

REVISION NO. 1
 APPROVED BY
 BUREAU OF EXPLOSIVES

D m Henry

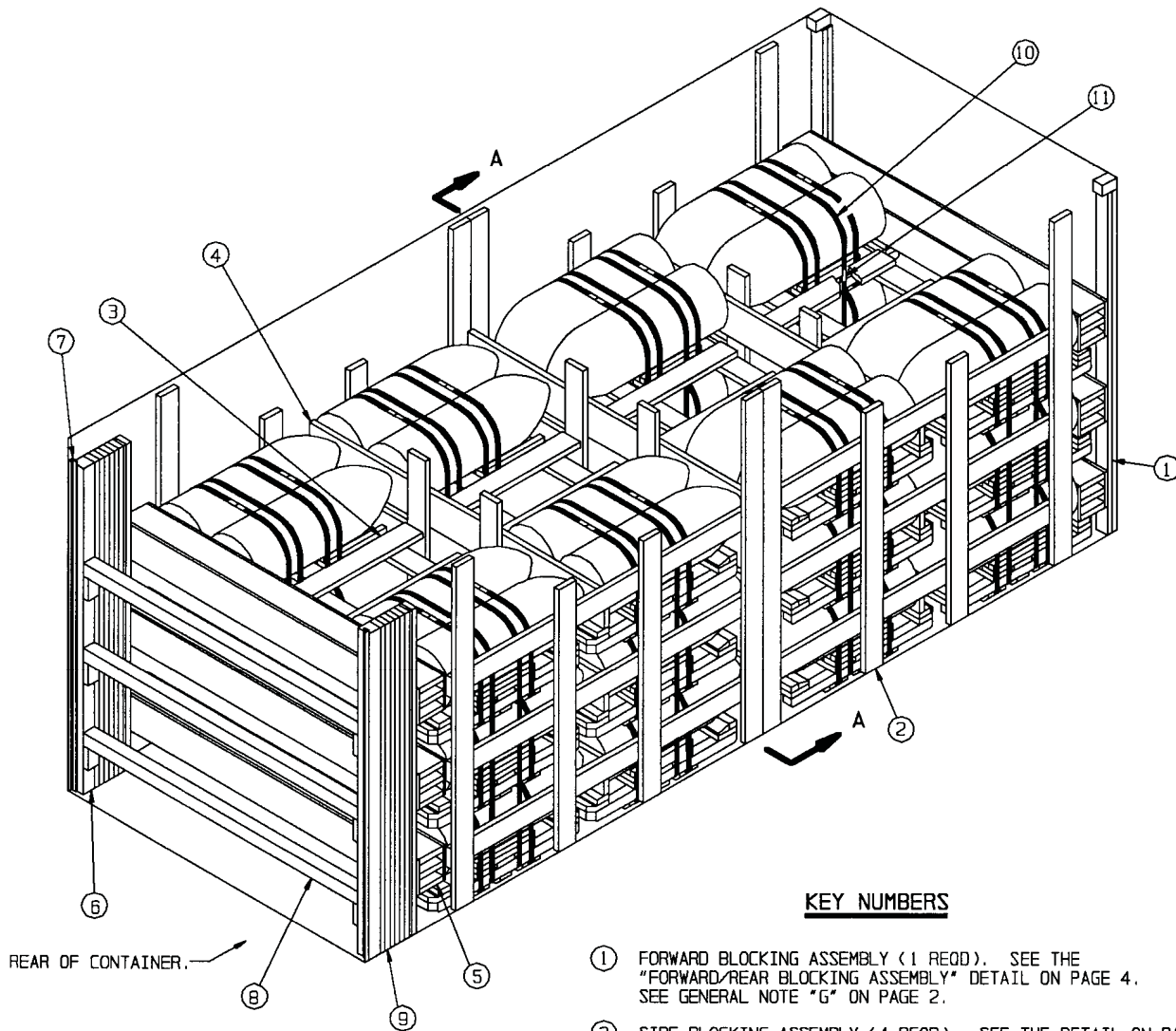
DATE 7-19-95

LOADING AND BRACING WITH WOODEN DUNNAGE IN END OPENING ISO CONTAINERS OF 750 POUND BOMB, PACKED TWO PER WOODEN PALLET

- LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLAT CAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS. SEE GENERAL NOTE "K" ON PAGE 3.

