

SUB-STATION EQUIPMENT

☒ High tension switchgear and low tension switchgear.

FEEDER INSTALLATION

☒ Control panel.
 ☒ Isolator non automatic molded case circuit breaker.
 ☐ Isolator non tripped molded case circuit breaker.
 — Floor slab.
 — Ceiling slab and/or wall.

LIGHTING AND SOCKET OUTLET INSTALLATION

☒ Fluorescent lighting fitting for recessed type. Number denotes quantity of 40W or 20W tubes, letter indicates type of fitting. (SPEC. TYPE: RECESSED)
 ☐ E6 Fluorescent lighting fitting for recessed type. Number denotes quantity of 20W tubes, letter indicates type of fitting. (SPEC. TYPE: SQUARE RECESSED WITH DIFFUSER)
 — P Fluorescent lighting fitting, surface mounted or suspended. (SPEC. TYPE: H-SHAPE BATTEN)
 ⊖ Fluorescent lighting fitting, single batten type, mounted on wall or columns vertically. (SPEC. TYPE: V-SHAPE BATTEN)
 ⊕ Fluorescent lighting fitting, single batten type, mounted on wall or columns horizontally. (SPEC. TYPE: V-SHAPE BATTEN)
 ⊖ Emergency circuit. (SPEC. TYPE: BRACKET)
 ○ Incandescent lighting fitting, surface mounted surface or recessed type. (SPEC. TYPE: SUSPENDED, RECESSED)
 ⊕ Incandescent lighting fitting, surface mounted above except on Emergency circuit. (SPEC. TYPE: LAMP HOLDER)
 ⊖ Incandescent lighting fitting, surface mounted. (SPEC. TYPE: LAMP HOLDER, SOCKET WITH RED GLASS GLOVE)
 ⊕ Darkroom worklight, wall mounted. (SPEC. TYPE: REVOLVING TRAY BRACKET)
 ⊖ WP Fluorescent lighting fitting, wall mounted. (SPEC. TYPE: WATERPROOF SOCKET)
 — Fluorescent lighting fitting, surface mounted with reflector. (SPEC. TYPE: REFLECTOR)
 ▲ Double socket outlet, 1# 100V 15A
 ▲ Single socket outlet, 1# 230V 5A
 ▲ Single socket outlet, 1# 230V 15A
 ▲ Double socket outlet, 1# 230V 15A
 ☒ Final distribution board on Normal emergency circuit.
 ☐ Connection box.
 ☐ Cable tray.
 ☐ Cable and/or lighting trunking.
 - - - Wiring for Normal light switch circuit.
 - - - Underground conduit.
 - - - Wiring in conduit embedded in floor slab.
 - - - Wiring in conduit embedded in ceiling slab and/or wall on Emergency circuit.
 ↕ Down and up conduit.

✓ One way tumbler switch.
 ✕ Three ways tumbler switch.
 ⊕ 100V socket outlet circuit 'A' is as indicated on the final distribution board diagram.
 ⊕ 230V lighting and socket outlet circuit '3' is as indicated on the final distribution board diagram.
 ⊕ 'B' is as indicated on the "FIGURES OF LIGHTING FITTINGS".

FIRE ALARM SYSTEM

☒ Fire alarm bell.
 ☐ Fire alarm push-button.

TELEPHONE CONDUIT SYSTEM

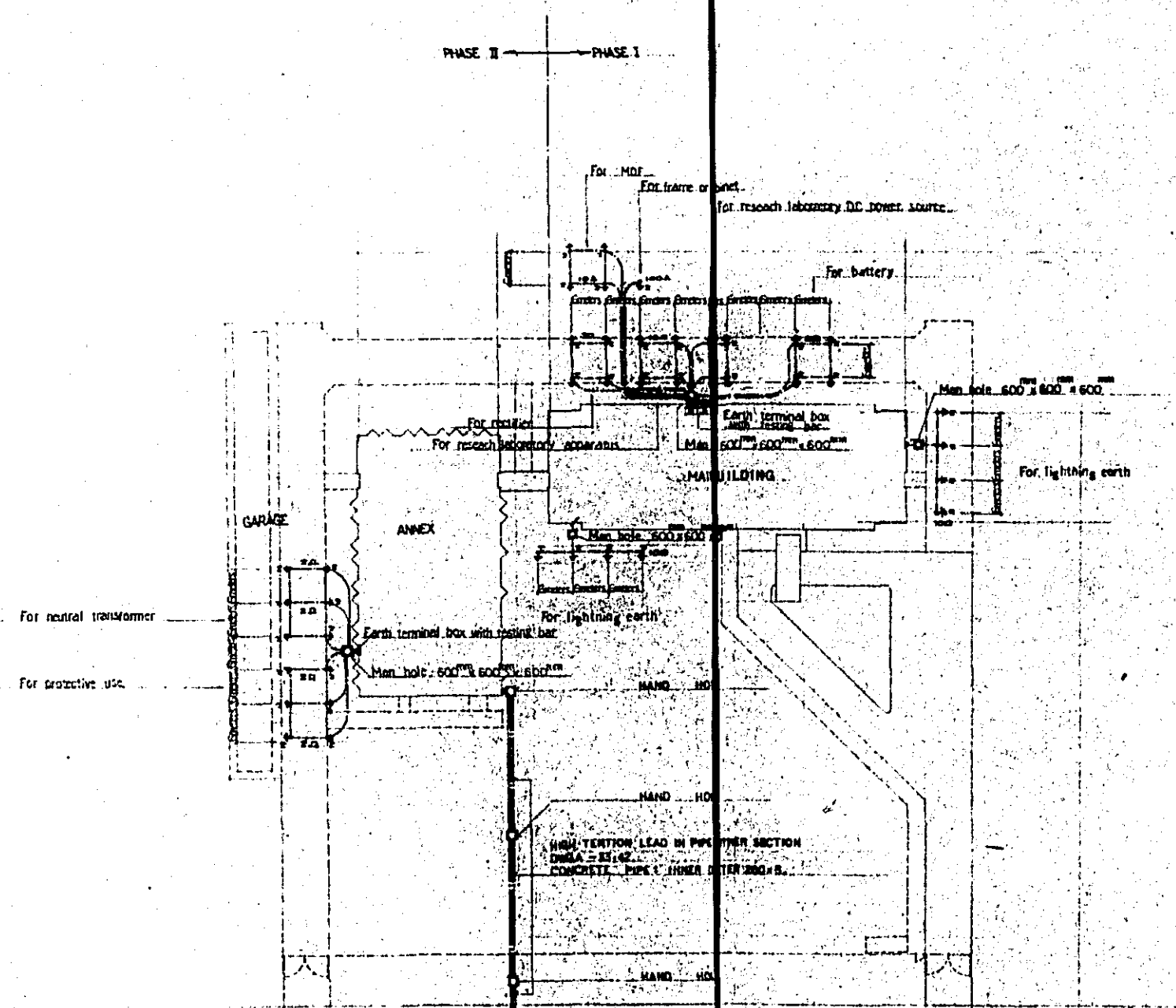
☒ Telephone cabinet.
 ⊕ Telephone outlet.
 — Telephone conduit embedded in ceiling slab and/or wall.

EARTHING AND LIGHTNING PROTECTION SYSTEM

☒ Manhole.
 ⊕ Air terminal phosphor bronze rod.
 ↓ Earthing electrode copper coated iron.
 ☐ Earth terminal box.
 — Earth continuity conductor.
 ↕ Down conductor.

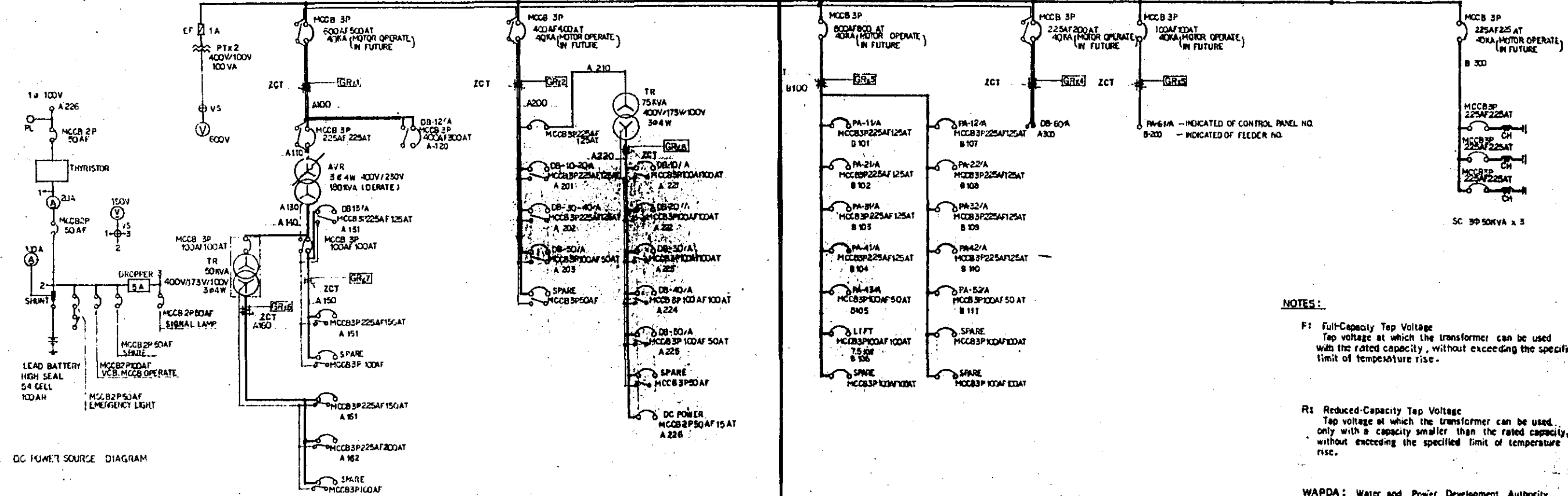
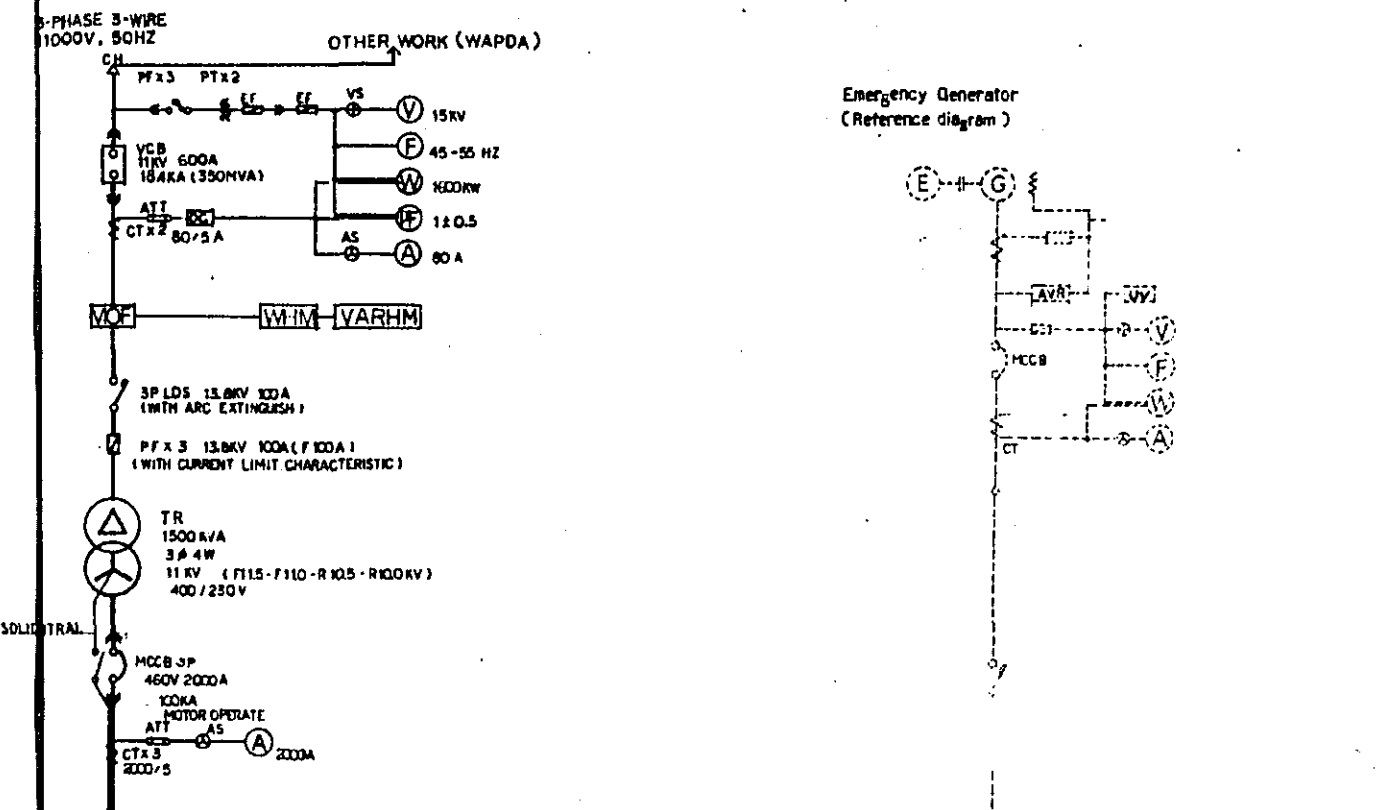
ABBREVIATIONS

AF Ampere frame.
 AT Ampere trip.
 SN Solid neutral.
 DB Final distribution board.
 MB Main building.
 WP Waterproof type.
 P.B Drawing box.
 VVR PVC insulated cable sheathed with PVC.
 IV PVC insulated cable.
 PA Control panel number.
 J.B Junction box.
 ☐ Clock. (Dry cell type)



LEGEND

VCB	Vacuum circuit breaker	ZCT	Zero phase current transformer																											
MOF	Metering Out Fit	GR	Ground relay (Protective relay)																											
TR	Transformer																													
LDS	Load disconnecting switch																													
PF	Power fuse																													
PT	Potential transformer																													
CT	Current transformer																													
MCCB	Molded case circuit breaker																													
WHM	Watt hour meter (WAPDA)																													
VARHM	Reactive power watt hour meter (WAPDA)																													
V	Volt meter																													
A	Ampere meter																													
W	Watt meter																													
F	Frequency meter		PF	Power factor meter			AVR	Automatic voltage regulator			OC	Over current relay (Protective relay)			SC	Static condenser			CH	Choke coil			AS	Ampere meter change switch			VS	Volt meter change switch		
PF	Power factor meter																													
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VS	Volt meter change switch																													

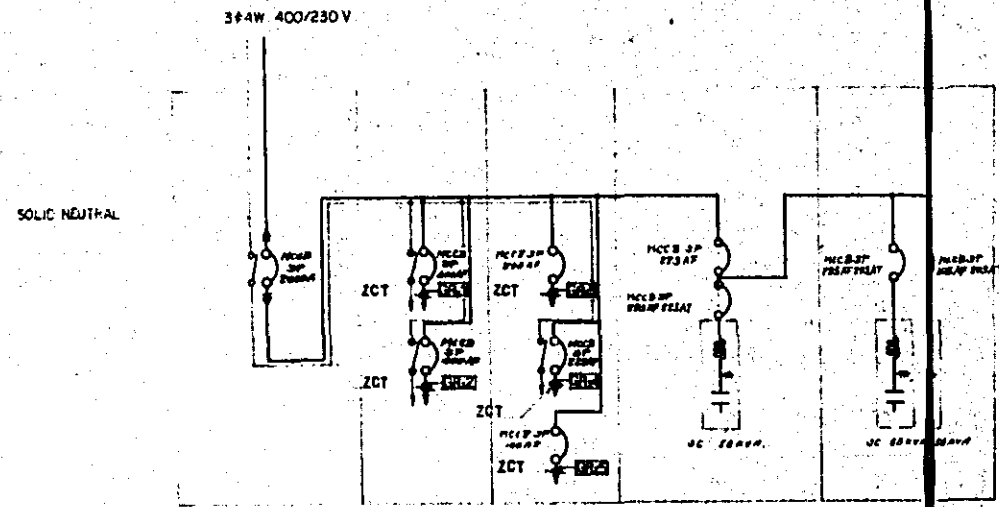


NOTES:

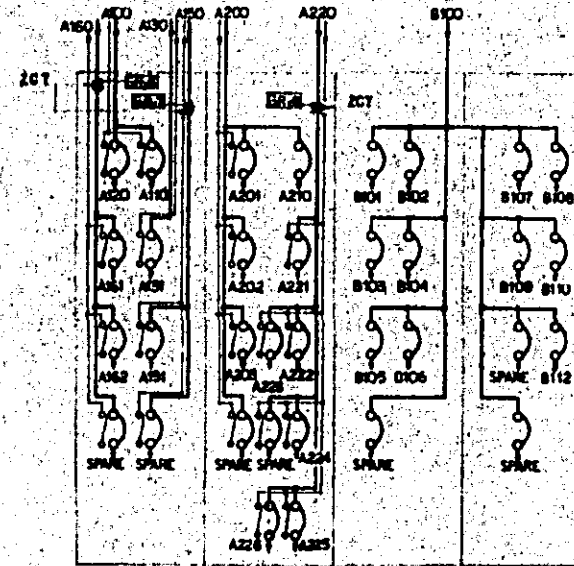
F1 Full-Capacity Tap Voltage
Tap voltage at which the transformer can be used with the rated capacity, without exceeding the specified limit of temperature rise.

R1 Reduced-Capacity Tap Voltage
Tap voltage at which the transformer can be used, only with a capacity smaller than the rated capacity, without exceeding the specified limit of temperature rise.

WAPDA: Water and Power Development Authority.



SINGLE LINE CONNECTION DIAGRAM FOR FEEDER



FOR LABORATORY FOR LIGHTING FITTING AND SOCKET OUTLET FOR MOTOR.1 FOR MOTOR.2
SINGLE LINE CONNECTION DIAGRAM FOR MEDIUM VOLTAGE SWITCHGEAR

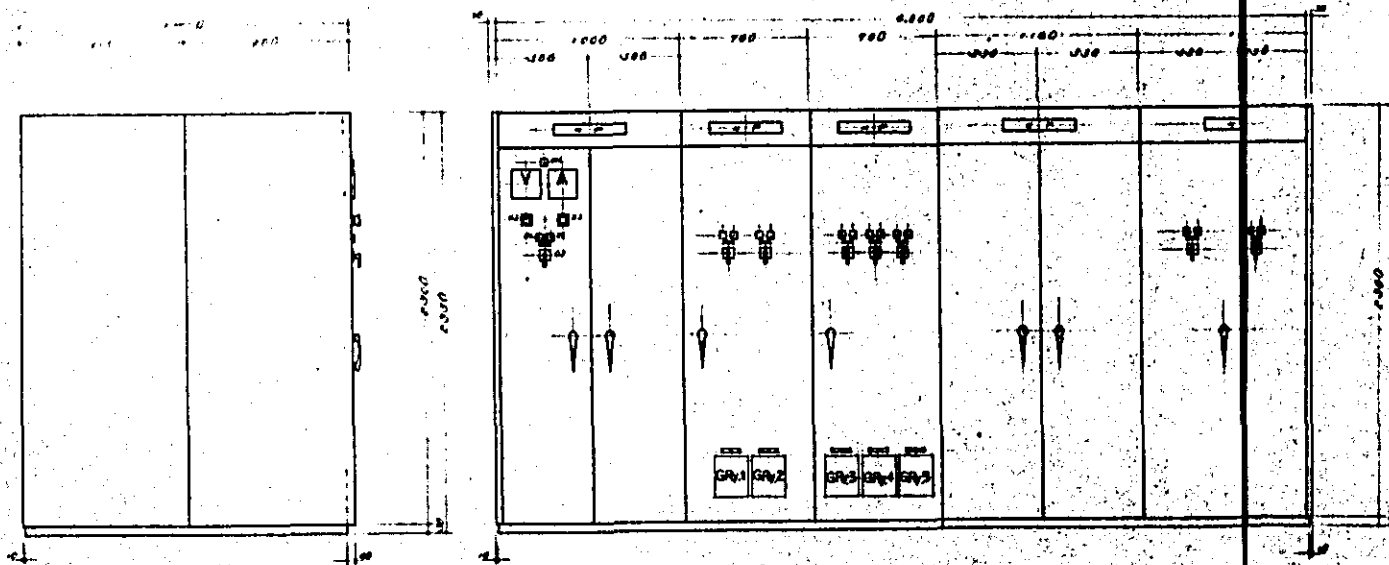


FIGURE OF FEEDER SWITCHGEAR (FRONT VIEW)

DITTO (SIDE VIEW)

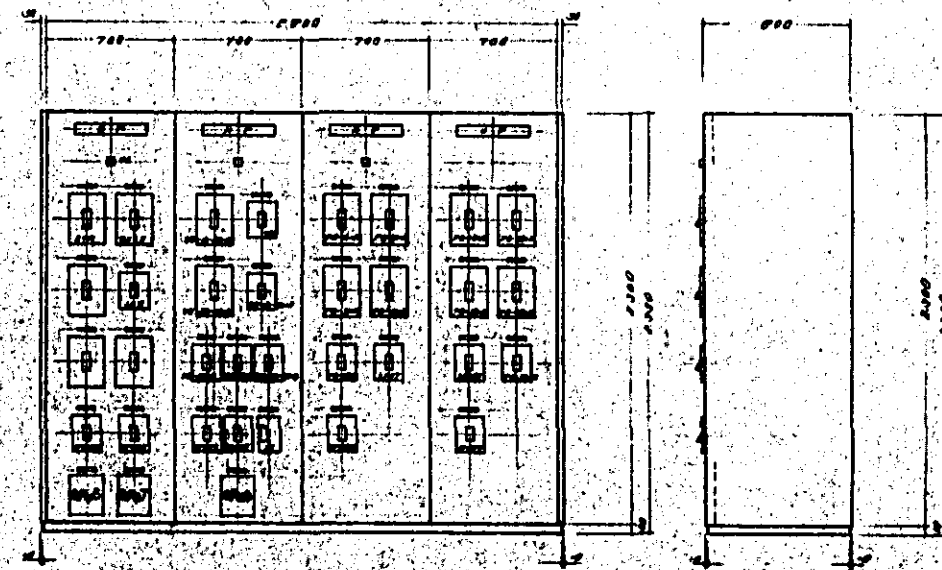
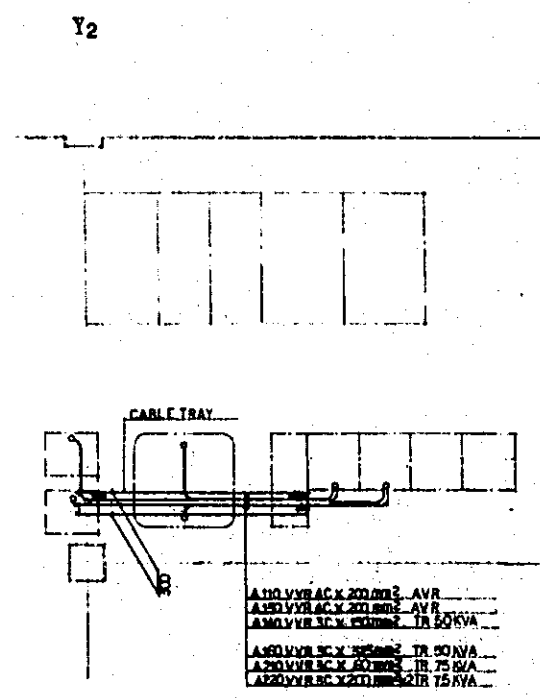
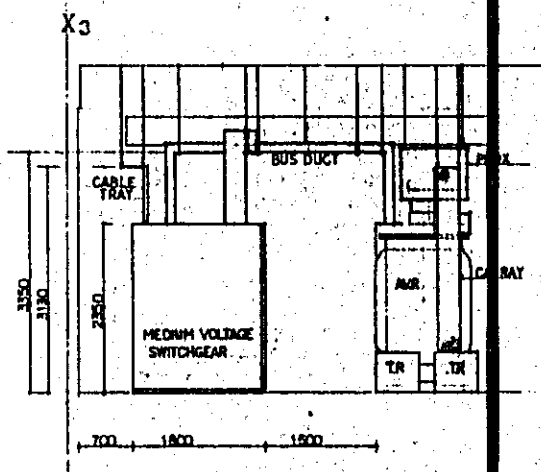


FIGURE OF MEDIUM VOLTAGE SWITCHGEAR (FRONT VIEW)

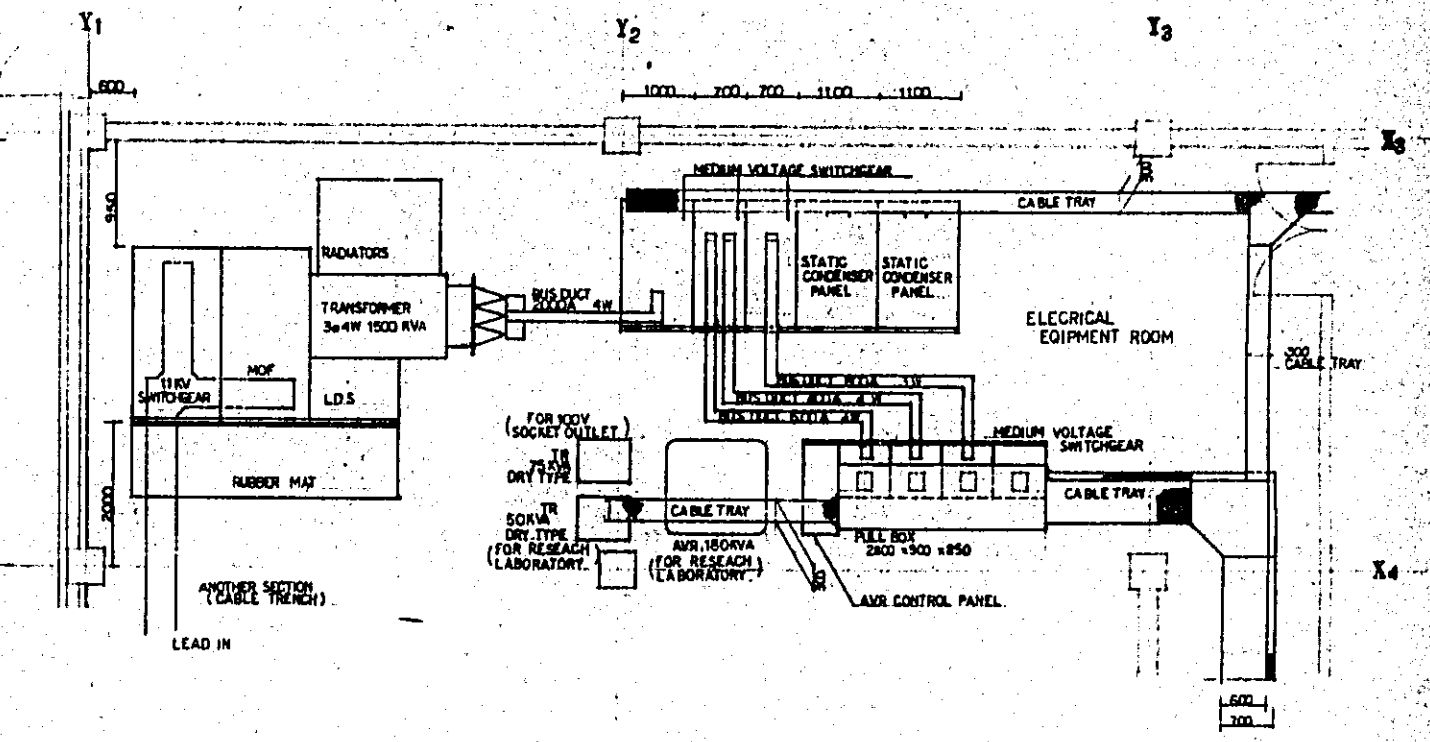
DITTO (SIDE VIEW)



