

APPROVED BY
BUREAU OF EXPLOSIVES

J R / H

DATE 9/15/97

LOADING AND BRACING IN END OPENING ISO CONTAINERS OF PROPELLING CHARGES PACKED IN CYLINDRICAL METAL CONTAINERS

M10 SERIES CONTAINERS

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- LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND <i>[Signature]</i>	ENGINEER	BASIC	MICHAEL SARDONE	DO NOT SCALE			
		REV.		WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN	BASIC		JULY 1997			
		REV.					
	DRAFTSMAN	BASIC					
		REV.					
APPROVED BY ORDER OF COMMANDING GENERAL U.S. ARMY MATERIEL COMMAND <i>[Signature]</i> DEFENSE AMMUNITION CENTER	TRANSPORTATION ENGINEERING DIVISION		<i>W.R. Eruecks</i>				
	VALIDATION ENGINEERING DIVISION		<i>[Signature]</i> TESTED	CLASS	DIVISION	DRAWING	FILE
	LOGISTICS ENGINEERING OFFICE		<i>[Signature]</i>	19	48	4154/ 1	15PM1002

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO LOADS OF PROPELLING CHARGES PACKED IN M10 SERIES METAL CONTAINERS. SUBSEQUENT REFERENCE TO PALLET UNIT HEREIN MEANS THE PALLET UNIT WITH AMMUNITION ITEMS. SEE PAGE 3 AND AMC DRAWING 19-48-4042A/1-20PM1001 FOR DETAILS OF THE PALLET UNIT. CAUTION: REGARDLESS OF THE QUANTITY OF PALLET UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE END OPENING ISO CONTAINER MUST NOT BE EXCEEDED.
- C. THE LOAD AS SHOWN IS BASED ON A 4,700 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH END OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 93" HIGH, WITH A MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. OLDER/OTHER CONTAINERS MAY HAVE A TOTAL INSIDE HEIGHT OF 95", BUT A CLEAR HEIGHT UNDER THE ROOF BOWS OF 93". VERIFY INSIDE CONTAINER HEIGHT PRIOR TO FABRICATING DUNNAGE. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT, HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF TRANSPORT. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN BE USED.
- D. WHEN LOADING PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE DUNNAGE ASSEMBLIES). THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 1-1/2". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE HORIZONTAL PIECES ON THE CENTER FILL ASSEMBLIES. NAIL EACH ADDITIONAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS AND/OR QUANTITY OF THE VERTICAL OR HORIZONTAL PIECES IN THE CENTER FILL ASSEMBLIES MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE PALLET UNIT.
- E. DUNNAGE LUMBER SPECIFIED IS OF 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.
- F. A STAGGERED NAILING PATTERN WILL BE USED WHENEVER 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. IN SOME CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE FORWARD WALL. PIECES OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES ON THE FORWARD BLOCKING ASSEMBLY TO PROVIDE A FLAT SURFACE FOR THE BUFFER PIECES. A PIECE OF 2" X 4", 2" X 3" OR A SPECIAL WIDTH PIECE CUT-TO-FIT CAN BE USED. THIS FILL PIECE WILL BE NAILED WITH ONE APPROPRIATELY SIZED NAIL EVERY 12". NOTE THAT SOME CONTAINERS ARE EQUIPPED WITH "TIE-BARS" IN THE CORNER SLOT, WHICH PRECLUDE THE USE OF A FULL HEIGHT FILL PIECE. WHEN "TIE-BARS" ARE PRESENT, THE FILL PIECE MUST BE INSTALLED IN SEGMENTS DESIGNED TO FIT BETWEEN THE "TIE-BARS" VERTICALLY. THE FILL PIECE(S) IS NOT REQUIRED WHEN THE CORNER PORTIONS OF THE CONTAINER FORWARD WALL ARE SMOOTH AND FLAT. DO NOT ALLOW ANY DUNNAGE ASSEMBLY TO CONTACT THE CONTAINER FORWARD WALL. ONLY THE CORNER POSTS OF THE CONTAINER SHOULD BE USED FOR FORWARD LONGITUDINAL BLOCKING.
- H. WHETHER A CONTAINER IS FULL OR IS LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF THE LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MID-POINT OF THE CONTAINER.
- J. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- K. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDEWALL, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

(CONTINUED AT RIGHT)

L. MAXIMUM LOAD WEIGHT CRITERIA:

THE MAXIMUM LOAD WEIGHTS ARE CONTROLLED BY EQUIPMENT CAPABILITY FACTORS. ALTHOUGH THE HEAVIEST MAXIMUM LOADS ARE DELINEATED IN THE LOAD VIEWS, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOADS CAN BE ADJUSTED TO SATISFY A LESSER QUANTITY OF LADING UNITS. DEPENDING ON TRANSPORTATION ROUTING, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY "WEIGHT LAWS" OF CERTAIN STATES. ALSO, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY OTHER WEIGHT RESTRICTIONS IMPOSED ON THE INTERMODAL CONTAINER SYSTEM.

M. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLATCAR (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 RAILCAR 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.

N. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS OR MODIFIED FLATBED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.

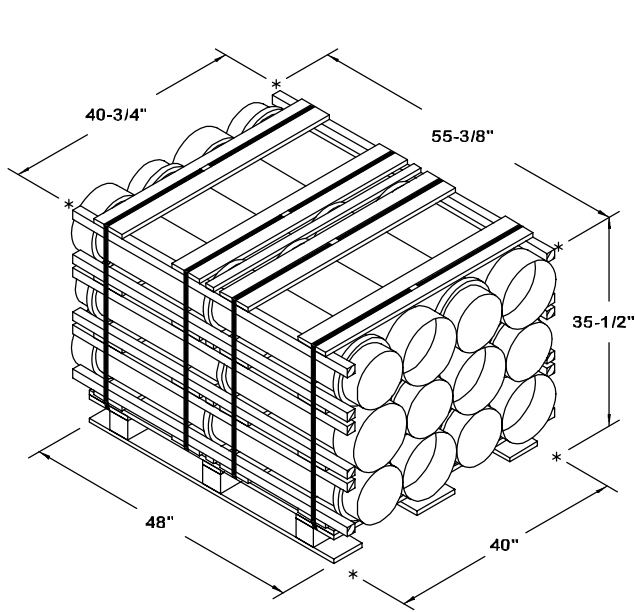
O. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4 MM AND ONE POUND EQUALS 0.454 KG.

P. THE QUANTITY OF PALLET UNITS SHOWN IN THE LOADS ON PAGES 6, 8, 10, 12, 14, AND 16 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE FILLER ASSEMBLY ON PAGE 4.

1. IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT (ONE OR TWO LADING UNITS), LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE CENTER OF THE LOAD.
2. IF A LOAD IS REDUCED BY LARGE AMOUNT (MORE THAN TWO LADING UNITS), LADING UNITS SHOULD BE ELIMINATED AS REQUIRED AND THE TOTAL LOAD SHIFTED FORE OR AFT, AS NECESSARY, 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.

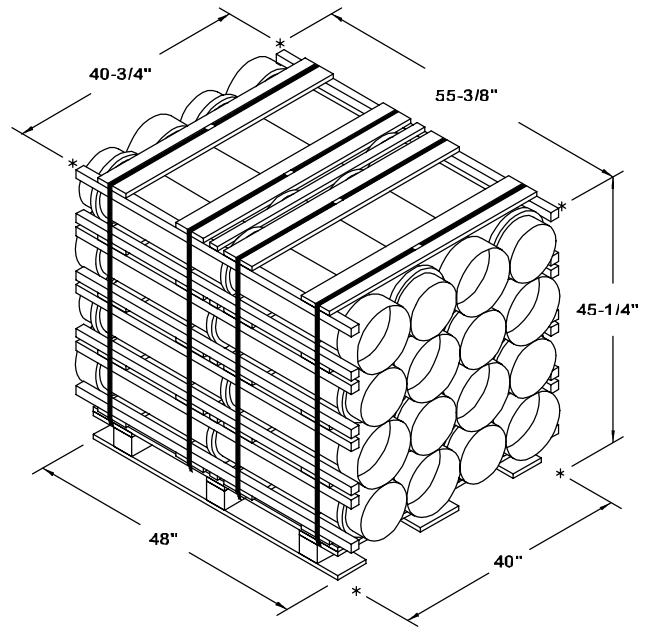
MATERIAL SPECIFICATIONS

<u>LUMBER</u> ----- :	SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
<u>NAILS</u> ----- :	FED SPEC FF-N-105; COMMON.
<u>PLYWOOD</u> ----- :	COMMERCIAL ITEM DESCRIPTION A-A-55057, TYPE A, 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.
<u>STEEL, STRUCTURAL</u> :-	ASTM A501, STEEL STRUCTURAL TUBING; AND ASTM A570, STEEL, STRIP, HOT-ROLLED, GRADE 36 (MINIMUM).



