

REV NO 1	APPROVED BY	REV NO 1	APPROVED BY
	U.S. COAST GUARD		BUREAU OF EXPLOSIVES
	<i>[Signature]</i>		<i>A. F. Grassmuck</i>
DATE	2/28/74	DATE	2/27/74
			SUPERVISOR, MILITARY & INTERMODAL SERVICES

# LOADING AND BRACING<sup>⊕</sup> IN MILVAN CONTAINERS<sup>⊕</sup> OF PALLETIZED 2.75" ROCKET (4 PER 73" LONG BOX) (10-BOX 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.
- 19,100 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.

THIS DRAWING, INCLUDING REVISION 1, SUPERSEDES INTERIM PROCEDURAL DRAWINGS D-AMXSV-4240, DATED JUNE 1971 AND D-AMXSV-4291, DATED JUNE 1971.

**SPECIAL T/COFC NOTES:**

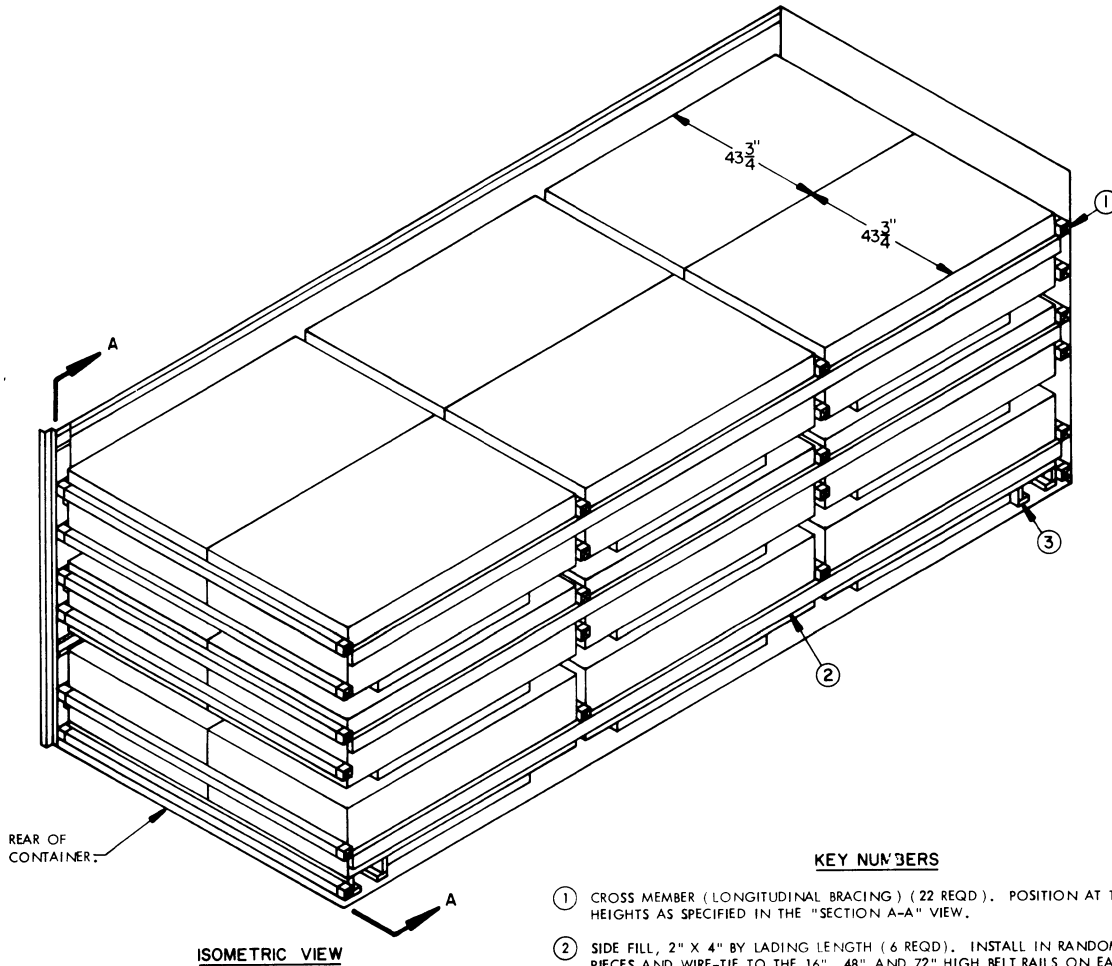
- A. **CAUTION:** LOADED CONTAINERS MUST BE ON CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE, REGARDLESS OF LOAD WEIGHT WITHIN THE CONTAINERS.
- B. LOAD LIMITS OF T/COFC RAIL CARS MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED SO THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES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

**DO NOT SCALE**

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		DATE: FEBRUARY 1974	
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**REVISIONS**

REVISION NO. 1, DATED FEBRUARY 1974, CONSISTS OF REMOVING THE TOMMING (HOLD-DOWNS) FROM THE TOP OF THE LOADS.

