

APPROVED BY
 HAZARDOUS MATERIALS SYSTEMS
 (BOE) ASSOCIATION OF AMERICAN
 RAILROADS
J. H. Johnson
 DATE 4/4/88

LOADING AND BRACING (CL & LCL) IN BOX CARS[⊕] OF CHARGE, DEMOLITION, LINEAR, HE M59 AND INERT M69, IN METAL SHIPPING AND STORAGE CONTAINER

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⊕ THIS OUTLOADING PROCEDURE DRAWING INCLUDES PROCEDURES FOR CONVENTIONAL TYPE BOX CARS AND CUSHIONED BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS. TO BE ACCEPTABLE, CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS MUST ALSO SATISFY THE SPECIAL NOTES ON PAGE 13.

DO NOT SCALE

REVISIONS				DRAFTSMAN	PROJ ENG
				<i>WJ/TM</i>	<i>MWD/WRF</i>
				CHECKER	LOG ENGRG OFFICE
				<i>GRS</i>	<i>WJ/TM</i>
APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND					
<i>S. A. Boyd</i>					
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIAL COMMAND (AMC)					
<i>William F. Ernst</i>					
U.S. ARMY AMC DRAWING					
MAY 1988					
CLASS	DIVISION	DRAWING	FILE		
19	48	4206	5J 1006		

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 LINEAR DEMOLITION CHARGES, HE M59 AND INERT M69, IN METAL SHIPPING AND STORAGE CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE SHIPPING AND STORAGE CONTAINER WITH CONTENTS.
- C. FOR DETAILS OF THE SHIPPING AND STORAGE CONTAINER, SEE THE DETAIL ON PAGE 3.
- CONTAINER DIMENSIONS--- 43¹/₂" LONG X 35¹/₄" WIDE X 57¹/₂" HIGH.
GROSS WEIGHT (APPROX):
WITH HE COMP C4, M59 CHARGE, DODIC ML25-----2,500 LBS
WITH PRACTICE ELECTRIC, M69 CHARGE, DODIC ML26-----2,390 LBS
CUBE -----51 CUBIC FEET
- D. THIS ITEM, WHEN AN M59 CHARGE, IS A DOT CLASS "A" EXPLOSIVE; WHEN AN M69 CHARGE, IS INERT.
- E. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE BASED ON 50'-6" LONG AND 60"-8" LONG BY 9'-2" WIDE BOX CARS EQUIPPED WITH THRU DOOR OPENINGS NOT LESS THAN 8'-0" WIDE NOR MORE THAN 10'-0" WIDE. DOORS MAY BE OF THE CONVENTIONAL SLIDING TYPE AND/OR PLUG TYPE. CARS WITH STAGGERED DOOR OPENINGS MAY BE USED. CARS WIDER THAN 9'-2" CAN BE USED. ALL METAL CARS ALSO MAY BE USED EXCEPT FOR LCL SHIPMENTS SHOWN HEREIN WHICH REQUIRE CARS WITH WOOD OR NAILABLE METAL FLOORS FOR SECURING THE BLOCKING AND BRACING. SEE GENERAL NOTES "M" AND "N". ALSO SEE GENERAL NOTE "S".
- F. THE PROCEDURES DEPICTED ON PAGES 4 THRU 7 ARE FOR SHIPMENTS IN CONVENTIONAL BOX CARS, WHEREAS, THE PROCEDURES SHOWN ON PAGES 12 AND 13 APPLY TO SHIPMENTS IN CUSHIONED BOX CARS EQUIPPED WITH LOAD-DIVIDER BULKHEADS. HOWEVER, ONLY THOSE LOAD-DIVIDER EQUIPPED CARS WHICH SATISFY THE SPECIFICATIONS CONTAINED ON PAGE 13 CAN BE USED. FOR ADDITIONAL GUIDANCE ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHOD.
- G. IF THE CAR IS EQUIPPED WITH PLUG TYPE DOORS, WHETHER AUXILIARY OR MAIN, AFTER THE DOORS 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.
- H. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE BOX CAR BEING LOADED OR THE QUANTITY TO BE SHIPPED. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN FOR FULL OR PARTIAL CARLOADS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING AND STAYING OF THE DESIGNATED ITEMS.
- J. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO 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.
- K. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEMS DESIGNATED WITHIN THE DRAWING TITLE.
- L. 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 1" X 6" MATERIAL IS ACTUALLY 3/4" 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. 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. SEE GENERAL NOTE "N" AT RIGHT. ALSO SEE GENERAL NOTE "M" AT RIGHT.

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MATERIAL SPECIFICATIONS

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

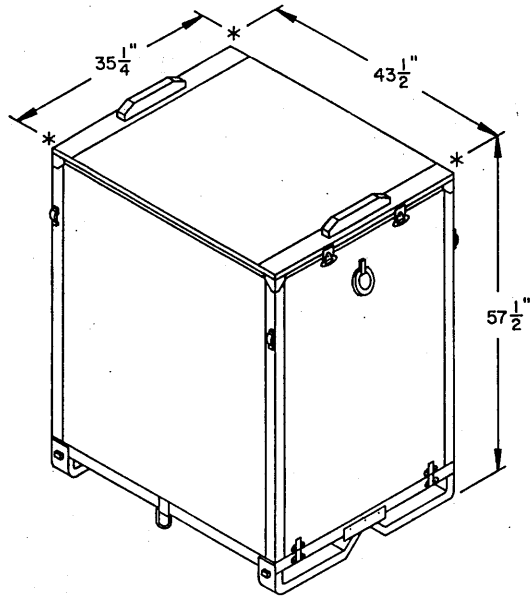
NAILS-----: FED SPEC FF-N-105, COMMON.

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

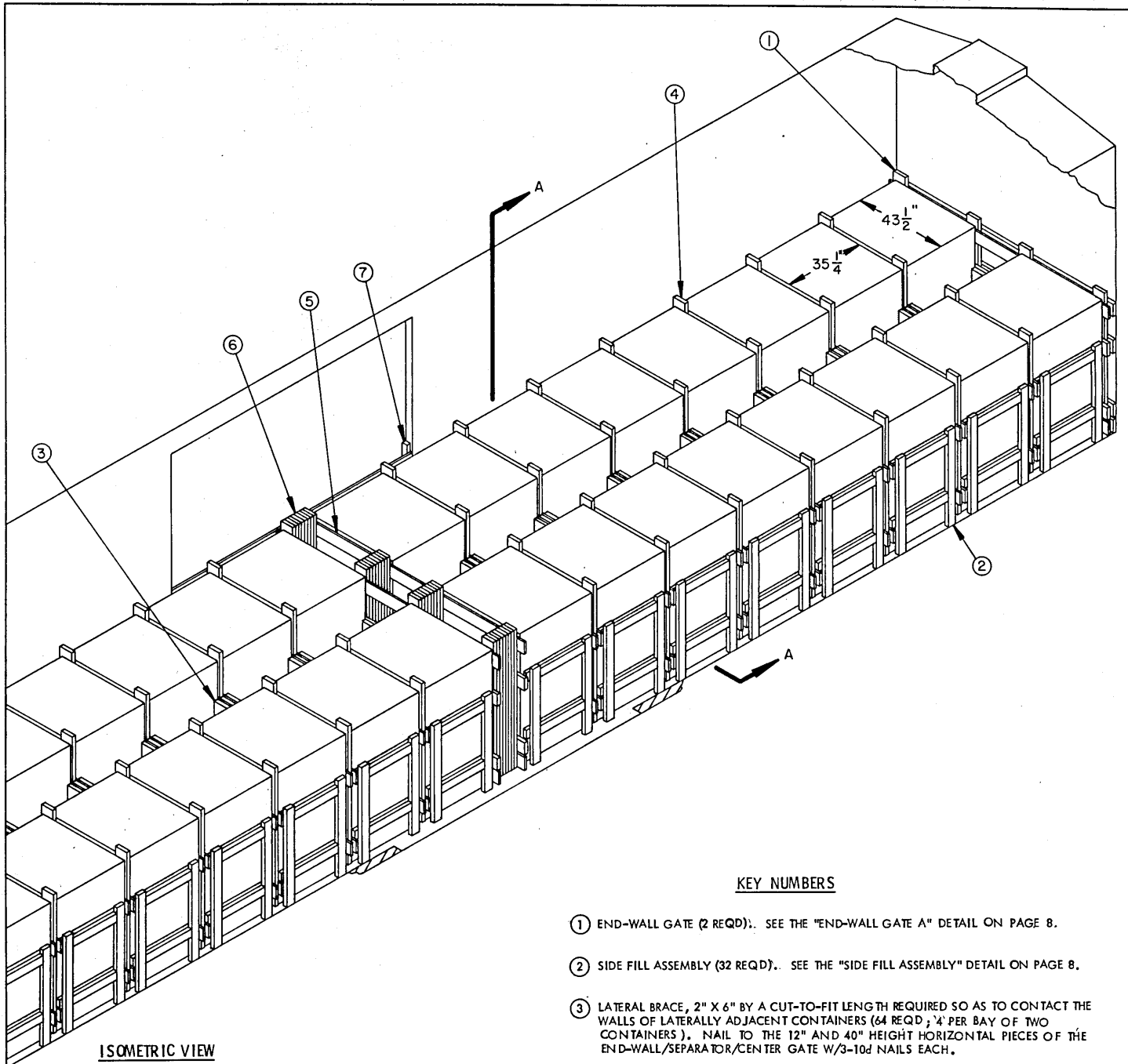
STRAP SEALS-----: TYPE D, STYLE I, II, OR IV, CLASS H, FINISH A, B (GRADE 2), OR C; FED SPEC QQ-5-781.

(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 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 LOADS AND DETAILS ON PAGES 16, 17 AND 19. SEE GENERAL NOTE "M" ON THIS PAGE.
- O. THE SELECTION OF RAILCARS FOR TRANSPORT OF THE DESIGNATED ITEMS WILL BE IN ACCORDANCE WITH HAZARDOUS MATERIALS REGULATIONS OF DOT AND AR-55-355, CHAPTER 29, FOR EXPLOSIVES OR OTHER DANGEROUS ARTICLES, IN FULL. 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 TWO INCHES (2"), EITHER FROM SIDE TO SIDE OR FROM FLOOR TO ROOF, SHIM MATERIAL WILL BE REQUIRED. DIMENSIONAL LUMBER OR PLYWOOD, 4" OR 6" WIDE OF A THICKNESS AND A LENGTH REQUIRED TO FILL THE VOID BETWEEN THE BOX CAR END WALL AND THE END-WALL GATE, WILL BE LAMINATED TO THE HORIZONTAL PIECES OF THE GATE TO PROVIDE A "SQUARED-OFF" SURFACE FOR THE LOAD AT THE END OF THE CAR.
- P. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES WHICH ARE TO BE USED IN THE DELINEATED 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 SENCOC PRODUCTS INCORPORATED. **NOTE:** STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- Q. PORTIONS OF THE CARS, SUCH AS SIDEWALLS, END WALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- R. 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.
- S. IF ALL METAL CARS ARE TO BE USED FOR THE LOAD SHOWN ON PAGES 20 AND 21, THE REQUIREMENTS OF THE SPECIAL NOTES ON PAGE 21 PERTAINING THERE TO MUST BE FOLLOWED..



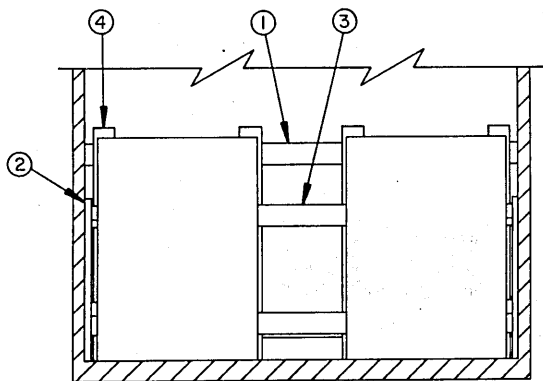
<u>CONTAINER DETAIL</u>	M59 HE CHARGE	M69 INERT CHARGE
GROSS WEIGHT -----	2,500 LBS	2,390 LBS
CUBE -----	51 CU FT	51 CU FT



ISOMETRIC VIEW

KEY NUMBERS

- ① END-WALL GATE (2 REQD). SEE THE "END-WALL GATE A" DETAIL ON PAGE 8.
- ② SIDE FILL ASSEMBLY (32 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 8.
- ③ LATERAL BRACE, 2" X 6" BY A CUT-TO-FIT LENGTH REQUIRED SO AS TO CONTACT THE WALLS OF LATERALLY ADJACENT CONTAINERS (64 REQD; 4 PER BAY OF TWO CONTAINERS). NAIL TO THE 12" AND 40" HEIGHT HORIZONTAL PIECES OF THE END-WALL/SEPARATOR/CENTER GATE W/3-10d NAILS EACH.
- ④ SEPARATOR GATE (14 REQD). SEE THE "SEPARATOR GATE A" DETAIL ON PAGE 9.
- ⑤ CENTER GATE (2 REQD). SEE THE "CENTER GATE A" DETAIL ON PAGE 9.
- ⑥ SOLID FILL, 6" WIDE BY 64" LONG BY THE THICKNESS REQUIRED TO PROVIDE A WEDGE FIT BETWEEN THE VERTICAL PIECES OF THE LONGITUDINALLY ADJACENT CENTER GATES (REQUIRED AT 4 PLACES). NAIL THE FIRST PIECE TO THE VERTICAL PIECE OF ONE CENTER GATE W/5-10d NAILS. NAIL EACH ADDITIONAL PIECE TO A PREVIOUSLY INSTALLED PIECE W/5-10d NAILS. NAIL THRU EACH VERTICAL PIECE OF THE OTHER CENTER GATE INTO THE SOLID FILL PIECES W/3-10d NAILS.
- ⑦ DOORWAY PROTECTION (2 REQ D). SEE THE "DOORWAY PROTECTION" DETAIL ON PAGE 11.



SECTION A-A

SPECIAL NOTES:

1. A 32-CONTAINER LOAD IS SHOWN IN A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR HAVING 10'-0" WIDE THRU DOOR OPENINGS WITH CONVENTIONAL SLIDING DOORS. SEE GENERAL NOTE "E" ON PAGE 2.
2. IF THE CAR IS EQUIPPED WITH PLUG-TYPE DOORS, DOORWAY PROTECTION AS DETAILED ON PAGE 26 WILL BE USED IN LIEU OF THAT SPECIFIED IN THE LOAD VIEW. HOWEVER, THE CAR MUST HAVE AVAILABLE SIDEWALLS OR BE EQUIPPED WITH SPECIAL ANCHOR RODS IN THE CAR DOOR POSTS.
3. IF A 31-CONTAINER SHIPMENT IS TO BE MADE, THESE PROCEDURES WILL BE AUGMENTED BY APPLYING THE METHOD FOR AN "OMITTED CONTAINER" AS SPECIFIED IN THE LOAD VIEW ON PAGE 6, PIECES MARKED ⑥ AND ⑨ AND SPECIAL NOTE 1 ON PAGE 7.

