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DATE 9/19/91

LOADING AND BRACING (CL & LCL) IN BOX CARS OF BLU-80/B (BIGEYE) BINARY CHEMICAL WEAPON BODY PACKED IN CNU-396/E STORAGE AND SHIPPING CONTAINER

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GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED WITHIN THIS DOCUMENT ARE APPLICABLE TO BLU-80/B (BIGEYE) BINARY CHEMICAL WEAPON BODIES PACKED IN CNU-396/E CONTAINERS. CONTAINERS MAY BE OFFERED FOR SHIPMENT IN A UNITIZED UNIT LOAD CONFIGURATION AS DETAILED ON PAGE 3. HOWEVER, IF INDIVIDUAL CONTAINERS, NOT UNITIZED, ARE AVAILABLE FOR SHIPMENT, THE PROCEDURES HEREIN WILL APPLY. STACKS MAY CONSIST OF UNIT LOADS, A COMBINATION OF UNIT LOADS AND INDIVIDUAL CONTAINERS, OR ALL INDIVIDUAL CONTAINERS. EACH STACK MUST BE BUNDLED WITH STEEL STRAPPING USING THE APPLICABLE "STACK BUNDLING DETAIL" SHOWN ON PAGE 3.
- C. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS IN BOX CARS OF ANY LENGTH, WITH A CAR WIDTH OF 9'-4" OR WIDER AND HAVING A 10'-0" DOOR OPENING. BOX CARS WITH DOORS LESS THAN 10'-0" WIDE CAN BE USED BUT LOADING AND UNLOADING BECOMES PROGRESSIVELY MORE DIFFICULT. ALL CARS MUST HAVE A WOOD OR NAILABLE METAL FLOOR.
- D. THE SELECTION OF THE RAIL CARS FOR TRANSPORTING BLU-80/B (BIGEYE) WEAPON BODIES IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY CARS WHICH HAVE SOUND FLOORS AND ARE IN OTHERWISE PROPER CONDITION IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENTS WILL BE SELECTED.
- E. 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. ALSO, AFTER THE PLUG DOORS ON A CAR ARE CLOSED AND READY FOR THE INSTALLATION OF CAR SEALS, A PIECE OF WIRE OF SUITABLE SIZE WILL BE USED IN ADDITION TO, AND IN CONJUNCTION WITH EACH CAR SEAL USED TO SEAL THE CAR. THE WIRE WILL BE THREADED THRU THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES, AND THE WIRE ENDS WILL BE TWISTED TOGETHER.
- F. THE USE OF AN OFFSET LOADING PATTERN WILL FACILITATE LOADING AND UNLOADING OPERATIONS IN THE DOORWAY AREA OF THE CAR. WHEN POSSIBLE TO DO SO, A FULL LOAD SHOULD BE BUILT USING AN OFFSET LOADING PATTERN. FOR INSTANCE, A LOAD CONSISTING OF AN EVEN NUMBER OF LOAD UNITS AND HAVING TWO MORE LOAD UNITS IN ONE END OF THE CAR THAN IN THE OPPOSITE END, OR A LOAD CONSISTING OF AN ODD NUMBER OF LOAD UNITS AND HAVING ONE MORE LOAD UNIT IN ONE END THAN IN THE OTHER IS CONSIDERED TO BE AN OFFSET LOAD.
- G. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN CARS WHICH ARE PARTIALLY LOADED WITH BLU-80/B (BIGEYE) WEAPON BODY PACKED IN CNU-396/E CONTAINERS PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.
- H. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE. SEE GENERAL NOTE "J" BELOW.
- J. 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.
- K. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE (1) SEAL WITH TWO (2) PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP-TYPE SEALER IS BEING USED. REFER TO THE "STRAP JOINT-A" AND "STRAP JOINT-B" DETAILS ON PAGE 10 FOR GUIDANCE.
- L. THROUGHOUT THIS PROCEDURAL DRAWING, PORTIONS OF THE BLOCKING COMPONENTS AND OF THE DEPICTED CARS, SUCH AS A CAR SIDEWALL, HAVE BEEN OMITTED FROM THE LOAD VIEW FOR CLARITY PURPOSES.
- M. 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 MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE UNITS. NOTICE: A SHIPMENT WILL BE POSITIONED IN THE RAIL CAR IN COMPLIANCE WITH THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS (AAR).

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

LUMBER -----SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.

NAILS -----COMMON, FED SPEC FF-N-105.

STRAPPING, STEEL --CLASS 1, TYPE I OR IV, HEAVY DUTY, FINISH A, B (GRADE 2), OR C, FED SPEC QQ-5-781.

STRAP SEAL -----TYPE D, STYLE I, II, OR IV, CLASS H, FINISH A, B (GRADE 2), OR C, FED SPEC QQ-5-781.

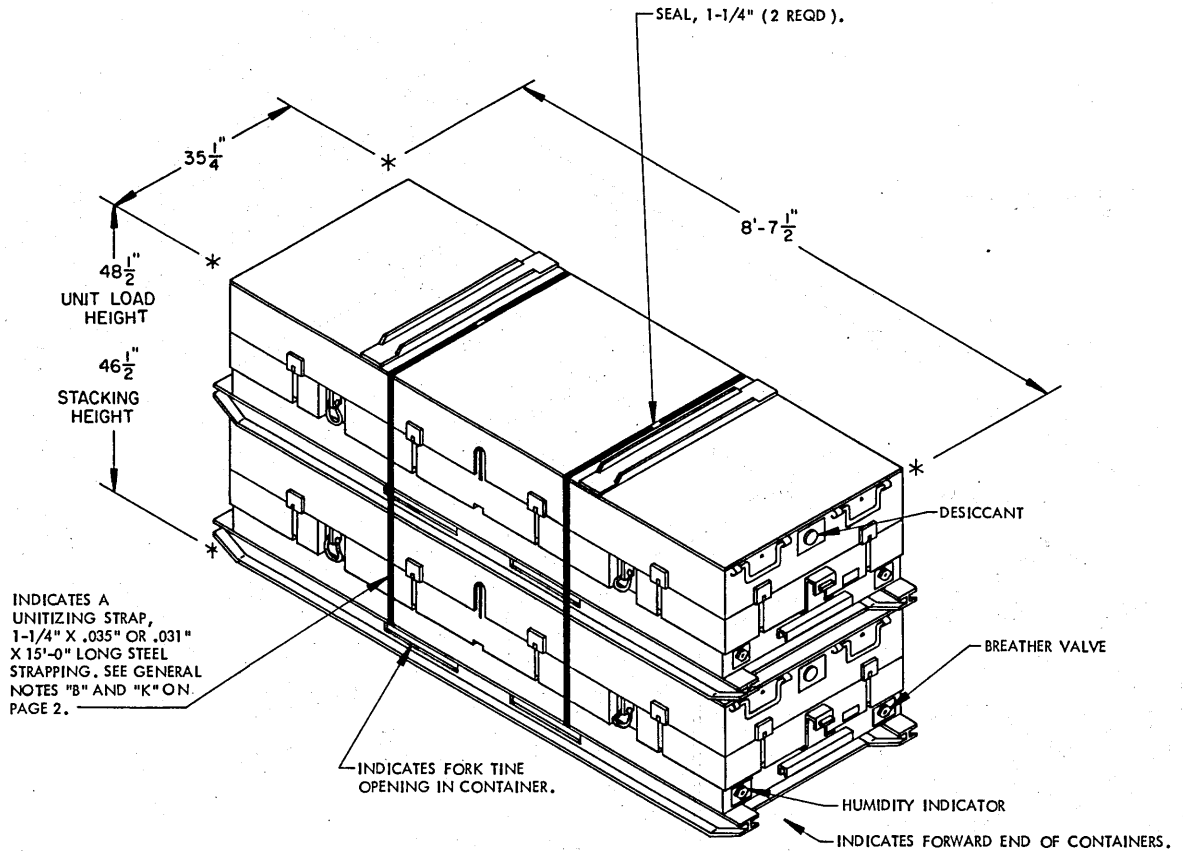
WIRE -----ANNEALED, BLACK; FED SPEC QQ-W-461.

ANTI-CHAFING

MATERIAL -----NEUTRAL BARRIER MATERIAL; MIL-B-121 (OR EQUAL).

(GENERAL NOTES CONTINUED)

