

APPROVED BY
 BUREAU OF EXPLOSIVES
J. H. ...
 DATE 8/19/91

LOADING AND BRACING¹ WITH WOODEN DUNNAGE IN SIDE OPENING COMMERCIAL CONTAINER OF MK-20 ROCKEYE DISPENSER AND BOMB IN CNU-319/E SHIPPING AND STORAGE CONTAINER

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¹ 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 "M" ON PAGE 2.

DO NOT SCALE

REVISIONS		DESIGNER	CHECKER	TECHNICIAN	ENGINEER
		<i>W</i>	<i>JM</i>	<i>GRS</i>	<i>GLW</i>
DEV					
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APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND (AMC)					
<i>James L. ...</i>					
U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL					
U.S. ARMY MATERIEL COMMAND					
NOVEMBER 1991					
CLASS	DIVISION	DRAWING	FILE		
19	48	7108	SP 15J9		

GENERAL NOTES

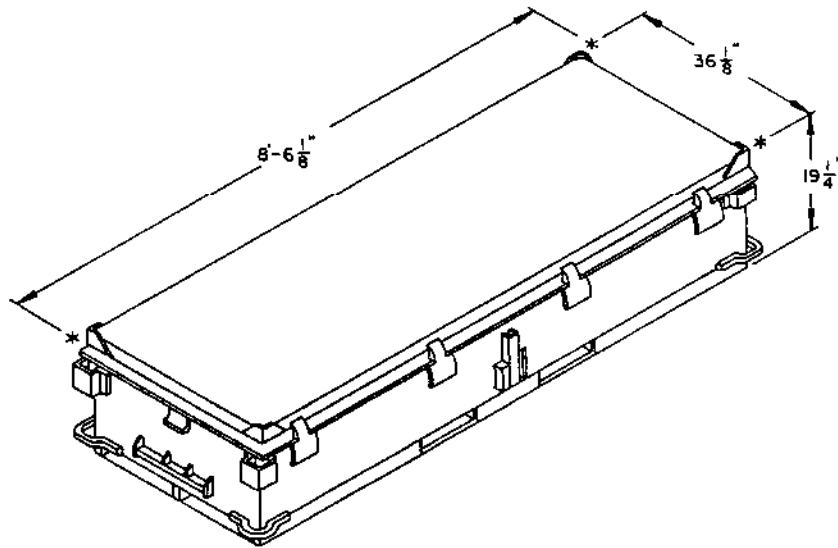
(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. ALL LOADS SHIPPED BY THE PROCEDURES DEPICTED IN THIS DRAWING MUST BE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN TITLE 49, THE UNITED STATES CODE OF FEDERAL REGULATIONS; AR 55-355/AFM 75-2; DOD 4500-32-R; DOD 5100.76-M; DOD 6055.9-STD; AS WELL AS ANY AND ALL OTHER APPLICABLE SERVICE REGULATIONS.
- C. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO THE MK-20 (ROCKEYE) DISPENSER AND BOMB PACKED IN A CNU-319/E SHIPPING AND STORAGE CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CNU-319/E CONTAINER WITH BOMBS INSTALLED. SEE PAGE 3 FOR DETAILS OF THE CONTAINER. **CAUTION:** REGARDLESS OF THE QUANTITY OF CONTAINERS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE SIDE OPENING CONTAINER INCLUDING LADING AND DUNNAGE MUST NOT BE EXCEEDED.
- D. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CNU-319/E CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE, PROVIDED THE GROSS WEIGHT OF THE CONTAINER DOES NOT EXCEED 2,000 POUNDS.
- E. THE LOAD AS SHOWN IS BASED ON A 20'-0" LONG BY 8'-0" WIDE BY 8'-6" HIGH AIR FORCE PROCURED SIDE OPENING CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89-1/2" WIDE BY 88" HIGH. THE LOAD AS SHOWN CAN BE SHIPPED BY ANY FORM OF SURFACE TRANSPORTATION. **NOTICE:** OTHER SIDE OPENING CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN ALSO BE USED.