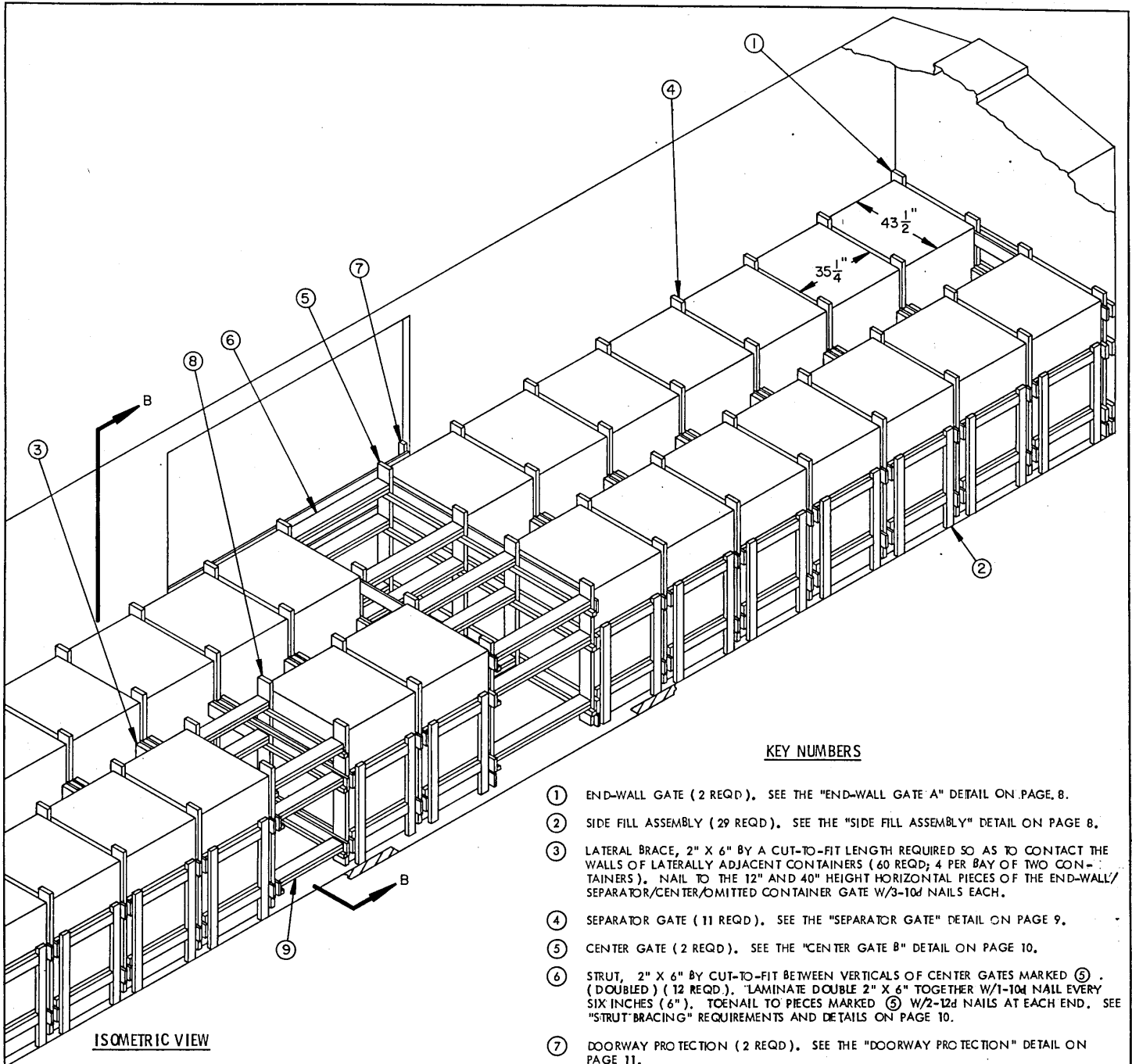
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	648	324
2" X 3"	26	13
2" X 4"	312	342
2" X 6"	814	814
NAILS	NO. REQD	POUNDS
6d (2")	984	6
10d (3")	1168	18
12d (3 1/4")	20	1/2

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS WITH HE M59 CHARGE	32	80,000 LBS
DUNNAGE		3,010 LBS
TOTAL WEIGHT		83,010 LBS

LOAD AS SHOWN

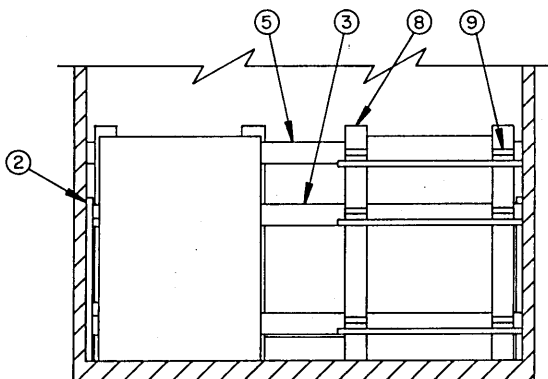
ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS WITH INERT M69 CHARGE	32	76,480 LBS
DUNNAGE		3,010 LBS
TOTAL WEIGHT		79,490 LBS



ISOMETRIC VIEW

KEY NUMBERS

- ① END-WALL GATE (2 REQD). SEE THE "END-WALL GATE A" DETAIL ON PAGE 8.
- ② SIDE FILL ASSEMBLY (29 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 8.
- ③ LATERAL BRACE, 2" X 6" BY A CUT-TO-FIT LENGTH REQUIRED SO AS TO CONTACT THE WALLS OF LATERALLY ADJACENT CONTAINERS (60 REQD; 4 PER BAY OF TWO CONTAINERS). NAIL TO THE 12" AND 40" HEIGHT HORIZONTAL PIECES OF THE END-WALL/SEPARATOR/CENTER/OMITTED CONTAINER GATE W/3-10d NAILS EACH.
- ④ SEPARATOR GATE (11 REQD). SEE THE "SEPARATOR GATE" DETAIL ON PAGE 9.
- ⑤ CENTER GATE (2 REQD). SEE THE "CENTER GATE B" DETAIL ON PAGE 10.
- ⑥ STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN VERTICALS OF CENTER GATES MARKED ⑤ (DOUBLED) (12 REQD). LAMINATE DOUBLE 2" X 6" TOGETHER W/1-10d NAIL EVERY SIX INCHES (6"). TOENAIL TO PIECES MARKED ⑤ W/2-12d NAILS AT EACH END. SEE "STRUT BRACING" REQUIREMENTS AND DETAILS ON PAGE 10.
- ⑦ DOORWAY PROTECTION (2 REQD). SEE THE "DOORWAY PROTECTION" DETAIL ON PAGE 11.
- ⑧ OMITTED CONTAINER GATE (2 REQD; 1 AS DETAILED, 1 OPPOSITE HAND). SEE THE "OMITTED CONTAINER GATE" DETAIL ON PAGE 11.
- ⑨ STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN VERTICALS OF GATES MARKED ⑧ (DOUBLED) (6 REQD). LAMINATE DOUBLE 2" X 6" TOGETHER W/1-10d NAIL EVERY SIX INCHES (6"). TOENAIL TO PIECES MARKED ⑧ W/2-12d NAILS AT EACH END.



SECTION B-B

SPECIAL NOTES:

1. A 29-CONTAINER LOAD IS SHOWN IN A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOXCAR HAVING 10'-0" WIDE THRU DOOR OPENINGS WITH CONVENTIONAL SLIDING DOORS. PROCEDURES FOR AN OMITTED CONTAINER ARE DEPICTED, HOWEVER, THE LOCATION OF THE OMITTED CONTAINER WILL BE AS NEAR TO THE DOOR OPENING AS POSSIBLE WITHOUT PROJECTING INTO THE DOORWAY AREA, BUT MUST NOT BE ADJACENT TO A CENTER GATE.
2. IF THE CAR IS EQUIPPED WITH PLUG-TYPE DOORS, DOORWAY PROTECTION AS DETAILED ON PAGE 26 WILL BE USED IN LIEU OF THAT SPECIFIED IN THE LOAD VIEW. HOWEVER, THE CAR MUST HAVE NAILABLE SIDEWALLS OR BE EQUIPPED WITH SPECIAL ANCHOR RODS IN THE CAR DOOR POSTS.
3. THIS PROCEDURE CAN BE USED FOR SHIPMENT OF A 30-CONTAINER LOAD BY USING 2 ADDITIONAL PIECES MARKED ④ AND ELIMINATING ALL PIECES MARKED ⑥ AND ⑦.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	610	305
2" X 2"	78	26
2" X 3"	26	13
2" X 4"	464	310
2" X 6"	784	784
NAILS	NO. REQD	POUNDS
6d (2")	924	5-1/2
10d (3")	1168	18
12d (3-1/4")	92	1-1/2

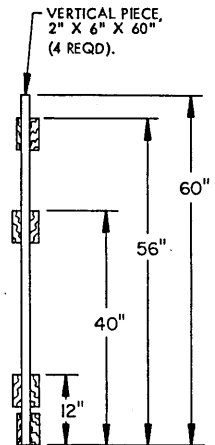
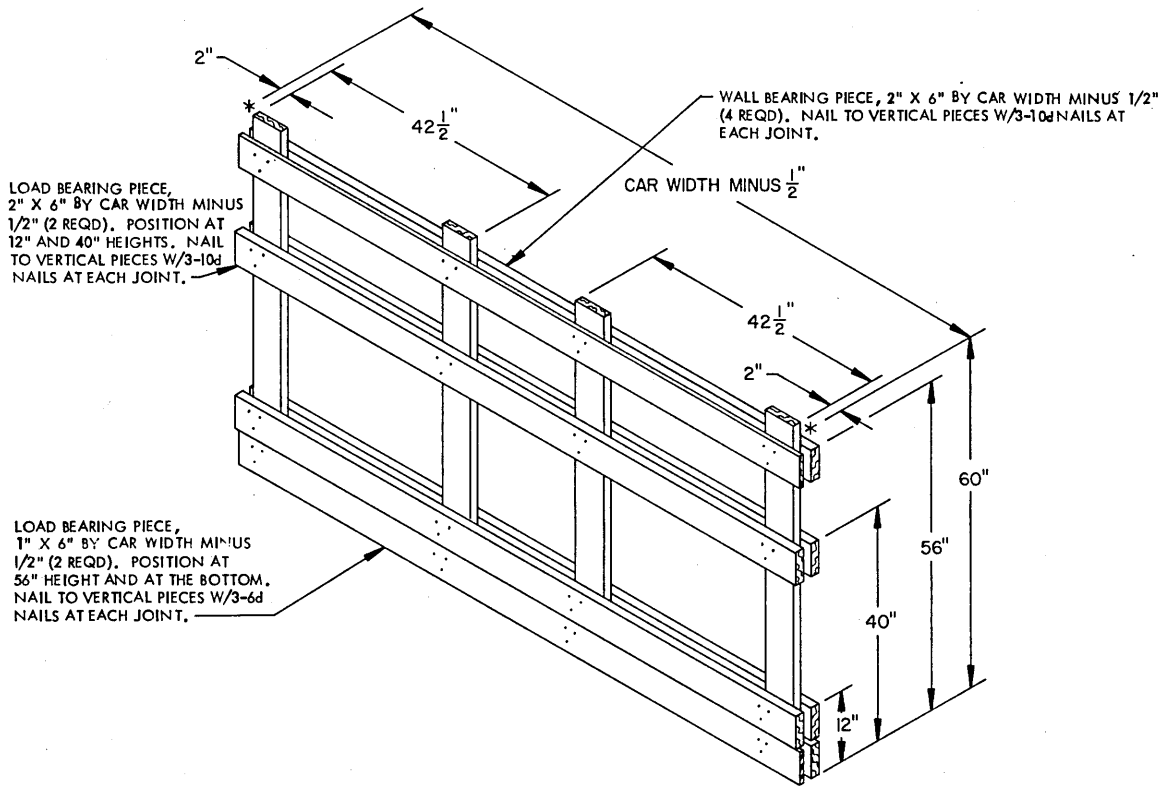
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS WITH HE M59 CHARGE	29	72,500 LBS
DUNNAGE		2,901 LBS
TOTAL WEIGHT		75,401 LBS

LOAD AS SHOWN

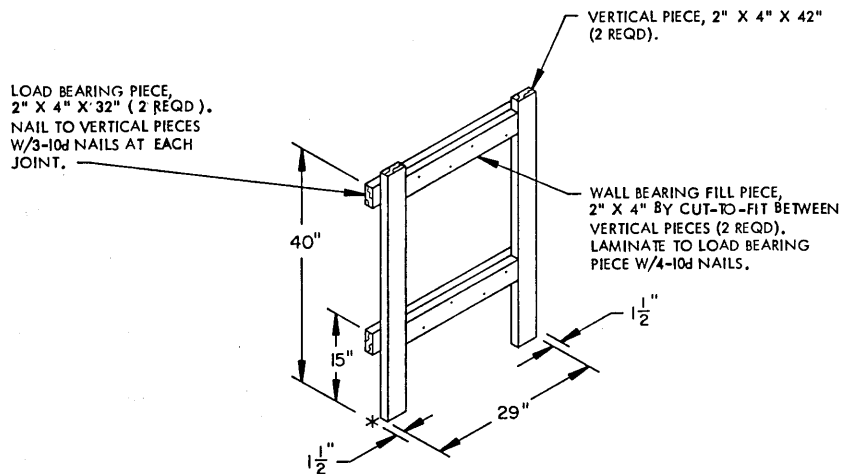
ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS WITH INERT M69 CHARGE	29	69,310 LBS
DUNNAGE		2,901 LBS
TOTAL WEIGHT		72,211 LBS

