

Code Ident  
10001

Naval Ordnance Systems Command  
Department of the Navy

WR-52/74A

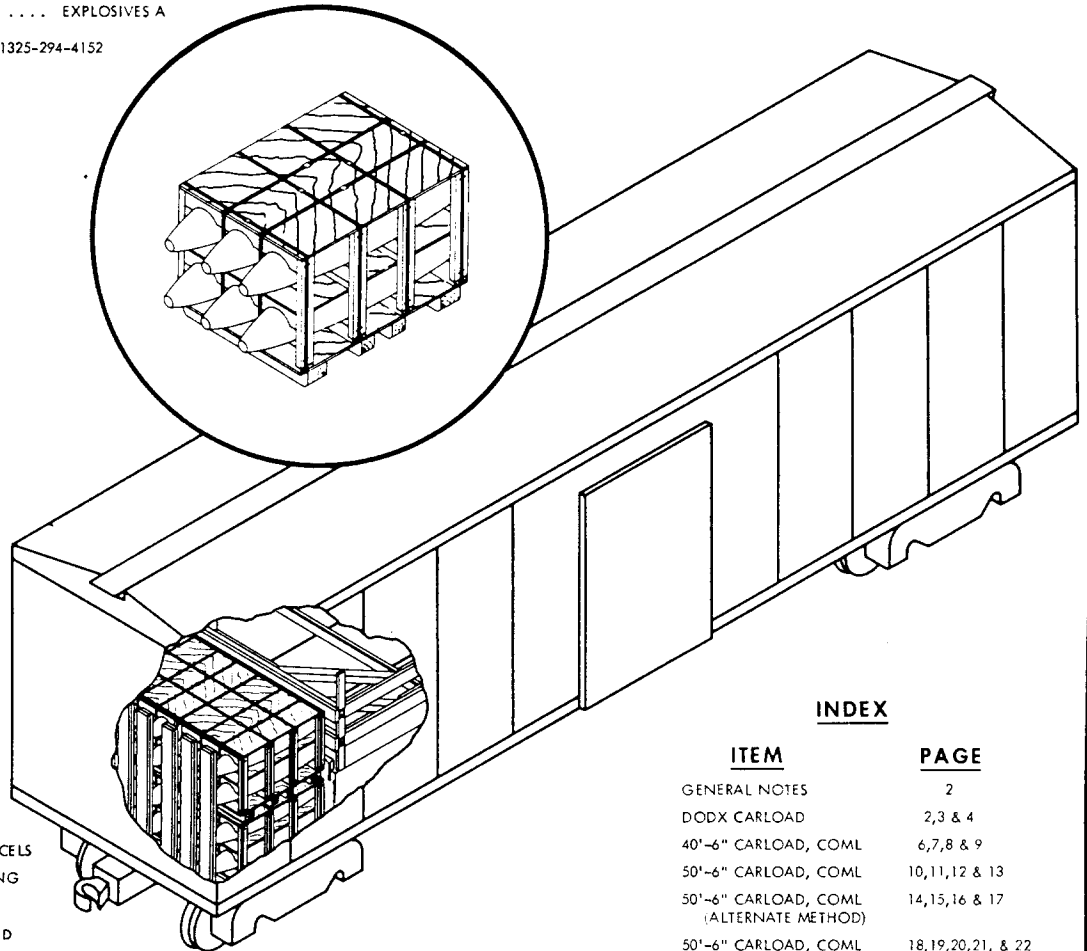
10 FEBRUARY 1970

**WEAPONS REQUIREMENT, CARLOADING**  
**BOMB, GENERAL PURPOSE, MK 82 & MODS (500 LB)**  
**WITH PLASTIC NOSE PLUG**  
**AIR FORCE UNIT LOAD**

SUPERSEDING  
WR-52/74  
21 MAY 1969

**UNIT LOAD DATA**

WEIGHT ..... 3200 LBS  
DIMENSIONS ..... 61 3/4 L x 36 W x 32 1/2 H  
CUBE ..... 41.2 CU FT  
DOT HAZARD CLASSIFICATION ..... EXPLOSIVES A  
AIR FORCE DRAWING NO. TPO 1325-294-4152  
REVISION G OR H



THIS WR SUPERSEDES AND CANCELS  
ALL PRIOR DRAWINGS COVERING  
CARLOADING OF THIS ITEM.  
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES

**INDEX**

ITEM	PAGE
GENERAL NOTES	2
DODX CARLOAD	2,3 & 4
40'-6" CARLOAD, COML	6,7,8 & 9
50'-6" CARLOAD, COML	10,11,12 & 13
50'-6" CARLOAD, COML (ALTERNATE METHOD)	14,15,16 & 17
50'-6" CARLOAD, COML (ALTERNATE METHOD)	18,19,20,21, & 22

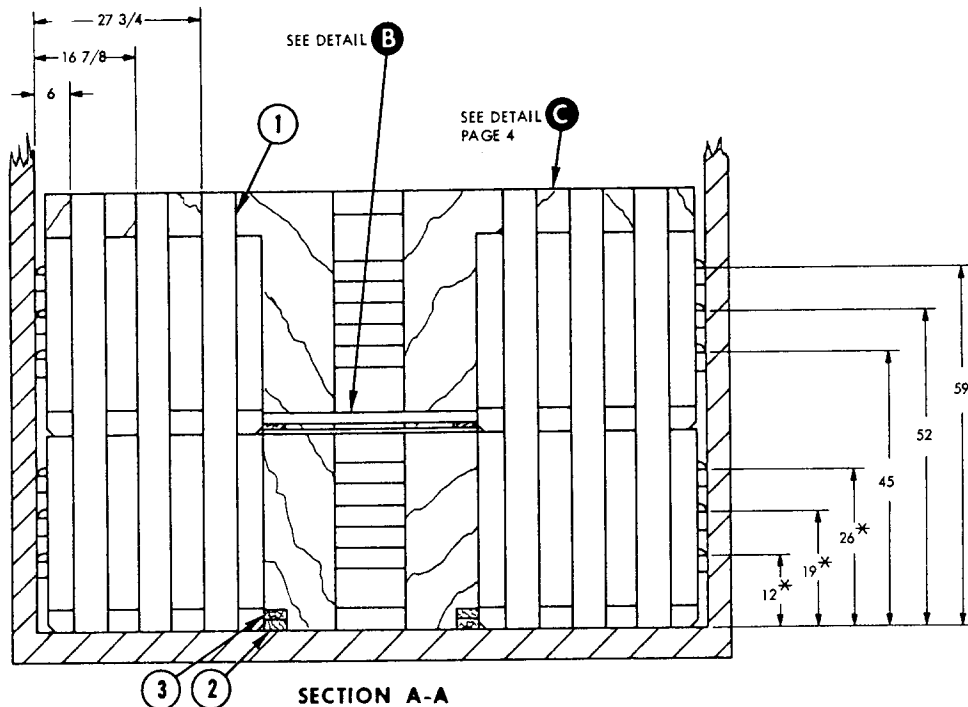
NONE	PALLETIZING (SEE UNIT LOAD DATA ABOVE)							
51/85	TRUCKLOADING (TOFC) & (COFC)	A	ADDED 40'-6" COML CA	DS	12/17/69	OK	0.7.2	1.0.2
51/81	TRUCKLOADING (HWY)	REV	REVISION DESCRIPTION	DATE	UTDA	BUXPL	SYSCOM	APPROVAL
WR NO.	ASSOCIATED PROCESS	LTR						
<p><b>AUTHORIZED AND RELEASED FOR GENERAL USE.</b></p>		<p><b>APPROVED BY BUREAU OF EXPLOSIVES</b></p> <p><i>A. F. Grassmuck</i>      <b>MILITARY ASSISTANT</b>      <i>4/14/69</i></p> <p>SIGNATURE      DATE</p>						
<p><i>J. E. Kelly</i>      <i>None</i>      <i>4/22/69</i></p> <p>SIGNATURE      TECHNICAL DIRECTING ACTIVITY (TDA)      DATE</p> <p><i>R. E. Albrecht</i>      <i>WR-52/74A</i>      <i>4/14/69</i></p> <p>SIGNATURE      (AIR) (OR) SYSCOM, BY DIRECTION      DATE</p>		<p><b>ORIGINATOR</b>      <i>C. P. Tranter</i>      <i>4/22/69</i></p> <p>SIGNATURE</p> <p><b>NAVAL WEAPONS HANDLING LABORATORY</b> <b>U.S.N.A.D. EARLE, NEW JERSEY</b></p>						
								PAGE 1 OF 22

## GENERAL NOTES

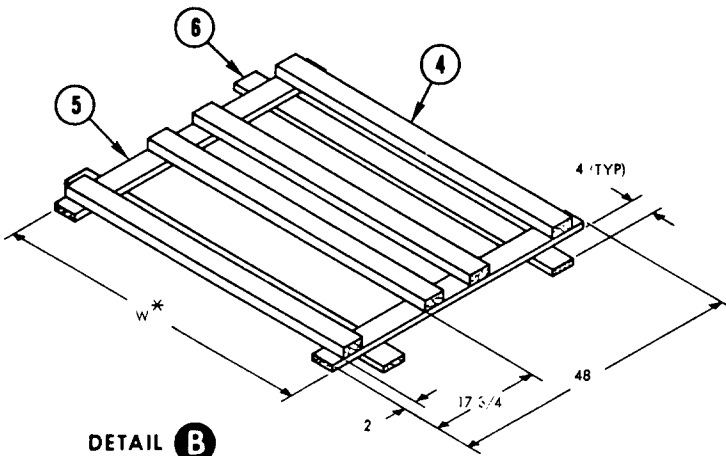
1. FOR GENERAL INFORMATION CONCERNING ORDERING, INSPECTING, AND PREPARING CARS, AND FOR DUNNAGING MATERIALS, DESIGN, AND INSTALLATION OF DUNNAGE SEE THE GENERAL DOCUMENT WR-52 "CARLOADING OF WEAPONS AND MAJOR WEAPON SYSTEM COMPONENTS."
2. WHEN PLANNING SHIPMENTS ORDER THE MINIMUM NUMBER OF CARS OF THE CAPACITY REQUIRED FOR THE SHIPMENT. UTILITY LOADER CARS SHALL BE SERIES DODX 28000.
3. LOADING PLANS SHOWN ARE FOR DODX UTILITY LOADER CAR WITH 50 FT 6 INCHES INSIDE LENGTH, 107 3/4 INCHES INSIDE WIDTH BETWEEN RAILS (111 INCHES INSIDE WIDTH BETWEEN SIDE WALLS), COMMERCIAL BOXCARS WITH 40 FT 6 INCHES INSIDE LENGTH, 110 INCHES MINIMUM INSIDE WIDTH, AND COMMERCIAL BOXCARS WITH 50 FT 6 INCHES INSIDE LENGTH, 110 INCHES MINIMUM INSIDE WIDTH.
4. IF END WALLS OF CARS ARE NOT SQUARE THEY MUST BE SQUARED OFF BEFORE STARTING TO LOAD CAR. SEE DETAIL F, PAGE 22.
5. THE LOAD CONSISTS OF 500 LB GENERAL PURPOSE BOMBS MK 82 AND MODS WITH PLASTIC NOSE PLUGS PALLETIZED IN ACCORDANCE WITH AIR FORCE DRAWING NO. TPO 1325-294-4152, REVISION G OR H.
6. THE UNIT LOADS ARE HANDLED AND LOADED WITH A SUITABLE FORK LIFT TRUCK.
7. UNLESS OTHERWISE SPECIFIED NAILING SHALL BE IN ACCORDANCE WITH WR-52.
8. APPLICABLE MATERIAL SPECIFICATIONS:  
 DUNNAGE LUMBER - FED SPEC MM-L-751  
 NAILS - FED SPEC FF-N-105
9. AFTER BLOCKING AND BRACING HAS BEEN INSPECTED ATTACH SHIPPING DOCUMENTS INSIDE THE CAR IN AN ACCESSIBLE AREA, CLOSE AND SEAL BOXCAR DOORS, AND ATTACH APPLICABLE PLACARDS TO THE OUTSIDE OF CAR AS PRESCRIBED IN OP 2165 (VOL 1).

