APPROVED BY
BUREAU OF EXPLOSIVES

DATE 5/13/94

LOADING AND BRACING● WITH WOODEN DUNNAGE IN SIDE OPENING ISO CONTAINERS OF CHARGE, DEMOLITION, LINEAR, HE, M58A3 IN METAL SHIPPING AND STORAGE CONTAINER

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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.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND

APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND

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DO NOT SCALE

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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 A LOAD OF LINEAR DEMOLITION CHARGES, HE M58A3 IN METAL SHIPPING AND STORAGE CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE SHIPPING AND STORAGE CONTAINER. SEE PAGE 3 FOR THE DETAIL OF THE CONTAINER. CAUTION: REGARDLESS OF THE QUANTITY OF CONTAINERS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE SIDE OPENING ISO CONTAINER MUST NOT BE EXCEEDED.

C. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED ITEM, OR WHEN THEY ARE EMPTY.

D. THE LOADS AS SHOWN ARE BASED ON 6,050 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89" WIDE BY 88" HIGH AND A MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT, HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY MOTOR OR WATER CARRIERS. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN ALSO BE USED.

E. WHEN LOADING 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 THE LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE BEARING PIECES ON THE SIDE FILL ASSEMBLIES. NAIL EACH ADDITIONAL PIECE TO THE BEARING PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS OF THE BEARING PIECES MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE CONTAINER SIZE.

F. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 2" MATERIAL IS ACTUALLY 3/4" THICK BY 1-1/2" WIDE AND 2" X 6" IS ACTUALLY 1-1/2" THICK BY 5-1/2" 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 SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEW FOR CLARITY PURPOSES.

K. IN SOME CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE ENDWALLS. A PIECE OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES OF THE END BLOCKING ASSEMBLY TO PROVIDE A FLAT SURFACE FOR THE 2" X 4" 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". THIS PIECE IS NOT REQUIRED WHEN THE ENDWALL OF THE CONTAINER IS SMOOTH AND FLAT.

(CONTINUED AT RIGHT)

(GENERAL NOTES CONTINUED)

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-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.

N. 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.

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 0.454KG.

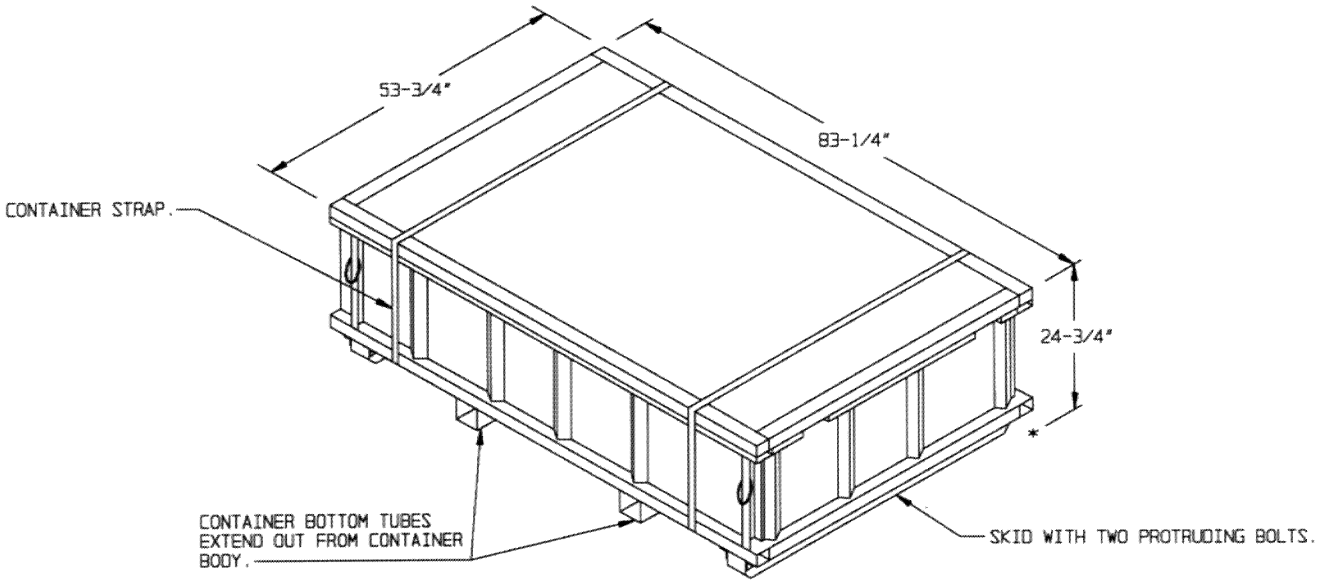
P. THE QUANTITY OF CONTAINERS SHOWN IN THE LOAD ON PAGE 4 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. WHEN A CONTAINER IS TO BE LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF THE LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MID-POINT OF THE CONTAINER. CONTAINERS SHOULD BE ELIMINATED FROM THE TOP LAYER ONLY. SEE THE "OMITTED CONTAINER ASSEMBLY" DETAIL ON PAGE 8.