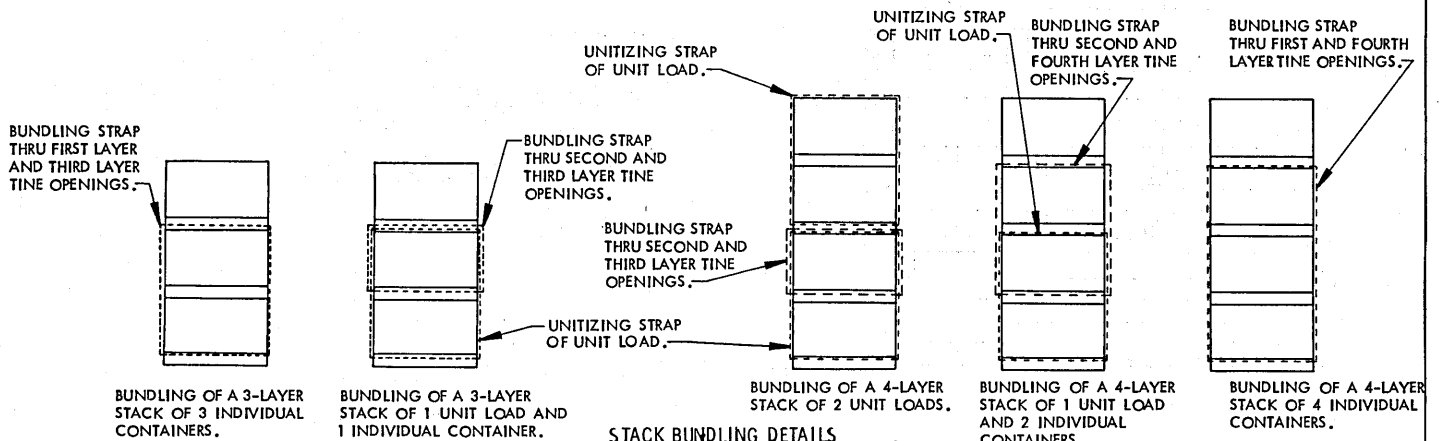
- N. IF THE CAR BEING USED FOR A SHIPMENT IS EQUIPPED WITH A NAILABLE METAL FLOOR AND A NAIL SIZE FOR FLOOR NAILING IS MARKED ON THE SIDEWALL OF THE CAR, THAT GUIDANCE SHOULD BE APPLIED TO THE NAILING OF THE "SIDE BLOCKING" PIECES IN THE FULL LOADS AND TO THE NAILING TO THE CAR FLOOR OF THE LCL BRACES AND KNEE BRACE ASSEMBLIES IN THE LESS-THAN-FULL LOADS. IF A NAIL SIZE IS NOT SPECIFIED IN THE CAR, 30d NAILS SHOULD BE USED IN LIEU OF THOSE SPECIFIED IN THE APPLICABLE KEY NUMBERS.
- O. THE SPACE BETWEEN THE LOAD UNITS MUST BE KEPT TO A MINIMUM. TO ACHIEVE A TIGHT LOAD, HYDRAULIC JACKS CAN BE USED FOR THIS OPERATION. CAUTION: WHEN USING A JACK TO COMPACT A LOAD, THE JACK MUST BE USED AGAINST STRONG POINTS OF THE CONTAINERS, SUCH AS THE JOINTS BETWEEN THE LAYERS OF CONTAINERS. PADDING, OF 2-INCH (2") THICK LUMBER OR ANY OTHER MATERIAL OF SIMILAR CONSISTENCY, SHOULD BE PLACED BETWEEN THE JACK AND THE LADING.
- P. LOAD-BLOCKING STRUTS WHICH ARE 48" OR LONGER MUST BE STIFFENED BY THE APPLICATION OF HORIZONTAL AND VERTICAL STRUT BRACING AS SHOWN BY THE "STRUT BRACING" DETAIL ON PAGE 10. BRACING IS 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 BETWEEN ADJACENT STRUT BRACING PIECES. NOTE THAT HORIZONTAL STRUT BRACING PIECES FOR THE UPPER LEVEL OF STRUTS FOR ALL BUT THE UPPERMOST TIER OF A LOAD MAY BE DIFFICULT TO APPLY TO THE TOP SURFACE OF THE STRUTS AS DEPICTED. STRUT BRACING WILL BE EQUALLY EFFECTIVE IF APPLIED TO THE UNDER SIDE OF THOSE STRUTS.
- Q. 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. THE OTHER END, WHICH CAN BE BEVELED ON THE LOWER CORNER IF DESIRED, WILL THEN 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 10 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.
- R. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.
- S. CONVERSION TO METRIC EQUIVALENTS:
DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454KG.
- T. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES WHICH ARE TO BE USED IN THE DELINEATED BOX CAR LOADS SHOWN THROUGHOUT THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIED NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS. STAPLES WHICH ARE 2-1/2" OR LESS IN LENGTH SHOULD BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-N-105 AS NEARLY AS PRACTICABLE. STAPLES WHICH ARE LONGER THAN 2-1/2" WILL BE A COMMERCIAL GRADE, OF A QUALITY EQUIVALENT TO THOSE MANUFACTURED BY SENCO PRODUCTS INCORPORATED. NOTE: STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- U. END WALL GATES ARE NOT REQUIRED FOR BOX CARS HAVING WOOD LINED END WALLS WHICH ARE BOWED TWO INCHES (2") OR LESS FROM SIDE TO SIDE OR FROM FLOOR TO ROOF. END WALL GATES ARE REQUIRED FOR ALL BOX CARS HAVING METAL LINED END WALLS. NOTE: FILL PIECES MUST ALSO BE INSTALLED ON ALL END WALL GATES WHEN THE END WALLS ARE BOWED OUTWARD TWO INCHES (2") OR MORE EITHER FROM SIDE TO SIDE OR FROM FLOOR TO ROOF, TO PROVIDE FOR A UNIFORM LOAD BEARING SURFACE. NAIL 1" X 6" AND/OR 2" X 6" FILL PIECES TO THE END WALL GATE HORIZONTAL PIECE AS REQUIRED AND NAIL W/1-APPROPRIATELY SIZED NAIL EVERY SIX INCHES (6").



CNU-396/E CONTAINER-UNIT LOAD DETAIL

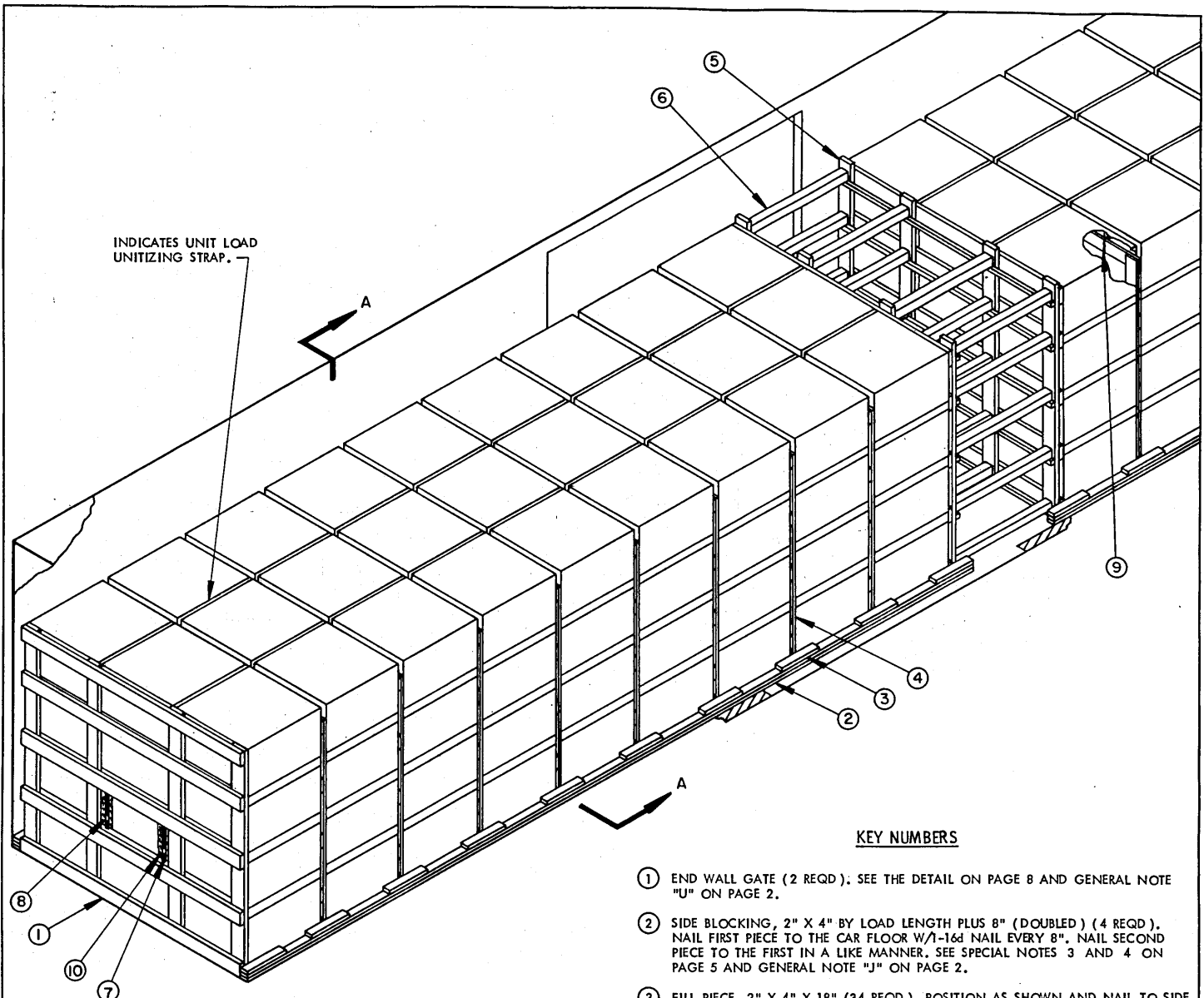
CUBE -----102.4 CUBIC FEET (APPROX)
 GROSS WEIGHT -----3,044 LBS (APPROX)

REF: MIL STD 1323-350 (NAVY)



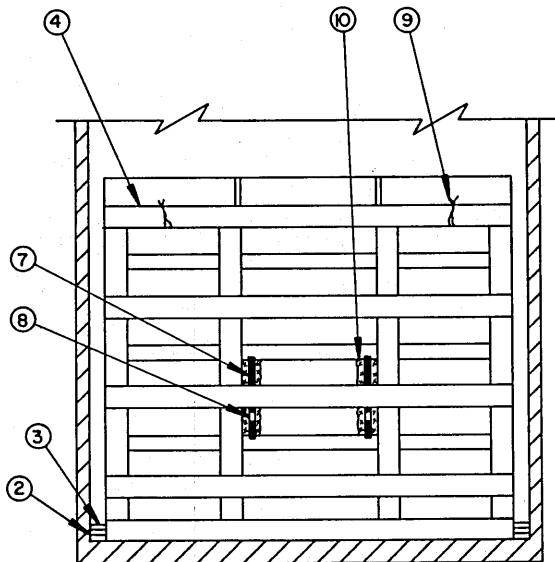
STACK BUNDLING DETAILS

UNIT LOAD AND STACK BUNDLING DETAILS



INDICATES UNIT LOAD UNITIZING STRAP.

ISOMETRIC VIEW



SECTION A-A

KEY NUMBERS

- ① END WALL GATE (2 REQD). SEE THE DETAIL ON PAGE 8 AND GENERAL NOTE "U" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 4" BY LOAD LENGTH PLUS 8" (DOUBLED) (4 REQD). NAIL FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". NAIL SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTES 3 AND 4 ON PAGE 5 AND GENERAL NOTE "J" ON PAGE 2.
- ③ FILL PIECE, 2" X 4" X 18" (34 REQD). POSITION AS SHOWN AND NAIL TO SIDE BLOCKING, PIECE MARKED ②, W/5-16d NAILS EACH.
- ④ SEPARATOR GATE (13 REQD). SEE THE "SEPARATOR GATE-A" DETAIL ON PAGE 8.
- ⑤ CENTER GATE, (2 REQD). SEE THE DETAIL ON PAGE 9.
- ⑥ STRUT, 4" X 4" BY A LENGTH TO SUIT (REF: 45-3/4") (20 REQD). TOENAIL TO PIECES MARKED ⑤ W/2-16d NAILS AT EACH END. SEE GENERAL NOTES "P" AND "Q" ON PAGE 2 AND SPECIAL NOTE 5 ON PAGE 5.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT (REF: 11'-0") (30 REQD). SEE SPECIAL NOTE 6 ON PAGE 5 AND THE APPLICABLE "STACK BUNDLING" DETAIL ON PAGE 3.
- ⑧ SEAL FOR 1-1/4" STRAPPING (30 REQD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑨ TIE WIRE, 14 GAGE BY A LENGTH TO SUIT (REF: 24") (26 REQD). FASTEN THE SEPARATOR GATE, PIECE MARKED ③, IN TWO PLACES AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 18.
- ⑩ ANTI-CHAFING MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS, EXCEPT THRU FORK TINE OPENINGS.

