GMLRS/MLRS/RRPR

LOADING AND BRACING (CL & LCL) IN HYUNDAI FREIGHT CAR⊕ OF MULTI-LAUNCH ROCKET SYSTEM (MLRS) OR THE GUIDED MULTI-LAUNCH ROCKET SYSTEM (GMLRS)

INDEX

⊕ THIS OUTLOADING DRAWING APPLIES EXCLUSIVELY TO HYUNDAI FREIGHT CAR USED BY KOREA RAILROAD CORPORATION (KORAIL) IN THE REPUBLIC OF KOREA (ROK). REFER TO HYUNDAI ASSEMBLY DRAWING FV00033-000 REV A AND RELATED SUBASSEMBLY DRAWINGS FOR DETAILS OF THE FREIGHT CAR.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY AVIATION ANDMISSILE COMMAND

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APPROVED BY ORDER OF COMMANDING GENERAL, U.S ARMY MATERIEL COMMAND

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U.S. ARMY DEFENSE AMMUNITION CENTER

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DO NOT SCALE

JULY 2017

ENGINEER OR TECHNICIAN	BASIC	MADELINE BANKS
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TEST REPORT	NA	
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CLASS	DIVISION	DRAWING	FILE
19	48	8246	GM5RS56

PROJECT GM 937-17

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 LOADS OF MULTI-LAUNCH ROCKET SYSTEM (MLRS) OR THE GUIDED MULTI-LAUNCH ROCKET SYSTEM (GMLRS). SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE ROCKET POD CONTAINER WITH AMMUNITION ITEMS. SEE PAGE 4 FOR DETAILS OF THE CONTAINER.

C. THE SELECTION OF FREIGHT CARS FOR THE TRANSPORT OF CONTAINERS IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY CARS WHICH HAVE "SOUND" FLOORS AND ARE IN OTHERWISE PROPER CONDITION, IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENTS, WILL BE SELECTED.

D. THE OUTLOADING PROCEDURES DEPICTED IN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS ONLY IN HYUNDAI FREIGHT CARS WHICH ARE 48'-7" (14808 MM) LONG BY 8'-9" (2667 MM) WIDE BY 10'-2" (3099 MM) HIGH (INSIDE DIMENSIONS). THE FREIGHT CAR SELECTED MUST BE EQUIPPED WITH 12 TIEDOWN ANCHORS LOCATED IN THE FLOOR ON EACH SIDE OF THE CAR, EACH CAPABLE OF RETAINING A MINIMUM OF 3,000 LBS (1362 KG). THE CARS DEPICTED HAVE A NOMINAL CAPACITY OF 109 METRIC TONS (210,304 LBS).

E. WHEN SELECTING FREIGHT CARS, EVERY EFFORT SHOULD BE MADE TO OBTAIN CARS THAT DO NOT HAVE BOWED ENDWALLS. CARS HAVING BOWED ENDS CAN BE USED, HOWEVER, IF AN ENDWALL IS BOWED OUTWARD MORE THAN 2" (51MM) EITHER FROM SIDE TO SIDE OR FROM FLOOR TO ROOF, AN END-OF-CAR BULKHEAD MUST BE INSTALLED TO PROVIDE A "SQUARED OFF" SURFACE FOR THE LOAD AT THE END OF THE CAR.

F. THE LOADING PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR LOADING MLRS OR GMLRS ROCKET POD CONTAINERS WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 4, PROVIDED THE ROCKET POD CONTAINER DOES NOT VARY FROM WHAT IS DELINEATED HEREIN. THE EXPLOSIVE CLASSIFICATION OF OTHER ITEMS MAY BE DIFFERENT THAN WHAT IS SHOWN. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN CARS WHICH ARE PARTIALLY LOADED WITH THE ROCKET POD CONTAINERS, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.

G. TO ACHIEVE A TIGHTLY BLOCKED LOAD, A STRUT WILL BE CUT APPROXIMATELY 1/4" (6MM) TO 3/8" (10MM) LONGER THAN THE MEASURED DISTANCE BETWEEN THE STRUT BEARING AREAS ON THE CENTER GATES. MEASUREMENTS FOR STRUT LENGTHS NEED TO BE ACCOMPLISHED AT SEVERAL PLACES DURING THE BLOCKING AND BRACING PROCESS. CARE MUST BE EXERCISED WHEN MEASURING FOR AND INSTALLING STRUTS. THE SPECIFIED APPROXIMATE DIMENSION FOR A STRUT LENGTH MAY BE ADJUSTED, AS NECESSARY, TO PROVIDE FOR A TIGHTLY BLOCKED LOAD WITHOUT DISTORTING, DENTING OR OTHERWISE DAMAGING THE CONTAINERS. ONE END OF THE STRUT WILL BE POSITIONED AT ITS BEARING AREA JUST ABOVE THE STRUT LEDGER ON ONE GATE. THE OTHER END, WHICH CAN BE BEVELED ON THE LOWER CORNER IF DESIRED, WILL THEN BE DRIVEN DOWNWARD UNTIL IT CONTACTS THE STRUT LEDGER ON THE OTHER GATE. EACH END OF THE STRUT WILL BE TOENAILDED TO THE ADJACENT CENTER GATE, AS SPECIFIED WITHIN THE KEY NUMBERS FOR A LOAD, IN SUCH A MANNER SO THAT AS NEARLY AS PRACTICAL EQUAL LENGTHS OF A NAIL ARE EMBEDDED IN THE STRUT AND IN THE VERTICAL PIECE OF THE CENTER GATE. SEE THE "BEVEL CUT" DETAIL AND THE "STRUT INSTALLATION" DETAIL ON PAGE 5 FOR A PICTORIAL VIEW SHOWING THE PROPER POSITIONING OF A BEVELED STRUT FOR INSTALLATION. NOTE THAT THE UPPER CORNER NEEDS TO BE BEVELED ONLY IF THE STRUTS ARE VERY SHORT. IF ONLY ONE END IS BEVEL CUT, THE BEVELED EDGE WILL BE PLACED IN THE DOWNWARD POSITION SO THAT IT WILL ALLOW THE STRUT END TO SLIDE MORE FREELY DOWN THE FACE OF THE VERTICAL PIECE ON THE ADJACENT CENTER GATE AS THE STRUT IS DRIVEN DOWN INTO ITS FINAL BLOCKING POSITION.

