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APPENDIX 107

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

COMBINATION SMOKE AND INCENDIARY
GRENADES PALLETIZED ON WOODEN
PALLETS; INCLUDES FOUR UNIQUE PALLET
UNIT CONFIGURATIONS ON CROP

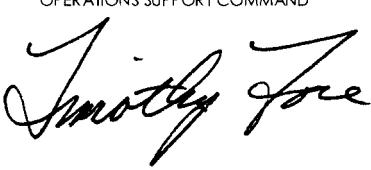

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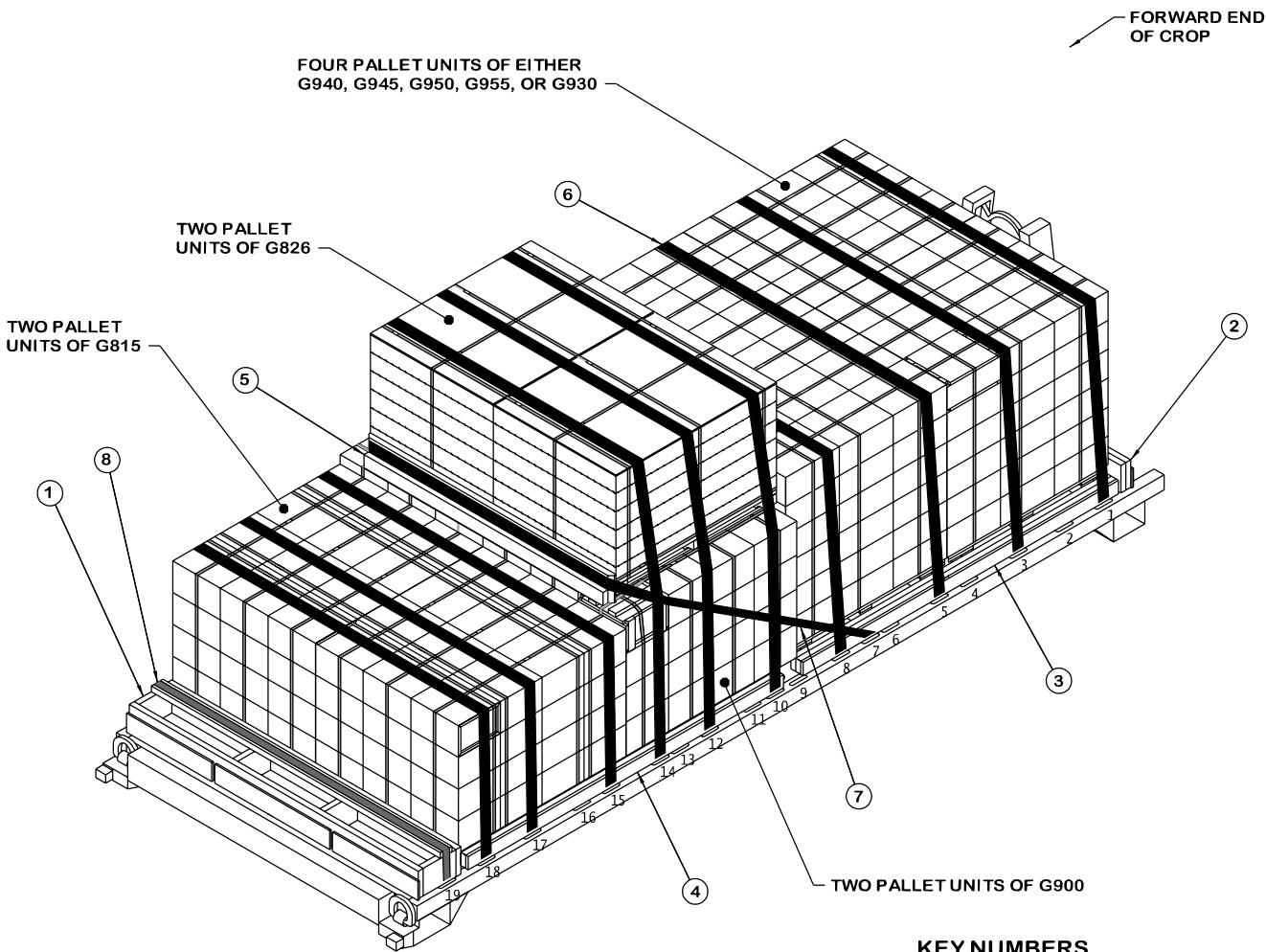
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NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC CROP OUTLOADING PROCEDURES DRAWING 19-48-4906-CA17Q7.

