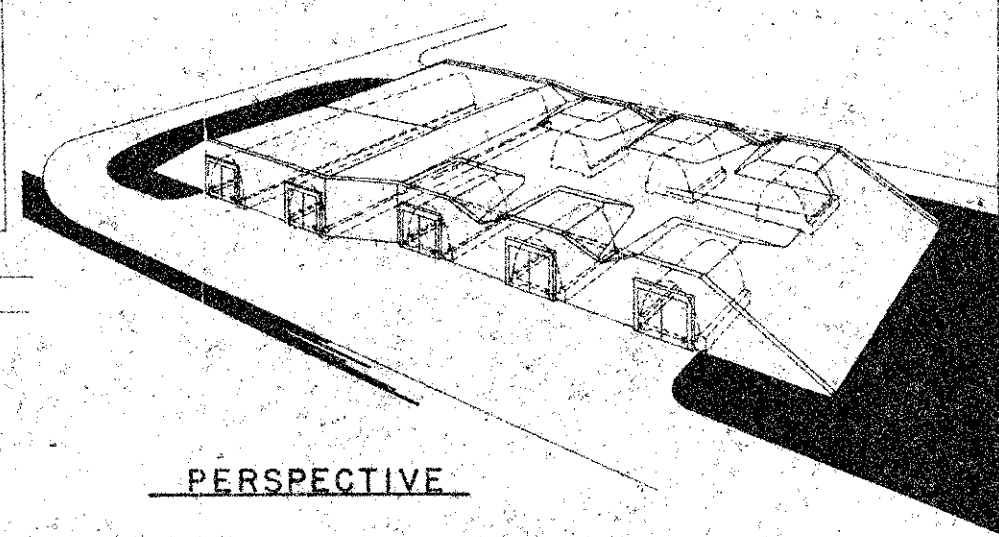


1,300 LB. LOADING (NOTE 1) (CL. 10 EQUIVALENCY)		DISTANCE IN FEET
MAGAZINES SIDE TO SIDE 125W'S	A	137
MAGAZINES BACK TO BACK 15W'S	B	165
INHABITED NOTE 21	BARRICADED	C 109
	UNBARRICADED	D 210
INHABITED BUILDINGS	BARRICADED	E 460
	UNBARRICADED	F 920
PUB HWYS & RAILROADS	BARRICADED	G 276
	UNBARRICADED	H 560
RUNWAYS & TAXIWAYS JOINT MILITARY & CIVILIAN USE	BARRICADED	I 750 TO R/W 530 TO T/W
	UNBARRICADED	J 1235
RUNWAYS & TAXIWAYS MILITARY USE ONLY	BARRICADED	K 1000 TO R/W 390 TO T/W
	UNBARRICADED	L 1000 TO R/W 780 TO T/W

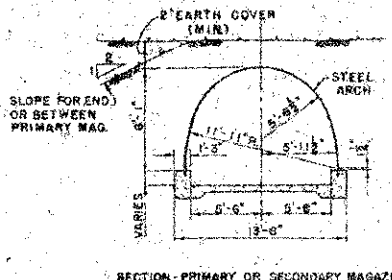
- NOTES:
- IF DESIGN LOADINGS VARY FROM 1300 LBS. ADJUST EXPLOSIVE-SAFETY DISTANCES IN ACCORDANCE WITH AFM 127-100, AND SEPARATIONS BY A & B ABOVE MINIMUM SEPARATION IS 7 FEET.
  - IF LOADING IS OTHER THAN 1300 LBS. BUILDING IS TO BE SITED AS A TARGET AND AS AN EXPLOSIVE HAZARD FOR THE QUANTITY OF EXPLOSIVES CONTAINED.
  - IF AIRFIELD LATERAL CLEARANCE CRITERIA FOR RUNWAY IS WAIVED, THIS DISTANCE CAN BE REDUCED TO 630'.
  - IF LESS THAN THE OPTIMUM LATERAL CLEARANCE FOR RUNWAY IS REQUIRED, SEE AFM 127-100, HOWEVER IN NO CASE WILL THE DISTANCE BE LESS THAN 780'.