- F. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE ENDWALL AND THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEW FOR CLARITY PURPOSES.
- G. WHEN LOADING THE CNU-319/E CONTAINERS, THEY ARE TO BE POSITIONED TIGHTLY AGAINST THE END BLOCKING ASSEMBLY AND THE SIDE FILL OR CENTER FILL ASSEMBLY. LONGITUDINAL VOIDS WITHIN THE LOAD ARE TO BE HELD TO A MINIMUM, NOT EXCEEDING ONE-HALF INCH (1/2"), ALTHOUGH A TOTAL OF ONE AND ONE-HALF INCHES (1-1/2") OF UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD IS PERMITTED, LATERAL VOIDS SHOULD ALSO BE HELD TO A MINIMUM. EXCESSIVE LONGITUDINAL VOIDS CAN BE ELIMINATED BY LAMINATING ADDITIONAL FILLER PIECES OF APPROPRIATE THICKNESS TO THE HORIZONTAL PIECES OF THE CENTER GATE ASSEMBLY. EXCESSIVE LATERAL VOIDS CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE BEARING PIECES OF THE SIDE FILL ASSEMBLIES. NAIL EACH ADDITIONAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS OF THE BEARING PIECES ON ONE OR BOTH SIDES OF THE CONTAINER MAY BE ADJUSTED (EITHER INCREASED OR DECREASED) AS REQUIRED TO FACILITATE ANY VARIANCE IN ACTUAL CONTAINER DIMENSIONS.
- H. WHEN INSTALLING THE END BLOCKING ASSEMBLIES, THE ASSEMBLIES MUST BE POSITIONED SO AS TO BE SUPPORTED AND IN LINE WITH THE STRONG POINTS AT THE CORNERS OF THE CONTAINER ENDWALLS. **NOTE:** ADJUST QUANTITY AND/OR DIMENSIONS OF FILL PIECES TO BE INSTALLED ON THE BUFFER PIECES OF THE END BLOCKING ASSEMBLY IN ORDER TO PROVIDE A UNIFORM LOAD BEARING SURFACE AGAINST THE CORNERS OF THE CONTAINER ENDWALLS. NAIL THESE FILL PIECES TO THE PREVIOUS PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12" INCHES.
- J. DUNNAGE LUMBER SPECIFIED IS OF 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" BY 5-1/2" WIDE.
- K. 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.
- L. **CAUTION:** DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- M. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C 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.

