



THE UNIVERSITY OF ADELAIDE

Department of Mechanical Engineering

A UNIFIED APPROACH TO THE  
DESIGN OF CLIMATE SIMULATORS

by

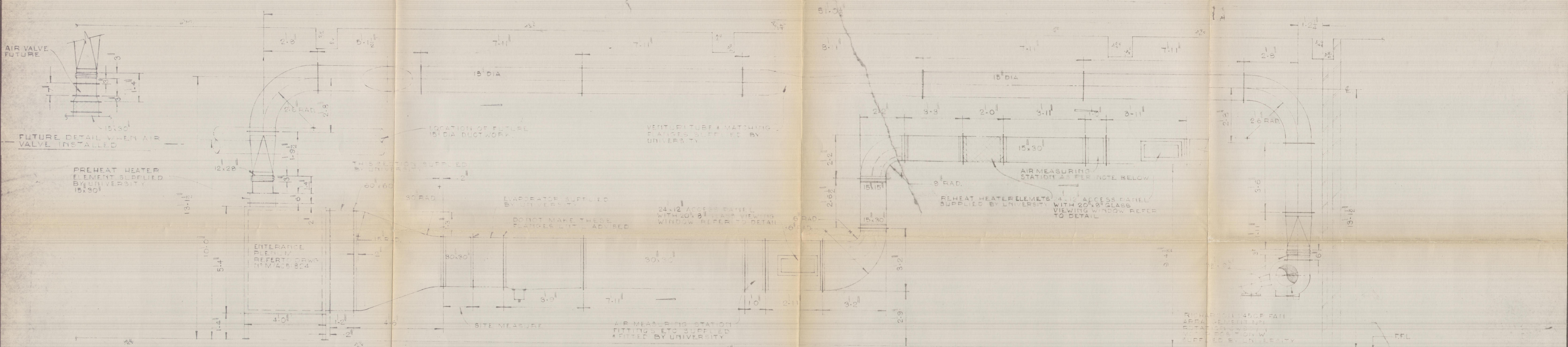
ALLAN SHAW

B.A. (Brooklyn), B.E. (New York), M.E. (Adelaide)

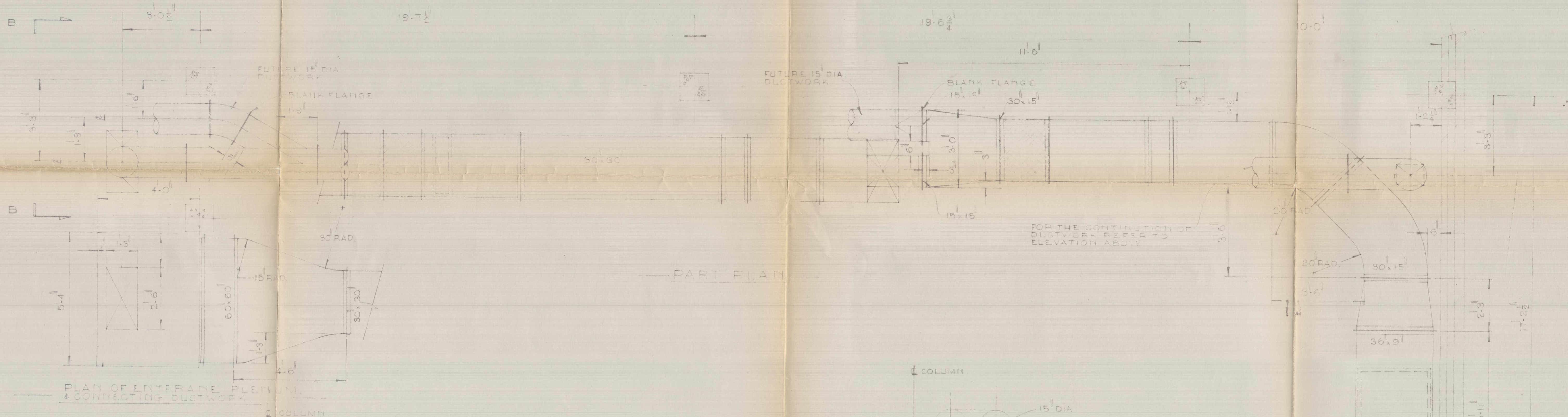
Thesis for the Degree of Doctor of Philosophy

July 1979.

