

APPROVED BY U.S. COAST GUARD <i>Michael M.../Hr</i>	APPROVED BY BUREAU OF EXPLOSIVES <i>E. P. Ralton</i> SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE <i>8/14/84</i>	DATE <i>8/13/84</i>

# LOADING AND BRACING<sup>1</sup> WITH WOODEN DUNNAGE IN 6-FOOT HIGH OPEN TOP COMMERCIAL CONTAINERS OF MIXED LOADS OF PALLETIZED AMMUNITION OR COMPONENTS

<sup>1</sup> LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLAT-CAR (TCOFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS. SEE GENERAL NOTE "L" ON PAGE 2.

ITEM	INDEX	PAGE(S)
GENERAL NOTES, AND MATERIAL SPECIFICATIONS -----		2
LOAD PLANNING GUIDANCE -----		4
LOAD PLANNING CHARTS -----		5
PALLET UNIT DETAILS -----		6-11
TYPICAL LOADING PROCEDURES -----		12-45
TYPICAL DETAILS -----		46-47
TYPICAL REDUCED-LOAD PROCEDURES -----		48-49

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U.S. ARMY AMC DRAWING AUGUST 1984					
CLASS	DIVISION	DRAWING	FILE		
19	48	4190	15PM 1006		

DO NOT SCALE

## 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 HEREIN ARE APPLICABLE TO MIXED LOADS OF UNITIZED AMMUNITION ITEMS AND COMPONENTS. SUBSEQUENT REFERENCE TO A PALLET UNIT MEANS THE UNIT WITH AMMUNITION ITEMS. SEE PAGES 6 THRU 11 FOR "TYPICAL UNIT DETAILS". **CAUTION:** REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.
- C. THE LOADS AS SHOWN ARE BASED ON A 4,365 POUND 20' LONG BY 8' WIDE BY 6' HIGH COMMERCIAL INTERMODAL FREIGHT CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 60" HIGH. THE LOADS ARE DESIGNED FOR TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) SHIPMENT, HOWEVER, THE LOADS AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF TRANSPORT (MOTOR AND WATER). **NOTICE:** OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN BE USED, HOWEVER, THE CONFIGURATION OF THE REAR CORNER POSTS AND ADJACENT WELDED STEEL ANGLE PIECES MUST BE AS DEPICTED HEREIN SO THAT SPECIFIED BLOCKING AND BRACING PROCEDURES CAN BE APPLIED.
- D. WHEN LOADING THE UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE FORWARD AND SIDE DUNNAGE ASSEMBLIES OR TIGHT AGAINST THE FORWARD ASSEMBLY AND SIDE WALL OF THE CONTAINER). ALTHOUGH A TOTAL OF ONE AND ONE-HALF INCHES (1-1/2") OF UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS PERMITTED, LATERAL VOIDS WITHIN THE LOAD ARE TO BE HELD TO A MINIMUM. EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE DUNNAGE ASSEMBLIES ON ONE OR BOTH SIDES OF THE CONTAINER OR TO THE CENTER FILL ASSEMBLIES. NAIL EACH ADDITIONAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE NUMBER AND/OR THICKNESS OF THE DUNNAGE LUMBER USED MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE UNIT SIZE. SEE THE "SPECIAL NOTES" FOR EACH TYPICAL LOAD FOR ADDITIONAL GUIDANCE.
- E. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE. **NOTE:** ALL SPECIFIED DUNNAGE LUMBER IS SOFT-WOOD EXCEPT THAT REQUIRED FOR THE TWO DOOR POST VERTICALS USED IN A ONE-HIGH UNIT LOAD CONFIGURATION WHEN THE TOTAL WEIGHT OF THE UNITS TO BE SHIPPED EXCEEDS 26,000 POUNDS. THE 4" X 4" DOOR POST VERTICALS MUST THEN BE HARD-WOOD, SUCH AS OAK.
- F. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES 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.
- G. 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.
- H. **CAUTION:** DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- J. PORTIONS OF THE CONTAINERS DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

(CONTINUED AT RIGHT)

## MATERIAL SPECIFICATIONS

LUMBER	-----	: TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
PLYWOOD	-----	: FED SPEC NN-P-530; GROUP B, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
NAILS	-----	: FED SPEC FF-N-105; COMMON.
WIRE	-----	: FED SPEC QQ-W-461.

## (GENERAL NOTES CONTINUED)

- K. TO MAKE LOADING EASIER, TO HELP ACHIEVE A TIGHT LOAD ACROSS A CONTAINER AND TO PREVENT UNACCEPTABLE DAMAGE TO LADING UNITS WHEN LOADING A CONTAINER, A SLIP-SHEET CAN BE USED EFFECTIVELY AS A "SHOEHORN" TYPE DEVICE. THE SLIP-SHEET WILL PROVIDE A SMOOTH SURFACE THAT WILL PREVENT UNIT STRAPS AND/OR BOXES AND/OR BOX CLEATS FROM INTERLOCKING OR CATCHING ON OTHER PROJECTIONS WHEN LATERALLY ADJACENT LADING UNITS ARE BEING LOADED. A SLIP-SHEET WILL BE USED AFTER ONE-HALF OF A STACK IS LOADED WITH ONE OF ITS SIDES IN TIGHT CONTACT AT ONE SIDE OF THE CONTAINER. THE SLIP-SHEET IS TO BE PLACED AGAINST THE OTHER SIDE OF THE HALF-STACK BEFORE THE LAST HALF OF THE STACK IS LOADED. AFTER A STACK IS COMPLETED, THE SLIP-SHEET IS TO BE REMOVED FOR SUBSEQUENT USE WITH THE NEXT STACK. A SLIP-SHEET OF SUITABLE SIZE CAN BE MADE FROM A SHEET OF 1/8" TEMPERED HARDBOARD (MASONITE) OR FROM A SHEET OF ANY OTHER MATERIAL THAT WILL SATISFY THE REQUIREMENT.
- L. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 4C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC). SPECIAL T/COFC NOTES FOLLOW.
1. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.
  2. THE LOAD LIMIT OF A T/COFC RAIL CAR MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED SO THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES MORE THAN ONE-HALF OF THE LOAD LIMIT FOR THAT CAR.
- M. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS/MODIFIED FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.
- N. IF THE SPECIFIED 2" X 3" DUNNAGE LUMBER IS NOT READILY AVAILABLE, TWO ACCEPTABLE SIZE 2" X 3" PIECES CAN BE MADE BY RIPPING (SAWING) A PIECE OF NOMINAL SIZE 2" X 6" LUMBER ON THE CENTER LINE OF ITS 5-1/2" WIDTH.
- O. THE BLOCKING AND BRACING PROCEDURES DELINEATED WITHIN THIS DRAWING ARE TYPICAL PROCEDURES. THE PRINCIPLES OF THE DELINEATED BLOCKING AND BRACING PROCEDURES WILL BE APPLIED WHEN THE AMMUNITION ITEMS TO BE SHIPPED ARE UNITIZED IN A DIFFERENT MANNER THAN THAT DEPICTED. FOR ADDITIONAL GUIDANCE IN THE PLANNING OF A COMMERCIAL CONTAINER MIXED LOAD, REFER TO DARCOM DRAWINGS 19-48-4187-15PA1007 AND 19-48-4188-15PE1005. ALTHOUGH THE AFOREMENTIONED DRAWINGS DO NOT CONTAIN MIXED LOAD PROCEDURES, THEY DO DEPICT VARIOUS LOAD PATTERNS THAT CAN BE COMBINED OR PARTIALLY USED IN THE OUTLOADING AND SHIPMENT OF A SPECIFIC MIXED LOAD.
- P. **CAUTION:** CARE MUST BE EXERCISED TO INSURE THAT THE MIX OF AMMUNITION ITEMS TO BE LOADED INTO A COMMERCIAL CONTAINER IS COMPATIBLE.
- Q. ALL LOADS SHOWN WITHIN THIS DRAWING EXCEPT MIXED LOADS 3 AND 5 ARE FULL LAYER LOADS. FOR ADDITIONAL REDUCED-LOAD PROCEDURAL GUIDANCE, REFER TO THE "TYPICAL REDUCED-LOAD PROCEDURES" ON PAGES 48 AND 49.
- R. ANTI-SWAY BRACING SHOWN THROUGHOUT THIS DRAWING IS TYPICAL. FOR ADDITIONAL INFORMATION/APPLICATION GUIDANCE, REFER TO THE TYPICAL DETAILS AND GUIDANCE CONTAINED ON PAGE 46.

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**SPECIAL NOTES:**

**( SPECIAL NOTES CONTINUED )**

1. THE FOLLOWING SPECIAL NOTES AND THE FIVE CHARTS ON PAGE 5 ARE PRESENTED AS GUIDANCE IN THE SELECTION OF A LOAD PATTERN, AND IN DETERMINING THE QUANTITY OF UNITS WHICH CAN BE LOADED IN A 20' LONG BY 8' WIDE BY 6' HIGH COMMERCIAL INTERMODAL FREIGHT CONTAINER, BASED ON THE SIZE AND WEIGHT OF THE PALLETIZED UNIT TO BE LOADED.
2. CHART NO. 1 MAY BE USED IN SELECTING A LOAD PATTERN FOR THE WIDTH OF THE CONTAINER WHICH IS TO BE LOADED. THE LOAD PATTERN WILL BE BASED EITHER ON THE UNIT LENGTH ACROSS THE CONTAINER OR ON THE UNIT WIDTH ACROSS THE CONTAINER, DEPENDENT UPON THE LENGTH OR WIDTH DIMENSIONS OF THE UNIT TO BE LOADED. UNIT SIZE RANGES AND LOAD PATTERNS FOR A COMMERCIAL CONTAINER WIDTH OF 92" ARE GIVEN. CONTAINERS OF OTHER WIDTHS MAY BE USED, HOWEVER, THE SIZE RANGE OF THE UNITS WHICH CAN BE LOADED IN THE TWO LOAD PATTERNS WILL HAVE TO BE CALCULATED. THE SMALLER FIGURE SHOWN FOR UNIT SIZE RANGE IS BASED ON THE MINIMUM UNIT LENGTH OR WIDTH, AS APPLICABLE, AND THE LARGER FIGURE IS CALCULATED ON THERE BEING AT LEAST 1-1/2" EXCESS LATERAL SPACE REMAINING IN THE CONTAINER AFTER THE UNITS ARE POSITIONED.
3. CHART NO. 2 MAY BE USED IN DETERMINING THE QUANTITY OF UNITS WHICH CAN BE POSITIONED WITHIN ONE ROW IN THE LENGTH OF A CONTAINER. THE UNIT SIZE RANGE FOR A 20' CONTAINER IS BASED ON THE INSIDE USEABLE LENGTH OF THE CONTAINER BEING 19'-0-1/2" LONG AND ALSO ON A REQUIRED AVERAGE TOTAL INSIDE BLOCKING THICKNESS OF 23-1/2".
4. CHART NO. 3 MAY BE USED IN DETERMINING THE NUMBER OF TIERS WHICH CAN BE LOADED IN A CONTAINER, BASED ONLY ON THE HEIGHT OF THE UNIT. THE ACTUAL NUMBER OF TIERS WHICH CAN BE LOADED WILL BE BASED ON SEVERAL FACTORS SUCH AS THE WEIGHT OF THE UNITS AND THE QUANTITY THAT IS TO BE SHIPPED.
5. CHART NO. 4 MAY BE USED IN DETERMINING THE COMBINATIONS OF PALLET UNIT LENGTHS AND WIDTHS WHICH ARE ACCEPTABLE FOR CHIMNEY-PATTERN LOADS. THE DATA CONTAINED IN THE CHART IS BASED UPON THE TOTAL OF THE PALLET UNIT LENGTH AND WIDTH BEING LESS THAN THE INSIDE WIDTH OF THE COMMERCIAL CONTAINER BY AT LEAST 1/2" BUT NOT MORE THAN 10".  
**NOTE:** REGARDLESS OF THE LADING WEIGHT, SIDE BLOCKING MUST BE USED WHEN THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS GREATER THAN 1-1/2". IF THE UNBLOCKED SPACE IS LESS THAN 1-1/2", SIDE BLOCKING IS NOT REQUIRED UNLESS THE LADING WEIGHT EXCEEDS 26,880 POUNDS.
6. CHART NO. 5 MAY BE USED AS GUIDANCE IN DETERMINING THE NUMBER OF 2" X 6", 2" X 8", OR 2" X 10" BEAMS REQUIRED, THE NUMBER OF BEAM ASSEMBLIES REQUIRED, AND THE NUMBER OF 2" THICK BEAMS PER BEAM ASSEMBLY REQUIRED PER LAYER IN THE FABRICATION OF THE FORWARD AND REAR BLOCKING ASSEMBLIES FOR A SPECIFIED CONTAINER LOAD WEIGHT. THE BEAM ASSEMBLIES WILL BE ARRANGED IN SUCH A MANNER SO AS TO PROVIDE MAXIMUM SUPPORT FOR THE LAYER OF PALLET UNITS BEING BLOCKED. ADDITIONALLY, THE BEAM ASSEMBLIES WILL BE ARRANGED IN A SYMMETRICAL PATTERN FOR EACH TIER.
7. WHEN EACH BEAM ASSEMBLY OF THE FORWARD BLOCKING ASSEMBLY CONSISTS OF ONLY ONE 2" X 6", 2" X 8", OR 2" X 10" BEAM AND FORWARD STRUT ASSEMBLIES ARE INSTALLED AT THE FRONT OF THE LOAD, IT WILL BE NECESSARY TO DOUBLE THE NUMBER OF BEAMS PER BEAM ASSEMBLY. THIS WILL ENABLE THE PROPER ATTACHMENT OF THE FORWARD STRUT ASSEMBLIES TO THE FORWARD BLOCKING ASSEMBLY TO BE ACCOMPLISHED.
8. THE LOAD BEARING PIECES OF THE FORWARD AND REAR BLOCKING ASSEMBLIES SHOULD BE CUT APPROXIMATELY 6" LONGER THAN THE LOAD HEIGHT. ADDITIONALLY, THE LOAD BEARING PIECES SHOULD BE SPACED TO PROVIDE MAXIMUM SUPPORT TO THE UNITS BEING BLOCKED, AND GENERALLY SHOULD NOT BE LOCATED DIRECTLY AT THE CENTER OF THE FORWARD OR REAR BLOCKING ASSEMBLY.
9. WHENEVER THE GROSS WEIGHT OF THE LADING BEING LOADED IN A CONTAINER EXCEEDS 26,880 POUNDS ( 60% OF THE MAXIMUM GROSS WEIGHT OF THE CONTAINER ), ADDITIONAL SIDEWALL STRENGTHENING MUST BE PROVIDED. THIS ADDITIONAL SIDEWALL STRENGTHENING IS USUALLY FABRICATED IN THE FORM OF SIDE FILL ASSEMBLIES. FOR ADDITIONAL GUIDANCE, SEE THE TYPICAL SIDE FILL ASSEMBLIES ON PAGES 19, 23, 30, 38, AND 44. WHENEVER THE GROSS WEIGHT OF THE LADING IS LESS THAN 26,880 POUNDS AND THERE IS MORE THAN 1-1/2" OF UNBLOCKED SPACE ACROSS THE WIDTH OF THE LOAD BAY, THIS UNBLOCKED SPACE MUST BE FILLED OUT BY EITHER PLACING SIDE FILL ASSEMBLIES AT THE SIDES OF THE LOAD OR ANTI-SWAY BRACING OR CENTER FILL ASSEMBLIES IN THE CENTER OF THE LOAD. FOR ADDITIONAL GUIDANCE, SEE THE ANTI-SWAY BRACING ASSEMBLIES ON PAGE 18 AND THE CENTER FILL ASSEMBLIES ON PAGE 12. WHENEVER THE GROSS WEIGHT OF THE LADING IS LESS THAN 26,880 POUNDS AND THE UNBLOCKED SPACE ACROSS THE WIDTH OF THE LOAD BAY IS 1-1/2" OR LESS, NEITHER SIDE BLOCKING NOR CENTER BLOCKING WILL BE REQUIRED.
10. UNLESS OTHERWISE SPECIFIED, COMMERCIAL CONTAINERS CAN BE LOADED UP TO THEIR RATED CAPACITY. **CAUTION:** REGARDLESS OF THE QUANTITY OF PALLET UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.

( CONTINUED AT RIGHT )

CHART NO. 1					
UNITS IN WIDTH OF COMMERCIAL CONTAINER					
CONTAINER WIDTH	LOAD PATTERN	UNIT SIZE RANGE			
		PALLETIZED UNITS (LENGTH ACROSS CONTAINERS)		PALLETIZED UNITS (WIDTH ACROSS CONTAINERS)	
		UNIT LENGTH	LOAD PAGE	UNIT WIDTH	LOAD PAGE
92"	1-WIDE	45-1/2"-90"	—	45-1/2"-90"	—
	2-WIDE	25"-45-1/4"	12, 16	27"-45-1/4"	—
	3-WIDE	25"-30-1/4"	34, 40	27"-30-1/4"	20, 26, 34, 40

CHART NO. 3	
TIERS IN HEIGHT OF COMMERCIAL CONTAINER	
NO. OF TIERS	UNIT HEIGHT RANGE
	60" INSIDE HEIGHT CONTAINER
2	18-1/2" - 27"
1	27-1/4" - 54"

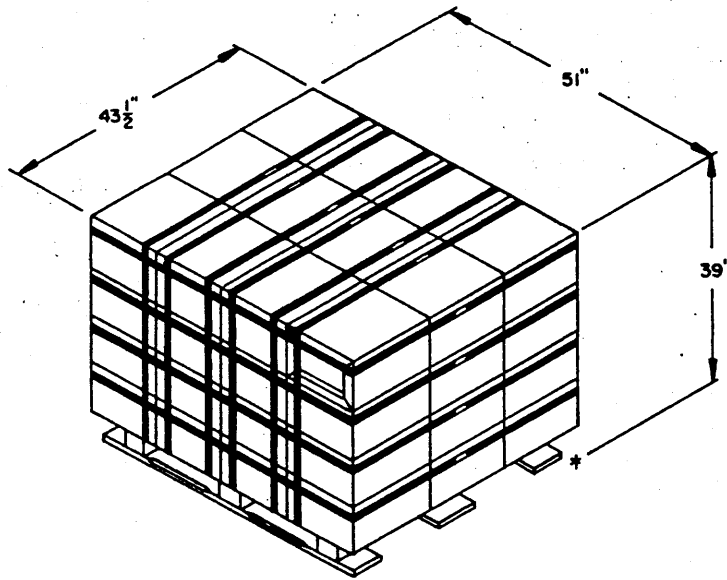
CHART NO. 2	
UNITS IN LENGTH OF 20' COMMERCIAL CONTAINER	
NUMBER UNITS LONG	UNIT SIZE RANGE
9	20-3/4" - 22-3/4"
8	23" - 25-3/4"
7	26" - 29-1/4"
6	29-1/2" - 34"
5	34-1/4" - 41"
4	41-1/4" - 51-1/4"
3	51-1/2" - 68-1/4"

CHART NO. 4	
PALLETIZED OR SKIDDED UNIT LENGTH/WIDTH COMBINATIONS	
UNIT LENGTH	MINIMUM TO MAXIMUM UNIT WIDTH
	CONTAINER WIDTH (92" INSIDE DIMENSION)
44"	38"-47-1/2"
43"	39"-48-1/2"
42"	40"-49-1/2"
41"	41"-50-1/2"
40"	42"-51-1/2"
39"	43"-52-1/2"
38"	44"-53-1/2"
37"	45"-54-1/2"
36"	46"-55-1/2"
35"	47"-56-1/2"
34"	48"-57-1/2"
33"	49"-58-1/2"
32"	50"-59-1/2"
31"	51"-60-1/2"
30"	52"-61-1/2"
29"	53"-62-1/2"
28"	54"-63-1/2"
27"	55"-64-1/2"

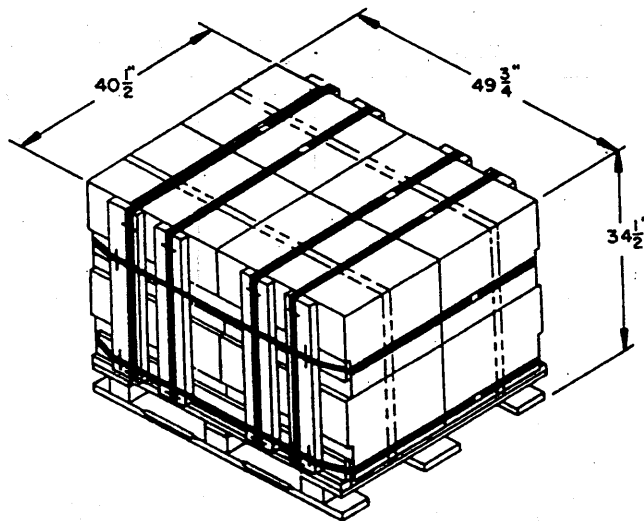
CHART NO. 5									
REQUIRED BEAMS/BEAM ASSEMBLIES PER LAYER FOR FORWARD/REAR BLOCKING ASSEMBLY									
LOAD WEIGHT IN LBS	2" X 6" BEAM MATERIAL			2" X 8" BEAM MATERIAL			2" X 10" BEAM MATERIAL		
	NO. BEAMS REQD	NO. BEAM ASSY REQD*	NO. BEAMS PER ASSY ●	NO. BEAMS REQD	NO. BEAM ASSY REQD*	NO. BEAMS PER ASSY ●	NO. BEAMS REQD	NO. BEAM ASSY REQD*	NO. BEAMS PER ASSY ●
6,100-8,000	4	2	2	3	3	1	2	2	1
8,100-12,000	6	2	3	4	2	2	2	2	1
12,100-16,000	8	2	4	6	2	3	3	3	1
16,100-20,000	10	2	5	6	2	3	4	2	2
20,100-24,000	12	3	4	8	2	4	4	2	2
24,100-28,000	14	2	7	8	2	4	6	2	3
28,100-32,000	16	2	8	9	3	3	6	2	3
32,100-34,000	18	3	6	10	2	5	6	2	3
34,100-36,000	18	3	6	10	2	5	6	2	3
36,100-38,000	20	4	5	12	3	4	8	2	4
38,100-40,000	20	4	5	12	3	4	8	2	4

● SEE SPECIAL NOTE 7 ON PAGE 4.

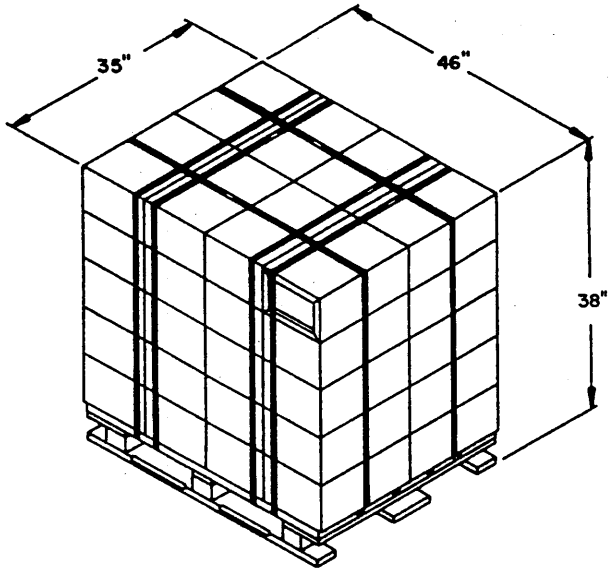
\*THE NUMBER OF BEAMS PER ASSEMBLY AND NUMBER OF BEAM ASSEMBLIES REQUIRED COMBINATIONS MAY BE ADJUSTED, AS APPROPRIATE, FOR THE ITEM/ITEMS BEING SHIPPED; I.E., IF ITEMS SUCH AS SEPARATE LOADING PROJECTILES ARE TO BE SHIPPED AND THE LOAD WEIGHT REQUIRES TWELVE 2" X 8" BEAMS TO BE USED, THEN ONLY TWO BEAM ASSEMBLIES WITH SIX BEAMS PER ASSEMBLY SHOULD BE USED IN LIEU OF WHAT IS SPECIFIED WITHIN THE CHART. SEE SPECIAL NOTE 6 ON PAGE 4 FOR ADDITIONAL GUIDANCE.



UNIT NO. 1  
 UNIT WEIGHT ----- 3,546 LBS (APPROX)  
 CUBE ----- 50.1 CU FT

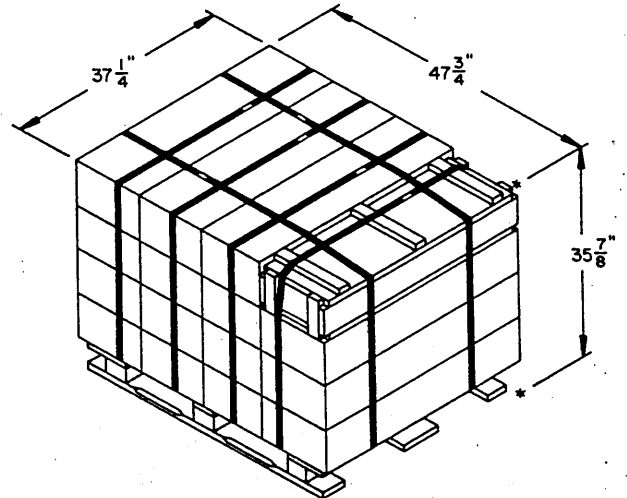


UNIT NO. 2  
 UNIT WEIGHT ----- 2,967 LBS (APPROX)  
 CUBE ----- 40.2 CU FT



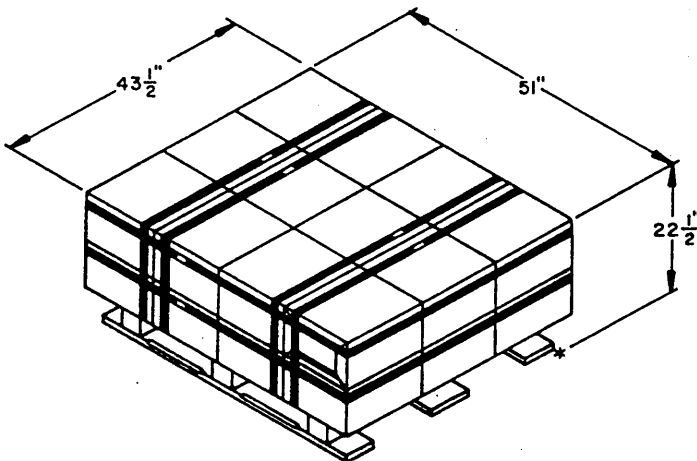
**UNIT NO. 1**

UNIT WEIGHT ----- 2,663 LBS (APPROX)  
 CUBE ----- 35.4 CU FT



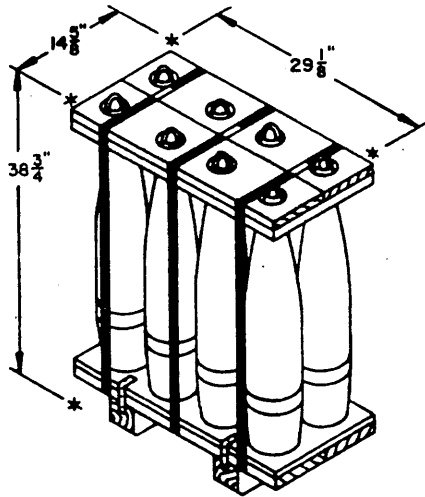
**UNIT NO. 2**

UNIT WEIGHT ----- 1,751 LBS (APPROX)  
 CUBE ----- 36.9 CU FT

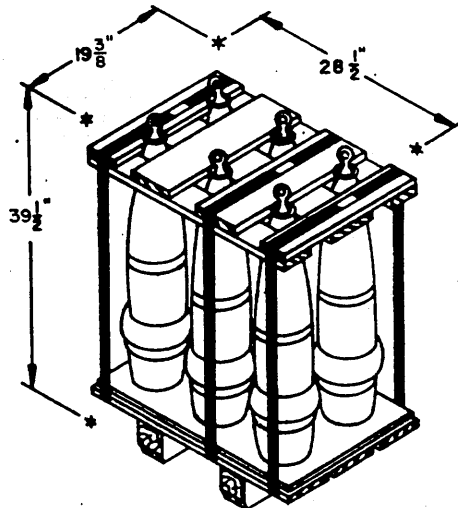


**UNIT NO. 3**

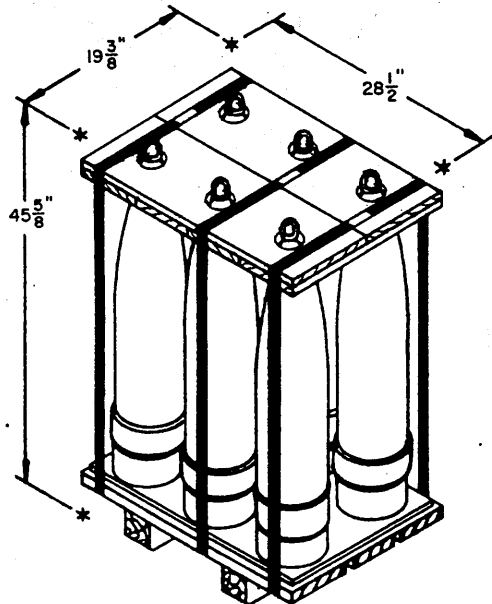
UNIT WEIGHT ----- 1,934 LBS (APPROX)  
 CUBE ----- 28.9 CU FT



