

Facility Design and Planning  
 AIR FORCE DESIGN MANUAL  
 DEFINITIVE DESIGNS OF AIR FORCE STRUCTURES

AFM 88-2, 1 April 1969, is changed as follows:

(Note: This change adds nine new definitive drawings and five revised definitive drawings and revises Distribution "X".)

1. Definitive Drawing Changes (new):

Add	Date	Nomenclature
AD39-01-89	7 Apr 70	Hangar, Maintenance Field C-5A Aircraft
AD39-05-15	7 Apr 70	Maintenance Dock, Fuel System, Small Aircraft
AD35-35-08	7 Apr 70	Shop, Ordnance Equipment Type "A", Type "B"
AD26-04-01	7 Apr 70	Fluoridation Facilities, Type 1 and Type 2
AD31-21-12	12 Jun 67	Arts and Crafts Shops, Recreational Workshops
AD35-02-62	14 Sep 67	Automotive Shop, Recreational Workshop
AD36-08-31	4 Dec 68	Post Office Floor Plans, Types I, II, III
AD30-15-01	2 Sep 70	Data Automation Facility, Base Level "A" Configuration
AD30-15-02	2 Sep 70	Data Automation Facility, Base Level "B" Configuration

2. Definitive Drawing Changes (revisions):

Add	Date	Supersedes	Nomenclature
AD28-12-04R2	7 Apr 70	AD28-12-04R1 11 May 1956	High Altitude Training Building
AD33-39-03R1	15 Dec 69	AD33-39-03 22 Jun 56	Rocket Storage Checkout & Assembly Building
AD35-06-01R2	8 Sep 69	AD35-06-01R1 30 Aug 60	Laboratory Precision Measurement Equipment
AD36-40-12R2	7 Apr 70	AD36-40-12R1 9 Jan 59	Washrack Aircraft
AD39-19-01R4		AD39-19-01R3 21 Oct 63	Canine Kennels

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

JOHN D. RYAN, General, USAF  
 Chief of Staff

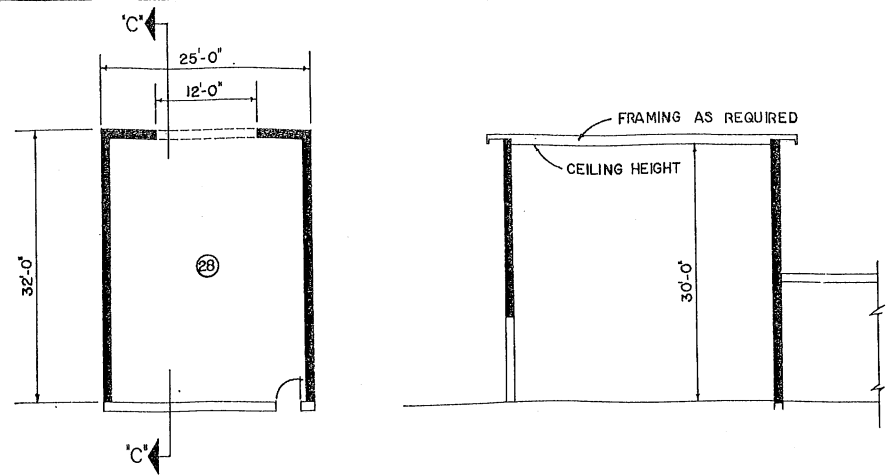
JOHN F. RASH, Colonel, USAF  
 Director of Administration

Above listing of page changes is not applicable. This reprint, 4 November 1976, contains only the current pages of the change. It does not contain insert pages from subsequent changes listed in AFR O-2.

OPR: PREES

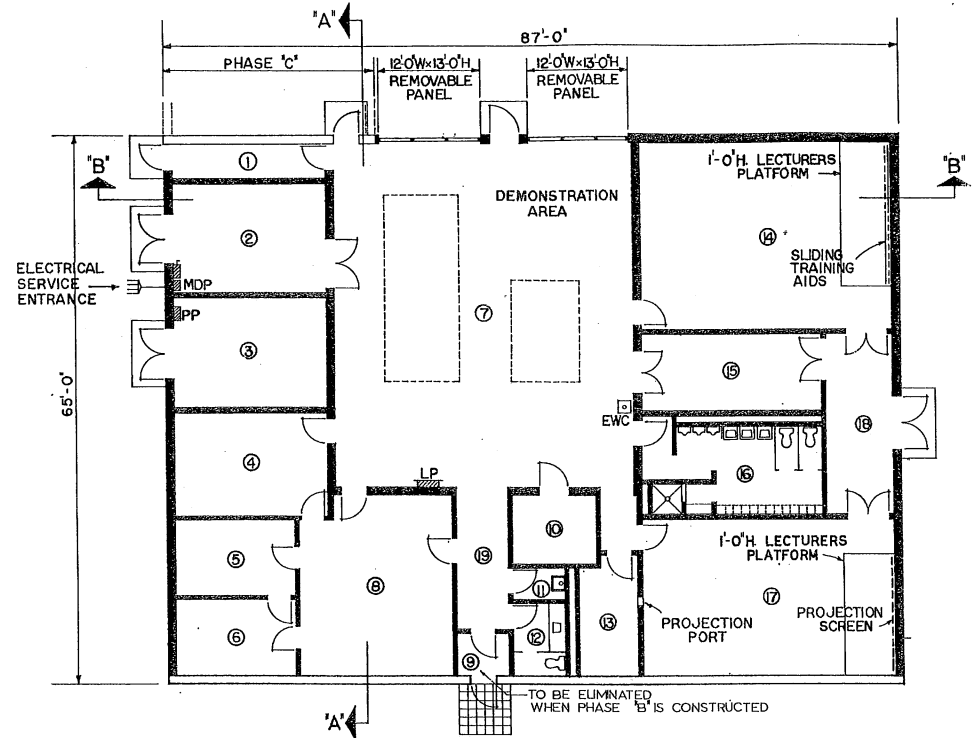
DISTRIBUTION: F; X:

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Division Engineer, US Army Engr Div, North Pacific, 210 Custom House, Portland OR 97209	19
Division Engineer, US Army Engr Div, Pacific Ocean, Bldg 96, Fort Armstrong, Honolulu, HI 96813	10
Division Engineer, US Army Engr Div, South Atlantic, 510 Title Bldg, 30 Pryor St, SW Atlanta GA 30303	30
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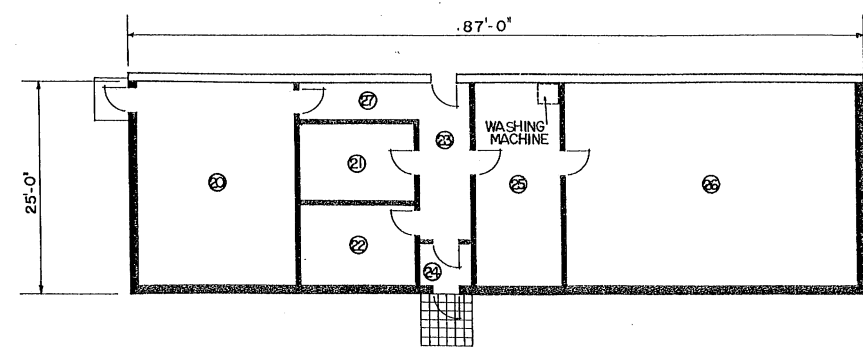


PLAN OF PHASE 'C'  
800 SQ. FT.

SECTION C-C



PLAN OF PHASE 'A' 5655 SQ. FT.



PLAN OF PHASE 'B' 2175 SQ. FT.

ROOM SCHEDULE

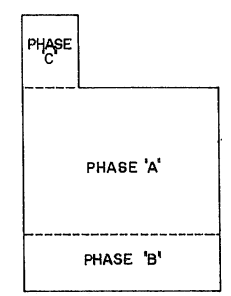
PHASE 'A'		
①	OXYGEN ROOM	18'-8" x 4'-0"
②	PUMP ROOM	18'-8" x 12'-0"
③	HEATING & AIR COND. ROOM	18'-8" x 13'-0"
④	CREW ROOM	18'-8" x 12'-0"
⑤	OFFICE	14'-0" x 9'-0"
⑥	OFFICE	14'-0" x 9'-0"
⑦	CHAMBER ROOM	35'-0" x 40'-6"
⑧	ADMINISTRATION ROOM	18'-2" x 21'-6"
⑨	LOBBY (ELIMINATE WHEN PHASE 'B' IS CONSTRUCTED)	6'-0" x 5'-0"
⑩	RECOVERY ROOM	10'-0" x 8'-0"
⑪	JANITOR'S CLOSET	6'-0" x 4'-0"
⑫	WOMEN'S TOILET	6'-0" x 8'-6"
⑬	STORAGE ROOM	7'-2" x 13'-0"
⑭	CLASSROOM (LIGHT TIGHT)	30'-0" x 22'-0"
⑮	MAINTENANCE & SUPPLY ROOM	21'-6" x 9'-0"
⑯	MEN'S TOILET	21'-6" x 10'-2"
⑰	CLASSROOM	30'-0" x 19'-0"
⑱	TRAINING AIDS ROOM	7'-4" x 21'-0"
⑲	CORRIDOR	6'-0" WIDE
PHASE 'B'		
⑳	PRESSURE SUIT CLASSROOM	18'-8" x 25'-0"
㉑	FITTING ROOM	13'-6" x 9'-6"
㉒	OFFICE	13'-6" x 9'-6"
㉓	CORRIDOR	6'-0" WIDE
㉔	LOBBY	6'-0" x 5'-0"
㉕	TAILOR & SUIT REPAIR	10'-0" x 24'-0"
㉖	PRESSURE SUIT STORAGE	34'-10" x 24'-0"
㉗	CORRIDOR	4'-6" WIDE
PHASE 'C'		
㉘	EJECTION SEAT TRAINER	23'-0" x 31'-0"

EQUIPMENT SCHEDULE

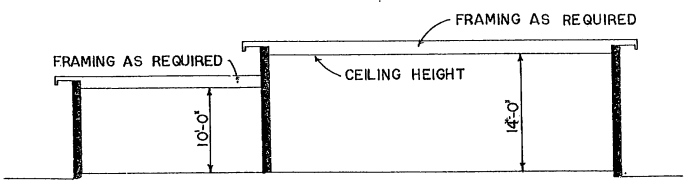
A	COMPRESSOR
B	RECTIFIER
C	PROJECTOR
D	LOW PRESSURE CHAMBER, 20 MAN CAP.
E	LOW PRESSURE CHAMBER, 8 MAN CAP.

LEGEND

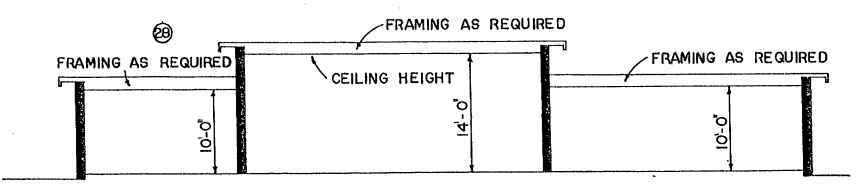
- MAIN SERVICE SWITCH
- MAIN DISTRIBUTION PANEL
- LIGHTING PANEL
- POWER PANEL
- SERVICE SINK
- ELECTRIC WATER COOLER



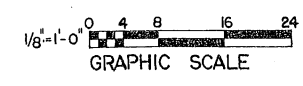
KEY PLAN



SECTION A-A



SECTION B-B



PROGRAMMING AND PLANNING GUIDES  
THE FOLLOWING INFORMATION IS FOR GUIDANCE IN PROGRAMMING, AND PLANNING.

