APPROVED BY	APPROVED BY
U.S. COAST GUARD	BUREAU OF EXPLOSIVES
Michael Monenettz	E. P. RALLUSUPERVISOR, MILITARY & INTERMODAL BERVICES
	SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE 8/14/84	DATE 7/31/84
REVISION NO. I	REVISION NO. 1
SIGNED STATE TOWN	SIGNED P. P. Balley
DATE	DATE _IIIaile+

LOADING AND BRACING WITH WOODEN DUNNAGE IN COMMERCIAL CONTAINERS OF DISPENSER AND BOMB, AIRCRAFT, CBU-MK 20, IN CNU-238/E CONTAINER OR CNU-319/E CONTAINER

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 "K" ON PAGE 3.

INDEX

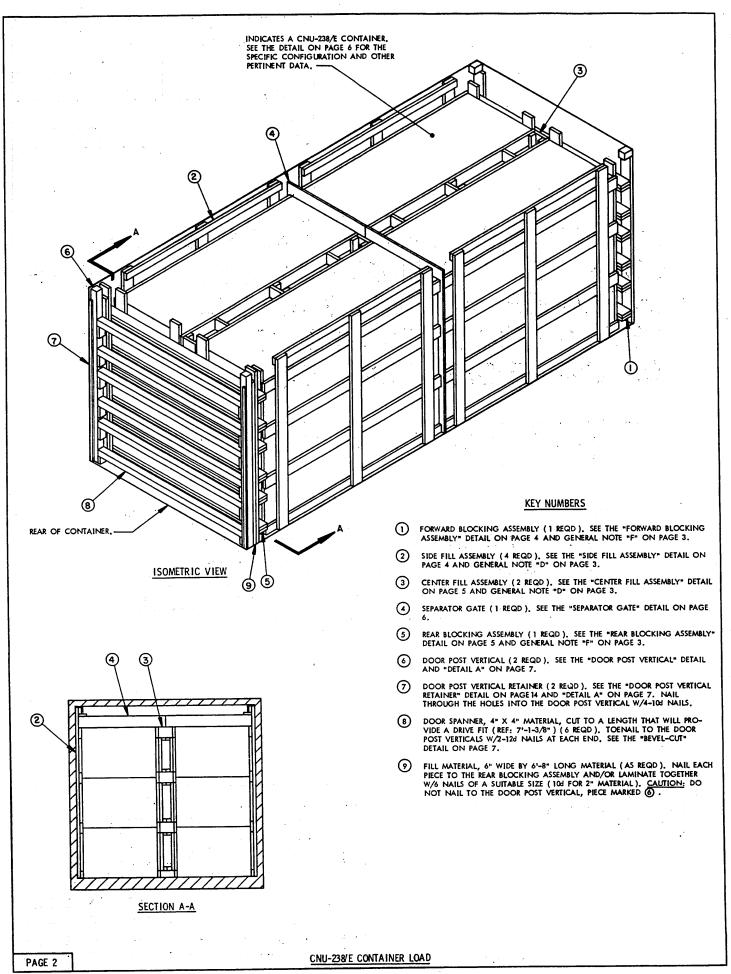
ITEM	PAGE(S)
TYPICAL LOADING PROCEDURES FOR CNU-238'E CONTAINERS GENERAL NOTES, AND MATERIAL SPECIFICATIONS CNU-238'E CONTAINER DETAILS CNU-238'E CONTAINER LOAD DETAILS TYPICAL LOADING PROCEDURES FOR CNU-319'E CONTAINERS CNU-319'E CONTAINER DETAILS CNU-319'E CONTAINER LOAD DETAILS DETAILS DETAILS	3 6 4-7 8

REVISION

REVISION NO. 1, DATED OCTOBER 1984, CONSISTS OF: ADDING OUTLOADING PROCEDURES FOR CBU-MK 20 WHEN PACKED IN CNU-319'E CONTAINERS.

