

APPENDIX 157E

UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLET

**FUZE, MULTI-OPTION OR POINT DETONATING,
PACKED 72 PER M548 METAL BOX, UNITIZED
36 BOXES PER 40" X 48" PALLET; APPROX BOX
SIZE 18-19/32" L X 8-19/64" W X 14-19/32" H**

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

DISTRIBUTION STATEMENT A:

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DISTRIBUTION IS UNLIMITED.**

U.S. ARMY MATERIEL COMMAND DRAWING

<p style="font-size: small;">APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND</p> <p style="font-size: x-small;">AMSTA/ARWEP-RP</p> <p style="font-size: x-small;">AMSJM-TT</p> <p style="font-size: x-small;">APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND</p> <p style="font-size: x-small;">U.S. ARMY DEFENSE AMMUNITION CENTER</p>	<p>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 4.</p> <p style="text-align: center;">DO NOT SCALE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; font-size: x-small;">ENGINEER OR TECHNICIAN</td> <td style="width: 15%; font-size: x-small;">BASIC REV.</td> <td style="width: 70%;">LAURA A. FIEFFER</td> </tr> <tr> <td></td> <td></td> <td>LAURA A. FIEFFER</td> </tr> </table> <p style="text-align: center;">FEBRUARY 1987</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; font-size: x-small;">REVISION NO. 4</td> <td style="width: 30%; font-size: x-small;">JUNE 2003</td> </tr> </table> <p style="text-align: center; font-size: x-small;">SEE THE REVISION LISTING ON PAGE 2</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; font-size: x-small;">CLASS</td> <td style="width: 15%; font-size: x-small;">DIVISION</td> <td style="width: 30%; font-size: x-small;">DRAWING</td> <td style="width: 30%; font-size: x-small;">FILE</td> </tr> <tr> <td style="text-align: center;">19</td> <td style="text-align: center;">48</td> <td style="text-align: center;">4116/ 157E</td> <td style="text-align: center;">20PA1002</td> </tr> </table>	ENGINEER OR TECHNICIAN	BASIC REV.	LAURA A. FIEFFER			LAURA A. FIEFFER	REVISION NO. 4	JUNE 2003	CLASS	DIVISION	DRAWING	FILE	19	48	4116/ 157E	20PA1002
ENGINEER OR TECHNICIAN	BASIC REV.	LAURA A. FIEFFER															
		LAURA A. FIEFFER															
REVISION NO. 4	JUNE 2003																
CLASS	DIVISION	DRAWING	FILE														
19	48	4116/ 157E	20PA1002														

PROJECT FSA 146/157E-75

PALLET UNIT DATA				
ITEMS INCLUDED		HAZARD CLASS AND DIVISION	COMPAT-IBILITY GROUP	APPROX WEIGHT LBS
NSN	DODIC			
1390-				
01-268-7283	N288	1. 2. 2	D	2, 540
01-268-9155	N342	1. 2. 2	D	2, 720
01-240-9257	N658	1. 2. 2	D	2, 720
01-259-0661	N660	1. 2. 2	D	2, 540
01-419-3289	NA06	1. 2. 2	D	2, 540
01-483-4698	NA19	1. 2. 2	D	2, 540
01-501-3343	NA23	1. 4	S	2, 540

- 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).

REVISIONS

REVISION NO. 1, DATED MARCH 1988, CONSISTS OF:

ADDING ITEM BY NATIONAL STOCK NUMBER TO "PALLET UNIT DATA" CHART.

REVISION NO. 2, DATED AUGUST 1994, CONSISTS OF:

1. ADDING ITEM BY NATIONAL STOCK NUMBER TO "PALLET UNIT DATA" CHART.
2. DELETING ITEMS BY NATIONAL STOCK NUMBER FROM "PALLET UNIT DATA" CHART.

REVISION NO. 3, DATED MARCH 2002, CONSISTS OF:

ADDING ITEMS BY NATIONAL STOCK NUMBER TO "PALLET UNIT DATA" CHART.

