
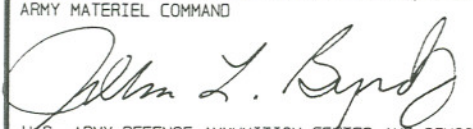
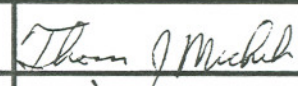
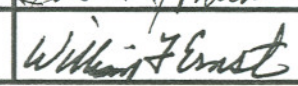


CHAPARRAL

STORAGE IN 81'-0" AND 60'-8" L
 X 26'-6" W X 12'-9" H IGL00,
 80'-0" L X 25'-0" W X 14'-0" H
 STRADLEY, AND 89'-0" L X
 24'-10" W X 14'-4" H OVAL-ARCH
 MAGAZINES OF COMPLETE ROUND
 IN THE M570 SHIPPING AND
 STORAGE CONTAINER

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U.S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U.S. ARMY MISSILE COMMAND  APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND  U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL	DRAFTSMAN INGBORG DEPPE	ENGINEER M. DAEUMER	
		SUPPLY ENGINEERING DIVISION 	
		LOGISTICS ENGINEERING OFFICE 	
JUNE 1968			
	CLASS	DIVISION	DRAWING
	19	48	5231
	REVISION NO. 3	JULY 1994	
	SEE THE REVISION LISTING ON PAGE 2		
			FILE
			GM 1-14-22 CH 1

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:

1. FOR DETAILS OF THE M570 CONTAINER, SEE DRAWING NO. 11074804 AND THE VIEW SHOWN ON PAGE 3.

CONTAINER DIMENSIONS - - - 125" L X 18" W X 19" H
GROSS WEIGHT - - - - - 299 LBS (APPROX)
EXPLOSIVE WEIGHT - - - - 69 LBS (APPROX)
(WARHEAD AND MOTOR).

2. FOR DETAILS OF THE M570 PALLETIZED UNIT, SEE DRAWING NO. 19-48-5235-GM 20CH1, AND THE VIEW SHOWN ON PAGE 3.

PALLET UNIT DIMENSIONS - - - 128-1/4" L X 36" W X
44-5/8" H
GROSS WEIGHT - - - - - 1,398 LBS (APPROX)
EXPLOSIVE WEIGHT - - - - - 276 LBS (APPROX)
(WARHEAD AND MOTOR).

C. THIS IS A QD CLASS 1.1 ITEM AND IS IN COMPATIBILITY GROUP E. CAUTION: THIS ITEM IS IN A "PROPULSIVE STATE" AND MUST BE STORED WITH THE FORWARD END FACING TOWARD THE REAR WALL AND/OR SIDE WALLS OF THE MAGAZINE, AS INDICATED BY THE DIRECTIONAL ARROWS IN THE STORAGE VIEWS.

D. AISLE DIMENSIONS AS SHOWN HEREIN MAY BE ADJUSTED TO SUIT LOCAL CONDITIONS AND/OR AVAILABLE MATERIAL HANDLING EQUIPMENT (MHE). HOWEVER, A 24" MINIMUM INSPECTION AISLE MUST BE MAINTAINED AT THE AFT END OF THE STORED ITEMS.

E. STORED CONTAINERS MUST NOT CONTACT THE WALLS OF A MAGAZINE. TO PROVIDE FOR THIS MANDATORY CLEARANCE REQUIREMENT, THE WIDTH OF THE AISLES MAY BE ADJUSTED OR CONTAINERS MAY BE ELIMINATED FROM THE DEPICTED STORAGE PATTERNS AS NECESSARY.

F. CAUTION: A STACK OF SINGLE CONTAINERS WILL NOT BE STACKED MORE THAN THREE (3) OR FOUR (4) CONTAINERS HIGH WITHOUT BEING WIRE-TIED TO AN ADJACENT STACK AS SPECIFIED. THE THIRD LAYER IN A FOUR-HIGH CONTAINER STACK OR THE FOURTH LAYER IN A FIVE OR SIX-HIGH CONTAINER STACK WILL BE WIRE-TIED AS DETAILED IN THE "STACK STABILIZING WIRE TIE DETAIL" ON PAGE 20. POSITION ANTICHAFING MATERIAL OR TAPE BETWEEN THE TIE WIRE AND THE LIFTING HANDLES. IF NO. 8 GAGE WIRE IS NOT READILY AVAILABLE OTHER SIZES OF WIRE TIES, IF OF EQUAL STRENGTH, MAY BE SUBSTITUTED; SUCH AS, TWO (2) LOOPS OF NO. 14 GAGE WIRE FOR ONE (1) LOOP OF NO. 8 GAGE WIRE WHICH IS SPECIFIED.

G. CAUTION: EXTREME CARE MUST BE EXERCISED DURING HANDLING, WIRE TYING AND INSPECTION OPERATIONS TO PREVENT DAMAGE TO THE EXPOSED PLASTIC AREAS OF THE CONTAINER. PLASTIC AREAS WILL NOT BE STEPPED ON, WALKED ON, PRIED AGAINST, STRUCK OR GOUGED WITH HAND TOOLS, MATERIAL HANDLING EQUIPMENT, LADDERS AND OTHER EQUIPMENT BEING USED.

H. IF AVAILABLE MHE PERMITS, ADDITIONAL M570 CONTAINERS WITH MISSILES MAY BE STORED WITHIN THE FRONTAL AREA OF THE MAGAZINE.

J. THE STORAGE PROCEDURES DEPICTED HEREIN FOR SPECIFIC TYPES OF MAGAZINES MAY ALSO BE UTILIZED TO STORE CONTAINERS AND/OR PALLET UNITS 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.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

LUMBER - - - - - SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.

WIRE, CARBON STEEL - : ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.

ANTI-CHAFING MATERIAL - - - - - MIL-B-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.

K. OTHER COMPATIBLE ITEMS MAY BE STORED IN A MAGAZINE WHICH IS PARTIALLY FILLED WITH THE DESIGNATED ITEM.

L. THE STORAGE PROCEDURES DEPICTED FOR IGLOO MAGAZINES ARE ALSO APPLICABLE FOR STEEL ARCH MAGAZINES WHICH HAVE A SIMILAR CROSS SECTIONAL AREA.

M. PAGES 16 THROUGH 19 DEPICT SPECIAL STORAGE PROCEDURES WHICH WILL BE USED ONLY AT INSTALLATIONS WHICH HAVE A REQUIREMENT TO PROVIDE FOR AN EOD DESTRUCTION CAPABILITY.

N. FLOOR DUNNAGE IS REQUIRED TO PERMIT LEVEL STACKING OF UNPALLETIZED CONTAINERS 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. FLOOR DUNNAGE WILL BE USED IN AN OVAL-ARCH MAGAZINE IF THE FLOOR IS SLOPED TO THE SIDE WALLS.

O. CONTAINERS AND/OR PALLET UNITS PRESENTLY STORED IN ACCORDANCE WITH A PRIOR APPROVED DRAWING NEED NOT BE RESTORED SOLELY TO CONFORM TO THE PROCEDURES SPECIFIED IN THIS DOCUMENT.

P. PORTIONS OF THE MAGAZINES, SUCH AS SIDEWALLS, END WALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE STORAGE VIEWS FOR CLARITY PURPOSES.

REVISIONS

REVISION NO. 1, DATED APRIL 1971, CONSISTS OF:

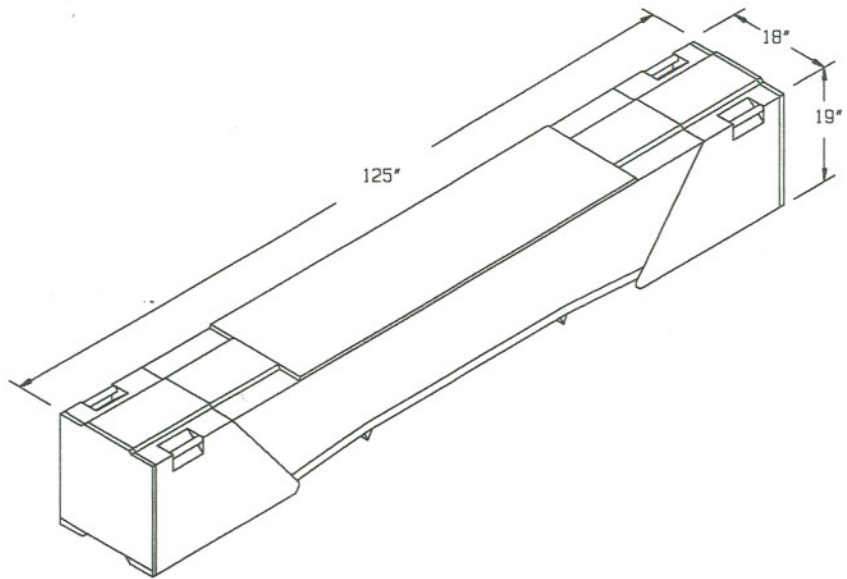
1. CHANGING THE QD CLASS FROM 7 TO 5.
2. CHANGING THE CONTAINER WEIGHT.
3. CHANGING THE LUMBER SPECIFICATION.

REVISION NO. 2, DATED OCTOBER 1976, CONSISTS OF:

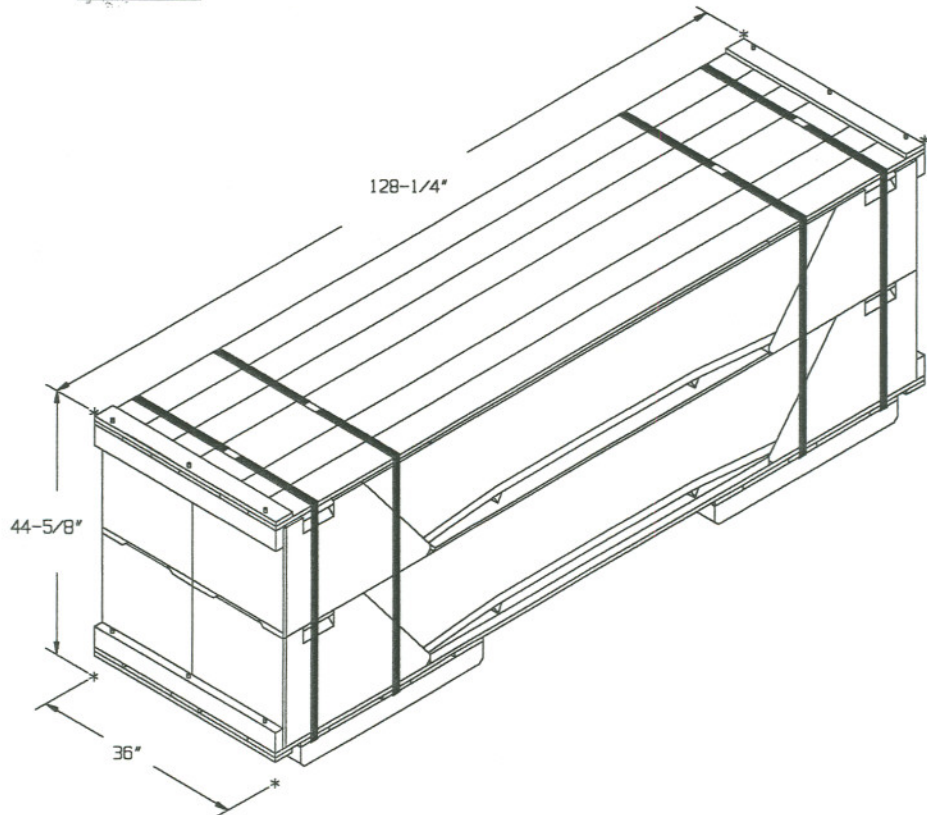
1. ADDING STORAGE PROCEDURES FOR PALLETIZED UNITS.
2. ADDING STORAGE PROCEDURES FOR STRADLEY AND OVAL-ARCH MAGAZINES.
3. ADDING EOD REQUIREMENTS.
4. UPDATING GENERAL NOTES AND DRAWING FORMAT.

REVISION NO. 3, DATED JULY 1994, CONSISTS OF:

1. UPDATING GENERAL NOTES AND DRAWING FORMAT.
2. CHANGING EXPLOSIVE WEIGHTS AND GROSS WEIGHTS OF CONTAINERS AND PALLET UNITS.
3. CHANGING THE QD CLASS AND COMPATABILITY GROUP IN NOTE "C".



