

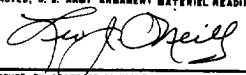
APPROVED BY
 BUREAU OF EXPLOSIVES
M. A. Miller
 SUPERVISOR, MILITARY & INTERMODAL SERVICES
 DATE 5/1/80

LOADING AND BRACING (CL & LCL) IN BOX CARS OF GAU-8/A 30MM AMMUNITION PACKAGED IN AUTOMATIC LOADING SYSTEM (ALS) CNU-309/E AND/OR CNU-332/E CONTAINERS

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⊙ THIS DOCUMENT INCLUDES OUTLOADING PROCEDURES FOR CONVENTIONAL TYPE BOX CARS AND CUSHIONED BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS.

REVISIONS				<small>DRAFTSMAN</small> <small>CHKD BY</small> <i>RA</i>	<small>PROJ ENG</small> <small>RWS</small> <i>AWW</i>
				<small>CHECKER</small> <small>RSM</small> <i>RHA</i>	<small>LOG ISSUES OFFICE</small> <small>APPROVED, U. S. ARMY ARMAMENT MATERIAL READINESS COMMAND</small>
				 <small>APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND READINESS COMMAND (DARCOM)</small> <small>U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL</small>	
				U. S. ARMY DARCOM DRAWING SEPTEMBER 1981	
				<small>CLASS</small>	<small>DIVISION</small>
				19	48
				<small>DRAWING</small>	<small>FILE</small>
				7062	SP5M7

DO NOT SCALE

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5). SEE GENERAL NOTE "AA".
- B. THE OUTLOADING PROCEDURES SPECIFIED WITHIN THIS DOCUMENT ARE APPLICABLE TO GAU-8/A 30MM AMMUNITION IN THE AUTOMATIC LOADING SYSTEM (ALS) CNU-309/E AND/OR CNU-332/E CONTAINERS. THE SHIPPING AND STORAGE CONFIGURATION FOR THE CONTAINERS CONSISTS OF TWO CONTAINERS UNITIZED INTO ONE TWIN-PACK UNIT. SUBSEQUENT REFERENCE TO TWIN-PACK UNIT HEREIN MEANS TWO CNU-309/E OR CNU-332/E CONTAINERS WITH 30MM AMMUNITION UNITIZED TOGETHER.
- C. DETAILS OF THE TWIN-PACK UNITS:
- CNU-309/E DIMENSIONS -----53" LONG X 28-3/4" WIDE X 45-1/4" HIGH,
CNU-309/E WEIGHT-----2,350 POUNDS MAXIMUM (APPROX),
CNU-332/E DIMENSIONS-----52-3/8" LONG X 28-3/4" WIDE X 45-1/4" HIGH,
CNU-332/E WEIGHT-----2,350 POUNDS MAXIMUM (APPROX).
- D. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE. SEE GENERAL NOTE "CC" ON PAGE 3.
- E. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS IN CONVENTIONAL TYPE BOX CARS, AND FOR SHIPMENTS IN CUSHIONED BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS. REFER TO GENERAL NOTES "W" THROUGH "Z" FOR SPECIFIC GUIDANCE RELATIVE TO OUTLOADING IN BOX CARS HAVING LOAD DIVIDER BULKHEADS.
- F. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE AND 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE. IF THOSE MEMBERS SPECIFICALLY IDENTIFIED AS "STRUTS" WITHIN THE KEY NUMBERS OF A DEPICTED LOAD ARE SPECIFIED TO BE 4" X 4" MATERIAL, IT IS PERMISSIBLE TO USE TWO LAMINATED PIECES OF 2" X 6" MATERIAL IN LIEU OF EACH 4" X 4" STRUT. DOUBLE 2" X 6" STRUTS WILL BE LAMINATED W/1-10d NAIL EVERY 6".
- G. 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 OR SIDEWALL OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS OR SIDEWALL BOARDS. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- H. PORTIONS OF THE BOX CARS DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS SIDEWALLS, END WALLS, ROOFS, AND PORTIONS OF THE BLOCKING AND BRACING COMPONENTS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- J. 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.
- K. WHEN REFERING TO THE TWIN-PACK UNIT LENGTH OR WIDTH, THE 53" OR 52-3/8" DIMENSION OF THE TWIN-PACK UNIT CONSTITUTES THE LENGTH AND THE 28-3/4" DIMENSION CONSTITUTES THE WIDTH.
- L. TWIN-PACK UNITS OF CNU-309/E CONTAINERS WHICH ARE OFFERED FOR LOADING SHOULD BE INSPECTED AND AS REQUIRED, LOOSE UNITIZING STEEL STRAPPING MUST BE REPLACED OR TIGHTENED.
- M. BOX CARS EQUIPPED WITH CONVENTIONAL SLIDING DOORS HAVE BEEN SHOWN. HOWEVER, THE DEPICTED OUTLOADING PROCEDURES ARE ALSO APPLICABLE FOR BOX CARS 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 BOX CAR ARE CLOSED AND READY FOR THE INSTALLATION OF BOX CAR SEALS, A PIECE OF WIRE OF SUITABLE SIZE WILL BE USED IN ADDITION TO, AND IN CONJUNCTION WITH, EACH BOX CAR SEAL USED TO SEAL THE BOX CAR. THE WIRE WILL BE THREADED THRU THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES, AND THE WIRE ENDS WILL BE TWISTED TOGETHER.
- N. THE SELECTION OF RAIL CARS FOR THE TRANSPORT OF THE DESIGNATED ITEMS IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY BOX CARS WHICH HAVE "SOUND" FLOORS AND ARE IN OTHERWISE PROPER CONDITION,

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

- LUMBER -----: SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS-----: FED SPEC FF-N-105, COMMON.
- STRAPPING, STEEL-----: CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH A, B (GRADE 2), OR C; FED SPEC QQ-S-781.
- STRAP SEALS-----: TYPE D, STYLE I, II, OR IV, CLASS H, FED SPEC QQ-S-781.

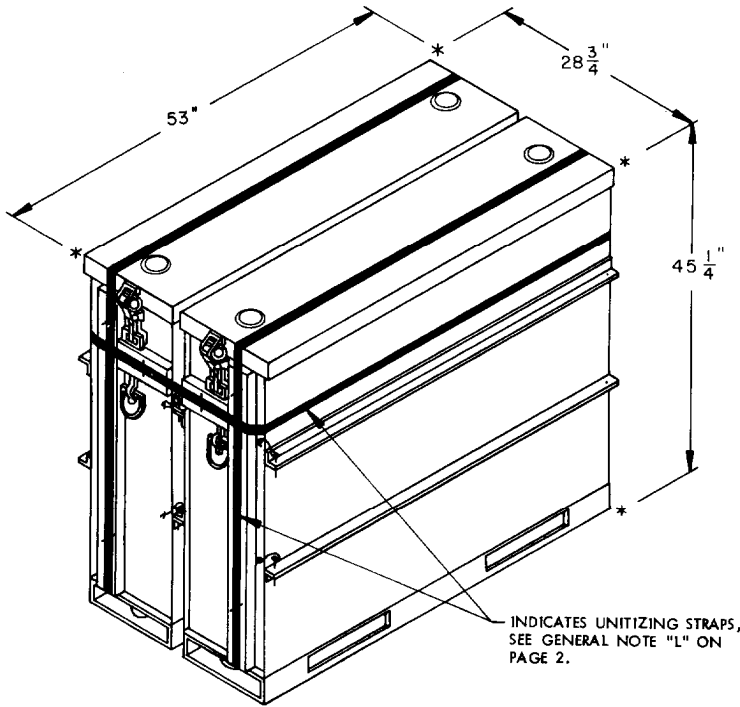
IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENTS, WILL BE SELECTED. WHEN SELECTING RAIL CARS, EVERY EFFORT SHOULD BE MADE TO OBTAIN BOX CARS THAT DO NOT HAVE BOWED END WALLS. CARS WITH BOWED ENDS CAN BE USED, HOWEVER, IF AN END WALL IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM FLOOR TO ROOF, AN END-OF-CAR BULKHEAD MUST BE INSTALLED TO PROVIDE A "SQUARED OFF" SURFACE FOR THE LOAD AT THE END OF THE CAR. END-OF-CAR BULKHEADS MUST BE CONSTRUCTED TO RECEIVE ADEQUATE SUPPORT FROM THE BOWED END WALLS. THIS CAN BE ACCOMPLISHED BY LAMINATING APPROPRIATELY SIZED LUMBER TO THE BULKHEAD TO FILL IN THE SPACE CREATED BY THE BOWED END WALL. REFER TO THE "END-OF-CAR BULKHEAD" DETAIL AND THE SPECIAL NOTES ON PAGE 25. NOTE THAT END-OF-CAR BULKHEADS ARE NOT REQUIRED AND SHOULD NOT BE USED IF AN END WALL IS NOT BOWED MORE THAN ONE INCH.

- O. NOTICE: WHEN POSITIONING TWIN-PACK UNITS IN A BOX CAR THEY SHOULD BE PLACED TIGHTLY AGAINST A LATERALLY ADJACENT UNIT AND PRESSED TIGHTLY TOGETHER LENGTHWISE SO AS TO ACHIEVE A TIGHT LOAD. TO AID IN ACHIEVING TIGHTNESS LENGTHWISE IN A FULL LOAD, A LOAD-COMPRESSING JACK MAY BE EMPLOYED IN THE AREA OF THE CENTER GATES TO MOVE THE TWIN-PACK UNITS INTO THEIR FINAL SHIPPING POSITION. A HYDRAULIC JACK IS RECOMMENDED FOR THIS OPERATION. CAUTION: WHEN USING A JACK TO COMPACT A LOAD, THE JACK MUST BE USED AGAINST THE CONTAINER BASE ADJACENT TO THE FORKLIFT POCKETS OF THE TWIN-PACK UNITS. PADDING, OF 2-INCH (2") THICK LUMBER OR ANY OTHER MATERIAL OF SIMILAR CONSISTENCY, SHOULD BE PLACED BETWEEN THE JACK AND THE LADING.
- P. THE NUMBER OF LADING TWIN-PACK 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 MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE TWIN-PACK UNITS. NOTICE: A SHIPMENT WILL BE POSITIONED IN THE RAIL CAR IN COMPLIANCE WITH THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE AAR.
- Q. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN BOX CARS WHICH ARE PARTIALLY LOADED WITH THE DESIGNATED ITEMS, 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.
- R. IF THE BOX CAR BEING USED FOR A SHIPMENT IS EQUIPPED WITH A NAILABLE METAL FLOOR AND A NAIL SIZE FOR FLOOR NAILING IS MARKED ON THE SIDEWALL OF THE BOX CAR, THAT GUIDANCE SHOULD BE APPLIED TO THE NAILING OF SIDE BLOCKING PIECES AND TO THE NAILING TO THE BOX CAR FLOOR OF THE KNEE BRACE ASSEMBLIES IN THE LESS-THAN-FULL LOADS. IF A NAIL SIZE IS NOT SPECIFIED IN THE BOX CAR, 30d NAILS SHOULD BE USED IN LIEU OF THOSE SPECIFIED IN THE APPLICABLE KEY NUMBERS. SEE GENERAL NOTE "G" ON THIS PAGE.
- S. LOAD-BLOCKING STRUTS WHICH ARE 48" OR LONGER MUST BE STIFFENED BY THE APPLICATION OF HORIZONTAL AND VERTICAL STRUT BRACING AS SHOWN BY KEY NUMBERS ③, ④ AND ⑤ ON PAGE 16. THESE PIECES ARE NOT REQUIRED IF THE STRUTS FOR THE LOAD BEING SHIPPED ARE SHORTER THAN 48". THE LENGTH OF THE LOAD-BLOCKING STRUTS SHOULD BE KEPT AS SHORT AS POSSIBLE (APPROX 18" MINIMUM), BUT IN THE EVENT IT IS NECESSARY TO USE STRUTS WHICH ARE 8'-0" OR MORE IN LENGTH, IT WILL BE NECESSARY TO APPLY AN ADDITIONAL SET OF HORIZONTAL AND VERTICAL STRUT BRACING PIECES. STRUT BRACING SHOULD BE APPLIED SO AS TO PROVIDE NEARLY EQUAL SPACES BETWEEN THE BRACING PIECES AND THE CENTER GATES AND/OR BETWEEN THE ADJACENT STRUT BRACING PIECES.
- T. TO ACHIEVE A TIGHTLY BLOCKED LOAD, A STRUT WILL BE CUT SLIGHTLY LONGER THAN THE MEASURED DISTANCE BETWEEN THE STRUT BEARING AREAS ON THE TWO CENTER GATES. ONE END OF THE STRUT WILL BE POSITIONED AT ITS BEARING AREA JUST ABOVE THE STRUT LEDGER ON ONE GATE, THEN THE OTHER END, WHICH CAN BE BEVELED ON THE LOWER CORNER IF DESIRED, WILL BE DRIVEN DOWNWARD UNTIL IT CONTACTS THE STRUT LEDGER ON THE OTHER GATE. EACH END OF THE STRUT WILL BE TOENAILED TO THE ADJACENT CENTER GATE, AS SPECIFIED WITHIN THE KEY NUMBERS FOR A LOAD, IN SUCH A MANNER SO THAT AS NEARLY AS PRACTICAL EQUAL LENGTHS OF A NAIL ARE EMBEDDED IN THE STRUT AND IN THE VERTICAL PIECE OF THE CENTER GATE. SEE THE "BEVEL CUT" DETAIL ON PAGE 25 FOR BEVELING INSTRUCTIONS AND THE "STRUT INSTALLATION" DETAIL ON THAT PAGE FOR A PICTORIAL VIEW SHOWING THE PROPER POSITIONING OF A BEVELED STRUT FOR INSTALLATION. NOTE THAT THE UPPER CORNER NEEDS TO BE BEVELED ONLY IF THE STRUTS ARE VERY SHORT. IF ONLY ONE END IS BEVEL-CUT, THE BEVELED EDGE WILL BE PLACED IN THE DOWNWARD POSITION SO THAT IT WILL ALLOW THE STRUT END TO SLIDE MORE FREELY DOWN THE FACE OF THE VERTICAL PIECE ON THE ADJACENT CENTER GATE AS THE STRUT IS DRIVEN DOWN INTO ITS FINAL BLOCKING POSITION.
- U. ALL THE LOADS SHOWN HEREIN ARE TYPICAL. BECAUSE OF THIS FACT, IT IS MOST LIKELY THAT THE ACTUAL QUANTITY TO BE SHIPPED WILL NOT BE DEPICTED IN ANY OF THE LOADING PROCEDURES HEREIN. A LOAD PLAN SHOULD BE DEVELOPED WHICH WILL BE THE MOST EFFICIENT AS TO THE AMOUNT OF DUNNAGE REQUIRED AND THE EASE OF LOADING FOR THE QUANTITY TO BE SHIPPED.
- V. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.

(CONTINUED ON PAGE 3)

- W. THE OUTLOADING PROCEDURES SPECIFIED ON PAGES 26 THRU 30 ARE FOR CUSHIONED BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS. CAUTION: ONLY BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS MANUFACTURED BY EVANS, EQUIPCO, OR PRECO MAY BE USED. LOAD DIVIDER BULKHEADS MANUFACTURED BY TRANSCO ARE NOT ACCEPTABLE, WHETHER OF ALUMINUM OR STEEL CONSTRUCTION. THE DEPICTED PROCEDURES ARE APPLICABLE FOR BOX CARS OF VARIOUS LENGTHS AND WIDTHS. THE AAR MECHANICAL DESIGNATION CLASS FOR THESE BOX CARS, AS IDENTIFIED IN "THE OFFICIAL RAILWAY EQUIPMENT REGISTER", WILL BE RBL, XL, OR XLI.
- X. THE USE OF LOAD DIVIDER BULKHEAD EQUIPPED CARS WILL ELIMINATE THE NEED FOR CENTER GATES AND STRUTS, WHICH ARE REQUIRED IN CONVENTIONAL BOX CAR LOADS. THIS WILL ACCOUNT FOR A CONSIDERABLE SAVING IN MATERIAL AND LABOR COSTS. THEREFORE, EVERY EFFORT SHOULD BE MADE TO ACQUIRE CUSHIONED BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS FOR SHIPMENT OF AMMUNITION ITEMS.
- Y. IF NAILING TO A BOX CAR SIDEWALL IS NOT REQUIRED, BOX CARS EQUIPPED WITH ADJUSTABLE SIDE FILLERS THAT HAVE 3/8" OR THICKER PANELS MAY BE USED. HOWEVER, THESE SIDE FILLERS MUST NOT BE USED FOR LATERAL BLOCKING; THEY MUST BE RETRACTED AND LOCKED AGAINST THE BOX CAR SIDEWALL. A "FILL PIECE" MUST BE INSTALLED IN THE VOID BETWEEN THE BOX CAR SIDEWALL AND THE SIDE FILLER PANEL. SEE THE "TYPICAL TYPE A" VIEW ON PAGE 30 FOR GUIDANCE. IF THE BACK OF THE SIDE FILLER PANELS ARE REINFORCED WITH VERTICAL AND HORIZONTAL STEEL MEMBERS AS SHOWN IN THE "TYPICAL TYPE B" VIEW ON PAGE 30, THE "FILL PIECE" MATERIAL IS NOT REQUIRED.
- Z. NOTICE: AFTER THE LOAD DIVIDER BULKHEADS ARE POSITIONED AGAINST THE LADING, AND THE LOCKING PINS ARE ENGAGED IN THE HOLES OF THE RAILS, THE LOWER LOCKING PINS MUST BE INSPECTED TO ENSURE THAT THE PINS ARE FULLY ENGAGED IN THE LOCKING HOLES. IF THE PINS ARE NOT FULLY SEATED IN THE LOCKING HOLES, THE LINKAGE MECHANISM WILL BE ADJUSTED AS REQUIRED SO THAT THE PINS WILL BE FULLY SEATED INTO THE LOCKING HOLES OF THE LOWER RAILS. IF PRESENT, DEBRIS MUST BE REMOVED FROM BENEATH THE LOCKING HOLES WHICH HAVE BEEN SELECTED FOR SECURING A LOAD DIVIDER BULKHEAD.
- AA. CAUTION: TWIN-PACK UNITS MUST NOT BE LOADED MORE THAN ONE TWIN-PACK UNIT IN HEIGHT.
- BB. NOTICE: THE BLOCKING AND BRACING PROCEDURES DELINEATED WITHIN THIS DRAWING ARE ADEQUATE FOR MAXIMUM LOADS IN BOX CARS WITH OR WITHOUT LOAD DIVIDER BULKHEADS UP TO 60'-8" IN LENGTH.
- CC. CNU-309/E AND CNU-332/E CONTAINERS ARE CERTIFIED PACKAGING APPROVED IN ACCORDANCE WITH TITLE 49 OF THE CODE OF FEDERAL REGULATIONS PARAGRAPH 173.7 (a) BY CONTAINER CERTIFICATION NUMBER AF-78-51 AND DOT EXEMPTION 8101. A COPY OF THE DOT-EB101 WILL BE PROVIDED THE CARRIER AT TIME OF LOADING FOR CARRIAGE ABOARD THE VEHICLE.

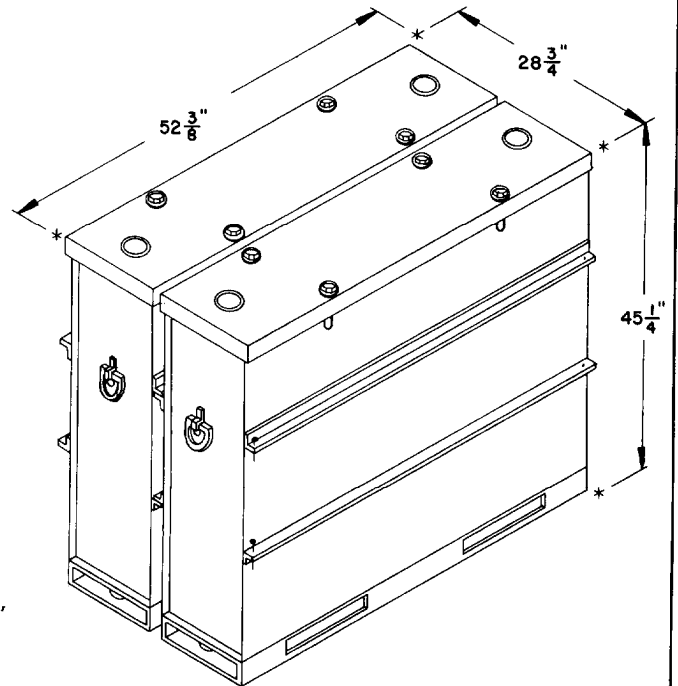
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TWIN-PACK UNIT (CNU-309/E CONTAINER)

TWIN-PACK UNIT DATA:

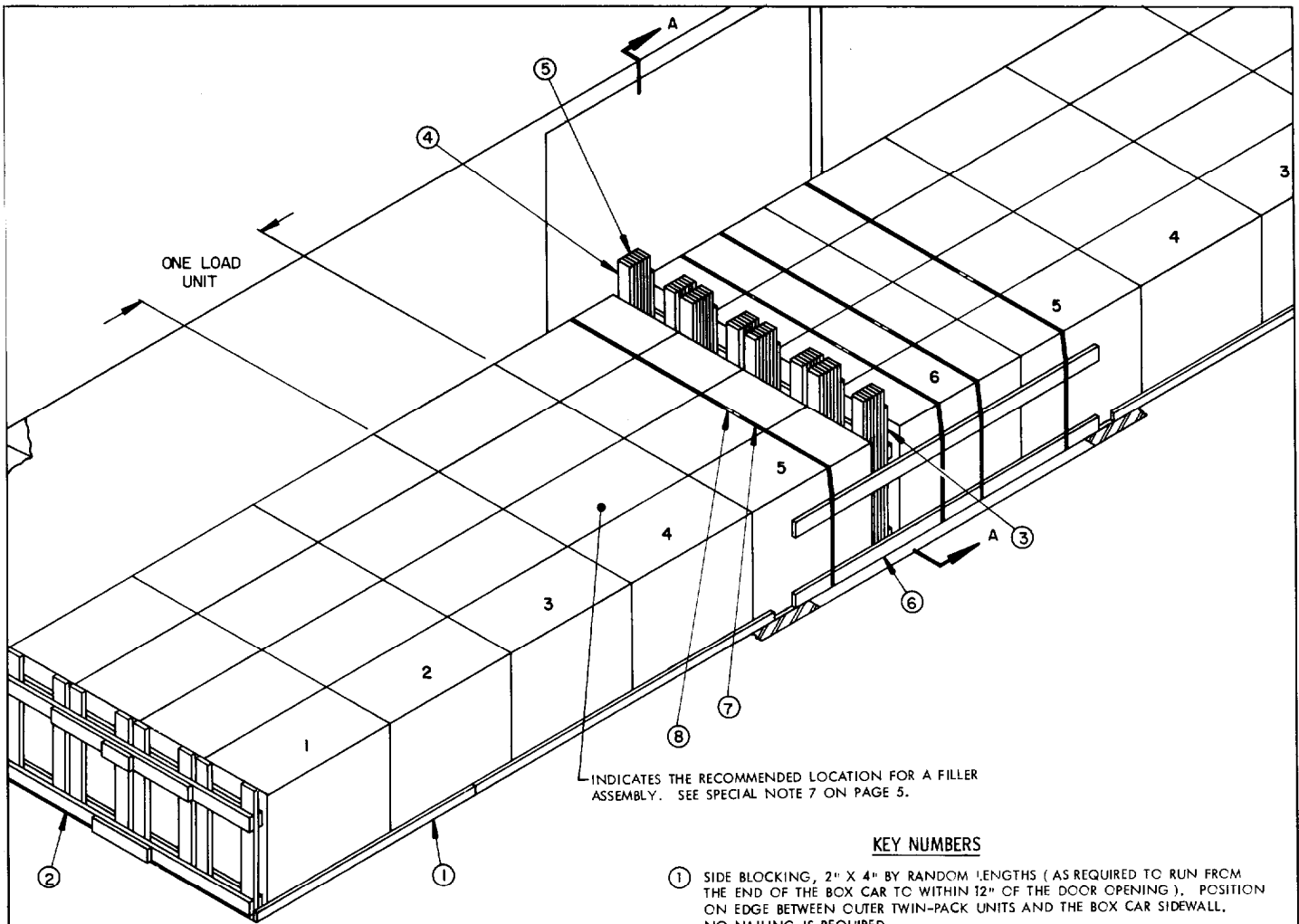
NUMBER OF CONTAINERS ----- TWO (2)
 GROSS WEIGHT ----- 2,350 LBS (APPROX)
 CUBE ----- 39.9 CUBIC FEET



TWIN-PACK UNIT (CNU-332/E CONTAINER)

TWIN-PACK UNIT DATA:

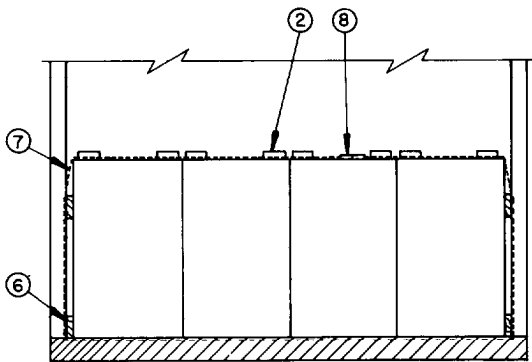
NUMBER OF CONTAINERS ----- TWO (2)
 GROSS WEIGHT ----- 2,350 LBS (APPROX)
 CUBE ----- 39.24 CUBIC FEET