**UNIT NO. 1**  
 ( 155MM SEPARATE LOADING PROJECTILES )  
 UNIT WEIGHT ----- 830 LBS ( APPROX )  
 CUBE ----- 9.6 CU FT



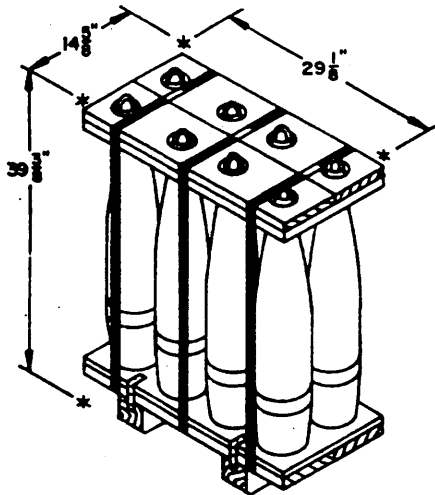
**UNIT NO. 2**  
 ( 8" SEPARATE LOADING PROJECTILES )  
 UNIT WEIGHT ----- 1,265 LBS ( APPROX )  
 CUBE ----- 12.6 CU FT



**UNIT NO. 3**  
 ( 8" SEPARATE LOADING PROJECTILES )  
 UNIT WEIGHT ----- 1,253 LBS ( APPROX )  
 CUBE ----- 14.6 CU FT

MIXED LOAD NO. 3 PALLET UNIT DETAILS

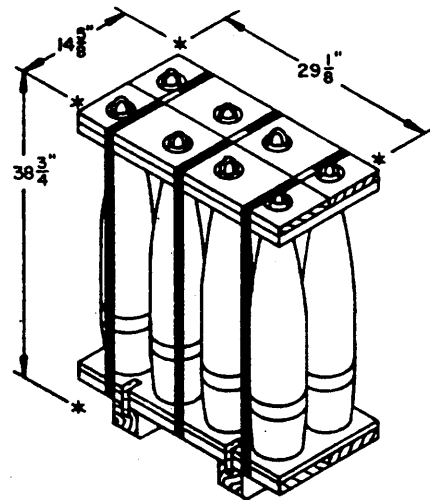




UNIT NO. 1

(155MM SEPARATE LOADING PROJECTILES)

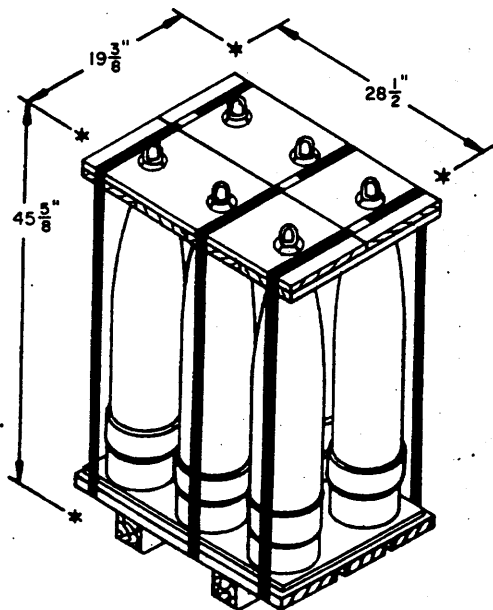
UNIT WEIGHT ----- 882 LBS (APPROX)  
 CUBE ----- 9.7 CU FT



UNIT NO. 2

(155MM SEPARATE LOADING PROJECTILES)

UNIT WEIGHT ----- 830 LBS (APPROX)  
 CUBE ----- 9.6 CU FT

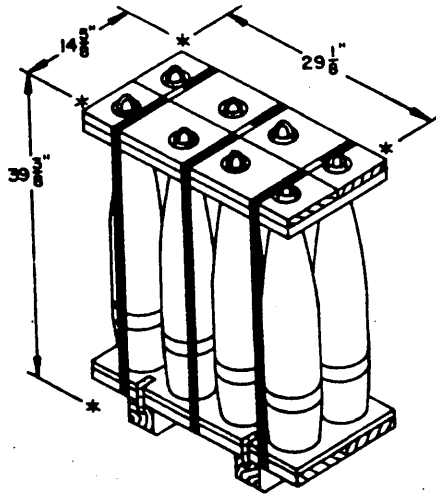


UNIT NO. 3

(8" SEPARATE LOADING PROJECTILES)

UNIT WEIGHT ----- 1,253 LBS (APPROX)  
 CUBE ----- 14.6 CU FT

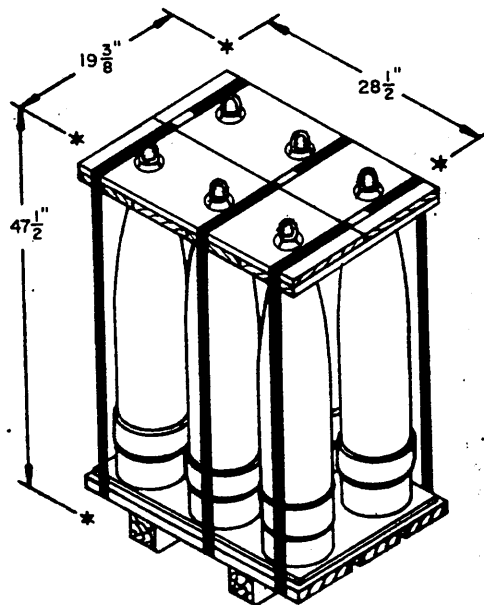
MIXED LOAD NO. 4 PALLET UNIT DETAILS



UNIT NO. 1

( 155MM SEPARATE LOADING PROJECTILES )

UNIT WEIGHT ----- 874 LBS ( APPROX )  
 CUBE ----- 9.7 CU FT

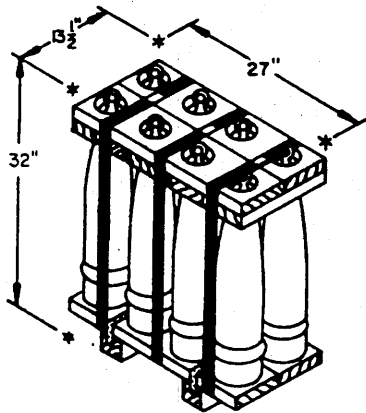


UNIT NO. 2

( 8" SEPARATE LOADING PROJECTILES )

UNIT WEIGHT ----- 1,288 LBS ( APPROX )  
 CUBE ----- 15.2 CU FT

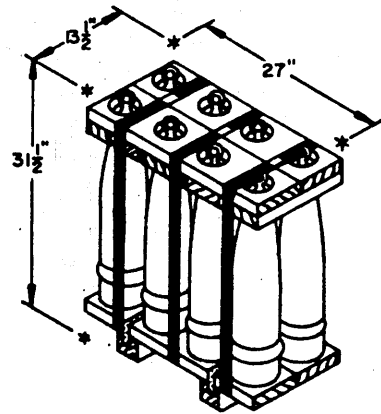
MIXED LOAD NO. 5 PALLET UNIT DETAILS



UNIT NO. 1

( 155MM SEPARATE LOADING PROJECTILES )

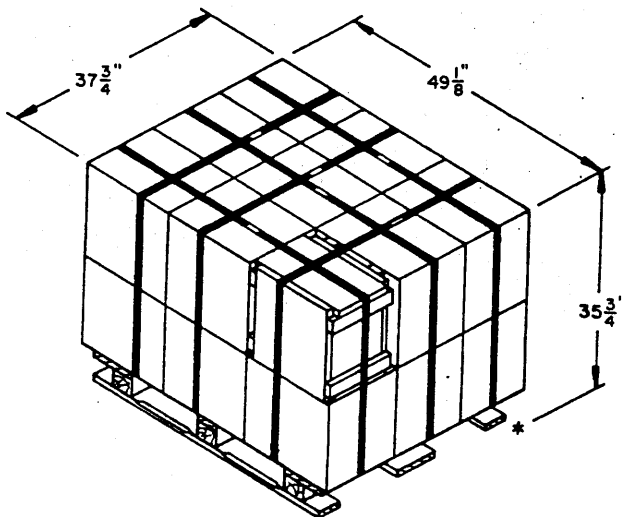
UNIT WEIGHT ----- 782 LBS ( APPROX )  
 CUBE ----- 6.8 CU FT



UNIT NO. 2

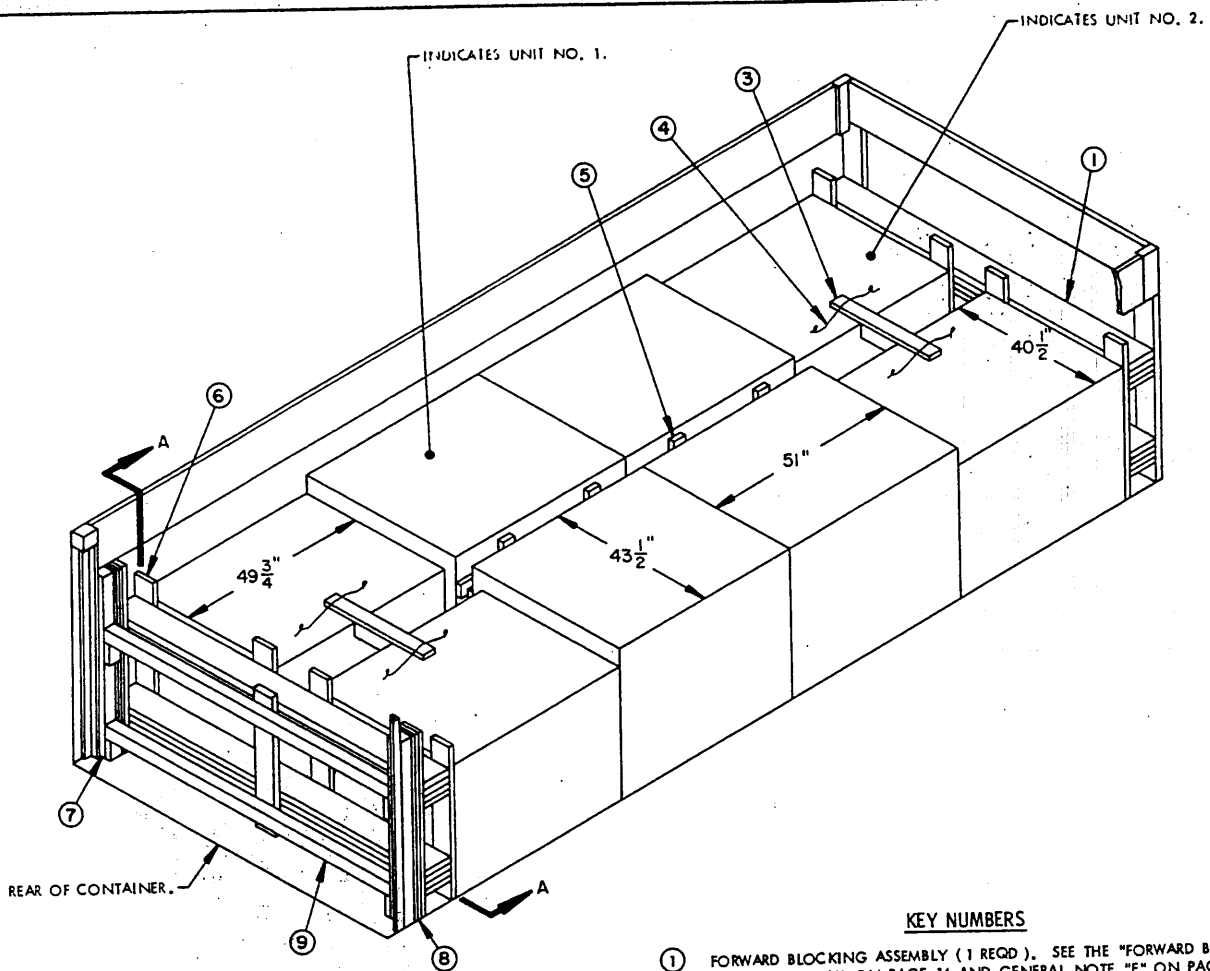
( 155MM SEPARATE LOADING PROJECTILES )

UNIT WEIGHT ----- 802 LBS ( APPROX )  
 CUBE ----- 6.6 CU FT



UNIT NO. 3

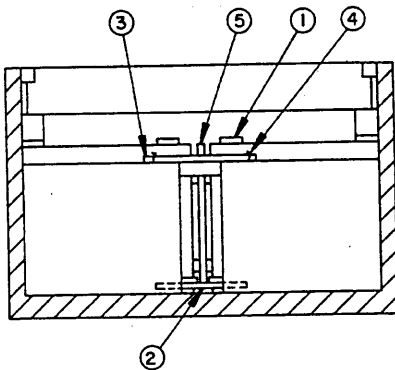
UNIT WEIGHT ----- 917 LBS ( APPROX )  
 CUBE ----- 38.4 CU FT



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 14 AND GENERAL NOTE "F" ON PAGE 2.
- ② ANTI-SWAY BRACE (2 REQD). SEE THE "ANTI-SWAY BRACE" DETAIL ON PAGE 14.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (2 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE" DETAIL ON PAGE 14.
- ④ TIE WIRE, NO. 14 GAGE WIRE 30" LONG (4 REQD). ATTACH ONE END TO A TIEDOWN STRAP, FORM A COMPLETE LOOP AROUND THE TOP-OF-LOAD ANTI-SWAY BRACE AND ATTACH THE OTHER END TO A SECOND UNITIZING STRAP.
- ⑤ CENTER FILL ASSEMBLY (2 REQD). SEE THE "CENTER FILL ASSEMBLY" DETAIL ON PAGE 15 AND GENERAL NOTE "D" ON PAGE 2.
- ⑥ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 15, AND GENERAL NOTE "F" ON PAGE 2.
- ⑦ DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" (2 REQD). SEE THE DETAIL ON PAGE 15 AND GENERAL NOTE "E" ON PAGE 2.
- ⑧ FILL MATERIAL, 6" WIDE BY 47-1/2" LONG MATERIAL (AS REQD). NAIL EACH PIECE TO THE REAR BLOCKING ASSEMBLY AND/OR LAMINATE TOGETHER W/4 NAILS OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL). CAUTION: DO NOT NAIL TO THE DOOR POST VERTICALS, PIECES MARKED ⑦.
- ⑨ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE A DRIVE FIT (REF: 7"-1-3/8") (2 REQD). TOENAIL TO THE 4" X 4" DOOR POST VERTICAL PIECES W/2-12d NAILS AT EACH END. SEE THE "BEVEL CUT" DETAIL ON PAGE 47.



SECTION A-A

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES:**

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY, TWO TOP-OF-LOAD ANTI-SWAY BRACES, TWO CENTER FILL ASSEMBLIES, AND ONE REAR BLOCKING ASSEMBLY.
2. INSTALL FORWARD BLOCKING ASSEMBLY.
3. LOAD TWO PALLET UNITS (UNIT NO. 2).
4. INSTALL ONE TOP-OF-LOAD ANTI-SWAY BRACE WITH TIE WIRES.
5. INSTALL ONE LOWER ANTI-SWAY BRACE. (THIS ASSEMBLY MUST BE FABRICATED IN PLACE, BETWEEN THE PALLET UNITS.)
6. LOAD ONE PALLET UNIT (UNIT NO. 1)
7. INSTALL ONE CENTER FILL ASSEMBLY.
8. REPEAT STEP 6.
9. REPEAT STEPS 6, 7, AND 8.
10. REPEAT STEPS 3,4, AND 5.
11. INSTALL REAR BLOCKING ASSEMBLY.
12. INSTALL DOOR POST VERTICALS.
13. INSTALL DOOR SPANNER PIECES AFTER CLOSING AND FASTENING CONTAINER DOOR HEADER.
14. INSTALL FILL MATERIAL BETWEEN REAR BLOCKING ASSEMBLY AND DOOR POST VERTICALS.

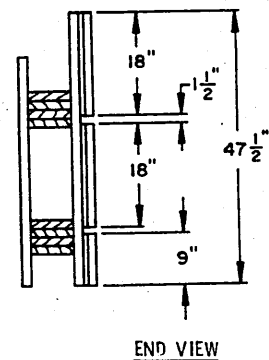
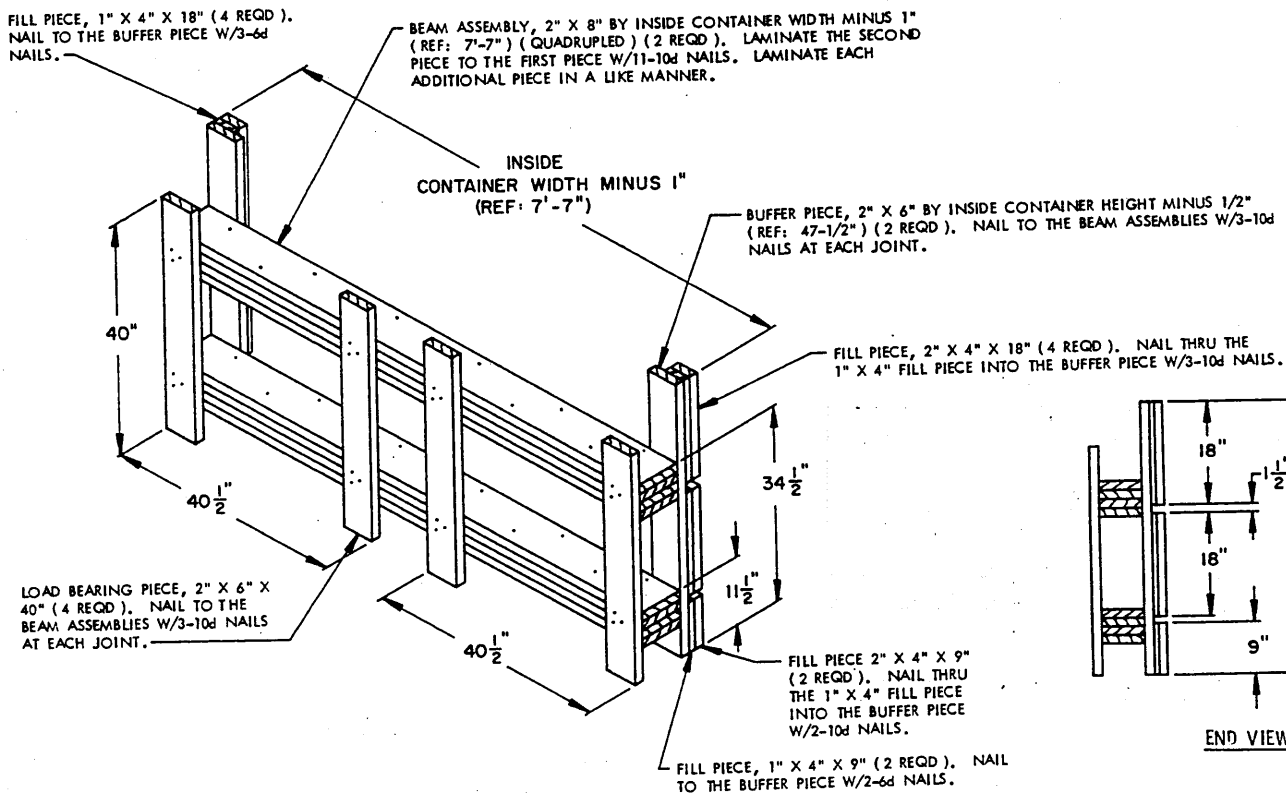
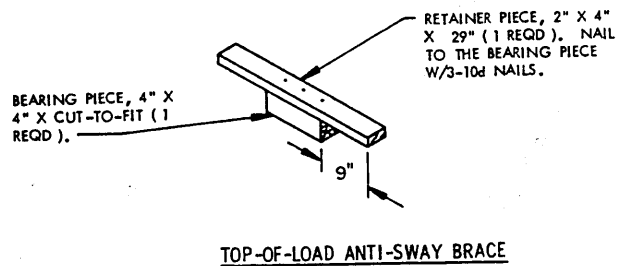
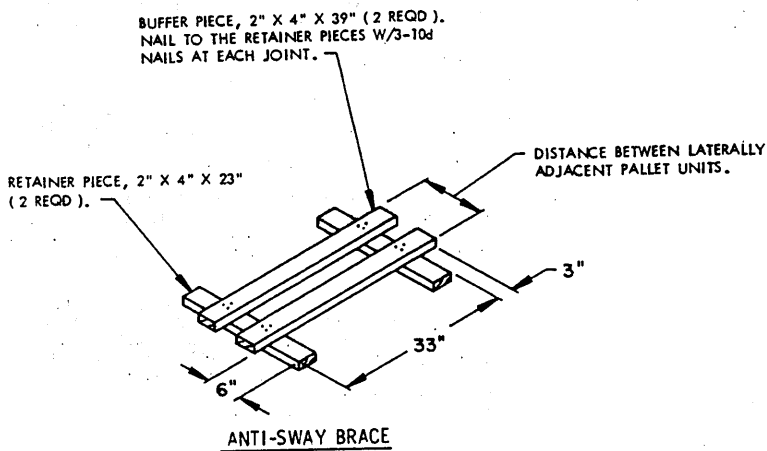
**SPECIAL NOTES:**

1. THE PALLETIZED UNITS SHOWN IN THE TYPICAL LOAD ON PAGE 12 ARE BASED ON UNIT NUMBERS 1 AND 2 SHOWN ON PAGE 6. THE DEPICTED LOADING PROCEDURES ARE ALSO APPLICABLE FOR PALLETIZED UNITS OF OTHER DIMENSIONS. REFER TO THE "LOAD PLANNING GUIDANCE" AND "LOAD PLANNING CHARTS" ON PAGES 4 AND 5 FOR ADDITIONAL GUIDANCE.
2. EXCESSIVE SLACK ACROSS THE WIDTH OF A LOAD CAN BE ELIMINATED BY LAMINATING ADDITIONAL HORIZONTAL PIECES TO THE CENTER FILL ASSEMBLIES, OR BY INCREASING THE SWAY BRACING SIZES, AS APPROPRIATE.
3. FOR EASE IN THE INSTALLATION OF THE FORWARD BLOCKING ASSEMBLY INTO THE COMMERCIAL CONTAINER, THE OUTER TWO LOAD BEARING PIECES WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION.
4. THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION. AFTER THE REAR BLOCKING ASSEMBLY HAS BEEN CENTERED IN THE CONTAINER, THE BUFFER PIECES WILL BE POSITIONED SO AS TO CONTACT THE CONTAINER SIDEWALL AND WILL BE NAILED AS SPECIFIED WITHIN THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 15.

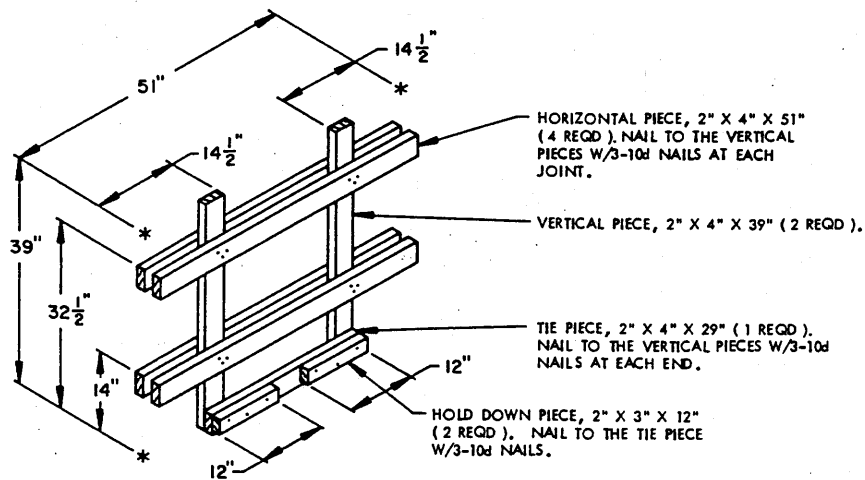
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
2" X 3"	4	2
2" X 4"	80	53
2" X 6"	62	62
2" X 8"	122	162
4" X 4"	24	32
NAILS	NO. REQD	POUNDS
6d (2")	16	NIL
10d (3")	360	5-1/2
12d (3-1/4")	8	1/4
WIRE, NO. 14 GAGE ----- 10' REQD ----- 1/4 LB		

**LOAD AS SHOWN**

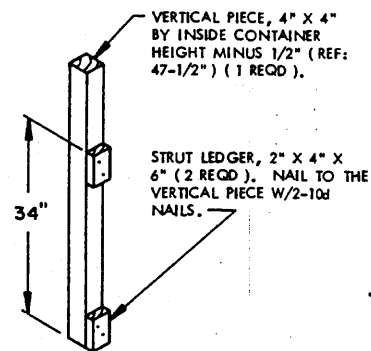
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT NO. 1	4	14,184 LBS
PALLET UNIT NO. 2	4	11,868 LBS
DUNNAGE		628 LBS
CONTAINER		4,365 LBS
TOTAL WEIGHT		31,045 LBS



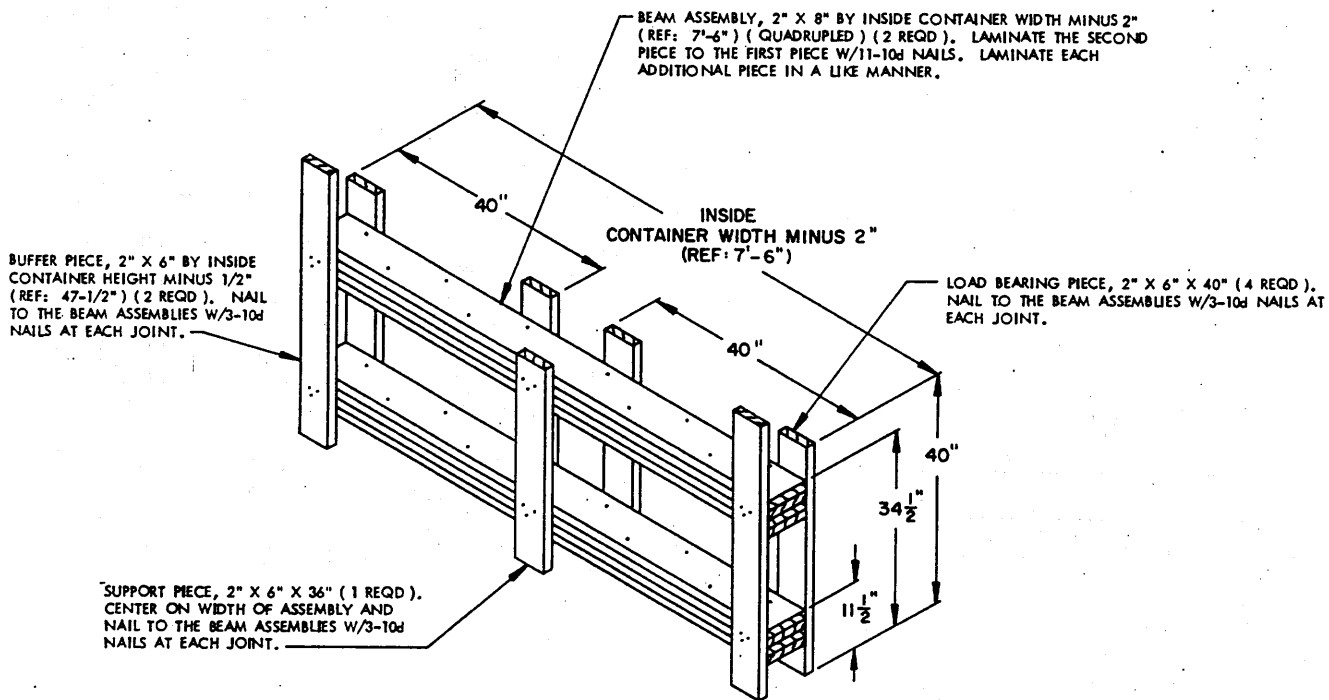
**FORWARD BLOCKING ASSEMBLY**  
(SEE SPECIAL NOTE 3 ON PAGE 13.)



