

APPROVED BY U.S. COAST GUARD <i>P.R. Dickey</i>	APPROVED BY BUREAU OF EXPLOSIVES <i>E.P. Rubin</i>
DATE <i>5/14/86</i>	DATE <i>4/22/86</i>

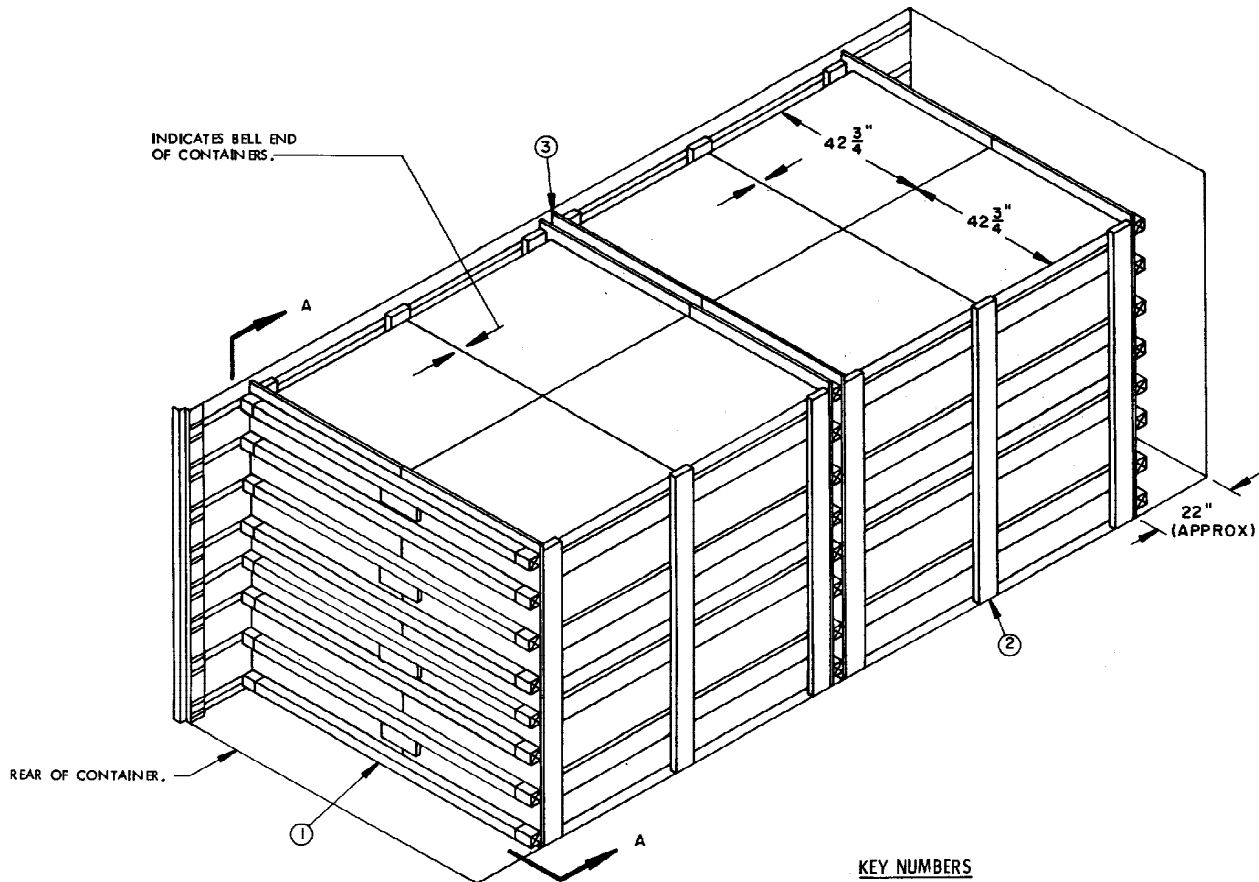
LOADING AND BRACING[⊙] IN MILVAN CONTAINERS[⊕] OF COMPLETE ROUNDS PACKED IN PA104 CYLINDRICAL METAL CONTAINERS (PALLETIZED W/O WOODEN DUNNAGE)

- ⊙ 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 CARRIERS. SEE GENERAL NOTE "M" ON PAGE 3.
- ⊕ 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.

