UNITIZATION PROCEDURES FOR M23 CHEMICAL MINES PACKED 12 DRUMS (36 MINES) PER 4-WAY ENTRY, 40" X 48" PALLET

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		CLASS	DIVISION	DRAWING	FILE
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DO NOT SCALE

THIS DOCUMENT DELINEATES ONE OF FOUR METHODS FOR UNITIZATION OF M23 MINES. THE METHOD WHICH IS MOST COST AND/OR OPERATIONAL EFFECTIVE SHOULD BE UTILIZED. FOR ADDITIONAL INFORMATION REGARDING THE OTHER UNITIZING METHODS, THE US ARMY ARMAMENT MATERIEL READINESS COMMAND, ROCK ISLAND, IL, SHOULD BE CONTACTED.

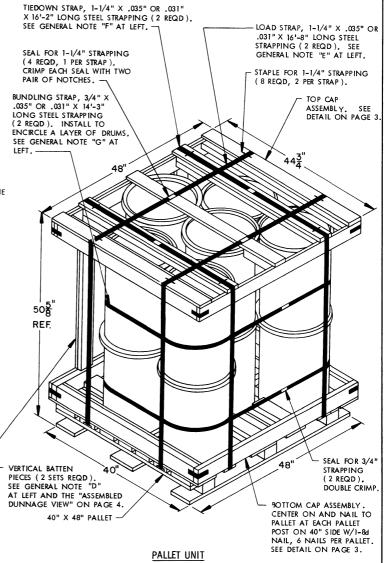
GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5) AND MIL-STD-1660.

B. DRUM DATA:

----- 119 LBS (APPROX)

- C. DIMENSIONAL LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE AND 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK
- THE ACTUAL LENGTH REQUIRED FOR THE VERTICAL BATTEN SUPPORT PIECES SHOULD BE MEASURED IN THE FIELD WHEN ASSEMBLING EACH UNIT LOAD. LENGTHS MAY VARY SLIGHTLY FROM UNIT TO UNIT. THE "TOP CAP" MUST BEAR FIRMLY AND SOLIDLY ON THE COVERS OF THE DRUMS TO ENSURE A SOUND, COMPACT UNIT LOAD. IT IS RECOMMENDED THAT THE TWO "LOAD STRAPS" BE INSTALLED PRIOR TO MEASURING THE REQUIRED LENGTH OF THE BATTEN SUPPORT PIECES.
- THE LOAD STRAPS WILL BE THREADED THROUGH THE STRAP SLOTS OF A PALLET. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS.
- INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK 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.
- G. BUNDLING STRAPS WILL BE INSTALLED AFTER TOP CAP ASSEMBLY IS POSITIONED IN PLACE AND PRIOR TO INSTALLATION OF LOAD STRAPS. LOCATE BUNDLING STRAPS AT APPROXIMATELY HALF-HEIGHT OF EACH LAYER OF DRUMS.
- H. IN LIEU OF CORNER STRAPS, ONE PIECE OF 3/4" STEEL STRAPPING MAY BE USED TO ENCIRCLE THE ENTIRE FRAME. SEAL THE JOINT WITH ONE SEAL CRIMPED WITH TWO PAIR OF NOTCHES. STAPLE STRAP TO CAP ASSEMBLY W/4 STAPLES
- THE PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING THE DESIGNATED DRUMS WHEN THEY ARE FILLED WITH ITEMS WHICH HAVE A NOMENCLATURE WHICH IS DIFFERENT FROM THAT SHOWN.
- K. WHEN THE QUANTITY OF DRUMS CONTAINING MINES WILL NOT PROVIDE FOR UNITIZATION OF A 12-DRUM UNIT LOAD AS DEPICTED ON THIS PAGE, THE PROCEDURES WILL BE ADJUSTED AS SPECIFIED ON PAGE 6 FOR "REDUCED QUANTITY UNIT LOADS".



