

H1

Creating a better climate for business.

- Environmental Control System
- Building Automation System
- Fire Management System
- Security System
- Lighting Services
- Telecommunication System
- Integrated Motor Control Center
- Air and Water Systems Balancing
- Instrumentation System Installation
- Building Operations Management
- Energy Conservation Control
- Custom Programmed Maintenance:
 - Automatic Temperature Controls
 - Heating
 - Air Conditioning
 - Air Filters
 - Water Treatment
 - Coil Cleaning
 - Control Center
 - Fire Management
 - Security Management
 - Sound and Communication
 - Programmed Clocks
 - Contract Operations
 - Time Scheduling Automated Building
 - Refrigeration
 - Electrical Equipment
 - Emergency Generator/Lighting Equipment
 - Industrial Controls/Recording/Indication Equipment

JOHNSON TUBE CARRIER SYSTEM

GENERAL

Polyethylene tubing will be manufactured from virgin stock and will meet the following specifications:

- Density = 0.92 grams/cc
- Melt Index = 0.30 decigrams/min.
- Stress Crack Resistance = 2000 hours minimum per ASTM-D 1693-60T
- Tensile Strength = 2200 psi
- Maximum Pressure Temp. = 550 psi at 75°F to 175 psi at 175°F

Black FR tubing will be routed and fastened so that contact with any heat source above 175°F is impossible.

Fitting connections for low pressure polyethylene tubing (25 psi or less) will be made with barbed push-on fittings. For high pressure polyethylene tubing (more than 80 psi), the connections will be made with compression fittings.

INSTALLATION

Exposed: Single polyethylene tubing will be run exposed for lengths 36 inches or less; lengths exceeding 36 inches will be run within enclosed trough or conduit. This tube carrier system will be installed in a workmanlike manner, parallel to building lines, adequately supported, etc. All connections, except for terminal connections to valves, damper actuators, etc., will be made inside through, junction boxes, or control cabinets.

Factory manufactured bundles of polyethylene tubing with protective outer sheath, will be installed without an additional trough or conduit envelope, provided that the tube system is installed in the same workmanlike manner as specified above for trough and conduit systems.

Concealed-Inaccessible: Single polyethylene tubes will be run within enclosed trough or conduit. Factory manufactured bundles of polyethylene tubing, with protective outer sheath, will be installed without an additional trough or conduit envelope. Fitting connections to polyethylene tubing will not be made within the inaccessible area.

Concealed-Accessible: Single polyethylene tubing, either individual or bundles, will be installed in a workmanlike manner, securely fastened to fixed members of the building structure at sufficient points to avoid excessive movement. Field fabricated bundles will be tied together with a sufficient number of nylon ties. Concealed-accessible areas include all dry-wall and accessible block construction.

Project
 CAMP LEBJEUNE HOSPITAL CONVERSION
 DIVISION HEADQUARTERS
 CAMP LEBJEUNE, N.C.

Architect
 JOB # 82-10-2243
 SPEC # 15971

Engineer
 Contractor
 GENERAL HTG & A.C.

Revision	ECN	Date

Sales Engr. F.N.H. **Proj. Mgr.** **Appl. Engr.** J.A.L. **Date** 10-24-84 **Contract No.** 4128-0080

Legend

	MAIN AIR SUPPLY TUBE AT 20 PSIG		PNEUMATIC TUBE TERMINAL WITH APPROPRIATE NUMBER
	DUAL AIR SUPPLY TUBE AT 15/20 PSIG		ELECTRICAL WIRE TERMINAL WITH APPROPRIATE NUMBER
	HIGH PRESSURE AIR SUPPLY TUBE AT 100 PSIG		SPECIAL TERMINALS WITH APPROPRIATE NUMBER (MUST BE IDENTIFIED ON DRAWING)
	AIR LINE OR ELECTRICAL WIRE		ITEM LOCATED IN CONTROL PANEL
	CONNECTED LINES OR WIRES		ITEM LOCATED IN MOTOR STARTER
	CROSSING LINES OR WIRES, NOT CONNECTED		ITEM LOCATED AT AC UNIT
	ELECTRIC WIRE IN CONDUIT (STROKES INDICATE NO. OF WIRES)		ITEM LOCATED ON PANEL FACE
	INSTRUMENT IDENTIFICATION NUMBER		OPTIONAL LOCATION
			IN-LINE RESTRICTOR .007"
			IN-LINE RESTRICTOR .005"

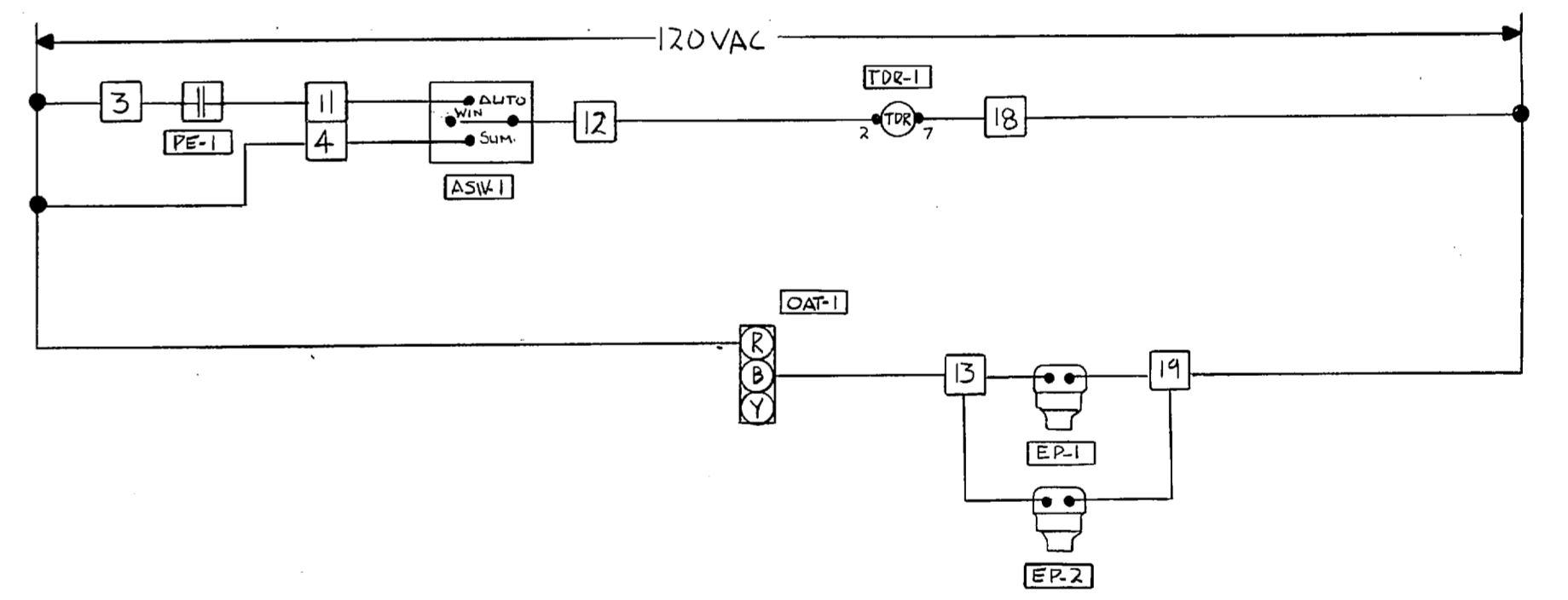
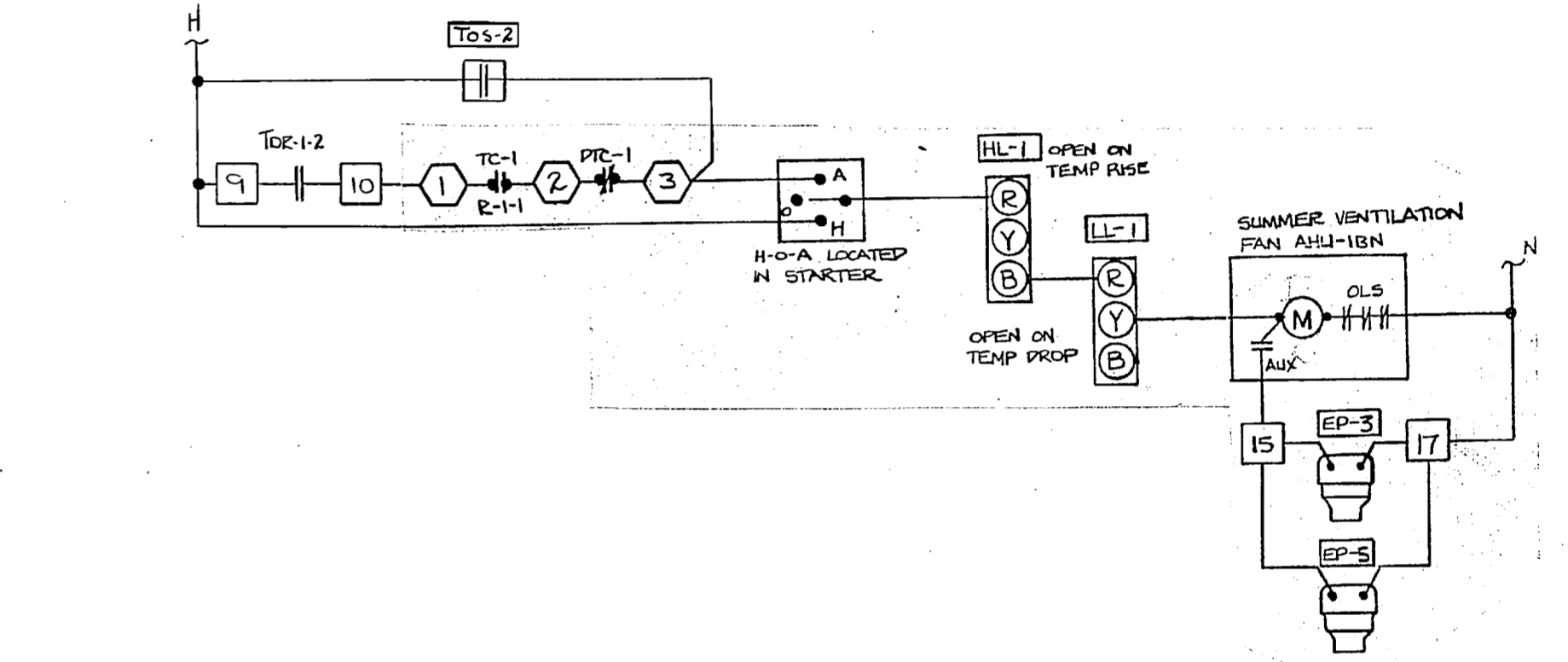
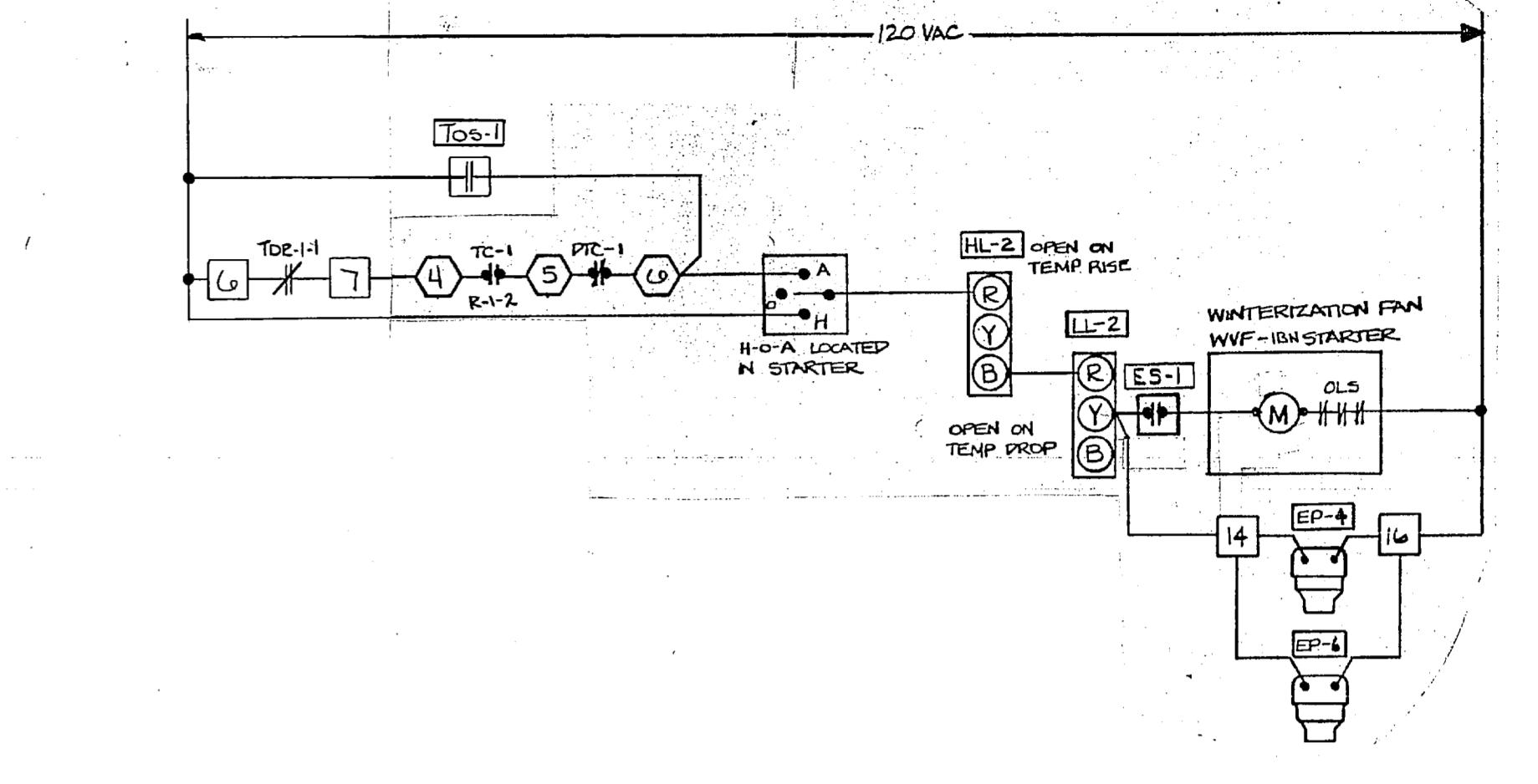
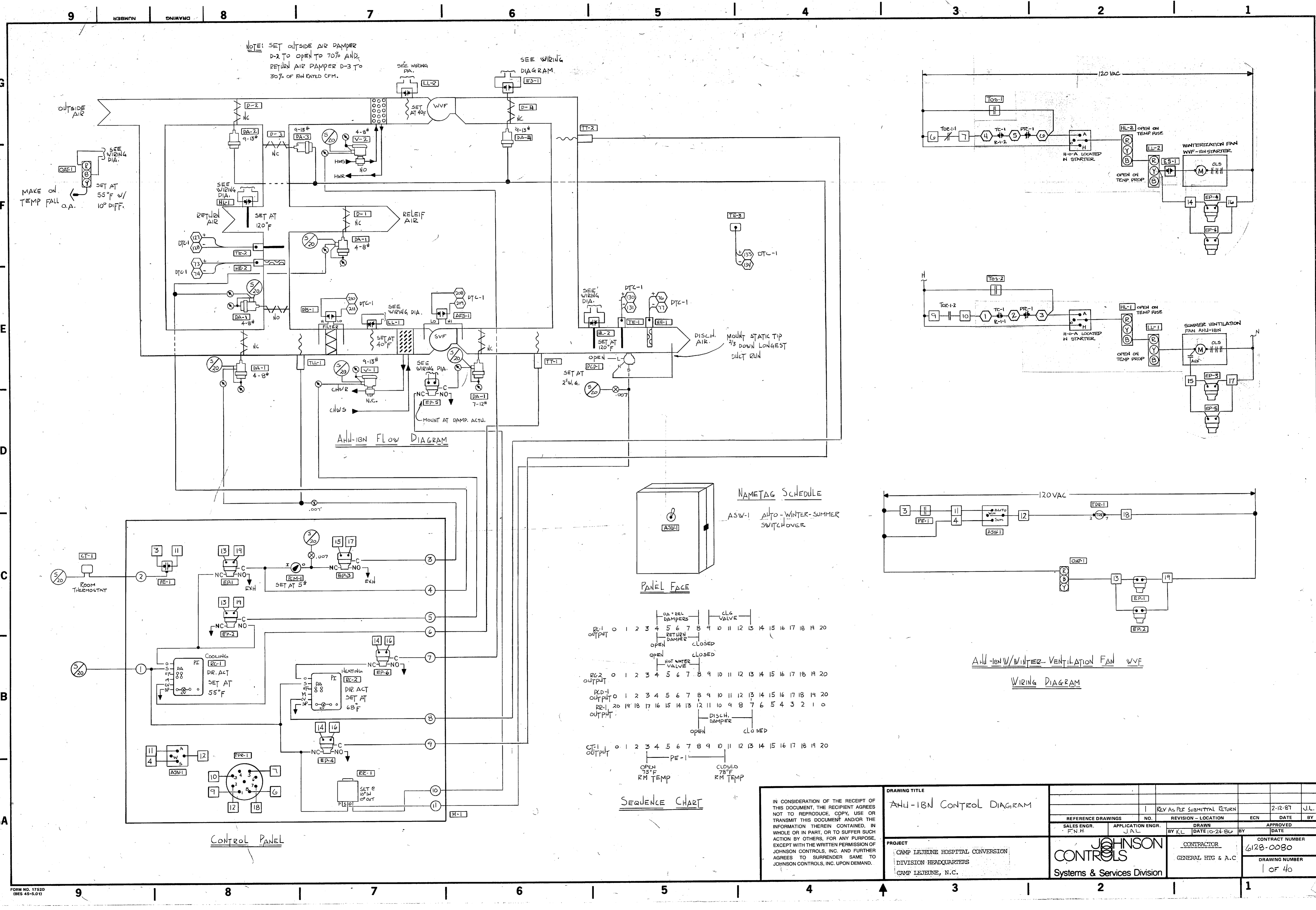
COLOR ABBREVIATIONS

AMB = Amber	BLU = Blue	BLK = Black	BRN = Brown	GLD = Gold	GRN = Green	GRY = Gray	ORN = Orange	PNK = Pink	RED = Red	SIL = Silver	VIO = Violet	WHT = White	YEL = Yellow
AC = Air Conditioning	A.C. = Alternating Current	ADJ = Adjust	AHU = Air Handling Unit	ALT = Alternate	AMP = Ampere	ASP = Aspirate, Aspirating	ASSN = Association	ASSY = Assembly	AUTH = Authority	AUTO = Automatic	AUX = Auxiliary	AVG = Average	AWG = American Wire Gauge
B = Bandwidth	BLDG = Building	BRD = Board	BRKR = Breaker	BRKT = Bracket	Bth = British Thermal Unit per Hour	C = Celsius, Centigrade	CAP = Capillary	CB = Circuit Breaker	CIC = Cooling Coil	CFM = Cubic Feet Per Minute	CHWR = Chilled Water Return	CHWS = Chilled Water Supply	CIRC = Circulating
CL = Close, Closed	CLG = Cooling	COL = Column	COM = Common	COMPR = Compressor	CON = Contactor	COND = Condenser	CONV = Converter or Converter	COV = Flow Coefficient	CWR = Condenser Water Return	CWS = Condenser Water Supply	Δ (Delta) = Differential, Difference	DB = Dry Bulb	D.C. = Direct Current
DHW = Domestic Hot Water	DIA = Diameter	DIFF = Differential, Difference	DIR = Direct Acting	DISC = Disconnect	DISCH. A = Discharge Air	D.N. = Day-Night	DPR = Damper	D.R. = Direct Readjustment	DWG = Drawing	DX = Direct Expansion	E = Equivalent Direct Radiation	EDR = Equivalent Direct Radiation	h = Hour
H = Hot/High	HC = Heating Coil	HL = High Limit	HDA = Hands-Off-Automatic	HP = Horsepower	HTG = Heating	HTB = Heater	HFIER = Humidifier	H & V = Heating & Ventilating	HWR = Hot Water Return	HWS = Hot Water Supply	Hz = Hertz	I = Input	
IC = Interrupting Capacity	ICC = Integrated Control Center	I.D. = Inside Diameter	ID = Identification	IN. = Inch	IND = Indicator	IPS = Iron Pipe Size	J = Junction Box	JBI = Johnson Controls, Inc.	JCI = Johnson Controls, Ltd./Lee	JCL = Johnson Controls, Ltd./Lee	K = Knockout	kw = Kilowatt	
L = Length/Liters/Low	LB = Pound	LID = Liquid	LL = Low Limit	LPS = Low Pressure Steam	MAN = Manual	MAX = Maximum	MBH = 1000 BTU/Hour	MCC = Motor Control Center	MECH = Mechanical	MFR = Manufacturer	MIN = Minimum	mm = Millimeter	
MTD = Mounted	MTG = Mounting	MZ = Multi-Zone	N = Neutral	N.C. = Normally Closed	NEG = Negative	NEMA = National Electrical Manufacturers Assn.	N.O. = Normally Open	N.P.T. = National Pipe Thread	O.A. = Outside Air	OCC = Occupied	O.D. = Outside Diameter	OL = Overload	
OPR = Operator	OSHA = Occupational Safety & Health Act	P = Pilot	PE = Pressure Electric	PHT = Preheat	PL = Pilot Light	PNEU = Pneumatic	PNL = Panel	POS = Positive, Position, Positioner	PPM = Parts Per Million	P.R. = Plug-in Relay	PRESS = Pressure	PROP = Proportional	
PRV = Pressure Reducing Valve	PSI = Pounds Per Square Inch	PSIG = Pounds Per Square Inch (Gage)	PT = Point	R = Relay	RAD = Radiation	RECIRC = Recirculate	REFRIG = Refrigeration	REQD = Required	RET. A = Return Air	REV = Reverse Acting	RHT = Relative Humidity	RHM = Room	
RM = Room	RRM = Revolutions Per Minute	RR = Reverse Readjustment	S = Supply	SCM = Standard Cubic Feet per Minute	SCR = Silicon Controlled Rectifier	SEP. SOC = Separable Socket (Well)	SEQ = Sequence	SP = Static Pressure	SPEC = Specification	SPG = Spring	SPR = Sparker	SS = Stainless Steel	
STD = Standard	STM = Steam	SUM = Summer	SYM = Symmetrical	SVS = System	TC = Temperature Controller	TE = Temperature Element	TEMP = Temperature	TRANS = Transmitter	UH = Unit Heater	UL = Underwriters Laboratories, Inc.	UN = Union	UNOCC = Unoccupied	
UV = Unit Ventilator	V = Volt	VA = Volt Amperes	VAV = Variable Air Volume	VEL = Velocity	VOL = Volume	W = With	WB = Wet Bulb	WG = Water Gage	WIN = Winter	W/O = Without	X = Transformer	CU(H) = Hard Copper	
CU(S) = Soft Copper	PE = Single Polyethylene (Black)	PE(A) = Bundled Polyethylene (Armored)	PE(C) = Bundled Polyethylene (Poly-Cor)	PE(D) = Bundled Polyethylene (Dakobon)	PU = Polyurethane	TUBING = Hard Copper	CU(S) = Soft Copper	PE = Single Polyethylene (Black)	PE(A) = Bundled Polyethylene (Armored)	PE(C) = Bundled Polyethylene (Poly-Cor)	PE(D) = Bundled Polyethylene (Dakobon)	PU = Polyurethane	

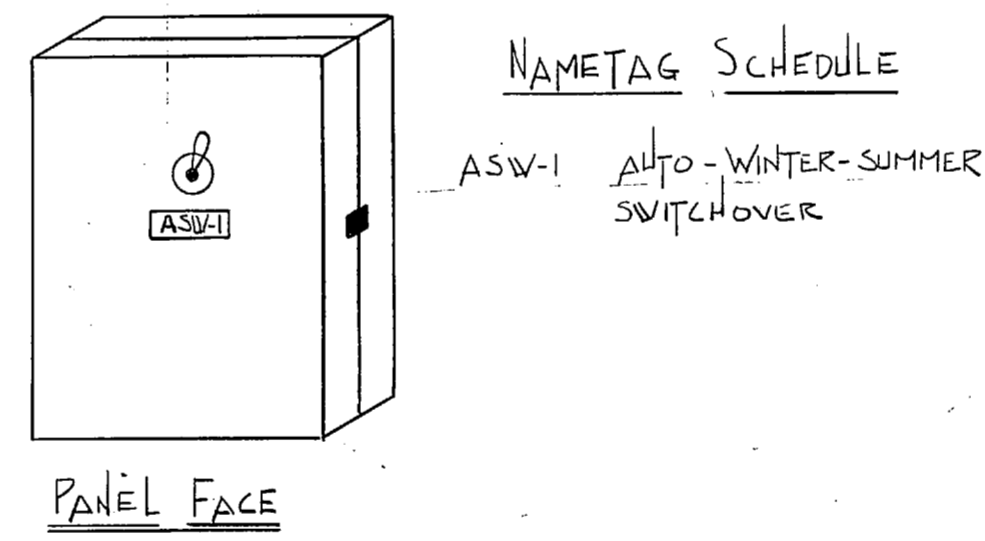
Abbreviations

HWS = Hot Water Supply	Hz = Hertz	I = Input	IC = Interrupting Capacity	ICC = Integrated Control Center	I.D. = Inside Diameter	ID = Identification	IN. = Inch	IND = Indicator	IPS = Iron Pipe Size	J = Junction Box	JBI = Johnson Controls, Inc.	JCI = Johnson Controls, Ltd./Lee	JCL = Johnson Controls, Ltd./Lee
K = Knockout	kw = Kilowatt	L = Length/Liters/Low	LB = Pound	LID = Liquid	LL = Low Limit	LPS = Low Pressure Steam	MAN = Manual	MAX = Maximum	MBH = 1000 BTU/Hour	MCC = Motor Control Center	MECH = Mechanical	MFR = Manufacturer	MIN = Minimum
mm = Millimeter	MTD = Mounted	MTG = Mounting	MZ = Multi-Zone	N = Neutral	N.C. = Normally Closed	NEG = Negative	NEMA = National Electrical Manufacturers Assn.	N.O. = Normally Open	N.P.T. = National Pipe Thread	O.A. = Outside Air	OCC = Occupied	O.D. = Outside Diameter	OL = Overload
OPR = Operator	OSHA = Occupational Safety & Health Act	P = Pilot	PE = Pressure Electric	PHT = Preheat	PL = Pilot Light	PNEU = Pneumatic	PNL = Panel	POS = Positive, Position, Positioner	PPM = Parts Per Million	P.R. = Plug-in Relay	PRESS = Pressure	PROP = Proportional	PRV = Pressure Reducing Valve
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SVS = System	TC = Temperature Controller	TE = Temperature Element	TEMP = Temperature	TRANS = Transmitter	UH = Unit Heater	UL = Underwriters Laboratories, Inc.	UN = Union	UNOCC = Unoccupied	UV = Unit Ventilator	V = Volt	VA = Volt Amperes	VAV = Variable Air Volume	VEL = Velocity
VOL = Volume	W = With	WB = Wet Bulb	WG = Water Gage	WIN = Winter	W/O = Without	X = Transformer	CU(H) = Hard Copper	CU(S) = Soft Copper	PE = Single Polyethylene (Black)	PE(A) = Bundled Polyethylene (Armored)	PE(C) = Bundled Polyethylene (Poly-Cor)	PE(D) = Bundled Polyethylene (Dakobon)	PU = Polyurethane

ISSUE - A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



WIRING DIAGRAM

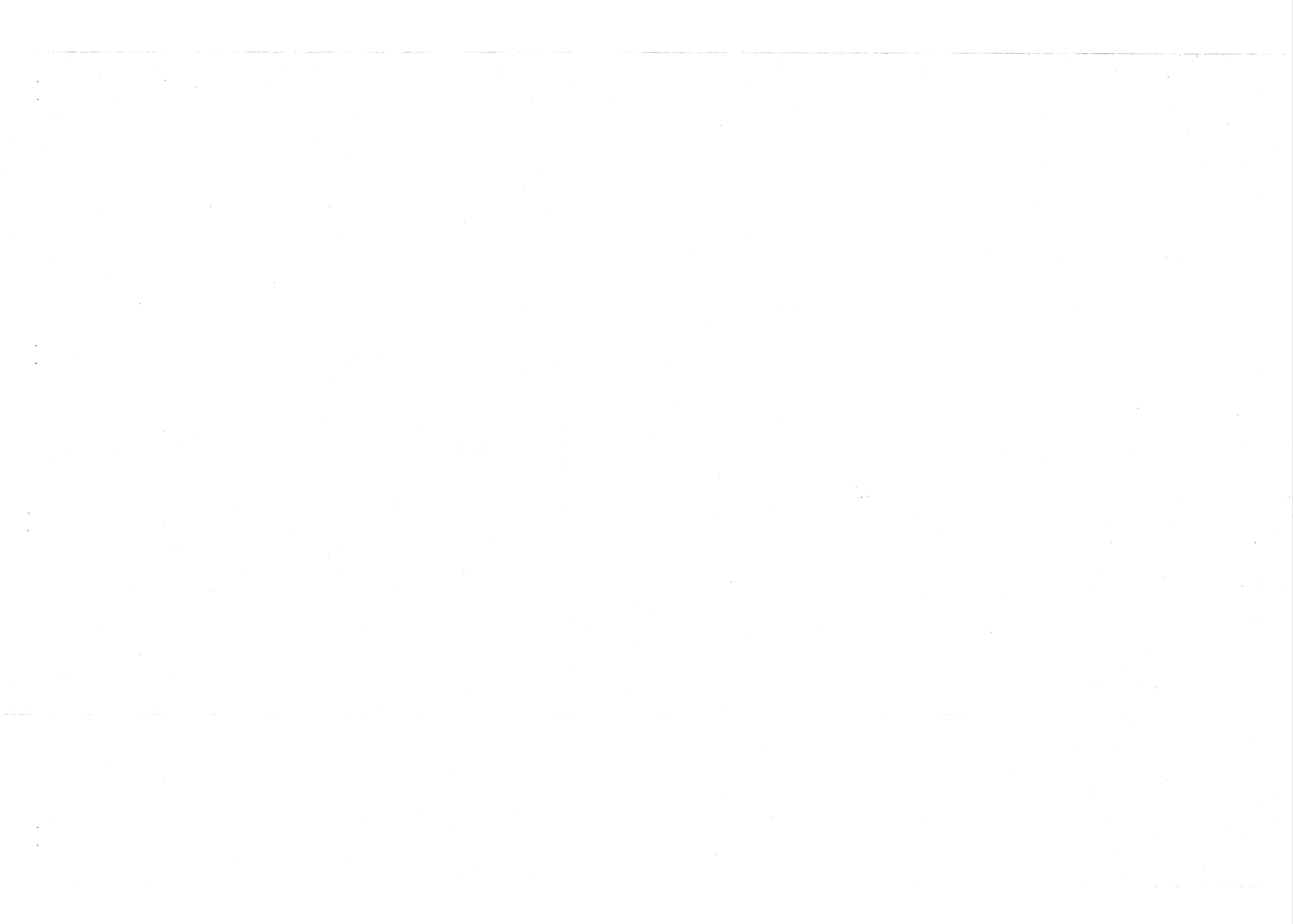


SEQUENCE CHART

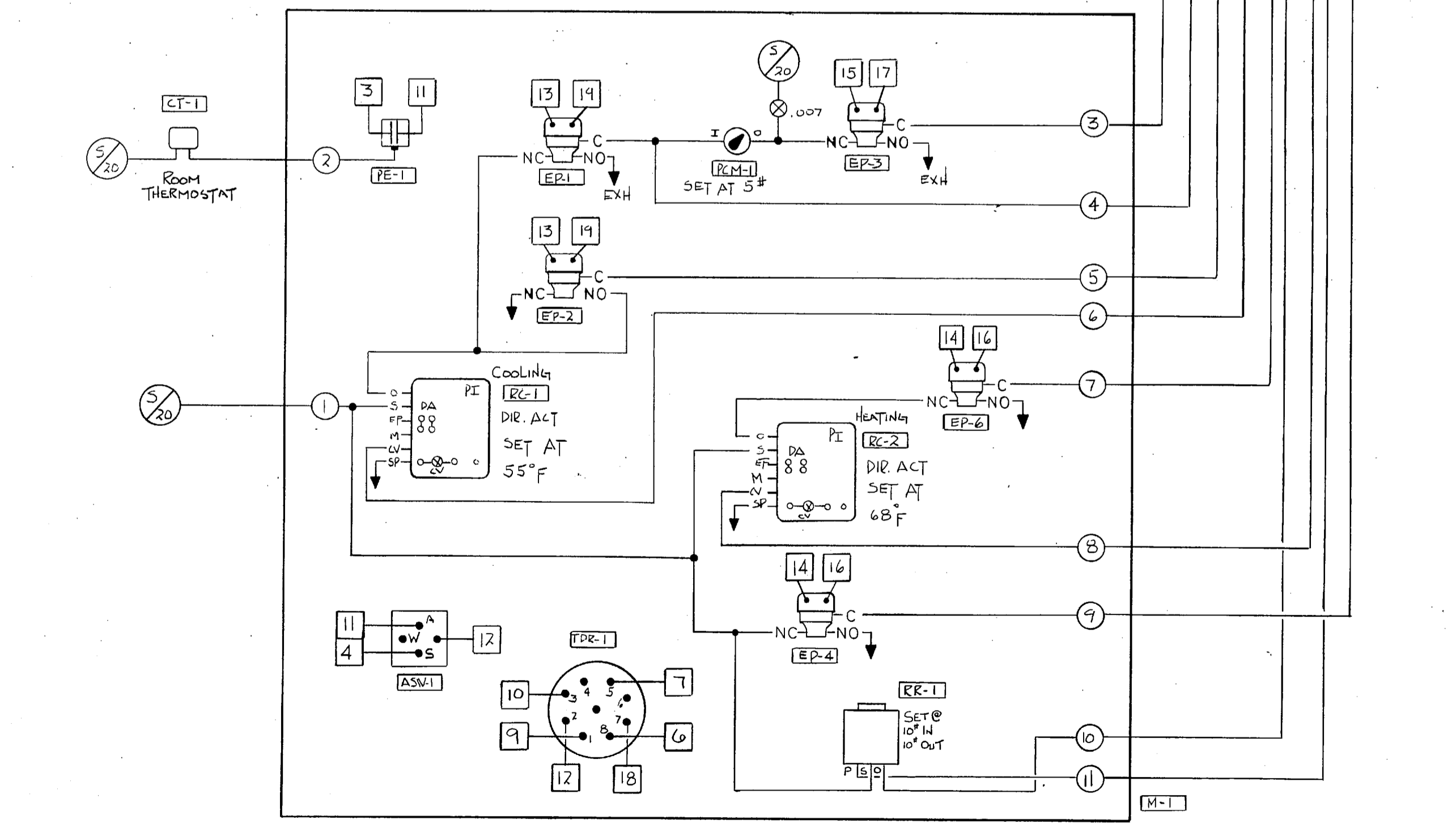
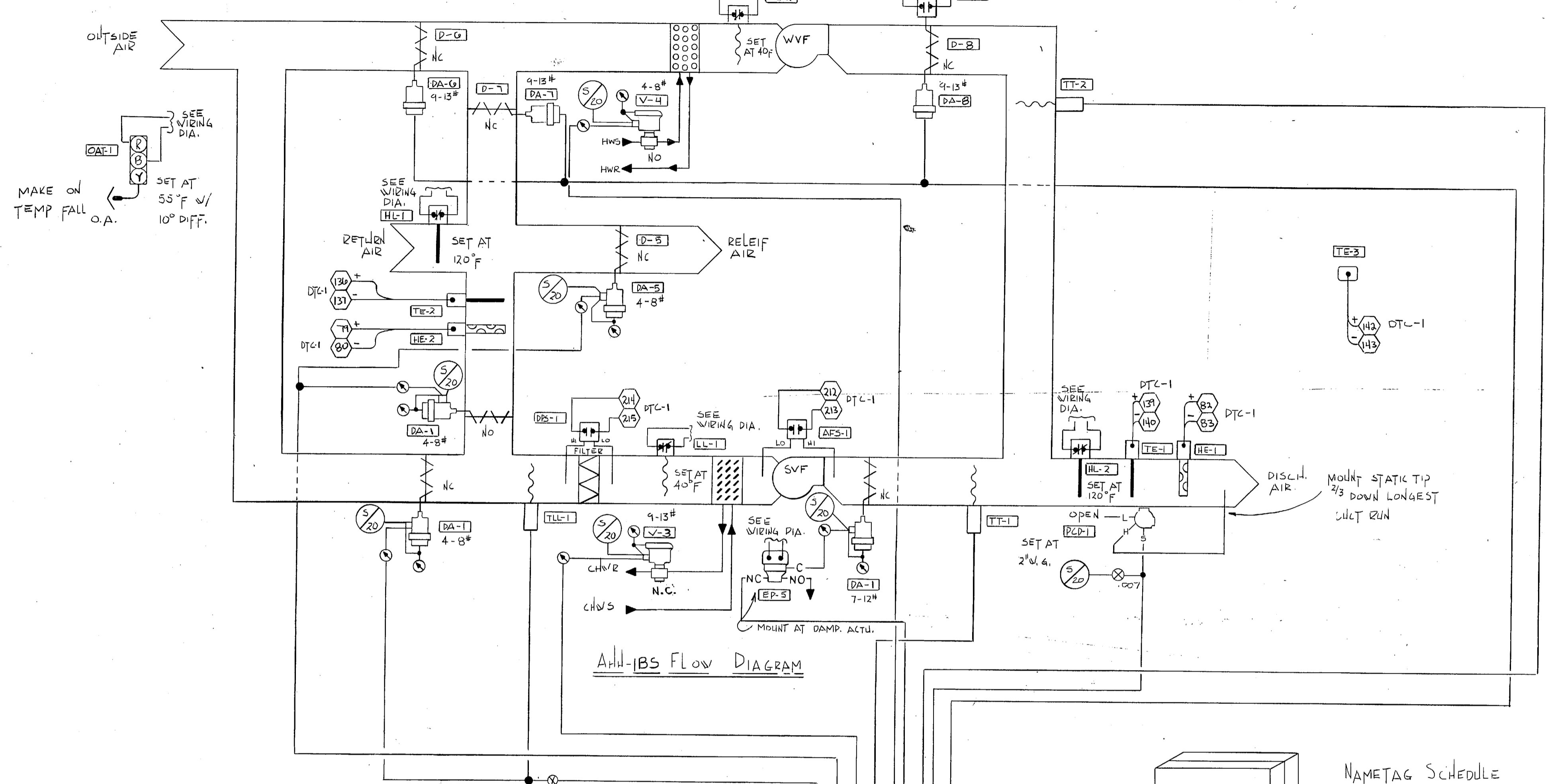
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RC-2 output	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RD-1 output	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-1 output	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CT-1 output	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

DRAWING TITLE		AHU-1BN CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REV AS PER SUBMITTAL RETURN	DATE
SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	DRAWN BY K.L.	DATE 10-24-80
PROJECT		CONTRACT NUMBER	
CAMP LEJEUNE HOSPITAL CONVERSION		6128-0080	
DIVISION HEADQUARTERS		DRAWING NUMBER	
CAMP LEJEUNE, N.C.		1 of 40	

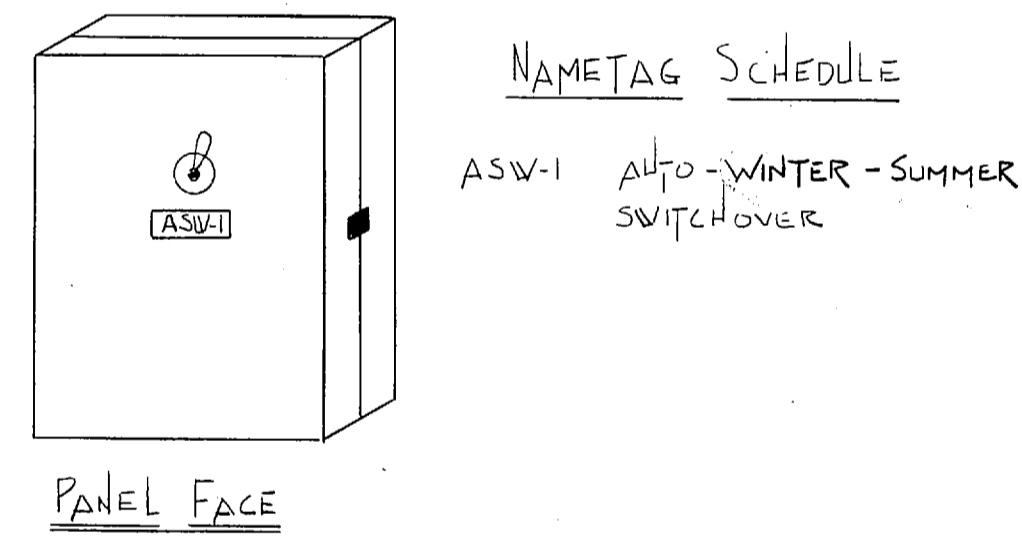
22" X 34" ORIGINAL



NOTE: SET OUTSIDE AIR DAMPER D-6 TO OPEN TO 70% AND RETURN AIR DAMPER D-7 TO 30% OF FAN RATED CFM.

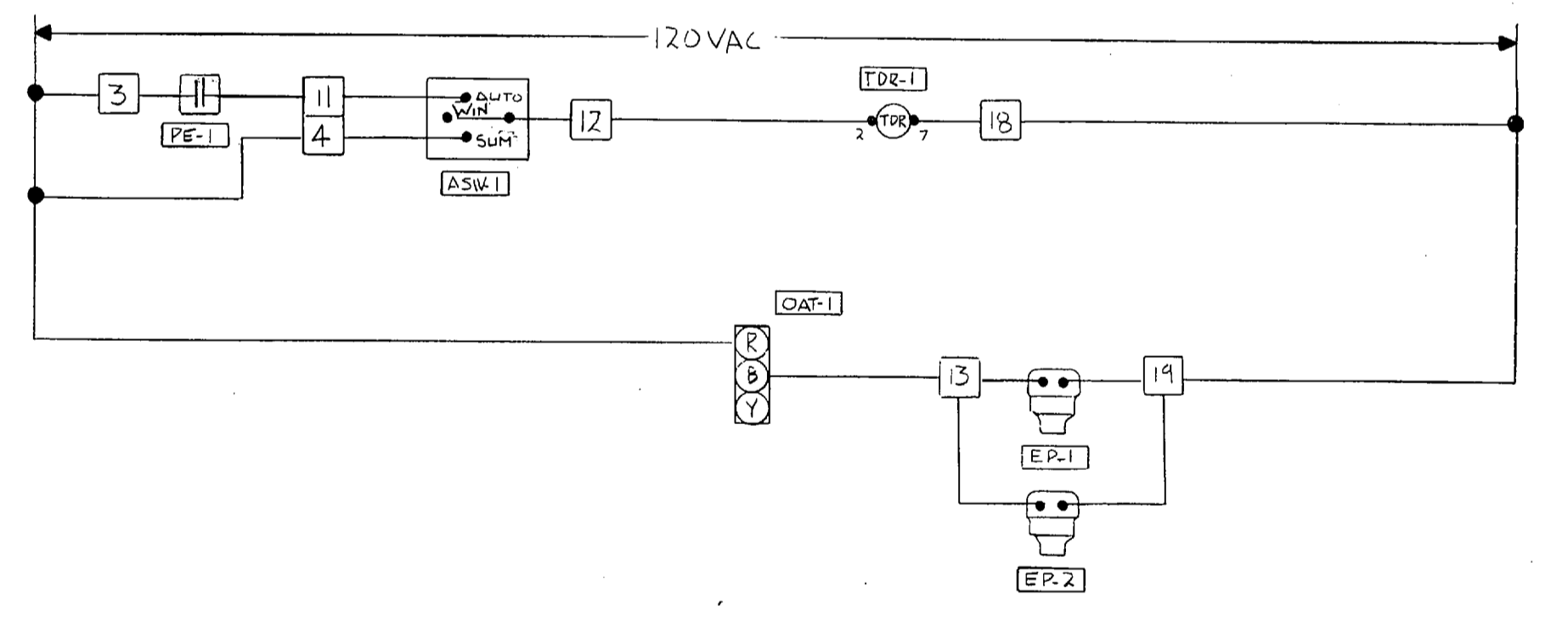
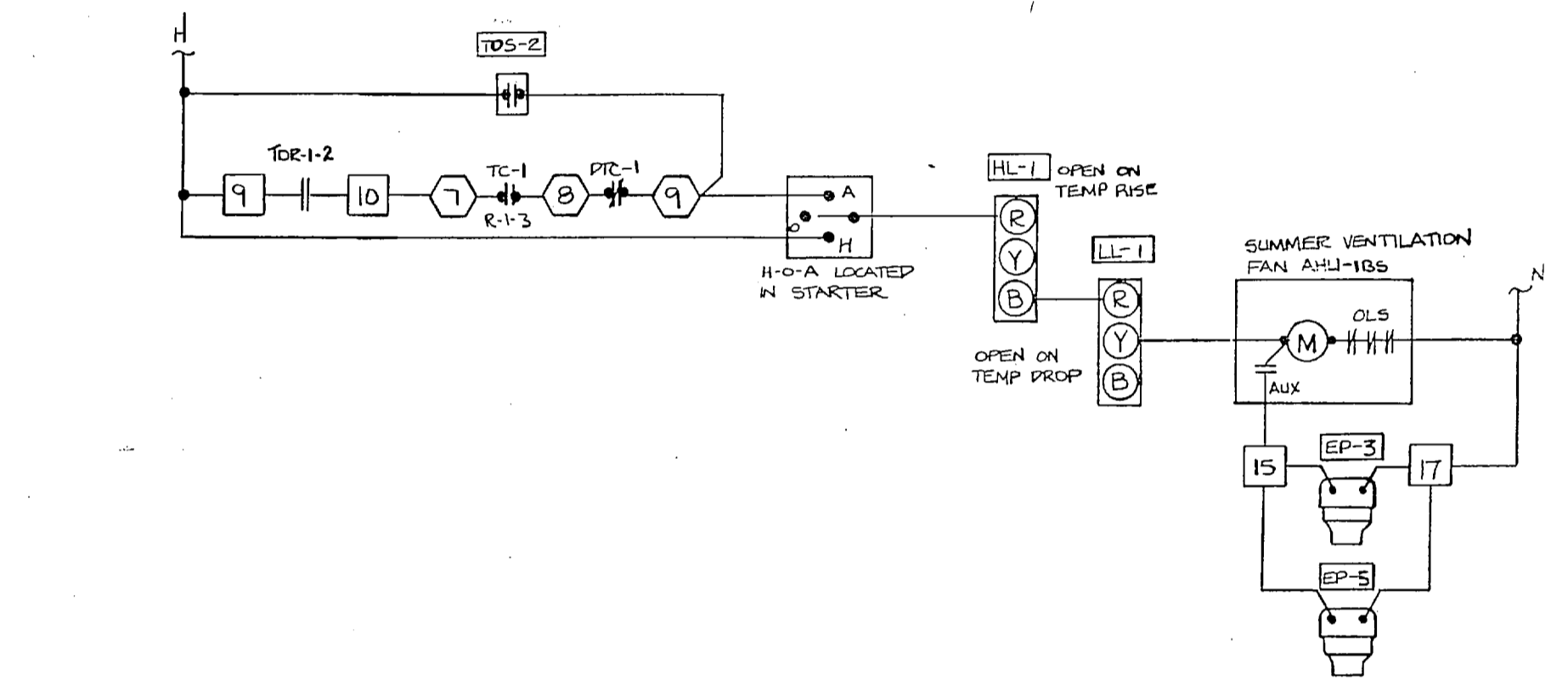
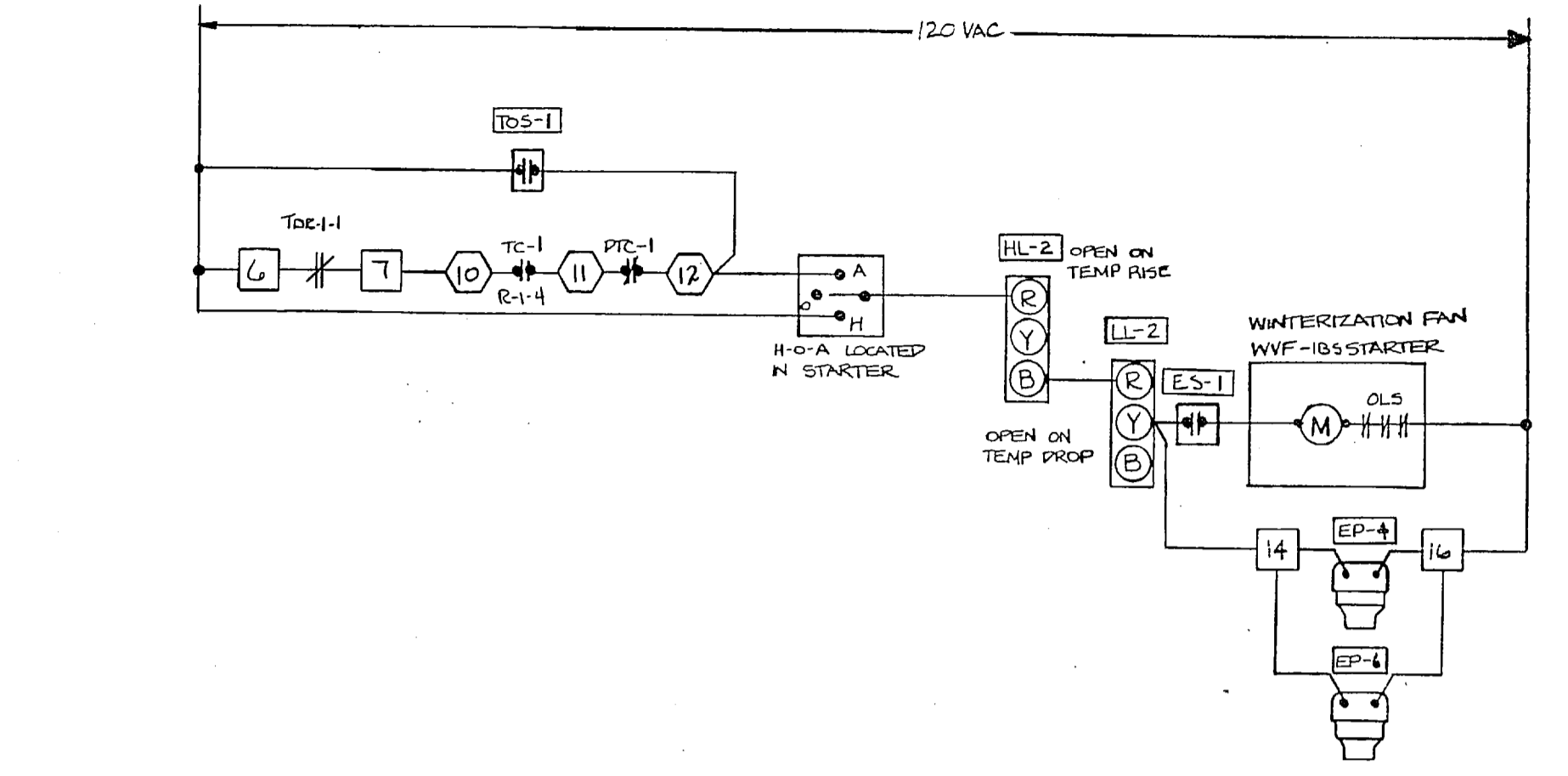


CONTROL PANEL



SEQUENCE CHART

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RL-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
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RL-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
CT-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	



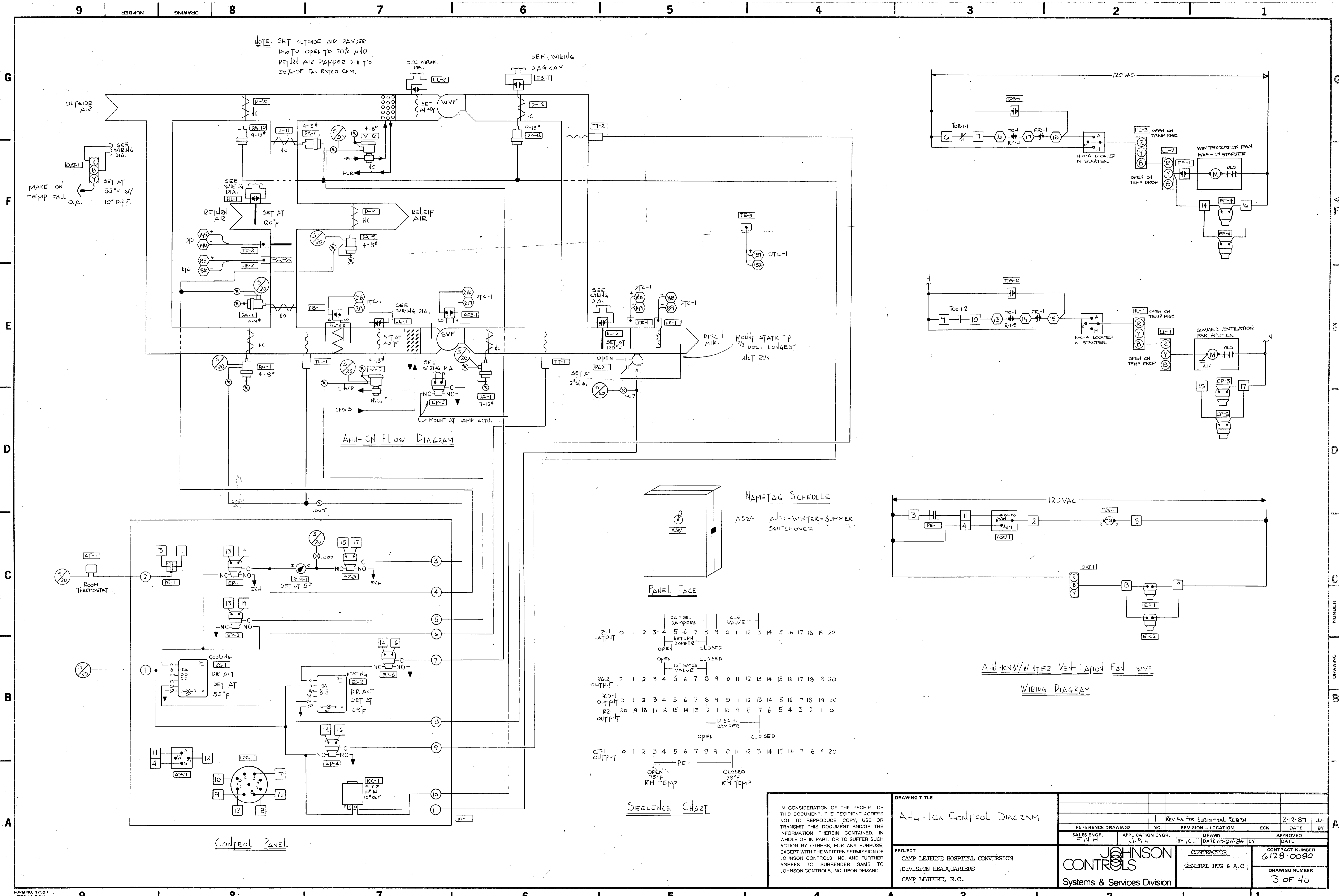
AHU-1BS W/WINTER VENTILATION FAN WVF WIRING DIAGRAM

DRAWING TITLE		AHU-1BS CONTROL DIAGRAM	
PROJECT		CAMP LEJUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJUNE, N.C.	
CONTRACTOR		GENERAL HTG & A.C.	
SALES ENGR.		F.N.H.	
APPLICATION ENGR.		J.A.L.	
DRAWN		BY KL DATE 10-25-86	
APPROVED		DATE	
REFERENCE DRAWINGS		NO. REVISION - LOCATION	
1		REV AS PER SUBMITTAL RETURN	
DATE		2-12-87	
BY		J.L.	
CONTRACT NUMBER		6128-0080	
DRAWING NUMBER		2 OF 40	

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22" x 34" ORIGINAL

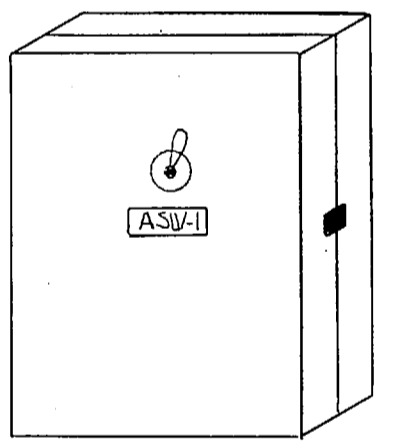




NOTE: SET OUTSIDE AIR DAMPER D-10 TO OPEN TO 70% AND RETURN AIR DAMPER D-11 TO 30% OF FAN RATED CFM.

MAKE ON TEMP FALL O.A. SET AT 55°F w/ 10° DIFF.

