

3. PRELIMINARY DESIGN

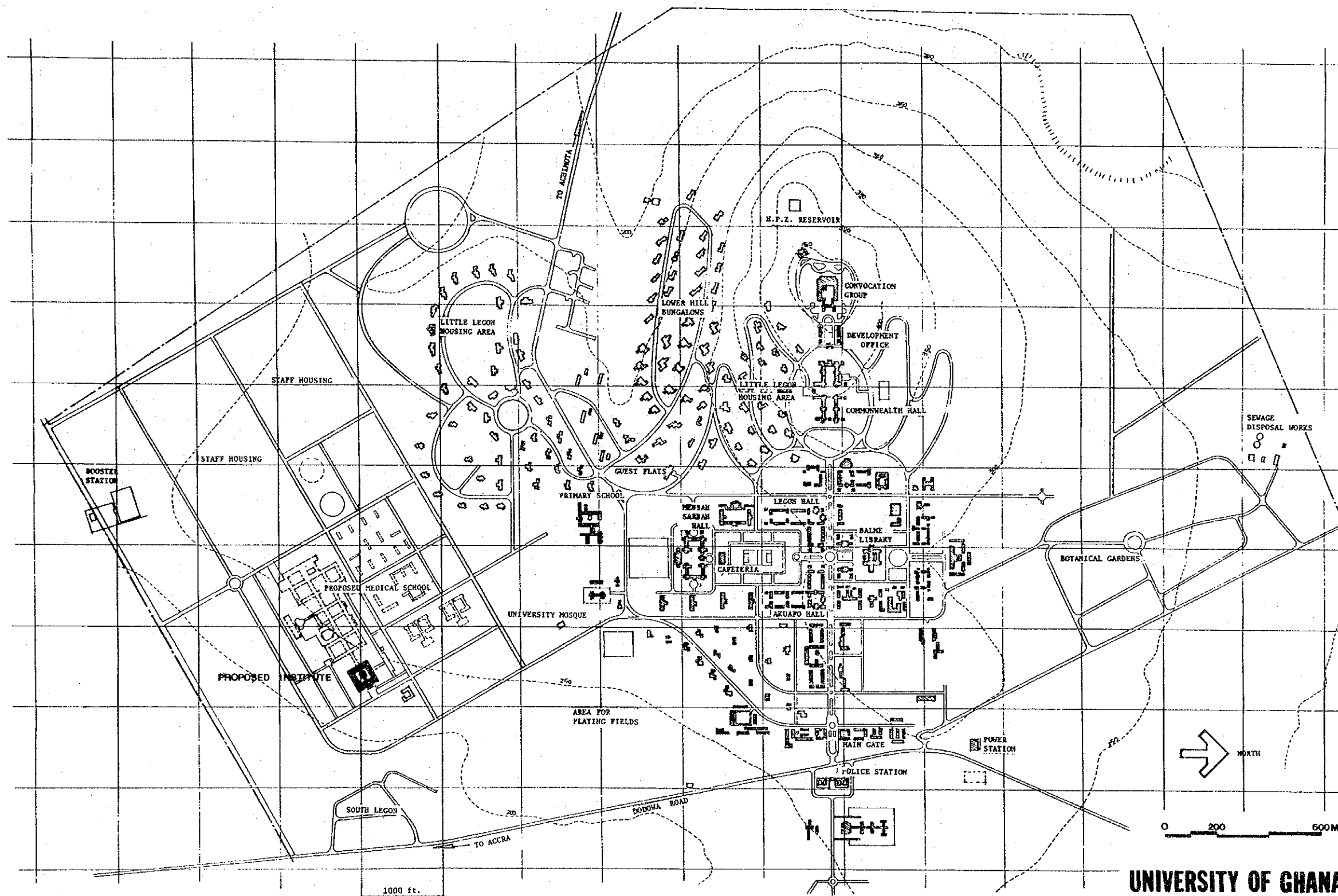
Preliminary Design consists of following drawings.

DRAWINGS

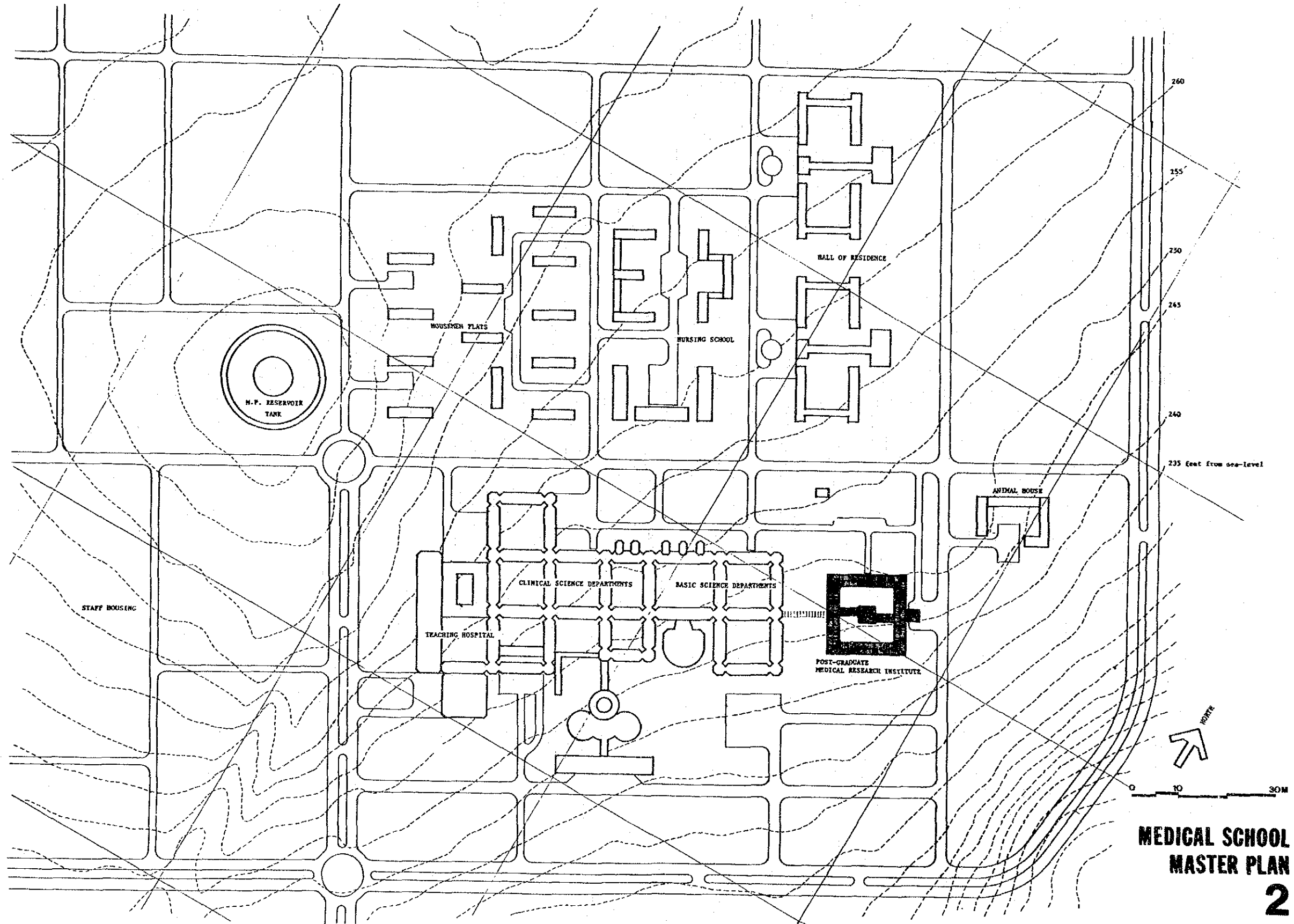
DWG.NO.

