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DATE 12/29/01

APPENDIX 113

LOADING AND BRACING PROCEDURES FOR AMMUNITION LOADED ON CONTAINER ROLL IN/OUT PLATFORM (CROP)

COMBINATION LOAD OF MINES AND FUZES
PALLETIZED ON WOODEN PALLETS; INCLUDES
TWO UNIQUE PALLET UNIT CONFIGURATIONS
PER LOAD


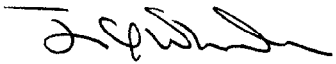
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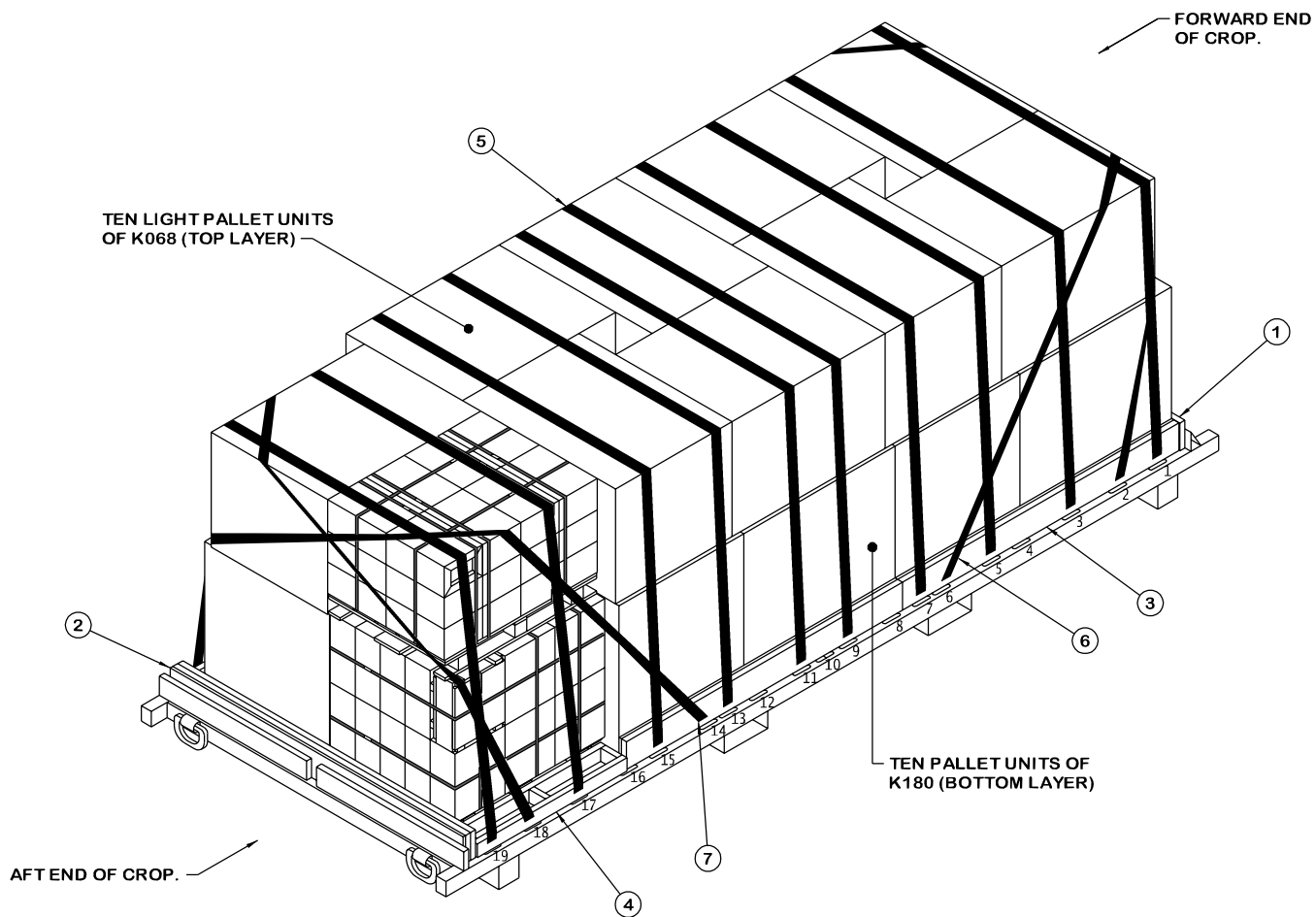
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NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC CROP OUTLOADING PROCEDURES DRAWING 19-48-4906-CA17Q7.