CONTAINER



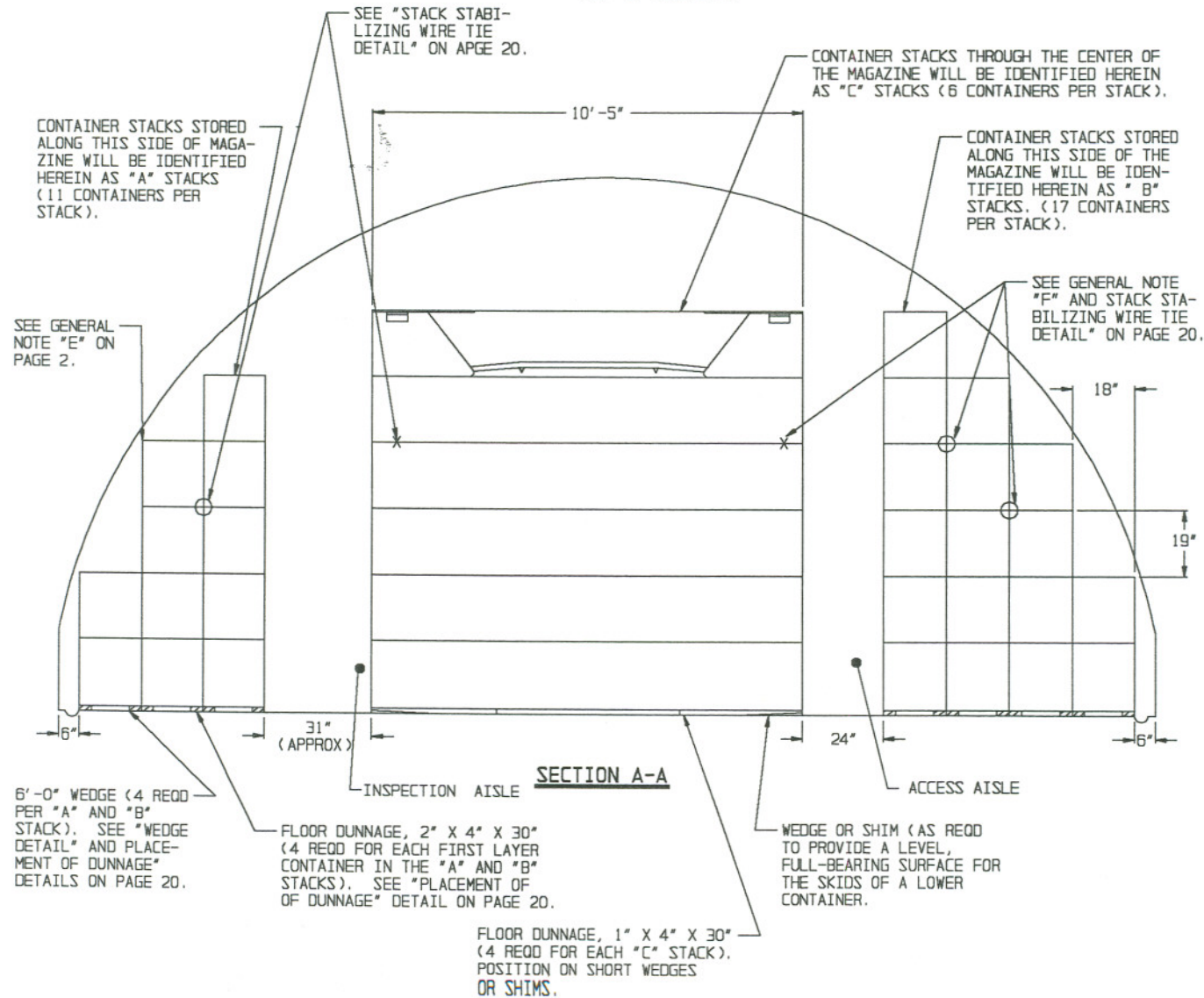
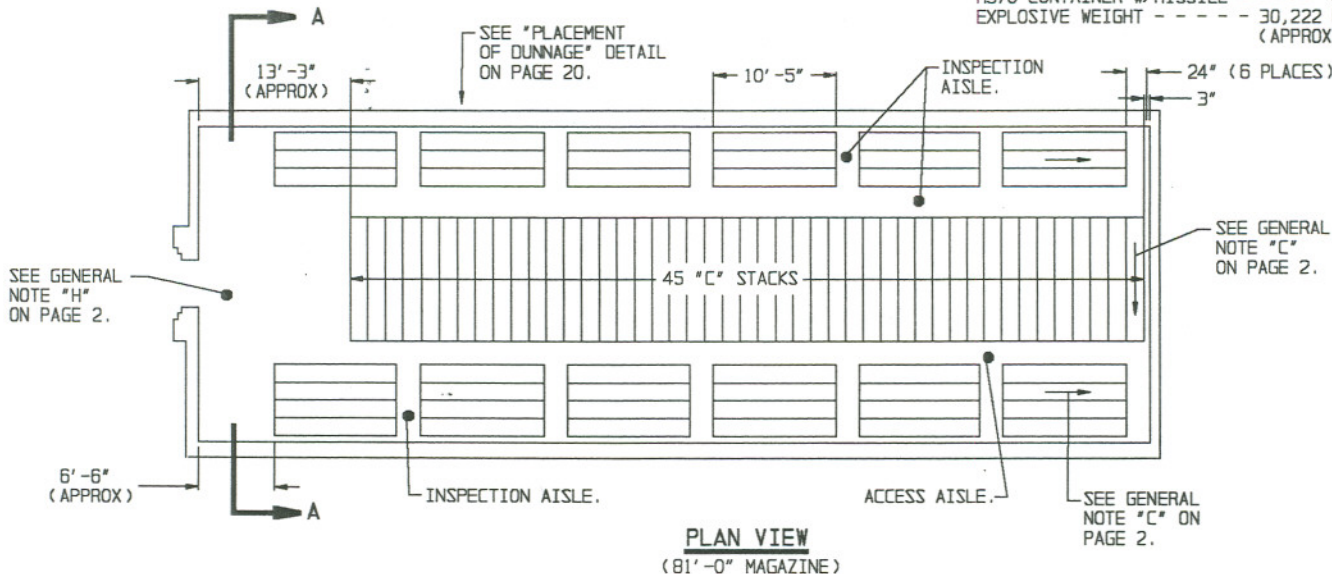
PALLET UNIT

PALLET AND CONTAINER DETAILS

STORAGE IN 81'-0" IGLOO

(12'-9" HIGH)

ITEM	QUANTITY
M570 CONTAINER W/MISSILE	438
EXPLOSIVE WEIGHT	30,222 LBS (APPROX)



STORAGE PROCEDURES (UNPALLETIZED)

IN 81'-0" AND 60'-8" L X 26'-6" W X 12'-9" H IGLOO MAGAZINES

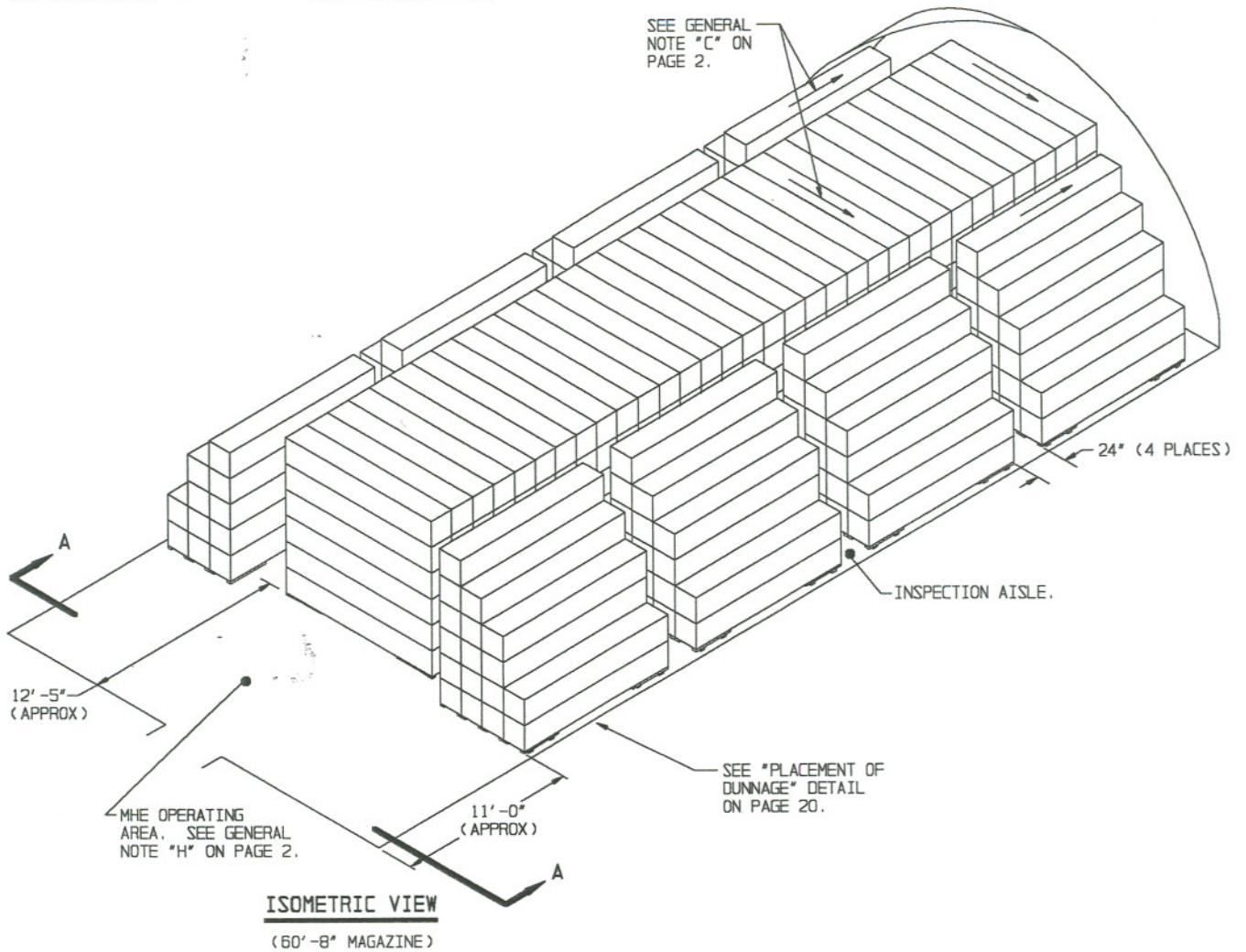
STORAGE IN 60'-8" IGLOO

(12'-9" HIGH)

