

APPROVED BY  
BUREAU OF EXPLOSIVES

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# LOADING AND BRACING WITH WOODEN DUNNAGE IN SIDE OPENING COMMERCIAL CONTAINERS OF SIDEWINDER (AIM-9L) MISSILES IN CNU-310/E SHIPPING AND STORAGE CONTAINERS

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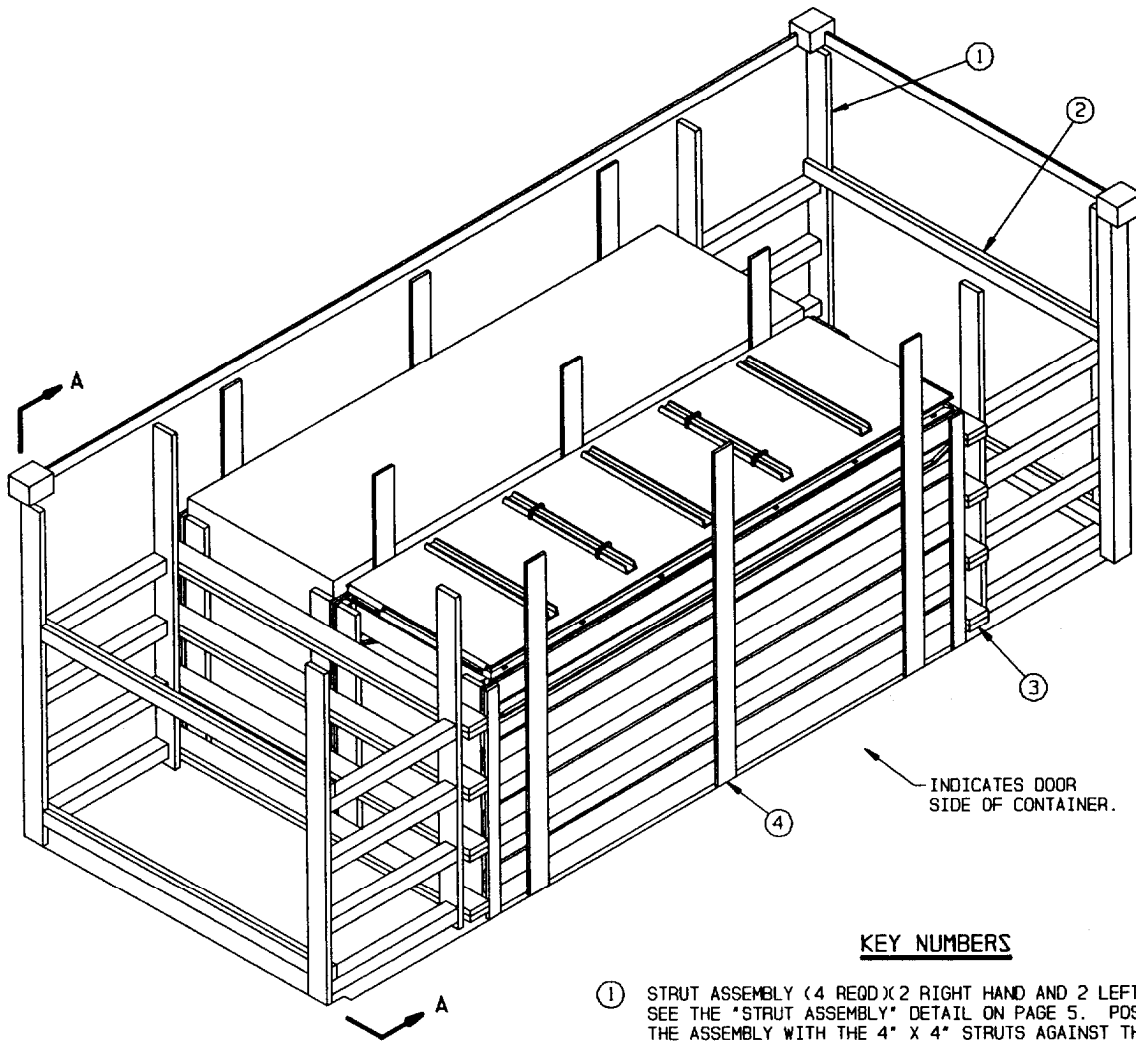
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● LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLAT CAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS. SEE GENERAL NOTE "K" ON PAGE 3.

