

LOADING AND BRACING[⊕] IN SIDE OPENING ISO CONTAINERS OF MAU-91 FIN ASSEMBLIES FOR M117 750-POUND BOMBS PACKED IN WIREBOUND PALLET BOXES

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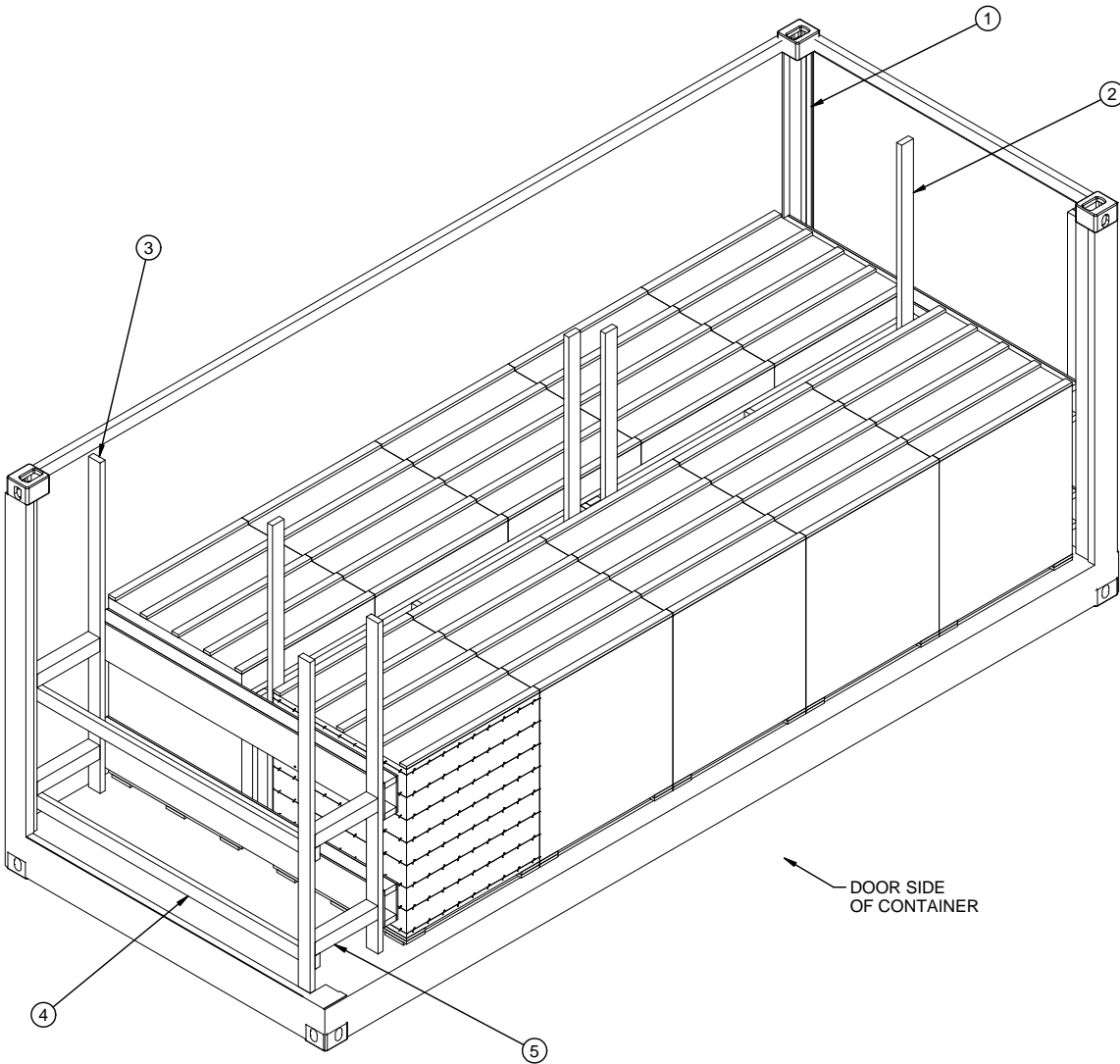
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® THE PROCEDURES SHOWN HEREIN ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL, MOTOR, OR WATER CARRIERS.