ITEM

QUANTITY

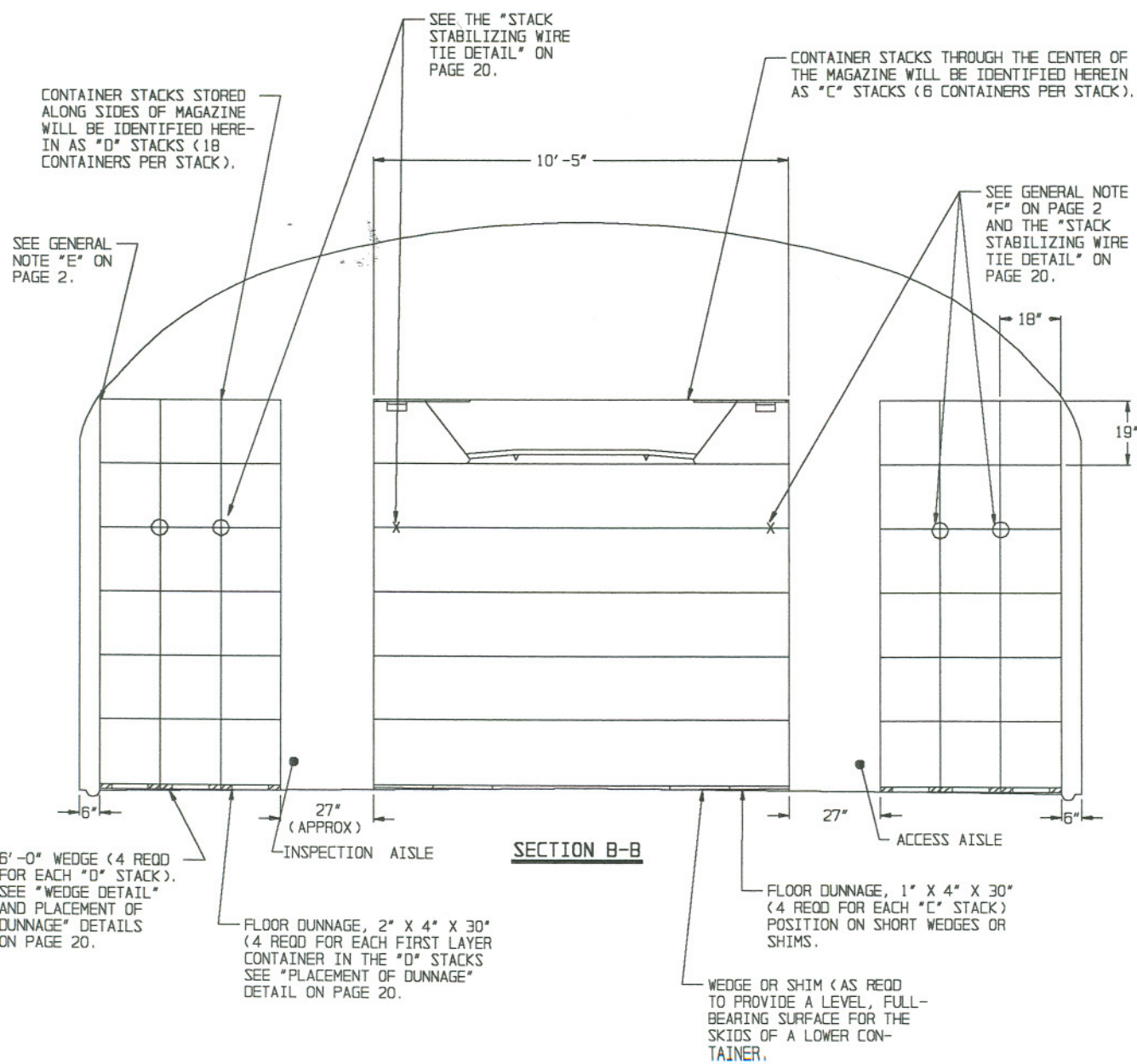
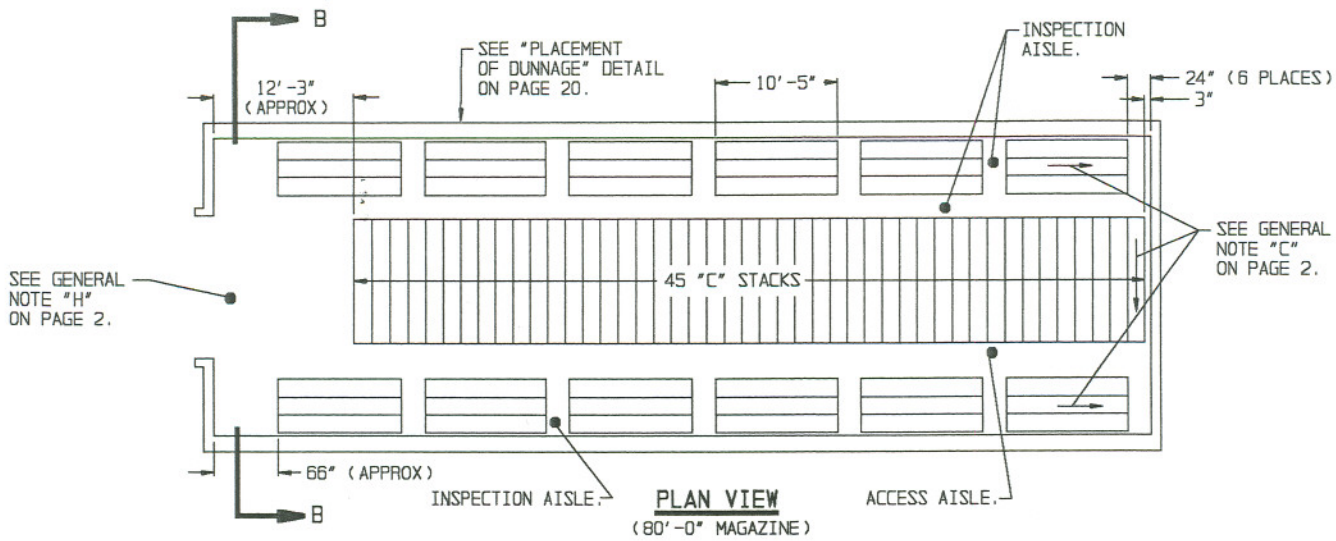
M570 CONTAINER WITH MISSILE - - - 304
 EXPLOSIVE WEIGHT - - - - - 20,976 LBS (APPROX)



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

BILL OF MATERIAL PER STACK *					
STACK*	QUANTITY	LUMBER		6'-0" WEDGES	WIRE TIE REQUIREMENTS
		SIZE	LINEAR FEET		
"A"	12	2" X 4" X 30"	30	4	24"
"B"	16	2" X 4" X 30"	40	4	48"
"C"	4	1" X 4" X 30"	10	SHIMS	24"

* SEE "SECTION A-A" FOR IDENTIFICATION OF STACKS.



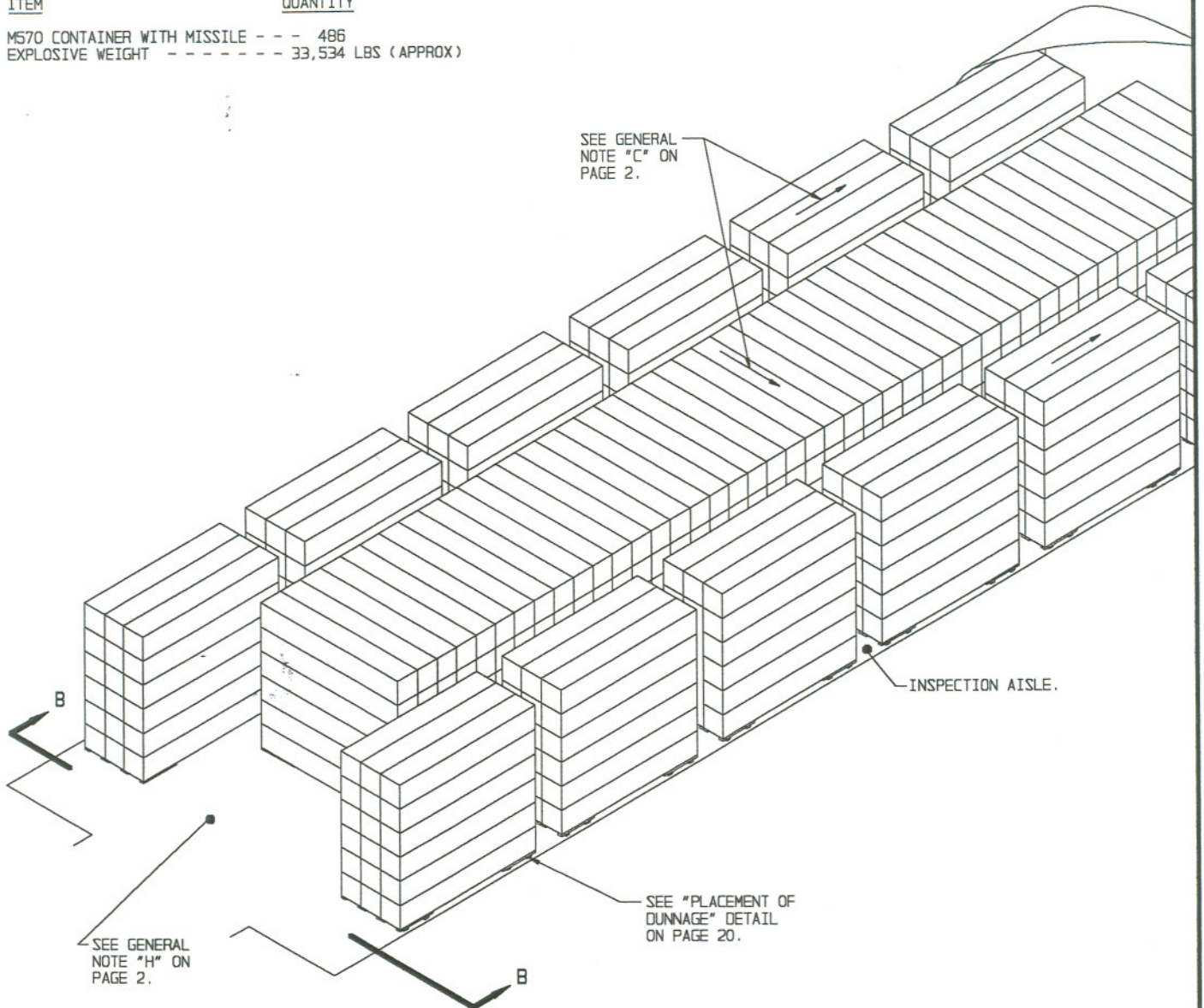
STORAGE IN 80'-0" STRADLEY MAGAZINE

(14'-0" HIGH)

ITEM

QUANTITY

M570 CONTAINER WITH MISSILE - - - 486
 EXPLOSIVE WEIGHT - - - - - 33,534 LBS (APPROX)



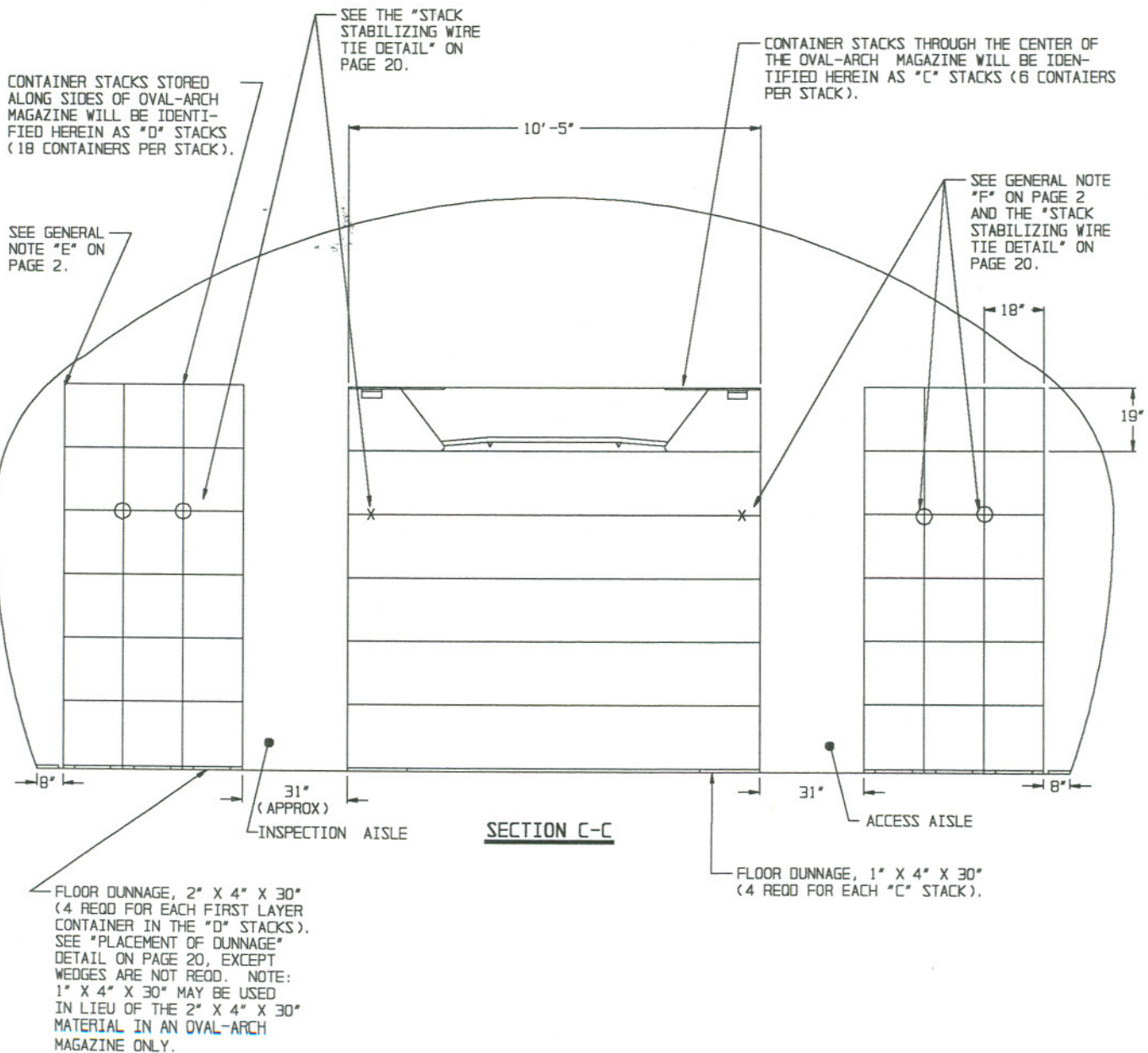
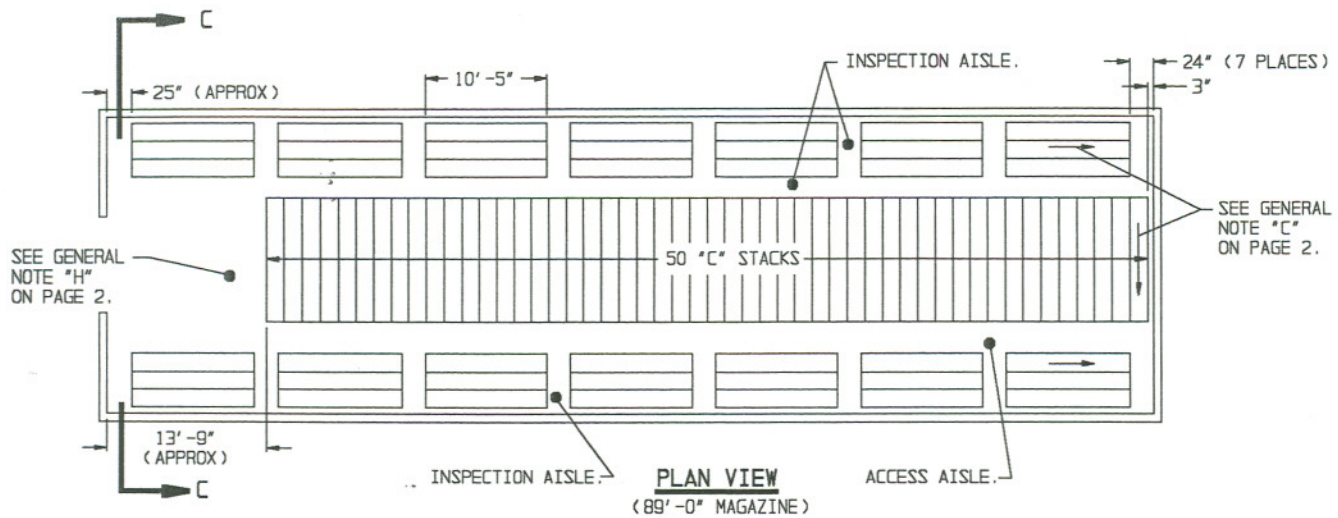
ISOMETRIC VIEW

