APPROVED BY U.S. COAST GUARD	APPROVED BY BUREAU OF EXPLOSIVES
E. A. Altemos	A. F. Grassmuck
	SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE 11/24/75	DATE 11/4/75

HONEST JOHN

LOADING AND BRACING◑ IN MILVAN CONTAINER⊕ OF WARHEAD SECTION, PACKED IN WOODEN CONTAINER, FOR THE 762 MM ROCKET, FOR SHIPMENT BY T/COFC CARRIER

◑ 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 "M" 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.

INDEX

DO NOT SCALE

REVISIONS

DRAFTSMAN	PROJ ENG	CHECKER	LOG ENGRG OFFICE
[illegible]	[illegible]	RSH	AMSMI-SP [illegible]

APPROVED
Wesley E. Gilleland
U. S. ARMY MISSILE COMMAND

APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL COMMAND
A. H. Ehringer
USAMC AMMO CENTER

U.S. ARMY MATERIEL COMMAND

JANUARY 1976

CLASS	DIVISION	DRAWING	FILE
19	48	5950	GM 15HJ2

PROJECT GM 681-75

GENERAL NOTES

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 PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO THE HONEST JOHN WARHEAD ASSEMBLIES WHEN THEY ARE PACKAGED IN A PLYWOOD SHEATHED CONTAINER, LUMBER SHEATHED CONTAINER, AND THE M473 CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH WARHEAD ASSEMBLY.

C. LADING DATA:

1. FOR DETAIL OF THE LUMBER SHEATHED CONTAINER, SEE DRAWING NO. 8026346.

CONTAINER DIMENSIONS -----	146" LONG X 49-5/8" WIDE X 56-1/2" HIGH.
GROSS WEIGHT W/WARHEAD --	3,410 LBS (APPROX).
W/O WARHEAD ----------	1,922 LBS (APPROX).

2. FOR DETAIL OF THE PLYWOOD SHEATHED CONTAINER, SEE DRAWING NO. 8100000.

CONTAINER DIMENSIONS -----	144" LONG X 49-5/8" WIDE X 56-1/2" HIGH.
GROSS WEIGHT W/WARHEAD --	3,102 LBS (APPROX).
W/O WARHEAD ----------	1,416 LBS (APPROX).

3. FOR DETAIL OF THE M473 CONTAINER, SEE DRAWING NOS. 8824908 AND 8881082.

CONTAINER DIMENSIONS -----	140-1/4" LONG X 44-1/4" WIDE X 50-3/8" HIGH.
GROSS WEIGHT ----------	2,898 LBS (APPROX).

D. THESE ITEMS ARE CLASSIFIED AS EXPLOSIVES. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE CONTAINERS WHEN THEY ARE LOADED WITH PRACTICE OR EMPTY WARHEAD SECTIONS, EMPTY CONTAINERS, OR WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN AS IDENTIFIED WITHIN THE DRAWING TITLE.

E. 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.

F. PORTIONS OF THE CONTAINERS DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

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" POSTIONS (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 8 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 NSN 8115-00-165-6623 (FSN 8115-165 6623).

(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.

(GENERAL NOTES CONTINUED)

H. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-5/8" OR 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" WIDE OR 1-1/2" THICK BY 5-1/2" WIDE.

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.