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DO NOT SCALE



RECOMMENDED SEQUENTIAL LOADING PRECEDURES:

- 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.
- INSTALL ONE SIDE FILL ASSEMBLY, LOAD ONE STACK OF THREE CONTAINERS, AND INSTALL ONE CENTER FILL ASSEMBLY.
- INSTALL SIDE FILL ASSEMBLY AND LOAD ONE STACK OF THREE CONTAINERS.
- 5. INSTALL ONE SEPARATOR GATE.
- 6. REPEAT STEP 3.
- 7. REPEAT STEP 4.
- 8. INSTALL REAR BLOCKING ASSEMBLY.
- INSTALL THE TWO DOOR POST VERTICAL ASSEMBLIES (ONE RIGHT HAND AND ONE LEFT HAND).
- INSTALL TWO DOOR SPANNER PIECES (ONE AT THE LOWEST POSITION AND ONE AT THE UPPERMOST POSITION).
- 11. INSTALL FILL MATERIAL.
- 12. INSTALL THE REMAINING FOUR DOOR SPANNER PIECES,

LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	4	2
2" X 4"	191	127
2" X 6"	598	598
4" X 4"	58	. 7
NAILS	NO. REQD	POUNDS
10d (3")	930	14-1/2
12d (3-1/4")	24	1/2

MATERIAL SPECIFICATIONS

LUMBER -----: TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.

NAILS ----:: FED SPEC FF-N-105; COMMON.

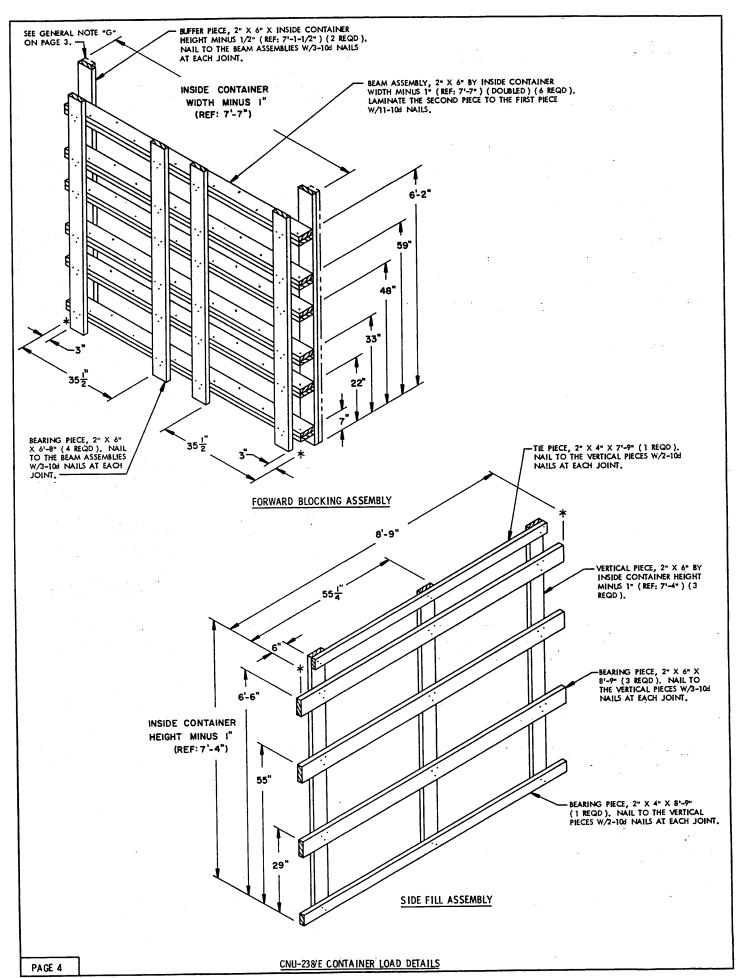
STEEL, STRUCTURAL ---: FED SPEC QQ-S-741; SQUARE STRUCTURAL TUBING AND HOT-ROLLED STRIP.

