

DATE 8/28/04

ATACMS

LOADING AND BRACING[⊕] WITH LOAD AND ROLL PALLET (LRP)[⊕] IN END OPENING ISO CONTAINERS OF MISSILE/LAUNCH POD ASSEMBLY (M/LPA) FOR ARMY TACTICAL MISSILE SYSTEM

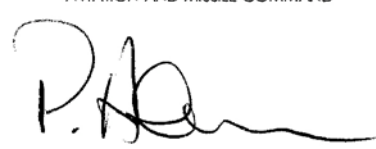

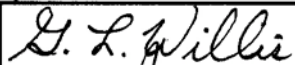
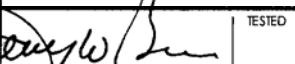

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⊕ LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY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

⊕ SEE GENERAL NOTE "P" ON PAGE 2.

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 12.			
		DO NOT SCALE		FEBRUARY 1993	
		ENGINEER OR TECHNICIAN	BASIC REV.	RICHARD HAYNES	
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND				REVISION NO. 2	AUGUST 2004
				SEE THE REVISION LISTING ON PAGE 3	
 U.S. ARMY DEFENSE AMMUNITION CENTER		TRANSPORTATION ENGINEERING DIVISION			CLASS DIVISION DRAWING FILE
		VALIDATION ENGINEERING DIVISION			
		ENGINEERING DIRECTORATE			
		19	48	8198	GM15AT5

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- 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 DEPICTED HEREIN ARE APPLICABLE TO THE ARMY TACTICAL MISSILE SYSTEM MISSILE/LAUNCH POD ASSEMBLY (M/LPA) UTILIZING A LOAD AND ROLL PALLET (LRP). SUBSEQUENT REFERENCE TO ASSEMBLY HEREIN MEANS THE M/LPA WITH MISSILE COMPONENTS. NOTE: THE OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO THE MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) ROCKET/POD CONTAINER (RP/C) OR OTHER SIMILARLY CONFIGURED ITEMS NOT EXCEEDING 22,000 POUNDS IN TOTAL LADING WEIGHT.
- C. FOR DETAILS OF THE MISSILE/LAUNCH POD ASSEMBLY, SEE MICOM DRAWING NOS. 13288205, 13283365, AND THE PICTORIAL VIEW ON PAGE 3 AND THE CHART ON PAGE 4.
- D. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED ASSEMBLIES WHEN THEY ARE LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED IN THE DRAWING TITLE.
- E. THE LOAD AS SHOWN IS BASED ON A 4,700 POUND 20'-0" LONG BY 8'-0" WIDE BY 8'-6" HIGH INTERMODAL END OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 95" HIGH. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT. HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF TRANSPORT. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN ALSO BE USED.
- F. WHEN LOADING THE ASSEMBLIES, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE FORWARD BLOCKING ASSEMBLY). ADDITIONALLY, LATERAL VOIDS WITHIN THE LOAD ARE TO BE HELD TO A MINIMUM. EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE FILLER BLOCKS ON THE CORNER RETAINER PIECES. NAIL EACH ADDITIONAL PIECE WITH APPROPRIATELY SIZED NAILS. ADDITIONALLY, THE THICKNESS OF THE FILLER BLOCKS MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE LOAD AND ROLL PALLET OR THE CONTAINER INTERIOR LOADING SPACE. INTERLOCKING
- G. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE, FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE AND 4" X 4" MATERIAL IS ACTUALLY 3-1/2" THICK BY 3-1/2" WIDE.

(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).
- STRAPPING, STEEL - - : ASTM D3953; FLAT STRAPPING, TYPE I, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.
- SEAL, STRAP - - - - : ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV.
- WEB STRAP - - - - - : ANCRASSEMBLY PART NO. 48050-10 (8M-30-24-260P3) OR EQUIVALENT.
- WIRE, CARBON STEEL - : ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.
- STAKE POCKET PROTECTOR - - - - : COMMERCIAL GRADE.
- ANTI-CHAFING MATERIAL - - - - - : MIL-B-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.
- LOAD & ROLL PALLET - : LOAD & ROLL IN. DRAWING NO. 100-3121 AND PATENT NO. 4,834,000. CAPACITY 2,000 LBS.
- LUMBER, LRP BLOCKING - - - - - : FED SPEC MM-L-751; DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS.
- 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.

- H. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WILL BE USED. A MINIMUM OF TWO SEALS, BUTTED TOGETHER, WITH TWO PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP TYPE SEALER IS BEING USED. REFER TO THE "STRAP JOINT A" AND "STRAP JOINT B" DETAILS ON PAGE 5 FOR GUIDANCE.
- J. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDEWALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- K. DIMENSIONS GIVEN FOR DUNNAGE PIECES OR ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY AND INSTALLATION INTO THE COMMERCIAL CONTAINER.
- 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. REQUIREMENTS CITED WITHIN THE ASSOCIATION OF AMERICAN RAILROADS (AAR) INTERMODAL LOADING GUIDE APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLATCAR (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 RAILCAR MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED ST THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES MORE THAN ONE-HALF OF THE LOAD LIMIT FOR THAT CAR.

- 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. THREE INCH WIDE WEB CARGO STRAPS MAY BE USED IN LIEU OF THE 2" WIDE STEEL HOLD-DOWN STRAPS USED TO SECURE THE LADING TO THE LOAD AND ROLL PALLET. EACH WEB CARGO STRAP ASSEMBLY MUST HAVE A MINIMUM LOAD RATING OF 9,000 POUNDS AND CONSIST OF A HEAVY CAPACITY RATCHET, 3" WIDE POLYESTER WEBBING, A PAIR OF MOVABLE CORNER PROTECTORS, A FLAT HOOK ON EACH END, AND A KEEPER ON EACH FLAT HOOK. AN ACCEPTABLE WEB STRAP ASSEMBLY IS IDENTIFIED IN THE MATERIAL SPECIFICATIONS BELOW.
- P. CONVERSIONS 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 0.454 KG.
- Q. THE LOAD AND ROLL PALLET IS A COMMERCIAL PRODUCT. FOR A SOURCE OF SUPPLY, CONTACT LOAD AND ROLL INC., 10100 KITTY AVENUE, CHICAGO RIDGE, IL 60415. PHONE (708) 499-3370.
- R. NEW STYLE MISSILE/LAUNCH POD ASSEMBLIES AS REFERENCED IN THE REVISION BLOCK 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 COVER.
- S. 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 LADING WEIGHTS WILL CHANGE SLIGHTLY.
- T. AS REQUIRED BY THE ASSOCIATION OF AMERICAN RAILROADS (AAR), ALL 1-1/4" AND 2" STEEL STRAPPING USED FOR LOAD RESTRAINT MUST BE MARKED AS SPECIFIED WITHIN THE APPLICABLE AAR RULES GOVERNING LOADING, BLOCKING AND BRACING OF FREIGHT WITHIN THE CONVEYANCE. FOR THE SPECIFIC MARKING SIZE, FREQUENCY, ETC., REQUIRED, REFER TO THE APPROPRIATE AAR LOADING RULES.
- U. IF 2" WIDE STEEL STRAPPING IS UNAVAILABLE FOR USE, TWO 1-1/4" X .035" OR .031" STEEL HOLD-DOWN STRAPS MAY BE USED IN LIEU OF EACH 2" WIDE STEEL HOLD-DOWN STRAP USED TO SECURE THE LADING TO THE LOAD AND ROLL PALLET. INSTALL 1-1/4" WIDE STRAPPING PAD BETWEEN EACH 1-1/4" WIDE HOLD-DOWN STRAP AND TIEDOWN PROVISION. EACH FULL LOAD WILL REQUIRE EIGHT 1-1/4" HOLD-DOWN STRAPS AND 16 STRAPPING PADS.

