

APPROVED BY U.S. COAST GUARD <i>[Signature]</i> DATE <u>1-1-82</u>	APPROVED BY BUREAU OF EXPLOSIVES <i>E.P. Rother</i> SUPERVISOR, MILITARY & INTERMODAL SERVICES DATE <u>1/1/82</u>
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# LOADING AND BRACING WITH WOODEN DUNNAGE IN COMMERCIAL CONTAINERS OF CBU 52 OR CBU 58 IN CNU 126A/E METAL SHIPPING AND STORAGE CONTAINER

THE DEPICTED WOODEN DUNNAGE METHOD CAN BE APPLIED TO ANY COMMERCIAL INTERMODAL 20-FOOT CONTAINER, ALTHOUGH THE DUNNAGE DIMENSIONS HAVE BEEN GIVEN FOR A 92" WIDE BY 96" HIGH (INSIDE DIMENSIONS) CONTAINER. ALTHOUGH THE LOAD AS SHOWN IS BASED ON AN 8'-6" HIGH CONTAINER, AN 8'-0" HIGH CONTAINER IS PREFERRED FOR SHIPPING THE DEPICTED LOAD. WHEN AN 8'-0" HIGH CONTAINER IS USED, THE HEIGHT OF SOME DUNNAGE ASSEMBLIES WILL HAVE TO BE LOWERED BY REMOVING SOME MATERIAL FROM THE TOP OR BOTTOM OF SOME OF THE VERTICAL PIECES.

LOADING AND BRACING SPECIFICATIONS AS DELINEATED HEREIN ARE ADEQUATE FOR SHIPMENTS TO BE MOVED BY ANY SURFACE MODE OF TRANSPORT (MOTOR, RAIL, AND WATER).

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.

- A. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOPC SERVICE.
- B. THE LOAD LIMIT OF A T/COFC RAIL CAR 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.

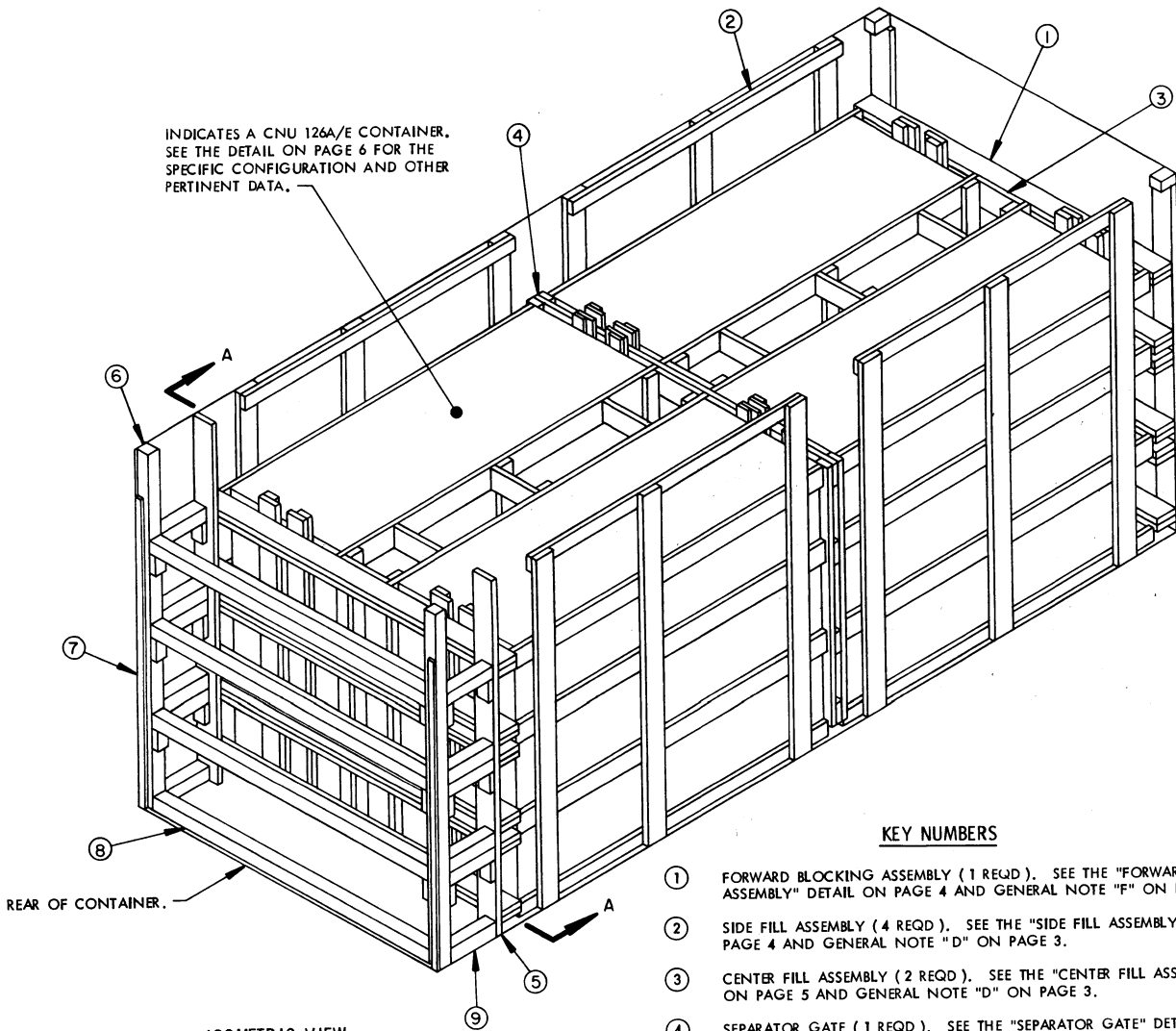
DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS/MODIFIED FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.