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



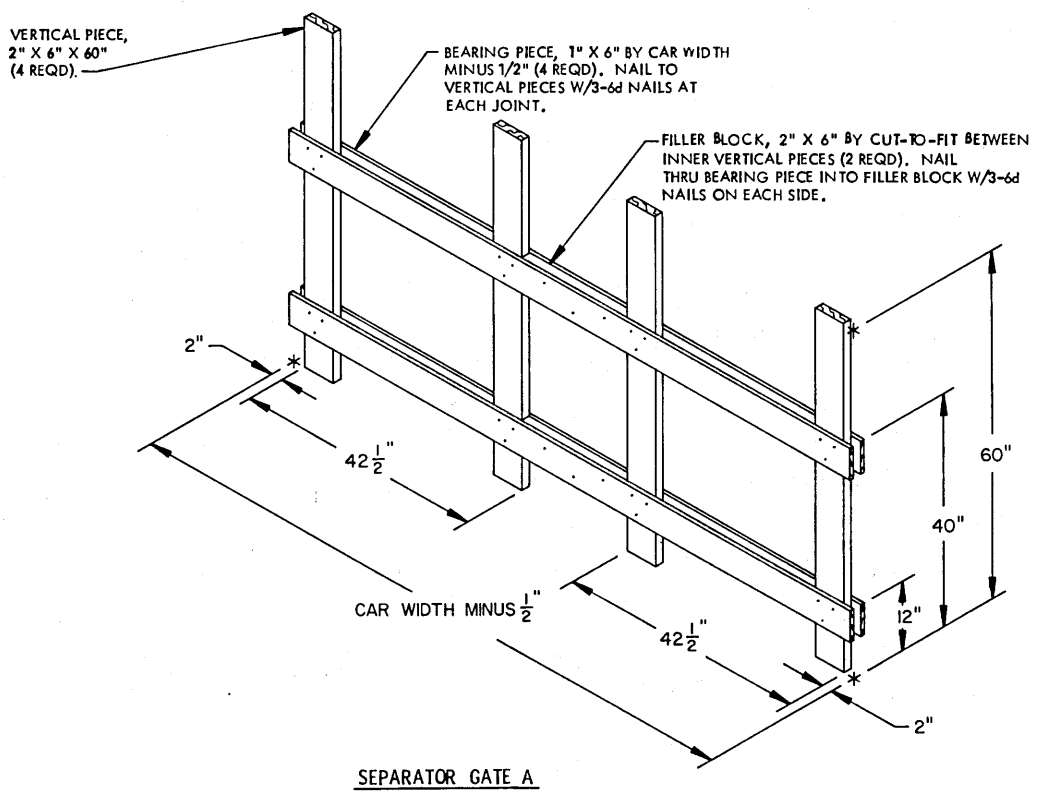
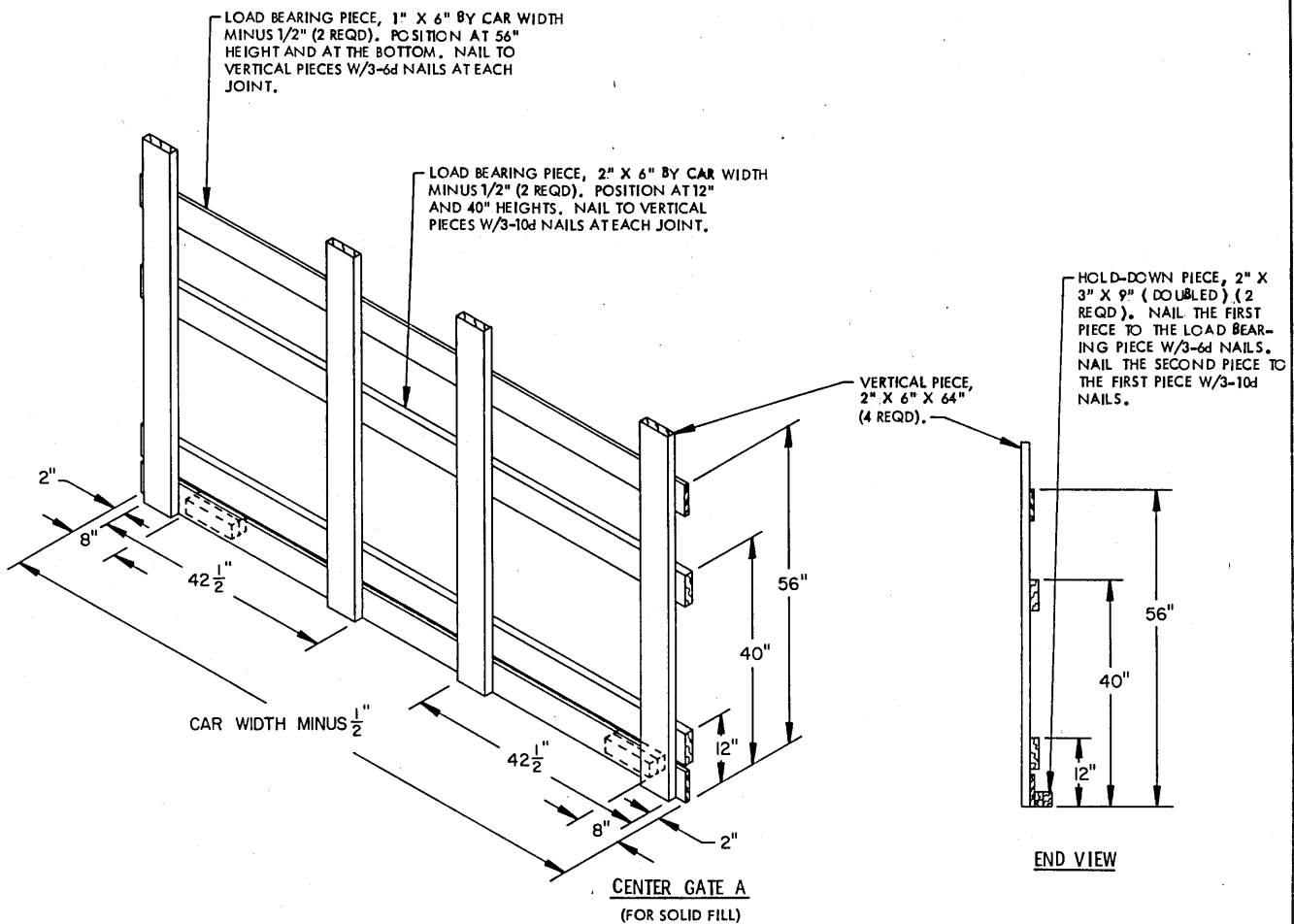
END VIEW

END-WALL GATE A

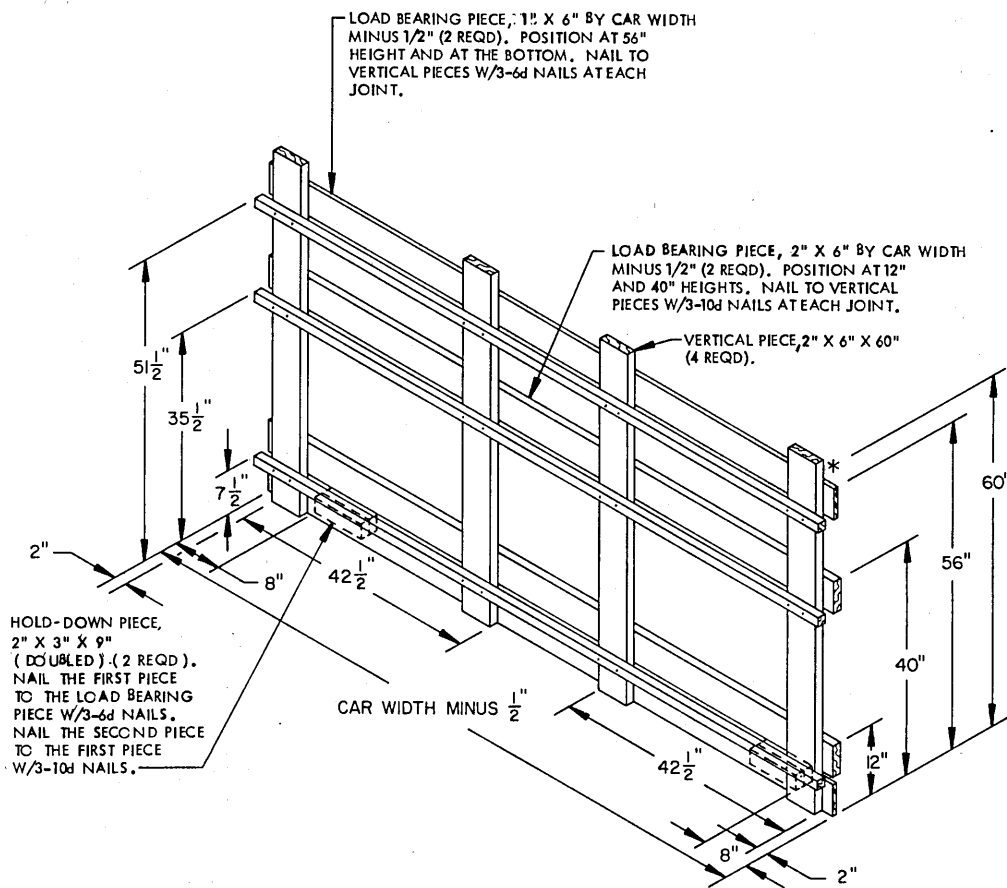


SIDE FILL ASSEMBLY

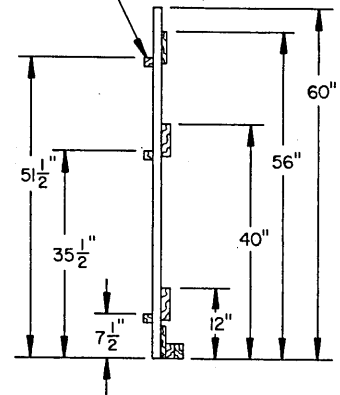
DETAILS



DETAILS



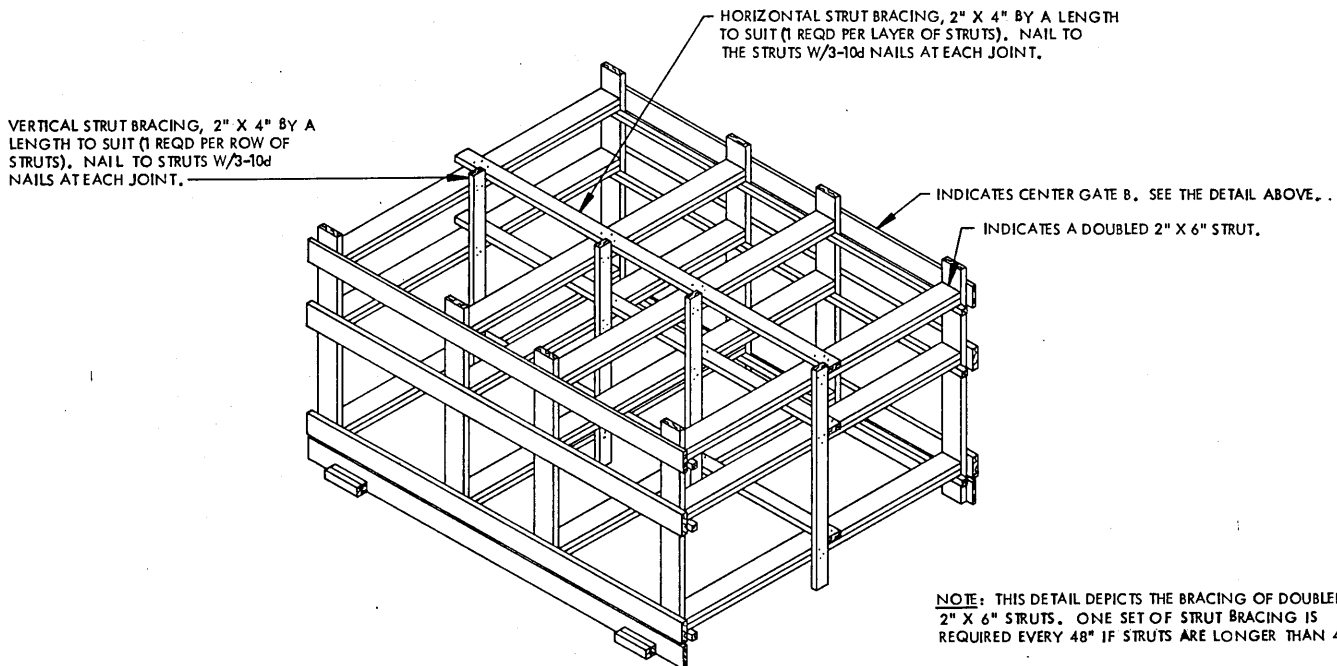
STRUT LEDGER, 2" X 2" BY CAR WIDTH MINUS 1/2" (3 REQD), NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



END VIEW

CENTER GATE B

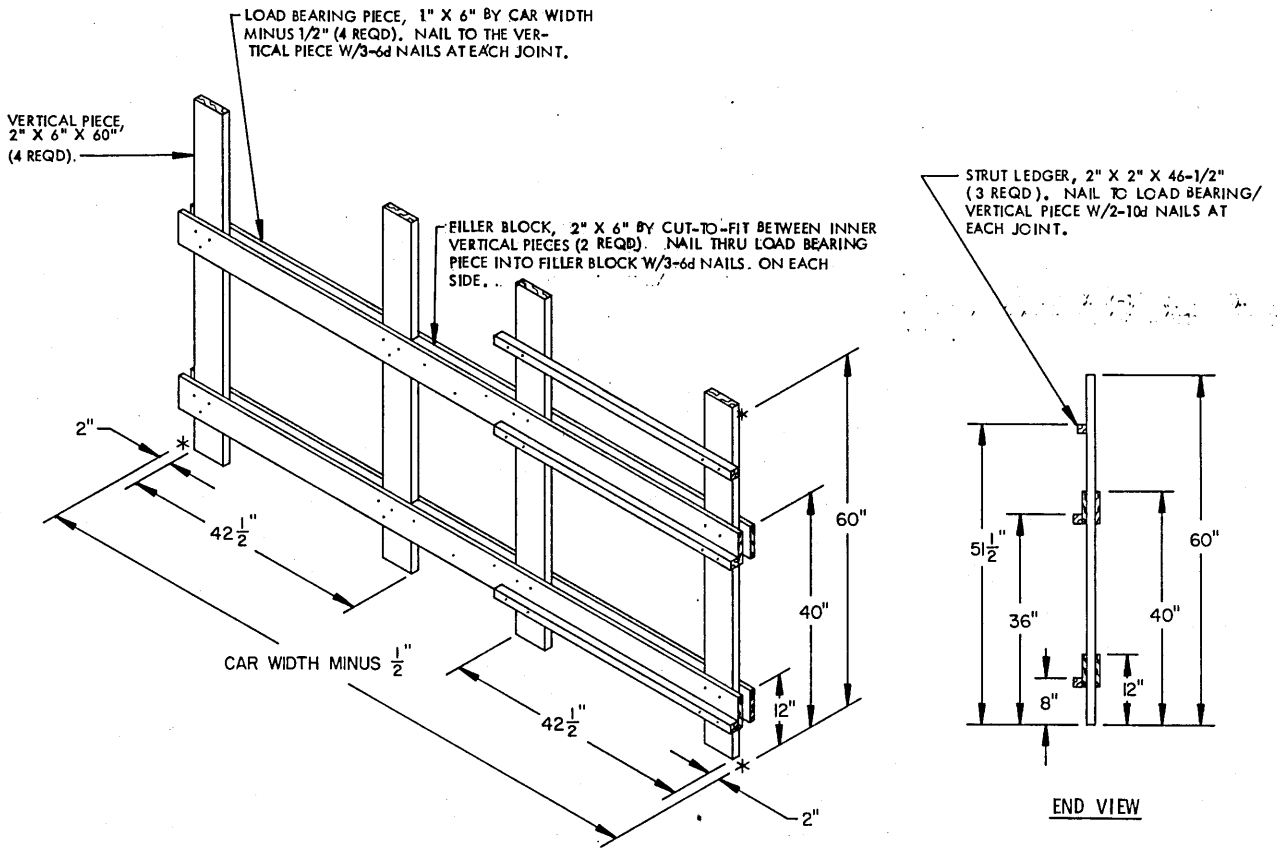
(FOR STRUTS)



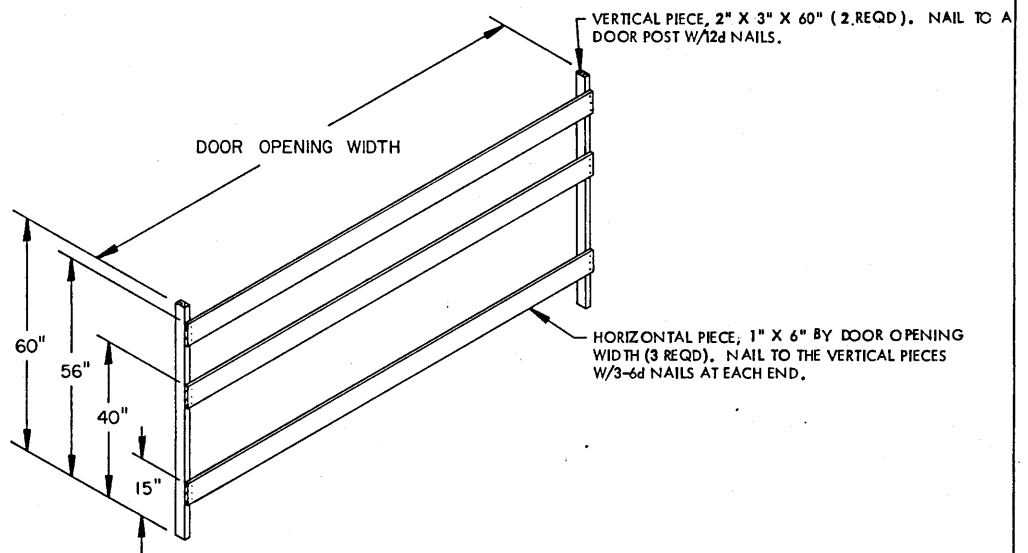
NOTE: THIS DETAIL DEPICTS THE BRACING OF DOUBLED 2" X 6" STRUTS. ONE SET OF STRUT BRACING IS REQUIRED EVERY 48" IF STRUTS ARE LONGER THAN 48".

