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DATE 10/11/2000

APPENDIX 10

LOADING AND BRACING PROCEDURES FOR STRATEGIC CONFIGURED LOAD (SCL) ON M1 FLATRACK

SCL #10 - MLRS

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NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC CROP OUTLOADING PROCEDURES DRAWING 19-48-4905-CA17Q6.

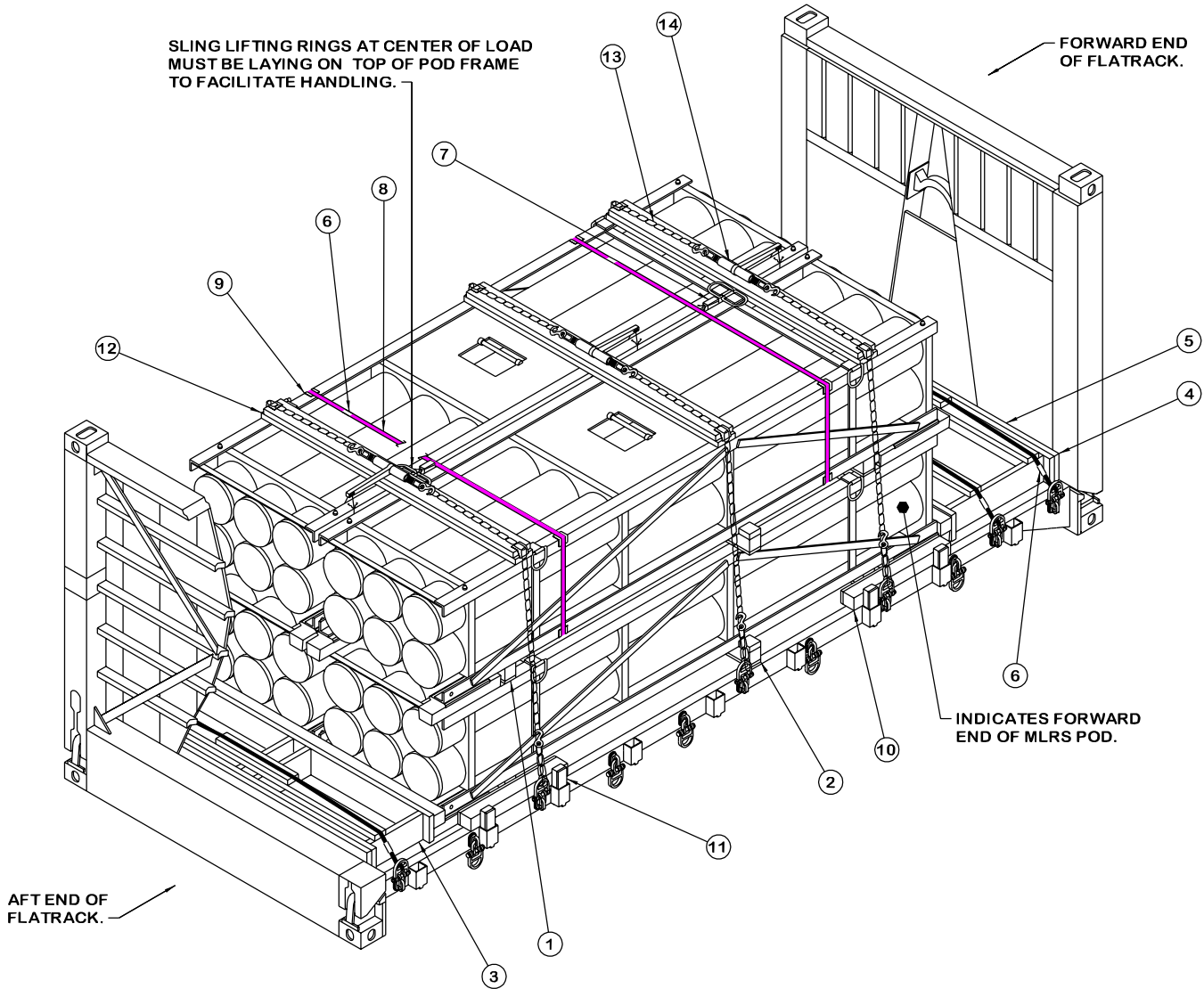
- LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY AVIATION AND MISSILE COMMAND <i>Mark T. Heinich</i>	ENGINEER	BASIC	WALTER GORDON		DO NOT SCALE			
		REV.			WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN	BASIC			SEPTEMBER 2000			
		REV.						
	DRAFTSMAN	BASIC						
		REV.						
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND <i>[Signature]</i>	TRANSPORTATION ENGINEERING DIVISION	<i>William P. French</i>						
	VALIDATION ENGINEERING DIVISION	<i>[Signature]</i>		TESTED	CLASS	DIVISION	DRAWING	FILE
	ENGINEERING DIRECTORATE	<i>[Signature]</i>			19	48	4905/ 10	CA17Q6
U.S. ARMY DEFENSE AMMUNITION CENTER								

SLING LIFTING RINGS AT CENTER OF LOAD MUST BE LAYING ON TOP OF POD FRAME TO FACILITATE HANDLING.

