APPROVED BY	APPROVED BY
U.S. COAST GUARD COR USCG DATE 11 Jan 1974	BUREAU OF EXPLOSIVES SUPERVISOR, MILITARY & INTERMODAL SERVICES DATE 12/12/73
REVISION NO. 1 SIGNED [illegible] CAPT USCG DATE 4-16-74	REVISION NO. 1 SIGNED L. F. Grammick DATE 4/3/74

CHAPARRAL

LOADING AND BRACING◑ IN MILVAN CONTAINERS⊕ OF THE COMPLETE ROUND IN THE M570 SHIPPING AND STORAGE CONTAINER

◑ 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 GENERAL NOTE "O" ON PAGE 2.

⊕ 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.

REVISIONS				DRAFTSMAN PB/AA	PROJ ENG JNV/[illegible]	
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MARCH 1974

CLASS	DIVISION	DRAWING	FILE
19	48	5944	GM 15CHI

DO NOT SCALE

PROJECT GM 667-73

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 OUTLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO THE CHAPARRAL COMPLETE ROUND, WHEN PACKED IN THE M570 SHIPPING AND STORAGE CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH MISSILE COMPONENTS.

C. FOR DETAIL OF THE M570 SHIPPING AND STORAGE CONTAINER SEE DRAWING NO. 11074804 AND "CONTAINER DETAIL" ON PAGE 3.

CONTAINER DIMENSIONS --- 125" LONG BY 18" WIDE BY 19" HIGH.
GROSS WEIGHT ---------- 280 POUNDS (APPROX).
TARE WEIGHT ---------- 95 POUNDS (APPROX).
CUBE ---------- 24.7 CUBIC FEET.

D. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE AND A COAST GUARD CLASS X-C. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE.

E. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN MILVAN CONTAINERS WHICH ARE 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. WHEN ANOTHER TYPE OF LADING IS TO BE LOADED INTO A MILVAN CONTAINER WITH THE M570 CONTAINERS, THE CROSS MEMBERS AND THE M570 CONTAINERS SHOULD BE LOCATED NEAR THE FRONT OR REAR OF THE CONTAINER. THE 48" DIMENSION MAY BE ADJUSTED AS REQUIRED.

F. THE LOADS AS SHOWN ARE 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 LOADS ARE DESIGNED FOR TRAILER/CONTAINER-ON-FLAT-CAR SERVICE.

G. 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" ON PAGE 5 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.

H. 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 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE OR 1-5/8" THICK BY 5-5/8" WIDE UNLESS OTHERWISE SPECIFIED.

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

K. 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.

(CONTINUED AT RIGHT)

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

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.

HARDBOARD -- : TYPE II (TEMPERED); FED SPEC LLL-B-810.

(GENERAL NOTES CONTINUED)

L. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDEWALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

M. MAXIMUM LOAD WEIGHT CRITERIA:

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

SEE SPECIAL NOTE SECTION OPPOSITE THE BASIC LOAD FOR INSTRUCTIONS WHICH MUST BE APPLIED IF A CONTAINER IS TO BE LOADED WITH LESS UNITS THAN SHOWN IN THE BASIC LOAD ON PAGE 4.

N. SPECIAL T/COFC NOTES:

1. 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.

2. 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.