H. LOAD-BLOCKING STRUTS WHICH ARE 48" (1219MM) OR LONGER MUST BE STIFFENED BY THE APPLICATION OF HORIZONTAL AND VERTICAL STRUT BRACING. BRACING IS NOT REQUIRED IF THE STRUTS FOR THE LOAD BEING SHIPPED ARE SHORTER THAN 48" (1219MM). THE LENGTH OF THE LOAD-BLOCKING STRUTS SHOULD BE KEPT AS SHORT AS POSSIBLE (APPROX 18" (457MM) MINIMUM), BUT IN THE EVENT IT IS NECESSARY TO USE STRUTS WHICH ARE 8'-0" (2438MM) OR MORE IN LENGTH, IT WILL BE NECESSARY TO APPLY AN ADDITIONAL SET OF HORIZONTAL AND VERTICAL STRUT BRACING PIECES. STRUT BRACING SHOULD BE APPLIED SO AS TO PROVIDE NEARLY EQUAL SPACES BETWEEN THE BRACING PIECES AND THE CENTER GATES AND/OR BETWEEN ADJACENT STRUT BRACING PIECES. VERTICAL STRUT BRACING PIECES ARE TO BE 2" X 4" MATERIAL CUT TO A LENGTH TO EXTEND 2" ABOVE THE TOP STRUT. HORIZONTAL STRUT BRACING PIECES ARE TO BE 2" X 4" MATERIAL CUT TO A LENGTH TO EXTEND 2" BEYOND THE OUTERMOST STRUTS. BOTH VERTICAL AND HORIZONTAL STRUT BRACING PIECES WILL BE NAILED TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

(CONTINUED AT RIGHT)

(GENERAL NOTES CONTINUED)

J. WHEN LOADING GMLRS, CARE MUST BE TAKEN TO PROTECT THE RADIUS BLOCKS. DO NOT INSTALL ANY STRAPPING DIRECTLY OVER THE RADIUS BLOCKS. SHIFT THE LOAD AS NECESSARY TO AVOID CONTACT WITH THE RADIUS BLOCKS.

K. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" (38MM) THICK BY 3-1/2" (89MM) WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" (38MM) THICK BY 5-1/2" (140MM) WIDE. SEE THE "LUMBER SIZE CONVERSION" CHART ON PAGE 3.

L. THE "NAIL SIZE CONVERSION" CHART SHOWN ON PAGE 3 PROVIDES GUIDANCE IN COMPARING U.S.AND METRIC SIZE OF NAILS. **NOTICE:** A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. 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.

M. THROUGHOUT THIS PROCEDURAL DRAWING, PORTIONS OF THE BLOCKING COMPONENTS AND OF THE DEPICTED CARS, SUCH AS A CAR SIDEWALL, HAVE BEEN OMITTED FROM THE LOAD VIEW FOR CLARITY PURPOSES.

N. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE FREIGHT CAR BEING LOADED OR THE QUANTITY TO BE SHIPPED, HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE CONTAINERS. **NOTICE:** A SHIPMENT WILL BE POSITIONED IN THE FREIGHT CAR IN COMPLIANCE WITH THE WEIGHT DISTRIBUTION REQUIREMENTS.

O. **CAUTION:** WHEN POWER OR PNEUMATIC NAILERS ARE BEING USED IN THE APPLICATION OF NAILED FLOORLINE BLOCKING OR BRACING, CONTAINERS BEING LOADED INTO THE CONVEYANCE MUST BE POSITIONED TO ALLOW A CLEAR PATH OF EXIT FOR THE OPERATOR AT ALL TIMES, SHOULD AN EMERGENCY EXIT BECOME NECESSARY.

P. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES AND WEIGHTS ARE EXPRESSED IN POUND. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454 KG.

MATERIAL SPECIFICATIONS

LUMBER - - - - - - -: SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.

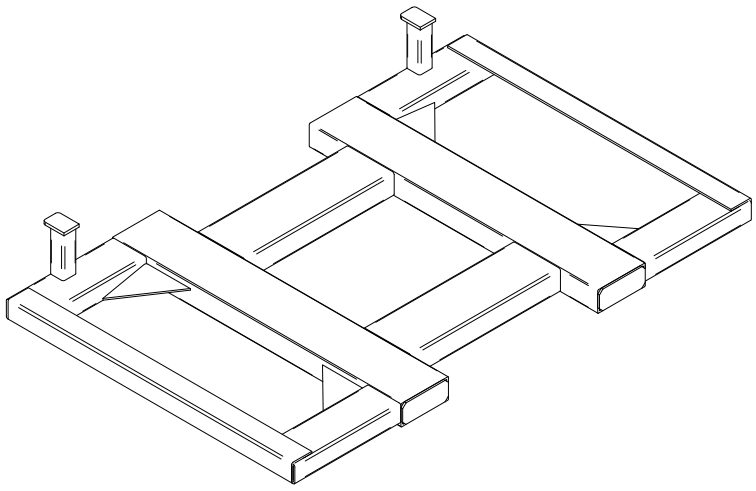
NAILS - - - - - - - -: ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMMS).

STAPLE, STRAP - - -: COMMERCIAL GRADE.

STRAP - - - - - - - -: WEBBING, UNIVERSAL TIEDOWN, NSN 5340-00-980-9277, PN 10900880; OR NSN 1670-00-725-1437, PN 0376-013; OR NSN 3990-01-204-3009, PN 1619230 OR PN 9392419.

NAIL SIZE CONVERSION				
SIZE	LENGTH		DIAMETER	
	U.S.	METRIC	U.S.	METRIC
6d	2″	51MM	.113″	3MM
8d	2-1/2″	64MM	.131″	3MM
10d	3″	76MM	.148″	4MM
12d	3-1/4″	83MM	.148″	4MM
16d	3-1/2″	89MM	.162″	4MM
20d	4″	102MM	.192″	5MM
30d	4-1/2″	114MM	.207″	5MM
40d	5″	127MM	.226″	6MM
50d	5-1/2″	140MM	.244″	6MM
60d	6″	152MM	.262″	7MM