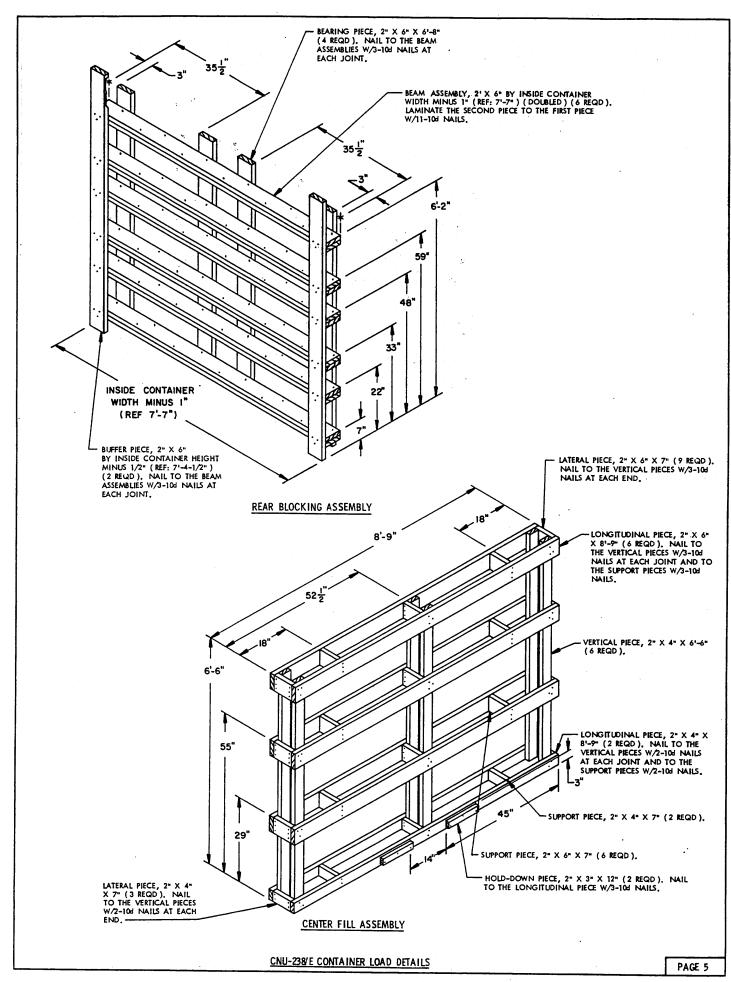
GENERAL NOTES

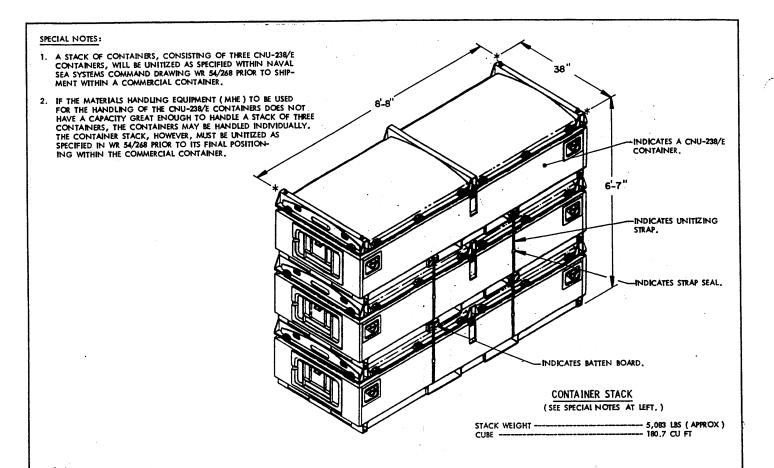
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO LOADS OF CNU-238/E AND CNU-319/E METAL SHIPPING AND STORAGE CONTAINERS LOADED WITH CBU-MK20 BOMB AND DISPENSER. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE CONTAINER WITH AMMUNITION ITEMS. SEE PAGES 6 AND 12 FOR THE DETAILS OF THE CONTAINERS. CAUTION: REGARDLESS OF THE QUANTITY OF CONTAINERS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.
- C. THE LOADS AS SHOWN ARE BASED ON A 4,700 POUND 20' LONG BY. 8' WIDE BY. 8' HIGH INTERMODAL COMMERCIAL CONTAINER, WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92' WIDE BY 89" 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 TRAINSPORT. MOTICE: 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/I 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, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" 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 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 SUFFACE 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 DUNN AGE.
- 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.
- K. 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 LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.
 - 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.
- L. 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.
- M. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCU-MENT 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.

