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HONEST JOHN

LOADING AND BRACING* IN END OPENING ISO CONTAINERS OF WARHEAD ASSEMBLIES, M38, M144, OR M186, PACKED IN M473 SERIES CONTAINERS

INDEX

***THE PROCEDURES SHOWN HEREIN ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR(T/COFC) RAIL, MOTOR, OR WATER CARRIERS.**

U.S. ARMY MATERIEL COMMAND DRAWING

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AVIATION ANDMISSILE COMMAND

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DO NOT SCALE

SEPTEMBER 2009

ENGINEER OR TECHNICIAN	BASIC	RICHARD GARSIDE
	REV.	

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CLASS	DIVISION	DRAWING	FILE
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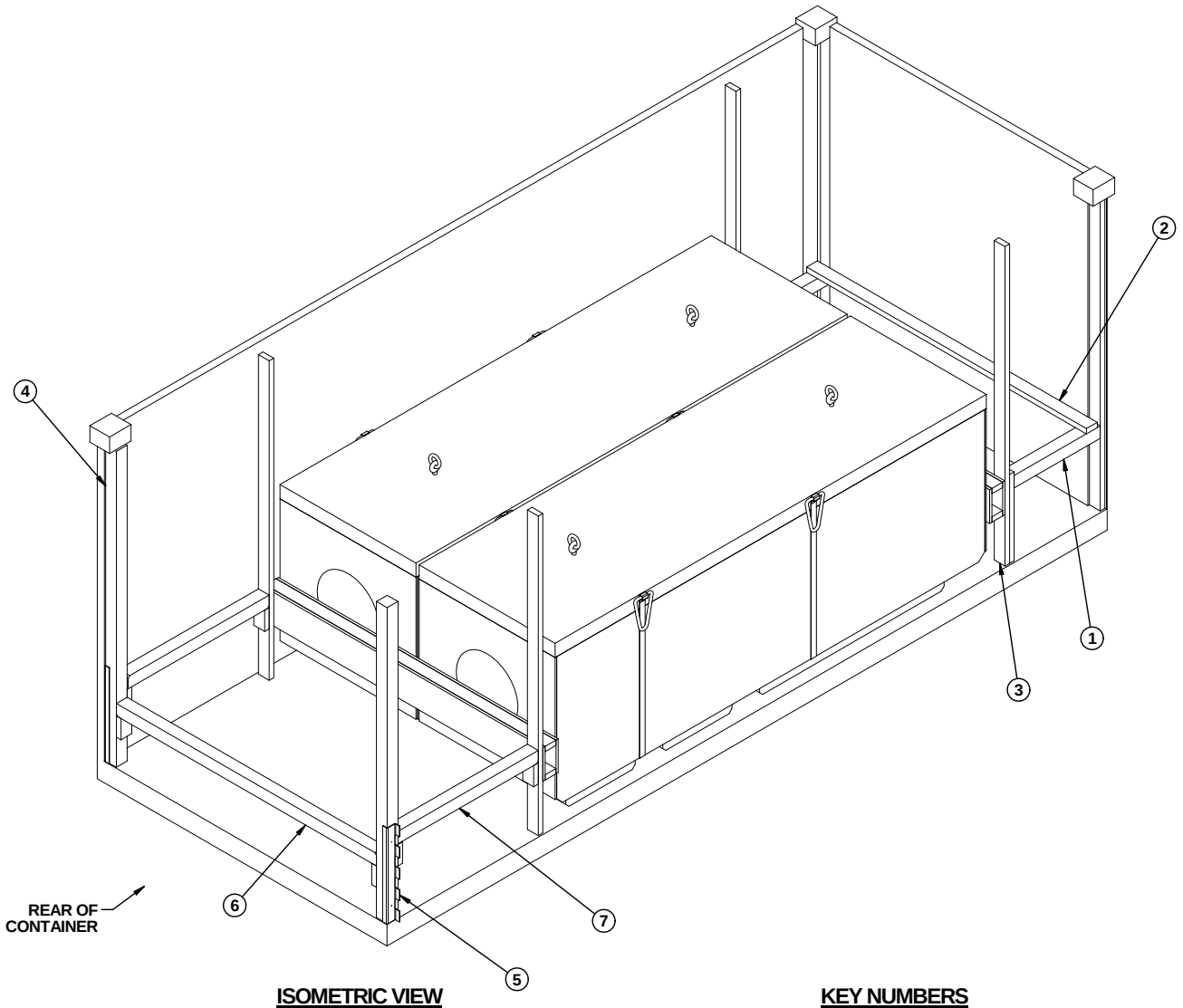
PROJECT GM 918-09