U.S. ARMY MATERIEL COMMAND DRAWING

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ISOMETRIC VIEW

KEY NUMBERS

- ① END BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 5.
- ② CENTER FILL ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6.
- ③ END BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 5.
- ④ END GATE ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 6.
- ⑤ STRUT, 4" X 4" BY CUT-TO-FIT (REF: 18-7/8") (4 REQD). TOENAIL TO THE BUFFER PIECES OF THE END BLOCKING ASSEMBLY "B" AND TO THE VERTICAL PIECE OF THE END GATE ASSEMBLY W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 4.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	247	165
4" X 4"	7	9
NAI LS	NO. REQD	POUNDS
6d (2")	176	1-1/4
10d (3")	140	2-1/4
12d (3-1/4")	16	1/2
PLYWOOD, 1/2" - - 45.39 SQ FT REQD - - 62.41 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	10 - - - - -	6,460 LBS
DUNNAGE - - - - -	- - - - -	415 LBS
CONTAINER - - - - -	- - - - -	6,500 LBS
TOTAL WEIGHT - - - - -		13,375 LBS (APPROX)

GENERAL NOTES

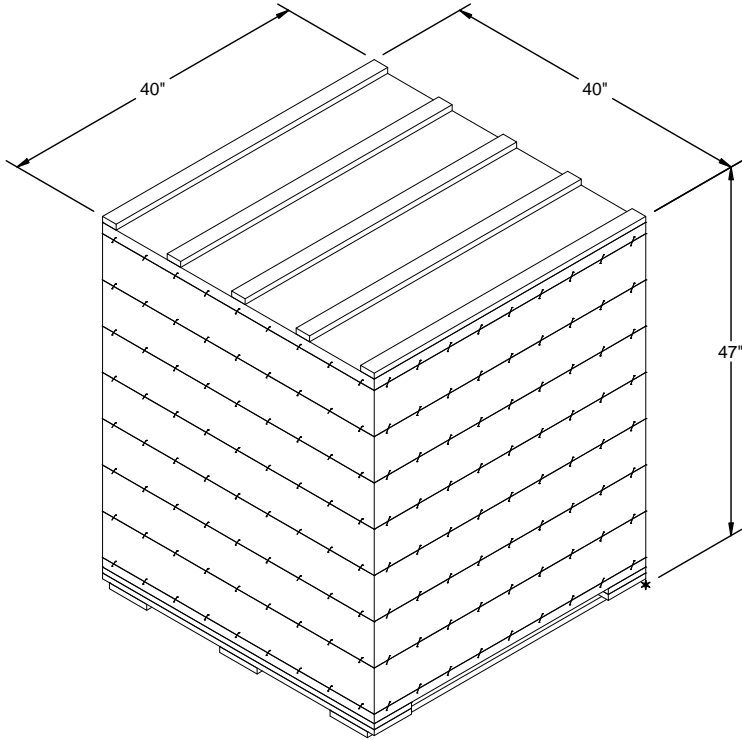
(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED UNLOADING PROCEDURES ARE APPLICABLE TO LOADS OF MAU-91 FIN ASSEMBLIES PACKED IN WIREBOUND PALLET BOXES. SUBSEQUENT REFERENCE TO PALLET UNIT HEREIN MEANS PALLET UNIT WITH FIN ASSEMBLIES. SEE AIR FORCE TPO 00-933-6451 AND PAGE 4 FOR DETAILS OF THE PALLET UNIT. **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 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 PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE DUNNAGE ASSEMBLIES). THE UNLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 1-1/2". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY ADJUSTING THE LENGTH OF THE LATERAL PIECES OF THE CENTER FILL ASSEMBLIES. THE LOAD MUST BE AS TIGHT AS POSSIBLE LONGITUDINALLY, BUT THE VOID MUST NOT EXCEED 3/4" OVERALL. EXCESSIVE SLACK CAN BE ELIMINATED BY INCREASING THE LENGTH OF THE STRUTS.
- 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" 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 THERE IS A SLOT AT THE CORNERS OF THE ENDWALL. 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 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 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.
- H. 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.
- J. **CAUTION:** DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- K. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDEWALL, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- L. **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.
- M. 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:
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.
- N. 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.
- O. 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.
- P. THE QUANTITY OF PALLET UNITS SHOWN IN THE LOAD ON PAGE 2 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE "LESS-THAN-FULL-LOAD PROCEDURES" ON PAGE 7.
- Q. RECOMMENDED SEQUENTIAL LOADING PROCEDURES:
1. PREFABRICATE ONE END BLOCKING ASSEMBLY "A", ONE END BLOCKING ASSEMBLY "B", TWO CENTER FILL ASSEMBLIES, AND ONE END GATE ASSEMBLY.
2. INSTALL END BLOCKING ASSEMBLY "A".
3. LOAD FIVE PALLET UNITS.
4. INSTALL TWO CENTER FILL ASSEMBLIES.
5. LOAD THE REMAINING FIVE PALLET UNITS.
6. INSTALL END BLOCKING ASSEMBLY "B".
7. INSTALL END GATE ASSEMBLY AND FOUR STRUTS.

