

APPROVED BY
BUREAU OF EXPLOSIVES

J. A. Fleishman
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LOADING AND BRACING IN END OPENING ISO CONTAINERS OF MAVERICK (AGM-65) MISSILES IN CNU-399/E AND CNU-425/E SHIPPING AND STORAGE CONTAINERS

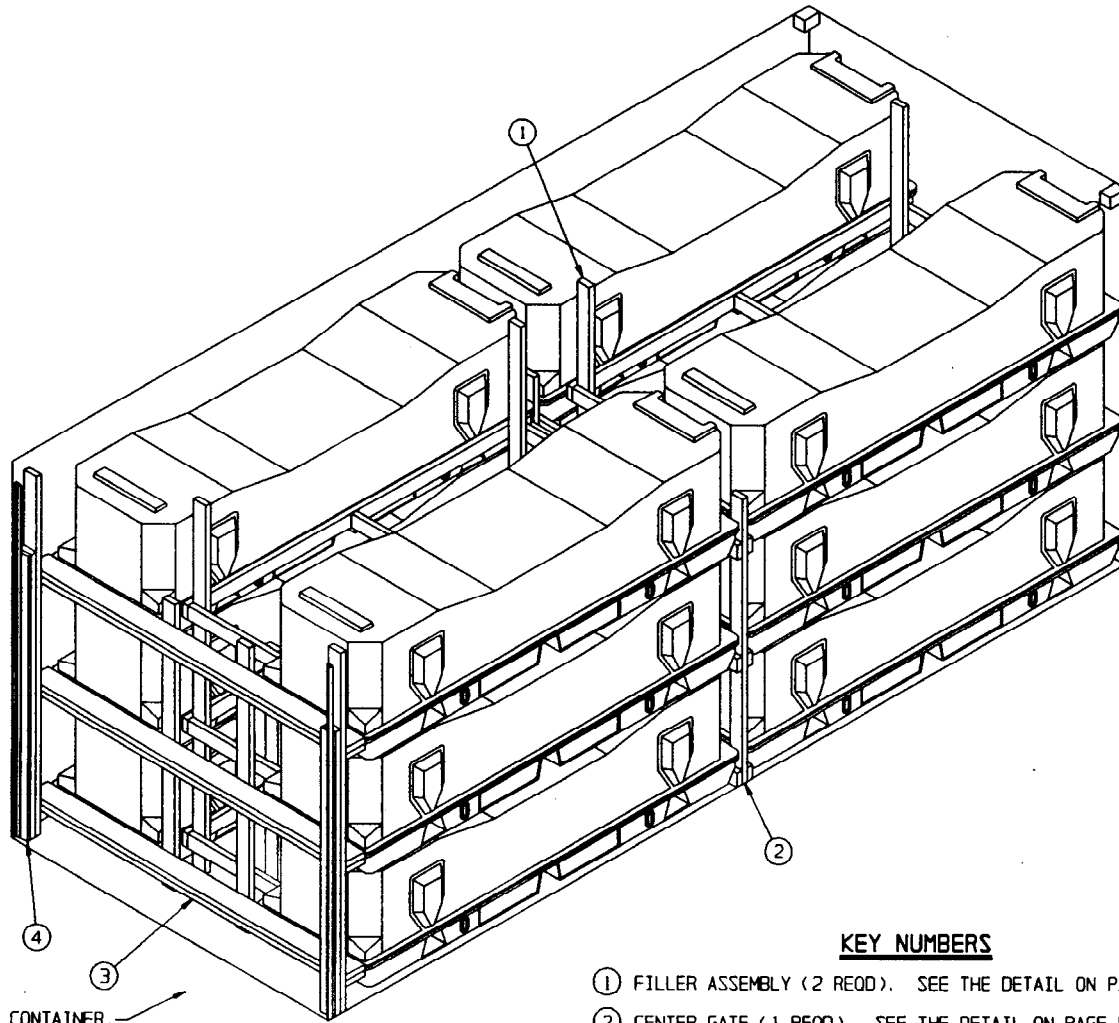
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- LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLAT CAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY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

U.S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND <i>EM Jones</i>	DRAFTSMAN	TECHNICIAN	ENGINEER L. FIEFFER
	VALIDATION ENGINEERING DIVISION <i>W. J. Ernst</i>	TRANSPORTATION ENGINEERING DIVISION <i>W. J. Ernst</i>	LOGISTICS ENGINEERING OFFICE <i>W. J. Ernst</i>
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U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL	CLASS	DIVISION	DRAWING
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DO NOT SCALE