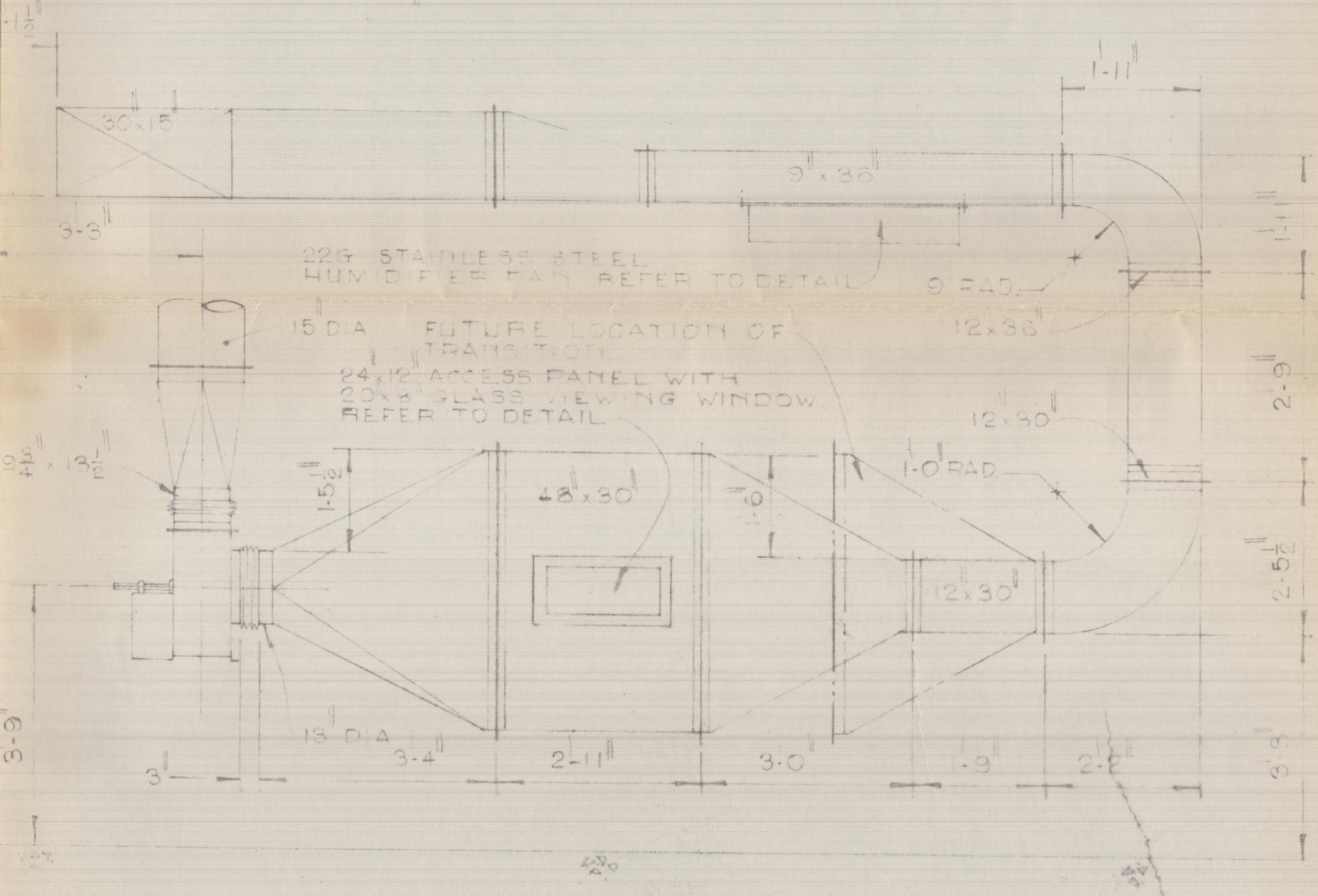
THIRD ANGLE PROJECTION



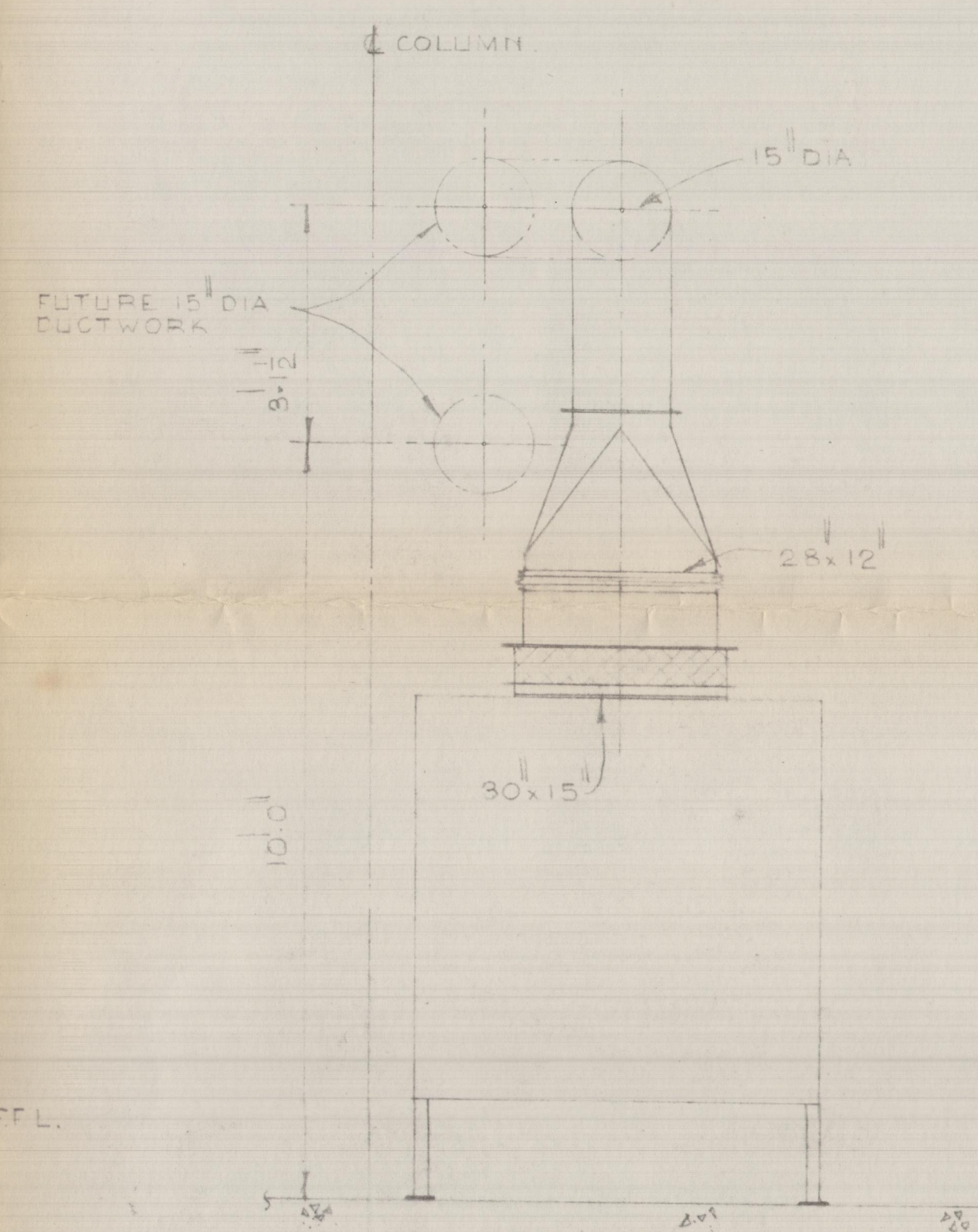
ELEVATION



PART PLAN



SECTION A-A

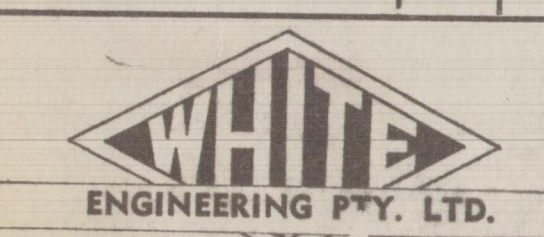


SECTION B-B

ALL DUCTWORK TO BE MANUFACTURED FROM 18 GA PBI  
 ALL LONGITUDINAL SEALS TO BE AIR TIGHT & FLANGES TO BE RUBBER GASKETED.  
 RECTANGULAR & SQUARE DUCTWORK FLANGES TO BE 1/8" THICK FMS & ROUND DUCTWORK FLANGES TO BE 15" IOD PBI  
