

STORAGE IN 60' & 80' IGLOO MAGAZINES, 80' STRADLEY MAGAZINES, AND 89' OVAL-ARCH MAGAZINES OF SEPARATE LOADING PROJECTILES, PALLETIZED, WITH GB, VX OR H FILLER, OR SIMILAR FILLER MATERIAL

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THIS DRAWING SUPERSEDES DRAWING 19-48-4041-1-2-14PE1002,
DATED MAY 1975, AND REVISION 1 THERETO, DATED MAY 1975.

REVISIONS				DATE	BY	APPROVED BY	OFFICE
1	DEC 76	<i>[Signature]</i>	<i>[Signature]</i>			<i>[Signature]</i>	LOG ENGINE OFFICE
2	JUN 78	<i>[Signature]</i>	<i>[Signature]</i>			<i>[Signature]</i>	LOG ENGINE OFFICE
						<i>[Signature]</i>	APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND READINESS COMMAND (DARCOM)
						<i>[Signature]</i>	DARCOM ANMO CENTER
U. S. ARMY DARCOM DRAWING							
SEPTEMBER 1976							
				CLASS	DIVISION	DRAWING	FILE
				19	48	4041	CBI-14- 22 PE I

DO NOT SCALE

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. DETAILS OF PALLET UNITS: (SEE GENERAL NOTE "R" AT RIGHT)
 - 1. PALLET UNIT FOR 8" CHEMICAL PROJECTILE.
DIMENSIONS---- 19-1/2" LONG X 28" WIDE X 39-1/2" HIGH.
GROSS WEIGHT- 1,255 POUNDS (APPROX).
 - 2. PALLET UNIT FOR 155 MM CHEMICAL PROJECTILE.
DIMENSIONS --- 13-1/2" LONG X 27" WIDE X 31-1/2" HIGH.
GROSS WEIGHT- 831 POUNDS (APPROX).
- C. AISLE DIMENSIONS SHOWN IN THIS DRAWING MAY BE ADJUSTED TO SUIT LOCAL CONDITIONS AND/OR AVAILABLE MATERIALS HANDLING EQUIPMENT; HOWEVER, A THIRTY-INCH (30") MINIMUM ACCESS AISLE IS REQUIRED ON ONE SIDE OF A STACK, AS SHOWN, UNLESS OTHERWISE DESIGNATED, TO FACILITATE INSPECTION.
- D. ADDITIONAL PALLET UNITS OR "REPACKAGED UNITS" (TEMPORARILY) MAY BE STORED IN THE FRONTAL AREA OF THE MAGAZINE.
- E. STORED PALLET UNITS MUST NOT CONTACT THE WALL OF A MAGAZINE. TO PROVIDE FOR THIS MANDATORY CLEARANCE REQUIREMENT, UNITS MAY BE ELIMINATED FROM THE DEPICTED STORAGE PATTERN AS NECESSARY.
- F. UNLESS OTHERWISE SPECIFICALLY SHOWN, STABILIZER ASSEMBLIES ARE REQUIRED BETWEEN ALL LAYERS OF CURRENT DESIGN PALLET UNITS AND/OR OLDER TYPE PALLET UNITS, EXCEPT THAT CURRENT DESIGN UNITS STORED ONLY TWO LAYERS HIGH WILL NOT REQUIRE STABILIZER ASSEMBLIES.
- G. THE MAGAZINE MUST COMPLY WITH ALL REQUIREMENTS AND BE APPROVED FOR THE STORAGE OF CHEMICAL ITEMS.
- H. THE MAXIMUM FLOOR LOAD FOR A MAGAZINE AS PRESCRIBED BY LOCAL STANDARDS WILL NOT BE EXCEEDED.
- J. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" OR 3-5/8" WIDE.
- K. THE STORAGE PROCEDURES DEPICTED HEREIN FOR SPECIFIC TYPES OF MAGAZINES MAY ALSO BE UTILIZED TO STORE PROJECTILES IN OTHER TYPES OF APPROVED MAGAZINES. MINOR ADJUSTMENTS MAY BE MADE TO FACILITATE STORAGE IN OTHER TYPES OF MAGAZINES, HOWEVER, THE BASIC PRINCIPLES AS DEPICTED HEREIN WILL BE COMPLIED WITH.
- L. A COMBINATION OF MATERIAL HANDLING EQUIPMENT (MHE), SUCH AS FORKLIFT TRUCKS, PALLET JACKS, AND OTHER APPROVED EQUIPMENT, MAY BE USED TO PLACE AND/OR REMOVE UNITS WITHIN A STACK. IF SUITABLE MHE IS NOT AVAILABLE TO PERMIT PLACING AND/OR REMOVAL OPERATIONS WITHIN THE DESIGNATED CENTER AISLE, IT MAY BE NECESSARY TO OMIT ONE ROW OF UNITS ADJACENT TO THE CENTER AISLE TO GAIN ADDITIONAL OPERATING SPACE.
- M. REFER TO PAGE 16 FOR GUIDANCE RELATIVE TO LOT SEPARATION REQUIREMENTS WHEN STORING MULTIPLE LOTS WITHIN A MAGAZINE.
- N. THE STORAGE PROCEDURES DEPICTED FOR IGLOO MAGAZINES ARE ALSO APPLICABLE FOR STEEL ARCH MAGAZINES WHICH HAVE A SIMILAR CROSS SECTIONAL AREA.
- O. OTHER COMPATIBLE ITEMS MAY BE STORED IN A MAGAZINE WHICH IS PARTIALLY FILLED WITH THE DESIGNATED ITEM.
- P. PROVIDED SUITABLE NARROW AISLE STACKER MHE IS AVAILABLE, IT IS PERMITTED TO ADD ONE ROW OF UNITS ADJACENT TO THE CENTER AISLE TO GAIN INCREASED STORAGE DENSITY.
- Q. WEDGES ARE REQUIRED TO PERMIT LEVEL STACKING OF UNITS IN IGLOO AND STRADLEY MAGAZINES, WHICH HAVE FLOORS THAT SLOPE TOWARD THE SIDEWALL OF THE MAGAZINE. WEDGES ARE NOT REQUIRED IN OVAL-ARCH MAGAZINES, WHERE THE FLOOR DOES NOT SLOPE TOWARD THE SIDEWALL OF THE MAGAZINE. WEDGES WILL BE USED IN AN OVAL-ARCH MAGAZINE IF THE FLOOR IS SLOPED TO THE SIDE WALLS.

R. STORAGE PROCEDURES SHOWN HEREIN ARE BASED ON PALLET UNITS OF CURRENT DESIGN AND DIMENSIONS. SEE PAGE 17 FOR "SPECIAL NOTES" AND "DETAILS" THAT APPLY TO THE STORAGE OF OLDER TYPE PALLET UNITS OF 8" PROJECTILES, 6/PALLET.

REVISIONS

REVISION NO. 1, DATED DECEMBER 1976, CONSISTS OF:

- 1. REPLACING RISER ASSEMBLY WITH A STABILIZER ASSEMBLY.
- 2. UPDATING GENERAL NOTES AND CHANGING MULTIPLE LOT STORAGE REQUIREMENTS.
- 3. EXPANDED DRAWING TO INCLUDE PROJECTILES FILLED WITH ADDITIONAL MATERIALS OTHER THAN GB AND VX.

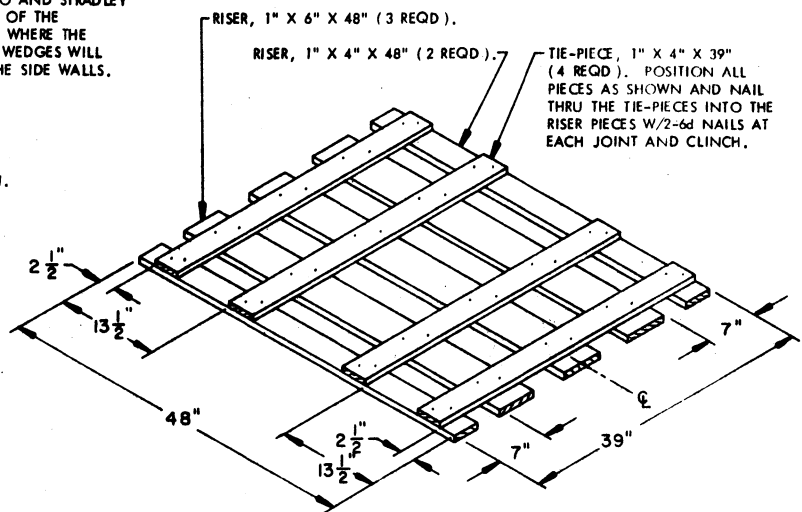
REVISION NO. 2, DATED JUNE 1978, CONSISTS OF:

- 1. ADDING PROVISIONS FOR OLDER TYPE PALLET UNITS OF 8" PROJECTILES (6/PALLET).
- 2. UPDATING GENERAL NOTES.

MATERIAL SPECIFICATIONS

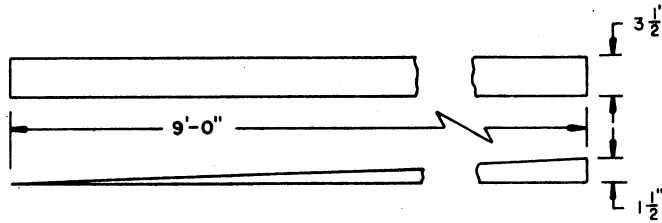
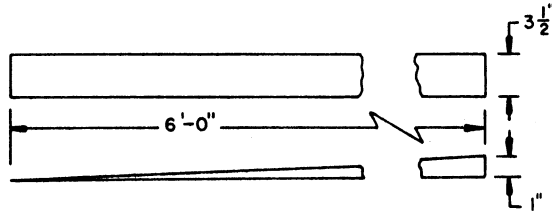
LUMBER ----- : SEE TM 743-200-1, DUNNAGE LUMBER, FED SPEC MM-L-751.

NAILS ----- : COMMON, CEMENT COATED OR CHEMICALLY ETCHED.
FED SPEC FF-N-105.
ALT: ANNULAR-RING NAIL OF THE SAME SIZE.



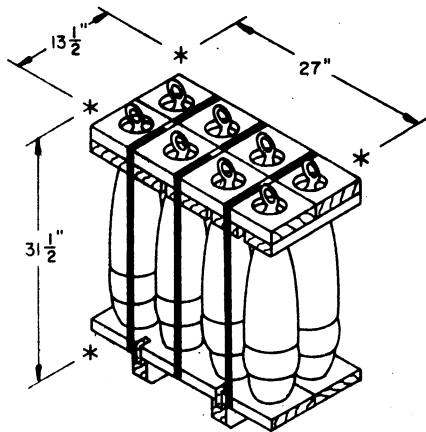
STABILIZER ASSEMBLY A

SEE GENERAL NOTE "R" ABOVE.

