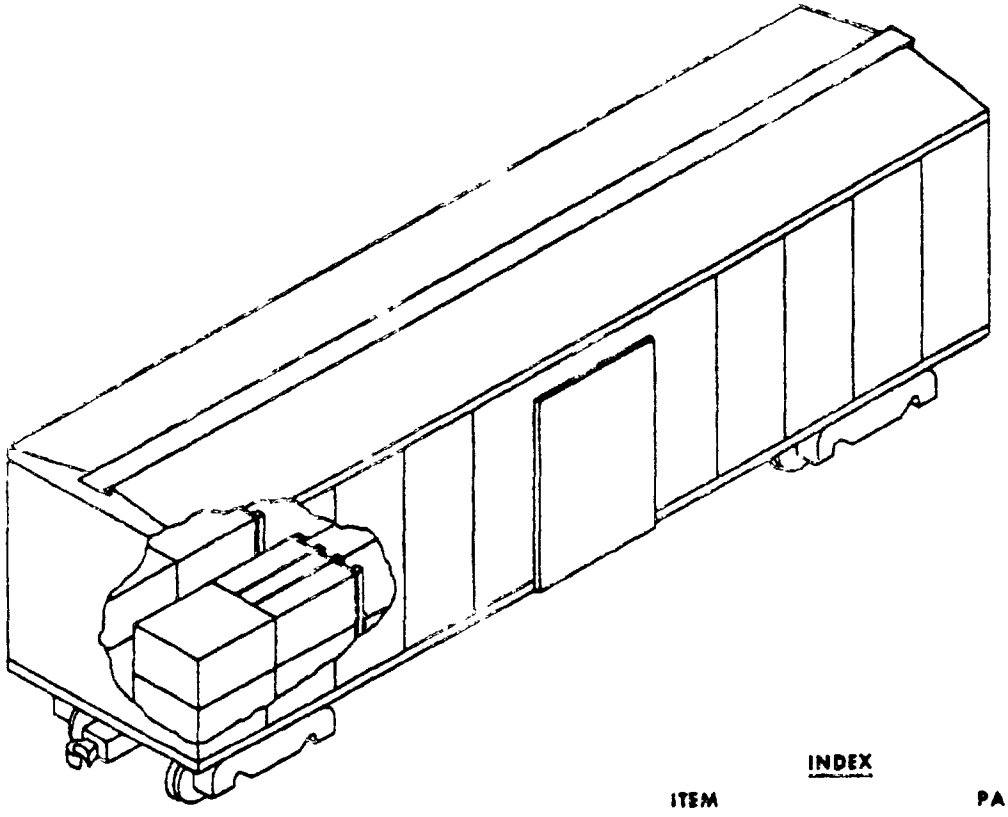
MILITARY STANDARD

RAILCAR LOADING OF HAZARDOUS MATERIALS

TYPICAL PARTIAL UPPER LAYER BRACING OF UNIT LOADS IN ALL METAL BOXCARS

MIL-STD-1325-102A
(NAVY)
26 JANUARY 1976

SUPERSEDING
MIL-STD-1325-102 (NAVY)
7 FEBRUARY 1975



INDEX

NOTES:
1. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
2. FOR CROSS REFERENCE TO ASSOCIATED PALLETIZING TRUCKLOADING AND CONTAINERLOADING MILITARY STANDARDS, REFER TO INDEX TO STANDARDS MIL-HDBK-236 (NAVY)

FSC 8140

AUTHORIZED AND RELEASED FOR GENERAL USE.

SIGNATURE — DEFENSE DISTRIBUTION AGENCY (TOA) — DATE

SIGNATURE — (ACTING) STATION BY DIR — DATE

APPROVED BY BUREAU OF EXPLOSIVES

SIGNATURE — SUPERVISOR MILITARY & INTERMODAL SERVICES — DATE 1/13/76

ORIGINATOR — SIGNATURE — 1/16/76

NAVAL WEAPONS HANDLING LABORATORY
NAD EARLE, NEW JERSEY

GENERAL NOTES

1. THE TYPICAL LOADING PLANS SHOWN ARE FOR PARTIAL LAYER BRACING OF PALLETIZED UNIT LOADS, SKIDDED UNIT LOADS, AND UNITIZED CONTAINERS IN BOXCARS. THE DUNNAGE LOADING IS CONSTRUCTED IN SUCH A MANNER THAT NAILING INTO THE SIDEWALLS OF THE BOXCAR IS NOT NECESSARY.
2. THE TYPICAL PROCEDURES SHOWN HAVE BEEN APPROVED FOR BLOCKING AND BRACING PARTIAL LAYERS IN BOXCARS WITH METAL SIDE WALLS. THEY ARE ALSO APPLICABLE TO BOXCARS WITH WOOD SIDEWALLS.
3. THE "LOAD LIMIT" OF A CAR MUST NOT BE EXCEEDED NOR SHOULD THE RAILCAR BE LOADED SO THAT MORE THAN ONE-HALF OF THE "LOAD LIMIT" IS CARRIED BY ONE SET OF TRUCKS.
4. IF END WALLS OF CARS ARE NOT SQUARE THEY MUST BE SQUARED OFF BEFORE STARTING TO LOAD CAR.
5. UNLESS OTHERWISE SPECIFIED, NAILING SHALL BE IN ACCORDANCE WITH MIL-STD-1325 (NAVY).
6. ALL STRAP JOINTS SHALL BE CRIMP-TYPE JOINTS MADE WITH A CRIMPING TOOL THAT DOES NOT CUT THE SEAL OR STRAP, RATHER THAN A TOOL THAT MAKES A NOTCH-TYPE JOINT.
7. APPLICABLE MATERIAL SPECIFICATIONS:
   - DUNNAGE LUMBER - FED SPEC MM-L-751
   - NAILS - FED SPEC FF-N-105
   - STRAPPING - FED SPEC QQ-S-781 TYPE I HEAVY DUTY, CLASS A DRY (UNLUBRICATED)
   - SEALS - FED SPEC QQ-S-781 STYLE III, HEAVY DUTY