ISOMETRIC VIEW

KEY NUMBERS

- ① FILLER ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6.
- ② CENTER GATE (1 REQD). SEE THE DETAIL ON PAGE 5.
- ③ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 6.
- ④ FILL MATERIAL 4" WIDE BY 72" LONG MATERIAL (AS REQD). NAIL EACH PIECE TO THE REAR BLOCKING ASSEMBLY AND/OR LAMINATE TOGETHER W/6 NAILS OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL). SEE DETAIL A ON PAGE 8.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	12	4
2" X 4"	296	198
2" X 6"	46	46
NAILS	NO. REQD	POUNDS
6d (2")	12	1/4
10d (3")	249	4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-399 OR 425	12	12,180 LBS
BUNNAGE		501 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		17,381 LBS (APPROX)

(GENERAL NOTES CONTINUED)

GENERAL NOTES

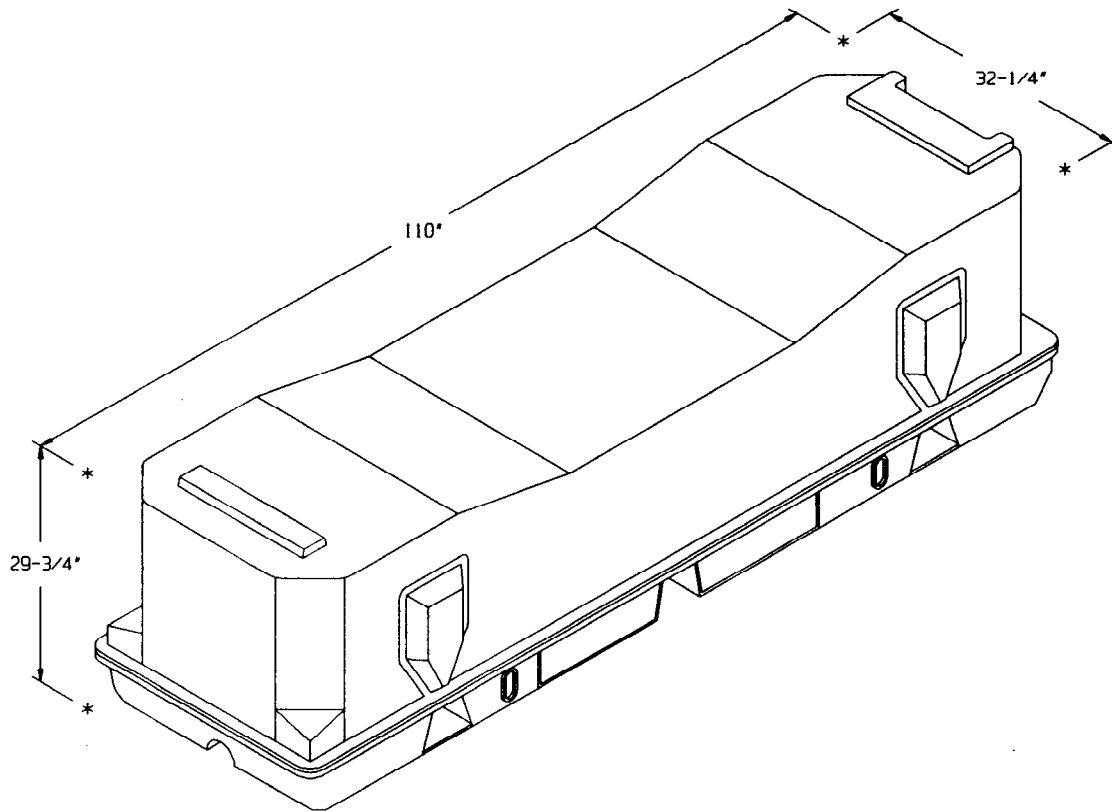
- M. THE QUANTITY OF CONTAINERS SHOWN IN THE LOAD ON PAGE 2 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE DETAILS ON PAGE 7. WHEN A CONTAINER IS TO BE LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF THE LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MID-POINT OF THE CONTAINER.
 - 1. IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT (ONE, TWO OR THREE LADING UNITS), LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE EITHER END OF THE LOAD, AS LONG THE CONDITIONS STATED IMMEDIATELY ABOVE ARE ADHERED TO.
 - 2. IF A LOAD IS REDUCED BY A LARGE AMOUNT (MORE THAN THREE 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.
- N. ISO CONTAINERS UTILIZED TO SHIP THE MAVERICK AS DEPICTED IN THIS DRAWING MUST BE EQUIPPED WITH PRE-WELDED LOAD RETAINERS AT THE REAR OF THE CONTAINER. CONTAINERS NOT SO EQUIPPED WILL NOT BE USED.
- O. RECOMMENDED SEQUENTIAL LOADING PROCEDURES:
 - 1. PREFABRICATE ONE REAR BLOCKING ASSEMBLY, TWO FILLER ASSEMBLIES AND ONE CENTER GATE.
 - 2. LOAD THREE CONTAINERS.
 - 3. INSTALL ONE FILLER ASSEMBLY.
 - 4. REPEAT STEP 2.
 - 5. INSTALL ONE CENTER GATE.
 - 6. REPEAT STEPS 2 THROUGH 4.
 - 7. INSTALL ONE REAR BLOCKING ASSEMBLY.
 - 8. INSTALL FILL MATERIAL.