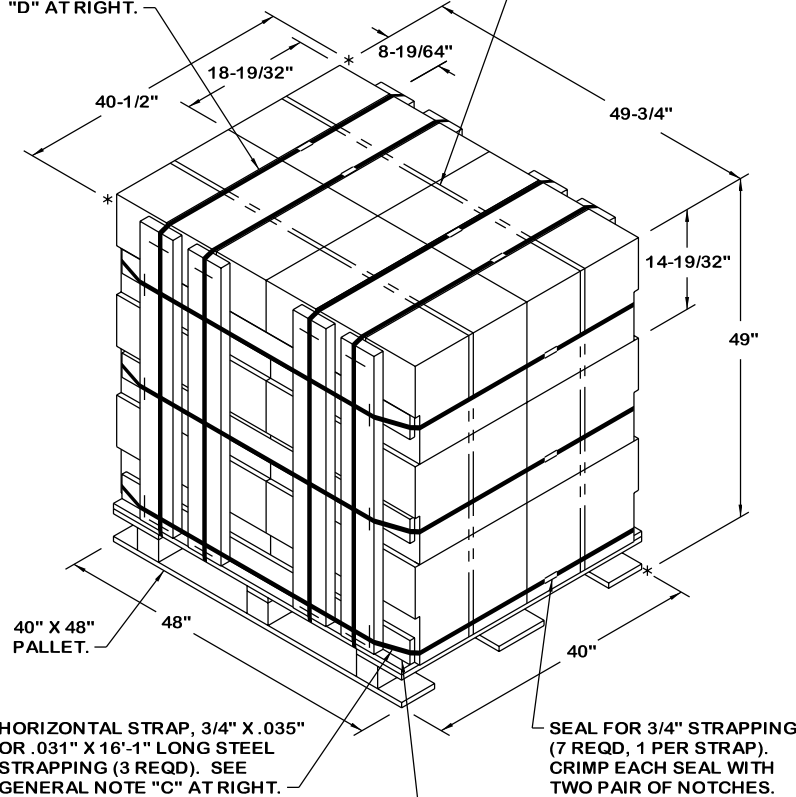
REVISION NO. 4, DATED JUNE 2003, CONSISTS OF:

1. ADDING ITEM BY NATIONAL STOCK NUMBER TO "PALLET UNIT DATA" CHART.
2. ADDING PAGES 3 AND 4.

GENERAL NOTES

TIEDOWN STRAP, 3/4" X .035" OR .031" X 15'-1" LONG STEEL STRAPPING (4 REQD). SEE GENERAL NOTE "D" AT RIGHT.

LOAD STRAP (ALTERNATIVE FOR HORIZONTAL STRAP), 3/4" X .035" OR .031" X 16'-8" LONG STEEL STRAPPING (2 REQD). SEE GENERAL NOTE "M" BELOW.



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 ENCIRCLE A LAYER OF BOXES ON THE PALLET AND TO BE ALIGNED WITH THE HORIZONTAL PIECE OF THE "SUPPORT GATES" AS SHOWN. HORIZONTAL STRAPS MUST BE TENSIONED AND SEALED PRIOR TO THE APPLICATION OF TIEDOWN STRAPS.

D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET AND TO BE ALIGNED WITH THE VERTICAL PIECES OF THE "SUPPORT GATES" 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 REVISION TO THIS APPENDIX, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS REVISION.

G. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING FUZES WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 2, 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. THE STYLE 1 PALLET DELINEATED IN THE DETAIL AT LEFT NEED NOT HAVE CHAMFERS OR STRAP SLOTS AS SPECIFIED WITHIN MILITARY SPECIFICATION MIL-P-15011 WHEN USED FOR THE UNITIZATION OF ITEMS COVERED BY THIS APPENDIX.

J. ALL DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH GENERAL NOTE "AA" IN THE BASIC PROCEDURES.

K. DIMENSIONS GIVEN FOR DUNNAGE PIECES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY TO THE PALLET UNIT. BOXES MUST FIT SNUGLY IN THE DUNNAGE ASSEMBLIES. ALSO, DUE TO THE VARIATION OF BOX DIMENSIONS, ADJUSTMENTS MAY BE REQUIRED AS TO THE LOCATION OF CERTAIN PIECES OF DUNNAGE IN A DUNNAGE ASSEMBLY.

