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DATE 12/12/74

LOADING AND BRACING (CL & LCL) IN BOX CARS OF THE M56 MINE DISPERSING SYSTEM RELOAD KIT, PACKED IN THE XM602 SHIPPING CONTAINER

INDEX

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DO NOT SCALE

PROJECT FSA 135-74

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 IN THIS DRAWING ARE APPLICABLE TO THE M56 MINE DISPERSING SYSTEM RELOAD KIT, PACKED IN THE XM602 SHIPPING CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE XM602 SHIPPING CONTAINER WITH CONTENTS.

C. FOR DETAILS OF THE XM602 SHIPPING CONTAINER SEE DRAWING NO. 9272787.
CONTAINER DIMENSIONS -- 37-1/2" LONG BY 32-1/4" WIDE BY 18-1/4" HIGH.
GROSS WEIGHT ---------- 775 POUNDS (APPROX).

D. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE FOR CONVENTIONAL TYPE BOXCARS OF VARIOUS LENGTH AND WIDTH COMBINATIONS. PROCEDURES ARE ALSO INCLUDED FOR SHIPMENT IN CARS EQUIPPED WITH LOAD DIVIDERS; HOWEVER, ONLY THOSE CARS WHICH SATISFY SPECIFICATIONS CONTAINED ON PAGE 11 CAN BE USED.

E. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE DOORS OF THE CONVENTIONAL SLIDING TYPE; HOWEVER, THE DEPICTED OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO CARS WHICH ARE EQUIPPED WITH PLUG DOORS. CAUTION: DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER AUXILIARY OR MAIN, EXCEPT TO A NAILING STRIP. IF A DOOR IS SO EQUIPPED, FOR SECURING SUCH ITEMS AS GATE HOLD DOWNS, OR DOORWAY SPANNER DUNNAGE. ALSO, AFTER THE PLUG DOORS ON A CAR ARE CLOSED AND READY FOR THE INSTALLATION OF "CAR SEALS", A PIECE OF WIRE OF SUITABLE SIZE WILL BE USED IN ADDITION TO, AND IN CONJUNCTION WITH, EACH CAR SEAL USED TO "SEAL" THE CAR. THE WIRE WILL BE THREADED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES, AND THE WIRE ENDS WILL BE TWISTED TOGETHER.

F. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE BOXCAR BEING LOADED OR THE QUANTITY TO BE SHIPPED, AND COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED FOR THE VARIOUS LOADS SHOWN HEREIN MAY BE USED AS REQUIRED. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN FOR FULL OR PARTIAL CARLOADS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.

G. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN BOXCARS WHICH ARE PARTIALLY LOADED WITH ITEMS WHICH ARE PACKED IN THE XM602 SHIPPING CONTAINER, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.

H. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEMS DESIGNATED WITHIN THE TITLE OF THIS DOCUMENT.

J. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT AS SHOWN, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.

K. IF THE CAR BEING USED IS EQUIPPED WITH A NAILABLE METAL FLOOR AND A NAIL SIZE FOR FLOOR NAILING IS MARKED ON THE SIDE WALL OF THE CAR, THAT GUIDANCE SHOULD BE APPLIED FOR THE NAILING OF THE APPLICABLE DUNNAGE PIECES. IF A NAIL SIZE IS NOT SPECIFIED, 30d NAILS SHOULD BE USED. ALSO, IF THE LOCATION OF PIECES NAILED TO THE CAR FLOOR IS SUCH THAT PROPER NAILING INTO THE NAILING CHANNELS IN THE CAR FLOOR CANNOT BE ACHIEVED, THE LENGTH AND/OR WIDTH OF THESE PIECES MAY BE INCREASED AS NECESSARY.

L. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE OR 1-1/2" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" WIDE OR 1-1/2" THICK BY 5-1/2" WIDE.

M. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. 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.

N. THROUGHOUT THIS PROCEDURAL DRAWING, PORTIONS OF THE BLOCKING COMPONENTS AND OF THE DEPICTED CARS, SUCH AS A CAR SIDE WALL, HAVE BEEN OMITTED FROM THE LOAD VIEWS FOR CLARITY PURPOSES.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

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

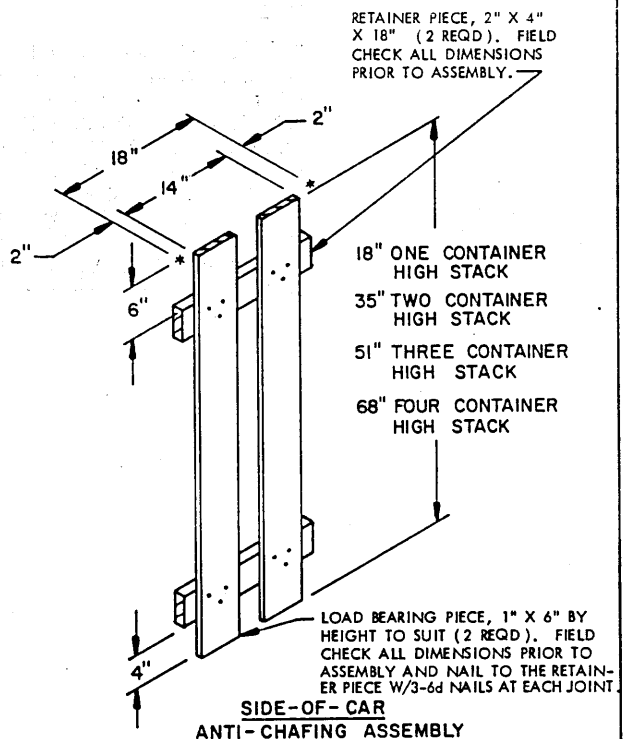
(GENERAL NOTES CONTINUED)

O. THE "DOORWAY AREA" WITHIN A CAR IS DEFINED AS THE CARGO SPACE THAT IS ADJACENT TO A CONVENTIONAL TYPE AND/OR A PLUG TYPE DOOR. THE LENGTH OF A "DOORWAY AREA" CAN BE AS MUCH AS 24 FEET IN SOME CARS THAT ARE EQUIPPED WITH STAGGERED DOORS.

P. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "CONTAINER DETAIL" ON PAGE 3 AND TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO DEPICTED OUTLOADING METHODS.

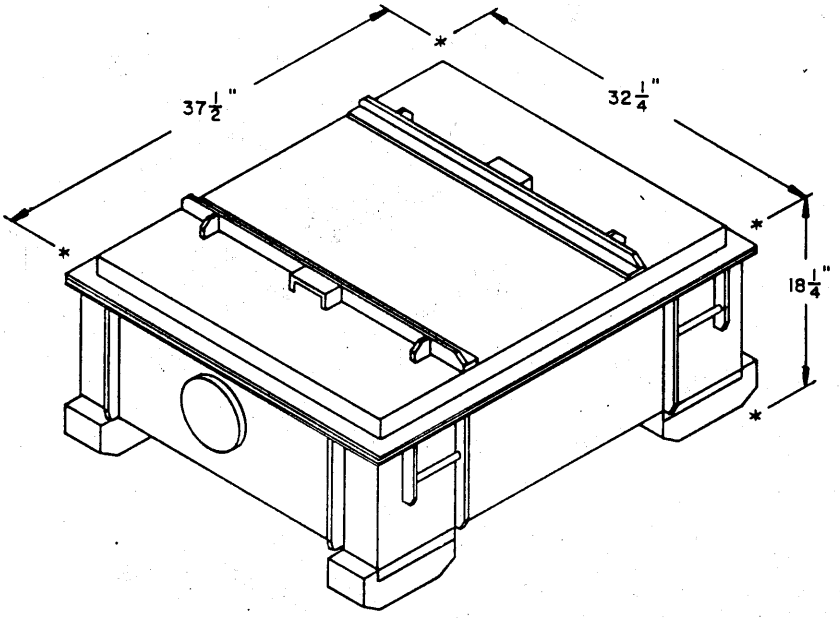
Q. THE LOAD LIMIT OF A CAR MUST NOT BE EXCEEDED. LIKEWISE, THE LOAD IN ONE END OF A CAR MUST NOT EXCEED ONE-HALF OF THE LOAD LIMIT WHICH IS STENCILED ON THE OUTSIDE OF THE CAR. THE CENTER OF GRAVITY (CG) OF A LOAD HAVING AN EQUAL NUMBER OF UNITS IN EACH END OF THE CAR WILL BE AT THE LONGITUDINAL CENTER OF THE CAR AND THEREFORE THE TOTAL WEIGHT OF THE LADING AND DUNNAGE MAY EQUAL BUT MUST NOT EXCEED THE STENCILED LOAD LIMIT. HOWEVER, FOR A LOAD CONSTRUCTED IN AN OFFSET LOADING PATTERN, THE CG WILL BE LOCATED TOWARD THE LONG-LOAD END FROM THE LONGITUDINAL CENTER OF THE CAR SO NATURALLY THE LONG-LOAD END WILL BE THE HEAVIEST. THE TOTAL WEIGHT OF THE LADING AND DUNNAGE MUST THEN BE SOMETHING LESS THAN THE STENCILED LOAD LIMIT. NOTE: A 50'-6" LONG BOXCAR HAVING 4-LAYERS OF CONTAINERS, (180 CONTAINERS TOTAL) AS SHOWN ON PAGE 4, REQUIRES A BOXCAR HAVING A LOAD LIMIT OF NOT LESS THAN 147,600 POUNDS. A 50'-6" LONG BOXCAR HAVING 3-LAYERS OF CONTAINERS (135 CONTAINERS TOTAL) REQUIRES A BOXCAR HAVING A LOAD LIMIT OF NOT LESS THAN 111,600 POUNDS. A 40'-6" LONG BOXCAR HAVING 4-LAYERS OF CONTAINERS (144 CONTAINERS TOTAL) REQUIRES A BOXCAR HAVING A LOAD LIMIT OF NOT LESS THAN 115,500 POUNDS. A 40'-6" LONG BOXCAR HAVING 3-LAYERS OF CONTAINERS (108 CONTAINERS TOTAL) REQUIRES A BOXCAR HAVING A LOAD LIMIT OF NOT LESS THAN 86,600 POUNDS.

R. NOTE: WOOD-LINED BOXCARS ARE PREFERRED FOR THE LOADS SHOWN IN THIS DRAWING. HOWEVER, IF AN ALL METAL BOXCAR IS USED IT MUST BE LINED WITH SUITABLE "SIDE-OF-CAR ANTI-CHAFING ASSEMBLIES" AS SHOWN IN THE DETAIL BELOW.