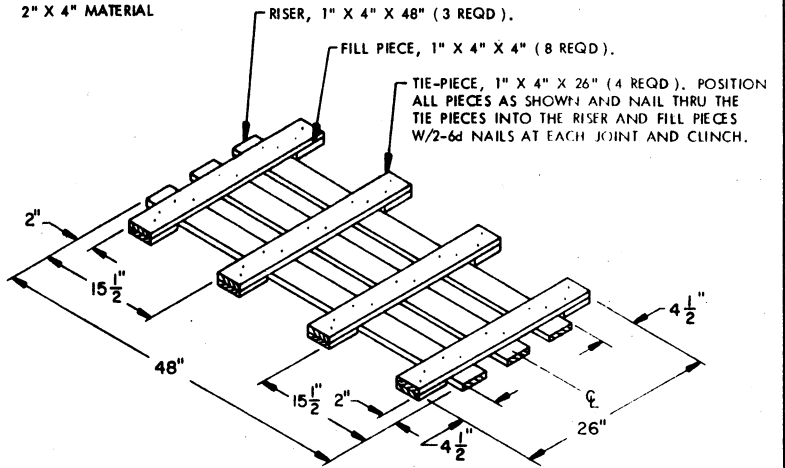


WEDGE DETAILS

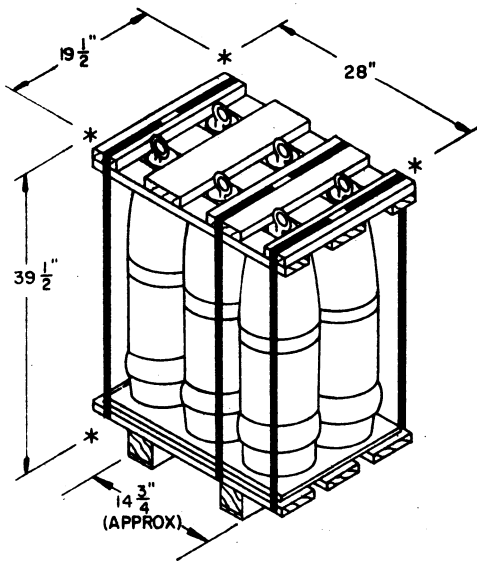
2" X 4" MATERIAL



**120 MM PROJECTILE
PALLET**

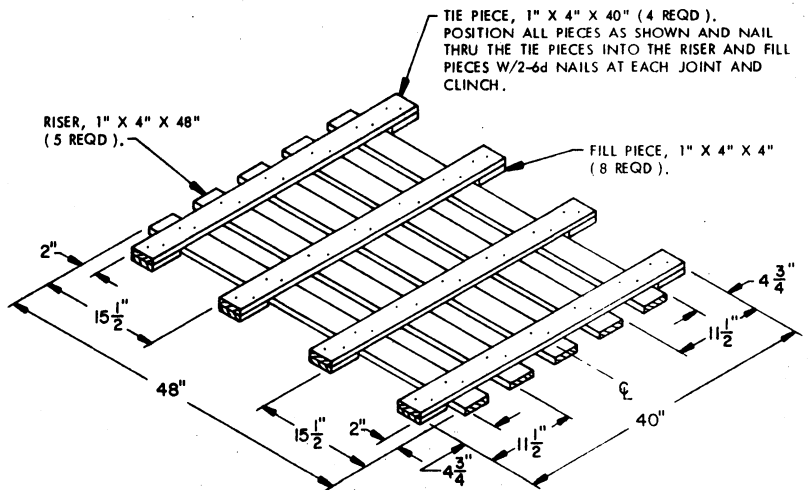


STABILIZER ASSEMBLY B



**8' PROJECTILE
PALLET**

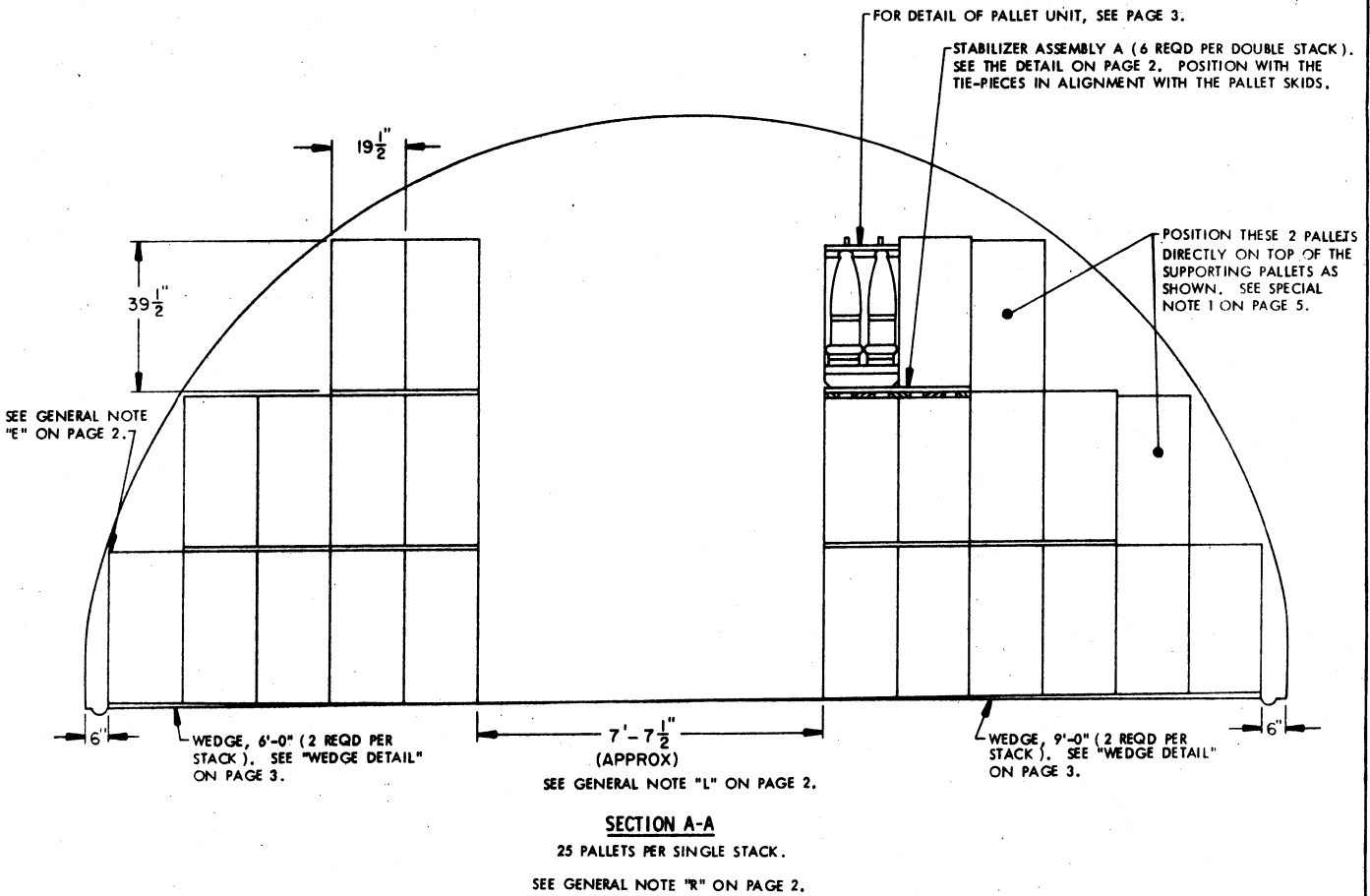
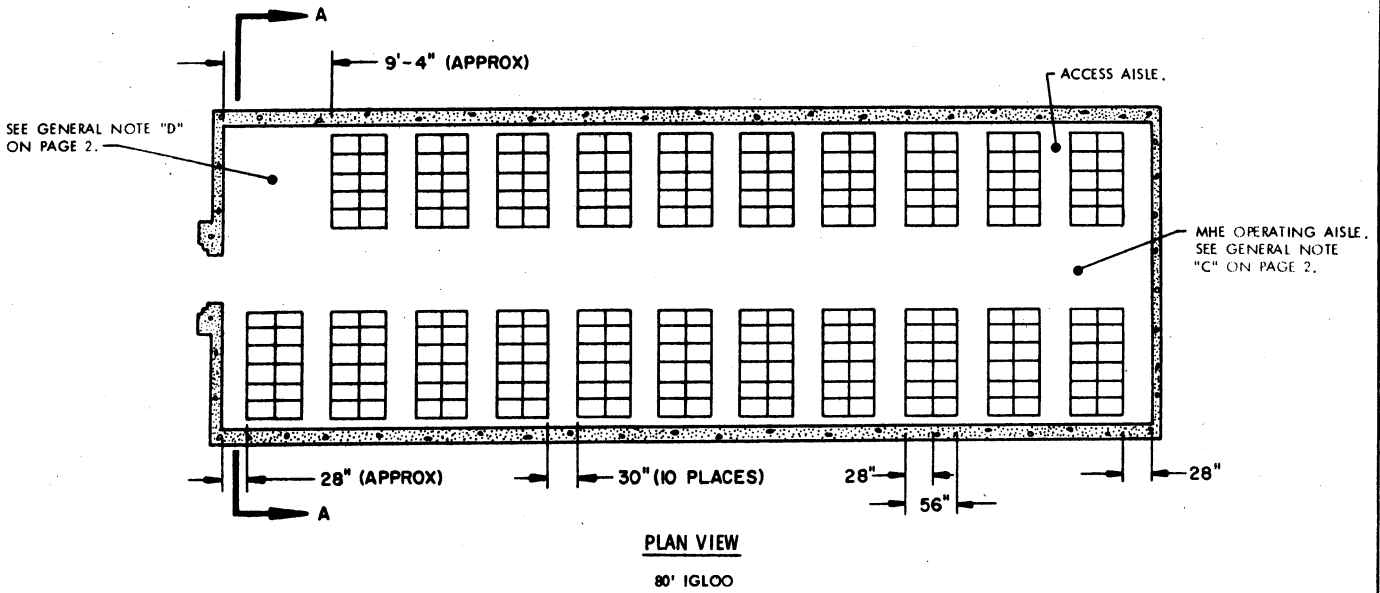
SEE GENERAL NOTE "R" ON PAGE 2.



