

7) Material Testing Lab.

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	10 Ton Wolpert Universal Testing Machine	1	Otto-Wolpert GmbH	For Tensile, Shear, Comp. & Flexure (small beams) tests. Max. Force 10,000 Kg	1953	Very old with worn out parts but still working
2	100 Ton Wolpert Universal Testing Machine	1	-ditto-	Same as above but with Max. Force 100,000 Kg	1953	Very old with worn out parts but still working (small Piston not working)
3	Wolpert Pendulum Impact Testing Machine	1	-ditto-	For Charpy and Izod Tests	1953	In working order
4	Torsion Testing Machine	1	Avery, Birmingham, England	For Torsion Tests	1963	In working order
5	Gauge Length Marker	1	Otto-W. GmbH	For Marking on Metal Samples	1953	Not in working order

8) Computer Lab.

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	IBM Personal Computer	1	IBM PS/2 Model 30	8086-8MHz Processor, 640 Kb RAM, with VGA Monochrome Monitor, 2-3.5" Drives and 20 Mb Hard Card	1988	Functioning
2	NEC Personal Computer	1	NEC PowerMate 2	80386DX-25 MHz Processor with 80387 Math-Coprocessor, 4 Mb RAM, Super VGA Colour Monitor, 1-3.5" HD & 1-5.5" HD Drives, 130 Mb Hard Drive	1990	Functioning
3	Dot Matrix Printer	1	IBM Proprinter IIIXL	24 Pins Printer Head electric generation	1988	Functioning

(4) Department of Agricultural Engineering

1) Agricultural Machinery and Farm Power Lab.

S.No.	Name of Equipment	No. / Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Pump design evaluation set	1	Kendal Cumbria England		1985/86	Working Order
2	Air Conditioning, Refrigeration test Bed	1	U.S.A./7088		1983/84	- ditto -
3	Lathe Machine	1	Pakistan Made	6' Bed Length	1985	- ditto -
4	Shapper Machine	1	Pakistan Made	24" with motor	1985	- ditto -
5	Welding Set	1	Japan Made		1985	- ditto -
6	Drilling Machine	1	Pakistan Made	1" dia	1985	- ditto -
7	Hydraulic Dynamometer	1	Jap-SF 30 set		1983/84	- ditto -
8	Hydraulic Controls Test Bed	1	Eng-TPU-1431-III		1984/85	- ditto -
9	Diesel Fuel Injector Test Bed	1	Eng-HA 551		1983/84	- ditto -
10	Sectional Tractor	1	Eng-VB 250	For Non-Destructive Tests using	1984/85	- ditto -
11	Mold Board Plow	1	A 1-41-Aust		1970	- ditto -
12	Dic Plow	1	- ditto -		1970	- ditto -
13	Chisel Plow		U.S.A.		1970	- ditto -
14	Cultivator		G.B.		1969	- ditto -
15	Disc Harow		Austraria		1968	- ditto -
16	Rotavator		France		1985	- ditto -
17	Rear Blade		Canada		1975	- ditto -
18	Row Crop Planter				1984/85	- ditto -

2) Soil and Water Lab.

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Soil Drying Oven	1	W. Germany Shutzart Din 40050-IP 20		1982	Working order
2	Soil Drying Oven	2	U.S.A./Cenco		1964	Not in Proper Working Condition
3	Water Distiller	1	U.S.A.		1964	Working Order
4	Sieve Shaker	1	U.S.A./CENCO	220 Volts	1964	- ditto -
5	Perniameter for compacted Soils	1			1985	- ditto -
6	Centrifuge Machine	1	U.S.A./SS 1696M		1964	- ditto -

(5) Department of Mining Engineering

1) Mine Ventilation Lab.

S.No.	Name of Equipment	No. /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Round hygrometer	1	MAS/U.S.A.	Portable		Working
2	Barometers	2	-ditto-	-ditto-		- ditto -
3	Manometers	1	-ditto-	-ditto-		- ditto -
4	Dust Sampling Kit	1	-ditto-	-ditto-		- ditto -

2) Mine Safety Lab.

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Oxygen meter	1		Portable		Working
2	First Aid kit	1		-ditto-		Expired
3	Gas detectors	1		-ditto-		-ditto-
4	Safety equipments (clothings)			-ditto-		Working

3) Rock Mechanics Lab.

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Tri axial Testing Machine	1	ELE England	Laboratory Small Size	1978	Out of order
2	Rock cutting and Polishing Machine	1	-ditto-	-ditto-	1978	Working
3	Core drilling Machine	1	-ditto-	-ditto-	1978	-ditto-
4	Rock toughness tester	1	-ditto-	-ditto-	1978	-ditto-
5	Strength testing Machine	1	-ditto-	-ditto-	1978	-ditto-
6	Photoelastic Machine	1	Japan	-ditto-	1978	Not working order

4) Mineral Processing Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Mortor Mill	1	K.H.D. Germany	Lab. Size (Small) 275 mm	1977	Working
2	Jaw crusher	1	Soil Test(USA)	Lab. Size	1978	-ditto-
3	Shaking Table (for coarse material)	1	K.H.D.(Germany)	-ditto-	1977	-ditto-
4	Vibration Sieve analysis Machine (Drf)	1	-ditto-	-ditto-	1977	-ditto-
5	Lab. flotation cell	2	-ditto-	wich agitator 50, 70, 90 mm	1977	One out of order One Working
6	Jar rolling Machine	1	-ditto-	Lab. Size	1978	-ditto-
7	Hammer crusher	1	-ditto-	-ditto-	1984	-ditto-
8	Magnetic separator	2	BOX MAG RAPID	Two Disc	1984	-ditto-
9	Dise Mill	1	-ditto-	Lab. Size	1978	-ditto-
10	Lab. Electric Jig	1	-ditto-	-ditto-	1978	-ditto-
11	Vibrating Screen	1	K.H.D.(Germany)	-ditto-	1978	-ditto-

5) Mine Survey Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Micro meter theodolite	1	TM 20 ES Ogawa Seiki Co., Ltd.	10 See	1982	Working
2	Transit theodolite	1	World BC-8 Japan	30 See	1985	-ditto-
3	Topeon Transit Theodolite	1	AG-20-B Japan	20 Se	1985	-ditto-
4	Tilting Level	1	OSK 20 SL-5 Japan		1982	-ditto-
5	Dampy Level	1	OSK-200 dl-8 Japan		1982	-ditto-
6	Allbrit Level	1	No. 183318/74 London U.K.		1985	-ditto-

6) Drilling Technology Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
		Nil				

7) Geology Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Various model for demourtration					Working
2	Microscope	1				Out of order

(6) Department of Basic Sciences & Islamiat

1) Physics Lab.

S.No.	Name of Equipment	No. /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Audio Frequency generator	2	Trio		1985	Working
2	Ballistic Galvanometer	2	Michne (Germ.)		1977	- ditto -
3	Digital frequency counter	1	Leybold He racus 575-20		1985	- ditto -
4	Mechanical equivalent of heat	1	England (Pye)			- ditto -
5	Sextant	2	Cat No. 52B500A		1983	- ditto -
6	Travelling microscope	1	PTI 7826		1984	- ditto -
7	Oscilloscope	1	Kikusui		1977	- ditto -
8	Spectrometer	1	Germany		1983	- ditto -
9	Microwave Generator & Receiver	1	Cat No. XFB 350-D			- ditto -
10	D.C. Power Supply 0-16V	1	OSK 3576		1985	- ditto -
11	Lee's disk appt for thermal conductivity	3	XHB 760L		1983	- ditto -
12	Earth inductor	3	XKD 430D		1983	- ditto -

2) General Chemistry Lab.

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
	The laboratory does not contain any worth-mentioning equipment. It only contains the usual glass ware and chemicals for routine qualitative and quantitative chemical analysis using the so called "Wet Methods"					

3) Analytical & Special Chemistry Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
	The laboratory does not contain any worth-mentioning equipment. It only contains the usual glass ware and chemicals for routine qualitative and quantitative chemical analysis using the so called "Wet Methods"					

4) Unit Operation & Pilot Plant Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
	Nothing worth-mentioning					

5) Computer Lab.

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Computer	5	IBM PS2-30	UK made	1987	Working
2	Computer	7	IBM Compatible	Taiwan made	1987	-ditto-
3	Computer	1	CAF/IBM Compati.	Taiwan made	1989	-ditto-
4	Computer	1	Fujtec/IBM Compatible	Korean made	1991	-ditto-
5	Printer	2	IBM/XL	Netherland made	1987	-ditto-
6	Printer	3	STAR NX 10	Japan made	1987	-ditto-

(7) University Workshops

1) Fitting Shop

S.No.	Name of Equipment	No. /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Drill Machine Pillar type	1	Pak	Chuck 1", 1 H.P., Single Phase	1985	Properly working
2	Grinding Machine	1	Pak	1/2 H.P. single phase	1977	- ditto -
3	Press Machine	1	Pak	2 H.P. 5 Ton Capacity	1985	- ditto -
4	Press Machine	1	Pak	1 H.P. 3 Ton Capacity		- ditto -
5	Sheet Metal Cutting Machine	2	Germany Type AV 75B	Cutting size 105 cm	1983	- ditto -

2) Project Shop

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Drill Machine Pillar Type	1	Pak PD-20 PECO No. 1502	Speed 2450, 1470, 900, 550, 360 chuck size 13 mm	1985	Properly working
2	Grinding Machine	1	Pak	1 H.P. 3 phase R.P.M. 3000	1986	-ditto-
3	Grinding Machine	1	Germany D-17-1	volt 280/400	1955	-ditto-
4	Lathe Machine	1	Germany Model 280	Bs 110 Ch 12cm spindle bore 23mm	1955	-ditto-
5	Power Hacksaw Machine	1	Pak	single phase 1/2 H.P. Blade size 12"	1987	-ditto-

3) Welding Shop

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Electric Arc Welding Machine	1	Germany Type K 7288-1 Nr-408297	Motor LSR 772-2H 15 KV 3 Phase Generator LE 108	1955	Properly working

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
2	Gas Welding Plant	1	Germany	for Cutting & welding	1955	-ditto-
3	Arc welding Plant	1	Pak	3 Phase Portable	1983	-ditto-
4	Arc welding Plant	1	Pak	Single Phase portable	1985	-ditto-
5	Spot welding Machine	1	U.K. type PM 21 V Sr No 0760	Foot Padie control, 230V single phase 10 KVA with water cooling and Tuner control	1968	-ditto-
6	Drill Machine Filler Type	1	Pak	1/2 H.P. Motor, Chuck 3/8" speed 485, 328, 214, 132	1988	-ditto-
7	Bench Grinding Machine	1	Pak	1/2 H.P. Motor	1988	-ditto-

4) Foundry Shop

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Cupola	1	Germany B.D.M.	Motor Blower GVB, 3 Phase 2800 R.P.M. Capacity 1/2 ton, Internal dia. of cupola 1 ft	1968	Properly working
2	Oil Tilting Furnace	1	Germany Fulmina type KOA 10 No. 10988 1862	Capacity 20 kg	1968	-ditto-
3	Jolt Squeeze and Pin lifting Moulding Machine	1	Germany type UGR0 Model 188557	Shockless anvil jolter oil lifting device	1979	-ditto-
4	Electric Oven	1	Germany Model 100 A	280 volts Ac, 1 phase 2 kW, 100 Litres, Temperature 40-250°C	1987	-ditto-
5	Smith Hearth	1	Germany	for Melting of lead and Aluminium	1988	-ditto-
6	Centrifugal Casting Machine	1	Austria No: 1768 37 type 48 1985	incoming line 380 V	1985	parts missing

5) Smith Shop

S.No.	Name of Equipment	Number /Qty	Make & Model	Short Specification	Year of Installation	Present Status
1	Power spring Hammer	1	Germany Type 0/54 H B F	To forge square and round upto 50 mm/2" Height of Stroke 225/335, mm 13" W. Hammer 20 kg, 190 R.P.M. A.C. 400/440 V	1955	Properly working
2	Grinding Machine	1	England TG 6D 80162	1/2 H.P. Motor	1968	-ditto-
3	Drill Machine Pillier Type	1	Pak	speed 485, 328, 214, 132 1/2 H.P. Chuck upto 1/2"	1988	-ditto-
4	Cut off Machine	1	Japan MCC-305 EX	stone size 12"	1992	-ditto-

