

APPROVED BY
BUREAU OF EXPLOSIVES

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DATE 2/22/95

LOADING AND BRACING IN VAN TYPE TRAILERS OF PROPELLANTS OR OTHER SOLIDS IN FIBERBOARD OR METAL DRUMS FOR TRAILER-ON-FLATCAR (TOFC) SHIPMENT

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- SHIPMENTS ARE RESTRICTED TO TRAILER-ON-FLATCAR (TOFC) MOVEMENTS; SHIPMENTS BY CONTAINER-ON-FLATCAR (COFC) ARE PROHIBITED.

U.S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND <i>Timothy R. Fore</i>	DRAFTSMAN	TECHNICIAN	ENGINEER
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DO NOT SCALE

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 OUTLOADING PROCEDURES SPECIFIED IN THIS DOCUMENT APPLY TO PROPELLANT POWDER AND OTHER SOLIDS IN FIBERBOARD OR METAL DRUMS.
- C. ALL LOADS SHOWN ARE BASED ON TRAILERS WHICH ARE 40'-0" LONG BY 7'-8-1/2" WIDE (INSIDE DIMENSION) WITH WOOD OR WOOD AND METAL FLOORS. THE DELINEATED OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO TRAILERS WHICH ARE EIGHT-NINE INCHES (89") THRU NINETY-EIGHT INCHES (98") IN WIDTH AND TRAILERS OF OTHER LENGTHS. **CAUTION:** ONLY TRAILERS WILL BE USED FOR THE LOADING OF FIBERBOARD DRUMS. CONTAINERS (TRAILERS WHICH ARE REMOVED FROM THEIR CHASSIS FOR POSITIONING ON SPECIAL CONTAINER CARS FOR COPC SHIPMENT) MUST NOT BE USED.
- D. DETAILS OF DRUMS:
 FIBER DRUM DIMENSIONS (APPROX)-----16" DIAMETER X 27" HIGH.
 METAL DRUM DIMENSIONS (APPROX)-----16-5/16" DIAMETER X 27-1/8" HIGH
 GROSS WEIGHT----- VARIABLE FROM APPROX 121 POUNDS TO 176 POUNDS.
- E. SELECTION OF A VEHICLE TO BE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 29, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- F. THE 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. **NOTICE:** A SHIPMENT WILL BE POSITIONED IN A TRAILER CONSISTENT WITH THE WEIGHT LAWS OF THE STATES THROUGH WHICH THE TRAILER WILL BE TRANSPORTED BY HIGHWAY (MOTOR CARRIER).
- G. THE NUMBER OF DRUMS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS SHOWN HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEM.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN A TRAILER WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEMS, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED.
- J. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE (1) SEAL WITH TWO (2) PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP-TYPE SEALER IS BEING USED. REFER TO THE "STRAP JOINT A" AND "STRAP JOINT B" DETAILS AT RIGHT FOR GUIDANCE.
- K. **CAUTION:** BLOCKING WILL NOT BE NAILED TO THE TRAILER WALLS. ALL NAILING WILL BE WITHIN THE DUNNAGE OR TO THE TRAILER FLOOR.
- L. EXCEPT FOR PLYWOOD, 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 AND 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE.

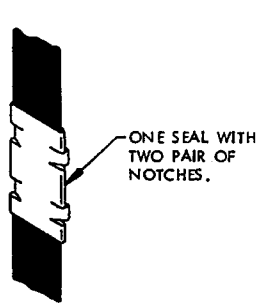
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MATERIAL SPECIFICATIONS

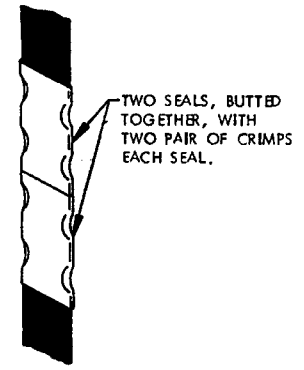
- LUMBER-----: SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS-----: COMMON, FED SPEC FF-N-105.
- STRAPPING, STEEL-----: CLASS 1, TYPE I OR IV, HEAVY DUTY, FINISH A, B (GRADE 2), OR C; FED SPEC QQ-5-781.
- SEAL, STRAP-----: TYPE D, STYLE I, II, OR IV, CLASS H, FINISH A, B, (GRADE 2), OR C; FED SPEC QQ-5-781.
- PLYWOOD-----: GROUP B, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D, FED SPEC NN-P-530. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
- TEMPERED HARDBOARD-----: TYPE I (STANDARD), FED SPEC LLL-B-810.

