

APPENDIX 139C

UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPO- NENTS ON 4-WAY ENTRY PALLETS

**TNT, PACKED 25 POUNDS PER FIBERBOARD BOX,
UNITIZED 42 BOXES PER 40" X 48" PALLET; AP-
PROX BOX SIZE 18-1/8" L X 14-7/8" W X 5-1/2" H**

NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4116-20PA1002.

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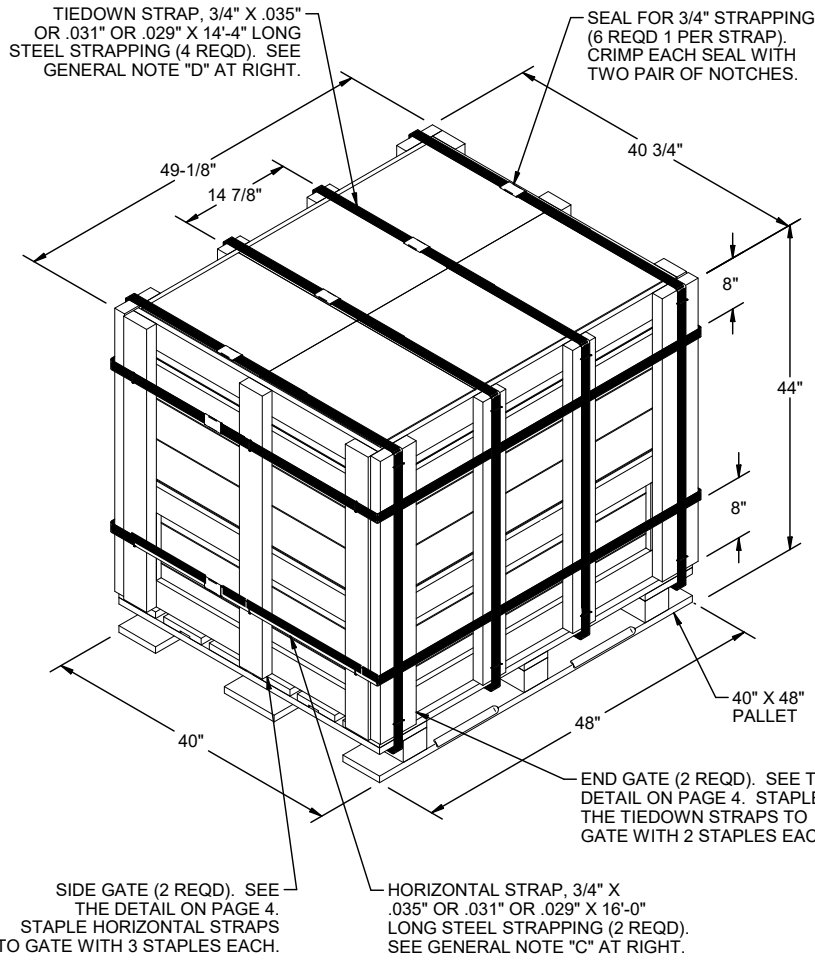
U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, COMBAT CAPABILITIES DEVELOPMENT COMMAND ARMAMENTS CENTER HANSENEN.JO Digitally signed by SEPH.W.1376 HANSENEN JOSEPH.W. 495538 1376495538 Date: 2021.05.06 10:35:16 -05'00' FCDD-ACE-LTP	CAUTION: VERIFY PRIOR TO USE AT https://www.dau.edu/cop/ammo/Pages/Default.aspx THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 6.										
APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND WARD.GINA. Digitally signed by M.1369379808 WARD.GINA.M.1369379808 Date: 2021.05.06 10:58:20 -05'00' AMSJM-MLT	DO NOT SCALE	<h2 style="margin: 0;">APRIL 2021</h2>									
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND BRAILSFORD.KEIT Digitally signed by H.ANTHONY.10286 BRAILSFORD.KEITH.ANTHONY. 55661 1028655661 Date: 2021.05.06 14:10:10 -05'00' U.S. ARMY DEFENSE AMMUNITION CENTER	ENGINEERING OR TECHNICIAN ENGINEERING DIVISON TEST ENGINEER TEST REPORT NA EXPLOSIVE SAFETY DIRECTORATE	BASIC REV. FIEFFER.LAUR A.A.1230375727 Digitally signed by FIEFFER.LAUR.A.1230375727 Date: 2021.04.14 08:49:55 -05'00' FELICIANO.AD IN.1259200373 Digitally signed by FELICIANO.ADIN.1259200373 Date: 2021.04.20 08:29:02 -05'00' FAIRHURST.ROBE RT.JOHN.10157668 80 Digitally signed by FAIRHURST.ROBERT.JOHN.101 5766880 Date: 2021.04.27 14:26:45 -05'00'	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">CLASS</th> <th style="width: 15%;">DIVISION</th> <th style="width: 15%;">DRAWING</th> <th style="width: 15%;">FILE</th> </tr> <tr> <td style="text-align: center;">19</td> <td style="text-align: center;">48</td> <td style="text-align: center;">4116/ 139C</td> <td style="text-align: center;">20PA1002</td> </tr> </table>	CLASS	DIVISION	DRAWING	FILE	19	48	4116/ 139C	20PA1002
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19	48	4116/ 139C	20PA1002								