- 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	WALTER GORDON		DO NOT SCALE			
		REV.			WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN	BASIC			DECEMBER 2000			
		REV.						
	DRAFTSMAN	BASIC						
		REV.						
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND 	TRANSPORTATION ENGINEERING DIVISION	<i>William D. French</i>						
	VALIDATION ENGINEERING DIVISION	<i>Ray W. Dean</i>		TESTED	CLASS	DIVISION	DRAWING	FILE
	ENGINEERING DIRECTORATE	<i>James L. ...</i>			19	48	4906/ 113	CA17Q7
U.S. ARMY DEFENSE AMMUNITION CENTER								



ISOMETRIC VIEW

KEY NUMBERS

(KEY NUMBERS CONTINUED)

- ⑥ FORWARD END RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (2 REQD). INSTALL EACH STRAP FROM THE SIXTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP (ONE ON EACH SIDE), OVER THE TOP AND ACROSS THE FRONT OF THE TOP LAYER OF PALLET UNITS AND BACK DOWN TO THE SECOND TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "G" ON PAGE 3.
- ⑦ AFT END RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (2 REQD). INSTALL EACH STRAP FROM THE FOURTEENTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP (ONE ON EACH SIDE), OVER THE TOP AND ACROSS THE AFT OF THE TOP LAYER OF PALLET UNITS AND BACK DOWN TO THE EIGHTEENTH TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "G" ON PAGE 3.

- ① FORWARD FILLER ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 5. CENTER AGAINST FORWARD CROP END GATE AND, AFTER THE PALLET UNITS ARE LOADED, NAIL W/2-12d NAILS THRU THE HOLES IN THE FORWARD CROP END GATE INTO THE FORWARD FILLER ASSEMBLY, LEAVING THE NAIL HEADS PROTRUDING THRU THE HOLES TO PROVIDE VERTICAL RESTRAINT. SEE GENERAL NOTE "B" ON PAGE 3.
- ② AFT FILLER ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 5. AFTER THE PALLET UNITS ARE LOADED, CENTER ON THE DECK OF THE CROP AGAINST THE AFT END GATE. ANY REMAINING GAP BETWEEN THE END BLOCKING AND THE CROP END GATE MUST BE FILLED BY LAMINATING ADDITIONAL 1" OR 2" X 8" X 7'-4" PIECES TO THE END BLOCKING W/8 NAILS OF A SUITABLE SIZE. NAIL TWO 12d NAILS THRU UPPER CORNER OF OPENING IN AFT END GATES INTO THE AFT BLOCKING ASSEMBLY, WITH NAIL HEADS PROTRUDING AND BENT OVER VERTICAL TUBE OF END GATE TO PROVIDE LATERAL AND VERTICAL RESTRAINT. SEE GENERAL NOTE "B" ON PAGE 3.
- ③ SIDE FILL ASSEMBLY A, 1" X 8" X 6'-11" AND 2" X 8" X 6'-11" (4 REQD). LAMINATE THE 1" X 8" PIECE TO THE 2" X 8" PIECE W/7-6d NAILS, EVENLY SPACED, TO FORM ONE ASSEMBLY. INSTALL TWO ASSEMBLIES ON EACH SIDE OF THE CROP. SEE GENERAL NOTE "H" ON PAGE 3.
- ④ SIDE FILL ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 6. INSTALL AN ASSEMBLY ON EACH SIDE OF THE CROP. SEE GENERAL NOTE "H" ON PAGE 3.
- ⑤ HOLD-DOWN STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (10 REQD). INSTALL EACH HOLD-DOWN STRAP TO EXTEND FROM THE DESIGNATED TIEDOWN ANCHOR ON ONE SIDE OF CROP, OVER TOP OF PALLET UNITS, TO CORRESPONDING TIEDOWN ANCHOR ON OPPOSITE SIDE OF CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "G" ON PAGE 3.