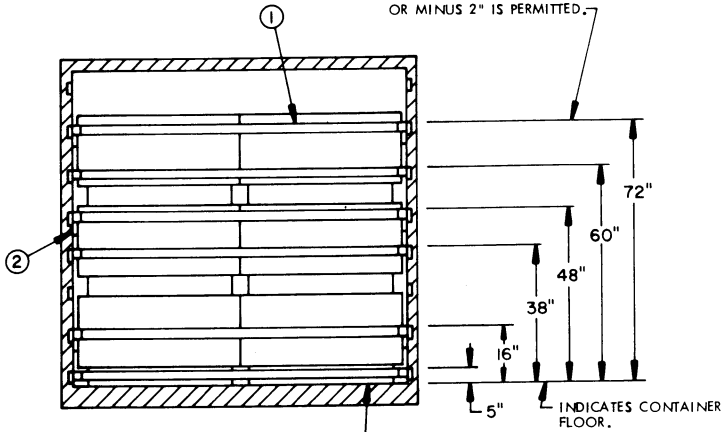


**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① CROSS MEMBER (LONGITUDINAL BRACING) (22 REQD). POSITION AT THE HEIGHTS AS SPECIFIED IN THE "SECTION A-A" VIEW.
- ② SIDE FILL, 2" X 4" BY LADING LENGTH (6 REQD). INSTALL IN RANDOM LENGTH PIECES AND WIRE-TIE TO THE 16", 48" AND 72" HIGH BELT RAILS ON EACH SIDE OF THE CONTAINER. SEE THE "SIDE FILL DETAIL" AND GENERAL NOTE "H" ON PAGE 3.
- ③ SPACER (2 REQD). SEE DETAIL ON PAGE 3. POSITION UNDER THE OVERHANG OF THE PALLET UNIT, BETWEEN THE PALLET AND THE 5" HIGH CROSS MEMBER. FIELD CHECK OVERHANG OF BOXES OF THE PALLET UNIT TO INSURE A SNUG FIT BETWEEN CROSS MEMBER AND PALLET.

INDICATES THE TOP SURFACE OF A CROSS MEMBER. PLUS OR MINUS 2" IS PERMITTED.



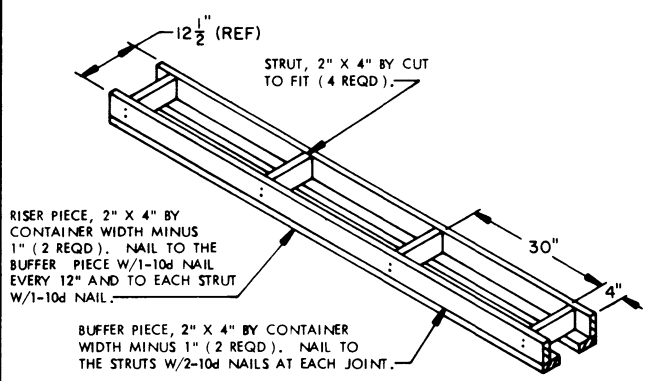
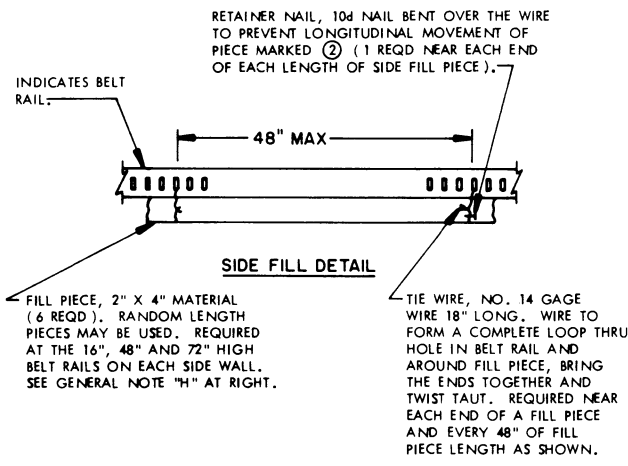
**SECTION A-A**

