APPROVED BY
BUREAU OF EXPLOSIVES

DATE 12/3/02

LOADING AND BRACING● IN SIDE OPENING ISO CONTAINERS OF JASSM (AGM-158) MISSILES PACKED IN CNU-614/E CONTAINERS

INDEX

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

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY
OPERATIONS SUPPORT COMMAND

APPROVED BY ORDER OF COMMANDING GENERAL,
U.S. ARMY MATERIEL COMMAND

U.S. ARMY DEFENSE AMMUNITION CENTER

CAUTION: VERIFY PRIOR TO USE AT WWW.DAC.ARMY.MIL/DET THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 6.

DO NOT SCALE

NOVEMBER 2002

ENGINEER OR TECHNICIAN	BASIC	LAURA FIEFFER
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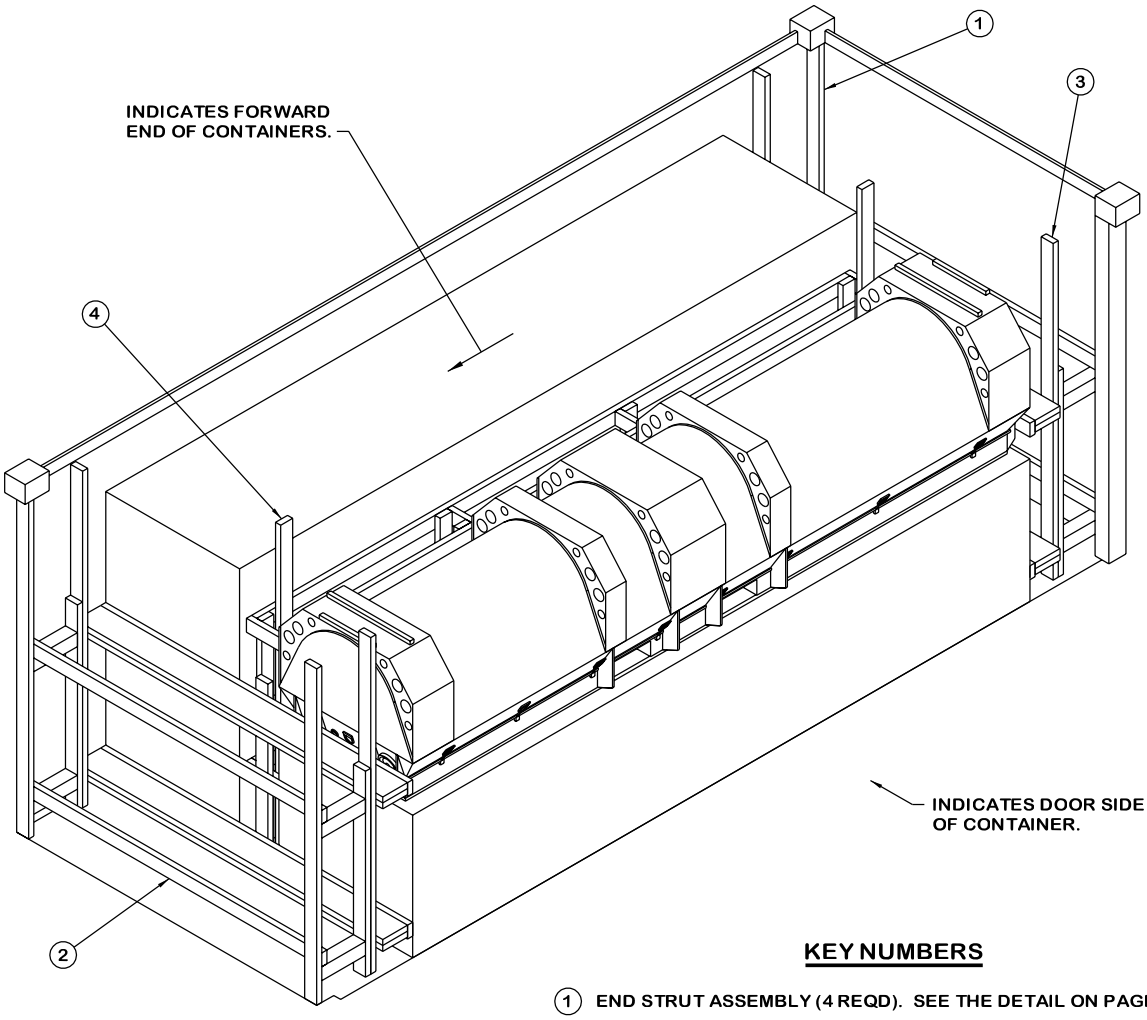

ISOMETRIC VIEW

KEY NUMBERS

(1) END STRUT ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 5.

