

APPROVED BY
 BUREAU OF EXPLOSIVES
A. F. [Signature]
 SUPERVISOR, MILITARY & INTERAGENCY SERVICES
 DATE 6/7/76

LOADING AND BRACING ON FLAT BED TRAILER OF TMU-28/B SPRAY TANK IN CNU-77/E23 CONTAINER

⊙ CAUTION: THE PROCEDURES SHOWN HEREIN ARE ONLY APPLICABLE FOR HIGHWAY MOVEMENTS; NOT FOR CONTAINER/TRAILER-ON-FLAT-CAR MOVEMENTS.

REVISIONS			DESIGNED BY	PROJ. ENG.
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			DARCOM ARMO CENTER	
			U.S. ARMY DARCOM DRAWING	
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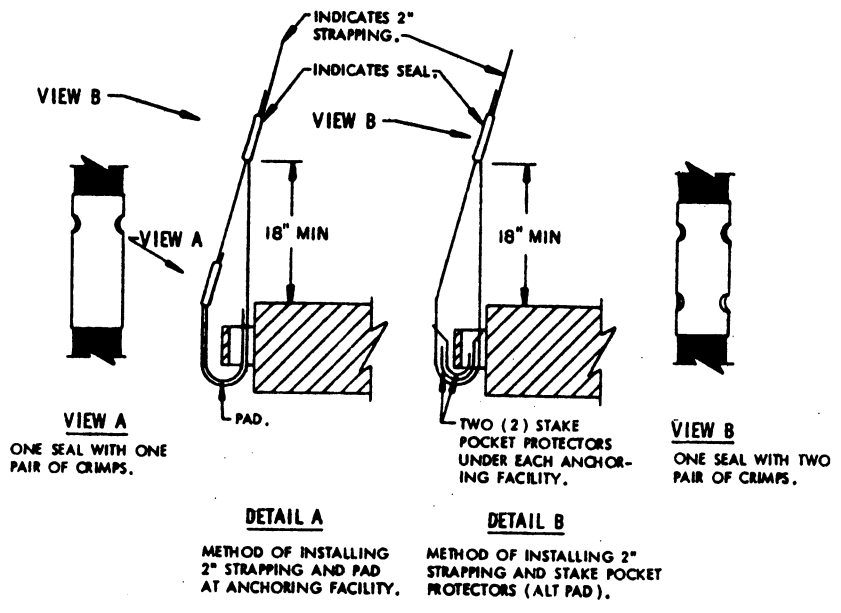
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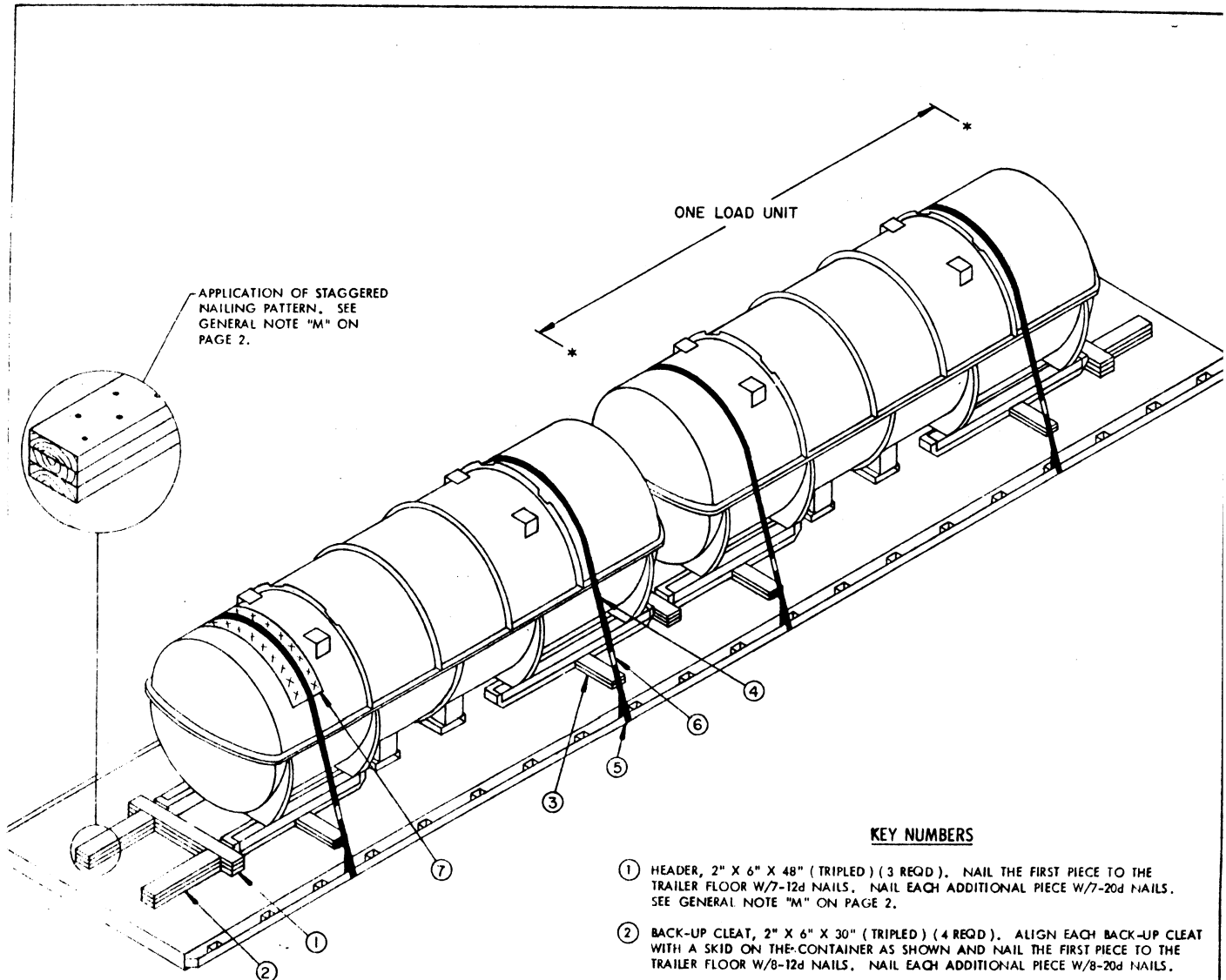
GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE LOAD AS SHOWN HEREIN IS BASED ON FLAT BED TRAILERS 40'-0" LONG BY 8'-0" WIDE HAVING WOOD OR WOOD AND METAL FLOORS. TRAILERS HAVING ALL METAL FLOORS WILL NOT BE USED. LONGER TRAILERS CAN BE USED.
- C. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO THE TMU-28/B SPRAY TANK WHEN PACKED IN THE CNU-77/E23 CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CNU-77/E23 CONTAINER WITH CONTENTS. THESE PROCEDURES CAN ALSO BE UTILIZED FOR SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE TITLE OF THIS DOCUMENT.
- D. FOR DETAIL OF THE CNU-77/E23 CONTAINER, SEE DRAWING NO. 65E9008.
- CONTAINER DIMENSIONS -- 193" LONG X 62" WIDE X 73" HIGH.
GROSS WEIGHT ----- 6,100 POUNDS (APPROX)
TARE WEIGHT ----- 4,000 POUNDS (APPROX)
- E. CAUTION: NON-COMPATIBLE ITEMS MUST NOT BE OUTLOADED ON THE SAME TRAILER.
- F. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEMS MUST COMPLY WITH AR 55-355, CHAPTER 213, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- G. GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.
- H. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH STATE WEIGHT LAWS. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS CONTAINED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- J. LADING WILL NOT BE SECURED BY CHAINS AND/OR LOAD BINDERS IN LIEU OF SPECIFIED DUNNAGE.
- K. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT. CAUTION: EXERCISE CARE DURING TENSIONING TO PREVENT DAMAGE TO THE CONTAINERS.
- L. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE OR 1-5/8" THICK BY 5-5/8" WIDE.
- M. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH INTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- N. OTHER LEVELS OF LADING ITEMS MAY BE LOADED ON A TRAILER WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEM, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIONS ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED.

