



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 UNLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO THE PATRIOT COMPLETE ROUND, WHEN PACKED IN THE MISSILE CANISTER ( SHIPPING, STORAGE AND LAUNCH CONTAINER ), W/O OVERPACK.
- C. THE LOADS AS SHOWN ARE BASED ON A 4,700 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH COMMERCIAL INTERMODAL FREIGHT CONTAINER, WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 95" HIGH. ALTHOUGH THE LOADS AS SHOWN ARE BASED ON AN 8'-6" HIGH CONTAINER, AN 8'-0" HIGH CONTAINER IS PREFERRED FOR SHIPPING THE DEPICTED LOADS. WHEN AN 8'-0" HIGH CONTAINER IS USED, THE HEIGHT OF SOME DUNNAGE ASSEMBLIES WILL HAVE TO BE LOWERED BY REMOVING SOME MATERIAL FROM THE TOP OF SOME OF THE VERTICAL PIECES. THE LOADS ARE DESIGNED FOR TRAILER/CONTAINER-ON-FLAT CAR ( T/COFC ) SHIPMENT, HOWEVER, THE LOADS AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF TRANSPORT ( MOTOR AND WATER ). NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN BE USED.
- D. FOR DETAIL OF THE MISSILE CANISTER, SEE DRAWING NUMBER 11450000, AND THE "TYPICAL STACK DETAIL" ON PAGE 3.  
  
CANISTER DIMENSIONS-----234" LONG X 42-3/8" WIDE X 38-3/4" HIGH.  
GROSS WEIGHT-----3,750 LBS ( APPROX )
- E. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE CANISTERS WHEN THEY ARE LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE, OR WHEN THEY ARE EMPTY.
- F. WHEN LOADING THE CANISTERS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD ( TIGHT AGAINST THE FORWARD AND SIDE DUNNAGE ASSEMBLIES ). ALTHOUGH A TOTAL OF ONE AND ONE-HALF INCHES ( 1-1/2" ) OF UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD IS PERMITTED, LATERAL VOIDS WITHIN THE LOAD ARE TO BE HELD TO A MINIMUM. EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL BEARING PIECES OF APPROPRIATE THICKNESS TO THE SIDE FILL ASSEMBLIES ON ONE OR BOTH SIDES OF THE CONTAINER. NAIL EACH ADDITIONAL PIECE TO THE BEARING PIECES W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE NUMBER AND THICKNESS OF THE BEARING PIECES AND VERTICAL PIECES MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE WIDTH OF THE INTERMODAL COMMERCIAL CONTAINER.
- G. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE AND 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- H. 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.
- J. IN SOME CONTAINERS, SUCH AS ALL STEEL CONTAINERS, THERE IS A SLOT AT THE CORNERS OF THE FORWARD WALL. A PIECE OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES ON THE FORWARD STRUT ASSEMBLIES TO PROVIDE A FLAT SURFACE FOR THE 2" X 6" BUFFER PIECES. A PIECE OF 2" X 4", 2" X 3" OR A SPECIAL WIDTH PIECE CUT-TO-FIT CAN BE USED. THIS FILL PIECE WILL BE NAILED WITH ONE APPROPRIATELY SIZED NAIL EVERY 12". THIS PIECE IS NOT REQUIRED WHEN THE FRONT OF THE CONTAINER IS SMOOTH AND FLAT.
- K. CAUTION: DO NOT NAIL DUNNAGE MATERIALS TO THE CONTAINER WALLS OR FLOOR, EXCEPT FOR THE ALIGNMENT PIECE SHOWN ON PAGE 4. ALL OTHER NAILING WILL BE WITHIN THE DUNNAGE.
- L. 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.
- M. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLAT-CAR ( T/COFC ). SPECIAL T/COFC NOTES FOLLOW.
  1. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.
  2. THE LOAD LIMIT OF A T/COFC RAIL CAR 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 THAT CAR.

( CONTINUED AT RIGHT )

MATERIAL SPECIFICATIONS

- LUMBER----- : SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS----- : COMMON, FED SPEC FF-N-105.
- WIRE----- : FED SPEC QQ-W-461.
- STEEL, STRUCTURAL----- : COLD DRAWN, LOW CARBON, 1018, PER ASTM A108.

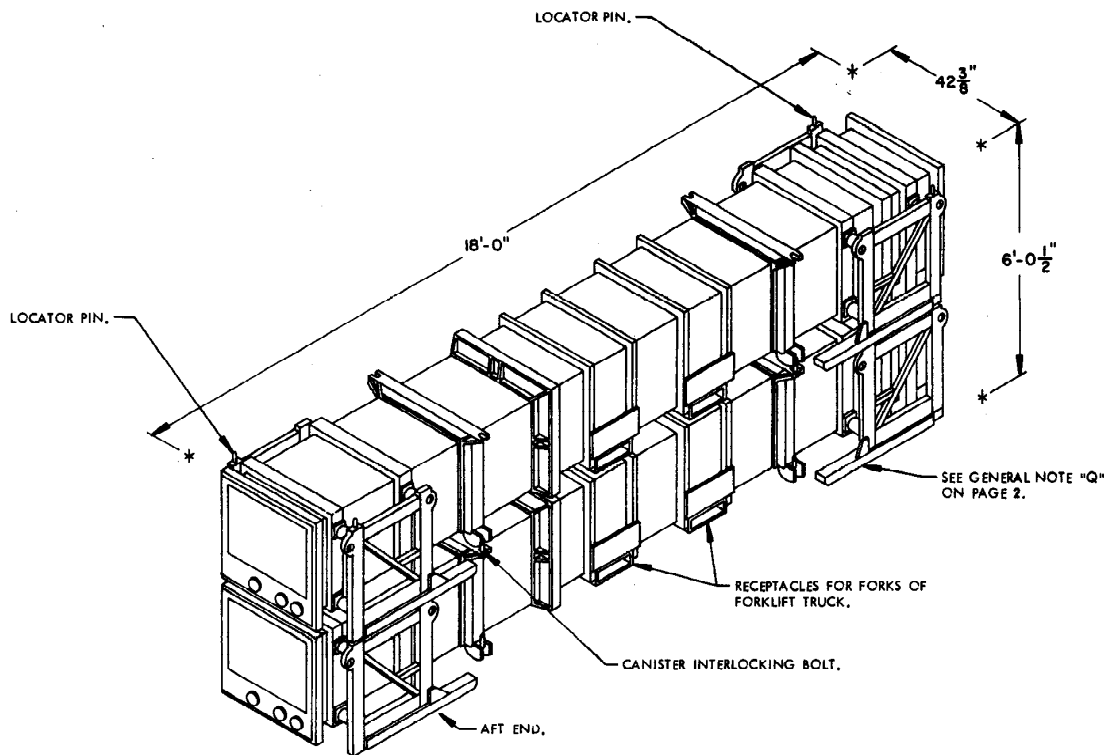
( GENERAL NOTES CONTINUED )

- N. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS/MODIFIED FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.
- O. DIMENSIONS GIVEN FOR DUNNAGE PIECES OR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY AND INSTALLATION IN THE INTERMODAL FREIGHT CONTAINER. DUNNAGE ASSEMBLIES MUST BE CONSTRUCTED SO THAT A SNUG FIT WITH THE MISSILE CANISTERS IS OBTAINED. ALSO, ADJUSTMENTS MAY BE REQUIRED AS TO THE LOCATION OF CERTAIN PIECES OF DUNNAGE IN AN ASSEMBLY IN ORDER FOR THE DUNNAGE ASSEMBLY TO CONTACT THE CANISTER AT ITS SHOCK ISOLATION FRAMES.
- P. NOTICE: TO FACILITATE UNLOADING IN ACCORDANCE WITH THE METHOD DESCRIBED WITHIN NOTE 2 ON PAGE 3, THE MISSILE CANISTERS MUST BE LOADED INTO AN INTERMODAL FREIGHT CONTAINER WITH THE AFT END OF THE CANISTERS ADJACENT TO THE DOORS OF THE FREIGHT CONTAINER.
- Q. FOR SHIPMENT OF THE MISSILE CANISTERS IN AN INTERMODAL FREIGHT CONTAINER IT IS NECESSARY THAT THE SHOCK ISOLATION FRAMES AND SKIDS BE IN THE REVERSE POSITION, ( THE WOODEN SKIDS EXTENDING UNDER THE BODY OF THE CANISTER RATHER THAN PROTRUDING ), THE OVERALL LENGTH OF THE CANISTER WILL BE REDUCED FROM 234" TO 216".

REVISION

REVISION NO. 1, DATED APRIL 1987, CONSISTS OF:

1. REDESIGN OF PUSH ASSEMBLY.
2. ADDING ADDITIONAL MATERIAL HANDLING EQUIPMENT GUIDANCE.



**TYPICAL STACK DETAIL**

**UNITIZATION AND HANDLING PROCEDURAL GUIDANCE**

(CONTINUED FROM LEFT)

1. CANISTER STACKING FOR OUTLOADING PURPOSES.
  - A. THE SKIDS OF THE UPPER CANISTER MUST BE FULLY SEATED UPON THE LOCATOR PINS OF THE LOWER CANISTER.
  - B. POSITION THE FORWARD END OF THE UPPER CANISTER ABOVE THE FORWARD END OF THE LOWER CANISTER.
  - C. CANISTER INTERLOCKING BOLTS MUST BE TIGHTENED AS SECURELY AS POSSIBLE WITH A NORMAL SIZE HAND TOOL WRENCH (REF: 60 FOOT POUNDS).