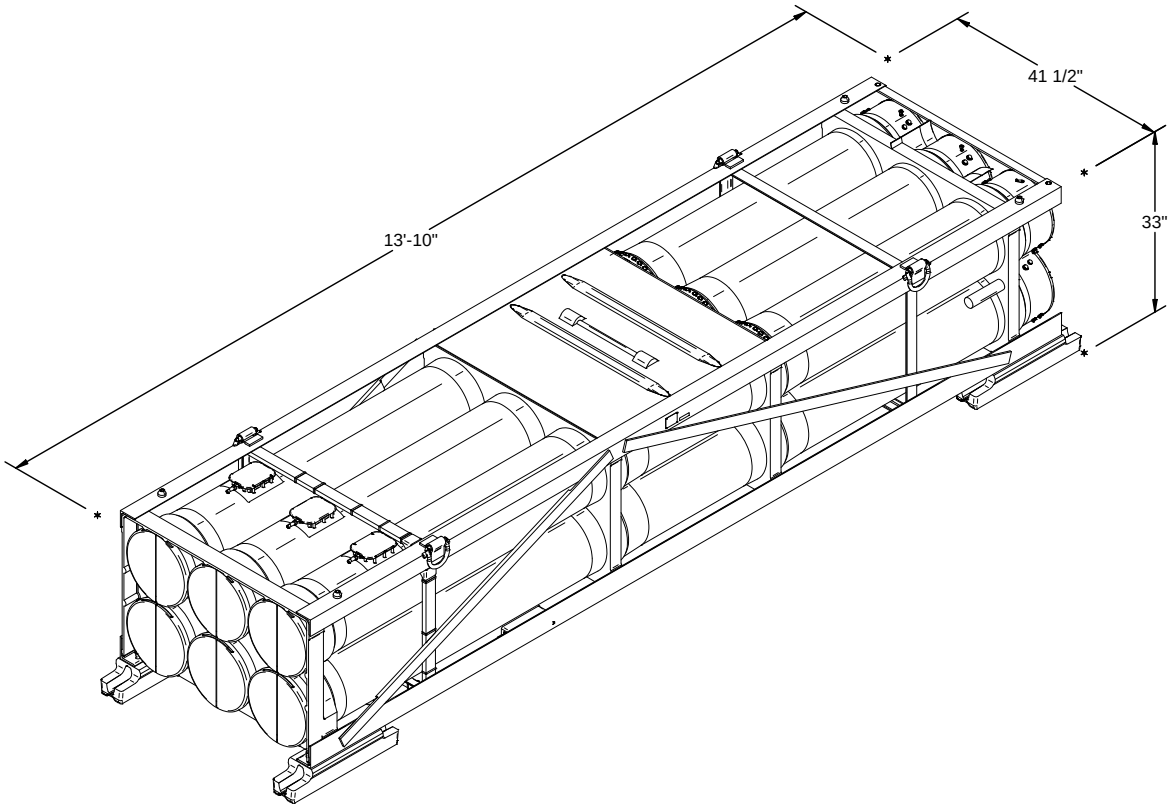
LUMBER SIZE CONVERSION	
U.S. SIZE	METRIC SIZE
1″ X 4″	19MM X 89MM
1″ X 6″	19MM X 140MM
2″ X 2″	38MM X 38MM
2″ X 3″	38MM X 64MM
2″ X 4″	38MM X 89MM
2″ X 6″	38MM X 140MM
4″ X 4″	89MM X 89MM



MLRS/GMLRS POD STABILZING FRAME

REFER TO U.S. ARMY AMAMENT MUNITIONS AND CHEMICAL COMMAND, DEFENSE AMMUNITION CENTER AND SCHOOL DRAWING NUMBER AC200000809 TO MANUFACTURE. THE DRAWING CAN BE OBTAINED FROM THE FOLLOWING ADDRESS: U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL, ATTN: ATCL-AC (ENG), McALESTER, OK 74501-9002, DSN 956-8072, COMM (918) 420-8072.

GROSS WEIGHT OF ROCKET POD CONTAINERS				
DESCRIPTION	**DRAWING NUMBER**	**NSN/DODIC**	**WEIGHT (LBS)**	**WEIGHT (KG)**
MLRS BASIC TACTICAL, M26	13027900	1340-01-122-3506-H104	5,094	2,311
ER-MLRS W/M77 GRENADES, M26A2	13213732	1340-01-450-5876-H186	4,990	2,264
REDUCED-RANGE PRACTICE ROUND (RRPR), M28A1	13031950	1340-01-370-9666-H185	5,090	2,309
LOW COST REDUCED-RANGE PRACTICE ROUND (RRPR), M28A2	13540620	1340-01-484-9001-H185	5,020	2,278
GMLRS DPICM, M30	13540000	1340-01-490-9695-HA22	5,072	2,301
GMLRS UNITARY UMR CONFIG (DUAL MODE FUZE), M31	13540700	1340-01-517-4757-HA37	5,069	2,300
GMLRS UNITARY OBJECTIVE CONFIG (TRI MODE FUZE), M31A1	13540701	1340-01-543-5696-HA51	5,069	2,300
EMPTY WEIGHT			1,048	476



ROCKET POD/CONTAINER

GROSS WEIGHT - - - - - - - - - - - - - 5,094 LBS (2,311 KG)
EMPTY WEIGHT - - - - - - - - - - - - - 1,048 LBS (476 KG)

SPECIAL HANDLING GUIDANCE

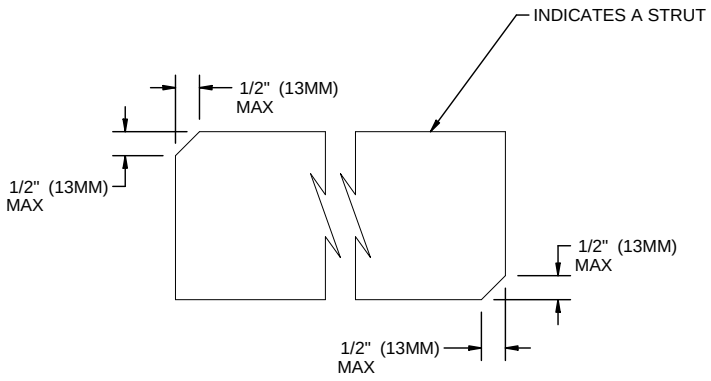
A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIAL HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED RP/Cs. APPROVED MATERIAL HANDLING EQUIPMENT (MHE) IS SPECIFIED IN OTHER DOCUMENTS SUCH AS TM 9-1425-646-10. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, STABILIZING FRAME, AND SPREADER BARS.

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

(CONTINUED AT RIGHT)

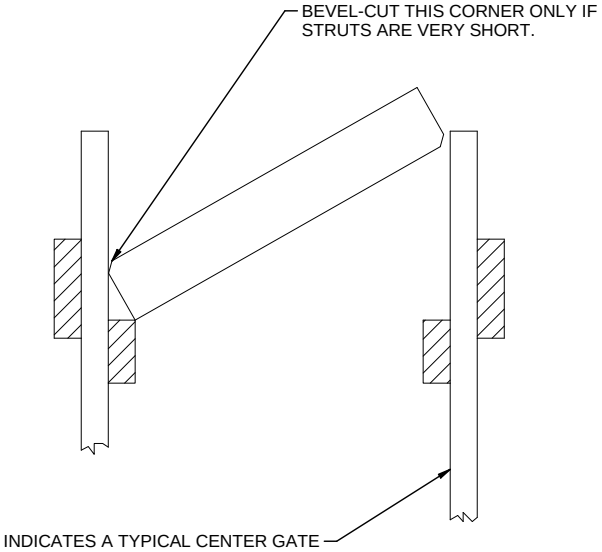
(UNITIZATION AND HANDLING GUIDANCE CONTINUED)

C. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE TINES OF THE FORKLIFT ARE INSERTED INTO THE MLRS POD STABILIZING FRAME SHOWN IN THE DETAILS ON PAGE 3. THE FORKLIFT CARRIAGE IS TO BE CENTERED ON THE CENTER OF GRAVITY MARK ON THE MLRS POD. **NOTE**: 1/4 INCH SAFETY CHAINS ARE NOT SHOWN BUT WILL BE WELDED TO THE STABILIZING FRAME AT THE MOST DIRECT LOCATION FOR ATTACHMENT TO THE FORKLIFT CARRIAGE BY SECURE HOOKING.