## 50 FT 6 IN. BOXCAR, DODX

1. THE CARLOAD CONSISTS OF 28 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING.
2. A DETAILED DESCRIPTION AND OPERATING INSTRUCTIONS FOR THE UTILITY LOADER ARE CONTAINED IN OP 1750.
3. TO PREVENT UNUSED "DF" EQUIPMENT FROM BECOMING DISLODGED DURING TRANSIT OF DODX CARS SECURE IT AT ANY LOCATION IN THE BOXCAR WHICH WILL NOT INTERFERE WITH UNLOADING.
4. WHEN LESS THAN CARLOAD (LCL) QUANTITIES ARE REQUIRED TO BE SHIPPED IN DODX BOXCARS THE SAME PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE. ANY BAYS OR PORTION THEREOF MAY BE USED PROVIDING THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE AAR ARE COMPLIED WITH (SEE WR-52). EACH CROSS MEMBER WILL BE USED IN SUCH A MANNER THAT IT WILL RETAIN NOT MORE THAN 2200 LBS OF THE LADING.

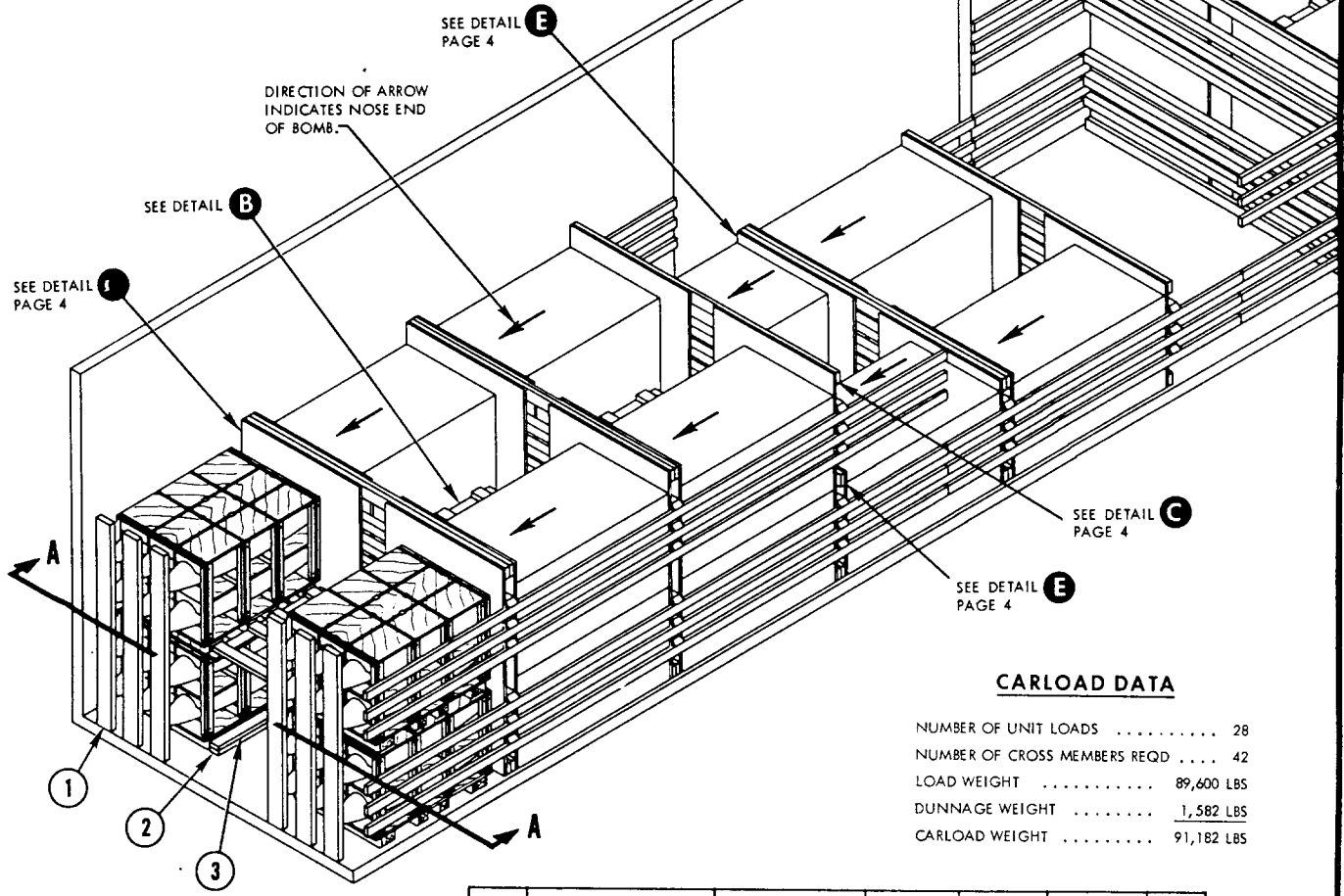


SECTION A-A  
 SHOWING LOCATION OF WALL MEMBERS  
 USED FOR CROSS MEMBERS AND  
 LOCATION OF END WALL MEMBERS  
 \* DOORWAY MEMBER LOCATION



**DETAIL B**  
SWAY BRACE ASSEMBLY  
6 REQUIRED

\*W = DISTANCE BETWEEN UNIT LOADS  
ACROSS THE CAR



**CARLOAD DATA**

NUMBER OF UNIT LOADS	28
NUMBER OF CROSS MEMBERS REQD	42
LOAD WEIGHT	89,600 LBS
DUNNAGE WEIGHT	1,582 LBS
CARLOAD WEIGHT	91,182 LBS

\*W = DISTANCE BETWEEN UNIT LOADS  
ACROSS THE CAR.

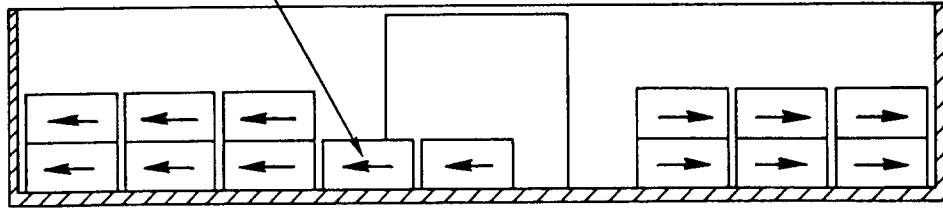
\*\*PIECE 5 NAILS TO PIECE 4 WITH  
10d NAILS, CLINCHED, 3 PER  
JOINT. PIECE 5 NAILS TO  
PIECE 6 WITH 6d NAILS 1 PER  
JOINT.

PIECE NO.	DESCRIPTION	SIZE	NO. PCS REQD	NAIL TO	NUMBER NAILS	SIZE
10	TIE PIECE	2 x 4 x 72	8	SEE 9	-	-
9	PLYWOOD SPACER	1/2 x 36 x 48	8	10	2 PER FOOT	6d
8	TIE PIECE	2 x 4 x 72	20	SEE 7	-	-
7	PLYWOOD SPACER	1/2 x 48 x 72	20	8	2 PER FOOT	6d
6	SWAY BRACE SUPPORT	1 x 4 x (W* + 8)	12	SEE 5	-	-
5	SWAY BRACE STRINGER	1 x 4 x 48	12	4,6	SEE NOTE **	-
4	CROSS BRACE	2 x 4 x W*	24	SEE 5	-	-
3	SLEEPER	2 x 4 x 48	16	2	2 PER FOOT	30d
2	SLEEPER	2 x 4 x 48	16	CAR FLOOR	2 PER FOOT	16d
1	END WALL MEMBER	2 x 6 x 72	12	CAR WALL	1 PER FOOT	12d
PIECE NO.	DESCRIPTION	SIZE	NO. PCS REQD	NAIL TO	NUMBER NAILS	SIZE

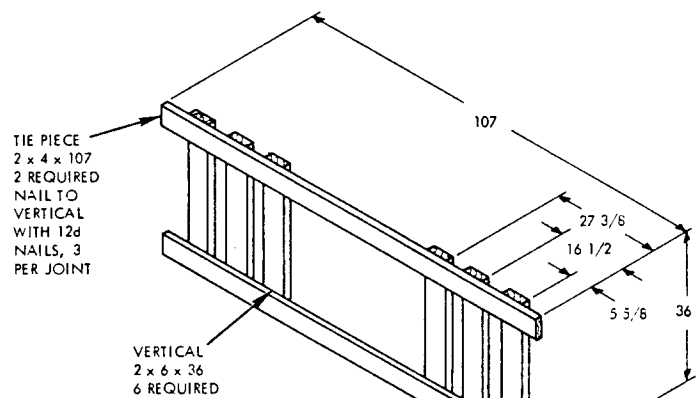
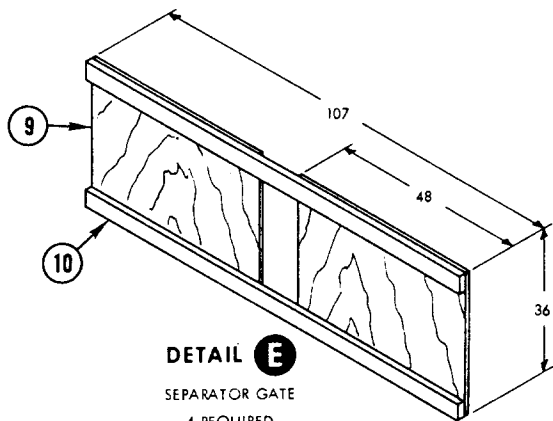
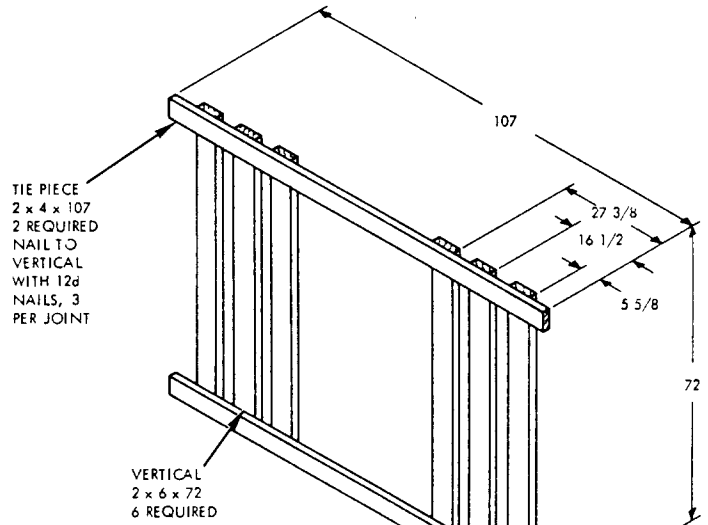
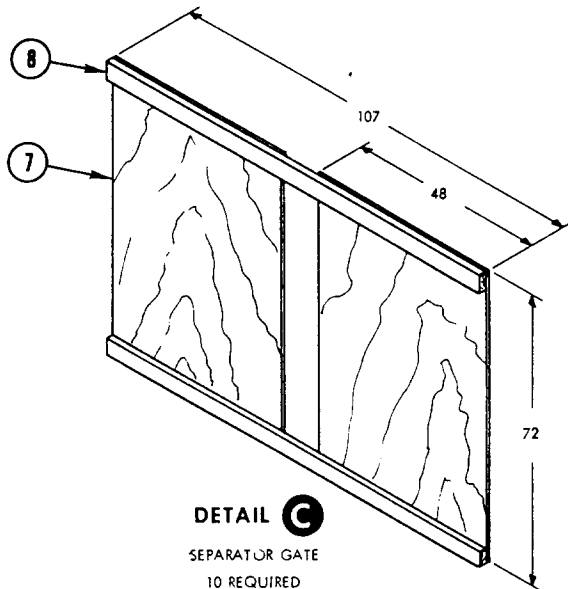
LIST OF MATERIALS AND NAILING DATA

