



DATE 4-12-05

ATACMS

LOADING AND BRACING[⊕] IN MILVAN CONTAINERS[⊕] OF MISSILE/LAUNCH POD ASSEMBLY (M/LPA) FOR ARMY TACTICAL MISSILE SYSTEM, FOR SHIPMENT BY T/COFC CARRIER

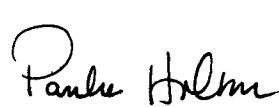

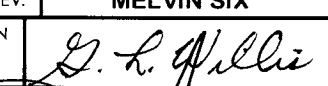


INDEX

<u>ITEM</u>	<u>PAGE(S)</u>
GENERAL NOTES AND MATERIAL SPECIFICATIONS - - - - -	2
ASSEMBLY DETAIL AND HANDLING GUIDANCE - - - - -	3-5
FOUR ASSEMBLY LOAD - - - - -	6-9
THREE ASSEMBLY LOAD - - - - -	10-11
TWO ASSEMBLY LOAD - - - - -	12-13
ONE ASSEMBLY LOAD - - - - -	14-15

⊕ **LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS.**

⊕ **ONLY TYPE II OR TYPE IV MILVAN CONTAINERS WHICH HAVE BEEN MODIFIED TO INCLUDE A MECHANICAL LOAD-BRACING SYSTEM THAT MEETS THE REQUIREMENTS OF MIL-C-52661 WILL BE USED FOR THE MOVEMENT OF AMMUNITION BY T/COFC SERVICE.**

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY AVIATION AND MISSILE COMMAND 	CAUTION: VERIFY PRIOR TO USE AT WWW.DAC.ARMY.MIL THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 16.			
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND  U.S. ARMY DEFENSE AMMUNITION CENTER	DO NOT SCALE		DECEMBER 1991	
	ENGINEER OR TECHNICIAN	BASIC REV.	MELVIN DAEUMER	
			MELVIN SIX	
		REVISION NO. 2	MAY 2005	
TRANSPORTATION ENGINEERING DIVISION				
VALIDATION ENGINEERING DIVISION				
ENGINEERING DIRECTORATE				
		CLASS	DIVISION	DRAWING
		19	48	8178
		FILE		GM15AT1

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 SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO THE ARMY TACTICAL MISSILE SYSTEM (ATACMS) COMPLETE ROUND, WHEN PACKED IN THE MISSILE/LAUNCH POD ASSEMBLY (M/LPA). SUBSEQUENT REFERENCE TO ASSEMBLY HEREIN MEANS THE M/LPA WITH MISSILE COMPONENTS. CAUTION: REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE MILVAN MUST NOT BE EXCEEDED.
- C. FOR DETAIL OF THE MISSILE/LAUNCH POD ASSEMBLY, SEE MICOM DRAWING NO. 13288205, 132833653, AND THE DETAIL ON PAGE 3.
- D. 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-FLATCAR (T/COFC) SHIPMENT.
- E. THE SPECIFIED OUTLOADING PROCEDURES ARE FOR CONTAINERS EQUIPPED WITH SELF-CONTAINED MECHANICAL BRACING DEVICES. CROSS MEMBER ATTACHMENT FACILITIES WITHIN THESE CONTAINERS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED. 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. SEE THE "FILL DETAIL" ON PAGE 7 FOR ADDITIONAL GUIDANCE. 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. THE LOAD BLOCKING COMPONENT DESIGNATED AS "CROSS MEMBER" HEREIN IS IDENTIFIED AS "BEAM ASSEMBLY" WITHIN TM 55-8115-200-23&P, DATED DECEMBER 1979. THE BEAM ASSEMBLY IS FURTHER IDENTIFIED AS NSN 8115-00-165-6623.
- F. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- G. VOIDS BETWEEN THE END GATE AND THE LADING MUST NOT EXCEED 1/2". ADDITIONAL MATERIAL MAY BE ADDED, OR THINNER MATERIAL MAY BE USED TO ACHIEVE THE PROPER THICKNESS AS REQUIRED.
- H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE MILVAN WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- J. A STAGGERED NAILING PATTERN WILL BE USED WHENEVER 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 ON TO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- K. NEW STYLE MISSILE/LAUNCH POD ASSEMBLIES AS REFERENCED IN THE REVISION BLOCK ON THIS PAGE AND ON PAGE 4 HAVE END COVERS ON THE AFT END OF THE ASSEMBLY WHICH EXTEND SLIGHTLY BEYOND THE TOP AND BOTTOM RAILS. EXTREME CARE MUST BE EXERCISED DURING HANDLING OPERATIONS TO ENSURE THAT NO CONTACT OCCURS BETWEEN THE FORKLIFT TRUCK AND END COVERS.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

LUMBER	- - - - -	: SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
NAILS	- - - - -	: ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMS).
WIRE	- - - - -	: ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.
PLYWOOD	- - - - -	: COMMERCIAL ITEM DESCRIPTION A-A-55057, INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.

(GENERAL NOTES CONTINUED)

- L. PORTIONS OF THE MILVAN 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:
- THE MAXIMUM LOAD WEIGHTS ARE CONTROLLED BY EQUIPMENT CAPABILITY FACTORS. ALTHOUGH THE HEAVIEST MAXIMUM LOADS ARE DELINEATED IN THE LOAD VIEWS, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOADS CAN BE ADJUSTED TO SATISFY A LESSER QUANTITY OF LADING UNITS. 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 INTERMODAL CONTAINER SYSTEM.
- 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 THE 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 TOFC RAIL CAR. THE REAR END OF THE 40-FOOT UNIT WILL OVERHANG 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.
- O. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4 MM AND ONE POUND EQUALS 0.454 KG.
- P. THE DUNNAGE ASSEMBLIES SHOWN WITHIN THIS DRAWING ARE BASED UP THE DIMENSIONS FOR THE BLOCK IA AND BLOCK II M/LPA'S. WHEN SHIPPING BLOCK I M/LPA'S, SOME DIMENSIONS WILL CHANGE SLIGHTLY. THESE CHANGES ARE NOTED IN THE DETAILED VIEWS OF THE DUNNAGE ASSEMBLIES.

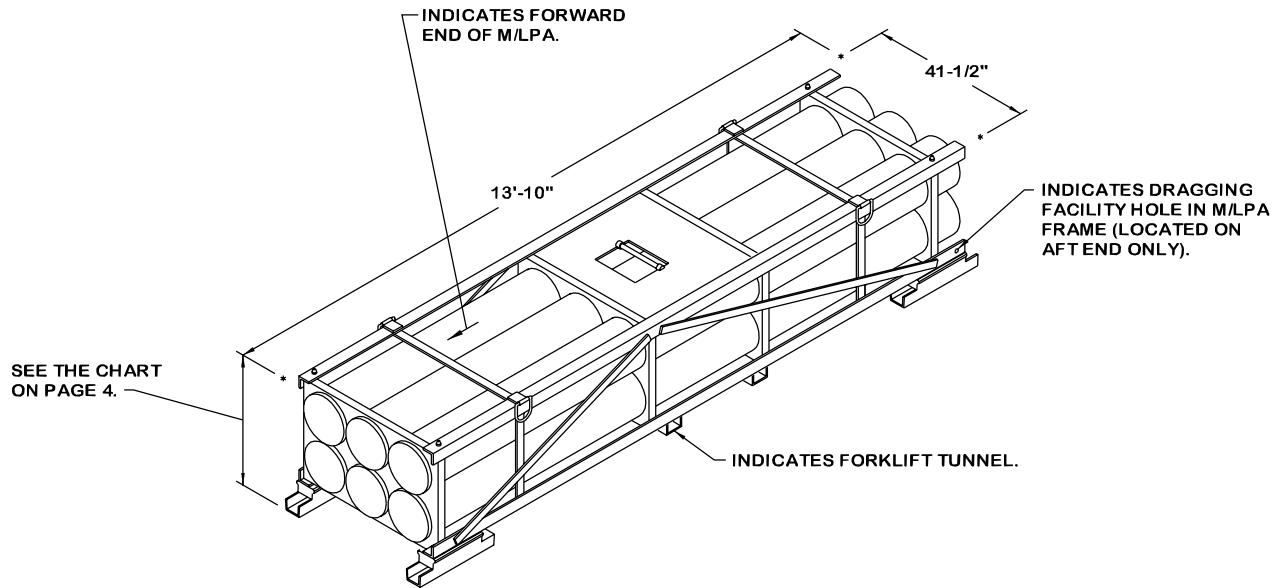
REVISIONS

REVISION NO. 1, DATED SEPTEMBER 1998, CONSISTS OF:

1. ADDITION OF PLYWOOD SPACERS TO GATE ASSEMBLIES FOR USE WITH NEW STYLE MISSILE/LAUNCH POD ASSEMBLIES.
2. ADDING NEW WEIGHTS FOR ASSEMBLIES.
3. UPDATING DRAWING FORMAT.

REVISION NO. 2, DATED MAY 2005, CONSISTS OF:

ADDING NEW WIEGHTS AND NSN'S.