REVISIONS		DATE	BY
		10/1/82	[Signature]

APPROVED, U. S. ARMY AMMUNITION MATERIAL READINESS COMMAND  
*[Signature]*  
 APPROVED BY HEAD OF COMMAND, SPECIAL U. S. ARMY  
 EXPLOSIVE DEVELOPMENT AND RESEARCH CENTER  
*[Signature]*  
 U. S. ARMY AMMUNITION CENTER AND SCHOOL  
**U. S. ARMY DARCOM DRAWING**  
**OCTOBER 1982**  
**DEF AMMO GEN & SCH DWG NO**  
**D-SARAC-4463**

**DO NOT SCALE**

INDICATES A CNU 126A/E CONTAINER.  
SEE THE DETAIL ON PAGE 6 FOR THE  
SPECIFIC CONFIGURATION AND OTHER  
PERTINENT DATA.

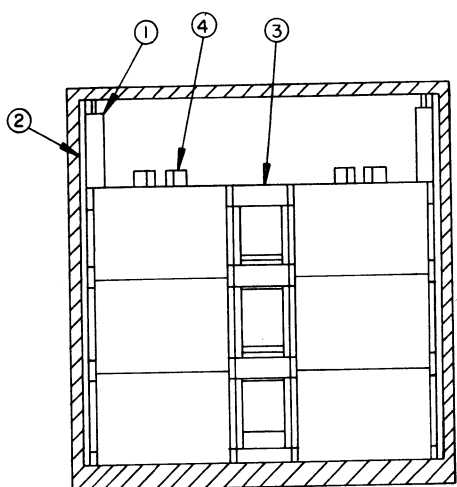


REAR OF CONTAINER.

ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY" DETAIL ON PAGE 4 AND GENERAL NOTE "F" ON PAGE 3.
- ② SIDE FILL ASSEMBLY (4 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 4 AND GENERAL NOTE "D" ON PAGE 3.
- ③ CENTER FILL ASSEMBLY (2 REQD). SEE THE "CENTER FILL ASSEMBLY" DETAIL ON PAGE 5 AND GENERAL NOTE "D" ON PAGE 3.
- ④ SEPARATOR GATE (1 REQD). SEE THE "SEPARATOR GATE" DETAIL ON PAGE 6.
- ⑤ REAR BLOCKING ASSEMBLY (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY" DETAIL ON PAGE 5 AND GENERAL NOTE "F" ON PAGE 3.
- ⑥ DOOR POST VERTICAL (2 REQD). SEE THE "DOOR POST VERTICAL" DETAIL AND "DETAIL A" ON PAGE 7.
- ⑦ DOOR POST VERTICAL RETAINER (2 REQD). SEE THE "DOOR POST VERTICAL RETAINER" DETAIL ON PAGE 8 AND "DETAIL A" ON PAGE 7. NAIL THROUGH THE HOLES INTO THE DOOR POST VERTICAL W/4-10d NAILS.
- ⑧ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (4 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL CUT" DETAIL ON PAGE 7. AFTER INSTALLING THE BOTTOM AND THE TOP DOOR SPANNERS, THE STRUTS, PIECES MARKED ⑨ ARE TO BE INSTALLED.
- ⑨ STRUT, 4" X 4" BY CUT-TO-FIT (12 REQD). TOENAIL TO THE BUFFER PIECES OF THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICAL W/2-12d NAILS AT EACH END. SEE THE "BEVEL CUT" DETAIL ON PAGE 7.