FORWARD END OF FLATRACK.



ISOMETRIC VIEW

KEY NUMBERS

(KEY NUMBERS CONTINUED)

- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT STEEL STRAPPING (REF: 19'-6") (2 REQD). PLACE AROUND TOP LAYER OF PODS WITH A LARGE STEEL EDGE PROTECTOR, PIECE MARKED ⑨, AT EACH EDGE. SEAL ON TOP OF LOAD.
- ⑨ EDGE PROTECTOR, 2-3/4" X .030" X 2" STEEL EDGE PROTECTOR (8 REQD). POSITION BETWEEN BUNDLING STRAP AND POD FRAME AT EACH CORNER.
- ⑩ SIDE BLOCKING ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 7.
- ⑪ STAKE ASSEMBLY (8 REQD). SEE THE DETAIL ON PAGE 7. INSERT STAKE ASSEMBLY INTO FLATRACK STAKE POCKETS AND NAIL TO SIDE BLOCKING, PIECE MARKED ⑪, W/2-16d NAILS.
- ⑫ CHAIN BOARD ASSEMBLY (3 REQD). SEE THE DETAIL ON PAGE 7. POSITION AS SHOWN.
- ⑬ CHAIN, BINDING, GRADE 70, 5/16" BY 20'-0" (3 REQD). CONNECT HOOK TO CHAIN APPROXIMATELY 12" FROM TIEDOWN ANCHOR.
- ⑭ LOAD BINDER, RATCHET-ACTION FOR 5/16" CHAIN (3 REQD). TIGHTEN CHAIN THEN WIRE TIE HANDLE TO MLRS POD FRAME TO PREVENT MOVEMENT DURING TRANSPORT. FASTEN THE TENSIONED CHAIN TO THE CHAIN BOARD ASSEMBLY W/1-16d NAIL AT EACH END, BENDING OVER TO FORM A LOOP AROUND THE CHAIN LINK.

- ① OUTER SUPPORT ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 5. SEE PAGE 5 FOR LOCATIONS OF PRE-POSITIONED DUNNAGE. PLACE TWO MORE OUTER SUPPORT ASSEMBLIES ON TOP OF THE FIRST LAYER OF MLRS PODS BEFORE ADDING THE SECOND LAYER OF PODS.
- ② CENTER SUPPORT ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 5.
- ③ AFT END BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 6. BEFORE FIRST LAYER OF PODS HAVE BEEN LOADED, CENTER HEADER AGAINST AFT ENDWALL OF THE M1 FLATRACK. ENSURE TIGHT END-TO-END FIT BETWEEN ENDWALL AND PODS.
- ④ FORWARD END BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 6. AFTER MLRS PODS HAVE BEEN LOADED, CENTER HEADER AGAINST FORWARD ENDWALL OF THE M1 FLATRACK. ENSURE TIGHT END-TO-END FIT BETWEEN ENDWALL AND PODS. FOR EASE OF LOADING, THE FILL PIECE MAY BE INSTALLED AFTER THE FORWARD END BLOCKING ASSEMBLY IS POSITIONED.
- ⑤ HOLD-DOWN STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT STEEL STRAPPING (REF: 11'-0") (3 REQD). LOOP END OF EACH STRAP AROUND FLAT PART OF A TIEDOWN RING ON OPPOSITE SIDES OF THE FLATRACK AND SEAL AT EACH END.
- ⑥ SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD). NOTCH EACH SEAL WITH TWO PAIR OF NOTCHES.
- ⑦ CENTER FILL PIECE, 2" X 4" X 64" (2 REQD). POSITION VERTICALLY ADJACENT TO POD LIFTING RINGS AND FASTEN TO CONTAINERS AT TWO LOCATIONS WITH A 24" LONG TIE WIRE.

(CONTINUED AT LEFT)

