LOADING AND BRACING[®] IN SIDE OPENING ISO CONTAINERS OF ADK-723 ADAPTER KITS PACKED IN CNU-483 CONTAINERS

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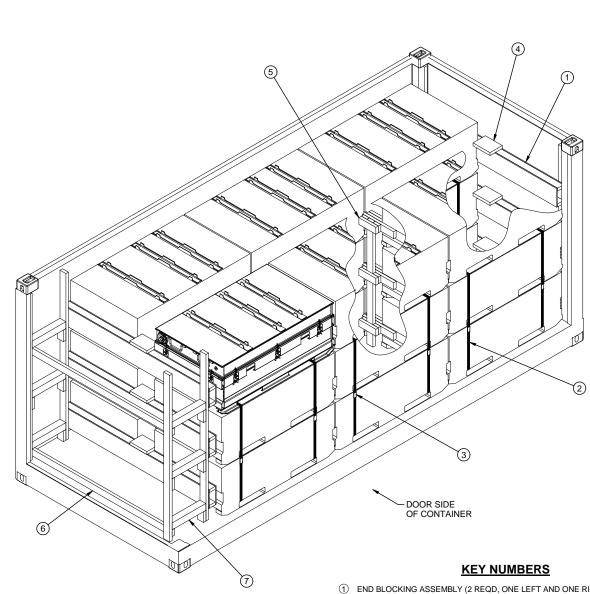
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^{*} THE PROCEDURES SHOWN HEREIN ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL, MOTOR, OR WATER CARRIERS.



ISOMETRIC VIEW

BILL OF MATERIAL						
LUMBER LI NEAR FEET		BOARD FEET				
2" X 4" 2" X 8" 4" X 4"	188 5 10	125 7 13				
NAI LS	NO. REQD	POUNDS				
6d (2") 10d (3") 12d (3-1/4")	264 117 24	1-1/2 1-3/4 1/2				

PLYWOOD, 1/2" - - 68.08 SQ FT REQD - - 93.61 LBS STEEL STRAPPING, 1-1/4" - 188' REQD - - 26.86 LBS SEAL FOR 1-1/4" STRAPPING - 12 REQD - - - 0.55 LB

- (1) END BLOCKING ASSEMBLY (2 REQD, ONE LEFT AND ONE RIGHT). SEE THE DETAIL ON PAGE 5. **NOTE**: STRUT LEDGERS ARE ONLY REQUIRED ON THE LEFT END BLOCKING ASSEMBLY. DO NOT INSTALL STRUT LEDGERS ON THE RIGHT END BLOCKING ASSEMBLY.
- ② STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" OR .029" X 15'-8" (11'-5" FOR A TWO-HIGH LOAD) LONG STEEL STRAPPING (12 REQD, 2 PER STACK). INSTALL THROUGH FORK POCKETS AS FAR APART AS POSSIBLE.
- SEAL FOR 1-1/4" STEEL STRAPPING (12 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 7.
- 4 SPACER PIECE, 2" X 8" BY CUT-TO-FIT (REF: 10") (6 REQD). NAIL TO THE BEAM ASSEMBLY W/4-10 NAILS.
- 5 LATERAL BLOCKING GATE (2 REQD). SEE THE DETAIL ON PAGE 6.
- (6) END GATE (1 REQD). SEE THE DETAIL ON PAGE 6.
- STRUT, 4" X 4" BY CUT-TO-FIT (REF: 20") (6 REQD). TOENAIL TO THE VERTICAL PIECES OF THE LEFT END BLOCKING ASSEMBLY AND OF THE END GATE W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 8.