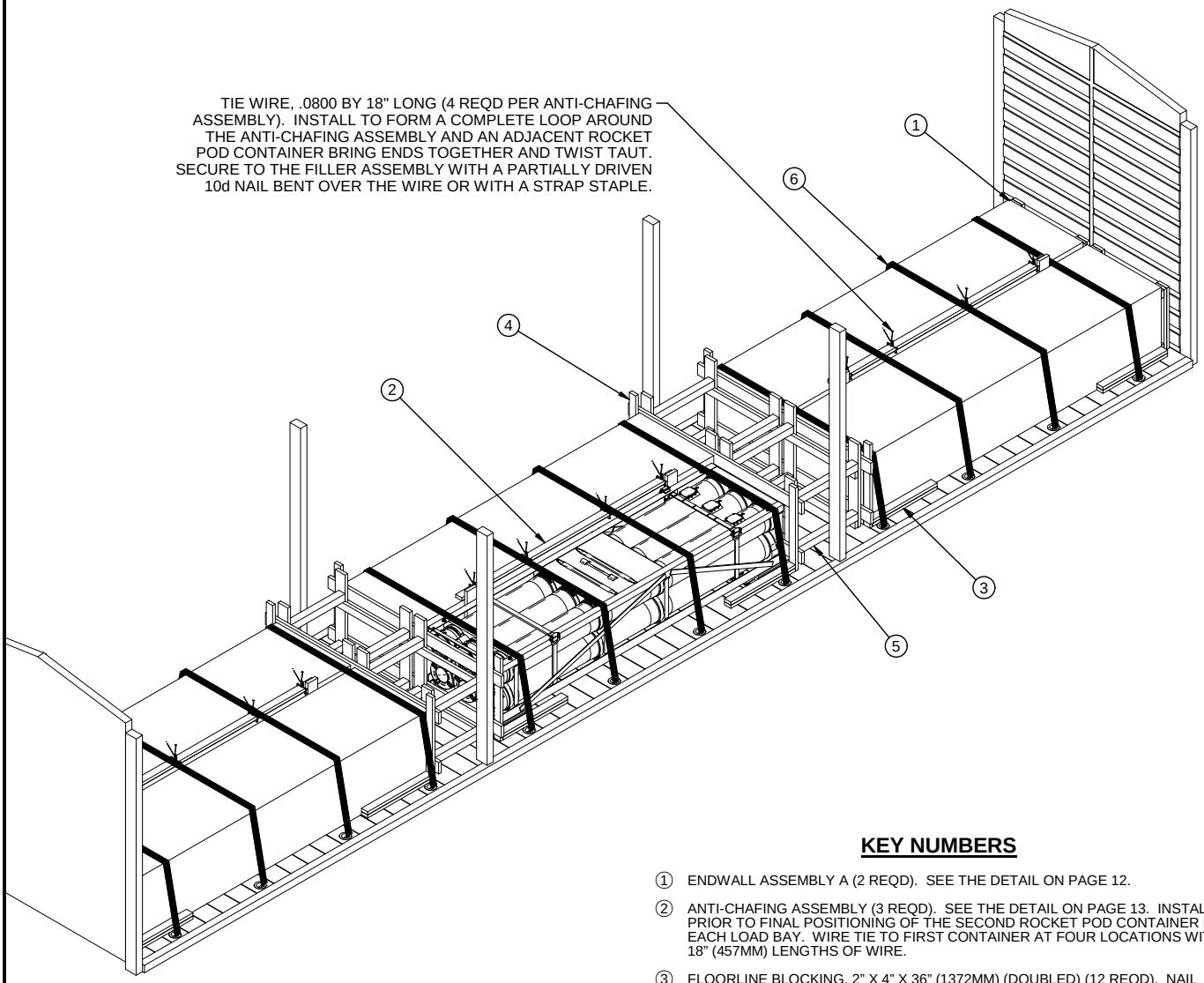
BEVEL CUT

IF DESIRED, EACH END OF A STRUT MAY BE BEVEL-CUT AS SHOWN ABOVE TO FACILITATE INSTALLING THE STRUTS WITH A "DRIVE" FIT.



STRUT INSTALLATION

SEE GENERAL NOTE "H" ON PAGE 2 FOR ADDITIONAL STRUT INSTALLATION GUIDANCE.



ISOMETRIC VIEW

KEY NUMBERS

① ENDWALL ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 12.

② ANTI-CHAFING ASSEMBLY (3 REQD). SEE THE DETAIL ON PAGE 13. INSTALL PRIOR TO FINAL POSITIONING OF THE SECOND ROCKET POD CONTAINER IN EACH LOAD BAY. WIRE TIE TO FIRST CONTAINER AT FOUR LOCATIONS WITH 18" (457MM) LENGTHS OF WIRE.

③ FLOORLINE BLOCKING, 2" X 4" X 36" (1372MM) (DOUBLED) (12 REQD). NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/8-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/8-16d NAILS.

④ CENTER GATE (4 REQD). SEE THE DETAIL ON PAGE 13.

⑤ STRUT, 4" X 4" BY CUT-TO-FIT (REF: 33" (838MM)) (16 REQD). TOENAIL TO THE CENTER GATES W/2-16d NAILS AT EACH END.

⑥ WEB STRAP ASSEMBLY (12 REQD). POSITION AS SHOWN, EXTENDING FROM STRAP ATTACHMENT ON ONE SIDE OF THE FREIGHT CAR, OVER THE ROCKET POD CONTAINER TO THE APPROPRIATE ATTACHMENT ON THE OPPOSITE SIDE.