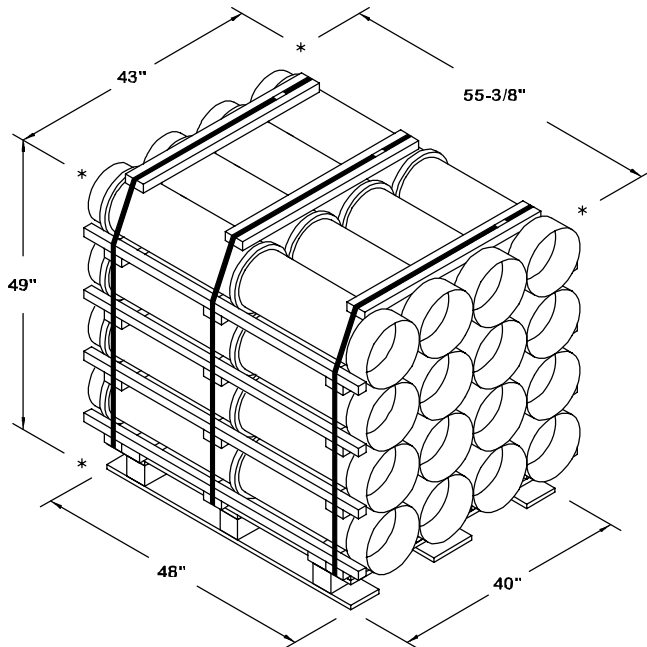
ALTERNATED CONTAINERS UNIT (BASIC HEIGHT)

CONTAINER ----- 12 EACH @ 121 LBS (APPROX)
 CUBE ----- 46.4 CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 1,636 LBS (APPROX)



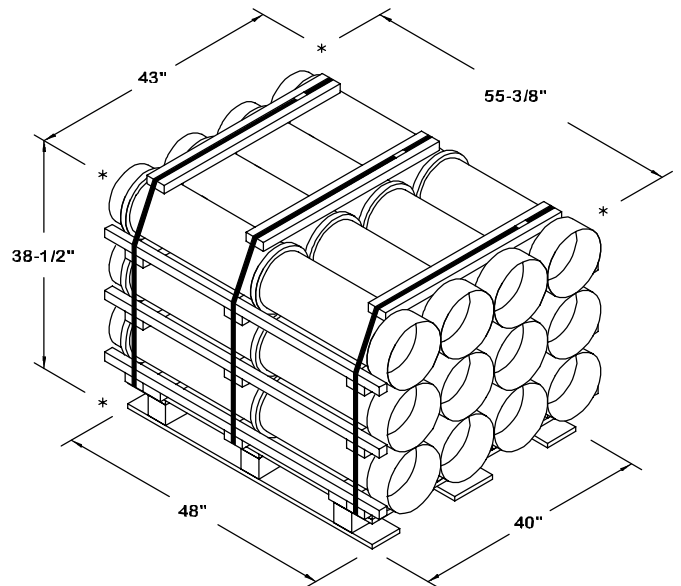
ALTERNATED CONTAINERS UNIT (INCREASED HEIGHT)

CONTAINER ----- 16 EACH @ 121 LBS (APPROX)
 CUBE ----- 59.1 CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 2,148 LBS (APPROX)



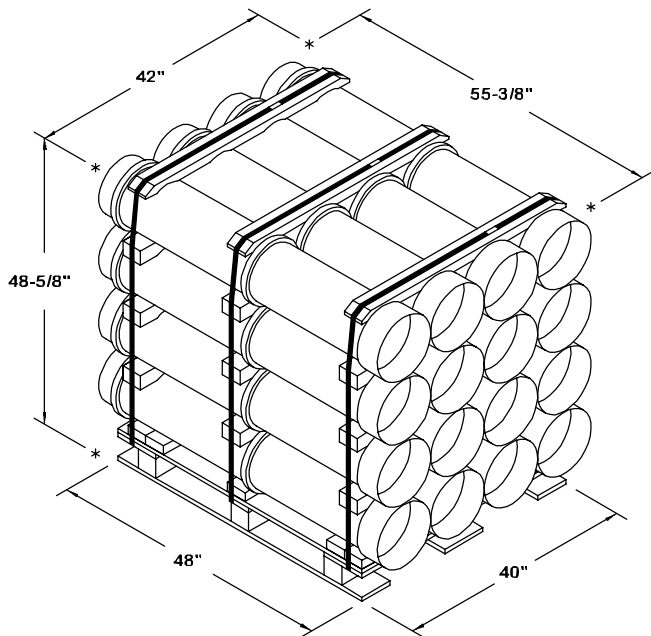
FLAT DUNNAGE UNIT (BASIC HEIGHT)

CONTAINER ----- 16 EACH @ 121 LBS (APPROX)
 CUBE ----- 67.5 CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 2,127 LBS (APPROX)



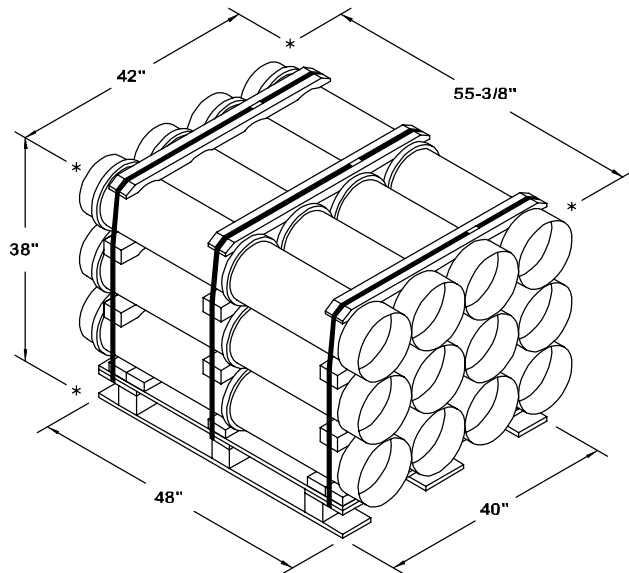
FLAT DUNNAGE UNIT (DECREASED HEIGHT)

CONTAINER ----- 12 EACH @ 121 LBS (APPROX)
 CUBE ----- 53. CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 1,614 LBS (APPROX)



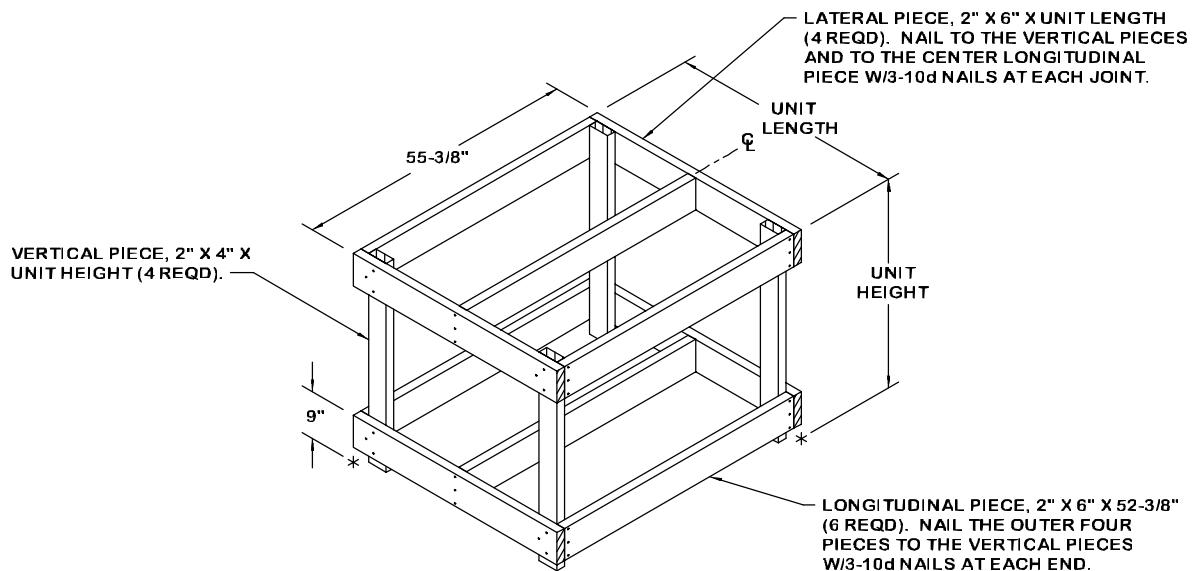
ROUTED DUNNAGE UNIT (BASIC HEIGHT)

CONTAINER -----16 EACH @ 121 LBS (APPROX)
 CUBE -----65.4 CUBIC FEET (APPROX)
 GROSS WEIGHT -----2,122 LBS (APPROX)



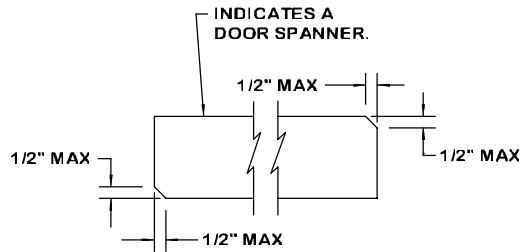
ROUTED DUNNAGE UNIT (BASIC HEIGHT)

CONTAINER -----12 EACH @ 121 LBS (APPROX)
 CUBE -----51.1 CUBIC FEET (APPROX)
 GROSS WEIGHT -----1,616 LBS (APPROX)



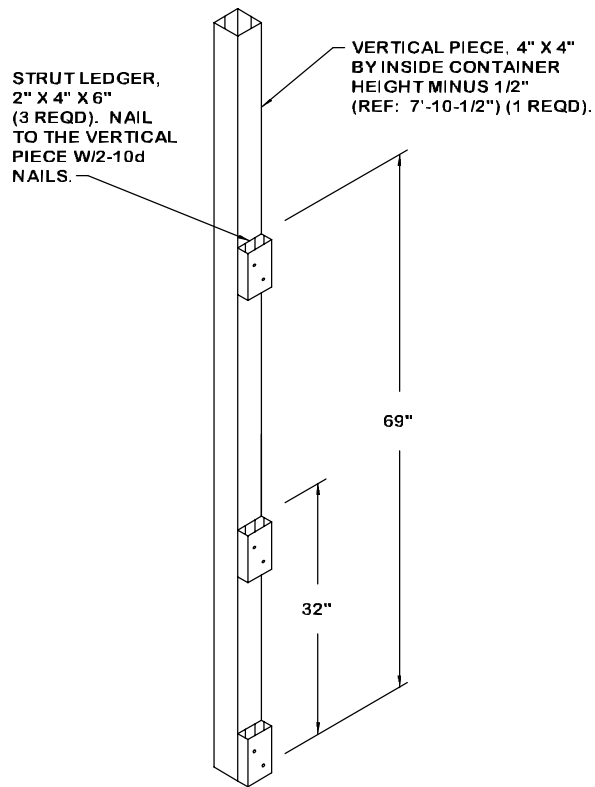
FILLER ASSEMBLY

THE ASSEMBLY DEPICTED ABOVE IS FOR USE IN PLACE OF AN OMITTED PALLET UNIT. NO MORE THAN FOUR FILLER ASSEMBLIES MAY BE USED PER LOAD. DO NOT INSTALL A FILLER ASSEMBLY IMMEDIATELY ADJACENT TO ANOTHER FILLER ASSEMBLY.