- 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		DO NOT SCALE			
		REV.		WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN	BASIC	PATRICK DOUGHERTY	DECEMBER 2000			
		REV.					
	DRAFTSMAN	BASIC					
		REV.					
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND 	TRANSPORTATION ENGINEERING DIVISION		<i>William R. French</i>				
	VALIDATION ENGINEERING DIVISION		<i>Ray W. [Signature]</i>	CLASS	DIVISION	DRAWING	FILE
	ENGINEERING DIRECTORATE		<i>Alvin F. Cook</i>	19	48	4906/ 107	CA17Q7



ISOMETRIC VIEW

KEY NUMBERS

(KEY NUMBERS CONTINUED)

- ① AFT FILLER ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 6. 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 (10d NAILS FOR 2" 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 SIDE BLOCKING ASSEMBLY A, 2" X 4" X 8'-0" (DOUBLED) AND 1" X 4" X 8'-0" (SINGLE) (2 ASSEMBLIES REQD). LAMINATE 1" X 4" BOARD TO A 2" X 4" BOARD W/9-6d NAILS. LAMINATE SECOND 2" X 4" BOARD TO FIRST 2" X 4" BOARD W/9-10d NAILS. POSITION AGAINST THE FORWARD PALLET ON BOTH SIDES OF THE CROP AS SHOWN. AFTER THE HOLD-DOWN STRAPS ARE INSTALLED, NAIL THROUGH THE STRAP ATTACHMENT SLOTS OF EACH HOLD-DOWN STRAP INTO THE SIDE BLOCKING W/1-10d NAIL PARTIALLY DRIVEN AND BENT OVER SIDE OF HOOK.
- ④ SIDE BLOCKING ASSEMBLY B, 2" X 4" X 8'-0" AND 1" X 4" X 8'-0" (2 ASSEMBLIES REQD). LAMINATE BY NAILING THROUGH 1" X 4" BOARD INTO 2" X 4" BOARD W/9-6d NAILS. POSITION AGAINST THE PALLET UNITS ON BOTH SIDES OF THE CROP AS SHOWN. AFTER THE HOLD-DOWN STRAPS ARE INSTALLED, NAIL THROUGH THE STRAP ATTACHMENT SLOTS OF EACH HOLD-DOWN STRAP INTO THE SIDE BLOCKING W/1-10d NAIL PARTIALLY DRIVEN AND BENT OVER SIDE OF HOOK.
- ⑤ AFT RESTRAINT ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 6. POSITION ASSEMBLY AT THE REAR OF THE PALLET UNITS ON THE SECOND LAYER. NOTE: ASSEMBLY NOT REQUIRED IF PALLET UNITS ON THE TOP LAYER ARE ON STANDARD 4-WAY ENTRY MIL-P-15011 40" X 48" PALLETS WITH POSTS.
- ⑥ 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 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 NOTES "F" AND "G" ON PAGE 3.
- ⑦ AFT RESTRAINT STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (1 REQD). INSTALL STRAP FROM THE SEVENTH TIEDOWN ANCHOR ON ONE SIDE OF THE CROP AT AN ANGLE AROUND THE CORNER POSTS OR AFT RESTRAINT ASSEMBLY (AS APPLICABLE) OF THE PALLET UNITS ON THE SECOND LAYER AND BACK DOWN TO THE SEVENTH TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP. ALIGN SCUFF SLEEVES OVER ALL SHARP EDGES AND FIRMLY TENSION STRAP. SEE GENERAL NOTES "F" AND "G" ON PAGE 3.
- ⑧ AFT RETAINER STRAP, 2" WIDE WEB STRAP TIEDOWN ASSEMBLY (1 REQD). SECURE STRAP TO THE NINETEENTH TIEDOWN RING, OVER THE AFT BLOCKING ASSEMBLY STRAPPING BOARD TO THE CORRESPONDING TIEDOWN RING 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.