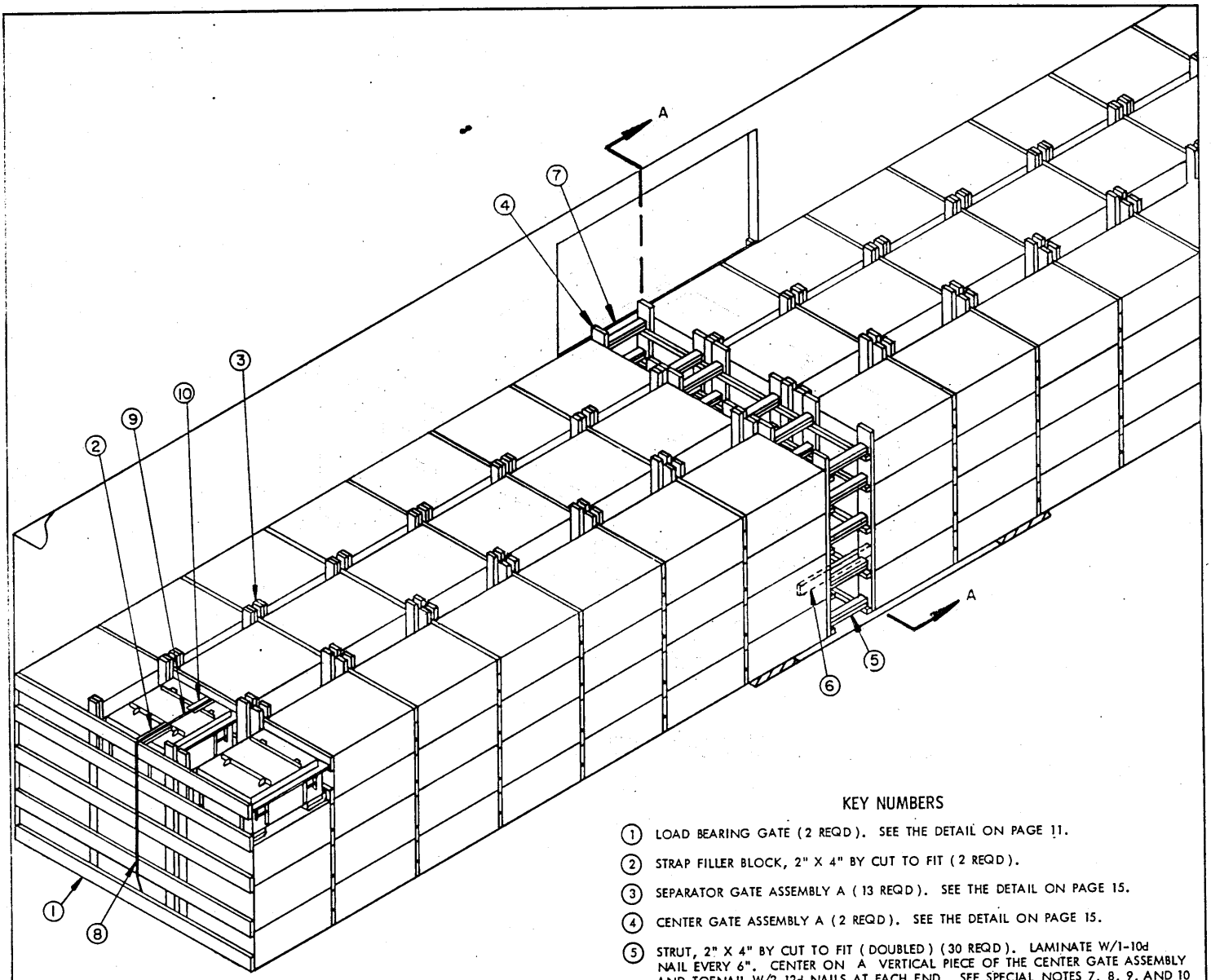


SIDE-OF-CAR
ANTI-CHAFING ASSEMBLY

TWO SIDE-OF-CAR ANTI-CHAFING ASSEMBLIES ARE REQUIRED FOR EACH STACK. POSITION THE LOAD BEARING PIECES AGAINST THE CAR SIDE WALL AND THE RETAINER PIECES BETWEEN THE VERTICAL FLANGES AT THE SIDE OF THE CONTAINER (SEE THE CONTAINER DETAIL ON PAGE 3). A 4-LAYER LOAD WILL HAVE THE TOP RETAINER PIECE POSITIONED AGAINST THE SIDE OF THE TOP CONTAINER AND THE BOTTOM RETAINER PIECE POSITIONED AGAINST THE SIDE OF THE BOTTOM CONTAINER. WHEN LOADING AN ALL METAL BOXCAR WHICH REQUIRES "SIDE-OF-CAR ANTI-CHAFING ASSEMBLIES" IT MAY BE NECESSARY TO ADJUST THE SPACING OF THE"VERTICAL PIECES"ON THE GATE ASSEMBLIES A SMALL AMOUNT TO COMPENSATE FOR INSTALLING THIS ANTI-CHAFING ASSEMBLY. THE CAR SHOULD BE FIELD CHECKED TO DETERMINE WHETHER THE SPACING OF THE"VERTICAL PIECES" ON THE GATE ASSEMBLIES SHOULD BE ADJUSTED.



XM602 SHIPPING CONTAINER



ISOMETRIC VIEW

KEY NUMBERS

(1) LOAD BEARING GATE (2 REQD). SEE THE DETAIL ON PAGE 11.

(2) STRAP FILLER BLOCK, 2" X 4" BY CUT TO FIT (2 REQD).

(3) SEPARATOR GATE ASSEMBLY A (13 REQD). SEE THE DETAIL ON PAGE 15.

(4) CENTER GATE ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 15.

(5) STRUT, 2" X 4" BY CUT TO FIT (DOUBLED) (30 REQD). LAMINATE W/1-10d NAIL EVERY 6". CENTER ON A VERTICAL PIECE OF THE CENTER GATE ASSEMBLY AND TOENAIL W/2-12d NAILS AT EACH END. SEE SPECIAL NOTES 7, 8, 9, AND 10 ON PAGE 5.

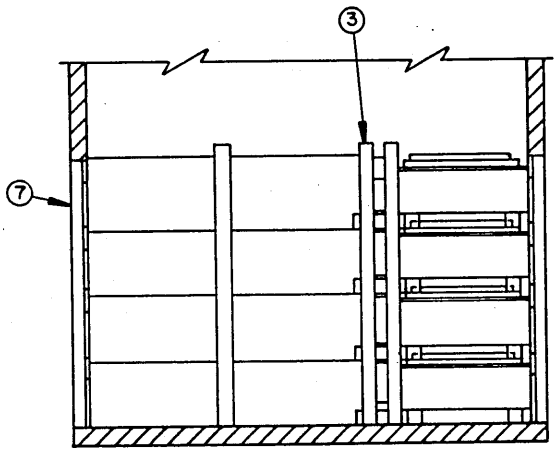
(6) GATE HOLD-DOWN, 2" X 3" BY CUT TO EXTEND 6" UNDER CONTAINERS ADJACENT TO THE CENTER GATE ASSEMBLIES (2 REQD). POSITION ON TOP OF THE STRUT LEDGER AND NAIL TO THE LOAD BEARING PIECES W/2-10d NAILS AT EACH JOINT.

(7) DOORWAY PROTECTION ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 16.

(8) STEEL STRAPPING, 1-1/4" X .035" X 19'-0" LONG (2 REQD). ENCIRCLE THE LOAD BEARING GATE AND THE CENTER STACK OF CONTAINERS AS SHOWN. STAPLE TO PIECE MARKED (2) W/2-1-1/4" STAPLES. SEE GENERAL NOTE "J" ON PAGE 2 AND SPECIAL NOTE 11 ON PAGE 5.

(9) SEAL FOR 1-1/4" STEEL STRAPPING (4 REQD, 2 PER STRAP JOINT).

(10) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER STEEL STRAPPING AT ALL POINTS OF CONTACT WITH THE CONTAINER.



SECTION A-A

180-CONTAINER LOAD IN A 50'-6" LONG BY 9'-2" WIDE BOX CAR

PROJECT FSA 135-74

SPECIAL NOTES:

1. A 180-CONTAINER LOAD IS SHOWN IN A 50'-6" LONG BY 9'-2" WIDE (INSIDE DIMENSIONS) BOXCAR EQUIPPED WITH 8'-0" WIDE DOOR OPENINGS AND CONVENTIONAL SLIDING DOORS. WIDER OR NARROWER CARS MAY BE USED. SEE GENERAL NOTE "E" ON PAGE 2, AND SPECIAL NOTE 12 BELOW.
2. IF A LESS-THAN-FULL QUANTITY OF CONTAINERS IS TO BE SHIPPED AN "OMITTED CONTAINER ASSEMBLY" AS SHOWN IN THE LOAD ON PAGE 6 MAY BE USED IN THE PLACE OF EACH OMITTED CONTAINER. USE IN THE TOP LAYER ONLY.
3. IF A LESS-THAN-CARLOAD QUANTITY OF CONTAINERS IS TO BE SHIPPED SEE THE LOADS ON PAGES 6, 7, 8, AND 9.
4. IF THE BOXCAR BEING LOADED IS LESS THAN 9'-2" WIDE SEE THE "ALTERNATIVE LOADING PATTERN" ON PAGE 9 AND "PROVISIONS FOR AN 8'-6" WIDE BOX CAR" ON PAGE 10.
5. FOR BOX CARS EQUIPPED WITH PLUG DOORS SEE "PROVISIONS FOR BOX CARS EQUIPPED WITH PLUG DOORS" ON PAGE 14.
6. FOR BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS SEE "PROVISIONS FOR CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS" ON PAGES 11 THROUGH 13.
7. THIRTY (30)DOUBLE 2" X 4" MATERIAL STRUTS, AS SHOWN, WILL RETAIN A MAXIMUM WEIGHT OF 78,550 POUNDS IN EACH END OF THE CAR.
8. NOTE: 4" X 4" MATERIAL MAY BE USED IN LIEU OF DOUBLE 2" X 4" MATERIAL FOR THE STRUTS. THIRTY (30) STRUTS WILL RETAIN A MAXIMUM WEIGHT OF 91,875 POUNDS IN EACH END OF THE CAR.
9. IF THE BOX CAR BEING LOADED HAS MORE THAN 91,875 POUNDS AT ONE END 2" X 6" MATERIAL (DOUBLED) MUST BE USED FOR STRUTS.
10. IF THE STRUTS ARE 48" OR GREATER IN LENGTH SEE THE "STRUT BRACING DETAIL" ON PAGE 17.
11. POSITION THE STEEL STRAPPING APPROXIMATELY 6" FROM THE EDGE OF THE CONTAINER IN SUCH A MANNER THAT IT WILL NOT CONTACT THE HUMIDITY INDICATOR OR OTHER APPURTENANCES.
12. THE DELINEATED LOAD REQUIRES A BOXCAR HAVING A LOAD LIMIT OF NOT LESS THAN 147,600 POUNDS. SEE GENERAL NOTE "Q" ON PAGE 2.

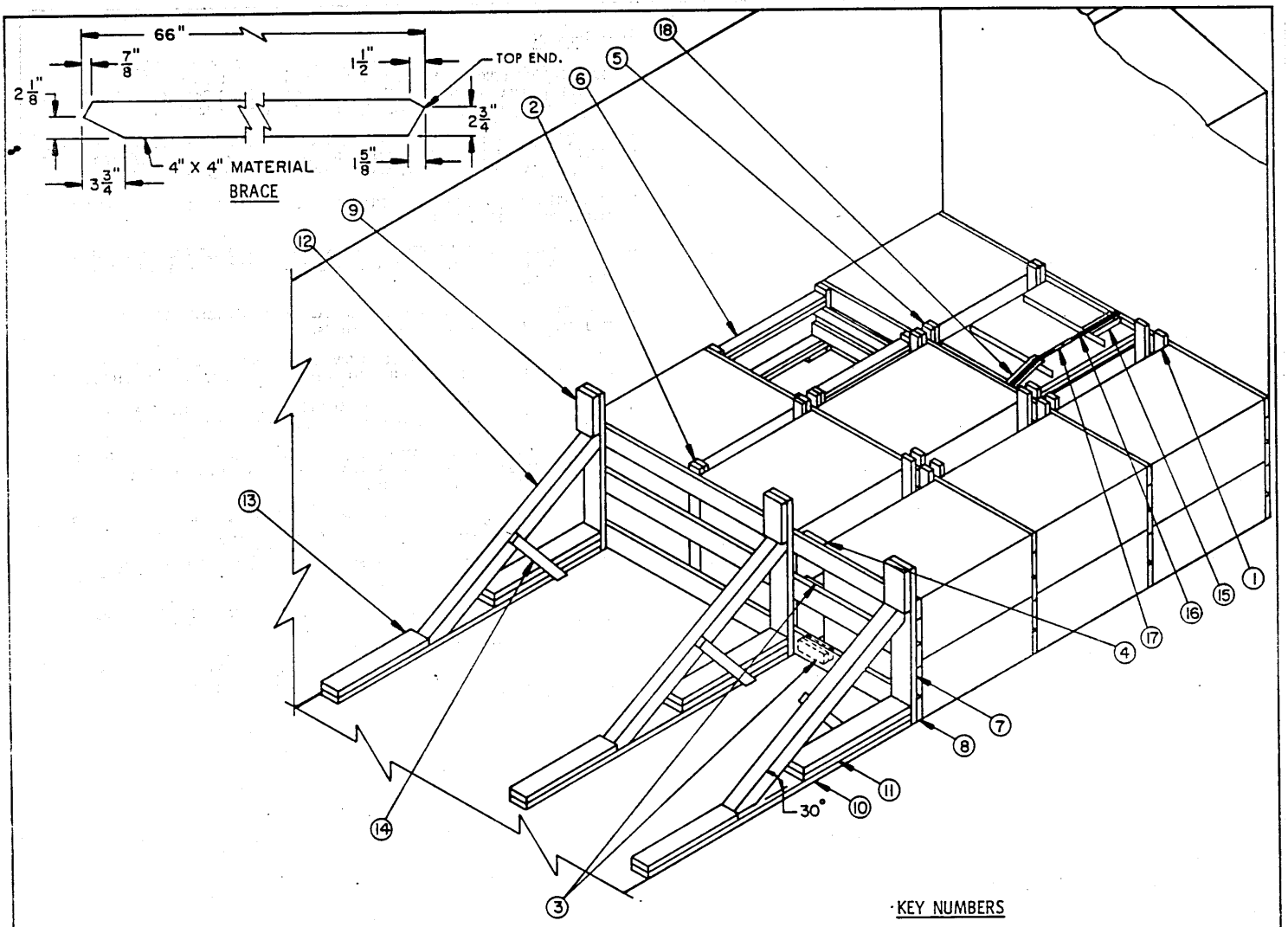
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	64	32
2" X 2"	92	31
2" X 3"	24	12
2" X 4"	1031	688
2" X 6"	768	768
NAILS	**NO. REQD**	**POUNDS**
6d (2")	48	1/2
10d (3")	2532	39
12d (3-1/4")	144	2-1/2

STEEL STRAPPING, 1-1/4" X .035" --------- 38' REQD -------- 6 LBS
SEALS FOR 1-1/4" STRAPPING ---------- 4 REQD -------- NIL
ANTI-CHAFING NEUTRAL BARRIER MATERIAL.- AS REQD ---- NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
SHIPPING CONTAINER - 180		139,500 LBS
DUNNAGE		3,876 LBS
TOTAL WEIGHT		143,376 LBS



ISOMETRIC VIEW

KEY NUMBERS

(1) LOAD BEARING GATE (1 REQD). SEE THE DETAIL ON PAGE 11.

(2) SPACER, 2" X 4" X 36" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE LOAD BEARING PIECES W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

(3) ANTI-SWAY BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN THE CONTAINER SKIDS (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE LOAD BEARING PIECES W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

(4) ANTI-SWAY BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN THE CONTAINER FLANGE (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE LOAD BEARING PIECE W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

(5) SEPARATOR GATE ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 15.