PARTIAL LAYER RETENTION PROCEDURES USING VERTICAL MEMBERS AND STRAPPING

1. THESE PROCEDURES MAY BE USED TO RETAIN AN UPPER PARTIAL LAYER. THE WEIGHT RETAINED IN EACH LAYER ROW MUST NOT EXCEED 8100 LBS. THESE TYPICAL PROCEDURES DEPICT TWO ROWS WITH THE SAME NUMBER OF UNIT LOADS RETAINED IN EACH PARTIAL LAYER ROW. THESE PROCEDURES ARE ALSO APPLICABLE TO CARLOADS HAVING OTHER THAN TWO PARTIAL UPPER LAYER ROWS (1, 3 OR MORE ROWS) AND TO CARLOADS HAVING DISSIMILAR NUMBERS OF UNIT LOADS IN THE PARTIAL UPPER LAYER ROWS.
2. CARLOADS THAT DO HAVE DISSIMILAR NUMBERS OF UNIT LOADS IN THE PARTIAL UPPER LAYER ROWS MUST NOT EXCEED THE WEIGHT LIMITATIONS FOR LONGITUDINAL AND CROSSWISE DISTRIBUTION AS REQUIRED BY MIL-STD-1325 (NAVY) AND THE ASSOCIATION OF AMERICAN RAILROADS (AAR) GENERAL RULES COVERING LOADING OF CARLOAD SHIPMENTS OF COMMODITIES IN CLOSED CARS.
3. EACH JACK MUST HAVE ADEQUATE SWAY BRACING IF THE CROSSWISE VOID EXCEEDS 6-INCHES. CARLOADS HAVING DISSIMILAR NUMBER OF UNIT LOADS IN THE PARTIAL UPPER LAYER ROWS MUST HAVE THE LONG ROWS SWAY BRACED SO THAT THE LATERAL FORCES ARE CARRIED INTO THE SIDE WALL OF THE CAR (SEE MIL-STD-1325 (NAVY) FOR SWAY BRACING PROCEDURES).
4. THE WEIGHT AND HEIGHT OF THE UPPER PARTIAL LAYER TO BE RETAINED DETERMINES THE SIZE AND QUANTITY OF VERTICAL MEMBERS REQUIRED TO RETAIN THE LOAD. TABLE I SHOWS THE AMOUNT OF LOAD WHICH MAY BE RETAINED BY EACH VERTICAL USED. THE AMOUNT DEPENDS ON THE DIMENSIONS OF THE VERTICAL AND THE HEIGHT IT EXTENDS ABOVE THE TOP OF THE FULL LOWER LAYER. THIS HEIGHT WILL NORMALLY BE THE HEIGHT OF THE UNIT LOADS BEING RETAINED. A MINIMUM OF 2 VERTICALS MUST BE USED FOR EACH UPPER LAYER ROW BEING RETAINED. IF SUFFICIENT VERTICAL MEMBERS CANNOT BE POSITIONED AT APPROPRIATE STRONG AREAS OF THE UNIT LOADS ON THE FRONT SIDE WHERE THE STEP DOWN OCCURS, ADDITIONAL VERTICAL MEMBERS MAY BE POSITIONED ON THE OPPOSITE SIDE (BACK SIDE). VERTICAL MEMBERS IN ADDITION TO THE MINIMUM NUMBER CALLED FOR MAY BE USED IF DICTATED BY THE CONFIGURATION OF THE UNIT LOAD STRONG AREAS (BAD POINTS) AND/OR THE NEED FOR SYMMETRY.
5. THE AMOUNT AND TYPE OF BUFFER MEMBERS REQUIRED DEPENDS ON THE CRUSHING STRENGTH OF THE UNIT LOAD AND ITS ABILITY TO CARRY THE LONGITUDINAL FORCES. A MINIMUM OF 2 BUFFER MEMBERS MUST BE USED FOR EACH UNIT LOAD CONTACTED.

THE CONFIGURATION OF THE UNIT LOAD DETERMINES HOW STRAPS ARE POSITIONED TO HOLD THE VERTICAL MEMBERS THAT RETAIN THE PARTIAL LAYER. TWO STRAPS ARE REQUIRED TO HOLD THE VERTICAL MEMBER FRAME IN POSITION.

CAUTION

UNIT LOADS THAT ARE WEAK IN THE AREAS WHERE THE VERTICALS MUST BE POSITIONED AND THAT CANNOT BE SUFFICIENTLY STRENGTHENED BY ADDING BUFFER BOARDS (EXAMPLES: WIRE BOUND CRATES, POLYSTYRENE BOXES, ETC.) AND UNIT LOADS OF AMMUNITION ITEMS IN CARTRIDGE TANKS SHOULD NOT BE RETAINED IN THIS MANNER.

TABLE I

HEIGHT OF UNIT LOAD (INCHES)	MAXIMUM LOAD PER VERTICAL (LBS)	
	4 X 4	4 X 6 *
27	1745	3492
30	1570	3143
33	1428	2857
36	1309	2619
39	1208	2418
42	1122	2245
45	1047	2095

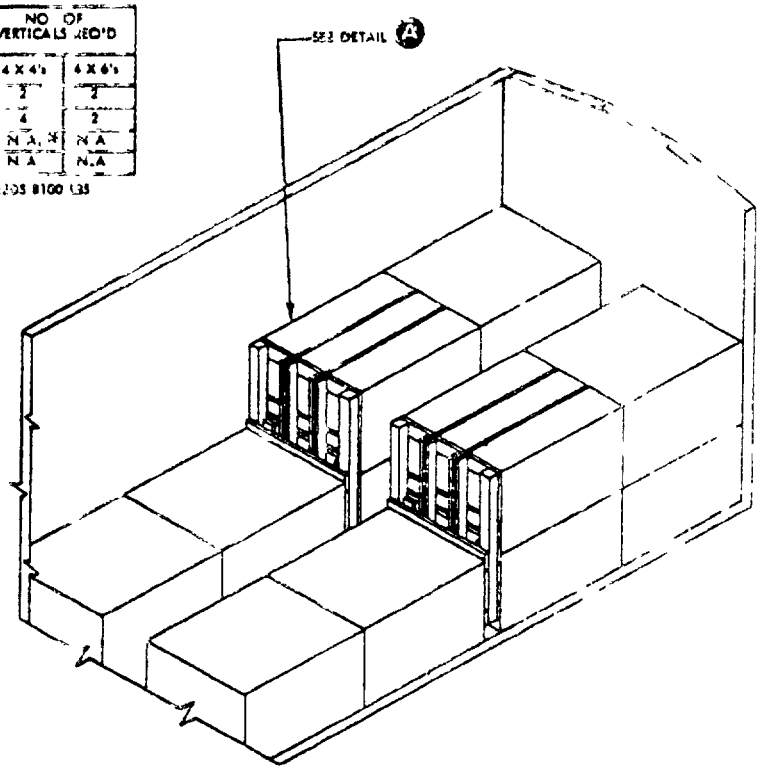
* TWO 2 X 6 VERTICALS LAMINATED WITH 10d NAILS (2 PER FOOT) AND WITH A 1 X 4 FACE BOARD NAILED TO THE OUTER EDGE WITH 6d NAILS (1 PER FOOT) MAY BE SUBSTITUTED IN PLACE OF 4 X 6 VERTICALS.

TYPICAL PARTIAL LAYER RETENTION PROCEDURE

TABLE II

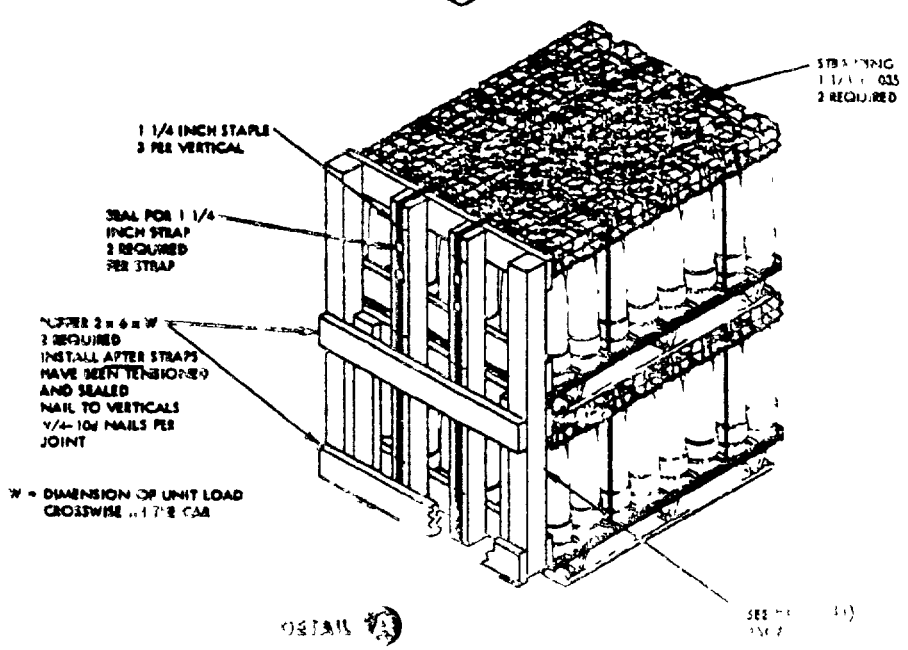
NO. OF U.L.'S IN PARTIAL LAYER ROW	UNIT LOAD HEIGHT (INCHES)	UNIT LOAD WEIGHT (LBS)	TOTAL WT IN PARTIAL LAYER ROW (LBS)	NO. OF VERTICALS REQ'D	
				4 X 4's	4 X 6's
1	28 3/8	3085	3085	2	2
2	28 3/8	3085	5170	4	2
3	28 3/8	3085	7733	N.A. *	N.A.
4	28 3/8	3085	12340	N.A.	N.A.