BLDG NO.	TITLE	QUAN.	AREA	DWG. NO.	R.F. CONTROL NO.
1	SECURITY GUARD HOUSE	1	737 S.F.	AD 27-04-11	730-833
2	ASSEMBLY & CHECKOUT BUILDING	1	VARIES	AD 35-59-07	218-814-03
3	IGLOO STORAGE STEEL ARCH, EARTH-MOUNDED, PRIMARY AND SECONDARY	AS REQD.	VARIES	AD 33-15-67R2	422-264

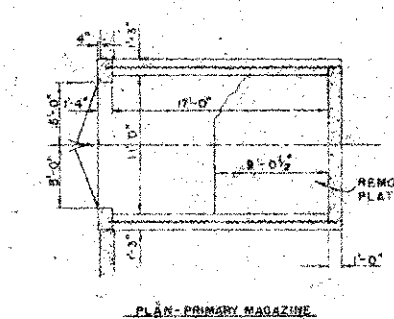
SITE PLANS SUBMITTED FOR MIL. USAF APPROVAL WILL INDICATE QUANTITIES AND CLASSES OF EXPLOSIVES PER BUILDING. ENTRANCE LOCATION MAY BE VARIED TO SUIT LOCAL CONDITIONS.



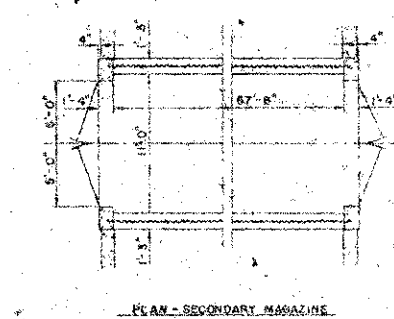
PERSPECTIVE



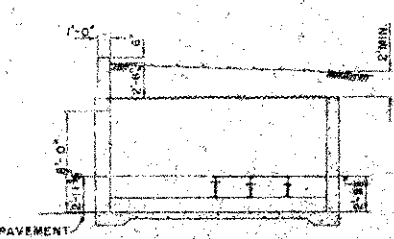
SECTION - PRIMARY OR SECONDARY MAGAZINE



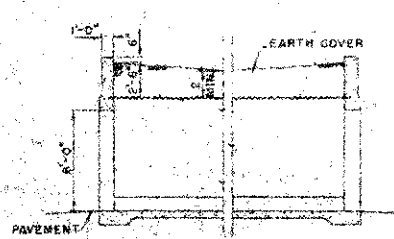
PLAN - PRIMARY MAGAZINE



PLAN - SECONDARY MAGAZINE



LONGITUDINAL - PRIMARY MAGAZINE



LONGITUDINAL - SECONDARY MAGAZINE

STEEL ARCH MAGAZINES

SCALE: 3/16" = 1'-0"  
GRAPHIC SCALE  
TO MEET OTHER THAN STANDARD PROGRAM SIZES, LENGTH AND WIDTH OF IGLOOS CAN BE VARIED ACCORDINGLY

REFERENCE	MATERIAL
1. AFM 127-100	Explosives Safety Manual
2. AFM 86-15	Standard Office Space for AF Facilities
3. AFM 86-15	Standard Office Space for AF Facilities
4. AFM 86-15	Standard Office Space for AF Facilities
5. AFM 86-15	Standard Office Space for AF Facilities
6. AFM 86-15	Standard Office Space for AF Facilities
7. AFM 86-15	Standard Office Space for AF Facilities

DESIGN GUIDE

**ARCHITECTURAL**  
All dimensions listed in "Table of Variable Dimensions for Siting" are minimum clearances for 1,300 lbs. loading. Clearance location and building siting may be varied to suit local conditions and installation capability requirements. Use carriage only where necessary or consider other arrangements such as AD 33-15-67R2.