MATERIAL SPECIFICATIONS

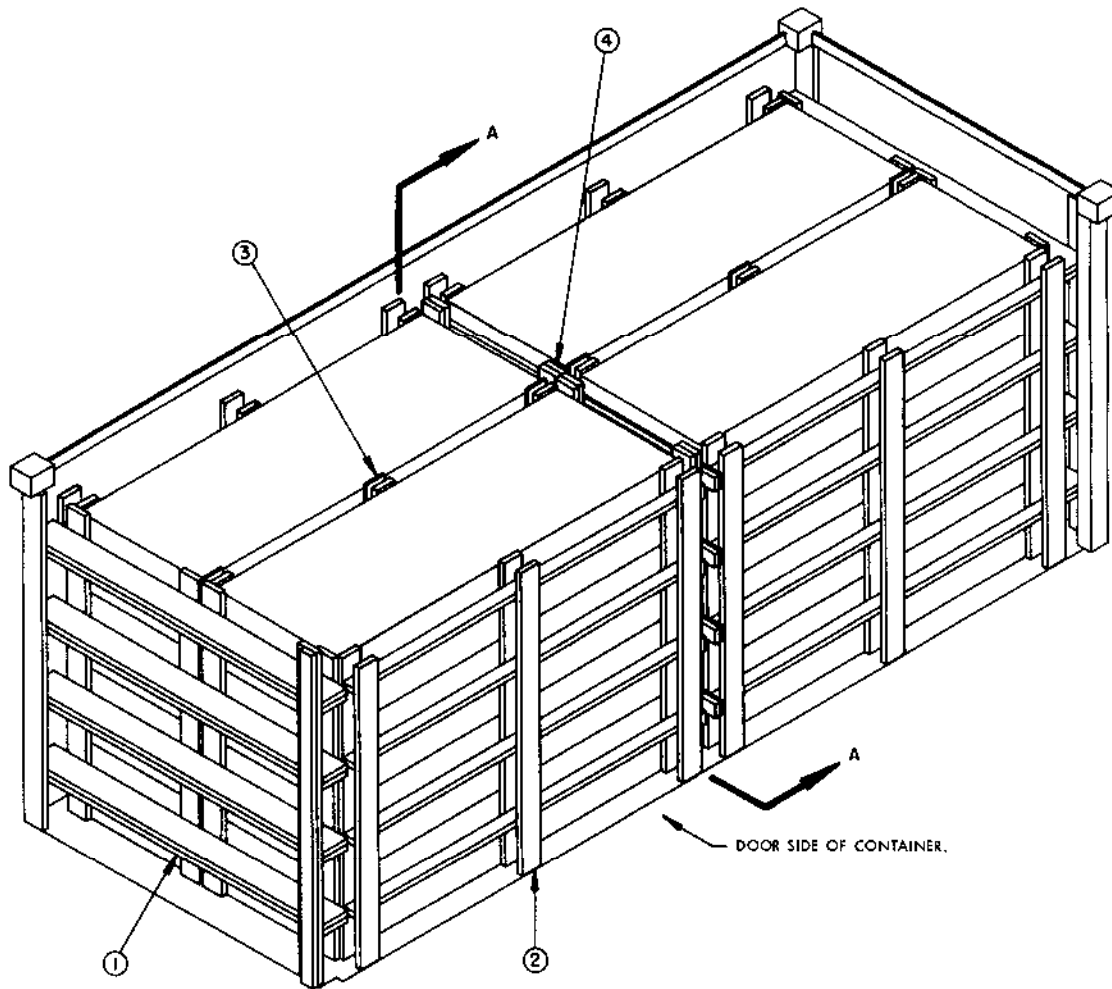
LUMBER ----- SEE TM 743-200-1, DUNNAGE LUMBER. FED SPEC MM-L-751.

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



CNU-319E CONTAINER DETAIL

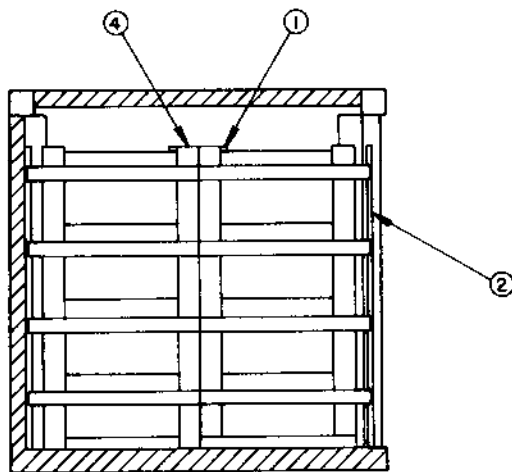
CONTAINER ----- 1 EA @ 475 LBS (APPROX)
 CUBE ----- 41.1 CUBIC FEET (APPROX)
 GROSS WEIGHT ----- 1,475 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① END BLOCKING ASSEMBLY (2 REQD). SEE THE "END BLOCKING ASSEMBLY" DETAIL ON PAGE 6. POSITION AS SHOWN. SEE GENERAL NOTE "H" ON PAGE 2.
- ② SIDE FILL ASSEMBLY (4 REQD). SEE THE "SIDE FILL ASSEMBLY" DETAIL ON PAGE 6. POSITION AS SHOWN. SEE GENERAL NOTE "G" ON PAGE 2.
- ③ CENTER FILL ASSEMBLY (2 REQD). SEE THE "CENTER FILL ASSEMBLY" DETAIL ON PAGE 7. POSITION AS SHOWN.
- ④ CENTER GATE ASSEMBLY (2 REQD). SEE THE "CENTER GATE ASSEMBLY" DETAIL ON PAGE 7. POSITION AS SHOWN. SEE GENERAL NOTE "G" ON PAGE 2.
NOTE: INSTALL BOTH ASSEMBLIES SO THE FLUSH SIDES ARE TOUCHING IN THE CENTER OF THE LOAD AND THE SIDES WITH THE PROTRUDING HORIZONTAL PIECES ARE AGAINST THE SIDES OF THE CONTAINER.