* N.A. - PROCEDURES NOT APPLICABLE WHEN WEIGHT EXCEEDS 8100 LBS



NOTE

THIS PARTIAL LAYER EXAMPLE CONSISTS OF APPROVED UNIT LOADS OF PROJECTILES IN WIRE FRAME ADAPTERS. THE EXAMPLE SHOWN DEPICTS UNIT LOADS AS PER MS-56/4. THE UNIT LOAD IS 28-3/8 INCHES HIGH AND WEIGHS 3085 LBS. WITH THIS DATA AND THE DATA GIVEN IN TABLE I, THE MINIMUM NUMBER OF VERTICALS REQUIRED TO RETAIN A PARTICULAR QUANTITY OF UNIT LOADS IN A PARTIAL LAYER ROW MAY BE OBTAINED AND ARE SHOWN IN TABLE II



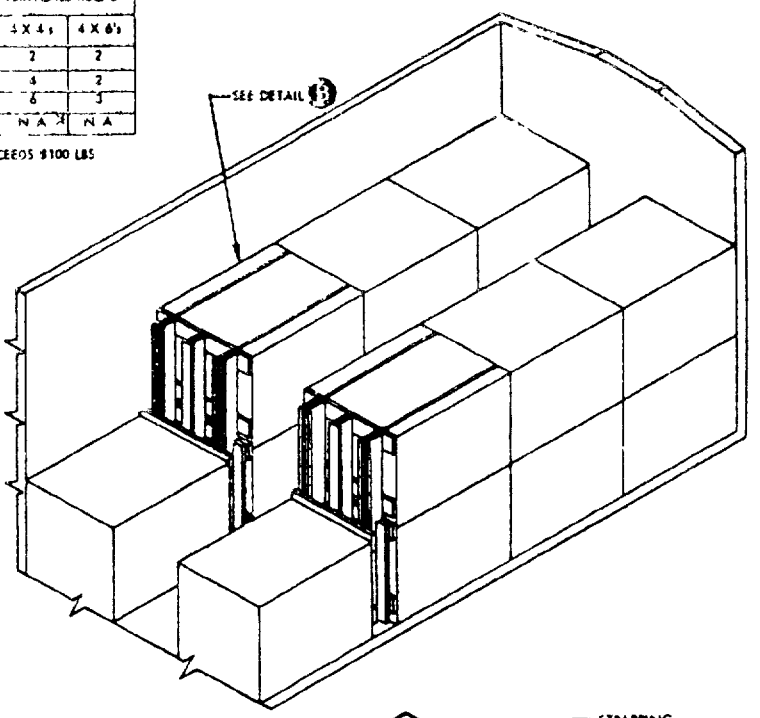
STRAPPING TO UNIT LOADS

TYPICAL PARTIAL LAYER RETENTION PROCEDURE

TABLE III

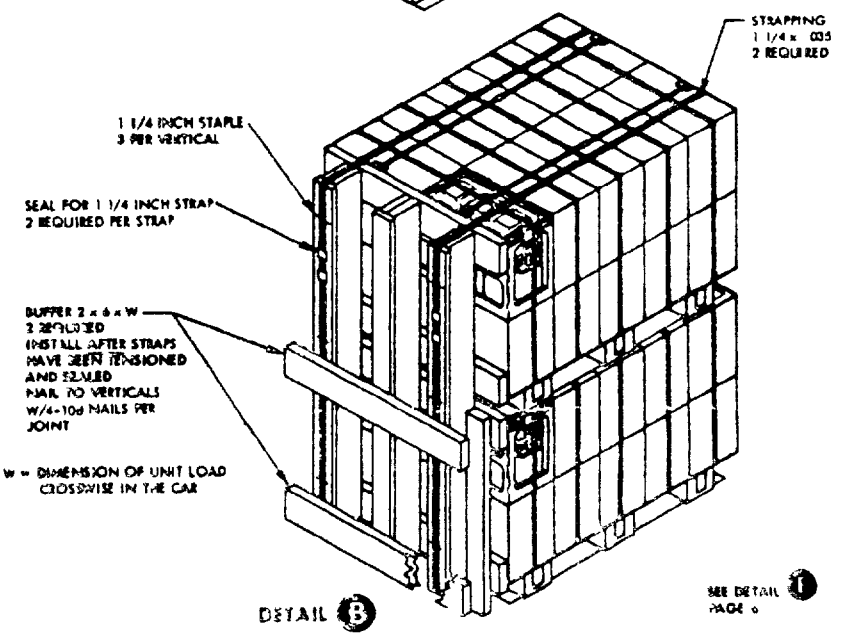
NO. OF U.L.'S IN PARTIAL LAYER ROW	UNIT LOAD HEIGHT (INCHES)	UNIT LOAD WEIGHT (LBS)	TOTAL WT. IN PARTIAL LAYER ROW (LBS)	NO. OF VERTICALS REQ'D	
				4 X 4's	4 X 6's
1	34 7/8	2700	2700	2	2
2	34 7/8	2700	5400	4	2
3	34 7/8	2700	8100	6	3
4	34 7/8	2700	10800	N.A.*	N.A.

* N.A. = PROCEDURES NOT APPLICABLE WHEN WEIGHT EXCEEDS 9100 LBS



NOTE

THIS PARTIAL LAYER EXAMPLE CONSISTS OF APPROVED UNIT LOADS OF SMALL ARMS AMMUNITION BOXES. THE EXAMPLE SHOWN DEPICTS UNIT LOADS AS PER WR-54/11. THE UNIT LOAD IS 34-7/8 INCHES HIGH AND WEIGHS 2700 LBS. WITH THIS DATA AND THE DATA GIVEN IN TABLE I. THE MINIMUM NUMBER OF VERTICALS REQUIRED TO RETAIN A PARTICULAR QUANTITY OF UNIT LOADS IN A PARTIAL LAYER ROW MAY BE OBTAINED AND ARE SHOWN IN TABLE III.



