APPROVED BY U.S. COAST GUARD	APPROVED BY BUREAU OF EXPLOSIVES
R.G. Schuning	A. F. Grassmuck MILITARY ASSISTANT
DATE 10-5-71	DATE 8/26/71

LOADING AND BRACING◑ IN MILVAN CONTAINERS⊕ OF PALLETIZED 175 MM SEPARATE LOADING PROJECTILES (6/PALLET)

◑ 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 CARRIERS. SEE THE "SPECIAL T/COFC NOTES" BELOW.

⊕ ONLY MILVAN CONTAINERS WHICH HAVE BEEN MODIFIED TO INCLUDE A MECHANICAL LOAD-BRACING SYSTEM 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:

THE ITEMIZED LOAD WEIGHTS ARE CONTROLLED BY EQUIPMENT CAPABILITY FACTORS. ALSO, THESE LISTED LOAD WEIGHTS IDENTIFY THE MAXIMUM COMBINED WEIGHT OF AMMUNITION LADING UNITS AND DUNNAGE THAT CAN BE PLACED INTO ONE (1) MILVAN CONTAINER WITHOUT VIOLATING ONE OR MORE OF THE "CAPABILITY FACTORS". SEE NOTES 1 AND 2.

39,100 LBS IN 20-FT CONTAINER (W/O CHASSIS) ABOARD CONTAINERSHIP.
39,100 LBS IN CONTAINER ON 20-FT CHASSIS WITH DOUBLE BOGIE. SEE NOTE 3.
25,300 LBS IN CONTAINER ON 20-FT CHASSIS WITH SINGLE BOGIE. SEE NOTE 4.
21,300 LBS IN EACH CONTAINER ON 40-FT CHASSIS (COUPLED WITH DOUBLE BOGIE). SEE NOTE 3.
19,300 LBS IN 20-FT CONTAINER (W/O CHASSIS) ABOARD FIXED-WING AIRCRAFT.
39,100 LBS IN 20-FT CONTAINER (W/O CHASSIS) FOR ROTARY-WING AIRCRAFT. SEE NOTE 5.

NOTE 1: DUNNAGE INCLUDES MATERIALS, OTHER THAN COMPONENTS OF THE MECHANICAL LOAD-BRACING SYSTEM USED TO BLOCK AND BRACE A LOAD.

NOTE 2: ALTHOUGH THE HEAVIEST MAXIMUM LOAD IS DELINEATED ON PAGES 2 AND 3, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOAD CAN BE ADJUSTED TO SATISFY A LESSER QUANTITY OF LADING UNITS. ADDITIONAL INSTRUCTIONS ARE UNDER THE "REDUCED-LOAD PROVISIONS" SECTION ON PAGE 2.

NOTE 3: DEPENDING ON TRANSPORTATION ROUTING, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY "WEIGHT LAWS" OF CERTAIN STATES. ALSO, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY OTHER WEIGHT RESTRICTIONS IMPOSED ON THE MILVAN SYSTEM.

NOTE 4: BY SPECIAL AUTHORITY, IT MAY BE POSSIBLE TO MOVE HEAVIER LOADS ON SINGLE BOGIE CHASSIS WITHIN AN INSTALLATION.

NOTE 5: IT WILL BE NECESSARY TO REDUCE WEIGHT OF SOME LOADS TO BE MOVED BY ROTARY-WING AIRCRAFT, DEPENDING ON "LIFT" CAPABILITY OF THE SCHEDULED AIRCRAFT.

DO NOT SCALE

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.

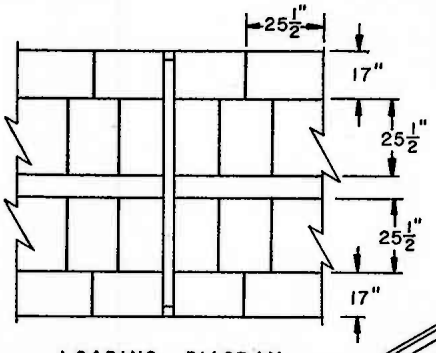
B. LOAD LIMITS OF T/COFC RAIL CARS MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED SO THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES MORE THAN ONE-HALF OF THE LOAD LIMIT FOR THAT CAR.

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.