 ALL DUCTWORK TO BE PAINTED INTERNALLY WITH EPOXY PRIMER & ONE COAT OF TAUBMAN'S STALASTIC BLACK PAINT.  
 ALL DUCTWORK TO FOLLOW IN DIRECTION INDICATED THREE (3) FT.

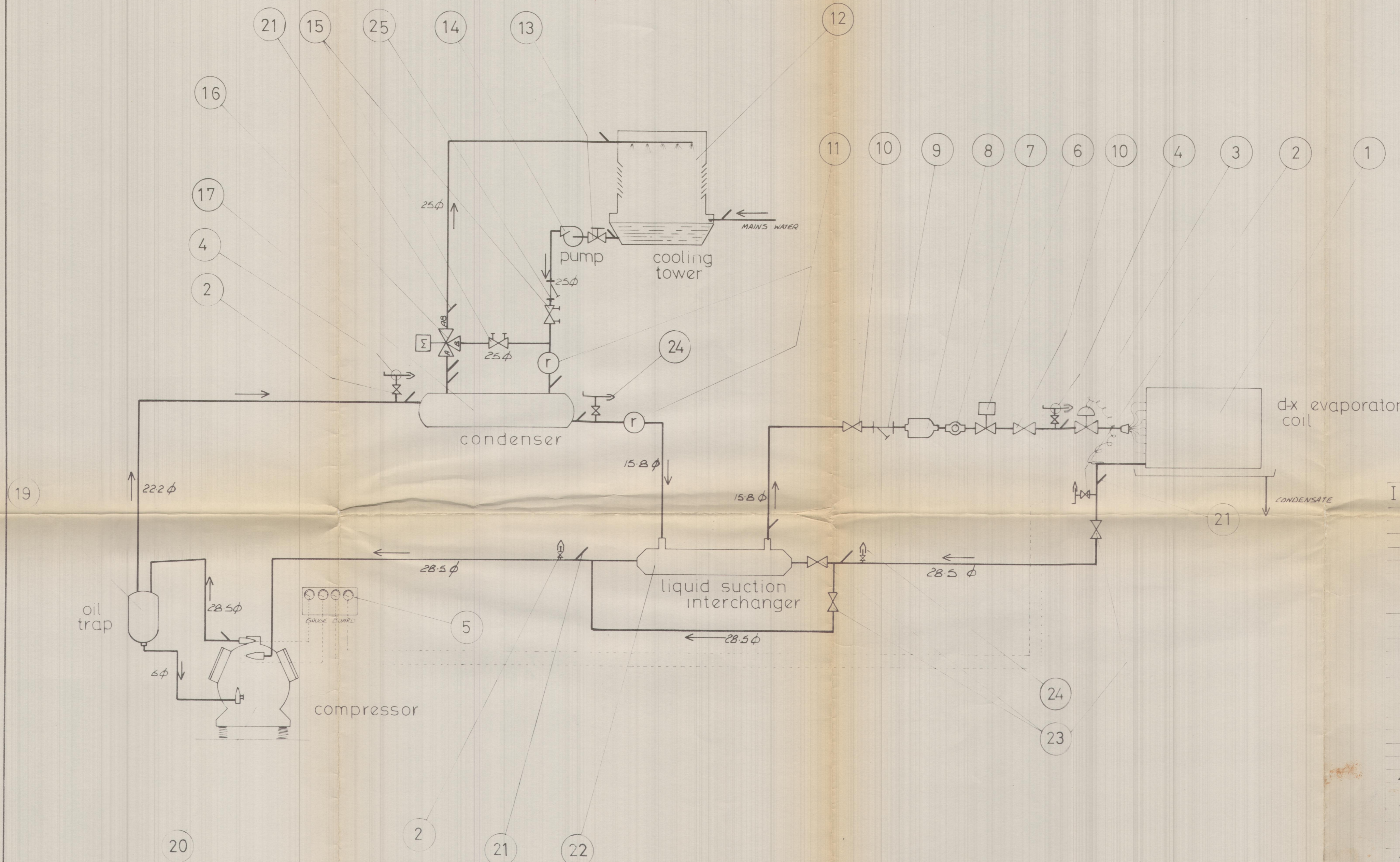
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 IF IN DOUBT, PLEASE ASK  
 DO NOT SCALE - WORK TO FIGURED DIMENSIONS