E. DUE TO THE SIZE AND WEIGHT OF THE CANISTERS, A FORKLIFT TRUCK HAVING A MINIMUM CAPACITY OF 6,000 POUNDS AND A SIDE-SHIFT CAPABILITY SHOULD BE USED FOR HANDLING/LOADING THE CANISTERS INTO A COMMERCIAL CONTAINER.

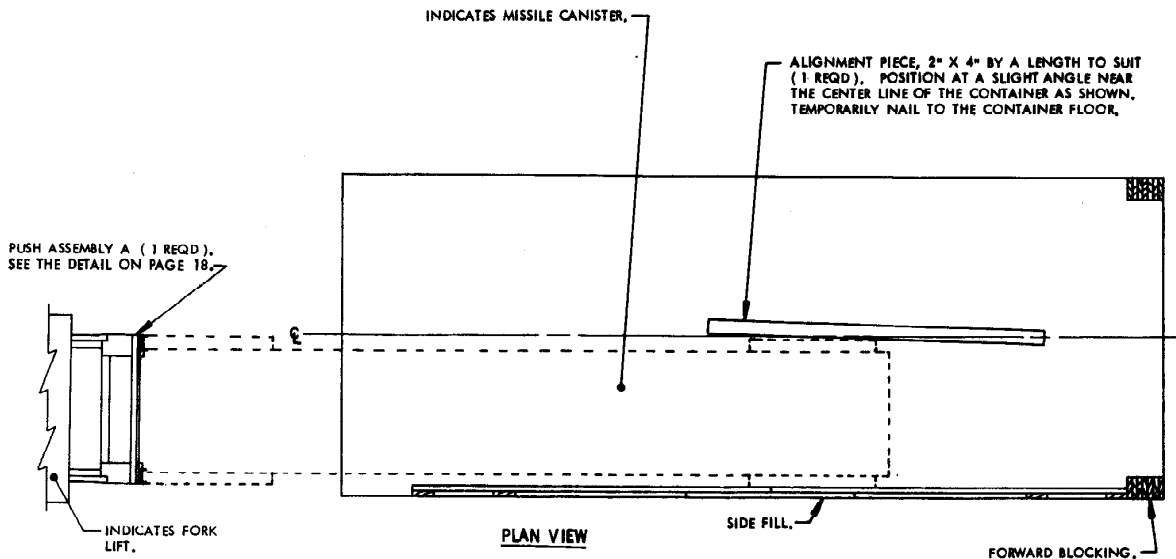
2. CANISTER OR CANISTER STACK HANDLING.

- 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 WILL BE USED FOR HANDLING THE DEPICTED CANISTERS.
- B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CANISTERS SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CANISTER, TO PREVENT DAMAGE TO THE CANISTER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. FOR VERY SHORT "INCHING" SPEED MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING FLAT CAR LOADING, A TWO-HIGH CANISTER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK INTO THE FORK RECEPTACLES OF THE UPPER CANISTER.
- C. SLINGING OF A CANISTER OR A CANISTER STACK WILL BE ACCOMPLISHED IN ACCORDANCE WITH APPROVED PROCEDURES.
- D. IF AVAILABLE MHE DOES NOT HAVE THE CAPACITY TO LIFT A STACK OF UNITIZED CANISTERS, THEN THE LOWER CANISTER MUST FIRST BE PLACED WITH THE SKIDS ON THE FORWARD END PARTIALLY INTO THE OPEN END OF THE COMMERCIAL CONTAINER. THE SECOND CANISTER WILL THEN BE PLACED DIRECTLY ON TOP OF THE FIRST AND WILL BE UNITIZED ACCORDING TO THE INSTRUCTIONS CONTAINED IN 1 ABOVE.

(CONTINUED AT RIGHT)

**UNITIZATION AND HANDLING PROCEDURES**



#### INTERMODAL CONTAINER LOADING PROCEDURES

1. PLACE FORWARD BLOCKING ASSEMBLIES AND CROSS BRACES IN THE FORWARD END OF THE COMMERCIAL CONTAINER.
2. PLACE THE SIDE FILL ASSEMBLIES ALONG THE CONTAINER SIDEWALLS TO AID DURING CANISTER LOADING, THESE ASSEMBLIES MAY BE TOENAILED TO THE FORWARD BLOCKING ASSEMBLIES TO HOLD THEM UPRIGHT.
3. TEMPORARILY NAIL THE ALIGNMENT PIECE TO THE CONTAINER FLOOR AS SHOWN IN THE PLAN VIEW ABOVE.
4. PUSH STACK OF CANISTERS INTO POSITION UTILIZING A FORKLIFT TRUCK WITH A "PUSH ASSEMBLY A" PLACED ON EACH FORK TINE, PUSH ASSEMBLY "A" MUST BE PLACED ON THE FORKS OF THE FORKLIFT TRUCK SO THAT THE CANISTER SKID IS "CAPTURED" BY THE "C" CHANNEL OF THE ASSEMBLY. SEE NOTE ON PAGE 18.
5. REMOVE THE ALIGNMENT PIECE AND PLACE THE CENTER FILL AGAINST THE FIRST STACK OF CANISTERS. THE CENTER FILL MAY BE WIRE TIED TO THE CANISTERS TO HOLD IT UPRIGHT DURING THE LOADING OF THE SECOND STACK OF CANISTERS.
6. PUSH THE SECOND STACK OF CANISTERS INTO POSITION USING THE SAME PROCEDURES AS STATED IN STEP 4.
7. PLACE THE REAR BLOCKING IN THE CONTAINER AS PER THE KEY NUMBERS APPLICABLE TO THE NUMBER OF CANISTERS LOADED.
8. THE ABOVE STEPS MAY BE MODIFIED AS NEEDED DEPENDING ON THE NUMBER OF CANISTERS LOADED.

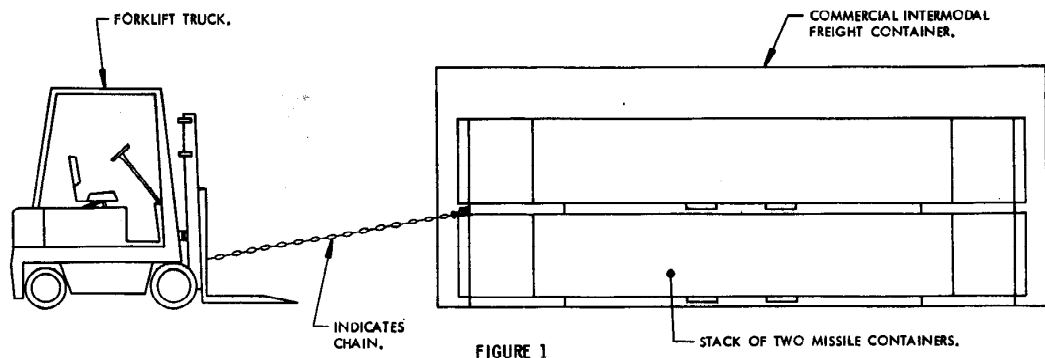


FIGURE 1

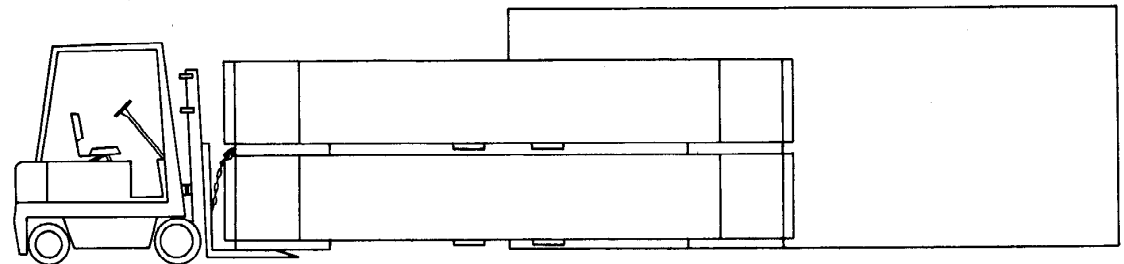


FIGURE 2

**INTERMODAL CONTAINER UNLOADING PROCEDURES**

1. REMOVE ALL REAR BLOCKING FROM THE COMMERCIAL CONTAINER.
2. ATTACH CHAIN FROM TIEDOWN RING ON BOTTOM CANISTER TO THE FORKLIFT TRUCK AS SHOWN IN FIGURE 1 ABOVE.
3. SLOWLY PULL A STACK OF CANISTERS FROM THE COMMERCIAL CONTAINER UNTIL APPROXIMATELY TWO-THIRDS OF THE SKID IS OUTSIDE OF THE CONTAINER.
4. DRIVE THE FORKLIFT FORWARD AND POSITION THE FORKS DIRECTLY BENEATH THE CANISTER SKIDS. IT IS RECOMMENDED THAT THE CHAIN BE LEFT ATTACHED AS A SAFETY PRECAUTION. SEE FIGURE 2 ABOVE.
5. RAISE CANISTERS SLIGHTLY AND SLOWLY PULL THEM FROM THE CONTAINER UNTIL THE TWO SKIDS ON THE OPPOSITE END ARE ALMOST OUTSIDE OF THE COMMERCIAL CONTAINER.
6. CANISTER STACK SHOULD THEN BE LOWERED ON TO A SHORT LENGTH OF DUNNAGE SO THAT THE AFT-END SKIDS ARE SUPPORTED BY THE DUNNAGE PIECE AND THE CANISTER STACK IS APPROXIMATELY LEVEL. CANISTER STACK MAY NOW BE HANDLED BY SLINGING, FORKLIFT TRUCK OR ANY OTHER MEANS; PROVIDING THEY ARE HANDLED IN ACCORDANCE WITH APPROVED PROCEDURES. SEE FIGURE 3 BELOW.
7. REPEAT THE ABOVE PROCEDURES FOR THE REMAINING STACK OF CANISTERS.