L. MAXIMUM LOAD WEIGHT CRITERIA:

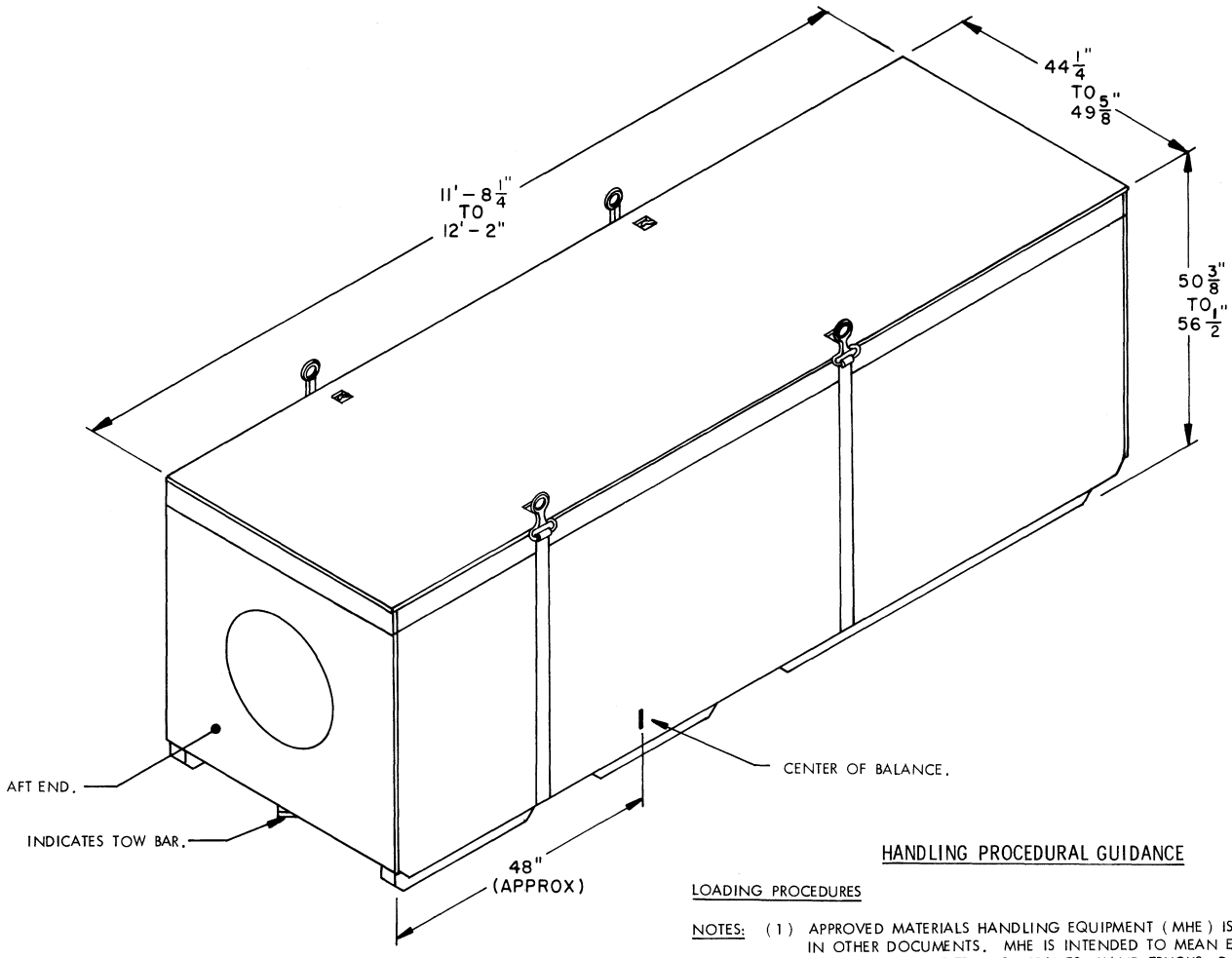
BECAUSE OF THE LIGHT WEIGHT OF THE DEPICTED ITEM, A LOAD WEIGHT WILL NEVER EXCEED ANY WEIGHT RESTRICTION CRITERIA.

M. 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 CONTAINERS.

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 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.



ITEM DETAIL

(HANDLING PROCEDURAL GUIDANCE CONTINUED)

C. REMOVE THE REAR LOAD BEARING CROSS MEMBERS.

D. USING AN APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT (MHE), SUCH AS A 6,000 POUND FORKLIFT TRUCK, ATTACH A CABLE OF SUFFICIENT SIZE TO THE TOW BAR OF THE ITEM AND INCH SLOWLY FROM THE MILVAN UNTIL IT CAN BE LIFTED FROM THE SIDE WITH THE FORKLIFT.

