



DATE 4-11-05

APPENDIX 24

LOADING AND BRACING PROCEDURES FOR STRATEGIC CONFIGURED LOAD (SCL) ON CONTAINER ROLL IN/OUT PLATFORM (CROP)

SCL #24 - ATACMS

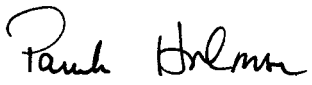

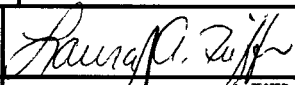
INDEX

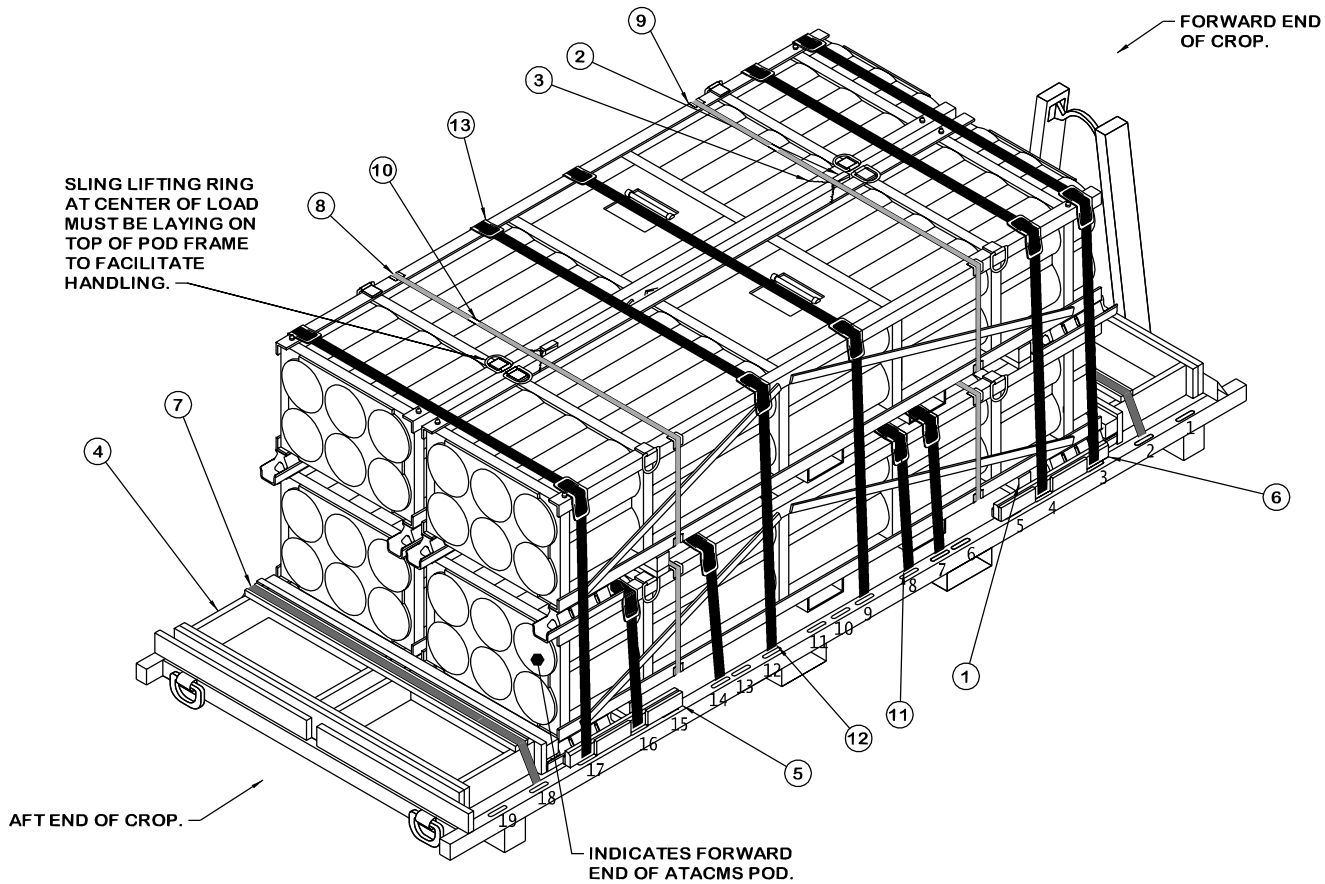
<u>ITEM</u>	<u>PAGE(S)</u>
TYPICAL LOADING PROCEDURES - - - - -	2
GENERAL NOTES AND SEQUENTIAL LOADING PROCEDURES - - - - -	3
MISSILE/LAUNCH POD ASSEMBLY DETAILS - - - - -	4
DETAILS - - - - -	5-7

