APPROVED BY
BUREAU OF EXPLOSIVES

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

INDEX

● 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

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DO NOT SCALE

PROJECT CA 282-92

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 DETAIL. 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. CONTAINER DIMENSIONS - - 6'-11-1/4" LONG X 53-3/4" WIDE X 24-3/4" HIGH.
GROSS WEIGHT - - - - - - - 2,900 POUNDS (APPROX).
CUBE - - - - - - - - - - - 64.1 CUBIC FEET

D. 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.

E. 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" 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.

F. 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.

G. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE.

H. 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.

J. IN SOME CONTAINERS, SUCH AS SOME ALL STEEL CONTAINERS, THERE IS A SLOT AT THE CORNERS OF THE FORWARD WALL. A PIECE OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES OF THE FORWARD STRUT ASSEMBLIES 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.

K. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.

(CONTINUED AT RIGHT)

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.

(GENERAL NOTES CONTINUED)

L. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

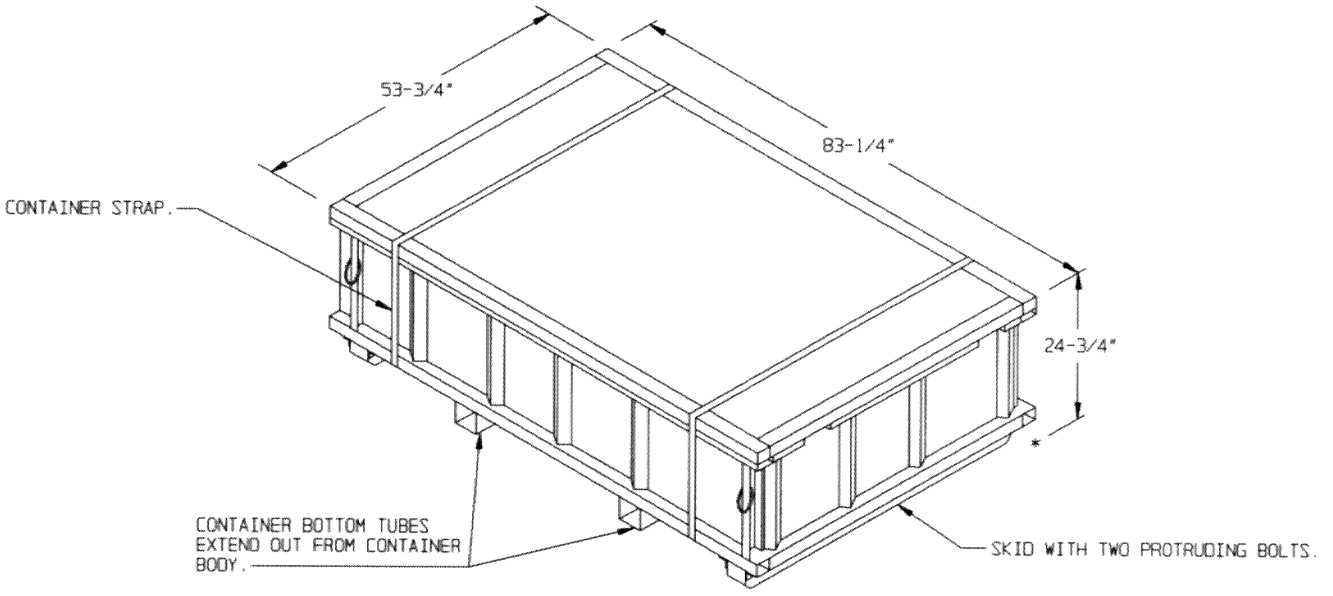
M. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC). SPECIAL T/COFC NOTES FOLLOW:

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.