ISOMETRIC VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" BY RANDOM LENGTHS (AS REQUIRED TO RUN FROM THE END OF THE BOX CAR TO WITHIN 12" OF THE DOOR OPENING). POSITION ON EDGE BETWEEN OUTER TWIN-PACK UNITS AND THE BOX CAR SIDEWALL. NO NAILING IS REQUIRED.
- ② END-OF-CAR BULKHEAD (2 REQD.). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND SPECIAL NOTE 2 ON PAGE 5.
- ③ CENTER GATE (1 REQD.). SEE THE "CENTER GATE ASSEMBLY A" DETAIL ON PAGE 6.
- ④ CENTER GATE (1 REQD.). SEE THE "CENTER GATE ASSEMBLY B" DETAIL ON PAGE 6.
- ⑤ SOLID FILL, 6" WIDE X 60" LONG MATERIAL BY A THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE VERTICAL PIECES OF THE CENTER GATES (REQUIRED AT 8 PLACES). DRIVE FINAL PIECES IN TO INSURE A TIGHT FIT. NAIL THE FIRST PIECE OF SOLID FILL TO THE "CENTER GATE ASSEMBLY B" VERTICAL W/4-8d NAILS. NAIL EACH ADDITIONAL PIECE TO THE ONE PLACED BEFORE IT W/4-8d NAILS. NAIL THE TOP EXPOSED PART OF EACH "CENTER GATE ASSEMBLY A" VERTICAL PIECE TO THE ADJACENT FINAL SOLID FILL PIECE W/2-8d NAILS. SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑥ DOORWAY PROTECTION PIECES, 2" X 6" BY A LENGTH TO EXTEND 6" PAST THE DOOR POSTS ON EITHER SIDE OF THE DOOR OPENINGS (4 REQD.). INSTALL ON EDGE AT FLOOR LEVEL AND ABOVE TOP SIDE FLANGE OF TWIN-PACK UNITS IN DOORWAY AREA. SECURE IN POSITION BY LOCATING UNDER DOORWAY PROTECTION UNITIZING STRAPS, PIECES MARKED ⑦.
- ⑦ DOORWAY PROTECTION UNITIZING STRAP, 1-1/4" X .035" X 29'-0" LONG STEEL STRAPPING (4 REQD.). INSTALL AS SHOWN TO ENCIRCLE THE FOUR-WIDE STACKS OF TWIN-PACK UNITS IN THE DOORWAY AREA. SEE SPECIAL NOTE 5 ON PAGE 5.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD., 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



SECTION A-A

CNU-309/E CONTAINERS

44-TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-6" WIDE BOX CAR (CONVENTIONAL)

SPECIAL NOTES:

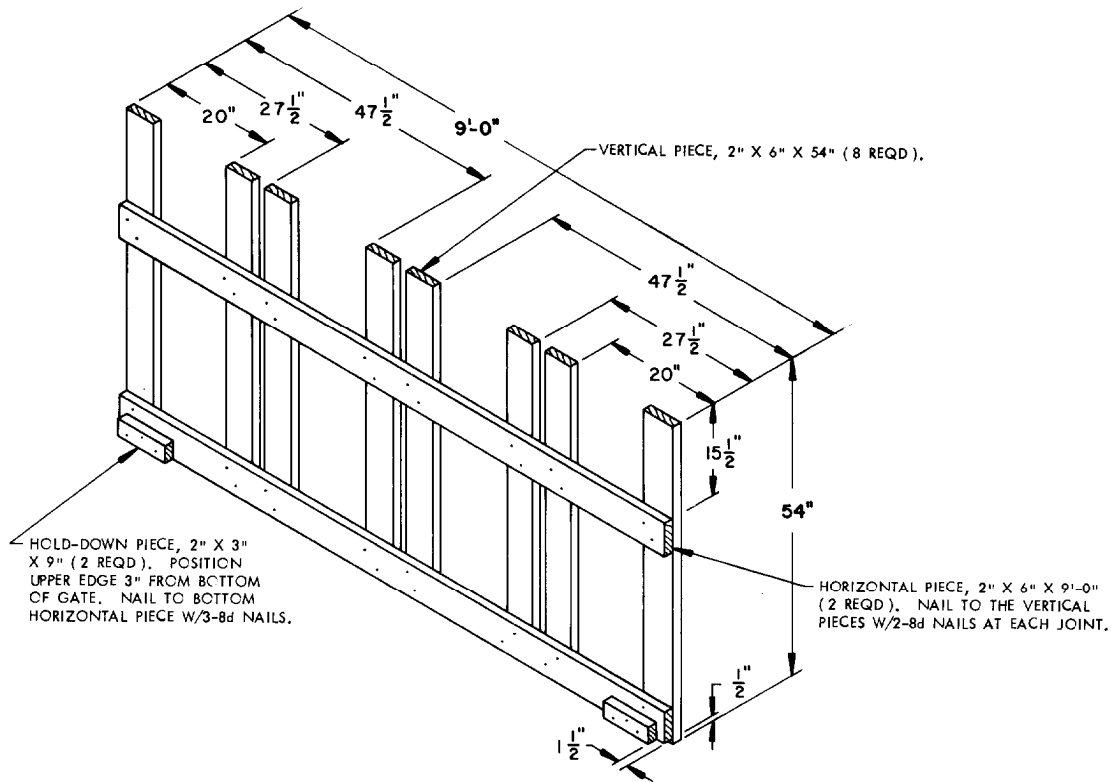
1. A 50'-6" LONG BY 9'-6" WIDE CONVENTIONAL TYPE BOX CAR EQUIPPED WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER OR NARROWER DOOR OPENINGS CAN BE USED.
2. AN END-OF-CAR BULKHEAD IS SHOWN IN THE LOAD VIEW ONLY TO DEPICT A TYPICAL INSTALLATION. THE BULKHEAD IS NOT REQUIRED AND SHOULD NOT BE USED UNLESS THE END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM THE FLOOR TO THE ROOF. SEE THE "END-OF-CAR BULKHEAD" DETAIL AND THE SPECIAL NOTES ON PAGE 25. SEE GENERAL NOTE "N" ON PAGE 2.
3. TO SATISFY A LESS THAN FULL LOAD QUANTITY OF TWIN-PACK UNITS TO BE SHIPPED, SEE THE PROCEDURES SPECIFIED ON PAGES 16 THRU 23.
4. CENTER GATE ASSEMBLIES AND SOLID FILL, SHOWN AS PIECES MARKED ③, ④, AND ⑤ ON PAGE 4, ARE REQUIRED FOR ALL FULL LOADS IN WHICH THE SPACE BETWEEN THE CENTER GATE ASSEMBLIES IS LESS THAN 18". FOR FULL LOADS OF 40-TWIN-PACK UNITS OR LESS WHERE THE SPACE BETWEEN THE CENTER GATE ASSEMBLIES IS 18" OR MORE, A "CENTER GATE ASSEMBLY C" AS SHOWN ON PAGE 7 AND 4" X 4" STRUTS, PIECES MARKED ④ ON PAGE 10, WILL BE REQUIRED. EACH SET OF FOUR 4" X 4" STRUTS IS ADEQUATE FOR RETAINING A WEIGHT OF 12,250 POUNDS. FOR FULL LOADS OF MORE THAN 40-TWIN-PACK UNITS WHERE SPACE BETWEEN THE CENTER GATE ASSEMBLIES IS 18" OR MORE, A "CENTER GATE ASSEMBLY C" AS SHOWN ON PAGE 7 AND DOUBLED 2" X 6" STRUTS WILL BE REQUIRED. EACH SET OF FOUR DOUBLED 2" X 6" STRUTS IS ADEQUATE FOR RETAINING A WEIGHT OF 16,500 POUNDS. DOUBLED 2" X 6" STRUTS WILL BE NAILED TOGETHER W/1-10d NAIL EVERY 6" AND TOENAILED TO THE CENTER GATE ASSEMBLY VERTICALS W/2-16d NAILS AT EACH END.
5. FOR DOORWAY PROTECTION, ONE SET OF UNITIZING STRAPS AND SEALS, PIECES MARKED ⑦ AND ⑧, MUST BE INSTALLED AROUND FOUR-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND UP TO 47" PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR. FOR FOUR-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND 47" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR, TWO SETS OF UNITIZING STRAPS AND SEALS MUST BE INSTALLED.
6. CNU-332/E CONTAINERS MAY BE SHIPPED WITHIN A LOAD OF CNU-309/E CONTAINERS, IF DESIRED. CNU-332/E CONTAINERS MUST BE SUBSTITUTED IN MULTIPLES OF FOUR TWIN-PACK UNITS. ALL CONTAINERS WITHIN A LOAD UNIT MUST BE OF THE SAME MODEL. A SEPARATOR GATE "A" AS DETAILED ON PAGE 13, MUST BE POSITIONED BETWEEN LOAD UNITS OF CNU-309/E CONTAINERS AND LOAD UNITS OF CNU-332/E CONTAINERS. THIS SEPARATOR GATE MUST BE MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES OF THE GATE. NOTE THAT LOAD UNITS ADJACENT TO THE CENTER GATES MUST CONSIST OF THE SAME MODEL OF CONTAINERS.
7. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF A FULL LOAD SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ON PAGE 4. SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 24 FOR CONSTRUCTION GUIDANCE.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	6	3
2" X 4"	97	65
2" X 6"	508	508
NAILS	NO. REQD	POUNDS
8d (2-1/2")	424	4-1/2
STEEL STRAPPING, 1-1/4" X .035" -----	116' REQD	17 LBS
SEAL FOR 1-1/4" STRAPPING -----	8 REQD	NIL

LOAD AS SHOWN

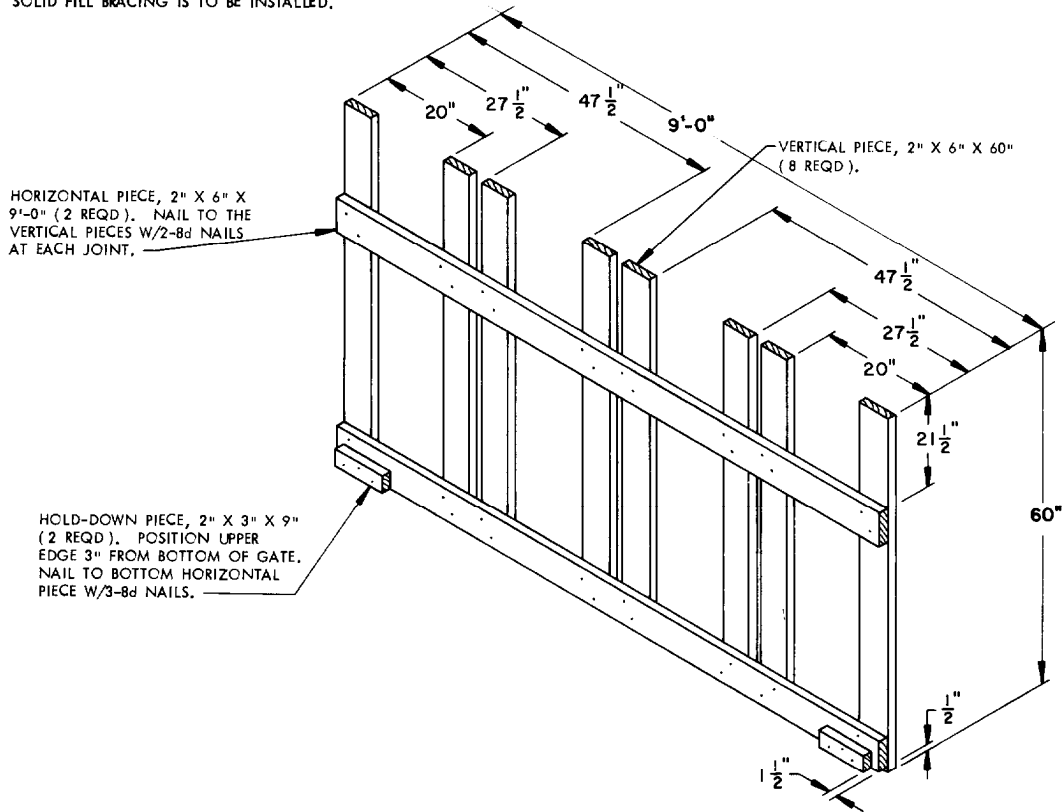
<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
TWIN-PACK UNITS -----	44 -----	103,400 LBS
DUNNAGE -----	-----	1,174 LBS
TOTAL WEIGHT -----	-----	104,574 LBS

CNU-309/E CONTAINERS
44-TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-6" WIDE BOX CAR (CONVENTIONAL)



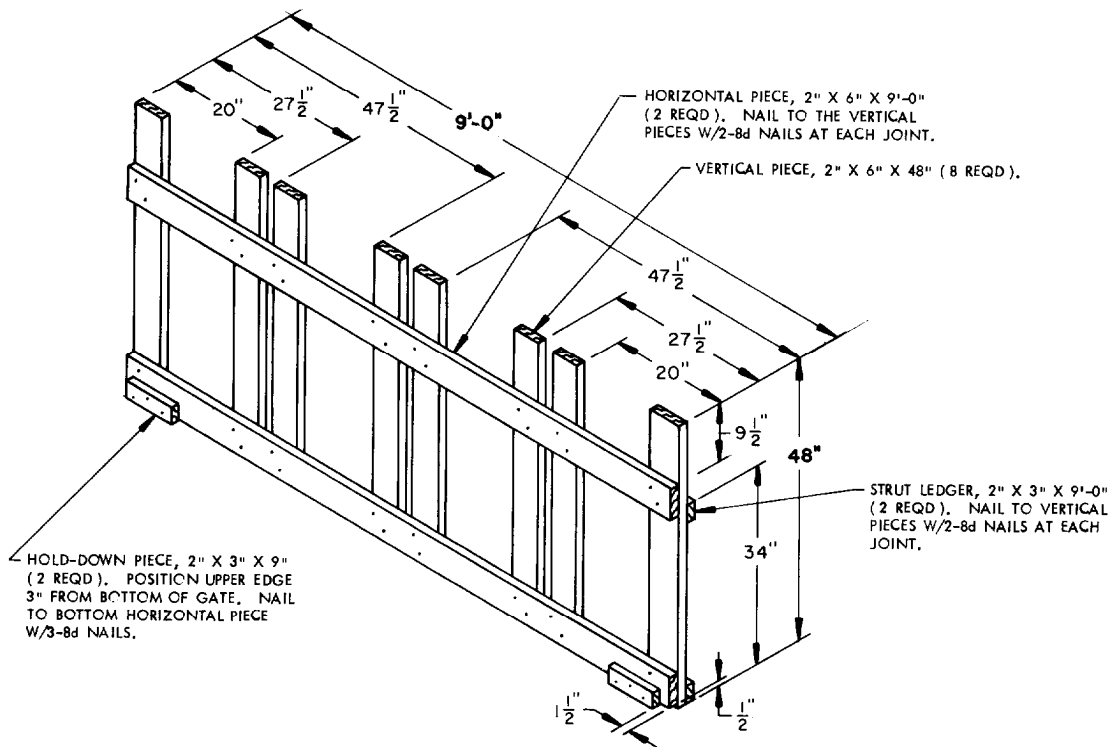
CENTER GATE ASSEMBLY A

THIS CENTER GATE IS FOR USE IN LOADS OF CNU-309/E CONTAINERS AS SHOWN ON PAGES 4 AND 26, WHEN SOLID FILL BRACING IS TO BE INSTALLED.



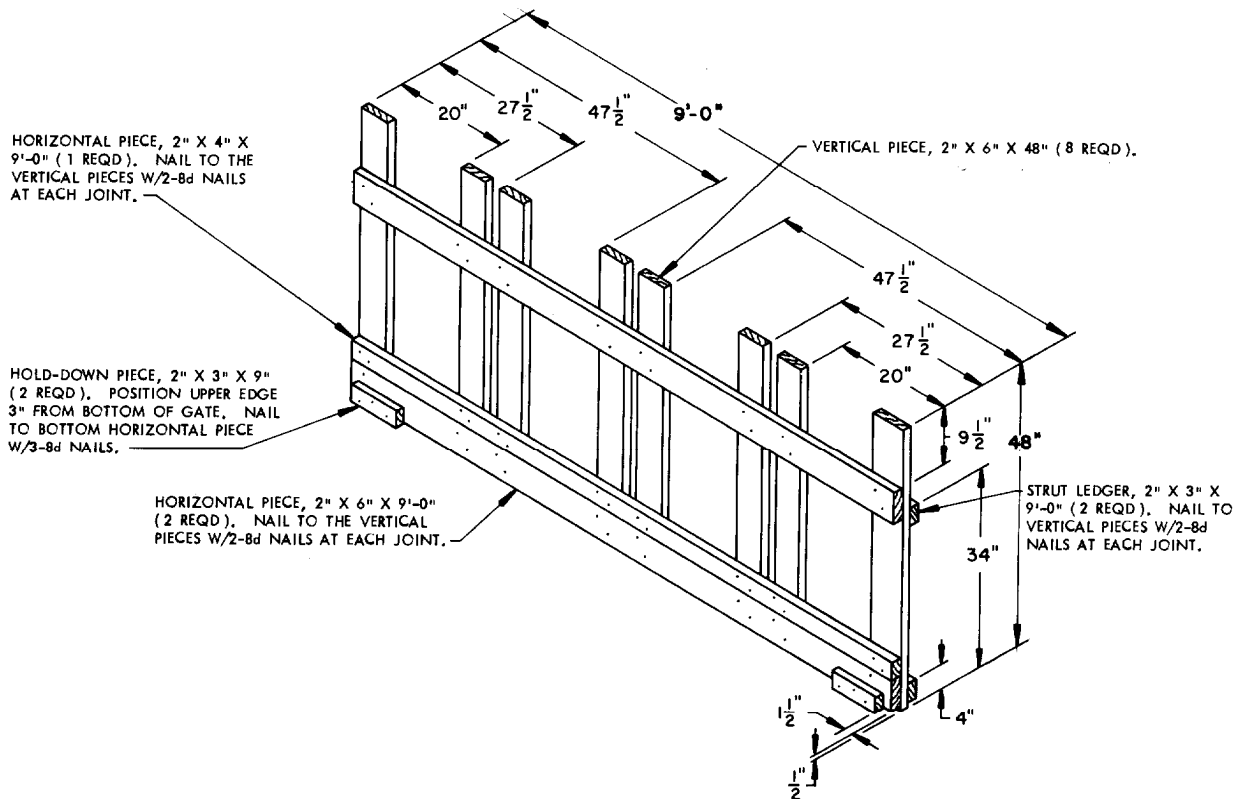
CENTER GATE ASSEMBLY B

THIS CENTER GATE IS FOR USE IN LOADS OF CNU-309/E CONTAINERS AS SHOWN ON PAGES 4 AND 26, WHEN SOLID FILL BRACING IS TO BE INSTALLED.



CENTER GATE ASSEMBLY C

THIS CENTER GATE IS FOR USE IN THE LOAD OF 309/E CONTAINERS SHOWN ON PAGE 4 WHEN STRUTS ARE TO BE USED. SEE SPECIAL NOTE 4 ON PAGE 5. THE GATE MAY ALSO BE USED IN THE LOAD ON PAGE 26, AS APPLICABLE.

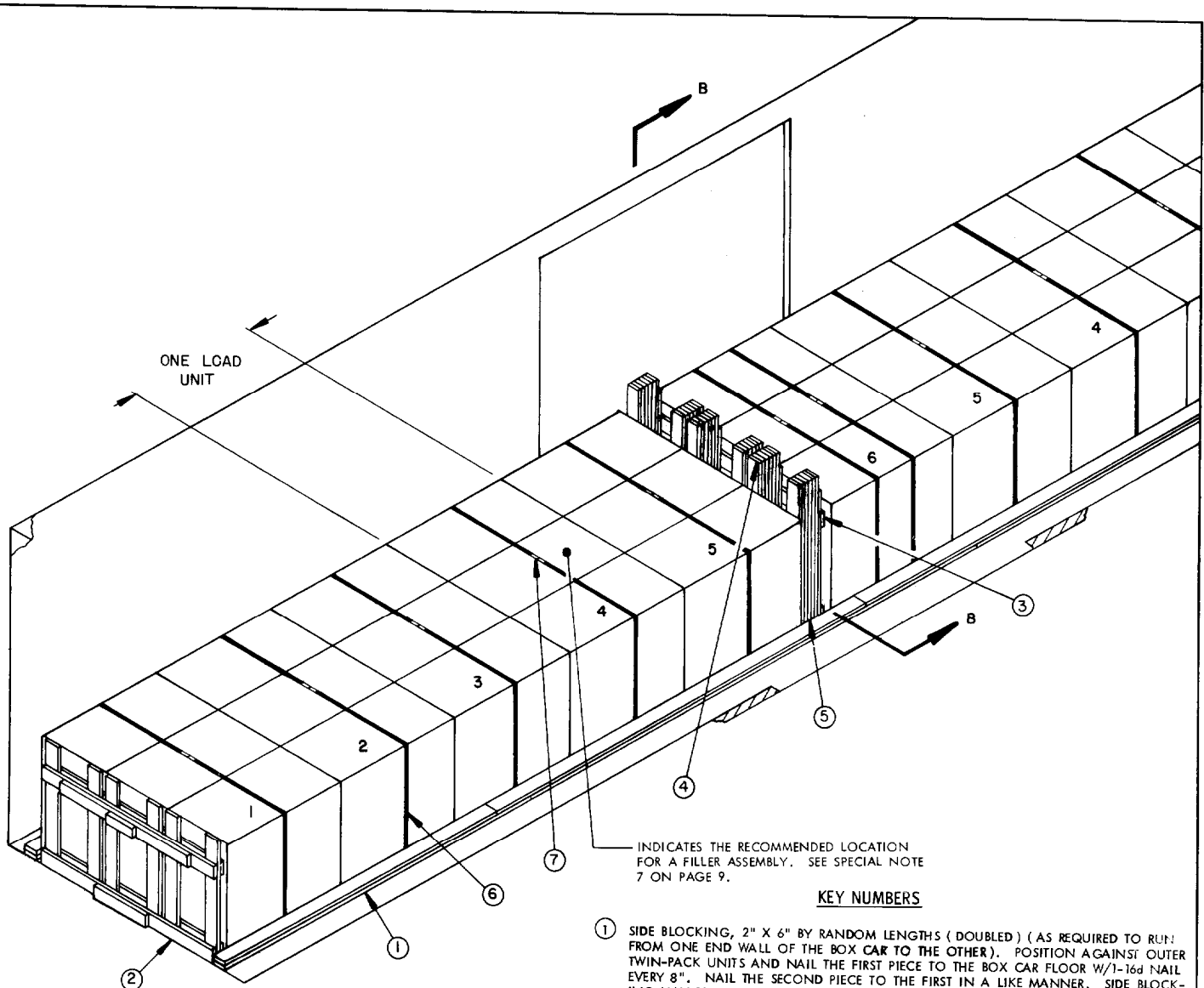


CENTER GATE ASSEMBLY D

THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 16 (SEE SPECIAL NOTE 1 ON THAT PAGE).

DETAILS

PAGE 7

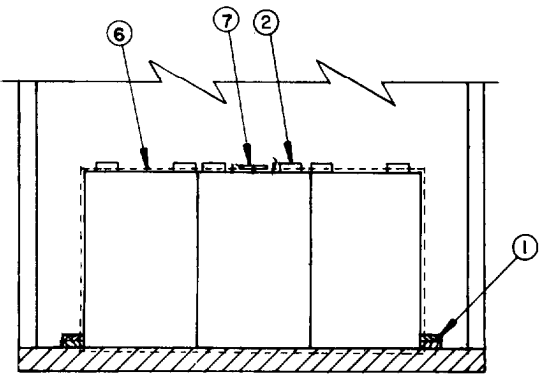


ISOMETRIC VIEW

INDICATES THE RECOMMENDED LOCATION FOR A FILLER ASSEMBLY. SEE SPECIAL NOTE 7 ON PAGE 9.