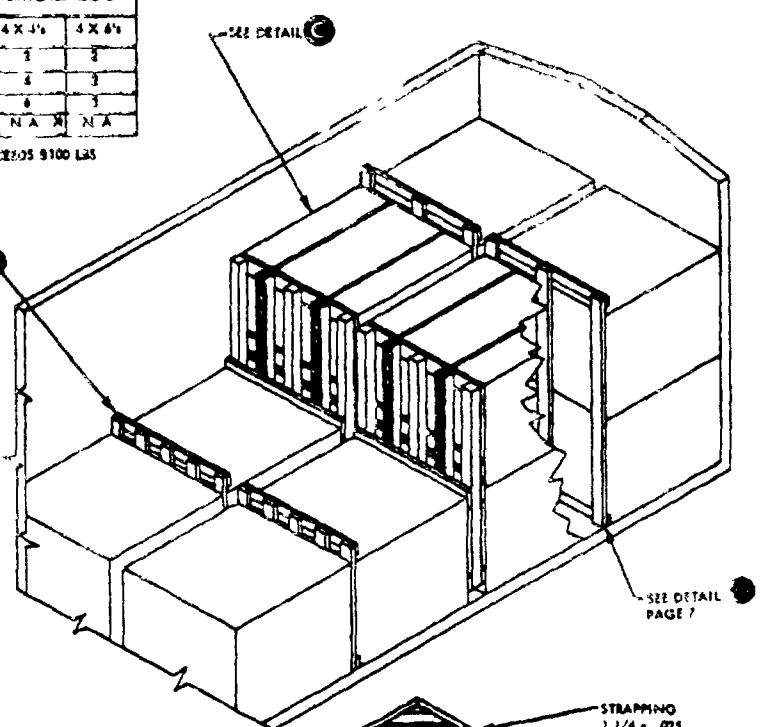
PARTIAL LAYER RETAINING FRAME STRAPPED TO UNIT LOADS

TYPICAL PARTIAL LAYER RETENTION PROCEDURE

TABLE IX

NO. OF U. L.'S IN PARTIAL LAYER ROW	UNIT LOAD HEIGHT (INCHES)	UNIT LOAD WEIGHT (LBS)	TOTAL WT IN PARTIAL LAYER ROW (LBS)	NO. OF VERTICALS REQ'D	
				4 X 4's	4 X 6's
1	39 3/4	2250	2250	4	4
2	39 3/4	2250	4500	4	4
3	39 3/4	2250	6750	6	4
4	39 3/4	2250	9000	N.A. [1]	N.A.

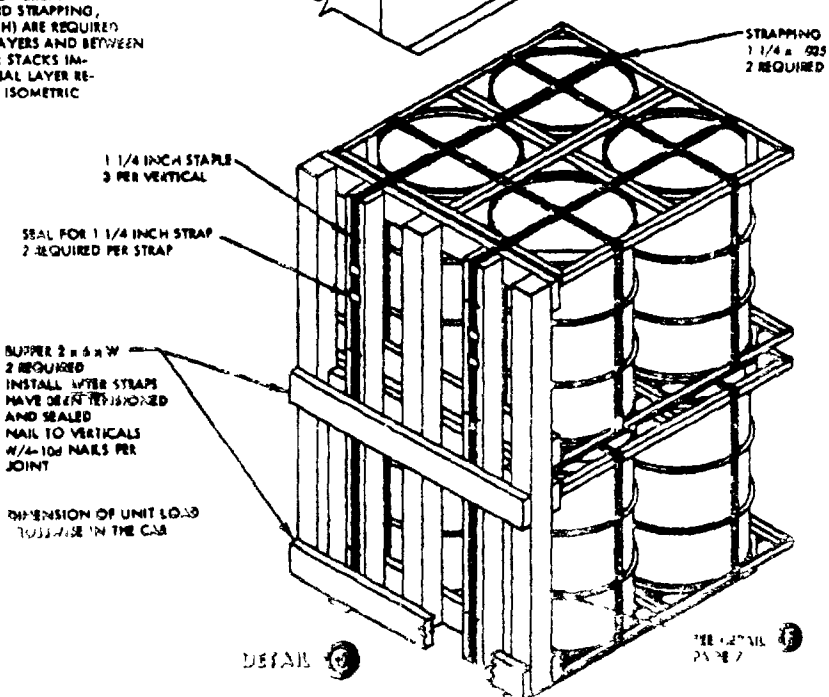
[1] N.A. = PROCEDURES NOT APPLICABLE WHEN WEIGHT EXCEEDS 8100 LBS



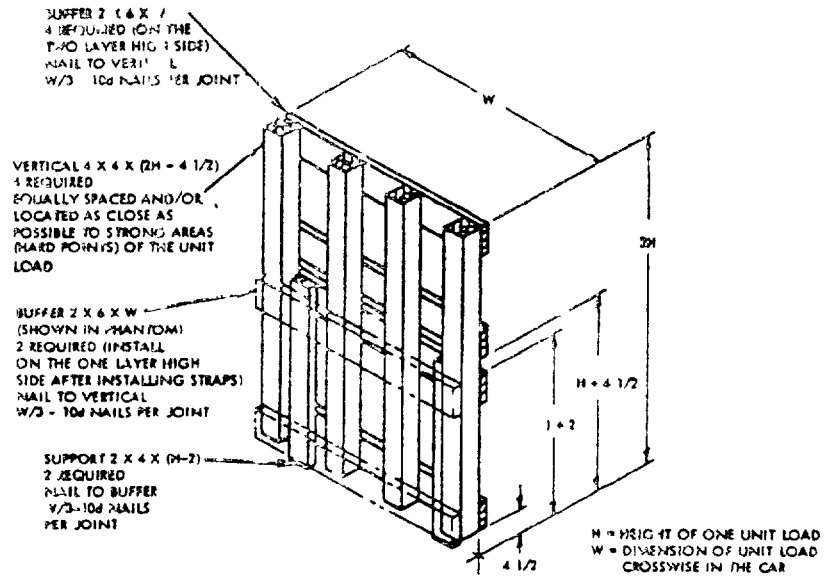
NOTE

THIS PARTIAL LAYER EXAMPLE CONSISTS OF APPROVED UNIT LOADS OF DRUMS IN STEEL ANGLE FRAME (1-1/2 X 1-1/2 X 1/8 INCH MINIMUM ALUMINUM ANGLE SIZE) ADAPTERS. THE EXAMPLE SHOWN DEPICTS UNIT LOADS AS MIL-STD-147B/100. THE UNIT LOAD IS 39-3/4 INCHES HIGH AND WEIGHS 2250 LBS. WITH THIS DATA AND THE DATA FROM TABLE I THE MINIMUM NUMBER OF VERTICALS REQUIRED TO RETAIN A PARTICULAR QUANTITY OF UNIT LOADS IN A PARTIAL LAYER ROW MAY BE OBTAINED AND ARE SHOWN IN TABLE IX.

WHEN RETAINING PARTIAL LAYERS OF DRUM LOADS WITH VERTICAL MEMBERS AND STRAPPING, SEPARATOR GATES (DETAILS G AND H) ARE REQUIRED BETWEEN STACKS OF THE PARTIAL LAYERS AND BETWEEN THE FIRST AND SECOND FULL LAYER STACKS IMMEDIATELY ADJACENT TO THE PARTIAL LAYER RETAINING FRAME AS SHOWN IN THE ISOMETRIC ILLUSTRATION.

