

UNITIZATION PROCEDURES FOR PALLET BOX PACKING OF 106MM CARTRIDGES IN M134 FIBER CON- TAINERS

WARNING:

THIS DRAWING IS ONLY AUTHORIZED FOR SHIPMENT OF 106MM CARTRIDGES FROM CONUS TO OCONUS DEMILITARIZATION FACILITY.

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U.S. ARMY MATERIEL COMMAND DRAWING

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GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5) AND CONFORMS TO MIL-STD-1660.
- B. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.
 - CARLOADING - - - - - 19-48-4115-5PA1002
 - END OPENING ISO CONTAINER - 19-48-4153-15PA1002
 - MILVAN - - - - - 19-48-4166-15PA1003
 - ON-DEPOT - - - - - 19-48-4306-5-1101000
 - TRUCKLOADING - - - - - 19-48-4117-11PA1003
 - SIDE OPENING ISO CONTAINER - 19-48-4267-15PA1009
 - STORAGE - - - - - 19-48-4118-1-2-3-4-14-22PA1002
 - TACTICAL VEHICLE - - - - - 19-48-4901/4-CA1702 OR 19-48-4901/5-CA1702
- C. UNLESS OTHERWISE SPECIFIED, A MANUFACTURING TOLERANCE OF PLUS-OR-MINUS 1/4" IS ALLOWED ON ALL DIMENSIONS. HOWEVER, SIMILAR PIECES IN AN ASSEMBLY MUST BE WITHIN 1/8" OF THE SAME DIMENSION.
- D. DIMENSIONAL LUMBER SPECIFIED THROUGHOUT THE DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE.
- E. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO 106MM CARTRIDGES, WHEN LOADED IN M134 FIBER CONTAINERS INTO THE PALLET BOX AND ARE INTENDED FOR SHIPMENT TO OCONUS DEMILITARIZATION FACILITY ONLY. SEE PAGE 3 FOR DETAILS OF THE PALLET BOX.
- F. INSTALL EACH HORIZONTAL, LOAD OR TIEDOWN STRAP TO BE LOCATED AS SHOWN. HORIZONTAL STRAPS MUST BE TENSIONED AND SEALED PRIOR TO THE APPLICATION OF TIEDOWN AND LOAD STRAPS. LOAD STRAPS MUST BE TENSIONED AND SEALED AFTER THE HORIZONTAL STRAPS AND PRIOR TO THE TIEDOWN STRAPS. THE LOAD STRAPS ON THE PALLET UNIT MUST BE THREADED THROUGH THE STRAP SLOTS OF THE PALLET.
- G. WHEN APPLYING ANY STRAP, CARE MUST BE EXERCISED TO ASSURE THAT THE END OF THE STRAP ON THE UNDERSIDE OF THE JOINT EXTENDS AT LEAST 6" BEYOND THE SEAL. THIS EXTRA MINIMUM LENGTH OF STRAP IS REQUIRED TO PERMIT SUBSEQUENT TIGHTENING OF LOOSENED STRAPPING. RETENSIONING CAN BE ACCOMPLISHED WITHOUT REPLACING STRAPPING OR SPLICING STRAPPING THROUGH THE USE OF A MANUAL OR PNEUMATIC FEEDWHEEL TYPE TENSIONING TOOL AND THE APPLICATION OF ONE ADDITIONAL SEAL.
- H. IN ORDER TO OBTAIN COMPACT AND SOUND UNITS, ALL STRAPS SHALL BE LOCATED IN PROPER ALIGNMENT AND TENSIONED UNTIL THEY CUT INTO THE EDGE OF THE PALLET BOX AND THE PALLET DECK. AFTER TENSIONING, ALL STRAPS WILL BE SECURED USING ONE SEAL AND TWO PAIR OF NOTCHES PER SEAL.
- J. COOLER NAILS MAY BE SUBSTITUTED FOR THE COMMON NAILS AS SPECIFIED BY APPLYING THE FOLLOWING GUIDANCE. THE NUMBER OF COOLER NAILS TO BE USED WILL BE THE NUMBER OF COMMON NAILS MULTIPLIED BY 1.2 AND ROUNDED UP TO THE NEXT WHOLE NUMBER. THE SIZE OF THE COOLER NAILS TO BE USED WILL BE THE SAME AS SPECIFIED FOR THE COMMON NAILS (4d, 6d, 10d, ETC.) BUT WILL CONFORM TO THE SIZE AND WEIGHT TOLERANCES SPECIFIED WITHIN ASTM F1667 FOR COOLER NAILS.
- K. ALL NON-MANUFACTURED WOOD USED IN THE UNIT LOAD WILL BE HEAT TREATED AND MARKED TO SHOW CONFORMANCE TO THE INTERNATIONAL PLANT PROTECTION CONVENTION STANDARD (IPPC), ISPM-15. SEE DAC DRAWING ACV00831 FOR ISPM-15 CERTIFICATION MARKING AND PLACEMENT DETAILS.
- L. THE STYLE 1 PALLET DELINEATED IN THE DETAIL ON PAGE 3 NEED NOT HAVE CHAMFERS OR STRAP SLOTS; AS SPECIFIED WITHIN MILITARY SPECIFICATION MIL-DTL-15011 WHEN USED FOR THE UNITIZATION OF ITEMS COVERED BY THIS DRAWING.
- M. THE PALLET BOX SHOULD BE FILLED WITH 106MM CARTRIDGES IN M134 FIBER CONTAINERS TO THE GREATEST EXTENT POSSIBLE. IF THE TOP OF THE M134 FIBER CONTAINERS DO NOT FILL THE PALLET BOX WITHIN 1/4" OF THE INSIDE HEIGHT, A VERTICAL FILLER MUST BE USED. LONGITUDINAL AND LATERAL VOIDS MUST NOT EXCEED 3/4". FILLERS SUCH AS PLYWOOD, FIBERBOARD, HONEYCOMB FILLER, FOAM CUSHIONING MATERIAL, HARDBOARD, OR WOODEN FILLER ASSEMBLIES SHALL BE ADDED AS REQUIRED TO OBTAIN A TIGHT PACK.