- 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 MAVERICK (AGM-65) MISSILES PACKED IN CNU-399/E OR CNU-425/E CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CNU-399/E OR CNU-425/E CONTAINER WITH MISSILES INSTALLED. SEE PAGE 4 FOR DETAILS OF THE CONTAINER. **CAUTION:** REGARDLESS OF THE QUANTITY OF CONTAINERS 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 95" (93" CLEAR HEIGHT). 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 CNU-399/E OR CNU-425/E CONTAINERS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE 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. EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY VARYING THE WIDTH OF THE FILLER ASSEMBLY.
- 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" 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. **CAUTION:** DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- H. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- J. 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.
- K. 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.
- L. 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 0.454 KG.

(CONTINUED AT LEFT)

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 AN EXTERIOR GRADE MAY BE SUBSTITUTED.



CNU-399/E OR CNU-425/E CONTAINER

CONTAINER WEIGHT (MAX) - - - 1,015 LBS (APPROX)
 CUBE - - - - - 61.1 CU FT (APPROX)

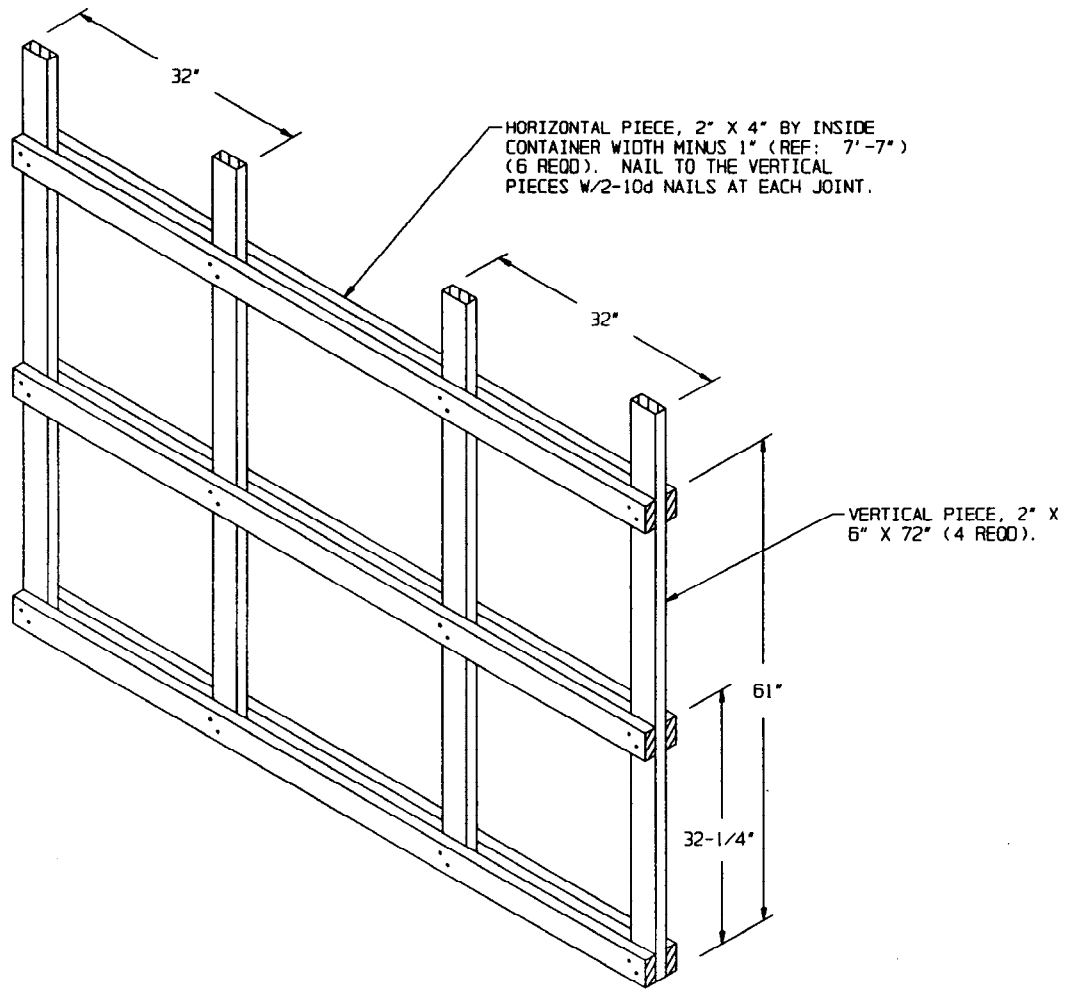
CONTAINER HANDLING GUIDANCE

1. CONTAINER HANDLING.

- A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT (MHE) WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS. APPROVED MHE IS SPECIFIED IN OTHER DOCUMENTS. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS AND SPREADER BARS.
- B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER TO PREVENT DAMAGE TO THE CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD.

2. CONTAINER UNLOADING.

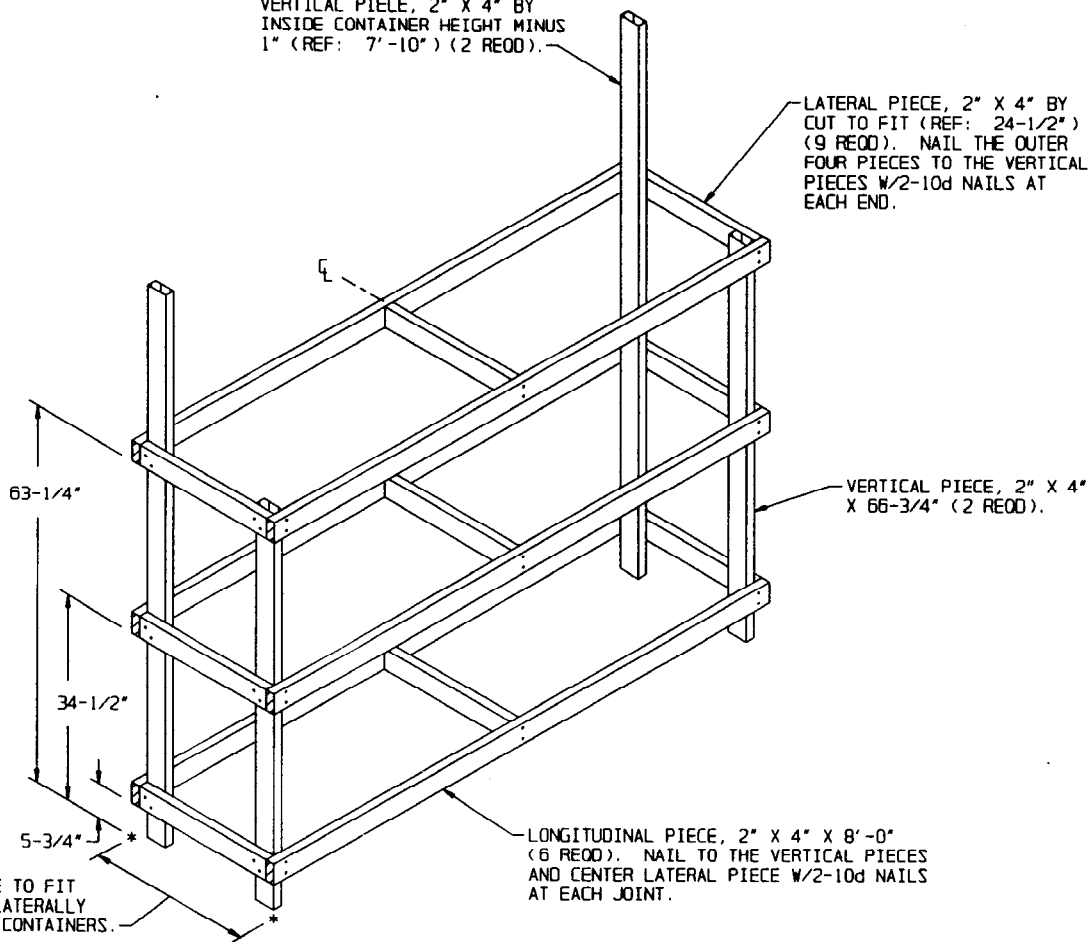
CONTAINERS MAY BE UNLOADED USING CHAINS AND A FORKLIFT TRUCK. ATTACH THE CHAINS TO THE RINGS ON THE BOTTOM OF THE CONTAINERS ONLY. AFTER CHAINS ARE ATTACHED, SLOWLY PULL THE CONTAINERS UNTIL A FORKLIFT CAN BE INSERTED UNDER THE NEAR END. SUPPORT THE CONTAINERS WITH THE FORKLIFT TINES, AND CONTINUE TO PULL THE CONTAINER OUT OF THE ISO CONTAINER, UNTIL THE CONTAINER FORKLIFT POCKETS ARE CLEAR OF THE ISO CONTAINER. CONTAINERS MAY THEN BE LIFTED FROM THE SIDE AND COMPLETELY REMOVED FROM THE COMMERCIAL CONTAINER.