SIX ROCKET POD CONTAINERS IN A HYUNDAI FREIGHT CAR

PROJECT GM 937-17

SPECIAL NOTES:

1. A SIX UNIT LOAD IS SHOWN IN A HYUNDAI FREIGHT CAR EQUIPPED WITH 16'-0" WIDE DOOR OPENINGS.
2. FOR SHIPMENT OF A LOAD WHICH CONTAINS FEWER ROCKET POD CONTAINERS THAN WHAT IS SHOWN, SEE THE PROCEDURES CONTAINED ON PAGES 8 AND 10.

BILL OF MATERIAL

LUMBER	LINEAR FEET	METERS	BOARD FEET
1″ X 6″	36	11	18
2″ X 4″	222	67-3/4	148
2″ X 6″	178	54-1/2	178
4″ X 4″	45	13-3/4	59

NAILS	NO. REQD	POUNDS	KG
6d (2″)	18	1/4	1/4
10d (3″)	298	4-3/4	2-1/4
16d (3-1/2″)	832	14	6-1/2

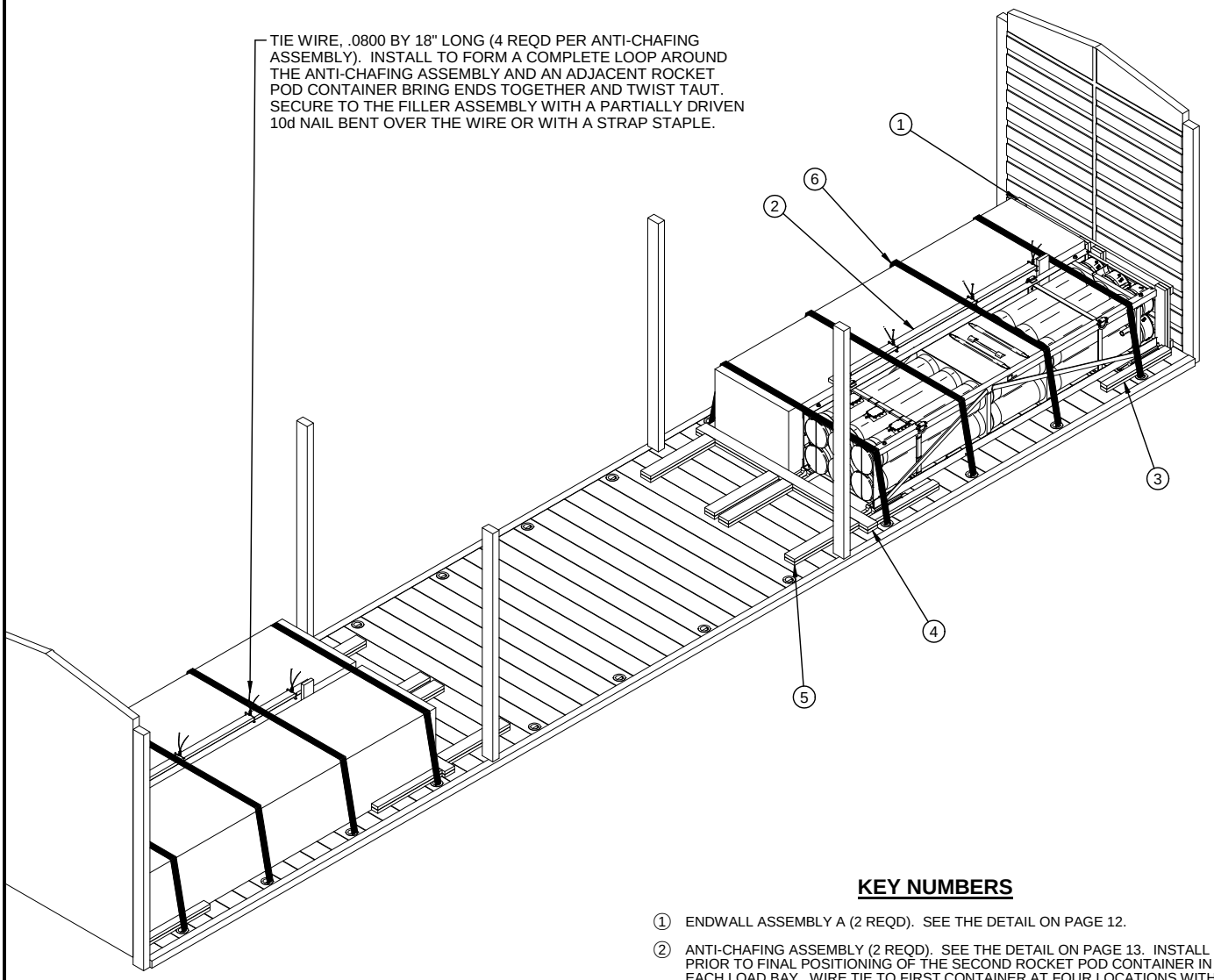
WEB STRAP ASSEMBLY - - - 12 REQD - - - - 125 LBS
WIRE, .0800″ DIAMETER - - 18′ (6M) REQD - - - NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
MLRS ROCKET POD CONTAINER	6	30,564 LBS (13,876 KG)
DUNNAGE		949 LBS (431 KG)
	TOTAL WEIGHT	31,513 LBS (14,307 KG)

SIX ROCKET POD CONTAINERS IN A HYUNDAI FREIGHT CAR

PROJECT GM 937-17



ISOMETRIC VIEW

KEY NUMBERS

① ENDWALL ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 12.

② ANTI-CHAFING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 13. INSTALL PRIOR TO FINAL POSITIONING OF THE SECOND ROCKET POD CONTAINER IN EACH LOAD BAY. WIRE TIE TO FIRST CONTAINER AT FOUR LOCATIONS WITH 18" (457MM) LENGTHS OF WIRE.

③ FLOORLINE BLOCKING, 2" X 4" X 36" (915 MM) (DOUBLED) (8 REQD). NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/7-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/7-16d NAILS.

④ HEADER, 2" X 6" X 8'-0" (2438MM) (DOUBLED) (2 REQD). LOCATE SO AS TO BE CENTERED ON THE CONTAINER SKIDS. NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/12-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/12-16d NAILS

⑤ BACKUP CLEAT, 2" X 6" X 36" (915MM) (DOUBLED) (8 REQD). POSITION AS SHOWN SO THAT A BACK-UP CLEAT IS ALIGNED WITH A CONTAINER SKID. NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/6-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/6-40d NAILS.

⑥ WEB STRAP ASSEMBLY (8 REQD). POSITION AS SHOWN, EXTENDING FROM STRAP ATTACHMENT ON ONE SIDE OF THE FREIGHT CAR, OVER THE ROCKET POD CONTAINER TO THE APPROPRIATE ATTACHMENT ON THE OPPOSITE SIDE.