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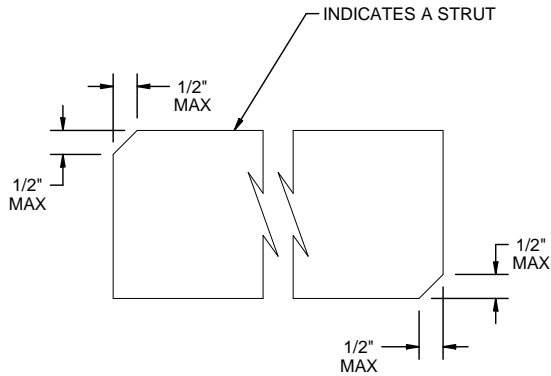
MATERIAL SPECIFICATIONS

<u>LUMBER</u> - - - - -	SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOL-UNTARY PRODUCT STANDARD PS 20.
<u>NAILS</u> - - - - -	ASTM F1667; COMMON STEEL NAIL NLCMS OR NLCMS).
<u>WIRE, CARBON STEEL:</u>	ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, 0.0800" DIA, GRADE 1006 OR BETTER.



PALLET UNIT

GROSS WEIGHT - - - - - 646 LBS (APPROX)
 CUBE - - - - - 43.5 CU FT (APPROX)



BEVEL CUT

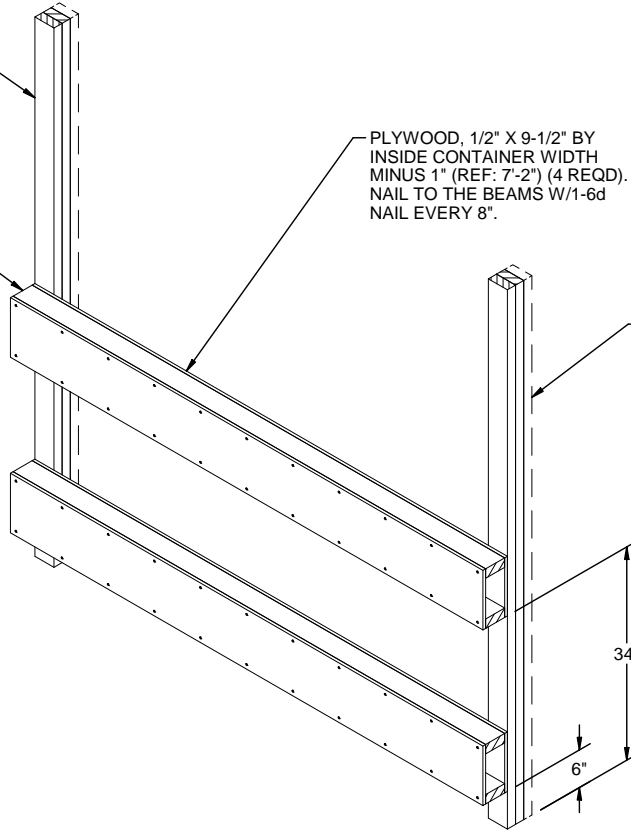
IF DESIRED, EACH END OF A STRUT MAY BE BEVEL-CUT AS SHOWN ABOVE TO FACILITATE INSTALLING THE STRUTS WITH A "DRIVE" FIT.