**CENTER FILL ASSEMBLY**

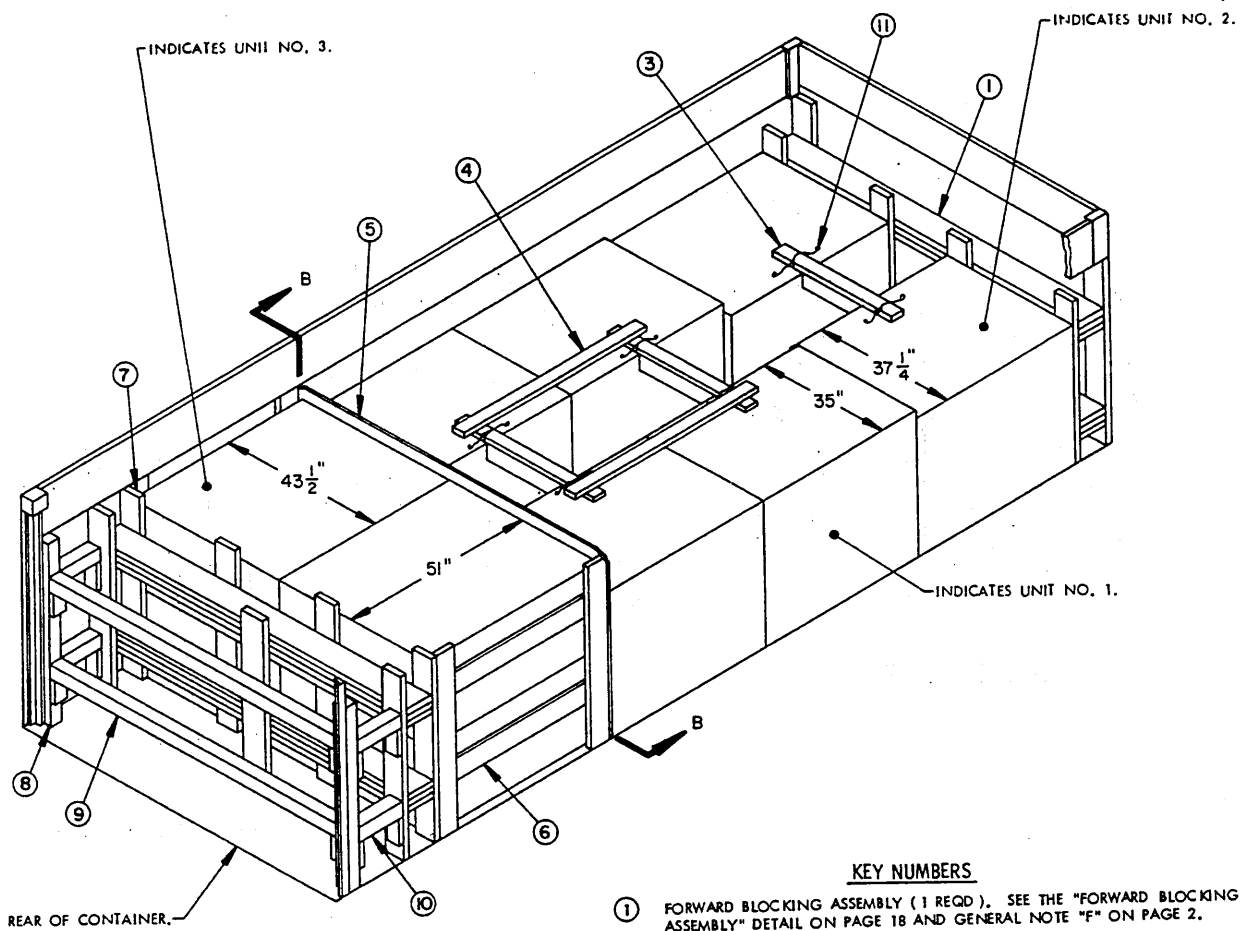


**DOOR POST VERTICAL**

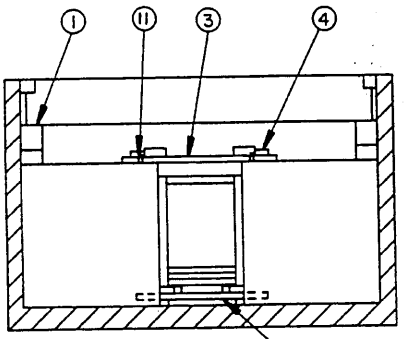


**REAR BLOCKING ASSEMBLY**

(SEE SPECIAL NOTE 4 ON PAGE 13.)



ISOMETRIC VIEW



SECTION B-B

**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 18 AND GENERAL NOTE "F" ON PAGE 2.
- ② ANTI-SWAY BRACE (3 REQD). SEE THE "ANTI-SWAY BRACE" DETAIL ON PAGE 18.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (3 REQD). SEE THE "TOP-OF-LOAD ANTI-SWAY BRACE" DETAIL ON PAGE 18.
- ④ TIE PIECE, 2" X 4" X 54" (2 REQD). NAIL TO THE TOP-OF-LOAD ANTI-SWAY BRACES W/2-10d NAILS AT EACH JOINT.
- ⑤ LOAD BEARING GATE (1 REQD). SEE THE "LOAD BEARING GATE" DETAIL ON PAGE 18.
- ⑥ SIDE FILL (2 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 19 AND GENERAL NOTE "D" ON PAGE 2.
- ⑦ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 19 AND GENERAL NOTE "F" ON PAGE 2.
- ⑧ DOOR POST VERTICAL (2 REQD). SEE THE "DOOR POST VERTICAL" DETAIL ON PAGE 19 AND "TYPICAL DETAIL A" ON PAGE 47.
- ⑨ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR DRIVE FIT (REF: 7"-1-3/8") (2 REQD). TOENAIL TO THE 4" X 4" DOOR POST VERTICAL PIECES W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47. AFTER INSTALLING THE DOOR SPANNERS, THE STRUTS, PIECES MARKED ⑩, ARE TO BE INSTALLED.
- ⑩ STRUT, 4" X 4" BY CUT-TO-FIT (4 REQD). TOENAIL TO THE BUFFER PIECES OF THE "REAR BLOCKING ASSEMBLY" AND THE "DOOR POST VERTICAL" W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47.
- ⑪ TIE WIRE, NO. 14 GAGE WIRE 30" LONG (6 REQD). ATTACH ONE END TO A TIEDOWN STRAP, FORM A COMPLETE LOOP AROUND THE TOP-OF-LOAD ANTI-SWAY BRACE AND ATTACH THE OTHER END TO A SECOND UNITIZING STRAP.



**RECOMMENDED SEQUENTIAL LOADING PROCEDURES:**

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY, THREE TOP-OF-LOAD ANTI-SWAY BRACES, ONE LOAD BEARING GATE, TWO SIDE FILL ASSEMBLIES, AND ONE REAR BLOCKING ASSEMBLY.
2. INSTALL FORWARD BLOCKING ASSEMBLY.
3. LOAD TWO PALLET UNITS (UNIT NO. 2).
4. INSTALL ONE TOP-OF-LOAD ANTI-SWAY BRACE WITH TIE WIRES AND ONE LOWER ANTI-SWAY BRACE (FABRICATED IN PLACE, BETWEEN THE PALLET UNITS).
5. LOAD TWO PALLET UNITS (UNIT NO. 1).
6. REPEAT STEP 4.
7. REPEAT STEPS 5 AND 6.
8. INSTALL TWO TIE PIECES AND ONE LOAD BEARING GATE.
9. INSTALL ONE SIDE FILL ASSEMBLY AND LOAD TWO PALLET UNITS (UNIT NO. 3).
10. REPEAT STEP 9.
11. INSTALL REAR BLOCKING ASSEMBLY.
12. INSTALL DOOR POST VERTICALS.
13. CLOSE AND FASTEN CONTAINER DOOR HEADER.
14. INSTALL DOOR SPANNER PIECES AND STRUTS.

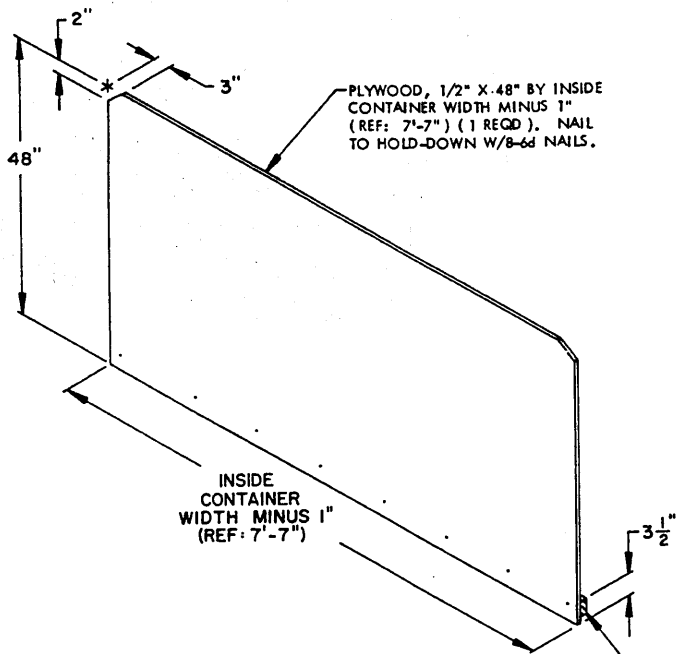
**SPECIAL NOTES:**

1. THE PALLETIZED UNITS SHOWN IN THE TYPICAL LOAD ON PAGE 16 ARE BASED ON UNIT NUMBERS 1, 2, AND 3 SHOWN ON PAGE 7. THE DEPICTED LOADING PROCEDURES ARE ALSO APPLICABLE FOR PALLETIZED UNITS OF OTHER DIMENSIONS. REFER TO THE "LOAD PLANNING CHARTS" AND "LOAD PLANNING GUIDANCE" ON PAGES 4 AND 5 FOR ADDITIONAL GUIDANCE.
2. EXCESSIVE SLACK ACROSS THE WIDTH OF A LOAD CAN BE ELIMINATED BY LAMINATING ADDITIONAL TIE PIECES TO THE SIDE FILL ASSEMBLIES, OR BY INCREASING THE SWAY BRACING SIZES, AS APPROPRIATE.
3. FOR EASE IN THE INSTALLATION OF THE FORWARD BLOCKING ASSEMBLY INTO THE COMMERCIAL CONTAINER, THE OUTER TWO LOAD BEARING PIECES WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION.
4. THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION. AFTER THE REAR BLOCKING ASSEMBLY HAS BEEN CENTERED IN THE CONTAINER, THE BUFFER PIECES WILL BE POSITIONED SO AS TO CONTACT THE CONTAINER SIDEWALL AND WILL BE NAILED AS SPECIFIED WITHIN THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 19.

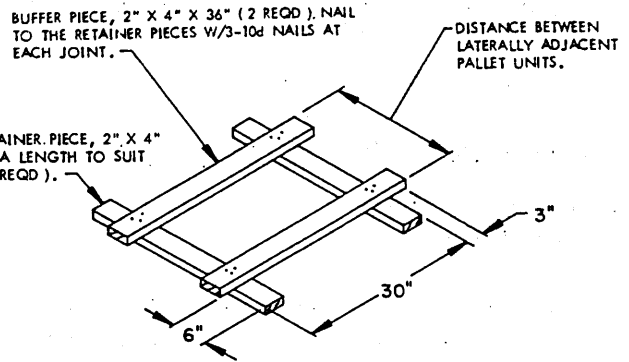
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	17	9
2" X 3"	8	4
2" X 4"	67	45
2" X 6"	68	68
2" X 8"	91	122
4" X 4"	32	43
NAILS	NO. REQD	POUNDS
6d (2")	48	1/2
10d (3")	275	4-1/4
12d (3-1/4")	24	1/2
PLYWOOD, 1/2" ----- 31 SQ FT REQD -----		42 LBS
WIRE, NO. 14 GAGE ----- 15' REQD -----		1/4 LB

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT NO. 1 -----	4 -----	10,652 LBS
PALLET UNIT NO. 2 -----	2 -----	3,502 LBS
PALLET UNIT NO. 3 -----	4 -----	7,736 LBS
DUNNAGE -----		636 LBS
CONTAINER -----		4,365 LBS
TOTAL WEIGHT -----		26,891 LBS

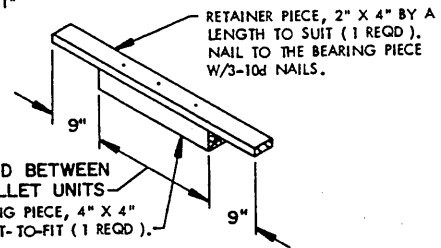


**LOAD BEARING GATE**



**ANTI-SWAY BRACE**

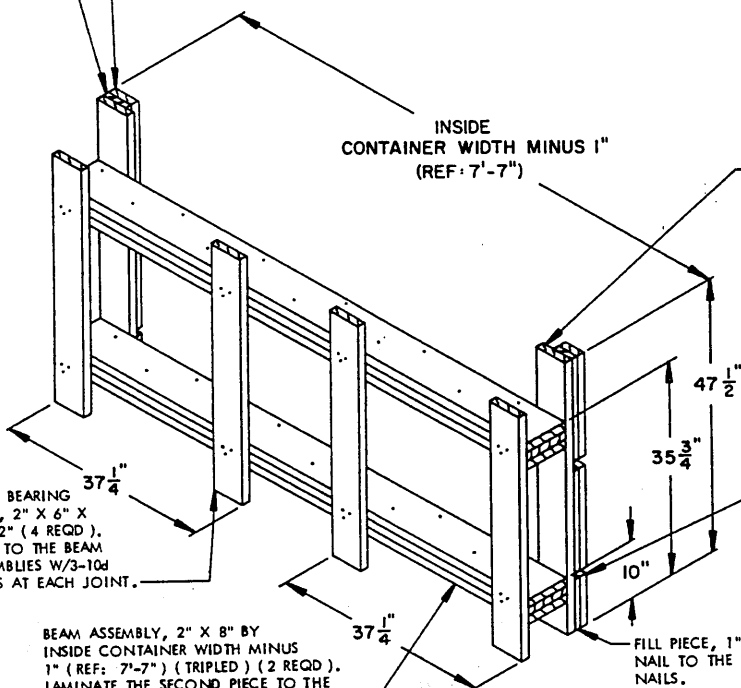
HOLD DOWN, 2" X 3" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (1 REQD.).



**TOP-OF-LOAD ANTI-SWAY BRACE**

FILL PIECE, 1" X 4" X 18" (4 REQD.). NAIL TO THE BUFFER PIECE W/3-6d NAILS.

FILL PIECE, 2" X 4" X 18" (4 REQD.). NAIL THRU THE 1" X 4" FILL PIECE INTO THE BUFFER PIECE W/3-10d NAILS.



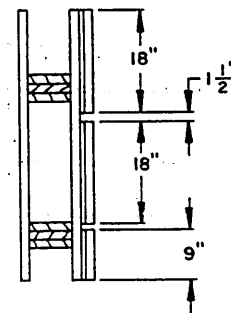
LOAD BEARING PIECE, 2" X 6" X 47-1/2" (4 REQD.). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

BEAM ASSEMBLY, 2" X 8" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (TRIPLED) (2 REQD.). LAMINATE THE SECOND PIECE TO THE FIRST W/11-10d NAILS. LAMINATE EACH ADDITIONAL PIECE IN A LIKE MANNER.

BUFFER PIECE, 2" X 6" BY INSIDE CONTAINER HEIGHT MINUS 1/2" (REF: 47-1/2") (2 REQD.). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

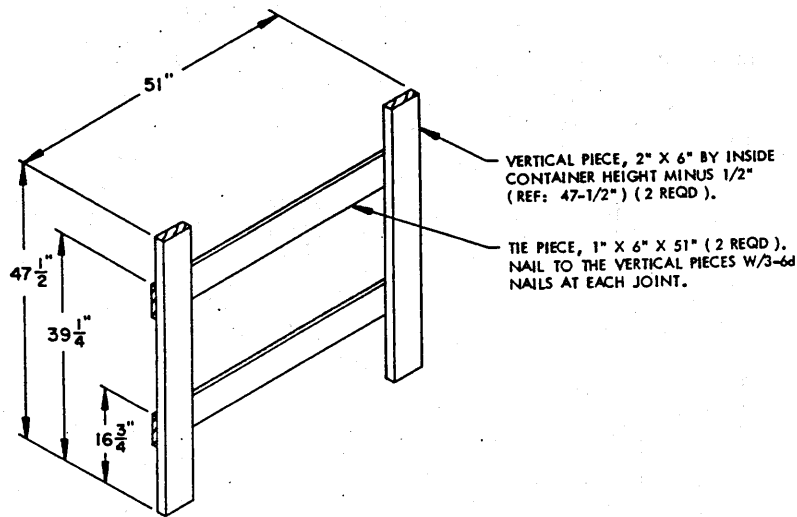
FILL PIECE, 2" X 4" X 9" (2 REQD.). NAIL THRU THE 1" X 4" FILL PIECE INTO THE BUFFER PIECE W/2-10d NAILS.

FILL PIECE, 1" X 4" X 9" (2 REQD.). NAIL TO THE BUFFER PIECE W/2-6d NAILS.

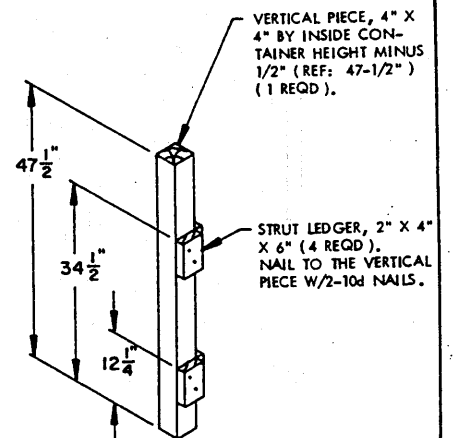


**END VIEW**

**FORWARD BLOCKING ASSEMBLY**  
(SEE SPECIAL NOTE 3 ON PAGE 17.)  
**MIXED LOAD NO. 2 DETAILS**



**SIDE FILL ASSEMBLY**

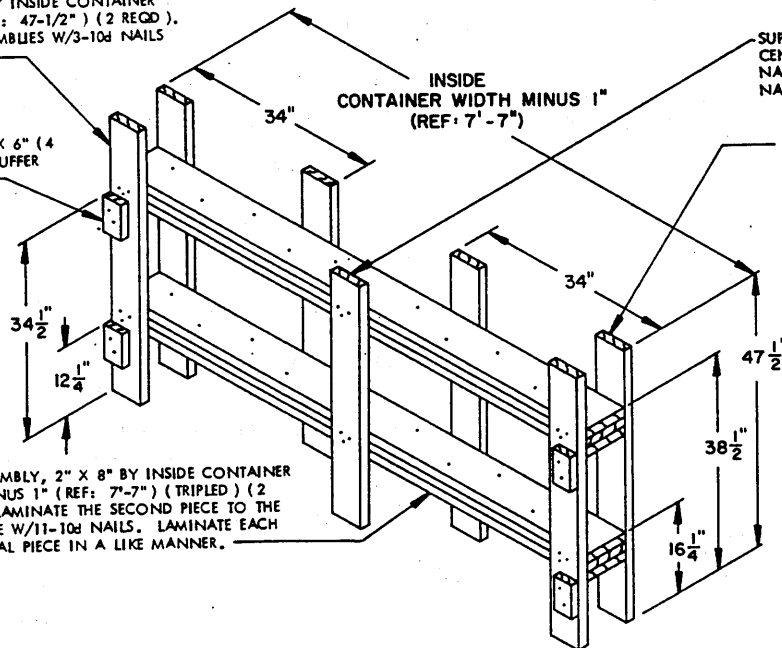


**DOOR POST VERTICAL**

BUFFER PIECE, 2" X 6" BY INSIDE CONTAINER HEIGHT MINUS 1/2" (REF: 47-1/2") (2 REQD). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

STRUT LEDGER, 2" X 4" X 6" (4 REQD). NAIL TO THE BUFFER PIECES W/2-10d NAILS.

BEAM ASSEMBLY, 2" X 8" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (TRIPLED) (2 REQD). LAMINATE THE SECOND PIECE TO THE FIRST PIECE W/11-10d NAILS. LAMINATE EACH ADDITIONAL PIECE IN A LIKE MANNER.

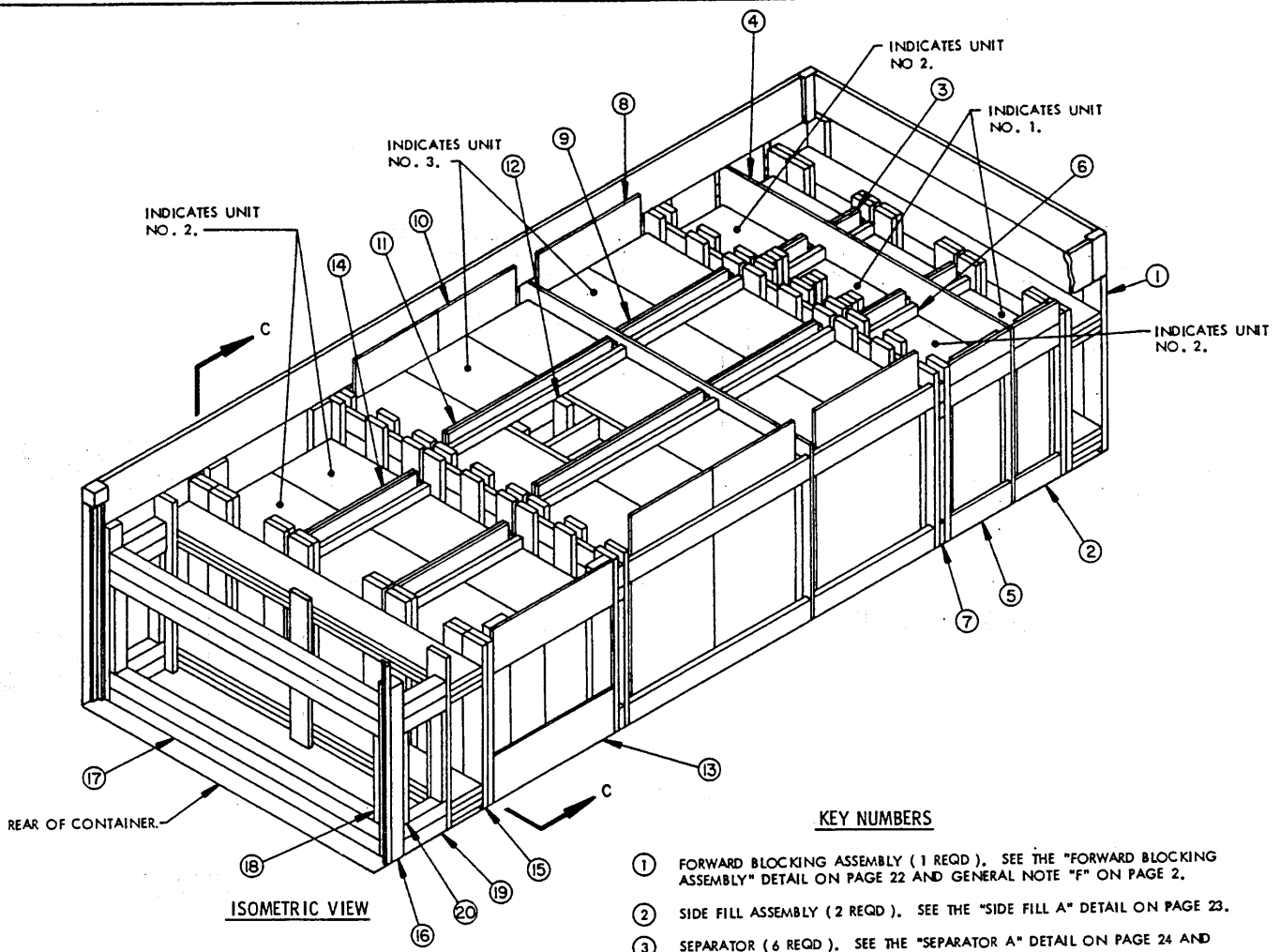


SUPPORT PIECE, 2" X 6" X 42" (1 REQD). CENTER ON WIDTH OF ASSEMBLY AND NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

LOAD BEARING PIECE, 2" X 6" X 47-1/2" (4 REQD). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

**REAR BLOCKING ASSEMBLY**

(SEE SPECIAL NOTE 4 ON PAGE 17.)



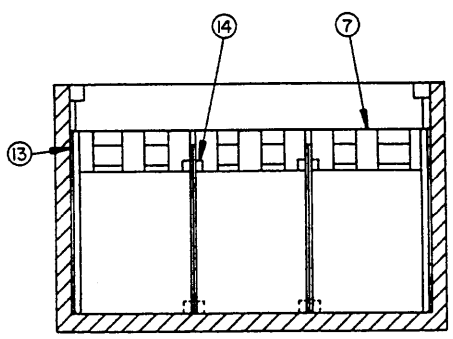
ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 22 AND GENERAL NOTE "F" ON PAGE 2.
- ② SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL A" DETAIL ON PAGE 23.
- ③ SEPARATOR (6 REQD). SEE THE "SEPARATOR A" DETAIL ON PAGE 24 AND GENERAL NOTE "D" ON PAGE 2.
- ④ LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE A" DETAIL ON PAGE 25.
- ⑤ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL B" DETAIL ON PAGE 23.
- ⑥ SEPARATOR (2 REQD). SEE THE "SEPARATOR B" DETAIL ON PAGE 24 AND GENERAL NOTE "D" ON PAGE 2.
- ⑦ LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 25.
- ⑧ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL C" DETAIL ON PAGE 23.
- ⑨ SEPARATOR (4 REQD). SEE THE "SEPARATOR C" DETAIL ON PAGE 24 AND GENERAL NOTE "D" ON PAGE 2.
- ⑩ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL D" DETAIL ON PAGE 23.
- ⑪ SEPARATOR (4 REQD). SEE THE "SEPARATOR D" DETAIL ON PAGE 24 AND GENERAL NOTE "D" ON PAGE 2.
- ⑫ FILLER ASSEMBLY (1 REQD). SEE THE "FILLER ASSEMBLY" DETAIL ON PAGE 25.
- ⑬ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL E" DETAIL ON PAGE 23.
- ⑭ SEPARATOR (4 REQD). SEE THE "SEPARATOR E" DETAIL ON PAGE 24 AND GENERAL NOTE "D" ON PAGE 2.
- ⑮ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 22 AND GENERAL NOTE "F" ON PAGE 2.
- ⑯ DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" (2 REQD). SEE THE "TYPICAL DETAIL A" ON PAGE 47 AND GENERAL NOTE "E" ON PAGE 2.
- ⑰ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7-1-3/8") (4 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47.
- ⑱ DOOR SPANNER SUPPORT PIECE, 2" X 4" X 25" (2 REQD). NAIL TO A DOOR POST VERTICAL W/4-10d NAILS AFTER THE LOWER DOOR SPANNER PIECES ARE IN POSITION.
- ⑳ STRUT, 4" X 4" BY CUT-TO-FIT (8 REQD). TOENAIL TO THE BUFFER PIECES OF THE "REAR BLOCKING ASSEMBLY" AND THE "DOOR POST VERTICAL" W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47.

(KEY NUMBERS CONTINUED)

⑳ STRUT SUPPORT PIECE, 2" X 4" X 25" (4 REQD). NAIL TO THE BUFFER PIECE OF THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICAL W/4-10d NAILS AFTER THE LOWER STRUTS ARE IN POSITION.