LOAD AS SHOWN

I TEM	QUANTI TY	WEIGHT (APPROX)	
CNU-483 CONTAI NEF DUNNAGE CONTAI NER		 416 LBS	
ΤΩΤΔΙ	WELGHT	 23 116 LRS (APPRO	y١

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 ADK-723 ADAPTER KITS PACKED IN CNU-483 CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH ADAPTER KITS. SEE PAGE 4 AND AIR FORCE DRAWING 8982910 FOR DETAILS OF THE CONTAINER. <u>CAUTION</u>: REGARDLESS OF THE QUANTITY OF CONTAINERS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE SIDE OPENING ISO CONTAINER MUST NOT BE EXCEEDED
- C. THE LOAD AS SHOWN IS BASED ON A 6,500 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-6-1/4" LONG BY 90" WIDE BY 89" HIGH, WITH A MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. OLDER/OTHER CONTAINERS MAY HAVE DIFFERENT INSIDE MEASUREMENTS, VERIFY INSIDE CONTAINER DIMENSIONS PRIOR TO FABRICATING DUNNAGE. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (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 WHEN LOADING CONTAINERS, THET ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE DUNNAGE ASSEMBLIES). THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 1-1/2". EXCESSIVE SLACK CAN BE ELIMINATED BY "CUT-TO-FIT" OF THE SPAC-
- E. 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 BE-SIDE A NAIL IN A LOWER PIECE.
- IN SOME CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE ENDWALL. PIECES OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES PIECES OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES ON THE END BLOCKING ASSEMBLY TO PROVIDE A FLAT SURFACE FOR THE BUFFER PIECES. A PIECE OF 2" X 4", 2" X 3" OR A SPECIAL WIDTH PIECE CUTTO-FIT CAN BE USED. THIS FILL PIECE WILL BE NAILED WITH ONE APPROPRIATELY SIZED NAIL EVERY 12". NOTE THAT SOME CONTAINERS ARE EQUIPPED WITH "TIE-BARS" IN THE CORNER SLOT, WHICH PRECLUDE THE USE OF A FULL HEIGHT FILL PIECE. WHEN "TIE-BARS" ARE PRESENT, THE FILL PIECE MUST BE INSTALLED IN SEGMENTS DESIGNED TO FIT BETWEEN THE "TIE-BARS" VERTICALLY. THE FILL PIECE(S) IS NOT REQUIRED WHEN THE CORNER POR TIONS OF THE CONTAINER FORWARD WALL ARE SMOOTH AND FLAT. DO NOT ALLOW ANY DUNNAGE ASSEMBLY TO CONTACT THE CONTAINER ENDWALLS, ONLY THE CORNER POSTS OF THE CONTAINER SHOULD BE USED FOR FORWARD LONGITUDINAL BLOCKING.
- G. WHETHER A CONTAINER IS FULL OR IS LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF THE LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MID-POINT OF THE CON-TAINER.
- H. <u>CAUTION</u>: 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 THE SIDEWALL, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

K. MAXIMUM LOAD WEIGHT CRITERIA:

THE MAXIMUM LOAD WEIGHTS ARE CONTROLLED BY EQUIPMENT CAPABILITY FACTORS. ALTHOUGH THE HEAVIEST MAXIMUM LOADS ARE DELINEATED IN THE LOAD VIEWS, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THE LOAD VIEWS, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOADS CAN BE ADJUSTED TO SATISFY A LESSER QUANTITY OF LADING UNITS. DEPENDING ON TRANSPORTATION ROUTING, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY "WEIGHT LAWS" OF CERTAIN STATES. ALSO, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY OTHER WEIGHT RESTRICTIONS IMPOSED ON THE IN-TERMODAL CONTAINER SYSTEM.

- L. REQUIREMENTS CITED WITHIN THE ASSOCIATION OF AMERICAN RAILROADS (AAR) INTERMODAL LOADING GUIDE APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC). SPECIAL T/COFC NOTES FOL-
 - 1. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BO-GIE 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.
- M. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER. A PROPER CHASSIS OR MODIFIED FLATBED TRAILER MUST BE USED TO PRE-CLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.