DWG. TITLE

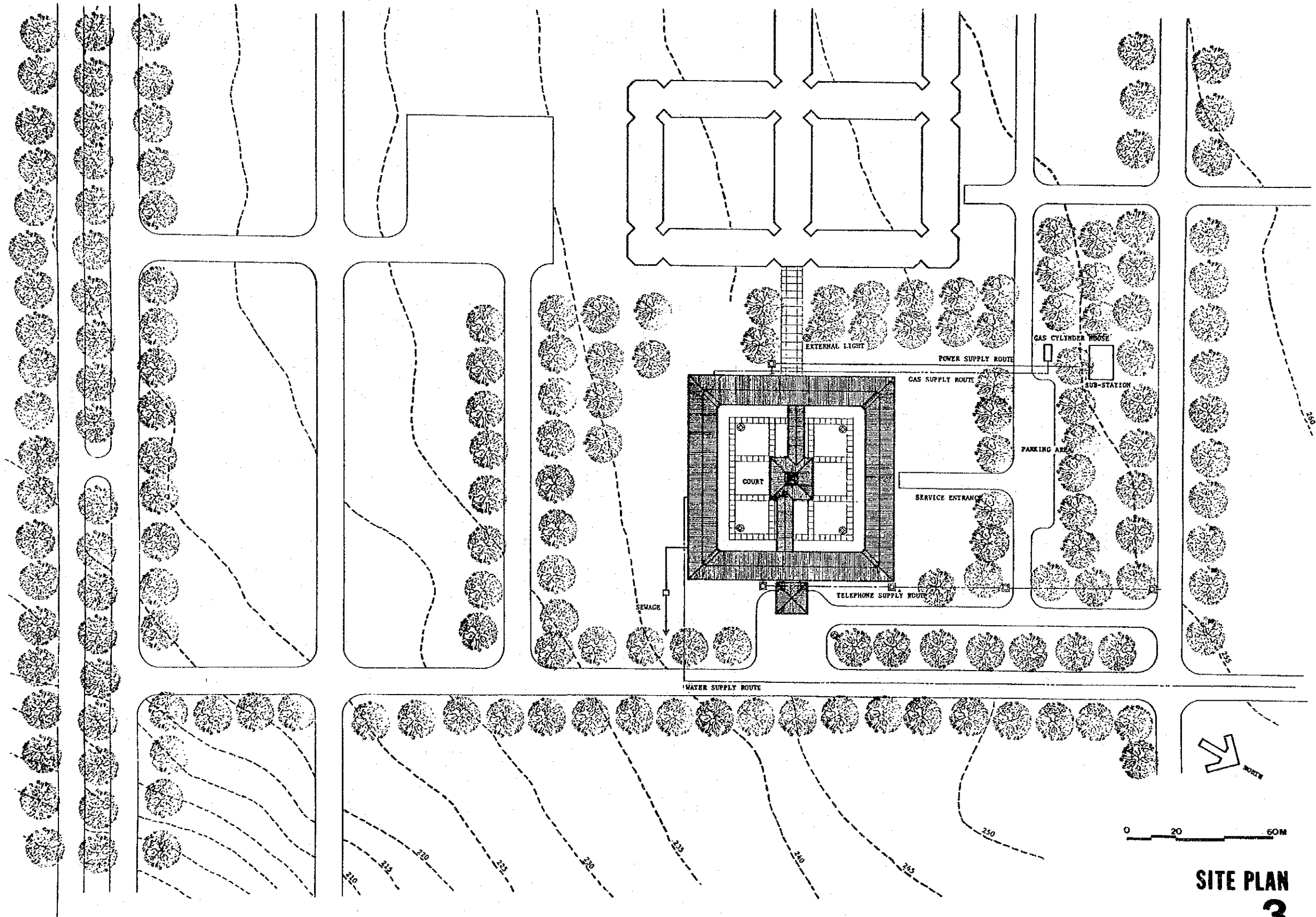
1. UNIVERSITY OF GHANA MASTER PLAN
2. MEDICAL SCHOOL MASTER PLAN
3. SITE PLAN
4. FLOOR PLAN LEVEL 1
5. FLOOR PLAN LEVEL 2
6. ELEVATIONS & SECTIONS
7. AIR CONDITIONING PLAN LEVEL 1
8. AIR CONDITIONING PLAN LEVEL 2
9. PLUMBING MASTER PLAN
10. PLUMBING PLAN LEVEL 1
11. PLUMBING PLAN LEVEL 2
12. POWER SUPPLY & TELEPHONE MASTER PLAN
13. POWER DISTRIBUTION DIAGRAM
14. ELECTRICAL PLAN LEVEL 1
15. ELECTRICAL PLAN LEVEL 2
16. LABORATORY TYPICAL PLAN
17. FLOOR AREA TABULATION OUTLINE OF BUILDING AND FINISHES