Superseded by 4163-15PE1002

DRAFTSMAN XQ /	PROJ ENG GWP/RWW	SUBMITTED M. R. Dickson, COMMANDING OFFICER, SAVANNA ARMY DEPOT
CHECKER RSH / RDK	AMC AMMO CTR John Syd	EXAMINED AND APPROVED S. J. Baermann, U S ARMY MUNITIONS COMMAND
REVISIONS		APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL COMMAND: A. D. Ehinger, USAMC AMMO CENTER
		U. S. ARMY MATERIEL COMMAND
		DATE: JUNE 1971
		SAVANNA AD DWG NO
		D-AMXSV-4274

PROJECT FSA 120C-71



LOADING DIAGRAM

THE DETAIL AT LEFT SHOWS A PLAN VIEW OF THE LOADING PATTERN SPECIFIED IN THE LOAD VIEW BELOW. NOTE THAT BRACING COMPONENTS/DUNNAGE HAVE BEEN OMITTED FOR CLARITY PURPOSES.

ISOMETRIC VIEW

KEY NUMBERS

(1) CROSS MEMBER (LONGITUDINAL BRACING) (17 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION A-A" VIEW.

(2) LOAD BEARING GATE, 1/2" PLYWOOD, CONTAINER WIDTH MINUS 1/2" BY 48" (8 REQD).

(3) GATE HOLD-DOWN, 2" X 4" X 6" (16 REQD). NAIL THROUGH LOAD BEARING GATE INTO HOLD DOWN W/3-6d NAILS.

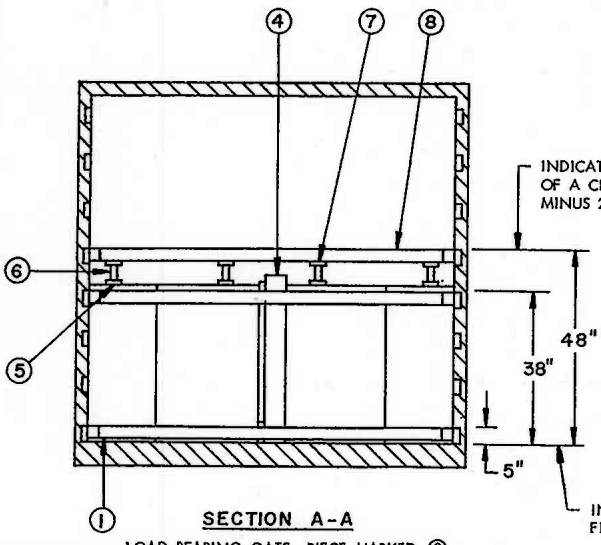
(4) SEPARATOR (4 REQD). SEE DETAIL ON PAGE 3.

(5) BUFFER PIECE, 1" X 4" X 48" (16 REQD). NAIL TO FILL PIECE, PIECE MARKED (6) , W/5-6d NAILS.

(6) FILL PIECE, 2" X 4" X 48" (16 REQD.). WIDER OR NARROWER MATERIAL MAY BE USED, DEPENDING ON THE COVER HEIGHT OF THE PALLET. SEE GENERAL NOTE "E" ON PAGE 3.

(7) BEARING PIECE, 1" X 4" X 9" (32 REQD). POSITION BETWEEN CROSS MEMBER, PIECE MARKED (8) , AND FILL PIECE, PIECE MARKED (6) , AND NAIL TO FILL PIECE W/2-6d NAILS.

(8) CROSS MEMBER (HOLD DOWN) (8 REQD). POSITION AT THE HEIGHT SPECIFIED IN THE "SECTION A-A" VIEW.



SECTION A-A

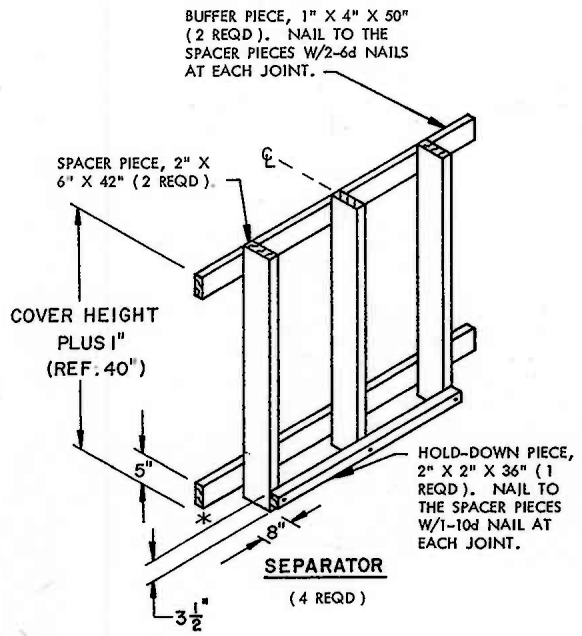
LOAD BEARING GATE, PIECE MARKED (2) , HAS BEEN OMITTED FOR CLARITY.