PALLET UNIT DATA				
ITEMS INCLUDED		*HAZARD CLASS AND DIVISION	*COMPATIBILITY GROUP	APPROX WEIGHT (LBS)
NSN	DODIC			
1376-01-692-9758	ML51	1. 1	D	1, 403

*HAZARD CLASSIFICATION DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY. VERIFICATION OF THE SPECIFIED DATA SHOULD BE MADE BY CONSULTING THE MOST RECENT JOINT HAZARD CLASSIFICATION SYSTEM LISTING OR OTHER APPROVED LISTING(S).

GENERAL NOTES



- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4116-20PA1002. TO PRODUCE AN APPROVED UNIT LOAD, ALL PERTINENT PROCEDURES, SPECIFICATIONS AND CRITERIA SET FORTH WITHIN THE BASIC DRAWING WILL APPLY TO THE PROCEDURES DELINEATED IN THIS APPENDIX. ANY EXCEPTIONS TO THE BASIC PROCEDURES ARE SPECIFIED IN THIS APPENDIX.
- B. DIMENSIONS, CUBE AND WEIGHT OF A PALLET UNIT WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE BOXES AND THE WEIGHT OF THE SPECIFIC ITEM BEING UNITIZED.
- C. INSTALL EACH HORIZONTAL STRAP TO BE LOCATED AS SHOWN. HORIZONTAL STRAPS MUST BE TENSIONED AND SEALED BEFORE THE APPLICATION OF TIEDOWN STRAPS.
- D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE DECK/STRINGER BOARDS OF THE PALLET AND TO BE LOCATED AS SHOWN. TIEDOWN STRAPS WILL NOT BE APPLIED UNTIL THE HORIZONTAL STRAPS HAVE BEEN TENSIONED AND SEALED.
- E. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.
 - CARLOADING - - - - 19-48-4115-5PA1002
 - TRUCKLOADING - - - - 19-48-4117-11PA1003
 - STORAGE - - - - 19-48-4118-1-2-3-4-14-22PA1002
 - END OPENING ISO CONTAINER - - - - 19-48-4153-15PA1002
 - MILVAN - - - - 19-48-4166-15PA1003
 - SIDE OPENING ISO CONTAINER - - - - 19-48-4267-15PA1009