MISSILE/LAUNCH POD ASSEMBLY

M/LPA STACKING AND HANDLING PROCEDURE GUIDANCE

(STACKING AND HANDLING GUIDANCE CONTINUED)

1. ASSEMBLY STACKING FOR OUTLOADING PURPOSES.

- A. THE UPPER ASSEMBLY SHOULD BE PLACED AS CLOSELY AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE LOWER ASSEMBLY.
- B. WHEN STACKING THESE ASSEMBLIES, CARE MUST BE EXERCISED TO INSURE THAT THE INTERLOCKING HOLES IN THE BOTTOM OF THE ASSEMBLY SKIDS ALIGN CORRECTLY WITH THE INTERLOCKING PINS ON THE TOP OF THE ASSEMBLY FRAME. THIS WILL PRECLUDE DAMAGE TO THE SKIDS AND INSURE PROPER FUNCTIONING OF THE ASSEMBLY INTERLOCKS.

2. ASSEMBLY OR ASSEMBLY STACK HANDLING.

NOTES: (1) APPROVED MATERIAL 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 MATERIAL HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED ASSEMBLIES. IF AVAILABLE MHE DOES NOT HAVE AN ALLOWABLE CAPACITY GREAT ENOUGH TO CARRY A STACK OF TWO ASSEMBLIES (APPROXIMATELY 9,700 POUNDS) IN ONE LIFT, THEN THE ASSEMBLIES MUST BE HANDLED INDIVIDUALLY.
- B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE ASSEMBLIES SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER AN ASSEMBLY, TO PREVENT DAMAGE TO THE ASSEMBLY BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. ADDITIONALLY, THE FORK TINES ARE TO BE PLACED THROUGH THE ASSEMBLY FORKLIFT TUNNELS.

- C. THE DUNNAGE ASSEMBLIES AT THE FRONT AND ALONG THE SIDEWALLS OF THE MILVAN CONTAINER MUST BE PRE-POSITIONED PRIOR TO LOADING THE FIRST STACK OF ASSEMBLIES INTO IT. ONCE THE FIRST STACK OF ASSEMBLIES IS IN POSITION, THE SECOND STACK CAN BE LOADED INTO THE MILVAN CONTAINER SUBSEQUENT TO THE INSTALLATION OF THE CENTER FILL ASSEMBLY.

- D. WHEN REMOVING AN ASSEMBLY OR ASSEMBLY STACK FROM A MILVAN CONTAINER BY ATTACHING CHAINS TO THE FRAME AND DRAGGING THE ASSEMBLY OR ASSEMBLY STACK PARTIALLY OUT OF THE MILVAN, CARE MUST BE TAKEN TO ENSURE THAT THE PULL ANGLE OF EACH OF THE TWO CHAIN LEGS IS 60° OR GREATER. IF THE CHAIN IS ATTACHED SO THAT PULL ANGLE IS LESS THAN 60° STRUCTURAL FAILURE ON THE M/LPA FRAME COULD OCCUR. SEE THE "M/LPA TOW ANGLE" DETAIL ON PAGE 4. CHAINS WILL BE ATTACHED ONLY TO BOTTOM-LAYER M/LPA UNITS, AND SHACKLES WILL BE USED TO ATTACH THE DRAG CHAINS TO THE D-RINGS. A FORKLIFT TRUCK IS TO BE USED FOR DRAGGING THE UNITS SO THAT THE TINES OF THE TRUCK CAN BE INSERTED A SHORT DISTANCE UNDER THE AFT END OF THE BOTTOM M/LPA AND THE AFT END OF THE M/LPA UNIT LIFTED ENOUGH TO JUST CLEAR THE CONTAINER FLOOR BEFORE ACTUAL DRAGGING IS BEGUN. **CAUTION:** FORKLIFT TRUCK TINES MUST ONLY BEAR ON THE BOTTOM SURFACE OF A BULKHEAD BRACE ASSEMBLY AT THE AFT END OF THE BOTTOM M/LPA UNIT DURING A DRAGGING OPERATION. **NOTICE:** WIRE ROPE CABLE CAN BE SUBSTITUTED FOR THE CHAIN SPECIFIED.

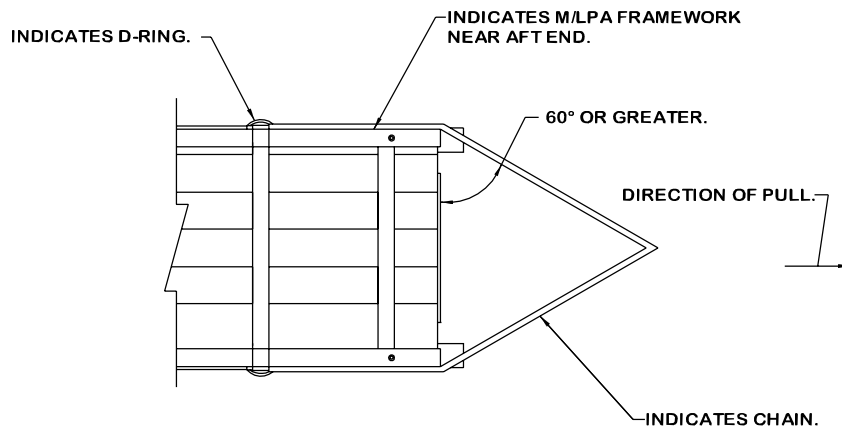
- E. WHEN M/LPAS ARE HANDLED WITH A FORKLIFT TRUCK, A 1" X 4" BUFFER BOARD MUST BE PLACED ACROSS THE FORKLIFT TRUCK TINES SUCH THAT THE TINES DO NOT CONTACT THE BOTTOM SURFACE OF THE FRAME MEMBERS.

- F. M/LPAS WILL BE PUSHED INTO THE MILVAN USING A PUSH ASSEMBLY OR A 4" X 4" BUFFER BOARD WILL BE POSITIONED BETWEEN THE HEELS OF THE FORKLIFT TRUCK TINES AND THE M/LPA FRAME. THE PUSH ASSEMBLY DEPICTED ON PAGE 9 MAY ALSO BE USED IN PLACE OF A 4" X 4" BUFFER BOARD TO PUSH THE M/LPAS INTO THE MILVAN.

(CONTINUED AT RIGHT)

**GROSS WEIGHT, DIMENSIONS, AND CUBE OF
GUIDED MISSILE LAUNCHING ASSEMBLIES**

NSN	DODIC	TYPE	LENGTH	WIDTH	HEIGHT	WEIGHT (LBS)	CUBE (CU FT)
1427-00-000-0195	PL81	BLOCK I	13' -10"	41-1/2"	32-5/8"	5,105	129.7
1427-01-274-3904	PL81	BLOCK I	13' -10"	41-1/2"	32-5/8"	4,814	129.7
1427-01-386-3113	PL81	BLOCK I	13' -10"	41-1/2"	32-5/8"	5,111	129.7
1427-01-398-6538	PL38	BLOCK IA	13' -10"	41-1/2"	33-3/4"	4,640	134.6
1427-01-463-0001	PL38	BLOCK IA	13' -10"	41-1/2"	33-3/4"	4,640	134.6
1427-01-439-8639	PL47	BLOCK II	13' -10"	41-1/2"	33-3/4"	4,985	134.6
1427-01-481-1620	N/A	TACMS 2K	13' -10"	41-1/2"	33-3/4"	4,985	134.6
1427-01-480-8516	PL65	IA UNITARY	13' -10"	41-1/2"	33-3/4"	4,682	134.6



