

APPENDIX 5

UNITIZING PROCEDURES FOR PROPELLING CHARGES PACKED IN CYLINDRICAL METAL CONTAINERS ON 4-WAY ENTRY PALLETS

M18 SERIES CONTAINERS

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PALLET UNIT DATA						
ITEMS INCLUDED		HAZARD CLASSIFICATION				WEIGHT
NSN	DODIC	DOT CLASS	CG CLASS	QD CLASS	COMP GROUP	(LBS)
1320-00						
028-4374	D675	B	II-A	1.3	C	1,779
542-0132	D675	B	II-A	1.3	C	TO
965-0554	D534	B	II-A	1.3	C	1,792

NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4042-20PM1001.

THIS DRAWING SUPERSEDES PART OF DRAWING 19-48-4042-1-2-5-11-14PM1000, DATED FEBRUARY 1965, AND REVISION 1, THERETO, DATED 29 AUGUST 1969.

DO NOT SCALE

REVISIONS				DRAFTSMAN	PROJ ENG
				DAK	WRF
				CHECKER	LOG ENGRG OFFICE
				GRG	L. Pawlitz
APPROVED, U. S. ARMY ARMAMENT MATERIAL READINESS COMMAND					
<i>Signature</i>					
DRBAR - MAD			DRBAR - TMD		
APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND READINESS COMMAND (DARCOM)					
<i>Signature</i>					
U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL					
U. S. ARMY DARCOM DRAWING					
OCTOBER 1979					
CLASS	DIVISION	DRAWING	FILE		
19	48	4042A/ 5	20PM 1001		

GENERAL NOTES

- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZING PROCEDURES DRAWING 19-48-4042-20PM1001. TO PRODUCE AN APPROVED UNIT 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. DIMENSIONS, CUBE, AND WEIGHT OF A PALLET UNIT WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE CONTAINER, WEIGHT OF THE SPECIFIED ITEM, AND METHOD OF UNITIZATION.
- C. FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX, SEE DARCOM DRAWING 19-48-4042-1-2-5-11-14PM1000, REVISION NO. 1.
- D. FOR METHOD OF SECURING A STRAP CUTTER TO THE PALLET UNIT, SEE DARCOM DRAWING 19-48-4127-20P1000.
- E. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS APPENDIX, THE CONTAINERS NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS APPENDIX.
- F. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING PROPELLING CHARGES WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN THOSE SHOWN ON THE COVER PAGE, PROVIDED THE ITEM IS PACKED IN THE M18 SERIES CONTAINER. THE EXPLOSIVE CLASSIFICATION OF OTHER ITEMS MAY BE DIFFERENT THAN THOSE SHOWN.
- G. FOR DETAILS OF THE M18 SERIES CONTAINER, SEE PICATINNY ARSENAL DRAWING NO. 8880530.
- CONTAINER DIMENSIONS ----- 26-9/32" LONG BY 8-13/32" DIAMETER.
 - CONTAINER CUBE ----- 0.9 CUBIC FEET.
 - CONTAINER WEIGHT
 - (WITH CHARGE) ----- 31 POUNDS (APPROX).
- H. THE SPECIFIED UNITIZING PROCEDURES SHOWN HEREIN DEPICT TWO DIFFERENT METHODS FOR UNITIZING THE M18 SERIES CONTAINERS:
1. UNIT "A" DEPICTS CONTAINERS UNITIZED ON FLAT DUNNAGE. SEE DETAILS ON PAGES 4 AND 5.
 2. UNIT "B" DEPICTS CONTAINERS UNITIZED ON ROUTED DUNNAGE. SEE DETAILS ON PAGES 6 AND 7.
- BOTH METHODS ARE APPROVED FOR USE.
- J. IF DEEMED MORE ECONOMICAL FOR SHIPPING AND STORAGE BY THE RESPONSIBLE COMMAND, THE UNITS DEPICTED IN THE FOLLOWING PAGES MAY BE DECREASED BY ONE COMPLETE LAYER OF CONTAINERS. FOR FURTHER UNITIZATION GUIDANCE, SEE SPECIAL NOTE 1 ON PAGES 4 AND 6.

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SEAL FOR 3/4" STRAP
(4 REQD, 1 PER STRAP).
CRIMP EACH SEAL
WITH TWO PAIR OF
NOTCHES.

TIEDOWN STRAP, 3/4" X .031" OR .035"
X 15'-8" LONG STEEL STRAPPING (4 REQD).