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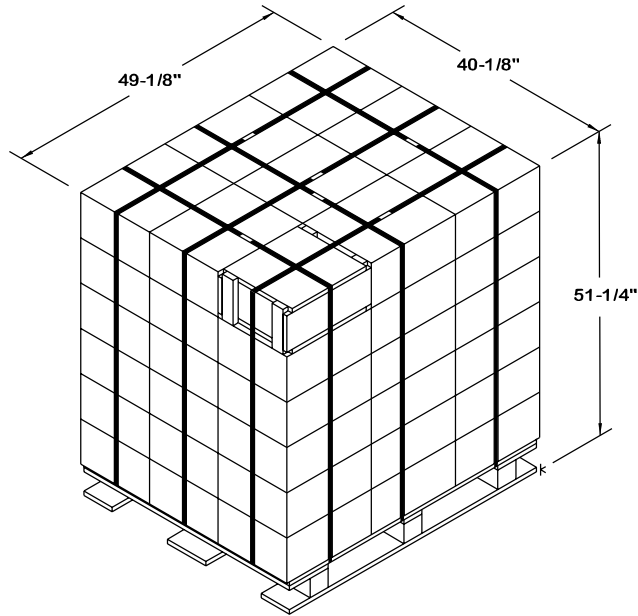
GENERAL NOTES

- 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 10 PALLET UNITS. SEE PAGES 4 AND 5 FOR DETAILS OF THE TYPICAL PALLET UNITS. AN M3A1 (HYUNDAI) CROP IS SHOWN AS TYPICAL. OTHER MANUFACTURER'S CROPS CAN BE USED FOR THE LOAD SHOWN ON PAGE 2. ACTUAL CROP CONFIGURATION WILL DETERMINE WHETHER THE LOADING STARTS AT THE AFT OR THE FORWARD END OF THE CROP. 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 (AFT 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. 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.
- E. 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.
- 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 19-48-4906-CA17Q7.
- G. UNUSED WEB STRAP TIEDOWN ASSEMBLIES MUST BE SECURED AS DELINEATED IN GENERAL NOTE "K.13" IN THE BASIC PROCEDURE DRAWING 19-48-4906-CA17Q7.
- H. 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"	32	11
2" X 4"	62	42
2" X 8"	39	52
NAILS	NO. REQD	POUNDS
6d (2")	36	1/4
10d (3")	106	2
12d (3-1/4")	4	1/4
2" WEB STRAP TIEDOWN ASSY -- 1 REQD -- -- 6 LBS		

LOAD AS SHOWN

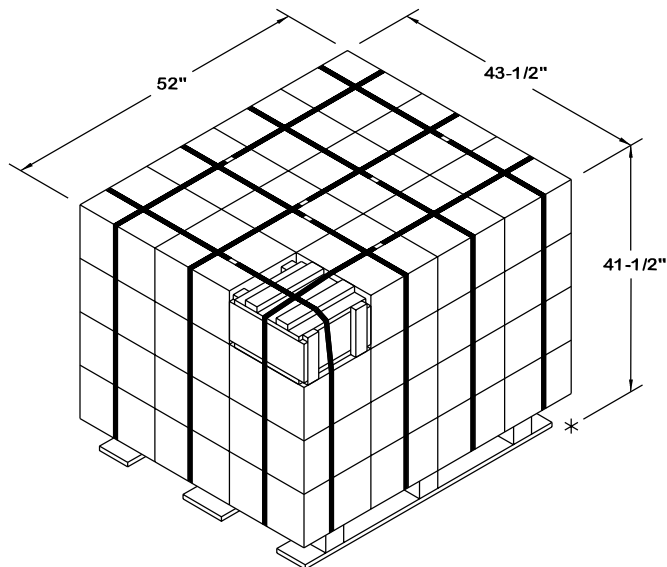
ITEM	QUANTITY	WEIGHT (APPROX)
G815 PALLET UNIT	2	3,346 LBS
G826 PALLET UNIT	2	3,574 LBS
G900 PALLET UNIT	2	4,304 LBS
G940 PALLET UNIT	4	9,420 LBS
DUNNAGE		219 LBS
CROP		3,800 LBS
TOTAL WEIGHT		24,663 LBS (APPROX)