(GENERAL NOTES CONTINUED)

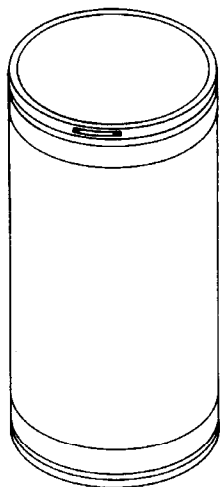
- M. **NOTICE:** A STAGGERED NAILING PATTERN WILL BE USED WHENEVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. ADDITIONALLY, A NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- N. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES WHICH ARE TO BE USED IN THE DELINEATED TRAILER LOADS SHOWN THROUGHOUT THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIED NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS. STAPLES WHICH ARE LONGER THAN 2-1/2" OR LESS IN LENGTH SHOULD BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-N-105 AS NEARLY AS PRACTICABLE. STAPLES WHICH ARE LONGER THAN 2-1/2" WILL BE A COMMERCIAL GRADE, OF A QUALITY EQUIVALENT TO THOSE MANUFACTURED BY SENCO PRODUCTS INCORPORATED. **NOTE:** STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- O. PORTIONS OF THE SEMITRAILER BODIES DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- P. THE PROCEDURES DEPICTED WITHIN THIS DRAWING ARE BASED ON ENGLISH MEASUREMENTS. THE METRIC EQUIVALENT MAY BE COMPUTED BY USING 1" EQUALS 25.4MM. METRIC EQUIVALENTS FOR WEIGHTS ARE BASED ON 1 POUND EQUALS 0.454KG.
- Q. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE DRUM DETAILS ON PAGE 3 AND TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHOD.



STRAP JOINT A
 METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.

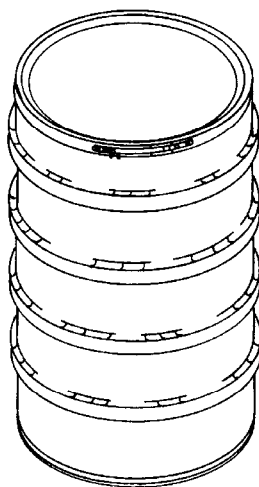


STRAP JOINT B
 METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.