REDUCED-LOAD PROVISIONS

1. IF A CONTAINER IS TO BE LOADED WITH A FEW LESS UNITS THAN SHOWN, PALLET UNITS SHOULD BE ELIMINATED FROM THE REAR OF THE LOAD. FOR EXAMPLE, IF A LOAD IS RESTRICTED SO AS TO NOT INCLUDE MORE THAN 34,000 POUNDS OF AMMUNITION, ONLY 36-934-POUND PALLET UNITS CAN BE LOADED. IN THIS CASE, THE FOUR REAR MOST UNITS MUST BE ELIMINATED AND TWO FILLER ASSEMBLIES MUST BE USED AS SHOWN IN THE "ALTERNATIVE LOADING PATTERN" ON PAGE 4. IF AN ODD NUMBER OF UNITS IS DESIRED, AN "OMITTED-UNIT ASSEMBLY", AS DETAILED ON PAGE 4, MUST BE USED IN THE PLACE OF AN OMITTED UNIT.

2. SPECIFICATIONS FOR THE "BASIC LOAD", FOR THE "OMITTED-UNIT METHOD", AND FOR THE "ALTERNATIVE LOADING PATTERN" SHOWN ON PAGE 4, WILL BE APPLIED SEPARATELY OR IN COMBINATION TO BLOCK AND BRACE OTHER THAN 40-UNIT LOADS.

3. IF A CONTAINER IS TO BE LOADED WITH SEVERAL LESS UNITS THAN SHOWN, PALLET UNITS SHOULD BE ELIMINATED FROM THE MID-SECTION, LEAVING LOAD BAYS AT THE FRONT AND BAYS AT THE REAR OF THE CONTAINER. BLOCKING AND BRACING COMPONENTS MUST BE REDUCED ACCORDINGLY.



GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13 AND AUGMENTS TM 743-200-1 (CHAPTER 5).

B. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO THE 175MM SEPARATE LOADING PROJECTILES WHEN PACKED SIX PROJECTILES PER PALLET. SUBSEQUENT REFERENCE TO PALLET UNIT MEANS THE PALLET WITH AMMUNITION ITEMS. FOR DETAIL OF PALLET UNIT SEE PAGE 4. CAUTION: REGARDLESS OF THE QUANTITY OF PALLETS SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.

C. THE LOAD AS SHOWN IS BASED ON A 20' LONG BY 8' WIDE BY 8' HIGH MILVAN CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 87" HIGH. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) SHIPMENT.

D. 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 AND THOSE NOT USED IN LOADED CONTAINERS MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS. SEE "FILL DETAIL" BELOW.

E. VOIDS BETWEEN HOLD-DOWN CROSS MEMBERS (PIECE MARKED ⑧) AND BEARING PIECE (PIECE MARKED ⑦) MUST NOT EXCEED ONE-HALF INCH (1/2").

F. CAUTION: EXERCISE CARE WHEN POSITIONING THE PALLET UNITS IN THE CONTAINER TO ASSURE THAT THE UNITS ARE PLACED AS CLOSE AS POSSIBLE AGAINST THE SIDE WALL OF THE CONTAINER AND AGAINST ADJACENT PALLET UNITS.

G. 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.

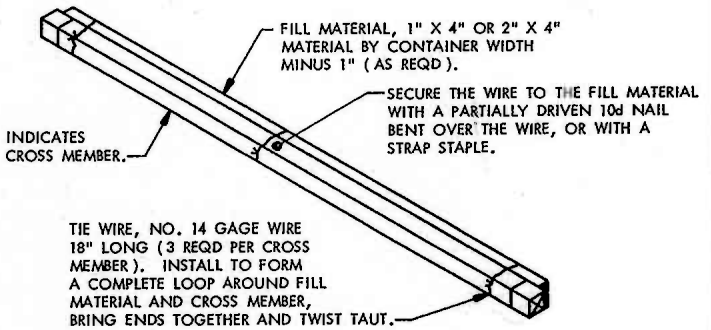
H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.

J. 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.

K. 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.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	121	40
2" X 2"	12	4
2" X 4"	72	48
2" X 6"	42	42
NAILS	**NO. REQD**	**POUNDS**
6d (2")	240	2
10d (3")	12	1/4
PLYWOOD, 1/2" ---------- 240 SQ. FT. REQD ------- 360 LBS		
CROSS MEMBER ---------- 25 REQD		



FILL DETAIL

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

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 SAME SIZE.