**M/LPA TOW ANGLE
(PARTIAL PLAN VIEW)**

**NOTE: TOW CHAIN MUST
NOT DAMAGE M/LPA.**

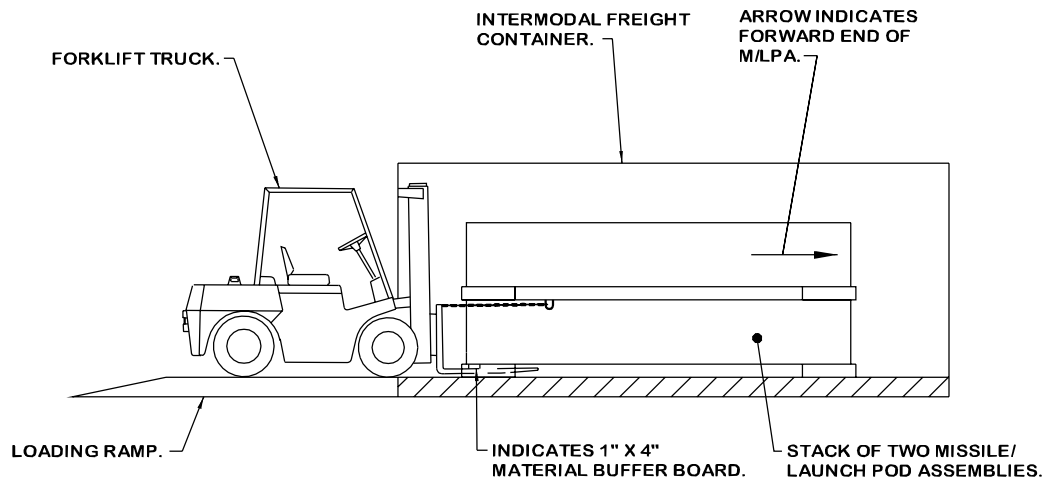


FIGURE 1

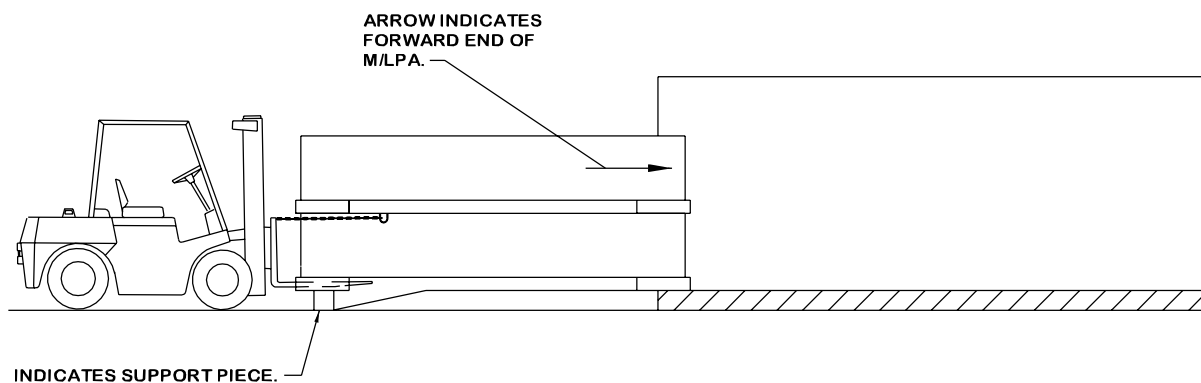
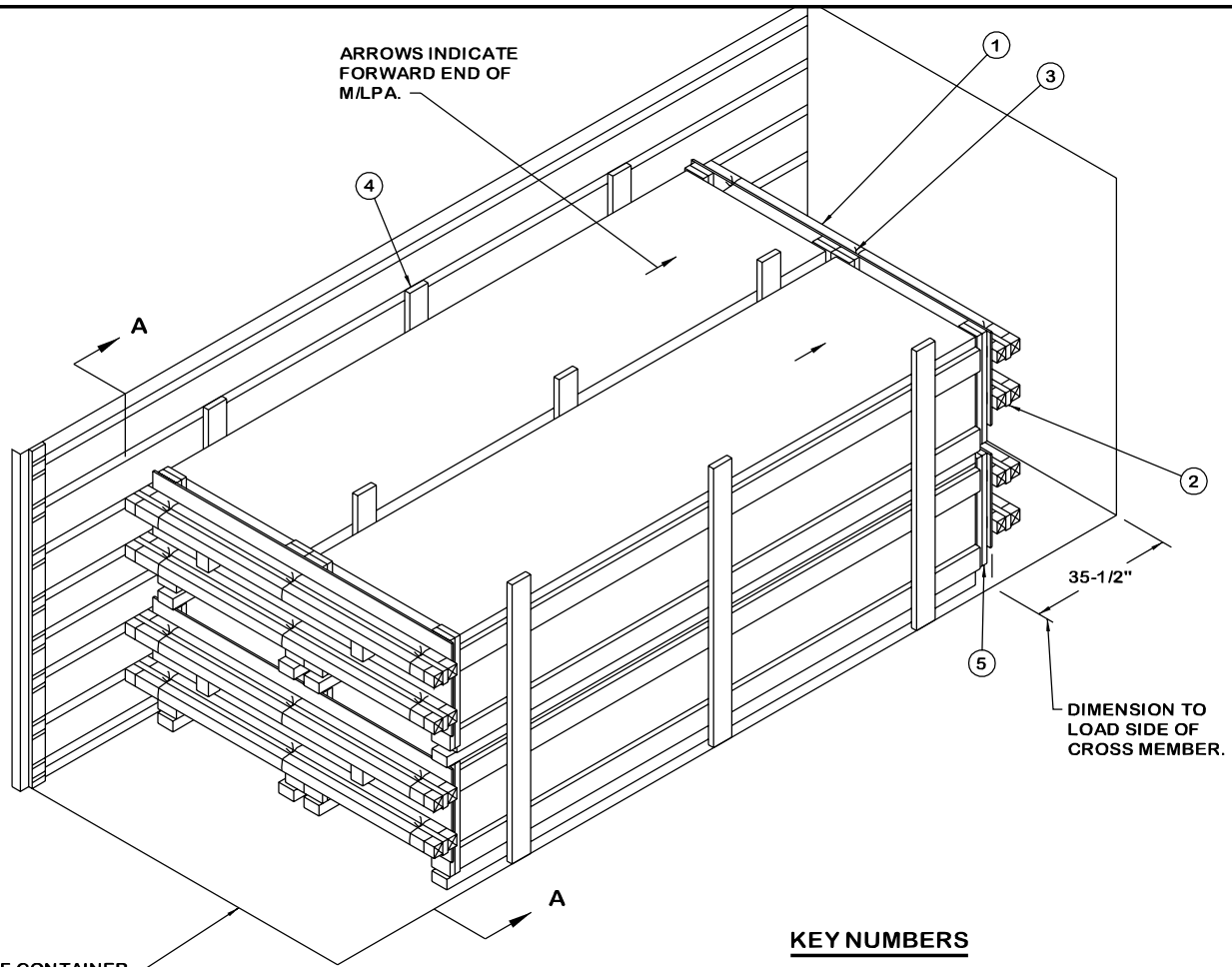


FIGURE 2

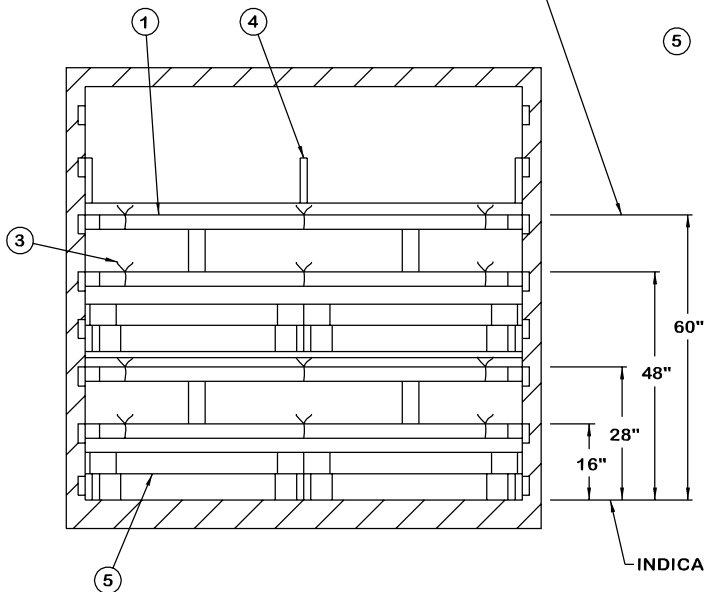
MILVAN CONTAINER UNLOADING PROCEDURES

1. REMOVE ALL REAR BLOCKING FROM THE MILVAN CONTAINER.
2. ATTACH CHAIN FROM D-RINGS ON BOTTOM M/LPA TO THE FORKLIFT TRUCK AS SHOWN IN FIGURE 1 ABOVE (SEE NOTE 2.D ON PAGE 3).
3. INSERT THE FORKLIFT TINES WITH A 1" X 4" MATERIAL BUFFER BOARD PLACED ACROSS THE FORK TINES (TO INSURE THAT THE TINES DO NOT CONTACT THE BOTTOM OF THE LONGITUDINAL FRAME MEMBERS) UNDER THE AFT END OF THE BOTTOM M/LPA.
4. LIFT THE AFT END OF THE M/LPA STACK ENOUGH TO JUST CLEAR THE CONTAINER FLOOR BEFORE ACTUAL DRAGGING IS BEGUN.
5. SLOWLY PULL THE M/LPA STACK FROM THE CONTAINER UNTIL THE TWO SKIDS ON THE OPPOSITE (FORE) END ARE ALMOST OUTSIDE THE MILVAN CONTAINER.
6. THE M/LPA STACK SHOULD THEN BE LOWERED ONTO A SHORT LENGTH OF DUNNAGE SO THAT THE AFT-END SKIDS ARE SUPPORTED BY THE DUNNAGE PIECE AND THE M/LPA STACK IS APPROXIMATELY LEVEL. THE M/LPA STACK MAY NOW BE HANDLED BY SLINGING, FORKLIFT TRUCK, OR ANY OTHER MEANS; PROVIDING THEY ARE HANDLED IN ACCORDANCE WITH APPROVED PROCEDURES.
7. REPEAT THE ABOVE PROCEDURES FOR THE REMAINING M/LPA STACK.