U.S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND <i>David E. Stuchwick</i>	DRAFTSMAN	TECHNICIAN	ENGINEER
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SEPTEMBER 1994			
U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL		CLASS	DIVISION
REVISION NO. 1	JUNE 1995	DRAWING	FILE
SEE THE REVISION LISTING ON PAGE 3		19	48
		4259	15PB1004

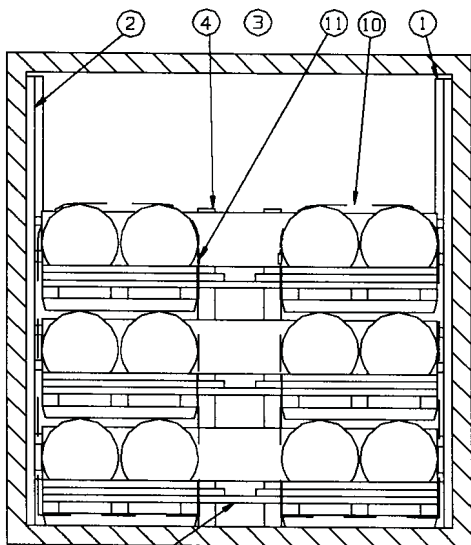
DO NOT SCALE



KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REOD). SEE THE "FORWARD/REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 4. SEE GENERAL NOTE "G" ON PAGE 2.
- ② SIDE BLOCKING ASSEMBLY (4 REOD). SEE THE DETAIL ON PAGE 5.
- ③ ANTI-SWAY BRACE (12 REOD). SEE THE DETAIL AND SPECIAL NOTE ON PAGE 4.
- ④ LOAD BEARING GATE (3 REOD). SEE THE DETAIL ON PAGE 5 AND GENERAL NOTE "G" ON PAGE 3.
- ⑤ REAR BLOCKING ASSEMBLY (1 REOD). SEE THE "FORWARD/REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 4.
- ⑥ DOOR POST VERTICAL (2 REOD). SEE THE "DOOR POST VERTICAL" AND "DETAIL A" DETAIL ON PAGE 7.
- ⑦ DOOR POST VERTICAL RETAINER (2 REOD). SEE THE "DOOR POST VERTICAL RETAINER" DETAIL ON PAGE 6. NAIL THROUGH THE HOLES INTO THE DOOR POST VERTICAL W/4-10d NAILS. NOTE: IF THE CONTAINER FURNISHED IS EQUIPPED WITH THE PRE-WELDED LOAD RETAINERS, SEE "DETAIL B" ON PAGE 8.
- ⑧ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (3 REOD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 7. NOTE: AFTER INSTALLING THE BOTTOM AND TOP DOOR SPANNERS, THE FILL MATERIAL, PIECE MARKED ⑧, IS TO BE INSTALLED.
- ⑨ FILL MATERIAL, 4" WIDE BY 7'-0" LONG MATERIAL (AS REOD). NAIL EACH PIECE TO THE REAR BLOCKING ASSEMBLY AND/OR LAMINATE TOGETHER W/9 NAILS OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL). CAUTION: DO NOT NAIL TO THE DOOR POST VERTICALS, PIECES MARKED ⑥.
- ⑩ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 16'-0" LONG STEEL STRAPPING (16 REOD, 2 PER STACK). PRE-POSITION SO AS TO ENCIRCLE A STACK OF THREE PALLET UNITS AS SHOWN.
- ⑪ SEAL FOR 1-1/4" STRAPPING (16 REOD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES. SEE GENERAL NOTE "N" ON PAGE 3.

ISOMETRIC VIEW



SECTION A-A

(GENERAL NOTES CONTINUED)

GENERAL NOTES

- L. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS OR MODIFIED FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.
- M. 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.
- N. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED.

