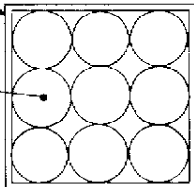
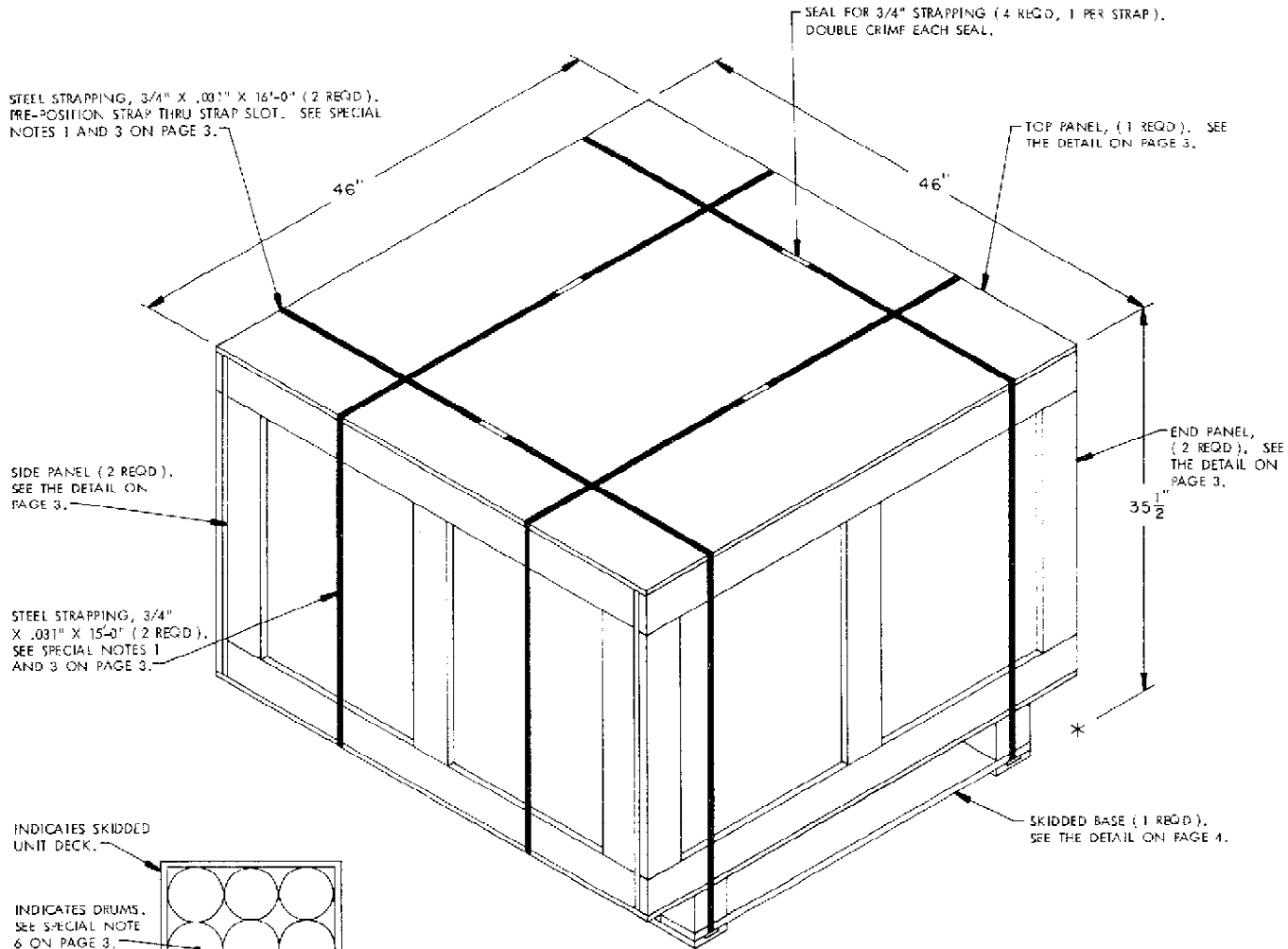