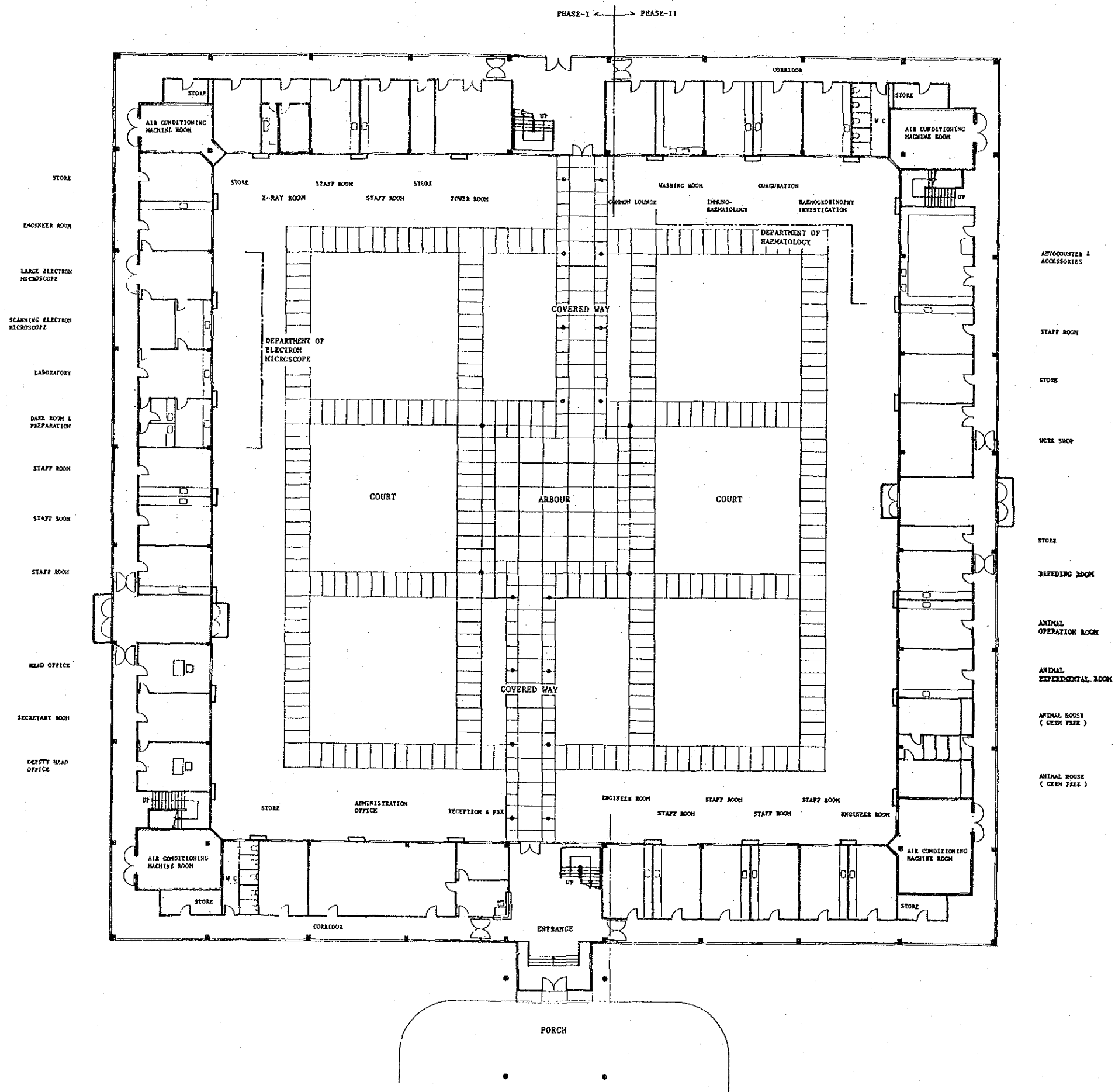
**UNIVERSITY OF GHANA
MASTER PLAN
1**



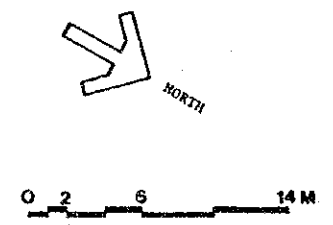
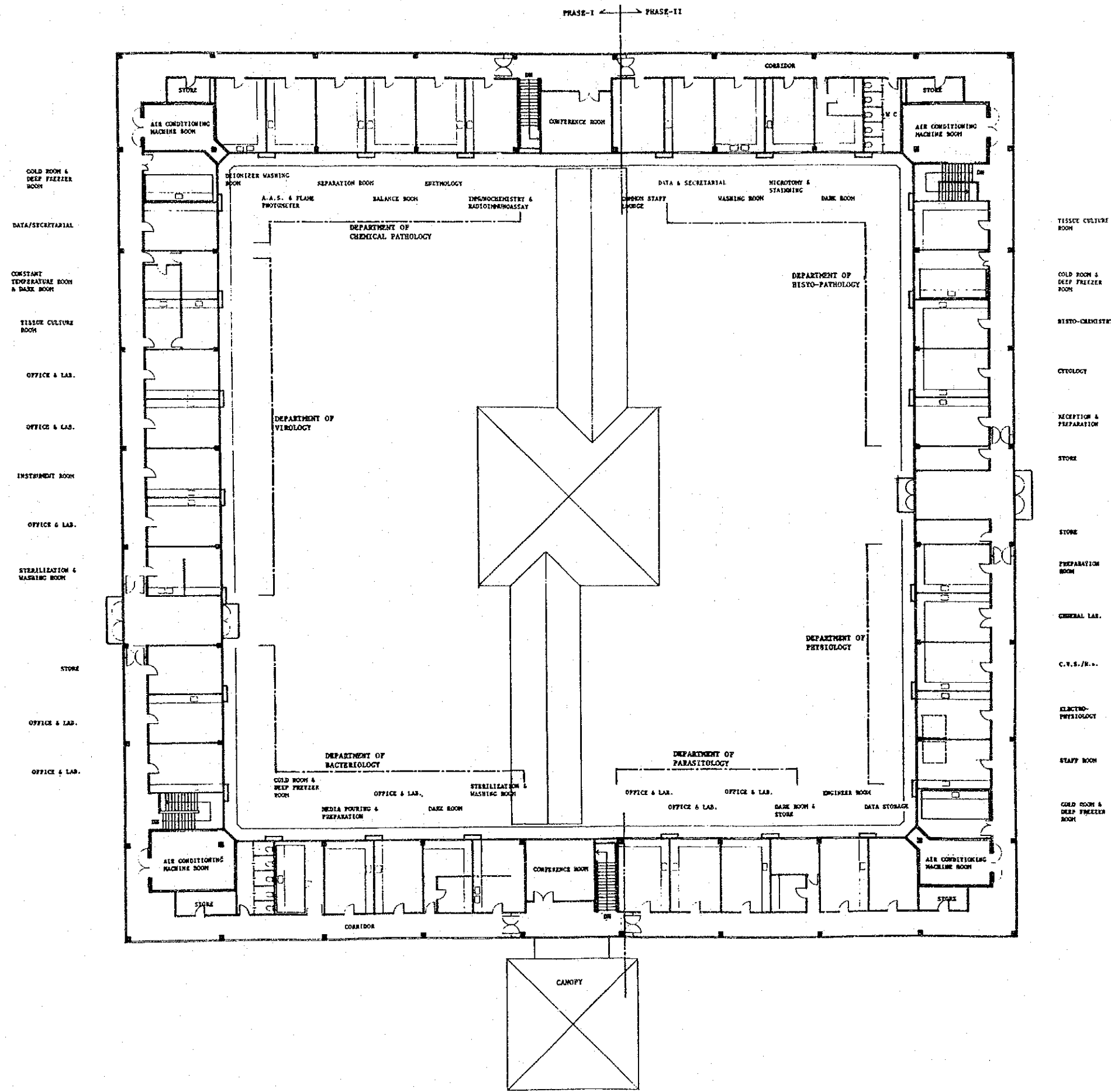
**MEDICAL SCHOOL
MASTER PLAN
2**