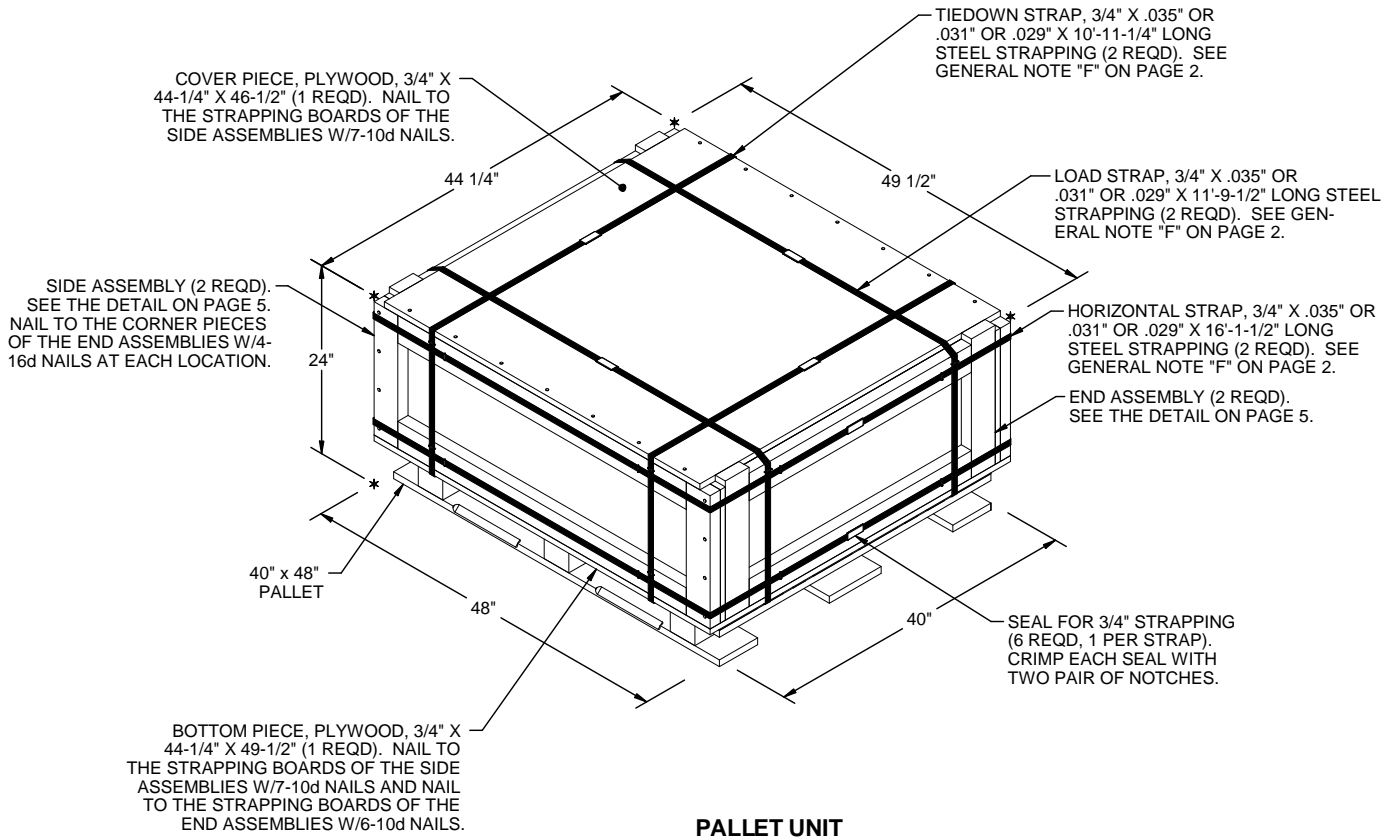
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(GENERAL NOTES CONTINUED)