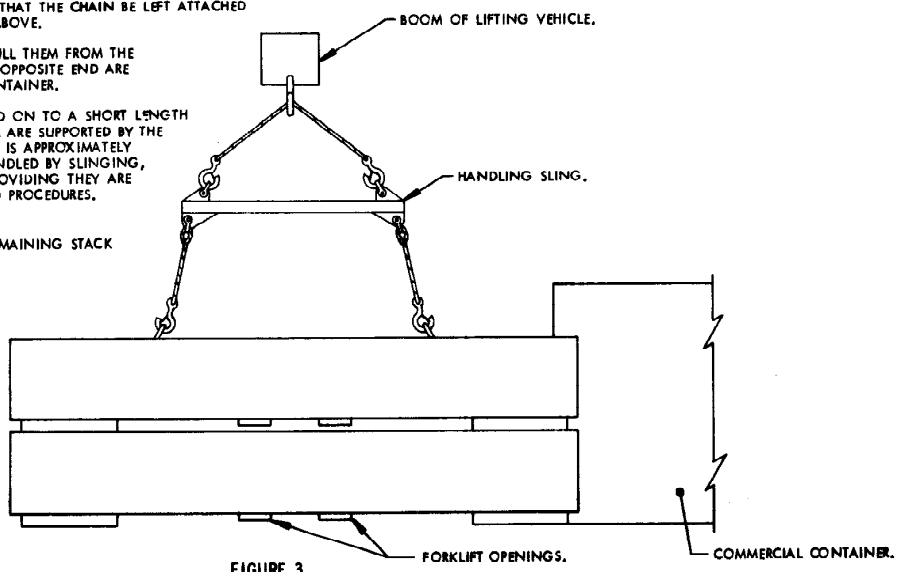
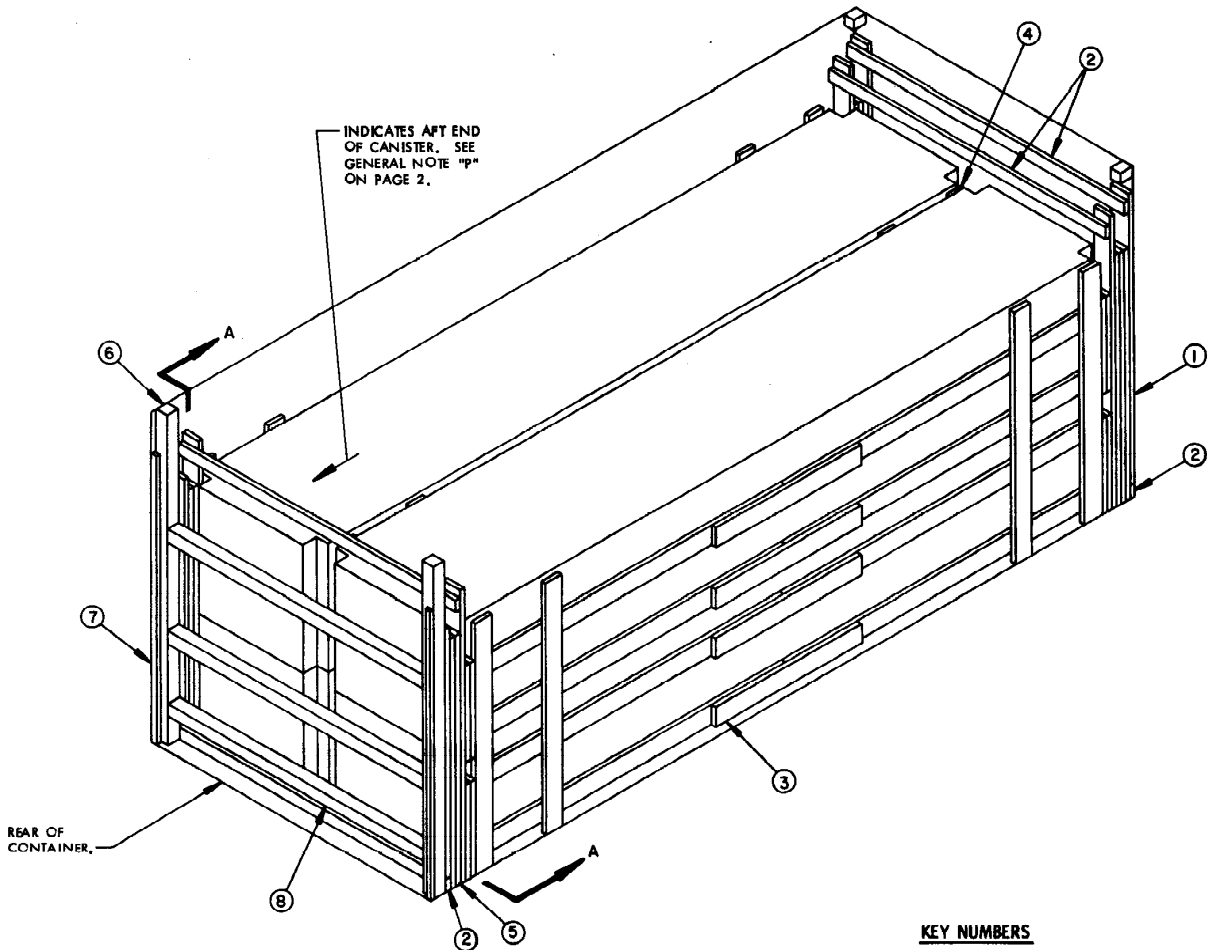
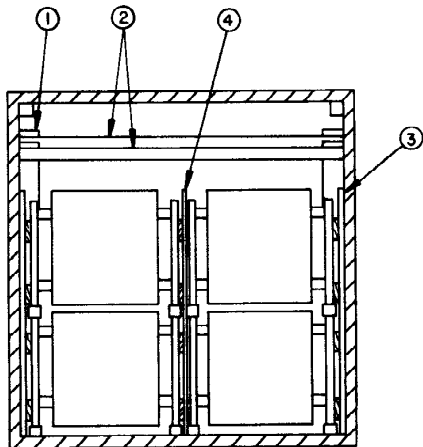


FIGURE 3

**UNLOADING PROCEDURES**



ISOMETRIC VIEW



SECTION A-A

**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY A (2 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY A" DETAIL ON PAGE 12. SEE GENERAL NOTE "H" ON PAGE 2.
- ② CROSS BRACE, 2" X 4" BY CONTAINER WIDTH (REF: 7'-8") (5 REQD). NAIL TO PIECES MARKED ① AND ⑤ W/3-10d NAILS AT EACH END.
- ③ SIDE FILL (2 REQD). SEE THE "SIDE FILL" DETAIL ON PAGE 19. SEE SPECIAL NOTE 3 ON PAGE 7.
- ④ CENTER FILL (1 REQD). SEE THE "CENTER FILL" DETAIL ON PAGE 13. SEE SPECIAL NOTE 3 ON PAGE 7.
- ⑤ REAR BLOCKING ASSEMBLY A (2 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 12.
- ⑥ DOOR POST VERTICAL (2 REQD). SEE THE "DOOR POST VERTICAL" DETAIL AND "DETAIL B" ON PAGE 17.
- ⑦ DOOR POST VERTICAL RETAINER (2 REQD). SEE THE "DOOR POST VERTICAL RETAINER" DETAIL ON PAGE 16 AND "DETAIL A" ON PAGE 17. NAIL THROUGH THE HOLES INTO THE DOOR POST VERTICAL W/4-10d NAILS.
- ⑧ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8"). (3 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL AND THE "DOOR POST VERTICAL" DETAIL ON PAGE 17.

**SPECIAL NOTES:**

1. THE LOAD AS SHOWN ON PAGE 6 DELINEATES A FOUR-CANISTER LOAD IN A COMMERCIAL INTERMODAL FREIGHT CONTAINER.
2. PRIOR TO LOADING THE MISSILE CANISTERS INTO THE INTERMODAL FREIGHT CONTAINER, SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
3. IF DESIRED, THE FORWARD END OF THE TWO SIDE FILL ASSEMBLIES CAN BE TOENAILED TO THE FORWARD BLOCKING ASSEMBLY TO HOLD THEM UPRIGHT AGAINST THE SIDEWALLS OF THE INTERMODAL FREIGHT CONTAINER DURING LOADING OPERATIONS. ALSO, IF DESIRED, THE CENTER FILL ASSMBLY CAN BE WIRE TIED TO THE CANISTER STACK THAT IS ALREADY LOADED TO HOLD IT UPRIGHT DURING LOADING OF THE SECOND STACK. NOTICE: THE CENTER FILL ASSEMBLY IS TO BE POSITIONED WITH THE VERTICAL PIECES, SPLICE PIECES AND RETENTION BLOCKS AGAINST THE CANISTERS THAT ARE ALREADY LOADED IN THE CONTAINER.