SECTION A-A

( GENERAL NOTES CONTINUED )

K. RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY, FOUR SIDE FILL ASSEMBLIES, TWO CENTER FILL ASSEMBLIES, ONE SEPARATOR GATE, ONE REAR BLOCKING ASSEMBLY, AND NAIL A DOOR POST VERTICAL RETAINER TO EACH DOOR POST VERTICAL, ONE RIGHT HAND AND ONE LEFT HAND.
2. INSTALL FORWARD BLOCKING ASSEMBLY.
3. INSTALL ONE SIDE FILL ASSEMBLY, LOAD THREE CONTAINERS, AND INSTALL ONE CENTER FILL ASSEMBLY.
4. INSTALL SIDE FILL ASSEMBLY AND LOAD THREE CONTAINERS.
5. INSTALL ONE SEPARATOR GATE.
6. REPEAT STEP 3.
7. REPEAT STEP 4.
8. INSTALL REAR BLOCKING ASSEMBLY.
9. INSTALL THE TWO DOOR POST VERTICAL ASSEMBLIES ( ONE RIGHT-HAND AND ONE LEFT-HAND ).
10. INSTALL TWO DOOR SPANNER PIECES ( ONE AT THE LOWEST POSITION AND ONE AT THE UPPERMOST POSITION ).
11. INSTALL TWELVE STRUTS.
12. INSTALL THE REMAINING TWO DOOR SPANNER PIECES.

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 PROCEDURE IS APPLICABLE TO A LOAD OF 12 CNU 126A/E METAL SHIPPING AND STORAGE CONTAINERS LOADED WITH CBU52 OR CBU58. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE CONTAINER WITH AMMUNITION ITEMS. SEE PAGE 6 FOR THE DETAIL OF THE CONTAINER. CAUTION: REGARDLESS OF THE QUANTITY OF CONTAINERS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.
- C. THE LOAD AS SHOWN IS BASED ON 4,700 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH INTERMODAL COMMERCIAL 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.
- D. WHEN LOADING CONTAINERS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD ( TIGHT AGAINST THE FORWARD AND SIDE DUNNAGE ASSEMBLIES ). ALTHOUGH A TOTAL OF ONE AND ONE-HALF INCHES ( 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 LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE BEARING PIECES ON THE SIDE FILL ASSEMBLIES ON ONE OR BOTH SIDES OF THE CONTAINER. NAIL EACH ADDITIONAL PIECE TO THE BEARING PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE LENGTH OF THE LATERAL AND SUPPORT PIECES OF THE CENTER FILL ASSEMBLIES MAY BE ADJUSTED AS NECESSARY, TO FACILITATE VARIANCE IN CONTAINER SIZE.
- E. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" 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 WHEREVER 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. 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 ON THE FORWARD BLOCKING ASSEMBLY TO PROVIDE A FLAT SURFACE FOR THE 2" X 6" 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 FRONT WALL OF THE CONTAINER IS SMOOTH AND FLAT.
- 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 ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

( CONTINUED AT LEFT )

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	45	15
1" X 6"	51	26
2" X 4"	253	169
2" X 6"	615	615
4" X 4"	58	78
NAILS	NO. REQD	POUNDS
6d ( 2" )	708	1-1/4
10d ( 3" )	1,036	16
12d ( 3-1/4" )	64	1-1/4
DOOR POST VERTICAL RETAINER----- 2 REQD ----- 64 LBS		

MATERIAL SPECIFICATIONS

- LUMBER -----: TM 743-200-1 ( DUNNAGE LUMBER ) AND FED SPEC MM-L-751.
- NAILS -----: FED SPEC FF-N-105; COMMON.
- STEEL, STRUCTURAL -----: FED SPEC QQ-S-741, SQUARE STRUCTURAL TUBING AND HOT-ROLLED STRIP.

LOAD AS SHOWN

( FOR CBU 58 )

ITEM	QUANTITY	WEIGHT ( APPROX )
CNU 126A/E CONTAINER -----	12 -----	25,920 LBS
DUNNAGE -----		1,889 LBS
CONTAINER -----		4,700 LBS
TOTAL WEIGHT -----		32,509 LBS

LOAD AS SHOWN

( FOR CBU 52 )

ITEM	QUANTITY	WEIGHT ( APPROX )
CNU 126A/E CONTAINER -----	12 -----	24,384 LBS
DUNNAGE -----		1,889 LBS
CONTAINER -----		4,700 LBS
TOTAL WEIGHT -----		30,973 LBS

SEE GENERAL NOTE "G" ON PAGE 3.