STABILIZER ASSEMBLY C

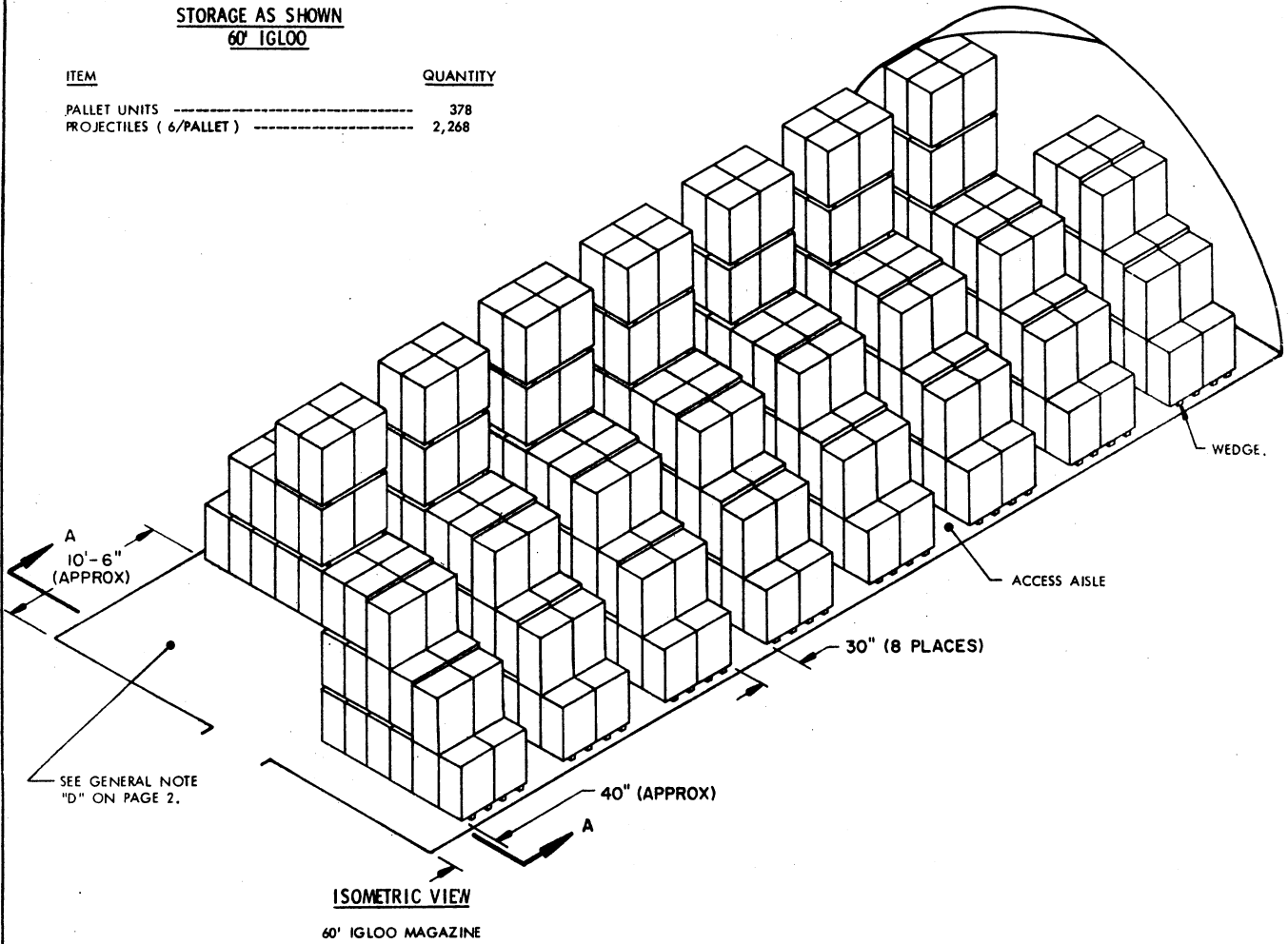
STORAGE AS SHOWN
8' IGLOO

ITEM	QUANTITY
PALLET UNITS -----	528
PROJECTILES (6/PALLET) -----	3,168



STORAGE AS SHOWN
60' IGLOO

ITEM	QUANTITY
PALLET UNITS -----	378
PROJECTILES (6/PALLET) -----	2,268



FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS"
SEE PAGE 2.

SPECIAL NOTE:

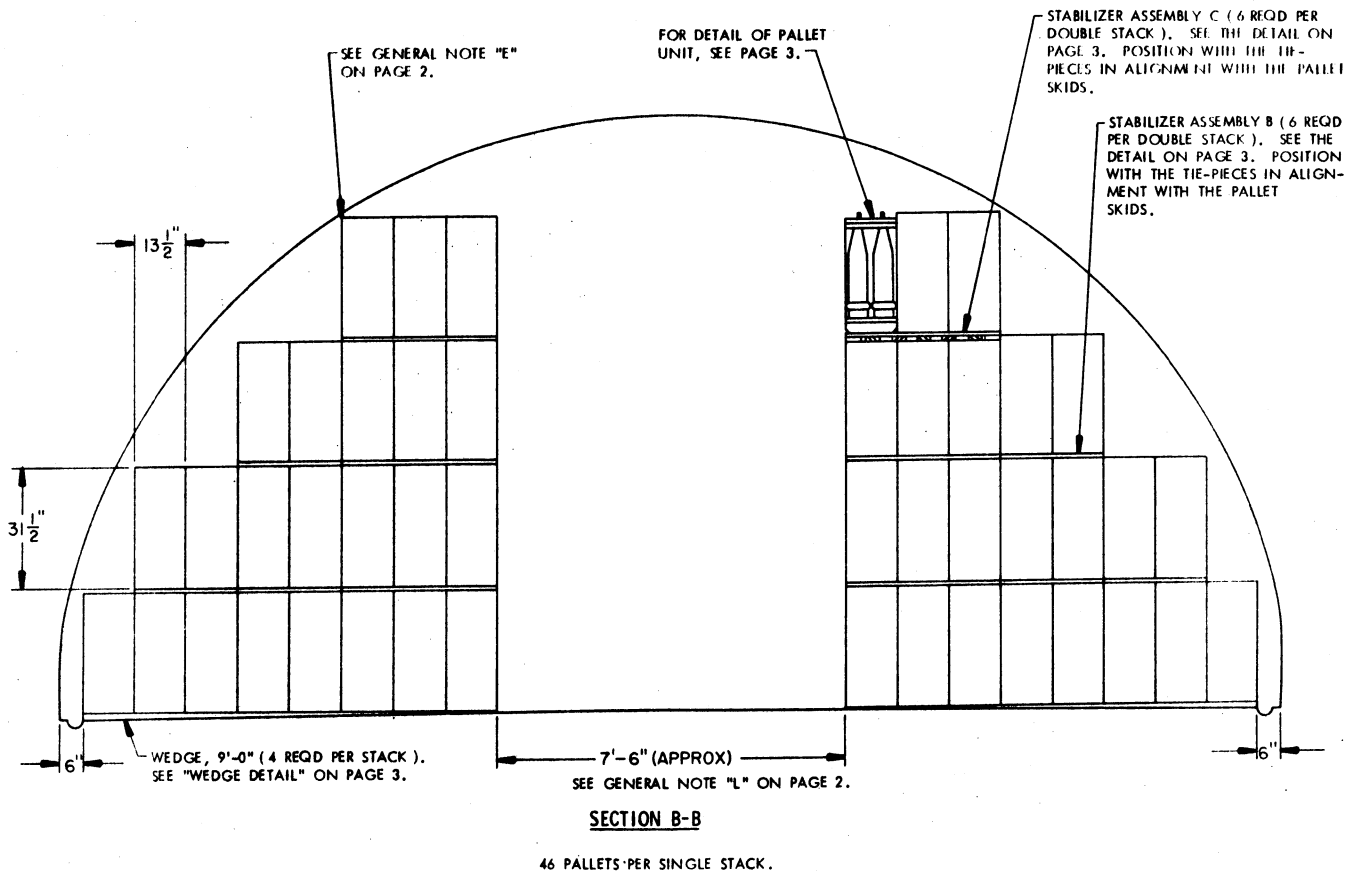
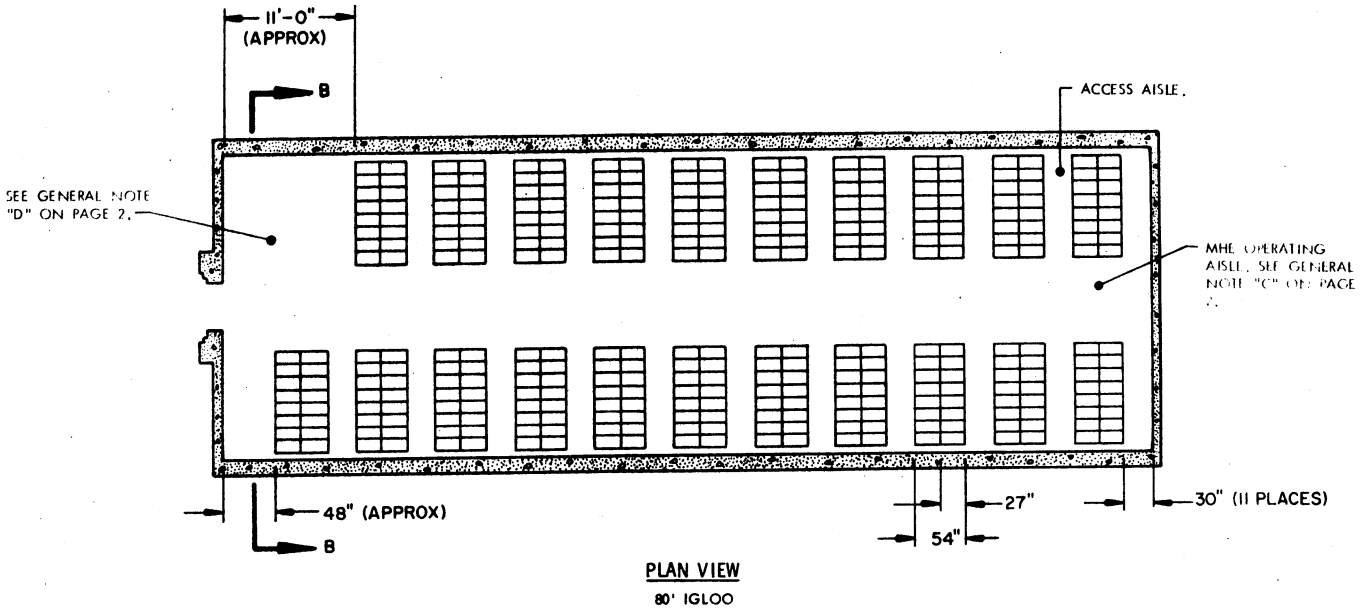
1. FOR THOSE SPECIFIC INSTANCES WHERE ONE PALLET IS DESIGNATED TO BE POSITIONED DIRECTLY ON TOP OF A SUPPORTING PALLET RATHER THAN ON A STABILIZER ASSEMBLY, TWO PIECES OF 2" X 4" X 18" LUMBER MAY BE POSITIONED UNDER THE SKIDS OF THE UPPER PALLET TO ALLOW FOR TIRE CLEARANCE IF THE THICKNESS OF THE FORKLIFT TIRE PREVENTS SAFE PLACEMENT OR REMOVAL OF THE UPPER PALLET UNIT.

BILL OF MATERIAL (PER DOUBLE STACK)		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	126	42
1" X 6"	72	36
NAILS	NO. REQD	POUNDS
6d (2")	240	1-1/2
WEDGE, 6'-0" LONG -----		4 REQD
WEDGE, 9'-0" LONG -----		4 REQD

NOTE: THE BILL OF MATERIAL IS BASED ON A DOUBLE STACK AS SHOWN IN SECTION A-A AND THE PLAN VIEW ON PAGE 4.