**BILL OF MATERIAL**

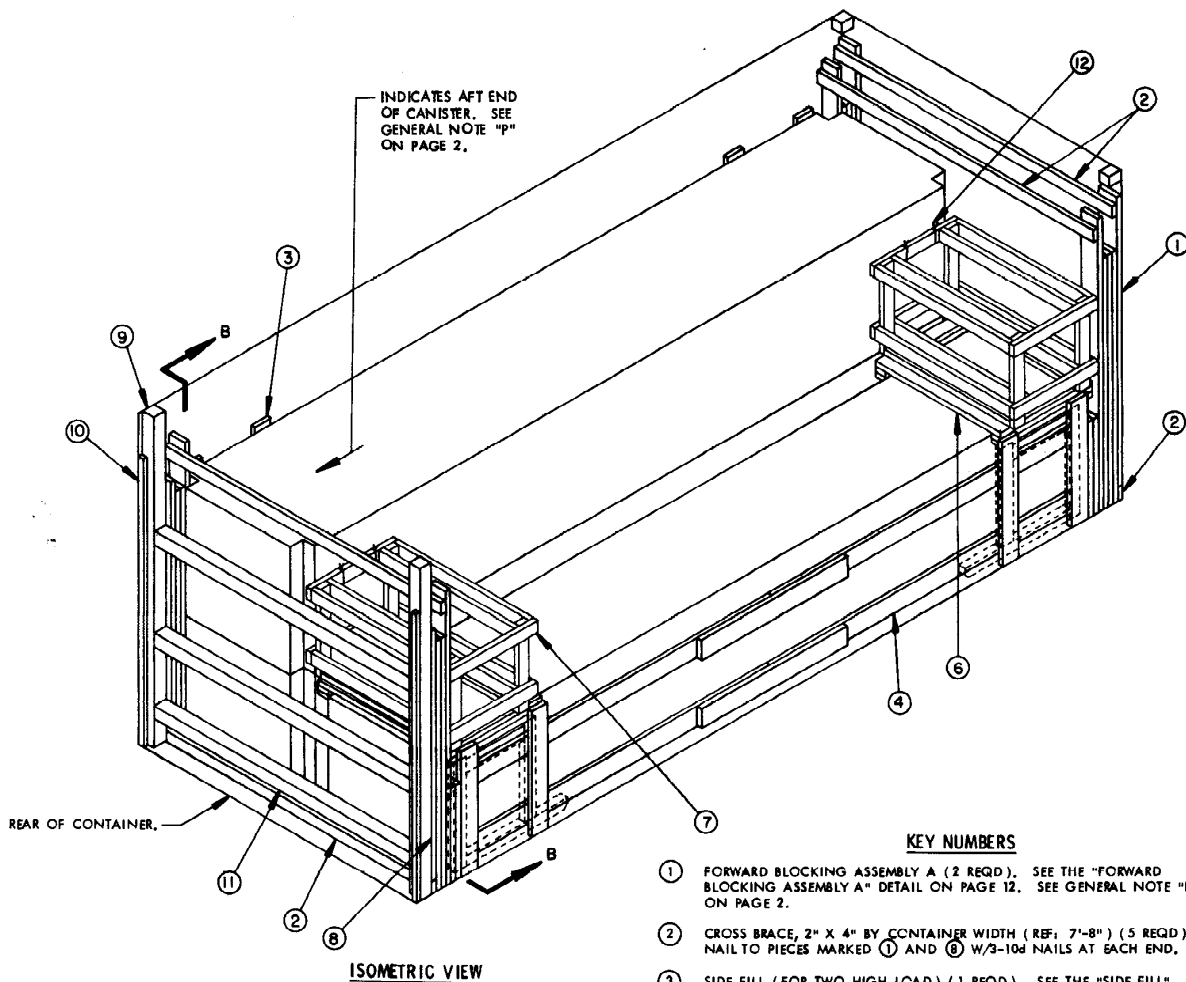
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	108	54
2" X 4"	39	26
2" X 6"	372	372
4" X 4"	37	49
NAILS	NO. REQD	POUNDS
6d (2")	80	1/2
10d (3")	346	5-1/2
12d (3-1/4")	8	NIL
16d (3-1/2")	12	1/2
DOOR POST VERTICAL RETAINER-----2 REQD-----		64 LBS

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT ( APPROX )
MISSILE CANISTER-----	4-----	15,000 LBS
DUNNAGE-----		1,009 LBS
COMMERCIAL CONTAINER-----		4,700 LBS
TOTAL WEIGHT-----		20,709 LBS

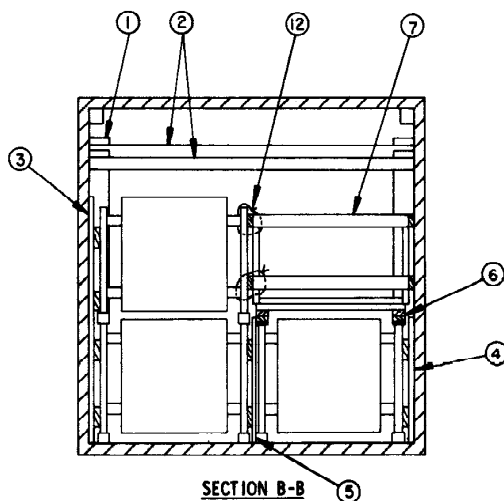
**FOUR-CANISTER LOAD**

**PAGE 7**



#### KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY A (2 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY A" DETAIL ON PAGE 12. SEE GENERAL NOTE "H" ON PAGE 2.
- ② CROSS BRACE, 2" X 4" BY CONTAINER WIDTH (REF: 7'-8") (5 REQD). NAIL TO PIECES MARKED ① AND ⑧ W/3-10d NAILS AT EACH END.
- ③ SIDE FILL (FOR TWO HIGH LOAD) (1 REQD). SEE THE "SIDE FILL" DETAIL ON PAGE 13. SEE SPECIAL NOTE 3 ON PAGE 9.
- ④ SIDE FILL (FOR ONE HIGH LOAD) (1 REQD). SEE THE "SIDE FILL" DETAIL ON PAGE 13. SEE SPECIAL NOTE 3 ON PAGE 9.
- ⑤ CENTER FILL (FOR ONE HIGH LOAD) (1 REQD). SEE THE "CENTER FILL" DETAIL ON PAGE 13. SEE SPECIAL NOTE 3 ON PAGE 9.
- ⑥ SPACER ASSEMBLY (2 REQD). SEE THE "SPACER ASSEMBLY" DETAIL ON PAGE 14. POSITION AS SHOWN SO AS TO REST ON THE SHOCK ISOLATION FRAMES.
- ⑦ FILLER ASSEMBLY A (2 REQD). SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 15. POSITION ON TOP OF AND NAIL TO PIECES MARKED ⑥ W/6-10d NAILS. WIRE TIE TO THE SHOCK ISOLATION FRAMES. SEE KEY NUMBER ⑫ BELOW.
- ⑧ REAR BLOCKING ASSEMBLY A (2 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 12.
- ⑨ DOOR POST VERTICAL (2 REQD). SEE THE "DOOR POST VERTICAL" DETAIL AND "DETAIL B" ON PAGE 17.
- ⑩ DOOR POST VERTICAL RETAINER (2 REQD). SEE THE "DOOR POST VERTICAL RETAINER" DETAIL ON PAGE 16 AND "DETAIL A" ON PAGE 17. NAIL THROUGH THE HOLES INTO THE DOOR POSTS W/4-10d NAILS.
- ⑪ DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (3 REQD). TO NAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL CUT" DETAIL AND THE "DOOR POST VERTICAL" DETAIL ON PAGE 17.
- ⑫ TIE WIRE, NO. 14 GAGE, BLACK ANNEALED WIRE, 24" LONG (8 REQD). WIRE TIE FILLER ASSEMBLY A TO THE ISOLATION FRAME.