6) Advance Machine Shop

S.No.	Name of Equipment	Number /Qty	Make & Model	Short Specification	Year of Installation	Present Status
1	Drill Machine Pillier Type	1	Germany Dr. G 0/4 Model B-16	R.P.M. 200, 400, 1000, 1500, 2000 TSB Morse 2 swing 95 mm	1955	Properly working
2	Drill Machine Pillier Type	1	Germany Model B 23/28-11 Type IR 75/4	R.P.M. 180, 270, 500, 800 Morse 2 swing 95 mm	1955	-ditto-
3	Grinding Machine for twist drill and cutters	1	England Type tefo T-234038-z	3 phase R.P.M. 1420	1955	-ditto-
4	Surface Grinding Machine	1	Japan NAGASE W-6	MBC 385MCT 350 MLI 710 mm Grinding wheel 305 x 50 x 127 mm Grinding speed 1700 R.P.M.	1984	Fault in hydraulic system
5	Grinding Machine	1	GRIEF GR 11 FD-20-2 No 70169	8" x 1 1/8" x 7/8"	1955	Properly working
6	Universal Grinding Machine	1	England 1314	MWD 8" ABC 24" WCH 4" GWS 8" X 3/4" X 1 3/4"	1955	-ditto-

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
7	Lathe Machine Heavy Duty	1	Germany M 111 200 x 750 type 9367/1952	BL 142 cm, HC 16.5 SB 3.5 cm	1955	-ditto-
8	Capstan Lathe Machine	1	England ward 2ds	LB 134 HC 16.5 SB 3.5 cm	1960	-ditto-
9	Lathe Machine Central Type	2	Germany Model LZ 280 N	BL 110 CH 12 SB 2.3 cm	1955	-ditto-
10	Lathe Machine	1	Pak PECO C1 250	BL 235 CH 28 SB 7.2 cm	1975	-ditto-
11	Milling Machine Simple Knee type	1	RUMAG Model REE-A U.RHE-A	HC 150 TL 300 VH 400 mm	1955	-ditto-
12	Universal Milling Machine	1	England ELLIOT Model U 2	HC 125 TL 482 Vh 280 mm	1955	-ditto-
13	Planer Machine	1	Germany E-1208	IS 36" TH 12" RCM 20"	1955	-ditto-
14	Shaper Machine	1	Germany Model H.20 Type KRD 314	LS 7" VM 8" CM 11"	1955	-ditto-
15	Shaper Machine Heavy Duty	1	Germany Type R 63/7 No 2239 Model SH 360	IS 14" VM 10" CM 16"	1955	-ditto-
16	Slotting Machine	1	Japan Model M Y 300-S	Max Stroke 310mm Stroke speed Range 18, 29, 47, 76 SPM Vertical Adjustment of Ram MAX 325 Diameter 550 mm, L.P. 460 C.P. 455 mm Feed 0.05-0.5mm/stroke Tool shank size 55mm	1984	-ditto-

7) Elementary Machine Shop

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Drill Machine	1	Germany type TB-5 1951	Chuck size 1 1/2"	1955	Properly working
2	Grinding Machine	1	U.S.A. Model B 77-3816 C	1/4 H.P. Motor	1968	-ditto-
3	Lathe Machine	10	England Model TDS/1/1PCS/L	Bed size 20"	1964	Poorly working
4	Lathe Machine	1	Germany D/L 361/1/52	Bed size 20 1/2"	1955	Properly working
5	Lathe Machine	1	Germany model UBR 9000	Bed size 19"	1955	-ditto-
6	Power Hacksaw Machine	1	Germany	Blade size 12"	1955	-ditto-
7	Power Hacksaw Machine	1	Pak Hs 160	Blade size 13"	1955	-ditto-
8	Shaper Machine	1	Germany H.185	Stroke 7"	1955	-ditto-
9	Shaper Machine	1	Germany H.20	Stroke 7"	1955	-ditto-

8) Pattern Making Shop

S.No.	Name of Equipment	Number /Q' ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Circular Saw	1	-	-	-	Properly working
2	Band Saw	2	-	-	-	-ditto-
3	Drill Machine	1	-	-	-	-ditto-
4	Grinding Machine	1	-	-	-	-ditto-
5	Grinding Machine	1	-	-	-	-ditto-
6	Lathe for wood turnings	2	Germany K A 1 Type EHD-F s	H C 300 B I 200 L B 2500 D B C to C 1800 mm	1955	-ditto-
7	Lathe Machine	1	Pak	B S 22"	1964	-ditto-
8	Pattern Miller	1	England Model WX	S.N: WX 375 Test No 67816 phase 3 cycle 50; I.S. 35" x 35"	1960	-ditto-

9) Electric Shop

S.No.	Name of Equipment	Number /Q'ty	Make & Model	Short Specification	Year of Installation	Present Status
1	Armature winding Machine	1	England Type 3	Quick way heavy duty single phase volts 220/240 cycles 50	1955	Properly working
2	Drill Machine Piller Type	1	Pak Type ss 200	Single phase; 1 H.P. Motor chuck 1/2"	1987	-ditto-
3	Bench Grinding Machine	1	U.S.A. Model B 77-3816	Single phase 1/4 H.P. RPM 3450	1968	-ditto-

APPENDIX-7 INDUSTRIES IN N-W.F.P.

1. Number of Companies by Type

TYPE	DISTRICT/AGENCY	Peshawar	Abbotabad	Bannu	Charsada	D. I. Khan	Dir	Kohat	Karak	Mardan	Mansehra	Swabi	Swat	Bajaur	Khaiber	Malakand	Wajiristan	Chitral	Kurram	TOTAL
A. Existing Companies		658	157	141	45	164	14	74	13	162	26	84	314	0	93	22	9	27	0	2,003
Food, Beverages & Tobacco		81	36	31	19	51	10	30	9	29	13	21	20	0	1	15	9	4	0	379
Textile, Wearing Apparel & Leather Products		27	4	2	1	2	0	3	0	2	0	0	207	0	89	1	0	1	0	339
Wood & Wood Products		23	6	0	0	5	3	1	0	2	2	0	1	0	0	0	0	2	0	45
Paper & Paper Products		51	16	10	1	10	0	5	2	14	4	0	15	0	0	0	0	0	0	128
Chemicals, Petroleum, Rubber & Plastic Products		32	14	3	1	7	0	2	1	10	0	1	15	0	0	1	0	0	0	87
Mineral Products		41	10	0	2	3	0	4	0	14	0	8	2	0	1	1	0	2	0	88
Metal & Metal Products		41	11	2	0	6	0	1	0	11	1	0	0	0	1	0	0	0	0	74
Other Manufacturing Industries		12	0	3	0	0	0	4	1	2	1	0	0	0	0	0	0	0	0	23
Marble Chips		192	0	0	0	0	0	0	0	2	0	15	5	0	1	0	0	0	0	215
Stone Crushers		27	34	0	1	8	1	10	0	1	0	3	2	0	0	0	0	0	0	87
Brick Kilns		110	19	83	18	65	0	5	0	66	0	36	21	0	0	4	0	0	0	427
Hotels		21	7	7	2	7	0	9	0	9	5	0	26	0	0	0	0	18	0	111
B. Industrial Units/Centres Set up by S.I.D.B.		10	2	3	1	2	3	3	1	2	5	1	3	0	0	2	0	4	1	43
C. Industrial Units Regist'd under Shops & Est. Ordinance, 1969		200	89	72	66	48	0	74	0	135	26	0	135	0	0	0	0	19	0	864
Food & Beverages		55	27	7	18	13	0	12	0	20	7	0	20	0	0	0	0	0	0	179
Textile, Wearing Apparel & Leather Products		0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3
Wood & Wood Products		78	33	33	46	11	0	23	0	43	11	0	44	0	0	0	0	19	0	341
Metal & Metal Products		67	29	31	2	22	0	39	0	71	8	0	71	0	0	0	0	0	0	340
Rubber & Plastic Products		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
D. Industrial Units under Construction		36	18	1	4	15	0	3	1	18	1	22	11	1	0	0	0	0	0	131
TOTAL		904	266	217	116	229	17	154	15	317	58	107	463	1	93	24	9	50	1	3,041

2. Employment of Companies by Type

(Unit:Persons)

Source: Industrial Investment in N.W.F.P., 1989

TYPE	DISTRICT/AGENCY	Peshawar	Abbotabad	Bannu	Charsada	D. I. Khan	Dir	Kohat	Karak	Mardan	Mansehra	Swabi	Swat	Bajaur	Khaiber	Malakand	Wajiristan	Chitral	Kurram	TOTAL
A. Existing Companies		20,366	11,950	2,838	3,967	1,610	694	4,291	83	5,327	376	3,776	3,427	0	2,532	592	69	118	0	62,016
Food, Beverages & Tobacco		4,383	712	1,314	2,470	491	65	305	73	3,534	257	3,124	223	0	250	550	69	9	0	17,829
Textile, Wearing Apparel & Leather Products		3,396	1,806	1,016	15	450	0	2,606	0	948	0	0	2,497	0	2,105	4	0	9	0	14,852
Wood & Wood Products		381	156	0	0	44	626	6	0	18	32	0	30	0	0	0	0	11	0	1,304
Paper & Paper Products		2,128	82	33	1,200	26	0	26	4	78	12	0	29	0	0	0	0	0	0	3,618
Chemicals, Petroleum, Rubber & Plastic Products		1,405	1,454	12	98	17	0	6	4	70	0	300	91	0	0	4	0	0	0	3,461
Mineral Products		1,968	3,002	0	31	6	0	1,049	0	63	0	53	170	0	159	20	0	6	0	6,527
Metal & Metal Products		2,003	4,265	36	0	133	0	104	0	164	24	0	0	0	13	0	0	0	0	6,742
Other Manufacturing Industries		515	0	14	0	0	0	32	2	24	4	0	0	0	0	0	0	0	0	591
Marble Chips		1,411	0	0	0	0	0	0	0	11	0	84	34	0	5	0	0	0	0	1,545
Stone Crushers		292	146	0	4	31	3	37	0	5	0	17	9	0	0	0	0	0	0	544
Brick Kilns		1,810	262	395	141	353	0	69	0	373	0	198	71	0	0	14	0	0	0	3,686
Hotels		674	65	18	8	59	0	51	0	39	47	0	273	0	0	0	0	83	0	1,317
B. Industrial Units/Centres Set up by S.I.D.B.		346	9	55	5	24	18	32	10	54	28	5	25	0	0	40	0	42	5	698
C. Industrial Units Regist'd under Shops & Est. Ordinance, 1969		946	354	162	260	85	0	223	0	409	91	0	383	0	0	0	0	81	0	2,994
Food & Beverages		252	103	14	61	25	0	45	0	52	25	0	90	0	0	0	0	0	0	667
Textile, Wearing Apparel & Leather Products		0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4
Wood & Wood Products		323	121	87	184	19	0	74	0	119	40	0	119	0	0	0	0	81	0	1,167
Metal & Metal Products		371	130	58	15	39	0	104	0	236	26	0	174	0	0	0	0	0	0	1,153
Rubber & Plastic Products		0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
TOTAL		21,658	12,313	3,055	4,232	1,719	712	4,546	93	5,790	495	3,781	3,835	0	2,532	632	69	241	5	65,708

3. Companies Established during Dec. 1989 - Jul. 1992

Source: Government of North-West Frontier Province

DISTRICT/AGENCY	Peshawar	Abbotabad	Bannu	Charsada	D. I. Khan	Dir	Kohat	Karak	Mardan	Mansehra	Swabi	Swat	Bajaur	Khaiber	Malakand	Wajiristan	Chitral	Kurram	TOTAL
Number of Companies	45	38	1	4	8	1	3	0	15	3	119	25	0	1	0	0	0	0	263
Employment	1,547	1,854	8	96	825	8	54	0	440	70	7,802	358	0	5	0	0	0	0	13,067

APPENDIX-8 OUTLINE OF PAKISTAN

1. Physical Geography.

The Islamic Republic of Pakistan lies in latitudes from 23° to 37° N. and in longitudes from 61° to 76° E. and the total area is 796,095 km² (the North-West Frontier Province: 74,521 km²). The climate in major cities of Pakistan in 1990 is shown in the following table.

