

D. L.

DATE 10/12/00

APPENDIX 36

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

SCL #36 - 155MM HERA M549A1

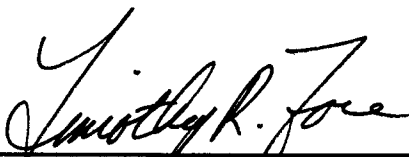
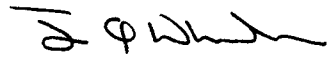
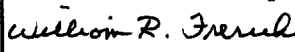


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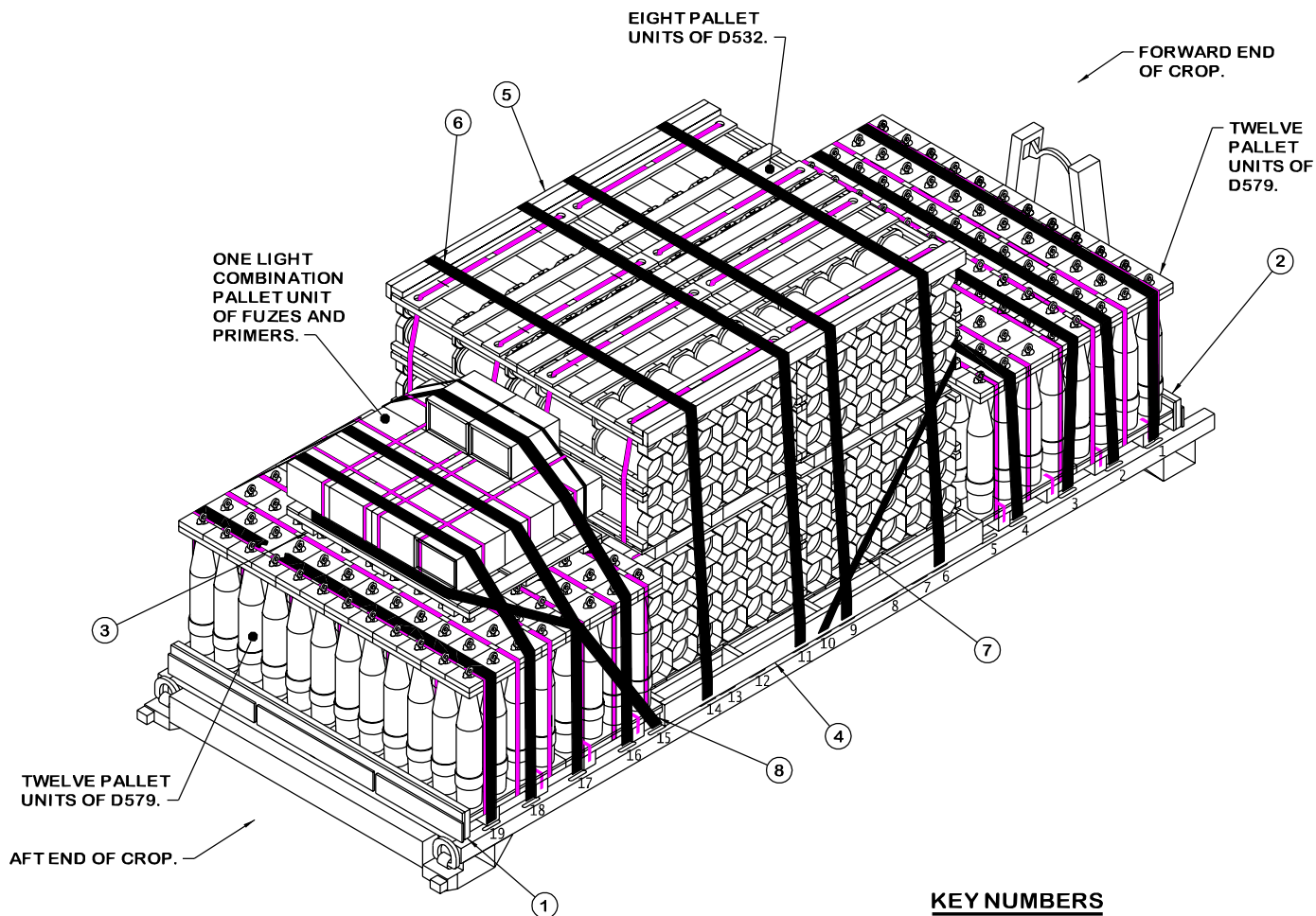
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NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC CROP OUTLOADING PROCEDURES DRAWING 19-48-4905-CA17Q6.