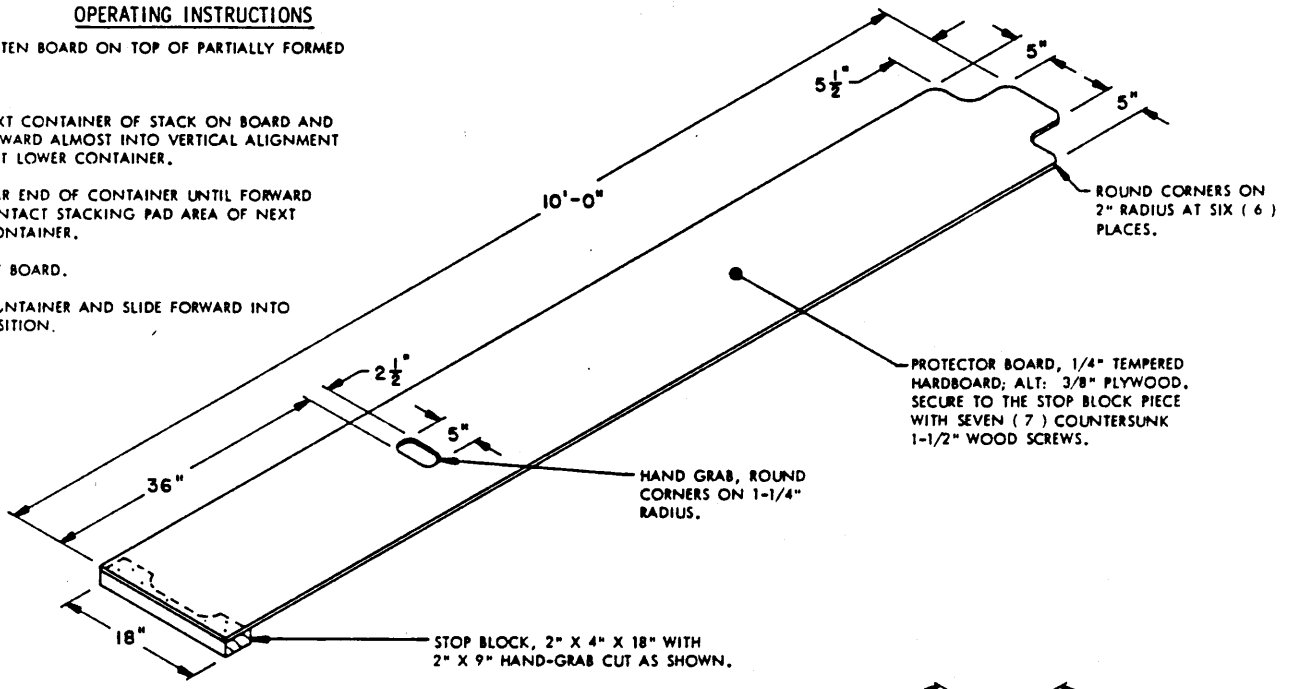
3. CHASSIS/CONTAINERS COUPLED INTO A 40-FOOT TRAILER CONFIGURATION MUST BE PLACED AT THE B-END OF A RAIL CAR. THE REAR END OF THE 40-FOOT UNIT WILL OVER-HANG THE END OF THE CAR IF IT IS PLACED