E. IF IT IS A TWO UNIT LOAD, INCH THE REMAINING UNIT OUT IN THE SAME MANNER.

F. REMOVE ALL REMAINING DUNNAGE AND SECURE THE CROSS MEMBERS IN THE CONTAINER.

G. CLOSE AND LATCH THE MILVAN DOORS.

HANDLING PROCEDURAL GUIDANCE

LOADING PROCEDURES

NOTES: (1) APPROVED MATERIALS HANDLING EQUIPMENT (MHE) IS SPECIFIED IN OTHER DOCUMENTS. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, AND SPREADER BARS.

(2) PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT (MHE) WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS. IN THIS CASE A 6,000 POUND FORKLIFT OR EQUIVALENT WILL BE USED.

B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER, TO PREVENT DAMAGE TO THE CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD.

C. THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION. POSITION THE FORWARD END OF THE CONTAINER PARTIALLY IN THE DOORWAY AREA OF THE MILVAN CONTAINER, THEN A FORKLIFT TRUCK, WITH A BUFFER BOARD ACROSS THE FORK TINES (4" X 4", ETC.) BLOCKED HIGH ENOUGH TO CLEAR THE TOW BAR ON THE REAR OF THE CONTAINER, CAN LIFT THE CONTAINER AND SLIDE IT INTO THE PROPER LOCATION. THE CONTAINER(S) MAY HAVE TO BE PRIED INTO THE FINAL LOCATION WITH A PRY BAR.

D. THE DUNNAGE ALONG THE SIDE WALLS OF THE MILVAN CONTAINER MUST BE PRE-POSITIONED BEFORE THE CONTAINER(S) ARE LOADED INTO THE MILVAN CONTAINER.