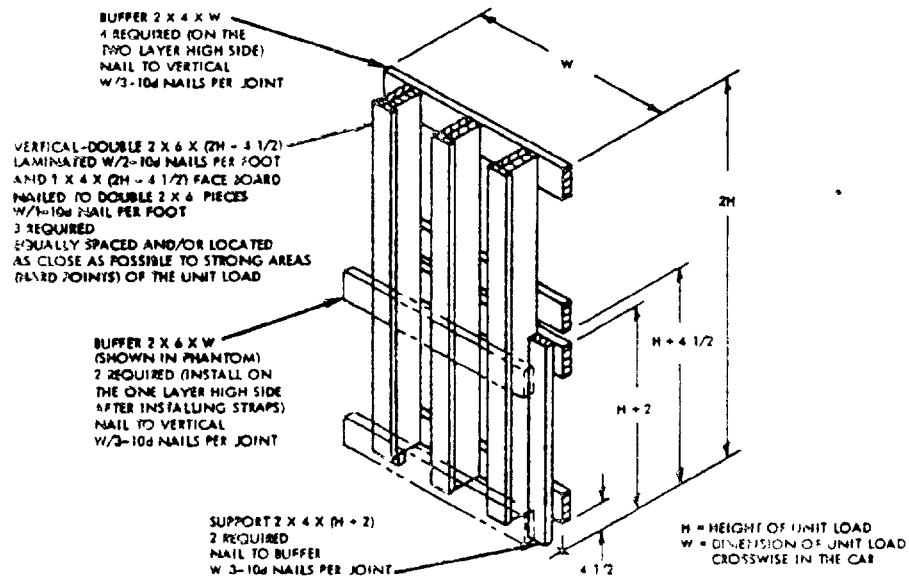


[1] A LAYER RETAINING FRAME STRAPPED TO UNIT LOADS



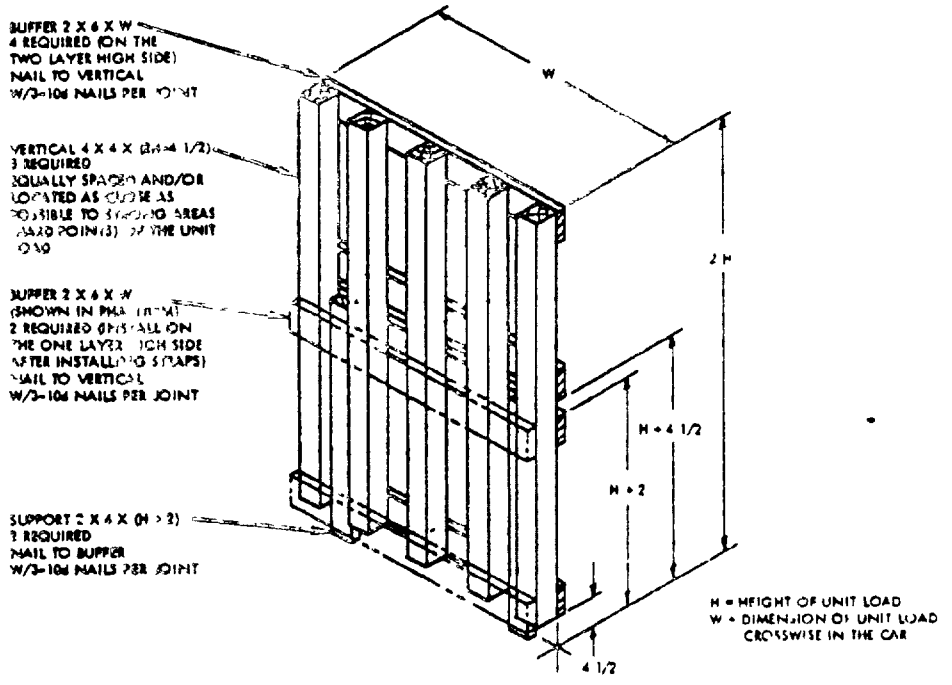
DETAIL D

PARTIAL LAYER RETAINING FRAME



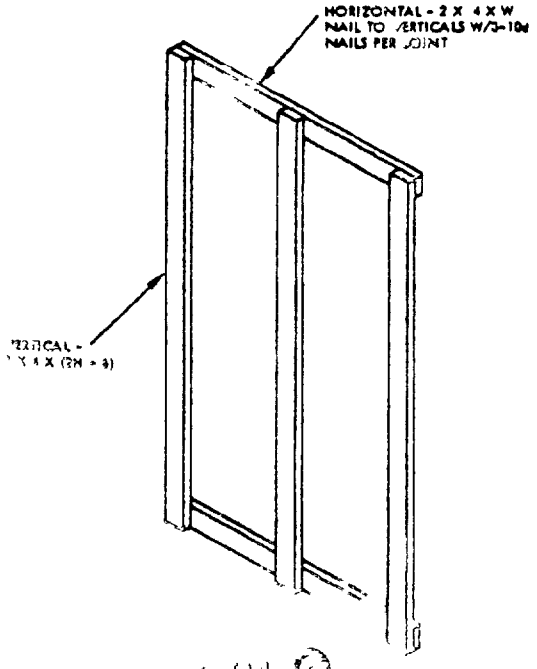
DETAIL E

PARTIAL LAYER RETAINING FRAME

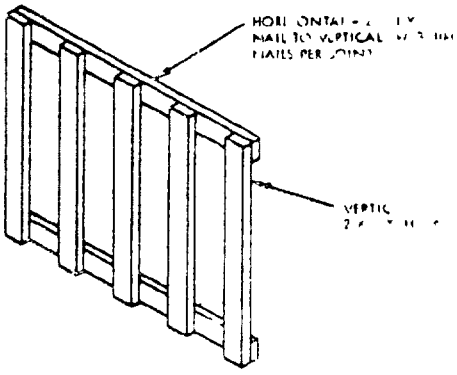


DETAIL F

PARTIAL LAYER RETAINING FRAME



DETAIL G

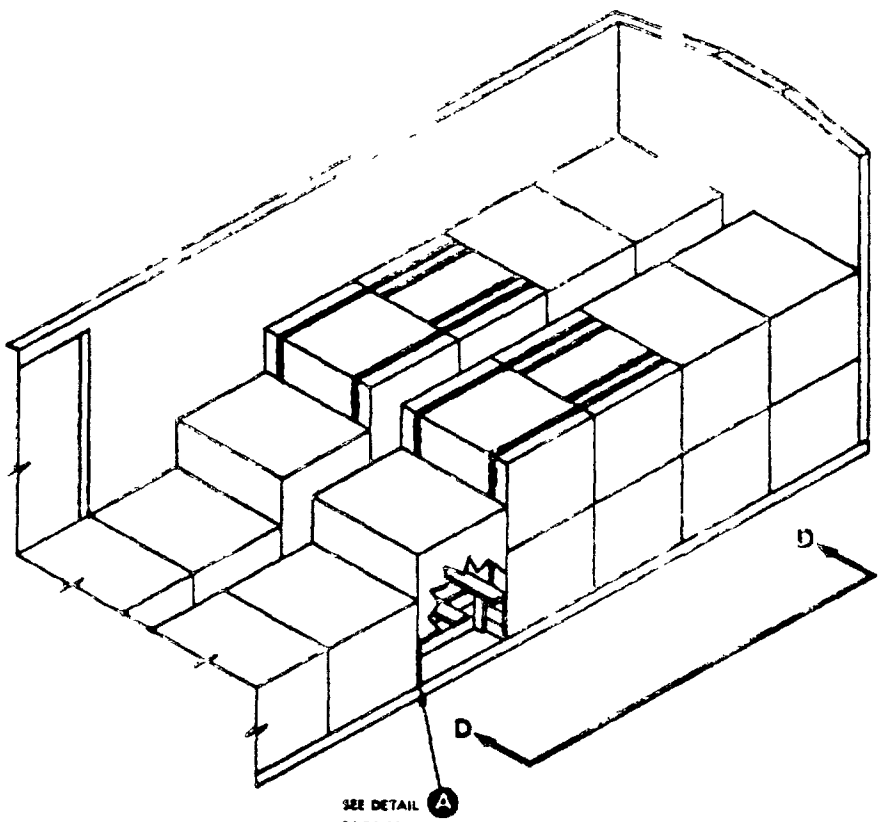


DETAIL H

PARTIAL LAYER RETENTENTION PROCEDURES

USING A UNIT LOAD ON A HALF HEIGHT RISER

1. THESE PROCEDURES MAY BE USED TO RETAIN AN UPPER PARTIAL LAYER. THE WEIGHT RETAINED IN EACH LAYER ROW MUST NOT EXCEED 2,000 LBS. THESE TYPICAL PROCEDURES DEPICT TWO ROWS WITH THE SAME NUMBER OF UNIT LOADS RETAINED IN SUCH PARTIAL LAYER ROW. THESE PROCEDURES ARE ALSO APPLICABLE TO CARLOADS HAVING OTHER THAN TWO PARTIAL UPPER LAYER ROWS (1, 3 OR MORE ROWS) AND TO CARLOADS HAVING DISSIMILAR NUMBERS OF UNIT LOADS IN THE PARTIAL UPPER LAYER ROWS.
2. CARLOADS THAT DO HAVE DISSIMILAR NUMBERS OF UNIT LOADS IN THE PARTIAL UPPER LAYER ROWS MUST NOT EXCEED THE WEIGHT LIMITATIONS FOR LONGITUDINAL AND CROSSWISE DISTRIBUTION AS REQUIRED BY MIL-STD-1325 (NAVY) AND THE ASSOCIATION OF AMERICAN RAILROADS (AAR) GENERAL RULES COVERING LOADING OF CARLOAD SHIPMENTS OF COMMODITIES IN CLOSED CARS.
3. EACH STACK MUST HAVE ADEQUATE SWAY BRACING IF THE CROSSWISE VOID EXCEEDS 6-INCHES. CARLOADS HAVING DISSIMILAR NUMBERS OF UNIT LOADS IN THE PARTIAL UPPER LAYER ROWS MUST HAVE THE LONG ROWS SWAY BRACED SO THAT THE LATERAL FORCES ARE CARRIED INTO THE SIDE WALL OF THE CAR (SEE MIL-STD-1325 (NAVY) FOR SWAY BRACING PROCEDURES).