***G940 PALLET UNIT DETAIL**

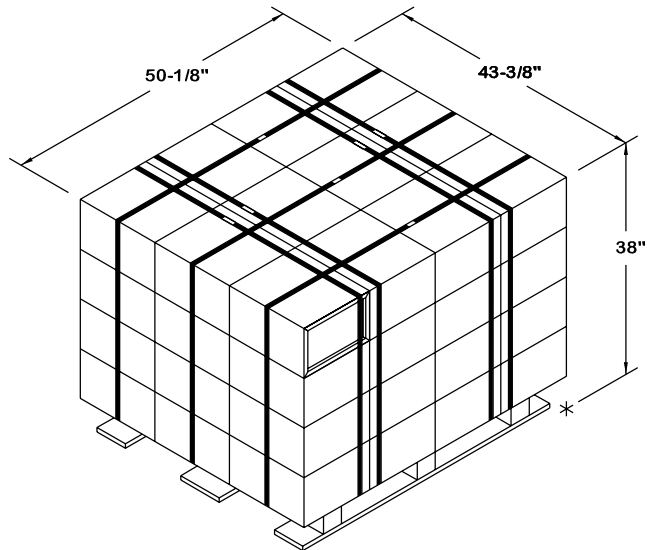
54 BOXES OF HAND GRENADE (16 PER BOX) AT 42 LBS	---	2,268 LBS (APPROX)
DUNNAGE	-----	7 LBS
PALLET	-----	80 LBS
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TOTAL WEIGHT	-----	2,355 LBS (APPROX)
CUBE	-----	58.5 CU FT (APPROX)

*G940 PALLET UNIT SHOWN, G945, G950, G955, AND G930 PALLET UNITS ARE IDENTICAL.



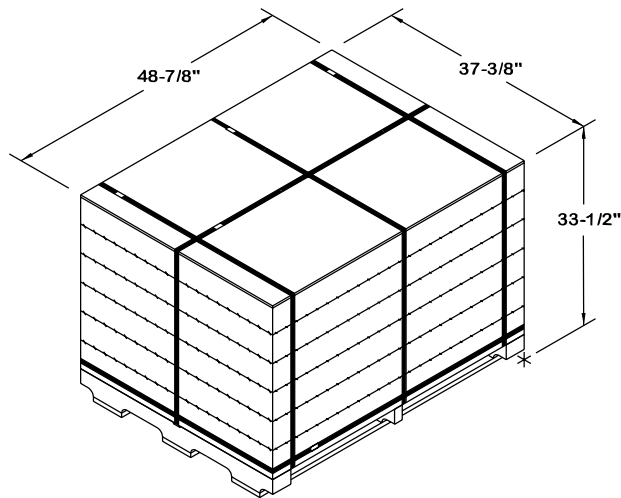
G900 PALLET UNIT DETAIL

48 BOXES OF HAND GRENADE (16 PER BOX) AT 43 LBS	---	2,064 LBS (APPROX)
DUNNAGE	-----	8 LBS
PALLET	-----	80 LBS
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TOTAL WEIGHT	-----	2,152 LBS (APPROX)
CUBE	-----	54.3 CU FT (APPROX)