FOUR ROCKET POD CONTAINERS IN A HYUNDAI FREIGHT CAR

PROJECT GM 937-17

SPECIAL NOTES:

1. A FOUR UNIT LOAD IS SHOWN IN A HYUNDAI FREIGHT CAR EQUIPPED WITH 16'-0" WIDE DOOR OPENINGS.
2. FOR SHIPMENT OF A LOAD WHICH CONTAINS GREATER OR FEWER ROCKET POD CONTAINERS THAN WHAT IS SHOWN, SEE THE PROCEDURES CONTAINED ON PAGES 6 OR 10.

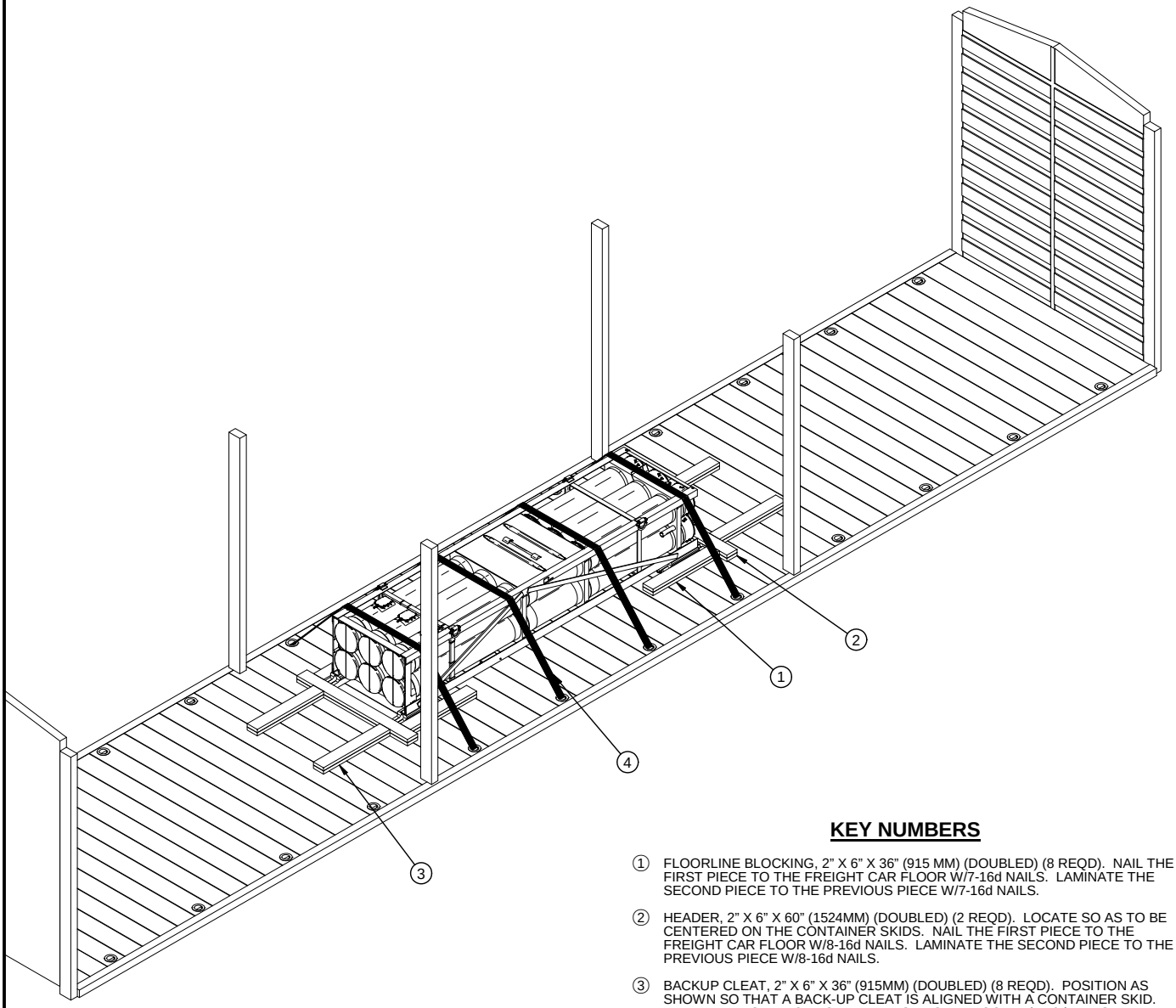
BILL OF MATERIAL

LUMBER	LINEAR FEET	METERS	BOARD FEET	
1″ X 6″	24	7-1/2	12	
2″ X 4″	97	29-3/4	65	
2″ X 6″	135	41-1/4	135	
NAILS	**NO. REQD**		**POUNDS**	**KG**
6d (2″)	12		1/4	1/4
10d (3″)	100		1-3/4	3/4
16d (3-1/2″)	208		4-1/4	2
40d (5″)	48		2-3/4	1-1/2
WEB STRAP ASSEMBLY, 3″ - - 8 REQD - - - - 83.2 LBS				
WIRE, .0800″ DIAMETER - - 12′ (4M) REQD - - NIL				

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
MLRS ROCKET POD CONTAINER	4	20,376 LBS (9,251 KG)
DUNNAGE		515 LBS (234 KG)
TOTAL WEIGHT		20,891 LBS (9,485 KG)

FOUR ROCKET POD CONTAINERS IN A HYUNDAI FREIGHT CAR



ISOMETRIC VIEW

KEY NUMBERS

① FLOORLINE BLOCKING, 2" X 6" X 36" (915 MM) (DOUBLED) (8 REQD). NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/7-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/7-16d NAILS.

② HEADER, 2" X 6" X 60" (1524MM) (DOUBLED) (2 REQD). LOCATE SO AS TO BE CENTERED ON THE CONTAINER SKIDS. NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/8-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/8-16d NAILS.

③ BACKUP CLEAT, 2" X 6" X 36" (915MM) (DOUBLED) (8 REQD). POSITION AS SHOWN SO THAT A BACK-UP CLEAT IS ALIGNED WITH A CONTAINER SKID. NAIL THE FIRST PIECE TO THE FREIGHT CAR FLOOR W/5-16d NAILS. LAMINATE THE SECOND PIECE TO THE PREVIOUS PIECE W/5-40d NAILS.

④ WEB STRAP ASSEMBLY (4 REQD). POSITION AS SHOWN, EXTENDING FROM STRAP ATTACHMENT ON ONE SIDE OF THE FREIGHT CAR, OVER THE ROCKET POD CONTAINER TO THE APPROPRIATE ATTACHMENT ON THE OPPOSITE SIDE.