SPECIAL NOTES:

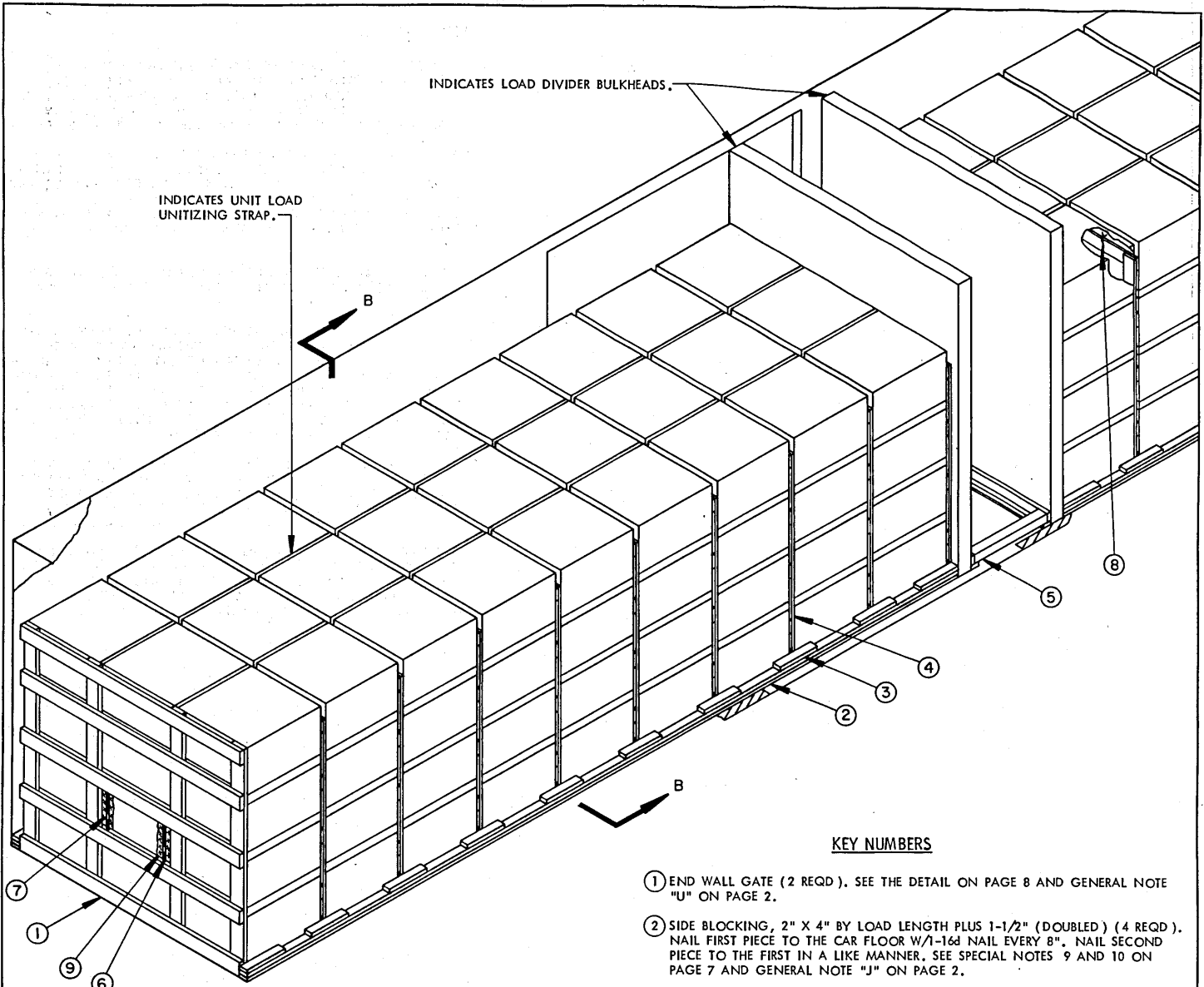
1. A 60-CONTAINER LOAD (30 UNIT LOADS) IS SHOWN IN A 50'-6" LONG BY 9'-4" WIDE CONVENTIONAL TYPE BOX CAR EQUIPPED WITH A 10'-0" WIDE THRU DOOR OPENING. WIDER OR LONGER CARS AND CARS HAVING OTHER DOOR WIDTHS CAN BE USED. ALL CARS MUST HAVE WOOD OR NAILABLE METAL FLOORS. SEE GENERAL NOTE "C" ON PAGE 2.
2. A MAXIMUM OF FORTY-EIGHT (48) OF THE CNU-396/E CONTAINERS FOR AN APPROXIMATE LOADING WEIGHT OF 73,248 POUNDS CAN BE SHIPPED IN A 40'-6" LONG BOX CAR USING THE DEPICTED PROCEDURES. IF A 60'-8" LONG BOX CAR IS AVAILABLE, SEVENTY-TWO (72) CONTAINERS FOR AN APPROXIMATE LADING OF 109,872 POUNDS CAN BE SHIPPED BY LOADING 9 STACKS OF 4-LAYERS IN EACH END OF THE CAR.
3. SIDE BLOCKING, PIECE MARKED ② MUST EXTEND AT LEAST EIGHT INCHES (8") PAST THE CONTAINER SKIDS IN THE DOORWAY AREA OF THE CAR.
4. PREPOSITION THE SIDE BLOCKING PIECE MARKED ② LONGITUDINALLY DOWN BOTH SIDES OF THE CAR 8'-8" APART AND FASTEN TO THE FLOOR PRIOR TO LOADING. THE DISTANCE BETWEEN THE SIDE BLOCKING MAY BE INCREASED OR DECREASED AS REQUIRED TO ALLOW NO MORE THAN ONE HALF INCH (1/2") OF LATERAL VOID BETWEEN THE CONTAINER SKIDS AND SIDE BLOCKING. ALSO PREPOSITION THE FILL PIECES, PIECE MARKED ③, SO AS TO BE CENTERED ON THE TWO LONGITUDINALLY ADJACENT CONTAINER SKIDS.
5. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY BEING SHIPPED BY OMITTING ONE OR MORE UNIT LOADS AS DETAILED ON PAGE 11. ALSO THE QUANTITY MAY BE REDUCED BY USING THE K-BRACE METHOD FOR PARTIAL LAYER BRACING AS SHOWN ON PAGES 12 AND 13, HOWEVER THE CAR MUST HAVE NAILABLE WOOD SIDEWALLS.
6. THE STACK BUNDLING STRAPS, PIECES MARKED ⑦, WILL BE THREADED THROUGH THE FORKLIFT POCKETS OF THE CONTAINERS WITHIN THE STACK IN ACCORDANCE WITH THE APPLICABLE "STACK BUNDLING" DETAIL ON PAGE 3. NOTE: THE STRAPS ARE TO BE POSITIONED AS FAR APART AS THE FORKLIFT POCKETS PERMIT.

BILL OF MATERIAL

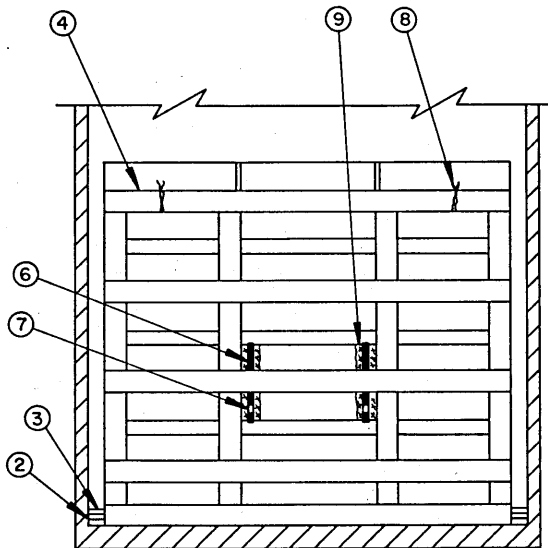
LUMBER	LINEAR FEET	BOARD FEET
1" X 3"	23	6
1" X 6"	933	467
2" X 2"	86	29
2" X 3"	4	2
2" X 4"	241	161
2" X 6"	298	298
4" X 4"	76	102
NAILS	NO. REQD	POUNDS
6d (2")	828	5
10d (3")	332	5-1/4
16d (3-1/2")	536	11-3/4
STEEL STRAPPING, 1-1/4" X .035" OR .031" -330' REQD ----- 48 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 30 REQD --1-1/2 LBS		
WIRE, NO. 14 GAGE ----- 52' REQD ----- 1 LB		
ANTI-CHAFING MATERIAL ----- AS REQD ----- NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-396/E	60 CONTAINERS (30 UNIT LOADS)	91,320 LBS
DUNNAGE		2,203 LBS
TOTAL WEIGHT		93,523 LBS



ISOMETRIC VIEW



SECTION B-B

KEY NUMBERS

- ① END WALL GATE (2 REQD). SEE THE DETAIL ON PAGE 8 AND GENERAL NOTE "U" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 4" BY LOAD LENGTH PLUS 1-1/2" (DOUBLED) (4 REQD). NAIL FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". NAIL SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTES 9 AND 10 ON PAGE 7 AND GENERAL NOTE "J" ON PAGE 2.
- ③ FILL PIECE, 2" X 4" X 18" (34 REQD). POSITION AS SHOWN AND NAIL TO SIDE BLOCKING, PIECE MARKED ②, W/5-16d NAILS EACH.
- ④ SEPARATOR GATE (15 REQD). SEE THE "SEPARATOR GATE-A" DETAIL ON PAGE 8.
- ⑤ STRUT ASSEMBLY (1 REQD). SEE THE "STRUT ASSEMBLY" DETAIL ON PAGE 17 AND SPECIAL NOTE 7 ON PAGE 7.
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT (REF: 11' -0") (30 REQD). SEE SPECIAL NOTE 11 ON PAGE 7 AND THE APPLICABLE "STACK BUNDLING" DETAIL ON PAGE 3.
- ⑦ SEAL FOR 1-1/4" STRAPPING (30 REQD, 1 PFR STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑧ TIE WIRE, NO. 14 GAGE BY A LENGTH TO SUIT (REF: 24") (30 REQD). FASTEN THE SEPARATOR GATE PIECE MARKED ④ IN TWO PLACES AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON PAGE 18.
- ⑨ ANTI-CHAFING MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS, EXCEPT THRU FORK TINE OPENINGS.