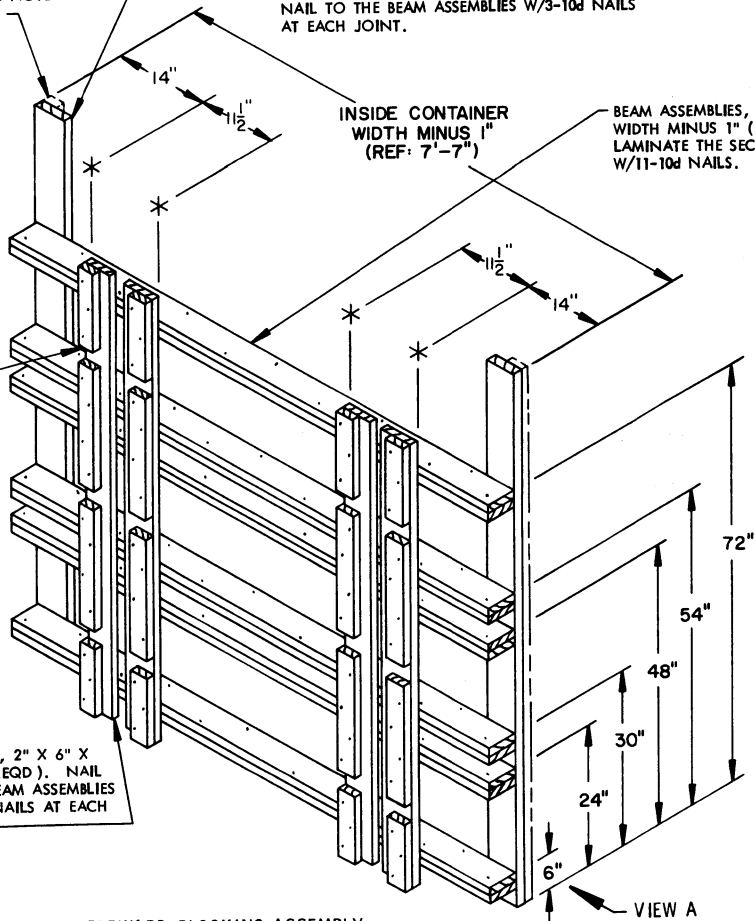
BUFFER PIECE, 2" X 6" X INSIDE CONTAINER HEIGHT MINUS 1/2" (REF: 7'-7-1/2") (2 REQD). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.

INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7")

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

BEARING PIECE, 2" X 4" X 13-1/2" (4 REQD). NAIL TO THE FILL PIECE W/3-10d NAILS.

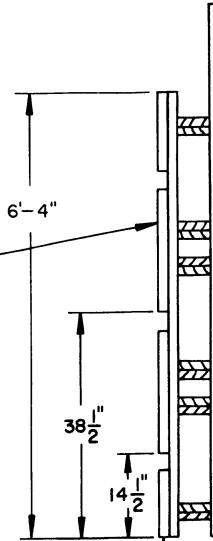
FILL PIECE, 2" X 6" X 6'-4" (4 REQD). NAIL TO THE BEAM ASSEMBLIES W/3-10d NAILS AT EACH JOINT.



FORWARD BLOCKING ASSEMBLY

VIEW A

BEARING PIECE, 2" X 4" X 21" (8 REQD). NAIL TO THE BEARING PIECE W/4-10d NAILS.



VIEW A

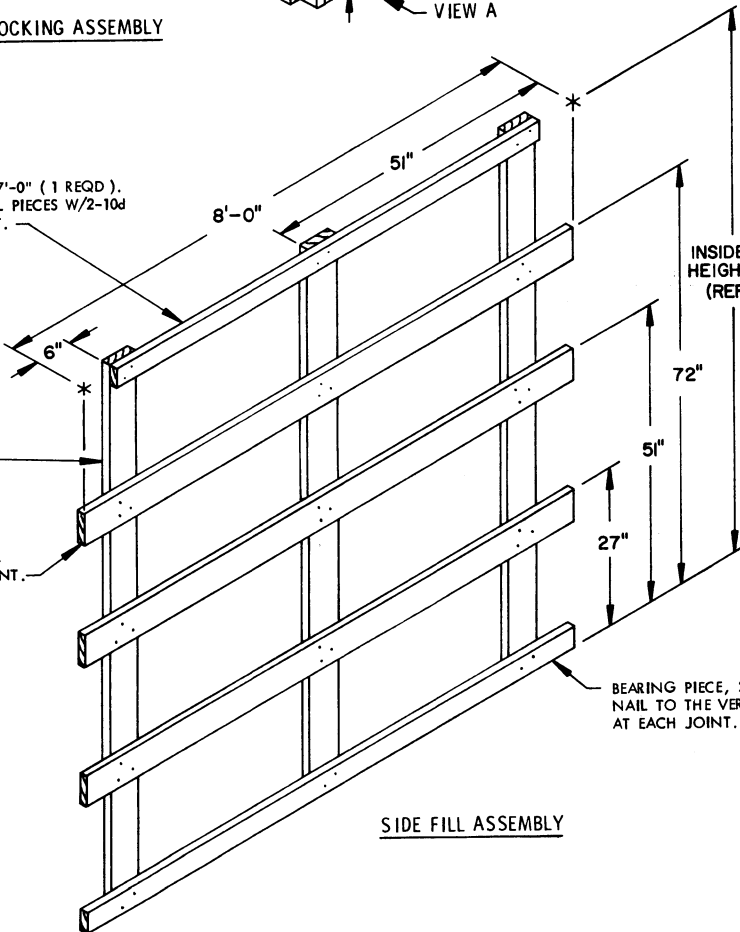
BEARING PIECE, 2" X 4" X 11-1/2" (4 REQD). NAIL TO THE FILL PIECE W/3-10d NAILS.