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 	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 8.				
	DO NOT SCALE		SEPTEMBER 2000		
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND  U.S. ARMY DEFENSE AMMUNITION CENTER	ENGINEER OR TECHNICIAN	BASIC REV.	WALTER GORDON MELVIN SIX		
	TRANSPORTATION ENGINEERING DIVISION	 TESTED		REVISION NO. 1	MAY 2005
	VALIDATION ENGINEERING DIVISION			SEE THE REVISION LISTING ON PAGE 3	
ENGINEERING DIRECTORATE	CLASS	DIVISION	DRAWING	FILE	
	19	48	4905/24	CA17Q6	



ISOMETRIC VIEW

KEY NUMBERS

(KEY NUMBERS CONTINUED)

- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-6" LONG STEEL STRAPPING (4 REQD). INSTALL TO ENIRCLE LATERALLY ADJACENT PODS IN EACH LAYER AS SHOWN.
- ⑨ EDGE PROTECTOR, 2-3/4" X .030" X 2" STEEL EDGE PROTECTOR (16 REQD). POSITION BETWEEN BUNDLING STRAP AND POD FRAME AT EACH CORNER.
- ⑩ SEAL, FOR 1-1/4" STEEL STRAPPING (4 REQD). NOTCH EACH SEAL WITH TWO PAIR OF NOTCHES.
- ⑪ LOWER HOLD-DOWN STRAP, 3-INCH WIDE WEB STRAP TIE-DOWN ASSEMBLY FOR CROP (4 REQD). INSTALL EACH LOWER HOLD-DOWN STRAP TO EXTEND FROM THE DESIGNATED TIE-DOWN ANCHOR ON SIDE OF CROP, OVER TOP OF LOWER LAYER OF PODS, TO CORRESPONDING TIEDOWN ANCHOR ON OPPOSITE SIDE OF CROP. FIRMLY TENSION STRAP. SEE GENERAL NOTE "F" ON PAGE 3.
- ⑫ UPPER HOLD-DOWN STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (5 REQD). INSTALL EACH UPPER LAYER HOLD-DOWN STRAP TO EXTEND FROM THE DESIGNATED TIE-DOWN ANCHOR ON SIDE OF CROP, OVER TOP OF TOP LAYER OF PODS, TO CORRESPONDING TIEDOWN ANCHOR ON OPPOSITE SIDE OF CROP. FIRMLY TENSION STRAP. SEE GENERAL NOTE "F" ON PAGE 3.
- ⑬ EDGE PROTECTOR, 11-3/4" X 3/8" X 4-1/4" REINFORCED RUBBER EDGE PROTECTOR (18 REQD). SLIDE OVER 3-INCH WEB STRAP AND POSITION BETWEEN SCUFF SLEEVE OF WEB STRAP AND POD FRAME AT EACH CORNER.

- ① SUPPORT ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 7. CENTER A SUPPORT ASSEMBLY CROSSWISE ON THE DECK OF CROP APPROXIMATELY 50" FROM EACH ENDGATE OF CROP. POSITION TWO MORE SUPPORT ASSEMBLIES BETWEEN LAYERS OF PODS AS SHOWN.
- ② CENTER FILL PIECE, 2" X 4" X 64" (2 REQD). POSITION EACH CENTER FILL PIECE APPROXIMATELY 34" FROM EACH END OF THE POD FRAME AS SHOWN.
- ③ TIE WIRE, 0.0800" DIA, 24" LONG (4 REQD). FASTEN EACH CENTER FILL PIECE, PIECE MARKED ②, TO ONE STACK OF PODS AT TWO LOCATIONS, LOOPING WIRE AROUND FRAME OF POD, BRINGING ENDS TOGETHER, AND TWISTING TAUT.
- ④ END BLOCKING ASSEMBLY (2 REQD). SEE THE DETAILS ON PAGE 5. CENTER EACH END BLOCKING ASSEMBLY AGAINST EACH ENDGATE OF CROP. ENSURE TIGHT END-TO-END FIT BETWEEN ENDGATES AND PODS. SEE GENERAL NOTE "J" ON PAGE 3.
- ⑤ SIDE BLOCKING ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 6. POSITION ONE AGAINST SKID ON FRONT DRIVERSIDE OF LOAD AND ONE AGAINST SKID ON AFT CURBSIDE OF LOAD AS SHOWN. AFTER THE HOLD-DOWN STRAPS ARE INSTALLED, NAIL THROUGH THE HOOK ATTACHMENT SLOT OF EACH ADJACENT HOLD-DOWN STRAP INTO SIDE BLOCKING W/1-10d PARTIALLY DRIVEN NAIL AND BEND OVER SIDE OF HOOK.
- ⑥ SIDE BLOCKING ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 6. POSITION ONE AGAINST SKID ON AFT DRIVERSIDE OF LOAD AND ONE AGAINST SKID ON FRONT CURBSIDE AS SHOWN. AFTER THE HOLD-DOWN STRAPS ARE INSTALLED, NAIL THROUGH THE HOOK ATTACHMENT SLOT OF EACH ADJACENT HOLD-DOWN STRAP INTO SIDE BLOCKING W/1-10d PARTIALLY DRIVEN NAIL AND BEND OVER SIDE OF HOOK.
- ⑦ RETAINER STRAP, 2-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH RETAINER STRAP TO EXTEND FROM A TIEDOWN RING ON SIDE OF CROP, OVER TOP OF STRAPPING BOARD OF END BLOCKING ASSEMBLY, TO CORRESPONDING TIE-DOWN RING ON OPPOSITE SIDE OF CROP. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTE "F" ON PAGE 3.