CENTER GATE

VERTICAL PIECE, 2" X 4" BY
INSIDE CONTAINER HEIGHT MINUS
1" (REF: 7'-10") (2 REQD).

LATERAL PIECE, 2" X 4" BY
CUT TO FIT (REF: 24-1/2")
(9 REQD). NAIL THE OUTER
FOUR PIECES TO THE VERTICAL
PIECES W/2-10d NAILS AT
EACH END.

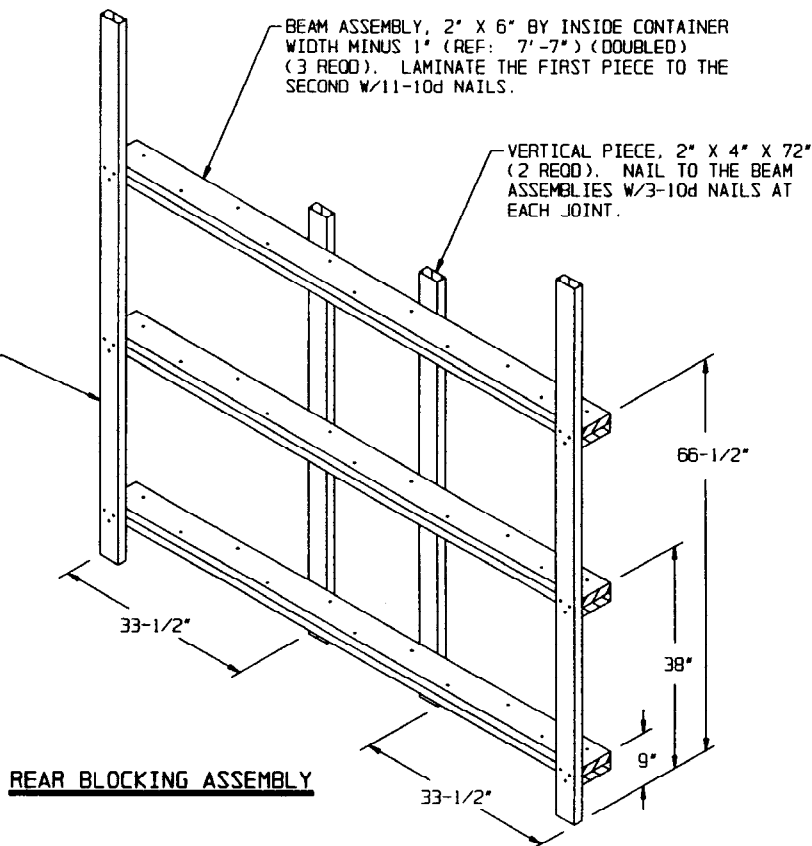