AT THE A-END. TWENTY-FOOT AND 40-FOOT UNITS CAN BE LOADED ON THE SAME CAR.

REVISIONS

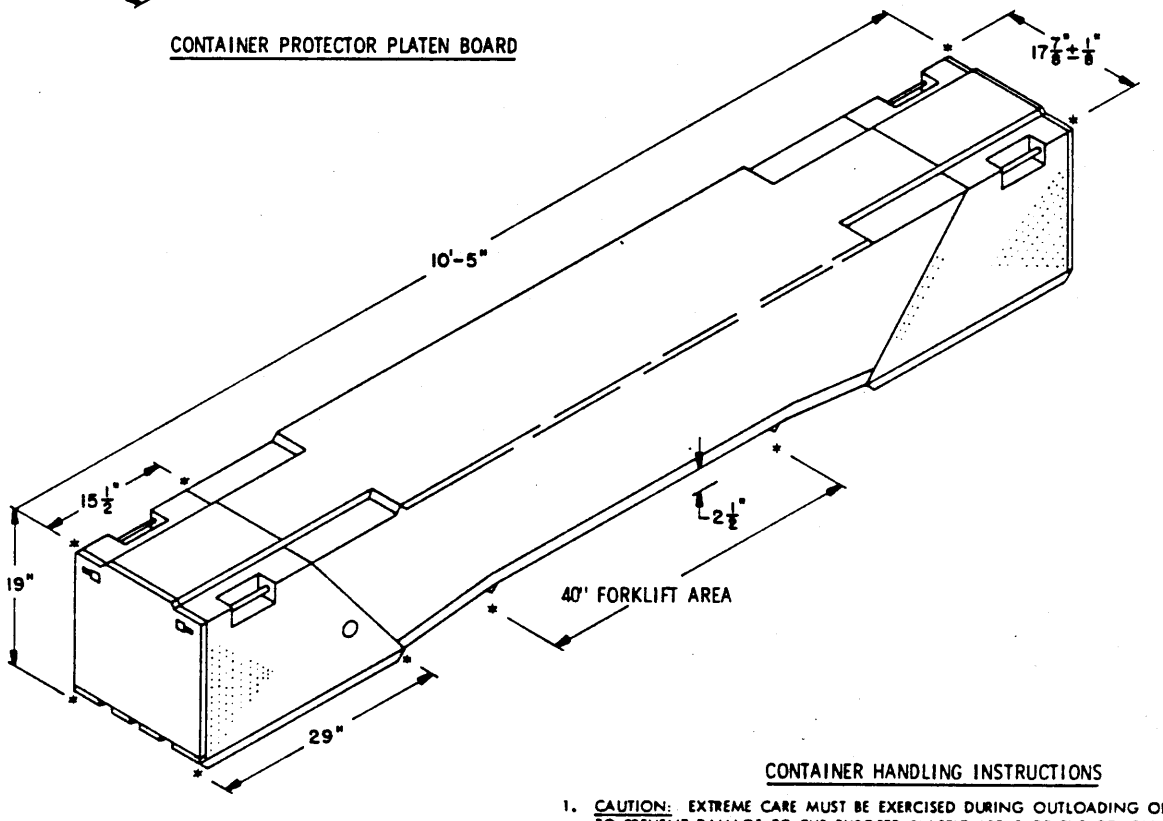
REVISION NO. 1, DATED APRIL 1974, CONSISTS OF REMOVING THE TOMMING (HOLD-DOWNS) FROM THE TOP OF THE LOADS.

