

APPROVED BY
BUREAU OF EXPLOSIVES



DATE 4-12-05

ATACMS

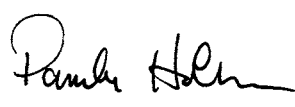
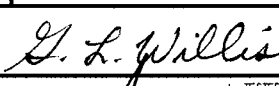

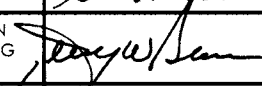

LOADING AND BRACING[†] WITH WOODEN DUNNAGE IN SIDE OPENING ISO CONTAINERS OF MISSILE/LAUNCH POD ASSEMBLY (M/LPA) FOR ARMY TACTICAL MISSILE SYSTEM

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[†] 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.

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.							
		DO NOT SCALE			JULY 1993				
		ENGINEER OR TECHNICIAN	BASIC REV.	RICHARD HAYNES MELVIN SIX		REVISION NO. 3	MAY 2005		
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND		TRANSPORTATION ENGINEERING DIVISION				SEE THE REVISION LISTING ON PAGE 2			
 U.S. ARMY DEFENSE AMMUNITION CENTER		VALIDATION ENGINEERING DIVISION			TESTED	CLASS	DIVISION	DRAWING	FILE
		ENGINEERING DIRECTORATE				19	48	8197	GM15AT4

PROJECT GM 848-92

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 SIDE OPENING ISO CONTAINER MUST NOT BE EXCEEDED.
- C. FOR DETAIL OF THE MISSILE/LAUNCH POD ASSEMBLY, SEE U.S. ARMY MISSILE COMMAND DRAWING NO. 13288205, 132833653, AND THE DETAIL ON PAGE 3.
- D. THE LOADS AS SHOWN ARE BASED ON 6,050 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89" WIDE BY 88" HIGH AND A MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT. HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY MOTOR OR WATER CARRIERS. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN ALSO BE USED.
- E. WHEN LOADING THE M/LPA, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE DUNNAGE ASSEMBLIES). THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 1-1/2". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE VERTICAL PIECES ON THE SIDE BLOCKING. NAIL EACH ADDITIONAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE LENGTH OF THE STRUTS WILL BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE LENGTH OF THE LADING.
- 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. 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 ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- H. IN SOME CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE ENDWALLS. PIECES OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES ON THE FORWARD BLOCKING ASSEMBLY TO PROVIDE A FLAT SURFACE FOR THE 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". NOTE THAT SOME CONTAINERS ARE EQUIPPED WITH "TIE-BARS" IN THE CORNER SLOT, WHICH PRECLUDE THE USE OF A FULL HEIGHT FILL PIECE. WHEN "TIE-BARS" ARE PRESENT, THE FILL PIECE MUST BE INSTALLED IN SEGMENTS DESIGNED TO FIT BETWEEN THE "TIE-BARS" VERTICALLY. THE FILL PIECE(S) IS NOT REQUIRED WHEN THE CORNER PORTIONS OF THE CONTAINER ENDWALLS ARE SMOOTH AND FLAT. DO NOT ALLOW ANY DUNNAGE ASSEMBLY TO CONTACT THE CONTAINER ENDWALLS, ONLY THE CORNER POSTS OF THE CONTAINER SHOULD BE USED FOR LONGITUDINAL BLOCKING.

(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 NLCMMS).
WIRE -----:	ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.
PLYWOOD -----:	COMMERICAL 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)

- J. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- K. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- L. 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.
- 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 THE LOAD WEIGHT IN 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.
- N. NEW STYLE MISSILE/LAUNCH POD ASSEMBLIES AS REFERENCED IN THE REVISION BLOCK ON THIS PAGE AND ON PAGE 3 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.
- O. THE DUNNAGE ASSEMBLIES SHOWN WITHIN THIS DRAWING ARE BASED ON 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.
- P. 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 25.4MM AND ONE POUND EQUALS 0.454KG.

REVISIONS

REVISION NO. 1, DATED APRIL 1997, CONSISTS OF:

1. ADDITION OF PLYWOOD SPACERS TO END BLOCKING ASSEMBLIES FOR USE WITH NEW STYLE MISSILE/LAUNCH POD ASSEMBLIES.
2. ADDING NEW WEIGHT FOR ASSEMBLIES.

REVISION NO. 2, DATED OCTOBER 1998, CONSISTS OF:

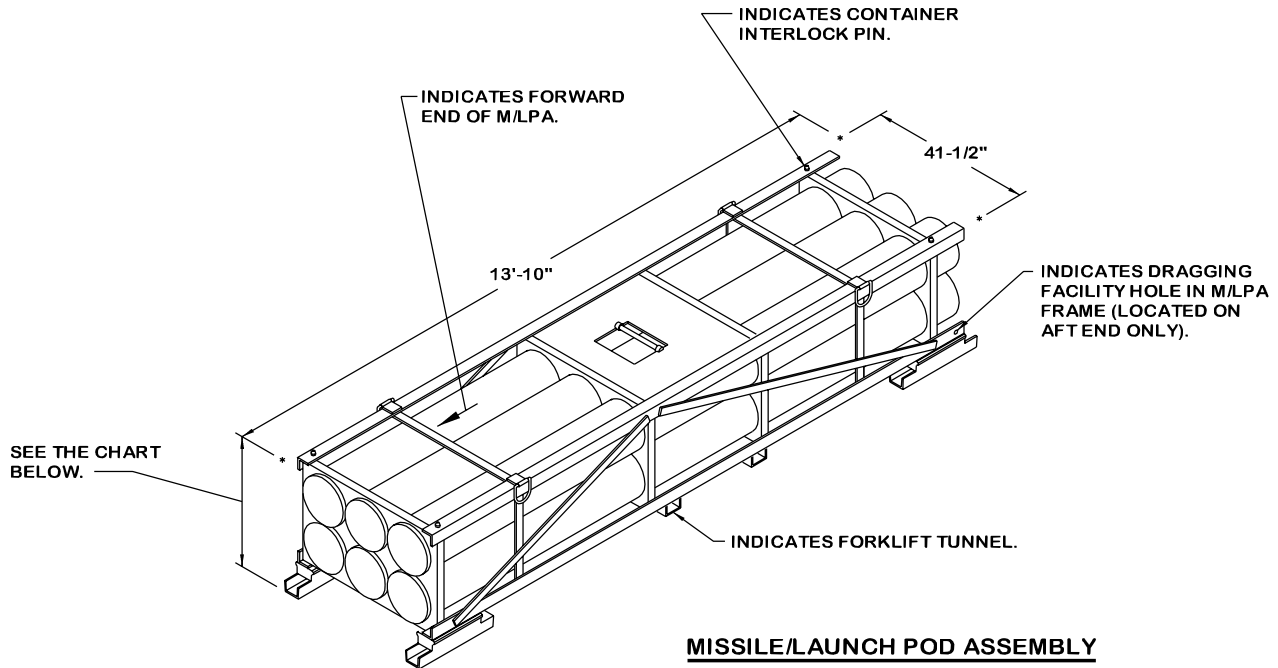
ADDING NEW WEIGHTS FOR ASSEMBLIES.

REVISION NO. 3, DATED MAY 2005, CONSISTS OF:

ADDING NEW ASSEMBLY WEIGHTS AND NSN'S.