ISOMETRIC VIEW

KEY NUMBERS

1. FORWARD STRUT ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 5.
2. SPREADER PIECE, 2" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (1 REQD). NAIL TO THE STRUTS OF THE FORWARD STRUT ASSEMBLIES W/2-10d NAILS AT EACH END.
3. END BLOCKING ASSEMBLY (2 REQD). NAIL THROUGH THE BUFFER PIECE INTO FORWARD STRUT ASSEMBLY W/3-10d NAILS. SEE THE DETAIL ON PAGE 5.
4. DOOR POST VERTICAL (2 REQD). SEE THE DETAIL ON PAGE 5.
5. UNIVERSAL LOAD RETAINER (2 REQD, 1 PER SIDE). NAIL THROUGH THE HOLES INTO THE DOOR POST VERTICAL W/2-10d NAILS. SEE DEPARTMENT OF ARMY DRAWING DA-116, DETAIL "A" ON PAGE 4, AND GENERAL NOTE "R" ON PAGE 3.
6. DOOR SPANNER, 4" X 4" BY CUT TO A LENGTH THAT WILL PROVIDE A DRIVE FIT (REF: 7'-1 1/4") (1 REQD). TOENAIL TO THE DOOR POST VERTICAL W/2-12d NAILS AT EACH END. SEE "BEVEL CUT" DETAIL ON PAGE 4.
7. STRUT, 4" X 4" BY CUT-TO-FIT (REF: 46") (2 REQD). TOENAIL TO THE REAR BLOCKING ASSEMBLY AND DOOR POST VERTICAL W/2-12d NAILS AT EACH END OF STRUT. SEE "BEVEL CUT" DETAIL ON PAGE 4.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	90	60
4" X 4"	34	46
NAILS	NO. REQD	POUNDS
6d (2")	88	1/2
10d (3")	50	3/4
12d (3-1/4")	12	1/4
PLYWOOD, 3/4" - - - 24 SQ FT REQD - - - 50 LBS		
UNIVERSAL LOAD RETAINER - 2 REQD - - - 13 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
M473 CONTAINER	2	5,796 LBS
DUNNAGE		263 LBS
CONTAINER		4,700 LBS
	TOTAL WEIGHT	10,759 LBS

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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 SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO THE M38, M144, AND M186 HONEST JOHN WARHEAD ASSEMBLIES PACKED IN M473 CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS CONTAINER WITH WARHEAD ASSEMBLY. SEE DRAWINGS 8824908, 8881082, AND 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 LOADS AS SHOWN ARE 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 AND 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 LOADS ARE DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT. HOWEVER, THE LOADS 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 CONTAINERS, 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 FILLER ASSEMBLY. NAIL EACH ADDITIONAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE LENGTH OF THE STRUTS IN THE FILLER ASSEMBLY MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE CONTAINERS.

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, ON TO, OR RIGHT BESIDE A NAIL IN A LOWER PIECE.

G. IN SOME ISO CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE FORWARD WALL. PIECES OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES OF THE FORWARD STRUT ASSEMBLIES 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 AN ISO 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 ISO CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.

K. PORTIONS OF THE ISO CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDEWALL, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

L. THE MAXIMUM LOAD WEIGHTS ARE CONTROLLED BY EQUIPMENT CAPABILITY FACTORS. ALTHOUGH THE HEAVIEST MAXIMUM LOAD IS DELINEATED IN THE LOAD VIEW, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOAD 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 ASSOCIATION OF AMERICAN RAILROADS (AAR) INTERMODAL LOADING GUIDE 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.