Issue	Date	Revision	Item	Description	Qty.	Material	Size
16/8/74							



Drawn MRE  
 Passed  
 Job Number 540224/80  
 Scale 2 TO 1-0"  
 Date 6-9-74  
 Drawing No. L/JAC51823A

THIRD ANGLE PROJECTION



Item	Description	Nº Off
1	DX EVAPORATOR COIL - BY OTHERS	1
2	PRESSURE TAPPING - HUDSON A 1500	6
3	T-X VALVE - SPORLAN - BY OTHERS	1
4	HUDSON TEE - MODEL 25A0 - 6mm	4
5	PRESSURE GAUGES - BY OTHERS	4
6	SOLENOID VALVE - SPORLAN MA-1052	1
7	LIQUID INDICATOR - HUDSON 1684-15.8φ	1
8	FILTER DRIER - HUDSON A-16655-15.8φ	1
9	STRAINER - HUDSON Y-TYPE 11854-15.8φ	1
10	CAPPED LINE VALVE - HUDSON A15D10-15.8φ	2
11	ROTMETER - BY OTHERS	2
12	COOLING TOWER - BY OTHERS	1
13	GATE VALVE - BRONZE, JOHN FIG.59-25φ	1
14	CONDENSER WATER PUMP - I.E.L. MAS239 3/4 H.P. MOTOR - 2 POLE	1
15	BALANCING VALVE - STAT 25φ	2
16	3-WAY MODULATING VALVE - BY OTHERS	1
17	WATER-COOLED CONDENSER - BY OTHERS	1
18		
19	OIL TRAP - KELVINATOR MODEL 065	1
20	COMPRESSOR - BY OTHERS	1
21	THERMOMETER POCKET - TO DETAIL	15
22	LIQUID/SUCTION INTERCHANGER	1
23	CAPPED LINE VALVE - HUDSON, 1161 28.5φ	3
24	PRESSURE TRANSDUCER ADAPTOR - HUDSON MODEL 1851 - 6mm FLARE SEAL CAP NUT	6
25	STRAINER - 25mmφ	1

