

# APPENDIX 120FF

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

**CHARGE, DEMOLITION, SHAPED, 40 LBS, M3A2,  
PACKED 1 PER WOODEN BOX, UNITIZED 24 BOX-  
ES PER 40" X 48" PALLET; APPROX BOX SIZE  
21-1/2" L X 12-5/8" W X 14-3/16" 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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**APPROVED FOR PUBLIC RELEASE  
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### U.S. ARMY MATERIEL COMMAND DRAWING

|  |   |                            |                        |                        |                                      |   |  |   |   |                                 |   |                |             |  |  |
|--|---|----------------------------|------------------------|------------------------|--------------------------------------|---|--|---|---|---------------------------------|---|----------------|-------------|--|--|
| <p><b>APPROVED, U.S. ARMY RESEARCH, DEVELOPMENT<br/>AND ENGINEERING COMMAND</b></p> <p><b>PENNOCK.AM</b><br/>AND A.C.13800<br/>42157</p> <p><small>Digitally signed by<br/>PENNOCK.AMANDA.C.1380042157<br/>DN: cn=US, o=U.S. Government, ou=DoD,<br/>ou=PRC, ou=USA,<br/>cn=PENNOCK.AMANDA.C.1380042157<br/>Date: 2017.10.26 07:01:24 -05'00'</small></p> <p style="text-align: right;"><b>RDAR-EIL-TP</b></p> | <p><b>CAUTION: VERIFY PRIOR TO USE AT <a href="https://MHP.REDSTONE.ARMY.MIL">HTTPS://MHP.REDSTONE.ARMY.MIL</a> THAT THIS IS<br/>THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 4.</b></p>  |                            |                        | <b>SEPTEMBER 2017</b>  |                                      |   |  |   |   |                                 |   |                |             |  |  |
| <p><b>APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND</b></p> <p><b>RUS.ALLEN.J</b><br/>.1230354282</p> <p><small>Digitally signed by<br/>RUS.ALLEN.J.1230354282<br/>Date: 2018.02.23 14:16:44<br/>-06'00'</small></p> <p style="text-align: right;"><b>AMSJM-MMT</b></p>  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>DESIGN<br/>ENGINEER</b></td> <td style="width: 10%;"><b>BASIC</b></td> <td style="width: 70%;"><b>QUYEN TRAN</b></td> </tr> <tr> <td></td> <td><b>REV.</b></td> <td></td> </tr> </table> | <b>DESIGN<br/>ENGINEER</b> | <b>BASIC</b>           | <b>QUYEN TRAN</b>      |                                      | <b>REV.</b>   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>ENGINEERING<br/>DIVISION</b></td> <td style="width: 50%;"><small>Digitally signed by<br/>FIEFFER.LAURA.A.1230375727<br/>DN: cn=US, o=U.S. Government, ou=DoD,<br/>ou=PRC, ou=USA,<br/>cn=FIEFFER.LAURA.A.1230375727<br/>Date: 2017.09.19 08:41:23 -05'00'</small><br/><b>FIEFFER.LAUR<br/>A.A.1230375727</b></td> </tr> </table> |   | <b>ENGINEERING<br/>DIVISION</b> | <small>Digitally signed by<br/>FIEFFER.LAURA.A.1230375727<br/>DN: cn=US, o=U.S. Government, ou=DoD,<br/>ou=PRC, ou=USA,<br/>cn=FIEFFER.LAURA.A.1230375727<br/>Date: 2017.09.19 08:41:23 -05'00'</small><br><b>FIEFFER.LAUR<br/>A.A.1230375727</b> |                |             |  |  |