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GENERAL NOTES

- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC LOADING PROCEDURES DRAWING 19-48-4906-CA17Q7. 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 20 PALLET UNITS. SEE PAGE 4 FOR DETAILS OF THE TYPICAL PALLET UNITS. AN M3 (SUMMA) CROP IS SHOWN AS TYPICAL. OTHER MANUFACTURER'S CROPS CAN BE USED FOR THE LOAD SHOWN ON PAGE 2. THE AFT AND FORWARD END FILLER ASSEMBLIES OR PIECES MUST BE RESTRAINED FROM MOVING IN BOTH THE LATERAL AND VERTICAL DIRECTIONS. THIS IS ACCOMPLISHED IN THE LOAD SHOWN ON PAGE 2 WITH HOLD DOWN PIECES (FORWARD FILLER ASSEMBLY) AND RETAINING NAILS (FORWARD AND AFT FILLERS). IF THE CONFIGURATION OF A CROP IS SUCH THAT VERTICAL OR LATERAL RESTRAINT CANNOT BE PROVIDED, ADDITIONAL RESTRAINT METHODS, TO INCLUDE HOLD DOWN PIECES, RETAINING NAILS, AND/OR 2" WIDE WEB STRAP TIEDOWN ASSEMBLIES MUST BE INSTALLED.
- C. THE LOADING PROCEDURES DEPICTED HEREIN MAY BE USED FOR OUTLOADING PALLET UNITS WITH DIMENSIONS OTHER THAN WHAT IS SHOWN ON PAGE 4, PROVIDED THE OVERALL PALLET UNIT DIMENSIONS RESULT IN A LOAD THAT IS CONTAINED WITHIN AN ENVELOPE OF 211" L X 89" W X 73-1/2" H.
- D. LIGHT PALLET UNITS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE GUIDELINES DELINEATED IN THE BASIC UNITIZATION PROCEDURES DRAWING APPLICABLE TO THAT PALLET UNIT.
- E. DIMENSIONS, CUBE AND WEIGHT OF THE PALLET UNITS WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE BOXES AND THE WEIGHT OF THE SPECIFIC ITEM BEING UNITIZED.
- F. DIMENSIONS GIVEN FOR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY. PALLET UNITS MUST FIT SNUGLY AGAINST THE DUNNAGE ASSEMBLIES. THIS GUIDANCE MUST BE APPLIED PRIOR TO BEGINNING AN OUTLOADING OPERATION. ALSO, DUE TO VARIATION OF PALLET UNIT DIMENSIONS, ADJUSTMENTS MAY BE REQUIRED AS TO THE LOCATION OF CERTAIN PIECES ON DUNNAGE ASSEMBLIES.
- G. 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 19-48-4906-CA17Q7.
- H. EACH END OF THE SIDE BLOCKING MUST BE SECURED BY NAILING A 10d NAIL THRU A 3" WEBSTRAP HOOK SLOT. SEE "STRAP HOOK DETAIL" AND GENERAL NOTE "G.2" IN THE BASIC PROCEDURES DRAWING 19-48-4906-CA17Q7.
- 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.