TYPICAL STRUT BRACING

DETAILS

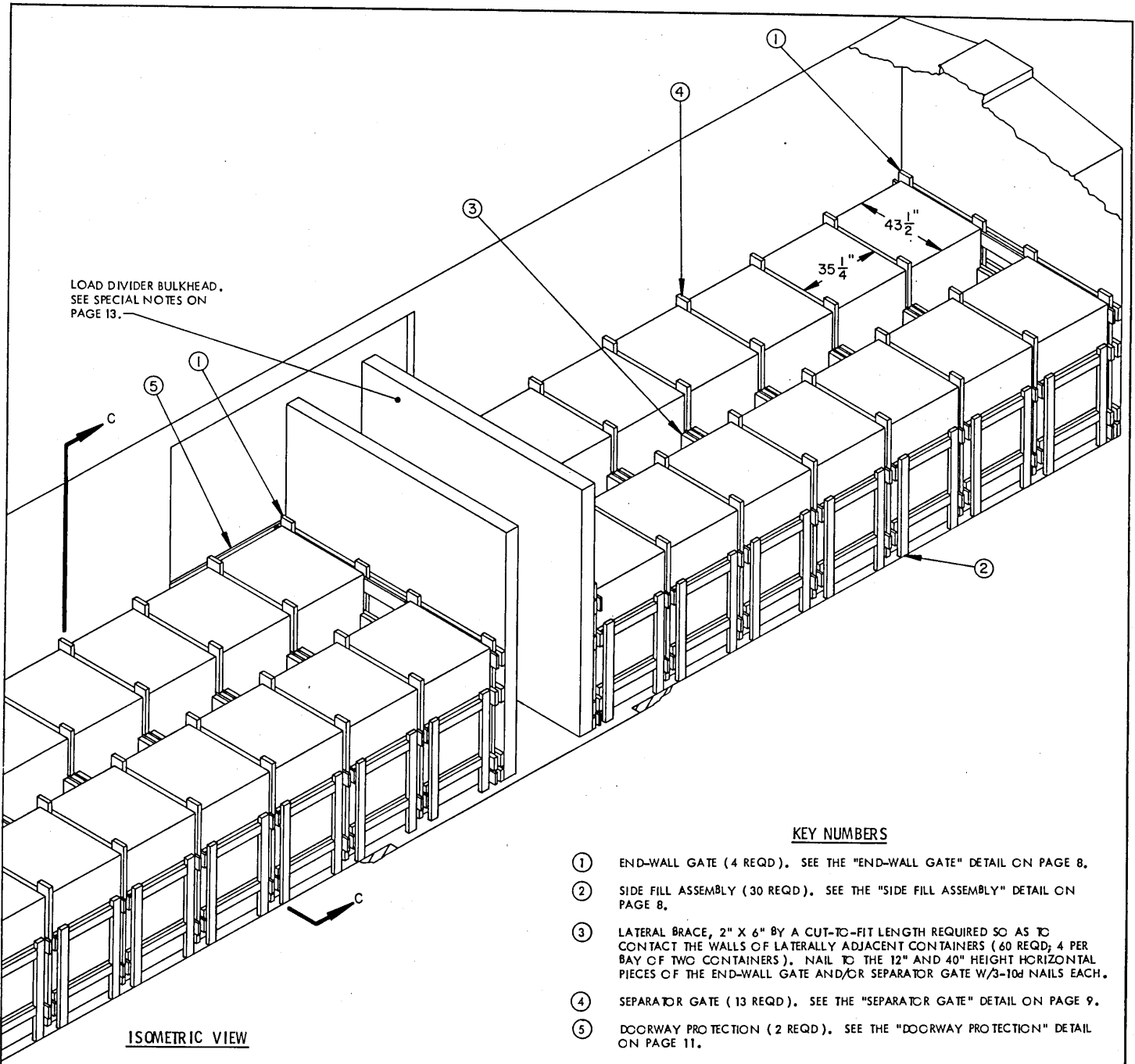


OMITTED CONTAINER GATE



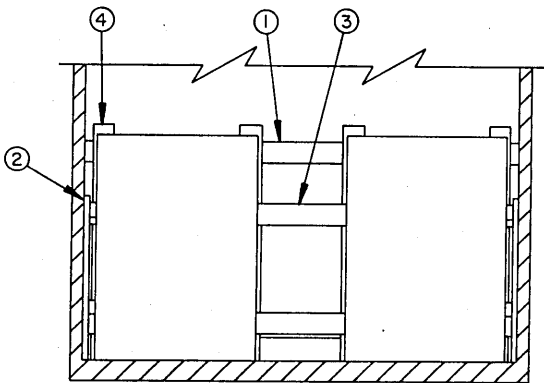
DOORWAY PROTECTION

THIS METHOD OF DOORWAY PROTECTION IS FOR USE IN CARS EQUIPPED WITH CONVENTIONAL SLIDING DOORS WHEN DOOR POSTS ARE WOODEN, OR ARE STEEL AND HAVE HOLES IN WHICH TO ACCOMPLISH THE NAILING OF THE VERTICAL PIECES.



KEY NUMBERS

- ① END-WALL GATE (4 REQD). SEE THE "END-WALL GATE" DETAIL ON PAGE 8.
- ② SIDE FILL ASSEMBLY (30 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 8.
- ③ LATERAL BRACE, 2" X 6" BY A CUT-TO-FIT LENGTH REQUIRED SO AS TO CONTACT THE WALLS OF LATERALLY ADJACENT CONTAINERS (60 REQD; 4 PER BAY OF TWO CONTAINERS). NAIL TO THE 12" AND 40" HEIGHT HORIZONTAL PIECES OF THE END-WALL GATE AND/OR SEPARATOR GATE W/3-10d NAILS EACH.
- ④ SEPARATOR GATE (13 REQD). SEE THE "SEPARATOR GATE" DETAIL ON PAGE 9.
- ⑤ DOORWAY PROTECTION (2 REQD). SEE THE "DOORWAY PROTECTION" DETAIL ON PAGE 11.



SPECIAL NOTES:

1. A 30-CONTAINER LOAD IS SHOWN IN A 50'-6" LONG CUSHIONED BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS AND 10'-0" WIDE THRU DOOR OPENINGS. SEE GENERAL NOTES "E" AND "F" ON PAGE 2.
2. CONTAINERS MUST BE FIRMLY PUSHED AGAINST THE SIDE FILL ASSEMBLIES AND SEPARATOR GATES TO PROVIDE FOR A TIGHT LOAD. CONTAINERS IN THE DOORWAY AREA MUST BE END-HANDLED.
3. **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 TRANS-CO 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 XL1.
4. THE USE OF LOAD DIVIDER EQUIPPED CARS WILL ELIMINATE THE NEED FOR CENTER GATES AND STRUTS, OR SOLID FILL 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 CONTAINERS. **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. **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. 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 14 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 14, THE "FILL PIECE" MATERIAL IS NOT REQUIRED.
6. **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.

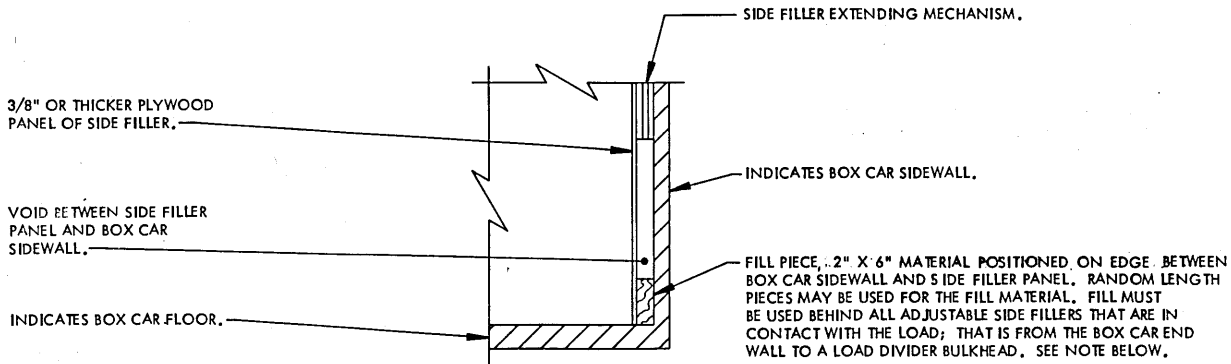
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	610	305
2" X 3"	20	10
2" X 4"	480	320
2" X 6"	726	726
NAILS	NO. REQD	POUNDS
6d (2")	912	5-1/2
10d (3")	1068	17
12d (3-1/4")	20	1/2

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS WITH HE M59 CHARGE	30	75,000 LBS
DUNNAGE		2,745 LBS
TOTAL WEIGHT		77,745 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS WITH INERT M69 CHARGE	30	71,700 LBS
DUNNAGE		2,745 LBS
TOTAL WEIGHT		74,445 LBS

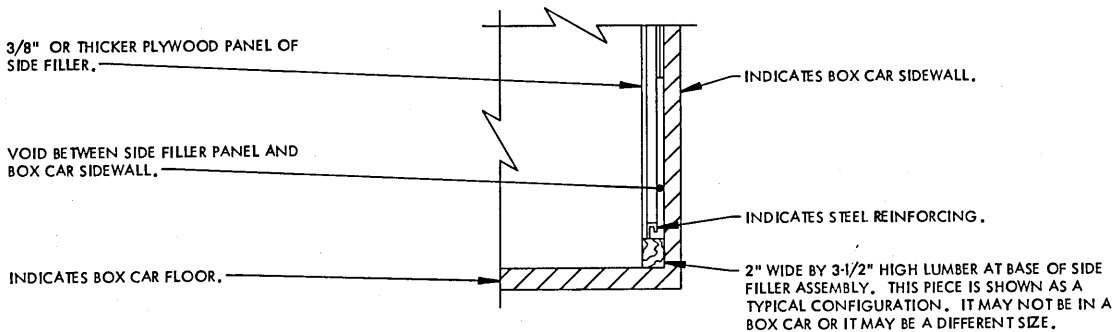


TYPICAL TYPE A

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

NOTE:

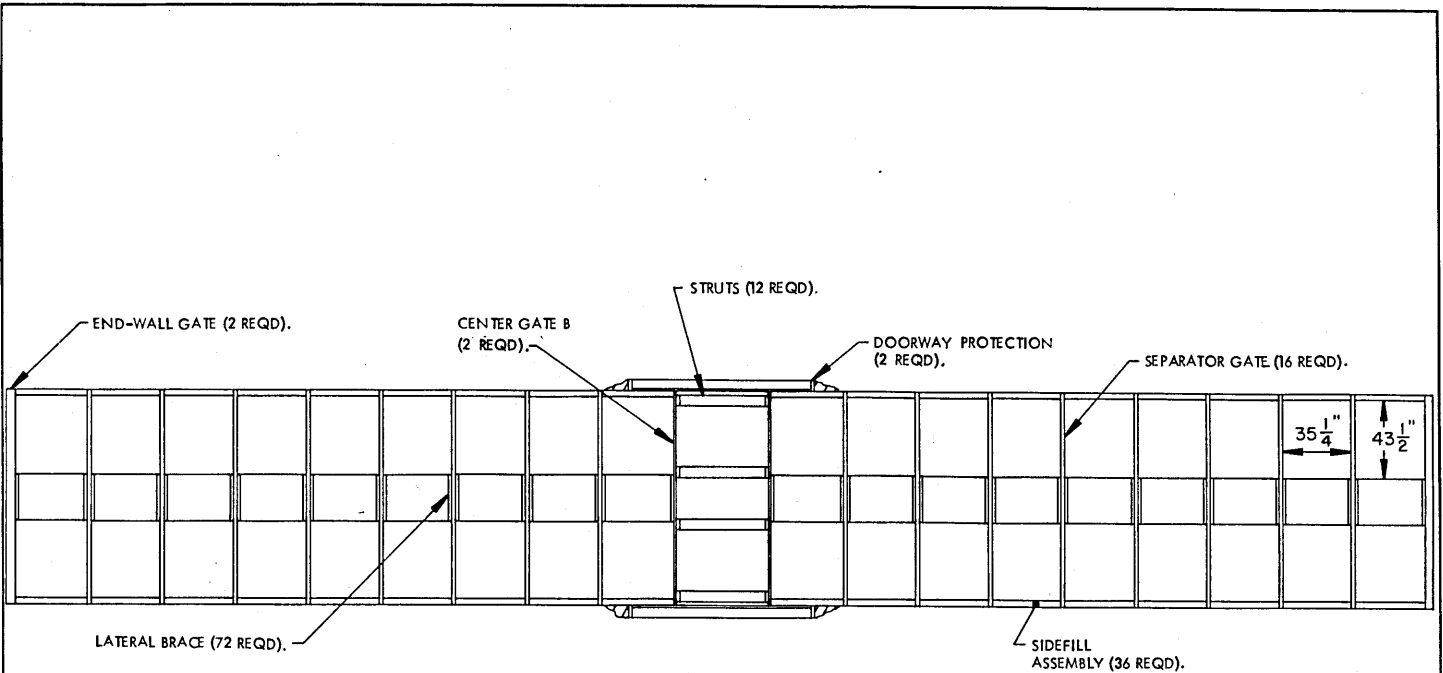
NAILING OF "FILL PIECES" IS NOT REQUIRED EXCEPT THAT EACH "FILL PIECE" LOCATED NEAREST THE DOOR OPENINGS OF THE CAR WILL BE SECURED AGAINST LONGITUDINAL MOVEMENT W/1-6d NAIL DRIVEN THROUGH THE SIDE FILLER PANEL AND INTO THE "FILL PIECE."



TYPICAL TYPE B

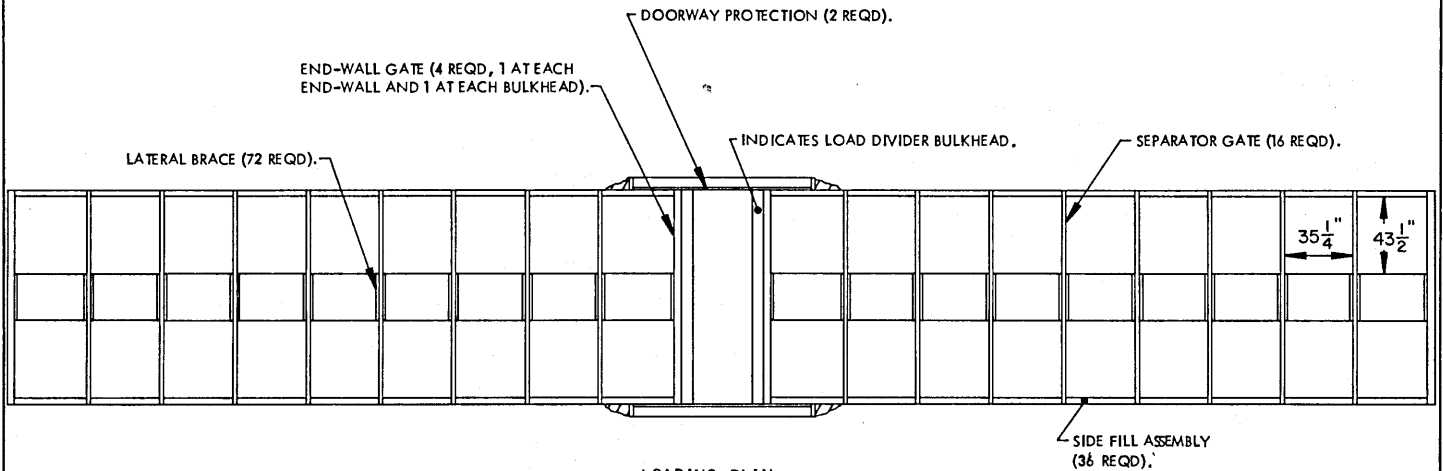
THIS VIEW SHOWS A TYPICAL SECTION OF A BOX CAR EQUIPPED WITH HEAVY DUTY, STEEL REINFORCED, ADJUSTABLE SIDE FILLERS. A "FILL PIECE", AS SHOWN IN THE "TYPICAL TYPE A" DETAIL ABOVE, IS NOT REQUIRED IN BOX CARS SO EQUIPPED.