- 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	LAURA FIEFFER	DO NOT SCALE			
		REV.		WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN	BASIC		OCTOBER 2000			
	REV.						
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND 	DRAFTSMAN	BASIC					
		REV.					
	TRANSPORTATION ENGINEERING DIVISION						
U.S. ARMY DEFENSE AMMUNITION CENTER	VALIDATION ENGINEERING DIVISION			CLASS	DIVISION	DRAWING	FILE
	ENGINEERING DIRECTORATE			19	48	4905/ 36	CA17Q6



ISOMETRIC VIEW

(KEY NUMBERS CONTINUED)

- ⑦ FORWARD END RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (1 REQD). INSTALL THE STRAP FROM THE TENTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, AROUND THE PALLET DUNNAGE ASSEMBLY AND BOTTOM LAYER OF CONTAINERS OF THE D532 PALLET UNITS, AND BACK DOWN TO THE TENTH TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. DO NOT INSTALL OVER THE HOLD-DOWN STRAPS ATTACHED TO THE SIXTH AND NINTH TIEDOWN ANCHORS, THREAD BEHIND THESE STRAPS. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "H" ON PAGE 3.
- ⑧ AFT END RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (1 REQD). INSTALL THE STRAP FROM THE FIFTEENTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, AT AN ANGLE OVER THE D579 PALLET UNITS, AND AROUND THE PALLET POSTS OF THE LIGHT COMBINATION FUZE/PRIMER PALLET UNIT, AND BACK DOWN TO THE FIFTEENTH TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. DO NOT INSTALL OVER THE HOLD-DOWN STRAP ATTACHED TO THE EIGHTEENTH TIEDOWN ANCHOR, THREAD BEHIND THIS STRAP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTE "H" ON PAGE 3.

KEY NUMBERS

- ① AFT FILLER ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 5. CENTER AGAINST AFT CROP END GATE AND, AFTER THE PALLET UNITS 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, 1" OR 2" X 8" X 7'-4" (AS REQD). LAMINATE EACH PIECE TO THE PREVIOUS PIECE W/8 NAILS OF A SUITABLE SIZE (6d NAILS FOR 1" THICK MATERIAL). 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 PIECES, LEAVING THE NAIL HEADS PROTRUDING THRU THE HOLES TO PROVIDE LATERAL AND VERTICAL RESTRAINT.
- ③ PALLET SUPPORT ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 6. POSITION THE ASSEMBLY ON TOP OF THE AFT D579 PALLET UNITS SO THAT ASSEMBLY LATERAL PIECES ARE LENGTHWISE ON THE LOAD AND FIT BETWEEN THE LIFTING RINGS OF THE D579 PROJECTILES. CENTER THE ASSEMBLY LATERALLY ON THE D579 PALLET UNITS AND POSITION SO THAT THE LIGHT FUZE/PRIMER COMBINATION PALLET UNIT WILL BE TIGHT AGAINST THE ADJACENT D532 PALLET UNIT.
- ④ SIDE BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6. INSTALL ONE ON EACH SIDE OF THE CROP ADJACENT TO THE D532 PALLET UNITS. AFTER THE HOLD-DOWN STRAPS ARE INSTALLED, NAIL THROUGH THE STRAP ATTACHMENT SLOTS OF TWO HOLD-DOWN STRAPS (ONE AT EACH END OF THE ASSEMBLY) INTO SIDE BLOCKING W/1-10d PARTIALLY DRIVEN NAIL AND BEND OVER SIDE OF HOOK.
- ⑤ STRAPPING BOARD ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6. INSTALL ON THE EDGES OF THE D532 PALLET UNITS.
- ⑥ 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 PALLET UNITS, 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 "H" ON PAGE 3.