ISOMETRIC VIEW

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



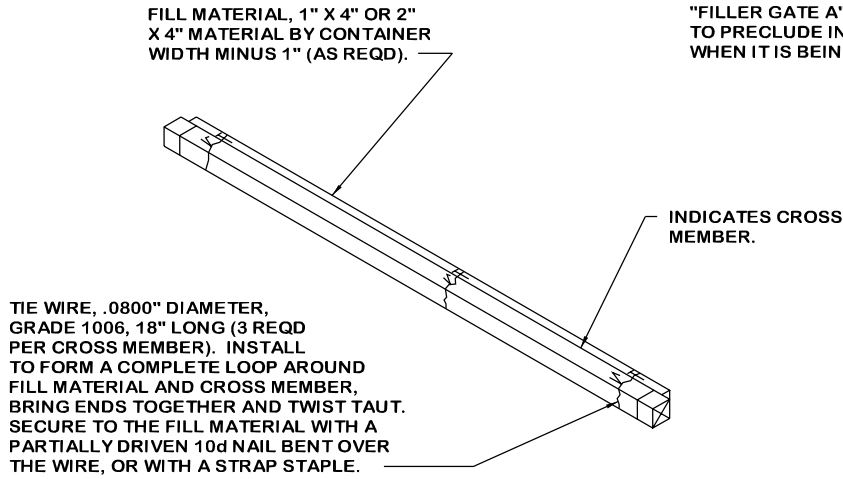
SECTION A-A

KEY NUMBERS

- ① CROSS MEMBER (16 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION A-A" VIEW. SEE GENERAL NOTE "E" ON PAGE 2, AND THE "FILL DETAIL" ON PAGE 7.
- ② FILL MATERIAL, 1-3/8" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (8 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ③ TIE WIRE, .0800" DIA. WIRE 24" LONG (24 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ④ FILLER GATE A (3 REQD). SEE THE DETAIL ON PAGE 9 AND SPECIAL NOTE 2 ON PAGE 7.
- ⑤ END GATE A (4 REQD, 2 UPPER AND 2 LOWER). SEE THE "END GATE A" DETAIL ON PAGE 8.

SPECIAL NOTES:

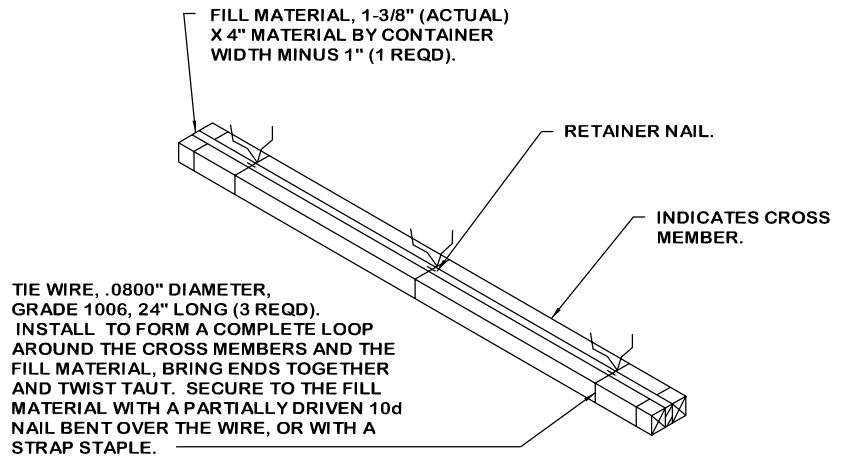
1. THE LOAD AS SHOWN ON PAGE 6 DEPICTS A FOUR ASSEMBLY LOAD IN A MILVAN CONTAINER.
2. TO AID IN LOADING OF THE ASSEMBLIES INTO THE MILVAN CONTAINER, THE "FILLER GATES A" LOCATED AGAINST THE SIDE-WALLS OF THE MILVAN MAY BE WIRE TIED IN PLACE PRIOR TO THE ACTUAL LOADING OPERATION. ADDITIONALLY, SUBSEQUENT TO PLACING THE FIRST ASSEMBLY STACK INTO THE MILVAN, THE CENTER "FILLER GATE A" MAY BE WIRE TIED TO THE FIRST ASSEMBLY STACK TO PRECLUDE INTERFERING WITH THE SECOND ASSEMBLY STACK WHEN IT IS BEING LOADED IN THE MILVAN CONTAINER.



TIE WIRE, .0800" DIAMETER, GRADE 1006, 18" LONG (3 REQD PER CROSS MEMBER). INSTALL TO FORM A COMPLETE LOOP AROUND FILL MATERIAL AND CROSS MEMBER, BRING 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.

FILL DETAIL

THIS DETAIL DEPICTS THE METHOD OF POSITIONING FILL MATERIAL BETWEEN A CROSS MEMBER AND LADING, WHEN THE VOID BETWEEN THE TWO IS GREATER THAN ONE INCH (1").



TIE WIRE, .0800" DIAMETER, GRADE 1006, 24" LONG (3 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE CROSS MEMBERS AND THE FILL MATERIAL, BRING 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.

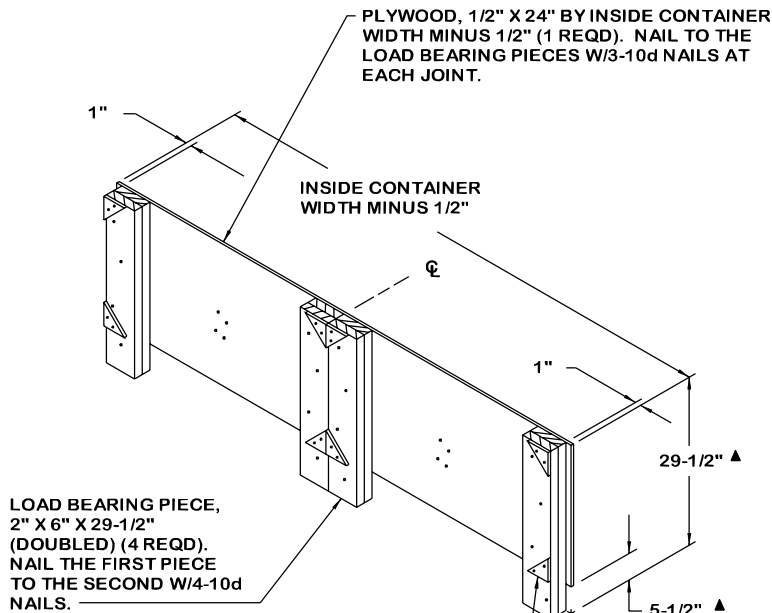
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	60	40
2" X 6"	286	286
4" X 4"	6	8
NAILS	NO. REQD	POUNDS
6d (2")	32	NIL
10d (3")	244	4
12d (3-1/4")	32	3/4
WIRE, GRADE 1006	-- 48' REQD	----- 1 LB
PLYWOOD, 1/2"	--- 2 SQ FT REQD	----- NIL
PLYWOOD, 3/4"	--- 61 SQ FT REQD	----- 126 LBS
CROSS MEMBER	-----	----- 16 REQD

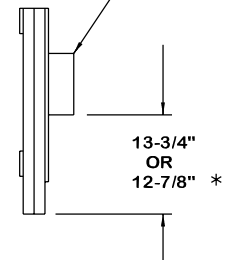
FILL MATERIAL INSTALLATION

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	----- 4	----- 20,444 LBS
DUNNAGE	-----	----- 800 LBS
CONTAINER	-----	----- 5,700 LBS
TOTAL WEIGHT		----- 26,944 LBS (APPROX)



GATE RETAINER PIECE, 4" X 4" X 8-1/2" (2 REQD). NAIL THRU PLYWOOD INTO GATE RETAINER PIECE W/4-12d NAILS.



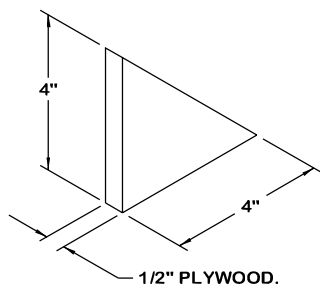
END GATE A RETAINER LOCATION

NOTE: GATE RETAINER PIECES SHOULD BE APPROXIMATELY CENTERED HORIZONTALLY BETWEEN THE LOAD BEARING PIECES OF THE END GATE ON THE SIDE OPPOSITE THE LOAD BEARING PIECES.

END GATE A

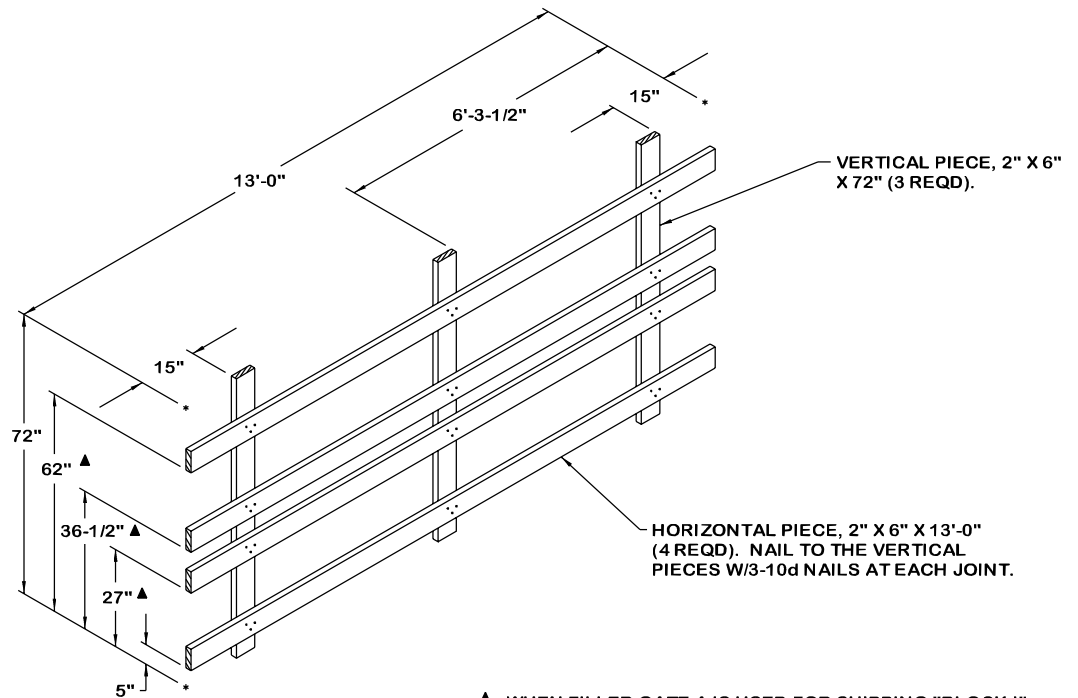
* THE 13-3/4" DIMENSION WILL BE USED IN THE LOWER END GATE AND THE 12-7/8" DIMENSION WILL BE USED IN THE UPPER END GATE ASSEMBLY.