KEY NUMBERS

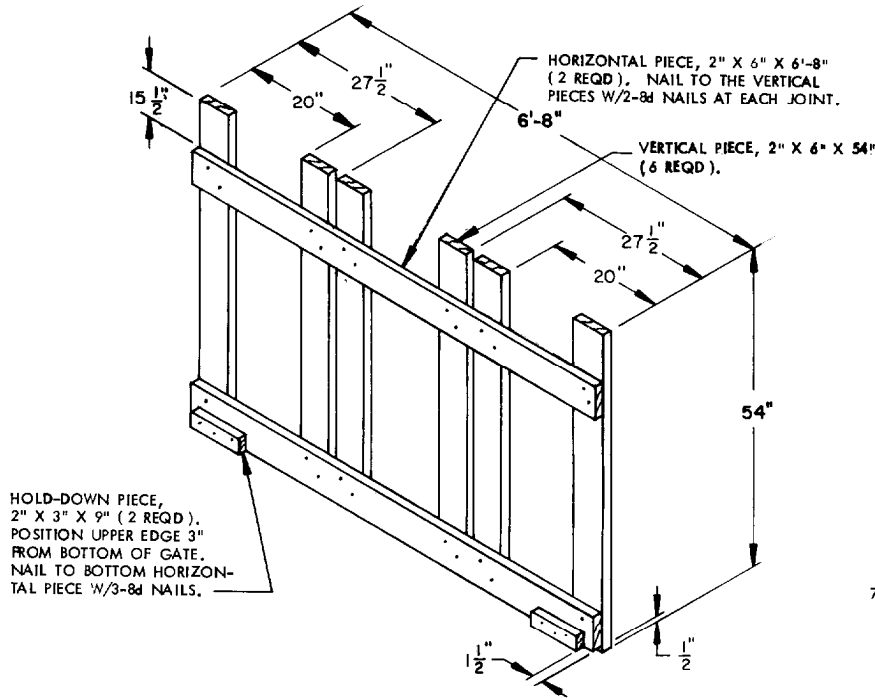
- ① SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQUIRED TO RUN FROM ONE END WALL OF THE BOX CAR TO THE OTHER). POSITION AGAINST OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING MAY BE PRE-POSITIONED. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② END-OF-CAR BULKHEAD (2 REQD). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND SPECIAL NOTE 3 ON PAGE 9.
- ③ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY E" DETAIL ON PAGE 9.
- ④ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY F" DETAIL ON PAGE 9.
- ⑤ SOLID FILL, 6" WIDE X 60" LONG MATERIAL BY A THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE VERTICAL PIECES OF THE CENTER GATES. (REQUIRED AT 6 PLACES). DRIVE FINAL PIECES IN TO INSURE A TIGHT FIT. NAIL THE FIRST PIECE OF SOLID FILL TO THE "CENTER GATE ASSEMBLY F" VERTICAL W/4-8d NAILS. NAIL EACH ADDITIONAL PIECE TO THE ONE PLACED BEFORE IT W/4-8d NAILS. NAIL THE TOP EXPOSED PART OF EACH "CENTER GATE ASSEMBLY E" VERTICAL PIECE TO THE ADJACENT FINAL SOLID FILL PIECE W/2-8d NAILS. SEE SPECIAL NOTE 5 ON PAGE 9.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (12 REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS. SEE SPECIAL NOTE 2 ON PAGE 9 FOR GUIDANCE IN DETERMINING NUMBER OF STRAPS REQUIRED IN DOORWAY AREA.
- ⑦ SEAL FOR 1-1/4" STEEL STRAPPING (24 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



SECTION B-B

CNU-309/E CONTAINERS

33-TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-2" WIDE BOX CAR (CONVENTIONAL)



CENTER GATE ASSEMBLY E

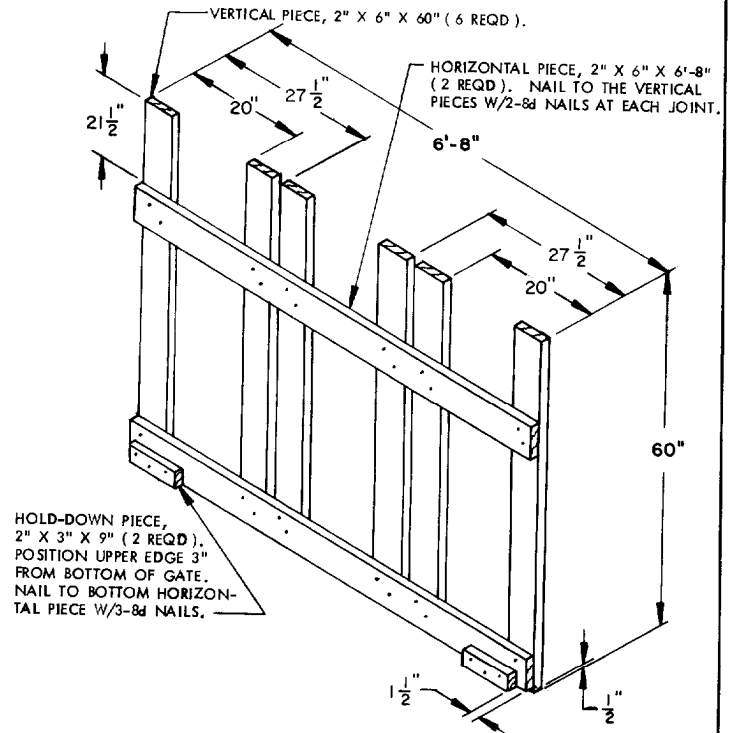
THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 8, WHEN SOLID FILL BRACING IS TO BE INSTALLED.

SPECIAL NOTES:

1. A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL TYPE BOX CAR EQUIPPED WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER OR NARROWER DOOR OPENINGS CAN BE USED.
2. FOR DOORWAY PROTECTION, TWO SETS OF UNITIZING STRAPS AND SEALS, PIECES MARKED (6) AND (7), MUST BE INSTALLED AROUND THREE-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND 47" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR.
3. AN END-OF-CAR BULKHEAD IS SHOWN IN THE LOAD VIEW ONLY TO DEPICT A TYPICAL INSTALLATION. THE BULKHEAD IS NOT REQUIRED AND SHOULD NOT BE USED UNLESS THE END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM THE FLOOR TO THE ROOF. SEE THE "END-OF-CAR BULKHEAD" DETAIL AND THE SPECIAL NOTES ON PAGE 25. SEE GENERAL NOTE "N" ON PAGE 2.
4. A 2-WIDE LOAD CAN BE SHIPPED, FOR A LOAD QUANTITY OF 22 TWIN-PACK UNITS IF SOLID FILL TYPE CENTER BLOCKING IS USED, OR 20 TWIN-PACK UNITS IF STRUT TYPE BLOCKING IS USED. CENTER GATE "M" WILL BE USED IN LIEU OF THE DEPICTED CENTER GATES "E" AND "F". SEE THE DETAIL ON PAGE 18. SEE PAGE 10 FOR A TYPICAL STRUT INSTALLATION. NOTE THAT IF SOLID FILL TYPE BLOCKING IS TO BE USED THE VERTICAL PIECES OF THE CENTER GATES MUST BE INCREASED, ONE GATE TO 54" AND THE VERTICAL PIECES OF THE OTHER GATE TO 60". TO REDUCE A 3-WIDE LOAD BY ONE TWIN-PACK UNIT, SEE THE PROCEDURES ON PAGES 16 THRU 18. REFER TO PAGES 20 THRU 23 FOR TYPICAL LCL PROCEDURES FOR SMALL QUANTITIES.

(CONTINUED AT RIGHT)

5. CENTER GATE ASSEMBLIES AND SOLID FILL, SHOWN AS PIECES MARKED (3), (4) AND (5) ON PAGE 8, ARE REQUIRED FOR ALL FULL LOADS IN WHICH THE SPACE BETWEEN THE CENTER GATE ASSEMBLIES IS LESS THAN 18". FOR FULL LOADS OF 30-TWIN-PACK UNITS OR LESS WHERE THE SPACE BETWEEN THE CENTER GATE ASSEMBLIES IS 18" OR MORE, CENTER GATE ASSEMBLIES AND 4" X 4" STRUTS, PIECES MARKED (3) AND (4) ON PAGE 10, WILL BE REQUIRED. EACH SET OF FOUR 4" X 4" STRUTS IS ADEQUATE FOR RETAINING A WEIGHT OF 12,250 POUNDS. FOR FULL LOADS OF MORE THAN 30-TWIN-PACK UNITS WHERE THE SPACE BETWEEN THE CENTER GATE ASSEMBLIES IS 18" OR MORE, CENTER GATE ASSEMBLIES, PIECES MARKED (3) ON PAGE 10 AND DOUBLED 2" X 6" STRUTS WILL BE REQUIRED. EACH SET OF FOUR DOUBLED 2" X 6" STRUTS IS ADEQUATE FOR RETAINING A WEIGHT OF 16,500 POUNDS. DOUBLED 2" X 6" STRUTS WILL BE NAILED TOGETHER W/1-10d NAIL EVERY 6" AND TO NAILED TO THE CENTER GATE ASSEMBLY VERTICALS W/2-16d NAILS AT EACH END.
6. CNU-332/E CONTAINERS MAY BE SHIPPED WITHIN A LOAD OF CNU-309/E CONTAINERS, IF DESIRED. CNU-332/E CONTAINERS MUST BE SUBSTITUTED IN MULTIPLES OF THREE TWIN-PACK UNITS. ALL CONTAINERS WITHIN A LOAD UNIT MUST BE OF THE SAME MODEL. A SEPARATOR GATE "B", AS DETAILED ON PAGE 15, MUST BE POSITIONED BETWEEN LOAD UNITS OF CNU-309/E CONTAINERS AND LOAD UNITS OF CNU-332/E CONTAINERS, AS WELL AS BETWEEN ADJACENT LOAD UNITS OF CNU-332/E CONTAINERS. THE SEPARATOR GATE BETWEEN THE DIFFERENT MODELS MUST BE MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES. NOTE THAT LOAD UNITS ADJACENT TO THE CENTER GATES MUST BE OF THE SAME MODEL OF CONTAINERS.
7. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF A FULL LOAD SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ON PAGE 8. SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 24 FOR CONSTRUCTION GUIDANCE.



CENTER GATE ASSEMBLY F

THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 8, WHEN SOLID FILL BRACING IS TO BE INSTALLED.

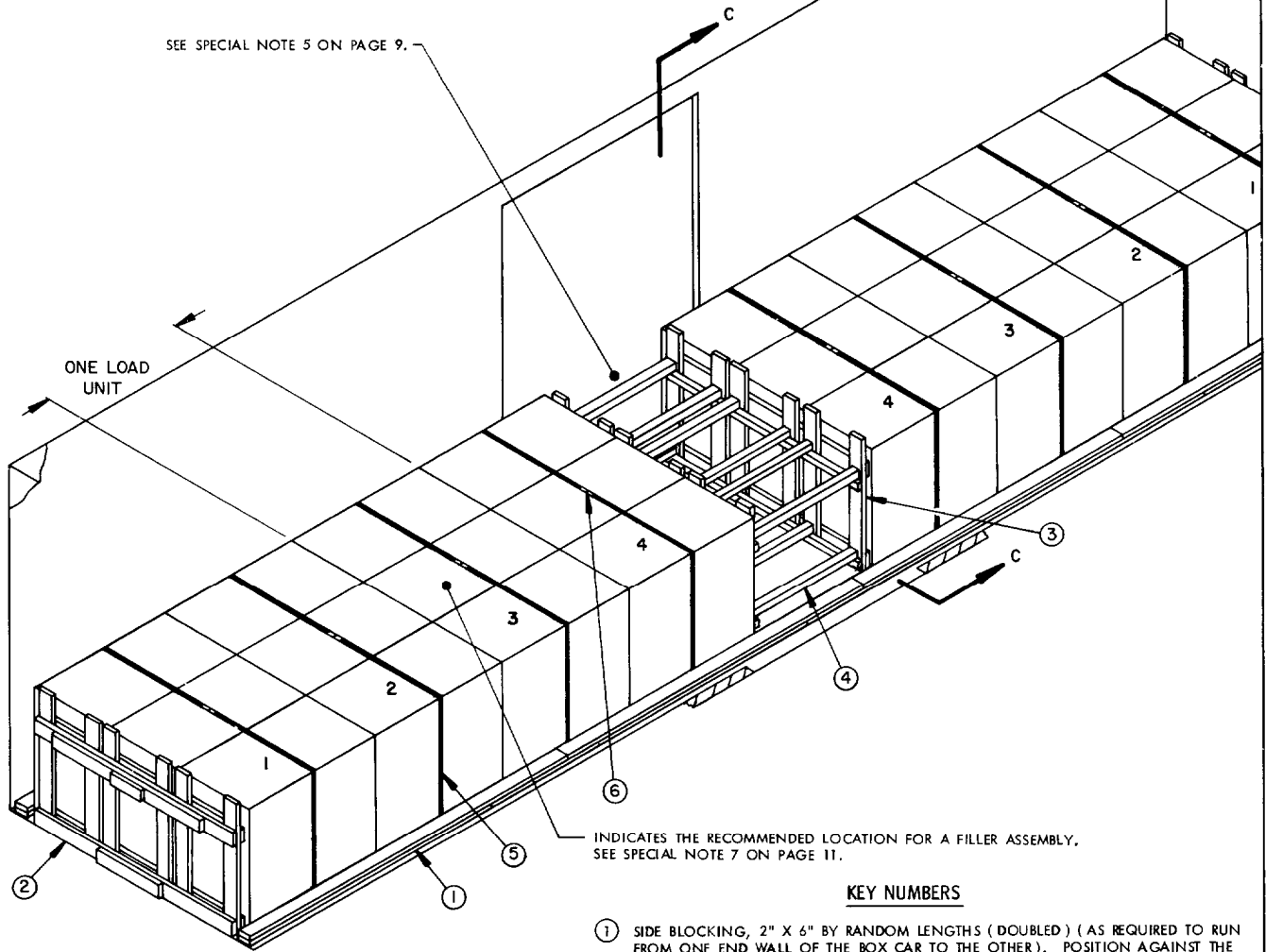
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNITS	33	77,500 LBS
DUNNAGE		1,164 LBS
TOTAL WEIGHT		78,714 LBS

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	6	3
2" X 6"	553	553
NAILS	NO. REQD.	POUNDS
8d (2-1/2")	332	3-1/2
16d (3-1/2")	303	6-3/4
STEEL STRAPPING, 1-1/4" X .035" -----	2761 REQD	39 LBS
SEAL FOR 1-1/4" STRAPPING -----	24 REQD	1 LB

CNU-309/E CONTAINERS
33-TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-2" WIDE BOX CAR (CONVENTIONAL)

SEE SPECIAL NOTE 5 ON PAGE 9.

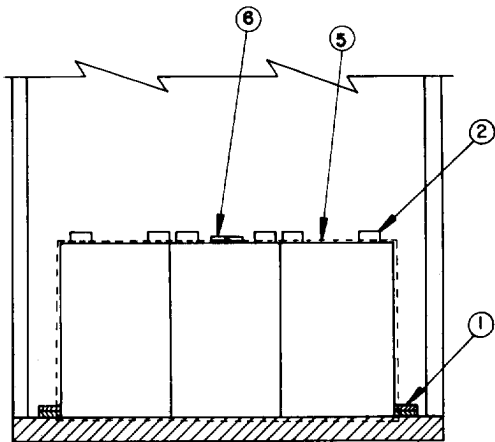


ISOMETRIC VIEW

INDICATES THE RECOMMENDED LOCATION FOR A FILLER ASSEMBLY, SEE SPECIAL NOTE 7 ON PAGE 11.

KEY NUMBERS

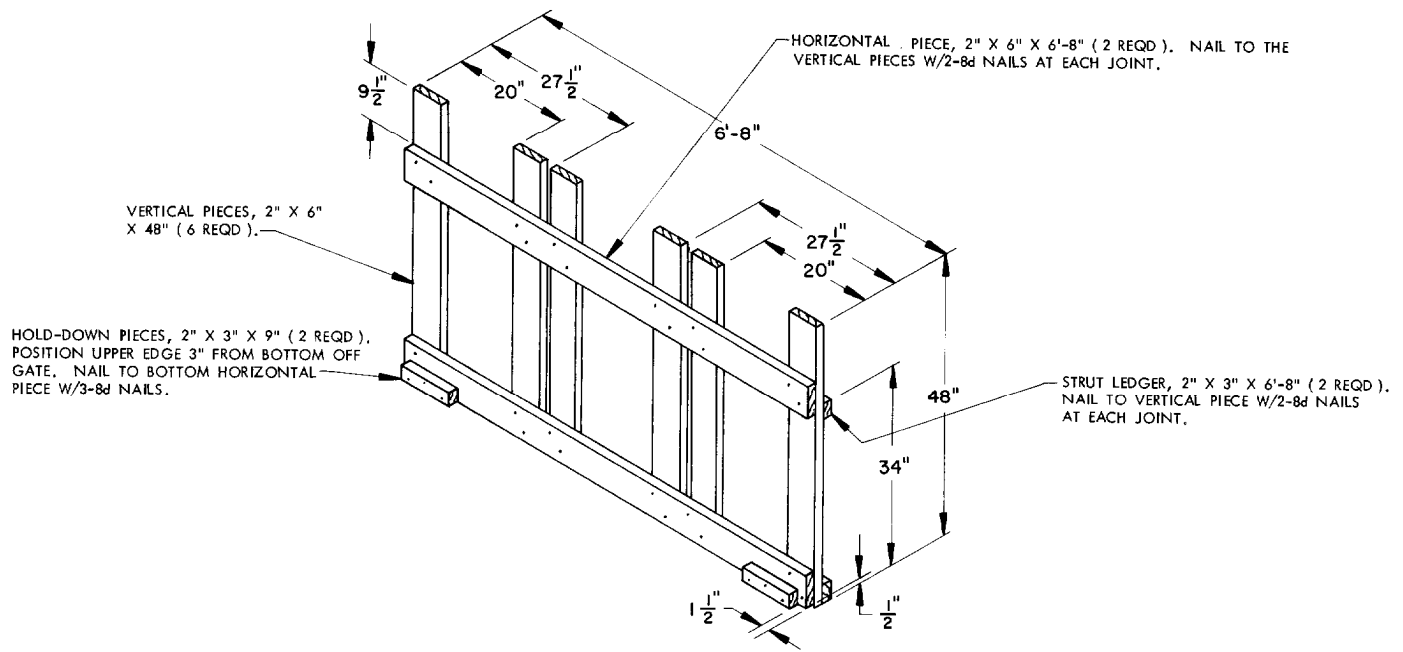
- ① SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQUIRED TO RUN FROM ONE END WALL OF THE BOX CAR TO THE OTHER). POSITION AGAINST THE OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING MAY BE PRE-POSITIONED. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② END-OF-CAR BULKHEAD (2 REQD). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND SPECIAL NOTE 3 ON PAGE 11.
- ③ CENTER GATE (2 REQD). SEE THE "CENTER GATE ASSEMBLY G" DETAIL ON PAGE 11.
- ④ STRUT, 4" X 4" BY CUT-TO-FIT (12 REQD). TOENAIL TO PIECES MARKED ③ W/2-16d NAILS AT EACH END. SEE GENERAL NOTE "F" ON PAGE 2 AND SPECIAL NOTE 5 ON PAGE 9.
- ⑤ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (8 REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS. SEE SPECIAL NOTE 2 ON PAGE 11 FOR GUIDANCE IN DETERMINING NUMBER OF STRAPS REQUIRED IN DOORWAY AREA.
- ⑥ SEAL FOR 1-1/4" STEEL STRAPPING (16 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



SECTION C-C

CNU-309/E CONTAINERS

24-TWIN-PACK UNIT LOAD IN A 40'-6" LONG BY 8'-6" WIDE BOX CAR (CONVENTIONAL)



CENTER GATE ASSEMBLY G

THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 10, WHEN STRUTS ARE TO BE INSTALLED.

SPECIAL NOTES:

(SPECIAL NOTES CONTINUED)

1. A 40'-6" LONG BY 8'-6" WIDE CONVENTIONAL TYPE BOX CAR EQUIPPED WITH 7'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER DOOR OPENINGS CAN BE USED.
2. FOR DOORWAY PROTECTION, TWO SETS OF UNITIZING STRAPS AND SEALS, PIECES MARKED ⑤ AND ⑥, MUST BE INSTALLED AROUND THREE-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND 47" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR. SEE THE LOAD SHOWN ON PAGE 8.
3. AN END-OF-CAR BULKHEAD IS SHOWN IN THE LOAD VIEW ONLY TO DEPICT A TYPICAL INSTALLATION. THE BULKHEAD IS NOT REQUIRED AND SHOULD NOT BE USED UNLESS THE END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM THE FLOOR TO THE ROOF. SEE THE "END-OF-CAR BULKHEAD" DETAIL AND THE SPECIAL NOTES ON PAGE 25. SEE GENERAL NOTE "N" ON PAGE 2.
4. TO SATISFY A LESS THAN FULL LOAD QUANTITY OF TWIN-PACK UNITS TO BE SHIPPED, SEE THE PROCEDURES SPECIFIED ON PAGES 16 THRU 23. OR, A 2-WIDE LOAD CAN BE SHIPPED, FOR A LOAD QUANTITY OF 16 TWIN-PACK UNITS. CENTER GATE "M" WILL BE USED IN LIEU OF CENTER GATE "G". SEE THE DETAIL ON PAGE 18. NOTE THAT IF SOLID FILL TYPE BLOCKING IS TO BE USED THE VERTICAL PIECES OF THE CENTER GATES MUST BE INCREASED, ONE GATE TO 54" AND THE VERTICAL PIECES OF THE OTHER GATE TO 60". TO REDUCE A 3-WIDE LOAD BY ONE TWIN-PACK UNIT, SEE THE PROCEDURES ON PAGES 16 THRU 18. REFER TO PAGES 20 THRU 23 FOR TYPICAL LCL PROCEDURES FOR SMALL QUANTITIES.
5. IT MAY BE POSSIBLE TO FIT AN ADDITIONAL THREE-WIDE STACK OF TWIN-PACK UNITS IN THE CENTER AREA OF THE BOX CAR SHOWN TO ACHIEVE A 27-TWIN-PACK UNIT LOAD. CENTER GATES AND STRUTS, PIECES MARKED ③ AND ④, WOULD NOT BE REQUIRED. HORIZONTAL PIECES OF THE END-OF-CAR BULKHEADS MAY BE REDUCED TO 1" X 6" LUMBER TO GAIN ADDITIONAL SPACE. ANY LENGTH-WISE VOID IN THE LOAD MUST BE FILLED WITH SOLID FILL PIECES OF ADEQUATE THICKNESS, POSITIONED BETWEEN THE VERTICAL DUNNAGE PIECES OF ADJACENT TWIN-PACK UNITS. THIS SOLID FILL METHOD MAY ONLY BE USED IF THE VOID IS SMALL ENOUGH TO PREVENT THE USE OF CENTER GATES WITH SOLID FILL, AS SHOWN ON PAGES 4 AND 8. SEE SPECIAL NOTE 2 ABOVE AND GENERAL NOTE "O" ON PAGE 2.
6. CNU-332/E CONTAINERS MAY BE SHIPPED WITHIN A LOAD OF CNU-309/E CONTAINERS, IF DESIRED. CNU-332/E CONTAINERS MUST BE SUBSTITUTED IN MULTIPLES OF THREE TWIN-PACK UNITS. ALL CONTAINERS WITHIN A LOAD UNIT MUST BE OF THE SAME MODEL. A SEPARATOR GATE "B", AS DETAILED ON PAGE 15, MUST BE POSITIONED BETWEEN LOAD UNITS OF CNU-309/E CONTAINERS AND LOAD UNITS OF CNU-332/E CONTAINERS, AS WELL AS BETWEEN ADJACENT LOAD UNITS OF CNU-332/E CONTAINERS. THE SEPARATOR GATE BETWEEN THE DIFFERENT MODELS MUST BE MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES. NOTE THAT LOAD UNITS NUMBERED "4" IN EACH END OF THE CAR MUST CONSIST OF THE SAME MODEL OF CONTAINERS.
7. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF A FULL LOAD SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ON PAGE 10. SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 24 FOR CONSTRUCTION GUIDANCE.

(CONTINUED AT RIGHT)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	33	17
2" X 6"	354	354
4" X 4"	47	63
NAILS	NO. REQD	POUNDS
8d (2-1/2")	248	2-1/2
16d (3-1/2")	291	6-1/2
STEEL STRAPPING, 1-1/4" X .035"	184' REQD	26 LBS
SEAL FOR 1-1/4" STRAPPING	16 REQD	1 LBS

LOAD AS SHOWN

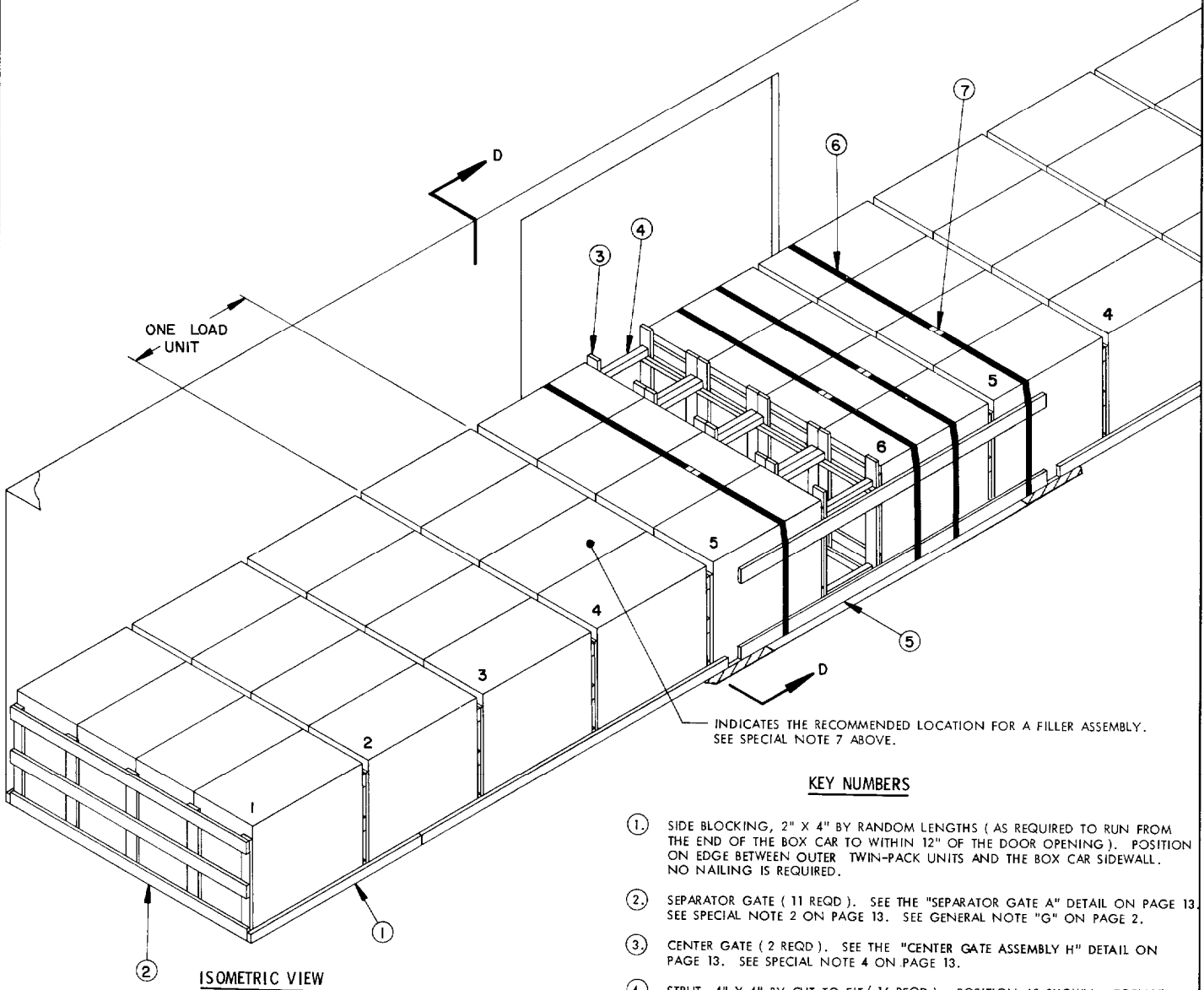
ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNITS	24	56,400 LBS
DUNNAGE		906 LBS
TOTAL WEIGHT		57,306 LBS

CNU-309/E CONTAINERS

24 TWIN-PACK UNIT LOAD IN A 40'-6" LONG BY 8'-6" WIDE BOX CAR (CONVENTIONAL)

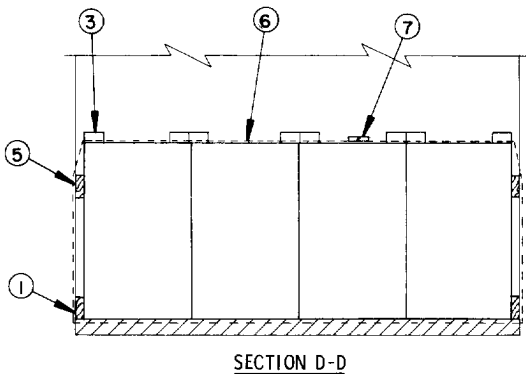
(SPECIAL NOTES CONTINUED FROM PAGE 13)

7. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF A FULL LOAD SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW BELOW. SEE THE "FILLER ASSEMBLY B" DETAIL ON PAGE 24 FOR CONSTRUCTION GUIDANCE.