**SPECIAL NOTES:**

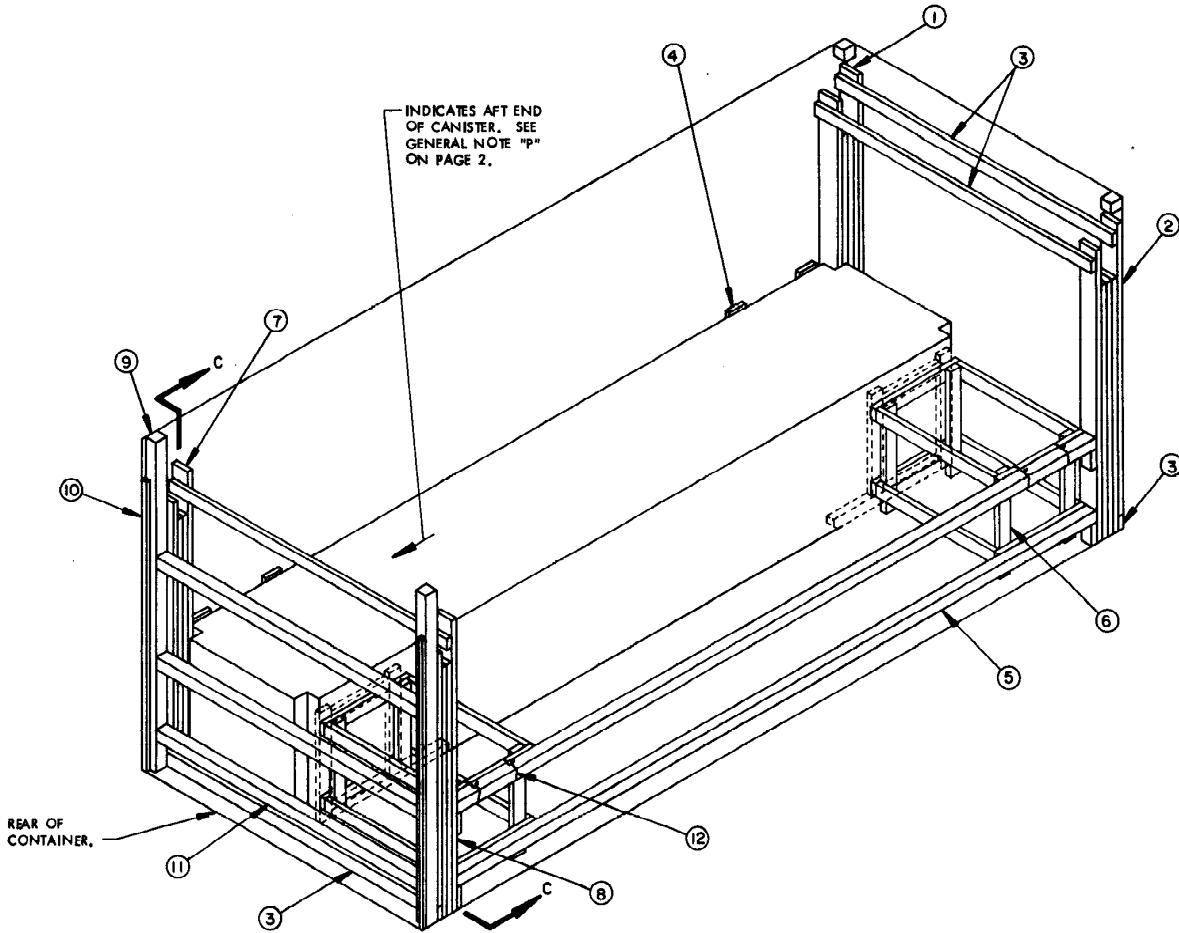
1. THE LOAD AS SHOWN ON PAGE 8 DELINEATES A THREE-CANISTER LOAD IN A COMMERCIAL INTERMODAL FREIGHT CONTAINER.
2. PRIOR TO LOADING THE MISSILE CANISTERS INTO THE INTERMODAL FREIGHT CONTAINER, SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
3. IF DESIRED, THE FORWARD END OF THE TWO SIDE FILL ASSEMBLIES CAN BE TOENAILED TO THE FORWARD BLOCKING ASSEMBLY TO HOLD THEM UPRIGHT AGAINST THE SIDEWALLS OF THE INTERMODAL FREIGHT CONTAINER DURING LOADING OPERATIONS. ALSO, IF DESIRED, THE CENTER FILL ASSEMBLY CAN BE WIRE TIED TO THE CANISTER THAT IS ALREADY LOADED TO HOLD IT UPRIGHT DURING LOADING OF THE STACK OF TWO CANISTERS. **NOTICE:** THE CENTER FILL ASSEMBLY IS TO BE POSITIONED WITH THE VERTICAL PIECES, SPLICE PIECES AND RETENTION BLOCKS AGAINST THE CANISTER THAT IS ALREADY LOADED INTO THE CONTAINER.

THREE-CANISTER LOAD

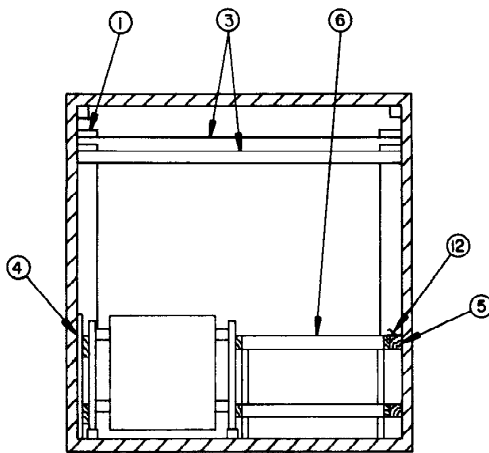
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	7	4
1" X 6"	60	30
2" X 4"	110	73
2" X 6"	327	327
4" X 4"	37	30
NAILS	NO. REQD	POUNDS
6d (2")	56	1/2
10d (3")	308	4-3/4
12d (3-1/4")	12	NIL
16d (3-1/2")	8	NIL
DOOR POST VERTICAL RETAINER-----2 REQD-----64 LBS		
WIRE, NO. 14 GAUGE-----16' REQD-----1/4 LB		

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
MISSILE CANISTER-----	3-----	11,250 LBS
DUNNAGE-----	-----	1,038 LBS
COMMERCIAL CONTAINER-----	-----	4,700 LBS
TOTAL WEIGHT-----		16,988 LBS



**ISOMETRIC VIEW**



**SECTION C-C**

**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY A (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY A" DETAIL ON PAGE 12. SEE GENERAL NOTE "H" ON PAGE 2.
- ② FORWARD BLOCKING ASSEMBLY B (1 REQD). SEE THE "FORWARD BLOCKING ASSEMBLY B" DETAIL ON PAGE 12.
- ③ CROSS BRACE, 2" X 4" BY CONTAINER WIDTH (REF: 7'-8") (5 REQD). NAIL TO PIECES MARKED ①, ②, ⑦ AND ⑧ W/3-10d NAILS AT EACH END.
- ④ SIDE FILL (FOR ONE HIGH LOAD) (1 REQD). SEE THE "SIDE FILL" DETAIL ON PAGE 13. SEE SPECIAL NOTE 2 ON PAGE 11.
- ⑤ STRUT, 4" X 4" X LENGTH-TO-SUIT (2 REQD). TOENAIL TO THE VERTICAL PIECES OF THE FORWARD AND REAR BLOCKING ASSEMBLIES W/2-12d NAILS AT EACH END.
- ⑥ FILLER ASSEMBLY B (2 REQD). SEE THE "FILLER ASSEMBLY B" DETAIL ON PAGE 15. WIRE TIE TO A PIECE MARKED ⑤ AS SHOWN. SEE KEY NUMBER ⑫ BELOW.
- ⑦ REAR BLOCKING ASSEMBLY A (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY A" DETAIL ON PAGE 12.
- ⑧ REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE "REAR BLOCKING ASSEMBLY B" DETAIL ON PAGE 12.
- ⑨ DOOR POST VERTICAL (2 REQD). SEE THE "DOOR POST VERTICAL" DETAIL AND "DETAIL B" ON PAGE 17.
- ⑩ DOOR POST VERTICAL RETAINER (2 REQD). SEE THE "DOOR POST VERTICAL RETAINER" DETAIL ON PAGE 16 AND "DETAIL A" ON PAGE 17. NAIL THRU THE HOLES INTO THE DOOR POST VERTICAL W/4-10d NAILS.
- ⑪ DOOR SPANNER, 4" X 4" MATERIAL, CUT-TO-A-LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (3 REQD). TOENAIL TO THE DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL CUT" DETAIL AND THE "DOOR POST VERTICAL" DETAIL ON PAGE 17.
- ⑫ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (4 REQD). WIRE TIE THE FILLER ASSEMBLY B TO THE TOP 4" X 4" STRUTS, PIECE MARKED ⑤.

**SPECIAL NOTES:**

1. THE LOAD AS SHOWN ON PAGE 8 DELINEATES A ONE-CANISTER LOAD IN A COMMERCIAL INTERMODAL FREIGHT CONTAINER.
2. IF DESIRED, THE FORWARD END OF THE SIDE FILL ASSEMBLY CAN BE TIED-DAILED TO THE FORWARD BLOCKING ASSEMBLY A TO HOLD IT UPRIGHT AGAINST THE SIDEWALL OF THE INTERMODAL FREIGHT CONTAINER DURING LOADING OPERATIONS.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	109	73
2" X 6"	163	163
4" X 4"	73	98
NAILS	NO. REQD	POUNDS
10d ( 3" )	254	4
12d ( 3-1/4" )	24	1/2
DOOR POST VERTICAL ----- 2 REQD -----		64 LBS
WIRE, NO. 14 GAGE ----- 8' REQD -----		1/4 LB

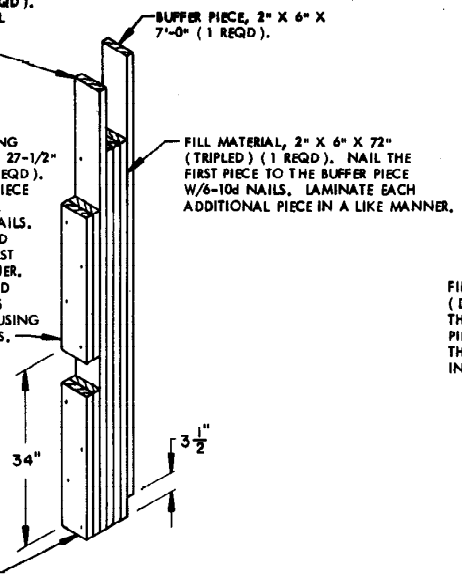
**LOAD AS SHOWN**

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT ( APPROX )</u>
MISSILE CANISTER -----		3,750 LBS
DUNNAGE -----		737 LBS
COMMERCIAL CONTAINER -----		4,700 LBS
TOTAL WEIGHT -----		9,187 LBS

VERTICAL PIECE, 2" X 6" X 7'-0" (1 REQD). NAIL TO THE FILL MATERIAL W/6-10d NAILS.

TOP LOAD BEARING PIECE, 2" X 6" X 27-1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE VERTICAL PIECE W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. NOTE: TOP LOAD BEARING PIECE IS OMITTED WHEN USING FILLER ASSEMBLIES.