(CONTINUED AT LEFT)

RECOMMENDED SEQUENTIAL PROCEDURES

1. PREFABRICATE THE FORWARD END BLOCKING ASSEMBLY WITH FILL PIECE, BUT WITHOUT BEARING PIECE AND STRAPPING BOARD. PREFABRICATE FOUR SUPPORT ASSEMBLIES, TWO CENTER FILL PIECES, FOUR SIDE BLOCKING ASSEMBLIES, AND THE AFT END BLOCKING ASSEMBLY WITHOUT FILL PIECE.
2. INSTALL THE PARTIAL FORWARD END BLOCKING ASSEMBLY AND PLACE TWO SUPPORT ASSEMBLIES CROSSWISE ON THE DECK OF CROP.
3. ORIENT POD LIFTING RINGS AND LOAD THE FIRST LAYER OF PODS WITH CENTER FILL PIECES BETWEEN THE TWO PODS. CENTER PODS CROSSWISE ON CROP AND PLACE THEM TIGHTLY AGAINST FORWARD END BLOCKING ASSEMBLY.
4. BUNDLE THE TWO PODS TOGETHER WITH 1-1/4" STEEL STRAPPING.
5. WIRE TIE THE CENTER FILL PIECES TO THE FRAME OF ONE POD.
6. INSTALL BEARING PIECE AND STRAPPING BOARD ON FORWARD END BLOCKING ASSEMBLY.
7. INSTALL THE AFT END BLOCKING ASSEMBLY AND FILL PIECE.
8. INSTALL THE TWO AFT SIDE BLOCKING ASSEMBLIES: SIDE BLOCKING ASSEMBLY "A" ON THE CURBSIDE OF THE LOAD AND SIDE BLOCKING ASSEMBLY "B" ON THE DRIVERSIDE OF THE LOAD.
9. INSTALL FOUR 3" WEB STRAP TIEDOWN ASSEMBLIES TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, OVER TOP OF LOWER LAYER OF PODS, TO THE CORRESPONDING TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP.
10. INSTALL THE REMAINING TWO SUPPORT ASSEMBLIES. ORIENT POD LIFTING RINGS AND LOAD SECOND LAYER OF PODS.
11. BUNDLE THE TWO PODS IN THE TOP LAYER TOGETHER WITH 1-1/4" STEEL STRAPPING.
12. WIRE TIE CENTER FILL PIECES TO POD IN TOP LAYER ABOVE PREVIOUSLY TIED POD.
13. INSTALL THE TWO FORWARD SIDE BLOCKING ASSEMBLIES: SIDE BLOCKING ASSEMBLY "B" ON THE CURBSIDE OF THE LOAD AND SIDE BLOCKING ASSEMBLY "A" ON THE DRIVERSIDE OF THE LOAD.
14. INSTALL FIVE 3" WEB STRAP TIEDOWN ASSEMBLIES TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, OVER THE TOP OF THE TOP LAYER OF PODS, TO THE CORRESPONDING TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP.
15. INSTALL TWO 2" RETAINER STRAPS, ONE OVER EACH END BLOCKING ASSEMBLY.
16. NAIL THROUGH THE HOOK ATTACHMENT SLOT OF A HOLD-DOWN STRAP INTO EACH END OF THE SIDE BLOCKING ASSEMBLIES W/1-10d PARTIALLY DRIVEN NAIL AND BEND OVER SIDE OF HOOK.