- 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 PALLETIZED 750-POUND BOMBS AS SHOWN. CAUTION: REGARDLESS OF THE QUANTITY OF BOMBS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE ISO CONTAINER MUST NOT BE EXCEEDED.
- C. LADING DATA:
DIMENSIONS - - 52-1/4" LONG BY 32-1/4" WIDE BY 22-7/8" HIGH.
GROSS WEIGHT - 1,575 POUNDS (APPROX).
- D. THE LOAD AS SHOWN IS BASED ON A 4,800 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH INTERMODAL ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 95" HIGH. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLAT-CAR (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.
- E. WHEN LOADING PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE END AND SIDE DUNNAGE ASSEMBLIES). ALTHOUGH A TOTAL OF 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.
- F. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE AND 4" X 4" MATERIAL IS ACTUALLY 3-1/2" BY 3-1/2" WIDE.
- G. 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.
- H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- J. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDEWALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- K. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C 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 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.

RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

- 1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, FOUR SIDE BLOCKING ASSEMBLIES, THREE LOAD BEARING GATES, PARTIALLY PRE-FABRICATE TWELVE ANTI-SWAY BRACES, AND NAIL DOOR POST VERTICALS TO THE DOOR POST VERTICAL RETAINERS, ONE RIGHT HAND AND ONE LEFT HAND.
- 2. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE BLOCKING ASSEMBLIES.
- 3. LOAD TWO STACKS OF THREE PALLET UNITS AND UNITIZE WITH TWO STRAPS PER STACK.
- 4. INSTALL AND FINISH FABRICATING THREE ANTI-SWAY BRACES.
- 5. INSTALL LOAD BEARING GATE.
- 6. REPEAT STEPS 3, 4, AND 5.
- 7. INSTALL TWO SIDE BLOCKING ASSEMBLIES.
- 8. REPEAT STEPS 3, 4, AND 5, THEN STEPS 3 AND 4.
- 9. INSTALL THE REAR BLOCKING ASSEMBLY.
- 10. INSTALL THE TWO DOOR POST VERTICALS.
- 11. INSTALL TWO DOOR SPANNER PIECES (ONE AT THE LOWEST POSITION AND ONE AT THE UPPERMOST POSITION).
- 12. INSTALL THE SOLID FILL BETWEEN REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
- 13. INSTALL THE REMAINING DOOR SPANNER PIECE.

MATERIAL SPECIFICATIONS

LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.

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

PLYWOOD - - - - - : 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 EXTERIOR GRADE MAY BE SUBSTITUTED.

STEEL, STRUCTURAL - - : ASTM A501, STEEL STRUCTURAL TUBING; AND ASTM A570, STEEL, STRIP, HOT-ROLLED, GRADE 36 (MINIMUM).

(CONTINUED AT LEFT)

REVISIONS

REVISION NO. 1, DATED JUNE 1995, CONSISTS OF:

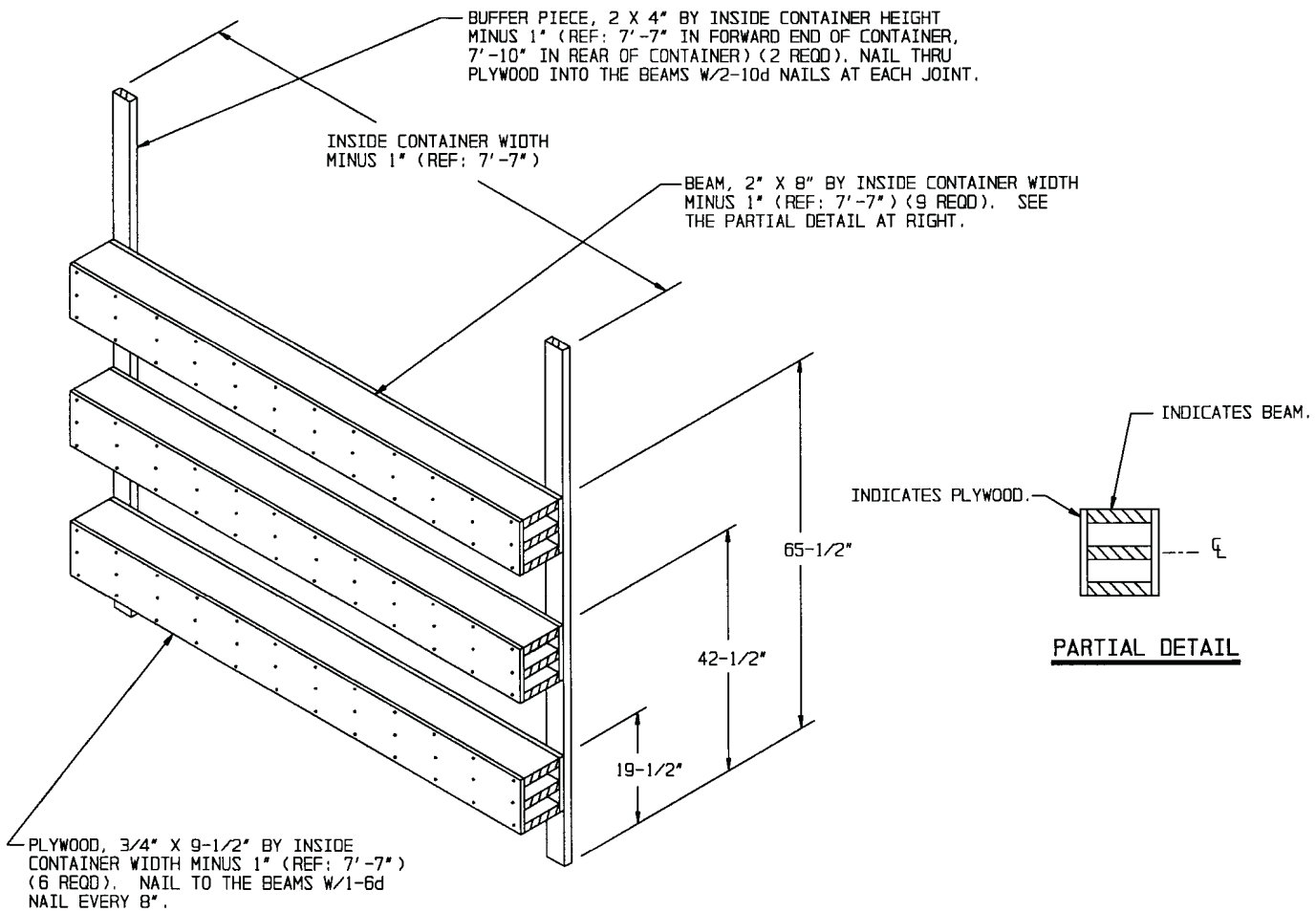
- 1. CHANGING POSITION OF PALLET UNITS IN CONTAINER.
- 2. CHANGING SIZE OF LUMBER IN FORWARD/REAR BLOCKING ASSEMBLY.
- 3. CHANGING NAIL SIZE FOR LOAD BEARING GATE.
- 4. CHANGING BLOCKING PROCEDURES AT REAR OF CONTAINER.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
BOMB PALLET- - - - -	24 - - - - -	37,800 LBS
DUNNAGE - - - - -	- - - - -	1,537 LBS
CONTAINER - - - - -	- - - - -	4,700 LBS