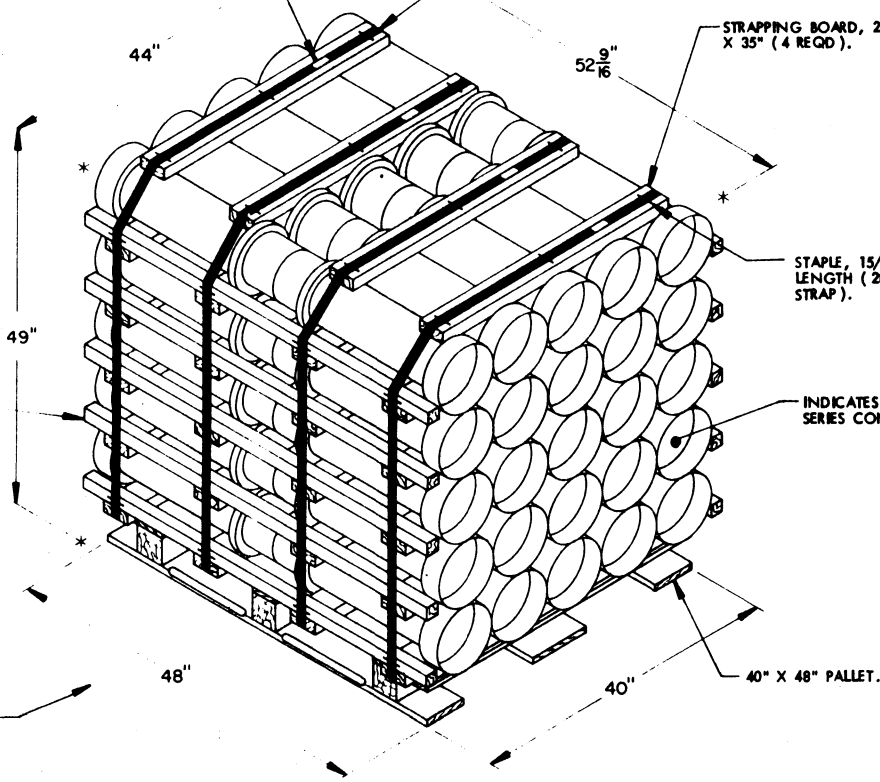
STRAPPING BOARD, 2" X 4"
X 35" (4 REQD).

STAPLE, 15/16" WIDE X 3/4" LEG
LENGTH (28 REQD, 7 PER TIEDOWN
STRAP).

INDICATES THE M18
SERIES CONTAINER.

DUNNAGE ASSEMBLY
(5 REQD). SEE THE
"DUNNAGE ASSEMBLY"
AND "PALLET DUNNAGE
LOCATION" DETAIL
ON PAGE 5.

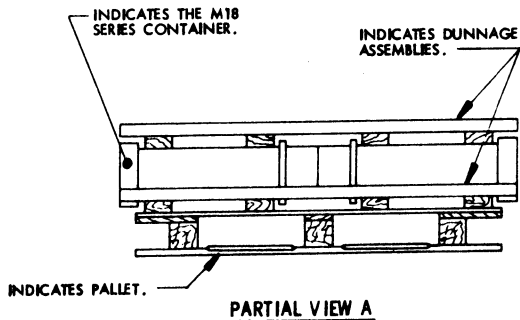
VIEW A



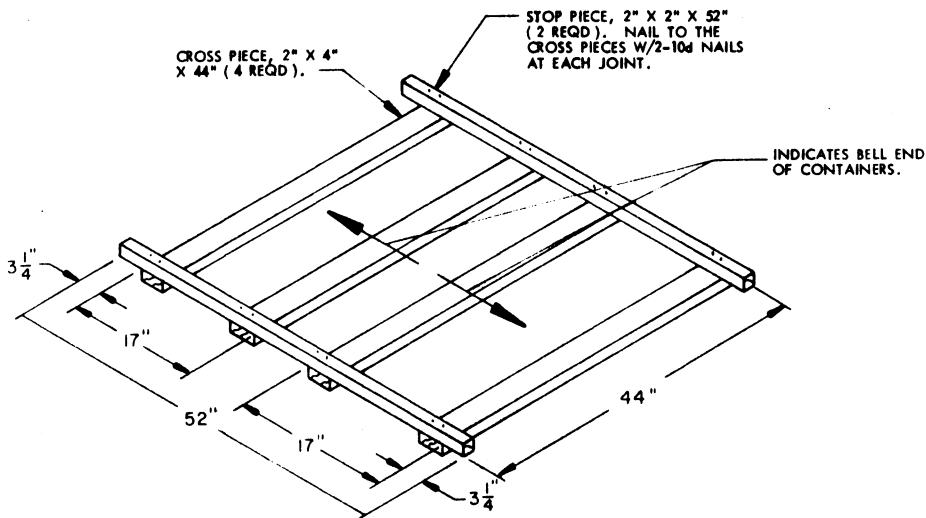
ISOMETRIC VIEW

SPECIAL NOTE:

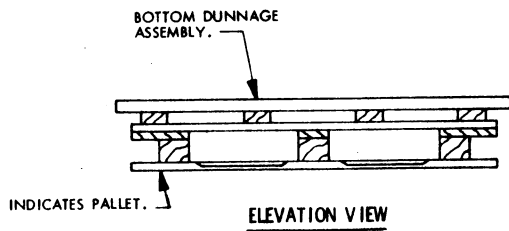
1. THE UNIT DEPICTED ABOVE MAY BE REDUCED BY ONE COMPLETE LAYER OF CONTAINERS BY THE DELETION OF ONE DUNNAGE ASSEMBLY AND TEN CONTAINERS, AND BY DECREASING THE STRAP LENGTHS APPROPRIATELY. THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 40-5/8".



