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LOADING AND BRACING^① IN MILVAN CONTAINERS[⊕] OF DRY CS-1&2 PACKED IN 55-GALLON DRUM

- ① LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER OR AIR CARRIER. SEE THE "SPECIAL T/COFC NOTES" BELOW.
- ⊕ ONLY MILVAN CONTAINERS WHICH HAVE BEEN MODIFIED TO INCLUDE A MECHANICAL LOAD-BRACING DEVICE THAT SATISFIES THE REQUIREMENTS OF THE BUREAU OF EXPLOSIVES PAMPHLET 6C WILL BE USED FOR THE MOVEMENT OF AMMUNITION BY T/COFC SERVICE. CAUTION: OTHER REQUIREMENTS OF PAMPHLET 6C ALSO APPLY.

MAXIMUM LOAD WEIGHT CRITERIA

BECAUSE OF THE LIGHT WEIGHT OF THE AMMUNITION ITEMS, A LOAD WEIGHT WILL NEVER EXCEED ANY WEIGHT RESTRICTION CRITERIA.

SEE "REDUCED-LOAD PROVISIONS" ON PAGE 2 FOR INSTRUCTIONS WHICH MUST BE APPLIED IF A CONTAINER IS TO BE LOADED WITH LESS UNITS THAN SHOWN IN THE "BASIC LOAD" ON PAGE 2.

SPECIAL T/COFC NOTES:

- A. CAUTION: LOADED CONTAINERS MUST BE ON CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE, REGARDLESS OF LOAD WEIGHT WITHIN THE CONTAINER.
- B. LOAD LIMITS OF T/COFC RAIL CARS MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED SO THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES MORE THAN ONE-HALF OF THE LOAD LIMIT FOR THAT CAR.
- C. CHASSIS/CONTAINERS COUPLED INTO A 40-FOOT TRAILER CONFIGURATION MUST BE PLACED AT THE B-END OF A TOFC RAIL CAR. THE REAR END OF THE 40-FOOT UNIT WILL OVER-HANG THE END OF THE CAR IF IT IS PLACED AT THE A-END. TWENTY-FOOT AND 40-FOOT UNITS CAN BE LOADED ON THE SAME CAR.

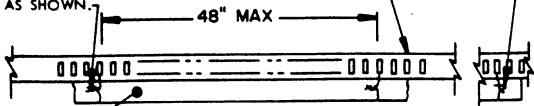
DO NOT SCALE

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		U. S. ARMY MATERIEL COMMAND MARCH 1972	
		CLASS	DIVISION
		19	48
		DRAWING	FILE
		4029	11-15 F1001

TIE WIRE, NO. 14 GAGE WIRE 18" LONG, WIRE TO FORM A COMPLETE LOOP THRU HOLE IN BELT RAIL AND AROUND FILL PIECE, BRING ENDS TOGETHER AND TWIST TAUT. REQUIRED NEAR EACH END OF A FILL PIECE AND EVERY 48" OF FILL PIECE LENGTH AS SHOWN.