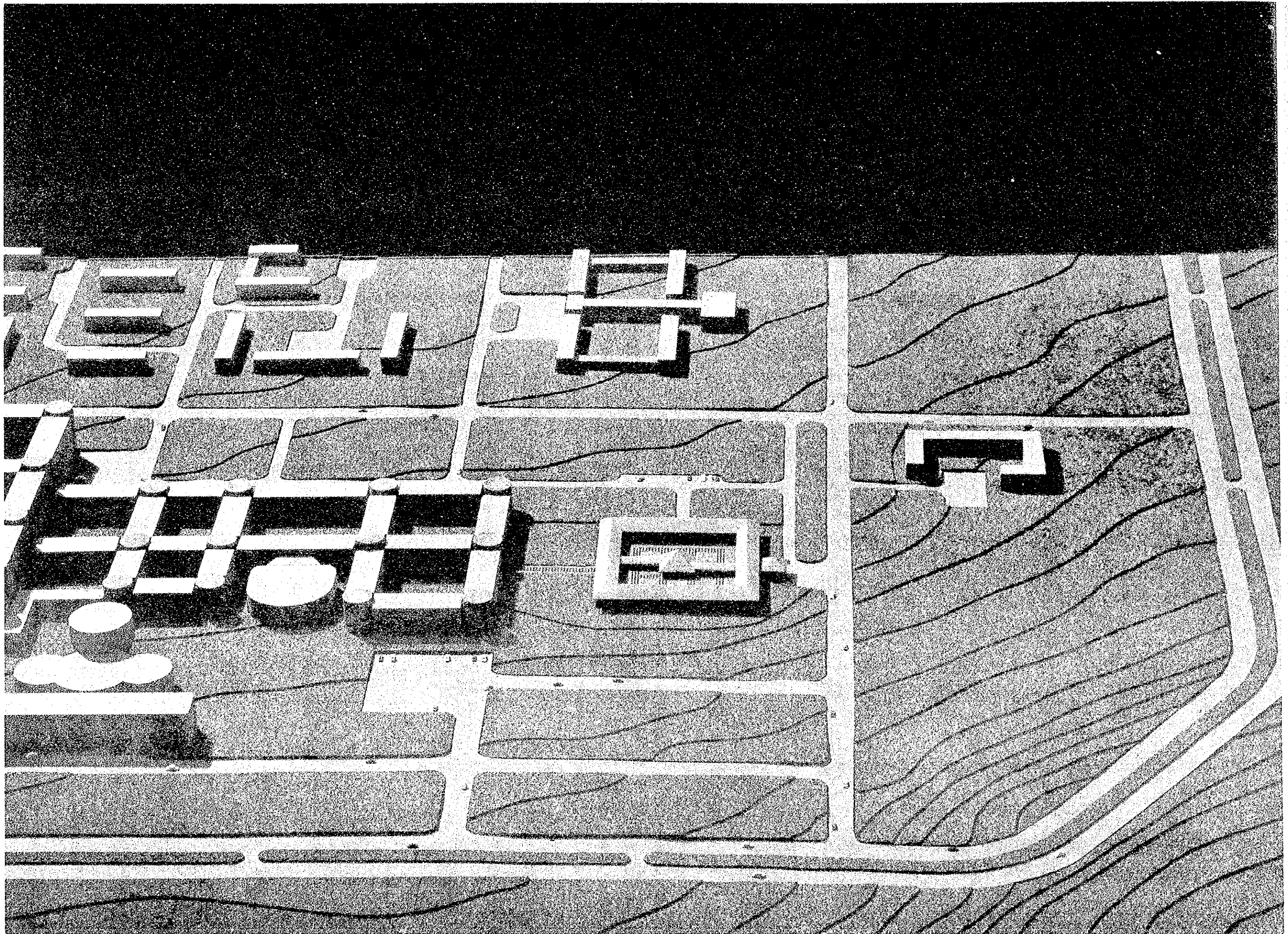
SITE PLAN
3

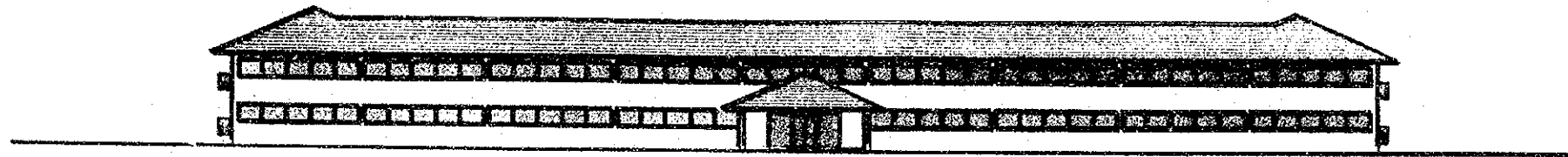


**FLOOR PLAN
LEVEL 1
4**

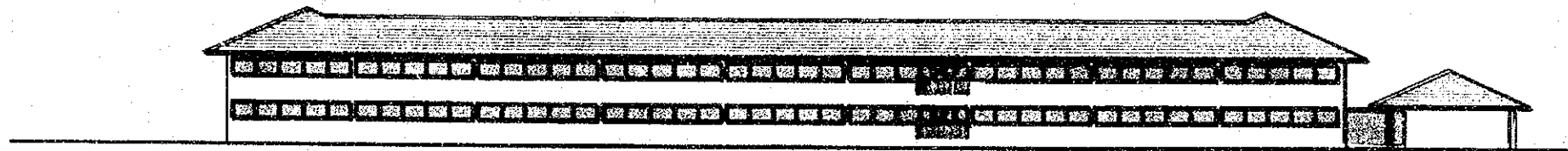


FLOOR PLAN
LEVEL 2
5

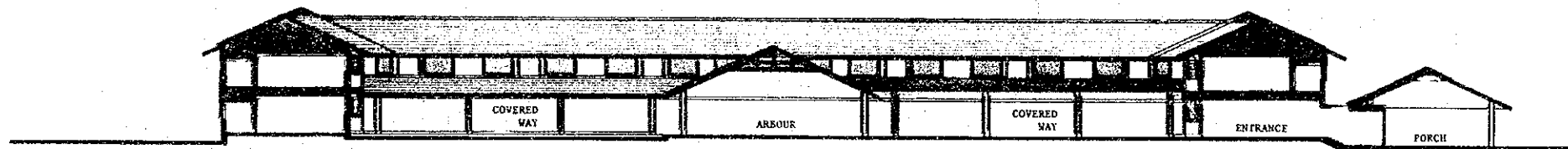




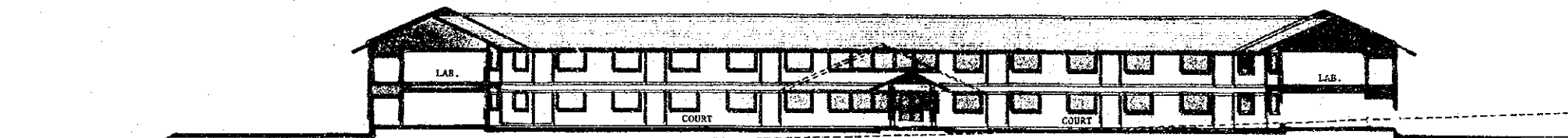
NORTH-EAST ELEVATION



SOUTH-EAST ELEVATION