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DO NOT SCALE

REVISIONS		DRAFTSMAN	PROJ. ENG.
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		U.S. ARMY AMC DRAWING	
		JUNE 1986	
		CLASS	DIVISION
		19	48
		DRAWING	FILE
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ISOMETRIC VIEW

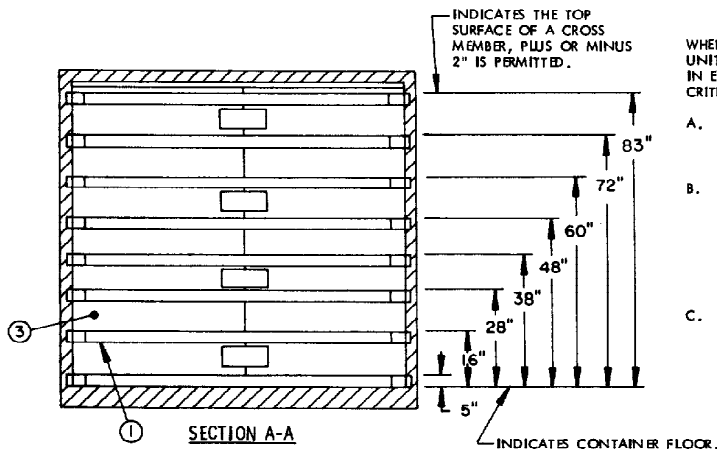
KEY NUMBERS

- ① CROSS MEMBER (24 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION A-A" VIEW. SEE THE "FILL DETAIL" ON PAGE 4.
- ② SIDE FILL ASSEMBLY (4 REQD). SEE THE "SIDE FILL ASSEMBLY A (2-HIGH)" DETAIL ON PAGE 4. WIRE TIE THE SIDE FILL ASSEMBLIES TO THE BELT RAILS WITH TWO PIECES OF NO. 14 GAGE WIRE 18" LONG. SEE GENERAL NOTE "K" ON PAGE 3.
- ③ LOAD BEARING GATE (4 REQD). SEE THE "LOAD BEARING GATE A (2-HIGH)" DETAIL ON PAGE 5.

REDUCED-LOAD PROVISIONS

WHEN A PALLET UNIT IS TO BE LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF A LOAD MUST BE WITHIN 12" IN EITHER DIRECTION, OF THE MID-POINT IN A MILVAN, AND THE FOLLOWING CRITERIA WILL APPLY.

- A. IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT, LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE REAR OF THE LOAD. SEE THE "ALTERNATIVE LOADING PATTERN" PROCEDURES FOR ADDITIONAL GUIDANCE.
- B. IF A LOAD IS REDUCED BY A LARGE AMOUNT, LADING UNITS SHOULD BE ELIMINATED AS REQUIRED AND THE TOTAL LOAD SHIFTED AS NECESSARY FORE OR AFT, TO ACHIEVE A SYMMETRICAL WEIGHT DISTRIBUTION. THE DEPICTED PROCEDURES WILL BE FOLLOWED AS CLOSELY AS POSSIBLE, MAKING ONLY THOSE ADJUSTMENTS TO THE DUNNIAGE WHICH ARE REQUIRED TO ACCOMMODATE THE NUMBER OF UNITS TO BE SHIPPED.
- C. COMBINATIONS OF THE DEPICTED LOADING PATTERNS MAY BE USED TO SATISFY THE NUMBER OF UNITS TO BE SHIPPED. HOWEVER, EACH LOAD BAY WILL BE INDEPENDENTLY BLOCKED AS A SEPARATE LOAD BAY IN ACCORDANCE WITH THE DEPICTED PROCEDURES FOR THAT SPECIFIC LOADING PATTERN.



(GENERAL NOTES CONTINUED)

GENERAL NOTES

K. TO MAKE LOADING EASIER, TO HELP ACHIEVE A TIGHT LOAD ACROSS A CONTAINER, AND TO PREVENT UNACCEPTABLE DAMAGE TO LADING UNITS WHEN LOADING A MILVAN, A SLIP-SHEET CAN BE USED EFFECTIVELY AS A "SHOE-HORN" TYPE DEVICE...