OPERATING INSTRUCTIONS

1. PLACE PLATEN BOARD ON TOP OF PARTIALLY FORMED STACK.
2. PLACE NEXT CONTAINER OF STACK ON BOARD AND SLIDE FORWARD ALMOST INTO VERTICAL ALIGNMENT WITH NEXT LOWER CONTAINER.
3. RAISE NEAR END OF CONTAINER UNTIL FORWARD SKIDS CONTACT STACKING PAD AREA OF NEXT LOWER CONTAINER.
4. WITHDRAW BOARD.
5. LOWER CONTAINER AND SLIDE FORWARD INTO FINAL POSITION.



CONTAINER PROTECTOR PLATEN BOARD

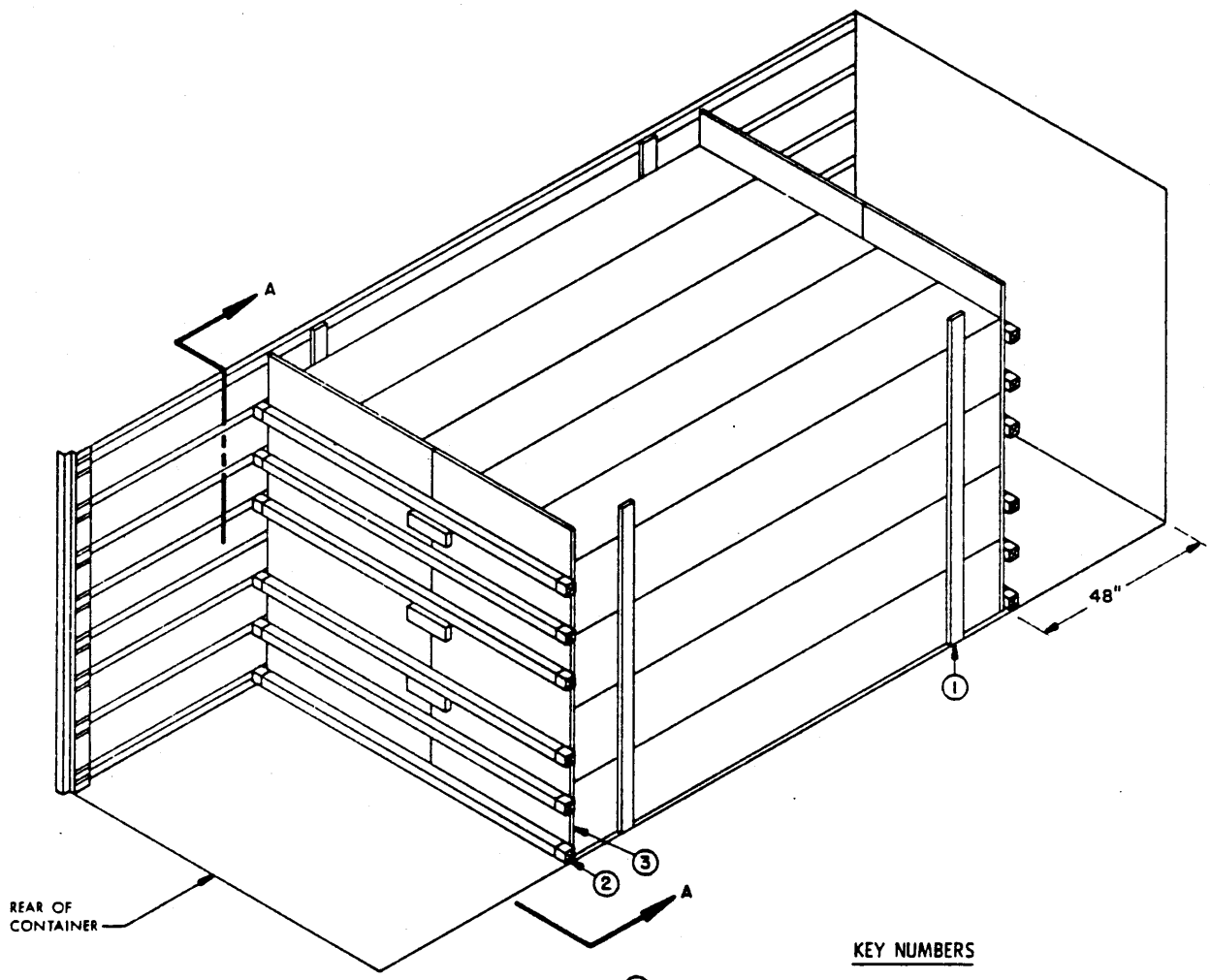


CONTAINER DETAIL

GROSS WEIGHT ----- 280 POUNDS (APPROX).
TARE WEIGHT ------- 95 POUNDS (APPROX).
CUBE ---------- 24.7 CUBIC FEET.

CONTAINER HANDLING INSTRUCTIONS

1. CAUTION: EXTREME CARE MUST BE EXERCISED DURING OUTLOADING OPERATIONS TO PREVENT DAMAGE TO THE EXPOSED PLASTIC AREAS OF THE CONTAINER PLASTIC AREAS WILL NOT BE STEPPED ON, WALKED ON, PRIED AGAINST, STRUCK OR GOUGED WITH HAND TOOLS OR MATERIALS HANDLING EQUIPMENT, OR BUMPED AGAINST PROTRUSIONS.
2. IT IS RECOMMENDED THAT THE CONTAINERS BE MANUALLY STACKED WITHIN THE MILVAN CONTAINER. TO FACILITATE COMPLIANCE WITH THIS RECOMMENDATION, THE "CONTAINER PROTECTOR" BOARD AS SHOWN ABOVE MUST BE USED WHEN PLACING THE UPPER CONTAINERS WITHIN A LOAD.
3. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, CONTAINERS SHOULD BE HAULED FROM A SIDE POSITION. CAUTION: THE USUALLY APPLIED END-HANDLING IS NOT PERMITTED. HOWEVER, FORK TINES MAY BE PLACED UNDER THE SKIDS FROM AN END DIRECTION. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER OR WITHDRAWING FORKS FROM UNDER A CONTAINER, TO PREVENT DAMAGE TO THE CONTAINERS BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD.