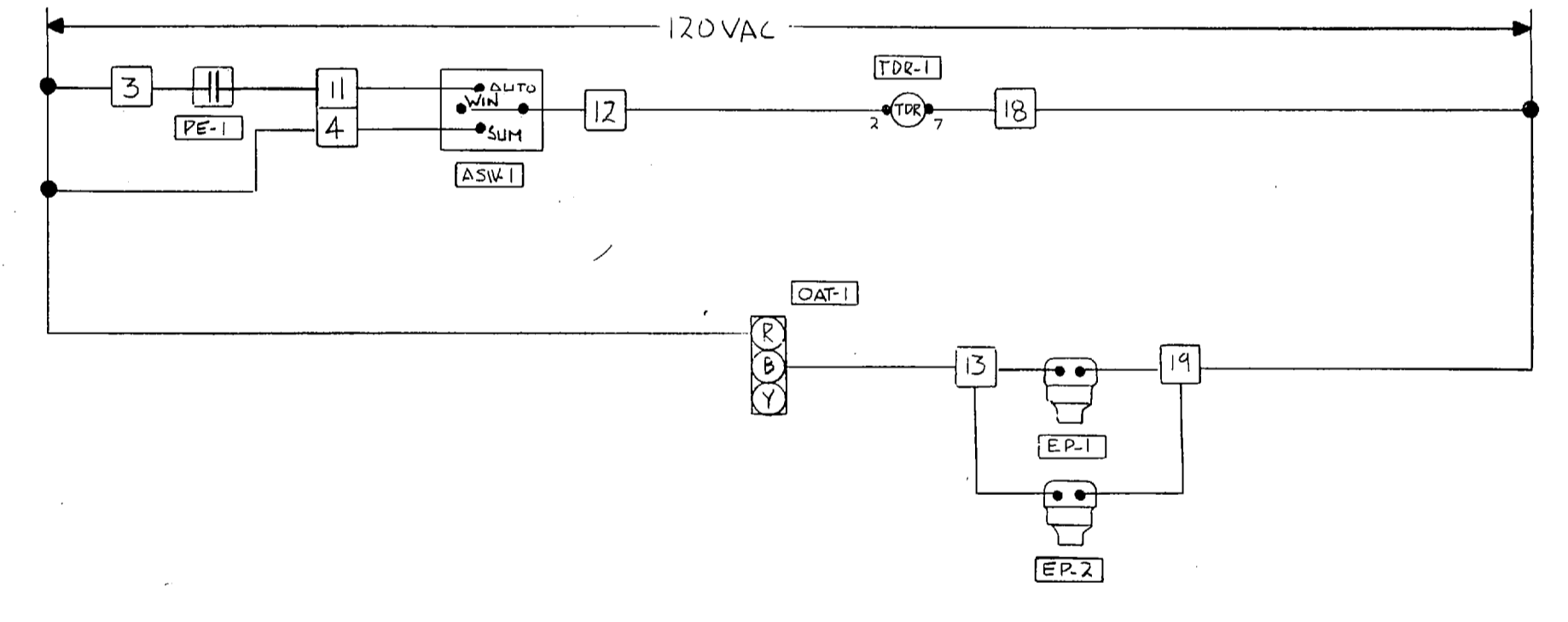
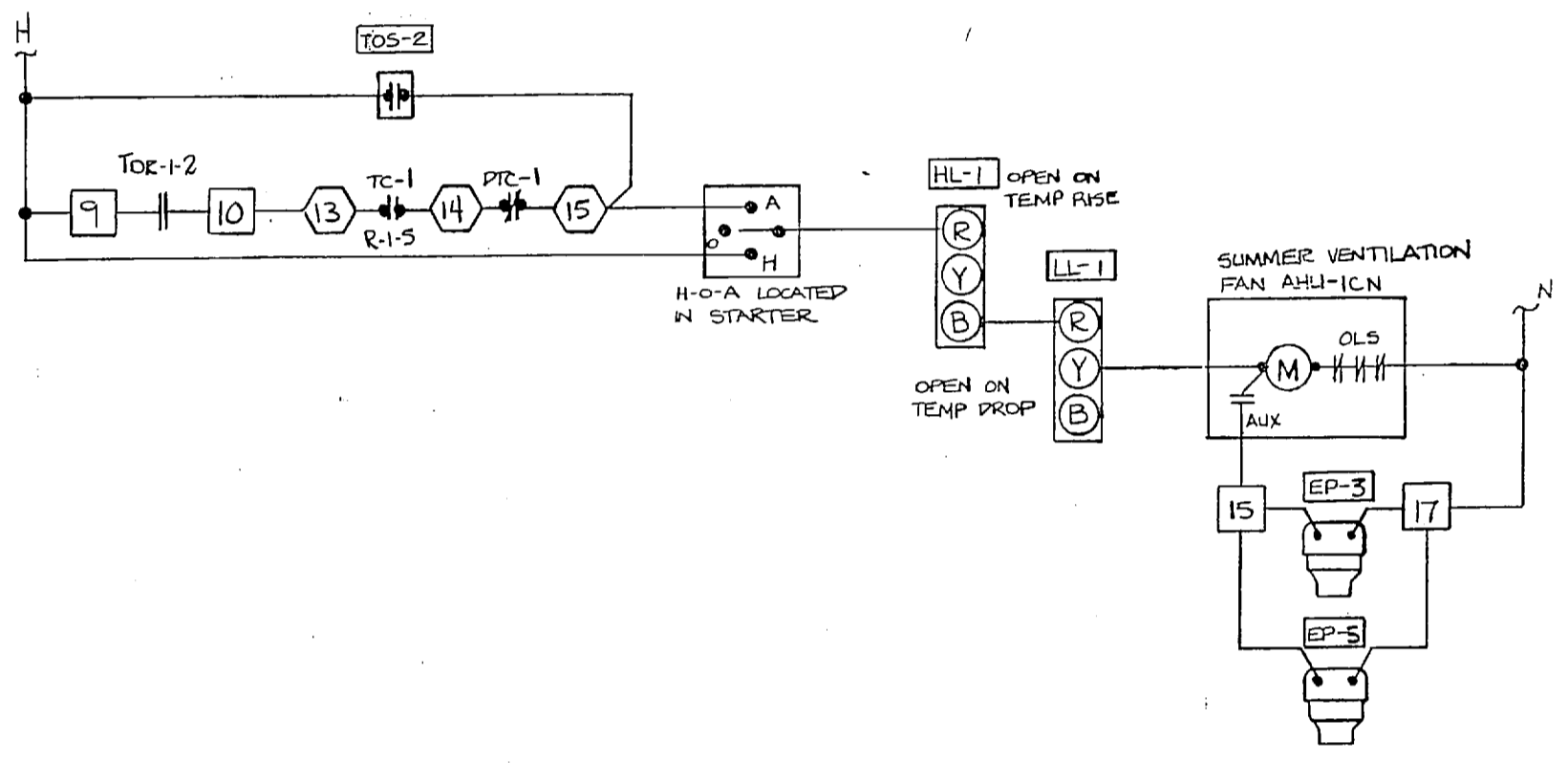
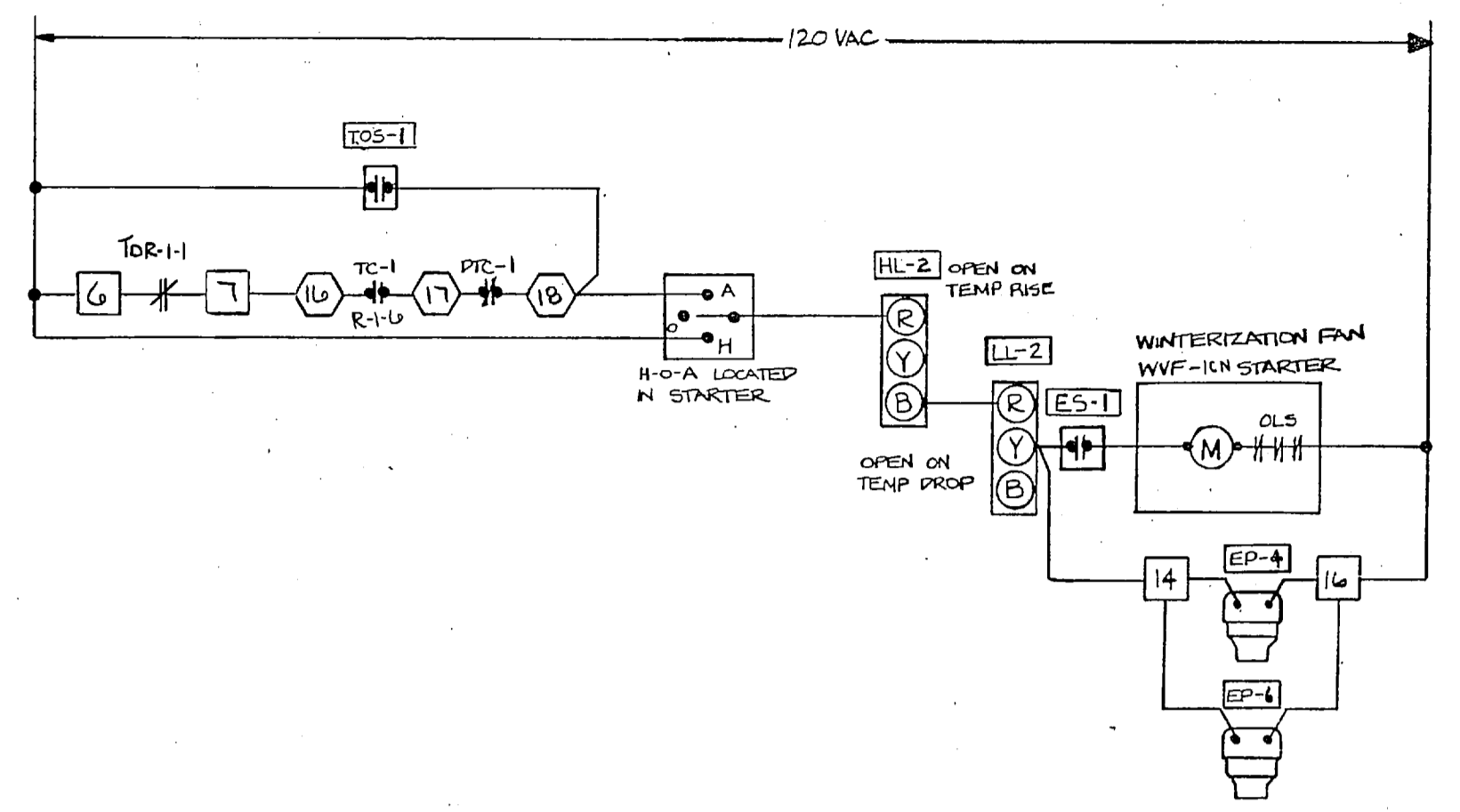
AHU-ICN FLOW DIAGRAM



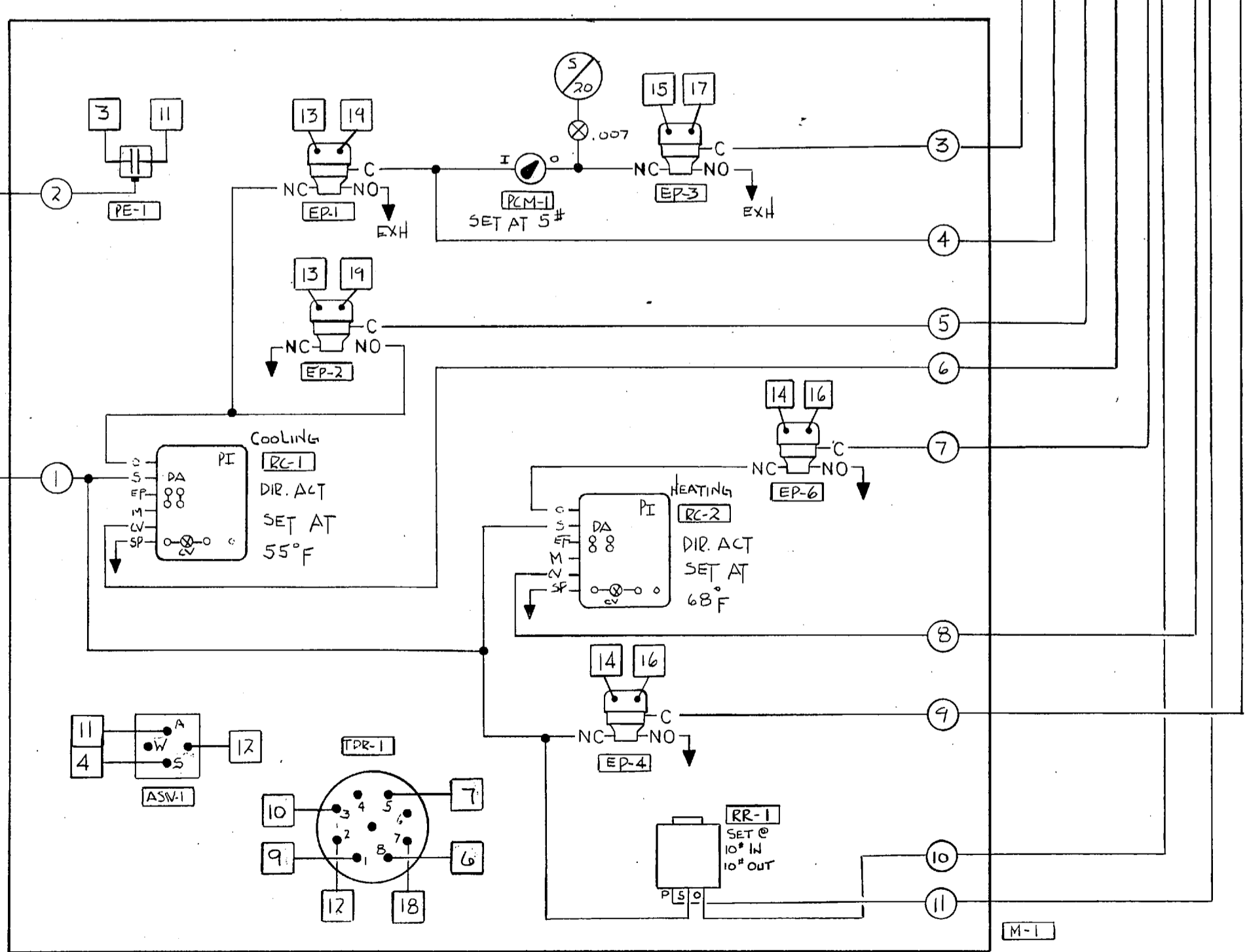
NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

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RA-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RA-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RA-2 OUTPUT	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
CT-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

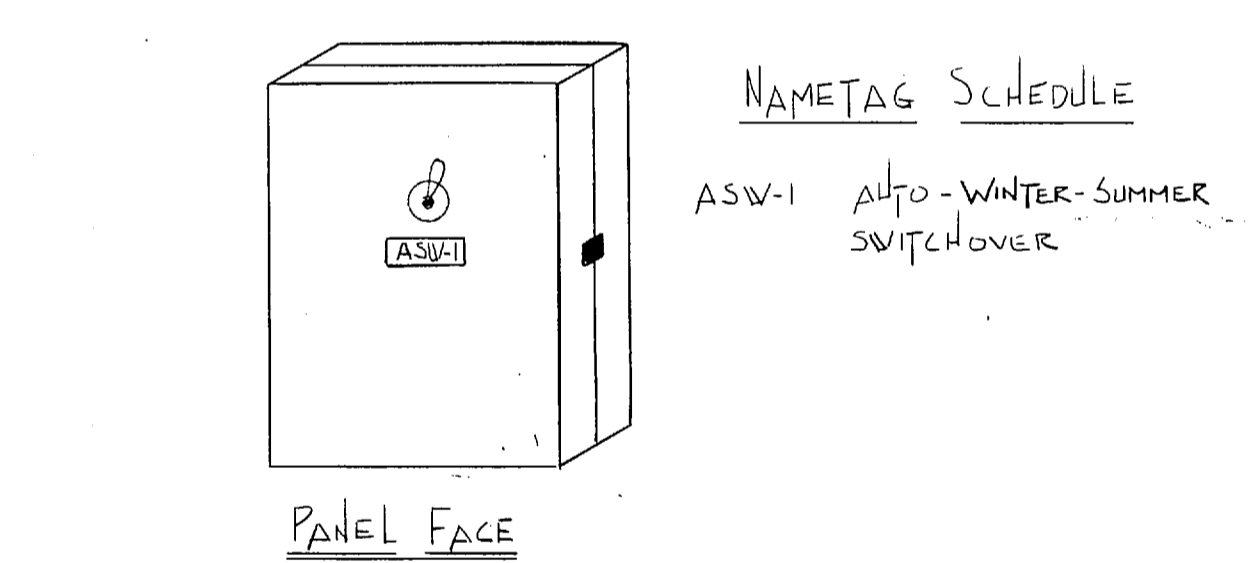
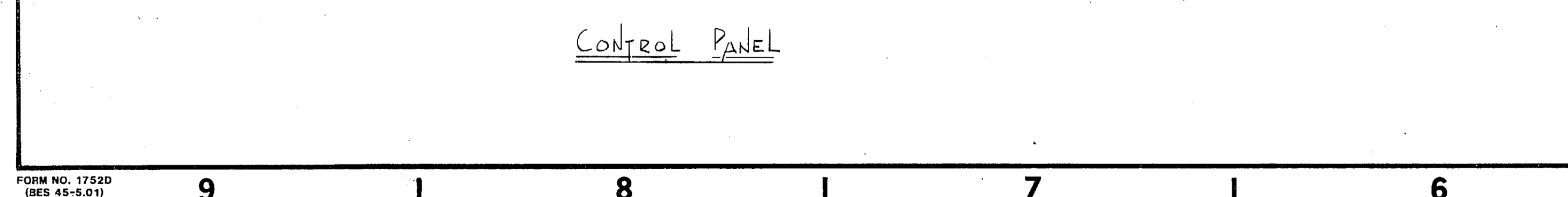
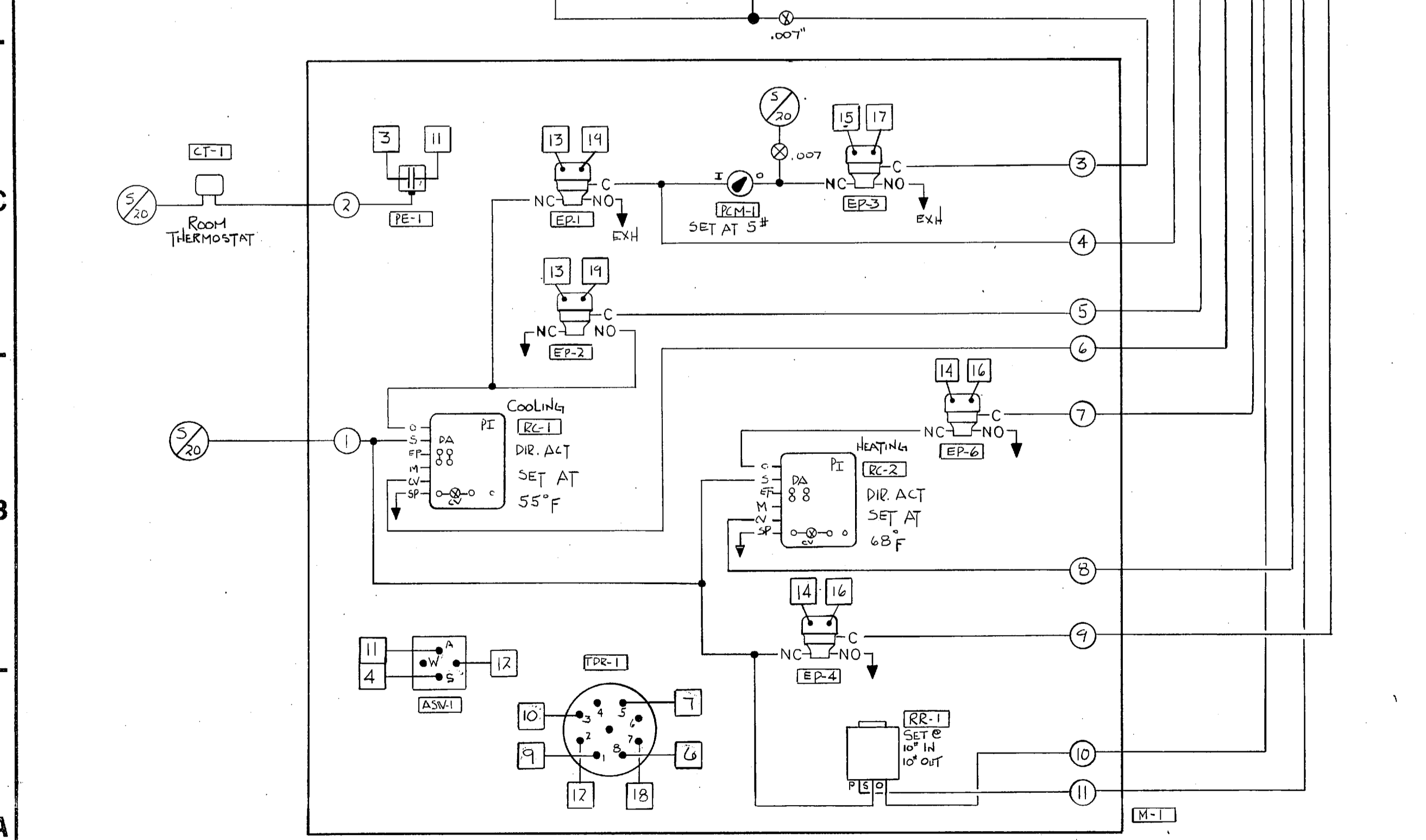
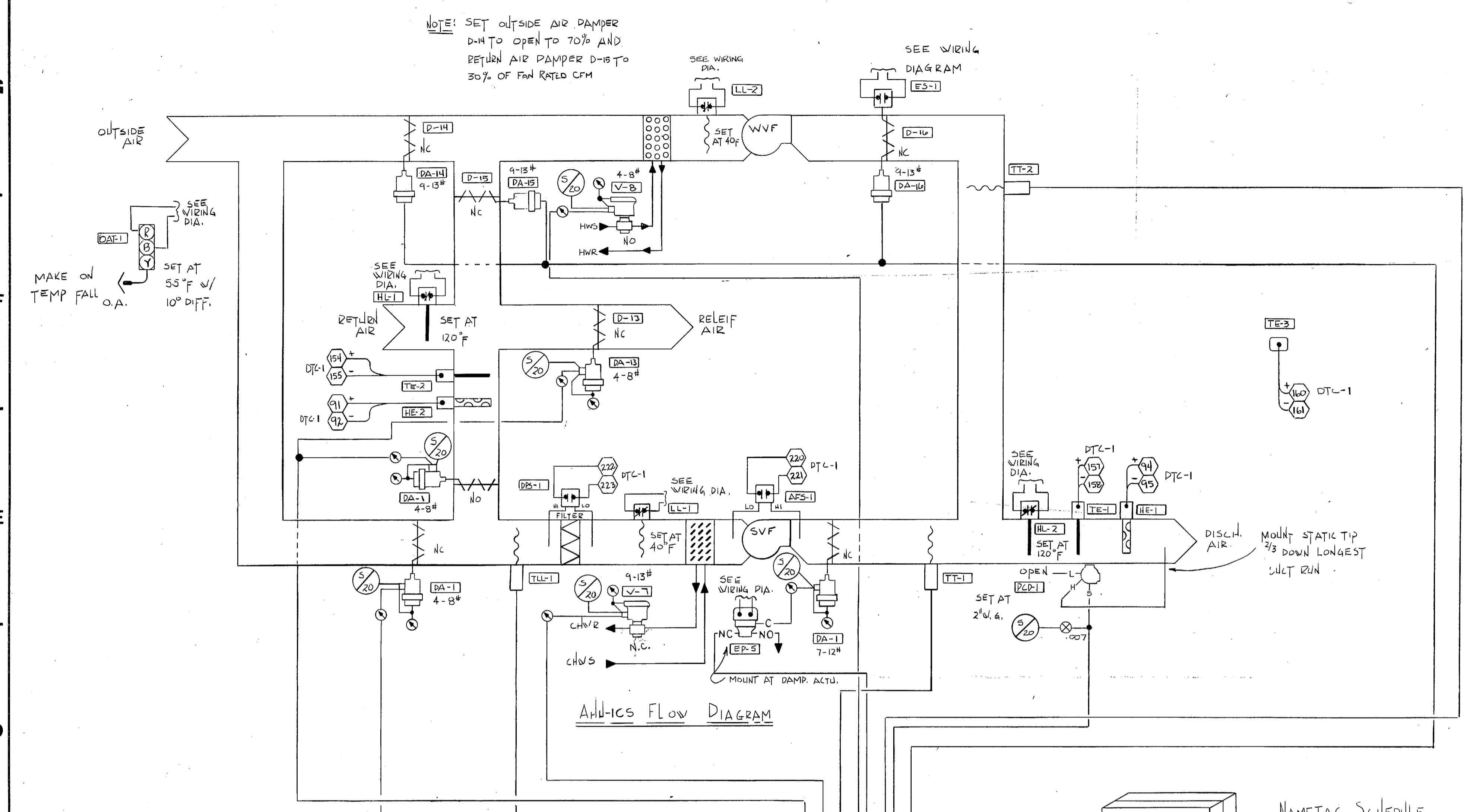


AHU-ICN/WINTER VENTILATION FAN WVF
WIRING DIAGRAM



CONTROL PANEL

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REFERENCE DRAWINGS	NO.	REV. NO. PER SUBMITTAL RETURN	DATE
SALES ENGR.	APPLICATION ENGR.	DRAWN	APPROVED
F.N.H.	J.A.L.	BY J.L.	DATE 10-24-86
PROJECT		CONTRACTOR	
CAMP LEBLANC HOSPITAL CONVERSION		GENERAL HIG & A.C.	
DIVISION HEADQUARTERS		CONTRACT NUMBER	
CAMP LEBLANC, N.C.		6128-0080	
		DRAWING NUMBER	
		3 OF 40	



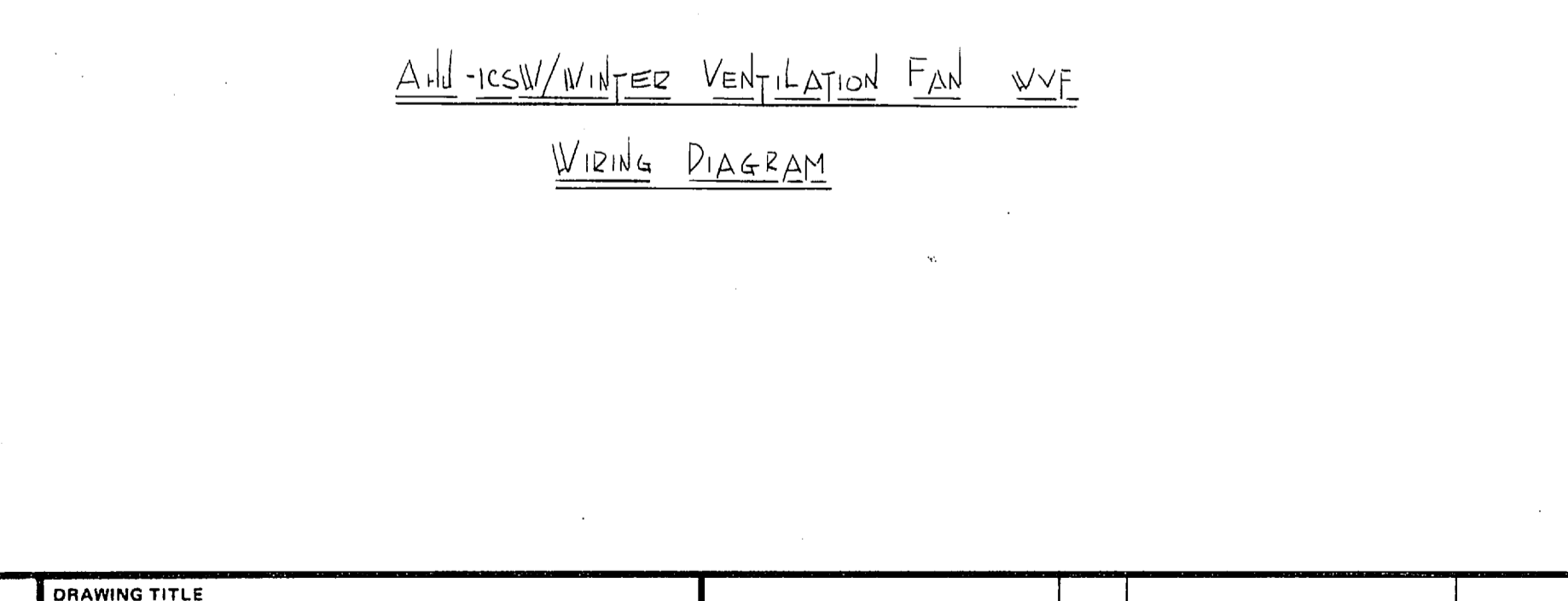
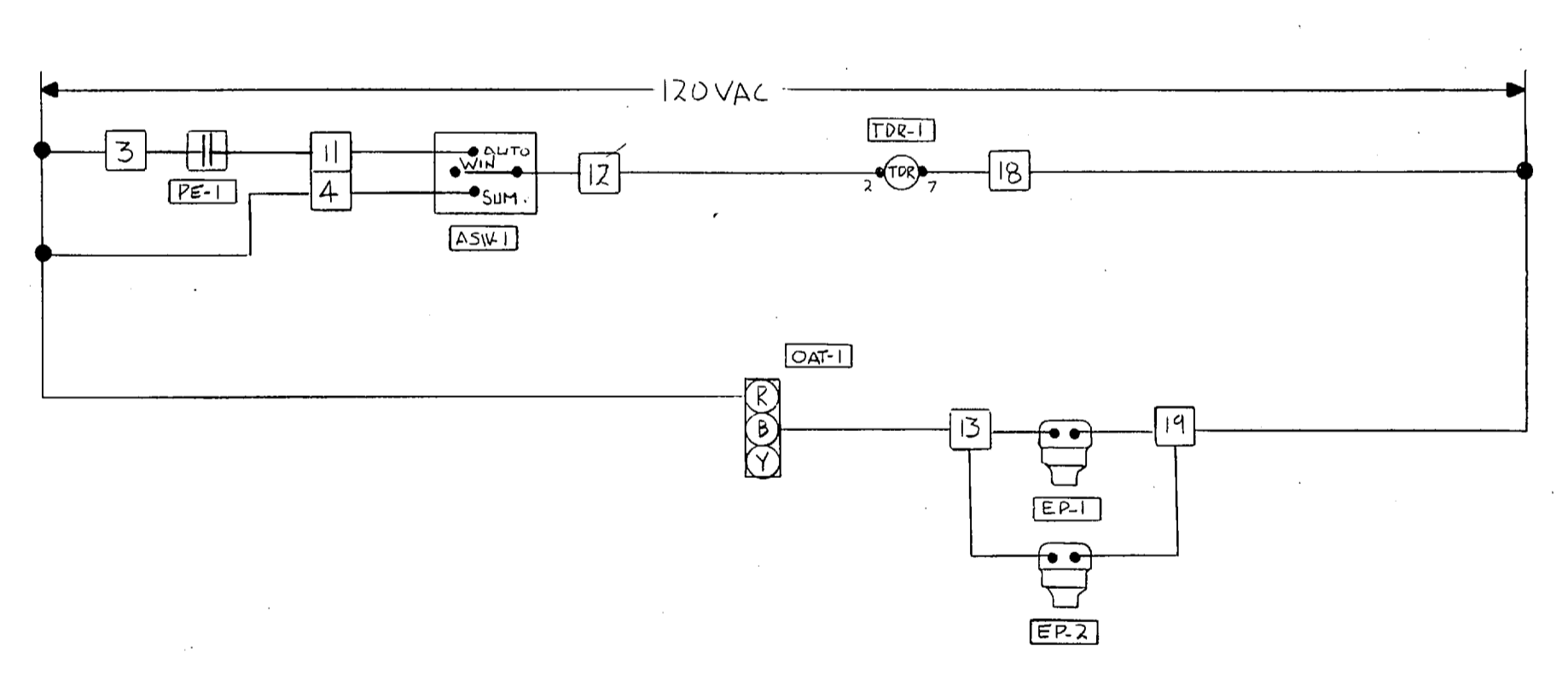
NAME TAG SCHEDULE

ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

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RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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SEQUENCE CHART

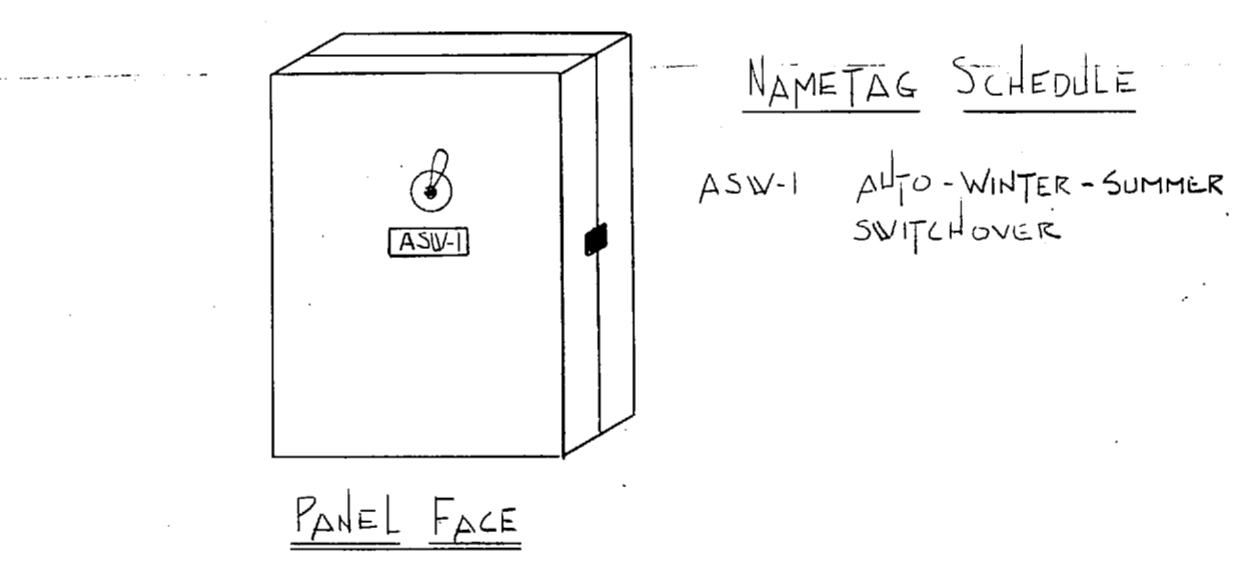
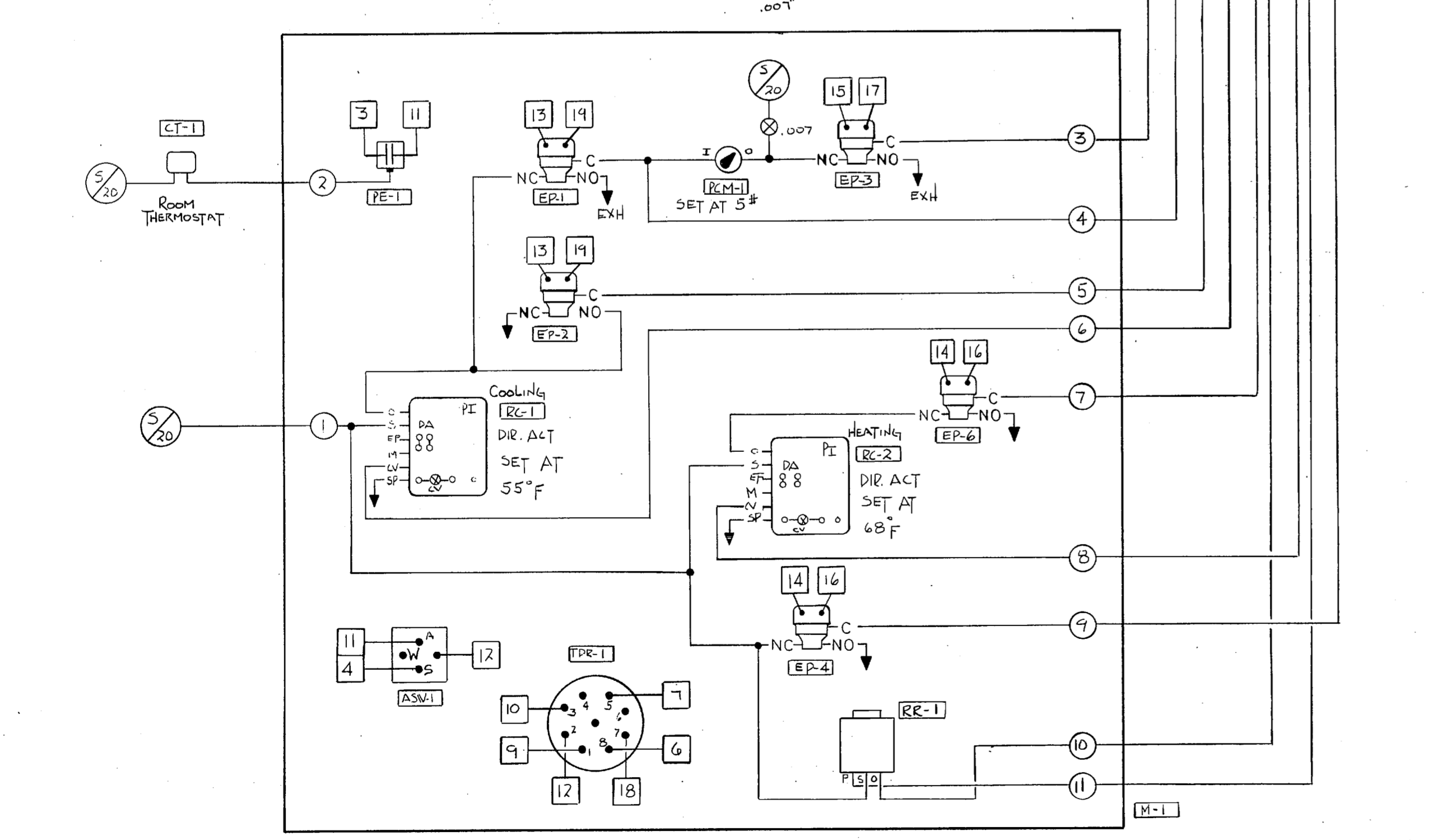
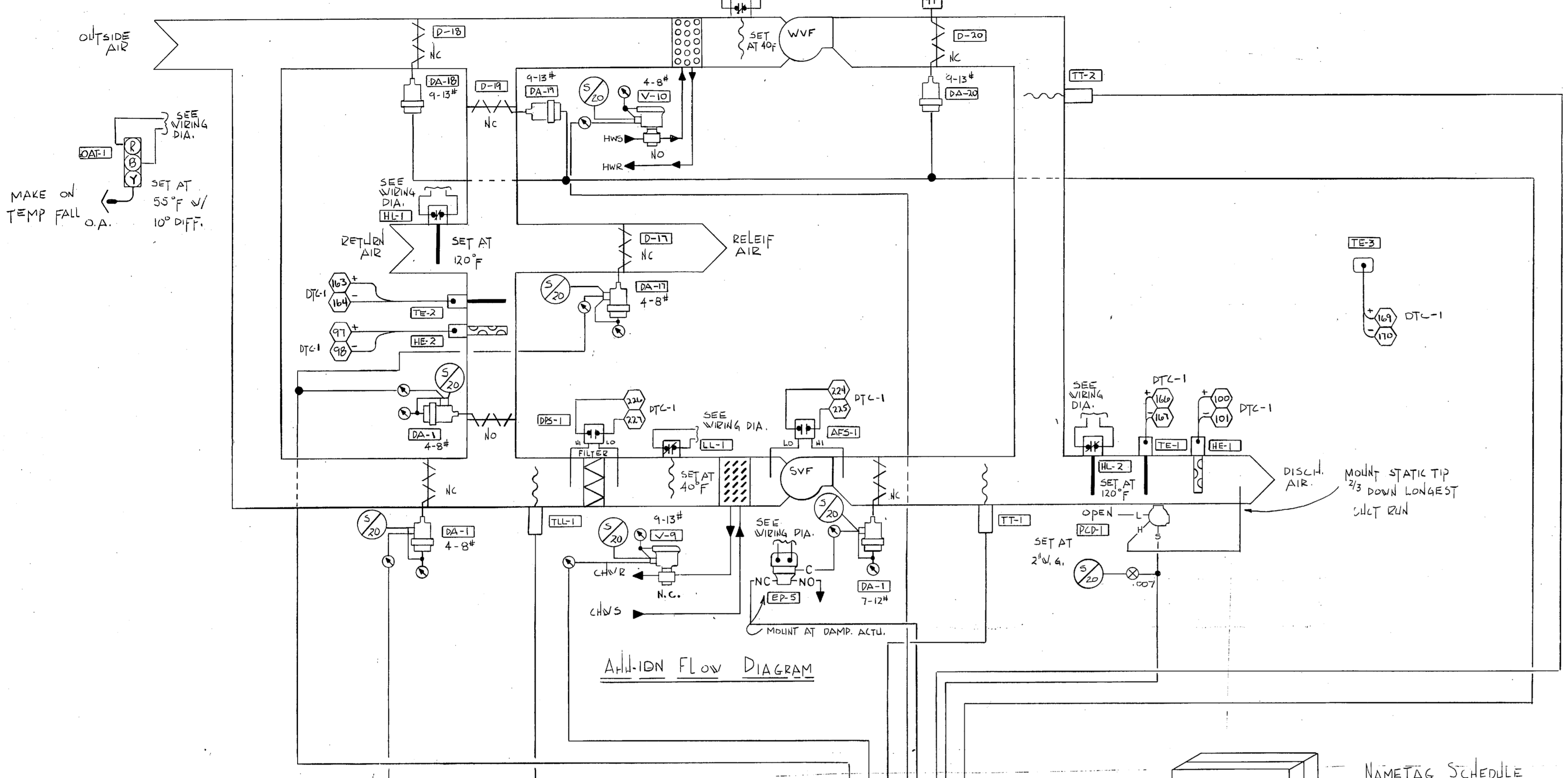
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RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CF-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



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DRAWING TITLE		NO.		REV. AS PER SUBMITTAL RETURN		DATE		BY	
AHU-1CS CONTROL DIAGRAM		1				2-12-87		J.L.	
REFERENCE DRAWINGS		NO.		REVISION - LOCATION		ECN		DATE	
SALES ENGR. F.N.H.		APPLICATION ENGR. J.A.L.		BY K.L.		DATE 10-24-86		BY	
PROJECT		CONTRACTOR		CONTRACT NUMBER		DATE		BY	
CAMP LEBLANC HOSPITAL CONVERSION		JOHNSON CONTROLS		6128-0080					
DIVISION HEADQUARTERS		GENERAL HTG. & A.C.		DRAWING NUMBER					
CAMP LEBLANC, N.C.		Systems & Services Division		4 OF 40					

NOTE: SET OUTSIDE AIR DAMPER D-18 TO OPEN TO 70% AND RETURN AIR DAMPER D-19 TO 30% OF FAN RATED CFM.



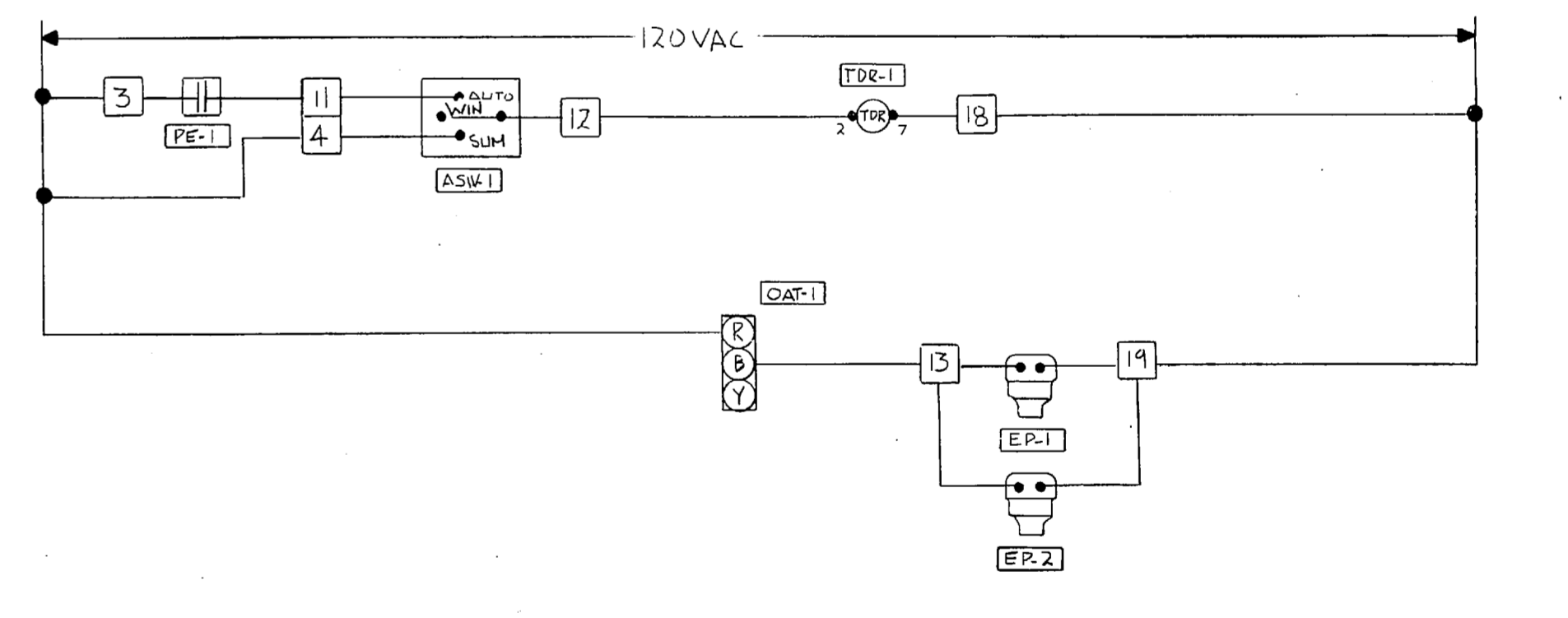
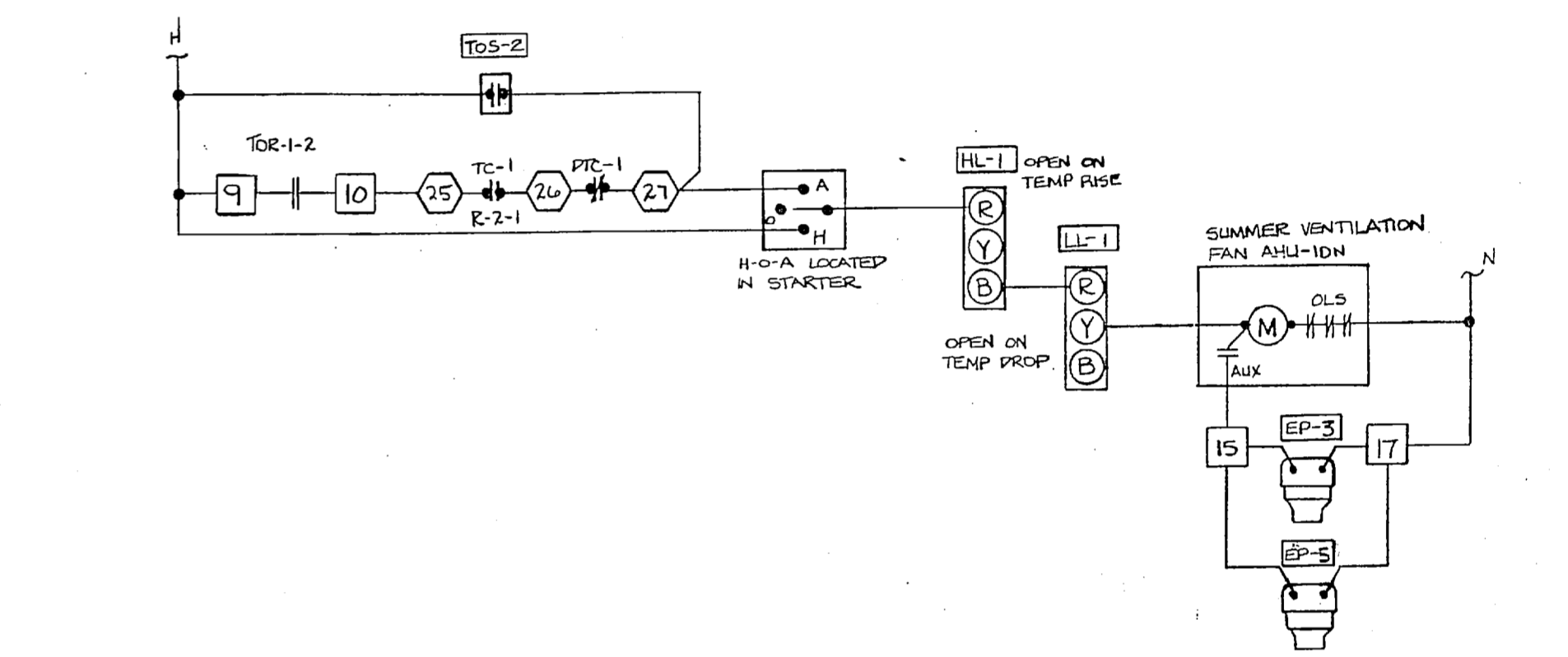
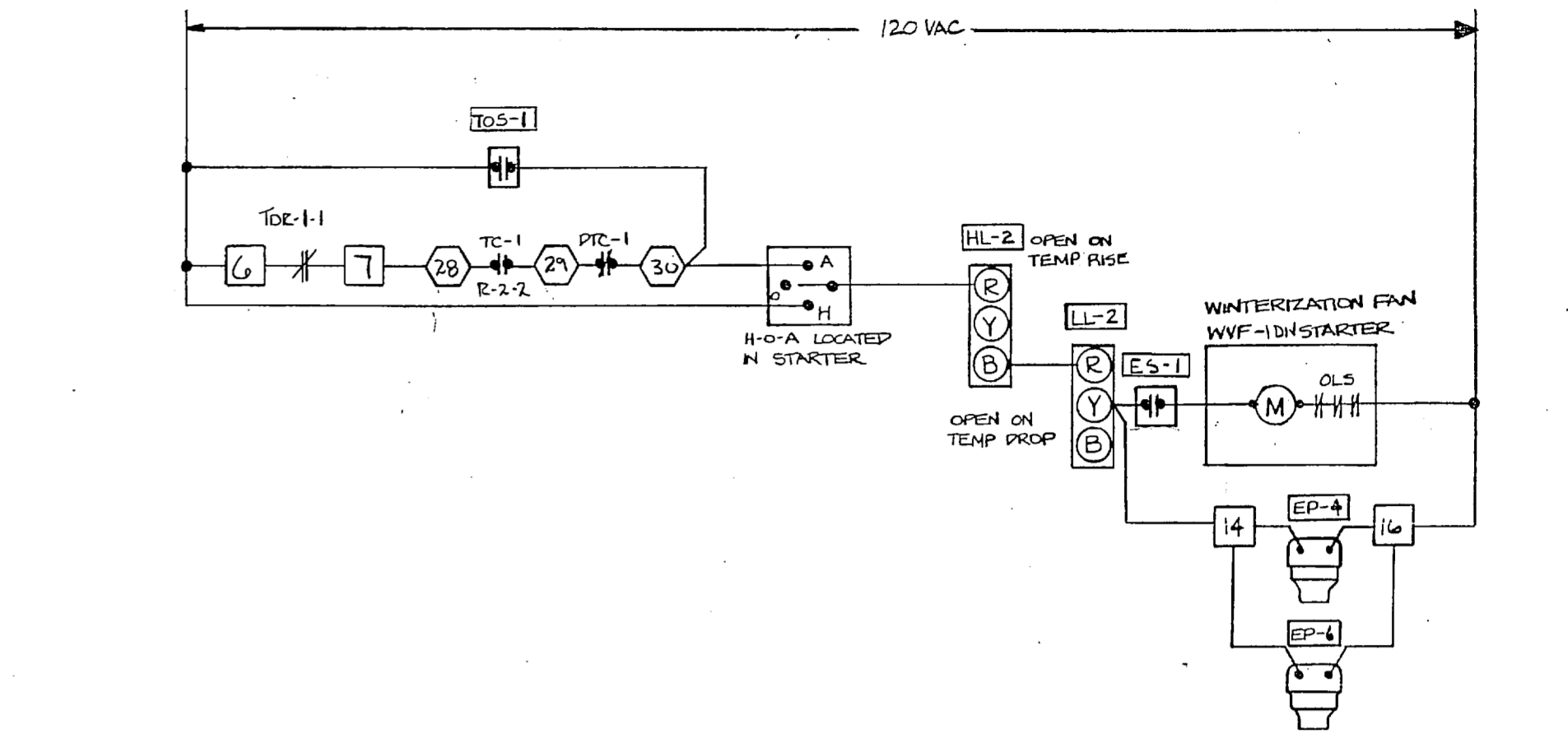
NAME TAG SCHEDULE

ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

DA-1 SEL DAMPERS	CLG VALVE
RET-1 RETURN DAMPER	DISCH. DAMPER
RET-2 RETURN DAMPER	DISCH. DAMPER
RET-3 RETURN DAMPER	DISCH. DAMPER
RET-4 RETURN DAMPER	DISCH. DAMPER
RET-5 RETURN DAMPER	DISCH. DAMPER
RET-6 RETURN DAMPER	DISCH. DAMPER
RET-7 RETURN DAMPER	DISCH. DAMPER
RET-8 RETURN DAMPER	DISCH. DAMPER
RET-9 RETURN DAMPER	DISCH. DAMPER
RET-10 RETURN DAMPER	DISCH. DAMPER
RET-11 RETURN DAMPER	DISCH. DAMPER
RET-12 RETURN DAMPER	DISCH. DAMPER
RET-13 RETURN DAMPER	DISCH. DAMPER
RET-14 RETURN DAMPER	DISCH. DAMPER
RET-15 RETURN DAMPER	DISCH. DAMPER
RET-16 RETURN DAMPER	DISCH. DAMPER
RET-17 RETURN DAMPER	DISCH. DAMPER
RET-18 RETURN DAMPER	DISCH. DAMPER
RET-19 RETURN DAMPER	DISCH. DAMPER
RET-20 RETURN DAMPER	DISCH. DAMPER

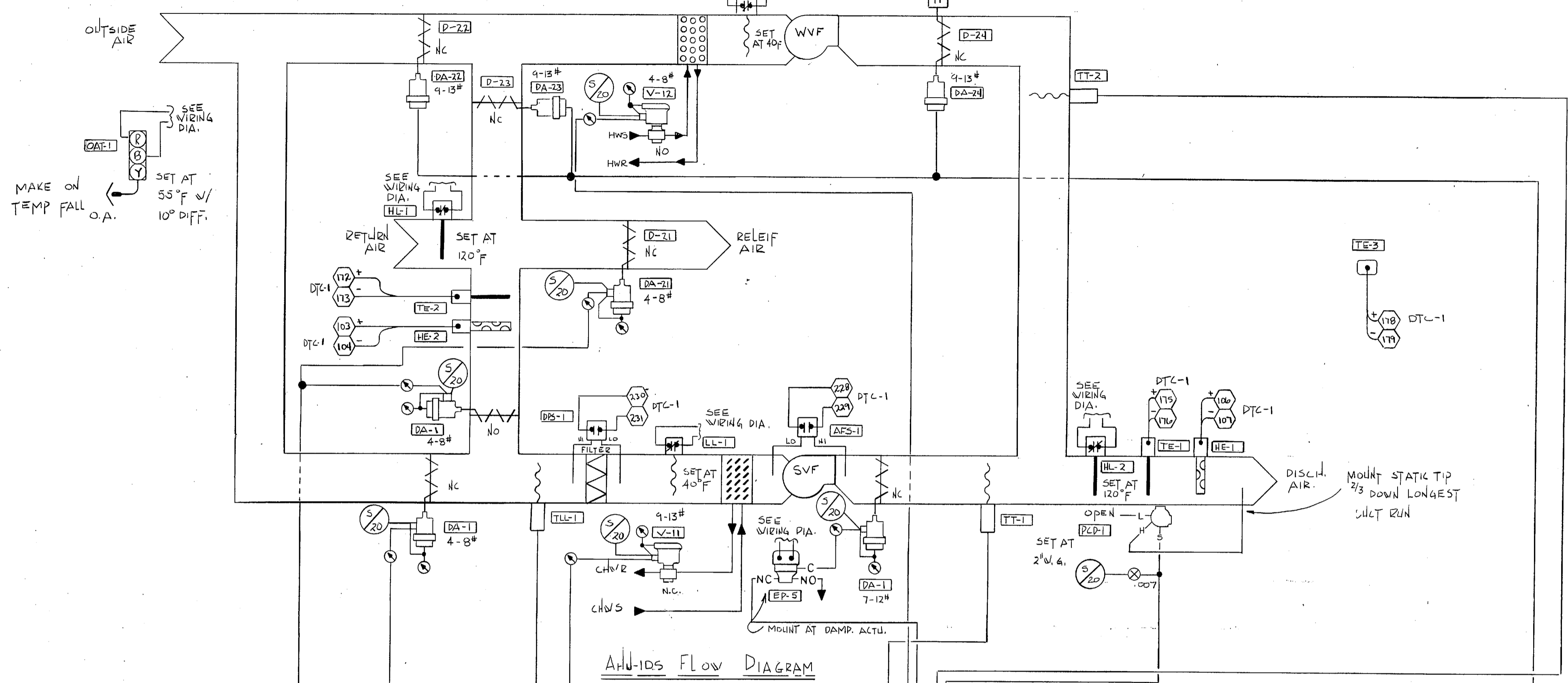
SEQUENCE CHART

RET-1 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-2 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-3 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-4 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-5 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-6 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-7 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-8 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-9 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-10 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-11 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-12 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-13 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-14 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-15 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-16 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-17 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-18 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-19 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
RET-20 OUTPUT	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

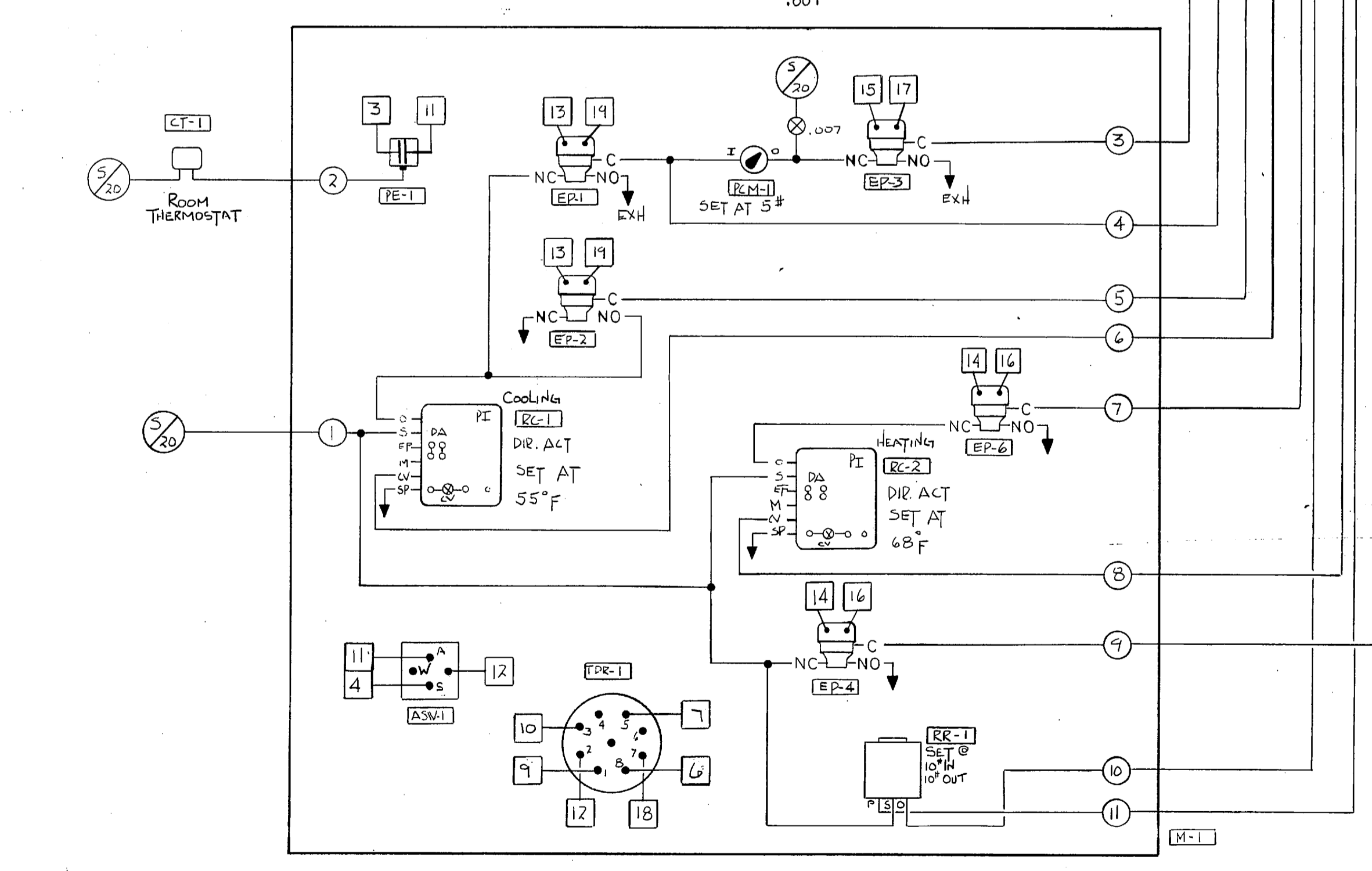


DRAWING TITLE		REV AS PER SUBMITTAL RETURN		ECN	DATE	J.L.
A.H.U.-IDN CONTROL DIAGRAM		1			7-12-87	
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	DATE	BY	DATE	
SALES ENGR. F.N.H.		APPLICATION ENGR. J.A.L.		BY K.L.	DATE 10-24-86	
PROJECT		CONTRACTOR		CONTRACT NUMBER		
CAMP LEJEUNE HOSPITAL CONVERSION		JOHNSON CONTROLS		6128-0080		
DIVISION HEADQUARTERS		GENERAL HIG & A.C.		DRAWING NUMBER		
CAMP LEJEUNE, N.C.		Systems & Services Division		5 OF 40		

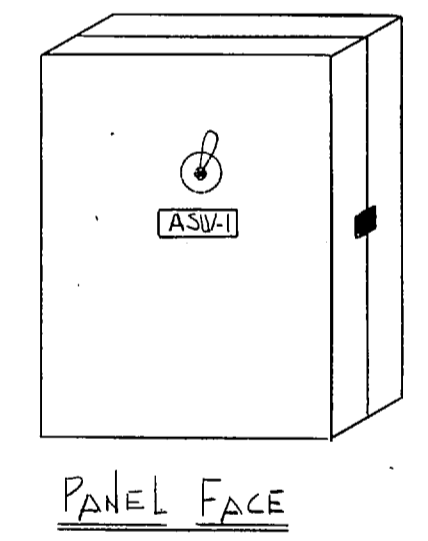
NOTE: SET OUTSIDE AIR DAMPER D-22 TO OPEN TO 70% AND RETURN AIR DAMPER D-23 TO 30% OF FAN RATED CFM.



AHU-105 FLOW DIAGRAM



CONTROL PANEL

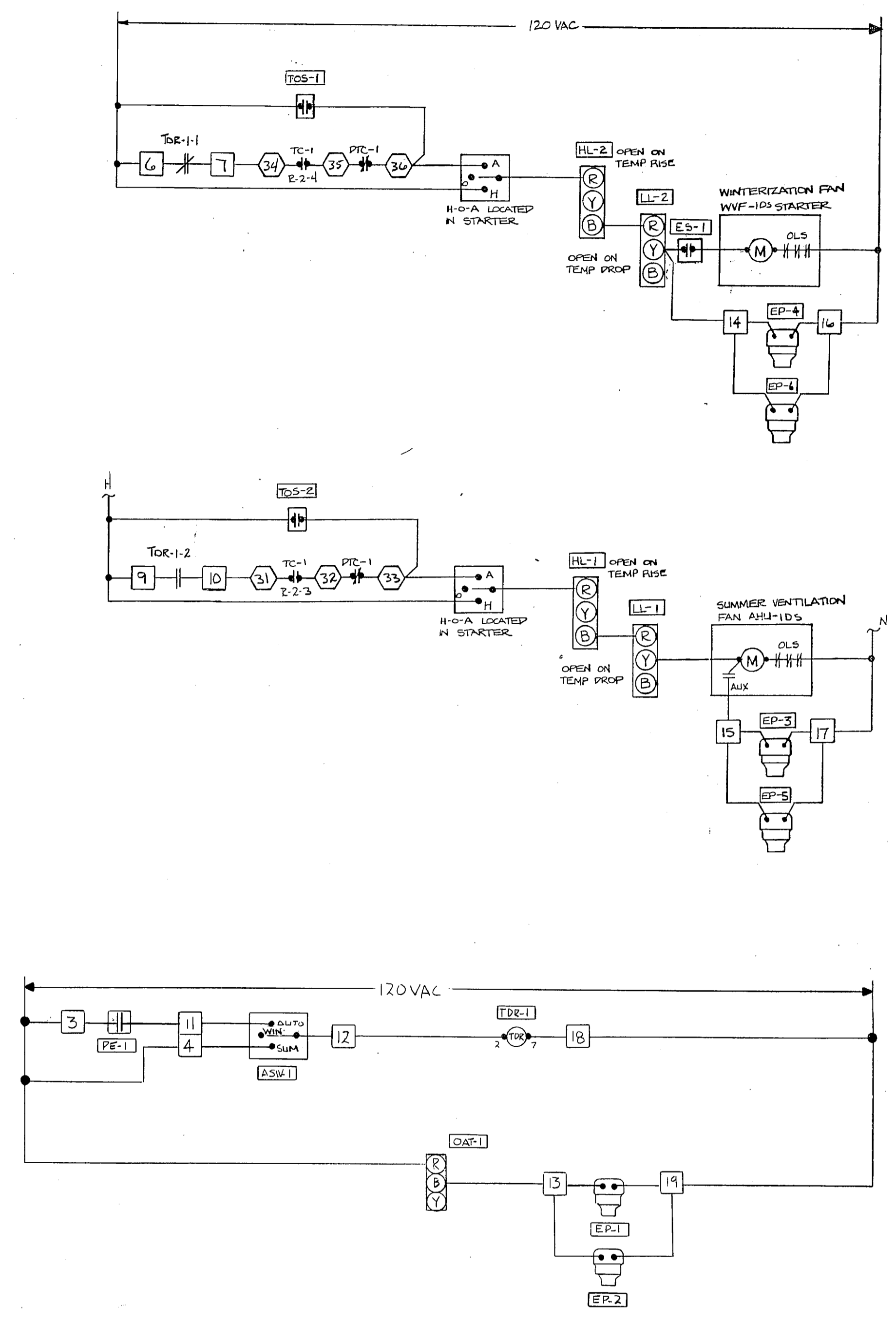


NAME TAG SCHEDULE

ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

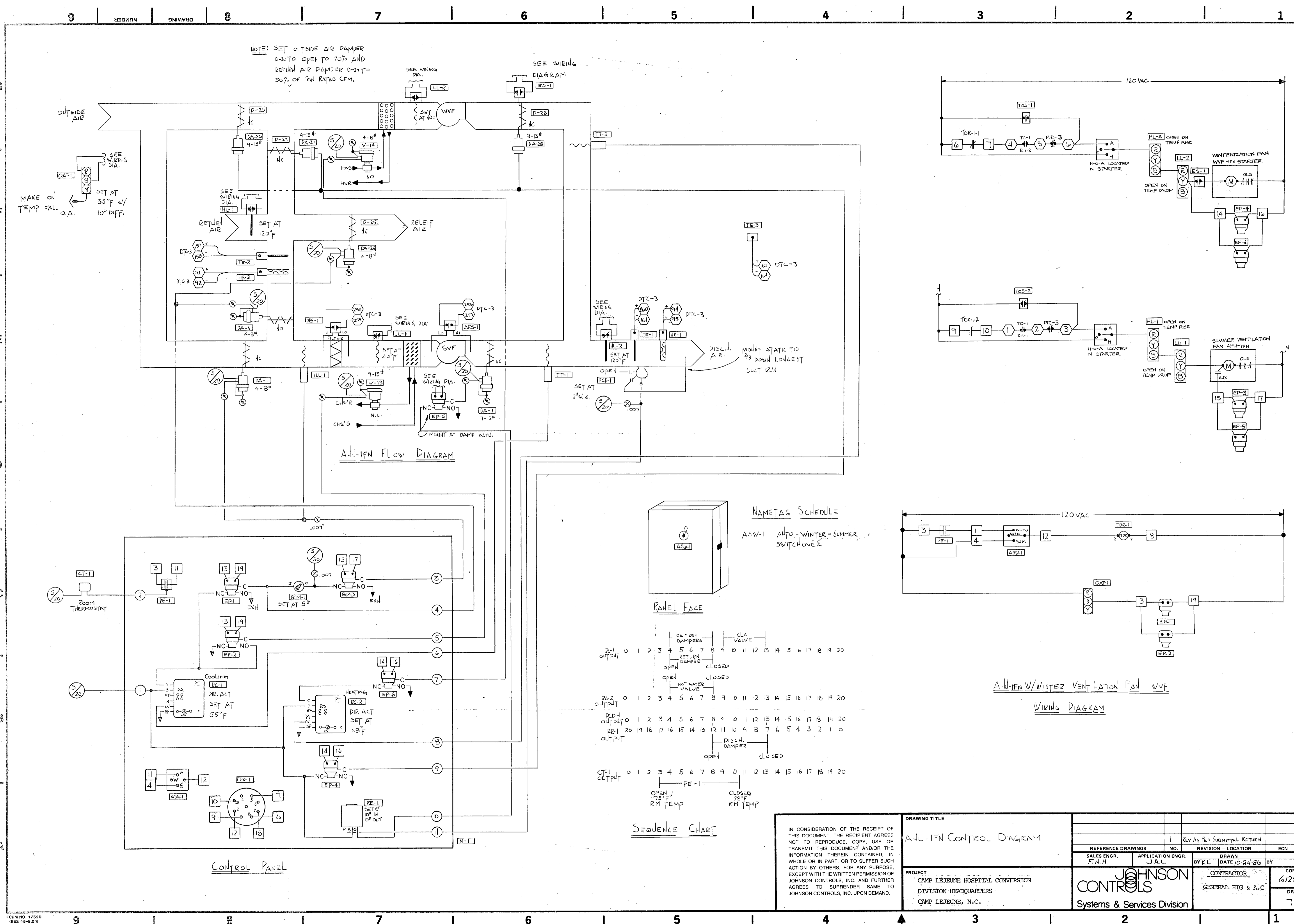
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RA-2 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RD-1 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RD-2 OUTPUT	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CT-1 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	



AHU-105 WINTER VENTILATION FAN WVF WIRING DIAGRAM

DRAWING TITLE		AHU-105 CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REV'S FOR SUBMITTAL RETURN	DATE
SALES ENGR.	APPLICATION ENGR.	REVISION - LOCATION	ECN
F.N.H.	J.A.L.	DRAWN	DATE
PROJECT		CONTRACTOR	
CAMP LEJEUNE HOSPITAL CONVERSION		JOHNSON CONTROLS	
DIVISION HEADQUARTERS		GENERAL HTG & A.C.	
CAMP LEJEUNE, N.C.		CONTRACT NUMBER	
		6128-0080	
		DRAWING NUMBER	
		6 OF 40	

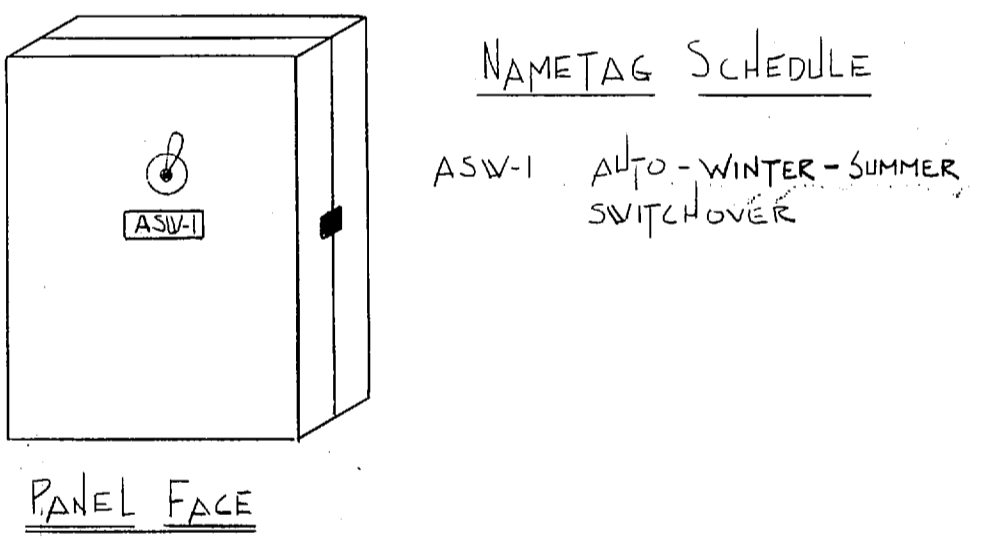
22" X 34" ORIGINAL



MAKE ON TEMP FALL O.A. SET AT 55°F w/ 10° DIFF.