BUFFER PIECE, 2" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1" (REF: 7'-1") (DOUBLED) (2 REQD). NAIL THE FIRST PIECE THRU THE PLYWOOD INTO THE BEAMS W/2-10d NAILS AT EACH JOINT. LAMINATE THE SECOND PIECE TO THE FIRST W/6-10d NAILS.

BEAM, 2" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-2") (4 REQD).

PLYWOOD, 1/2" X 9-1/2" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-2") (4 REQD). NAIL TO THE BEAMS W/1-6d NAIL EVERY 8".

SEE GENERAL NOTE "G" ON PAGE 3.

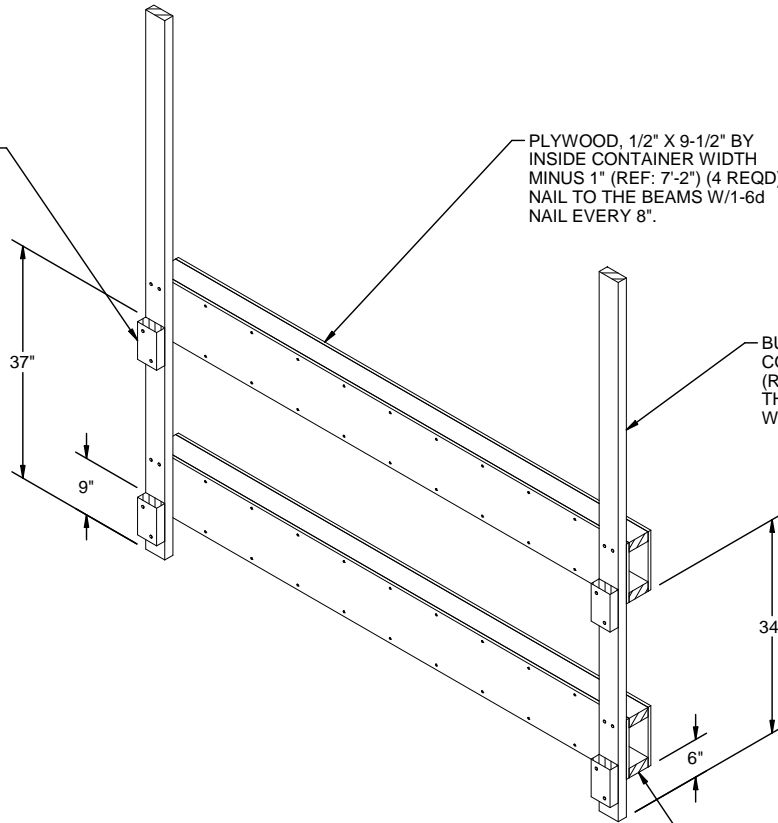


END BLOCKING ASSEMBLY A

STRUT LEDGER, 2" X 4" X 6" (4 REQD). NAIL TO THE BUFFER PIECES W/2-10d NAILS EACH.