RECOMMENDED SEQUENTIAL PROCEDURES

1. PREFABRICATE FOUR OUTER AND TWO CENTER SUPPORT ASSEMBLIES, FORWARD AND AFT END BLOCKING ASSEMBLIES WITHOUT BEARING PIECES AND STRAPPING BOARDS, FOUR SIDE BLOCKING ASSEMBLIES, EIGHT STAKE ASSEMBLIES, AND THREE CHAIN BOARDS.
2. PRE-POSITION TWO OUTER SUPPORT ASSEMBLIES ON THE DECK OF THE FLATRACK.
3. INSTALL THE AFT END BLOCKING ASSEMBLY WITHOUT THE BEARING PIECE AND STRAPPING BOARD. CENTER ASSEMBLY AGAINST AFT ENDWALL OF FLATRACK.
4. ORIENT POD LIFTING RINGS AND LOAD THE FIRST LAYER OF PODS WITH CENTER FILL PIECES BETWEEN THE TWO PODS. CENTER PODS CROSSWISE ON FLATRACK AND PLACE THEM TIGHTLY AGAINST AFT END BLOCKING ASSEMBLY.
5. WIRE TIE THE CENTER FILL PIECES TO THE FRAME OF ONE POD.
6. INSTALL THE SIDE BLOCKING AND STAKE ASSEMBLIES.
7. INSTALL BEARING PIECE ONTO AFT END BLOCKING ASSEMBLY.
8. INSTALL STRAPPING BOARD AND ONE 1-1/4 INCH HOLD-DOWN STRAP ONTO AFT END BLOCKING ASSEMBLY.
9. SLIDE THE CENTER SUPPORT ASSEMBLY INTO POSITION UNDER THE FIRST LAYER OF PODS AND INSTALL RETAINER BLOCK.
10. PRE-POSITION TWO OUTER SUPPORT ASSEMBLIES ON THE FIRST LAYER OF PODS.
11. ORIENT POD LIFTING RINGS AND LOAD SECOND LAYER OF PODS.
12. WIRE TIE CENTER FILL PIECES TO POD IN TOP LAYER ABOVE PREVIOUSLY TIED POD.
13. INSTALL BUNDLING STRAPS AROUND TOP LAYER OF PODS.
14. SLIDE THE CENTER SUPPORT ASSEMBLY INTO POSITION UNDER THE SECOND LAYER OF PODS AND INSTALL RETAINER BLOCK.
15. INSTALL THE FORWARD END BLOCKING ASSEMBLY WITHOUT THE BEARING PIECE AND STRAPPING BOARDS. THE FILL PIECE MAY BE INSTALLED AFTER THE FORWARD END BLOCKING ASSEMBLY IS POSITIONED ON THE FLATRACK.
16. INSTALL BEARING PIECE ONTO FORWARD END BLOCKING ASSEMBLY.
17. INSTALL STRAPPING BOARDS AND TWO 1-1/4 INCH HOLD-DOWN STRAPS ON FORWARD END BLOCKING ASSEMBLY.
18. POSITION THE CHAIN BOARD ASSEMBLIES AND INSTALL THREE CHAINS. FASTEN CHAINS TO CHAIN BOARD ASSEMBLIES.

GENERAL NOTES

- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC LOADING PROCEDURES DRAWING 19-48-4905-CA17Q6. TO PRODUCE AN APPROVED LOAD, ALL PERTINENT PROCEDURES, SPECIFICATIONS AND CRITERIA SET FORTH WITHIN THE BASIC DRAWING WILL APPLY TO THE PROCEDURES DELINEATED IN THIS APPENDIX. ANY EXCEPTIONS TO THE BASIC PROCEDURES ARE SPECIFIED IN THIS APPENDIX.
- B. THE OUTLOADING PROCEDURES DEPICTED IN THIS DRAWING ARE APPLICABLE TO LOADS OF SCL #10. SEE PAGE 4 FOR DETAILS OF THE MLRS POD. SEE GENERAL NOTE "P" IN THE BASIC PROCEDURE DRAWING 19-48-4905-CA17Q6 FOR A DESCRIPTION OF THE M1 FLATRACK SHOWN. THE SEQUENTIAL LOADING PROCEDURES DEPICTED AT LEFT DESCRIBE THE SEQUENCE USED TO LOAD AN M1 FLATRACK.
- C. THE LOADING PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR OUTLOADING SIMILAR SCL LOADS WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 4, PROVIDED THE OVERALL UNIT DIMENSIONS DO NOT VARY FROM WHAT IS DELINEATED HEREIN.
- D. ALTERNATE NSN/DODIC COMBINATIONS ARE SHOWN IN THE CHART ON PAGE 4. THESE ALTERNATES MAY BE SUBSTITUTED FOR SOME OR ALL THE DEPICTED NSN/DODICS IF NECESSARY DUE TO THE ITEMS OR QUANTITIES ON HAND.
- E. DIMENSIONS GIVEN FOR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY. PODS MUST FIT SNUGLY AGAINST THE DUNNAGE ASSEMBLIES. THIS GUIDANCE MUST BE APPLIED PRIOR TO BEGINNING AN OUTLOADING OPERATION. ALSO, DUE TO VARIATIONS IN HEIGHT OF SKIDS, ADJUSTMENTS MAY BE REQUIRED AS TO THE LOCATION AND/OR THICKNESS OF CERTAIN PIECES ON DUNNAGE ASSEMBLIES.
- F. THE SUPPORT ASSEMBLIES AS SHOWN ON PAGE 5 MUST BE USED UNDER BOTH LAYERS OF CONTAINERS TO PREVENT DAMAGE TO THE SHOCK ISOLATORS AND POD FRAME.
- G. CAUTION: CARE MUST BE EXERCISED TO INSURE THAT PRESSURE IS NOT APPLIED AGAINST THE TUBES (ENDS AND SIDES) OF THE CONTAINERS OR THE UPPER RAIL NEAR THE CROSSMEMBER MARKED "NO STEP" DURING HANDLING OPERATIONS OR WHEN BRACED. ALSO, PERSONNEL SHALL NOT STAND OR WALK ON THE FIBERGLASS TUBES OR THE CROSSMEMBERS SO MARKED.
- H. THE RATCHET-ACTION LOAD BINDERS MUST BE PLACED ON TOP OF THE LOAD AND STEEL EDGE PROTECTORS MUST BE USED BETWEEN THE CHAINS AND THE CHAIN BOARD ASSEMBLIES TO ENSURE PROPER TENSIONING OF THE CHAINS.
- J. 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 0.454 KG.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" x 4"	60	20
2" x 2-3/4" (ACTUAL)	6	4
2" x 4"	37	25
2" x 6"	41	41
2" x 8"	58	77
4" x 4"	67	89
NAILS	NO. REQD	POUNDS
6d (2")	48	1/4
8d (2-1/2")	68	3/4
10d (3")	161	2-1/2
16d (3-1/2")	22	1/2
STEEL STRAPPING, 1-1/4" - - - 72' REQD - - - 7.63 LBS		
SEAL FOR 1-1/4" STRAPPING - - 8 REQD - - - - - NIL		
EDGE PROTECTORS FOR		
1-1/4" STEEL STRAPPING - - - - 14 REQD - - - 1.40 LBS		
CHAIN AND RATCHET BINDER - - - 3 REQD - - - 120 LBS		
WIRE, .0800" DIA - - - - - 14' REQD - - - - - NIL		
PLYWOOD, 1/2" - - - - 5.55 SQ FT REQD - - - 7.63 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
RP/C	4	20,380 LBS
DUNNAGE		653 LBS
FLATRACK		7,300 LBS