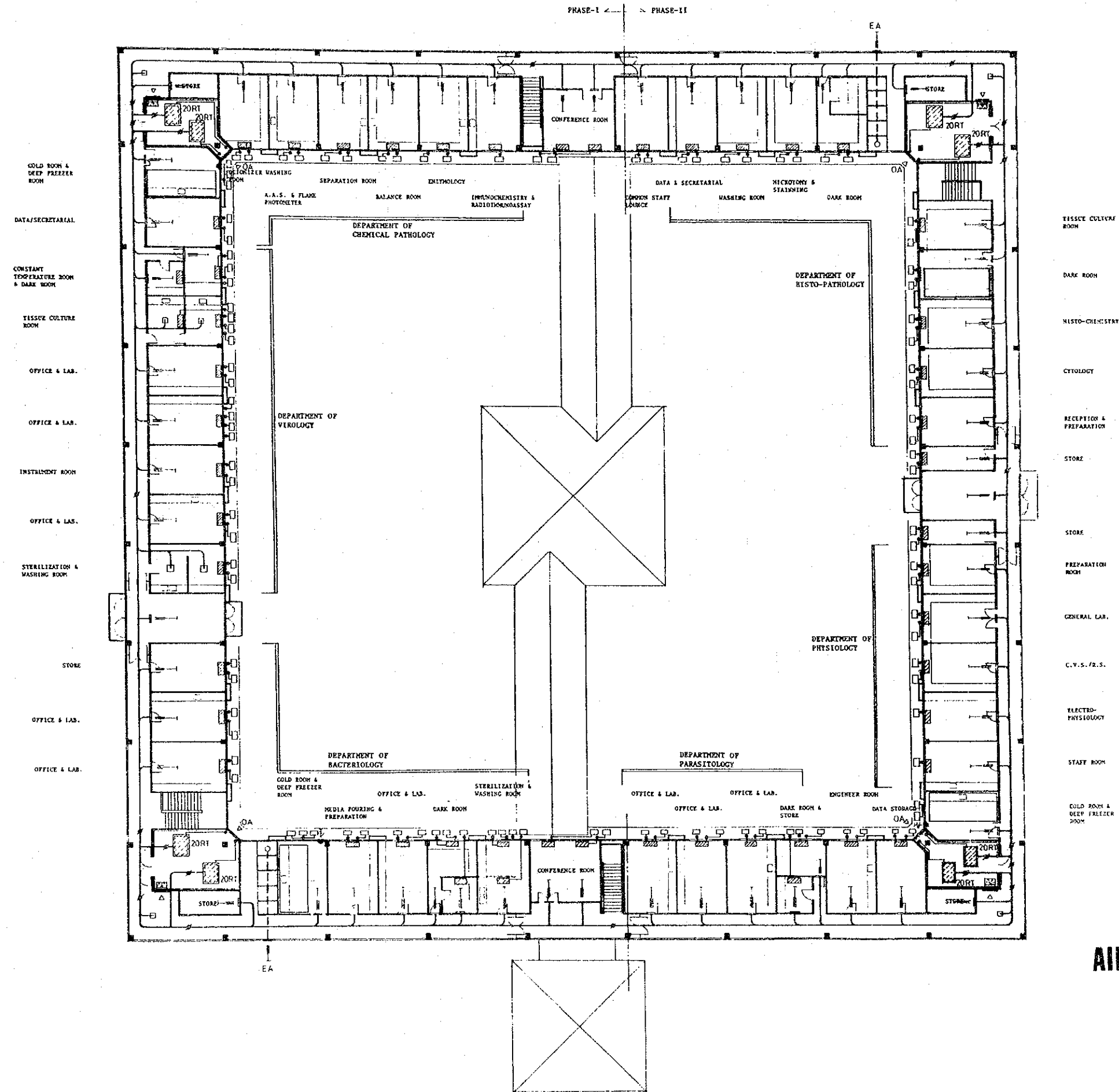


SECTION 1



SECTION 2

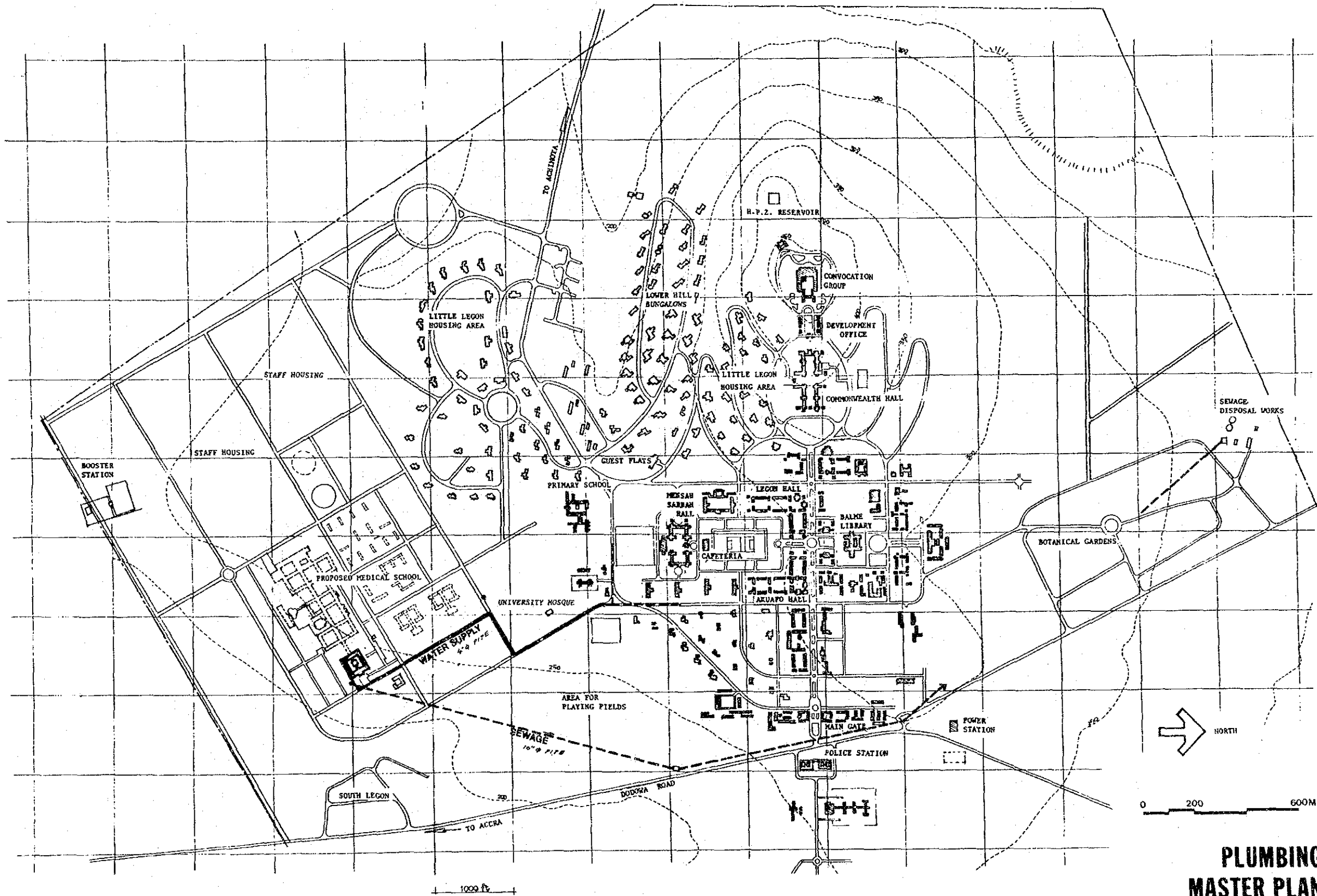
**ELEVATION
& SECTION
6**



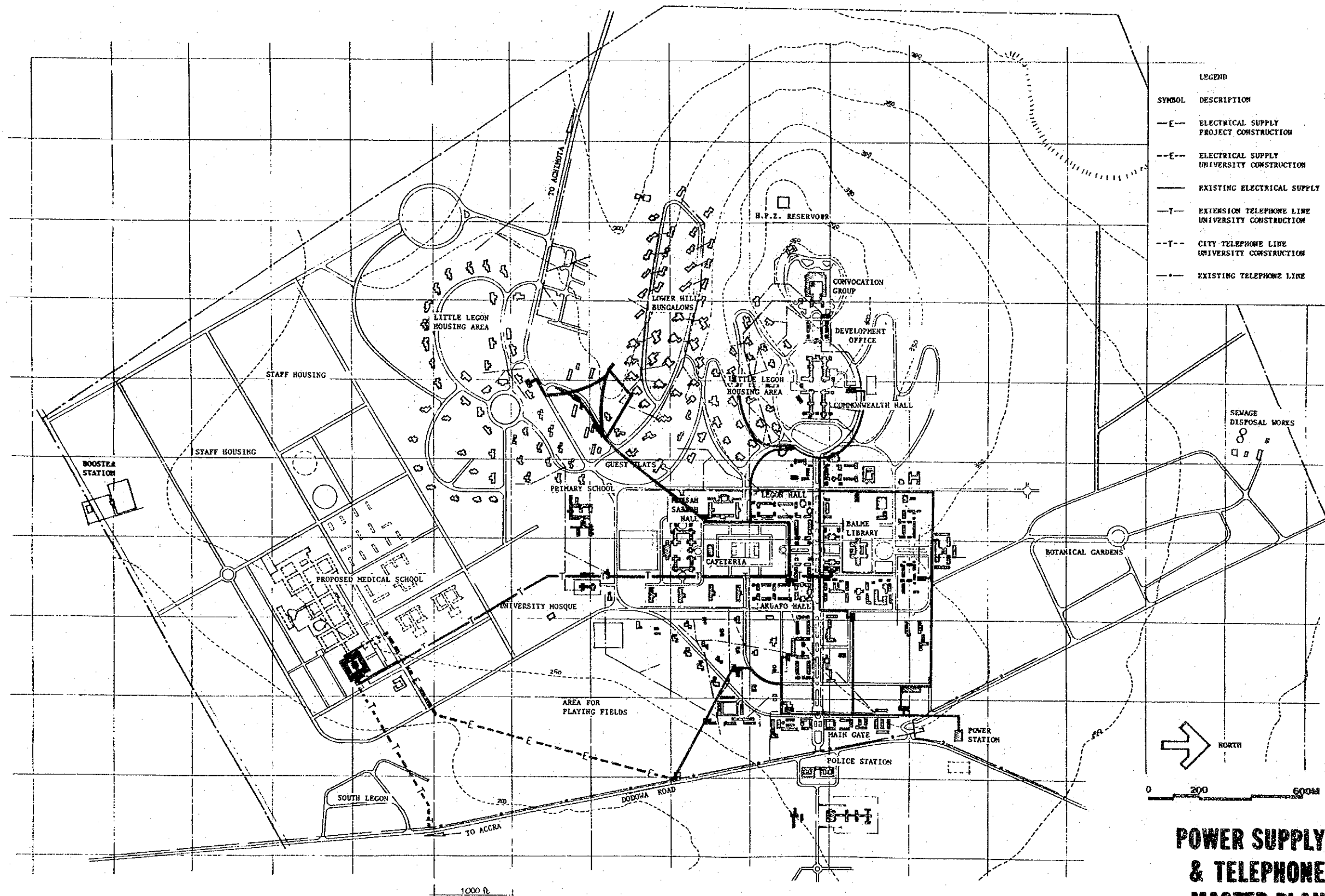
**AIR CONDITIONING PLAN
LEVEL 2
8**

LEGEND

SYMBOL	DESCRIPTION
	AIR COOLED REMOTE CONDENSER
	SPLIT TYPE AIR CONDITIONERS
	EXHAUST FAN
	V. D.
	OUTLET
	INLET
	ECONOVENT