(CONTINUED AT RIGHT)

(GENERAL NOTES CONTINUED)

- N. 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
- O. THE QUANTITY OF CONTAINERS SHOWN IN THE LOAD ON PAGE 2 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE "LESS-THAN-FULL LOAD PROCEDURES" ON PAGE 8.
 - IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT (LESS THAN FIVE LADING UNITS), LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE CENTER OF THE LOAD.
 - 2. IF A LOAD IS REDUCED BY A LARGE AMOUNT (MORE THAN FIVE LADING UNITS), LADING UNITS SHOULD BE ELIMINATED AS REQUIRED AND THE VOID IN THE LONGITUDINAL CENTER OF THE CONTAINER SHIFTED FORE OR AFT, AS NECESSARY, TO ACHIEVE A SYMMETRICAL WEIGHT DISTRIBUTION. THE DEPICTED PROCEDURES WILL BE FOLLOWED AS CLOSELY AS POSSIBLE, MAKING ONLY THOSE ADJUSTMENTS TO THE DUNNAGE WHICH ARE REQUIRED TO ACCOMMODATE THE NUMBER OF UNITS TO BE SHIPPED
- P. AS REQUIRED BY THE ASSOCIATION OF AMERICAN RAILROADS (AAR), ALL 1-1/4" AND 2" STEEL STRAPPING USED FOR LOAD RESTRAINT MUST BE MARKED AS SPECIFIED WITHIN THE APPLICABLE AAR RULES GOVERNING LOADING, BLOCKING AND BRACING OF FREIGHT WITHIN THE CONVEYANCE. FOR THE SPECIFIC MARKING SIZE, FREQUENCY, ETC., REQUIRED, REFER TO THE APPROPRIATE AAR LOADING RULES.
- Q. 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" THICK BY 5-1/2" WIDE.
- R. ANTI-CHAFING MATERIAL MAY BE INSTALLED AT POINTS OF CONTACT BE-TWEEN CONTAINERS, BETWEEN CONTAINERS AND THE SIDE OPENING CONTAINER, AND BETWEEN CONTAINERS AND STEEL STRAPPING, IF DE-SIRED, TO PREVENT CHAFING DAMAGE TO CONTAINER PAINT AND MARK-
- S. RECOMMENDED SEQUENTIAL LOADING PROCEDURES:
 - 1. PREFABRICATE TWO END BLOCKING ASSEMBLIES, TWO LATERAL BLOCKING GATES, AND ONE END GATE.
 - 2. INSTALL RIGHT END BLOCKING ASSEMBLY.
 - 3. LOAD NINE CNU-483 CONTAINERS.
 - 4. INSTALL THREE CENTER SPACERS AND TWO LATERAL BLOCKING
 - LOAD NINE CNU-483 CONTAINERS.
 - 6. INSTALL LEFT END BLOCKING ASSEMBLY.
 - 7. INSTALL THREE CENTER SPACERS.
 - 8. INSTALL END GATE.
 - 9. INSTALL SIX STRUTS

MATERIAL SPECIFICATIONS

SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOL-UNTARY PRODUCT STANDARD PS 20.

ASTM F1667; COMMON STEEL NAIL NLCMS OR NAILS - - - - - -:

NLCMMS)

PLYWOOD - - - - -:

COMMERCIAL ITEM DESCRIPTION A-A-55057, IN-DUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EX-TERIOR GRADE MAY BE SUBSTITUTED.

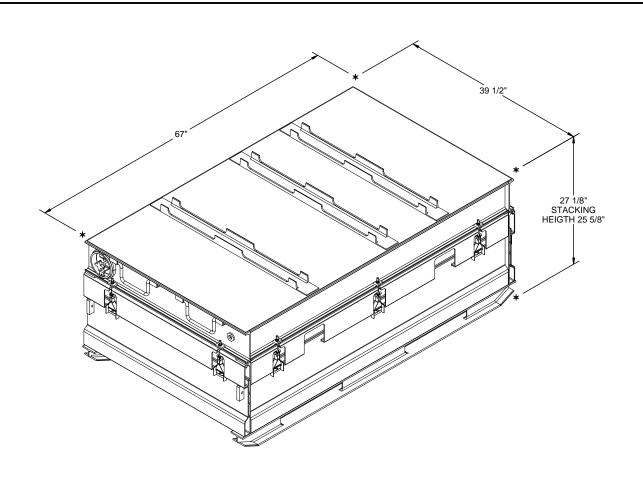
ASTM D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH A, B (GRADE 2), OR C. STRAPPING, STEEL - -:

ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV. SEAL, STRAP - - - -:

ANTI -CHAFI NG MATERIAL -

- - - -: MIL-PRF-121 (OR EQUAL); NEUTRAL BARRIER

MATERIAL.