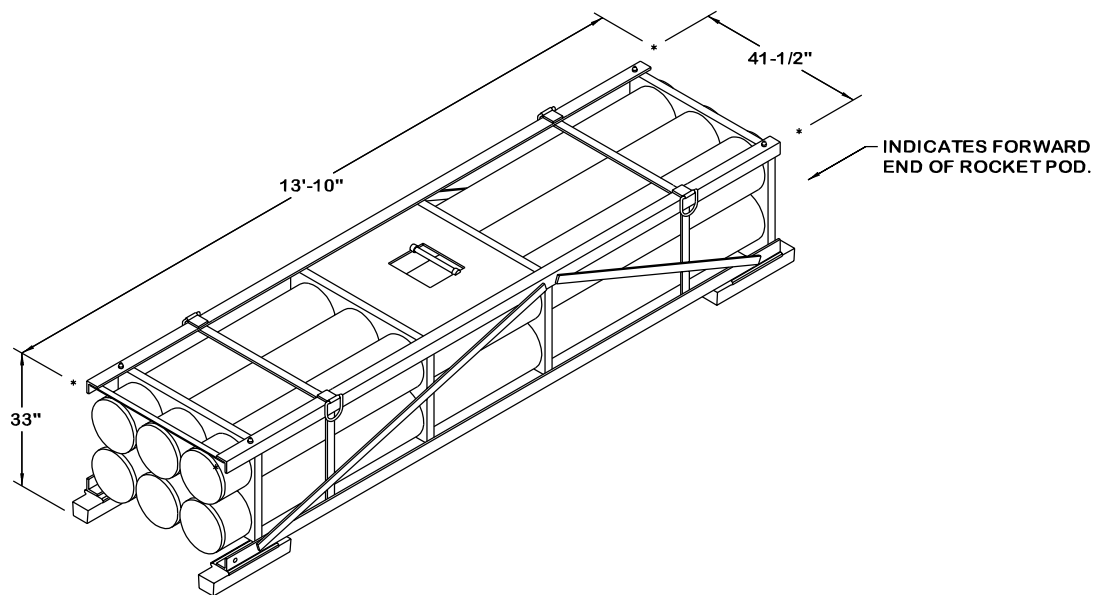
TOTAL WEIGHT - - - - - 28,333 LBS (APPROX)