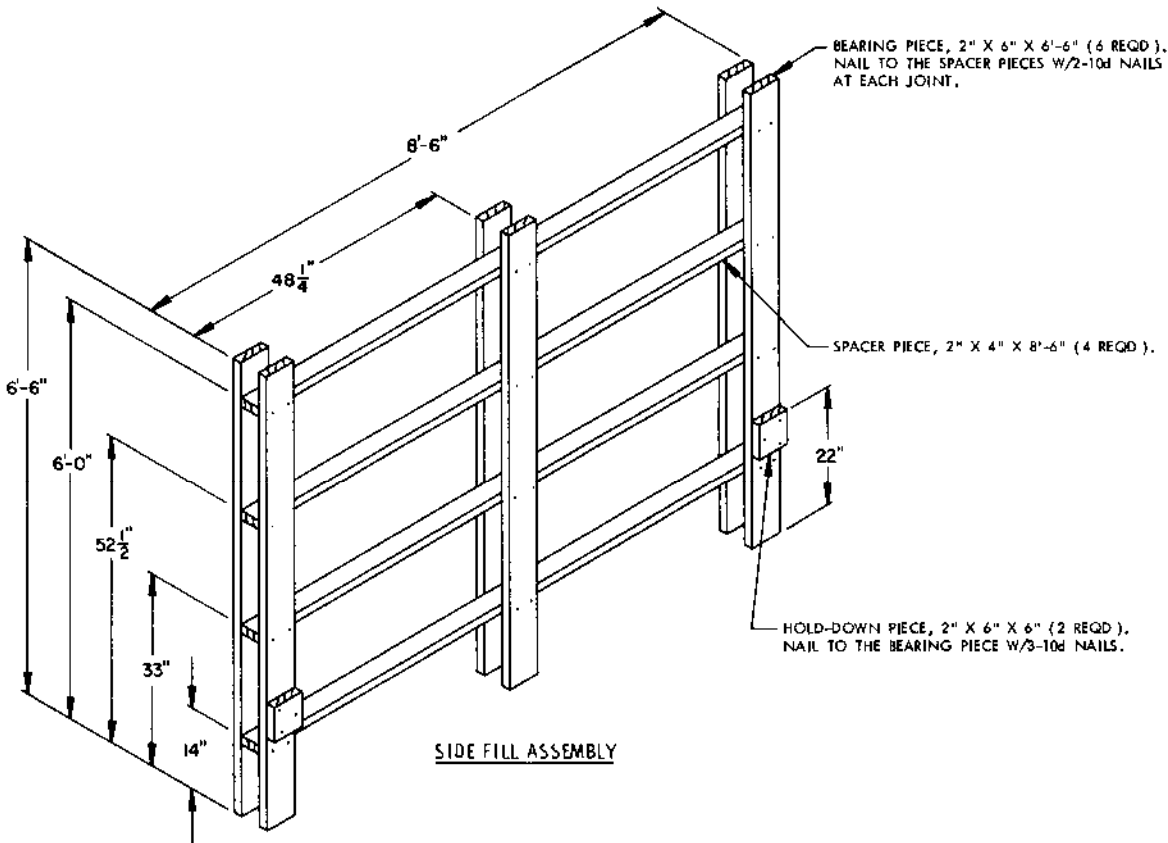