**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



MISSILE/LAUNCH POD ASSEMBLY

M/LPA STACKING AND HANDLING PROCEDURE GUIDANCE

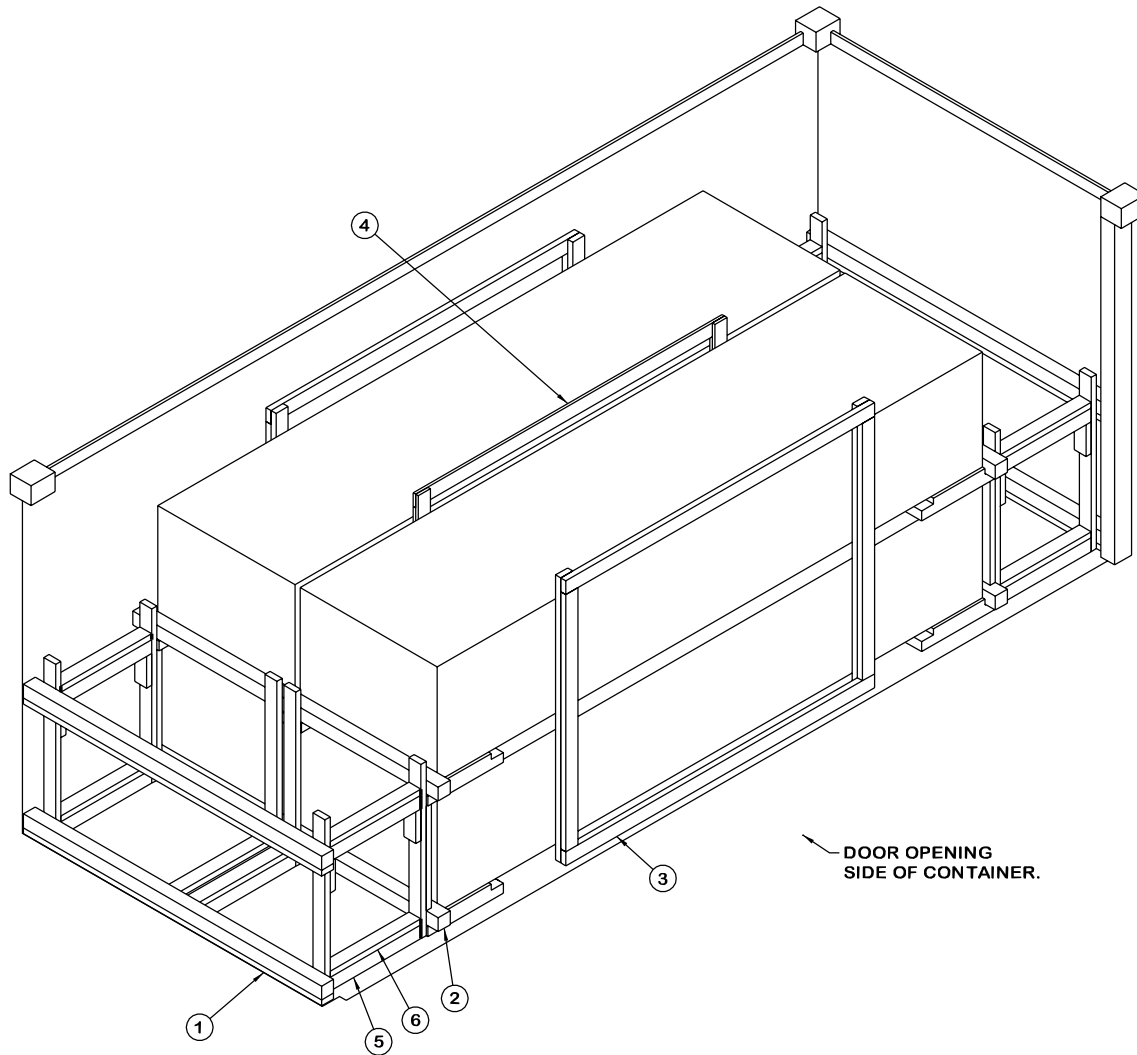
1. ASSEMBLY STACKING FOR OUTLOADING PURPOSES.

- 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 10,000 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 FORKLIFT TUNNELS.



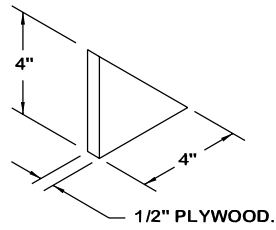
ISOMETRIC VIEW

KEY NUMBERS

- ① END WALL GATE (2 REQD). SEE THE "END WALL GATE" DETAIL ON PAGE 6.
- ② LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE" DETAIL ON PAGE 6.
- ③ SIDE FILL ASSEMBLY (2 REQD). SEE THE "SIDE FILL ASSEMBLY A" DETAIL ON PAGE 7.
- ④ CENTER FILL ASSEMBLY (1 REQD). SEE THE "CENTER FILL ASSEMBLY A" DETAIL ON PAGE 7.
- ⑤ STRUT "A", 4" X 4" BY CUT TO FIT (REF: 26-1/2") (12 REQD). INSTALL AS SHOWN AND TOENAIL EACH END TO THE GATES W/2-12d NAILS. NOTE: THE BOTTOM CENTER STRUTS NEED TO BE 1-1/2" LONGER THAN THE OUTSIDE STRUTS. BOTTOM CENTER STRUTS WILL BE INSTALLED IN LINE WITH THE CENTER VERTICAL BEARING PIECES OF THE LOAD BEARING GATE, PIECE MARKED ②.
- ⑥ STRUT "B", 2" X 4" BY CUT TO FIT (REF: 26-1/2") (12 REQD). LAMINATE TO STRUT "A", PIECE MARKED ⑤ W/4-10d NAILS. NOTE: THE BOTTOM CENTER STRUTS NEED TO BE 1-1/2" LONGER THAN THE OUTSIDE STRUTS.

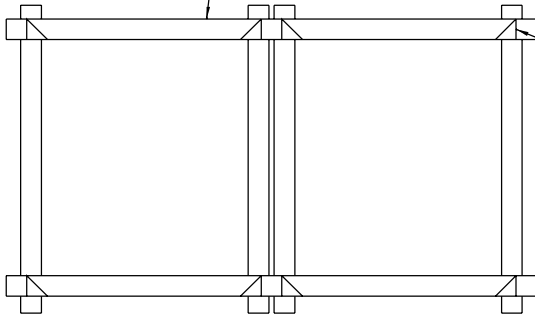
SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 4 DEPICTS A FOUR ASSEMBLY LOAD IN A COMMERCIAL SIDE OPENING CONTAINER.
2. PRIOR TO LOADING THE MISSILE ASSEMBLIES INTO THE SIDE OPENING CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGE 3.
3. TO PROVIDE ADDITIONAL SPACE BETWEEN THE AFT END COVER AND THE LOAD BEARING GATE AT THE AFT END OF MOST M/LPA'S, SPACER PIECES, AS DETAILED AT THE LEFT MUST BE USED. THE SPACER PIECES SHALL BE LOCATED SO THAT THEY CONTACT THE BOTTOM RAILS OF THE M/LPA.
4. THE LOAD AS SHOWN IS BASED ON BLOCK I M/LPA'S. WHEN SHIPPING BLOCK IA OR BLOCK II M/LPA'S BOTH THE UNIT WEIGHT AND SOME DIMENSIONS ON THE END WALL GATE AND THE LOAD BEARING GATE WILL CHANGE. THESE DIMENSIONAL CHANGES ARE NOTED IN THE DETAILS SHOWN ON PAGE 6.