# UNITIZATION PROCEDURES FOR BULK EXPLOSIVES<sup>●</sup> WHEN PACKAGED IN A 14-1/2" DIAMETER BY 28" HIGH FIBERBOARD DRUM, OVERPACKED NINE PER SKIDDED BASE UNIT (46" L X 46" W X 35-1/2" H)

● THE SKIDDED BASE UNIT DATA DISPLAYED HEREIN IS BASED ON DRUM-PACKED NITROGUANADINE. HOWEVER, THE SPECIFIED UNITIZATION PROCEDURES ARE ALSO APPLICABLE TO OTHER DRUM-PACKED BULK EXPLOSIVES WHICH ARE PACKED IN THE SAME SIZE OR NEARLY THE SAME SIZE FIBERBOARD DRUM, PROVIDING THE GROSS WEIGHT OF A COMPLETE PALLET UNIT DOES NOT EXCEED 2,200 POUNDS. SIZE ADJUSTMENTS TO THE SKIDDED BASE UNIT WILL BE MADE DURING FABRICATION AS REQUIRED TO COMPENSATE FOR DRUMS THAT VARY SLIGHTLY IN SIZE FROM THE DESIGNATED DIMENSIONS OF 14-1/2" AND 28". THE SPECIFIED PROCEDURES ARE APPLICABLE TO DRUMS WHICH HAVE DIAMETERS FROM 13" TO 14-1/2" AND HEIGHTS OF NOT MORE THAN 46". DRUMS WHICH ARE 15-1/2" OR LESS IN HEIGHT CAN BE TRIPLE-TIERED WITHIN A PALLET UNIT AND THOSE THAT ARE NOT MORE THAN 23" HIGH CAN BE DOUBLE-TIERED.

| REVISIONS |  |  | DRAWN BY<br><i>WJ/Alus</i>  | PROJ. ENG.<br><i>WJ/Alus</i>         |
|-----------|--|--|---|--------------------------------------|
|           |  |  | CHECKED<br><i>WJ/Alus</i>   | LOG ENGRG OFFICE<br><i>John Boyd</i> |
|           |  |  | APPROVED<br><i>Keith H. Stanton</i>   |                                      |
|           |  |  | U. S. ARMY ARMORERS COMMAND   |                                      |
|           |  |  | APPROVED BY ORDER OF COMMANDING GENERAL<br>U. S. ARMY MATERIEL COMMAND<br><i>W. L. Springer</i> |                                      |
|           |  |  | U.S. ARMY MATERIEL COMMAND  |                                      |
|           |  |  | OCTOBER 1975  |                                      |
|           |  |  | CLASS   | DIVISION                             |
|           |  |  | DRAWING   | FILE                                 |
|           |  |  | 19  | 48                                   |
|           |  |  | 4133  | 20 PN<br>1005                        |

**DO NOT SCALE**



DRUM PLACEMENT  
ON SKIDDED BASE

**SKIDDED UNIT (BASED ON NITROGUANADINE)**

|                                 |                         |
|---------------------------------|-------------------------|
| 9 DRUMS @ 57 LBS                | 513 LBS                 |
| SKIDDED BASE AND PANEL MATERIAL | 249 LBS                 |
| <b>TOTAL WEIGHT</b>             | <b>762 LBS (APPROX)</b> |
| <b>CUBE</b>                     | <b>34.7 CU FT</b>       |