(6) OMITTED CONTAINER ASSEMBLY, (1 REQD). SEE THE DETAIL ON PAGE 16 AND SPECIAL NOTE 4.

(7) VERTICAL PIECE, 2" X 6" X 45" (3 REQD). POSITION THE OUTSIDE VERTICALS AT THE ENDS OF THE LOAD BEARING PIECES AND ALIGN THE CENTER VERTICAL WITH THE CONTAINER SKID AS SHOWN.

(8) LOAD BEARING PIECE, 2" X 6" BY CAR WIDTH MINUS 1/2" (3 REQD). POSITION THE FIRST PIECE ON THE FLOOR, CENTER THE SECOND PIECE ON THE CONTAINER SKID, AND CENTER THE THIRD PIECE ON THE CONTAINER FLANGE. NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

(9) HOLD DOWN PIECE, 2" X 6" X 12" (3 REQD). NAIL TO A VERTICAL PIECE W/4-10d NAILS.

(10) FLOOR CLEAT, 2" X 6" X 7'-3" (3 REQD). ALIGN WITH A VERTICAL PIECE AND NAIL TO THE CAR FLOOR W/1-16d NAIL EVERY 8".

(11) POCKET CLEAT, 2" X 6" X 36" (DOUBLED) (3 REQD). NAIL THE FIRST PIECE TO A FLOOR CLEAT W/8-40d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER AND TOENAIL IT TO THE ADJACENT VERTICAL PIECE W/2-16d NAILS.

(12) DIAGONAL BRACE, 4" X 4" X 66" (3 REQD). SEE THE BRACE DETAIL ABOVE. TOENAIL TO A VERTICAL PIECE AND TO A FLOOR CLEAT W/2-16d NAILS AT EACH END.

(13) BACK-UP CLEAT, 2" X 6" X 30" (3 REQD). NAIL TO A FLOOR CLEAT W/6-40d NAILS.

(CONTINUED AT LEFT)

(KEY NUMBERS CONTINUED)

(14) SUPPORT PIECE, 2" X 4" X 21" (3 REQD). POSITION SO AS TO CENTER ON THE LENGTH OF A "DIAGONAL BRACE" AND SO AS TO BE PERPENDICULAR TO SAME. NAIL TO THE DIAGONAL BRACE AND TO A DOUBLED POCKET CLEAT W/3-10d NAILS AT EACH END.

(15) STRAP FILLER BLOCK, 2" X 4" BY CUT TO FIT (1 REQD).

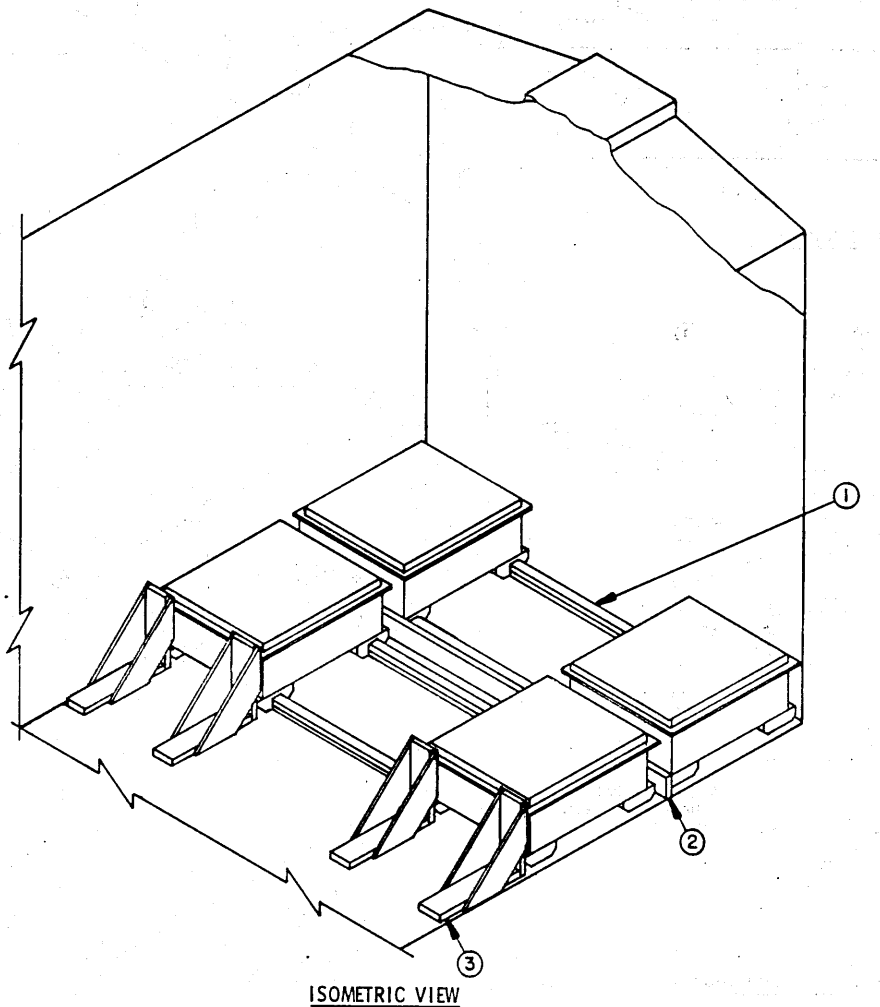
(16) STEEL STRAPPING, 1-1/4" X .035" X 19'-0" LONG (1 REQD). ENCIRCLE THE LOAD BEARING GATE AND THE CENTER STACK OF CONTAINERS AS SHOWN. STAPLE TO PIECE MARKED (15) W/2-1-1/4" STAPLES. SEE GENERAL NOTE "J" ON PAGE 2 AND SPECIAL NOTE 11 ON PAGE 5.

(17) SEAL FOR 1-1/4" STEEL STRAPPING (2 REQD).

(18) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER STEEL STRAPPING AT ALL POINTS OF CONTACT WITH THE CONTAINER.

SPECIAL NOTES:

1. A 17-UNIT LOAD OF CONTAINERS IS SHOWN IN A 9'-2" WIDE BOX CAR AND DEPICTS THE USE OF KNEE BRACES. THESE PROCEDURES ARE LIMITED TO A 2-LAYER LOAD BUT CAN BE APPLIED AT ONE OR BOTH ENDS OF THE CAR.
2. THREE (3) KNEE BRACE ASSEMBLIES AS SHOWN ARE ADEQUATE FOR RETAINING AN LCL LOAD OF NOT MORE THAN 21,000 POUNDS.
3. IF THE CAR BEING USED FOR THE SHIPMENT OF THE DEPICTED LOAD IS EQUIPPED WITH A NAILABLE METAL FLOOR, SEE GENERAL NOTE "K" ON PAGE 2.
4. TO ADJUST THE QUANTITY OF CONTAINERS TO BE SHIPPED, ONE OR MORE CONTAINERS MAY BE OMITTED FROM THE TOP LAYER AND AN "OMITTED CONTAINER ASSEMBLY" USED IN PLACE OF EACH OMITTED CONTAINER.



ISOMETRIC VIEW

SPECIAL NOTES:

1. A 4-UNIT LOAD OF CONTAINERS IS SHOWN IN A 9'-2"WIDE BOX CAR AND DEPICTS THE USE OF LCL BRACES. ANY WIDTH CAR MAY BE USED AND THE PROCEDURES CAN BE APPLIED AT ONE OR BOTH ENDS OF THE CAR.
2. EACH LCL BRACE AS APPLIED FOR LONGITUDINAL BRACING WILL SUPPORT 2,000 POUNDS OF LADING.
3. THE BLOCKING PROCEDURES SHOWN ON THIS PAGE ARE RESTRICTED TO LCL SHIPMENTS THAT ARE ONLY ONE (1) LAYER HIGH.
4. THE LCL BRACE MAY ALSO BE USED FOR LATERAL BLOCKING IN LIEU OF PIECES MARKED (1).
5. TWO (2) LCL BRACES WILL BE INSTALLED ON EACH ROW OF CONTAINERS, AS TYPICALLY SHOWN.

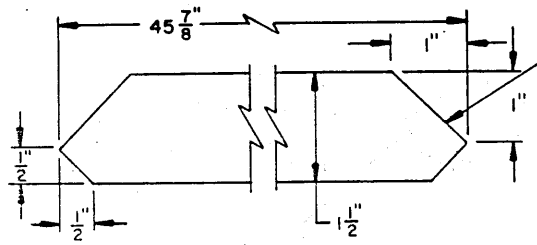
KEY NUMBERS

(1) SIDE BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN SKIDS OF ADJACENT CONTAINERS (DOUBLED) (4 REQD). CENTER ON CONTAINER SKIDS AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/8-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTES "K" AND "M" ON PAGE 2.

(2) LOAD BEARING PIECE, 2" X 6" BY CAR WIDTH MINUS 1/2" (1 REQD).

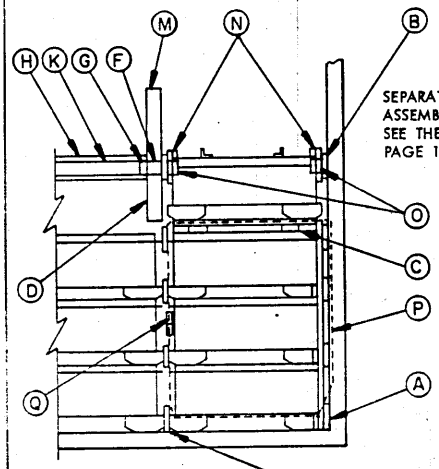
(3) LCL BRACE (4 REQD). SEE THE DETAIL ON PAGE 17. NAIL TO THE CAR FLOOR W/7-16d NAILS.

TYPICAL LCL (4 CONTAINER LOAD)



DIAGONAL BRACE

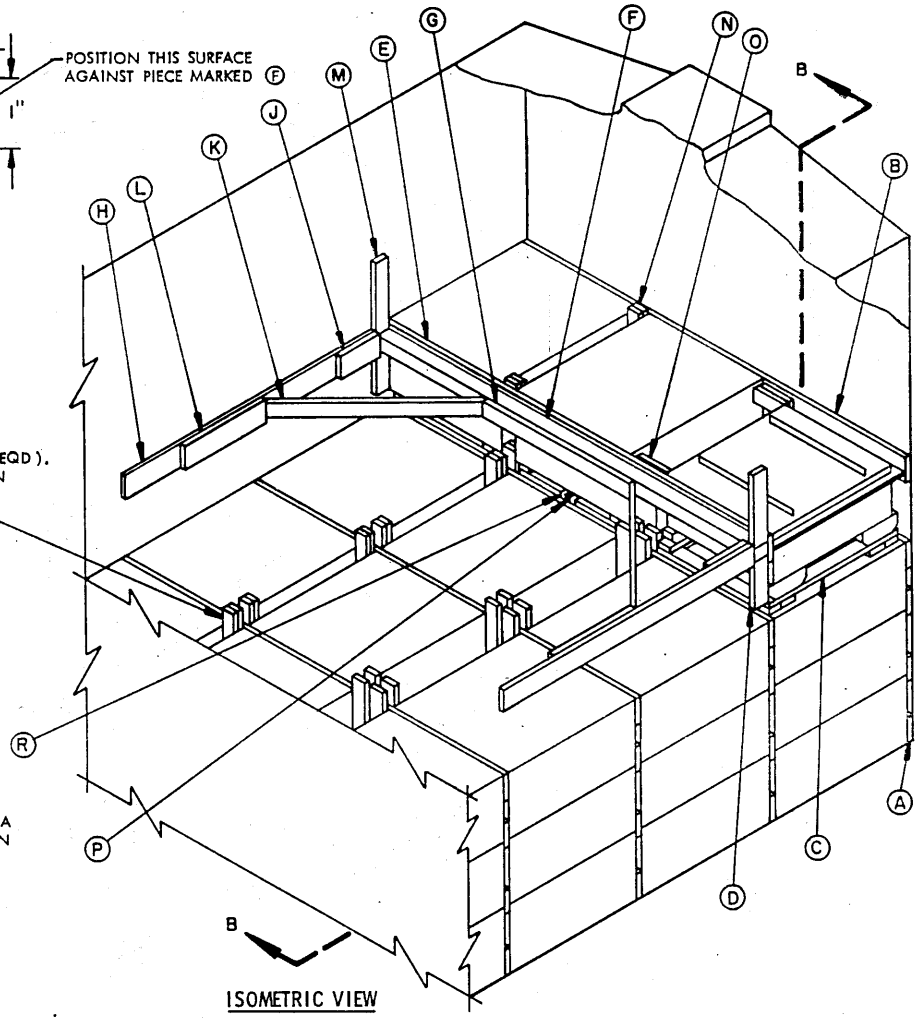
POSITION THIS SURFACE AGAINST PIECE MARKED (F)



SEPARATOR GATE ASSEMBLY A (AS REQD). SEE THE DETAIL ON PAGE 15.

SEPARATOR GATE ASSEMBLY A (VERTICAL PIECES HAVE BEEN OMITTED FOR CLARITY).