SECTION C-C

(CONTINUED AT LEFT)

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES:**

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
2. PREFABRICATE THE FOLLOWING:
  - A. TWO EACH OF SIDE FILL ASSEMBLIES "A", "B", "C", "D" AND "E".
  - B. SIX SEPARATORS "A" AND FOUR EACH OF SEPARATORS "B", "C", "D" AND "E".
  - C. TWO LOAD BEARING GATES "A" AND TWO LOAD BEARING GATES "B".
  - D. ONE FILLER ASSEMBLY.
3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE FILL "A" ASSEMBLIES.
4. LOAD THREE PALLET UNITS (UNIT NO. 1) AND INSTALL FOUR SEPARATOR "A" ASSEMBLIES.
5. INSTALL ONE LOAD BEARING GATE "A" AND TWO SIDE FILL "B" ASSEMBLIES.
6. LOAD TWO PALLET UNITS (UNIT NO. 2) AGAINST SIDE FILL ASSEMBLIES, INSTALL TWO SEPARATOR "B" ASSEMBLIES AND TWO SEPARATOR "A" ASSEMBLIES, AND LOAD ONE PALLET UNIT (UNIT NO. 1).
7. INSTALL ONE LOAD BEARING GATE "B" (WITH FILL PIECES ATTACHED) AND TWO SIDE FILL "C" ASSEMBLIES.
8. LOAD SIX PALLET UNITS (UNIT NO. 3) AND INSTALL FOUR SEPARATOR "C" ASSEMBLIES.
9. INSTALL ONE LOAD BEARING GATE "A" AND TWO SIDE FILL "D" ASSEMBLIES.
10. LOAD EIGHT PALLET UNITS (UNIT NO. 3) AND INSTALL ONE FILLER ASSEMBLY AND FOUR SEPARATOR "D" ASSEMBLIES.
11. INSTALL ONE LOAD BEARING GATE "B" AND TWO SIDE FILL "E" ASSEMBLIES.
12. LOAD SIX PALLET UNITS (UNIT NO. 2) AND INSTALL FOUR SEPARATOR "E" ASSEMBLIES.
13. INSTALL REAR BLOCKING ASSEMBLY.
14. INSTALL THE TWO DOOR POST VERTICALS.
15. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION AFTER CLOSING AND FASTENING THE CONTAINER DOOR HEADER.
16. INSTALL THE STRUTS AND STRUT SUPPORT PIECES BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
17. INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNER PIECES.

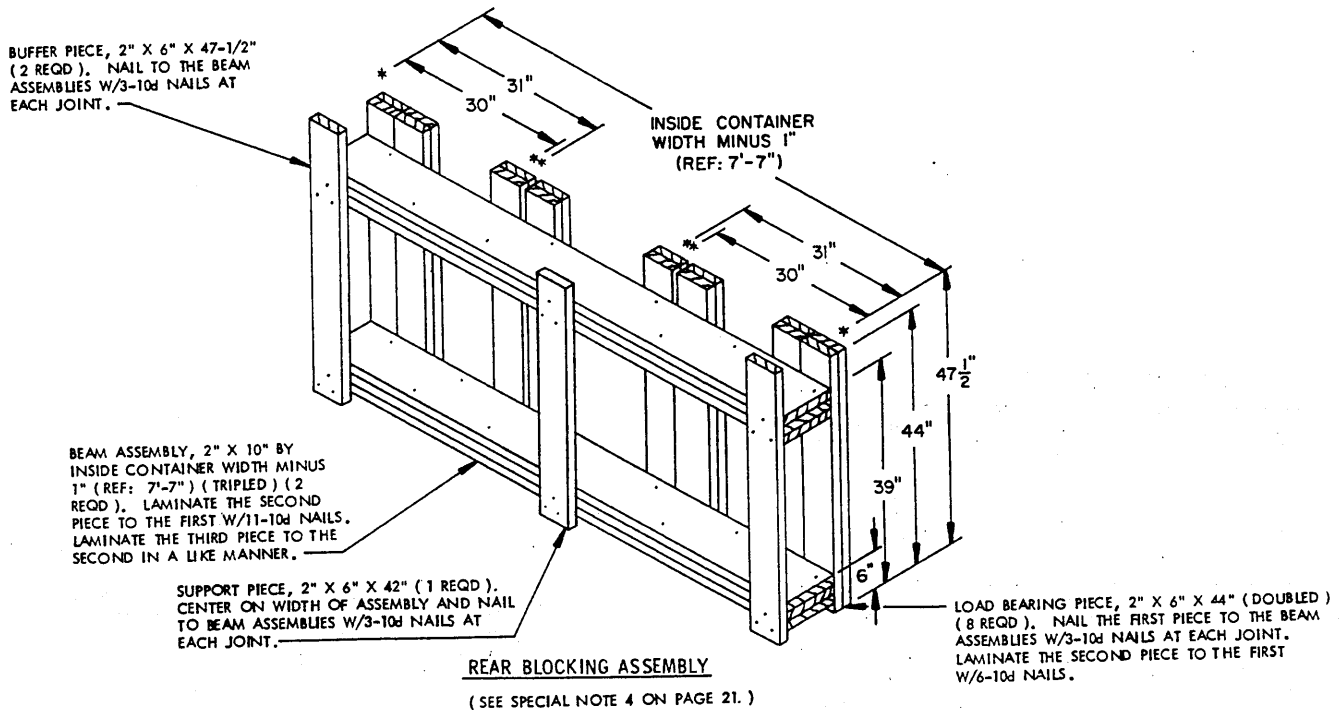
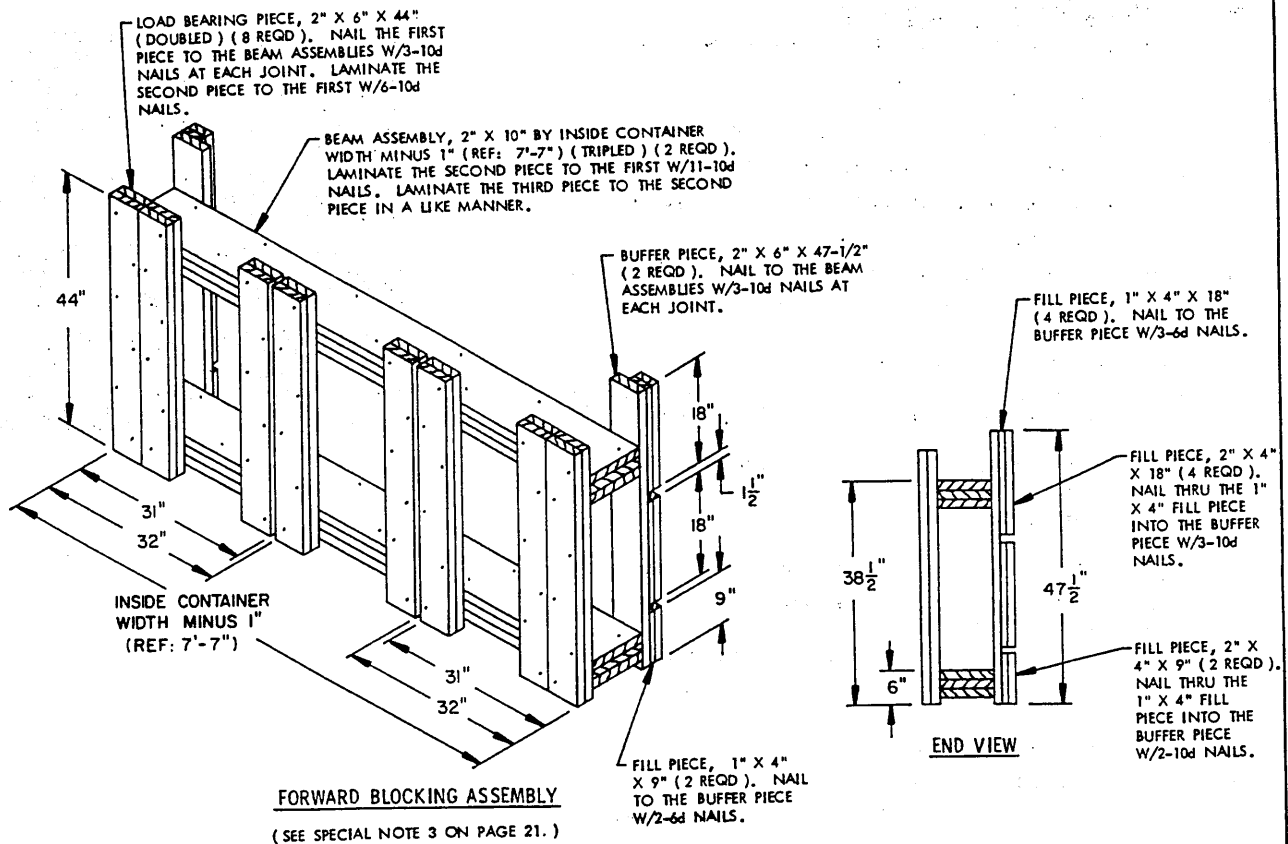
**SPECIAL NOTES:**

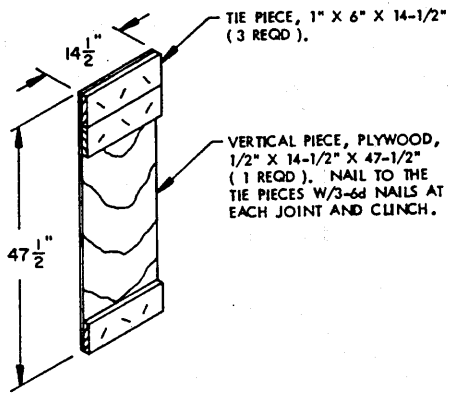
1. THE PALLETIZED SEPARATE LOADING PROJECTILE UNITS SHOWN IN THE TYPICAL LOAD ON PAGE 20 ARE BASED ON UNIT NUMBERS 1, 2, AND 3 SHOWN ON PAGE 8. THE DEPICTED LOADING PROCEDURES ARE ALSO APPLICABLE FOR PALLETIZED UNITS OF OTHER DIMENSIONS. REFER TO THE "LOAD PLANNING GUIDANCE" AND "LOAD PLANNING CHARTS" ON PAGES 4 AND 5 FOR ADDITIONAL GUIDANCE.
2. EXCESSIVE SLACK ACROSS THE WIDTH OF A LOAD CAN BE ELIMINATED BY LAMINATING ADDITIONAL VERTICAL PIECES TO THE SEPARATOR ASSEMBLIES.
3. FOR EASE IN THE INSTALLATION OF THE FORWARD BLOCKING ASSEMBLY INTO THE COMMERCIAL CONTAINER, THE OUTER TWO LOAD BEARING PIECES WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION.
4. THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION. AFTER THE REAR BLOCKING ASSEMBLY HAS BEEN CENTERED IN THE CONTAINER, THE BUFFER PIECES WILL BE POSITIONED SO AS TO CONTACT THE CONTAINER SIDEWALL AND WILL BE NAILED AS SPECIFIED WITHIN THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 22.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	8	4
2" X 3"	101	51
2" X 4"	86	57
2" X 6"	344	344
2" X 10"	91	152
4" X 4"	49	65
NAILS	NO. REQD	POUNDS
6d (2")	128	3/4
8d (2-1/2")	168	2
10d (3")	797	12-1/4
12d (3-1/4")	48	1
PLYWOOD, 1/2"	317 SQ FT REQD	435 LBS

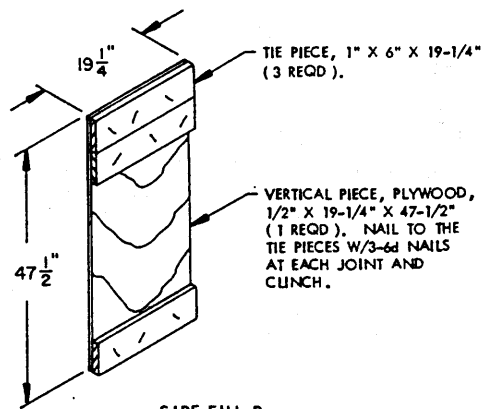
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT NO. 1	4	3,320 LBS
PALLET UNIT NO. 2	8	10,120 LBS
PALLET UNIT NO. 3	14	17,542 LBS
DUNNAGE		1,803 LBS
CONTAINER		4,365 LBS
<b>TOTAL WEIGHT</b>		<b>37,150 LBS</b>

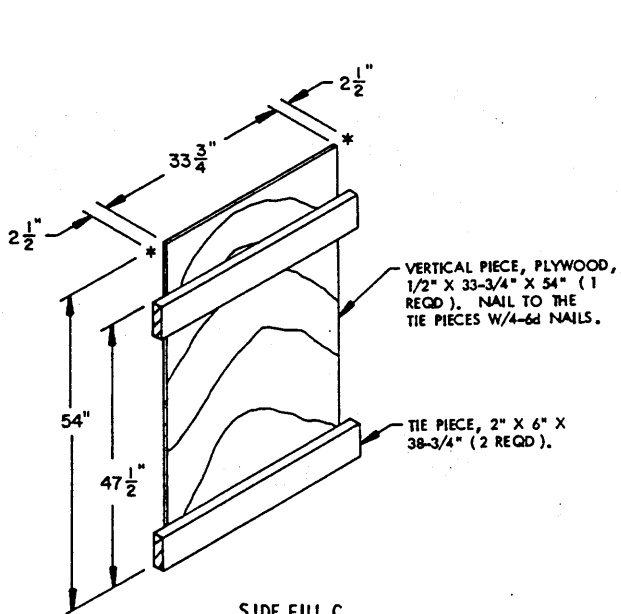




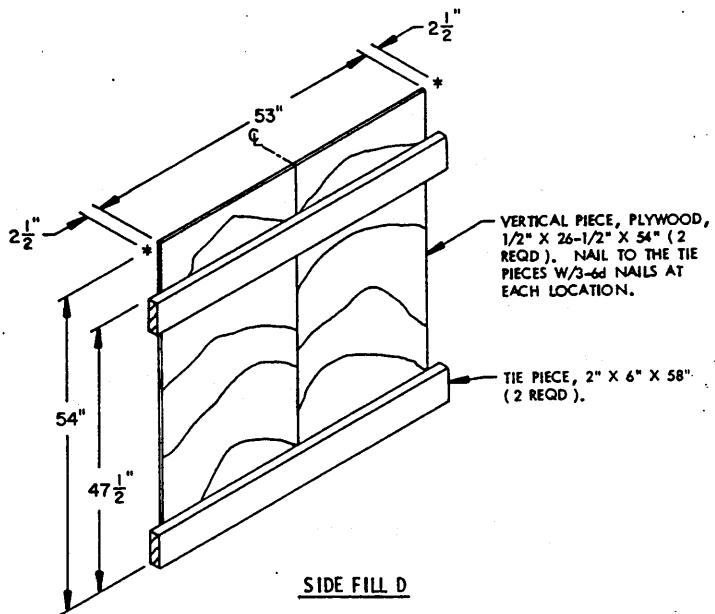
SIDE FILL A



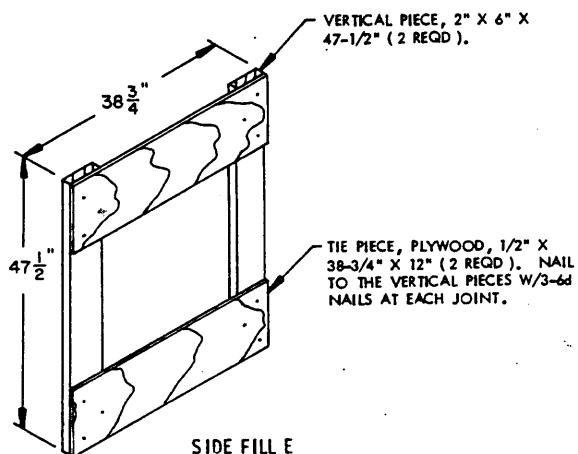
SIDE FILL B



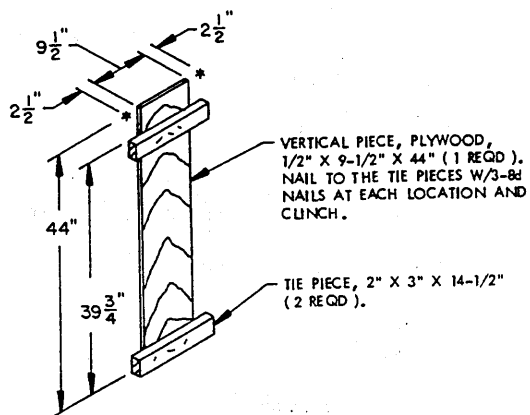
SIDE FILL C



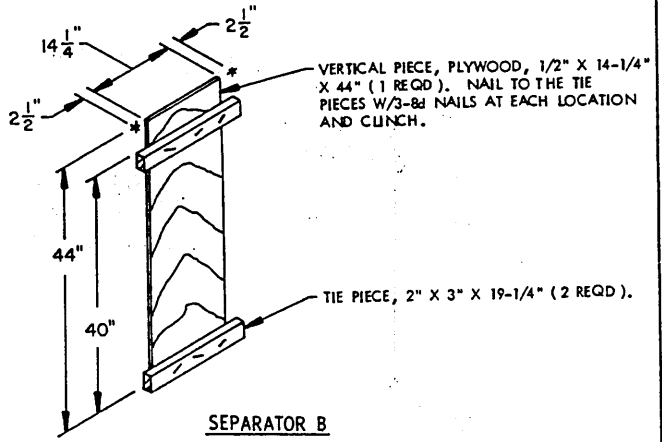
SIDE FILL D



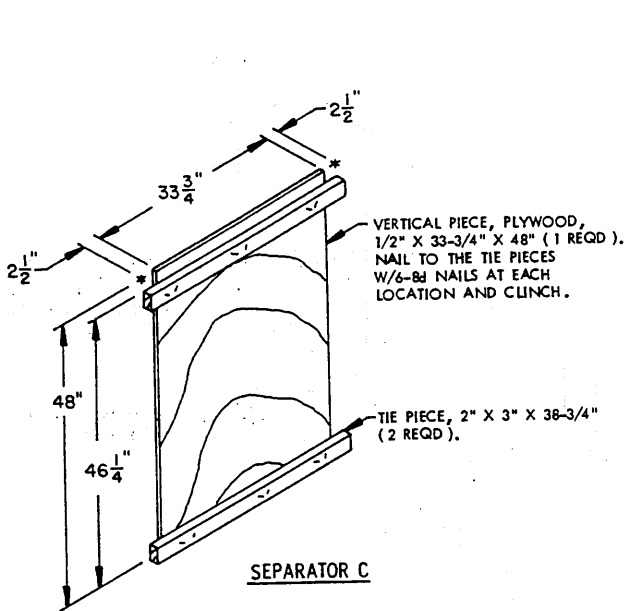
SIDE FILL E



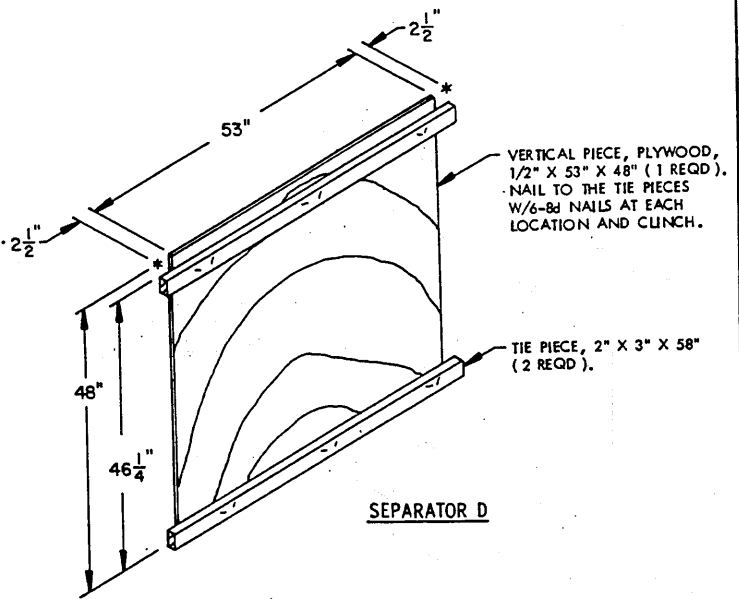
SEPARATOR A



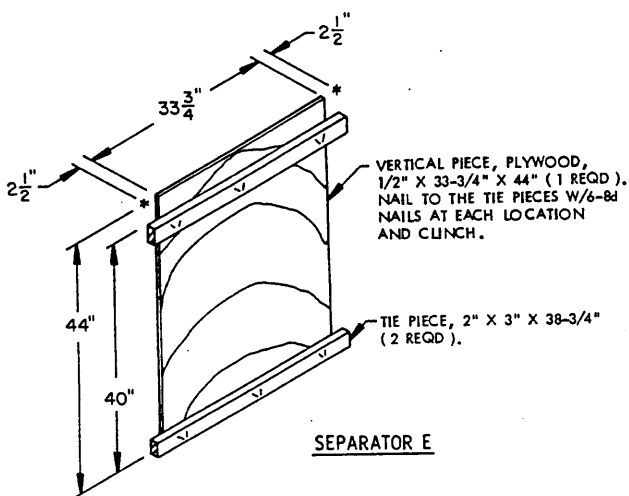
SEPARATOR B



SEPARATOR C

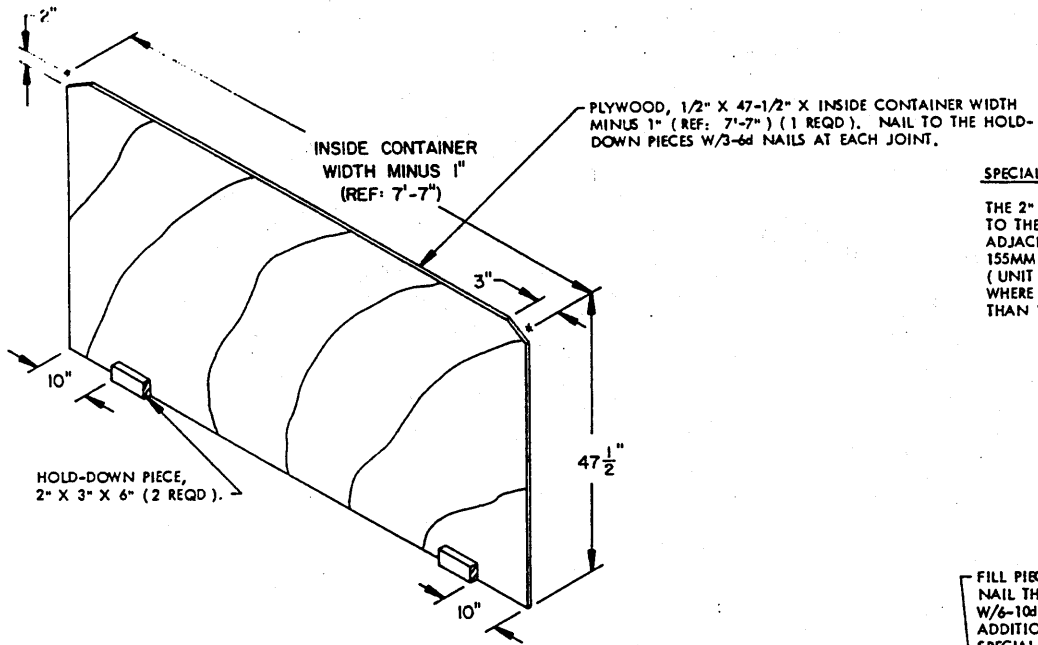


SEPARATOR D



SEPARATOR E



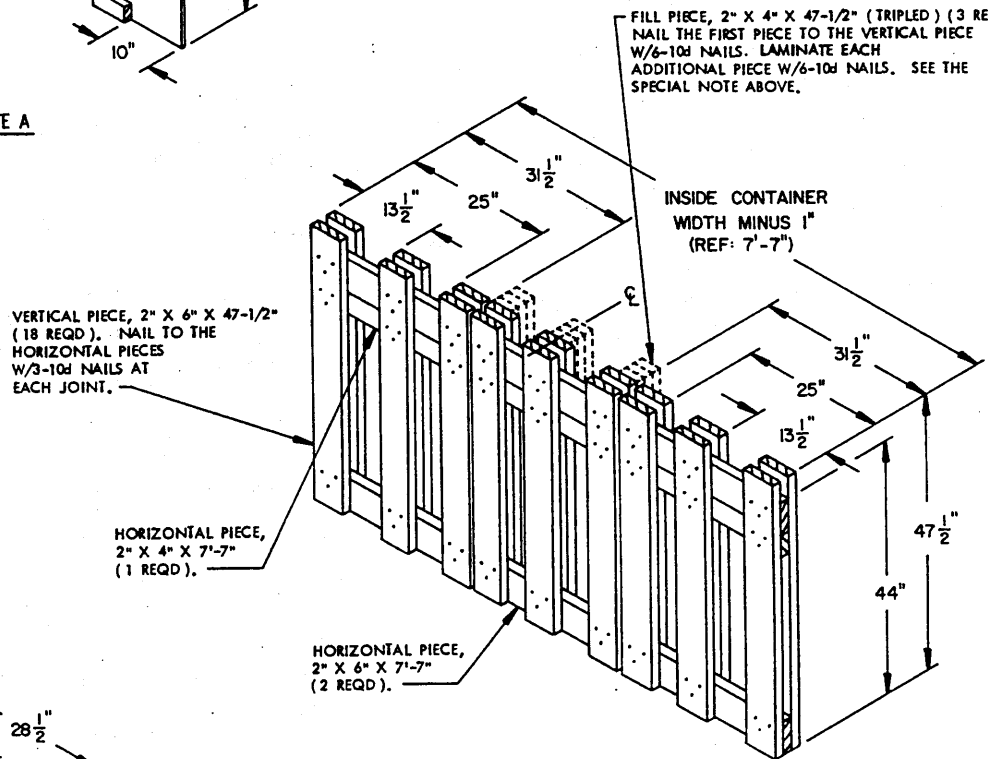


**LOAD BEARING GATE A**

**SPECIAL NOTE:**

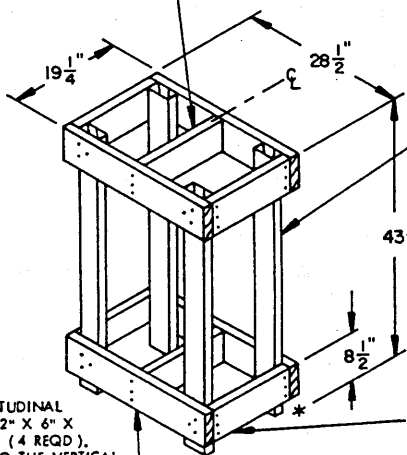
THE 2" X 4" FILL PIECES NEED NOT BE APPLIED TO THE LOAD BEARING GATE UNLESS POSITIONED ADJACENT TO A LOAD BAY CONTAINING BOTH 155MM AND 8" SEPARATE LOADING PROJECTILES (UNIT NUMBERS 1 AND 2), OR A LOAD BAY WHERE THE PALLET UNIT LENGTHS DIFFER MORE THAN 1".

FILL PIECE, 2" X 4" X 47-1/2" (TRIPLED) (3 REQD). NAIL THE FIRST PIECE TO THE VERTICAL PIECE W/6-10d NAILS. LAMINATE EACH ADDITIONAL PIECE W/6-10d NAILS. SEE THE SPECIAL NOTE ABOVE.



**LOAD BEARING GATE B**

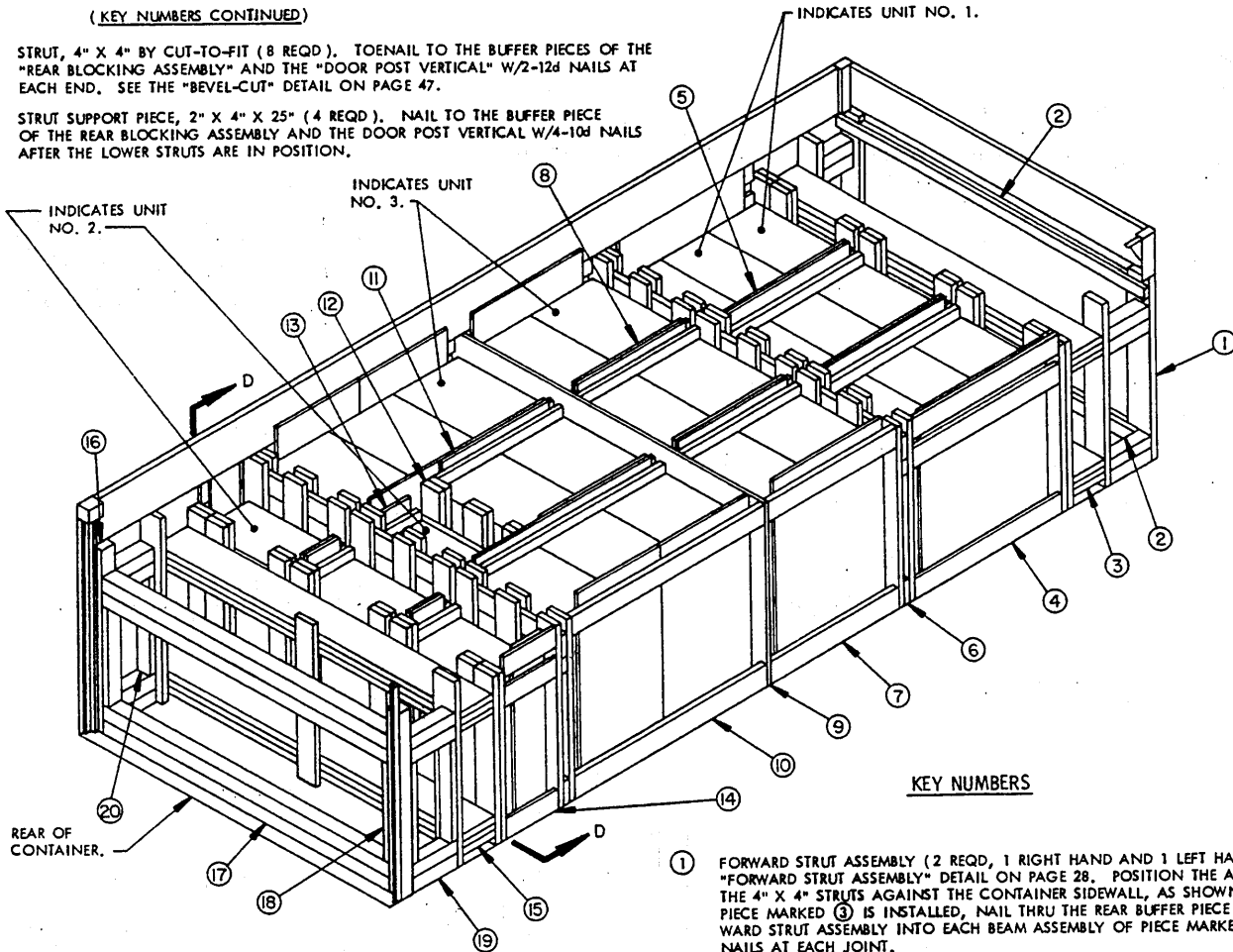
CENTER SUPPORT PIECE, 2" X 6" X 16-1/4" (2 REQD).