ONE ROCKET POD CONTAINER IN A HYUNDAI FREIGHT CAR

PROJECT GM 937-17

SPECIAL NOTES:

1. A ONE UNIT LOAD IS SHOWN IN A HYUNDAI FREIGHT CAR EQUIPPED WITH 16'-0" WIDE DOOR OPENINGS AND A NAILABLE WOOD FLOOR.

2. FOR SHIPMENT OF A LOAD WHICH CONTAINS TWO ROCKET POD CONTAINERS, SEE THE PROCEDURES CONTAINED ON PAGE 8. REPLACE EACH ENDWALL ASSEMBLY "A" WITH AN ENDWALL ASSEMBLY "B" CENTERING THE LOAD WIDTH-WISE IN THE FREIGHT CAR AND UTILIZING THE HEADER FROM PAGE 10. SEE THE ENDWALL ASSEMBLY "B" DETAIL ON PAGE 12.

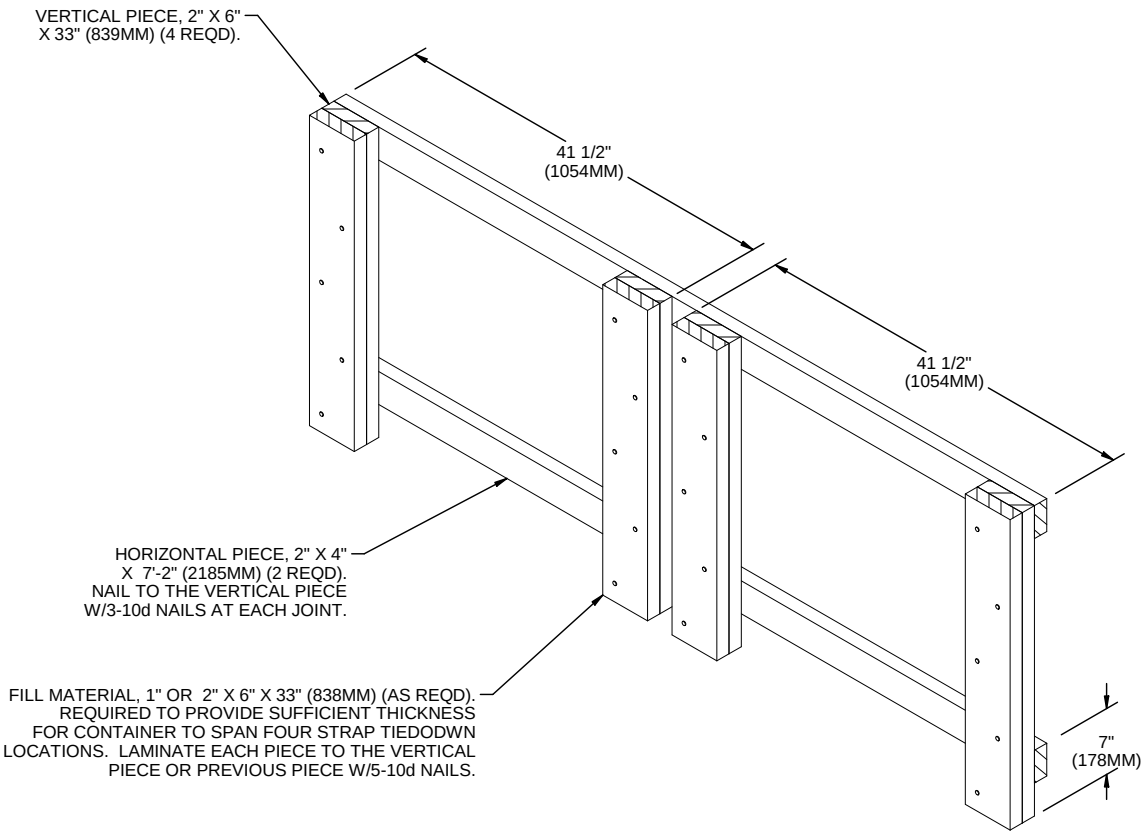
BILL OF MATERIAL

LUMBER	LINEAR FEET	METERS	BOARD FEET	
2″ X 6″	68	20-3/4	68	
NAILS	**NO. REQD**		**POUNDS**	**KG**
16d (3-1/2″)	72		1-1/2	3/4
40d (5″)	40		2-1/4	1-1/4
WEB STRAP ASSEMBLY, 3″ - - 4 REQD - - - - 41.6 LBS				

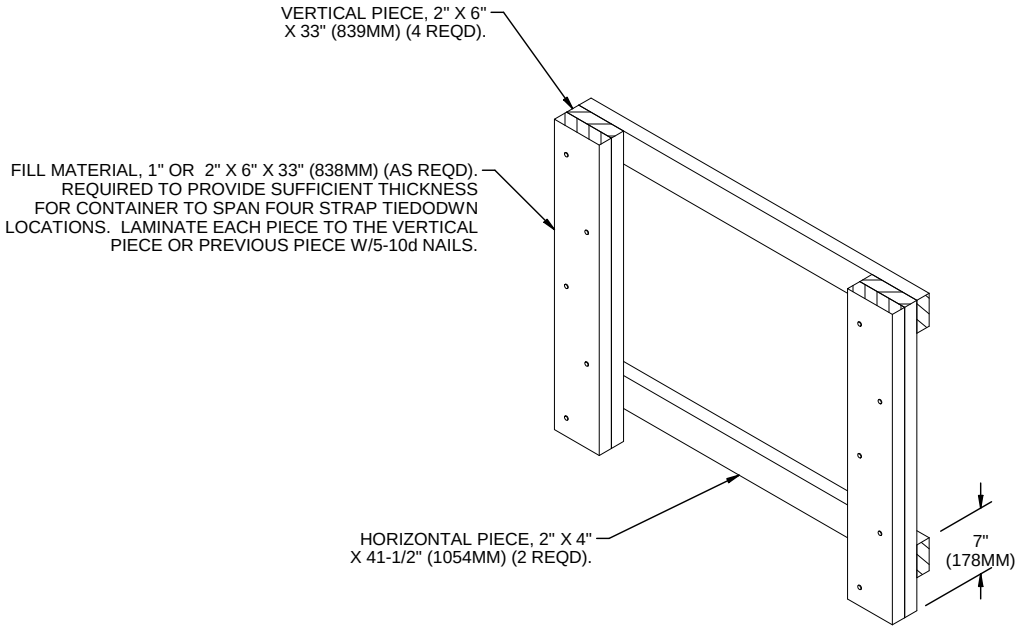
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
MLRS ROCKET POD CONTAINER	1	5,094 LBS (2,313 KG)
DUNNAGE		181 LBS (82 KG)
TOTAL WEIGHT		5,275 LBS (2,395 KG)