SECTION B-B
PARTIAL SIDE VIEW



ISOMETRIC VIEW

(KEY LETTERS CONTINUED)

(P) STEEL STRAPPING, 1-1/4" X .035" X 16'-0" LONG (1 REQD). ENCIRCLE THE LOAD BEARING GATE, THE RISER ASSEMBLY AND THE CENTER STACK OF THREE HIGH CONTAINERS AS SHOWN IN THE SECTION B-B, PARTIAL SIDE VIEW ABOVE. SEE GENERAL NOTE "J" ON PAGE 2 AND SPECIAL NOTE 11 ON PAGE 5.

(Q) SEAL FOR 1-1/4" STEEL STRAPPING (2 REQD, 2 PER STRAP JOINT).

(R) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER STEEL STRAPPING AT ALL POINTS OF CONTACT WITH THE CONTAINER.

SPECIAL NOTES:

1. A PARTIAL LAYER LOAD IS SHOWN IN A 9'-2" WIDE BOX CAR; HOWEVER, ANY WIDTH CAR CAN BE USED. IF IT IS NECESSARY TO BLOCK A HEAVIER LOAD, REFER TO DRAWING 19-48-4016-5M1001 FOR THE PROPER SIZED K-BRACE TO USE AND THE DESIGN SPECIFICATIONS FOR THE SELECTED BRACE. THE PROCEDURES CAN BE APPLIED AT ONE OR BOTH ENDS OF THE CAR.

2. A "K-BRACE ASSEMBLY" AS SHOWN IS ADEQUATE FOR RETAINING A PARTIAL LAYER LOAD OF 4,000 POUNDS.

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

4. FABRICATE THE LOAD BEARING GATES FOR A THREE HIGH LOAD AND POSITION ONE AT EACH END OF THE BOX CAR.

5. A RISER ASSEMBLY, SHOWN AS PIECE MARKED (C), IS REQUIRED UNDER EACH CONTAINER IN THE PARTIAL TOP LAYER TO PREVENT CONTAINER DAMAGE WHEN THE CONTAINERS IN THE LOWER LAYERS SHIFT A SMALL AMOUNT BACK AND FORTH LONGITUDINALLY DURING TRANSIT.

KEY LETTERS

(A) LOAD BEARING GATE (2 REQD). SEE THE DETAIL ON PAGE 11 AND SPECIAL NOTE 4 ON THIS PAGE.

(B) BUFFER PIECE, 2" X 6" BY CAR WIDTH MINUS 1/2" IN LENGTH (1 REQD). CENTER ON THE FLANGE OF THE TOP CONTAINER AND NAIL TO THE CAR END WALL W/1-10d NAIL EVERY 12".

(C) RISER ASSEMBLY (3 REQD). SEE THE DETAIL ON PAGE 18 AND SPECIAL NOTE 5 ON THIS PAGE.

(D) SUPPORT PIECE, 2" X 4" X 12" (2 REQD). NAIL TO THE CAR SIDE WALL W/3-10d NAILS. SEE GENERAL NOTE "M" ON PAGE 2.

(E) HORIZONTAL, 2" X 6" BY CAR WIDTH MINUS 1/2" IN LENGTH (CUT-TO-FIT) (1 REQD). NAIL TO THE CROSS CAR BRACE MARKED (F) W/1-12d NAIL EVERY 6". CENTER ON THE HORIZONTAL FLANGE ON THE CONTAINER.

(F) CROSS CAR BRACE, 4" X 4" BY CAR WIDTH IN LENGTH (CUT-TO-FIT) (1 REQD). CENTER ON PIECE MARKED (E).

(G) CENTER CLEAT, 2" X 4" X 42" (1 REQD). NAIL TO THE CROSS CAR BRACE MARKED (F) W/8-20d NAILS.

(H) HORIZONTAL WALL CLEAT, 2" X 6" X 72" (2 REQD). NAIL TO THE CAR SIDE WALL W/16-12d NAILS.

(J) POCKET CLEAT, 2" X 6" X 12" (2 REQD). NAIL TO THE HORIZONTAL WALL CLEAT MARKED (H) W/4-20d NAILS.

(K) DIAGONAL BRACE, 2" X 4" X 45-7/8" (2 REQD). TOENAIL TO THE HORIZONTAL WALL CLEAT MARKED (H) AND THE CROSS CAR BRACE MARKED (F) W/1-20d NAIL AT EACH END.

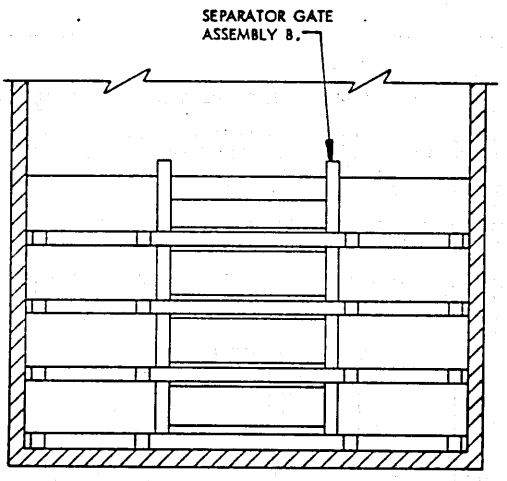
(L) BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO THE HORIZONTAL WALL CLEAT MARKED (H) W/8-20d NAILS.

(M) HOLD-DOWN CLEAT, 2" X 4" X 18" (2 REQD). NAIL TO THE CAR SIDE WALL W/5-12d NAILS.

(N) SPACER PIECE, 2" X 4" X 8" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE BUFFER PIECE MARKED (B) AND/OR THE HORIZONTAL MARKED (E) W/2-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

(O) ANTI-SWAY BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN THE CONTAINER FLANGE (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE BUFFER PIECE MARKED (B) AND/OR THE HORIZONTAL MARKED (E) W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

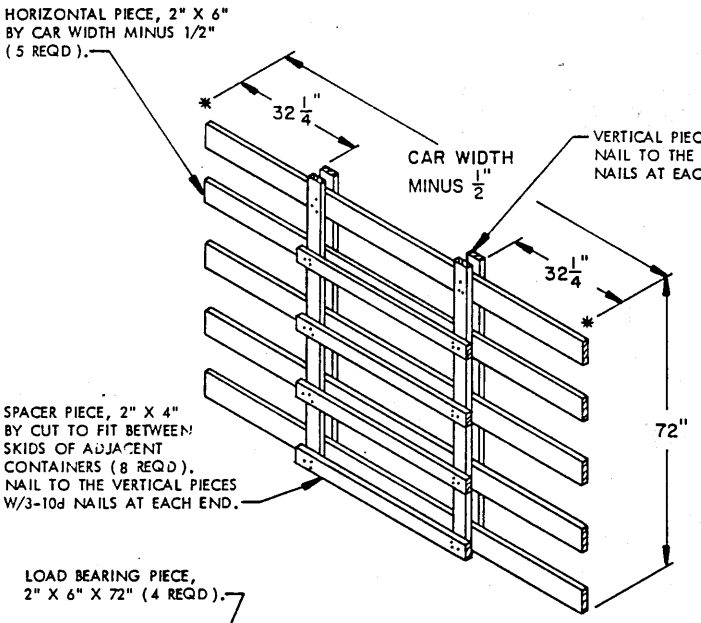
(CONTINUED AT LEFT)



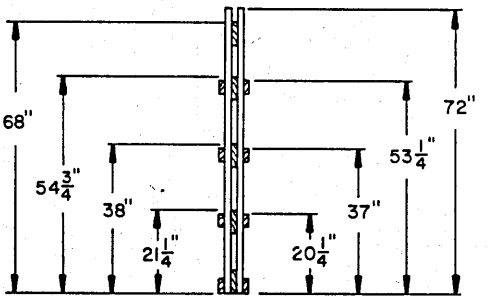
ALTERNATIVE LOADING PATTERN

SPECIAL NOTES:

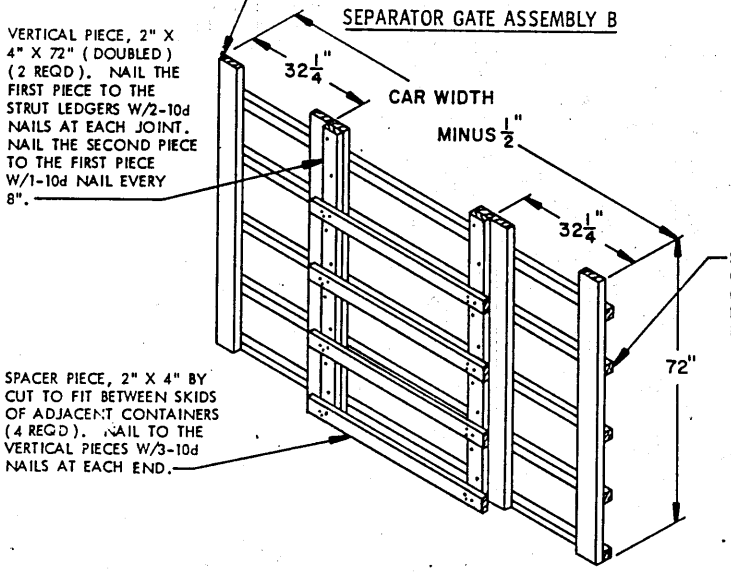
1. A SECTION VIEW OF A 9'-2" WIDE (INSIDE DIMENSION) BOX CAR DEPICTING AN ALTERNATIVE METHOD OF LOADING A LESS-THAN-CAR-LOAD SHIPMENT OF CONTAINERS IS SHOWN. THE MIDDLE ROW OF CONTAINERS IS OMITTED IN THIS LCL PROCEDURE.
2. THIS METHOD MAY BE USED IN NARROWER OR WIDER BOX CARS. ALSO, SEE PROVISIONS FOR AN 8'-6" WIDE BOX CAR ON PAGE 10.
3. BLOCKING IN THE DOOR OPENING, STRUTS IN THE CENTER, AND END-OF-LOAD BLOCKING WILL BE SIMILAR TO THAT SHOWN IN THE LOAD ON PAGE 4. SEE "SEPARATOR GATE ASSEMBLY B" AND "CENTER GATE ASSEMBLY B" BELOW.
4. THE "SEPARATOR GATE ASSEMBLY B" AND THE "CENTER GATE ASSEMBLY B" ARE SHOWN FOR A FOUR HIGH LOAD. GATE ASSEMBLIES FOR A TWO AND/OR A THREE-HIGH LOAD MUST BE FABRICATED IN A SIMILAR MANNER.
5. A LOAD BEARING GATE, SIMILAR TO THE ONE USED IN THE LOAD ON PAGE 4, MUST BE POSITIONED AT EACH END OF THE LOAD AND STRAPPED TO THE CONTAINER STACKS AS SHOWN ON PAGE 4. THE LOAD BEARING GATE MAY BE FABRICATED BY OMITTING TWO VERTICAL PIECES AND FOUR SPACER PIECES FROM ONE SIDE OF THE "SEPARATOR GATE ASSEMBLY B" SHOWN ON THIS PAGE.