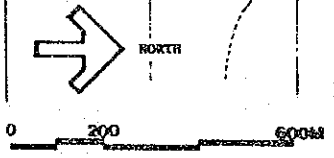


**PLUMBING
MASTER PLAN**



LEGEND

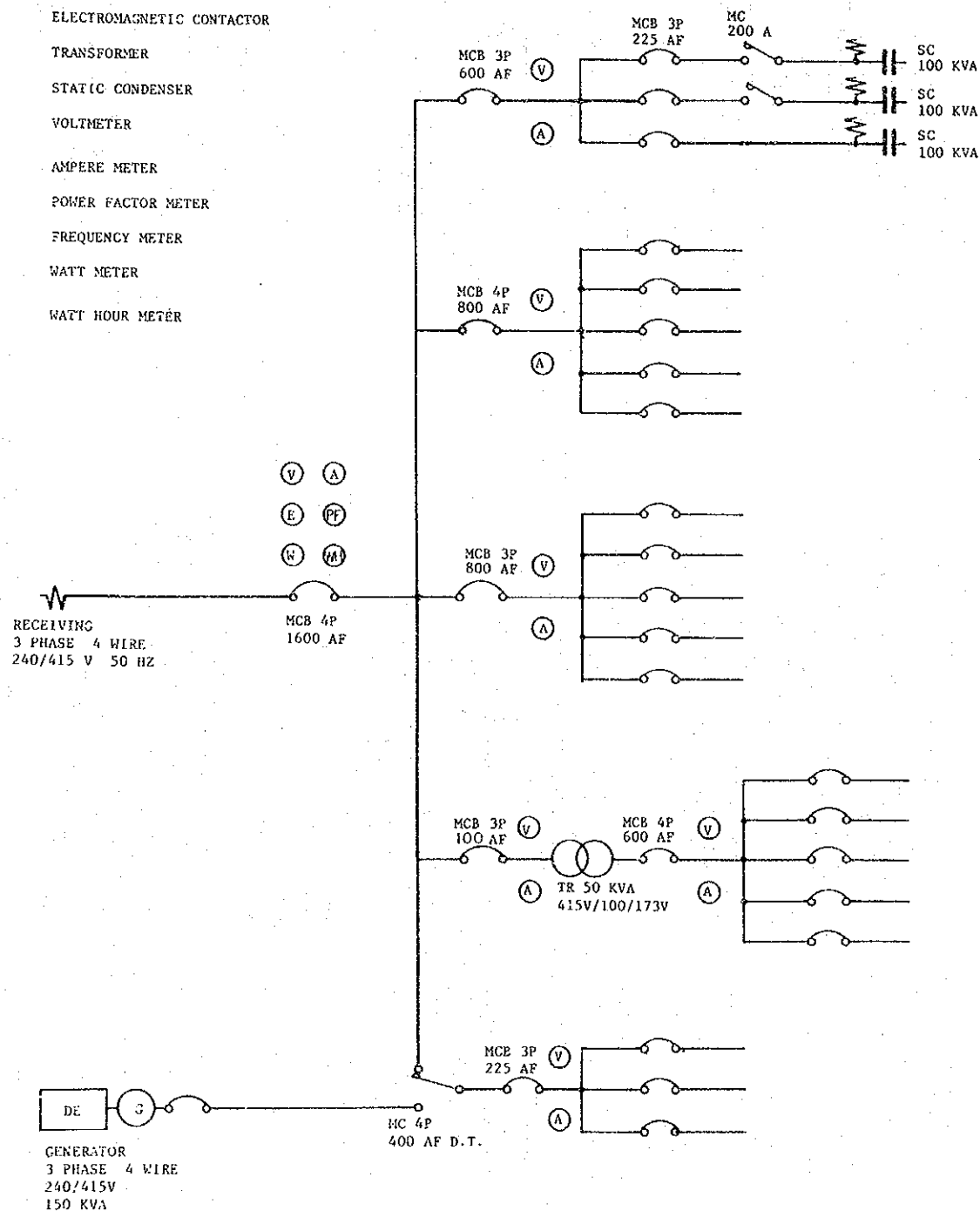
SYMBOL	DESCRIPTION
—E—	ELECTRICAL SUPPLY PROJECT CONSTRUCTION
--E--	ELECTRICAL SUPPLY UNIVERSITY CONSTRUCTION
---	EXISTING ELECTRICAL SUPPLY
-T-	EXTENSION TELEPHONE LINE UNIVERSITY CONSTRUCTION
--T--	CITY TELEPHONE LINE UNIVERSITY CONSTRUCTION
---	EXISTING TELEPHONE LINE



**POWER SUPPLY
& TELEPHONE
MASTER PLAN
12**

LEGEND

- MCB MOLDED CASE CIRCUIT BREAKER
- MC ELECTROMAGNETIC CONTACTOR
- TR TRANSFORMER
- SC STATIC CONDENSER
- V VOLTMETER
- A AMPERE METER
- PF POWER FACTOR METER
- F FREQUENCY METER
- W WATT METER
- WH WATT HOUR METER



VOLTAGE	MCB	LOAD CAPACITY
3 PHASE 4 WIRE 240/415 V FOR LABORATORIES' LIGHTING SOCKET OUTLET AIR CONDITIONER ELECTRIC BOILER	4P 225 AF	PHASE I LEVEL I 100 KVA
	"	PHASE I LEVEL II 100 KVA
	"	PHASE II LEVEL I 100 KVA
	"	PHASE II LEVEL II 100 KVA
	4P 225 AF	SPARE

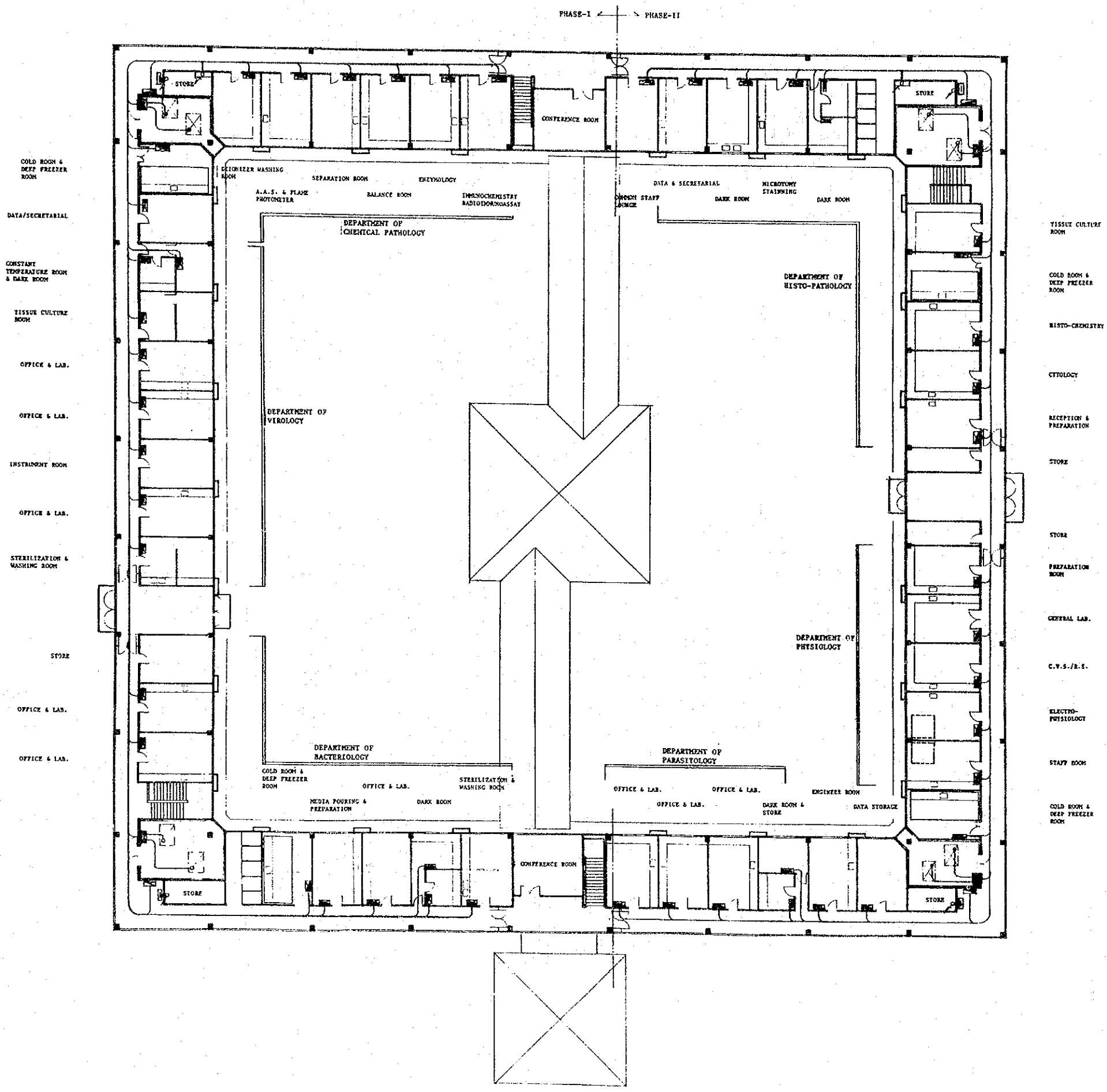
VOLTAGE	MCB	LOAD CAPACITY
3 PHASE 3 WIRE 415 V FOR POWER	3P 225 AF	PHASE I LEVEL I 70 KW
	"	PHASE I LEVEL II 70 KW
	"	PHASE II LEVEL I 70 KW
	"	PHASE II LEVEL II 70 KW
	3P 225 AF	SPARE

VOLTAGE	MCB	LOAD CAPACITY
3 PHASE 4 WIRE 100/173 V FOR 100 V EXPERIMENT	4P 100 AF	PHASE I LEVEL I 12.5 KVA
	"	PHASE I LEVEL II 12.5 KVA
	"	PHASE II LEVEL I 12.5 KVA
	"	PHASE II LEVEL II 12.5 KVA
	4P 100 AF	SPARE