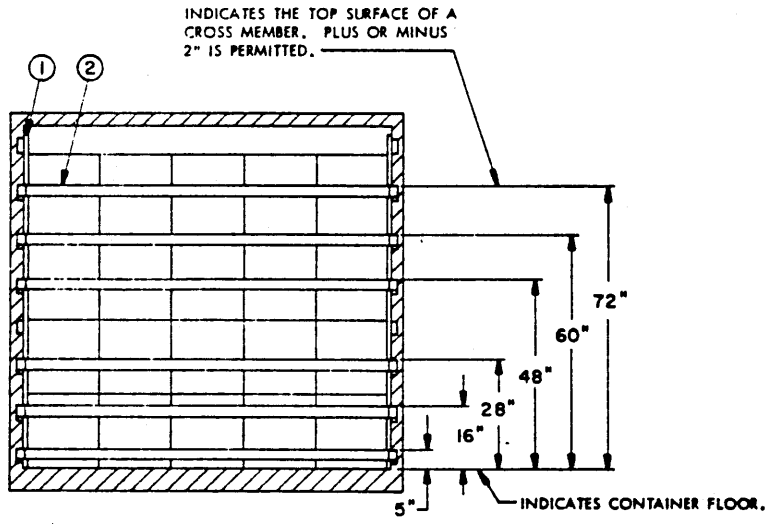
ISOMETRIC VIEW

KEY NUMBERS

(1) SIDE FILL, 1" X 4" X 7'-0" (4 REQD). SEE THE "SIDE FILL SECUREMENT" DETAIL ON PAGE 5.

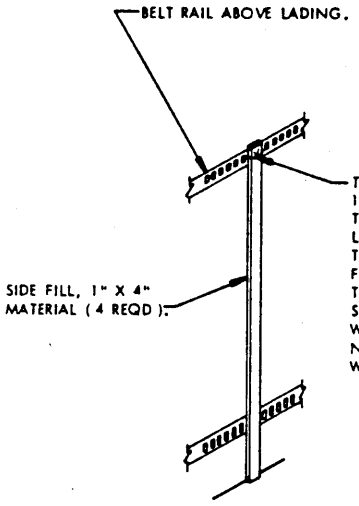
(2) CROSS MEMBER (12 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION A-A" VIEW. SEE THE "FILL DETAIL" ON PAGE 5.

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



SECTION A-A

LOAD BEARING GATE, PIECE MARKED (3), HAS BEEN OMITTED FOR CLARITY PURPOSES.

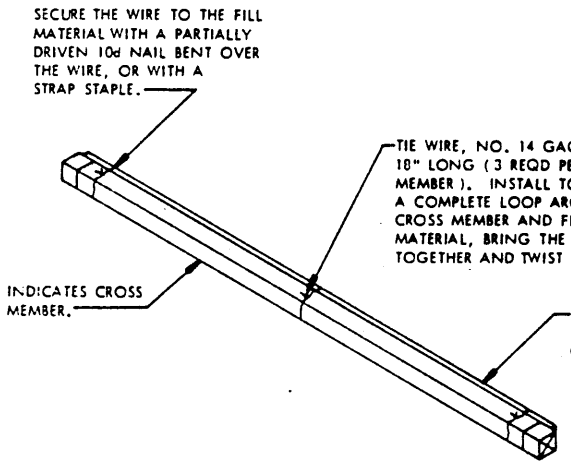


SIDE FILL SECUREMENT

SEE SPECIAL NOTE 4.