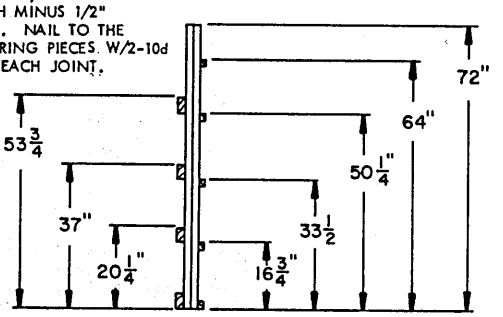
SEPARATOR GATE ASSEMBLY B



END VIEW

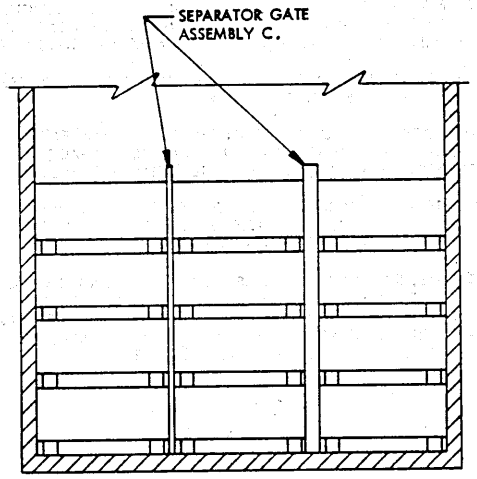


CENTER GATE ASSEMBLY B



END VIEW

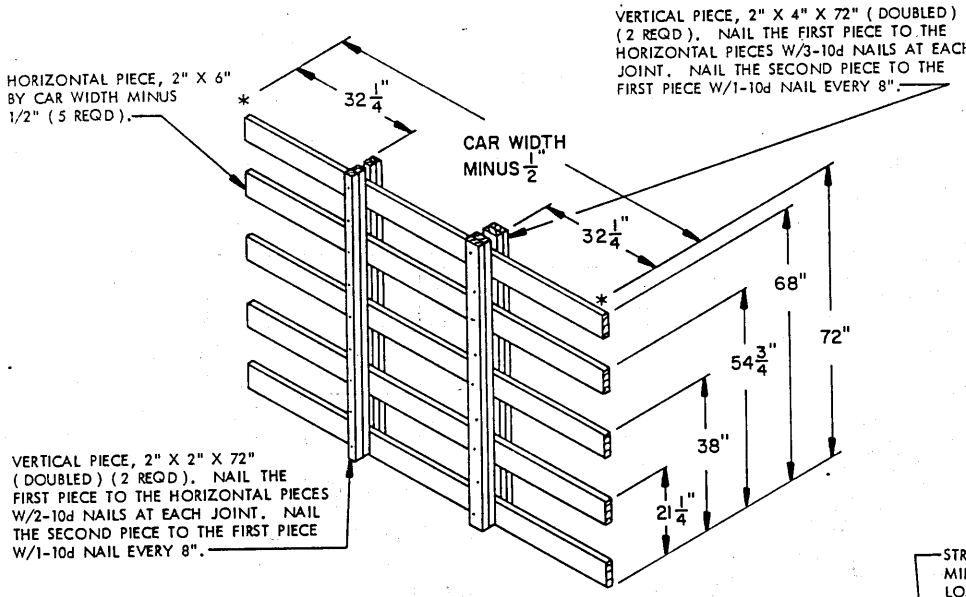
ALTERNATIVE LOADING PATTERN



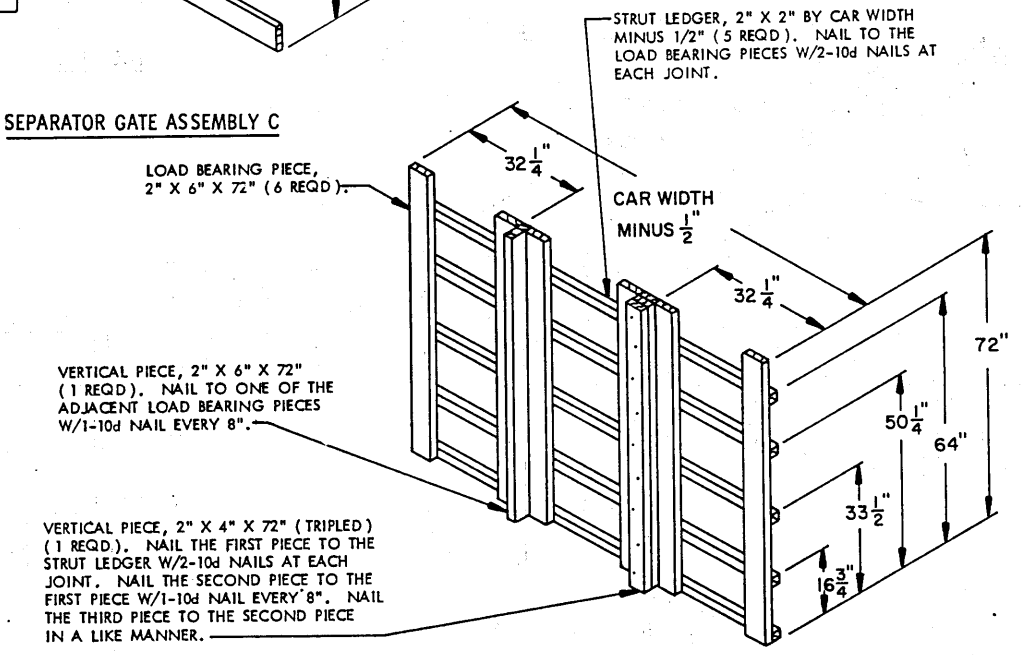
SECTION VIEW OF AN 8'-6" WIDE BOX CAR

SPECIAL NOTES:

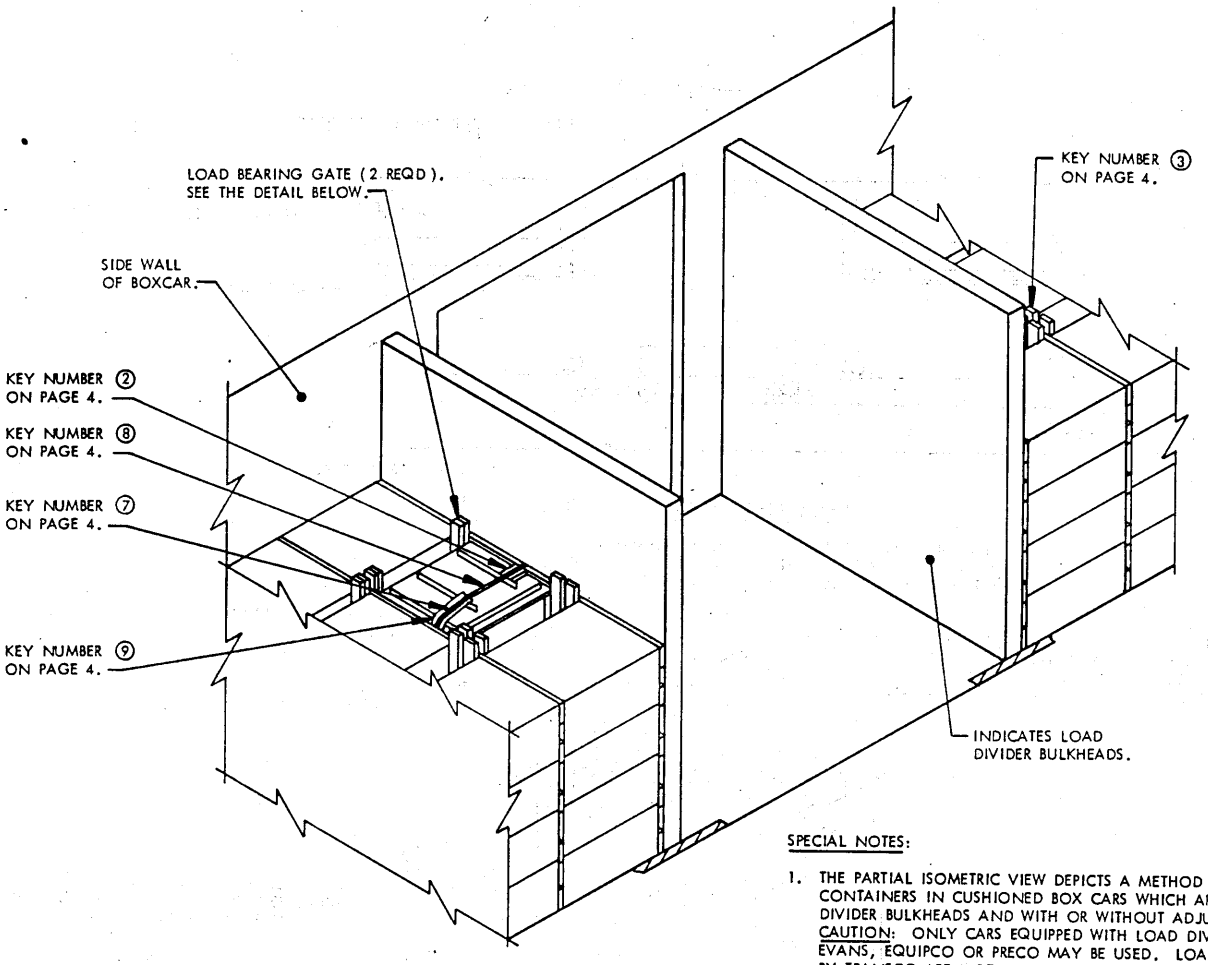
1. A SECTION VIEW OF AN 8'-6" WIDE (INSIDE DIMENSION) BOX CAR IS SHOWN.
2. IF THE BOX CAR BEING LOADED IS 8'-6" WIDE BY 40'-6" LONG AND THE LADING IS THREE (3) CONTAINERS ACROSS, FOUR (4) CONTAINERS HIGH AND TWELVE (12) CONTAINERS IN LENGTH THE LOAD WOULD CONSIST OF 144 CONTAINERS AND WOULD WEIGH 111,600 POUNDS (NOT INCLUDING DUNNAGE).
3. IF A LESS-THAN-CARLOAD QUANTITY OF CONTAINERS IS TO BE SHIPPED SEE THE LOADS ON PAGES 6, 7, 8, AND 9.
4. IF A LESS-THAN-FULL QUANTITY OF CONTAINERS IS TO BE SHIPPED AN "OMITTED CONTAINER ASSEMBLY" AS SHOWN IN THE LOAD ON PAGE 6 MAY BE USED IN THE PLACE OF EACH OMITTED CONTAINER. USE IN THE TOP LAYER ONLY.
5. THE LOAD INDICATED IN SPECIAL NOTE 2 ABOVE WILL REQUIRE TWO (2) DOORWAY PROTECTION ASSEMBLIES AS SHOWN ON PAGE 16, TEN (10) SEPARATOR GATE ASSEMBLIES C AND TWO (2) CENTER GATE ASSEMBLIES C. BLOCK THE CENTER OF THE BOX CAR USING THIRTY (30) DOUBLE 2" X 4" BY CUT TO FIT STRUTS SIMILAR TO THE LOAD SHOWN ON PAGE 4.
6. A LOAD BEARING GATE, SIMILAR TO THE ONE USED IN THE LOAD ON PAGE 4, MUST BE POSITIONED AT EACH END OF THE LOAD AND STRAPPED TO THE CENTER STACK OF CONTAINERS AS SHOWN ON PAGE 4. THE LOAD BEARING GATE MAY BE FABRICATED BY OMITTING THE 2" X 2" AND 2" X 4" VERTICAL PIECES FROM ONE SIDE OF THE "SEPARATOR GATE ASSEMBLY C" SHOWN ON THIS PAGE.
7. THE "SEPARATOR GATE ASSEMBLY C" AND THE "CENTER GATE ASSEMBLY C" ARE SHOWN FOR A FOUR HIGH LOAD. GATE ASSEMBLIES FOR A TWO AND/OR THREE HIGH LOAD MUST BE FABRICATED IN A SIMILAR MANNER.



SEPARATOR GATE ASSEMBLY C



CENTER GATE ASSEMBLY C



ISOMETRIC VIEW

SPECIAL NOTES:

1. THE PARTIAL ISOMETRIC VIEW DEPICTS A METHOD OF OUTLOADING CONTAINERS IN CUSHIONED BOX CARS WHICH ARE EQUIPPED WITH LOAD DIVIDER BULKHEADS AND WITH OR WITHOUT ADJUSTABLE SIDE FILLERS. CAUTION: 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. ALSO, 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.

2. 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. A "FILL PIECE" MUST BE INSTALLED IN THE VOID BETWEEN THE CAR SIDEWALL AND THE SIDE FILLER PANEL. SEE THE "TYPICAL TYPE A" VIEW ON PAGE 18 FOR GUIDANCE. IF THE BACKS OF THE SIDE FILLER PANELS ARE REINFORCED WITH VERTICAL AND HORIZONTAL STEEL MEMBERS AS SHOWN IN THE "TYPICAL TYPE B" VIEW ON PAGE 18, THE "FILL PIECE" MATERIAL IS NOT REQUIRED. NOTE: DUNNAGE MATERIALS MUST NOT BE NAILED TO SIDE FILLERS.

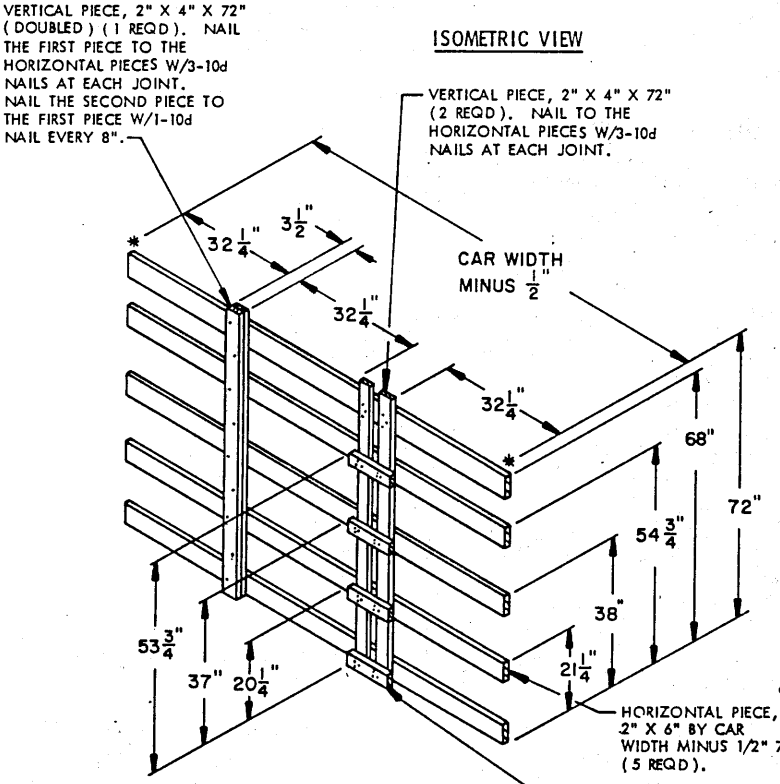
3. AFTER THE LOAD DIVIDER BULKHEADS ARE POSITIONED AGAINST THE LADING, AND THE LOCKING PINS ARE ENGAGED IN THE HOLES OF THE RAILS, THE LOWER LOCKING PINS MUST BE INSPECTED TO ENSURE THAT THE PINS ARE FULLY ENGAGED IN THE LOCKING HOLES. IF THE PINS ARE NOT FULLY SEATED IN THE LOCKING HOLES, THE LINKAGE 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.

4. CAUTION: THE WEIGHT OF THE LOAD TO BE RETAINED BY ONE LOAD DIVIDER BULKHEAD MUST NOT EXCEED ONE-HALF OF THE LOAD LIMIT WHICH IS STENCILED ON THE SIDE OF THE CAR.

