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DATE 11/4/2000

# APPENDIX 4

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

### SCL #4 - MICLIC M58A4

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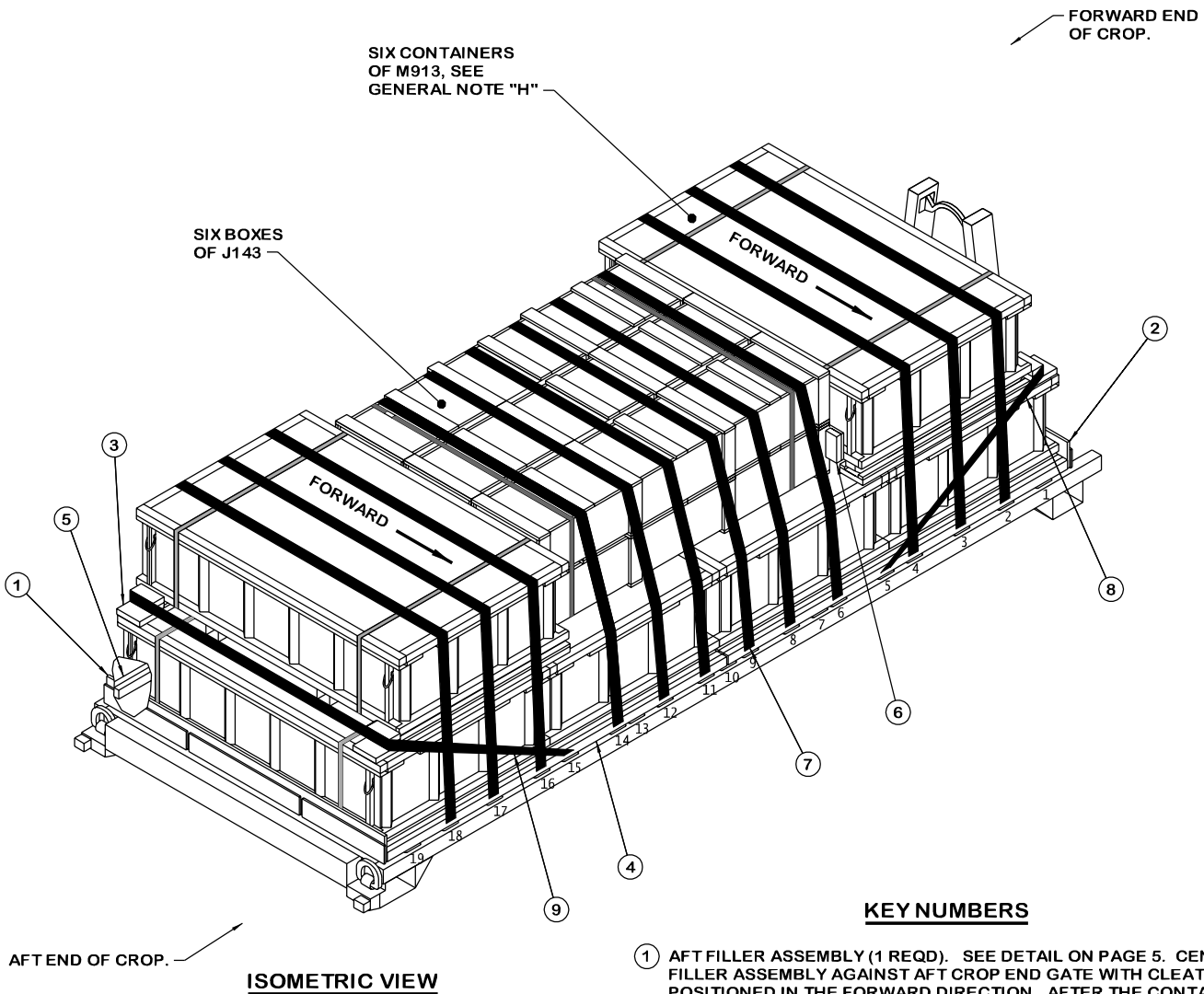
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**NOTICE:** THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC CROP OUTLOADING PROCEDURES DRAWING 19-48-4905-CA17Q6.