Climate

	Height above sea level (m)	Temperature (°C)		Rainfall a year (mm)
		Mean of maximum	Mean of minimum	
<u>Islamabad</u>	511	28.3	15.1	1,530
<u>Punjab</u>				
Lahore	214	30.6	18.4	955
<u>Sind</u>				
Karachi	22	31.8	19.9	137
<u>NWFP</u>				
Peshawar	359	29.9	16.5	454
<u>Baluchistan</u>				
Quetta	1,589	25.1	8.9	313

Source: Pakistan Statistical Yearbook, 1991

Geographically, Pakistan comprises four regions.

- 1) The Himalaya offshoots in the northern and northwestern parts of Pakistan (the North-West Frontier Province, the Northern Areas).
- 2) The Plateau of Baluchistan (Baluchistan).
- 3) The Potwar Plateau and the Salt Range (the northern part of Punjab).
- 4) The Indus plains (Punjab and Sind).

2. Population.

According to the 1981 Census, Pakistan had a population of 84.25 million. In January 1992 the population was estimated at 117.32 million. The North-West Frontier Province has about 13 % of the population.

3. Languages and Religions.

The official languages in Pakistan are Urdu and English. The regional languages are Punjabi, Sindhi, Pashto, Balochi etc. Muslims constitute 97 % of the total population, Christians 2 % and others 1 %.

4. Economy.

The sectoral growth rates in recent years are shown in the following table.

	Sectoral Growth Rates		(% per annum)	
	1989-90 Actual	1990-91 Revised	1991-92 Target	1991-92 Estimated
1. Commodity Sector	4.7	5.9	6.9	6.8
Agriculture	3.0	5.1	4.3	6.4
Manufacturing	5.7	6.3	10.3	7.7
(Large Scale)	(4.7)	(5.5)	(11.0)	(7.4)
(Small Scale)	(8.4)	(8.4)	(8.4)	(8.4)
Mining & Quarrying	9.6	10.8	9.0	4.4
Construction	3.1	5.7	6.5	5.9

Electricity and Gas Distribution	14.6	10.4	9.5	7.1
2. Service Sector	4.6	5.2	6.5	5.9
Wholesale & Retail Trade	3.5	5.6	8.2	7.6
Transport, Storage & Communication	6.5	5.5	6.5	6.9
All Others	4.7	4.9	4.7	4.2
3. GDP (FC)	4.7	5.6	6.7	6.4
4. GNP (FC)	5.0	4.2	-	5.5

Source: Economic Survey 1991-92, Government of Pakistan, Finance Division.

	Sectoral Growth Rates (% per annum)			
	1989-90	1990-91	1991-92	
	Actual	Revised	Target	Estimated
1. Commodity Sector 4.7	5.9	6.9	6.8	
Agriculture	3.0	5.1	4.3	6.4
Manufacturing	5.7	6.3	10.3	7.7
(Large Scale)	(4.7)	(5.5)	(11.0)	(7.4)
(Small Scale)	(8.4)	(8.4)	(8.4)	(8.4)
Mining & Quarrying	9.6	10.8	9.0	4.4
Construction	3.1	5.7	6.5	5.9
Electricity and Gas Distribution	14.6	10.4	9.5	7.1

2. Service Sector	4.6	5.2	6.5	5.9
Wholesale & Retail Trade	3.5	5.6	8.2	7.6
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All Others	4.7	4.9	4.7	4.2
3. GDP (FC)	4.7	5.6	6.7	6.4
4. GNP (FC)	5.0	4.2	-	5.5

Source: Economic Survey 1991-92, Government of Pakistan, Finance Division.

APPENDIX-9 FLOOR PLAN OF LABORATORIES

Floor plans of laboratories that are proposed to be equipped with planned equipment are shown on the following pages in the order as follows (words in the parentheses indicate code names assigned to each laboratory);

- Fig.- 1 Structural and Materials Testing Lab.(CSM)
- Fig.- 2 Soil Mechanics and Highway Engineering Lab.(CSH), Concrete Lab.(CCL)
- Fig.- 3 Hydraulics and Fluid Mechanics Lab.(CHF)
- Fig.- 4 Public Health Engineering Lab.(CPH), Survey Lab.(CSL), Fluid Mechanics Lab.(CHF)
- Fig.- 5 Basic Electronics Lab.(EBL), Digital Electronics Lab.(EDE), Power Electronics Lab.(EPE), Communication Lab.(ECL), Power System Lab.(EPS)
- Fig.- 6 Theory of Machines Lab.(MTM), Metallurgy Lab.(MML)
- Fig.- 7 Automobile Engineering Lab.(MAE), Heat Transfer Lab.(MHT), Fuel Engineering Lab.(MFL)
- Fig.- 8 Production Engineering Lab.(MPE), Machine Drawing and Design Lab.(MMD), Power Plant Lab.(MPP)
- Fig.- 9 Agricultural Machinery and Farm Power Lab.(AMF)
- Fig.-10 Soil and Water Engineering Lab.(ASW)
- Fig.-11 Mineral Processing Lab.(NMP), Rock Mechanics Lab.(NRM), Drilling Technology Lab.(NDT), Mine Surveying Lab.(NSV)
- Fig.-12 Mine Ventilation Lab.(NMV), Mine Safety Lab.(NMS), Geology Lab.(NGL)
- Fig.-13 Physics Lab.(BPL)
- Fig.-14 General Chemistry Lab.(BGC), Analytical Chemistry Lab.(BAC), Special Lab.(BSL)
- Fig.-15 Computer Rooms(BCC)
- Fig.-16 Workshop(UWL)

Structural and Materials Testing Laboratory

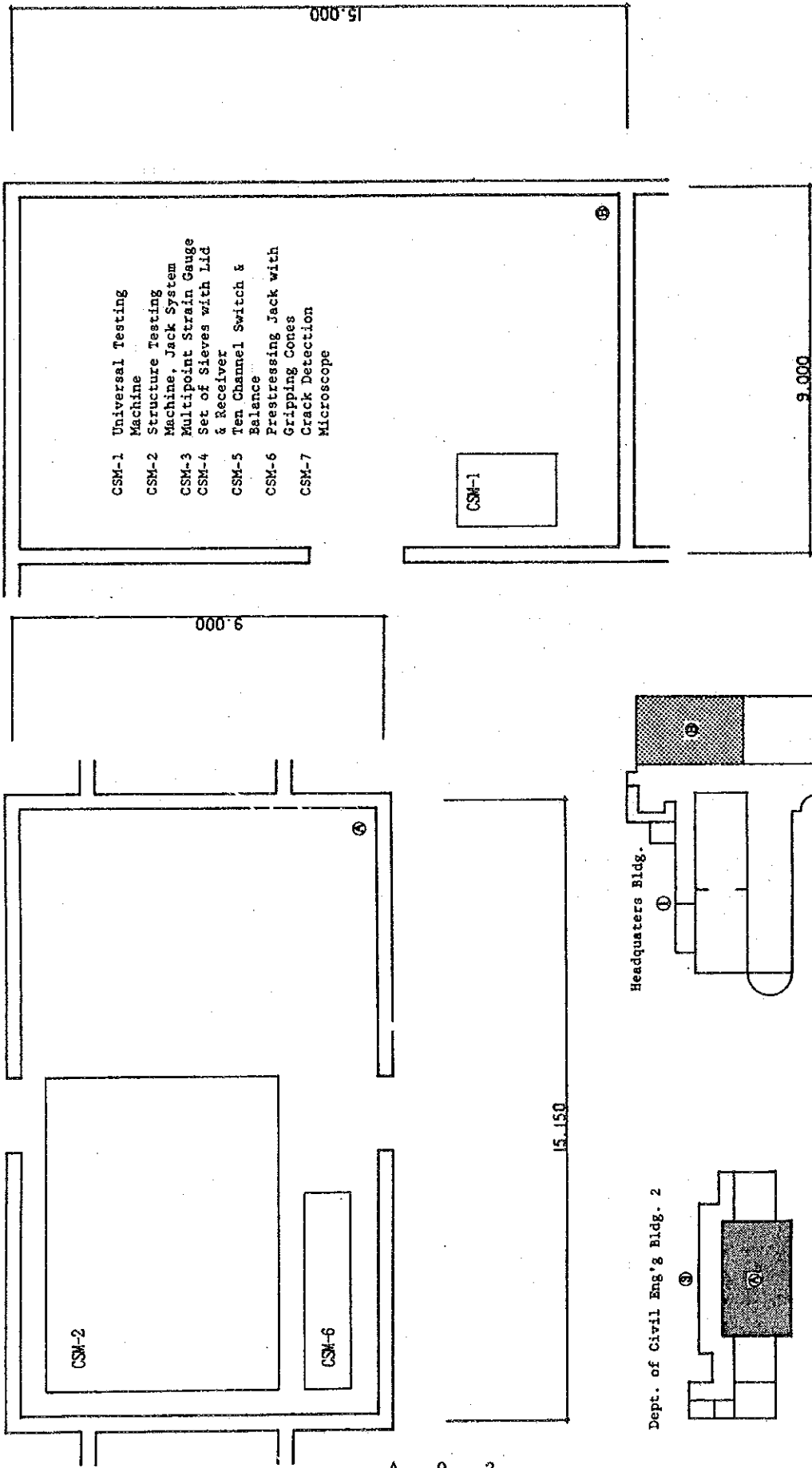
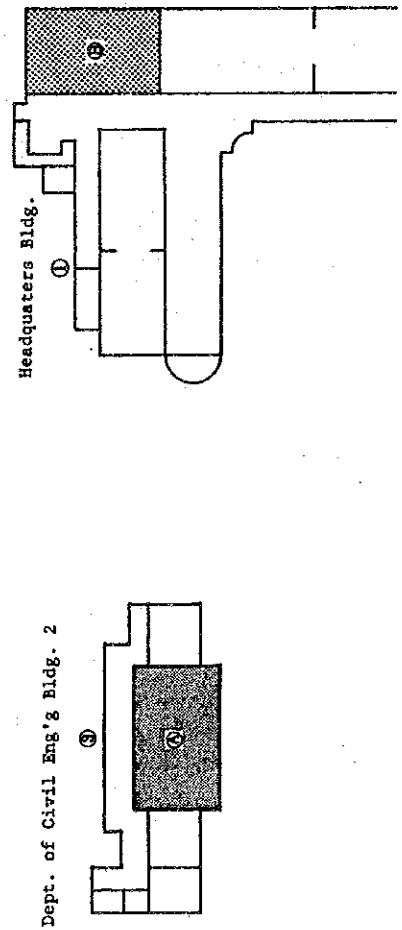