TYPICAL ADJUSTABLE SIDE FILLERS IN LOAD DIVIDER EQUIPPED BOX CARS



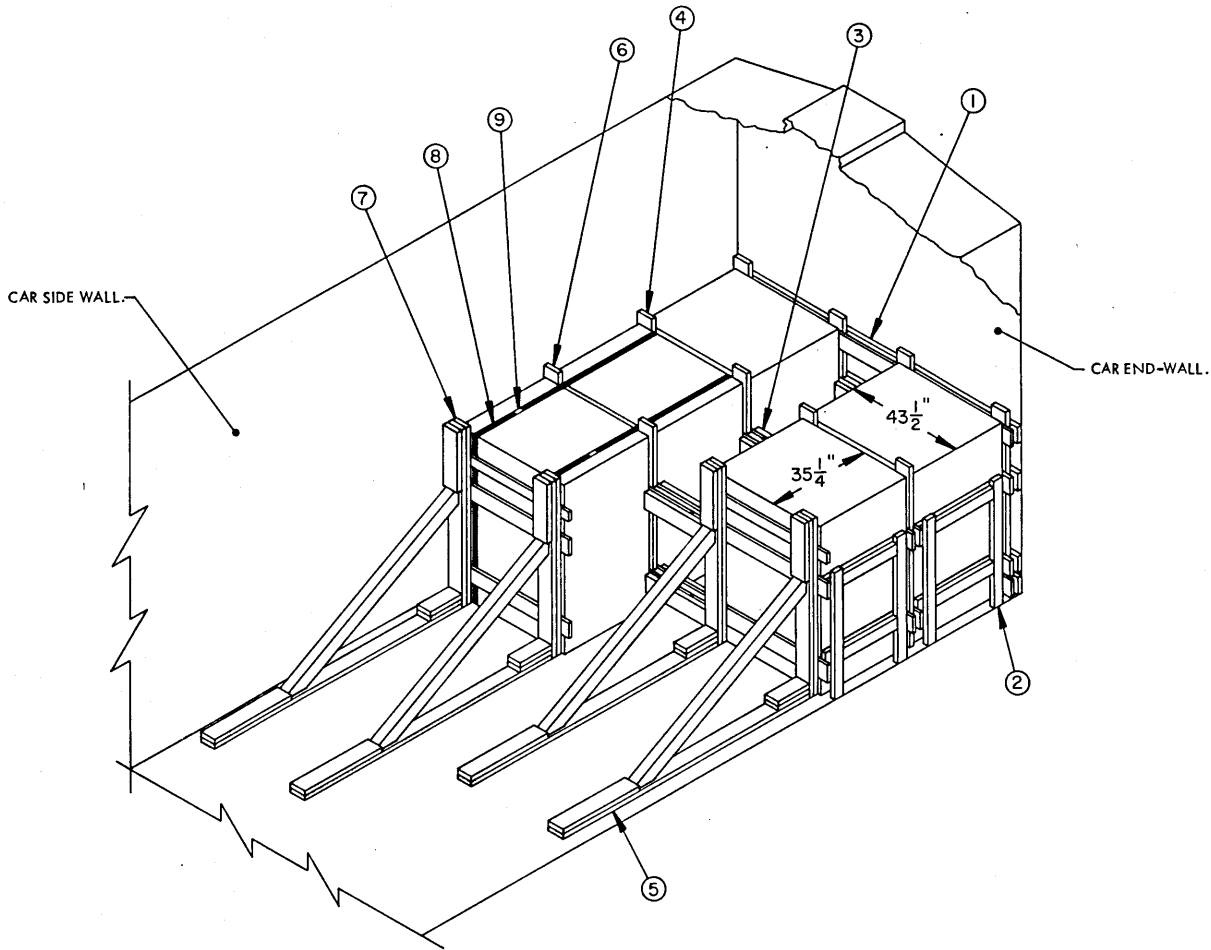
LOADING PLAN

A 36-CONTAINER LOAD IS SHOWN IN A 60'-8" LONG CONVENTIONAL BOX CAR WITH 8'-0" WIDE THRU DOOR OPENINGS. KEY NUMBERS " ① THRU ⑦ " AND "SPECIAL NOTES" ON PAGES 6 AND 7 APPLY TO THIS LOAD.



LOADING PLAN

A 36-CONTAINER LOAD IS SHOWN IN A 60'-8" LONG BOX CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS AND 8'-0" WIDE THRU DOOR OPENINGS. THE "KEY NUMBERS" AND "SPECIAL NOTES" ON PAGES 12 AND 13 APPLY TO THIS LOAD.



ISOMETRIC VIEW

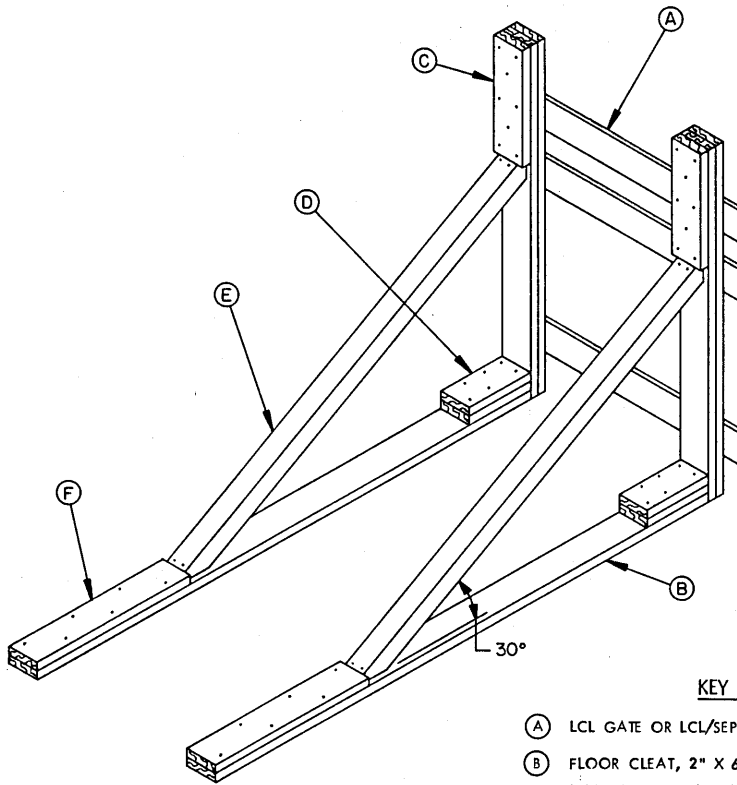
SPECIAL NOTES:

1. A TYPICAL LCL LOAD OF 5 CONTAINERS IS SHOWN IN A 9'-2" WIDE CONVENTIONAL TYPE BOX CAR HAVING A WOOD OR NAILABLE METAL FLOOR. CARS OF OTHER WIDTHS CAN BE USED, SEE GENERAL NOTE "E" ON PAGE 2.

2. ONE (1) KNEE BRACE ASSEMBLY AS DETAILED ON PAGE 17 IS ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 7,500 POUNDS.

KEY NUMBERS

- ① END-WALL GATE (1 REQD). SEE THE "END-WALL GATE" DETAIL ON PAGE 8.
- ② SIDE FILL ASSEMBLY (5 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 8.
- ③ LATERAL BRACE, 2" X 6" BY A CUT-TO-FIT LENGTH REQUIRED SO AS TO CONTACT THE WALLS OF LATERALLY ADJACENT CONTAINERS (10 REQD, 4 PER BAY OF TWO CONTAINERS). NAIL TO THE 12" AND 40" HEIGHT HORIZONTAL PIECES OF APPLICABLE GATES MARKED ①, ④, AND ⑥ W/3-10d NAILS EACH.
- ④ SEPARATOR GATE (1 REQD). SEE THE "SEPARATOR GATE" DETAIL ON PAGE 9.
- ⑤ KNEE BRACE ASSEMBLY (2 REQD). SEE THE "KNEE BRACE ASSEMBLY" DETAIL ON PAGE 17.
- ⑥ LCL/SEPARATOR GATE (1 REQD). SEE THE "LCL/SEPARATOR GATE" DETAIL ON PAGE 18.
- ⑦ LCL GATE (1 REQD). SEE THE "LCL GATE" DETAIL ON PAGE 18.
- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH-TO-SUIT STEEL STRAPPING (2 REQD). PRE-POSITION AND INSTALL TO ENIRCLE TWO LONGITUDINALLY ADJACENT CONTAINERS AS SHOWN.
- ⑨ SEAL FOR 1-1/4" STRAPPING (2 REQD). DOUBLE CRIMP.

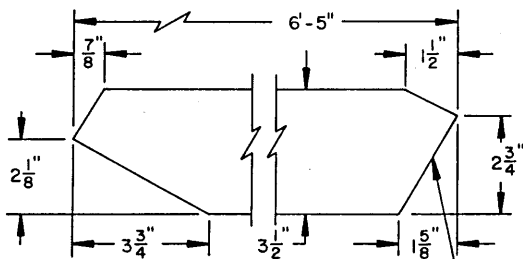


KNEE BRACE ASSEMBLY

THE ASSEMBLY AS SHOWN IS ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 7,500 POUNDS.

KEY LETTERS

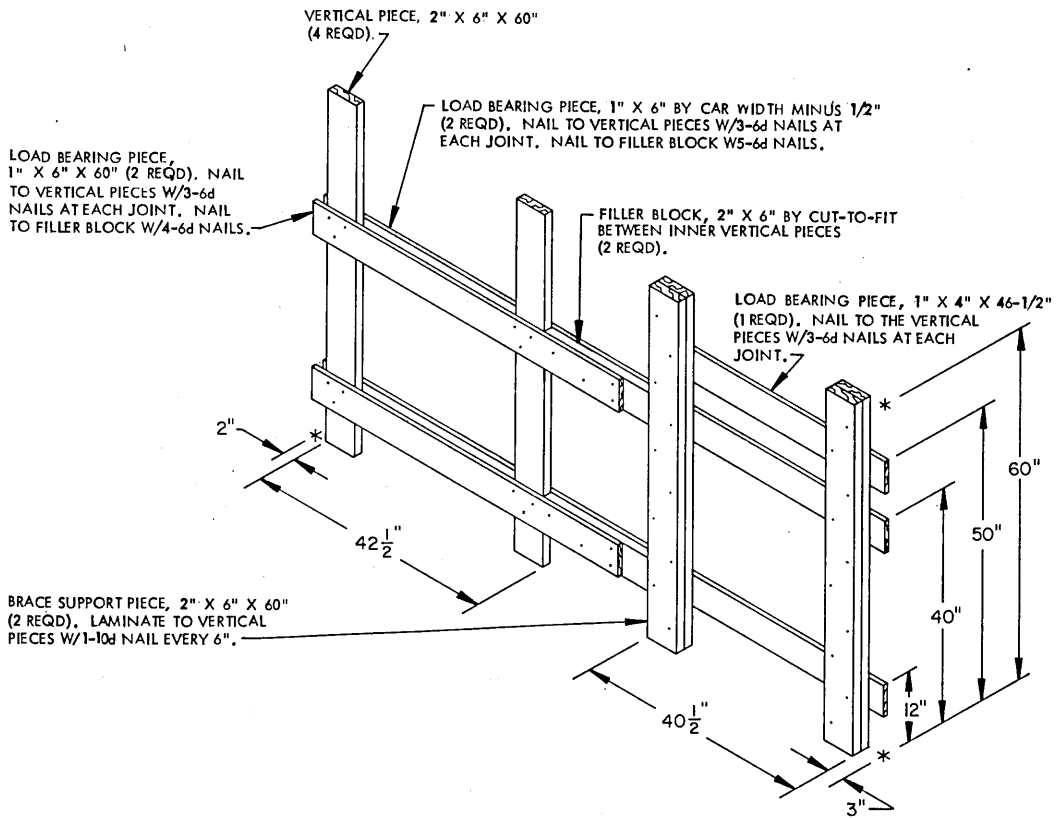
- (A) LCL GATE OR LCL/SEPARATOR GATE, AS APPLICABLE (1 REQD).
- (B) FLOOR CLEAT, 2" X 6" X 8'-0" + $\frac{11}{16}$ "₀ (2 REQD). ALIGN WITH THE VERTICAL PIECE OF THE GATE AND NAIL TO THE CAR FLOOR W/ 3-16d NAIL EVERY 8".
- (C) HOLD-DOWN CLEAT, 2" X 6" X 20" (2 REQD). NAIL TO A VERTICAL PIECE W/ 8-10d NAILS.
- (D) POCKET CLEAT, 2" X 6" X 12" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE FLOOR CLEAT, PIECE MARKED (B), W/ 4-16d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER AND TOENAIL IT TO THE VERTICAL PIECE OF GATE MARKED (A), W/ 2-16d NAILS.
- (E) BRACE, 4" X 4" BY 6'-5" LONG (2 REQD). SEE THE DETAIL AT LEFT FOR BEVEL CUTS REQUIRED. TOENAIL TO THE VERTICAL PIECE OF THE GATE AND TO THE FLOOR CLEAT, PIECES MARKED (A) AND (B) W/ 2-16d NAILS AT EACH END.
- (F) BACK-UP CLEAT, 2" X 6" X 30" (2 REQD). NAIL TO THE FLOOR CLEAT, PIECE MARKED (B), W/ 6-40d NAILS.



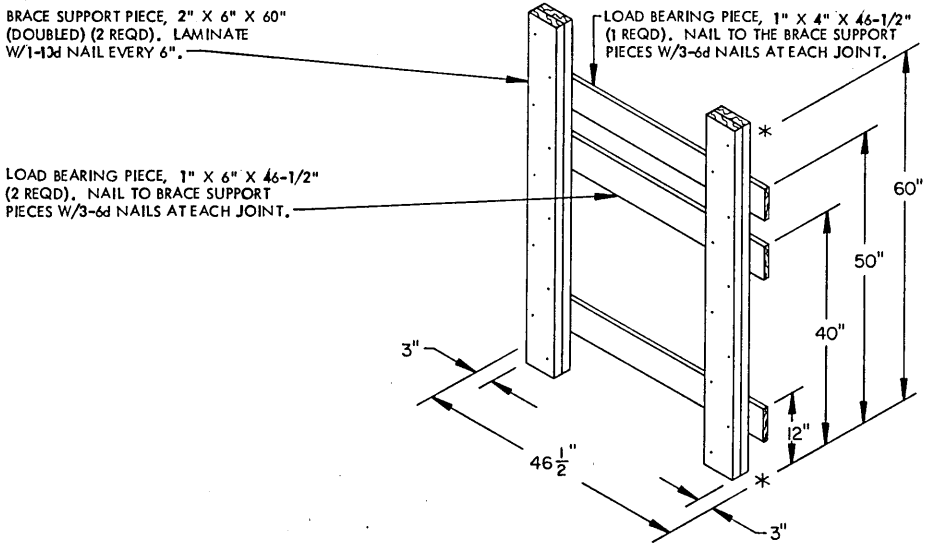
DIAGONAL BRACE

4" X 4" MATERIAL

THE BRACE MUST BE INSTALLED SO THAT THIS BEARING SURFACE WILL BE IN CONTACT WITH THE VERTICAL PIECE OF THE GATE.