MATERIAL SPECIFICATIONS

- LUMBER ----- SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS ----- COMMON, CEMENT COATED OR CHEMICALLY ETCHED,
FED SPEC FF-N-105.
ALT: ANNULAR-RING TYPE NAIL OF THE SAME SIZE.
- STRAPPING, STEEL ----- CLASS I, TYPE I, HEAVY DUTY, FINISH A, B (GRADE 2),
OR C, FED SPEC QQ-S-781.
- SEAL STRAP ----- TYPE D, STYLE I, II, OR IV, CLASS H, FED SPEC QQ-S-781.
- ANTI-CHAFING MATERIAL ----- NEUTRAL BARRIER MATERIAL MIL-B-121 (OR EQUAL).
- STAKE POCKET
PROTECTOR ----- COMMERCIAL GRADE.





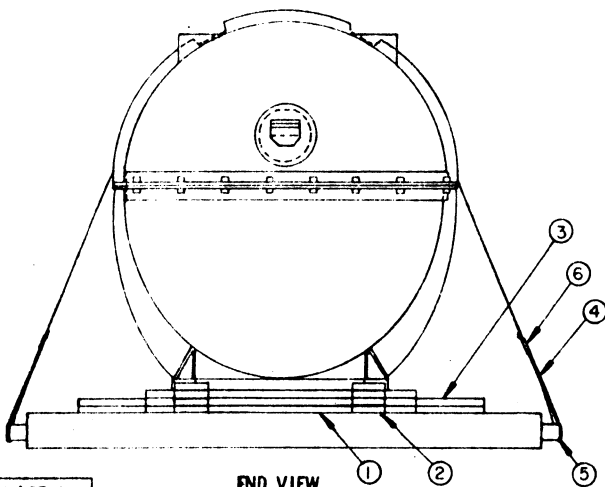
APPLICATION OF STAGGERED NAILING PATTERN. SEE GENERAL NOTE "M" ON PAGE 2.

ONE LOAD UNIT

ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 48" (TRIPLED) (3 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL EACH ADDITIONAL PIECE W/7-20d NAILS. SEE GENERAL NOTE "M" ON PAGE 2.
- ② BACK-UP CLEAT, 2" X 6" X 30" (TRIPLED) (4 REQD). ALIGN EACH BACK-UP CLEAT WITH A SKID ON THE CONTAINER AS SHOWN AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-12d NAILS. NAIL EACH ADDITIONAL PIECE W/8-20d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (8 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ HOLD-DOWN STRAP, 2" X .050" (OR .044") X 30'-0" LONG STEEL STRAPPING (4 REQD). INSTALL EACH STRAP FROM ONE (1) PIECE OF STRAPPING; ANCHOR THE STRAP TO A TIE DOWN FACILITY ON ONE SIDE OF THE TRAILER, RUN IT OVER THE LOAD, PASS IT THROUGH A TIE DOWN FACILITY ON THE OPPOSITE SIDE OF THE TRAILER, AND BRING IT BACK UP ABOVE THE TRAILER FLOOR WHERE IT CAN BE TENSIONED AND SEALED.
- ⑤ PAD, 2" X .050" STEEL STRAPPING 18" LONG (8 REQD). POSITION UNDER A TIE DOWN FACILITY AND SEAL TO A HOLD-DOWN STRAP MARKED ④. SEE "DETAIL A" ON PAGE 3. ALT: STAKE POCKET PROTECTOR (16 REQD). USE TWO (2) UNDER EACH TIE DOWN FACILITY WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 3.
- ⑥ SEAL FOR 2" STRAPPING (16 REQD, 4 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑦ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS.



END VIEW

SPECIAL NOTES:

1. SIMILAR PROCEDURES MAY BE USED FOR THE SHIPMENT OF A ONE-UNIT LOAD. A SINGLE LOAD UNIT WILL BE SECURED WITH A HEADER AND TWO BACK-UP CLEATS AT EACH END. THE SIDE BLOCKING AND HOLD-DOWN STRAPS WILL BE INSTALLED AS SHOWN FOR ONE LOAD UNIT.
2. A SHORTER TRAILER MAY BE USED TO TRANSPORT A ONE-UNIT LOAD. HOWEVER, THE TRAILER MUST BE PROPERLY EQUIPPED TO PERMIT INSTALLATION OF THE TIE-DOWN STRAPPING AND WOODEN DUNNAGE AS SHOWN. THE TRAILER MUST HAVE A AVAILABLE WOODEN SURFACE AT LEAST 22'-1" LONG BY 6'-3" WIDE.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	90	90
NAILS	NO. REQD	POUNDS
12d (3-1/4")	133	2-1/4
20d (4")	106	4
STEEL STRAPPING, 2" X .050" OR .044" --- 132' REQD --- 44 LBS		
SEAL FOR 2" STRAPPING ----- 16 REQD --- 4 LBS		
ANTI-CHAFING MATERIAL ----- AS REQD --- NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNTR W/CONTENTS	2	12,200 LBS
DUNNAGE		235 LBS
TOTAL WEIGHT		12,435 LBS