Fig. - 1



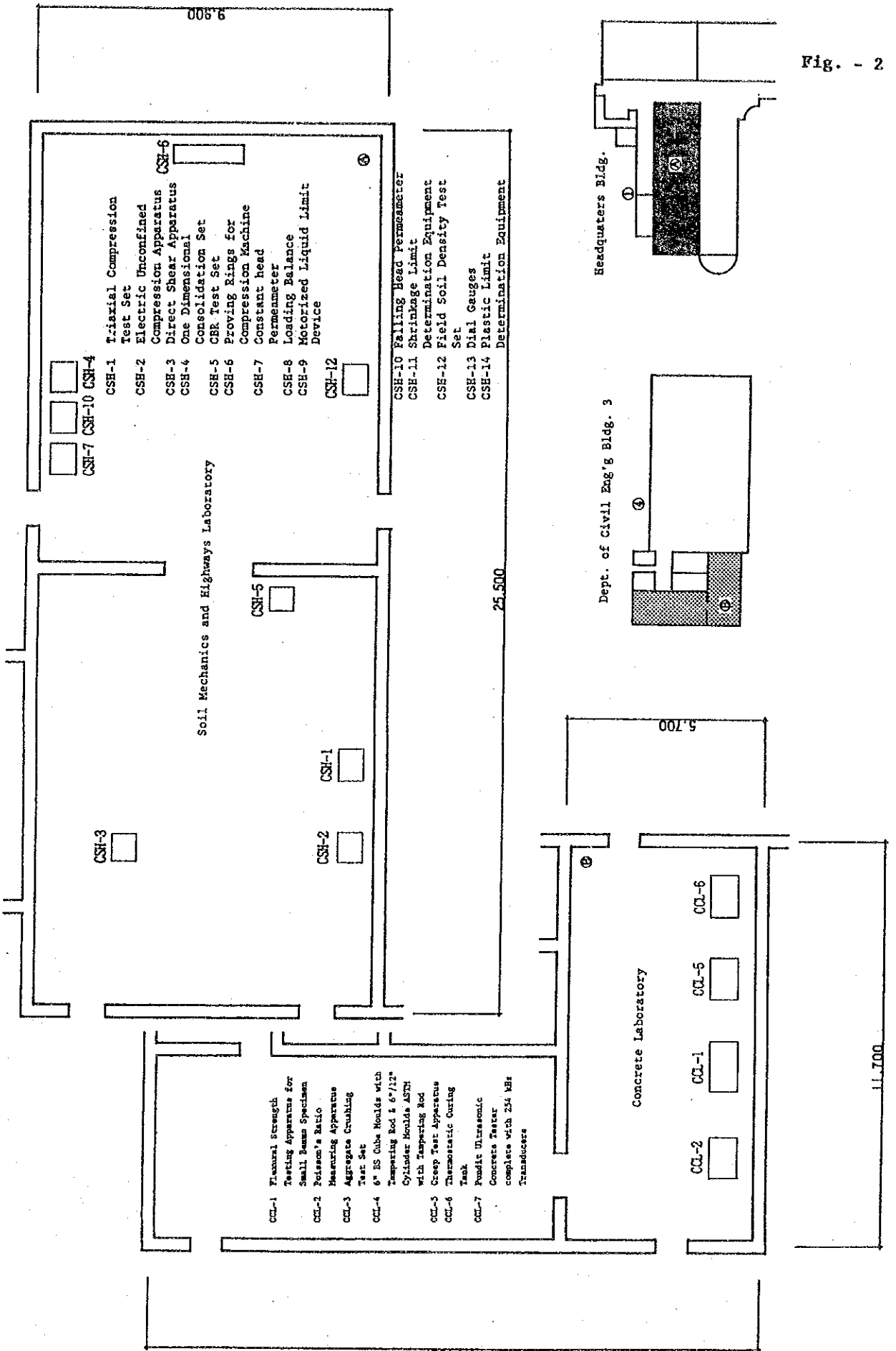


Fig. - 2

Fig. - 3

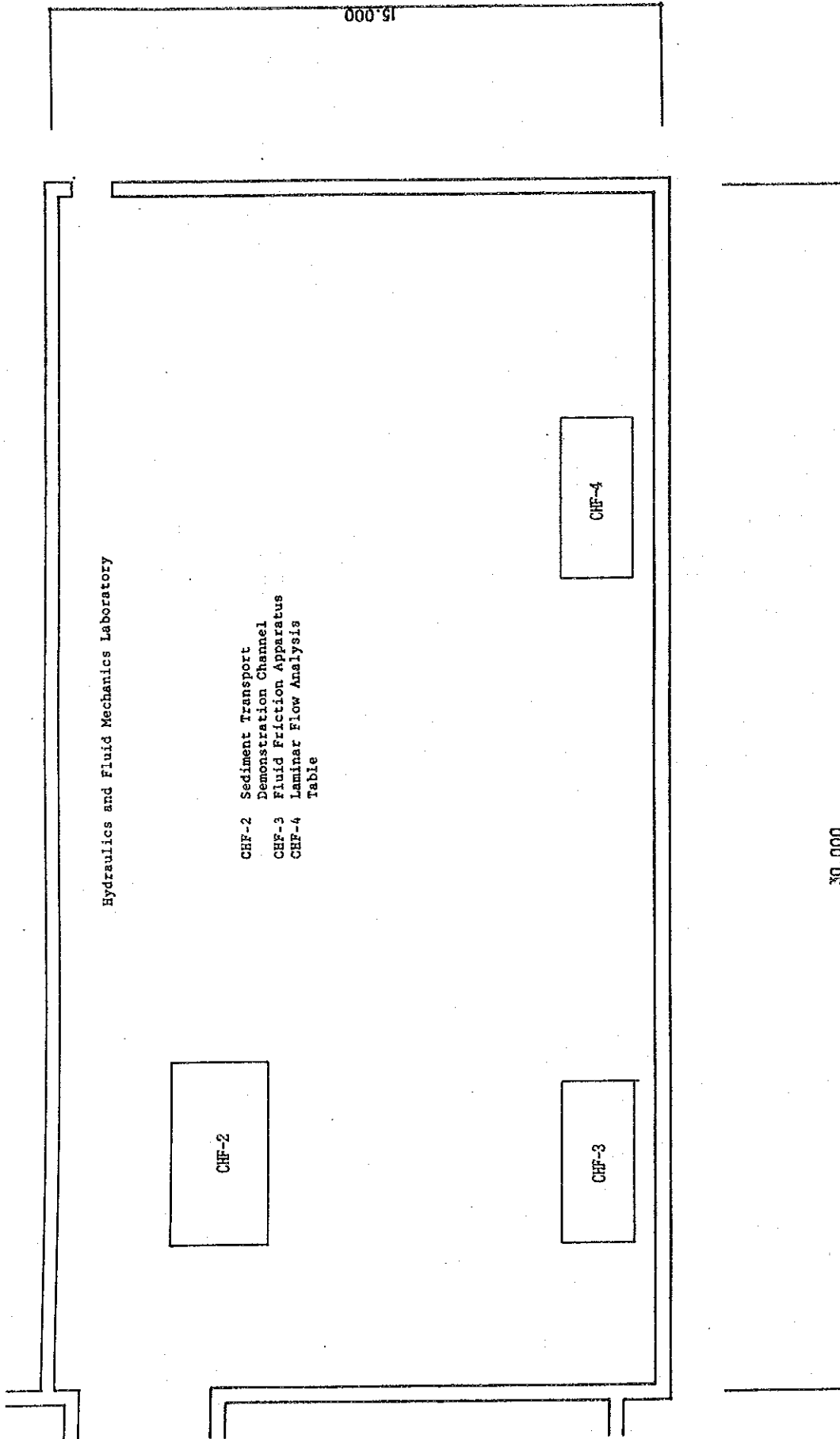
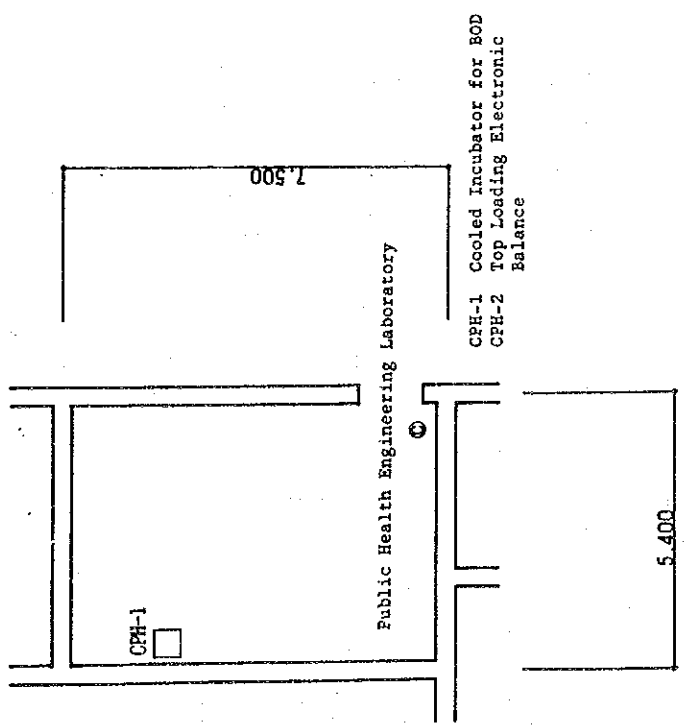
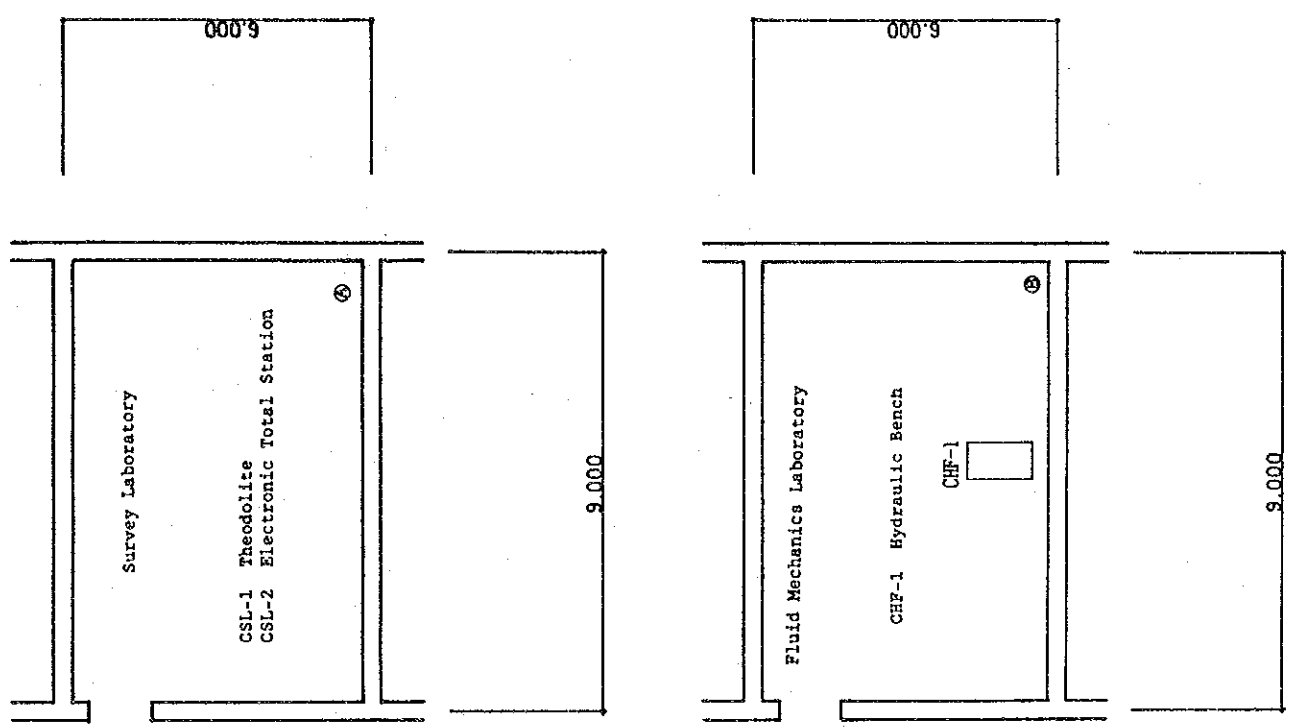