4. ONLY APPROVED UNIT LOADS OF ITEMS IN STRONG METAL OR WOOD BOXES/CONTAINERS THAT WHEN PALLETIZED/UNITIZED HAVE A FULLY DISTRIBUTED HARD SURFACE ON AT LEAST TWO OPPOSITE VERTICAL SIDES MAY BE RETAINED BY THESE PROCEDURES (EXAMPLE: SMALL ARMS BOXES, WOOD BOXES, ETC.)
5. UNIT LOADS MADE UP OF ITEMS WITH IRREGULAR SHAPES AND THOSE THAT REQUIRE PALLET ADAPTERS TO SQUARE UP THE LOAD MAY NOT BE RETAINED BY THESE PROCEDURES (EXAMPLE: PROJECTILES IN MK 11 ADAPTER, UNCRATED DEPTH CHARGE CASE MK 9).
6. ITEMS THAT ARE PACKED IN BOXES/CONTAINERS THAT ARE NOT STRONG ENOUGH TO CARRY THE LONGITUDINAL FORCES TO WHICH THESE PROCEDURES SUBJECT THE UNIT LOAD, WITHOUT RESULTING DAMAGE TO THE UNIT LOAD MAY NOT BE RETAINED BY THESE PROCEDURES (FIBERBOARD BOXES, POLYSTYRENE CONTAINERS, WIRE BOUND CRATES, ETC.)
7. THE TWO STACKS OF THE PARTIAL LAYER ROW NEXT TO THE UNIT LOAD ON THE HALF HEIGHT RISER MUST BE UNITIZED BY STEEL STRAPPING (SEE VIEW D-D). IF ONLY ONE STACK IS BEING HELD BY THE UNIT LOAD ON THE HALF HEIGHT RISER IT MUST BE UNITIZED BY VERTICAL STRAPPING ONLY.

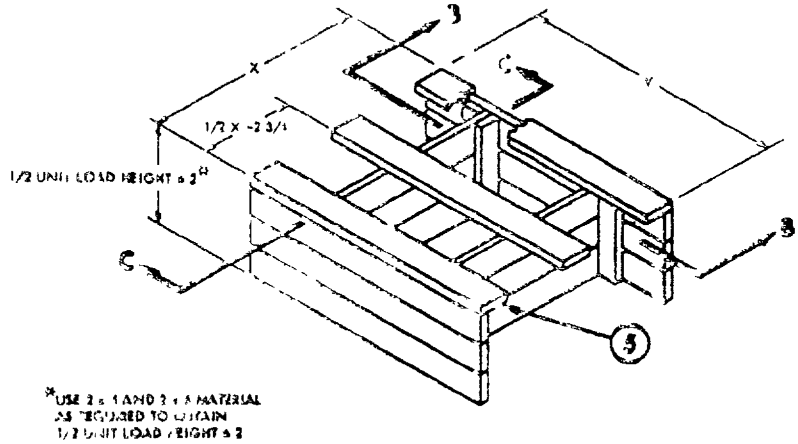


SWAY BRACING OMITTED FOR CLARITY REFER TO GENERAL DOCUMENT MIL-STD-1325 (NAVY) FOR DETAILS OF SWAY BRACING PROCEDURES

*USE 2 x 4 AND 2 x 6 MATERIAL AS REQUIRED TO OBTAIN 1/2 UNIT LOAD HEIGHT ± 2

PIECE NO	DESCRIPTION	SIZE	NO. PCS REQ'D	NAIL TO	NAILS NUMBER	NAILS SIZE
8	SEAL	1 1/4	2 PER STRAP	-	-	-
7	LONGITUDINAL STRAPPING	1 1/4 x .035 x TO SUIT	2 PER ROW	-	-	-
6	VERTICAL STRAPPING	1 1/4 x .035 x TO SUIT	2 PER ROW	-	-	-
5	DECK PIECE	2 x 6 x Y	3	3 1	- 7	- 10d
4	LONGITUDINAL SUPPORT TIE PIECE	2 x 4 x H	4	3	2 PER JOINT	10d
3	LONGITUDINAL SUPPORT PIECE	2 x 6 x X	SEE NOTE*	-	-	-
2	LATERAL SUPPORT TIE PIECE	2 x 4 x H	4	1	2 PER JOINT	10d
1	LATERAL SUPPORT PIECE	2 x 6 x W	SEE NOTE*	3 4	3 PER JOINT	20d