**SPECIFICATIONS**  
FOR ACCEPTABLE CONSTRUCTION MATERIALS AND DESIGN CRITERIA SEE CURRENT AFM 88-15 AND APPLICABLE AIR FOR Pamphlets.  
CONSTRUCTION SHALL BE TYPE "N" UNPROTECTED NON-COMBUSTIBLE.  
PROVIDE MANUAL FIRE AND EVACUATION ALARM SYSTEM AS SPECIFIED BY AFM 88-15.

UTILITY REQUIREMENTS

	PHASE 'A'	PHASE 'B'	PHASE 'C'	TOTAL
ELECTRICITY (KW)				
ESTIMATED DEMAND	13.5	5	1	19.5
LIGHTING	21	5.5	1.5	28
POWER	34.5	10.5	2.5	47.5
TOTAL				
CONNECTED LOAD				
LIGHTING	17	7	2	26
POWER	30	8	2.2	40.2
TOTAL	47	15	4.2	66.2
WATER				
HOT (GPM)	3	2	1	6
COLD (GPM)	32	15	7	54
TOTAL (GPM)	35	17	8	60
TOTAL (GPD)	950	400	200	1550
SEWAGE (GPD)	950	400	200	1550
GAS (THE MM/DAY)				
EXCLUDING HEATING	NONE	NONE		
STEAM (MATSU/HR)				
EXCLUDING HEATING	NONE	NONE		

HEATING REQUIREMENTS

OUTSIDE DESIGN TEMPERATURE °F	PHASE 'A'	PHASE 'B'	PHASE 'C'	TOTAL
330				
120				
90				
540				

AIR CONDITIONING REQUIREMENTS

OUTSIDE DESIGN TEMPERATURE °F, DB 78°F, WB 95°F	PHASE 'A'	PHASE 'B'	PHASE 'C'	TOTAL
24				
6				
-				
30				
TONS OF REFRIGERATION FOR ZONES A, B, C,				
FOR ZONE D	20	5	-	25

AREA FOR PROGRAMMING GROSS AREA

PHASE "A" = 5,655 SQ. FT.  
PHASE "B" = 2,175 SQ. FT.  
PHASE "C" = 800 SQ. FT.  
TOTAL FACILITY = 8,630 SQ. FT.

CATEGORY CODE NO. 171-214-01

SYMBOL	REVISION - DESCRIPTION	DATE	APPROVED
△	MADE CHANGES ON FACE OF DRAWING, DATA SHEET & NOTES		

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
McLEOD, FERRARA, AND ENSIGN  
ARCHITECTS-ENGINEERS WASHINGTON, D. C.

HIGH ALTITUDE TRAINING BLDG.  
PLAN AND SECTION

APPROVED	AD 28-12-04 R2
FOR CHIEF OF STAFF USAF	SCALE: 1/8" = 1'-0"
	DATE: 7 APR 1970
	SHEET 1 OF 2

DESIGN DATA								ANALYSIS							
NO.	ROOM	BASIC OCCUPANCY FACTOR	DESIGN CRITERIA		MINIMUM NET DIMENSIONS	CLEAR HT. REQ'D.	DIMENSIONS ON THIS PLAN		FLOOR LOADS (MIN)	ELECTRICAL		MECHANICAL			REMARKS AND ADDITIONAL REQUIREMENTS
			DESIGN FACTOR	SOURCE			INTERIOR	SQ. FT.		CONVENIENCE OUTLETS	LIGHTING F.C.	SUPPLEMENTAL PLUMBING	VENTILATION	HEATING, AIR COND., ETC. CONTROL TEMP.	
PHASE "A"															
1	OXYGEN ROOM	STORAGE & SUPPLY/DISTRIBUTION	STORAGE REQUIREMENTS	T0-33-D11-4-101	18'-8" x 4'-0"	10'-0"	18'-8" x 4'-0"	75	0	30F		MECH. EXHAUST	MIN. 50° F	EXPLOSION PROOF FIXTURE *, LOUVER SEE ARCHITECTURAL GUIDE	
2	PUMP ROOM	EQUIPMENT	EQUIPMENT DESIGN	CCL-20-90-1	18'-8" x 12'-0"	10'-0"	18'-8" x 12'-0"	224	2	30F	WATER DROP-F, D.	MECH. EXHAUST	MIN. 50° F	LOUVER, SOUND, TREATMENT	
3	HTG. & AIR COND.	EQUIPMENT	EQUIPMENT	LAYOUT AFM88-8	18'-8" x 13'-0"	10'-0"	18'-8" x 13'-0"	243	2	20F	WATER DROP	MECH. EXHAUST	MIN. 50° F		
4	CREW ROOM	PERSONNEL	SQ. FT. PER MAN	LAYOUT	18'-8" x 12'-0"	10'-0"	18'-8" x 12'-0"	224	4	30F		AIR CONDITION	AFM 88-15	DISPLAY BOARDS, SHELVES	
5	OFFICE	PERSONNEL	SQ. FT. PER MAN	LAYOUT	14'-0" x 9'-0"	10'-0"	14'-0" x 9'-0"	126	4	50F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
6	OFFICE	PERSONNEL	SQ. FT. PER MAN	LAYOUT	14'-0" x 9'-0"	10'-0"	14'-0" x 9'-0"	126	4	50F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
7	CHAMBER ROOM	EQUIPMENT	EQUIPMENT DESIGN	T033-D11-4-101	35'-0" x 40'-6"	14'-0"	35'-0" x 40'-6"	1418	8	30F	COMP. AIR. ELECT. WATER COOLER	AIR CONDITION	AFM 88-15	ACOUSTIC CEILING A/C SAME AS FOR CLASSROOMS TACKBOARD, ACOUSTIC CEILING	
8	ADMINISTRATION ROOM	PERSONNEL AND EQUIPMENT	SQ. FT. PER MAN AND EQUIPMENT	LAYOUT	18'-2" x 21'-6"	10'-0"	18'-2" x 21'-6"	387	10	50F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
9	LOBBY	PERSONNEL	CIRCULATION	NONE	6'-0" x 5'-0"	10'-0"	6'-0" x 5'-0"	30	2	20F		AIR CONDITION	AFM 88-15	DISPLAY BOARD, ACOUSTIC CEILING	
10	RECOVERY ROOM	PERSONNEL AND EQUIPMENT	SQ. FT. PER MAN	LAYOUT	10'-0" x 8'-0"	10'-0"	10'-0" x 8'-0"	80	3	70F	LAVATORY	AIR CONDITION	AFM 88-15	OXYGEN OUTLET, ACOUSTIC CEILING	
11	JANITOR'S CLOSET	EQUIPMENT	EQUIP. & STGE. SPACE	LAYOUT	6'-0" x 4'-0"	10'-0"	6'-0" x 4'-0"	24	2	20F	SERVICE SINK	MECH. EXHAUST	MIN. 50° F	STORAGE SHELVES, CEM. PLAS. CEILING	
12	WOMEN'S TOILET	PERSONNEL	PERSONNEL PER FIXTURE	LAYOUT	6'-0" x 8'-6"	10'-0"	6'-0" x 8'-6"	51	2	20F		MECH. EXHAUST	MIN. 70° F	MIRROR, CEMENT PLASTER CEILING	
13	STORAGE ROOM	STORAGE	STORAGE REQUIREMENTS	LAYOUT	7'-2" x 13'-0"	10'-0"	7'-2" x 13'-0"	93	2	30F		AIR CONDITION	AFM 88-15	STORAGE BINS, WORK TABLE	
14	CLASSROOM	PERSONNEL	SQ. FT. PER MAN	FAC. REQ. MAN	30'-0" x 22'-0"	10'-0"	30'-0" x 22'-0"	660	8	70F		AIR CONDITION	AFM 88-15	BLACKBOARD, TACKBOARD, TRAINING AIDS ACOUSTIC CEILING, 1'-0" HIGH PLATFORM LIGHT TIGHT (DARK ROOM)	
15	MAINTENANCE & SUPPLY ROOM	STORAGE AND EQUIPMENT	STORAGE REQUIREMENTS	NONE	21'-6" x 9'-0"	10'-0"	21'-6" x 9'-0"	194	2	30F		AIR CONDITION	AFM 88-15	STORAGE BINS, WORK TABLE	
16	MEN'S TOILET	PERSONNEL	MEN PER FIXTURE	LAYOUT	21'-6" x 10'-2"	10'-0"	21'-6" x 10'-2"	219	2	20F		MECH. EXHAUST	MIN. 70° F	BLACKBOARD, TACKBOARD, PROJECTION SCREEN ACOUSTIC CEILING, 1'-0" HIGH PLATFORM	
17	CLASSROOM	PERSONNEL	SQ. FT. PER MAN	FAC. REQ. MAN	30'-0" x 19'-0"	10'-0"	30'-0" x 19'-0"	570	5	70F		AIR CONDITION	AFM 88-15	BLACKBOARD, TACKBOARD, PROJECTION SCREEN ACOUSTIC CEILING, 1'-0" HIGH PLATFORM	
18	TRAINING AIDS ROOM	EQUIPMENT	EQUIPMENT	LAYOUT	7'-4" x 21'-0"	10'-0"	7'-4" x 21'-0"	154	3	50F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
19	CORRIDOR	PERSONNEL	CIRCULATION	NONE	6'-0" WIDE	10'-0"	6'-0" WIDE	102	3	20F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
PHASE "B"															
20	PRESSURE SUIT CLASS ROOM	PERSONNEL & EQUIPMENT	SQ. FT. PER MAN AND STORAGE REQUIREMENTS	LAYOUT	18'-8" x 25'-0"	10'-0"	18'-8" x 25'-0"	467	4	70F		AIR CONDITION	AFM 88-15	STORAGE BINS AND RACKS	
21	FITTING ROOM	PERSONNEL AND EQUIPMENT	LAYOUT	LAYOUT	13'-6" x 9'-6"	10'-0"	13'-6" x 9'-6"	128	2	70F		AIR CONDITION	AFM 88-15	WORK TABLE, STORAGE BINS	
22	OFFICE	PERSONNEL	SQ. FT. PER MAN	LAYOUT	13'-6" x 9'-6"	10'-0"	13'-6" x 9'-6"	128	4	50F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
23	CORRIDOR	PERSONNEL	CIRCULATION	NONE	6'-0" WIDE	10'-0"	6'-0" WIDE	111	3	20F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
24	LOBBY	PERSONNEL	CIRCULATION	NONE	6'-0" x 5'-0"	10'-0"	6'-0" x 5'-0"	30	2	20F		AIR CONDITION	AFM 88-15	DISPLAY BOARD, ACOUSTIC CEILING	
25	TAILOR & SUIT REPAIR	PERSONNEL AND EQUIPMENT	EQUIP. & WORK SPACE	LAYOUT	10'-0" x 24'-0"	10'-0"	10'-0" x 24'-0"	240	4	100F		AIR CONDITION	AFM 88-15		
26	PRESSURE SUIT STORAGE	STORAGE	STORAGE REQUIRED	LAYOUT	34'-10" x 24'-0"	10'-0"	34'-10" x 24'-0"	836	4	20F		AIR CONDITION	AFM 88-15	STORAGE BINS AND RACKS	
27	CORRIDOR	PERSONNEL	CIRCULATION	NONE	4'-6" WIDE	10'-0"	4'-6" WIDE	90	2	20F		AIR CONDITION	AFM 88-15	ACOUSTIC CEILING	
PHASE "C"															
28	EJECTION SEAT TRAINER	EQUIPMENT	EQUIPMENT DESIGN	T.O. 4308-2-2-1	23'-0" x 31'-0"	30'-0"	23'-0" x 31'-0"	713	8	30F	2 COMPARTMENT SINK (SERVICE)	MECH. EXHAUST	MIN. 70° F (FOR PERSONNEL)	ONE CONVENIENCE OUTLET IN FLOOR (MIN. 55° F MAX. 95° F FOR EQUIP. OPERATION)	

TO BE IN ACCORDANCE WITH PART V CHAPTER 4 ENGINEERING MANUAL FOR MILITARY CONSTRUCTION

**ARCHITECTURAL**  
THE SECTIONS INDICATED IN THIS DEFINITIVE DRAWING ARE NOT INTENDED TO ESTABLISH AN ARCHITECTURAL DESIGN TREATMENT NOR USE OF SPECIFIC MATERIALS. CAREFUL USE OF MATERIALS AND COLOR CAN ENHANCE THE APPEARANCE OF THIS FACILITY WITHOUT INVOLVING ADDITIONAL COST. IT IS NOT INTENDED THAT EXTREME DESIGN OR UNTRIED MATERIALS BE INCORPORATED. MATERIALS USED WILL BE IN ACCORDANCE WITH APPLICABLE CRITERIA FOR THIS FACILITY.