Fig. - 4



Dept. of Civil Eng'g Bldg. 1

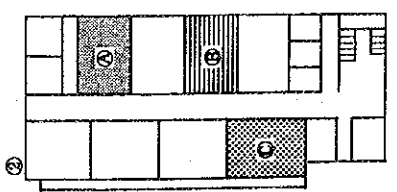
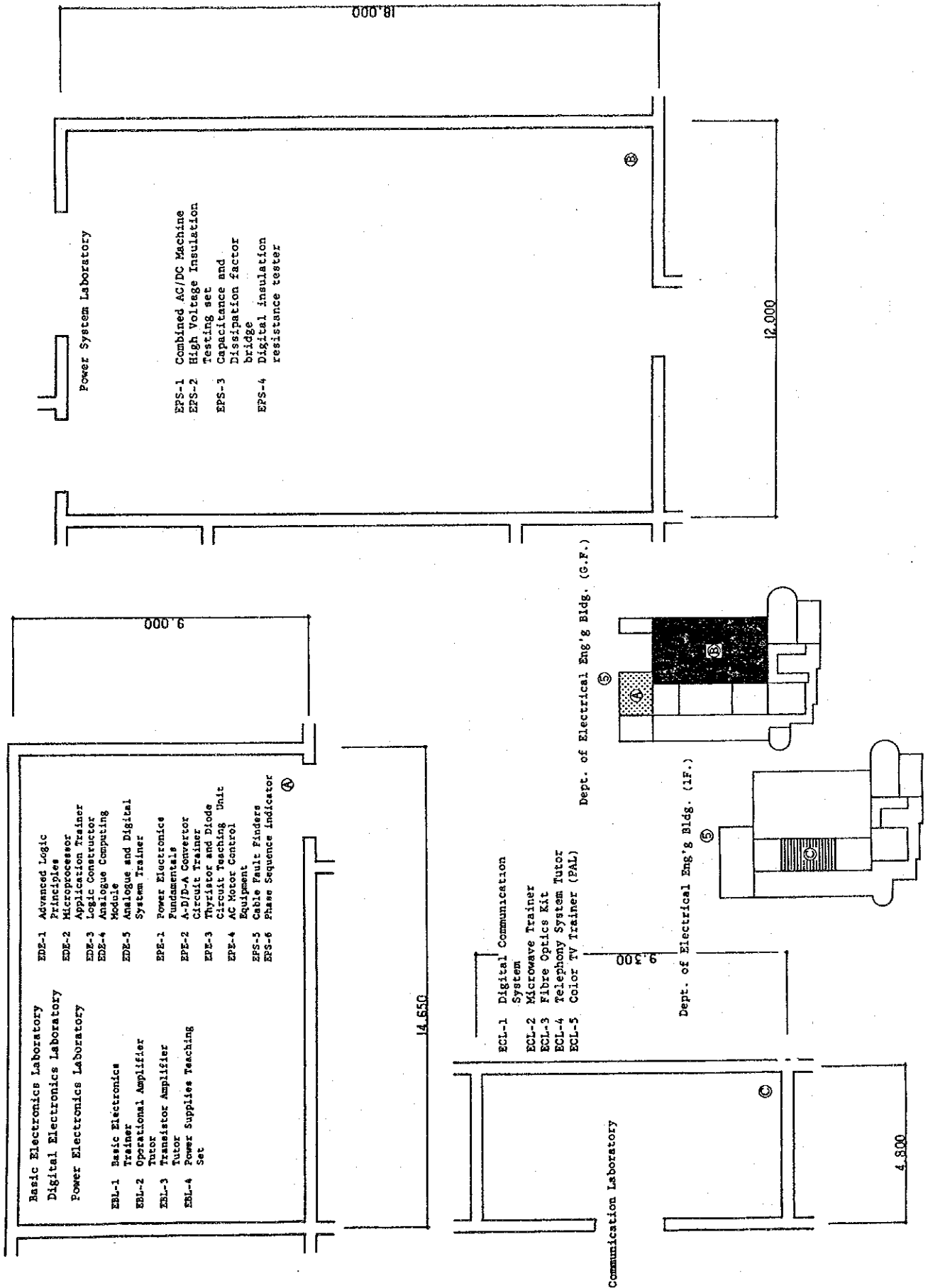
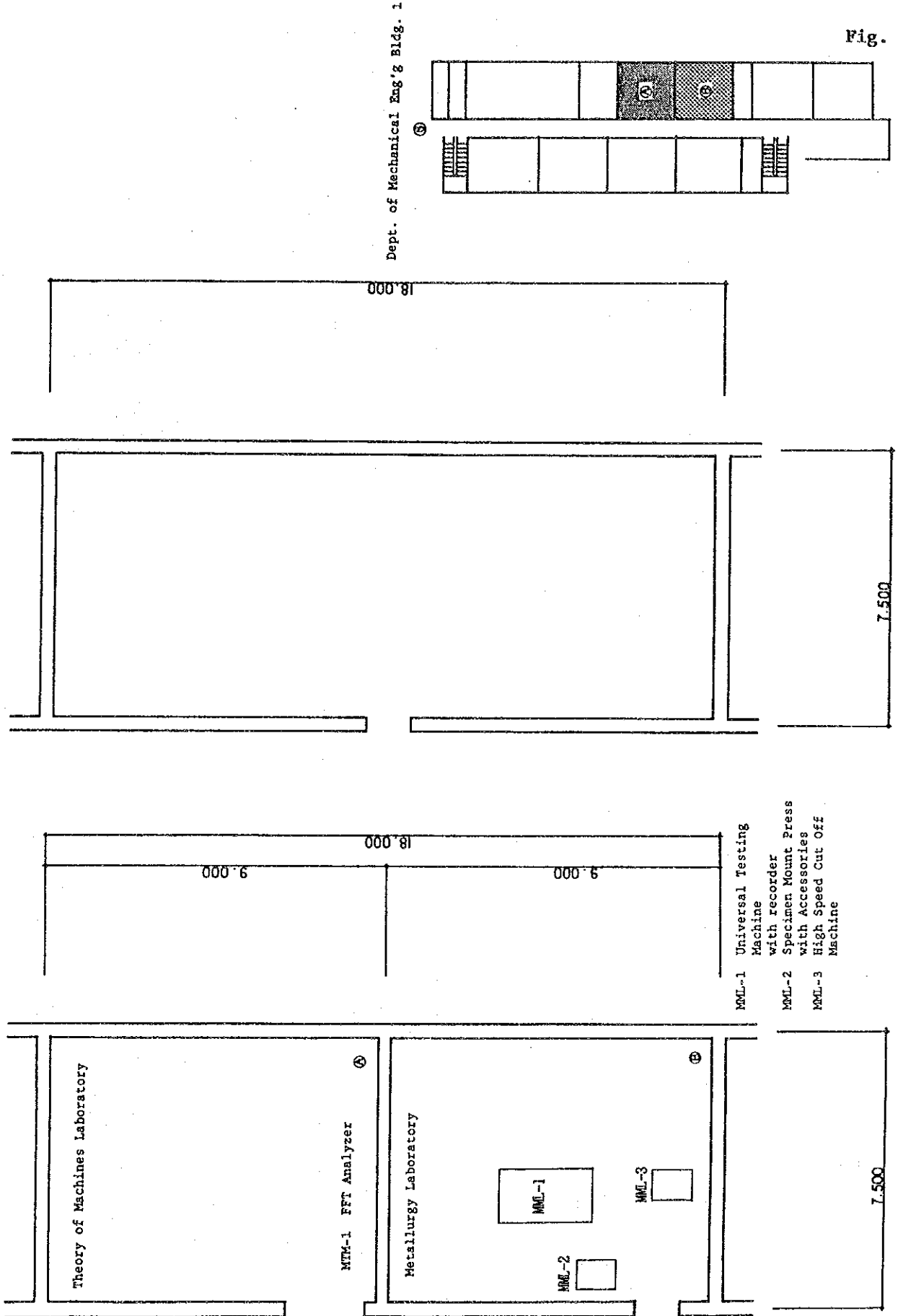