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 #24. SEE PAGE 4 FOR DETAILS OF THE ATACMS POD. AN M3 (SUMMA) CROP IS SHOWN AS TYPICAL. OTHER MANUFACTURER'S CROPS CAN BE USED FOR THE LOAD SHOWN ON PAGE 2. THE SEQUENTIAL LOADING PROCEDURES DEPICTED AT LEFT DESCRIBE THE SEQUENCE USED TO LOAD AN M3 CROP. ACTUAL CROP CONFIGURATION WILL DETERMINE WHETHER THE SEQUENTIAL LOADING STARTS AT THE AFT OR THE FORWARD END OF THE CROP.
- 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 OF CERTAIN PIECES ON DUNNAGE ASSEMBLIES.
- F. ALL WEB STRAP TIEDOWN ASSEMBLIES MUST HAVE THE EXCESS LENGTH OF THE STRAP SECURED. ROLL UP AND BUNDLE THE EXCESS LENGTH OF WEB STRAP, SECURING WITH CABLE TIES. SEE THE "STRAP END SECUREMENT" DETAIL AND GENERAL NOTE "K.12" IN THE BASIC PROCEDURE DRAWING 19-48-4905-CA17Q6.
- G. THE SUPPORT ASSEMBLY AS SHOWN ON PAGE 7 MUST BE USED UNDER BOTH LAYERS OF CONTAINERS TO PREVENT DAMAGE TO THE SHOCK ISOLATORS.
- H. CAUTION: CARE MUST BE EXERCISED TO INSURE THAT PRESSURE IS NOT APPLIED AGAINST THE BODY (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 CONTAINER BODY OR THE CROSSMEMBERS SO MARKED.
- J. NEW STYLE PODS HAVE AN END COVER ON THE AFT END OF THE CONTAINER, WHICH EXTENDS SLIGHTLY BEYOND THE TOP AND BOTTOM RAILS. THE ALTERNATE END BLOCKING ASSEMBLY ON PAGE 5 MUST BE USED WHEN BRACING THE AFT END OF THESE CONTAINERS.
- K. 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 2" (ACTUAL)	11	2
1" X 4"	67	22
2" X 4"	35	23
2" X 8"	56	74
4" X 4"	42	55
NAILS	NO. REQD	POUNDS
8d (2-1/2")	128	1/2
10d (3")	104	1-3/4
STEEL STRAPPING, 1-1/4" - - - 83' REQD - - 11.86 LBS		
SEAL FOR 1-1/4" STRAPPING - - 4 REQD - - - - - NIL		
EDGE PROTECTORS FOR		
1-1/4" STEEL STRAPPING - - - - 16 REQD - - - 1.6 LBS		
WIRE, 0.0800" DIA - - - - - 8' REQD - - - - - NIL		
2" WEB STRAP		
TIEDOWN ASSEMBLY - - - - - 2 REQD - - - - 11 LBS		
EDGE PROTECTORS FOR		
3" WEB STRAPS - - - - - 18 REQD - - - 13.5 LBS		

REVISION

REVISION NO. 1, DATED MAY 2005, CONSISTS OF:

1. ADDING WEIGHTS AND NSN'S.
2. REVERSING ORIENTATION OF M/LPAS.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ATACMS M/LPA	4	20,444 LBS
DUNNAGE		397 LBS
CROP		3,800 LBS
TOTAL WEIGHT		24,641 LBS (APPROX)

SCL #24 COMPOSITION CHART

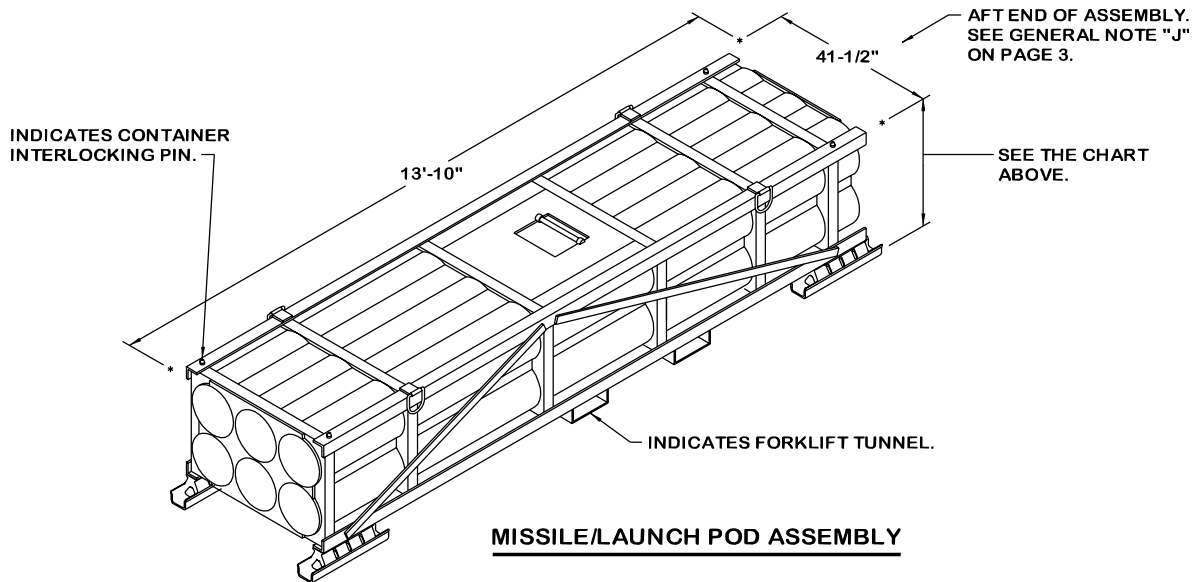
DODIC	NSN	NOMENCLATURE	UNIT DWG	REQD	UNITS REQD	HC
PL81	1427-00-000-0195	GM AND LAUNCHING ASSEMBLY, SURFACE ATTACK, M39	13288685	4	N/A	1.1E