(2) SPREADER PIECE, 2" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-2") (4 REQD). NAIL TO THE BUFFER PIECES OF PIECES MARKED (1) W/2-10d NAILS AT EACH END.

(3) END BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 5. NAIL THROUGH THE BUFFER PIECES INTO THE VERTICAL PIECE OF PIECES MARKED (1) W/5-10d NAILS.

(4) CENTER FILL ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 4.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4" 2" X 8" 4" X 4"	231 59 9	154 79 12
NAILS	NO. REQD	POUNDS
10d (3") 12d (3-1/4")	176 32	2-3/4 3/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-614/E	4	13,480 LBS
DUNNAGE		468 LBS
ISO CONTAINER		6,050 LBS
TOTAL WEIGHT		19,998 LBS (APPROX)

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(GENERAL NOTES CONTINUED)

J. 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 0.454 KG.

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 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 INTERMODAL 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 FOLLOW:

A. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.

B. 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 PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.

N. 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 CONTAINER.

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" DETAIL ON PAGE 6.

P. ANTI-CHAFING MATERIAL MAY BE INSTALLED AT POINTS OF CONTACT BETWEEN CONTAINERS AND THE SIDE OPENING CONTAINER, IF DESIRED, TO PREVENT CHAFING DAMAGE TO CONTAINER MARKINGS.

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 OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO LOADS OF JASSM MISSILES PACKED IN CNU-614/E CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH MISSILE ITEMS. SEE PAGE 4 AND LOCKHEED MARTIN INTEGRATED SYSTEMS DRAWING 79601200 FOR DETAILS OF THE CONTAINER. CAUTION: REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE SIDE OPENING ISO CONTAINER MUST NOT BE EXCEEDED.

C. THE LOADS AS SHOWN ARE BASED ON A 6,050 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89" WIDE BY 88" HIGH AND A MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT, HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY MOTOR OR WATER CARRIERS. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN ALSO BE USED.

D. WHEN LOADING THE CONTAINERS, THEY 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 FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE CENTER FILL ASSEMBLY. NAIL EACH ADDITIONAL PIECE TO THE LONGITUDINAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE LENGTH OF THE LATERAL PIECES AND STRUTS IN THE CENTER FILL ASSEMBLY MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE CONTAINER.

E. DUNNAGE LUMBER SPECIFIED IS OF 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 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 ISO CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE ENDWALLS. PIECES OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES ON THE END STRUT ASSEMBLIES TO PROVIDE A FLAT SURFACE FOR THE 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". 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 PORTIONS OF THE CONTAINER ENDWALLS 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 LONGITUDINAL BLOCKING.

H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEW FOR CLARITY PURPOSES.