- N. 106MM CARTRIDGES IN M134 FIBER CONTAINERS SHOULD BE LOADED 24 PER PALLET BOX IF AT ALL POSSIBLE. IF A LOAD CONSISTS OF LESS THAN 24 106MM CARTRIDGES, ADDITIONAL FILL MATERIAL OR ASSEMBLIES MUST BE INSTALLED TO FILL THE VOIDS. FILLERS SUCH AS PLYWOOD, FIBERBOARD, HONEYCOMB FILLER, FOAM CUSHIONING MATERIAL, HARDBOARD, OR WOODEN FILLER ASSEMBLIES SHALL BE ADDED AS REQUIRED TO OBTAIN A TIGHT PACK.
- O. M134 FIBER CONTAINERS SHALL LAY HORIZONTALLY STARTING ON THE FLOOR OF THE PALLET BOX WITH THE PROJECTILE END POINTING IN THE SAME DIRECTION. THE SECOND LAYER OF M134 FIBER CONTAINERS SHALL HAVE THE PROJECTILE END POINTED IN THE OPPOSITE DIRECTION. CONTINUE STACKING ADDITIONAL LAYERS OF FIBERS IN THE SAME MANNER UNTIL THE PALLET BOX IS FULL.
- P. UNIT LOAD MARKING MUST BE APPLIED IN ACCORDANCE WITH ARDEC-ROCK ISLAND LETTER OF INSTRUCTION-4/EIL-TP.
- Q. PALLET BOX ASSEMBLY INSTRUCTIONS (REFER ALSO TO PAGES 3 AND 4):
 1. BUILD SIDE ASSEMBLIES AND END ASSEMBLIES.
 2. NAIL SIDE ASSEMBLIES TO THE END ASSEMBLIES.
 3. NAIL THE BOTTOM PIECE TO THE SIDE/END ASSEMBLY.
 4. PLACE PALLET BOX ASSEMBLY ONTO PALLET.
 5. INSTALL TWO HORIZONTAL STRAPS.
 6. LOAD THE PALLET BOX WITH 106MM CARTRIDGES IN M134 FIBER CONTAINERS.
 7. INSTALL FILL MATERIAL OR FILLER ASSEMBLIES AS REQUIRED IAW GENERAL NOTES "M" AND "N" ABOVE.
 8. NAIL THE TOP PIECE TO THE PALLET BOX.
 9. THE LOAD STRAPS MUST BE THREADED THRU THE STRAP SLOTS OF THE PALLET. TENSION AND SEAL THE HORIZONTAL STRAPS, THEN THE LOAD STRAPS, AND FINALLY THE TIEDOWN STRAPS, INSTALLING EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET AND OVER THE COVER ASSEMBLY AS SHOWN.