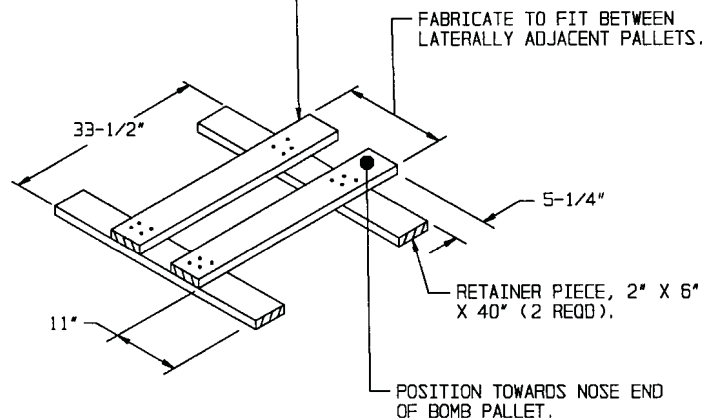
TOTAL WEIGHT - - - - - 44,037 LBS (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	134	90
2" X 6"	210	210
2" X 8"	137	183
2" X 10"	64	107
4" X 4"	37	49
NAILS	NO. REQD	POUNDS
6d (2")	432	2-1/2
10d (3")	452	7
12d (3-1/4")	12	NIL
16d (3-1/2")	54	1
PLYWOOD, 3/4" - - - -	72.04 SQ FT REQD - -	148.58 LBS
STEEL STRAPPING, 1-1/4" - -	256' REQD - - - -	36 LBS
SEAL FOR 1-1/4" STRAPPING - -	16 REQD - - - -	1 LB
DOOR POST VERTICAL RETAINER -	2 REQD - - - -	64 LBS



FORWARD/REAR BLOCKING ASSEMBLY

BUFFER PIECE, 2" X 6" X 31-1/2" (2 REQD). NAIL TO THE RETAINER PIECES W/4-10d NAILS AT EACH JOINT.



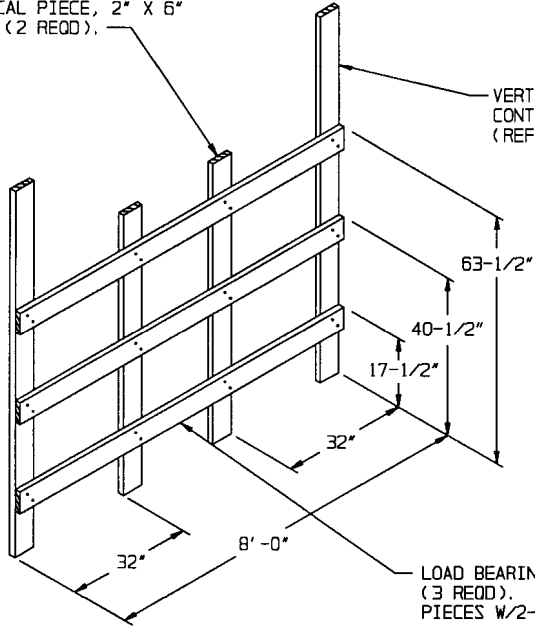
ANTI-SWAY BRACE

SEE SPECIAL NOTE AT THE LEFT.

SPECIAL NOTE:

PARTIALLY ASSEMBLE THE ANTI-SWAY BRACE BY NAILING ONE BUFFER PIECE TO THE RETAINER PIECES. AFTER ONE PALLET UNIT HAS BEEN POSITIONED IN THE LOAD UNIT LAYER IN WHICH THE ANTI-SWAY BRACE IS TO BE USED, INSERT THE LONG ENDS OF THE RETAINER PIECES SO AS TO EXTEND BETWEEN THE OUTER DECK BOARDS OF THE PALLET. SLIDE THE PARTIAL ASSEMBLY IN UNDER THE BOMBS ON THE PALLET UNIT. POSITION THE OTHER PALLET UNIT. PULL THE PARTIAL ASSEMBLY OUT AND INSERT THE SHORT END OF THE RETAINER PIECES UNDER THE LAST PALLET SO THE BUFFER PIECE BEARS AGAINST THE NOSE END STOP AND THE AFT END STOP PIECES. POSITION THE REMAINING BUFFER PIECE AGAINST THE FIRST PALLET UNIT AND NAIL IN PLACE.

VERTICAL PIECE, 2" X 6"
X 72" (2 REQD).