KEY NUMBERS

- ①. SIDE BLOCKING, 2" X 4" BY RANDOM LENGTHS (AS REQUIRED TO RUN FROM THE END OF THE BOX CAR TO WITHIN 12" OF THE DOOR OPENING). POSITION ON EDGE BETWEEN OUTER TWIN-PACK UNITS AND THE BOX CAR SIDEWALL. NO NAILING IS REQUIRED.
- ②. SEPARATOR GATE (11 REQD). SEE THE "SEPARATOR GATE A" DETAIL ON PAGE 13. SEE SPECIAL NOTE 2 ON PAGE 13. SEE GENERAL NOTE "G" ON PAGE 2.
- ③. CENTER GATE (2 REQD). SEE THE "CENTER GATE ASSEMBLY H" DETAIL ON PAGE 13. SEE SPECIAL NOTE 4 ON PAGE 13.
- ④. STRUT, 4" X 4" BY CUT TO FIT (16 REQD). POSITION AS SHOWN. TOENAIL TO PIECES MARKED ③ W/2-16d NAILS AT EACH END. SEE GENERAL NOTE "F" ON PAGE 2.
- ⑤. DOORWAY PROTECTION PIECES, 2" X 6" BY A LENGTH TO EXTEND 6" PAST THE DOOR POSTS ON EITHER SIDE OF THE DOOR OPENINGS (4 REQD). INSTALL ON EDGE AT FLOOR LEVEL AND ABOVE TOP SIDE FLANGE OF TWIN-PACK UNITS IN DOORWAY AREA. SECURE IN POSITION BY LOCATING UNDER DOORWAY PROTECTION UNITIZING STRAPS, PIECES MARKED ⑥.
- ⑥. DOORWAY PROTECTION UNITIZING STRAP, 1-1/4" X .035" X 29'-0" LONG STEEL STRAPPING (4 REQD). INSTALL AS SHOWN TO ENIRCLE THE FOUR-WIDE STACKS OF TWIN-PACK UNITS IN THE DOORWAY AREA. SEE SPECIAL NOTE 3 ON PAGE 13.
- ⑦. SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



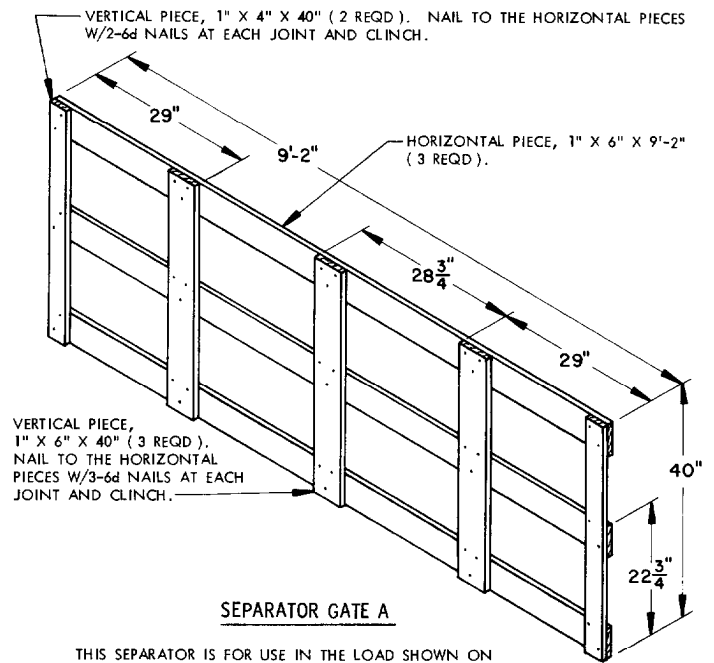
CNU-332/E CONTAINERS

44 TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-6" WIDE BOX CAR (CONVENTIONAL)

SPECIAL NOTES:

1. A 50'-6" LONG BY 9'-6" WIDE CONVENTIONAL TYPE BOX CAR EQUIPPED WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER OR NARROWER DOOR OPENINGS CAN BE USED.
2. IF AN END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM FLOOR TO THE ROOF, A BULKHEAD MUST BE INSTALLED IN LIEU OF POSITIONING A SEPARATOR GATE, PIECE MARKED ②, TO PROVIDE A "SQUARED OFF" SURFACE FOR THE LOAD. SEE THE "END-OF-CAR BULKHEAD" DETAIL AND THE SPECIAL NOTES ON PAGE 25. SEE GENERAL NOTE "N" ON PAGE 2.
3. FOR DOORWAY PROTECTION, TWO SETS OF UNITIZING STRAPS AND SEALS, PIECES MARKED ⑥ AND ⑦, MUST BE INSTALLED AROUND FOUR-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND 47" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR. FOR FOUR-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND UP TO 47" PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR, ONE SET OF UNITIZING STRAPS AND SEALS, PIECES MARKED ⑥ AND ⑦, MUST BE INSTALLED.
4. CENTER GATES AND STRUTS, SHOWN AS PIECES MARKED ③ AND ④, ARE REQUIRED FOR ALL FULL LOADS IN WHICH THE SPACE BETWEEN THE CENTER GATES IS 18" OR MORE. FOR FULL LOADS IN WHICH THE SPACE BETWEEN THE CENTER GATES IS LESS THAN 18", OMIT THE STRUT LEDGERS FROM THE GATES, INCREASE THE HEIGHT OF THE VERTICAL PIECES ON ONE GATE TO 54" AND THE VERTICAL PIECES ON THE OTHER GATE TO 60". THEN INSTALL 6" WIDE BY 60" LONG SOLID FILL OF A THICKNESS AS REQUIRED TO FILL THE VOID BETWEEN THE VERTICAL PIECES. SEE THE LOAD ON PAGE 4 FOR A TYPICAL INSTALLATION OF SOLID FILL CENTER BLOCKING.
5. TO REDUCE A 4-WIDE LOAD BY ONE OR TWO TWIN-PACK UNITS, SEE THE PROCEDURES ON PAGE 16 THRU 18. REFER TO PAGES 20 THRU 23 FOR TYPICAL LCL PROCEDURES FOR SMALL QUANTITIES.
6. CNU-309/E CONTAINERS MAY BE SHIPPED WITHIN A LOAD OF CNU-332/E CONTAINERS, IF DESIRED. CNU-309/E CONTAINERS MUST BE SUBSTITUTED IN MULTIPLES OF FOUR TWIN-PACK UNITS. ALL CONTAINERS WITHIN A LOAD UNIT MUST BE OF THE SAME MODEL. THE PREFERRED LOCATION WOULD BE AT THE ENDS OF THE LOAD. THE SEPARATOR GATES AT THE ENDS OF THE CAR WILL THEN NOT BE REQUIRED. A SEPARATOR GATE BETWEEN ADJACENT LOAD UNITS OF CNU-309/E AND CNU-332/E CONTAINERS MUST BE MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES. NOTE THAT LOAD UNITS ADJACENT TO THE CENTER GATES MUST CONSIST OF THE SAME MODEL OF CONTAINERS.

(CONTINUED ON PAGE 12)

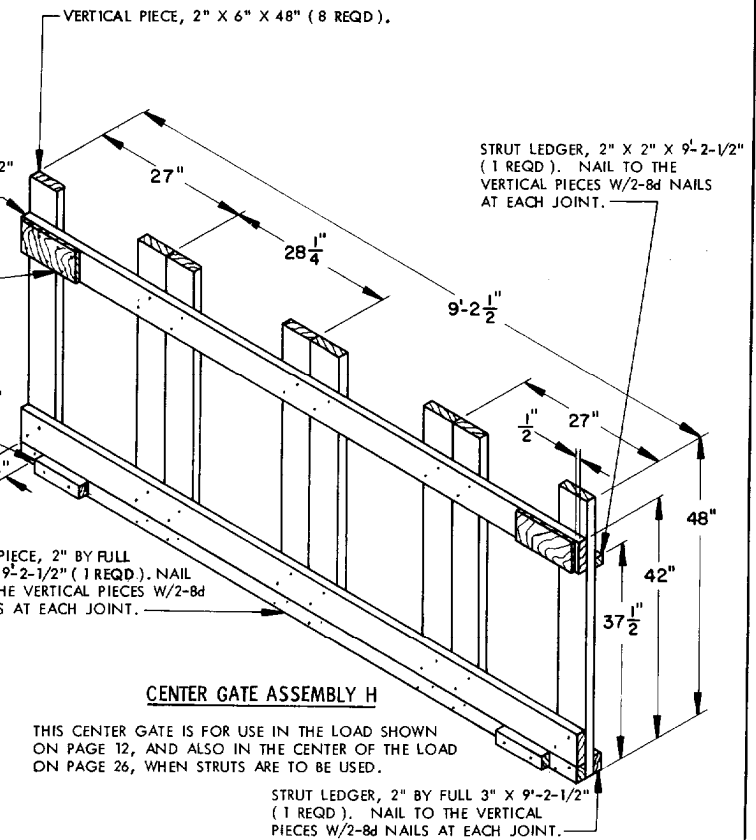


SEPARATOR GATE A
THIS SEPARATOR IS FOR USE IN THE LOAD SHOWN ON PAGE 12, AND ALSO IN THE LOAD ON PAGE 26 WHEN SHIPPING THE CNU-332/E CONTAINER.

HORIZONTAL PIECE, 2" X 6" X 9'-2-1/2" (2 REQD). NAIL TO THE VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

PLYWOOD, 3/8" X 5-1/2" X 11" (2 REQD). NAIL TO A HORIZONTAL PIECE W/6-4d NAILS.

HOLD-DOWN PIECE, 2" X 3" X 9" (2 REQD). NAIL TO THE FILL PIECE W/2-8d NAILS.



FILL PIECE, 2" BY FULL 3" X 9'-2-1/2" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

CENTER GATE ASSEMBLY H

THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 12, AND ALSO IN THE CENTER OF THE LOAD ON PAGE 26, WHEN STRUTS ARE TO BE USED.

STRUT LEDGER, 2" BY FULL 3" X 9'-2-1/2" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

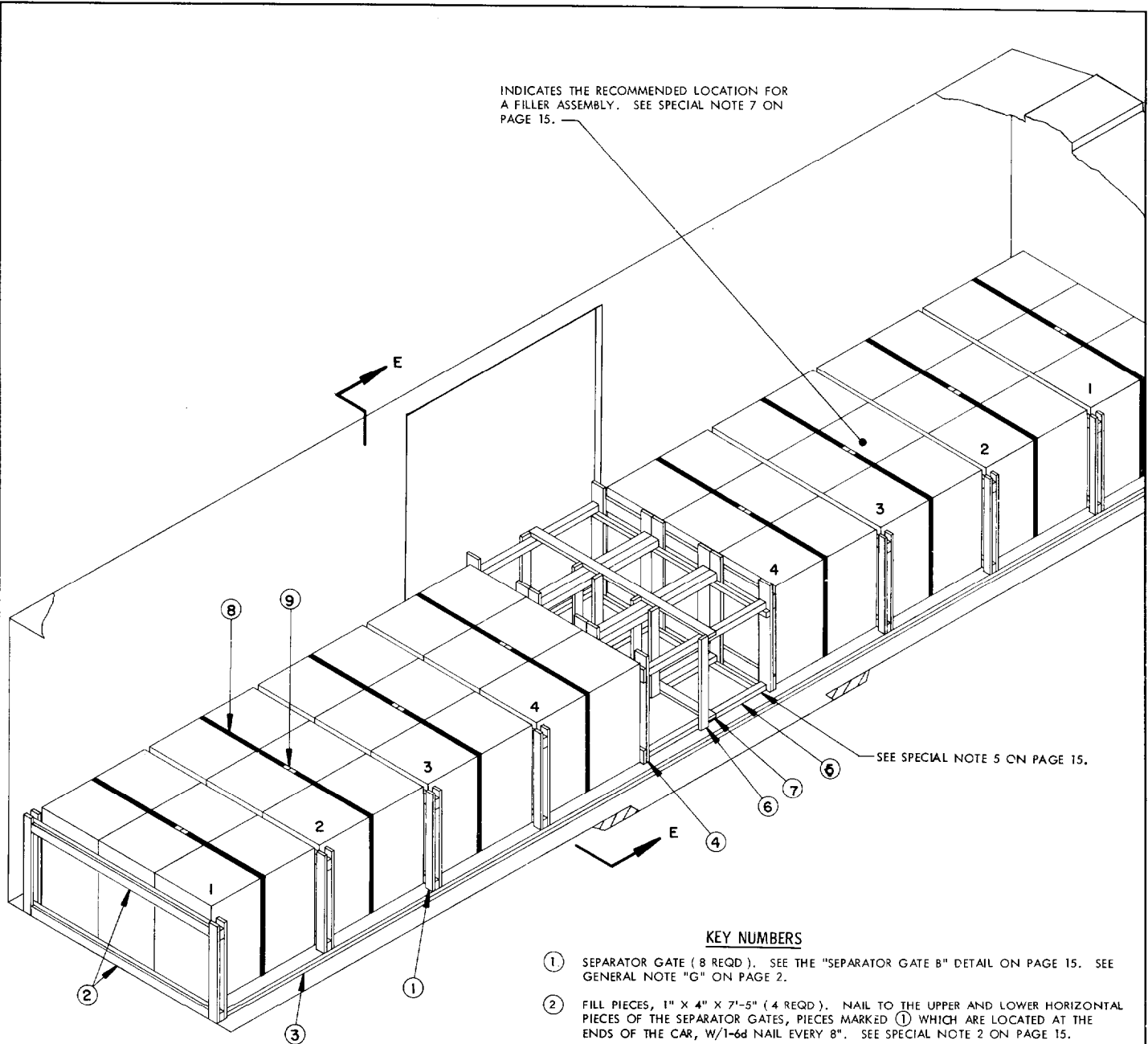
LOAD AS SHOWN

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	74	25
1" X 6"	413	207
2" X 2"	19	7
2" X 3"	3	2
* 2" X 3" (FULL)	37	25
2" X 4"	77	52
2" X 6"	145	145
4" X 4"	30	40
NAILS		
	NO. REQD	POUNDS
4d (1-1/2")	24	NIL
6d (2")	330	2
8d (2-1/2")	168	2
16d (3-1/2")	64	1-1/2
PLYWOOD, 3/8" X 5-1/2" X 11"-----2 REQD-----1 LB		

*RIP FROM 2" X 4" MATERIAL.

ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNITS	44	103,400 LBS
DUNNAGE		1,013 LBS
TOTAL WEIGHT		104,413 LBS

CNU-332/E CONTAINERS
44 TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-6" WIDE BOX CAR (CONVENTIONAL)



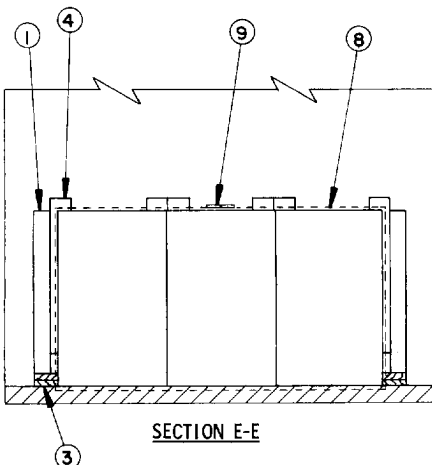
INDICATES THE RECOMMENDED LOCATION FOR A FILLER ASSEMBLY. SEE SPECIAL NOTE 7 ON PAGE 15.

SEE SPECIAL NOTE 5 ON PAGE 15.

ISOMETRIC VIEW

KEY NUMBERS

- ① SEPARATOR GATE (8 REQD). SEE THE "SEPARATOR GATE B" DETAIL ON PAGE 15. SEE GENERAL NOTE "G" ON PAGE 2.
- ② FILL PIECES, 1" X 4" X 7'-5" (4 REQD). NAIL TO THE UPPER AND LOWER HORIZONTAL PIECES OF THE SEPARATOR GATES, PIECES MARKED ① WHICH ARE LOCATED AT THE ENDS OF THE CAR, W/1-16d NAIL EVERY 8". SEE SPECIAL NOTE 2 ON PAGE 15.
- ③ SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQUIRED TO RUN FROM ONE END WALL OF THE BOX CAR TO THE OTHER). POSITION AGAINST OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING MAY BE PRE-POSITIONED. SEE GENERAL NOTE "R" ON PAGE 2.
- ④ CENTER GATE (2 REQD). SEE THE "CENTER GATE J" DETAIL ON PAGE 15.
- ⑤ STRUT, 4" X 4" BY CUT TO FIT (12 REQD). POSITION AS SHOWN. TOENAIL TO PIECES MARKED ④ W/2-16d NAILS AT EACH END. SEE SPECIAL NOTE 5 ON PAGE 15.
- ⑥ VERTICAL STRUT BRACING, 2" X 4" X 48" (6 REQD). NAIL TO THE STRUTS, PIECES MARKED ⑤, W/3-10d NAILS AT EACH JOINT.
- ⑦ HORIZONTAL STRUT BRACING, 2" X 4" X 7'-4" (2 REQD). NAIL TO THE STRUTS, PIECES MARKED ⑤ W/3-10d NAILS AT EACH JOINT.
- ⑧ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (8 REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS. SEE SPECIAL NOTE 3 ON PAGE 15 FOR GUIDANCE IN DETERMINING NUMBER OF STRAPS REQUIRED IN DOORWAY AREA.
- ⑨ SEAL FOR 1-1/4" STEEL STRAPPING (16 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



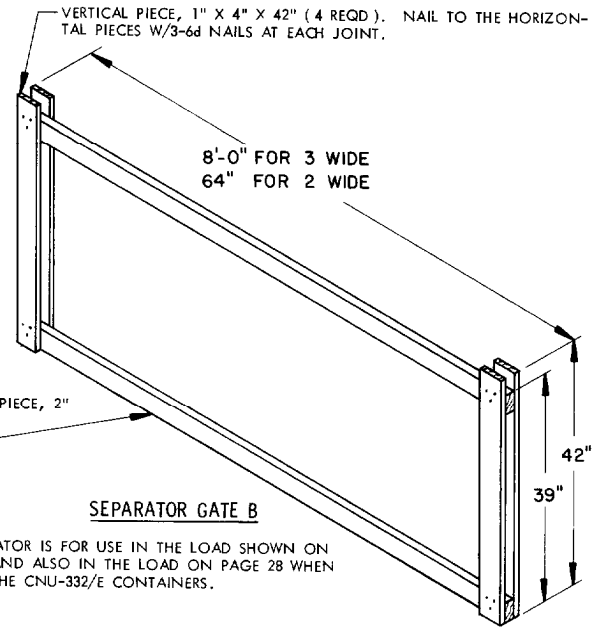
SECTION E-E

CNU-332/E CONTAINERS

24 TWIN-PACK UNIT LOAD IN A 40'-6" LONG BY 9'-2" WIDE BOX CAR (CONVENTIONAL)

SPECIAL NOTES:

1. A 40'-6" LONG BY 9'-2" WIDE CONVENTIONAL TYPE BOX CAR EQUIPPED WITH 8'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER OR NARROWER DOOR OPENINGS CAN BE USED.
2. IF AN END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM FLOOR TO ROOF, A BULKHEAD MUST BE INSTALLED IN LIEU OF POSITIONING A SEPARATOR GATE AND FILL PIECES, PIECES MARKED ① AND ②, TO PROVIDE A "SQUARED OFF" SURFACE FOR THE LOAD. SEE THE "END-OF-CAR BULKHEAD" DETAIL AND THE SPECIAL NOTES ON PAGE 25. SEE GENERAL NOTE "N" ON PAGE 2.
3. FOR DOORWAY PROTECTION, TWO SETS OF UNITIZING STRAPS AND SEALS, PIECES MARKED ⑧ AND ⑨, MUST BE INSTALLED AROUND THREE-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND 47" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR. SEE THE LOAD ON PAGE 8.
4. A 2-WIDE LOAD CAN BE SHIPPED FOR A LOAD QUANTITY OF 16 TWIN-PACK UNITS IF STRUT TYPE BLOCKING IS USED OR 18 TWIN-PACK UNITS IF SOLID FILL TYPE BLOCKING IS USED. CENTER GATE "O" WILL BE USED IN LIEU OF THE DEPICTED CENTER GATE "J". SEE THE DETAIL ON PAGE 19. NOTE THAT IF SOLID FILL TYPE BLOCKING IS TO BE USED THE VERTICAL PIECES OF THE CENTER GATES MUST BE INCREASED, ONE GATE TO 54" AND THE VERTICAL PIECES OF THE OTHER GATE TO 60". SEE KEY NUMBER ⑤ ON PAGE 8 FOR INSTALLATION GUIDANCE. TO REDUCE A 3-WIDE LOAD BY ONE TWIN-PACK UNIT, SEE THE PROCEDURES ON PAGES 16 THRU 18. REFER TO PAGES 20 THRU 23 FOR TYPICAL LCL PROCEDURES FOR SMALL QUANTITIES.
5. EACH OUTWARD STRUT IN THE LOWER LEVEL, WHEN INSTALLED, WILL REST PARTLY ON THE 2" BY FULL 3" WIDE STRUT LEDGERS OF THE CENTER GATES, PIECES MARKED ④, AND PARTLY ON TOP OF THE SIDE BLOCKING, PIECE MARKED ③. CAUTION: DO NOT NAIL THE STRUTS TO THE SIDE BLOCKING; THESE STRUTS ARE TO BE SECURED ONLY BY TOENAILING EACH END TO THE CENTER GATES AS SPECIFIED WITHIN KEY NUMBER ⑤.
6. CNU-309/E CONTAINERS MAY BE SHIPPED WITHIN A LOAD OF CNU-332/E CONTAINERS, IF DESIRED. CNU-309/E CONTAINERS MUST BE SUBSTITUTED IN MULTIPLES OF THREE TWIN-PACK UNITS. ALL CONTAINERS WITHIN A LOAD UNIT MUST BE OF THE SAME MODEL. THE PREFERRED LOCATION WOULD BE AT THE ENDS OF THE LOAD. PIECES MARKED 1 AND 2 AT THE ENDS OF THE CAR WILL THEN NOT BE REQUIRED.

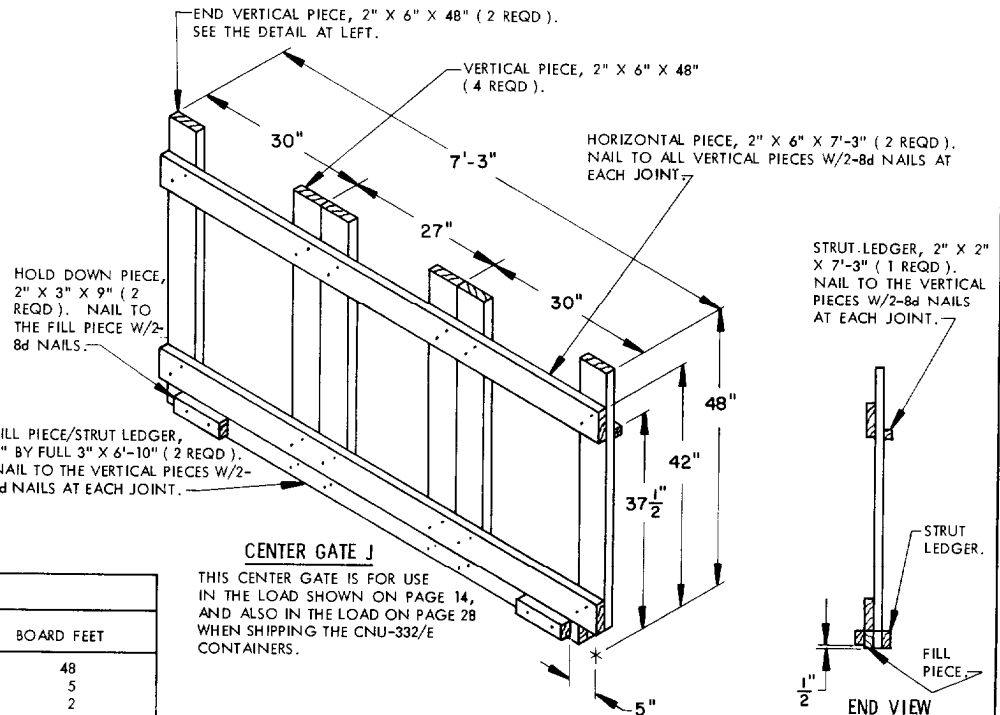
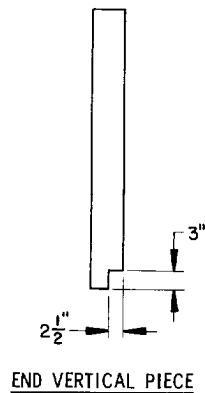


(SPECIAL NOTES CONTINUED)

A SEPARATOR GATE "B" BETWEEN ADJACENT LOAD UNITS OF CNU-309/E AND CNU-332/E CONTAINERS MUST BE MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES. NOTE THAT LOAD UNITS NUMBERED "4" IN EACH END OF THE CAR MUST CONSIST OF THE SAME MODEL OF CONTAINERS.

7. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF A FULL LOAD SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ON PAGE 14. SEE THE "FILLER ASSEMBLY B" DETAIL ON PAGE 24 FOR CONSTRUCTION GUIDANCE.

(CONTINUED AT RIGHT)



BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	142	48
2" X 2"	15	5
2" X 3"	3	2
* 2" X 3" (FULL)	28	19
2" X 4"	167	112
2" X 6"	237	237
4" X 4"	59	79
NAILS		POUNDS
6d (2")	236	1-1/2
8d (2-1/2")	128	1-1/2
10d (3")	72	1-1/4
16d (3-1/2")	288	6-1/2

* RIP FROM 2" X 4" MATERIAL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNITS	24	56,400 LBS
DUNNAGE		1,025 LBS
TOTAL WEIGHT		57,425 LBS

CNU-332/E CONTAINERS
24 TWIN-PACK UNIT LOAD IN A 40'-6" LONG BY 9'-2" WIDE BOX CAR (CONVENTIONAL)

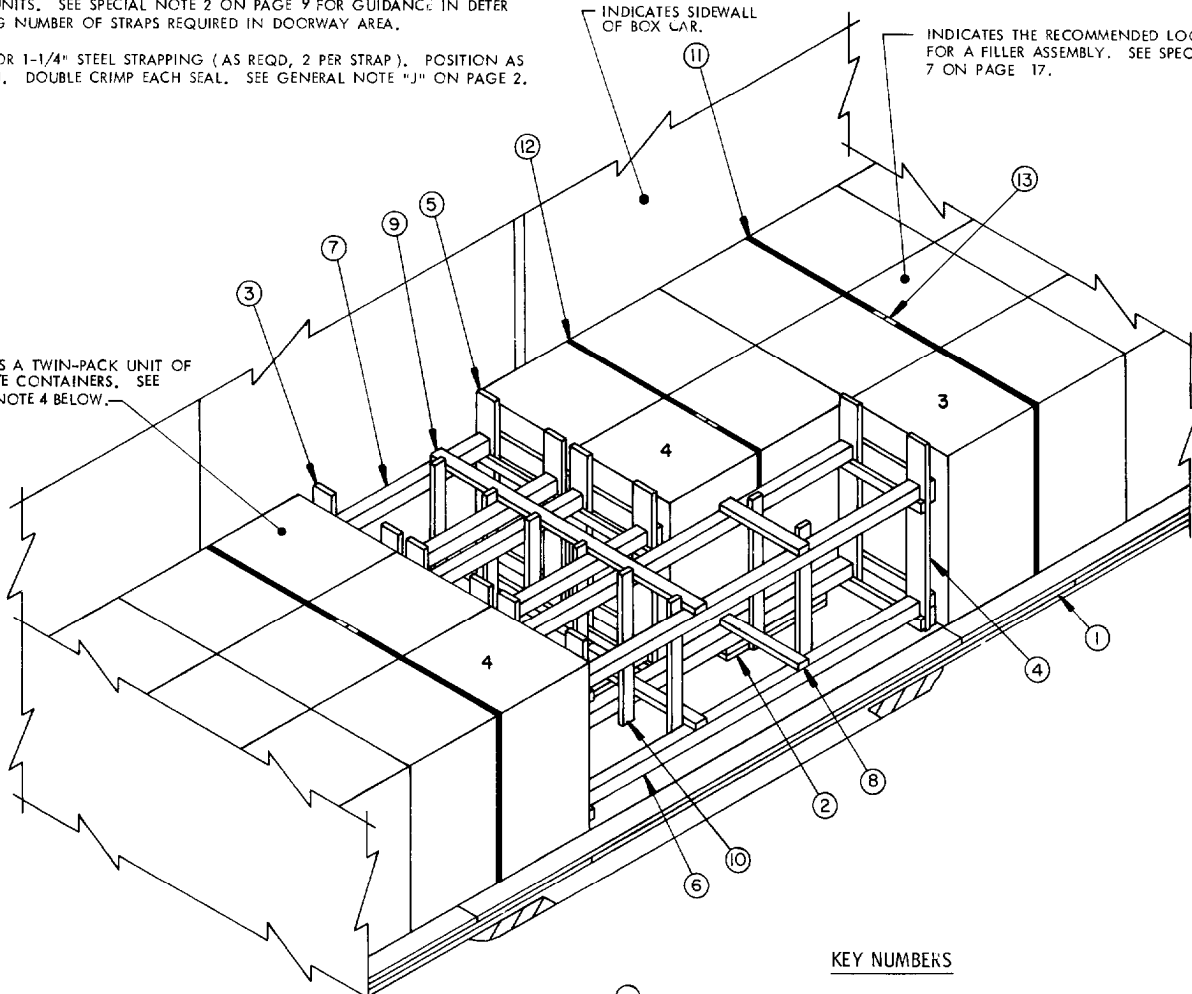
(KEY NUMBERS CONTINUED)

- ⑫ UNITIZING STRAP, 1-1/4" X .035" X 18'-0" LONG STEEL STRAPPING (1 REQD). INSTALL AS SHOWN TO ENCIRCLE THE TWO-WIDE STACK OF TWIN-PACK UNITS. SEE SPECIAL NOTE 2 ON PAGE 9 FOR GUIDANCE IN DETERMINING NUMBER OF STRAPS REQUIRED IN DOORWAY AREA.
- ⑬ SEAL FOR 1-1/4" STEEL STRAPPING (AS REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.

INDICATES SIDEWALL OF BOX CAR.

INDICATES THE RECOMMENDED LOCATION FOR A FILLER ASSEMBLY. SEE SPECIAL NOTE 7 ON PAGE 17.

INDICATES A TWIN-PACK UNIT OF CNU-309/E CONTAINERS. SEE SPECIAL NOTE 4 BELOW.



ISOMETRIC VIEW

KEY NUMBERS

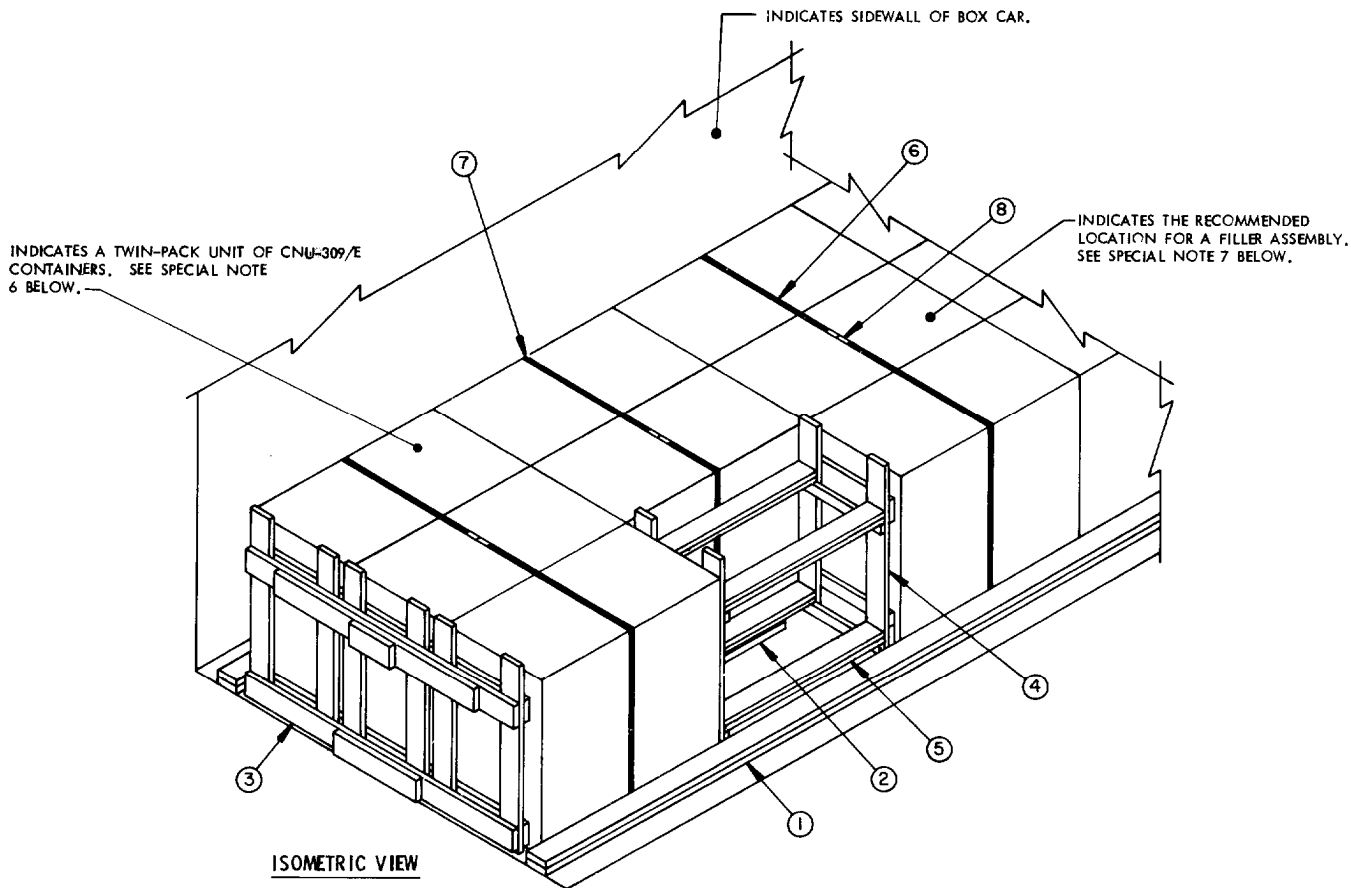
- ① SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQD). POSITION AGAINST THE OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 6". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING MAY BE PRE POSITIONED. SIDE BLOCKING WILL RUN FROM ONE END WALL OF THE BOX CAR TO THE OTHER. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 36" (DOUBLED) (1 REQD). POSITION AGAINST THE TWIN-PACK UNIT AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/8-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ③ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY K" DETAIL ON PAGE 18. SEE SPECIAL NOTE 4 AT LEFT.
- ④ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY L" DETAIL ON PAGE 18. SEE SPECIAL NOTE 4 AT LEFT.
- ⑤ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY M" DETAIL ON PAGE 18. SEE SPECIAL NOTE 4 AT LEFT.
- ⑥ STRUT, 4" X 4" BY CUT-TO-FIT (4 REQD). TOENAIL TO PIECES MARKED ③ AND ④ W/2-16d NAILS AT EACH END. SEE GENERAL NOTE "F" ON PAGE 2 AND SPECIAL NOTE 5 ON PAGE 9.
- ⑦ STRUT, 4" X 4" BY CUT-TO-FIT (8 REQD). TOENAIL TO PIECES MARKED ③ AND ⑤ W/2-16d NAILS AT EACH END. SEE GENERAL NOTE "F" ON PAGE 2 AND SPECIAL NOTE 5 ON PAGE 9.
- ⑧ LATERAL STRUT BRACING, 2" X 4" X 23-1/2" (2 REQD). NAIL TO STRUTS, PIECES MARKED ⑥, W/3-10d NAILS AT EACH END.
- ⑨ LATERAL STRUT BRACING, 2" X 4" X 6'-6" (2 REQD). NAIL TO STRUTS, PIECES MARKED ⑥ AND ⑦, W/3-10d NAILS AT EACH JOINT.
- ⑩ VERTICAL STRUT BRACING, 2" X 4" X 42" (8 REQD). NAIL TO STRUTS, PIECES MARKED ⑥ AND ⑦, W/3-10d NAILS AT EACH JOINT.
- ⑪ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (AS REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS. SEE SPECIAL NOTE 2 ON PAGE 9 FOR GUIDANCE IN DETERMINING NUMBER OF STRAPS REQUIRED IN DOORWAY AREA.

(CONTINUED AT LEFT ABOVE)

SPECIAL NOTES:

- 1. THESE PROCEDURES SPECIFY REQUIREMENTS FOR OMITTING A CNU-309/E TWIN-PACK FROM THE LOAD DEPICTED ON PAGES 10 AND 11. THEY MAY ALSO BE USED TO OMIT ONE OR TWO TWIN-PACK UNITS FROM FOUR-WIDE LOADS WHICH USE STRUTTED GATES. THERE MUST BE AT LEAST TWO TWIN-PACK UNITS LEFT IN A STACK WITH AN OMITTED TWIN-PACK UNIT OR UNITS. FOR A LOAD CONSISTING OF FOUR-WIDE STACKS, "CENTER GATE ASSEMBLY D" AS SHOWN ON PAGE 7 WILL BE USED IN LIEU OF "CENTER GATE ASSEMBLY K" AS SHOWN ABOVE. A COMBINATION OF "CENTER GATE ASSEMBLY K, L AND M" WILL BE USED OPPOSITE "CENTER GATE ASSEMBLY D". THE COMBINATION WILL DEPEND ON WHETHER ONE OR TWO TWIN-PACK UNITS ARE OMITTED.
- 2. IF DESIRED, IN LIEU OF PROCEDURES ON THIS PAGE, THE PROCEDURES SHOWN ON PAGE 17 MAY BE USED FOR OMITTING TWIN-PACK UNITS.
- 3. IF TWO TWIN-PACK UNITS ARE TO BE OMITTED FROM A THREE-WIDE LOAD OR IF THREE TWIN-PACK UNITS ARE TO BE OMITTED FROM A FOUR-WIDE LOAD, THE PROCEDURES SHOWN ABOVE MAY NOT BE USED. ONE ADDITIONAL UNIT MUST BE OMITTED IN EACH CASE TO CAUSE AN ENTIRE THREE-WIDE OR FOUR-WIDE STACK TO BE LEFT OUT AND THE PROCEDURES SHOWN ON PAGES 10 AND 11 WILL BE USED. THESE PROCEDURES WILL BE MODIFIED FOR FOUR-WIDE STACKS BY USING "CENTER GATE ASSEMBLY C" IN LIEU OF "CENTER GATE ASSEMBLY G", ADDING FOUR STRUTS, ADDING STRUT BRACING, OMITTING UNITIZING STRAPS AND SEALS ON TWIN-PACK UNITS NOT IN DOORWAY OPENING, AND USING SIDE BLOCKING AND DOORWAY PROTECTION AS SHOWN ON PAGE 4.
- 4. THE PROCEDURES ON THIS PAGE DEPICT A METHOD OF OMITTING ONE TWIN-PACK UNIT FROM A LOAD OF CNU-309/E CONTAINERS. THE METHOD MAY BE ADAPTED FOR THE OMISSION OF ONE TWIN-PACK UNIT FROM A 3-WIDE LOAD OF CNU-332/E CONTAINERS BY SUBSTITUTING CENTER GATE "J" AS DETAILED ON PAGE 15, AND CENTER GATES "O" AND "N", AS DETAILED ON PAGE 19, FOR THE DEPICTED CENTER GATES "K", "L" AND "M", RESPECTIVELY. IF A TWIN-PACK UNIT IS TO BE OMITTED FROM A 4-WIDE LOAD OF CNU-332/E CONTAINERS, CENTER GATE "H", AS DETAILED ON PAGE 13, WILL BE USED IN CONJUNCTION WITH A COMBINATION OF CENTER GATES "J", "O" AND/OR "N". NOTE THAT SEPARATOR GATE "A" MUST BE POSITIONED BETWEEN 4-WIDE LOAD UNITS OF CNU-332/E CONTAINERS, AND SEPARATOR GATE "B" MUST BE POSITIONED BETWEEN 3-WIDE LOAD UNITS. SEE THE DETAILS ON PAGES 13 AND 15, RESPECTIVELY.

CNU-309/E AND/OR CNU-332/E CONTAINERS
PROCEDURES FOR AN OMITTED TWIN-PACK UNIT

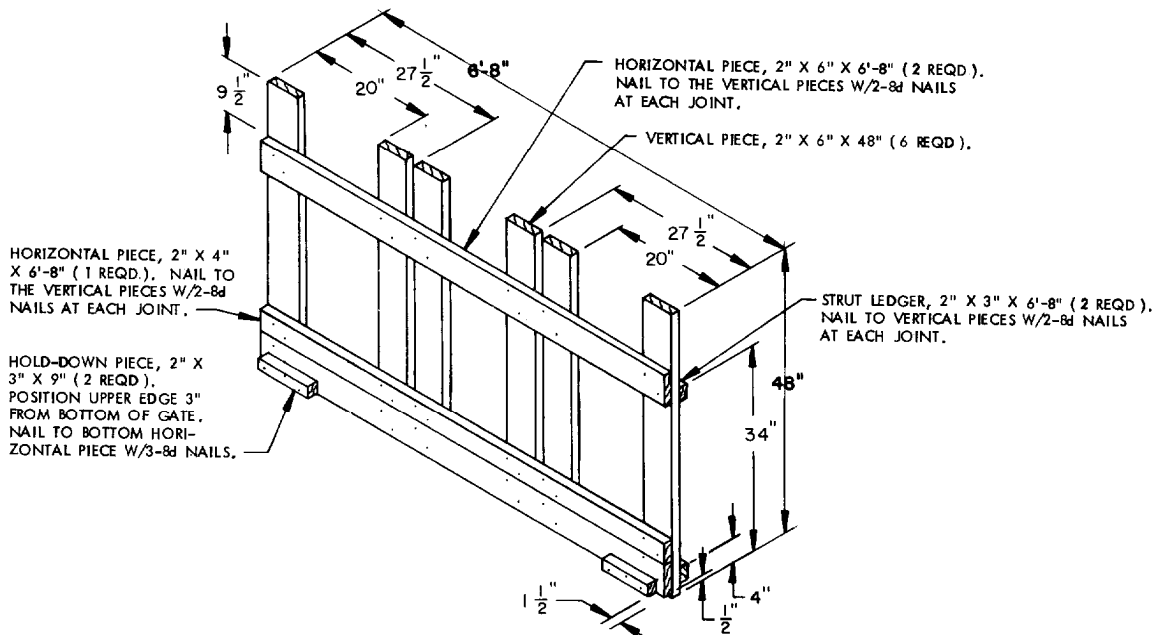


SPECIAL NOTES:

1. A PARTIAL VIEW OF A LOAD IN A 40'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR HAVING ONE TWIN-PACK UNIT OMITTED IS SHOWN. BOX CARS OF OTHER DIMENSIONS CAN BE USED.
2. THIS METHOD OF BRACING (OMITTING A TWIN-PACK UNIT FOR THE ADJUSTMENT OF A LOAD QUANTITY) IS APPLICABLE FOR USE IN BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS AS WELL AS CONVENTIONAL BOX CARS.
3. THE OMITTED TWIN-PACK UNIT PROCEDURE SHOULD BE APPLIED NEAR THE CENTER OF THE BOX CAR LENGTH, BUT NOT IN THE DOORWAY AREA OF THE BOX CAR. ALSO, THERE SHOULD BE AT LEAST ONE TWIN-PACK UNIT BETWEEN THE OMITTED TWIN-PACK UNIT AND A LOAD DIVIDER BULKHEAD, A BOX CAR END WALL, A CENTER GATE OR AN END-OF-CAR BULKHEAD. OMITTED TWIN-PACK UNITS WILL NOT OCCUR ADJACENT TO EACH OTHER ACROSS THE BOX CAR OR ALONG THE LENGTH OF THE BOX CAR.
4. ONLY THE BLOCKING AND BRACING FOR THE OMITTED TWIN-PACK UNIT IS SHOWN. REFER TO THE APPLICABLE LOAD PAGE FOR THE BLOCKING AND BRACING REQUIREMENTS FOR THE BALANCE OF THE LOAD.
5. FOUR (4) LOAD BLOCKING DOUBLED 2" X 6" STRUTS ARE ADEQUATE FOR RETAINING A WEIGHT OF 16,500 POUNDS. (7 TWIN-PACK UNITS).
6. THE PROCEDURES ON THIS PAGE DEPICT A METHOD OF OMITTING ONE TWIN-PACK UNIT FROM A LOAD OF CNU-309/E CONTAINERS. THE METHOD MAY BE ADAPTED FOR THE OMISSION OF ONE TWIN-PACK UNIT FROM A LOAD OF CNU-332/E CONTAINERS BY SUBSTITUTING CENTER GATES "N", AS DETAILED ON PAGE 19, FOR THE DEPICTED CENTER GATES "L", AND POSITIONING A SEPARATOR GATE "B", AS DETAILED ON PAGE 15, BETWEEN ADJACENT LOAD UNITS.
7. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF AN LCL SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ABOVE AND/OR ON PAGE 16. FOR CONSTRUCTION GUIDANCE, SEE THE "FILLER ASSEMBLY A" DETAIL AND/OR THE "FILLER ASSEMBLY B" DETAIL ON PAGE 24 FOR THE CNU-309/E AND/OR CNU-332/E CONTAINERS, RESPECTIVELY.

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQD). POSITION AGAINST THE OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 6". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING WILL RUN FROM ONE END WALL OF THE BOX CAR TO THE OTHER. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 36" (DOUBLED) (1 REQD). POSITION AGAINST THE TWIN-PACK UNIT AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/8-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ③ END-OF-CAR BULKHEAD (2 REQD). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND GENERAL NOTE "N" ON PAGE 2.
- ④ LOAD BEARING GATE (2 REQD). SEE THE "CENTER GATE ASSEMBLY L" DETAIL ON PAGE 18. SEE SPECIAL NOTE 6 AT LEFT.
- ⑤ STRUT, 2" X 6" BY CUT-TO-FIT (DOUBLED) (4 REQD). LAMINATE W/1-10d NAIL EVERY 6". CENTER ON A VERTICAL PIECE OF THE LOAD BEARING GATE AND TOENAIL W/2-16d NAILS AT EACH END. SEE SPECIAL NOTE 5 AT LEFT.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (AS REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS.
- ⑦ UNITIZING STRAP, 1-1/4" X .035" X 18'-0" LONG STEEL STRAPPING (1 REQD). INSTALL AS SHOWN TO ENCIRCLE EACH TWO-WIDE STACK OF TWIN-PACK UNITS.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (AS REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.

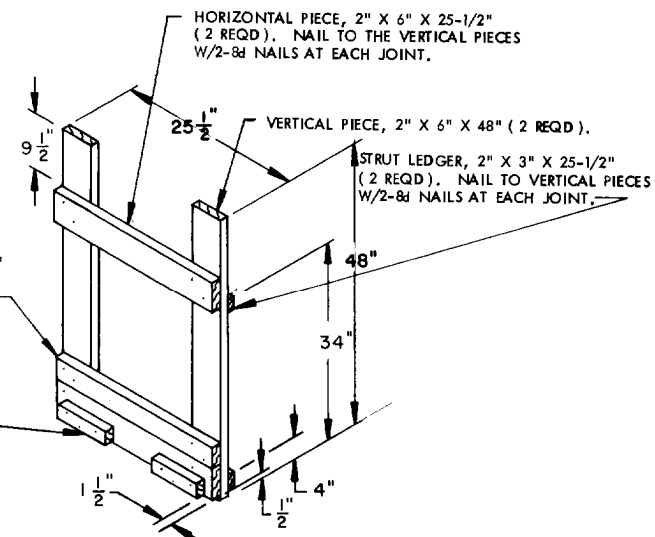


CENTER GATE ASSEMBLY K

THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 16 WHEN SHIPPING THE CNU-309/E CONTAINERS. THE CENTER GATE "J", AS DETAILED ON PAGE 15, WILL BE USED WHEN SHIPPING CNU-332/E CONTAINERS.

HORIZONTAL PIECE, 2" X 4" X 25-1/2" (1 REQD.). NAIL TO THE VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

HOLD-DOWN PIECE, 2" X 3" X 9" (2 REQD.). POSITION UPPER EDGE 3" FROM BOTTOM OF GATE. NAIL TO BOTTOM HORIZONTAL PIECE W/3-8d NAILS.



CENTER GATE ASSEMBLY L

THIS CENTER GATE IS FOR USE IN THE LOADS SHOWN ON PAGES 16 AND 17 WHEN SHIPPING THE CNU-309/E CONTAINERS. THE CENTER GATE "N" AS DETAILED ON PAGE 19 WILL BE USED WHEN SHIPPING CNU-332/E CONTAINERS.

HORIZONTAL PIECE, 2" X 6" X 52-1/2" (2 REQD.). NAIL TO THE VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 48" (4 REQD.).