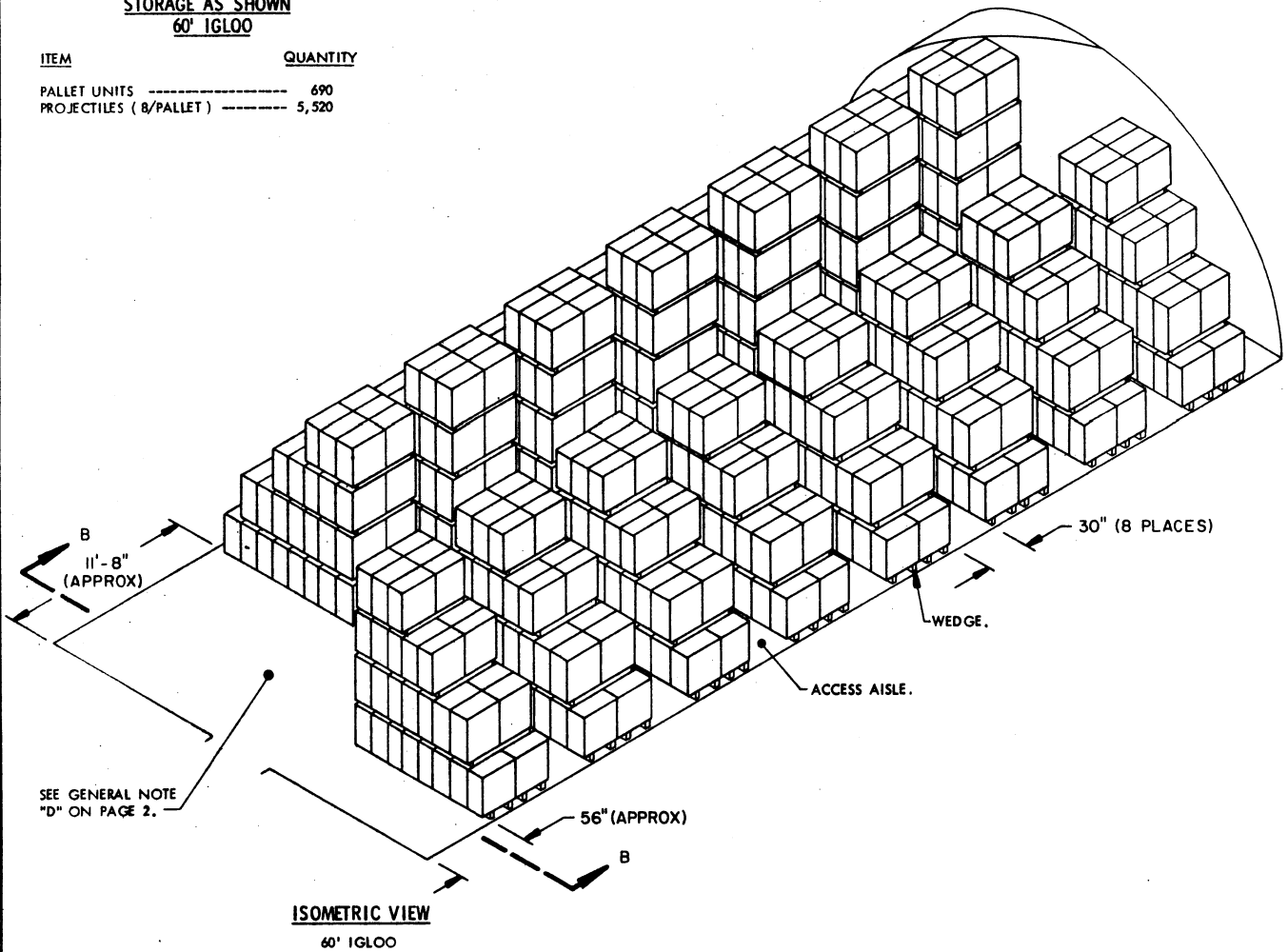
**STORAGE AS SHOWN
80' IGLOO**

ITEM	QUANTITY
PALLET UNITS -----	966
PROJECTILES (8/PALLET) -----	7,728



STORAGE AS SHOWN
60' IGLOO

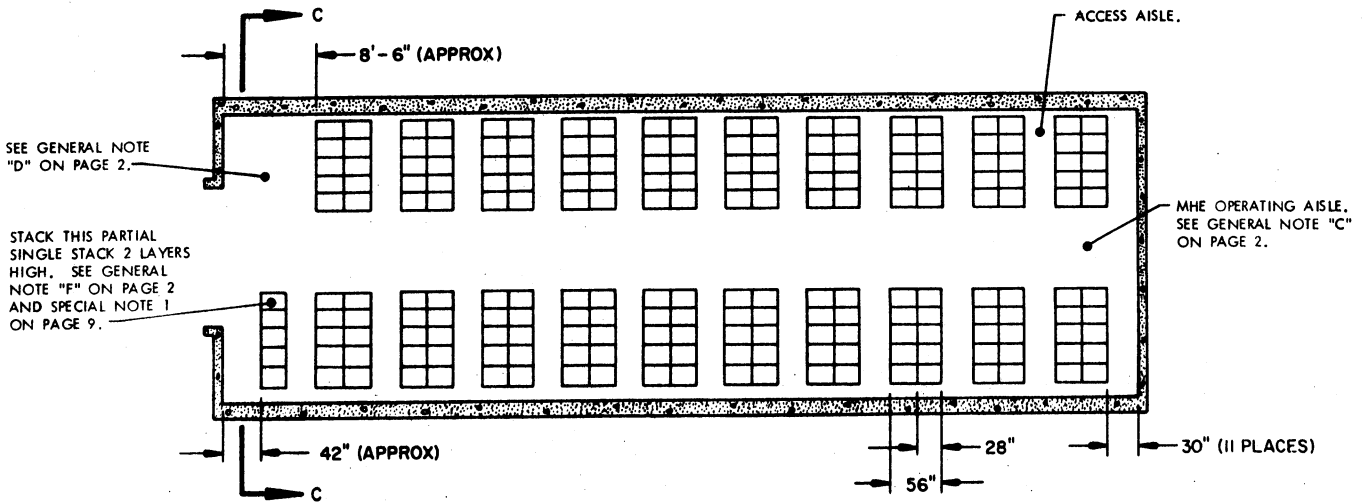
ITEM	QUANTITY
PALLET UNITS -----	690
PROJECTILES (8/PALLET) -----	5,520



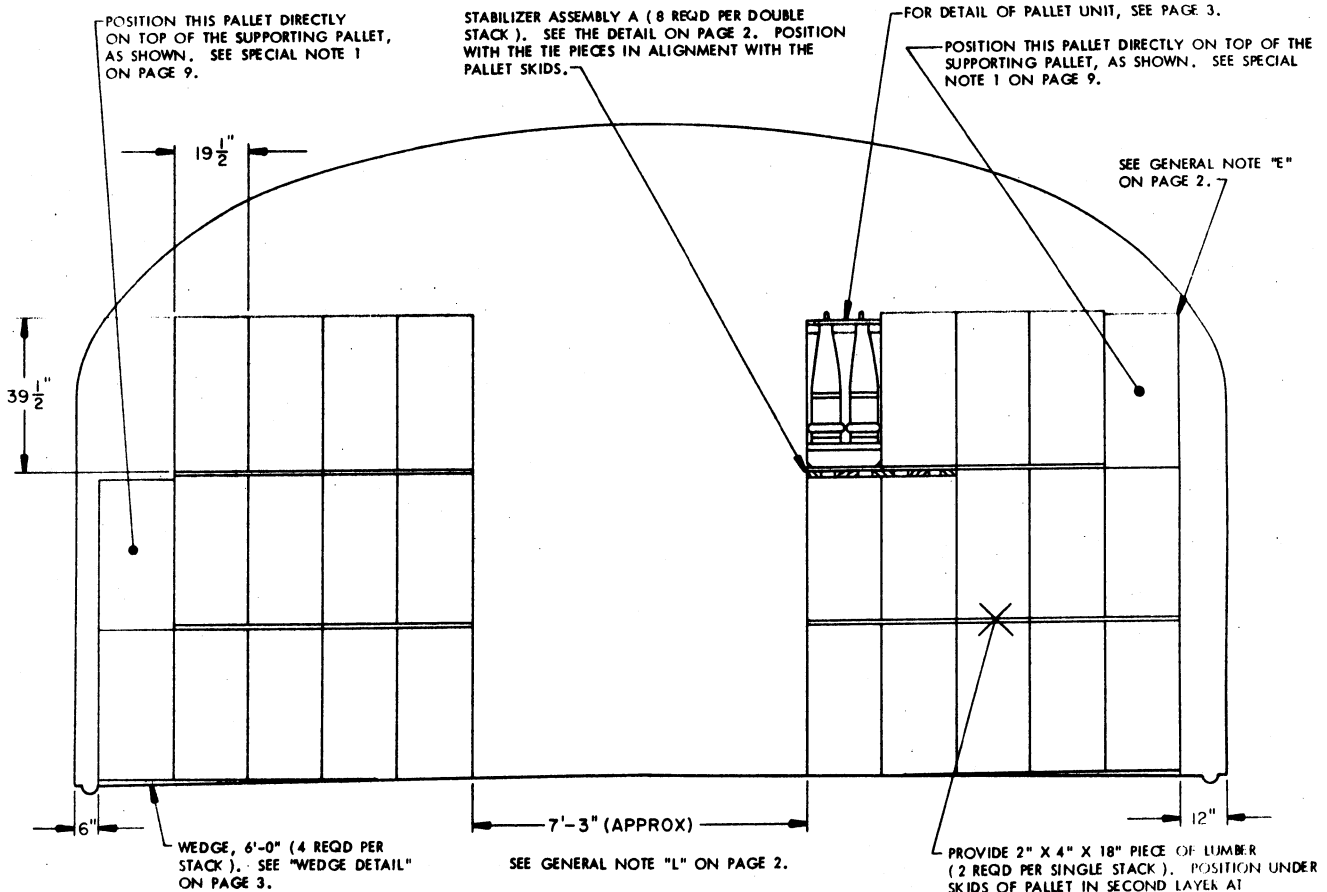
FOR "GENERAL NOTES", AND "MATERIAL SPECIFICATIONS"
SEE PAGE 2.

BILL OF MATERIAL (PER DOUBLE STACK)		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	356	119
NAILS	NO. REQD	POUNDS
6d (2")	576	3-1/2
WEDGE, 9'-0" LONG -----		8 REQD

NOTE: THE BILL OF MATERIAL IS BASED ON A DOUBLE STACK AS SHOWN IN SECTION B-B AND THE PLAN VIEW ON PAGE 6.



PLAN VIEW
80' STRADLEY

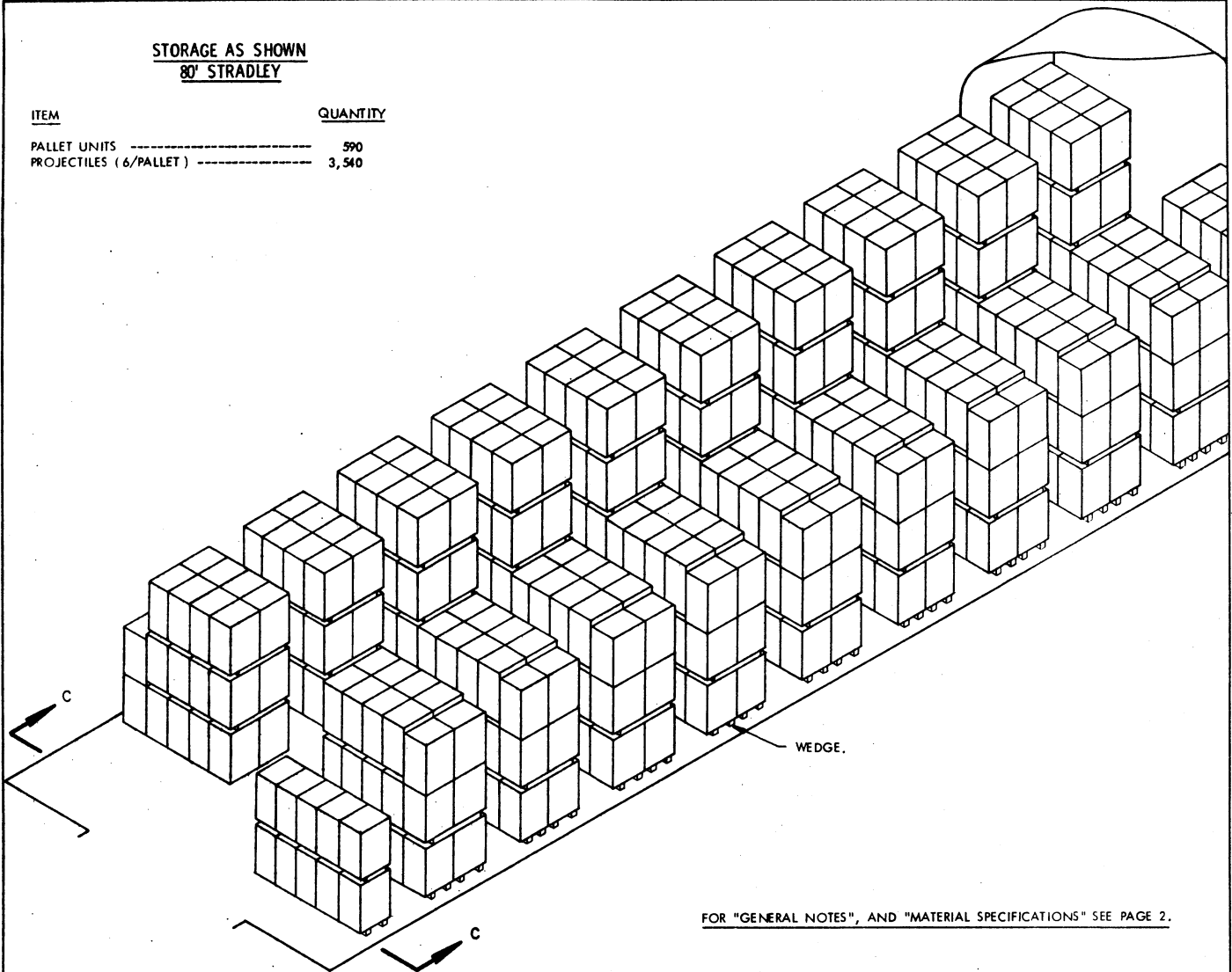


SECTION C-C

29 PALLETS PER SINGLE STACK.
SEE GENERAL NOTE "R" ON PAGE 2.

STORAGE AS SHOWN
80' STRADLEY

ITEM	QUANTITY
PALLET UNITS -----	590
PROJECTILES (6/PALLET) -----	3,540



FOR "GENERAL NOTES", AND "MATERIAL SPECIFICATIONS" SEE PAGE 2.