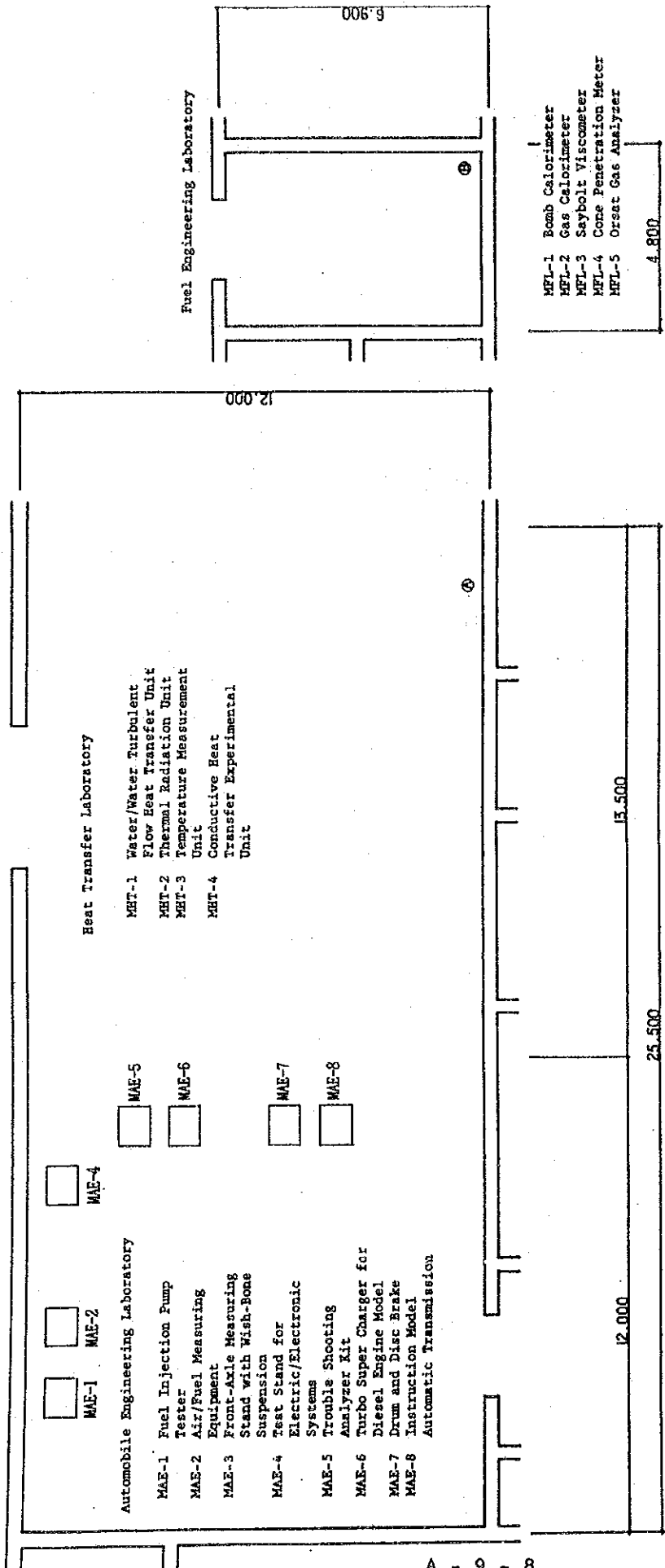
Fig. - 5





Dept. of Mechanical Eng'g Bldg. 1

Fig. - 6



Dept. of Mechanical Eng'g Bldg. 2

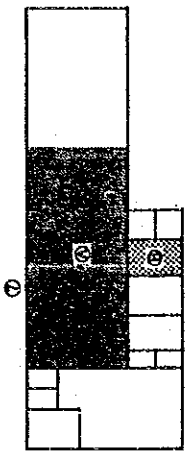


Fig. - 7

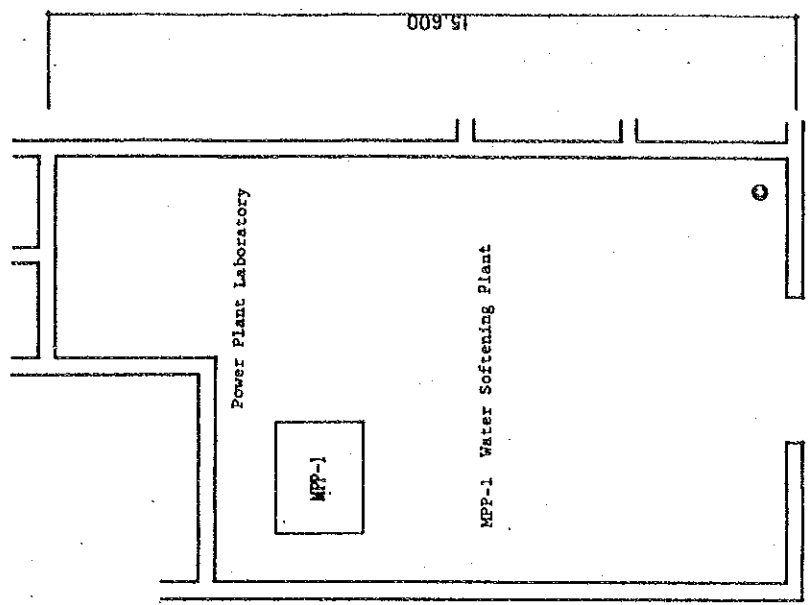
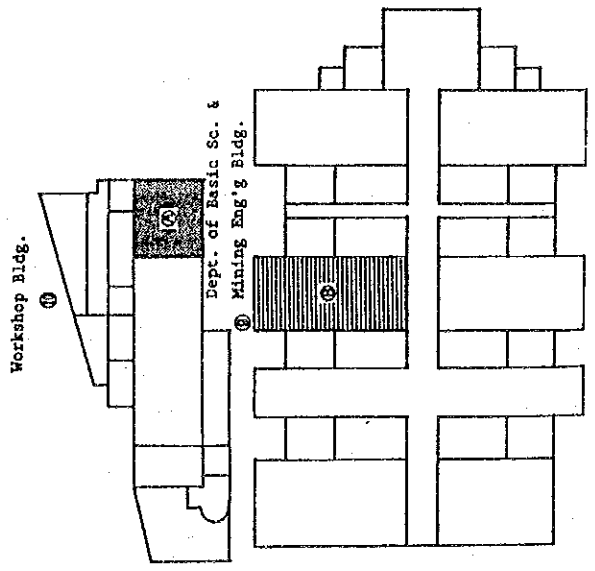
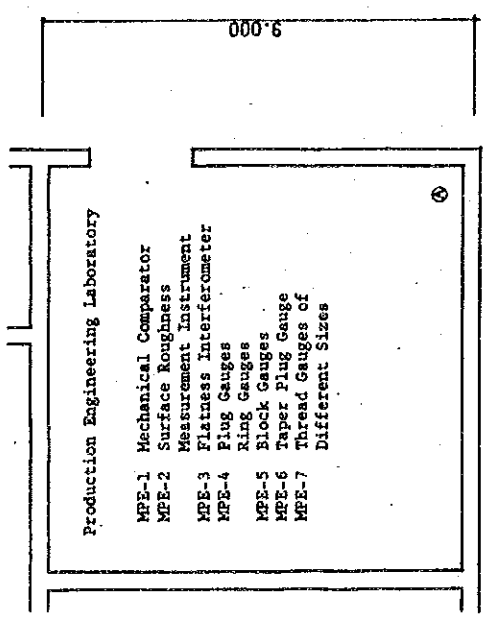
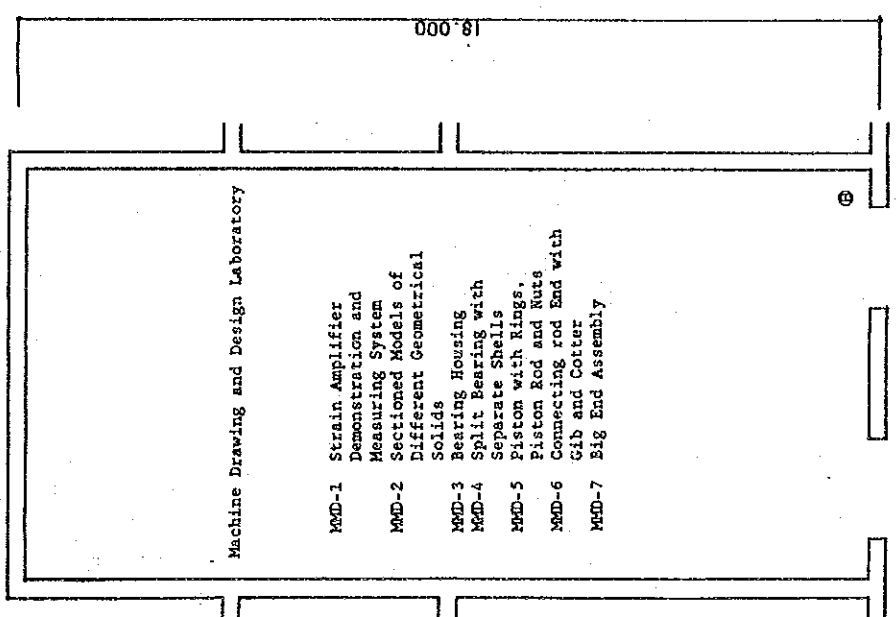
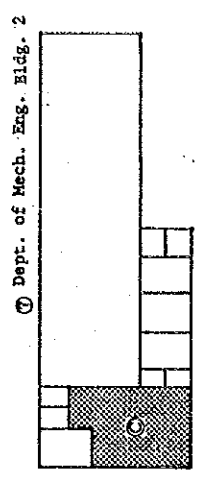
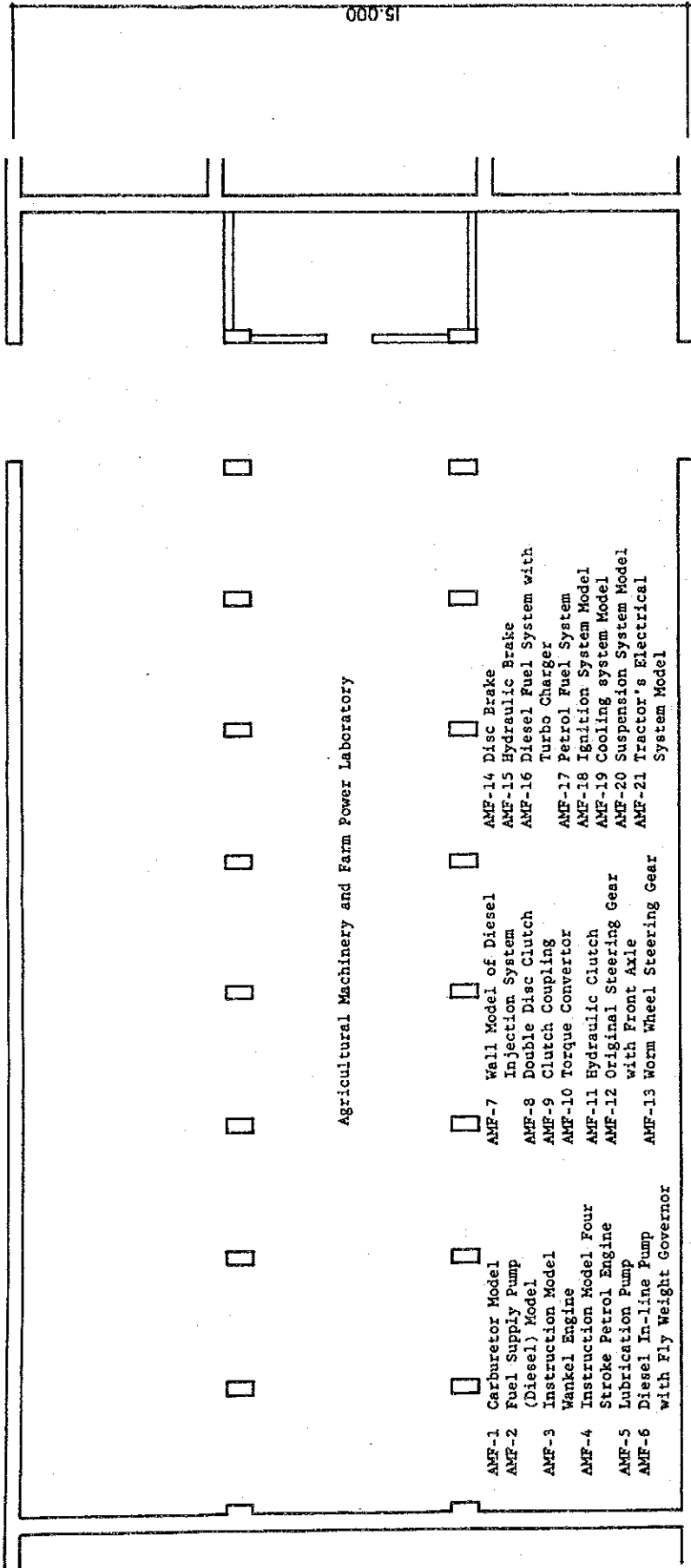
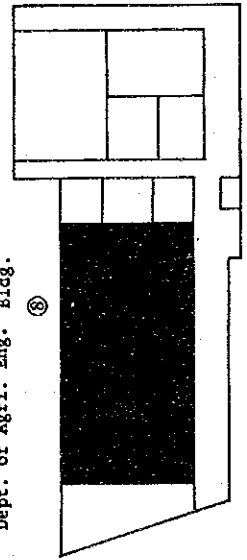


Fig. - 8



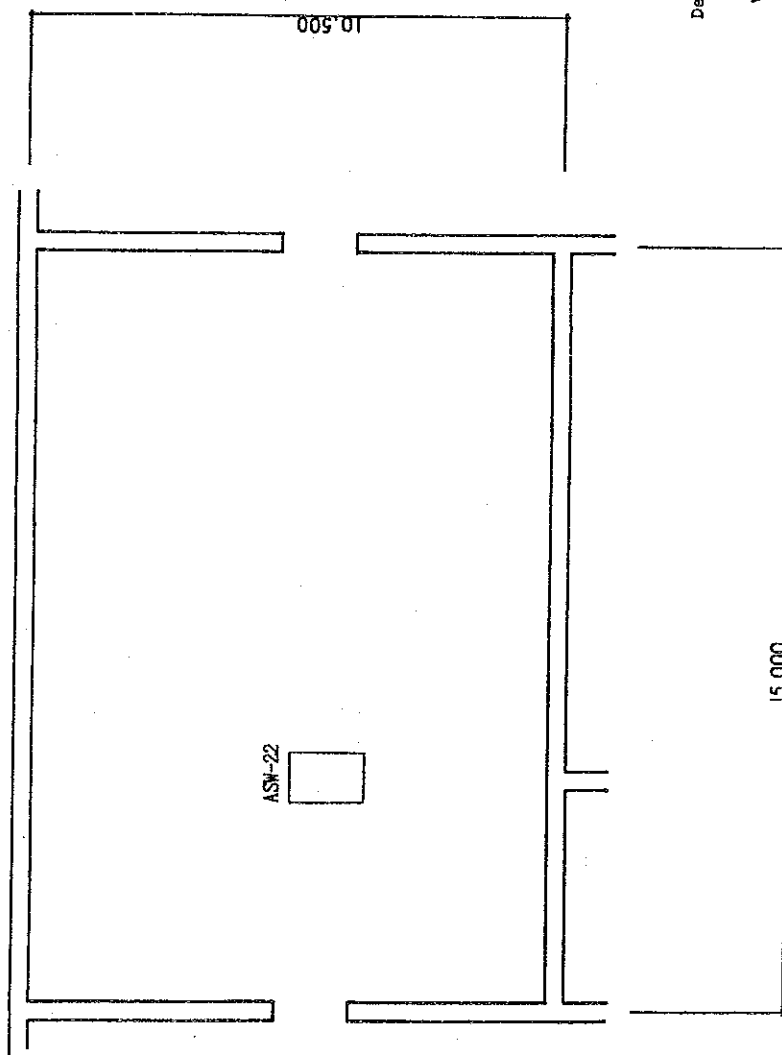


Dept. of Agri. Eng. Bldg.