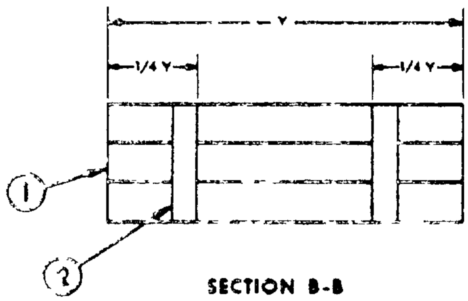
LIST OF MATERIALS AND BRACING DATA



DETAIL A

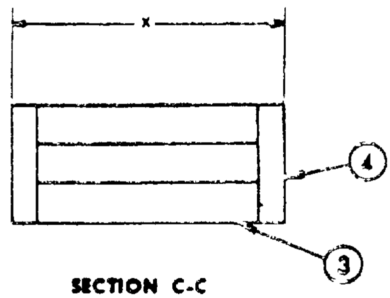
HALF HEIGHT RISER
1 REQUIRED PER ROW

X = UNIT LOAD DIMENSION POSITIONED LENGTHWISE IN THE BOXCAR
Y = UNIT LOAD DIMENSION POSITIONED CROSSWISE IN THE BOXCAR



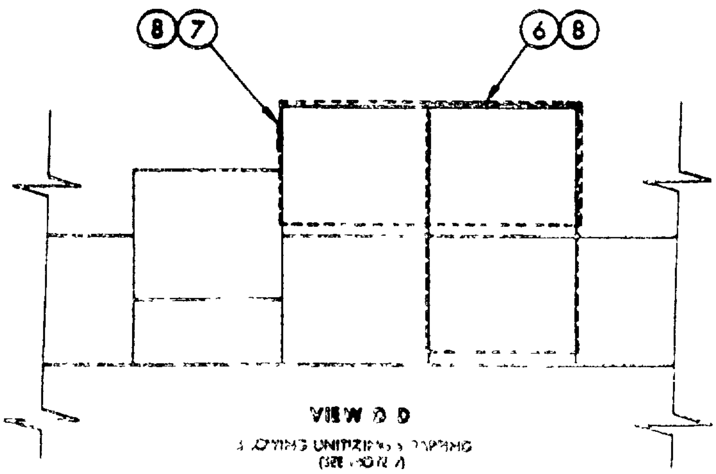
SECTION B-B

(ITEM 5 OMITTED FOR CLARITY)
LATERAL SUPPORT
2 REQUIRED PER RISER



SECTION C-C

(ITEM 5 OMITTED FOR CLARITY)
LONGITUDINAL SUPPORT
2 REQUIRED PER RISER



VIEW D-D

SHOWING UNITIZING STRAPPING
(SEE NOTE 4)

THIS PAGE INTENTIONALLY LEFT BLANK

PARTIAL LAYER RETENTION PROCEDURES USING KNEE BRACING

1. KNEE BRACING PROCEDURES MAY BE USED TO HOLD PARTIAL LAYERS HAVING A WEIGHT NOT IN EXCESS OF 24,000 LBS EACH END OF THE DIAGONAL.
2. A MINIMUM OF 1 TIE DOWN STRAP MUST BE INSTALLED FOR EACH LOWER LAYER UNIT LOAD LOCATED BETWEEN THE LOWER ENDS OF THE LONG DIAGONALS EACH END OF THE CAR. MAXIMUM DISTANCE BETWEEN TIE DOWNS MUST NOT EXCEED 48 INCHES.
3. CENTER GATE AREA OF LOWER LAYER SHALL NOT EXCEED 48 INCHES
4. DIAGONALS, PIECES 12 AND 15, MUST FORM A 60 DEGREE ANGLE WITH THE VERTICAL MEMBER AND A 30 DEGREE ANGLE WITH THE HORIZONTAL SPACER PLUS OR MINUS 5 DEGREES. (SEE DETAIL 2.)
5. UNIT LOADS HAVING A HEIGHT GREATER THAN 36 INCHES SHALL HAVE A LONG DIAGONAL HOLD DOWN CLEAT (PIECE 17) 12 INCHES IN LENGTH AND UNIT LOADS HAVING A HEIGHT 36 INCHES OR LESS SHALL HAVE A LONG DIAGONAL HOLD DOWN CLEAT (PIECE 17) 8 INCHES IN LENGTH

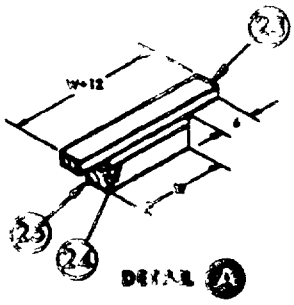
* H = HEIGHT OF UNIT LOAD
** 8 INCHES FOR UNIT LOADS 36 INCHES HIGH OR LESS
*** W = DISTANCE BETWEEN UNIT LOADS IN ADJACENT ROWS

LIST OF MATERIALS AND NAILING DATA

PIECE NO	DESCRIPTION	SIZE	NO. PCS REQD	NAIL TO	NUMBER NAILS	SIZE NAILS
25	CROSS BRACE	4 x 4 x W***	AS REQD	SEE 24	-	-
24	SPACER	2 x 4 x W***	AS REQD	25	4	16d
23	SUPPORT PIECE	2 x 4 x (W + 12)***	AS REQD	24 11	4 2 EACH END	16d 8d
22	SEAL	1 1/4 INCH	2 PER STRAP	-	-	-
21	HOLD DOWN STRAP	1 1/4 x .035 x LENGTH TO SUIT	AS REQD	SEE NOTE 2		
20	STRAPPING BOARD	2 x 6 x (DISTANCE BETWEEN U L +18)	AS REQD	19	5	10d
19	STRAPPING BOARD	2 x 6 x (DISTANCE BETWEEN U L +18)	AS REQD	18	5	10d
18	CROSS BRACE	2 x 6 x CAR WIDTH - 12	AS REQD	16	3 PER JOINT	16d
17	HOLD DOWN CLEAT	2 x 6 x 12**	8	14	5	16d
16	BACK-UP CLEAT	2 x 6 x CUT TO FIT	4	13	2 PER FOOT	10d
15	LONG DIAGONAL BRACE	4 x 4 x 2 x (H + 13 1/2)*	8	13 & 14	2 EACH END	16d
14	HOLD-DOWN CLEAT	2 x 6 x (H + 11 1/2)*	8	2	12	10d

LIST OF MATERIALS AND NAILING DATA

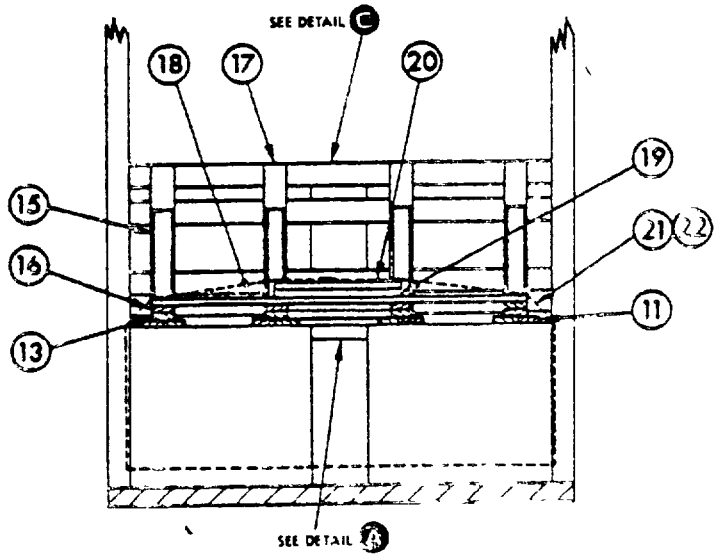
PIECE NO	DESCRIPTION	SIZE	NO. PCS REQD	NAIL TO	NUMBER NAILS	SIZE NAILS
13	BACK-UP CLEAT	2 x 6 x CUT TO FIT	4	11	2 PER FOOT	10d
12	SHORT DIAGONAL BRACE	4 x 4 x 20	8	2 & 11	2 EACH END	16d
11	BEARING PIECE	2 x 6 x CUT TO FIT	16	SEE 11	-	-
10	STRUT	4 x 4 x WEDGE FIT	8	5	2 PER JOINT	16d
9	CENTER GATE HOLD DOWN	2 x 4 x CUT TO FIT	4	8	2 PER FOOT	16d
8	CENTER GATE HOLD DOWN	2 x 4 x CUT TO FIT	4	7	2 PER FOOT	10d
7	HOLD DOWN MEMBER	2 x 4 x CAR WIDTH - 1	2	5	3 PER JOINT	10d
6	CENTER GATE STRUT CLEAT	2 x 4 x CAR WIDTH - 1	4	5	3 PER JOINT	10d
5	CENTER GATE VERTICAL	2 x 6 x (H + 10)*	8	SEE 4	-	-
4	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH - 1	4	5	3 PER JOINT	10d
3	SPACER	2 x 6 x CUT TO FIT	8	2	2 PER FOOT	10d
2	KNEE BRACE GATE VERTICAL	2 x 6 x 2 H	8	SEE 1	-	-
1	KNEE BRACE GATE HORIZONTAL	2 x 6 x CAR WIDTH - 1/2	10	2	3 PER JOINT	10d