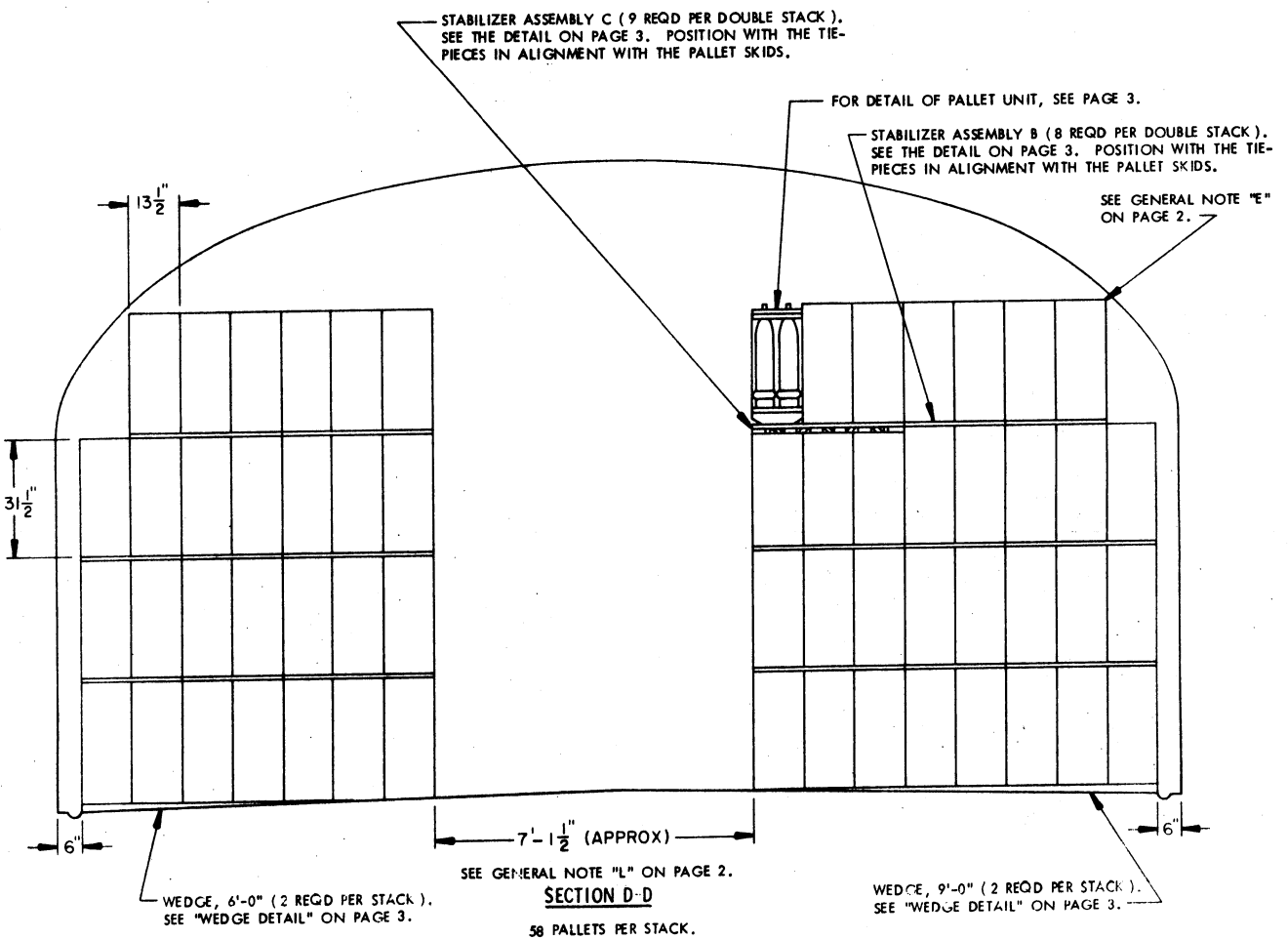
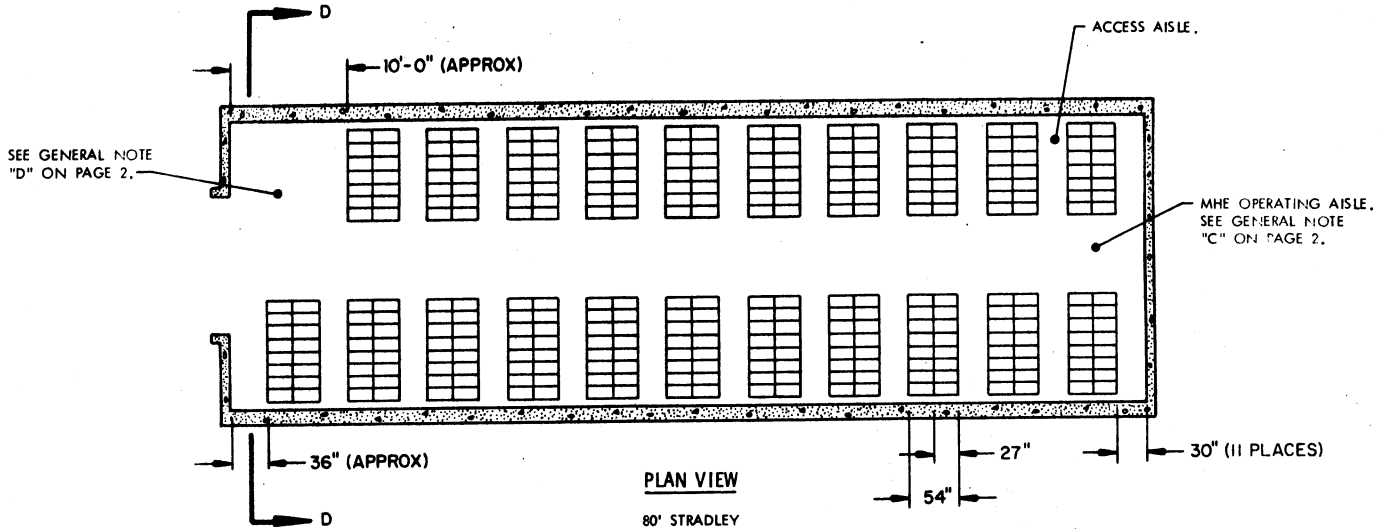
ISOMETRIC VIEW
80' STRADLEY

BILL OF MATERIAL (PER DOUBLE STACK)		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	168	56
1" X 6"	96	48
2" X 4"	6	4
NAILS	NO. REQD	POUNDS
6d (2")	320	2

SPECIAL NOTE:

- FOR THOSE SPECIFIC INSTANCES WHERE ONE PALLET IS DESIGNATED TO BE POSITIONED DIRECTLY ON TOP OF A SUPPORTING PALLET RATHER THAN ON A STABILIZER ASSEMBLY, TWO PIECES OF 2" X 4" X 18" LUMBER MAY BE POSITIONED UNDER THE SKIDS OF THE UPPER PALLET TO ALLOW FOR TIRE CLEARANCE IF THE THICKNESS OF THE FORKLIFT TIRE PREVENTS SAFE PLACEMENT OR REMOVAL OF THE UPPER PALLET UNIT.

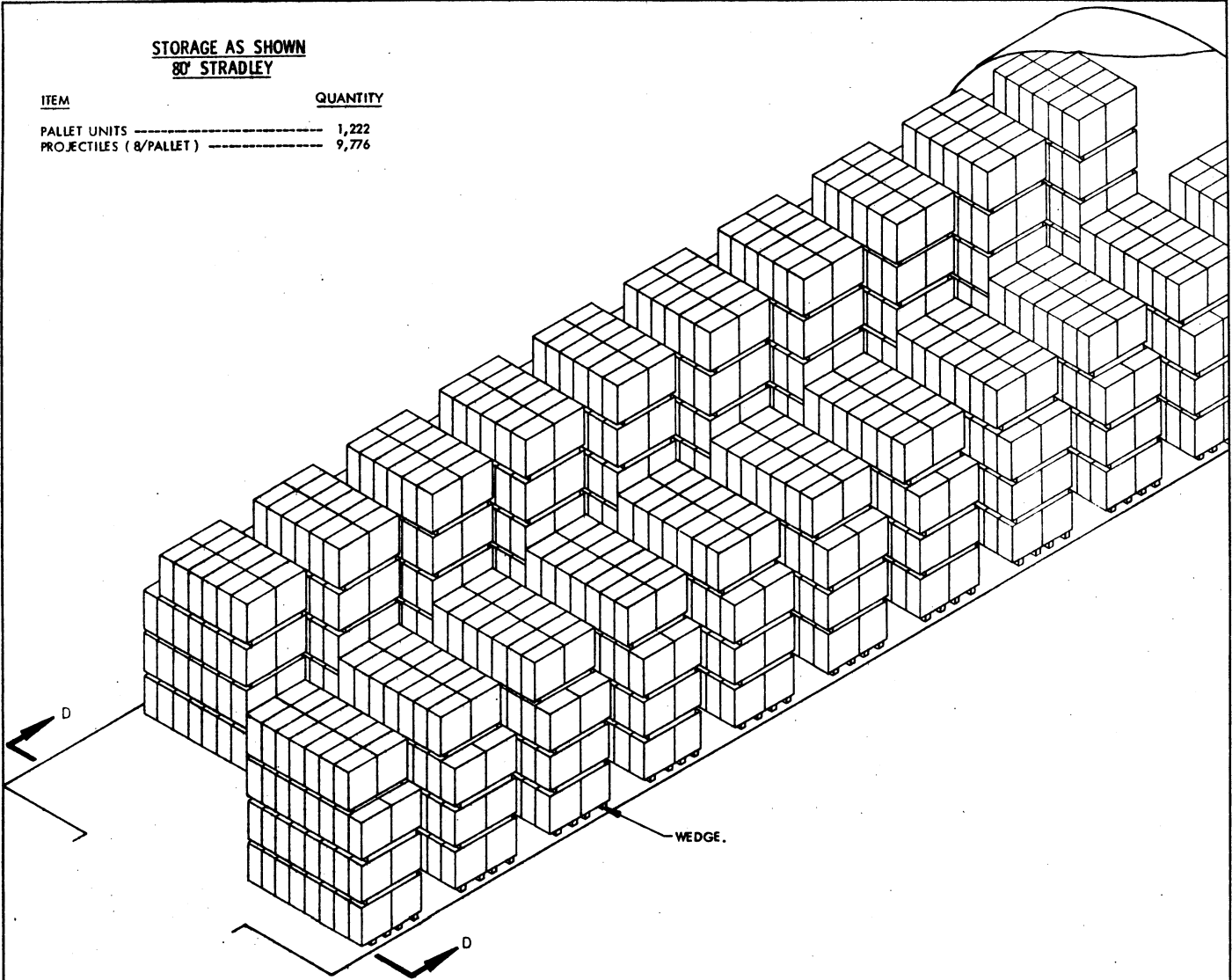
NOTE: THE BILL OF MATERIAL IS BASED ON A DOUBLE STACK AS SHOWN IN SECTION C-C AND THE PLAN VIEW ON PAGE 8.