(SPECIAL NOTES CONTINUED)

9. SIDE BLOCKING PIECE MARKED ② MUST EXTEND ONE AND ONE HALF INCHES (1-1/2") PAST THE CONTAINER SKIDS IN THE DOORWAY AREA OF THE CAR.
10. PREPOSITION THE SIDE BLOCKING PIECE MARKED ② LONGITUDINALLY DOWN BOTH SIDES OF THE CAR 8"-8" APART AND FASTEN TO THE FLOOR PRIOR TO LOADING. THE DISTANCE BETWEEN THE SIDE BLOCKING MAY BE INCREASED OR DECREASED AS REQUIRED TO ALLOW NO MORE THAN ONE HALF INCH (1/2") OF LATERAL VOID BETWEEN THE CONTAINER SKIDS AND SIDE BLOCKING. ALSO PREPOSITION THE FILL PIECES, PIECE MARKED ③, SO AS TO BE CENTERED ON THE TWO LONGITUDINALLY ADJACENT CONTAINER SKIDS.
11. THE STACK BUNDLING STRAPS, PIECES MARKED ⑥, WILL BE THREADED THROUGH THE FORKLIFT POCKETS OF THE CONTAINERS WITHIN THE STACK IN ACCORDANCE WITH THE APPLICABLE "STACK BUNDLING" DETAIL ON PAGE 3. NOTE: THE STRAPS ARE TO BE POSITIONED AS FAR APART AS THE FORKLIFT POCKETS PERMIT.
12. THESE PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENT OF A 4-LAYER, 72-CONTAINER LOAD (36 UNIT LOADS) IN A 60'-8" LONG CUSHIONED BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS, BY LOADING 9 STACKS IN EACH END OF THE CAR.

SPECIAL NOTES:

1. A 60-CONTAINER LOAD (30 UNIT LOADS) IS SHOWN IN A 50'-6" LONG BY 9'-4" WIDE CUSHIONED BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS, WOOD OR NAILABLE METAL FLOORS AND 10'-0" WIDE THROUGH DOOR OPENINGS. WIDER AND/OR LONGER CARS AND CARS WITH NARROWER DOORS OR DOUBLE DOORS MAY BE USED. HOWEVER, NARROWER DOORS MAY HINDER LOADING OPERATIONS.
2. CAUTION: FOR CUSHIONED BOX CARS EQUIPPED WITH LOAD-DIVIDER BULKHEADS, ONLY CARS EQUIPPED WITH LOAD DIVIDERS MANUFACTURED BY EVANS, EQUIPCO, OR PRECO MAY BE USED. LOAD DIVIDERS MANUFACTURED BY TRANSCO ARE NOT ACCEPTABLE, WHETHER OF ALUMINUM OR STEEL CONSTRUCTION. THE DEPICTED PROCEDURES ARE APPLICABLE FOR CARS OF VARIOUS LENGTHS AND WIDTHS. THE AAR MECHANICAL DESIGNATION CLASS FOR THESE CARS, AS IDENTIFIED IN "THE OFFICIAL RAILWAY EQUIPMENT REGISTER" WILL BE RBL, XL, OR XLI.
3. THE USE OF LOAD DIVIDER 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 CARS EQUIPPED WITH LOAD DIVIDERS FOR SHIPMENT OF THE DESIGNATED UNITS. NOTICE: ONLY CUSHIONED CARS THAT HAVE SLIDING CENTER SILL TYPE CUSHIONING DEVICES OR END-OF-CAR TYPE DEVICES WHICH HAVE AT LEAST FIFTEEN INCHES (15") OF TRAVEL ARE ACCEPTABLE.
4. 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.
5. 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 CAR SIDEWALL AND PROVIDE A MINIMUM INSIDE WIDTH DIMENSION OF 9'-4".
6. IF NECESSARY, TO SATISFY THE QUANTITY OF UNITS TO BE SHIPPED, A PARTIAL LAYER MAY BE LOADED IN EITHER OR BOTH ENDS OF THE CAR BY APPLYING THE K-BRACE METHOD OF PARTIAL LAYER BRACING AS DETAILED ON PAGES 12 AND 13. HOWEVER, THE CAR MUST HAVE NAILABLE WALLS. CARS WITH ADJUSTABLE SIDE FILLERS CANNOT BE USED. SEE NOTE 8 BELOW.
7. A "STRUT ASSEMBLY" MUST BE INSTALLED BETWEEN THE LOAD DIVIDER BULKHEADS IF THE CAR CONTAINS CLASS A OR CLASS B EXPLOSIVES AND THE LOAD IN EITHER END OF THE CAR WEIGHS 50,000 POUNDS OR MORE. A STRUT ASSEMBLY IS NOT REQUIRED FOR LOADS OF CLASS C EXPLOSIVES REGARDLESS OF THE WEIGHT OF THE LOAD.
8. THE NORMAL LOADING PATTERN IN CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS IS TO POSITION THE LADING BETWEEN A CAR END WALL AND A LOAD DIVIDER BULKHEAD IN FULL LAYERS. OBVIOUSLY, A LOAD QUANTITY MUST THEN BE A MULTIPLE OF THE NUMBER OF CONTAINERS WHICH ARE IN ONE LOAD UNIT. A LOAD UNIT IS DEFINED AS A STACK OF CONTAINERS WHICH IS FULL LOAD HEIGHT BY ONE UNIT IN LENGTH. IF THE QUANTITY TO BE SHIPPED CANNOT BE ATTAINED BY ADJUSTING THE NUMBER OF TIERS IN ONE OR BOTH ENDS OF A CAR, ONE OF THE FOLLOWING PROCEDURES MUST BE USED IN ORDER TO OBTAIN THE DESIRED QUANTITY.
 - A. THE "GATES AND STRUTS" METHOD OF OMITTING A UNIT LOAD (2 CONTAINERS) MAY BE USED TO ADJUST A LOAD QUANTITY DOWNWARD BY OTHER THAN A MULTIPLE OF A LOAD UNIT. SEE THE PROCEDURES ON PAGE 11 FOR GUIDANCE.
 - B. AT LOCATION (5) WHERE K-BRACES MIGHT NORMALLY BE USED IN A LOAD IN A CONVENTIONAL CAR, LOAD DIVIDER BULKHEADS CAN BE POSITIONED. LOADING CAN THEN CONTINUE TOWARD THE CENTER OF THE CAR FROM EACH INSTALLED LOAD DIVIDER BULKHEAD, IN EVEN LAYERS WHICH ARE ONE OR MORE LESS IN HEIGHT THAN THE LOAD IN THE ENDS OF THE CAR. INSTALL CENTER GATES AND STRUTS AS SHOWN IN THE APPLICABLE CONVENTIONAL BOX CAR DRAWING ON PAGES 4 AND 5 TO PROVIDE FOR A TIGHT LOAD BETWEEN THE BULKHEADS. SEE GENERAL NOTE "B" ON PAGE 2.
 - C. ONE OR MORE UNITS CAN BE POSITIONED IN CONTACT WITH A LOAD DIVIDER BULKHEAD ON THE CENTER-OF-CAR SIDE. BLOCK AND BRACE WITH LCL BRACES AS SHOWN ON PAGE 16, OR WITH KNEE BRACE ASSEMBLIES, AS SHOWN ON PAGES 14 AND 15.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 3"	16	4
1" X 6"	1,076	538
1" X 8"	18	12
2" X 4"	274	181
2" X 6"	148	148
4" X 4"	11	15
NAILS	NO. REQD	POUNDS
6d (2")	954	5-3/4
10d (3")	140	2-1/4
12d (3-1/4")	16	1/2
16d (3-1/2")	449	10
STEEL STRAPPING, 1-1/4" X .035" X .031" --- 330' REQD --- 48 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 30 REQD --- 1-1/2 LBS		
WIRE, NO. 14 GAGE ----- 60' REQD --- 1 LB		
ANTI-CHAFING MATERIAL ----- AS REQD --- NIL		

LOAD AS SHOWN

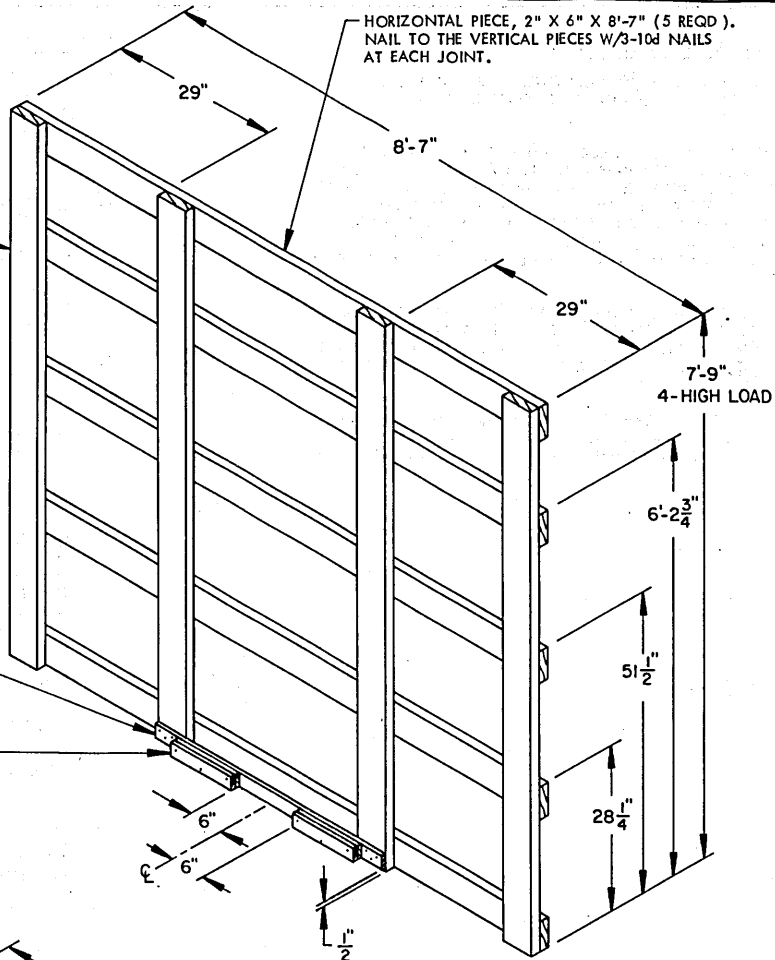
ITEM	QUANTITY	WEIGHT (APPROX)
CNU-396/E	60 CONTAINERS (30 UNIT LOADS)	91,320 LBS
DUNNAGE		1,866 LBS
TOTAL WEIGHT		93,186 LBS

VERTICAL PIECE, 2" X 6" BY 7'-9"
FOR A 4-HIGH LOAD, 69-3/4" FOR
A 3-HIGH LOAD, 46-1/2" FOR A
2-HIGH LOAD, 23-1/4" FOR A 1-
HIGH LOAD, (4 REQD).