PLYWOOD : GROUP B OR C, GRADE *C-D (EXTERIOR), FED SPEC NN-P-530.

*IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER EXTERIOR GRADE MAY BE SUBSTITUTED.

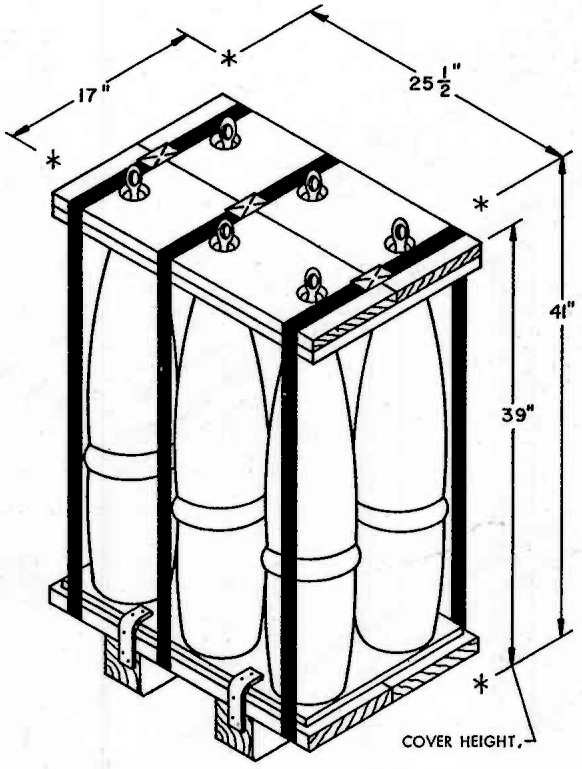
WIRE ----- : FED SPEC QQ-W-461.

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

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

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	40	37,360 LBS
DUNNAGE		697 LBS
CONTAINER		5,700 LBS
TOTAL GROSS WEIGHT		43,757 LBS