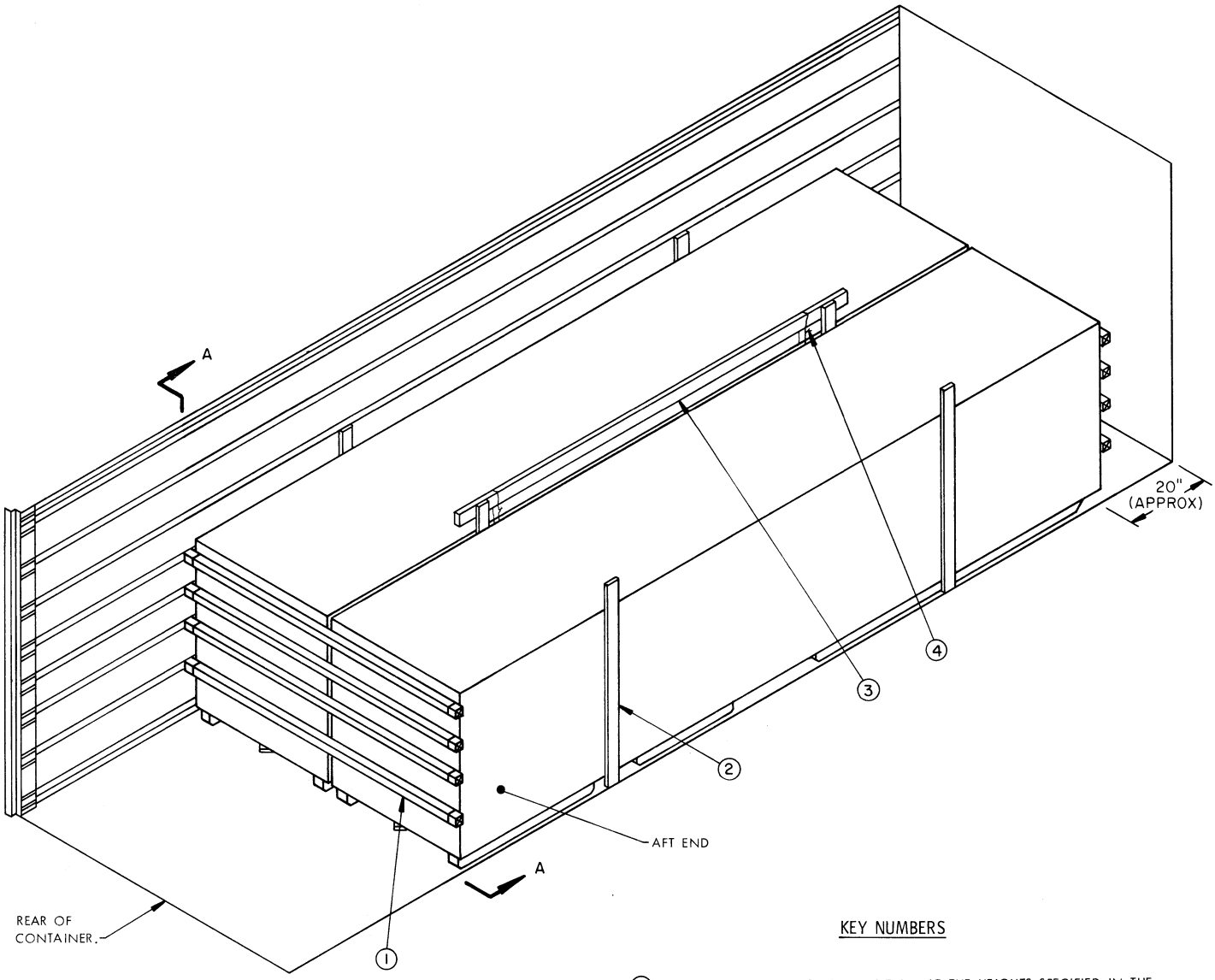
E. AFTER TWO CONTAINERS ARE LOADED, THE FILL ASSEMBLY WILL BE INSTALLED. ANY VOID BETWEEN THE FILL ASSEMBLY AND THE LADING MUST NOT EXCEED ONE-HALF INCH (1/2").

UNLOADING PROCEDURES

A. AFTER THE MILVAN IS POSITIONED AT THE DESIRED UNLOADING SITE, REMOVE SEALS, IF PRESENT, OPEN AND SECURE DOORS IN AN OPEN POSITION.

B. REMOVE ALL EXCESS CROSS MEMBERS AT THE REAR OF THE LADING.

(CONTINUED AT LEFT)



ISOMETRIC VIEW

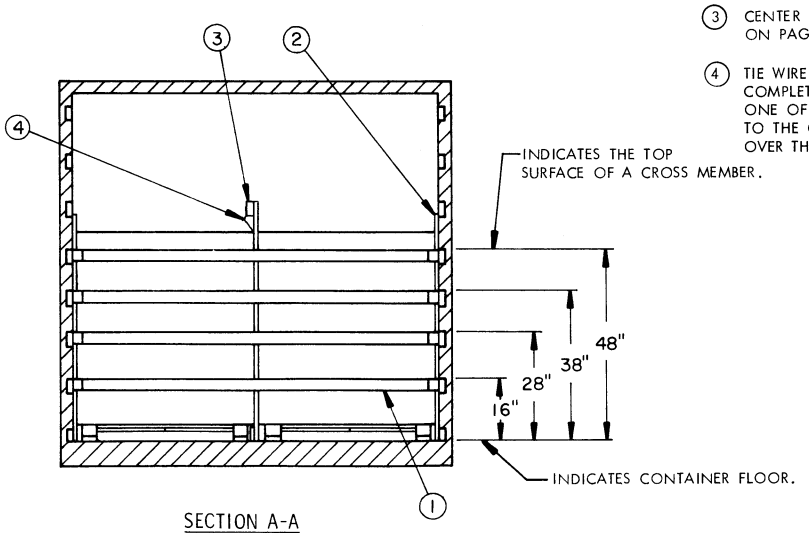
KEY NUMBERS

(1) CROSS MEMBER (8 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION A-A" VIEW. SEE GENERAL NOTE "G" ON PAGE 2, AND THE "FILL DETAIL" ON PAGE 8.