- F. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS APPENDIX, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS APPENDIX.
- G. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING TNT IN FIBERBOARD BOXES PROVIDED THE BOX PACK DOES NOT VARY FROM WHAT IS DELINEATED HEREIN. THE EXPLOSIVE CLASSIFICATION OF OTHER ITEMS MAY BE DIFFERENT THAN WHAT IS SHOWN.
- H. IF LESS THAN 42 BOXES ARE TO BE LOADED ON A PALLET, IT SHALL BE ACCOMPLISHED BY SUBSTITUTING FILLER ASSEMBLIES, AS DEPICTED ON PAGE 5 FOR OMITTED BOXES. IF MORE THAN SIX BOXES ARE TO BE OMITTED FROM THE PALLET UNIT, IT CAN BE ACCOMPLISHED BY USING A COMBINATION OF OMITTING A COMPLETE LAYER OF BOXES AND SUBSTITUTING FILLER ASSEMBLIES AS NECESSARY, TO SATISFY THE REDUCED QUANTITY OF BOXES TO BE UNITIZED.
- J. THE STYLE 1 PALLET DELINEATED IN THE DETAIL AT LEFT 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 APPENDIX.
- K. ALL WOODEN DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH GENERAL NOTE "AA" IN THE BASIC PROCEDURES, AND HEAT TREATED IN ACCORDANCE WITH GENERAL NOTE "JJ" IN THE BASIC PROCEDURES.

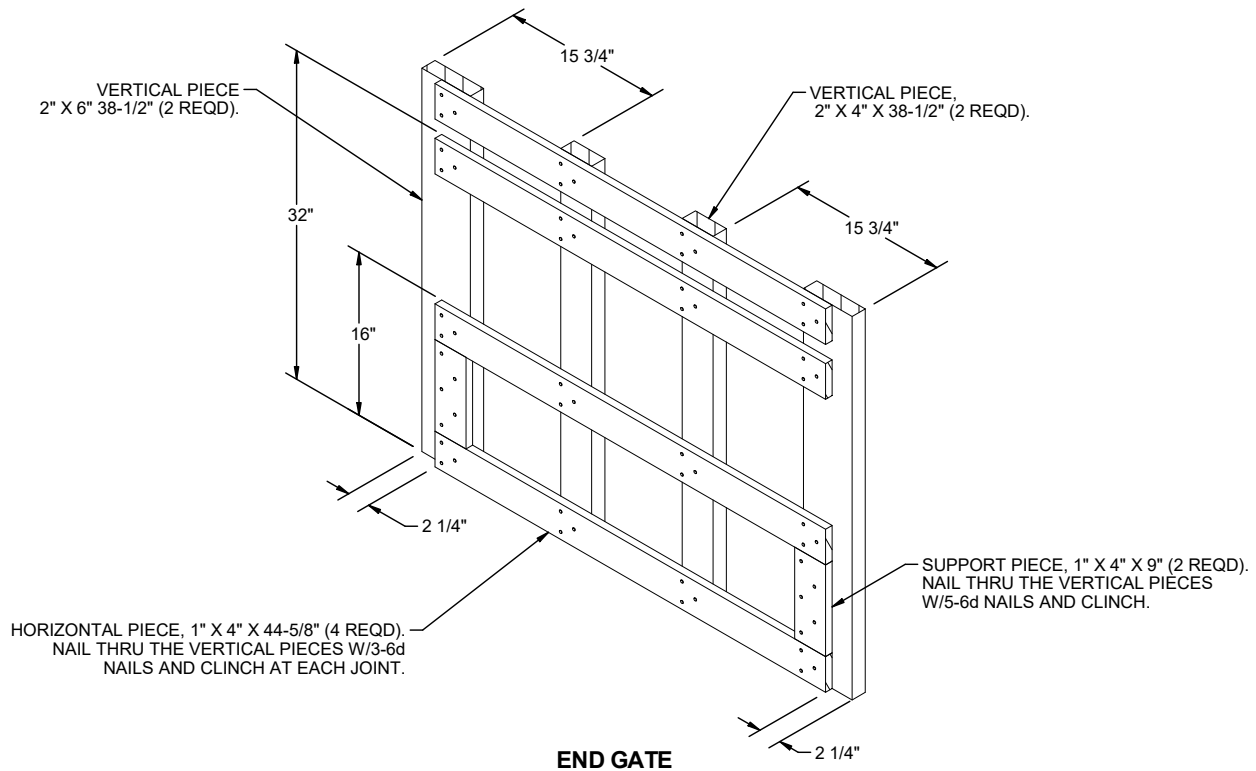
L. FOR DETAILS OF THE FIBERBOARD BOX SEE ARDEC DRAWING 13102414.