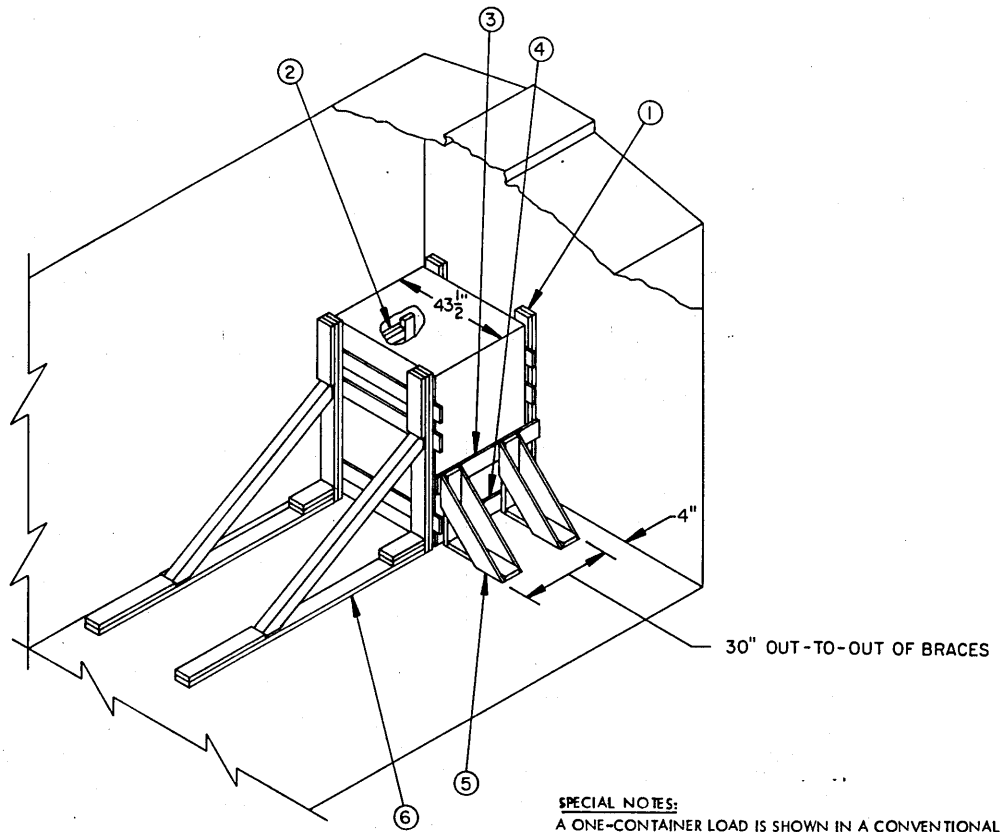


LCL/SEPARATOR GATE



LCL GATE

DETAILS



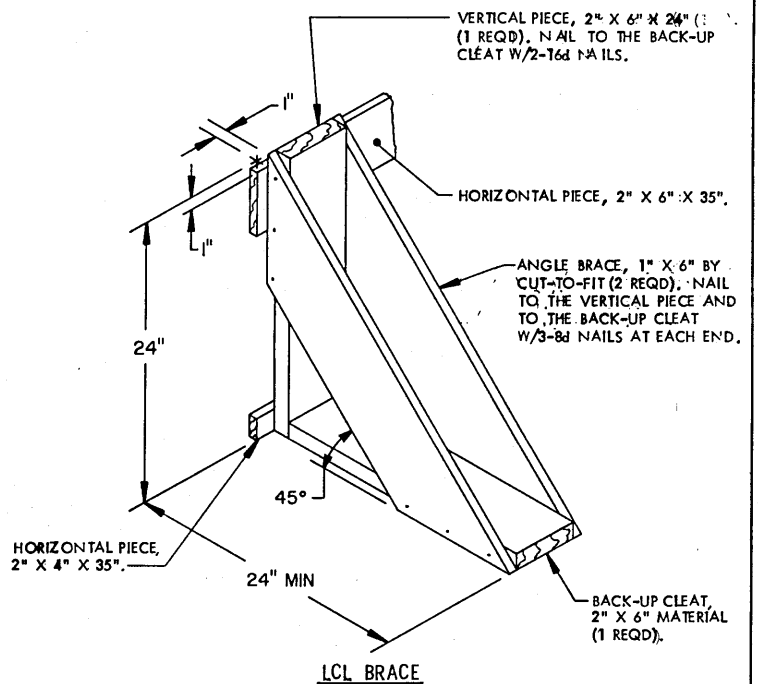
ISOMETRIC VIEW

KEY NUMBERS

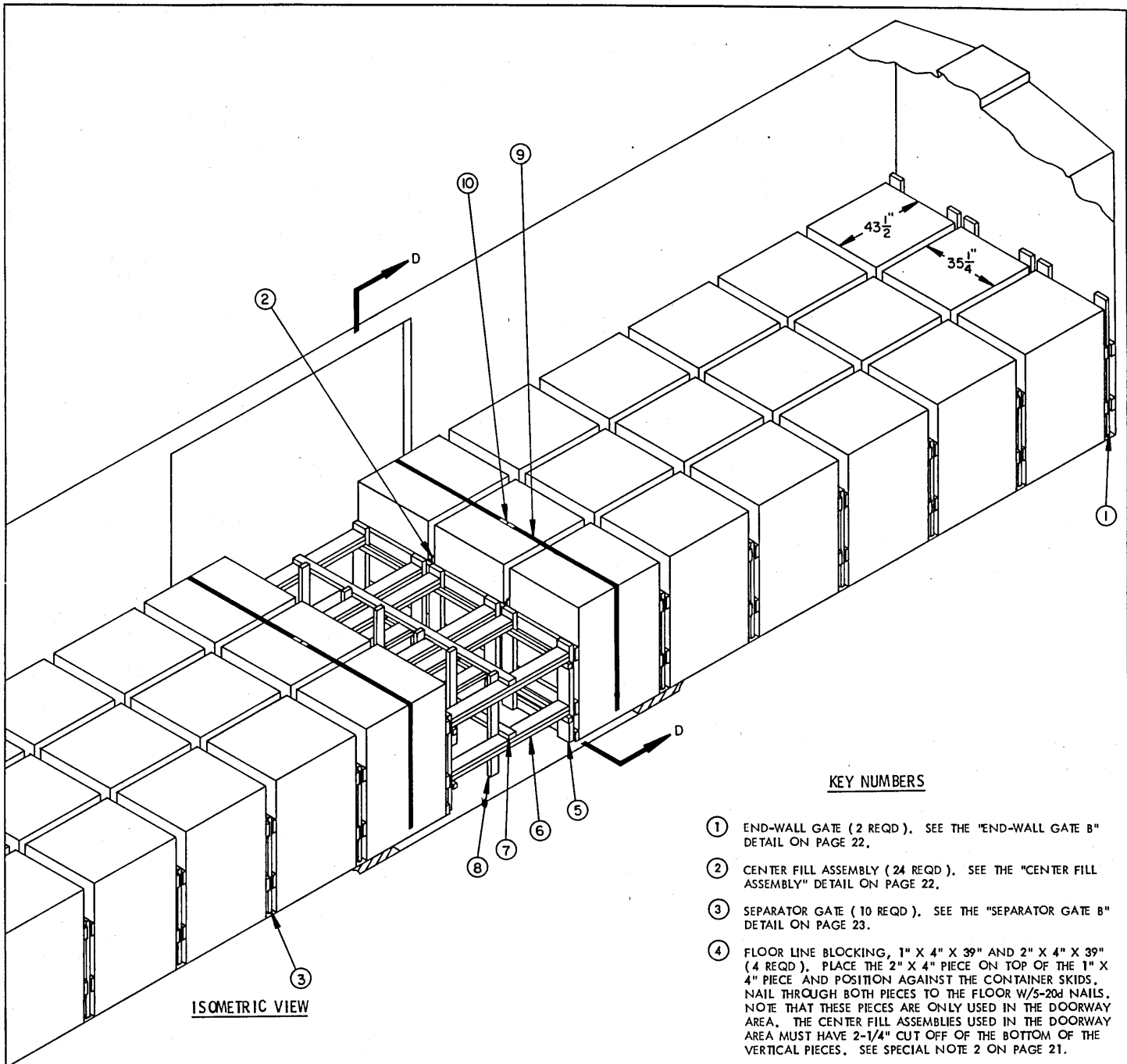
- ① LCL GATE (2 REQD). SEE THE "LCL GATE" DETAIL ON PAGE 18.
- ② SIDE FILL ASSEMBLY (1 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 8.
- ③ HORIZONTAL PIECE, 2" X 6" X 35" (1 REQD). NAIL TO LCL BRACES W/3-10d NAILS AT EACH JOINT.
- ④ HORIZONTAL PIECE, 2" X 4" X 35" (1 REQD). NAIL TO LCL BRACES W/3-10d NAILS AT EACH JOINT.
- ⑤ LCL BRACE (2 REQD). SEE THE DETAIL BELOW. NAIL TO THE CAR FLOOR W/7-16d NAILS.
- ⑥ KNEE BRACE ASSEMBLY (1 REQD). SEE THE "KNEE BRACE ASSEMBLY" DETAIL ON PAGE 17.

SPECIAL NOTES:

A ONE-CONTAINER LOAD IS SHOWN IN A CONVENTIONAL TYPE BOX CAR HAVING A WOOD OR NAILABLE METAL FLOOR. THE LOAD SHOWN DEPICTS USE OF LCL BRACES FOR LATERAL BRACING AND A KNEE BRACE ASSEMBLY FOR LONGITUDINAL RESTRAINT. LCL BRACES WILL NOT BE USED FOR LONGITUDINAL BRACING.



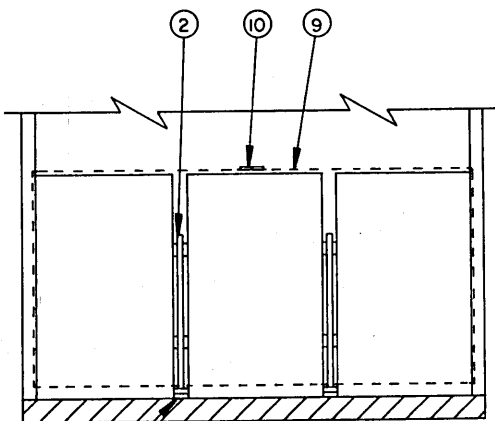
LCL BRACE



ISOMETRIC VIEW

KEY NUMBERS

- ① END-WALL GATE (2 REQD). SEE THE "END-WALL GATE B" DETAIL ON PAGE 22.
- ② CENTER FILL ASSEMBLY (24 REQD). SEE THE "CENTER FILL ASSEMBLY" DETAIL ON PAGE 22.
- ③ SEPARATOR GATE (10 REQD). SEE THE "SEPARATOR GATE B" DETAIL ON PAGE 23.
- ④ FLOOR LINE BLOCKING, 1" X 4" X 39" AND 2" X 4" X 39" (4 REQD). PLACE THE 2" X 4" PIECE ON TOP OF THE 1" X 4" PIECE AND POSITION AGAINST THE CONTAINER SKIDS. NAIL THROUGH BOTH PIECES TO THE FLOOR W/5-20d NAILS. NOTE THAT THESE PIECES ARE ONLY USED IN THE DOORWAY AREA. THE CENTER FILL ASSEMBLIES USED IN THE DOORWAY AREA MUST HAVE 2-1/4" CUT OFF OF THE BOTTOM OF THE VERTICAL PIECES. SEE SPECIAL NOTE 2 ON PAGE 21.
- ⑤ CENTER GATE (2 REQD). SEE THE "CENTER GATE C" DETAIL ON PAGE 23.
- ⑥ STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN VERTICALS OF CENTER GATES MARKED ⑤ (DOUBLED) (12 REQD). LAMINATE DOUBLE 2" X 6" TOGETHER W/1-10d NAIL EVERY SIX INCHES (6") TO NAIL TO VERTICALS OF CENTER GATES W/2-12d NAILS AT EACH END.
- ⑦ HORIZONTAL STRUT BRACING, 2" X 4" X 9'-0" (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.
- ⑧ VERTICAL STRUT BRACING, 2" X 4" X 48" (6 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.
- ⑨ BUNDLING STRAP, 1-1/4" X .031" OR .035" X 29'-0" (2 REQD). INSTALL TO ENCIRCLE THE CONTAINERS POSITIONED IN THE DOORWAY AREA. SEE SPECIAL NOTE 2 ON PAGE 21.
- ⑩ SEAL FOR 1-1/4" STRAPPING (4 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL.