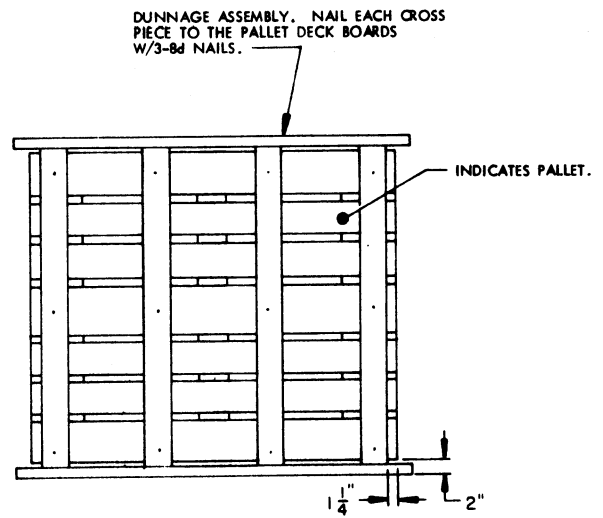
PARTIAL VIEW A



DUNNAGE ASSEMBLY
(5 REQD)



ELEVATION VIEW



PLAN VIEW

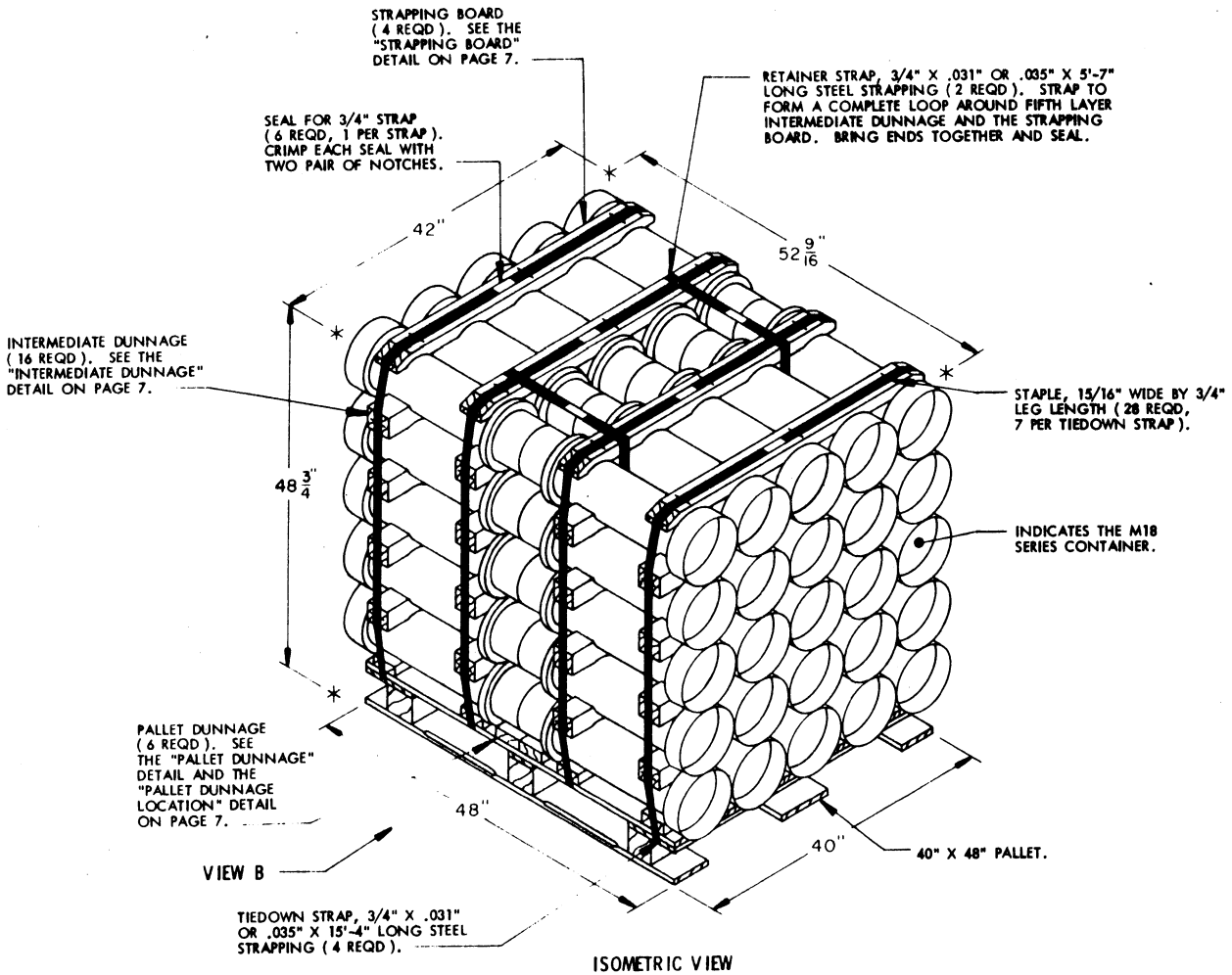
PALLET DUNNAGE LOCATION

BILL OF MATERIAL			
LUMBER	NO. REQD	LINEAR FEET	BOARD FEET
2" X 2" X 52"	10	43.33	14.44
2" X 4" X 35"	4	11.67	7.78
2" X 4" X 44"	20	73.33	48.89
NAILS	NO. REQD	POUNDS	
8d (2-1/2")	12	0.13	
10d (3")	80	1.23	
PALLET, 40" X 48"	1 REQD	80 LBS	
STEEL STRAPPING, 3/4" X .031" OR .035"	62.67' REQD	4.48 LBS	
SEAL FOR 3/4" STRAP	4 REQD	NIL	
STRAP STAPLE, 15/16" X 3/4"	28 REQD	NIL	