(CONTINUED AT LEFT)

RECOMMENDED SEQUENTIAL PROCEDURES

1. PREFABRICATE THE AFT FILLER ASSEMBLY, THE PALLET SUPPORT ASSEMBLY, TWO SIDE BLOCKING ASSEMBLIES, AND TWO STRAPPING BOARD ASSEMBLIES. ASSEMBLE THE FUZE/PRIMER COMBINATION PALLET UNIT.
2. INSTALL THE AFT FILLER ASSEMBLY.
3. LOAD TWO ROWS OF SIX PALLET UNITS OF D579 AGAINST THE AFT END FILLER ASSEMBLY, CENTERING THE ROWS Laterally ON THE CROP.
4. LOAD TWO ROWS OF FOUR PALLET UNITS EACH OF D532 AGAINST THE D579 PALLET UNITS, CENTERING THE ROWS Laterally ON THE CROP.
5. LOAD TWO ROWS OF SIX PALLET UNITS OF D579 AGAINST THE D532 PALLET UNITS, CENTERING THE ROWS Laterally ON THE CROP.
6. INSTALL THE FORWARD FILLER PIECES.
7. INSTALL THE PALLET SUPPORT ASSEMBLY ON TOP OF THE AFT D579 PALLET UNITS AS INSTRUCTED IN KEY NUMBER ③.
8. LOAD ONE LIGHT FUZE/PRIMER COMBINATION PALLET UNIT ON TOP OF THE PALLET SUPPORT ASSEMBLY, AGAINST THE AFT D532 PALLET UNITS, ALIGNING THE PALLET SKIDS WITH THE PALLET SUPPORT ASSEMBLY LONGITUDINAL PIECES. SEE GENERAL NOTE "F" AT RIGHT.
9. INSTALL THE TWO SIDE BLOCKING ASSEMBLIES, ONE ON EITHER SIDE OF THE D532 PALLET UNITS.
10. INSTALL THE TWO STRAPPING BOARD ASSEMBLIES ON THE D532 PALLET UNITS.
11. INSTALL 12 WEB STRAP TIEDOWN ASSEMBLIES TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, OVER THE TOP OF PALLET UNITS, TO THE CORRESPONDING TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP.
12. INSTALL THE WEB STRAP TIEDOWN ASSEMBLY ATTACHED TO THE TENTH TIEDOWN ANCHORS AROUND THE D532 PALLET UNITS, AS INSTRUCTED IN KEY NUMBER ⑦.
13. INSTALL THE WEB STRAP TIEDOWN ASSEMBLY ATTACHED TO THE FIFTEENTH TIEDOWN ANCHORS AROUND THE COMBINATION FUZE/PRIMER PALLET UNIT, AS INSTRUCTED IN KEY NUMBER ⑧.
14. NAIL THROUGH THE STRAP 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.
15. NAIL TWO 12d RETAINING 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.
16. NAIL THE TWO REMAINING 12d RETAINING NAILS THRU THE HOLES IN THE FORWARD CROP END GATE INTO THE FORWARD FILLER PIECES, LEAVING THE NAIL HEADS PROTRUDING THRU THE HOLES TO PROVIDE LATERAL AND VERTICAL RESTRAINT.

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 #36. SEE PAGES 4 AND 5 FOR DETAILS OF THE PALLET UNITS. 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 6 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. 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. 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.
- G. 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.
- H. 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.
- 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"	7	3
1" X 8"	15	10
2" X 3" (ACTUAL)	2	1
2" X 4"	34	23
2" X 6"	24	24
2" X 8"	15	20
NAILS	NO. REQD	POUNDS
6d (2")	27	1/4
10d (3")	62	1
12d (3-1/4")	4	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
D532 PALLET UNIT	8	10,960 LBS
D579 PALLET UNIT	24	19,560 LBS
COMBINATION		
FUZE/PRIMER PALLET UNIT	1	594 LBS
DUNNAGE		159 LBS
CROP		3,800 LBS
TOTAL WEIGHT		35,073 LBS (APPROX)

SCL #36 COMPOSITION CHART

DODIC	NSN	NOMENCLATURE	UNIT DWG	REQD	UNITS REQD	HC
D532	1320-01-202-8938	CHG, PROPELLING 155MM RB M203A1	4042A/22	192	8 PALLETS	1. 3C
D579	1320-01-047-6009	PROJ, 155MM HERA M549A1	9327883	192	24 PALLETS	1. 1D
N290 [▲]	1390-01-283-6532	FUZE, ELECTRONIC TIME W/BOOSTER M767	4116/156S	64	4 BOXES	1. 2D
N291*	1390-01-309-6452	FUZE, PROXIMITY W/BOOSTER M732A2	4116/156	80	5 BOXES	1. 2D
N340 [▲]	1390-01-132-7481	FUZE, PD W/O BOOSTER M739A1	4116/156	64	4 BOXES	1. 2D
N523	1390-00-892-4202	PRIMER, PERCUSSION M82	4116/158E	200	1 BOX	1. 4S