SECTION D-D

SPECIAL NOTES:

1. A 36-CONTAINER LOAD IS SHOWN IN A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR HAVING WOOD LINED SIDE WALLS AND 10'-0" WIDE THRU DOOR OPENINGS. WIDER CARS MAY BE USED, HOWEVER, THE THICKNESS OF THE HORIZONTAL MEMBERS OF THE "CENTER FILL ASSEMBLIES", PIECES MARKED ②, MUST BE INCREASED BY LAMINATING ADDITIONAL PIECES OR SUBSTITUTING THICKER MATERIAL, TO COMPENSATE FOR THE EXTRA CAR WIDTH.
2. DOORWAY PROTECTION, NAILED FLOOR LINE BLOCKING AND BUNDLING STRAPS, PIECES MARKED ④, ⑤, AND ⑩, ARE ONLY REQUIRED WHEN MORE THAN ONE-HALF THE LENGTH OF ANY CONTAINER EXTENDS INTO THE DOORWAY AREA.
3. IF AN ALL METAL CAR IS TO BE USED, THE SIDE WALLS MUST BE LINED WITH PLYWOOD AS DETAILED ON PAGE 26. ALL METAL PLUG DOORS, IF THE CAR IS SO EQUIPPED MUST ALSO BE LINED WITH PLYWOOD.
4. THE DEPICTED PROCEDURES CAN ALSO BE USED FOR A 36-CONTAINER LOAD IN 50'-6" LONG CUSHIONED BOX CARS EQUIPPED WITH LOAD DIVIDER BULKHEADS PROVIDING THEY COMPLY WITH ALL THE REQUIREMENTS SPECIFIED IN SPECIAL NOTES 3 THRU 6 ON PAGE 13, AND THE LOAD TO BE RETAINED BY EITHER BULKHEAD DOES NOT EXCEED 50,000 POUNDS. THE CONTAINERS SHOULD BE LOADED, BLOCKED, AND BRACED AS SHOWN IN THE ISOMETRIC VIEW. CENTER GATES AND STRUTS, PIECES MARKED ⑤ AND ⑥ WILL BE OMITTED, HOWEVER, FOUR (4) END-WALL GATES, PIECES MARKED ① MUST BE INSTALLED, ONE AT EACH END-WALL AND ONE BETWEEN EACH LOAD DIVIDER AND THE LADING.
5. A 60'-8" LONG BOX CAR CAN BE USED FOR A SHIPMENT OF A 45-CONTAINER LOAD USING THE PROCEDURES DEPICTED. SEVEN STACKS (21 CONTAINERS) WILL BE PLACED IN ONE END OF THE CAR AND EIGHT STACKS (24 CONTAINERS) IN THE OTHER END. THE CAR MUST HAVE A LOAD LIMIT OF NOT LESS THAN 124,000 POUNDS, AND MAY BE THE CONVENTIONAL TYPE CAR OR A CUSHIONED CAR EQUIPPED WITH LOAD DIVIDER BULKHEADS (SEE NOTE 6). IF THE CAR IS THE CONVENTIONAL TYPE, CENTER GATES AND STRUTS WILL BE USED. EXCEPT THAT THE 12 STRUTS PIECES MARKED ⑥ WILL BE TRIPLED 2" X 6" MATERIAL IN LIEU OF DOUBLED 2" X 6" DUE TO THE INCREASED WEIGHT OF THE LOAD.
6. IF THE 60'-8" LONG CAR IS EQUIPPED WITH LOAD DIVIDER BULKHEADS, AND THE LOAD TO BE RETAINED BY EITHER LOAD DIVIDER EXCEEDS 50,000 POUNDS, THE APPLICABLE BLOCKING PROCEDURES BETWEEN THE LOAD DIVIDERS, AS DETAILED ON PAGES 24 AND 25, MUST BE USED. FOUR (4) END-WALL GATES, PIECES MARKED ① WILL BE REQUIRED AS CITED IN NOTE 4 ABOVE.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	334	112
2" X 2"	37	13
2" X 3"	2	1
2" X 4"	242	162
2" X 6"	900	900
NAILS	NO. REQD	POUNDS
6d (2")	576	3-1/2
10d (3")	1220	18-3/4
12d (3-1/4")	48	1
20d (4")	20	3/4
STEEL STRAPPING, 1-1/4" ----- 58' REQD ----- 8-1/4 LBS		
SEAL, FOR 1-1/4" STRAPPING ----- 4 REQD ----- NIL		

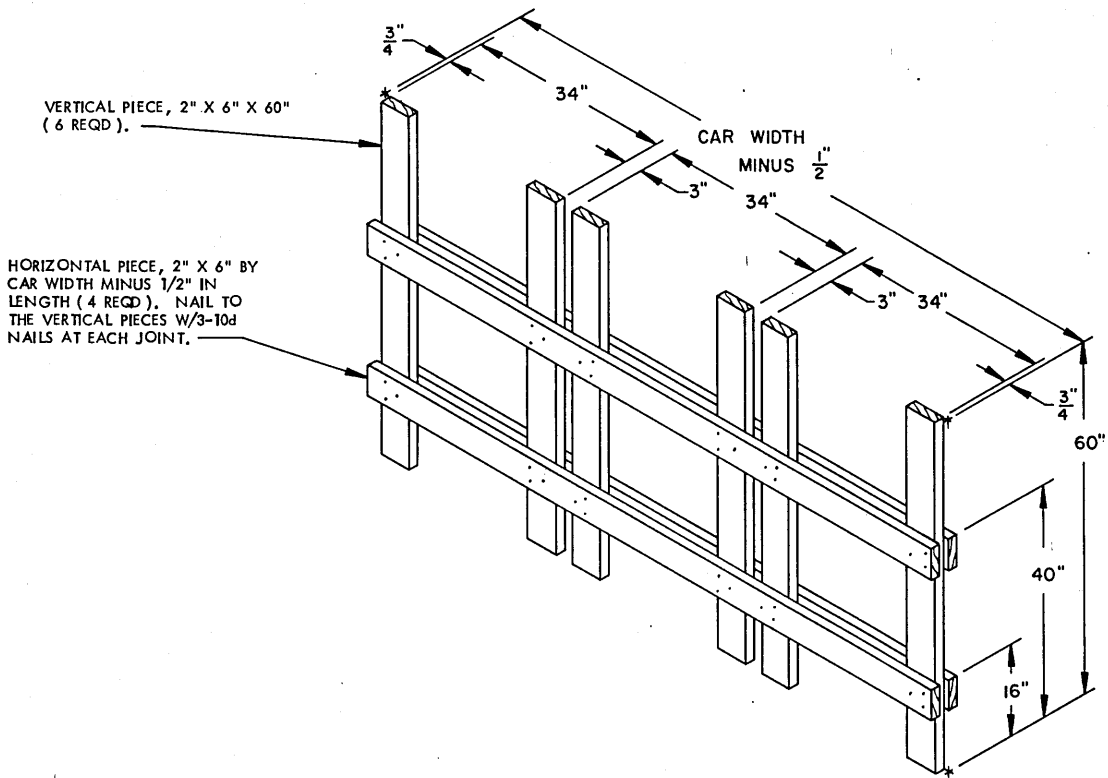
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER WITH HE M59 CHARGE	36	90,000 LBS
DUNNAGE		2,409 LBS
TOTAL WEIGHT		92,409 LBS

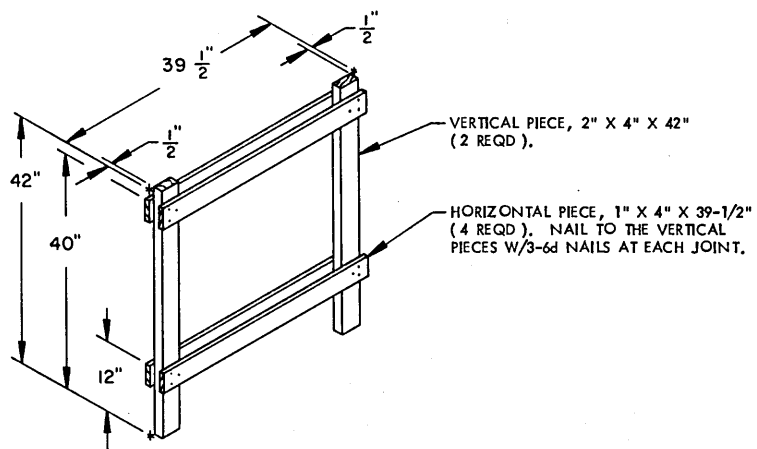
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER WITH INERT M69 CHARGE	36	86,040 LBS
DUNNAGE		2,409 LBS
TOTAL WEIGHT		88,449 LBS

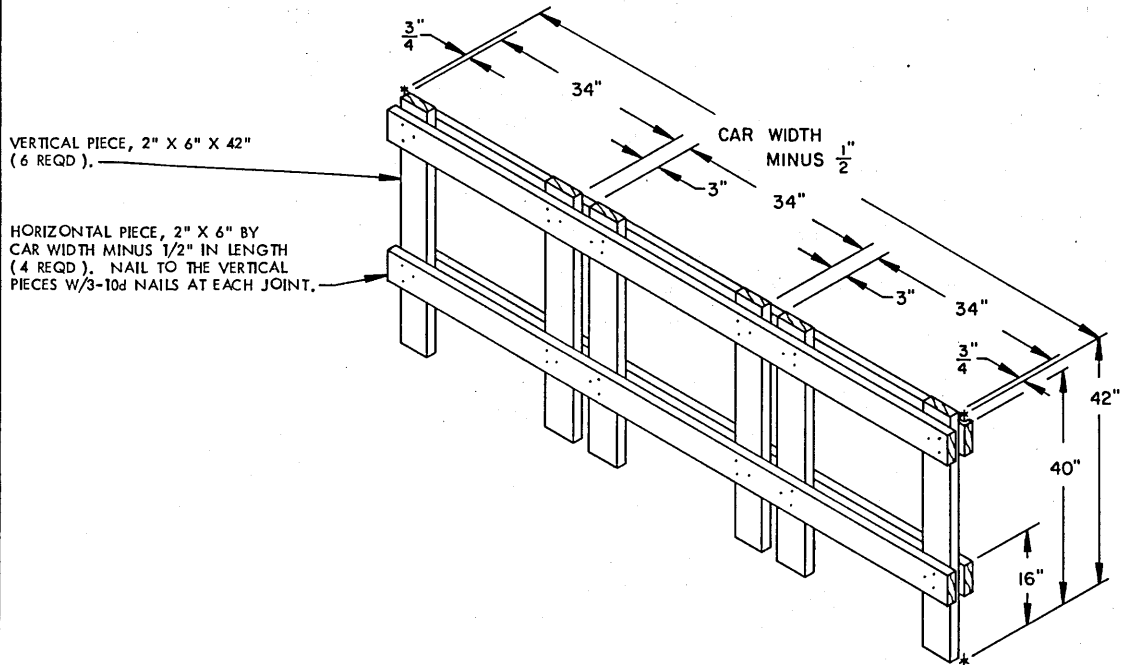
36-CONTAINER LOAD IN A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOXCAR



END-WALL GATE B



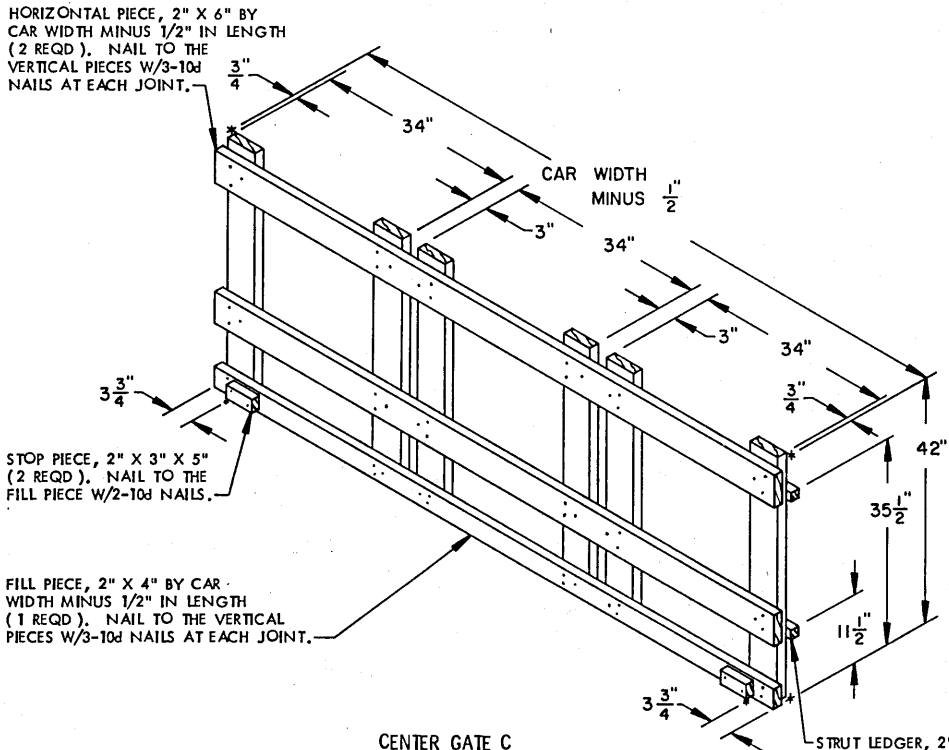
CENTER FILL ASSEMBLY



VERTICAL PIECE, 2" X 6" X 42"
(6 REQD).

HORIZONTAL PIECE, 2" X 6" BY
CAR WIDTH MINUS 1/2" IN LENGTH
(4 REQD). NAIL TO THE VERTICAL
PIECES W/3-10d NAILS AT EACH JOINT.

SEPARATOR GATE B



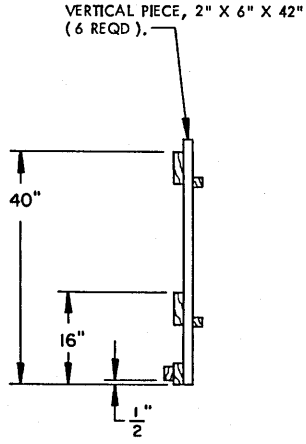
HORIZONTAL PIECE, 2" X 6" BY
CAR WIDTH MINUS 1/2" IN LENGTH
(2 REQD). NAIL TO THE
VERTICAL PIECES W/3-10d
NAILS AT EACH JOINT.

STOP PIECE, 2" X 3" X 5"
(2 REQD). NAIL TO THE
FILL PIECE W/2-10d NAILS.

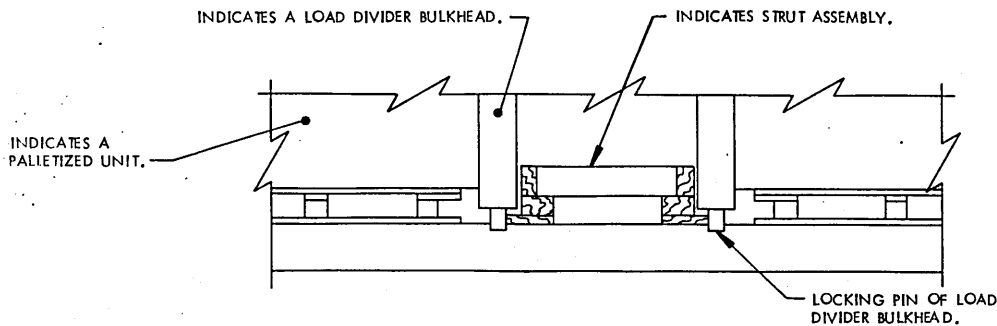
FILL PIECE, 2" X 4" BY CAR
WIDTH MINUS 1/2" IN LENGTH
(1 REQD). NAIL TO THE VERTICAL
PIECES W/3-10d NAILS AT EACH JOINT.