**FILLER ASSEMBLY**

(KEY NUMBERS CONTINUED)

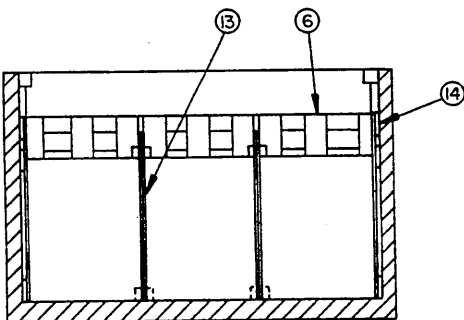
- 19 STRUT, 4" X 4" BY CUT-TO-FIT (8 REQD). TOENAIL TO THE BUFFER PIECES OF THE "REAR BLOCKING ASSEMBLY" AND THE "DOOR POST VERTICAL" W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47.
- 20 STRUT SUPPORT PIECE, 2" X 4" X 25" (4 REQD). NAIL TO THE BUFFER PIECE OF THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICAL W/4-10d NAILS AFTER THE LOWER STRUTS ARE IN POSITION.



ISOMETRIC VIEW

KEY NUMBERS

- 1 FORWARD STRUT ASSEMBLY (2 REQD, 1 RIGHT HAND AND 1 LEFT HAND). SEE THE "FORWARD STRUT ASSEMBLY" DETAIL ON PAGE 28. POSITION THE ASSEMBLY WITH THE 4" X 4" STRUTS AGAINST THE CONTAINER SIDEWALL, AS SHOWN ABOVE. AFTER PIECE MARKED 3 IS INSTALLED, NAIL THRU THE REAR BUFFER PIECE OF EACH FORWARD STRUT ASSEMBLY INTO EACH BEAM ASSEMBLY OF PIECE MARKED 3 W/2-12d NAILS AT EACH JOINT.
- 2 SPREADER ASSEMBLY (2 REQD). SEE THE "SPREADER ASSEMBLY" DETAIL ON PAGE 28. POSITION AS SHOWN AND NAIL TO THE FORWARD STRUT ASSEMBLY W/2-10d NAILS AT EACH END.
- 3 FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 28 AND GENERAL NOTE "F" ON PAGE 2.
- 4 SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL A" DETAIL ON PAGE 30.
- 5 SEPARATOR (4 REQD). SEE THE "SEPARATOR A" DETAIL ON PAGE 31 AND GENERAL NOTE "D" ON PAGE 2.
- 6 LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE A" DETAIL ON PAGE 29.
- 7 SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL B" DETAIL ON PAGE 30.
- 8 SEPARATOR (6 REQD). SEE THE "SEPARATOR B" DETAIL ON PAGE 31 AND GENERAL NOTE "D" ON PAGE 2.
- 9 LOAD BEARING GATE (1 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 29.
- 10 SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL C" DETAIL ON PAGE 30.
- 11 SEPARATOR (2 REQD). SEE THE "SEPARATOR C" DETAIL ON PAGE 31 AND GENERAL NOTE "D" ON PAGE 2.
- 12 FILLER ASSEMBLY (1 REQD). SEE THE "FILLER ASSEMBLY" DETAIL ON PAGE 32.
- 13 SEPARATOR (6 REQD). SEE THE "SEPARATOR D" DETAIL ON PAGE 31 AND GENERAL NOTE "D" ON PAGE 2.
- 14 SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL D" DETAIL ON PAGE 30.
- 15 REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 32 AND GENERAL NOTE "F" ON PAGE 3.
- 16 DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" (2 REQD). SEE THE "TYPICAL DETAIL A" ON PAGE 47 AND GENERAL NOTE "E" ON PAGE 2.
- 17 DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7"-1-3/8") (4 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47. AFTER INSTALLING THE BOTTOM AND THE TOP DOOR SPANNERS, THE STRUTS, PIECES MARKED 19, ARE TO BE INSTALLED.
- 18 DOOR SPANNER SUPPORT PIECE, 2" X 4" X 25" (2 REQD). NAIL TO A DOOR POST VERTICAL W/4-10d NAILS AFTER THE LOWER DOOR SPANNER PIECES ARE IN POSITION. (CONTINUED AT LEFT)



SECTION D-D

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES:**

1. PREFABRICATE TWO FORWARD STRUT ASSEMBLIES, TWO SPREADER ASSEMBLIES, ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
2. PREFABRICATE THE FOLLOWING:
  - A. TWO EACH OF SIDE FILL ASSEMBLIES "A", "B", "C", AND "D".
  - B. FOUR SEPARATORS "A", SIX SEPARATORS "B" AND "D", AND TWO SEPARATORS "C".
  - C. TWO LOAD BEARING GATES "A" AND ONE LOAD BEARING GATE "B".
  - D. ONE FILLER ASSEMBLY.
3. INSTALL THE TWO FORWARD STRUT ASSEMBLIES, THE FORWARD BLOCKING ASSEMBLY AND THE TWO SPREADER ASSEMBLIES.
4. INSTALL TWO SIDE FILL "A" ASSEMBLIES.
5. LOAD NINE PALLET UNITS ( UNIT NO. 1 ) AND INSTALL FOUR SEPARATOR "A" ASSEMBLIES.
6. INSTALL ONE LOAD BEARING GATE "A" AND TWO SIDE FILL "B" ASSEMBLIES.
7. LOAD SIX PALLET UNITS ( UNIT NO. 3 ) AND INSTALL FOUR SEPARATOR "B" ASSEMBLIES.
8. INSTALL ONE LOAD BEARING GATE "B" AND TWO SIDE FILL "C" ASSEMBLIES.
9. LOAD EIGHT PALLET UNITS ( UNIT NO. 3 ), THREE PALLET UNITS AGAINST EACH SIDE FILL ASSEMBLY AND TWO IN THE CENTER, AND INSTALL TWO SEPARATOR "C" ASSEMBLIES AND TWO SEPARATOR "B" ASSEMBLIES.
10. INSTALL ONE FILLER ASSEMBLY, LOAD ONE PALLET UNIT ( UNIT NO. 2 ), AND INSTALL TWO SEPARATOR "D" ASSEMBLIES.
11. INSTALL ONE LOAD BEARING GATE "A" AND TWO SIDE FILL "D" ASSEMBLIES.
12. LOAD THREE PALLET UNITS ( UNIT NO. 2 ) AND INSTALL FOUR SEPARATOR "D" ASSEMBLIES.
13. INSTALL REAR BLOCKING ASSEMBLY.
14. INSTALL THE TWO DOOR POST VERTICALS.
15. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION AFTER CLOSING AND FASTENING THE CONTAINER DOOR HEADER.
16. INSTALL THE STRUTS AND STRUT SUPPORT PIECES BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
17. INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNER PIECES.

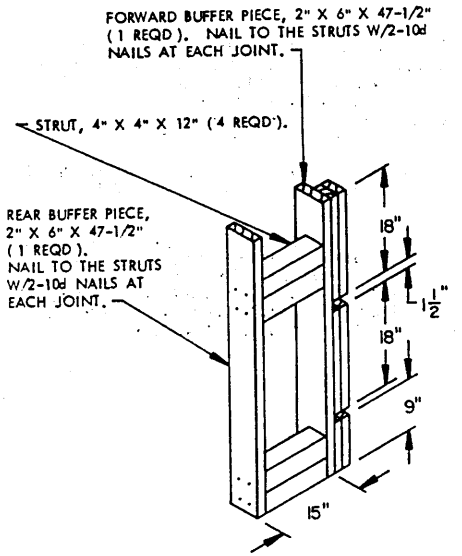
**SPECIAL NOTES:**

1. THE PALLETIZED SEPARATE LOADING PROJECTILE UNITS SHOWN IN THE TYPICAL LOAD ON PAGE 26 ARE BASED ON UNIT NUMBERS 1, 2, AND 3 SHOWN ON PAGE 9. THE DEPICTED LOADING PROCEDURES ARE ALSO APPLICABLE FOR PALLETIZED UNITS OF OTHER DIMENSIONS. REFER TO THE "LOAD PLANNING GUIDANCE" AND LOAD PLANNING CHARTS" ON PAGES 4 AND 5 FOR ADDITIONAL GUIDANCE.
2. EXCESSIVE SLACK ACROSS THE WIDTH OF A LOAD CAN BE ELIMINATED BY LAMINATING ADDITIONAL VERTICAL PIECES TO THE SEPARATOR ASSEMBLIES.
3. THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION. AFTER THE REAR BLOCKING ASSEMBLY HAS BEEN CENTERED IN THE CONTAINER, THE BUFFER PIECES WILL BE POSITIONED SO AS TO CONTACT THE CONTAINER SIDEWALL AND WILL BE NAILED AS SPECIFIED WITHIN THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 32.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	29	15
2" X 3"	104	52
2" X 4"	64	43
2" X 6"	377	377
2" X 10"	91	152
4" X 4"	56	74
NAILS	NO. REQD	POUNDS
6d ( 2" )	76	1/2
8d ( 2-1/2" )	244	2-3/4
10d ( 3" )	754	11-3/4
12d ( 3-1/4" )	56	1
PLYWOOD, 1/2"-----291 SQ FT REQD-----400 LBS		

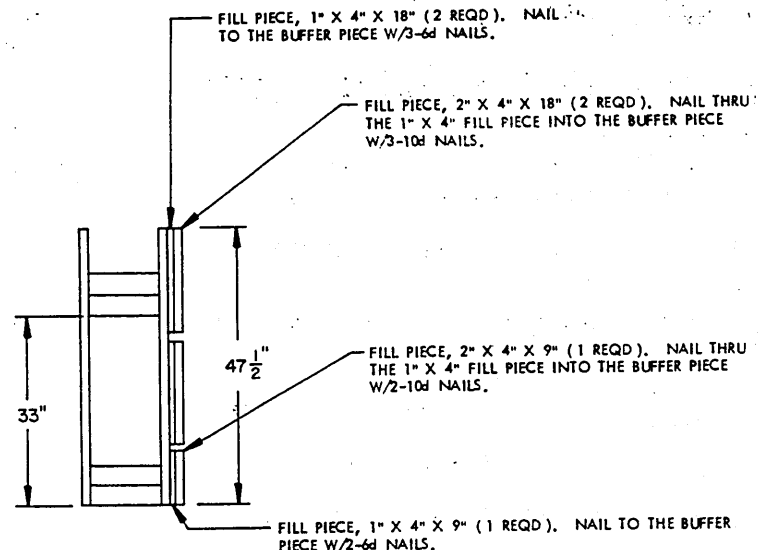
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT ( APPROX )
PALLET UNIT NO. 1	9	7,938 LBS
PALLET UNIT NO. 2	4	3,320 LBS
PALLET UNIT NO. 3	14	17,542 LBS
DUNNAGE		1,848 LBS
CONTAINER		4,365 LBS
TOTAL WEIGHT		35,013 LBS



**FORWARD STRUT ASSEMBLY**

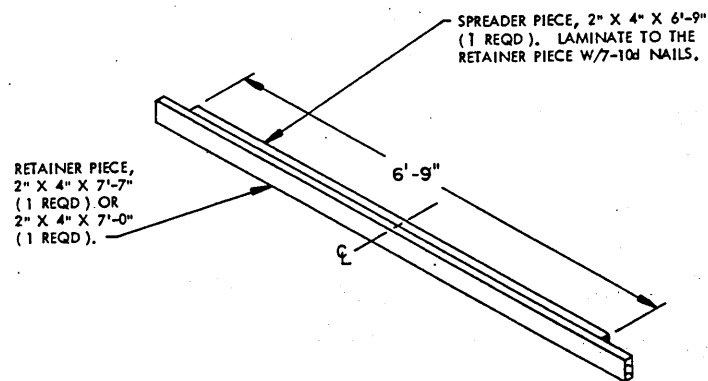
A "RIGHT HAND" FORWARD STRUT ASSEMBLY IS DEPICTED. A "LEFT HAND" ASSEMBLY IS ALSO REQUIRED AND WILL BE THE SAME AS THE ASSEMBLY DEPICTED ABOVE, EXCEPT THE 4" X 4" STRUTS AND STRUT LEDGERS ARE ALIGNED ON THE OPPOSITE SIDE OF THE BUFFER PIECES.



**END VIEW**

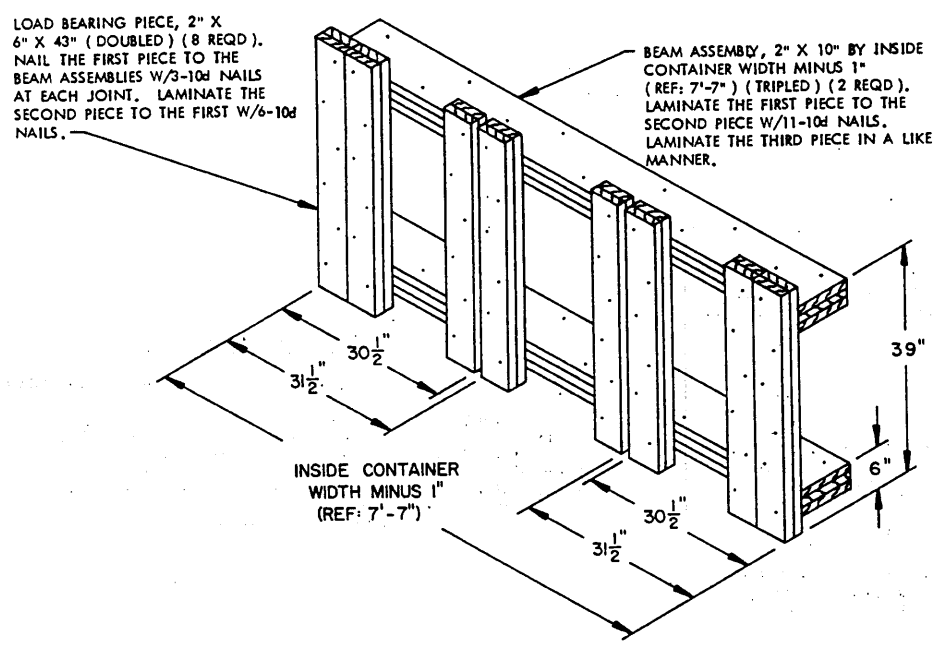
**SPECIAL NOTE:**

THE RETAINER PIECE OF THE SPREADER ASSEMBLY WILL BE 7'-7" LONG WHEN THE ASSEMBLY IS POSITIONED ABOVE THE UPPER STRUTS OF THE FORWARD STRUT ASSEMBLY AND 7'-0" LONG WHEN POSITIONED BETWEEN THE UPPER AND LOWER STRUTS OF THE FORWARD STRUT ASSEMBLY.



**SPREADER ASSEMBLY**

(SEE THE SPECIAL NOTE AT LEFT.)



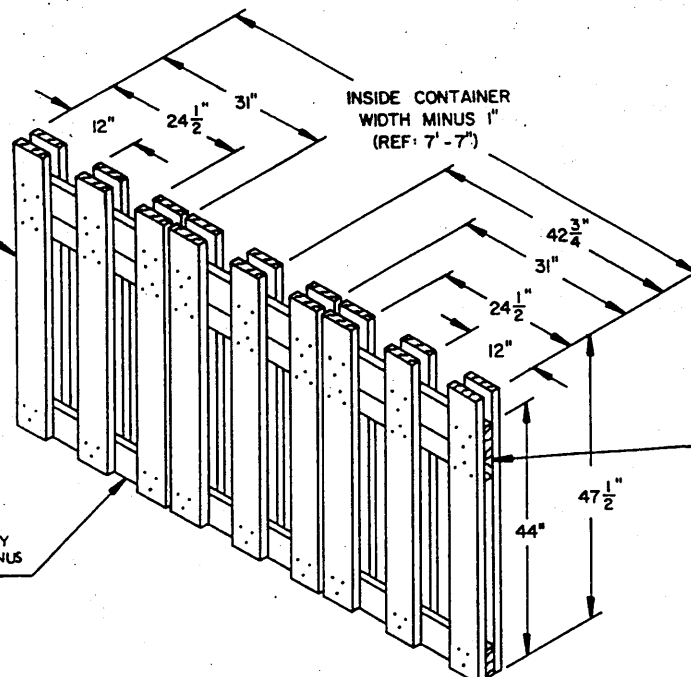
**FORWARD BLOCKING ASSEMBLY**

LOAD BEARING PIECE, 2" X 6" X 47-1/2"  
(18 REQD). NAIL TO THE HORIZONTAL  
PIECES W/3-10d NAILS AT EACH JOINT.

HORIZONTAL PIECE, 2" X 6" BY  
INSIDE CONTAINER WIDTH MINUS  
1" (REF: 7'-7") (2 REQD).

INSIDE CONTAINER  
WIDTH MINUS 1"  
(REF: 7'-7")

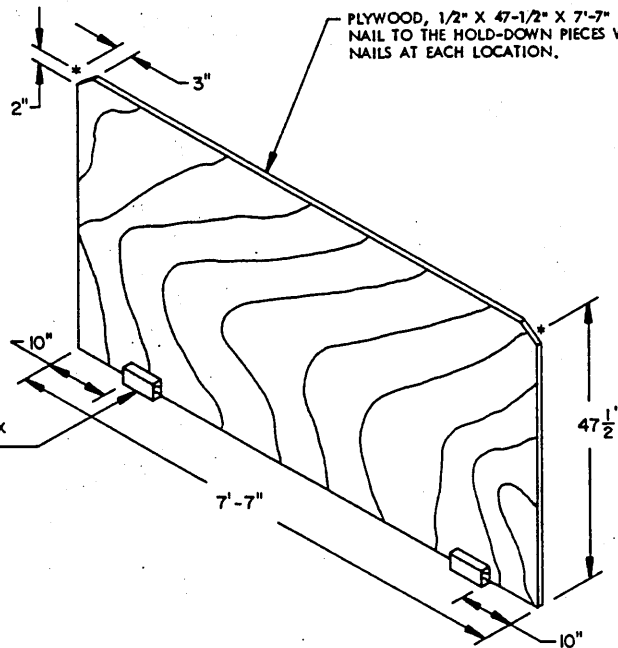
HORIZONTAL PIECE, 2" X 4" BY  
INSIDE CONTAINER WIDTH MINUS 1"  
(REF: 7'-7") (1 REQD).



LOAD BEARING GATE A

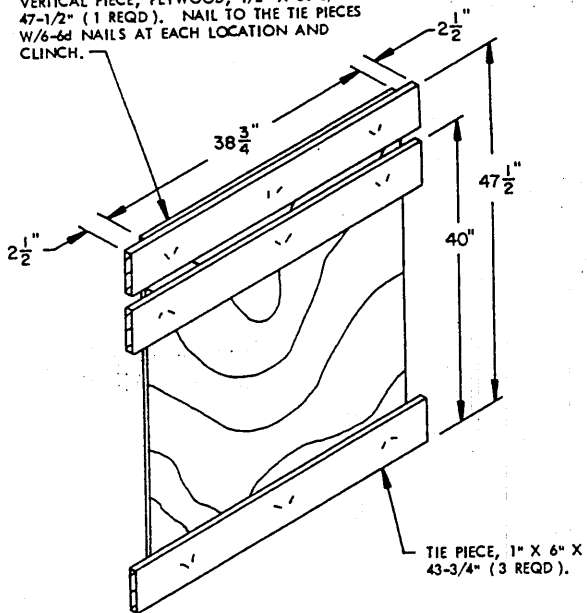
HOLD-DOWN PIECE, 2" X  
3" X 6" (2 REQD).

PLYWOOD, 1/2" X 47-1/2" X 7'-7" (1 REQD).  
NAIL TO THE HOLD-DOWN PIECES W/3-6d  
NAILS AT EACH LOCATION.



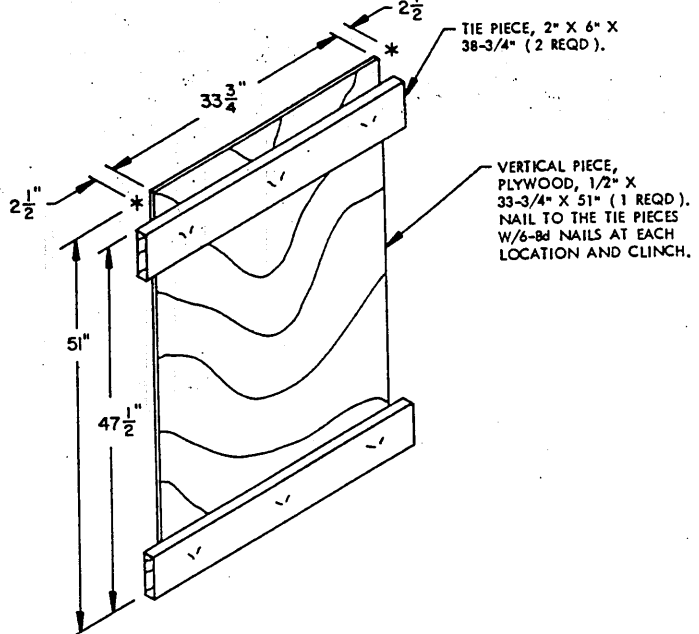
LOAD BEARING GATE B

VERTICAL PIECE, PLYWOOD, 1/2" X 38-3/4" X 47-1/2" (1 REQD). NAIL TO THE TIE PIECES W/6-6d NAILS AT EACH LOCATION AND CLINCH.



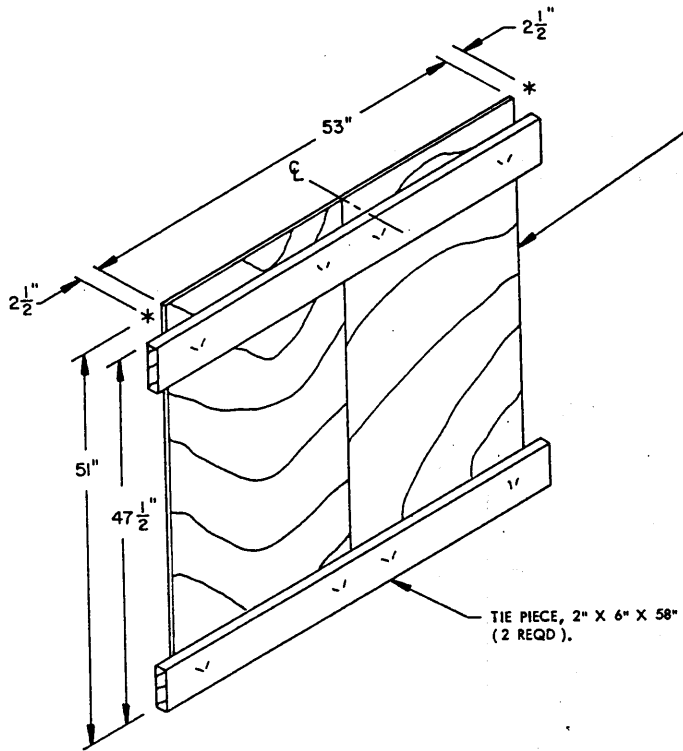
SIDE FILL A

TIE PIECE, 2" X 6" X 38-3/4" (2 REQD).



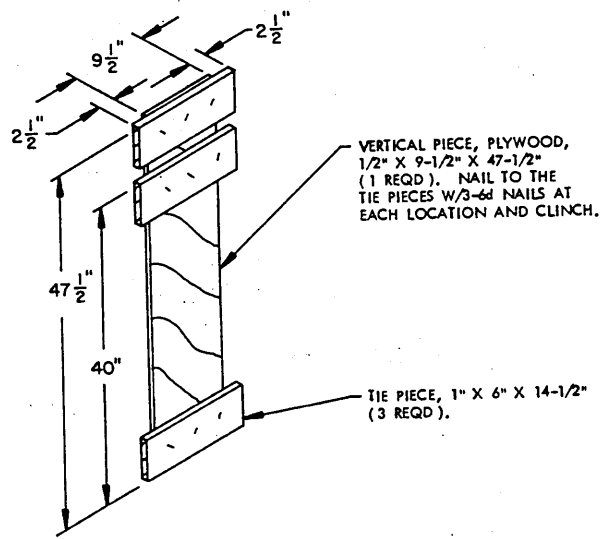
VERTICAL PIECE, PLYWOOD, 1/2" X 33-3/4" X 51" (1 REQD). NAIL TO THE TIE PIECES W/6-6d NAILS AT EACH LOCATION AND CLINCH.

SIDE FILL B



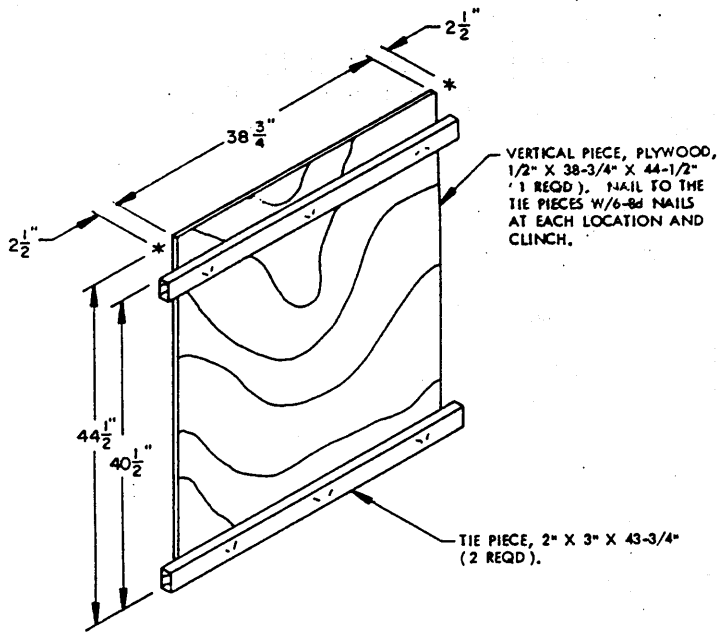
VERTICAL PIECE, PLYWOOD, 1/2" X 26-1/2" X 51" (2 REQD). NAIL TO THE TIE PIECES W/4-8d NAILS AT EACH LOCATION AND CLINCH.

SIDE FILL C

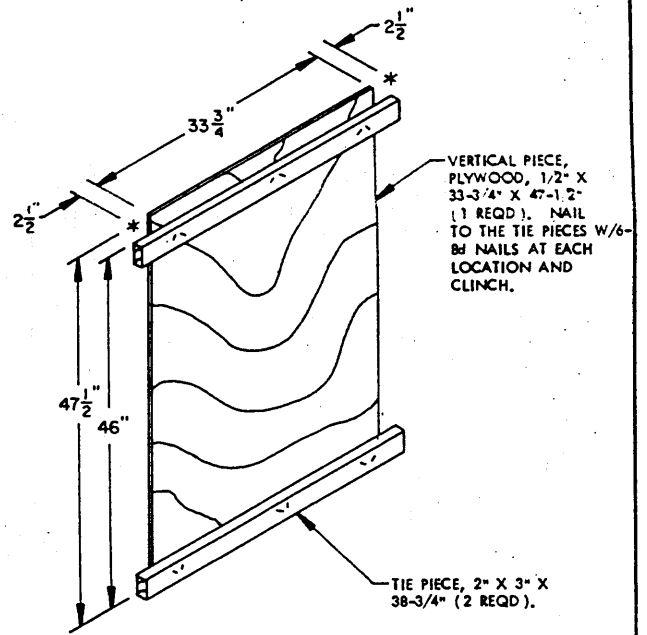


VERTICAL PIECE, PLYWOOD, 1/2" X 9-1/2" X 47-1/2" (1 REQD). NAIL TO THE TIE PIECES W/3-6d NAILS AT EACH LOCATION AND CLINCH.