CONSIDERATION SHALL BE GIVEN TO FENESTRATION BASED ON GEOGRAPHIC LOCATION AND ORIENTATION OF THE FACILITY.

UNLESS NOTED TO THE CONTRARY WINDOW AND DOOR LOCATIONS AND DIMENSIONS ARE APPROXIMATE AND SERVE AS A DESIGN GUIDE, ETC.

WALL AT OXYGEN ROOM 1 SHALL BE REINFORCED CONCRETE OR 12" MASONRY WITH CONCRETE ROOF SLAB IN ACCORDANCE WITH CURRENT SAFETY CRITERIA.

DOORS AT ROOMS 20 AND 26 SHALL BE LOCK DOORS AND PASS WINDOWS SHALL HAVE LOCKING OVERHEAD SLIDING METAL SHUTTERS.

**STRUCTURAL**  
LIVE LOADS WILL BE IN ACCORDANCE WITH PART IV, CHAPTER 1, OF THE O.C.E. ENGINEERING MANUAL.

**ELECTRICAL**  
LIGHTING INTENSITIES SHOWN ARE AT WORKING LEVEL. THE SUGGESTED NUMBER OF CONVENIENCE OUTLETS/ROOM IS TABULATED. THEIR LOCATION TO BE SELECTED BY THE DESIGN AGENCY. OUTLETS TO SERVE ITEMS TABULATED ON THE EQUIPMENT SCHEDULE ARE NOT INCLUDED IN THE COLUMN "CONVENIENCE OUTLETS". THEY WILL BE LOCATED BY THE DESIGN AGENCY IN ACCORDANCE WITH THE EQUIPMENT POSITIONS SHOWN ON THIS PLAN. ALL ELECTRICAL PANELS TO BE LOCATED AS SHOWN, UNLESS NOTED OTHERWISE, ON THE EQUIPMENT SCHEDULE SWITCHES INCORPORATED IN U.S.A.F. SUPPORTED ITEMS (UNIT SWITCHES) AND MOTOR CONTROLLERS ARE NOT SUITABLE DISCONNECT MEANS. PROVIDE ADEQUATE DISCONNECT DEVICES IN ACCORDANCE WITH THE N.E.C. SECTION 422-20 THRU 430-113.

SYMBOLS IN COLUMN 11:  
"I" = INCANDESCENT  
"F" = FLUORESCENT

**MECHANICAL**  
HEATING, AIR CONDITIONING, EVAPORATIVE COOLING AND MECHANICAL VENTILATION SHALL BE IN ACCORDANCE WITH AFM 88-15 AND APPLICABLE AIR FORCE PAMPHLETS.

WHEN A COMPLETE MECHANICAL EQUIPMENT ROOM IS NOT REQUIRED, THE SURPLUS SPACE MAY BE ABSORBED BY OTHER FUNCTIONS OF THE FACILITY.

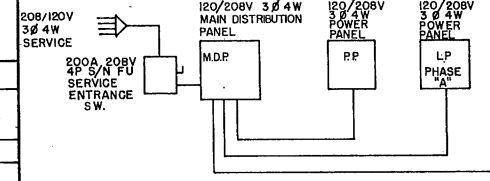
AIR CONDITIONING SYSTEMS DESIGN SHALL CONFORM TO A NON-CRITICAL SYSTEM.

AIR CONDITIONING SHALL BE PROVIDED IN ALL WEATHER ZONES FOR CHAMBER ROOM, RECOVERY, AND CLASSROOMS OR AS REQUIRED IN APPLICABLE T.O.'S. REMAINING AREA'S ENVIRONMENTAL SYSTEM WILL BE IN ACCORDANCE WITH AFM 88-15.

**PLUMBING**  
PLUMBING WILL BE IN ACCORDANCE WITH O.C.E. ENGINEERING MANUAL, PART V, CHAPTER 4 AND WITH AFM 88-15.

**EQUIPMENT SCHEDULE\*\***

NO.	ROOM	NO. ON PLAN	DESCRIPTION	OPERATIONAL CRITERIA	STATUS	SPEC. NO.	A. F. STOCK NO.	OVERALL DIMENSIONS OR REQ'D CLEARANCE	WEIGHT	ELECTRICAL				MECHANICAL				REMARKS
										VOLTAGE DESIGN TOL.	NO. OF PHASES	NO. OF COND'RS	LOAD	TERMINATION	FREQUENCY DESIGN TOL.	UTILITIES OTHER THAN ELECTRICITY	USAF INSTALLED EQUIPMENT ONLY	
PHASE "A"																		
3	HTG. & AIR COND.	A	PORT. 2 STAGE 5 CFM COMPRESSOR 200 PSI 30 GAL. REC. MTR.	AF/CO			8100-204000	21'-8" x 5'-0"		110V	120V	1	2		60			
3		B	RECTIFIER BATTERY, 36 CELL CAPACITY	AF/AF			8100-617000	1'-0" x 2'-0"		6A 115V	120V							
6	PROJ. ROOM	C	MOTION PICTURE TYPE D-4 PROJECTOR - 16 MM SILENT & SOUND	AF/AF			2900-678598	1'-0" x 2'-0"		110V	120V	1	2		60			
9	CHAMBER ROOM	D	CHAMBER ASS'Y, RECT., LOW PRES., 20 MAN	AF/CO			7CAD-185100	8'-0" x 23'-0"	46000							COMP. AIR AT 150 PSI		
9		E	CHAMBER ASS'Y, CYL. LOW PRES. 6 MAN	AF/CO			7CAD-183150	6'-0" x 12'-0"	26000							COMP. AIR AT 150 PSI		
2	PUMP ROOM	1	PUMP, VACUUM, KT 850	AF/CO			4310-115-7752YK	3'-10" x 3'-1-1/2"	4700	220V		3			60		WATER 5 GPM	
2	PUMP ROOM	1	PUMP, VACUUM, KD 480	AF/CO			4310-237-408	6'-0" x 5'-5-1/2"	5300	220V		3			60		WATER 3-1/2 GPM	WITH PHASE B ONLY



PROPOSED RISER DIAGRAM  
NO SCALE  
M.D.P. - DISTRIBUTION PANEL  
P.P. - POWER PANEL  
L.P. - LIGHTING PANEL

CATEGORY CODE NO. 171-214-01

**DESCRIPTION OF EQUIPMENT SCHEDULE**

A. NATURE - THE SCHEDULE LISTS EQUIPMENT CHARACTERISTICS AFFECTING THE DESIGN OF THE FACILITY AND INCLUDES ALL ITEMS WHICH:

- AFFECT DIMENSIONS OF OPENINGS AND/OR AREAS.
- REQUIRE SPECIAL STRUCTURAL SUPPORT OR FOUNDATIONS.
- REQUIRE SUPPORTING UTILITIES.

B. THE SCHEDULE TRANSMITS TO THE DESIGN AGENCY CHARACTERISTICS OF AIR FORCE SUPPLIED EQUIPMENT AND CRITICAL SPECIFICATIONS WHICH CONTRACTOR-SUPPLIED EQUIPMENT MUST MEET.

C. THE EQUIPMENT CHARACTERISTICS LISTED IN THE SCHEDULE WILL PROVIDE THE DESIGN AGENCY WITH INFORMATION ESSENTIAL TO DEVELOPMENT OF AN OPTIMUM OPERATIONAL FACILITY. HOWEVER, THESE CHARACTERISTICS ARE TYPICAL FOR AIR FORCE STOCK ITEMS AUTHORIZED FOR THIS FACILITY AND SHOULD BE USED FOR GENERAL GUIDANCE ONLY. (EQUIPMENT MAY BE MANUFACTURED UNDER A SINGLE AIR FORCE STOCK NUMBER WITH SIGNIFICANT VARIATIONS IN DIMENSIONS AND MECHANICAL AND ELECTRICAL CHARACTERISTICS.)

**EXPLANATION OF COLUMN ENTRIES**

**COLUMN 6**  
AF/AF DENOTES ITEMS SUPPLIED AND INSTALLED BY THE AIR FORCE USING PROCUREMENT BUDGET FUNDS.  
AF/CO DENOTES ITEMS SUPPLIED BY THE AIR FORCE, MILITARY CONSTRUCTION FUNDS WILL NOT BE USED FOR PURCHASE OR INSTALLATION OF THESE ITEMS, THE CONSTRUCTION CONTRACTOR SHALL MAKE NECESSARY STRUCTURAL PROVISIONS AND UTILITY CONNECTIONS AS REQUIRED TO PERMIT READY INSTALLATION OF THESE ITEMS.

**COLUMN 7**  
SPECIFICATIONS TO WHICH CONTRACTOR MUST ADHERE IN SUPPLYING AN ITEM OF EQUIPMENT.

**COLUMN 11b**  
VOLTAGE TOLERANCES FOR AIR FORCE ITEMS ABNORMALLY SENSITIVE TO VOLTAGE VARIATION.

**COLUMN 13**  
PHYSICAL NO. OF CONDUCTORS CARRIED TO EQUIPMENT. SYMBOL "FG" INDICATES THAT ONE OF THE CONDUCTORS INCLUDED IS PROVIDED TO GROUND THE METAL FRAME OF THE EQUIPMENT AND IS NOT SYSTEM NEUTRAL.

**COLUMN 14**  
FULL ELECTRICAL LOADS FOR EACH AIR FORCE ITEM. "F" INDICATES FRACTIONAL HORSEPOWER MOTOR OF 1/2 HP OR LESS, WHERE ACTUAL SIZE IS UNDETERMINED.