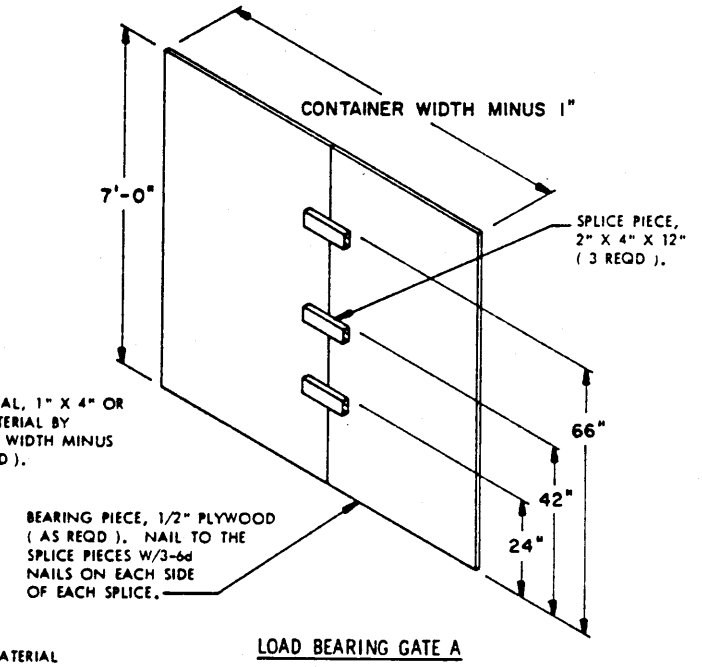
SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 4 DEPICTS A 20-CONTAINER LOAD IN A MILVAN CONTAINER.
2. IF A CONTAINER IS TO BE LOADED WITH LESS CONTAINERS THAN SHOWN IN THE LOAD VIEW ON PAGE 4, A "FILLER ASSEMBLY" MAY BE USED TO FILL THE VOID IN A LOAD FOR AN OMITTED CONTAINER. THE FILLER ASSEMBLY MUST BE USED IN THE TOP LAYER ONLY.
3. SEE THE "ALTERNATIVE LOADING PATTERN" DETAIL ON PAGE 7 FOR SHIPPING A TWO-CONTAINER HIGH LOAD.
4. THE THICKNESS OF THE SIDE FILL PIECES MUST BE ADJUSTED AS REQUIRED SO AS TO NOT ALLOW MORE THAN ONE-HALF INCH (1/2") VOID ACROSS THE WIDTH OF A BRACED LOAD.
5. IF 1/2" PLYWOOD IS NOT AVAILABLE, DIMENSIONAL LUMBER MAY BE USED IN LIEU OF THE PLYWOOD. SEE THE "ALTERNATIVE LOAD BEARING GATE" DETAIL ON PAGE 6.



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.



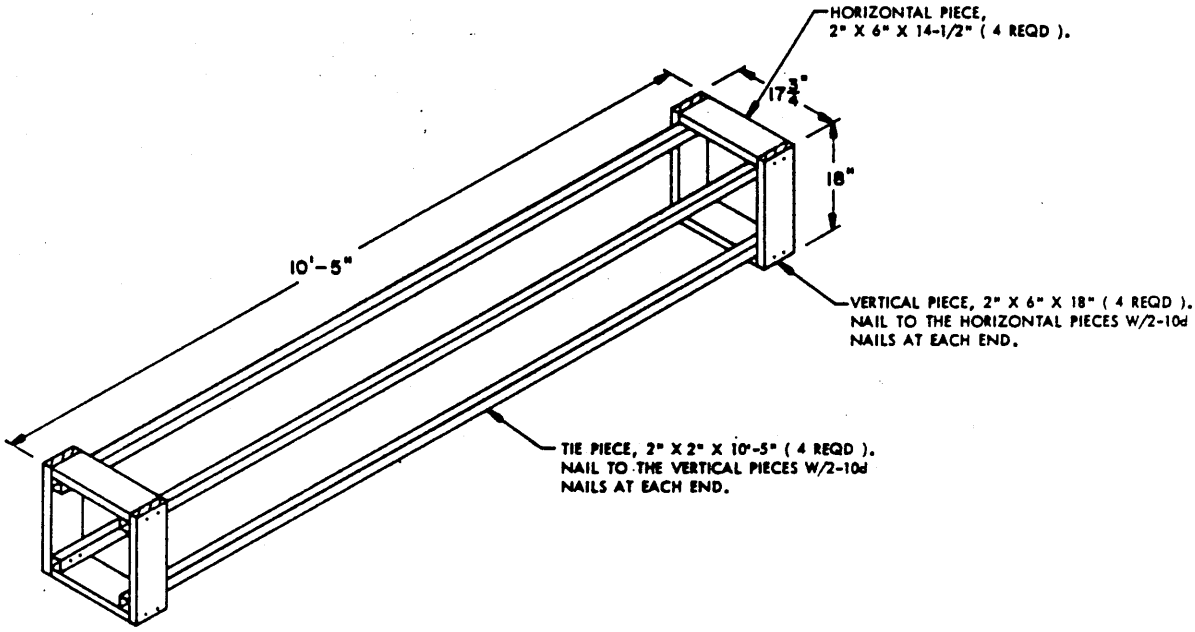
LOAD BEARING GATE A

SEE SPECIAL NOTE 5.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 2" X 4"	28 6	10 4
NAILS	NO. REQD	POUNDS
6d (2") 10d (3")	36 4	NIL NIL
WIRE, NO. 14 GAGE ------- 6' REQD ---------- NIL PLYWOOD, 1/2" ---------- 105 SQ FT REQD --------- 144 LBS		
CROSS MEMBER ---------- 12 REQD		