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.

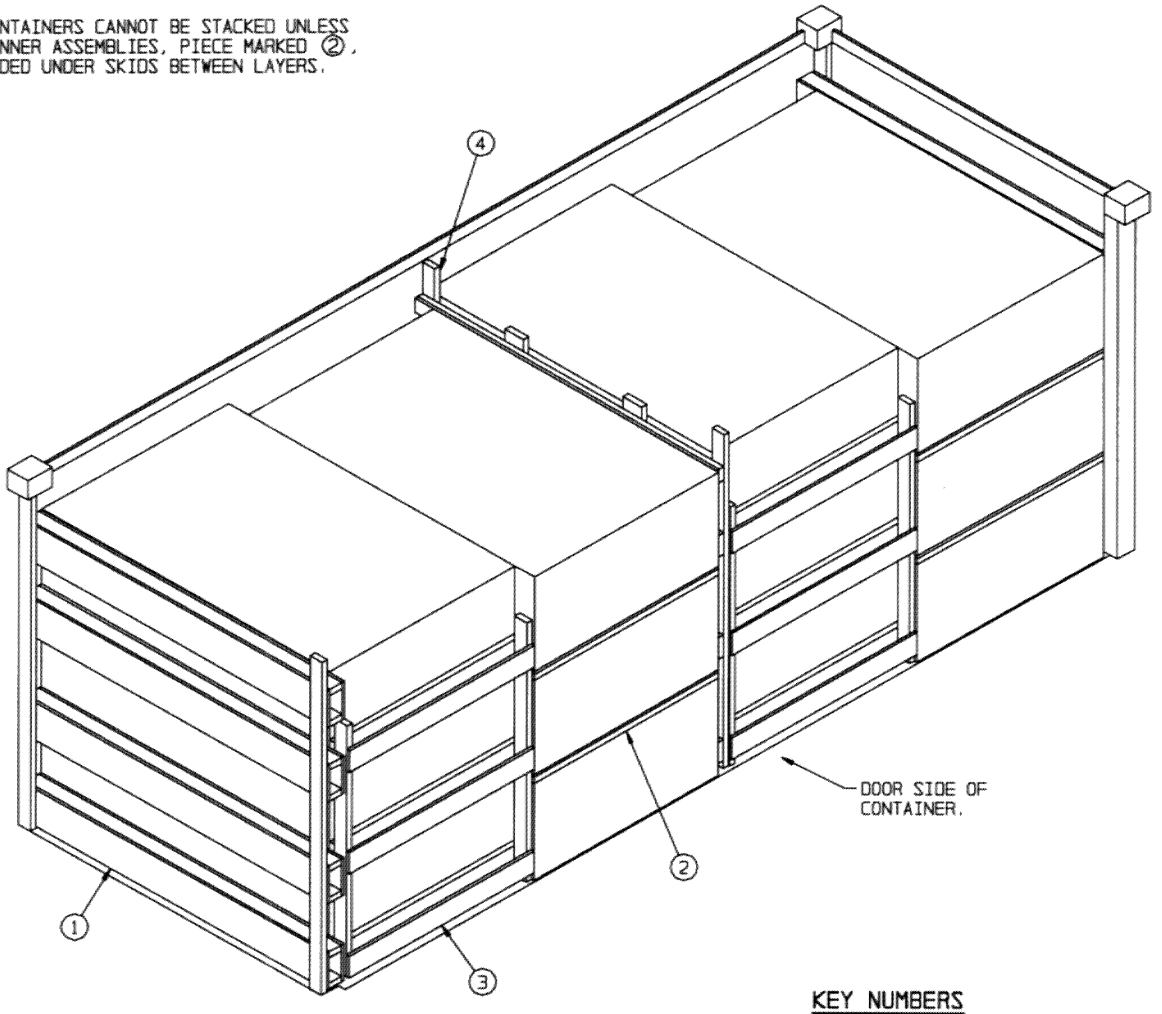


CONTAINER DETAIL

GROSS WEIGHT - - - - - - - - - 2,900 LBS
CUBE - - - - - - - - - - - - - 64.1 CUBIC FEET

NOTE: CONTAINERS CANNOT BE STACKED UNLESS COVER SPANNER ASSEMBLIES ARE PROVIDED UNDER SKIDS BETWEEN LAYERS.

NOTE: CONTAINERS CANNOT BE STACKED UNLESS COVER SPANNER ASSEMBLIES, PIECE MARKED ②, ARE PROVIDED UNDER SKIDS BETWEEN LAYERS.



ISOMETRIC VIEW

KEY NUMBERS

① END BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6.

② COVER SPANNER ASSEMBLY (16 REQD). POSITION TWO ON COVER OF FIRST-LAYER CONTAINER AND TO BE LOCATED UNDER SKIDS OF SECOND-LAYER CONTAINER. REPEAT FOR SECOND/THIRD-LAYER CONTAINERS. SEE THE DETAIL ON PAGE 6.

③ SIDE FILL ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 7 AND GENERAL NOTE "E" ON PAGE 2.

④ CENTER FILL ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 7 AND THE SPECIAL NOTE ON PAGE 5.

RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES, FOUR SIDE FILL ASSEMBLIES, ONE CENTER FILL ASSEMBLY AND SIXTEEN COVER SPANNER ASSEMBLIES.