(2) SIDE FILL, 1" X 4" X 60" (4 REQD). SEE THE "SIDE FILL" DETAIL ON PAGE 5.

(3) CENTER BLOCKING (1 REQD). SEE THE "CENTER BLOCKING ASSEMBLY" DETAIL ON PAGE 8. SEE SPECIAL NOTE 2 ON PAGE 5.

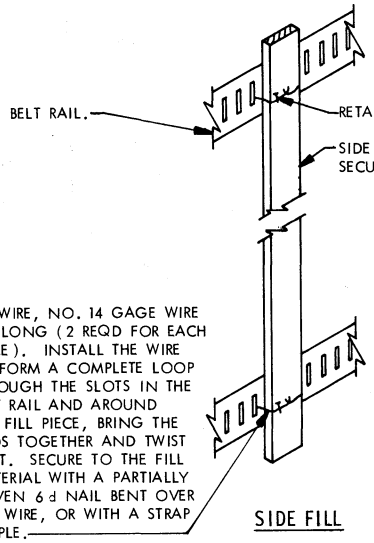
(4) TIE WIRE, NO. 14 GAGE WIRE 18" LONG (2 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CENTER BLOCKING AND THE LIFTING RINGS OF ONE OF THE CONTAINERS, BRING THE ENDS TOGETHER AND TWIST TAUT. SECURE TO THE CENTER BLOCKING TOP TIE WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE, OR WITH A STRAP STAPLE.



SECTION A-A

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 4 DEPICTS A TWO-CONTAINER LOAD IN A MILVAN CONTAINER.
2. ADDITIONAL PIECES OF 4" WIDE MATERIAL MAY BE LAMINATED TO THE BUFFER PIECES OF THE CENTER BLOCKING ASSEMBLY TO FILL ANY VOID EXCEEDING 1/2" BETWEEN THE CONTAINERS. IF ADDITIONAL MATERIAL IS NECESSARY, IT MAY BE NAILED TO THE BUFFER PIECES EVERY 12" USING THE APPROPRIATELY SIZED NAIL.
3. TO MAKE LOADING EASIER, AND TO ACHIEVE A TIGHT LOAD ACROSS A CONTAINER, SEE "HANDLING PROCEDURAL GUIDANCE" ON PAGE 3.
4. PRIOR TO THE START OF LOADING OPERATIONS THE SIDE BLOCKING SHALL BE POSITIONED AGAINST THE SIDES OF THE CONTAINER AND WIRED TO THE BELT RAILS. FOR FURTHER GUIDANCE SEE "SIDE FILL" DETAIL ON THIS PAGE.
5. THE PROCEDURES FOR A TWO-CONTAINER LOAD, AS SHOWN ON PAGE 4, ARE ONLY APPLICABLE TO SHIPMENTS OF THE M473 CONTAINER. BECAUSE OF THEIR GREATER WIDTH, THE OTHER CONTAINERS MUST BE SHIPPED USING THE PROCEDURES FOR A ONE-CONTAINER LOAD, AS SHOWN ON PAGE 6.
6. THE AFT END OF THE CONTAINER MUST BE POSITIONED TOWARD THE REAR OF THE MILVAN, AS SHOWN, SO THAT THE CENTER OF BALANCE OF THE LOAD IS AT THE CENTER OF THE MILVAN CONTAINER.