MATERIAL SPECIFICATIONS

- PALLET - - - - - : MIL SPEC MIL-DTL-15011; 4-WAY ENTRY, STYLE 1, TYPE I, CLASS 1, PRESERVATIVE AND HEAT TREATED. SEE GENERAL NOTE "L".
- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20. HEAT TREATMENT REQUIRED. SEE GENERAL NOTE "K".
- NAILS - - - - - : ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMMS). ALT: UNDERLAYMENT NAIL (NLUL), PALLET NAIL (NLPL), OR COOLER NAIL (NLCL) OF THE SAME SIZE. SEE GENERAL NOTE "J".
- PLYWOOD - - - - - : COMMERCIAL ITEM DESCRIPTION A-A-55057, INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
- STRAPPING, STEEL - - - : ASTM D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH B (GRADE 2), SIZE 3/4" X .035" OR .031" OR .029", NOTE: BRITTE OR SLIT EDGES SHALL HAVE FINISH A OVERLAY.
- SEAL, STEEL - - - - - : ASTM D3953; CLASS H, FINISH B (GRADE 2), DOUBLE NOTCH TYPE, STYLE I, II, III, OR IV. ALTERNATIVE SEAL FINISH: SIGNODE OR DELTA PAINTED SEALS MAY BE USED AS AN ALTERNATIVE IF ALL SURFACES ARE PAINTED. GRITTED BACKING IS NOT PERMITTED.
- STAPLE - - - - - : ASTM F1667; STFCS-189, STFCS-198, STFCS-207, OR STFCS-216, 15/16" OR 1" CROWN WIDTH X 3/4" LEG LENGTH.
- HARDBOARD - - - - - : ANSI/AHA A135.4, CLASS 1.
- FIBERBOARD - - - - - : ASTM D4727.
- HONEYCOMB FILLER - - - : FIBERBOARD, FACING PAPER WEIGHT 69 POUNDS/1,000 SQUARE FEET, CORE PAPER WEIGHT 33 POUNDS/1,000 SQUARE FEET, 1/2" CORE CELL CENTERS, INTERNATIONAL HONEYCOMB CORP. (OR EQUAL).
- FOAM CUSHIONING MATERIAL - - - - - : COMMERCIAL ITEM DESCRIPTION A-A-59136, CLASS 1, TYPE III, GRADE A, OR COMMERCIAL EQUIVALENT.