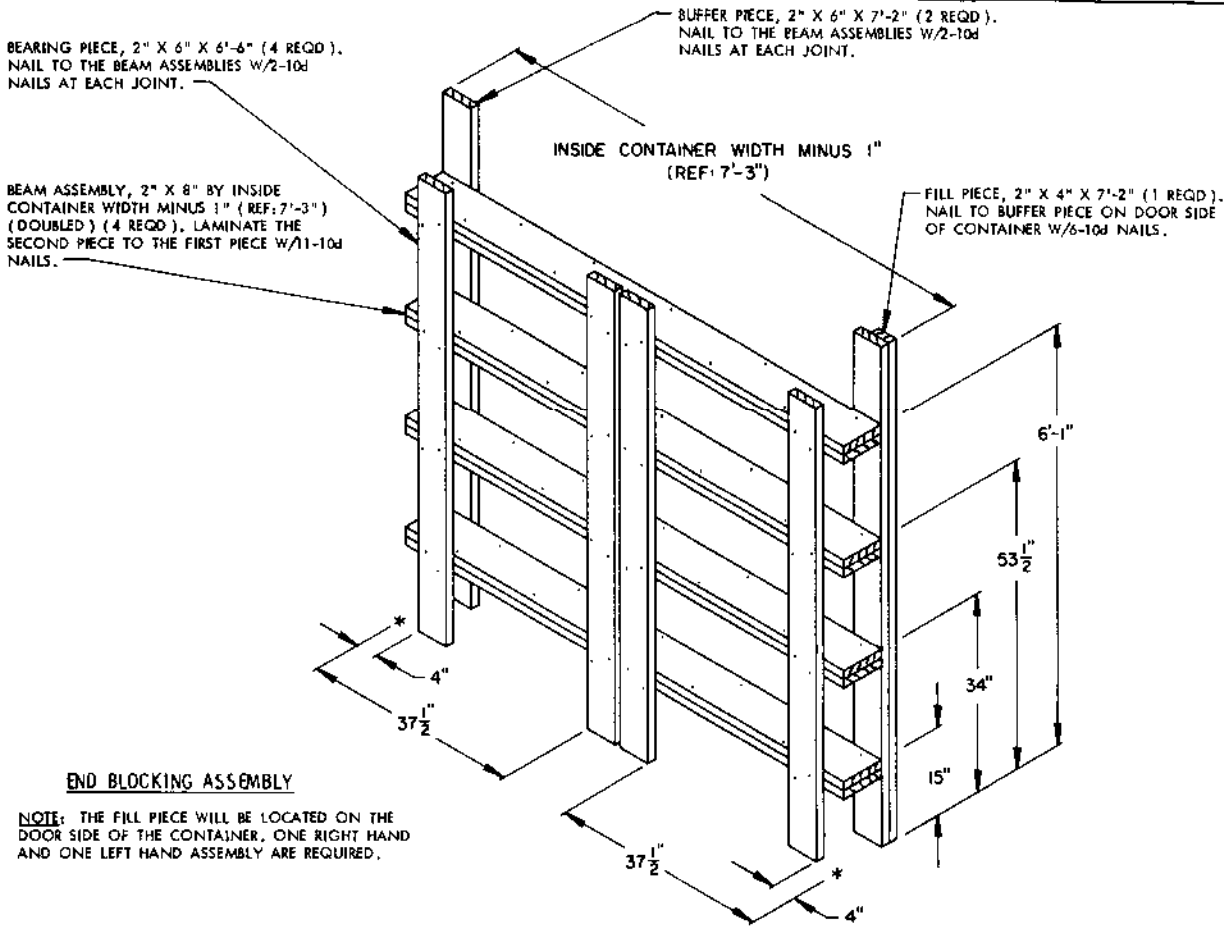
SECTION A-A