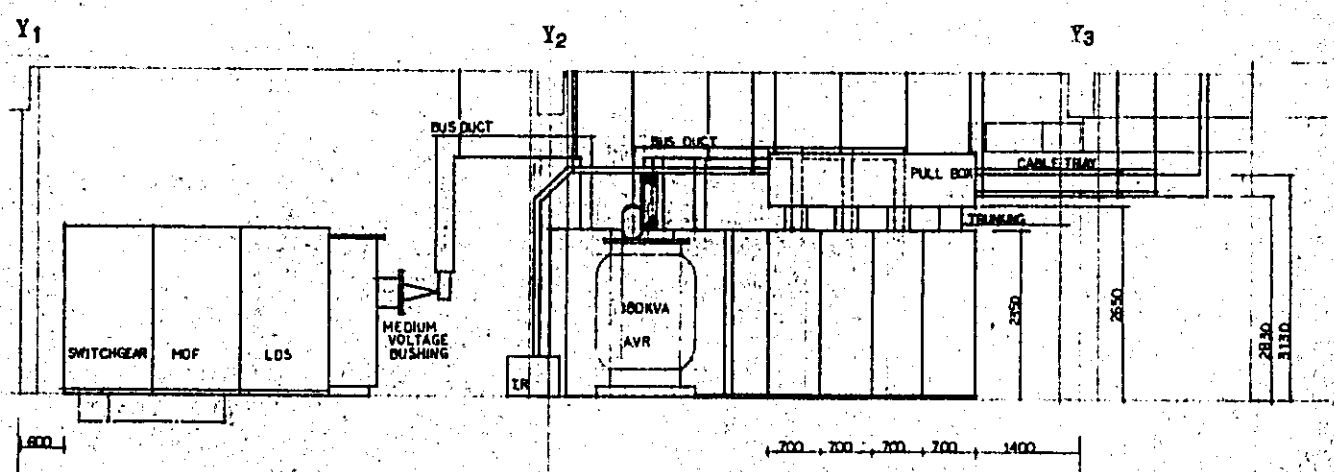
PLAN SCALE 1/50



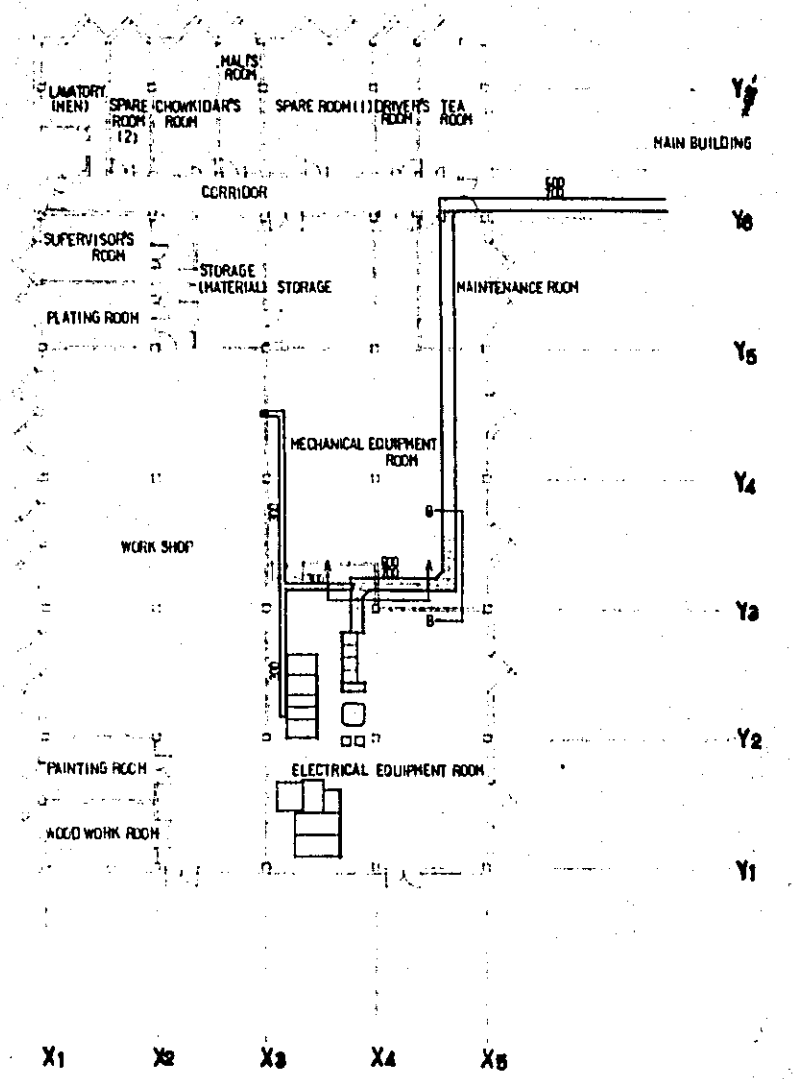
ELEVATION SCALE 1/50



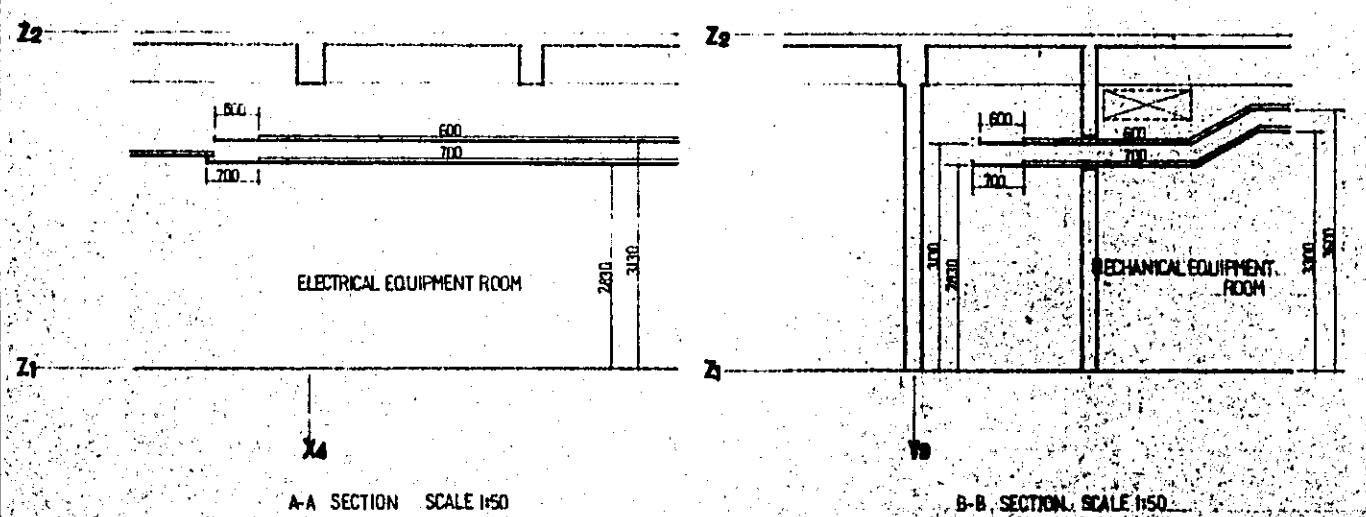
PLAN SCALE 1/50



ELEVATION SCALE 1/50



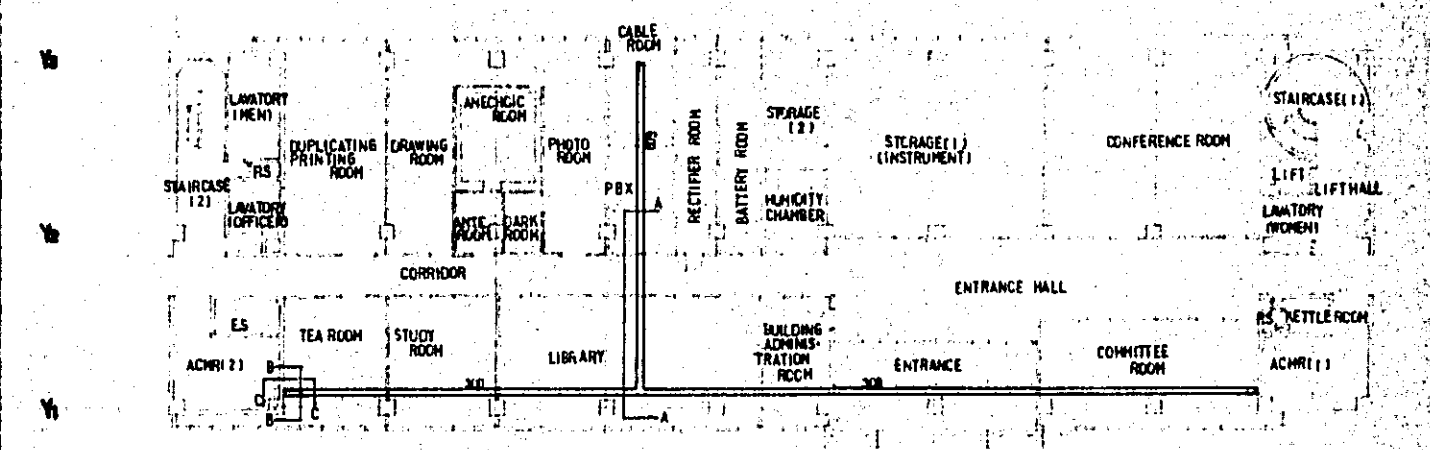
ANNEX SCALE 1:200
CABLE TRAY FOR FEEDER



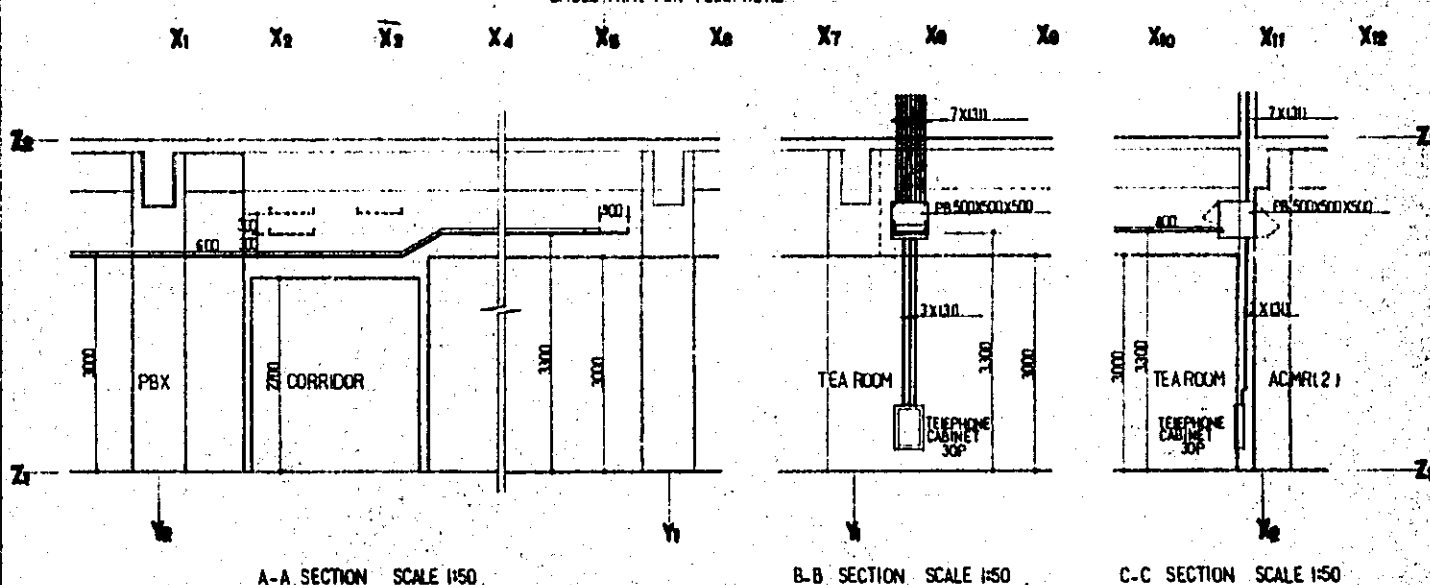
A-A SECTION SCALE 1:50

B-B SECTION SCALE 1:50

PHASE II PHASE I



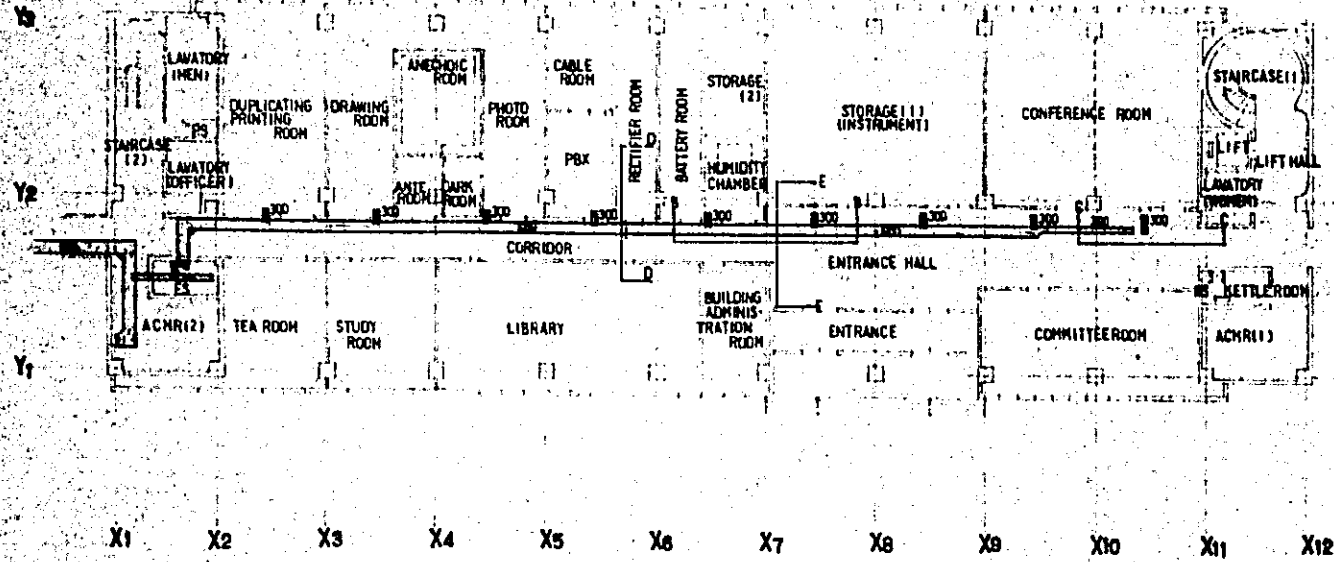
GROUND FLOOR SCALE 1:200
CABLE TRAY FOR TELEPHONE



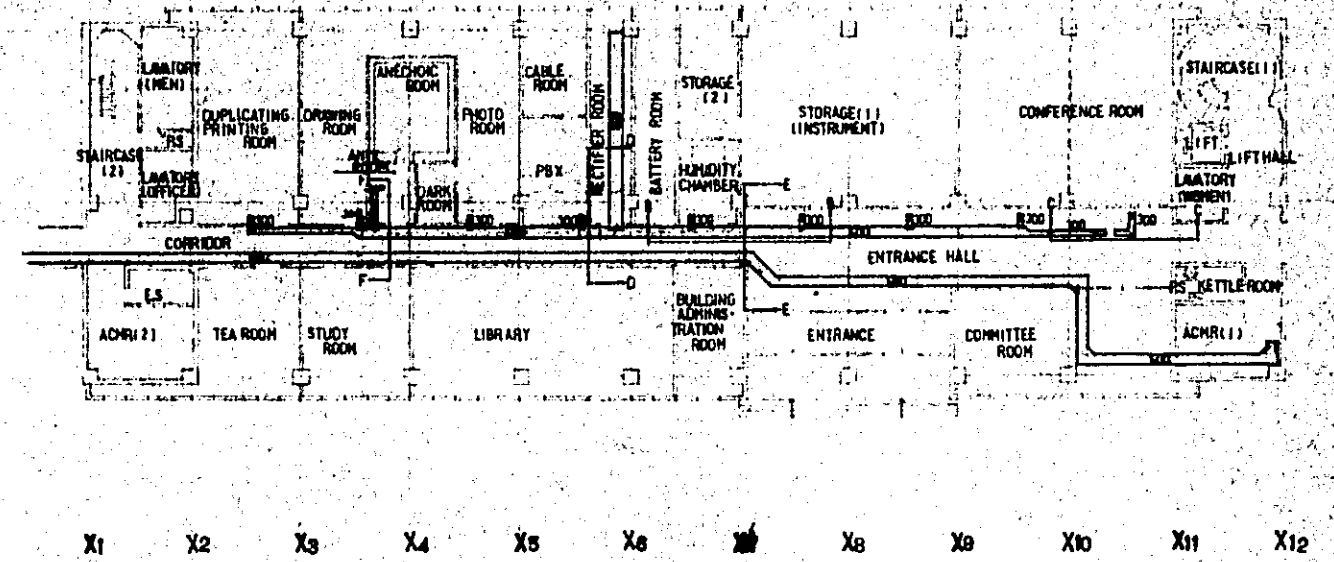
A-A SECTION SCALE 1:50

B-B SECTION SCALE 1:50

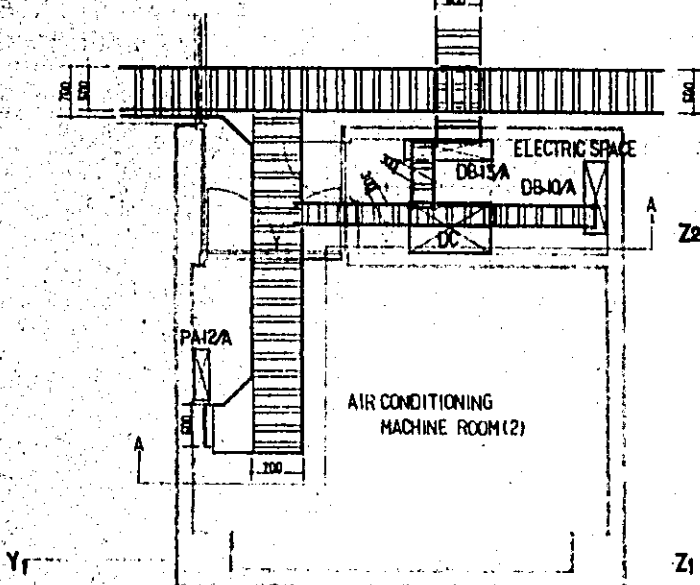
C-C SECTION SCALE 1:50



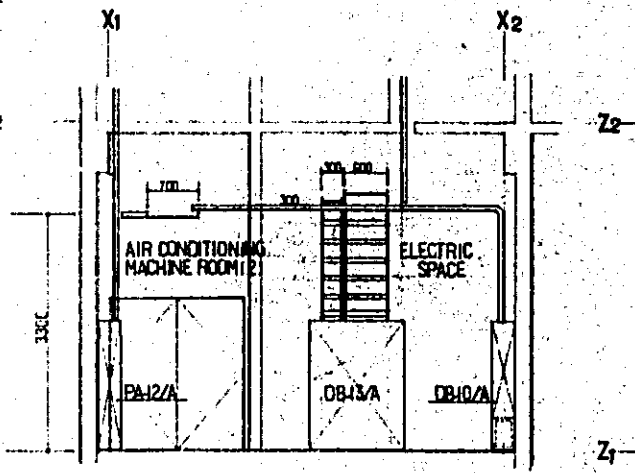
SCALE 1:200 CABLE TRAY LAYOUT



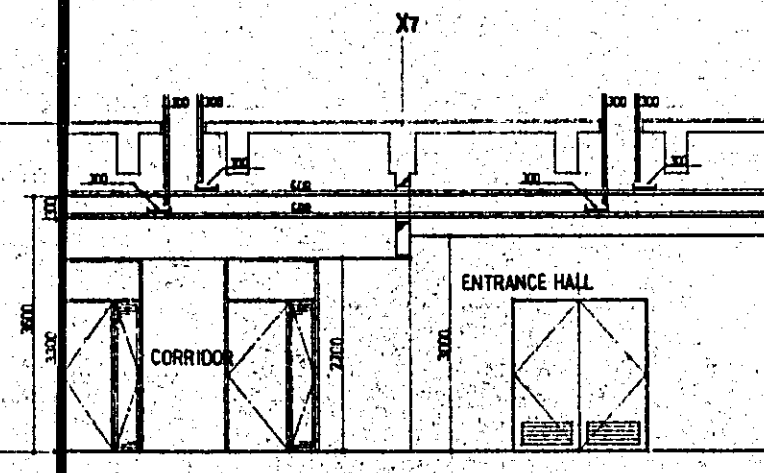
SCALE 1:200 CABLE TRAY LAYOUT



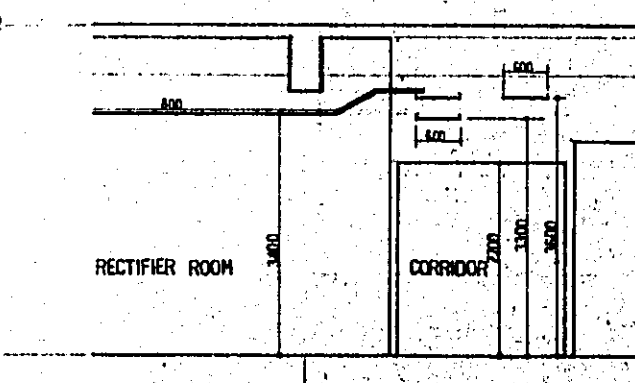
A-A SECTION SCALE 1:50



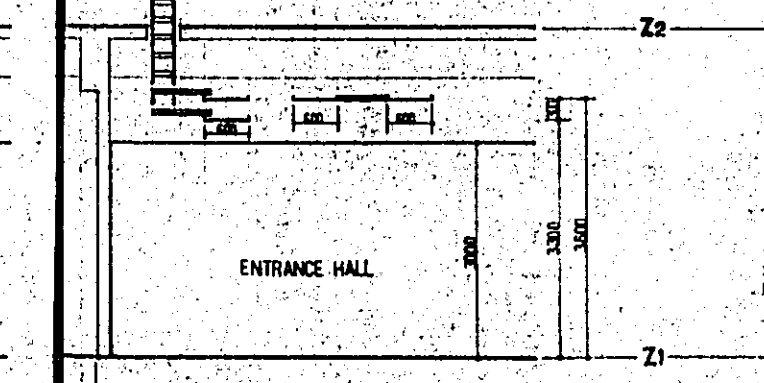
B-B SECTION SCALE 1:50



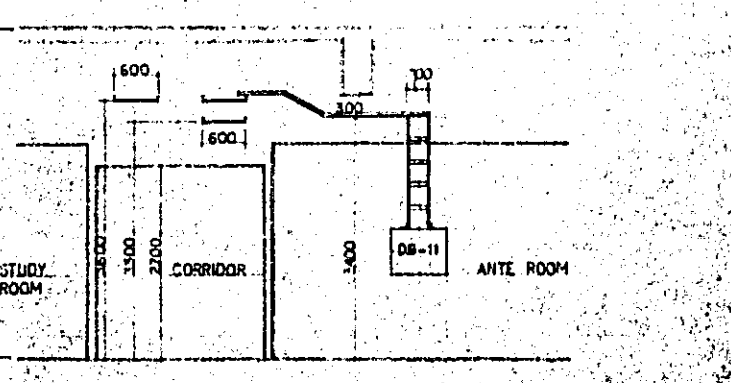
C-C SECTION SCALE 1:50



D-D SECTION SCALE 1:50



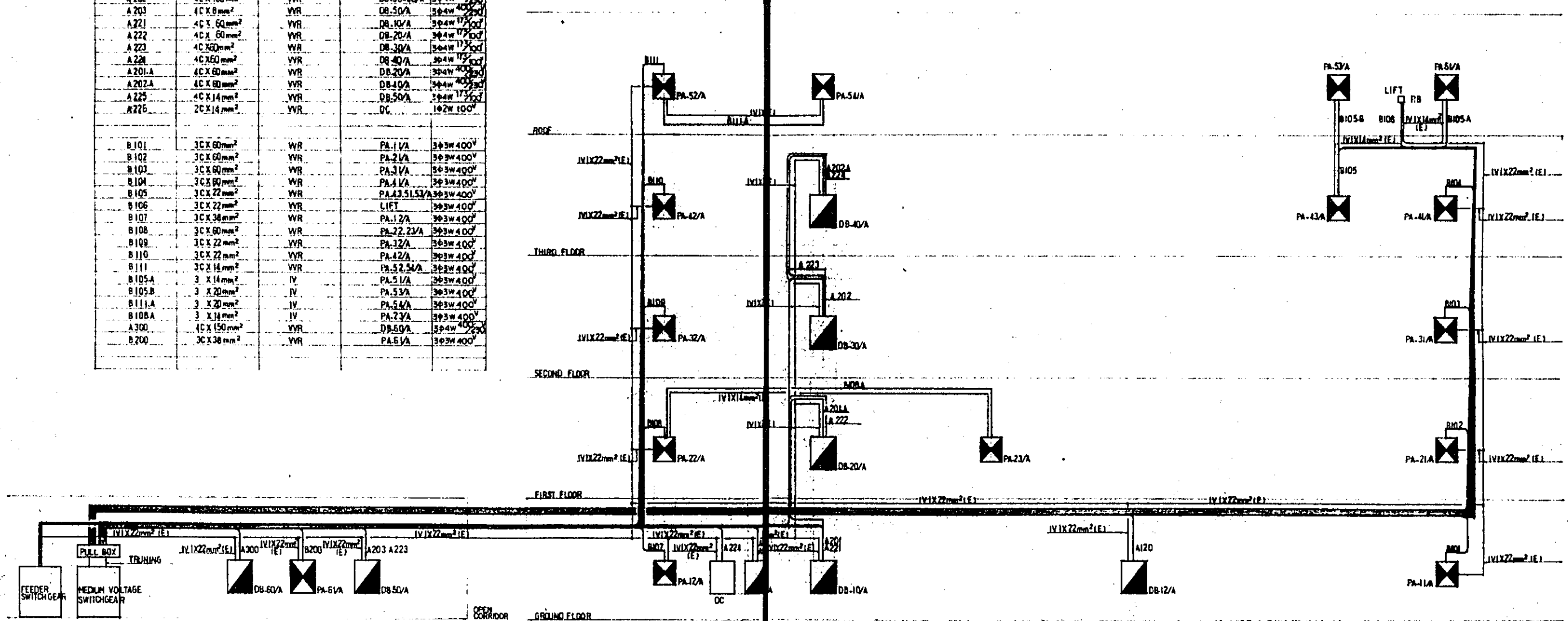
E-E SECTION SCALE 1:50



F-F SECTION SCALE 1:50

SCHEDULE OF FEEDERS

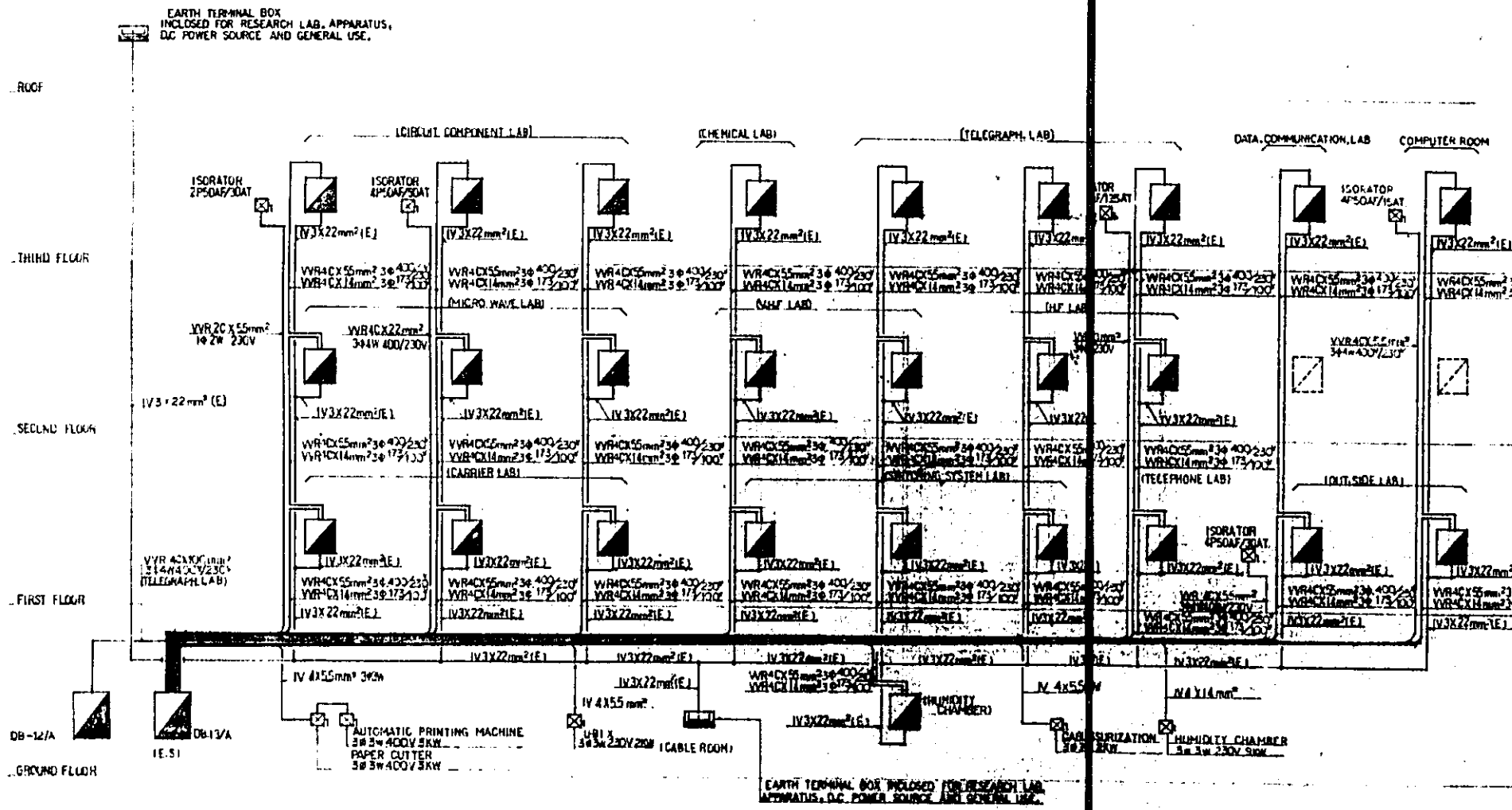
FEEDER NO.	SIZE & NUMBER	TYPE	LOAD	ELECTRIC SPEC.
A 120	4C X 250 mm ²	VVR	DB-12/A	3φ4W 400V
A 131	4C X 100 mm ²	VVR	DB-13/A	3φ4W 400V
A 151	4C X 100 mm ²	VVR	DB-13/A	3φ4W 400V
A 161	4C X 150 mm ²	VVR	DB-13/A	3φ4W 400V
A 162	4C X 200 mm ²	VVR	DB-13/A	3φ4W 400V
A 201	4C X 100 mm ²	VVR	DB-10-20/A	3φ4W 400V
A 202	4C X 100 mm ²	VVR	DB-30-40/A	3φ4W 400V
A 203	4C X 8 mm ²	VVR	DB-50/A	3φ4W 400V
A 221	4C X 50 mm ²	VVR	DB-10/A	3φ4W 400V
A 222	4C X 50 mm ²	VVR	DB-20/A	3φ4W 400V
A 223	4C X 50 mm ²	VVR	DB-30/A	3φ4W 400V
A 224	4C X 50 mm ²	VVR	DB-40/A	3φ4W 400V
A 201-A	4C X 60 mm ²	VVR	DB-20/A	3φ4W 400V
A 202-A	4C X 60 mm ²	VVR	DB-40/A	3φ4W 400V
A 225	4C X 14 mm ²	VVR	DB-50/A	3φ4W 400V
A 226	2C X 14 mm ²	VVR	DC	1φ2W 100V
B 101	3C X 60 mm ²	WR	PA-1/A	3φ3W 400V
B 102	3C X 60 mm ²	WR	PA-2/A	3φ3W 400V
B 103	3C X 60 mm ²	WR	PA-3/A	3φ3W 400V
B 104	3C X 60 mm ²	WR	PA-4/A	3φ3W 400V
B 105	3C X 22 mm ²	WR	PA-13,15,17/A	3φ3W 400V
B 106	3C X 22 mm ²	WR	LIFT	3φ3W 400V
B 107	3C X 36 mm ²	WR	PA-12/A	3φ3W 400V
B 108	3C X 60 mm ²	WR	PA-22,23/A	3φ3W 400V
B 109	3C X 22 mm ²	WR	PA-12/A	3φ3W 400V
B 110	3C X 22 mm ²	WR	PA-12/A	3φ3W 400V
B 111	3C X 14 mm ²	WR	PA-52,54/A	3φ3W 400V
B 105-A	3 X 14 mm ²	IV	PA-51/A	3φ3W 400V
B 105-B	3 X 20 mm ²	IV	PA-53/A	3φ3W 400V
B 111-A	3 X 20 mm ²	IV	PA-54/A	3φ3W 400V
B 108-A	3 X 14 mm ²	IV	PA-23/A	3φ3W 400V
A 300	4C X 150 mm ²	VVR	DB-50/A	3φ4W 400V
B 200	3C X 36 mm ²	VVR	PA-5/A	3φ3W 400V



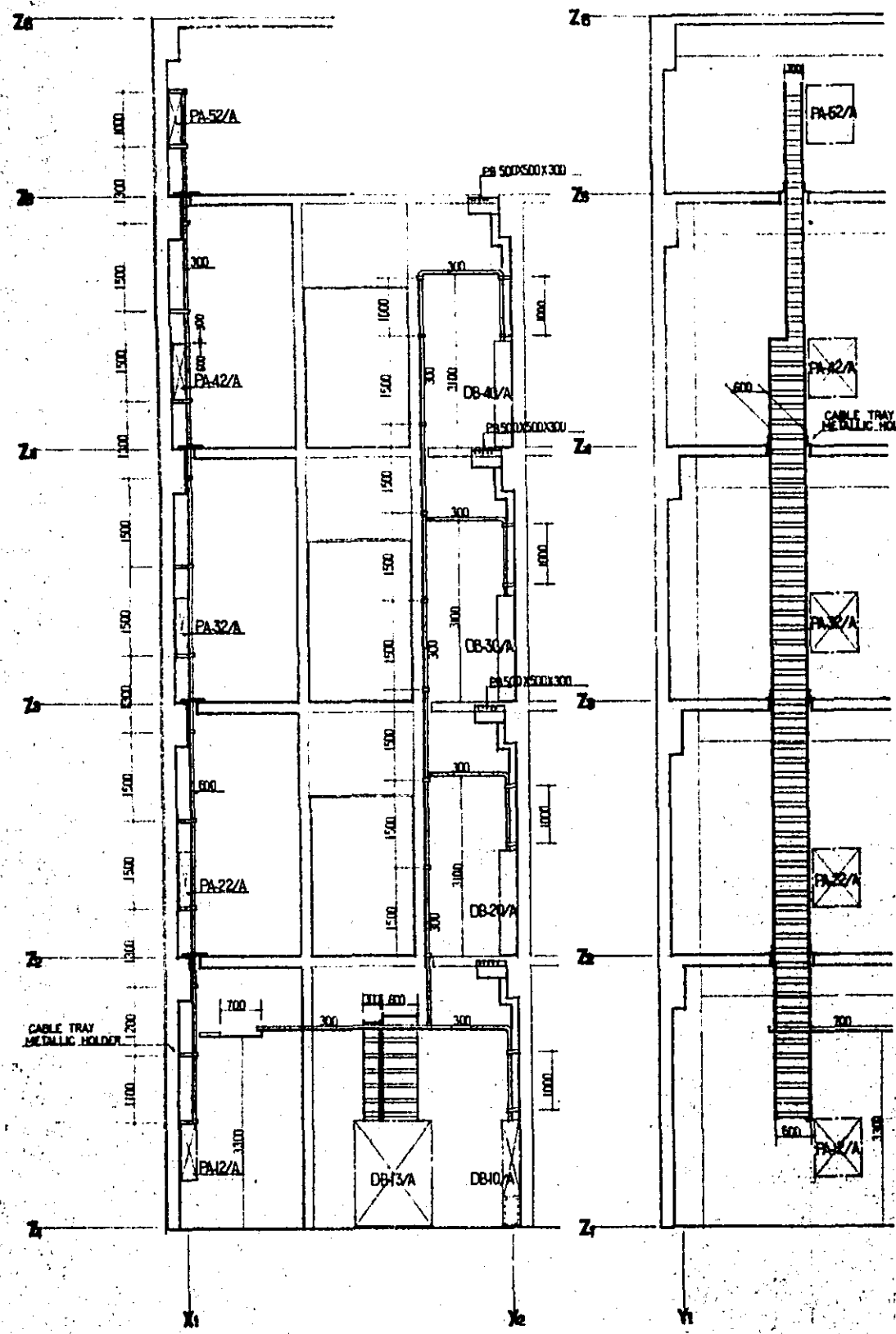
ANNEX PHASE II ← PHASE I

MAIN BUILDING

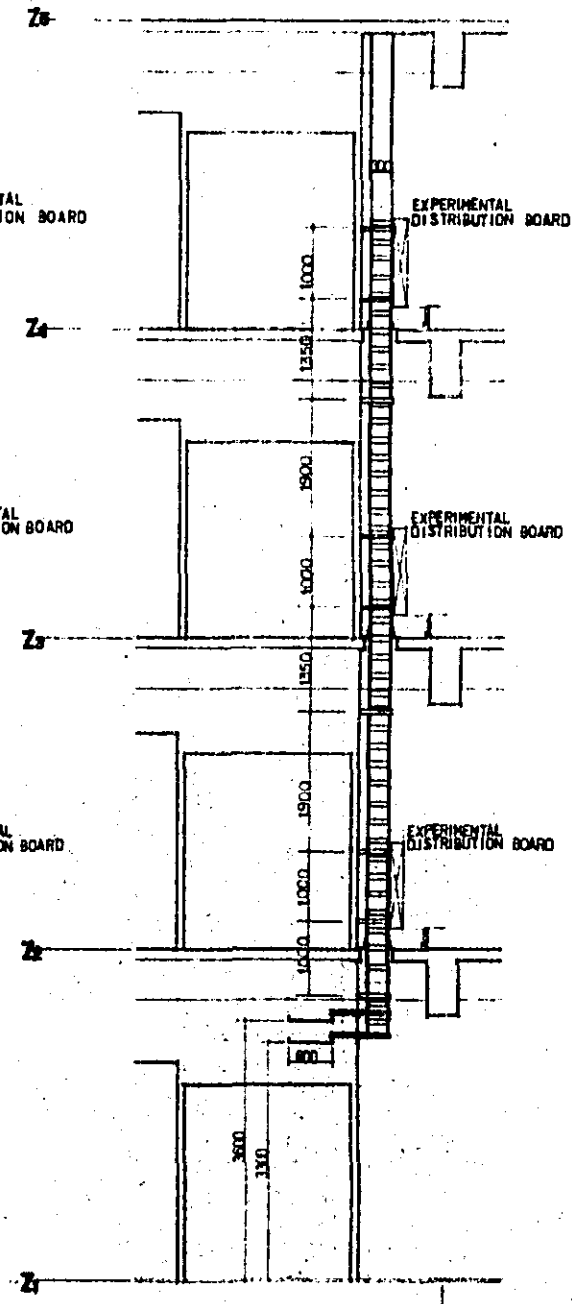
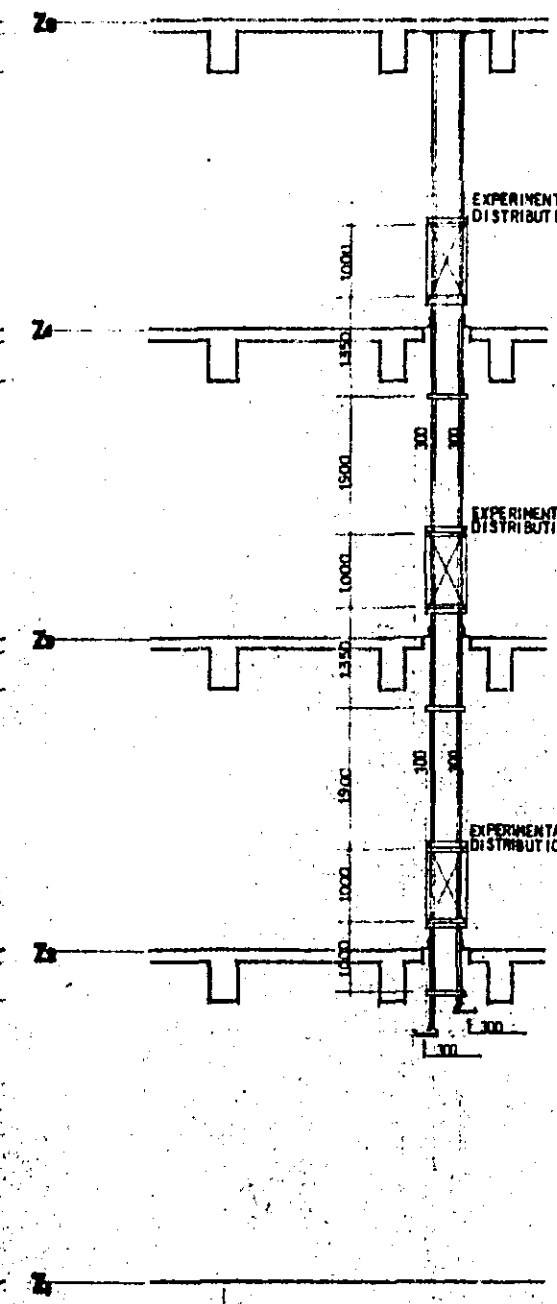
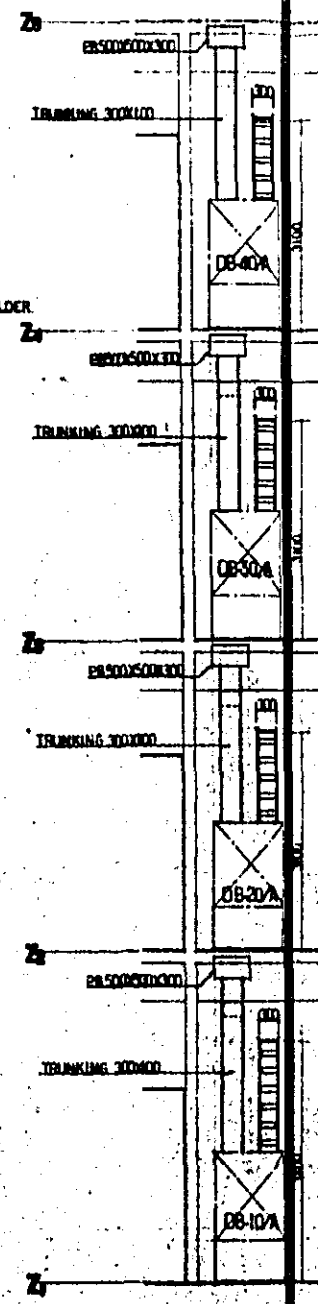
FEEDER DIAGRAM



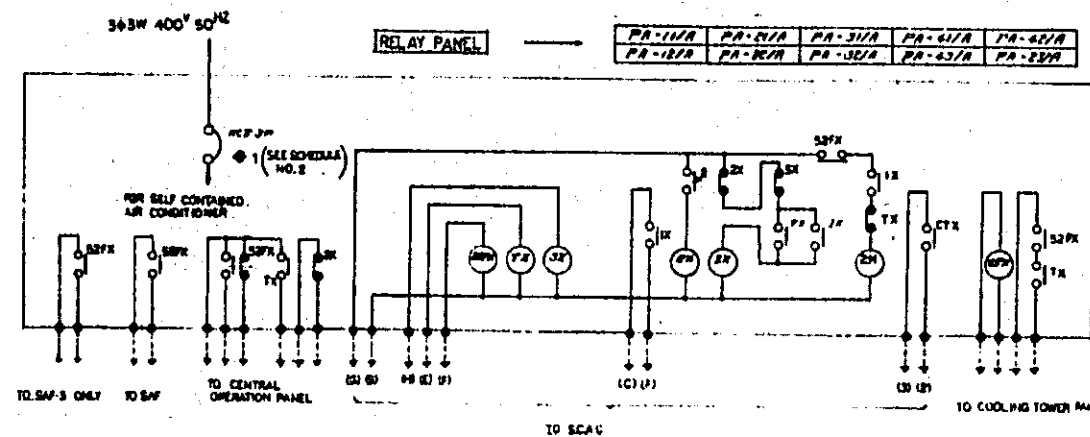
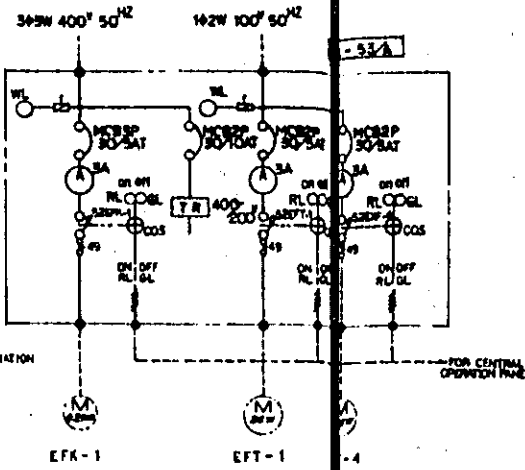
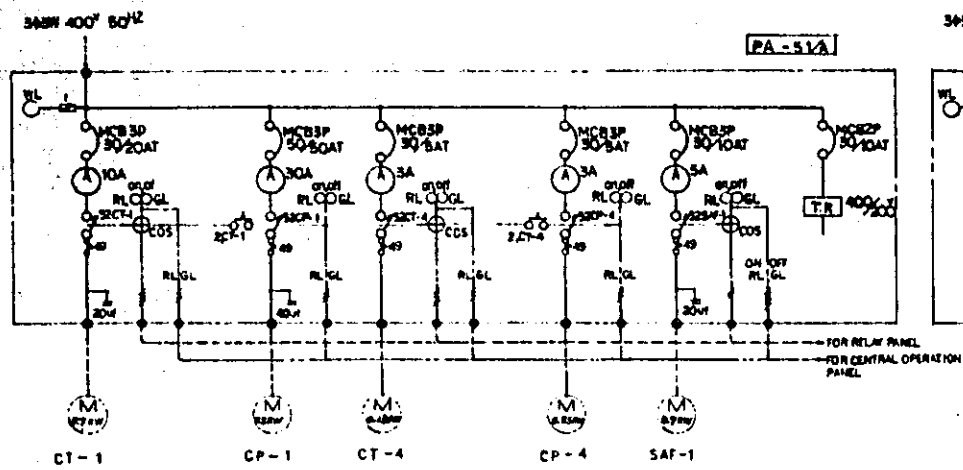
WIRE DIAGRAM OF LABORATORY



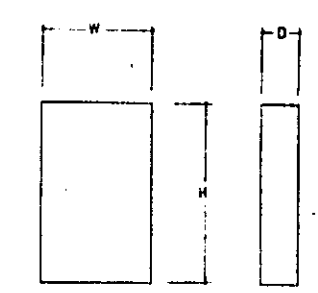
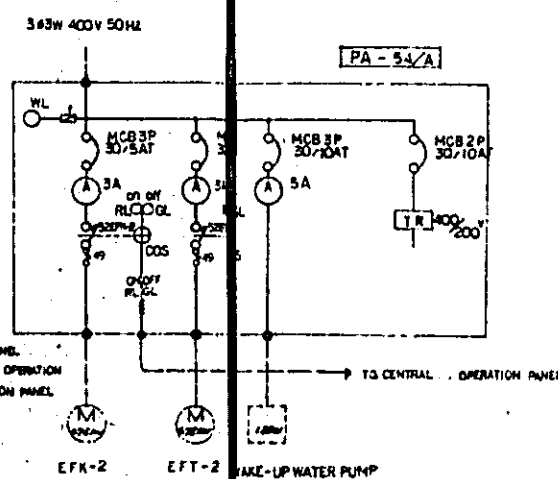
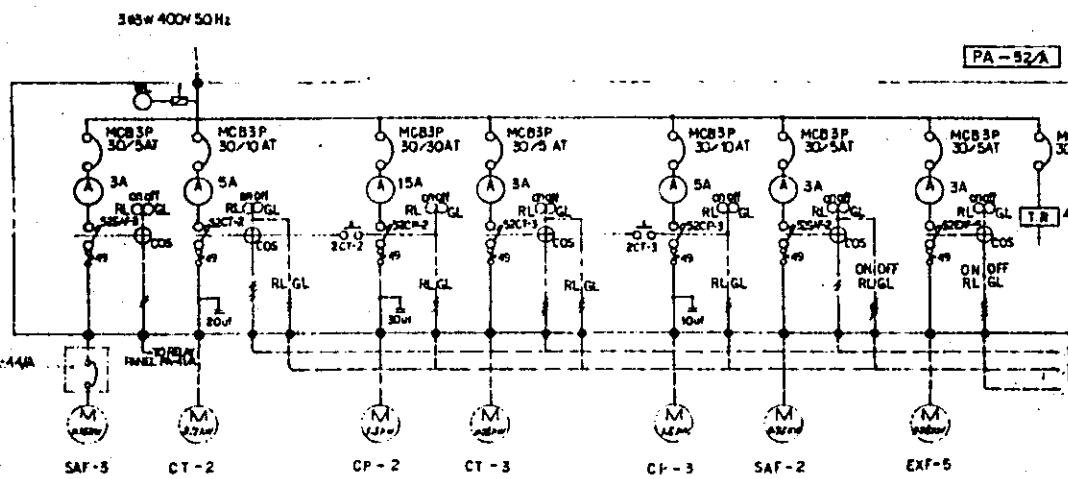
DETAIL OF FEEDER (LIGHTING) AND CABLE TRAY