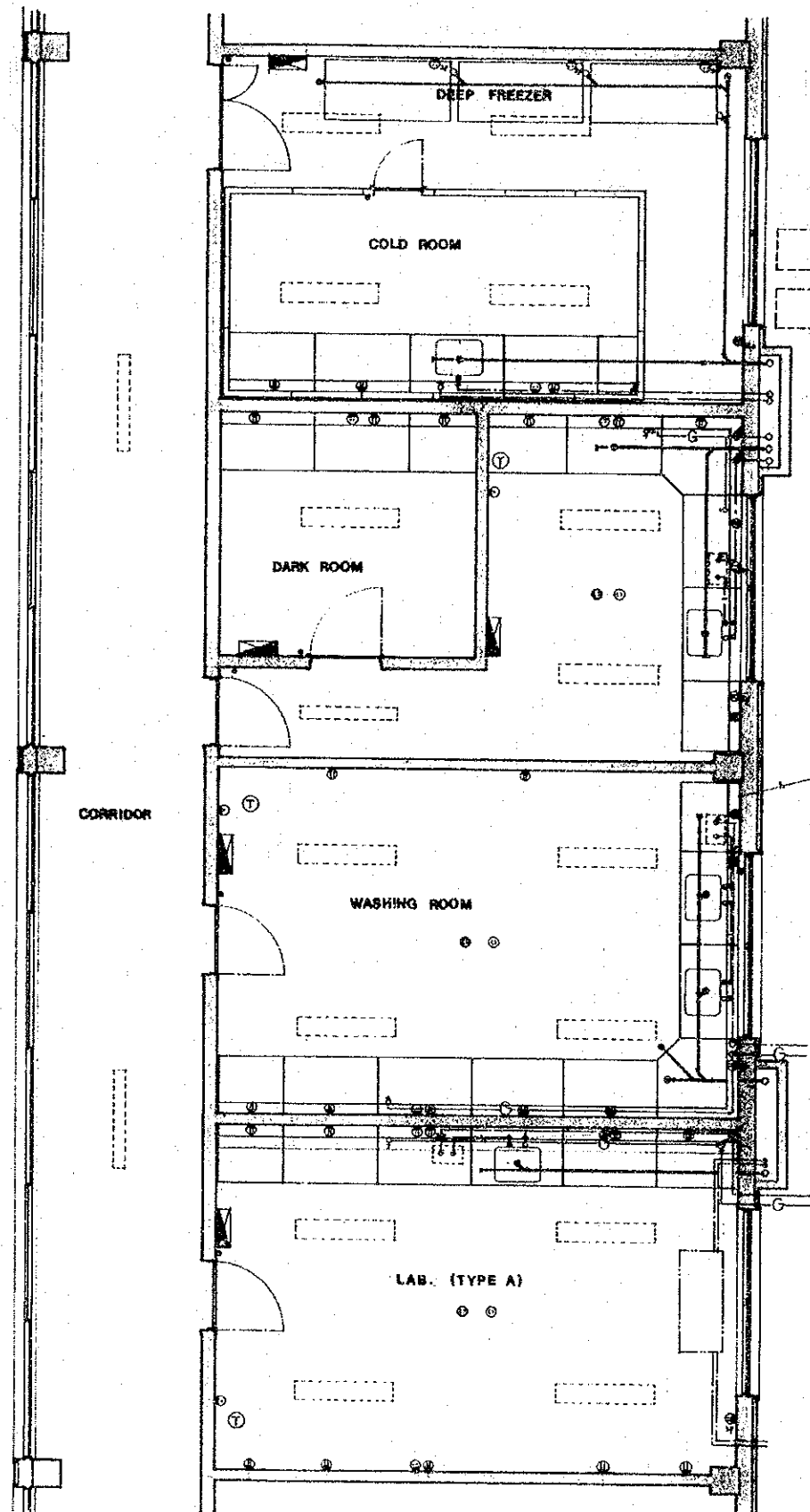
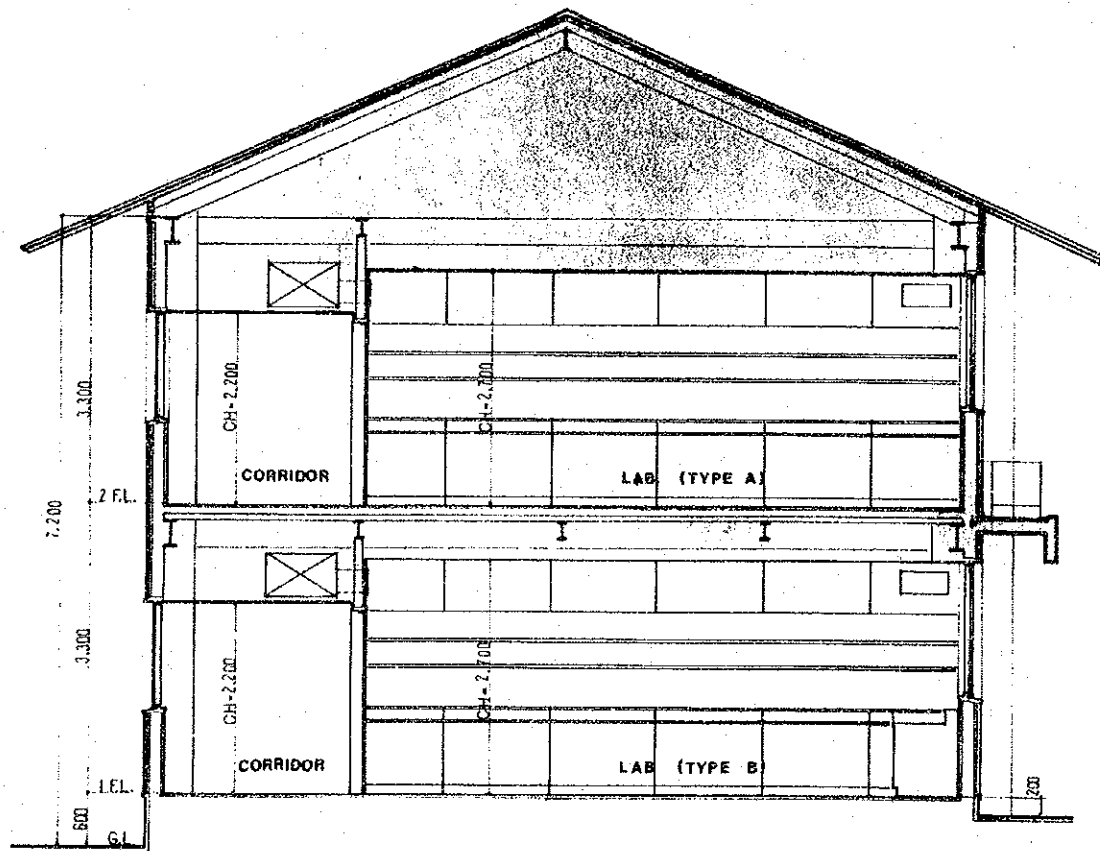
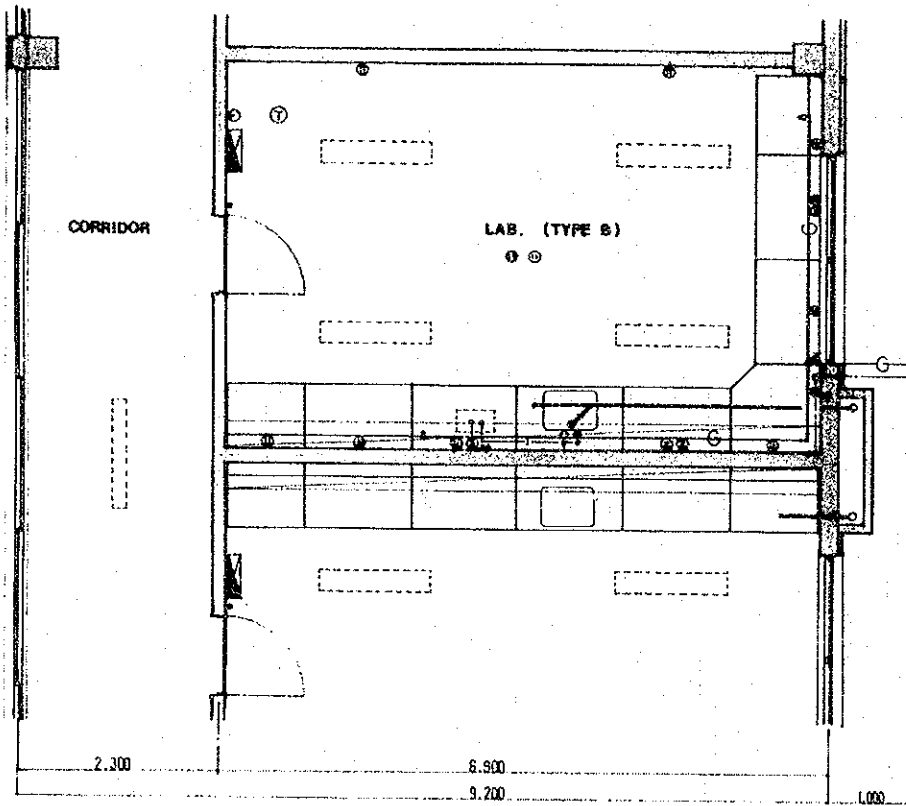
VOLTAGE	MCB	LOAD CAPACITY
3 PHASE 3 WIRE 415 V FOR EMERGENCY POWER	3P 225 AF	PHASE I LEVEL I, II 50 KW
	"	PHASE II LEVEL I, II 50 KW
	3P 100 AF	SPARE