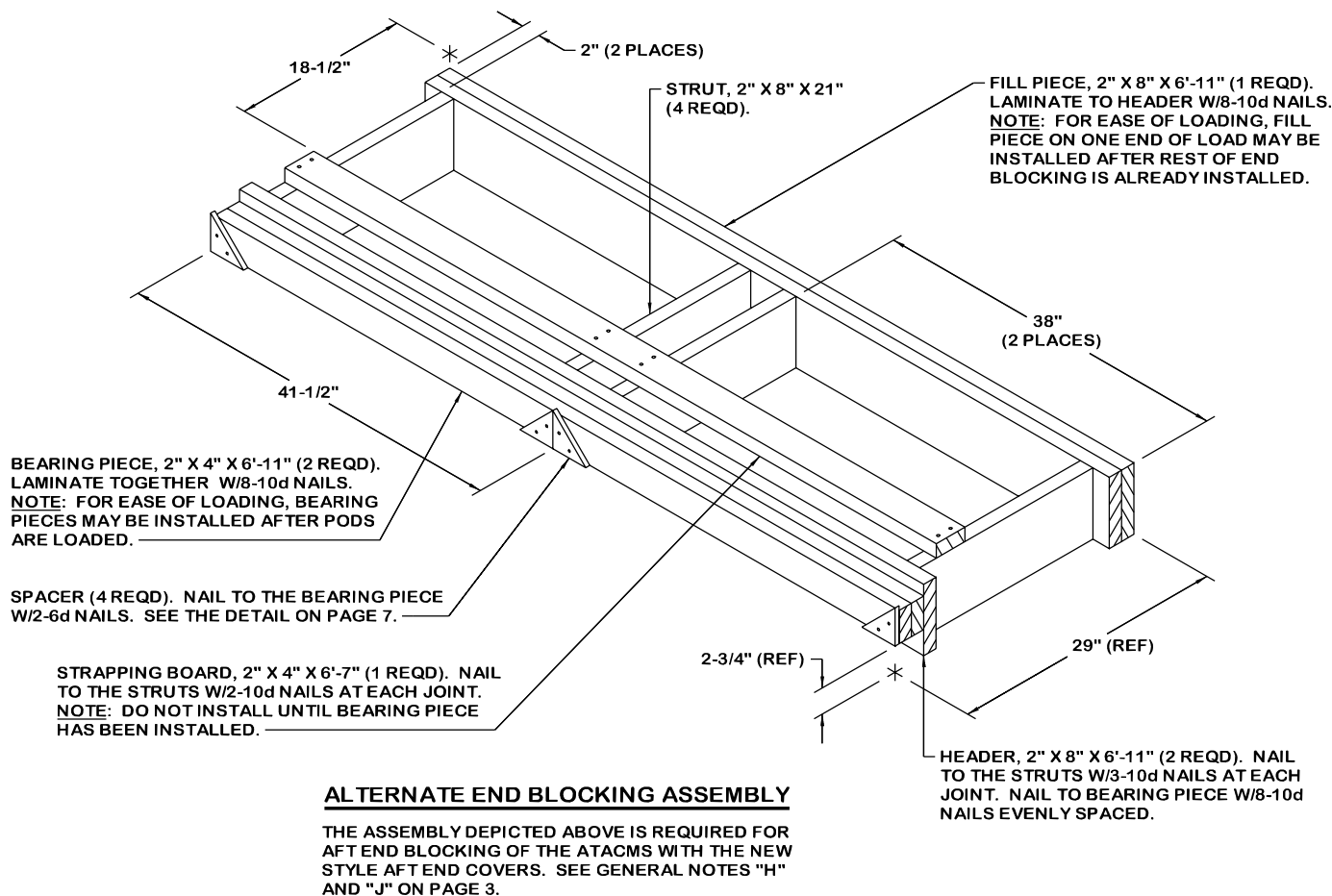
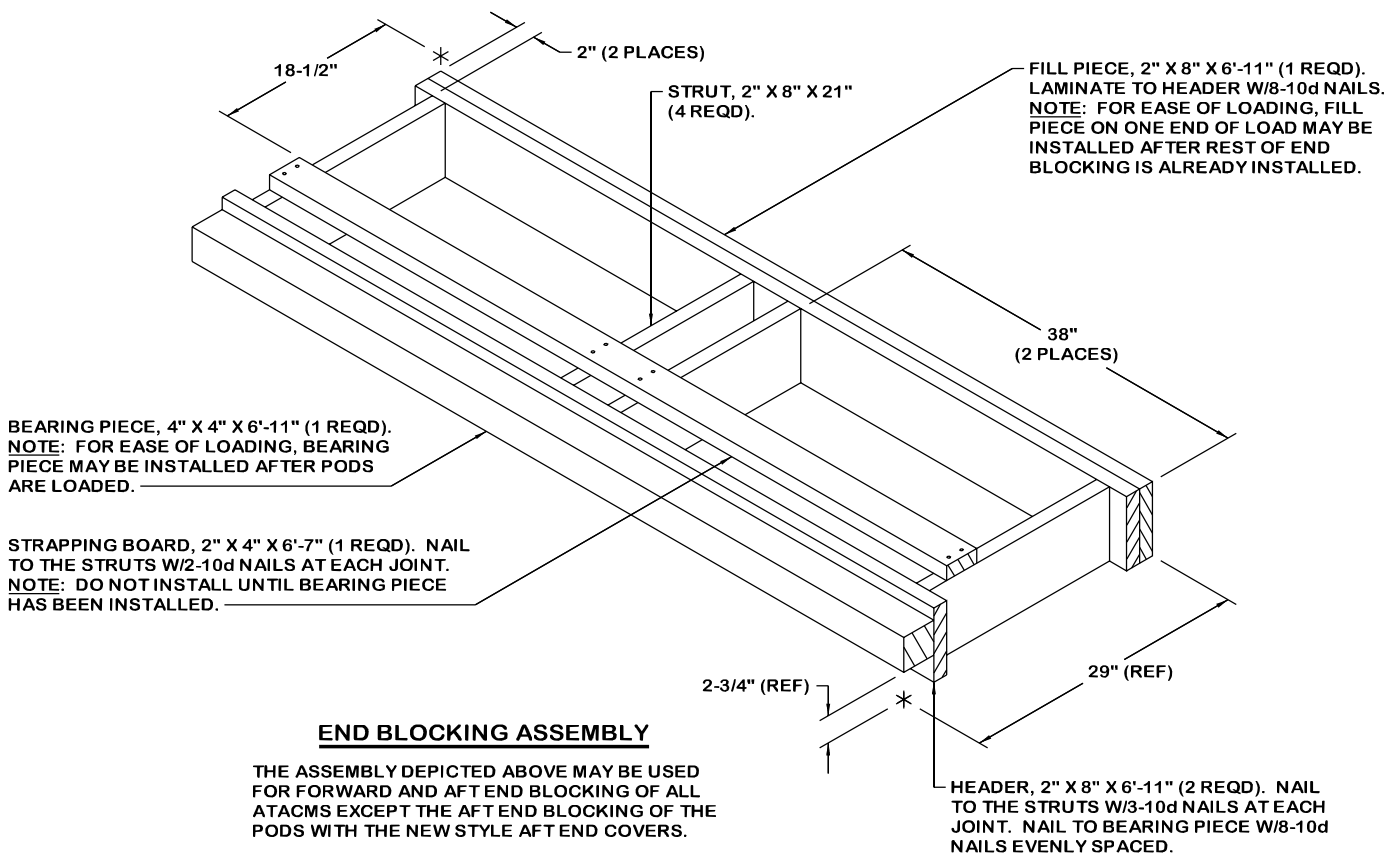
NOTE: THE DODICS LISTED BELOW MAY BE USED AS ALTERNATES FOR THE DODIC SHOWN ABOVE IF THE QUANTITY OF THE DODIC SHOWN ABOVE IS INSUFFICIENT.