PALLET UNIT

42 BOXES OF TNT @ 30 LBS	-----	1,260 LBS
DUNNAGE	-----	63 LBS
PALLET	-----	80 LBS
TOTAL WEIGHT	-----	1,403 LBS (APPROX)
CUBE	-----	51.0 CU FT (APPROX)

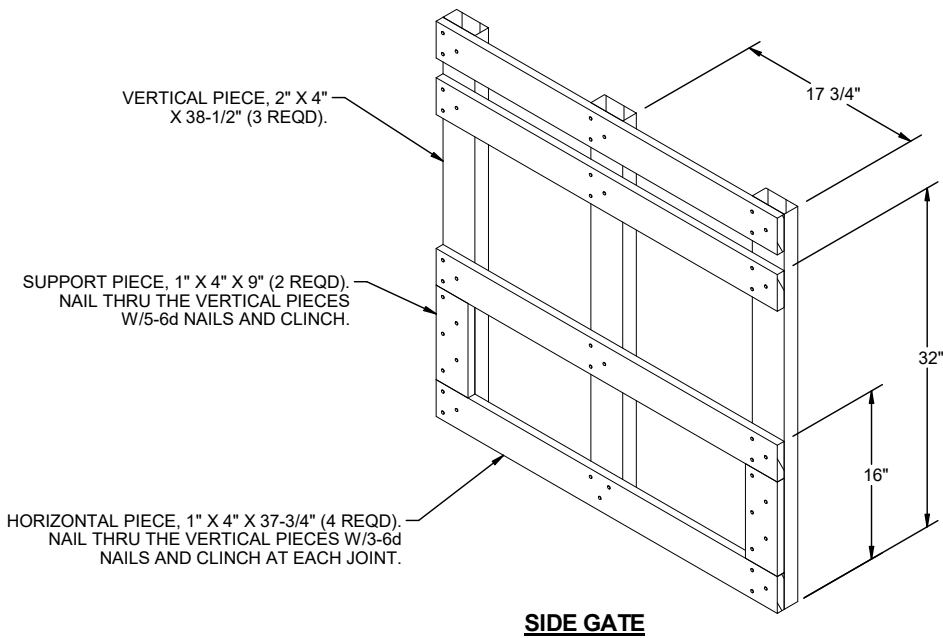
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	30.33	10.11
2" X 4"	15.68	10.45
2" X 6"	6.27	6.27
NAI LS	NO. REQD	POUNDS
6d (2")	104	3/4
STEEL STRAPPING, 3/4" - - 89.17' REQD - 7.96 LBS		
SEAL FOR 3/4" STRAPPING - - - 6 REQD - - - NIL		
STAPLE, 15/16" X 3/4" - - - 24 REQD - - - NIL		