SIDE FILL

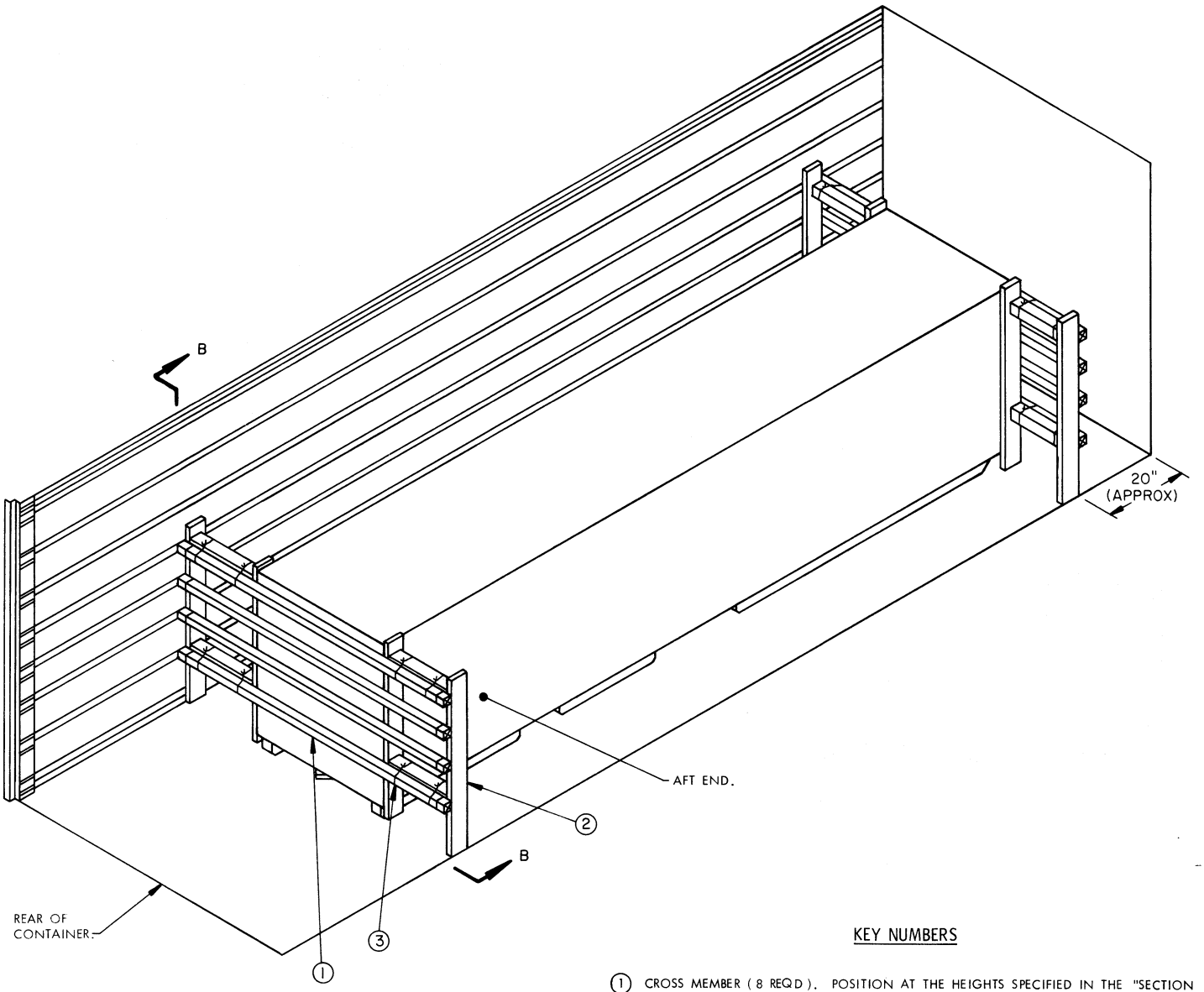
THE FLAT SURFACE OF THE WARHEAD SECTION CONTAINER MUST BEAR AGAINST THE SIDE FILL MATERIAL.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 2" X 4"	38 10	13 7
NAILS	NO. REQD	POUNDS
6d (2")	12	NIL
WIRE, NO. 14 GAGE ----- 12' REQD ---------- NIL		
CROSS MEMBER ---------- 8 REQD		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
M473 CONTAINER	2	5,796 LBS
DUNNAGE		50 LBS
CONTAINER		5,700 LBS
TOTAL GROSS WEIGHT		11,546 LBS