| <b>DESIGN<br/>ENGINEER</b>   | <b>BASIC</b>  | <b>QUYEN TRAN</b>          |                        |                        |                                      |   |  |   |   |                                 |   |                |             |  |  |
|  | <b>REV.</b>   |                            |                        |                        |                                      |   |  |   |   |                                 |   |                |             |  |  |
| <b>ENGINEERING<br/>DIVISION</b>  | <small>Digitally signed by<br/>FIEFFER.LAURA.A.1230375727<br/>DN: cn=US, o=U.S. Government, ou=DoD,<br/>ou=PRC, ou=USA,<br/>cn=FIEFFER.LAURA.A.1230375727<br/>Date: 2017.09.19 08:41:23 -05'00'</small><br><b>FIEFFER.LAUR<br/>A.A.1230375727</b>   |                            |                        |                        |                                      |   |  |   |   |                                 |   |                |             |  |  |
| <p><b>APPROVED BY ORDER OF COMMANDING<br/>GENERAL, U.S. ARMY MATERIEL COMMAND</b></p> <p><b>SHIMP.UPTON</b><br/>.R.1231257183</p> <p><small>Digitally signed by<br/>SHIMP.UPTON.R.1231257183<br/>Date: 2018.03.12 10:38:58 -05'00'</small></p> <p style="text-align: center;"><b>U.S. ARMY DEFENSE AMMUNITION CENTER</b></p>   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>TEST ENGINEER</b></td> <td style="width: 80%;"><b>FELICIANO.AD</b></td> </tr> <tr> <td><b>TEST<br/>REPORT</b></td> <td><b>16-09</b><br/><b>IN.1259200373</b></td> </tr> </table>         | <b>TEST ENGINEER</b>       | <b>FELICIANO.AD</b>    | <b>TEST<br/>REPORT</b> | <b>16-09</b><br><b>IN.1259200373</b> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>EXPLOSIVE<br/>SAFETY<br/>DIRECTORATE</b></td> <td style="width: 50%;"><small>Digitally signed by<br/>THOMAS.CARL.ANTHONY.1104621372<br/>DN: cn=US, o=U.S. Government, ou=DoD,<br/>ou=PRC, ou=USA,<br/>cn=THOMAS.CARL.ANTHONY.1104621372<br/>Date: 2017.10.02 10:38:18 -05'00'</small><br/><b>THOMAS.CARL.AN<br/>THONY.1104621372</b></td> </tr> </table> |  | <b>EXPLOSIVE<br/>SAFETY<br/>DIRECTORATE</b>   | <small>Digitally signed by<br/>THOMAS.CARL.ANTHONY.1104621372<br/>DN: cn=US, o=U.S. Government, ou=DoD,<br/>ou=PRC, ou=USA,<br/>cn=THOMAS.CARL.ANTHONY.1104621372<br/>Date: 2017.10.02 10:38:18 -05'00'</small><br><b>THOMAS.CARL.AN<br/>THONY.1104621372</b> | <b>CLASS</b>                    | <b>DIVISION</b>   | <b>DRAWING</b> | <b>FILE</b> |  |  |
| <b>TEST ENGINEER</b>   | <b>FELICIANO.AD</b>   |                            |                        |                        |                                      |   |  |   |   |                                 |   |                |             |  |  |
| <b>TEST<br/>REPORT</b>   | <b>16-09</b><br><b>IN.1259200373</b>  |                            |                        |                        |                                      |   |  |   |   |                                 |   |                |             |  |  |
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|  | <b>19</b>   | <b>48</b>                  | <b>4116/<br/>120FF</b> | <b>20PA1002</b>        |                                      |   |  |   |   |                                 |   |                |             |  |  |