**COLUMN 15**  
CODED DESCRIPTION OF ELECTRICAL TERMINATING DEVICE INCORPORATED WITH AIR FORCE SUPPLIED ITEM TO WHICH CONTRACTOR-INSTALLED BRANCH CIRCUIT MUST PROVIDE POWER. THE FOLLOWING SYMBOLS ARE USED:  
P - 2 PRONG PLUG CAP  
P-3 - 3 PRONG PLUG CAP (INCLUDES GROUNDING POLE)  
P-4 - 3 PHASE PLUG FOR PORTABLE EQUIPMENT  
S - A UNIT SWITCH OR MOTOR CONTROLLER. (MOTOR CONTROLLERS AND MOTOR OVERCURRENT PROTECTIVE DEVICES REQUIRED FOR AIR FORCE SUPPLIED EQUIPMENT ARE AIR FORCE SUPPLIED)

**COLUMN 16b**  
FREQUENCY TOLERANCES FOR AIR FORCE ITEMS ABNORMALLY SENSITIVE TO FREQUENCY VARIATION.

**COLUMN 18**  
REQUIRED UTILITIES OTHER THAN ELECTRICITY. THE FOLLOWING SYMBOLS ARE USED:  
HW - HOT WATER  
CW - COLD WATER  
G - NATURAL GAS  
S - STEAM  
A - COMPRESSED AIR  
CFH - CUBIC FT/HR  
GPM - GALS/MIN  
OD - OPEN DRAIN  
PSI - LBS/SQ IN  
°F - TEMP IN DEG FAH°  
FD - FLOOR DRAIN  
CD - CONNECTED DRAIN

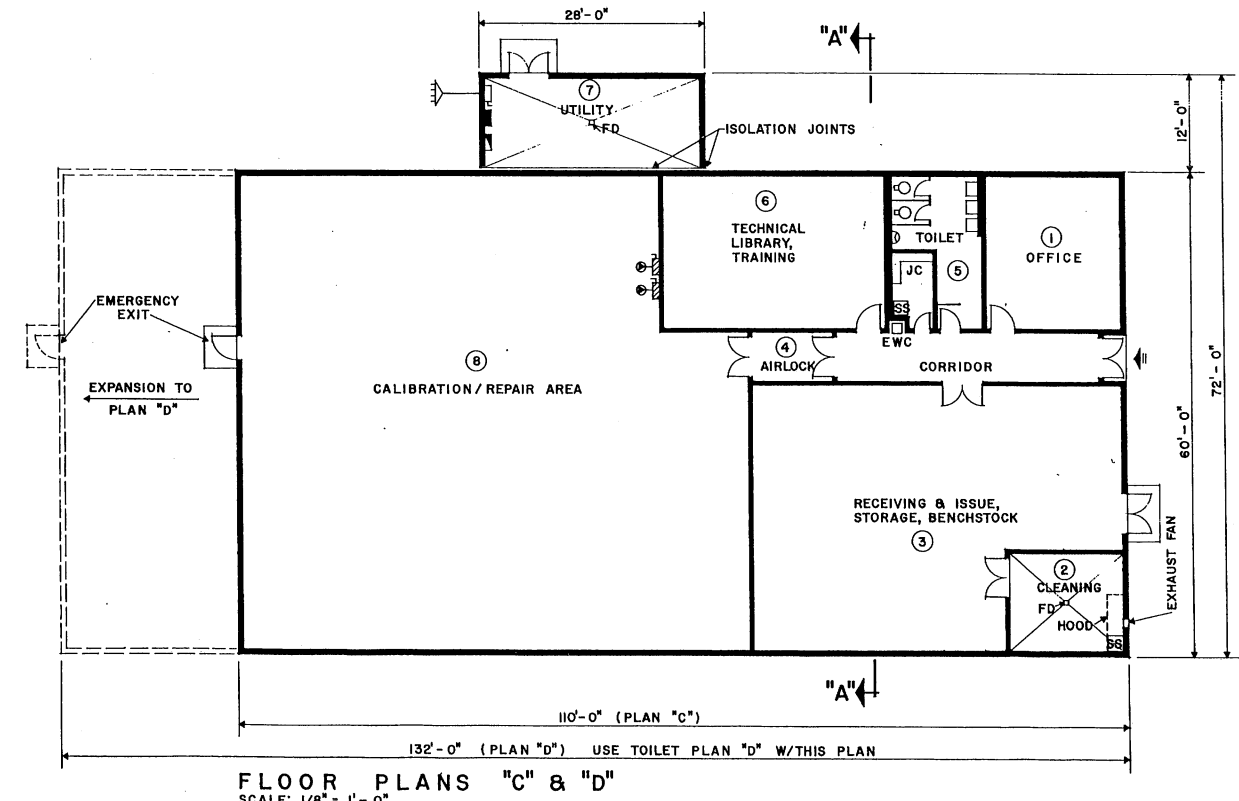
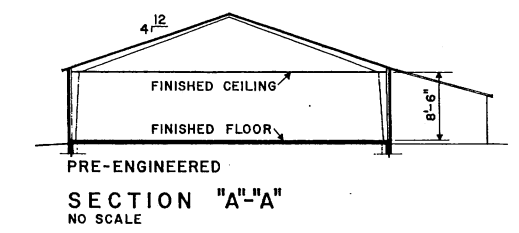
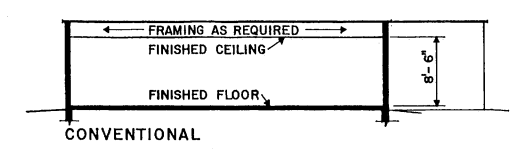
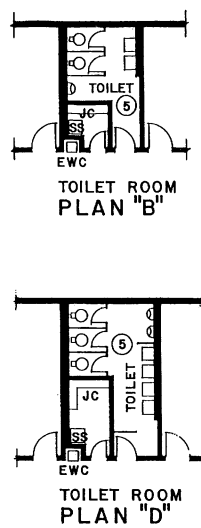
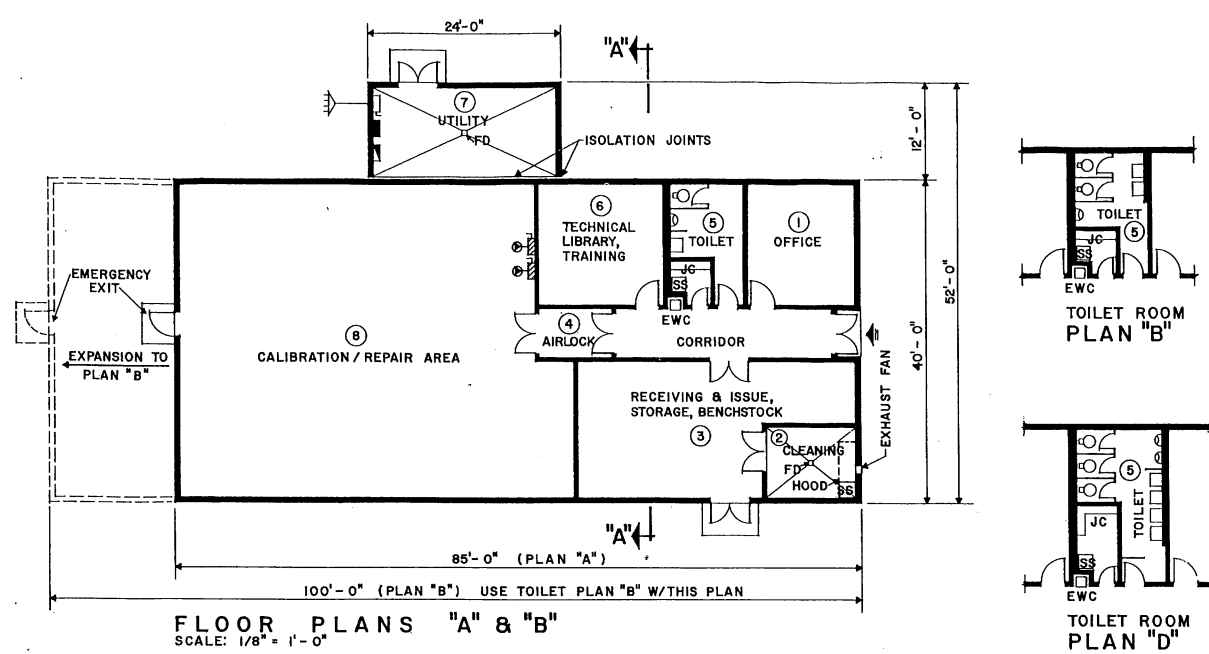
**COLUMN 19 (FOR USAF INSTALLED EQUIPMENT ONLY)**  
DETAILS AND DIMENSIONS OF UTILITY TERMINATIONS (OTHER THAN ELECTRICITY) WITH WHICH THE PARTICULAR PIECE OF EQUIPMENT IS SUPPLIED.

**COLUMN 20 (FOR USAF INSTALLED EQUIPMENT ONLY)**  
DETAILS AND DIMENSIONS OF UTILITY TERMINATIONS (OTHER THAN ELECTRICITY) WHICH THE CONTRACTOR WILL BE REQUIRED TO INSTALL.

**COLUMN 21**  
GENERAL REMARKS FOR AF/AF ITEMS ONLY. DETERMINE ANY SPECIAL FITTINGS AND ANCHORAGE REQUIREMENTS.

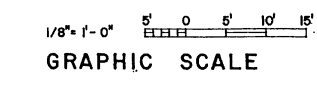
**SPECIAL NOTES**  
\*\* AUTHORIZED EQUIPMENT LISTED HEREIN INTENDED FOR GENERAL GUIDANCE TOWARD THE DEVELOPMENT OF AN OPTIMUM OPERATIONAL FACILITY, SUBSTITUTION OF EQUIPMENT ITEMS OF EQUIPMENT MAY BE NECESSARY TO PREVENT CONSTRUCTION DELAYS AND OVERCOME PROCUREMENT DIFFICULTIES.

DEPARTMENT OF THE AIR FORCE			
HEADQUARTERS UNITED STATES AIR FORCE			
McLEOD, FERRARA, AND ENSIGN			
ARCHITECTS-ENGINEERS - WASHINGTON, D. C.			
HIGH ALTITUDE TRAINING BLDG.			
DESIGN DATA & EQUIPMENT SCHEDULE			
APPROVED	AD 28-12-04 R2		
FOR CHIEF OF STAFF	USAF	SCALE: NONE	SHEET 2 OF 2
		DATE: 7 Nov 1970	



- LEGEND**
- ENTRY
  - E.W.C. ELECTRIC WATER COOLER
  - S.S. SERVICE SINK
  - F.D. FLOOR DRAIN
  - E.F. EXHAUST FAN

- ELECTRICAL LEGEND**
- SERVICE SWITCH
  - MAIN DISTRIBUTION PANEL & POWER PANEL
  - LIGHTING PANEL
  - RECTIFIER
  - SAFETY SWITCH
  - INCOMING ELECTRICAL SERVICE
  - SPECIAL RECEPTACLE
  - DIRECT CURRENT BRANCH PANEL



**PROGRAMMING AND PLANNING GUIDES**

**SPECIFICATIONS**  
FOR ACCEPTABLE CONSTRUCTION MATERIALS SEE CURRENT AFM 88-15, APPLICABLE AIR FORCE PAMPHLETS, AND T.O. 33-1-14.  
PROVIDE MANUAL FIRE AND EVACUATION ALARM SYSTEM, AS SPECIFIED BY AFM 88-15, FOR PLAN TYPES "B", "C" AND "D" ONLY.

**UTILITY REQUIREMENTS**

ELECTRICITY (KW)	PLAN A	PLAN B	PLAN C	PLAN D
ESTIMATED DEMAND				
LIGHTING	25	25	48	60
POWER	120	120	165	175
TOTAL	145	145	203	235
CONNECTED LOAD				
LIGHTING	25	25	60	60
POWER	150	150	190	205
TOTAL	175	175	250	265
SPECIAL ELECTRICAL POWER EQUIPMENT				
WATER				
HOT (GPH)	50	50	60	80
COLD (GPM)	40	40	45	52
TOTAL (GPM)	42	42	48	55
TOTAL (GPD)	900	1250	1800	2500
SEWAGE (GPD)	900	1250	1800	2500

**HEATING REQUIREMENTS**  
OUTSIDE DESIGN TEMPERATURE ° F.  
INSIDE DESIGN CONDITION  
73° F. DB, 45 + 5% RH MAX.  
M/STU/HR (BOILER OUTPUT)

	PLAN A	PLAN B	PLAN C	PLAN D
	170	200	330	400

**AIR CONDITIONING REQUIREMENTS**  
OUTSIDE DESIGN TEMPERATURE  
95° F. DB - 78° F. WB  
INSIDE DESIGN CONDITIONS  
CALIBRATION/REPAIR AREA  
73° F. DB, 45 + 5% RH MAX.  
OTHER AREAS  
73° F. DB, 50 + 5% RH MAX.  
TONS OF REFRIGERATION

	PLAN A	PLAN B	PLAN C	PLAN D
	17	20	30	40

**AREA FOR PROGRAMMING GROSS AREA**

PLAN	INCLUDES UTILITY LEAN-TO AT	GROSS AREA (SQ. FT.)
PLAN "A"	288 SQ. FT.	3,688
PLAN "B"	288 SQ. FT.	4,288
PLAN "C"	336 SQ. FT.	6,936
PLAN "D"	336 SQ. FT.	8,256

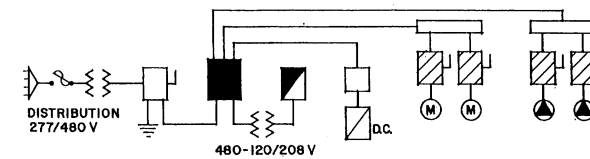
- NOTES:**
- AIR CONDITIONING DESIGN CONDITION
  - NON-CRITICAL SYSTEMS CRITERIA WILL BE USED AS OUTLINED IN AFM 88-15.
  - AIR FILTERS WILL BE MEDIUM EFFICIENCY TYPE, 35% MIN. EFFICIENCY WHERE A SINGLE AIR HANDLING UNIT IS UTILIZED; OTHERWISE THE CALIBRATION AND REPAIR AREA WILL HAVE MEDIUM EFFICIENCY FILTERS AND THE REMAINDER OF THE BUILDING WILL HAVE ROUGHING FILTERS.
  - HUMIDIFICATION IS NOT REQUIRED.