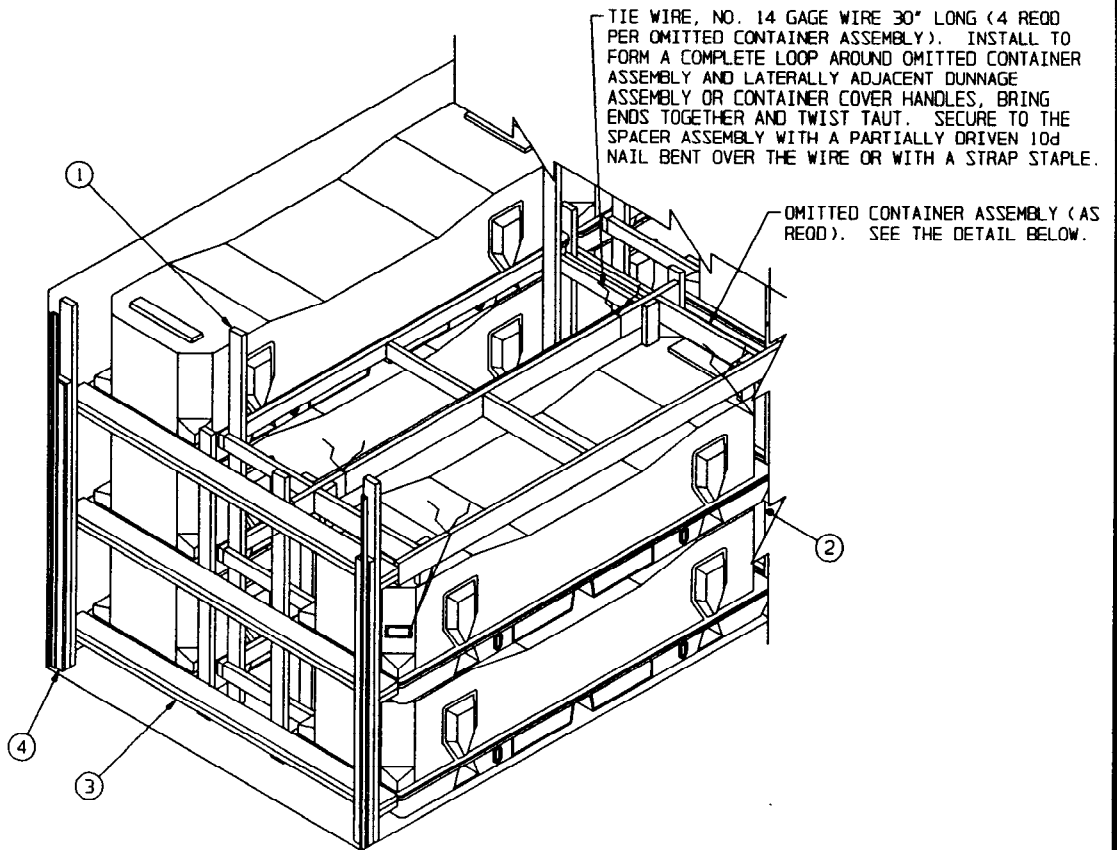
FILLER ASSEMBLY

BEAM ASSEMBLY, 2" X 6" BY INSIDE CONTAINER
WIDTH MINUS 1" (REF: 7'-7") (DOUBLED)
(3 REQD). LAMINATE THE FIRST PIECE TO THE
SECOND W/11-10d NAILS.

VERTICAL PIECE, 2" X 4" X 72"
(2 REQD). NAIL TO THE BEAM
ASSEMBLIES W/3-10d NAILS AT
EACH JOINT.