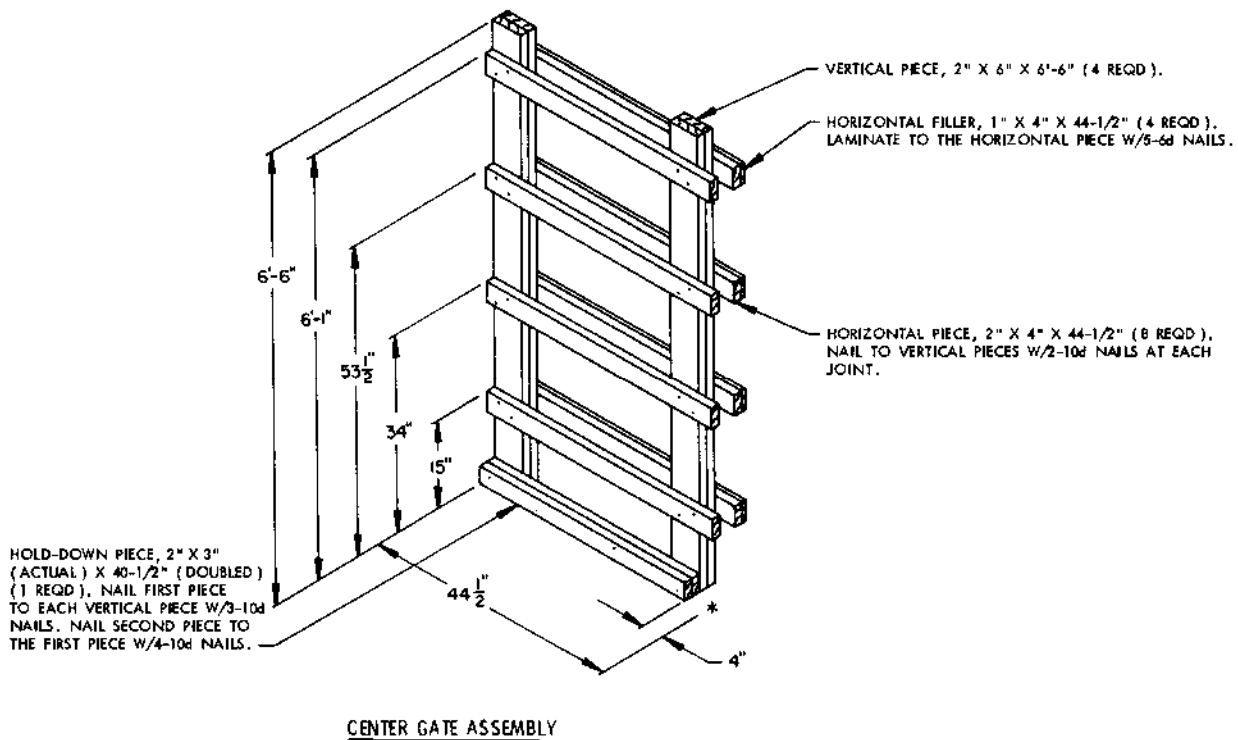
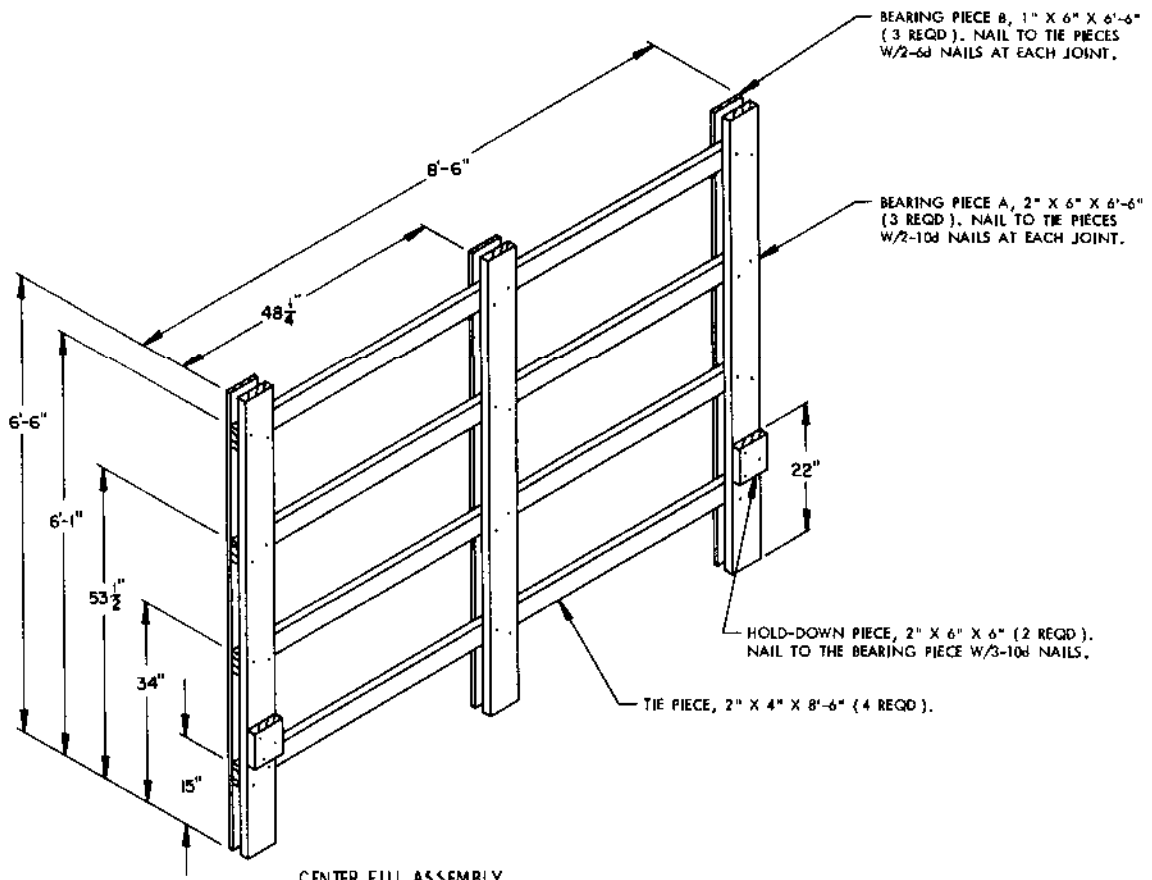
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PREFABRICATE TWO END GATE ASSEMBLIES (ONE RIGHT HAND AND ONE LEFT HAND), FOUR SIDE FILL ASSEMBLIES, TWO CENTER FILL ASSEMBLIES, AND TWO CENTER GATE ASSEMBLIES.
2. INSTALL TWO END GATES AND TWO SIDE FILL ASSEMBLIES.
3. LOAD EIGHT CNU-319/E CONTAINERS AGAINST FAR SIDE (FOUR HIGH STACK POSITIONED TO EACH END).
4. SLIDE ONE CENTER GATE ASSEMBLY INTO POSITION.
5. INSTALL TWO CENTER FILL ASSEMBLIES.
6. LOAD EIGHT CNU-319/E CONTAINERS (FOUR HIGH STACK POSITIONED TO EACH END).
7. SLIDE SECOND CENTER GATE ASSEMBLY INTO POSITION.
8. INSTALL REMAINING TWO SIDE FILL ASSEMBLIES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	30	10
1" X 6"	39	20
2" X 3"	14	7
2" X 4"	278	186
2" X 6"	334	334
2" X 8"	116	155
NAILS	NO. REQD	POUNDS
6d (2")	88	1/2
10d (3")	556	8-1/2

<u>LOAD AS SHOWN</u>		
<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CNU-319/E CONTAINERS	- 16 @ 1,475 LBS	--- 23,600 LBS
DUNNAGE	-----	1,433 LBS
SIDE OPENING CONTAINER	-----	6,050 LBS
TOTAL WEIGHT		----- 31,083 LBS





DETAILS