## U.S. ARMY MATERIEL COMMAND DRAWING

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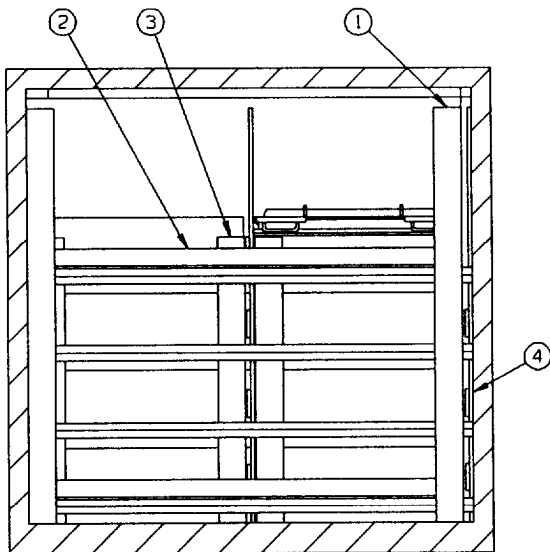
DO NOT SCALE



ISOMETRIC VIEW

KEY NUMBERS

- ① STRUT ASSEMBLY (4 REQD)(2 RIGHT HAND AND 2 LEFT HAND). SEE THE "STRUT ASSEMBLY" DETAIL ON PAGE 5. POSITION THE ASSEMBLY WITH THE 4" X 4" STRUTS AGAINST THE CONTAINER SIDEWALL OR TOWARDS THE DOOR, AS SHOWN ABOVE. AFTER PIECE MARKED ③ IS INSTALLED AND CENTERED ON THE WIDTH OF THE CONTAINER, NAIL THROUGH THE REAR BUFFER PIECE OF EACH STRUT ASSEMBLY INTO EACH BEAM ASSEMBLY OF PIECE MARKED ③ W/2-12d NAILS AT EACH JOINT.
- ② SPREADER ASSEMBLY (4 REQD). SEE THE "SPREADER ASSEMBLY" DETAIL ON PAGE 5. POSITION AS SHOWN, IMMEDIATELY ABOVE THE TOP AND BOTTOM STRUTS AND NAIL TO THE STRUT ASSEMBLY W/2-10d NAILS AT EACH JOINT.
- ③ END BLOCKING ASSEMBLY (2 REQD). SEE THE "END BLOCKING ASSEMBLY" DETAIL ON PAGE 5 AND GENERAL NOTE "F" ON PAGE 3.
- ④ FILL ASSEMBLY (3 REQD). SEE THE "FILL ASSEMBLY" DETAIL ON PAGE 6 AND GENERAL NOTE "D" ON PAGE 3.



SECTION A-A

(GENERAL NOTES CONTINUED)

GENERAL NOTES

N. RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

1. PREFABRICATE FOUR STRUT ASSEMBLIES, FOUR SPREADER ASSEMBLIES, TWO END BLOCKING ASSEMBLIES, AND THREE FILL ASSEMBLIES.
2. INSTALL FOUR STRUT ASSEMBLIES, FOUR SPREADER ASSEMBLIES, TWO END BLOCKING ASSEMBLIES AND ONE FILL ASSEMBLY.
3. LOAD FOUR CNU-310/E CONTAINERS.
4. INSTALL ONE FILL ASSEMBLY.
5. REPEAT STEP 3.
5. REPEAT STEP 4.

- 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 THE SIDEWINDER (AIM-9L) MISSILE IN A CNU-310/E CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CNU-310/E CONTAINER WITH MISSILES INSTALLED. SEE PAGE 4 FOR DETAILS OF THE CONTAINER. CAUTION: REGARDLESS OF THE QUANTITY OF CONTAINERS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" MUST NOT BE EXCEEDED.
- C. THE LOAD AS SHOWN IS BASED ON A 6,050 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING INTERMODAL COMMERCIAL CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89" WIDE BY 88" 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 CNU-310/E CONTAINERS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE END AND SIDE 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 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 THICKNESS OF THE BEARING PIECES ON ONE OR BOTH SIDES OF THE CONTAINER MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE CNU-310/E CONTAINER SIZE.
- E. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" 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. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- H. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- J. 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.
- K. 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.
- L. 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.
- M. THE LOAD AS SHOWN ON PAGE 2 MAY BE REDUCED BY ONE, TWO OR THREE LAYERS FOR A SHIPMENT OF 6, 4, OR 2 CONTAINERS, WITH LOAD WEIGHTS OF 8,280 POUNDS, 5,520 POUNDS AND 2,760 POUNDS, RESPECTIVELY. NOTE: THE LOAD MUST ONLY BE REDUCED BY A MULTIPLE OF TWO CONTAINERS. IT IS NOT PERMISSIBLE TO REDUCE THE LOAD BY 1, 3 OR 5 CONTAINERS.