HORIZONTAL PIECE, 2" X 6" X 8'-7" (5 REQD).
NAIL TO THE VERTICAL PIECES W/3-10d NAILS
AT EACH JOINT.

SUPPORT PIECE, 1" X 3" X 45" (1 REQD).
NAIL TO THE VERTICAL PIECES W/3-6d
NAILS AT EACH JOINT.

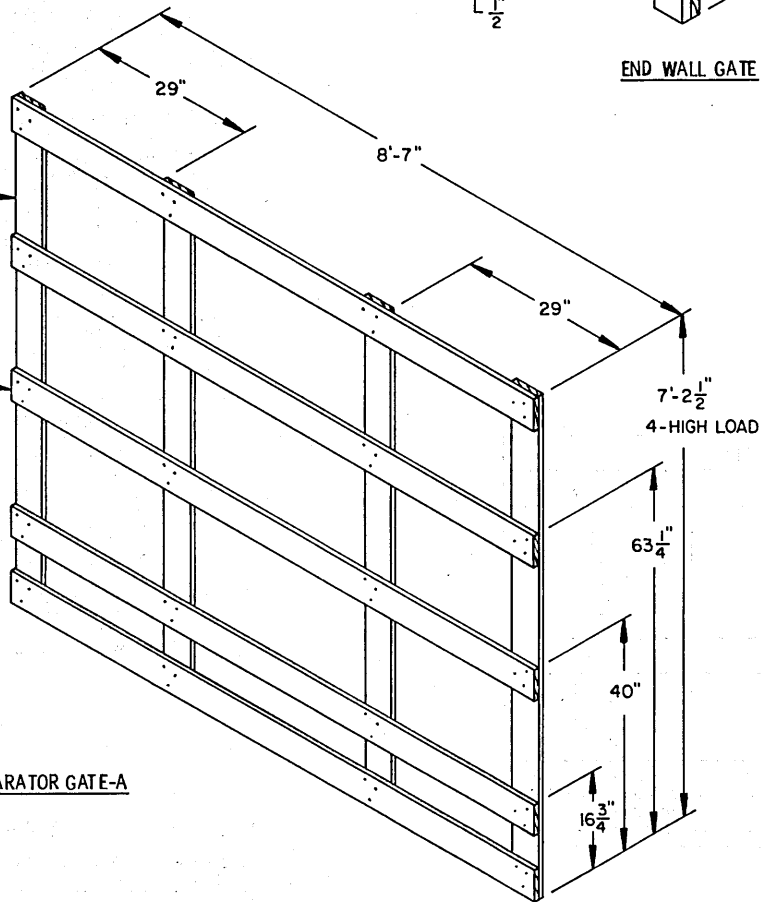
HOLD DOWN PIECE, 1" X 3" X 12"
(DOUBLED) (2 REQD). NAIL THE
FIRST PIECE TO THE SUPPORT PIECE
W/3-6d NAILS. NAIL THE SECOND
PIECE TO THE FIRST IN A LIKE
MANNER.



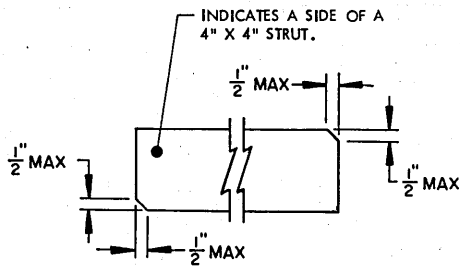
END WALL GATE

VERTICAL PIECE, 1" X 6" BY 7'-2-1/2"
FOR A 4-HIGH LOAD, 63-1/4" FOR A
3-HIGH LOAD, 40" FOR A 2-HIGH
LOAD, 16-3/4" FOR A 1-HIGH LOAD
(4 REQD).

HORIZONTAL PIECE, 1" X 6" X 8'-7"
(5 REQD). NAIL TO THE VERTICAL
PIECES W/3-6d NAILS AT EACH JOINT
AND CLINCH.



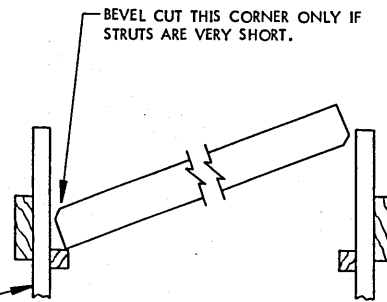
SEPARATOR GATE-A



BEVEL CUT

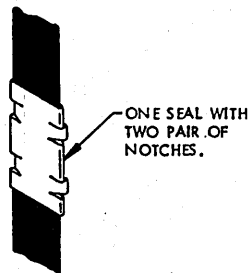
BEVEL CUTTING THE STRUTS AS SPECIFIED WILL FACILITATE INSTALLING THE STRUTS WITH A "DRIVE-FIT". **CAUTION:** DO NOT BEVEL A CORNER MORE THAN 1/2".

INDICATES A TYPICAL CENTER GATE.



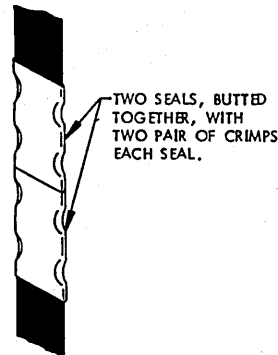
STRUT INSTALLATION

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



STRAP JOINT-A

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

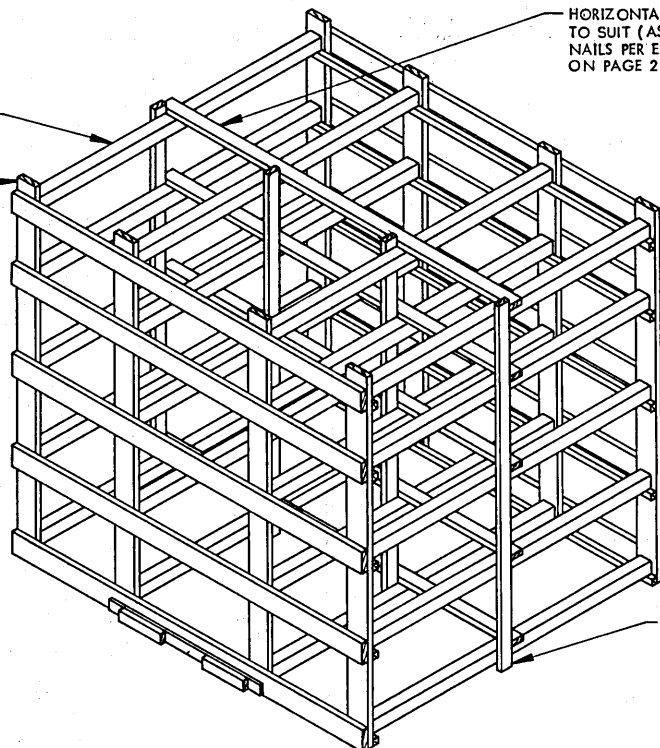


STRAP JOINT-B

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

INDICATES A STRUT, SEE GENERAL NOTES "P" AND "Q" ON PAGE 2.

CENTER GATE FOR A 4-HIGH LOAD IS SHOWN.

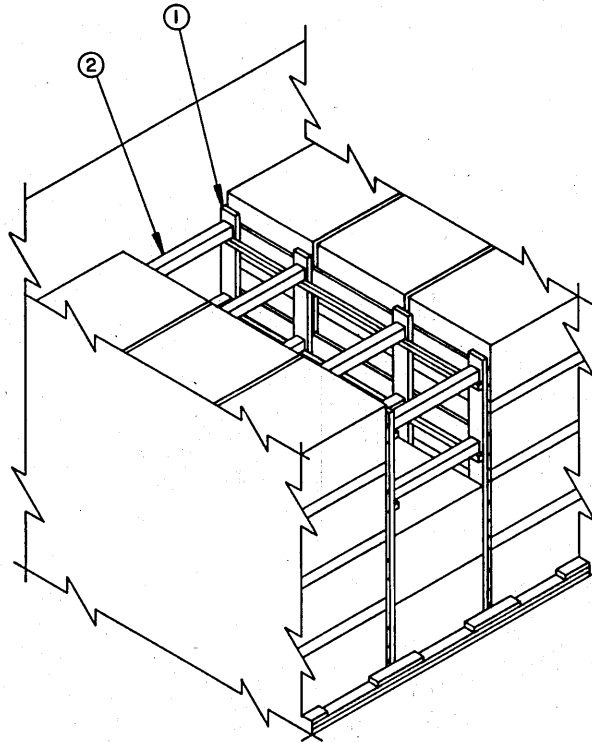


HORIZONTAL STRUT BRACING, 2" X 4" BY A LENGTH TO SUIT (AS REQD). NAIL TO THE STRUTS W/3-10d NAILS PER EACH JOINT. SEE GENERAL NOTE "P" ON PAGE 2.

VERTICAL STRUT BRACING, 2" X 4" BY A LENGTH TO EXTEND 2" ABOVE THE TOP STRUT (AS REQD). NAIL TO THE STRUTS W/3-10d NAILS PER EACH JOINT.