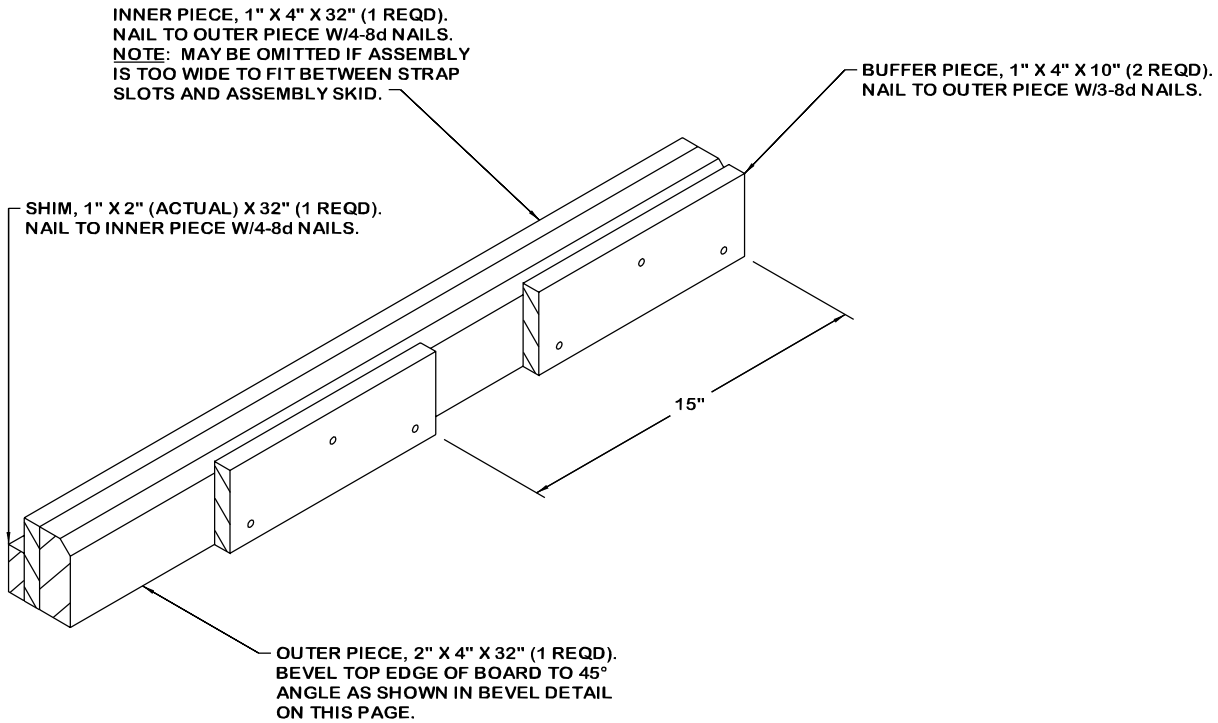
GROSS WEIGHT, DIMENSIONS, AND CUBE OF GUIDED MISSILE LAUNCHING ASSEMBLIES

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

• PL81 MUST NOT BE MIXED WITH ANY OTHER DODIC IN THE SAME LAYER.

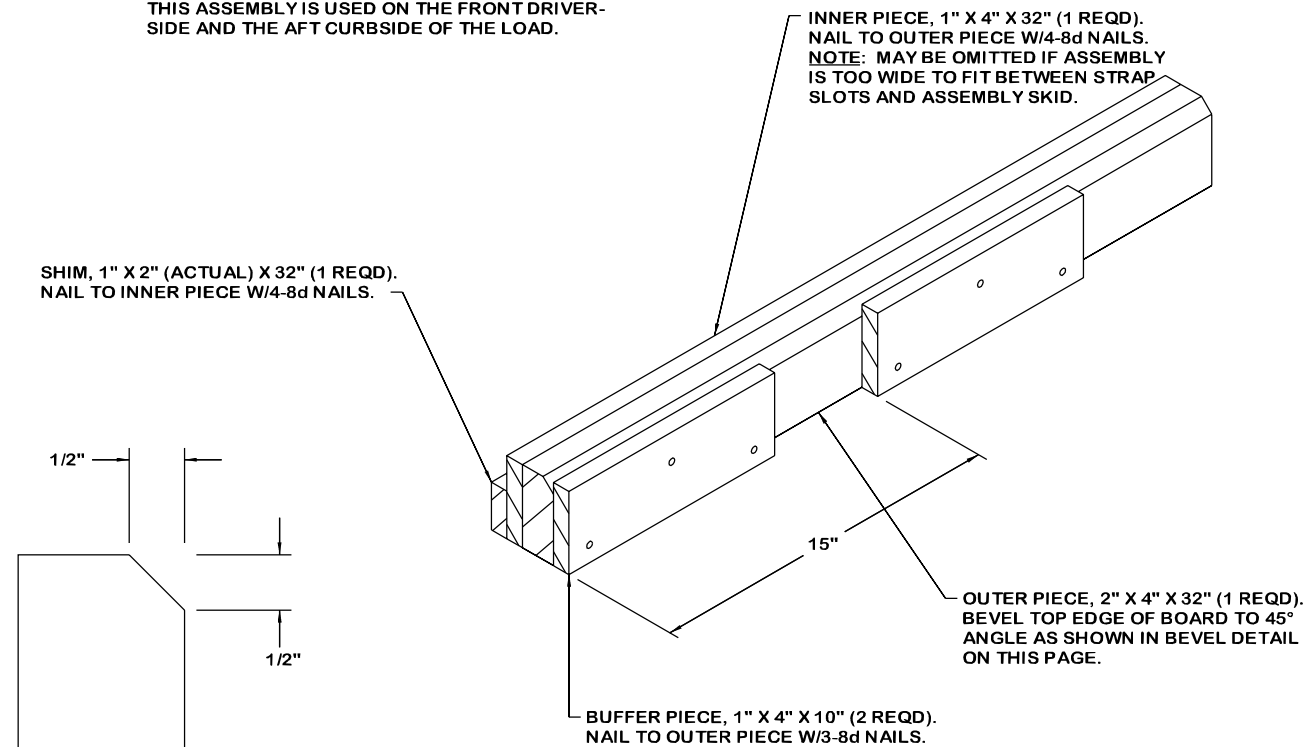






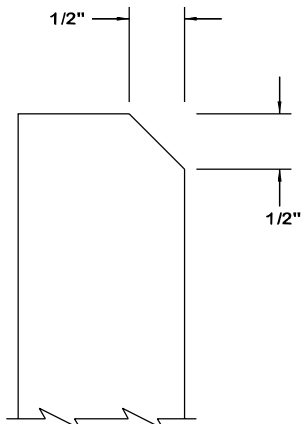
SIDE BLOCKING ASSEMBLY A

THIS ASSEMBLY IS USED ON THE FRONT DRIVER-SIDE AND THE AFT CURBSIDE OF THE LOAD.