▲ WHEN END GATE A IS USED FOR SHIPPING "BLOCK I" M/LPA'S THESE DIMENSIONS WILL BE REDUCED BY ONE INCH (1").



SPACER

TO PROVIDE ADDITION SPACE BETWEEN THE NEW STYLE AFT END COVER AND THE CENTER GATE, SPACER PIECES, AS DEPICTED ABOVE MUST BE USED. THE SPACER PIECES SHALL BE LOCATED SO THAT THEY CONTACT EITHER THE BOTTOM OR TOP RAIL OF THE M/LPA. NOTE: SPACERS ARE ONLY REQUIRED AT THE AFT END OF THE ASSEMBLIES.



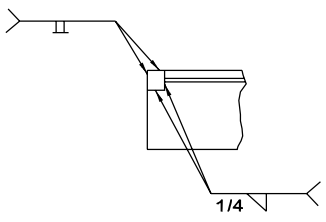
▲ WHEN FILLER GATE A IS USED FOR SHIPPING "BLOCK I" M/LPA'S THESE DIMENSIONS WILL BE REDUCED AS FOLLOWS:

27" TO 25"

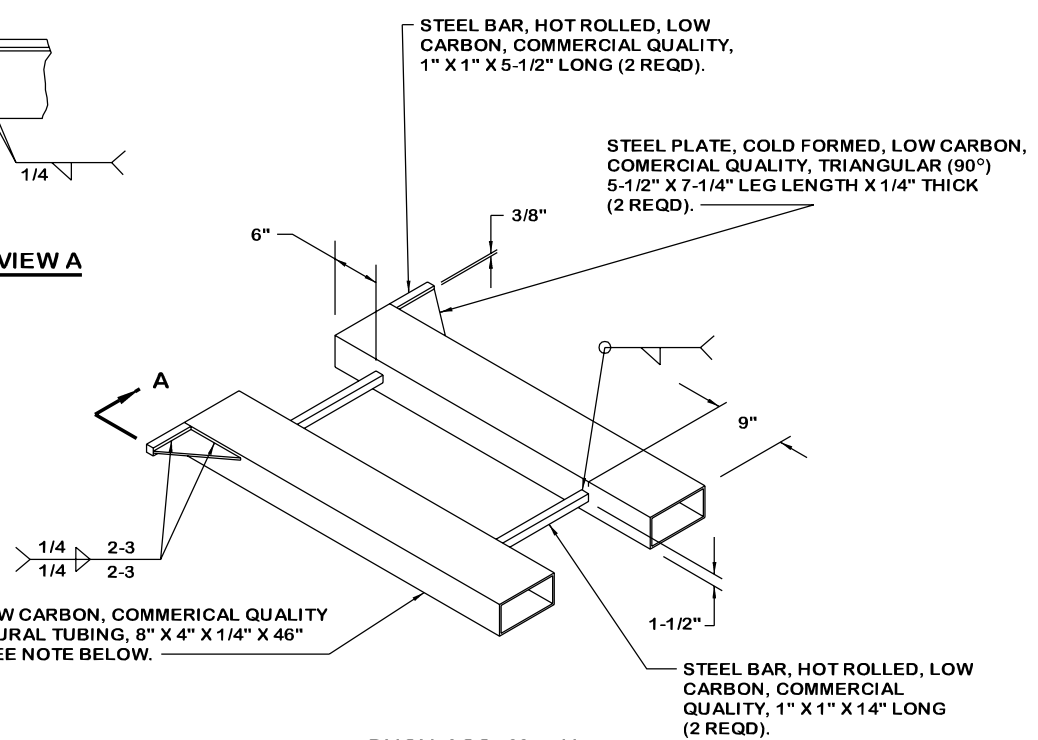
36-1/2" TO 35-1/2"

62" TO 56"

FILLER GATE A

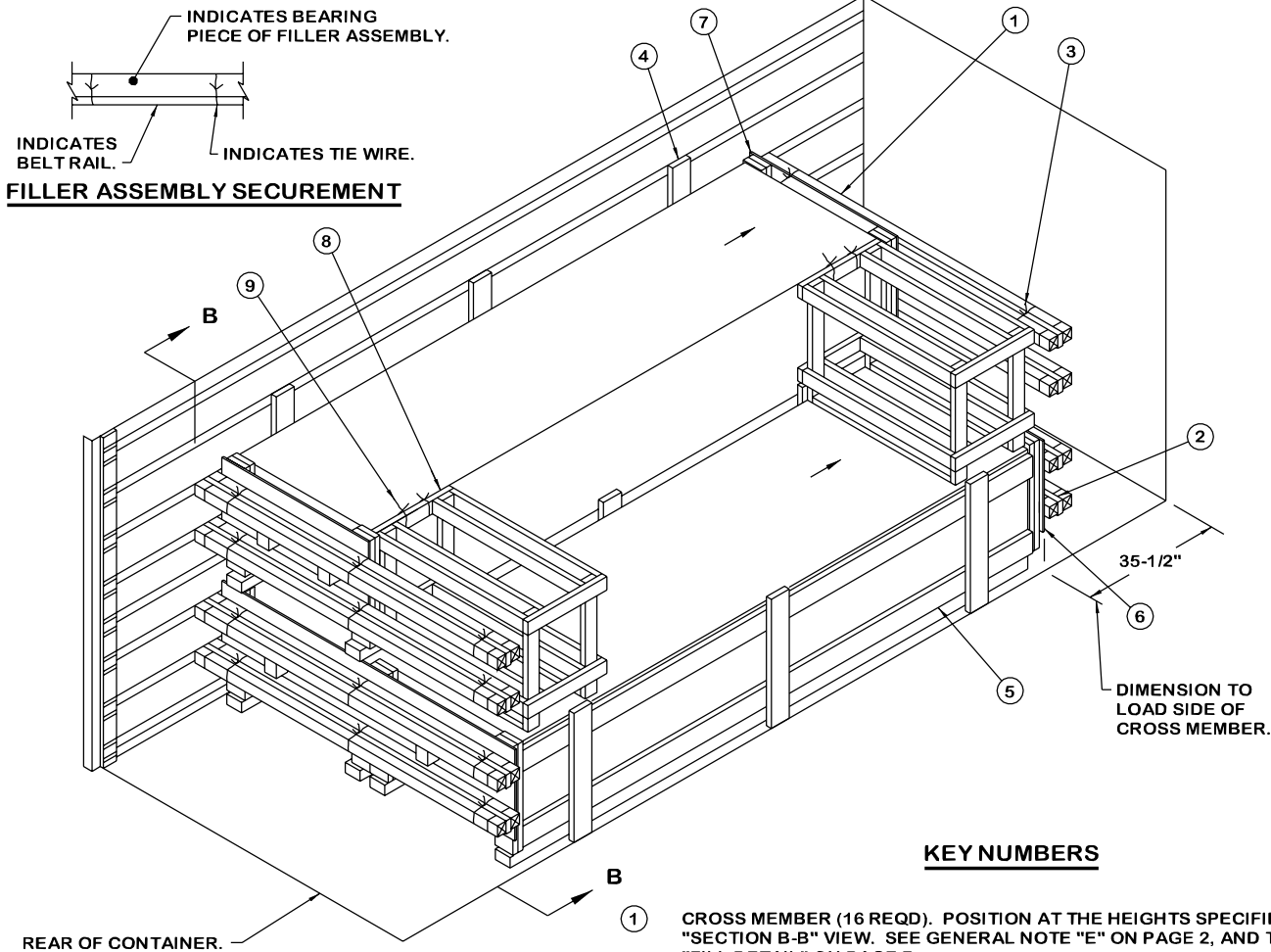


SECTION VIEW A



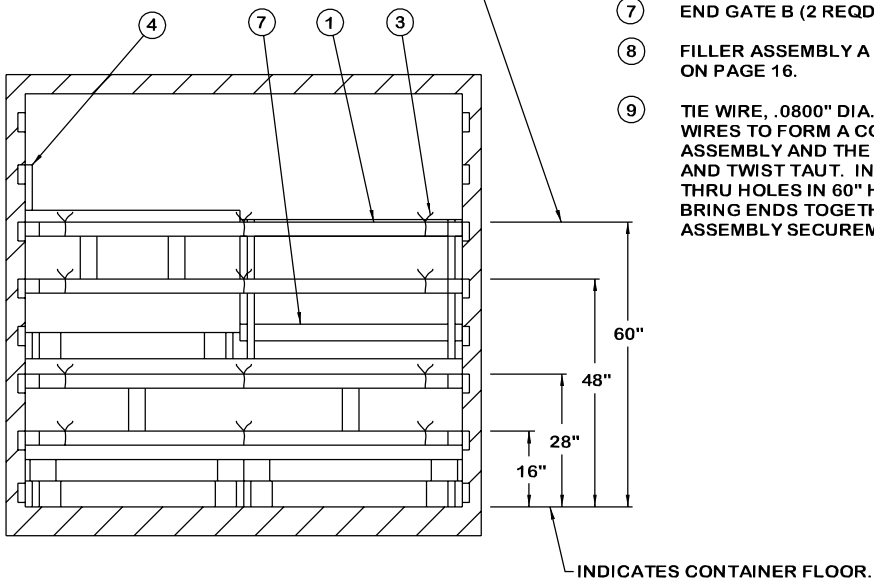
PUSH ASSEMBLY

NOTE: THE FORK TINES MUST EXTEND AN ADDITIONAL 13" BEYOND THE END OF THE PUSH ASSEMBLY. THE LENGTH OF THE RECTANGULAR TUBING MAY BE VARIED AS NECESSARY TO ACCOMMODATE VARIOUS LENGTH FORK TINES.