SPACER

INDICATES UPPER HORIZONTAL BEAM.



SPACER (8 REQD). SEE THE DETAIL ABOVE. POSITION SO AS TO CONTACT THE BOTTOM RAIL AND NAIL TO THE HORIZONTAL BEAM W/2-6d NAILS. SEE SPECIAL NOTE 3 ABOVE.

INDICATES LOWER HORIZONTAL BEAM OF LOAD BEARING GATE, PIECE MARKED ②.

LOCATION OF SPACER

NOTE: SPACERS ARE ONLY REQUIRED ON THE DUNNAGE ASSEMBLY AT THE AFT END OF THE M/LPA'S.

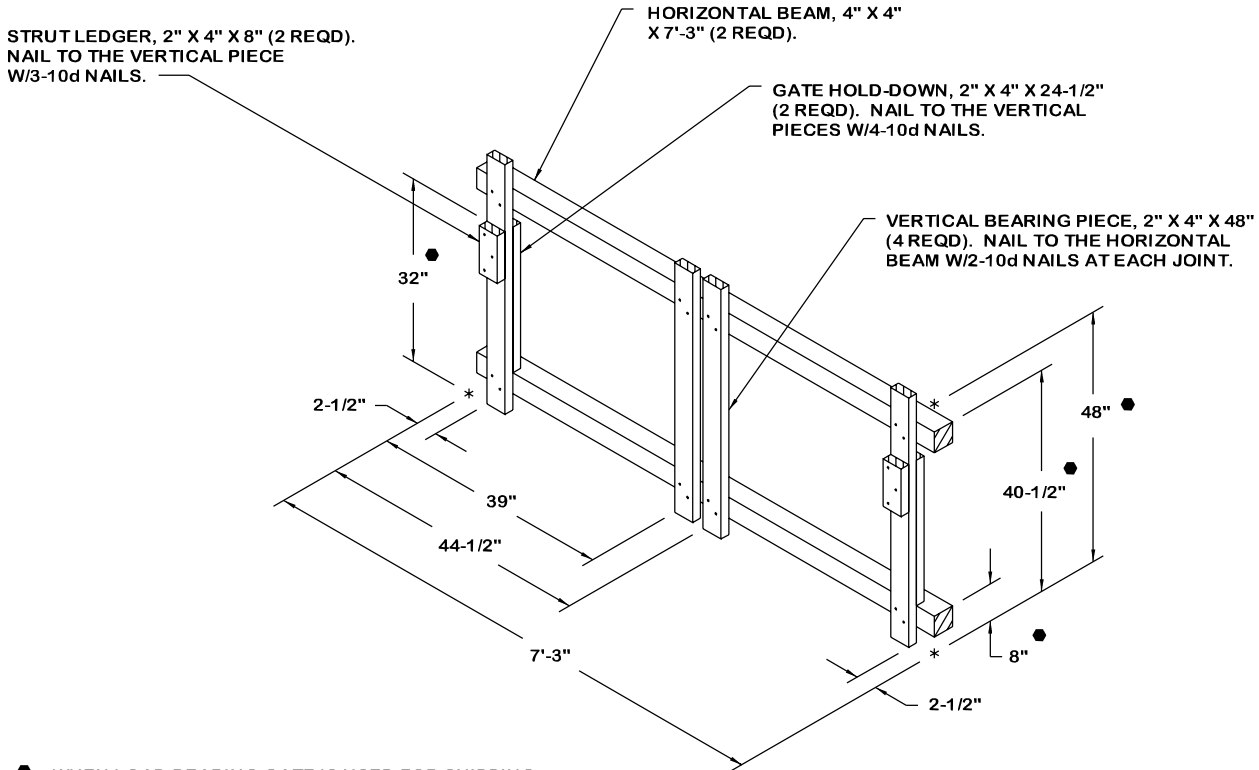
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	40	14
2" X 4"	196	131
4" X 4"	85	113
NAILS	NO. REQD	POUNDS
6d (2")	34	1/4
10d (3")	212	3-1/4
12d (3-1/4")	48	1
PLYWOOD, 1/2" - - 1/2 SQ FT REQD - - - - 3/4 LB		

* SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	4	20,444 LBS *
DUNNAGE		522 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		27,012 LBS (APPROX)

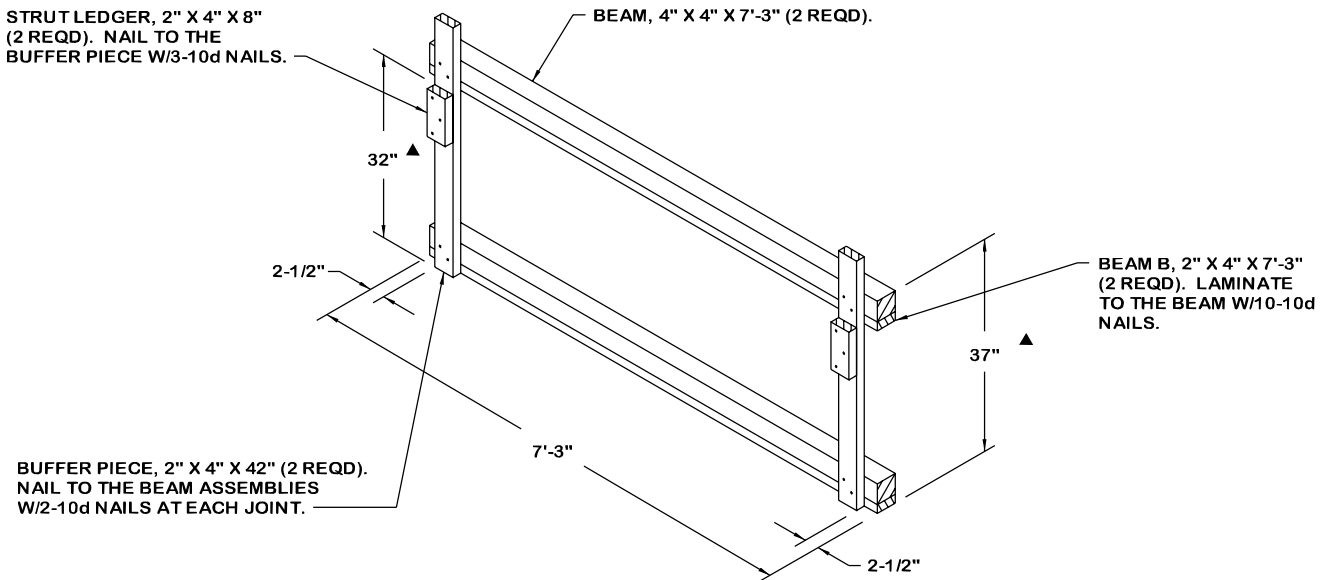


● WHEN LOAD BEARING GATE IS USED FOR SHIPPING "BLOCK I" M/LPA'S THESE DIMENSIONS WILL BE REDUCED AS FOLLOWS:

- 32" TO 30-3/4"
- 48" TO 42"
- 40-1/2" TO 37-1/4"
- 8" TO 6-1/4"

LOAD BEARING GATE

SEE THE "LOCATION OF SPACER" DETAIL ON PAGE 5, SPECIAL NOTE 3 ON PAGE 5 AND GENERAL NOTE "N" ON PAGE 2.