WR-52/74A

DIRECTION OF ARROW  
INDICATES NOSE END  
OF BOMB



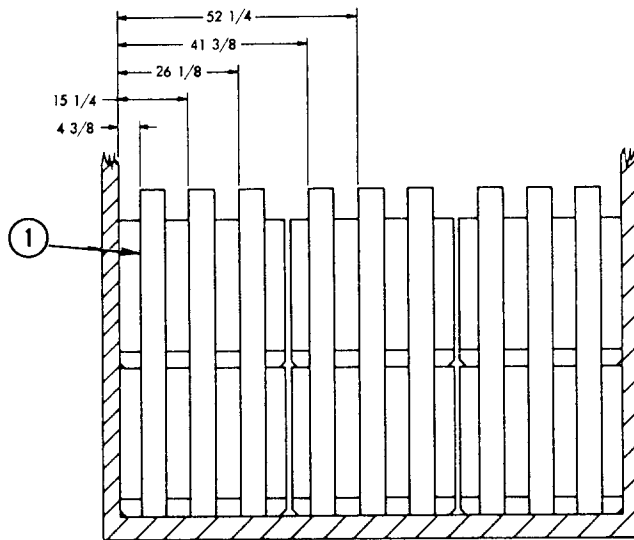
**ELEVATION  
LOADING PLAN**



THIS PAGE INTENTIONALLY LEFT BLANK

# 40 FT 6 IN. BOXCAR, COMMERCIAL

1. THE CARLOAD CONSISTS OF 36 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING.
2. WHEN LESS THAN CARLOAD (LCL) QUANTITIES ARE REQUIRED TO BE SHIPPED IN COMMERCIAL BOXCARS AND A PARTIAL LAYER RESULTS, THE PARTIAL LAYER OF LADING SHALL BE BRACED BY MEANS OF END BRACING AND/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH DETAILS PAGES 8, 9 AND 10 OF WR-52/100. SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. THE CENTER GATE HEIGHT SHOULD BE ADJUSTED AS REQUIRED.
3. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 6 FT WIDE DOORWAY OPENINGS AND ARE EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 6 FT WIDE, PROVIDED DOORWAY PROTECTION WHEN REQUIRED IS INSTALLED IN ACCORDANCE WITH WR-52.
4. WHEN BOXCARS WIDER THAN 9 FT 2 IN. ARE USED, DUNNAGE MUST BE NAILED TO THE SIDE WALL OF THE CAR AS NECESSARY FOR A TIGHT LOAD ACROSS THE CAR.



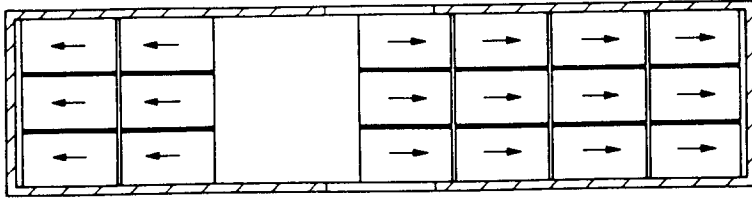
**SECTION A-A**  
SHOWING LOCATION OF END WALL MEMBERS

15	HORIZONTAL DOORWAY MEMBER	2 x 4 x DOOR WIDTH	8	14	3 PER JOINT	10d
14	VERTICAL DOORWAY MEMBER	2 x 3 x 84	4	DOOR POST	2 PER FOOT	20d
13	HOLD DOWN CLEAT	2 x 6 x 24	4	12	5	10d
12	GATE HOLD DOWN	2 x 6 x 14 FT	2	CAR WALL	SEE NOTE **	
11	VERTICAL TIE BAR	2 x 4 x 66	6	9	3 PER JOINT	16d
10	HORIZONTAL TIE BAR	2 x 4 x CAR WIDTH-1	4	9	3 PER JOINT	16d
9	STRUT	4 x 4 x WEDGE FIT *	24	6	2 PER JOINT	16d
8	TOP HORIZONTAL	2 x 4 x CAR WIDTH-1	2	6	3 PER JOINT	10d
7	CENTER GATE STRUT CLEAT	2 x 4 x CAR WIDTH-1	8	6	3 PER JOINT	10d
6	CENTER GATE VERTICAL	2 x 6 x 69	12	SEE 5	-	-
5	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH-1	8	6	3 PER JOINT	10d
4	SEPARATOR GATE TIE PIECE	2 x 4 x CAR WIDTH-1	8	3	3 PER JOINT	10d
3	SEPARATOR GATE VERTICAL	2 x 6 x 69	36	SEE 4	-	-
2	END WALL MEMBER	2 x 6 x 72	18	1	1 PER FOOT	10d
1	END WALL MEMBER	2 x 6 x 72	18	CAR WALL	1 PER FOOT	10d
PIECE NO.	DESCRIPTION	SIZE	NO. PCS. REQD.	NAIL TO	NUMBER	SIZE
					NAILS	

\* 2 x 6 STRUTS DOUBLED AND LAMINATED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 x 4'S.

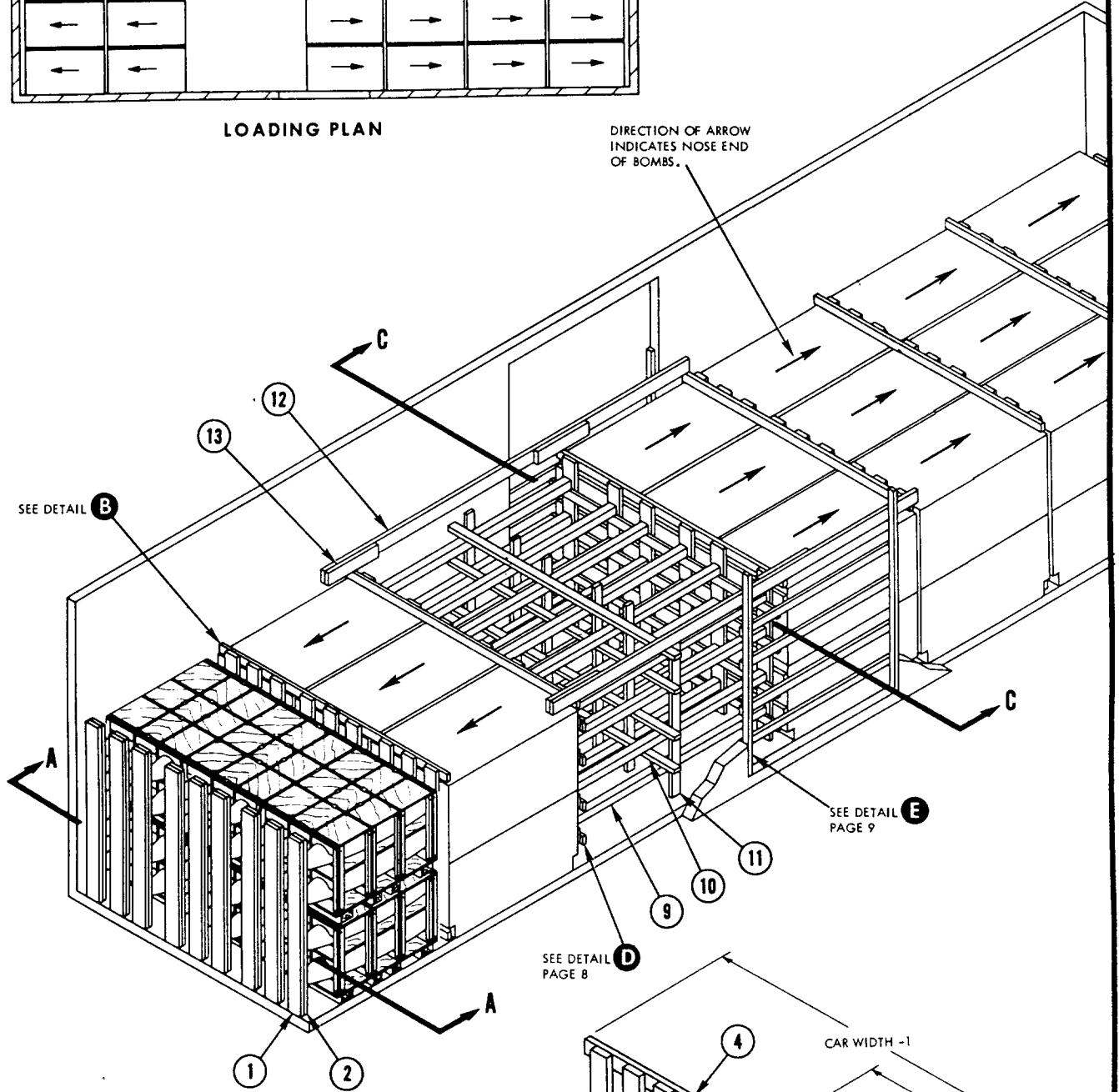
\*\* PIECE 12 NAILS TO CAR WALL WITH 10d NAILS, 2 PER FOOT ON CENTER GATE SIDE OF DOOR AND 5 NAILS ON OTHER SIDE, POSITIONED AS SHOWN IN ISOMETRIC.

LIST OF MATERIALS AND NAILING DATA



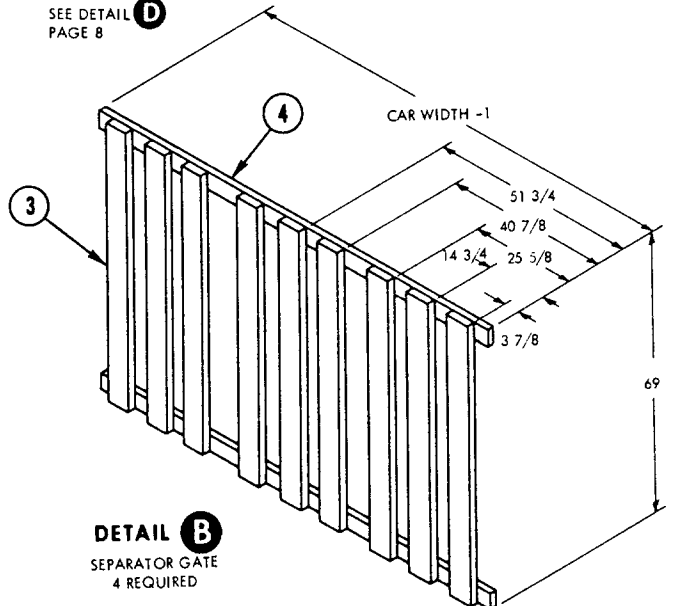
LOADING PLAN

DIRECTION OF ARROW INDICATES NOSE END OF BOMBS.