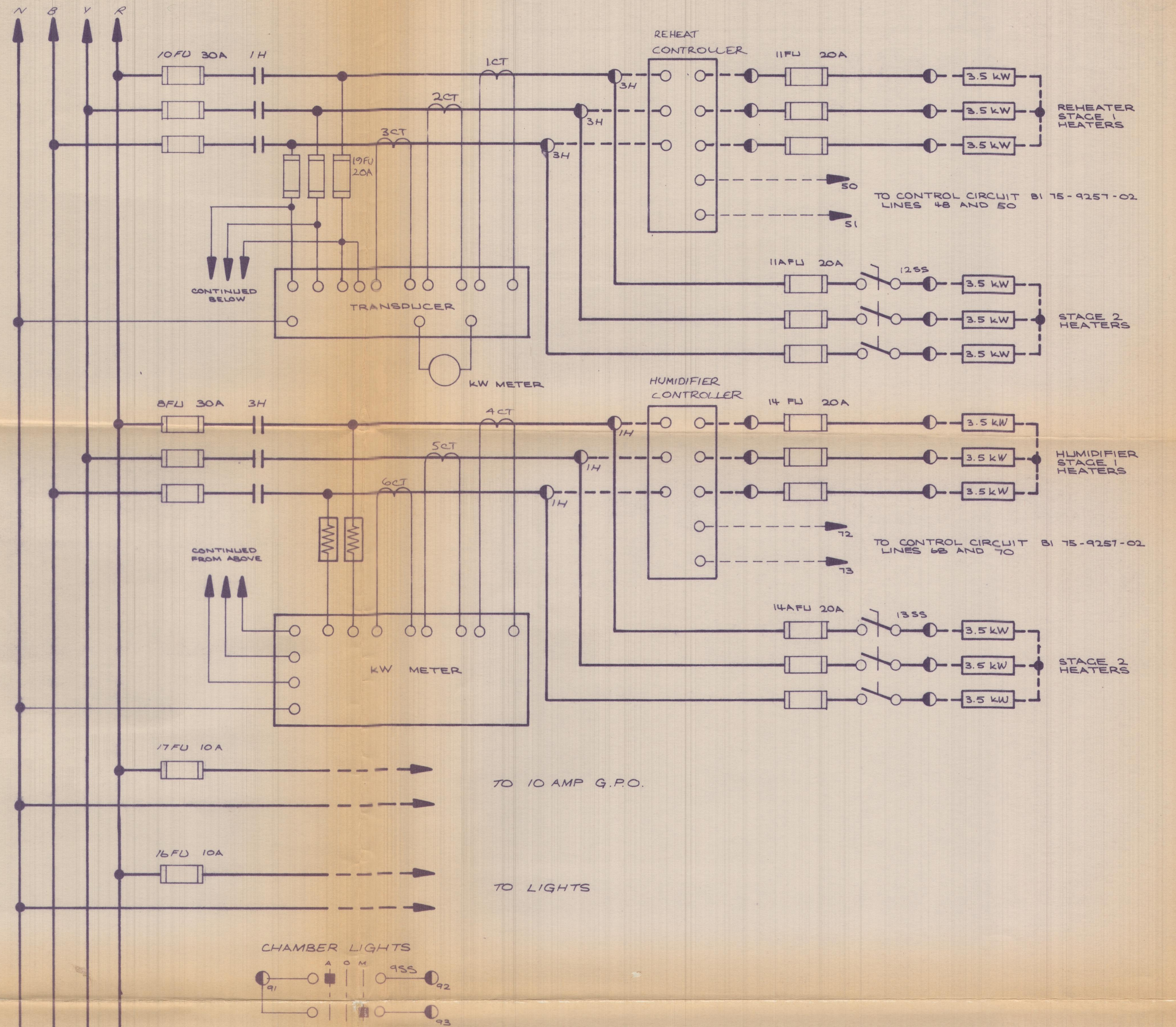
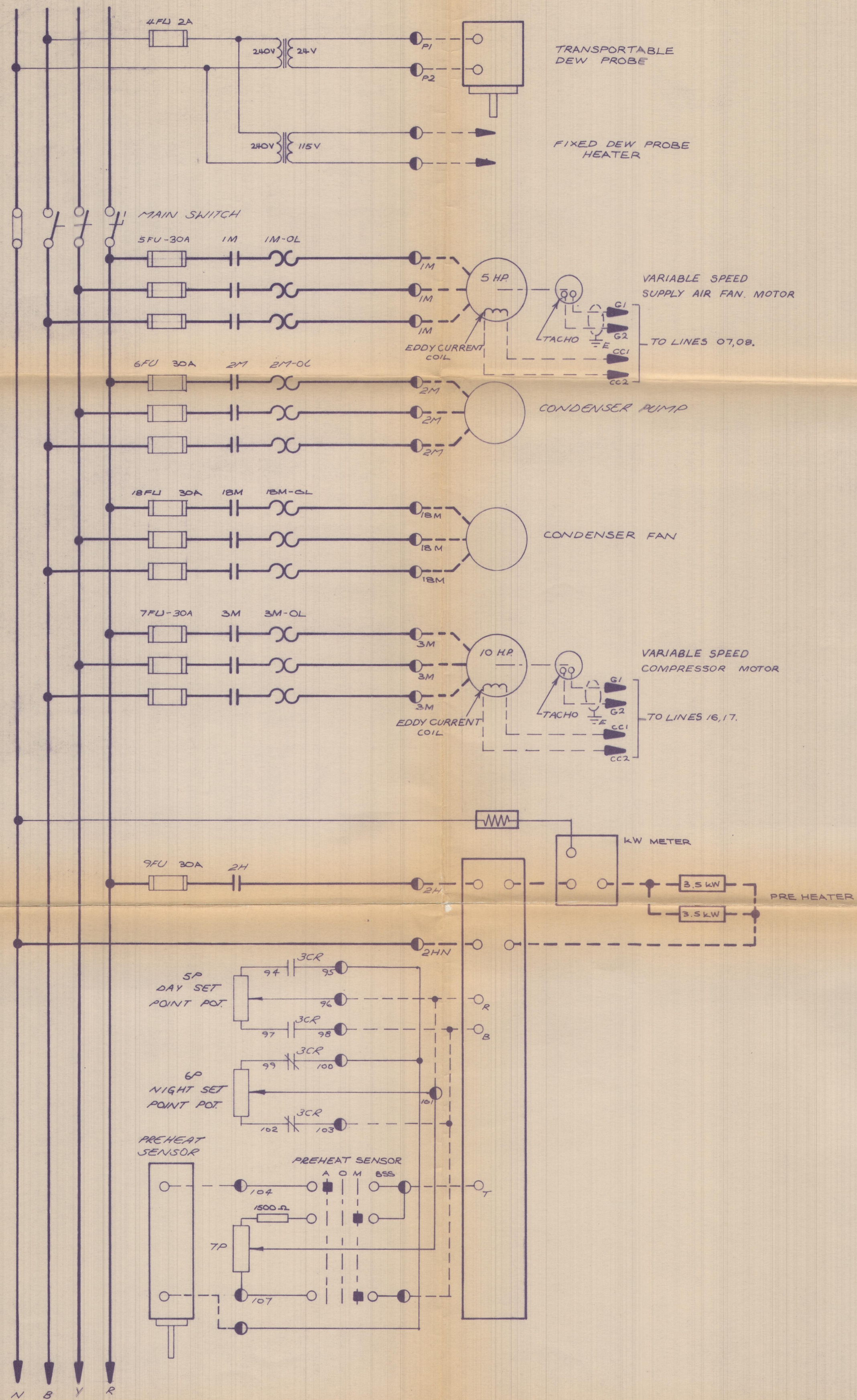
WORK TO FIGURED DIMENSIONS - DO NOT SCALE  
IF IN DOUBT, ASK - REPORT ERRORS TO DRAWING OFFICE

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Issue	Date	Revision
A	12.12.77	Amended as per final installation