END WALL GATE

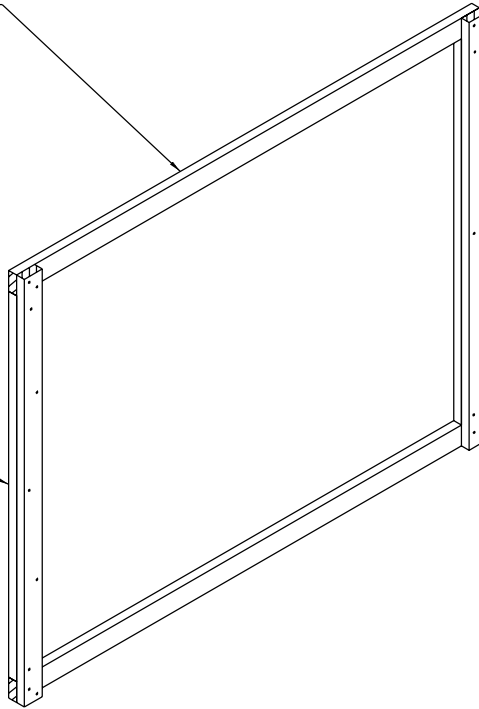
▲ WHEN END WALL GATE IS USED FOR SHIPPING "BLOCK I" M/LPA'S THESE DIMENSIONS WILL BE REDUCED AS FOLLOWS:

- 32" TO 30-3/4"
- 37" TO 35-3/4"

HORIZONTAL PIECE, 2" X 4"
X 7'-6" (2 REQD).

VERTICAL PIECE, 2" X 4" X 6'-7"
(2 REQD). NAIL TO THE HORIZONTAL
PIECES W/2-10d NAILS AT EACH
END AND TO THE FILL PIECE
W/5-10d NAILS.

FILL PIECE, 2" X 4" X 72"
(2 REQD).

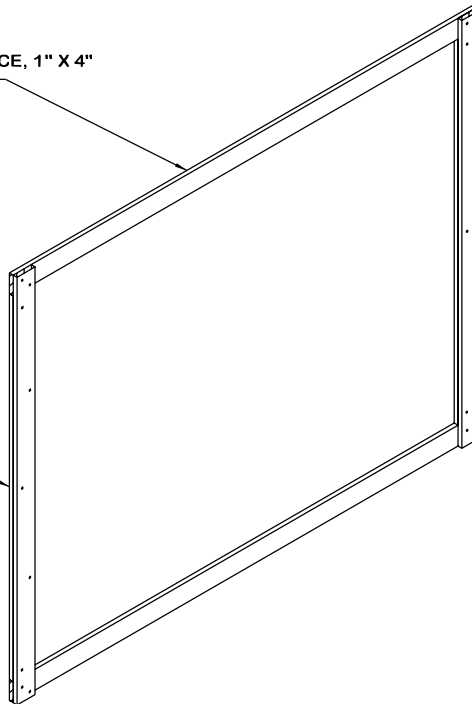


SIDE FILL ASSEMBLY A

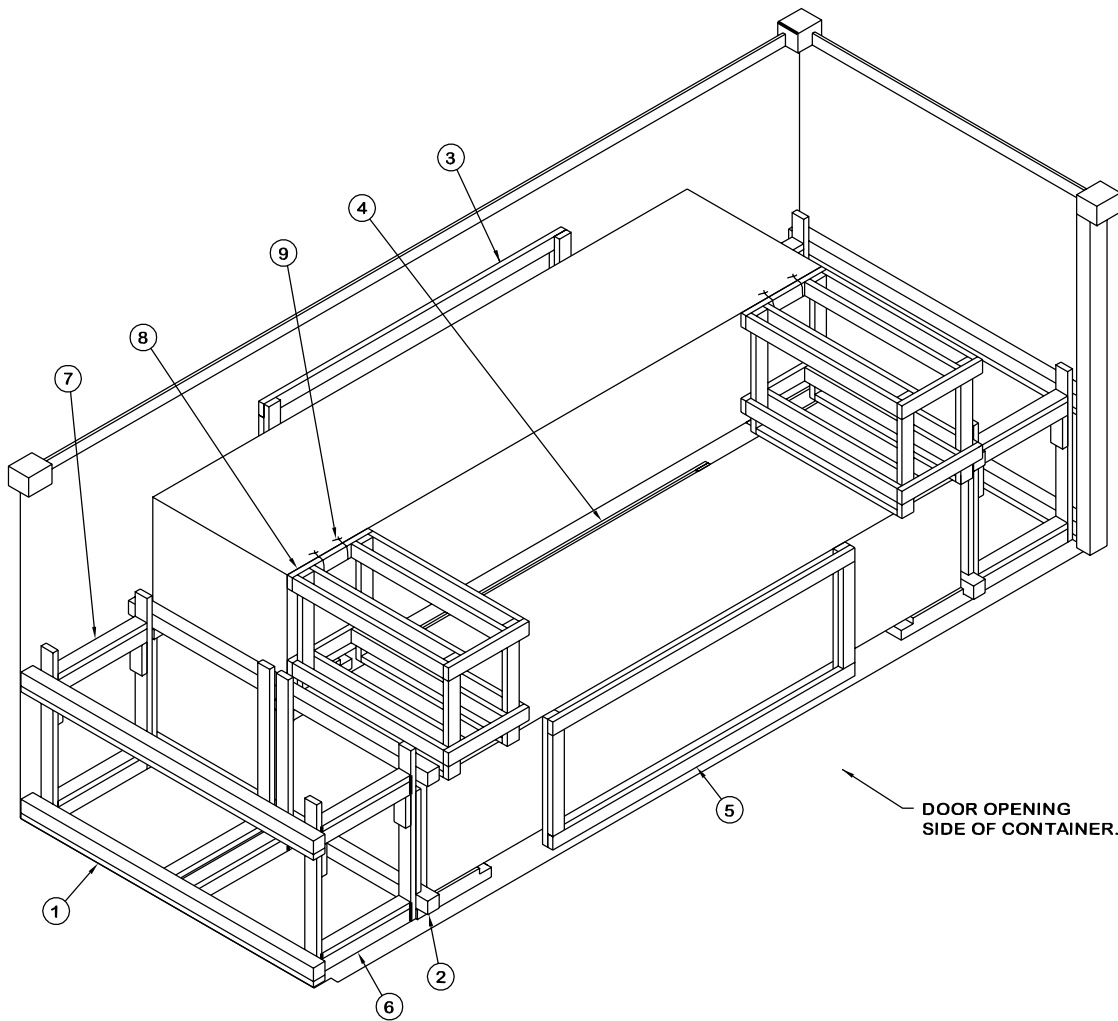
HORIZONTAL PIECE, 1" X 4"
X 7'-6" (2 REQD).