12 DRUMS (3 MINES/DRUM) @ 119 LBS ----- 1,428 LBS DUNNAGE -----

PALLET -----

MATERIAL SPECIFICATIONS

PALLET ----- : 4-WAY ENTRY, STYLE I, TYPE I, CLASS I, PRESERVATIVE TREATED, MIL SPEC MIL-P-15011. LUMBER -----: SEE TM 743-200-1, DUNNAGE LUMBER, FED SPEC MM-L-751.

NAILS -----: COMMON, FED SPEC FF-N-105.

STRAPPING, STEEL -----:: CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH B (GRADE 2), FED SPEC QQ-5-781.

SEAL, STRAP -----:: TYPE D, STYLE I, II OR IV, CLASS H, FINISH B (GRADE 2), FED SPEC QQ-S-781.

STAPLE, STRAP -----: TYPE III, STYLE 3, FED SPEC FF-N-105.

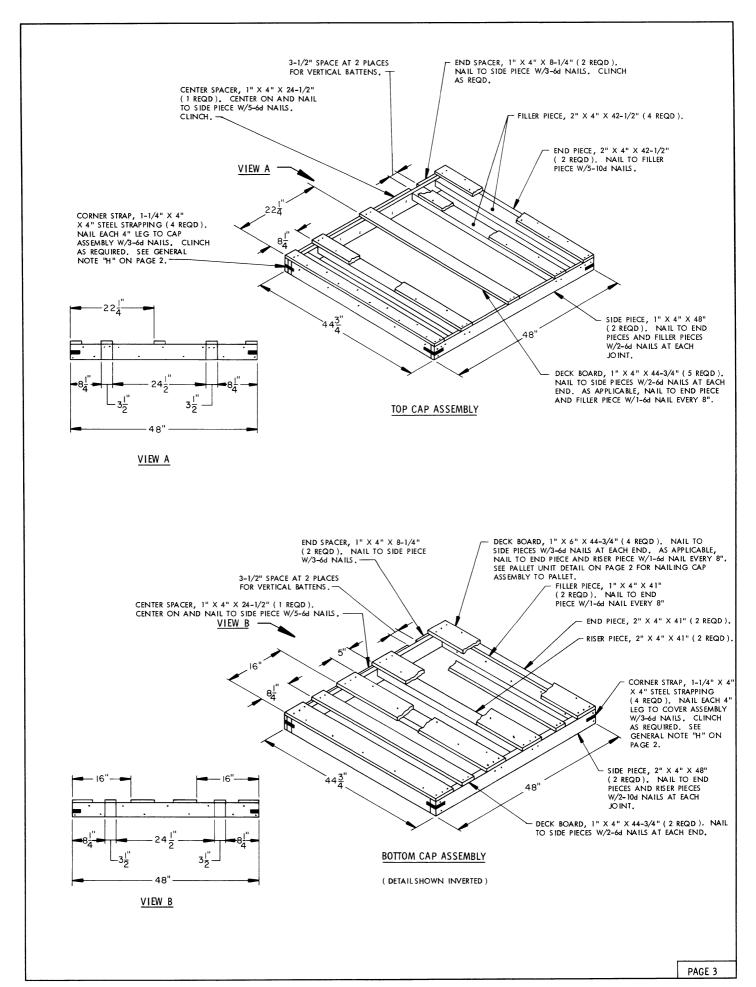
LUMBER	LINEAR FEET	BOARD FEET	
311 37 411			
1" X 4"	61.15	20.38	
1" X 6"	14.92	7.46	
2" X 2"	3.50	1.17	
2" X 4"	48.17	32.11	
NAILS	NO. REQD	POUNDS	
6d (2")	228	1.35	
8d (2-1/2")	6	.07	
10d (3")	59	.91	