DETAIL OF EXPERIMENTAL DISTRIBUTION BOARD AND CABLE TRAY

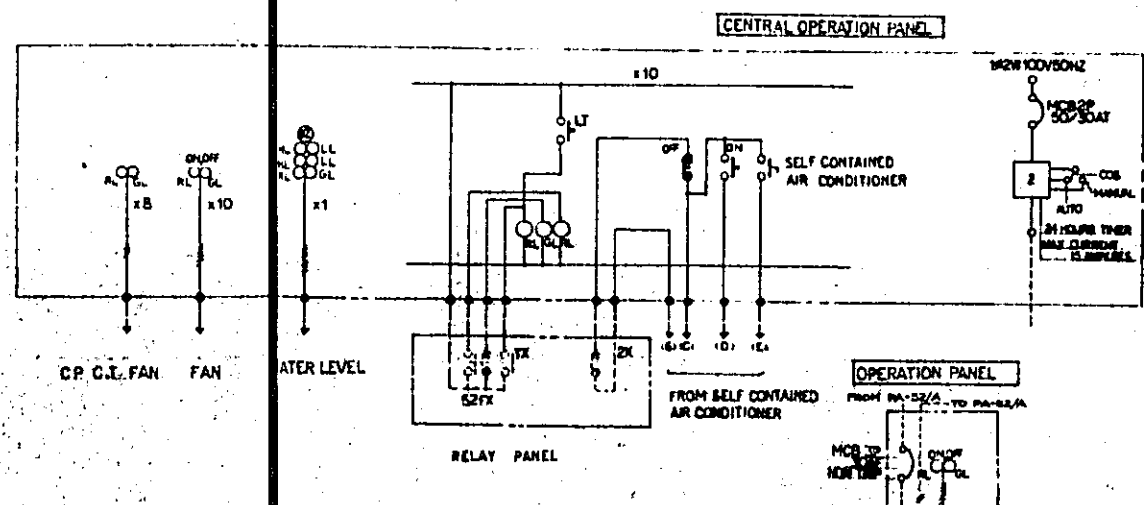
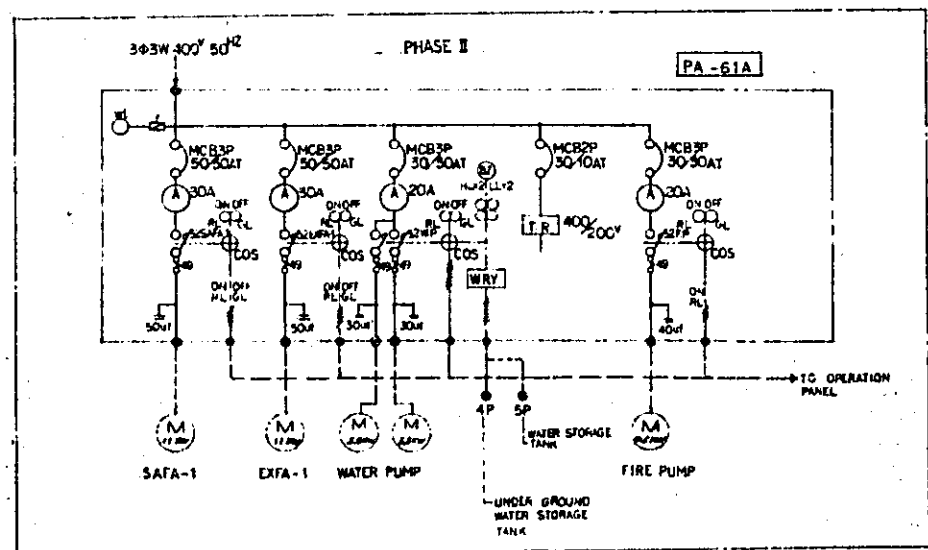


SEE THE DRAWING NOE-12



	W	H	D
PA-51/A	180	1000	200
PA-52/A	350	800	200
PA-53/A	180	1000	200
PA-54/A	180	800	200
PA-61/A	350	1000	200
PA-62/A	350	800	200
PA-63/A	350	800	200
PA-64/A	350	800	200
PA-65/A	350	800	200
PA-66/A	350	800	200
PA-67/A	350	800	200
PA-68/A	350	800	200
PA-69/A	350	800	200
PA-70/A	350	800	200
PA-71/A	350	800	200
PA-72/A	350	800	200
PA-73/A	350	800	200
PA-74/A	350	800	200
PA-75/A	350	800	200
PA-76/A	350	800	200
PA-77/A	350	800	200
PA-78/A	350	800	200
PA-79/A	350	800	200
PA-80/A	350	800	200

NO.1 DIMENSION OF CONTROL PANEL

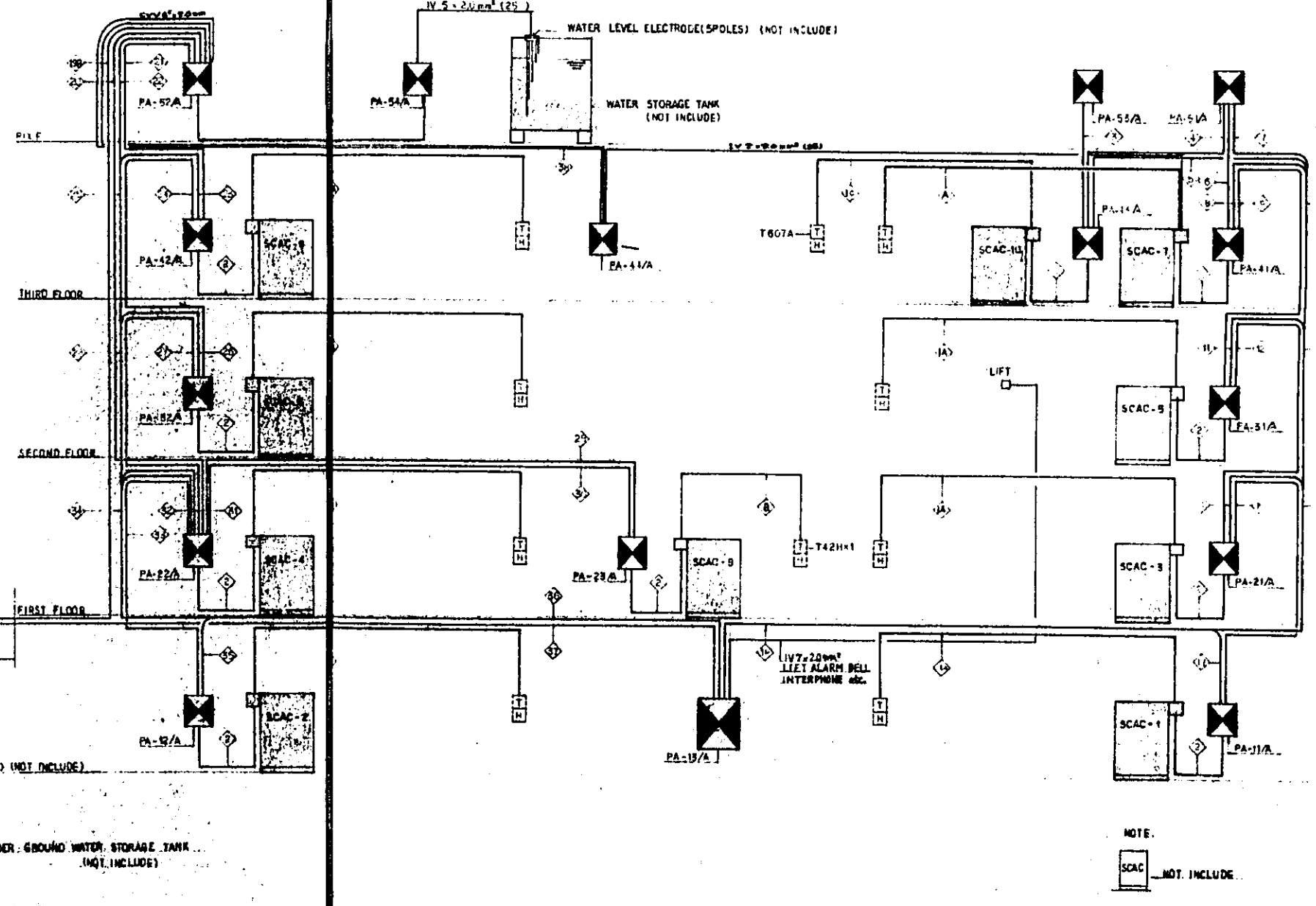
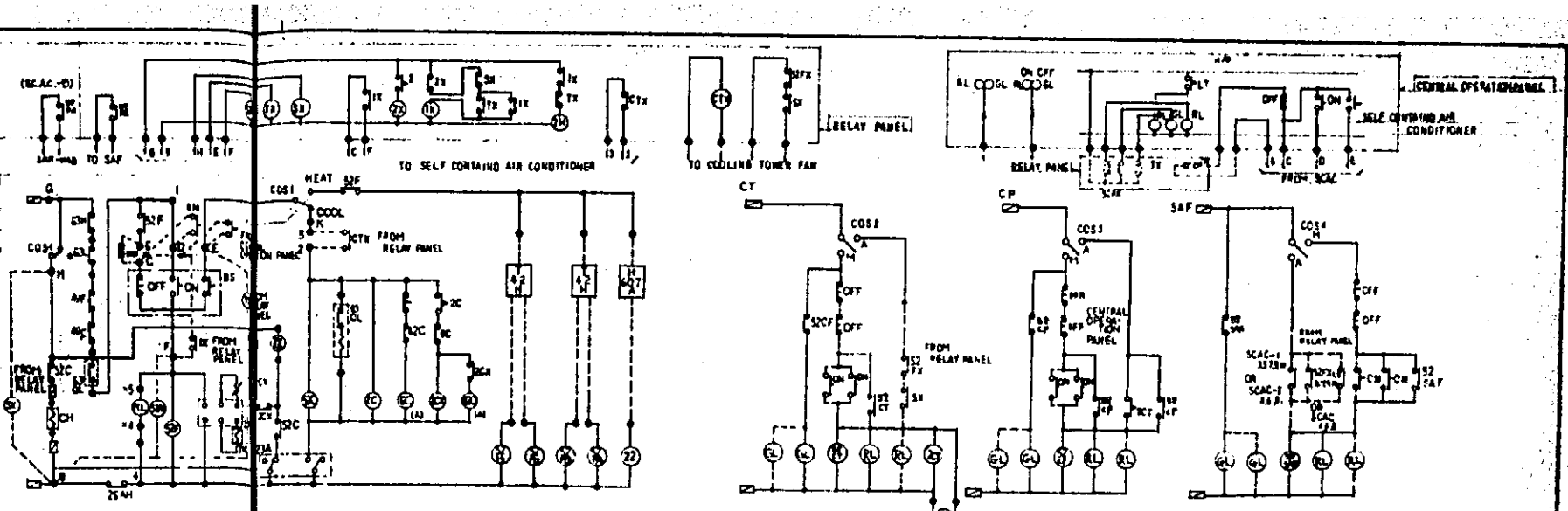


	TYPE	FAH	NO. OF	NO.
PA-11/A	40/50AT	3-3	40	40/50AT
PA-12/A	40/50AT	3-3	40	40/50AT
PA-13/A	40/50AT	3-3	40	40/50AT
PA-14/A	40/50AT	3-3	40	40/50AT
PA-15/A	40/50AT	3-3	40	40/50AT
PA-16/A	40/50AT	3-3	40	40/50AT
PA-17/A	40/50AT	3-3	40	40/50AT
PA-18/A	40/50AT	3-3	40	40/50AT
PA-19/A	40/50AT	3-3	40	40/50AT
PA-20/A	40/50AT	3-3	40	40/50AT
PA-21/A	40/50AT	3-3	40	40/50AT
PA-22/A	40/50AT	3-3	40	40/50AT
PA-23/A	40/50AT	3-3	40	40/50AT
PA-24/A	40/50AT	3-3	40	40/50AT
PA-25/A	40/50AT	3-3	40	40/50AT
PA-26/A	40/50AT	3-3	40	40/50AT
PA-27/A	40/50AT	3-3	40	40/50AT
PA-28/A	40/50AT	3-3	40	40/50AT
PA-29/A	40/50AT	3-3	40	40/50AT
PA-30/A	40/50AT	3-3	40	40/50AT

NO.2 BREAKER CAPACITY OF RELAY PANEL

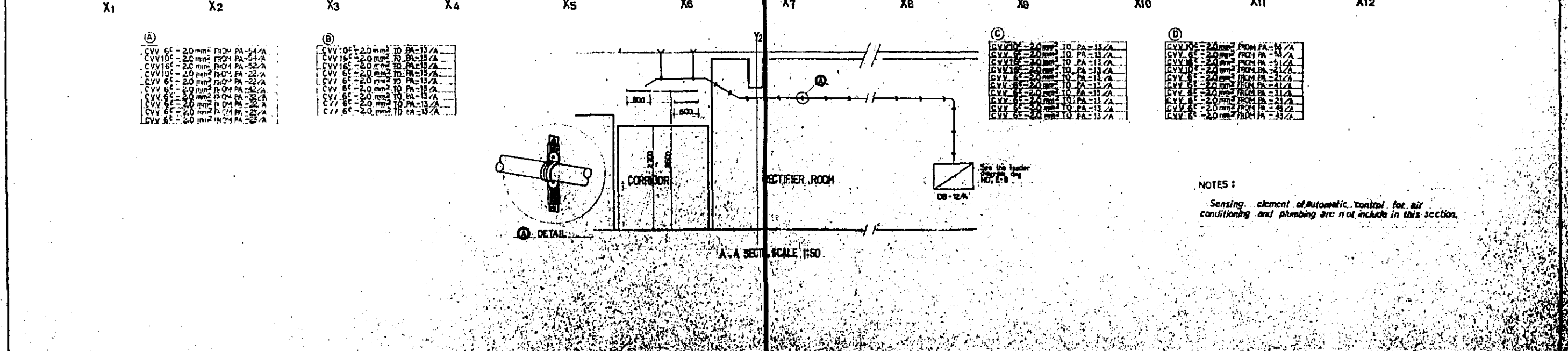
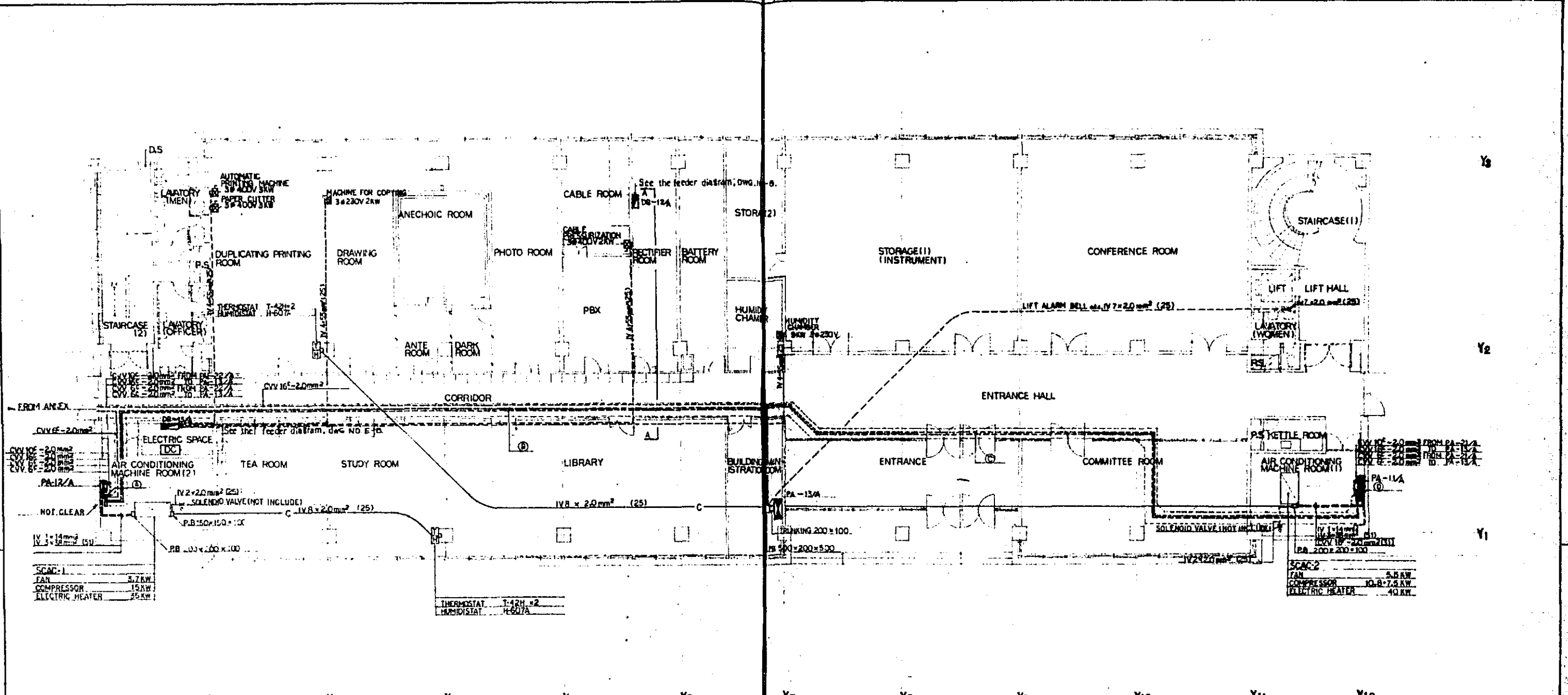
NO.	WIRE	NOTE	NO.	WIRE	NOTE
1a	IV 8x2.0mm ² (25)	OP	19 A	IV 9x2.0mm ² (31) 200 ^o OP ID	
1b	IV 5x2.0mm ² (25)	CP	19 B	IV 5x2.0mm ² (25)	OP
1c	IV 6x2.0mm ² (25)	OP	20	CVV 6x2.0mm ²	IL
2	CVV 16x2.0mm ² (31)	OP	21	CVV 6x2.0mm ²	OP
3	CVV 6x2.0mm ²	200 ^o OP ID	22	CVV 6x2.0mm ²	1D
4	CVV 6x2.0mm ²	100 ^o OP ID	23	CVV 6x2.0mm ²	OP
5	CVV 6x2.0mm ²	200 ^o OP ID	24	CVV 6x2.0mm ²	IL
6	CVV 6x2.0mm ²	100 ^o OP ID	25	CVV 6x2.0mm ²	1D
7	CVV 6x2.0mm ²	OP	26	CVV 6x2.0mm ²	OP
8	CVV 6x2.0mm ²	1L	27	CVV 6x2.0mm ²	1L
9	CVV 6x2.0mm ²	ID	28	CVV 6x2.0mm ²	OP
10	CVV 6x2.0mm ²	200 ^o OP ID	29	CVV 6x2.0mm ²	OP
11	CVV 6x2.0mm ²	100 ^o OP ID	30	CVV 6x2.0mm ²	OP
12	CVV 6x2.0mm ²	OP	31	CVV 6x2.0mm ²	OP
13	CVV 6x2.0mm ²	1L	32	CVV 6x2.0mm ²	OP
14	CVV 6x2.0mm ²	OP	33	CVV 6x2.0mm ²	IL
15	CVV 6x2.0mm ²	OP	34	CVV 10x2.0mm ²	200 ^o OP ID
16	CVV 6x2.0mm ²	OP	35	CVV 6x2.0mm ²	OP
17	CVV 6x2.0mm ²	OP	36	CVV 6x2.0mm ²	OP
18	CVV 6x2.0mm ²	OP	37	CVV 6x2.0mm ²	OP
19	CVV 6x2.0mm ²	OP	38	CVV 6x2.0mm ²	OP
20	CVV 6x2.0mm ²	OP	39	CVV 6x2.0mm ²	OP
21	CVV 6x2.0mm ²	OP	40	CVV 6x2.0mm ²	OP
22	CVV 6x2.0mm ²	OP	41	CVV 6x2.0mm ²	OP
23	CVV 6x2.0mm ²	OP	42	CVV 6x2.0mm ²	OP
24	CVV 6x2.0mm ²	OP	43	CVV 6x2.0mm ²	OP
25	CVV 6x2.0mm ²	OP	44	CVV 6x2.0mm ²	OP
26	CVV 6x2.0mm ²	OP	45	CVV 6x2.0mm ²	OP
27	CVV 6x2.0mm ²	OP	46	CVV 6x2.0mm ²	OP
28	CVV 6x2.0mm ²	OP	47	CVV 6x2.0mm ²	OP
29	CVV 6x2.0mm ²	OP	48	CVV 6x2.0mm ²	OP
30	CVV 6x2.0mm ²	OP	49	CVV 6x2.0mm ²	OP
31	CVV 6x2.0mm ²	OP	50	CVV 6x2.0mm ²	OP
32	CVV 6x2.0mm ²	OP	51	CVV 6x2.0mm ²	OP
33	CVV 6x2.0mm ²	OP	52	CVV 6x2.0mm ²	OP
34	CVV 6x2.0mm ²	OP	53	CVV 6x2.0mm ²	OP
35	CVV 6x2.0mm ²	OP	54	CVV 6x2.0mm ²	OP
36	CVV 6x2.0mm ²	OP	55	CVV 6x2.0mm ²	OP
37	CVV 6x2.0mm ²	OP	56	CVV 6x2.0mm ²	OP
38	CVV 6x2.0mm ²	OP	57	CVV 6x2.0mm ²	OP
39	CVV 6x2.0mm ²	OP	58	CVV 6x2.0mm ²	OP
40	CVV 6x2.0mm ²	OP	59	CVV 6x2.0mm ²	OP
41	CVV 6x2.0mm ²	OP	60	CVV 6x2.0mm ²	OP
42	CVV 6x2.0mm ²	OP	61	CVV 6x2.0mm ²	OP
43	CVV 6x2.0mm ²	OP	62	CVV 6x2.0mm ²	OP
44	CVV 6x2.0mm ²	OP	63	CVV 6x2.0mm ²	OP
45	CVV 6x2.0mm ²	OP	64	CVV 6x2.0mm ²	OP
46	CVV 6x2.0mm ²	OP	65	CVV 6x2.0mm ²	OP
47	CVV 6x2.0mm ²	OP	66	CVV 6x2.0mm ²	OP
48	CVV 6x2.0mm ²	OP	67	CVV 6x2.0mm ²	OP
49	CVV 6x2.0mm ²	OP	68	CVV 6x2.0mm ²	OP
50	CVV 6x2.0mm ²	OP	69	CVV 6x2.0mm ²	OP
51	CVV 6x2.0mm ²	OP	70	CVV 6x2.0mm ²	OP
52	CVV 6x2.0mm ²	OP	71	CVV 6x2.0mm ²	OP
53	CVV 6x2.0mm ²	OP	72	CVV 6x2.0mm ²	OP
54	CVV 6x2.0mm ²	OP	73	CVV 6x2.0mm ²	OP
55	CVV 6x2.0mm ²	OP	74	CVV 6x2.0mm ²	OP
56	CVV 6x2.0mm ²	OP	75	CVV 6x2.0mm ²	OP
57	CVV 6x2.0mm ²	OP	76	CVV 6x2.0mm ²	OP
58	CVV 6x2.0mm ²	OP	77	CVV 6x2.0mm ²	OP
59	CVV 6x2.0mm ²	OP	78	CVV 6x2.0mm ²	OP
60	CVV 6x2.0mm ²	OP	79	CVV 6x2.0mm ²	OP
61	CVV 6x2.0mm ²	OP	80	CVV 6x2.0mm ²	OP
62	CVV 6x2.0mm ²	OP	81	CVV 6x2.0mm ²	OP
63	CVV 6x2.0mm ²	OP	82	CVV 6x2.0mm ²	OP
64	CVV 6x2.0mm ²	OP	83	CVV 6x2.0mm ²	OP
65	CVV 6x2.0mm ²	OP	84	CVV 6x2.0mm ²	OP
66	CVV 6x2.0mm ²	OP	85	CVV 6x2.0mm ²	OP
67	CVV 6x2.0mm ²	OP	86	CVV 6x2.0mm ²	OP
68	CVV 6x2.0mm ²	OP	87	CVV 6x2.0mm ²	OP
69	CVV 6x2.0mm ²	OP	88	CVV 6x2.0mm ²	OP
70	CVV 6x2.0mm ²	OP	89	CVV 6x2.0mm ²	OP
71	CVV 6x2.0mm ²	OP	90	CVV 6x2.0mm ²	OP
72	CVV 6x2.0mm ²	OP	91	CVV 6x2.0mm ²	OP
73	CVV 6x2.0mm ²	OP	92	CVV 6x2.0mm ²	OP
74	CVV 6x2.0mm ²	OP	93	CVV 6x2.0mm ²	OP
75	CVV 6x2.0mm ²	OP	94	CVV 6x2.0mm ²	OP
76	CVV 6x2.0mm ²	OP	95	CVV 6x2.0mm ²	OP
77	CVV 6x2.0mm ²	OP	96	CVV 6x2.0mm ²	OP
78	CVV 6x2.0mm ²	OP	97	CVV 6x2.0mm ²	OP
79	CVV 6x2.0mm ²	OP	98	CVV 6x2.0mm ²	OP
80	CVV 6x2.0mm ²	OP	99	CVV 6x2.0mm ²	OP
81	CVV 6x2.0mm ²	OP	100	CVV 6x2.0mm ²	OP

SYMBOL	NAME
32Z	MAGNETIC SWITCH FOR FAN
32S	MAGNETIC SWITCH FOR MOTOR
32T	OVERCURRENT RELAY FOR FAN
32C	OVERCURRENT RELAY FOR MOTOR
32E	MAGNETIC SWITCH FOR PRESSURE
32F	MAGNETIC SWITCH FOR PRESSURE
32G	MAGNETIC SWITCH FOR PRESSURE
32H	MAGNETIC SWITCH FOR PRESSURE
32I	MAGNETIC SWITCH FOR PRESSURE
32J	MAGNETIC SWITCH FOR PRESSURE
32K	MAGNETIC SWITCH FOR PRESSURE
32L	MAGNETIC SWITCH FOR PRESSURE
32M	MAGNETIC SWITCH FOR PRESSURE
32N	MAGNETIC SWITCH FOR PRESSURE
32O	MAGNETIC SWITCH FOR PRESSURE
32P	MAGNETIC SWITCH FOR PRESSURE
32Q	MAGNETIC SWITCH FOR PRESSURE
32R	MAGNETIC SWITCH FOR PRESSURE
32S	MAGNETIC SWITCH FOR PRESSURE
32T	MAGNETIC SWITCH FOR PRESSURE
32U	MAGNETIC SWITCH FOR PRESSURE
32V	MAGNETIC SWITCH FOR PRESSURE
32W	MAGNETIC SWITCH FOR PRESSURE
32X	MAGNETIC SWITCH FOR PRESSURE
32Y	MAGNETIC SWITCH FOR PRESSURE
32Z	MAGNETIC SWITCH FOR PRESSURE



I... T 42H+2
II... H 607H

NOTE:
SCAC... NOT INCLUDE



(A)

CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 105	- 2.0 mm ²	FROM PA-14/A
CVV 106	- 2.0 mm ²	FROM PA-14/A
CVV 107	- 2.0 mm ²	FROM PA-14/A
CVV 108	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A

(B)

CVV 105	- 2.0 mm ²	TO PA-13/A
CVV 106	- 2.0 mm ²	TO PA-13/A
CVV 107	- 2.0 mm ²	TO PA-13/A
CVV 108	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A

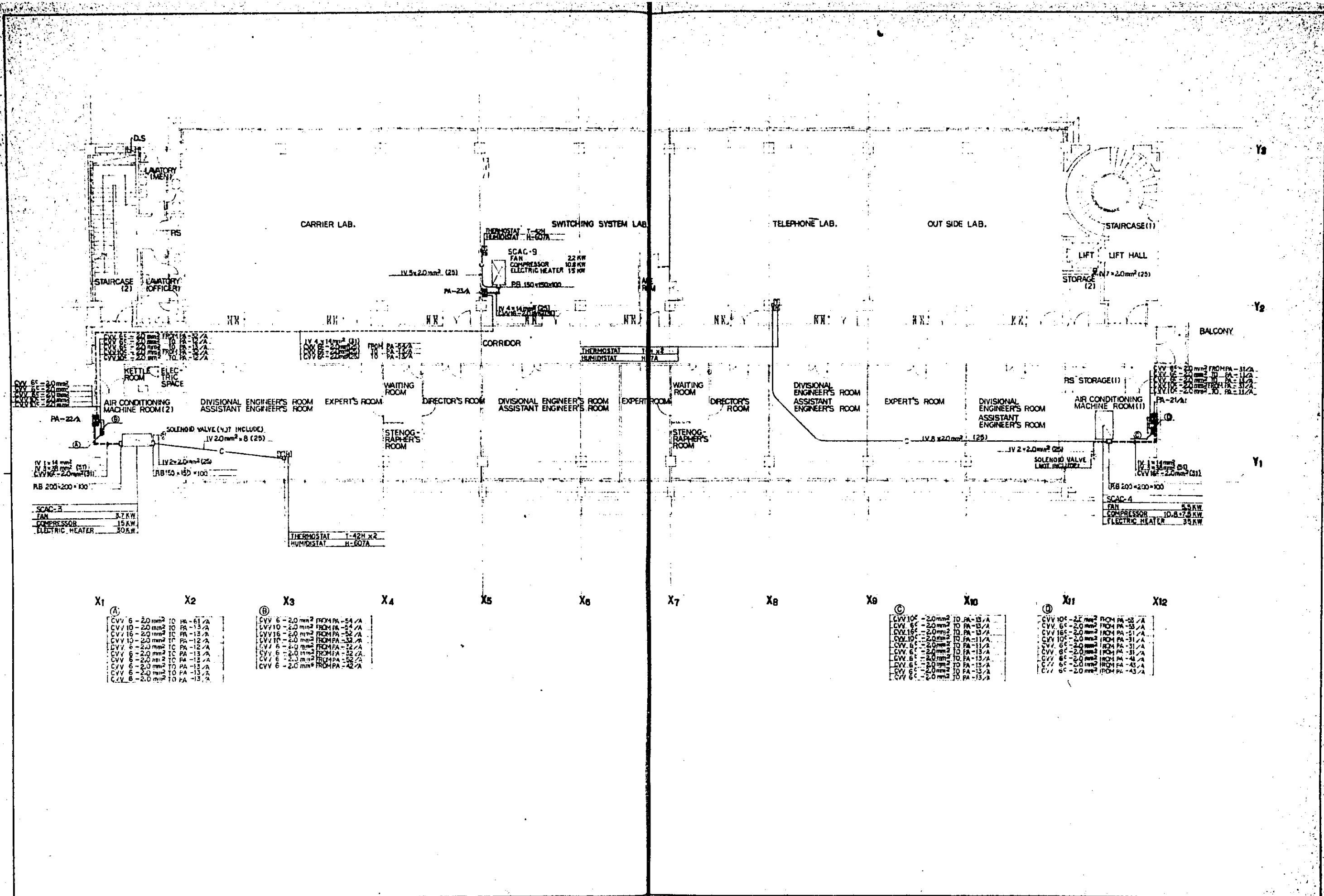
(C)

CVV 105	- 2.0 mm ²	TO PA-13/A
CVV 106	- 2.0 mm ²	TO PA-13/A
CVV 107	- 2.0 mm ²	TO PA-13/A
CVV 108	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A
CVV 65	- 2.0 mm ²	TO PA-13/A

(D)

CVV 105	- 2.0 mm ²	FROM PA-14/A
CVV 106	- 2.0 mm ²	FROM PA-14/A
CVV 107	- 2.0 mm ²	FROM PA-14/A
CVV 108	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A
CVV 65	- 2.0 mm ²	FROM PA-14/A

NOTES:
Sensing element of automatic control for air conditioning and plumbing are not include in this section.



X1

(A)	CVV 6 - 2.0 mm ²	TO PA - 61/A
	CVV 10 - 2.0 mm ²	TO PA - 13/A
	CVV 16 - 2.0 mm ²	TO PA - 13/A
	CVV 10 - 2.0 mm ²	TO PA - 12/A
	CVV 6 - 2.0 mm ²	TO PA - 12/A
	CVV 6 - 2.0 mm ²	TO PA - 13/A
	CVV 6 - 2.0 mm ²	TO PA - 13/A
	CVV 6 - 2.0 mm ²	TO PA - 13/A
	CVV 6 - 2.0 mm ²	TO PA - 13/A
	CVV 6 - 2.0 mm ²	TO PA - 13/A

X2

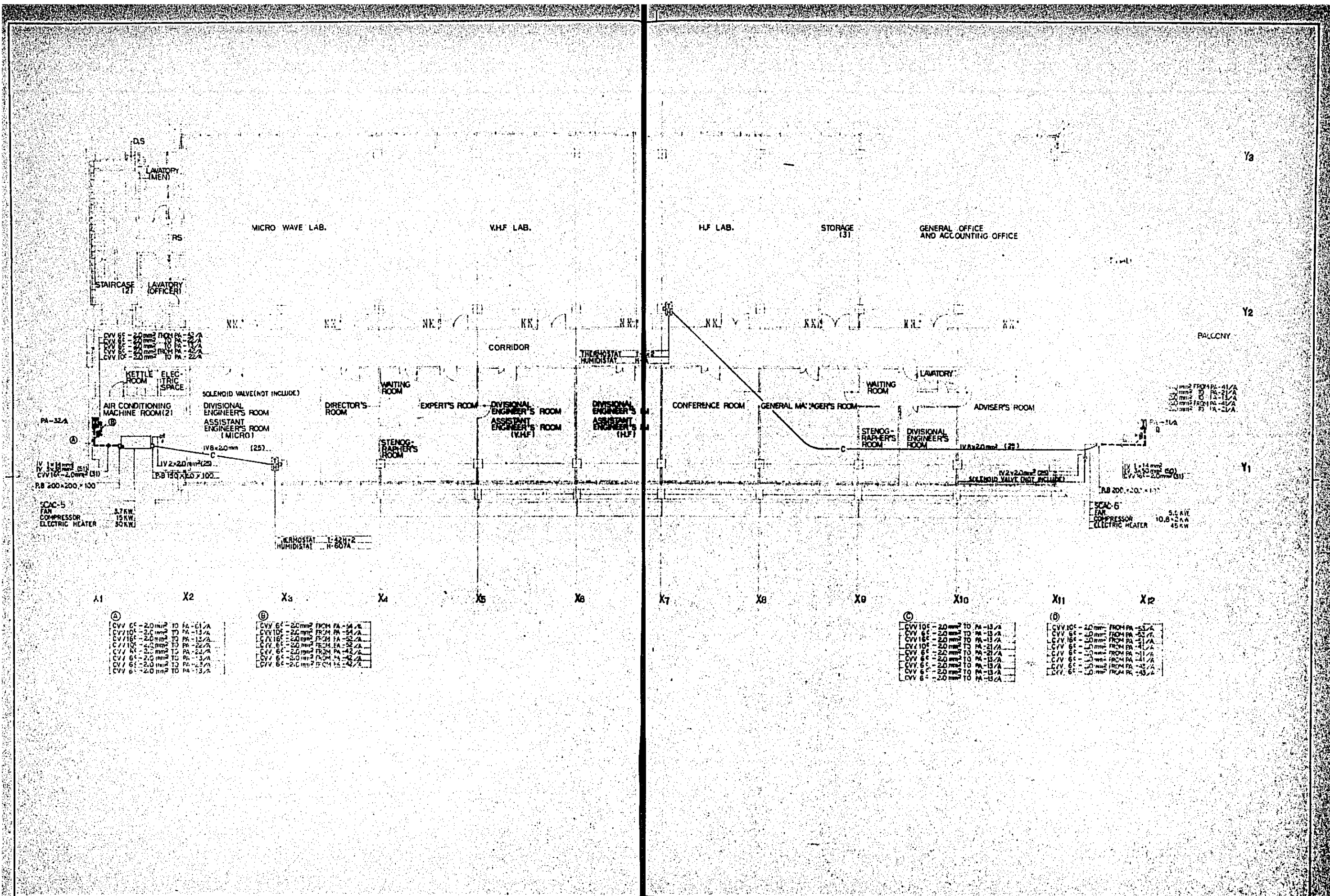
(B)	CVV 6 - 2.0 mm ²	FROM PA - 54/A
	CVV 10 - 2.0 mm ²	FROM PA - 54/A
	CVV 16 - 2.0 mm ²	FROM PA - 54/A
	CVV 10 - 2.0 mm ²	FROM PA - 52/A
	CVV 6 - 2.0 mm ²	FROM PA - 52/A
	CVV 6 - 2.0 mm ²	FROM PA - 52/A
	CVV 6 - 2.0 mm ²	FROM PA - 52/A
	CVV 6 - 2.0 mm ²	FROM PA - 52/A
	CVV 6 - 2.0 mm ²	FROM PA - 42/A

X9

(C)	CVV 10 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 16 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 10 ^c - 2.0 mm ²	TO PA - 11/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 11/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 13/A
	CVV 6 ^c - 2.0 mm ²	TO PA - 13/A

X11

(D)	CVV 10 ^c - 2.0 mm ²	FROM PA - 52/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 52/A
	CVV 16 ^c - 2.0 mm ²	FROM PA - 51/A
	CVV 10 ^c - 2.0 mm ²	FROM PA - 31/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 31/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 31/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 41/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 41/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 41/A
	CVV 6 ^c - 2.0 mm ²	FROM PA - 41/A

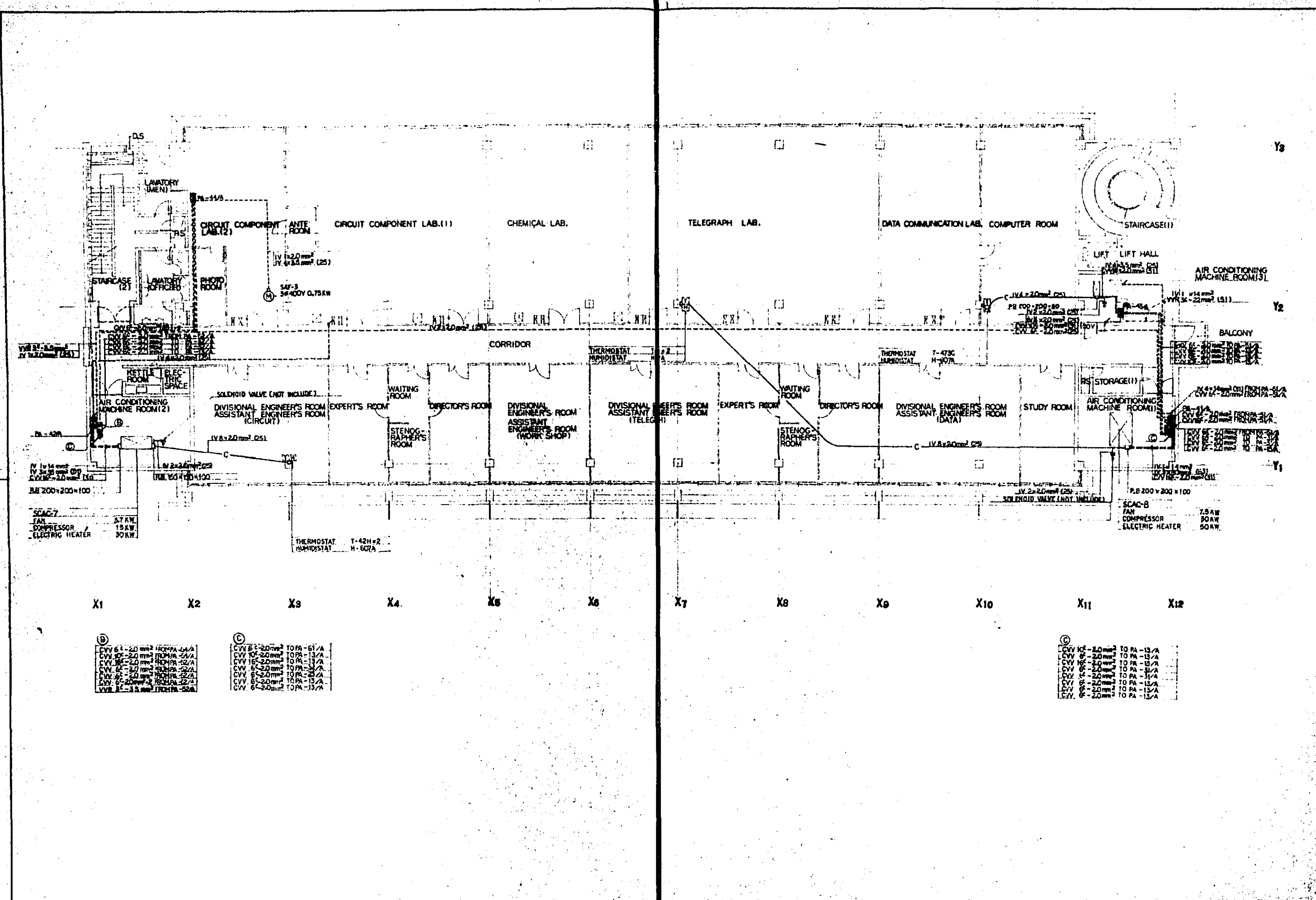


- (A)
- CVV 65 - 2.0 mm² TO PA-11/A
 - CVV 105 - 2.0 mm² TO PA-13/A
 - CVV 106 - 2.0 mm² TO PA-12/A
 - CVV 107 - 2.0 mm² TO PA-22/A
 - CVV 108 - 2.0 mm² TO PA-21/A
 - CVV 109 - 2.0 mm² TO PA-13/A
 - CVV 110 - 2.0 mm² TO PA-13/A
 - CVV 111 - 2.0 mm² TO PA-13/A