- 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 OPERATIONS SUPPORT COMMAND	ENGINEER	BASIC	DO NOT SCALE				
<i>[Signature]</i>	TECHNICIAN	BASIC	WEBSITE: <a href="http://www.dac.army.mil">HTTP://WWW.DAC.ARMY.MIL</a>				
		REV.	OCTOBER 2000				
	DRAFTSMAN	BASIC					
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND	TRANSPORTATION ENGINEERING DIVISION	<i>[Signature]</i>					
<i>[Signature]</i>	VALIDATION DIVISION	<i>[Signature]</i>	TESTED	CLASS	DIVISION	DRAWING	FILE
	ENGINEERING DIRECTORATE	<i>[Signature]</i>		19	48	4905/ 4	CA17Q6
	U.S. ARMY DEFENSE AMMUNITION CENTER						



**ISOMETRIC VIEW**

(KEY NUMBERS CONTINUED)

- ⑦ HOLD-DOWN STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (12 REQD). INSTALL EACH HOLD-DOWN STRAP TO EXTEND FROM THE DESIGNATED TIEDOWN ANCHOR ON ONE SIDE OF CROP, OVER THE TOP OF THE M913 CONTAINERS OR THE J143 BOXES (AS APPROPRIATE), TO THE CORRESPONDING TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "F" ON PAGE 3.
- ⑧ FORWARD END RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (1 REQD). INSTALL STRAP FROM THE FIFTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, OVER THE FORWARD COVER SPANNER ASSEMBLIES, AND BACK DOWN TO THE FIFTH TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "F" ON PAGE 3.
- ⑨ AFT END RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (1 REQD). INSTALL STRAP FROM THE FIFTEENTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, OVER THE REAR COVER SPANNER ASSEMBLIES, AND BACK DOWN TO FIFTEENTH TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "F" ON PAGE 3.

**KEY NUMBERS**

- ① AFT FILLER ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 5. CENTER FILLER ASSEMBLY AGAINST AFT CROP END GATE WITH CLEATS POSITIONED IN THE FORWARD DIRECTION. AFTER THE CONTAINERS ARE LOADED, NAIL W/2-12d NAILS THRU THE SLOTS IN THE AFT CROP END GATE INTO THE AFT FILLER ASSEMBLY, LEAVING THE NAIL HEADS PROTRUDING THRU THE SLOTS TO PROVIDE LATERAL RESTRAINT.
- ② FORWARD FILLER PIECE, 1" X 8" X 7'-4" (1 REQD). POSITION FILLER PIECE AGAINST THE FORWARD CROP END GATE AND CENTER ON THE CROP. AFTER THE CONTAINERS ARE LOADED, NAIL THROUGH THE HOLES IN THE FORWARD CROP END GATE W/2-12d NAILS INTO THE FORWARD FILLER PIECE, LEAVING THE NAIL HEADS PROTRUDING THROUGH THE HOLES TO PROVIDE LATERAL AND VERTICAL RESTRAINT.
- ③ COVER SPANNER ASSEMBLY (4 REQD). SEE DETAIL ON PAGE 5.
- ④ SIDE BLOCKING ASSEMBLY A, 2" X 3" X 8'-11" (TRIPLED) (2 REQD). LAMINATE THE SECOND BOARD TO THE FIRST W/10-10d NAILS. LAMINATE THE THIRD BOARD TO THE SECOND BOARD IN A SIMILAR MANNER. POSITION AGAINST THE SKIDS ON THE BOTTOM ROW OF M913 CONTAINERS ON THE SIDE MARKED FORWARD AS SHOWN.
- ⑤ SIDE BLOCKING ASSEMBLY B, 2" X 3" X 8'-11" (DOUBLED) (2 REQD). LAMINATE THE SECOND BOARD TO THE FIRST W/10-10d NAILS. POSITION AGAINST THE SKIDS ON THE BOTTOM ROW OF M913 CONTAINERS ON THE AFT SIDE. NAIL THROUGH THE STRAP ATTACHMENT SLOTS OF EACH WEB STRAP INTO THE SIDE BLOCKING ASSEMBLY B W/1-10d PARTIALLY DRIVEN NAIL AND BEND OVER SIDE OF HOOK.
- ⑥ BUFFER ASSEMBLY (2 REQD). SEE DETAIL ON PAGE 5. POSITION A BUFFER ASSEMBLY AT THE FORWARD END AND THE AFT END OF THE J143 BOXES. THE BUFFER ASSEMBLIES WILL BE PLACED ON THE TOP OF THE M913 CONTAINER SKIDS WITH THE STOP BLOCKS POSITIONED TO PREVENT LATERAL MOVEMENT OF THE ASSEMBLY.