LOAD AS SHOWN

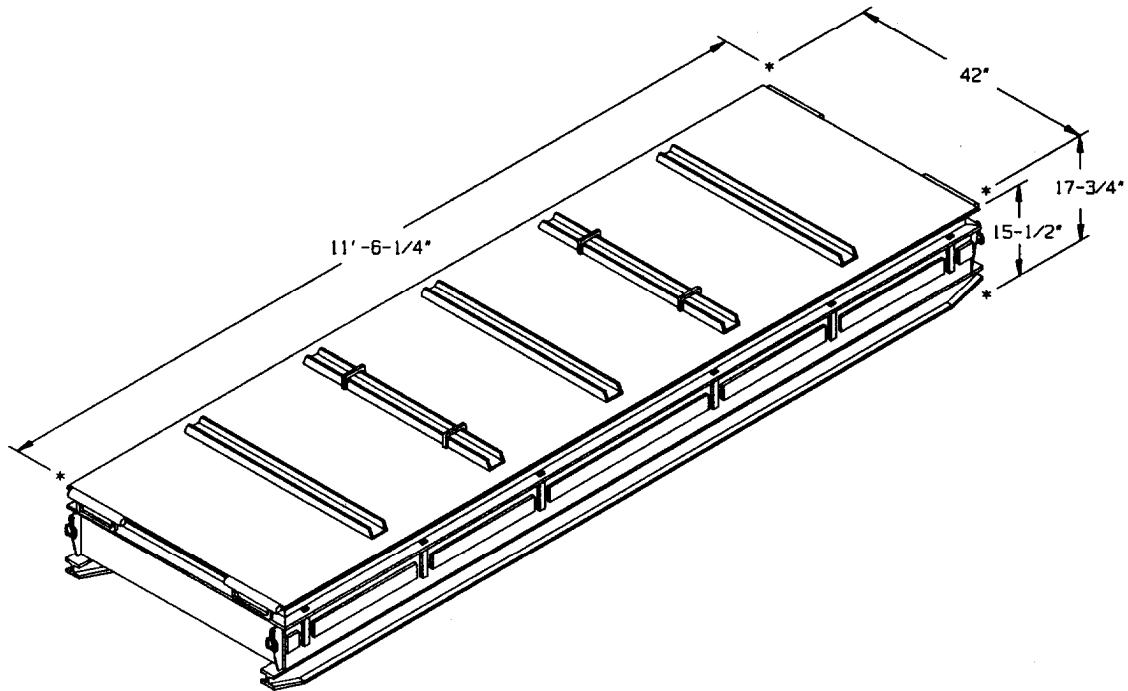
ITEM	QUANTITY	WEIGHT (APPROX)
CNU-310/E CONTAINER	8	11,040 LBS
DUNNAGE		895 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		17,985 LBS (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	29	10
1" X 6"	201	101
2" X 4"	54	36
2" X 6"	230	230
4" X 4"	50	67
NAILS	NO. REQD	POUNDS
6d (2")	156	1
10d (3")	292	4-1/2
12d (3-1/4")	32	3/4