(80'-0" MAGAZINE)

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

BILL OF MATERIAL PER STACK *					
STACK*	QUANTITY	LUMBER		6'-0" WEDGES	WIRE TIE REQUIREMENTS
		SIZE	LINEAR FEET		
"C"	4	1" X 4" X 30"	10	SHIMS	24"
"D"	12	2" X 4" X 30"	30	4	8'-0"

* SEE "SECTION B-B" FOR IDENTIFICATION OF STACKS.

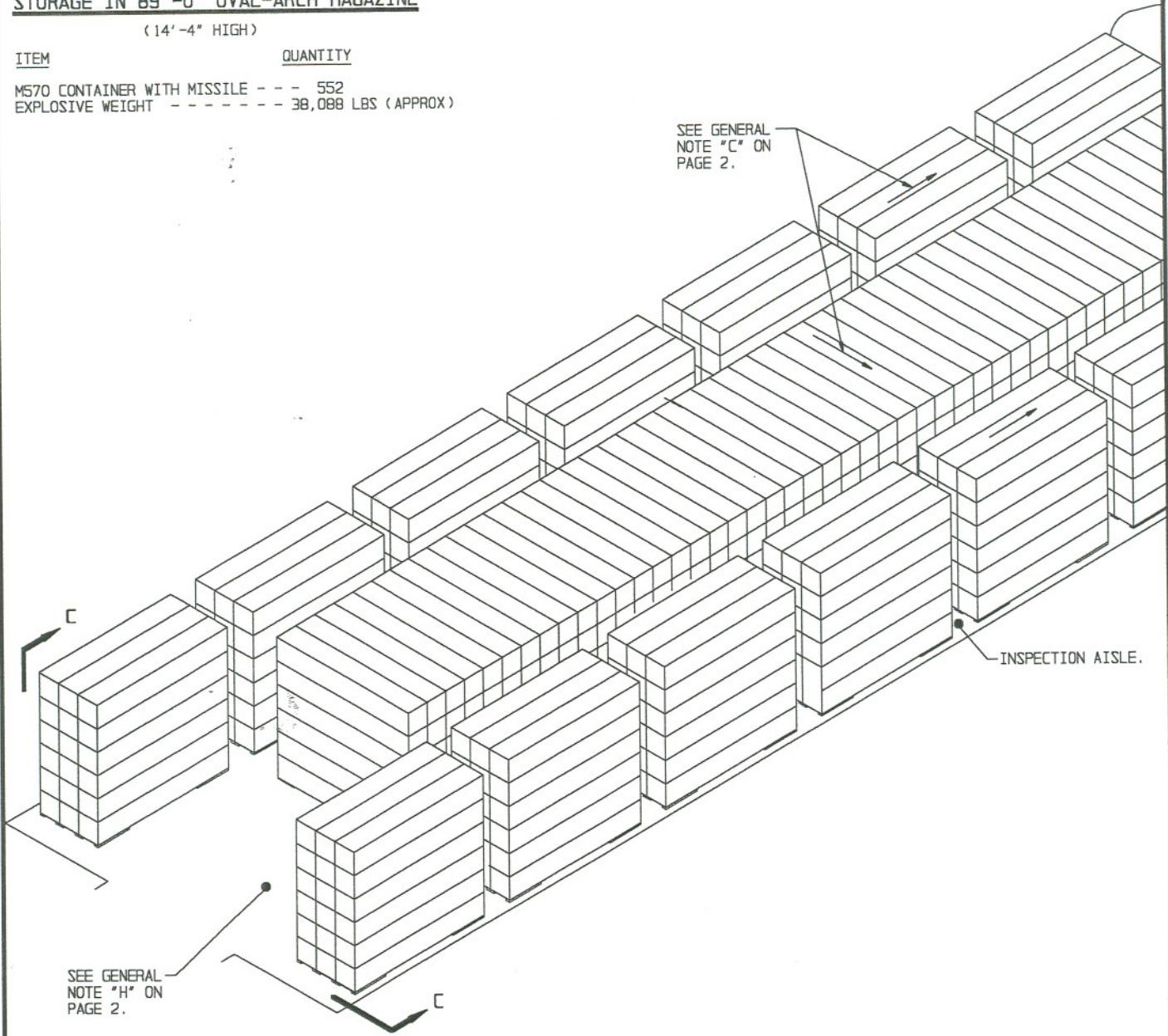


STORAGE IN 89'-0" OVAL-ARCH MAGAZINE

(14'-4" HIGH)

ITEM	QUANTITY
M570 CONTAINER WITH MISSILE - - -	552
EXPLOSIVE WEIGHT - - - - -	38,088 LBS (APPROX)

SEE GENERAL NOTE "C" ON PAGE 2.



ISOMETRIC VIEW
(89'-0" MAGAZINE)

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

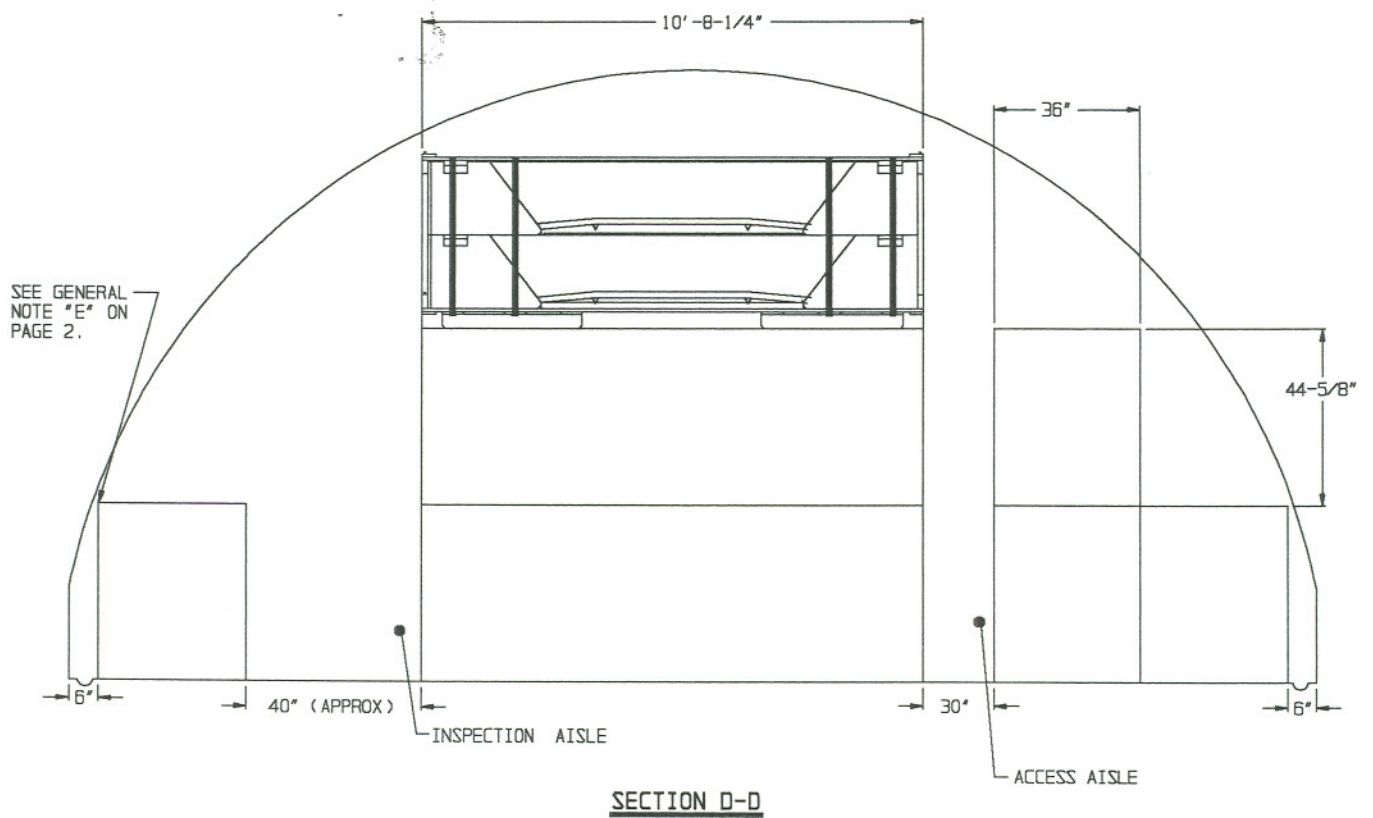
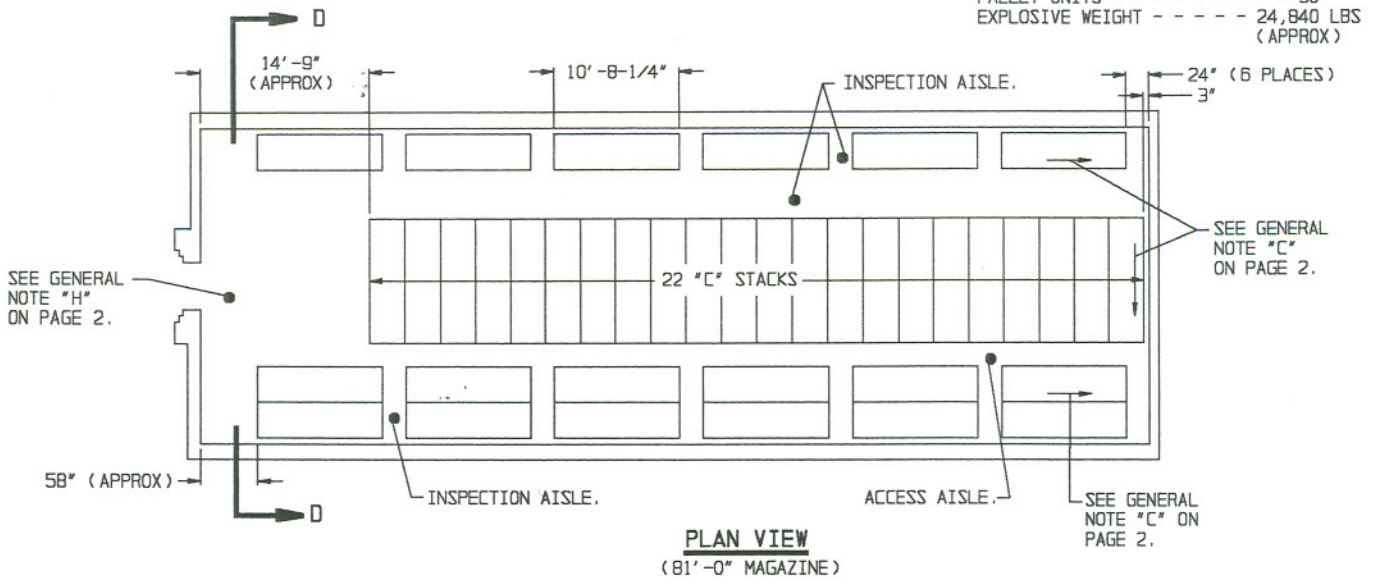
BILL OF MATERIAL PER STACK *				
STACK*	QUANTITY	LUMBER		WIRE TIE REQUIREMENTS
		SIZE	LINEAR FEET	
"C"	4	1" X 4" X 30"	10	24"
"D"	12	2" X 4" X 30"	30	8'-0"

* SEE "SECTION C-C" FOR IDENTIFICATION OF STACKS.