**GENERAL NOTES**

- THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- DATA FOR FIBERBOARD DRUM WHEN PACKED WITH NITROGUANADINE:  
DIMENSIONS ----- 14-1/2" DIAMETER BY 28" HIGH.  
GROSS WEIGHT ----- 57 ROUNDS (APPROX).
- SKIDDED UNIT DETAILS ARE BASED ON THE DIMENSIONS IDENTIFIED ABOVE. ANY VARIATIONS IN THE SIZE OF THE FIBER DRUMS ACTUALLY USED WILL REQUIRE A CORRESPONDING ADJUSTMENT IN UNIT DETAILS TO COMPENSATE. FOR EXAMPLE, IF THE DRUMS SHOULD ACTUALLY BE 27 1/2" HIGH, THE HEIGHT OF THE UNIT SIDE PANELS AND END PANELS WILL BE ADJUSTED ACCORDINGLY.
- WHERE PLYWOOD PANELS ARE SPECIFIED FOR VARIOUS LOCATIONS, THE DIMENSIONS ARE BASED ON USING ONE SOLID PIECE OF PLYWOOD FOR EACH PANEL. HOWEVER, IT IS PERMITTED TO ASSEMBLE SIDE AND END PANELS FROM TWO PIECES PROVIDED THE CONSTRUCTED PANEL MEETS ALL SPECIFIED DIMENSIONAL CRITERIA. ONLY A HORIZONTAL BUTT JOINT IS PERMITTED, AND NOT MORE THAN ONE JOINT PER PANEL. NEITHER PIECE OF PLYWOOD ON A PANEL WILL BE LESS THAN TWELVE INCHES (12") WIDE. WHEN TWO STRIPS OF PLYWOOD ARE USED ON A PANEL, EXTRA STAPLES WILL BE USED; ONE (1) NOT MORE THAN ONE INCH (1") FROM THE JOINT ON EACH SIDE OF THE BUTT JOINT AT EACH SPECIFIED STAPLING LOCATION.

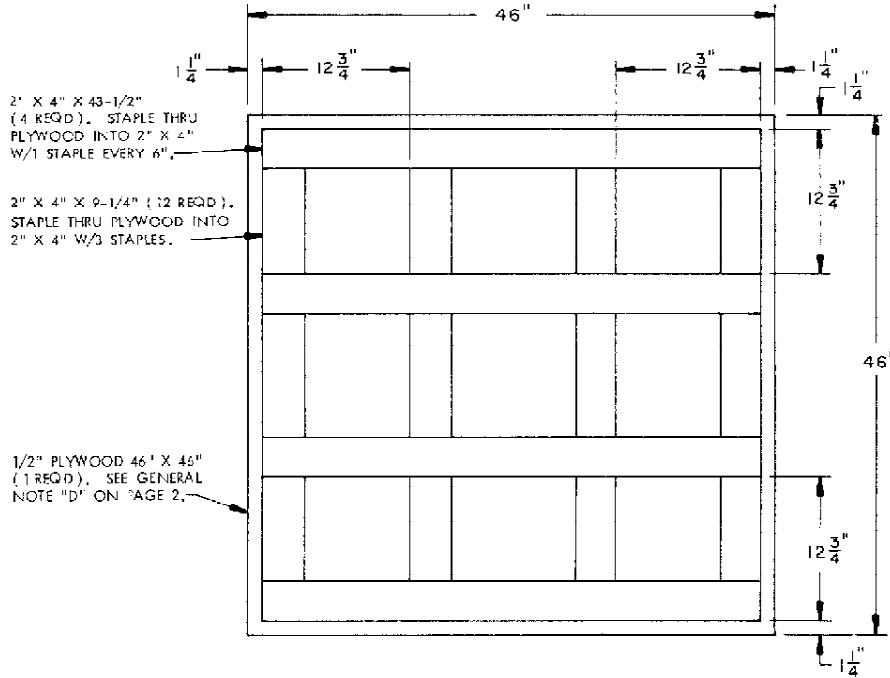
**EXPLOSIVE CLASSIFICATION\***  
(BASED ON NITROGUANADINE)

|                     |      |
|---------------------|------|
| DOT CLASS           | A    |
| COAST GUARD CLASS   | 1X-B |
| Q J CLASS           | 7    |
| COMPATIBILITY GROUP | I    |

\*THE EXPLOSIVE CLASSIFICATION OF OTHER DRUM-PACKED BULK EXPLOSIVES MAY BE DIFFERENT THAN THAT SHOWN.