(CONTINUED AT RIGHT)

(GENERAL NOTES CONTINUED)

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 25.4MM AND ONE POUND EQUALS 0.454 KG.

P. THE QUANTITY OF CONTAINERS SHOWN IN THE LOAD ON PAGE 2 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE DETAIL ON PAGE 6.

Q. ANTI-CHAFING MATERIAL MAY BE INSTALLED AT POINTS OF CONTACT BETWEEN CONTAINERS AND BETWEEN CONTAINERS AND THE ISO END OPENING CONTAINER, IF DESIRED, TO PREVENT CHAFING DAMAGE TO CONTAINER PAINT AND MARKINGS.

R. TWO UNIVERSAL LOAD RETAINERS, AS DEPICTED IN THE LOADS ON PAGES 2 AND 6, ARE REQUIRED WHEN LOADING TWO OR ONE M473 CONTAINER(S). THIS IS AN EXCEPTION TO THE ESTABLISHED PROCEDURES; HOWEVER, THE EXCEPTION IS PERMITTED FOR THE AMMUNITION PACK COVERED BY THIS DRAWING. REFER TO DAC DRAWING ACV00682 FOR DETAILS OF THE UNIVERSAL LOAD RETAINER CONSTRUCTION, AND TO DEPARTMENT OF THE ARMY DRAWING DA-116 FOR DETAILS FOR INSTALLATION TO THE DOOR POST VERTICAL, PLACEMENT INTO THE ISO CONTAINER, AND FOR OTHER METHODS OF REAR-OF-LOAD RESTRAINT.