STRADLEY STORAGE PROCEDURES (155 MM PROJECTILE, 8/PALLET)

STORAGE AS SHOWN
80' STRADLEY

ITEM	QUANTITY
PALLET UNITS -----	1,222
PROJECTILES (8/PALLET) -----	9,776



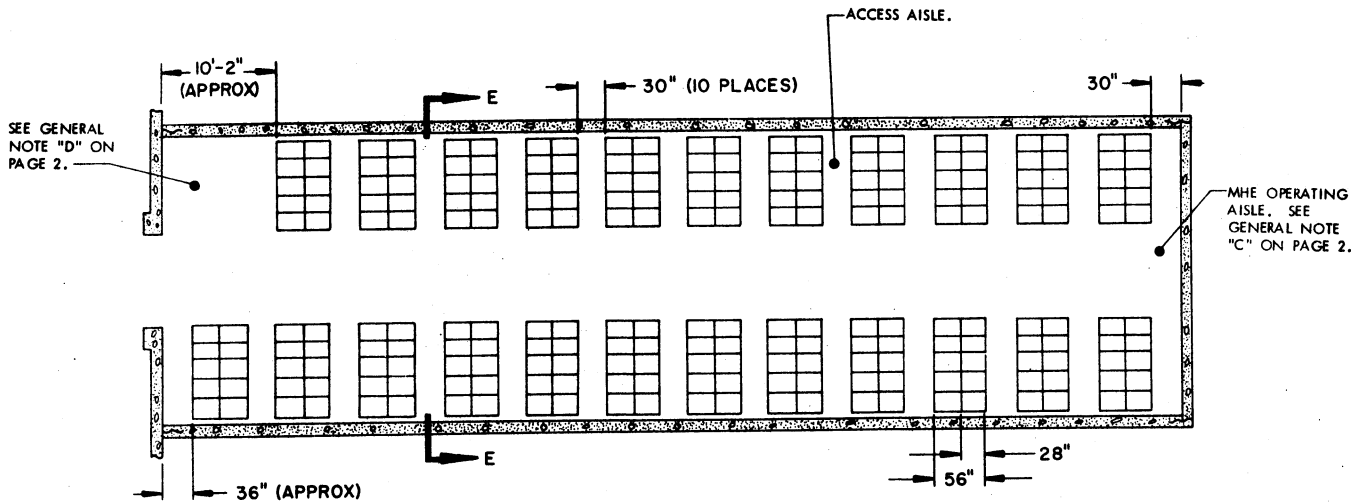
ISOMETRIC VIEW
80' STRADLEY

FOR "GENERAL NOTES", AND "MATERIAL SPECIFICATIONS",
SEE PAGE 2.

BILL OF MATERIAL (PER DOUBLE STACK)

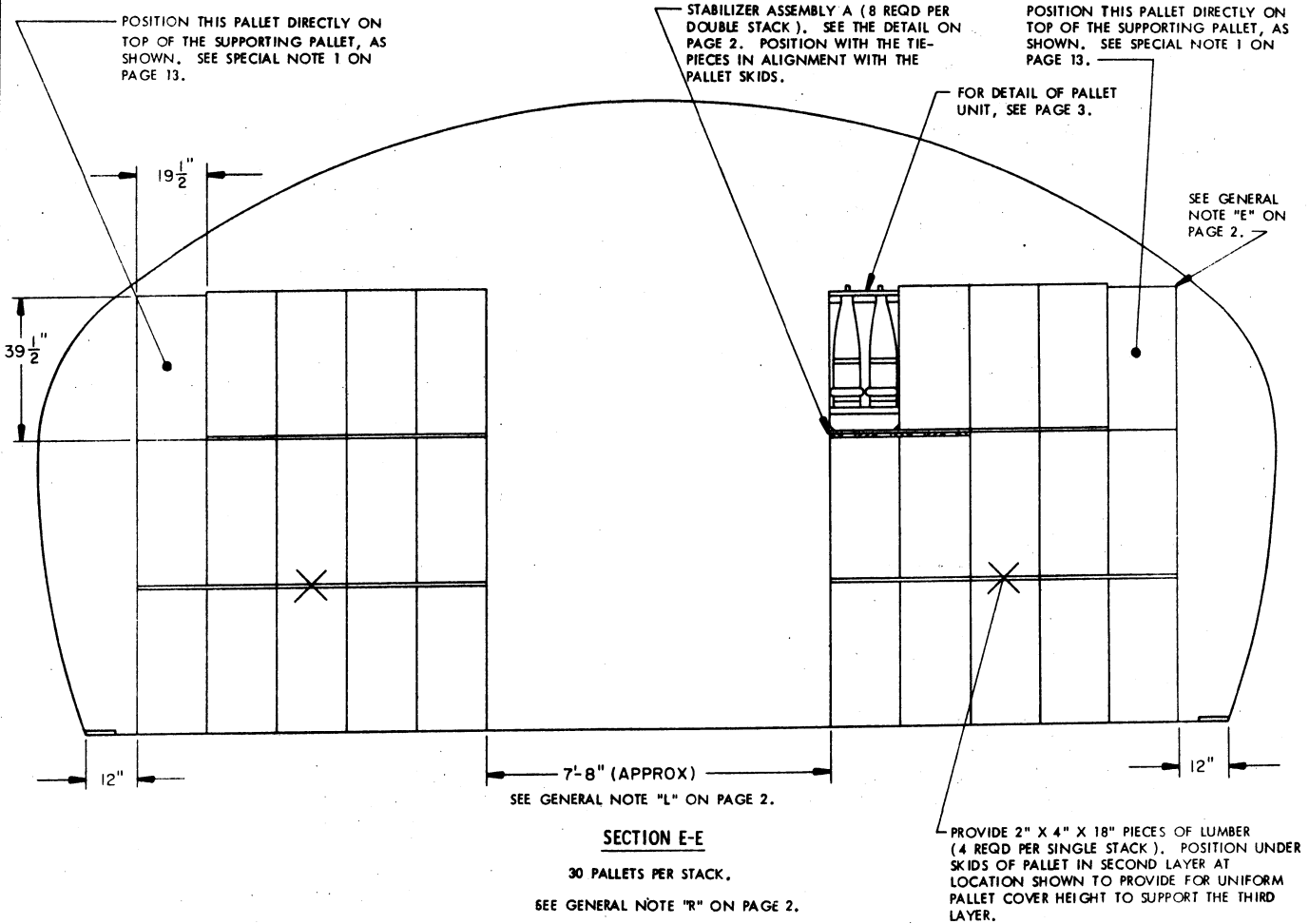
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	511	170
NAILS	NO. REQD	POUNDS
6d (2")	824	4-3/4
WEDGE, 6'-0" LONG -----		4 REQD
WEDGE, 9'-0" LONG -----		4 REQD

NOTE: THE BILL OF MATERIAL IS BASED ON A DOUBLE STACK OF PALLET UNITS AS SHOWN IN SECTION D-D AND THE PLAN VIEW ON PAGE 10.



PLAN VIEW

89' OVAL-ARCH MAGAZINE



SECTION E-E

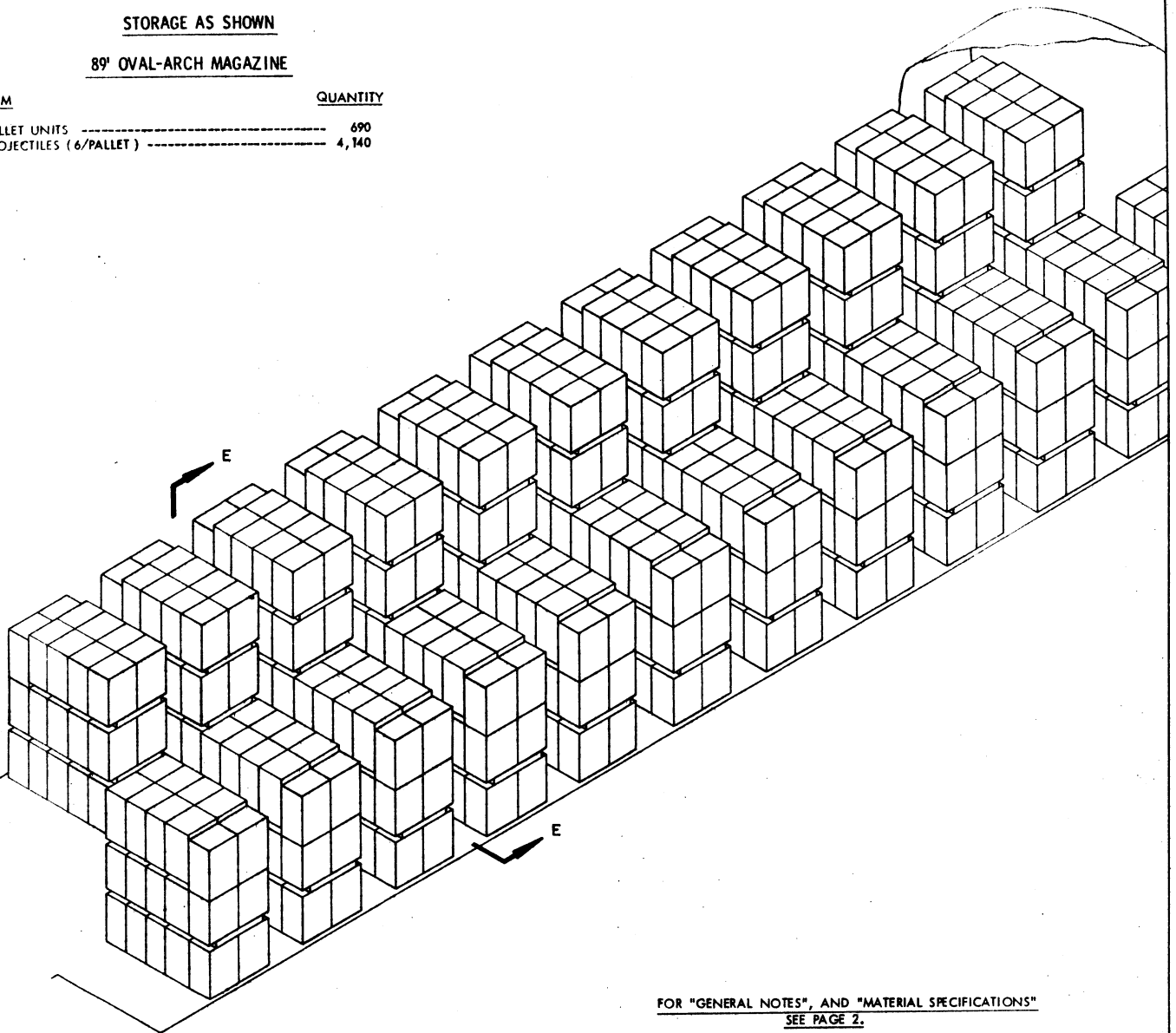
30 PALLETS PER STACK.

SEE GENERAL NOTE "R" ON PAGE 2.

STORAGE AS SHOWN

89' OVAL-ARCH MAGAZINE

ITEM	QUANTITY
PALLET UNITS -----	690
PROJECTILES (6/PALLET) -----	4,140



FOR "GENERAL NOTES", AND "MATERIAL SPECIFICATIONS"
SEE PAGE 2.