- ASW-1 Dial Type Soil Moisture Gauge, Tensiometer
- ASW-2 Quick Draw Soil Moisture Probe
- ASW-3 Soil Moisture Meter & Resistance Blocks
- ASW-4 Soil Anger Set
- ASW-5 Sieve Analysis Set
- ASW-6 Portable Digital pH Meter
- ASW-7 Electronic Top Loading Balance
- ASW-8 Unit Type Constant Head Permeameter
- ASW-9 Falling Head Permeameter
- ASW-10 Soil Testing Kit
- ASW-11 Water Quality Testing Kit
- ASW-12 Pressure Membrane Apparatus
- ASW-13 Portable Dial Gauge
- ASW-14 Soil Thermometer
- ASW-15 Salinity Bridge
- ASW-15 Measuring Instrument
- ASW-15 Conductivity/Temperature Meter
- ASW-16 Multi-Purpose Water Analysis Meter
- ASW-17 Water Level Recorder
- ASW-18 Motorized Liquid Limit Device
- ASW-19 Chart Recording Rain Gauge
- ASW-20 Digital Thermo/Anemometer
- ASW-21 Irrigation Displays
- ASW-22 Ground Water Flow Unit

Soil and Water Engineering Laboratory



Dept. of Agri. Eng'g Bldg.

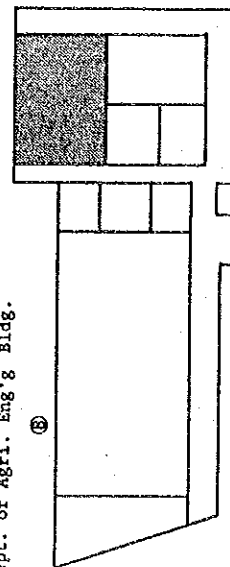


Fig. -11

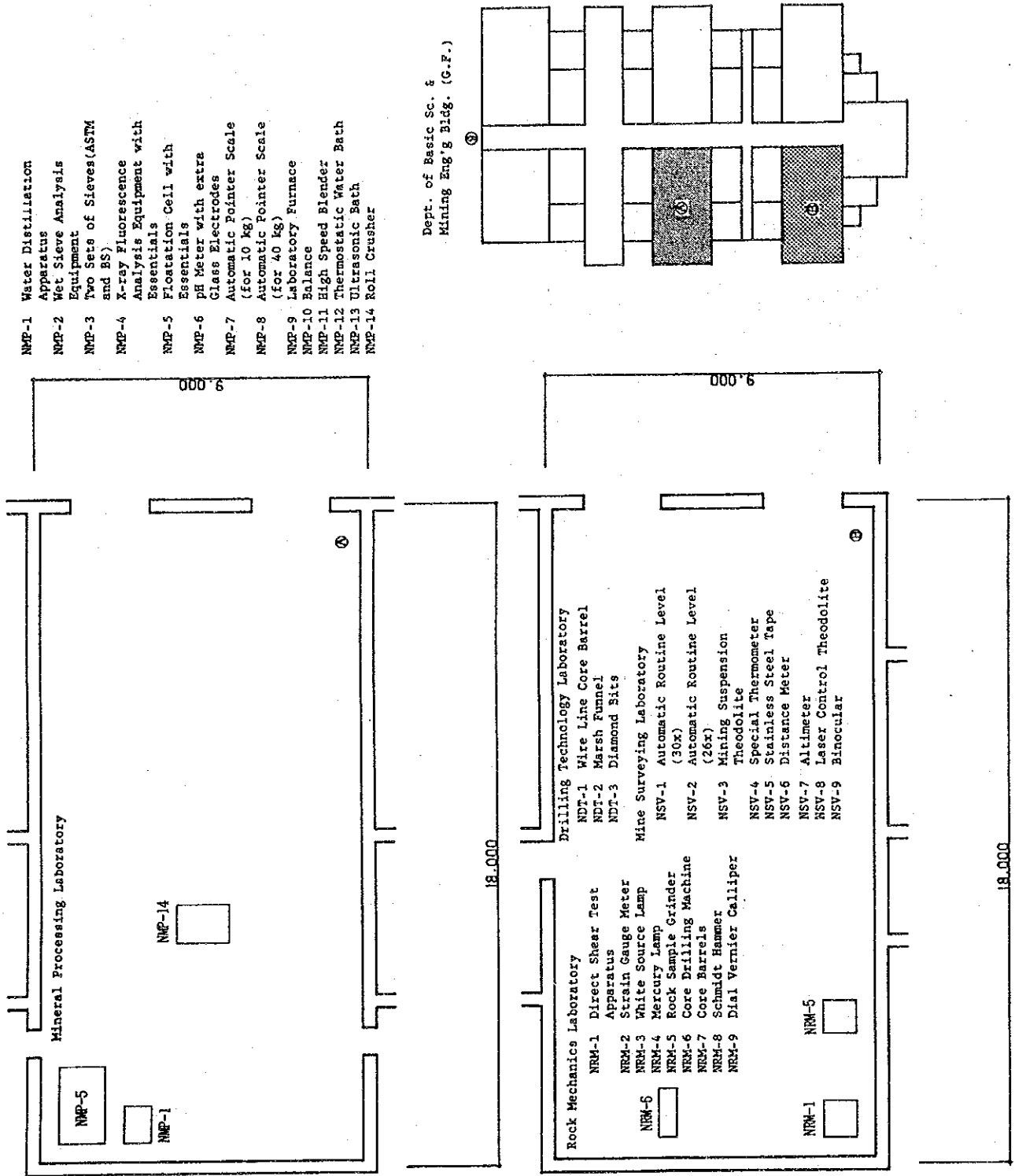
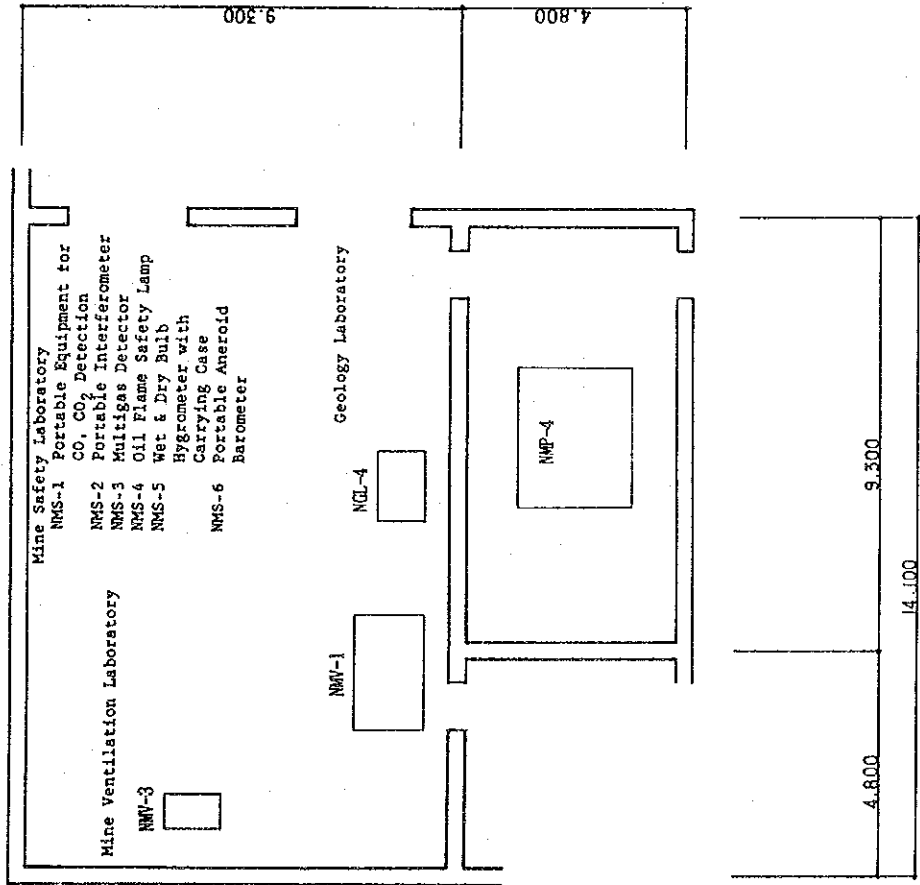
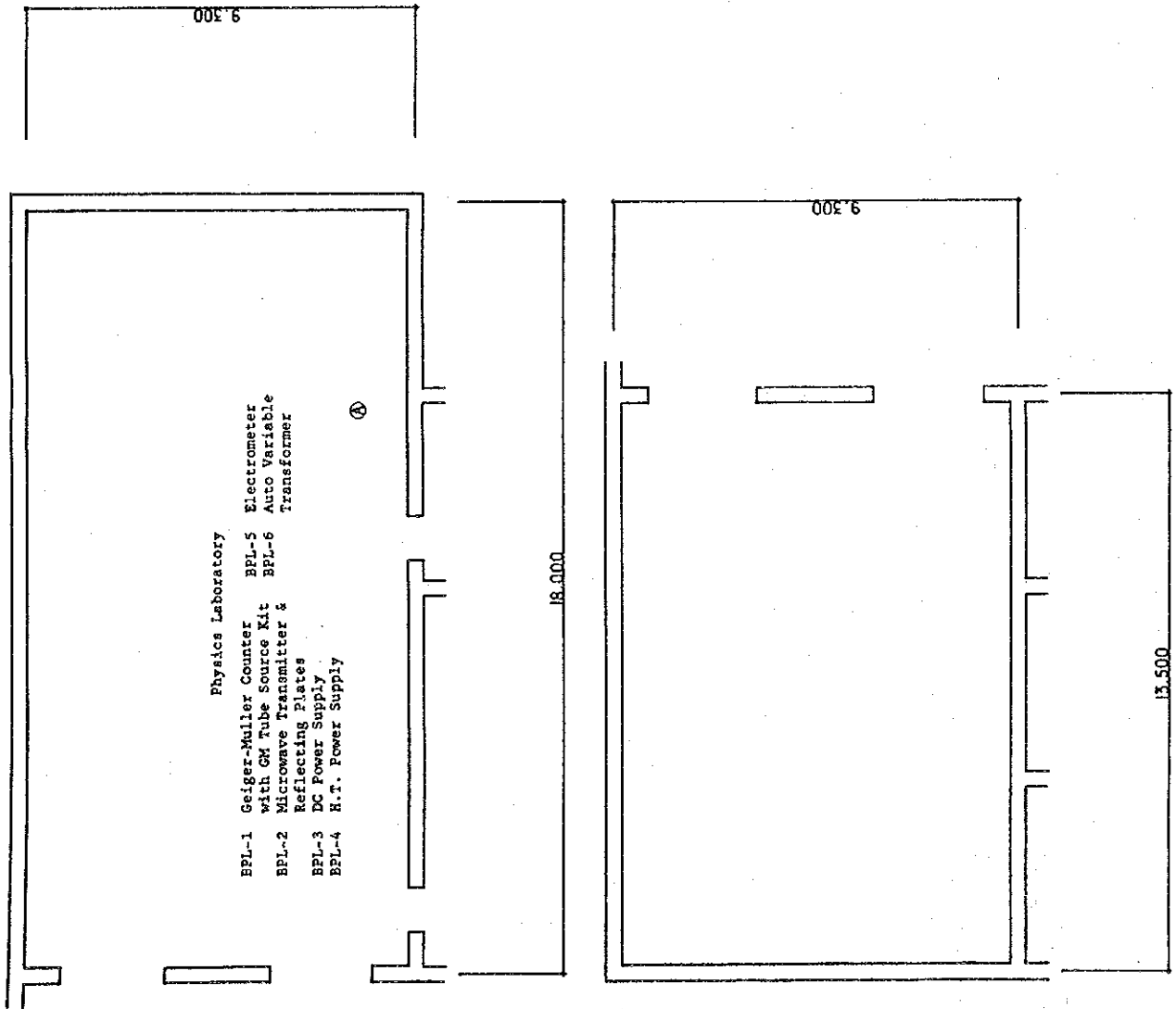


Fig. -12

- NGL-1 Polarizing Microscope
- NGL-2 Crystal and Atomic Structure Model Set of Six Models
- NGL-3 Mountain Models
- NGL-4 Geological Thin Section Preparation Apparatus
- NGL-5 Geological Hammer

- NMV-1 Wind Tunnel with Fan Self Contained
- NMV-2 Breathing Apparatus
- NMV-3 Pipe Friction/ Fluid Friction Apparatus
- NMV-4 Digital Luxmeter
- NMV-5 Geiger Counter





Dept. of Basic Sc. & Mining Eng'g Bldg. (1F.)