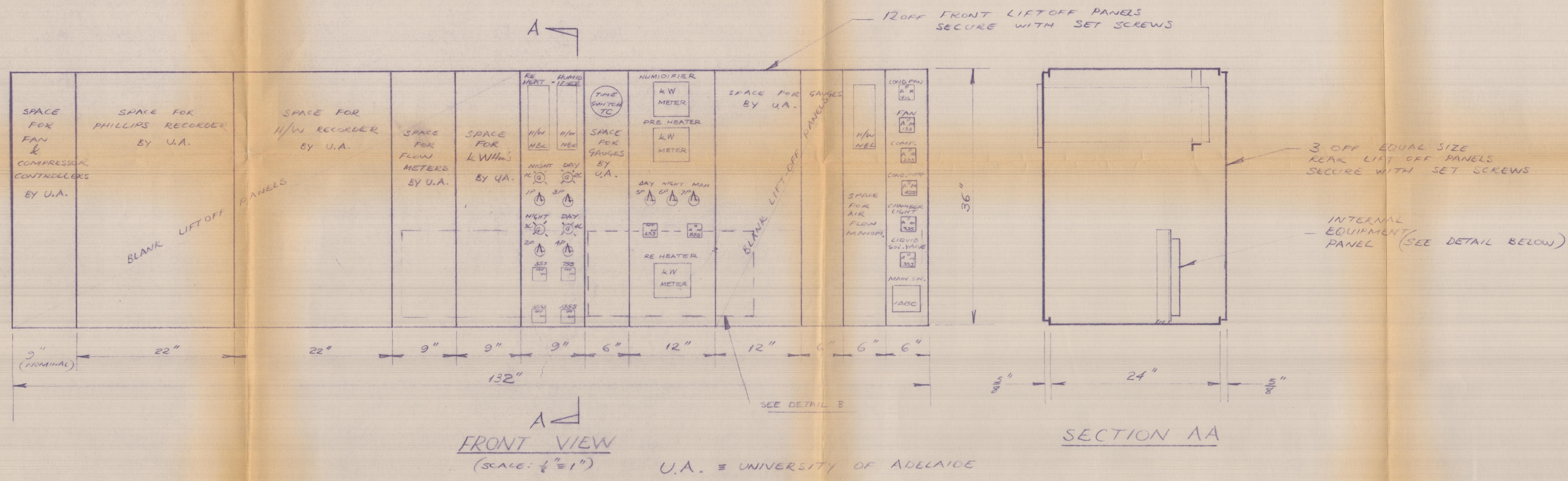
**WHITE**  
ENGINEERING PTY. LTD.  
54 Howards Road, Beverley, S. A. 5009

Drawn	<i>M.C.</i>	PIPEWORK SCHEMATIC	
Passed		ADELAIDE UNIVERSITY	
Job Number		Scale	Drawing No
			<b>A</b>
		Date 7-10-77	M/AC 52075



NOTES.  
1. REPRESENTS SHIELDED CABLE.

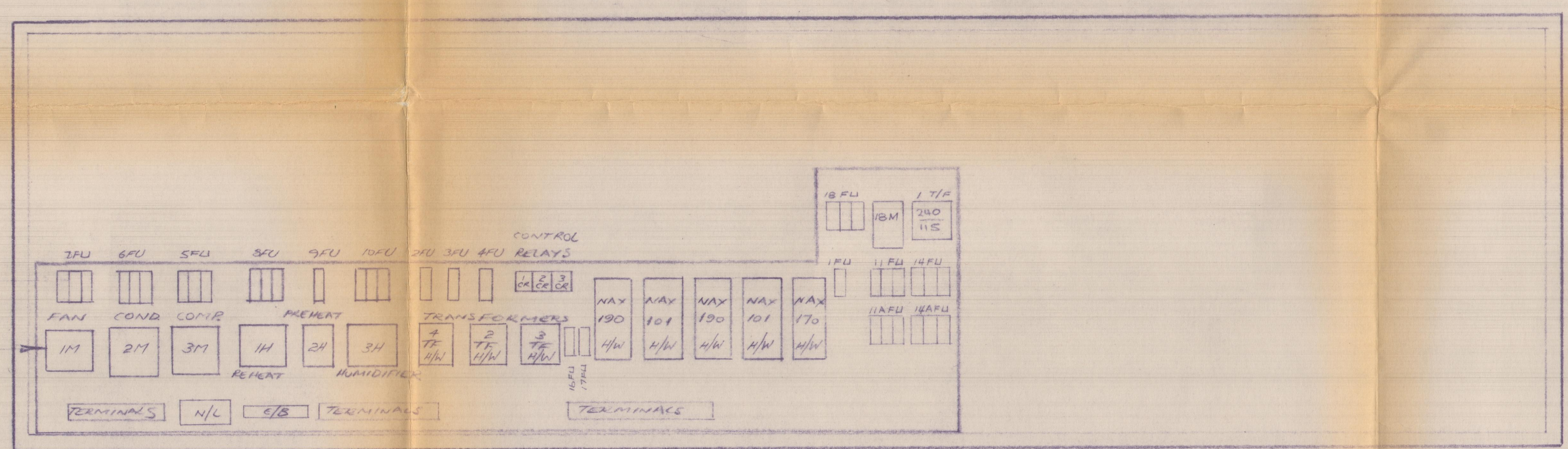
ITEM	DESCRIPTION	QTY.	MAKE	CAT. No.	RATING
<b>I.E.S. PTY. LTD.</b>					
				SCALE	DATE
				DRAWN	T.W. 16.9.75
				CHECKED	
				APPROVED	
				REV. A B	
				<b>C</b>	75-9257-03
CLIENT		WHITE ENGINEERING PTY. LTD.			