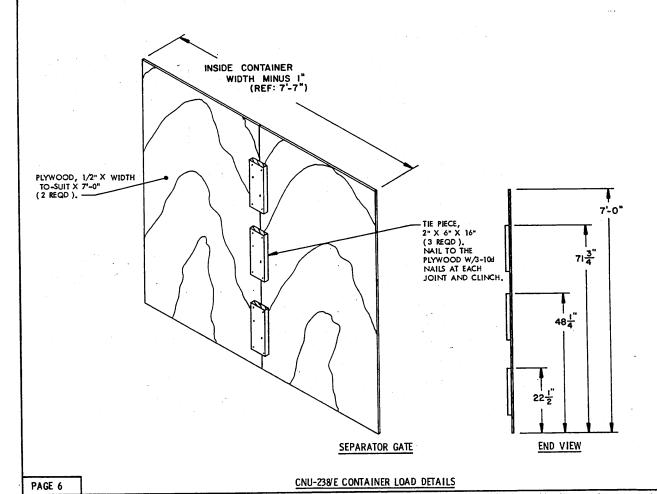
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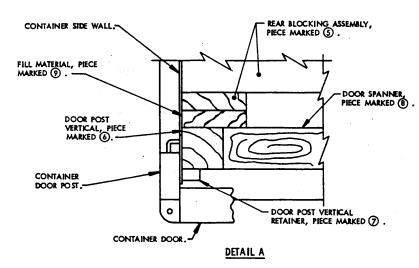
TOTAL WEIGHT	26,792	LBS
CONTAINER	4,700	LBS
DUNNAGE	1,760	
CNU-238/E CONTAINER - 12	20,332	
ITEM QUANTITY	WEIGHT	(APPRO



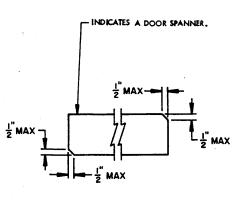








A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND ADJACENT DUNNAGE PIECES.