S. RECOMMENDED SEQUENTIAL LOADING PROCEDURES FOR THE LOAD ON PAGE 3:

1. PREFABRICATE TWO END BLOCKING ASSEMBLIES, TWO FORWARD STRUT ASSEMBLIES, AND TWO DOOR POST VERTICAL ASSEMBLIES.

2. INSTALL THE TWO FORWARD STRUT ASSEMBLIES, SPREADER PIECE, AND ONE END BLOCKING ASSEMBLY.

3. LOAD TWO M473 CONTAINERS TIGHT AGAINST END BLOCKING ASSEMBLY.

4. INSTALL LAST END BLOCKING ASSEMBLY TIGHT AGAINST THE M473 CONTAINERS.

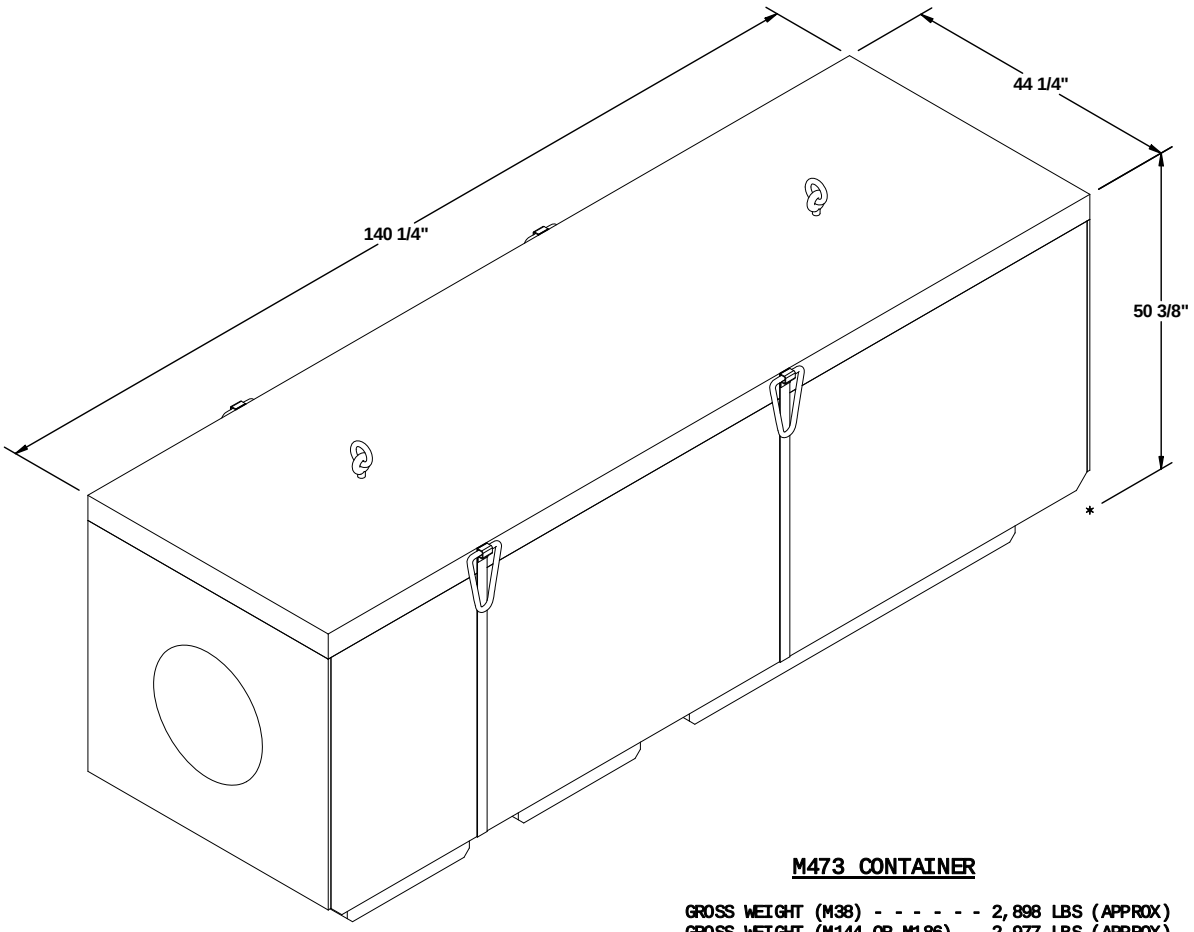
5. INSTALL THE TWO DOOR POST VERTICAL ASSEMBLIES AND TWO UNIVERSAL LOAD RETAINERS.

6. INSTALL THE DOOR SPANNER.

7. INSTALL THE TWO STRUTS AND THE STRUT BRACING.

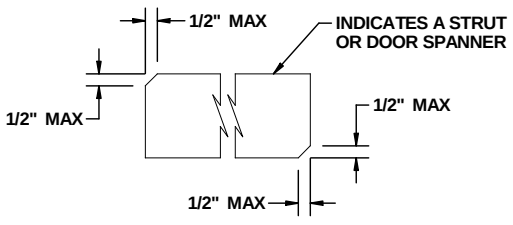
MATERIAL SPECIFICATIONS

LUMBER - - - - - - - -:	SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
NAILS - - - - - - - -:	ASTM F1667; COMMON STEEL NAIL NLCMS OR NLCMMS).
PLYWOOD - - - - - - -:	COMMERCIAL ITEM DESCRIPTION A-A-55057, 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.
ANTI-CHAFING MATERIAL - - - - - - -:	MIL-PRF-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.