5. IF THE DELINEATED OUTLOADING METHOD IS USED FOR THE SHIPMENT OF A LESS-THAN-FULL-LOAD QUANTITY OF CONTAINERS, AND THE QUANTITY CANNOT BE SATISFIED BY OMITTING A COMPLETE LAYER OF CONTAINERS, FROM ALL THE LOAD UNITS IN EITHER OR BOTH ENDS OF THE CAR, A "FILLER ASSEMBLY", AS DETAILED ON PAGE 6, MAY BE SUBSTITUTED IN THE PLACE OF EACH OMITTED CONTAINER. "FILLER ASSEMBLIES" CAN ONLY BE USED IN THE TOP LAYER OF ONE OR MORE LOAD UNITS.

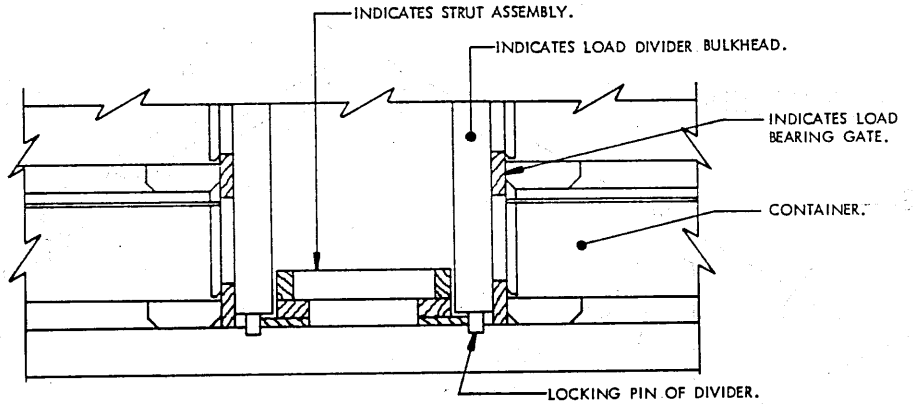
6. SEE PAGE 12 FOR STRUT ASSEMBLIES REQUIRED WHEN THE LOAD BEHIND EITHER LOAD DIVIDER BULKHEAD EXCEEDS 50,000 POUNDS.

A TYPICAL LOAD IS SHOWN ABOVE. IF ALL OTHER CRITERIA IS SATISFIED AND IF DESIRED, ADDITIONAL STACKS OF CONTAINERS CAN BE LOADED BEHIND ONE OR BOTH BULKHEADS. IF A LOAD EXTENDS INTO THE DOORWAY AREA, DOORWAY PROTECTION, AS SPECIFIED ELSEWHERE WITHIN THIS DRAWING, MUST BE USED.



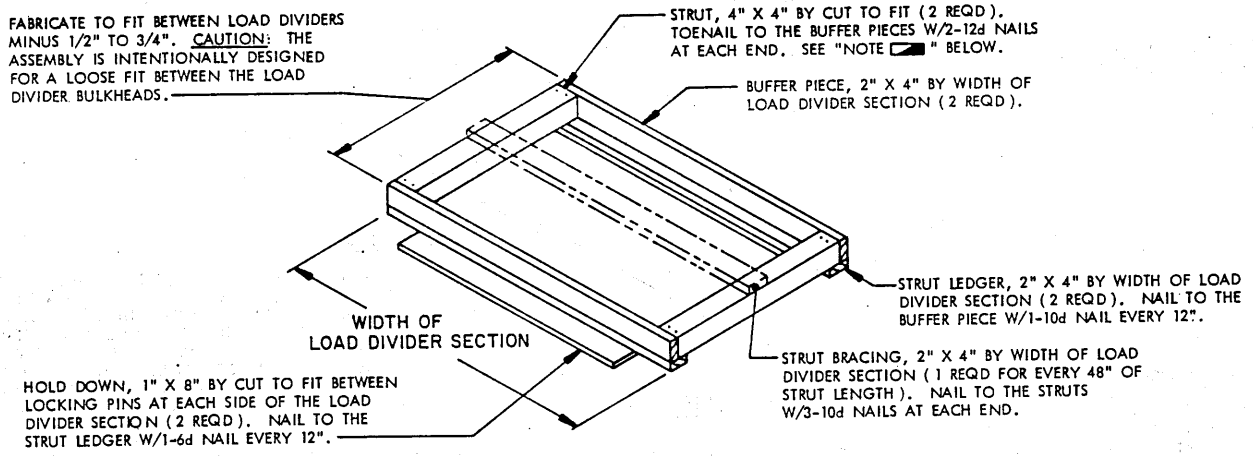
LOAD BEARING GATE

THE GATE ASSEMBLY SHOWN IS FOR A FOUR HIGH LOAD. GATE ASSEMBLIES FOR A TWO AND/OR THREE HIGH LOAD MUST BE FABRICATED IN A SIMILAR MANNER.



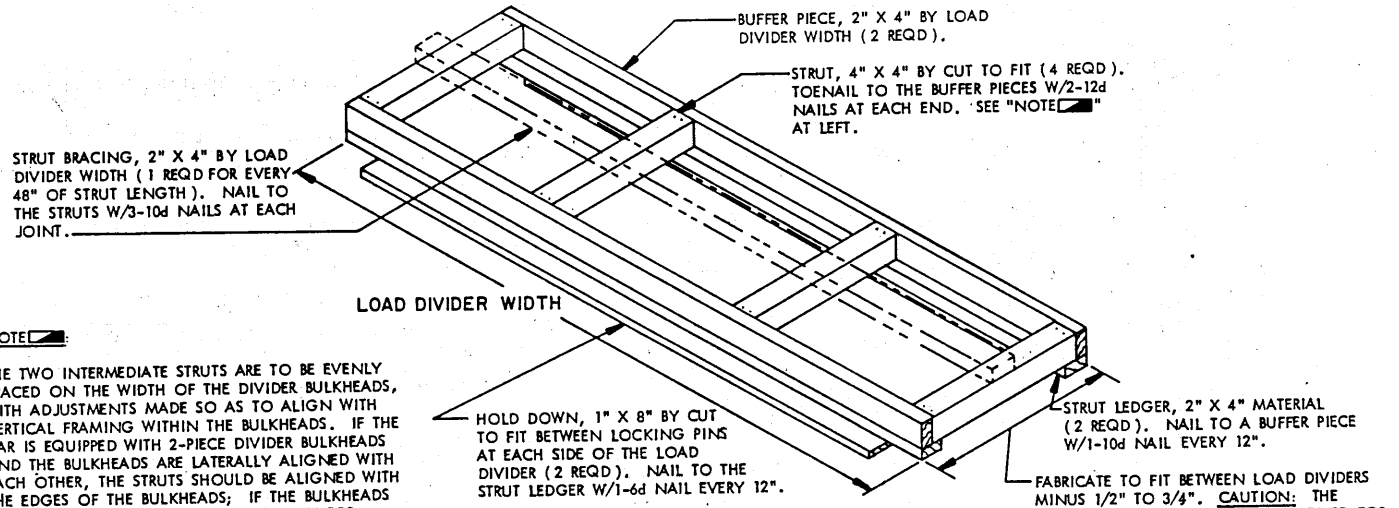
INSTALLATION OF STRUT ASSEMBLY

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 FOR 2-PIECE BULKHEADS

A STRUT ASSEMBLY IS REQUIRED WHEN THE LOAD BEHIND EITHER LOAD DIVIDER BULKHEAD EXCEEDS 50,000 POUNDS. IF A STRUT ASSEMBLY IS LONGER THAN 12'-0", THE ASSEMBLY MUST BE HELD DOWN IN THE CENTER. SEE THE DETAILS ON PAGE 13 FOR GUIDANCE. NOTE: TWO (2) ASSEMBLIES AS SHOWN ARE REQUIRED FOR A 2-PIECE BULKHEAD IF NOT LATERALLY ALIGNED.

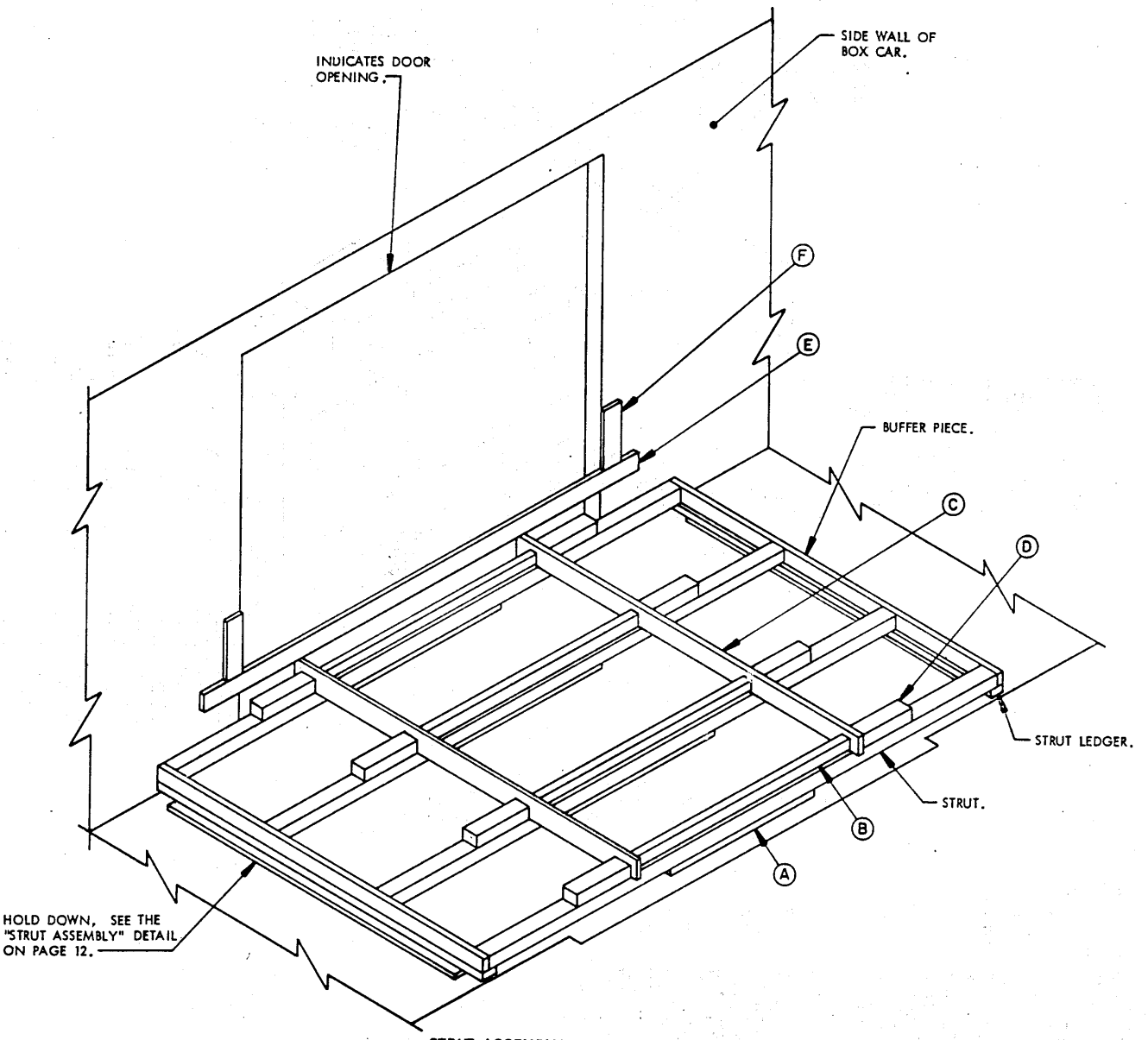


NOTE ■:

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. IF THE CAR IS EQUIPPED WITH 2-PIECE DIVIDER BULKHEADS AND THE BULKHEADS ARE LATERALLY ALIGNED WITH EACH OTHER, THE STRUTS SHOULD BE ALIGNED WITH THE EDGES OF THE BULKHEADS; IF THE BULKHEADS ARE NOT ALIGNED, THE "STRUT ASSEMBLY FOR 2-PIECE BULKHEADS" MUST BE USED. SEE THE DETAIL ABOVE.

STRUT ASSEMBLY

A STRUT ASSEMBLY IS REQUIRED WHEN THE LOAD BEHIND EITHER LOAD DIVIDER BULKHEAD EXCEEDS 50,000 POUNDS. IF A STRUT ASSEMBLY IS 12'-0" LONG OR GREATER, THE ASSEMBLY MUST BE HELD DOWN IN THE CENTER. SEE THE DETAILS ON PAGE 13 FOR GUIDANCE.



STRUT ASSEMBLY HOLD-DOWN

THIS ISOMETRIC VIEW DEPICTS THE HOLD-DOWN BLOCKING WHICH IS REQUIRED WHEN THE STRUTS OF THE "STRUT ASSEMBLY" USED IN A LOAD DIVIDER CAR ARE LONGER THAN 12'-0". NOTE THAT THE SPECIAL STRUT HOLD-DOWN AND THE STRUT ASSEMBLY ARE ONLY REQUIRED IF THE LOAD BEHIND EITHER BULKHEAD IS MORE THAN 50,000 POUNDS.