DETAIL A

STAKE ASSEMBLY
LOCATE BELOW CENTER JOINT ONLY

W = DISTANCE BETWEEN UNIT LOADS
IN ADJACENT BAYS

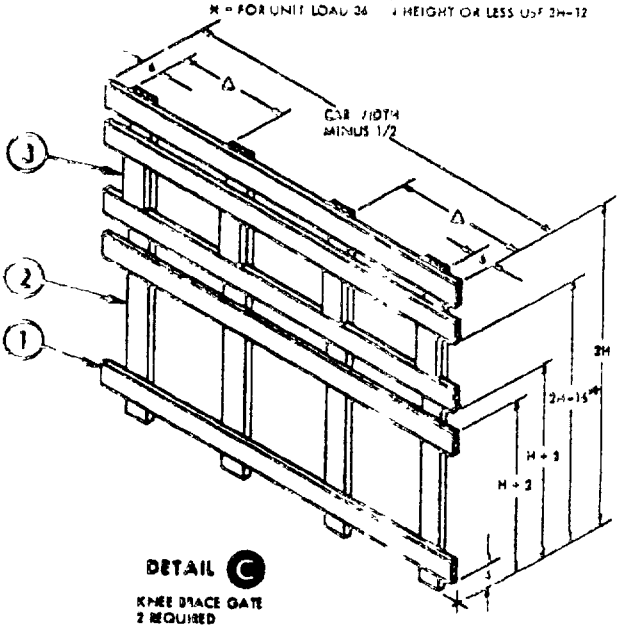


SECTION B-B

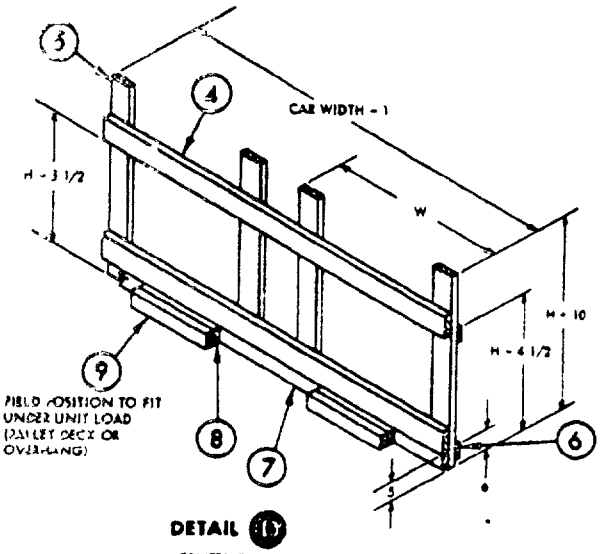
STAY BRACING AND DOORWAY PROTECTION
OMITTED FOR CLARITY. REFER TO GENERAL
DOCUMENT MIL-STD-1325 (NAVY) FOR
DETAILS OF THESE PROCEDURES

MIL STD-1323-102A (NAVY)

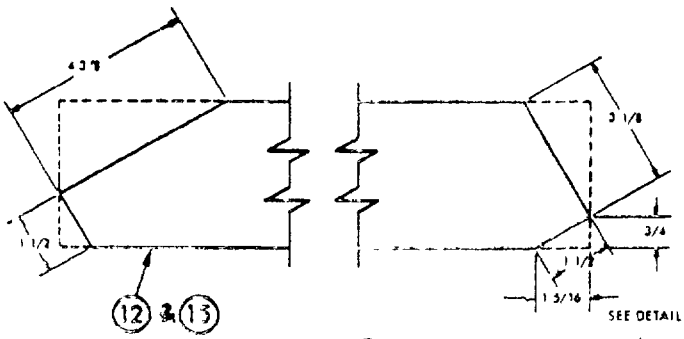
W = DIMENSION OF UNIT LOAD PARALLEL TO LENGTH OF CAR
Δ = UNIT LOAD DIMENSION PERPENDICULAR TO LENGTH OF BOXCAR MINUS 1 1/2
H = HEIGHT OF UNIT LOAD
H = FOR UNIT LOAD 36" HEIGHT OR LESS USE 2H=12



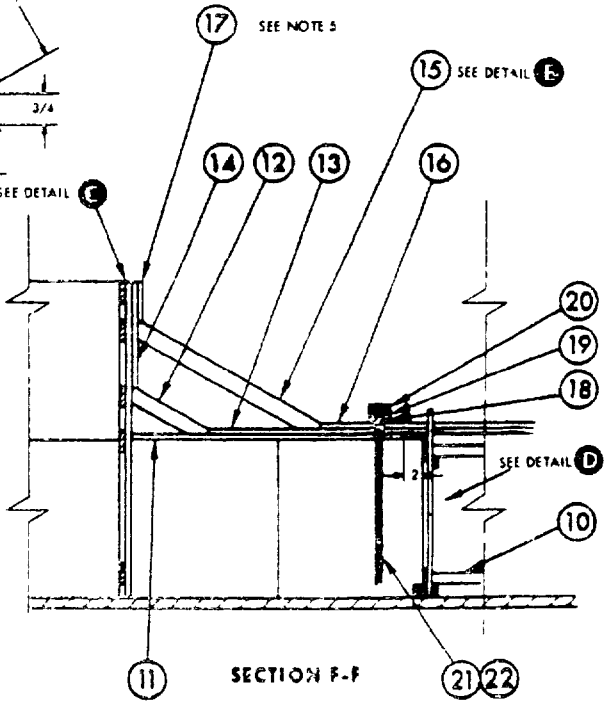
DETAIL C
KNEE BRACE GATE
2 REQUIRED



DETAIL D
CENTER GATE
2 REQUIRED



DETAIL E
DIAGONAL BRACE
60°/30° DIAGONAL CUTS FROM 4 x 4 MATERIAL
(3 1/2 x 3 1/2 ACTUAL DIMENSIONS)



SECTION F-F

PREPARING ACTIVITY
NAVY-OS

PROJECT NO 8140-N327

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval
No 22-R255

INSTRUCTIONS The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost, on schedule, without waiver, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

DOCUMENT IDENTIFIER AND TITLE

MIL-STD-1325-10ZA (Navy)

NAME OF ORGANIZATION AND ADDRESS	CONTRACT NUMBER
	MATERIAL PROCURED UNDER A ☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1 HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A GIVE PARAGRAPH NUMBER AND WORDING

B RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2 COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3 IS THE DOCUMENT RESTRICTIVE?

☐ YES ☐ NO *(If "Yes", in what way?)*

4 REMARKS

SUBMITTED BY *(Printed or typed name and address - Optional)*	TELEPHONE NO DATE

DD FORM 1426 (REPLACES EDITION OF 1 JAN 72 WHICH MAY BE USED)

S/N 0102-01-[illegible]

FOLD

POSTAGE AND FEES PAID

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

COMMANDING OFFICER
NAVAL WEAPONS STATION EARLE
NAVAL WEAPONS HANDLING LABORATORY (803)
COLTS NECK, NEW JERSEY 07722

FOLD