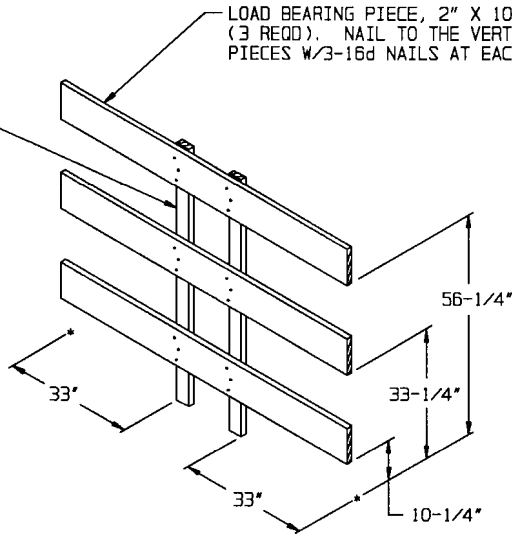


VERTICAL PIECE, 2" X 6" BY INSIDE
CONTAINER HEIGHT MINUS 1"
(REF: 7'-10") (2 REQD).

LOAD BEARING PIECE, 2" X 6" X 8'-0"
(3 REQD). NAIL TO THE VERTICAL
PIECES W/2-10d NAILS AT EACH JOINT.

SIDE BLOCKING ASSEMBLY

VERTICAL PIECE,
2" X 4" X 66"
(2 REQD).

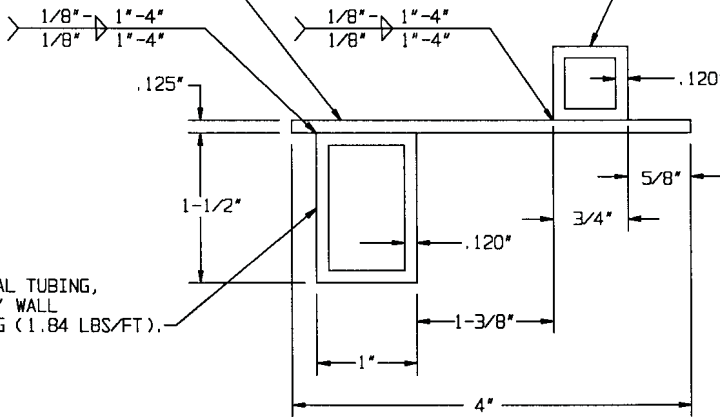


LOAD BEARING PIECE, 2" X 10" X 7'-1"
(3 REQD). NAIL TO THE VERTICAL
PIECES W/3-16d NAILS AT EACH JOINT AND CLINCH.

LOAD BEARING GATE

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

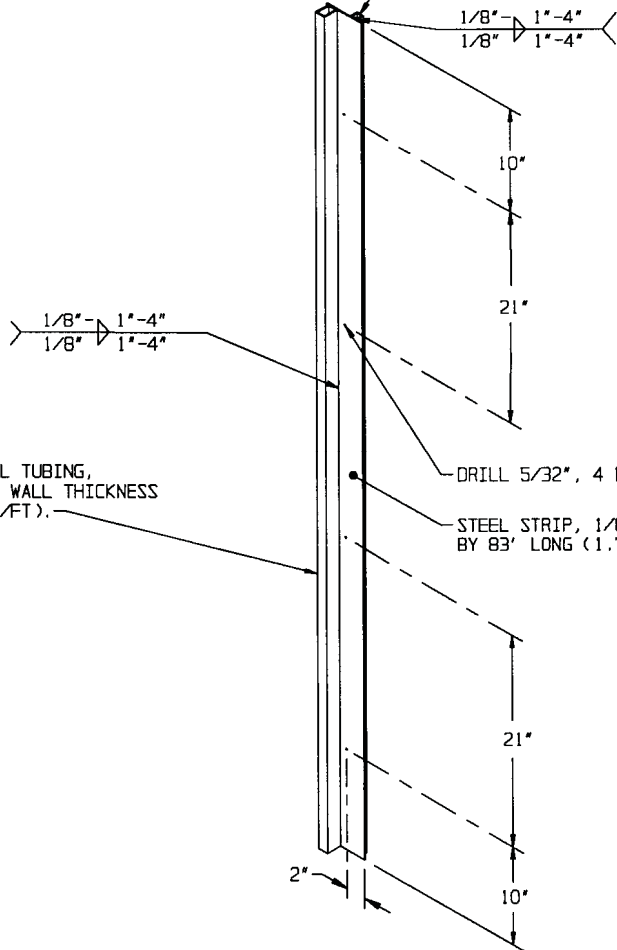
SQUARE STRUCTURAL TUBING, 3/4" SQUARE
BY .120" WALL THICKNESS BY 83" LONG
(1.03 LBS/FT).