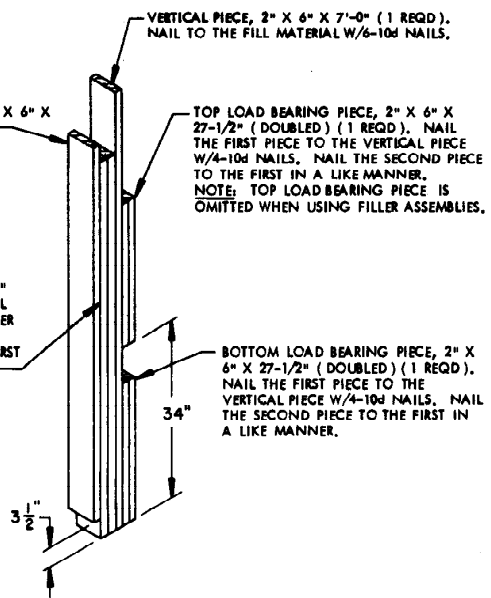
BOTTOM LOAD BEARING PIECE, 2" X 6" X 27-1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE VERTICAL PIECE W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.



**FORWARD BLOCKING ASSEMBLY A**

BUFFER PIECE, 2" X 6" X 72" (1 REQD).

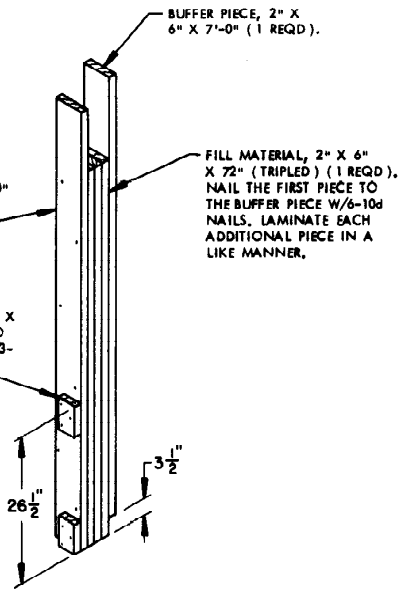
FILL MATERIAL, 2" X 6" X 72" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE BUFFER PIECE W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.



**REAR BLOCKING ASSEMBLY A**

VERTICAL PIECE, 2" X 6" X 7'-0" (1 REQD). NAIL TO THE FILL MATERIAL W/6-10d NAILS.

STRUT LEDGER, 2" X 4" X 6" (2 REQD). NAIL TO THE VERTICAL PIECE W/3-10d NAILS.



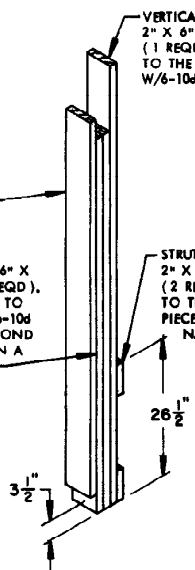
**FORWARD BLOCKING ASSEMBLY B**

BUFFER PIECE, 2" X 6" X 72" (1 REQD).

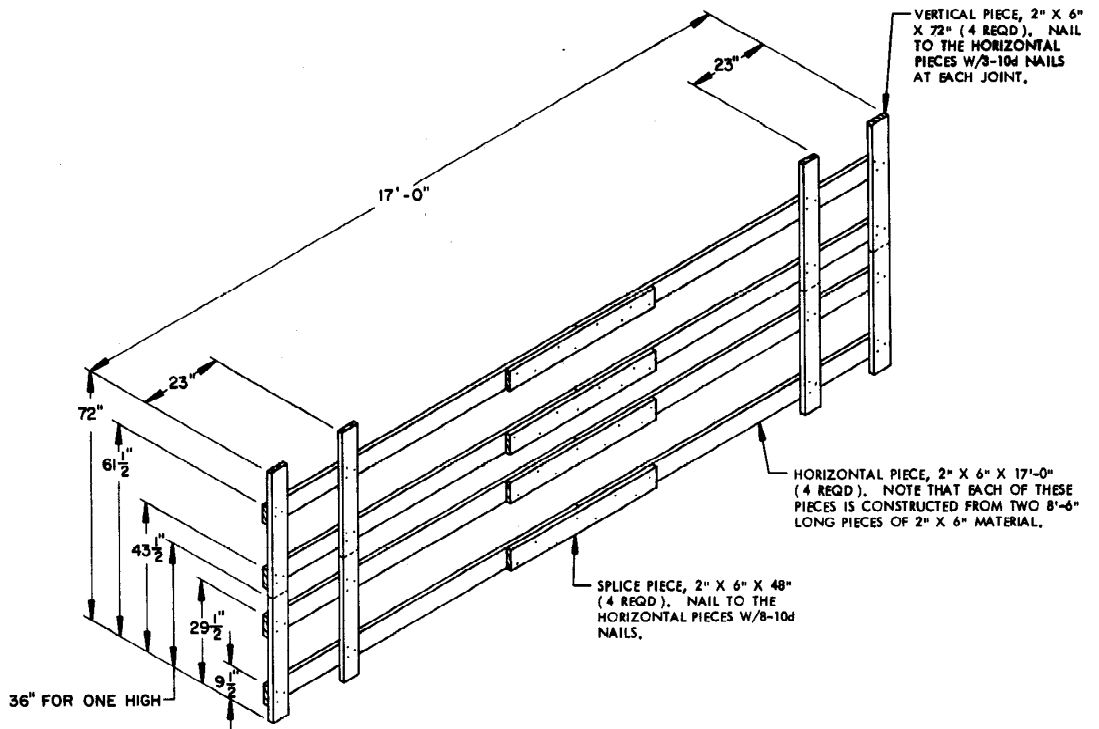
FILL MATERIAL, 2" X 6" X 72" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE BUFFER PIECE W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

VERTICAL PIECE, 2" X 6" X 7'-0" (1 REQD). NAIL TO THE FILL MATERIAL W/6-10d NAILS.

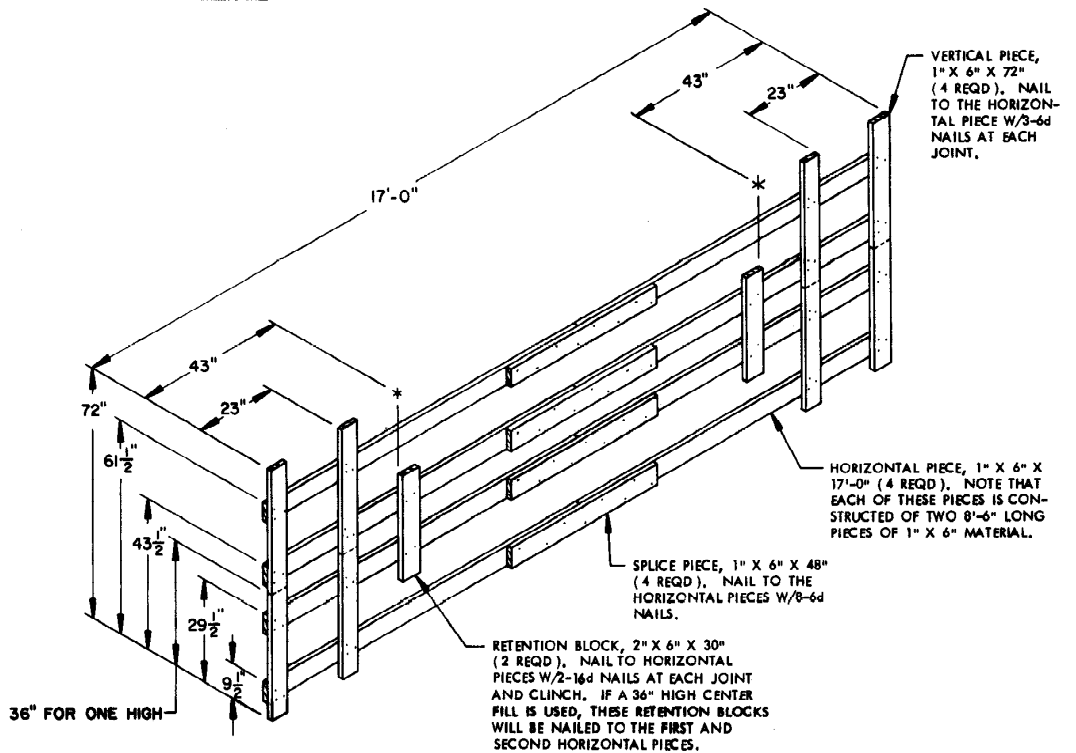
STRUT LEDGER, 2" X 4" X 6" (2 REQD). NAIL TO THE VERTICAL PIECE W/3-10d NAILS.



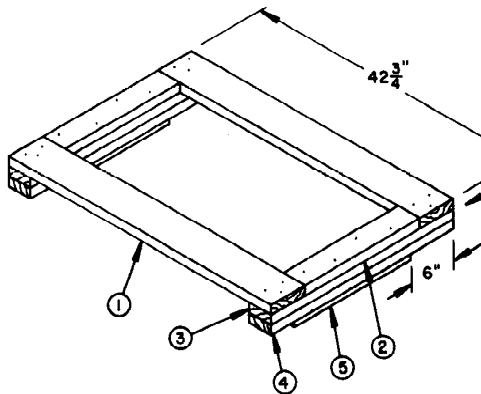
**REAR BLOCKING ASSEMBLY B**



**SIDE FILL**



**CENTER FILL**

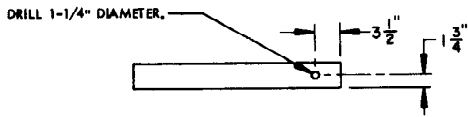


FABRICATE ASSEMBLY SO THAT PIECES MARKED ③ AND ④ ARE POSITIONED WITH THE HOLES AT THIS END OF THE ASSEMBLY. HOLES MUST BE ALIGNED SO THAT THEY WILL ACCEPT THE LOCATOR PINS OF THE SHOCK ISOLATION FRAMES.