STORAGE IN 81'-0" IGLOO

(12'-9" HIGH)

ITEM	QUANTITY
PALLET UNITS - - - - -	90
EXPLOSIVE WEIGHT - - - - -	24,840 LBS (APPROX)

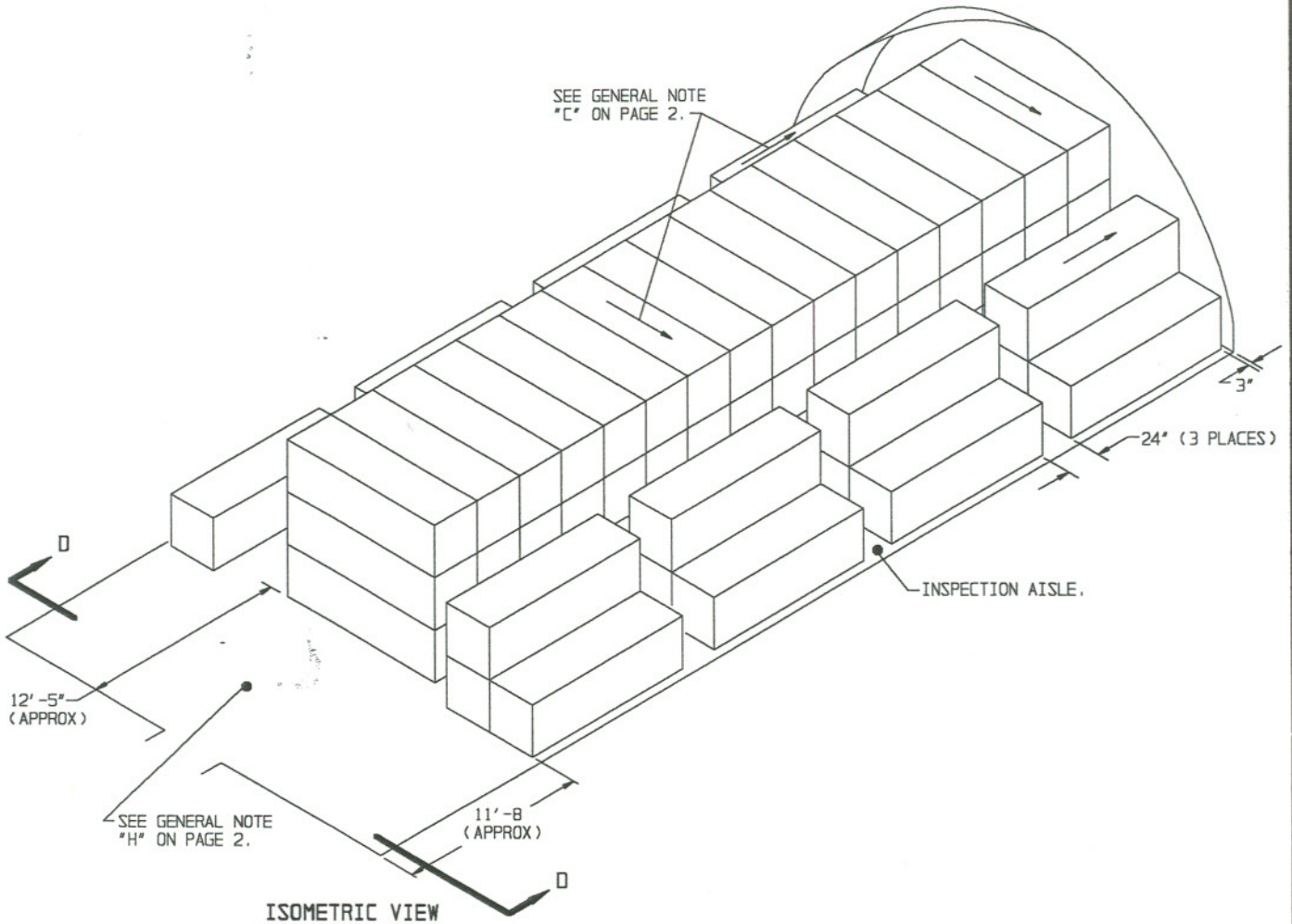


STORAGE PROCEDURES (PALLETIZED)
IN 81'-0" AND 60'-8" L X 26'-6" W X 12'-9" H IGLOO MAGAZINES

STORAGE IN 60'-8" IGLOO

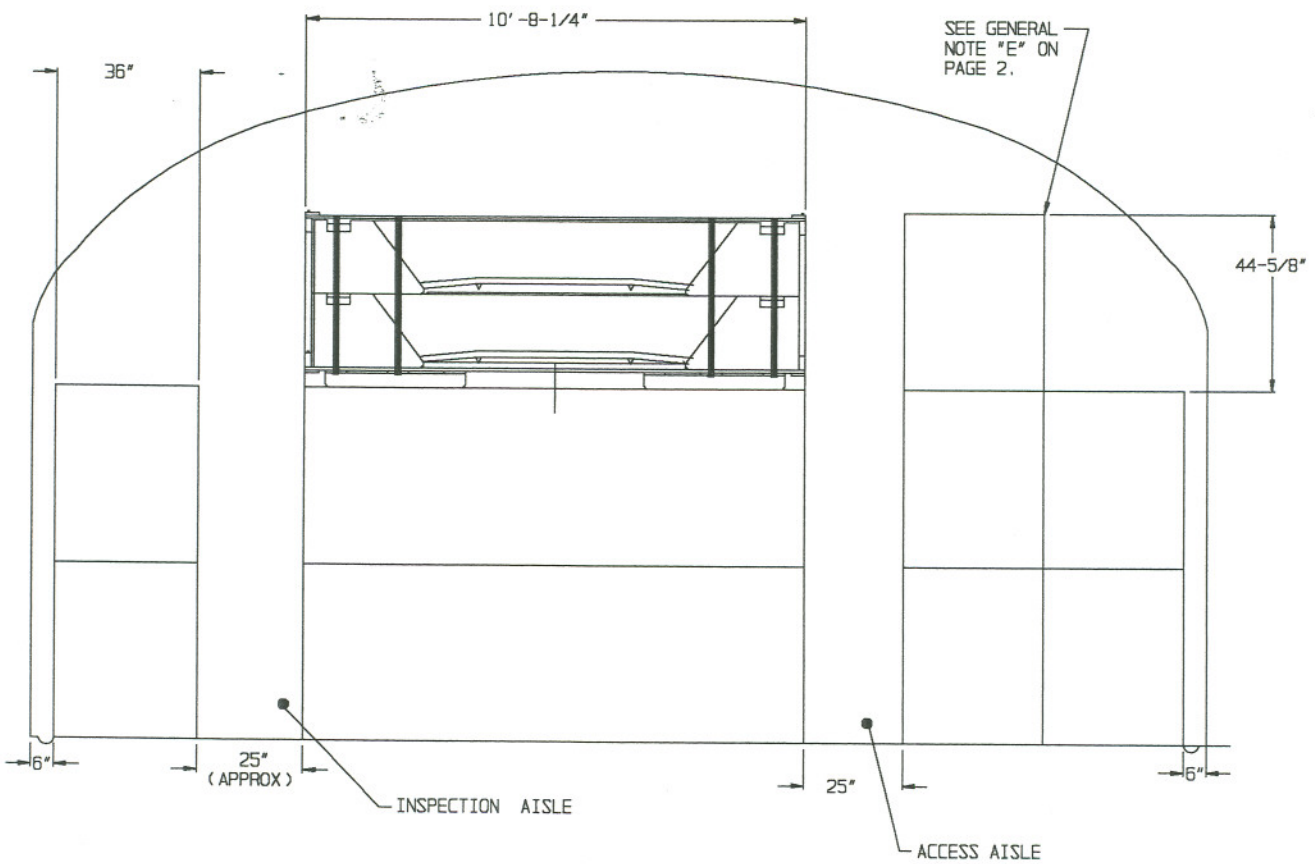
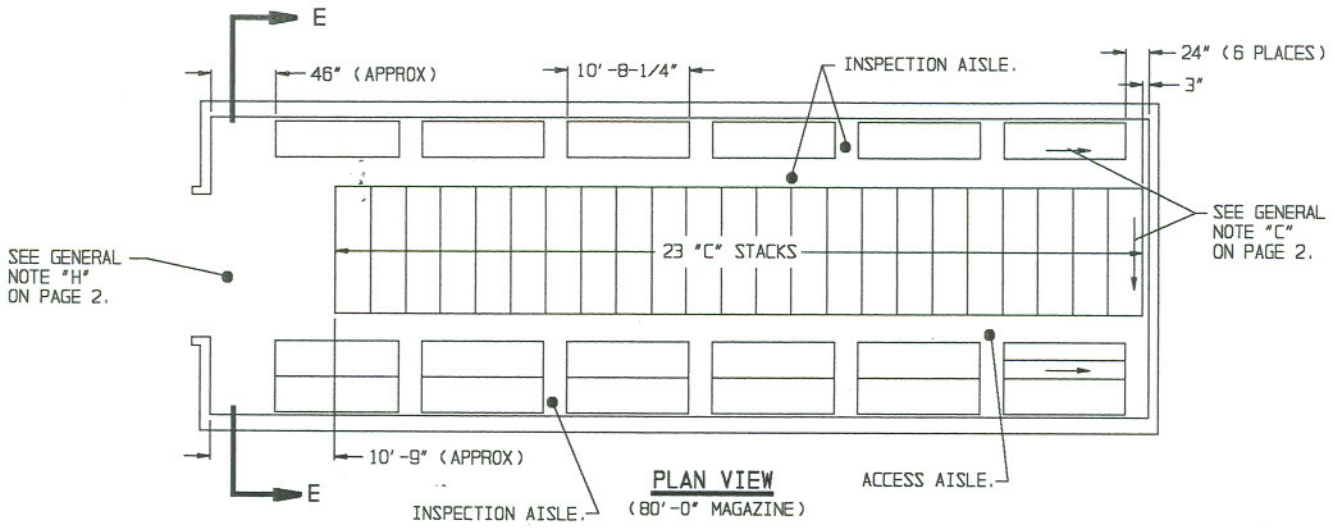
(12'-9" HIGH)

ITEM	QUANTITY
PALLET UNITS	64
EXPLOSIVE WEIGHT	17,664 LBS (APPROX)



ISOMETRIC VIEW
(60'-8" MAGAZINE)