SKELTON DIAGRAM OF METAL ENCLOSED LOW-TENSION DISTRIBUTION PANEL

**POWER DISTRIBUTION
DIAGRAM
13**



ELECTRICAL PLAN
LEVEL 2
15



LEGEND

SYMBOL	DESCRIPTION
—	WATER PIPE
—	DRAIN PIPE
—G—	GAS PIPE
---	VENT PIPE
⊗	GATE VALVE
●	FLOOR DRAIN
●	FLOOR CLEAN OUT
○	FAUCET
●	HOT WATER FAUCET
+	GAS TAP
■	LABORATORY ROOM PANEL BOARD
□	FLUORESCENT LIGHTING FIXTURE (40W x 2)
□	FLUORESCENT LIGHTING FIXTURE (40W x 1)
•	SWITCHES (10A 250V)
Ⓜ	DUPLEX CONVENIENCE OUTLET (2P 15A 240V Wall Mounted)
Ⓝ	DUPLEX CONVENIENCE OUTLET (2P 15A 100V Wall Mounted)
Ⓢ	CONVENIENCE OUTLET (3P 15A 240V Recessed Ceiling Mounted)
Ⓣ	CONVENIENCE OUTLET (3P 15A 100V Recessed Ceiling Mounted)
Ⓤ	CONVENIENCE OUTLET (3P 15A 240V Wall Mounted)
Ⓤ	CONVENIENCE OUTLET (3P 15A 240V Wall Mounted)
Ⓥ	HALL TELEPHONE OUTLET
Ⓦ	TELEPHONE EQUIPMENT

**LABORATORY
TYPICAL PLAN
16**

DESCRIPTION OF FLOOR AREA AND FINISHES

FLOOR AREA TABULATION

		LEVEL-1		LEVEL-2			
PHASE 1	ADMINISTRATION	222.18 ^{m²}	unit (7)	DEPARTMENT OF BACTERIOLOGY	253.92 ^{m²}	unit (8)	
	DEPARTMENT OF ELECTRON MICROSCOPE	126.96	(4)	DEPARTMENT OF VIROLOGY	222.18	(7)	
	STAFF ROOM & ENGINEER ROOM	222.18	(7)	DEPARTMENT OF CHEMICAL PATHOLOGY	253.92	(8)	
	STORE	111.09	(3.5)	CONFERENCE ROOM	90.48	(2)	
	POWER ROOM	47.61	(1.5)				
TOTAL:		730.02	m ²	820.50	m ²		
COMMON FLOOR AREA		729.86	m ²	618.38	m ²		
COVERED WAY, PORCH		507.84	m ²				
LEVEL-1 FLOOR AREA		1,967.72	m ²	LEVEL-2 FLOOR AREA	1,438.88	m ²	PHASE-1 TOTAL FLOOR AREA 3,406.60 m ²

		LEVEL-1		LEVEL-2			
PHASE 2	DEPARTMENT OF HAEMATOLOGY	190.44 ^{m²}	unit (6)	DEPARTMENT OF HISTOPATHOLOGY	222.18 ^{m²}	unit (7)	
	SPECIAL EXPERIMENTAL ROOM	95.22	(3)	DEPARTMENT OF PHYSIOLOGY	126.96	(4)	
	ANIMAL HOUSE	63.48	(2)	DEPARTMENT OF PARASITOLOGY	126.96	(4)	
	STAFF ROOM & ENGINEER ROOM	222.18	(7)	DATA STORAGE	31.74	(1)	
	COMMON LOUNGE	31.74	(1)	STAFF ROOM & ENGINEER ROOM	126.96	(4)	
	WORK SHOP	47.61	(1.5)	COLD ROOM & DEEP FREEZER ROOM	31.74	(1)	
	STORE	47.61	(1.5)	COMMON STAFF LOUNGE	31.74	(1)	
				STORE	31.74	(1)	
TOTAL:		698.28	m ²	730.02	m ²		
COMMON FLOOR AREA		571.32	m ²	539.58	m ²		
LEVEL-1 FLOOR AREA		1,269.60	m ²	LEVEL-2 FLOOR AREA	1,269.60	m ²	PHASE-2 TOTAL FLOOR AREA 2,539.20 m ²

NOTE: One unit is 4.6 m x 6.9 m = 31.74 m²PHASE-2
TOTAL FLOOR
AREAGRAND TOTAL
FLOOR AREA
5,945.80 m²

OUTLINE OF STRUCTURE AND FINISHES

FOUNDATION AND BELOW GROUND FLOOR CONSTRUCTION:	Reinforced Concrete Foundations Sprit Footing. Reinforced Concrete Tie Beams and Ground Floor Slab.
UPPER CONSTRUCTION:	Two-Story Steel Frame Construction, Reinforced Concrete Slabs and Steel Beams.
ROOF:	Vinyl Coated Galvanized Iron Sheet. Insulation back-up panels and Coloured Asbestos Roof Tiles on Steel Framing.
STAIRCASE:	Steel Stair Framing and Reinforced Precast Terrazzo Tread.
EXTERNAL WALL:	Coloured Asbestos Siding Board with Polystyrene In-Situ Forming. Washed Terrazzo Skirting.
EXTERNAL WINDOW AND DOOR:	Anodized Aluminum Sliding and Fixed Window in General, Wooden Louvers with Insect Screen.
GLAZING:	Clear Sheet Glass.
INTERNAL PARTITION:	6" Concrete Hollow Block
INTERNAL DOOR:	Wooden Doors; Heat Insulated Doors to Cold Rooms.
WALL FINISH:	Typical Laboratory Room: Plaster and Emulsion Paint. Glazed Tiling partially to walls in Laboratories and Toilets. Veneered Plywood Panels in Head Office, Conference Room and Common Staff Lounge.
FLOOR FINISH:	In-Situ Polished Terrazzo with Brass Divided Strips Carpet in Head Offices, Conference Rooms and Common Staff Lounge.
CEILING FINISH:	Suspended Mineral Fiber Acoustic Ceiling Boards, in General. Clean Room Boards in Special Rooms.

FLOOR AREA TABULATION
OUTLINE OF STRUCTURE AND FINISHES

4. SCOPE OF WORKS ON THE PART OF THE UNIVERSITY

4.1 SCOPE OF WORKS ON THE PART OF THE UNIVERSITY

In the present plan, works to be planned and executed on the part of the University of Ghana are also described. Preparatory works to be promptly executed by the University for construction of the Institute are as follows:

- a) Access road from the Legon campus peripheral point to the proposed site of the Institute.
- b) Power supply system to the site.
- c) Water supply system to the site.
- d) Arrangement for servicing-in of local telephone circuits.
- e) Drainage system from the site (including storm-water drainage and sanitary sewage drainage).

Unless these works are completed before commencement of construction of the Institute, smooth progress of the construction work can not be expected. Power supply system mentioned in item b) above is indispensable for execution of the construction work and, in view of local conditions including the necessity of importing all necessary materials and equipments, it is expected that a considerably long period of time will be

required for completion of such power supply system. It is therefore considered that these works should be started at least about six months before commencement of the Institute construction work.

4.2 CONSTRUCTION PERIOD

Schedule from the commencement of execution designing to the completion of construction is as planned below. Construction period is estimated at 12 months for Phase I and 12 months for Phase II. It is however advisable to request each contractor to submit the practicable construction period at the moment of submission of tenders, or to take other suitable measures so as to adjust the above estimated period to actual conditions.

Our assumption of construction period is based on the quick response of the works which are included in the scope of University construction, and also the smooth clearance of import materials at the port.

CONSTRUCTION SCHEDULE