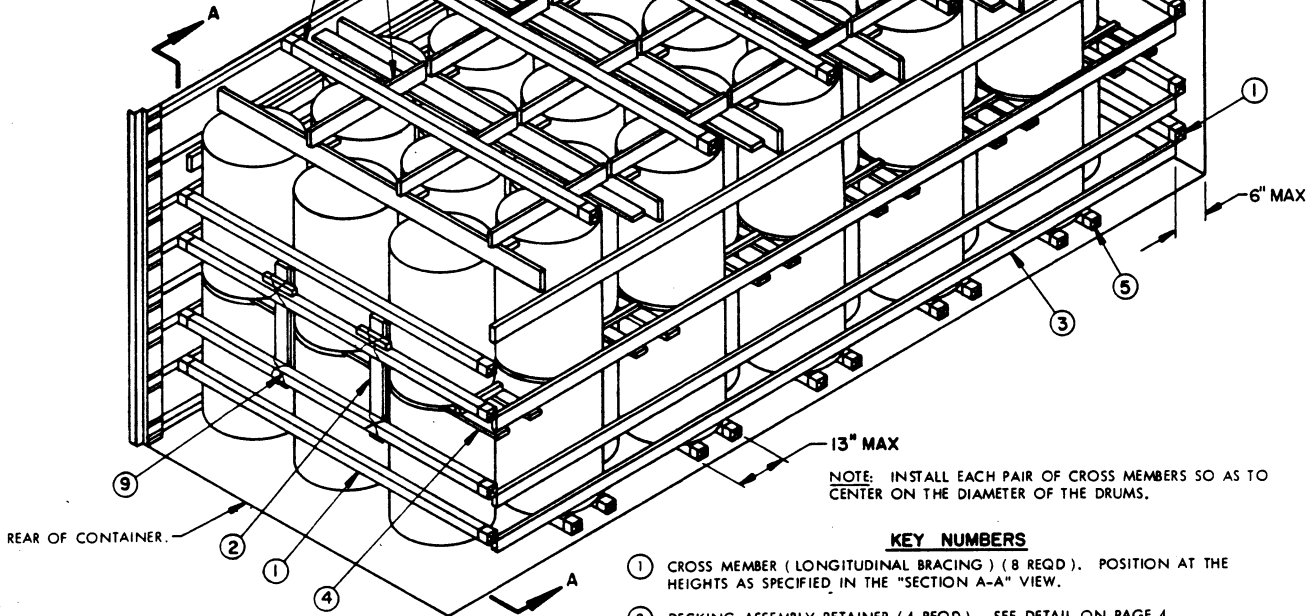
16", 28", 48", OR 72" HIGH BELT RAIL.

RETAINER NAIL, 10d NAIL BENT OVER THE WIRE TO PREVENT LONGITUDINAL MOVEMENT OF PIECE MARKED ③ (1 REQD NEAR EACH END OF EACH LENGTH OF SIDE FILL PIECES.



SIDE FILL DETAIL

FILL PIECE, 2" X 4" BY LADING LENGTH, RANDOM LENGTH PIECES MAY BE USED (8 REQD). REQUIRED AT THE 16", 28", 48" AND 72" HIGH BELT RAILS ON EACH SIDE WALL.



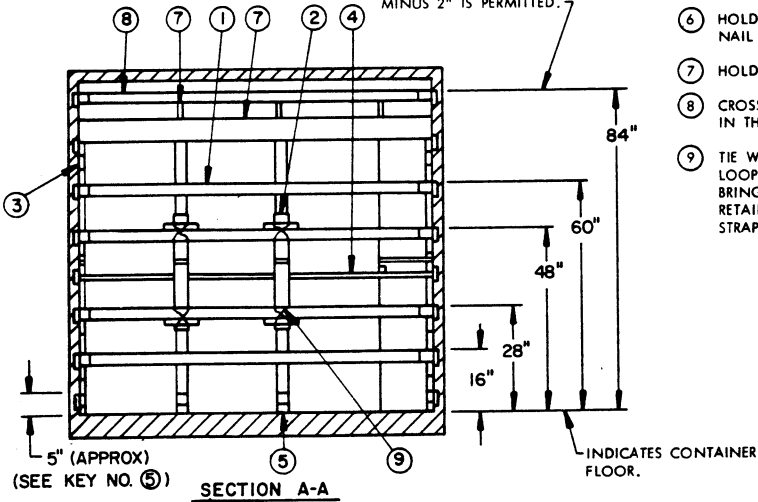
ISOMETRIC VIEW

NOTE: INSTALL EACH PAIR OF CROSS MEMBERS SO AS TO CENTER ON THE DIAMETER OF THE DRUMS.