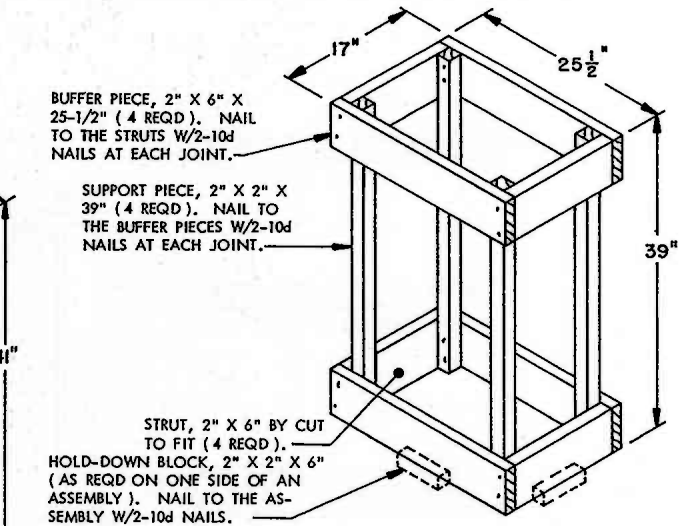


PALLET UNIT

UNIT WEIGHT ---------- 934 POUNDS (APPROX).
CUBE ---------- 10.3 CUBIC FEET

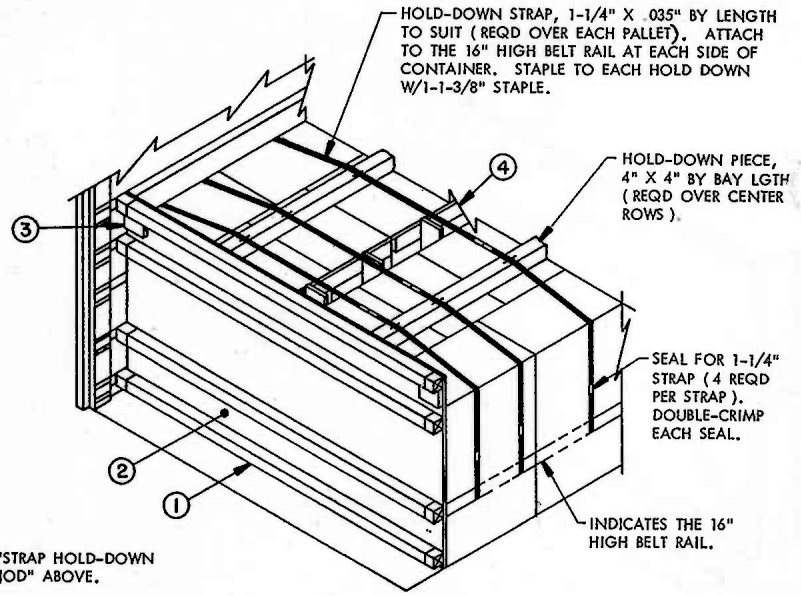
NOTE ●

THE DETAIL AT THE RIGHT DELINEATES AN ALTERNATIVE METHOD FOR RESTRAINING THE LOAD IN A VERTICAL DIRECTION. THIS "STRAPPING METHOD ELIMINATES THE REQUIREMENT FOR PIECES MARKED ④, ⑤, ⑥, ⑦ AND ⑧ WITHIN THE BASIC LOAD DEPICTED ON PAGE 2. EACH OF THE "HOLD-DOWN STRAP" ASSEMBLIES SHOULD BE FORMED FROM TWO PIECES OF STRAPPING SO THAT THE TWO PIECES CAN BE BROUGH TOGETHER ABOVE THE LOAD FOR TENSIONING AND SEALING. NOTE THAT TWO (2) SEALS MUST BE USED TO SEAL THIS END-OVER-END LAP JOINT.



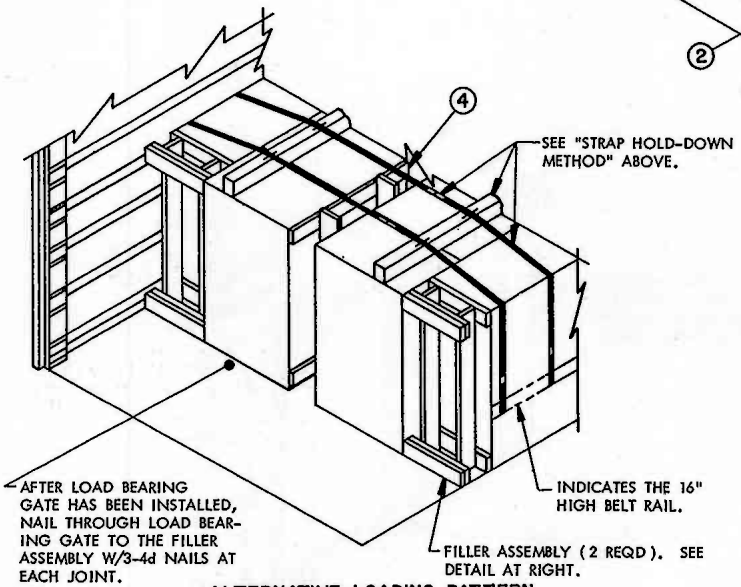
OMITTED-UNIT ASSEMBLY

THE ASSEMBLY AS SPECIFIED ABOVE IS FOR USE IN PLACE OF AN OMITTED PALLET UNIT, AND WILL BE REQUIRED FOR SOME LOADS TO PROVIDE A 4-WIDE LOADING PATTERN THROUGHOUT THE LENGTH OF THESE LOADS. IT WILL NEVER BE REQUIRED TO USE MORE THAN THREE ASSEMBLIES IN ANY ONE LOAD. CAUTION: AN ASSEMBLY OR ASSEMBLIES MUST ONLY BE PLACED WITHIN THE MIDDLE ROWS OF A LOAD.



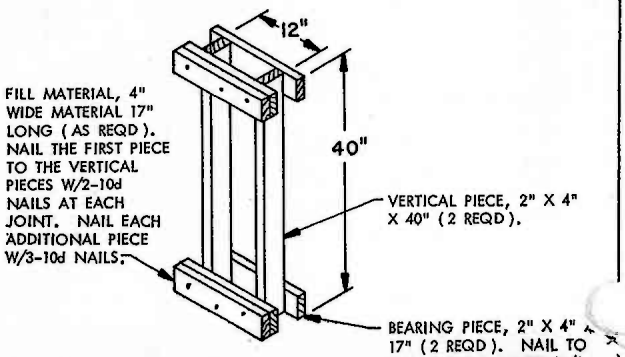
STRAP HOLD-DOWN METHOD

SEE "NOTE ● " AT LEFT.



ALTERNATIVE LOADING PATTERN

PIECES MARKED ①, ②, AND ③ HAVE BEEN OMITTED FOR CLARITY.



FILLER ASSEMBLY

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