ISOMETRIC VIEW

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



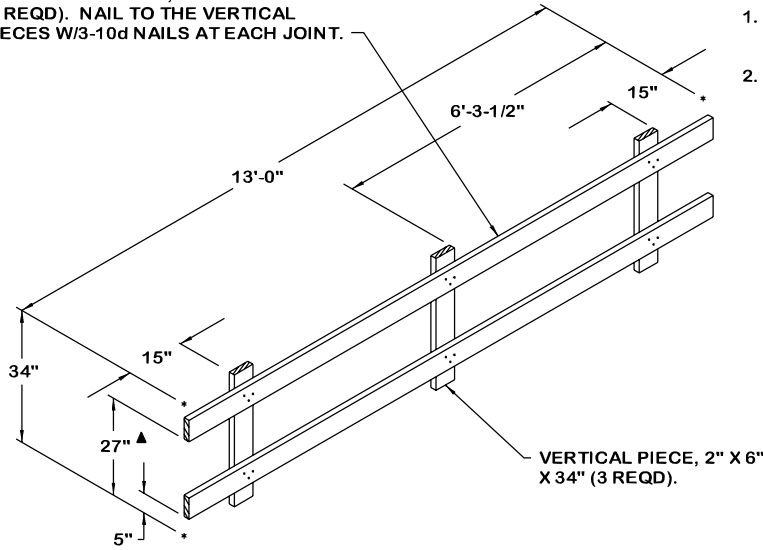
SECTION B-B

THREE ASSEMBLY LOAD

KEY NUMBERS

- ① CROSS MEMBER (16 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION B-B" VIEW. SEE GENERAL NOTE "E" ON PAGE 2, AND THE "FILL DETAIL" ON PAGE 7.
- ② FILL MATERIAL, 1-3/8" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (8 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ③ TIE WIRE, .0800" DIA. WIRE 24" LONG (24 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ④ FILLER GATE A (1 REQD). SEE THE "FILLER GATE A" DETAIL ON PAGE 9.
- ⑤ FILLER GATE B (2 REQD). SEE THE "FILLER GATE B" DETAIL ON PAGE 11.
- ⑥ END GATE A (2 REQD). SEE THE "END GATE A" DETAIL ON PAGE 8.
- ⑦ END GATE B (2 REQD). SEE THE "END GATE B" DETAIL ON PAGE 11.
- ⑧ FILLER ASSEMBLY A (2 REQD). SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 16.
- ⑨ TIE WIRE, .0800" DIA. WIRE 24" LONG (8 REQD). INSTALL TWO TIE WIRES TO FORM A COMPLETE LOOP AROUND ONE END OF A FILLER ASSEMBLY AND THE ITEM FRAME AS SHOWN, BRING ENDS TOGETHER AND TWIST TAUT. INSTALL TWO TIE WIRES TO FORM A COMPLETE LOOP THRU HOLES IN 60" HIGH BELT RAIL AND AROUND FILLER ASSEMBLY, BRING ENDS TOGETHER AND TWIST TAUT. SEE THE "FILLER ASSEMBLY SECUREMENT" DETAIL ABOVE.

HORIZONTAL PIECE, 2" X 6" X 13'-0"
(2 REQD). NAIL TO THE VERTICAL
PIECES W/3-10d NAILS AT EACH JOINT.



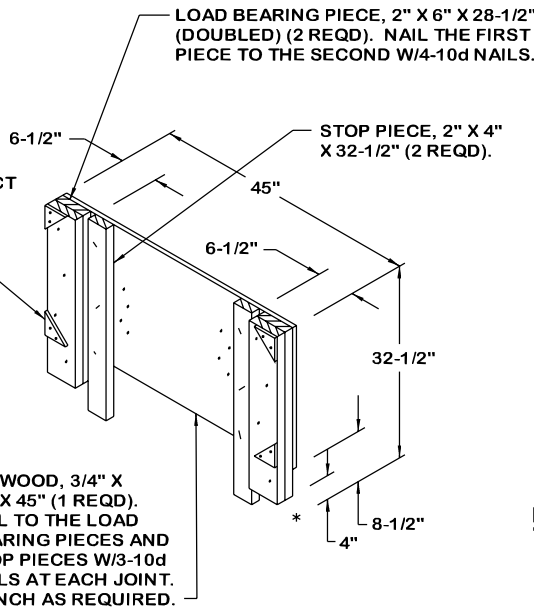
FILLER GATE B

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 10 DEPICTS A THREE ASSEMBLY LOAD IN A MILVAN CONTAINER.
2. TO AID IN THE LOADING OF THE ASSEMBLIES INTO THE MILVAN CONTAINER, THE "FILLER GATES A AND B" LOCATED AGAINST THE SIDEWALLS OF THE MILVAN MAY BE WIRE TIED IN PLACE PRIOR TO THE ACTUAL LOADING OPERATION. ADDITIONALLY, SUBSEQUENT TO PLACING THE FIRST ASSEMBLY STACK INTO THE MILVAN, THE CENTER "FILLER GATE B" MAY BE WIRE TIED TO THE FIRST ASSEMBLY STACK TO PRECLUDE INTERFERING WITH THE SECOND ASSEMBLY STACK WHEN IT IS BEING LOADED IN THE MILVAN CONTAINER.

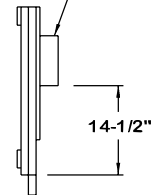
▲ WHEN FILLER GATE B IS USED FOR SHIPPING "BLOCK I" M/LPA'S THIS DIMENSION WILL BE REDUCED FROM 27" TO 25".

SPACER (AS REQD). SEE THE DETAIL ON PAGE 8. POSITION SO AS TO CONTACT THE TOP AND BOTTOM RAILS ON THE AFT END OF THE M/LPA AND NAIL TO THE LOAD BEARING PIECE W/2-6d NAILS. NOTE: SPACERS ARE NOT REQUIRED ON THE FORWARD END OF THE M/LPA.



END GATE B

GATE RETAINER PIECE, 4" X 4" X 8-1/2" (2 REQD). NAIL THRU PLYWOOD INTO GATE RETAINER PIECE W/4-12d NAILS.



END GATE B RETAINER LOCATION

SEE NOTE BELOW.