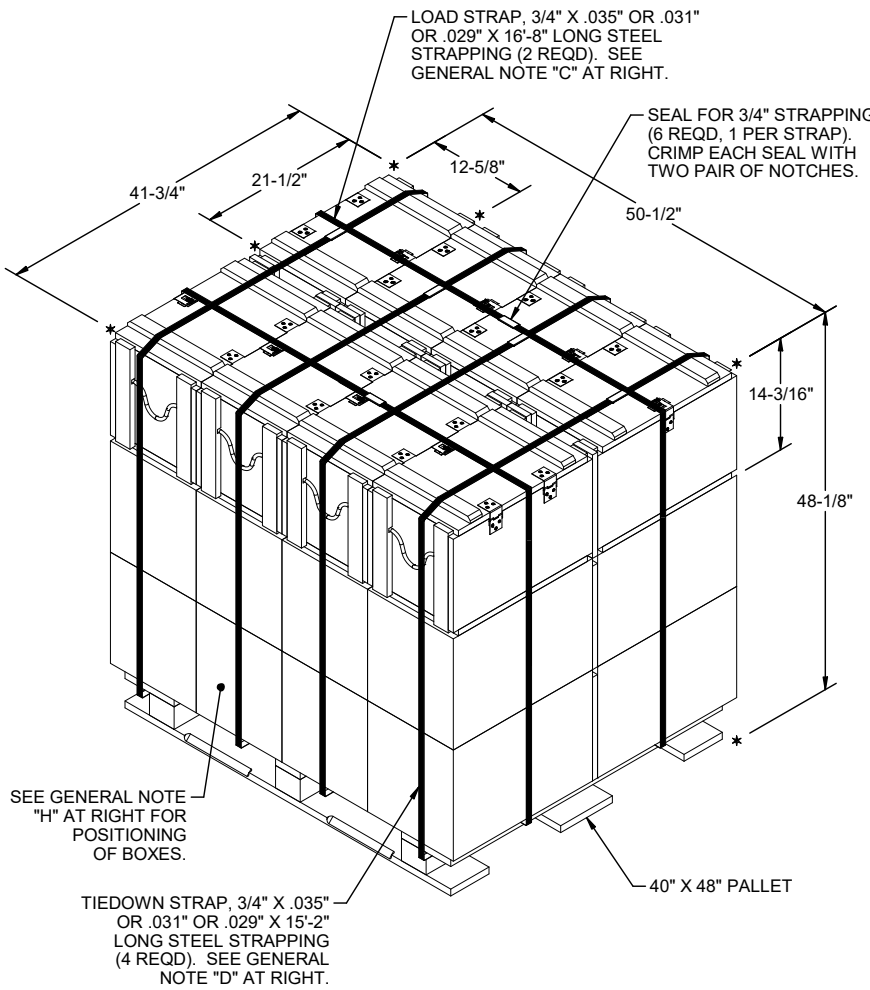
| PALLET UNIT DATA |       |                            |                      |                     |
|------------------|-------|----------------------------|----------------------|---------------------|
| ITEMS INCLUDED   |       | *HAZARD CLASS AND DIVISION | *COMPATIBILITY GROUP | APPROX WEIGHT (LBS) |
| NSN              | DODIC |                            |                      |                     |
| 1375-01-650-8648 | MP56  | 1. 2. 1                    | D                    | 2, 136              |