SYMBOL	REVISION - DESCRIPTION	DATE	APPROVED
<b>DEPARTMENT OF THE AIR FORCE</b>			
HEADQUARTERS UNITED STATES AIR FORCE			
SECTOR, PEAKE AND HOWELL			
ARCHITECTS-ENGINEERS - FALLS CHURCH, VIRGINIA			
<b>LABORATORY</b>			
<b>PRECISION MEASUREMENT</b>			
<b>EQUIPMENT</b>			
PLANS AND SECTIONS			

APPROVED	AD 35-06-01 R2
<i>[Signature]</i>	SCALE: AS SHOWN
FOR CHIEF OF STAFF USAF	DATE: 8 SEPT. 1969
	SHEET 1 OF 2

## DESIGN DATA AND ANALYSIS

NO.	ROOM	BASIC OCCUPANCY FACTOR	DESIGN FACTOR	CRITERIA SOURCE	MINIMUM NET DIMENSIONS	CLEAR HGT. REQ'D	DIMENSIONS OF THIS PLAN INTERIOR APPROXIMATE	SQ. FT. APPROX.	LIVE LOADS	ELECTRICAL CONVENIENCE OUTLETS	LIGHTING F.C.	SUPPLEMENTAL PLUMBING	MECHANICAL VENTILATION	HEATING, AIR COND. ETC. CONTROL TEMP.	REMARKS AND ADDITIONAL REQUIREMENTS
1.	OFFICE	PERSONNEL	70-90 S.F./MAN			8'-6"	13'-3" x 14'-9"	195			50 F (MIN)				SEE AFM 88-15
	PLAN A						13'-3" x 14'-9"	195							
	" B						16'-9" x 14'-9"	314							
	" C						16'-9" x 14'-9"	314							
2.	CLEANING	EQUIPMENT	EQUIPMENT			8'-6"	11'-3" x 8'-9"	98			50 F	FLOOR DRAIN & OIL SEPARATOR	POWER EXHAUST	SUPPLY AIR QUANTITY DEPENDENT ON HEATING DEMAND. POSITIVE EXHAUST AT ALL TIMES.	HOOD OVER SINK. AIR CONDITIONING SYSTEM SHOULD NOT BE REQUIRED TO SUPPLY TOTAL HOOD EXHAUST AIR RATE. CONSIDER SEPARATE MAKE-UP AIR UNIT TO ROOM (HEAT ONLY) TO BALANCE HOOD EXHAUST AIR FAN DEMAND.
	PLAN A						11'-3" x 8'-9"	98							
	" B						14'-3" x 12'-3"	175							
	" C						14'-3" x 12'-3"	175							
3.	RECEIVING, STORAGE ISSUE, BENCH STOCK	EQUIPMENT & PERSONNEL	CIRCULATION			8'-6"	34'-9" x 16'-9" IRREG	473			50 F			SEE AFM 88-15	
	PLAN A						34'-9" x 16'-9" IRREG	473							
	" B						45'-9" x 32'-9" IRREG	1310							
	" C						45'-9" x 32'-9" IRREG	1310							
4.	AIRLOCK	CIRCULATION	OPERATIONAL REQMT.			8'-6"	9'-0" x 6'-0"	54			50 F			AIR SUPPLY OUTLET ONLY - NO POSITIVE EXHAUST OUTLET.	
	PLAN A						9'-0" x 6'-0"	54							
	" B						10'-0" x 6'-0"	60							
	" C						10'-0" x 6'-0"	60							
5.	TOILET	FIXTURES	MAN PER FIXTURE			8'-6"	9'-0" x 14'-9" IRREG	105			50 F	DEEP SINK		70°F MIN.	HEATING AND VENTILATION ONLY.
	PLAN A						9'-0" x 14'-9" IRREG	105							
	" B						9'-0" x 14'-9" IRREG	115							
	" C						10'-0" x 18'-9" IRREG	137							
6.	TECH. LIBRARY BREAKROOM, TRAINING	PERSONNEL	OPERATIONAL REQMT.			8'-6"	15'-6" x 14'-9"	229			50 F			SEE AFM 88-15	
	PLAN A						15'-6" x 14'-9"	229							
	" B						27'-6" x 18'-9"	516							
	" C						27'-6" x 18'-9"	516							
7.	UTILITY	MECHANICAL & ELECTRICAL EQUIPMENT				8'-6"	23'-0" x 11'-6"	264			10 I	FLOOR DRAIN		50°F MIN.	HEATING AND VENTILATION ONLY.
	PLAN A						23'-0" x 11'-6"	264							
	" B						27'-0" x 11'-6"	310							
	" C						27'-0" x 11'-6"	310							
8.	CALIBRATION/REPAIR AREA	EQUIPMENT & PERSONNEL	OPERATIONAL REQMT.			8'-6"	48'-3" x 38'-6" IRREG	1760			50-100 F			SEE AFM 88-15	
	PLAN A						48'-3" x 38'-6" IRREG	1760							
	" B						63'-3" x 38'-6" IRREG	2337							
	" C						62'-3" x 58'-6" IRREG	3430							



**ELECTRICAL RISER DIAGRAM**  
NO SCALE

### DESIGN GUIDES

#### ARCHITECTURAL

1. TYPE OF CONSTRUCTION - PERMANENT, TYPE "N" NONCOMBUSTIBLE.
2. WHERE PRE-ENGINEERED CONSTRUCTION IS MORE ECONOMICAL THAN CONVENTIONAL CONSTRUCTION A COMMERCIALY AVAILABLE PRE-ENGINEERED STRUCTURE OF NEAREST SUITABLE DIMENSIONS SHOULD BE UTILIZED; IN ACCORDANCE WITH AFM-88-15, CRITERIA AND STANDARDS FOR AIR FORCE CONSTRUCTION.
3. UTILITY ROOM SHOULD BE OF THE MINIMUM PRACTICAL SIZE TO SUIT THE EQUIPMENT REQUIRED.
4. PROVIDE SUITABLE JOINTS TO ISOLATE VIBRATION WHERE UTILITY ROOM WALLS AND FLOOR ADJOIN MAIN STRUCTURE.
5. DOOR LOCATIONS ARE SUBJECT TO MINOR RELOCATION TO MEET MANUFACTURER'S STANDARDS.
6. LENGTH OF AIR LOCK SHALL ACCOMMODATE ITEMS BEING MOVED, SO THAT BOTH SETS OF DOORS ARE NOT OPEN AT THE SAME TIME.
7. PROVIDE VISION PANELS IN AIR-LOCK DOORS, AND ELSEWHERE AS REQUIRED TO AVOID INTERFERENCE OR DAMAGE.
8. AIR-LOCK DOORS, AND ALL DOORS IN CALIBRATION/REPAIR AREA SHALL BE PROVIDED WITH GASKET TYPE STOPS AND ASTRAGALS AND AUTOMATIC DOOR BOTTOMS.
9. ALL DOORS SHALL BE OF THE MINIMUM PRACTICAL SIZE TO PROVIDE CLEARANCE FOR PASSAGE OF EQUIPMENT.
10. FOR OPTIMUM ENVIRONMENTAL CONTROL THE WORKING DRAWINGS AND SPECIFICATIONS SHOULD EMPHASIZE INTEGRITY OF "U" FACTORS AND VAPOR BARRIERS.

#### STRUCTURAL

LIVE LOADS WILL BE IN ACCORDANCE WITH PART IV, CHAPTER 1, OF THE O.C.E. ENGINEERING MANUAL.

#### ELECTRICAL

LIGHTING INTENSITIES ARE DETERMINED AT WORKING LEVELS; CONVENIENCE OUTLETS WILL BE LOCATED BY THE DESIGN AGENCY. ELECTRICAL PANELS WILL BE LOCATED AS INDICATED. OUTLETS FOR EQUIPMENT WILL BE LOCATED BY THE DESIGN AGENCY IN ACCORDANCE WITH THE EQUIPMENT POSITIONS. PROVIDE DISCONNECT DEVICES IN ACCORDANCE WITH THE N.E.C. SECTION 422-20 THRU 430-113.

SYMBOLS IN LIGHTING COLUMN AS FOLLOWS:

F - FLUORESCENT  
I - INCANDESCENT

#### MECHANICAL

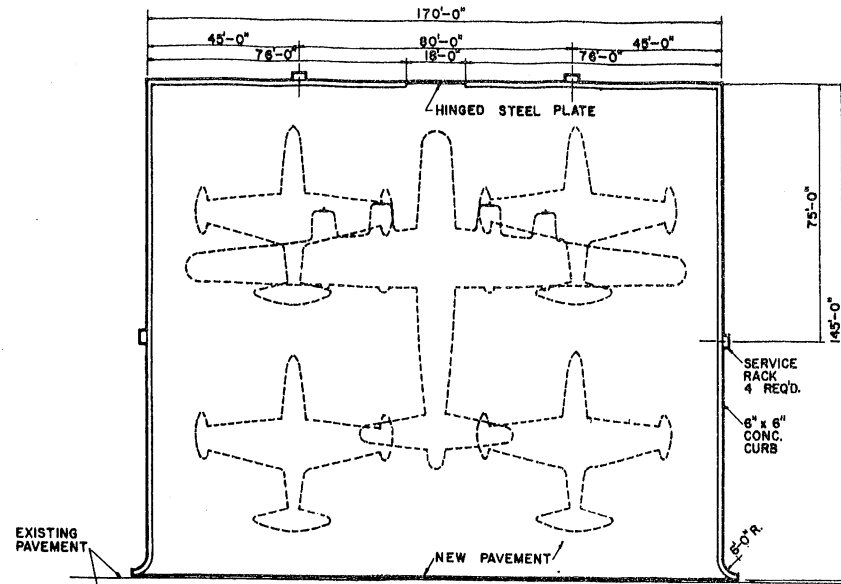
HEATING, AIR CONDITIONING, EVAPORATIVE COOLING AND MECHANICAL VENTILATION SHALL BE IN ACCORDANCE WITH AFM-88-15 AND APPLICABLE AIR FORCE PAMPHLETS.

WHEN A COMPLETE MECHANICAL EQUIPMENT ROOM IS NOT REQUIRED, THE SURPLUS SPACE MAY BE ABSORBED BY OTHER FUNCTIONS OF THE FACILITY.

#### PLUMBING

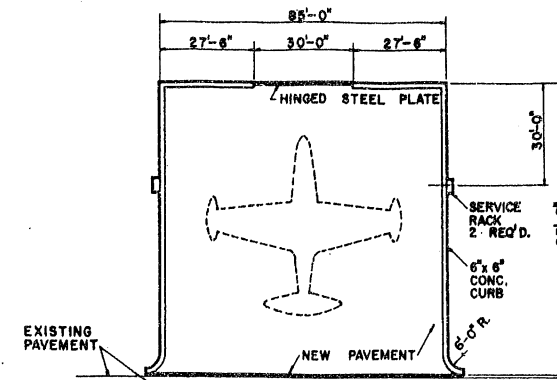
PLUMBING WILL BE IN ACCORDANCE WITH O.C.E. ENGINEERING MANUAL, PART V, CHAPTER 4 AND AFM-88-15.