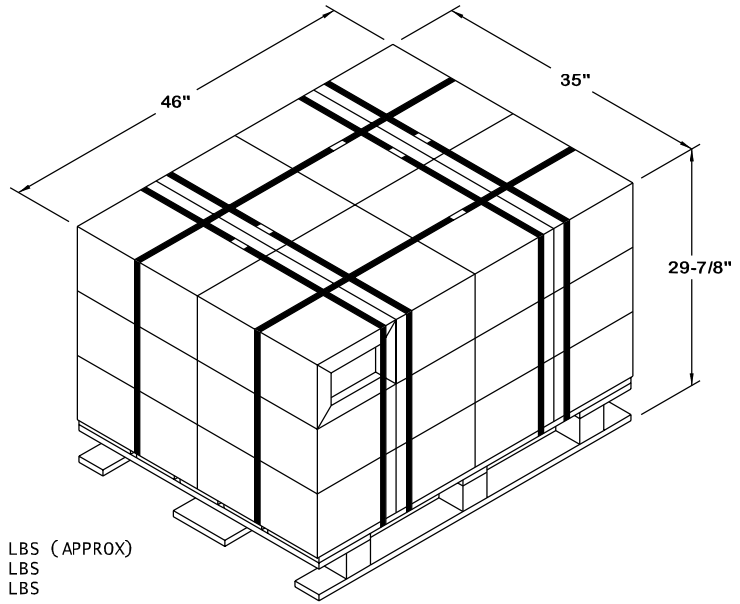
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 8"	35	24
2" X 3" (ACTUAL)	2	1
2" X 4"	18	12
2" X 8"	50	66
NAILS	NO. REQD	POUNDS
6d (2")	36	1/4
10d (3")	50	1
12d (3-1/4")	4	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
K068 LIGHT PALLET UNIT	10	10,800 LBS
K180 PALLET UNIT	10	15,400 LBS
DUNNAGE		207 LBS
CROP		3,800 LBS
TOTAL WEIGHT		30,207 LBS (APPROX)

THE LIGHT K068 PALLET UNIT DEPICTED AT RIGHT SHOULD BE CONSTRUCTED IAW WITH AMC DRAWING 19-48-4116/96F WITH THE FOLLOWING CHANGES:

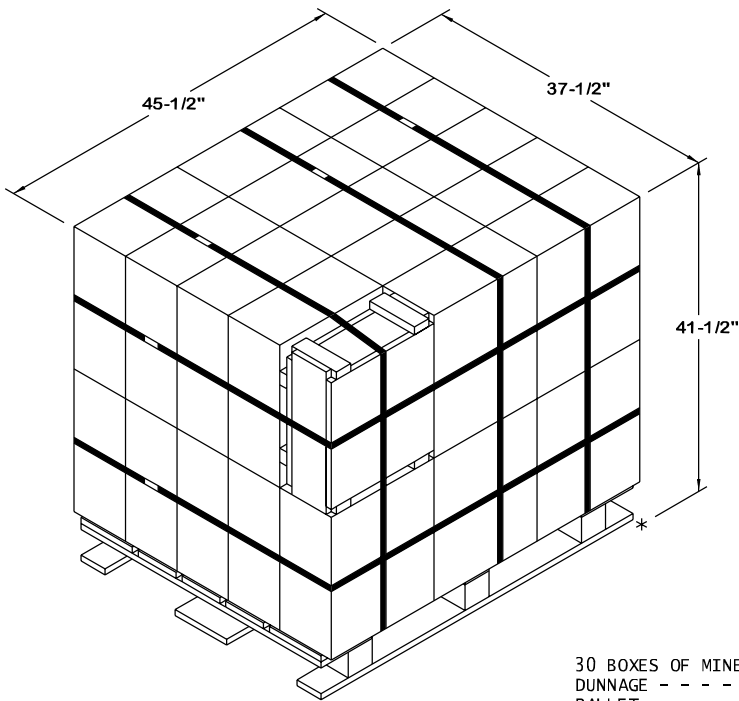
1. ELIMINATE TWO LAYERS OF BOXES (16 BOXES).
2. REDUCE THE TIEDOWN STRAP LENGTH TO 11'-0".
2. REDUCE THE LOAD STRAP LENGTH TO 12'-11".