KEY LETTERS

(A) FILLER PIECE, 2" X 4" X 48" (4 REQD). POSITION SO AS TO BE CENTERED ON THE DOORWAY AREA AND NAIL TO THE BOTTOM SURFACE OF A STRUT W/4-10d NAILS.

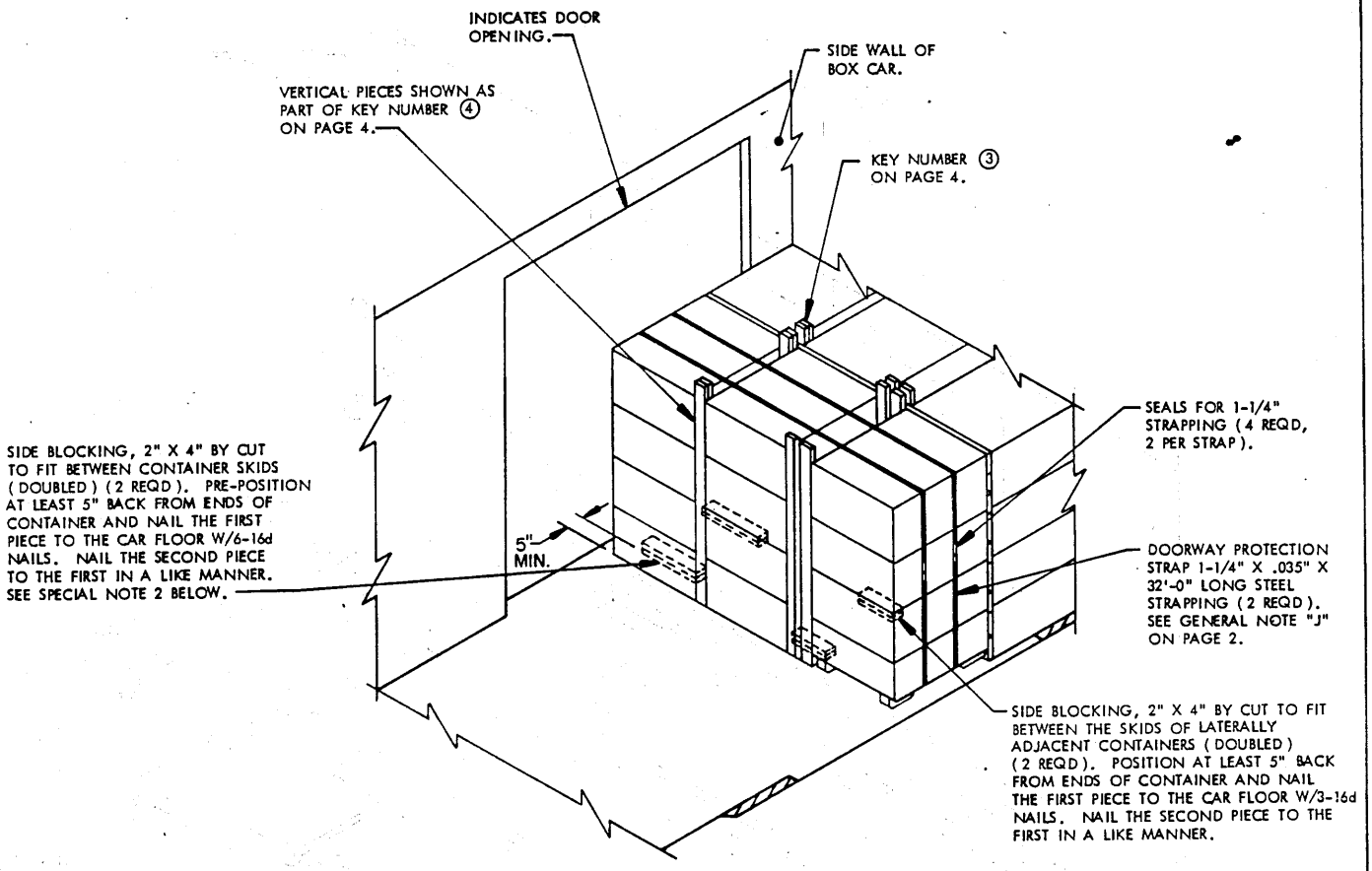
(B) SPACER PIECE, 2" X 4" X 72" (4 REQD). POSITION ON EDGE AND SO AS TO BE CENTERED IN THE DOORWAY AREA AND TOENAIL TO A STRUT W/3-12d NAILS ON EACH SIDE.

(C) HOLD-DOWN PIECE, 2" X 6" BY CAR WIDTH (CUT TO FIT IF THE CAR HAS PLUG DOORS, OR 2" X 6" BY CAR WIDTH PLUS 4" IF THE CAR HAS CONVENTIONAL SLIDING DOORS) (2 REQD). NAIL TO PIECE MARKED (B) W/2-12d NAILS AND TOENAIL TO THE STRUTS W/2-12d NAILS AT EACH JOINT.

(D) BRACE PIECE, 4" X 4" X 18" (8 REQD). POSITION AGAINST A PIECE MARKED (C) AND TOENAIL TO A STRUT W/3-12d NAILS ON EACH SIDE.

(E) DOOR SPANNER PIECE, 2" X 6" BY DOOR OPENING WIDTH PLUS 24" (2 REQD). NAIL TO A CAR DOOR POST/SIDE WALL OR TO A NAILING STRIP W/5-12d NAILS AT EACH END. NOTE: PRIOR TO NAILING THESE PIECES IN PLACE, THE STRUTS OF THE STRUT ASSEMBLY ARE TO BE PRESSED DOWNWARD UNTIL THE PIECES MARKED (A) ARE TOUCHING OR ARE ALMOST TOUCHING THE FLOOR OF THE CAR.

(F) HOLD-DOWN CLEAT, 2" X 6" X 18" (4 REQD). NAIL TO A CAR DOOR POST/SIDE WALL OR TO A NAILING STRIP W/5-12d NAILS.



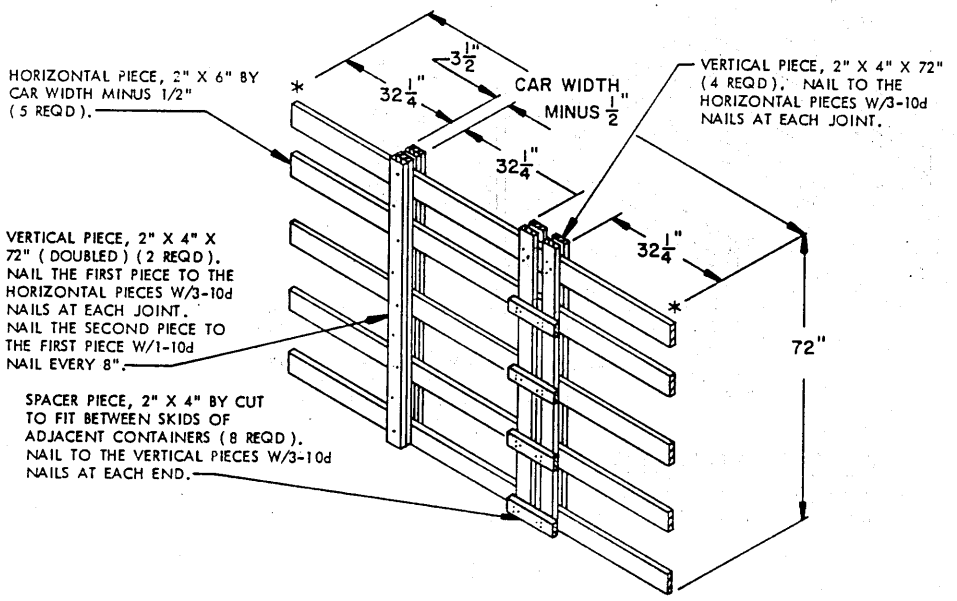
ISOMETRIC VIEW

THE ABOVE VIEW SHOWS A PORTION OF THE LOAD ON PAGE 4. NOTE THAT THE CENTER GATES AND STRUTS HAVE BEEN OMITTED FOR CLARITY.

SPECIAL NOTES:

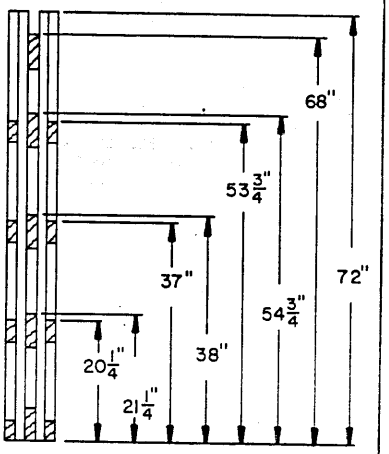
1. THE ISOMETRIC VIEW DEPICTS "DOORWAY PROTECTION" APPLICABLE TO SHIPMENTS OF CONTAINERS IN BOX CARS WHICH ARE EQUIPPED WITH PLUG DOORS. SEE GENERAL NOTE "E" ON PAGE 2.

2. IF A STACK OF CONTAINERS EXTENDS INTO THE DOORWAY AREA 18" OR LESS, ON ONE OR BOTH SIDES OF THE BOXCAR, THE SPECIFIED DOORWAY PROTECTION IS NOT REQUIRED. IF A STACK OF CONTAINERS EXTENDS INTO THE DOORWAY AREA MORE THAN 18" BUT LESS THAN 31" ON ONE OR BOTH SIDES OF THE BOXCAR, ONE DOORWAY PROTECTION STRAP AND FOUR PIECES OF SIDE BLOCKING ON THE FLOOR, AS SHOWN ABOVE, ARE REQUIRED. IF A STACK OF CONTAINERS EXTENDS MORE THAN 31" INTO THE DOORWAY AREA ON ONE OR BOTH SIDES OF THE BOXCAR, BLOCK AS SHOWN ABOVE WITH TWO DOORWAY PROTECTION STRAPS AND FOUR PIECES OF DOUBLED SIDE BLOCKING.

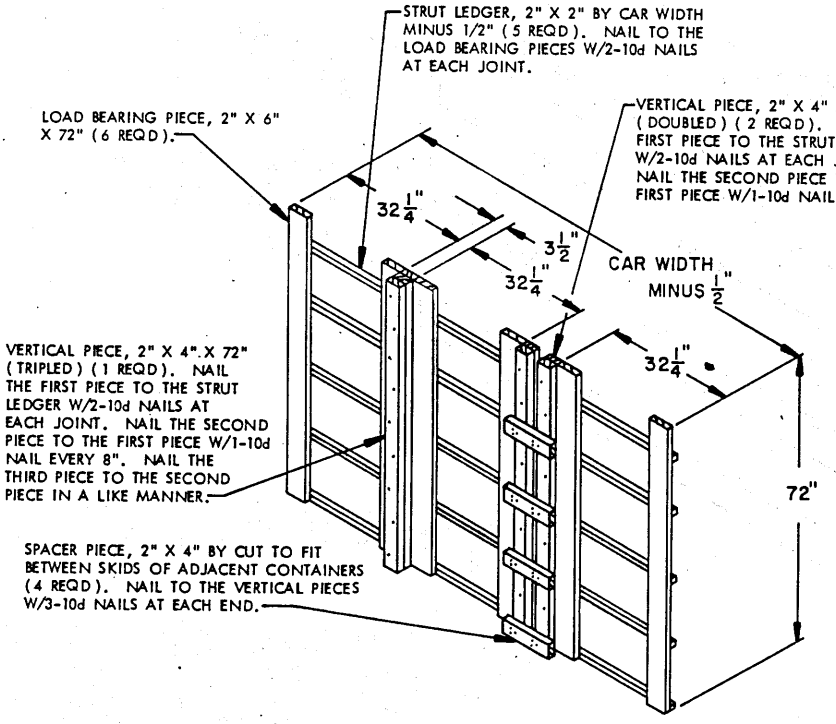


SEPARATOR GATE ASSEMBLY A

THE GATE ASSEMBLY SHOWN IS FOR A FOUR HIGH LOAD. GATE ASSEMBLIES FOR A TWO AND/OR THREE HIGH LOAD MUST BE FABRICATED IN A SIMILAR MANNER.

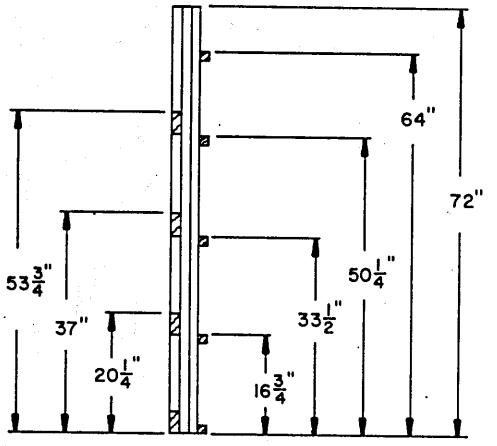


END VIEW



CENTER GATE ASSEMBLY A

THE GATE ASSEMBLY SHOWN IS FOR A FOUR HIGH LOAD. GATE ASSEMBLIES FOR A TWO AND/OR THREE HIGH LOAD MUST BE FABRICATED IN A SIMILAR MANNER.