NOTE: SET OUTSIDE AIR DAMPER D-20 TO OPEN TO 70% AND RETURN AIR DAMPER D-21 TO 30% OF FAN RATED CFM.

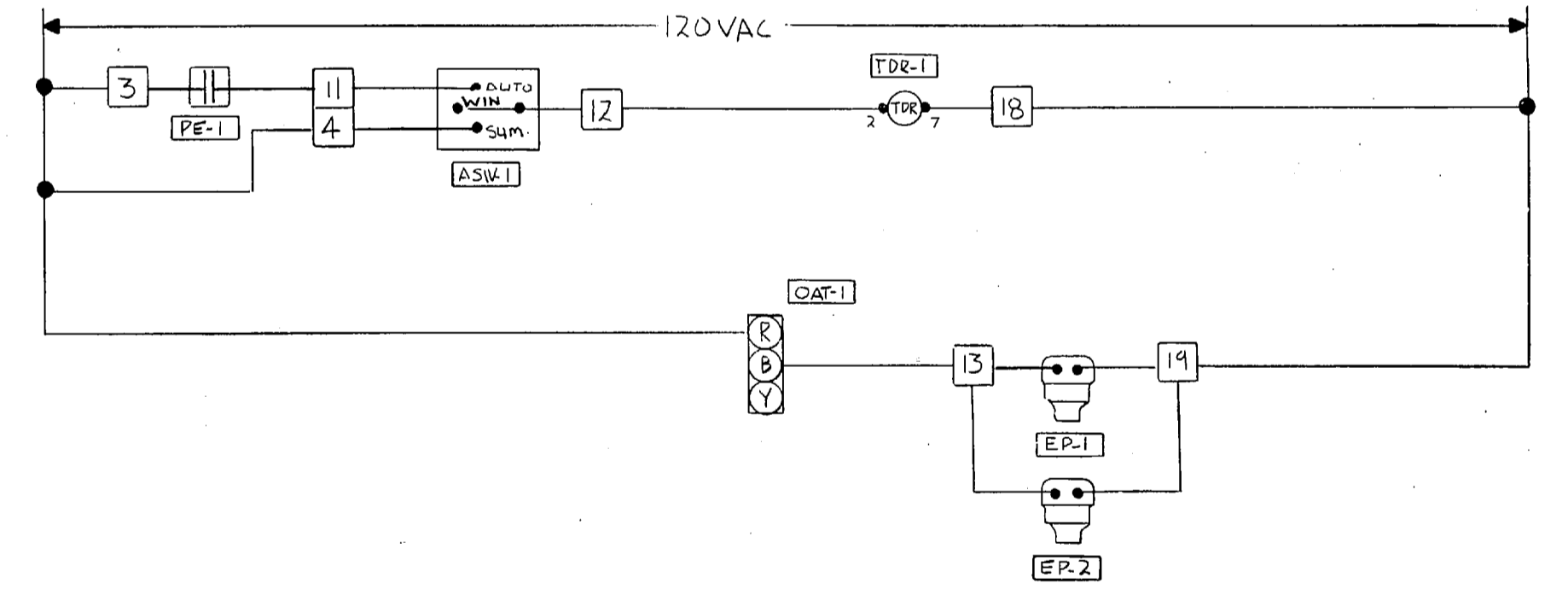
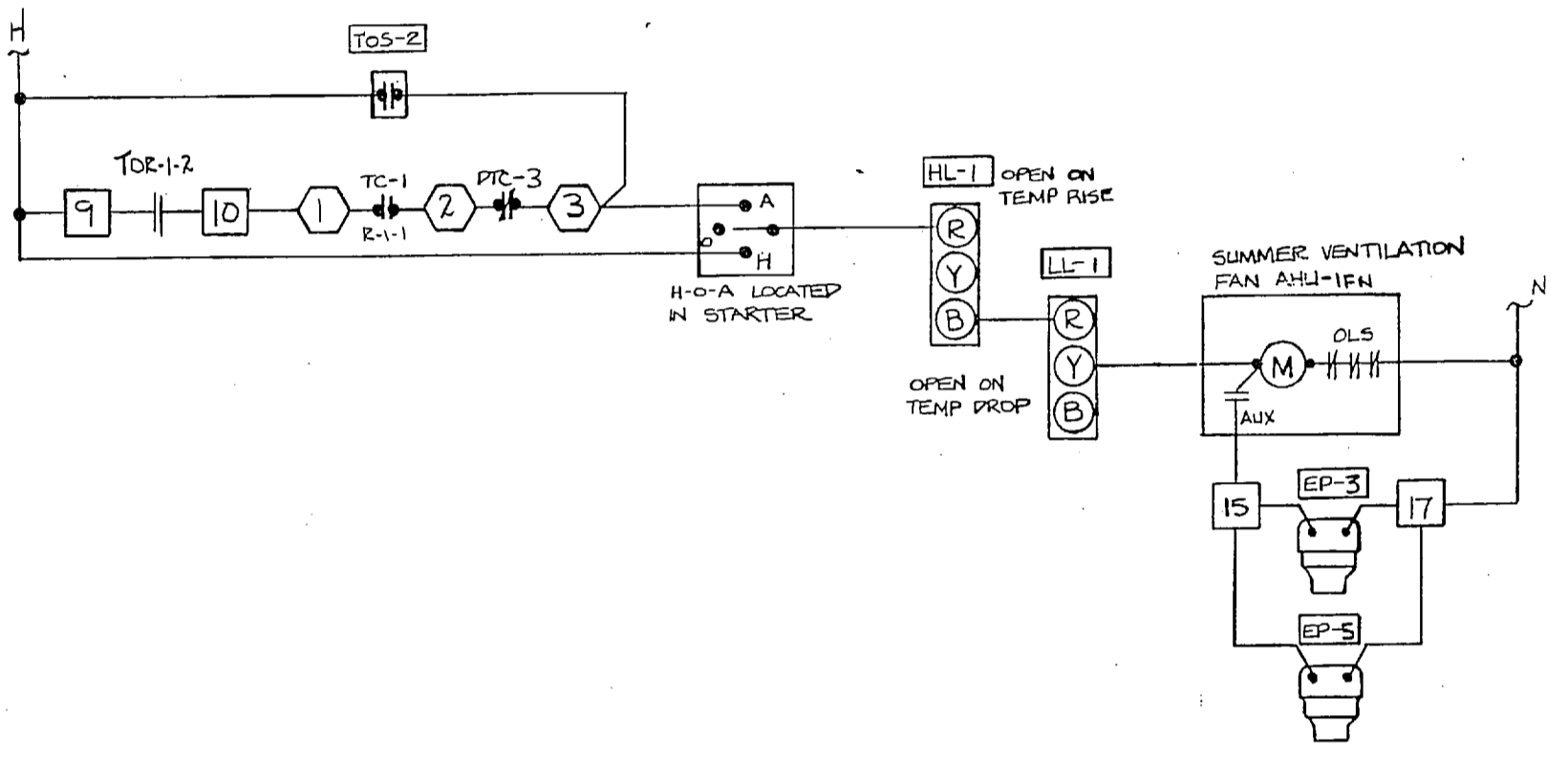
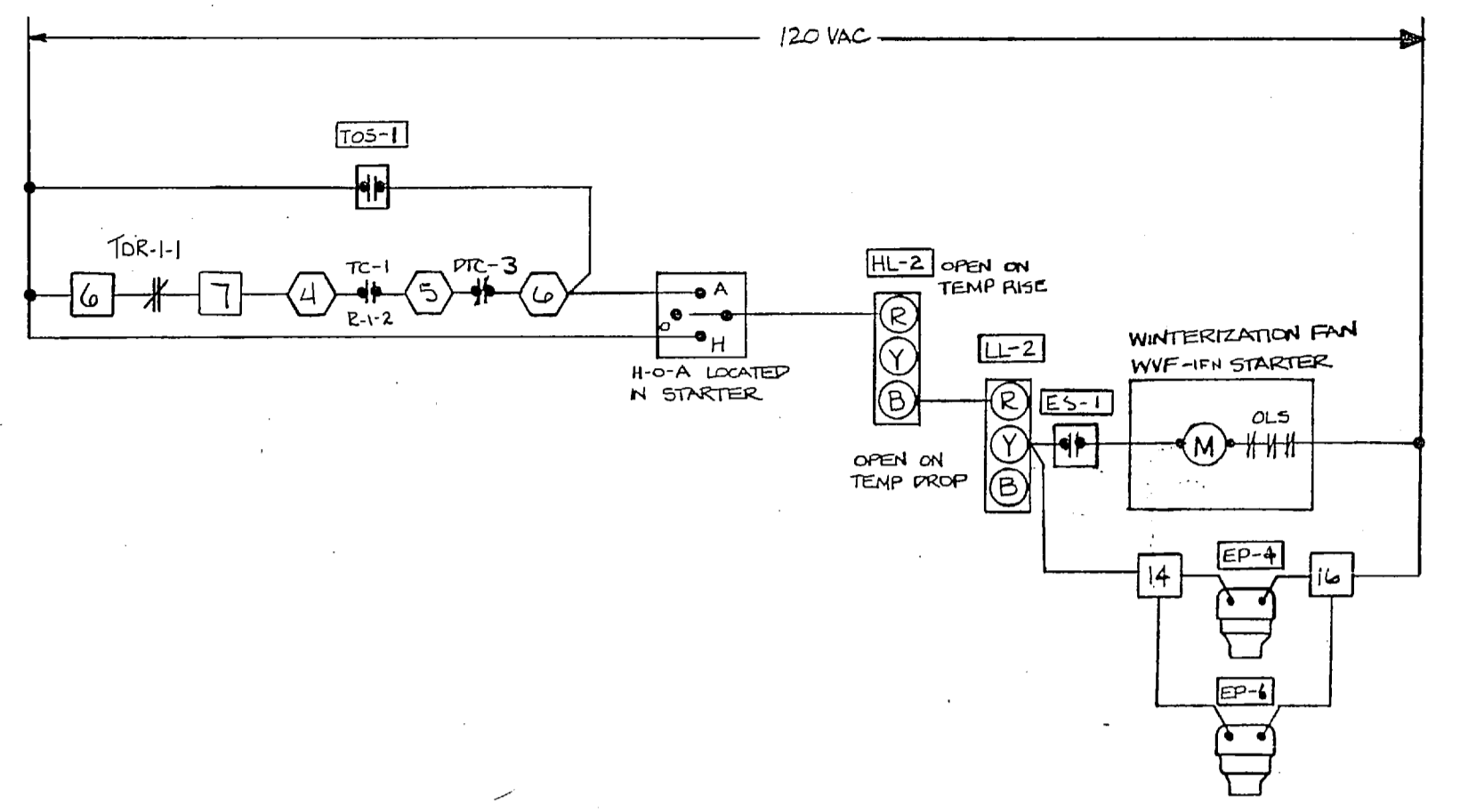
AHU-1FN FLOW DIAGRAM



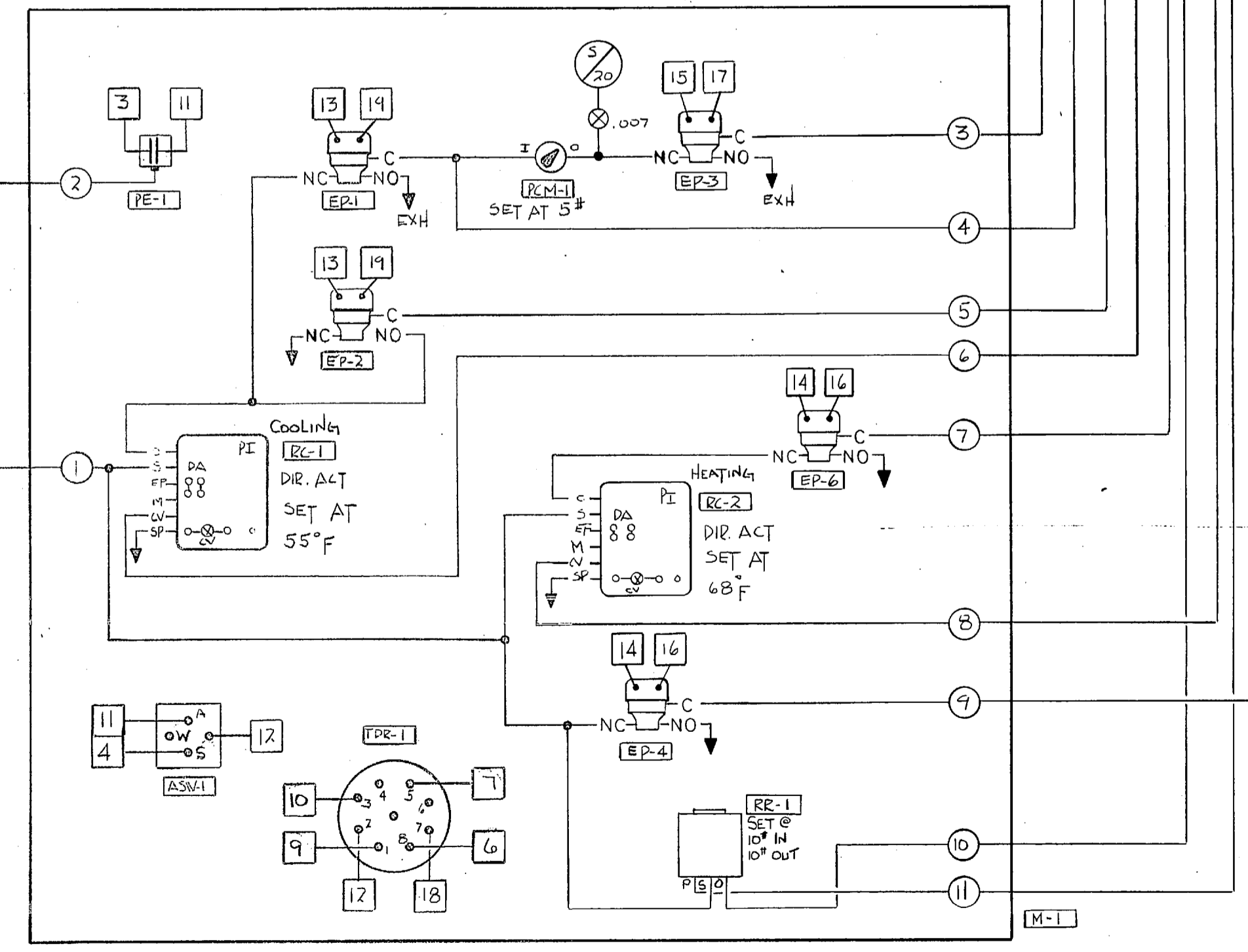
NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RD-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
CF-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	



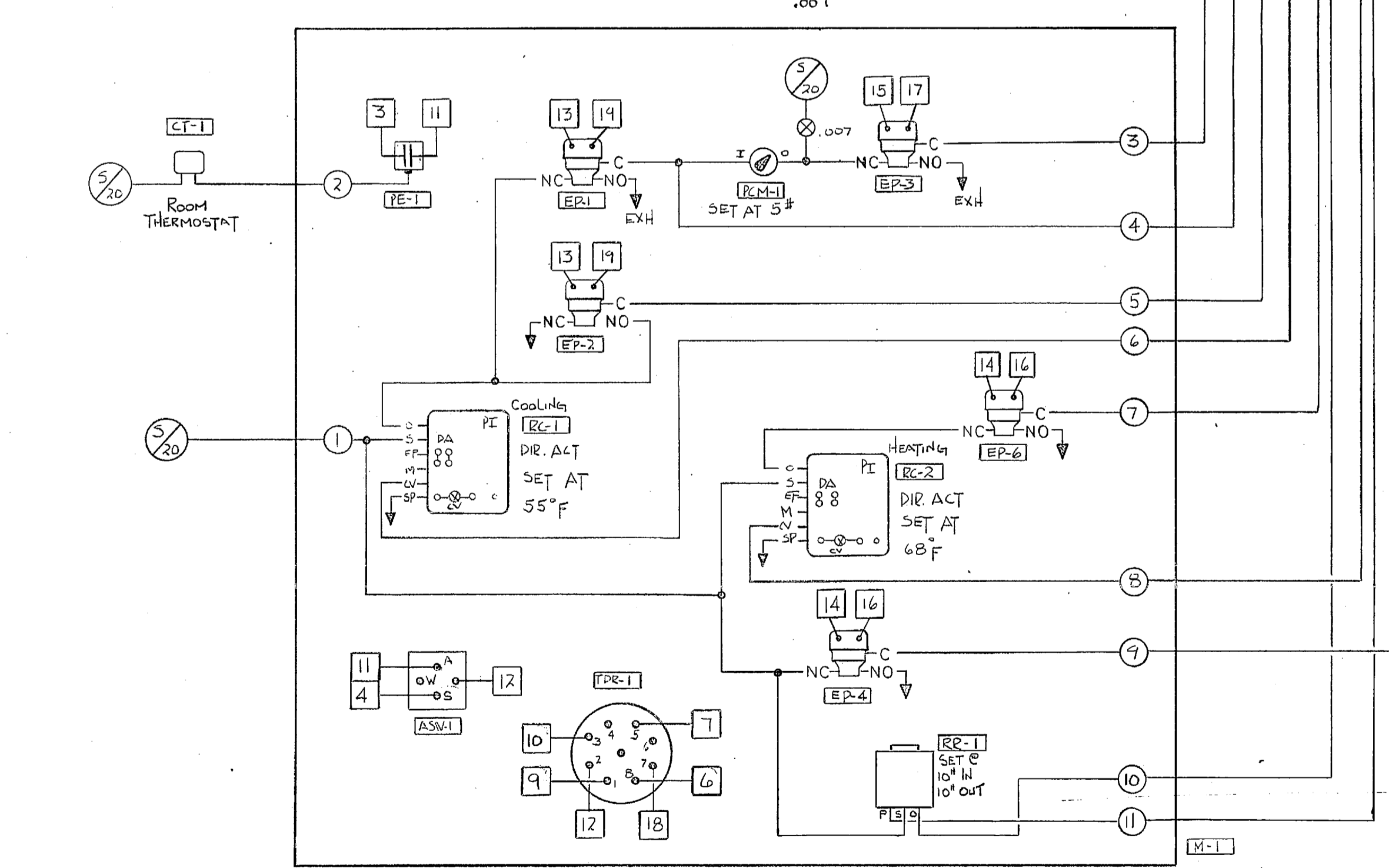
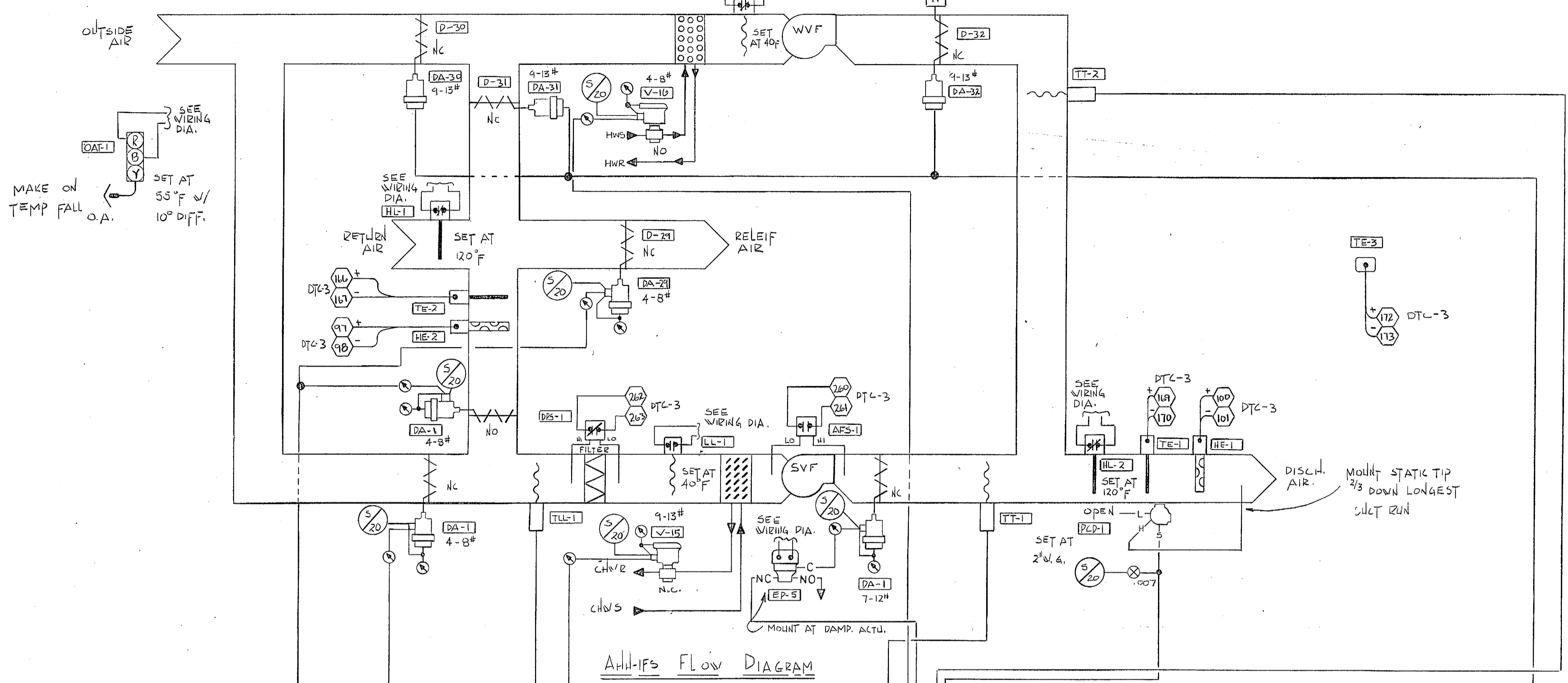
AHU-1FN W/WINTER VENTILATION FAN WVF
WIRING DIAGRAM



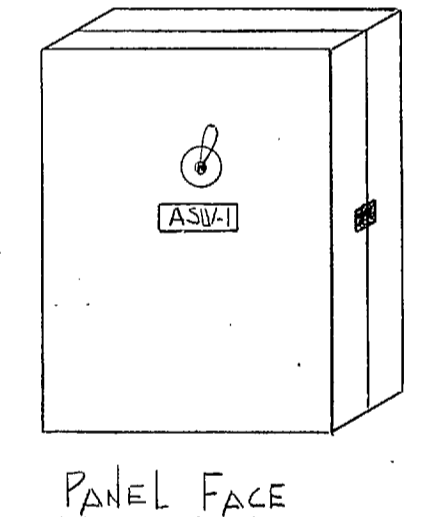
CONTROL PANEL

DRAWING TITLE		AHU-1FN CONTROL DIAGRAM	
REFERENCE DRAWINGS NO.	1	Rev As Per Submittal Return	2-12-87
SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	DRAWN BY K.L.	DATE 10-24-80
PROJECT		CONTRACTOR	
CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		JOHNSON CONTROLS Systems & Services Division GENERAL HIG & A.C.	
CONTRACT NUMBER		DRAWING NUMBER	
6128-0080		7 of 40	

NOTE: SET OUTSIDE AIR DAMPER D-30 TO OPEN TO 70% AND RETURN AIR DAMPER D-31 TO 30% OF FAN RATED CFM.



CONTROL PANEL

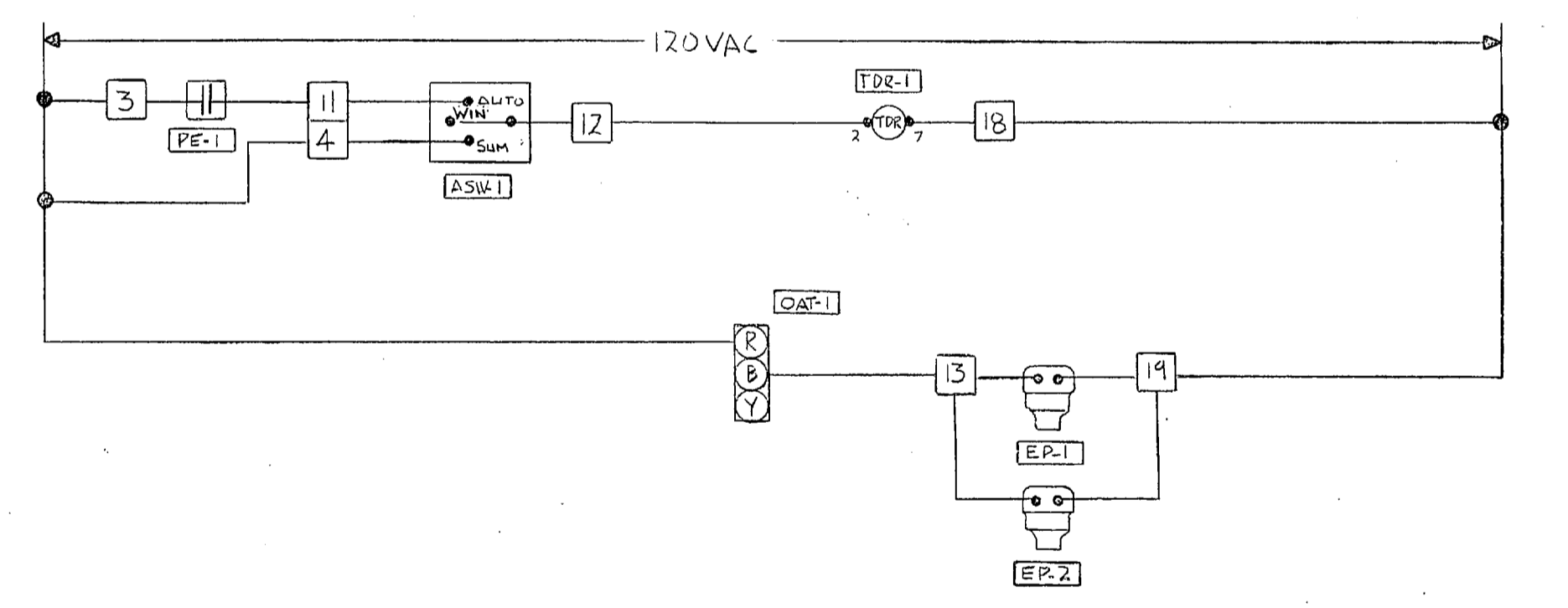
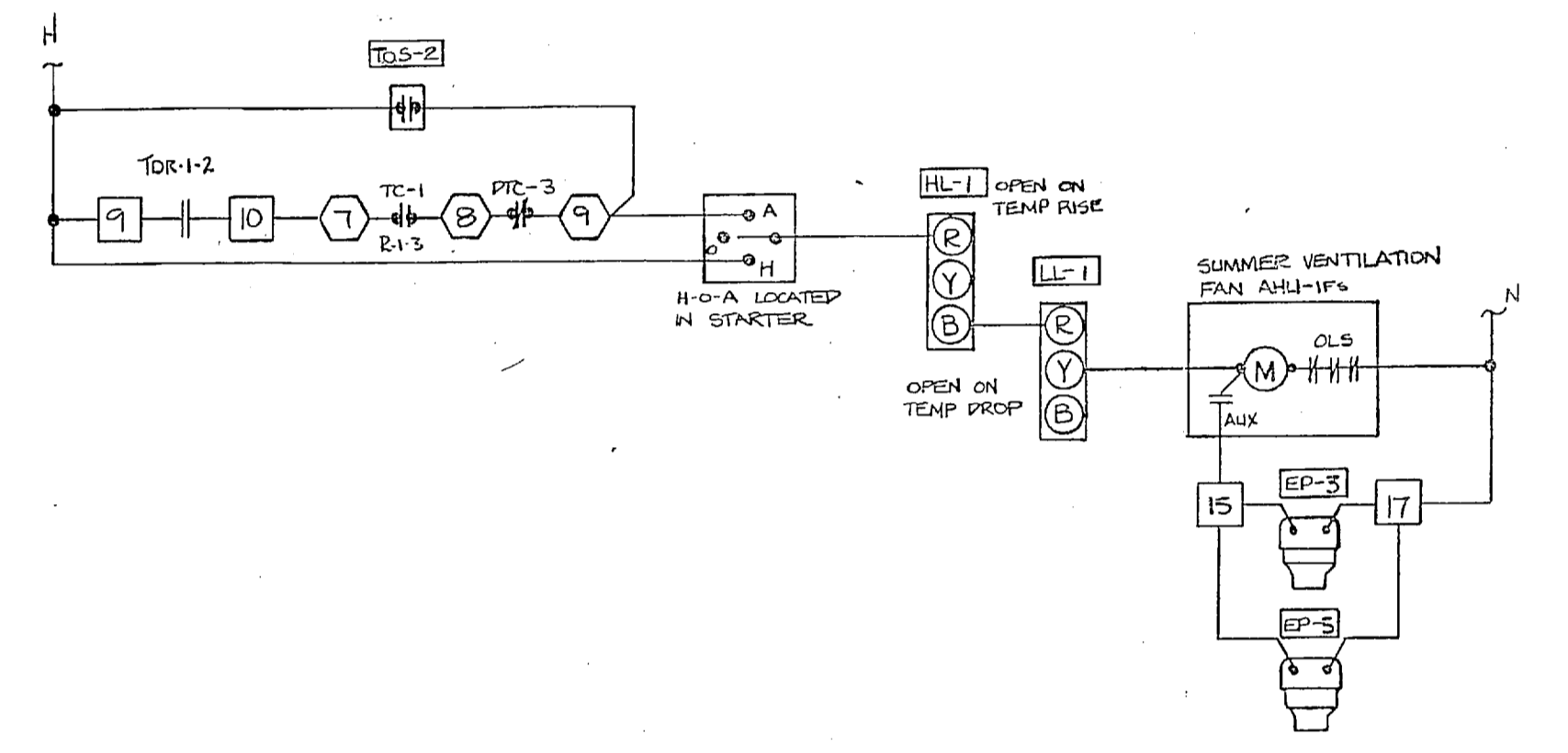
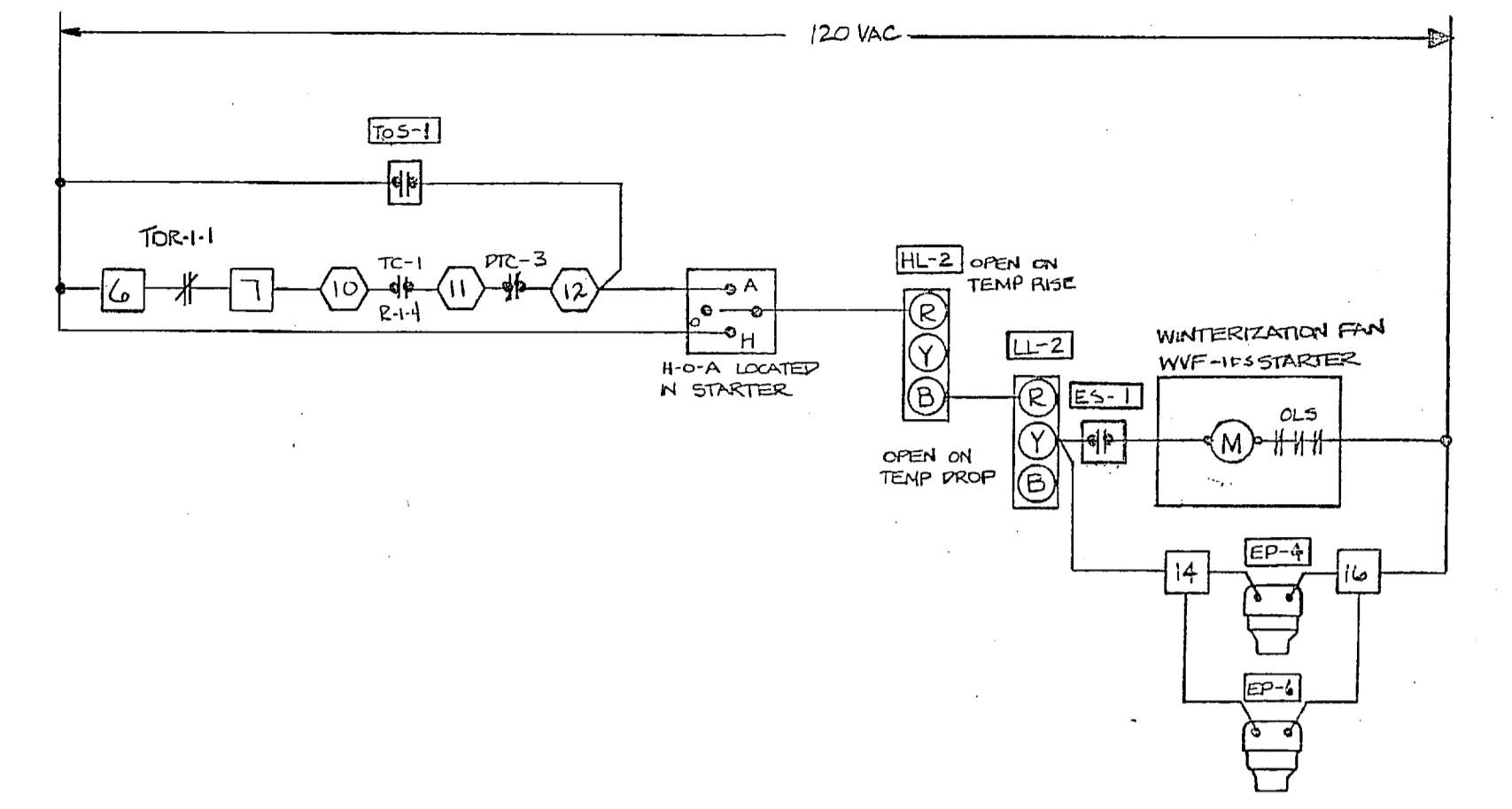


PANEL FACE

NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

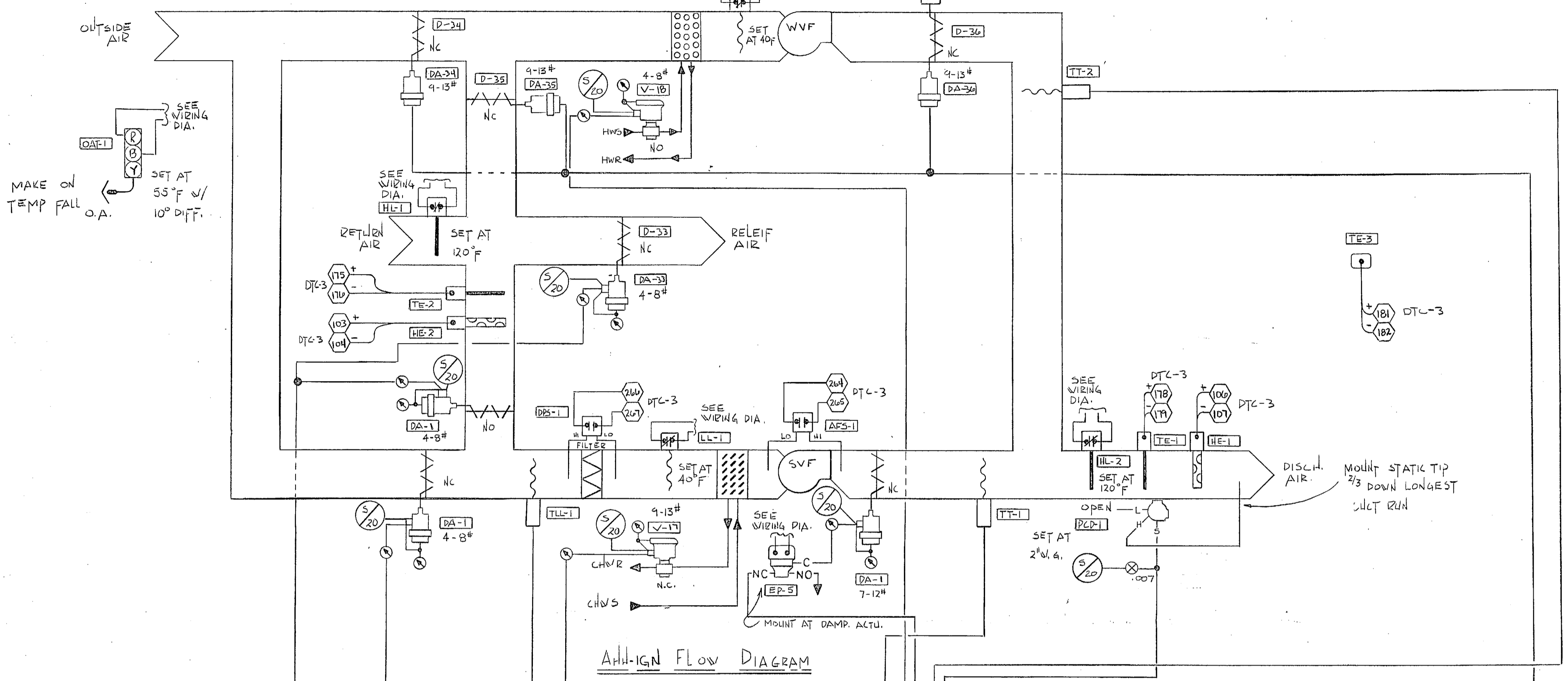
RC-1 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RC-2 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RD-1 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RR-1 OUTPUT	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CT-1 OUTPUT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	



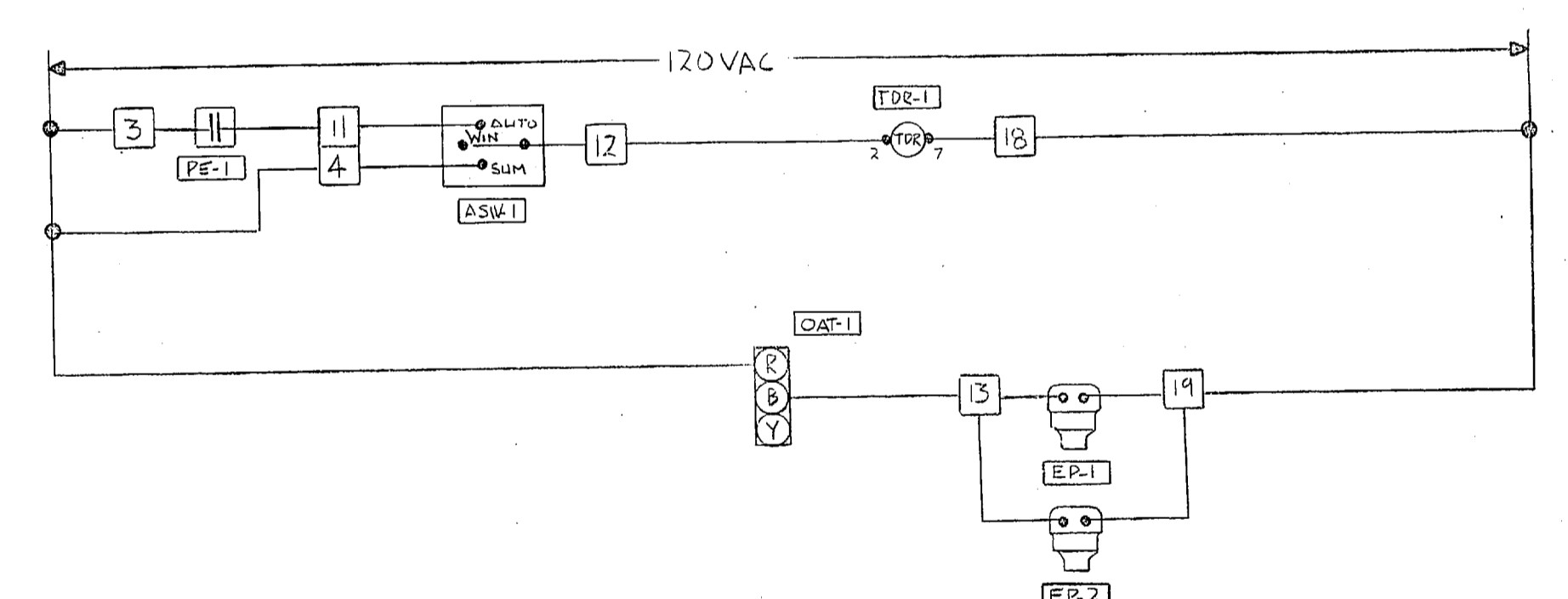
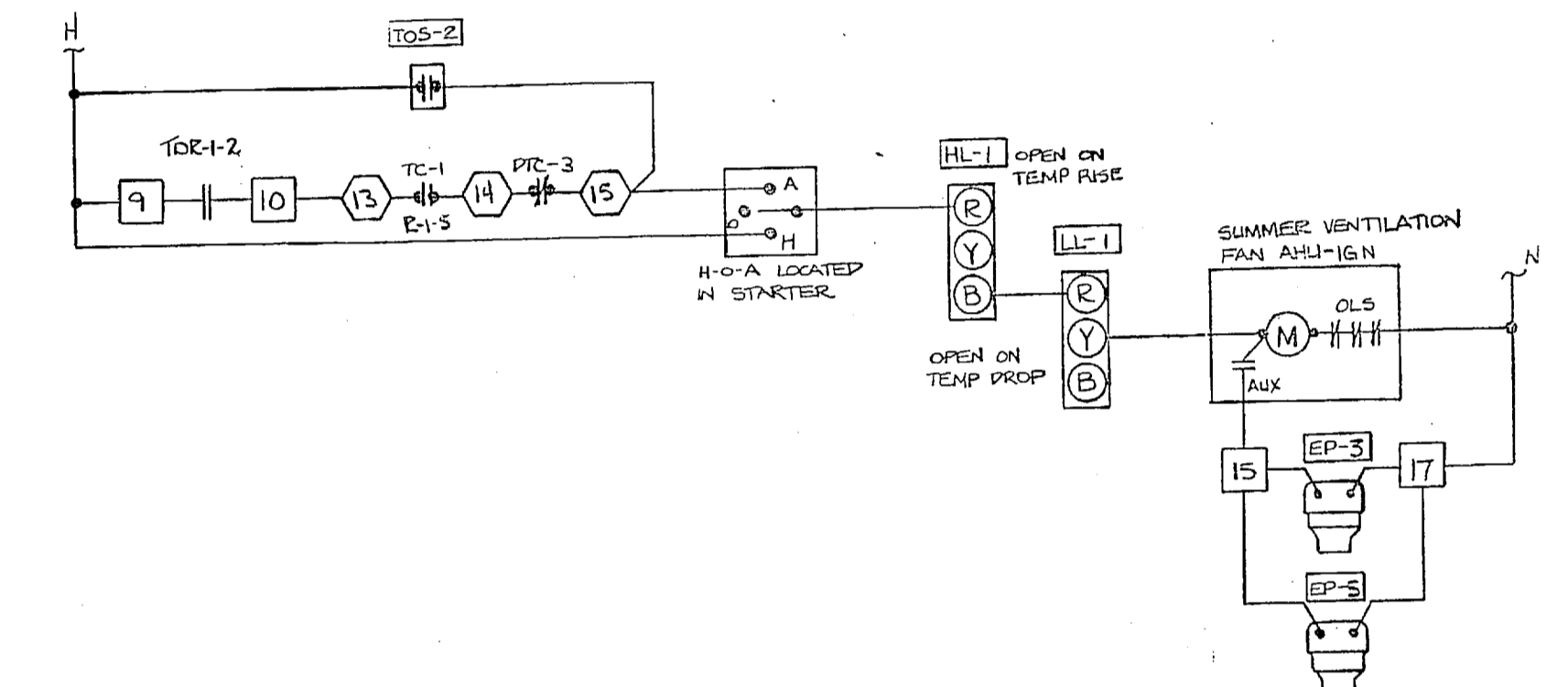
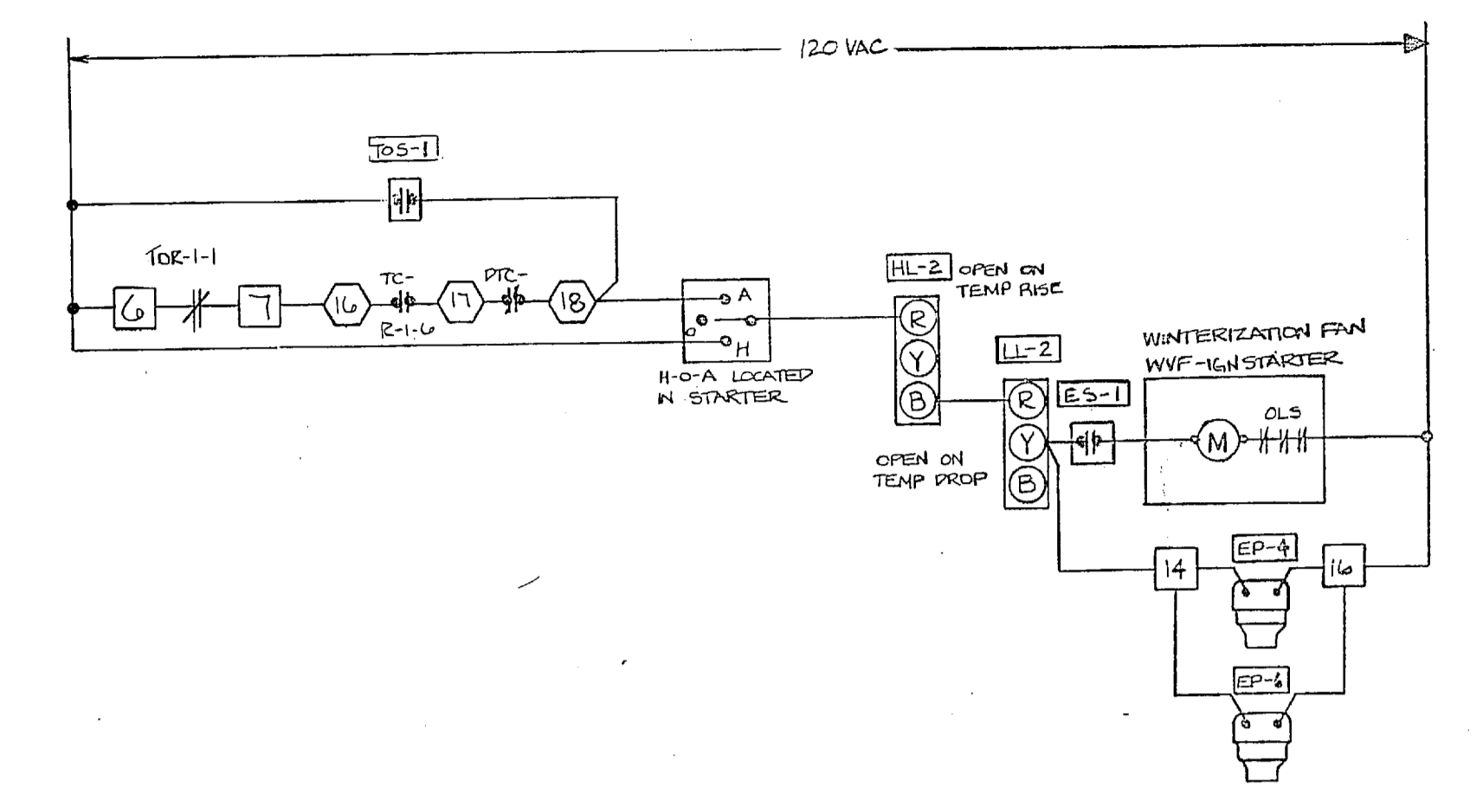
AHU-1FS W/WINTER VENTILATION FAN WVF
WIRING DIAGRAM

DRAWING TITLE		AHU-1FS CONTROL DIAGRAM	
PROJECT		CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.	
CONTRACTOR		JOHNSON CONTROLS Systems & Services Division	
REFERENCE DRAWINGS		NO. 1 Rev As Per SUBMITTAL RETURN	
SALES ENGR.		APPLICATION ENGR.	
F.N.H.		J.A.L.	
DATE		DATE 10-27-86	
BY		BY	
DATE		DATE	
CONTRACT NUMBER		6128-0080	
DRAWING NUMBER		8 OF 40	

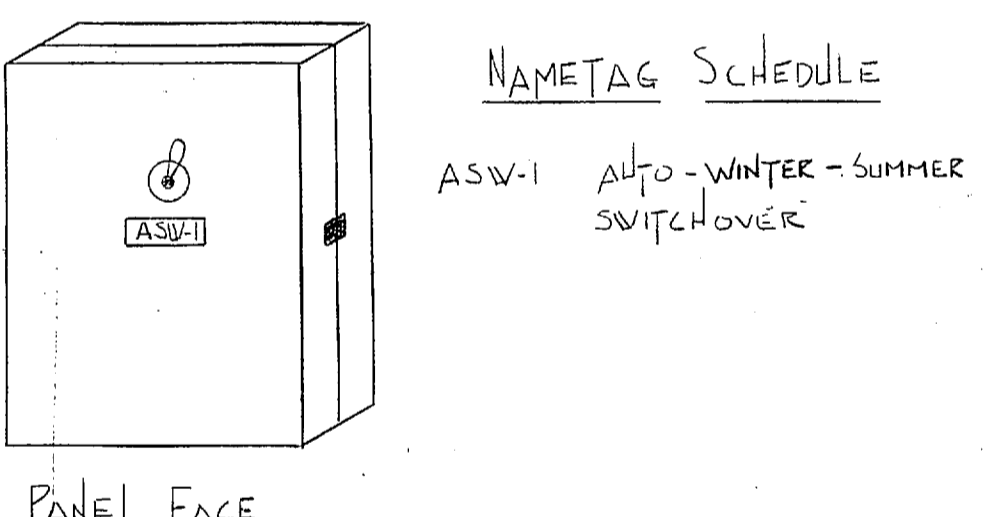
NOTE: SET OUTSIDE AIR DAMPER D-34 TO OPEN TO 70% AND RETURN AIR DAMPER D-35 TO 30% OF FAN RATED CFM.



AHU-IGN FLOW DIAGRAM



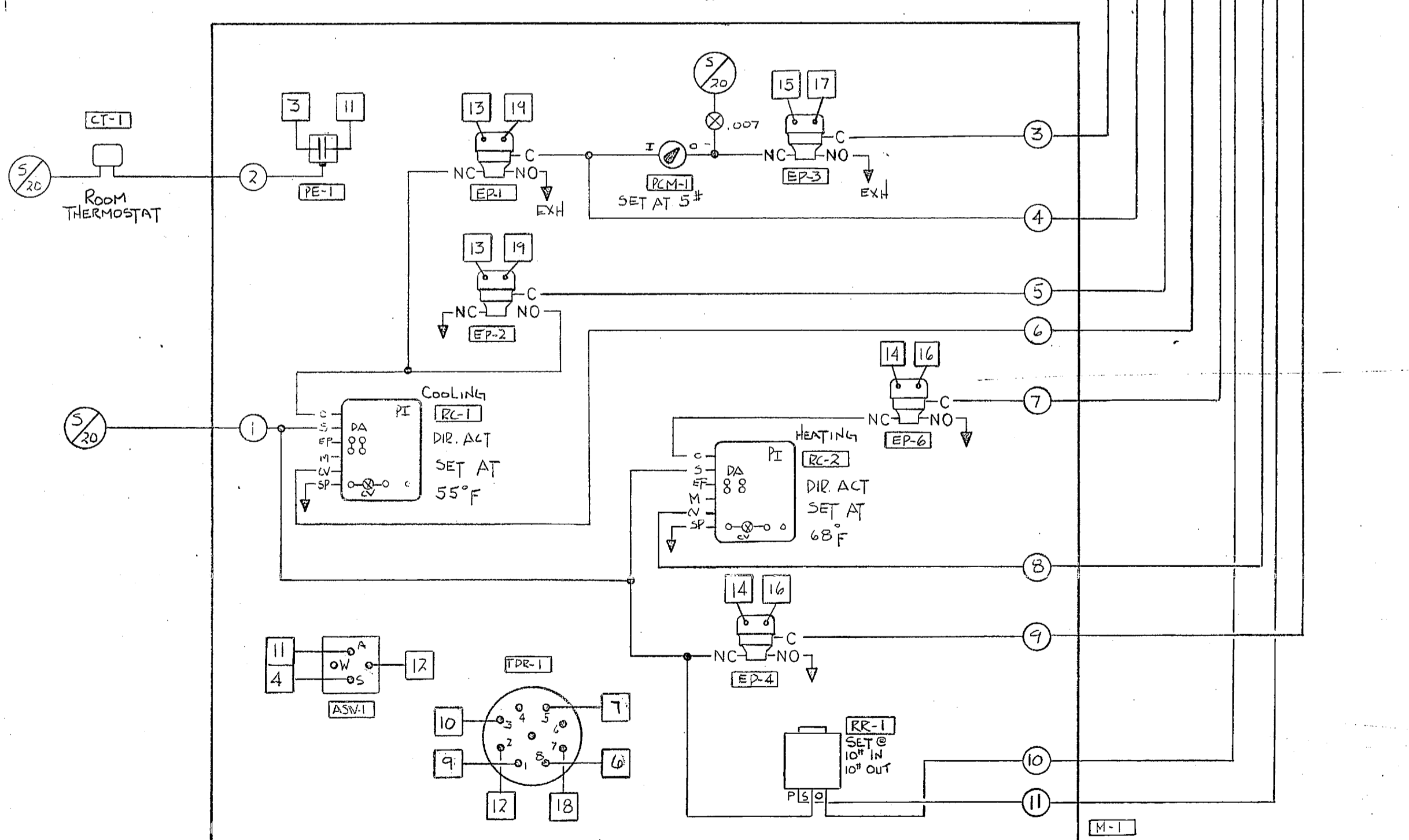
AHU-IGN/WINTER VENTILATION FAN WVF WIRING DIAGRAM



NAMETAG SCHEDULE ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

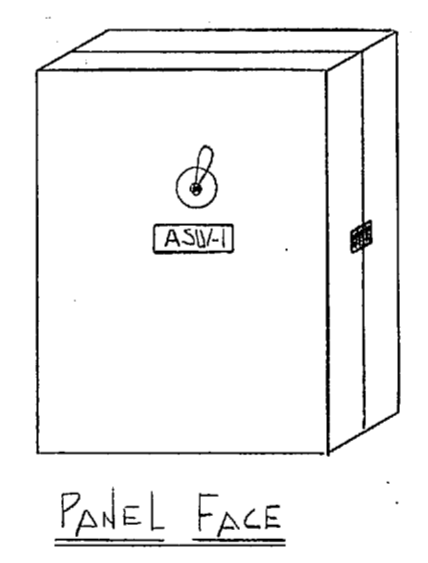
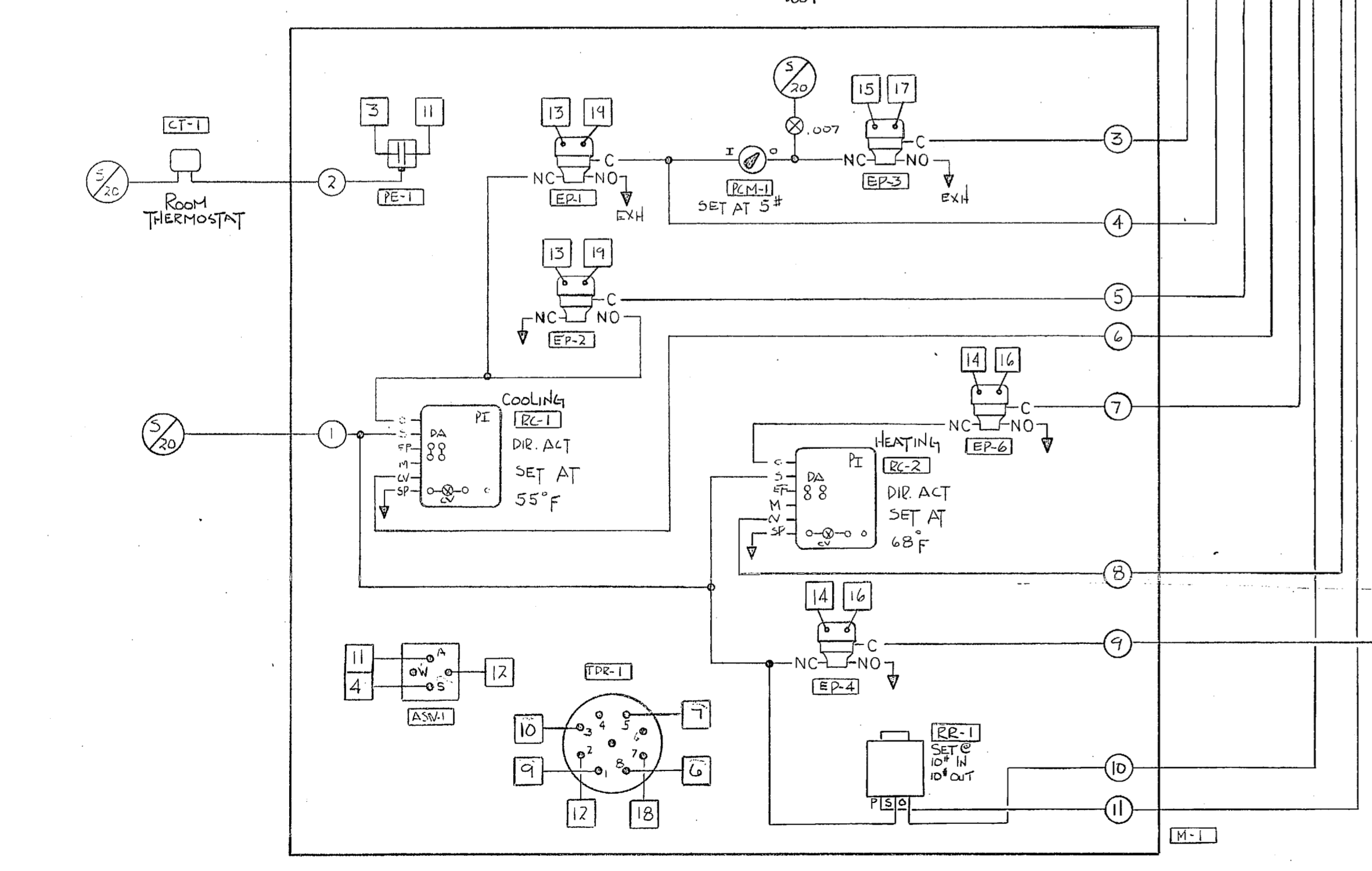
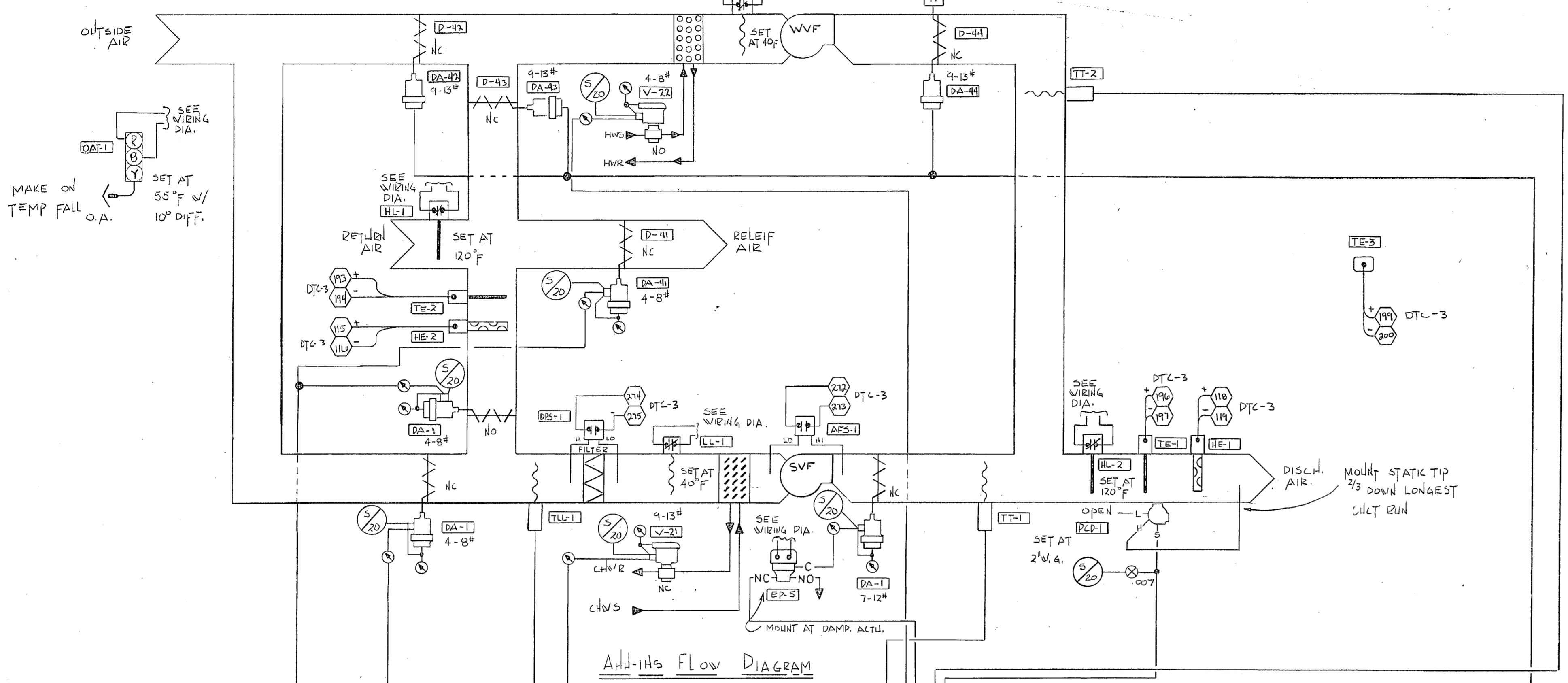
RC1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RC2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RD-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CT-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



CONTROL PANEL

DRAWING TITLE		AHU-IGN CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	ECN
SALES ENGR.	F.N.H.	APPLICATION ENGR.	J.A.L.
PROJECT		CONTRACTOR	
CAMP LEBLANC HOSPITAL CONVERSION		JOHNSON CONTROLS	
DIVISION HEADQUARTERS		GENERAL ENG & A.C.	
CAMP LEBLANC, N.C.		Systems & Services Division	
DATE		DATE	
2-12-87		10-24-86	
DATE		DATE	
2-12-87		10-24-86	
CONTRACT NUMBER		CONTRACT NUMBER	
6128-0080		6128-0080	
DRAWING NUMBER		DRAWING NUMBER	
9 OF 40		9 OF 40	

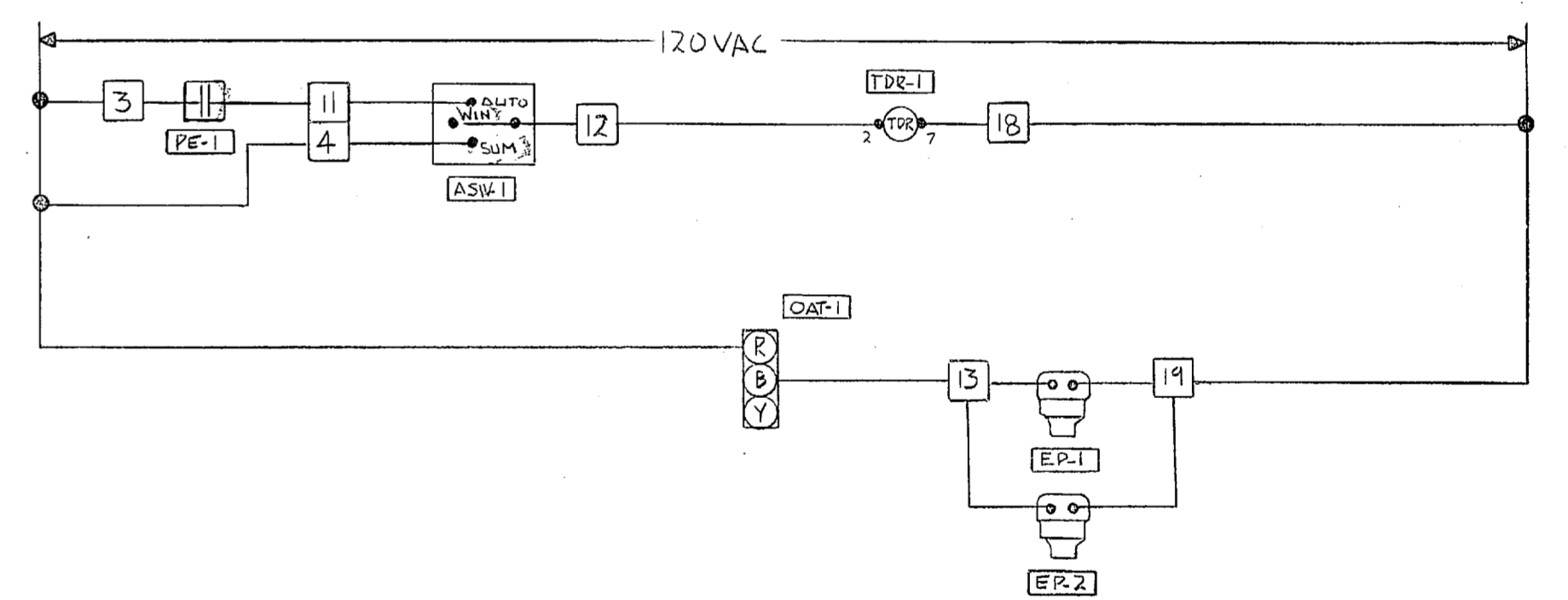
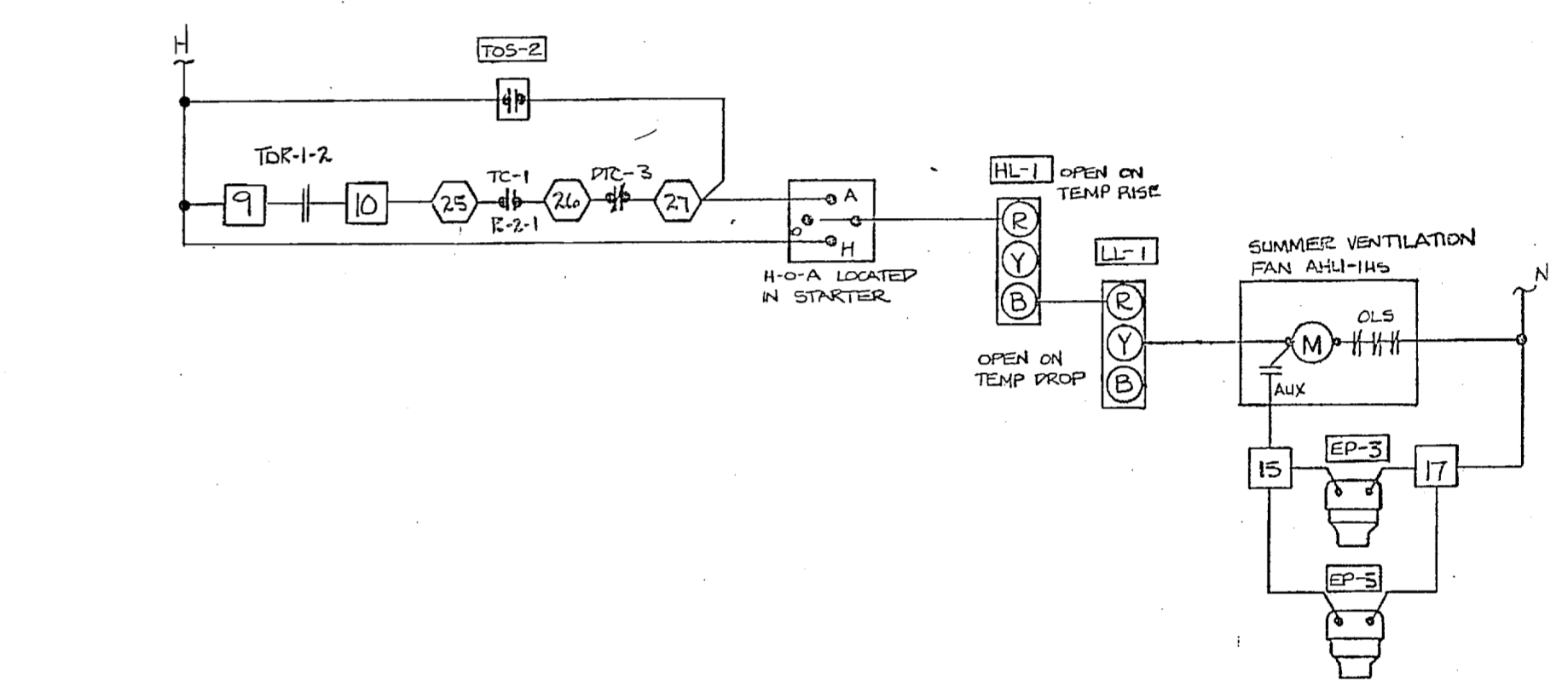
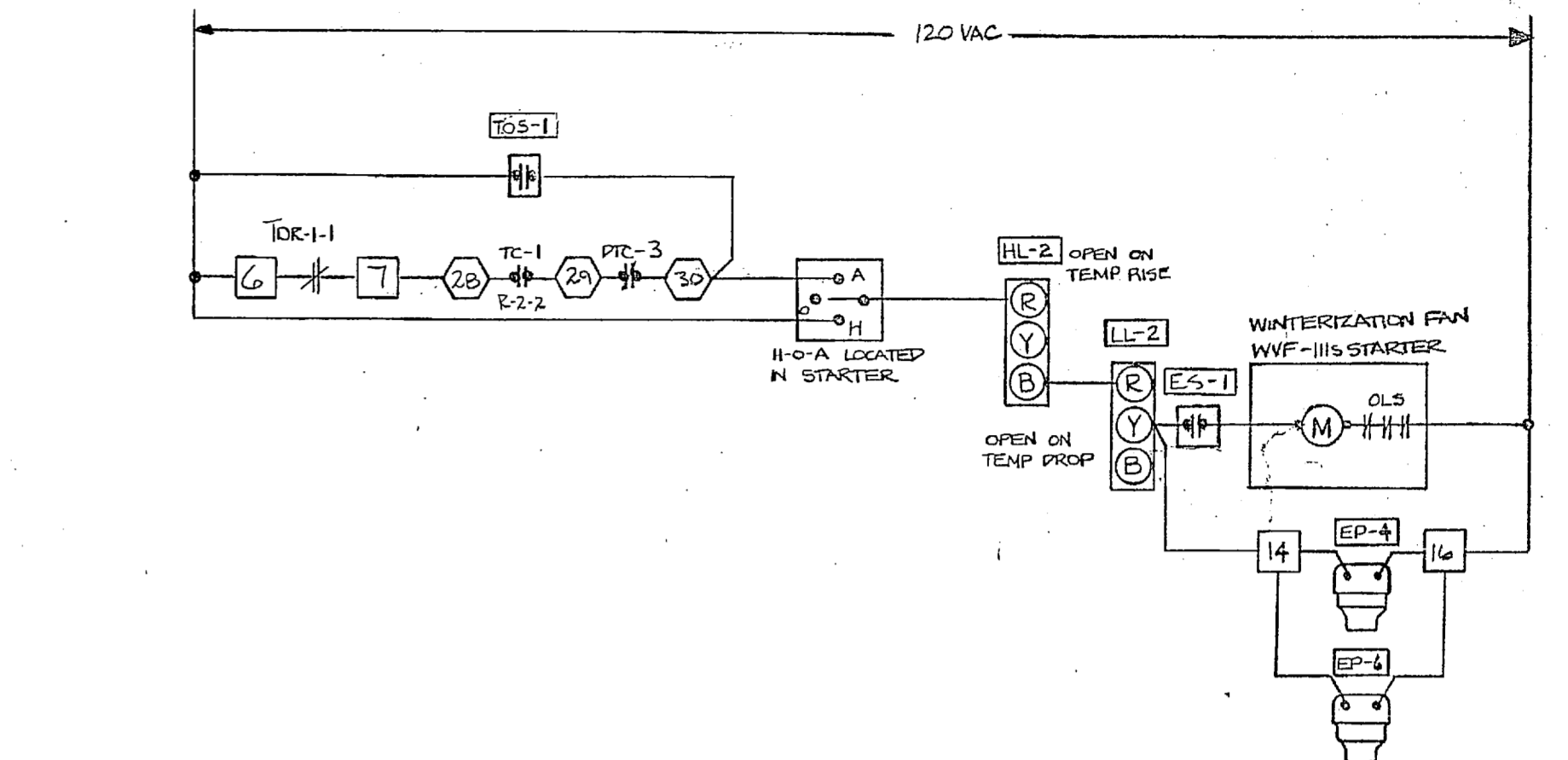
NOTE: SET OUTSIDE AIR DAMPER D-41 TO OPEN TO 70% AND RETURN AIR DAMPER D-43 TO 30% OF FAN RATED CFM.



NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

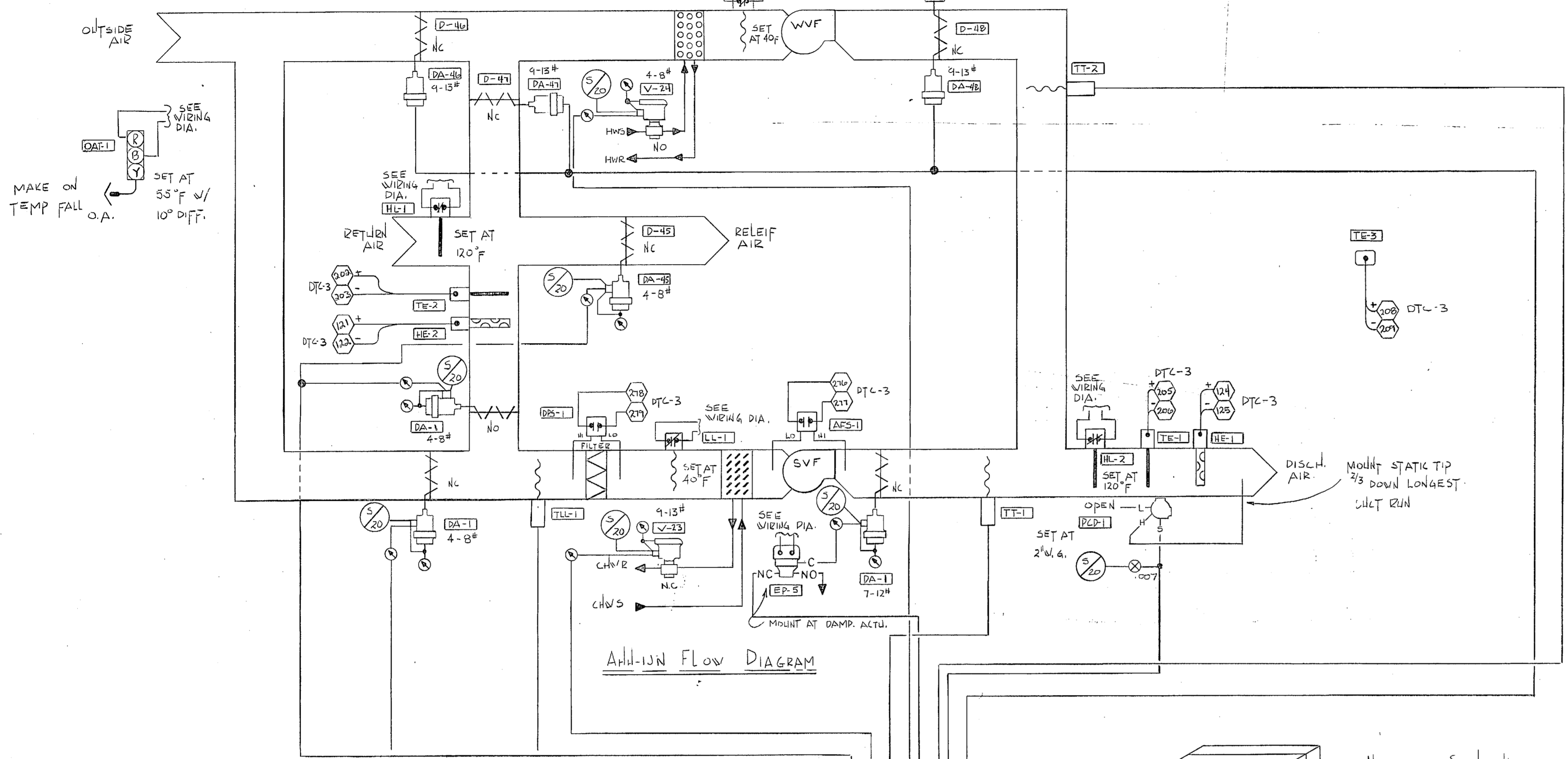
CLG VALVE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RETUR AIR DAMPER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DISCH. DAMPER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PE-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



DRAWING TITLE AHH-IHS CONTROL DIAGRAM		KEY AS PER SUBMITTAL RETURN		DATE	J.L.
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	ECN	DATE	BY
SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	DRAWN BY K.L.	DATE 10-24-86	APPROVED	
PROJECT CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		CONTRACTOR JOHNSON CONTROLS GENERAL HTG & A/C		CONTRACT NUMBER 6128-0080	DRAWING NUMBER 11 OF 40

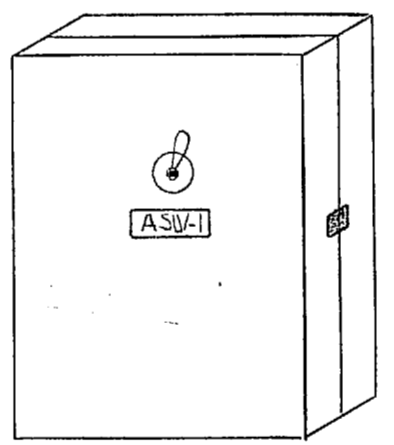
IN CONSIDERATION OF THE RECEIPT OF THIS DOCUMENT THE RECIPIENT AGREES NOT TO REPRODUCE, COPY, USE OR TRANSMIT THIS DOCUMENT AND/OR THE INFORMATION THEREIN CONTAINED, IN WHOLE OR IN PART, OR TO SUFFER SUCH ACTION BY OTHERS, FOR ANY PURPOSE, EXCEPT WITH THE WRITTEN PERMISSION OF JOHNSON CONTROLS, INC. AND FURTHER AGREES TO SURRENDER SAME TO JOHNSON CONTROLS, INC. UPON DEMAND.

NOTE: SET OUTSIDE AIR DAMPER D-46 TO OPEN TO 70% AND RETURN AIR DAMPER D-41 TO 30% OF FAN RATED CFM.



MAKE ON TEMP FALL O.A. SET AT 55°F w/ 10° DIFF.

AHU-1JN FLOW DIAGRAM

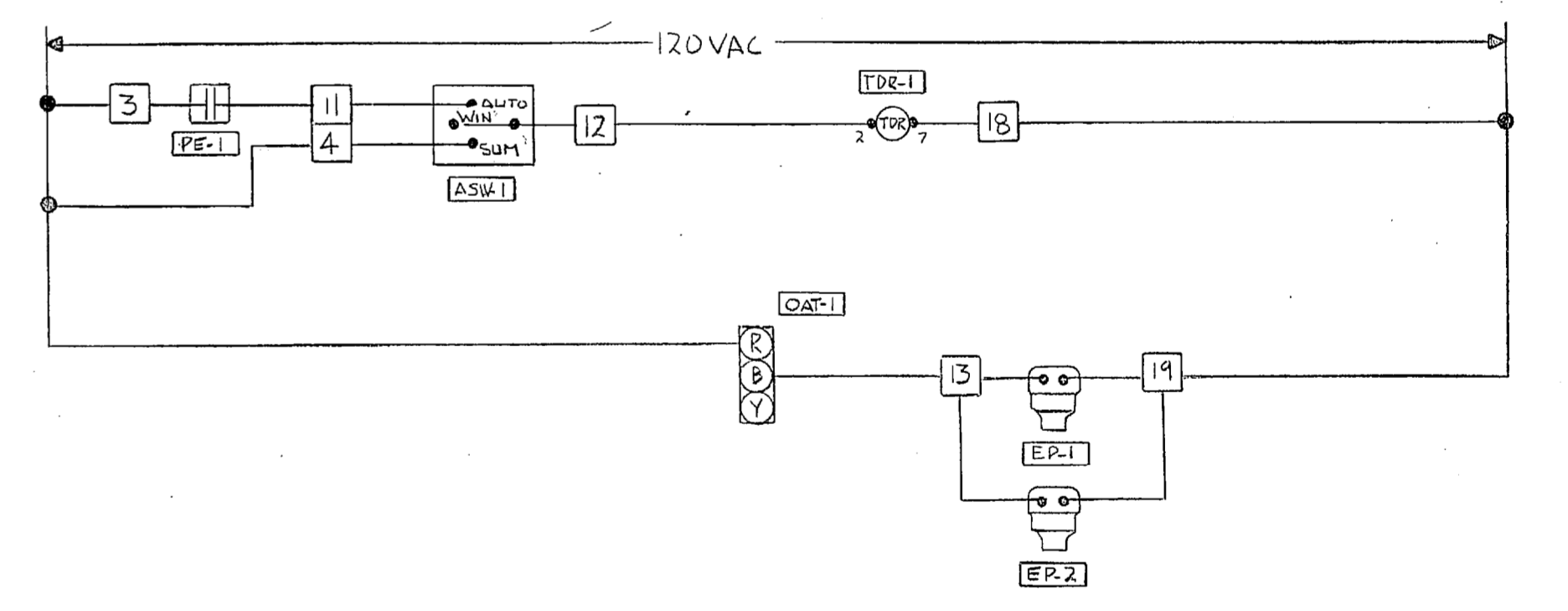
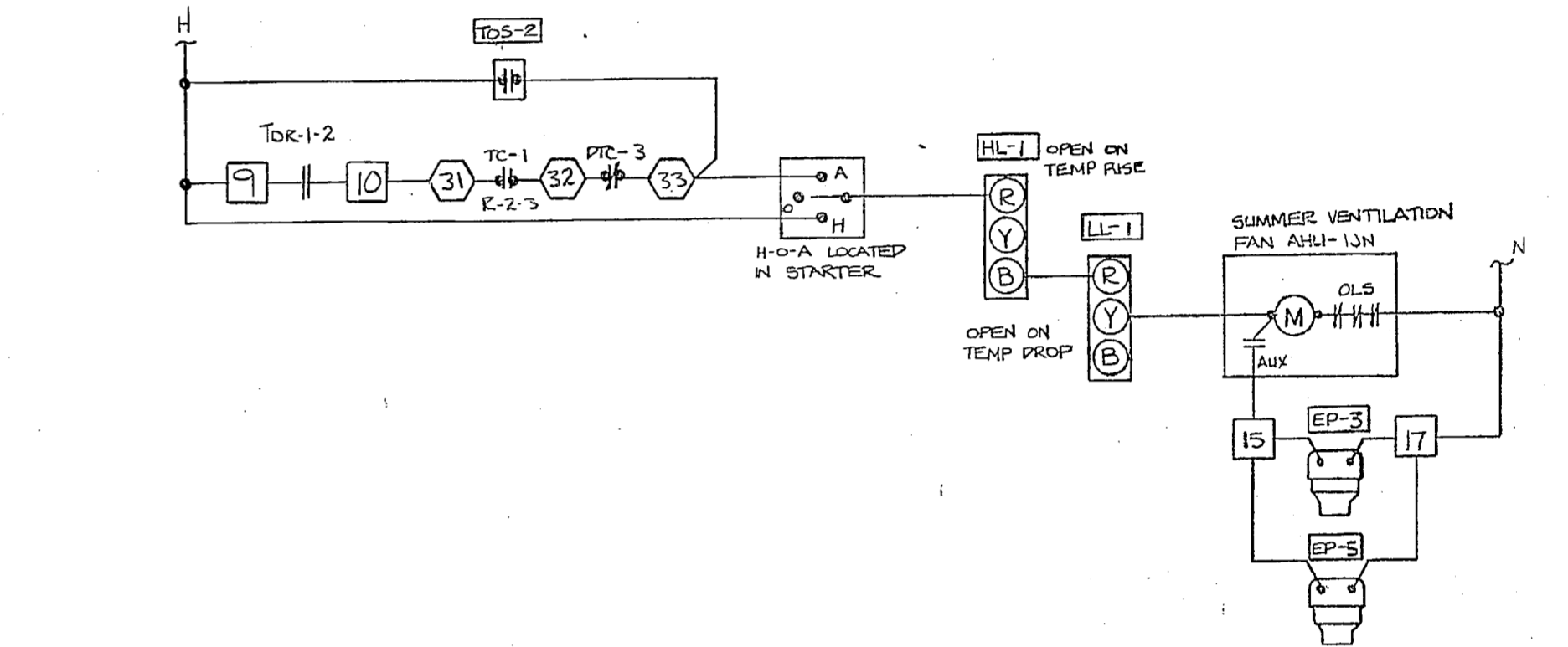
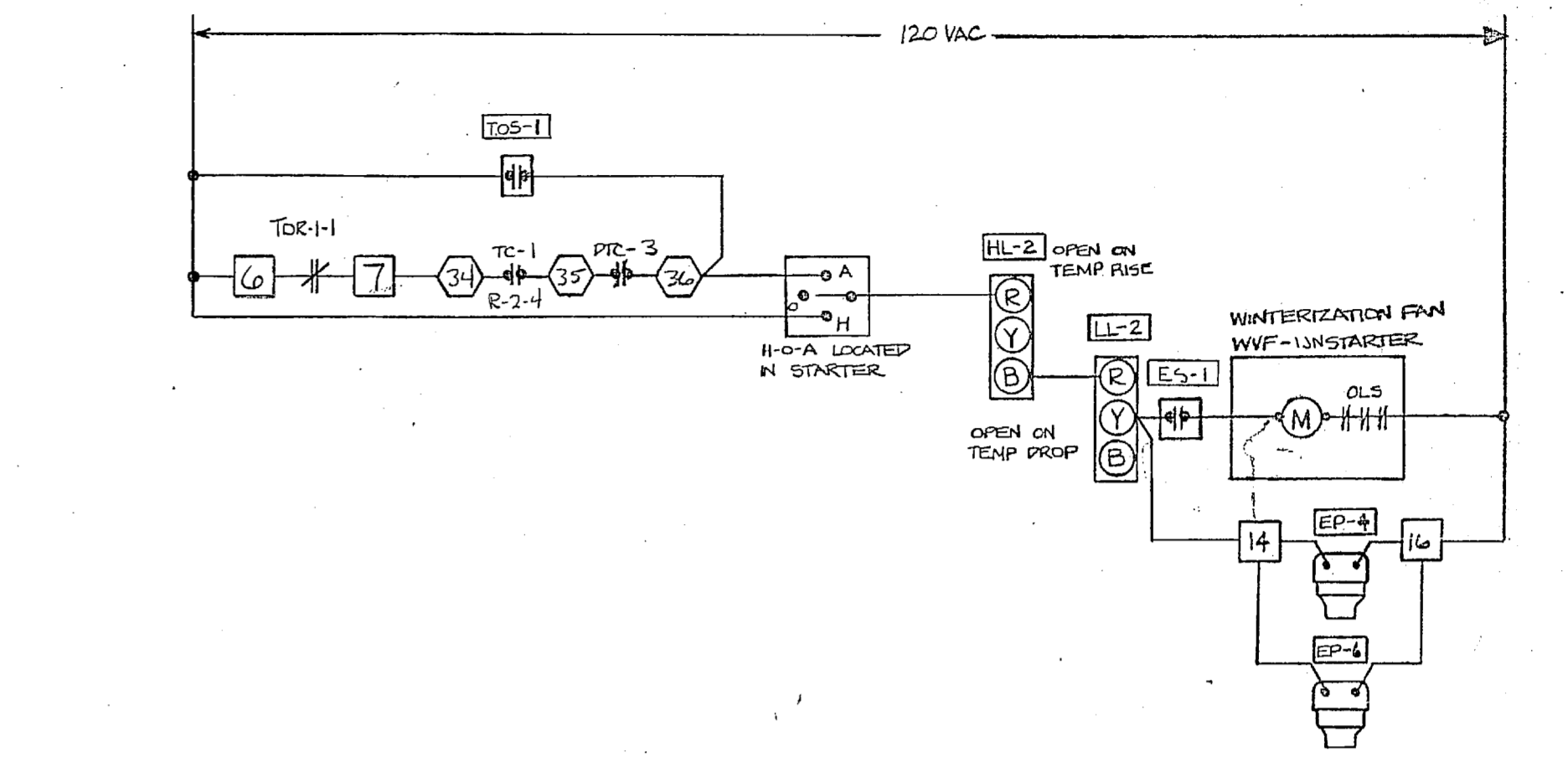


NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

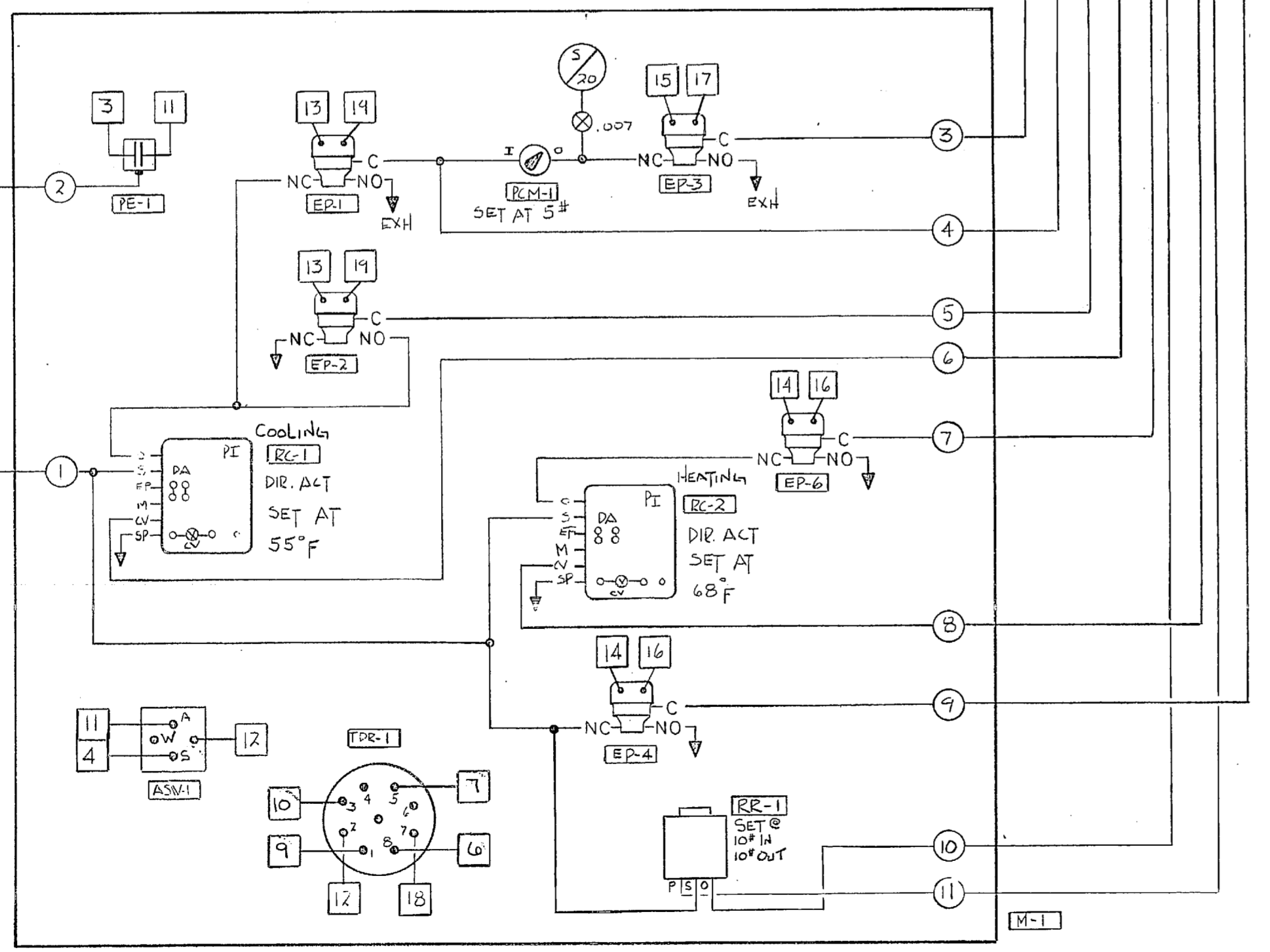
PANEL FACE

R-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	DA-REL DAMPERS	CLG VALVE																			
R-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	RETURN DAMPER	CLOSED																			
R-3 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	DISCH. DAMPER	CLOSED																			
R-4 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	PE-1	CLOSE																			

SEQUENCE CHART



AHU-1JN W/WINTER VENTILATION FAN WVF
WIRING DIAGRAM



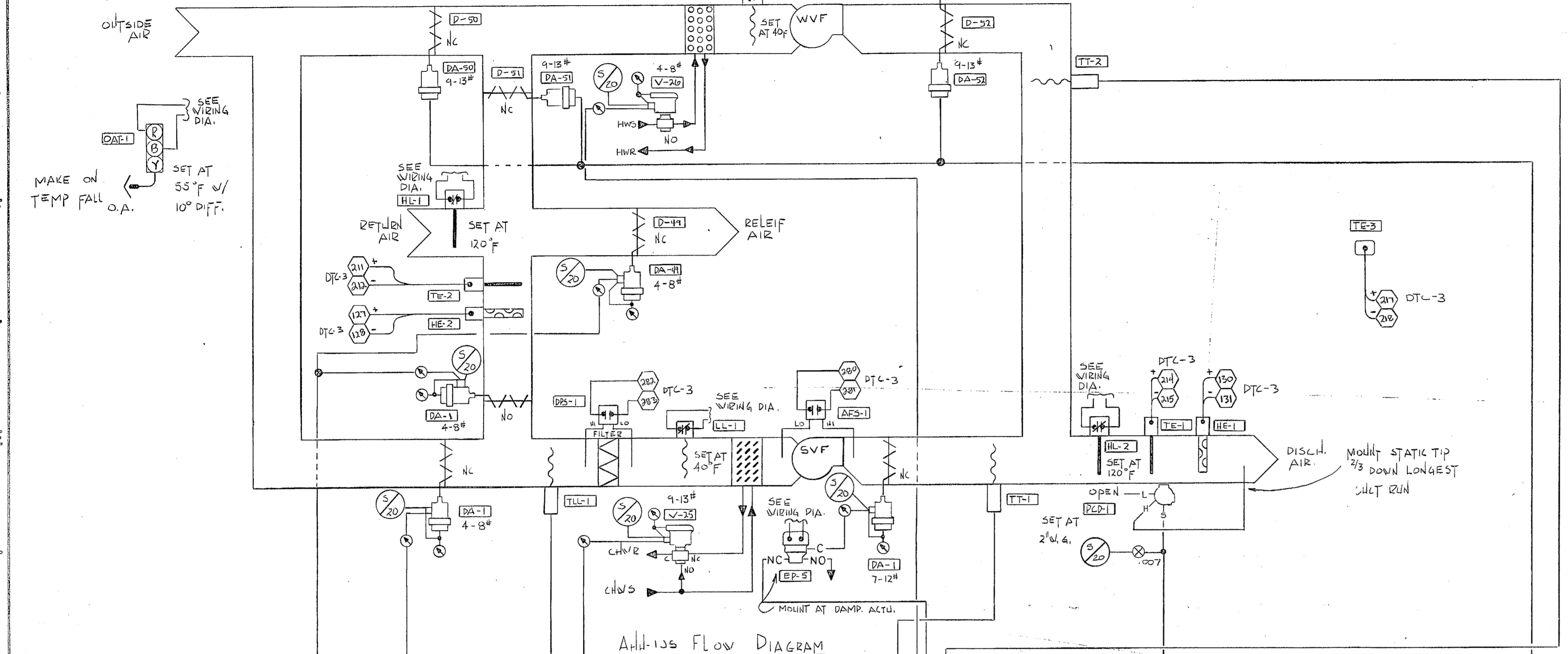
CONTROL PANEL

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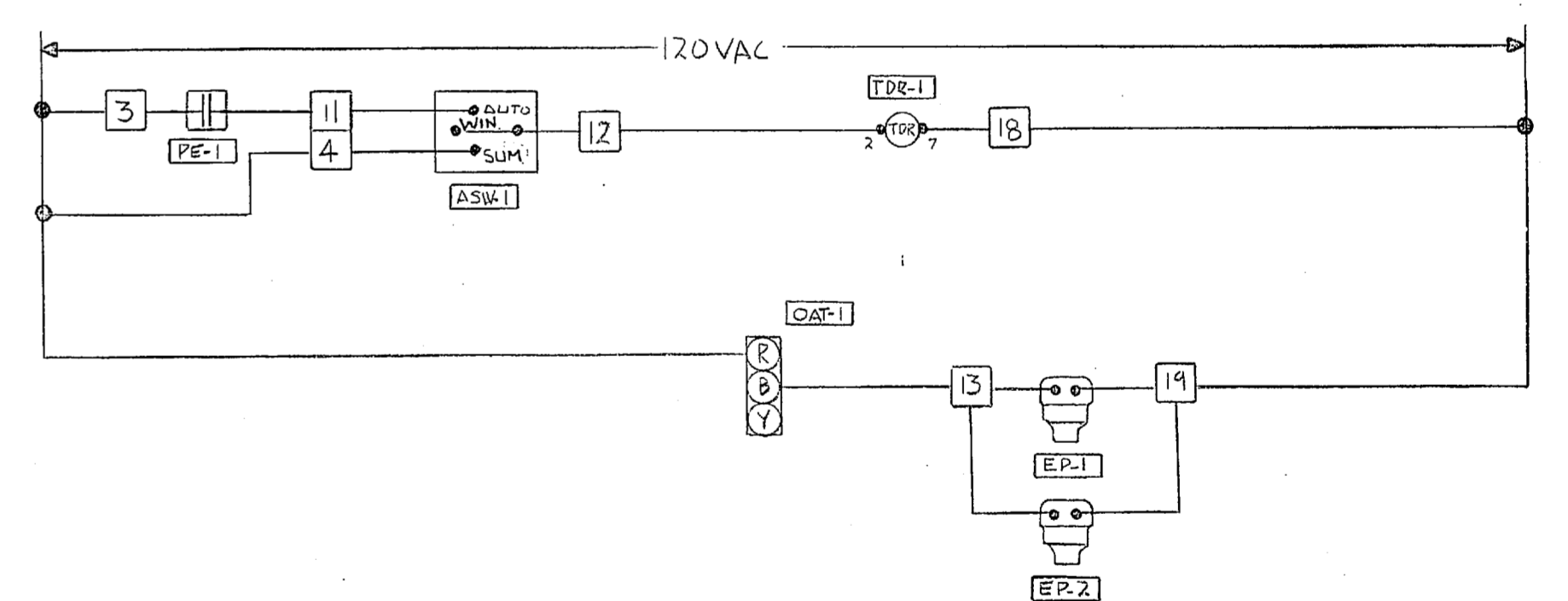
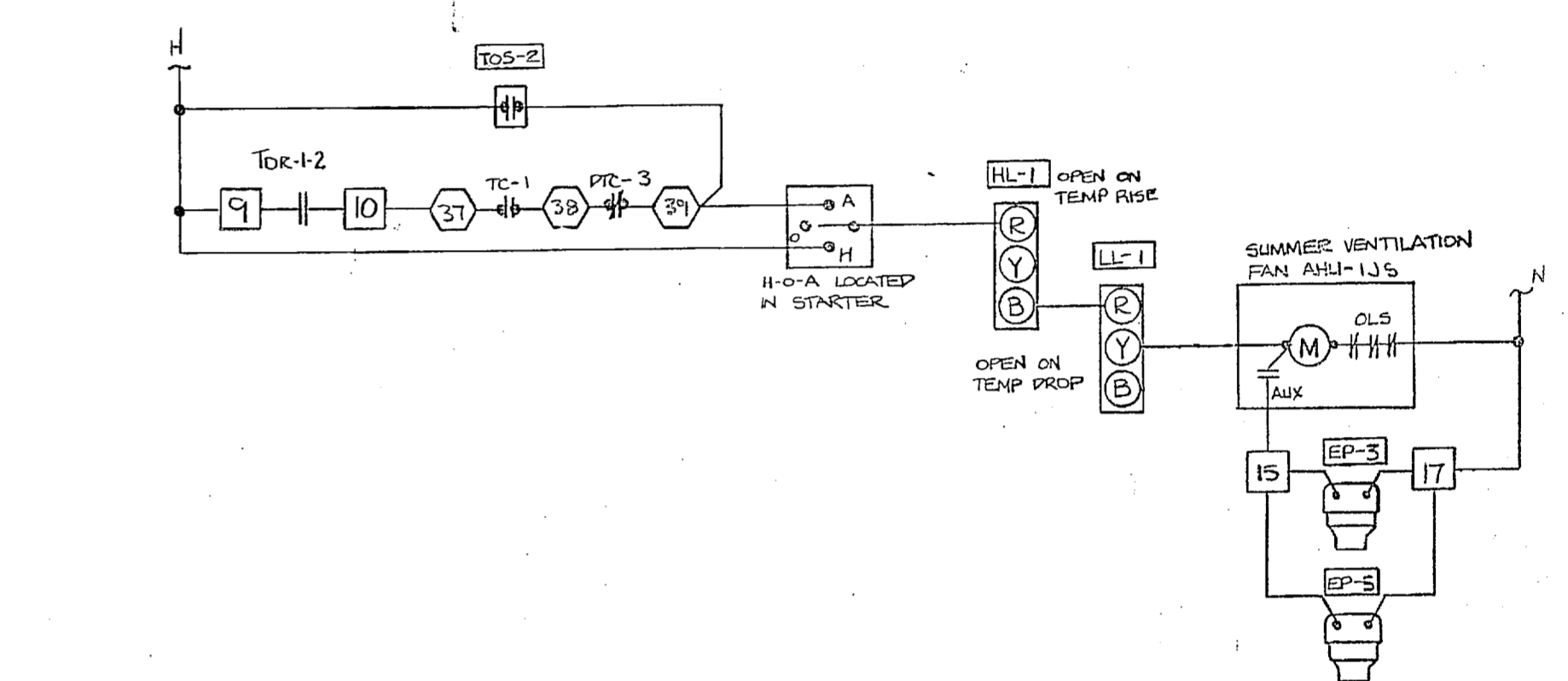
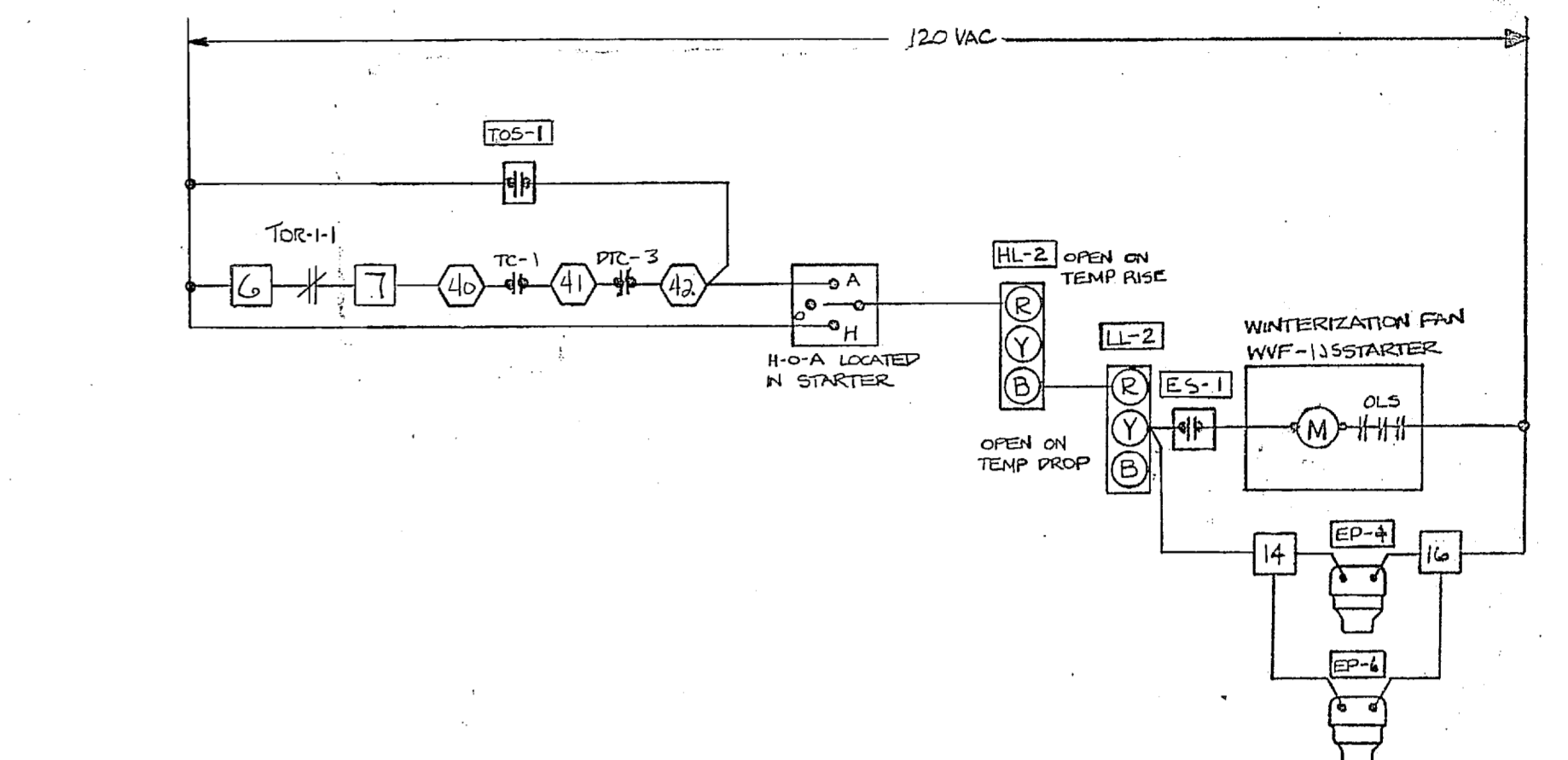
DRAWING TITLE		AHU-1JN CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	DATE
1	REV AS PER SUBMITTAL RETURN		2-12-87 J.L.
SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	BY K.L.	DATE 10-24-86
PROJECT		CONTRACTOR	
CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		GENERAL HIG & A.C.	
JOHNSON CONTROLS Systems & Services Division		CONTRACT NUMBER 6128-0080 DRAWING NUMBER 12 OF 40	

22" x 34" ORIGINAL

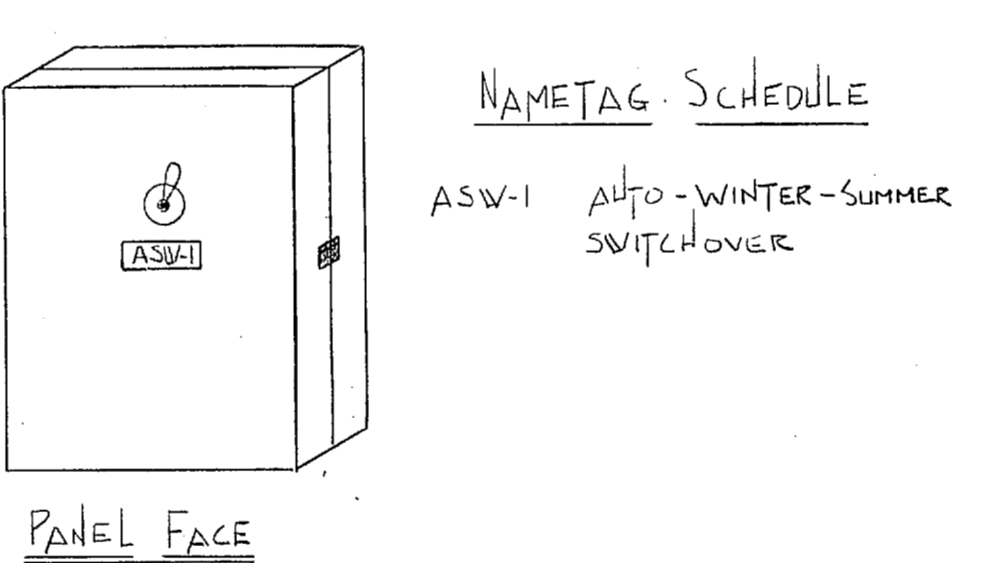
NOTE: SET OUTSIDE AIR DAMPER D-50 TO OPEN TO 70% AND RETURN AIR DAMPER D-51 TO 30% OF FAN RATED CFM.



AHU-135 FLOW DIAGRAM



AHU-135 W/WINTER VENTILATION FAN WVF WIRING DIAGRAM



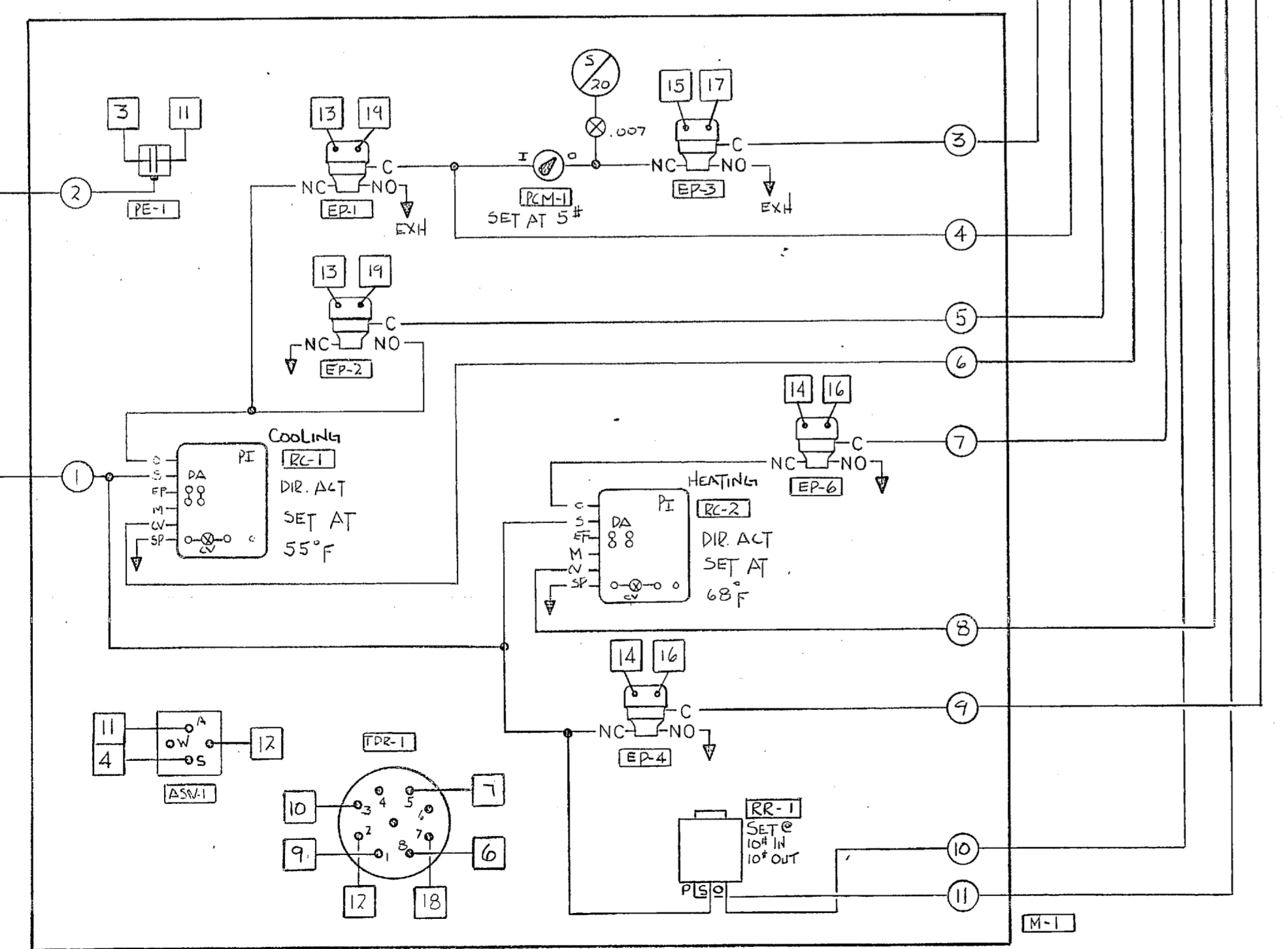
PANEL FACE

NAME TAG SCHEDULE

ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

DA-1 REL DAMPERS	CLG VALVE
RET2 OUTPUT	RET2N DAMPER
OPEN	CLOSED
OPEN	CLOSED
HOT WATER VALVE	DISCH. DAMPER
OPEN	CLOSED
CT-1 OUTPUT	PE-1
OPEN 75°F RM TEMP	CLOSE 78°F RM TEMP

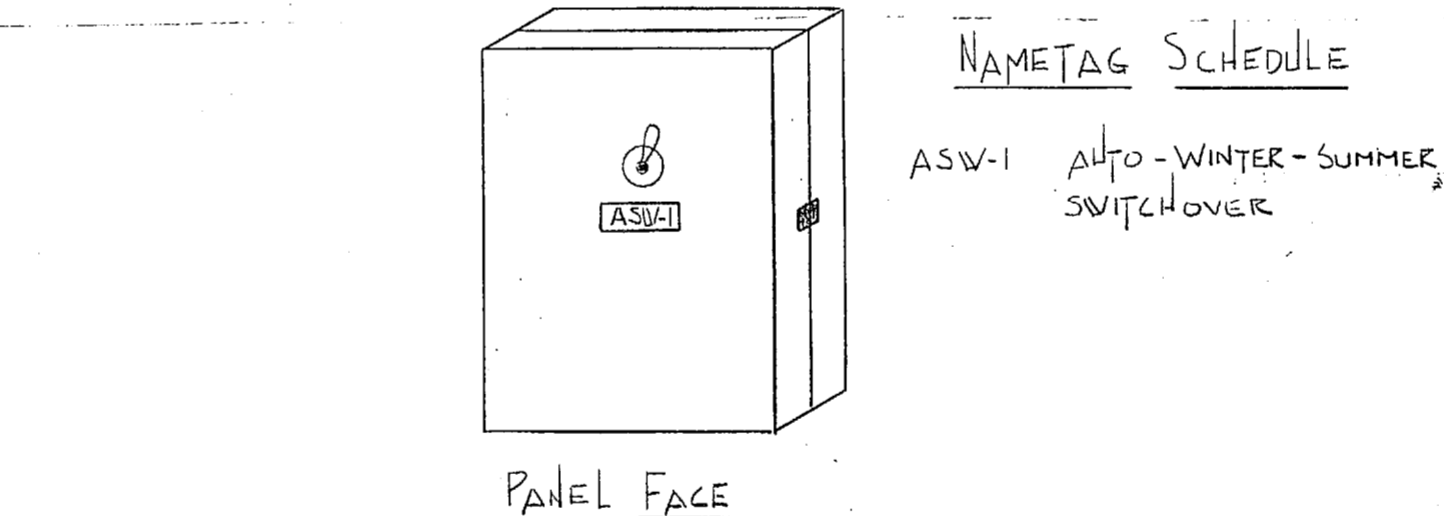
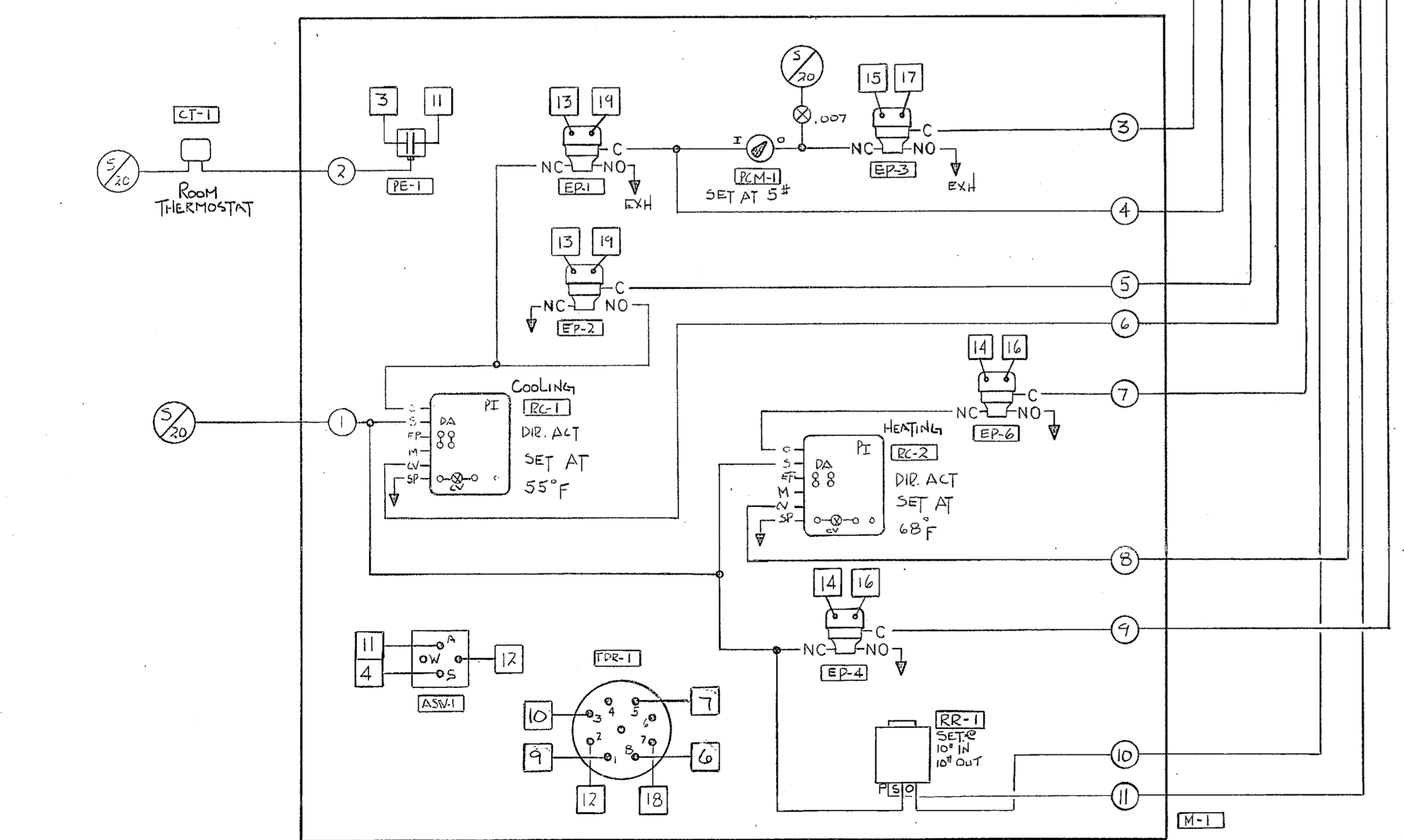
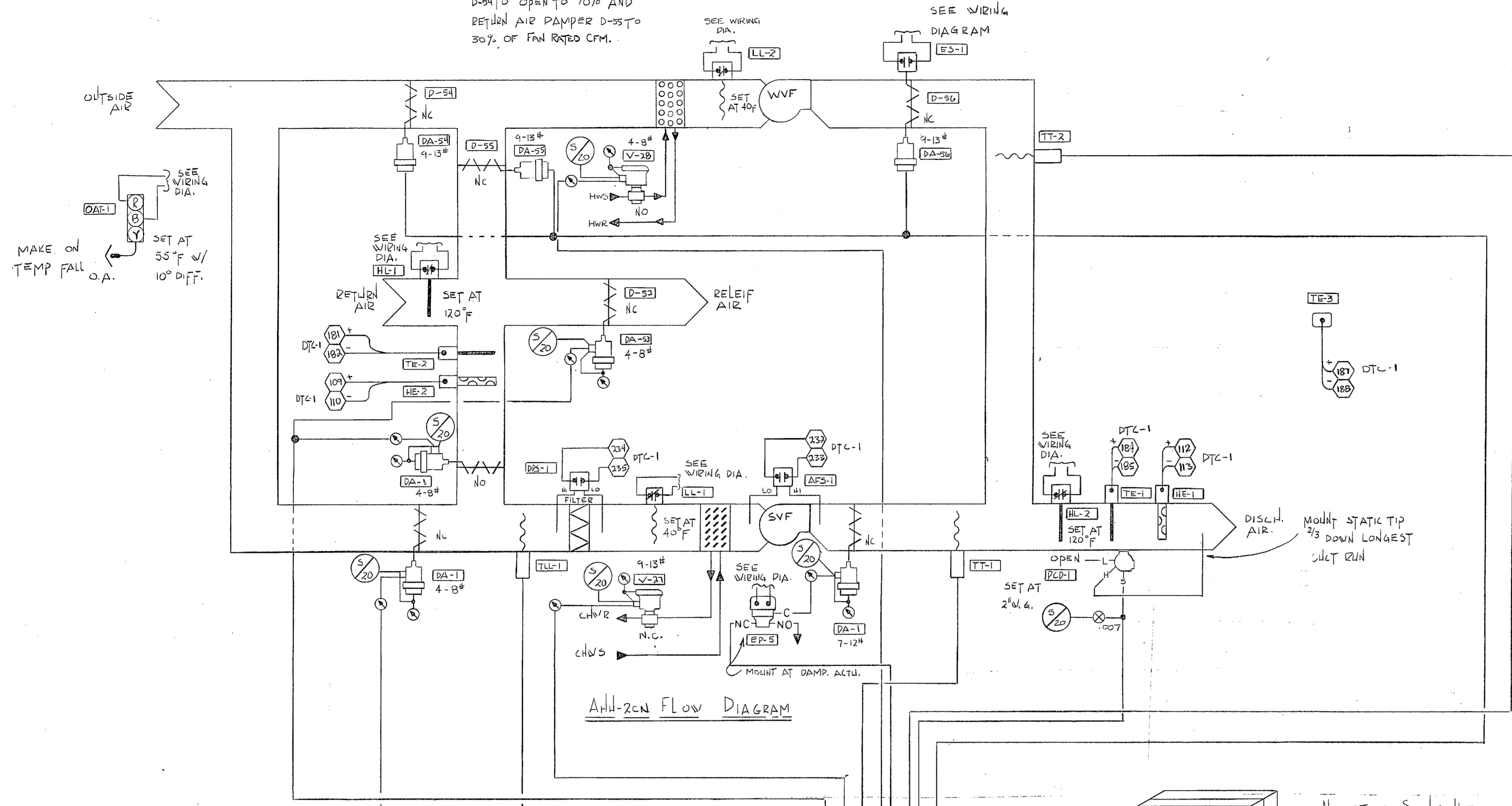
SEQUENCE CHART



CONTROL PANEL

DRAWING TITLE		AHU-135 CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REV AS PER SUBMITTAL LETTER	DATE
SALES ENGR.	APPLICATION ENGR.	DRAWN	APPROVED
F.N.H.	J.A.L.	BY K.L. DATE 10-24-86	DATE
PROJECT	CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.	CONTRACTOR	GENERAL HIG & A.C.
JOHNSON CONTROLS Systems & Services Division		CONTRACT NUMBER	6128-0080
		DRAWING NUMBER	13 OF 40

NOTE: SET OUTSIDE AIR DAMPER
DOWN TO OPEN TO 70% AND
RETURN AIR DAMPER D-55 TO
30% OF FAN RATED CFM.