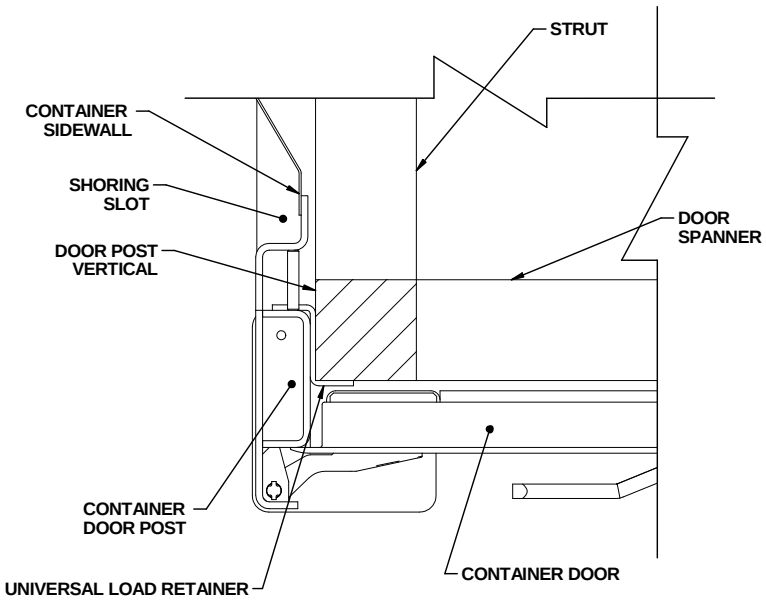
M473 CONTAINER

GROSS WEIGHT (M38) - - - - - - 2,898 LBS (APPROX)
GROSS WEIGHT (M144 OR M186) - 2,977 LBS (APPROX)
CUBE - - - - - - - - - - - - - - 180.9 CU FT (APPROX)