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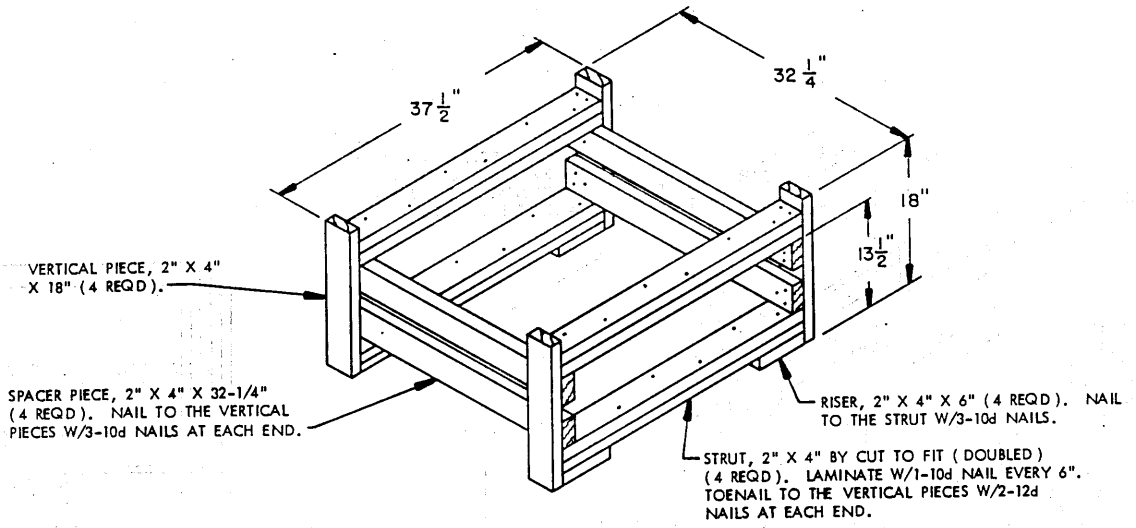
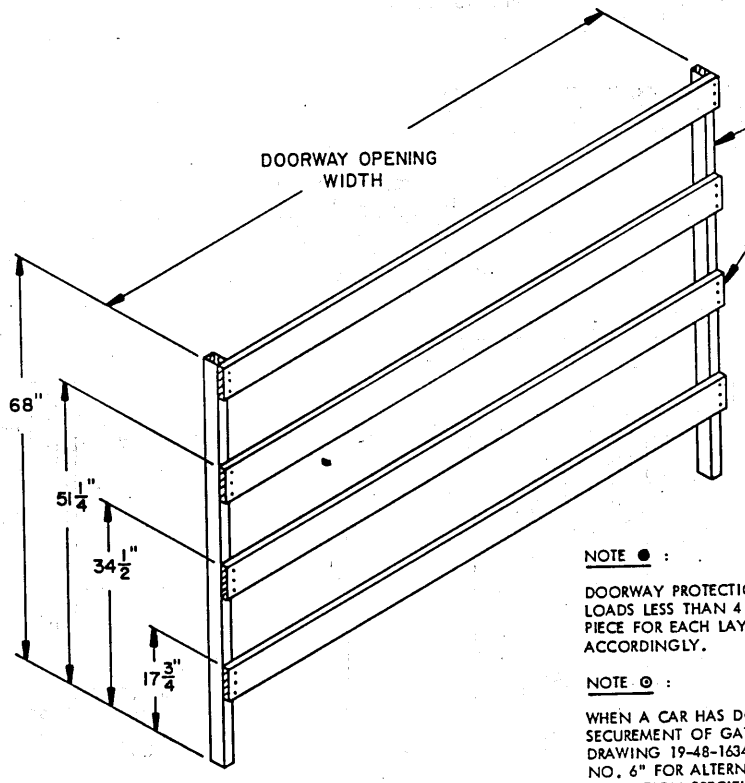


OMITTED CONTAINER ASSEMBLY

MUST BE USED IN THE TOP LAYER ONLY.
SEE THE TYPICAL LCL LOAD ON PAGE 6.



DOORWAY PROTECTION ASSEMBLY

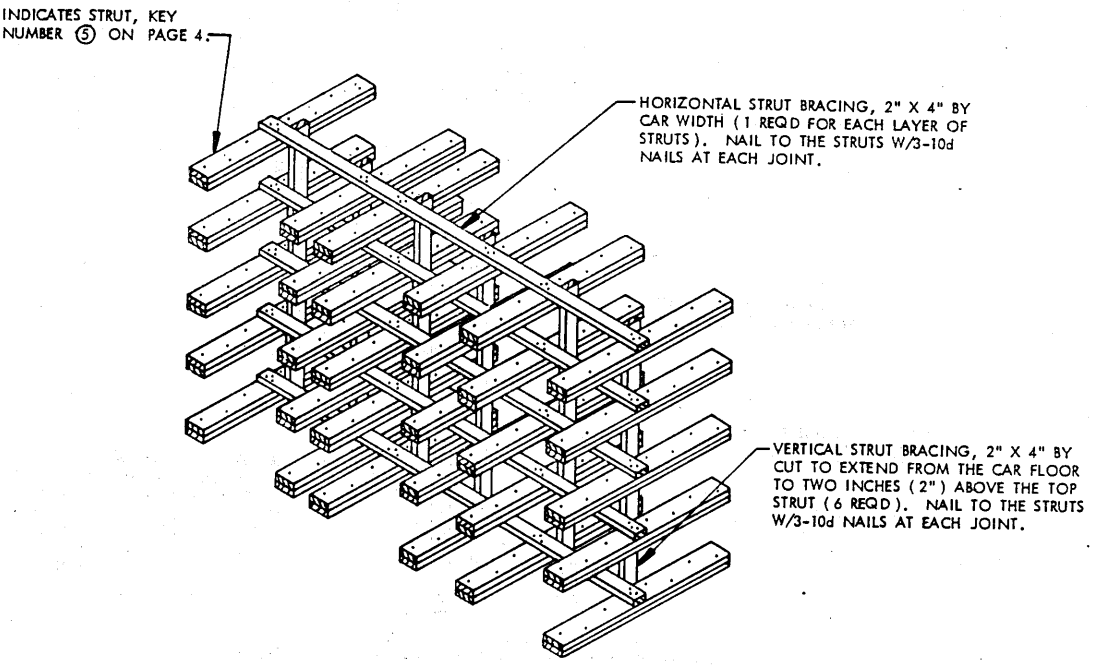
SEE NOTE " ● " AT RIGHT.

NOTE ● :

DOORWAY PROTECTION AS DETAILED IS FOR A 4-LAYER LOAD. FOR LOADS LESS THAN 4 LAYERS HIGH, ELIMINATE ONE HORIZONTAL PIECE FOR EACH LAYER OMITTED AND REDUCE HEIGHT OF VERTICALS ACCORDINGLY.

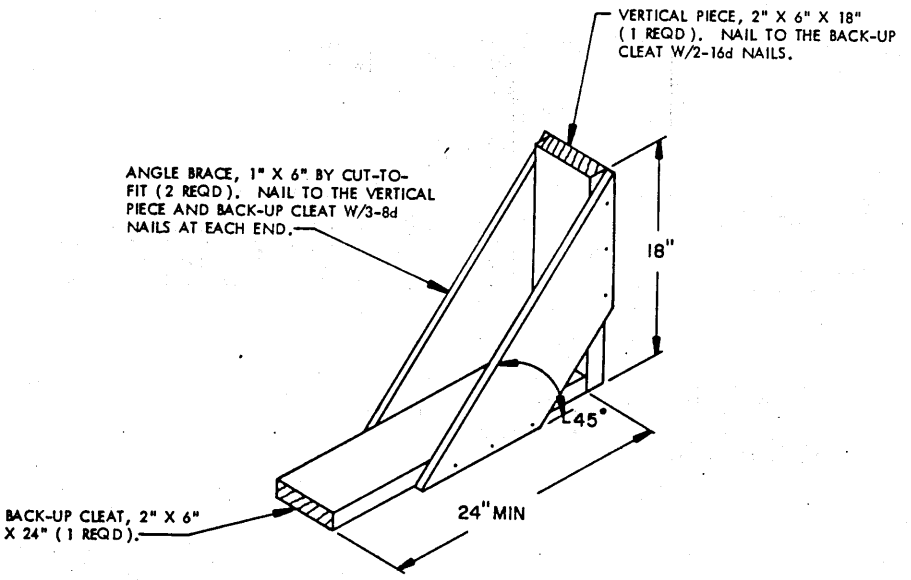
NOTE ⊙ :

WHEN A CAR HAS DOOR POSTS WHICH DO NOT PROVIDE FOR ADEQUATE SECUREMENT OF GATE BY THE SPECIFIED NAILING METHOD, REFER TO DRAWING 19-48-1634-5A29 OR TO "BUREAU OF EXPLOSIVES PAMPHLET NO. 6" FOR ALTERNATIVE GATE SECURING METHODS OR DOORWAY PROTECTION SPECIFICATIONS. DOORWAY PROTECTION DUNNAGE AS SHOWN IS NOT REQUIRED IF ALL OF THE DOORS IN A CAR ARE OF THE PLUG TYPE. REFER TO THE "SPECIAL NOTES" SECTION IMMEDIATELY ADJACENT TO THE BASIC LOADING DIAGRAM BEING FOLLOWED, FOR SPECIAL DOOR PROTECTION PROVISIONS WHICH MUST BE IMPLEMENTED.



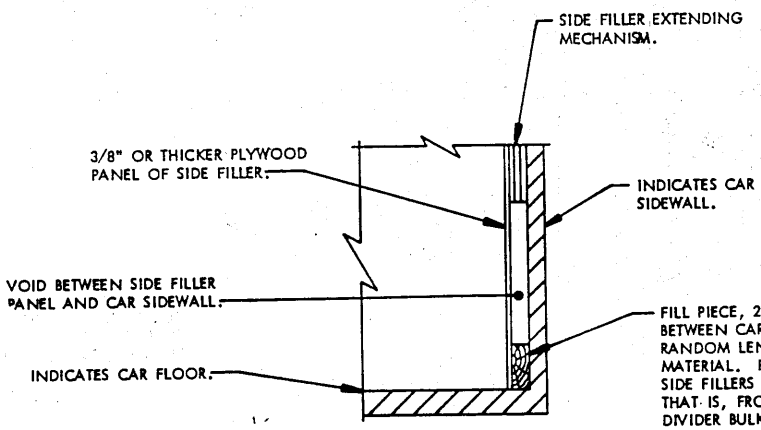
STRUT BRACING DETAIL

STRUT BRACING IS REQUIRED WHEN STRUTS ARE 48" OR GREATER IN LENGTH. ONE SET AS SHOWN IS REQUIRED FOR EVERY 48" OF STRUT LENGTH.



LCL BRACE

SEE THE TYPICAL LCL LOAD ON PAGE 7.

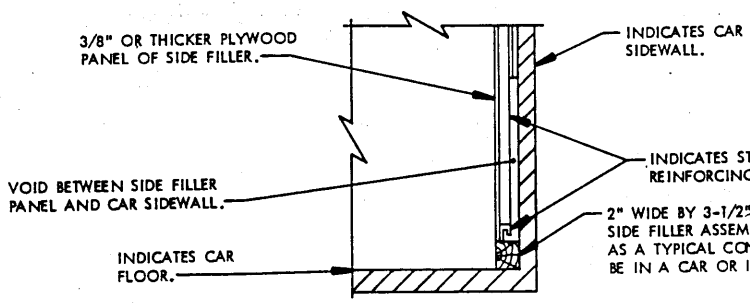


TYPICAL TYPE A

THIS VIEW SHOWS THE INSTALLATION OF A "FILL PIECE" IN A CAR EQUIPPED WITH A STANDARD ADJUSTABLE SIDE FILLER. SEE SPECIAL NOTE 2 ON PAGE 11.

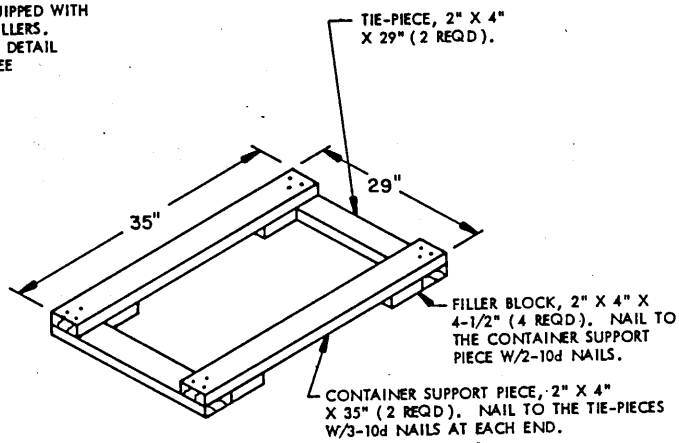
NOTE: ◐ :

NAILING OF "FILL PIECES" IS NOT REQUIRED EXCEPT THAT EACH "FILL PIECE" LOCATED NEAREST THE DOOR OPENINGS OF THE CAR WILL BE SECURED AGAINST LONGITUDINAL MOVEMENT W/1-6d NAIL DRIVEN THROUGH THE SIDE FILLER PANEL AND INTO THE "FILL PIECE".



TYPICAL TYPE B

THIS VIEW SHOWS A TYPICAL SECTION OF A 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 CARS SO EQUIPPED. SEE SPECIAL NOTE 2 ON PAGE 11.



RISER ASSEMBLY

NOTE: FIELD CHECK THE DIMENSIONS ABOVE PRIOR TO CONSTRUCTION TO ASSURE A PROPER FIT OF THE RISER ASSEMBLY.