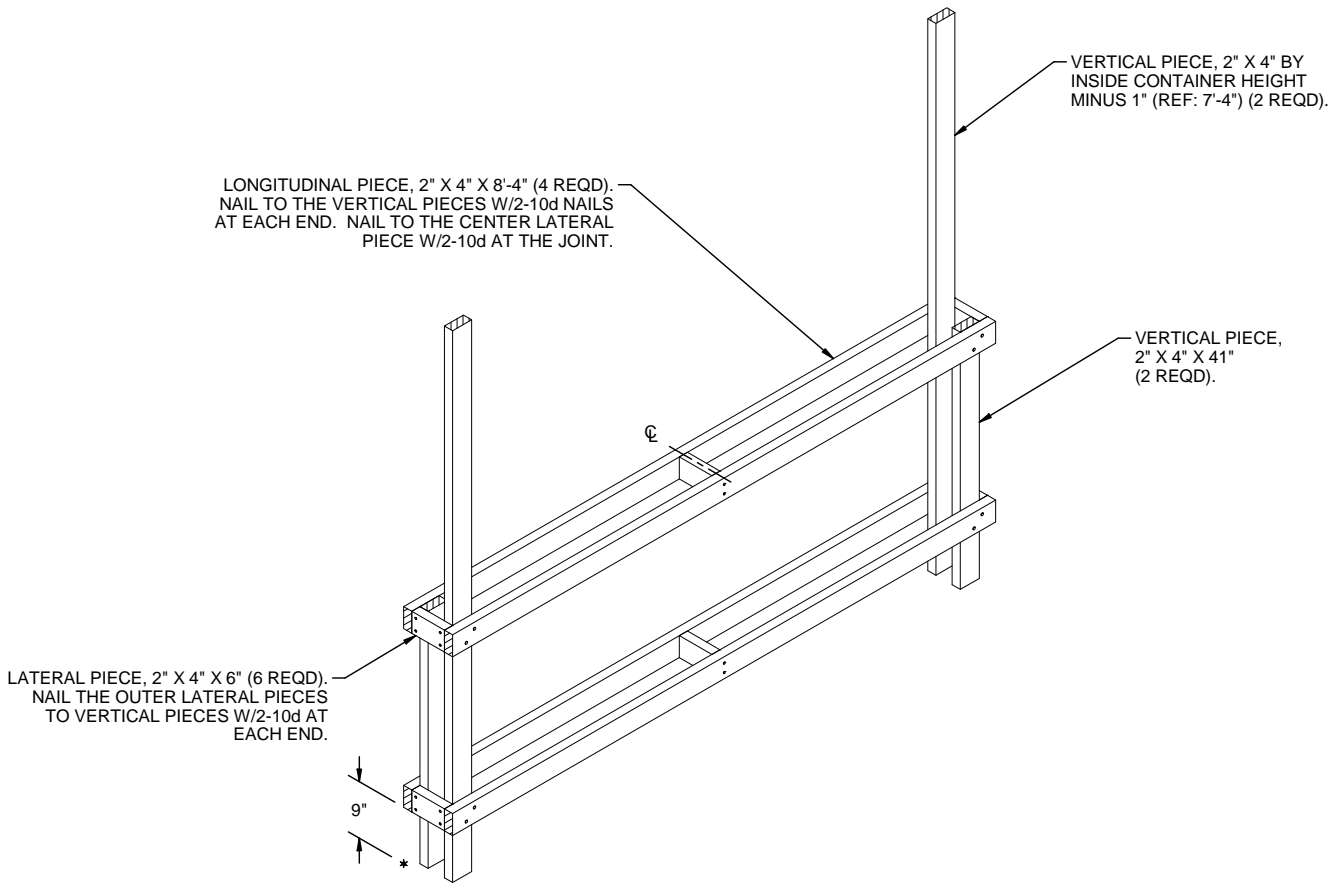
PLYWOOD, 1/2" X 9-1/2" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-2") (4 REQD). NAIL TO THE BEAMS W/1-6d NAIL EVERY 8".

BUFFER PIECE, 2" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1" (REF: 7'-4") (2 REQD). NAIL THRU THE PLYWOOD INTO THE BEAMS W/2-10d NAILS AT EACH JOINT.