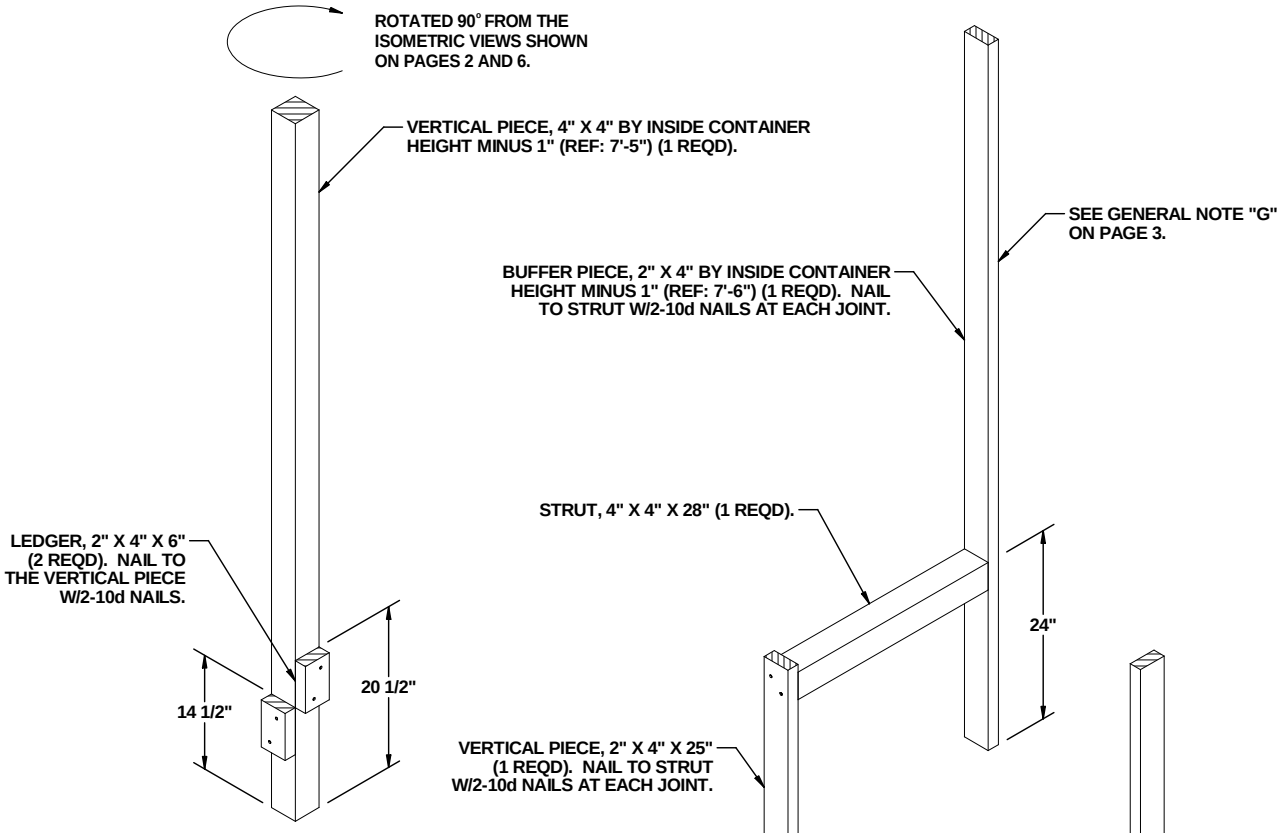
BEVEL CUT

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



DETAIL A

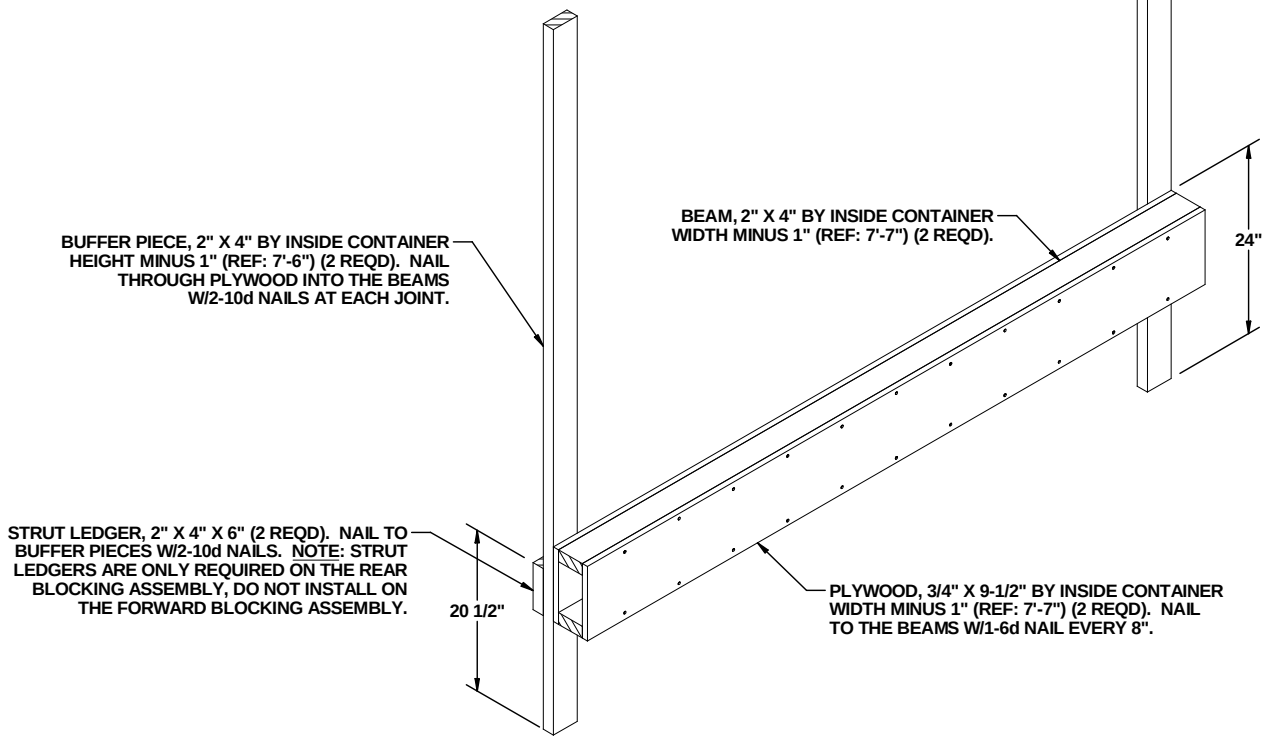
A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER ON PAGE 2 OR 6 IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL, UNIVERSAL LOAD RETAINER, AND ADJACENT DUNNAGE PIECES.