2. INSTALL THE END BLOCKING ASSEMBLY.
3. INSTALL ONE SIDE FILL ASSEMBLY AND LOAD THREE CONTAINERS WITH COVER SPANNER ASSEMBLIES.
4. LOAD THREE CONTAINERS WITH COVER SPANNER ASSEMBLIES AND INSTALL ONE SIDE FILL ASSEMBLY.
5. REPEAT STEP 2.
6. REPEAT STEP 3.
7. REPEAT STEP 4.
8. INSTALL THE CENTER FILL ASSEMBLY.

SPECIAL NOTE:

THE CENTER FILL ASSEMBLY, PIECE MARKED ④ ON PAGE 4, IS BASED ON A VOID OF 4" BETWEEN LONGITUDINALLY ADJACENT CONTAINERS. IF THE VOID IS LESS THAN 4" IT MAY BE NECESSARY TO OMIT THE 1" X 4" FILL MATERIAL. A FIELD CHECK OF THE VOID BETWEEN THE LONGITUDINALLY ADJACENT CONTAINERS SHOULD BE MADE PRIOR TO ASSEMBLING THE CENTER FILL ASSEMBLY.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 2"	143	24
1" X 4"	7	2
1" X 6"	76	38
2" X 2"	18	6
2" X 4"	202	135
2" X 6"	89	89
2" X 8"	71	47
NAILS	**NO. REQD**	**POUNDS**
6d (2")	728	4-1/4
10d (3")	172	2-3/4
PLYWOOD, 3/4" - - -	90.78 SQ FT REQD - -	187.23 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	12	34,800 LBS
DUNNAGE		876 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		41,726 LBS (APPROX)