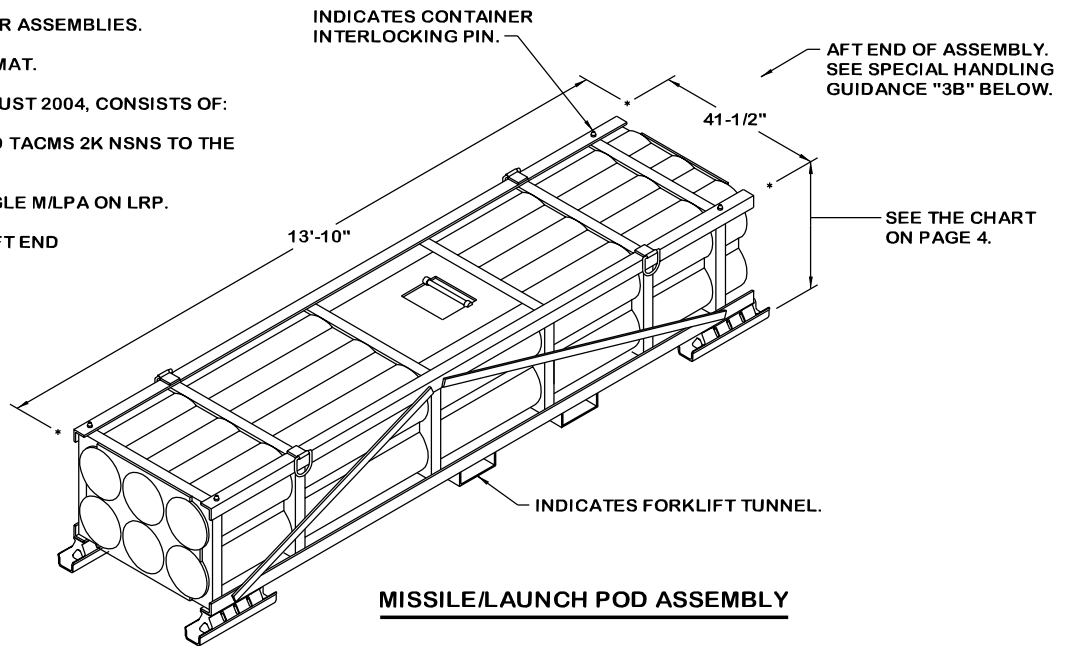
REVISIONS

REVISION NO. 1, DATED MAY 1999, CONSISTS OF:

1. ADDING NEW WEIGHTS FOR ASSEMBLIES.
2. UPDATING DRAWING FORMAT.

REVISION NO. 2, DATED AUGUST 2004, CONSISTS OF:

1. ADDING THE UNITARY AND TACMS 2K NSNS TO THE CHART ON PAGE 4.
2. ADDING LAYOUT FOR SINGLE M/LPA ON LRP.
3. ORIENTING M/LPA WITH AFT END TOWARDS DOORS.



SPECIAL HANDLING 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) MATERIALS HANDLING EQUIPMENT (MHE) IS INTENDED TO MEAN EQUIPMENT, SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, AND SPREADER BARS, THAT CAN BE USED TO HANDLE THE DEPICTED ASSEMBLIES.
 - (2) PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

- A. ONLY APPROVED AND APPROPRIATELY SIZED MHE WILL BE USED FOR HANDLING THE DEPICTED ASSEMBLIES.
- B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE ASSEMBLIES SHOULD BE HANDLED FROM A SIDE POSITION ONLY. CARE MUST BE EXERCISED WHEN INSERTING THE FORKS UNDER THE ASSEMBLY TO PREVENT DAMAGE TO THE ASSEMBLY BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. ADDITIONALLY, THE FORK TINES MUST BE PLACED UNDER THE ASSEMBLIES THROUGH THE FORKLIFT TINE TUNNELS.

SEQUENTIAL CONTAINER LOADING.

3. **A. NOTE:** FOR EASE IN LOADING THE LOAD AND ROLL PALLET INTO THE ISO CONTAINER, SET THE FRONT END PORTION (APPROX 24") OF THE LOAD AND ROLL PALLET IN THE OPEN DOORWAY END OF THE ISO CONTAINER AND INSERT CORNER SUPPORTS DIAGONALLY BENEATH THE REAR CORNERS OF THE LOAD AND ROLL PALLET (SEE DETAIL ON PAGE 4).
- B. LOAD THE ASSEMBLIES OR ASSEMBLY STACKS BY FIRST INSERTING THE FAR SKIDS IN THE CENTER SKID RESTRAINT PANS ON THE LOAD AND ROLL PALLET. THEN LOWERING THE NEAR SKIDS INTO THE OUTSIDE SKID RESTRAINT PANS ON THE PALLET. NOTE: THE AFT END OF THE ASSEMBLIES MUST BE POSITIONED AT THE AFT END OF THE LOAD AND ROLL PALLET.**

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(SPECIAL HANDLING GUIDANCE CONTINUED)