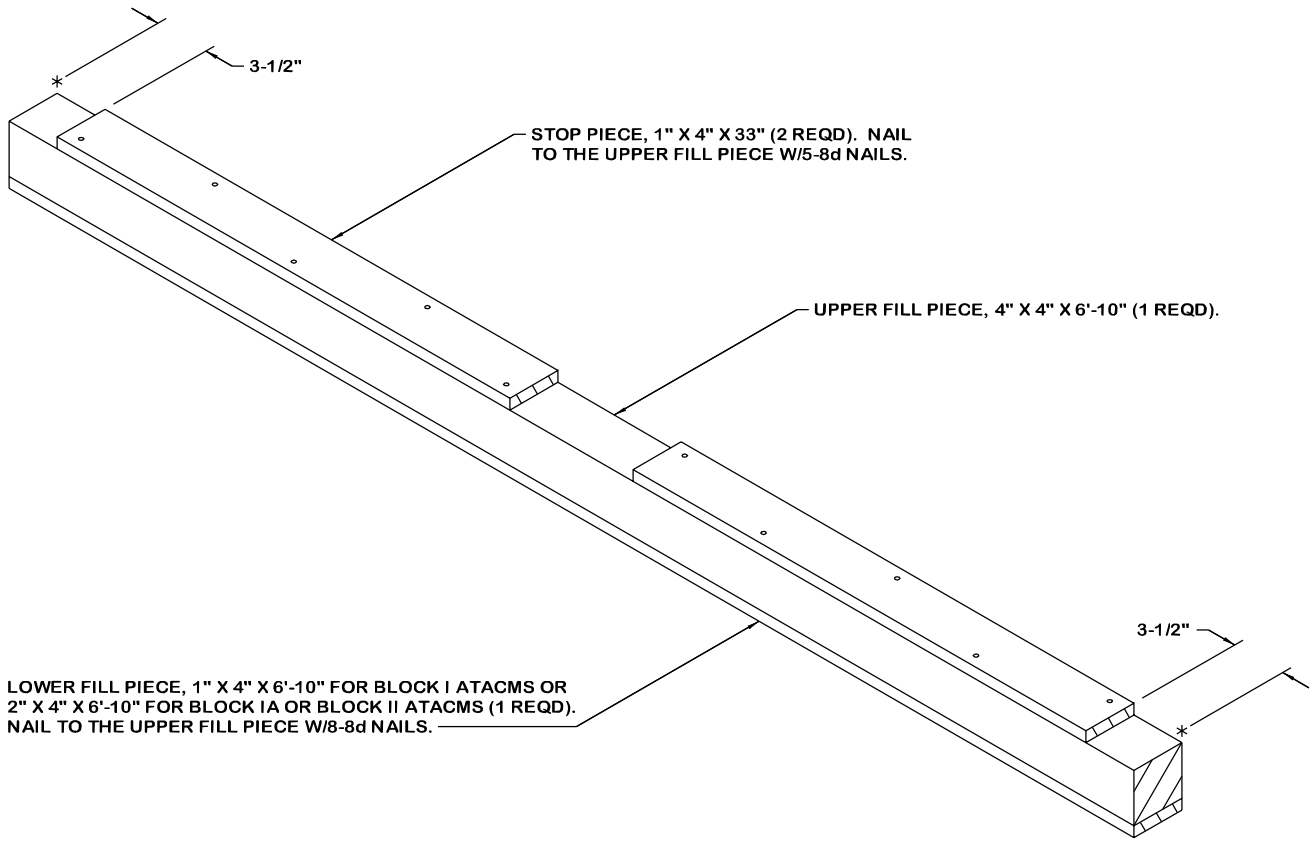


SIDE BLOCKING ASSEMBLY B

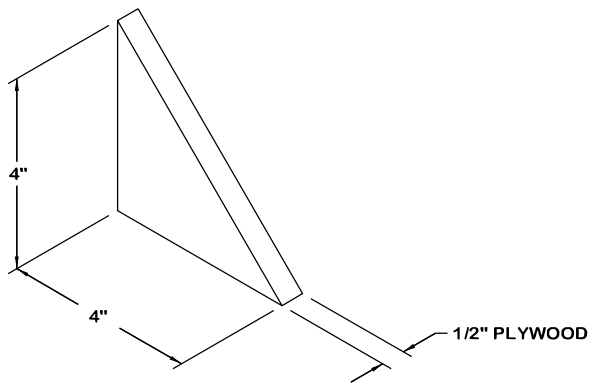
THIS ASSEMBLY IS USED ON THE AFT DRIVER-SIDE AND THE FRONT CURBSIDE OF THE LOAD.



BEVEL DETAIL



SUPPORT ASSEMBLY



SPACER

THE SPACER IS USED IN THE ALTERNATE END BLOCKING ASSEMBLY ON PAGE 5.