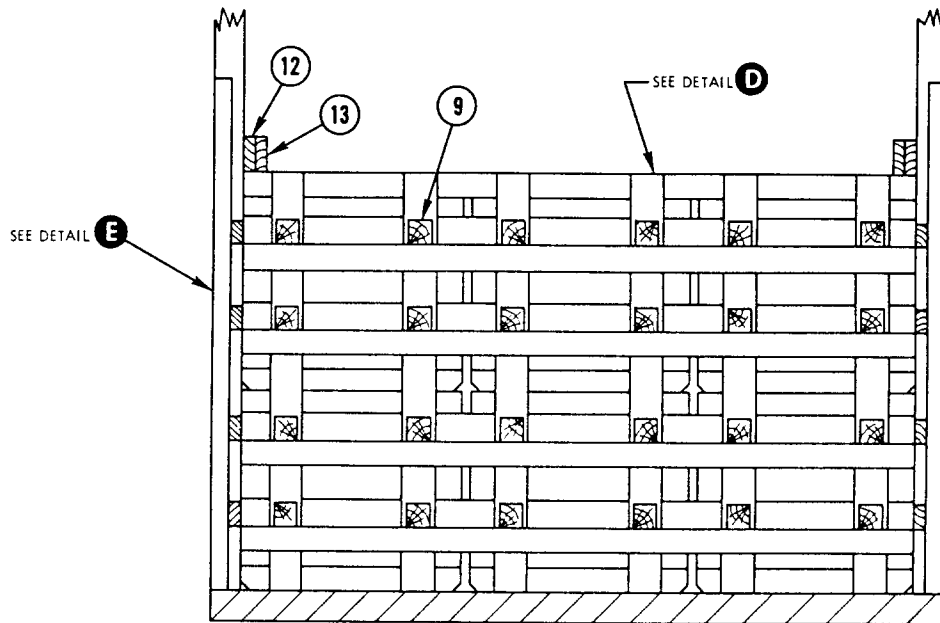


**CARLOAD DATA**

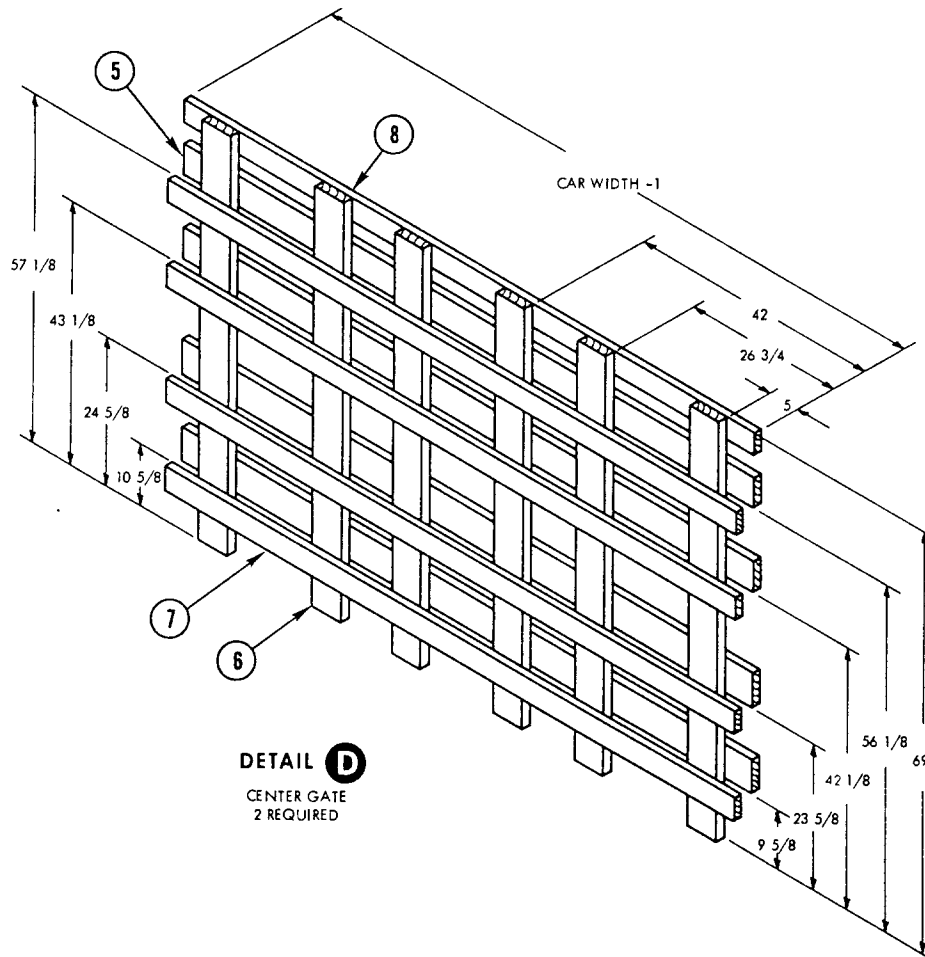
NUMBER OF UNIT LOADS	..	36
LOAD WEIGHT	.....	115,200 LBS
DUNNAGE WEIGHT	....	2,602 LBS
CARLOAD WEIGHT	....	117,802 LBS



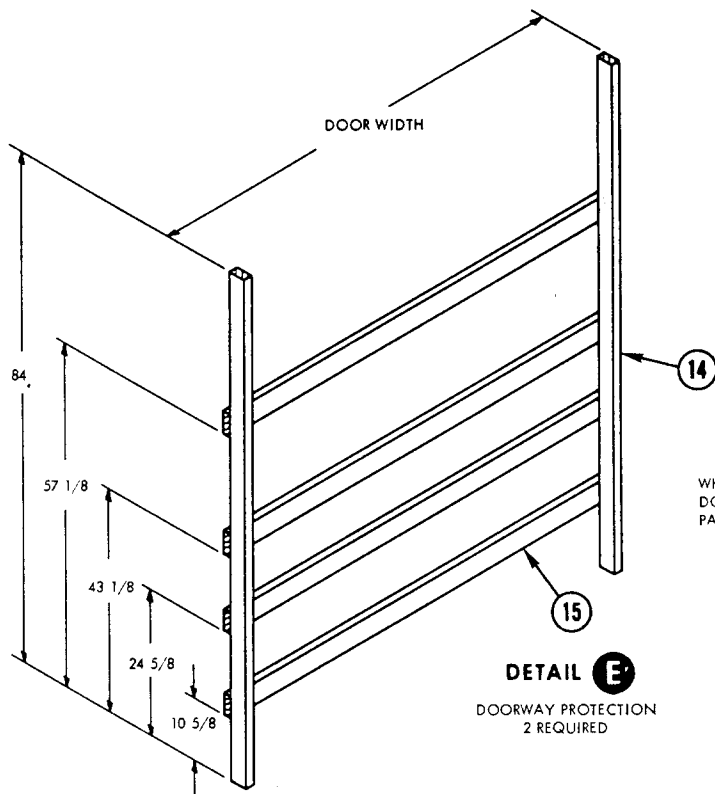
**DETAIL B**  
SEPARATOR GATE  
4 REQUIRED



SECTION C-C





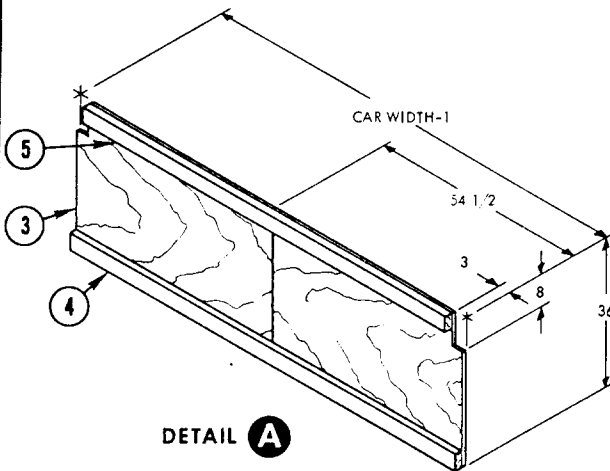


WHEN BOXCAR HAS STEEL DOOR POSTS,  
DOORWAY PROTECTION AS PER WR-52,  
PAGE 35, FIG. 21 IS REQUIRED.

**DETAIL E**  
DOORWAY PROTECTION  
2 REQUIRED

# 50 FT 6 IN. BOXCAR, COMMERCIAL

1. THE CARLOAD CONSISTS OF EITHER 33 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING OR 27 UNIT LOADS COMPRISING THE FIRST LAYER ONLY OF THIS PROCEDURAL DRAWING.
2. WHEN LESS THAN CARLOAD (LCL) QUANTITIES ARE REQUIRED TO BE SHIPPED IN COMMERCIAL BOXCARS AND A PARTIAL FLOOR LAYER RESULTS, THE PARTIAL LAYER OF LADING SHALL BE BRACED BY MEANS OF END BRACING AND/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH DETAILS PAGES 8, 9 AND 10 OF WR-52/100. SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED.
3. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 10 FT WIDE DOORWAY OPENINGS AND ARE EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 10 FT WIDE PROVIDING THE LENGTH OF PIECE 24 IS ADJUSTED WHEN NECESSARY.
4. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE ALSO APPLICABLE TO BOXCARS EQUIPPED WITH PLUG TYPE DOORS PROVIDING THE LENGTH OF PIECE 24 IS ADJUSTED AS REQUIRED TO SUIT THE PARTICULAR DOORWAY OPENING. DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT WHEN THE CAR HAS A COMBINATION OF A CONVENTIONAL SLIDING TYPE DOOR AND A PLUG TYPE DOOR, AND AN ADEQUATE NAILING STRIP IS PROVIDED ON THE PLUG TYPE DOOR. IF NECESSARY TO SPAN PLUG DOORS AND LUMBER OF SUFFICIENT LENGTH IS NOT AVAILABLE, RANDOM LENGTH MATERIAL, DOUBLED AND SPLICED, BUT WITH JOINTS OF SPLICES OFFSET MAY BE USED. THE STACKS THAT ARE IN THE DOORWAY AREA (INCLUDES AREA OF ALL PLUG DOORS OR ALL PLUG AND CONVENTIONAL DOORS) MUST BE UNITIZED WITH TWO LATERALLY APPLIED 1 1/4 INCH STEEL STRAPS PER STACK, EACH TENSIONED AND SEALED WITH TWO DOUBLE CRIMPED SEALS.
5. WHEN BOXCARS WIDER THAN 9 FT 2 IN. ARE USED, DUNNAGE MUST BE NAILED TO THE SIDE WALL OF THE CAR AS NECESSARY FOR A TIGHT LOAD ACROSS THE CAR.



**DETAIL A**

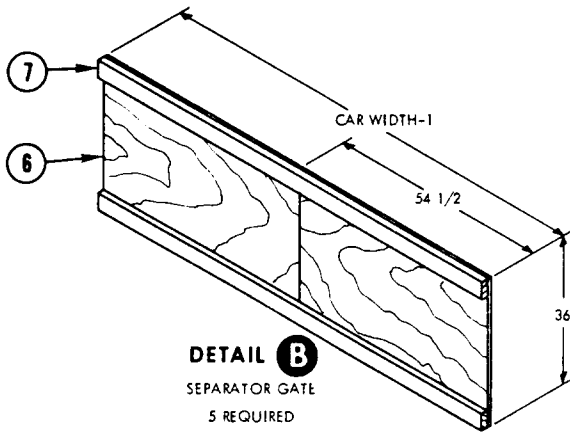
SEPARATOR GATE  
2 REQUIRED

(SEE ALTERNATE SEPARATOR GATE, DETAIL C)

\* 2 x 6 STRUTS DOUBLED AND LAMINATED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 x 4'S.