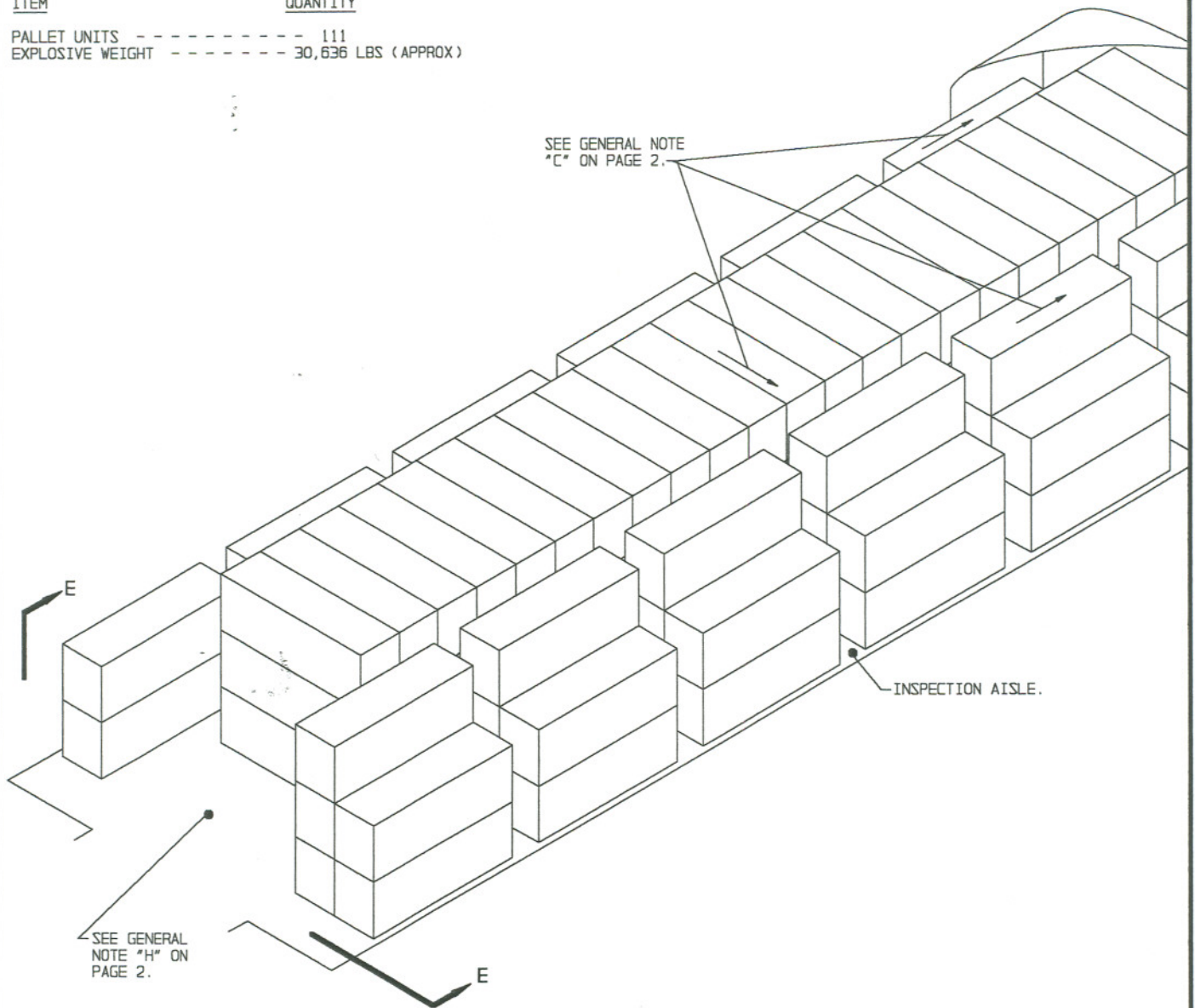
FOR "GENERAL NOTES" SEE PAGE 2.



STORAGE IN 80'-0" STRADLEY MAGAZINE

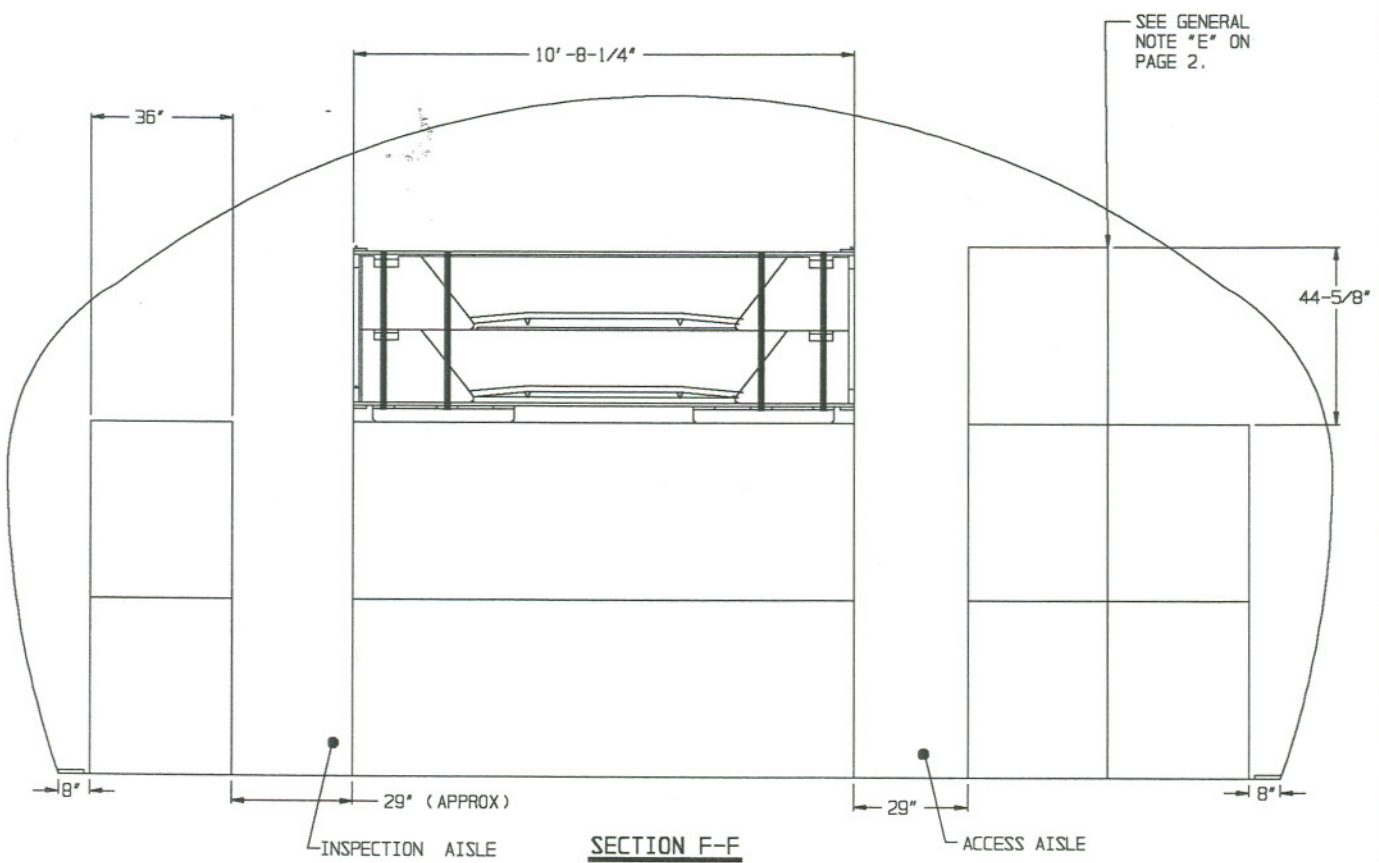
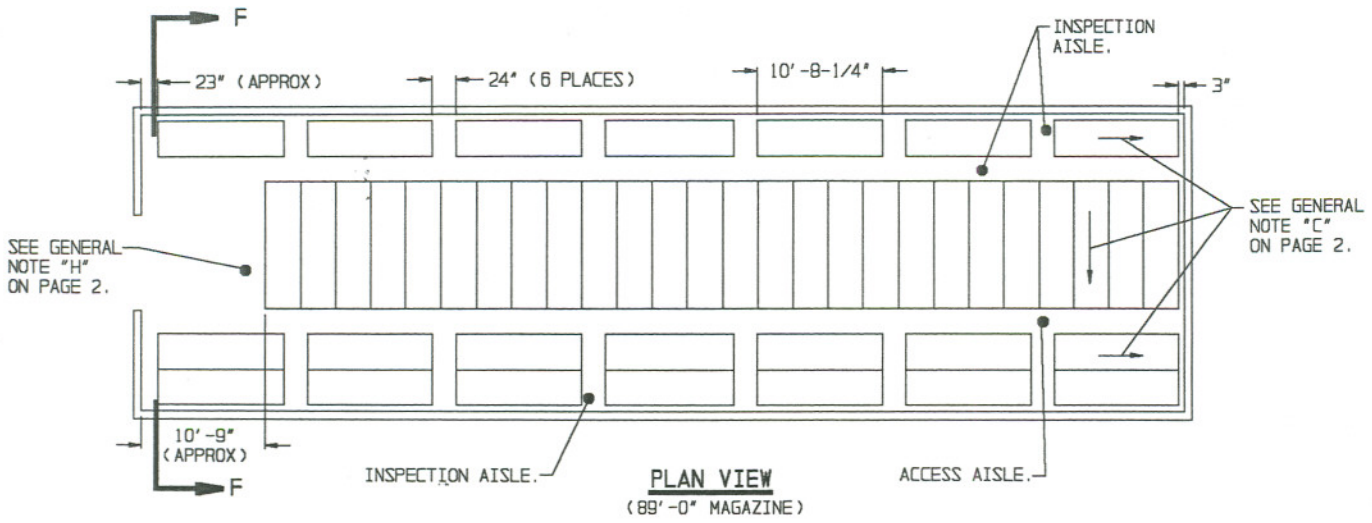
(14'-0" HIGH)

<u>ITEM</u>	<u>QUANTITY</u>
PALLET UNITS - - - - -	111
EXPLOSIVE WEIGHT - - - - -	30,636 LBS (APPROX)



ISOMETRIC VIEW
(80'-0" MAGAZINE)

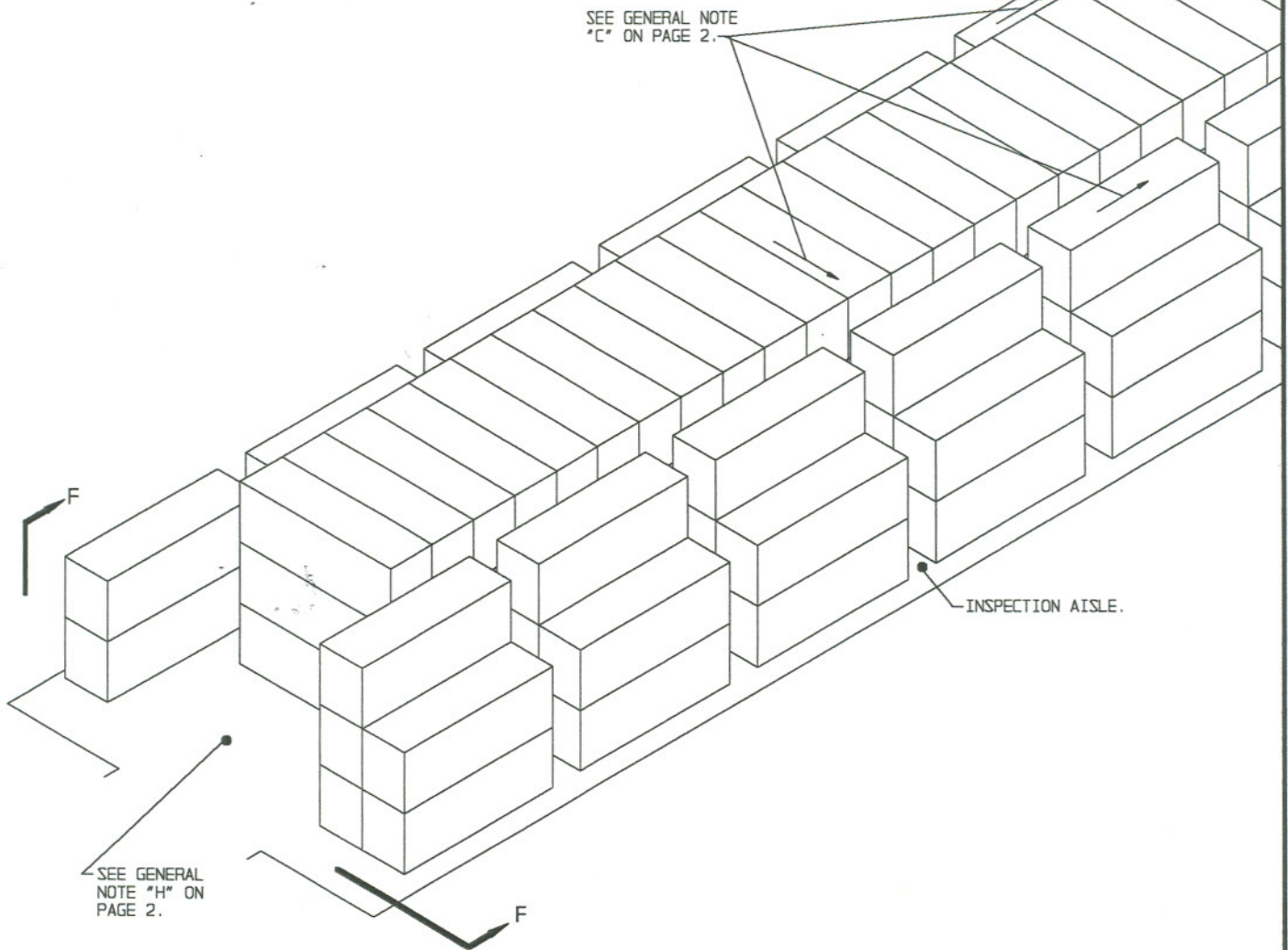
FOR "GENERAL NOTES" SEE PAGE 2.