SYMBOL	REVISION - DESCRIPTION	DATE	APPROVED
<b>DEPARTMENT OF THE AIR FORCE</b>			
HEADQUARTERS UNITED STATES AIR FORCE			
SPECTOR, PEAKE AND HOWELL			
ARCHITECTS-ENGINEERS • FALLS CHURCH, VIRGINIA			
<b>LABORATORY</b>			
<b>PRECISION MEASUREMENT</b>			
<b>EQUIPMENT</b>			
<b>DESIGN DATA</b>			
APPROVED	AD 35 - 06 - 01 R2		
<i>[Signature]</i>	AFCE RB	SCALE: NONE	SHEET 2 OF 2
FOR CHIEF OF STAFF	USAF	DATE: 8 SEPT. 1969	



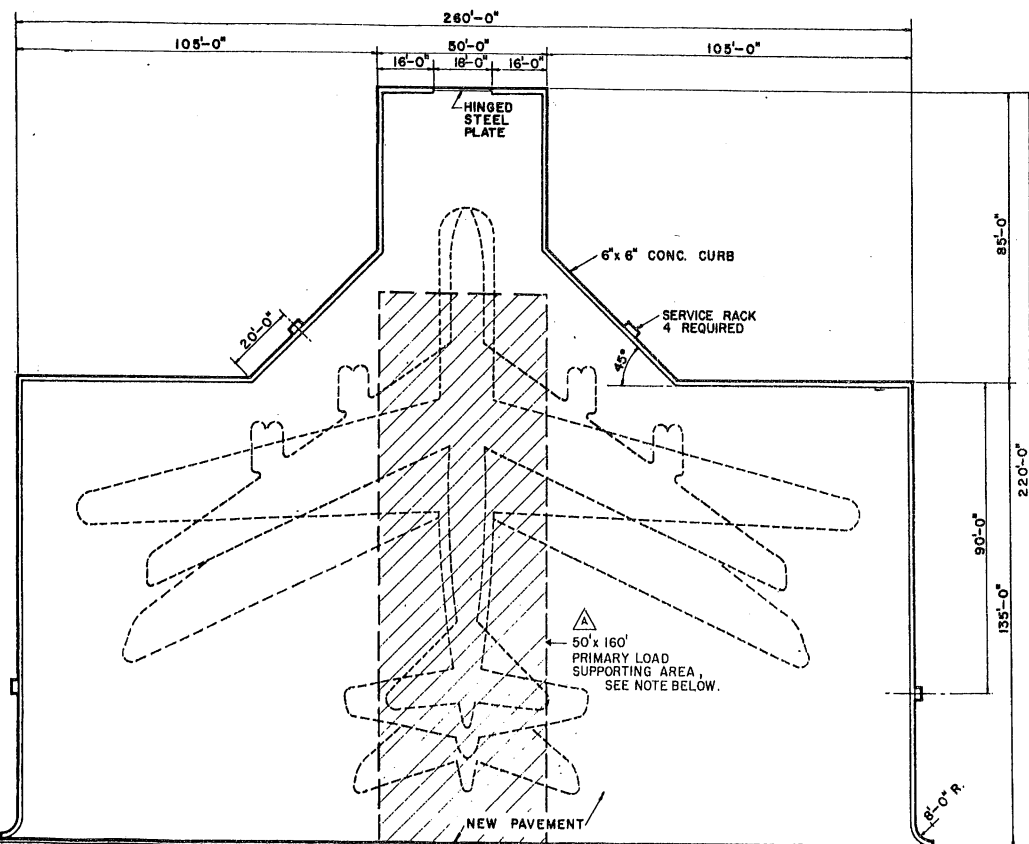
**TYPE "B" AIRCRAFT WASHRACK - MEDIUM BOMBER**

NOTE: PAVEMENT THICKNESS DESIGNED TO SUPPORT LOADING OF 80,000 LBS ON A TWIN WHEEL GEAR. REFER TO AFP 88-116-2.



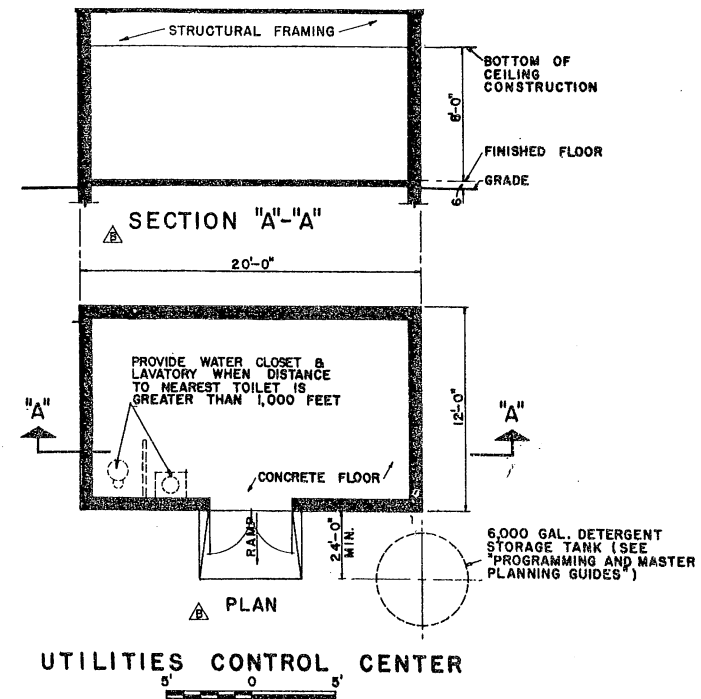
**TYPE "C" AIRCRAFT WASHRACK - FIGHTER**

NOTE: PAVEMENT THICKNESS DESIGNED TO SUPPORT LOADING OF 20,000 LBS. ON A SINGLE WHEEL.



**TYPE "A" AIRCRAFT WASHRACK - HEAVY BOMBER**

NOTE: THE PAVEMENT IN THE PRIMARY LOAD SUPPORTING AREA, 50 FT. WIDE AND APPROXIMATELY 160 FT. LONG, WILL BE DESIGNED FOR 160,000 LBS. ON A TWIN-TWIN GEAR. PAVEMENT FOR THE REMAINING AREA WILL BE DESIGNED FOR 20,000 LBS SINGLE WHEEL LOAD. REFER TO AFP 88-116-2.



**UTILITIES CONTROL CENTER**

**GENERAL NOTES**

- 1 NEW AIRCRAFT WASHRACKS WILL NOT BE CONSTRUCTED AT AIR FORCE BASES WHERE SUITABLE PAVEMENTS & COMPONENT UTILITIES ARE AVAILABLE FOR WASHRACK PURPOSES.
- 2 WHERE SUITABLE EXISTING PAVED SITE IS AVAILABLE, NECESSARY CURBING WILL BE PROVIDED, DRAINAGE ADJUSTED AS REQUIRED, AND SUCH OTHER FACILITIES AS THOSE NOTED UNDER "PROGRAMMING AND MASTER PLANNING GUIDES" WILL BE PROVIDED TO MAKE A USABLE FACILITY.
- 3 IN PROVIDING AIRCRAFT WASHRACK FACILITIES AT AIR FORCE INSTALLATIONS, IT IS INTENDED THAT MAXIMUM USE BE MADE OF ANY EXISTING FACILITY.

**PROGRAMMING AND PLANNING GUIDES**  
THE FOLLOWING INFORMATION IS FOR GUIDANCE IN PROGRAMMING AND PLANNING.

**SPECIFICATIONS**  
FOR ACCEPTABLE CONSTRUCTION MATERIALS AND DESIGN CRITERIA SEE CURRENT AFM 88-15 AND APPLICABLE AIR FORCE PAMPHLETS.

**AREA FOR PROGRAMMING GROSS AREA**

TYPE "A" WASHRACK	4,540 SQ. YDS.
TYPE "B" WASHRACK	2,740 SQ. YDS.
TYPE "C" WASHRACK	803 SQ. YDS.
UTILITIES CONTROL CENTER	240 SQ. FT.

**DESIGN GUIDES**

**ARCHITECTURAL**  
OPERATING PERSONNEL 33

**STRUCTURAL**  
FLOOR LOADING TYPE B AND TYPE C TRAFFIC PAVEMENT TO BE DESIGNED USING AFM 88-6, 4CF 1509, 4CF 1513, and 4CF 1517.

**ELECTRICAL**  
ELECTRICAL SYSTEMS SHALL CONFORM TO THE REQUIREMENTS OF AFM 88-15, CHAPTERS 7 AND 8.

ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM WILL BE 120/208 VOLTS, 3 PHASE, 4 WIRE, 50 CYCLE. THERE WILL BE (4) SERVICE RACKS EACH WITH THE FOLLOWING RECEPTACLES:

TYPE	QUANTITY	RACK NO.	REMARKS
120/208V, 3Ø, 60Hz, 30A	1 EA.	ALL RACKS	
120/208V, 3Ø, 60Hz, 60A	1 EA.	ALL RACKS	
120V, 1Ø, 60Hz, 20A	1 EA.	ALL RACKS	
120V, 1Ø, 60Hz, 15A, DUPLEX	1 EA.	ALL RACKS	

GROUNDING SHALL CONFORM TO THE REQUIREMENTS OF AFM 88-15, CHAPTER 7, PARAGRAPH 7-6, AND THE NATIONAL ELECTRICAL CODE, ARTICLE 250.

PORTABLE FLOOD LIGHTING WILL BE PROVIDED BY U.S.A.F. IF NIGHT AIRCRAFT WASHING IS REQUIRED.

**MECHANICAL**  
COMPRESSED AIR - 125 CFM AT 100 PSI WITH 1/2" HOSE CONNECTIONS. THIS COMPRESSED AIR SYSTEM WILL BE RUN IN A UTILITY TRENCH WITH A 1/2" QUICK DISCONNECT OUTLET AT EACH VALVE PIT (10) AND (1) OUTLET AT EMPENNAGE VALVE PIT.

FIRE PROTECTION SHALL BE PER AFM 88-15 AND WATER SUPPLY FOR FIRE PROTECTION SHALL BE PER AFM 88-10, CHAPTER 6.

HEATING - HEATING WILL BE PROVIDED IN UTILITIES CONTROL BUILDING, IF REQUIRED, BY CEILING UNIT HEATERS.