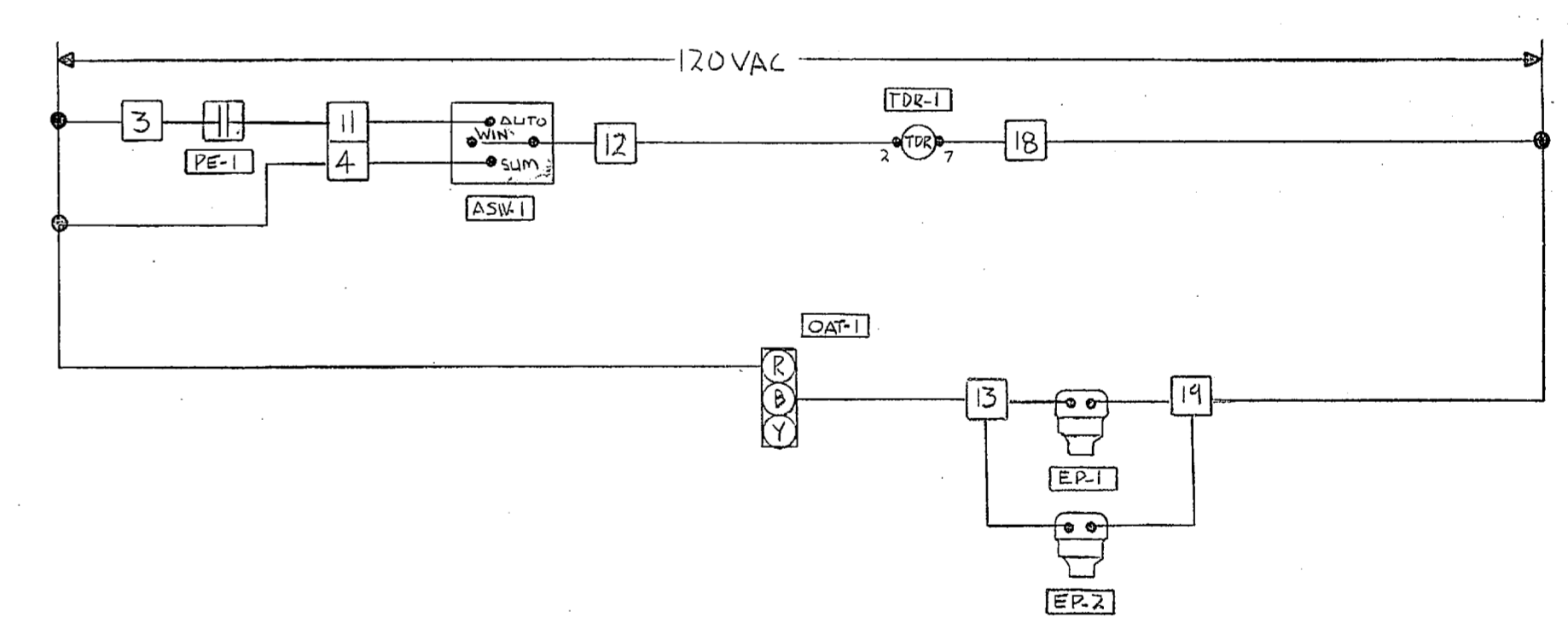
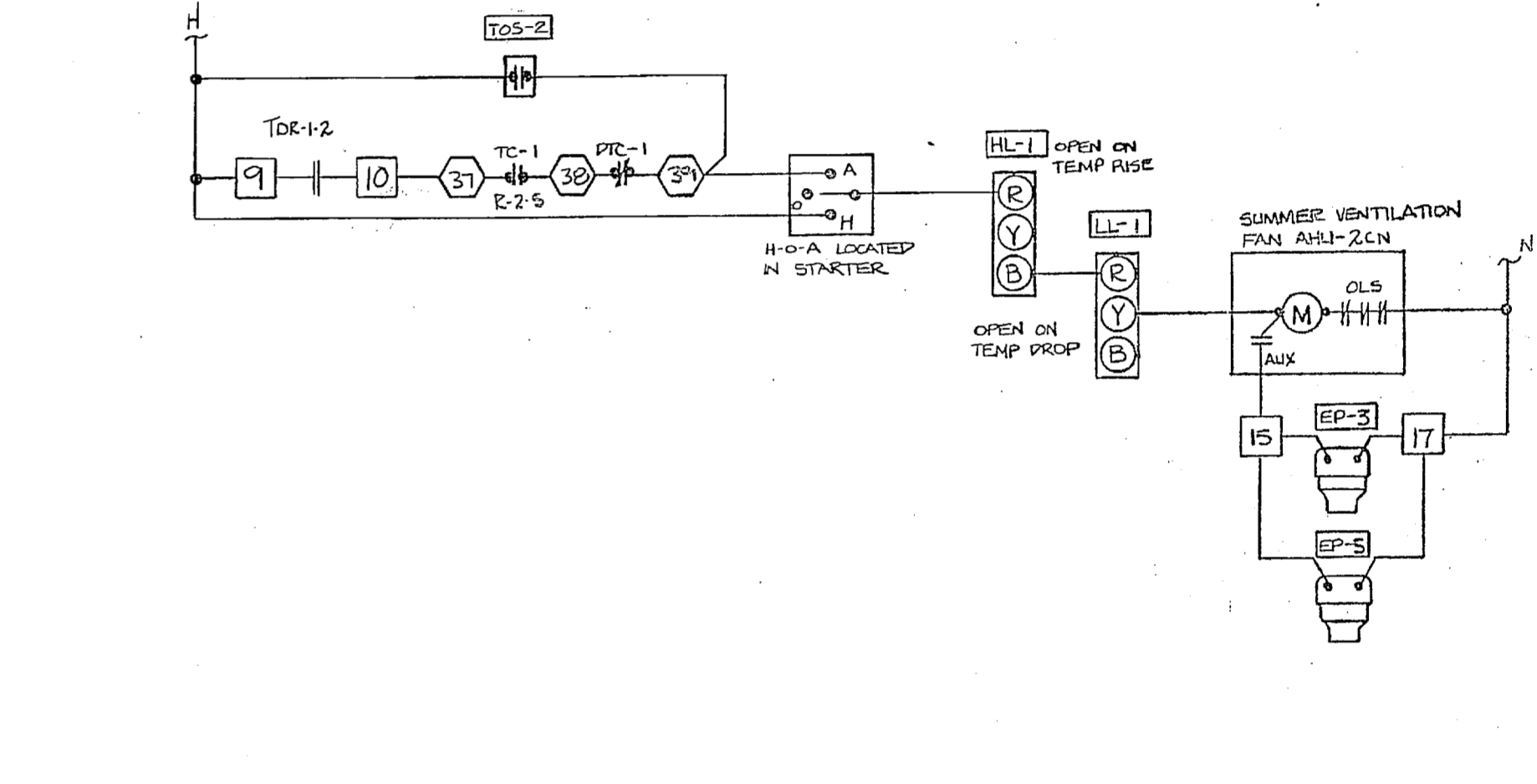
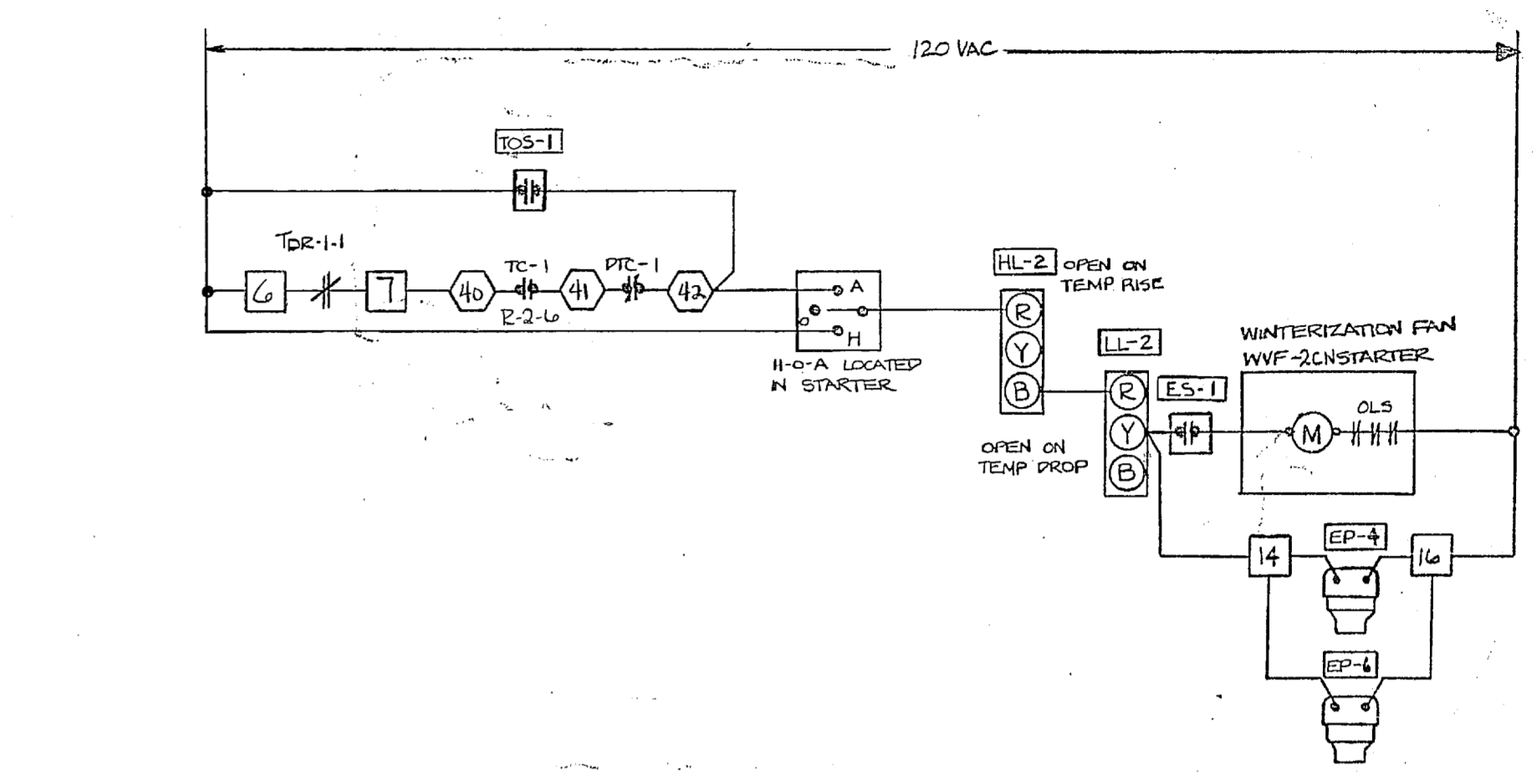


NAME TAG SCHEDULE

ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

RT-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-3 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-4 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-5 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-6 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-7 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-8 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-9 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-10 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-11 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-12 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-13 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-14 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-15 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-16 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-17 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-18 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-19 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RT-20 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

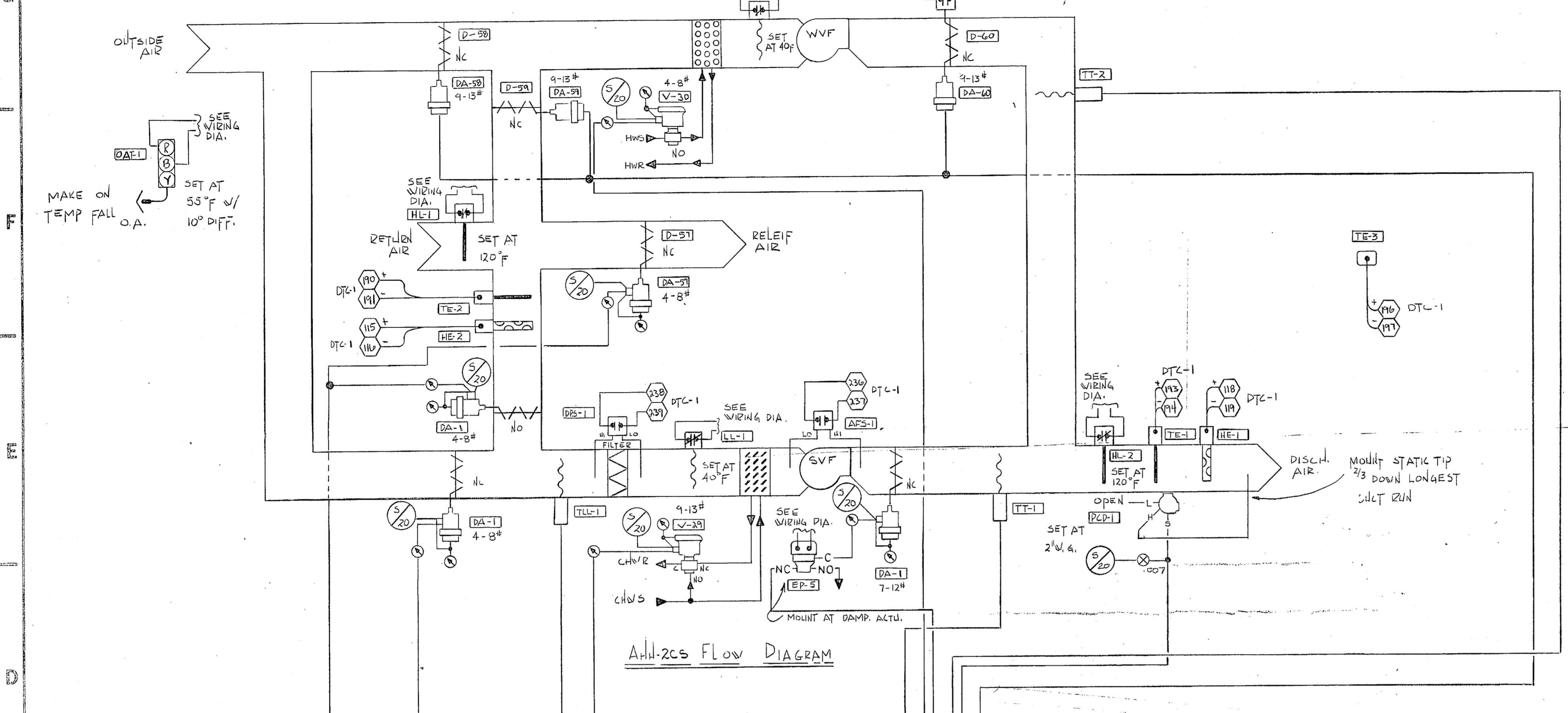


AHL-2CN/WINTER VENTILATION FAN WVF
WIRING DIAGRAM

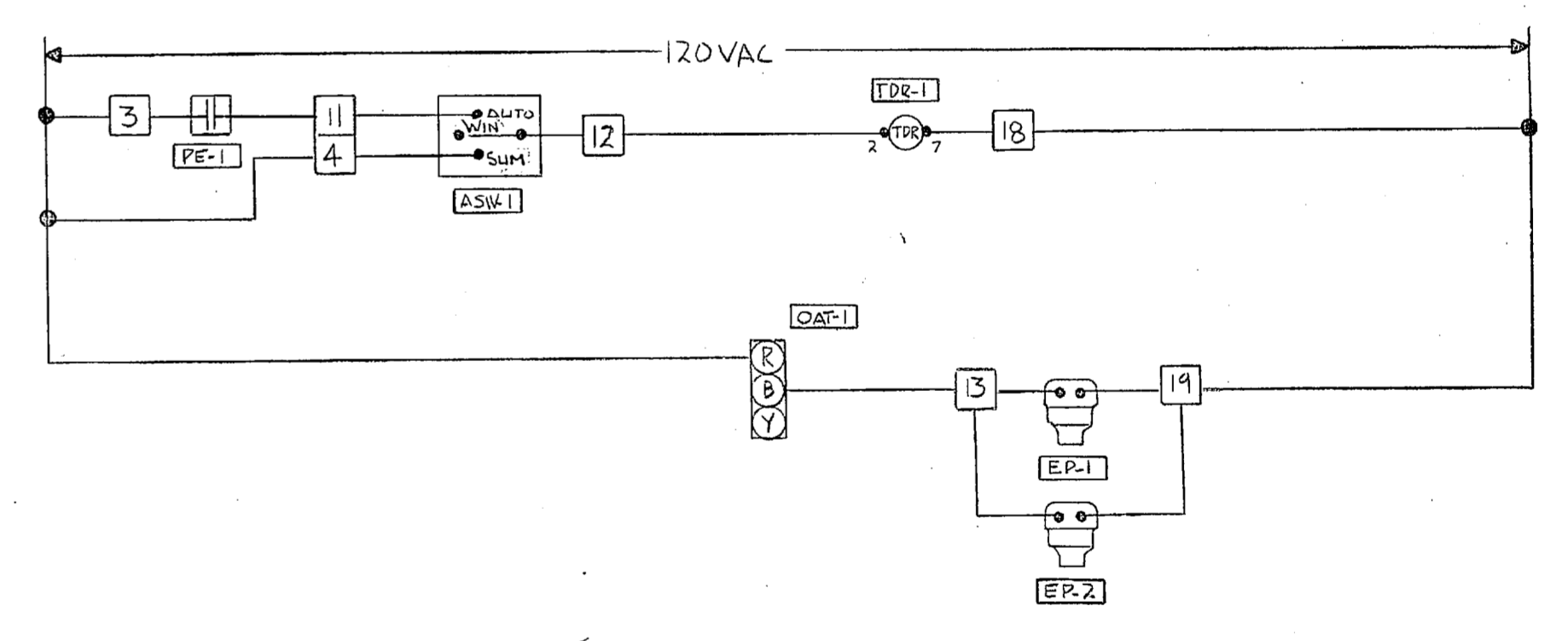
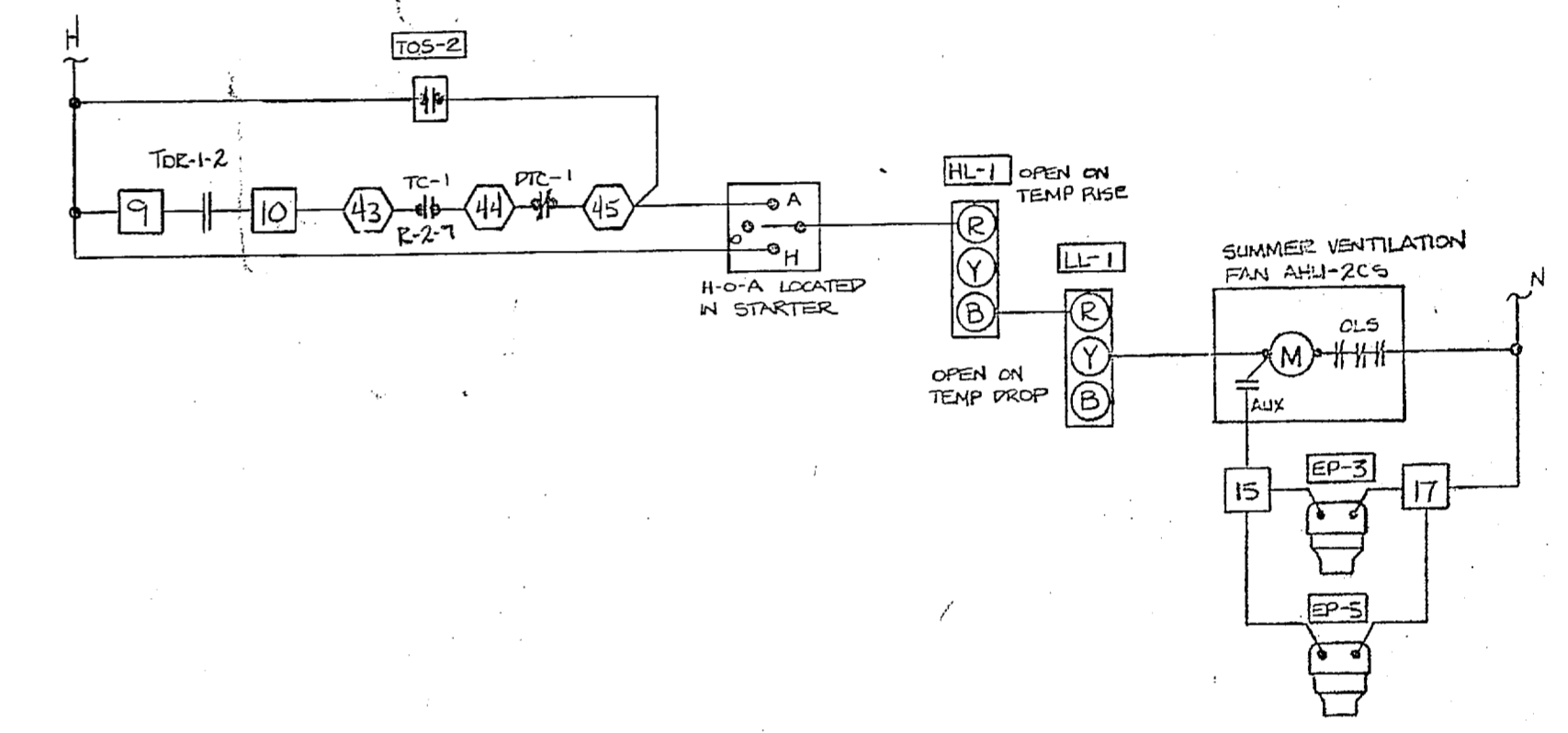
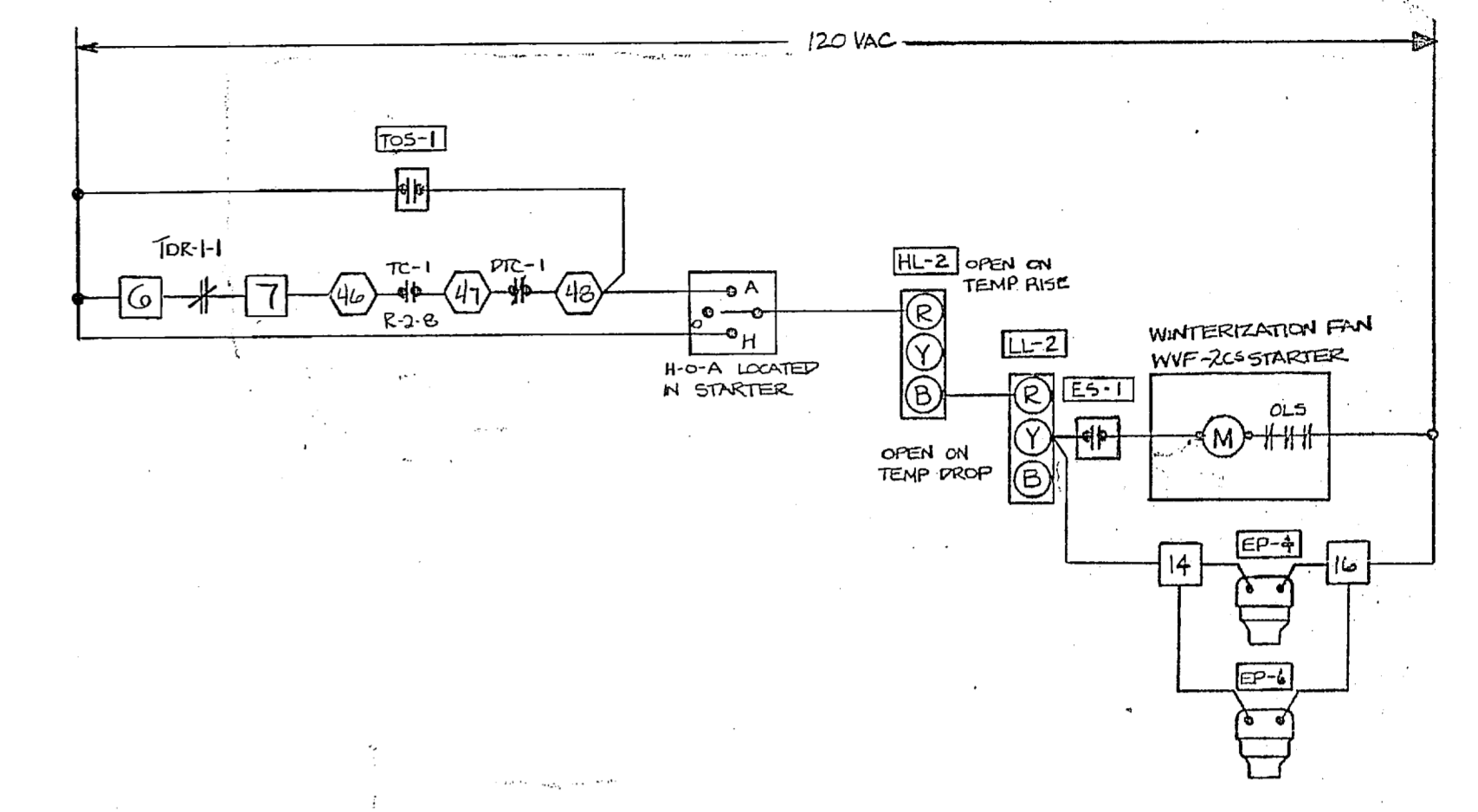
DRAWING TITLE		AHL-2CN CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	ECN
SALES ENGR.	APPLICATION ENGR.	DRAWN	APPROVED
F.N.H.	J.A.L.	BY KL DATE 10-24-86	BY DATE
PROJECT		CONTRACTOR	
CAMP LEJEUNE HOSPITAL CONVERSION		JOHNSON CONTROLS	
DIVISION HEADQUARTERS		GENERAL HIG & A.C.	
CAMP LEJEUNE, N.C.		CONTRACT NUMBER	
		6128-0080	
		DRAWING NUMBER	
		14 OF 40	

22" x 34" ORIGINAL

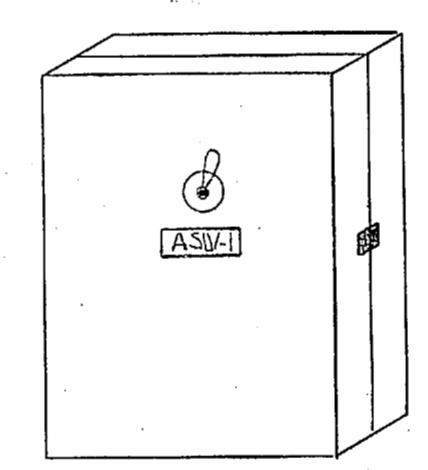
NOTE: SET OUTSIDE AIR DAMPER
D-50 TO OPEN TO 70% AND
RETURN AIR DAMPER D-51 TO
30% OF FAN RATED CFM.



AHU-2CS FLOW DIAGRAM



AHU-2CS W/WINTER VENTILATION FAN WVF
WIRING DIAGRAM

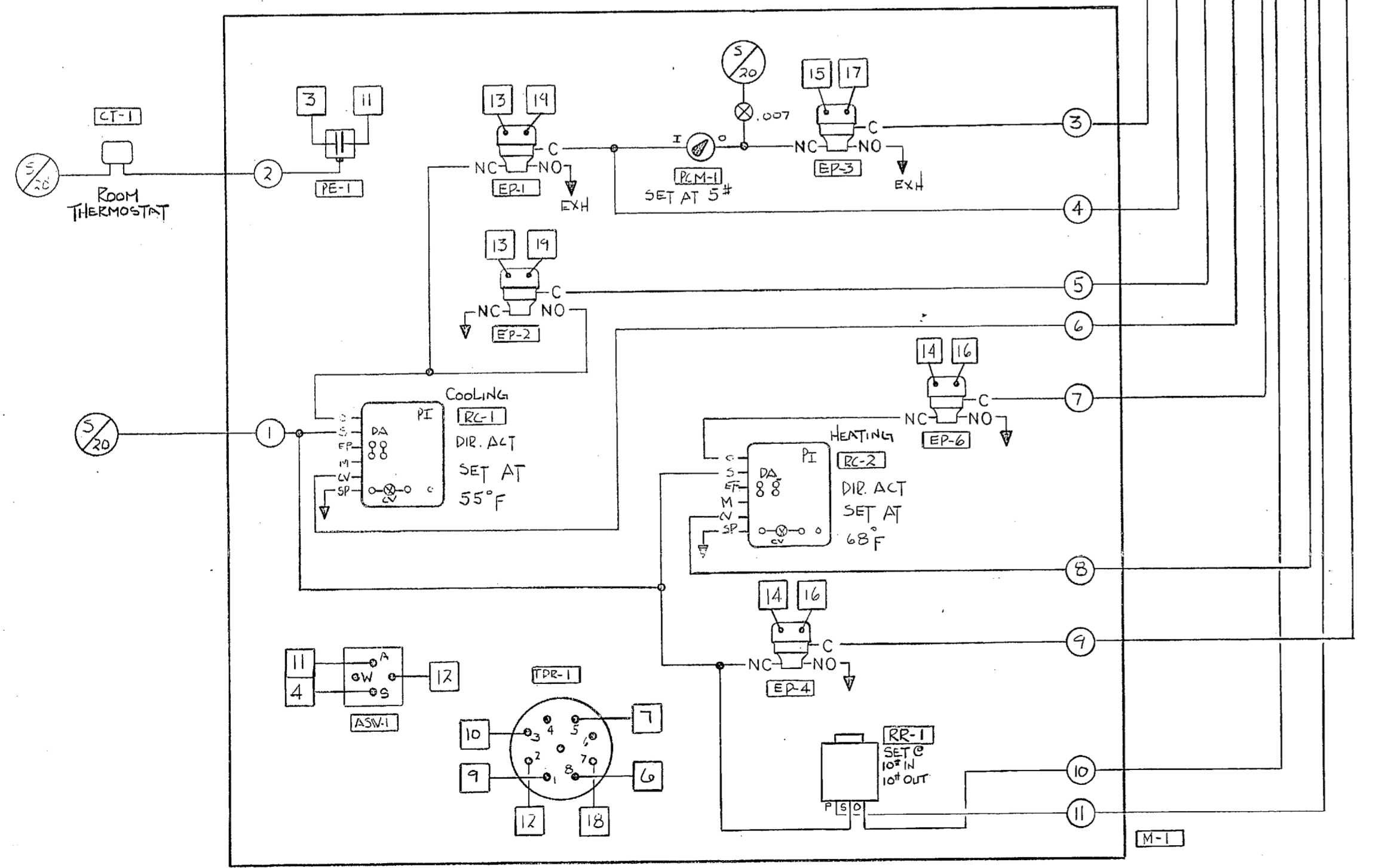


NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-3 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-4 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-5 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-6 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-7 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-8 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-9 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-10 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-11 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-12 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-13 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-14 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-15 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-16 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-17 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-18 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-19 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-20 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

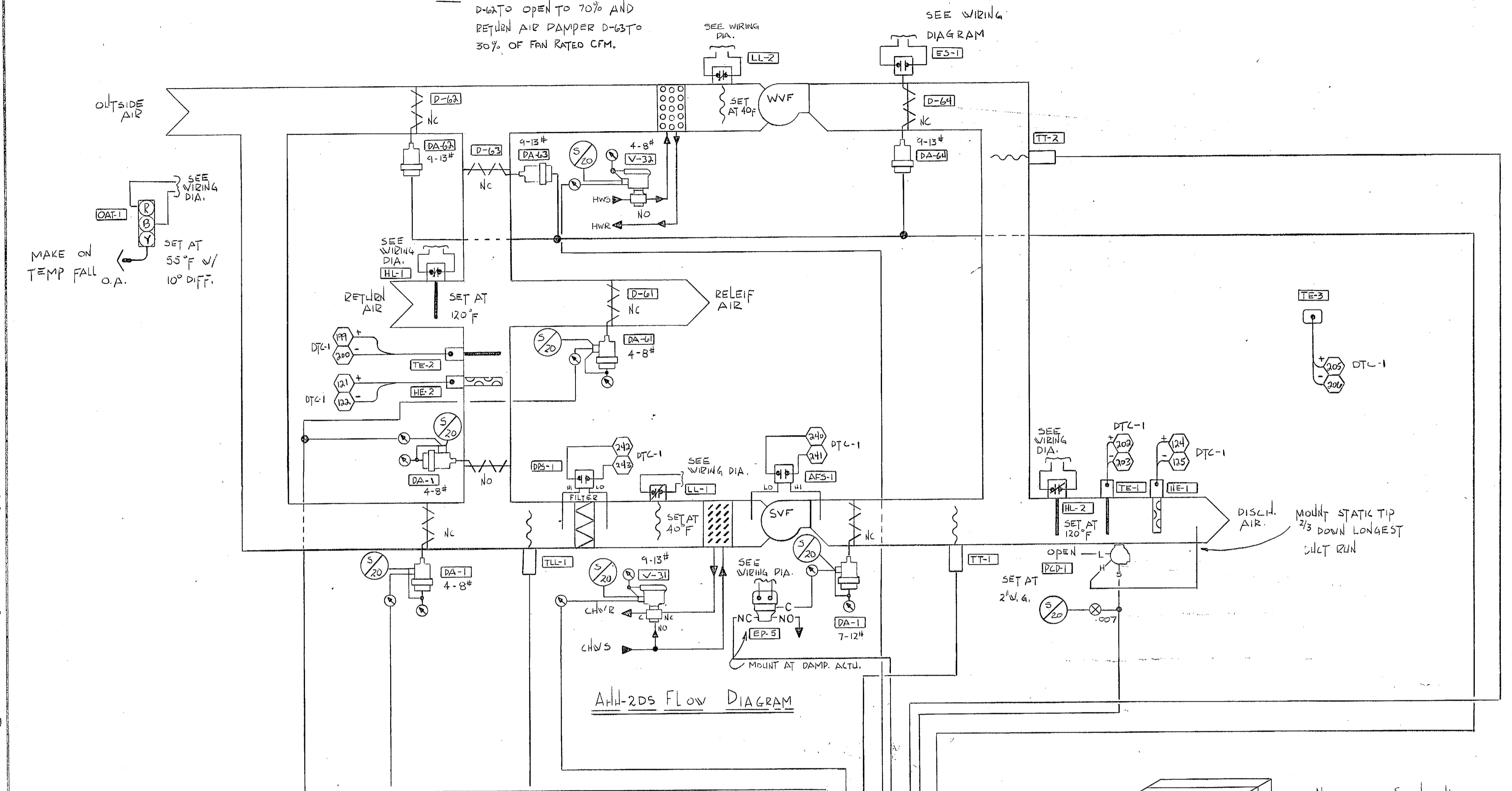
SEQUENCE CHART



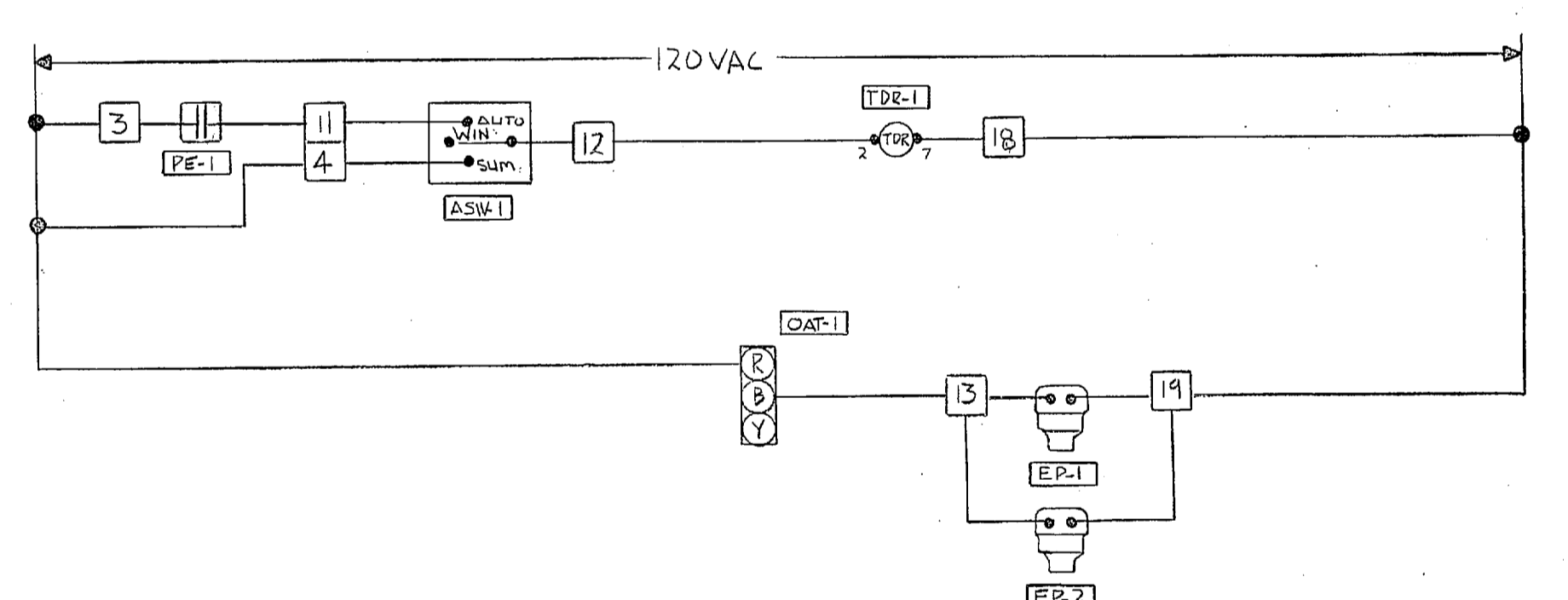
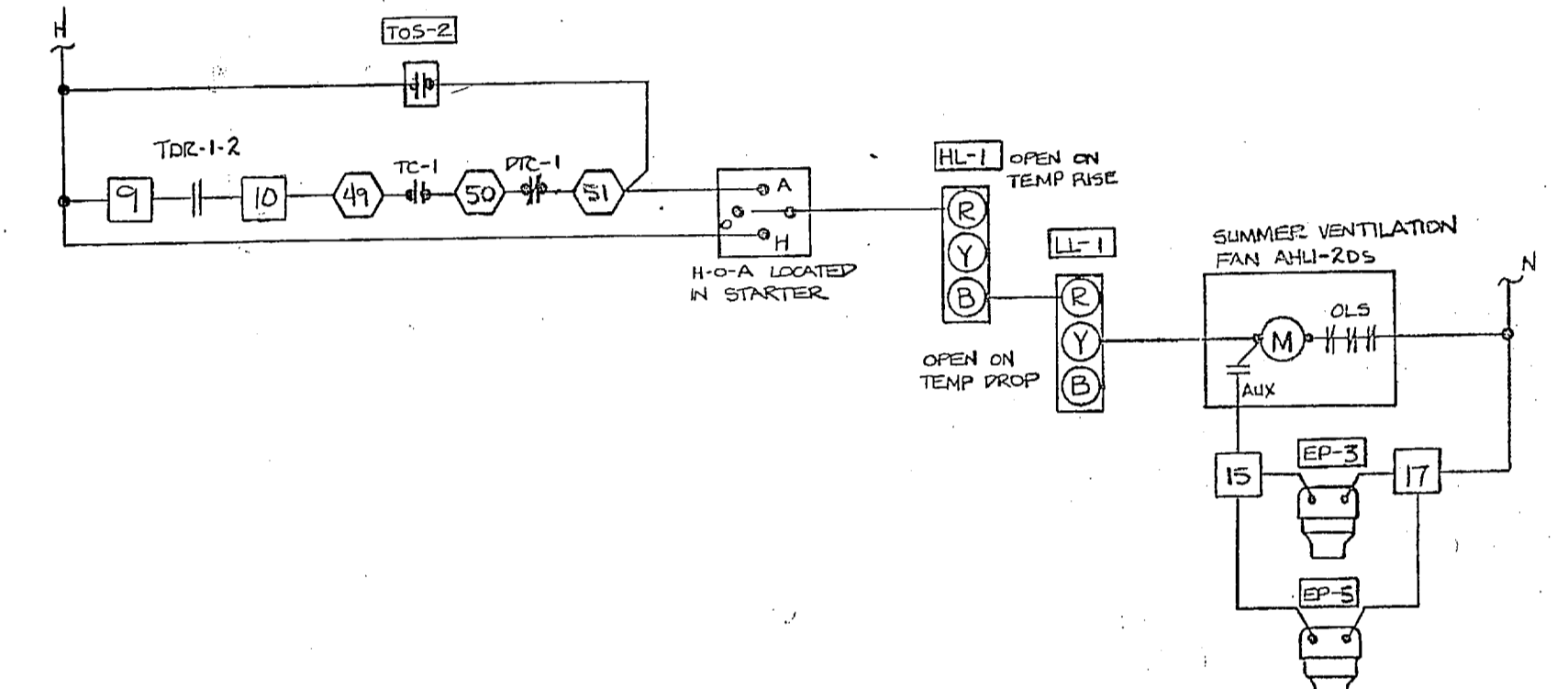
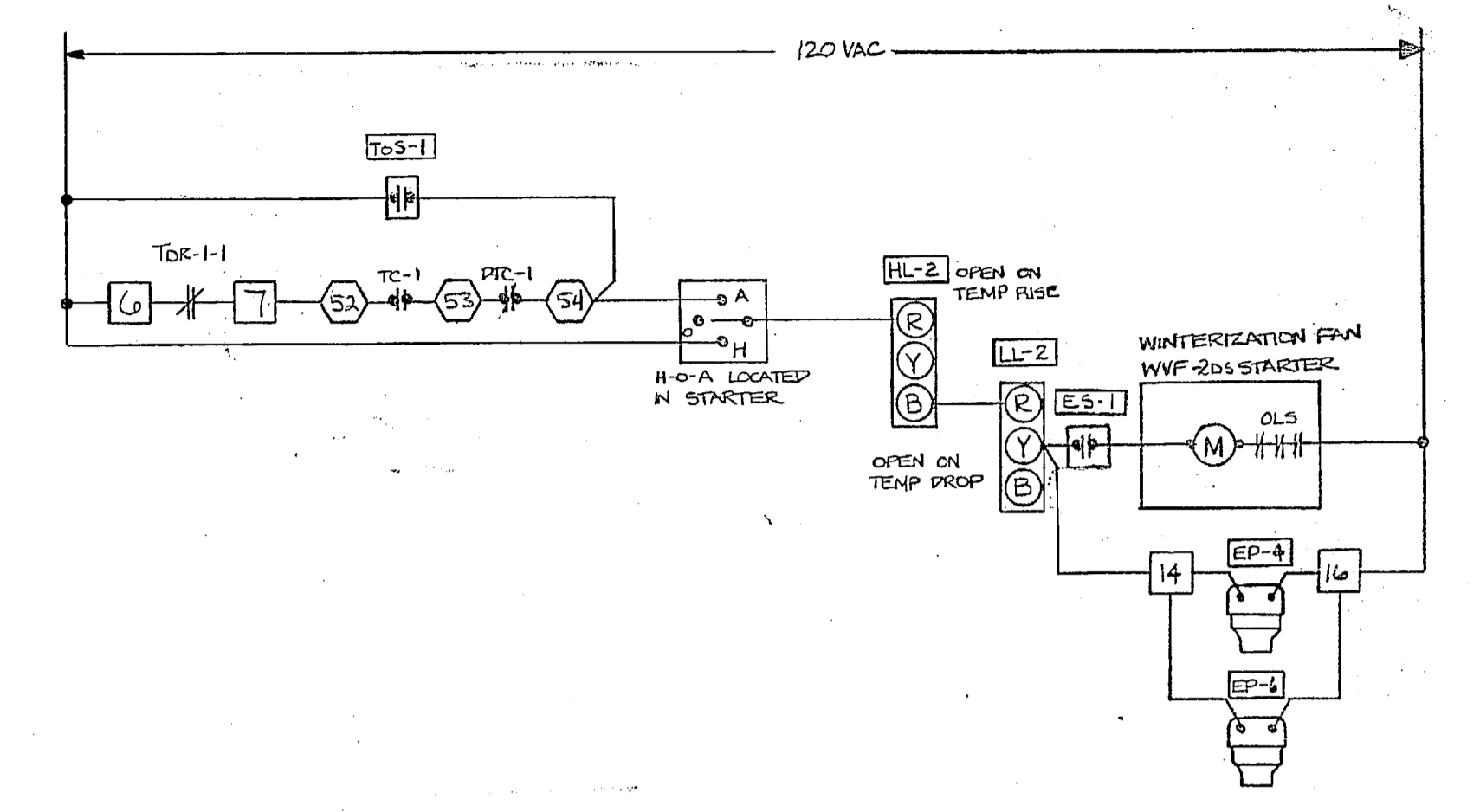
CONTROL PANEL

DRAWING TITLE		AHU-2CS CONTROL DIAGRAM	
PROJECT	CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.	CONTRACTOR	JOHNSON CONTROLS Systems & Services Division
REFERENCE DRAWINGS	NO. REVISION LOCATION	ECN	DATE
SALES ENGR.	APPLICATION ENGR.	DRAWN	APPROVED
F.N.H.	J.A.L.	BY KL DATE 10-24-86	DATE
CONTRACT NUMBER		6128-0080	
DRAWING NUMBER		15 OF 40	

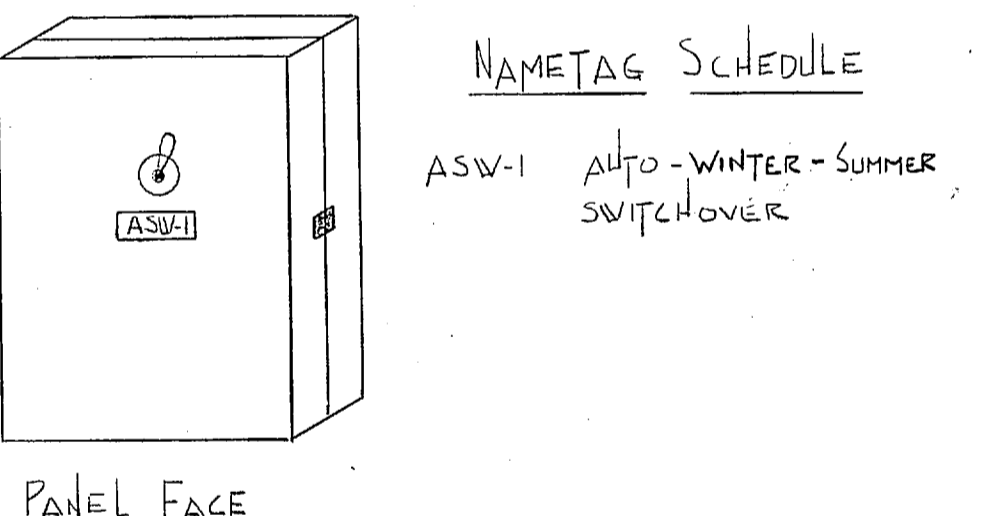
NOTE: SET OUTSIDE AIR DAMPER D-6A TO OPEN TO 70% AND RETURN AIR DAMPER D-63 TO 30% OF FAN RATED CFM.



AHU-2DS FLOW DIAGRAM



AHU-2DS W/WINTER VENTILATION FAN WVF WIRING DIAGRAM

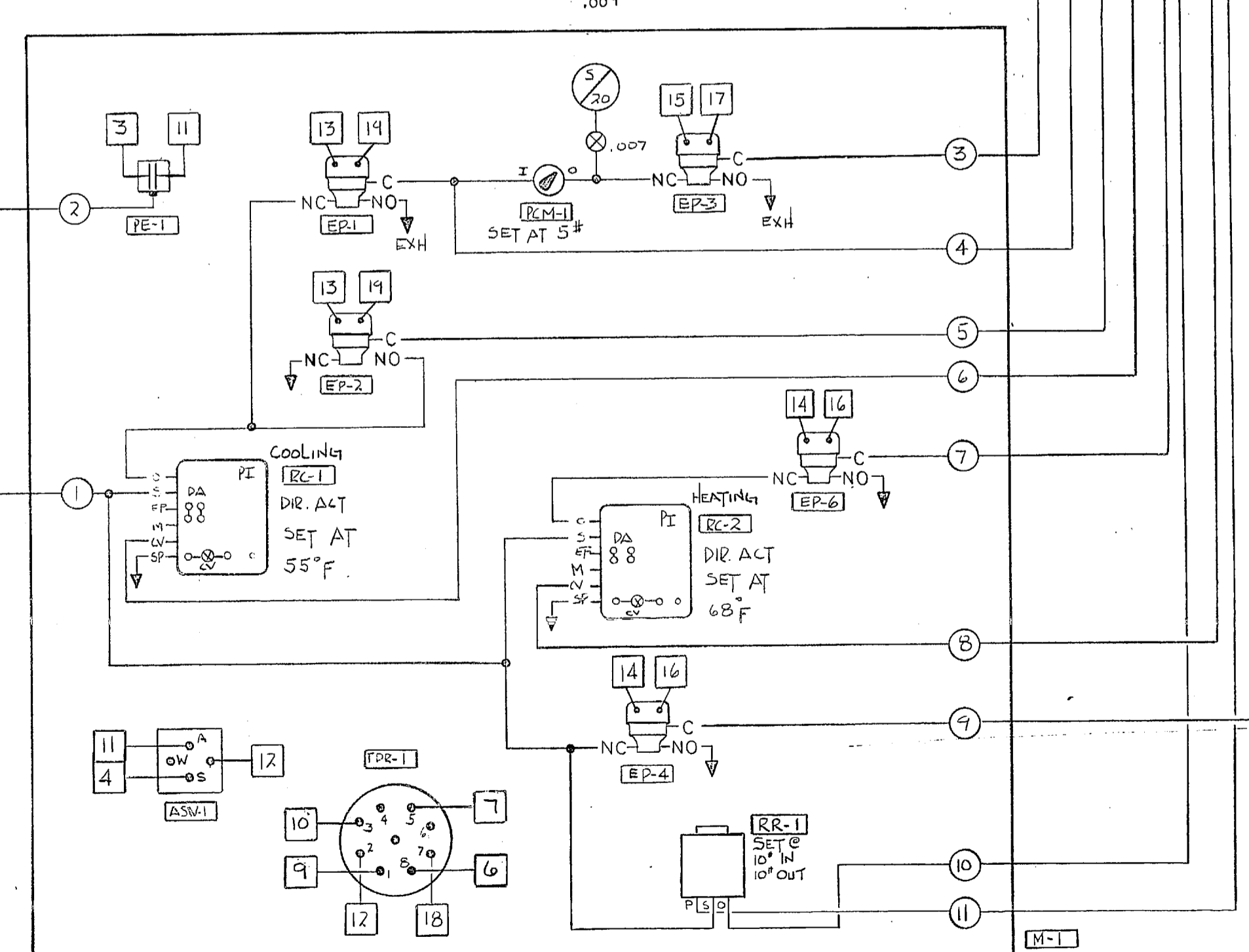


PANEL FACE

SEQUENCE CHART

RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CF-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

MAKE ON TEMP FALL O.A. SET AT 55°F W/ 10° DIFF. SEE WIRING DIA.

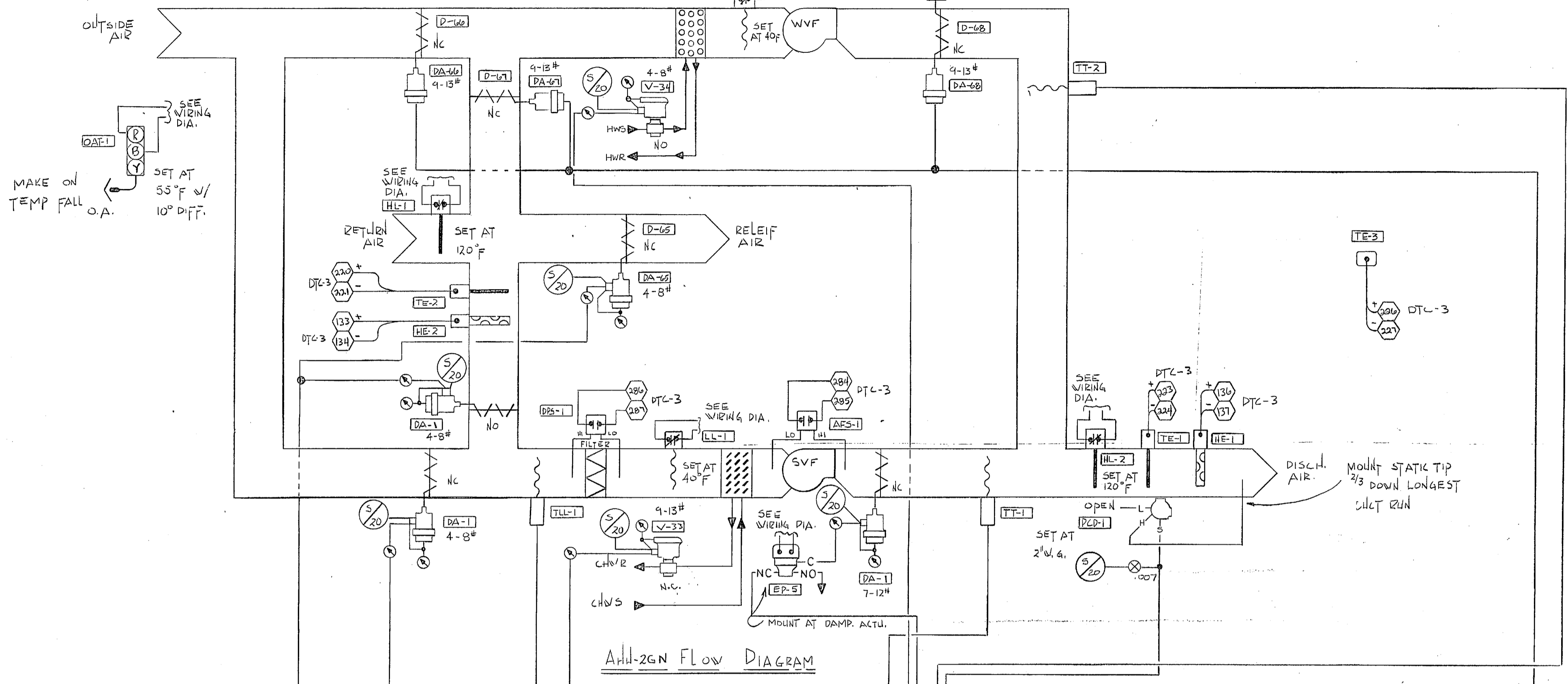


CONTROL PANEL

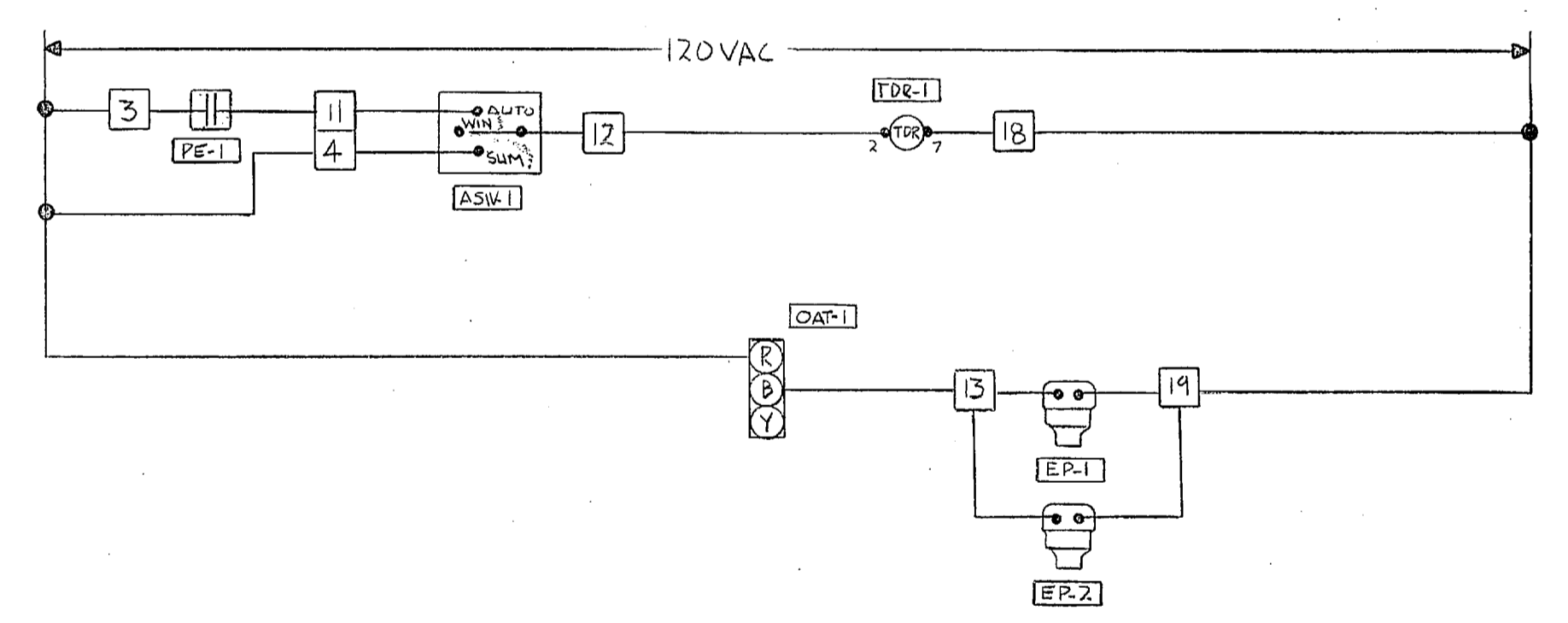
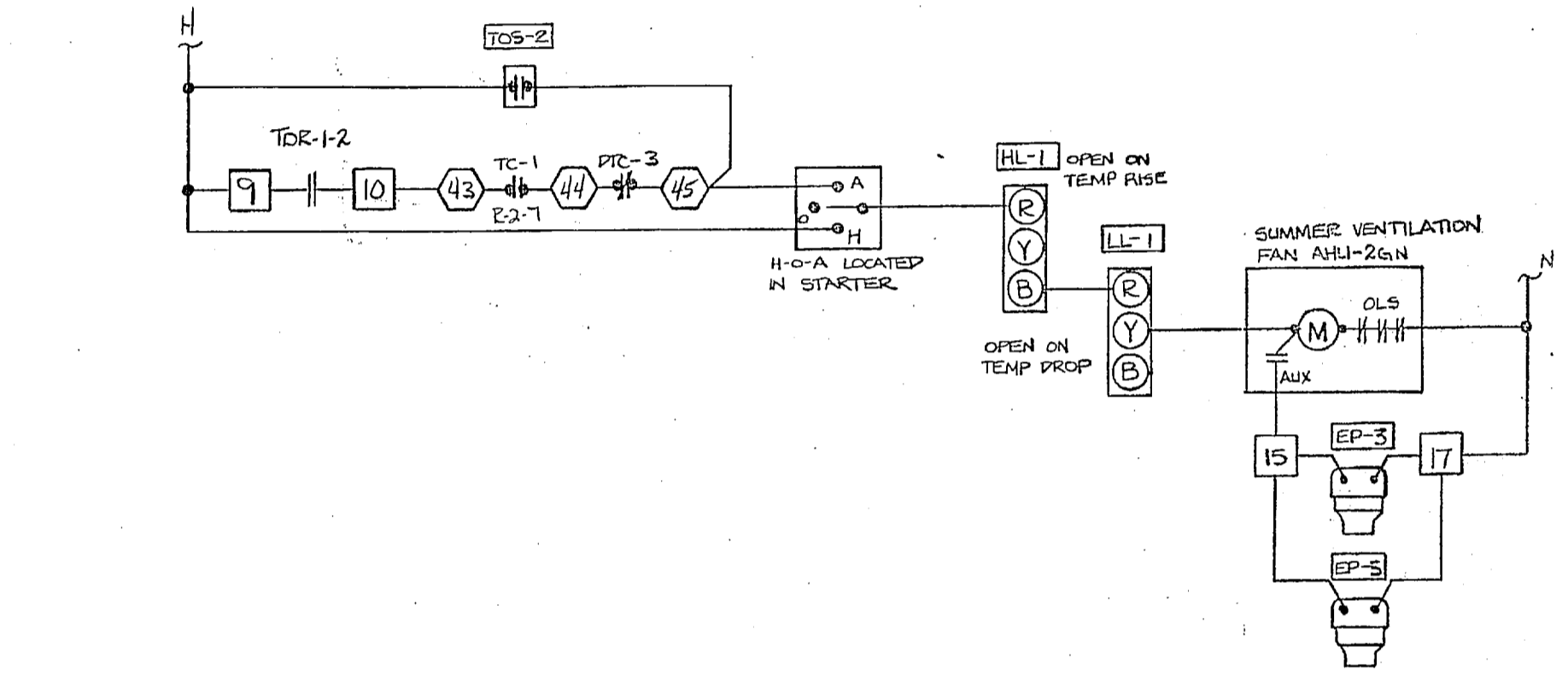
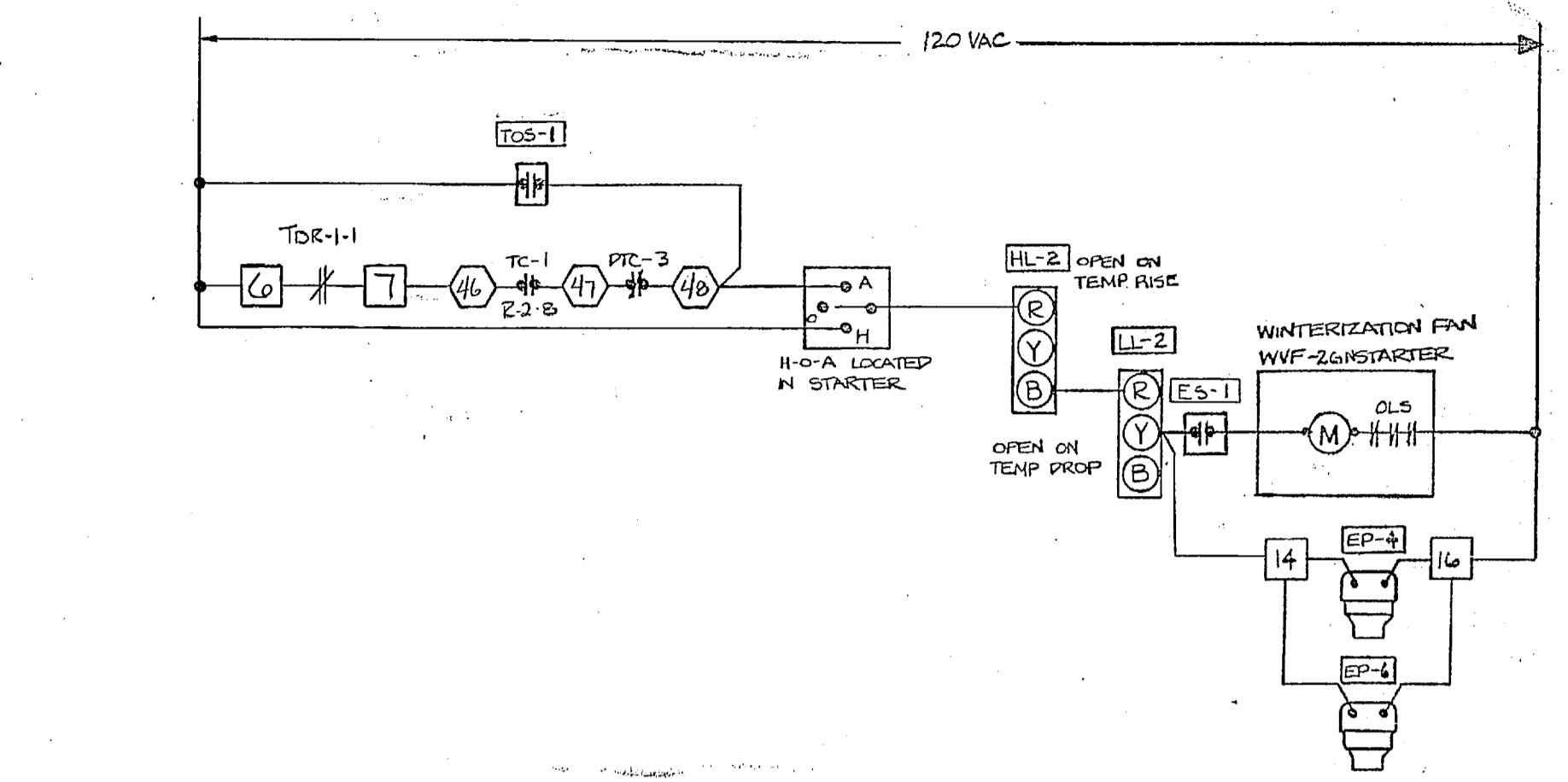
DRAWING TITLE		AHU-2DS CONTROL DIAGRAM	
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	DATE
SALES ENGR.	F.N.H.	APPLICATION ENGR.	J.A.L.
PROJECT		CONTRACT NUMBER	
CAMP LEJEUNE HOSPITAL CONVERSION		6128-0080	
DIVISION HEADQUARTERS		DRAWING NUMBER	
CAMP LEJEUNE, N.C.		16 OF 40	

NOTE: SET OUTSIDE AIR DAMPER D-66 TO OPEN TO 70% AND RETURN AIR DAMPER D-67 TO 30% OF FAN RATED CFM.