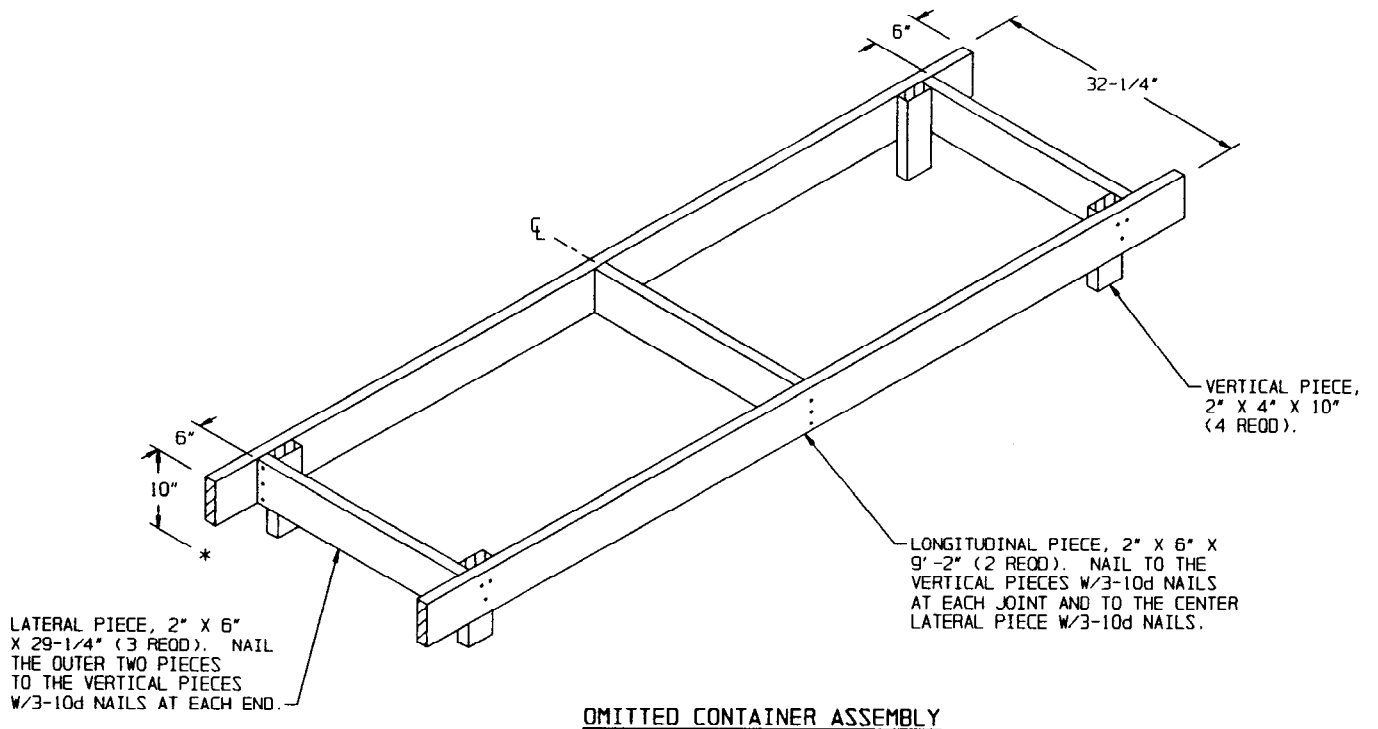
VERTICAL PIECE, 2" X 4" BY
INSIDE CONTAINER HEIGHT MINUS
1" (REF: 7'-10") (2 REQD).
NAIL TO THE BEAM ASSEMBLIES
W/3-10d NAILS AT EACH JOINT.

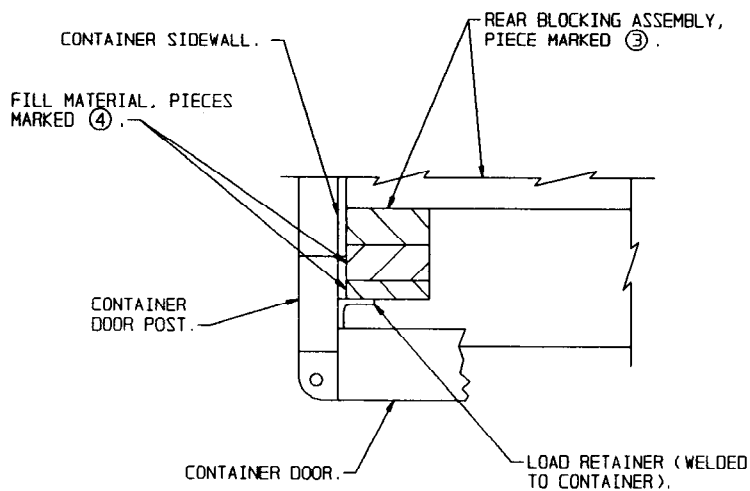




LESS-THAN-FULL-LOAD PROCEDURE

THE DETAIL ABOVE DEPICTS A BLOCKING METHOD TO BE USED IN A LESS-THAN-FULL CONTAINER LOAD (LESS THAN 12 UNITS). KEY NUMBERS REFER TO KEY NUMBERS ON PAGE 2. ONE OMITTED CONTAINER ASSEMBLY REPLACES ONE CONTAINER. IF FOUR CONTAINERS ARE TO BE OMITTED, OMIT ONE FULL LAYER OF CONTAINERS. SEE GENERAL NOTE "M" ON PAGE 3.