UNIT DATA

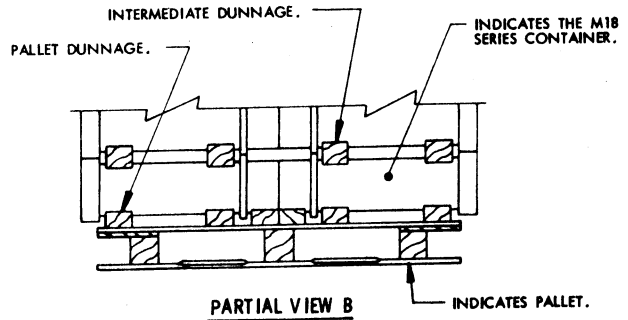
WEIGHT

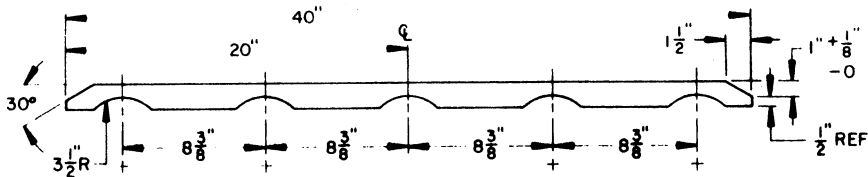
CUBE-----	65.6 CUBIC FEET (APPROX)	
CONTAINER, M18 SERIES -----	50 EA @ 31 LBS -----	1,550 LBS (APPROX)
DUNNAGE -----		149 LBS
PALLET -----		80 LBS
TOTAL WEIGHT -----		1,779 LBS (APPROX)



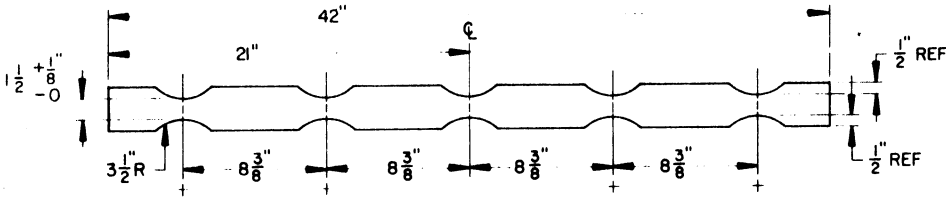
SPECIAL NOTES:

1. THE UNIT DEPICTED ABOVE MAY BE REDUCED BY ONE COMPLETE LAYER OF CONTAINERS BY THE DELETION OF FOUR INTERMEDIATE DUNNAGE PIECES AND TEN CONTAINERS, AND BY DECREASING THE STRAP LENGTHS APPROPRIATELY. THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 40-1/4".
2. IF DESIRED, A 2" X 6" PIECE CAN BE SUBSTITUTED FOR THE ONE SET OF TWO (SIDE BY SIDE) 2" X 4" PIECES OF PALLET DUNNAGE LOCATED AT THE CENTER OF THE PALLET DECK ON THE 48" SIDES OF THE PALLET. THE 2" X 6" PIECE WILL BE NAILED TO THE PALLET W/6-8d NAILS.

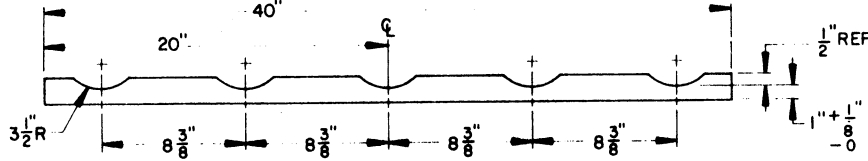




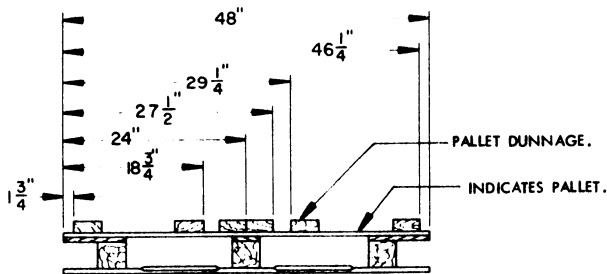
STRAPPING BOARD
2" X 4" MATERIAL
(4 REQD)



INTERMEDIATE DUNNAGE
3" X 4" MATERIAL
(16 REQD)

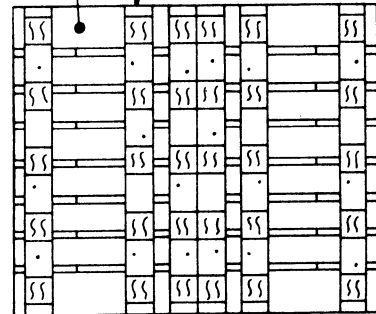


PALLET DUNNAGE
2" X 4" MATERIAL
(6 REQD)



ELEVATION VIEW

INDICATES PALLET.
PALLET DUNNAGE (6 REQD).
NAIL EACH PIECE TO THE PALLET
BOARDS W/3-Bd NAILS.