THIS DRAWING SUPERSEDES DRAWING NO. AD 36-40-12 R1, DATED 9, JAN, 1959

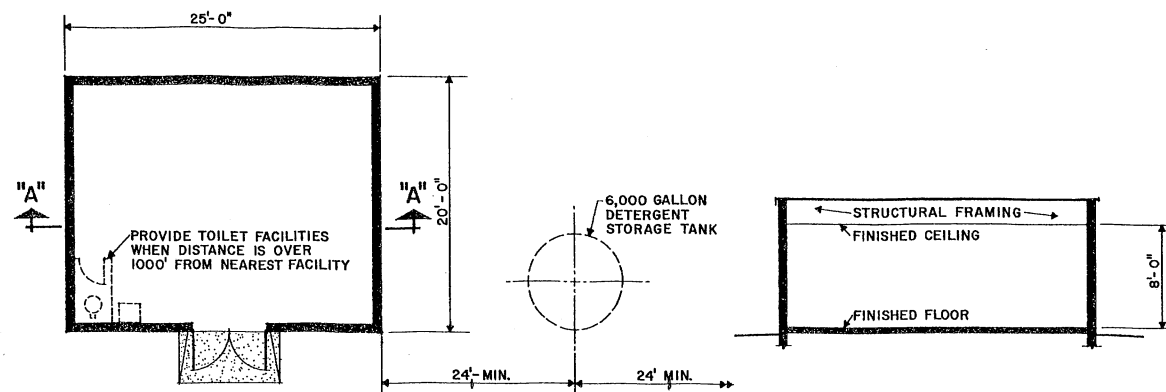
CATEGORY CODE 116-672-02

REVISED NOTES ON SHEET 1, & ADDED SHEETS 2 & 3	1/20/59	1/20/59
NOTES UNDER PLANS REVISED AND SHADED AREA, TYPE "A" AIRCRAFT WASHRACK, ADDED.	1/20/59	1/20/59

**DEPARTMENT OF THE AIR FORCE**  
HEADQUARTERS UNITED STATES AIR FORCE  
VICTOR B. SPECTOR AND ASSOCIATES  
ARCHITECTS-ENGINEERS • FALLS CHURCH, VIRGINIA

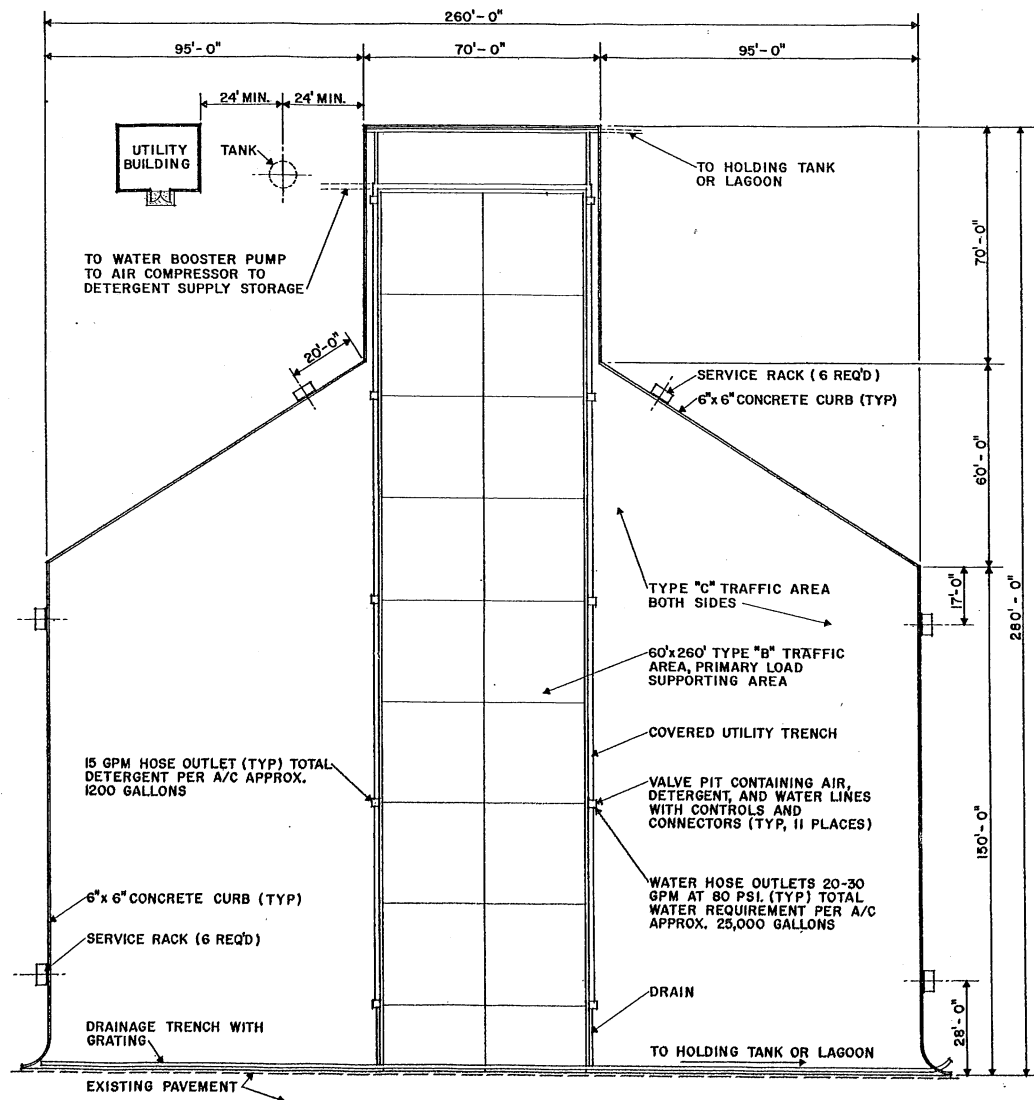
**WASHRACKS, AIRCRAFT**  
PLANS & SECTION

APPROVED	AD 36-40-12 R2
FOR CHIEF OF STAFF USAF	SCALE: AS NOTED
	DATE: 9 JAN 1959
	SHEET 1 OF 3

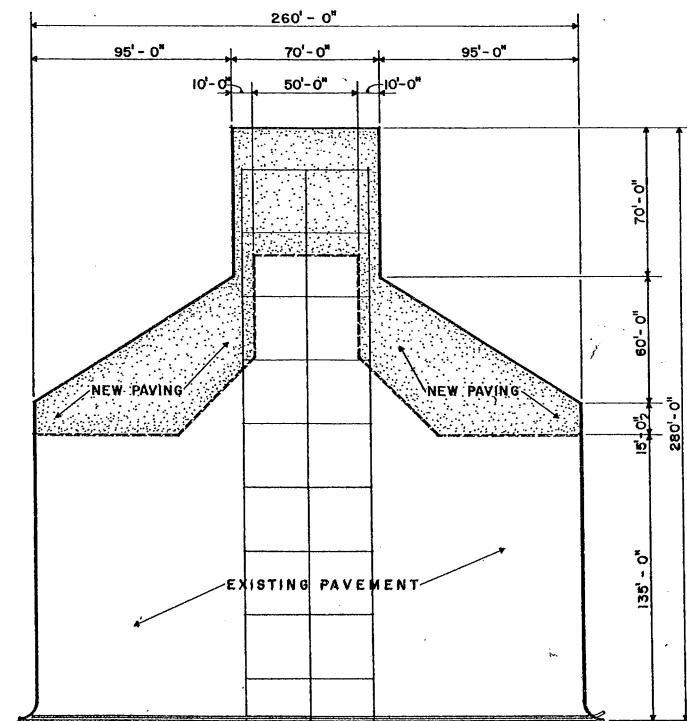


**PLAN - UTILITY BUILDING**  
SCALE: 3/16" = 1' - 0"

**SECTION "A-A"**  
SCALE: 3/16" = 1' - 0"



**TYPE "D" AIRCRAFT WASHRACK - C-5A (CARGO)**  
SCALE: 1" = 20'



**TYPE "A" WASHRACK MODIFIED FOR C-5A AIRCRAFT (CARGO)**  
SCALE: 1/32" = 1' - 0"



**PROGRAMMING AND PLANNING GUIDES**  
THE FOLLOWING INFORMATION IS FOR GUIDANCE IN PROGRAMMING, AND PLANNING.

**SPECIFICATIONS**  
FOR ACCEPTABLE CONSTRUCTION MATERIALS AND DESIGN CRITERIA SEE CURRENT AFM 88-15 AND APPLICABLE AIR FORCE PAMPHLETS.

**UTILITY REQUIREMENTS**  
POWER REQUIREMENTS (KVA) ESTIMATED

	LIGHTING	POWER	TOTAL
CONNECTED LOAD	61	230	291
ESTIMATED DEMAND	1	215	216

WATER:  
DOMESTIC (IF AUTHORIZED)  
HOT 1 GPM  
COLD 41 GPM  
TOTAL 42 GPM  
QUANTITY 495 GALLONS PER DAY  
SEWAGE 495 GALLONS PER DAY

**AREA FOR PROGRAMMING GROSS AREA**

C-5A WASHRACK	53,965 SQ. FT.
UTILITY BUILDING	500 SQ. FT.
<b>TOTAL</b>	<b>54,465 SQ. FT.</b>

**TYPE "D" 6000 S.Y.**

CATEGORY CODE 116-672-02

SYMBOL	REVISION - DESCRIPTION	DATE	APPROVED

**DEPARTMENT OF THE AIR FORCE**  
HEADQUARTERS UNITED STATES AIR FORCE  
**SPECTOR, PEAKE AND HOWELL**  
ARCHITECTS-ENGINEERS • FALLS CHURCH, VIRGINIA

**WASHRACKS, AIRCRAFT**

PLANS & SECTIONS

APPROVED  
*Richard H. Spector*  
FOR CHIEF OF STAFF USAF

**AD 36-40-12 R2**

SCALE: AS SHOWN  
DATE: 7 Apr 1970  
SHEET 2 OF 3

# EQUIPMENT SCHEDULE

GENERAL										ELECTRICAL							MECHANICAL				
NO ON PLAN	QUANTITY	NOMENCLATURE	C, E. I. NO.	F S N OR P/N	STATUS	SPEC. NO.	A E STOCK NO.	APPROXIMATE DIMENSIONS OR REQUIRED CLEARANCES	REMARKS	VOLTAGE	OF PHASE	OF COND	LOAD	MIN-ATION	QUENCY CPS	REMARKS	UTILITIES OTHER THAN ELECTRICITY	USAF INSTALLED TERMINAL FITTINGS SUPPLIED W/EQUIP	EQUIP. ONLY UTILITY TERMINATION	REMARKS	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
NOT SHOWN ON PLAN	3	SERVICING PLATFORM, REQUIRED TO WASH AIRCRAFT	MR1355A	CSKP-1190																	
		SERVICING PLATFORM, TRUCK MOUNTED, REQUIRED TO POSITION PERSONNEL ON ALL AREAS OF EMPENNAGE	MK0001A	CONDOR 125																	USE, WITH B-2 MAINTENANCE PLATFORM
	8	MAINTENANCE PLATFORM "B-2, AIRCRAFT ACCESS	MW0002A	I730-390-5620				166L x 126W x 248H, 1900 LBS													CAP. OF 1,000 LBS-WL. 13' TO 20' H.
	28	COVER, WHEEL NLG. & MLG., PROTECTION FOR TIRES	MRO044A	LOCKHEED DWG. 4850006 IA				50L x 23W x 50H													
		TRACTOR, WHEELED INDUSTRIAL, TOW AGE INTO POSITION	MW0014A	2420-821-0834				144L x 84W x 84H, 2000 LBS													2,500LBS DRAWBAR PULL-206PH GAS. ENG. DRIVEN
	8	CHOCK ASSY, WHEEL, TO KEEP A/C POSITIONED	MW0018A	I730-294-3696				6 L x 8 W x 56 H, 55 LBS													
		MOD. KIT, SERVICE TRUCK, TO MODIFY MW0755 FOR WATER HOSE	MRO260A	4880028-10IA																	
		TRACTOR, AIRCRAFT TOW, TOW A/C INTO POSITION	MW0022A	MILT 38454				236 L x 98 W x 102 H, 53000 LBS													
		TOWBAR, AIRCRAFT MLG., CONNECT TOW TUG TO A/C	MRO247A	4880022-10IA				470 L x 170 W x 45 H, 4200 LBS													
		BRIDLE TOW AIRCRAFT, TO TOW A/C FROM MLG	MRO229A	4880005-10IA				100													
8	MAINTENANCE PLATFORM, LOW ACCESS STAND	MW0735A	4935-723-4837				65L x 42W x 33H, 66 LBS														
	SPRAYER, INSECTICIDE	MW1246A	3740-641-4719																		

## MECHANICAL (CONTINUED)

**WASH:**  
 DESIGN WILL INCLUDE ADEQUATE PIPE SIZE AND VALVE CONTROLS TO PERMIT THE USE OF A SINGLE OUTLET AT A TIME.

PIPE SIZING FOR DELIVERY OF 20-30 GPM @ 100 PSI WITH 1-1/2" HOSE CONNECTIONS. EACH HOSE SHALL BE CAPABLE OF 30 GPM @ 100 PSI AT NOZZLE. TOTAL WATER DEMAND ESTIMATED TO BE 138 GPM @ FACILITY MANIFOLD PIT AREA WITH A TOTAL REQUIREMENT OF APPROXIMATELY 25,000 GALLONS PER C-5 AIRCRAFT.