CENTER GATE C

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

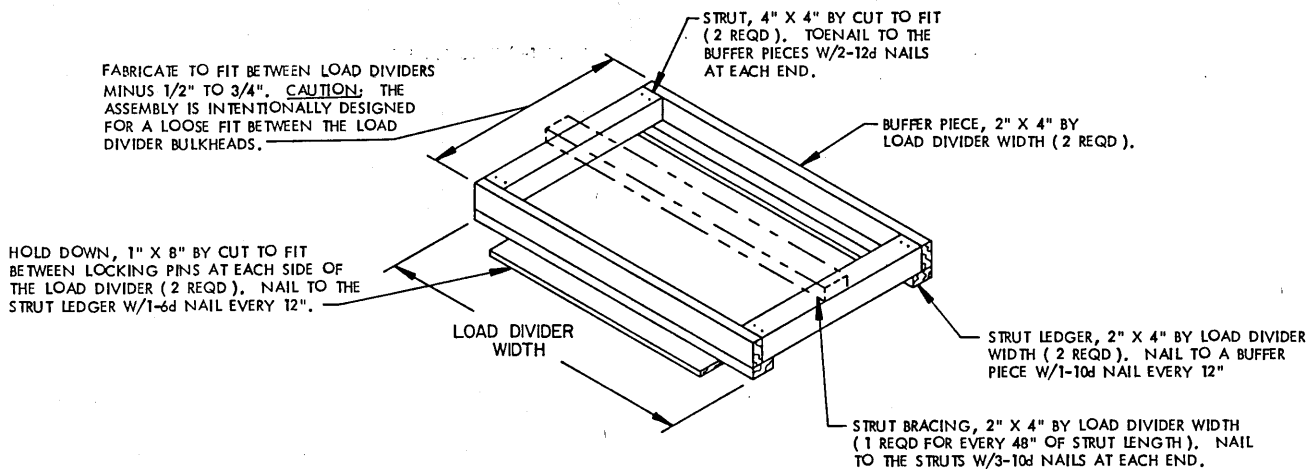


DETAILS



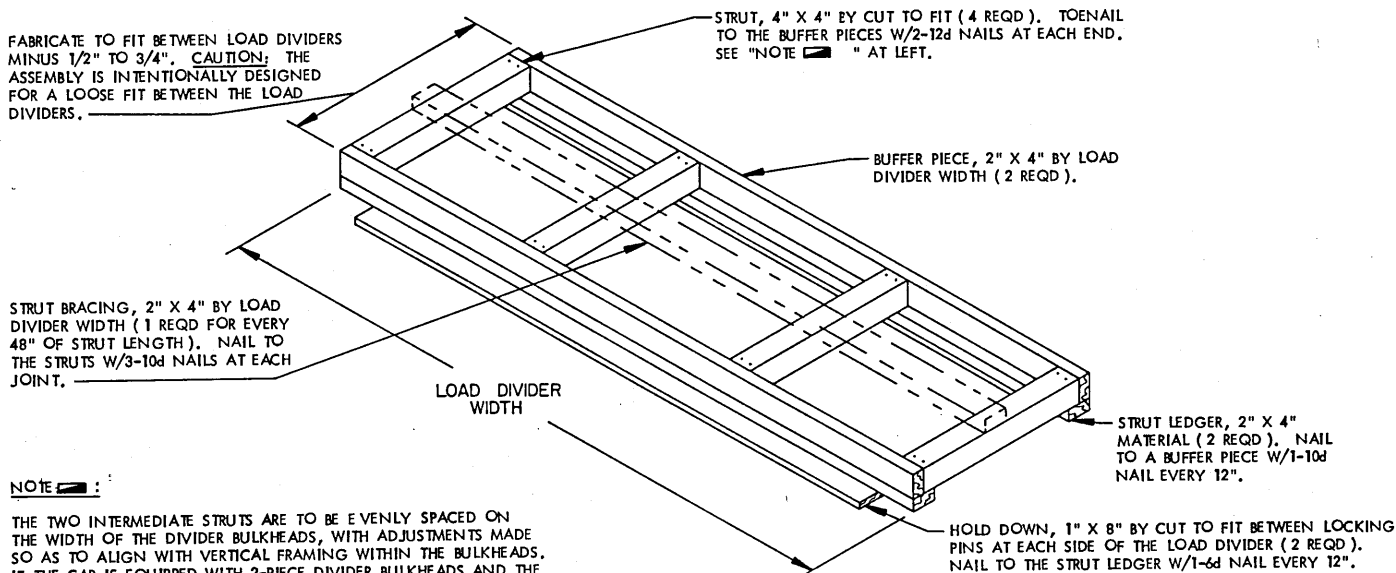
INSTALLATION OF STRUT ASSEMBLY

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.



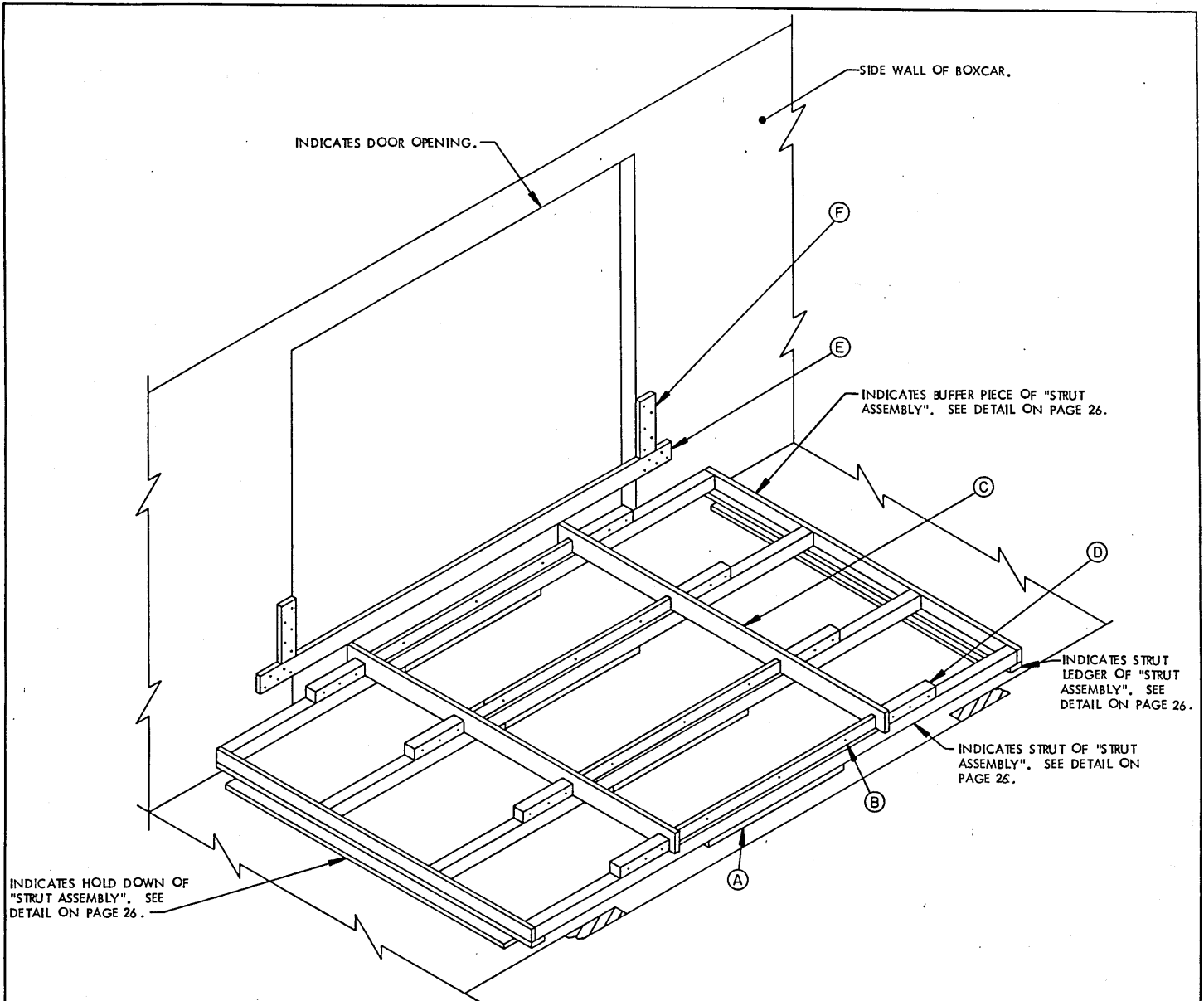
STRUT ASSEMBLY FOR 2-PIECE BULKHEADS

A STRUT ASSEMBLY IS REQUIRED WHEN THE LOAD BEHIND EITHER LOAD DIVIDER BULKHEAD EXCEEDS 50,000 POUNDS OF CLASS A OR CLASS B EXPLOSIVES. A STRUT ASSEMBLY IS NOT REQUIRED FOR LOADS OF CLASS C EXPLOSIVES, REGARDLESS OF THE WEIGHT OF THE LOAD. NOTE: TWO (2) ASSEMBLIES AS SHOWN ARE REQUIRED FOR A 2-PIECE BULKHEAD IF NOT LATERALLY ALIGNED. SEE "NOTE 1" BELOW.



STRUT ASSEMBLY FOR 1-PIECE BULKHEADS

A STRUT ASSEMBLY IS REQUIRED WHEN THE LOAD BEHIND EITHER LOAD DIVIDER BULKHEAD EXCEEDS 50,000 POUNDS OF CLASS A OR CLASS B EXPLOSIVES. A STRUT ASSEMBLY IS NOT REQUIRED FOR LOADS OF CLASS C EXPLOSIVES, REGARDLESS OF THE WEIGHT OF THE LOAD.



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.

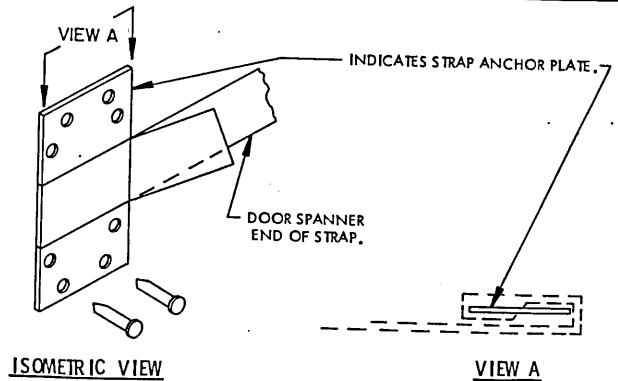
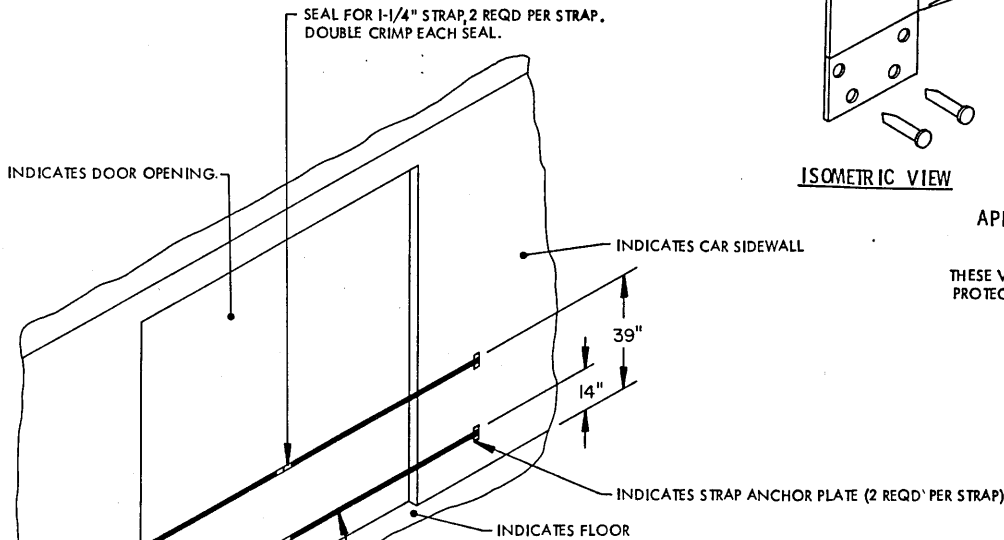
(KEY LETTERS CONTINUED)

- (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/SIDEWALL OR TO A NAILING STRIP W/5-12d NAILS.

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.

(KEY LETTERS CONTINUED AT LEFT)



ISOMETRIC VIEW

VIEW A

APPLICATION OF STRAPPING TO STRAP ANCHOR PLATE

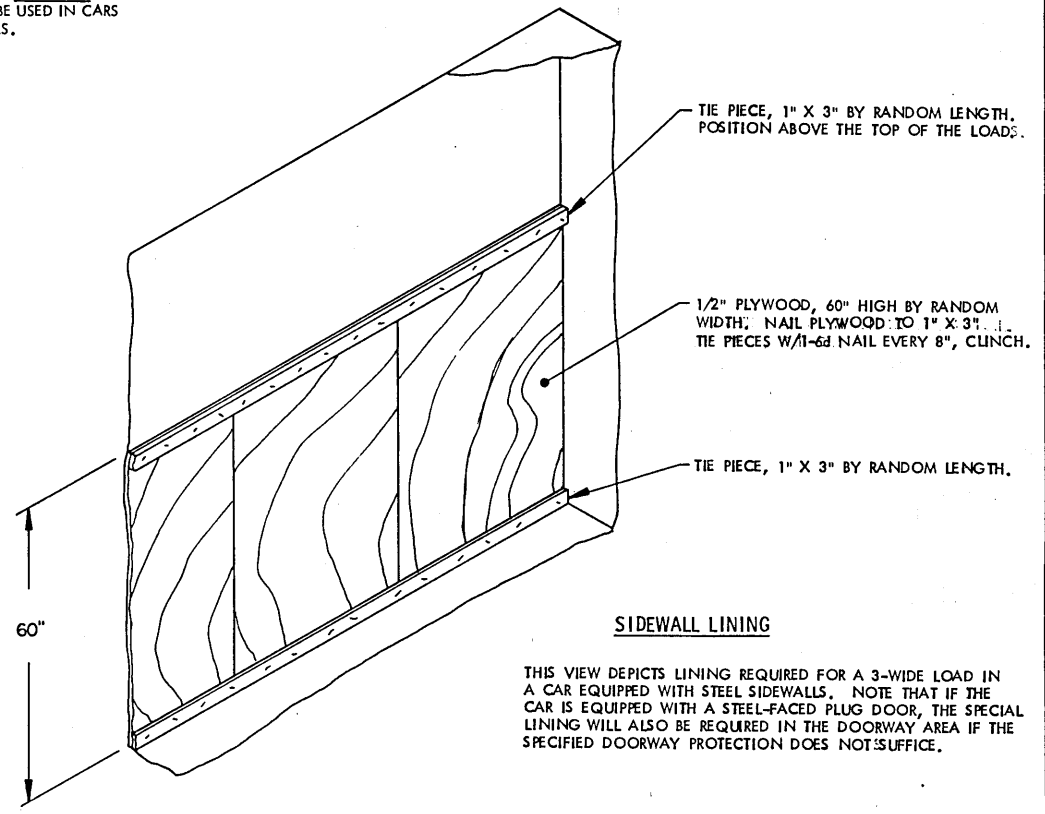
THESE VIEWS DEPICT THE PROPER THREADING OF A DOORWAY PROTECTION STRAP THRU AN ANCHOR PLATE.

DOORWAY PROTECTION STRAP 1-1/4" X .035" OR .031" STEEL STRAPPING, BY DOOR OPENING WIDTH PLUS 8'-0" IN LENGTH (2 REQD). INSTALL FROM TWO (2) PIECES. THREAD ONE END THRU A STRAP ANCHOR PLATE AS SHOWN BY THE "APPLICATION OF STRAPPING TO STRAP ANCHOR PLATE" DETAIL BELOW. NAIL STRAP ANCHOR PLATE TO CAR SIDEWALL W/4 SIGNODE NUMBER 27 RINGLOCK NAILS.

ALTERNATIVE DOORWAY PROTECTION

(FOR LOADS SHOWN ON PAGES 4 THRU 7, 12, 13, AND 15)

THIS METHOD OF DOORWAY PROTECTION IS ONLY FOR USE IN CARS EQUIPPED WITH PLUG TYPE DOORS, AND ONLY IF THE CAR HAS NAILABLE SIDEWALLS. IF THE CAR IS EQUIPPED WITH SPECIAL ANCHOR RODS IN THE CAR DOOR POSTS, THE DOORWAY PROTECTION STRAPS MAY BE SECURED TO THESE RODS IN LIEU OF ATTACHING TO THE CAR SIDEWALL WITH STRAP ANCHOR PLATES. CAUTION: THIS METHOD OF DOORWAY PROTECTION WILL NOT BE USED IN CARS EQUIPPED WITH CONVENTIONAL SLIDING DOORS.



SIDEWALL LINING

THIS VIEW DEPICTS LINING REQUIRED FOR A 3-WIDE LOAD IN A CAR EQUIPPED WITH STEEL SIDEWALLS. NOTE THAT IF THE CAR IS EQUIPPED WITH A STEEL-FACED PLUG DOOR, THE SPECIAL LINING WILL ALSO BE REQUIRED IN THE DOORWAY AREA IF THE SPECIFIED DOORWAY PROTECTION DOES NOT SUFFICE.