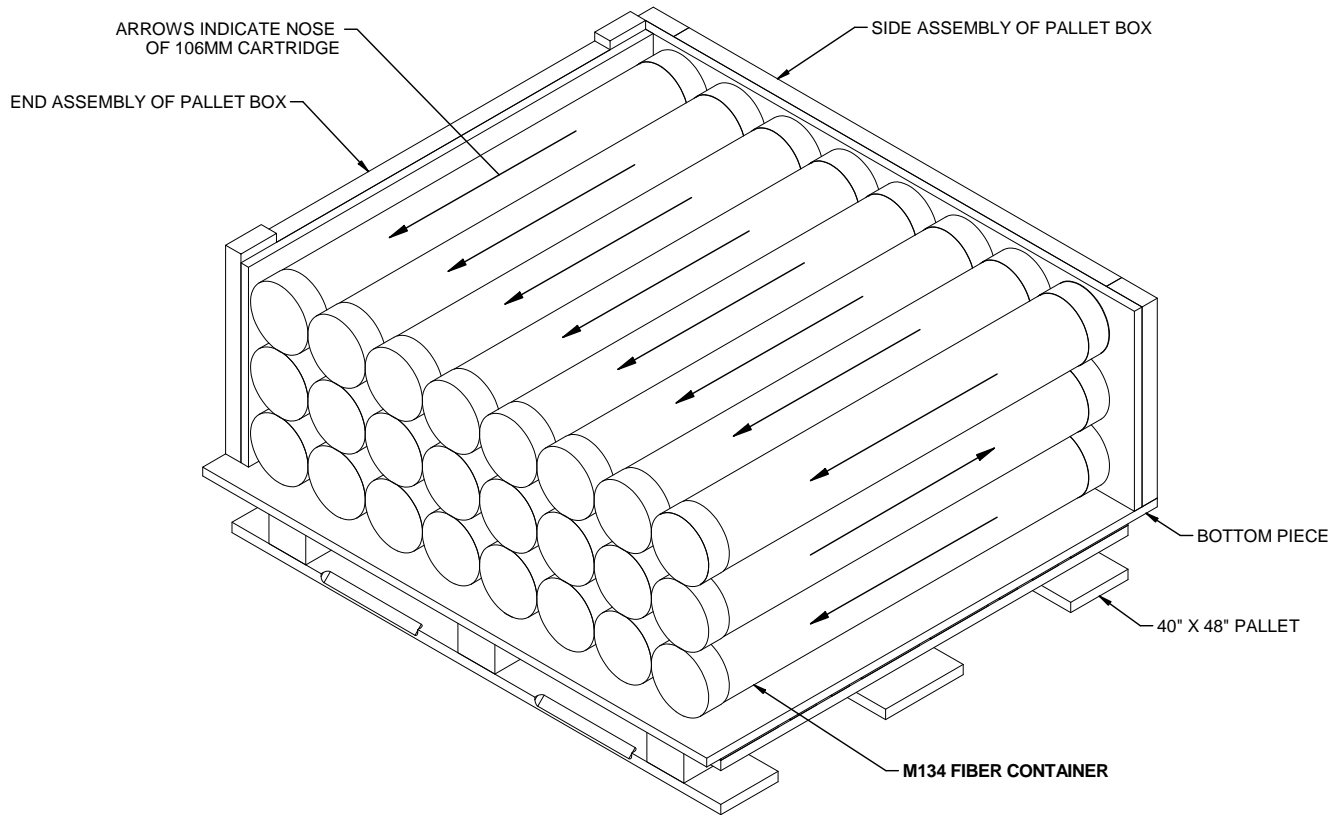


PALLET UNIT

SEE GENERAL NOTE "O" ON PAGE 2.