VERTICAL PIECE, 1" X 4" X 6'-7"
(2 REQD). NAIL TO THE HORIZONTAL
PIECES W/2-6d NAILS AT EACH
END AND TO THE FILL PIECE
W/5-6d NAILS. CLINCH AS
REQUIRED.

FILL PIECE, 1" X 4" X 72"
(2 REQD).



CENTER FILL ASSEMBLY A



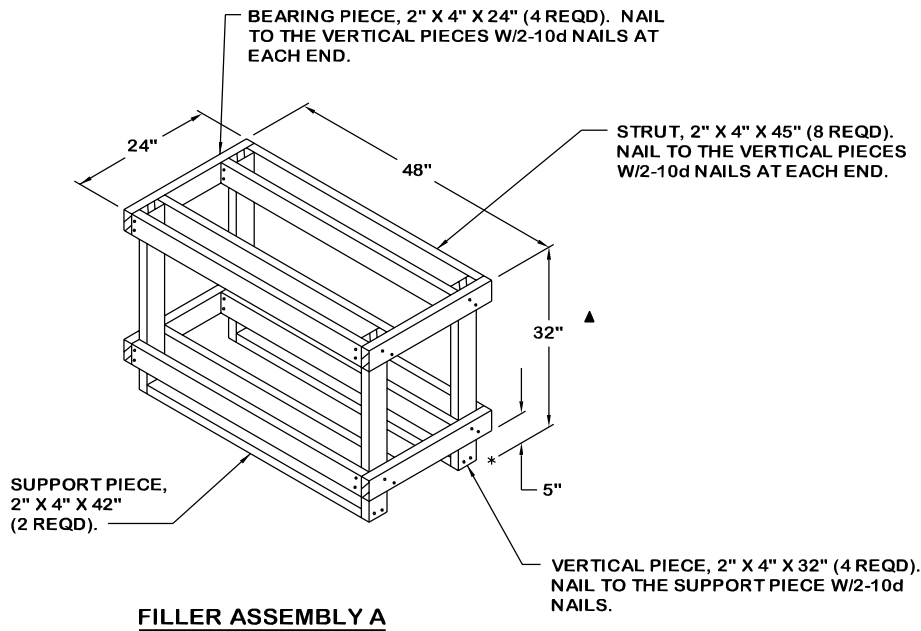
ISOMETRIC VIEW

KEY NUMBERS

- ① END WALL GATE (2 REQD). SEE THE "END WALL GATE" DETAIL ON PAGE 6.
- ② LOAD BEARING GATE (2 REQD). SEE THE "LOAD BEARING GATE" DETAIL ON PAGE 6, AND "LOCATION OF SPACER" ON PAGE 5. SEE SPECIAL NOTE 3 ON PAGE 9.
- ③ SIDE FILL ASSEMBLY (1 REQD). SEE THE "SIDE FILL ASSEMBLY A" DETAIL ON PAGE 7.
- ④ CENTER FILL ASSEMBLY (1 REQD). SEE THE "CENTER FILL ASSEMBLY B" DETAIL ON PAGE 11.
- ⑤ SIDE FILL ASSEMBLY (1 REQD). SEE THE "SIDE FILL ASSEMBLY B" DETAIL ON PAGE 11.
- ⑥ STRUT "A", 4" X 4" BY CUT TO FIT (REF: 26-1/2") (12 REQD). INSTALL AS SHOWN AND TOENAIL EACH END TO THE GATES W/2-12d NAILS. NOTE: THE BOTTOM CENTER STRUTS NEED TO BE 1-1/2" LONGER THAN THE OUTSIDE STRUTS.
- ⑦ STRUT "B", 2" X 4" BY CUT TO FIT (REF: 26-1/2") (12 REQD). LAMINATE TO STRUT "A", PIECE MARKED ⑥, W/4-10d NAILS. NOTE: THE BOTTOM CENTER STRUTS NEED TO BE 1-1/2" LONGER THAN THE OUTSIDE STRUTS.
- ⑧ FILLER ASSEMBLY (2 REQD). SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 9.
- ⑨ TIE WIRE, .0800" DIA WIRE 24" LONG (4 REQD). INSTALL THE WIRE TO FORM A COMPLETE LOOP AROUND THE BEARING PIECE OF THE FILLER ASSEMBLY, PIECE MARKED ⑧, AND THE FRAME OF THE M/LPA. BRING ENDS TOGETHER AND TWIST TAUT.

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 8 DEPICTS A THREE ASSEMBLY LOAD IN A COMMERCIAL SIDE OPENING CONTAINER.
2. PRIOR TO LOADING THE MISSILE ASSEMBLIES INTO THE SIDE OPENING CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGE 3.
3. TO PROVIDE ADDITIONAL SPACE BETWEEN THE NEW STYLE AFT END COVER AND THE LOAD BEARING GATE AT THE AFT END OF THE M/LPA, SPACER PIECES, AS DEPICTED ON PAGE 5 MUST BE USED. THE SPACER PIECES SHALL BE LOCATED SO THAT THEY CONTACT THE BOTTOM RAILS OF THE M/LPA. SEE GENERAL NOTE "P" ON PAGE 2.
4. THE LOAD AS SHOWN IS BASED ON BLOCK I M/LPA'S. WHEN SHIPPING BLOCK IA OR BLOCK II M/LPA'S BOTH THE UNIT WEIGHT AND SOME DIMENSIONS ON THE END WALL GATE AND THE LOAD BEARING GATE WILL CHANGE. THESE DIMENSIONAL CHANGES ARE NOTED IN THE DETAILS SHOWN ON PAGE 6.