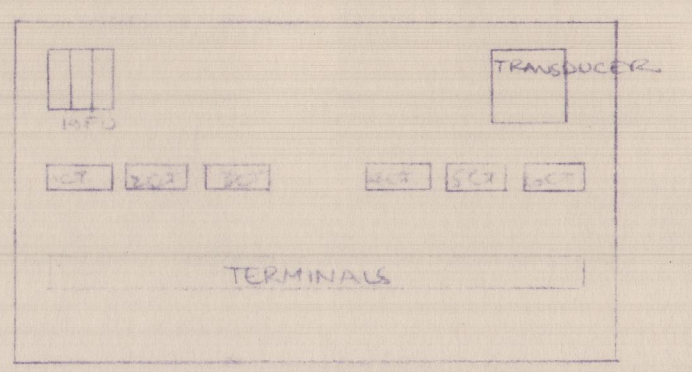
FRONT VIEW  
(SCALE: 1/4" = 1")

SECTION AA

U.A. = UNIVERSITY OF ADELAIDE



REAR VIEW  
(WITH PANELS REMOVED)  
(SCALE: 1/8" = 1")



DETAIL B

- CONSTRUCTION!**
- FABRICATED FROM 1209 MILD SHEET STEEL.
  - PROVIDE SUPPORTING BRACKETS FOR INSTRUMENTS AS REQUIRED.
  - PAINT ASK 165, N° 107 STRONG BLUE.

ITEM	DESCRIPTION	QTY.	MAKE	CAT. No.	RATING
1- GCT		6		GC/S	
6/118, 6/119	FEDERAL	2		FB 30 FW	
11A, 11A PU	"	2		FB 30 FW	
TC	H.F.	1		WF 60/0/4	240V
4/B	ROE POINT	1		BP/63, 824	
N/L	FEDERAL	1		FC12	
TERMINALS	RELION	70		SRT 215	
"	"	4		SAT 16	
25-155	VINCENT	2		RIVE 3/MC	32A
555, 555	"	2		R1M1 X MB	10A
555, 755	"	3		R1M1 X MB	10A
25-435	"	3		R1M1 X MB	10A
755, 755	"	1		R1M2 X MB	10A
10-4L	X.M.	4		CL/10/19	240V
1, 2, 3CR	ICR; 2CR; 3CR	3	C.H.	CK-44-44-75	
3H	3H	1	"	C10, 2N3	240V
2H	2H	1	"	"	"
1H	1H	1	"	"	"
3M	3M	1	"	A10 DNO	"
2M	2M	1	"	A10 BNO	"
1M	1M	1	"	"	"
3-11, 14FU	FEDERAL	13		FB30/FW	
7FU	"	3		FB60/FW	
11U-6FU	"	8		FB30FU	
10DISC	CLIPCAL	1		T100F	100A