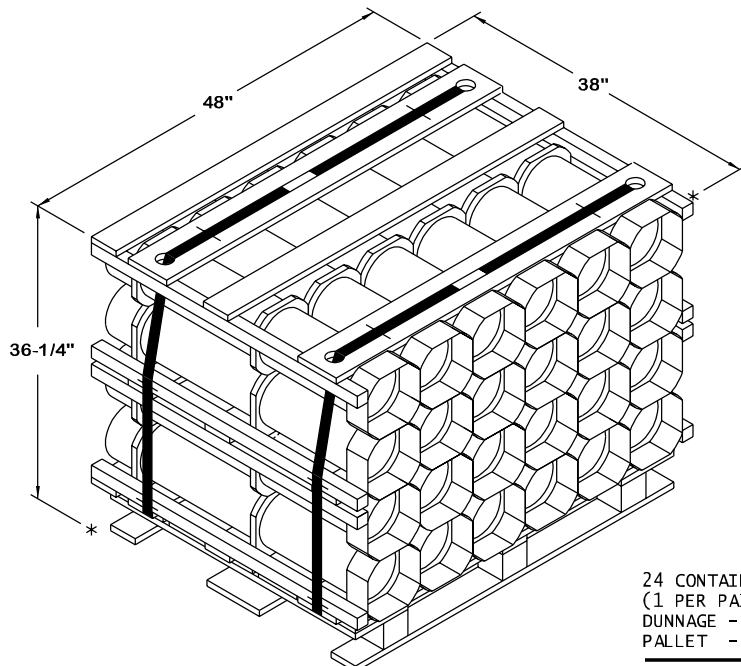
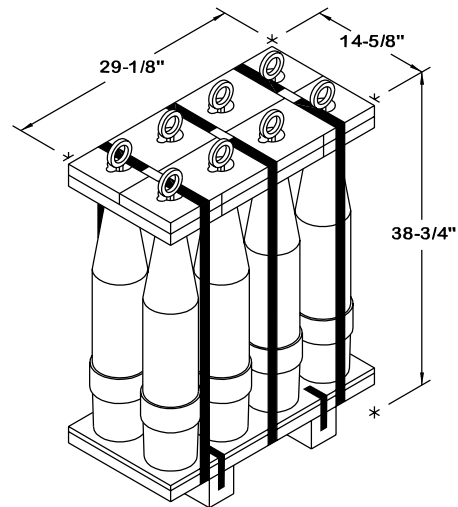
NOTE: THE DODICS LISTED BELOW MAY BE USED AS ALTERNATES FOR THE DODICS WITH MATCHING SYMBOLS SHOWN ABOVE IF THE QUANTITY OF THE DODICS SHOWN ABOVE IS INSUFFICIENT.

N464*	1390-01-202-1710	FUZE, PROXIMITY W/BOOSTER M732	4116/156G			1. 2D
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[▲] REPLACE WITH 1390-NA08 MOFA FUZE WHEN AVAILABLE.