WATER LINES TO BE RUN IN TRENCH OR CONDUIT WITH VALVE PITS AND 1-1/2" QUICK DISCONNECT FOR HOSE CONNECTION. MANUALLY OPERATED WATER PRESSURE CONTROL VALVE (20-100 PSI) LOCATED IN EACH VALVE PIT.

COLD WATER FROM BASE SUPPLY WILL BE ROUTED THROUGH A BOOSTER PUMP IF NECESSARY.

IF HOT WATER IS REQUIRED, PORTABLE HOT WATER GENERATING EQUIPMENT WILL BE PROVIDED THROUGH NORMAL AIR FORCE CHANNELS. HOT WATER GENERATING EQUIPMENT WILL BE LOCATED ALONGSIDE THE UTILITIES CONTROL CENTER AND PROVIDED WITH A VALVED WATER SUPPLY SYSTEM INTO THE CENTER TO UTILIZE EITHER HOT OR COLD WATER TO THE WASH RACK OUTLETS THROUGH THE COLD WATER LINES. NO SEPARATE HOT WATER LINES WILL BE PROVIDED IN AND TO THE SERVICE POINTS AT THE WASH RACK. WEATHER-PROOF 220V, 60 AMP OUTLETS WILL BE PROVIDED FOR 5 HP SINGLE PHASE MOTORS ON THE HOT WATER GENERATING EQUIPMENT LOCATED ALONGSIDE THE UTILITIES CONTROL CENTER.

**DETERGENT:**

DETERGENT/SOLUTION PIPING TO BE RUN IN UTILITY TRENCH TO EACH VALVE PIT.

LOCATION - THE 6,000 GAL. DETERGENT STORAGE TANK PROVIDED WITH A 50 GPM PUMP LOCATED OUTSIDE THE FACILITY UTILITIES CONTROL CENTER WILL BE CONNECTED TO A 1200 GAL. DETERGENT MIXING TANK. THE DETERGENT STORAGE TANK MAY BE LOCATED AT GROUND LEVEL OR BELOW GROUND, DEPENDENT ON CLIMATIC CONDITIONS. THE 1200 GAL. MIXING TANK WILL BE PROVIDED WITH MECHANICAL OR AIR MIXING FACILITIES, PUMP, INVERT DRAINING VALVE AND HOIST FOR DETERGENT FILLING. DETERGENT CONNECTIONS WILL BE MADE TO THE 1200 GAL. DETERGENT MIXING TANK AND PROVISIONS MADE FOR MAINTAINING A CONSTANT PRESSURE AND CONTROLLED FLOW TO THE DETERGENT DISTRIBUTION SYSTEM.

PROVIDE 140° F DETERGENT/SOLUTION 15 GPM @ 100 PSI TOTAL DETERGENT PER A/C APPROX. 1200 GALLONS.

**DRAINAGE CONTROL:**

WASHING WASTE - DRAINAGE CONTROL WILL BE PROVIDED TO DIVERT FACILITY WASHING WASTES FROM STORM DRAINAGE CHANNELS TO A CONCRETE HOLDING TANK OR LAGOON WHICH WILL CONTAIN THE FOLLOWING APPURTENANCES:

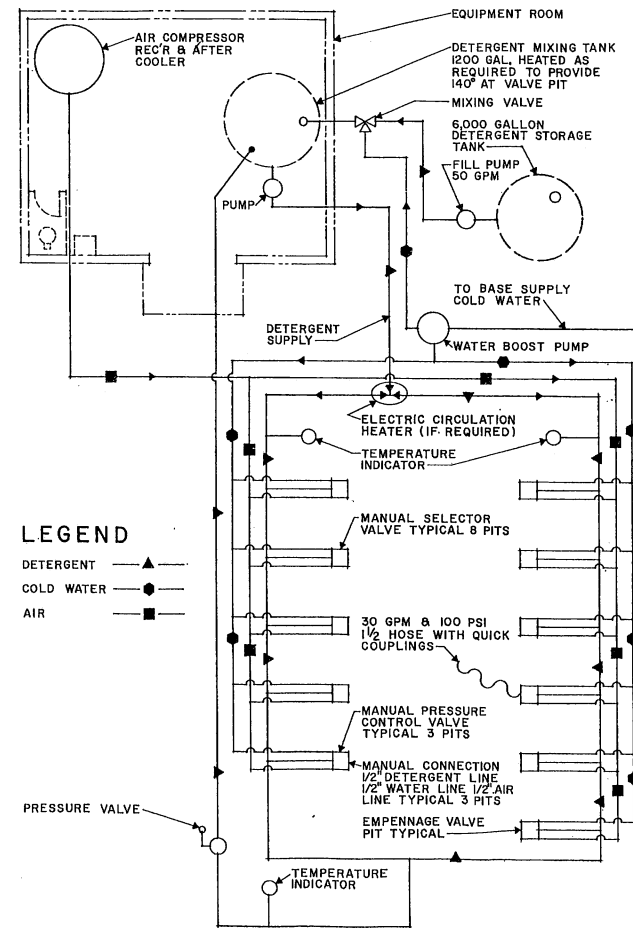
- A SLOTTED PIPE, OVERFLOW OR DIFFERENTIAL WEIR TO RECOVER SURFACED FREE OILS OR GREASES FOR DISPOSAL AND ELIMINATION FROM WASH WASTE EFFLUENT TO BE DISCHARGED TO SANITARY SEWER WHERE ADDITIONAL TREATMENT IS REQUIRED.

HOUSING WILL BE PROVIDED IF SPACE IN AN ADJACENT BUILDING IS NOT AVAILABLE FOR THE FACILITIES CITED ABOVE AND FOR NECESSARY CLEANING TOOLS AND EQUIPMENT. SANITARY FACILITIES FOR OPERATING PERSONNEL WILL BE CONSIDERED BY INDIVIDUAL LOCATION OF WASH RACK TO OTHER BASE FACILITIES. HEATING WILL BE PROVIDED, WHERE REQUIRED, BY CEILING UNIT HEATERS.

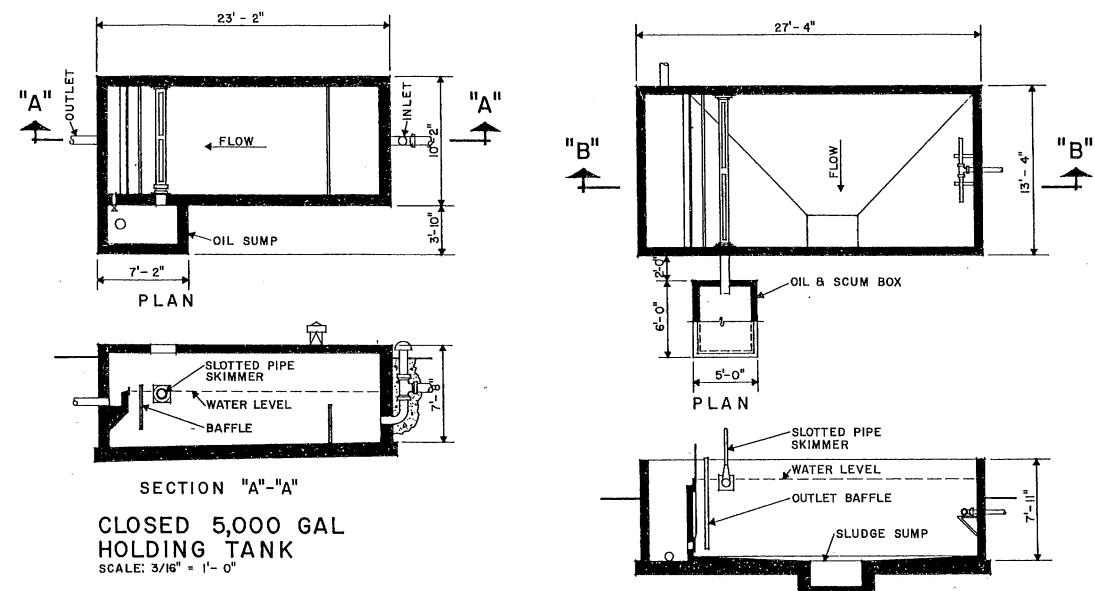
THE UTILITY CONTROL CENTER SHOULD BE LOCATED A SUFFICIENT DISTANCE FROM THE WASH RACK TO PRECLUDE FIRE HAZARDS ASSOCIATED WITH HEATING EQUIPMENT AND ELECTRICAL APPARATUS.

SURFACE DRAINAGE - ADEQUATE DRAINAGE WILL BE PROVIDED AT THE FACILITY. PAVEMENT GRADIENTS WILL BE LAID TO RETAIN SURFACE DRAINAGE WITHIN THE CONFINES OF THE FACILITY AND WILL BE ONLY SUFFICIENT TO PREVENT SURFACE PONDING. RUNOFF FROM THE FACILITY WILL BE ROUTED TO STORM DRAINAGE CHANNELS AND IN NO CASE WILL UNTREATED WASTES BE CONDUCTED INTO SANITARY SEWER SYSTEMS.

CATEGORY CODE I16-672-02



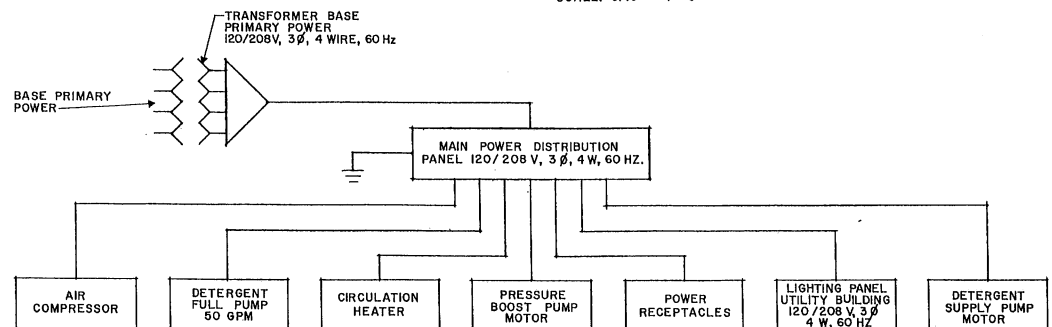
PLAN - SERVICE PIPING



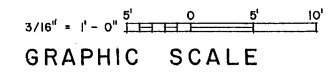
CLOSED 5,000 GAL HOLDING TANK  
SCALE: 3/16" = 1'-0"

OPEN 5,000 GAL HOLDING TANK  
SCALE: 3/16" = 1'-0"

NOTE:  
 HOLDING TANK PLANS AND SECTIONS ARE NOT INTENDED TO ESTABLISH A DESIGN TREATMENT NOR USE OF SPECIFIC MATERIALS. SLOTTED, BELT, AND ROLL SKIMMERS MAY BE USED AT THE OPTION OF THE USER.



PROPOSED ELECTRICAL RISER DIAGRAM



SYMBOL	REVISION - DESCRIPTION	DATE	APPROVED
<b>DEPARTMENT OF THE AIR FORCE</b> HEADQUARTERS UNITED STATES AIR FORCE SPECTOR, PEAKE AND HOWELL ARCHITECTS-ENGINEERS • FALLS CHURCH, VIRGINIA			
<b>WASHRACKS, AIRCRAFT</b> PLANS, SECTIONS, SCHEDULE & DIAGRAMS			
APPROVED		AD 36-40-12 R2	
FOR CHIEF OF STAFF USAF		SCALE: AS SHOWN	SHEET 3 OF 3
		DATE: 2 Apr 69	