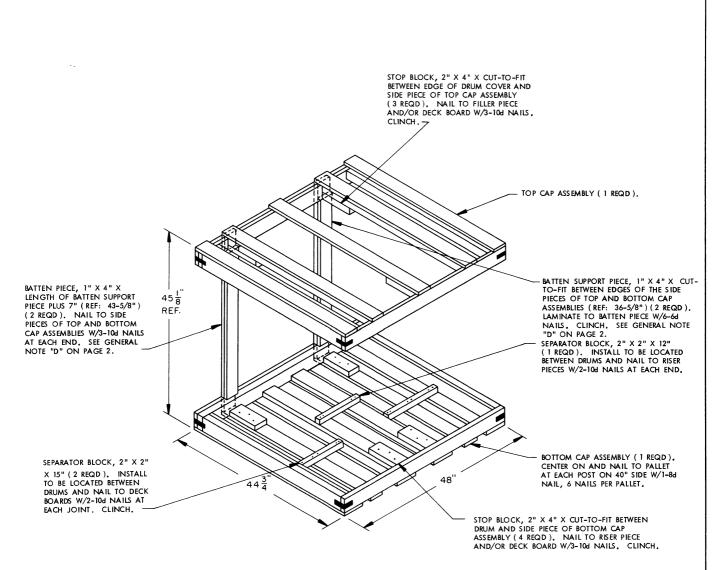
TOTAL WEIGHT ------ 1,645 LBS (APPROX)
CUBE ----- 62.92 CU FT

137 LBS

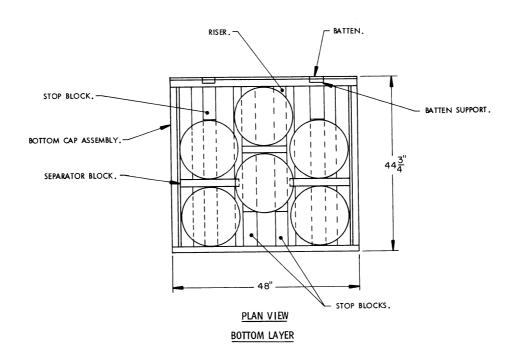
80 LBS

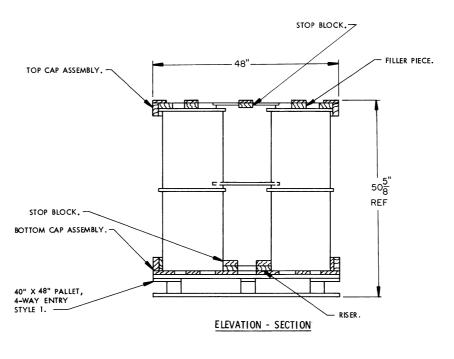
PALLET, 40" X 48" ----- 80 LBS





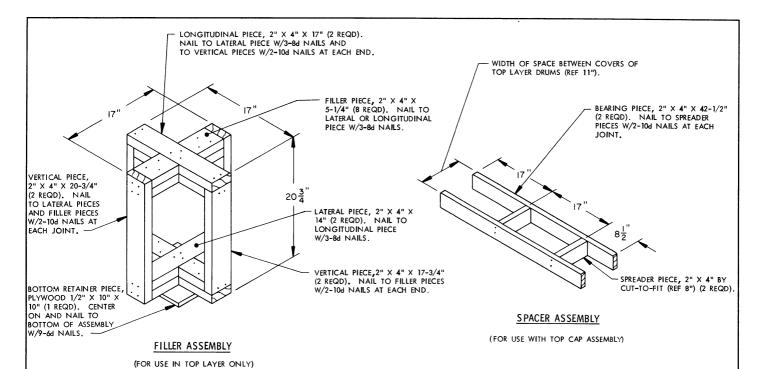
ASSEMBLED DUNNAGE VIEW





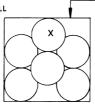
PLACEMENT OF DRUMS

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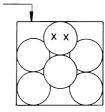
SPECIAL NOTES:

- WHEN QUANTITIES OF DRUMS WITH MINES REQUIRE UNITIZATION OF LESS THAN A 12-DRUM UNIT, IT IS PREFERRED, IF POSSIBLE, TO SUBSTITUTE AN EMPTY DRUM FOR EACH FULL DRUM TO BE OMITTED. EMPTY DRUMS MUST BE PAINTED "CRANGE" AND IDENTIFIED BY THE WORD "EMPTY" CLEARLY STAMPED ON THE SIDE AND TOP OF THE DRUM
- IF THE QUANTITY OF DRUMS IS LESS THAN 7, A 1-LAYER UNIT LOAD WILL BE ASSEMBLED USING THE PROCEDURES SPECIFIED HEREIN, EXCEPT THAT THE LENGTH OF THE BATTEN PIECES, LOAD STRAPS AND TIEDOWN STRAPS WILL BE DECREASED ACCORDINGLY AND ONE BUNDLING
- IF EMPTY DRUMS ARE NOT AVAILABLE AS SUBSTITUTES FOR FULL DRUMS, THE PROCEDURES PRESCRIBED IN THE DIAGRAMS ON THIS PAGE, FOR THE SPECIFIC QUANTITY OF FULL DRUMS TO BE UNITIZED, WILL BE USED IN CONJUNCTION WITH THE CRITERIA SPECIFIED FOR THE BASIC UNIT LOAD.



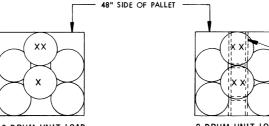
11-DRUM UNIT LOAD

OMIT TOP LAYER DRUM MARKED "X" AND SUBSTI-TUTE A "FILLER ASSEMBLY" AS DETAILED ABOVE.



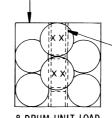
10-DRUM UNIT LOAD

OMIT TOP AND BOTTOM LAYER DRUMS MARKED "XX". OMIT THE 2" X 2" X 12" SEPARATOR BLOCK PROM RISERS OF BOTTOM CAP ASSEMBLY. ADD TWO
2" x 4" BY CUT-TO-FIT STOP BLOCKS TO RISERS OF
BOTTOM CAP ASSEMBLY. ADD ONE 2" X 4" BY
CUT-TO-FIT STOP BLOCK TO CENTER DECK BOARD OF TOP CAP ASSEMBLY.



9-DRUM UNIT LOAD

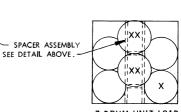
APPLY PROCEDURES FOR THE 10-DRUM UNIT LOAD. ALSO, OMIT TOP LAYER DRUM MARKED
"X" AND SUBSTITUTE A "FILLER ASSEMBLY" AS DETAILED ABOVE.



48" SIDE OF PALLET

8-DRUM UNIT LOAD

OMIT TOP AND BOTTOM LAYER DRUMS MARKED "XX". OMIT THE TWO 2" X 4" STOP BLOCKS AND THE 2" X 2" X 12" SEPARATOR BLOCK FROM RISERS OF THE BOTTOM CAP ASSEMBLY. OMIT THE 2" X 4" STOP BLOCK FROM THE CENTER DECKBOARD OF THE TOP CAP ASSEMBLY. ADD A "SPACER ASSEMBLY", AS DETAILED ABOVE, TO THE TOP CAP ASSEMBLY, ALIGN SPREADER PIECES WITH CENTER OF DRUM COVERS. NAIL THROUGH SIDE PIECES OF TOP CAP ASSEMBLY TO ENDS OF BEARING PIECES OF SPACER ASSEMBLY W/2-10d NAILS AT EACH JOINT.



7-DRUM UNIT LOAD

APPLY PROCEDURES FOR THE 8-DRUM UNIT LOAD. ALSO, OMIT TOP
LAYER DRUM MARKED "X" AND
SUBSTITUTE A "FILLER ASSEMBLY" AS
DETAILED ABOVE.

REDUCED-QUANTITY UNIT LOADS