TYPICAL STRUT BRACING

DETAILS



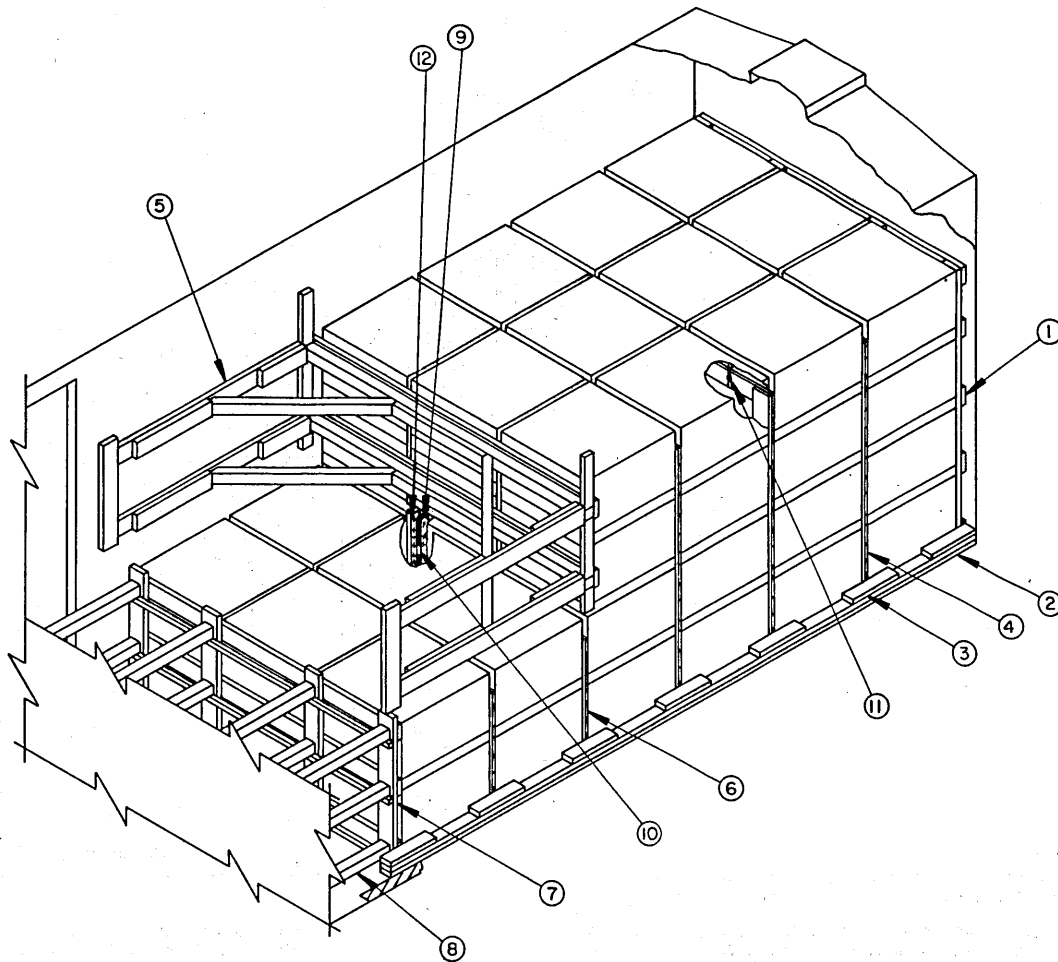
ISOMETRIC VIEW

SPECIAL NOTES:

1. A PARTIAL VIEW OF A 9'-4" WIDE CONVENTIONAL TYPE BOX CAR IS SHOWN. OTHER WIDER WIDTH CARS CAN ALSO BE USED.
2. A UNIT LOAD (2-CONTAINERS) FROM THE TOP TWO LAYERS OF A 4-LAYER LOAD (4-CONTAINERS) IS SHOWN AS TYPICAL. THE PROCEDURES ARE ALSO APPLICABLE FOR THE OMISSION OF 1-CONTAINER FROM A 4-LAYER OR 3-LAYER LOAD. ONE SET OF FOUR STRUTS IS REQUIRED FOR EACH OMITTED LAYER.
3. THE OMITTED UNIT LOAD (2-CONTAINERS) PROCEDURES SHOULD BE APPLIED NEAR THE CENTER OF THE CAR LENGTH, BUT NOT IN THE DOORWAY AREA. ALSO THERE SHOULD BE AT LEAST ONE (1) UNIT LOAD (2-CONTAINERS) BETWEEN THE OMITTED UNIT LOAD (2-CONTAINERS) AND THE CENTER GATE.
4. ONLY THE BLOCKING AND BRACING FOR THE OMITTED UNIT LOAD (2-CONTAINERS) IS SHOWN. REFER TO PAGES 4 AND 5 FOR THE BLOCKING AND BRACING REQUIREMENTS FOR THE BALANCE OF THE LOAD.

KEY NUMBERS

- ① SEPARATOR GATE (2 REQD). SEE THE "SEPARATOR GATE-B" DETAIL ON PAGE 9.
- ② STRUT, 4" X 4" BY CUT-TO-FIT (REF: 35-1/4") (8 REQD). TOENAIL THE STRUT TO THE SEPARATOR GATES, PIECES MARKED ①, W/2-16d NAILS AT EACH END. SEE THE "STRUT INSTALLATION" DETAIL ON PAGE 10 AND SPECIAL NOTES 2 AND 3 AT LEFT.



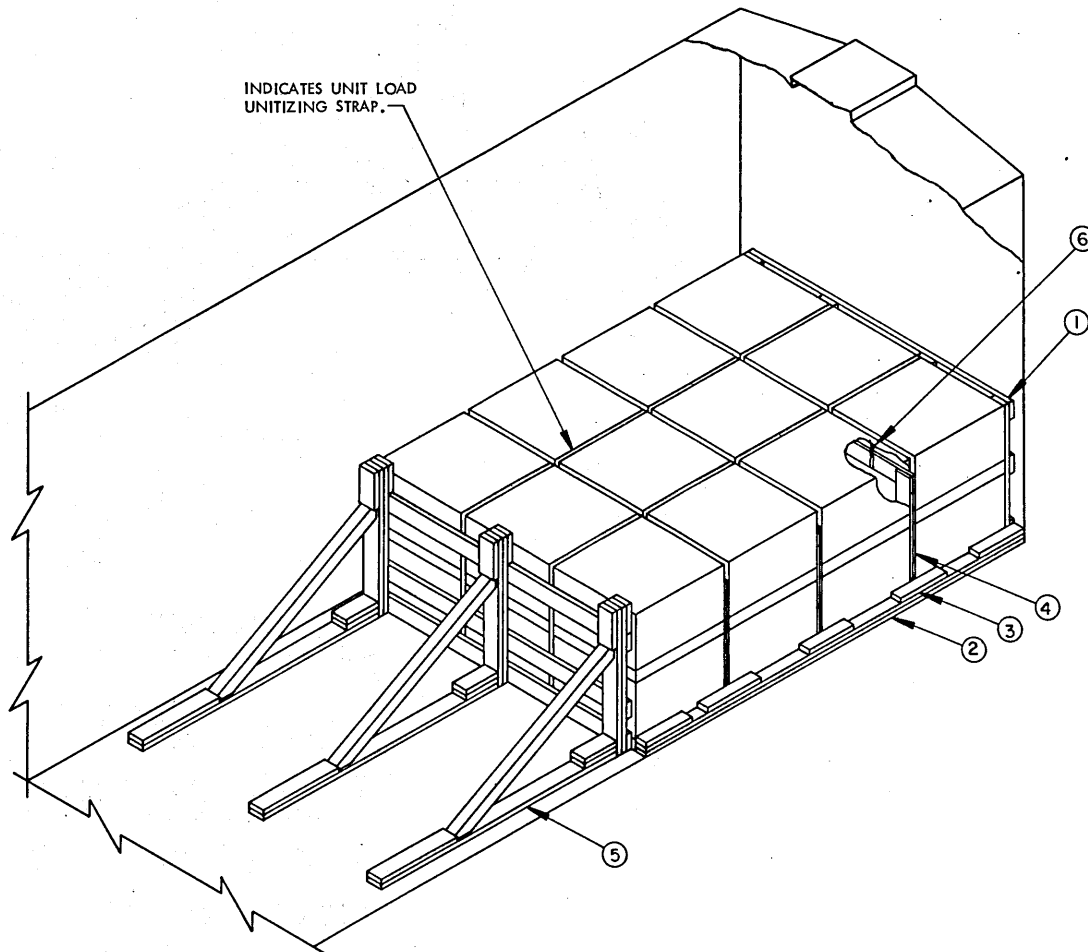
ISOMETRIC VIEW

KEY NUMBERS

SPECIAL NOTES:

1. A 9'-4" WIDE CONVENTIONAL BOX CAR WITH WOOD LINED SIDEWALLS IS SHOWN WITH A K-BRACE. OTHER WOOD LINED BOX CARS OF WIDER WIDTHS CAN BE USED.
2. THE K-BRACE METHOD OF PARTIAL-LAYER (TIER, 1 UNIT LOAD, 2 CONTAINERS HIGH) BRACING MAY BE USED IN EITHER OR BOTH ENDS OF A WOOD LINED CAR FOR SECUREMENT OF A PARTIAL TOP TIER. THE K-BRACE SHOWN IS ADEQUATE FOR RETAINING A PARTIAL TIER OF NOT MORE THAN 14,000 POUNDS.
3. THE CENTER CLEAT, PIECE MARKED (4) IN THE K-BRACE DETAIL ON PAGE 13 WILL BE 38" LONG FOR A 9'-4" WIDE BOX CAR AND 40" LONG FOR A 9'-6" WIDE BOX CAR. ADJUST THE LENGTH PROPORTIONATELY FOR CARS OF OTHER WIDTHS.

- (1) END WALL GATE (AS REQD). SEE THE DETAIL ON PAGE 8 AND GENERAL NOTE "U" ON PAGE 2.
- (2) SIDE BLOCKING, 2" X 4" BY LOAD LENGTH PLUS 8" (DOUBLED) (AS REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 4 ON PAGE 5.
- (3) FILL PIECE, 2" X 4" X 18" (AS REQD). POSITION AS SHOWN AND NAIL TO SIDE BLOCKING, PIECE MARKED (2), W/5-16d NAILS EACH.
- (4) SEPARATOR GATE (AS REQD). SEE THE "SEPARATOR GATE-A" DETAIL ON PAGE 8.
- (5) K-BRACE (AS REQD). SEE THE DETAIL ON PAGE 13.
- (6) SEPARATOR GATE FOR 1 UNIT LOAD (2 CONTAINERS HIGH) (AS REQD). SEE THE "SEPARATOR GATE-A" DETAIL ON PAGE 8.
- (7) CENTER GATE FOR 1 UNIT LOAD (2 CONTAINERS HIGH) (AS REQD). SEE THE DETAIL ON PAGE 9.
- (8) STRUT, 4" X 4" BY A LENGTH TO SUIT (AS REQD). TOENAIL TO PIECES MARKED (7) W/2-16d NAILS AT EACH END.
- (9) BUNDLING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT (AS REQD). SEE THE APPLICABLE "STACK BUNDLING" DETAIL ON PAGE 3.
- (10) SEAL FOR 1-1/4" STRAPPING (AS REQD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.
- (11) TIE WIRE, 14 GAGE BY A LENGTH TO SUIT (AS REQD). FASTEN THE SEPARATOR GATE, PIECES MARKED (4) AND (6), IN TWO PLACES AS PER THE "TIE WIRE APPLICATION" DETAIL ON PAGE 18.
- (12) ANTI-CHAFING MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS, EXCEPT THRU FORK TINE OPENINGS.