KEY NUMBERS

- ① CROSS MEMBER (LONGITUDINAL BRACING) (8 REQD). POSITION AT THE HEIGHTS AS SPECIFIED IN THE "SECTION A-A" VIEW.
- ② DECKING ASSEMBLY RETAINER (4 REQD). SEE DETAIL ON PAGE 4.
- ③ SIDE FILL, 2" X 4" BY LADING LENGTH (8 REQD). INSTALL IN RANDOM LENGTH PIECES AND WIRE TIE TO THE 16", 28", 48" AND 72" HIGH BELT RAILS ON EACH SIDE OF THE CONTAINER. SEE THE "SIDE FILL" DETAIL ABOVE.
- ④ DECKING ASSEMBLY (11 REQD). SEE DETAIL ON PAGE 3. INSTALL ONE ASSEMBLY BETWEEN LAYERS OF ALL ELEVEN STACKS.
- ⑤ CROSS MEMBER/RISER SUPPORT (5 REQD). POSITION UNDER ALTERNATE STACKS OF CONTAINERS AND ATTACH TO THE 5" HIGH BELT RAIL ON EACH SIDE OF THE CONTAINER. SEE THE DETAIL ON PAGE 4.
- ⑥ HOLD-DOWN PIECE, 2" X 6" BY CONTAINER WIDTH MINUS 1/2" (1 REQD). NAIL TO HOLD DOWN ASSEMBLY W/1-10d NAIL EVERY 8".
- ⑦ HOLD-DOWN ASSEMBLY (5 REQD). SEE DETAIL ON PAGE 3.
- ⑧ CROSS MEMBER (HOLD DOWN) (5 REQD). POSITION AT THE HEIGHT SPECIFIED IN THE "SECTION A-A" VIEW.
- ⑨ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (8 REQD). WIRE TO FORM A COMPLETE LOOP AROUND DECKING ASSEMBLY RETAINER AND LONGITUDINAL CROSS MEMBER. BRING ENDS TOGETHER AND TWIST TAUT. SECURE TO THE DECKING ASSEMBLY RETAINER WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE, OR WITH A STRAP STAPLE.

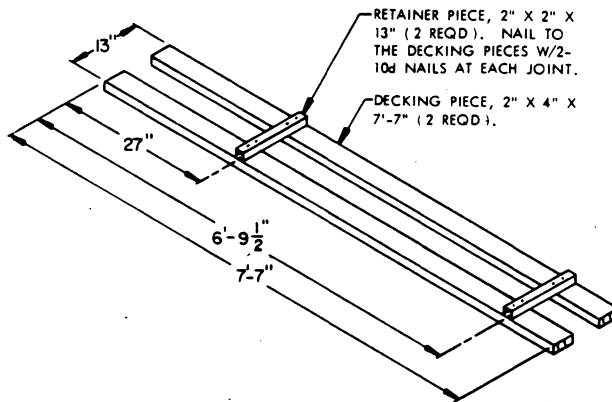
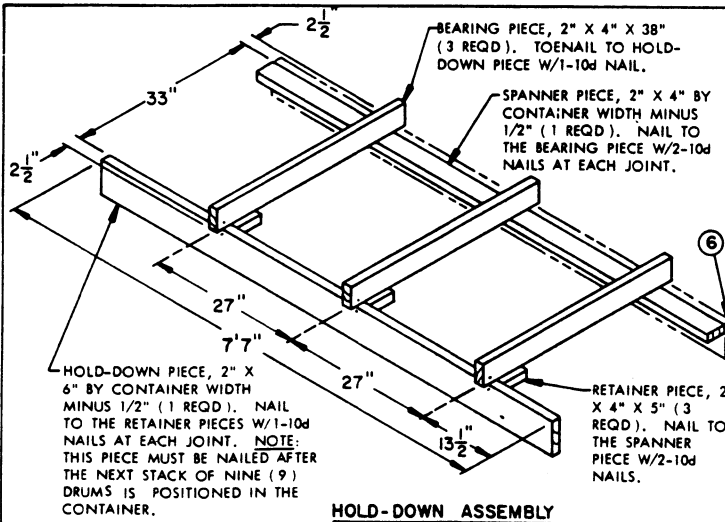
INDICATES TOP SURFACE OF CROSS MEMBERS. PLUS OR MINUS 2" IS PERMITTED.



SECTION A-A

REDUCED-LOAD PROVISIONS

- 1. IF A CONTAINER IS TO BE LOADED WITH LESS UNITS THAN SHOWN, DRUM UNITS SHOULD BE ELIMINATED FROM THE REAR OF THE LOAD. FOR EXAMPLE, IF ONLY 65 UNITS ARE TO BE LOADED, THE OMITTED UNIT ASSEMBLY DETAILED ON PAGE 4 MUST BE SUBSTITUTED FOR THE OMITTED UNIT. SEE THE "OMITTED-UNIT ASSEMBLY" ON PAGE 4.
- 2. SPECIFICATIONS FOR THE "BASIC LOAD", FOR THE "OMITTED-UNIT METHOD", AND FOR THE "ONE-LAYER HOLD-DOWN METHOD" SHOWN ON PAGE 4 WILL BE APPLIED SEPARATELY OR IN COMBINATION TO BLOCK AND BRACE OTHER THAN 66-UNIT LOADS.



BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	10	2
2" X 2"	27	9
2" X 4"	233	156
2" X 6"	224	224
4" X 4"	10	13
NAILS	NO. REQD	POUNDS
10d (3")	162	2-1/2
WIRE, NO. 14 GAGE	31' REQD	3 LBS
CROSS MEMBER		23 REQD

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.

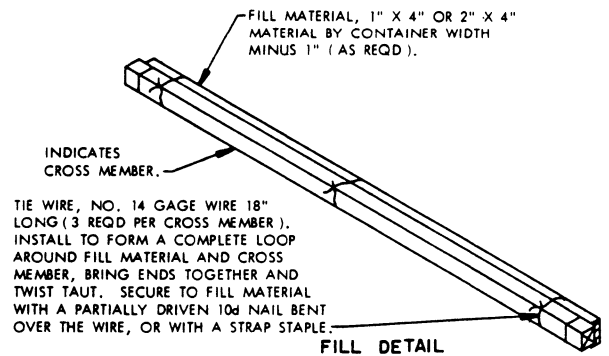
STRAPPING, STEEL : TYPE I OR IV, CLASS A OR B, FED SPEC QQ-5-781.

STAPLE, STRAP; SEAL, STRAP ----- : COMMERCIAL GRADE.

WIRE ----- : FED SPEC QQ-W-461.

GENERAL NOTES

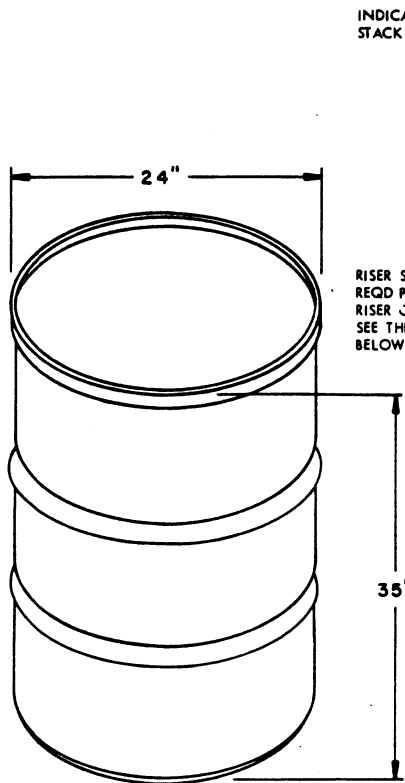
- THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO CS-1 AND 2 PACKED 10 BAGS PER 55-GALLON DRUM. SUBSEQUENT REFERENCE TO DRUM MEANS THE DRUM WITH BAGS INSIDE. SEE PAGE 4 FOR DETAIL OF DRUM. **CAUTION:** REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.
- THE LOAD AS SHOWN IS BASED ON A 20' LONG BY 8' WIDE BY 8' HIGH MILVAN CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" WIDE BY 92" WIDE BY 87" HIGH. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) SHIPMENT.
- THE SPECIFIED OUTLOADING PROCEDURES ARE FOR CONTAINERS EQUIPPED WITH SELF-CONTAINED MECHANICAL BRACING DEVICES AS DESCRIBED WITHIN BUREAU OF EXPLOSIVES PAMPHLET 6C. CROSS MEMBER ATTACHMENT FACILITIES WITHIN THESE CONTAINERS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED. THE HEIGHT DIMENSIONS SPECIFIED WITHIN THIS DRAWING FOR THE INSTALLATION OF CROSS MEMBERS CONFORM WITH BUREAU OF EXPLOSIVES PAMPHLET 6C, WITH THE EXCEPTION THAT TWO (2) ADDITIONAL BELT RAILS HAVE BEEN SHOWN; ONE AT 72" AND ONE AT 84" HEIGHT FROM THE CONTAINER FLOOR. VOIDS LENGTHWISE WITHIN THE LOAD MUST BE HELD TO A MINIMUM. CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE HOLE SPACING IN THE CROSS MEMBER ATTACHMENT FACILITY PERMITS. EACH CROSS MEMBER WILL BE INSTALLED WITH THE ENDS ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS (AT EQUAL HEIGHTS, AND AT EQUAL DISTANCES FROM THE END OF THE CONTAINER). CROSS MEMBERS IN EMPTY CONTAINERS MUST BE FASTENED INTO BELT RAILS FOR SHIPMENT. COMPONENTS ASSIGNED TO EACH CONTAINER MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS. SEE "FILL DETAIL" BELOW.
- WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT. WHEN ANY STRAP IS INSTALLED AROUND A BELT RAIL WITH A LAP-BACK-ON-SELF JOINT, ONE (1) SEAL WITH TWO (2) PAIR OF CRIMPS WILL BE USED. **CAUTION:** EXERCISE CARE DURING TENSIONING TO PREVENT DAMAGE TO THE LADING.
- DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-5/8" WIDE AND 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE.
- CAUTION:** DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES OR WHEN LAMINATING DUNNAGE. 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 ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- CAUTION:** EXTREME CARE MUST BE EXERCISED WHEN POSITIONING DRUMS IN CONTAINER SO THAT THE CLOSURE BOLTS OF THE LID DO NOT COME IN CONTACT WITH ADJACENT DRUMS OR DUNNAGE.