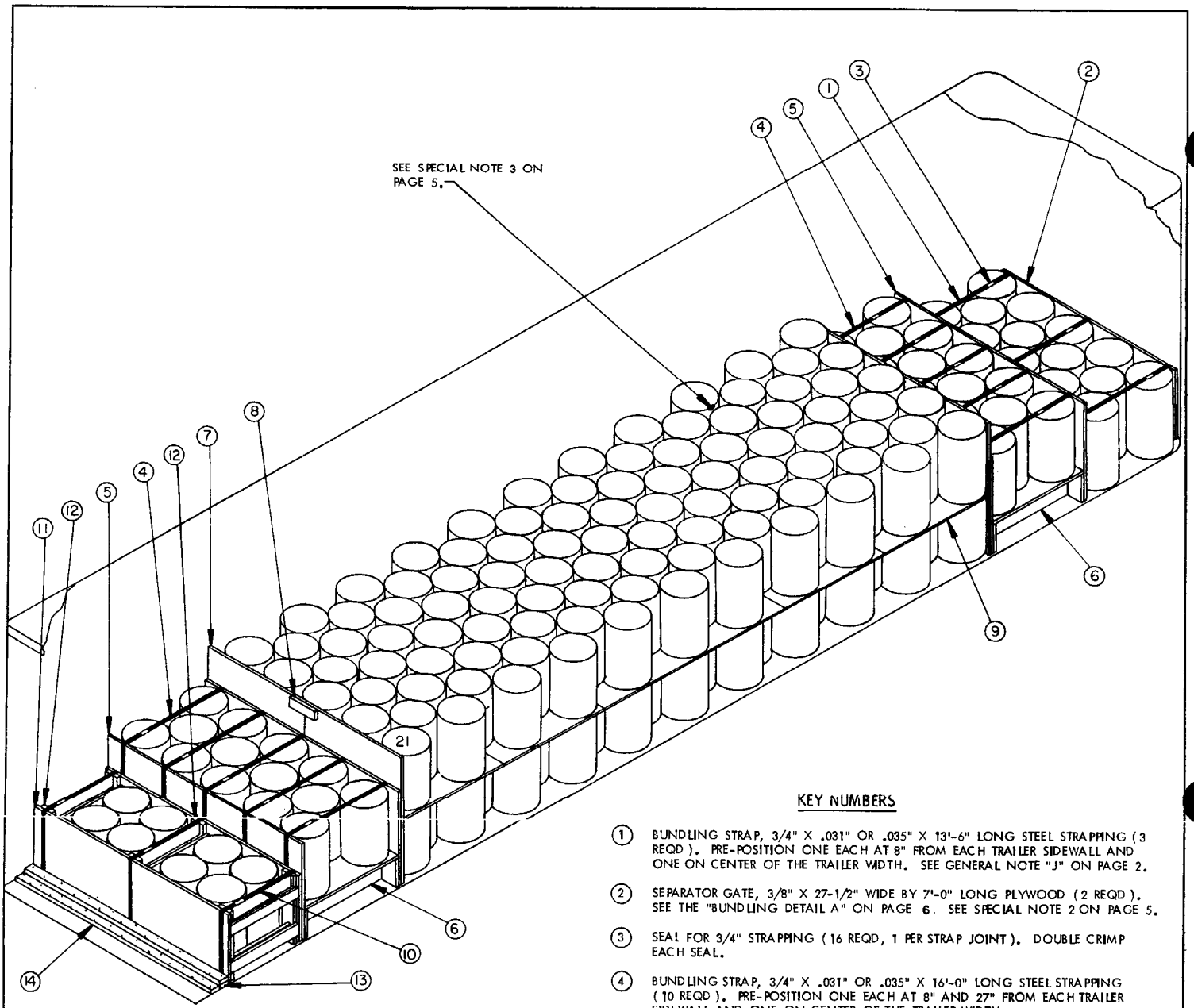
ISOMETRIC VIEW

THE SPECIFIC FIBERBOARD DRUM DEPICTED ABOVE IS SHOWN IN THE LOAD ON PAGE 4 IN THIS DRAWING. THE DRUM SHOWN IS APPROXIMATELY 16" DIAMETER BY 27" HIGH. THE GROSS WEIGHT IS VARIABLE, DEPENDING UPON THE TYPE OF PROPELLANT AND/OR THE METHOD OF FILLING; FROM APPROXIMATELY 121 TO 176 POUNDS. THE DEPICTED FIBERBOARD DRUM IS A STACKABLE (VERTICAL NESTING) TYPE WITH A LEVER-LOCK TYPE CLOSURE AND CONFORMS TO MIL-SPEC MIL-C-70470,



ISOMETRIC VIEW

METAL DRUM, MIL SPEC MIL-C-70469 WHICH IS STACKABLE (VERTICAL NESTING), HAS A LEVER-LOCK TYPE CLOSURE AND FOUR WIDE-FACED FLAT ROLLING HOOPS. THE DRUM IS APPROXIMATELY 16-5/16" DIAMETER BY 27-1/8" HIGH, WITH A GROSS WEIGHT SIMILAR TO THE FIBERBOARD DRUM ABOVE.



SEE SPECIAL NOTE 3 ON PAGE 5.

ISOMETRIC VIEW

KEY NUMBERS

- ① BUNDLING STRAP, 3/4" X .031" OR .035" X 13'-6" LONG STEEL STRAPPING (3 REQD). PRE-POSITION ONE EACH AT 8" FROM EACH TRAILER SIDEWALL AND ONE ON CENTER OF THE TRAILER WIDTH. SEE GENERAL NOTE "J" ON PAGE 2.
- ② SEPARATOR GATE, 3/8" X 27'-1/2" WIDE BY 7'-0" LONG PLYWOOD (2 REQD). SEE THE "BUNDLING DETAIL A" ON PAGE 6. SEE SPECIAL NOTE 2 ON PAGE 5.
- ③ SEAL FOR 3/4" STRAPPING (16 REQD, 1 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.
- ④ BUNDLING STRAP, 3/4" X .031" OR .035" X 16'-0" LONG STEEL STRAPPING (10 REQD). PRE-POSITION ONE EACH AT 8" AND 27" FROM EACH TRAILER SIDEWALL AND ONE ON CENTER OF THE TRAILER WIDTH.
- ⑤ SEPARATOR GATE, 3/8" X 40'-3/4" WIDE BY 7'-7" LONG PLYWOOD (4 REQD).
- ⑥ RISER (2 REQD). SEE THE DETAIL ON PAGE 6 AND THE "BUNDLING DETAIL B" ON PAGE 6. SEE GENERAL NOTES "M" AND "N" ON PAGE 2.
- ⑦ RETAINER GATE, 3/8" X 55" WIDE BY 7'-7" LONG PLYWOOD (2 REQD). CONSTRUCT FROM 2 PIECES OF PLYWOOD BY CUTTING ONE 4' X 8' SHEET OF PLYWOOD TO A 55" LENGTH AND THE OTHER CUT TO FIT (REF: 43" WIDE BY 55" LONG).
- ⑧ TIE PIECE, 1" X 4" X 12" (2 REQD). POSITION ON SIDE OPPOSITE THE 2-HIGH PORTION OF THE LOAD. NAIL TO THE PLYWOOD PIECES OF THE RETAINER GATE, PIECE MARKED ⑦, W/3-6d NAILS AT EACH END AND CLINCH.
- ⑨ INTERMEDIATE DECKING, 1/8" TEMPERED HARDBOARD, TRAILER WIDTH MINUS 4" BY LOAD BAY LENGTH MINUS 4". POSITION WITH LENGTH OF SHEET ACROSS THE TRAILER. SEE SPECIAL NOTE 10 ON PAGE 5.
- ⑩ BUNDLING STRAP, 3/4" X .031" OR .035" X 11'-6" LONG STEEL STRAPPING (3 REQD). PRE-POSITION ONE EACH AT 4" FROM EACH TRAILER SIDEWALL AND ONE SO AS TO BE CENTERED IN THE WIDTH OF THE TRAILER.
- ⑪ SEPARATOR GATE, 3/8" X 27'-1/2" WIDE BY 7'-7" LONG PLYWOOD (2 REQD).
- ⑫ SPACER ASSEMBLY (3 REQD). SEE THE "SPACER ASSEMBLY A" DETAIL ON PAGE 7. SEE SPECIAL NOTE 5 ON PAGE 5.
- ⑬ HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 6". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ⑭ HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1" (1 REQD). NAIL TO THE TRAILER FLOOR W/1-10d NAIL EVERY 6".