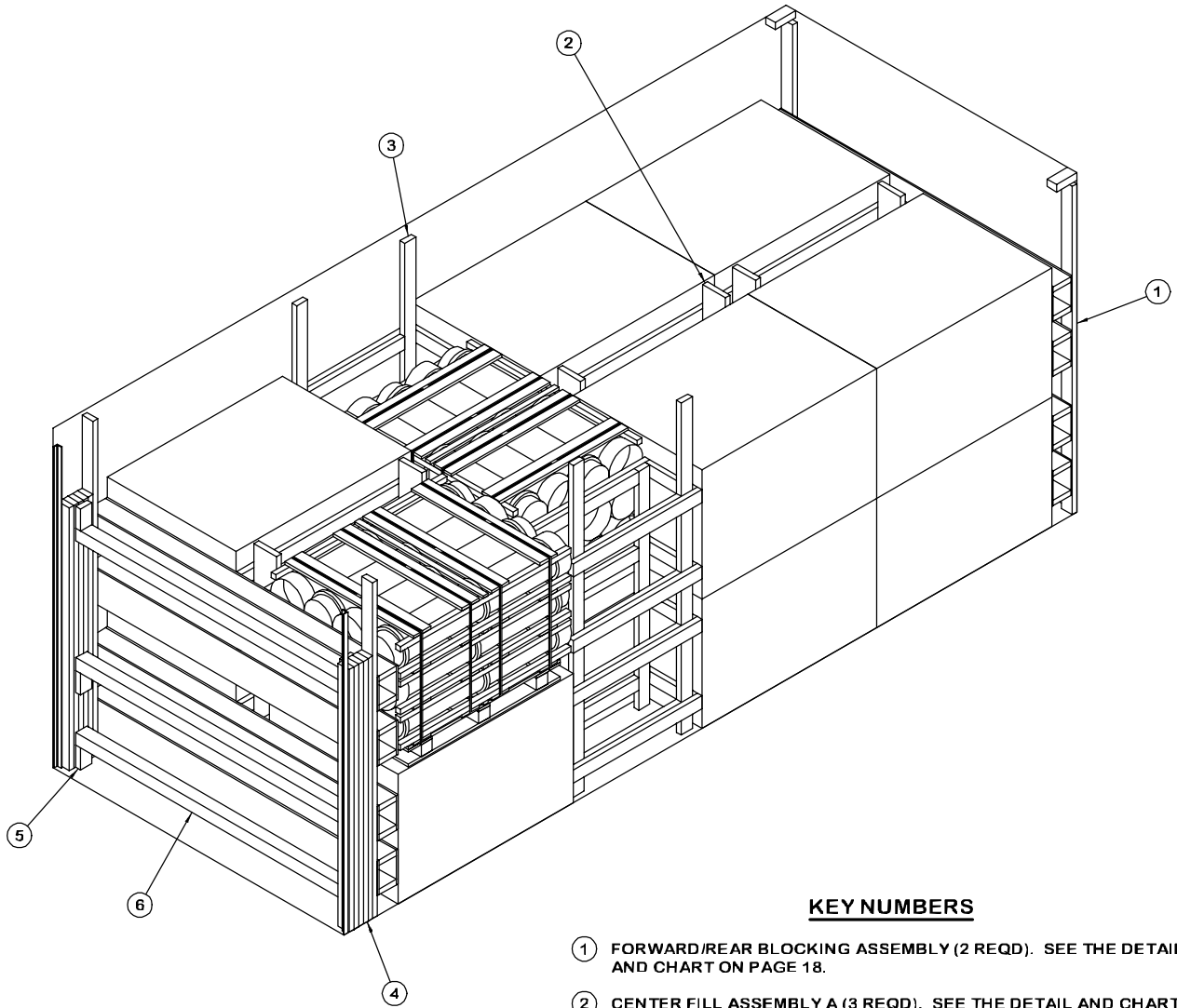
BEVEL-CUT

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



DOOR POST VERTICAL

IF THE ISO CONTAINER TO BE LOADED IS NOT EQUIPPED WITH PRE-WELDED LOAD RETAINERS, THE DOOR POST VERTICAL MUST BE NAILED TO THE DOOR POST VERTICAL RETAINER. NAIL THROUGH THE HOLES IN THE DOOR POST VERTICAL RETAINER INTO THE DOOR POST VERTICAL W/4-10d NAILS. THE ABOVE DIMENSIONS ARE FOR THE LOAD ON PAGE 6. FOR OTHER LOADS, ADJUST THE DIMENSIONS ACCORDINGLY.



KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ② CENTER FILL ASSEMBLY A (3 REQD). SEE THE DETAIL AND CHART ON PAGE 19.
- ③ CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ④ FILL MATERIAL, 4" WIDE BY 6'-0" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/1 NAIL EVERY 12" OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL). NAIL EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER. NOTE: MULTIPLE PIECES MAY BE LAMINATED TOGETHER FIRST AND THEN TOENAILED TO THE REAR BLOCKING ASSEMBLY.
- ⑤ STRUT LEDGER, 2" X 4" X 6" (6 SHOWN - OPTIONAL). INSTALL IF DESIRED TO AID IN THE INSTALLATION OF SPANNER PIECES. NAIL TO THE FILL MATERIAL W/2-10d NAILS.
- ⑥ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (3 REQD). TOENAIL TO THE FILL MATERIAL W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 5. NOTE THAT THESE PIECES ARE NOT REQUIRED IF THE SPACE BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINER IS NOT GREATER THAN 6".

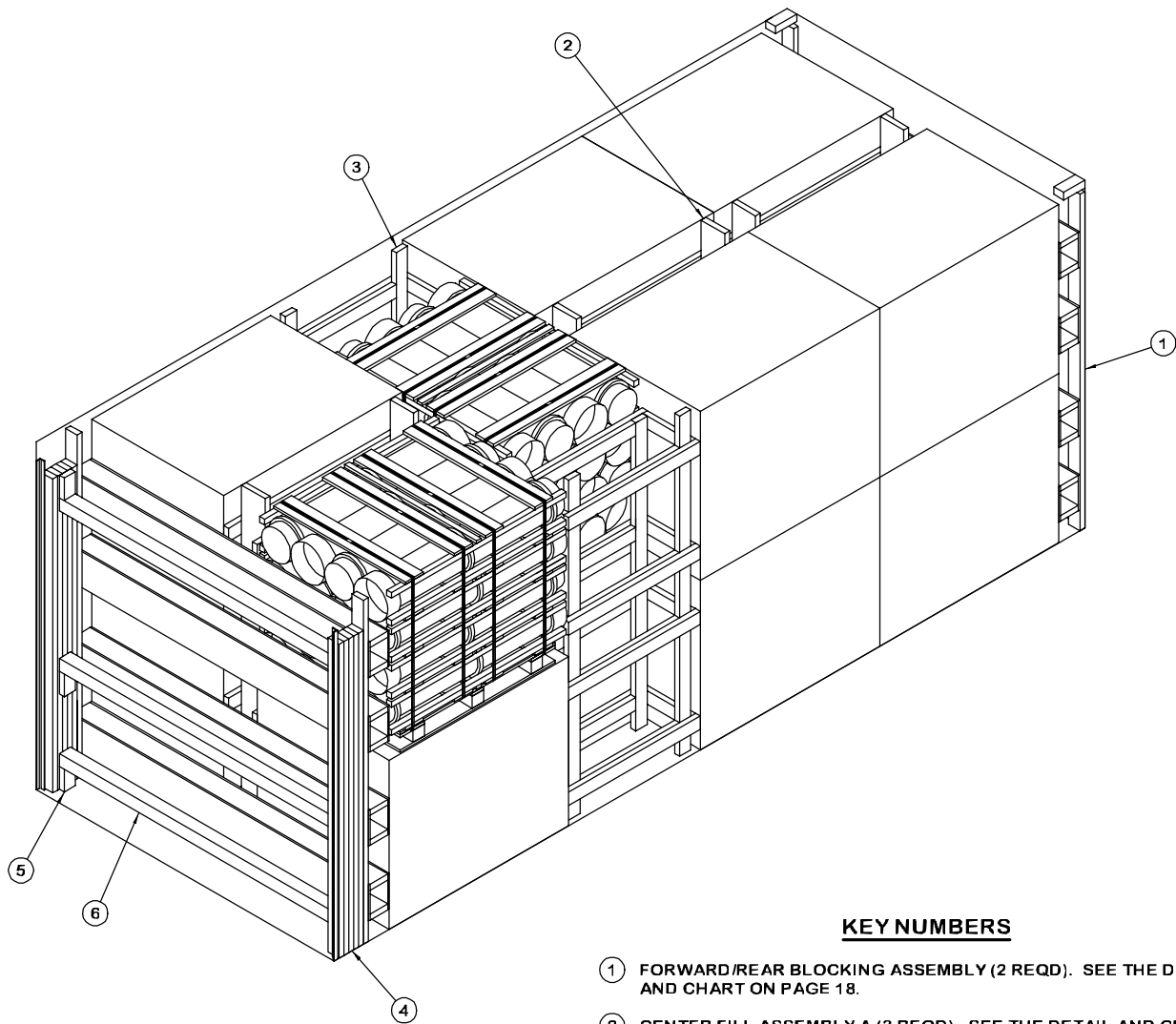
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, THREE CENTER FILL ASSEMBLIES A, AND TWO CRIB FILL ASSEMBLIES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD FOUR PALLET UNITS AND INSTALL ONE CENTER FILL ASSEMBLY A.
4. REPEAT STEP 3.
5. INSTALL TWO CRIB FILL ASSEMBLIES AND LOAD TWO PALLET UNITS.
6. REPEAT STEP 3.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.
9. INSTALL THE SIX STRUT LEDGERS AND THE THREE DOOR SPANNER PIECES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	374	250
2" X 6"	122	122
2" X 8"	36	48
4" X 4"	22	30
NAILS	NO. REQD	POUNDS
6d (2")	352	2-1/4
10d (3")	456	7-1/4
12d (3-1/4")	16	1/2
PLYWOOD, 1/2"	96.06 SQ FT	132-1/4 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -	14	22,904 LBS
DUNNAGE		1,042 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		28,646 LBS (APPROX)



KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ② CENTER FILL ASSEMBLY A (3 REQD). SEE THE DETAIL AND CHART ON PAGE 19.
- ③ CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ④ FILL MATERIAL, 4" WIDE BY 7'-0" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/1 NAIL EVERY 12" OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL). NAIL EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER. **NOTE:** MULTIPLE PIECES MAY BE LAMINATED TOGETHER FIRST AND THEN TOENAILED TO THE REAR BLOCKING ASSEMBLY.
- ⑤ STRUT LEDGER, 2" X 4" X 6" (6 SHOWN - OPTIONAL). INSTALL IF DESIRED TO AID IN THE INSTALLATION OF SPANNER PIECES. NAIL TO THE FILL MATERIAL W/2-10d NAILS.
- ⑥ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (3 REQD). TOENAIL TO THE FILL MATERIAL W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 5. **NOTE:** THESE PIECES ARE NOT REQUIRED IF THE SPACE BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINER IS NOT GREATER THAN 6".