27	HORIZONTAL DOORWAY MEMBER	2 x 4 x DOOR WIDTH	6	26	3 PER JOINT	12d
26	VERTICAL DOORWAY MEMBER	2 x 3 x 36	4	DOOR POST	2 PER FOOT	20d
25	HOLDDOWN CLEAT	2 x 6 x 24	4	24	5	12d
24	GATE HOLDDOWN	2 x 6 x 72	2	CAR WALL	2 PER FOOT	10d
23	STRUT	4 x 4 x WEDGE FIT *	12	20	2 PER JOINT	12d
22	CENTER GATE HORIZONTAL	2 x 4 x CAR WIDTH-1	2	20	3 PER JOINT	12d
21	STRUT CLEAT	2 x 4 x CAR WIDTH-1	4	20	3 PER JOINT	12d
20	CENTER GATE VERTICAL	2 x 6 x 36	12	SEE 19	-	-
19	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH-1	4	20	3 PER JOINT	12d
18	UPPER WALL CLEAT	2 x 4 x 18	4	CAR WALL	4	10d
17	VERTICAL BACK-UP CLEAT	2 x 6 x 36	4	CAR WALL	8	10d
16	INTERMEDIATE WALL CLEAT	2 x 4 x 10 3/8	4	CAR WALL	4	10d
15	HORIZONTAL BACK-UP CLEAT	2 x 6 x 30	8	12	14	16d
14	DIAGONAL BRACE	4 x 4 x 50	8	10, 12	1 EA END	60d
13	HORIZONTAL POCKET CLEAT	2 x 6 x 18	8	13	7	16d
12	HORIZONTAL WALL CLEAT	2 x 6 x 72	8	CAR WALL	16	10d
11	CENTER CLEAT	2 x 4 x 36	4	10	7	16d
10	CROSS BRACE	4 x 4 x CAR WIDTH	4	SEE 9	-	-
9	CROSS BRACE STIFFENER	2 x 6 x CAR WIDTH	4	10	2 PER FOOT	12d
8	LOWER WALL CLEAT	2 x 4 x 12	4	CAR WALL	4	10d
7	TIE PIECE	2 x 4 x CAR WIDTH-1	10	SEE 6	-	-
6	PLYWOOD SPACER	1/2 x 36 x 54 1/2	10	7	2 PER FOOT	6d
5	TIE PIECE	2 x 4 x CAR WIDTH-7	2	SEE 3	-	-
4	TIE PIECE	2 x 4 x CAR WIDTH-1	2	SEE 3	-	-
3	PLYWOOD SPACER	1/2 x 36 x 54 1/2	4	4, 5	2 PER FOOT	6d
2	END WALL MEMBER	2 x 6 x 72	18	1	1 PER FOOT	12d
1	END WALL MEMBER	2 x 6 x 72	18	CAR WALL	1 PER FOOT	12d
PIECE NO.	DESCRIPTION	SIZE	NO. PCS REQD	NAIL TO	NUMBER	SIZE NAILS

LIST OF MATERIALS AND NAILING DATA

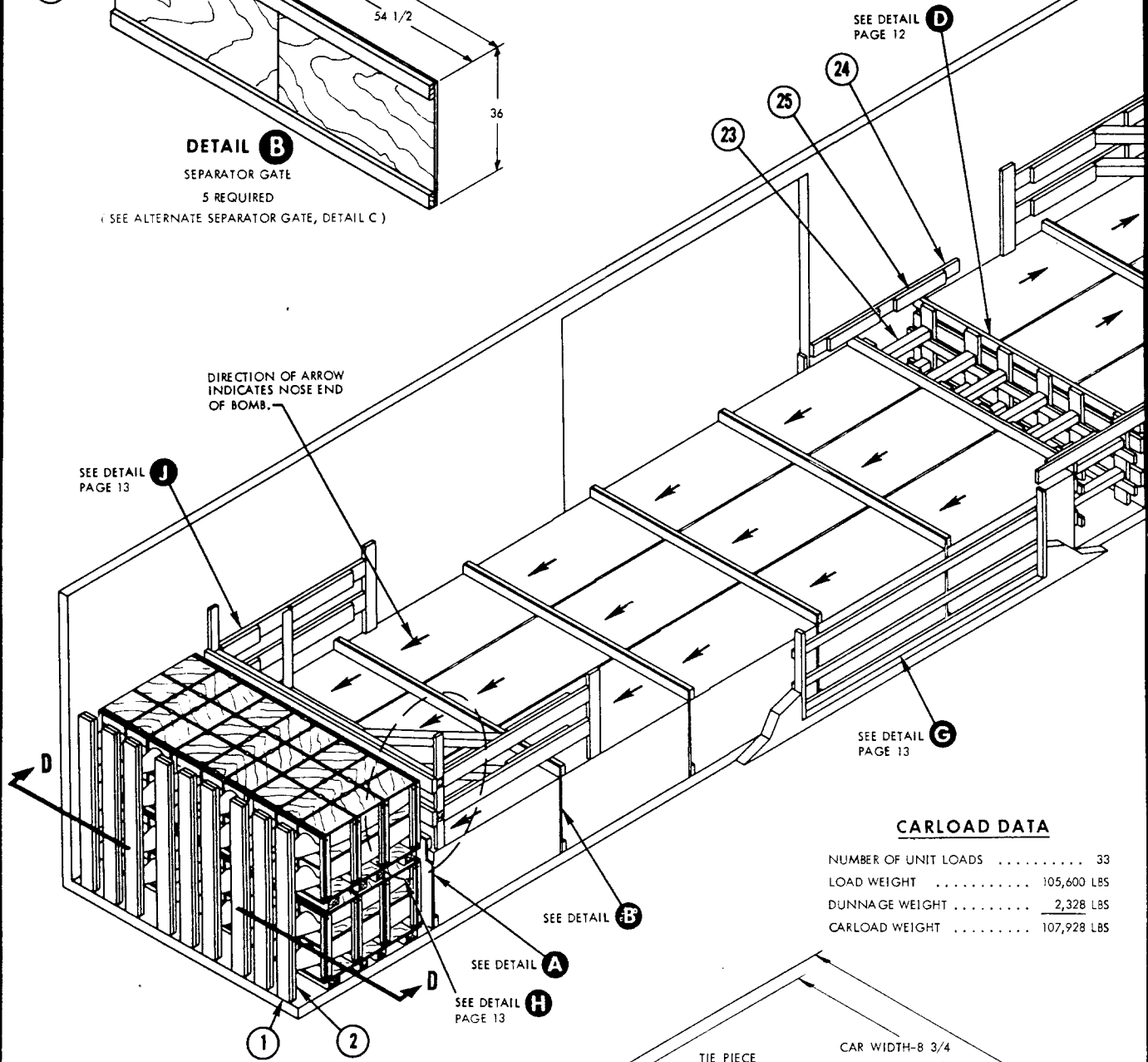


**DETAIL B**

SEPARATOR GATE

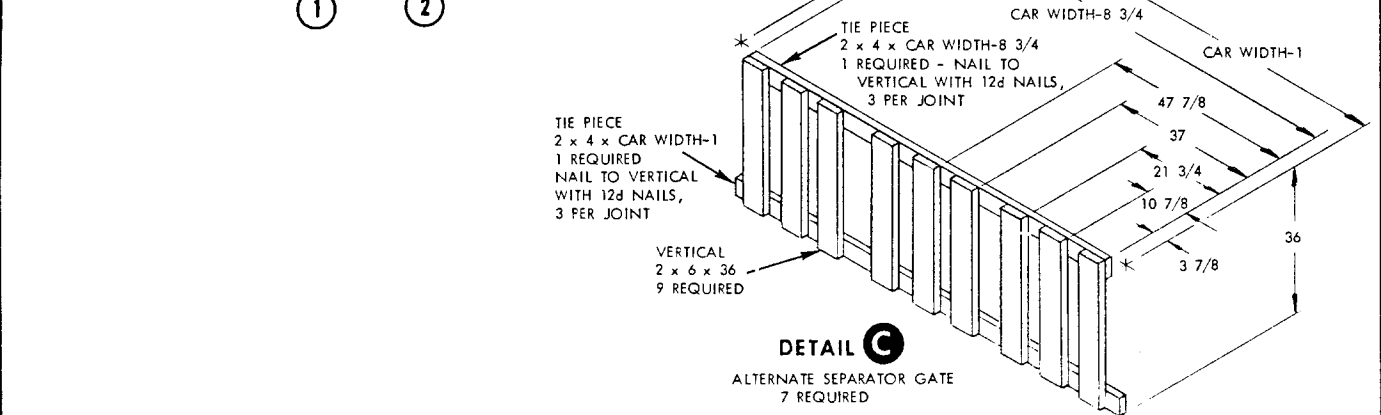
5 REQUIRED

(SEE ALTERNATE SEPARATOR GATE, DETAIL C)



**CARLOAD DATA**

NUMBER OF UNIT LOADS	33
LOAD WEIGHT	105,600 LBS
DUNNAGE WEIGHT	2,328 LBS
CARLOAD WEIGHT	107,928 LBS

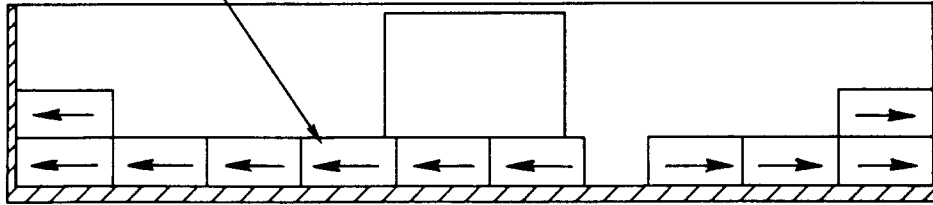


**DETAIL C**

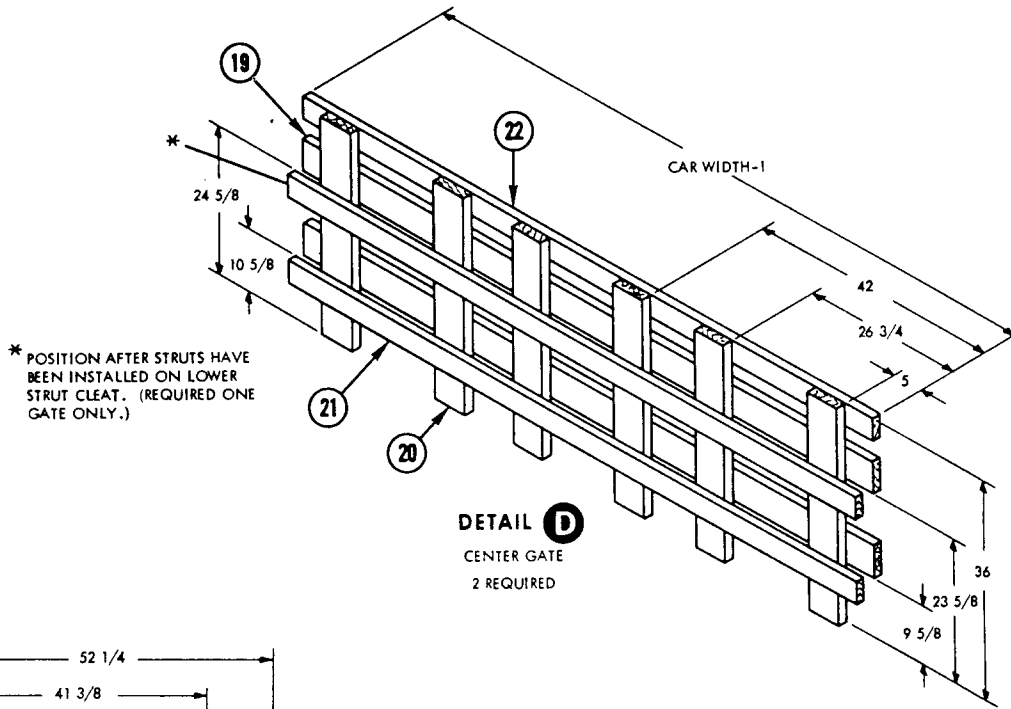
ALTERNATE SEPARATOR GATE  
7 REQUIRED

WR-52/74A

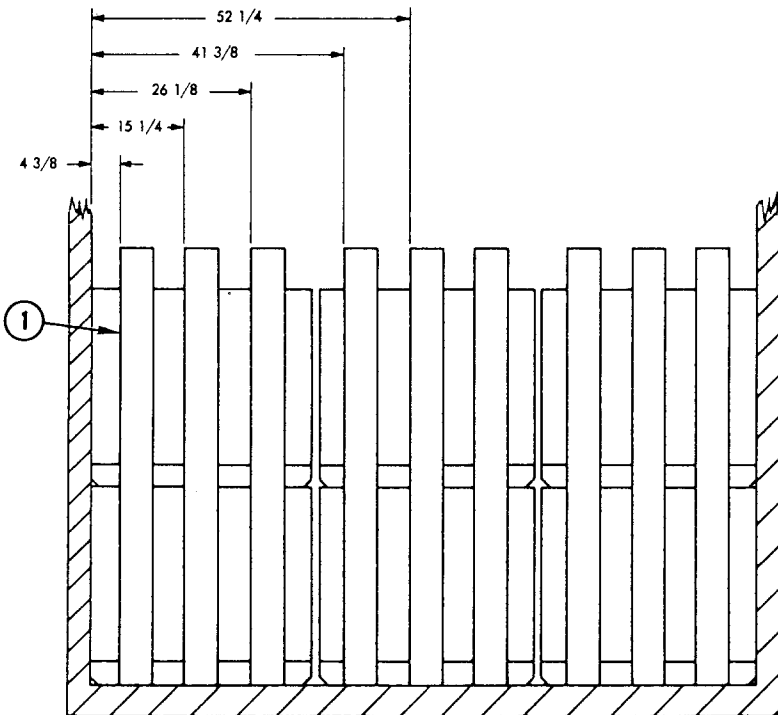
DIRECTION OF ARROW  
INDICATES NOSE END  
OF BOMB