STORAGE IN 89'-0" OVAL-ARCH MAGAZINE

(14'-4" HIGH)

<u>ITEM</u>	<u>QUANTITY</u>
PALLET UNITS - - - - -	127
EXPLOSIVE WEIGHT - - - - -	35,052 LBS (APPROX)



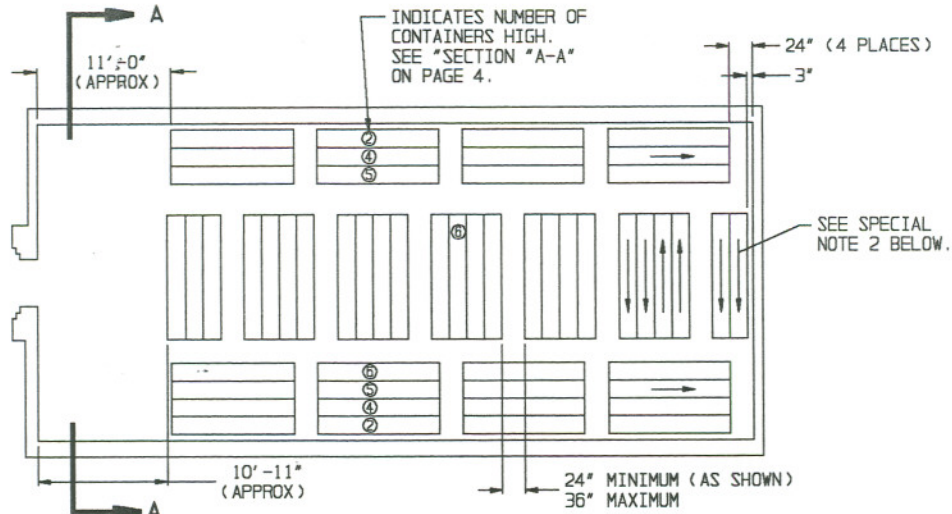
ISOMETRIC VIEW
(89'-0" MAGAZINE)

FOR "GENERAL NOTES" SEE PAGE 2.

STORAGE IN 60'-8" IGLOO

(12'-9" HIGH)

ITEM	QUANTITY
M570 CONTAINER W/MISSILE - - - -	262
EXPLOSIVE WEIGHT - - - - -	18,078 LBS (APPROX)



PLAN VIEW 60'-8" IGLOO
SEE "SECTION A-A" ON PAGE 4.

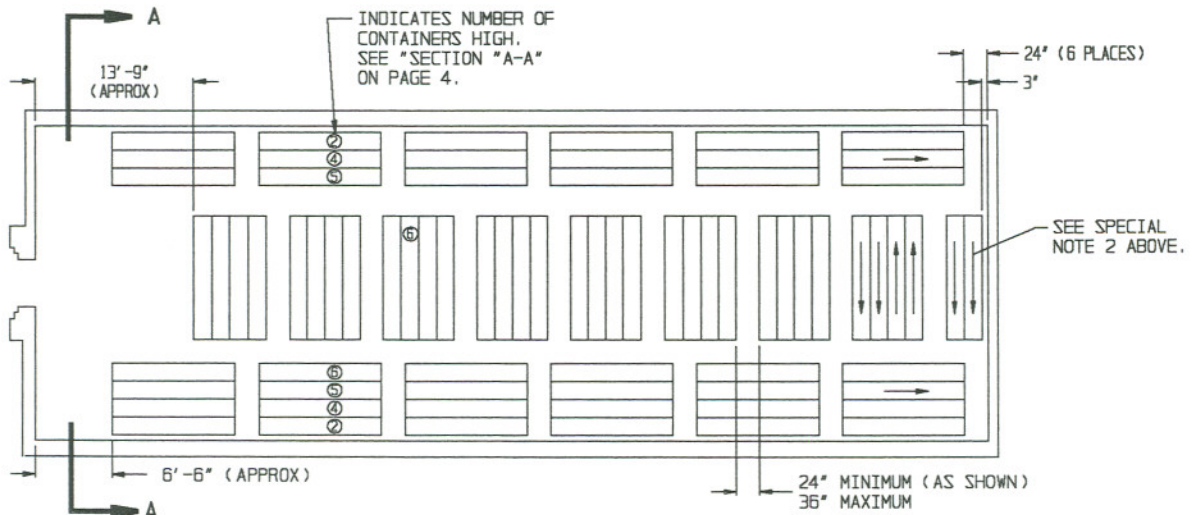
SPECIAL NOTES:

1. THE PROCEDURES DEPICTED ON PAGES 16 THRU 19 ARE APPLICABLE TO THOSE MAGAZINES WHERE AN EOD REQUIREMENT IS TO BE PROVIDED.
2. CONTAINERS SHALL BE PLACED WITH THE FORWARD END FACING IN THE DIRECTION OF THE ARROWS AS SHOWN ON THE PLAN VIEWS.
3. FOR SECTION VIEWS REFER TO THE APPLICABLE PAGES AS DESIGNATED. FLOOR DUNNAGE WILL BE PROVIDED AS SPECIFIED.
4. SEE GENERAL NOTE "F" ON PAGE 2 AND THE "STACK STABILIZING WIRE TIE DETAIL" ON PAGE 20 FOR ADDITIONAL GUIDANCE PERTINENT TO UNPALLETIZED CONTAINERS.
5. USE OF THE 36" WIDE AISLE WILL DECREASE THE QUANTITY OF ITEMS STORED IN A MAGAZINE.

STORAGE IN 81'-0" IGLOO

(12'-9" HIGH)

ITEM	QUANTITY
M570 CONTAINER W/MISSILE - - - -	372
EXPLOSIVE WEIGHT - - - - -	25,668 LBS (APPROX)

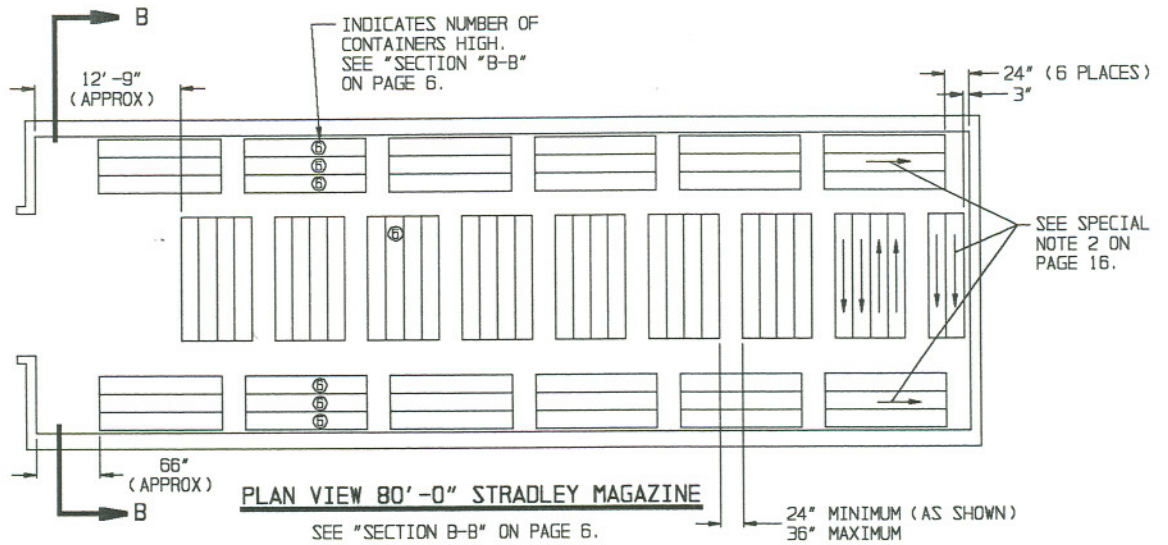


PLAN VIEW 81'-0" IGLOO
SEE "SECTION A-A" ON PAGE 4.

STORAGE IN 80'-0" STRADLEY MAGAZINE

(14'-0" HIGH)

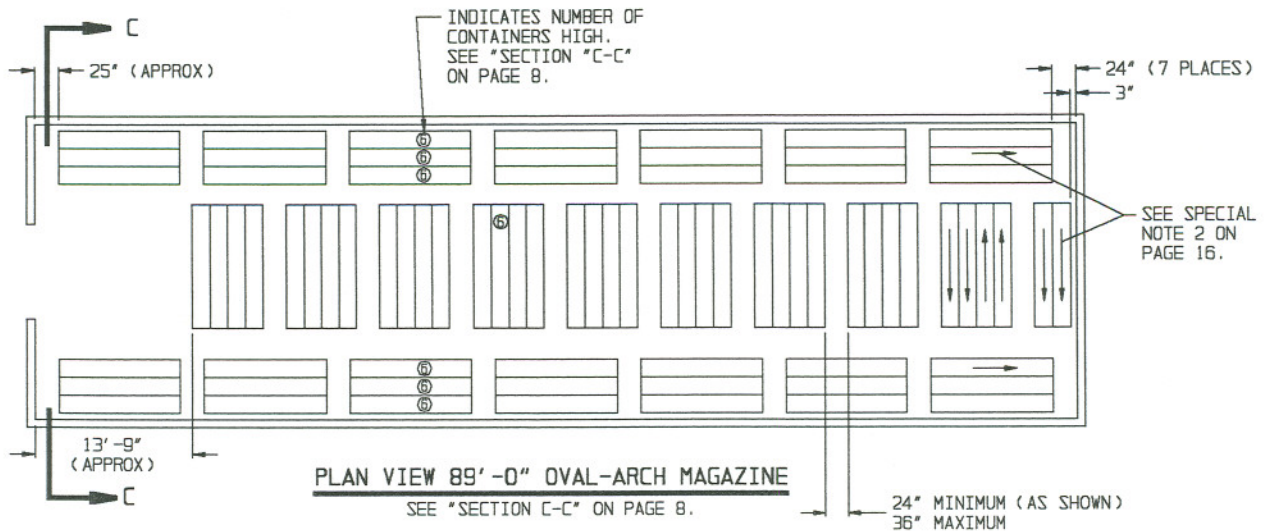
ITEM	QUANTITY
M570 CONTAINER W/MISSILE	420
EXPLOSIVE WEIGHT	28,980 LBS (APPROX)



STORAGE IN 89'-0" OVAL-ARCH MAGAZINE

(14'-4" HIGH)

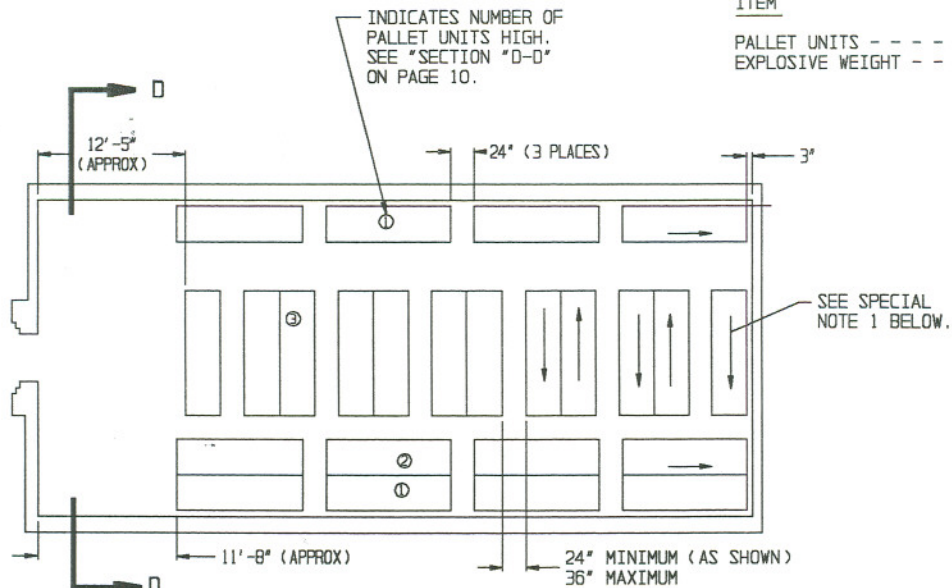
ITEM	QUANTITY
M570 CONTAINER W/MISSILE	480
EXPLOSIVE WEIGHT	33,120 LBS (APPROX)



STORAGE IN 60'-8" IGLOO

(12'-9" HIGH)

ITEM	QUANTITY
PALLET UNITS - - - - -	52
EXPLOSIVE WEIGHT - - - - -	14,352 LBS (APPROX)