L. MAXIMUM LOAD WEIGHT CRITERIA:

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

- 39,100 LBS IN 20-FT CONTAINER (W/O CHASSIS) ABOARD CONTAINERSHIP.
39,100 LBS IN CONTAINER ON 20-FT CHASSIS WITH DOUBLE BOGIE.
25,900 LBS IN CONTAINER ON 20-FT CHASSIS WITH SINGLE BOGIE.
21,300 LBS IN EACH CONTAINER ON 40-FT CHASSIS (COUPLED WITH DOUBLE BOGIE).

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 IN THE LOAD VIEW, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOAD CAN BE ADJUSTED TO SATISFY A LESSER QUANTITY OF LADING UNITS.

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.

M. SPECIAL T/COFC NOTES:

- 1. CAUTION: LOADED CONTAINERS MUST BE ON CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE...
2. LOAD LIMITS OF T/COFC RAIL CARS MUST NOT BE EXCEEDED...
3. CHASSIS/CONTAINERS COUPLED INTO A 40-FOOT TRAILER CONFIGURATION MUST BE PLACED AT THE B-END OF A TOFC RAIL CAR...

N. THE THICKNESS OF THE SIDE FILL ASSEMBLIES AS DEPICTED ON EACH SIDE OF THE LOAD MUST BE ADJUSTED, AS REQUIRED, TO COMPLY WITH THE DIMENSIONAL VARIANCE OF THE PALLET UNIT...

- 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 PROCEDURE SPECIFIED HEREIN IS APPLICABLE TO PALLETIZED UNITS OF COMPLETE ROUNDS PACKED IN PAL104 SERIES CYLINDRICAL METAL CONTAINERS...
C. THE LOADS AS SHOWN ARE BASED ON A 20' LONG BY 8' WIDE BY 8' HIGH MILVAN CONTAINER...
D. THE SPECIFIED OUTLOADING PROCEDURES ARE FOR CONTAINERS EQUIPPED WITH SELF-CONTAINED MECHANICAL BRACING DEVICES...
E. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE...
F. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR...
G. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE...
H. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING...
J. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES...

(CONTINUED AT LEFT)

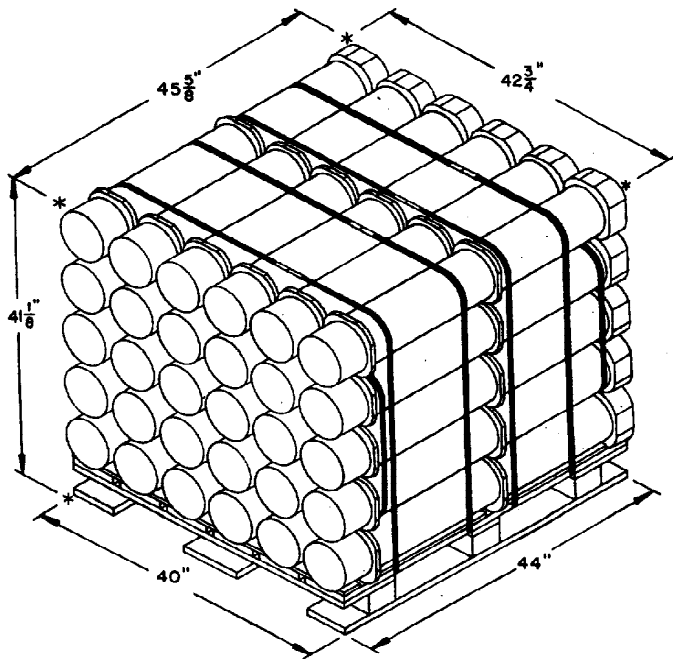
Table with 3 columns: LUMBER, LINEAR FEET, BOARD FEET. Rows include 1" X 6", 2" X 6", NAILS (6d, 10d), PLYWOOD, WIRE, and CROSS MEMBER.

MATERIAL SPECIFICATIONS

- LUMBER -----: SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
NAILS -----: FED SPEC FF-N-105; COMMON.
WIRE -----: FED SPEC QQ-W-461.
STAPLE, STRAP ---: COMMERCIAL GRADE.

LOAD AS SHOWN

Table with 3 columns: ITEM, QUANTITY, WEIGHT (APPROX). Rows include PALLET UNIT, DUNNAGE, CONTAINER, and TOTAL WEIGHT.