SCL #10 COMPOSITION CHART

DODIC	NSN	NOMENCLATURE	UNIT DWG	REQD	UNITS REQD	HC
H104	1340-01-122-3506	ROCKET POD, 298MM M26 MLRS	13027900	4	N/A	1.1E

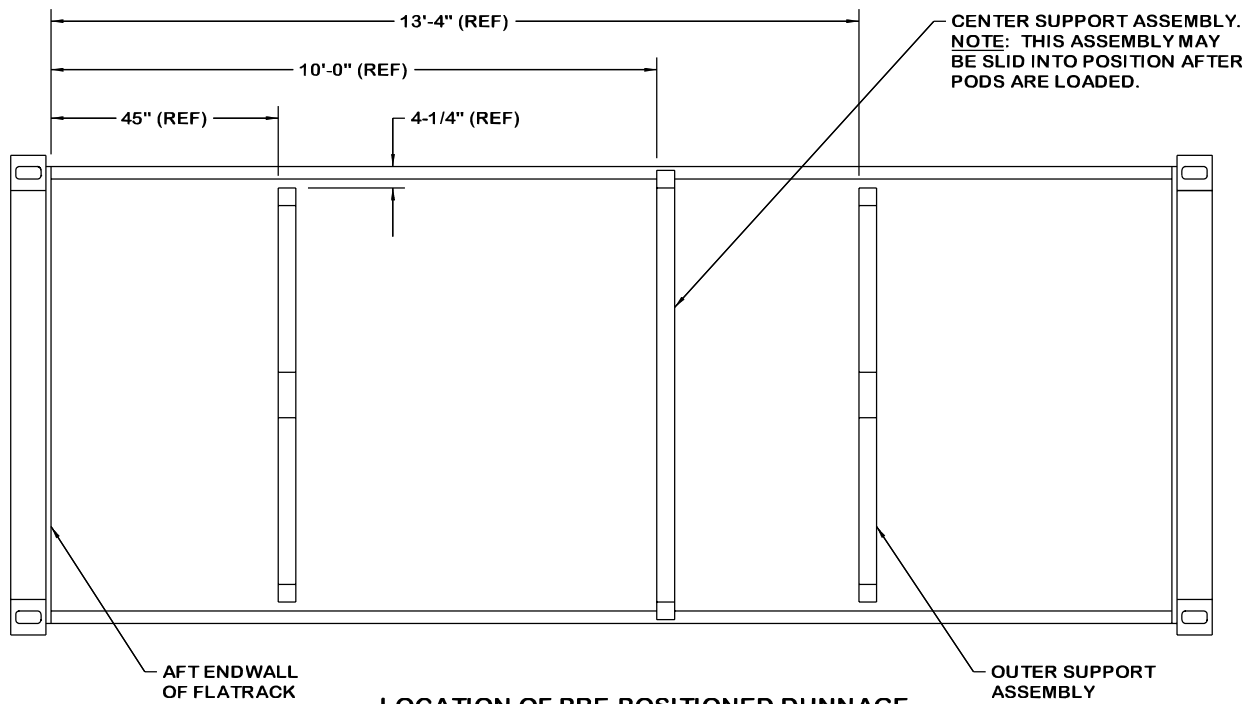
NOTE: THE DODIC LISTED BELOW MAY BE USED AS AN ALTERNATE FOR THE DODIC SHOWN ABOVE IF THE QUANTITY OF THE DODIC SHOWN ABOVE IS INSUFFICIENT.

H108	1340-01-149-0918	ROCKET POD, PRACTICE 298MM M28 MLRS	13031900			1.3C
H185	1340-01-370-9666	ROCKET POD, REDUCED RANGE PRACTICE 298MM M28A1 MLRS	13031950			1.3C
H186	1340-01-398-2159	ROCKET POD, EXTENDED RANGE WITH M77 SUBMUNITIONS 298MM M26A1 MLRS	13213750			1.1E
H186	1340-01-450-5876	ROCKET POD, EXTENDED RANGE 298MM M26A2 MLRS	13213732			1.1E