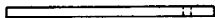
SPACER ASSEMBLY

KEY NUMBERS

- ① 2" X 6" X 42-3/4" (2 REQD), NAIL TO PIECE MARKED ③ W/3-10d NAILS AT EACH END.
- ② 2" X 4" X 19" (2 REQD), NAIL TO PIECE MARKED ③ W/4-10d NAILS.
- ③ 2" X 4" X 30" (2 REQD), DRILL A 1-1/4" DIAMETER HOLE AS SHOWN BY THE DETAIL AT THE LEFT.
- ④ 2" X 4" X 30" (2 REQD), DRILL A 1-1/4" DIAMETER HOLE AS SHOWN BY THE DETAIL AT THE LEFT, NAIL TO PIECE MARKED ③ W/8-10d NAILS.
- ⑤ 1" X 4" X 19" (2 REQD), NAIL TO PIECE MARKED ④ W/8-6d NAILS.

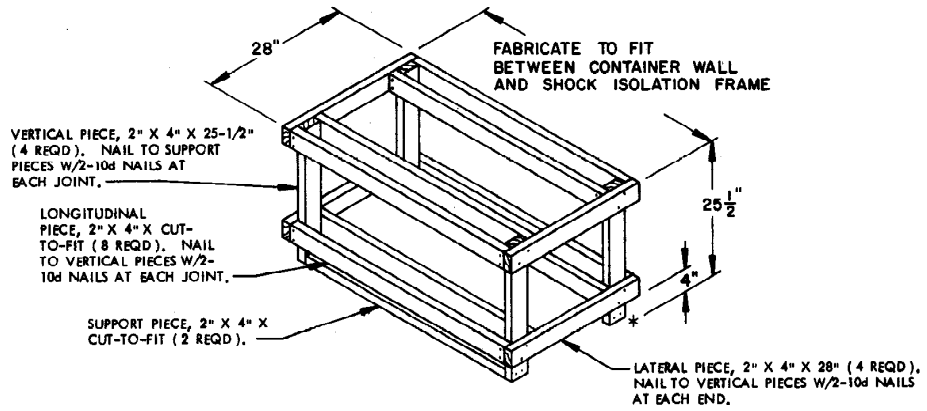


TOP VIEW

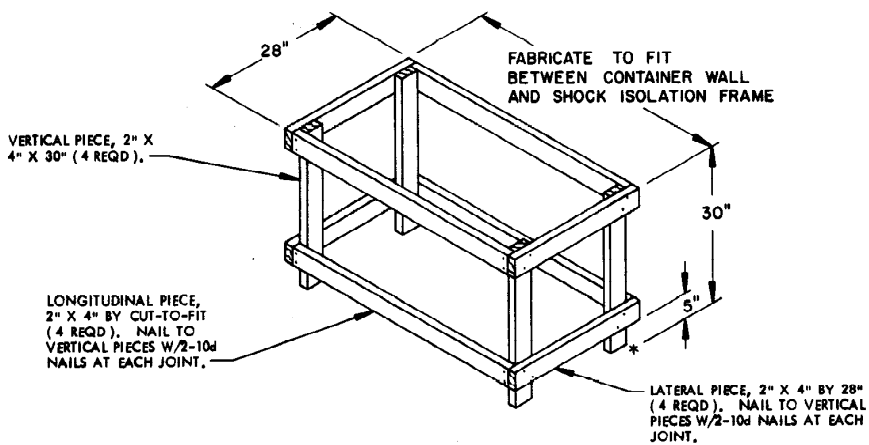


SIDE VIEW

DETAIL: PIECE ③ AND ④



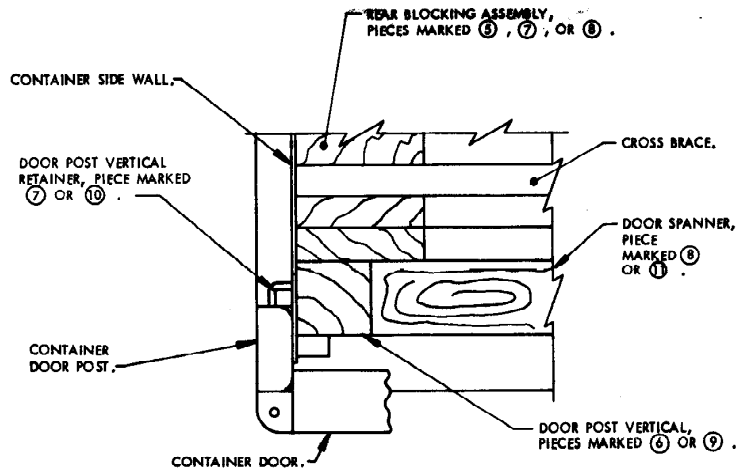
**FILLER ASSEMBLY A**



**FILLER ASSEMBLY B**

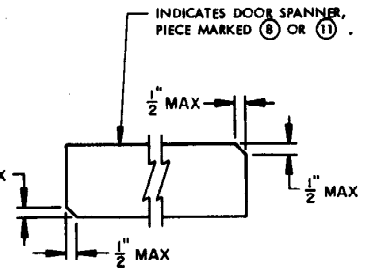






**DETAIL A**

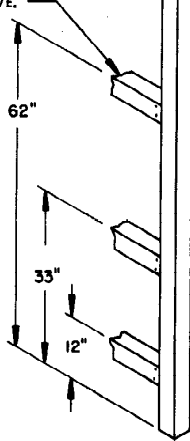
A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND ADJACENT DUNNAGE PIECES.



**BEVEL-CUT**

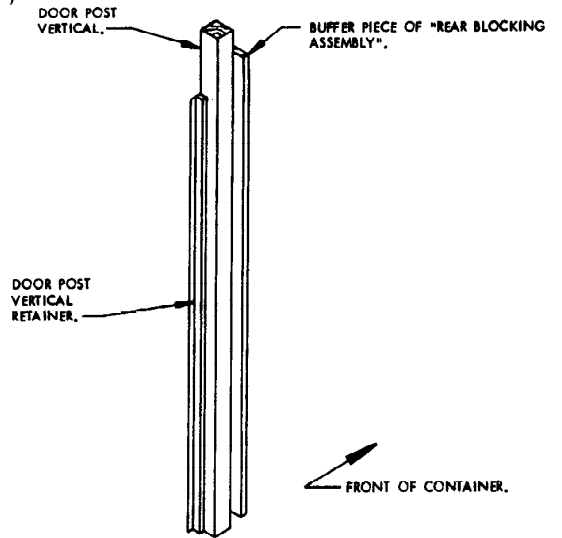
IF DESIRED, EACH END OF A DOOR SPANNER PIECE MAY BE BEVEL-CUT AS SHOWN TO FACILITATE THE ACHIEVEMENT OF A TIGHT DOOR-POST-TO-DOOR-POST FIT.

DOOR SPANNER, 4" X 4" BY CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (3 REQD). TOE-NAIL TO THE 4" X 4" DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ABOVE.

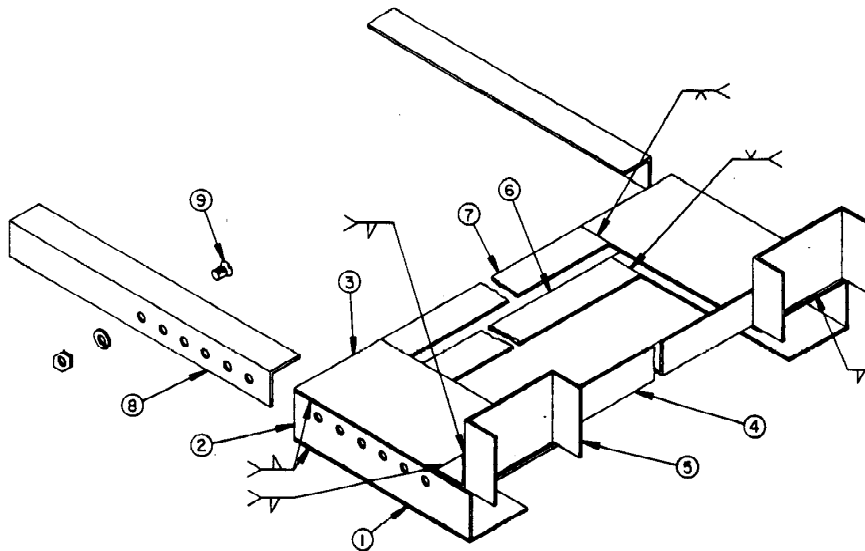


**DOOR POST VERTICAL**

DOOR POST VERTICAL, 4" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1/2" (REF: 7'-10-1/2") (2 REQD).