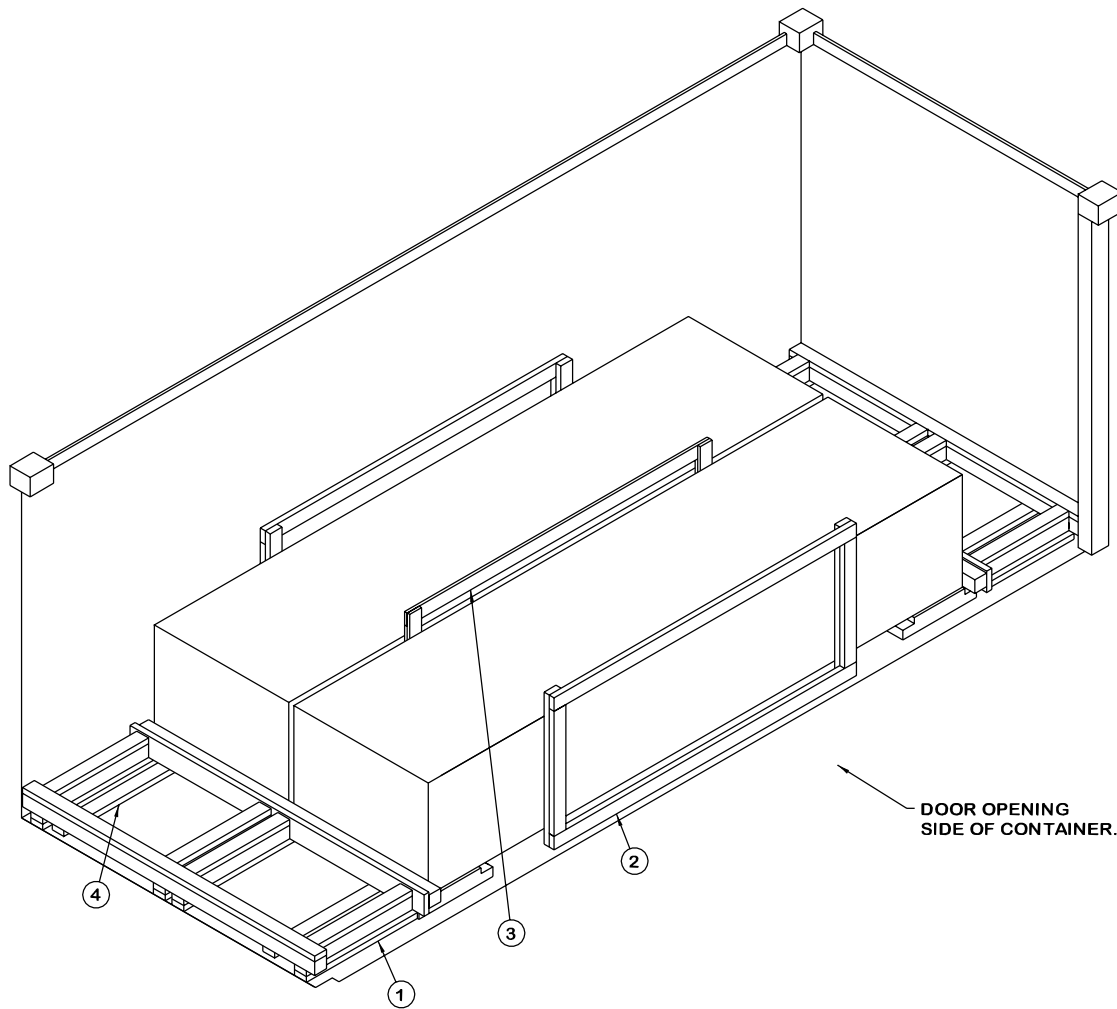
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	26	9
2" X 4"	293	195
4" X 4"	85	113
NAILS	NO. REQD	POUNDS
6d (2")	34	1/4
10d (3")	324	5
12d (3-1/4")	48	1
PLYWOOD, 1/2"	1/2 SQ FT REQD	3/4 LB
WIRE, .080"	8' REQD	NIL

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

* SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	3	15,333 LBS *
DUNNAGE		640 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		22,023 LBS (APPROX)



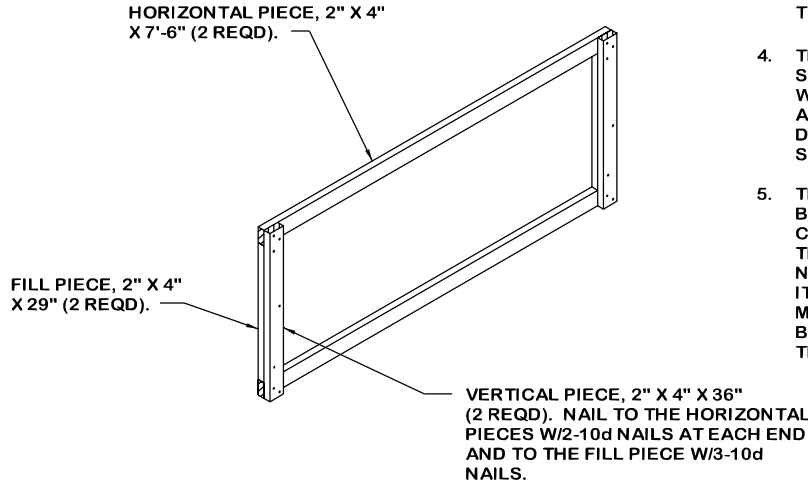
ISOMETRIC VIEW

KEY NUMBERS

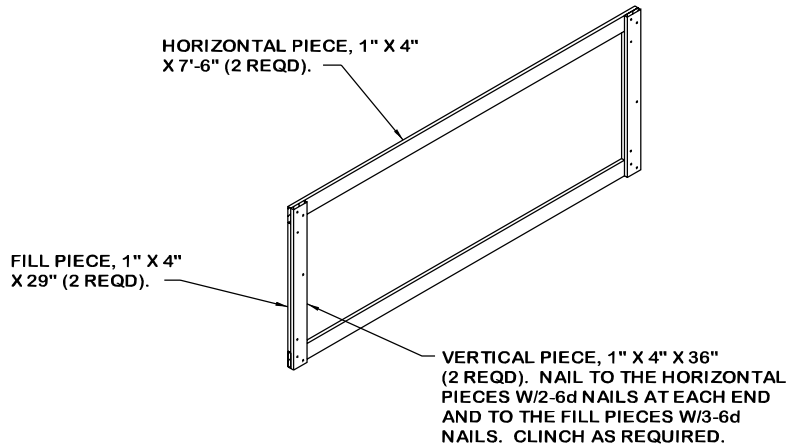
- ① END BLOCKING ASSEMBLY (2 REQD). SEE THE "END BLOCKING ASSEMBLY A" DETAIL ON PAGE 12. SEE SPECIAL NOTE 3 ON PAGE 11.
- ② SIDE FILL (2 REQD). SEE THE "SIDE FILL ASSEMBLY B" DETAIL ON PAGE 11.
- ③ CENTER FILL (1 REQD). SEE THE "CENTER FILL ASSEMBLY B" DETAIL ON PAGE 11.
- ④ HOLD DOWN PIECE, 2" X 4" X 60" (4 REQD). PREPOSITION AND NAIL TO THE END BLOCKING ASSEMBLY, PIECE MARKED ①, W/2-10d NAILS AT EACH JOINT PRIOR TO PLACING THE END BLOCKING ASSEMBLY IN THE CONTAINER. SEE SPECIAL NOTE 5 ON PAGE 11.

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 10 DEPICTS A TWO ASSEMBLY LOAD IN A COMMERCIAL SIDE OPENING CONTAINER.
2. PRIOR TO LOADING THE MISSILE ASSEMBLIES INTO THE SIDE OPENING CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGE 3.
3. TO PROVIDE ADDITIONAL SPACE BETWEEN THE NEW STYLE AFT END COVER AND THE END BLOCKING ASSEMBLY AT THE AFT END OF THE M/LPA, SPACER PIECES, AS DEPICTED ON PAGE 5 MUST BE USED. THE SPACER PIECES SHALL BE LOCATED SO THAT THEY CONTACT THE BOTTOM RAILS OF THE M/LPA. SEE GENERAL NOTE "N" ON PAGE 2.
4. THE LOAD AS SHOWN IS BASED ON BLOCK I M/LPA'S. WHEN SHIPPING BLOCK IA OR BLOCK II M/LPA'S BOTH THE UNIT WEIGHT AND SOME DIMENSIONS ON THE END WALL GATE AND THE LOAD BEARING GATE WILL CHANGE. THESE DIMENSIONAL CHANGES ARE NOTED IN THE DETAILS SHOWN ON PAGE 6. SEE NOTE ① ON PAGE 12.
5. THE END BLOCKING ASSEMBLY, LESS THE 4" X 4" LOAD BEARING PIECE, MUST BE PRE-POSITIONED IN THE CONTAINER PRIOR TO LOADING THE M/LPA'S. ALSO, THE HOLD DOWN PIECES, PIECE MARKED ④, MUST BE NAILED TO THE END BLOCKING ASSEMBLY PRIOR TO IT BEING INSTALLED IN THE CONTAINER. AFTER THE M/LPA'S ARE LOADED INTO THE CONTAINER, THE LOAD BEARING PIECE MUST BE INSTALLED AND ATTACHED TO THE BUFFER PIECE AS SHOWN IN THE DETAIL ON PAGE 12.