- (B)
- CVV 65 - 2.0 mm² FROM PA-14/A
 - CVV 105 - 2.0 mm² FROM PA-14/A
 - CVV 106 - 2.0 mm² FROM PA-14/A
 - CVV 107 - 2.0 mm² FROM PA-14/A
 - CVV 108 - 2.0 mm² FROM PA-14/A
 - CVV 109 - 2.0 mm² FROM PA-14/A
 - CVV 110 - 2.0 mm² FROM PA-14/A
 - CVV 111 - 2.0 mm² FROM PA-14/A

- (C)
- CVV 105 - 2.0 mm² TO PA-13/A
 - CVV 106 - 2.0 mm² TO PA-13/A
 - CVV 107 - 2.0 mm² TO PA-13/A
 - CVV 108 - 2.0 mm² TO PA-13/A
 - CVV 109 - 2.0 mm² TO PA-13/A
 - CVV 110 - 2.0 mm² TO PA-13/A
 - CVV 111 - 2.0 mm² TO PA-13/A
 - CVV 112 - 2.0 mm² TO PA-13/A

- (D)
- CVV 105 - 2.0 mm² FROM PA-13/A
 - CVV 106 - 2.0 mm² FROM PA-13/A
 - CVV 107 - 2.0 mm² FROM PA-13/A
 - CVV 108 - 2.0 mm² FROM PA-13/A
 - CVV 109 - 2.0 mm² FROM PA-13/A
 - CVV 110 - 2.0 mm² FROM PA-13/A
 - CVV 111 - 2.0 mm² FROM PA-13/A
 - CVV 112 - 2.0 mm² FROM PA-13/A



Ⓓ

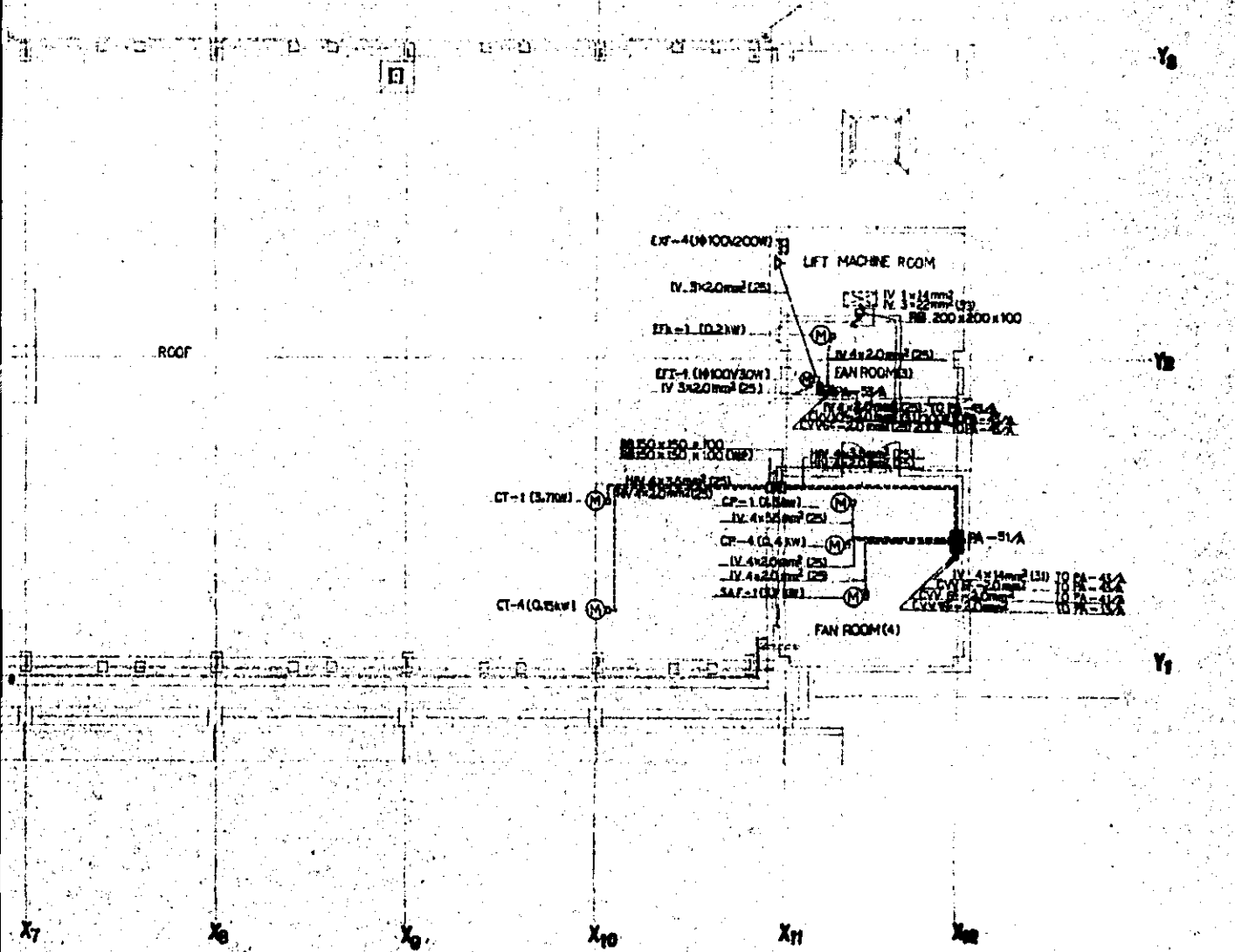
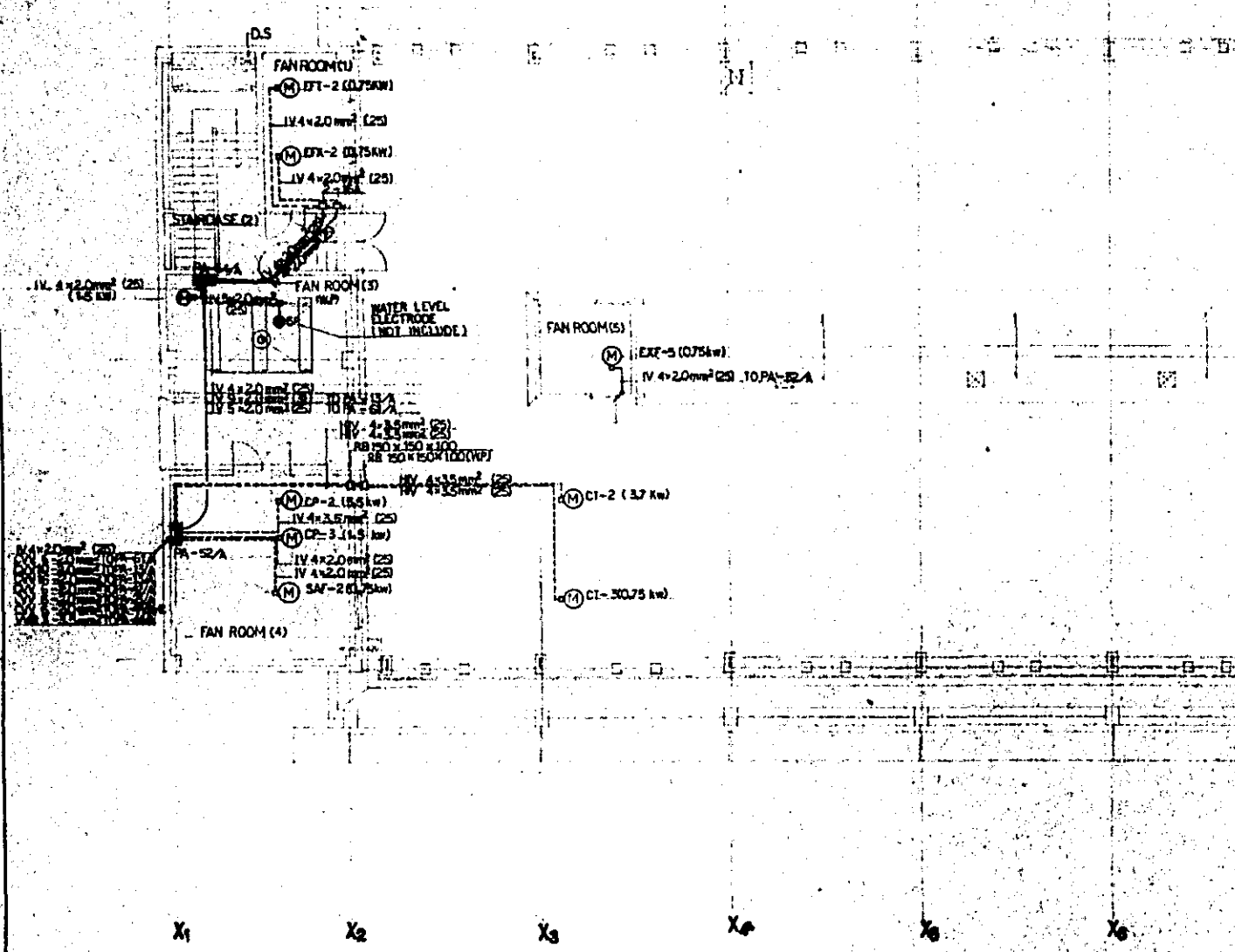
CVV 6-20mm ²	TO PA-5/A
CVV 10-20mm ²	TO PA-5/A
CVV 15-20mm ²	TO PA-5/A
CVV 20-20mm ²	TO PA-5/A
CVV 25-20mm ²	TO PA-5/A
CVV 30-20mm ²	TO PA-5/A
CVV 35-20mm ²	TO PA-5/A

Ⓒ

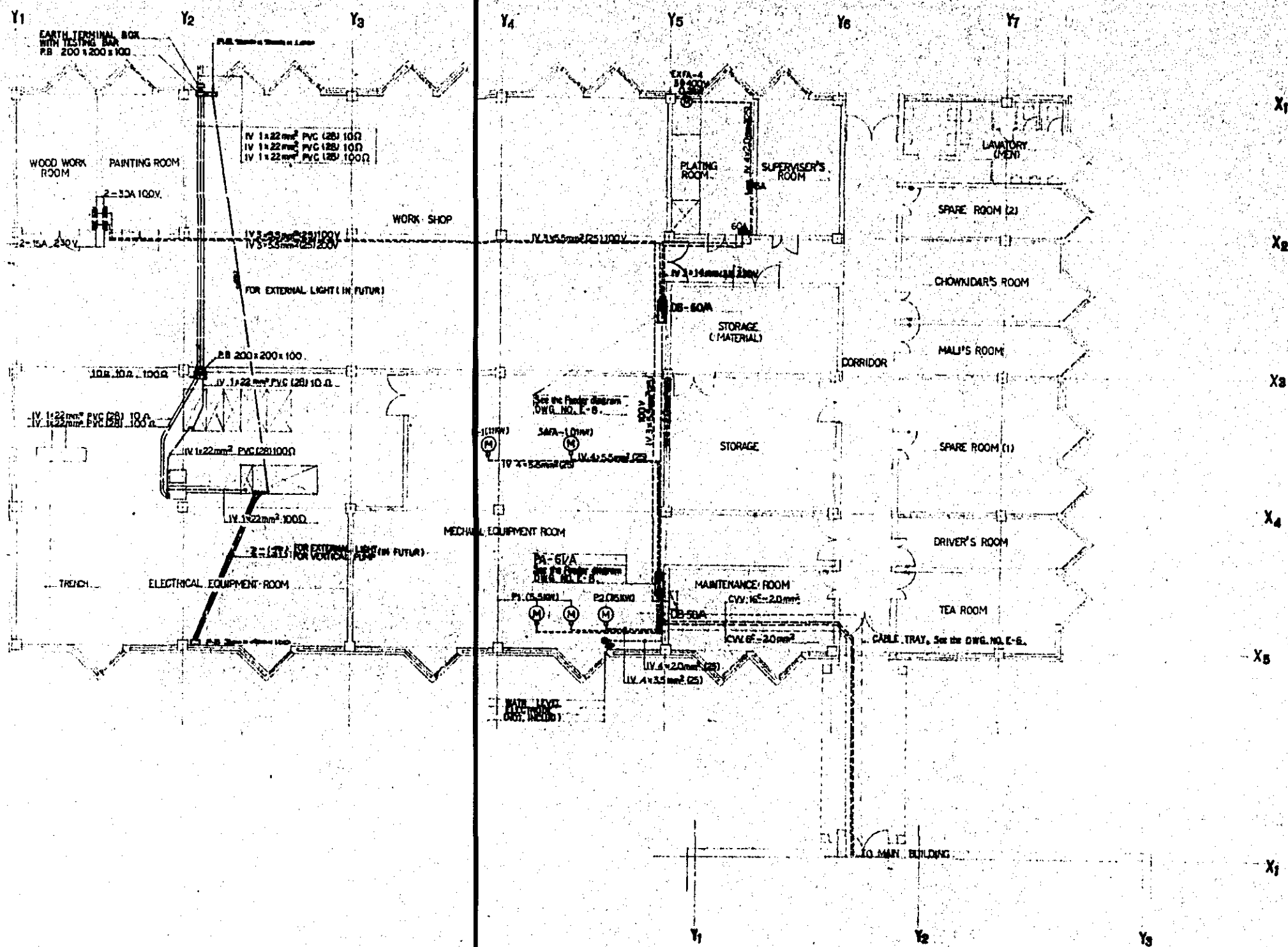
CVV 5-20mm ²	TO PA-13/A
CVV 10-20mm ²	TO PA-13/A
CVV 15-20mm ²	TO PA-13/A
CVV 20-20mm ²	TO PA-13/A
CVV 25-20mm ²	TO PA-13/A
CVV 30-20mm ²	TO PA-13/A
CVV 35-20mm ²	TO PA-13/A

Ⓒ


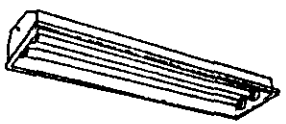
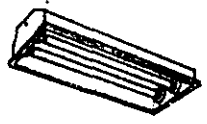

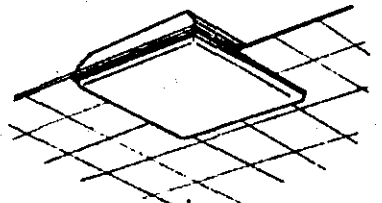
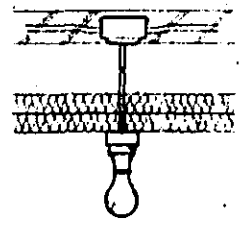



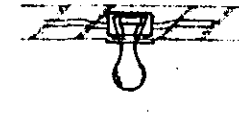
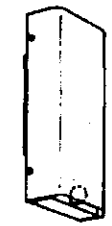

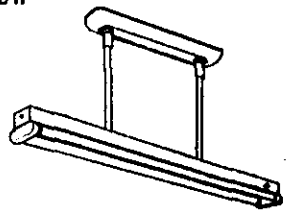
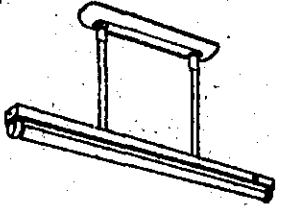
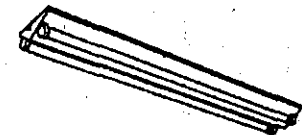
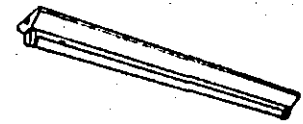
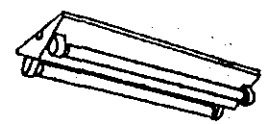
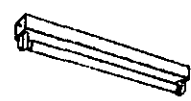

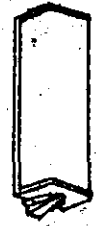
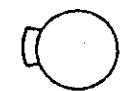
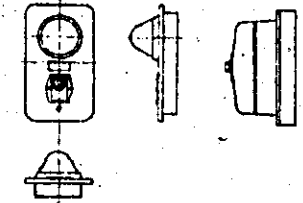
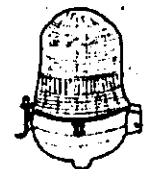
CVV 12-20mm ²	TO PA-13/A
CVV 15-20mm ²	TO PA-13/A
CVV 20-20mm ²	TO PA-13/A
CVV 25-20mm ²	TO PA-13/A
CVV 30-20mm ²	TO PA-13/A
CVV 35-20mm ²	TO PA-13/A

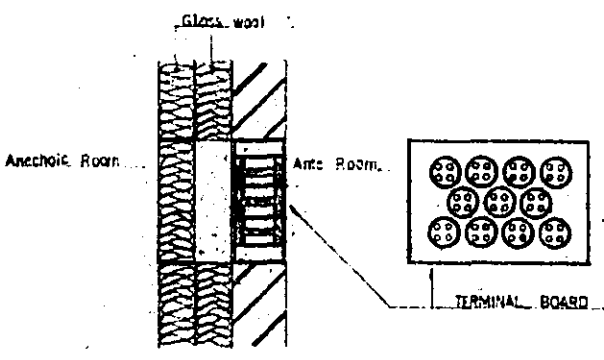
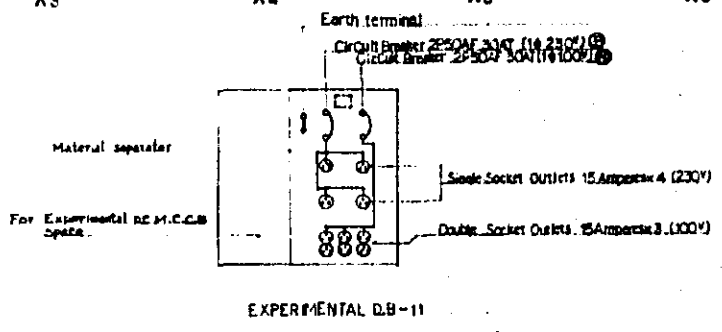
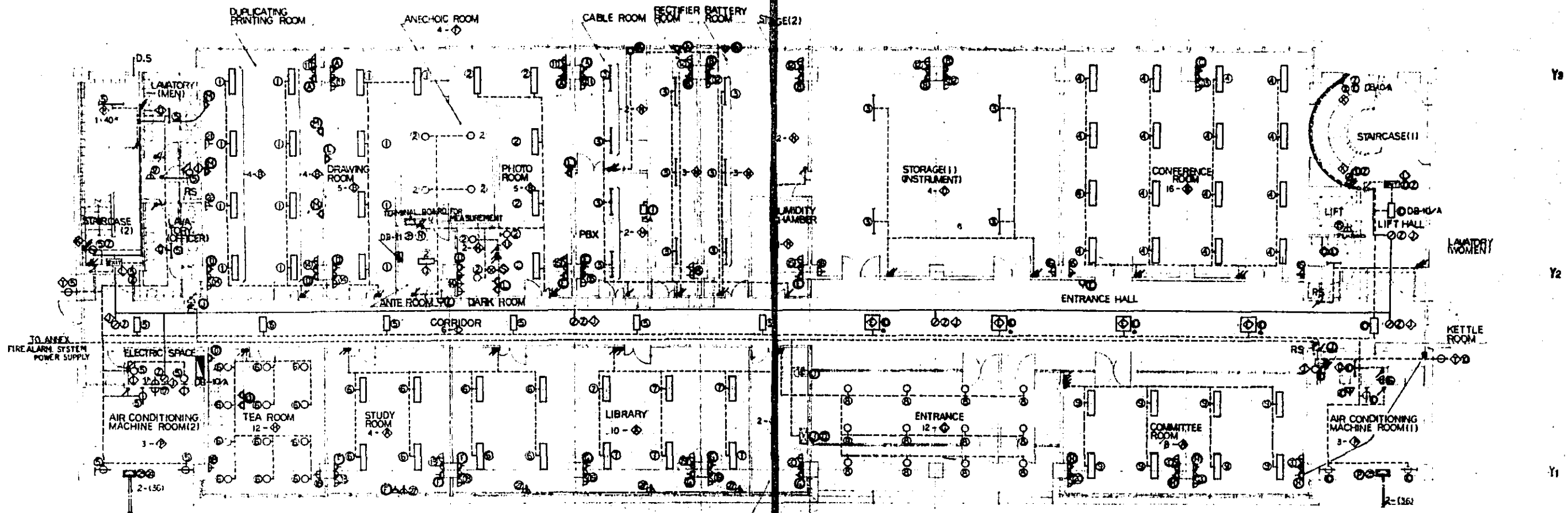


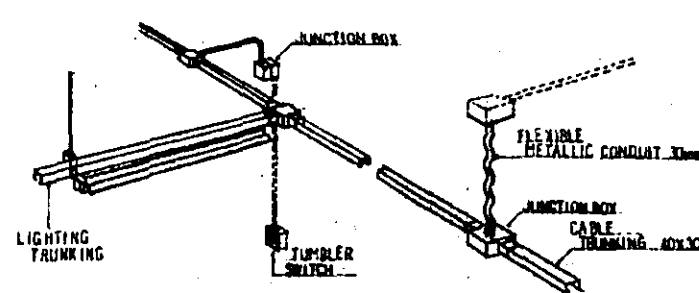
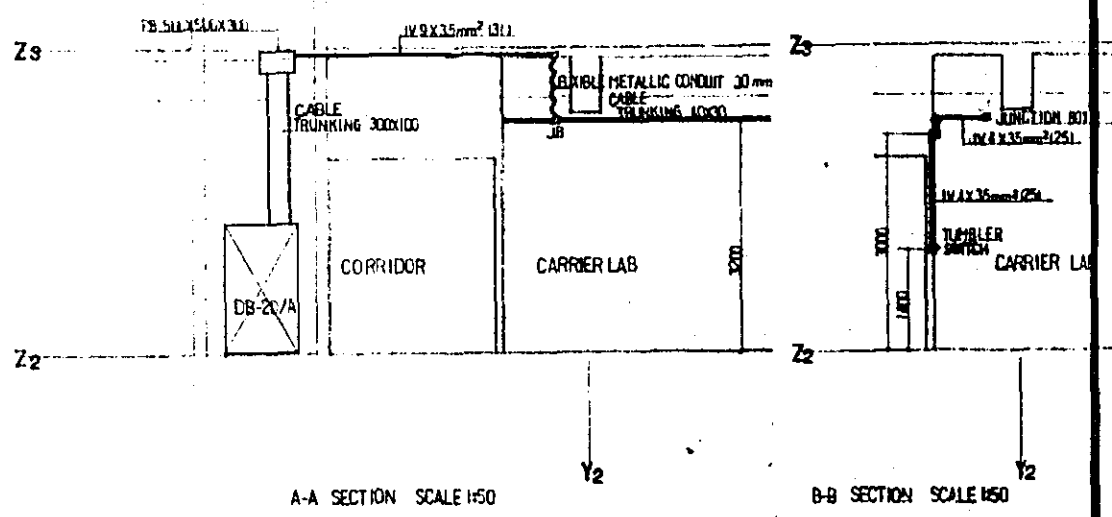
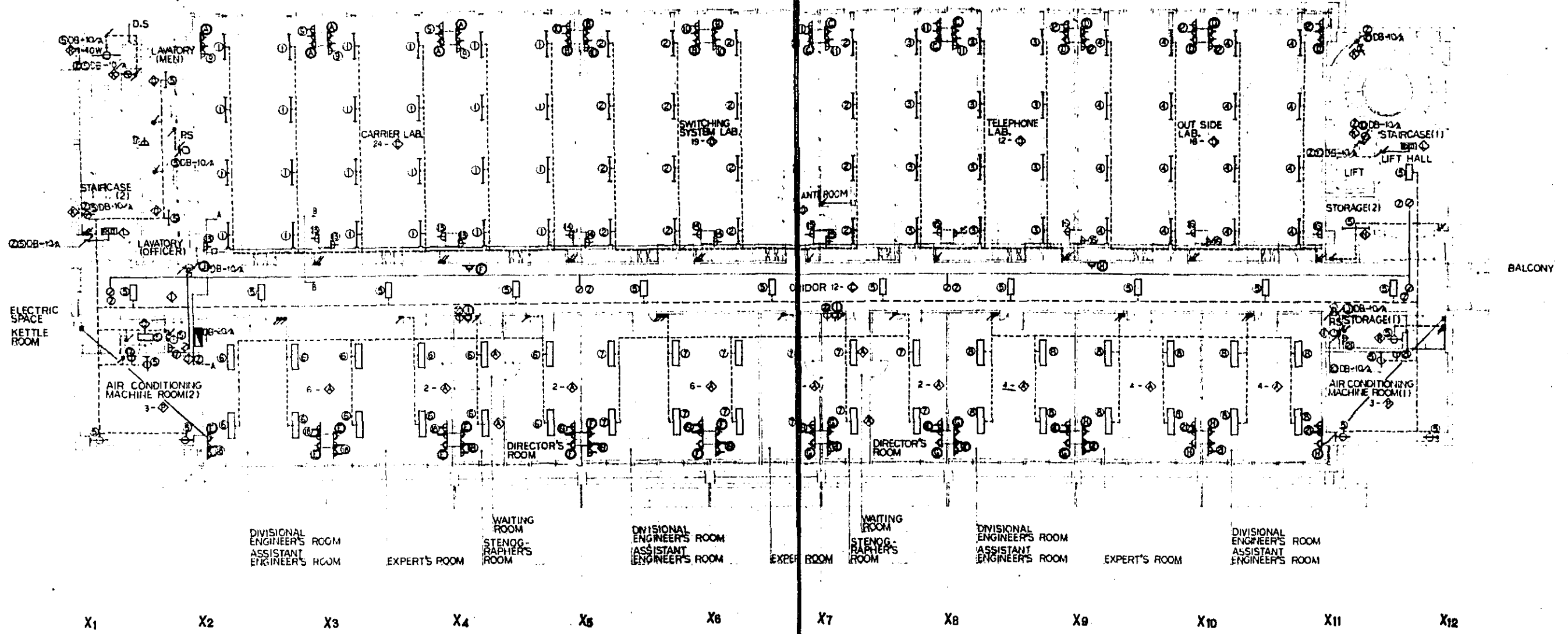
NOTE: Ⓞ
ALL MOTORS NOT INCLUD

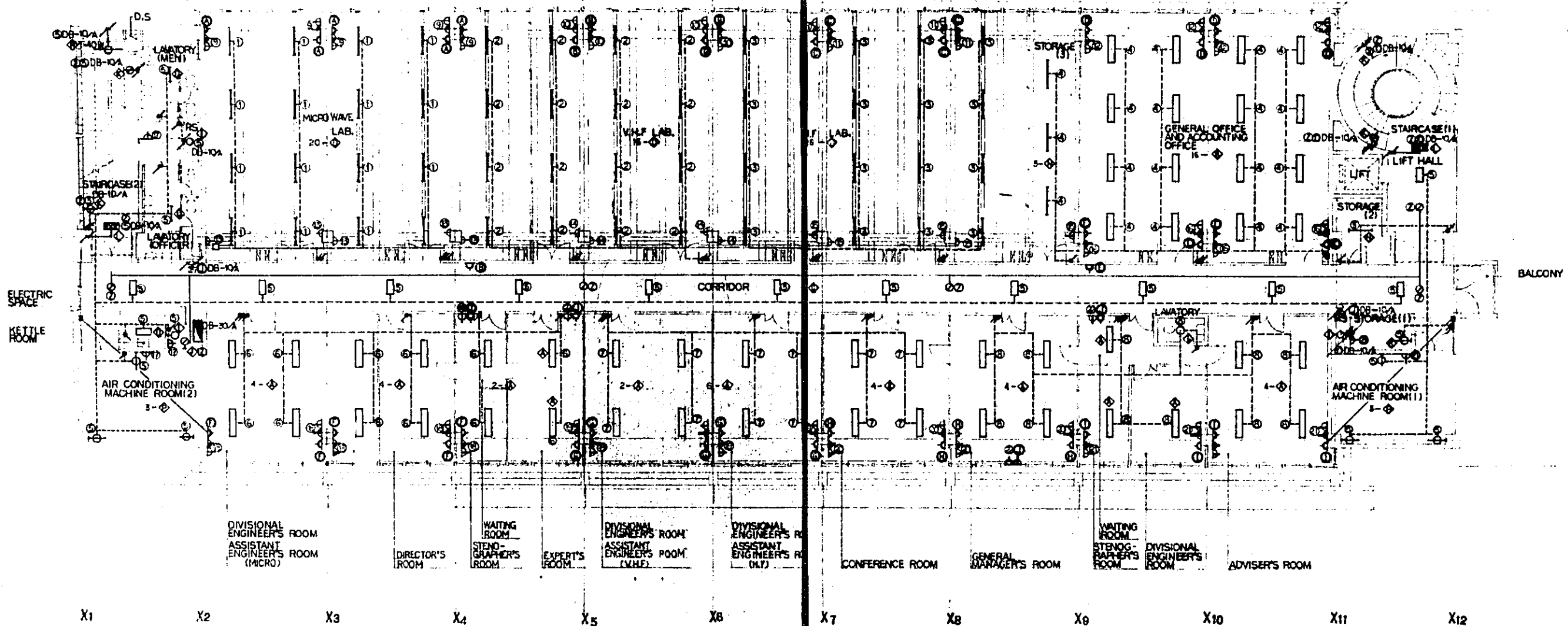


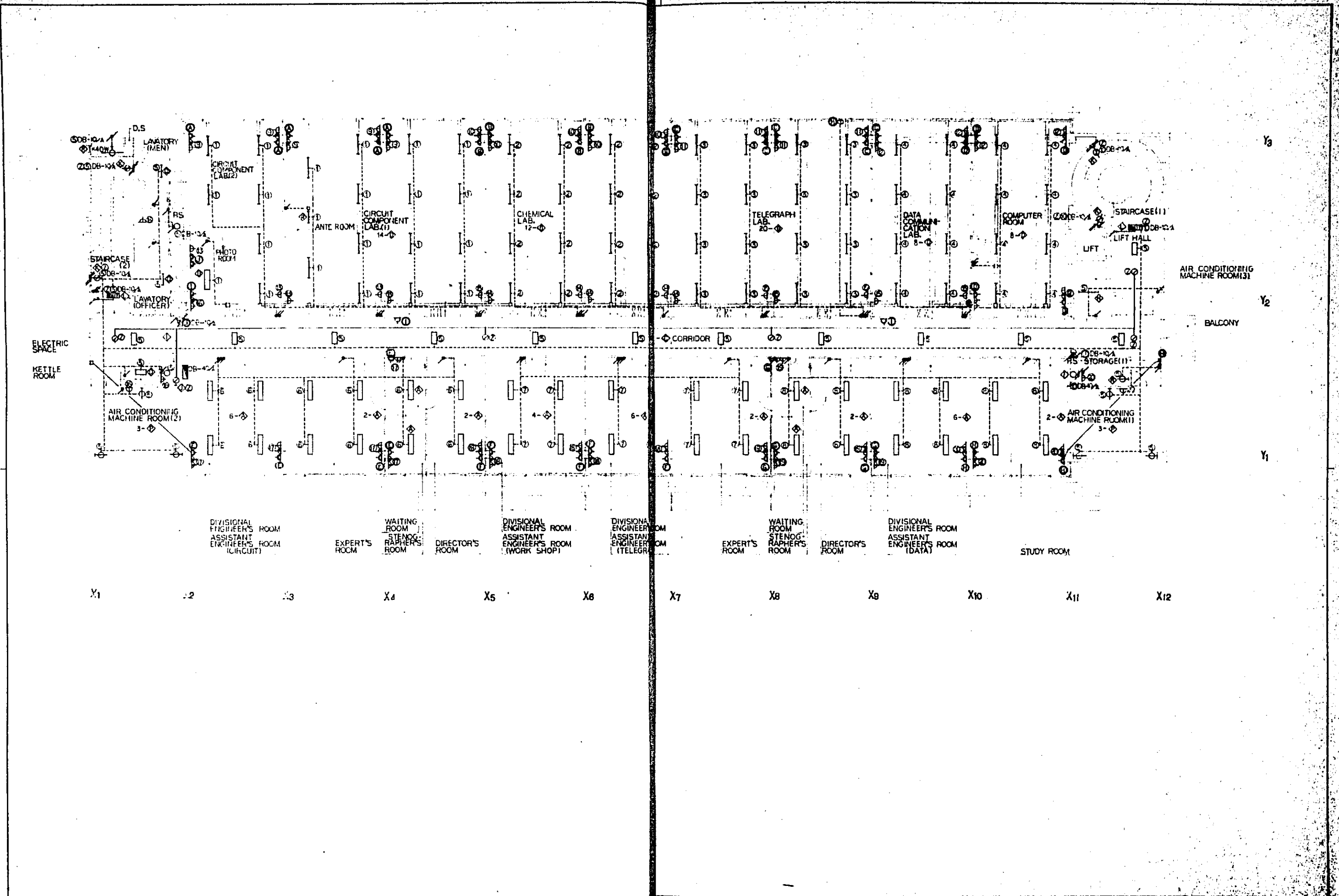
ABBREVIATIONS.
 FL—Fluorescent Lighting fitting.
 IL—Incandescent Lighting fitting.

<p>A RECESSED TYPE (FL) 3x40W</p> 	<p>B RECESSED TYPE (FL) 2x40W</p> 	<p>C RECESSED TYPE (FL) 2x20W</p> 	<p>D REFLECTOR TYPE (FL) 2x40W</p> 	<p>E SQUARE RECESSED WITH DIFFUSER TYPE (FL) 6x20W</p> 	<p>F SUSPENDED TYPE (IL) 150W</p> 
<p>G RECESSED TYPE (IL) (IL) 100W</p> 	<p>H RECESSED TYPE (IL) (IL) 60W</p> 	<p>I LAMP HOLDER TYPE (IL) (IL) 40W</p> 	<p>J LAMP HOLDER TYPE (IL) (IL) 40W DC100V</p> 	<p>K BRACKET TYPE (FL+IL) (FL+IL) 2x20W+40W</p> 	
<p>L EXIT SIGNS (FL)+(IL) 2x10W AC230V. DC100V (5w Emergency)</p> 	<p>M H-SHAPE BATTEN SUSPENDED TYPE (FL) 2x40W</p> 	<p>N H-SHAPE BATTEN SUSPENDED TYPE (FL) 1x40W</p> 	<p>O V-SHAPE BATTEN TYPE (FL) 2x40W</p> 	<p>P V-SHAPE BATTEN TYPE (FL) 1x40W</p> 	<p>Q V-SHAPE BATTEN TYPE (FL) 2x20W</p> 
<p>R SIMPLE BATTEN TYPE (FL) 1x20W</p> 	<p>S REVOLVING THREE SIDES BRACKET TYPE (IL) 20W</p> 	<p>T WATER PROOF BRACKET TYPE (FL) 2x20W</p> 	<p>U BRACKET WITH RED GLASS GLOVE TYPE (IL) 1x40W</p> 	<p>V ALARM PUSH BUTTON AND BELL</p>  <p>ALARM PUSH BUTTON 100V</p> <p>ALARM BELL</p>	<p>W OBSTRUCTION LIGHT 100W</p> 









DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (CIRCUIT)

EXPERT'S ROOM

WAITING ROOM STENOGRAPHER'S ROOM

DIRECTOR'S ROOM

DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (WORK SHOP)

DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (TELEGR)

EXPERT'S ROOM

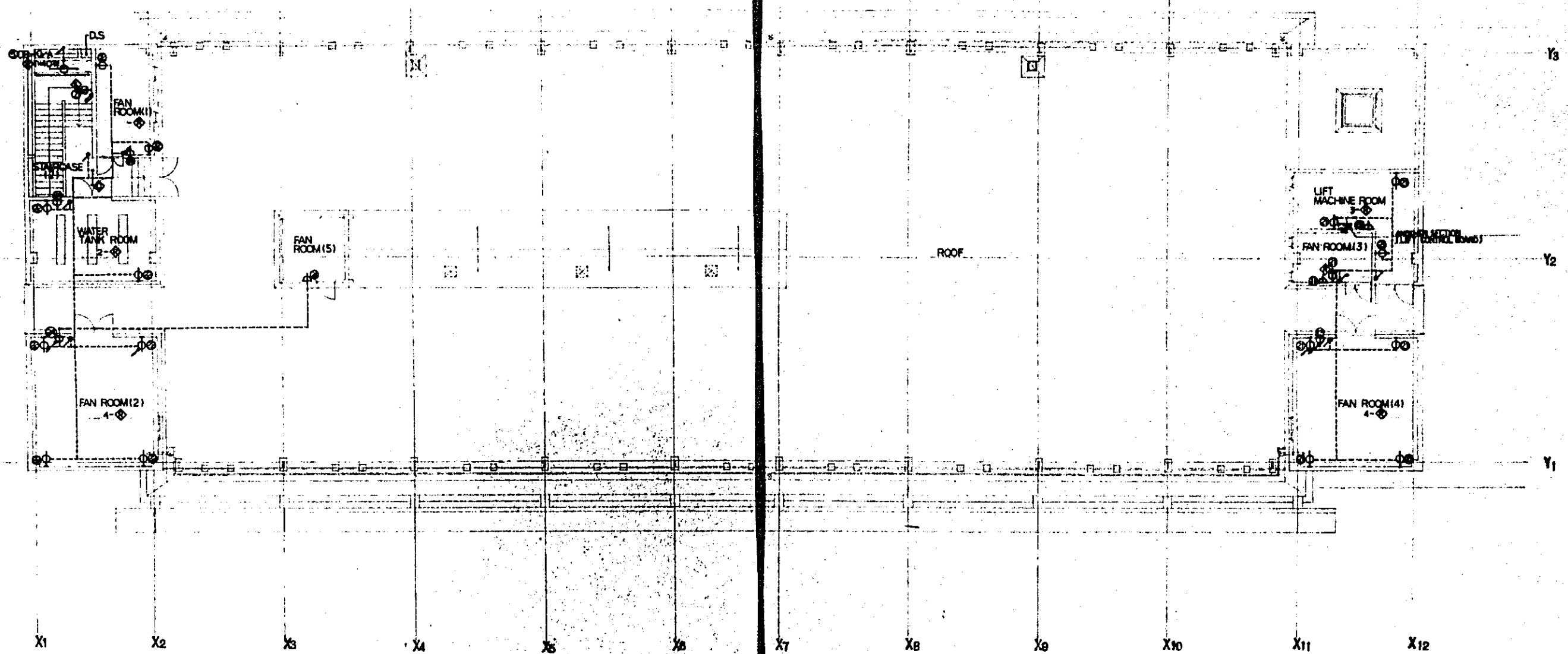
WAITING ROOM STENOGRAPHER'S ROOM

DIRECTOR'S ROOM

DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (DATA)