SPECIAL NOTES:

1. A 240-DRUM LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8-1/2" WIDE (INSIDE DIMENSION) VAN TRAILER HAVING A WOOD OR WOOD AND METAL FLOOR. TRAILERS HAVING ALL METAL FLOORS CANNOT BE USED; HOWEVER, TRAILERS OF OTHER SIZES MAY BE USED. SEE SPECIAL NOTE 9.
2. THE FIBERBOARD DRUM IS SHOWN IN THE LOAD ON PAGE 4. THE PROCEDURES MAY BE ADAPTED FOR USE IN SHIPPING METAL DRUMS. THE LENGTH OF THE RISERS, PIECE MARKED (6), AND THE LENGTH OF THE SPACER ASSEMBLIES, PIECE MARKED (2), MUST BE INCREASED. ALSO, FILLER PIECES, AS SHOWN BY THE PHANTOM LINES ON THE SEPARATOR GATE DETAIL, MUST BE ADDED TO THE SEPARATOR GATES, PIECE MARKED (2).
3. A DRUM WILL BE POSITIONED IN A TRAILER SO THAT THE LOCKING DEVICE ON THE COVER WILL BE IN A VOID AREA, AND NOT IN DIRECT CONTACT WITH AN ADJACENT DRUM, A TRAILER SIDEWALL, A SEPARATOR GATE, A RETAINER GATE, OR THE SPACER ASSEMBLIES.
4. THE "LOAD AS SHOWN" IS BASED ON DRUMS HAVING A GROSS WEIGHT OF 176 POUNDS. THE DEPICTED LOADING PATTERN CAN BE USED FOR DRUMS HAVING A LESSER GROSS WEIGHT AND CAN ALSO BE USED FOR DRUMS SOMEWHAT HEAVIER, PROVIDING THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT LIMITATIONS FOR A LOAD ARE NOT EXCEEDED.
5. SPACER ASSEMBLIES, PIECE MARKED (2), SHOULD BE OF SUCH A WIDTH AS TO PROVIDE FOR A MINIMUM OF EXCESS LATERAL SPACE ACROSS THE TRAILER. IF A 7'-6" WIDE TRAILER IS BEING LOADED, A SPACER ASSEMBLY "A" AND TWO SPACER ASSEMBLIES "B" WILL BE USED. WHEN LOADING FIBERBOARD DRUMS IN A TRAILER WHICH IS 7'-8-1/2" WIDE, AS SHOWN, THREE SPACER ASSEMBLIES "A" WILL BE USED, WITH 1" X 4" FILL PIECES LAMINATED TO ONE SIDE OF EACH SPACER. VARIATIONS IN TRAILER WIDTHS, AND THE TYPE DRUM BEING LOADED, MAY REQUIRE COMBINATIONS OF SPACER ASSEMBLIES AND/OR MAY REQUIRE ADDED LAMINATIONS OF MATERIAL TO PROVIDE FOR A SNUG FIT ACROSS THE LOAD.
6. IF A LESSER QUANTITY THAN WHAT IS SHOWN IS DESIRED, THE TWO-HIGH CENTER SECTION MAY BE DECREASED IN LENGTH BY A MULTIPLE OF TWO STACKS OR EIGHTEEN (18) DRUMS. A SINGLE LAYER MAY THEN BE ADDED AT THE REAR OF THE BUNDLED PORTION AT THE FRONT OF THE LOAD OR IN FRONT OF THE REAR BUNDLED PORTION OR BOTH. A MINIMUM OF THREE STACKS (14 DRUMS) WILL BE PLACED AT EITHER LOCATION. ADDITIONAL DRUMS MAY BE ADDED IN MULTIPLES OF NINE (9) DRUMS. A PORTION OF A LOAD MUST END UP WITH FIVE DRUMS ACROSS THE TRAILER.
7. A LOAD MAY BE DECREASED BY A SMALL QUANTITY BY INSTALLING ONE OR MORE FILLERS. SEE THE "FILLER FOR OMITTED METAL DRUM" OR "FILLER FOR OMITTED FIBERBOARD DRUM" DETAIL, AS APPLICABLE, ON PAGE 8. SEE THE "INSTALLATION OF FILLER ASSEMBLY" DETAIL ON PAGE 9 FOR GUIDANCE IN POSITIONING. NOTE THAT A FILLER MUST BE INSTALLED SUCH THAT THERE ARE DRUMS ON ALL SIDES IN THE 2-HIGH PORTION OF THE LOAD; A FILLER WILL NOT BE INSTALLED ADJACENT TO EITHER THE TRAILER SIDEWALL OR A RETAINER GATE.
8. IF A TRAILER LONGER THAN 40'-0" IS TO BE LOADED, THE GUIDANCE CONTAINED IN SPECIAL NOTE 5 ABOVE MAY BE APPLIED FOR THE DEVELOPMENT OF A LOAD FOR THE LONGER TRAILER. FOR PLANNING PURPOSES, EACH STACK OF FIBERBOARD DRUMS REQUIRES APPROXIMATELY 12.8" OF TRAILER LENGTH; EACH STACK OF METAL DRUMS REQUIRES APPROXIMATELY 13.2" OF TRAILER LENGTH. A 3-LONG PORTION WOULD THEN BE 2 TIMES THE APPLICABLE DRUM SPACE PLUS THE DIAMETER OF THE APPLICABLE DRUM; A 5-LONG BAY WOULD BE 4 TIMES THE SPACE PLUS THE DIAMETER.
9. IF 8'-2" WIDE TRAILERS ARE TO BE LOADED, SEE THE "LOAD PATTERN VIEWS FOR 8'-2" WIDE TRAILERS" ON PAGE 9. NOTE THAT THE SEPARATOR GATES, PIECE MARKED (2), WILL BE 7'-6" LONG, AND THE SEPARATOR GATES, PIECES MARKED (5) AND (11), AND THE RETAINER GATE, PIECE MARKED (7), AND THE RISERS, PIECE MARKED (6), WILL BE 8'-0" LONG.
10. DECKING IS TO BE PROVIDED BETWEEN THE LAYERS OF DRUMS IN THE 2-HIGH PORTION OF THE LOAD. IT MAY BE NECESSARY TO USE ONE OR MORE DECKING SHEETS WHICH ARE LESS THAN 48" WIDE IN ORDER TO PROVIDE DECKING FOR THE ENTIRE BAY. PARTIAL WIDTH SHEETS TO BE USED SHOULD NOT BE LESS THAN TWENTY-FOUR INCHES (24") WIDE AND SHOULD NOT BE USED AT EITHER END OF THE BAY.