LIGHT K068 PALLET UNIT DETAIL

24 BOXES OF FUZES (12 PER BOX) AT 42 LBS	-----	1,008 LBS (APPROX)
DUNNAGE	-----	7 LBS
PALLET	-----	65 LBS

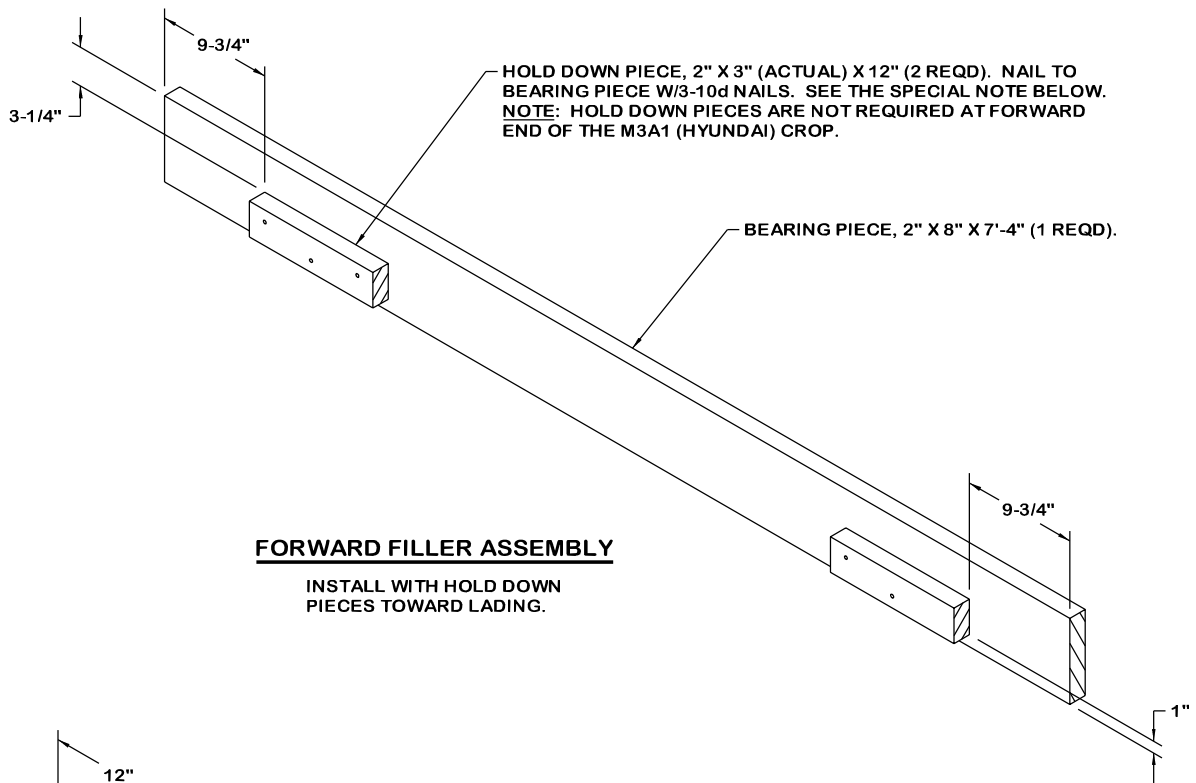
TOTAL WEIGHT	-----	1,080 LBS (APPROX)
CUBE	-----	27.8 CU FT (APPROX)