12-CONTAINER LOAD

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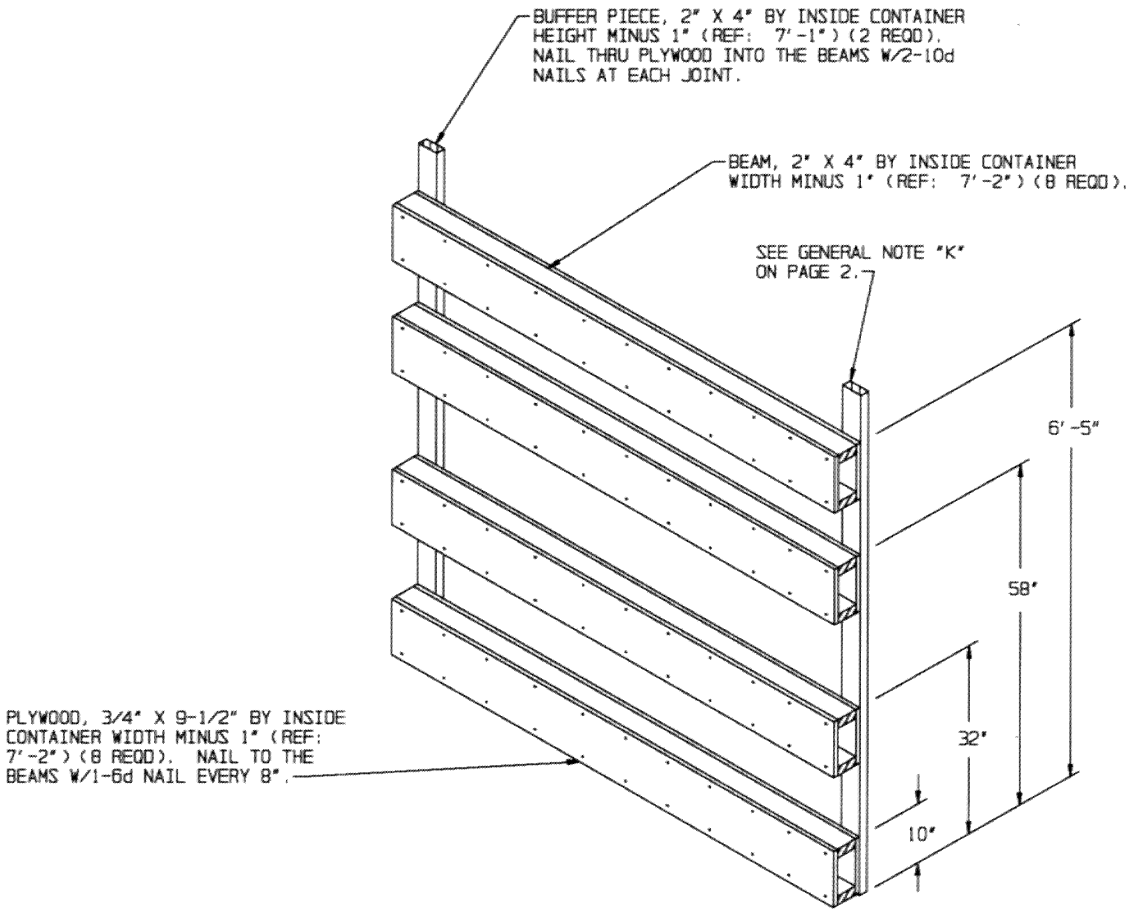
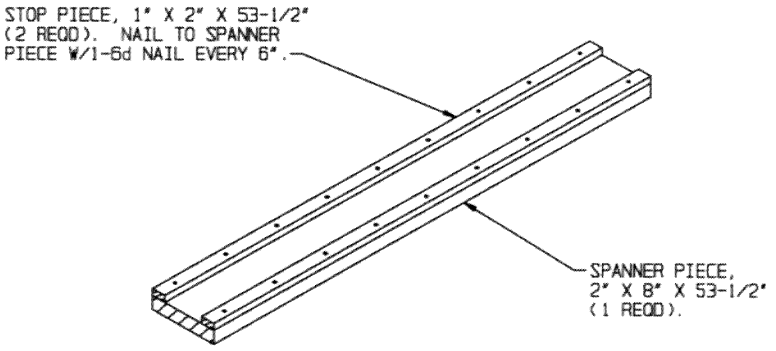
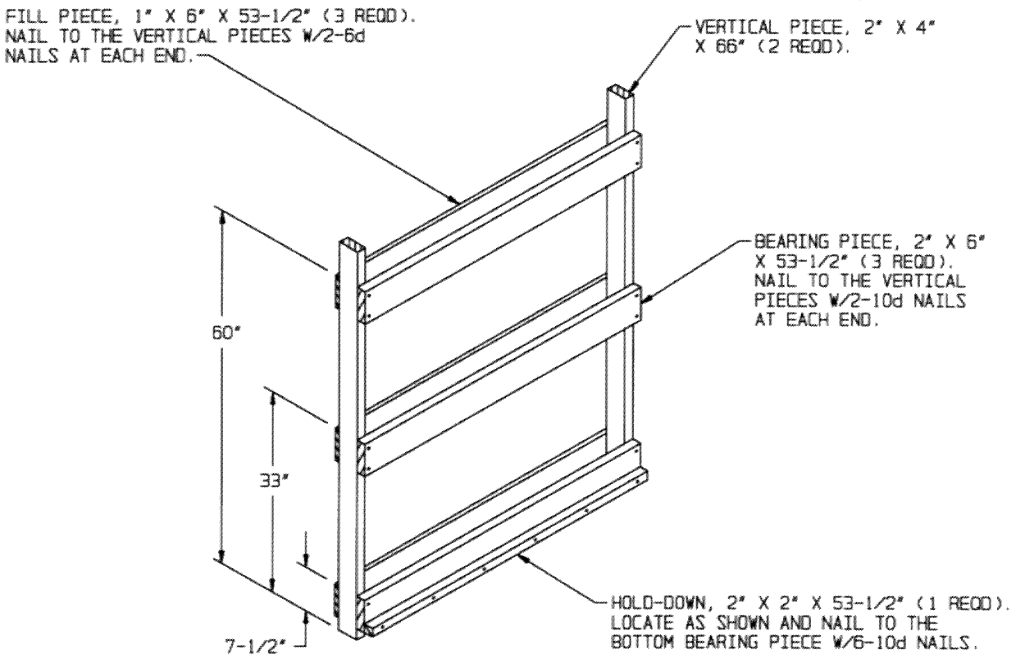