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

VIEW A

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



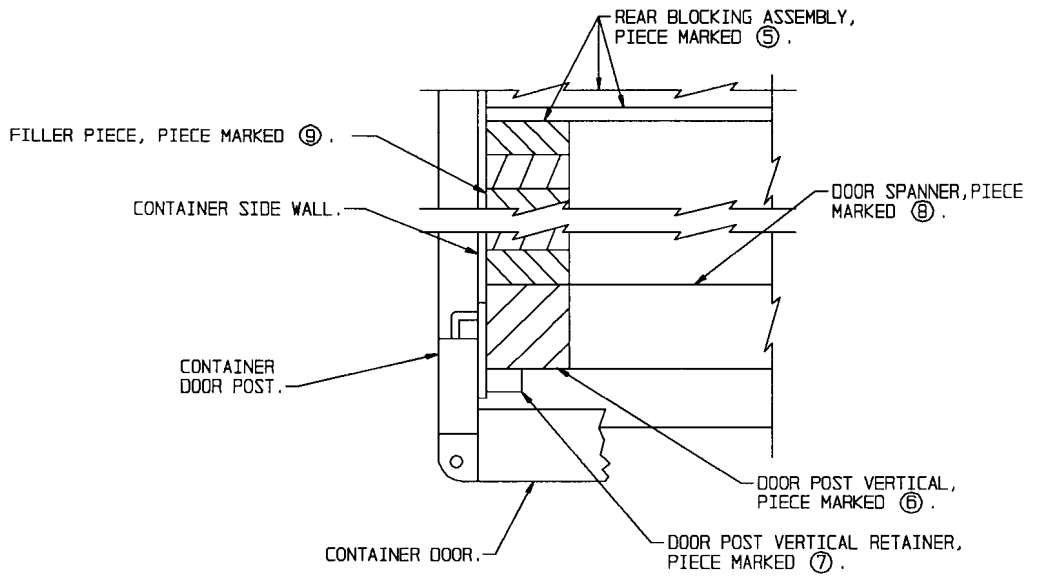
RECTANGULAR STRUCTURAL TUBING,
1-1/2" BY 1" BY .120" WALL THICKNESS
BY 83" LONG (1.84 LBS/FT).

DRILL 5/32", 4 HOLES.

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

DOOR POST VERTICAL RETAINER

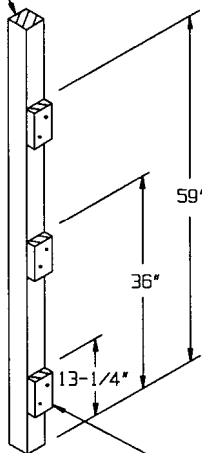
NOTE: THE ABOVE ASSEMBLY HAS BEEN SHOWN ROTATED 90° FROM THE
ORIENTATION IN WHICH IT IS INSTALLED IN THE LEFT REAR CORNER
OF THE CONTAINER. THE ASSEMBLY HAS BEEN ROTATED FOR HOLE LOCATION CLARITY.



DETAIL A

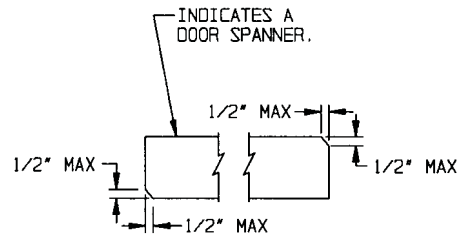
A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND ADJACENT DUNNAGE PIECES.