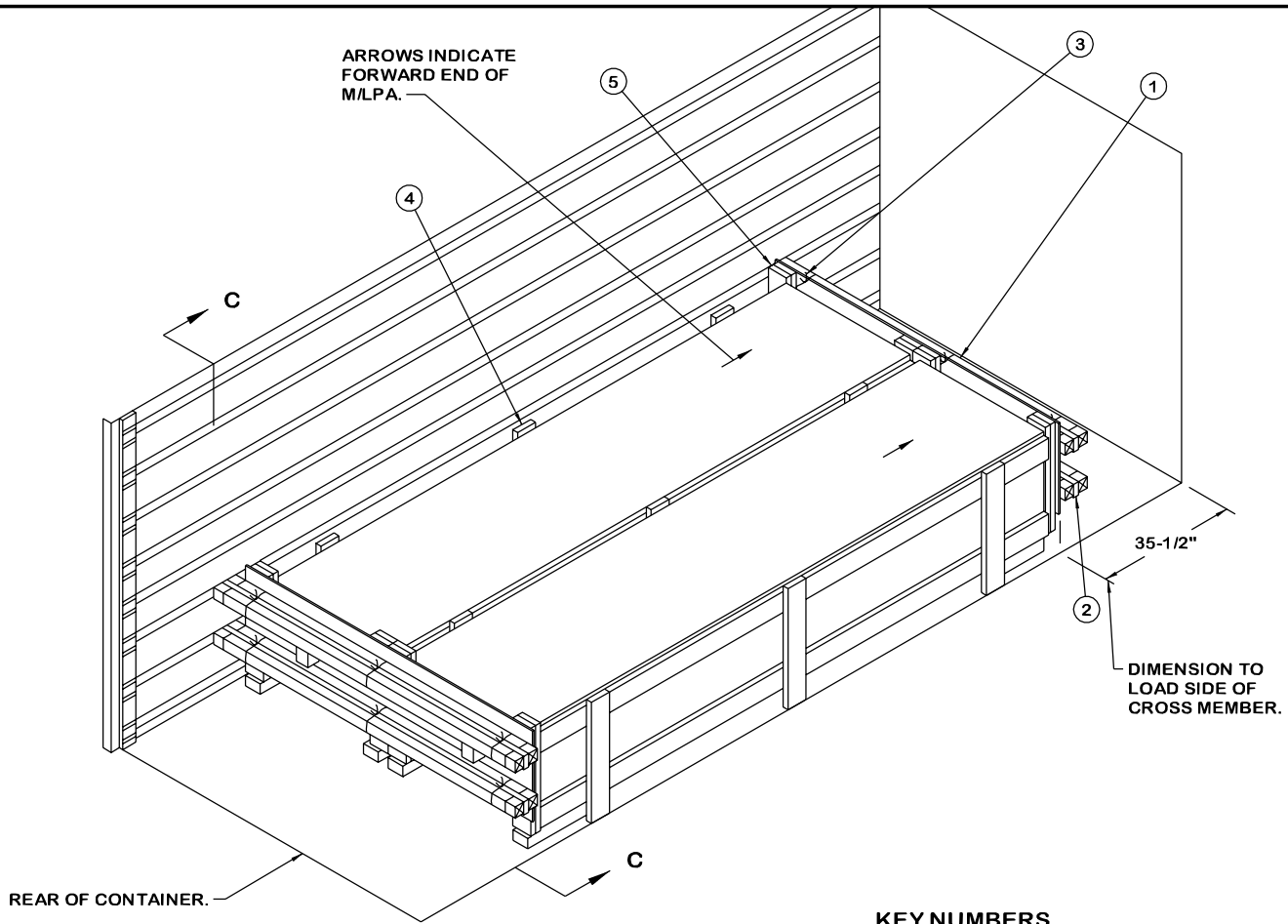
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	182	122
2" X 6"	196	196
4" X 4"	6	8
NAILS	NO. REQD	POUNDS
6d (2")	8	NIL
10d (3")	304	4-3/4
12d (3-1/4")	32	3/4
WIRE, GRADE 1006	64' REQD	1 LB
PLYWOOD, 1/2"	1 SQ FT REQD	NIL
PLYWOOD, 3/4"	46 SQ FT REQD	95 LBS
CROSS MEMBER		16 REQD

NOTE: GATE RETAINER PIECES SHOULD BE APPROXIMATELY CENTERED HORIZONTALLY BETWEEN THE LOAD BEARING PIECES OF THE END GATE ON THE SIDE OPPOSITE OF THE LOAD BEARING PIECES, WITH APPROXIMATELY 15" BETWEEN GATE RETAINER PIECES.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	3	15,333 LBS
DUNNAGE		754 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		21,787 LBS (APPROX)

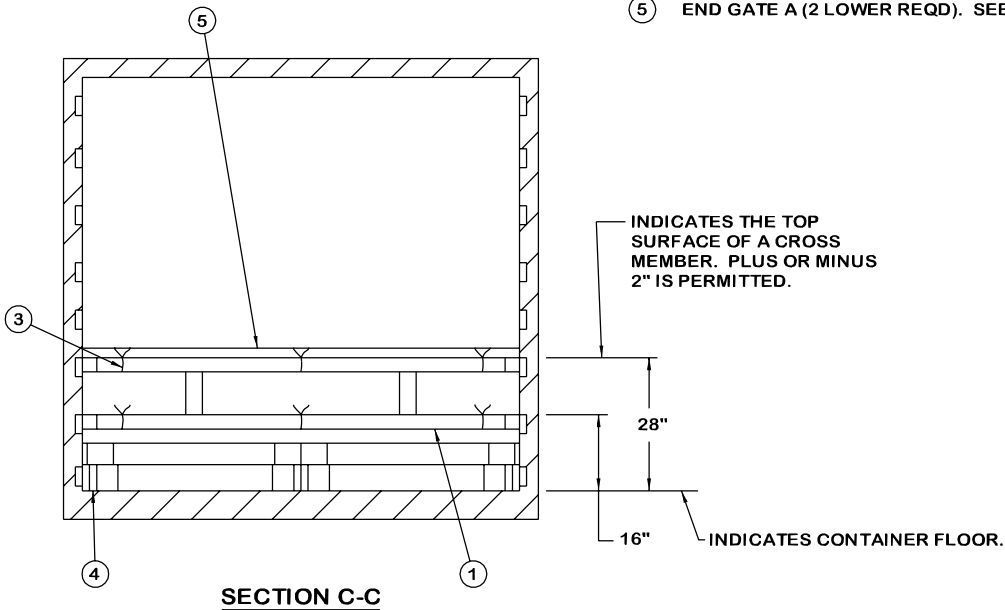
ARROWS INDICATE FORWARD END OF M/LPA.



ISOMETRIC VIEW

KEY NUMBERS

- ① CROSS MEMBER (8 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION C-C" VIEW. SEE GENERAL NOTE "E" ON PAGE 2, AND THE "FILL DETAIL" ON PAGE 7.
- ② FILL MATERIAL, 1-3/8" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (4 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ③ TIE WIRE, .0800" DIA. WIRE 24" LONG (12 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ④ FILLER GATE B (3 REQD). SEE THE "FILLER GATE B" DETAIL ON PAGE 11.
- ⑤ END GATE A (2 LOWER REQD). SEE THE "END GATE A" DETAIL ON PAGE 8.



SECTION C-C

TWO ASSEMBLY LOAD

SPECIAL NOTES:

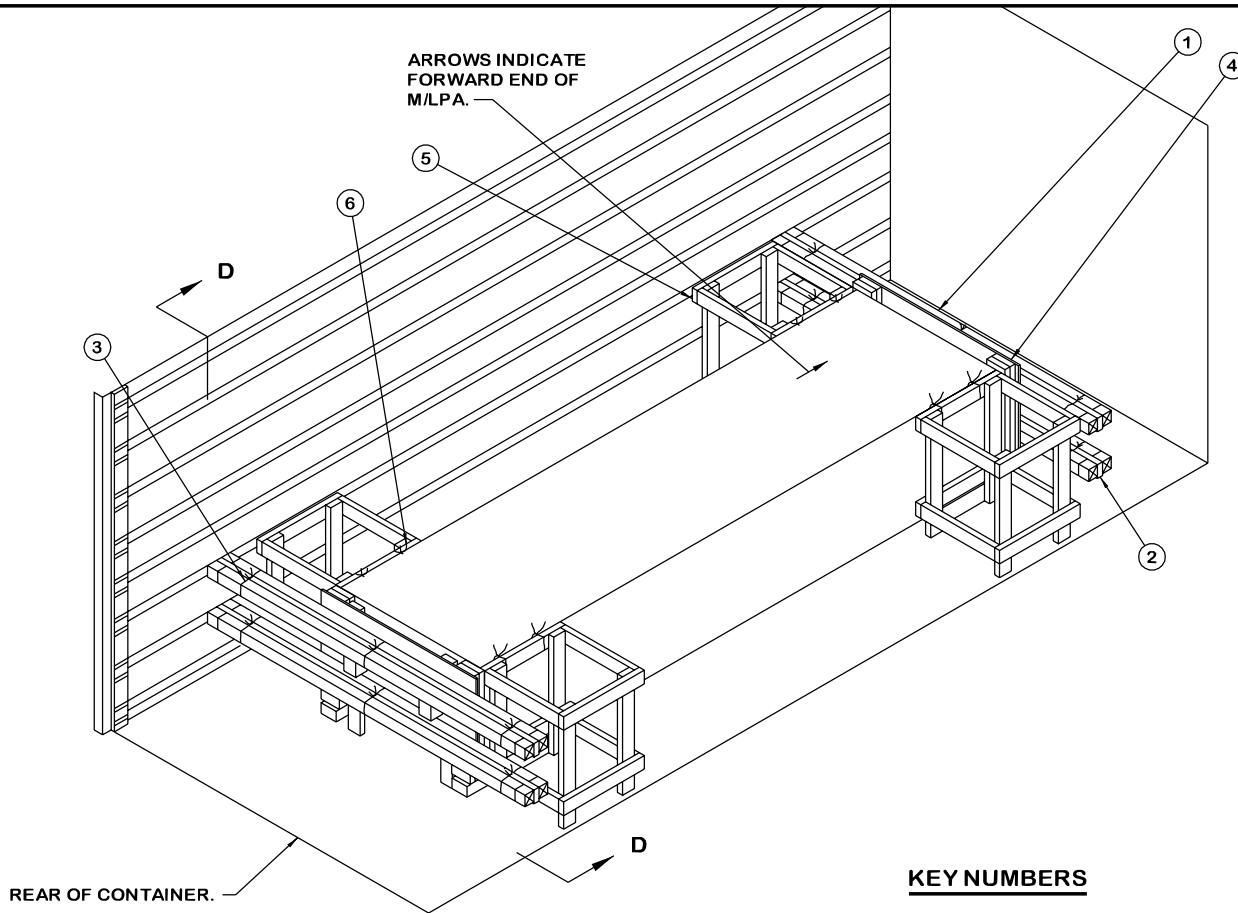
1. THE LOAD AS SHOWN ON PAGE 12 DEPICTS A TWO ASSEMBLY LOAD IN A MILVAN CONTAINER.
2. TO AID IN THE LOADING OF THE ASSEMBLIES INTO THE MILVAN CONTAINER, THE "FILLER GATES B" LOCATED AGAINST THE SIDEWALLS OF THE MILVAN MAY BE WIRE TIED IN PLACE PRIOR TO THE ACTUAL LOADING OPERATION. ADDITIONALLY, SUBSEQUENT TO PLACING THE FIRST ASSEMBLY INTO THE MILVAN, THE CENTER "FILLER GATE B" MAY BE WIRE TIED TO THE FIRST ASSEMBLY TO PRECLUDE INTERFERING WITH THE SECOND ASSEMBLY WHEN IT IS BEING LOADED IN THE MILVAN CONTAINER.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	30	20
2" X 6"	142	142
4" X 4"	3	4
NAILS	NO. REQD	POUNDS
6d (2")	16	NIL
10d (3")	122	2
12d (3-1/4")	16	1/2
WIRE, GRADE 1006 - -	24' REQD - - - - -	1/2 LB
PLYWOOD, 1/2" - - -	1 SQ FT REQD - - - - -	NIL
PLYWOOD, 3/4" - - -	31 SQ FT REQD - - - - -	64 LBS
CROSS MEMBER - - - - -	- - - - -	8 REQD