ISOMETRIC VIEW

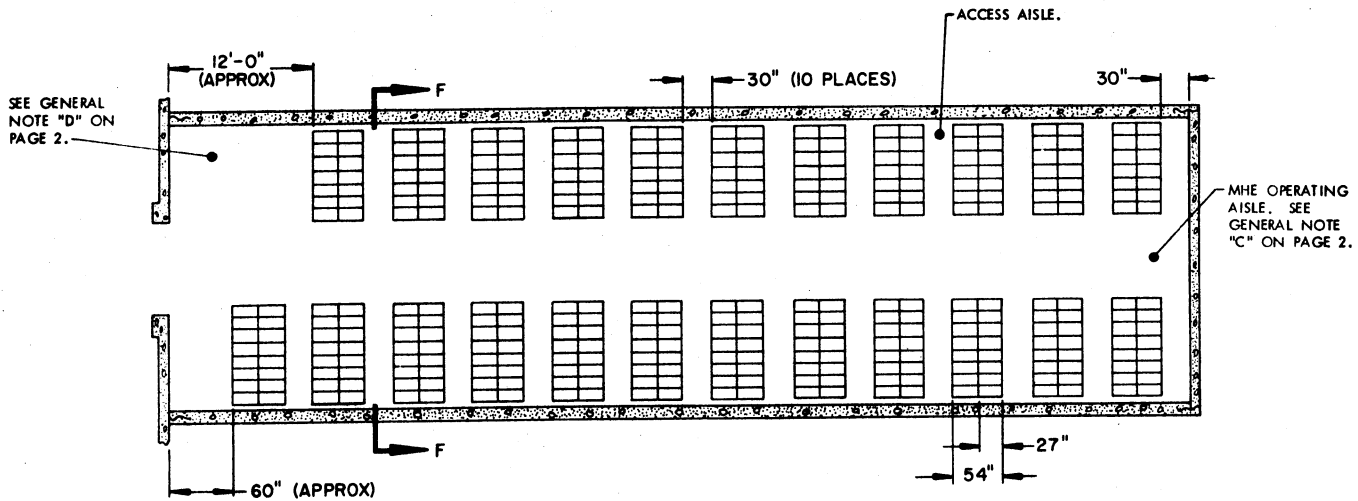
89' OVAL-ARCH MAGAZINE

BILL OF MATERIAL (PER DOUBLE STACK)		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	168	56
1" X 6"	96	48
2" X 4"	12	8
NAILS	NO. REQD	POUNDS
6d (2")	320	2

NOTE: THE BILL OF MATERIAL IS BASED ON A DOUBLE STACK OF PALLET UNITS AS SHOWN IN SECTION E-E AND THE PLAN VIEW ON PAGE 12.

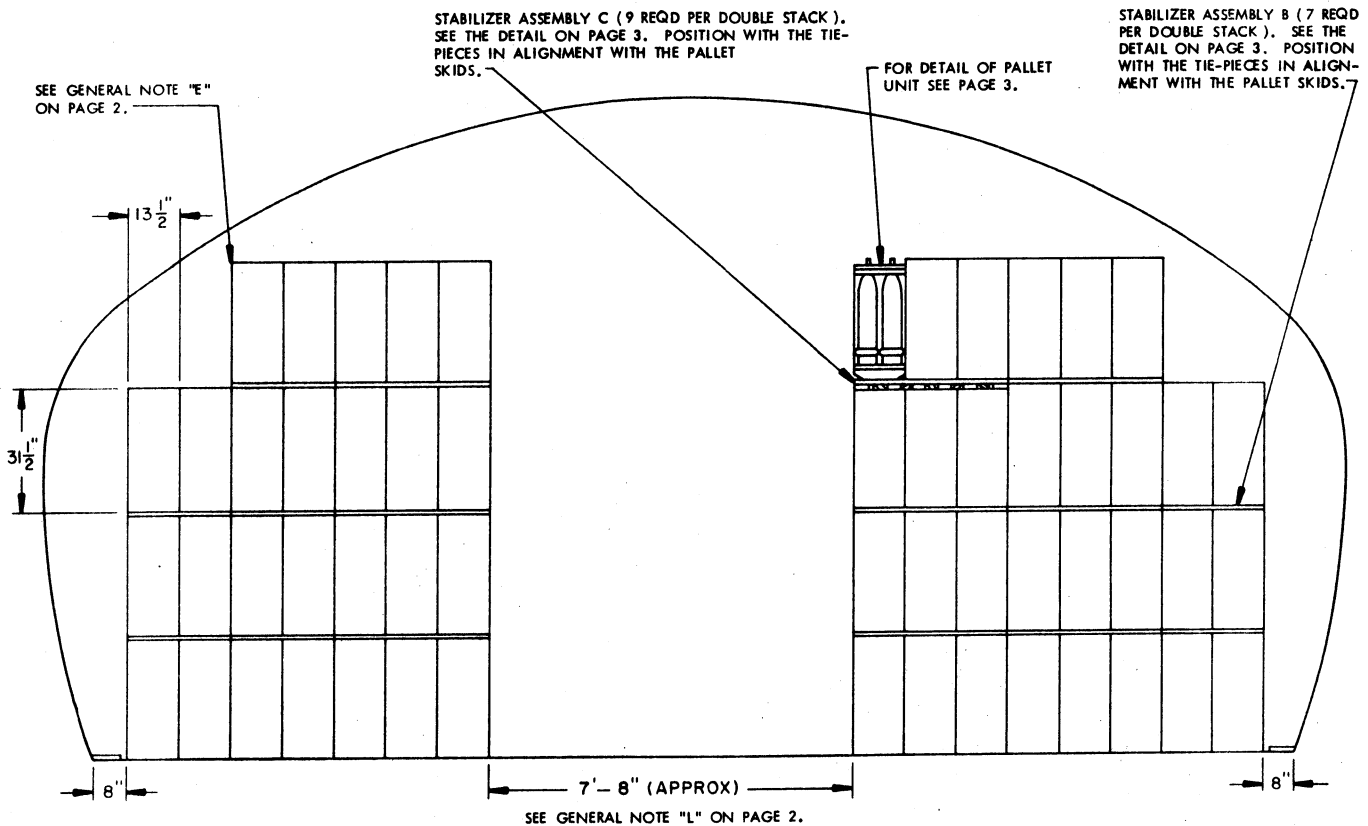
SPECIAL NOTE:

1. FOR THOSE SPECIFIC INSTANCES WHERE ONE PALLET IS DESIGNATED TO BE POSITIONED DIRECTLY ON TOP OF A SUPPORTING PALLET RATHER THAN ON A STABILIZER ASSEMBLY, TWO PIECES OF 2" X 4" X 18" LUMBER MAY BE POSITIONED UNDER THE SKIDS OF THE UPPER PALLET TO ALLOW FOR TIRE CLEARANCE IF THE THICKNESS OF THE FORKLIFT TIRE PREVENTS SAFE PLACEMENT OR REMOVAL OF THE UPPER PALLET UNIT.



PLAN VIEW

89' OVAL-ARCH MAGAZINE.



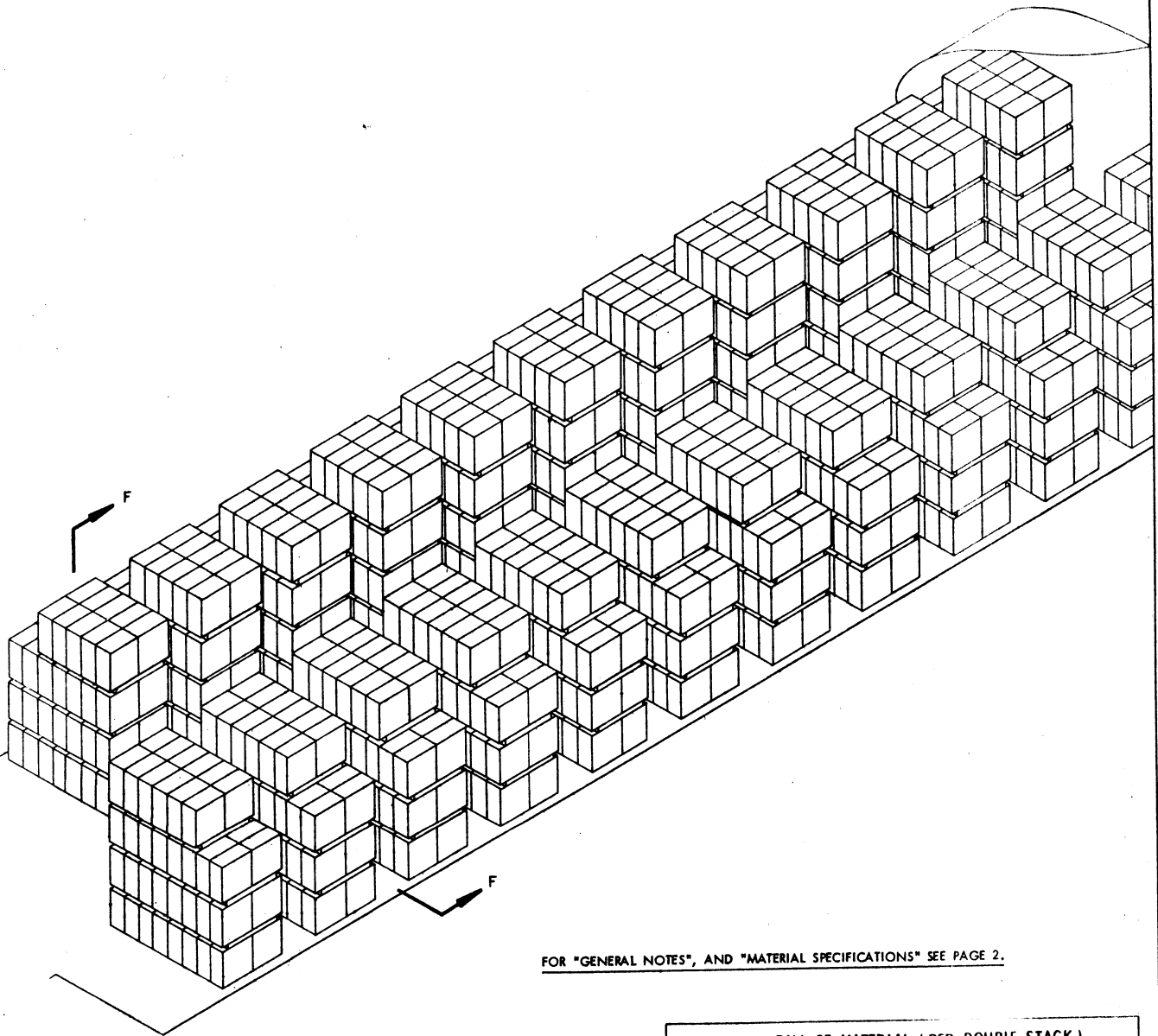
SECTION F-F

56 PALLETS PER STACK.

STORAGE AS SHOWN

89' OVAL-ARCH MAGAZINE

ITEM	QUANTITY
PALLET UNITS -----	1,292
PROJECTILES (8/PALLET) -----	10,336



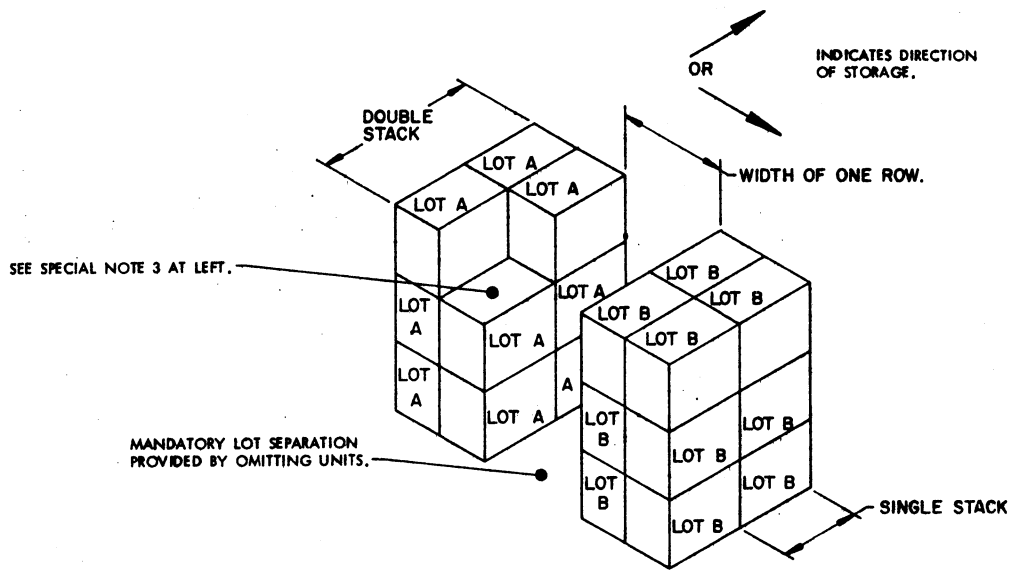
FOR "GENERAL NOTES", AND "MATERIAL SPECIFICATIONS" SEE PAGE 2.