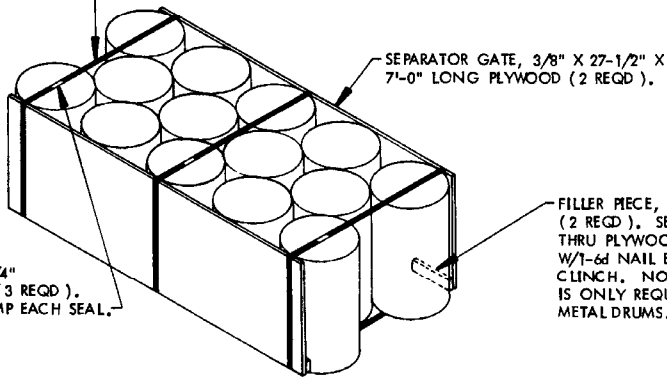
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	19	7
2" X 4"	56	38
2" X 6"	63	63
2" X 8"	34	46
NAILS	NO. REQD	POUNDS
6d (2")	282	1-3/4
10d (3")	129	2
PLYWOOD, 3/8"-----825 SQ FT----- 336 LBS 3/4" STEEL STRAPPING ----- 235' REQD----- 11 LBS SEALS FOR 3/4" STRAPPING ----- 16 REQD----- NIL HARDBOARD, 1/8"-----170 SQ FT REQD----- 75 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
DRUM	240	42,240 LBS
DUNNAGE		740 LBS
TOTAL WEIGHT		42,980 LBS (APPROX)

BUNDLING STRAP, 3/4" X .031" OR .035" X 13'-6" LONG STEEL STRAPPING (3 REQD).

SEAL FOR 3/4" STRAPPING (3 REQD). DOUBLE CRIMP EACH SEAL.