HORIZONTAL PIECE, 2" X 4" X 52-1/2" (1 REQD.). NAIL TO THE VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

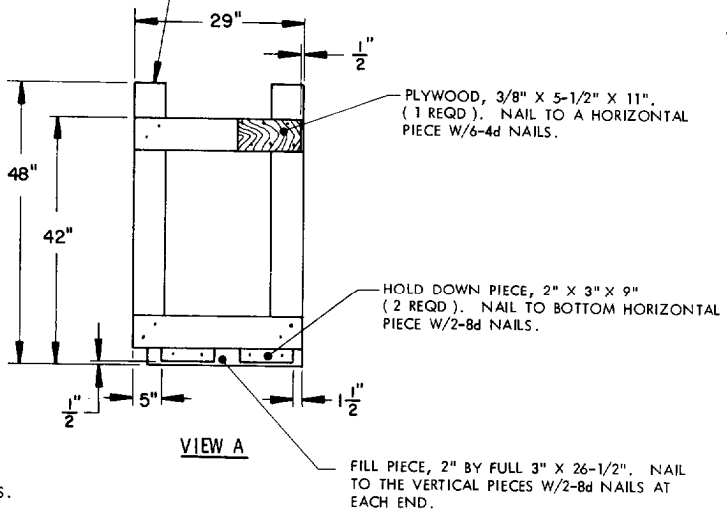
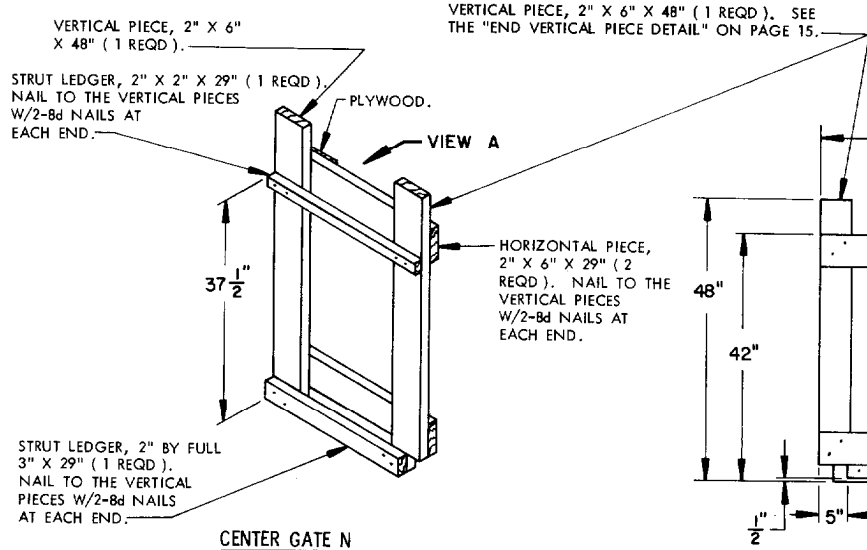
HOLD-DOWN PIECE, 2" X 3" X 9" (2 REQD.). POSITION UPPER EDGE 3" FROM BOTTOM OF GATE. NAIL TO BOTTOM HORIZONTAL PIECE W/3-8d NAILS.

STRUT LEDGER, 2" X 3" X 52-1/2" (2 REQD.). NAIL TO VERTICAL PIECES W/2-8d NAILS AT EACH JOINT.

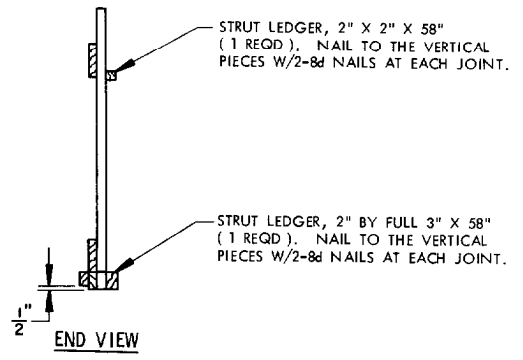
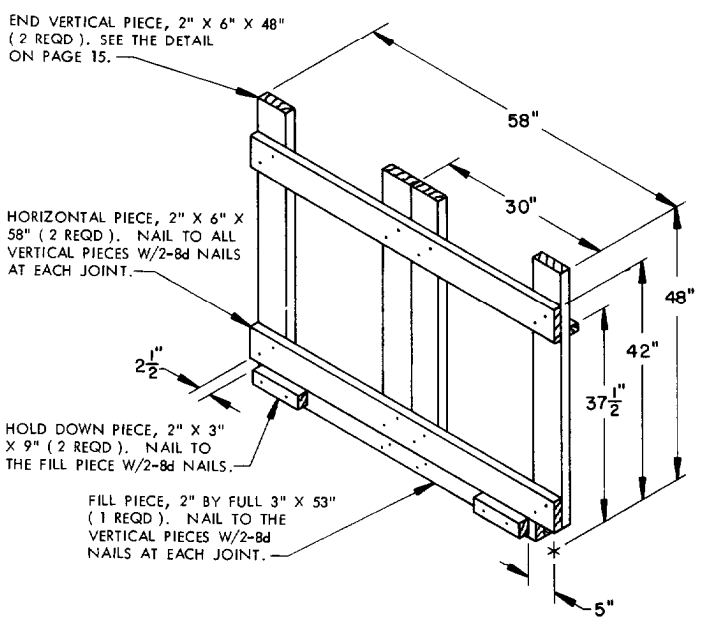
CENTER GATE ASSEMBLY M

THIS CENTER GATE IS FOR USE ON PAGES 8, 10, OR 16 AS AN ALTERNATIVE WHEN SHIPPING THE CNU-309/E CONTAINERS. THE CENTER GATE "O" AS DETAILED ON PAGE 19, WILL BE USED WHEN SHIPPING CNU-332/E CONTAINERS.

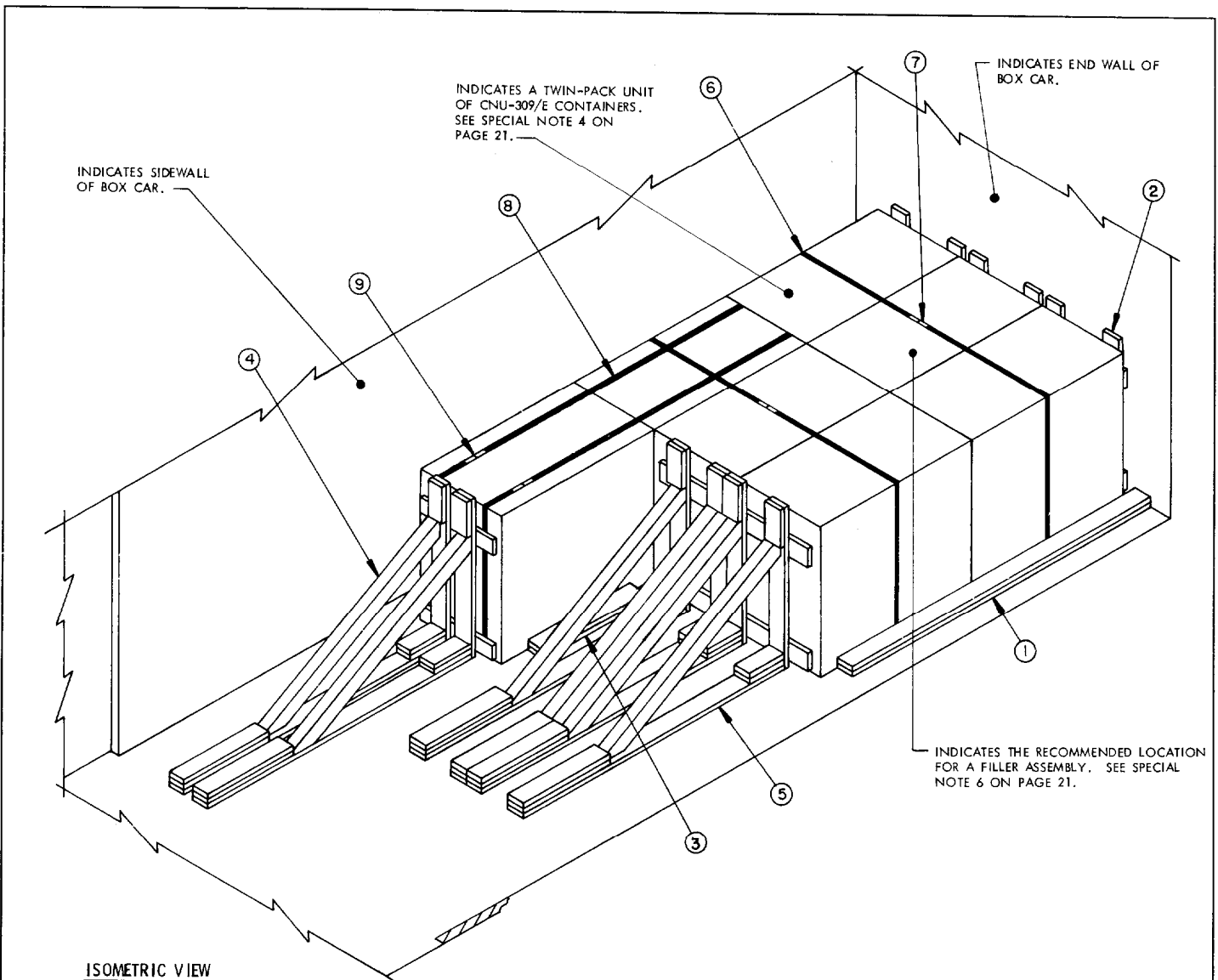
DETAILS



THIS CENTER GATE IS FOR USE IN THE LOADS SHOWN ON PAGES 16 AND 17 WHEN SHIPPING THE CNU-332/E CONTAINERS. THE CENTER GATE "L", AS DETAILED ON PAGE 18, WILL BE USED WHEN SHIPPING CNU-309/E CONTAINERS.



THIS CENTER GATE IS FOR USE IN THE LOAD SHOWN ON PAGE 16 WHEN SHIPPING THE CNU-332/E CONTAINERS. THE CENTER GATE "M", AS DETAILED ON PAGE 18, WILL BE USED WHEN SHIPPING CNU-309/E CONTAINERS.



ISOMETRIC VIEW

KEY NUMBERS

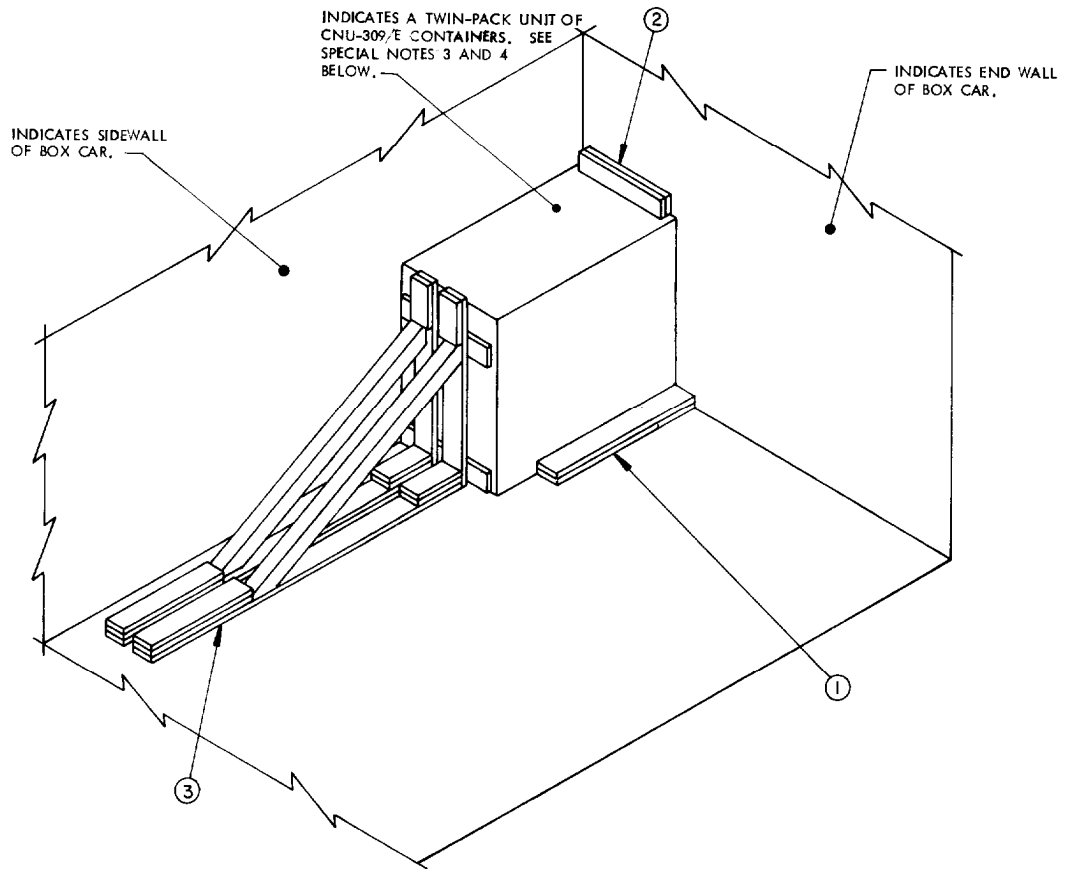
- ① SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQD TO RUN FROM THE END WALL OF THE BOX CAR TO WITHIN 6" OF THE FAR CORNER OF THE MOST DISTANT TWIN-PACK UNIT). POSITION AGAINST THE OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 16". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING MAY BE PRE-POSITIONED. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② END-OF-CAR BULKHEAD (1 REQD). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND GENERAL NOTE "N" ON PAGE 2.
- ③ SIDE BLOCKING, 2" X 6" X 36" (DOUBLED) (1 REQD). POSITION AGAINST THE TWIN-PACK UNIT AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/8-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ④ KNEE BRACE ASSEMBLY (1 REQD). SEE THE "KNEE BRACE ASSEMBLY A" DETAIL ON PAGE 23 FOR CONSTRUCTION SPECIFICATION AND NAILING REQUIREMENTS. SEE SPECIAL NOTE 2 ON THIS PAGE.
- ⑤ KNEE BRACE ASSEMBLY (1 REQD). SEE THE "KNEE BRACE ASSEMBLY B" DETAIL ON PAGE 22 FOR CONSTRUCTION SPECIFICATION AND NAILING REQUIREMENTS. SEE SPECIAL NOTES 2 AND 4 ON THIS PAGE.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (2 REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS.
- ⑦ SEAL FOR 1-1/4" STEEL STRAPPING (4 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.
- ⑧ HOLD-DOWN STRAP, 1-1/4" X .035" X 27'-0" LONG (REF) STEEL STRAPPING (2 REQD). ENCIRCLE TWO LONGITUDINALLY ADJACENT TWIN-PACK UNITS AS SHOWN ABOVE. SEE SPECIAL NOTE 3 ON THIS PAGE.
- ⑨ SEAL FOR HOLD-DOWN 1-1/4" STEEL STRAPPING (4 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.

SPECIAL NOTES:

1. A TYPICAL LCL LOAD OF SEVEN (7) TWIN-PACK UNITS IS SHOWN IN A 9'-2" WIDE CONVENTIONAL TYPE BOX CAR HAVING NAILABLE SIDEWALLS AND A WOOD OR NAILABLE METAL FLOOR. BOX CARS OF OTHER WIDTHS CAN BE USED. THE PROCEDURES ARE ALSO APPLICABLE FOR OTHER QUANTITIES OF TWIN-PACK UNITS, BUT NOT MORE THAN THREE STACKS OF TWIN-PACK UNITS, REGARDLESS OF STACK WIDTH, WILL BE LOADED IN ONE END OF A BOX CAR USING THESE PROCEDURES.
2. A "KNEE BRACE ASSEMBLY A" MUST BE USED FOR EACH SINGLE ROW OF TWIN-PACK UNITS. ONE "KNEE BRACE ASSEMBLY A" IS ADEQUATE FOR RETAINING NOT MORE THAN THREE TWIN-PACK UNITS. A "KNEE BRACE ASSEMBLY B" OR TWO "KNEE BRACE ASSEMBLY A" WILL BE REQUIRED FOR GROUPS OF TWIN-PACK UNITS WHICH ARE TWO ROWS WIDE WITH EACH ROW HAVING THE SAME QUANTITY OF TWIN-PACK UNITS. ONE "KNEE BRACE ASSEMBLY B" IS ADEQUATE FOR RETAINING NOT MORE THAN SIX TWIN-PACK UNITS (THREE TWO-WIDE STACKS). ANY COMBINATION OF "KNEE BRACE ASSEMBLY A" AND/OR "KNEE BRACE ASSEMBLY B" MAY BE USED FOR GROUPS OF TWIN-PACK UNITS WHICH ARE THREE OR FOUR ROWS WIDE WITH EACH ROW HAVING THE SAME QUANTITY OF TWIN-PACK UNITS.
3. IN BOX CARS IN WHICH TWIN-PACK UNITS ARE LOADED FOUR-WIDE, LATERAL RESTRAINT WILL BE PROVIDED BY SIDE BLOCKING, PIECE MARKED ① ON PAGE 4, FOR THE FOUR-WIDE STACKS. IN BOX CARS IN WHICH THE UNITS ARE LOADED THREE-WIDE, LATERAL RESTRAINT WILL BE PROVIDED BY SIDE BLOCKING, UNITIZING STRAPS, AND SEALS, PIECES MARKED ①, ③, AND ⑦ AT RIGHT, FOR THE THREE-WIDE STACKS. IN BOTH CASES IF MORE THAN ONE TWIN-PACK UNIT IS LEFT OVER, THEY WILL BE UNITIZED TOGETHER AND SIDE BLOCKED USING PIECES MARKED ①, ③, ⑥ AND ⑦ AT RIGHT. IF ONLY ONE TWIN-PACK UNIT IS LEFT OVER, IT WILL BE SIDE BLOCKED AND STRAPPED AS SHOWN IN THE "ISOMETRIC VIEW" ABOVE.

(CONTINUED ON PAGE 21)

CNU-309/E AND /OR CNU-332/E CONTAINERS
TYPICAL LCL (7 TWIN-PACK UNIT LOAD)



ISOMETRIC VIEW

SPECIAL NOTES:

1. THESE LCL OUTLOADING PROCEDURES ARE SHOWN DEPICTING THE USE OF A KNEE-BRACE ASSEMBLY IN A BOX CAR EQUIPPED WITH WOOD OR NAILABLE METAL FLOORS AND NAILABLE SIDEWALLS AND END WALLS.
2. ONE KNEE BRACE ASSEMBLY IS ADEQUATE FOR RETAINING NOT MORE THAN THREE TWIN-PACK UNITS.
3. THE CNU-309/E CONTAINER IS SHOWN. IF THE CNU-332/E CONTAINERS ARE BEING LOADED, 2" X 6" X 30" BATTENS MUST BE NAILED TO THE CAR END WALL, ONE AT FLOOR LEVEL AND ONE POSITIONED SO THE TOP IS 42" ABOVE THE FLOOR TO PROVIDE CLEARANCE FOR THE CONTAINER LIFTING DEVICES. ALSO, AN ADDITIONAL LAMINATION MUST BE NAILED TO PIECES MARKED ②.
4. IF SHIPPING A SINGLE CONTAINER FROM A TWIN-PACK UNIT, PIECE MARKED ② NEED ONLY BE 12" LONG AND ONE "KNEE" OF PIECE MARKED ③ MAY BE OMITTED.

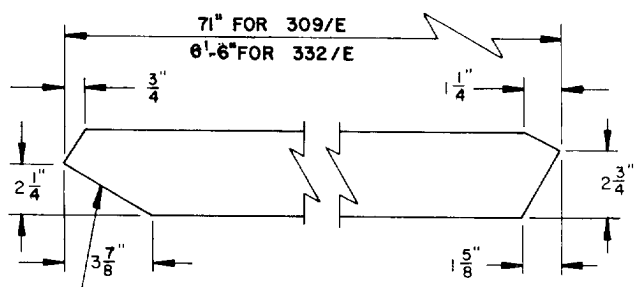
(SPECIAL NOTES CONTINUED FROM PAGE 20)

4. THE CNU-309/E CONTAINERS ARE SHOWN. IF THE CNU-332/E CONTAINERS ARE BEING LOADED, A 3-WIDE SEPARATOR GATE WITH THE 1" X 4" FILL PIECES ADDED, SHOWN AS PIECES MARKED ① AND ② ON PAGE 14, MUST BE POSITIONED BETWEEN THE CAR END WALL AND THE FIRST LOAD UNIT IF THE END-OF-CAR BULKHEAD, PIECE MARKED ②, IS NOT USED. A 3-WIDE SEPARATOR GATE WILL BE POSITIONED BETWEEN THE FIRST TWO LOAD UNITS, AND THE HORIZONTAL PIECES, PIECES MARKED ③ OF THE KNEE BRACE ASSEMBLY, PIECE MARKED ⑤, WILL BE EXTENDED TO THE SIDE BLOCKING, PIECE MARKED ①, AND/OR TO EXTEND SLIGHTLY BEYOND THE EDGE OF THE TWIN-PACK UNIT, AS APPLICABLE. EXTENDING OF THE HORIZONTAL PIECES WILL NEGATE THE NEED FOR A SEPARATOR GATE AT THAT LOCATION.
5. CNU-309/E CONTAINERS AND CNU-332/E CONTAINERS MAY BE SHIPPED IN THE SAME LOAD, IF DESIRED. EACH OF THE THREE LATERALLY ADJACENT CONTAINERS MUST BE OF THE SAME MODEL. A SEPARATOR GATE, MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES, MUST BE POSITIONED BETWEEN LONGITUDINALLY ADJACENT UNLIKE MODELS. SEE THE "SEPARATOR GATE A" DETAIL ON PAGE 13 FOR THE ASSEMBLY TO BE USED IN A 4-WIDE LOAD, OR THE "SEPARATOR GATE B" DETAIL ON PAGE 15 FOR THE ASSEMBLY TO BE USED IN 3-WIDE LOADS.
6. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF AN LCL SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN THE PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ON PAGE 20. FOR CONSTRUCTION GUIDANCE, SEE THE "FILLER ASSEMBLY A" DETAIL AND/OR THE "FILLER ASSEMBLY B" DETAIL ON PAGE 24 FOR THE CNU-309/E AND/OR CNU-332/E CONTAINERS, RESPECTIVELY.

KEY NUMBERS

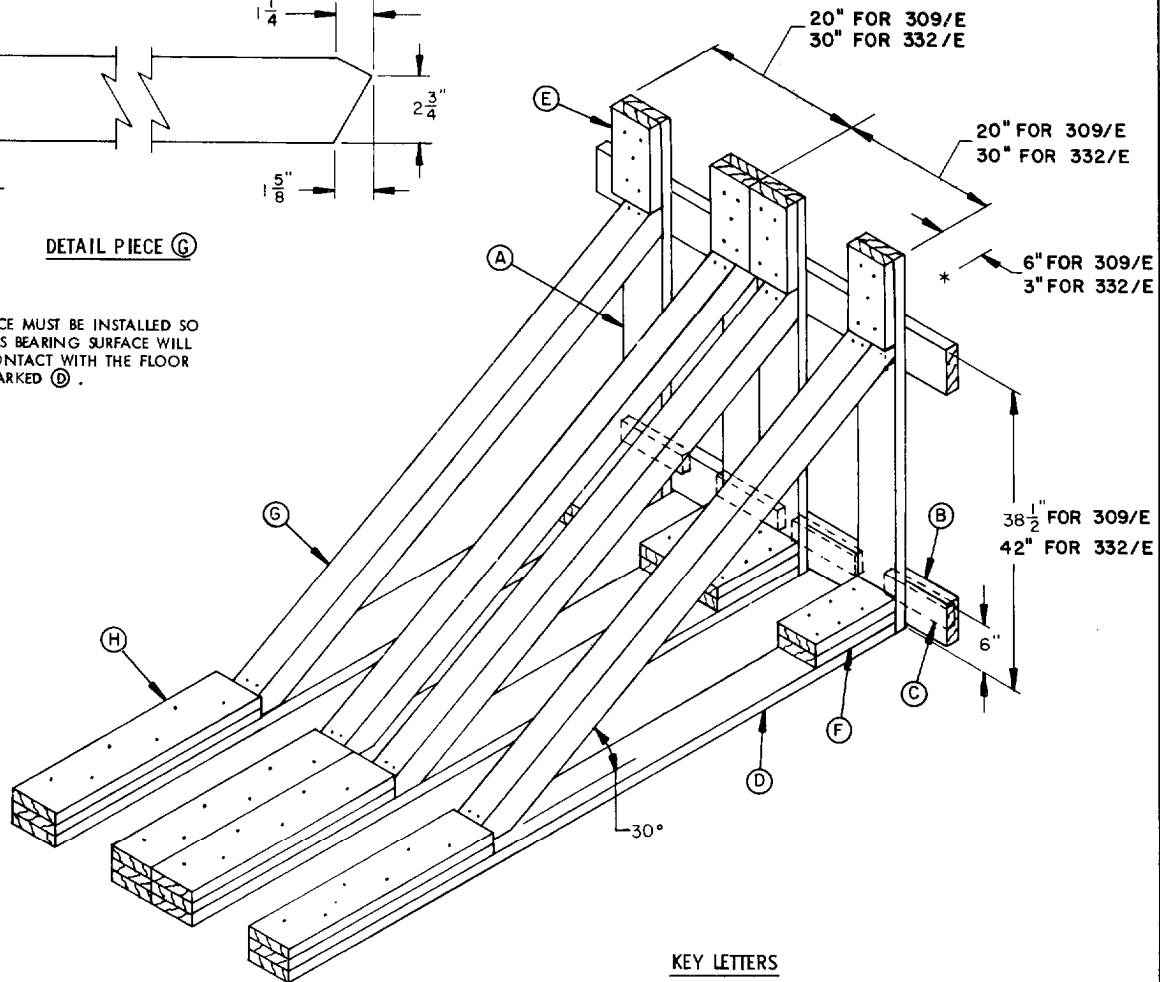
- ① SIDE BLOCKING, 2" X 6" X 42" (DOUBLED) (1 REQD). POSITION AGAINST THE TWIN-PACK UNIT AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/8-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② TOP BLOCKING, 2" X 6" X 24" (DOUBLED) (1 REQD). POSITION AGAINST THE TOP OF THE TWIN-PACK UNIT AND NAIL THE FIRST PIECE TO THE BOX CAR SIDEWALL OR END WALL W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTE "G" ON PAGE 2.
- ③ KNEE BRACE ASSEMBLY (1 REQD). SEE THE "KNEE BRACE ASSEMBLY A" DETAIL ON PAGE 23 FOR CONSTRUCTION SPECIFICATION AND NAILING REQUIREMENTS. SEE SPECIAL NOTE 2 ON THIS PAGE.