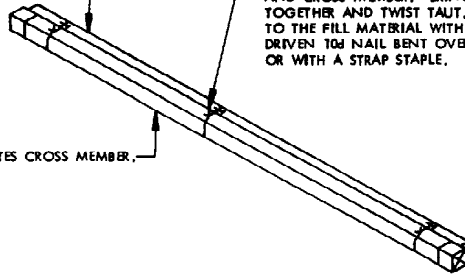
PALLET UNIT

UNIT WEIGHT-----2,344 LBS (APPROX)
 CUBE-----46.4 CUBIC FEET

FILL MATERIAL, 1" X 4" OR 2" X 4"
 MATERIAL BY CONTAINER WIDTH
 MINUS 1" (AS REQD).

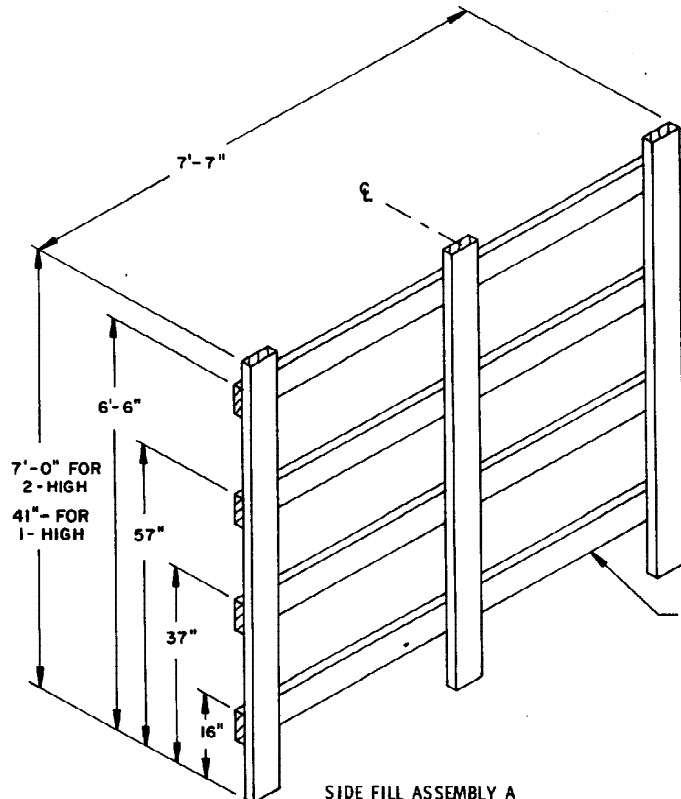
TIE WIRE, NO. 14 GAGE WIRE 18" LONG
 (3 REQD/CROSS MEMBER). INSTALL TO FORM
 A COMPLETE LOOP AROUND FILL MATERIAL
 AND CROSS MEMBER. BRING THE ENDS
 TOGETHER AND TWIST TAUT. SECURE
 TO THE FILL MATERIAL WITH A PARTIALLY
 DRIVEN 10d NAIL BENT OVER THE WIRE,
 OR WITH A STRAP STAPLE.

INDICATES CROSS MEMBER.



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.

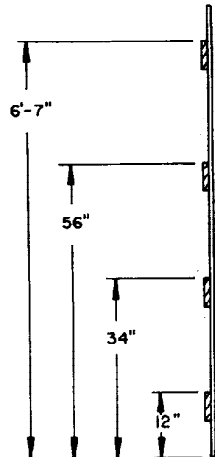
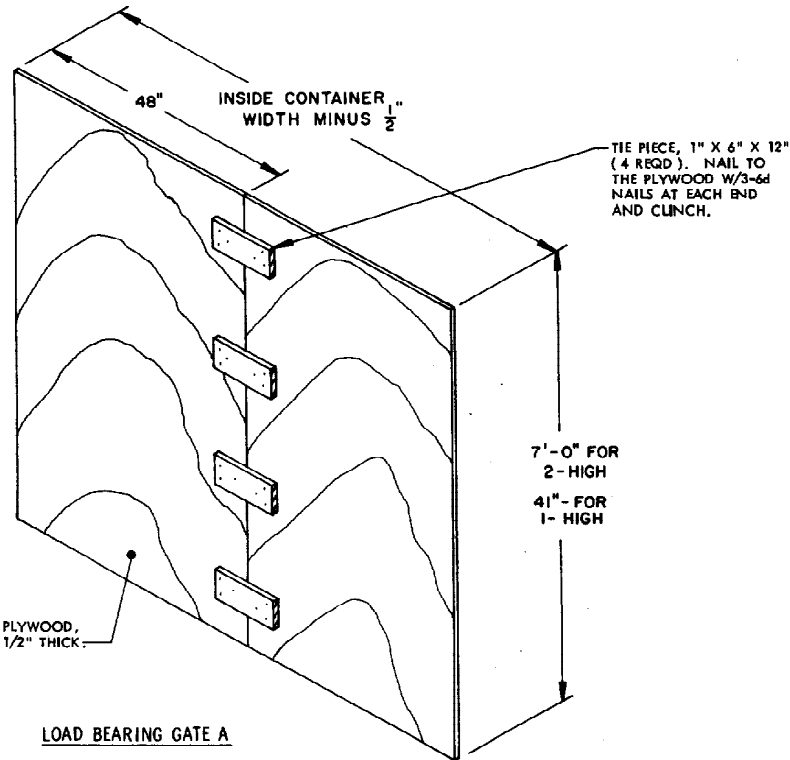