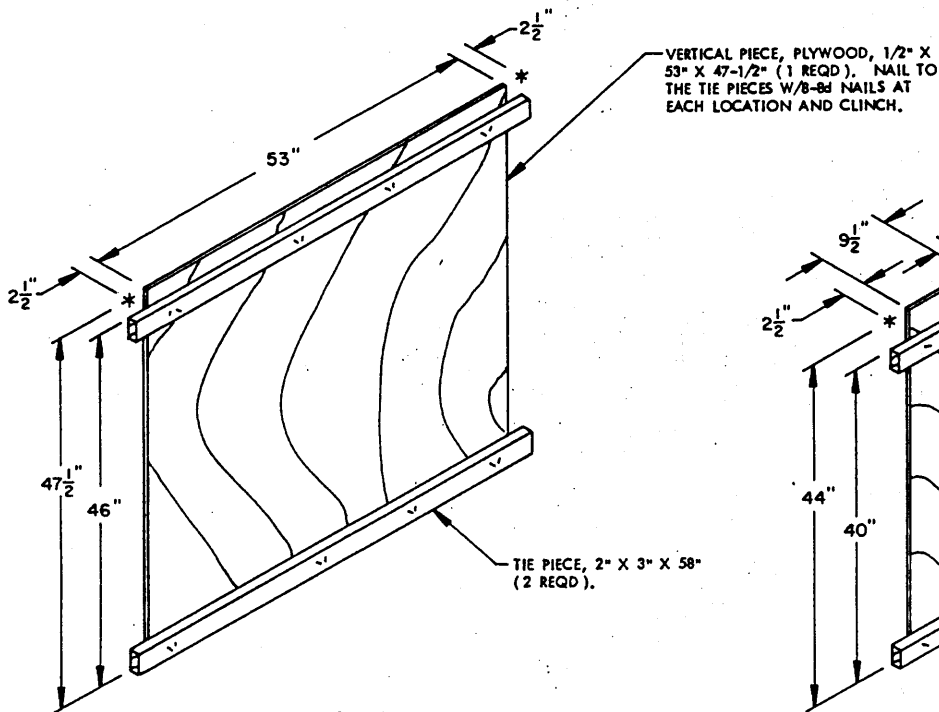
SIDE FILL D



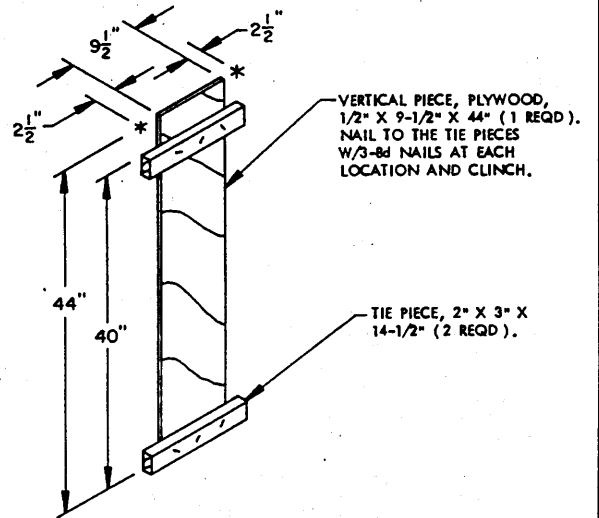
SEPARATOR A



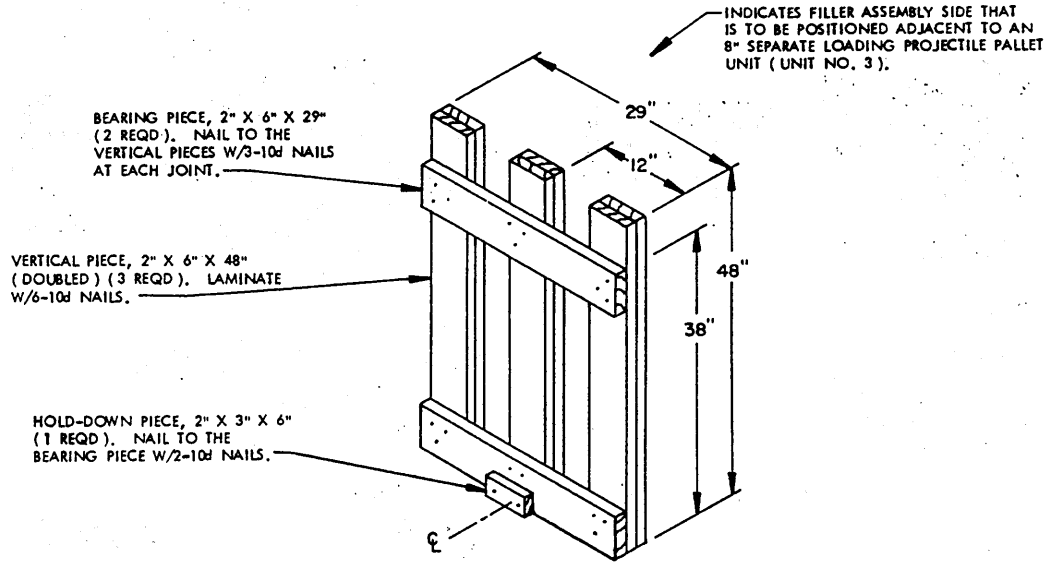
SEPARATOR B



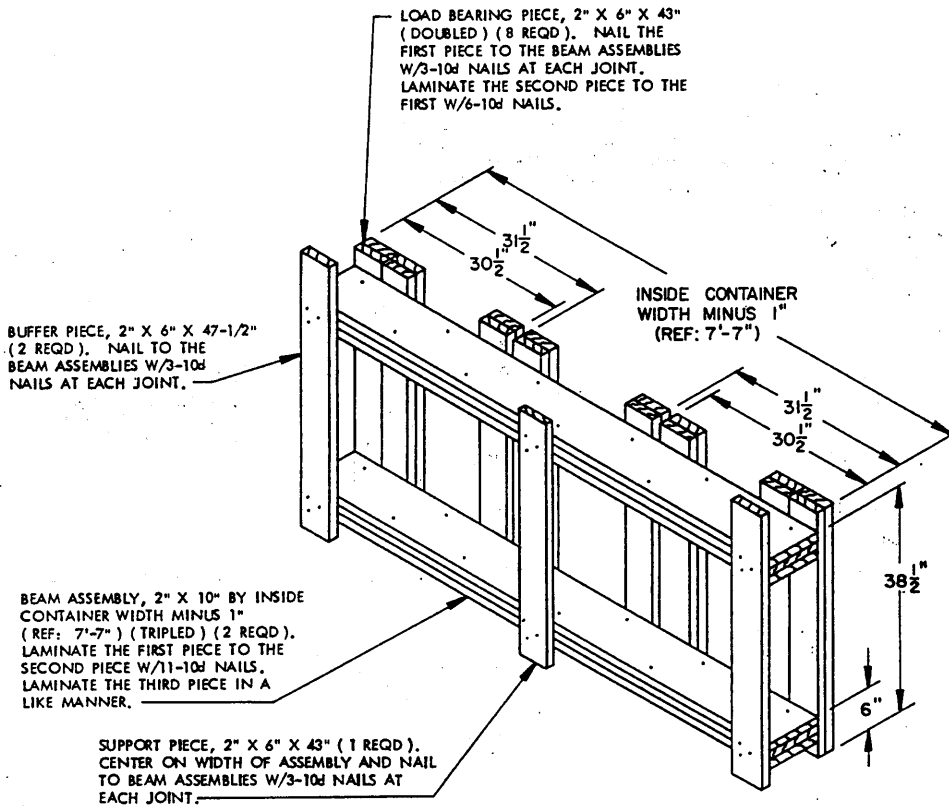
SEPARATOR C



SEPARATOR D



**FILLER ASSEMBLY**

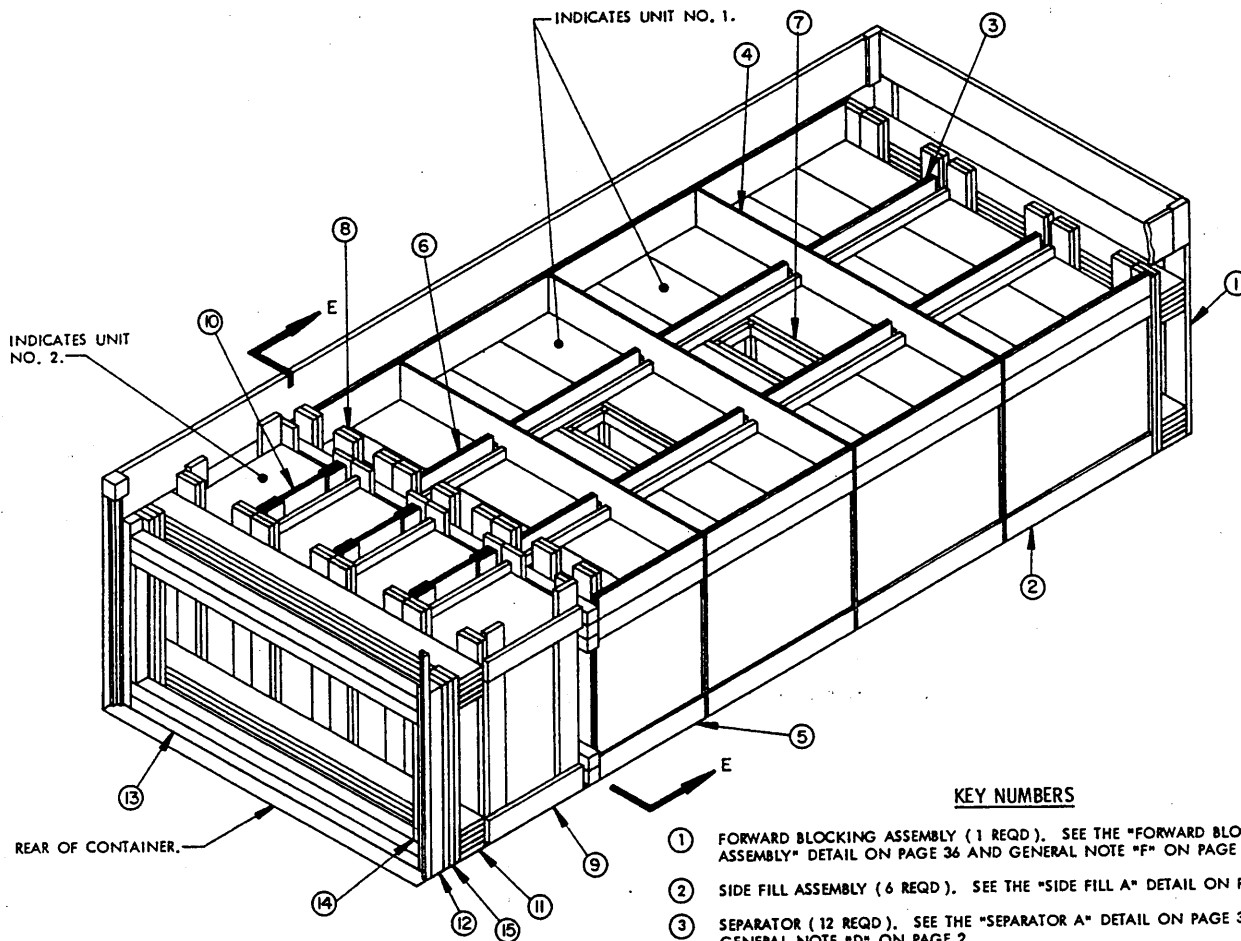


**REAR BLOCKING ASSEMBLY**

(SEE SPECIAL NOTE 3 ON PAGE 27.)



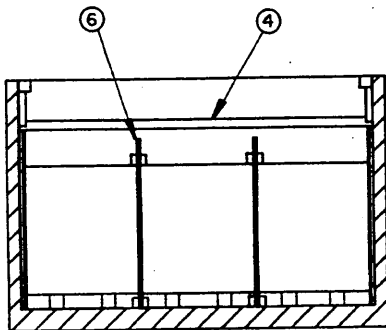
THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 36 AND GENERAL NOTE "F" ON PAGE 2.
- ② SIDE FILL ASSEMBLY (6 REQD). SEE THE "SIDE FILL A" DETAIL ON PAGE 38.
- ③ SEPARATOR (12 REQD). SEE THE "SEPARATOR A" DETAIL ON PAGE 37 AND GENERAL NOTE "D" ON PAGE 2.
- ④ LOAD BEARING GATE (3 REQD). SEE THE "LOAD BEARING GATE A" DETAIL ON PAGE 37.
- ⑤ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL B" DETAIL ON PAGE 38.
- ⑥ SEPARATOR (4 REQD). SEE THE "SEPARATOR B" DETAIL ON PAGE 37 AND GENERAL NOTE "D" ON PAGE 2.
- ⑦ FILLER ASSEMBLY (2 REQD). SEE THE "FILLER ASSEMBLY" DETAIL ON PAGE 39.
- ⑧ LOAD BEARING GATE (1 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 39.
- ⑨ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL C" DETAIL ON PAGE 38.
- ⑩ SEPARATOR (6 REQD). SEE THE "SEPARATOR C" DETAIL ON PAGE 38 AND GENERAL NOTE "D" ON PAGE 2.
- ⑪ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 36 AND GENERAL NOTE "F" ON PAGE 2.
- ⑫ DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" (2 REQD). SEE THE "TYPICAL DETAIL B" AND "C" ON PAGE 47 AND GENERAL NOTE "E" ON PAGE 2.
- ⑬ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (4 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47.
- ⑭ DOOR SPANNER SUPPORT PIECE, 2" X 4" X 32" (2 REQD). NAIL TO A DOOR POST VERTICAL W/4-10d NAILS AFTER THE LOWER DOOR SPANNER PIECES ARE IN POSITION.
- ⑮ FILL MATERIAL, 6" WIDE BY 47-1/2" LONG MATERIAL (AS REQD). NAIL EACH PIECE TO THE REAR BLOCKING ASSEMBLY AND/OR LAMINATE TOGETHER W/4 NAILS OF A SUITABLE SIZE (10d FOR 2" THICK MATERIAL). CAUTION: DO NOT NAIL TO THE DOOR POST VERTICALS, PIECES MARKED ⑫.



SECTION E-E

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES:**

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
2. PREFABRICATE THE FOLLOWING:
  - A. SIX SIDE FILL "A" ASSEMBLIES.
  - B. TWELVE SEPARATOR "A" ASSEMBLIES.
  - C. THREE LOAD BEARING GATE "A" ASSEMBLIES.
  - D. TWO EACH SIDE FILL "B" AND "C" ASSEMBLIES.
  - E. FOUR SEPARATOR "B" ASSEMBLIES.
  - F. TWO FILLER ASSEMBLIES.
  - G. ONE LOAD BEARING GATE "B" ASSEMBLY.
  - H. SIX SEPARATOR "C" ASSEMBLIES.
3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE FILL "A" ASSEMBLIES.
4. LOAD NINE PALLET UNITS (UNIT NO. 1) AND INSTALL FOUR SEPARATOR "A" ASSEMBLIES AND ONE LOAD BEARING GATE "A".
5. INSTALL TWO SIDE FILL "A" ASSEMBLIES.
6. LOAD EIGHT PALLET UNITS (UNIT NO. 1) AND INSTALL ONE FILLER ASSEMBLY, FOUR SEPARATOR "A" ASSEMBLIES, AND ONE LOAD BEARING GATE "A".
7. REPEAT STEPS 5 AND 6.
8. INSTALL TWO SIDE FILL "B" ASSEMBLIES.
9. LOAD SIX PALLET UNITS (UNIT NO. 1) AND INSTALL FOUR SEPARATOR "B" ASSEMBLIES.
10. INSTALL ONE LOAD BEARING GATE "B" WITH ITS DOUBLED 2" X 6" LOAD BEARING PIECES ADJACENT TO THE PREVIOUSLY LOADED PALLET UNITS.
11. INSTALL TWO SIDE FILL "C" ASSEMBLIES, LOAD FOUR PALLET UNITS (UNIT NO. 2) AND INSTALL SIX SEPARATOR "C" ASSEMBLIES. NOTE: THE SEPARATOR ASSEMBLIES MUST BE INSTALLED SIMULTANEOUSLY WITH THE PALLET UNITS.
12. INSTALL REAR BLOCKING ASSEMBLY.
13. INSTALL THE TWO DOOR POST VERTICALS.
14. INSTALL THE DOOR SPANNER PIECES AT THE LOWEST POSITION AFTER CLOSING AND FASTENING THE CONTAINER DOOR HEADER.
15. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
16. INSTALL THE TWO DOOR SPANNER SUPPORT PIECES AND THE REMAINING TWO DOOR SPANNERS.

**SPECIAL NOTES:**

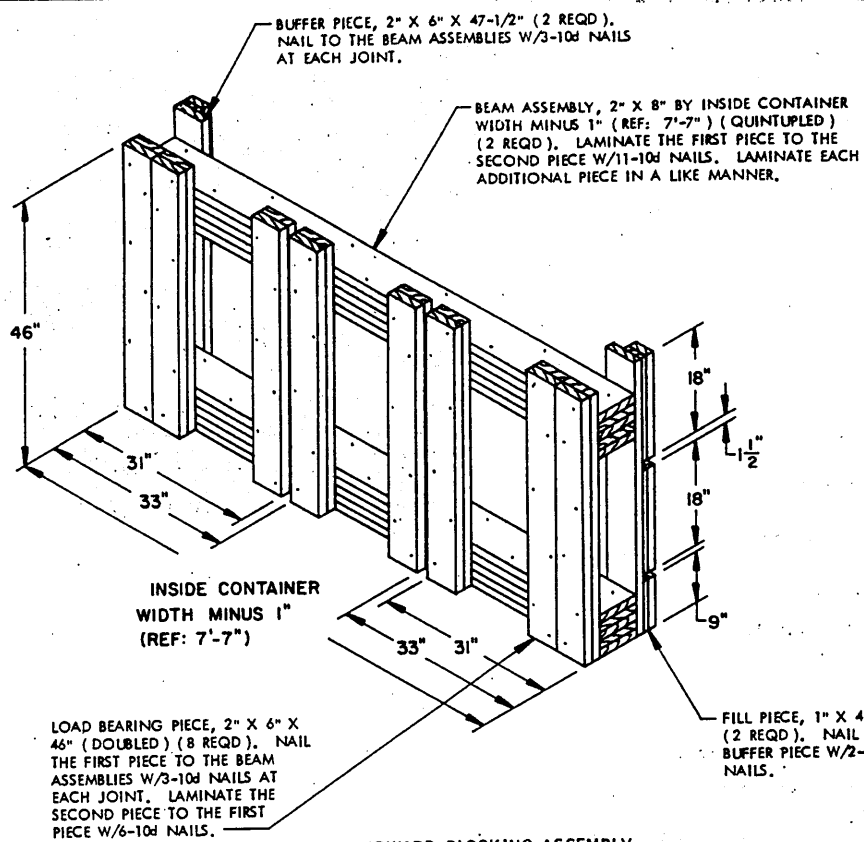
1. THE PALLETIZED SEPARATE LOADING PROJECTILE UNITS SHOWN IN THE TYPICAL LOAD ON PAGE 34 ARE BASED ON UNIT NUMBERS 1 AND 2 SHOWN ON PAGE 10. THE DEPICTED LOADING PROCEDURES ARE ALSO APPLICABLE FOR PALLETIZED UNITS OF OTHER DIMENSIONS. REFER TO THE "LOAD PLANNING GUIDANCE" AND "LOAD PLANNING CHARTS" ON PAGES 4 AND 5 FOR ADDITIONAL GUIDANCE.
2. EXCESSIVE SLACK ACROSS THE WIDTH OF A LOAD CAN BE ELIMINATED BY LAMINATING ADDITIONAL VERTICAL PIECES TO THE SEPARATOR ASSEMBLIES.
3. FOR EASE IN THE INSTALLATION OF THE FORWARD BLOCKING ASSEMBLY INTO THE COMMERCIAL CONTAINER, THE OUTER TWO LOAD BEARING PIECES WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION.
4. THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION. AFTER THE REAR BLOCKING ASSEMBLY HAS BEEN CENTERED IN THE CONTAINER, THE BUFFER PIECES WILL BE POSITIONED SO AS TO CONTACT THE CONTAINER SIDEWALL AND WILL BE NAILED AS SPECIFIED WITHIN THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 36.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	148	74
2" X 2"	26	9
2" X 3"	127	64
2" X 4"	61	41
2" X 6"	295	295
2" X 8"	152	203
4" X 4"	60	79
NAILS	NO. REQD	POUNDS
6d (2")	210	1-1/4
8d (2-1/2")	184	2
10d (3")	893	13-3/4
12d (3-1/4")	52	1
PLYWOOD, 1/2"	420 SQ FT REQD	578 LBS

**LOAD AS SHOWN**

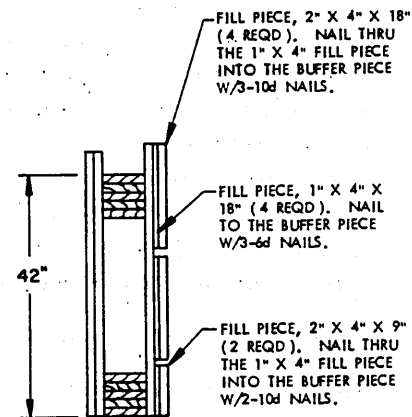
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT NO. 1	31	27,094 LBS
PALLET UNIT NO. 2	4	5,152 LBS
DUNNAGE		2,132 LBS
CONTAINER		4,365 LBS

TOTAL WEIGHT-----38,743 LBS

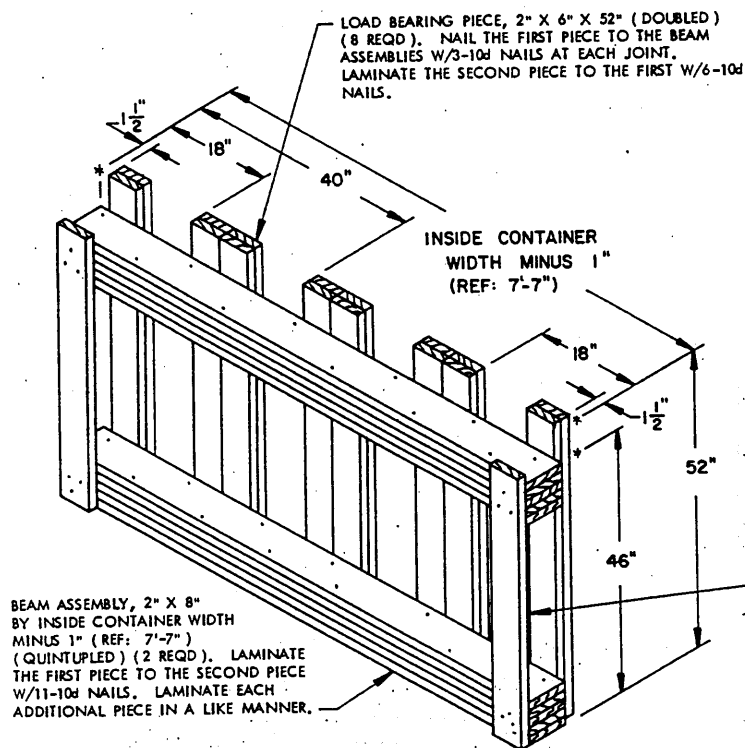


**FORWARD BLOCKING ASSEMBLY**

(SEE SPECIAL NOTE 3 ON PAGE 35.)



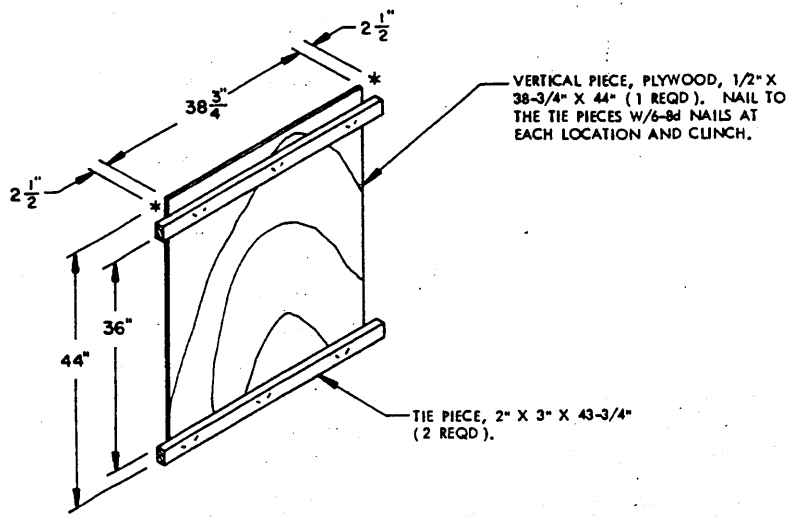
**END VIEW**



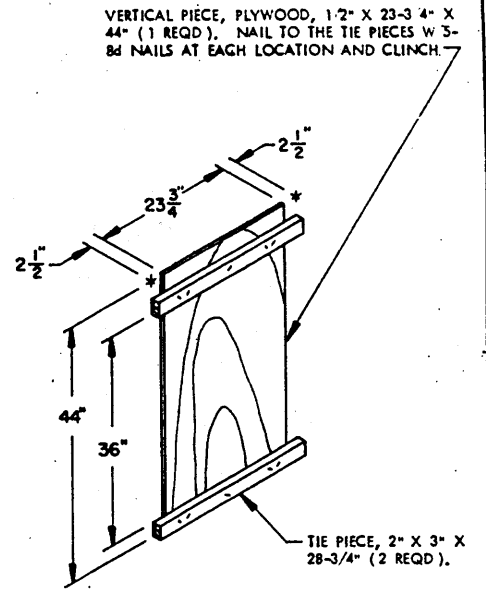
**REAR BLOCKING ASSEMBLY**

(SEE SPECIAL NOTE 4 ON PAGE 35.)

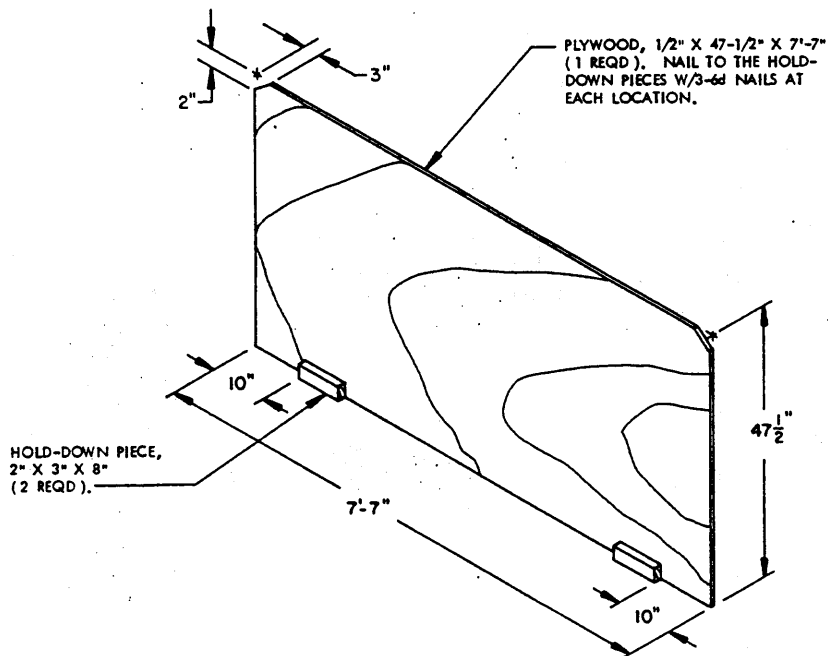
**MIXED LOAD NO. 5 DETAILS**



SEPARATOR A

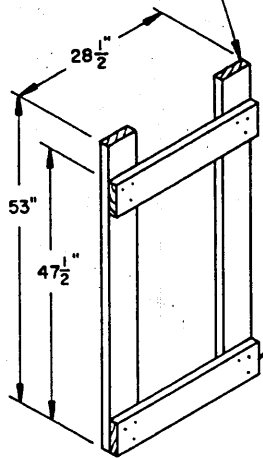


SEPARATOR B



LOAD BEARING GATE A

BEARING PIECE, 2" X 6" X 53"  
(2 REQD).

