BRACING DEVICES, SEE THE "APPLICATION OF FILLER ASSEMBLY" DETAIL BELOW, AND "NOTE " AT THE LEFT.



APPLICATION OF FILLER ASSEMBLY

POSITION THE FILLER AS SEMBLY ON TOP OF THE UPPER CONTAINER IN THE STACK BEFORE APPLYING THE UNITIZING STRAPS. SECURE IT IN POSITION WITH THE STACK UNITIZING STRAPS AS SHOWN. NOTE: THE TOP-OF-LOAD CROSS BRACE, PIECE MARKED ③ ON PAGE 6, WILL BE PLACED ON TOP OF THE FILLER ASSEMBLY AND THE ANTI-SWAY BRACE, PIECE MARKED ⑥ ON PAGE 6, WILL BE PLACED AGAINST THE SIDE OF THE FILLER ASSEMBLY

PAGE 12

DETAILS