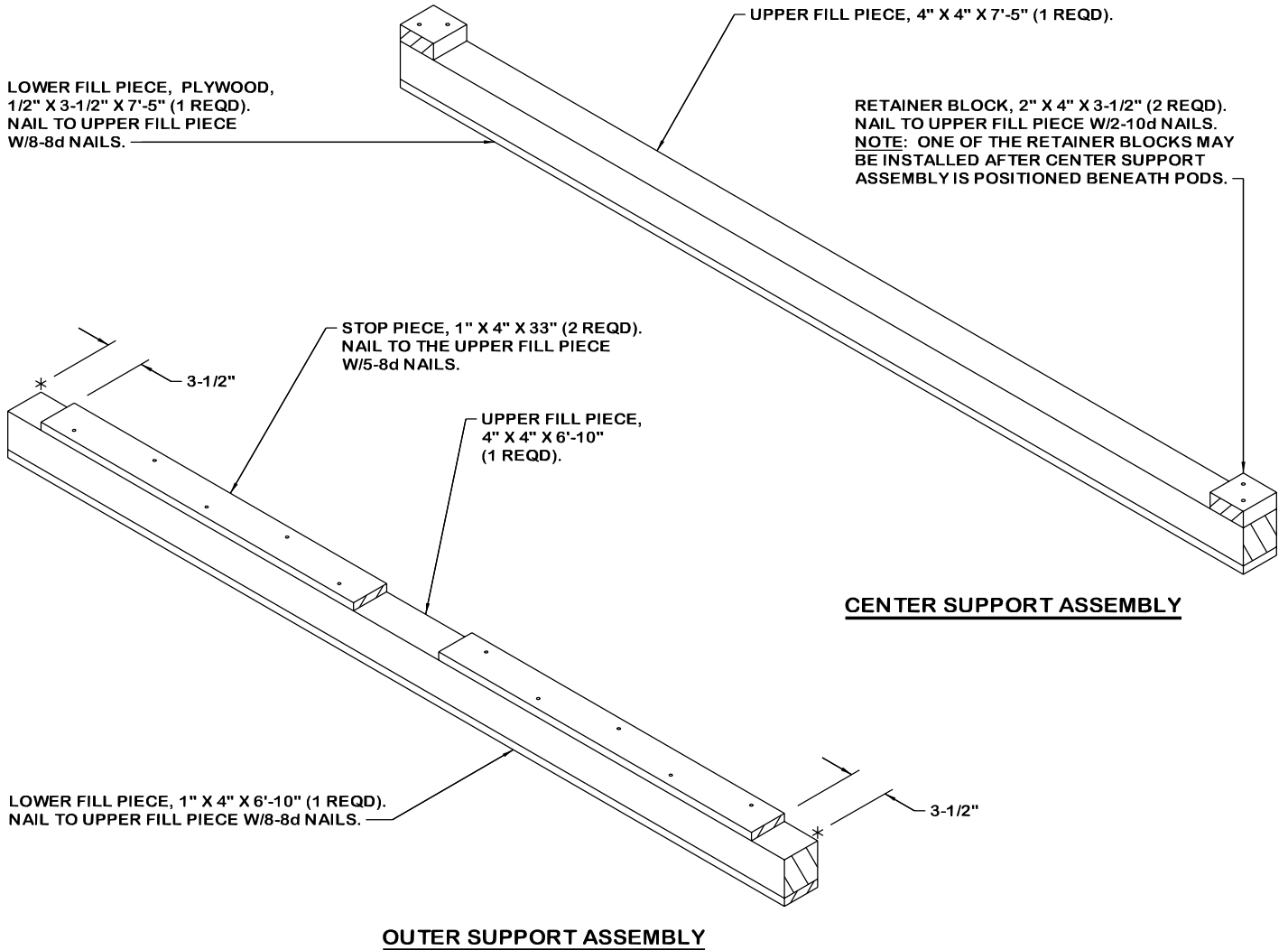
GROSS WEIGHT, DIMENSIONS, AND CUBE OF ROCKET POD/CONTAINERS

NSN	DODIC	LENGTH	WIDTH	HEIGHT	WEIGHT (LBS)	CUBE (CU FT)
1340-01-122-3506	H104	13' -10"	41-1/2"	33"	5,095	131.5
1340-01-149-0918	H108	13' -10"	41-1/2"	33"	5,095	131.5
1340-01-370-9666	H185	13' -10"	41"	33"	5,091	131.5
1340-01-398-2159	H186	13' -10"	41"	33"	5,091	131.5
1340-01-450-5876	H186	13' -10"	41"	33"	5,091	131.5



LOCATION OF PRE-POSITIONED DUNNAGE

A PLAN VIEW OF THE M1 FLATRACK WITH PRE-POSITIONED DUNNAGE IS DEPICTED ABOVE.