G815 PALLET UNIT DETAIL

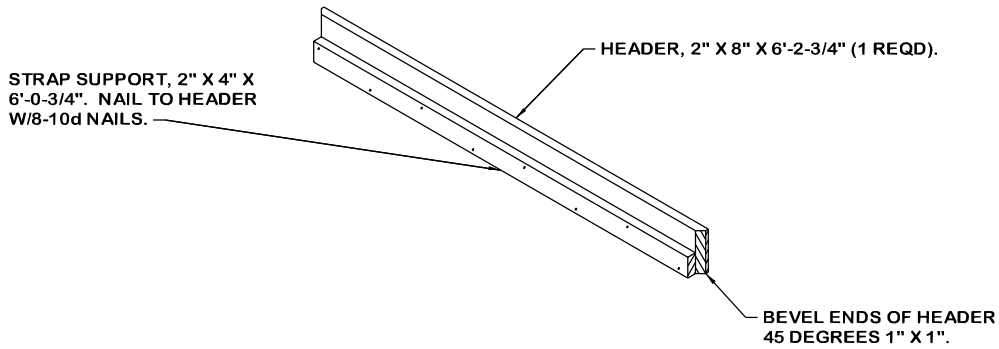
48 BOXES OF SMOKE GRENADE LAUNCHERS (8 PER BOX) AT 33 LBS -	1,584 LBS (APPROX)
DUNNAGE - - - - -	9 LBS
PALLET - - - - -	80 LBS
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TOTAL WEIGHT - - - - -	1,673 LBS (APPROX)
CUBE - - - - -	47.8 CU FT (APPROX)



***G826 PALLET UNIT DETAIL**

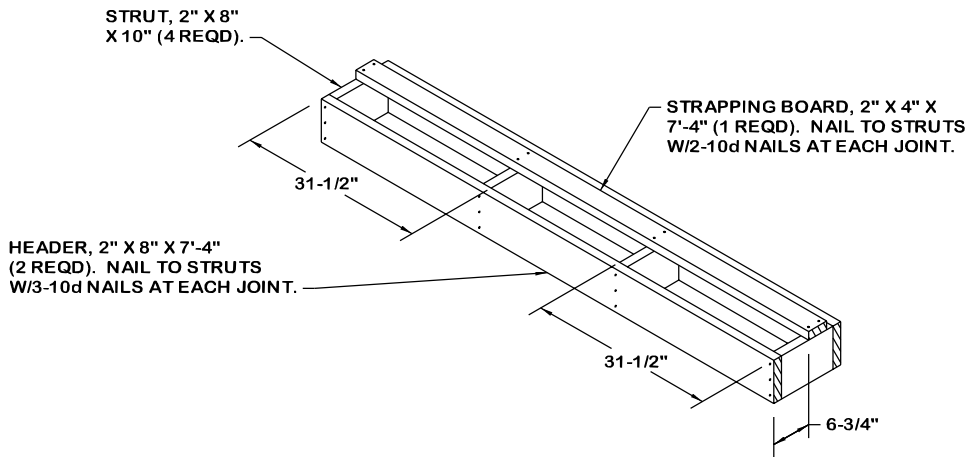
72 BOXES OF SMOKE GRENADE LAUNCHERS (4 PER BOX) AT 23 LBS -	1,656 LBS (APPROX)
DUNNAGE - - - - -	13 LBS
PALLET - - - - -	118 LBS
<hr/>	
TOTAL WEIGHT - - - - -	1,787 LBS (APPROX)
CUBE - - - - -	35.4 CU FT (APPROX)

*PALLET UNIT SHOWN ON A NON-STANDARD PALLET. REQUIRES AFT RESTRAINT ASSEMBLY SHOWN ON PAGES 2 AND 6.



AFT RESTRAINT ASSEMBLY

THE AFT RESTRAINT ASSEMBLY WILL BE PLACED AT THE AFT END OF THE G826 PALLET UNITS ON THE TOP LAYER OF THE LOAD. NOTE: THIS ASSEMBLY NOT REQUIRED FOR G826 UNITIZED ON A STANDARD 40" X 48" PALLET WITH POSTS.



AFT FILLER ASSEMBLY

POSITION THE AFT FILLER ASSEMBLY AT THE AFT END OF THE CROP. ENSURE THAT THE STRAPPING BOARD IS IN ALIGNMENT WITH THE NINETEENTH TIEDOWN ANCHOR.