CNU-309/E AND /OR CNU-332/E CONTAINERS
TYPICAL LCL (1 TWIN-PACK UNIT LOAD)



DETAIL PIECE (G)

THIS BRACE MUST BE INSTALLED SO THAT THIS BEARING SURFACE WILL BE IN CONTACT WITH THE FLOOR CLEAT MARKED (D).



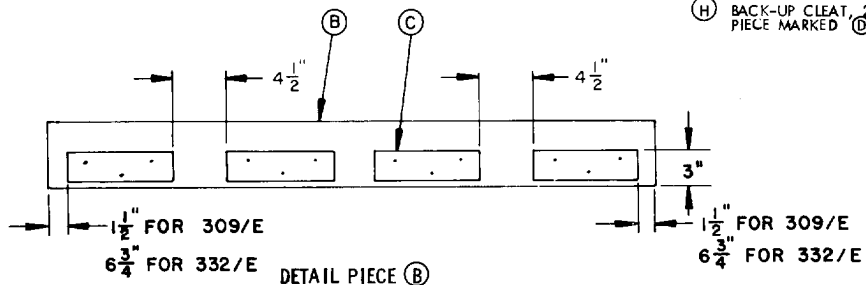
KEY LETTERS

- (A) VERTICAL PIECE, 2" X 6" X 48" (4 REQD). SEE SPECIAL NOTE 1 AT LEFT.
- (B) HORIZONTAL PIECE, 2" X 6" X 52" (2 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT. SEE THE DETAIL BELOW.
- (C) HOLD-DOWN PIECE, 2" X 3" X 9" (4 REQD). NAIL TO THE BOTTOM HORIZONTAL PIECE W/3-8d NAILS. SEE THE DETAIL BELOW.
- (D) FLOOR CLEAT, 2" X 6" X 7'-7-1/2" (4 REQD). ALIGN WITH A VERTICAL PIECE AND NAIL TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 8".
- (E) HOLD-DOWN CLEAT, 2" X 6" X 11" (4 REQD). NAIL TO A VERTICAL PIECE W/5-10d NAILS.
- (F) POCKET CLEAT, 2" X 6" X 12" (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE FLOOR CLEAT, PIECE MARKED (D), W/4-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER AND TOENAIL IT TO THE VERTICAL PIECE MARKED (A), W/2-16d NAILS.
- (G) DIAGONAL BRACE, 4" X 4" BY CUT TO FIT (REF: 71") (4 REQD). SEE THE DETAIL ABOVE FOR BEVEL CUTS REQUIRED. TOENAIL TO THE VERTICAL PIECE AND TO THE FLOOR CLEAT, PIECES MARKED (A) AND (D), W/2-16d NAILS AT EACH END.
- (H) BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (4 REQD). NAIL TO THE FLOOR CLEAT, PIECE MARKED (D), W/6-40d NAILS.

KNEE BRACE ASSEMBLY B

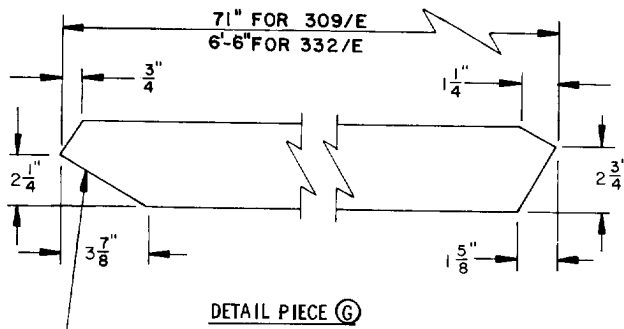
SPECIAL NOTES:

1. THE KNEE BRACE ASSEMBLY "B" AS SHOWN IS DESIGNED FOR USE WITH THE CNU-309/E TWIN-PACK UNITS. LOCATION DIMENSIONS FOR THE POSITIONING OF THE VARIOUS PIECES OF THE ASSEMBLY ARE SPECIFIED FOR BOTH THE CNU-309/E AND THE CNU-332/E CONTAINERS. THE LENGTHS OF THE PIECES OF THE ASSEMBLY SPECIFIED WITHIN THE KEY LETTERS ARE APPLICABLE FOR BOTH CONTAINER MODELS WITH THE EXCEPTION OF PIECES MARKED (A), (B), (D), AND (G). FOR AN ASSEMBLY TO BE USED FOR BRACING OF AN LCL LOAD OF 332/E CONTAINERS, PIECES MARKED (A) WILL BE 51-1/2" LONG, PIECES MARKED (B) WILL BE 63" LONG WITH A 3/8" X 5-1/2" X 11" PIECE OF PLYWOOD NAILED TO THE TOP ONE AT THE END THAT IS FLUSH WITH THE VERTICAL PIECE MARKED (A) (SEE THE "CENTER GATE H" DETAIL ON PAGE 13 FOR LOCATION GUIDANCE), PIECES MARKED (D) WILL BE 8'-2" LONG, AND PIECES MARKED (C) WILL BE 6'-6" IN LENGTH.



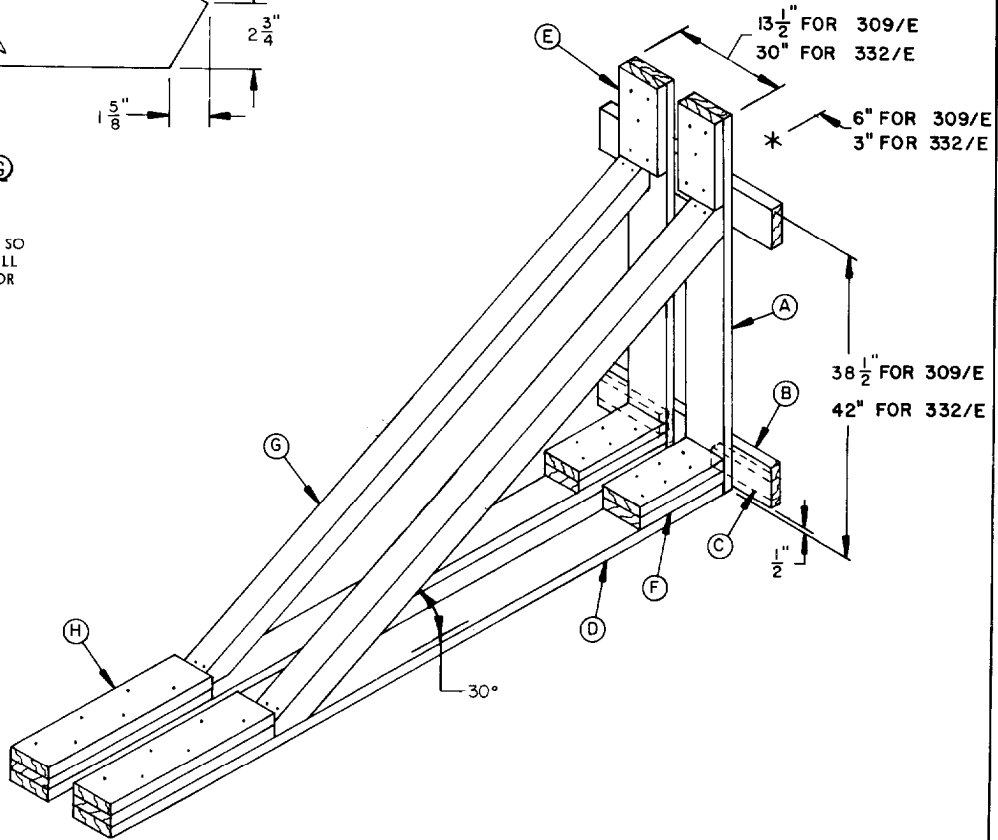
DETAIL PIECE (B)

SEE SPECIAL NOTE 1 ABOVE,



DETAIL PIECE (C)

THIS BRACE MUST BE INSTALLED SO THAT THIS BEARING SURFACE WILL BE IN CONTACT WITH THE FLOOR CLEAT MARKED (D).



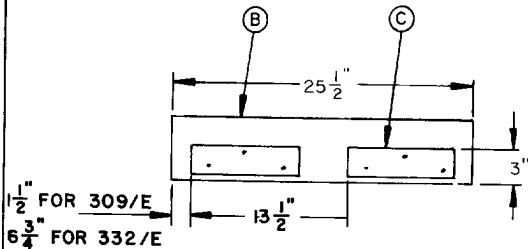
KNEE BRACE ASSEMBLY A

SPECIAL NOTE:

1. THE KNEE BRACE ASSEMBLY "A" AS SHOWN IS DESIGNED FOR USE WITH THE CNU-309/E TWIN-PACK UNITS. LOCATION DIMENSIONS FOR THE POSITIONING OF THE VARIOUS PIECES OF THE ASSEMBLY ARE SPECIFIED FOR BOTH THE CNU-309/E CONTAINER AND THE CNU-332/E CONTAINERS. THE LENGTHS OF THE PIECES OF THE ASSEMBLY SPECIFIED WITHIN THE KEY LETTERS ARE APPLICABLE FOR BOTH CONTAINER MODELS WITH THE EXCEPTION OF PIECES MARKED (A), (B), (D) AND (C). FOR AN ASSEMBLY TO BE USED FOR BRACING OF AN LCL LOAD OF 332/E CONTAINERS, PIECES MARKED (A) WILL BE 51-1/2" LONG, PIECES MARKED (B) WILL BE 36" LONG FOR THE LOAD ON PAGE 20 OR 33" LONG FOR THE LOAD ON PAGE 21, PIECES MARKED (D) WILL BE 8'-2" LONG, AND PIECES MARKED (C) WILL BE 6'-6" IN LENGTH.

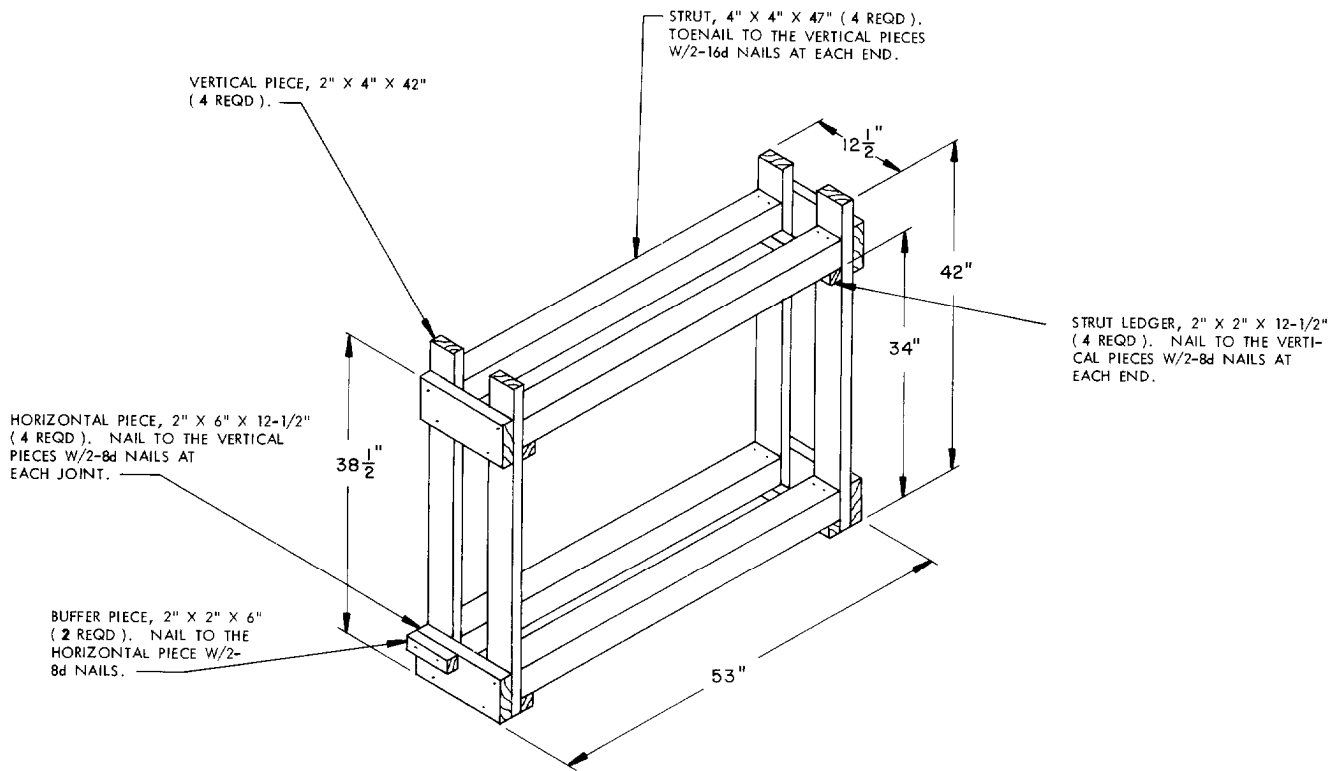
KEY LETTERS

- (A) VERTICAL PIECE, 2" X 6" X 48" (2 REQD). SEE SPECIAL NOTE 1 AT LEFT.
- (B) HORIZONTAL PIECE, 2" X 6" X 25-1/2" (2 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT. SEE THE DETAIL AT LEFT.
- (C) HOLD-DOWN PIECE, 2" X 3" X 9" (2 REQD). NAIL TO THE BOTTOM HORIZONTAL PIECE W/3-8d NAILS. SEE THE DETAIL BELOW.
- (D) FLOOR CLEAT, 2" X 6" X 7'-7-1/2" (2 REQD). ALIGN WITH A VERTICAL PIECE AND NAIL TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 8".
- (E) HOLD-DOWN CLEAT, 2" X 6" X 11" (2 REQD). NAIL TO A VERTICAL PIECE W/5-10d NAILS.
- (F) POCKET CLEAT, 2" X 6" X 12" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE FLOOR CLEAT, PIECE MARKED (D), W/4-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER AND TOENAIL IT TO THE VERTICAL PIECE MARKED (A), W/2-16d NAILS.
- (G) DIAGONAL BRACE, 4" X 4" BY CUT TO FIT (REF: 71") (2 REQD). SEE THE DETAIL ABOVE FOR BEVEL CUTS REQUIRED. TOENAIL TO THE VERTICAL PIECE AND TO THE FLOOR CLEAT, PIECES MARKED (A) AND (D), W/2-16d NAILS AT EACH END.
- (H) BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (2 REQD). NAIL TO THE FLOOR CLEAT, PIECE MARKED (D), W/6-40d NAILS.



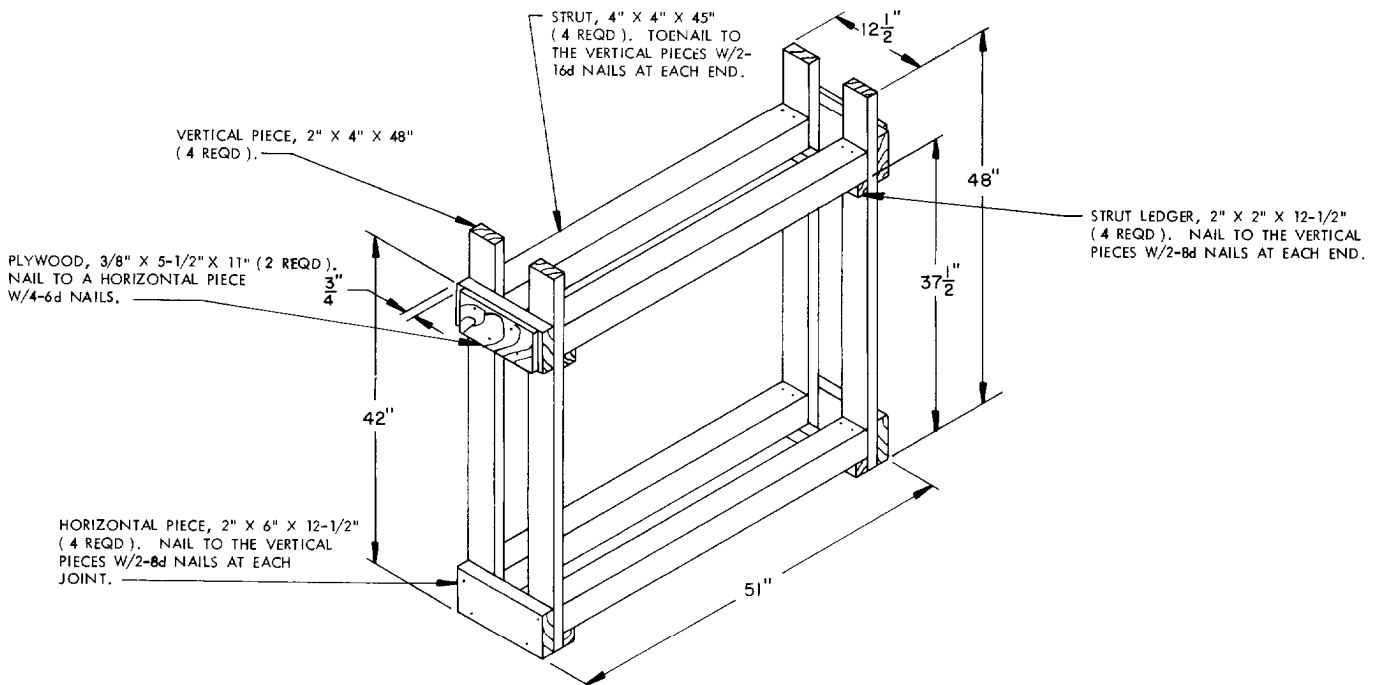
DETAIL PIECE (B)

SEE SPECIAL NOTE 1 ABOVE.



FILLER ASSEMBLY A

THIS ASSEMBLY IS FOR USE IN THE PLACE
OF A SINGLE CONTAINER OMITTED FROM A
TWIN-PACK UNIT OF CNU-309/E CONTAINERS.

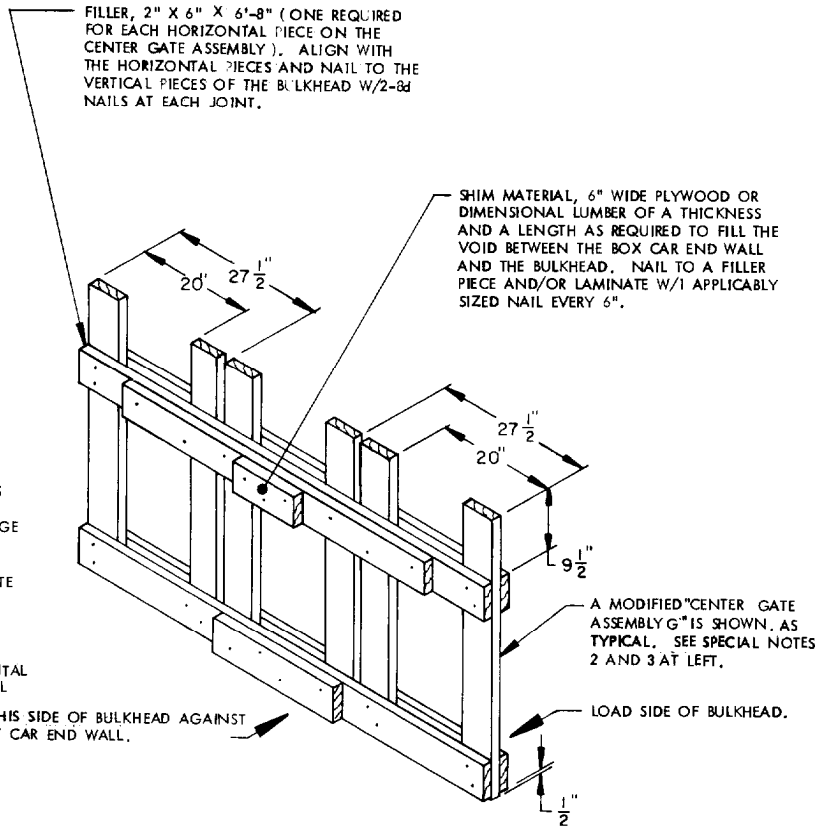


FILLER ASSEMBLY B

THIS ASSEMBLY IS FOR USE IN THE PLACE OF A SINGLE CONTAINER OMITTED FROM A TWIN-PACK UNIT OF CNU-332/E CONTAINERS.

SPECIAL NOTES:

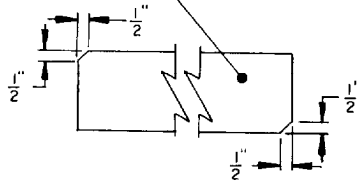
1. FOR ALL LOADS IN WHICH A BOX CAR END WALL IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM THE FLOOR TO THE ROOF OR FROM SIDE TO SIDE, AN END-OF-CAR BULKHEAD MUST BE INSTALLED TO PROVIDE A "SQUARED OFF" SURFACE FOR THE LOAD AT THE END OF THE BOX CAR. END-OF-CAR BULKHEADS MUST BE CONSTRUCTED AS SHOWN BELOW TO RECEIVE ADEQUATE SUPPORT FROM THE BOWED END WALLS. THE END-OF-CAR BULKHEAD IS APPLICABLE FOR USE AT THE END OF A LOAD IN A CONVENTIONAL BOX CAR OR IN A BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS.
2. FOR LOADS OF CNU-309/E CONTAINERS, THE APPLICABLE CENTER GATE FOR A LOAD WILL BE MODIFIED FOR USE BY OMITTING THE STRUT LEDGERS AND ADDING FILLER PIECES AND SHIM MATERIAL AS TYPICALLY SHOWN BY THE END-OF-CAR BULKHEAD DETAIL AT RIGHT. FOR FOUR-WIDE LOADS, A "CENTER GATE ASSEMBLY C" AS DETAILED ON PAGE 7 WILL BE MODIFIED FOR USE. FOR THREE-WIDE LOADS, A "CENTER GATE ASSEMBLY G" AS DETAILED ON PAGE 11 WILL BE MODIFIED FOR USE. FOR TWO-WIDE AND ONE-WIDE LOADS, "CENTER GATE ASSEMBLIES M AND L", RESPECTIVELY, WILL BE CHANGED AS SPECIFIED. SEE THE DETAILS ON PAGE 18.
3. FOR LOADS OF CNU-332/E CONTAINERS, THE APPLICABLE CENTER GATE FOR A LOAD WILL BE MODIFIED FOR USE BY OMITTING THE STRUT LEDGERS AND ADDING FILLER PIECES AND SHIM MATERIAL AS TYPICALLY SHOWN FOR THE CNU-309/E CONTAINERS BY THE END-OF-CAR BULKHEAD DETAIL AT RIGHT. FOR FOUR-WIDE LOADS, A "CENTER GATE ASSEMBLY H" AS DETAILED ON PAGE 13 WILL BE MODIFIED FOR USE. FOR THREE-WIDE LOADS, A "CENTER GATE ASSEMBLY J" AS DETAILED ON PAGE 15 WILL BE MODIFIED. FOR TWO-WIDE AND ONE-WIDE LOADS, "CENTER GATE ASSEMBLIES O AND N", RESPECTIVELY, WILL BE CHANGED AS SPECIFIED. SEE THE DETAILS ON PAGE 19.
4. TO GAIN ADDITIONAL SPACE LONGITUDINALLY IN A CAR WHICH REQUIRES END-OF-CAR BULKHEADS, 1" X 6" FILLER AND HORIZONTAL PIECES MAY BE USED IN LIEU OF 2" X 6" FILLER AND HORIZONTAL PIECES.



END-OF-CAR BULKHEAD

THIS BULKHEAD IS APPLICABLE FOR USE AT THE END OF A BOX CAR. A MODIFIED "CENTER GATE ASSEMBLY G" IS SHOWN. SEE THE LOAD ON PAGE 10 AND SPECIAL NOTES 2 AND 3 ABOVE.

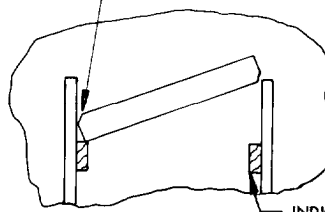
INDICATES A SIDE OF A 4" X 4" AS A TYPICAL STRUT.