(CONTINUED AT LEFT)

**RECOMMENDED SEQUENTIAL PROCEDURES**

1. PREFABRICATE THE AFT FILLER ASSEMBLY, FOUR COVER SPANNER ASSEMBLIES, TWO SIDE BLOCKING ASSEMBLIES "A", TWO SIDE BLOCKING ASSEMBLIES "B", AND TWO BUFFER ASSEMBLIES.
2. INSTALL THE AFT FILLER ASSEMBLY AS NOTED IN KEY NUMBER ①.
3. LOAD ONE M913 CONTAINER AGAINST THE AFT END FILLER ASSEMBLY, CENTERING THE CONTAINER Laterally ON THE CROP.
4. LOAD THREE ADDITIONAL M913 CONTAINERS AGAINST THE PREVIOUSLY LOADED CONTAINER, CENTERING THE CONTAINERS Laterally ON THE CROP AS SHOWN ON PAGE 2.
5. INSTALL THE FORWARD FILLER PIECE.
6. PLACE TWO COVER SPANNER ASSEMBLIES ON TOP OF THE REAR M913 CONTAINERS SO THAT THE STOP PIECE END OF THE ASSEMBLIES ARE IN VERTICAL ALIGNMENT WITH THE REAR EDGE OF THE M913 CONTAINERS AND POSITIONED Laterally APPROXIMATELY 1-1/2" FROM EACH SIDE OF THE CONTAINER AS SHOWN ON PAGE 2.
7. LOAD ONE M913 CONTAINER ON TOP OF THE TWO REAR COVER SPANNER ASSEMBLIES. INSURE THAT THE REAR COVER SPANNER ASSEMBLIES ARE POSITIONED UNDER THE OUTER SKIDS OF THE TOP M913 CONTAINER.
8. PLACE ONE BUFFER ASSEMBLY AGAINST THE M913 CONTAINER AS INSTRUCTED IN KEY NUMBER ⑥.
9. LOAD SIX BOXES OF J143 TIGHT AGAINST THE BUFFER ASSEMBLY AND THE FRONT OF THE TOP REAR M913 CONTAINER. STACK THE BOXES THREE WIDE AND TWO HIGH AS SHOWN ON PAGE 4. NOTE: SEE GENERAL NOTE "D".
10. PLACE TWO COVER SPANNER ASSEMBLIES ON TOP OF THE FRONT M913 CONTAINER SO THAT THE STOP PIECE END OF THE ASSEMBLIES IS IN VERTICAL ALIGNMENT WITH THE FRONT EDGE OF THE BOTTOM M913 CONTAINER AND POSITIONED Laterally APPROXIMATELY 1-1/2" FROM EACH SIDE OF THE CONTAINER AS SHOWN ON PAGE 2.
11. LOAD ONE M913 CONTAINER ON TOP OF THE TWO FRONT COVER SPANNER ASSEMBLIES. INSURE THAT THE FRONT COVER SPANNER ASSEMBLIES ARE POSITIONED UNDER THE OUTER SKIDS OF THE TOP M913 CONTAINER.
12. PLACE ONE BUFFER ASSEMBLY AGAINST THE M913 CONTAINER AS INSTRUCTED IN KEY NUMBER ⑥. ENSURE THAT THE M913 CONTAINER IS TIGHT AGAINST THE BUFFER ASSEMBLY AND THE J143 BOXES.
13. INSTALL THE TWO SIDE BLOCKING ASSEMBLIES "A" AS NOTED IN KEY NUMBER ④.
14. INSTALL THE TWO SIDE BLOCKING ASSEMBLIES "B" AS NOTED IN KEY NUMBER ⑤.
15. INSTALL THE 12 WEB STRAP TIEDOWN ASSEMBLIES AS NOTED IN KEY NUMBER ⑦.
16. INSTALL THE FORWARD END RESTRAINT STRAP AS NOTED IN KEY NUMBER ⑧.
17. INSTALL THE AFT END RESTRAINT STRAP AS NOTED IN KEY NUMBER ⑨.
18. NAIL TWO 6d RETAINING NAILS INTO THE AFT FILLER ASSEMBLY AS NOTED IN KEY NUMBER ①.
19. NAIL THE TWO REMAINING 6d RETAINING NAILS INTO THE FORWARD FILLER PIECE AS NOTED IN KEY NUMBER ②.