STUDY ROOM

X1 X2 X3 X4 X5 X6 X7 X8 X9 X10 X11 X12



DEPARTMENT OF ELECTRICAL ENGINEERING
UNIVERSITY OF ISLAMABAD

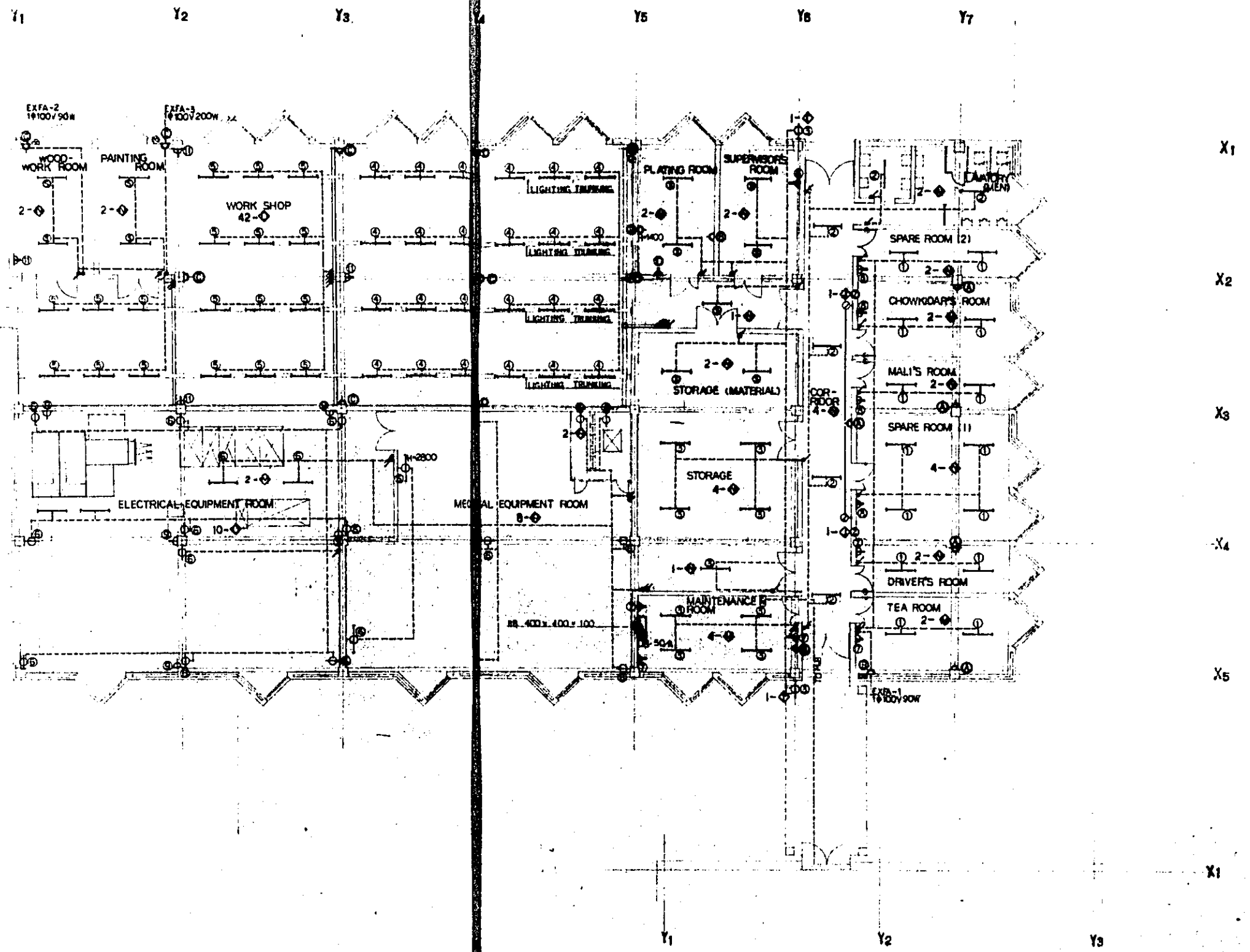
UNIVERSITY OF ISLAMABAD AND UNIVERSITY OF ENGINEERING AND TECHNOLOGY

CTRL ISLAMABAD

N.B. ROOF LIGHTING AND SOCKET OUTLETS PLAN

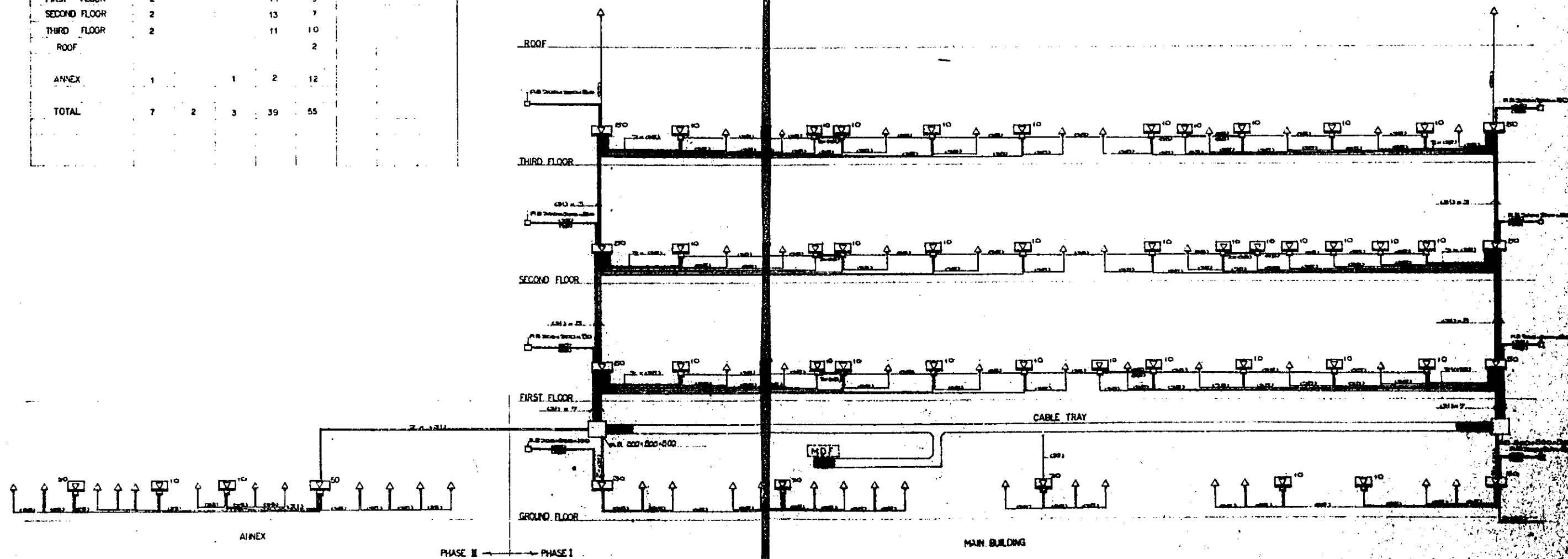
1/100

E-25



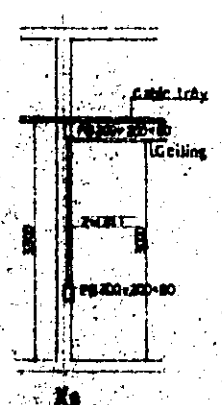
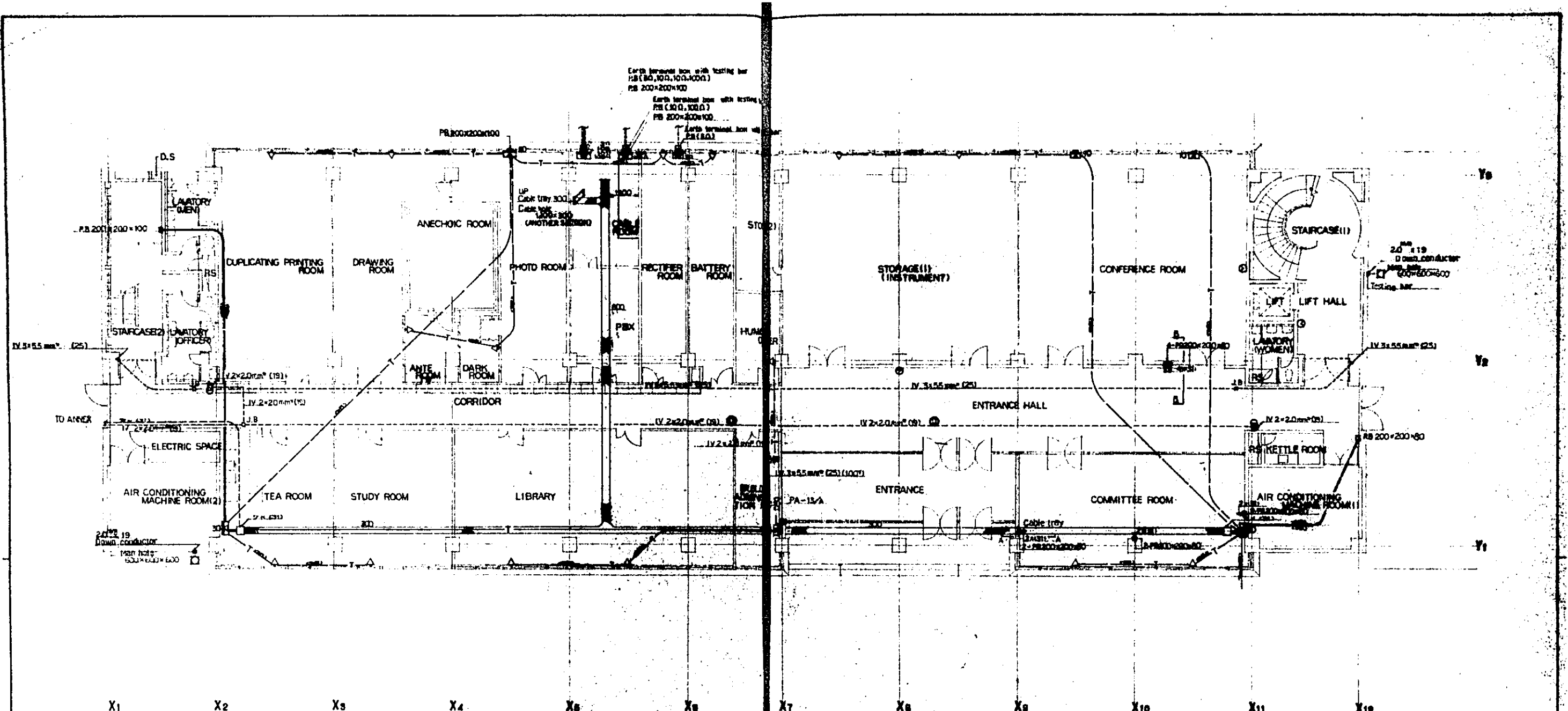
SCHEDULE OF TELEPHONE CABINETS AND OUTLETS

LOCATION	50	30	20	10	△	REMARK
MAIN BUILDING						
GROUND FLOOR		2	2	2	15	
FIRST FLOOR	2			11	9	
SECOND FLOOR	2			13	7	
THIRD FLOOR	2			11	10	
ROOF					2	
ANNEX	1		1	2	12	
TOTAL	7	2	3	39	55	

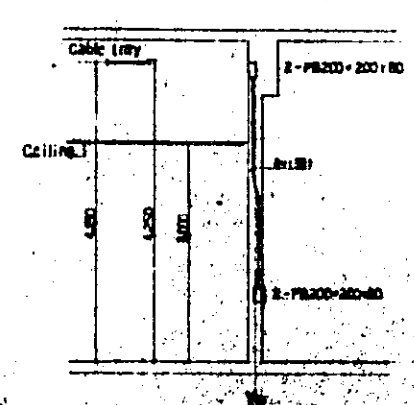


RISER DIAGRAM OF TELEPHONE CONDUCTOR SYSTEM

NOTE:
MDF: OTHER'S WORK (NOT INCLUDED)

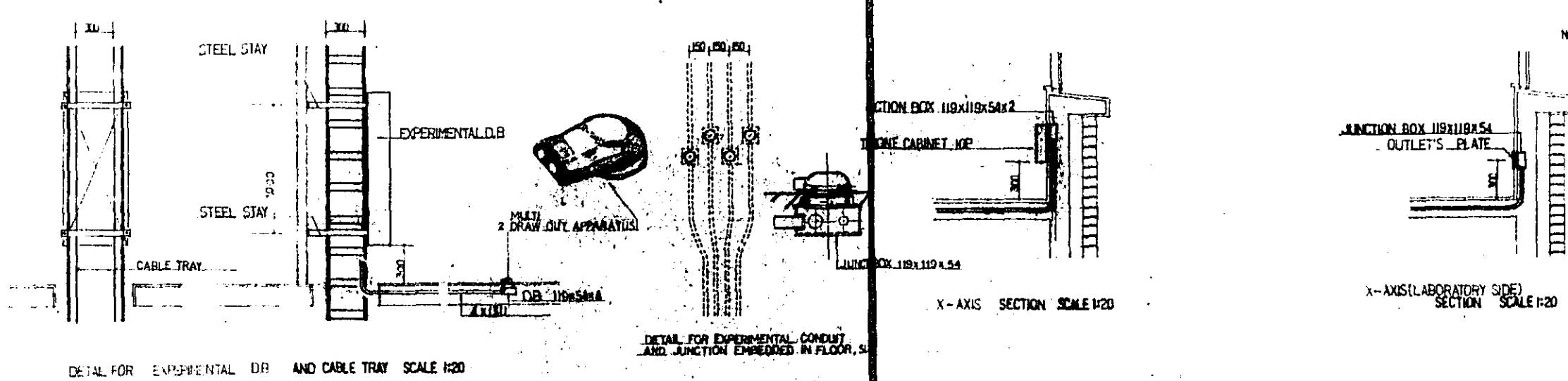
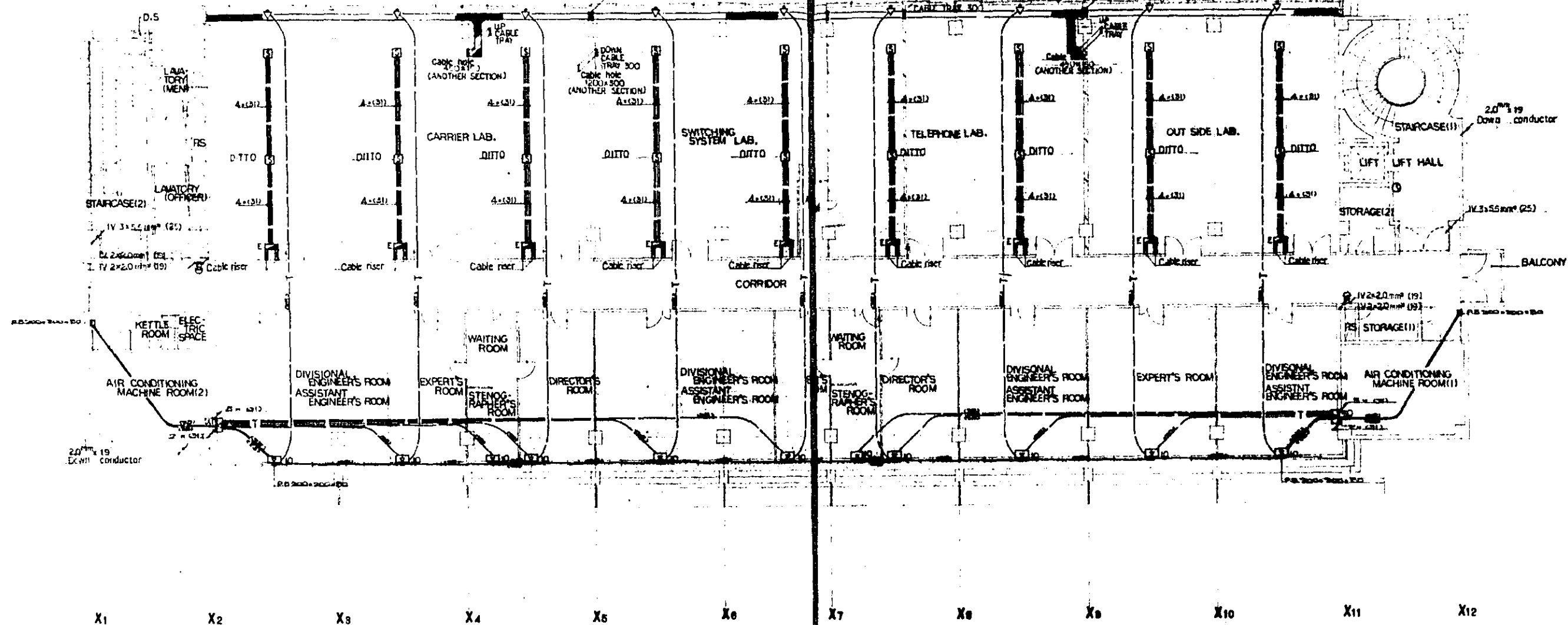


A-A SECTION SCALE 1:50



B-B SECTION SCALE 1:50

WALL OPENING - A 400x150 (ANOTHER SECTION)



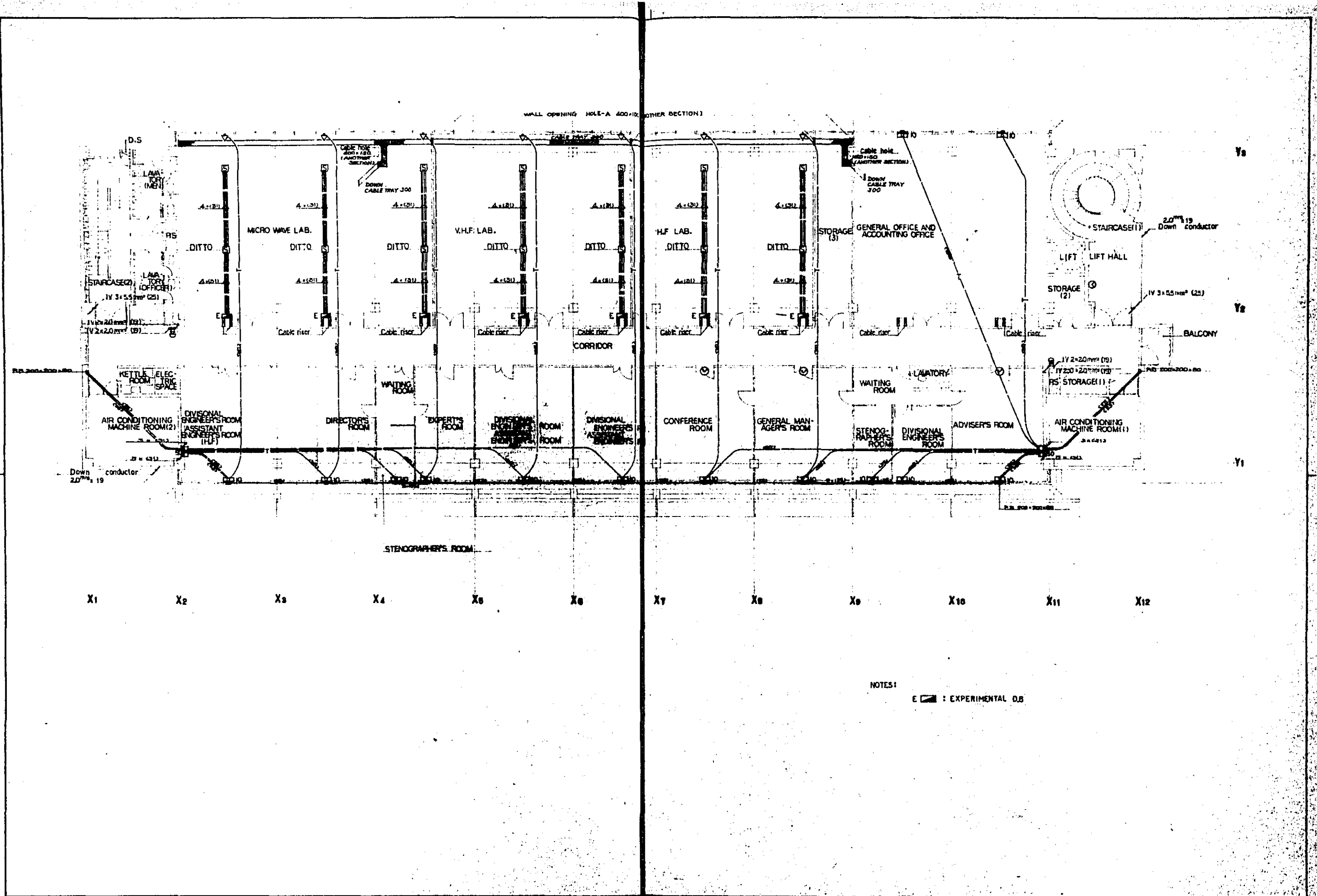
NOTES:
E : EXPERIMENTAL

DETAIL FOR EXPERIMENTAL D.B. AND CABLE TRAY SCALE 1:20

DETAIL FOR EXPERIMENTAL CONDUIT AND JUNCTION EMBEDDED IN FLOOR, S

X-AXIS SECTION SCALE 1:20

X-AXIS (LABORATORY SIDE) SECTION SCALE 1:20



WALL OPENING HOLE-A 400x100 (OTHER SECTION)

CABLE NO. 1000 (ANOTHER SECTION)

STORAGE (3)

STORAGE (2)

STENOGRAPHER'S ROOM

DIVISIONAL ENGINEER'S ROOM

ADVISER'S ROOM

AIR CONDITIONING MACHINE ROOM (1)

STENOGRAPHER'S ROOM

DIVISIONAL ENGINEER'S ROOM

ADVISER'S ROOM

AIR CONDITIONING MACHINE ROOM (1)

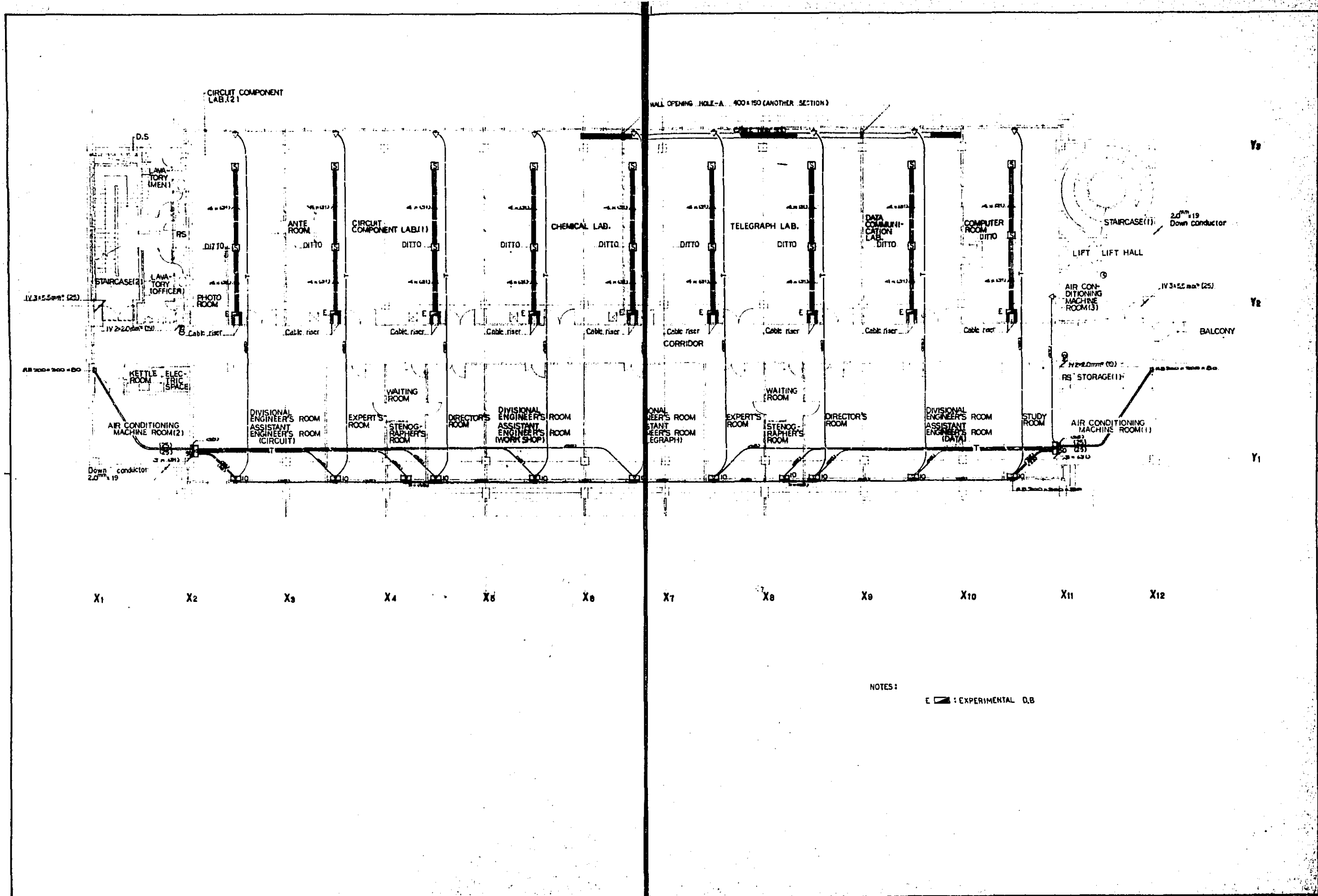
STENOGRAPHER'S ROOM

DIVISIONAL ENGINEER'S ROOM

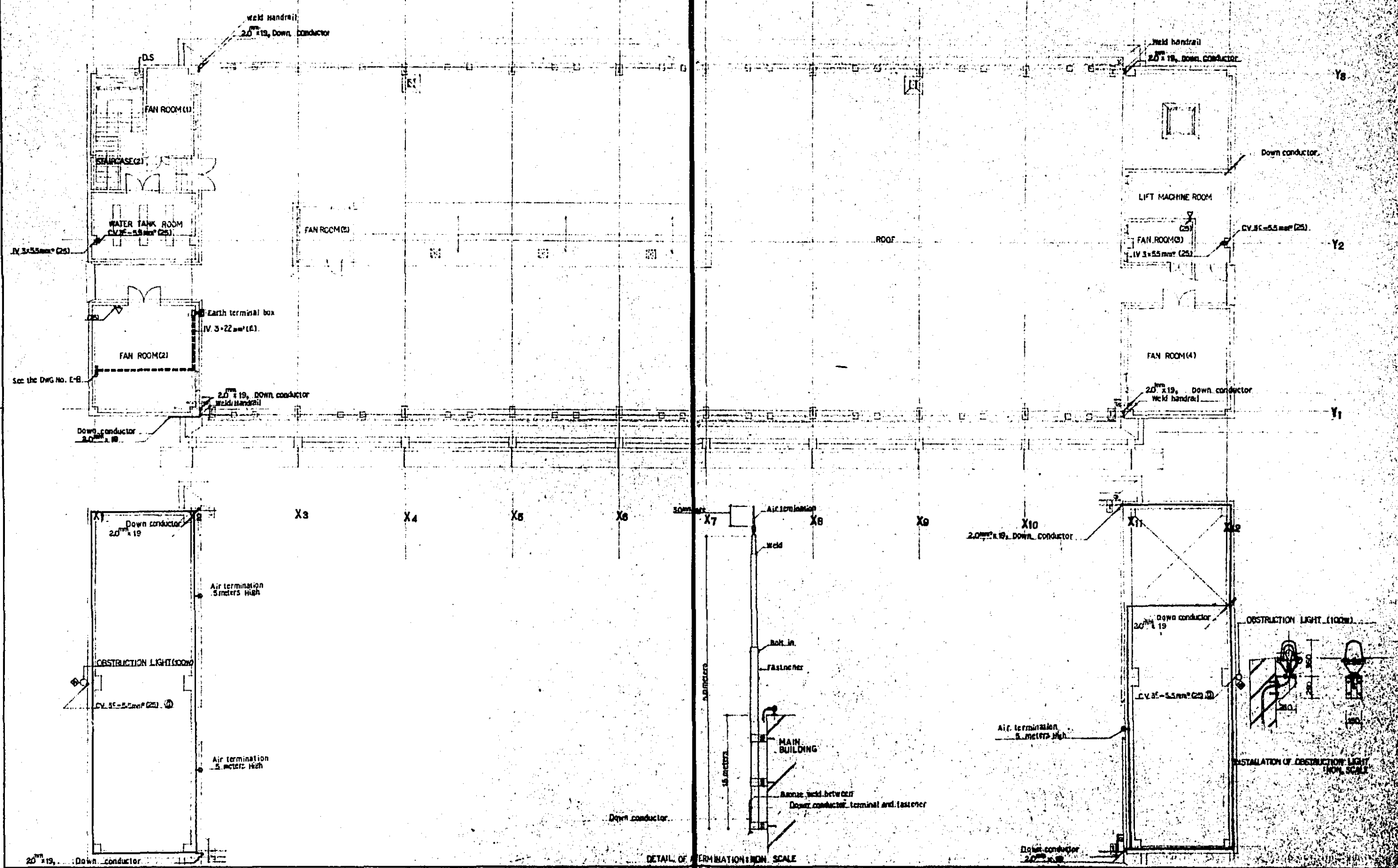
ADVISER'S ROOM

AIR CONDITIONING MACHINE ROOM (1)

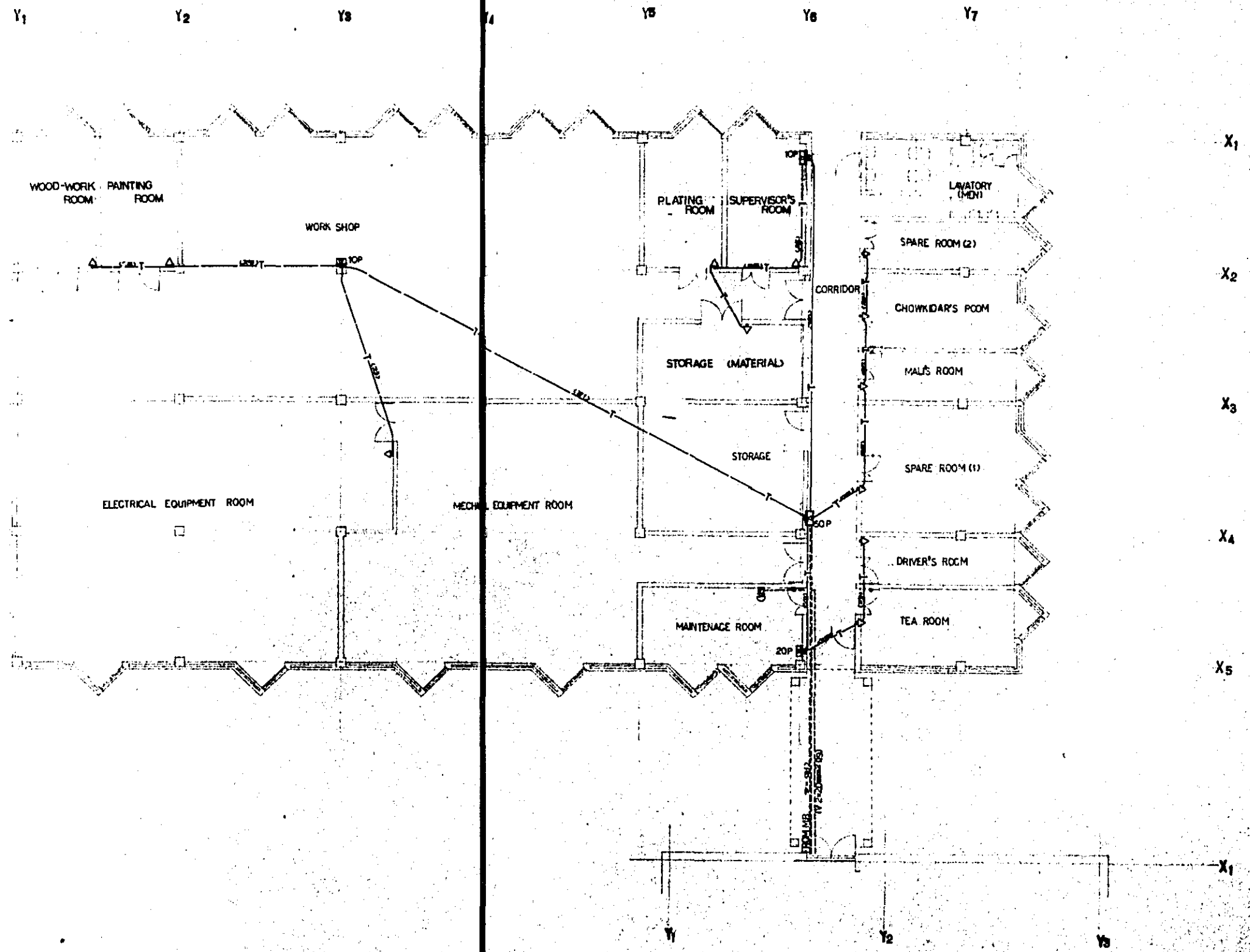
NOTES:
E [Symbol] : EXPERIMENTAL D.B.



NOTES:
 E [Symbol] : EXPERIMENTAL D.B.



DETAIL OF TERMINATION ON SCALE



PLUMBING

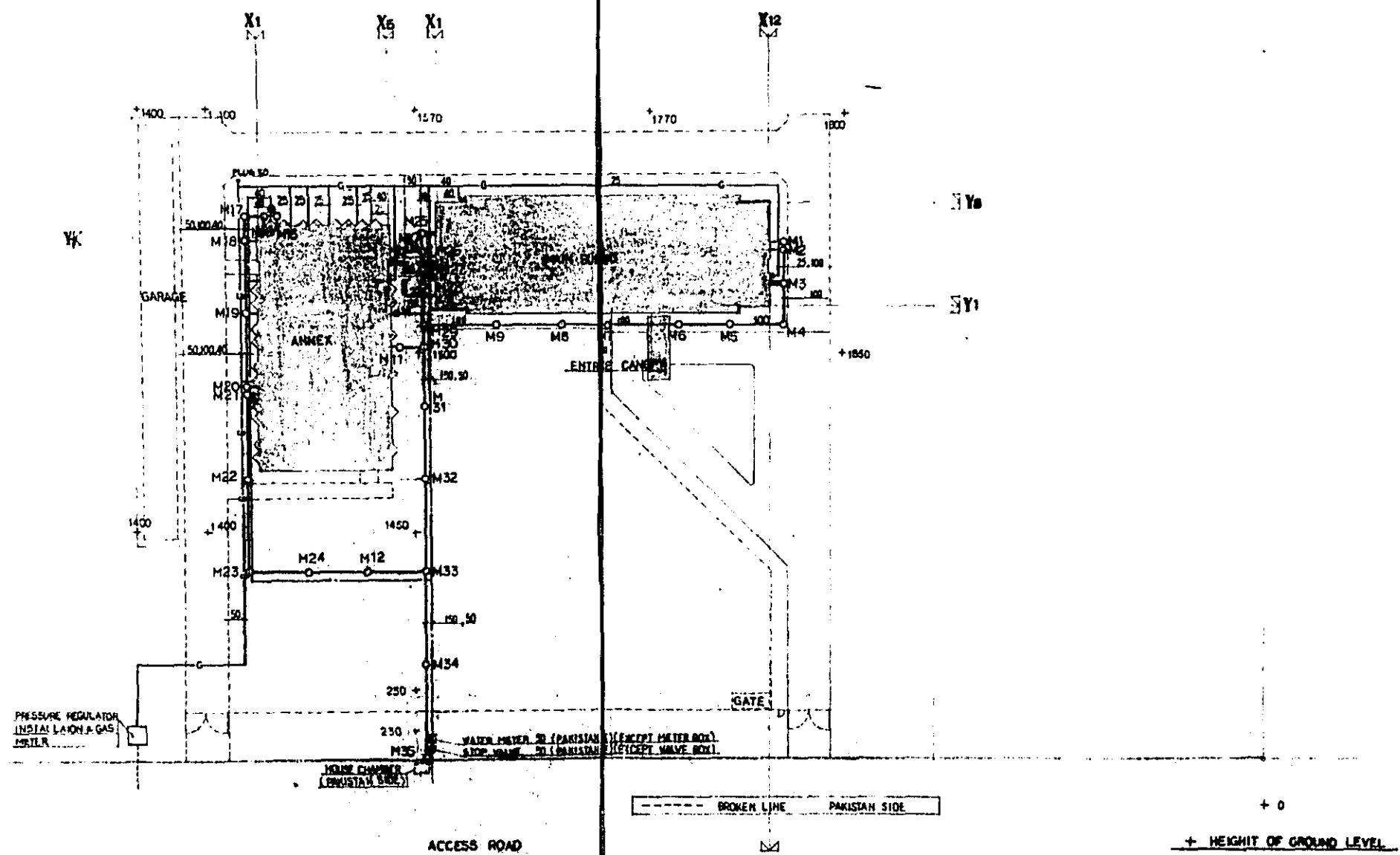
SYMBOL	NAME	ABBREVIATION	
	WATER SUPPLY LINE	C I P	CAST IRON PIPE
	SOIL WASTE LINE	M N	MANHOLE
	DITTO (CIP)	P H	PENT HOUSE
	MANHOLES	F L	FLOOR
	VENT PIPING	F D	FLOOR DRAIN
	SILL COCK	G V	GATE VALVE
	VALVE, COCK	C V	CHECK VALVE
	VALVE, COCK AND BOX	C O	CLEAN OUT
	CHECK VALVE	B V	BALL VALVE
	TAP FOR WATER SUPPLY	C F	OVER FLOW
	BALL VALVE	M B	MAIN BUILDING
	CLEAN OUT	L R	GROUND
	RUNNING TRAP	F V	FOOT VALVE
	FLOOR DRAIN	V P	POLYVINYLE-CHLORIDE PIPE
	TRAP	L P	LEAD PIPE
	EASTERN WATER CLOSET		
	EUROPEAN WATER CLOSET		
	CISTERN		
	LAVATORY BASIN		
	SLOP SINK		
	URINAL		
	STAINLESS STEEL SINK		
	SHELF (GLASS)		
	MIRROR		
	STRAGE WATER HEATER		
	PAPER HOLDER		
	FLEXIBLE CONDUIT		
	ELECTRODE FOR WATER LEVEL		

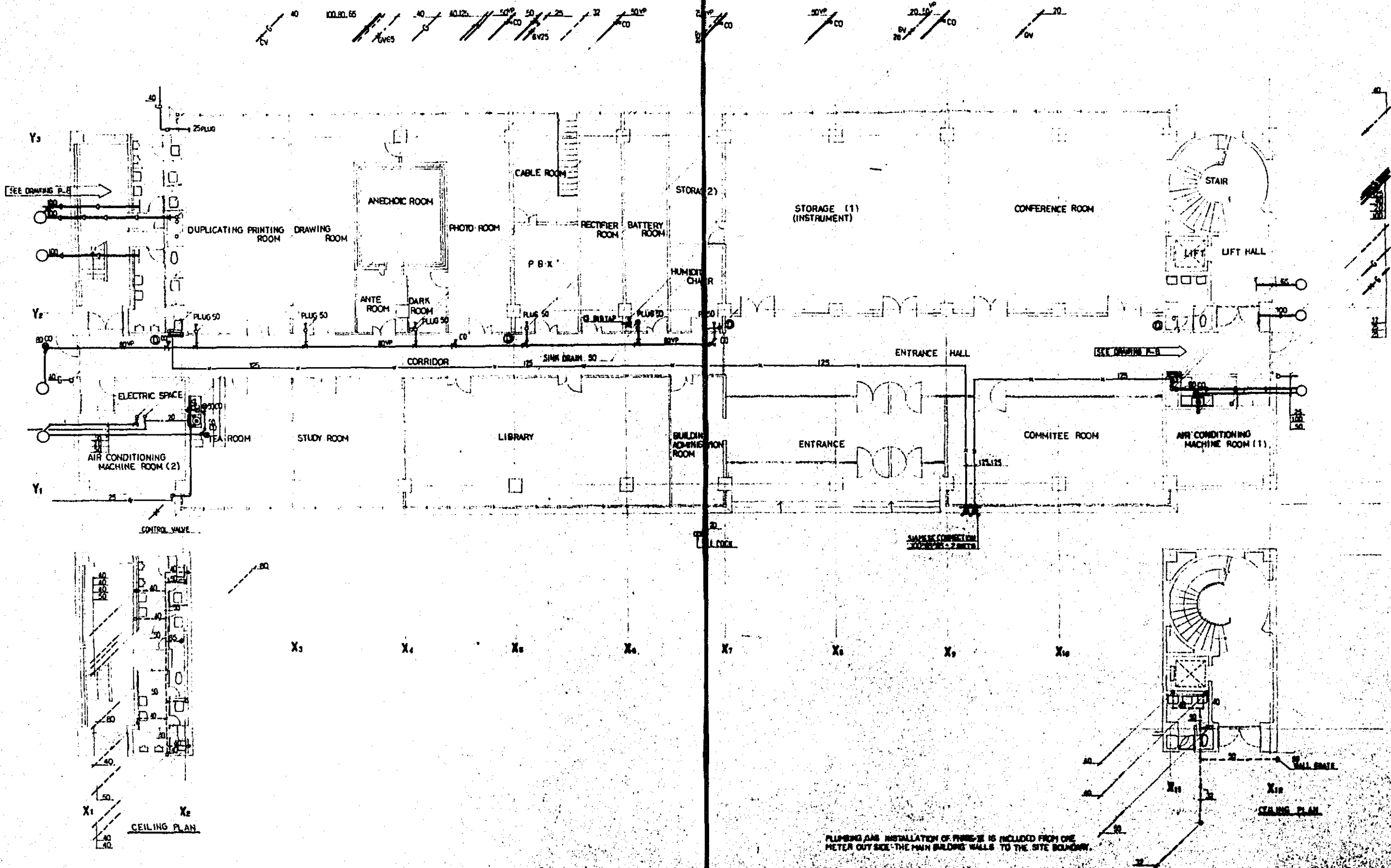
FIRE FIGHTING

SYMBOL	NAME	ABBREVIATION	
	FIRE LINE		
	FIRE HYDRANT INSTALLATION		
	TEST VALVE FOR FIRE INDOOR HYDRANT		
	SIAMESE CONNECTION		
	PORTABLE FIRE EXTINGUISHER (DRY POWDER TYPE)		
	DITTO (CARBON DIOXIDE TYPE)		

GAS PIPING

SYMBOL	NAME	ABBREVIATION	
	GAS SUPPLY LINE	G	GAS SUPPLY LINE
	CONTROL VALVE		
	STOP VALVE AND BOX	C O V	CONTROL VALVE
	GAS COCK (2 NOZZLE)		
	DITTO (1 NOZZLE)		
	DITTO (1 NOZZLE) AND BOX		



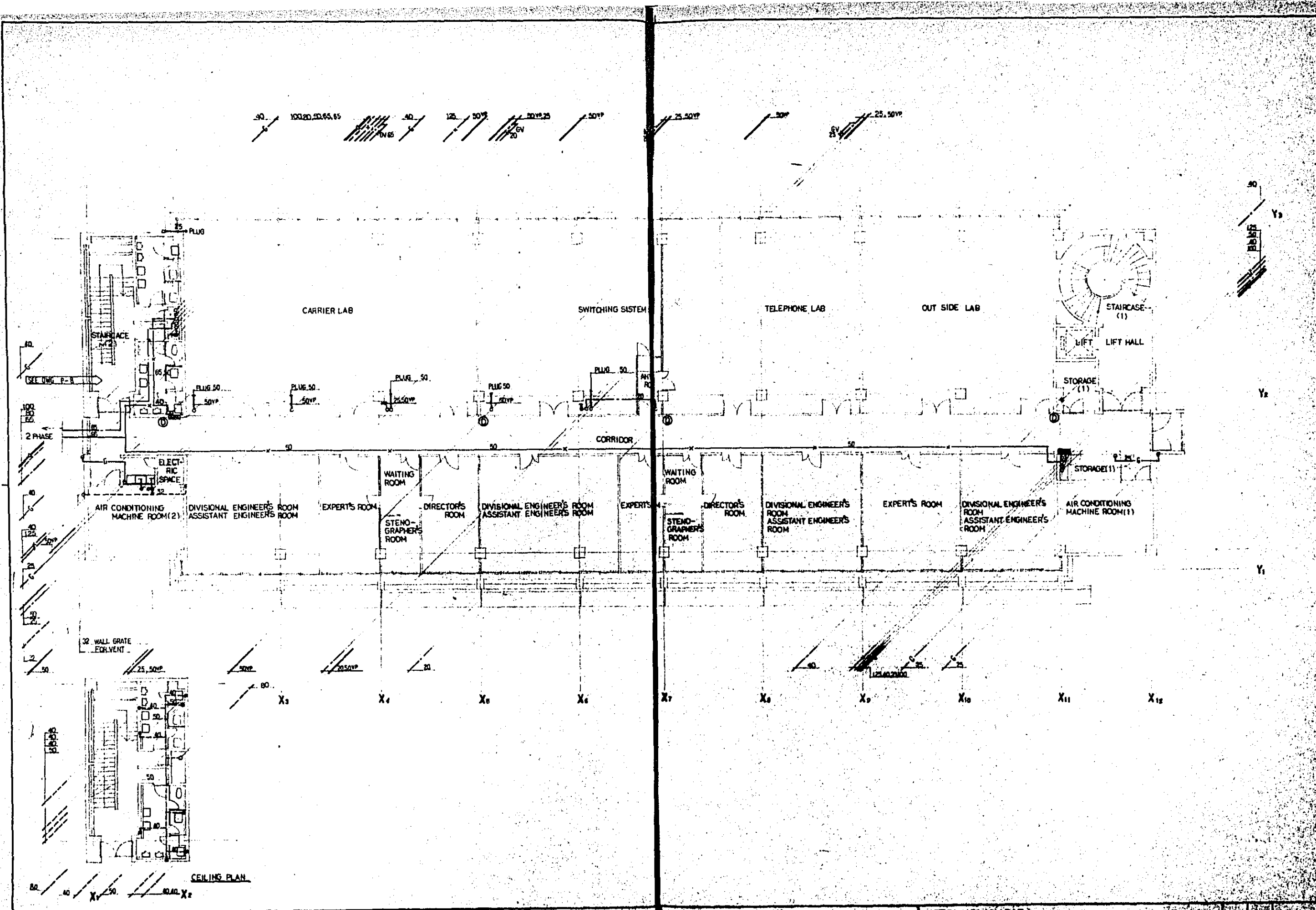


PLUMBING GAS INSTALLATION OF PIPES IS INCLUDED FROM ONE METER OUTSIDE THE MAIN BUILDING WALLS TO THE SITE BOUNDARY.