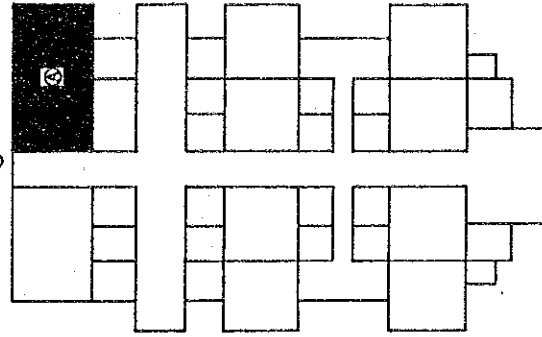


Fig. -13

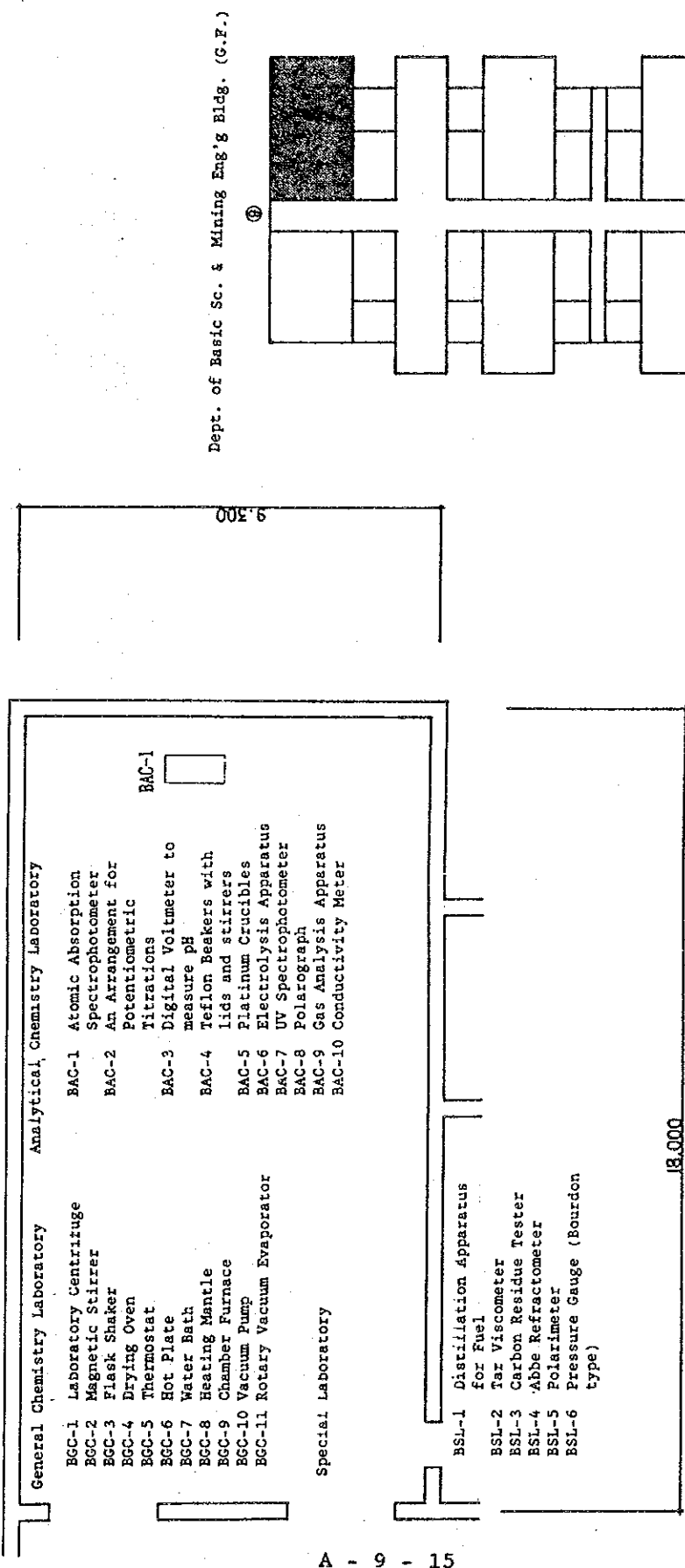
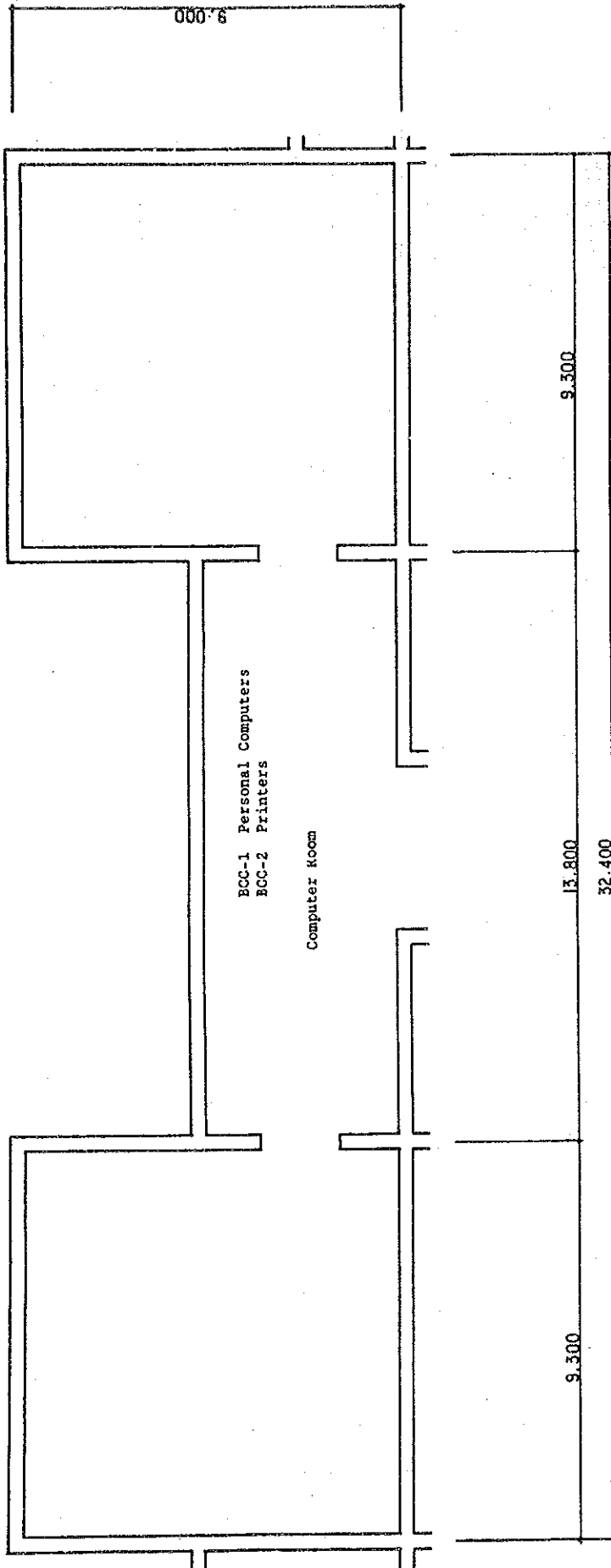


Fig. -14

Fig. -15



Dept. of Basic Sc. & Mining Eng'g Bldg. (1F.)

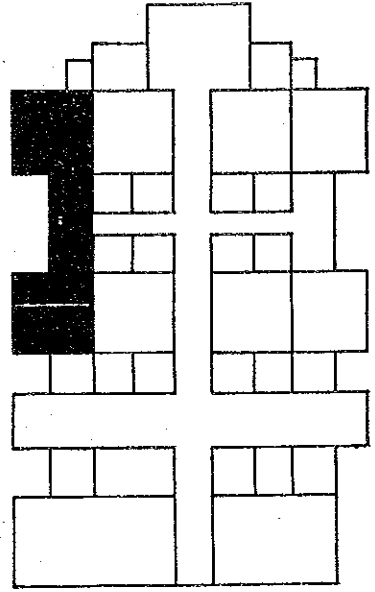
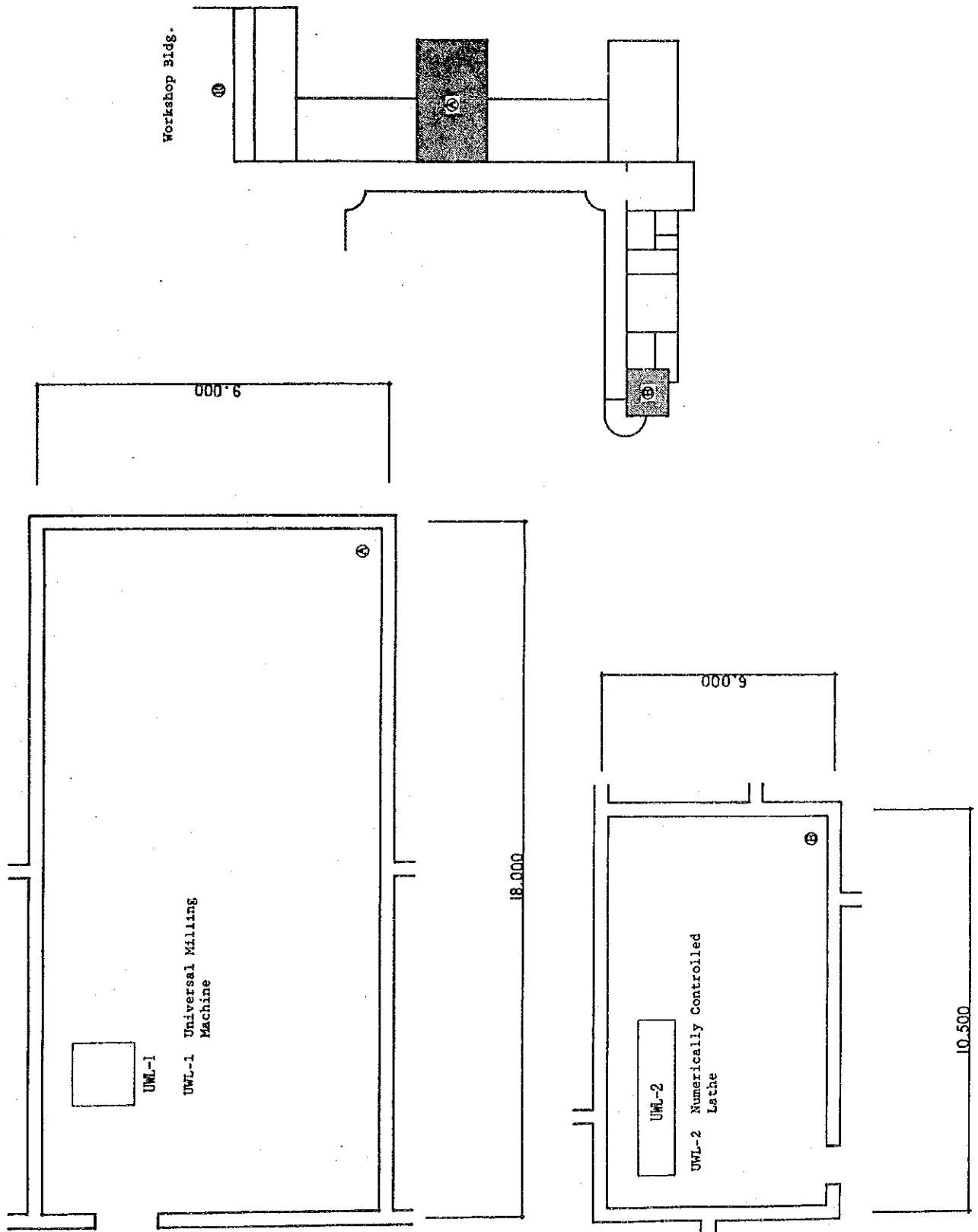


Fig. -16



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