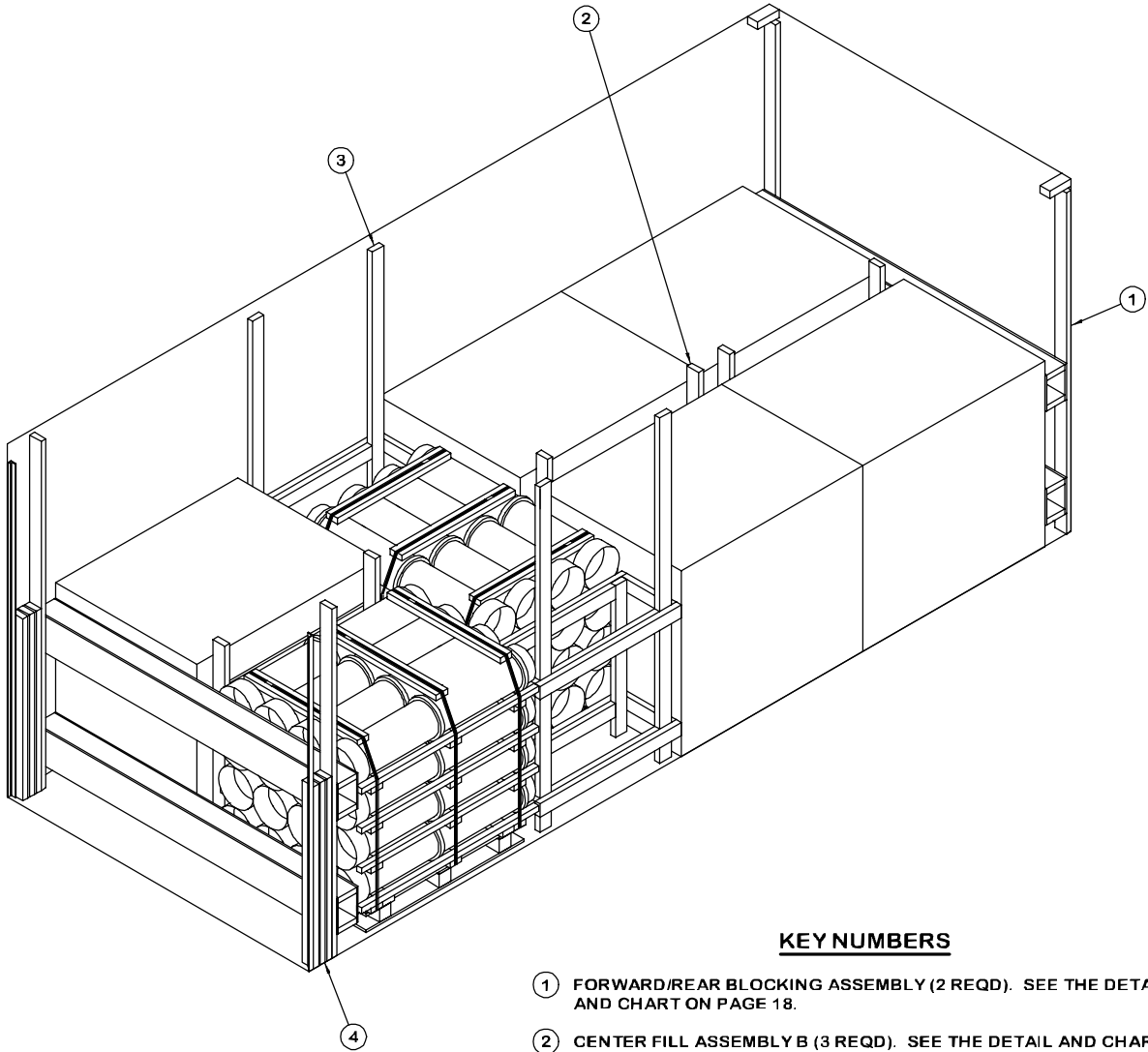
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, THREE CENTER FILL ASSEMBLIES A, AND TWO CRIB FILL ASSEMBLIES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD FOUR PALLET UNITS AND INSTALL ONE CENTER FILL ASSEMBLY A.
4. REPEAT STEP 3.
5. INSTALL CRIB SIDE FILL ASSEMBLIES AND LOAD TWO PALLET UNITS.
6. REPEAT STEP 3.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.
9. INSTALL THE SIX STRUT LEDGERS AND THE THREE DOOR SPANNER PIECES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	390	260
2" X 6"	122	122
2" X 8"	46	62
4" X 4"	22	30
NAILS	NO. REQD	POUNDS
6d (2")	352	2-1/4
10d (3")	456	7-1/4
12d (3-1/4")	16	1/2
PLYWOOD, 1/2"	96.06 SQ FT	132-1/4 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -	14	30,072 LBS
DUNNAGE		1,092 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		35,862 LBS (APPROX)



KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ② CENTER FILL ASSEMBLY B (3 REQD). SEE THE DETAIL AND CHART ON PAGE 19.
- ③ CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ④ FILL MATERIAL, 4" WIDE BY 48" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/1 NAIL EVERY 12" OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL, 4d NAILS FOR 1/2" THICK MATERIAL). NAIL EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER. NOTE: MULTIPLE PIECES MAY BE LAMINATED TOGETHER FIRST AND THEN TOENAILED TO THE REAR BLOCKING ASSEMBLY.

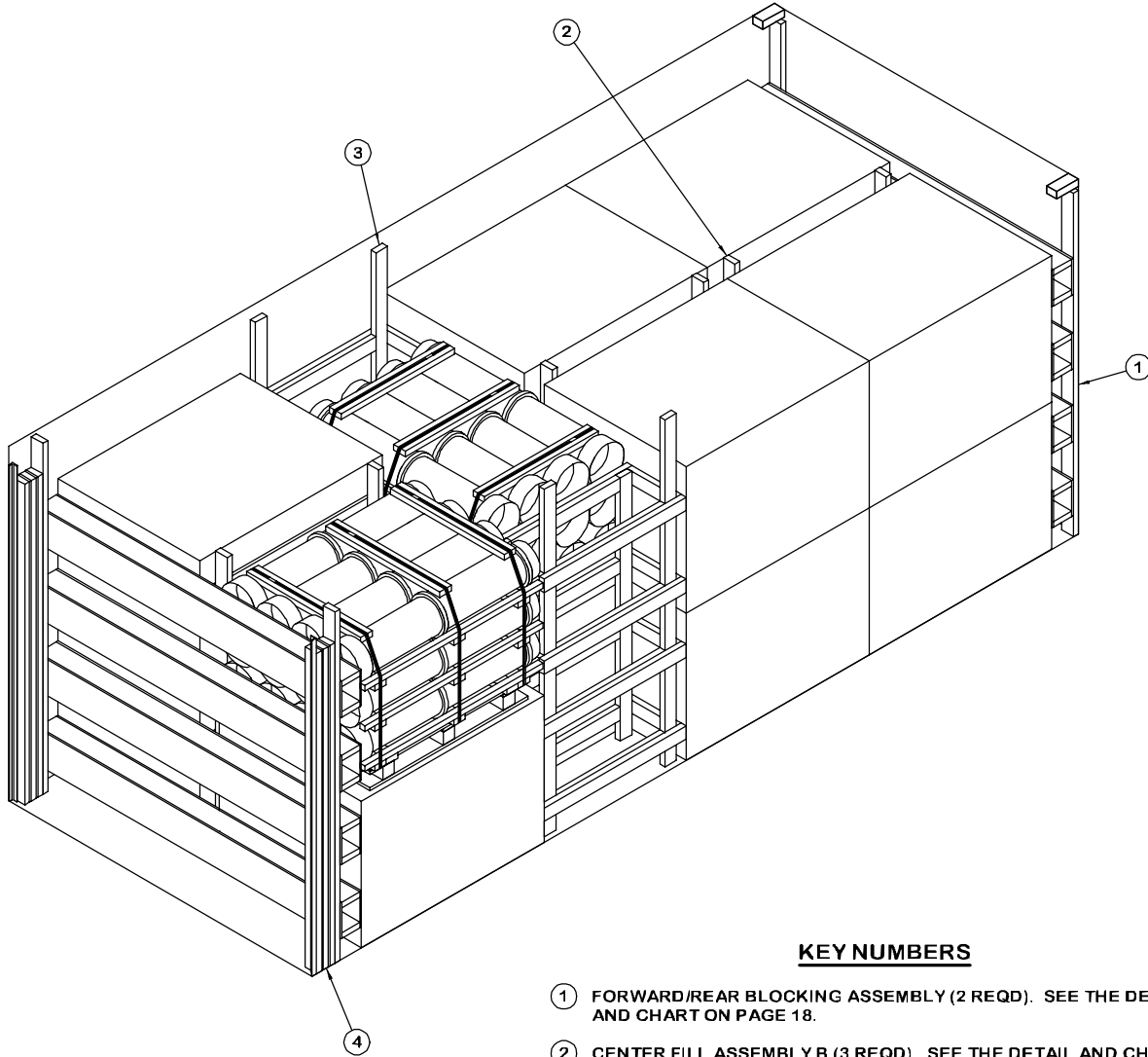
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, THREE CENTER FILL ASSEMBLIES B, AND TWO CRIB FILL ASSEMBLIES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD TWO PALLET UNITS AND INSTALL ONE CENTER FILL ASSEMBLY B.
4. REPEAT STEP 3.
5. INSTALL TWO CRIB FILL ASSEMBLIES AND LOAD ONE PALLET UNIT.
6. REPEAT STEP 3.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	28	10
2" X 4"	216	144
2" X 6"	61	61
NAILS	NO. REQD	POUNDS
4d (1")	16	NIL
6d (2")	352	2-1/4
10d (3")	456	7-1/4
PLYWOOD, 1/2" ----- 52.70 SQ FT ----- 72-1/2 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -	7	14,889 LBS
DUNNAGE		507 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		20,096 LBS (APPROX)



KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ② CENTER FILL ASSEMBLY B (3 REQD). SEE THE DETAIL AND CHART ON PAGE 19.
- ③ CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ④ FILL MATERIAL, 4" WIDE BY 7'-0" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/1 NAIL EVERY 12" OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL, 4d NAILS FOR 1/2" THICK MATERIAL). NAIL EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER. NOTE: MULTIPLE PIECES MAY BE LAMINATED TOGETHER FIRST AND THEN TOENAILED TO THE REAR BLOCKING ASSEMBLY.