\*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. THE LOAD STRAPS MAY BE THREADED THROUGH THE STRAP SLOTS OF A PALLET OR PRE-POSITIONED ON THE PALLET DECK PRIOR TO PLACING THE BOXES ON THE PALLET. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO 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 LOAD 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 DEMOLITION CHARGES 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. POSITION THE BOXES WITH THE BOOSTERS OF ADJACENT SHAPED CHARGES FACING EACH OTHER. THIS WILL RESULT IN THE SINGLE OUTER CLEATS ON THE MODIFIED BOXES BEING LOCATED TOWARD THE CENTER OF THE PALLET UNIT.
- 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. FOR DETAILS OF THE MODIFIED MIL-DTL-2427 BOX SEE ARDEC DRAWING 13060547.



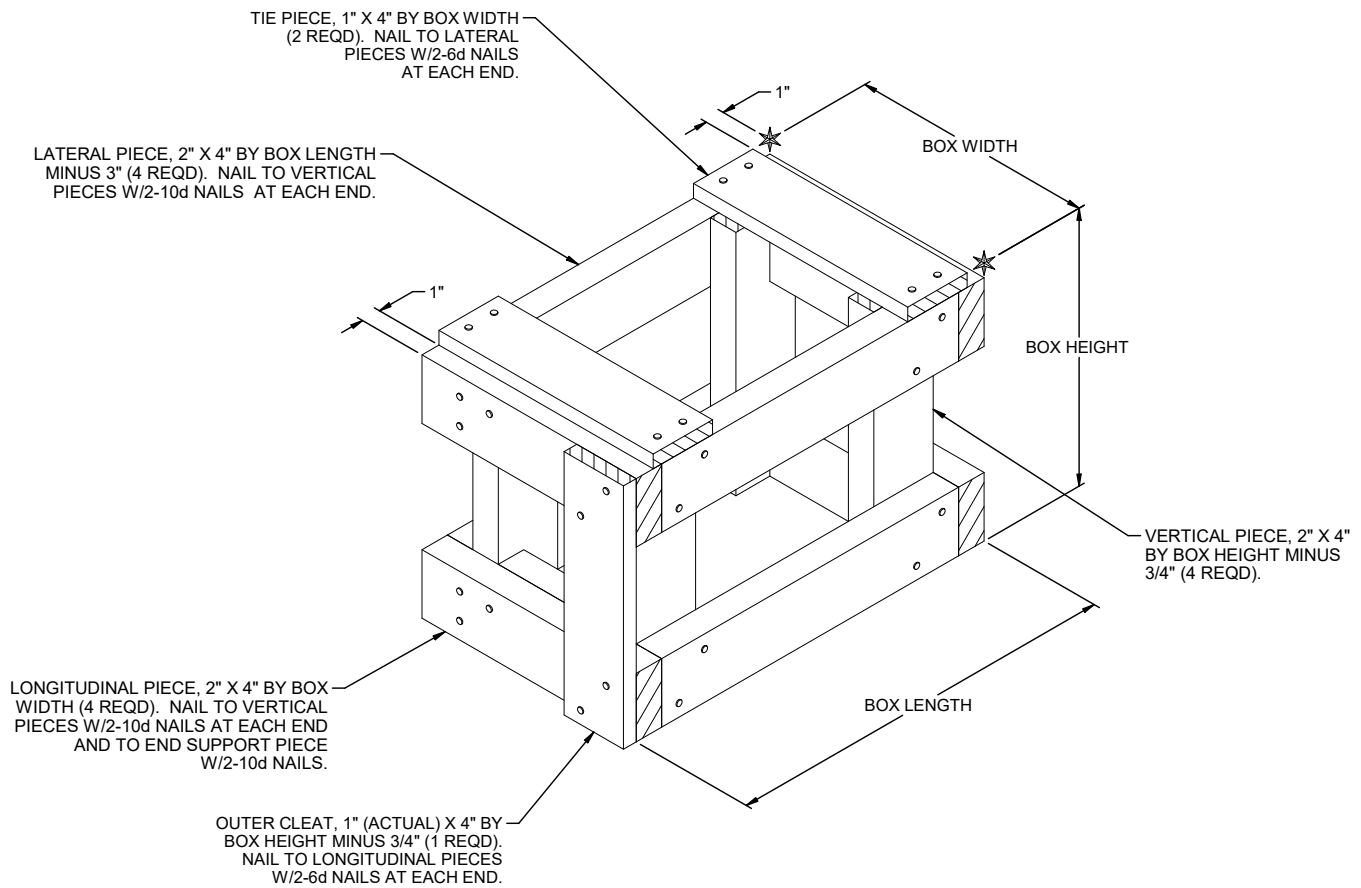
**PALLET UNIT**

SEE GENERAL NOTE "B" AT RIGHT.

|   |           |                     |
|---|-----------|---------------------|
| 24 BOXES OF DEMOLITION CHARGES (1 PER BOX) @ 85.3 LBS | - -       | 2,047 LBS           |
| DUNNAGE   | - - - - - | 9 LBS               |
| PALLET  | - - - - - | 80 LBS              |
| <hr/>   |           |                     |
| TOTAL WEIGHT  | - - - - - | 2,136 LBS (APPROX)  |
| CUBE  | - - - - - | 58.7 CU FT (APPROX) |

**BILL OF MATERIAL**

|                         |           |        |           |          |
|-------------------------|-----------|--------|-----------|----------|
| PALLET, 40" X 48"       | - - - - - | 1 REQD | - - - - - | 80 LBS   |
| STEEL STRAPPING, 3/4"   | - 94.00'  | REQD   | - - - - - | 8.39 LBS |
| SEAL FOR 3/4" STRAPPING | - - - 6   | REQD   | - - - - - | NIL      |



**FILLER ASSEMBLY**

FOR MINUS ONE BOX. **NOTE:** INSTALL FILLER ASSEMBLY WITH OUTER CLEAT TOWARD THE CENTER OF THE PALLET UNIT.