ISOMETRIC VIEW

89' OVAL-ARCH MAGAZINE

BILL OF MATERIAL (PER DOUBLE STACK)		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	488	163
NAILS	NO. REQD	POUNDS
6d (2")	784	4-1/2

NOTE: THE BILL OF MATERIAL IS BASED ON A DOUBLE STACK OF PALLET UNITS AS SHOWN IN SECTION F-F AND THE PLAN VIEW ON PAGE 14.

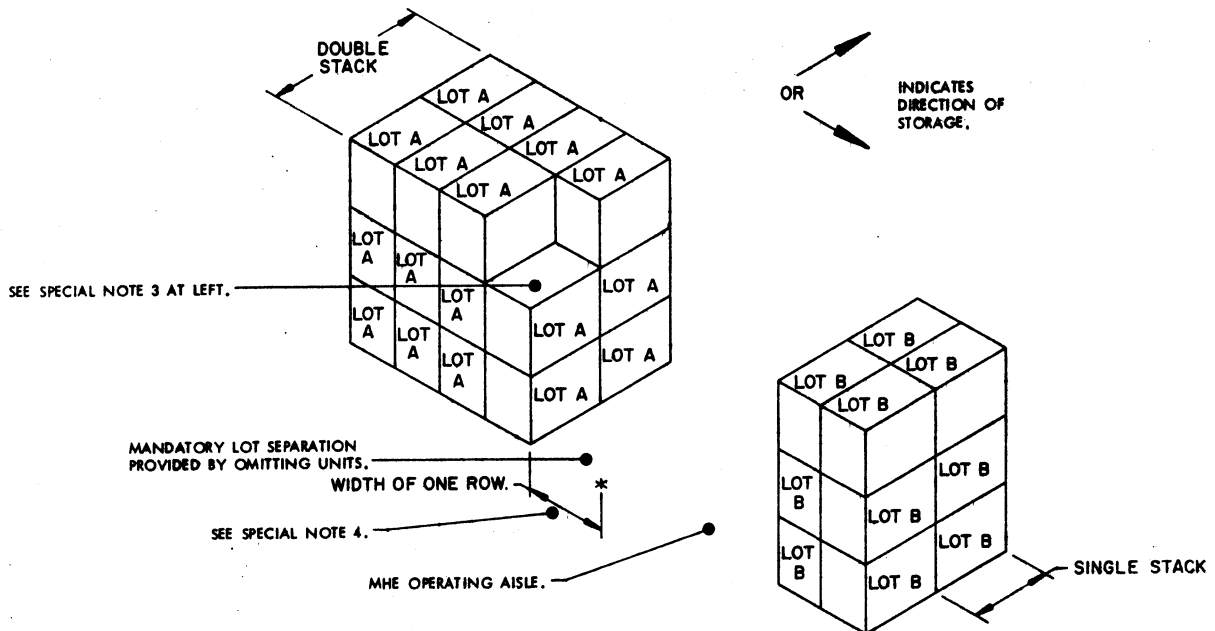


TYPICAL LOT SEPARATION DETAIL 1

(STRADLEY AND/OR OVAL-ARCH STACK DEPICTED)

SPECIAL NOTES:

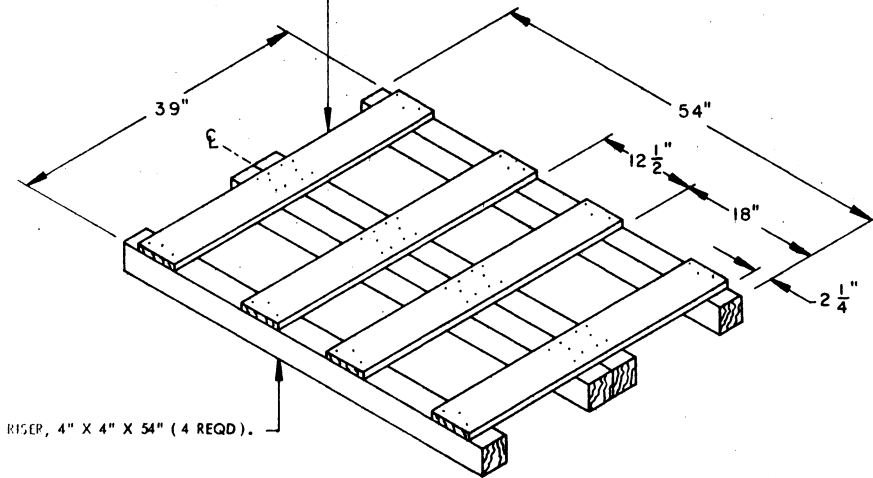
1. LOT SEPARATION WILL BE MAINTAINED WITHIN A STORAGE MAGAZINE. THE TYPICAL DETAILS ON THIS PAGE ILLUSTRATE POSSIBLE CONFIGURATIONS WHICH COMPLY WITH THE MANDATORY LOT SEPARATION REQUIREMENTS. OTHER CONFIGURATIONS MAY ALSO BE USED, PROVIDED THE OTHER CONFIGURATIONS COMPLY WITH THE BASIC REQUIREMENTS STATED HEREIN.
2. WHEN STORING MULTIPLE LOTS WITHIN A MAGAZINE, DIFFERENT LOTS WILL BE SEPARATED WITHIN A DOUBLE STACK BY OMITTING UNITS IN THE MANNER SHOWN IN THE "TYPICAL LOT SEPARATION DETAILS".
3. ONE LOT WILL NOT BE STACKED ON TOP OF ANOTHER LOT.
4. TO SATISFY LOT QUANTITIES, IT MAY BE NECESSARY TO OMIT A ROW WHICH WOULD NORMALLY BE NEXT TO AN MHE OPERATING AISLE, SINCE IT IS NOT PERMISSIBLE TO STACK ITEMS OF ONE LOT IMMEDIATELY ADJACENT TO ITEMS OF ANOTHER LOT WITHIN THE SAME SINGLE STACK.



TYPICAL LOT SEPARATION DETAIL 2

(STRADLEY AND/OR OVAL-ARCH STACK DEPICTED)

TIE PIECE, 1" X 6" X 39" (4 REQD).
 NAIL TO CENTER RISERS W/5-8d NAILS
 AT EACH JOINT. NAIL TO OUTER
 RISERS W/3-8d NAILS AT EACH END.



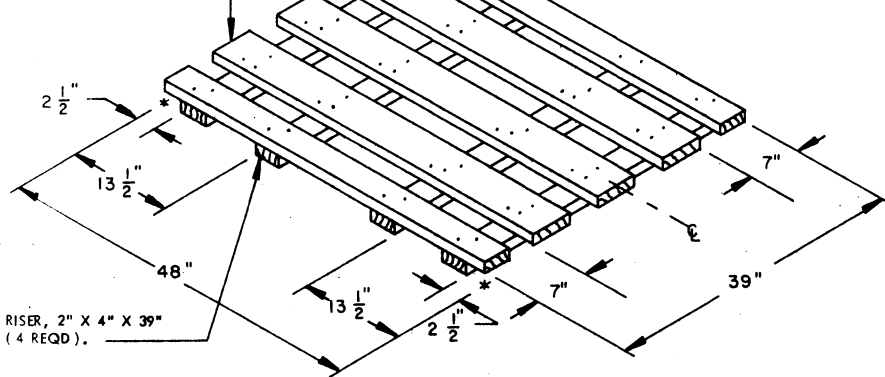
STABILIZER ASSEMBLY D

SPECIAL NOTES:

1. STORAGE PROCEDURES DEPICTED IN THIS DRAWING FOR 8" PROJECTILES, 6/PALLET ARE BASED ON PALLET UNITS OF CURRENT DESIGN, WHICH HAVE SKIDS WITH AN OUT-TO-OUT DIMENSION OF 14-3/4" APPROXIMATELY, AS SHOWN IN THE DETAIL ON PAGE 3. STABILIZER ASSEMBLY A, AS DETAILED ON PAGE 2, WILL BE USED WHEN STORING CURRENT DESIGN UNITS.
2. OLDER TYPE PALLET UNITS OF 8" PROJECTILES, 6/PALLET, HAVE SKIDS WITH AN OUT-TO-OUT DIMENSION OF 18-3/4" APPROXIMATELY, THEREFORE, STABILIZER ASSEMBLY A CANNOT BE USED IN STORING THE OLDER TYPE UNITS.
3. ALL PROCEDURES SHOWN HEREIN FOR 8" PROJECTILE UNITS WILL APPLY TO THE STORAGE OF OLDER TYPE UNITS, EXCEPT THAT STABILIZER ASSEMBLY D OR E, AS DETAILED ON THIS PAGE, WILL BE USED IN LIEU OF STABILIZER ASSEMBLY A.
4. THE HEIGHT OF THE NOSE PLUGS ABOVE THE TOP DECK BOARDS OF THE UNITS SHOULD BE MEASURED TO DETERMINE WHICH STABILIZER ASSEMBLY SHOULD BE USED. IF THE MEASURED HEIGHT IS MORE THAN 3", AS IS THE CASE IN SOME OLDER TYPE UNITS, STABILIZER ASSEMBLY D SHOULD BE USED TO PROVIDE MAXIMUM CLEARANCE FOR REMOVAL OF FORK TINES FROM THE UPPER UNITS.
5. DUE TO THE INCREASED HEIGHT OF STABILIZER ASSEMBLIES D AND E, THE QUANTITY OF PALLET UNITS PER SINGLE STACK MAY REQUIRE ADJUSTMENT FROM THAT SHOWN IN THE SECTION VIEW OF A MAGAZINE. IF DESIRED, THE DISTANCE BETWEEN THE SIDEWALL OF A MAGAZINE AND THE FIRST LAYER UNITS MAY BE ADJUSTED TO COMPENSATE FOR THE ADDITIONAL HEIGHT OF THE STABILIZER ASSEMBLIES.

TIE PIECE, 2" X 4" X 48" (2 REQD).
 NAIL TO RISERS W/2-10d NAILS AT
 EACH JOINT.

TIE PIECE, 2" X 6" X 48" (3 REQD).
 NAIL TO RISERS W/3-10d NAILS
 AT EACH JOINT.



STABILIZER ASSEMBLY E