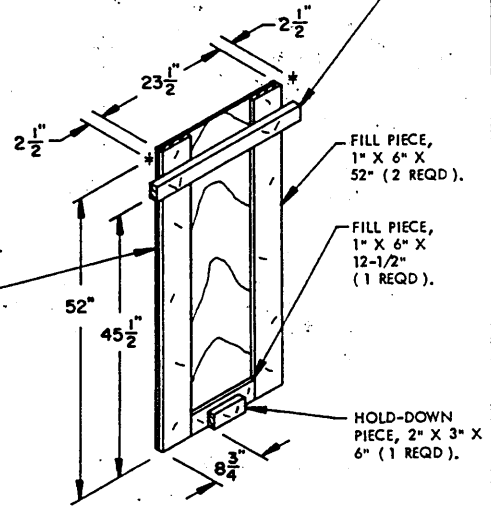


SIDE FILL C

TIE PIECE, 2" X 6" X 28-1/2"  
(2 REQD). NAIL TO THE  
BEARING PIECES W/3-10d  
NAILS AT EACH END.

VERTICAL PIECE, PLYWOOD, 1/2" X  
23-1/2" X 52" (1 REQD). NAIL TO  
THE VERTICAL FILL PIECES W/5-6d  
NAILS AT EACH LOCATION AND  
CLINCH AND NAIL TO THE HORI-  
ZONTAL FILL PIECE W/2-6d NAILS  
AND CLINCH. NAIL THRU FILL  
PIECE INTO THE TIE PIECE W/2-  
12d NAILS AT EACH LOCATION  
AND CLINCH. NAIL THRU THE  
FILL PIECE INTO THE HOLD-DOWN  
PIECE W/2-12d NAILS AND CLINCH.

TIE PIECE, 2" X 3" X 28-1/2" (1 REQD).



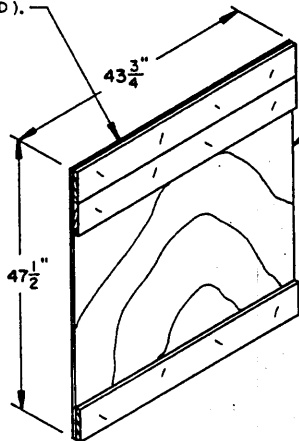
SEPARATOR C

FILL PIECE,  
1" X 6" X  
52" (2 REQD).

FILL PIECE,  
1" X 6" X  
12-1/2"  
(1 REQD).

HOLD-DOWN  
PIECE, 2" X 3" X  
6" (1 REQD).

TIE PIECE, 1" X 6" X  
43-3/4" (3 REQD).

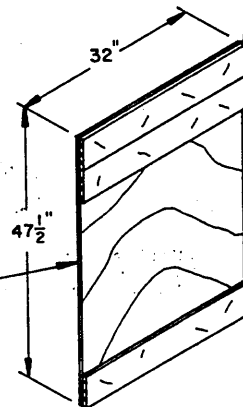


SIDE FILL A

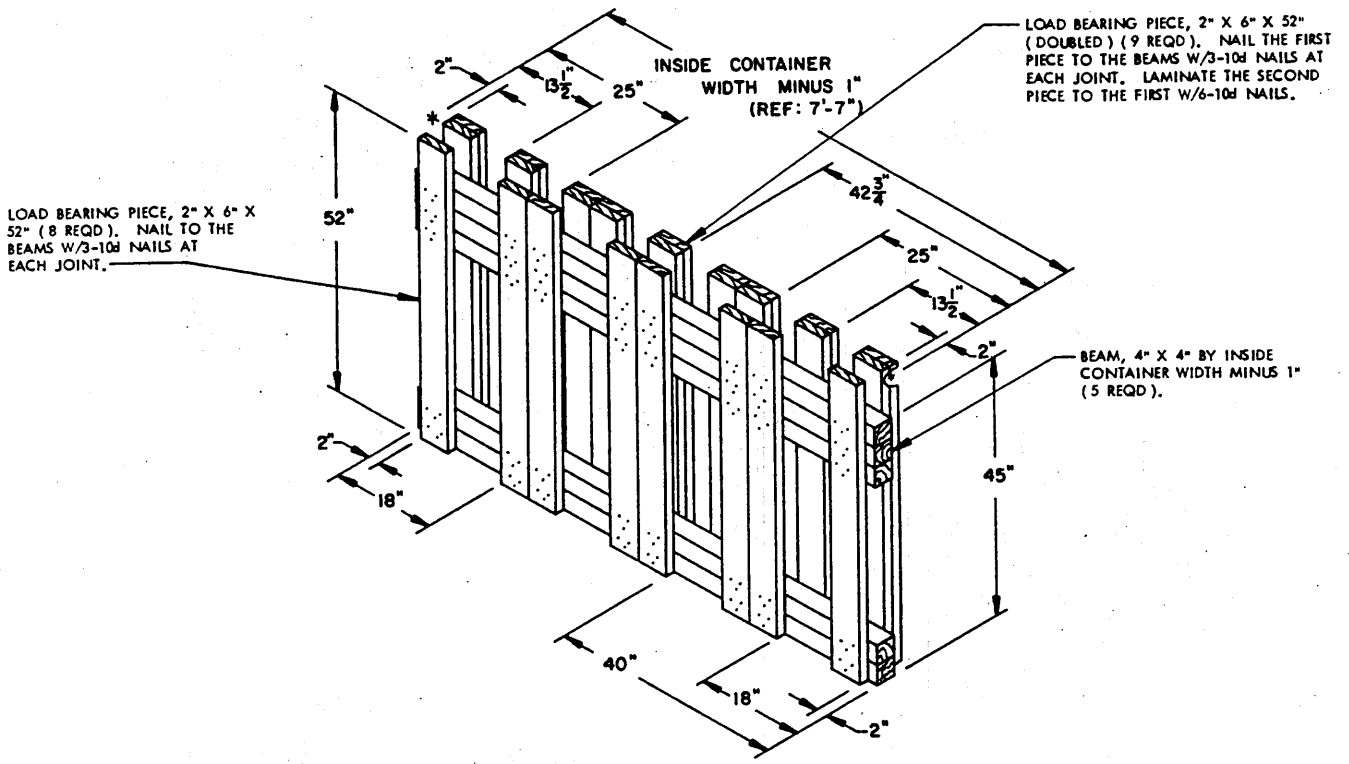
VERTICAL PIECE, PLYWOOD, 1/2" X  
43-3/4" X 47-1/2" (1 REQD). NAIL  
TO THE TIE PIECES W/4-6d NAILS AT  
EACH LOCATION AND CLINCH.

VERTICAL PIECE, PLYWOOD,  
1/2" X 32" X 47-1/2"  
(1 REQD). NAIL TO THE  
TIE PIECES W/4-6d NAILS  
AT EACH LOCATION  
AND CLINCH.

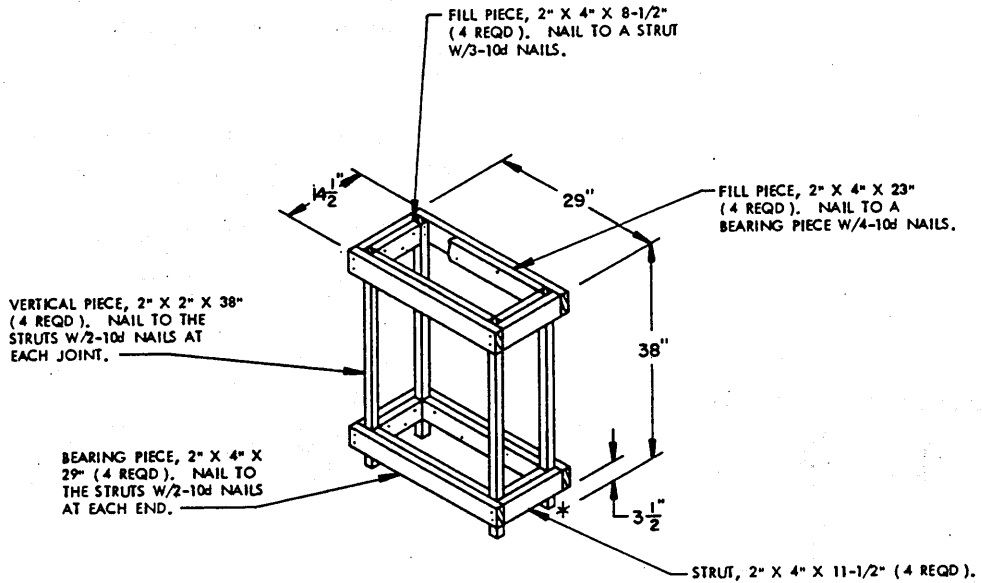
TIE PIECE, 1" X 6" X 32"  
(3 REQD).



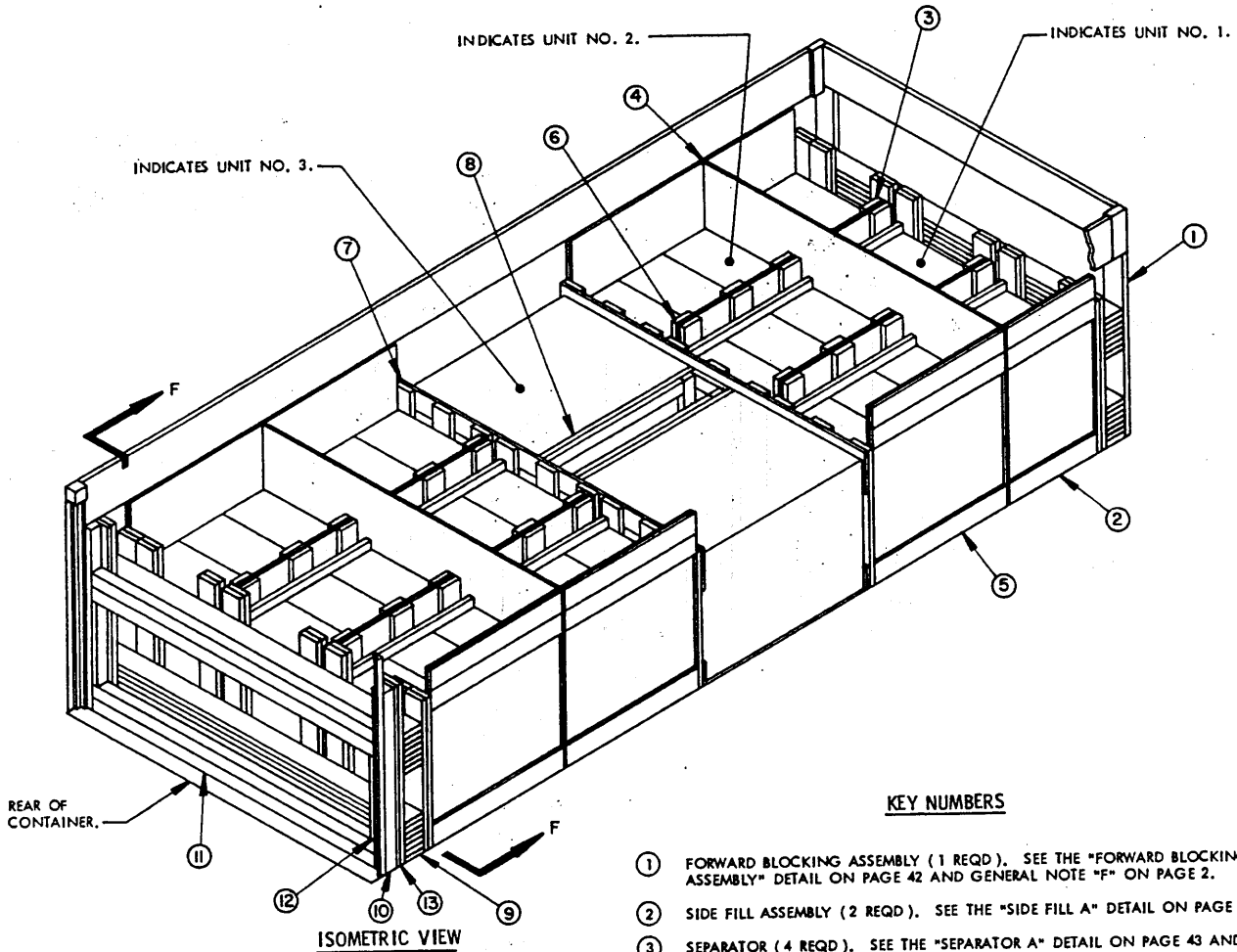
SIDE FILL B



**LOAD BEARING GATE B**

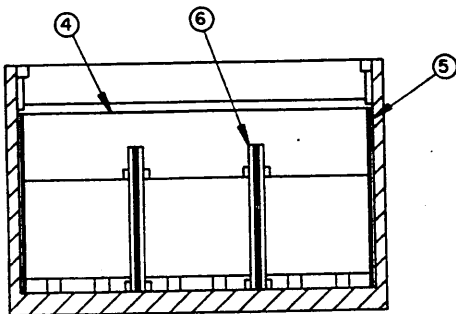


**FILLER ASSEMBLY**



**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 42 AND GENERAL NOTE "F" ON PAGE 2.
- ② SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL A" DETAIL ON PAGE 44.
- ③ SEPARATOR (4 REQD). SEE THE "SEPARATOR A" DETAIL ON PAGE 43 AND GENERAL NOTE "D" ON PAGE 2.
- ④ LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE A" DETAIL ON PAGE 43.
- ⑤ SIDE FILL ASSEMBLY (6 REQD). SEE THE "SIDE FILL B" DETAIL ON PAGE 44.
- ⑥ SEPARATOR (12 REQD). SEE THE "SEPARATOR B" DETAIL ON PAGE 43 AND GENERAL NOTE "D" ON PAGE 2.
- ⑦ LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE B" DETAIL ON PAGE 45.
- ⑧ FILLER ASSEMBLY (1 REQD). SEE THE "FILLER ASSEMBLY" DETAIL ON PAGE 45.
- ⑨ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 42 AND GENERAL NOTE "F" ON PAGE 2.
- ⑩ DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" (2 REQD). SEE THE "TYPICAL DETAIL B" AND "C" ON PAGE 47 AND GENERAL NOTE "E" ON PAGE 2.
- ⑪ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7"-1-3/8") (4 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 47.
- ⑫ DOOR SPANNER SUPPORT PIECE, 2" X 4" X 17" (2 REQD). NAIL TO A DOOR POST VERTICAL W/3-10d NAILS AFTER THE LOWER DOOR SPANNER PIECES ARE IN POSITION.
- ⑬ FILL MATERIAL, 6" WIDE X 47-1/2" LONG MATERIAL (AS REQD). NAIL EACH PIECE TO THE REAR BLOCKING ASSEMBLY AND/OR LAMINATE TOGETHER W/4 NAILS OF A SUITABLE SIZE (10d FOR 2" THICK MATERIAL). **CAUTION:** DO NOT NAIL TO THE DOOR POST VERTICALS, PIECES MARKED ⑩.





**RECOMMENDED SEQUENTIAL LOADING PROCEDURES:**

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
2. PREFABRICATE THE FOLLOWING:
  - A. TWO SIDE FILL "A" ASSEMBLIES.
  - B. FOUR SEPARATOR "A" ASSEMBLIES.
  - C. TWO LOAD BEARING GATE "A" ASSEMBLIES.
  - D. SIX SIDE FILL "B" ASSEMBLIES.
  - E. TWELVE SEPARATOR "B" ASSEMBLIES.
  - F. TWO LOAD BEARING GATE "B" ASSEMBLIES.
  - G. ONE FILLER ASSEMBLY.
3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE FILL "A" ASSEMBLIES.
4. LOAD SIX PALLET UNITS ( UNIT NO. 1 ) AND INSTALL FOUR SEPARATOR "A" ASSEMBLIES.
5. INSTALL ONE LOAD BEARING GATE "A", LOAD NINE PALLET UNITS ( UNIT NO. 2 ) AND INSTALL FOUR SEPARATOR "B" ASSEMBLIES.
6. INSTALL ONE LOAD BEARING GATE "B" , LOAD ONE PALLET UNIT ( UNIT NO. 3 ) AND INSTALL ONE FILLER ASSEMBLY.
7. LOAD ONE PALLET UNIT ( UNIT NO. 3 ) AND INSTALL ONE LOAD BEARING GATE "B".
8. INSTALL TWO SIDE FILL "B" ASSEMBLIES, LOAD NINE PALLET UNITS ( UNIT NO. 2 ), AND INSTALL FOUR SEPARATOR "B" ASSEMBLIES.
9. REPEAT STEP 5.
10. INSTALL REAR BLOCKING ASSEMBLY.
11. INSTALL THE TWO DOOR POST VERTICALS.
12. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION AFTER CLOSING AND FASTENING THE CONTAINER DOOR HEADER.
13. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
14. INSTALL THE TWO DOOR SPANNER SUPPORT PIECES AND THE REMAINING TWO DOOR SPANNERS.

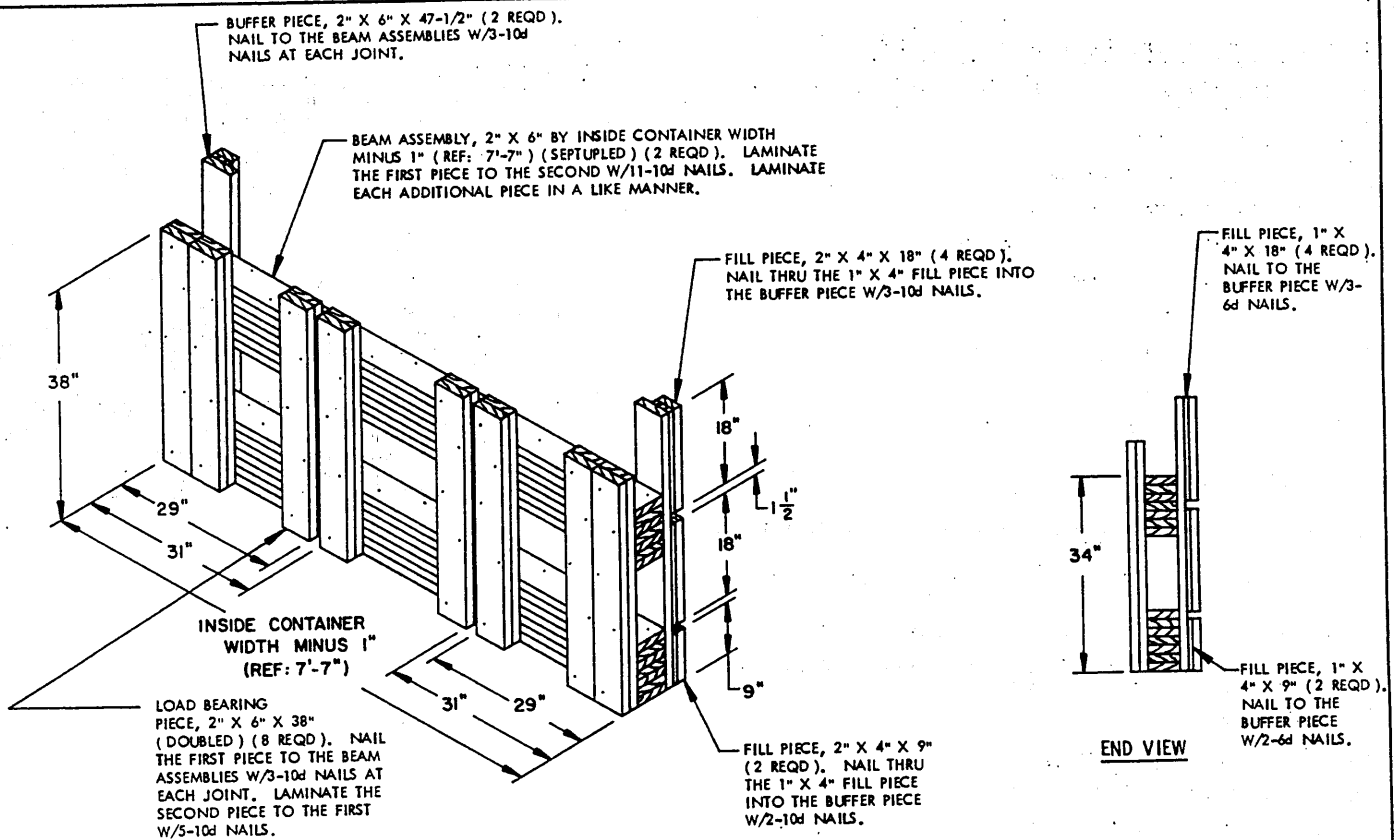
**SPECIAL NOTES:**

1. THE PALLETIZED SEPARATE LOADING PROJECTILE UNITS AND THE PALLETIZED BOXED AMMUNITION UNITS SHOWN IN THE TYPICAL LOAD ON PAGE 40 ARE BASED ON UNIT NUMBERS 1, 2, AND 3 SHOWN ON PAGE 11. THE DEPICTED LOADING PROCEDURES ARE ALSO APPLICABLE FOR PALLETIZED UNITS OF OTHER DIMENSIONS. REFER TO THE "LOAD PLANNING GUIDANCE" AND "LOAD PLANNING CHARTS" ON PAGES 4 AND 5 FOR ADDITIONAL GUIDANCE.
2. EXCESSIVE SLACK ACROSS THE WIDTH OF A LOAD CAN BE ELIMINATED BY LAMINATING ADDITIONAL VERTICAL PIECES TO THE SEPARATOR ASSEMBLIES AND/OR INCREASING THE LENGTH OF THE LATERAL PIECES OF THE FILLER ASSEMBLY, AS APPROPRIATE.
3. FOR EASE IN THE INSTALLATION OF THE FORWARD BLOCKING ASSEMBLY INTO THE COMMERCIAL CONTAINER, THE OUTER TWO LOAD BEARING PIECES WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION.
4. THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY WILL NOT BE NAILED TO THE ASSEMBLY UNTIL THE ASSEMBLY IS MOVED INTO ITS FINAL BLOCKING POSITION. AFTER THE REAR BLOCKING ASSEMBLY HAS BEEN CENTERED IN THE CONTAINER, THE BUFFER PIECES WILL BE POSITIONED SO AS TO CONTACT THE CONTAINER SIDEWALL AND WILL BE NAILED AS SPECIFIED WITHIN THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 42.

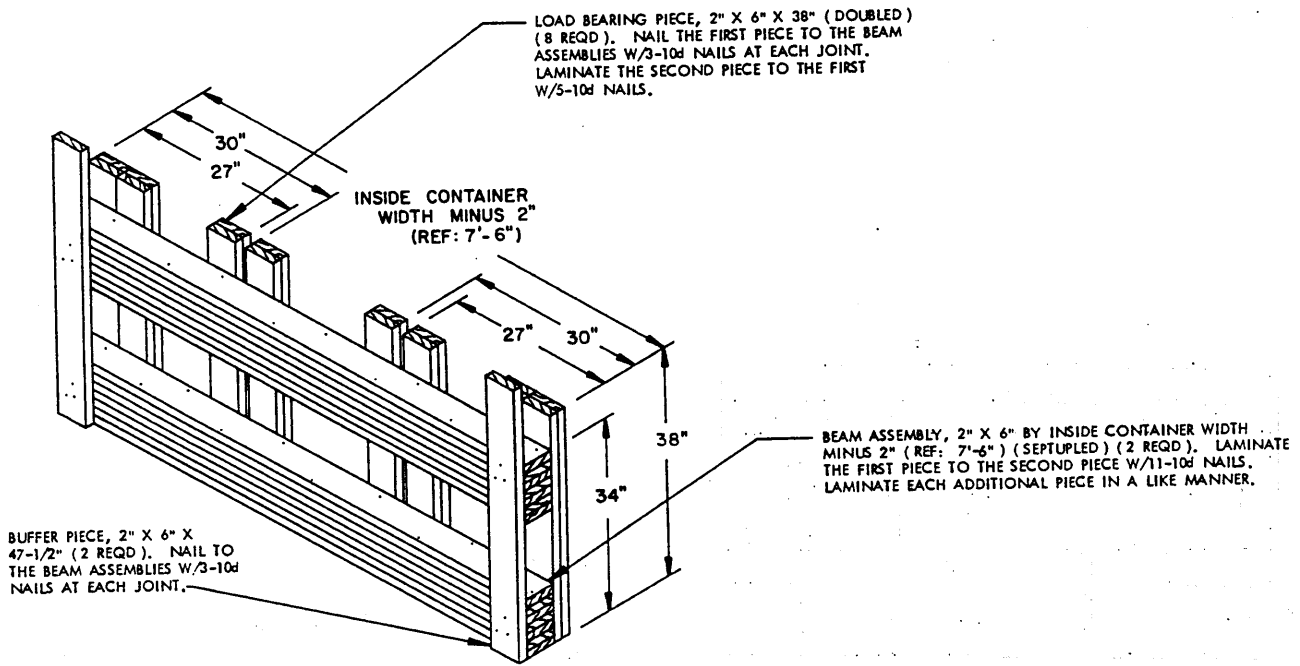
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	116	58
2" X 3"	104	52
2" X 4"	200	134
2" X 6"	392	392
4" X 4"	37	49
NAILS	NO. REQD	POUNDS
6d (2")	432	2-3/4
10d (3")	534	8-1/4
12d (3-1/4")	168	3
PLYWOOD, 1/2"	287 SQ FT REQD	394 LBS

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT NO. 1	6	4,692 LBS
PALLET UNIT NO. 2	29	23,258 LBS
PALLET UNIT NO. 3	2	1,834 LBS
DUNNAGE		1,784 LBS
CONTAINER		4,365 LBS
TOTAL WEIGHT		35,933 LBS

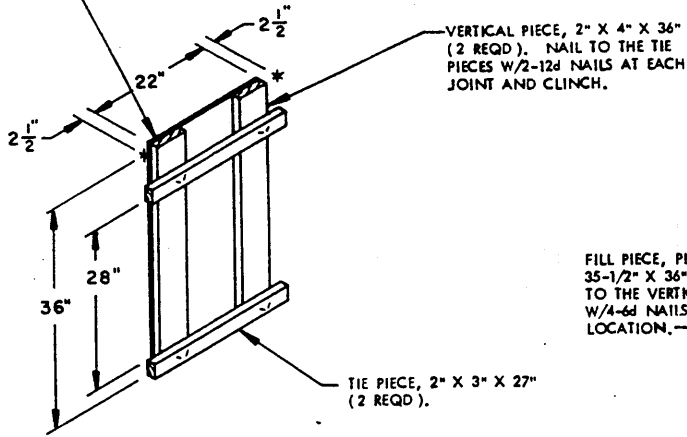


**FORWARD BLOCKING ASSEMBLY**  
 (SEE SPECIAL NOTE 3 ON PAGE 41.)



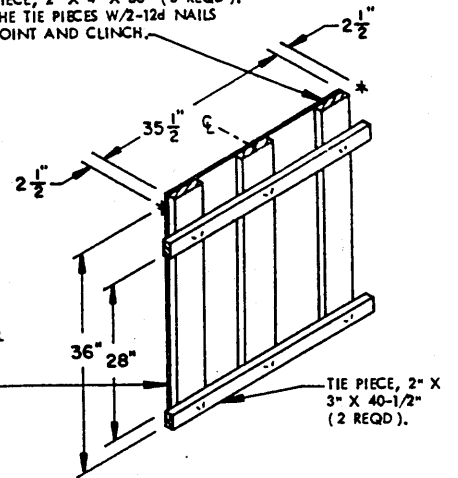
**REAR BLOCKING ASSEMBLY**  
 (SEE SPECIAL NOTE 4 ON PAGE 41.)

FILL PIECE, PLYWOOD, 1/2" X 22" X 36" (1 REQD).  
NAIL TO THE VERTICAL PIECES W/4-6d NAILS AT  
EACH LOCATION.



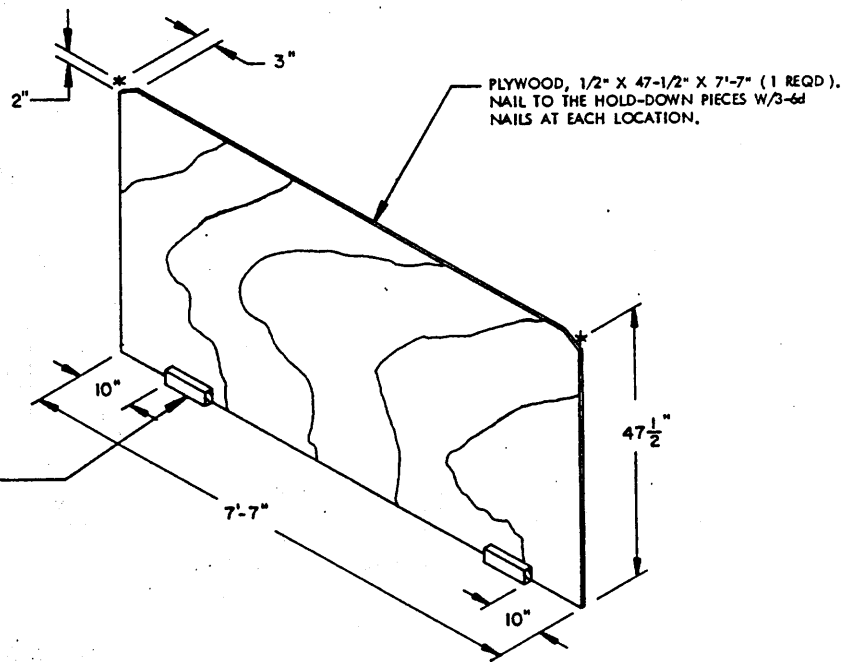
SEPARATOR A

VERTICAL PIECE, 2" X 4" X 36" (3 REQD).  
NAIL TO THE TIE PIECES W/2-12d NAILS  
AT EACH JOINT AND CLINCH.