MATERIAL SPECIFICATIONS

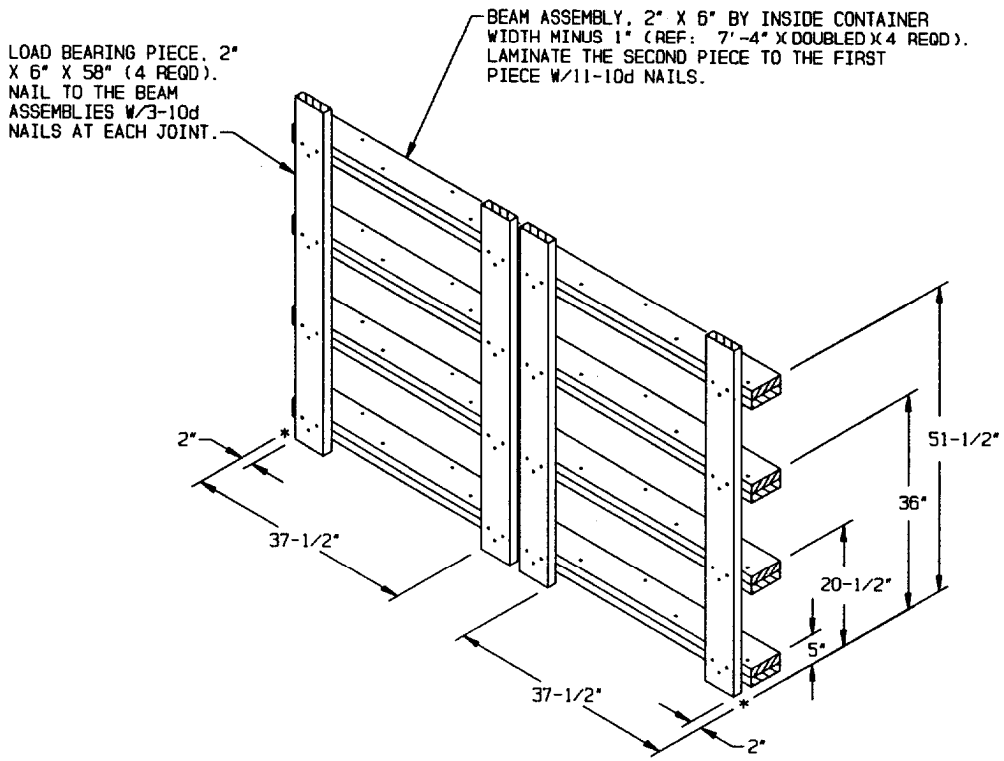
- LUMBER : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS : FED SPEC FF-N-105; COMMON.

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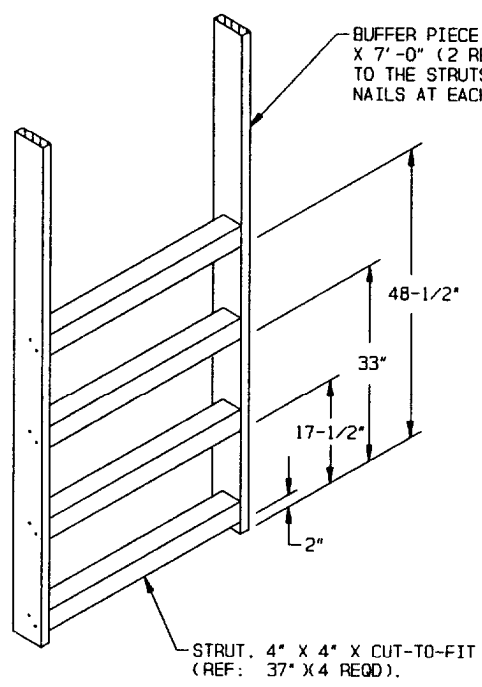


**CNU-310/E CONTAINER**

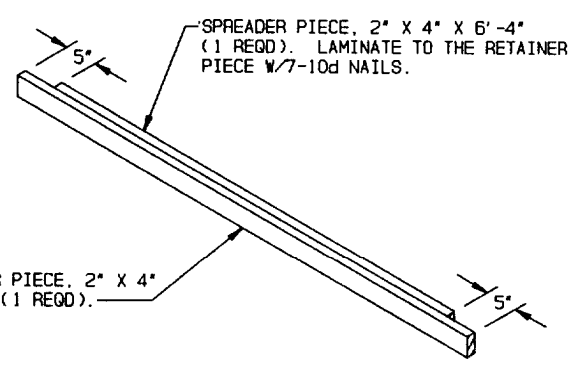
CONTAINER WEIGHT - - - - - 1,380 LBS (APPROX)  
CUBE - - - - - 59.7 CUBIC FEET (APPROX)



**END BLOCKING ASSEMBLY**



**STRUT ASSEMBLY**



**SPREADER ASSEMBLY**

HORIZONTAL PIECE, 1" X 6" X 11'-6"  
(4 REQD). NAIL TO THE VERTICAL PIECES  
W/3-6d NAILS AND TO THE STOP PIECES  
W/2-6d NAILS AT EACH JOINT AND CLINCH.

VERTICAL PIECE, 1" X 6"  
7'-0" (3 REQD).

STOP PIECE, 1" X 4"  
X 58" (2 REQD).