JAPANESE INTERNATIONAL
CORPORATION

GENERAL ARCHITECT AND ENGINEER

CTRL ISLA HABAD
1st FLOOR PLAN

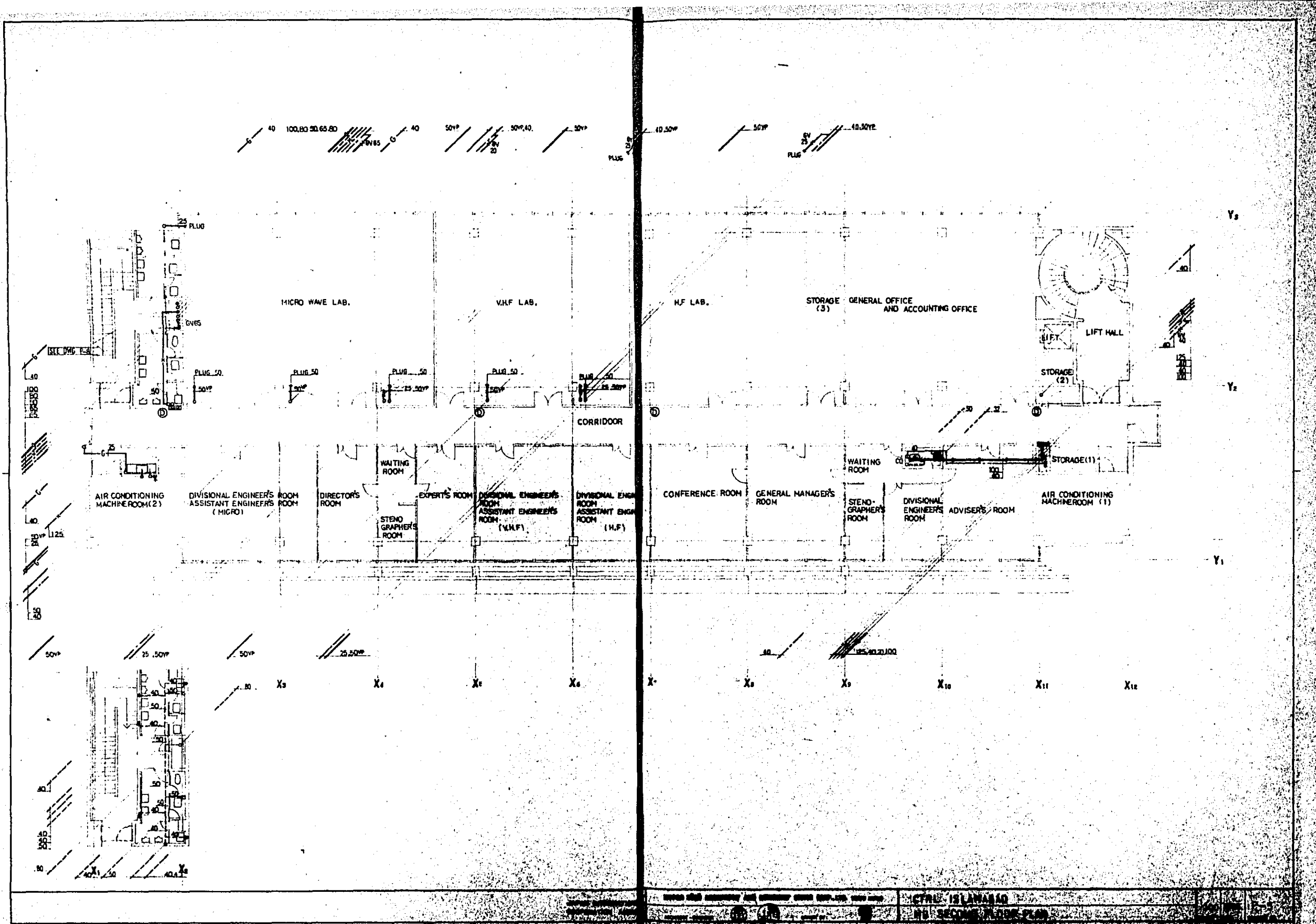


URBAN DEVELOPMENT
COOPERATION BOARD

URBAN DEVELOPMENT BOARD
URBAN DEVELOPMENT BOARD
URBAN DEVELOPMENT BOARD

CTRL - ISLAMABAD
MB FIRST FLOOR PLAN

1/50



MICRO WAVE LAB.

V.H.F. LAB.

H.F. LAB.

STORAGE (3) GENERAL OFFICE AND ACCOUNTING OFFICE

LIFT HALL

CORRIDOR

AIR CONDITIONING MACHINEROOM (2)

DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (MICRO)

DIRECTOR'S ROOM

WAITING ROOM

STENOGRAPHER'S ROOM

EXPERT'S ROOM

DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (V.H.F.)

DIVISIONAL ENGINEER'S ROOM ASSISTANT ENGINEER'S ROOM (H.F.)

CONFERENCE ROOM

GENERAL MANAGER'S ROOM

WAITING ROOM

STENOGRAPHER'S ROOM

DIVISIONAL ENGINEER'S ROOM ADVISER'S ROOM

STORAGE (1)

AIR CONDITIONING MACHINEROOM (1)

X3

X4

X5

X6

X7

X8

X9

X10

X11

X12

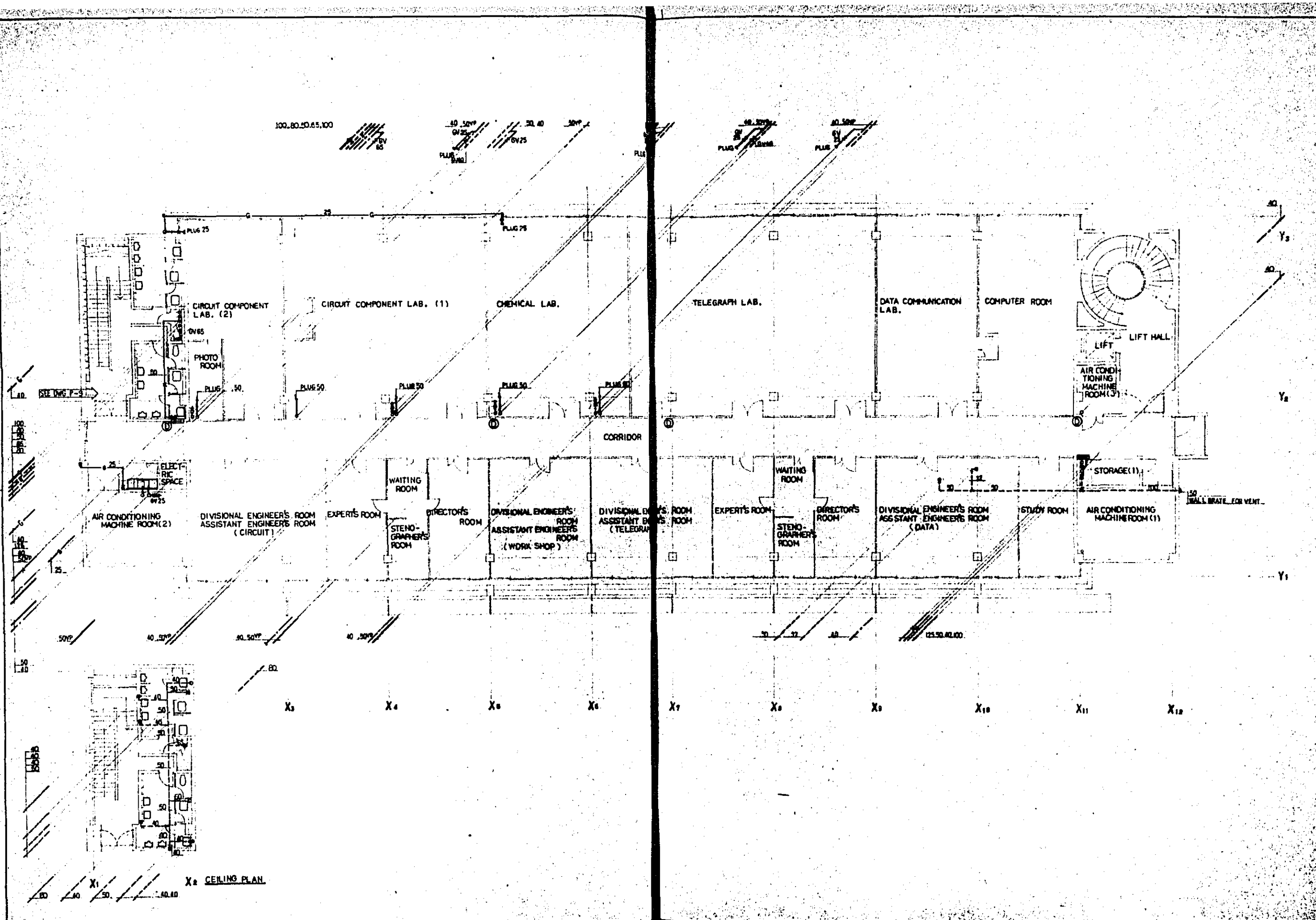
Y3

Y2

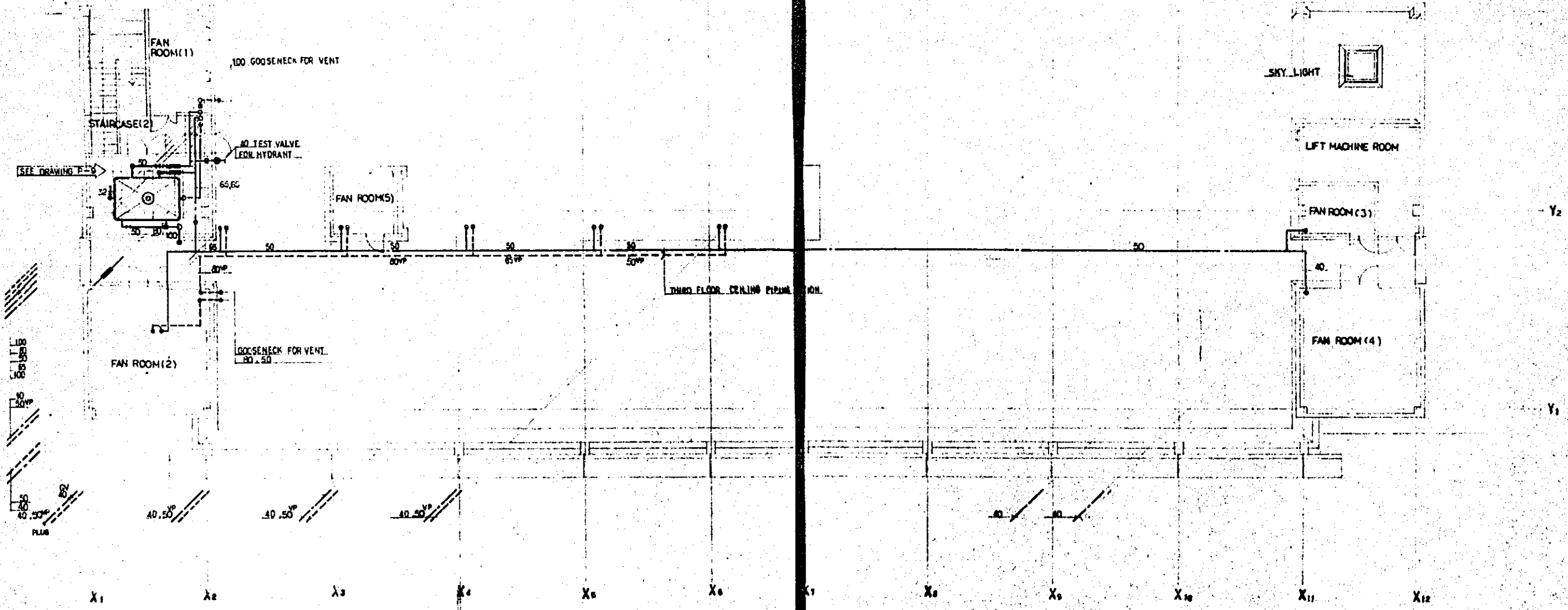
Y1

CTRU ISLAMABAD

NO. SECOND FLOOR PLAN



X₂ CEILING PLAN.



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GENERAL CONTRACTOR AND ENGINEER OFFICE CO., LTD. 1960-1965

CTRL ISLAMABAD

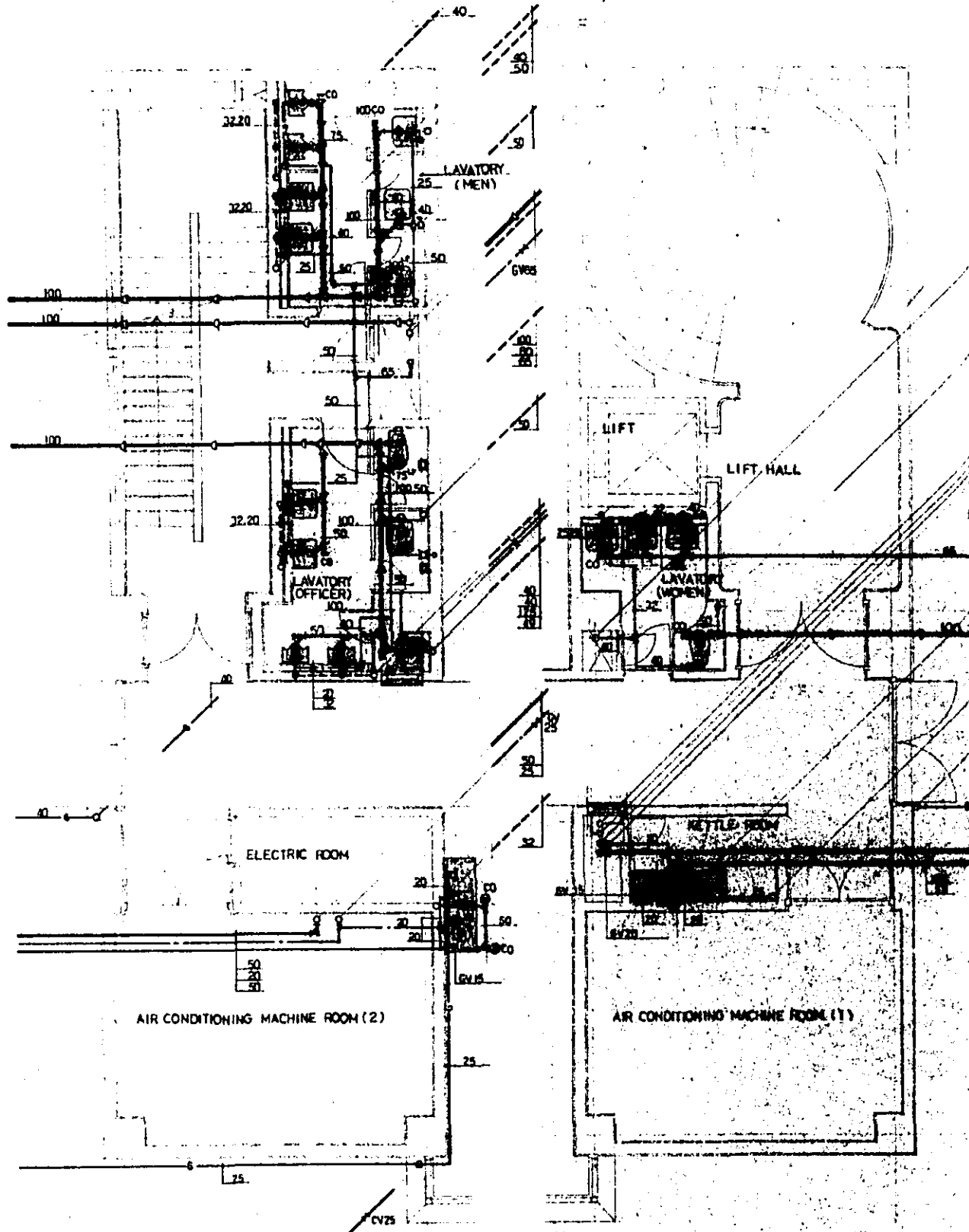
MB ROOF PLAN

1/100 SCALE

Y₂

Y₁

Y₁



LAVATORY DETAIL PLAN GROUND FLOOR

X₁

X₂

X₁₁

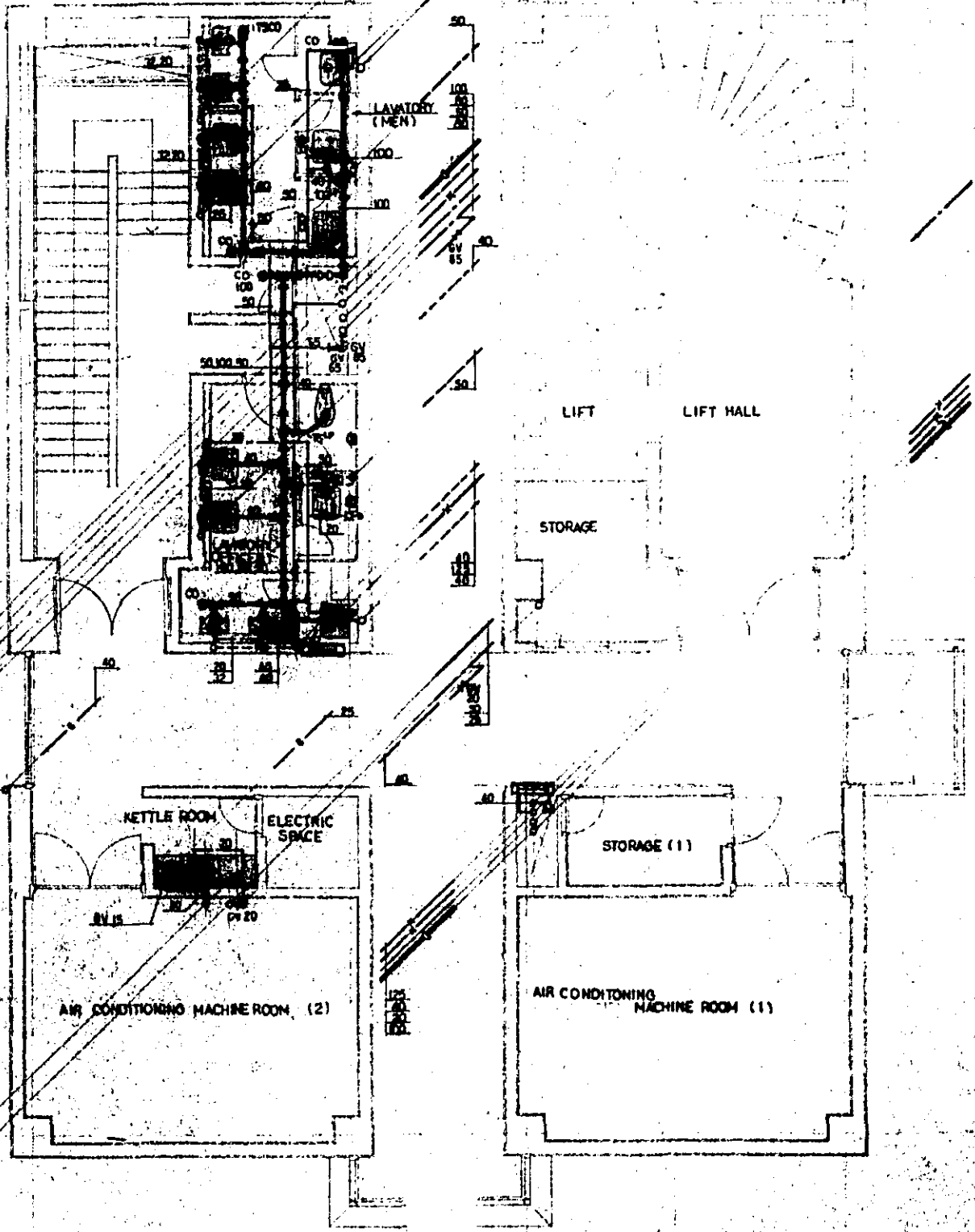
X₁₂

X₁

X₂

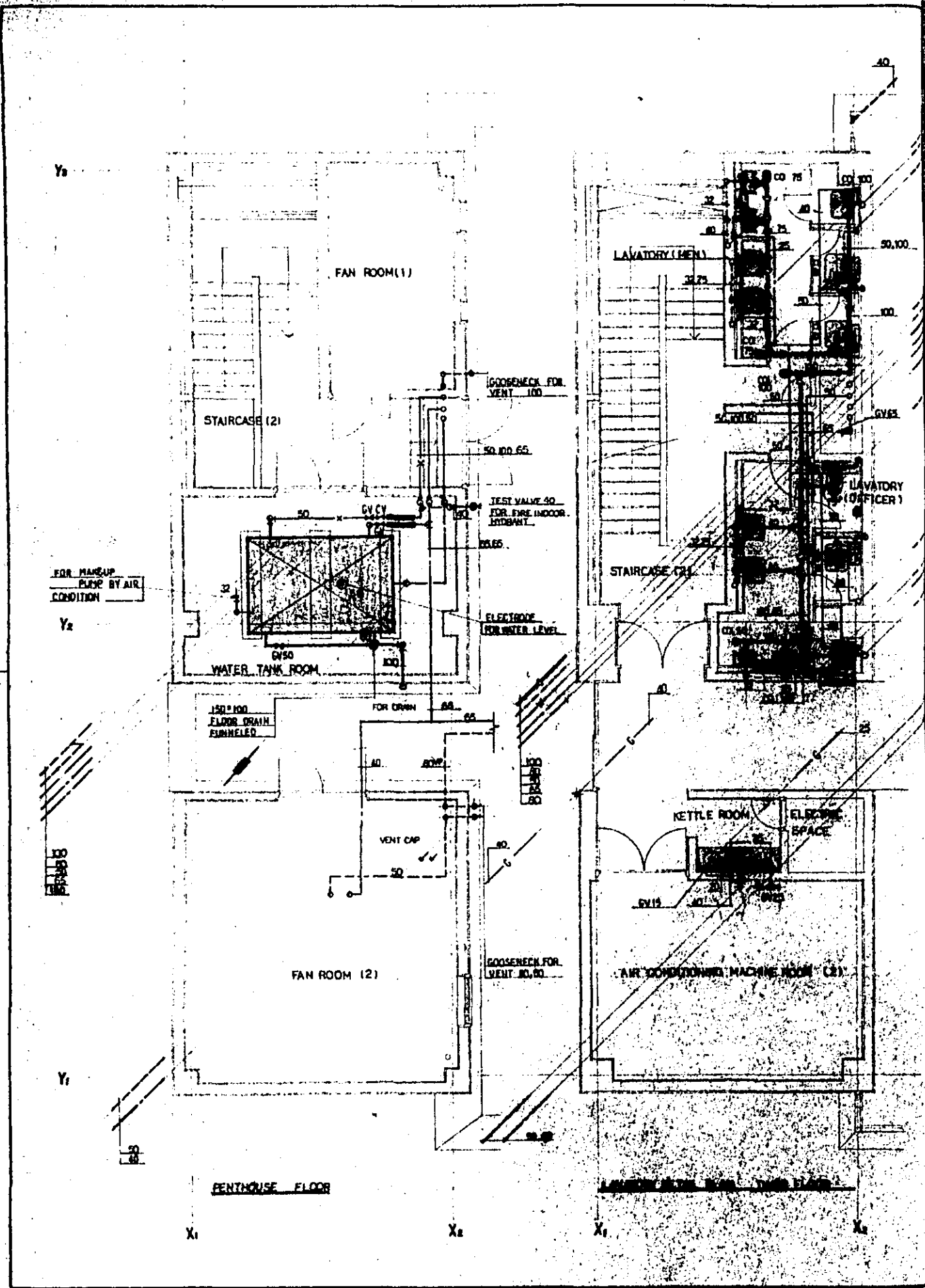
X₁₁

X₁₂



LAVATORY DETAIL PLAN FIRST & SECOND FLOOR

DETAIL PLAN FIRST FLOOR



PLUMBING FIXTURE SCHEDULE NUMBER OF EQUIPMENT (MAIN BUILDING)

FIXTURE	TYPE	WASTE & SOL. TRAP	MAIN BUILDING										
			GROUND FLOOR			1st FLOOR		2nd FLOOR		3rd FLOOR			
			LAVATORY MEN	LAVATORY OFFICER	LAVATORY WOMEN	BATTERY ROOM	EXTERNAL	LAVATORY MEN	LAVATORY OFFICER	WAITING ROOM	LAVATORY MEN	LAVATORY OFFICER	
EUROPEAN WATER CLOSET	FLASH VALVE	75 INTEGRAL	1	1									
	ELDE-COUPLED TANK 15"	75 DITTO											1
EASTERN WATER CLOSET	FLUSH VALVE	100 100	2	1		2	1	2	1				
	HIGH TANK (15") WASH DOWN	100 100											2 1
URINAL	FLUSH VALVE	50 INTEGRAL	2	2		2	2	2	2				
URINALS 2 SETS	HIGH TANK WALL MOUNT TYPE 11"	50 DITTO											1 1
SLOP SINK		65 65	1	1	1	1	1	1	1	1	1	1	1
LAVATORY SINK DRAIN	SHELF, MIRROR	32 32	2	2	2	2	2	2	2	1	2	2	2
		50 P-TYPE											
BIBTAP	INLET 13 (mm)												1
SILL COOK	INLET 20 (mm)												2

STORAGE WATER HEATER SCHEDULE

NO. REQ.	TYPE	CAPACITY	LOCATION
4	STORAGE	20#	KETTLE ROOM (Gr. 1st, 2nd, 3rd)
1	STORAGE	20#	TEA ROOM (Gr.)

STAINLESS STEEL SCHEDULE

FIXTURE	WASTE & SOL. TRAP	MAIN BUILDING			
		GROUND FLOOR	1st FLOOR	2nd FLOOR	3rd FLOOR
STAINLESS STEEL SINK	40 P-TYPE	1	1	1	1

WATER STORAGE TANK SCHEDULE

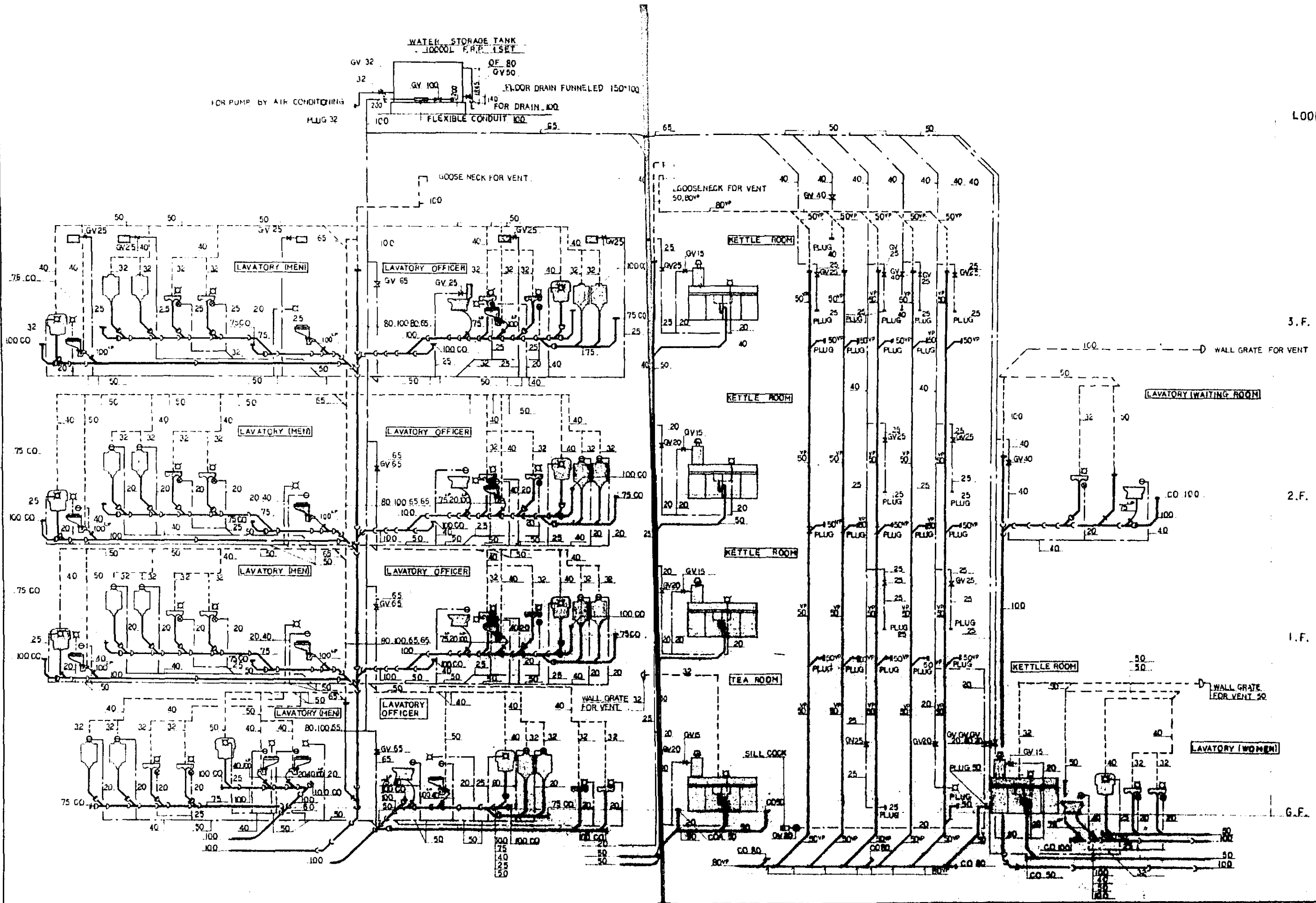
NO. REQ.	LOCATION	SIZE (mm)	CAPACITY (CUBIC METER)	REMARK
1	WATER TANK ROOM	2000 x 3000 x 2000	10	FIELD ASSEMBLED TYPE MADE OF FRP

GAS EQUIPMENT SCHEDULE (1" CORE mm)

FIXTURE	TYPE	LOCATION	MAIN BUILDING			
			GROUND FLOOR	1st FLOOR	2nd FLOOR	3rd FLOOR
GAS COCK	1 NOZZLE	13	1	1	1	1
DITTO	2 NOZZLE	10	1	1	1	1

FIRE FIGHTING EQUIPMENT SCHEDULE

ITEM	FLOOR	LOCATION	NO. REQ.	TYPE	CAPACITY	SIZE (mm)	REMARK
FIRE INDOOR HYDRANT	Gr.	CORRIDOR	2	INSTANTANE OIL		40	COMPLETE HOSE VALVE, HOSE, HOSEBACK NOZZLE AND CABINET
	1st	DITTO	2	DITTO		40	DITTO
	2nd	DITTO	2	DITTO		40	DITTO
	3rd	DITTO	2	DITTO		40	DITTO
FIRE SHOWER HYDRANT	Gr.	CORRIDOR	2	HOSE VALVE		65	HOSE VALVE ASSEMBLED IN THE FIRE INDOOR HYDRANT CABINET
	1st	DITTO	2	DITTO		65	DITTO
	2nd	DITTO	2	DITTO		65	DITTO
	3rd	DITTO	2	DITTO		65	DITTO
DRY POWDER FIRE EXTINGUISHER	Gr.	CORRIDOR	4	PORTABLE	TYPE 10		
	1st	DITTO	4	DITTO	TYPE 10		
	2nd	DITTO	4	DITTO	TYPE 10		
	3rd	DITTO	4	DITTO	TYPE 10		
WALL CONNECTION	Gr.	EXTERNAL	2	WALL MISC		100 x 65 x 65	



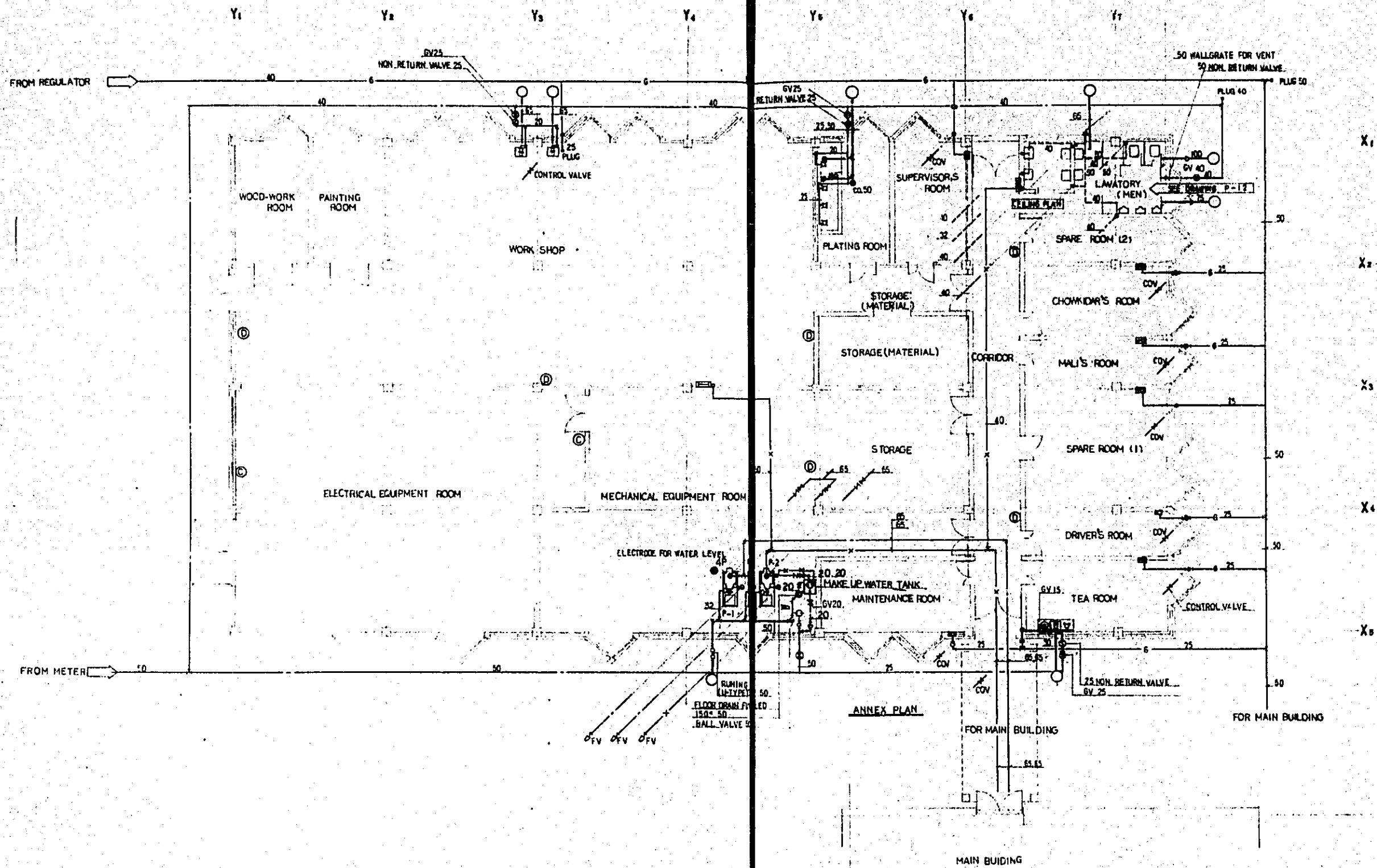
LOOF

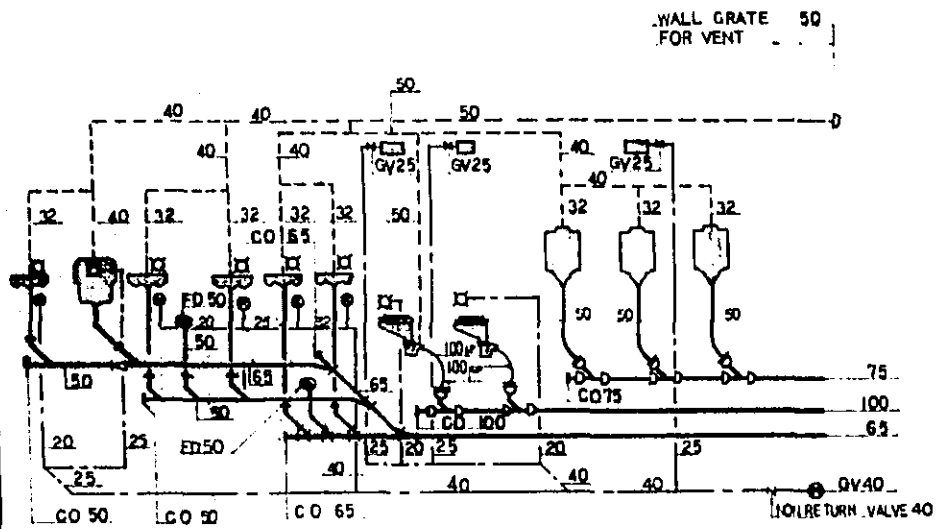
3.F.