PLAN VIEW

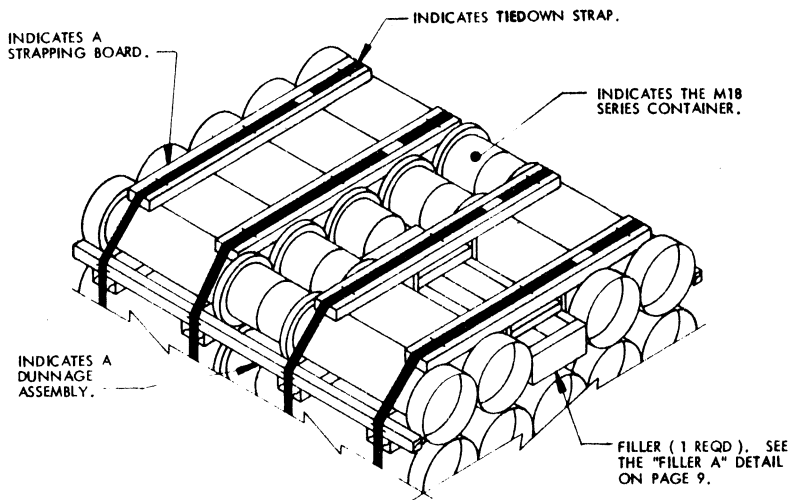
PALLET DUNNAGE LOCATION

BILL OF MATERIAL			
LUMBER	NO. REQD	LINEAR FEET	BOARD FEET
2" X 4" X 40"	10	33.33	22.22
3" X 4" X 42"	16	56.00	56.00
NAILS		NO. REQD	POUNDS
8d (2-1/2")		18	0.19
PALLET, 40" X 48"		1 REQD	80 LBS
STEEL STRAPPING, 3/4" X .031" OR .035"		72.50' REQD	5.18 LBS
SEAL FOR 3/4" STRAP		6 REQD	NIL
STAPLE, 15/16" X 3/4"		28 REQD	NIL

UNIT DATA

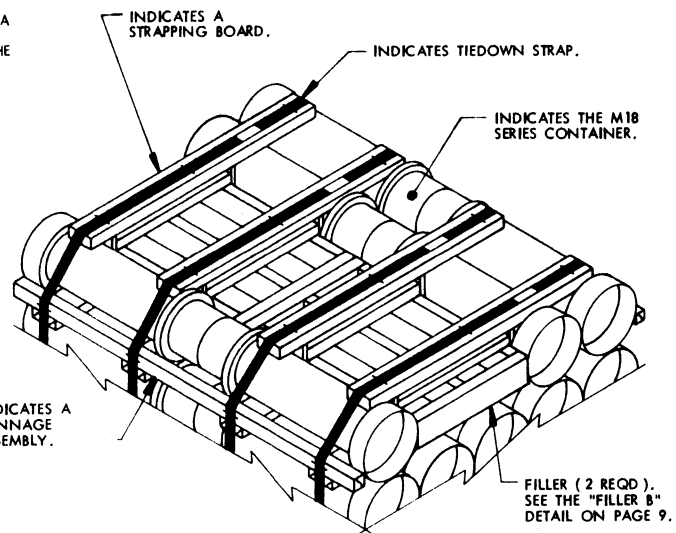
	WEIGHT
CUBE-----	42.9 CUBIC FEET (APPROX)
CONTAINER, M18 SERIES-----	50 EA @ 31 LBS-----
DUNNAGE-----	162 LBS
PALLET-----	80 LBS

TOTAL WEIGHT ----- 1,792 LBS (APPROX)



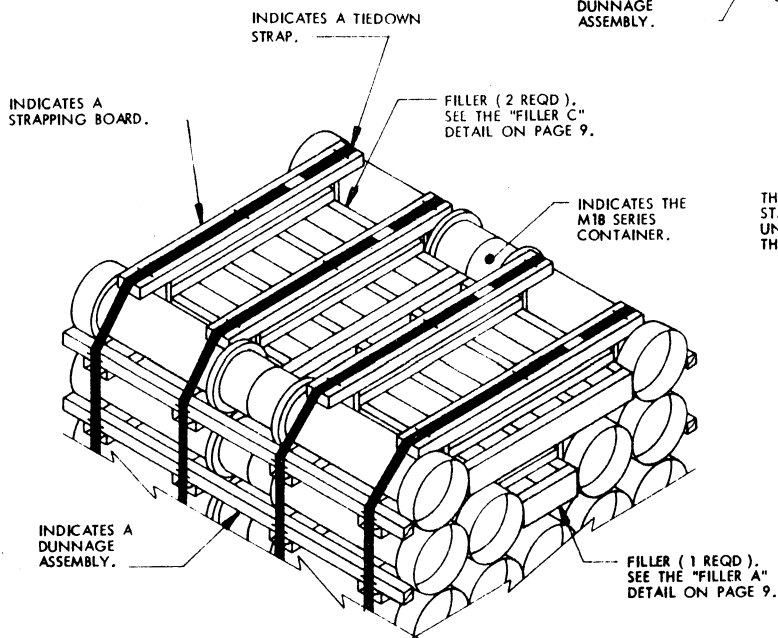
DETAIL A

THIS DETAIL DEPICTS PROCEDURES TO BE USED WHEN A STANDARD UNIT MINUS ONE CONTAINER IS TO BE UNITIZED. THIS ASSEMBLY MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER OF THE PALLET UNIT.