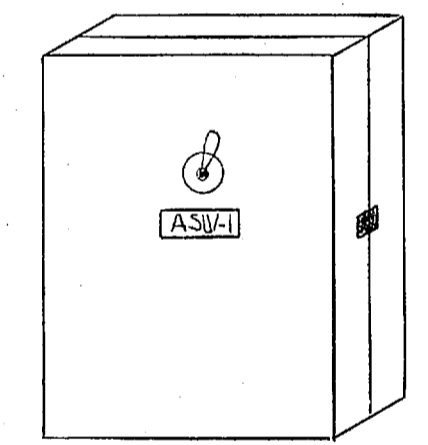
SEE WIRING DIAGRAM



AHU-2GN FLOW DIAGRAM



AHU-2GN W/WINTER VENTILATION FAN WVF WIRING DIAGRAM

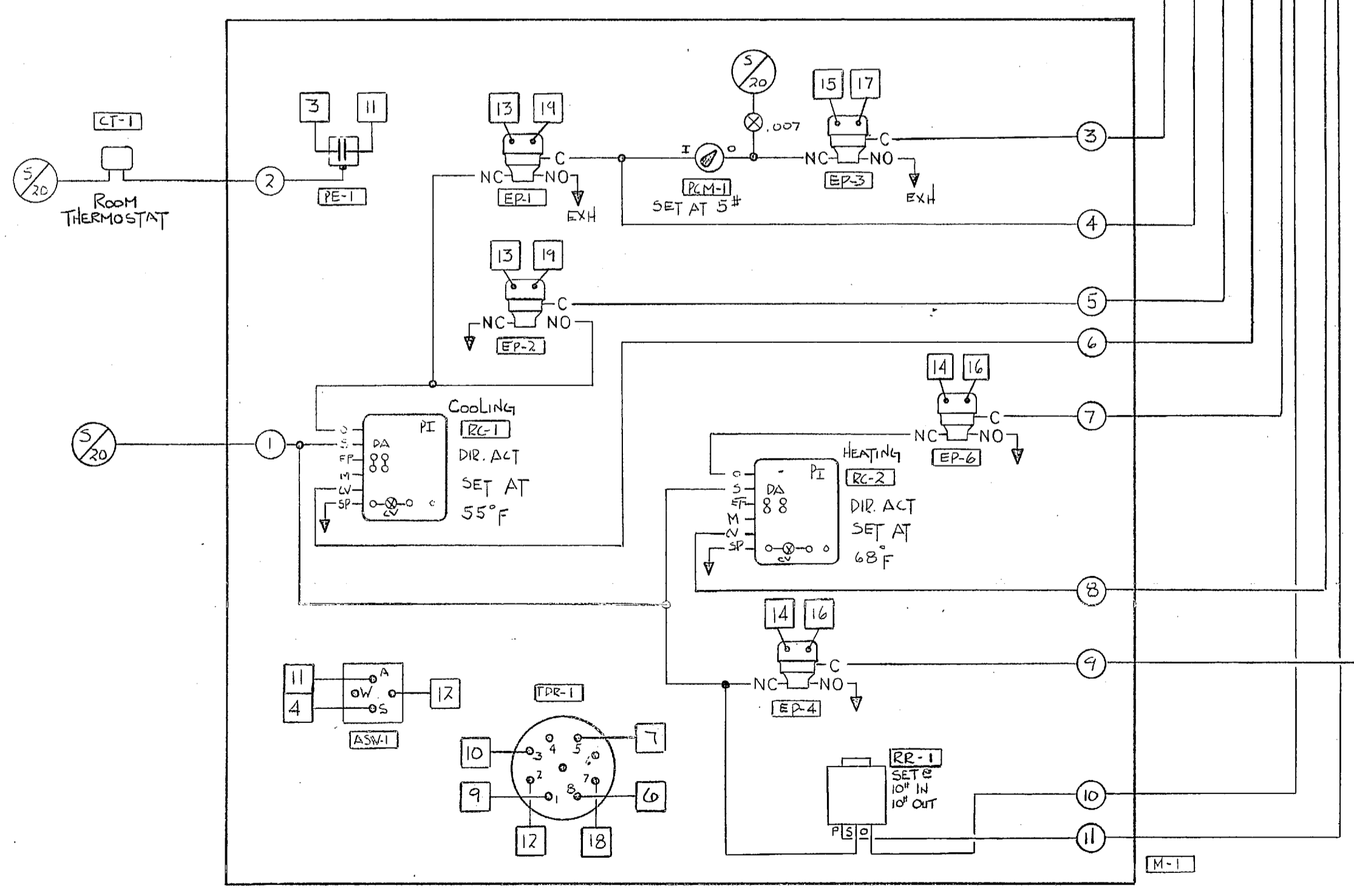


NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

PANEL FACE

SEQUENCE CHART

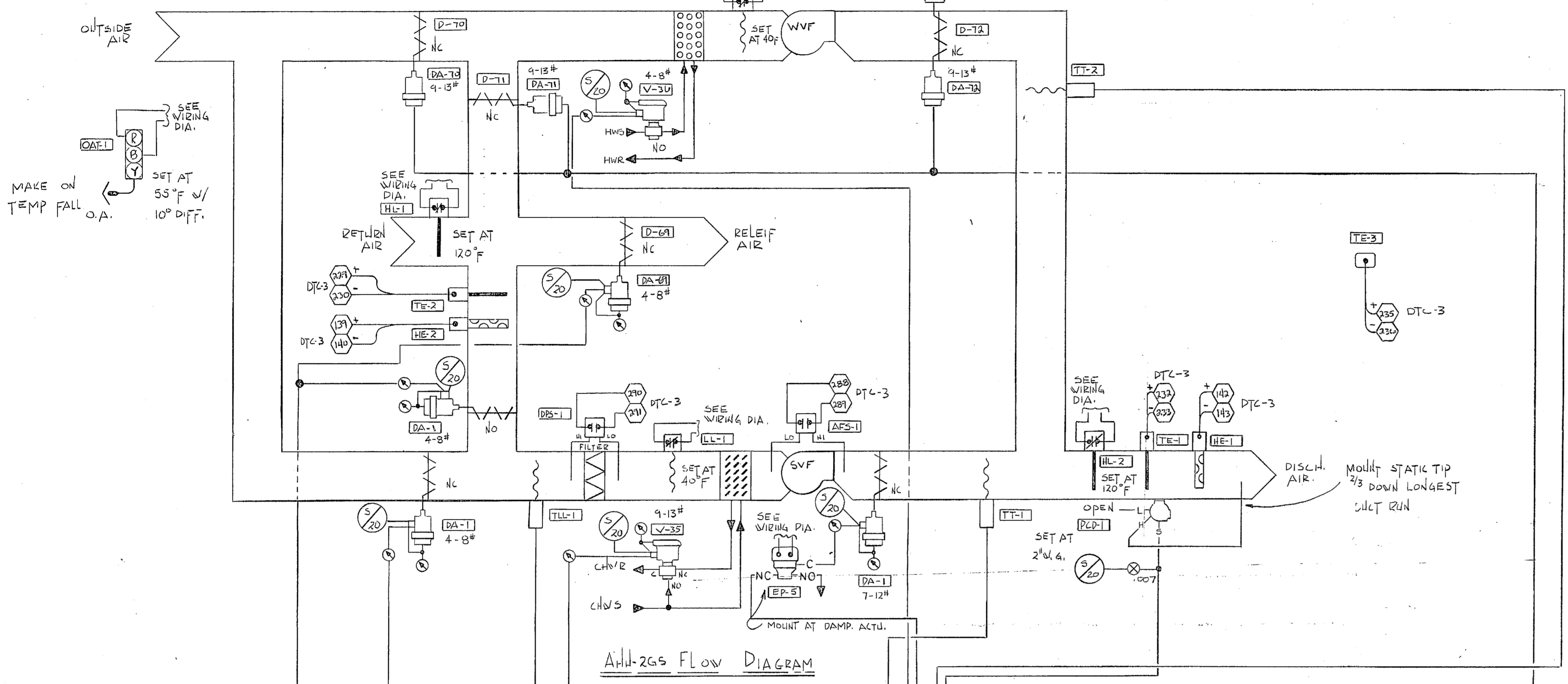
RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RR-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RR-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
CT-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	



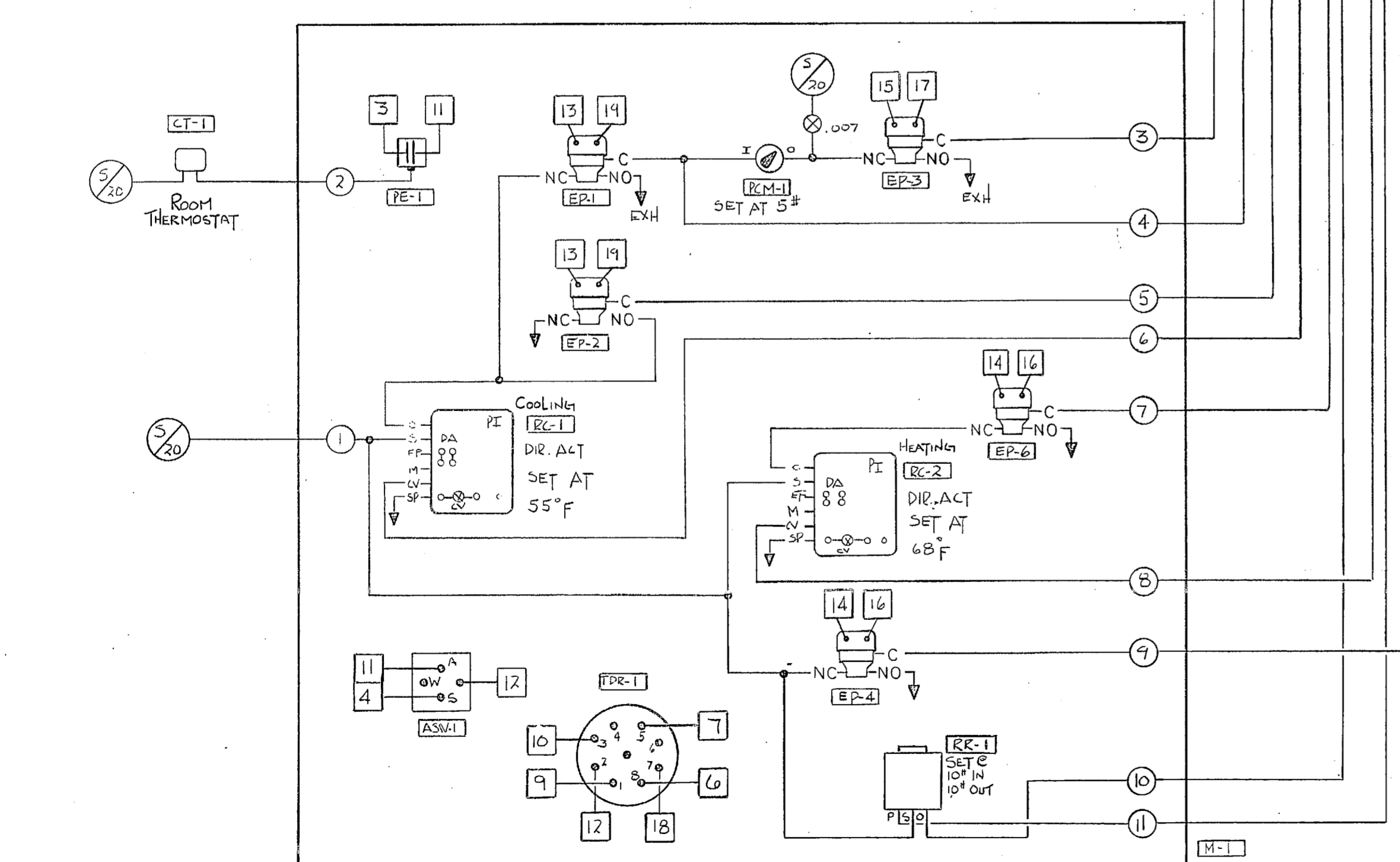
CONTROL PANEL

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	PROJECT		CAMP LEJEUNE HOSPITAL CONVERSION, DIVISION HEADQUARTERS, CAMP LEJEUNE, N.C.		
	REFERENCE DRAWINGS	NO.	REVISION - LOCATION	ECN	DATE
	SALES ENGR.	APPLICATION ENGR.	BY K.L.	DATE 10-27-86	APPROVED
Systems & Services Division		CONTRACTOR GENERAL, HIG & A.C.		CONTRACT NUMBER 6128-0080 DRAWING NUMBER 17 OF 40	

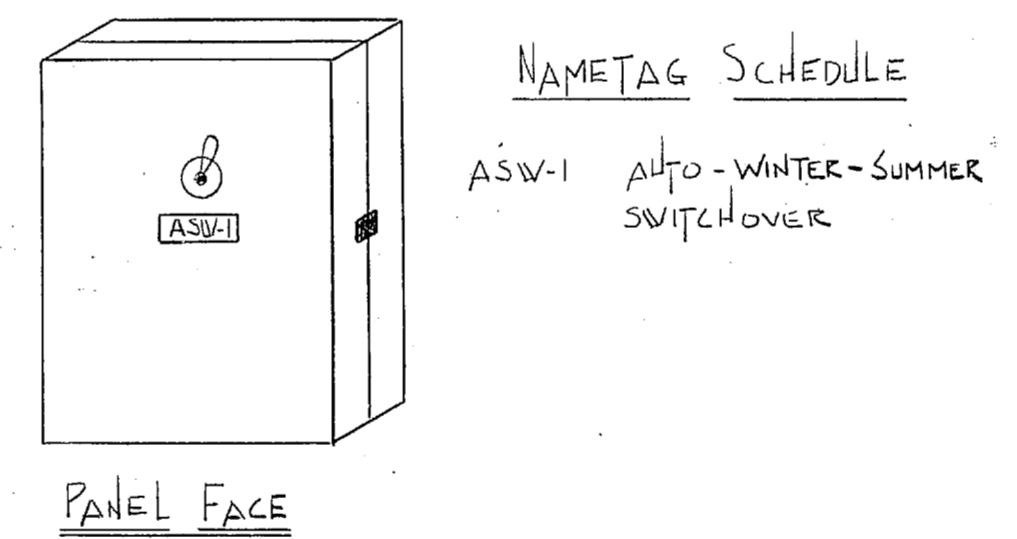
NOTE: SET OUTSIDE AIR DAMPER D-10 TO OPEN TO 70% AND RETURN AIR DAMPER D-11 TO 30% OF FAN RATED CFM.



AHU-2GS FLOW DIAGRAM

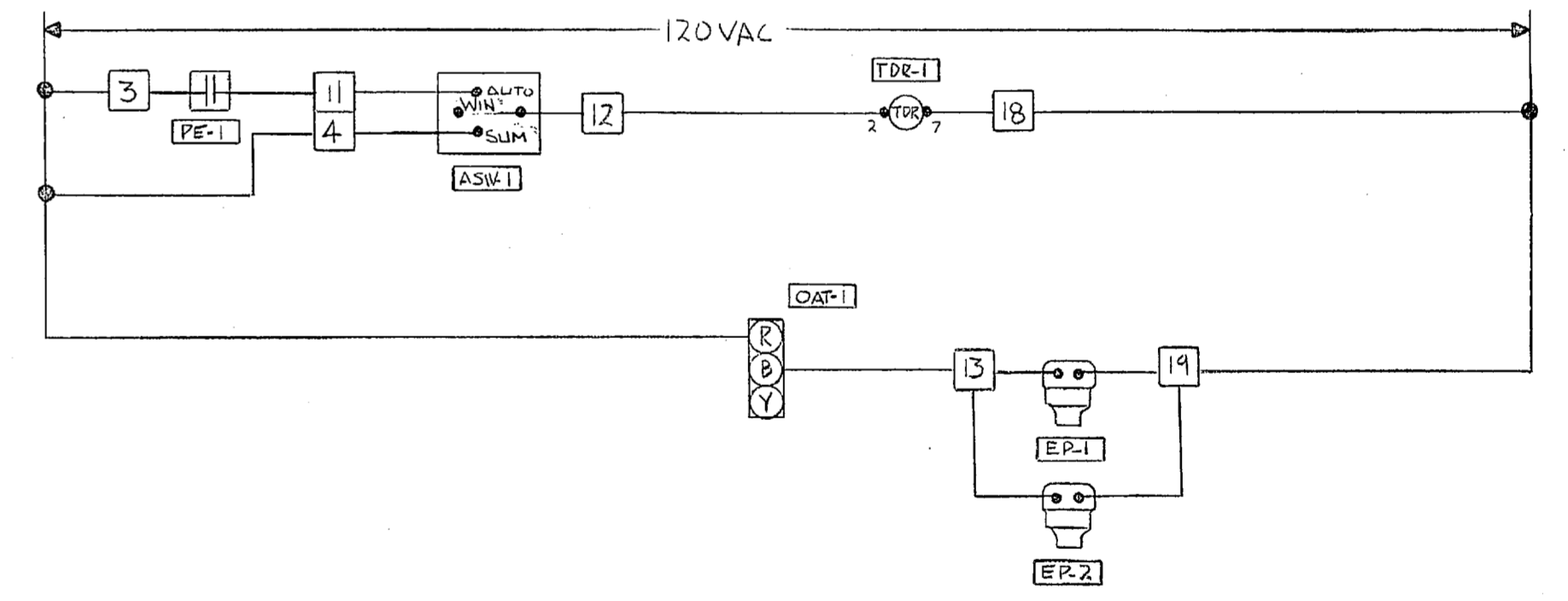
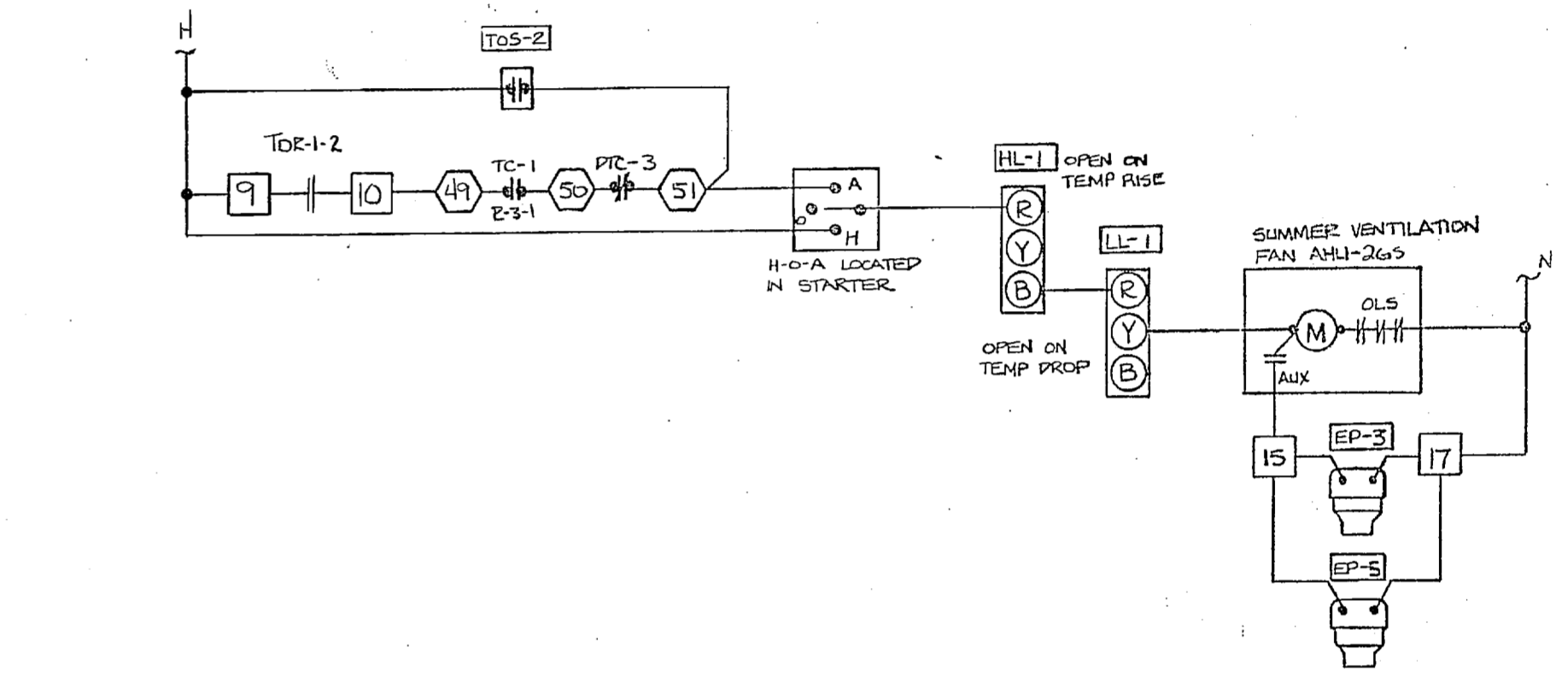
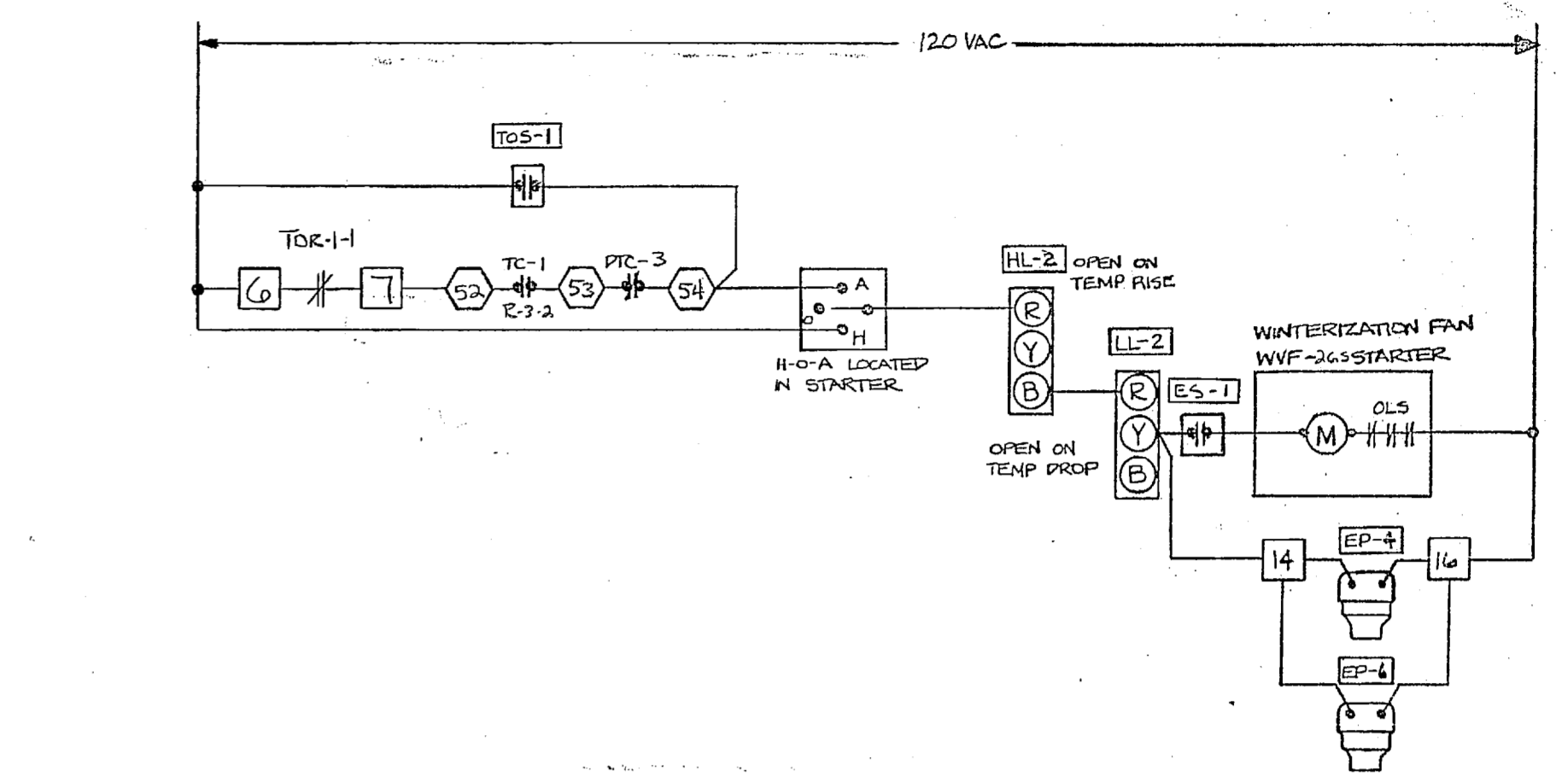


CONTROL PANEL



SEQUENCE CHART

RE-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RE-2 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
RE-3 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
CT-1 OUTPUT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

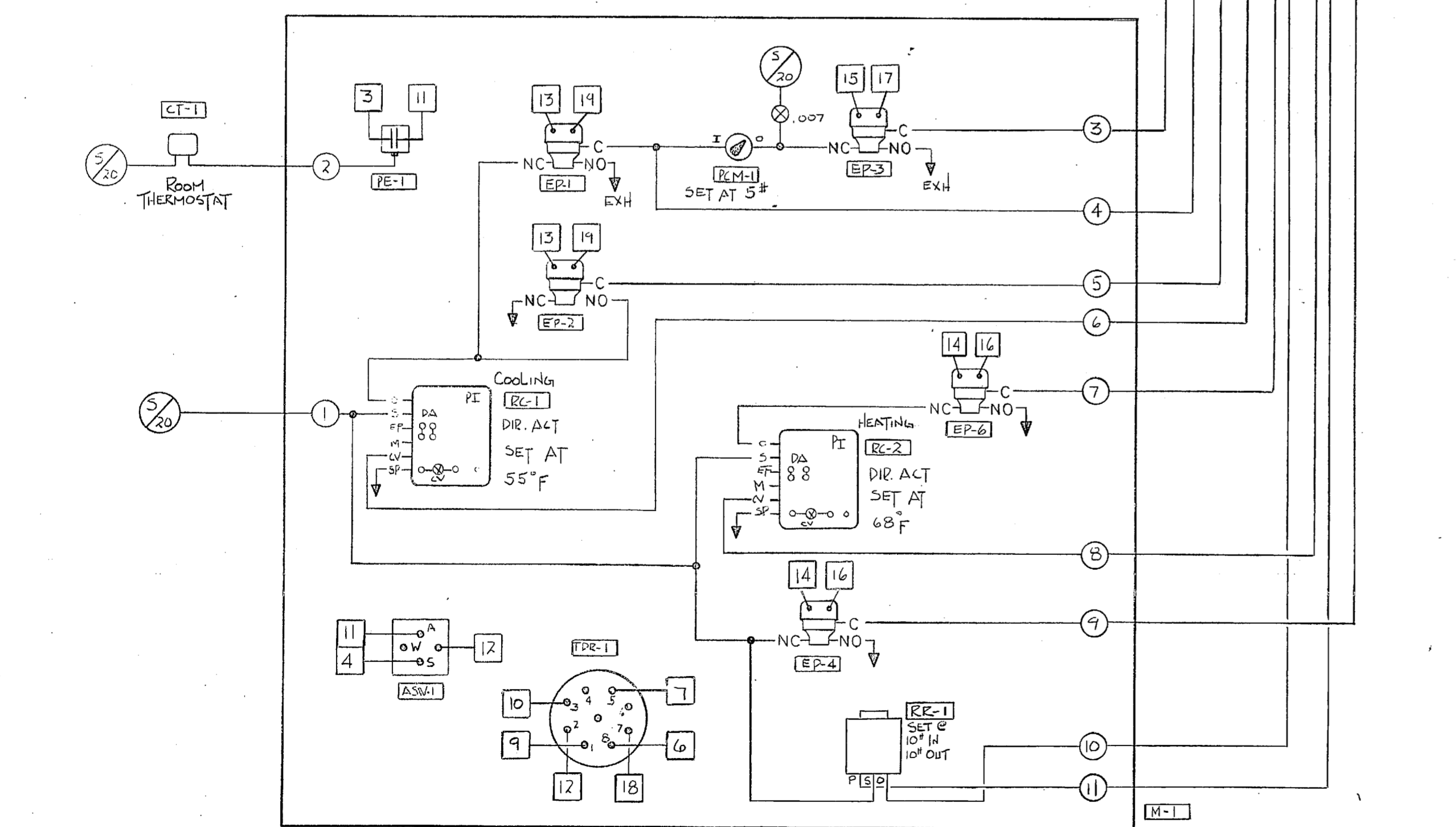
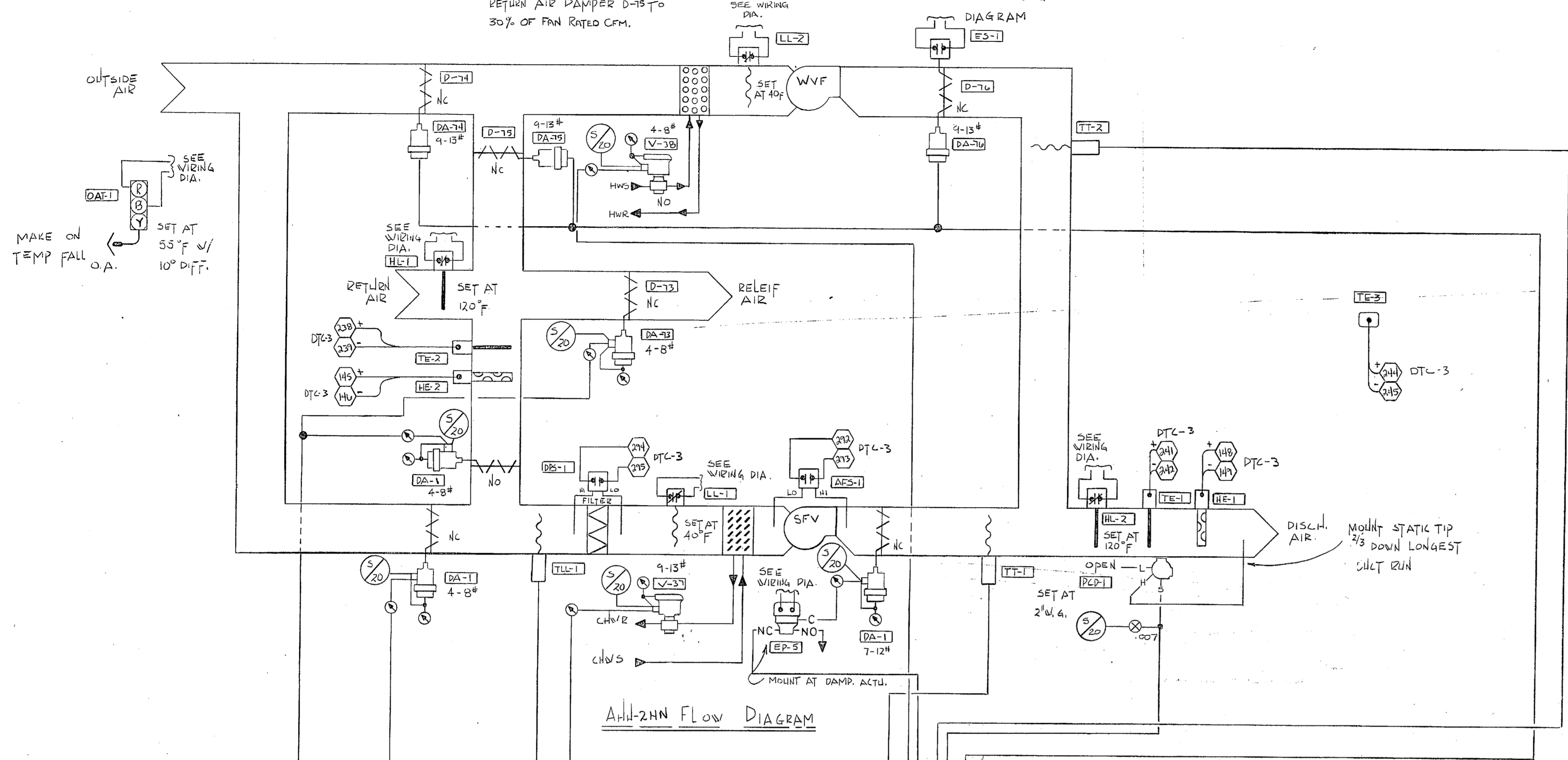


AHU-2GS W/WINTER VENTILATION FAN WVF WIRING DIAGRAM

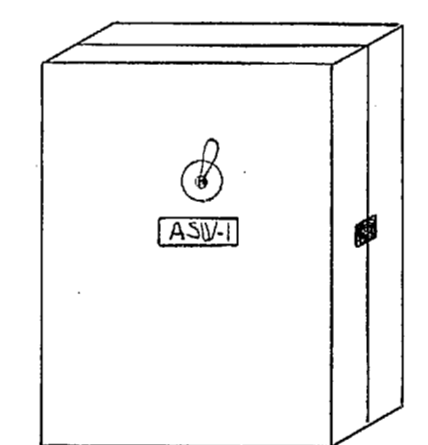
DRAWING TITLE		AHU-2GS CONTROL DIAGRAM	
PROJECT	CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.	CONTRACTOR	GENERAL HTG & A.C.
SALES ENGR.	F.N.H.	APPLICATION ENGR.	J.A.L.
DATE	10-24-86	DATE	12-12-87
BY	K.L.	BY	J.L.
CONTRACT NUMBER	6128-0080	DRAWING NUMBER	18 OF 46

22" x 34" ORIGINAL

NOTE: SET OUTSIDE AIR DAMPER D-14 TO OPEN TO 70% AND RETURN AIR DAMPER D-15 TO 30% OF FAN RATED CFM.



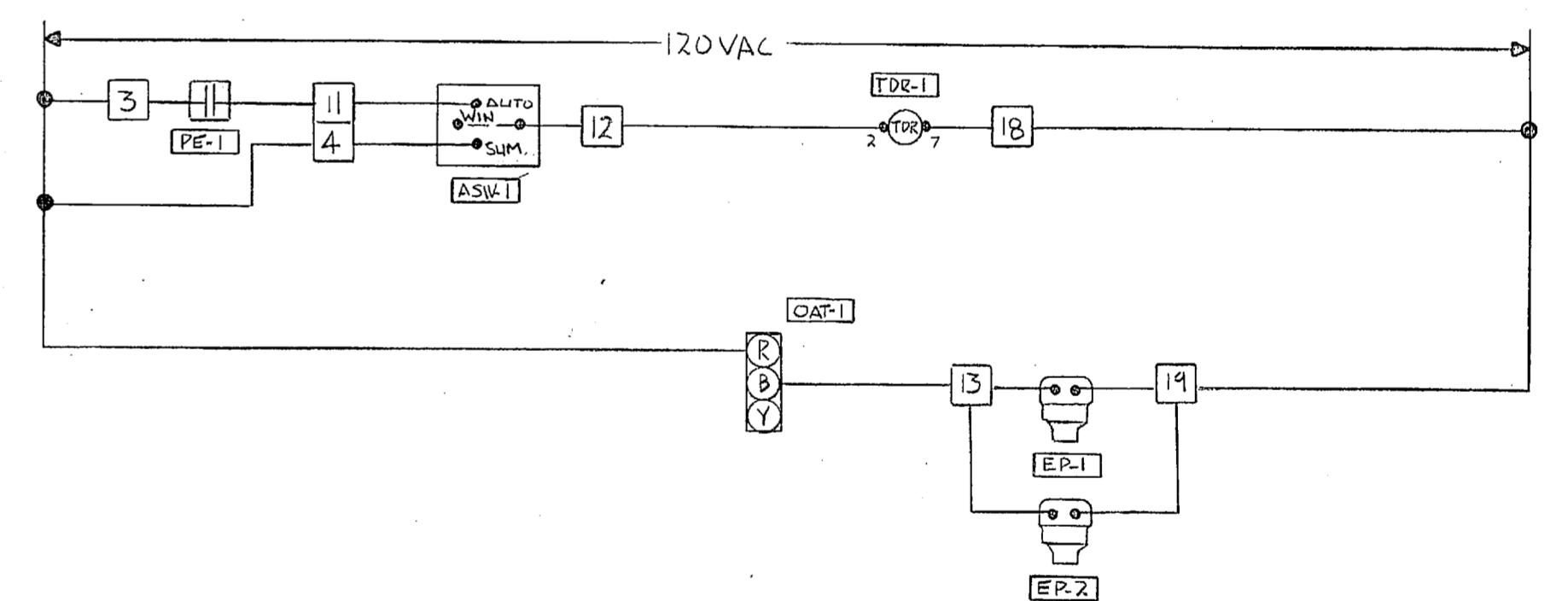
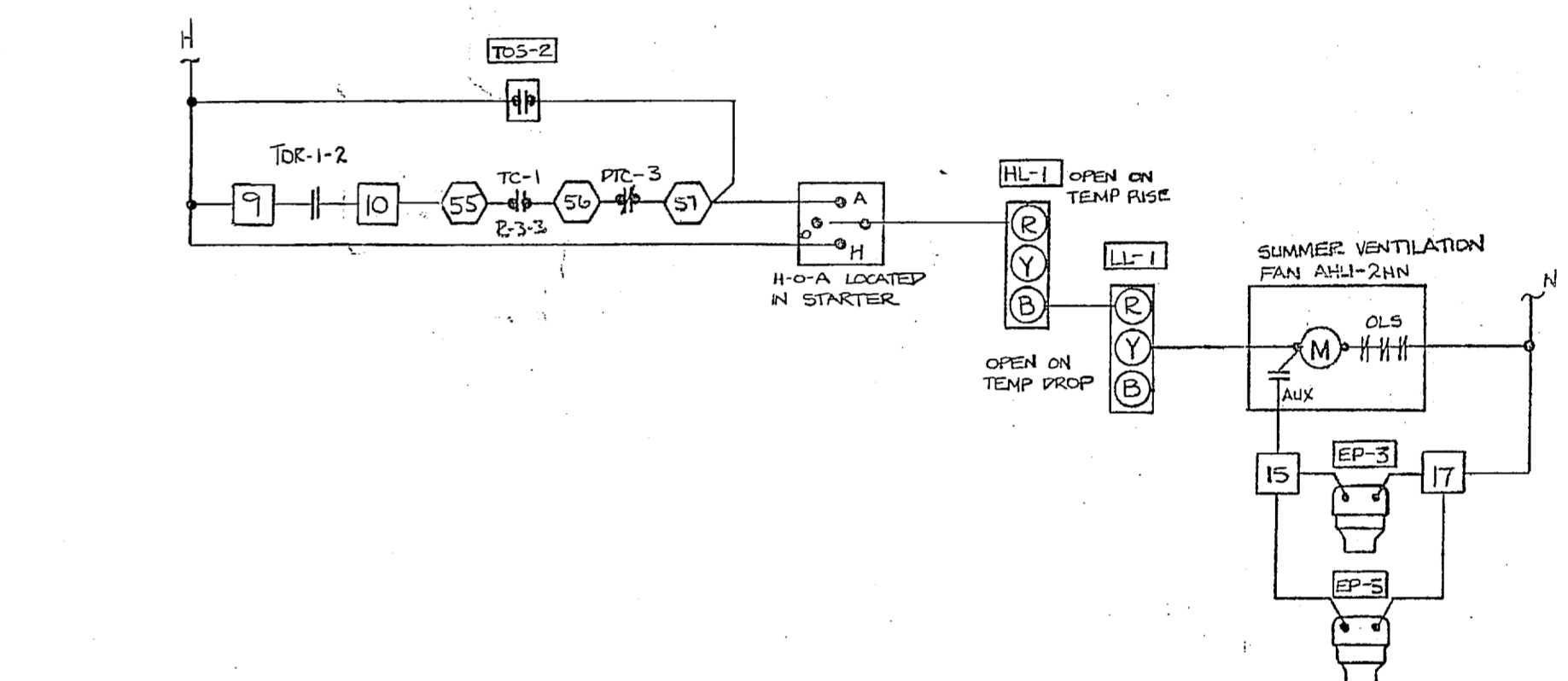
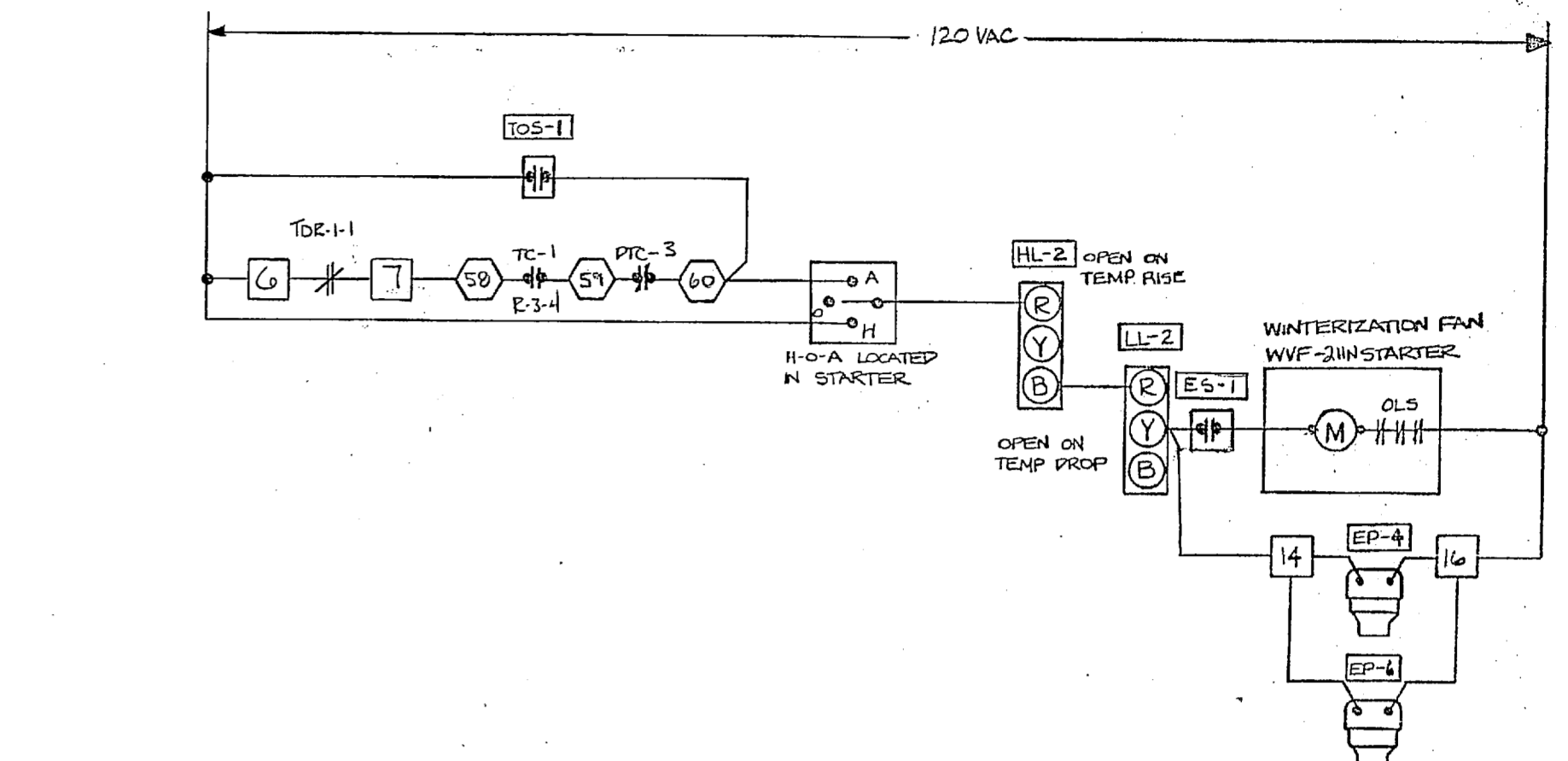
CONTROL PANEL



NAMETAG SCHEDULE
ASW-1 AUTO-WINTER-SUMMER SWITCHOVER

SEQUENCE CHART

OA REL DAMPERS	CLG VALVE
RETUR AIR DAMPER	DISCH. DAMPER
NOT WATER VALVE	PE-1
RM TEMP	



AHU-2HN W/WINTER VENTILATION FAN WVF
WIRING DIAGRAM

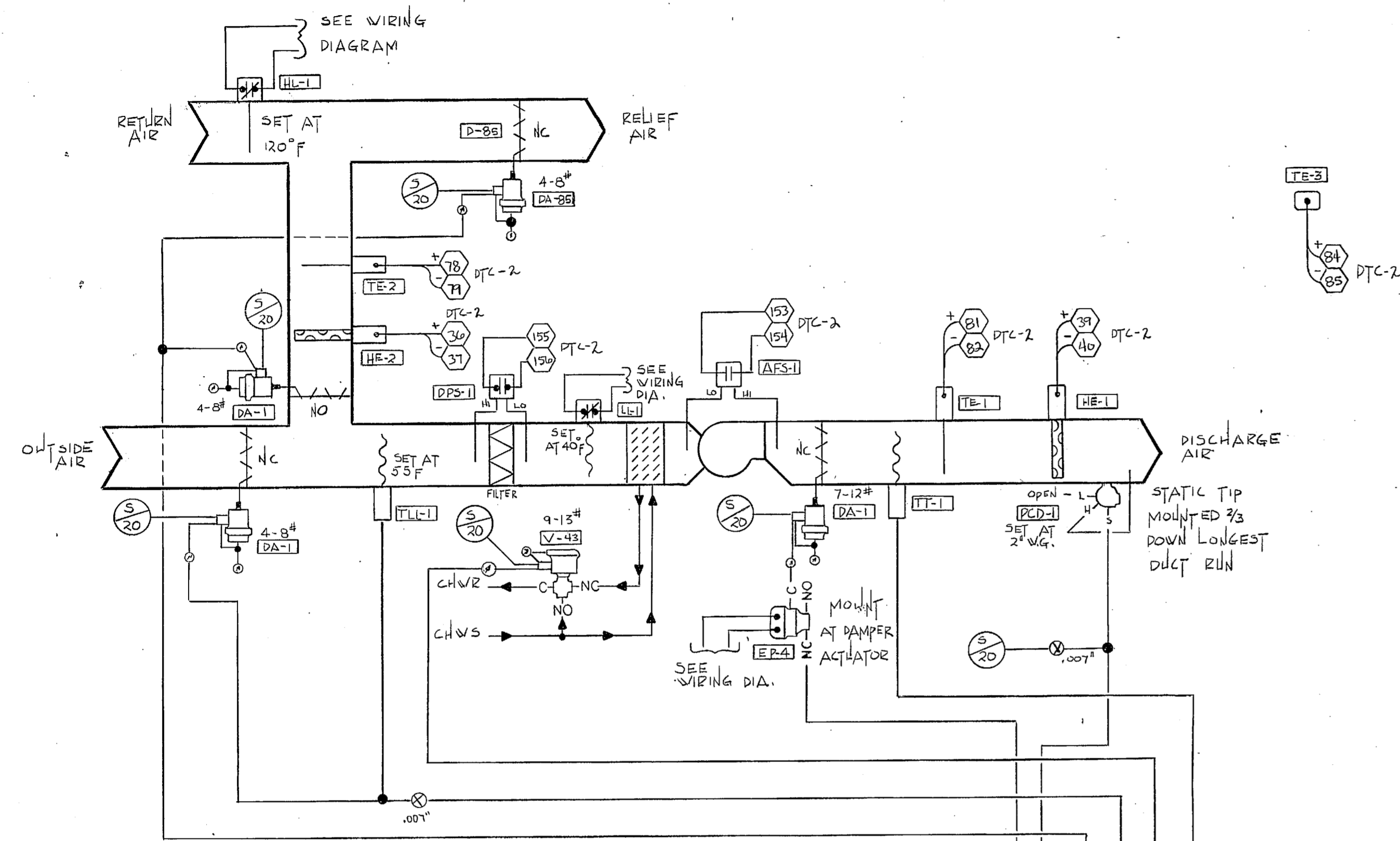
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DRAWING TITLE AHU-2HN CONTROL DIAGRAM		REVISION - LOCATION 1 REV AS PER SUBMITTAL RETURN		DATE 2-12-87	BY J.L.
SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	DATE 10-24-86	BY BY KL	APPROVED DATE	CONTRACT NUMBER 6128-0080
PROJECT CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.			CONTRACTOR GENERAL BTR & A.C.		DRAWING NUMBER 19 OF 40

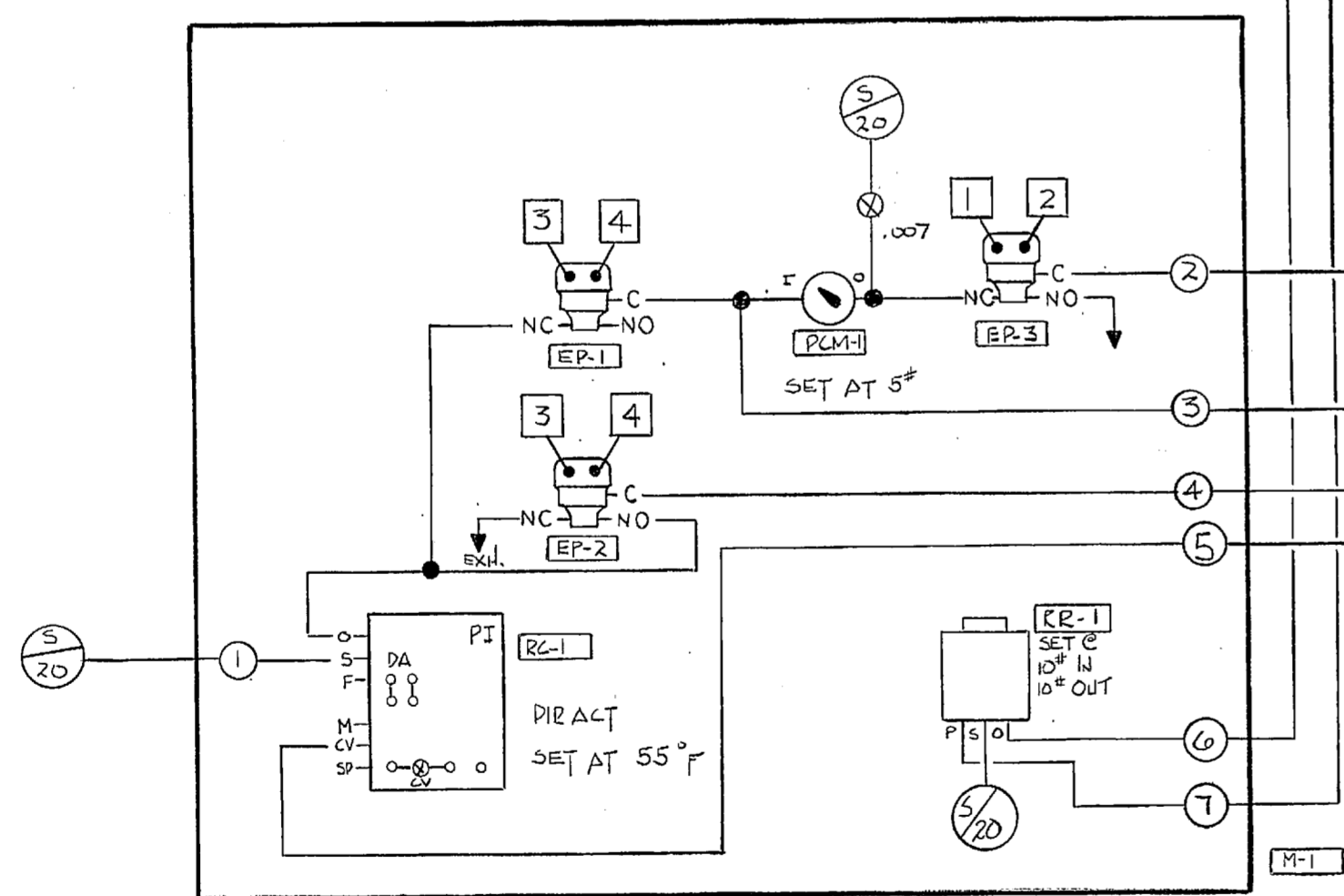
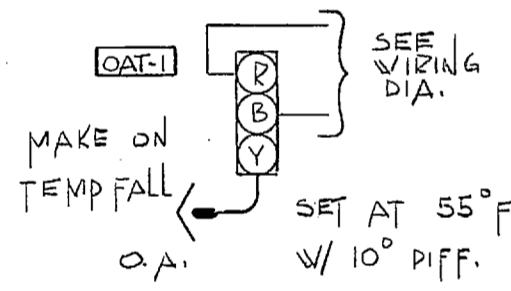
JOHNSON CONTROLS
Systems & Services Division

22" x 34" ORIGINAL

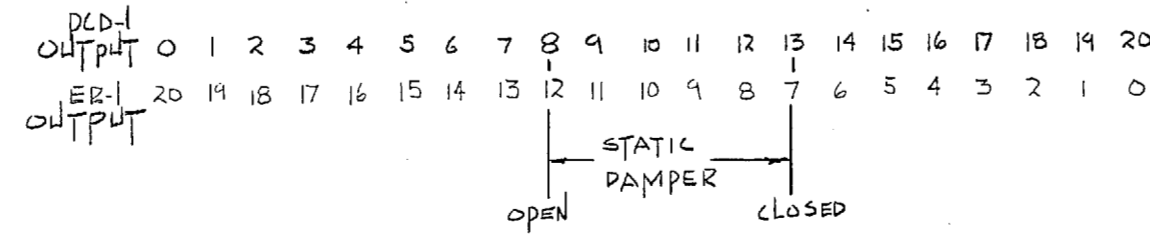
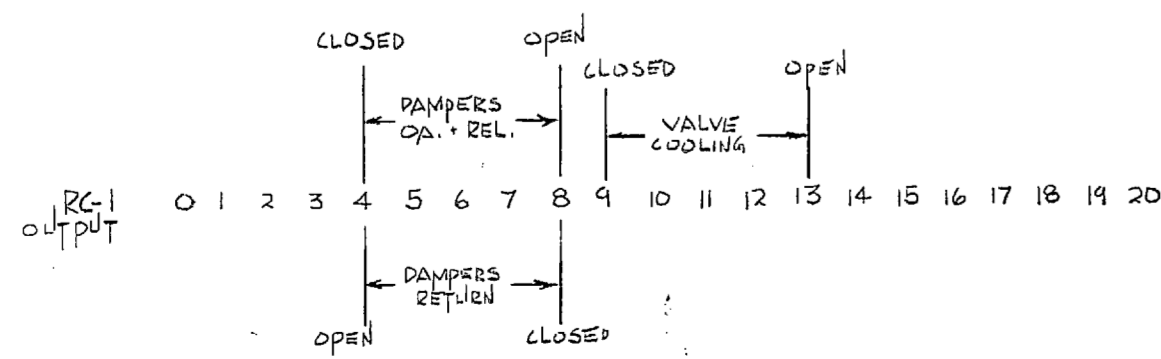




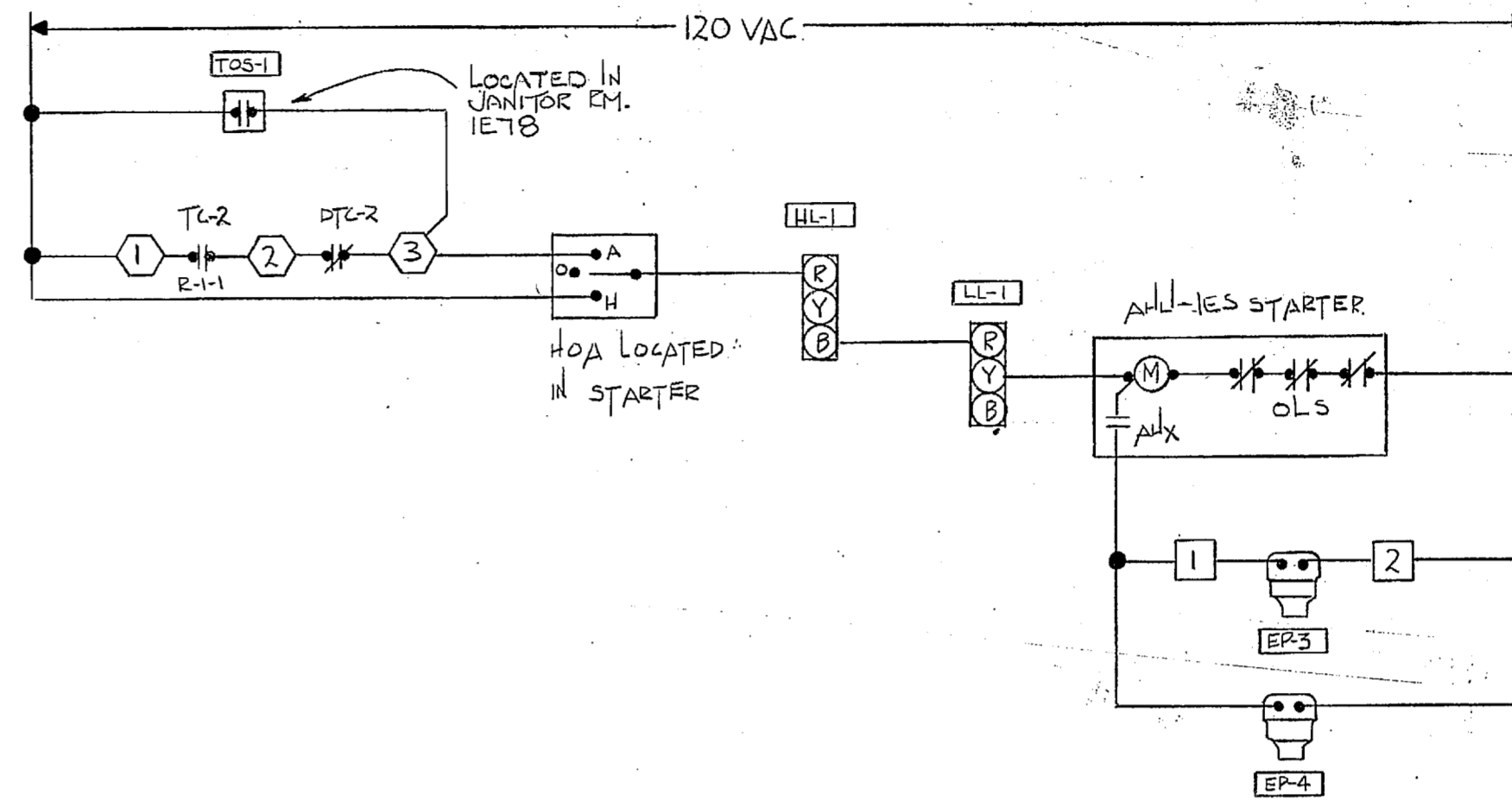
AHU-IES Flow Diagram



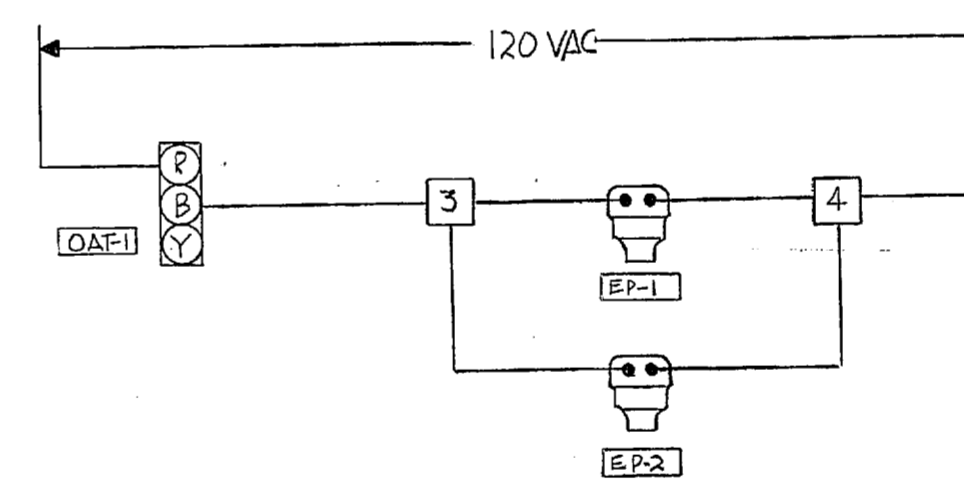
Control Panel



SEQUENCE CHART



AHU-IES WIRING DIAGRAM

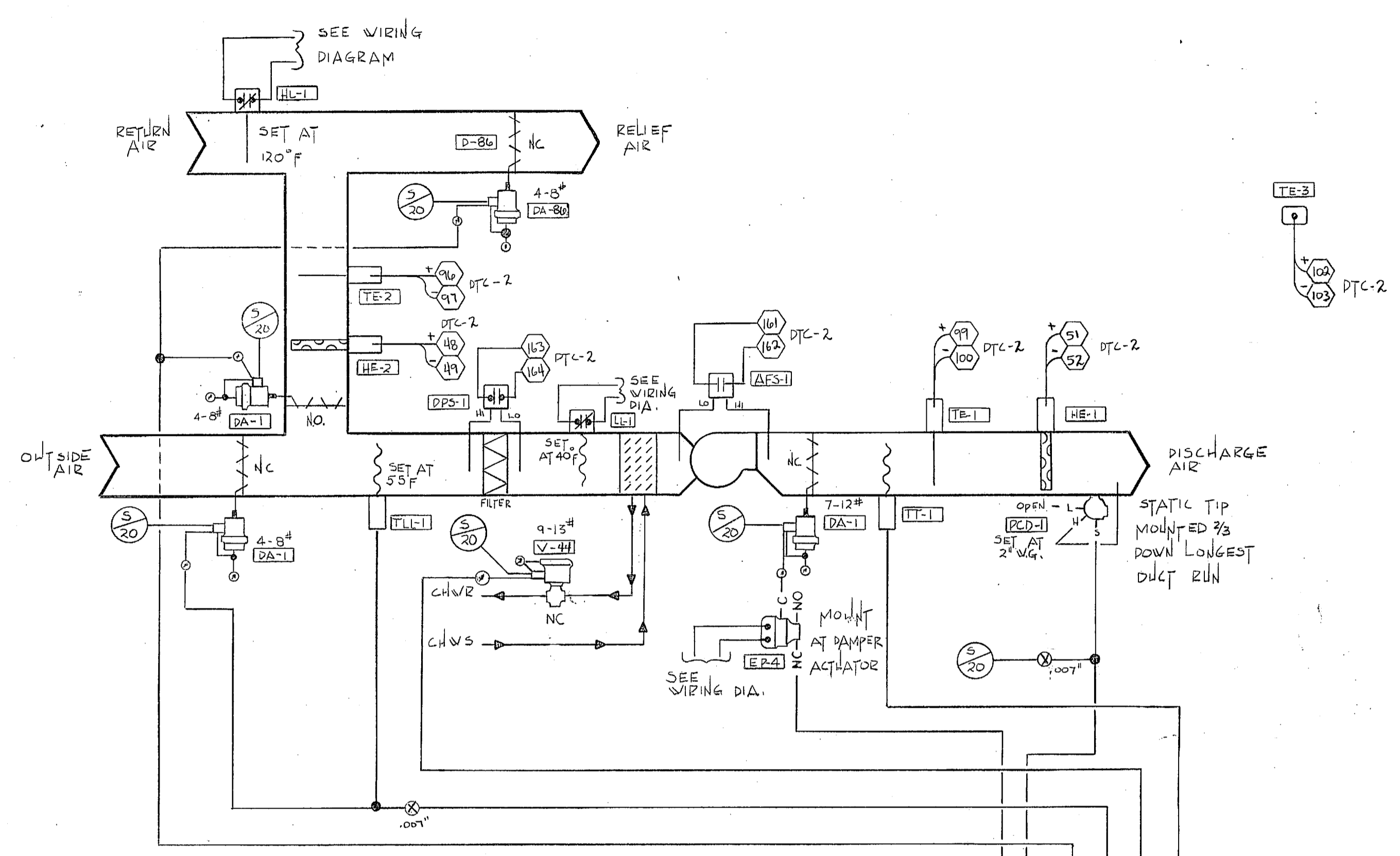


OUTSIDE AIR THERMOSTAT WIRING DIAGRAM

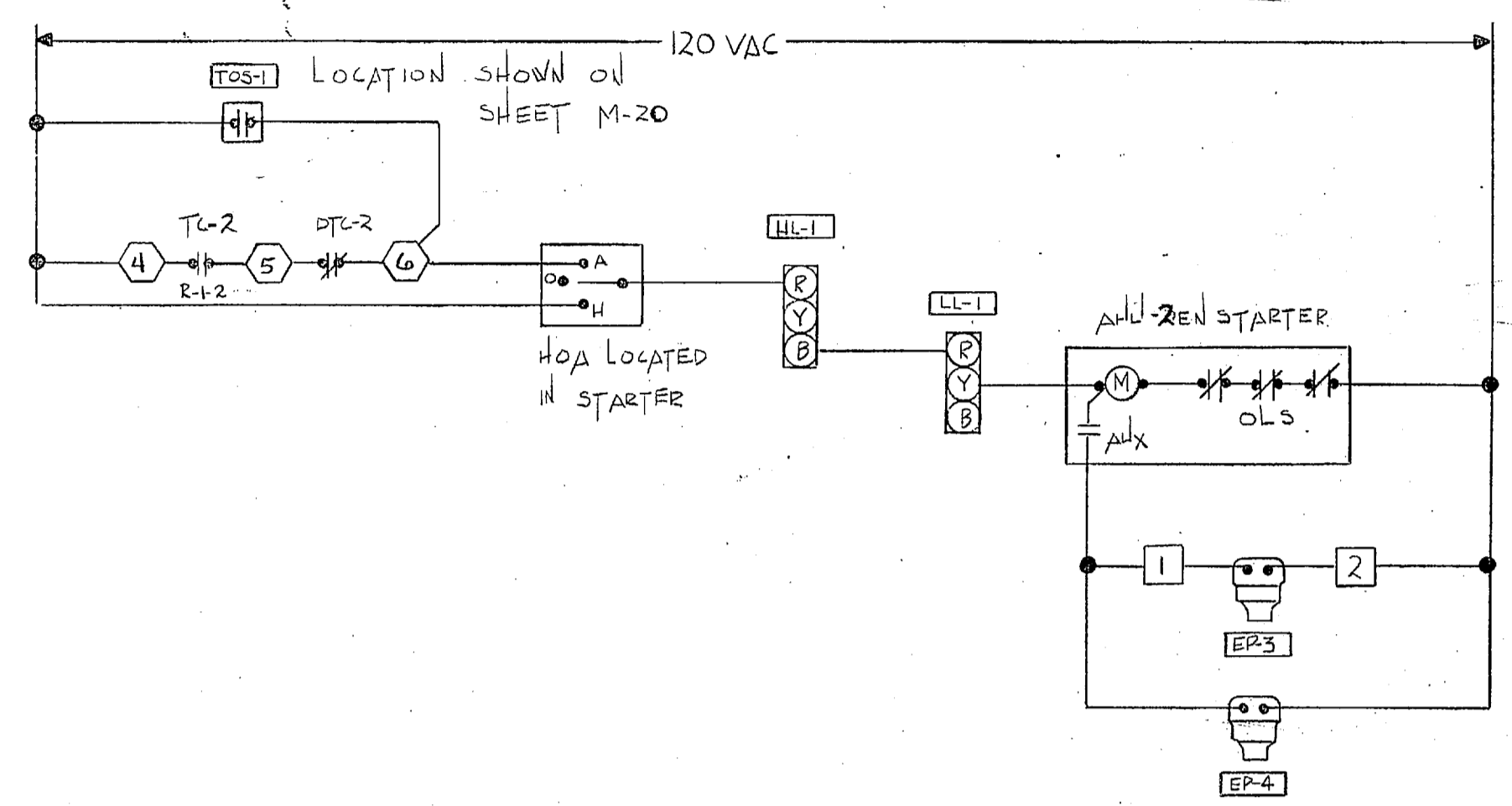
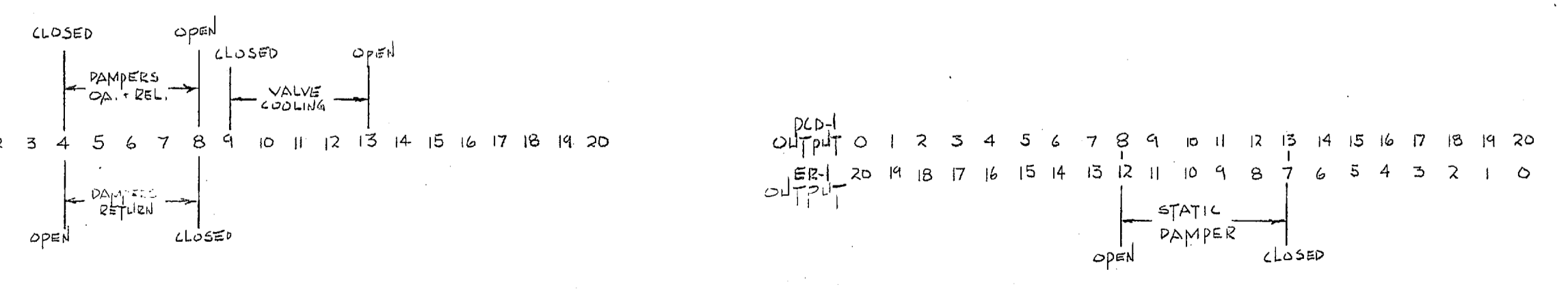
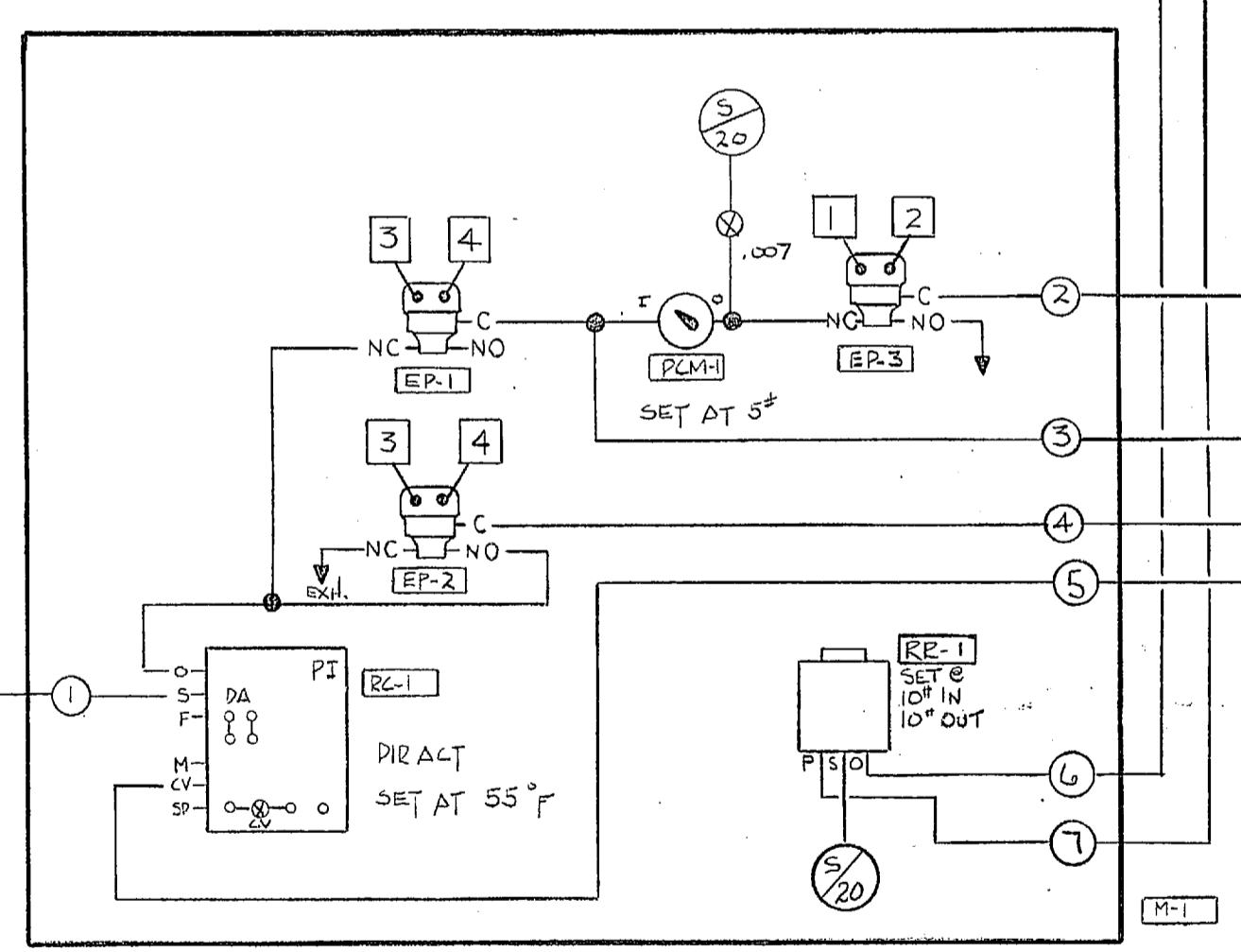
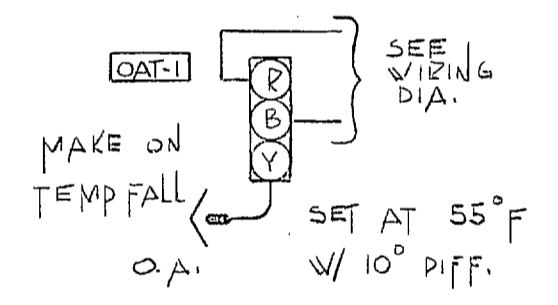
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DRAWING TITLE		NO.		REV AS PER SUBMITTAL RETURN		DATE	
AHU-IES DIAGRAM		1		2-12-87		JL	
PROJECT		SALES ENGR.		APPLICATION ENGR.		DRAWN	
CAMP LEJEUNE HOSPITAL CONVERSION		F.N.W.		J.A.L.		BY KL DATE 10-24-86 BY	
DIVISION HEADQUARTERS		JOHNSON CONTROLS		CONTRACTOR		CONTRACT NUMBER	
CAMP LEJEUNE, N.C.		Systems & Services Division		GENERAL HTG & A/C		6128-0085	
						DRAWING NUMBER	
						22 OF 48	