ELEVATION  
LOADING PLAN

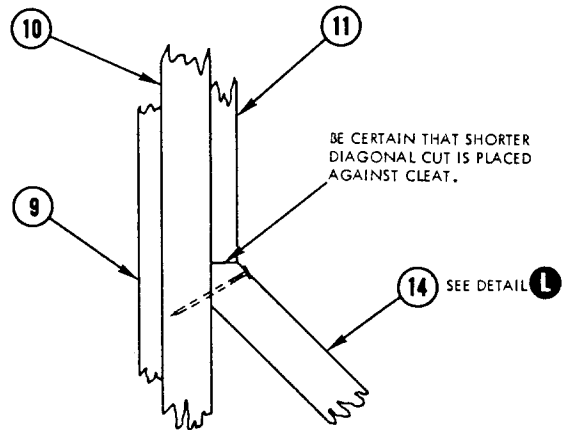


DETAIL **D**  
CENTER GATE  
2 REQUIRED



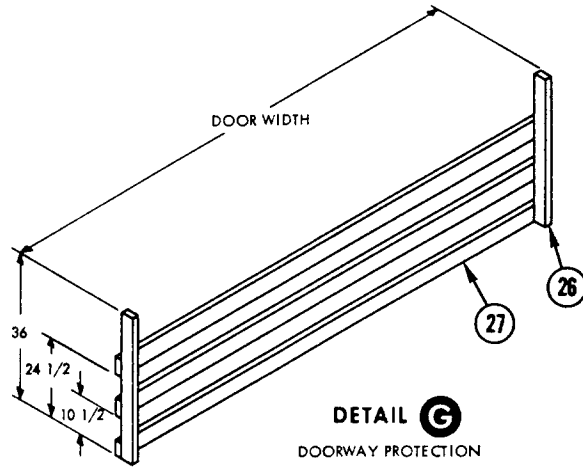
SECTION E-E

SHOWING LOCATION OF END WALL MEMBERS



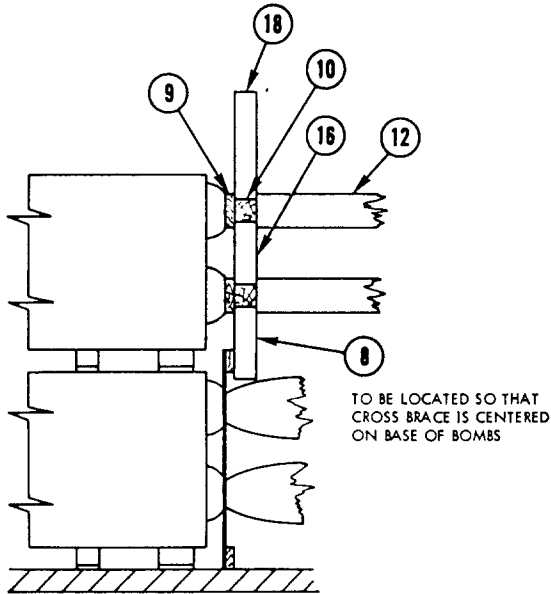
DETAIL **F**

POSITIONING OF DIAGONAL BRACE

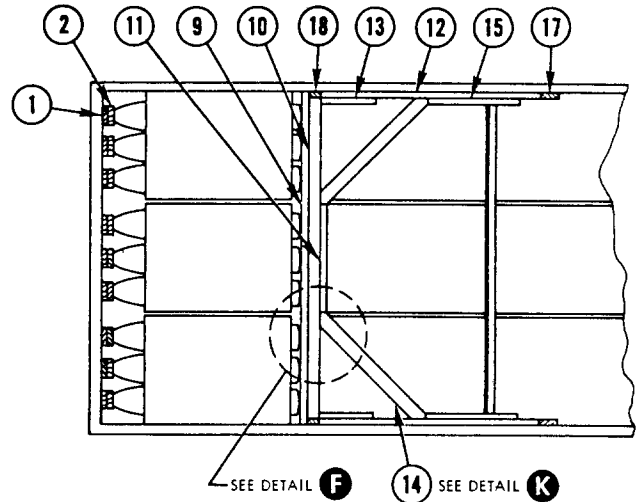


WHEN BOXCAR HAS STEEL DOOR POSTS, DOORWAY PROTECTION AS PER WR-52, PAGE 35, FIG. 21 IS REQUIRED.

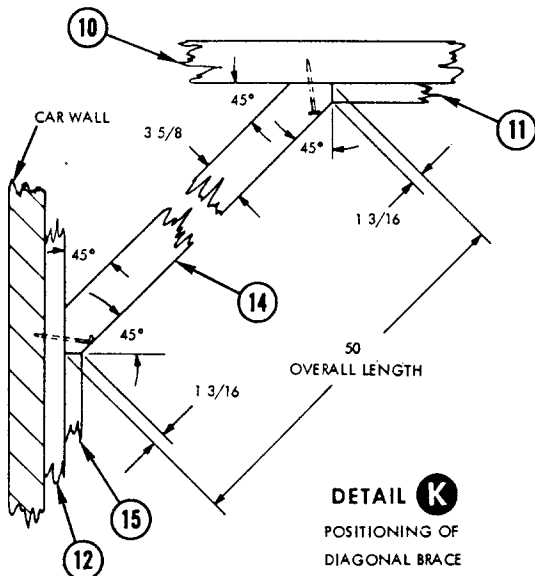
**DETAIL G**  
DOORWAY PROTECTION  
2 REQUIRED



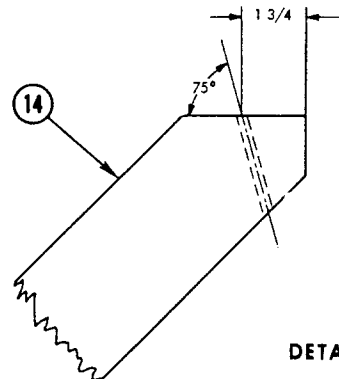
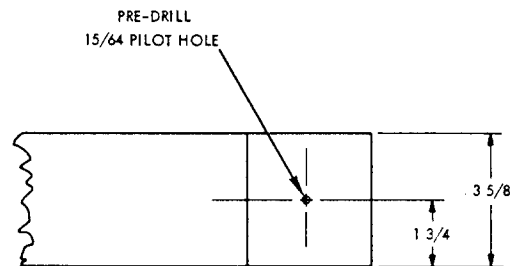
**DETAIL H**



**DETAIL J**  
PARTIAL LAYER BRACING



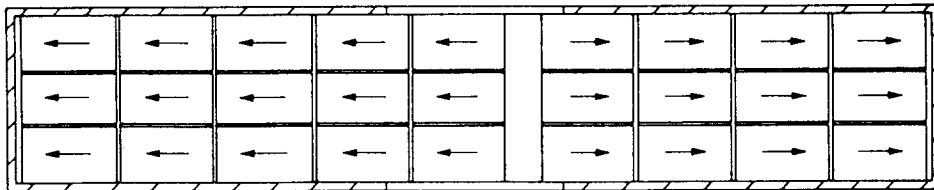
**DETAIL K**  
POSITIONING OF  
DIAGONAL BRACE  
ROTATED 90°



**DETAIL L**  
LOCATION OF PILOT  
HOLE FOR 60d NAIL

## 50 FT 6 IN. BOXCAR, COMMERCIAL (ALTERNATE METHOD)

1. THE CARLOAD CONSISTS OF EITHER 45 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING, OR 40 UNIT LOADS AS SHOWN IN ALTERNATE LOADING PLAN PAGE 17. FOR THE ALTERNATE LOADING PLAN CENTER GATE AREA SHALL BE DUNNAGED SIMILAR TO PROCEDURE SHOWN ON ALTERNATE CARLOADING METHOD PAGE 19, EXCEPT FOR OMITTING THE FOUR UPPER LAYER MIDDLE ROW STRUTS.
2. WHEN LESS THAN CARLOAD (LCL) QUANTITIES ARE REQUIRED TO BE SHIPPED IN COMMERCIAL BOXCARS AND A PARTIAL LAYER RESULTS, THE PARTIAL LAYER OF LADING SHALL BE BRACED BY MEANS OF END BRACING AND/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH DETAILS PAGES 8, 9 AND 10 OF WR-52/100. SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. THE CENTER GATE HEIGHT SHOULD BE ADJUSTED AS REQUIRED.
3. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 10 FT WIDE DOORWAY OPENINGS AND ARE EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 10 FT WIDE PROVIDING THE LENGTH OF PIECE 15 IS ADJUSTED AS REQUIRED TO SUIT THE PARTICULAR DOORWAY OPENING.
4. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE ALSO APPLICABLE TO BOXCARS EQUIPPED WITH PLUG TYPE DOORS PROVIDING THE LENGTH OF PIECE 15 IS ADJUSTED AS REQUIRED TO SUIT THE PARTICULAR DOORWAY OPENING. DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT WHEN THE CAR HAS A COMBINATION OF A CONVENTIONAL SLIDING TYPE DOOR AND A PLUG TYPE DOOR, AND AN ADEQUATE NAILING STRIP IS PROVIDED ON THE PLUG TYPE DOOR. IF LUMBER OF SUFFICIENT LENGTH TO SPAN PLUG DOORS IS NOT AVAILABLE, RANDOM LENGTH MATERIAL, DOUBLED AND SPLICED, BUT WITH JOINTS OF SPLICES OFFSET, MAY BE USED. THE STACKS THAT ARE IN THE DOORWAY AREA (INCLUDES AREA OF ALL PLUG DOORS OR ALL PLUG AND CONVENTIONAL DOORS) MUST BE UNITIZED WITH TWO LATERALLY APPLIED 1 1/4" STEEL STRAPS PER STACK, EACH TENSIONED AND SEALED WITH TWO DOUBLE CRIMPED SEALS AND DOORWAY PROTECTION, PIECES 17 AND 18, IS NOT REQUIRED WHEN PLUG DOOR EQUIPPED BOXCARS ARE USED, EXCEPT WHEN CAR HAS A COMBINATION OF PLUG DOOR AND CONVENTIONAL SLIDING DOOR. THEN DOORWAY PROTECTION IS REQUIRED FOR THE CONVENTIONAL DOOR. SECURELY CLOSE DOORS AND WIRE TOGETHER WITH A STRONG FLEXIBLE STEEL WIRE INSERTED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES AND THE WIRE ENDS TWISTED TOGETHER.
5. WHEN BOXCARS WIDER THAN 9 FT 2 IN. ARE USED, DUNNAGE MUST BE NAILED TO THE SIDE WALL OF THE CAR AS NECESSARY FOR A TIGHT LOAD ACROSS THE CAR.