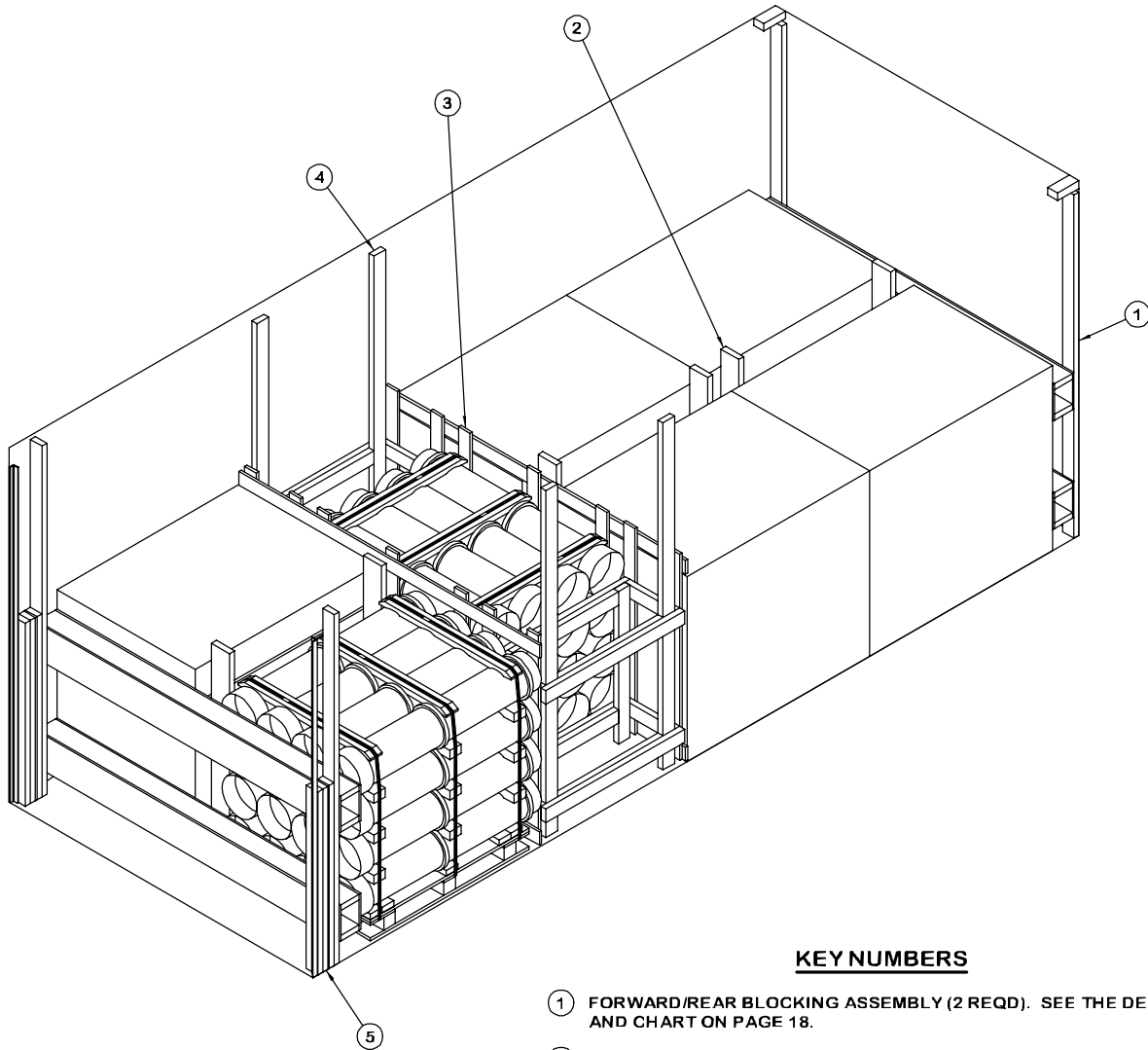
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, THREE CENTER FILL ASSEMBLIES B, AND TWO CRIB FILL ASSEMBLIES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD FOUR PALLET UNITS AND INSTALL ONE CENTER FILL ASSEMBLY B.
4. REPEAT STEP 3.
5. INSTALL TWO CRIB FILL ASSEMBLIES AND LOAD TWO PALLET UNITS.
6. REPEAT STEP 3.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	56	19
2" X 4"	344	230
2" X 6"	122	122
NAILS	NO. REQD	POUNDS
4d (1")	28	NIL
6d (2")	400	2-1/2
10d (3")	378	6
PLYWOOD, 1/2"	104.23 SQ FT	143-1/2 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT -	14	22,596 LBS
DUNNAGE		894 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		28,190 LBS (APPROX)

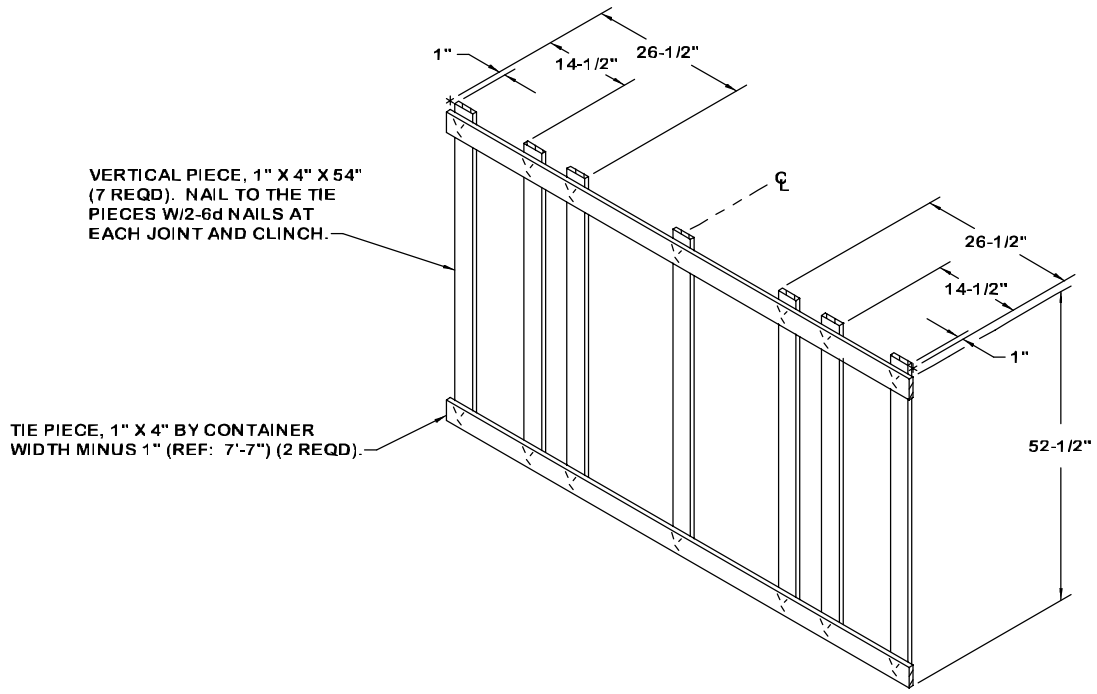


KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ② CENTER FILL ASSEMBLY C (3 REQD). SEE THE DETAIL AND CHART ON PAGE 19.
- ③ SEPARATOR GATE A (2 REQD). SEE THE DETAIL ON PAGE 15. POSITION WITH THE VERTICAL PIECES AGAINST THE CROSSWISE POSITIONED UNIT.
- ④ CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ⑤ FILL MATERIAL, 4" WIDE BY 48" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/1 NAIL EVERY 12" OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL, 4d NAILS FOR 1/2" THICK MATERIAL). NAIL EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER. **NOTE:** MULTIPLE PIECES MAY BE LAMINATED TOGETHER FIRST AND THEN TOENAILED TO THE REAR BLOCKING ASSEMBLY.

RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, THREE CENTER FILL ASSEMBLIES C, TWO CRIB FILL ASSEMBLIES, AND TWO SEPARATOR GATES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD TWO PALLET UNITS AND INSTALL ONE CENTER FILL ASSEMBLY C.
4. REPEAT STEP 3.
5. INSTALL ONE SEPARATOR GATE, AND TWO CRIB FILL ASSEMBLIES; LOAD ONE PALLET UNIT AND INSTALL A SECOND SEPARATOR GATE.
6. REPEAT STEP 3.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.