PLAN VIEW 60'-8" IGLOO
SEE "SECTION D-D" ON PAGE 10

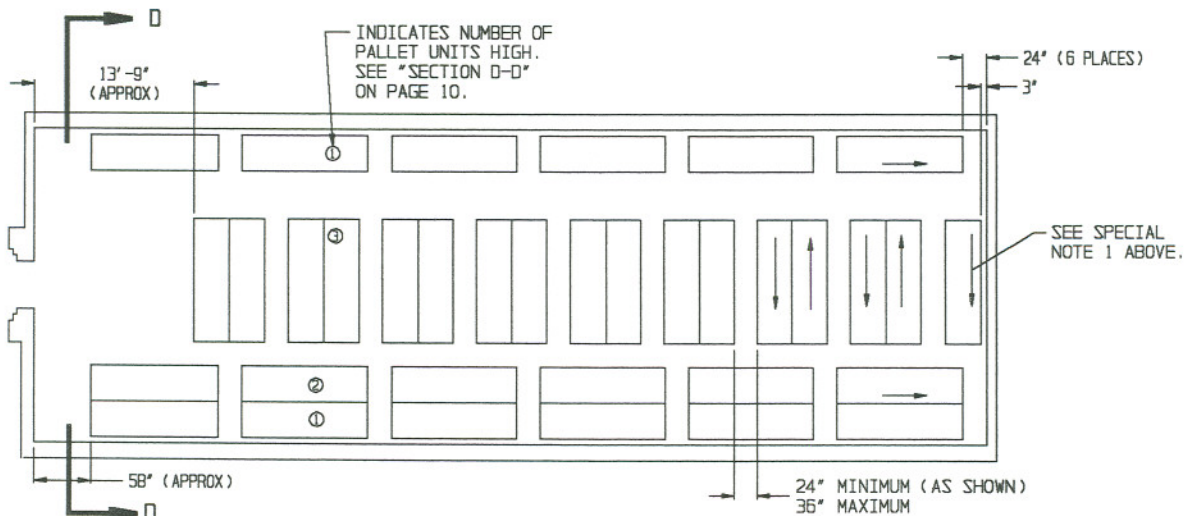
SPECIAL NOTES:

1. CONTAINERS SHALL BE PLACED WITH THE FORWARD ENDS FACING IN THE DIRECTION OF THE ARROWS AS SHOWN ON THE PLAN VIEW.
2. FOR SECTION VIEWS REFER TO THE APPLICABLE PAGES AS DESIGNATED.

STORAGE IN 81'-0" IGLOO

(12'-9" HIGH)

ITEM	QUANTITY
PALLET UNITS - - - - -	75
EXPLOSIVE WEIGHT - - - - -	20,700 LBS (APPROX)

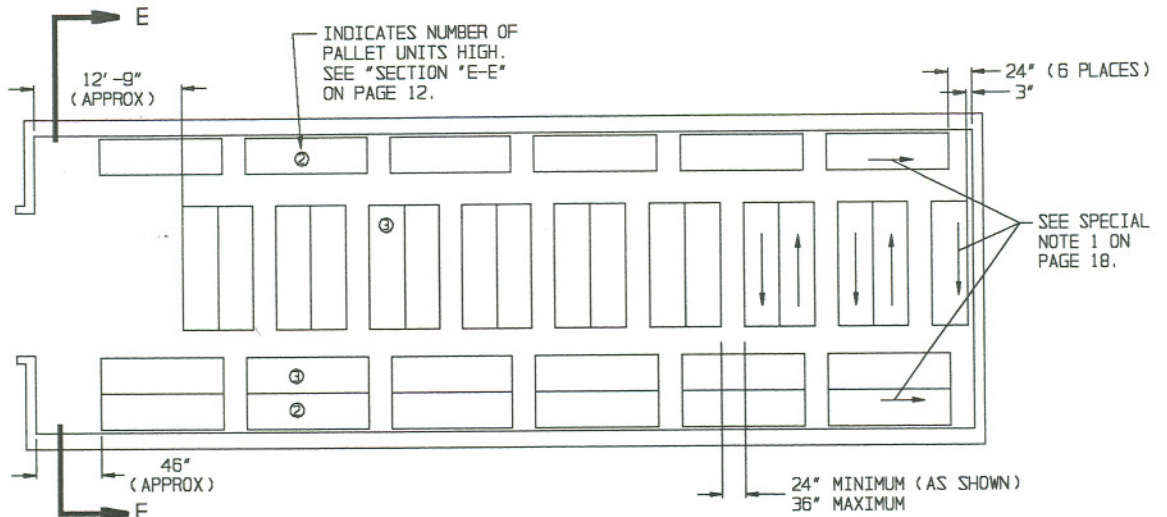


PLAN VIEW 81'-0" IGLOO
SEE "SECTION D-D" ON PAGE 10.

STORAGE IN 80'-0" STRADLEY MAGAZINE

(14'-0" HIGH)

ITEM	QUANTITY
PALLET UNITS	93
EXPLOSIVE WEIGHT	25,668 LBS (APPROX)



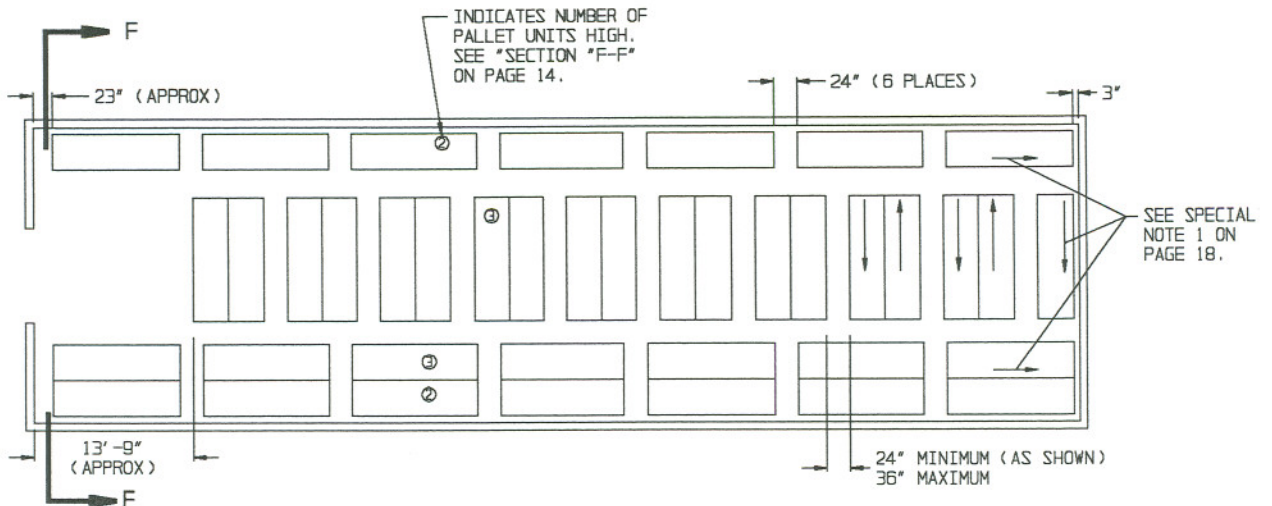
PLAN VIEW 80'-0" STRADLEY MAGAZINE

SEE "SECTION E-E" ON PAGE 12.

STORAGE IN 89'-0" OVAL-ARCH MAGAZINE

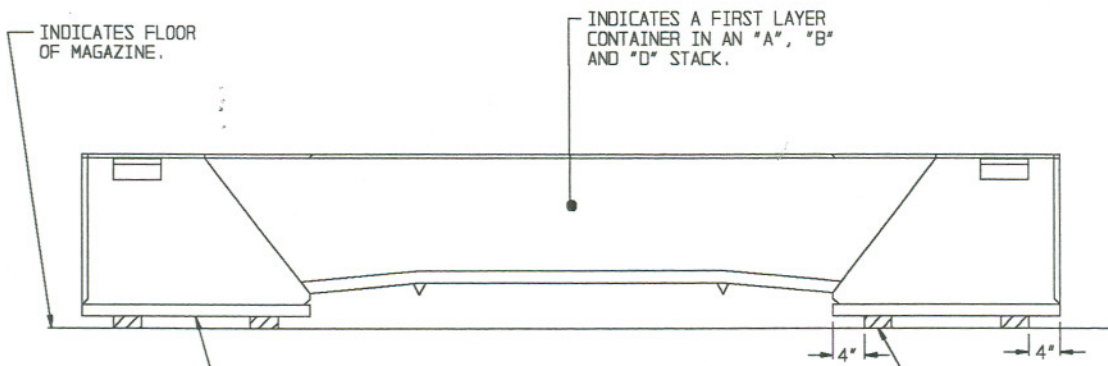
(14'-4" HIGH)

ITEM	QUANTITY
PALLET UNITS	106
EXPLOSIVE WEIGHT	29,256 LBS (APPROX)



PLAN VIEW 89'-0" OVAL-ARCH MAGAZINE

SEE "SECTION F-F" ON PAGE 14.

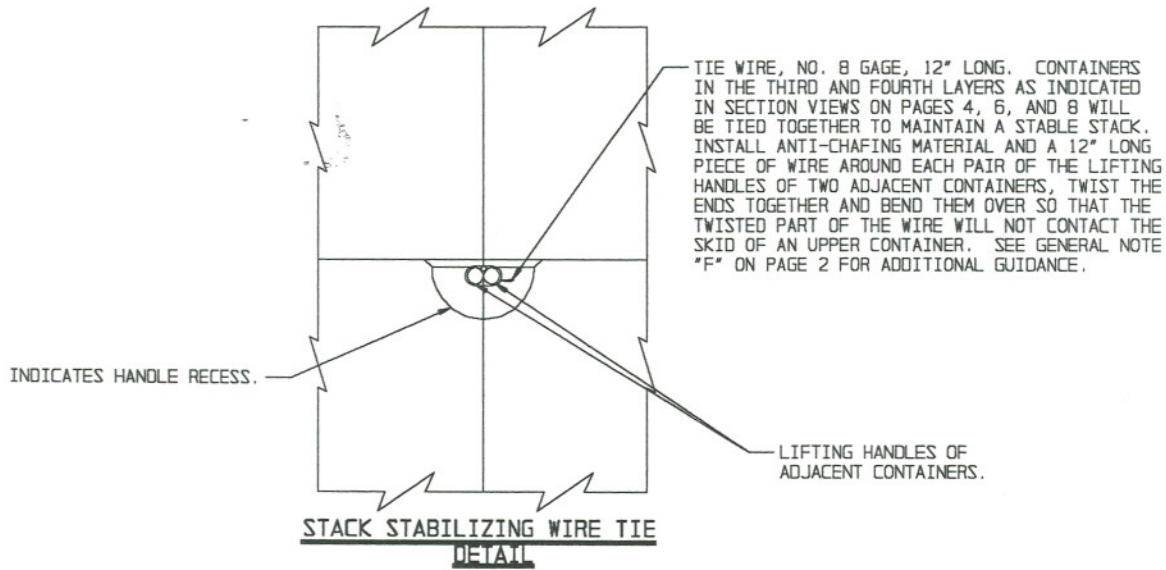


FLOOR DUNNAGE, 2" X 4" X 30"
(4 REOD FOR EACH FIRST LAYER
CONTAINER IN "A", "B", AND
"D" STACKS).

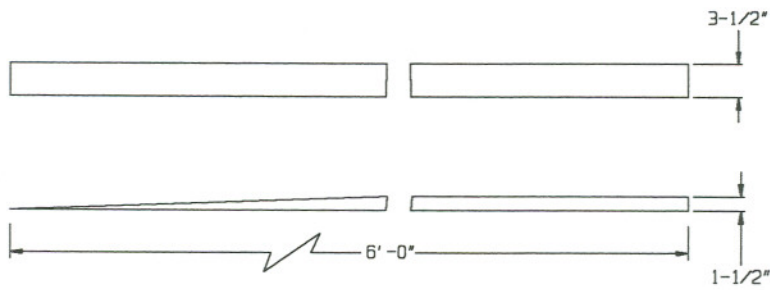
PLACEMENT OF DUNNAGE

THE ABOVE SPECIFICATIONS ARE ONLY APPLICABLE TO "A",
"B", AND "D" STACKS AS SHOWN ON PAGES 4, 6, AND 8.
SEE THE APPLICABLE SECTION VIEWS FOR DUNNAGE REQUIRE-
MENTS APPLICABLE TO "C" STACKS ON PAGES 4, 6, AND 8.

WEDGE, 2" X 4" X 6'-0"
(4 REOD FOR EACH "A",
"B", AND "D" STACK).



**STACK STABILIZING WIRE TIE
DETAIL**



WEDGE DETAIL

2' X 4" MATERIAL

NOTE: WEDGES FOR "A" AND "D" STACKS MAY BE CUT
TO 54", IF DESIRED, TO PREVENT THE ENDS OF THE
WEDGES FROM PROTRUDING INTO THE INSPECTION AISLE.