THIS DETAIL DEPICTS METHOD OF POSITIONING FILL MATERIAL BETWEEN CROSS MEMBER AND LADING, WHEN THE VOID BETWEEN THE TWO IS GREATER THAN ONE INCH (1") FOR LONGITUDINAL BRACING.

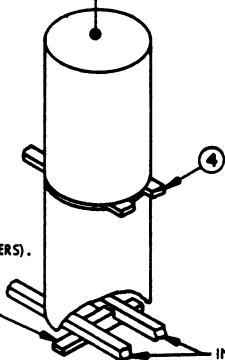
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
DRUM W/CONTENTS	66	11,220 LBS
DUNNAGE		1,013 LBS
CONTAINER		5,700 LBS
TOTAL GROSS WEIGHT		17,933 LBS



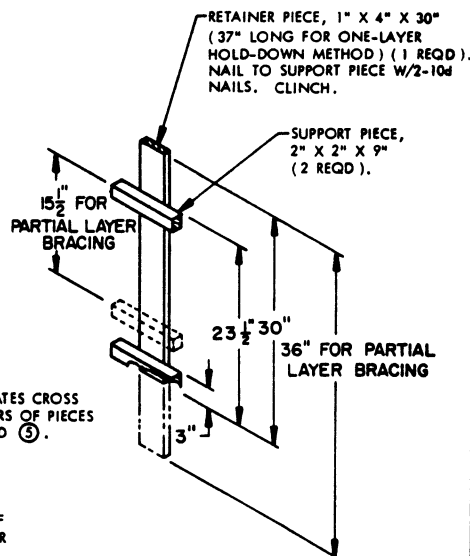
INDICATES THE CENTER DRUM STACK OF A 6-DRUM STACK.

RISER SUPPORT (1 REQD PER SET OF RISER CROSS MEMBERS). SEE THE DETAIL BELOW.



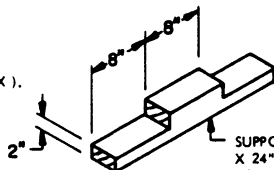
**CROSS MEMBER/
RISER SUPPORT**

THE ABOVE DETAIL DEPICTS THE METHOD OF POSITIONING A RISER SUPPORT PIECE UNDER CROSS MEMBERS USED AS RISERS. A RISER SUPPORT PIECE IS REQUIRED ONLY UNDER THE CENTER DRUM STACK OF A SET OF SIX (6) DRUMS THAT ARE ON A RISER/CROSS MEMBER ARRANGEMENT. THIS PIECE IS TO SUPPORT THE CENTER OF THE RISER CROSS MEMBERS.