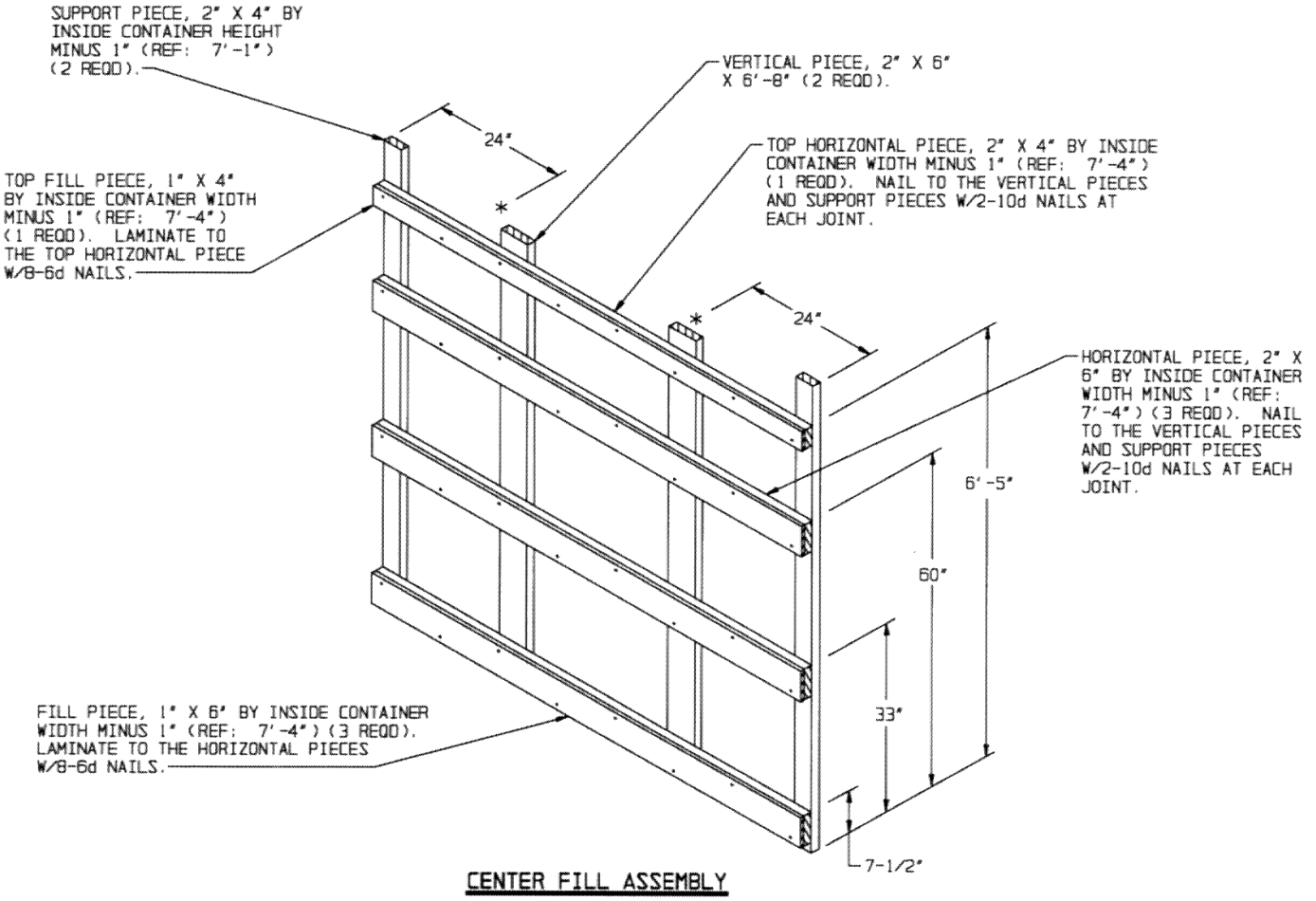
END BLOCKING ASSEMBLY



COVER SPANNER ASSEMBLY



SIDE FILL ASSEMBLY



CENTER FILL ASSEMBLY