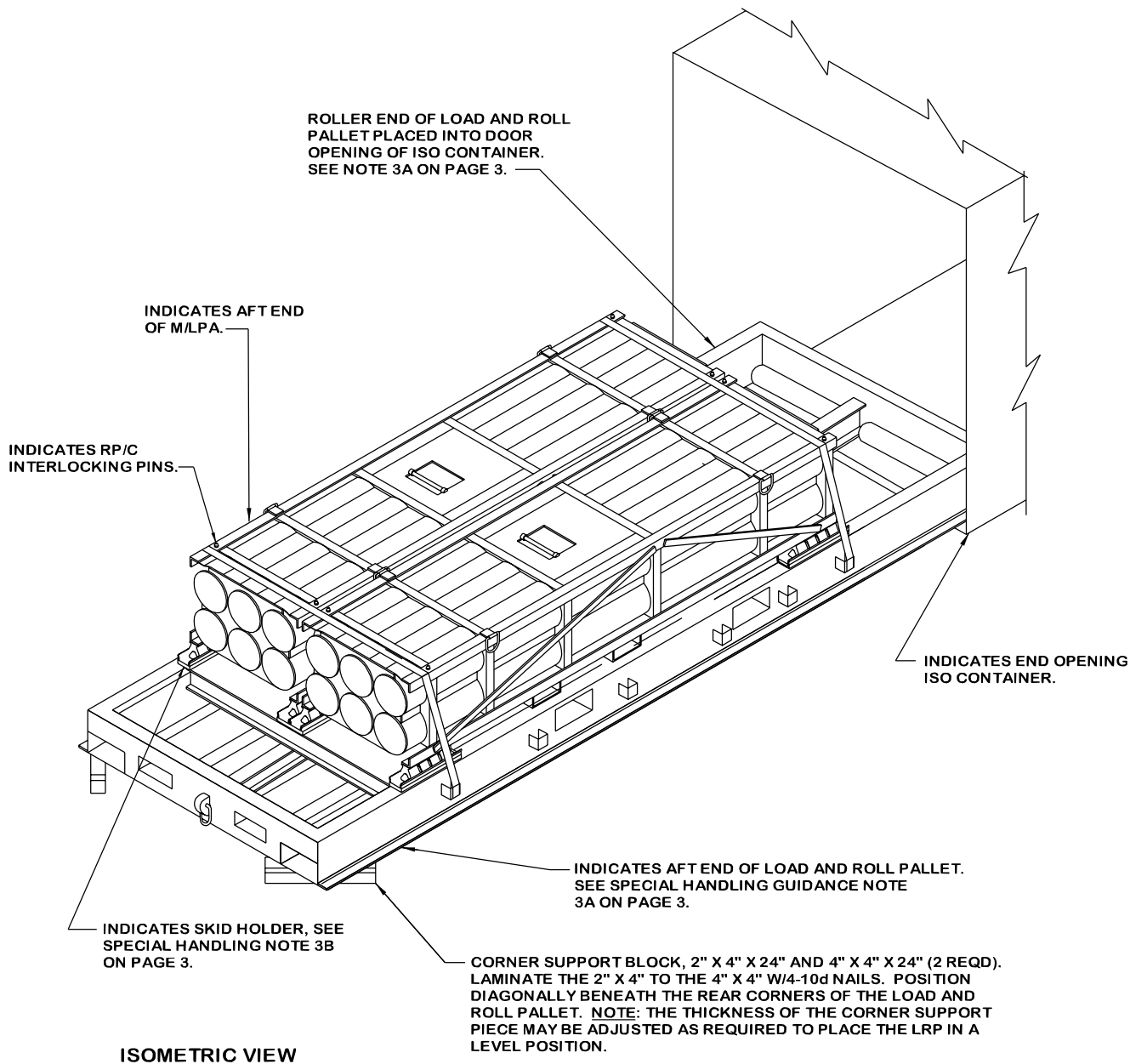
- C. APPLY THE STACK UNITIZING STRAP. NOTE: FIBERBOARD ANTI-CHAFING MATERIAL MUST BE INSTALLED UNDER THE STRAPS AT ALL POINTS OF CONTACT WITH THE ASSEMBLIES.
 - D. INSTALL THE CENTER FILL PIECES. POSITION THE CENTER FILL PIECES OF THE BOTTOM LAYER SO THAT THEY ARE SUPPORTED BY THE TOP OF THE FORK POCKET (TUNNEL) ON THE LOAD AND ROLL PALLET. POSITION THE CENTER FILL PIECES FOR THE TOP LAYER IN LINE WITH THOSE FOR THE BOTTOM LAYER. WIRE TIE THE CENTER FILL PIECES TO THE ASSEMBLY FRAME.
 - E. NEXT, LOAD AND UNITIZE THE REMAINING ASSEMBLIES IN THE MANNER DETAILED IN PARAGRAPHS 3B AND 3C ABOVE.
 - F. APPLY THE HOLD-DOWN STRAPS. POSITION FIBERBOARD ANTI-CHAFING MATERIAL UNDER THE STRAPS AT ALL POINTS OF CONTACT WITH THE ASSEMBLIES. CAUTION: THE HOLD-DOWN STRAPS MUST BE INSTALLED WITH CARE SO AS NOT TO HAVE EDGE-TO-EDGE CONTACT WITH THE STACK UNITIZING STRAPS.
 - G. POSITION THE FORWARD BLOCKING ASSEMBLY IN THE ISO CONTAINER. LIFT THE REAR END OF THE LOAD AND ROLL PALLET WITH APPROPRIATELY SIZED MHE UNTIL ONLY THE ROLLER CONTACTS THE CONTAINER FLOOR (REF: 6"). ROLL THE PALLET INTO THE CONTAINER UNTIL IT CONTACTS THE FORWARD BLOCKING ASSEMBLY. SET THE REAR OF THE PALLET ON THE CONTAINER FLOOR. INSTALL THE CORNER RETAINER PIECES AND FILL MATERIAL, AS NECESSARY.
4. UNLOADING THE LOAD AND ROLL PALLET FROM THE ISO CONTAINER.
 - A. THE LOAD AND ROLL PALLET MAY BE UNLOADED USING THE REVERSE OF THE METHOD DETAILED IN 3G ABOVE.
 - B. THE LOAD AND ROLL PALLET MAY ALSO BE UNLOADED USING A VEHICLE WITH AN APPROPRIATELY SIZED WINCH. FIRST REMOVE THE CORNER RETAINER PIECES. ATTACH THE WINCH TO THE D-RING ON THE REAR OF THE LOAD AND ROLL PALLET. RAISE THE PALLET UNTIL THE ROLLER CONTACTS THE ISO CONTAINER FLOOR, AND ROLL THE PALLET OUT USING THE WINCHING VEHICLE. TAKING CARE NOT TO PULL THE PALLET TOTALLY OUT OF THE CONTAINER. SET CORNER SUPPORTS UNDER THE CORNERS OF THE PALLET, AND UNLOAD THE ASSEMBLIES USING APPROPRIATELY SIZED MHE.