CNU-483 CONTAINER

GROSS WEI GHT - - - - - - - - - - 1,000 LBS CUBE - - - - - - - 41.48 CU FT

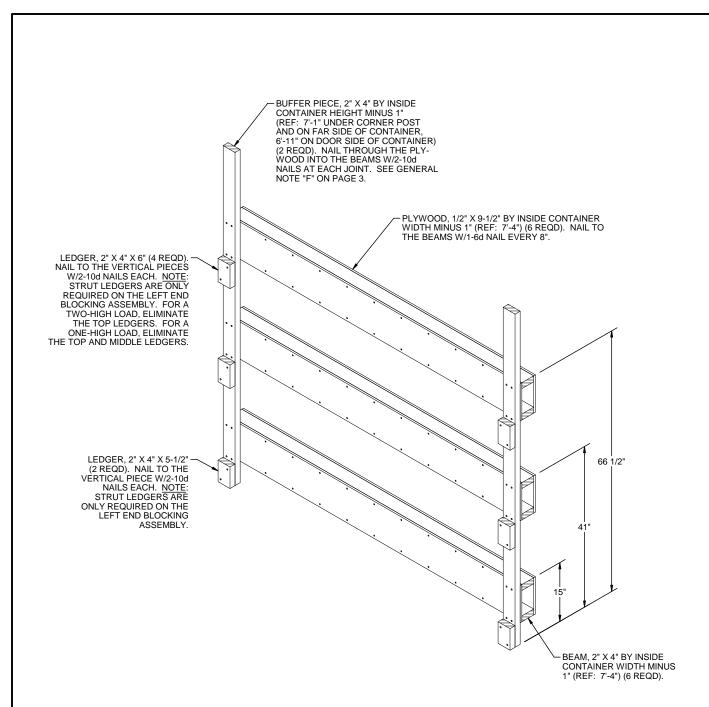
UNITIZATION AND HANDLING GUIDANCE

- 1. STACKING CONTAINERS FOR UNITIZING:
 - A. AN UPPER CONTAINER SHOULD BE PLACED AS CLOSE AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE NEXT LOWER CONTAINER.
 - B. POSITION THE AFT END OF AN UPPER CONTAINER ABOVE THE AFT END OF THE NEXT LOWER CONTAINER.
 - C. THE CONTAINER SKIDS OF AN UPPER CONTAINER SHOULD BE FULLY SEATED AGAINST THE SKID LOCATOR PIECES ON THE COVER OF THE NEXT LOWER CONTAINER.
- 2. INSTALLATION OF UNITIZING STRAPS:
 - A. STRAPS WILL BE POSITIONSED SO AS TO ENCIRCLE THE CONTAINERS AND SO THAT THE STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SURFACE OF THE CONTAINER; I.E., VERTICAL ALONG THE SIDES AND FLAT ACROSS THE TOP AND BOTTOM OF THE STACK.
 - B. PLACE ANTI-CHAFING NEUTRAL BARRIER MATERIAL UNDER THE STRAP-PING AT ALL POINTS OF CONTACT WITH THE CONTAINER, IF DESIRED, AND SECURE TO PREVENT DISLODGEMENT DURING AND AFTER STRAP APPLI-CATION. STRIPS OF ANTI-CHAFING MATERIAL MAY BE TAPED OR STRING-TIED TO THE CONTAINER OR STRAPPING, OR IT CAN BE FORMED INTO STRAP ENCIRCLING TUBES BY WINDING THE MATERIAL AROUND THE STRAPPING TO FORM A SELF-HOLDING UNIT.
 - C. STRAPPING WILL BE FIRMLY TENSIONED AND EACH END-OVER-END LAP JOINT WILL BE SEALED AS SHOWN ON PAGE 7. THE LAP JOINTS WILL BE MADE ALONG THE SIDE OF THE STACK AS SHOWN. DURING STRAP TENSIONING, CARE SHOULD BE EXERCISED TO ENSURE THAT THE CONTAINERS ARE NOT DAMAGED. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEALS.