**REDUCED-LOAD PROVISIONS**

- 1. IF A CONTAINER IS TO BE LOADED WITH LESS UNITS THAN SHOWN, PALLET UNITS SHOULD BE ELIMINATED FROM THE REAR OF THE LOAD. FOR EXAMPLE, IF ONLY 17 UNITS ARE TO BE LOADED, THE METHOD SPECIFIED BY THE "ALTERNATIVE LOADING PATTERN" DETAIL SHOWN ON PAGE 4 MUST BE APPLIED.
- 2. SPECIFICATIONS FOR THE "BASIC LOAD", AND FOR THE "ALTERNATIVE LOADING PATTERN" SHOWN ON PAGE 4 WILL BE APPLIED SEPARATELY OR IN COMBINATION TO BLOCK AND BRACE OTHER THAN 18-UNIT LOADS.

**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 10-BOX PALLET UNIT OF 2.75" ROCKET, WHEN PACKED FOUR ROCKETS PER 73" LONG WOODEN BOX. SUBSEQUENT REFERENCE TO PALLET UNIT MEANS THE PALLET WITH AMMUNITION ITEMS. SEE PAGE 4 FOR DETAIL OF PALLET UNIT. CAUTION: REGARDLESS OF THE QUANTITY OF UNITS TO BE 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 83" 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 BE FASTENED INTO BELT RAILS FOR SHIPMENT. COMPONENTS ASSIGNED TO EACH CONTAINER MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS. SEE THE "FILL DETAIL" BELOW FOR THE DUNNAGING METHOD REQUIRED TO ELIMINATE AN EXCESSIVE LENGTHWISE VOID WITHIN A LOAD. THE LOAD BLOCKING COMPONENT DESIGNATED AS "CROSS MEMBER" HEREIN, IS IDENTIFIED AS "BEAM ASSEMBLY" WITHIN TM 55-8115-200-24, DATED SEPTEMBER 1972. THE BEAM ASSEMBLY IS FURTHER IDENTIFIED AS FSN-8115-165-6623.
- E. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" OR 3-5/8" WIDE AND 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE OR 1-5/8" THICK BY 3-5/8" WIDE.
- F. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- G. THE SPACER ASSEMBLY AS DETAILED ON PAGE 4 NEED NOT BE FABRICATED FOR A DRIVE FIT. THE ASSEMBLY SHOULD BE FABRICATED SO THAT IT CAN BE EASILY INSTALLED. HOWEVER, IT MUST FIT TIGHT ENOUGH SO AS TO NOT ALLOW MORE THAN ONE-HALF INCH ( 1/2" ) VOID ACROSS THE WIDTH OF A BRACED LOAD.
- H. THE THICKNESS OF SIDE FILL PIECES AS DEPICTED ON EACH SIDE OF THE LOAD MUST BE ADJUSTED, AS REQUIRED, TO COMPLY WITH THE DIMENSIONAL VARIANCE OF THE PALLET UNIT, SO AS TO NOT ALLOW MORE THAN ONE AND ONE-HALF INCH ( 1-1/2" ) VOID ACROSS THE WIDTH OF A BRACED LOAD. ADJUSTMENTS CAN BE MADE BY USING A DIFFERENT THICKNESS FILL PIECE OR BY LAMINATING ADDITIONAL PIECES TO THE SPECIFIED FILL PIECES ON ONE OR BOTH SIDES OF THE LOAD.
- 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.

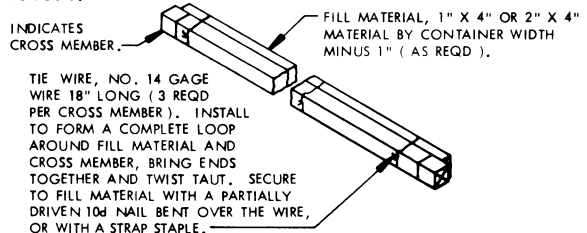


**SPACER**  
( 2 REQD ).

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	180	120
NAILS	NO. REQD	POUNDS
10d ( 3" )	60	1
WIRE, NO. 14 GAGE	22' REQD	NIL
CROSS MEMBER		22 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.
- WIRE ----- : FED SPEC QQ-W-461.
- STAPLE, STRAP -- : COMMERCIAL GRADE.