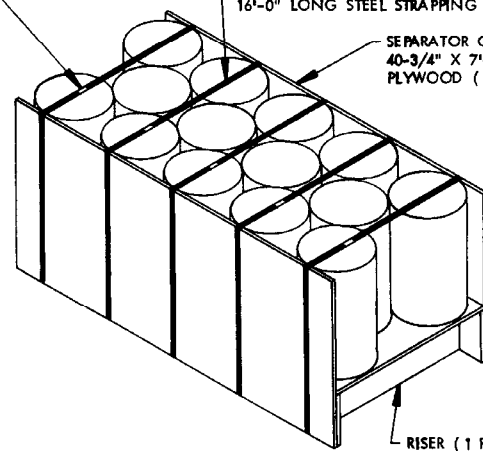
BUNDLING DETAIL A

SEAL FOR 3/4" STRAPPING (5 REQD). DOUBLE CRIMP EACH SEAL.

BUNDLING STRAP, 3/4" X .031" OR .035" X 16'-0" LONG STEEL STRAPPING (5 REQD).

SEPARATOR GATE, 3/8" X 40-3/4" X 7'-7" LONG PLYWOOD (2 REQD).

RISER (1 REQD). SEE DETAIL BELOW.

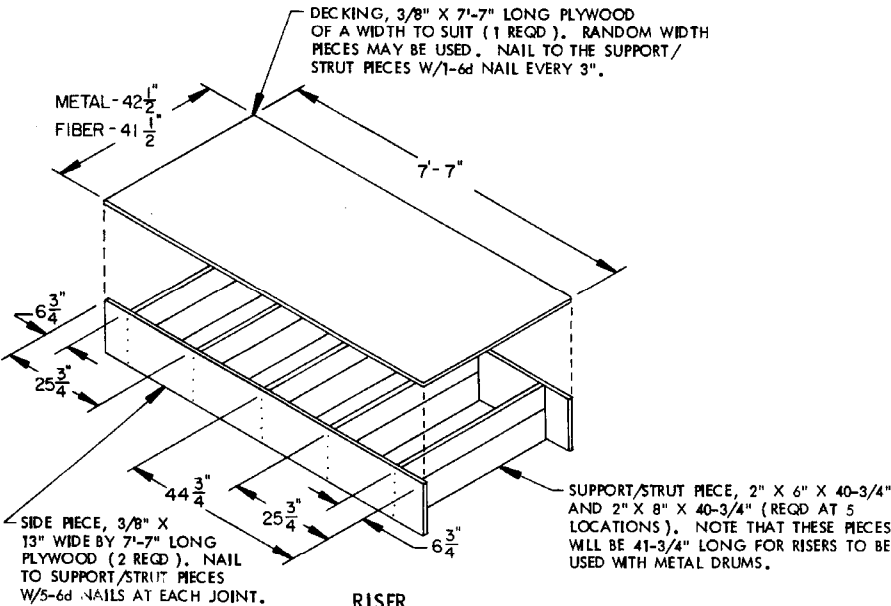


BUNDLING DETAIL B

DECKING, 3/8" X 7'-7" LONG PLYWOOD OF A WIDTH TO SUIT (1 REQD). RANDOM WIDTH PIECES MAY BE USED. NAIL TO THE SUPPORT/STRUT PIECES W/1-6d NAIL EVERY 3".