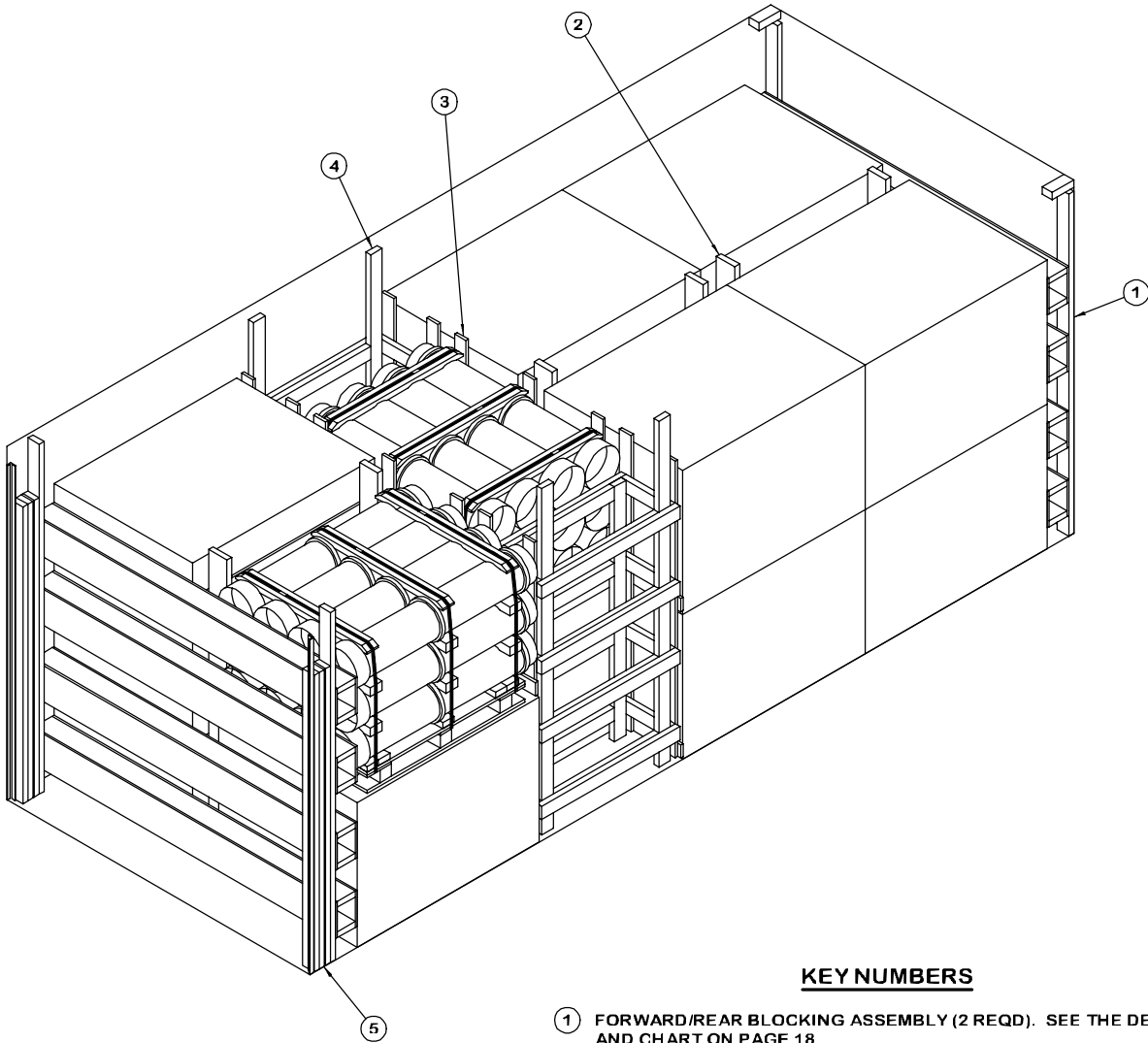


SEPARATOR GATE A

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	122	41
2" X 4"	188	126
2" X 6"	88	88
NAILS	NO. REQD	POUNDS
4d (1")	8	NIL
6d (2")	256	1-1/2
10d (3")	192	3
PLYWOOD, 1/2"	50.36 SQ FT	69-1/4 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	7	14,854 LBS
DUNNAGE		584 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		20,138 LBS (APPROX)

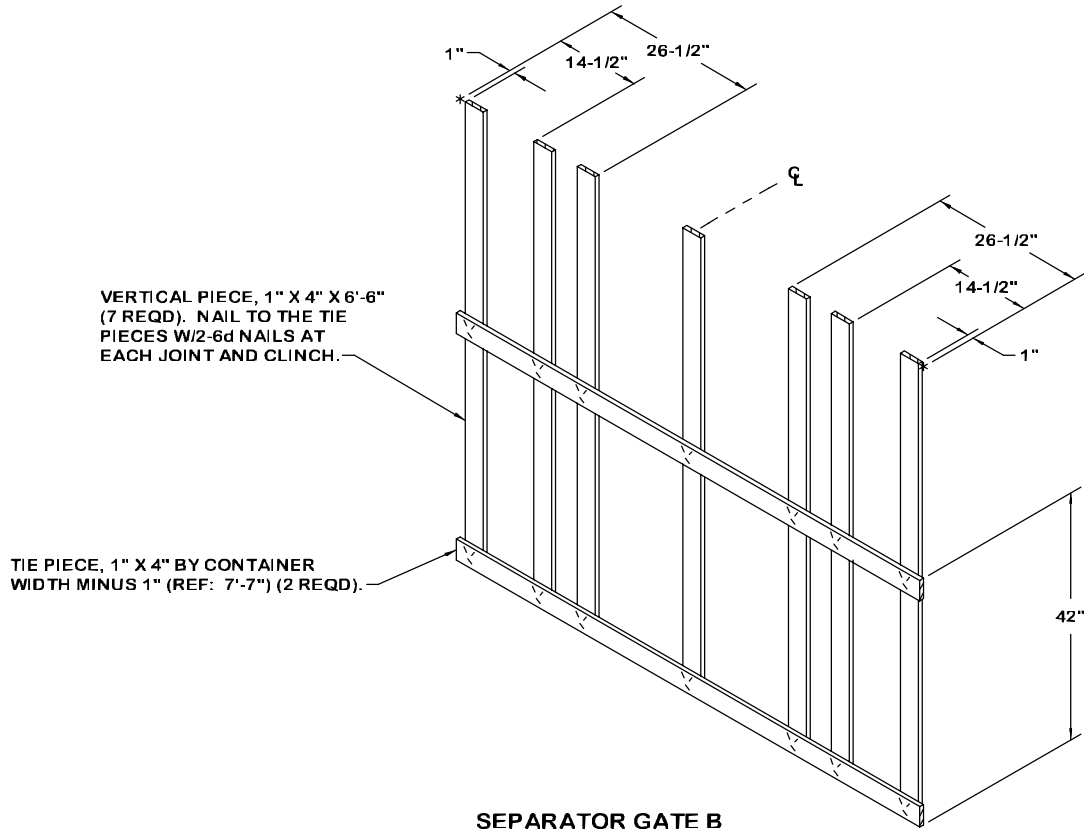


KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ② CENTER FILL ASSEMBLY C (3 REQD). SEE THE DETAIL AND CHART ON PAGE 19.
- ③ SEPARATOR GATE B (2 REQD). SEE THE DETAIL ON PAGE 17. POSITION WITH THE VERTICAL PIECES AGAINST THE CROSSWISE POSITIONED UNITS.
- ④ CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL AND CHART ON PAGE 18.
- ⑤ FILL MATERIAL, 4" WIDE BY 6'-6" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/1 NAIL EVERY 12" OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL, 4d NAILS FOR 1/2" THICK MATERIAL). NAIL EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER. **NOTE:** MULTIPLE PIECES MAY BE LAMINATED TOGETHER FIRST AND THEN TOENAILED TO THE REAR BLOCKING ASSEMBLY.

RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, THREE CENTER FILL ASSEMBLIES C, TWO CRIB FILL ASSEMBLIES, AND TWO SEPARATOR GATES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD FOUR PALLET UNITS AND INSTALL ONE CENTER FILL ASSEMBLY C.
4. REPEAT STEP 3.
5. INSTALL ONE SEPARATOR GATE, AND TWO CRIB FILL ASSEMBLIES; LOAD ONE PALLET UNIT AND INSTALL A SECOND SEPARATOR GATE.
6. REPEAT STEP 3.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.



SEPARATOR GATE B

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	178	60
2" X 4"	299	200
2" X 6"	161	161
NAILS	NO. REQD	POUNDS
4d (1")	14	NIL
6d (2")	456	2-3/4
10d (3")	406	6-1/4
PLYWOOD, 1/2"	99.86 SQ FT	137-1/2 LBS

LOAD AS SHOWN

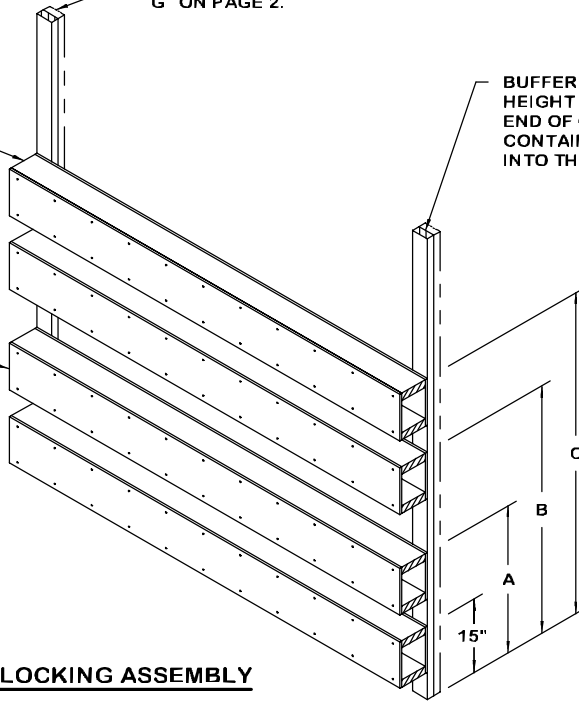
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	14	22,624 LBS
DUNNAGE		989 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		28,313 LBS (APPROX)

SEE GENERAL NOTE
"G" ON PAGE 2.

BEAM, 2" X 6" BY INSIDE
CONTAINER WIDTH MINUS 1"
(REF: 7'-7") (8 REQD).

BUFFER PIECE, 2" X 4" BY INSIDE CONTAINER
HEIGHT MINUS 1" (REF: 7'-6" IN FORWARD
END OF CONTAINER, 7'-8" IN REAR END OF
CONTAINER) (2 REQD). NAIL THRU PLYWOOD
INTO THE BEAMS W/2-10d NAILS AT EACH JOINT.

PLYWOOD, 1/2" X 9-1/2"
BY INSIDE CONTAINER
WIDTH MINUS 1" (REF:
7'-7") (8 REQD). NAIL
TO THE BEAMS W/1-6d
NAIL EVERY 8".