SIDE FILL ASSEMBLY B



CENTER FILL ASSEMBLY B

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	26	9
2" X 4"	107	72
2" X 6"	15	15
4" X 4"	49	65
NAILS	NO. REQD	POUNDS
6d (2")	18	NIL
10d (3")	118	2
12d (3-1/4")	48	1

* SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	2	10,222 LBS *
DUNNAGE		321 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		16,593 LBS (APPROX)

STRUT "B", 2" X 4" BY CUT TO FIT (REF: 28") (4 REQD). LAMINATE TO STRUT "A" W/4-10d NAILS.

LOAD BEARING PIECE, 4" X 4" BY INSIDE CONTAINER WIDTH MINUS 1/2" (1 REQD).
NOTE: THE END BLOCKING ASSEMBLY MUST BE PLACED IN POSITION WITH THE HOLD DOWN PIECES EXTENDING UNDER THE M/LPA PRIOR TO ATTACHMENT OF THIS PIECE.

VIEW A

2-1/2"

39"

39"

2-1/2"

BUFFER PIECE, 2" X 6" BY INSIDE CONTAINER WIDTH MINUS 1/2" (1 REQD). NAIL TO THE LOAD BEARING PIECE W/8-12d NAILS.

RISER, 2" X 4" BY A LENGTH TO SUIT (REF: 33") (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO STRUT "A" W/4-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE NOTE 1 BELOW.

END WALL BEARING PIECE, 2" X 4" AND 4" X 4" BY CONTAINER WIDTH MINUS 1/2" (1 REQD). LAMINATE THE 2" X 4" TO THE 4" X 4" W/1-10d NAIL EVERY 12".

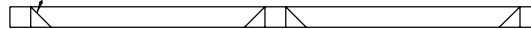
STRUT "A", 4" X 4" BY CUT TO FIT (REF: 28") (4 REQD). INSTALL AS SHOWN AND TOENAIL EACH END TO THE ENDWALL BEARING PIECE AND THE BUFFER PIECE W/2-12d NAILS.

END BLOCKING ASSEMBLY A

NOTE 1:

WHEN SHIPPING THE "BLOCK I" M/LPA'S, THE RISER PIECES SHOULD CONSIST OF ONLY ONE THICKNESS OF 2" X 4" MATERIAL. FOR SHIPMENT OF THE "BLOCK IA" OR "BLOCK II" M/LPA'S THE RISER PIECES SHALL BE DOUBLED 2" X 4" MATERIAL AS SHOWN IN THE ABOVE VIEW.

SPACER (4 REQD). SEE THE DETAIL ON PAGE 5. POSITION SO AS TO CONTACT THE BOTTOM RAIL OF THE M/LPA AND NAIL TO THE LOAD BEARING PIECE W/2-6d NAILS. SEE SPECIAL NOTE 3 ON PAGE 11.



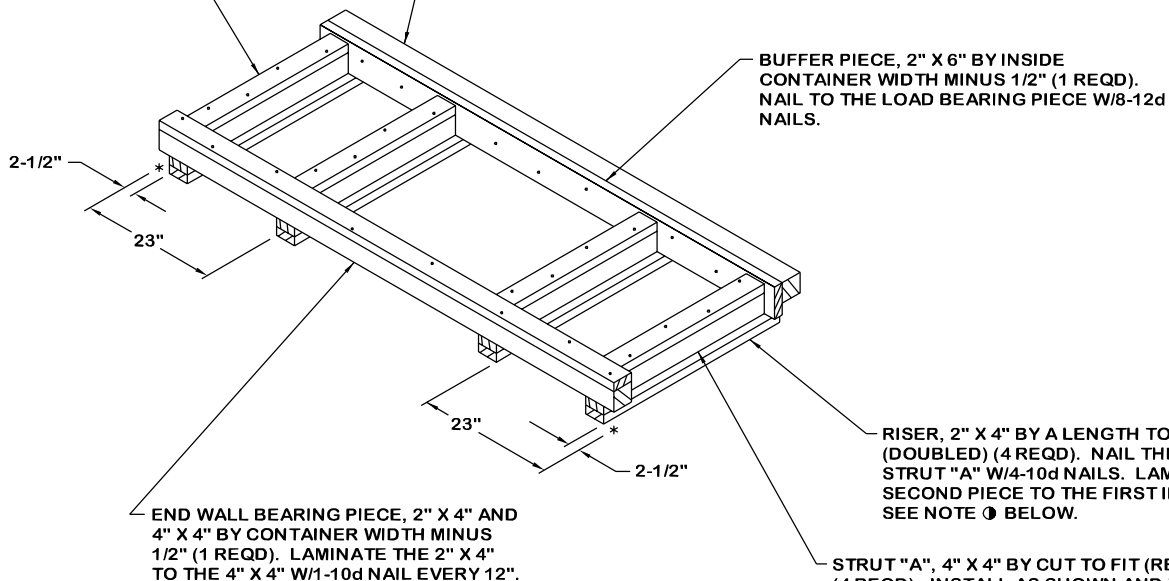
VIEW A

NOTE: SPACERS ARE ONLY REQUIRED ON THE DUNNAGE ASSEMBLY AT THE AFT END OF THE M/LPA'S.

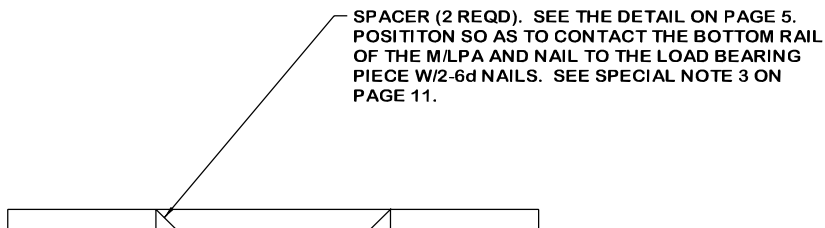
STRUT "B", 2" X 4" BY CUT TO FIT (REF: 28") (4 REQD). LAMINATE TO STRUT "A" W/4-10d NAILS.

LOAD BEARING PIECE, 4" X 4" BY INSIDE CONTAINER WIDTH MINUS 1/2" (1 REQD). NOTE: THE END BLOCKING ASSEMBLY MUST BE PLACED IN POSITION WITH THE HOLD DOWN PIECES EXTENDING UNDER THE M/LPA PRIOR TO ATTACHMENT OF THIS PIECE.