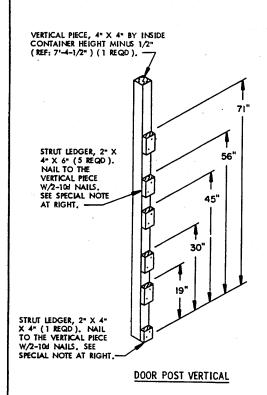


BEVEL-CUT

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

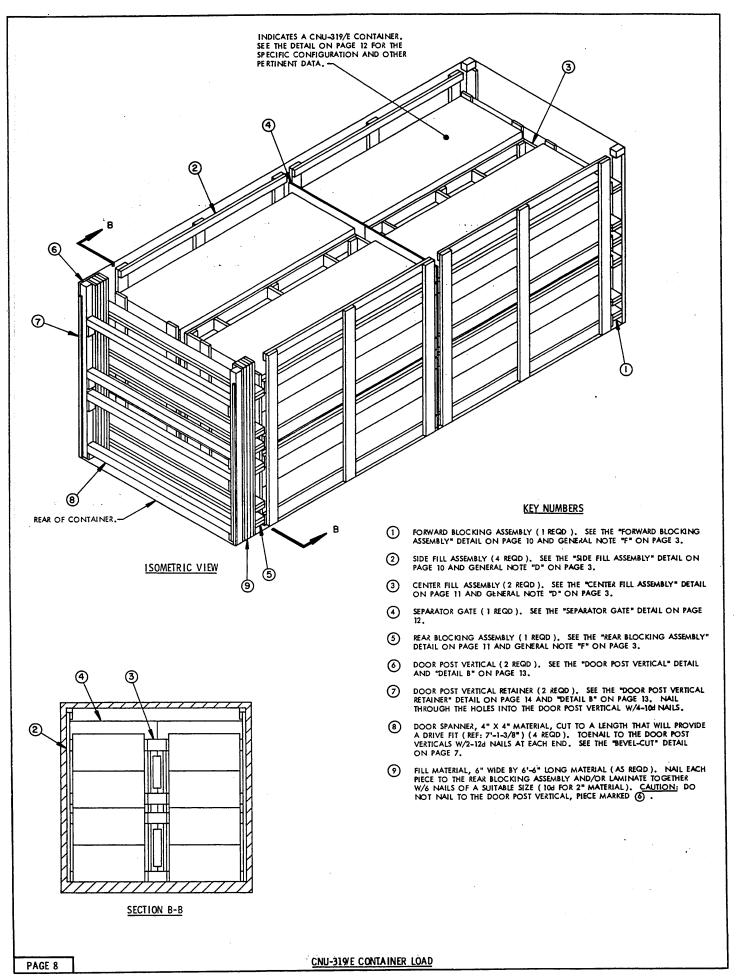
SPECIAL NOTE:

THE STRUT LEDGERS CAN ONLY BE PRE-NAILED TO THE DOOR POST VERTICAL ON ONE SIDE OF THE CONTAINER FOR THE DOOR SPANNER PIECES.



CNU-238/E CONTAINER LOAD DETAILS

PAGE 7



RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

- 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.
- INSTALL ONE SIDE FILL ASSEMBLY, LOAD ONE STACK OF FOUR CONTAINERS, AND INSTALL ONE CENTER FILL ASSEMBLY.
- INSTALL SIDE FILL ASSEMBLY AND LOAD ONE STACK OF FOUR 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).
- INSTALL TWO DOOR SPANNER PIECES (ONE AT THE LOWEST POSITION AND ONE AT THE UPPERMOST POSITION).
- 11. INSTALL FILL MATERIAL.
- 12. INSTALL THE REMAINING TWO DOOR SPANNER PIECES.

	BILL OF MATERIAL	
LUMBER	LINEAR FEET	BOARD FEET
1" X 6" 2" X 3" 2" X 4" 2" X 6" 4" X 4"	13 7 112 704 43	7 4 75 704 58
NAILS	NO. REQD	POUNDS
6d (2") 10d (3") 12d (3-1/4")	12 996 16	NIL 15-1/2 1/2