2.F.

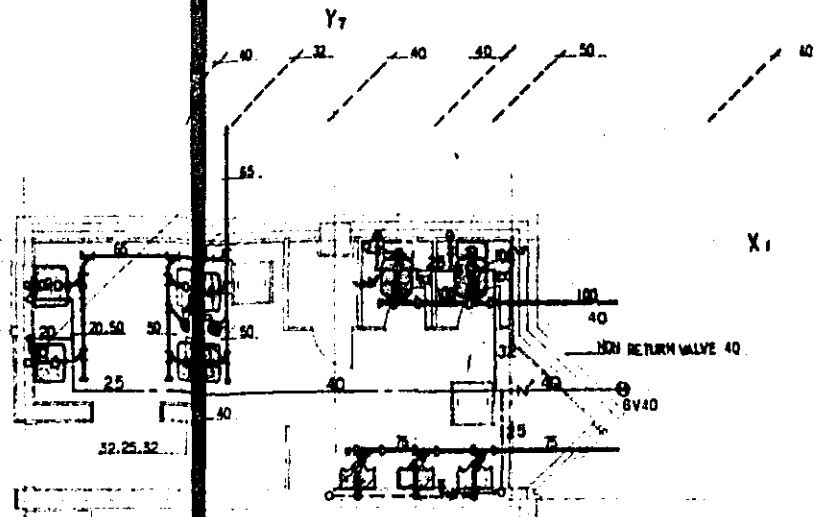
1.F.

G.F.





LAVATORY DISTRIBUTION DIAGRAM (ANNEX)



LAVATORY DETAIL PLAN (ANNEX) 1/50

JAP. FIXTURE SCHEDULE

FIXTURE	BORE (mm)	LOCATION	PLATING ROOM
BIBTAP		13	4

PLUMBING FIXTURE SCHEDULE NUMBER OF EQUIP (ANNEX)

FIXTURE	TYPE	LOCATION		ANNEX BUILDING			
		WASTE	TRAP	1st FLOOR			
EASTERN WATER CLOSET	HIGH TANK (15") WASH DOWN	100	100	2			
URINAL 3 SETS	HIGH TANK WALL HUNG (15")	60	INTEGRAL	3			
SLOP SINK		65	65	1			
LAVATORY BASIN	SHELF, MIRROR	32	32	5			
STAINLESS STEEL SINK		40	P-TYPE		1		
SINK DRAIN		50	DITTO				1
FLOOR DRAIN		50	C-TYPE	2			

STRAGE WATER HEATER SCHEDULE (ANNEX)

NO. REQ.	TYPE	CAPACITY	LOCATION
1	STORAGE	20 l	TEA ROOM

GAS EQUIPMENT SCHEDULE (*BORE mm)

FIXTURE	TYPE	LOCATION	SUPERVIS-ER'S ROOM	SPARE ROOM(1)	SPARE ROOM(2)	MAINTENANCE ROOM	CHOWKIDA-MALI'S ROOM	DRIVER'S ROOM	TEA ROOM
			GAS COCK	1 NOZZLE	13				
	2 NOZZLE	10							1
DITTO	1 NOZZLE AND BOX	13	1	1	1	1	1	1	1

PUMP SCHEDULE (ANNEX)

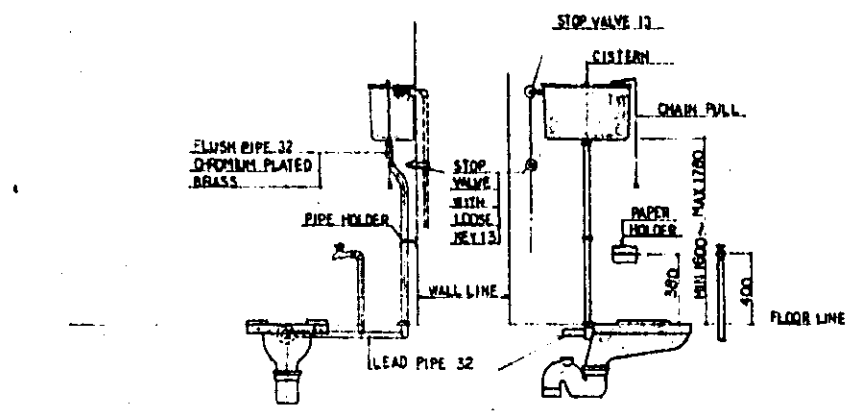
PUMP NO.	NO. REQ.	TYPE	SERVICE	LOCATION	CAPACITY (L/MIN)	HEAD (WATER) (M)	MOTOR 50 HERTZS			REMARK	SIZE FOUNDATION (mm)
							R/MIN	KW	V		
P-1	2	HORIZ SPLIT	WATER	MECHANICAL EQUIPMENT ROOM	380	37	1500	55	400	65	600*1200*300
P-2	1	DITTO	FIRE FIGHTING	DITTO	300	59	1500	75	400	65	600*1400*300

FIRE FIGHTING EQUIPMENT SCHEDULE (ANNEX)

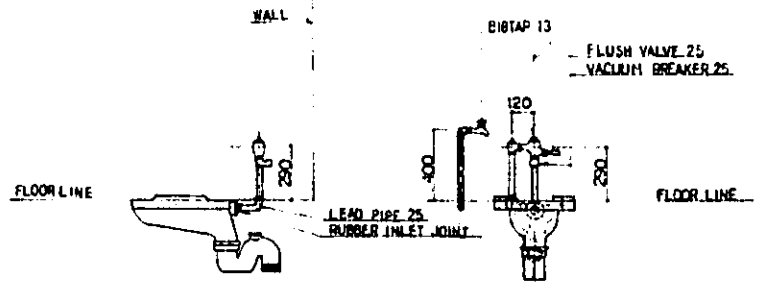
ITEM	LOCATION	NO. REQ.	TYPE	CAPACITY	SIZE (mm)	REMARK
FIRE INDOOR HYDRANT	CORRIDOR	1	INSTANTANEOUS	---	40	COMPLETE: HOSE VALVE, HOSE, HOSE RACK, NOZZLE AND CABINET
	WORK SHOP	1				
CARBON DIOXIDE FIRE EXTINGUISHER	ELECTRIC EQUIPMENT ROOM	2	POTABLE	TYPE 7		
DRY POWDER FIRE EXTINGUISHER	WORK SHOP	3	POTABLE	TYPE 10		
	MECHANICAL EQUIPMENT ROOM	1				
	CORRIDOR	2				

MAKE UP WATER TANK FOR PRIMING SCHEDULE

NAME	SIZE (mm)	NO. REQ.	REMARK
MAKE UP WATER TANK	400*600*400	1	GALVANIZED STEEL IRON PLATE THICKNESS 2.3(mm), BALL VALVE 20, WALL MOUNED WITH BRACKET GLASS GAUGE



HIGH LEVEL CISTERN SYSTEM

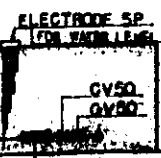


FLUSH VALVE SYSTEM

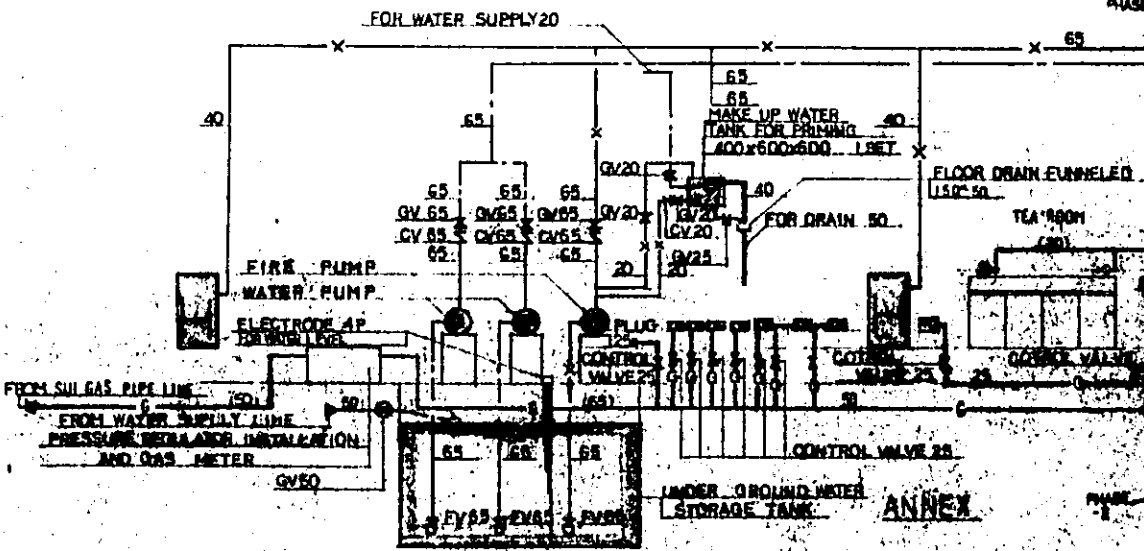
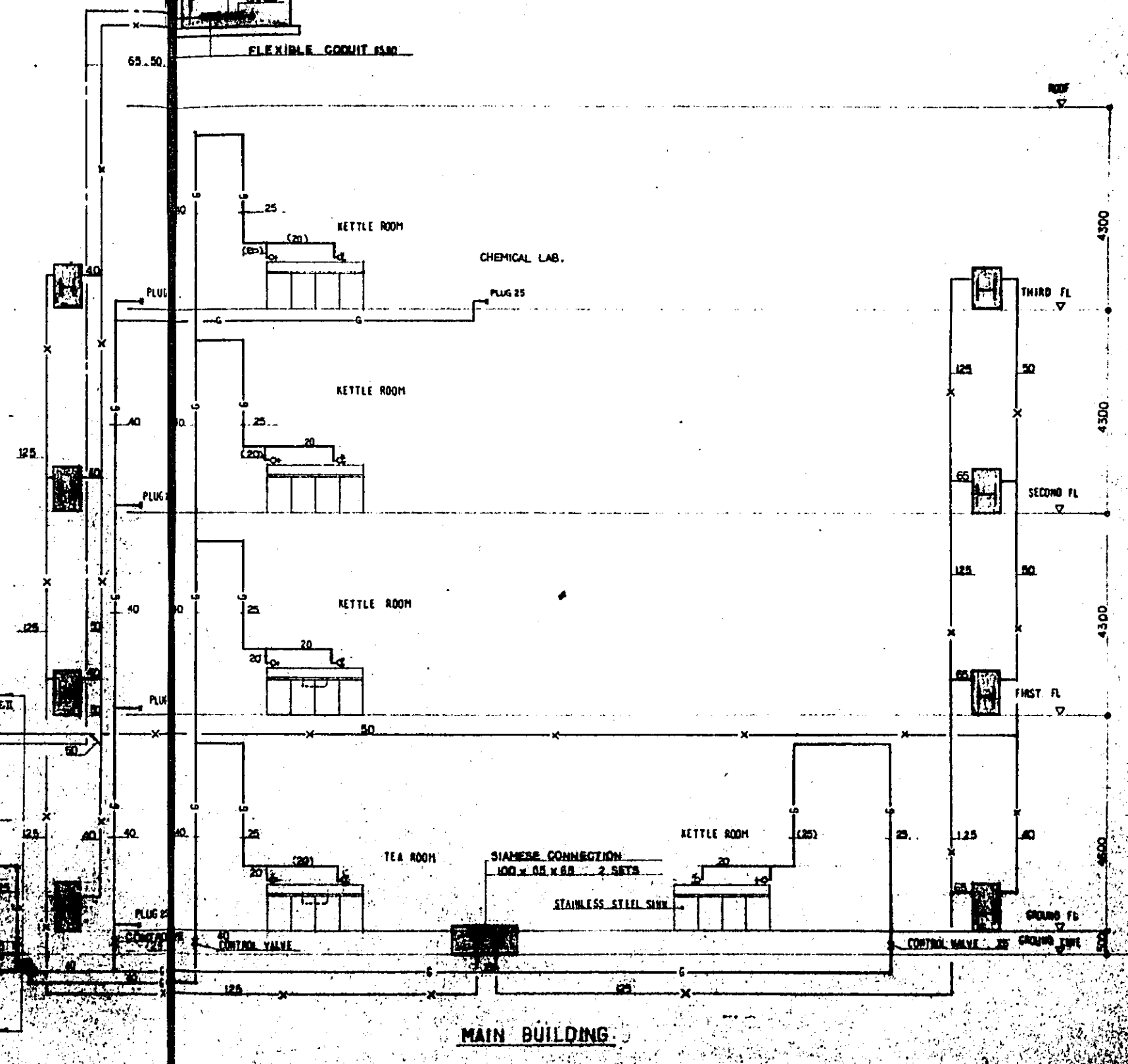
EASTERN WATER CLOSET DETAIL SECTION SCALE 1/20

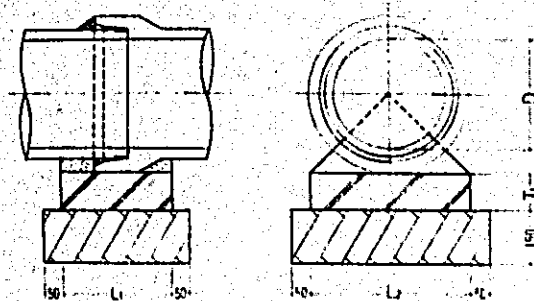
TEST VALVE FOR FIRE INDOOR HYDRANT 40

WATER STORAGE TANK

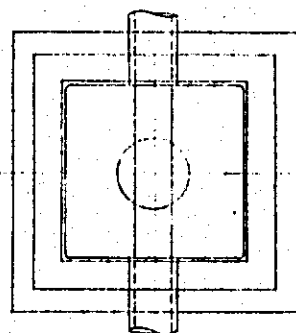
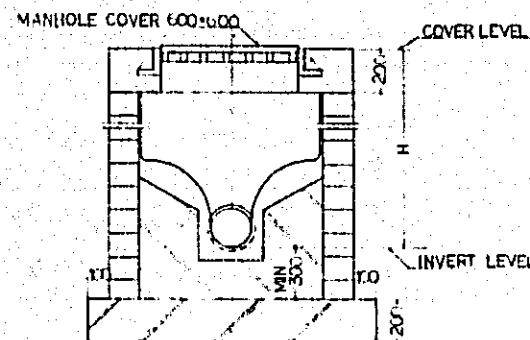


FLEXIBLE CONDUIT 1500



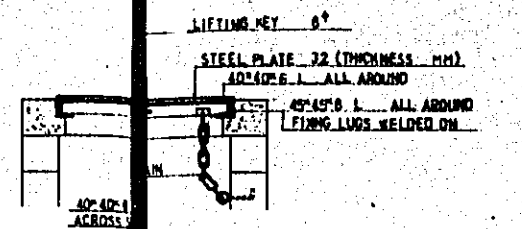


DIAMETER mm D	FOUNDATION L1 x L2	THICKNESS T1
100	250 x 250	100
125	250 x 250	100
150	250 x 250	100
200	250 x 250	120

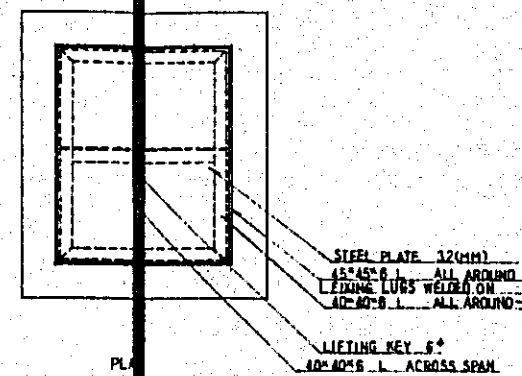


NOTE
H: ACCORDING TO THE DRAWINGS

MANHOLE



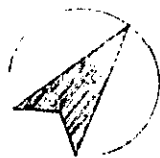
L TYPE ANGLE STEEL



STEEL MANHOLE DETAIL SCALE 1/20

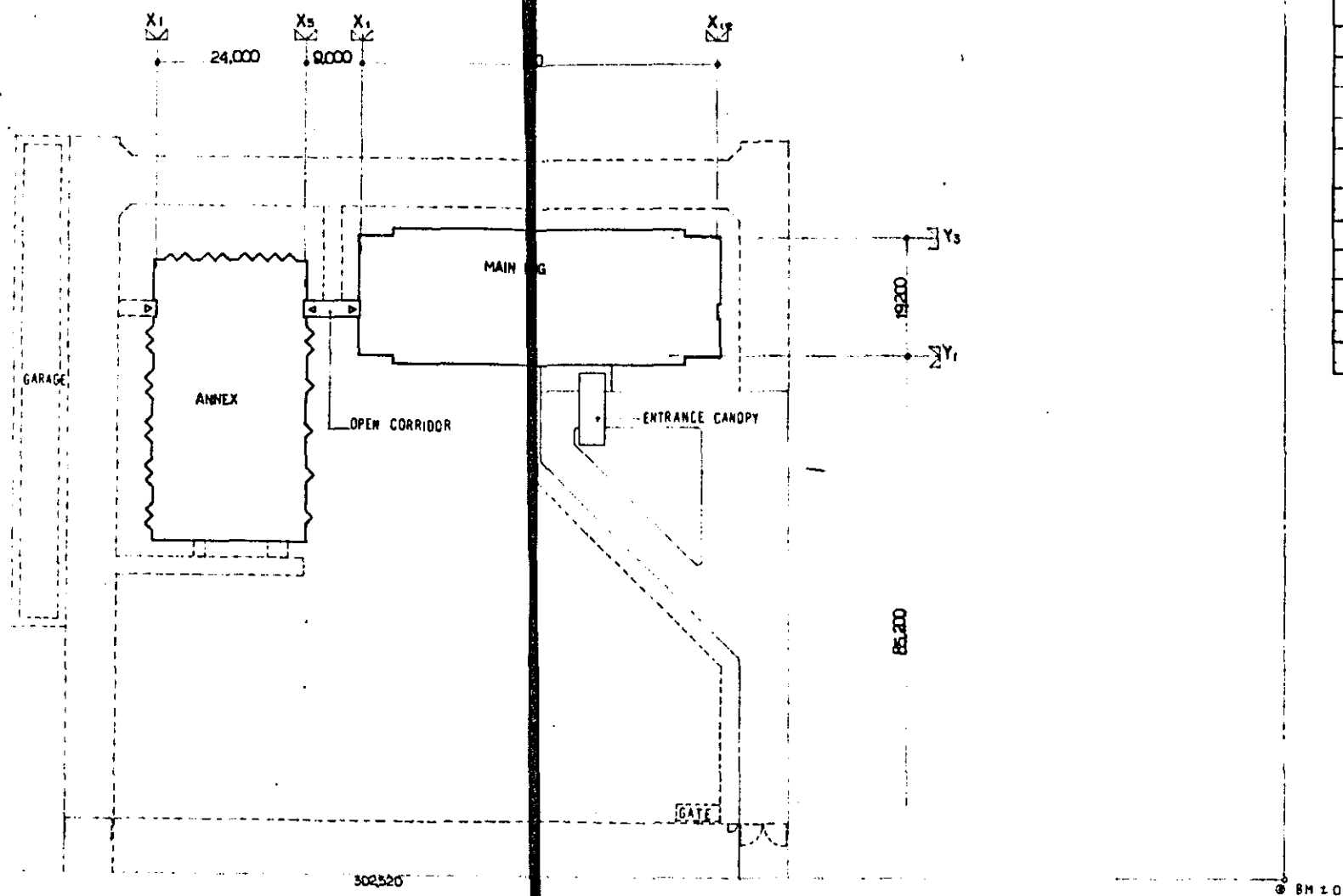
MANHOLE SCHEDULE

MANHOLE NO.	MANHOLE SIZE (mm)	INVERT LEVEL (mm)	COVER TYPE	PIPES	
				INLET DIA (mm)	OUTLET DIA (mm)
M 1	60 x 60	-400	GRADE B	65	100
M 2	60 x 60	-415		100, 100	
M 3	60 x 90	-475		50, 100, 100	
M 4	60 x 60	-550		100	
M 5		-650			
M 6		-745			
M 7		-880			
M 8	60 x 60	-1000			
M 9	75 x 75	-1120	GRADE B	100	100
M 10	60 x 60	-400	GRADE B	50	100
M 11	60 x 60	-400	GRADE B	50	100
M 12	75 x 75	-1230	GRADE B	100	100
M 15	60 x 60	-400	GRADE B	75	100
M 16		-425		100, 100	
M 17		-460		100	
M 18		-505		65, 100	
M 19		-640		50, 100	
M 20		-780		65, 100	
M 21		-795		65, 100	
M 22	60 x 60	-955		100	
M 23	75 x 75	-1065			
M 24	75 x 75	-1175	GRADE B	100	100
M 25	75 x 75	-1415	GRADE B	100, 100, 150	150
M 26		-1430		100, 150	
M 27		-1445		80, 150	
M 28		-1460		50, 50, 150	
M 29		-1495		100, 150	
M 30		-1515		90, 150	
M 31		-1570		150	
M 32		-1640		150	
M 33		-1675		100, 150	
M 34		-1760		150	
M 35	75 x 75	-1595	GRADE B	150	150



GRAPHICAL SYMBOLS

SYMBOL	NAME
—C—	CONDENSER WATER PIPE
---CR---	CONDENSER WATER RETURN PIPE
—	DRAINAGE PIPE
—	WATER PIPE
—X—	GATE VALVE
—Z—	CHECK VALVE
—S—	STRAINER
—P—	THERMOMETER
—G—	PRESSURE GAUGE
—	LINEAR AIR DIFFUSER
—	CEILING AIR DIFFUSER
—	RETURN AIR REGISTER OR GRILL
—	SUPPLY AIR REGISTER
—	VOLUME DAMPER
—	FIRE DAMPER
—	SOLENOID VALVE



ABBREVIATIONS

SYMBOL MEANING	SYMBOL
LINEAR AIR DIFFUSER	LD
CEILING AIR DIFFUSER	CD
RETURN AIR REGISTER	RR
SUPPLY AIR REGISTER	SR
RETURN AIR GRILL	R.G.
SUPPLY FAN	S.A.F.
EXHAUST FAN	E.E.F.
VOLUME DAMPER	V.D.
FIRE DAMPER	F.D.
VERTICAL SHUTTER	V.S.
VERTICAL HORIZONTAL SHUTTER	V.H.S.

SITE PLAN 1/500

AIR FILTER SCHEDULE					
DESIGNATION	AIR QUANTITY C.M.H.	FILTER TYPE	SIZE	ARRANGEMENT	REMARKS
S.C.A.C. NO-1	12000	STANDARD MANUFACTURE	AS CONDITIONERS CASING		SC.A.C. RETURN AIR
S.C.A.C. NO-2	9600	STANDARD MANUFACTURE	DITTO		DITTO
S.C.A.C. NO-3	12000	TYPE-A	DITTO		DITTO
S.C.A.C. NO-4	9600	STANDARD MANUFACTURE	DITTO		DITTO
S.C.A.C. NO-5	14400	TYPE-A	DITTO		DITTO
S.C.A.C. NO-6	9600	STANDARD MANUFACTURE	DITTO		DITTO
S.C.A.C. NO-7	19200	TYPE-A	DITTO		DITTO
S.C.A.C. NO-8	9600	STANDARD MANUFACTURE	DITTO		DITTO
S.C.A.C. NO-9	8100	TYPE-A	DITTO		DITTO
S.C.A.C. NO-10	1620	DITTO	DITTO		DITTO
S.A.F. NO-1	9730	DITTO	500" 500" 50"	3" x 3"	OUTSIDE AIR
S.A.F. NO-2	4150	DITTO	500" 500" 50"	2" x 2"	OUTSIDE AIR
S.A.F. NO-3	1340	TYPE-B	500" 500" 250"	EACH DIFFUSER (2PIECES)	SC.A.C. SUPPLY AIR
⊙ S.A.F.A. NO-1	32000	TYPE-A	500" 500" 50"	5" x 6"	OUTSIDE AIR

NOTE: S.A.F. MEANS AIR FILTER FOR SUPPLY AIR. SCAC MEANS AIR FILTER FOR SELF-CONTAINED AIR CONDITIONERS.
S.A.F.A. MEANS AIR FILTER FOR SUPPLY AIR OF ANNEX.

SUPPLY FAN SCHEDULE										
DESIGNATION	LOCATION	SERVED	C.M.H.	SP (MMHg)	TYPE	DRIVE	MOTOR 50 HERTZ			REMARKS
							KW	V	Φ	
S.A.F. NO-1	FAN ROOM (4)	OUTSIDE AIR	9730	25	SINGLE INLET	V-BELT	3.7	400	3	
S.A.F. NO-2	FAN ROOM (2)	OUTSIDE AIR	4150	17	SINGLE INLET	V-BELT	0.75	400	3	
S.A.F. NO-3	CIRCUIT COMPONENT LAB (2)	SC.A.C. SUPPLY AIR	2680	16	SINGLE INLET	V-BELT	0.75	400	3	
⊙ S.A.F.A. NO-1	MECHANICAL EQUIPMENT ROOM	ANNEX VENTILATING	32000	41	SINGLE INLET	V-BELT	11	400	3	

EXHAUST FAN SCHEDULE										
DESIGNATION	LOCATION	SERVED	C.M.H.	SP (MMHg)	TYPE	DRIVE	MOTOR 50 HERTZ			REMARKS
							KW	V	Φ	
EXF NO-1	PHOTO ROOM	PHOTO ROOM DARK ROOM	840	6	SINGLE INLET	DIRECT	0.09	100	1	
EXF NO-2	RECTIFIER ROOM	RECTIFIER ROOM	1300	8	PROPELLER	DIRECT	0.2	100	1	
EXF NO-3	BATTERY ROOM	BATTERY ROOM	1300	8	PROPELLER	DIRECT	0.2	100	1	
EXF NO-4	LIFT MACHINE ROOM	LIFT MACHINE ROOM	1300	8	PROPELLER	DIRECT	0.2	100	1	
EXF NO-5	FAN ROOM (5)	CIRCUIT COMPONENT LAB	4200	14	SINGLE INLET	V-BELT	0.75	400	3	
EXF NO-6	TELEGRAPH LAB	TELEGRAPH LAB	800	6	PROPELLER	DIRECT	0.09	100	1	
EXL NO-1	FAN ROOM (3)	LAVATORY	210	4	SINGLE INLET	DIRECT	0.09	100	1	
EXL NO-2	FAN ROOM (1)	LAVATORY	2640	13	SINGLE INLET	V-BELT	0.75	400	3	
EXR NO-1	FAN ROOM (3)	KETTLE ROOM	750	6	SINGLE INLET	V-BELT	0.2	400	3	
EXR NO-2	FAN ROOM (1)	KETTLE ROOM	3000	17	SINGLE INLET	V-BELT	0.75	400	3	
⊙ EXFA NO-1	MECHANICAL EQUIPMENT ROOM	ANNEX VENTILATING	31480	41	SINGLE INLET	V-BELT	11	400	3	
⊙ EXFA NO-2	WOOD WORK ROOM	WOOD WORK ROOM	680	5	PROPELLER	DIRECT	0.09	100	1	
⊙ EXFA NO-3	PAINTING ROOM	PAINTING ROOM	1130	7	PROPELLER	DIRECT	0.2	100	1	
⊙ EXFA NO-4	PLATING ROOM	PLATING ROOM	1300	7	SINGLE INLET	V-BELT	0.2	400	3	
⊙ EXFA NO-1	TEA ROOM (ANNEX)	TEA ROOM (ANNEX)	750	6	PROPELLER	DIRECT	0.09	100	1	

EXF NO-2,3,4,6, EXFA NO-2,3, EXFA NO-1 : WITH MR STREAM OPERATED DAMPER

PUMP SCHEDULE									
DESIGNATION	LOCATION	SERVED	TYPE	WATER QUANTITY L/H	DISCH HEAD (M)	MOTOR 50 HERTZ			DELIVERY OPENING (MM)
						KW	V	Φ	
C.P. NO-1	FAN ROOM (4)	CONDENSER WATER	CENTRIFUGAL TYPE SINGLE SECTION	79300	15	7.5	400	3	125
C.P. NO-2	FAN ROOM (2)	DITTO	DITTO	52800	15	5.5			100
C.P. NO-3	FAN ROOM (2)	DITTO	DITTO	9900	16	1.5			50
C.P. NO-4	FAN ROOM (4)	DITTO	DITTO	3360	12	0.75	400	3	32

NOTE: C.P. MEANS CONDENSER WATER PUMP.

COOLING TOWER MAKE UP WATER PUMP SCHEDULE									
DESIGNATION	LOCATION	SERVED	TYPE	WATER QUANTITY L/H	DISCH HEAD (M)	MOTOR 50 HERTZ			DELIVERY OPENING (MM)
						KW	V	Φ	
M.P.	WATER TANK ROOM	WATER SUPPLY	CENTRIFUGAL TYPE	9360	22	1.5	400	3	40

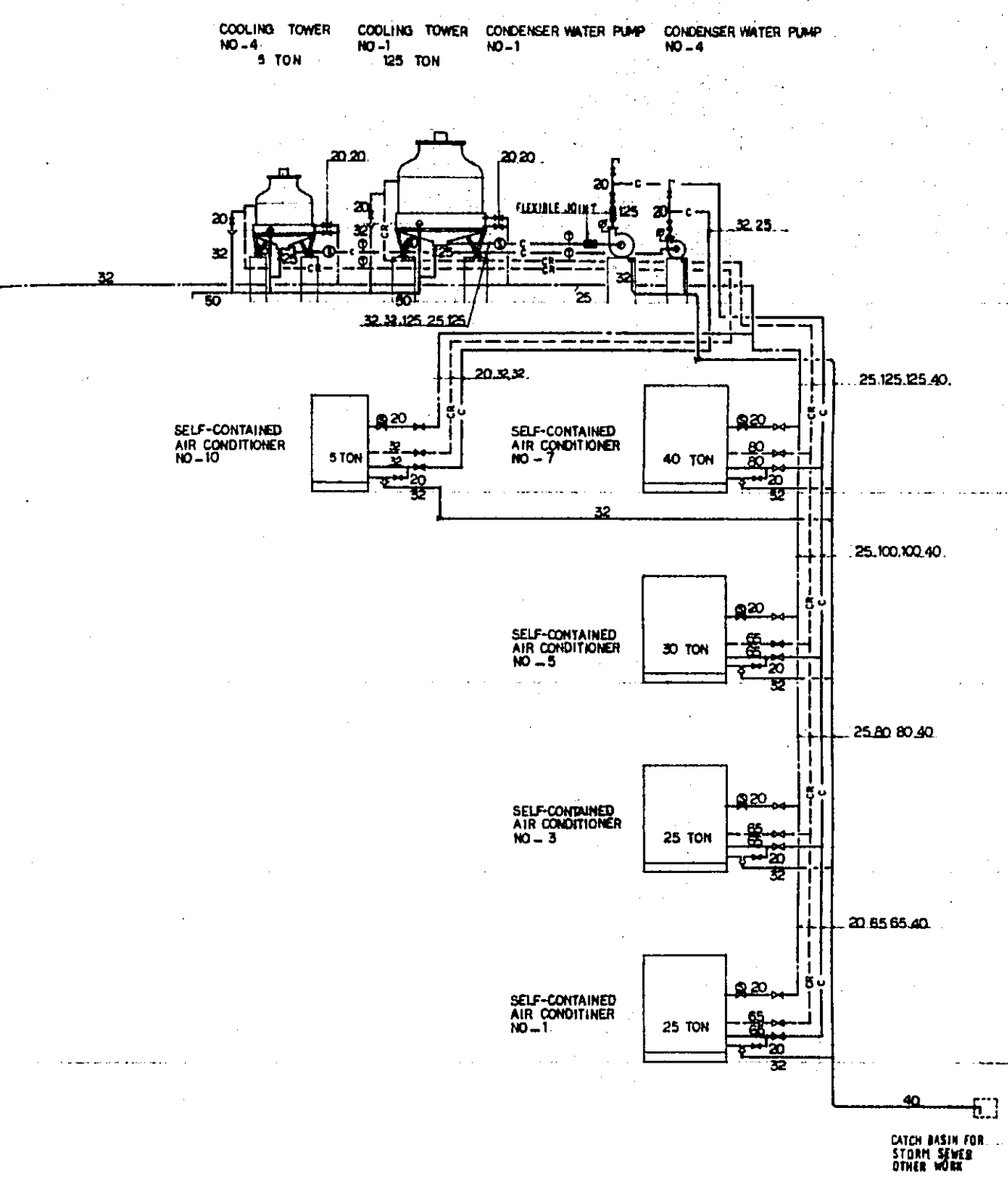
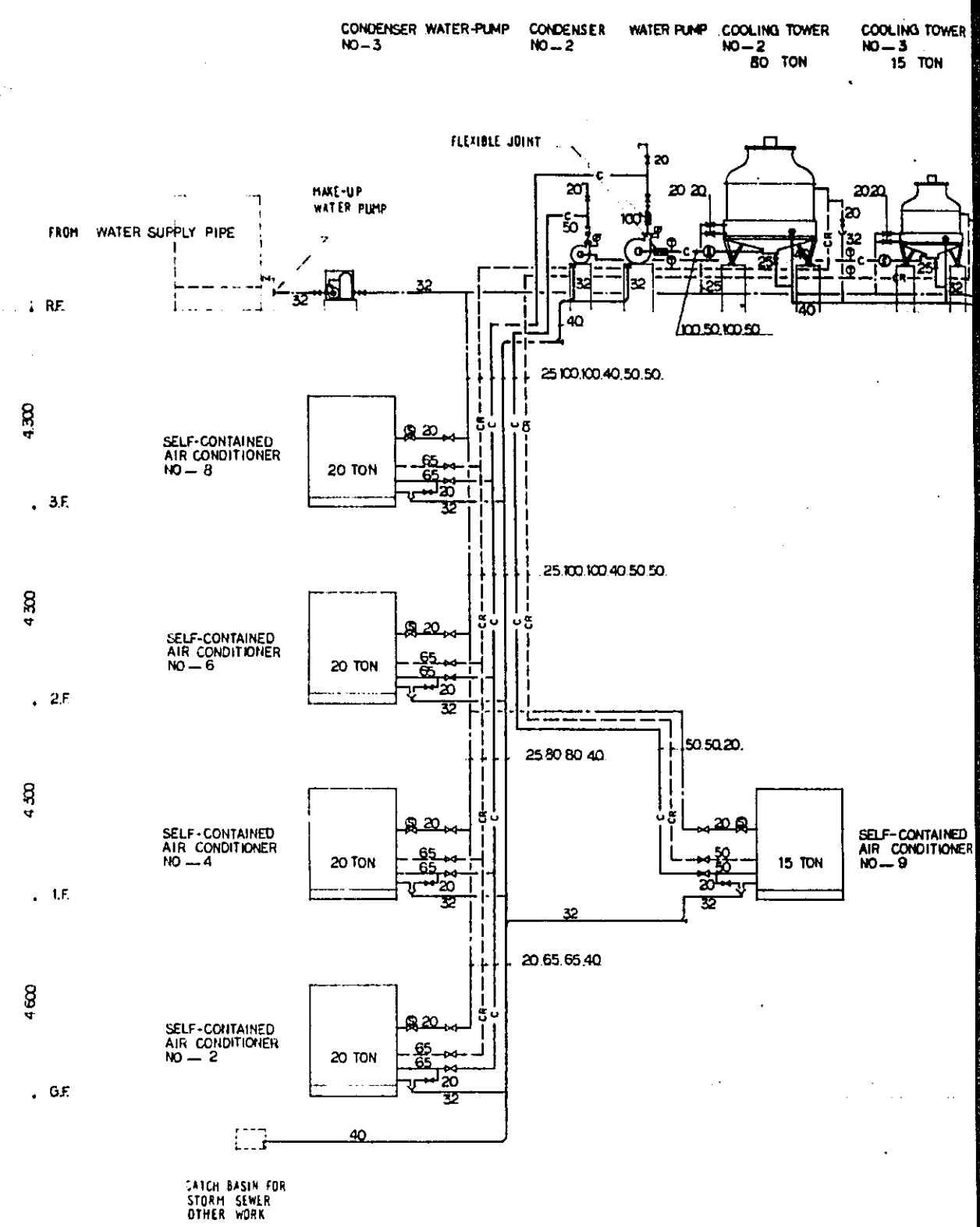
NOTE: M.P. MEANS MAKE UP WATER PUMP FOR COOLING TOWER.