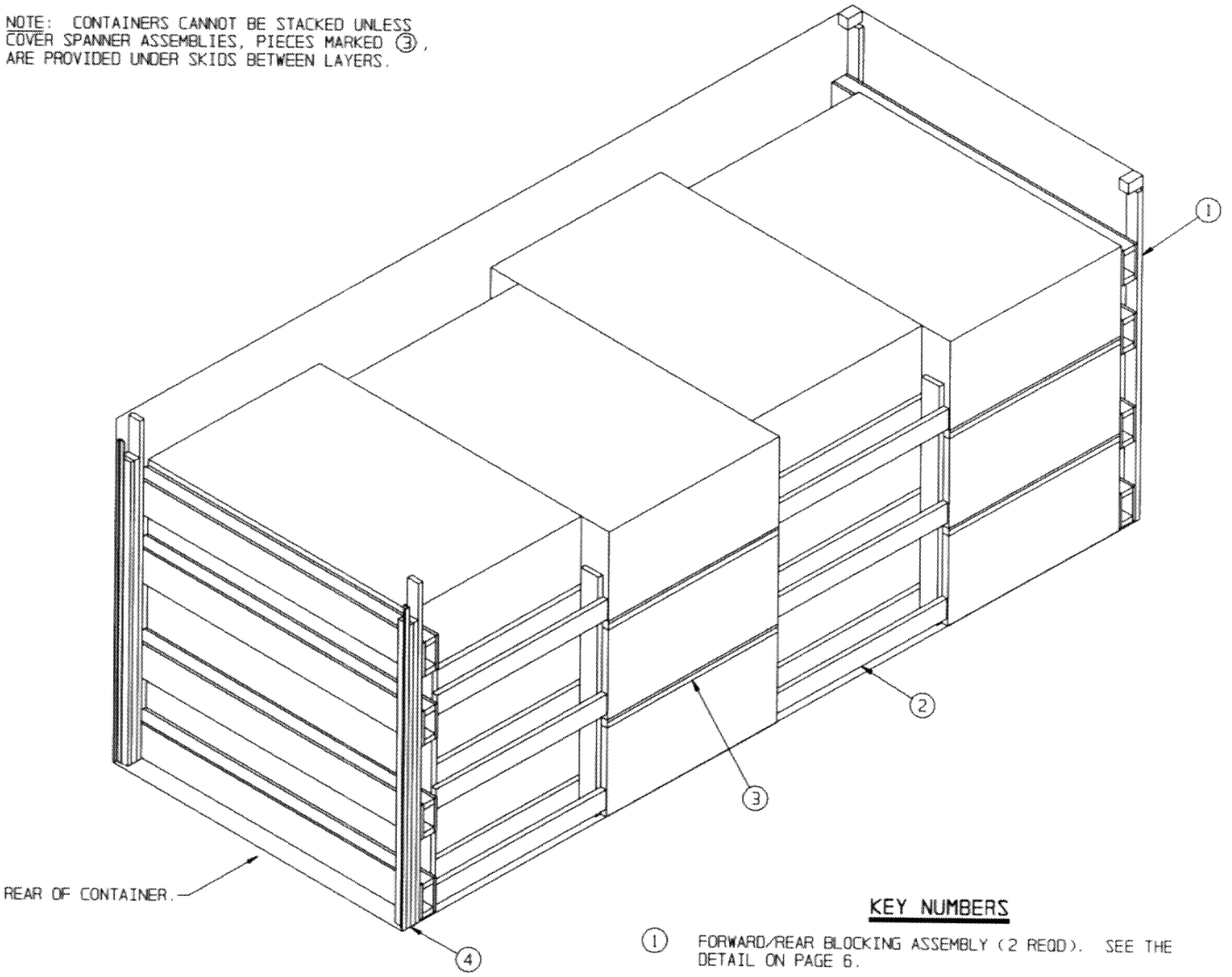


CONTAINER DETAIL

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, PIECES MARKED ③, ARE PROVIDED UNDER SKIDS BETWEEN LAYERS.



ISOMETRIC VIEW

KEY NUMBERS

① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6.

② SIDE FILL ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 6 AND GENERAL NOTE "F" ON PAGE 2.

③ 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 AND THIRD-LAYERS. SEE THE DETAIL ON PAGE 6.

④ FILL MATERIAL, 4" WIDE BY 7'-0" LONG MATERIAL (AS REQD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/7 NAILS OF A SUITABLE SIZE (10d FOR 2" MATERIAL). LAMINATE EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A LIKE MANNER.

RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PRE-FABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES, FOUR SIDE FILL ASSEMBLIES AND SIXTEEN COVER SPANNER ASSEMBLIES.
2. INSTALL THE FORWARD 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 3.
6. REPEAT STEP 4.
7. INSTALL THE REAR BLOCKING ASSEMBLY.
8. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.

SPECIAL NOTES:

1. THE BLOCKING AND BRACING PROCEDURES SHOWN ON PAGE 4 CAN ONLY BE USED IN ISO CONTAINERS WHICH HAVE PRE-WELDED LOAD RETAINERS.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 2"	143	24
2" X 2"	18	6
2" X 4"	180	120
2" X 6"	151	151
2" X 8"	71	95
NAILS	**NO. REQD**	**POUNDS**
6d (2")	672	4
10d (3")	212	3-1/4
PLYWOOD, 3/4" - - - 96.06 SQ FT REQD - - 198.12 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	12	34,800 LBS
DUNNAGE		997 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		40,497 LBS (APPROX)

12-UNIT LOAD

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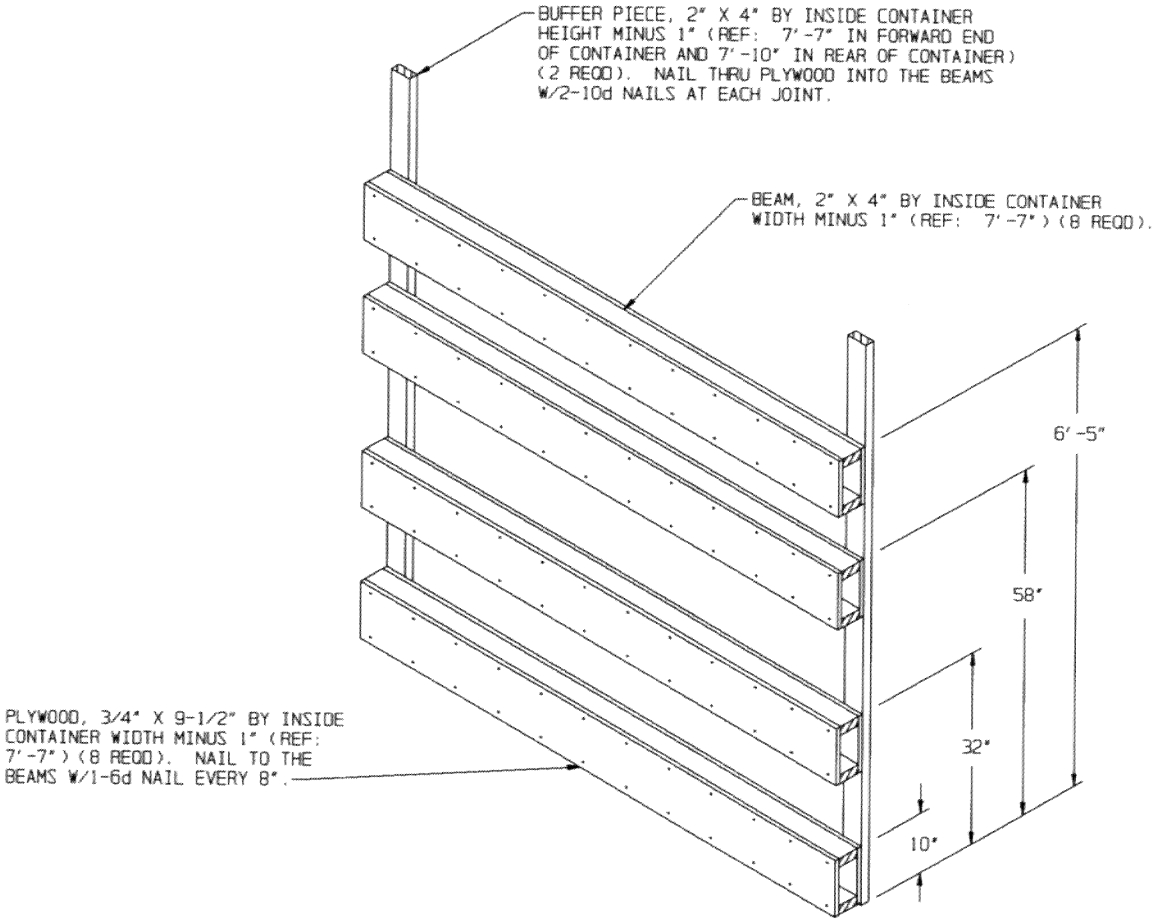
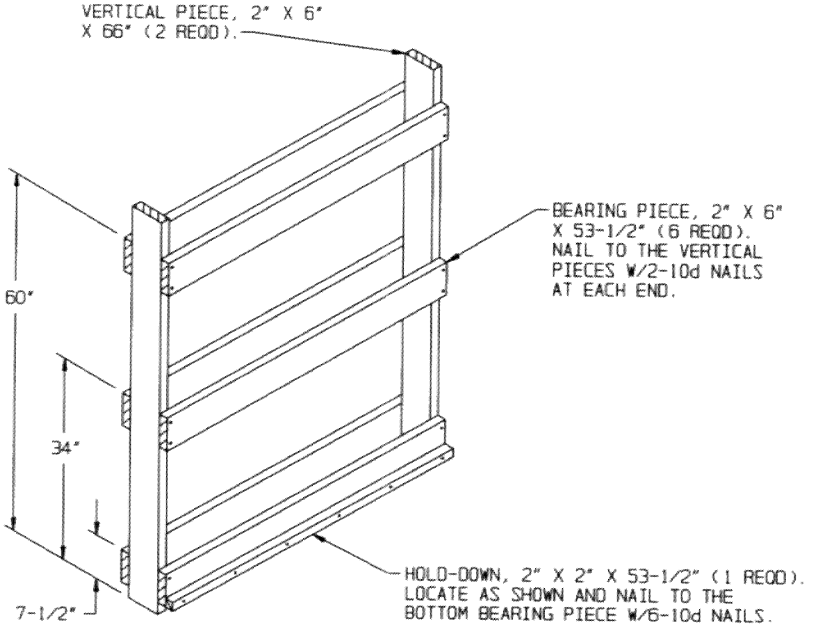
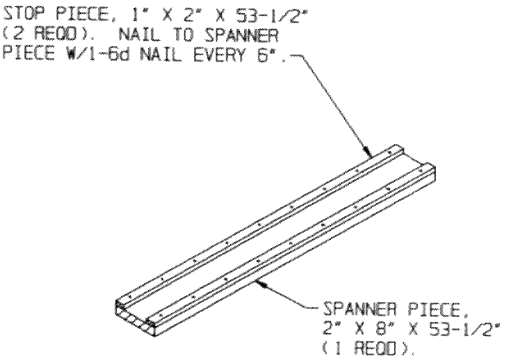