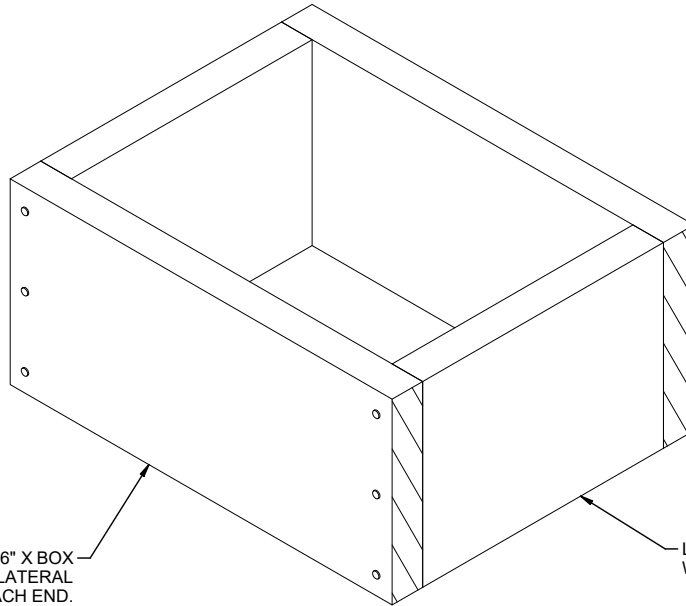
END GATE

THE DETAIL ABOVE DEPICTS THE TYPICAL END PANEL ASSEMBLY FOR A SEVEN HIGH PALLET UNIT. FOR A SIX HIGH PALLET, REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 33" AND THE HEIGHT OF THE SECOND UPPER MOST HORIZONTAL PIECE TO 28". FOR A FIVE HIGH PALLET, REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 27-1/2" AND THE HEIGHT OF THE SECOND UPPER MOST HORIZONTAL PIECE TO 22". FOR A FOUR HIGH PALLET, ELIMINATE THE SECOND UPPER MOST HORIZONTAL PIECE AND REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 22". FOR A THREE HIGH PALLET, ELIMINATE THE TWO CENTER HORIZONTAL PIECES AND REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 16-1/2". FOR A TWO HIGH PALLET, ELIMINATE THE TWO CENTER HORIZONTAL AND SUPPORT PIECES AND REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 11". FOR A ONE HIGH PALLET, ELIMINATE THE GATE AND UTILIZE A 1" X 6" BOARD LAMINATED TO 2" X 6" MATERIAL W/8-10d NAILS, CUT-TO-FIT (REF: 49-1/8").



SIDE GATE

THE DETAIL ABOVE DEPICTS THE TYPICAL SIDE PANEL ASSEMBLY FOR A SEVEN HIGH PALLET UNIT. FOR A SIX HIGH PALLET, REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 33" AND THE HEIGHT OF THE SECOND UPPER MOST HORIZONTAL PIECE TO 28". FOR A FIVE HIGH PALLET, REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 27-1/2" AND THE HEIGHT OF THE SECOND UPPER MOST HORIZONTAL PIECE TO 22". FOR A FOUR HIGH PALLET, ELIMINATE THE SECOND UPPER MOST HORIZONTAL PIECE AND REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 22". FOR A THREE HIGH PALLET, ELIMINATE THE TWO CENTER HORIZONTAL PIECES AND REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 16-1/2". FOR A TWO HIGH PALLET, ELIMINATE THE TWO CENTER HORIZONTAL AND SUPPORT PIECES AND REDUCE THE HEIGHT OF THE VERTICAL PIECES TO 11". FOR A ONE HIGH PALLET, ELIMINATE THE GATE AND UTILIZE A 1" X 6" BOARD LAMINATED TO 2" X 6" MATERIAL W/8-10d NAILS, CUT-TO-FIT (REF: 37-3/4").



LONGITUDINAL PIECE, 2" X 6" X BOX LENGTH (2 REQD). NAIL TO LATERAL PIECES W/3-10d NAILS AT EACH END.

LATERAL PIECE, 2" X 6" X BOX WIDTH MINUS 3" (2 REQD).

FILLER ASSEMBLY
(FOR MINUS ONE BOX)

NOTE: VERIFY PRIOR TO CONSTRUCTION THAT THE VOID DUE TO AN OMITTED BOX IS 5-1/2" HIGH. THE FILLER ASSEMBLY MUST NOT EXTEND BEYOND THE TOP OF THE ADJACENT BOXES. IF THE VOID IS LESS THAN 5-1/2", THE LUMBER USED IN THE FILLER ASSEMBLY ABOVE MUST BE RIPPED TO FIT THE HEIGHT OF THE VOID.