TWO-CONTAINER LOAD



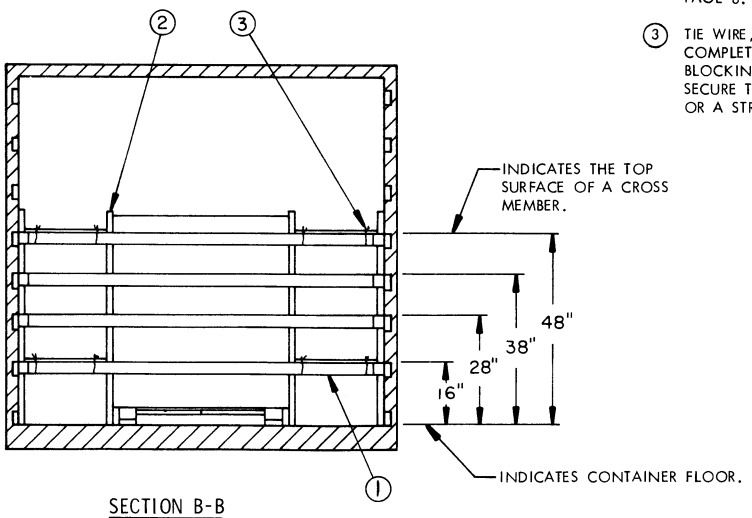
ISOMETRIC VIEW

KEY NUMBERS

(1) CROSS MEMBER (8 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION B-B" VIEW. SEE GENERAL NOTE "G" ON PAGE 2, AND THE "FILL DETAIL" ON PAGE 8.

(2) SIDE BLOCKING (4 REQD). SEE THE "SIDE BLOCKING ASSEMBLY" DETAIL ON PAGE 8.

(3) TIE WIRE, NO. 14 GAGE WIRE 24" LONG (16 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBER AND A SPACER PIECE ON THE SIDE BLOCKING ASSEMBLY AS SHOWN. BRING THE ENDS TOGETHER AND TWIST TAUT. SECURE TO THE SIDE BLOCKING ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL, OR A STRAP STAPLE.



SECTION B-B

ONE-CONTAINER LOAD

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 6 DEPICTS A ONE-CONTAINER LOAD IN A MILVAN CONTAINER.
2. TO MAKE LOADING EASIER, AND TO ACHIEVE A TIGHT LOAD ACROSS A CONTAINER, SEE "HANDLING PROCEDURAL GUIDANCE" ON PAGE 3.
3. THE "SIDE BLOCKING ASSEMBLY" AS DETAILED ON PAGE 8 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 THE LOAD.
4. THE AFT END OF THE CONTAINER MUST BE POSITIONED TOWARD THE REAR OF THE MILVAN, AS SHOWN, SO THAT THE CENTER OF BALANCE OF THE LOAD IS AT THE CENTER OF THE MILVAN CONTAINER.

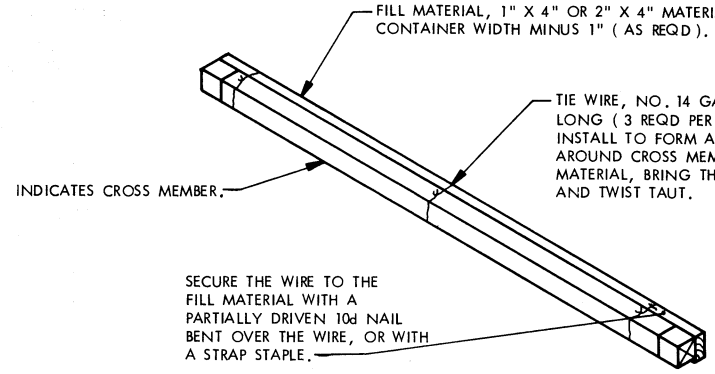
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6" 4" X 4"	35 16	35 22
NAILS	NO. REQD	POUNDS
10d (3") 12d (3-1/4")	16 32	1/4 1/2
WIRE, NO. 14 GAGE --------	32' REQD ----------	1/2 LB
CROSS MEMBER ----------		8 REQD