L. WHEN THE UNIT LOAD DEPICTED AT LEFT IS TO BE USED FOR UNITIZING MARINE CORPS AMMUNITION, ONE LAYER OF BOXES MUST BE OMITTED, SUPPORT GATE HEIGHT MUST BE DECREASED TO 28-1/2" AND THE UPPERMOST HORIZONTAL PIECE MUST BE OMITTED, TIEDOWN STRAP LENGTHS MUST BE DECREASED TO 12'-8", AND THE UPPERMOST HORIZONTAL STRAP MUST BE OMITTED. THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 34-1/2", A GROSS UNIT WEIGHT OF 1,841 POUNDS, AND A UNIT CUBE OF 40.0 CUBIC FEET. ADDITIONALLY, THE UNIT MAY BE MODIFIED AS DESCRIBED WHEN BEING SHIPPED BY MILVAN OR ISO INTERMODAL FREIGHT CONTAINER, VAN TRAILER, OR BOXCAR. THE DETERMINATION TO REDUCE THE LOAD BY A LAYER FOR TRANSPORTATION WILL BE MADE BY THE RESPONSIBLE COMMAND AND WILL BE BASED UPON ECONOMICS OF TRANSPORTATION AND HANDLING.

PALLET UNIT

SEE GENERAL NOTE "B" AT RIGHT.

36 BOXES OF FUZES (72 PER BOX) @ 71 LBS - - - - 2,556 LBS (APPROX)
 DUNNAGE - - - - - 84 LBS
 PALLET - - - - - 80 LBS

TOTAL WEIGHT - - - - - 2,720 LBS (APPROX)
 CUBE - - - - - 57.1 CU FT (APPROX)

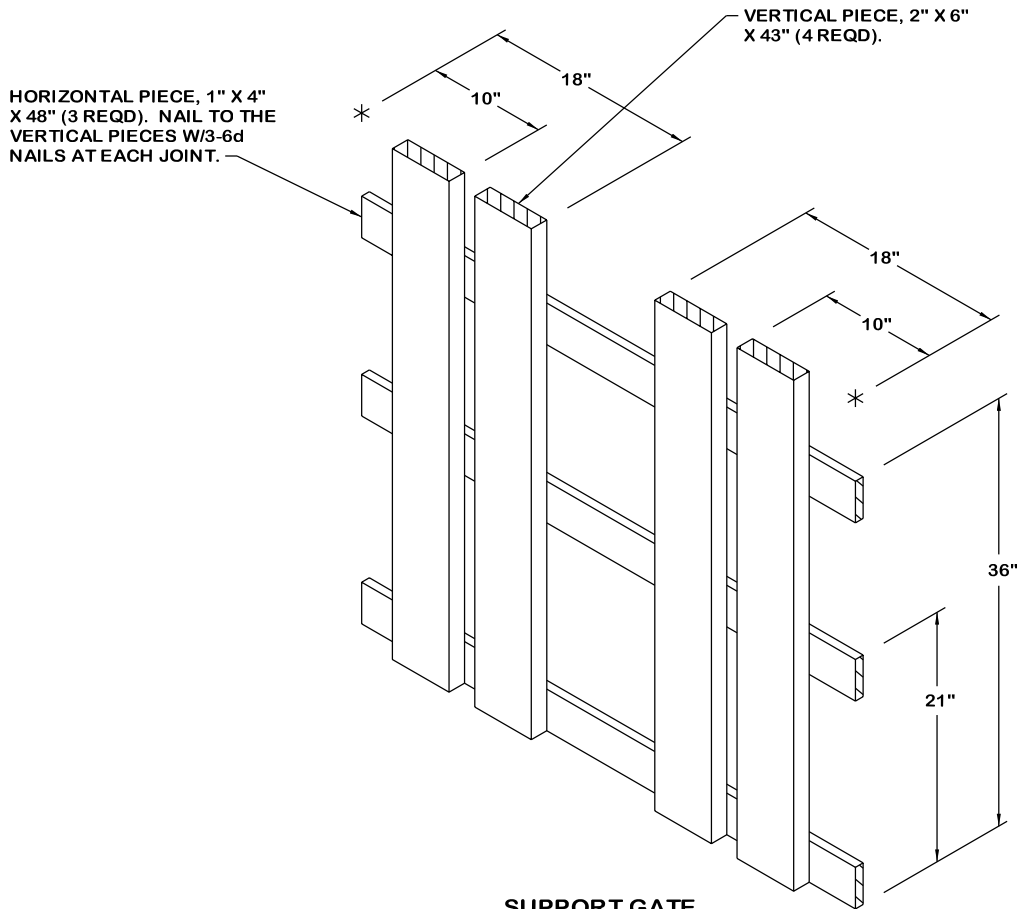
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	24.00	8.00
2" X 6"	28.67	28.67
NAILS	NO. REQD	POUNDS
6d (2")	72	0.42
PALLET, 40" X 48"	1 REQD	80 LBS
STEEL STRAPPING, 3/4"	108.58' REQD	9.69 LBS
SEAL FOR 3/4" STRAPPING	7 REQD	NIL
STAPLE, 15/16" X 3/4"	28 REQD	NIL