TIE PIECE, 2" X 4" X 7'-0" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

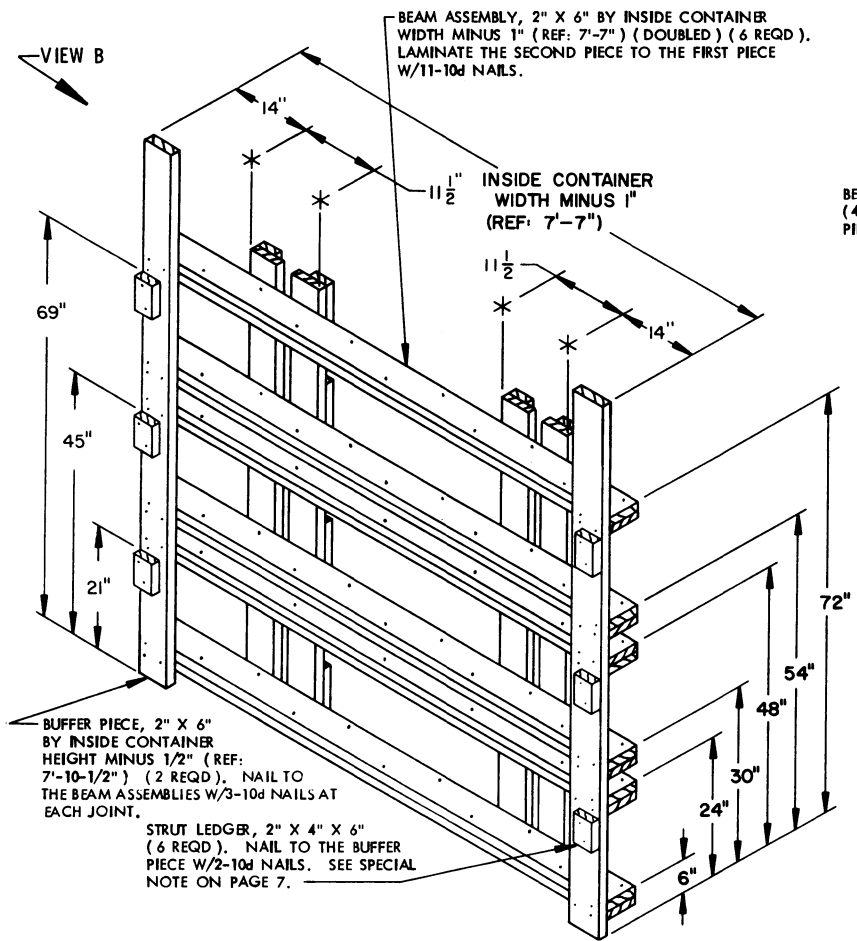
VERTICAL PIECE, 2" X 6" BY INSIDE CONTAINER HEIGHT MINUS 1" (3 REQD).