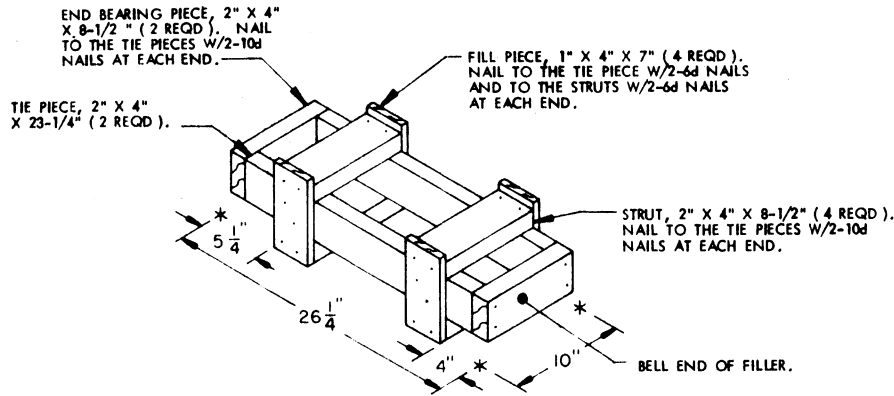
DETAIL B

THIS DETAIL DEPICTS PROCEDURES TO BE USED WHEN A STANDARD UNIT MINUS FOUR CONTAINERS IS TO BE UNITIZED. THESE ASSEMBLIES MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER OF THE PALLET UNIT.



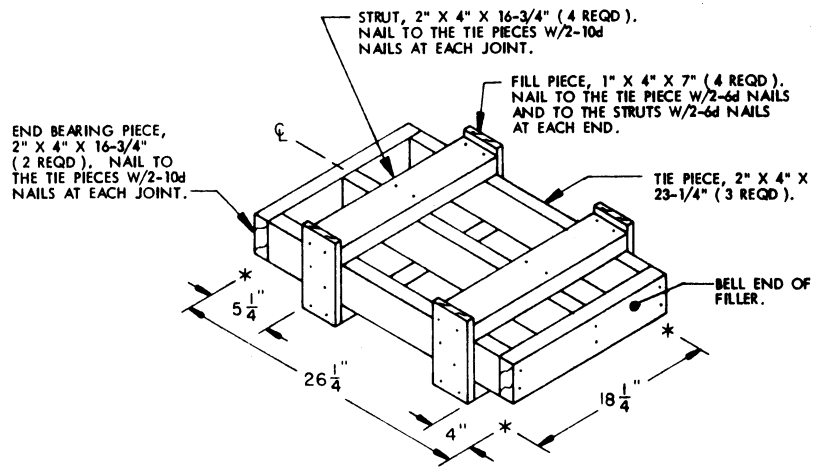
DETAIL C

THIS DETAIL DEPICTS PROCEDURES TO BE USED WHEN A STANDARD UNIT MINUS SEVEN CONTAINERS IS TO BE UNITIZED. WHEN TEN CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, A COMPLETE LAYER OF CONTAINERS MUST BE OMITTED. A COMBINATION OF FILLERS OR ONE OF THE FILLERS DEPICTED ON PAGE 9 MAY BE USED WHEN NINE OR LESS CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT. ALL FILLER ASSEMBLIES MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER OR LAYERS OF A PALLET UNIT.