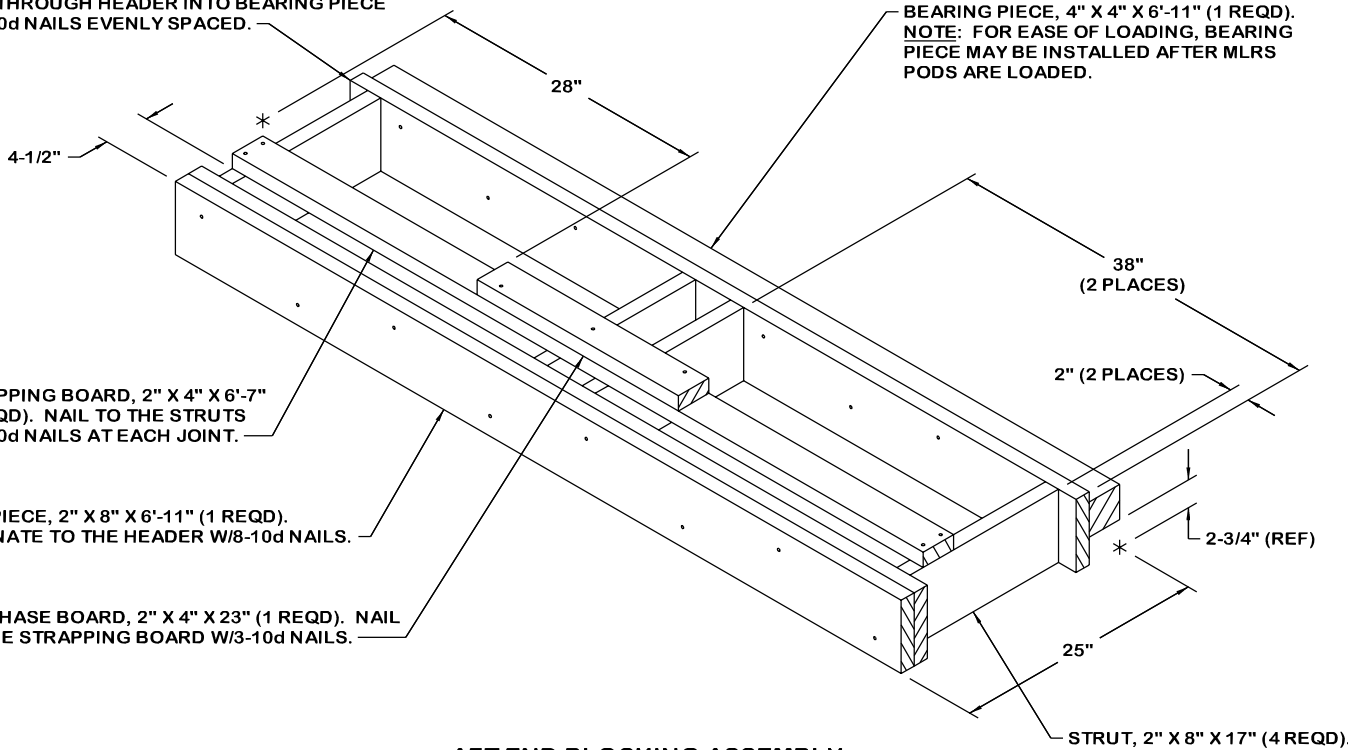
CENTER SUPPORT ASSEMBLY

OUTER SUPPORT ASSEMBLY

DETAILS

HEADER, 2" X 8" X 6'-11" (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT. NAIL THROUGH HEADER INTO BEARING PIECE W/8-10d NAILS EVENLY SPACED.

BEARING PIECE, 4" X 4" X 6'-11" (1 REQD). NOTE: FOR EASE OF LOADING, BEARING PIECE MAY BE INSTALLED AFTER MLRS PODS ARE LOADED.



STRAPPING BOARD, 2" X 4" X 6'-7" (1 REQD). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

FILL PIECE, 2" X 8" X 6'-11" (1 REQD). LAMINATE TO THE HEADER W/8-10d NAILS.

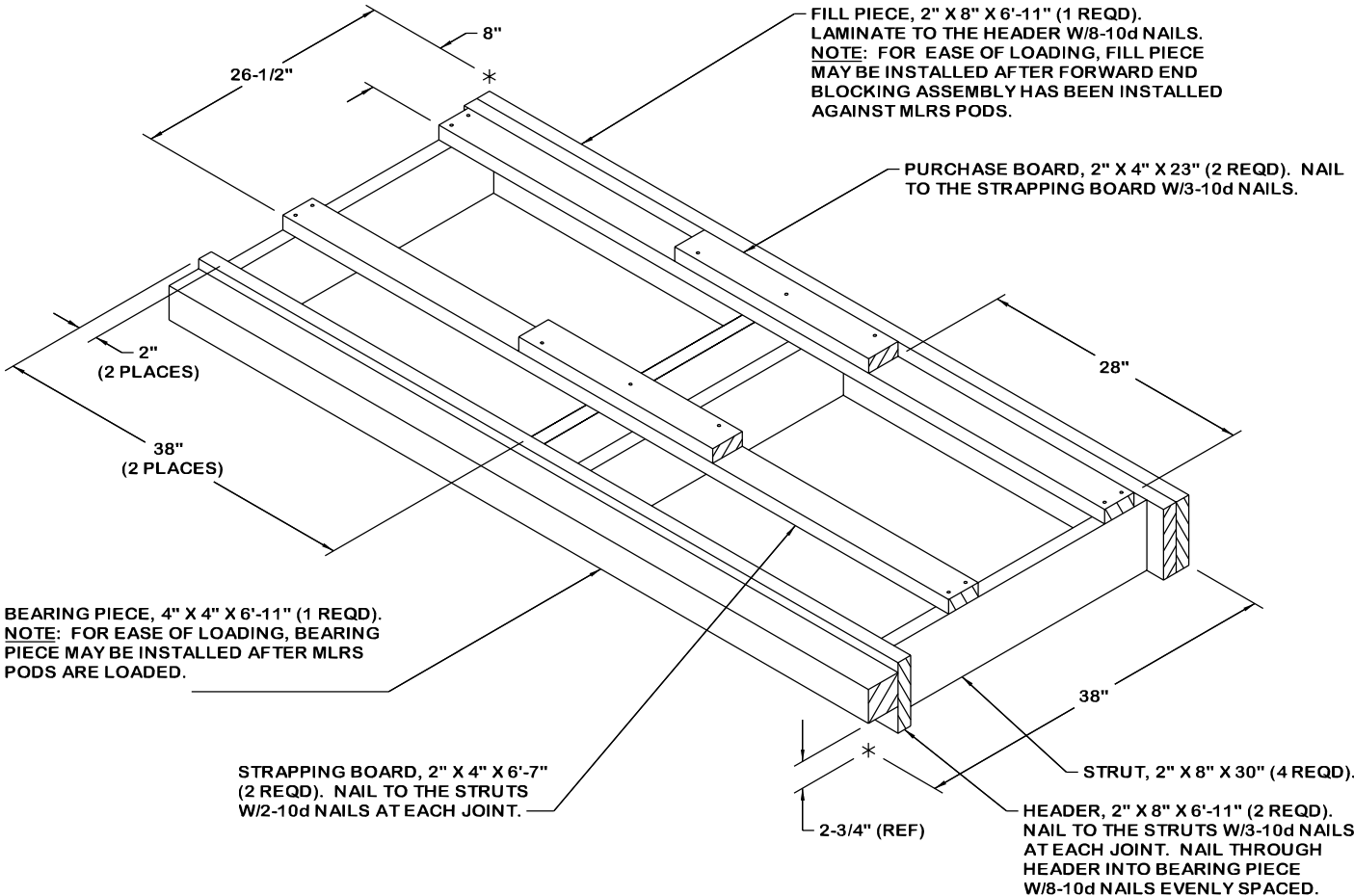
PURCHASE BOARD, 2" X 4" X 23" (1 REQD). NAIL TO THE STRAPPING BOARD W/3-10d NAILS.