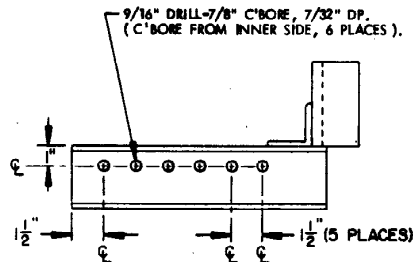
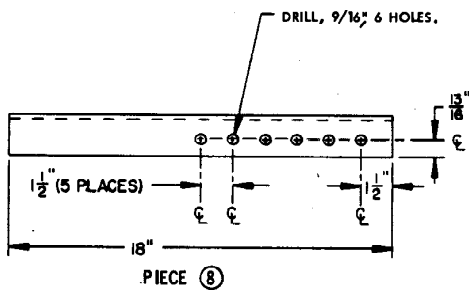


**DETAIL B**



ISOMETRIC VIEW

PUSH ASSEMBLY A



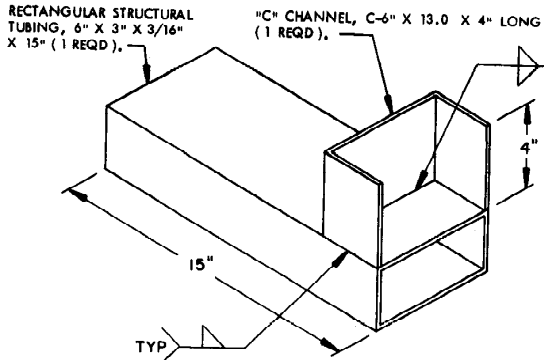
KEY NUMBERS

- 1 BOTTOM, 4" X 12" X 3/16" STEEL ( 2 REQD ). WELD TO PIECE 2 .
- 2 SIDE, 2-5/8" X 12" X 3/16" STEEL ( 2 REQD ). DRILL AND COUNTERSINK EACH PIECE W/6-9/16" DIA HOLES AS SHOWN.
- 3 TOP, 6" X 12" X 3/16" STEEL ( 2 REQD ). WELD TO PIECE 2 .
- 4 BRACE, ANGLE, 2" X 2" X 3/16" X 43-1/2" LONG. POSITION 3/4" BACK FROM END OF PIECES MARKED 3 AND WELD TO PIECES MARKED 3 .
- 5 POCKET, "C" CHANNEL, C-6" X 13.0 X 4" LONG ( 2 REQD ). POSITION AS SHOWN AND WELD TO 3 AND 4 .
- 6 BOTTOM SPACER, 2" X 35-1/2" X 3/16" ( 1 REQD ). WELD TO PIECES MARKED 1 AT EACH END.
- 7 TOP SPACER, 2" X 31-1/2" X 3/16" ( 1 REQD ). WELD TO PIECES MARKED 3 AT EACH END.
- 8 EXTENSION, ANGLE, 2" X 2" X 3/16" X 18" LONG ( 2 REQD, IF USED ). DRILL EACH PIECE W/6-9/16" DIA HOLES AS SHOWN. SEE NOTE BELOW.
- 9 MACHINE SCREW, 1/2" X 1" LONG, FLAT HEAD, WITH LOCK WASHER AND NUT ( 4 REQD ).

NOTE: PUSH ASSEMBLY A HAS BEEN DESIGNED SO AS TO BE ADJUSTABLE DEPENDING ON THE LENGTH OF THE FORKLIFT TINES. PIECES MARKED 8 SHALL BE BOLTED TO PIECES MARKED 2 WITH TWO MACHINE SCREWS ON EACH SIDE SO AS TO ALLOW APPROXIMATELY 24" OF THE FORKLIFT TINES TO EXTEND PAST THE END OF THE PUSH ASSEMBLY. PIECES MARKED 8 MAY BE OF A LONGER OR SHORTER DIMENSION THAN THAT SPECIFIED IN THE KEY NUMBERS ABOVE, PROVIDED THAT THE FORKLIFT TINES EXTEND BEYOND THE END APPROXIMATELY 24", AS SPECIFIED. SEE THE SPECIAL NOTES ON PAGE 19 FOR GUIDANCE.

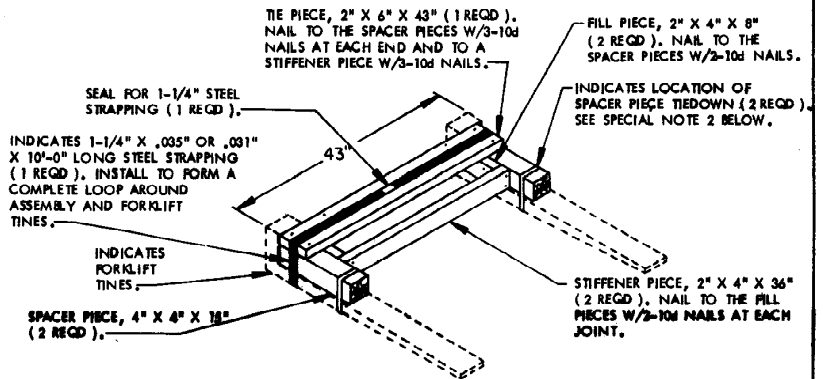
BILL OF MATERIAL

KEY NO.	NOMENCLATURE	QTY. REQD
1	BOTTOM, STEEL, SHEET, HOT ROLLED, LOW CARBON, COMMERCIAL QUALITY, 3/16", PER ASTM A569, FSC 9515	2
2	SIDE, STEEL, HOT ROLLED, LOW CARBON, COMMERCIAL QUALITY, 3/16", PER ASTM A569, FSC 9515	2
3	TOP, STEEL, HOT ROLLED, LOW CARBON, COMMERCIAL QUALITY, 3/16", PER ASTM A569, FSC 9515	2
4	BRACE, STEEL, ANGLE, BAR SIZE, 2 INCH X 2 INCH X 3/16 INCH, PER ASTM A36, FSC 9520	1
5	POCKET, STEEL CHANNEL, STRUCTURAL, 6 INCH @ 13.0 LBS/FT PER ASTM A36, FSC 9520	2
6	TOP SPACER, STEEL, SHEET, HOT ROLLED, LOW CARBON, COMMERCIAL QUALITY, 3/16", PER ASTM A569, FSC 9515	1
7	LOWER SPACER, STEEL, SHEET, HOT ROLLED, LOW CARBON, COMMERCIAL QUALITY, 3/16" PER ASTM A569, FSC 9515	1
8	EXTENSION, STEEL, ANGLE, BAR SIZE, 2 INCH X 2 INCH X 3/16 INCH, PER ASTM A36, FSC 9520	1
9	MACHINE SCREW, 82° FLAT COUNTERSUNK HEAD, CROSS RECESSED, 1/2-13 UNC-2A X 1 INCH LONG, MS 35190-342, FSC 5305	4
	WASHER, LOCK, 1/2 INCH NOMINAL, MS 35338-48, FSC 5310	4
	NUT, PLAIN, HEXAGON, 1/2-13 UNC-2B, FSC 5310	4



**PUSH ASSEMBLY B**

TWO OF THESE ASSEMBLIES MUST BE PLACED ON THE TINES (ONE PER TINE) OF THE FORKLIFT TRUCK WHEN USED TO PUSH THE CANISTERS INTO THE COMMERCIAL CONTAINER. SEE SPECIAL NOTE 1 BELOW.



**PUSH ASSEMBLY C**

THIS ASSEMBLY IS SHOWN AS AN ALTERNATIVE TO PUSH ASSEMBLIES A AND B, AND MAY BE USED IF THE MATERIALS FOR EITHER OF THE OTHER ASSEMBLIES ARE NOT AVAILABLE. SEE SPECIAL NOTE 2 AT LEFT.

**SPECIAL NOTES :**

1. PUSH ASSEMBLIES "A" AND "B", AS DETAILED ON PAGE 18 AND ABOVE, ARE THE PREFERRED HANDLING AIDS TO BE USED IN THE LOADING OF MISSILE CANISTERS INTO A COMMERCIAL CONTAINER. PUSH ASSEMBLY "A" HAS BEEN DESIGNED TO BE COMPATIBLE WITH MOST FORKLIFT TRUCKS COMMONLY USED FOR CANISTER HANDLING. PUSH ASSEMBLY "B" IS DESIGNED FOR USE WITH A FORKLIFT TRUCK HAVING A TINE LENGTH OF 40" AND A TINE WIDTH OF 4" TO 5-1/2".
2. PUSH ASSEMBLY "C" IS ALSO DESIGNED FOR USE WITH A FORKLIFT TRUCK HAVING 40" LONG TINES. THIS ASSEMBLY, HOWEVER, WILL NOT BE USED UNLESS MATERIAL TO CONSTRUCT ASSEMBLIES "A" AND "B" IS UNAVAILABLE OR THESE PREFERRED ASSEMBLIES CANNOT BE CONSTRUCTED IN TIME TO SUPPORT CANISTER UNLOADING OPERATIONS. EXTREME CAUTION MUST BE EXERCISED WHEN USING PUSH ASSEMBLY "C" TO AVOID CAUSING DAMAGE TO THE CANISTERS. NOTE: PRIOR TO THE USE OF ASSEMBLY "C" FOR CANISTER LOADING OPERATIONS, THE ASSEMBLY MUST BE SECURED TO THE FORKLIFT TRUCK TINES IN THREE LOCATIONS AS DEPICTED IN THE DETAIL AT RIGHT. SECUREMENT MAY BE ACCOMPLISHED BY UTILIZING STEEL STRAPPING, WEB STRAPPING, PLASTIC STRAPPING, WIRE, ETC., PROVIDED THAT THE MOVEMENT OF THE ASSEMBLY DURING CANISTER LOADING IS MINIMAL.
3. DURING FABRICATION OF ALL PUSH ASSEMBLIES DETAILED HEREIN, STRICT DIMENSIONAL ADHERENCE MUST BE MAINTAINED FOR ALL REQUIRED ASSEMBLY PIECES TO ENSURE PROPER CLEARANCES BETWEEN CANISTER ENDS AND FORKLIFT TRACK MASTS, ETC.