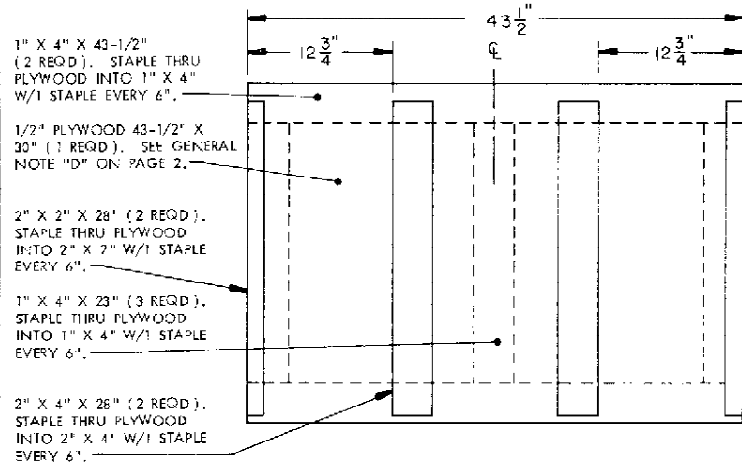
**MATERIAL SPECIFICATIONS**

|                   |   |
|-------------------|---|
| SKIDDED BASE      | MIL-S-50786 (AR) TITLED.  |
| LUMBER            | SEE MIL-STD-701, CLASS 2, GROUP II, III, OR IV.   |
| PLYWOOD           | GROUP B OR C, GRADE C-D (EXTERIOR); FED SPEC NN-P-530. NOTE: A BETTER GRADE MAY BE SUBSTITUTED.                 |
| NAILS             | COMMON, CEMENT COATED OR CHEMICALLY ETCHED; FED SPEC FF-N-105.<br>ALT: ANNULAR RING TYPE NAIL OF THE SAME SIZE. |
| STAPLE FOR LUMBER | TYPE III, STYLE 3, FED SPEC FF-N-105.   |
| STRAPPING, STEEL  | CLASS 1, TYPE I OR IV, HEAVY DUTY, FINISH B, GRADE 2, FED SPEC QQ-S-781.  |
| SEAL, STRAP       | TYPE D, STYLE I, II, OR IV, CLASS H, FED SPEC QQ-S-781.   |



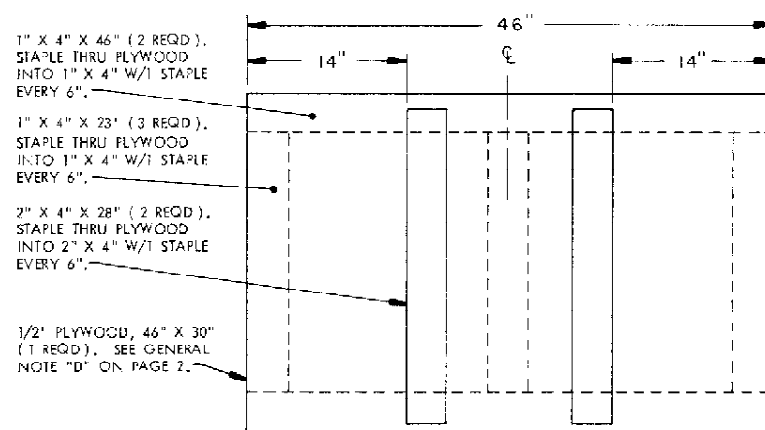
**TOP PANEL**

BOTTOM OF PANEL SHOWN



**SIDE PANEL**

(CLEATS ON OUTSIDE SURFACE ARE SHOWN IN DASHED LINES)

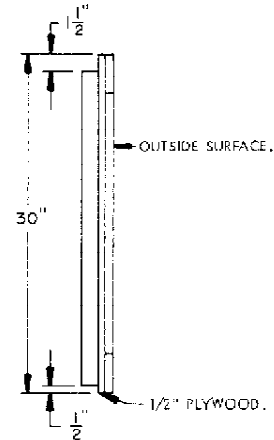


**END PANEL**

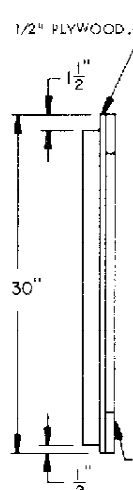
(CLEATS ON OUTSIDE SURFACE ARE SHOWN IN DASHED LINES)