STRUT, 2" X 8" X 17" (4 REQD).

AFT END BLOCKING ASSEMBLY

FILL PIECE, 2" X 8" X 6'-11" (1 REQD). LAMINATE TO THE HEADER W/8-10d NAILS. NOTE: FOR EASE OF LOADING, FILL PIECE MAY BE INSTALLED AFTER FORWARD END BLOCKING ASSEMBLY HAS BEEN INSTALLED AGAINST MLRS PODS.

PURCHASE BOARD, 2" X 4" X 23" (2 REQD). NAIL TO THE STRAPPING BOARD W/3-10d NAILS.



BEARING PIECE, 4" X 4" X 6'-11" (1 REQD). NOTE: FOR EASE OF LOADING, BEARING PIECE MAY BE INSTALLED AFTER MLRS PODS ARE LOADED.

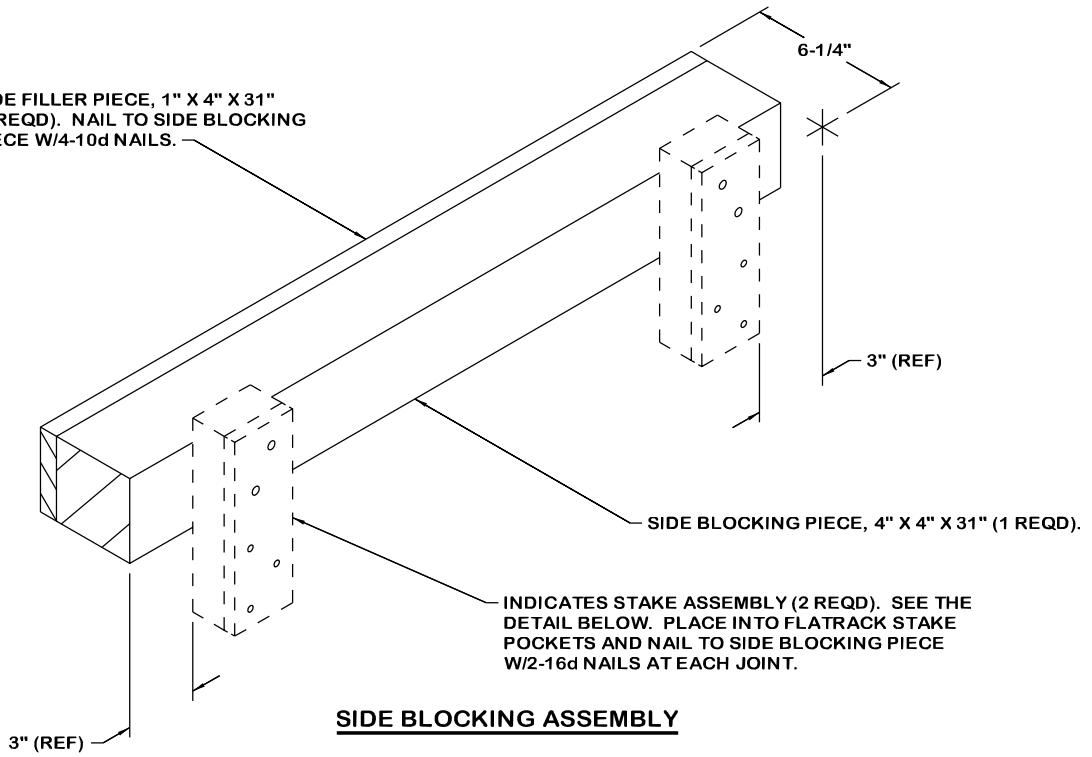
STRAPPING BOARD, 2" X 4" X 6'-7" (2 REQD). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

HEADER, 2" X 8" X 6'-11" (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT. NAIL THROUGH HEADER INTO BEARING PIECE W/8-10d NAILS EVENLY SPACED.

STRUT, 2" X 8" X 30" (4 REQD).

FORWARD END BLOCKING ASSEMBLY

SIDE FILLER PIECE, 1" X 4" X 31"
(1 REQD). NAIL TO SIDE BLOCKING
PIECE W/4-10d NAILS.



VERTICAL PIECE, 1-1/2" (ACTUAL)
X 2-3/4" (ACTUAL) X 8" (1 REQD).