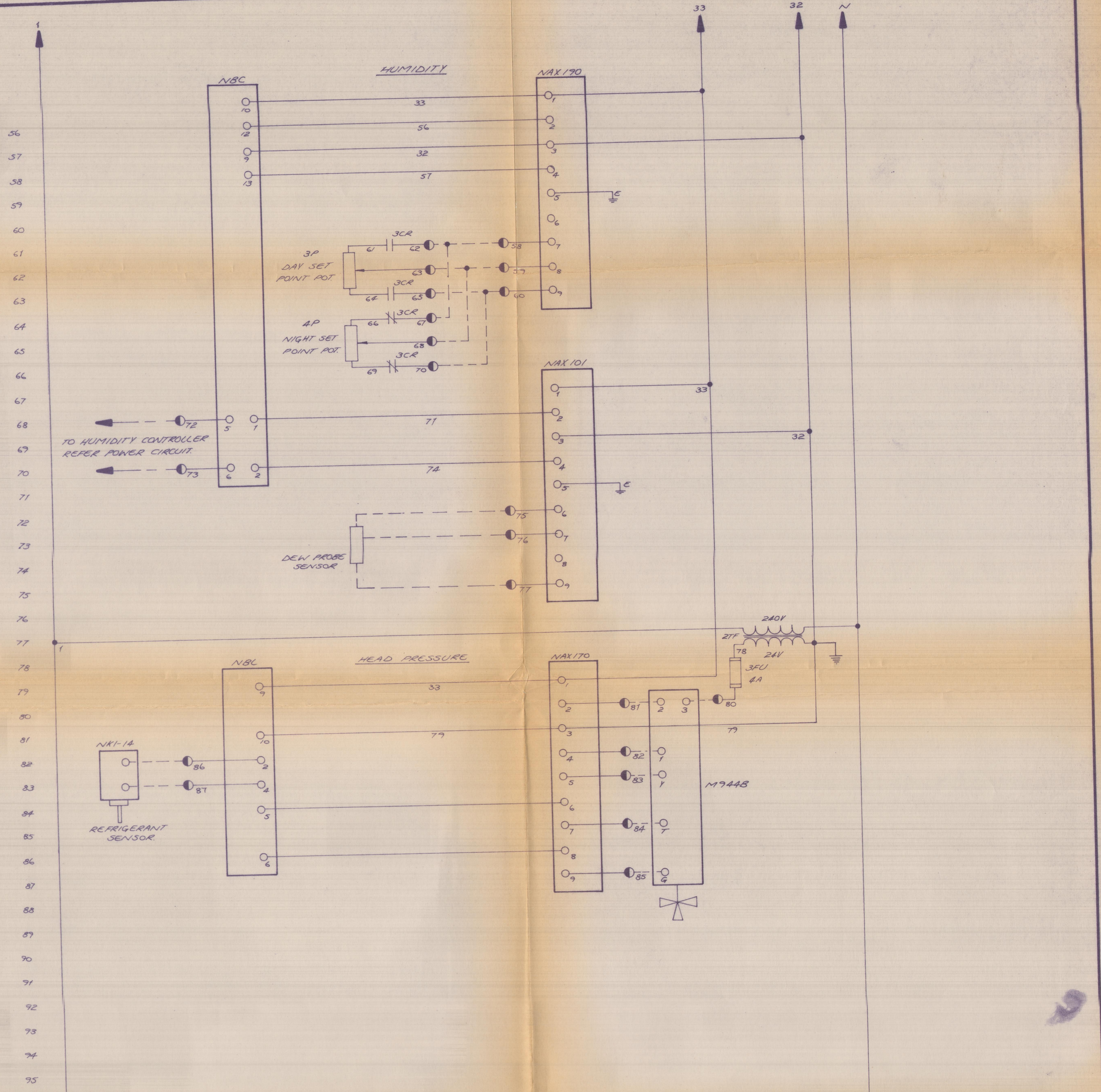
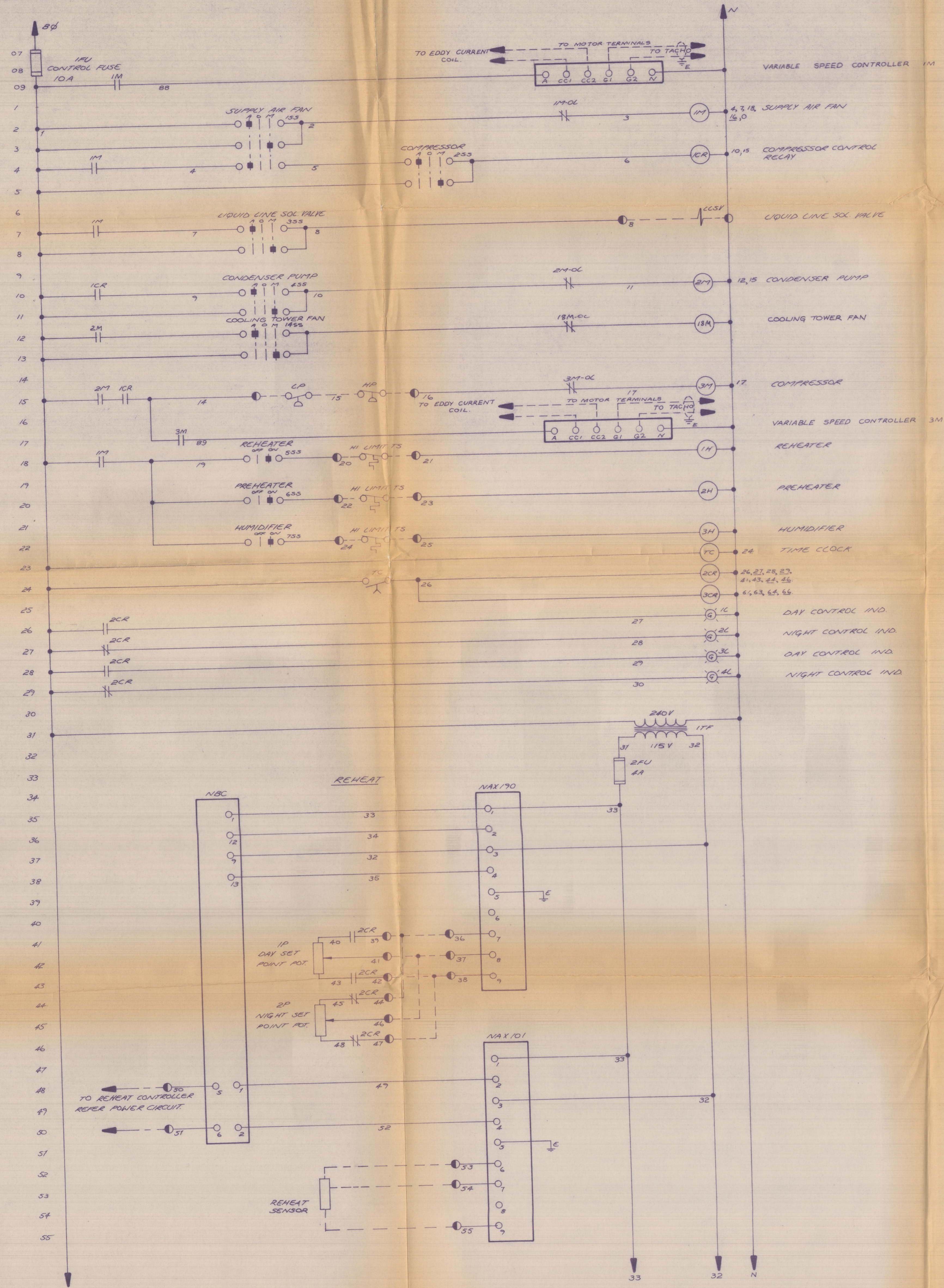
**I.E.S. PTY. LTD.**  
ADELAIDE. 51 6296

SCALE: AS SHOWN  
DRAWN: M/G  
CHECKED: M/G  
APPROVED: [Signature]

REV. A

CLIENT: WHITE AND COMPANY LIMITED

75-9257-01



- 1. ○ REPRESENTS TERMINALS ON CONSTANT TEMPERATURE CONTROL PANEL.
- 2. --- REPRESENTS FIELD WIRING.
- 3. LAST WIRE N° USED 89.
- 4. ⊕ REPRESENTS SHIELDED CABLE.

ITEM	LABEL	QTY.	MAKE	CAT. No.	RATING
<b>I.E.S. PTY. LTD.</b> ADELAIDE. 51 0296					
CONSTANT TEMPERATURE CONTROL PANEL CIRCUIT DIAGRAM					
UNIVERSITY OF ADELAIDE WHITE ENGINEERING PTY LTD					
SCALE	DATE				
DRAWN	T.W.				16.9.75
CHECKED	APPROVED				
REV. A	B				
B1					75.9257.02