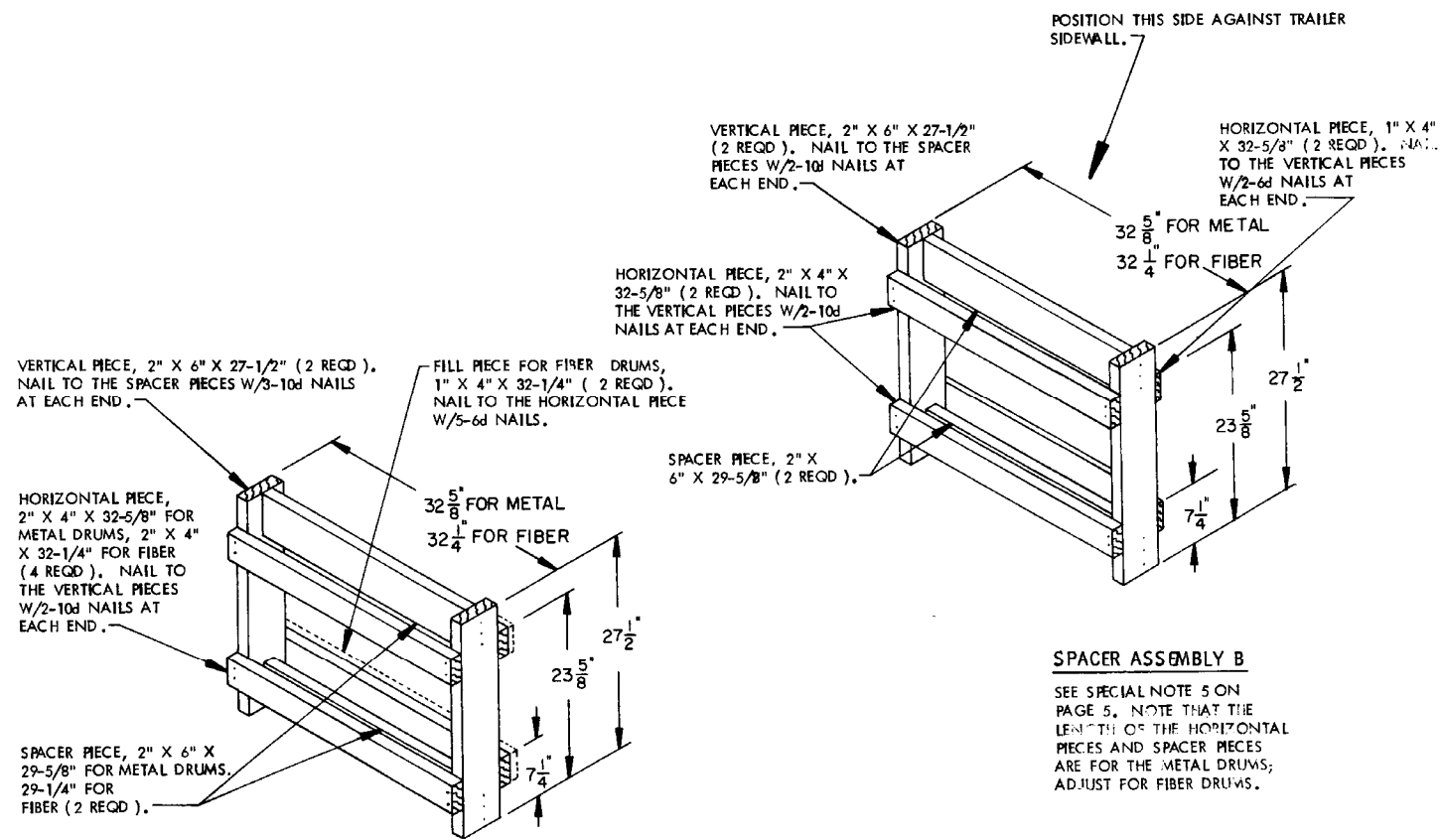
METAL - 42 1/2"
FIBER - 41 1/2"

7'-7"



RISER

WHEN THE RISER IS USED IN AN 8'-2" WIDE TRAILER, THE LENGTH WILL BE 43-5/8" FOR FIBERBOARD DRUMS AND 42" FOR METAL DRUMS. THE WIDTH WILL BE INCREASED TO 8'-0" AND THE 44-3/4" DIMENSION WILL BE INCREASED TO 47-1/4".

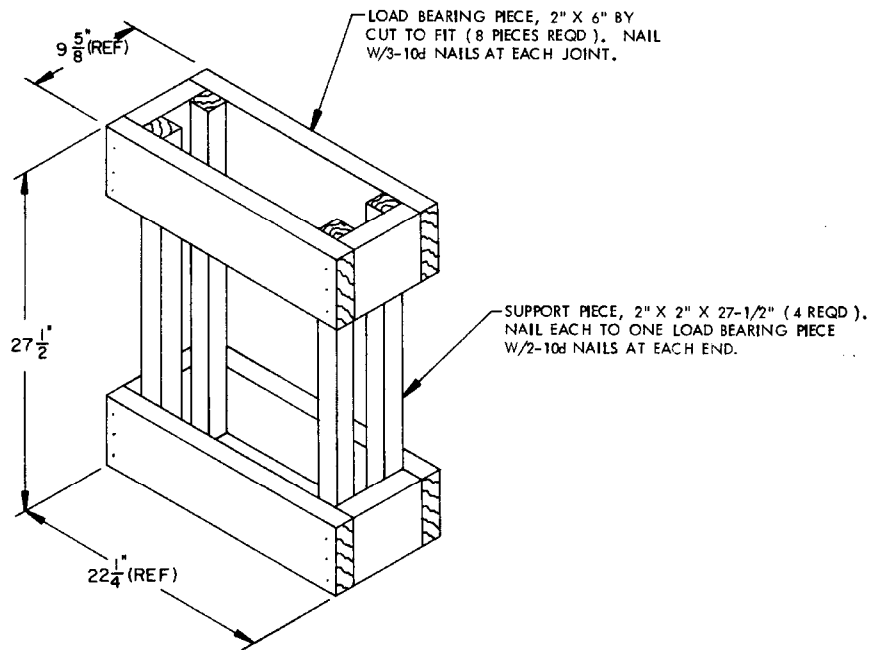


SPACER ASSEMBLY A

THIS ASSEMBLY IS FOR USE IN THE LOAD SHOWN ON PAGE 4. SEE SPECIAL NOTE 5 ON PAGE 5.