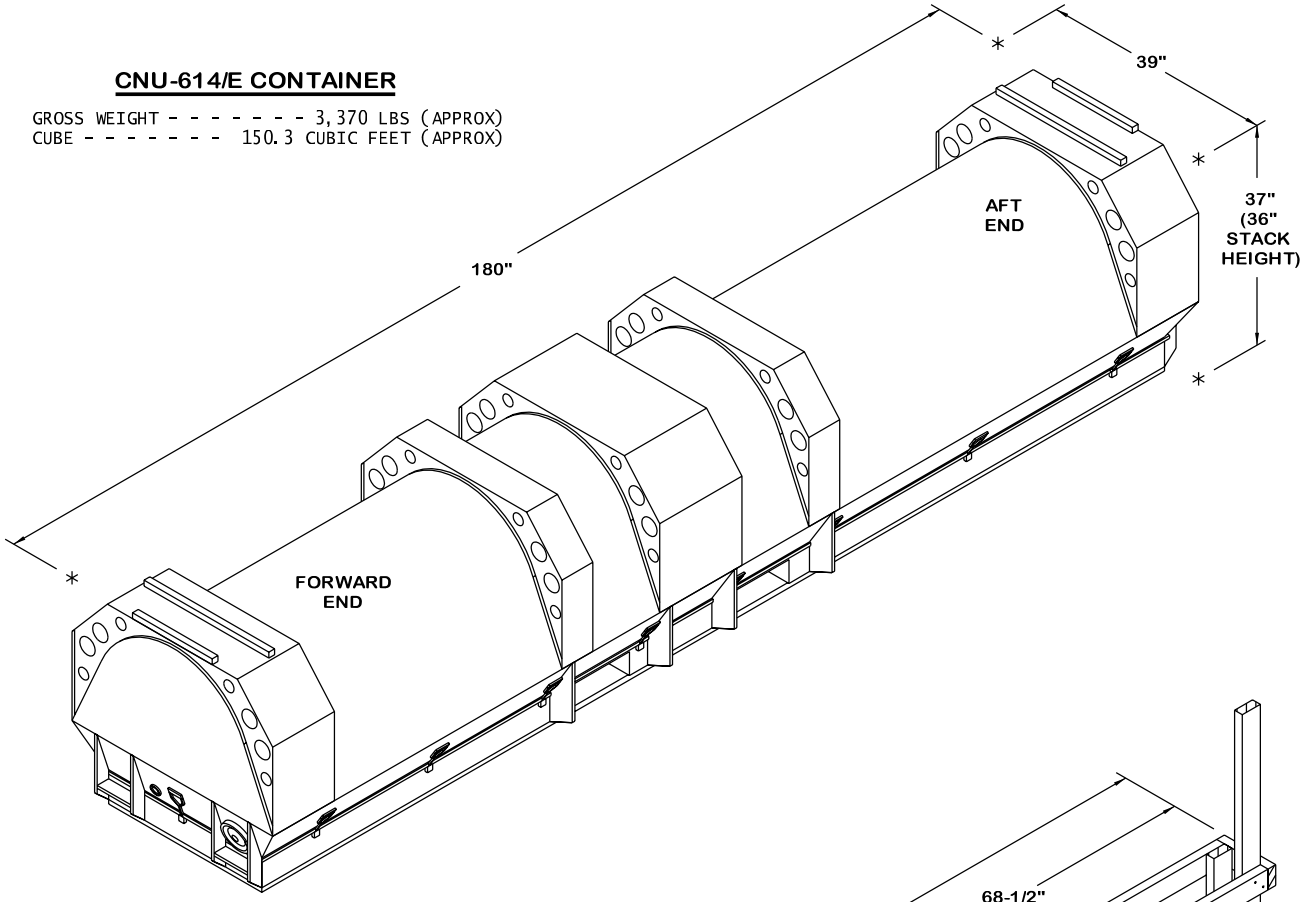
(CONTINUED AT LEFT)