SPECIAL HANDLING GUIDANCE

PAGE 3

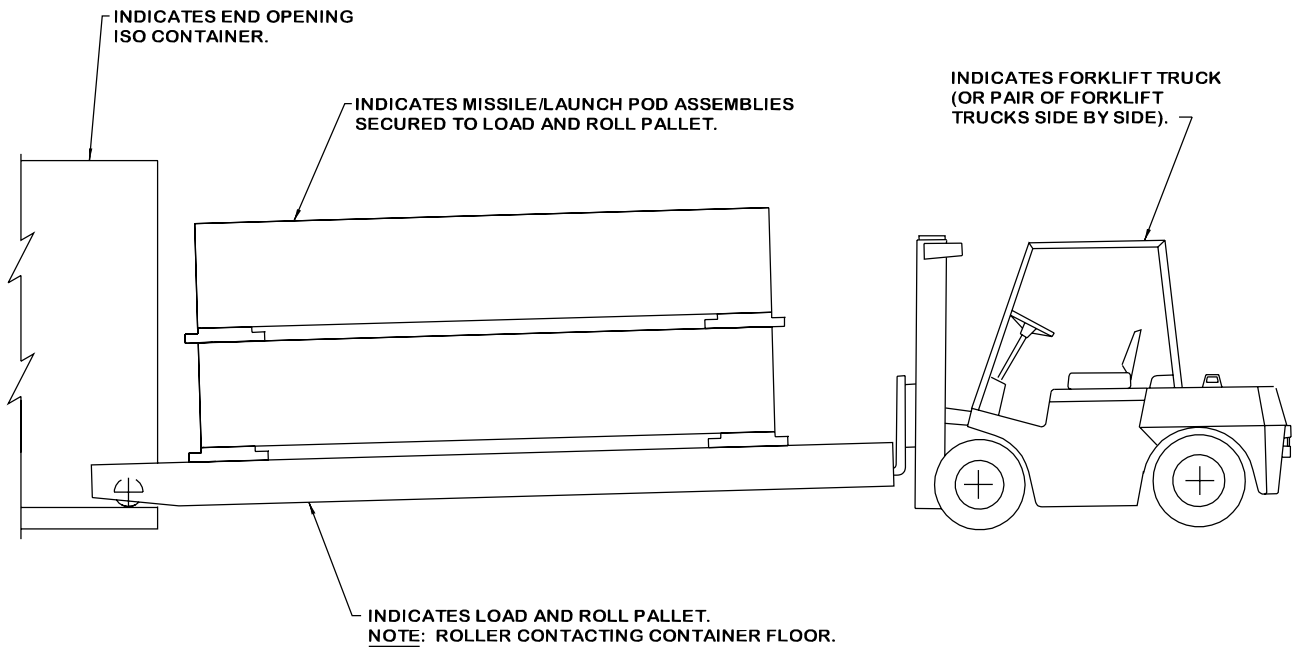
**GROSS WEIGHT, DIMENSIONS, AND CUBE OF
GUIDED MISSILE LAUNCHING ASSEMBLIES**

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

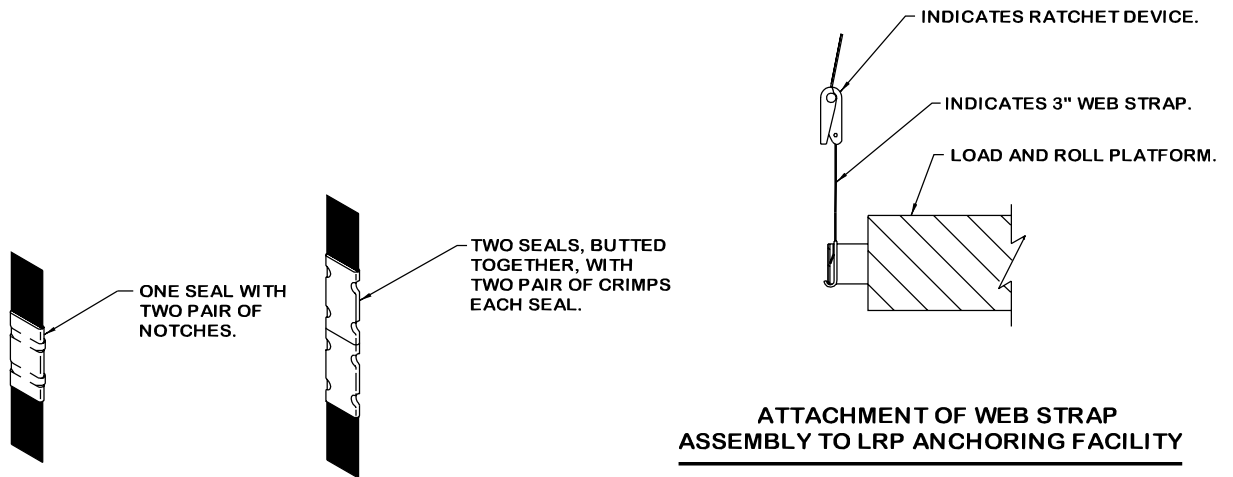


ISOMETRIC VIEW

ALTHOUGH THE ABOVE VIEW DEPICTS ONLY TWO ASSEMBLIES SECURED TO A LOAD AND ROLL PALLET, THE SAME PROCEDURES ARE APPLICABLE FOR A FOUR ASSEMBLY LOAD.



LOADING OF LRP AND M/LP ASSEMBLIES INTO ISO CONTAINER



ATTACHMENT OF WEB STRAP ASSEMBLY TO LRP ANCHORING FACILITY

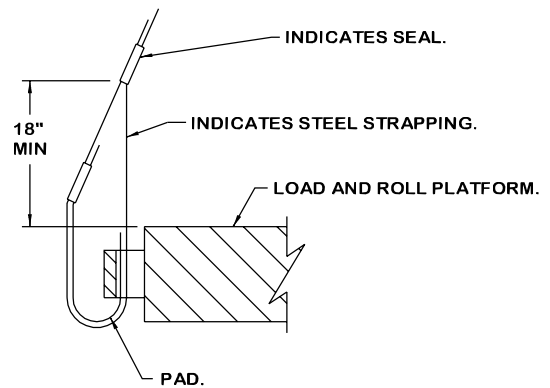
STRAP JOINT A

METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.