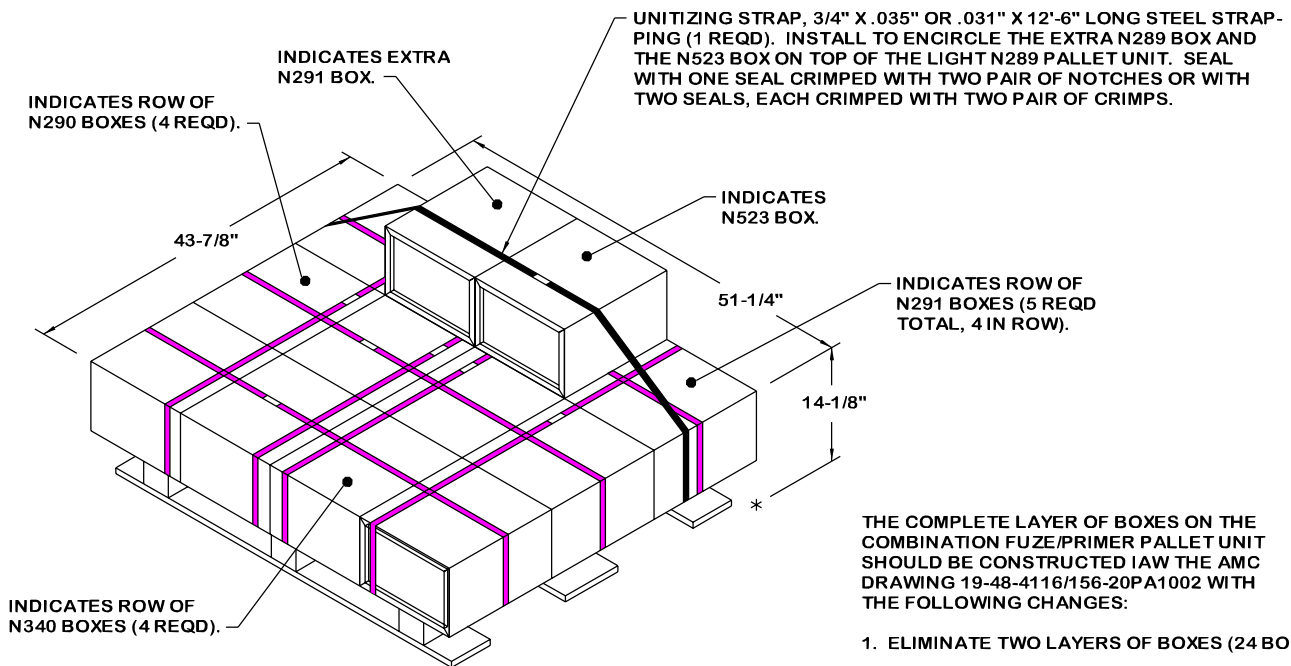
D579 PALLET UNIT DETAIL

8 155MM CTG AT 96-7/8 LBS	-----	775 LBS (APPROX)
DUNNAGE AND PALLET	-----	40 LBS
<hr/>		
TOTAL WEIGHT	-----	815 LBS (APPROX)
CUBE	-----	9.6 CU FT (APPROX)



D532 PALLET UNIT DETAIL

24 CONTAINERS OF 155MM PROPELLING CHARGES		
(1 PER PA103 CONTAINER) AT 52 LBS	-----	1,248 LBS (APPROX)
DUNNAGE	-----	57 LBS
PALLET	-----	65 LBS
<hr/>		
TOTAL WEIGHT	-----	1,370 LBS (APPROX)
CUBE	-----	38.3 CU FT (APPROX)



SPECIAL NOTE:

ALIGN THE TWO EXTRA BOXES WITH THE OUTER CENTER BOXES ON THE PALLET UNIT. INSTALL THE UNITIZATION STRAP OVER THE TWO BOXES, TOWARDS THE CENTER OF THE PALLET UNIT, AS SHOWN ABOVE.