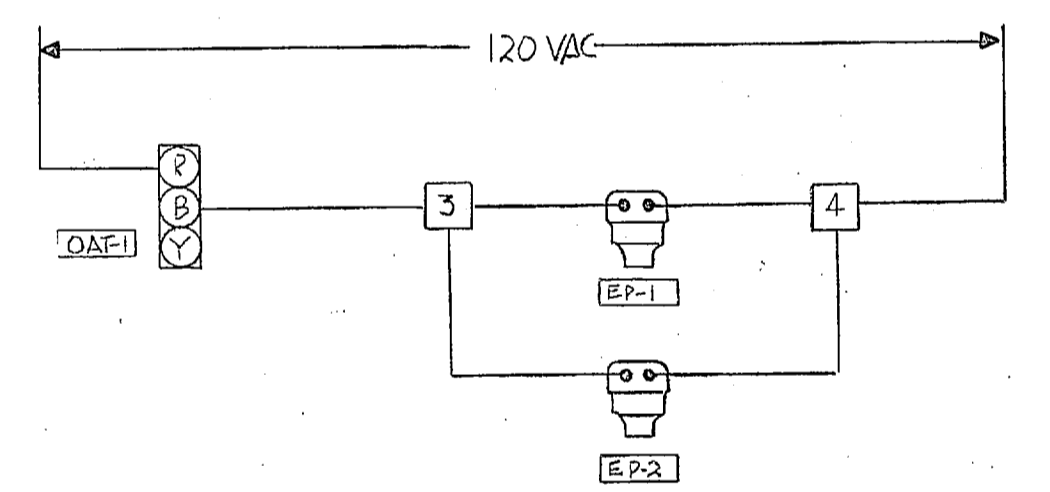




AHU-ZEN FLOW DIAGRAM



AHU-ZEN WIRING DIAGRAM

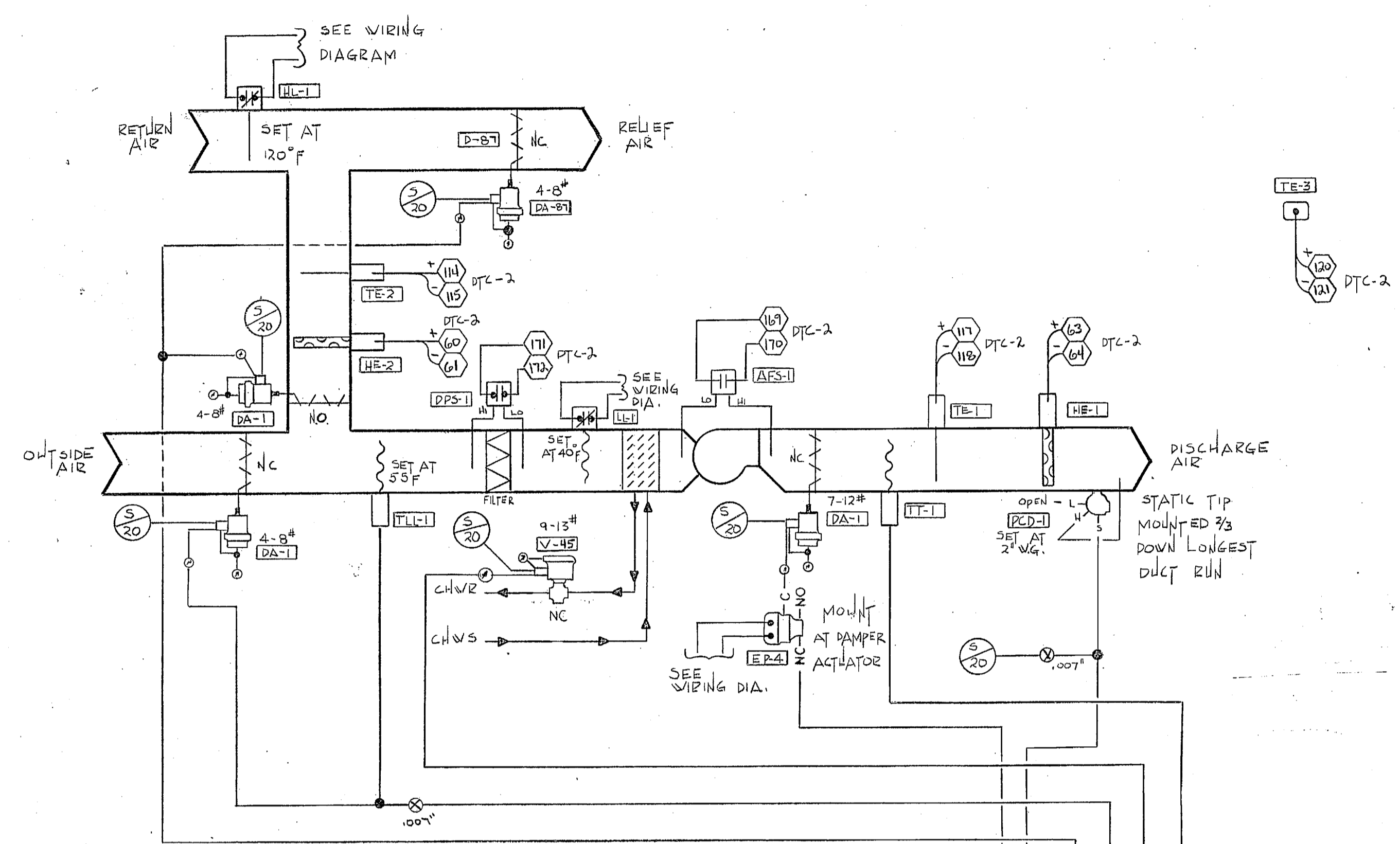


OUTSIDE AIR THERMOSTAT WIRING DIAGRAM

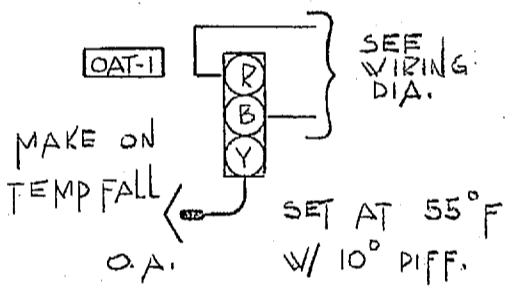
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		AHU-ZEN DIAGRAM			
PROJECT		SALES ENGR.		CONTRACT NUMBER	
CAMP LEJEUNE HOSPITAL CONVERSION		F.N.H.		6128-0080	
DIVISION HEADQUARTERS		APPLICATION ENGR.		DRAWING NUMBER	
CAMP LEJEUNE, N.C.		J.A.L.		23 OF 40	
		BY KL DATE 10-24-86		DATE	
		APPROVED		DATE	
		BY		DATE	
		BY		DATE	
		BY		DATE	
		BY		DATE	



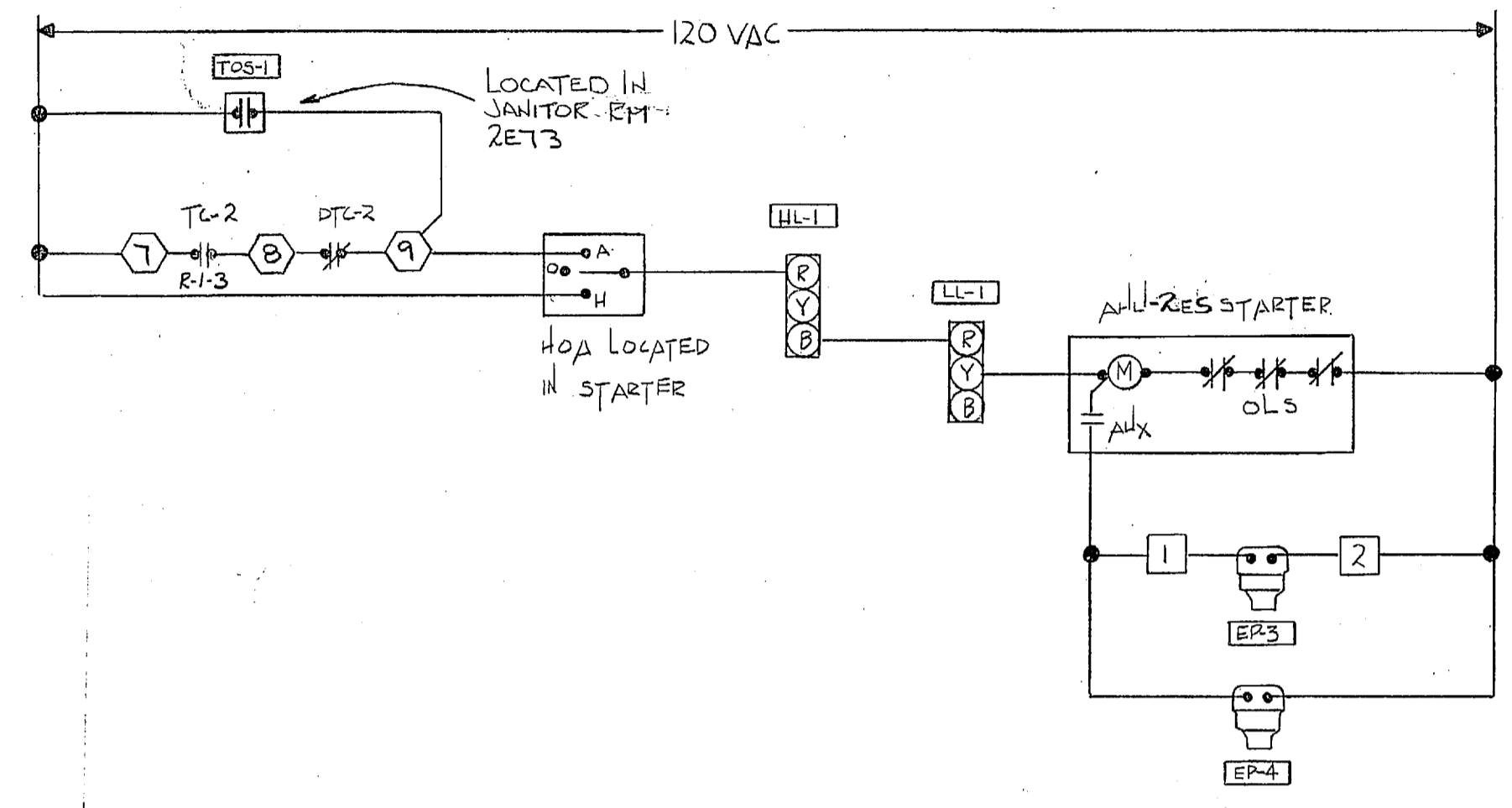
22" x 34" ORIGINAL



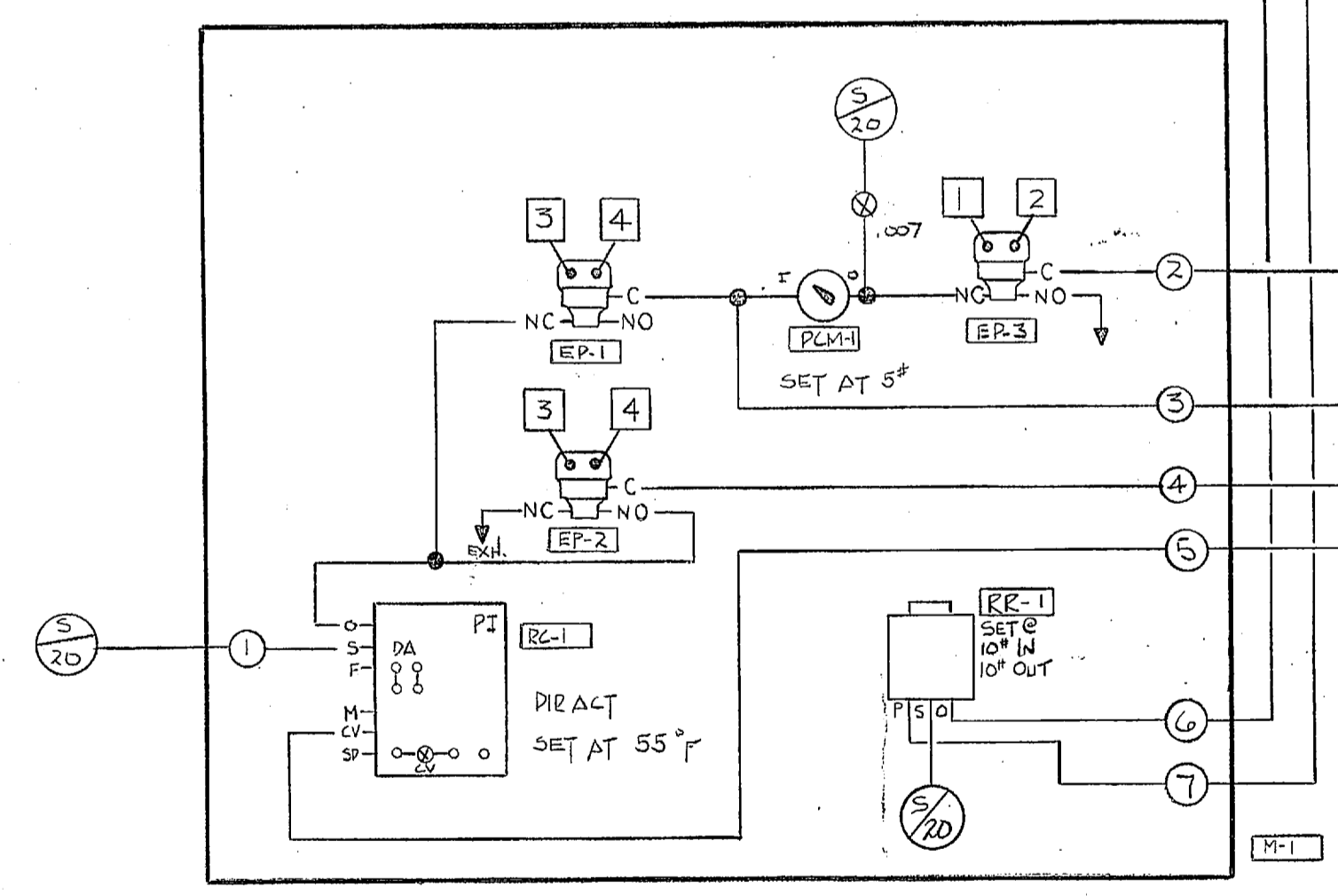
AHJ-2ES FLOW DIAGRAM



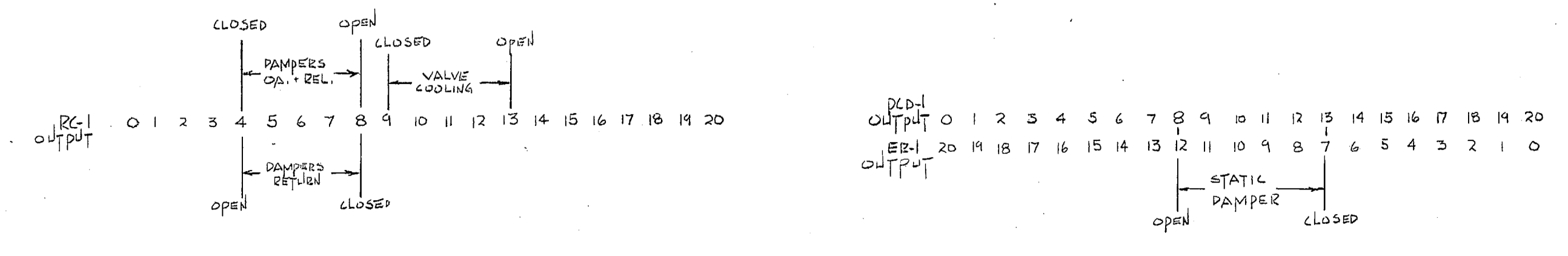
OUTSIDE AIR THERMOSTAT WIRING DIAGRAM



AHJ-2ES WIRING DIAGRAM

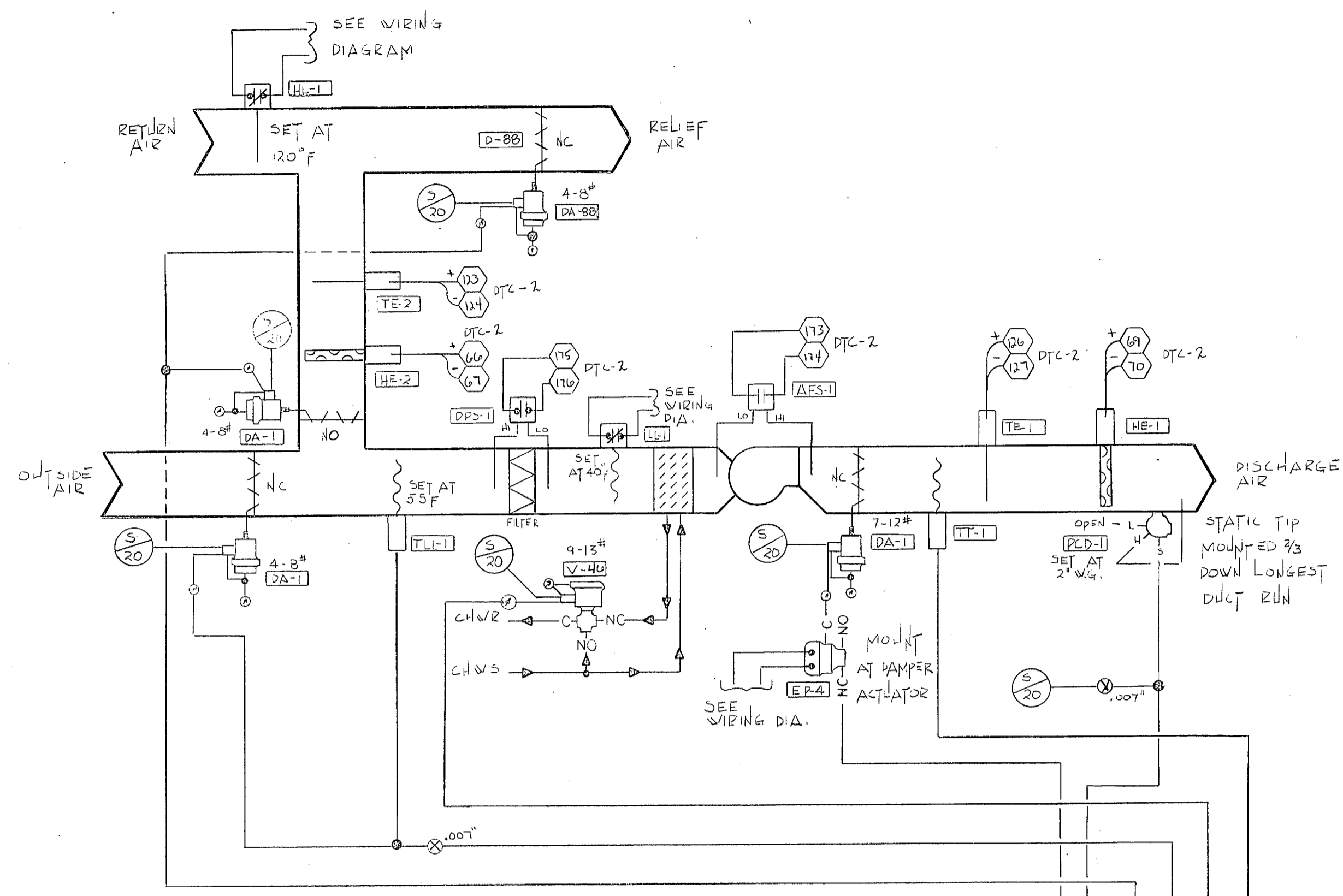


CONTROL PANEL

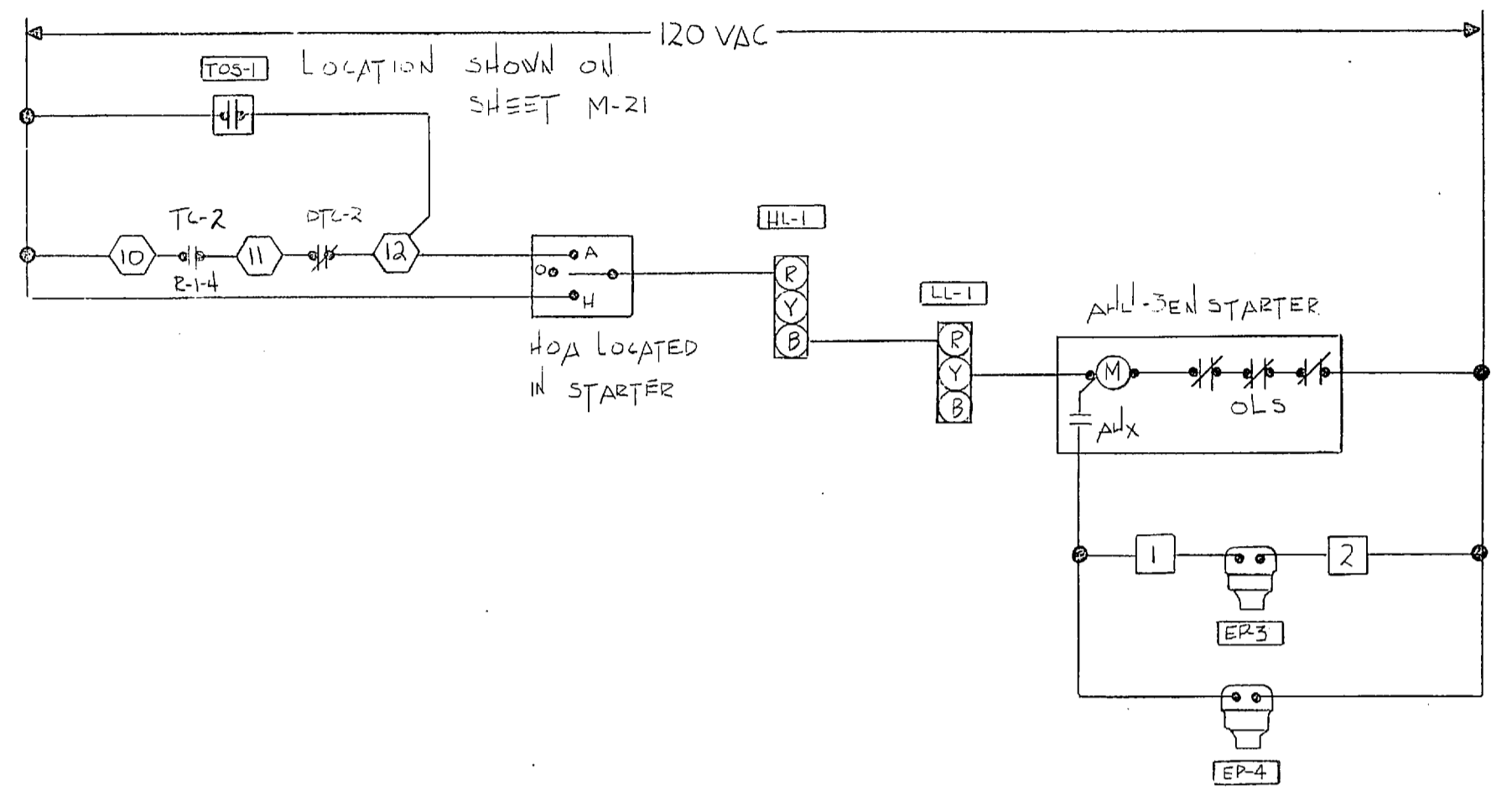
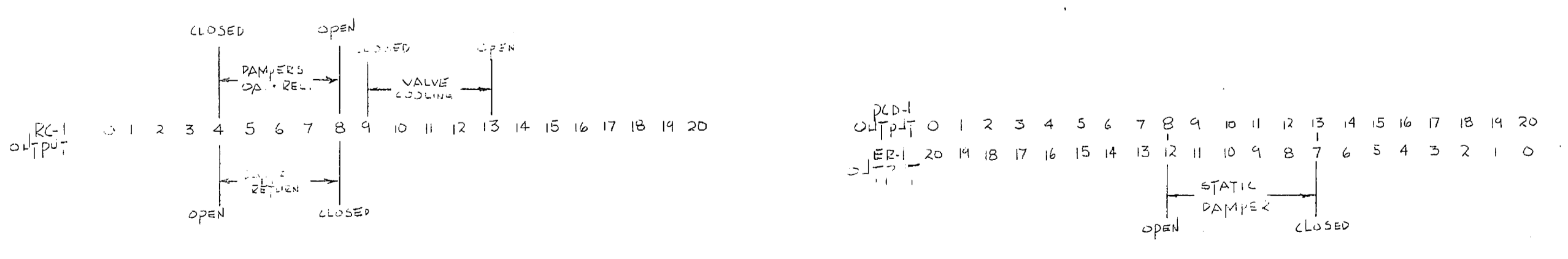
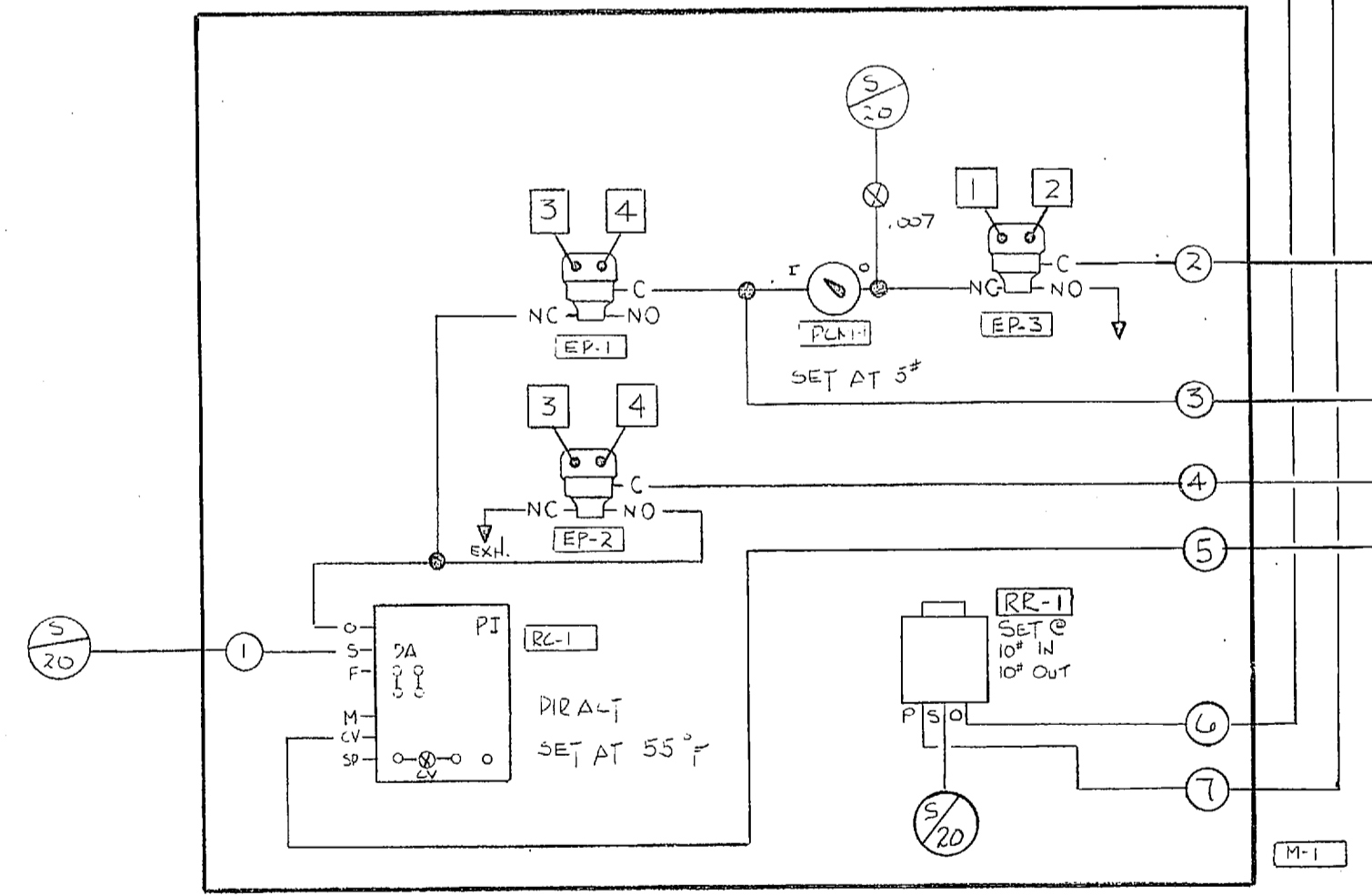
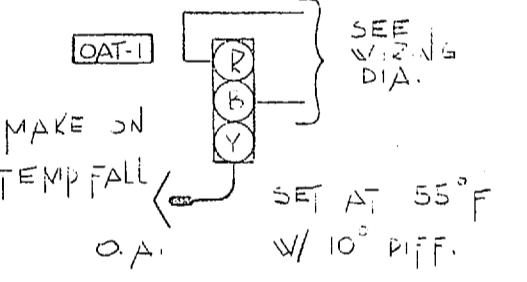


SEQUENCE CHART

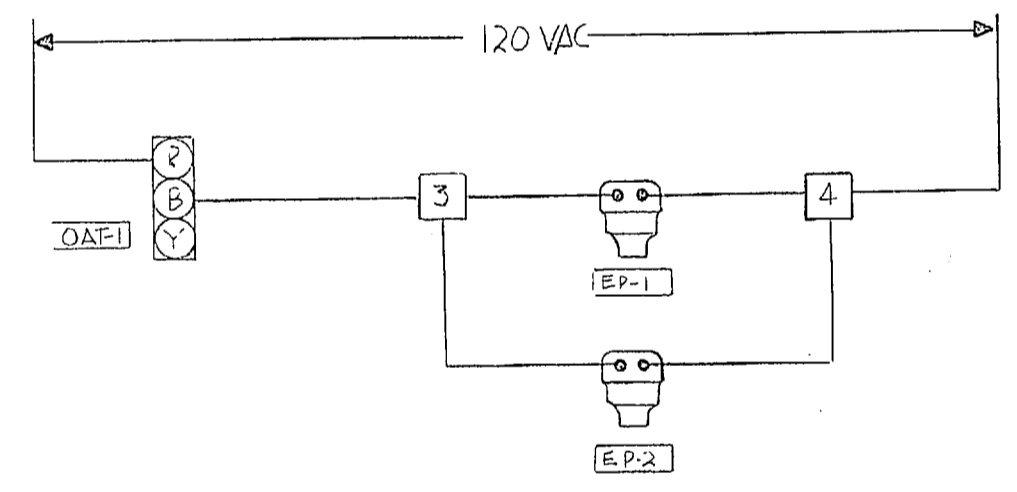
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		PROJECT		CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.	
SALES ENGR.	APPLICATION ENGR.	DATE	BY	APPROVED	DATE
F.N.H.	J.A.L.	10-24-86	KL		
REFERENCE DRAWINGS			NO.	REV AS PER SUBMITTAL RETURN	DATE
GENERAL HIG & A.C.			CONTRACTOR	CONTRACT NUMBER	DATE
JOHNSON CONTROLS Systems & Services Division			GENERAL HIG & A.C.	6128-0080	2-12-87
			DRAWING NUMBER	24 OF 40	



AHJ-3EN FLOW DIAGRAM



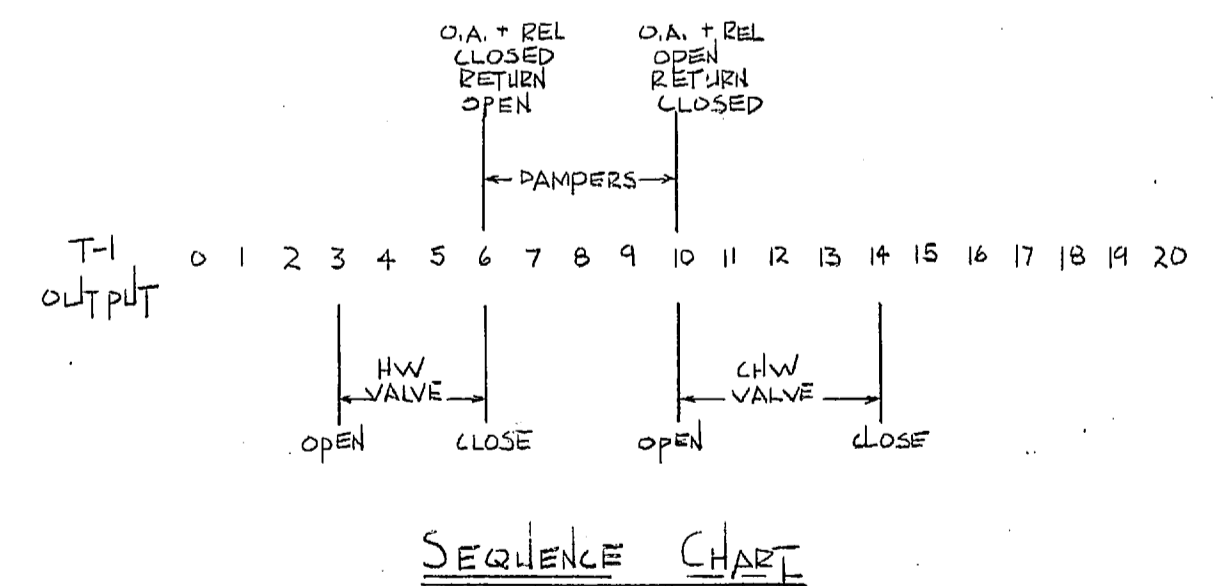
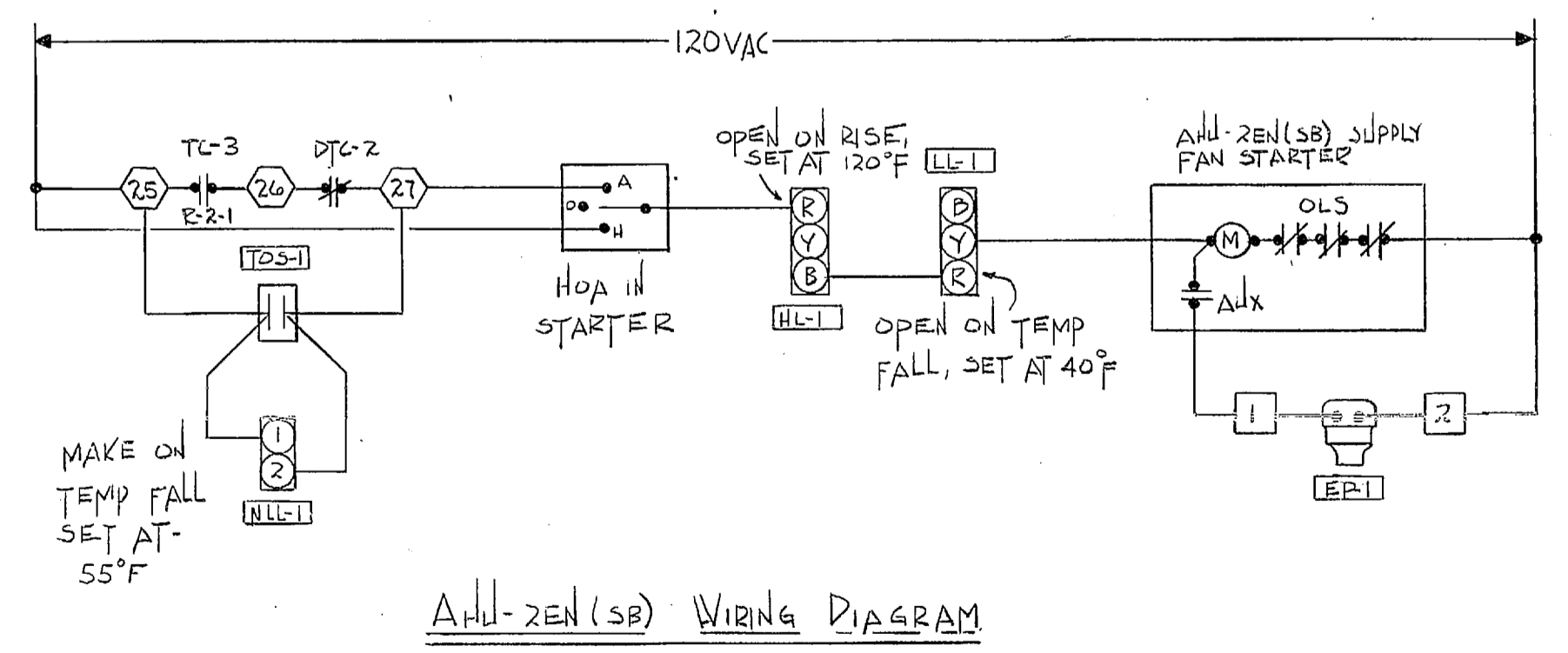
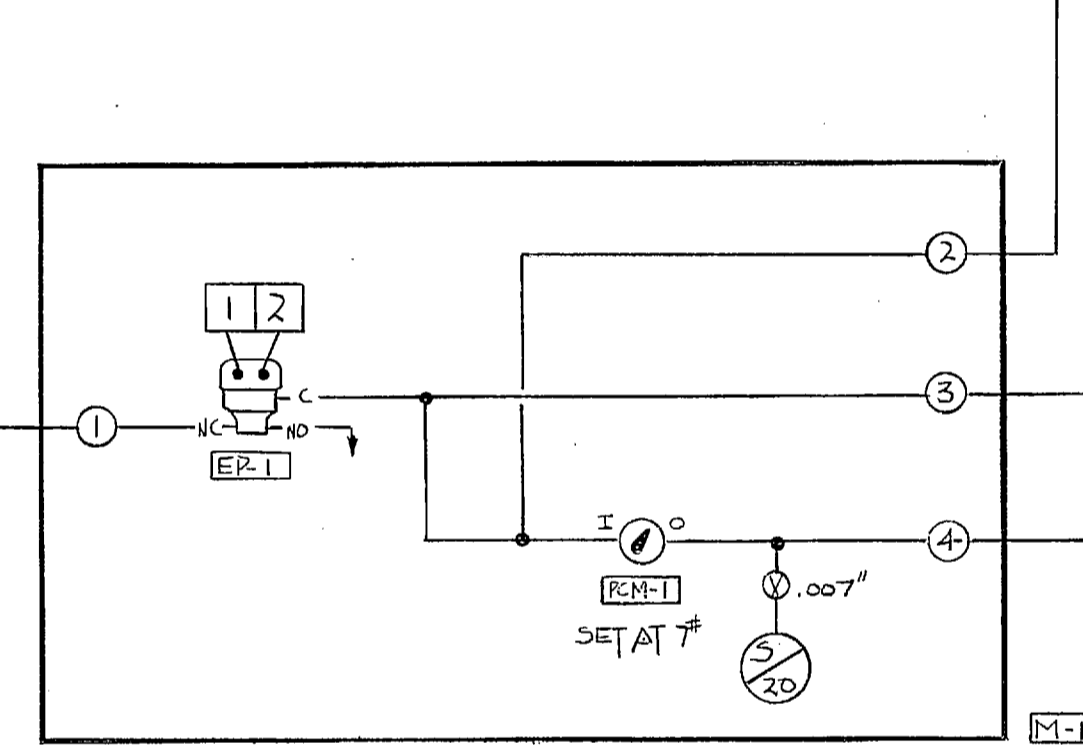
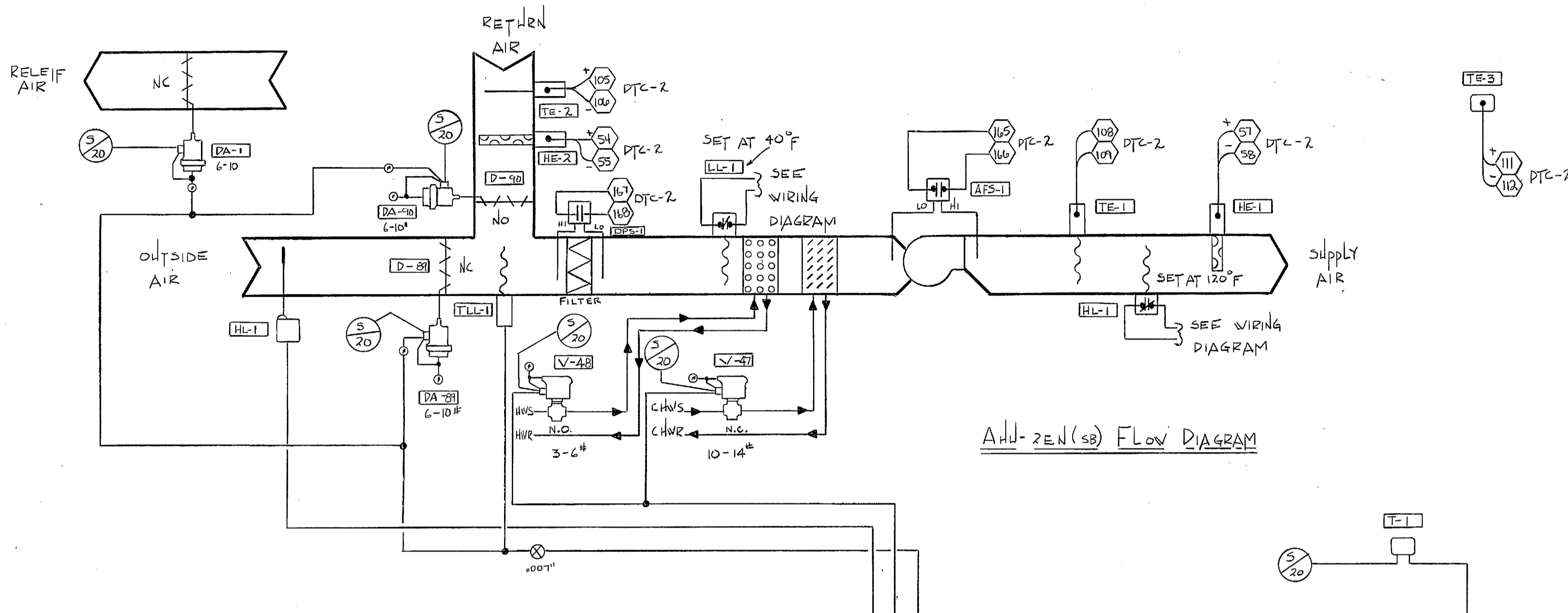
AHJ-3EN WIRING DIAGRAM



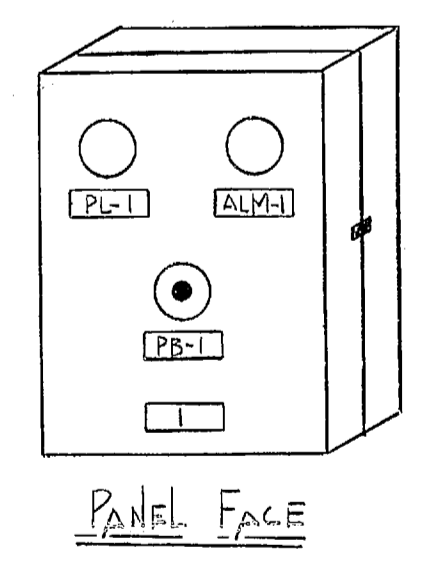
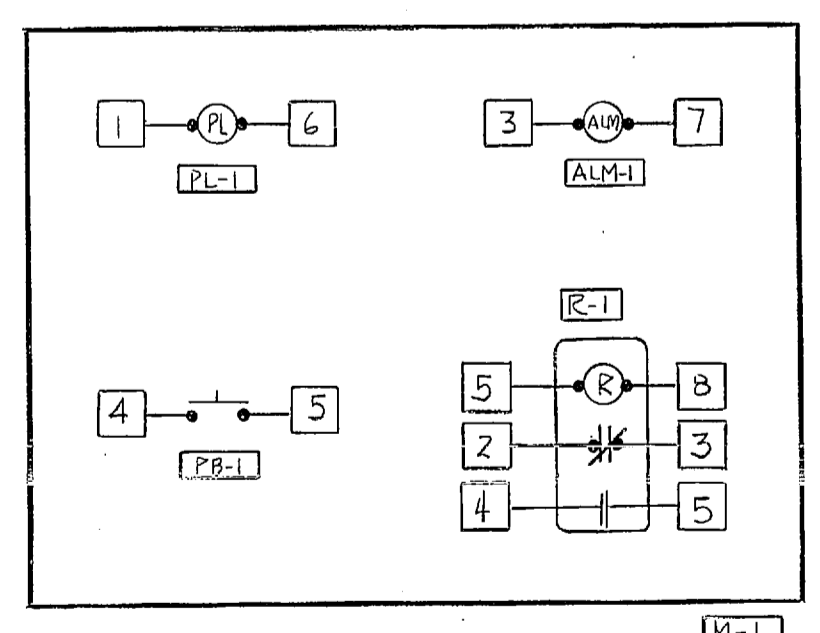
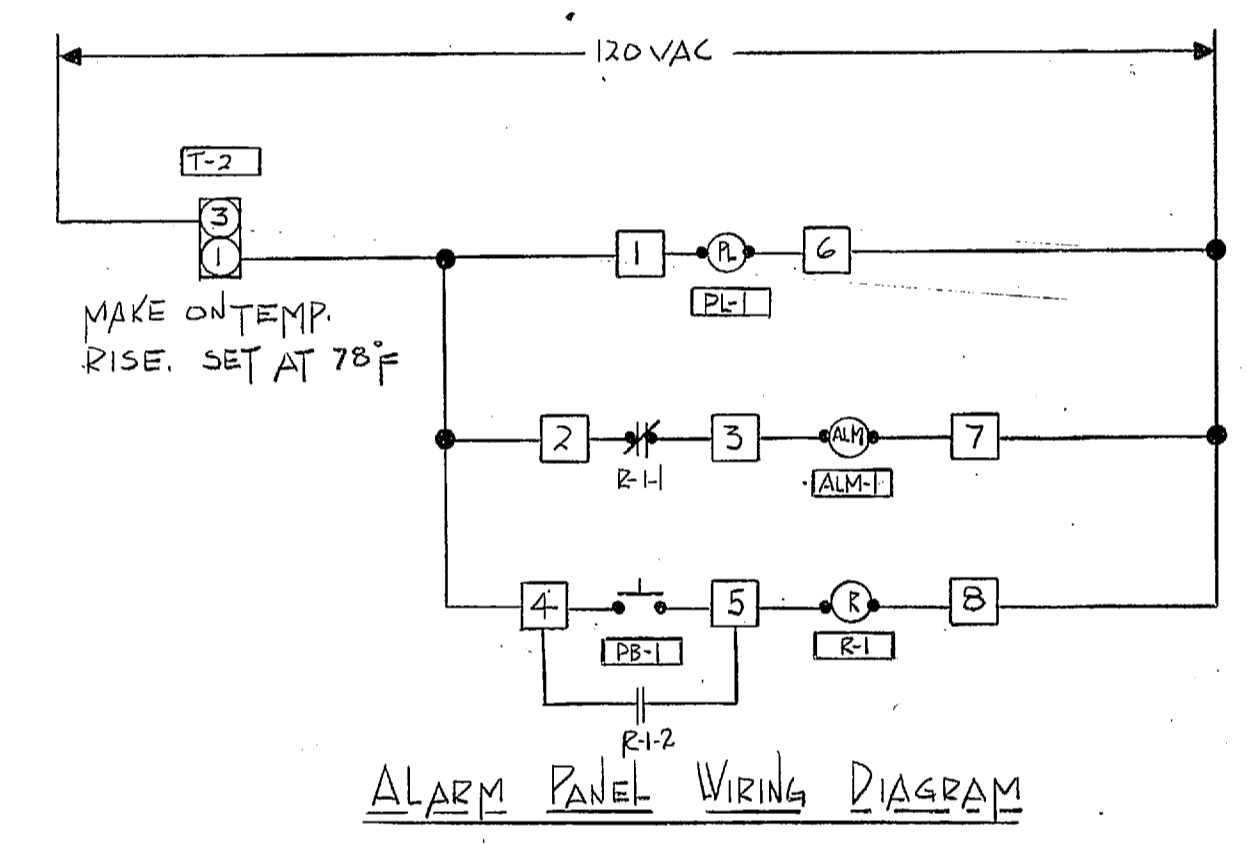
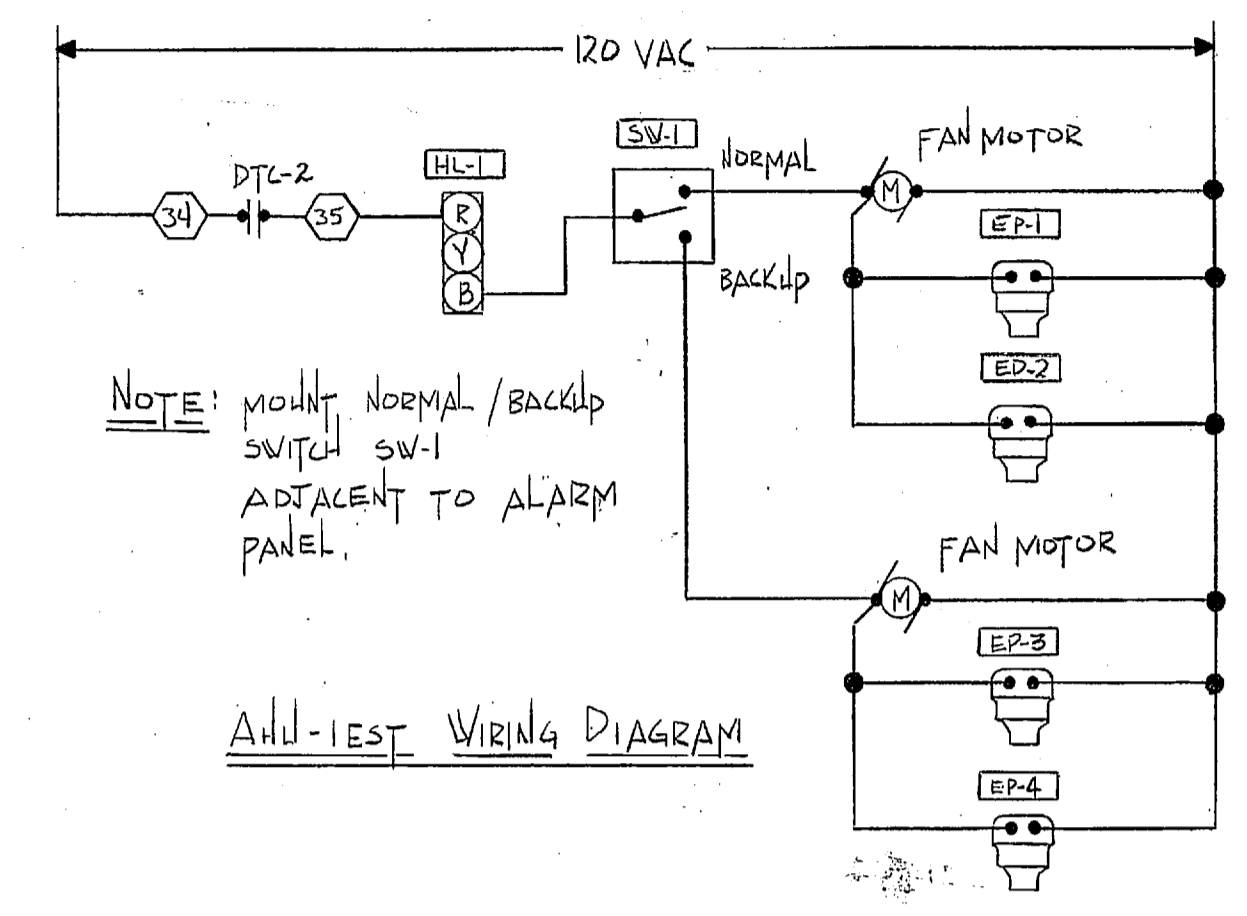
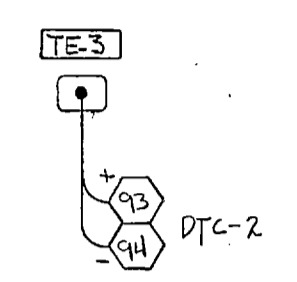
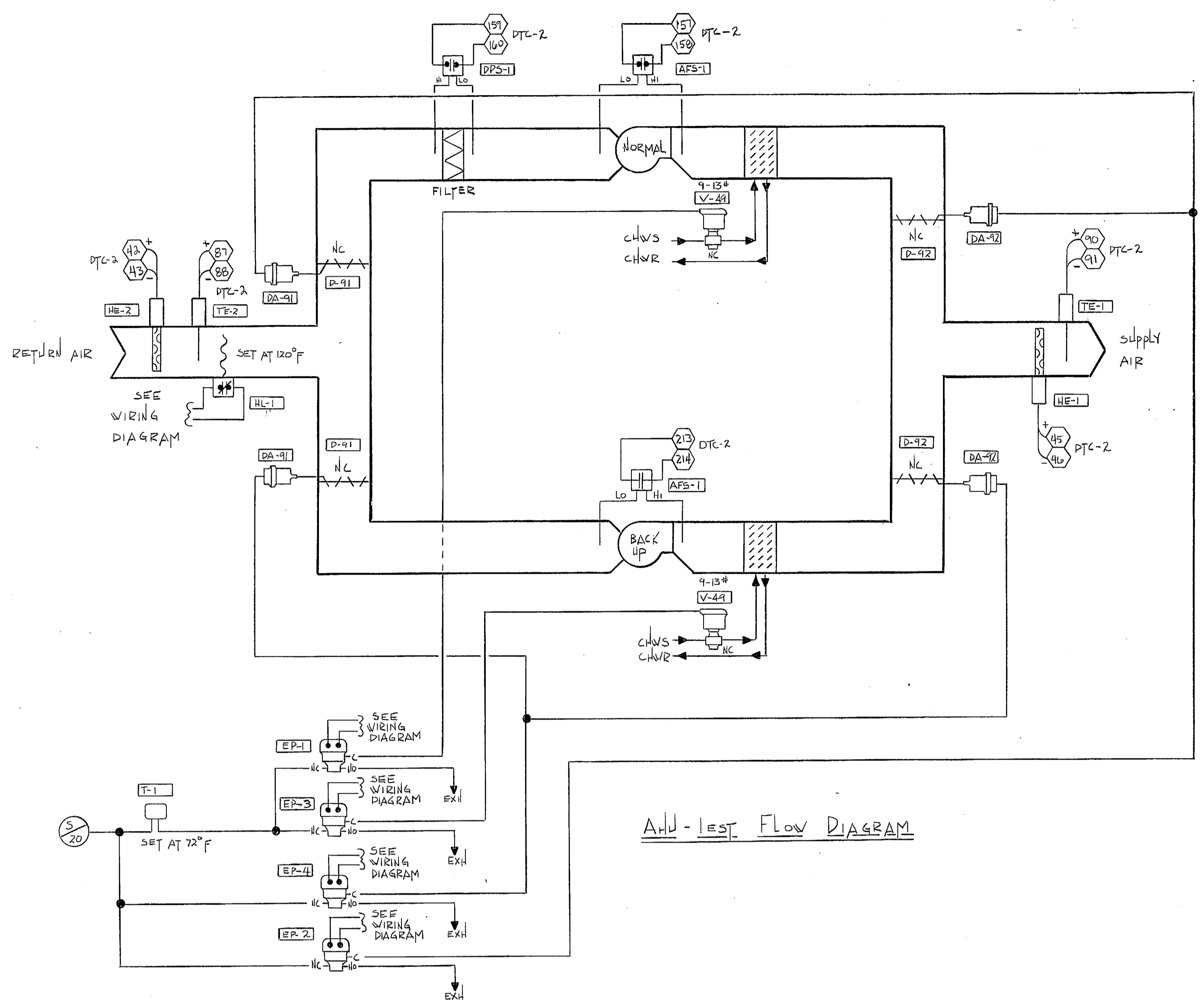
OUTSIDE AIR THERMOSTAT WIRING DIAGRAM

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	AHJ-3EN DIAGRAM		1		2-12-87		J.L.	
	PROJECT		CONTRACTOR		DATE		BY	
	CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		GENERAL, HTG & A.C.		10-24-86		BY	
SALES ENGR. F.N.H.		APPLICATION ENGR. J.A.L.		DATE		BY		
JOHNSON CONTROLS		CONTRACT NUMBER		DATE		BY		
Systems & Services Division		6128-0080		2-12-87		J.L.		
		DRAWING NUMBER		DATE		BY		
		25 of 40						