BEVEL CUT

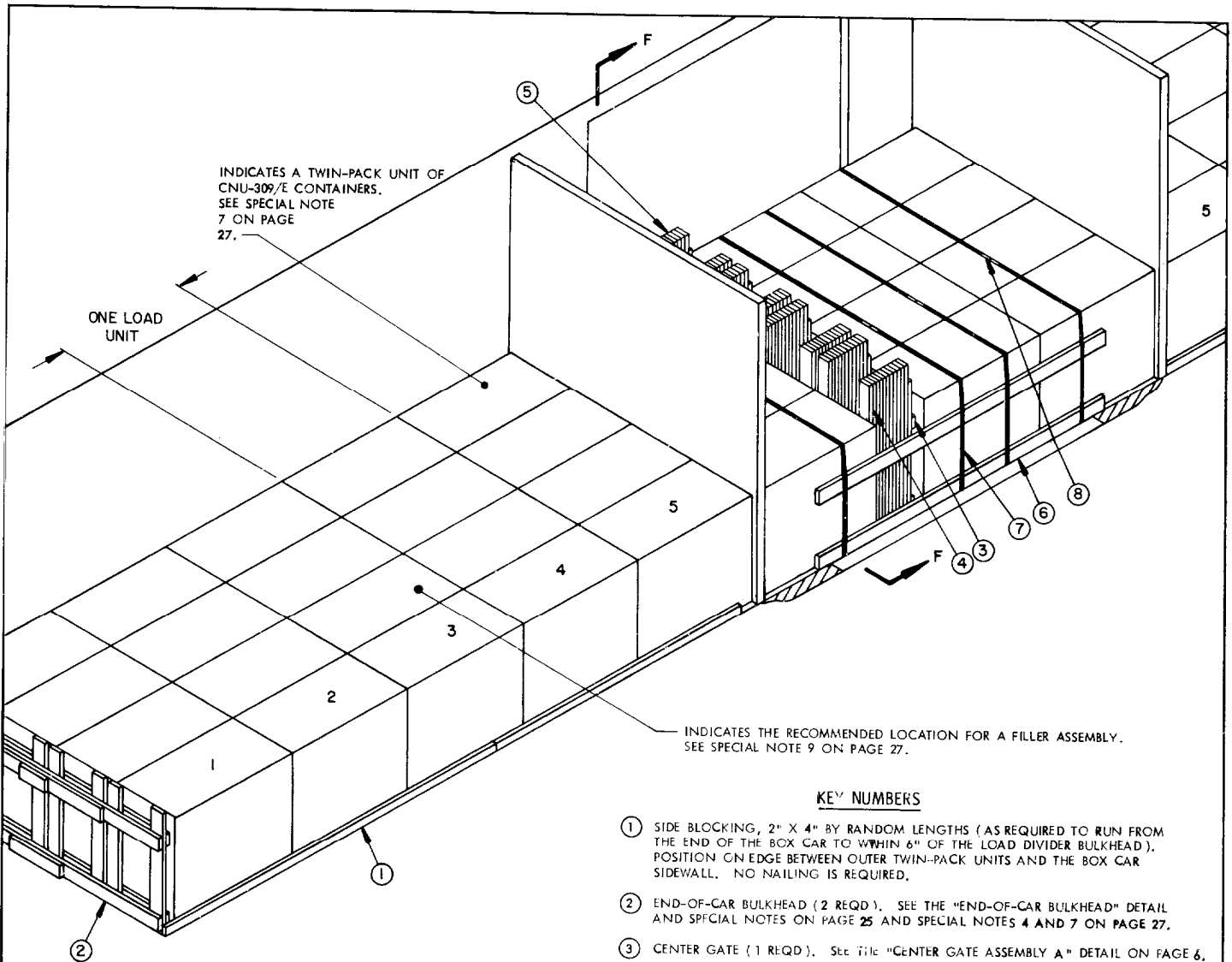
BEVEL CUTTING THE STRUTS AS SPECIFIED WILL FACILITATE INSTALLING THE STRUTS WITH A "DRIVE FIT". CAUTION: DO NOT BEVEL A CORNER MORE THAN ONE-HALF INCH (1/2").

BEVEL-CUT THIS CORNER ONLY IF STRUTS ARE VERY SHORT.



STRUT INSTALLATION

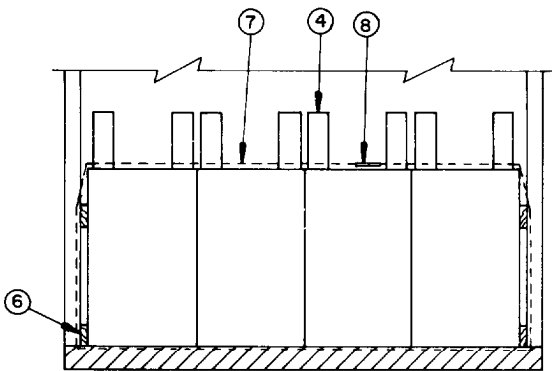
SEE GENERAL NOTE "T" ON PAGE 2 FOR ADDITIONAL STRUT INSTALLATION GUIDANCE.



ISOMETRIC VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" BY RANDOM LENGTHS (AS REQUIRED TO RUN FROM THE END OF THE BOX CAR TO WITHIN 6" OF THE LOAD DIVIDER BULKHEAD), POSITION ON EDGE BETWEEN OUTER TWIN-PACK UNITS AND THE BOX CAR SIDEWALL. NO NAILING IS REQUIRED.
- ② END-OF-CAR BULKHEAD (2 REQD). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND SPECIAL NOTES 4 AND 7 ON PAGE 27.
- ③ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY A" DETAIL ON PAGE 6.
- ④ CENTER GATE (1 REQD). SEE THE "CENTER GATE ASSEMBLY B" DETAIL ON PAGE 6.
- ⑤ SOLID FILL, 6" WIDE X 60" LONG MATERIAL BY A THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE VERTICAL PIECES OF THE CENTER GATES. (REQUIRED AT 8 PLACES) DRIVE FINAL PIECES IN TO INSURE A TIGHT FIT. NAIL THE FIRST PIECE OF SOLID FILL TO THE "CENTER GATE ASSEMBLY B" VERTICAL W/4-8d NAILS. NAIL EACH ADDITIONAL PIECE TO THE ONE PLACED BEFORE IT W/4-8d NAILS. NAIL THE TOP EXPOSED PART OF EACH "CENTER GATE ASSEMBLY A" VERTICAL PIECE TO THE ADJACENT FINAL SOLID FILL PIECE W/2-8d NAILS. SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑥ DOORWAY PROTECTION PIECES, 2" X 6" BY A LENGTH TO EXTEND 6" PAST THE DOOR POSTS ON EITHER SIDE OF THE DOOR OPENINGS (4 REQD). INSTALL ON EDGE AT FLOOR LEVEL AND ABOVE TOP SIDE FLANGE OF TWIN-PACK UNITS IN DOORWAY AREA. SECURE IN POSITION BY LOCATING UNDER DOORWAY PROTECTION UNITIZING STRAPS, PIECES MARKED ⑦.
- ⑦ DOORWAY PROTECTION UNITIZING STRAP, 1-1/4" X .035" X 29'-0" LONG STEEL STRAFFING (4 REQD). INSTALL AS SHOWN TO ENCIRCLE FOUR-WIDE STACKS OF TWIN-PACK UNITS IN THE DOORWAY AREA.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



SECTION F-F

SPECIAL NOTES:

(SPECIAL NOTES CONTINUED)

1. A 60'-8" LONG BY 9'-6" WIDE CUSHIONED BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS AND WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER OR NARROWER DOOR OPENINGS CAN BE USED.
2. THE MAXIMUM NUMBER OF FOUR-WIDE STACKS OF TWIN-PACK UNITS WHICH MAY BE LOADED INTO EACH END OF A BOX CAR BEHIND THE LOAD DIVIDER BULKHEADS IS FIVE. ANY ADDITIONAL TWIN-PACK UNITS IN A LOAD MUST BE BLOCKED AND BRACED BETWEEN THE LOAD DIVIDER BULKHEADS. WHEN COMPLETE FOUR-WIDE OR THREE-WIDE STACKS ARE LOADED BETWEEN THE LOAD DIVIDER BULKHEADS THE PROCEDURES SHOWN ON PAGES 4 THRU 9 WILL BE USED TO BLOCK AND BRACE THEM. THESE PROCEDURES CAN ALSO BE APPLIED TO COMPLETE TWO-WIDE STACKS LOADED BETWEEN THE LOAD DIVIDER BULKHEADS BY USING THE PROCEDURES NOTED ABOVE WITH TWO "CENTER GATE ASSEMBLIES" SHOWN ON PAGE 18. WHEN SOLID FILL IS REQUIRED WITH THIS ASSEMBLY, IT WILL BE MODIFIED BY OMITTING THE STRUT LEDGERS. FOR QUANTITIES OF TWIN-PACK UNITS LOADED BETWEEN THE LOAD DIVIDER BULKHEADS WHICH DO NOT ALLOW COMPLETE FOUR-WIDE, THREE-WIDE OR TWO-WIDE STACKS, THE LCL PROCEDURES SHOWN ON PAGES 16, 17, AND 20 MAY BE USED. UNDER NO CIRCUMSTANCES WILL ONE TWIN-PACK UNIT BE BLOCKED AND BRACED ALONE, AS SHOWN IN THE LCL PROCEDURES ON PAGE 21, BETWEEN THE LOAD DIVIDER BULKHEADS.
3. TWIN-PACK UNITS WILL NOT EXTEND MORE THAN 26" INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR IN FOUR-WIDE LOADS OF 40 TWIN-PACK UNITS OR LESS, AND DOORWAY PROTECTION WILL NOT BE REQUIRED. FOR LOADS OF MORE THAN 40 TWIN-PACK UNITS IN WHICH THE TWIN-PACK UNITS IN EXCESS OF 40 ARE BLOCKED AND BRACED BETWEEN THE LOAD DIVIDER BULKHEADS IN COMPLETE FOUR-WIDE STACKS, AS SHOWN ON PAGE 26, THE LOAD DIVIDER BULKHEADS MUST NOT BE CLOSER THAN 12" TO THE DOORWAY OPENINGS ON EITHER SIDE OF THE BOX CAR. THE FOUR-WIDE STACKS OF TWIN-PACK UNITS LOADED BETWEEN THE LOAD DIVIDER BULKHEADS WILL REQUIRE DOORWAY PROTECTION WHICH WILL CONSIST OF DOORWAY PROTECTION PIECES, UNITIZING STRAPS, AND SEALS, PIECES MARKED (6), (7) AND (8) ON PAGE 26. FOR LOADS OF MORE THAN 40 TWIN-PACK UNITS IN WHICH THE TWIN-PACK UNITS IN EXCESS OF 40 ARE BLOCKED AND BRACED BETWEEN THE LOAD DIVIDER BULKHEADS IN COMPLETE THREE-WIDE OR TWO-WIDE STACKS, THE LOAD DIVIDER BULKHEADS MUST NOT EXTEND INTO THE DOORWAY OPENINGS ON EITHER SIDE OF THE BOX CAR MORE THAN 26", AS NOTED ABOVE. EACH THREE-WIDE AND TWO-WIDE STACK OF TWIN-PACK UNITS LOADED BETWEEN THE LOAD DIVIDER BULKHEADS WILL BE BUNDLED WITH ONE SET OF UNITIZING STRAPS AND SEALS AND BLOCKED WITH DOUBLED 2" X 6" SIDE BLOCKING, INSTALLED FROM WITHIN 6" OF ONE LOAD DIVIDER BULKHEAD TO WITHIN 6" OF THE OTHER ON BOTH SIDES OF THE TWIN-PACK UNITS. FOR DOORWAY PROTECTION, AN ADDITIONAL SET OF UNITIZING STRAPS AND SEALS MUST BE INSTALLED AROUND EACH THREE-WIDE OR TWO-WIDE STACK OF TWIN-PACK UNITS WHICH EXTENDS 26" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR. SEE THE "ISOMETRIC VIEW" ON PAGE 8. THIS TYPE OF DOORWAY PROTECTION CONSISTING OF TWO SETS OF UNITIZING STRAPS AND SEALS AND SIDE BLOCKING WILL ALSO BE REQUIRED WHEN THE LCL PROCEDURES SHOWN ON PAGES 16, 17, AND 20 AND MENTIONED IN SPECIAL NOTE 2 ABOVE ARE USED ON QUANTITIES OF TWIN-PACK UNITS IN EXCESS OF 40 WHICH CANNOT BE LOADED BETWEEN THE LOAD DIVIDER BULKHEADS AS COMPLETE FOUR-WIDE, THREE-WIDE OR TWO-WIDE STACKS.
4. AN END-OF-CAR BULKHEAD IS SHOWN IN THE LOAD VIEW ONLY TO DEPICT A TYPICAL INSTALLATION. THE BULKHEAD IS NOT REQUIRED AND SHOULD NOT BE USED UNLESS THE END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM THE FLOOR TO THE ROOF. SEE THE DETAIL AND SPECIAL NOTES ON PAGE 25 AND GENERAL NOTE "N" ON PAGE 2.
5. FOR GUIDANCE IN THE SELECTION AND USE OF BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS, SEE GENERAL NOTES "W", "X", "Y" AND "Z" ON PAGE 3.

(CONTINUED AT RIGHT)

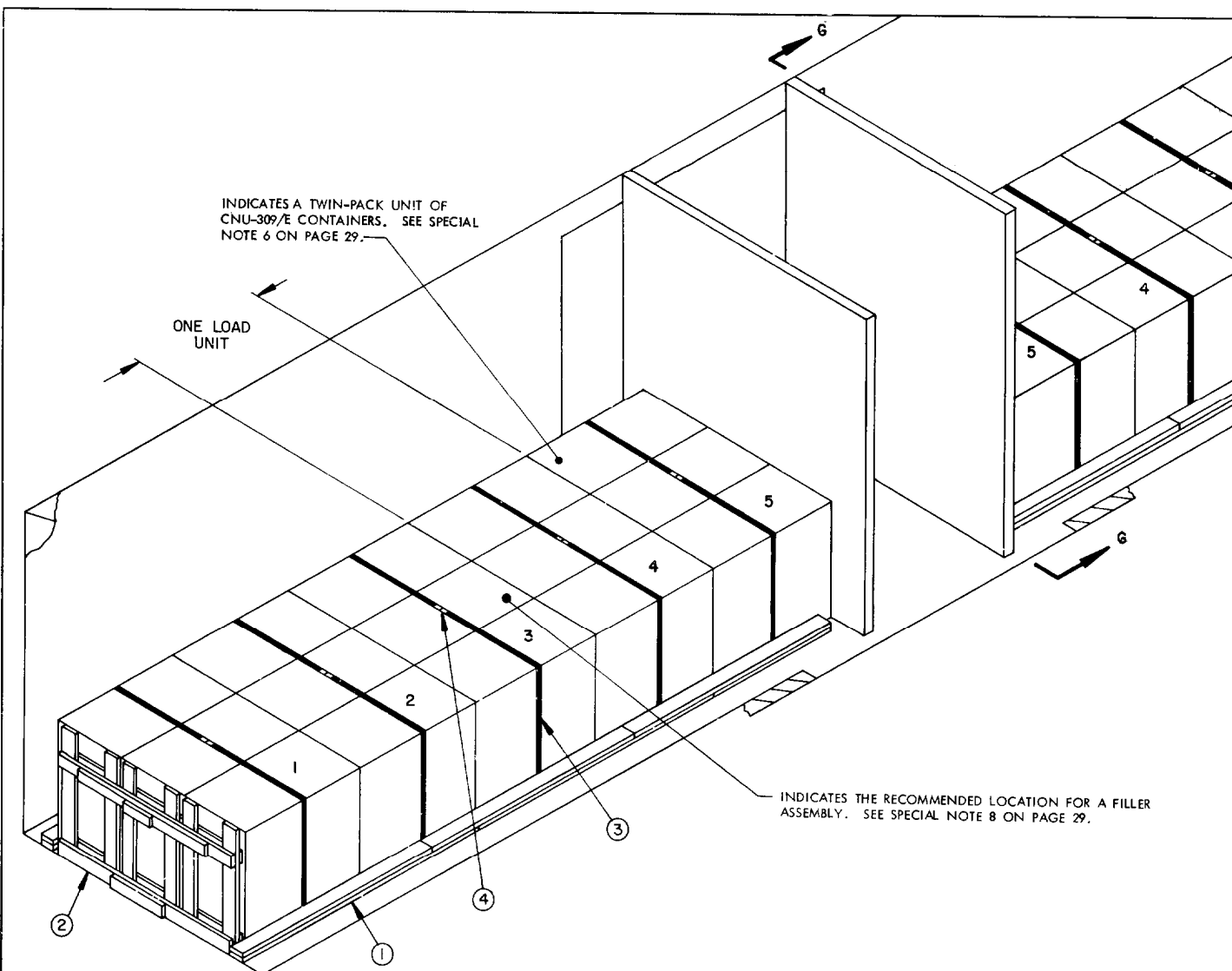
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	6	3
2" X 4"	88	59
2" X 6"	708	708
NAILS	NO. REQD	POUNDS
8d (2-1/2")	584	6-1/4
STEEL STRAPPING, 1-1/4" X .035" -----	116' REQD -----	17 LBS
SEAL FOR 1-1/4" STRAPPING -----	8 REQD -----	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNITS -----	52 -----	122,200 LBS
DUNNAGE -----	-----	1,563 LBS
TOTAL WEIGHT -----	-----	123,763 LBS

CNU-309/E AND /OR CNU-332/E CONTAINERS

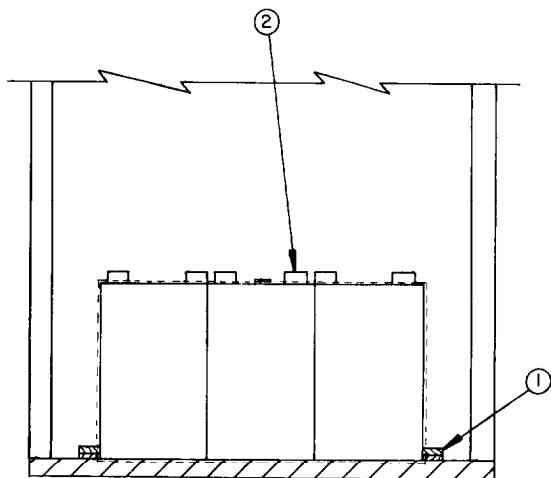
50-TWIN-PACK UNIT LOAD IN A 60'-8" LONG BY 9'-6" WIDE BOX CAR (WITH LOAD DIVIDER BULKHEADS)



ISOMETRIC VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 6" BY RANDOM LENGTHS (DOUBLED) (AS REQD TO RUN FROM THE END OF THE BOX CAR TO WITHIN 6" OF THE LOAD DIVIDER BULKHEAD). POSITION AGAINST THE OUTER TWIN-PACK UNITS AND NAIL THE FIRST PIECE TO THE BOX CAR FLOOR W/1-16d NAIL EVERY 6". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SIDE BLOCKING MAY BE PRE-POSITIONED. SEE GENERAL NOTES "G" AND "R" ON PAGE 2.
- ② END-OF-CAR BULKHEAD (2 REQD). SEE THE "END-OF-CAR BULKHEAD" DETAIL AND SPECIAL NOTES ON PAGE 25 AND SPECIAL NOTES 3 AND 6 ON PAGE 29.
- ③ UNITIZING STRAP, 1-1/4" X .035" X 23'-0" LONG STEEL STRAPPING (10 REQD). INSTALL AS SHOWN TO ENCIRCLE EACH THREE-WIDE STACK OF TWIN-PACK UNITS. SEE SPECIAL NOTE 2 ON PAGE 29 FOR GUIDANCE IN DETERMINING NUMBER OF STRAPS REQUIRED IN DOORWAY AREA.
- ④ SEAL FOR 1-1/4" STEEL STRAPPING (20 REQD, 2 PER STRAP). POSITION AS SHOWN. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "J" ON PAGE 2.



SECTION G-G

CNU-309/E AND/OR CNU-332/E CONTAINERS
30-TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-2" WIDE BOX CAR (WITH LOAD DIVIDER BULKHEADS)

SPECIAL NOTES:

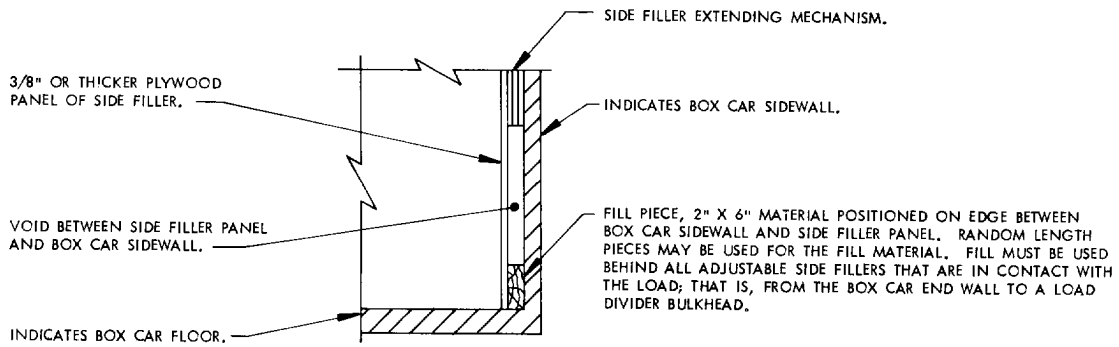
1. A 50'-6" LONG BY 9'-2" WIDE CUSHIONED BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS AND WITH 10'-0" WIDE DOOR OPENINGS IS SHOWN. BOX CARS OF OTHER DIMENSIONS AND BOX CARS HAVING WIDER OR NARROWER DOOR OPENINGS CAN BE USED.
2. FOR DOORWAY PROTECTION, TWO SETS OF UNITIZING STRAPS AND SEALS, PIECES MARKED ③ AND ④, MUST BE INSTALLED AROUND THREE-WIDE STACKS OF TWIN-PACK UNITS WHICH EXTEND 47" OR MORE PAST A DOOR POST INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOX CAR. SEE THE LOAD SHOWN ON PAGE 8.
3. AN END-OF-CAR BULKHEAD IS SHOWN IN THE LOAD VIEW ONLY TO DEPICT A TYPICAL INSTALLATION. THE BULKHEAD IS NOT REQUIRED AND SHOULD NOT BE USED UNLESS THE END OF THE BOX CAR IS BOWED OUTWARD MORE THAN ONE INCH (1"), EITHER FROM SIDE TO SIDE OR FROM THE FLOOR TO THE ROOF.
4. TO SATISFY A SHIPMENT OF AN UNEVEN QUANTITY OF TWIN-PACK UNITS, THE "PROCEDURES FOR AN OMITTED TWIN-PACK UNIT" AS SPECIFIED ON PAGE 17 APPLY.
5. FOR GUIDANCE IN THE SELECTION AND USE OF BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS, SEE GENERAL NOTES "W", "X", "Y" AND "Z" ON PAGE 3.
6. THE CNU-309/E CONTAINERS ARE SHOWN IN THE LOAD VIEW ON PAGE 28. IF THE CNU-332/E CONTAINERS ARE BEING LOADED, 3-WIDE SEPARATOR GATES WITH THE 1" X 4" FILL PIECES ADDED, SHOWN AS PIECES MARKED ① AND ② ON PAGE 14, MUST BE POSITIONED BETWEEN THE CAR END WALL AND THE FIRST LOAD UNIT (UNLESS AN END-OF-CAR BULKHEAD IS USED), AND ALSO BETWEEN THE LOAD DIVIDER BULKHEAD AND THE ADJACENT LOAD UNIT. THE 3-WIDE SEPARATOR GATES WILL ALSO BE POSITIONED BETWEEN LONGITUDINALLY ADJACENT LOAD UNITS. SEE THE "SEPARATOR GATE B" DETAIL ON PAGE 15.
7. CNU-309/E AND CNU-332/E CONTAINERS MAY BE SHIPPED IN THE SAME LOAD, IF DESIRED. ALL CONTAINERS WITHIN A LOAD UNIT MUST BE OF THE SAME MODEL. A SEPARATOR GATE "B", AS DETAILED ON PAGE 15, AND WHICH IS MODIFIED SO AS TO PROVIDE PROPER BEARING AGAINST THE CONTAINERS ON OPPOSITE SIDES OF THE GATE, MUST BE POSITIONED BETWEEN LONGITUDINALLY ADJACENT LOAD UNITS OF UNLIKE MODELS.
8. IF IT IS DESIRED TO SHIP A SINGLE CONTAINER FROM A TWIN-PACK UNIT AS PART OF A FULL LOAD SHIPMENT, A FILLER ASSEMBLY MUST BE INSTALLED IN PLACE OF THE OMITTED SINGLE CONTAINER. A FILLER ASSEMBLY SHOULD BE POSITIONED WITHIN A LOAD AT THE LOCATION INDICATED BY THE ISOMETRIC VIEW ON PAGE 28. FOR CONSTRUCTION GUIDANCE, SEE THE "FILLER ASSEMBLY A" DETAIL AND/OR THE "FILLER ASSEMBLY B" DETAIL ON PAGE 24 FOR THE CNU-309/E AND/OR CNU-332/E CONTAINERS, RESPECTIVELY.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	3	2
2" X 6"	293	293
NAILS	NO. REQD	POUNDS
8d (2-1/2")	140	1-1/2
16d (3-1/2")	350	7-1/2
STEEL STRAPPING, 1-1/4" X .035"	230'	REQD ----- 33 LBS
SEAL FOR 1-1/4" STRAPPING	20	REQD ----- 1 LBS

LOAD AS SHOWN

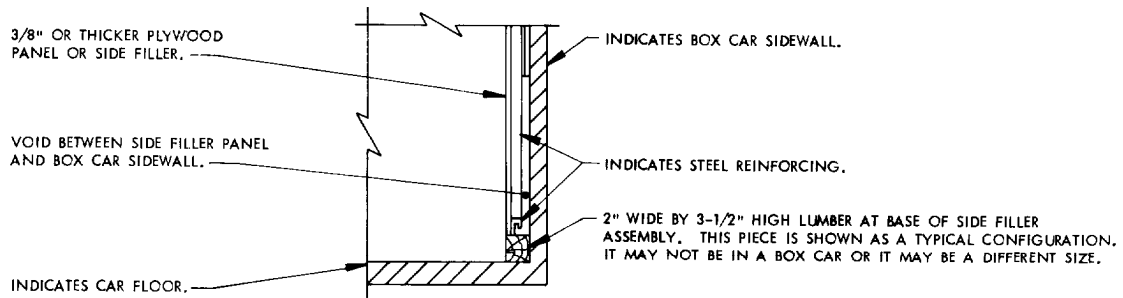
ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNITS	30	70,500 LBS
DUNNAGE		633 LBS
TOTAL WEIGHT		71,133 LBS

CNU-309/E AND/OR CNU-332/E CONTAINERS
 30-TWIN-PACK UNIT LOAD IN A 50'-6" LONG BY 9'-2" WIDE BOX CAR (WITH LOAD DIVIDER BULKHEADS)



TYPICAL TYPE A

THIS VIEW SHOWS THE INSTALLATION OF A "FILL PIECE" IN A BOX CAR EQUIPPED WITH A STANDARD ADJUSTABLE SIDE FILLER.



TYPICAL TYPE B

THIS VIEW SHOWS A TYPICAL SECTION OF A BOX CAR EQUIPPED WITH HEAVY DUTY, STEEL REINFORCED, ADJUSTABLE SIDE FILLERS. A "FILL PIECE", AS SHOWN IN THE "TYPICAL TYPE A" DETAIL ABOVE, IS NOT REQUIRED IN BOX CARS SO EQUIPPED.