VIEW B



END BLOCKING ASSEMBLY B

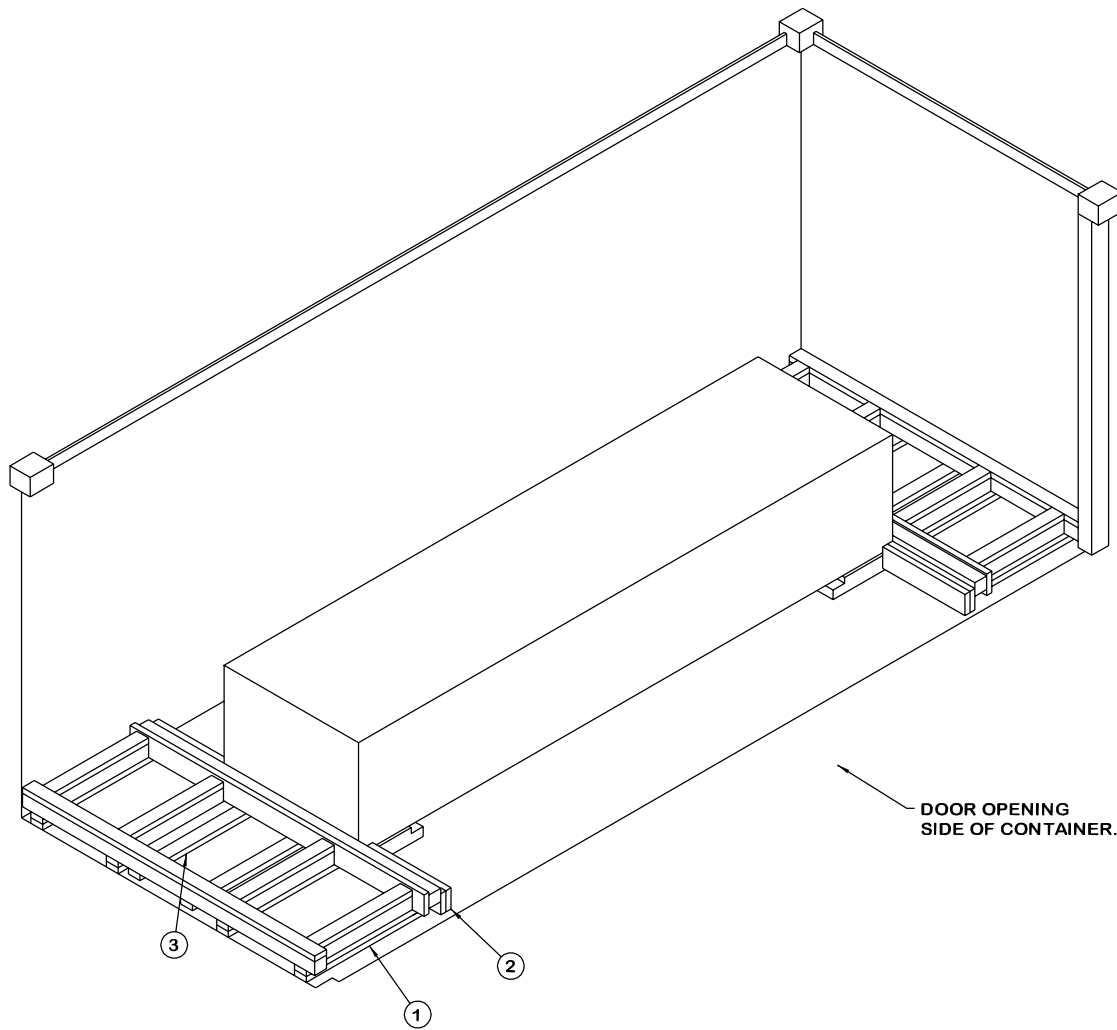


VIEW B

NOTE: SPACERS ARE ONLY REQUIRED ON THE DUNNAGE ASSEMBLY AT THE AFT END OF THE M/LPA'S.

NOTE 1:

WHEN SHIPPING THE "BLOCK I" M/LPA'S, THE RISER PIECES SHOULD CONSIST OF ONLY ONE THICKNESS OF 2" X 4" MATERIAL. FOR SHIPMENT OF THE "BLOCK IA" OR "BLOCK II" M/LPA'S THE RISER PIECES SHALL BE DOUBLED 2" X 4" MATERIAL AS SHOWN IN THE ABOVE VIEW.



ISOMETRIC VIEW

KEY NUMBERS

- ① END BLOCKING ASSEMBLY (2 REQD). SEE THE "END BLOCKING ASSEMBLY B" DETAIL ON PAGE 13 SEE SPECIAL NOTE 3 ON PAGE 15.
- ② SIDE BLOCKING, 2" X 6" BY CUT TO FIT (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE END BLOCKING ASSEMBLY W/4-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ HOLD DOWN PIECE, 2" X 4" X 60" (4 REQD). PREPOSITION AND NAIL TO THE END BLOCKING ASSEMBLY, PIECE MARKED ①, W/2-10d NAILS AT EACH JOINT PRIOR TO PLACING THE END BLOCKING ASSEMBLY IN THE CONTAINER. SEE SPECIAL NOTE 5 ON PAGE 15.

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 14 DEPICTS A ONE ASSEMBLY LOAD IN A COMMERCIAL SIDE OPENING CONTAINER.
2. PRIOR TO LOADING THE MISSILE ASSEMBLY INTO THE SIDE OPENING CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGE 3.
3. TO PROVIDE ADDITIONAL SPACE BETWEEN THE NEW STYLE AFT END COVER AND THE END BLOCKING ASSEMBLY AT THE AFT END OF THE M/LPA, SPACER PIECES, AS DEPICTED ON PAGE 5 MUST BE USED. THE SPACER PIECES SHALL BE LOCATED SO THAT THEY CONTACT THE BOTTOM RAILS OF THE M/LPA.
4. THE LOAD AS SHOWN IS BASED ON BLOCK I M/LPA'S. WHEN SHIPPING BLOCK IA OR BLOCK II M/LPA'S BOTH THE UNIT WEIGHT AND SOME DIMENSIONS ON THE END WALL GATE AND THE LOAD BEARING GATE WILL CHANGE. THESE DIMENSIONAL CHANGES ARE NOTED IN THE DETAILS SHOWN ON PAGE 6. SEE NOTE ④ ON PAGE 13.
5. THE END BLOCKING ASSEMBLY, LESS THE 4" X 4" LOAD BEARING PIECE, MUST BE PRE-POSITIONED IN THE CONTAINER PRIOR TO LOADING THE M/LPA. ALSO, THE HOLD DOWN PIECES, PIECE MARKED ④, MUST BE NAILED TO THE END BLOCKING ASSEMBLY PRIOR TO IT BEING INSTALLED IN THE CONTAINER. AFTER THE M/LPA IS LOADED INTO THE CONTAINER, THE LOAD BEARING PIECE MUST BE INSTALLED AND ATTACHED TO THE BUFFER PIECE AS SHOWN IN THE DETAIL ON PAGE 13.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	98	65
2" X 6"	31	31
4" X 4"	49	65
NAILS	NO. REQD	POUNDS
10d (3")	162	2-1/2
12d (3-1/4")	48	1

* SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
ATACMS M/LPA	1	5,111 LBS *
DUNNAGE		323 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		11,484 LBS (APPROX)