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

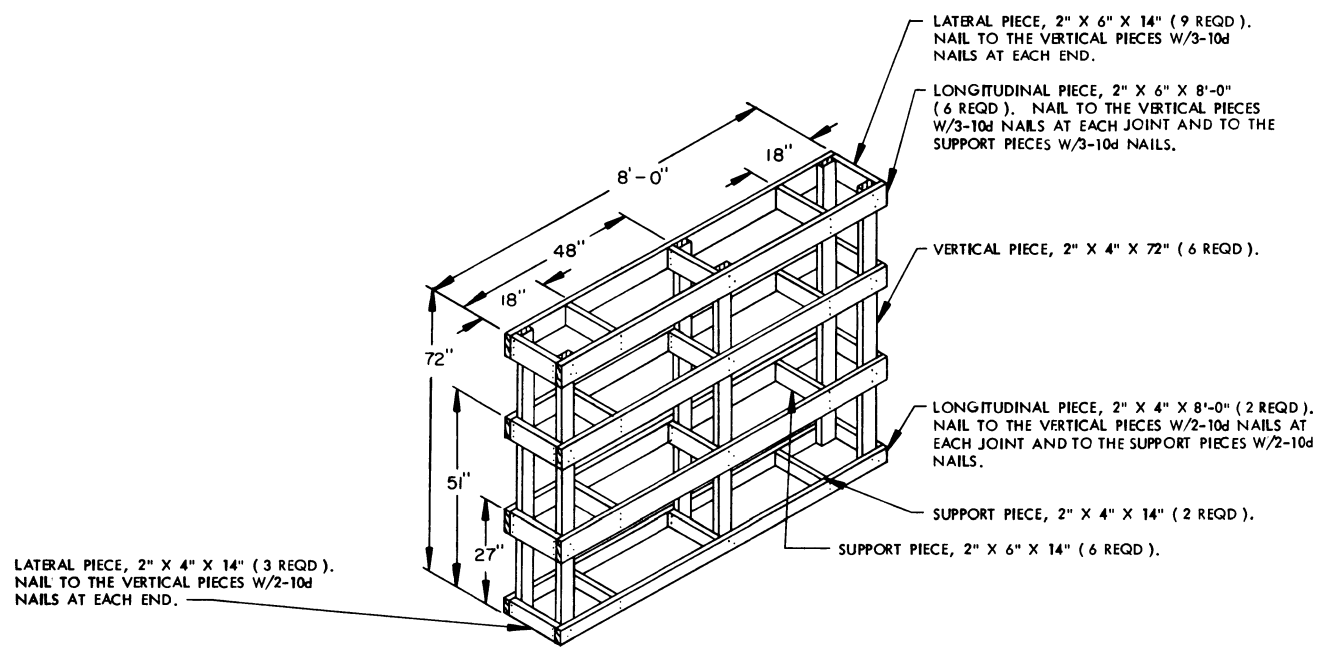
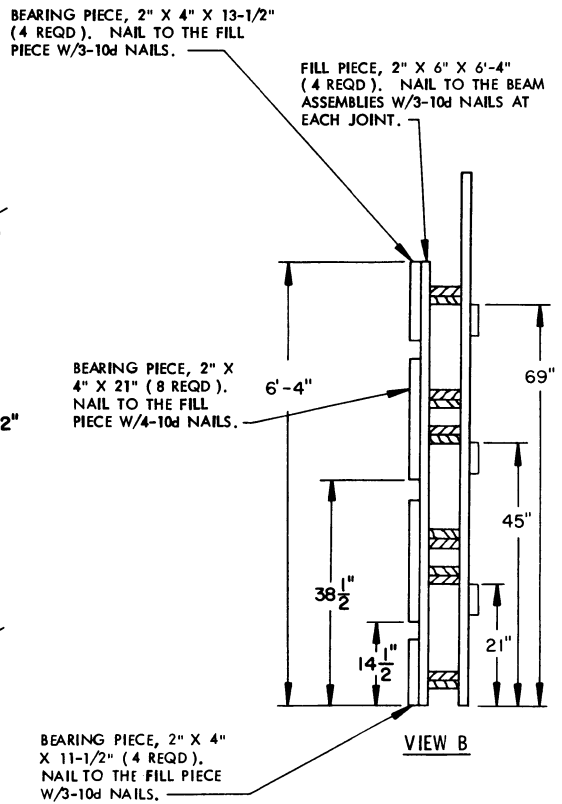
BEARING PIECE, 2" X 4" X 8'-0" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