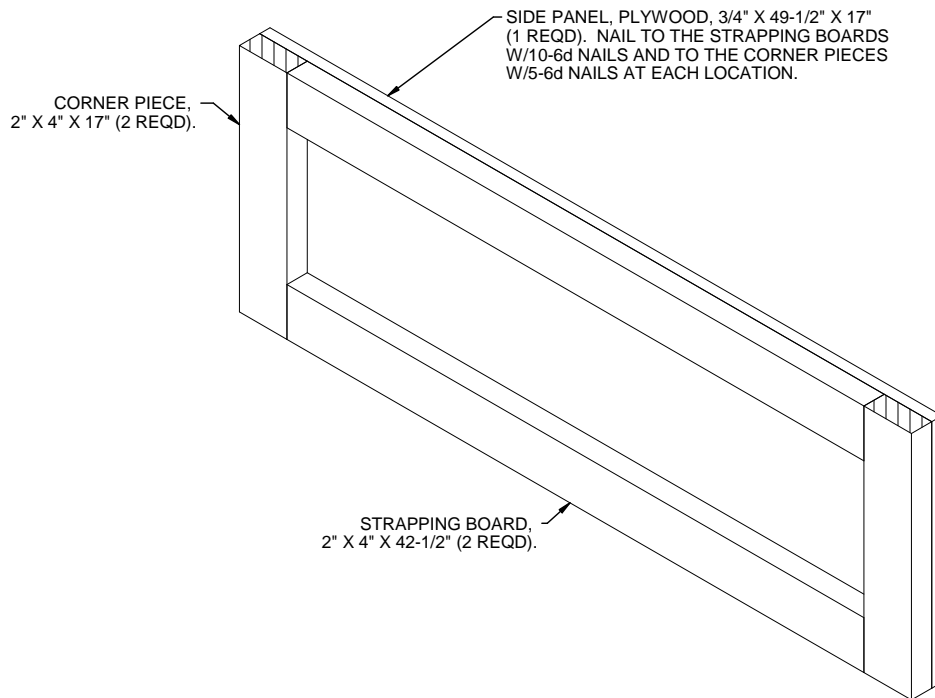
24 M134 FIBER CONTAINERS OF 106MM CTGS (1 PER TUBE) @ 45 LBS	1,080 LBS (APPROX)
DUNNAGE	162 LBS
PALLET	80 LBS
TOTAL WEIGHT	1,322 LBS (APPROX)
CUBE	30.4 CU FT (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	36.67	24.44
NAILS		
6d (2")	112	0.70
10d (3")	42	0.60
16d (3-1/2")	16	0.30
PALLET, 40" X 48" - - - - - 1 REQD - - - - - 80 LBS		
STEEL STRAPPING, 3/4" - - 77.71' REQD - - - - - 6.90 LBS		
SEAL FOR 3/4" STRAPPING - - - 6 REQD - - - - - 0.07 LB		
PLYWOOD, 3/4" - - - 50.57 SQ FT REQD - - - - - 104.31 LBS		
STAPLE, 15/16" X 3/4" - - - - 28 REQD - - - - - NIL		



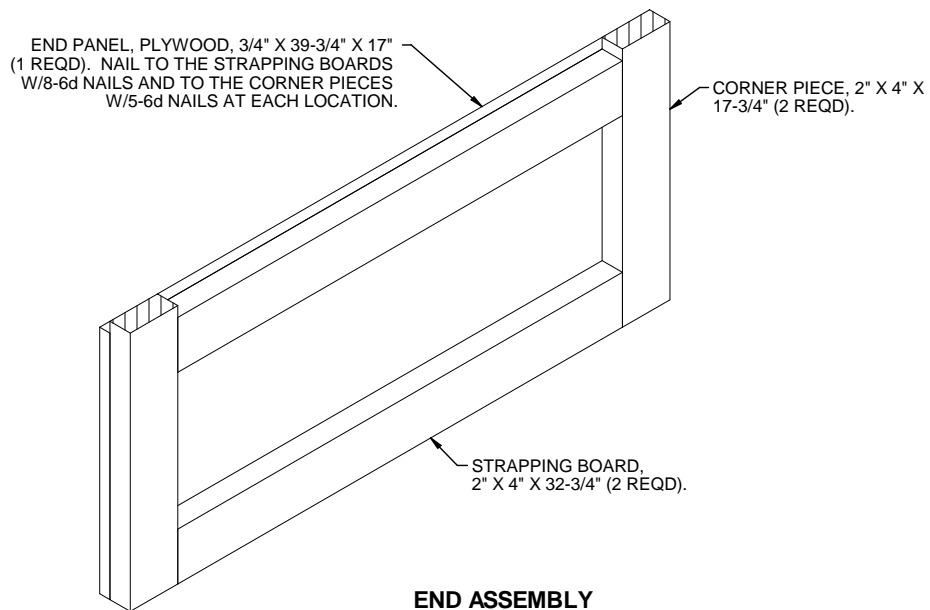
INTERNAL LOAD OF PALLET BOX

SEE GENERAL NOTE "O" ON PAGE 2.