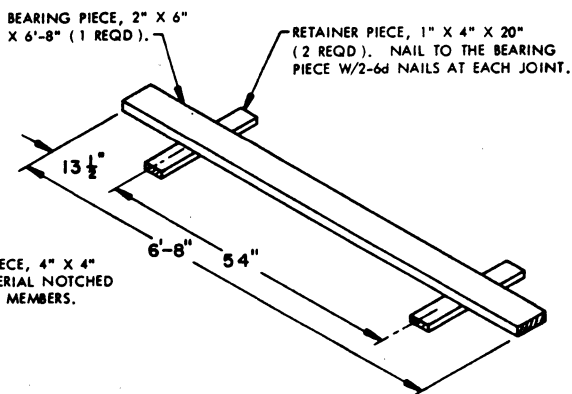


DECKING ASSEMBLY RETAINER

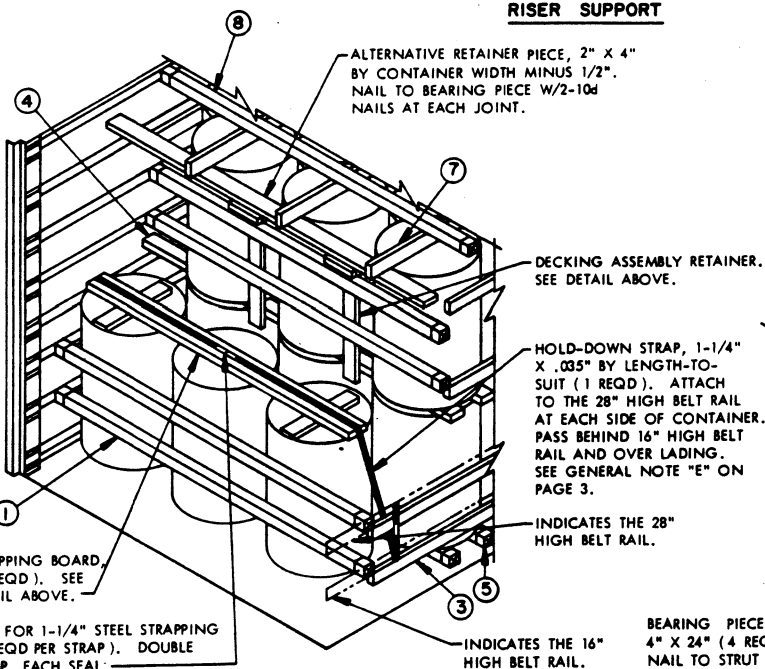
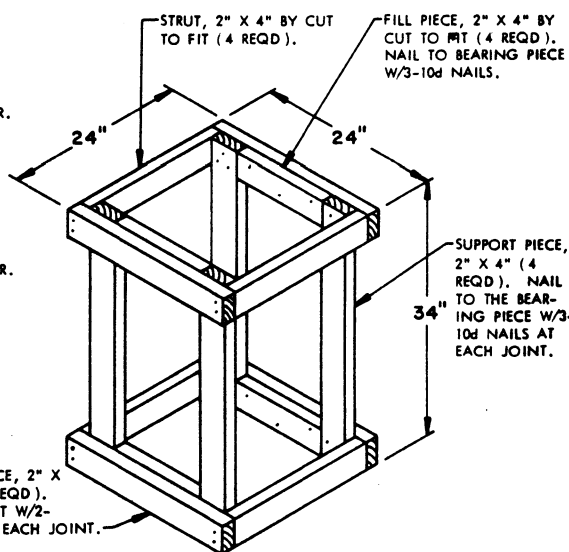
UNIT DETAIL
UNIT WEIGHT ----- 170 POUNDS (APPROX).
CUBE ----- 7.4 CUBIC FEET.



RISER SUPPORT



STRAPPING BOARD



ONE-LAYER HOLD-DOWN METHOD

NOTE THAT THE HOLD-DOWN ASSEMBLY, PIECE MARKED ⑦ AT THE REAR OF THE MAIN PORTION OF THE LOAD, HAS BEEN ALTERED TO SUBSTITUTE AN "ALTERNATIVE RETAINER PIECE" IN THE PLACE OF THE THREE (3) 'RETAINER PIECES' AND ONE (1) HOLD-DOWN PIECE.

OMITTED-UNIT ASSEMBLY

THE ASSEMBLY AS SPECIFIED ABOVE IS FOR USE IN PLACE OF AN OMITTED UNIT. IT WILL NEVER BE REQUIRED TO USE MORE THAN TWO (2) ASSEMBLIES IN ANY ONE LOAD. CAUTION: AN ASSEMBLY OR ASSEMBLIES MUST ONLY BE PLACED WITHIN THE MIDDLE ROW OF A LOAD, AND NOT ADJACENT TO A CROSS MEMBER.