**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 #4. SEE PAGE 4 FOR DETAILS OF THE CONTAINERS AND BOXES. AN M3A1 (HYUNDAI) 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 M3A1 CROP. FOR AN M3 (SUMMA) CROP, SEQUENTIAL LOADING PROCEDURES 2 THROUGH 5 MUST BE REVERSED. 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 PALLET UNIT DIMENSIONS DO NOT VARY FROM WHAT IS DELINEATED HEREIN.
- D. DIMENSIONS, CUBE AND WEIGHT OF THE LADING UNITS WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE BOXES AND THE WEIGHT OF THE SPECIFIC ITEM BEING LOADED. NOTE: THE J143 ROCKET MOTORS HAVE BEEN PACKED IN TWO DIFFERENT SIZED BOXES (MK679 AND MK757). THE OLDER BOX (MK697) DIMENSIONS ARE 92" L X 14" W X 21-1/2" H. THE NEWER BOX (MK757) DIMENSIONS ARE 88-5/8" L X 14" W X 20" H. VERIFY BOX DIMENSIONS AND INSURE THAT ALL SIX BOXES ON EACH LOAD ARE THE SAME SIZE.
- E. DIMENSIONS GIVEN FOR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY. LADING MUST FIT SNUGLY AGAINST THE DUNNAGE ASSEMBLIES. THIS GUIDANCE MUST BE APPLIED PRIOR TO BEGINNING AN OUTLOADING OPERATION. ALSO, DUE TO VARIATION OF CONTAINER AND BOX DIMENSIONS, 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. 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.
- H. THE FORWARD ENDS OF ALL M913 CONTAINERS SHALL POSITIONED ON THE SAME SIDE OF THE CROP.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 2"	36	6
2" X 3"	92	46
2" X 4"	7	5
1" X 8"	27	18
2" X 8"	22	30
NAILS	NO. REQD	POUNDS
6d (2")	74	1/2
10d (3")	92	2

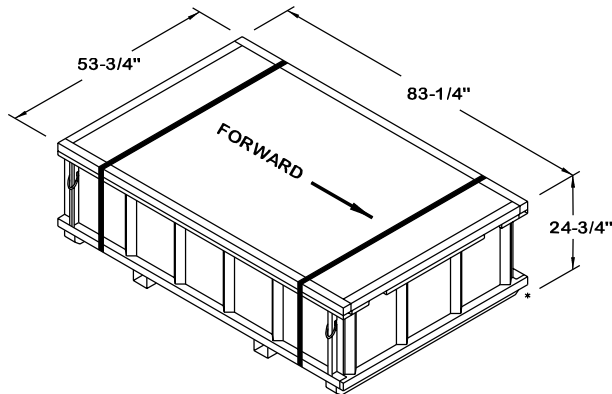
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
M913 CONTAINER	6	17,400 LBS
J143 BOXES	6	1,645 LBS *
DUNNAGE		213 LBS
CROP		3,800 LBS
TOTAL WEIGHT		23,058 LBS (APPROX)

\* THE WEIGHT SHOWN IS FOR THE MK697 BOXES.