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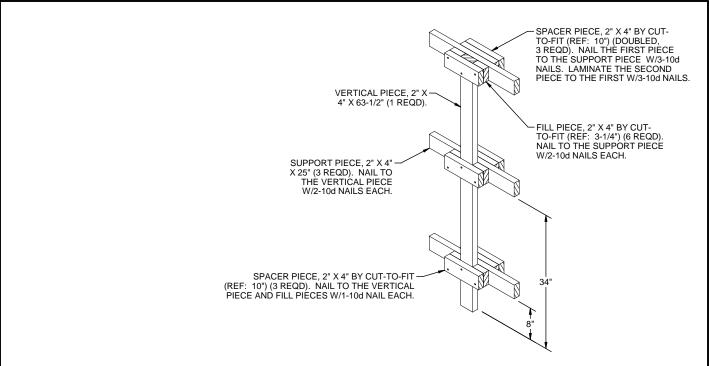
(UNITIZATION AND HANDLING GUIDANCE CONTINUED)

- 3. CONTAINER OR CONTAINER STACK HANDLING:
 - A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIAL HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS. APPROVED MATERIAL HANDLING EQUIPMENT (FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, SPREADER BARS, ETC.) IS SPECIFIED ELSEWHERE.
 - B. PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.
 - C. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER, TO PREVENT DAMAGE TO THE CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. IF ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING POINTS ON THE CONTAINER. DO NOT HANDLE STACKED CONTAINERS WITH A SLING.



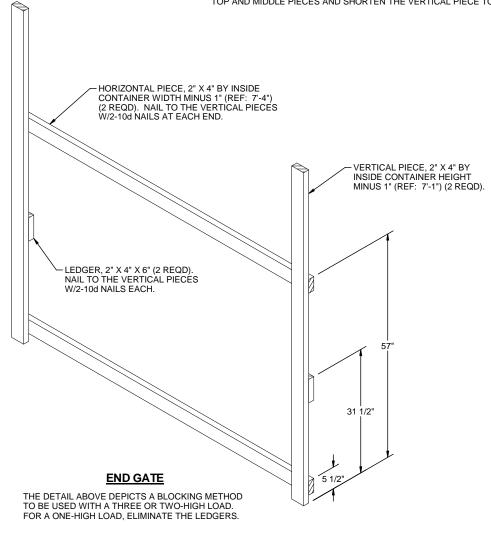
END BLOCKING ASSEMBLY

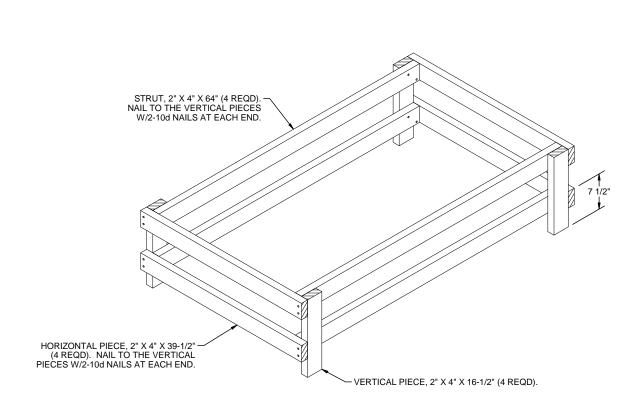
THE DETAIL ABOVE DEPICTS A BLOCKING METHOD TO BE USED WITH A THREE-HIGH LOAD. FOR A TWO-HIGH LOAD, ELIMINATE THE TOP BEAM ASSEMBLY. FOR A ONE-HIGH LOAD, ELIMINATE THE UPPER TWO BEAM ASSEMBLIES.