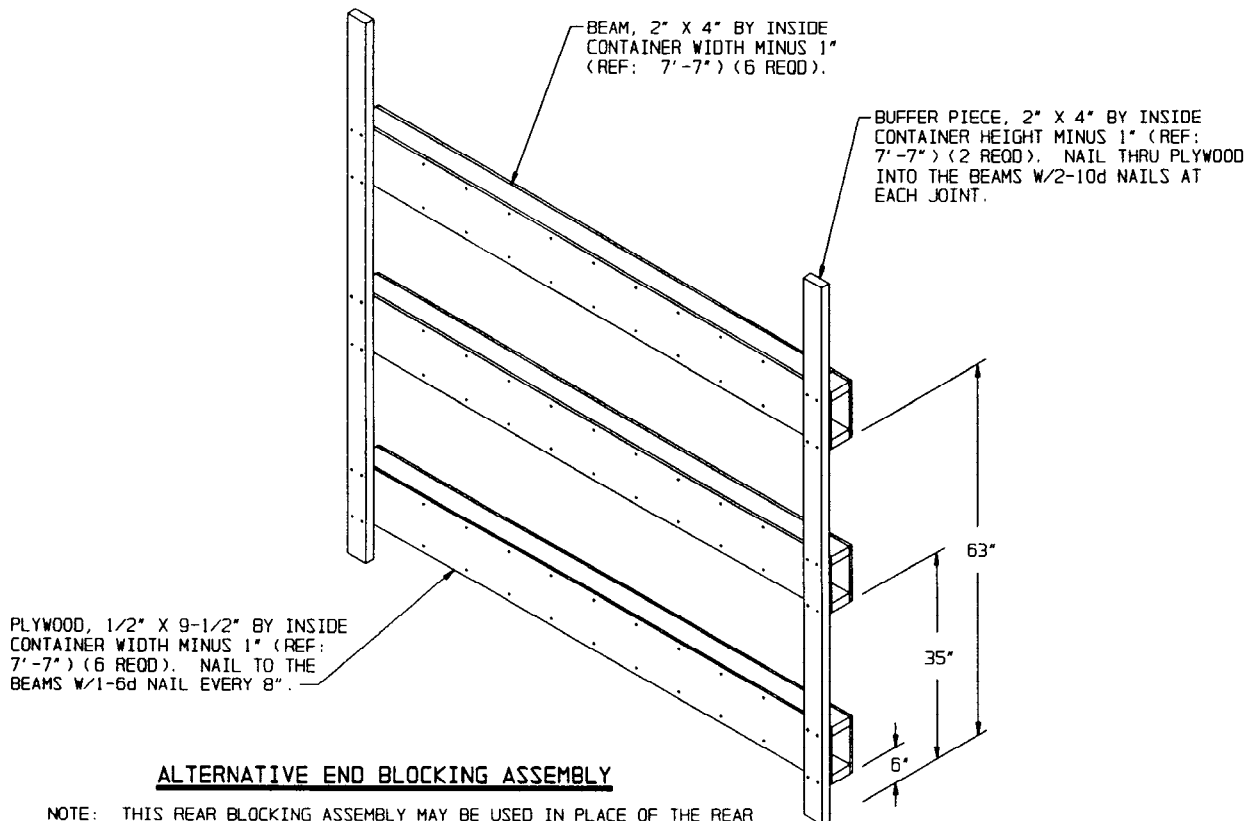


DETAIL A

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:

COMMERCIAL CONTAINERS NOT EQUIPPED WITH PRE-WELDED LOAD RETAINERS, AS DEPICTED IN "DETAIL A" ABOVE, CANNOT BE USED FOR SHIPMENT OF THE ITEMS DEPICTED IN THIS DRAWING. SEE GENERAL NOTE "N" ON PAGE 3.



ALTERNATIVE END BLOCKING ASSEMBLY

NOTE: THIS REAR BLOCKING ASSEMBLY MAY BE USED IN PLACE OF THE REAR BLOCKING ASSEMBLY DEPICTED ON PAGE 6, IF DESIRED.