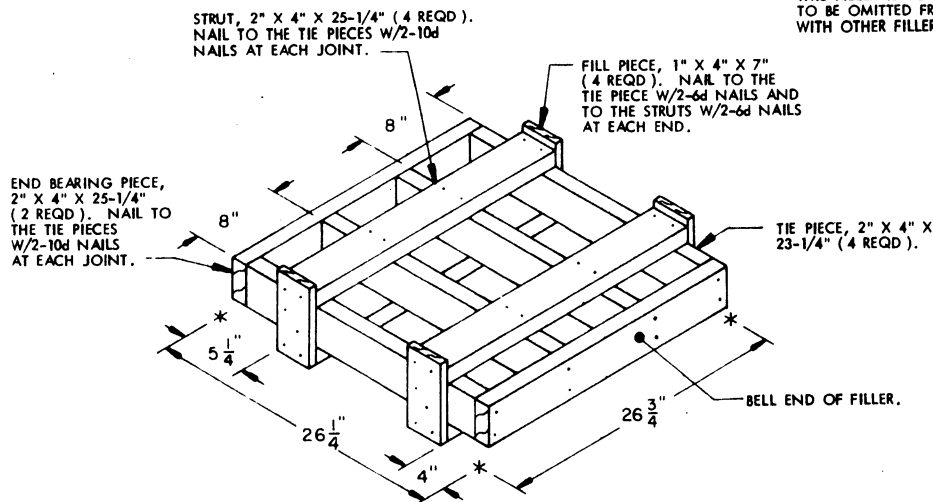
FILLER A

THIS FILLER IS TO BE USED WHEN ONE CONTAINER IS OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



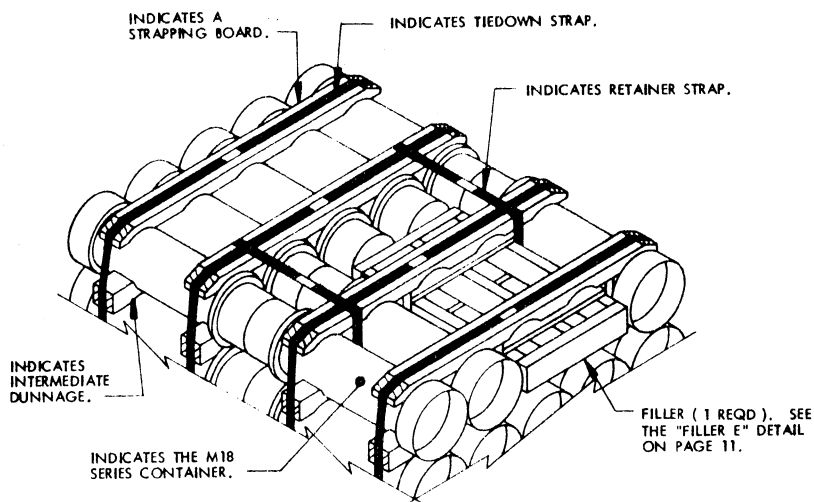
FILLER B

THIS FILLER IS TO BE USED WHEN TWO CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



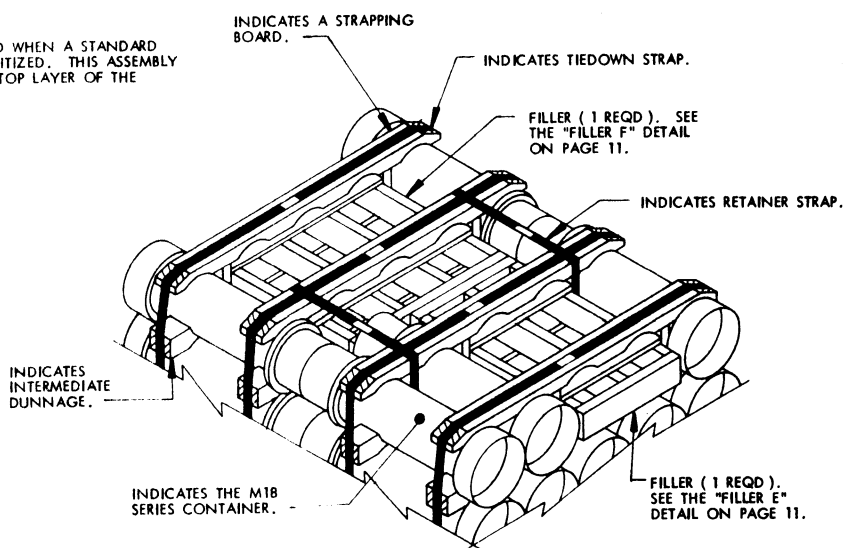
FILLER C

THIS FILLER IS TO BE USED WHEN THREE CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



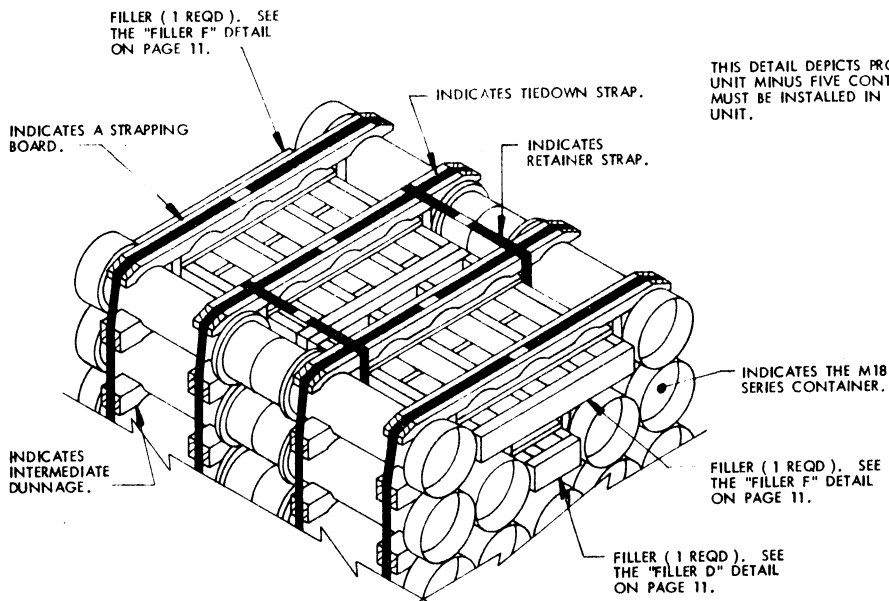
DETAIL D

THIS DETAIL DEPICTS PROCEDURES TO BE USED WHEN A STANDARD UNIT MINUS TWO CONTAINERS IS TO BE UNITIZED. THIS ASSEMBLY MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER OF THE PALLET UNIT.