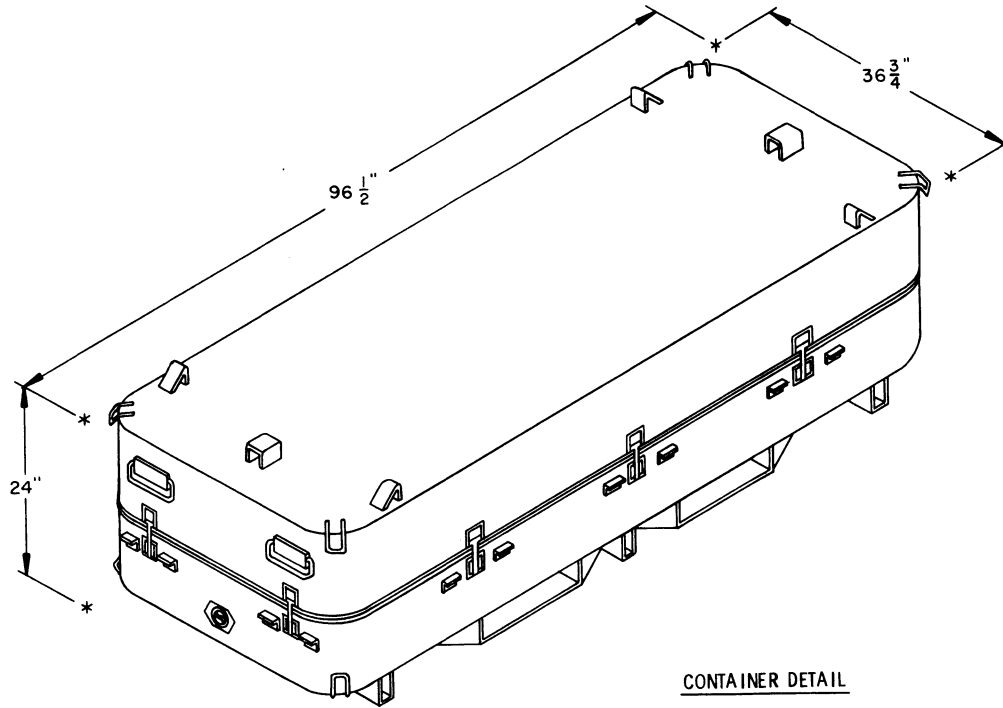
SIDE FILL ASSEMBLY



REAR BLOCKING ASSEMBLY



CENTER FILL ASSEMBLY

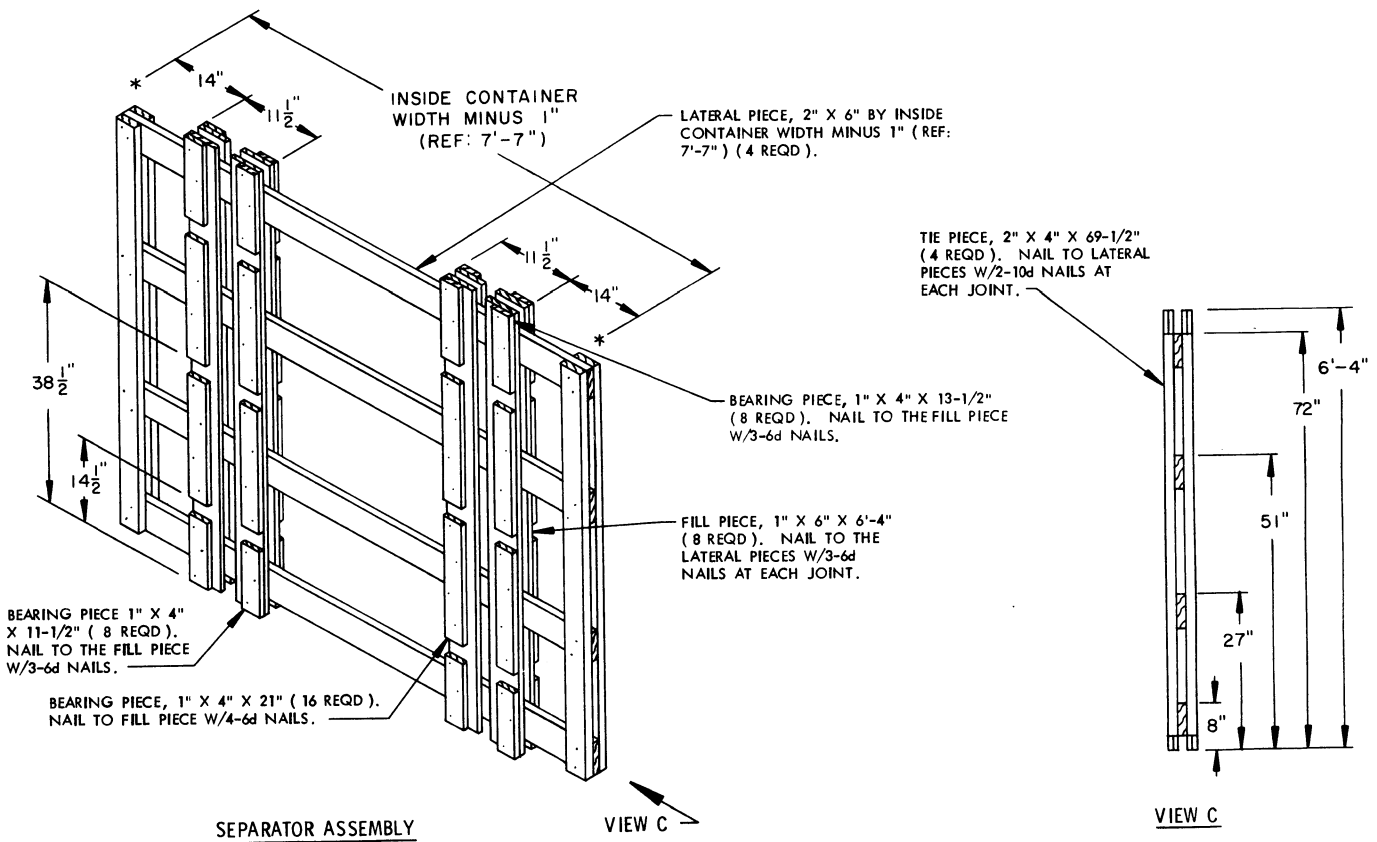


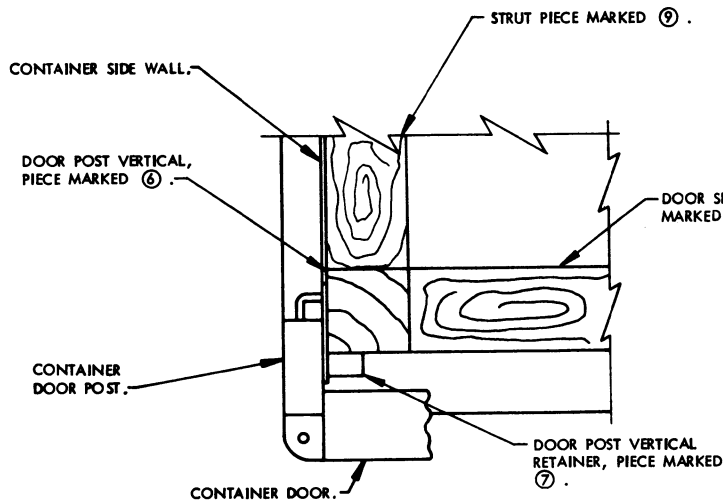
**CONTAINER DETAIL**

CONTAINER WEIGHT

FOR CBU 52 ----- 2,032 LBS ( APPROX )  
 FOR CBU 58 ----- 2,160 LBS ( APPROX )

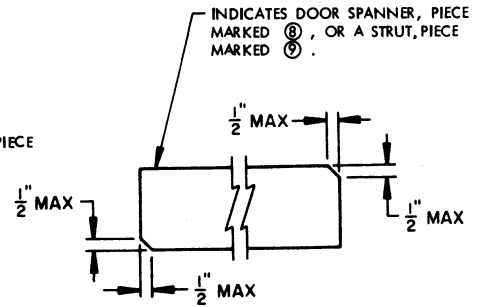
CONTAINER CUBE ----- 49.3 CU FT ( APPROX )