## SCL #4 COMPOSITION CHART

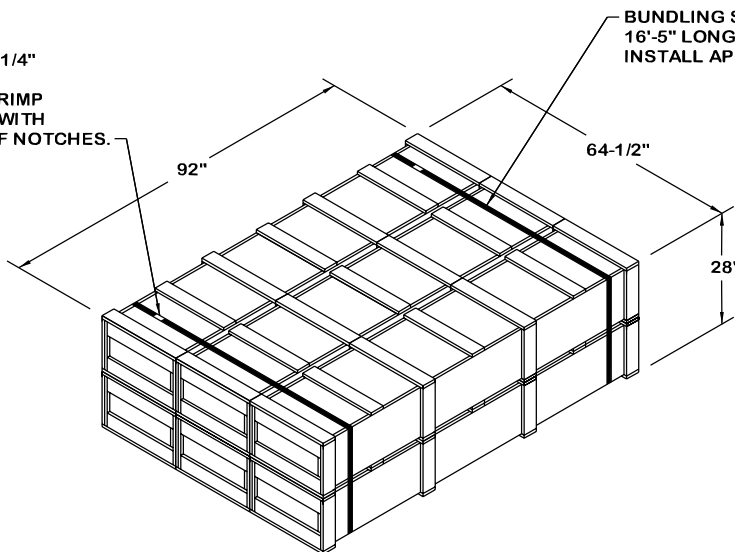
DODIC	NSN	NOMENCLATURE	UNIT DWG	REQD	UNITS REQD	HC
J143	1340-01-118-2838	ROCKET MOTOR, MK22-4, FOR MICLIC	537115167150	6	6 BOXES	1.3C
M913	1375-01-237-5933	CHARGE, DEMOLITION M58A4 (MICLIC)	2128451	6	6 CONTAINERS	1.1D



### M913 CONTAINER DETAIL

GROSS WEIGHT - - - - - 2,900 LBS (APPROX)  
 CUBE - - - - - 64.1 CU FT (APPROX)

SEAL FOR 1-1/4" STRAPPING (2 REQD). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.



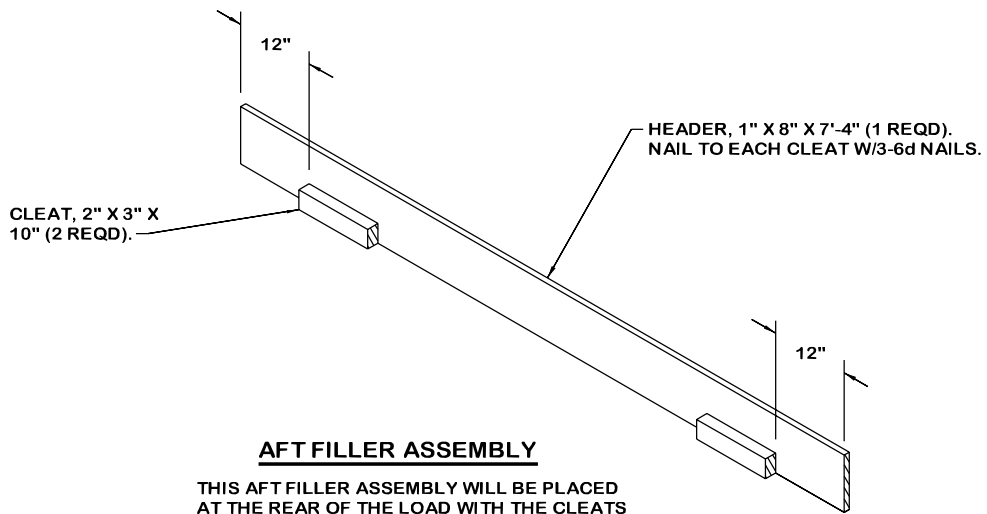
BUNDLING STRAP, 1-1/4" X .035" OR .031" X 16'-5" LONG STEEL STRAPPING (2 REQD). INSTALL APPROXIMATELY 8" FROM ENDS OF BOXES.

THE SIX J143 BOXES DEPICTED AT LEFT ARE PACKED IN MK697 BOXES. SEE GENERAL NOTE "D" ON PAGE 3. IF MK757 BOXES ARE USED THE FOLLOWING CHANGES WILL APPLY:

1. THE BOX LENGTH WILL BE 88-5/8".
2. THE WIDTH OF THE BUNDLED BOXES WILL BE 60".
3. THE BUNDLING STRAPS WILL BE 15'-7" IN LENGTH.
4. THE TOTAL WEIGHT WILL BE 1,433 LBS (APPROX).
5. THE CUBE WILL BE 86.1 CU FT (APPROX).