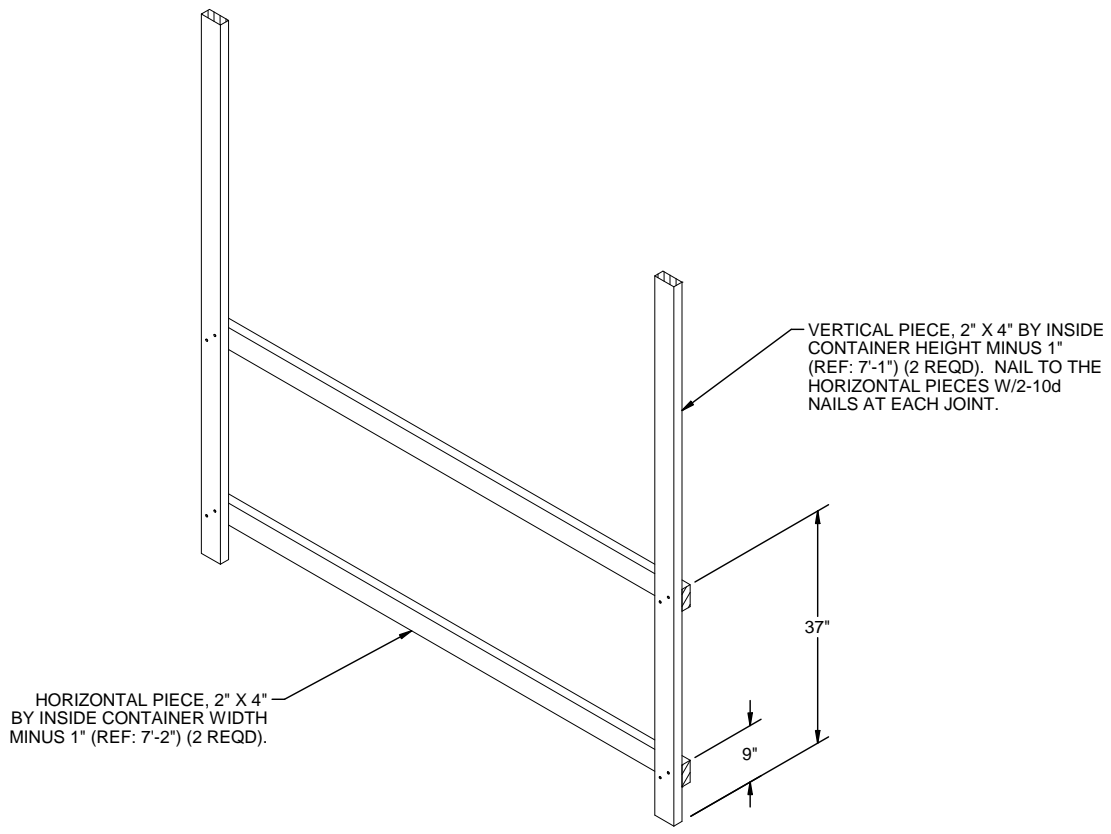


END BLOCKING ASSEMBLY B

BEAM, 2" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-2") (4 REQD).