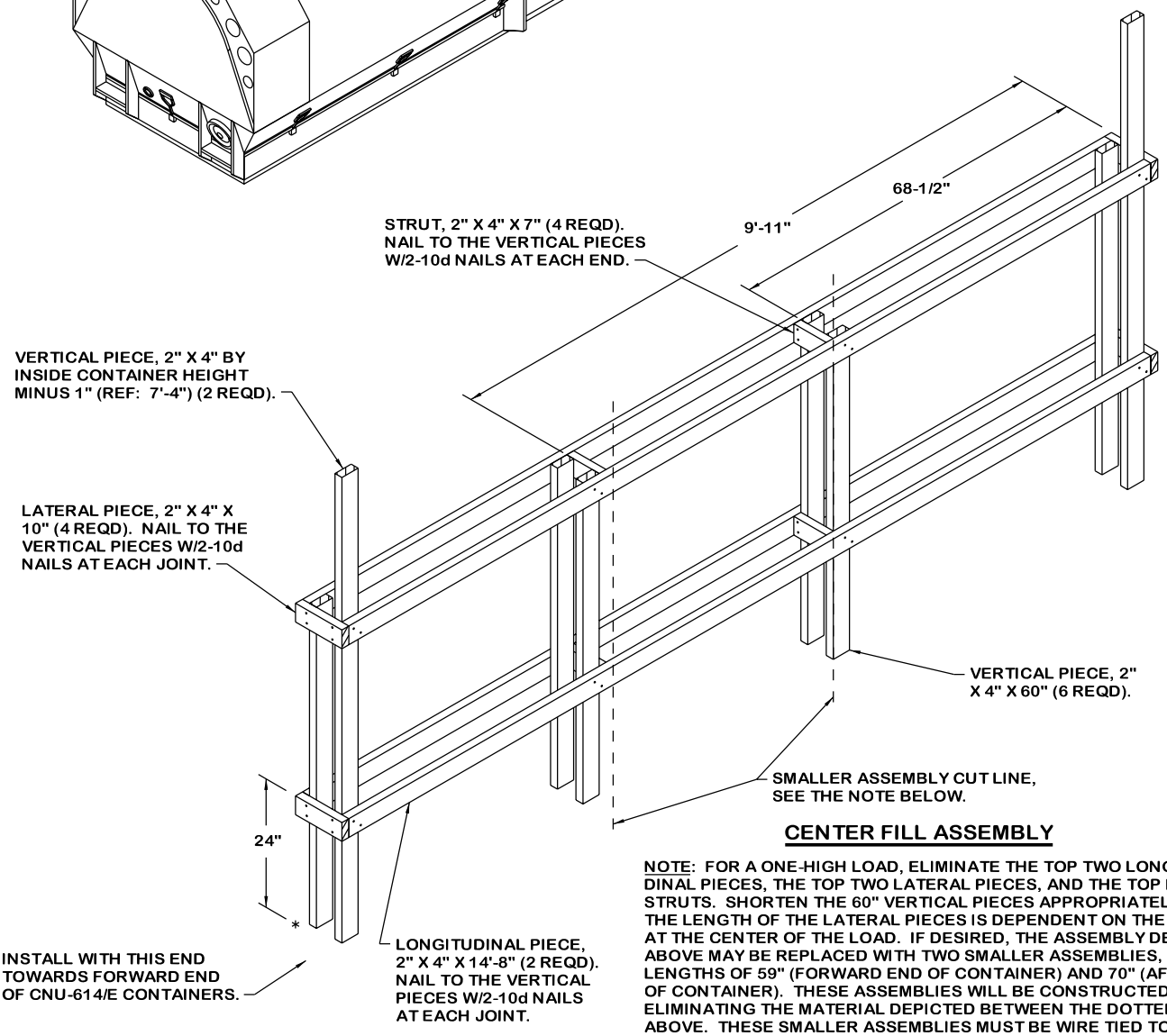
MATERIAL SPECIFICATIONS

LUMBER - - - - - - - -:	SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
NAILS - - - - - - - -:	ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMMS).
WIRE, CARBON STEEL -:	ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, 0.0800" DIA, GRADE 1006 OR BETTER.
ANTI-CHAFING MATERIAL - - - - - -:	MIL-PRF-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.

CNU-614/E CONTAINER

GROSS WEIGHT - - - - - - - - 3,370 LBS (APPROX)
CUBE - - - - - - - - - 150.3 CUBIC FEET (APPROX)





CENTER FILL ASSEMBLY

NOTE: FOR A ONE-HIGH LOAD, ELIMINATE THE TOP TWO LONGITUDINAL PIECES, THE TOP TWO LATERAL PIECES, AND THE TOP FOUR STRUTS. SHORTEN THE 60" VERTICAL PIECES APPROPRIATELY. THE LENGTH OF THE LATERAL PIECES IS DEPENDENT ON THE VOID AT THE CENTER OF THE LOAD. IF DESIRED, THE ASSEMBLY DEPICTED ABOVE MAY BE REPLACED WITH TWO SMALLER ASSEMBLIES, WITH LENGTHS OF 59" (FORWARD END OF CONTAINER) AND 70" (AFT END OF CONTAINER). THESE ASSEMBLIES WILL BE CONSTRUCTED BY ELIMINATING THE MATERIAL DEPICTED BETWEEN THE DOTTED LINES ABOVE. THESE SMALLER ASSEMBLIES MUST BE WIRE TIED TO THE CNU-614/E CONTAINER AT TWO LOCATIONS EACH.