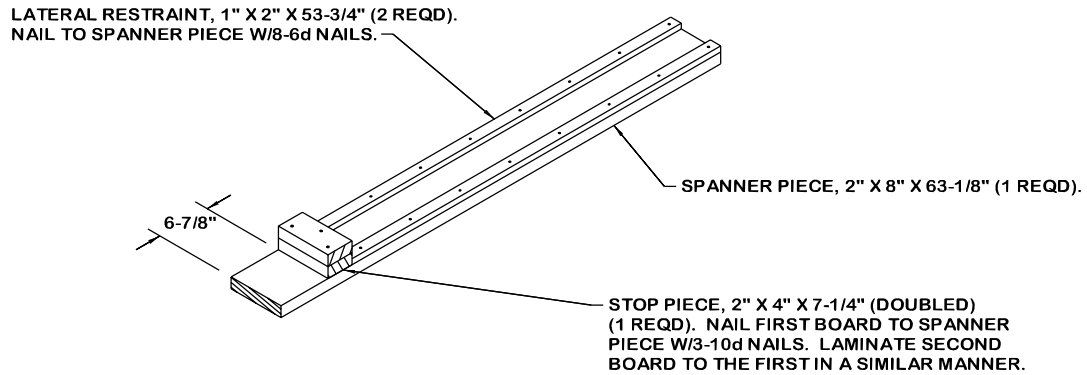
### J143 UNITIZED BOXES DETAIL

6 BOXES OF J143 AT 270 LBS - - - - -	1,620 LBS (APPROX)
DUNNAGE - - - - -	5 LBS
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TOTAL WEIGHT - - - - -	1,645 LBS (APPROX)
CUBE - - - - -	96.2 CU FT (APPROX)



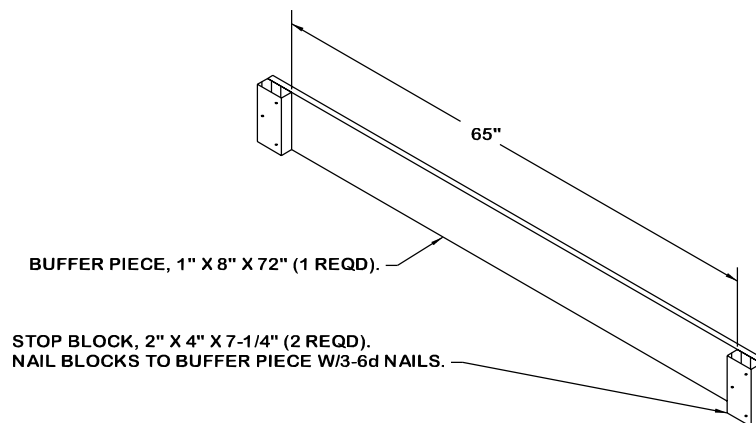
### AFT FILLER ASSEMBLY

THIS AFT FILLER ASSEMBLY WILL BE PLACED AT THE REAR OF THE LOAD WITH THE CLEATS RECESSED UNDER THE CONTAINER. FIELD CHECK CONTAINERS TO VERIFY PROPER CLEAT LOCATIONS.



### COVER SPANNER ASSEMBLY

THIS COVER SPANNER ASSEMBLY WILL BE POSITIONED UNDER THE SKIDS OF THE TWO M913 CONTAINERS ON THE TOP LAYER OF THE LOAD.



### BUFFER ASSEMBLY

THIS BUFFER ASSEMBLY WILL BE POSITIONED BETWEEN THE M913 CONTAINERS AND THE J143 BOXES ON THE TOP LAYER OF THE LOAD. NOTE: 65" SPACING BETWEEN STOP BLOCKS IS FOR MISSILES PACKED IN THE OLDER (MK697) BOX. FOR NEWER (MK757) BOXES, SPACING BETWEEN STOP BLOCKS WILL BE 60-1/2".