VERTICAL PIECE, 2" X 6" X
 7'-0" (3 REQD).

BEARING PIECE, 2" X 6" X 7'-7" (4 REQD).
 NAIL TO THE VERTICAL PIECES W/3-10d
 NAILS AT EACH JOINT.

SIDE FILL ASSEMBLY A

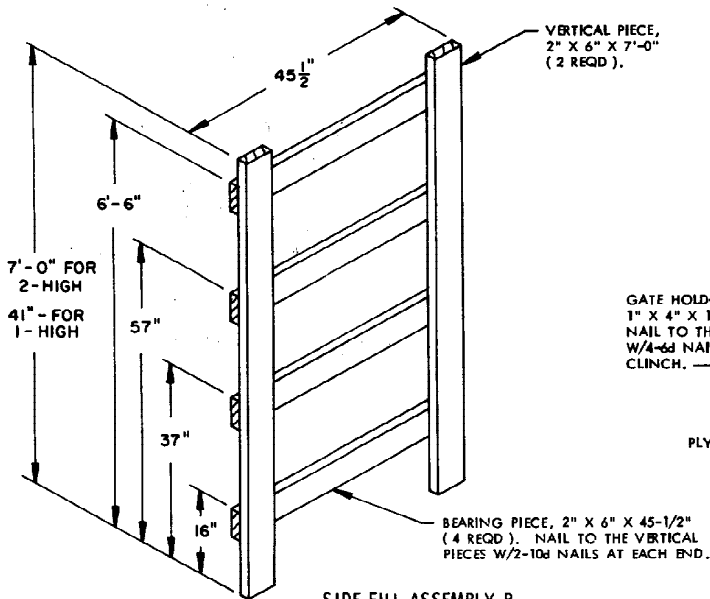
OMIT THE UPPER TWO BEARING PIECES WHEN
 USING SIDE FILL ASSEMBLY FOR 1-HIGH LOAD.



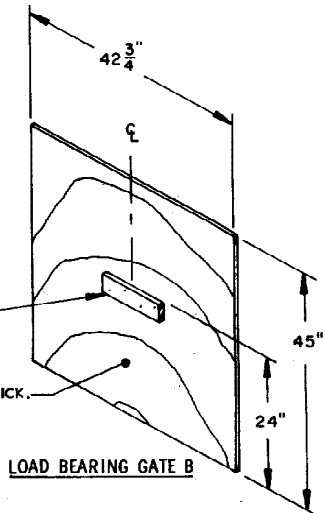
LOAD BEARING GATE A

OMIT THE UPPER TWO TIE PIECES WHEN USING LOAD BEARING GATE FOR A 1-HIGH LOAD.

END VIEW



GATE HOLD-DOWN PIECE, 1" X 4" X 12" (1 REQD). NAIL TO THE PLYWOOD W/4-6d NAILS AND CLINCH.