K180 PALLET UNIT DETAIL

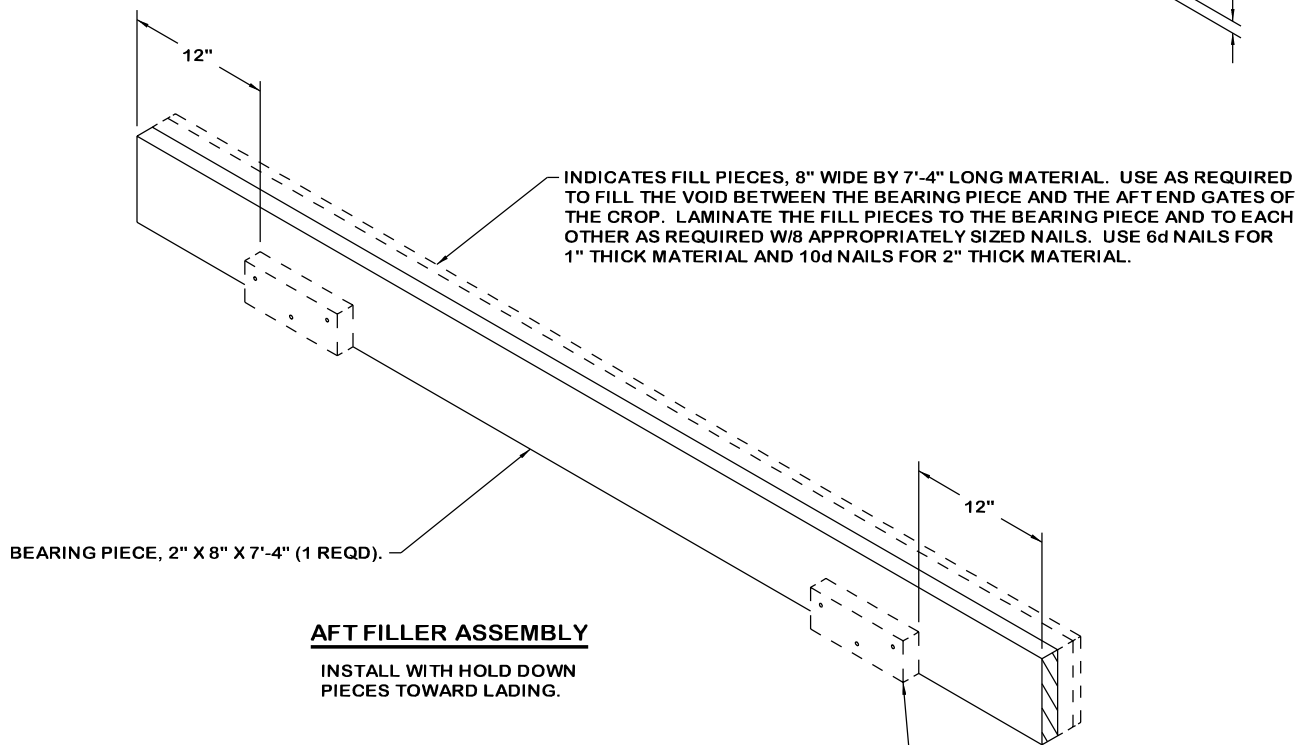
30 BOXES OF MINES (1 PER BOX) AT 49 LBS	-----	1,470 LBS (APPROX)
DUNNAGE	-----	5 LBS
PALLET	-----	65 LBS

TOTAL WEIGHT	-----	1,540 LBS (APPROX)
CUBE	-----	41.0 CU FT (APPROX)



FORWARD FILLER ASSEMBLY

INSTALL WITH HOLD DOWN PIECES TOWARD LADING.

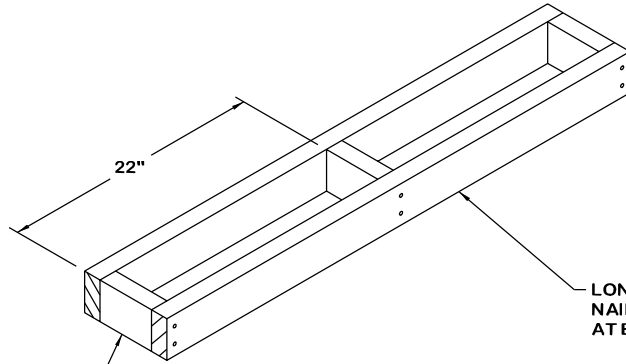


AFT FILLER ASSEMBLY

INSTALL WITH HOLD DOWN PIECES TOWARD LADING.

INDICATES HOLD DOWN PIECE, 2" X 4" X 9" (2 REQD). NAIL TO BEARING PIECE W/3-10d NAILS. SEE THE SPECIAL NOTE AT LEFT. NOTE: HOLD DOWN PIECES ARE NOT REQUIRED AT AFT END OF M3 (SUMMA) CROP.

SPECIAL NOTE: HOLD DOWN PIECES (IF REQD) MUST BE RECESSED UNDERNEATH THE PALLET UNITS AND FIT BETWEEN THE SKIDS. FIELD CHECK DIMENSIONS BEFORE ASSEMBLY TO ENSURE A PROPER FIT. SEE GENERAL NOTE "F" ON PAGE 3.



LONGITUDINAL PIECE, 2" X 4" X 45" (2 REQD).
NAIL TO THE LATERAL PIECES W/2-10d NAILS
AT EACH JOINT.

LATERAL PIECE, 2" X 4" X 5" (3 REQD).

SIDE FILL ASSEMBLY B