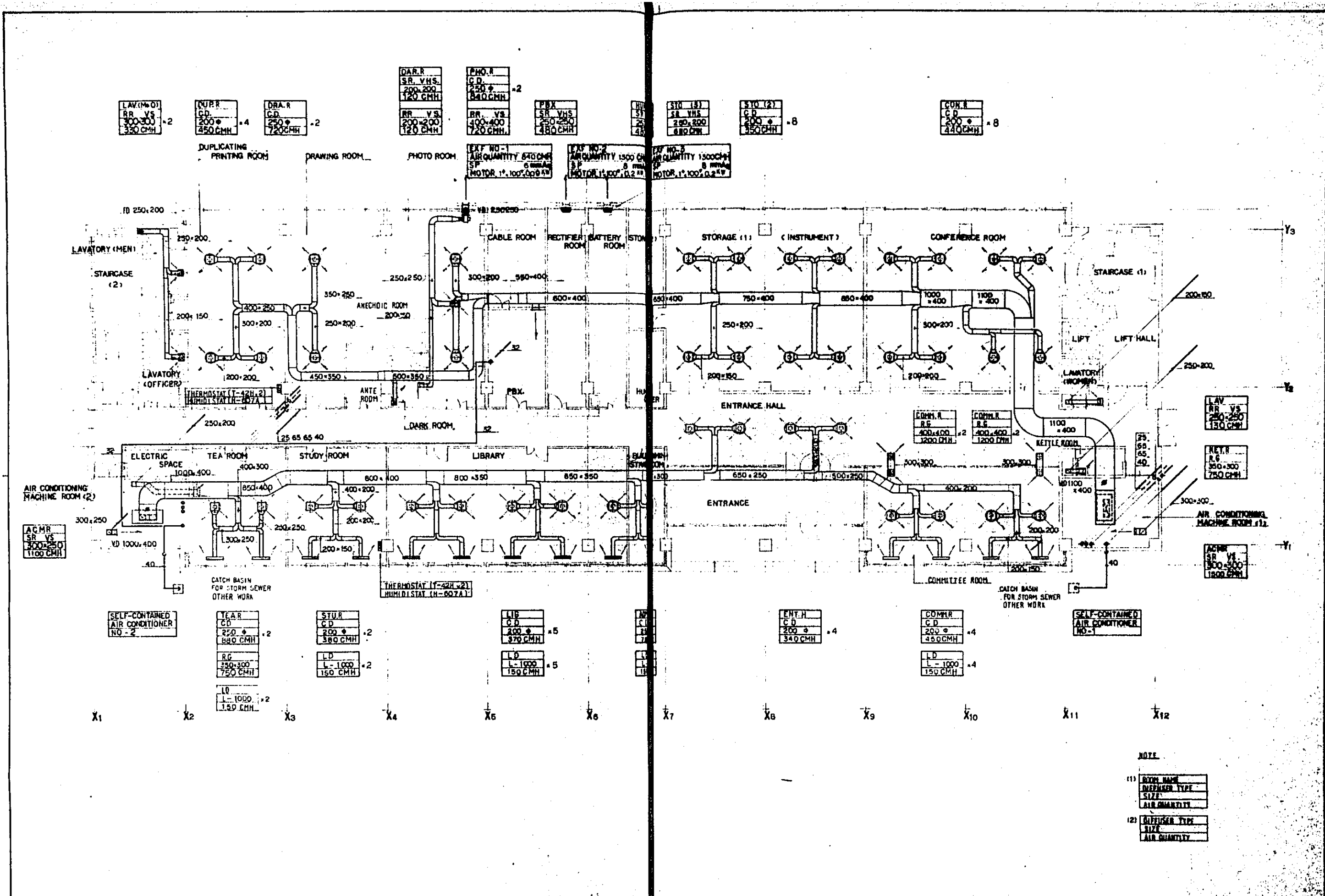
COOLING TOWER SCHEDULE											
DESIGNATION	LOCATION	COOLING CAPACITY TON	NOM. TONS	L/H	WATER C°		WET BULB C°	MOTOR 50 HERTZ			REMARKS
					IN	OUT		KW	V	Φ	
C.T. NO-1	MR ROOF	397000	125	79300	38	33	28	3.7	400	3	
C.T. NO-2	DITTO	264000	80	52800	38	33	28	3.7	400	3	
C.T. NO-3	DITTO	49400	15	9900	38	33	28	0.75	400	3	
C.T. NO-4	DITTO	16800	5	3360	38	33	28	0.15	400	3	

NOTE: C.T. MEANS COOLING TOWER.

SELF-CONTAINED AIR CONDITIONERS SCHEDULE											
ARTICLE	NO	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10
		FLOOR		6F	6F	1F	1F	2F	2F	3F	3F
COOLING CAPACITY	REAL/H	69300	55100	69100	55100	82500	55100	109800	55100	41200	14000
HUMIDIFYING CAPACITY (WATER SPRAY)	KG/H	7.6	5.5	10.1	5.5	12.9	4.8	13.4	5.5	4.8	0.8
CONDENSER WATER QUANTITY	LIT/H	16600	13200	16600	13200	19800	13200	26300	13200	9900	3360
SUPPLY AIR QUANTITY	M ³ /H	12000	9600	12000	9600	14400	9600	19200	9600	8100	3000
STATIC PRESSURE (EXCEPT SCAC CASING)	MMHg	34	20	50	20	53	20	55	20	—	6
COMPRESSOR MOTOR	KW	108+75	15	108+75	15	108+108	15	30	15	10.8	3.7
FAN MOTOR	KW	5.9	5.7	5.5	3.7	5.5	3.7	7.5	3.7	2.2	0.4
ELECTRIC HEATER	KW	40	35	35	30	45	30	50	35	15	5
CAPACITOR FOR POWER FACTOR CORRECTION	COMP. (μF)	20+20	75	50+40	75	50+50	75	130	75	30	20
	FAN (A.P.)	20	20	50	20	30	20	40	20	15	10

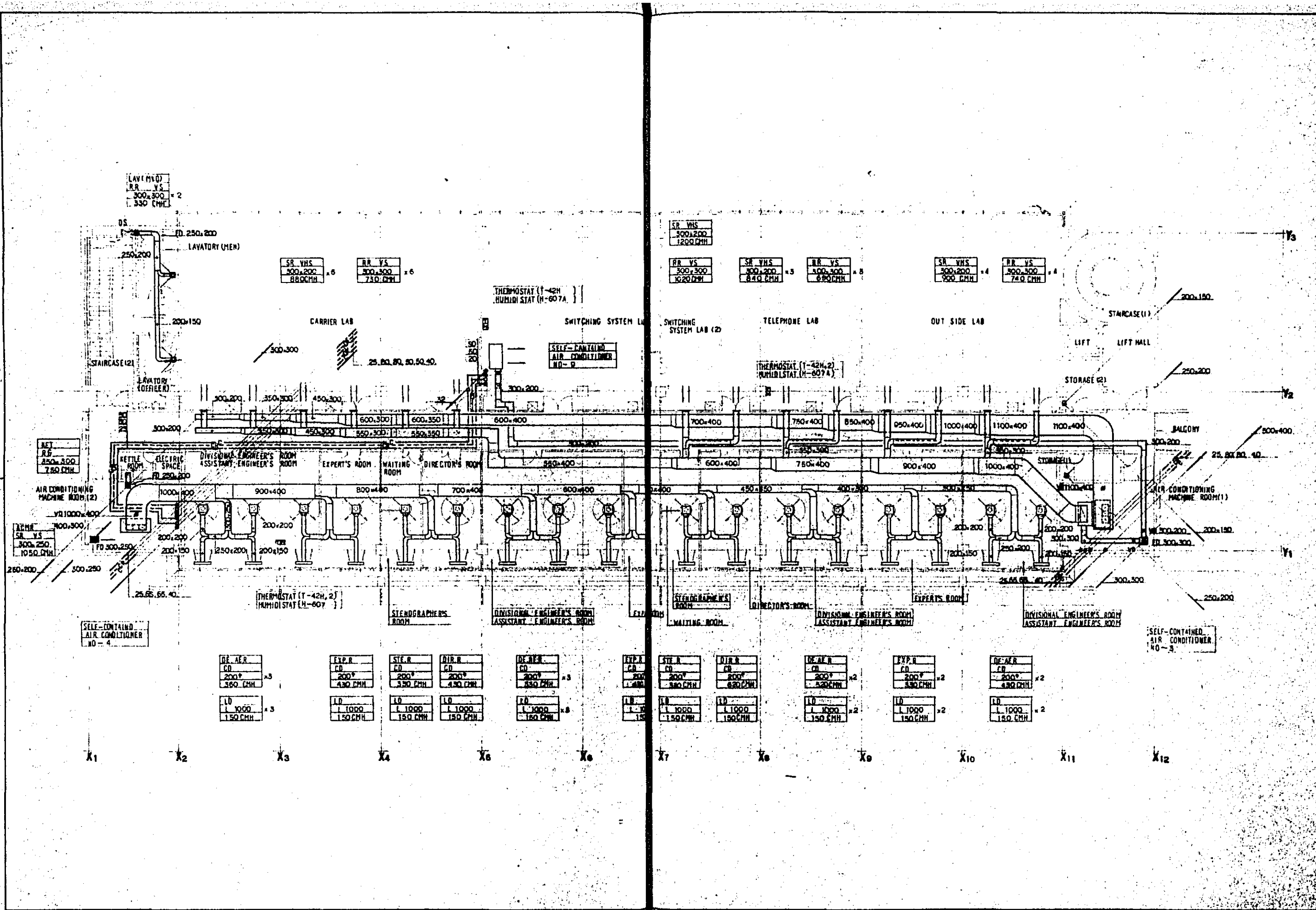
SYMBOL	REMARK
⊙	PHASE-2





NOTE

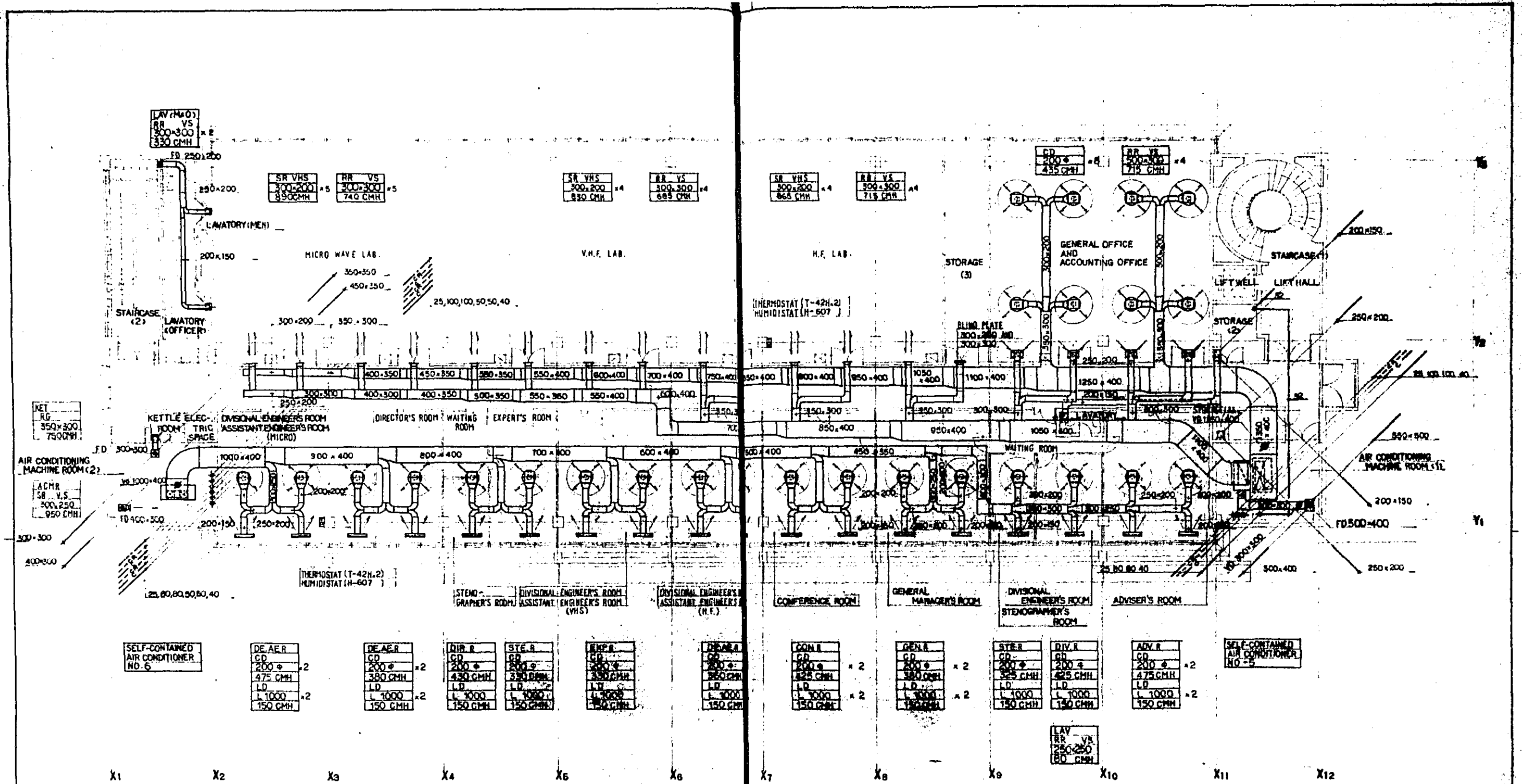
- (1) ROOM NAME
DIFFUSER TYPE
SIZE
AIR QUANTITY
- (2) DIFFUSER TYPE
SIZE
AIR QUANTITY

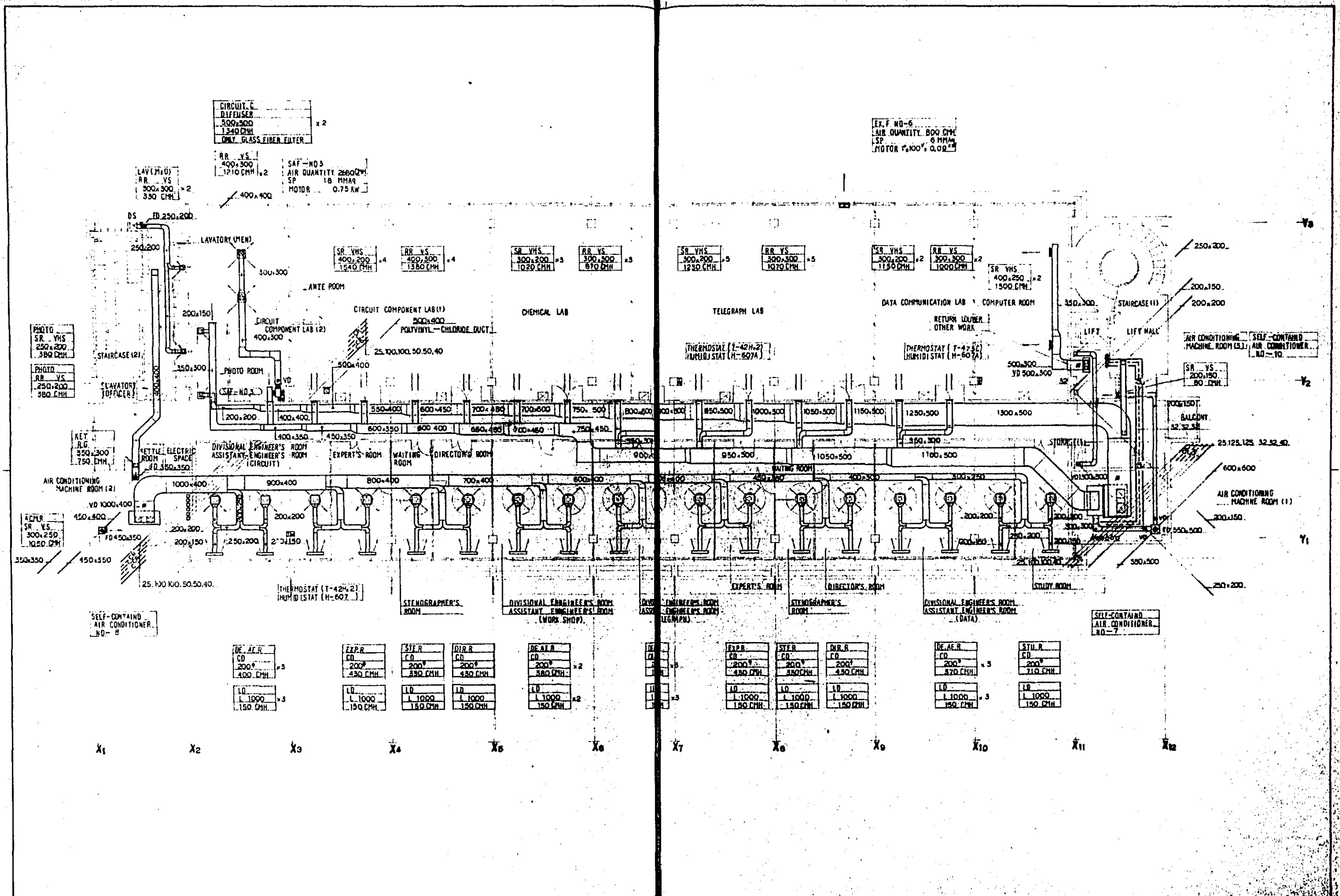


LABORATORY INTERNATIONAL CORPORATION

GENERAL CONTRACTOR AND ENGINEER OVERSEAS CORP. LTD. 10000 JAPAN
 PROJECT: CONTROL ISLAND
 DRAWN BY: [Signature]

CTRL ISLAND
 N-2 FIRST FLOOR PLAN





CIRCUIT C
DIFFUSER
500x500
1340 CMH
ONLY GLASS FIBER FILTER

LAV (M)O
RR VS
300x300
330 CMH

RR VS
400x300
1210 CMH

SAF-NO 3
AIR QUANTITY 2660 CMH
SP 18 MMA9
MOTOR 0.75 KW

EX. F. NO-6
AIR QUANTITY 800 CMH
SP 6 MMA9
MOTOR 0.100 KW

SR VHS
400x200
1540 CMH

RR VS
400x300
1380 CMH

SR VHS
300x300
1020 CMH

RR VS
300x300
870 CMH

SR VHS
300x200
1230 CMH

RR VS
300x300
1070 CMH

SR VHS
300x200
1150 CMH

RR VS
300x300
1000 CMH

SR VHS
400x250
1500 CMH

PHOTO
SR VHS
250x200
390 CMH

PHOTO
RR VS
250x200
380 CMH

KEY
R.G.
350x300
750 CMH

ACHR
SR VS
300x250
1050 CMH

SELF-CONTAINED
AIR CONDITIONER
NO-8

DE.A.E.R.	CD	200	400 CMH
LD	L 1000	150	CMH

EX.P.R.	CD	200	430 CMH
LD	L 1000	150	CMH

ST.E.R.	CD	200	390 CMH
LD	L 1000	150	CMH

DIR.R.	CD	200	450 CMH
LD	L 1000	150	CMH

DE.A.E.R.	CD	200	380 CMH
LD	L 1000	150	CMH

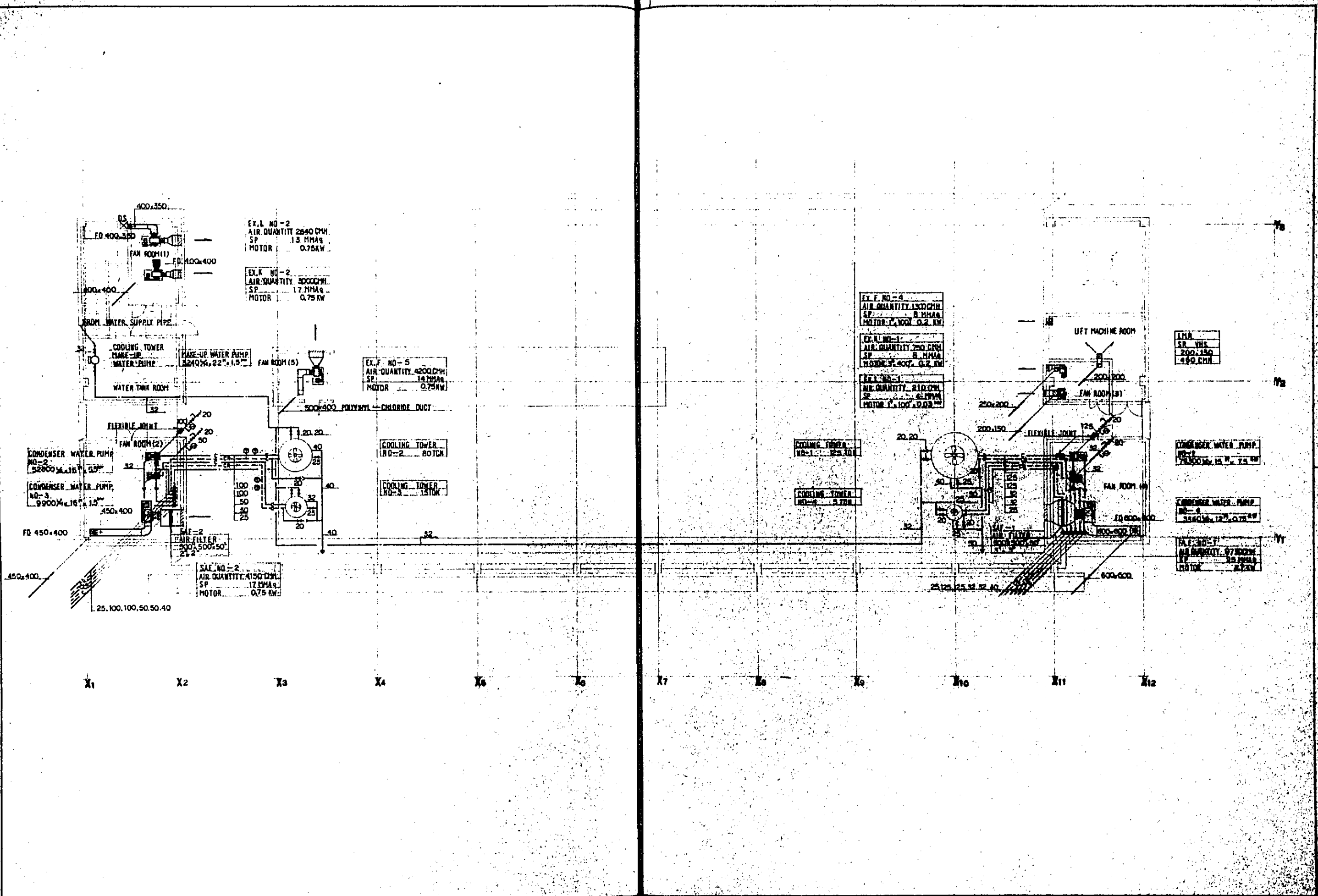
EX.P.R.	CD	200	430 CMH
LD	L 1000	150	CMH

ST.E.R.	CD	200	390 CMH
LD	L 1000	150	CMH

DIR.R.	CD	200	430 CMH
LD	L 1000	150	CMH

DE.A.E.R.	CD	200	370 CMH
LD	L 1000	150	CMH

ST.U.R.	CD	200	710 CMH
LD	L 1000	150	CMH



EX. L NO-2
AIR QUANTITY 2890 CMH
SP 13 MMHg
MOTOR 0.75 KW

EX. K NO-2
AIR QUANTITY 3000 CMH
SP 17 MMHg
MOTOR 0.75 KW

EX. F NO-5
AIR QUANTITY 4200 CMH
SP 14 MMHg
MOTOR 0.75 KW

EX. E NO-4
AIR QUANTITY 1300 CMH
SP 8 MMHg
MOTOR 0.100 0.2 KW

EX. L NO-1
AIR QUANTITY 280 CMH
SP 8 MMHg
MOTOR 0.100 0.2 KW

EX. S NO-1
AIR QUANTITY 210 CMH
SP 6 MMHg
MOTOR 0.100 0.03 KW

LIFT
SR. VHS
200-150
460 CMH

COOLING TOWER
NO-2 80 TON

COOLING TOWER
NO-3 15 TON

COOLING TOWER
NO-1 12.5 TON

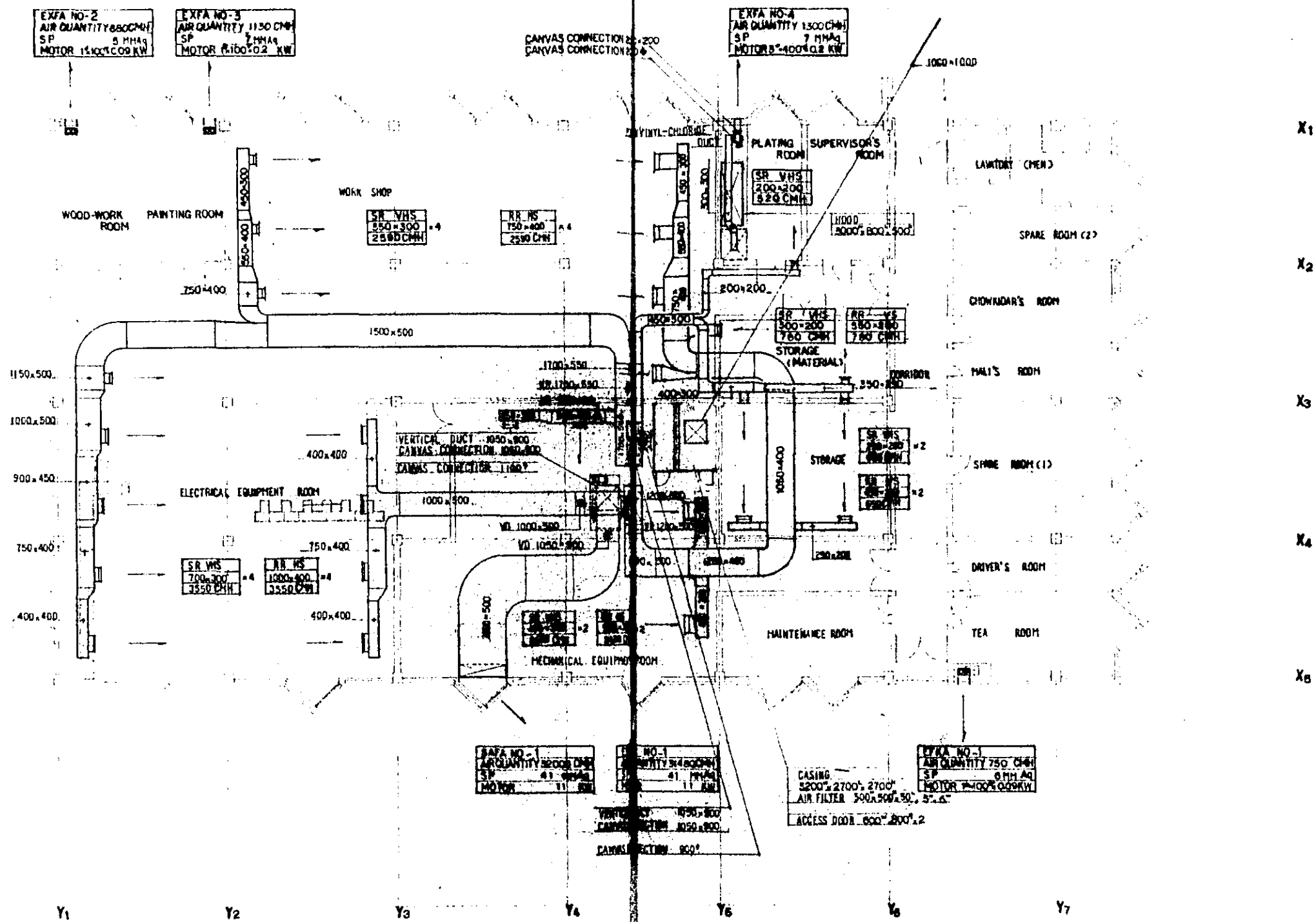
COOLING TOWER
NO-4 5 TON

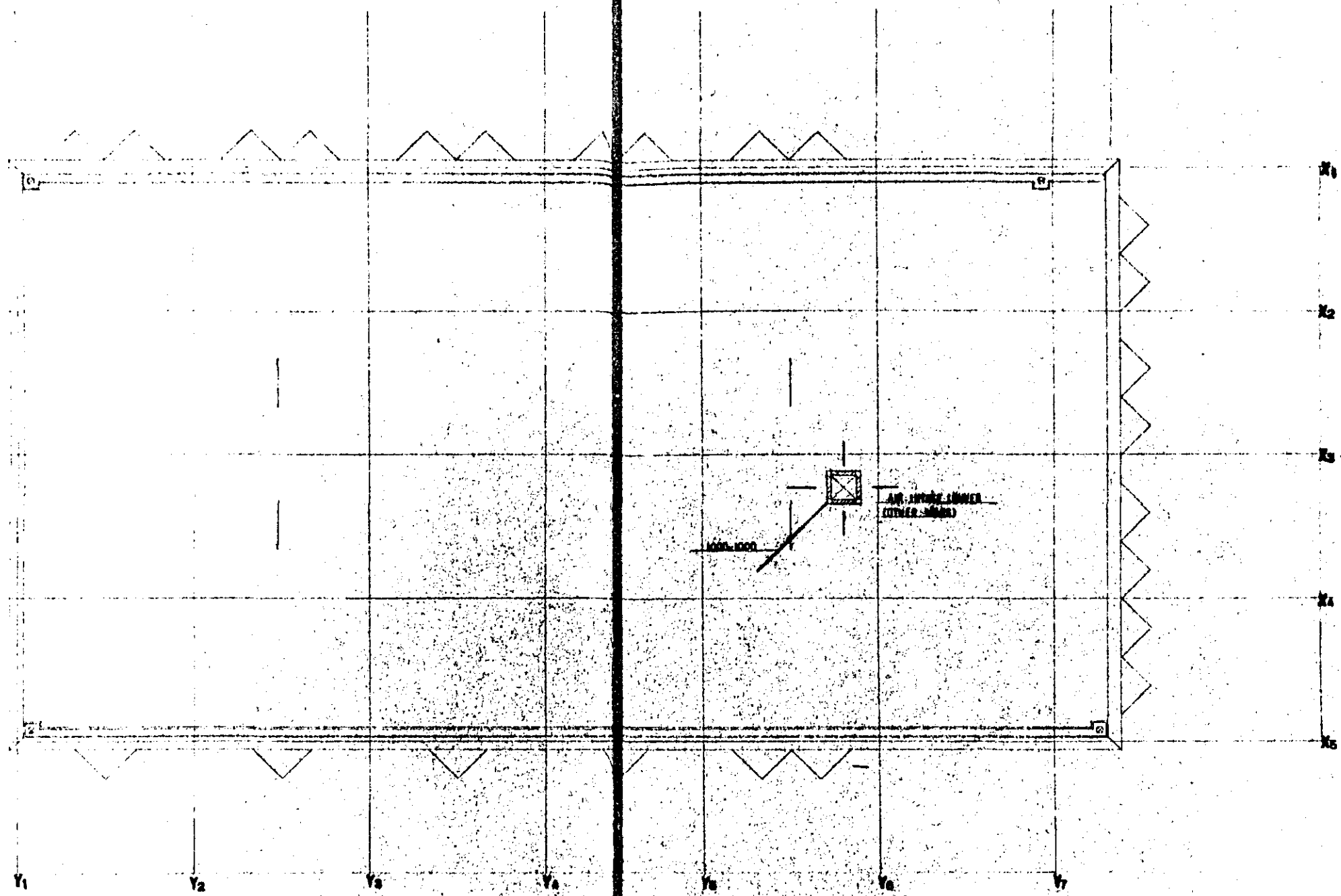
CONDENSER WATER PUMP
NO-1
5500 CMH 12" 0.75 KW

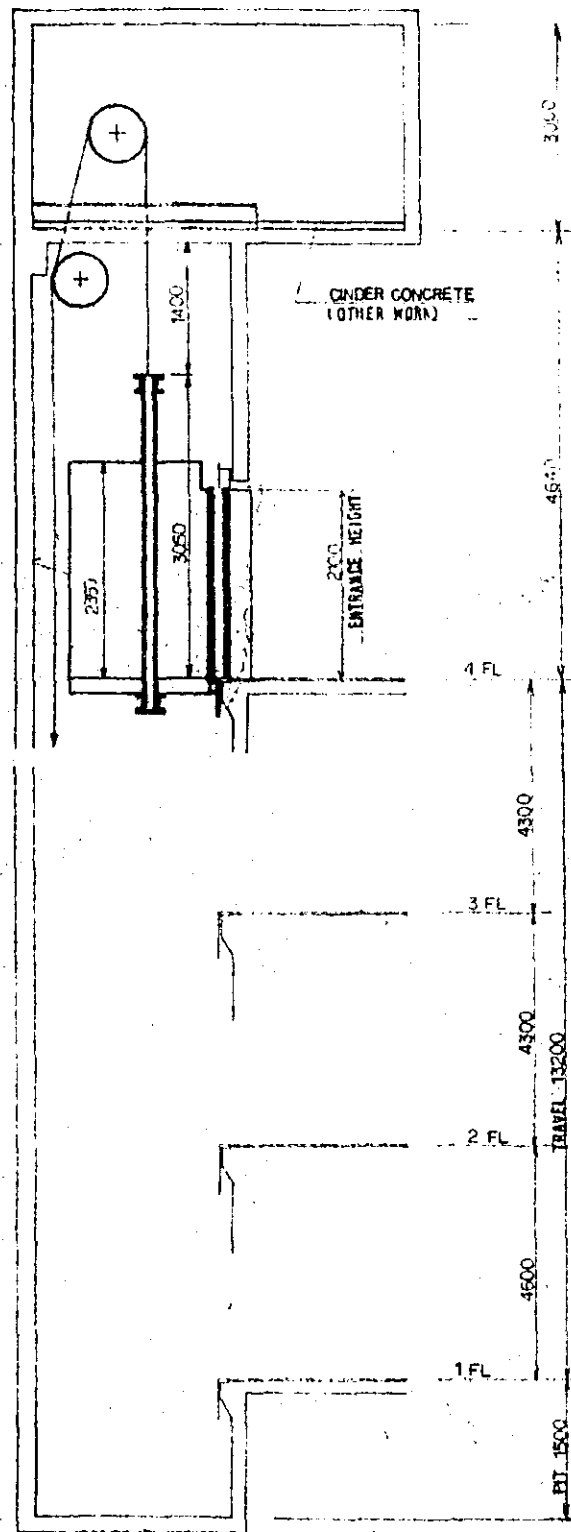
CONDENSER WATER PUMP
NO-4
5500 CMH 12" 0.75 KW

EX. S NO-1
AIR QUANTITY 210 CMH
SP 6 MMHg
MOTOR 0.100 0.03 KW

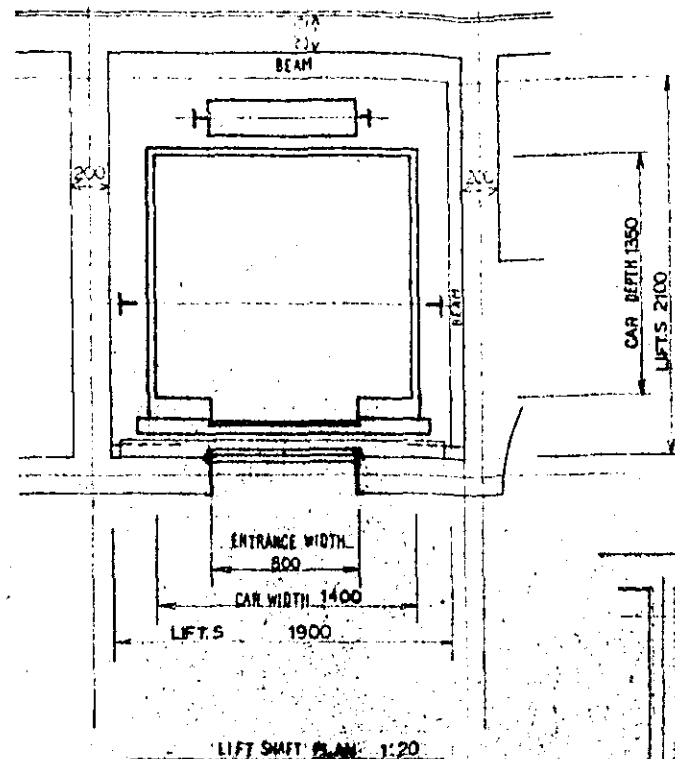
EX. S NO-2
AIR QUANTITY 4150 CMH
SP 17 MMHg
MOTOR 0.75 KW



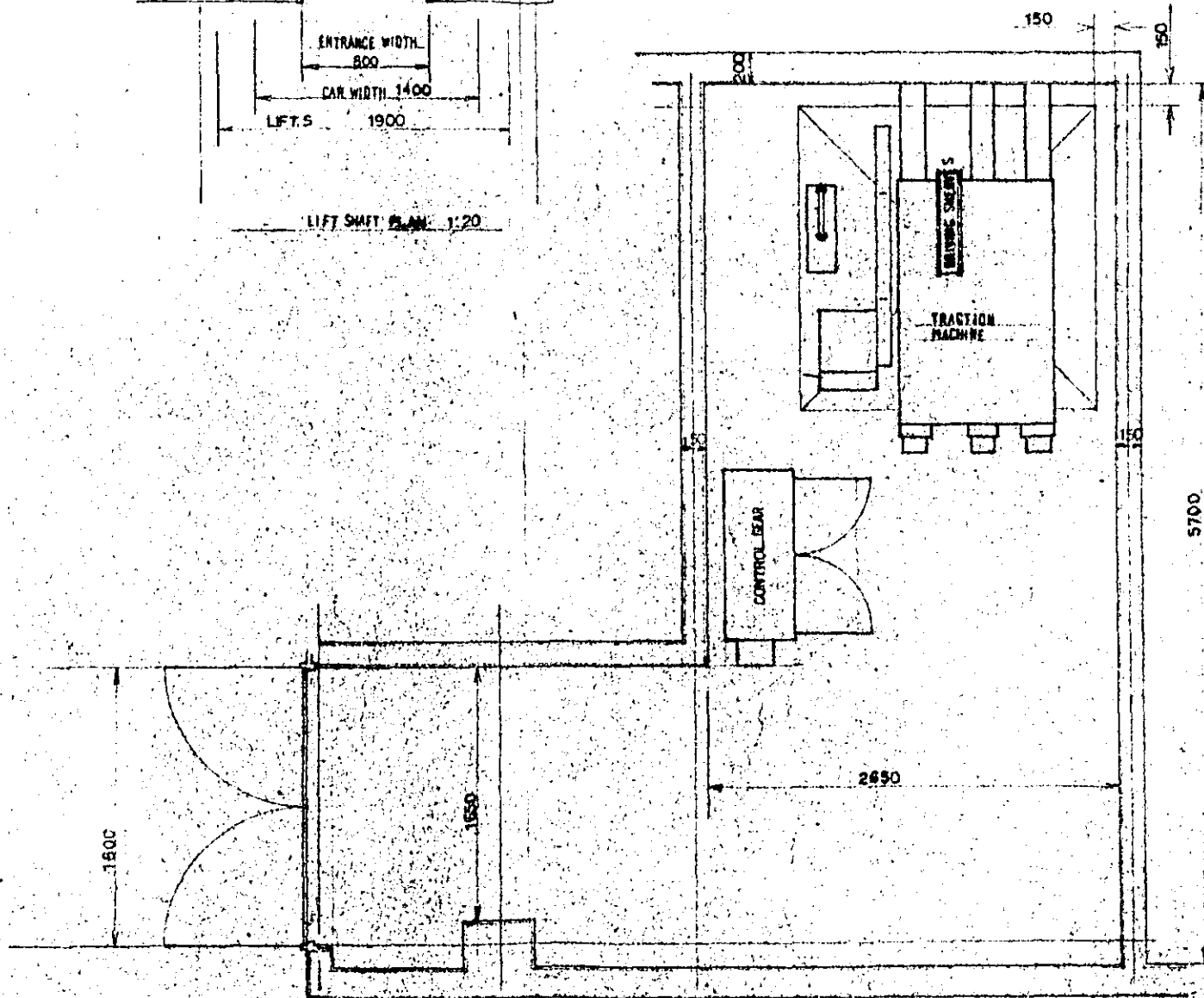




ELEVATION



LIFT SHAFT PLAN 1:20



LIFT MACHINE ROOM PLAN 1:20

DETAIL OF LIFT

- 1 Site or Location: CENTRAL TELECOMMUNICATION RESEARCH LABORATORIES
- 2 Type and number of lift required: Lift for passengers 1 set
- 3 Detail

Item	Lift for passengers
Capacity of lift	750 Kg or 10 persons
Floors to served	4
Car size width	1400 mm
(interior) depth	1950 "
height	2350 "
Car door width	800 mm
height	2100 "
Length of travel	13.2 m
Speed of travel	60 m/min
Type of gearing	Single stage worm reduction
Method of control	Car switch and selective collective automatic dual operation
Number of entrance to car	One
Position of entrance to car	Front
Position for machinery	Top of lift shaft