VERTICAL PIECE, 4" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1" (REF: 7'-10") (1 REQD).



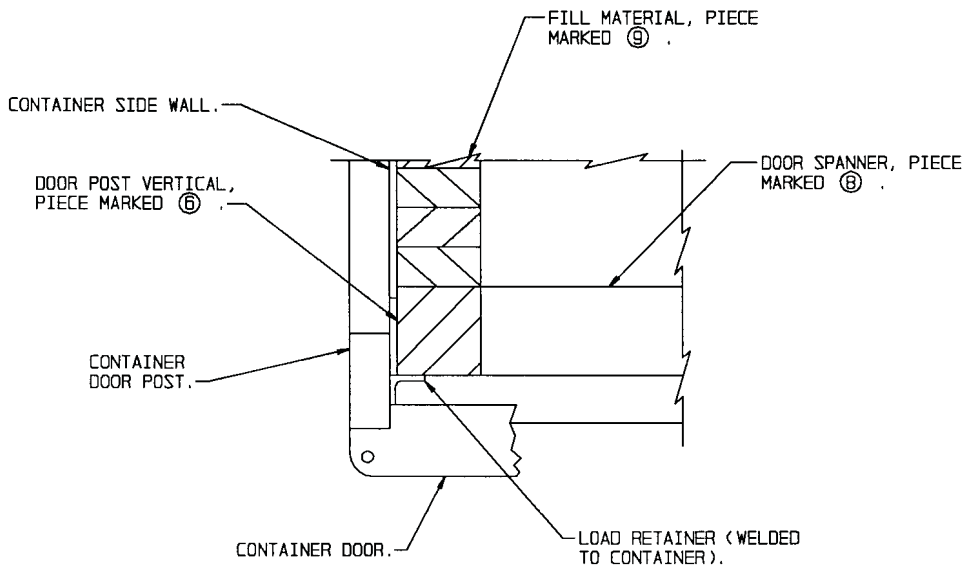
DOOR POST VERTICAL

STRUT LEDGER, 2" X 4" X 6" (3 REQD). NAIL TO THE VERTICAL PIECE W/2-10d NAILS AT EACH JOINT.



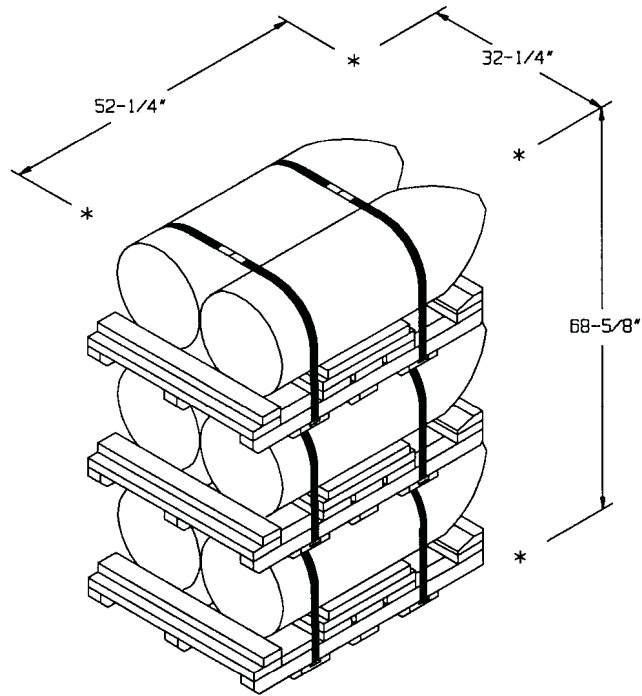
BEVEL-CUT

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.



DETAIL B

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



STACK DETAIL

WEIGHT - - - 4,725 LBS (APPROX)
 CUBE - - - 66.92 CU FT (APPROX)