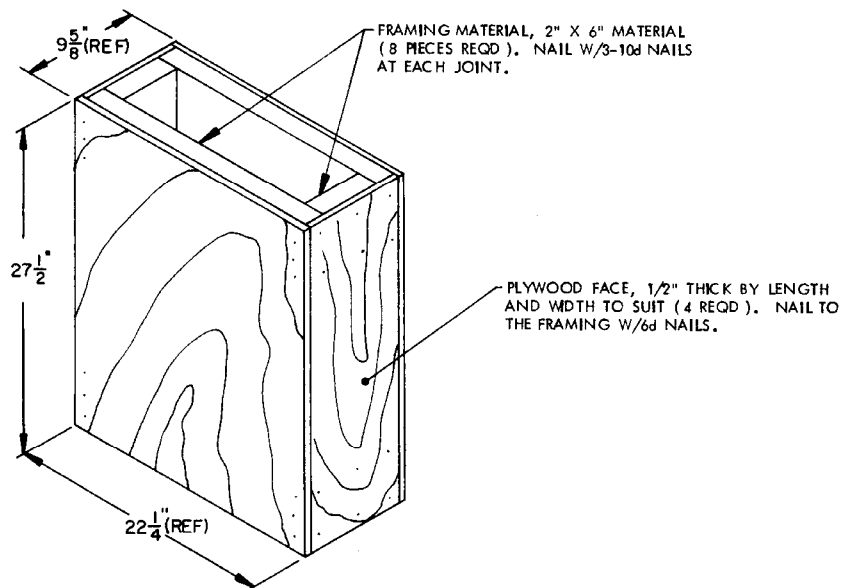
SPACER ASSEMBLY B

SEE SPECIAL NOTE 5 ON PAGE 5. NOTE THAT THE LENGTH OF THE HORIZONTAL PIECES AND SPACER PIECES ARE FOR THE METAL DRUMS; ADJUST FOR FIBER DRUMS.



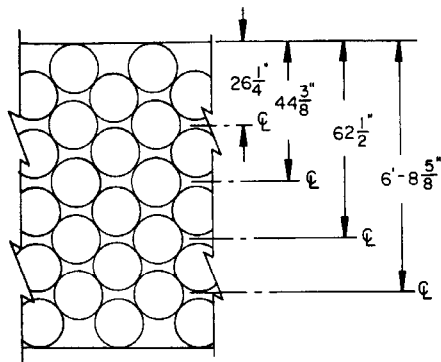
FILLER FOR OMITTED METAL DRUM

A FILLER IS TO BE INSTALLED AT A LOCATION WHERE THERE ARE DRUMS ON ALL SIDES AND SHOULD BE NEAR THE CENTER OF THE LOAD LENGTH. SEE THE TYPICAL "INSTALLATION OF FILLER ASSEMBLY" DETAIL ON PAGE 9.



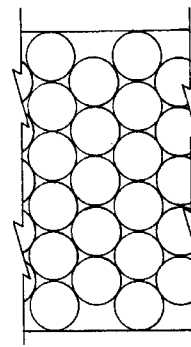
FILLER FOR OMITTED FIBERBOARD DRUM

A FILLER IS TO BE INSTALLED AT A LOCATION WHERE THERE ARE DRUMS ON ALL SIDES AND SHOULD BE NEAR THE CENTER OF THE LOAD LENGTH. SEE THE TYPICAL "INSTALLATION OF FILLER ASSEMBLY" DETAIL ON PAGE 9.



LOAD PATTERN FOR METAL DRUM

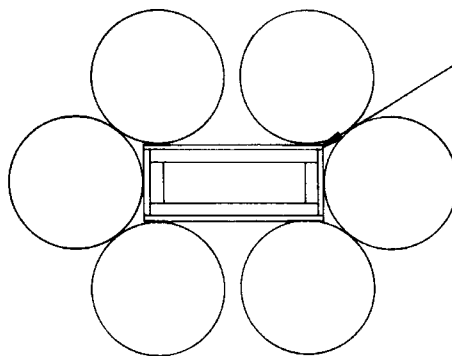
FOR LOAD PLANNING PURPOSES, THE METAL DRUMS STACK APPROXIMATELY 12.9" ON CENTER.



LOAD PATTERN FOR FIBERBOARD DRUM

FOR LOAD PLANNING PURPOSES, THE FIBERBOARD DRUMS STACK APPROXIMATELY 13.9" ON CENTER.

LOAD PATTERN VIEWS FOR 8'-2" WIDE TRAILERS



FILLER FOR OMITTED FIBERBOARD DRUM. SEE THE DETAIL ON PAGE 8.

INSTALLATION OF FILLER ASSEMBLY

FIBERBOARD DRUMS ARE SHOWN AS TYPICAL. THE INSTALLATION OF A FILLER FOR A METAL DRUM WILL BE SIMILAR.