SEPARATOR B

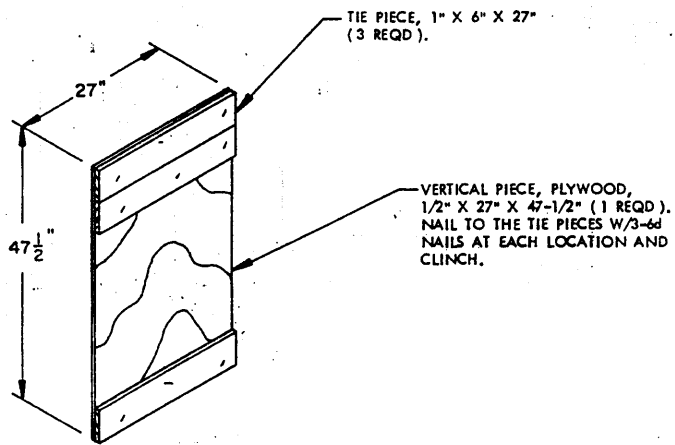
FILL PIECE, PLYWOOD, 1/2" X  
35-1/2" X 36" (1 REQD). NAIL  
TO THE VERTICAL PIECES  
W/4-6d NAILS AT EACH  
LOCATION.



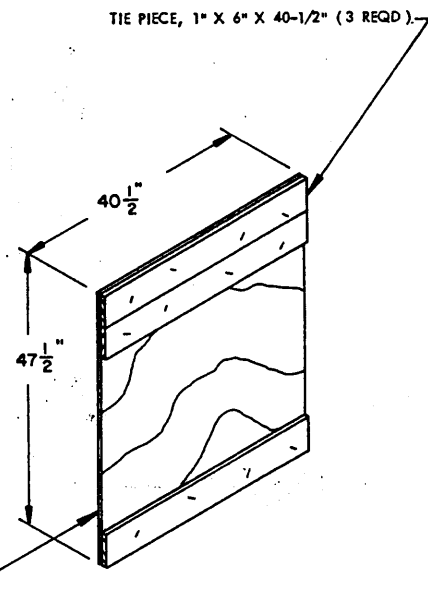
HOLD-DOWN PIECE,  
2" X 3" X 8" (2 REQD).

PLYWOOD, 1/2" X 47-1/2" X 7'-7" (1 REQD).  
NAIL TO THE HOLD-DOWN PIECES W/3-6d  
NAILS AT EACH LOCATION.

LOAD BEARING GATE A

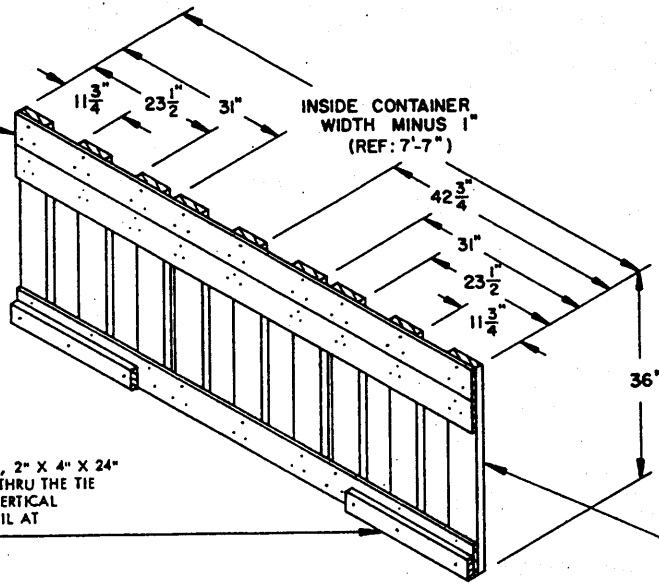


SIDE FILL A



SIDE FILL B

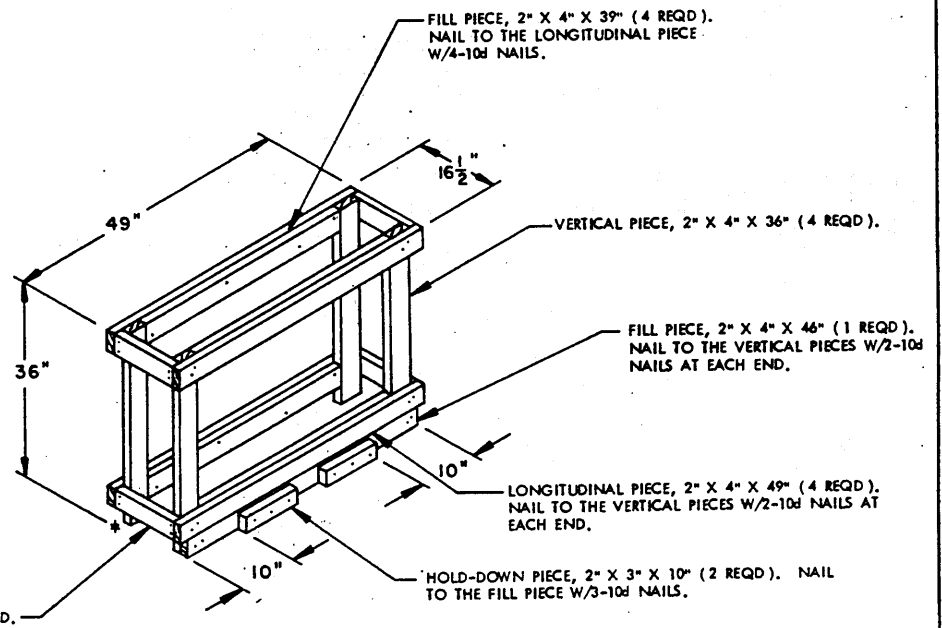
TIE PIECE, 1" X 6" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (3 REQD). NAIL TO THE VERTICAL PIECES W/3-6d NAILS AT EACH JOINT.



HOLD-DOWN PIECE, 2" X 4" X 24" (2 REQD). NAIL THRU THE TIE PIECES INTO THE VERTICAL PIECES W/1-10d NAIL AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 36" (9 REQD).

**LOAD BEARING GATE B**



FILL PIECE, 2" X 4" X 39" (4 REQD). NAIL TO THE LONGITUDINAL PIECE W/4-10d NAILS.

VERTICAL PIECE, 2" X 4" X 36" (4 REQD).

FILL PIECE, 2" X 4" X 46" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.

LONGITUDINAL PIECE, 2" X 4" X 49" (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.

LATERAL PIECE, 2" X 4" X 13-1/2" (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.

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

**FILLER ASSEMBLY**

BUFFER PIECE, 2" X 8" BY THE DISTANCE BETWEEN OUTSIDE PALLET POSTS PLUS 6" (1 REQD). POSITION AGAINST THE PALLET POSTS AND NAIL TO THE RETAINER PIECE W/3-10d NAILS AT EACH JOINT. SEE THE "ALTERNATIVE BUFFER PIECE" AT RIGHT.

RETAINER PIECE, 2" X 4" BY LENGTH TO SUIT (2 REQD). POSITION TO EXTEND UNDER THE LATERALLY ADJACENT PALLET AND AGAINST THE PALLET POSTS.

BUFFER PIECE, 2" X 4" BY THE DISTANCE BETWEEN OUTSIDE PALLET POSTS PLUS 6" (1 REQD). NAIL TO THE RETAINER PIECES W/3-10d NAILS AT EACH JOINT PRIOR TO POSITIONING AGAINST THE PALLET POSTS.

FILL PIECE, 2" X 2" BY THE DISTANCE BETWEEN OUTSIDE PALLET POSTS PLUS 6" (1 REQD). NAIL TO THE BUFFER PIECE W/1-10d NAIL EVERY 12".

POSITION THIS SIDE AGAINST THE PALLET POSTS.

BUFFER PIECE, 2" X 6" BY THE DISTANCE BETWEEN OUTSIDE PALLET POSTS PLUS 6" (1 REQD). NAIL TO THE RETAINER PIECES W/3-10d NAILS AT EACH END.

FABRICATE TO FIT BETWEEN THE POSTS OF LATERALLY ADJACENT PALLET.

POSITION TO FIT AGAINST THE PALLET POSTS.

#### ALTERNATIVE BUFFER PIECE

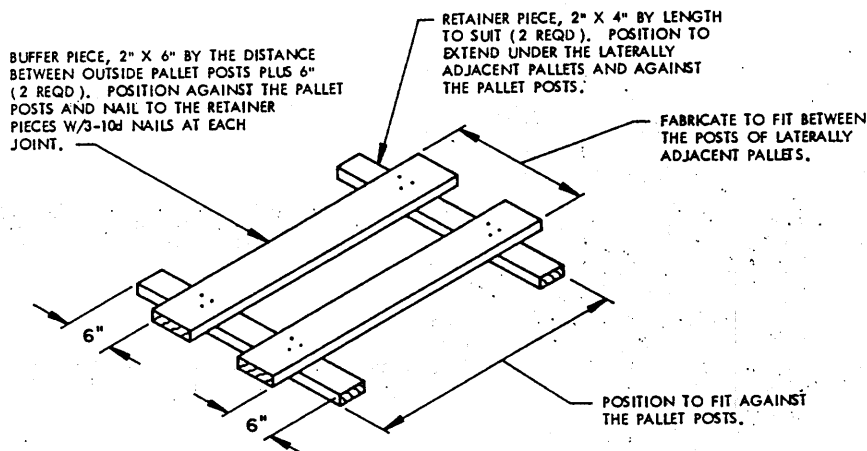
SEE SPECIAL NOTE "2.F" BELOW.

#### TYPICAL ANTI-SWAY BRACE A

SEE THE SPECIAL NOTES BELOW.

##### SPECIAL NOTES (FOR TYPICAL ANTI-SWAY BRACE A):

1. THE "TYPICAL ANTI-SWAY BRACE A" SHOWN ABOVE IS FOR USE BETWEEN PALLETIZED UNITS THAT ARE POSITIONED WITH THE PALLET LENGTH PARALLEL TO THE CONTAINER SIDEWALL.
2. THE ASSEMBLY MUST BE FABRICATED IN PLACE BETWEEN THE PALLET.
  - A. POSITION THE FIRST RETAINER PIECE BETWEEN THE CENTER PALLET POST AND THE PALLET POST WHICH IS FURTHEST AWAY. THE RETAINER PIECE IS TO SPAN THE VOID BETWEEN LATERALLY ADJACENT PALLET.
  - B. POSITION THE SECOND RETAINER PIECE AGAINST THE INSIDE OF THE NEAREST PALLET POST SO AS TO SPAN THE VOID BETWEEN LATERALLY ADJACENT PALLET.
  - C. POSITION THE 2" X 4" BUFFER PIECE 6" FROM THE END OF THE FIRST RETAINER PIECE AND EXTENDING BEYOND THE RETAINER PIECE. NAIL TO THE RETAINER PIECE W/3-10d NAILS.
  - D. PUSH THE PARTIAL ASSEMBLY FORWARD UNTIL THE FIRST RETAINER PIECE CONTACTS THE PALLET POST ON THE FAR SIDE OF THE PALLET. NAIL THE BUFFER PIECE TO THE SECOND RETAINER PIECE W/3-10d NAILS.
  - E. PUSH THE PARTIAL ASSEMBLY SIDEWAYS UNTIL THE 2" X 4" BUFFER PIECE IS AGAINST THE PALLET POSTS AND RESTING ON THE BOTTOM SUPPORT BOARDS OF THE PALLET.
  - F. POSITION THE 2" X 8" BUFFER PIECE AGAINST THE PALLET POSTS ON THE OPPOSITE SIDE OF THE VOID AND NAIL TO THE RETAINER PIECES W/3-10d NAILS AT EACH JOINT. NOTE: IF 2" X 8" MATERIAL IS NOT AVAILABLE, USE THE "ALTERNATIVE BUFFER PIECE" WHICH IS DETAILED ABOVE.

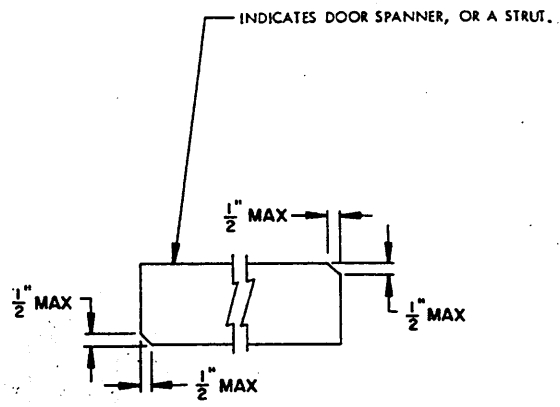
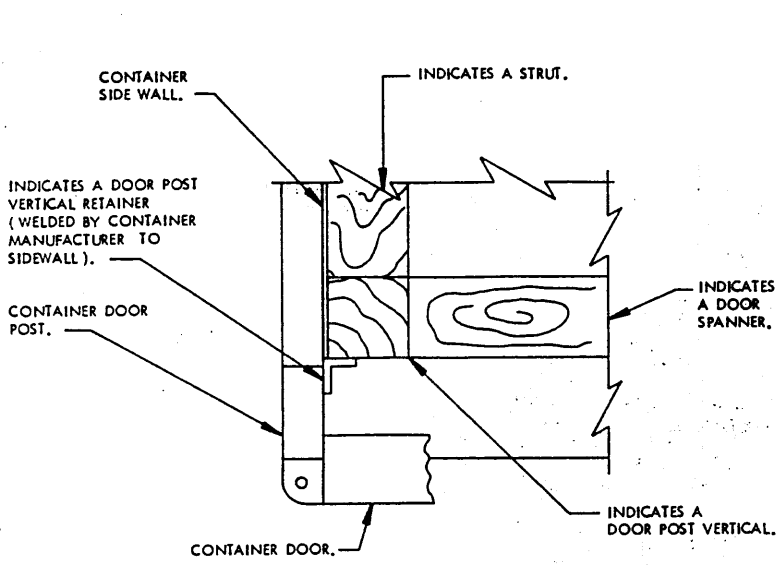


#### TYPICAL ANTI-SWAY BRACE B

##### SPECIAL NOTES (FOR TYPICAL ANTI-SWAY BRACE B):

1. THE "TYPICAL ANTI-SWAY BRACE B" IS FOR USE BETWEEN PALLET UNITS THAT ARE POSITIONED WITH THE PALLET WIDTH PARALLEL TO THE CONTAINER SIDEWALL.
2. THE ASSEMBLY MUST BE FABRICATED IN PLACE BETWEEN PALLET.
  - A. POSITION THE FIRST RETAINER PIECE BETWEEN THE CENTER PALLET POST AND THE PALLET POST WHICH IS FURTHEST AWAY. THE RETAINER PIECE IS TO SPAN THE VOID BETWEEN LATERALLY ADJACENT PALLET.
  - B. POSITION THE SECOND RETAINER PIECE AGAINST THE INSIDE OF THE NEAREST PALLET POST SO AS TO SPAN THE VOID BETWEEN LATERALLY ADJACENT PALLET.
  - C. POSITION THE FIRST BUFFER PIECE AGAINST THE PALLET POSTS AND EXTENDING 3" BEYOND THE FURTHEST RETAINER PIECE. NAIL TO THE RETAINER PIECE W/3-10d NAILS. POSITION THE SECOND BUFFER PIECE AGAINST THE PALLET POSTS ON THE OPPOSITE SIDE AND EXTENDING 3" BEYOND THE FURTHEST RETAINER PIECE. NAIL TO THE RETAINER PIECE W/3-10d NAILS.
  - D. PUSH THE PARTIAL ASSEMBLY FORWARD UNTIL THE FIRST RETAINER PIECE CONTACTS THE PALLET POST ON THE FAR SIDE OF THE PALLET. NAIL THE BUFFER PIECES TO THE SECOND RETAINER PIECE W/3-10d NAILS AT EACH JOINT.
3. IF THE VOID BETWEEN LATERALLY ADJACENT PALLET IS LESS THAN 11-1/4", THE BUFFER PIECES MAY BE 2" X 4" MATERIAL IN LIEU OF 2" X 6" MATERIAL.

#### TYPICAL DETAILS

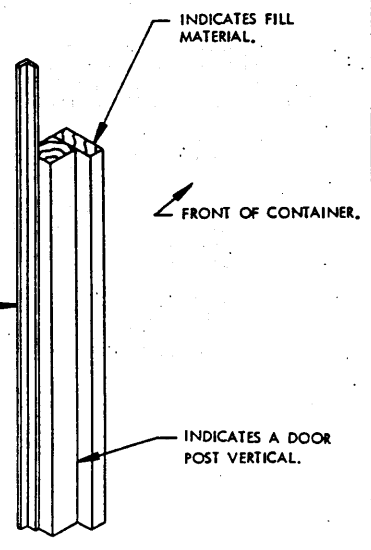
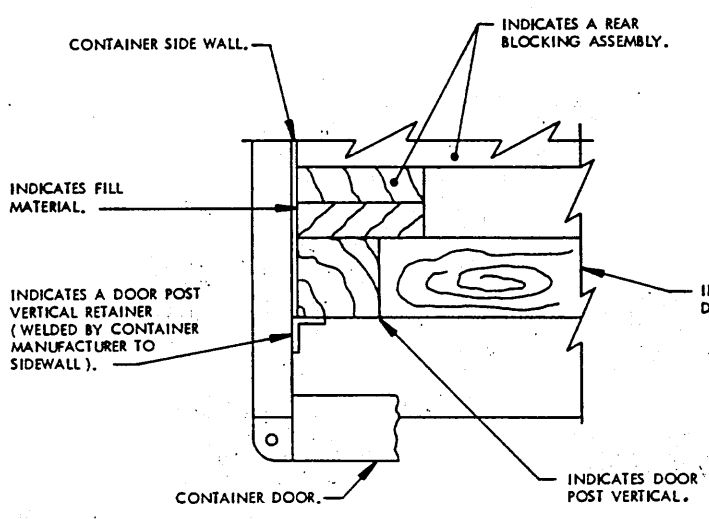


**BEVEL-CUT**

IF DESIRED, EACH END OF A DOOR SPANNER PIECE OR A STRUT MAY BE BEVEL-CUT AS SHOWN ABOVE TO FACILITATE THE ACHIEVEMENT OF A TIGHT DOOR-POST-TO-DOOR-POST FIT OR A TIGHT REAR-OF-LOAD FIT.

**TYPICAL DETAIL A**

A TYPICAL PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND ADJACENT DUNNAGE PIECES.



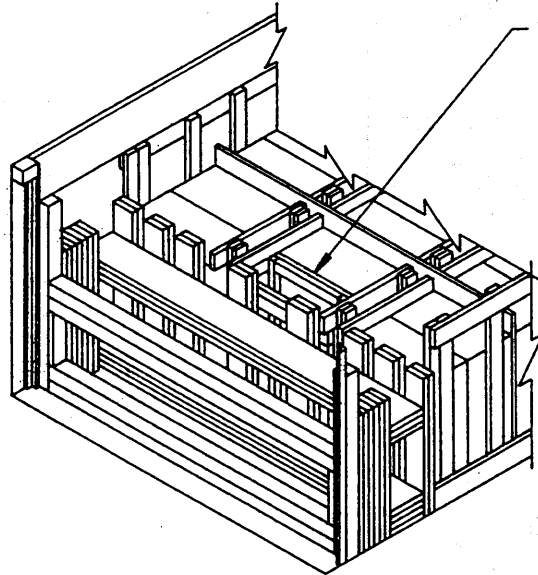
**TYPICAL DETAIL B**

A TYPICAL PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND ADJACENT DUNNAGE PIECES.

**TYPICAL DETAIL C**

DOOR SPANNERS AND STRUT LEDGERS HAVE BEEN OMITTED FOR CLARITY PURPOSES.

**TYPICAL DETAILS**



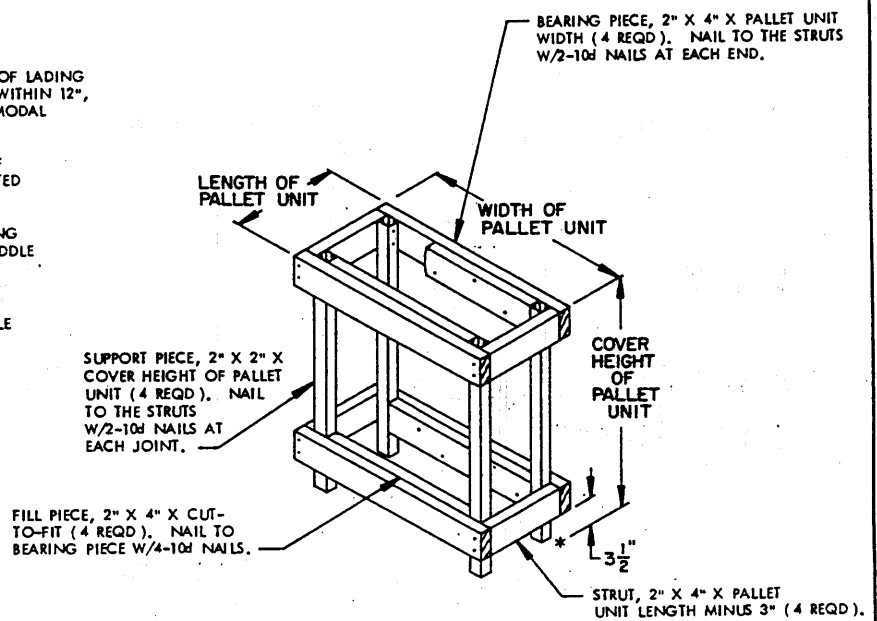
**TYPICAL REDUCED LOAD**

(SEE THE "REDUCED LOAD PROVISIONS" BELOW.)

**REDUCED LOAD PROVISIONS**

WHEN A CONTAINER IS TO BE LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF A LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MIDPOINT IN A COMMERCIAL INTERMODAL CONTAINER, AND THE FOLLOWING CRITERIA WILL APPLY:

- A. IF A LOAD IS REDUCED BY ONLY A SMALL QUANTITY OF LADING UNITS, THE UNITS NORMALLY MAY BE ELIMINATED FROM THE REAR OF THE LOAD AS SHOWN ABOVE.
- B. IF A LOAD IS REDUCED BY A LARGE QUANTITY OF LADING UNITS, THE UNITS SHOULD BE ELIMINATED FROM THE MIDDLE ROW IN THE CONTAINER, AS REQUIRED, SO THAT A SYMMETRICAL WEIGHT DISTRIBUTION IS ACHIEVED.
- C. LADING UNITS WILL ONLY BE OMITTED FROM THE MIDDLE ROW WITHIN THE CONTAINER. LADING UNITS IN THE OUTSIDE ROWS OF THE CONTAINER ARE NOT TO BE REPLACED BY OMITTED-UNIT ASSEMBLIES.

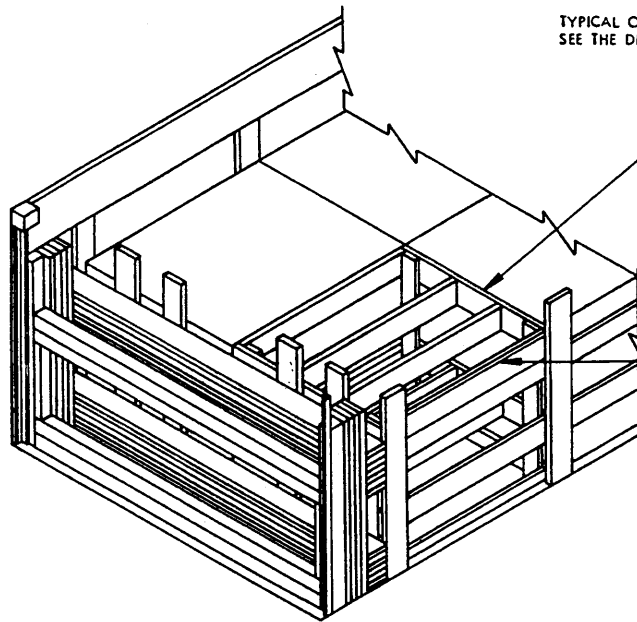


**TYPICAL OMITTED-UNIT ASSEMBLY**

THE ASSEMBLY DEPICTED ABOVE IS FOR USE IN PLACE OF AN OMITTED SEPARATE LOADING PROJECTILE PALLET UNIT. CAUTION: AN ASSEMBLY MUST ONLY BE PLACED WITHIN THE MIDDLE ROW OF A LOAD BAY. SEE THE "TYPICAL REDUCED-LOAD" DETAIL ABOVE.

**TYPICAL REDUCED-LOAD PROCEDURES**





TYPICAL OMITTED-UNIT ASSEMBLY (1 REQD).  
SEE THE DETAIL BELOW.

FILL PIECE, 2" X 6" BY UNIT WIDTH OR LENGTH (1 REQD). NAIL TO THE LONGITUDINAL PIECE W/3-10d NAILS. NOTE: WHEN THE UPPER LONGITUDINAL PIECE OF THE OMITTED-UNIT ASSEMBLY DOES NOT CONTACT A HORIZONTAL PIECE ON THE SIDE FILL ASSEMBLY, A FILL PIECE MUST BE ADDED AS SHOWN.

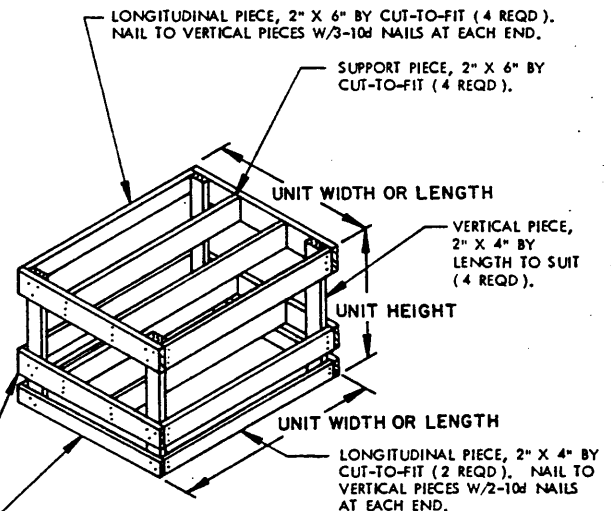
**TYPICAL REDUCED LOAD**

(SEE THE "REDUCED LOAD PROVISIONS" BELOW)

**REDUCED LOAD PROVISIONS**

WHEN A CONTAINER IS TO BE LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF A LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MIDPOINT IN A CONTAINER, AND THE FOLLOWING CRITERIA WILL APPLY.

- A. IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT, LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE REAR OF THE LOAD, AS SHOWN ABOVE.
- B. IF A LOAD IS REDUCED BY A LARGE AMOUNT, LADING UNITS SHOULD BE ELIMINATED FROM LOCATIONS WITHIN THE LOAD OR LADING UNITS SHOULD BE ELIMINATED AS REQUIRED AND THE TOTAL LOAD SHIFTED AS NECESSARY, FORE OR AFT, TO ACHIEVE A SYMMETRICAL WEIGHT DISTRIBUTION. THE DEPICTED PROCEDURES WILL BE FOLLOWED AS CLOSELY AS POSSIBLE, MAKING ONLY THOSE ADJUSTMENTS TO THE DUNNAGE WHICH ARE REQUIRED TO ACCOMMODATE THE NUMBER OF UNITS TO BE SHIPPED.



**TYPICAL OMITTED-UNIT ASSEMBLY**

THE ASSEMBLY AS SPECIFIED ABOVE IS FOR USE IN PLACE OF AN OMITTED BOXED AMMUNITION UNIT, AND WILL BE REQUIRED FOR SOME LOADS TO PROVIDE A TWO OR THREE-WIDE LOADING PATTERN THROUGHOUT THE LENGTH OF THESE LOADS.

**TYPICAL REDUCED-LOAD PROCEDURES**