INDICATES UNIT LOAD
UNITIZING STRAP.

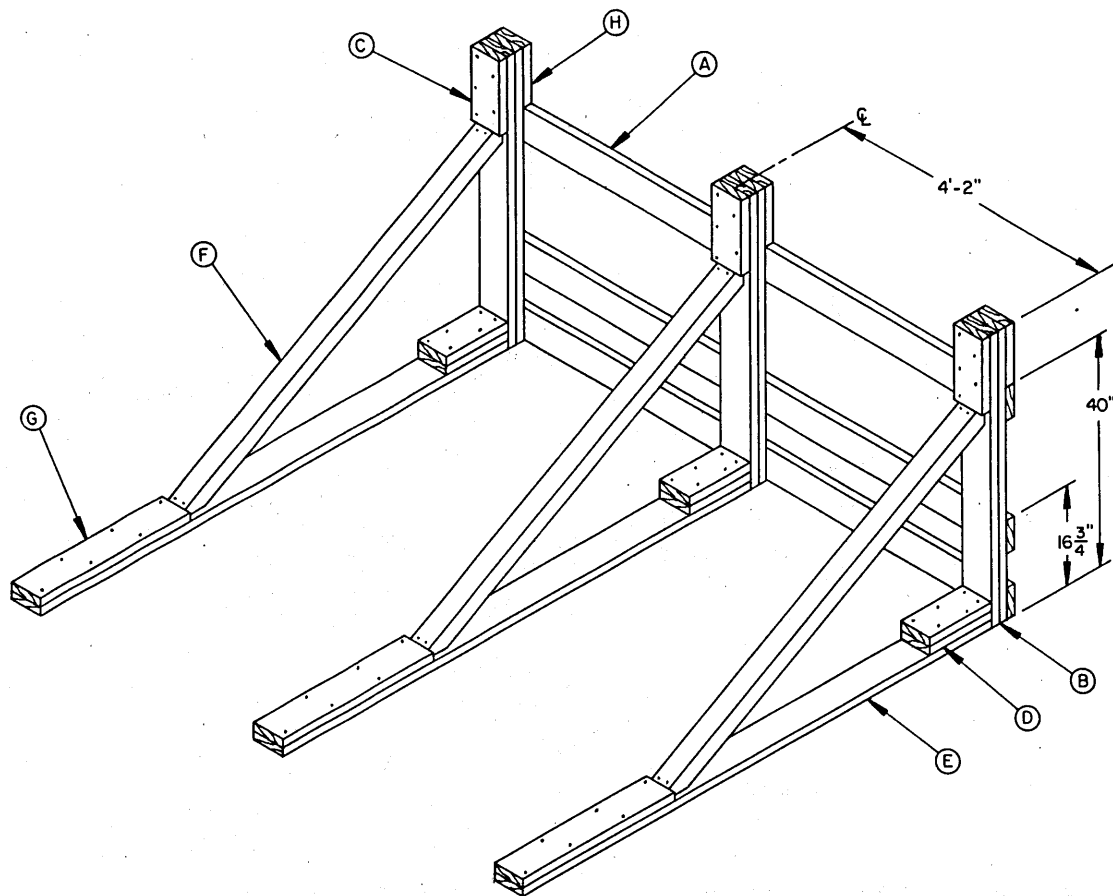
ISOMETRIC VIEW

KEY NUMBERS

SPECIAL NOTES:

1. AN 8-CONTAINER LOAD (4 UNIT LOADS) IS SHOWN IN A 9'-4" WIDE CONVENTIONAL BOX CAR USING THE KNEE BRACE METHOD OF RESTRAINT. OTHER BOX CARS OF WIDER WIDTHS CAN ALSO BE USED.
2. THE TOTAL KNEE BRACE ASSEMBLY IS ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF NOT MORE THAN 12,750 POUNDS.

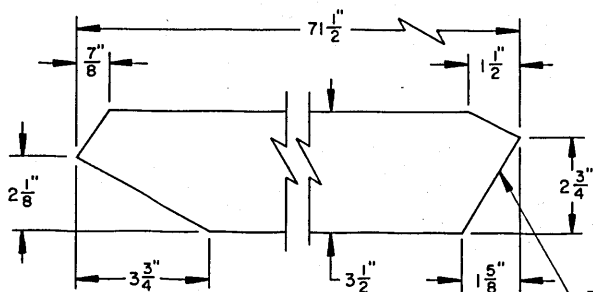
- ① END WALL GATE FOR 1 UNIT LOAD (2 CONTAINERS HIGH) (1 REQD). SEE THE DETAIL ON PAGE 8. SEE GENERAL NOTE "U" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 4" BY LOAD LENGTH (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". LAMINATE EACH ADDITIONAL PIECE IN A LIKE MANNER. SEE SPECIAL NOTE 4 ON PAGE 5.
- ③ FILL PIECE, 2" X 4" X 18" (10 REQD). POSITION AS SHOWN AND NAIL TO THE SIDE BLOCKING, PIECE MARKED ②, W/5-16d NAILS EACH.
- ④ SEPARATOR GATE FOR 1 UNIT LOAD (2 CONTAINERS HIGH) (3 REQD). SEE THE "SEPARATOR GATE-A" DETAIL ON PAGE 8.
- ⑤ KNEE BRACE ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 15 AND SPECIAL NOTE 2 AT LEFT.
- ⑥ TIE WIRE, 14 GAGE BY A LENGTH TO SUIT (REF: 24") (6 REQD). FASTEN THE SEPARATOR GATE, PIECE MARKED ④, IN TWO PLACES AS SHOWN IN THE "TIE WIRE APPLICATION" DETAIL ON PAGE 18.



ISOMETRIC VIEW

KEY LETTERS

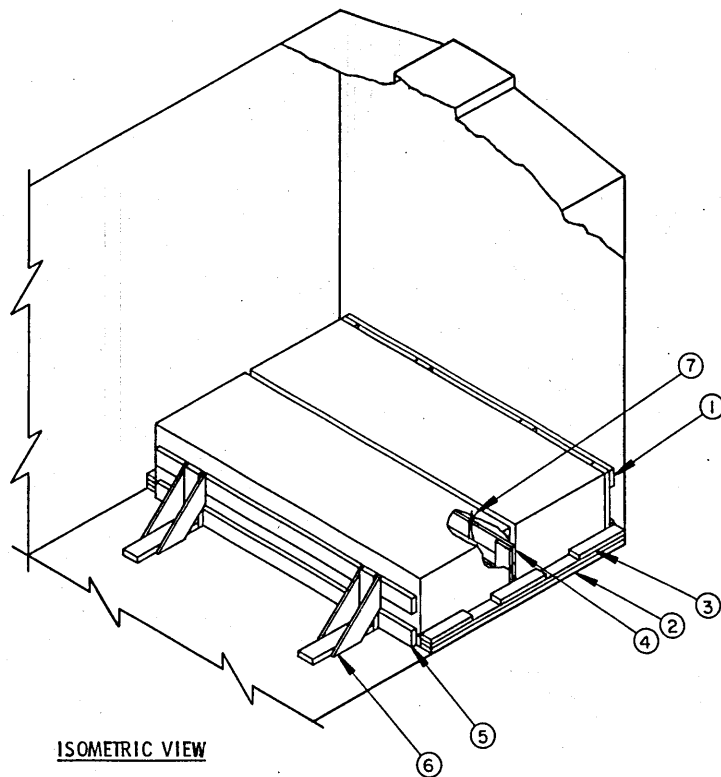
- (A) LOAD BEARING PIECE, 2" X 6" X 8'-4" (3 REQD). NAIL TO THE VERTICAL PIECES, PIECE MARKED (B), W/3-10d NAILS AT EACH JOINT.
- (B) VERTICAL PIECE, 2" X 6" X 50" (DOUBLED) (3 REQD). NAIL THE FIRST PIECE TO THE SECOND W/1-10d NAIL EVERY 6". SEE GENERAL NOTE "J" ON PAGE 2.
- (C) HOLD-DOWN CLEAT, 2" X 6" X 12 -3/4" (3 REQD). NAIL TO THE VERTICAL PIECE, PIECE MARKED (B), W/5-10d NAILS.
- (D) POCKET CLEAT, 2" X 6" X 12" (DOUBLED) (3 REQD). NAIL THE FIRST PIECE TO THE FLOOR CLEAT, PIECE MARKED (E), W/5-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. TOENAIL TO THE VERTICAL PIECE W/2-16d NAILS.
- (E) FLOOR CLEAT, 2" X 6" X 7'-8-1/4" (3 REQD). NAIL TO THE CAR FLOOR W/1-16d NAIL EVERY 8". SEE GENERAL NOTES "J" AND "N" ON PAGE 2.
- (F) BRACE, 4" X 4" X 71-1/2" (3 REQD). SEE THE DETAIL AT LEFT FOR BEVEL CUTS REQUIRED. TOENAIL TO THE VERTICAL PIECE AND FLOOR CLEAT, PIECES MARKED (B) AND (E), W/2-16d NAILS AT EACH JOINT.
- (G) BACK-UP CLEAT, 2" X 6" X 30" (3 REQD). NAIL TO THE FLOOR CLEAT, PIECE MARKED (E) W/6-40d NAILS.
- (H) FILL PIECE, 2" X 6" X 10" (3 REQD). NAIL TO THE VERTICAL PIECE W/3-10d NAILS.



DIAGONAL BRACE
4" x 4" MATERIAL

THE BRACE MUST BE INSTALLED SO THAT THIS BEARING SURFACE WILL BE IN CONTACT WITH THE VERTICAL PIECE MARKED (B).