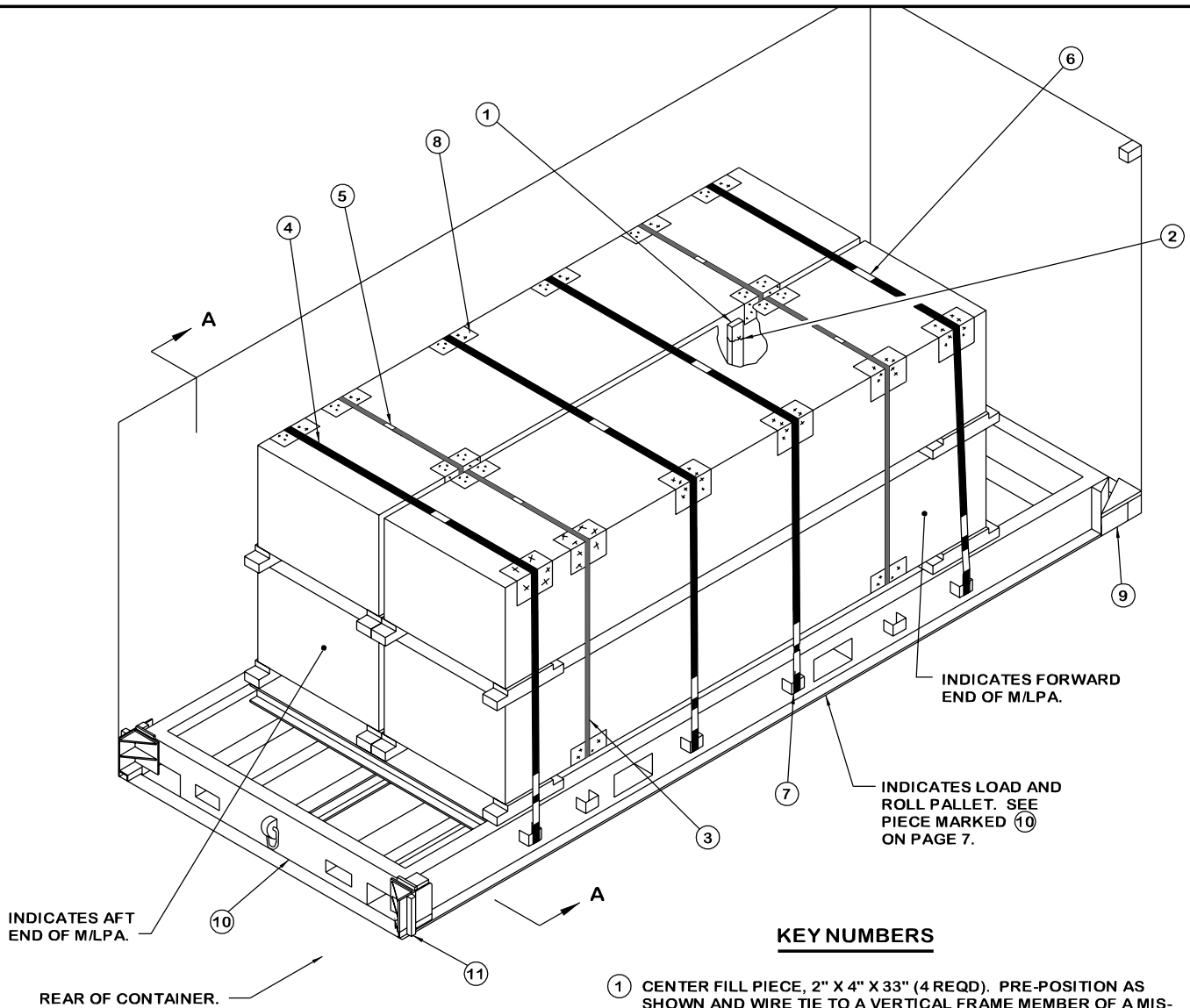
STRAP JOINT B

METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.

END-OVER-END LAP JOINT DETAILS



ATTACHMENT OF STEEL STRAPPING TO LRP ANCHORING FACILITY



ISOMETRIC VIEW

INDICATES AFT END OF M/LPA.

INDICATES FORWARD END OF M/LPA.

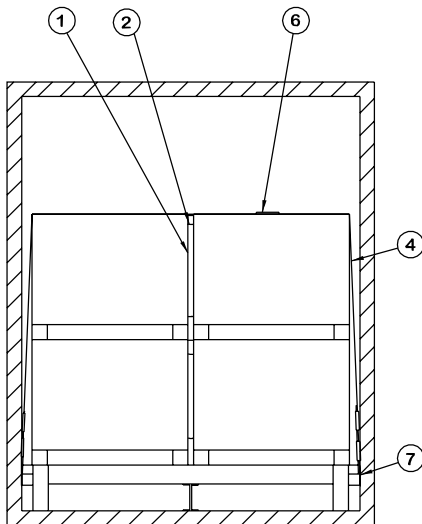
INDICATES LOAD AND ROLL PALLET. SEE PIECE MARKED ⑩ ON PAGE 7.

INDICATES AFT END OF M/LPA.

REAR OF CONTAINER.

KEY NUMBERS

- ① CENTER FILL PIECE, 2" X 4" X 33" (4 REQD). PRE-POSITION AS SHOWN AND WIRE TIE TO A VERTICAL FRAME MEMBER OF A MISSILE/LAUNCH POD ASSEMBLY.
- ② TIE WIRE, .0800" DIA 24" LONG (8 REQD). INSTALL WIRE TO FORM A LOOP AROUND A VERTICAL FRAME MEMBER OF AN ASSEMBLY AND THE CENTER FILL PIECE, PIECE MARKED ①. BRING ENDS TOGETHER AND TWIST TAUT.
- ③ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT (REF: 20'-0") (4 REQD). INSTALL SO AS TO ENCIRCLE THE ASSEMBLIES IN ONE STACK AS SHOWN.
- ④ HOLD-DOWN STRAP, 2" X .050" OR .044" X 28'-0" LONG STEEL STRAPPING (4 REQD). INSTALL EACH STRAP FROM TWO 14'-0" LONG PIECES.
- ⑤ SEAL FOR 1-1/4" STEEL STRAPPING (4 REQD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.
- ⑥ SEAL FOR 2" STEEL STRAPPING (20 REQD, 5 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES, EXCEPT FOR THOSE USED TO SECURE THE PADS, WHICH ONLY REQUIRE ONE PAIR OF NOTCHES.
- ⑦ PAD, STRAPPING, 2" X .050" OR .044" X 24" (8 REQD). PRE-POSITION THE PAD BETWEEN THE STRAPPING, PIECE MARKED ④, AND THE LOAD AND ROLL PALLET TIEDOWN PROVISION AND SECURE WITH ONE SEAL AND WITH ONE PAIR OF NOTCHES. SEE THE "ATTACHMENT OF STEEL STRAPPING TO LRP ANCHORING FACILITY" DETAIL ON PAGE 5.
- ⑧ FIBERBOARD ANTI-CHAFING MATERIAL (AS REQD). FOLD FIBERBOARD TO FORM A DOUBLE THICKNESS AND PLACE UNDER STRAPPING AT ALL POINTS OF CONTACT WITH THE ASSEMBLIES.



SECTION A-A

(CONTINUED ON PAGE 7)

(KEY NUMBERS CONTINUED FROM PAGE 6)

- ⑨ FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 12. PRE-POSITION PRIOR TO LOADING THE LOAD AND ROLL PALLET IN THE CONTAINER.
- ⑩ LOAD AND ROLL PALLET (1 REQD). SEE GENERAL NOTE "Q" ON PAGE 2.
- ⑪ CORNER RETAINER PIECE (2 REQD). SEE THE DETAIL ON PAGE 12.

SPECIAL NOTES:

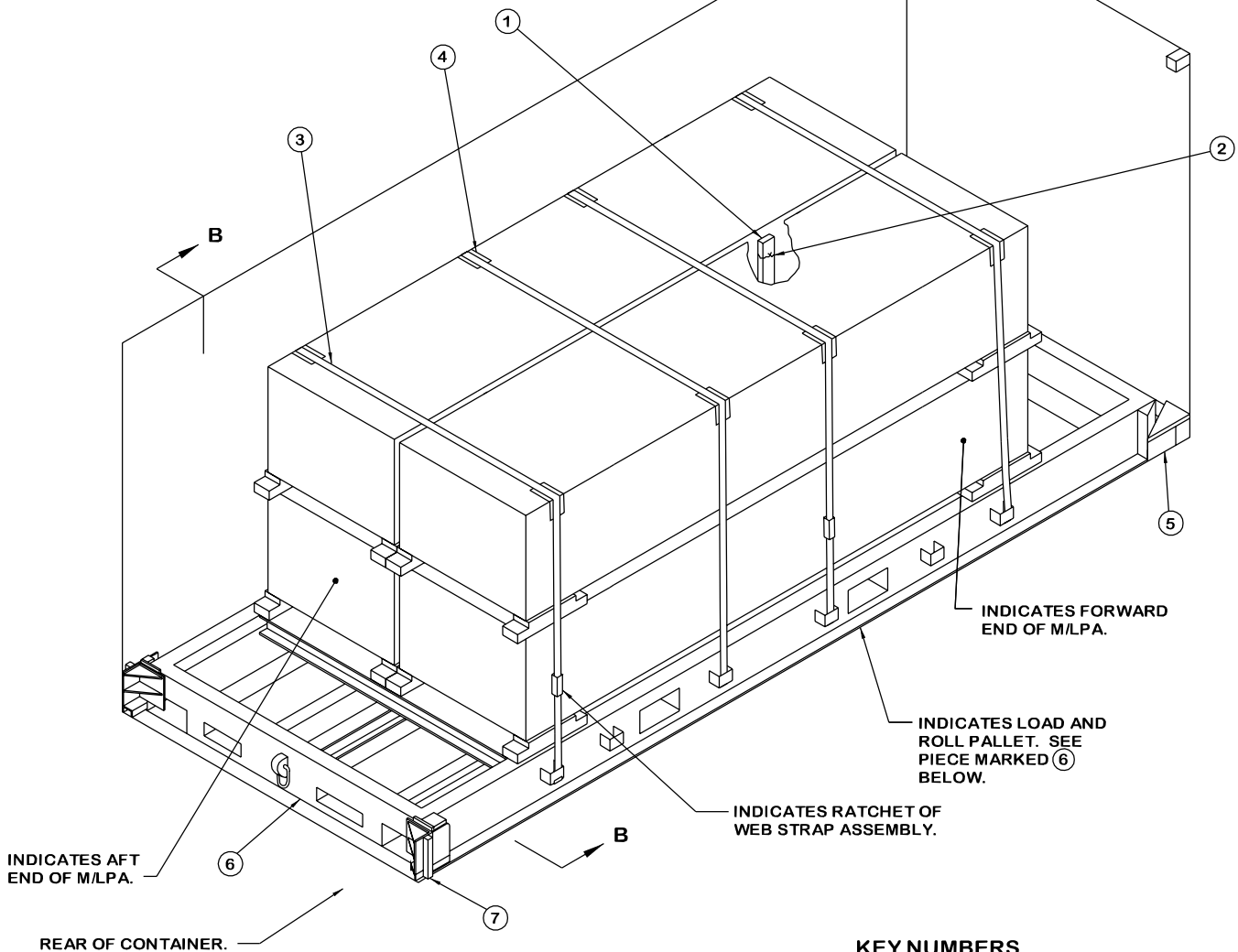
- 1. A 4-UNIT LOAD OF MISSILE/LAUNCH POD ASSEMBLIES (M/LPA) IS DEPICTED ON A LOAD AND ROLL PALLET IN AN END OPENING ISO INTERMODAL FREIGHT CONTAINER.
- 2. PRIOR TO LOADING THE ASSEMBLIES INTO THE ISO INTERMODAL FREIGHT CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGES 3 THROUGH 5.
- 3. ALL STRAPS MUST BE INSTALLED NEAR THE STRONG POINTS OR VERTICALLY REINFORCED AREAS OF THE ASSEMBLIES.
- 4. THE LOAD AS SHOWN IS BASED ON "BLOCK II" M/LPA'S. WHEN SHIPPING "BLOCK IA" M/LPA'S THE WEIGHT OF THE LADING WILL CHANGE. SEE THE WEIGHT CHART ON PAGE 4.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" x 4"	11	8
4" x 4"	11	15
NAILS	NO. REQD	POUNDS
6d (2")	14	NIL
10d (3")	4	NIL
STEEL STRAPPING, 2" - - -	128' REQD - - - -	43 LBS
SEAL FOR 2" STRAPPING - - -	20 REQD - - - -	5 LBS
STEEL STRAPPING, 1-1/4" -	80' REQD - - - -	11 LBS
SEAL FOR 1-1/4" STRAPPING -	4 REQD - - - -	1/4 LB
WIRE, .0800" - - - - -	16' REQD - - - -	NIL
PLYWOOD, AS REQD - -	2 SQ FT REQD - - - -	1 LB
ANTI-CHAFING MATERIAL - - -	AS REQD - - - -	NIL
LOAD AND ROLL PALLET - - -	1 REQD - - -	1,970 LBS

* SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA - - - - -	4 - - - - -	20,444 LBS *
DUNNAGE - - - - -	- - - - -	2,077 LBS
CONTAINER - - - - -	- - - - -	4,700 LBS
TOTAL WEIGHT - - - - -		27,221 LBS (APPROX)



INDICATES AFT
END OF M/LPA.

REAR OF CONTAINER.

INDICATES FORWARD
END OF M/LPA.

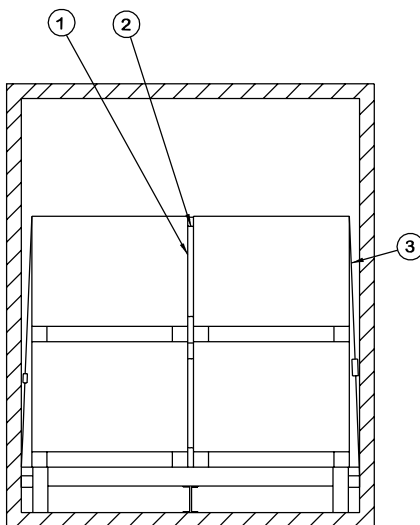
INDICATES LOAD AND
ROLL PALLET. SEE
PIECE MARKED ⑥
BELOW.

INDICATES RATCHET OF
WEB STRAP ASSEMBLY.

ISOMETRIC VIEW

KEY NUMBERS

- ① CENTER FILL PIECE, 2" X 4" X 33" (4 REQD). PRE-POSITION AS SHOWN AND WIRE TIE TO A VERTICAL FRAME MEMBER OF A MISSILE/LAUNCH POD ASSEMBLY.
- ② TIE WIRE, .0800" DIA 24" LONG (8 REQD). INSTALL WIRE TO FORM A LOOP AROUND A VERTICAL FRAME MEMBER OF AN ASSEMBLY AND THE CENTER FILL PIECE, PIECE MARKED ①. BRING ENDS TOGETHER AND TWIST TAUT.
- ③ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL TO EXTEND FROM AN ANCHORING FACILITY ON ONE SIDE OF THE LOAD AND ROLL PALLET, OVER THE ASSEMBLIES, TO AN ANCHORING FACILITY ON THE OPPOSITE SIDE OF THE PALLET. SEE GENERAL NOTE "M" ON PAGE 2. SEE THE "ATTACHMENT OF WEB STRAP ASSEMBLY TO LRP ANCHORING FACILITY" DETAIL ON PAGE 5.
- ④ CORNER PROTECTOR (2 PER STRAP PROVIDED). POSITION ON OUTER EDGE OF THE ASSEMBLY FRAME. NOTE: IF THE CORNER PROTECTOR IS MISSING THEN A FOLDED PIECE OF FIBERBOARD SHALL BE USED TO PROTECT THE WEBBING.
- ⑤ FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 12. PRE-POSITION PRIOR TO LOADING THE LOAD AND ROLL PALLET IN THE CONTAINER.
- ⑥ LOAD AND ROLL PALLET (1 REQD). SEE GENERAL NOTE "Q" ON PAGE 2.
- ⑦ CORNER RETAINER PIECE (2 REQD). SEE THE DETAIL ON PAGE 12.