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
M473 CONTAINER --------	1 ----------	2,898 LBS *
DUNNAGE ----------		143 LBS
CONTAINER ----------		5,700 LBS
TOTAL GROSS WEIGHT ---------		8,741 LBS

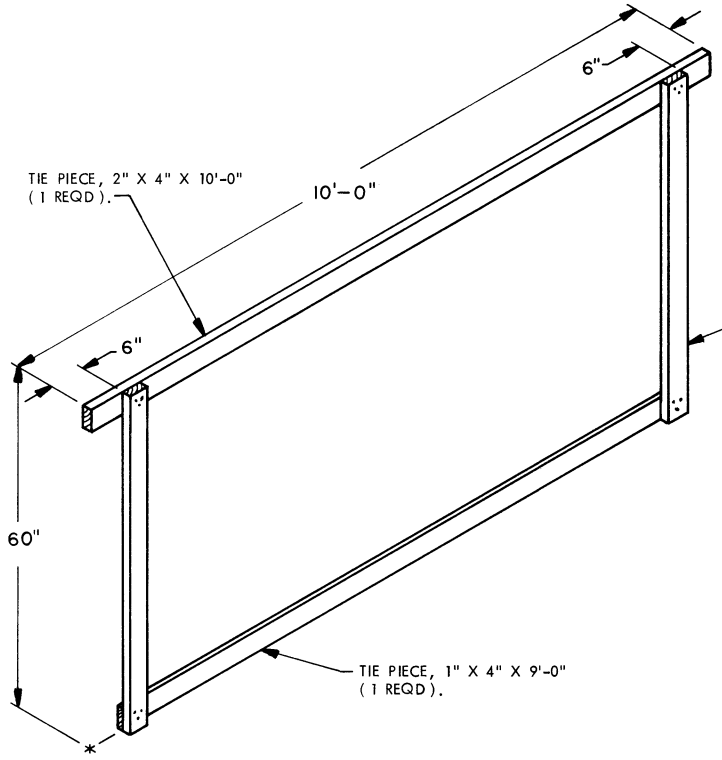
ONE-CONTAINER LOAD

* SEE GENERAL NOTE "C" ON PAGE 2 FOR LADING WEIGHT OF SPECIFIC ITEMS.

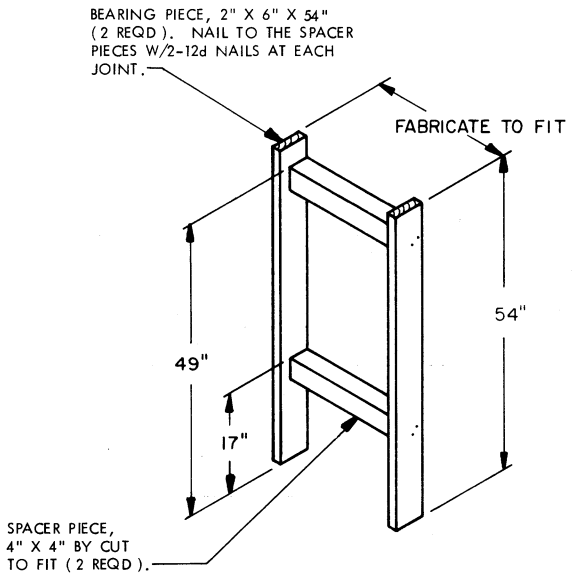


FILL DETAIL

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.



CENTER BLOCKING ASSEMBLY



SIDE BLOCKING ASSEMBLY