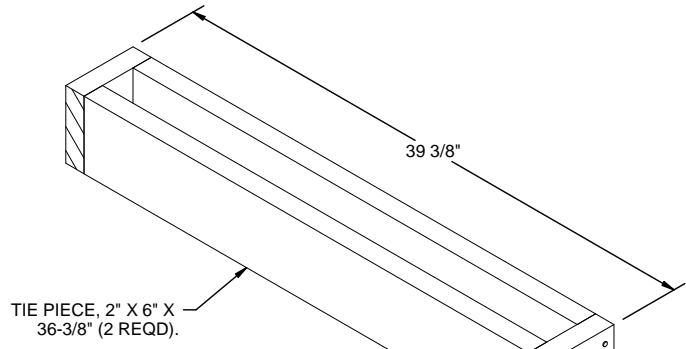
SIDE ASSEMBLY

(2 REQD)

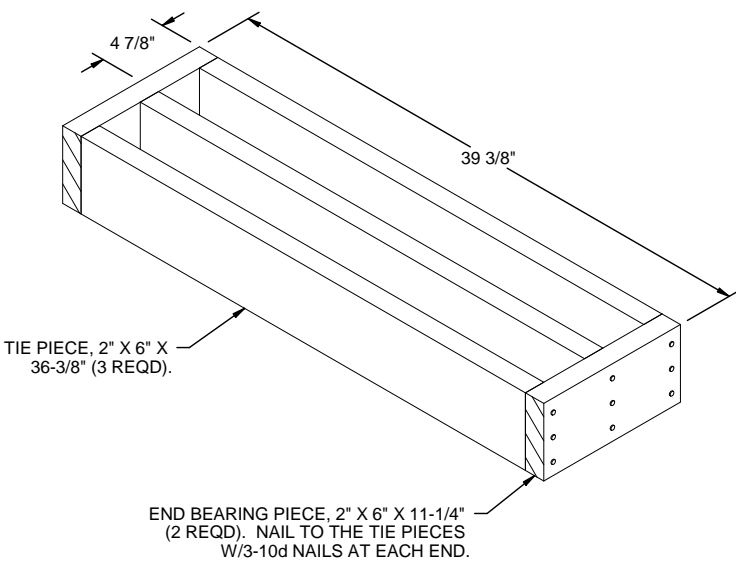


END ASSEMBLY

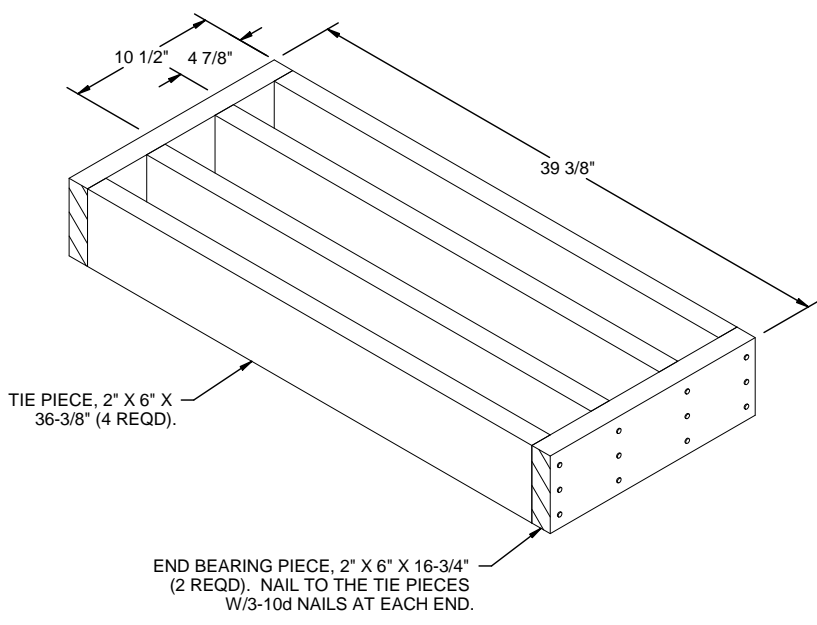
(2 REQD)



FILLER A
 THIS FILLER ASSEMBLY IS TO BE USED WHEN ONE M134 FIBER CONTAINER IS TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



FILLER B
 THIS FILLER ASSEMBLY IS TO BE USED WHEN TWO M134 FIBER CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



FILLER C
 THIS FILLER ASSEMBLY IS TO BE USED WHEN THREE M134 FIBER CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.