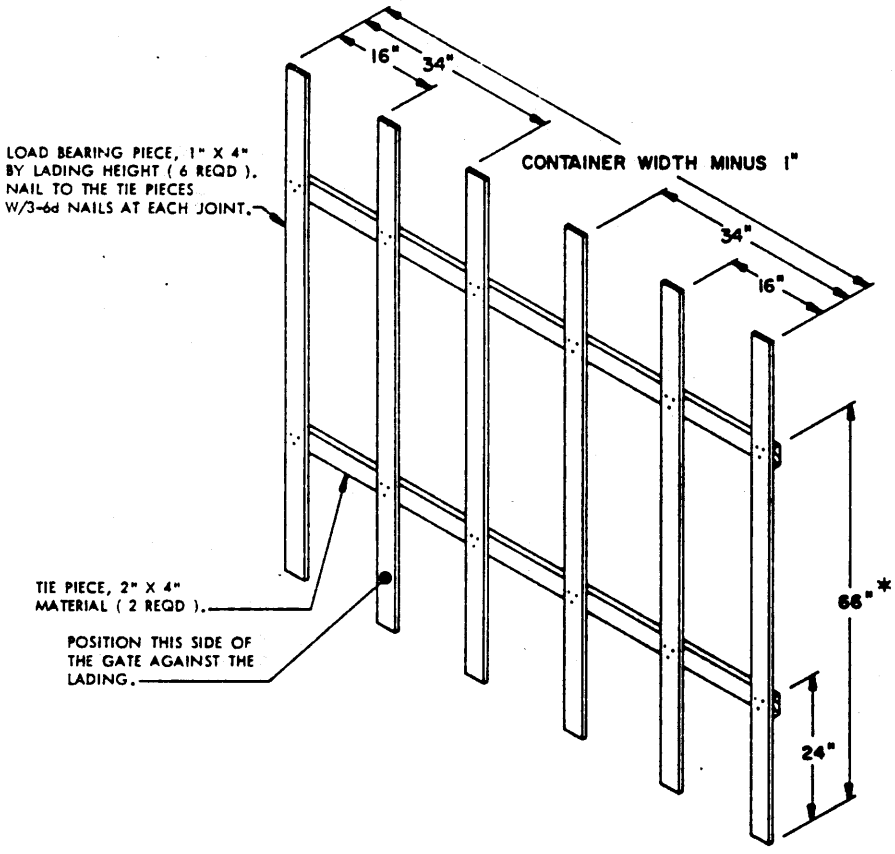
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
M570 CONTAINER	20	5,600 LBS
DUNNAGE		179 LBS
CONTAINER		5,700 LBS
TOTAL GROSS WEIGHT		11,479 LBS