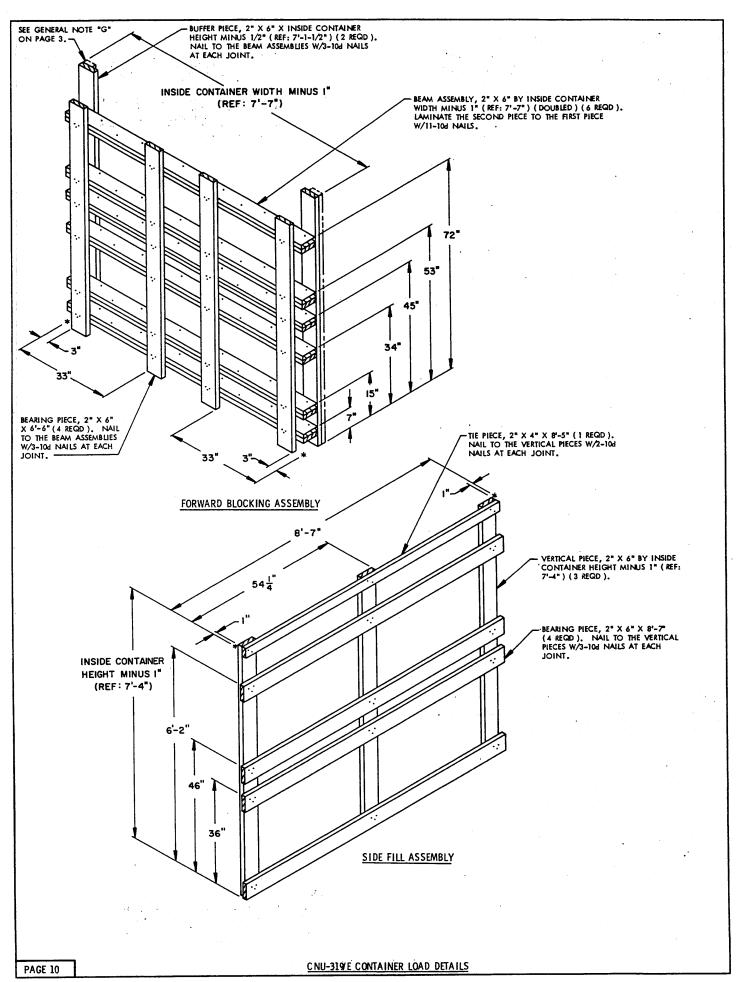
SPECIAL NOTES:

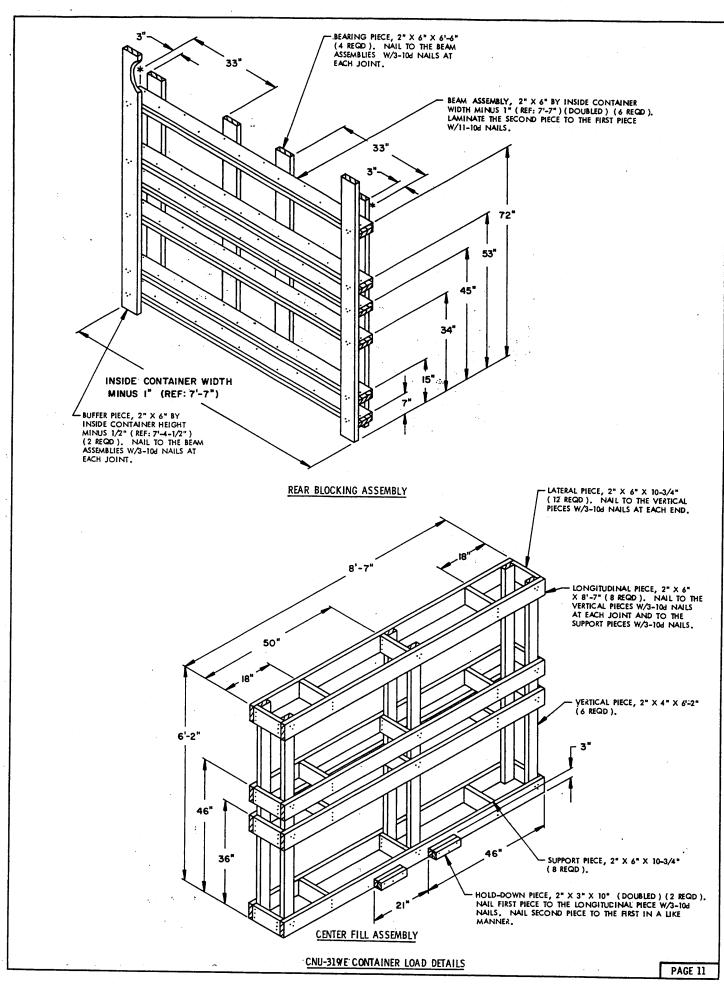
- THE SPECIFIED OUTLOADING PROCEDURE ON PAGE 8 IS APPLICABLE TO A LOAD OF DISPENSERS AND BOMBS, CBU-MK20 PACKED IN CNU-319/E CONTAINERS. SEE PAGE 12 FOR THE DETAIL OF THE CONTAINERS AND OTHER PERTINENT DATA.
- 2. EACH OF THE FOUR CONTAINER STACKS DEPICTED IN THE LOAD VIEWS ON PAGE 8 CONSISTS OF TWO STACKS OF TWO CONTAINERS EACH, UNITIZATION OF EACH OF THE STACKS OF TWO CONTAINERS WILL BE ACCOMPLISHED AS SPECIFIED WITHIN MILSTD-1323-97 (NAVY).