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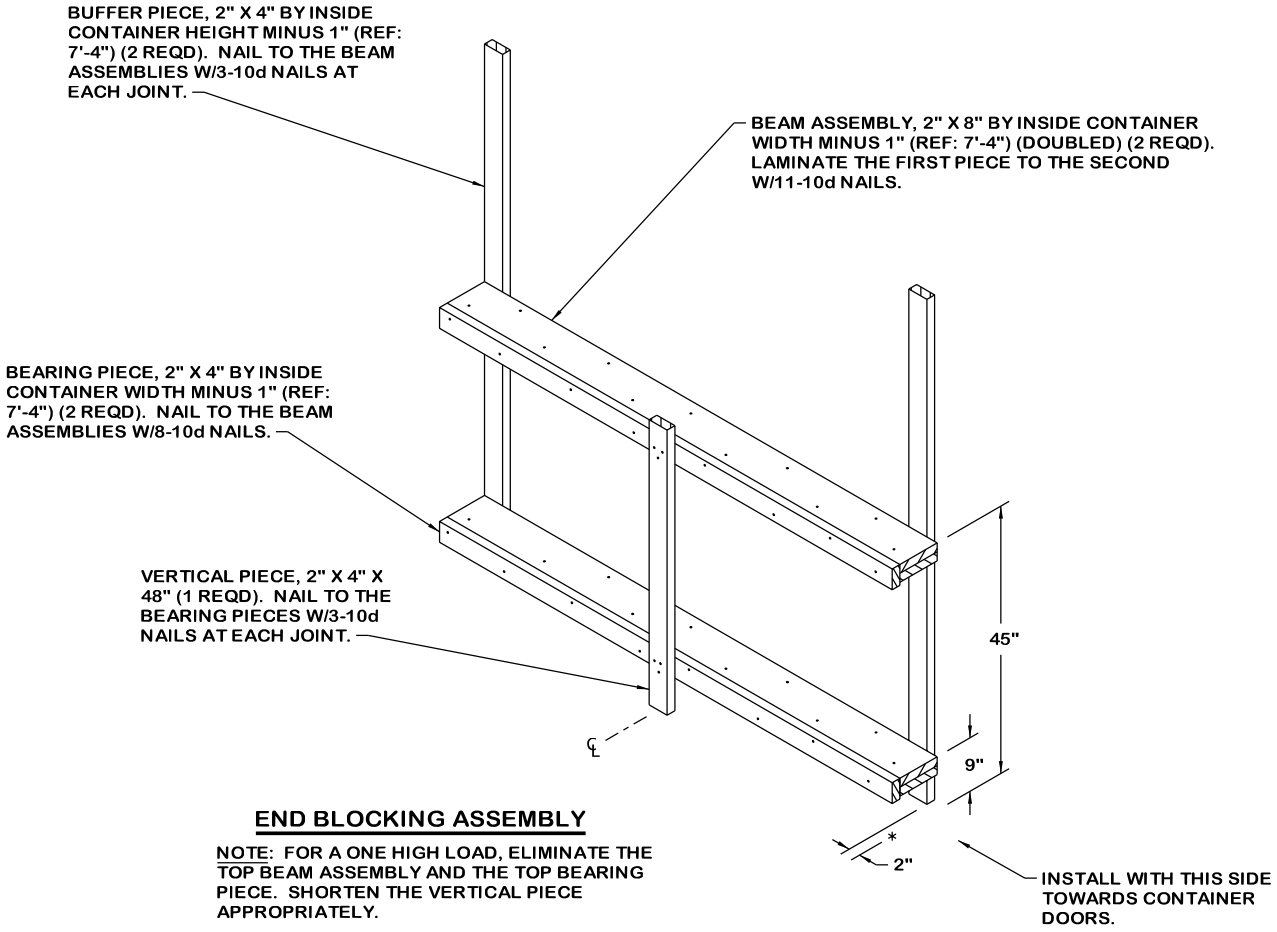
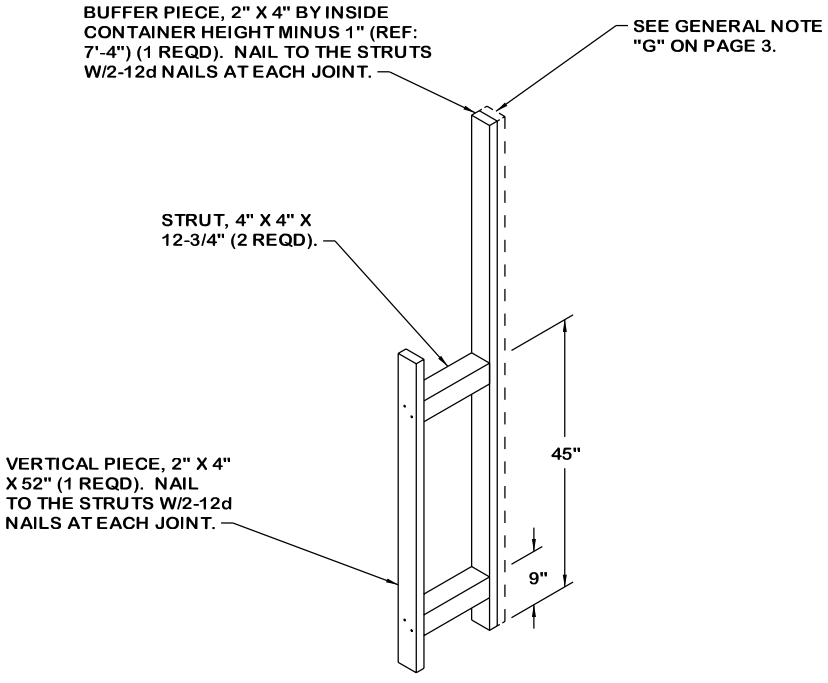