TYPICAL LCL LOAD USING KNEE BRACE METHOD OF PARTIAL-LAYER BRACING



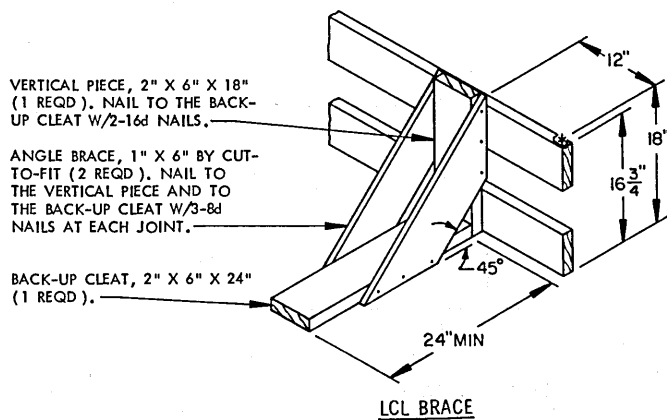
ISOMETRIC VIEW

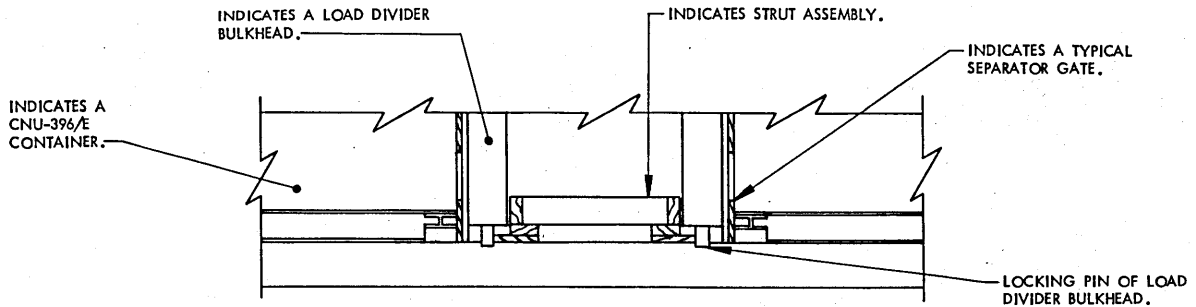
SPECIAL NOTE:

1. EACH LCL BRACE AS APPLIED FOR LONGITUDINAL BRACING WILL RETAIN 2,000 POUNDS OF LADING. A MINIMUM OF (2) BRACES MUST BE USED FOR LONGITUDINAL BRACING.

KEY NUMBERS

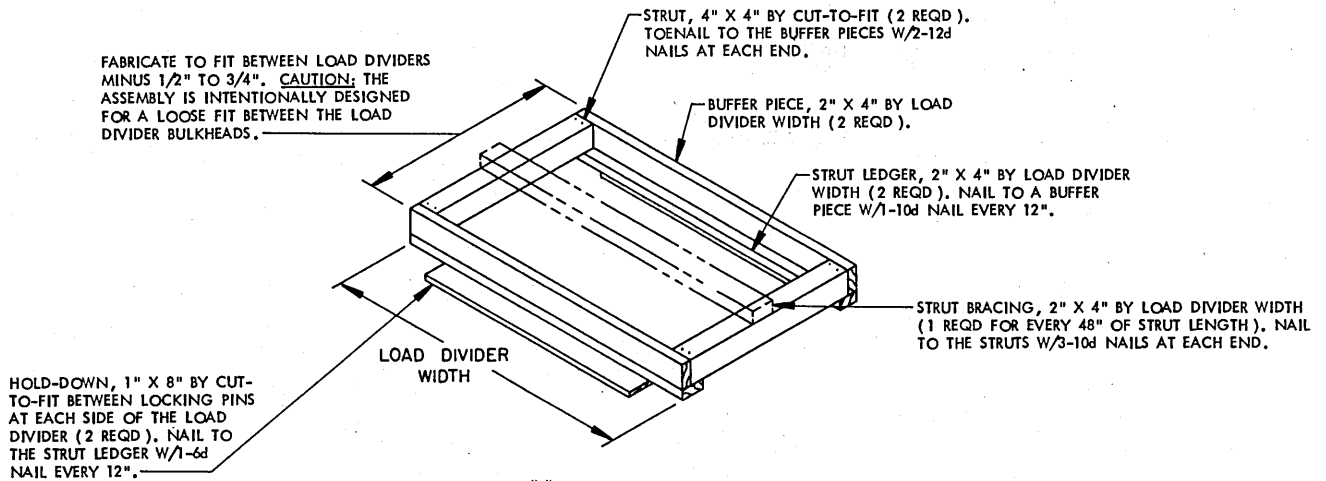
1. END WALL GATE (1 REQD). SEE THE DETAIL ON PAGE 8 FOR A 1-LAYER HIGH GATE. SEE GENERAL NOTE "U" ON PAGE 2.
2. SIDE BLOCKING, 2" X 4" X LOAD LENGTH (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/1-16d NAIL EVERY 8". LAMINATE EACH ADDITIONAL PIECE IN A LIKE MANNER. SEE GENERAL NOTE "J" ON PAGE 2.
3. FILL PIECE, 2" X 4" X 18" (6 REQD). POSITION AS SHOWN AND NAIL TO THE SIDE BLOCKING, PIECE MARKED 2 W/5-16d NAILS EACH.
4. SEPARATOR GATE (1 REQD). SEE THE "SEPARATOR GATE-A" DETAIL FOR A 1-LAYER HIGH GATE ON PAGE 8.
5. HORIZONTAL PIECE, 2" X 6" X 8'-4" (2 REQD). NAIL TO THE LCL BRACES W/3-10d NAILS AT EACH JOINT.
6. LCL BRACE (2 REQD). SEE THE "LCL BRACE" DETAIL BELOW. NAIL TO THE CAR FLOOR W/7-16d NAILS. SEE GENERAL NOTES "J" AND "N" ON PAGE 2 AND SPECIAL NOTE 1 AT LEFT.
7. TIE WIRE, 14 GAGE BY A LENGTH TO SUIT (REF: 24") (2 REQD). FASTEN THE SEPARATOR GATE, PIECE MARKED 4, IN TWO PLACES AS SHOWN IN THE "TIE WIRE APPLICATION" DETAIL ON PAGE 18.





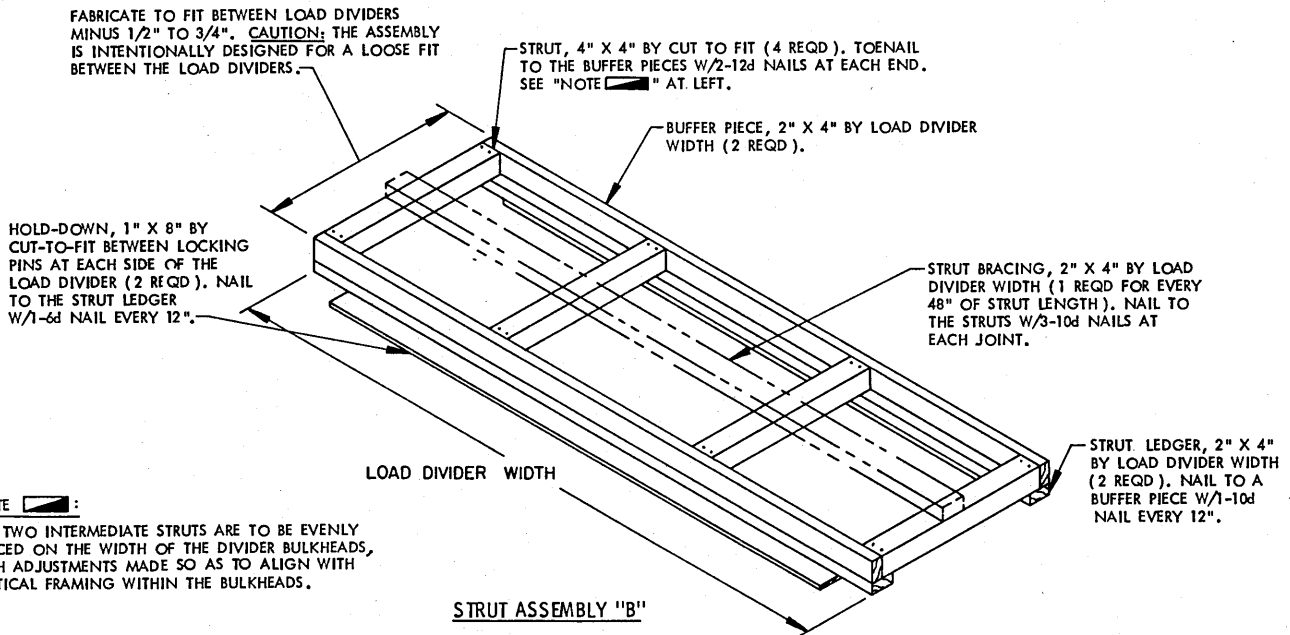
INSTALLATION OF STRUT ASSEMBLIES A OR B

THIS VIEW SHOWS THE STRUT ASSEMBLY INSTALLED BETWEEN THE LOAD DIVIDER BULKHEADS. NOTE THE 1/2" TO 3/4" (TOTAL) SPACE INTENTIONALLY PROVIDED BETWEEN THE ASSEMBLY AND THE BULKHEADS.



STRUT ASSEMBLY "A"

STRUT ASSEMBLY "A" IS DESIGNED FOR USE WITH 2-PIECE BULKHEADS, WITH TWO (2) ASSEMBLIES BEING REQUIRED PER LOAD. SEE SPECIAL NOTE 7 ON PAGE 7.



STRUT ASSEMBLY "B"

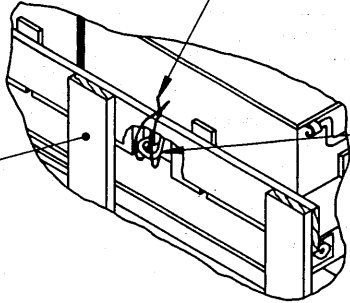
STRUT ASSEMBLY "B" IS DESIGNED FOR USE WITH 1-PIECE BULKHEADS. SEE SPECIAL NOTE 7 ON PAGE 7.

NOTE

THE TWO INTERMEDIATE STRUTS ARE TO BE EVENLY SPACED ON THE WIDTH OF THE DIVIDER BULKHEADS, WITH ADJUSTMENTS MADE SO AS TO ALIGN WITH VERTICAL FRAMING WITHIN THE BULKHEADS.

NO. 14 GAGE WIRE BY A LENGTH TO SUIT. FORM TWO LOOPS AROUND THE SEPARATOR GATE AND THROUGH THE CONTAINER TIEDOWN RINGS. BRING ENDS TOGETHER AND TWIST TO PREVENT DISLODGE-
MENT. TWO REQUIRED FOR EACH SEPARATOR GATE.

INDICATES A SEPARATOR GATE.



INDICATES CNU-396/E CONTAINER TIEDOWN RING.

TIE WIRE APPLICATION