FILLER ASSEMBLY

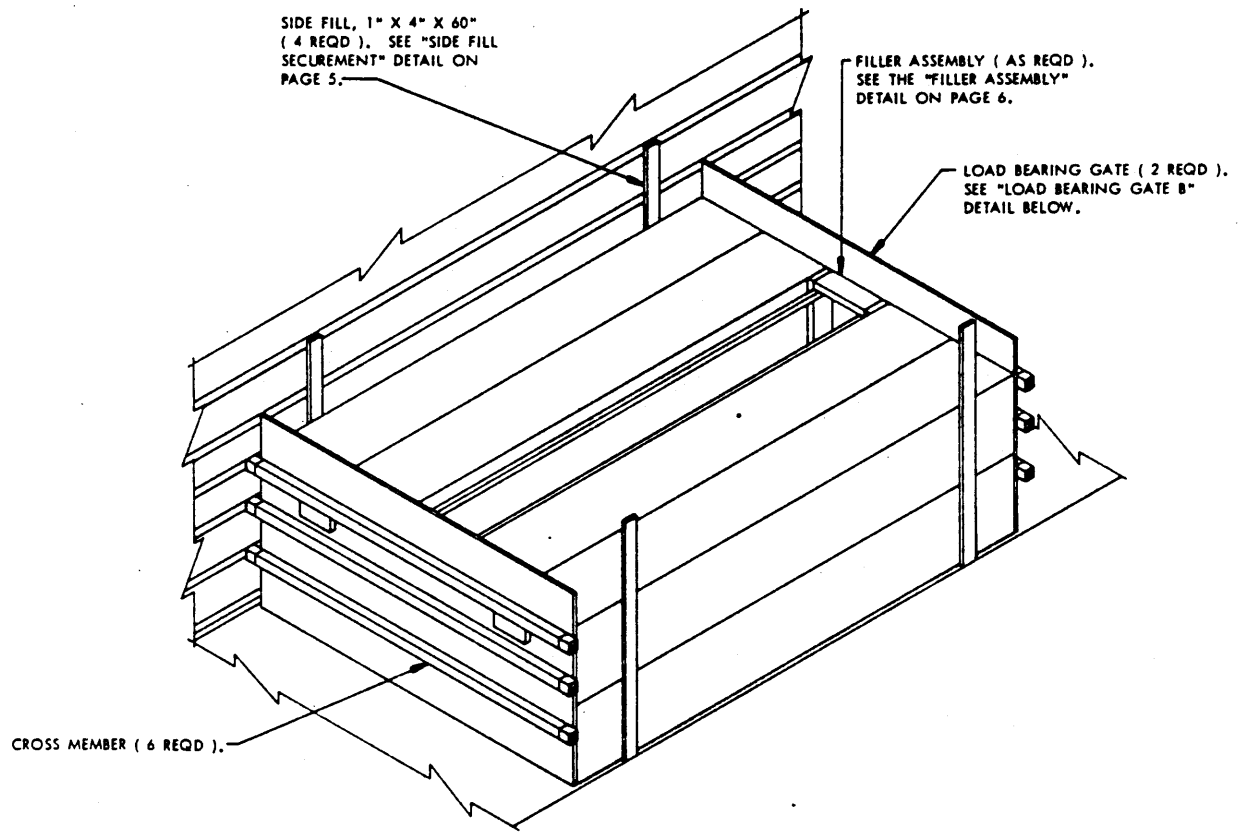
SEE SPECIAL NOTE 2 ON PAGE 5.



* 66" FOR A FOUR CONTAINER HIGH LOAD.
43" FOR A THREE CONTAINER HIGH LOAD.
34" FOR A TWO CONTAINER HIGH LOAD.

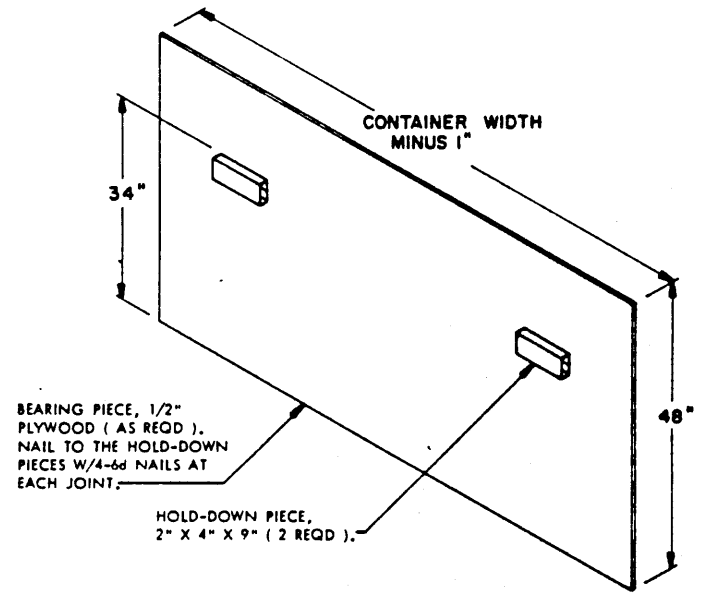
ALTERNATIVE LOAD BEARING GATE

SEE SPECIAL NOTE 5 ON PAGE 5.



ALTERNATIVE LOADING PATTERN

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



LOAD BEARING GATE B

SEE SPECIAL NOTE 5 ON PAGE 5.