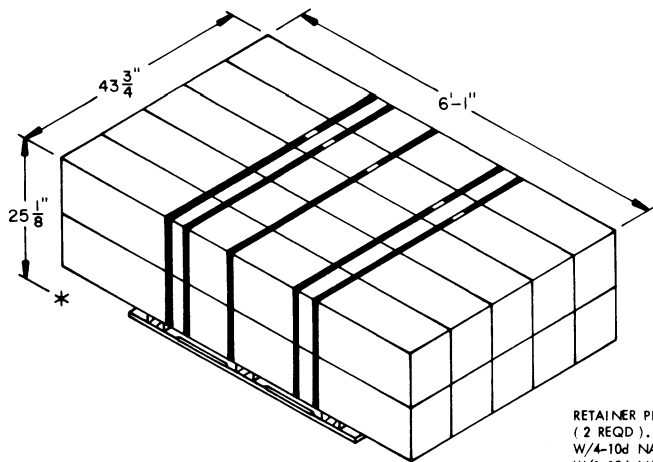
**FILL DETAIL**

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 )
PALLET UNIT	18	30,960 LBS
DUNNAGE		300 LBS
CONTAINER		5,700 LBS

TOTAL GROSS WEIGHT ----- 36,960 LBS

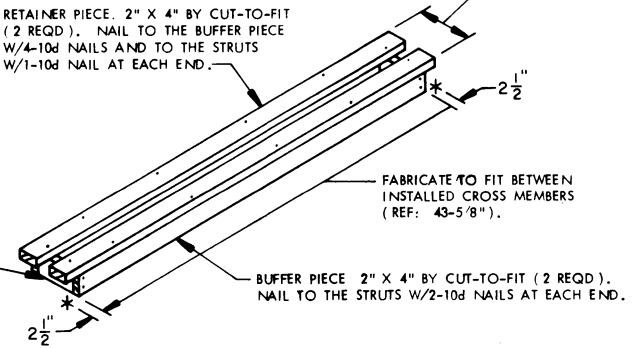


**PALLET UNIT**

UNIT WEIGHT ----- 1,720 POUNDS (APPROX).  
 CUBE ----- 46.4 CUBIC FEET.

FABRICATE TO FIT BETWEEN CONTAINER SIDE WALL AND PALLET UNIT (REF: 9'-1/2").

RETAINER PIECE, 2" X 4" BY CUT-TO-FIT (2 REQD). NAIL TO THE BUFFER PIECE W/4-10d NAILS AND TO THE STRUTS W/1-10d NAIL AT EACH END.



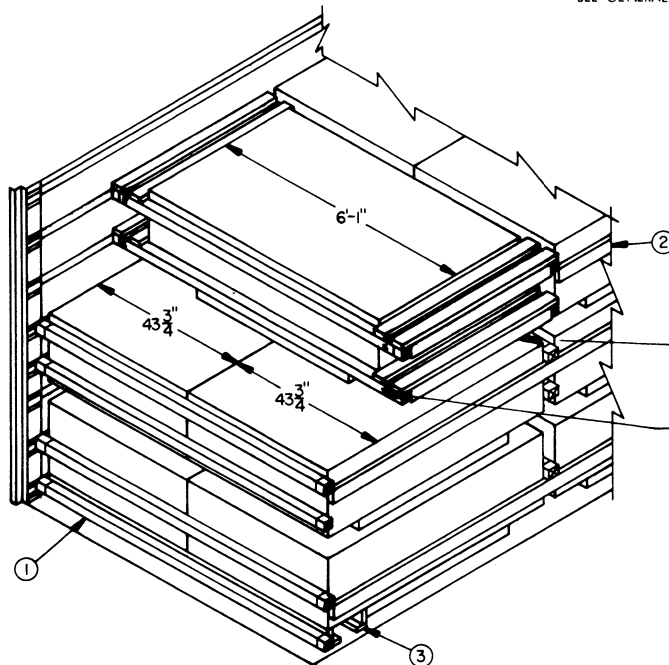
**SPACER ASSEMBLY**

SEE GENERAL NOTE "G" ON PAGE 3.

STRUT, 2" X 4" BY CUT-TO-FIT (2 REQD).

FABRICATE TO FIT BETWEEN INSTALLED CROSS MEMBERS (REF: 43'-5/8").

BUFFER PIECE 2" X 4" BY CUT-TO-FIT (2 REQD). NAIL TO THE STRUTS W/2-10d NAILS AT EACH END.



SPACER ASSEMBLY (4 REQD). SEE DETAIL ABOVE.

TIE WIRE NO. 14 GAGE WIRE 18" LONG (8 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND SPACER ASSEMBLY AND CROSS MEMBER. BRING ENDS TOGETHER AND TWIST TAUT. SECURE TO SPACER ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE OR WITH A STRAP STAPLE.

**ALTERNATIVE LOADING PATTERN**

THE DETAIL ABOVE SPECIFIES A BLOCKING METHOD TO BE USED IN A "REDUCED-LOAD" CONTAINER LOAD.