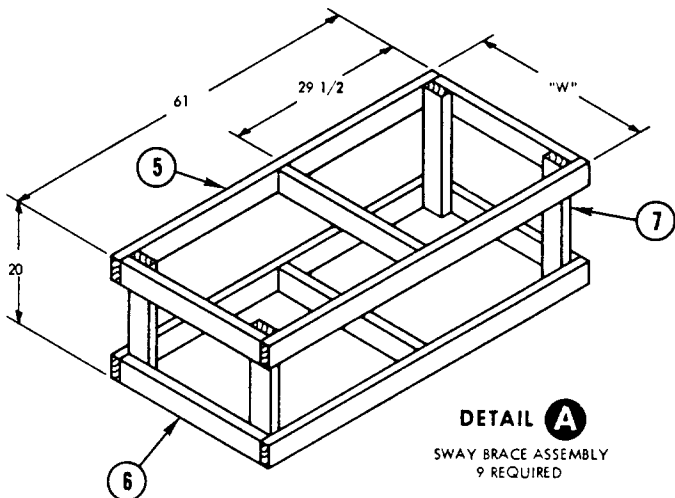


LOADING PLAN

- \* W = DISTANCE BETWEEN UNIT LOADS ACROSS THE CAR.
- \*\* 2 x 6 STRUTS DOUBLED AND LAMINATED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 x 4'S.

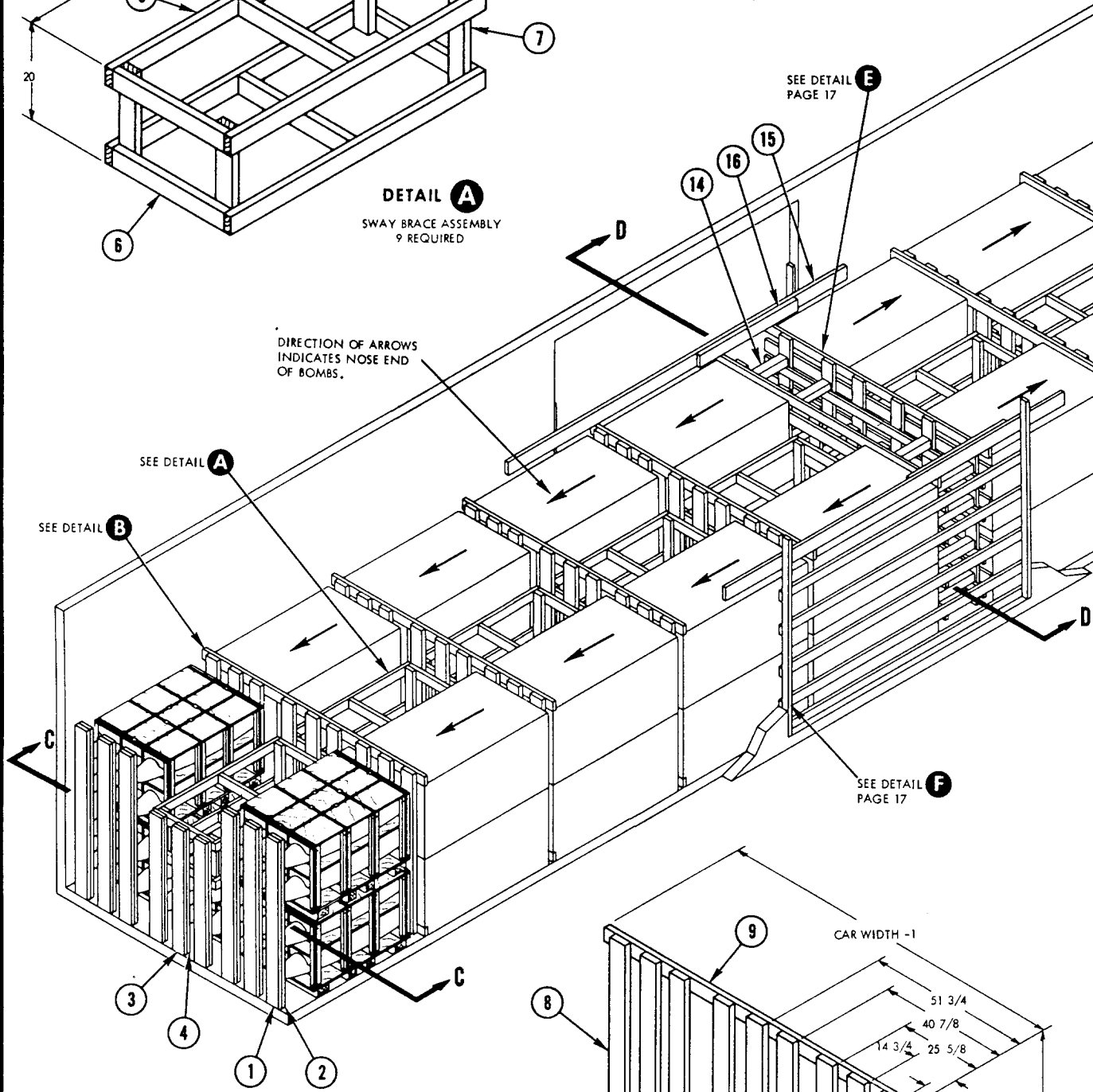
18	HORIZONTAL DOORWAY MEMBER	2 x 4 x DOOR WIDTH	10	17	3 PER JOINT	10d
17	VERTICAL DOORWAY MEMBER	2 x 3 x 84	4	DOOR POST	2 PER FOOT	20d
16	HOLD DOWN CLEAT	2 x 6 x 48	2	15	2 PER FOOT	10d
15	GATE HOLD DOWN	2 x 6 x 14 FT	2	CAR WALL	5 EA END	10d
14	STRUT	4 x 4 x WEDGE FIT **	20	11	2 PER JOINT	16d
13	TOP HORIZONTAL	2 x 4 x CAR WIDTH-1	2	11	3 PER JOINT	10d
12	CENTER GATE STRUT CLEAT	2 x 4 x CAR WIDTH-1	8	11	3 PER JOINT	10d
11	CENTER GATE VERTICAL	2 x 6 x 69	12	SEE 10	-	-
10	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH-1	8	11	3 PER JOINT	10d
9	SEPARATOR GATE TIE PIECE	2 x 4 x CAR WIDTH-1	14	8	3 PER JOINT	10d
8	SEPARATOR GATE VERTICAL	2 x 6 x 69	63	SEE 9	-	-
7	SWAY BRACE UPRIGHT	2 x 4 x 20	36	6	3 PER JOINT	10d
6	CROSS BRACE	2 x 4 x "W" *	54	SEE 5	-	-
5	SWAY BRACE LONGITUDINAL	2 x 4 x 61	36	6, 7	2 PER JOINT	16d
4	END WALL MEMBER	2 x 6 x 54	6	3	1 PER FOOT	10d
3	END WALL MEMBER	2 x 6 x 54	6	CAR WALL	1 PER FOOT	10d
2	END WALL MEMBER	2 x 6 x 72	12	1	1 PER FOOT	10d
1	END WALL MEMBER	2 x 6 x 72	12	CAR WALL	1 PER FOOT	10d
PIECE NO.	DESCRIPTION	SIZE	NO. PCS. REQD	NAIL TO	NUMBER	SIZE NAILS

LIST OF MATERIALS AND NAILING DATA



W - DISTANCE BETWEEN UNIT LOADS ACROSS THE CAR.

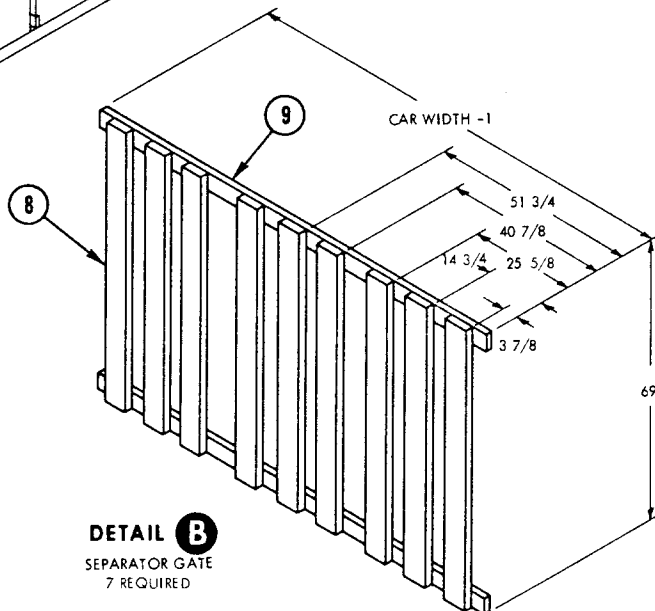
**DETAIL A**  
SWAY BRACE ASSEMBLY  
9 REQUIRED

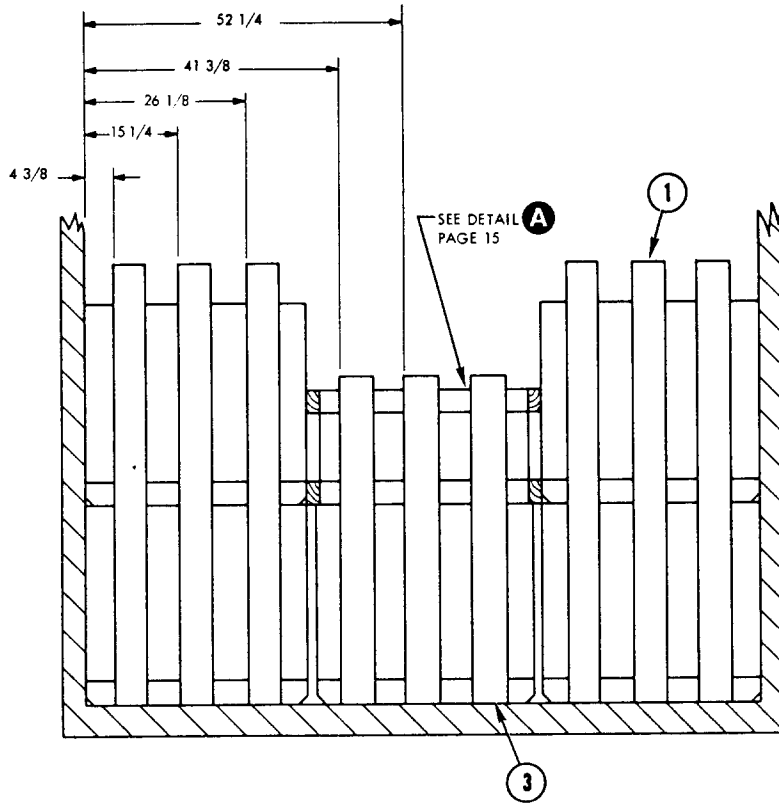


**CARLOAD DATA**

NUMBER OF UNIT LOADS	45
LOAD WEIGHT	144,000 LBS
DUNNAGE WEIGHT	3,150 LBS
CARLOAD WEIGHT	147,150 LBS

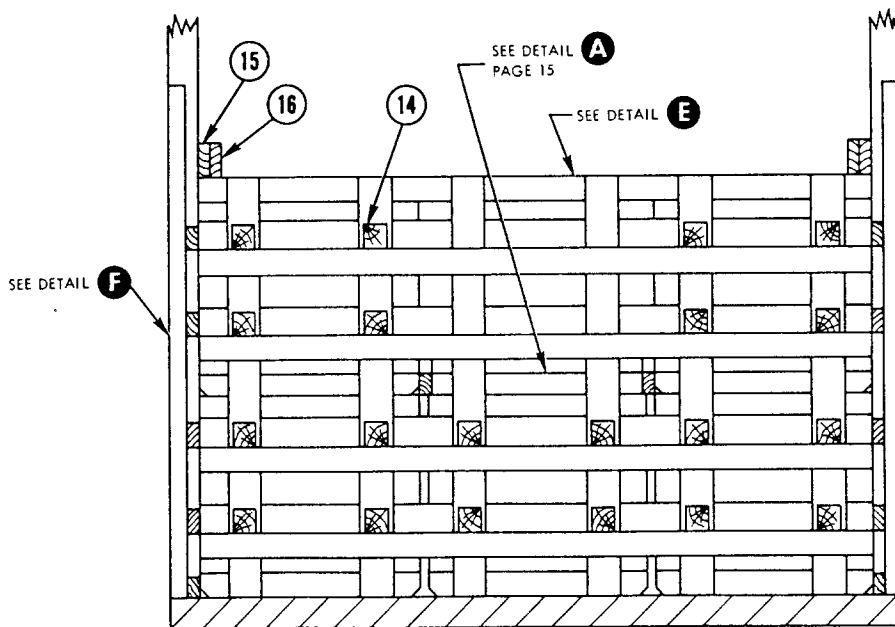
**DETAIL B**  
SEPARATOR GATE  
7 REQUIRED