SECTION B-B

SPECIAL NOTES:

1. A 4-UNIT LOAD OF MISSILE/LAUNCH POD ASSEMBLIES IS DEPICTED SECURED WITH WEB STRAPPING TO A LOAD AND ROLL PALLET AND LOADED INTO A END OPENING ISO INTERMODAL FREIGHT CONTAINER.
2. PRIOR TO LOADING THE ASSEMBLIES INTO THE INTERMODAL FREIGHT CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGE 3 THROUGH 5.
3. ALL STRAPS MUST BE INSTALLED NEAR THE STRONG POINTS OR VERTICALLY REINFORCED AREAS OF THE ASSEMBLIES.
4. THE LOAD AS SHOWN IS BASED ON 'BLOCK II' M/LPA'S. WHEN SHIPPING "BLOCK IA" M/LPA'S THE WEIGHT OF THE LADING WILL CHANGE. SEE THE WEIGHT CHART ON PAGE 4.

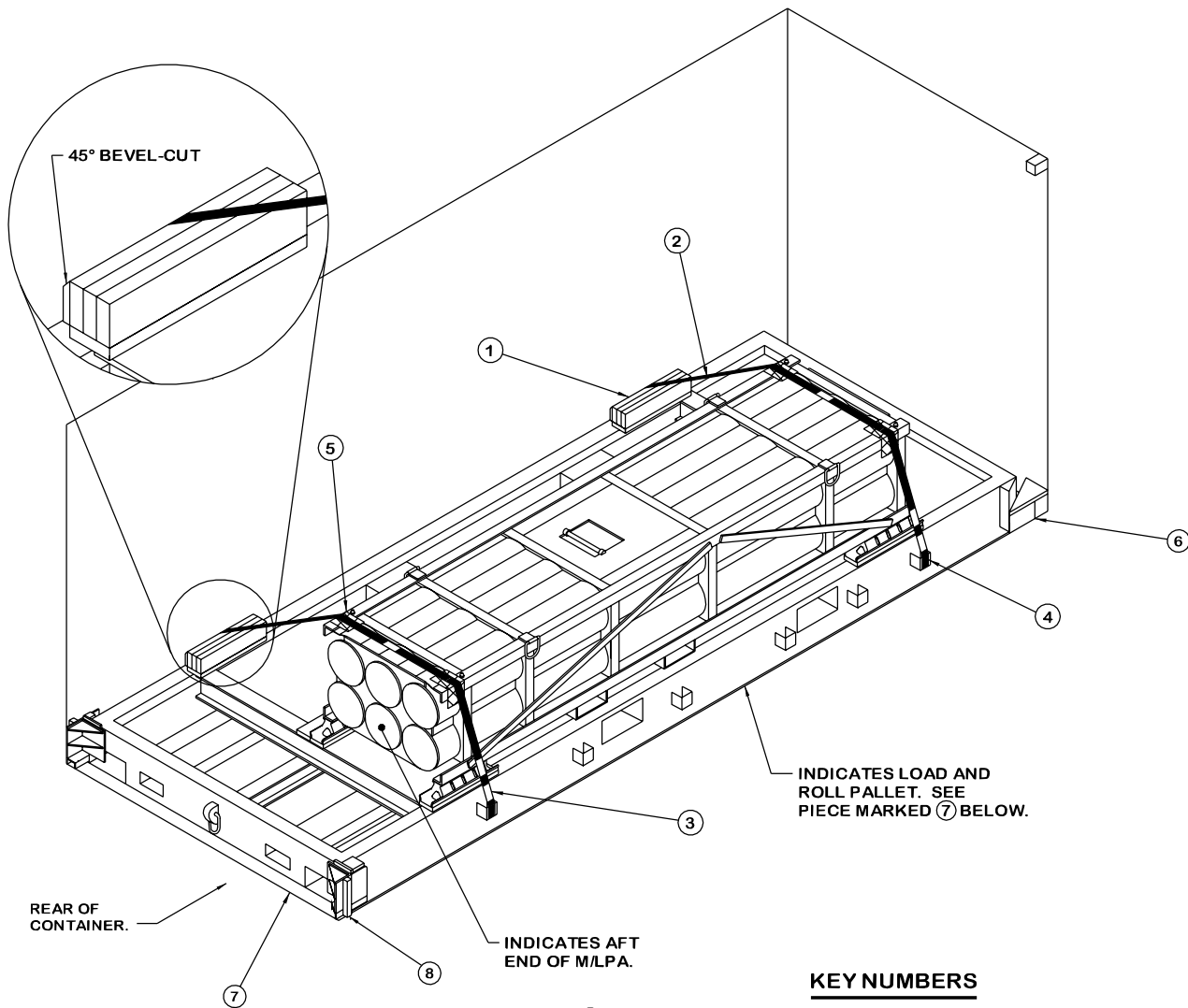
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	11	8
4" X 4"	11	15
NAILS	NO. REQD	POUNDS
6d (2")	14	NIL
10d (3")	4	NIL
WEB STRAP ASSEMBLY (3") - - 4 REQD - - - - 44 LBS		
WIRE, .0800" - - - - 16' REQD - - - - NIL		
PLYWOOD, AS REQD - - 2 SQ FT REQD - - - - 1 LB		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - NIL		
LOAD AND ROLL PALLET - - - 1 REQD - - - 1,970 LBS		

*SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	4	20,444 LBS *
DUNNAGE		2,060 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		27,204 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① ANTI-CHAFING ASSEMBLY, 2" X 6" BY CUT-TO-FIT (REF: 22-1/2") (TRIPLED) AND 1" X 4" BY CUT-TO-FIT (REF: 22-1/2") (2 REQD). NAIL THE FIRST 2" X 6" TO THE SECOND W/3-10d NAILS. NAIL THE THIRD PIECE TO THE SECOND IN A SIMILAR MANNER. BEVEL-CUT THE 1" X 4" WITH 45° BEVEL AS SHOWN, ALIGN WITH THE TOP EDGE OF THE TRIPLED 2" X 6", AND NAIL W/3-6d NAILS.
- ② HOLD-DOWN STRAP, 2" X .050" OR .044" X 13'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM TWO 6'-5" LONG PIECES.
- ③ SEAL FOR 2" STEEL STRAPPING (10 REQD, 5 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES, EXCEPT FOR THOSE USED TO SECURE THE PADS, WHICH ONLY REQUIRE ONE PAIR OF NOTCHES.
- ④ PAD, STRAPPING, 2" X .050" OR .044" X 24" (4 REQD). PRE-POSITION THE PAD BETWEEN THE STRAPPING, PIECE MARKED ④, AND THE LOAD AND ROLL PALLET TIEDOWN PROVISION AND SECURE WITH ONE SEAL AND WITH ONE PAIR OF NOTCHES. SEE THE "ATTACHMENT OF STEEL STRAPPING TO LRP ANCHORING FACILITY" DETAIL ON PAGE 5.
- ⑤ FIBERBOARD ANTI-CHAFING MATERIAL (AS REQD). FOLD FIBERBOARD TO FORM A DOUBLE THICKNESS AND PLACE UNDER STRAPPING AT ALL POINTS OF CONTACT WITH THE ASSEMBLIES.
- ⑥ FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 10. PRE-POSITION PRIOR TO LOADING THE LOAD AND ROLL PALLET IN THE CONTAINER.
- ⑦ LOAD AND ROLL PALLET (1 REQD). SEE THE "SPECIAL HANDLING GUIDANCE" ON PAGES 4 AND 5. SEE GENERAL NOTE "P" ON PAGE 2.
- ⑧ CORNER RETAINER PIECE (2 REQD). SEE THE DETAIL ON PAGE 12.