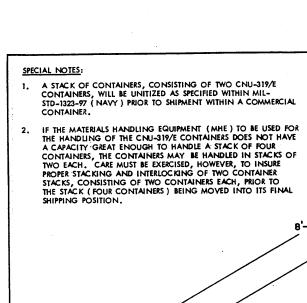
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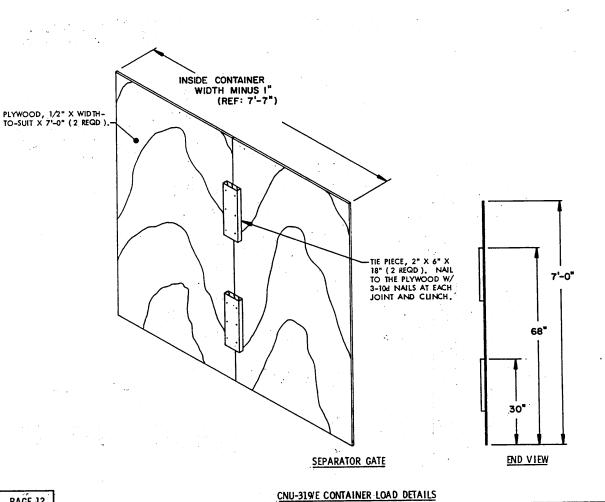
TOTAL WEIGHT	30 701 185
CNU-319/E CONTAINER16	1.849 LBS
ITEM QUANTITY	WEIGHT (APPROX

PAGE 9









INDICATES A CNU-319/E

- INDICATES UNITIZING .STRAP.

INDICATES STRAP SEAL.

-- 3,029 LBS (APPROX) -- 82.2 CU FT

CONTAINER.

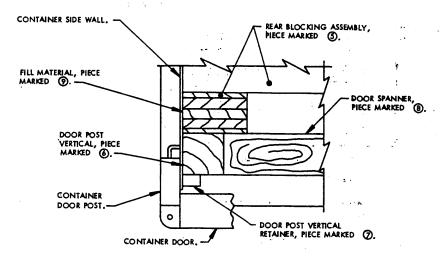
38 1

CONTAINER STACK (SEE SPECIAL NOTES AT LEFT.)

INDICATES BATTEN BOARD.

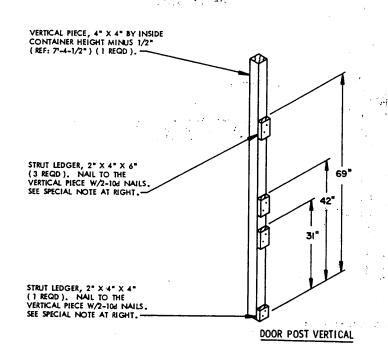
STACK WEIGHT ----CUBE -

PAGE 12



DETAIL B

A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND AD-JACENT DUNNAGE PIECES.



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.

CNU-319/E CONTAINER LOAD DETAILS