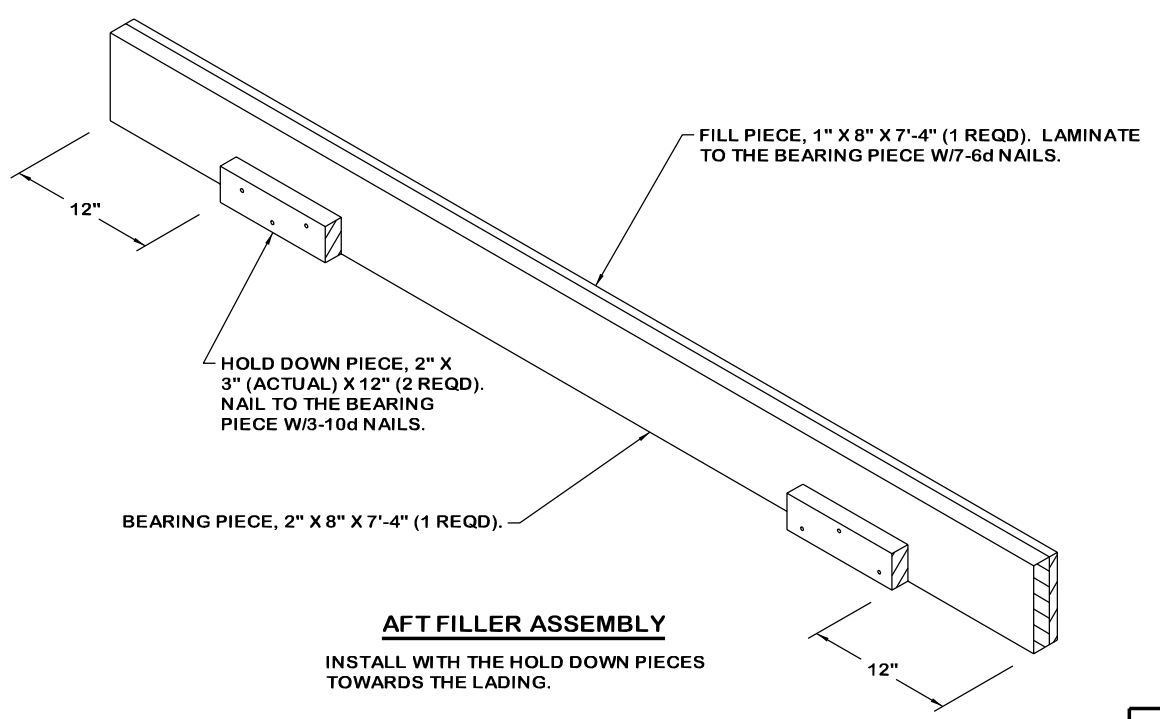
THE COMPLETE LAYER OF BOXES ON THE COMBINATION FUZE/PRIMER PALLET UNIT SHOULD BE CONSTRUCTED IAW THE AMC DRAWING 19-48-4116/156-20PA1002 WITH THE FOLLOWING CHANGES:

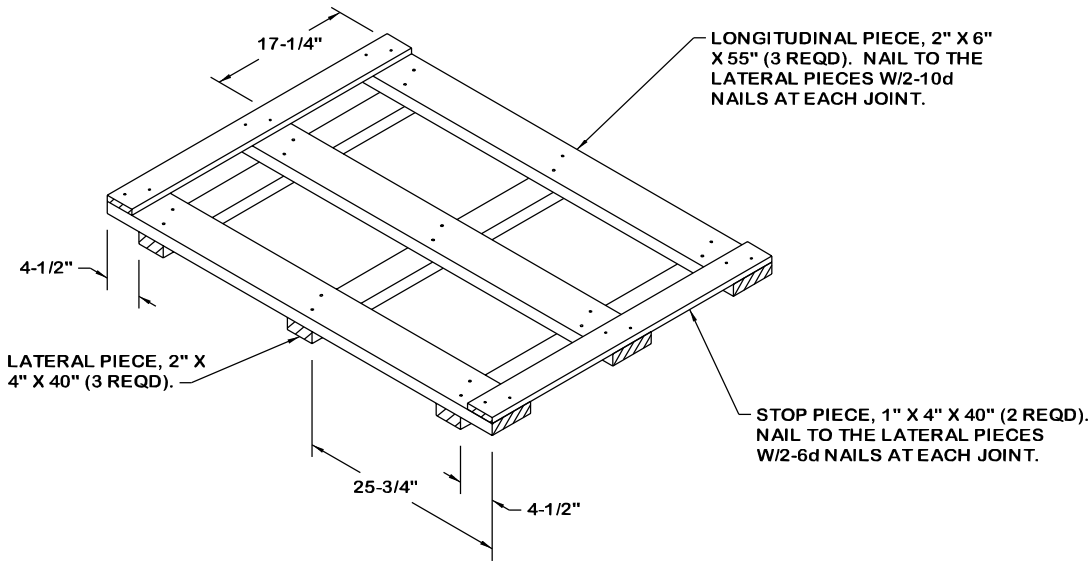
1. ELIMINATE TWO LAYERS OF BOXES (24 BOXES).
2. REDUCE THE TIEDOWN STRAP LENGTH TO 9'-10".
3. REDUCE THE LOAD STRAP LENGTH TO 11'-1".