**SPECIAL NOTES:**

1. THE STEEL STRAPPING SPECIFIED IN THE SKIDDED UNIT DETAIL IS 3/4" WIDE BY .031" THICK. FOR AN ALTERNATIVE, 3/4" WIDE BY .003" THICK STEEL STRAPPING MAY ALSO BE USED.
2. THE SKIDDED BASE AS SHOWN ON PAGE 4 IS FABRICATED ACCORDING TO STANDARD SPECIFICATIONS. HOWEVER, THE TWO (2) SHEETS OF 1/2" PLYWOOD ARE TO BE SUBSTITUTED FOR THE DECK OF THE SKIDDED BASE, IN LIEU OF THE 3/8" PLYWOOD, AND THE "WIDTH FORMULA" DOES NOT APPLY.
3. ALL STRAPPING MUST BE STRAIGHT WITHIN TWO INCHES (2") ON ANY SURFACE OF THE UNITIZED LOAD; I.E., TOP, BOTTOM, SIDES OR ENDS THAT IT ENCOMPASSES. EACH STRAP WILL BE TENSIONED SUFFICIENTLY TO SLIGHTLY CRUSH THE EDGES OF THE PALLET UNIT.
4. A MANUFACTURING TOLERANCE OF + OR - 1/4" IS ALLOWED ON ALL DIMENSIONS. ALTHOUGH A + OR - 1/4" TOLERANCE IS ALLOWED, ALL DIMENSIONAL LUMBER MEMBERS IN A SET, SUCH AS THE VERTICAL 1" X 4" CLEATS ON EXTERIOR OF A SIDE PANEL, MUST BE WITHIN 1/8" OF THE SAME LENGTH.
5. DIMENSIONAL LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE.
6. IF LESS THAN 9 DRUMS ARE LOADED INTO A SKIDDED UNIT, A BOX-TYPE ASSEMBLY CONSTRUCTED FROM DIMENSIONAL LUMBER AND PLYWOOD MUST BE INSTALLED TO OCCUPY THE VOID CREATED BY THE ELIMINATION OF A DRUM OR DRUMS. THE SPACE-OCCUPYING ASSEMBLY MUST BE AS STRONG OR STRONGER THAN THE DRUM(S) REPLACED.
7. IF DESIRED DURING ASSEMBLY OF A SKIDDED UNIT, ONE (1) 6d NAIL CAN BE DRIVEN THROUGH A SIDE PANEL AT EACH CORNER INTO AN INTERNAL FRAME MEMBER OF AN END PANEL, TO TEMPORARILY HOLD PANELS IN PLACE PRIOR TO APPLYING STRAPPING.



**END VIEW OF SIDE PANEL**



**END VIEW OF END PANEL**

| BILL OF MATERIAL        |                    |            |
|-------------------------|--------------------|------------|
| LUMBER                  | LINEAR FEET        | BOARD FEET |
| 1" X 4"                 | 70                 | 24         |
| 2" X 2"                 | 10                 | 4          |
| 2" X 4"                 | 43                 | 30         |
| 4" X 4"                 | 5                  | 7          |
| NAILS                   | NO. REQD           | POUNDS     |
| 6d (2")                 | 18                 | 1/4        |
| PLYWOOD, 1/2" -----     | 80 SQ. FT. REQD -- | 110 LBS    |
| STRAPPING, STEEL        |                    |            |
| 3/4" X .031" -----      | 62 FT. REQD -----  | 5 LBS      |
| SEALS STRAPPING, 3/4" - | 4 REQD -----       | 1/4 LB     |
| STAPLES,* -----         | 274 REQD -----     | 3 LBS      |

\* STAPLES TO BE USED SHOULD BE OF A TYPE USED IN PNEUMATIC OR MECHANICAL GUNS FOR FASTENING WOOD. LEG LENGTH WILL BE ONE INCH (1") AND THE CROWN WIDTH WILL BE 1/2" MINIMUM TO 1" MAXIMUM. THE WIRE GAGE OF THE STAPLE SHOULD BE SIXTEEN (16) GAGE OR HEAVIER.