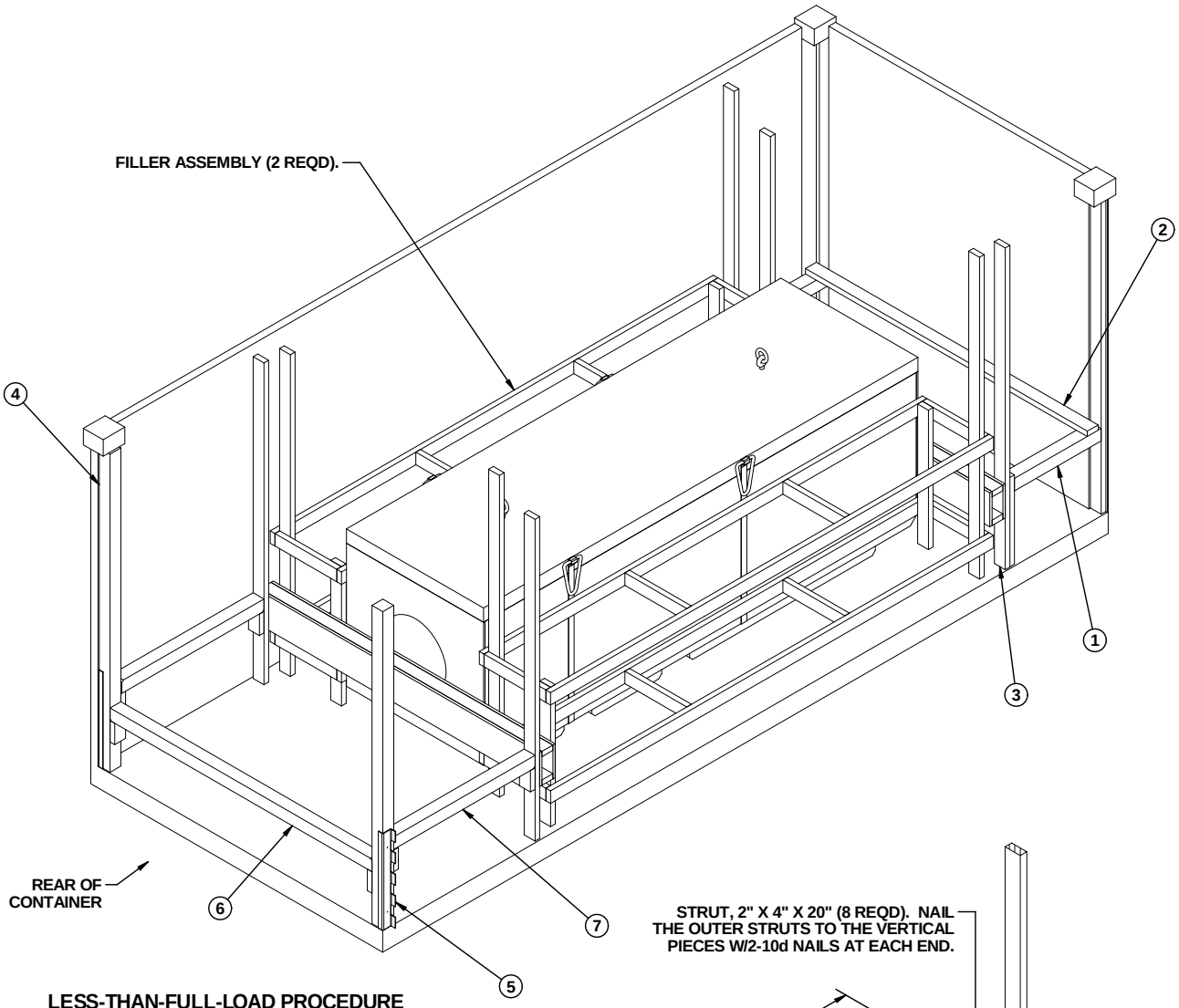
DOOR POST VERTICAL

A LEFT-HAND ASSEMBLY IS DEPICTED ABOVE, A RIGHT-HAND ASSEMBLY IS ALSO REQUIRED.