(GENERAL NOTES CONTINUED)

M. LOAD STRAPS MAY BE USED IN LIEU OF HORIZONTAL STRAPS. LOAD STRAPS WILL BE LOCATED AS SHOWN IN THE DETAIL ABOVE. LOAD STRAPS MAY BE PRE-POSITIONED ON THE PALLET DECK OR THREADED THROUGH THE STRAP SLOTS. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS.

N. FOR DETAILS OF THE M548 METAL BOX SEE DRAWING 7258943.

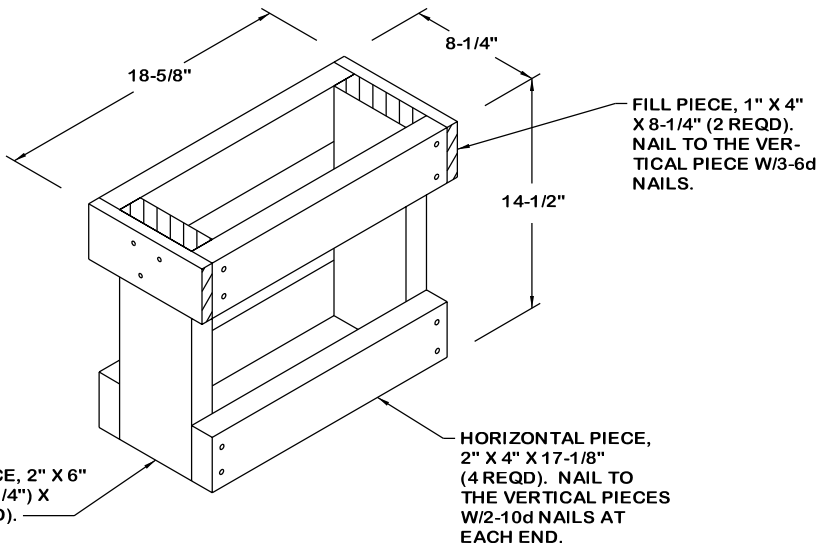
(CONTINUED AT LEFT)



HORIZONTAL PIECE, 1" X 4" X 48" (3 REQD). NAIL TO THE VERTICAL PIECES W/3-6d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 43" (4 REQD).

SUPPORT GATE
(2 REQD)



FILL PIECE, 1" X 4" X 8-1/4" (2 REQD). NAIL TO THE VERTICAL PIECE W/3-6d NAILS.

VERTICAL PIECE, 2" X 6" (RIPPED TO 5-1/4") X 14-1/2" (2 REQD).

HORIZONTAL PIECE, 2" X 4" X 17-1/8" (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.

FILLER ASSEMBLY
(FOR MINUS ONE BOX)