**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.

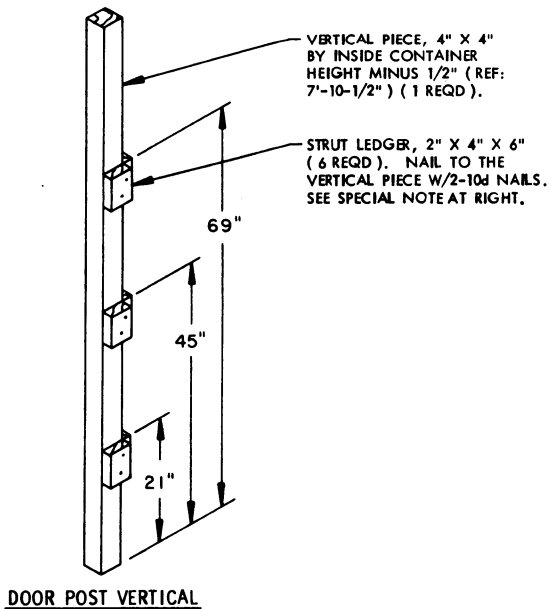


**BEVEL-CUT**

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.

**SPECIAL NOTE:**

THE STRUT LEDGERS CAN ONLY BE PRE-NAILED TO THE DOOR POST VERTICAL ON ONE SIDE OF THE CONTAINER FOR THE DOOR SPANNER PIECES. ALSO, THE STRUT LEDGERS FOR THE STRUTS CAN ONLY BE PRE-NAILED TO THE REAR BLOCKING ASSEMBLY OR THE DOOR POST VERTICAL AT THE LOWEST DIMENSION.



**DOOR POST VERTICAL**