**STRUCTURAL**  
Retaining walls shall be designed to resist load of earth (E) indicated and a uniform live load of 111 lb/ft.  
Steel trusses shall be 2"x6" galvanized corrugated galvanized structural plate conforming to AISC 1989-87. Thickness of arches shall not be less than 1/4".  
Arch Height (EFT) 11' or less 18" 18' to 20' 21" to 24" 24" to 30" 30" to 36"  
U.S. Std. Gauge 8 7 6 5 4 3  
Length may be varied in 2'-0" increments from lengths shown.  
All reinforced concrete shall be Class A-13,000 psi or O.C. Grade Spec. CC-204. Reinforcing steel shall be Type II, Grade C, 60,000-65,000.  
Floors shall slope to drains for drainage by a pitch of 1/8" per foot.  
Ramps and aprons shall slope 1/4" per foot from face of magazines.  
Peripheral footing drains shall be provided.  
Earth covering shall be conforming to extent required for stability of arches shall not be less than 48" and level shall be brown of arches, plane to drifts, and where applicable to vertical height shall be 48" to 60" and shall not be less than 1' on C. Where area and separation make it economical, fill between magazines may be topped out 48" or 60" and needed it may be notched. Start slopes only at vertical projection of openings.  
Curb height (backing on magazine floors) shall not exceed 1.000 (10" per wheel) for steel tires and 1.500 (15" per wheel) for rubber tires. Wheel loads on ramps and aprons shall not exceed 5,000 pounds per wheel. Exposed surfaces of magazines and their exteriors shall be investigated for adequate seismic stability.

**VENTILATION**  
For all magazines required ventilation are those included for storage of certain types of active materials. See SISA Manual, Section 1. Circulation of ventilation air is required.

**ELECTRICAL**  
Lighting: Interior 5' foot diameter at floor level. Exterior 10' foot diameter at floor level on edge of arch opposite entrance doors. Section fixtures shall be general-purpose type and located so as to prevent likely damage. Exterior fixtures shall be weatherproof.  
Power: District. As necessary for heating, lighting and other purposes.  
Grounding: Solid, heavy-duty with surge-type boxes.  
Security Lighting and Alarm: In accordance with AFM 127-1.  
Lighting Protection: No special lightning protection is required. Use of 2" diameter, uncoated, spaced bonding or welding of reinforcing steel, and not necessary. Use 3/16" WGS, AF 33-15-67R2 and 3/16" SPEC. 33-15-67R2 for lightning protection and ground connections. Design is applicable only to steel-arch. With magnetic induction when used for all types of explosives, explosion and induction except flame-path will create hazards of fire, gases or explosive dusts.  
On Site Transmission Lines: In accordance with Paragraph 650, AFM 127-100.

**SEEDING**  
Where practical, earth covering over structures and other surfaces of magazines shall be seeded to prevent soil erosion. Where rainfall is insufficient to maintain vegetative cover, a 2" thick layer of crushed rock or washed gravel shall be substituted.

**FIRE PROTECTION**: None  
**PLUMBING**: None  
**DRAINAGE**: As required by site conditions.

**INTRUSION-DETECTION EQUIPMENT**  
See STD. DWG. AD 33-15-67R2 and 3 (Cont) and SEC 17 (Cont), STD. SPEC. AD 33-15-67R2, (PHASE II)

**SECURITY AREA**  
A 100' wide safety perimeter shall be provided for perimeter fence for security reasons.

GROSS AREA PER IGLOO	NET AREA PER IGLOO
PRIMARY MAG. = 229 S.F.	PRIMARY MAG. = 187 S.F.
SECONDARY MAG. = 637 S.F.	SECONDARY MAG. = 744 S.F.

FOR CONSTRUCTION USE WORKING DRAWINGS: AFM 33-15-67R2  
THIS DEFINITIVE SUPERSEDES: AD 33-13-20 AND AD 10-06-27B  
CAT CODE NO. 422-264

A GENERAL REVISIONS		DATE

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
BLACK & VEATCH  
CONSULTING ENGINEERS  
KANSAS CITY, MISSOURI

IGLOO STORAGE  
STEEL ARCH - EARTH-MOUNDED  
(ADC TYPE - PRIMARY & SECONDARY)  
LAYOUT, PLANS AND SECTIONS

APPROVED: [Signature] DATE: [ ]  
SCALE: AS NOTED  
NOV. 8 WAY 1964

AD 33-15-67R2