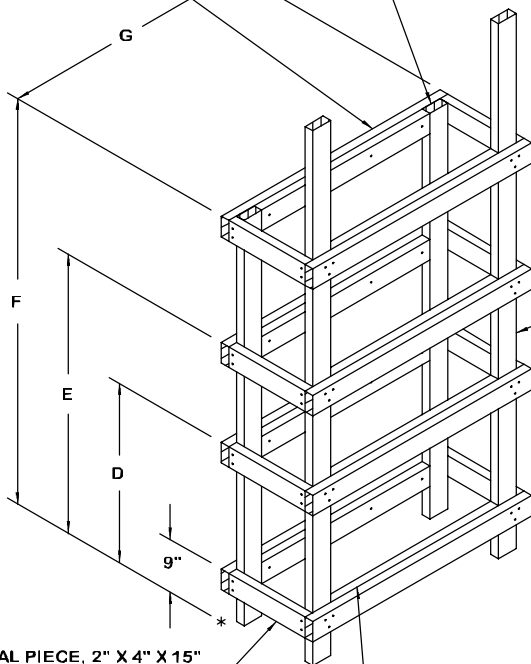


FORWARD/REAR BLOCKING ASSEMBLY

NOTE: FOR A ONE-HIGH LOAD, ELIMINATE THE TOP
TWO BOX BEAM ASSEMBLIES

LONGITUDINAL PIECE, 2" X
4" BY DIMENSION "G" (8
REQD). NAIL TO THE
VERTICAL PIECES W/3-10d
NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 4" BY
DIMENSION "F" (2 REQD).



LATERAL PIECE, 2" X 4" X 15"
(8 REQD). NAIL TO THE
VERTICAL PIECES W/2-10d
NAILS AT EACH END.

FILL PIECE, 2" X 4" BY
DIMENSION "G" MINUS
10" (8 REQD). NAIL TO
THE LONGITUDINAL
PIECE W/4-10d NAILS.

CRIB FILL ASSEMBLY

FOR A ONE-HIGH LOAD, ELIMINATE THE TOP FOUR
LONGITUDINAL PIECES, THE TOP FOUR FILL PIECES, AND
THE TOP FOUR LATERAL PIECES. REDUCE THE SHORT
VERTICAL PIECES TO THE HEIGHT OF DIMENSION "D".

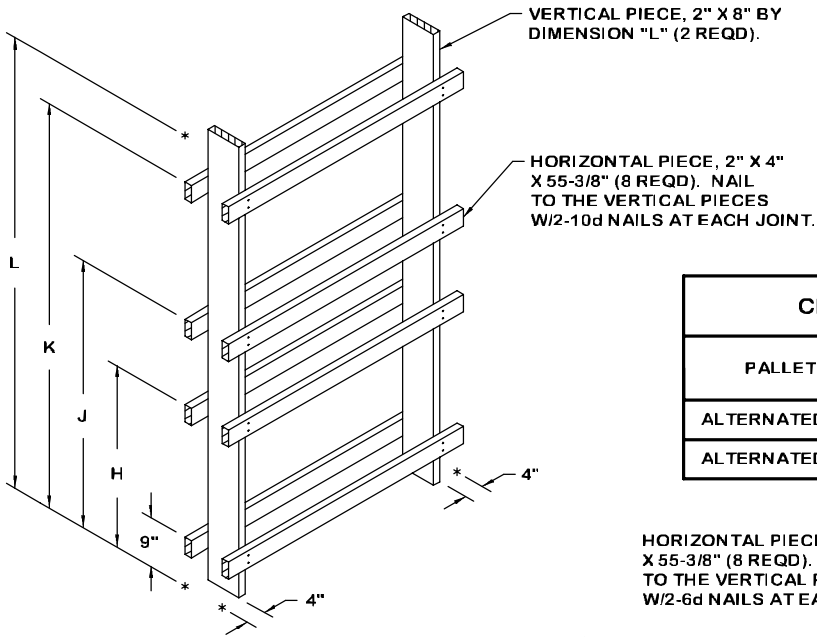
FORWARD/REAR BLOCKING ASSEMBLY CHART

PALLET UNITS	DIMENSIONS		
	A	B	C
ALTERNATED (BASIC)	30"	50-1/2"	65-1/2"
ALTERNATED (INCREASED)	35"	60"	6'-8"
FLAT (BASIC)	45"	--	--
FLAT (DECREASED)	34-1/2"	53-1/2"	6'-1"
ROUTED (BASIC)	43-1/2"	--	--
ROUTED (DECREASED)	33"	53"	71"

VERTICAL PIECE, 2" X 4" BY
CONTAINER HEIGHT MINUS
1" (REF: 7'-7") (2 REQD).

CRIB FILL ASSEMBLY CHART

PALLET UNITS	DIMENSIONS			
	D	E	F	G
ALTERNATED (BASIC)	30"	44-1/2"	65-1/2"	40-3/4"
ALTERNATED (INCREASED)	37"	54-1/2"	6'-10-1/2"	40-3/4"
FLAT (BASIC)	40"	--	--	43"
FLAT (DECREASED)	30-1/2"	47-1/2"	69"	43"
ROUTED (BASIC)	40"	--	--	42"
ROUTED (DECREASED)	29"	47"	67"	42"

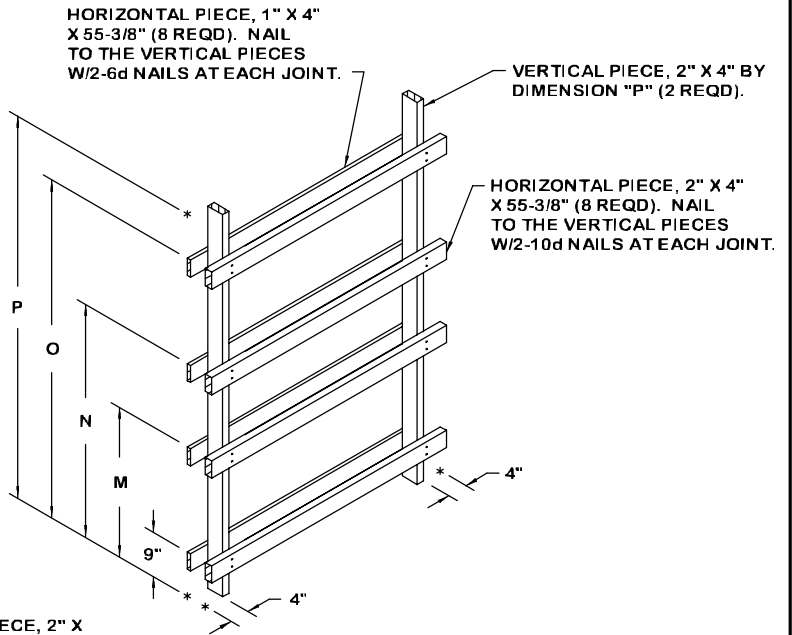


CENTER FILL ASSEMBLY A CHART				
PALLET UNITS	DIMENSIONS			
	H	J	K	L
ALTERNATED (BASIC)	30"	44-1/2"	65-1/2"	6'-0"
ALTERNATED (INCREASED)	37"	54-1/2"	6'-10-1/2"	7'-8"

CENTER FILL ASSEMBLY A

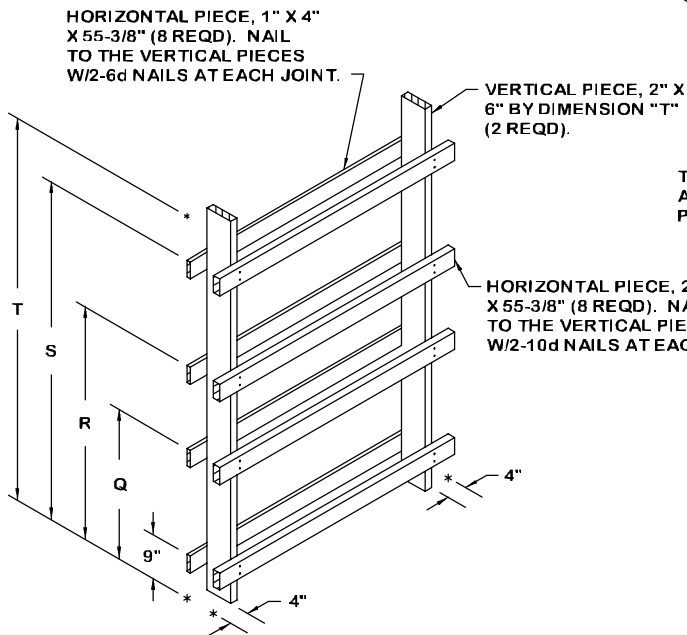
THIS ASSEMBLY IS FOR USE WITH THE LOADS ON PAGES 6 AND 8. FOR A 1-HIGH LOAD, OMIT THE TOP FOUR HORIZONTAL PIECES AND DECREASE THE VERTICAL PIECES BY HALF.

CENTER FILL ASSEMBLY B CHART				
PALLET UNITS	DIMENSIONS			
	M	N	O	P
FLAT (BASIC)	40"	--	--	54"
FLAT (DECREASED)	30-1/2"	47-1/2"	69"	6'-6"



CENTER FILL ASSEMBLY B

THIS ASSEMBLY IS FOR USE WITH THE LOADS ON PAGES 10 AND 12. FOR A 1-HIGH LOAD, OMIT THE TOP FOUR HORIZONTAL PIECES AND DECREASE THE VERTICAL PIECES BY HALF.



CENTER FILL ASSEMBLY C CHART				
PALLET UNITS	DIMENSIONS			
	Q	R	S	T
ROUTED (BASIC)	40"	--	--	54"
ROUTED (DECREASED)	29"	47"	67"	6'-6"

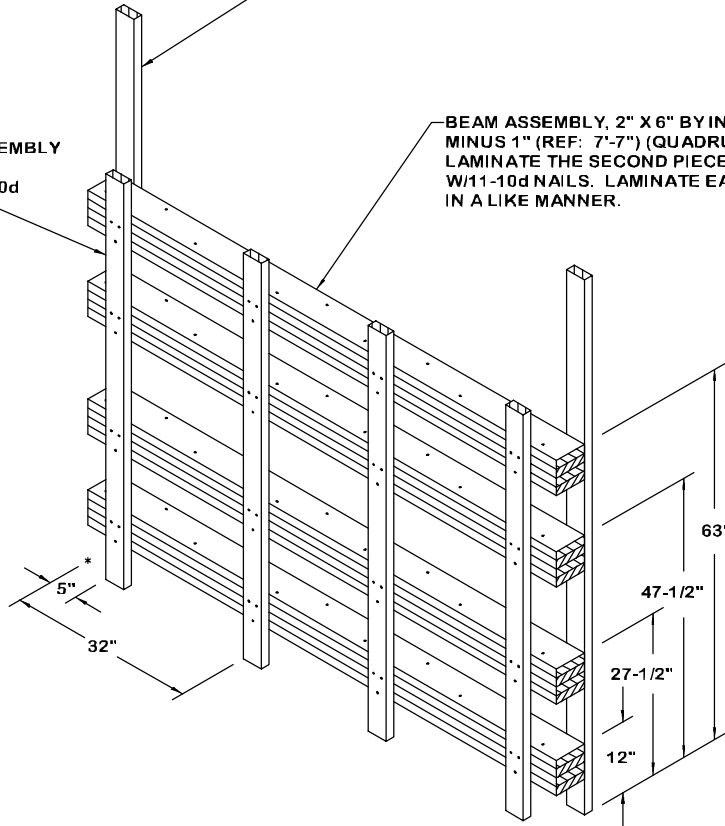
CENTER FILL ASSEMBLY C

THIS ASSEMBLY IS FOR USE WITH THE LOADS ON PAGES 14 AND 16. FOR A 1-HIGH LOAD, OMIT THE TOP FOUR HORIZONTAL PIECES AND DECREASE THE VERTICAL PIECES BY HALF OR AS SPECIFIED IN THE CHART AT RIGHT.