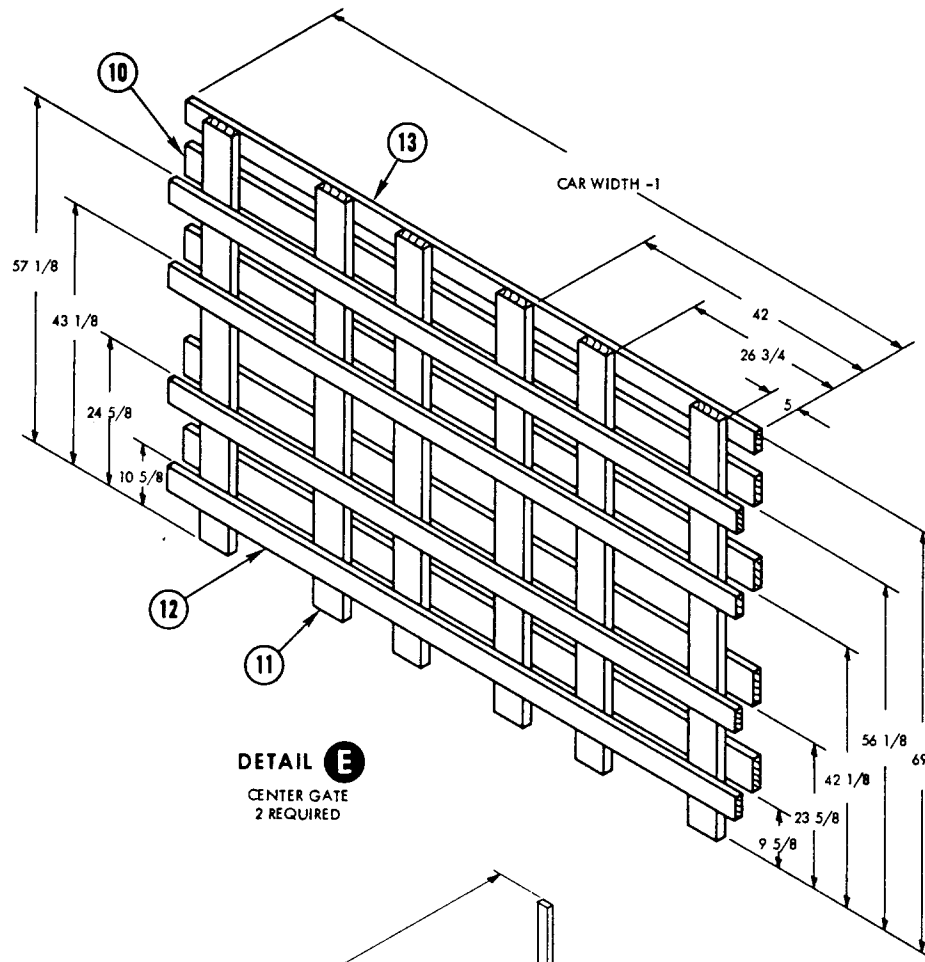
SECTION C-C

SHOWING LOCATION OF END WALL MEMBERS

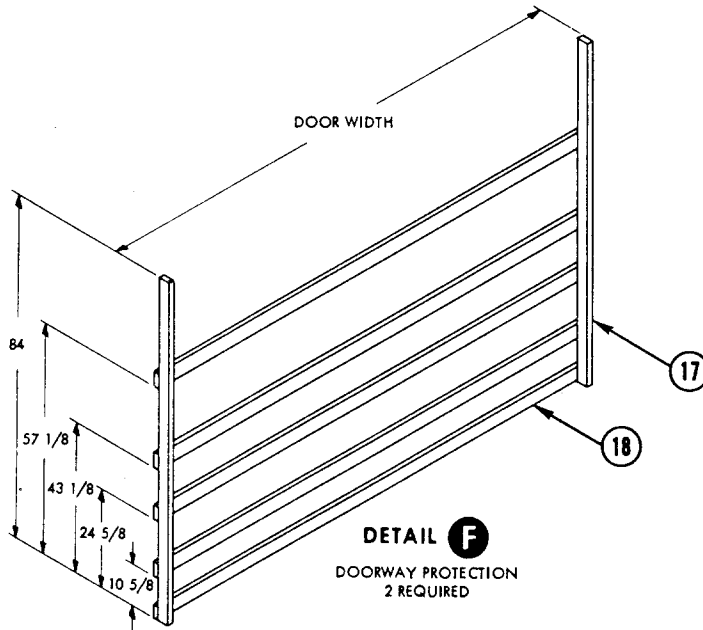


SECTION D-D



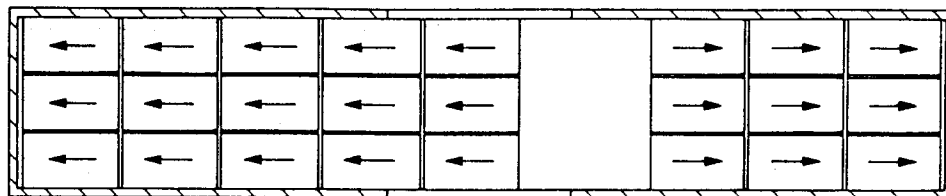


**DETAIL E**  
 CENTER GATE  
 2 REQUIRED



WHEN BOXCAR HAS STEEL DOOR POSTS,  
 DOORWAY PROTECTION AS PER WR-52,  
 PAGE 35, FIG. 21 IS REQUIRED.

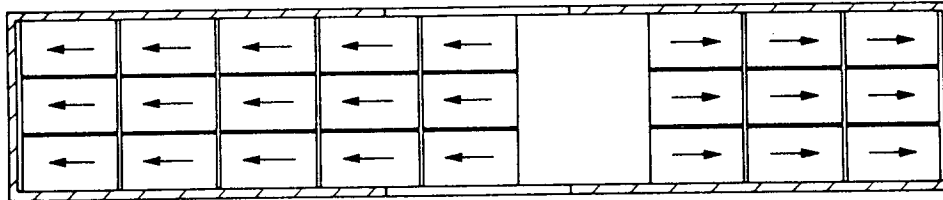
**DETAIL F**  
 DOORWAY PROTECTION  
 2 REQUIRED



ALTERNATE LOADING PLAN

## 50 FT 6 IN. BOXCAR, COMMERCIAL (ALTERNATE METHOD)

1. THE CARLOAD CONSISTS OF 48 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING.
2. WHEN LESS THAN CARLOAD (LCL) QUANTITIES ARE REQUIRED TO BE SHIPPED IN COMMERCIAL BOXCARS AND A PARTIAL LAYER RESULTS, THE PARTIAL LAYER OF LADING SHALL BE BRACED BY MEANS OF END BRACING AND/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH DETAILS PAGES 8,9 AND 10 OF WR-52/100. SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. THE CENTER GATE HEIGHT SHOULD BE ADJUSTED AS REQUIRED.
3. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 10 FT WIDE DOORWAY OPENINGS AND ARE EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 10 FT WIDE PROVIDING THE LENGTH OF PIECE 12 IS ADJUSTED AS REQUIRED TO SUIT THE PARTICULAR DOORWAY OPENING.
4. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE ALSO APPLICABLE TO BOXCARS EQUIPPED WITH PLUG TYPE DOORS PROVIDING THE LENGTH OF PIECE 12 IS ADJUSTED AS REQUIRED TO SUIT THE PARTICULAR DOORWAY OPENING. DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT WHEN THE CAR HAS A COMBINATION OF A CONVENTIONAL SLIDING TYPE DOOR AND A PLUG TYPE DOOR, AND AN ADEQUATE NAILING STRIP IS PROVIDED ON THE PLUG TYPE DOOR. IF LUMBER OF SUFFICIENT LENGTH TO SPAN PLUG DOORS IS NOT AVAILABLE, RANDOM LENGTH MATERIAL, DOUBLED AND SPLICED, BUT WITH JOINTS OF SPLICES OFFSET, MAY BE USED. THE STACKS THAT ARE IN THE DOORWAY AREA (INCLUDES AREA OF ALL PLUG DOORS OR ALL PLUG AND CONVENTIONAL DOORS) MUST BE UNITIZED WITH TWO LATERALLY APPLIED 1 1/4" STEEL STRAPS PER STACK, EACH TENSIONED AND SEALED WITH TWO DOUBLE CRIMPED SEALS AND DOORWAY PROTECTION, PIECES 14 AND 15, IS NOT REQUIRED WHEN PLUG DOOR EQUIPPED BOXCARS ARE USED, EXCEPT WHEN CAR HAS A COMBINATION OF PLUG DOOR AND CONVENTIONAL SLIDING DOOR. THEN DOORWAY PROTECTION IS REQUIRED FOR THE CONVENTIONAL DOOR. SECURELY CLOSE DOORS AND WIRE TOGETHER WITH A STRONG FLEXIBLE STEEL WIRE INSERTED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES AND THE WIRE ENDS TWISTED TOGETHER.
5. WHEN BOXCARS WIDER THAN 9 FT 2 IN. ARE USED, DUNNAGE MUST BE NAILED TO THE SIDE WALL OF THE CAR AS NECESSARY FOR A TIGHT LOAD ACROSS THE CAR.



LOADING PLAN

\* 2 x 6 STRUTS DOUBLED AND LAMINATED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 x 4'S.

\*\* PIECE 12 NAILS TO CAR WALL WITH 10d NAILS, 2 PER FOOT ON CENTER GATE SIDE OF DOOR AND 5 NAILS ON OTHER SIDE, POSITIONED AS SHOWN IN ISOMETRIC.

15	HORIZONTAL DOORWAY MEMBER	2 x 4 x DOOR WIDTH	10	14	3 PER JOINT	10d
14	VERTICAL DOORWAY MEMBER	2 x 3 x 84	4	DOOR POST	2 PER FOOT	20d
13	HOLD DOWN CLEAT	2 x 6 x 24	4	12	5	10d
12	GATE HOLD DOWN	2 x 6 x 16 FT	2	CAR WALL	SEE NOTE **	
11	VERTICAL TIE BAR	2 x 4 x 66	6	9	3 PER JOINT	16d
10	HORIZONTAL TIE BAR	2 x 4 x CAR WIDTH-1	4	9	3 PER JOINT	16d
9	STRUT	4 x 4 x * WEDGE FIT	24	6	2 PER JOINT	16d
8	TOP HORIZONTAL	2 x 4 x CAR WIDTH-1	2	6	3 PER JOINT	10d
7	CENTER GATE STRUT CLEAT	2 x 4 x CAR WIDTH-1	8	6	3 PER JOINT	10d
6	CENTER GATE VERTICAL	2 x 6 x 69	12	SEE 5	-	-
5	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH-1	8	6	3 PER JOINT	10d
4	SEPARATOR GATE TIE PIECE	2 x 4 x CAR WIDTH-1	12	3	3 PER JOINT	10d
3	SEPARATOR GATE VERTICAL	2 x 6 x 69	54	SEE 4	-	-
2	END WALL MEMBER	2 x 6 x 72	18	1	1 PER FOOT	10d
1	END WALL MEMBER	2 x 6 x 72	18	CAR WALL	1 PER FOOT	10d
PIECE NO.	DESCRIPTION	SIZE	NO. PCS. REGD	NAIL TO	NUMBER	SIZE
					NAILS	

LIST OF MATERIALS AND NAILING DATA