SPECIAL NOTES:

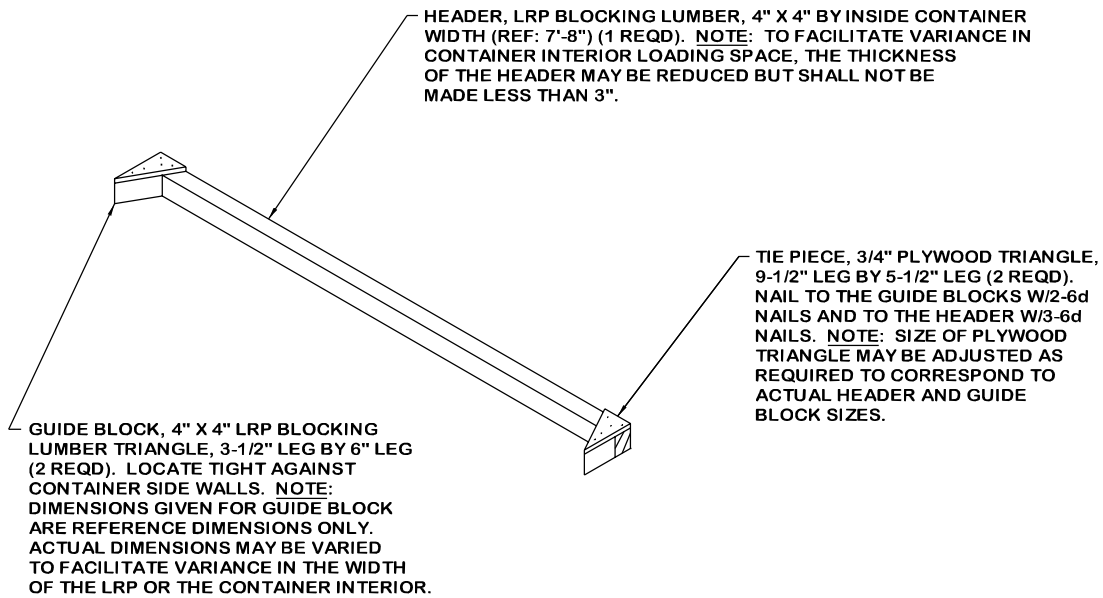
1. A 1-UNIT LOAD OF MISSILE/LAUNCH POD ASSEMBLIES (M/LPA) IS DEPICTED ON A LOAD AND ROLL PALLET IN AN END OPENING ISO INTERMODAL FREIGHT CONTAINER.
2. PRIOR TO LOADING THE ASSEMBLIES INTO THE INTERMODAL FREIGHT CONTAINER, SEE THE SPECIAL HANDLING GUIDANCE ON PAGES 3 THROUGH 5.
3. ALL STRAPS MUST BE INSTALLED NEAR THE STRONG POINTS OR VERTICALLY REINFORCED AREAS OF THE ASSEMBLIES.
4. THE LOAD AS SHOWN IS BASED ON "BLOCK II" M/LPA'S. WHEN SHIPPING "BLOCK IA" M/LPA'S THE WEIGHT OF THE LADING WILL CHANGE. SEE THE WEIGHT CHART ON PAGE 4.
5. INSTALL THE ANTI-CHAFING ASSEMBLIES IN THE SKID RESTRAINT PANS AS DEPICTED ON PAGE 10.
6. THREE INCH WEB STRAPPING MAY BE USED IN LIEU OF 2" STEEL STRAPPING.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	4	2
2" X 6"	12	12
4" X 4"	11	15
NAILS	NO. REQD	POUNDS
6d (2")	20	NIL
10d (3")	16	1/4
STEEL STRAPPING, 2" - - -	26' REQD - - - - -	9 LBS
SEAL FOR 2" STRAPPING - -	10 REQD - - - - -	2 LBS
PLYWOOD, AS REQD - -	2 SQ FT REQD - - - - -	1 LB
ANTI-CHAFING MATERIAL - - -	AS REQD - - - - -	NIL
LOAD AND ROLL PALLET - - -	1 REQD - - - - -	1,970 LBS

* SEE SPECIAL NOTE 4 ABOVE.

LOAD AS SHOWN

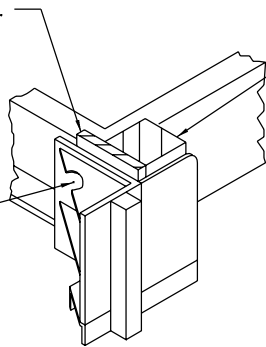
ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA - - - - -	1 - - - - -	5,111 LBS *
DUNNAGE - - - - -	- - - - -	2,035 LBS
CONTAINER - - - - -	- - - - -	4,700 LBS
TOTAL WEIGHT - - - - -		11,846 LBS (APPROX)



FORWARD BLOCKING ASSEMBLY

SHIM, 6" X 11" PLYWOOD BY THICKNESS TO SUIT (AS REQD). SELECT THICKNESS OF PLYWOOD TO FILL VOID BETWEEN FACE OF RETAINER AND END OF LOADING PLATFORM. NAIL PLYWOOD TO FILLER BLOCK W/2-6d NAILS BEFORE INSERTING INTO RETAINER.

RETAINER NAIL, 10d (4 REQD). NAIL THROUGH EACH RETAINER PIECE INTO SHIM AND FILLER BLOCK WITH A MINIMUM OF TWO 10d NAILS.



FILLER BLOCK, 11" LONG PIECE OF LRP BLOCKING LUMBER BY THICKNESS AND DEPTH TO SUIT (2 REQD). SELECT SIZE OF BLOCK TO FILL VOID BETWEEN RETAINER AND SIDE OF LOADING PLATFORM.

CORNER RETAINER PIECE

NOTE: POSITION SQUARE BAR OF RETAINER PIECE INTO RECESS OF SIDEWALL LOCATED JUST AHEAD OF REAR CORNER POST.