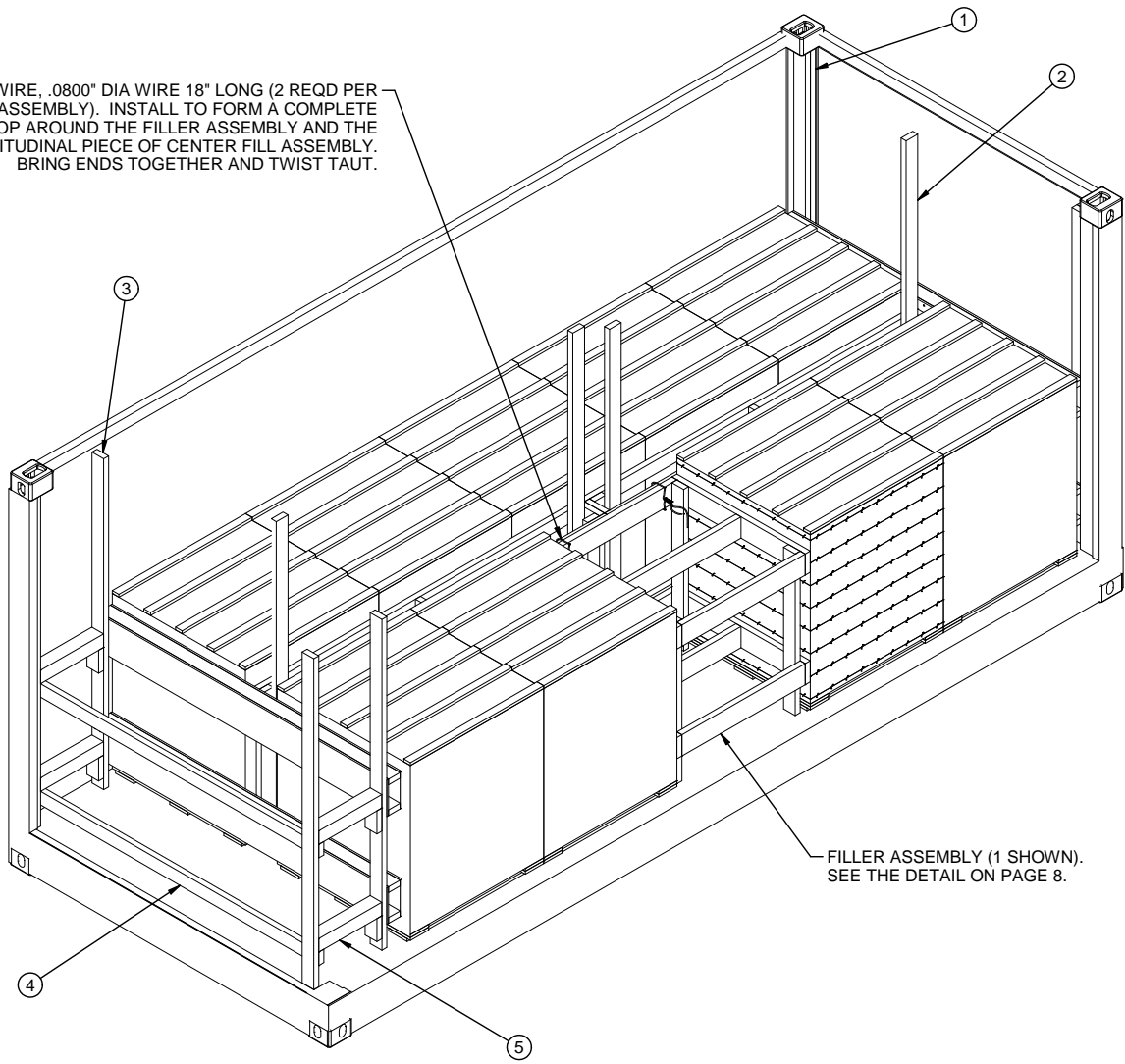


CENTER FILL ASSEMBLY



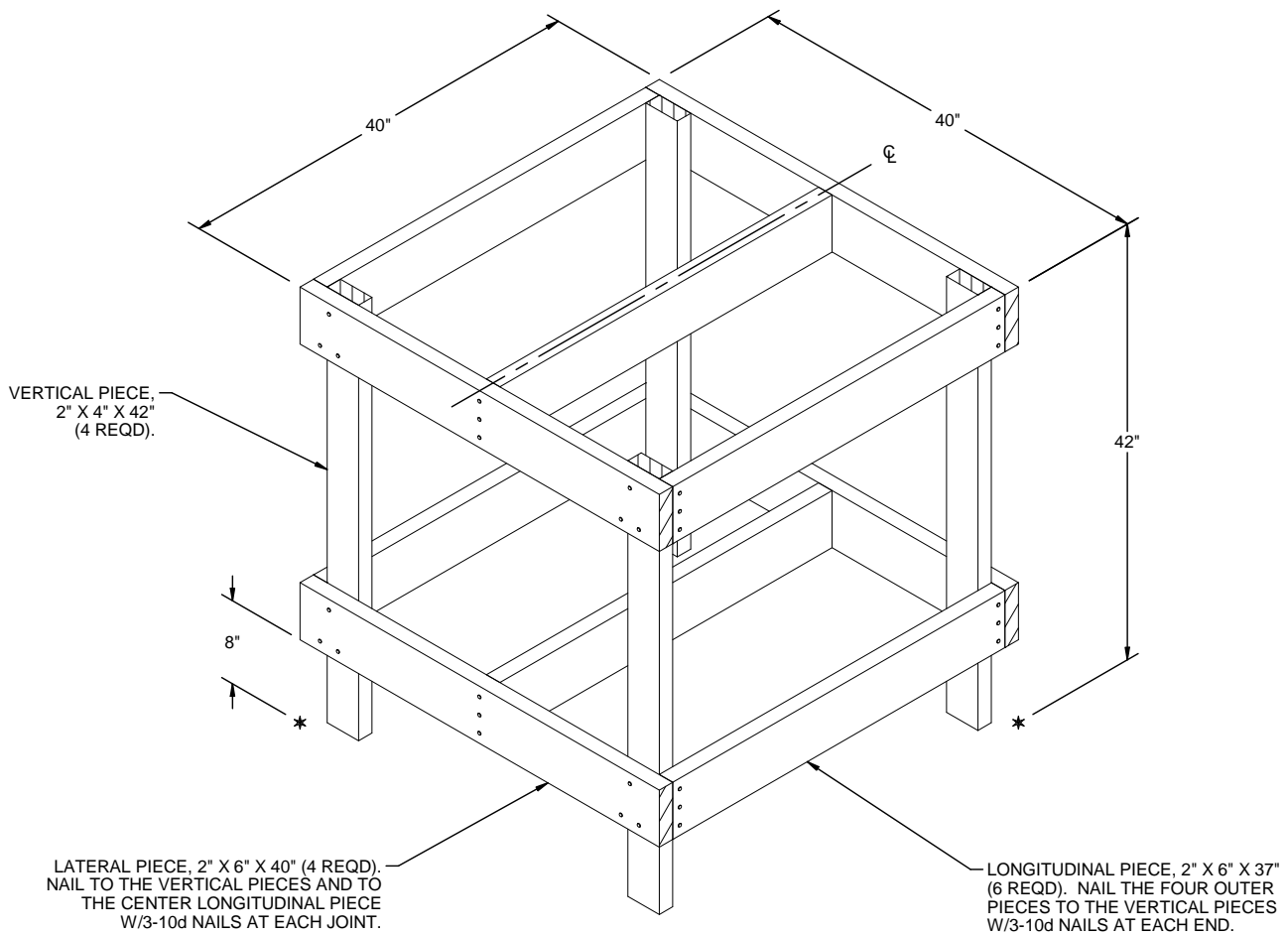
END GATE ASSEMBLY

TIE WIRE, .0800" DIA WIRE 18" LONG (2 REQD PER FILLER ASSEMBLY). INSTALL TO FORM A COMPLETE LOOP AROUND THE FILLER ASSEMBLY AND THE LONGITUDINAL PIECE OF CENTER FILL ASSEMBLY. BRING ENDS TOGETHER AND TWIST TAUT.



FILLER ASSEMBLY (1 SHOWN). SEE THE DETAIL ON PAGE 8.

LESS-THAN-FULL-LOAD PROCEDURES
KEY NUMBERS REFER TO KEY NUMBER ON PAGE 2.



FILLER ASSEMBLY

THIS ASSEMBLY IS FOR USE IN PLACE OF AN OMITTED PALLET UNIT. DO NOT INSTALL A FILLER ASSEMBLY IMMEDIATELY ADJACENT TO ANOTHER FILLER ASSEMBLY.