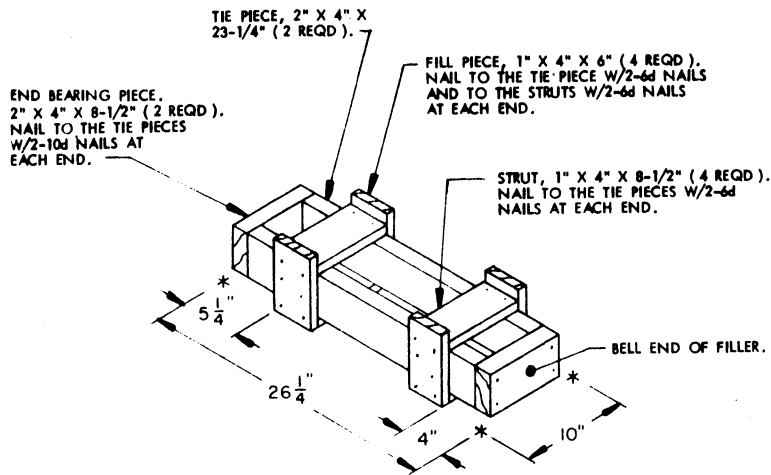
DETAIL E

THIS DETAIL DEPICTS PROCEDURES TO BE USED WHEN A STANDARD UNIT MINUS FIVE CONTAINERS IS TO BE UNITIZED. THESE ASSEMBLIES MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER OF THE PALLET UNIT.



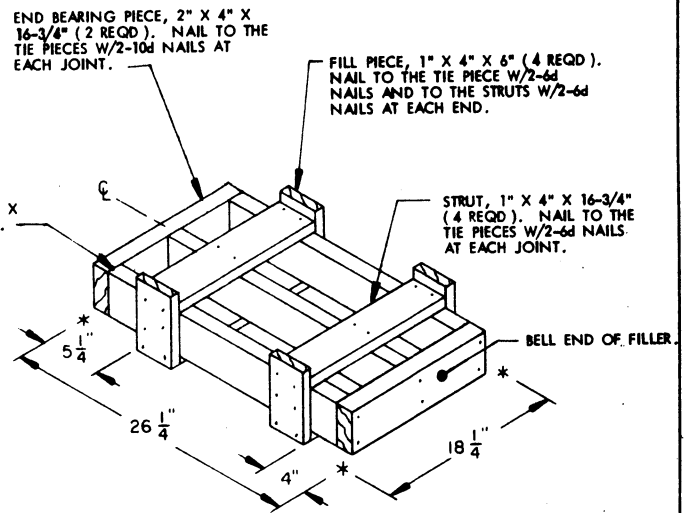
DETAIL F

THIS DETAIL DEPICTS PROCEDURES TO BE USED WHEN A STANDARD UNIT MINUS SEVEN CONTAINERS IS TO BE UNITIZED. WHEN TEN CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, A COMPLETE LAYER OF CONTAINERS MUST BE OMITTED. A COMBINATION OF FILLERS OR ONE OF THE FILLERS DEPICTED ON PAGE 11 MAY BE USED WHEN NINE OR LESS CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT. FILLER ASSEMBLIES MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER OR LAYERS OF A PALLET UNIT.



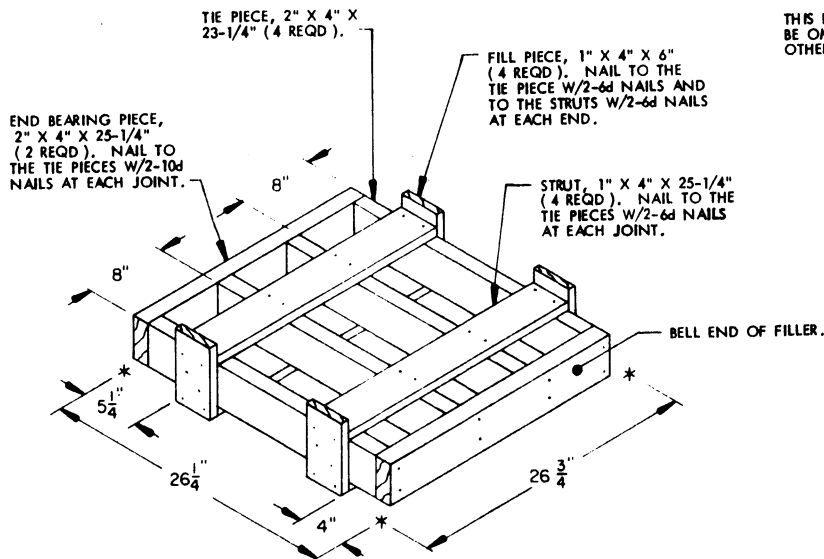
FILLER D

THIS FILLER IS TO BE USED WHEN ONE CONTAINER IS OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



FILLER E

THIS FILLER IS TO BE USED WHEN TWO CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.



FILLER F

THIS FILLER IS TO BE USED WHEN THREE CONTAINERS ARE TO BE OMITTED FROM A PALLET UNIT, OR IN COMBINATION WITH OTHER FILLER ASSEMBLIES.