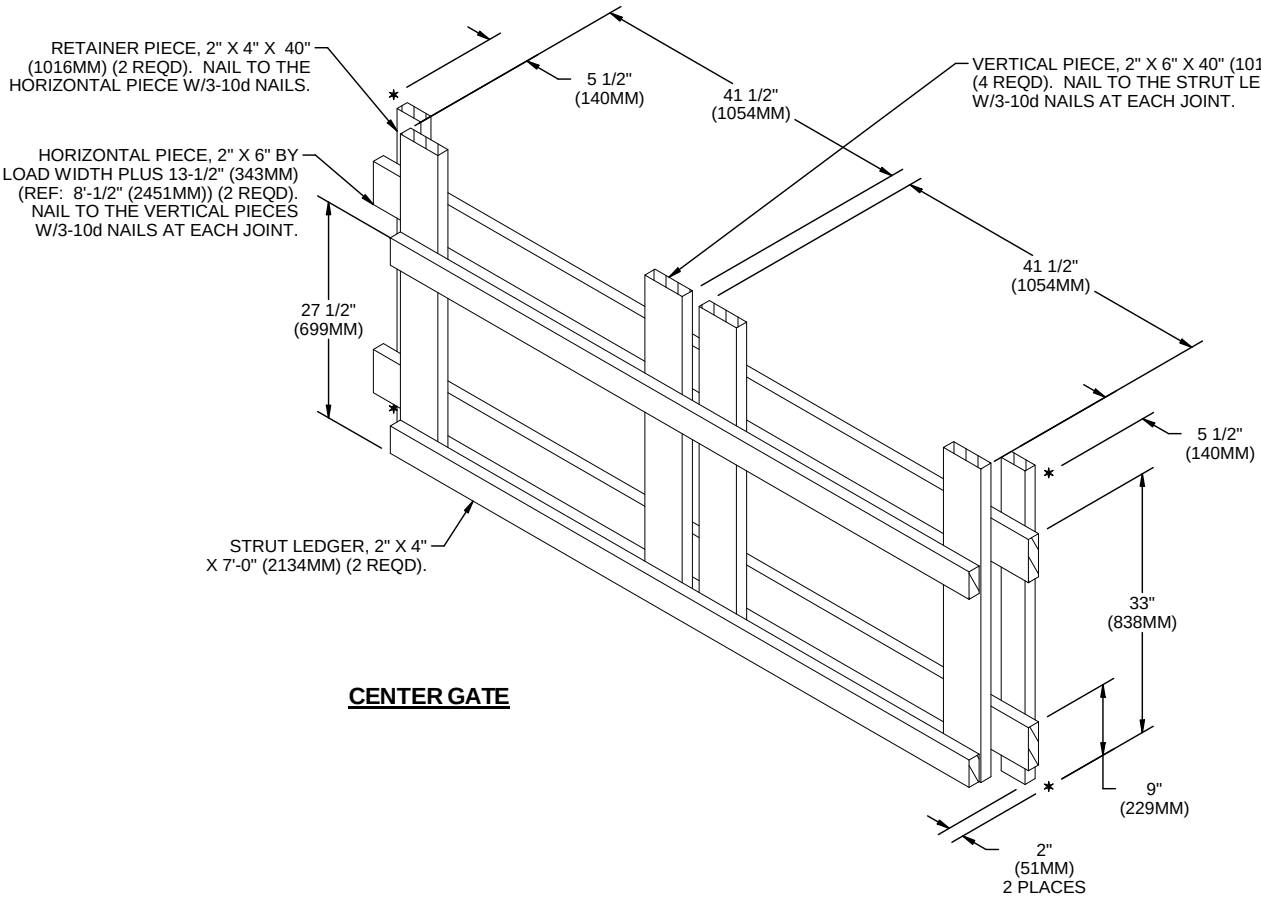
ONE ROCKET POD CONTAINER IN A HYUNDAI FREIGHT CAR



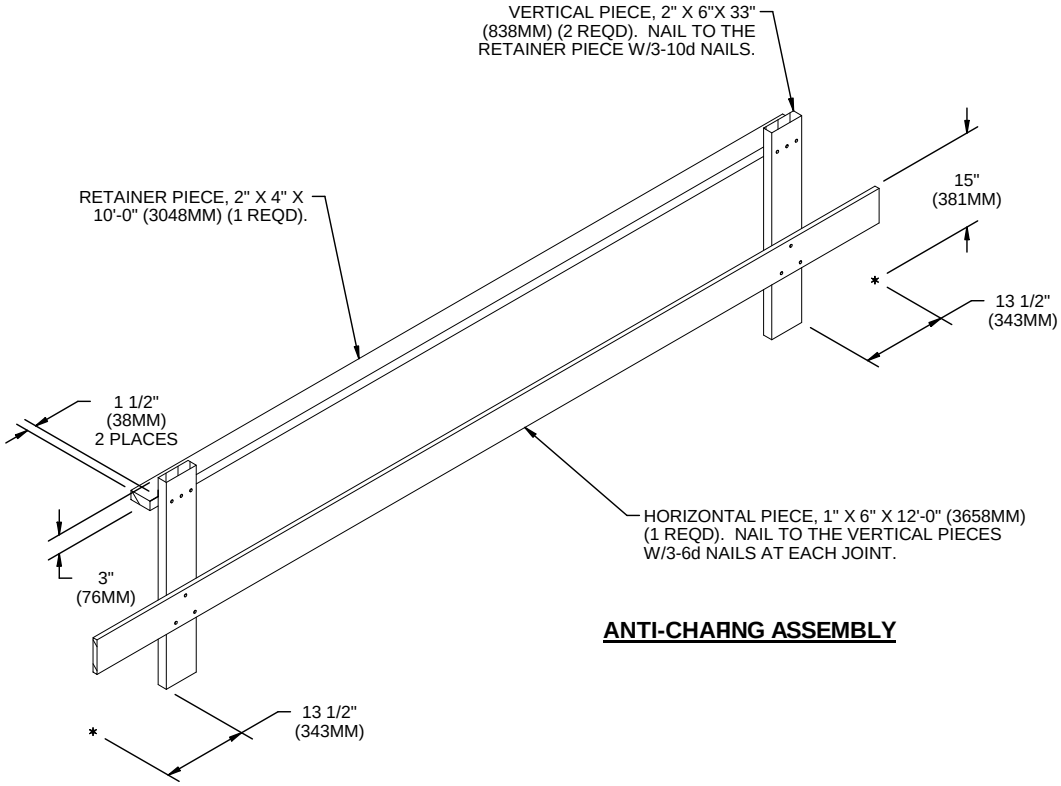
ENDWALL ASSEMBLY A



ENDWALL ASSEMBLY B



CENTER GATE



ANTI-CHARNG ASSEMBLY

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