LOAD AS SHOWN

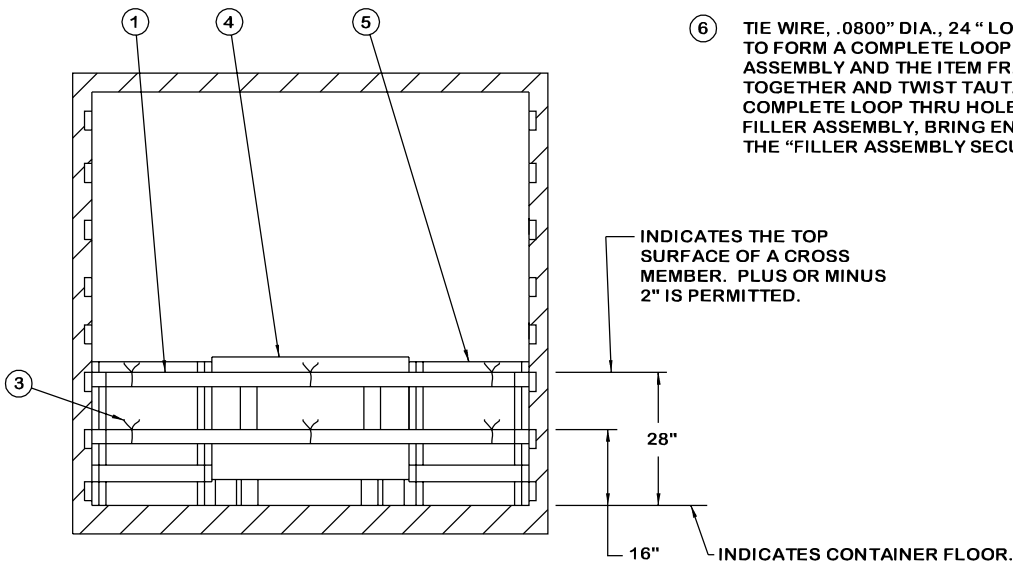
ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA - - - - -	2 - - - - -	10,222 LBS
DUNNAGE - - - - -	- - - - -	400 LBS
CONTAINER - - - - -	- - - - -	5,700 LBS
TOTAL WEIGHT - - - - -		16,322 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① CROSS MEMBER (8 REQD). POSITION AT THE HEIGHTS SPECIFIED IN THE "SECTION D-D" VIEW. SEE GENERAL NOTE "E" ON PAGE 2, AND THE "FILL DETAIL" ON PAGE 7.
- ② FILL MATERIAL, 1-3/8" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (4 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ③ TIE WIRE, .0800" DIA. WIRE, 24" LONG (12 REQD). SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 7.
- ④ END GATE B (2 REQD). SEE THE "END GATE B" DETAIL ON PAGE 11.
- ⑤ FILLER ASSEMBLY B (4 REQD). SEE THE "FILLER ASSEMBLY B" DETAIL ON PAGE 15.
- ⑥ TIE WIRE, .0800" DIA., 24" LONG (16 REQD). INSTALL TWO TIE WIRES TO FORM A COMPLETE LOOP AROUND ONE END OF A FILLER ASSEMBLY AND THE ITEM FRAME AS SHOWN, BRING ENDS TOGETHER AND TWIST TAUT. INSTALL TWO TIE WIRES TO FORM A COMPLETE LOOP THRU HOLES IN 28" HIGH BELT RAIL AND AROUND FILLER ASSEMBLY, BRING ENDS TOGETHER AND TWIST TAUT. SEE THE "FILLER ASSEMBLY SECUREMENT" DETAIL ON PAGE 10.



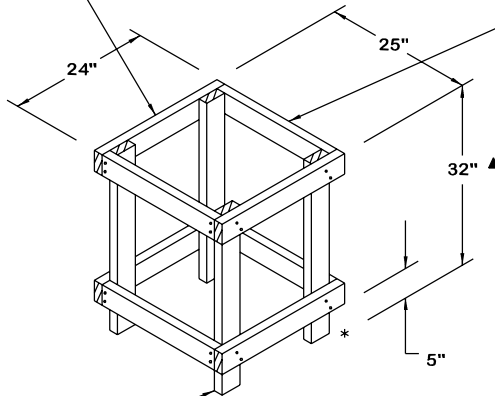
SECTION D-D

ONE ASSEMBLY LOAD

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 14 DEPICTS A ONE ASSEMBLY LOAD IN A MILVAN CONTAINER.
2. TO AID IN THE LOADING OF THE ONE ATACMS M/LPA INTO THE MILVAN, THE "FILLER ASSEMBLY B" WILL NOT BE PLACED IN OR WIRE TIED TO THE MILVAN CONTAINER UNTIL THE ONE ATACMS M/LPA IS PLACED INTO POSITION.

BEARING PIECE, 2" X 4" X 24"
(4 REQD). NAIL TO THE VERTICAL
PIECES W/2-10d NAILS AT EACH
JOINT.



STRUT, 2" X 4" X 22"
(4 REQD). NAIL TO THE
VERTICAL PIECES W/2-10d
NAILS AT EACH END.

VERTICAL PIECE,
2" X 4" X 32"
(4 REQD).

▲ WHEN FILLER ASSEMBLY B IS USED FOR SHIPPING
"BLOCK I" M/LPA'S THIS DIMENSION WILL BE
REDUCED FROM 32" TO 30-1/2".

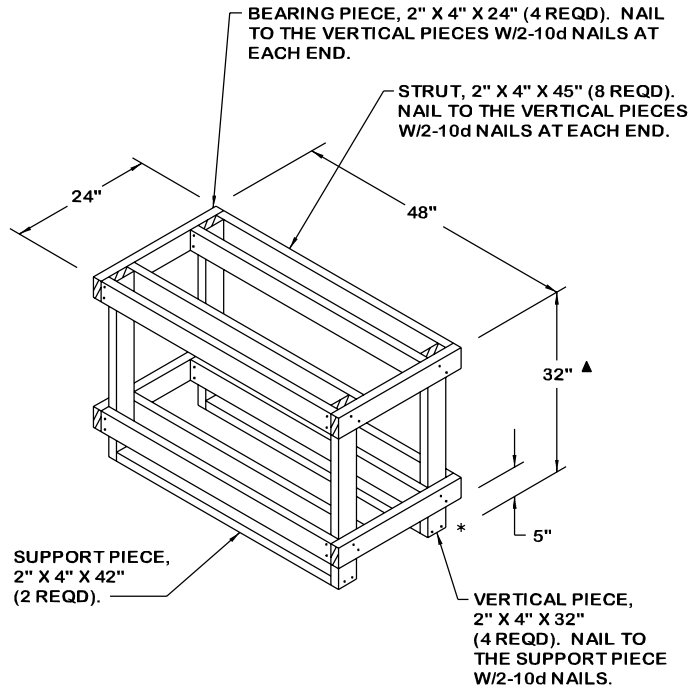
FILLER ASSEMBLY B

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	144	96
2" X 6"	19	19
4" X 4"	3	4
NAILS	NO. REQD	POUNDS
6d (2")	8	NIL
10d (3")	180	3
12d (3-1/4")	16	1/2
WIRE, GRADE 1006	56' REQD	1 LB
PLYWOOD, 1/2"	1 SQ FT REQD	NIL
PLYWOOD, 3/4"	15 SQ FT REQD	31 LBS
CROSS MEMBER		8 REQD

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	1	5,111 LBS
DUNNAGE		274 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		11,085 LBS (APPROX)

ONE ASSEMBLY LOAD



FILLER ASSEMBLY A

▲ WHEN FILLER ASSEMBLY A IS USED FOR SHIPPING "BLOCK 1" M/LPA'S THIS DIMENSION WILL BE REDUCED FROM 32" TO 30-1/2".