FORWARD STRUT ASSEMBLY

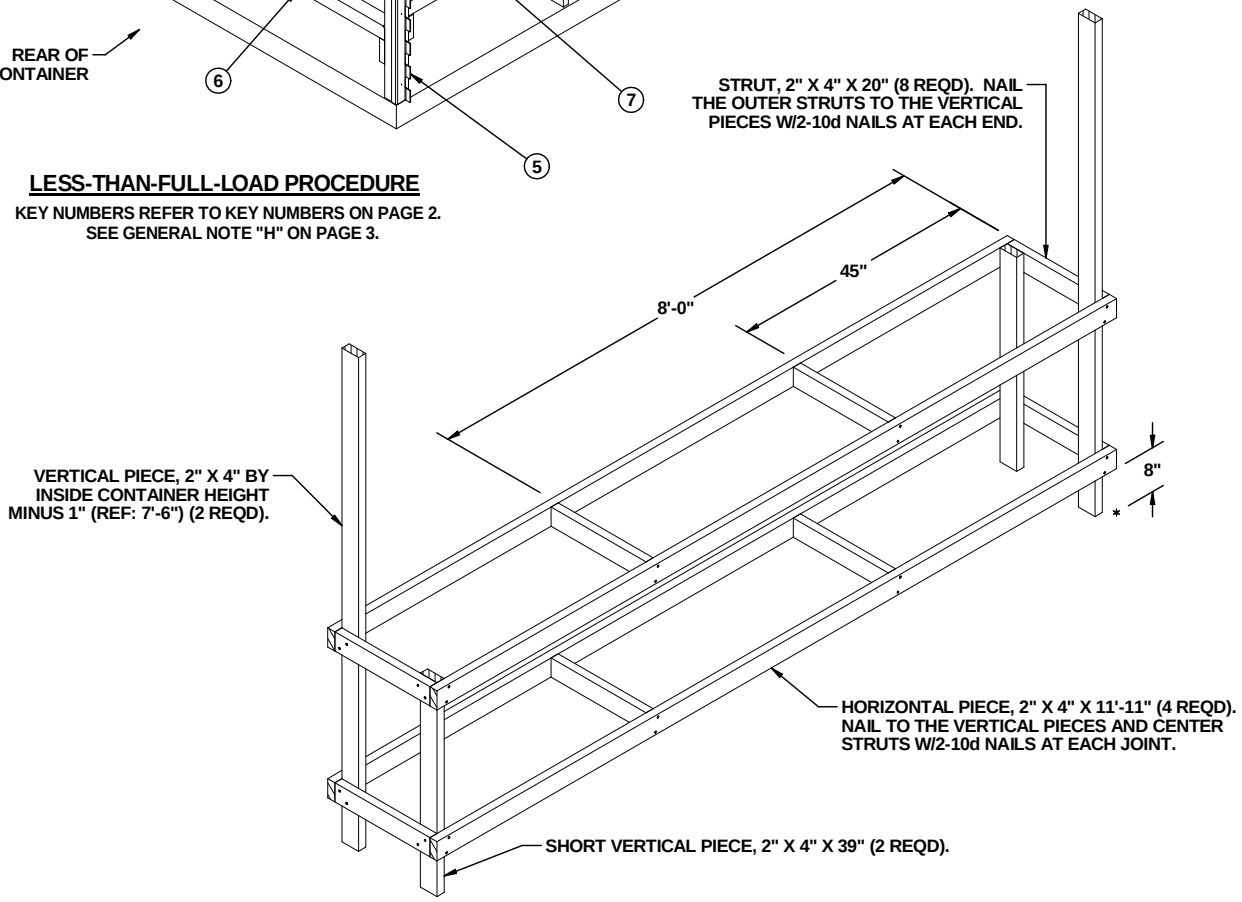


END BLOCKING ASSEMBLY



LESS-THAN-FULL-LOAD PROCEDURE

KEY NUMBERS REFER TO KEY NUMBERS ON PAGE 2.
SEE GENERAL NOTE "H" ON PAGE 3.



FILLER ASSEMBLY

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