LIGHT FUZE/PRIMER COMBINATION PALLET UNIT DETAIL

4 BOXES OF N290 FUZES (16 PER BOX) AT 42 LBS - - -	168 LBS (APPROX)
5 BOXES OF N291 FUZES (16 PER BOX) AT 42 LBS - - -	210 LBS (APPROX)
4 BOXES OF N340 FUZES (16 PER BOX) AT 46 LBS - - -	184 LBS (APPROX)
1 LIGHT BOX OF PRIMERS (200 PER BOX) AT 25 LBS - - -	25 LBS (APPROX)
DUNNAGE - - - - -	9 LBS
PALLET - - - - -	80 LBS

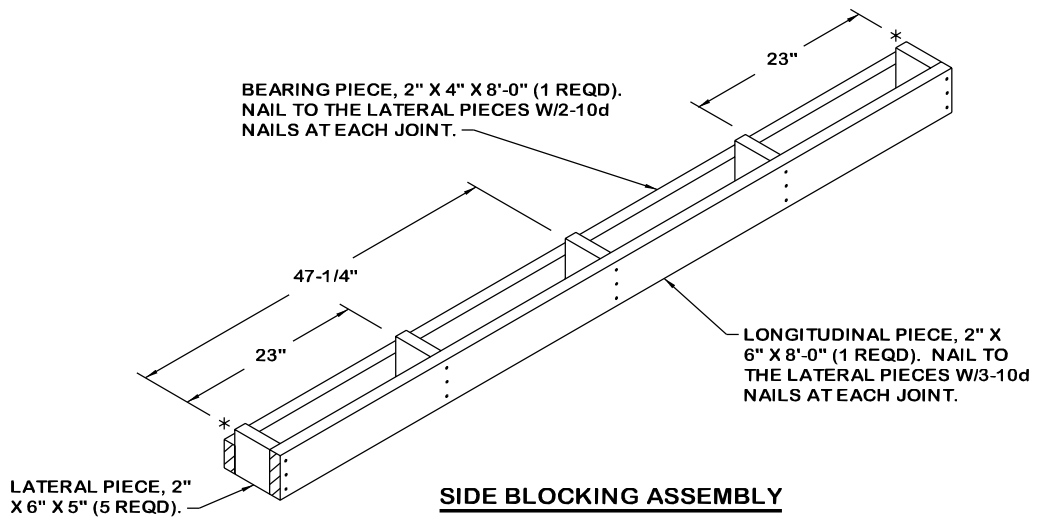
TOTAL WEIGHT - - - - -	676 LBS (APPROX)
CUBE - - - - -	29.7 CU FT (APPROX)





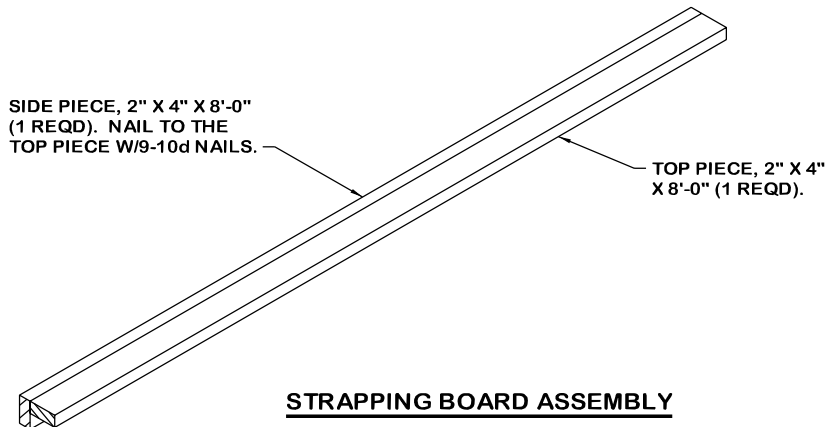
PALLET SUPPORT ASSEMBLY

NOTE: THE LONGITUDINAL PIECES MUST NOT CONTACT THE TOP OF THE LIFTING RINGS OF THE D579 PALLET UNITS. IF THE SINGLE 2" X 4" LATERAL PIECES DO NOT PROVIDE SUFFICIENT CLEARANCE FOR THE D579 LIFTING RINGS, ADDITIONAL PIECES MAY BE ADDED. LAMINATE AN ADDITIONAL 1" OR 2" PIECE TO EACH LATERAL PIECE AS NEEDED TO CLEAR THE LIFTING RINGS.



SIDE BLOCKING ASSEMBLY

INSTALL WITH THE BEARING PIECE AGAINST THE LADING.



STRAPPING BOARD ASSEMBLY