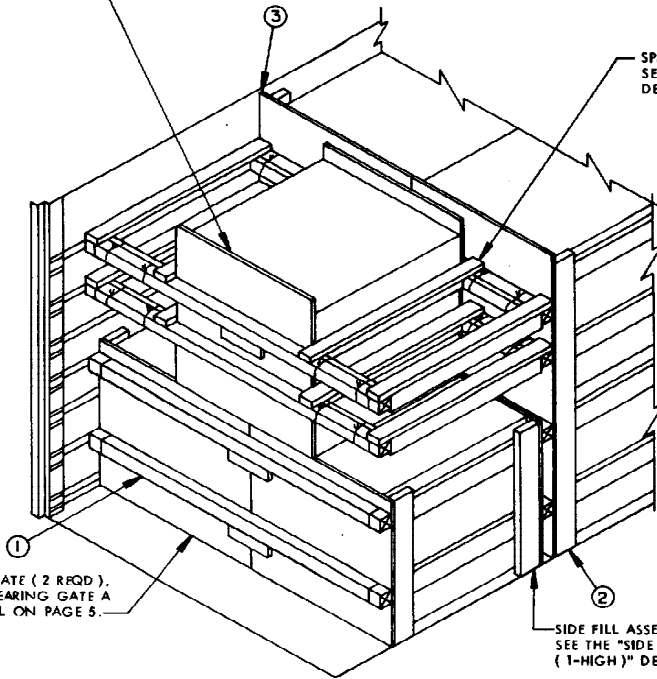
SIDE FILL ASSEMBLY B

OMIT THE UPPER TWO BEARING PIECES WHEN USING SIDE FILL ASSEMBLY FOR A 1-HIGH LOAD.

LOAD BEARING GATE B

LOAD BEARING GATE (2 REQD).
SEE THE "LOAD BEARING GATE B"
DETAIL ON PAGE 5.

SPACER ASSEMBLY (4 REQD).
SEE THE "SPACER ASSEMBLY"
DETAIL BELOW.



LOAD BEARING GATE (2 REQD).
SEE THE "LOAD BEARING GATE A
(1-HIGH)" DETAIL ON PAGE 5.

SIDE FILL ASSEMBLY (2 REQD).
SEE THE "SIDE FILL ASSEMBLY B
(1-HIGH)" DETAIL ON PAGE 5.

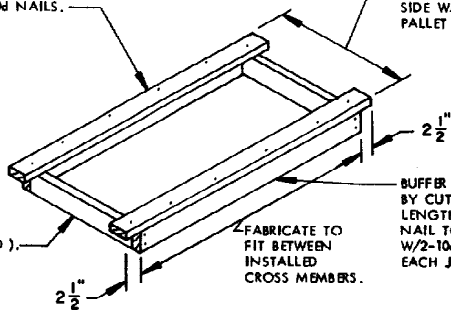
ALTERNATIVE LOADING PROCEDURE

KEY NUMBERS ABOVE REFER TO THE KEY NUMBERS LISTED ON PAGE 2.

TIIE WIRE, NO. 14 GAGE WIRE 18"
LONG. INSTALL TO FORM A COM-
PLETE LOOP AROUND THE CROSS MEM-
BER AND SPACER ASSEMBLY, BRING
ENDS TOGETHER AND TWIST TAUT.
SECURE TO THE SPACER ASSEMBLY WITH
A PARTIALLY DRIVEN 10d NAIL BENT
OVER THE WIRE OR WITH A STRAP
STAPLE.

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

FABRICATE TO FIT
BETWEEN CONTAINER
SIDE WALL AND
PALLET UNIT.



STRUT, 2" X 4"
BY CUT-TO-SUIT
IN LENGTH (2 REQD).

FABRICATE TO
FIT BETWEEN
INSTALLED
CROSS MEMBERS.

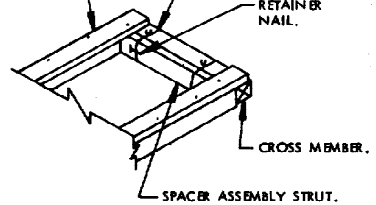
BUFFER PIECE, 2" X 4"
BY CUT-TO-FIT IN
LENGTH (2 REQD).
NAIL TO THE STRUTS
W/2-10d NAILS AT
EACH JOINT.

SPACER ASSEMBLY

SEE "SPACER ASSEMBLY SECUREMENT" DETAIL AT RIGHT.

SPACER ASSEMBLY.

RETAINER
NAIL.



CROSS MEMBER.

SPACER ASSEMBLY STRUT.

SPACER ASSEMBLY SECUREMENT