LOAD BEARING PIECE, 2" X 4" BY HEIGHT OF TOP BEAM ASSEMBLY PLUS 6" (4 REQD). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

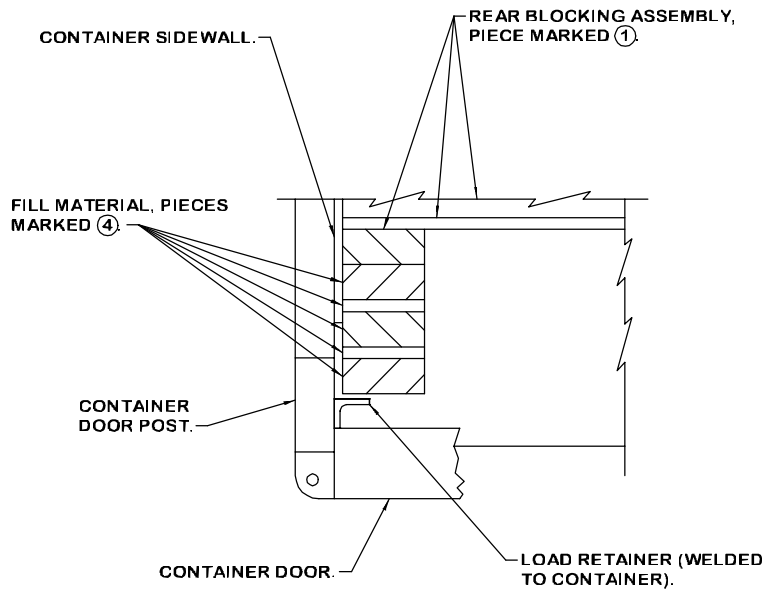
BUFFER PIECE, 2" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1" (REF: 7'-6" AT FORWARD END, 7'-8" AT REAR END) (2 REQD). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

BEAM ASSEMBLY, 2" X 6" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (QUADRUPLED) (4 REQD). LAMINATE THE SECOND PIECE TO THE FIRST PIECE W/11-10d NAILS. LAMINATE EACH ADDITIONAL PIECE IN A LIKE MANNER.



ALTERNATIVE FORWARD/REAR BLOCKING ASSEMBLY

NOTE: THE ALTERNATIVE FORWARD/REAR BLOCKING ASSEMBLY MAY BE USED IN PLACE OF ANY FORWARD/REAR BLOCKING ASSEMBLY IN THE LOADS DEPICTED HEREIN. THE ABOVE DIMENSIONS ARE FOR A BLOCKING ASSEMBLY FOR THE LOAD ON PAGE 6. ADJUST THE DIMENSIONS FOR THE DIFFERENT PALLET UNITS ACCORDINGLY. FOR USE IN ONE-LAYER LOADS, OMIT THE TOP TWO BEAM ASSEMBLIES AND DECREASE THE LENGTH OF THE LOAD BEARING PIECES APPROPRIATELY.

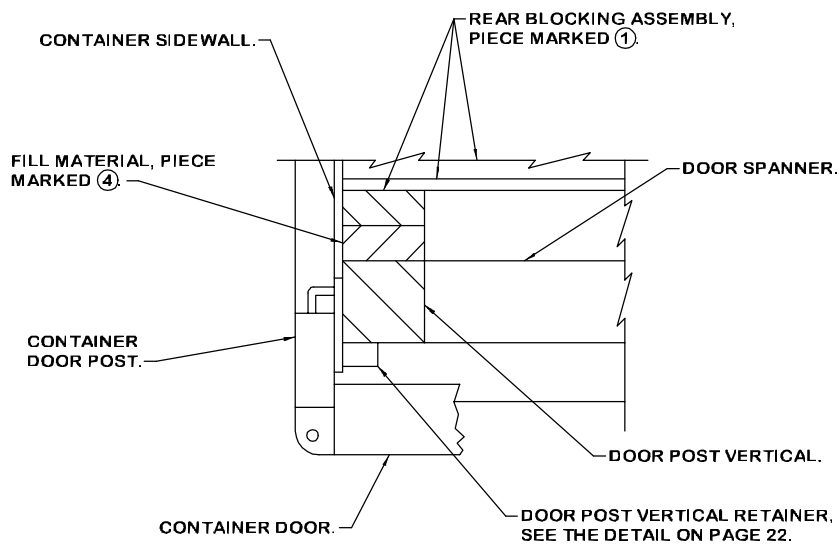


DETAIL A

A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE FILL MATERIAL AND ADJACENT DUNNAGE PIECES.

SPECIAL NOTE:

WHEN ISO CONTAINERS ARE NOT EQUIPPED WITH PRE-WELDED LOAD RETAINERS, AS DEPICTED IN "DETAIL A" ABOVE, DOOR POST VERTICALS, DOOR POST VERTICAL RETAINERS AND DOOR SPANNERS WILL BE REQUIRED FOR THE LOADS DEPICTED ON PAGES 6, 8, 10, 12, 14, AND 16. SEE VARIOUS LOADS WITHIN AMC DRAWING 19-48-4153-15PA1002 FOR EXAMPLES. SEE PAGE 22 FOR DETAILS OF THE METAL DOOR POST VERTICAL RETAINER.

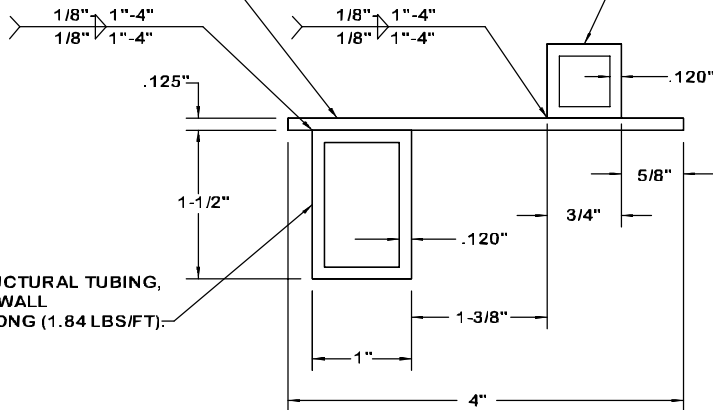


DETAIL B

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

STEEL STRIP, 1/8" THICK BY 4" WIDE
BY 83" LONG (1.70 LBS/FT).

SQUARE STRUCTURAL TUBING, 3/4" SQUARE
BY .120" WALL THICKNESS BY 83" LONG
(1.03 LBS/FT). SEE SPECIAL NOTE BELOW.



RECTANGULAR STRUCTURAL TUBING,
1-1/2" BY 1" BY .120" WALL
THICKNESS BY 83" LONG (1.84 LBS/FT).

VIEW A

SPECIAL NOTE:

IN MOST CORRUGATED STEEL CONTAINERS, LASHING OR TIE BARS WILL BE PRESENT IN THE SLOT WHERE THE 3/4" SQUARE STRUCTURAL TUBING IS TO BE INSTALLED. TO ENSURE PROPER ENGAGEMENT OF THE SQUARE TUBING AND THE CONTAINER DOOR POST, THE TUBING MUST BE NOTCHED AT THE TIE BAR LOCATIONS.

SQUARE STRUCTURAL TUBING,
3/4" SQUARE BY .120" WALL
THICKNESS BY 83" LONG
(1.03 LBS/FT).

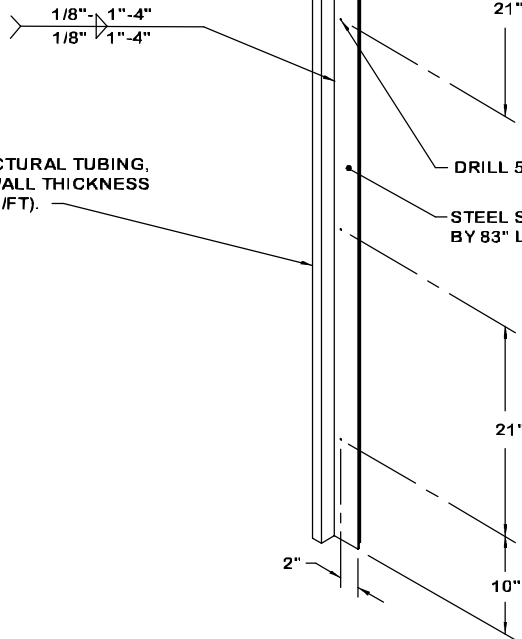
VIEW A



RECTANGULAR STRUCTURAL TUBING,
1-1/2" BY 1" BY .120" WALL
THICKNESS BY 83" LONG (1.84 LBS/FT).

DRILL 5/32", 4 HOLES.

STEEL STRIP, 1/8" THICK BY 4" WIDE
BY 83" LONG (1.70 LBS/FT).



DOOR POST VERTICAL RETAINER

NOTE: THE ABOVE ASSEMBLY HAS BEEN SHOWN ROTATED 90° FROM THE ORIENTATION IN WHICH IT IS INSTALLED IN THE LEFT REAR CORNER OF THE CONTAINER. THE ASSEMBLY HAS BEEN ROTATED FOR HOLE LOCATION CLARITY.