LATERAL BLOCKING GATE

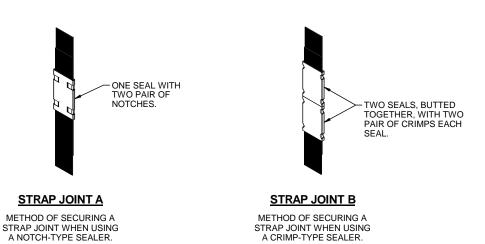
FOR A TWO-HIGH LOAD, ELIMINATE ALL THE TOP PIECES AND SHORTEN THE VERTICAL PIECE TO 37-1/2". FOR A ONE-HIGH LOAD, ELIMINATE ALL THE TOP AND MIDDLE PIECES AND SHORTEN THE VERTICAL PIECE TO 11-1/2".



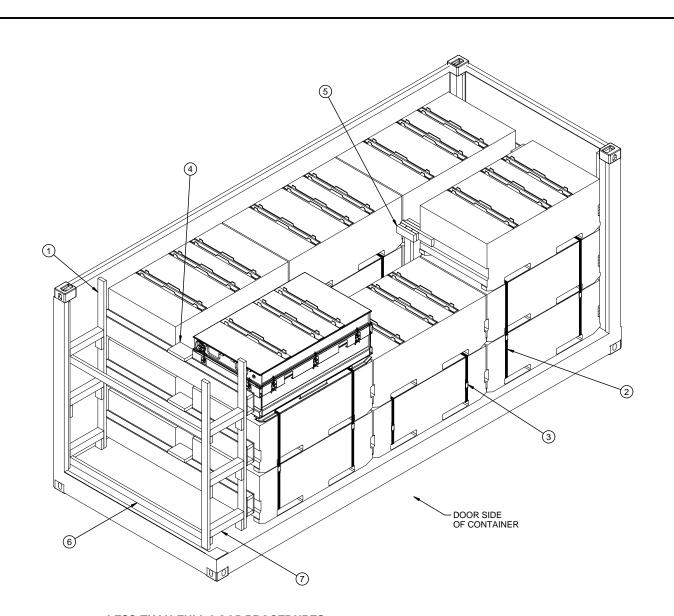


FILLER ASSEMBLY

THIS ASSEMBLY IS FOR USE WHEN LOADING AN ODD NUMBER OF CONTAINERS ONE LAYER HIGH. SECURE THE FILLER ASSEMBLY TO THE HANDLES OR LATCHES OF ADJACENT CNU-483 CONTAINER USING TIE WIRE IN AT LEAST TWO PLACES. INSTALL EACH WIRE AROUND THE FILLER ASSEMBLY STRUT OR HORIZONTAL PIECE AND THROUGH THE HANDLE OR THE LATCH OF THE CNU CONTAINER. PULL WIRE TAUT AND TWIST WIRE WITH A MINIMUM OF TWO COMPLETE TWISTS.

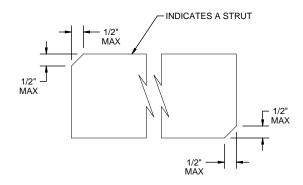


END-OVER-END LAP JOINT DETAILS



LESS-THAN-FULL-LOAD PROCEDURES

THE DETAIL ABOVE DEPICTS A BLOCKING METHOD TO BE USED IN A LESS-THAN-FULL CONTAINER LOAD (LESS THAN 18 UNITS). KEY NUMBERS REFER TO KEY NUMBERS ON PAGE 2. SEE GENERAL NOTES "G" AND "O" ON PAGE 3.



BEVEL CUT

IF DESIRED, EACH END OF A STRUT MAY BE BEVEL-CUT AS SHOWN ABOVE TO FACILITATE INSTALLING THE STRUTS WITH A "DRIVE" FIT.