DETAILS

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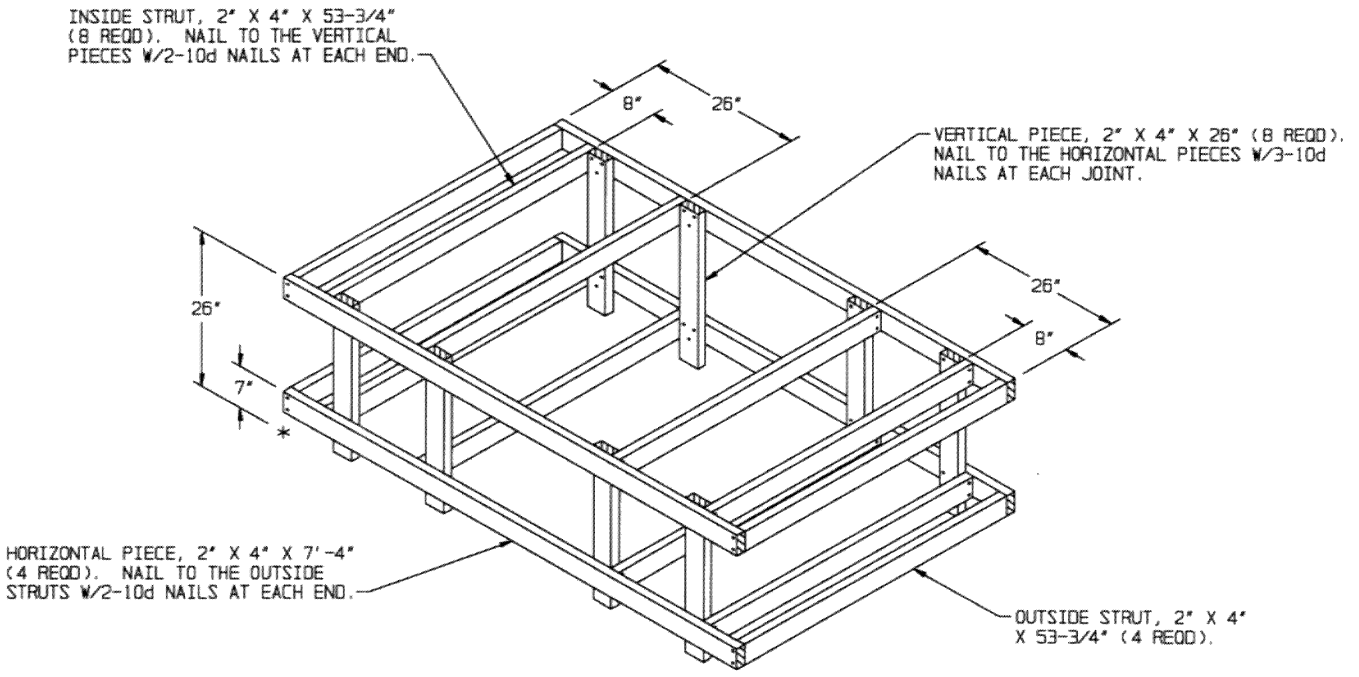

OMITTED CONTAINER ASSEMBLY

DETAIL