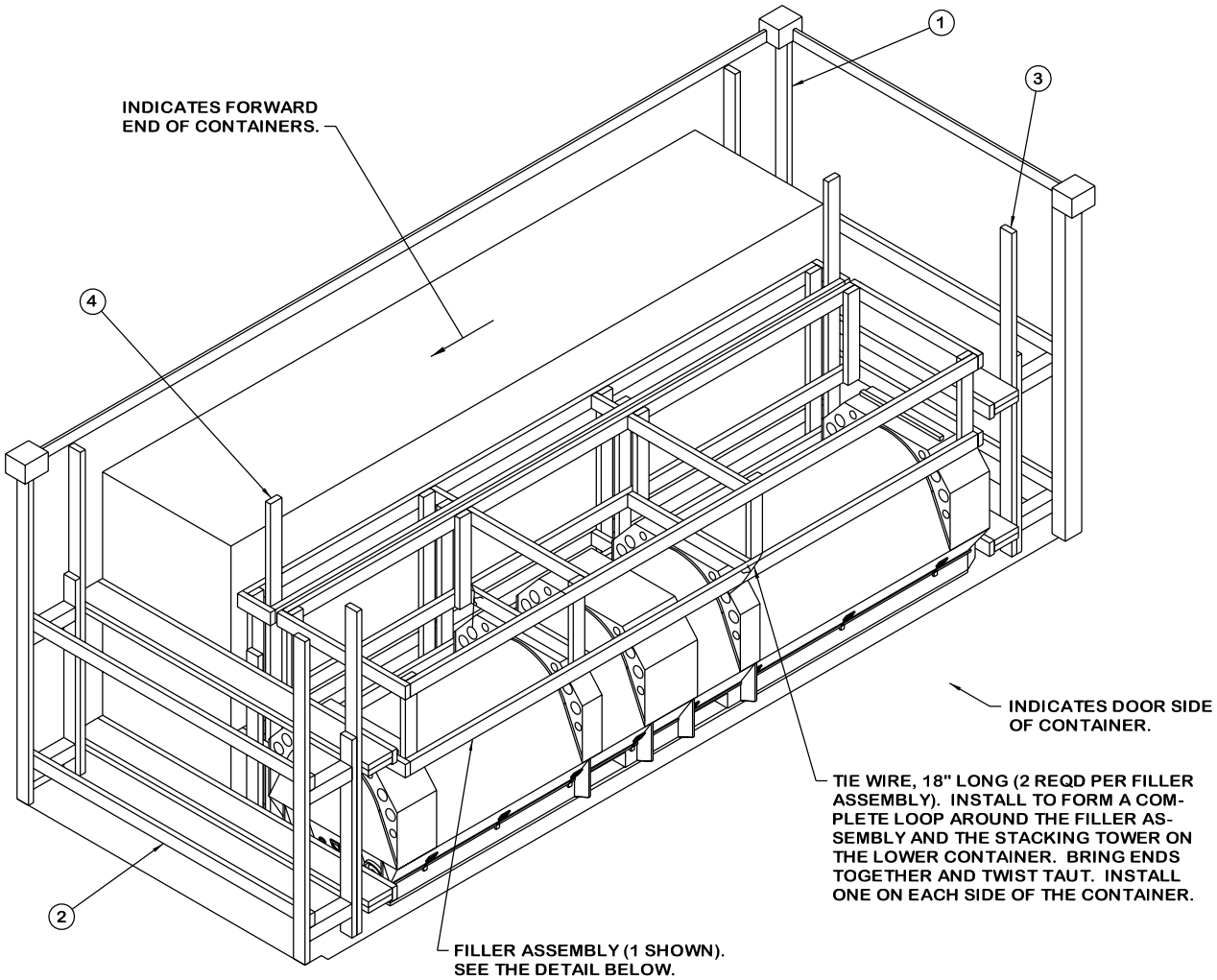
END BLOCKING ASSEMBLY

NOTE: FOR A ONE HIGH LOAD, ELIMINATE THE TOP BEAM ASSEMBLY AND THE TOP BEARING PIECE. SHORTEN THE VERTICAL PIECE APPROPRIATELY.



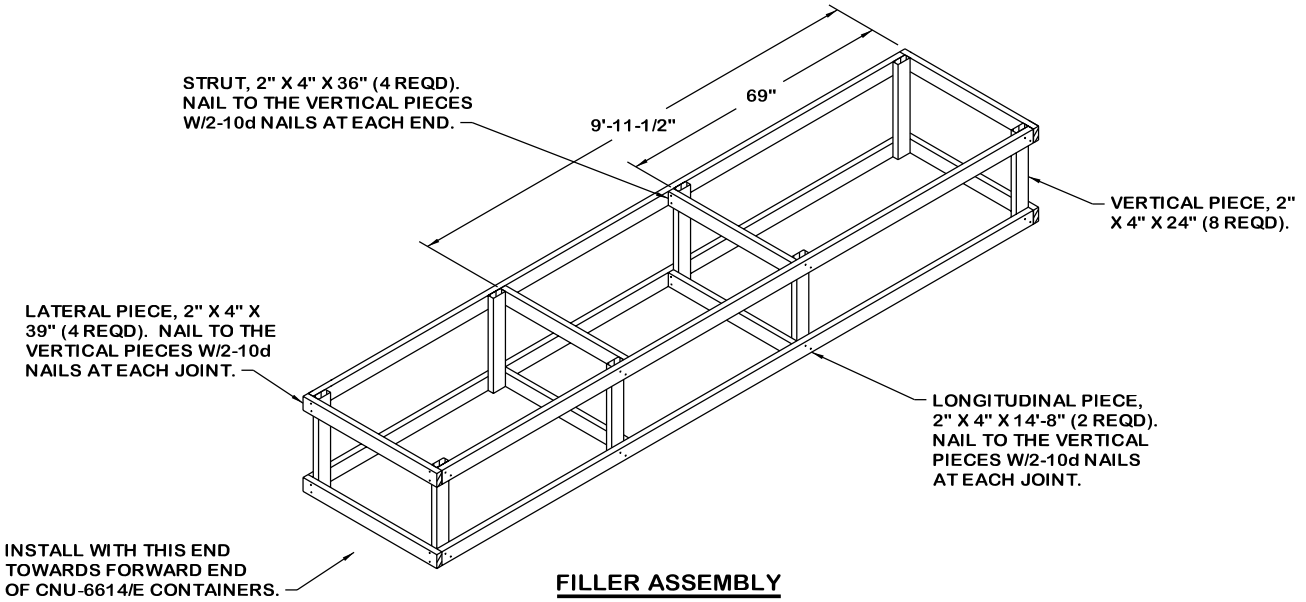
END STRUT ASSEMBLY

NOTE: FOR A ONE HIGH LOAD, ELIMINATE THE TOP STRUT AND SHORTEN THE VERTICAL PIECE APPROPRIATELY. THE LENGTH OF THE STRUTS IS DEPENDENT ON THE VOID AT THE END OF THE LOAD. LONGITUDINAL SLACK MUST BE KEPT TO A MINIMUM (LESS THAN 3/4").



LESS-THAN-FULL-LOAD PROCEDURE

KEY NUMBERS REFER TO KEY NUMBERS ON PAGE 2. SEE GENERAL NOTE "N" ON PAGE 3. INSTALL FILLER ASSEMBLY TO FIT WITHIN LOWER CONTAINER STACKING LUGS.



FILLER ASSEMBLY