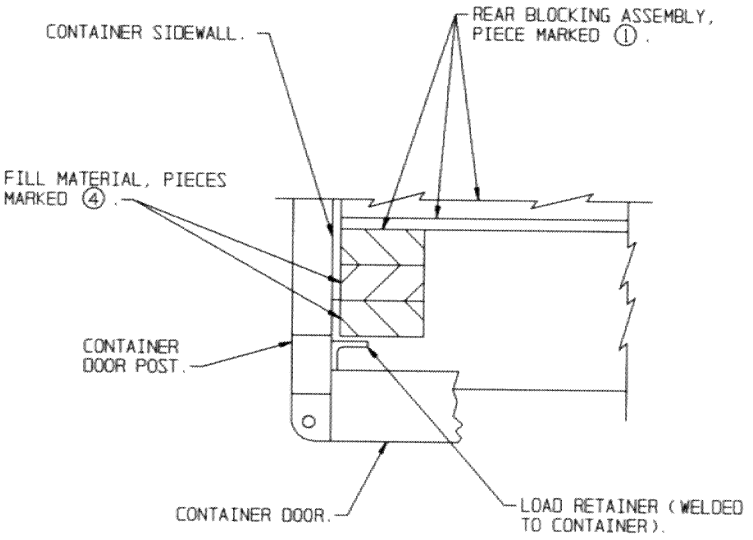
FORWARD/REAR BLOCKING ASSEMBLY



SIDE FILL ASSEMBLY



COVER SPANNER ASSEMBLY



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.