22" x 34" ORIGINAL



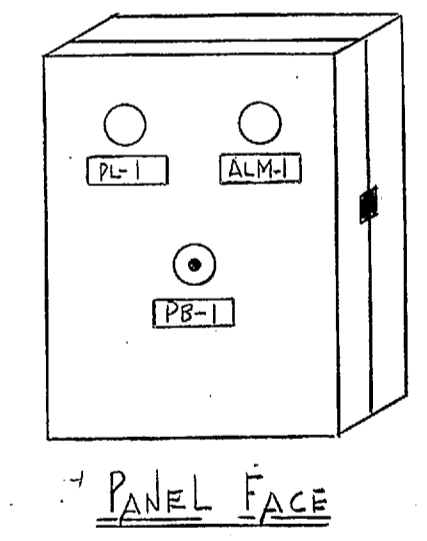
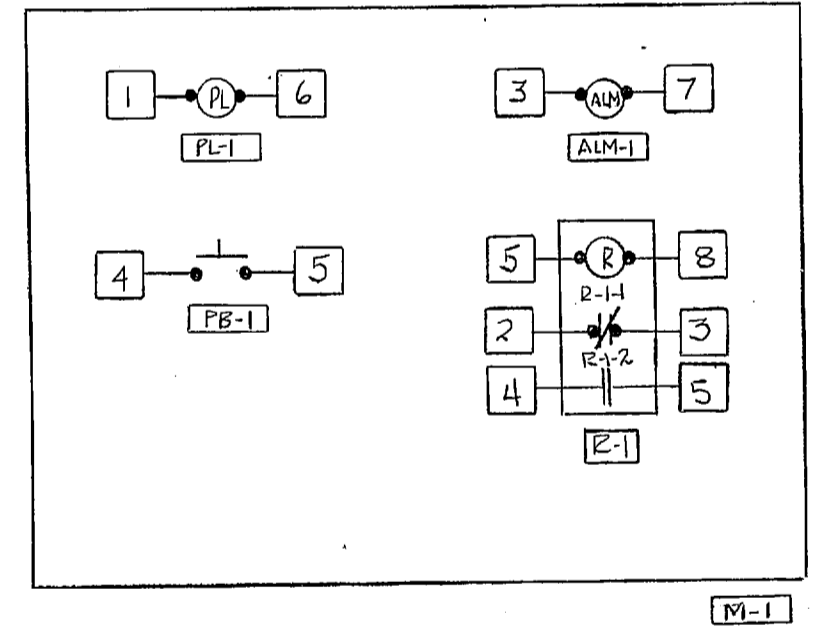
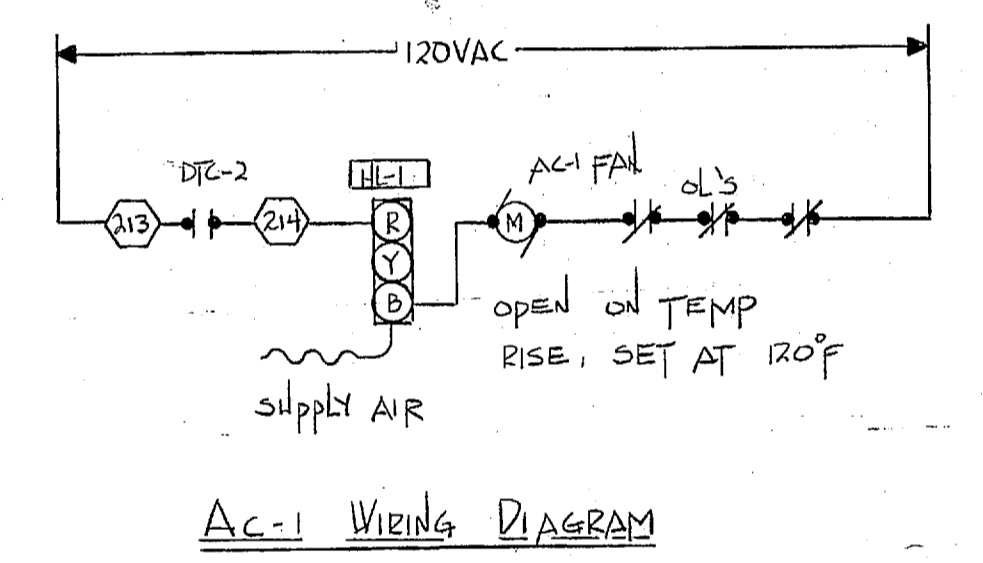
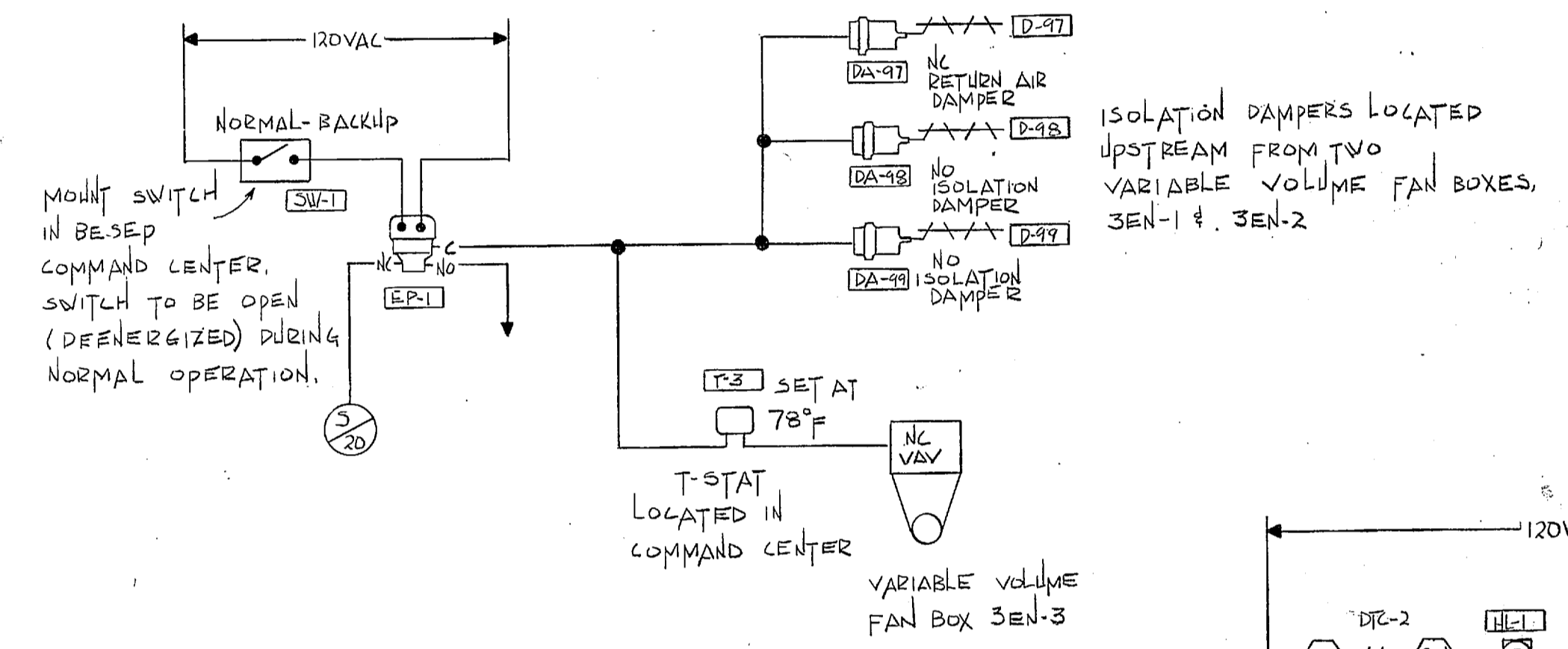
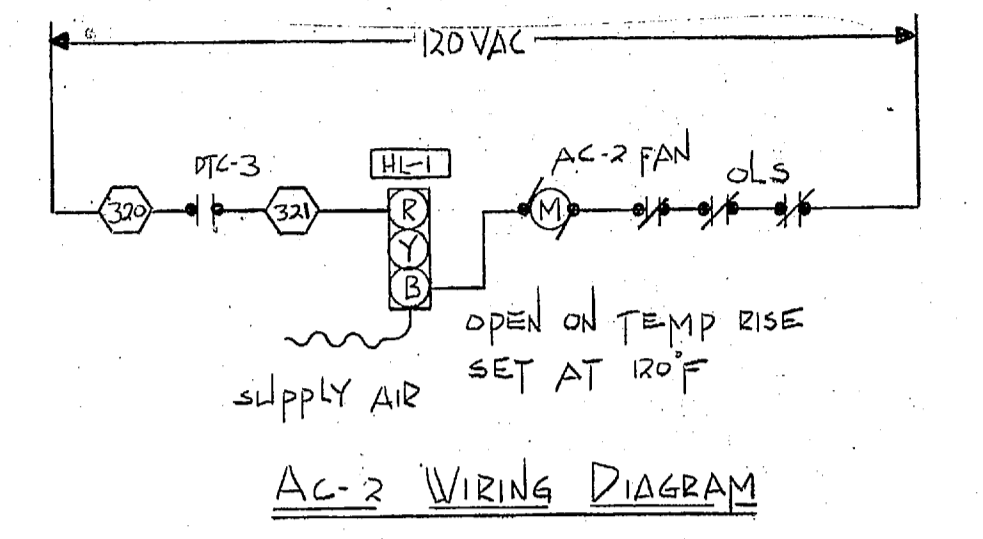
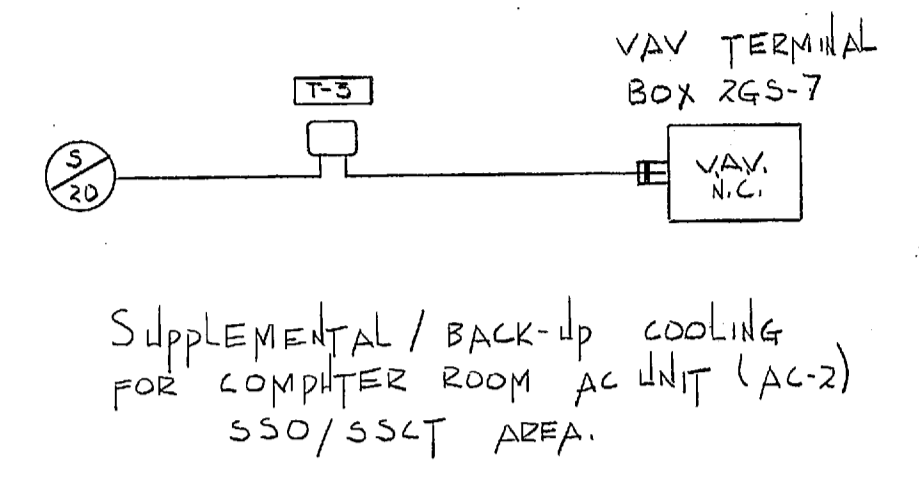
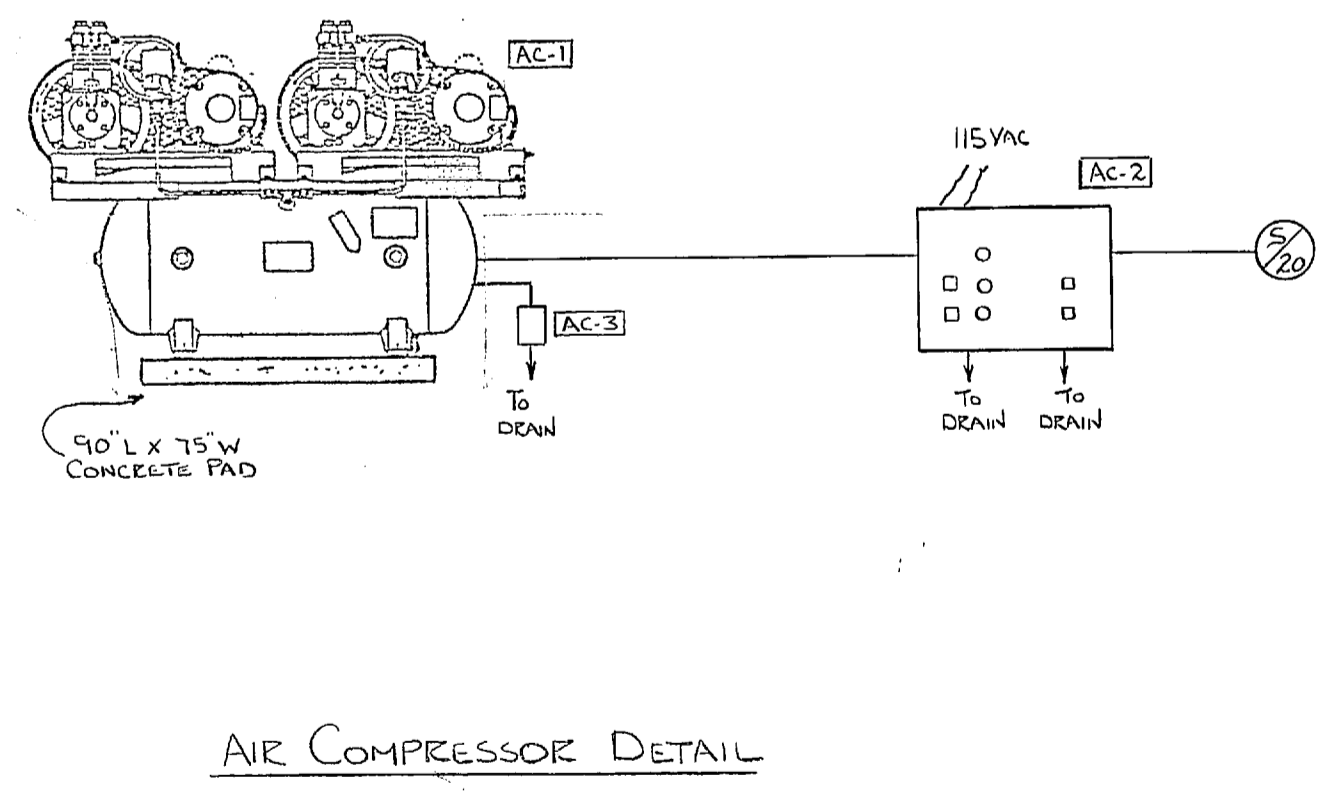
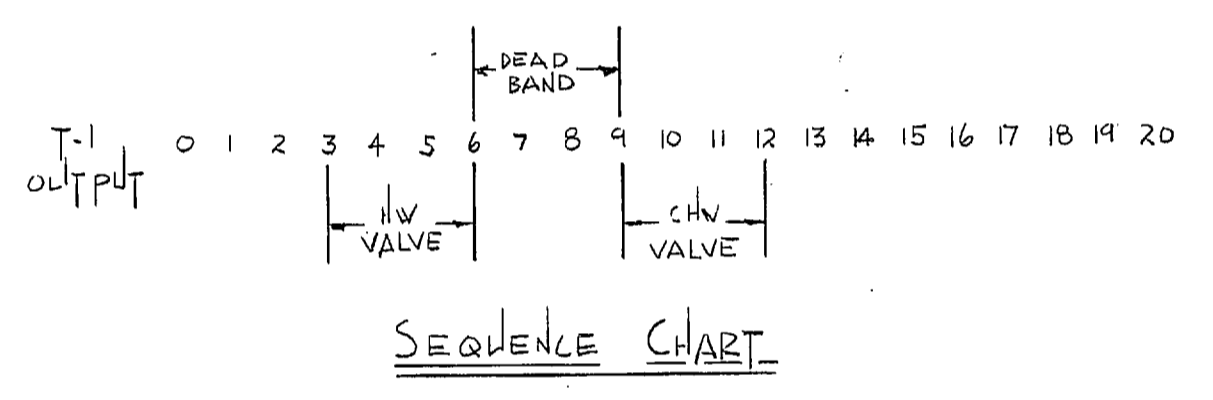
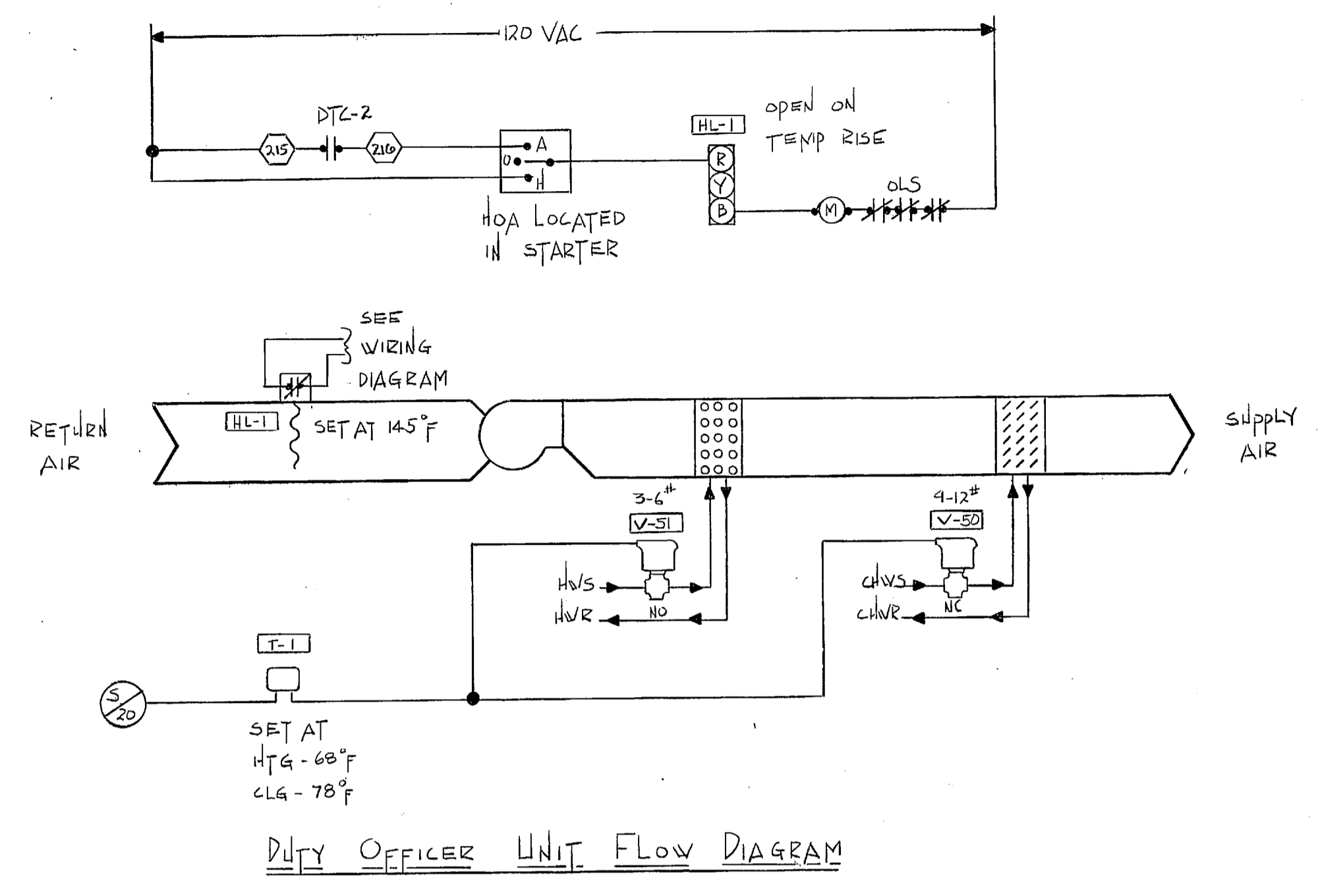
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SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	DRAWN BY K.L. DATE 10-24-86	APPROVED DATE	PROJECT CAMP LEBLANC HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEBLANC, N.C.		CONTRACTOR GENERAL ENG. & A.C.	
JOHNSON CONTROLS Systems & Services Division				CONTRACT NUMBER 6128-0080		DRAWING NUMBER 26 OF 40	



- NAMETAG SCHEDULE**
- PL-1 HIGH TEMPERATURE ALARM
 - ALM-1 HIGH TEMPERATURE ALARM BUZZER
 - PB-1 ALARM SILENCER
 - 1 TELEPHONE EQUIP. ROOM HIGH TEMP. ALARM PANEL

NOTE: PANEL LOCATED IN DUTY OFFICER ROOM 1E8B.

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<p>PROJECT CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.</p>		<p>SALES ENGR. F.N.H.</p>		<p>APPLICATION ENGR. J.A.L.</p>	
<p>JOHNSON CONTROLS Systems & Services Division</p>		<p>CONTRACTOR GENERAL HIG & A.C.</p>		<p>CONTRACT NUMBER 6128-0080 DRAWING NUMBER 27 OF 40</p>	



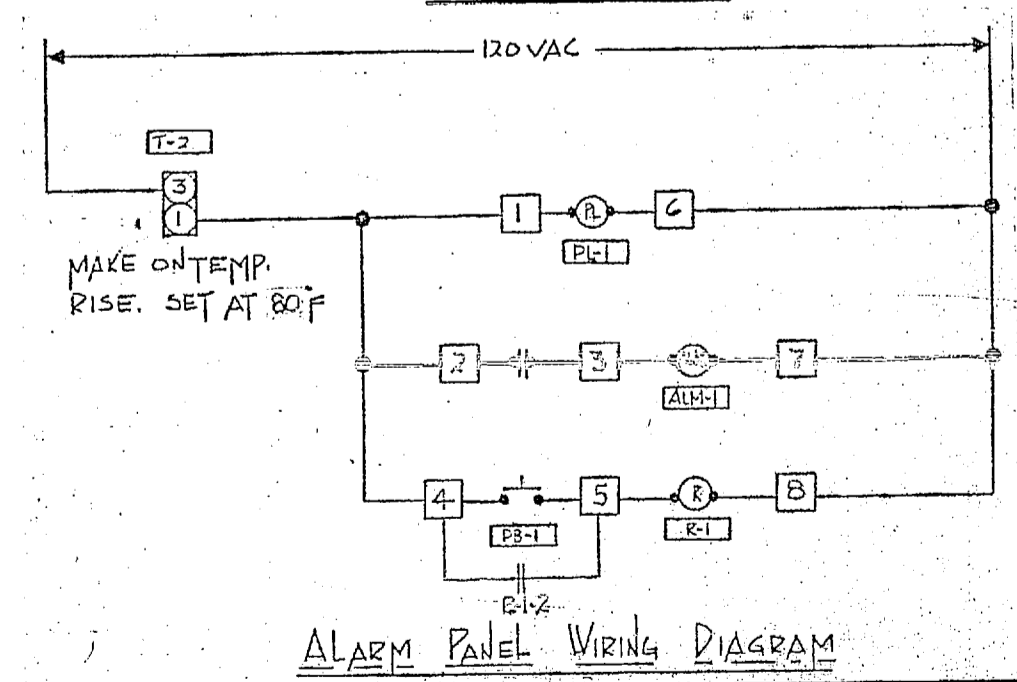
NAMETAG SCHEDULE

FL-1 HIGH TEMPERATURE ALARM

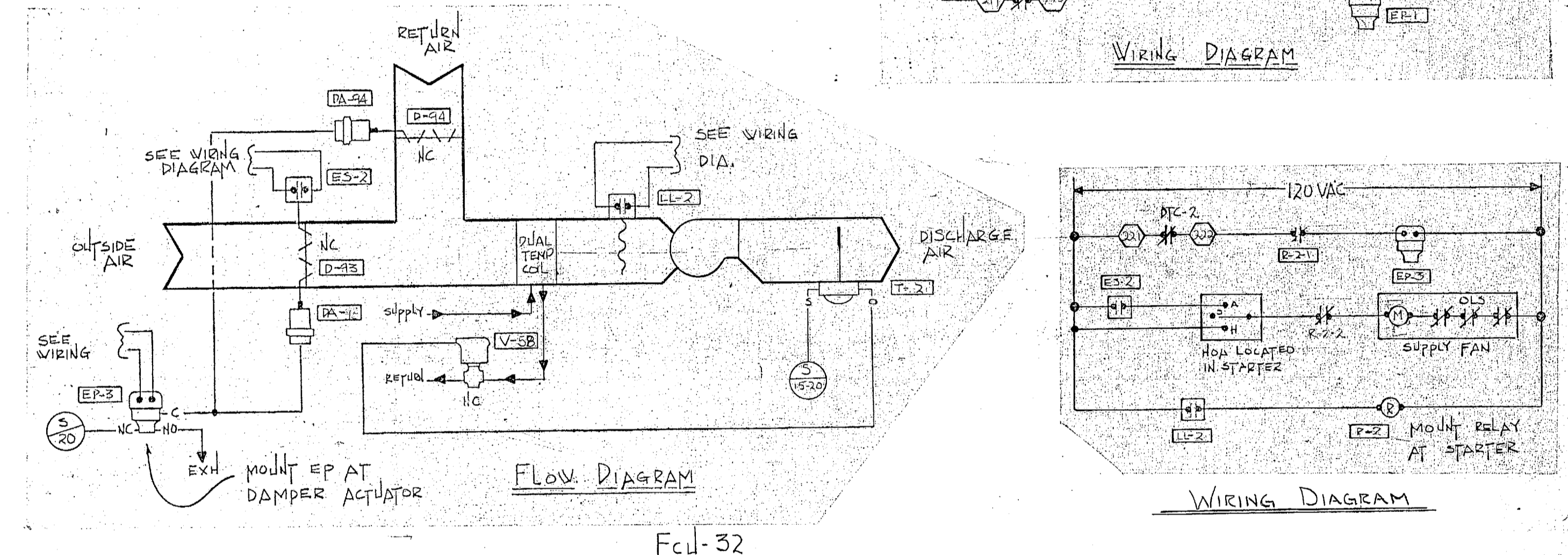
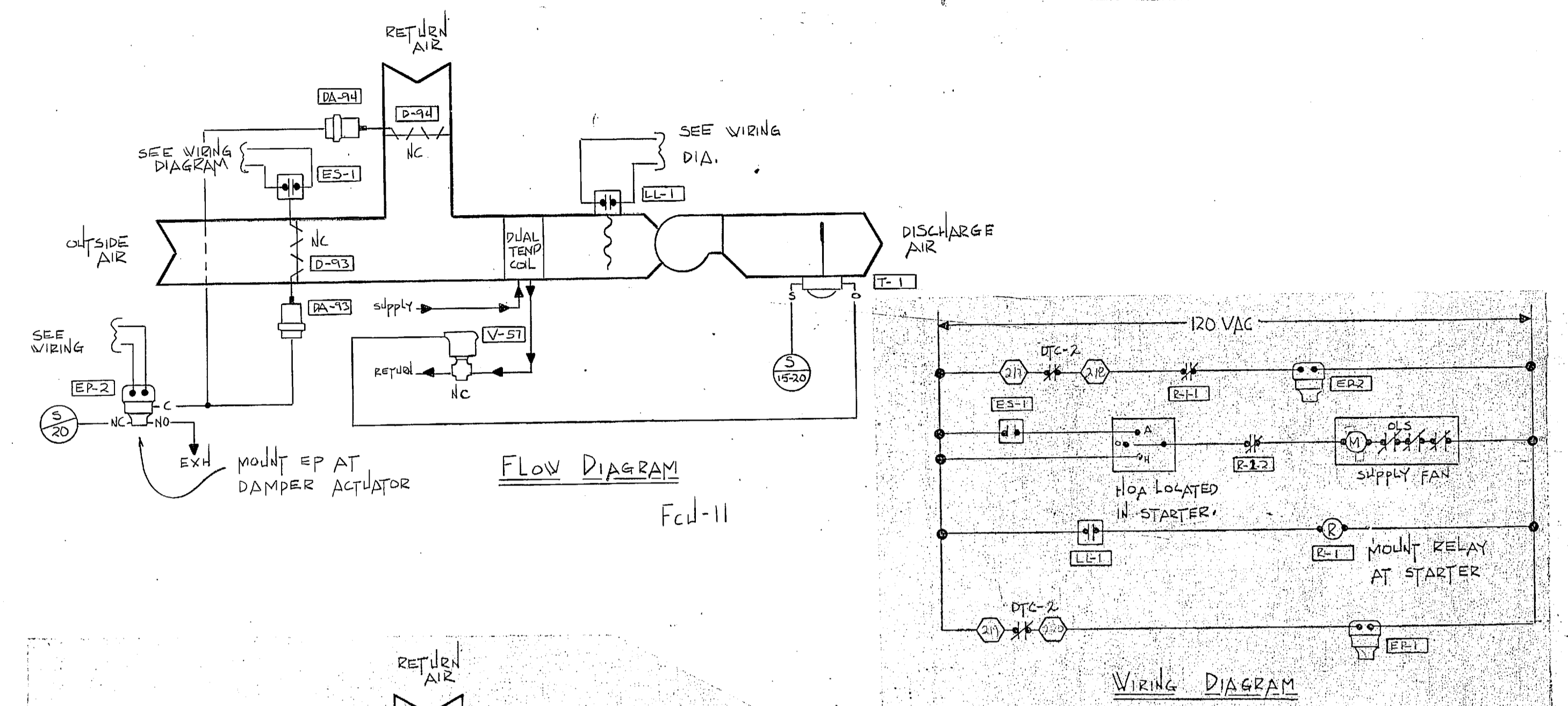
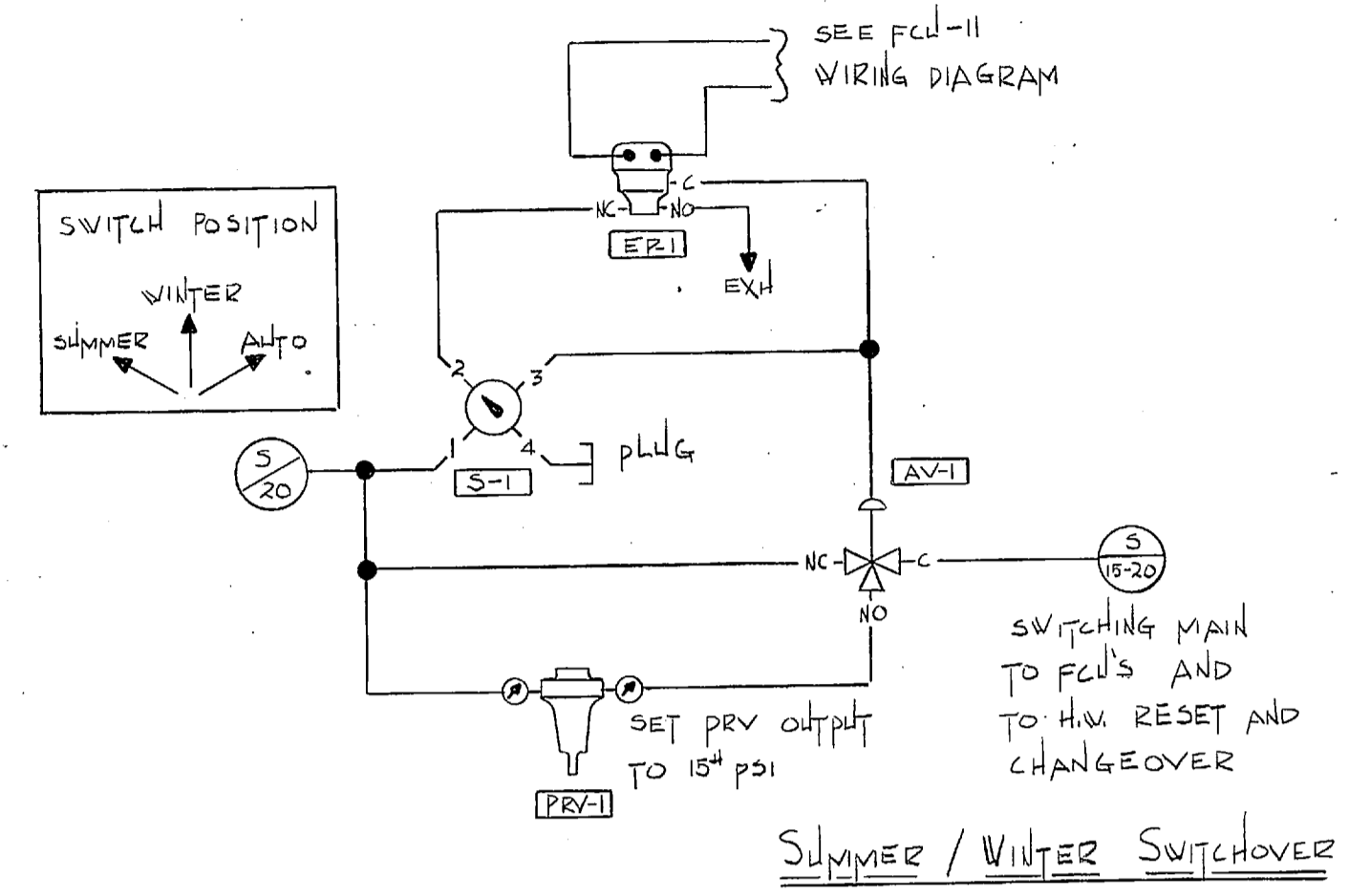
ALM-1 HIGH TEMPERATURE ALARM BUZZER

PB-1 ALARM SILENCER

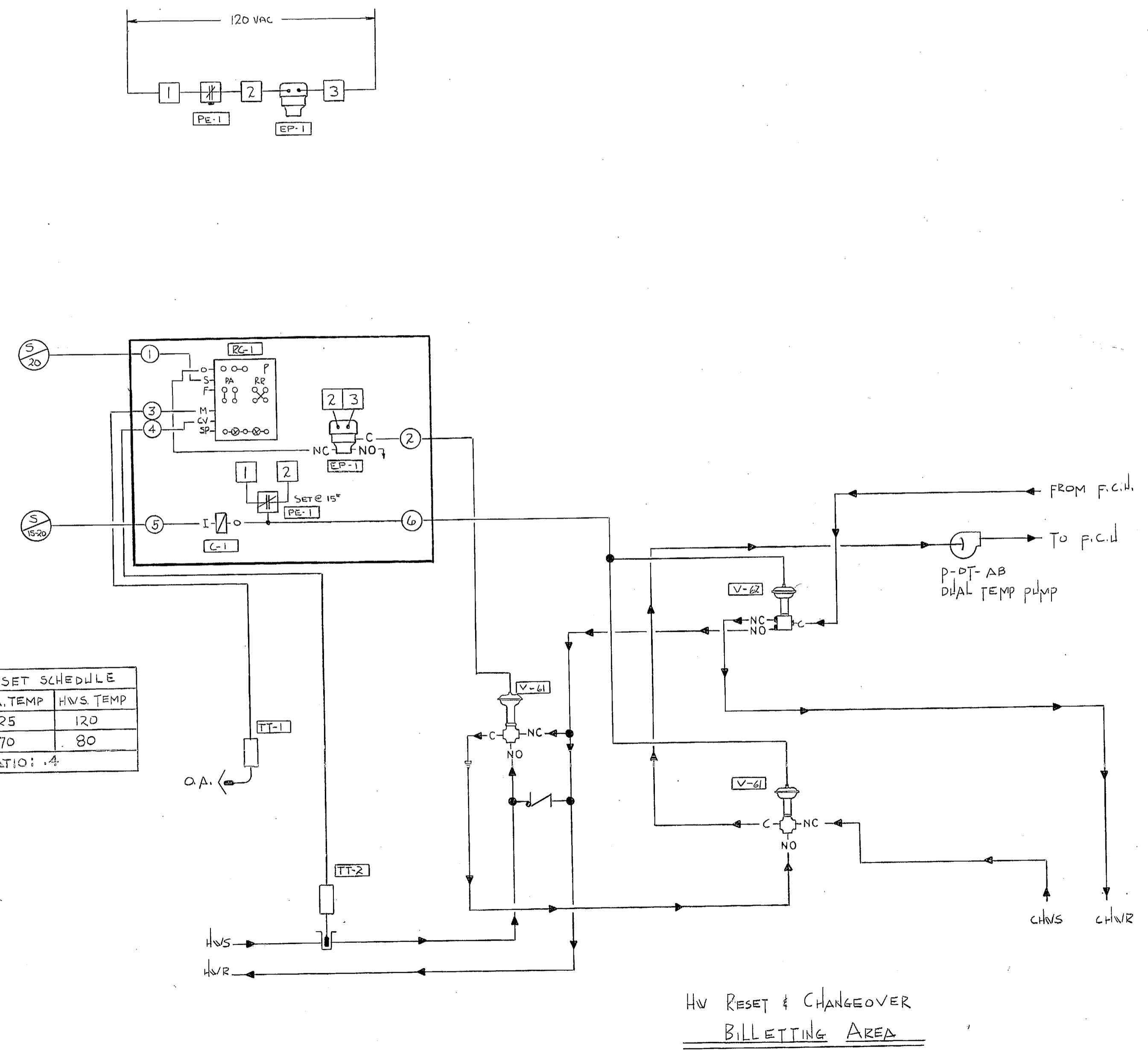
MOUNT PANEL IN BESEP COMMAND CENTER.



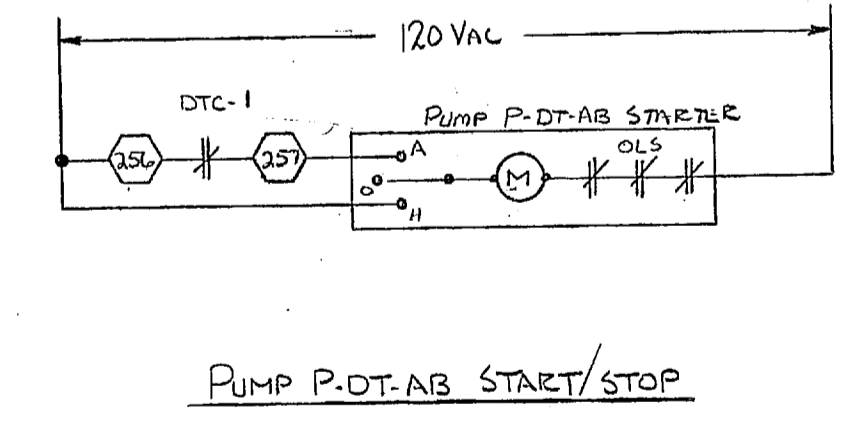
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	<p>SALES ENGR.</p> <p>F.N.H.</p>	<p>APPLICATION ENGR.</p> <p>S.M.L.</p>	<p>DRAWN</p> <p>BY K.L.</p>	<p>DATE 10-24-86</p>	<p>APPROVED</p> <p>DATE</p>	<p>CONTRACT NUMBER</p> <p>6138-0080</p>	<p>DRAWING NUMBER</p> <p>28 OF 40</p>	<p>JOHNSON CONTROLS</p> <p>Systems & Services Division</p>	<p>GENERAL HTS & A.C.</p>
	<p>PROJECT</p> <p>CAMP LEJUNE HOSPITAL CONVERSION</p> <p>DIVISION HEADQUARTERS</p> <p>CAMP LEJUNE, N.C.</p>	<p>JOHNSON CONTROLS</p> <p>Systems & Services Division</p>	<p>CONTRACTOR</p> <p>GENERAL HTS & A.C.</p>	<p>CONTRACT NUMBER</p> <p>6138-0080</p>	<p>DRAWING NUMBER</p> <p>28 OF 40</p>	<p>DATE</p>	<p>BY</p>	<p>DATE</p>	
	<p>JOHNSON CONTROLS</p> <p>Systems & Services Division</p>								



MAKE-UP AIR UNITS (MUAD) BILLETING AREA

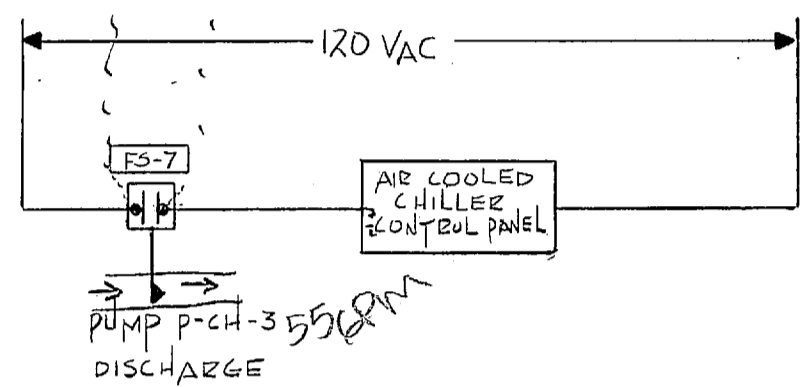
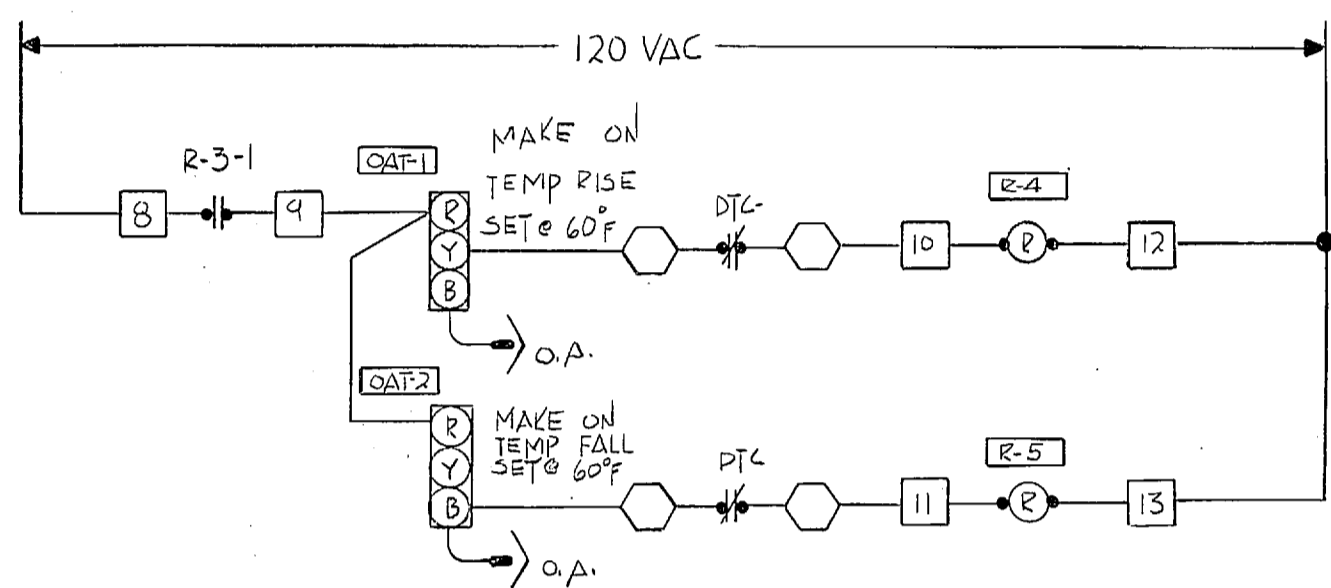
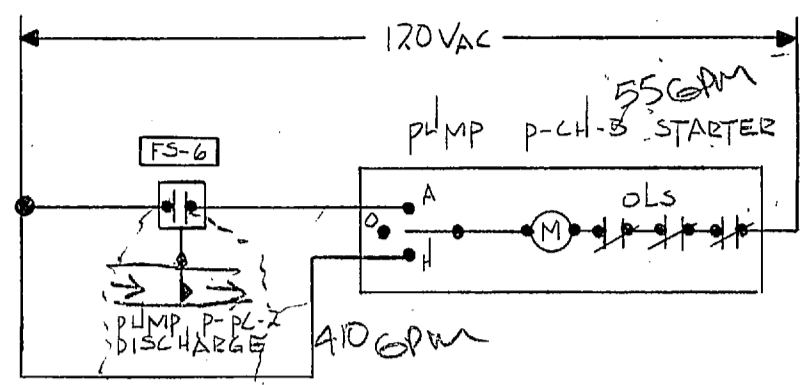
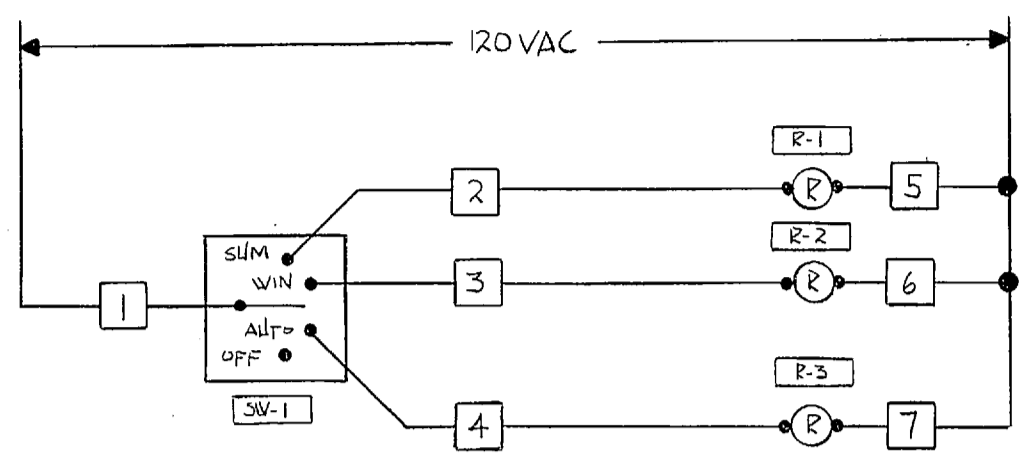


RESET SCHEDULE	
O.A. TEMP	HWS TEMP
25	120
70	80
RATIO: .4	

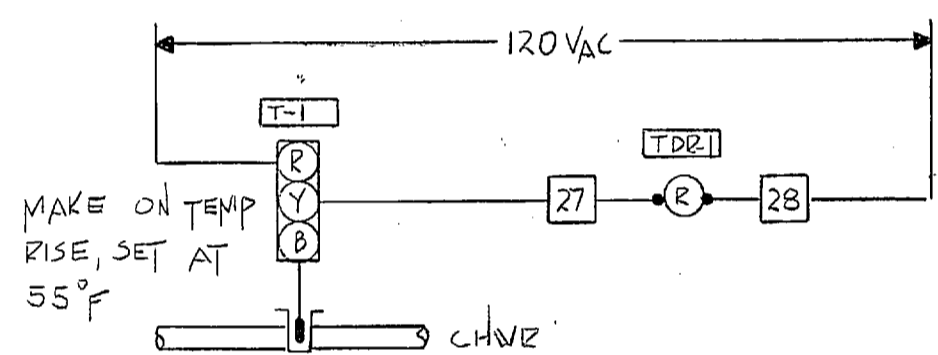
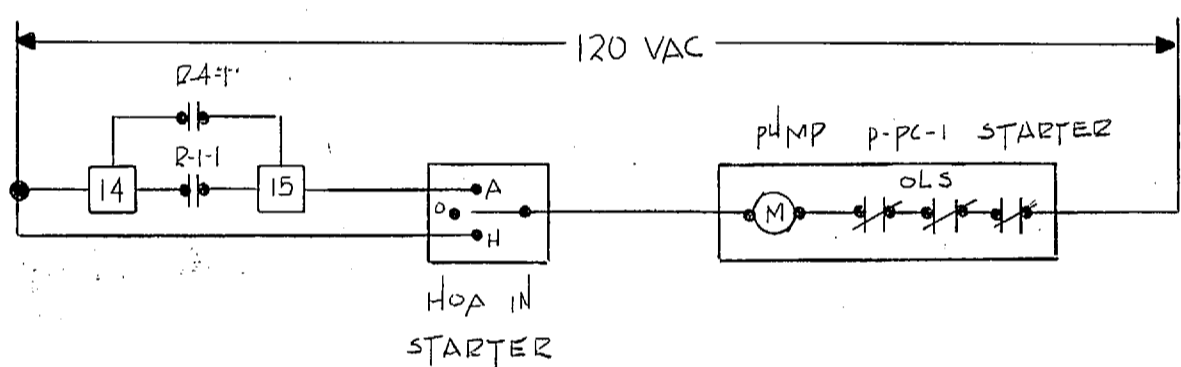


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PROJECT CAMP LEBLANC HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEBLANC, N.C.		SALES ENGR. F.N.H.		APPLICATION ENGR. J.A.L.		DRAWN DATE 10-24-86		APPROVED DATE		CONTRACT NUMBER 6.128-0080		DRAWING NUMBER 29 of 40	
JOHNSON CONTROLS Systems & Services Division		GENERAL		HTG + AIR.									

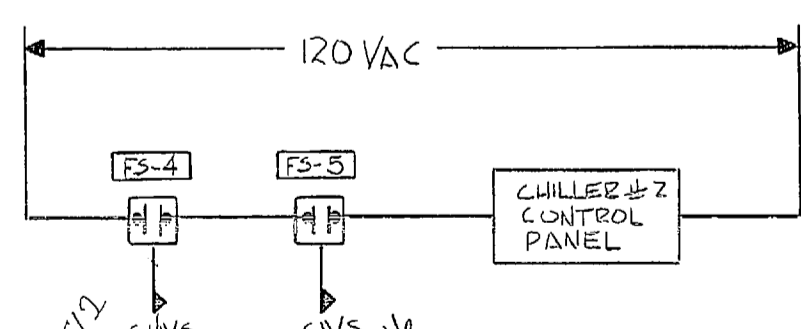
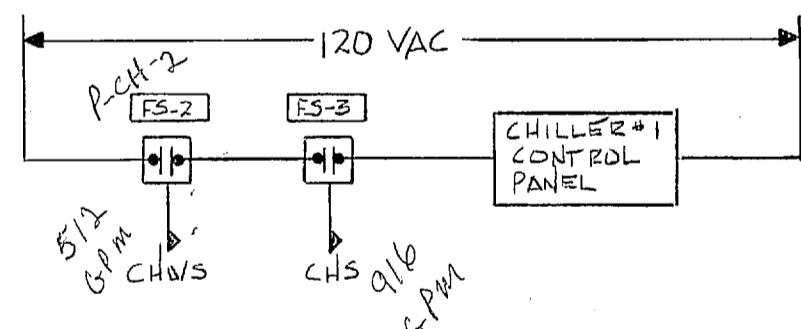
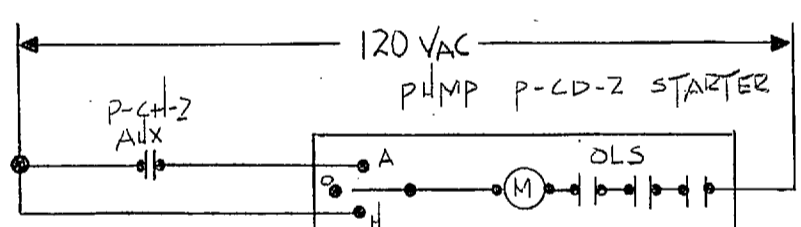
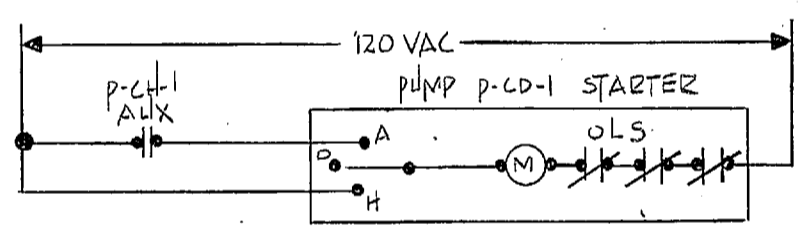
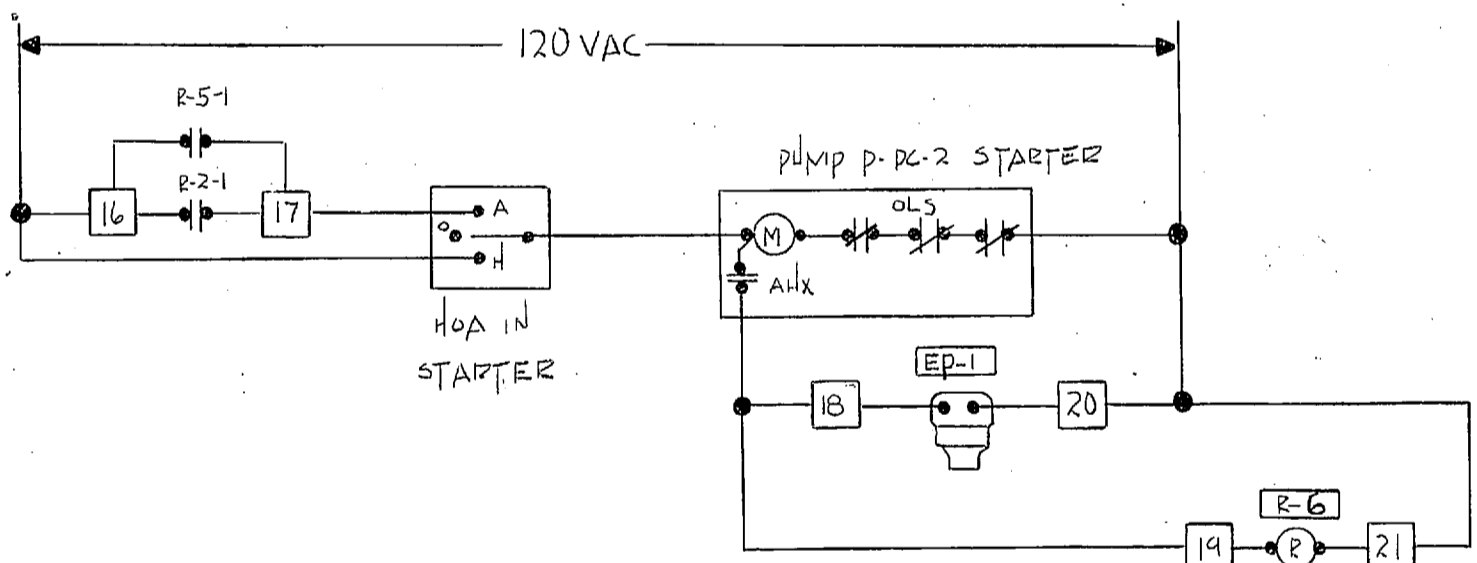
22" x 34" ORIGINAL



AIR COOLED CHILLER INTERLOCK

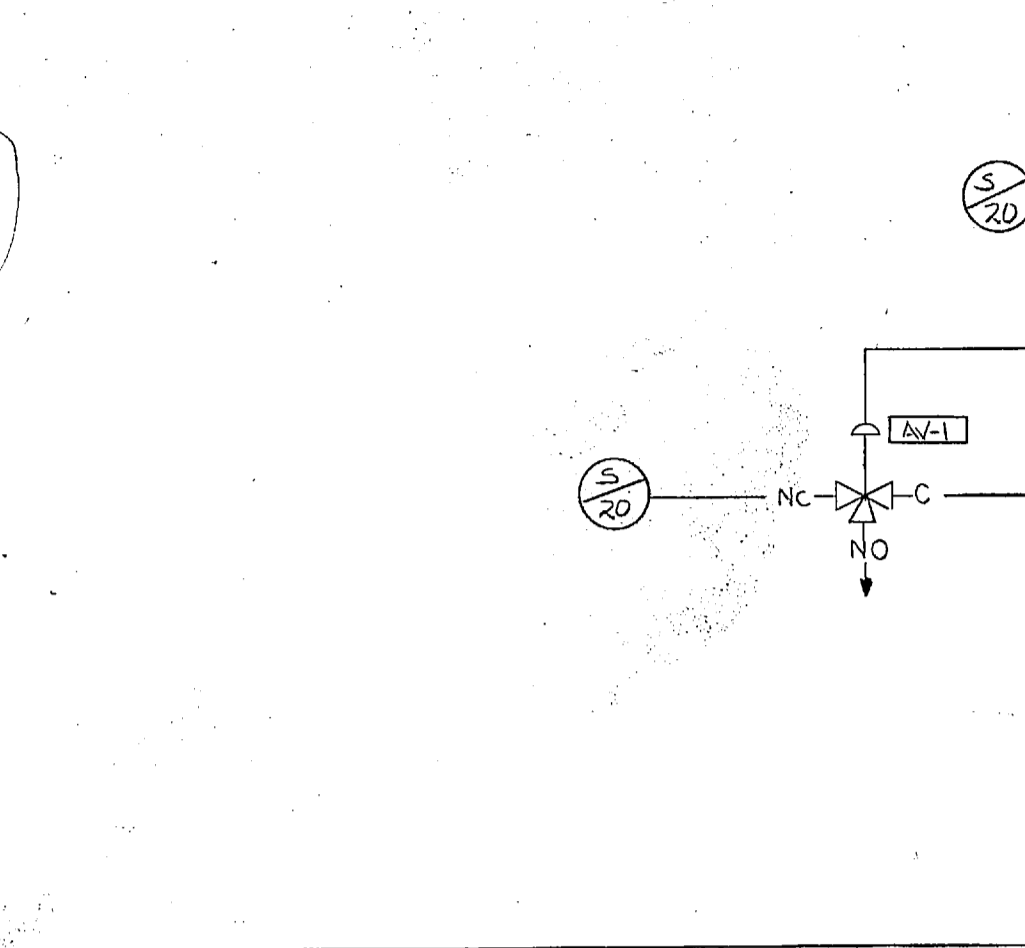
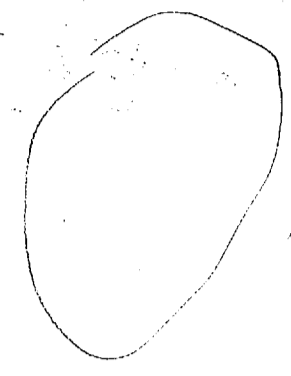
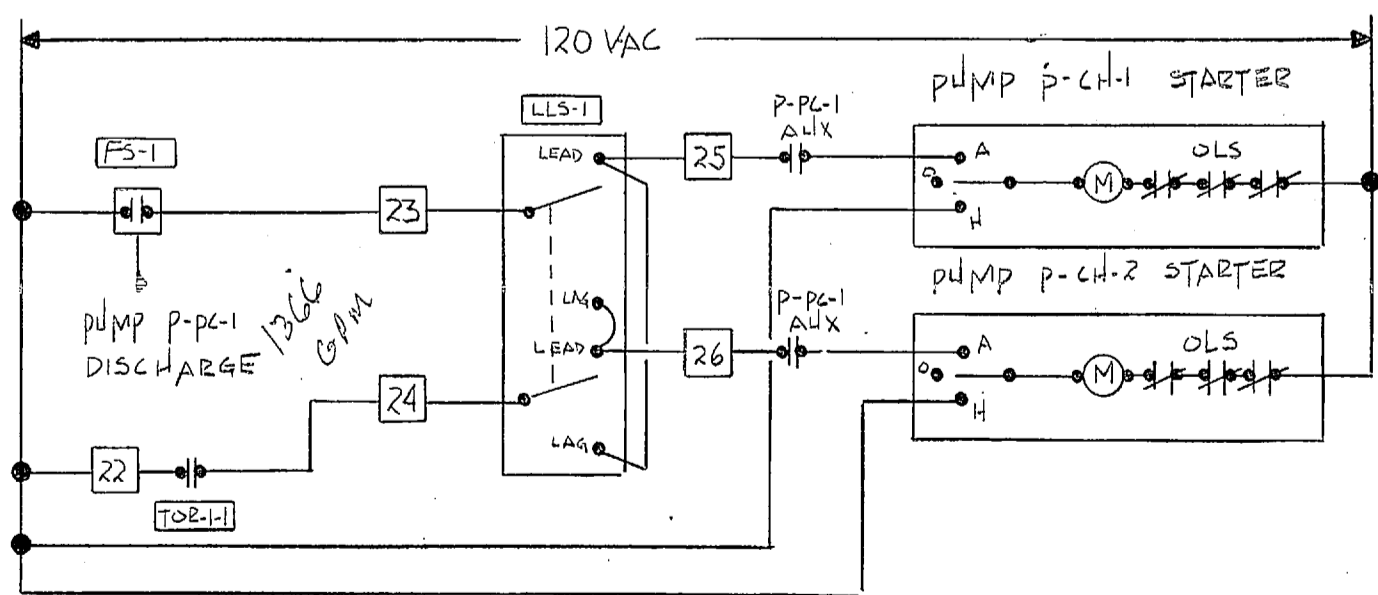


MAKE ON TEMP RISE, SET AT 55°F

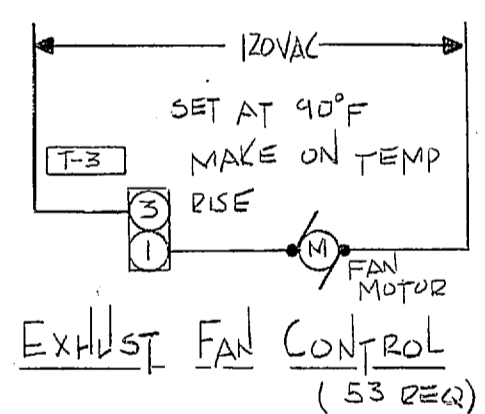


PUMP & CHILLER INTERLOCK WIRING DIAGRAM

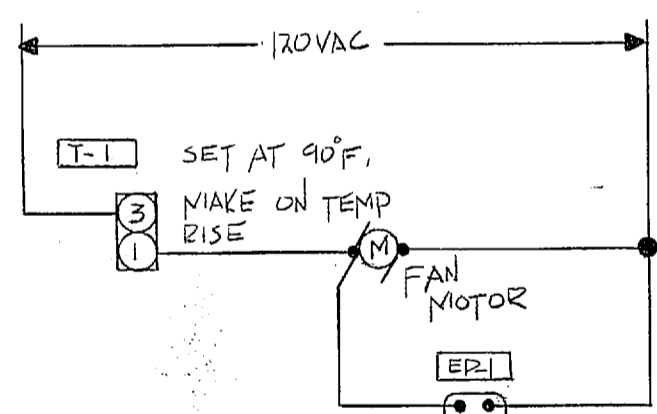
PRIMARY CHWP P-PC-1&2 CONTROL DIAGRAM



ISOLATION VALVE CONTROL

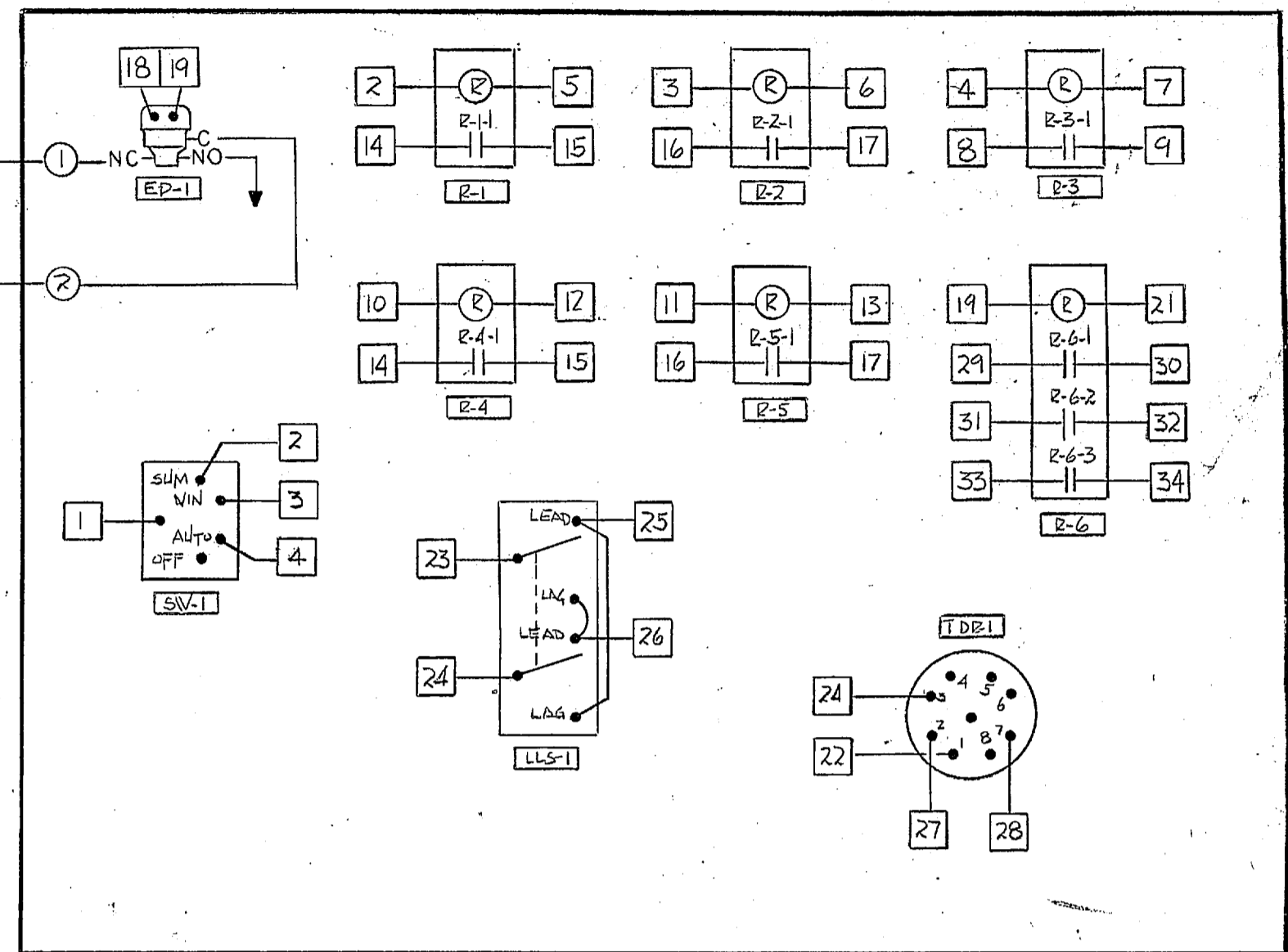


EXHAUST FAN CONTROL (53 REQ)

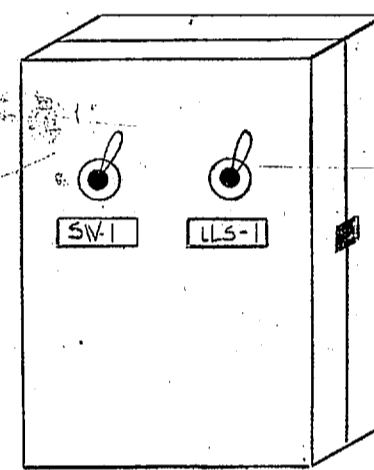


EXHAUST FAN CONTROL

- TYPICAL FOR:
- EF-4
 - EF-6
 - EF-10
 - EF-14
 - EF-16
 - EF-18
 - EF-20
 - EF-22
 - EF-24
 - EF-26
 - EF-28
 - EF-30
 - EF-33
 - EF-36
 - EF-40
 - EF-43
 - EF-45
 - EF-46
 - EF-47
 - EF-48
 - EF-51
 - EF-53
 - EF-56
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 - EF-75
 - EF-77
 - EF-80
 - EF-106

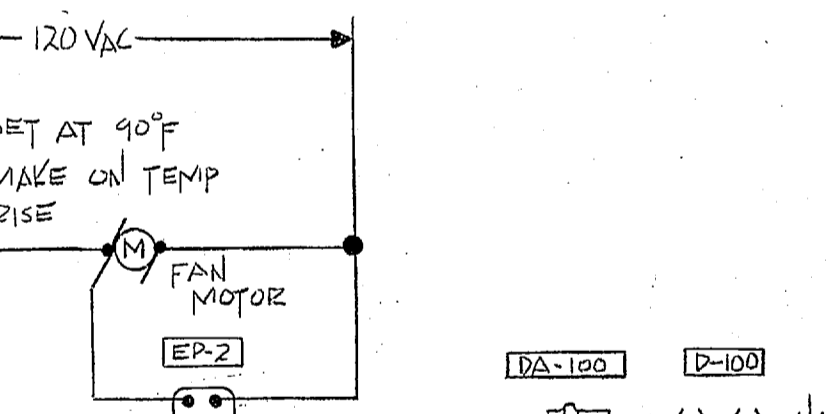


CONTROL PANEL



PANEL FACE

NAMETAG SCHEDULE
 SW-1 SUMMER-WINTER-AUTO-OFF
 PRIMARY CHWP
 LS-1 LEAD-LAG, CHWP & CHILLERS

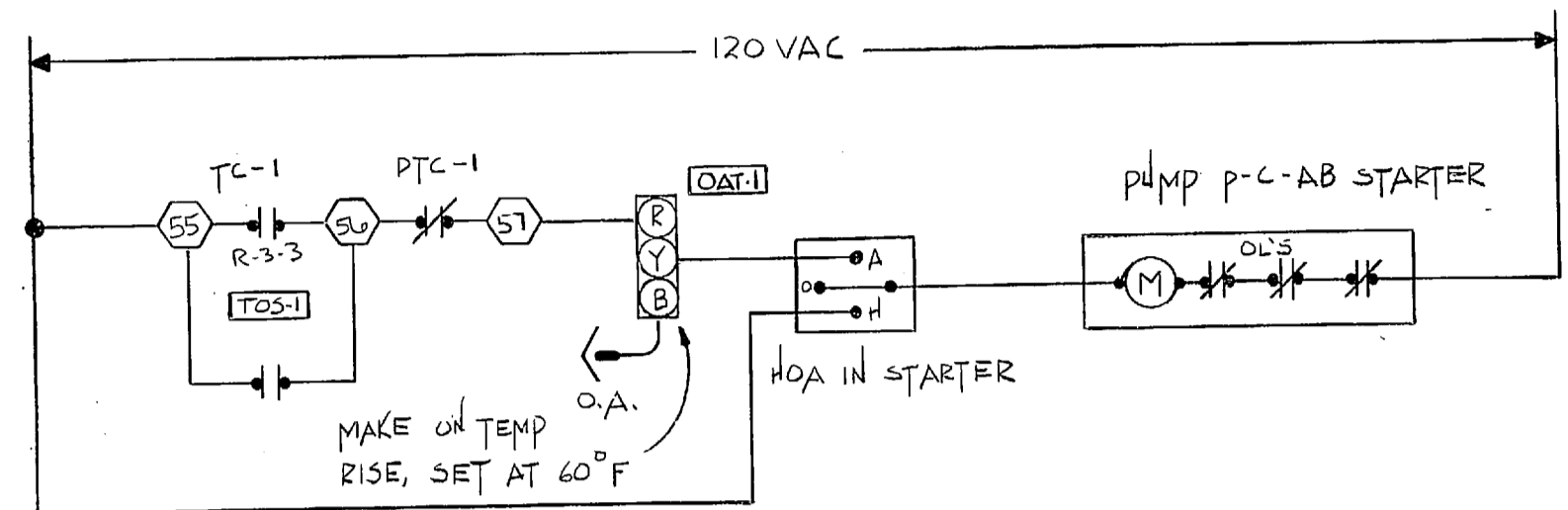


EXHAUST FAN EF-93 & EF-105 CONTROL

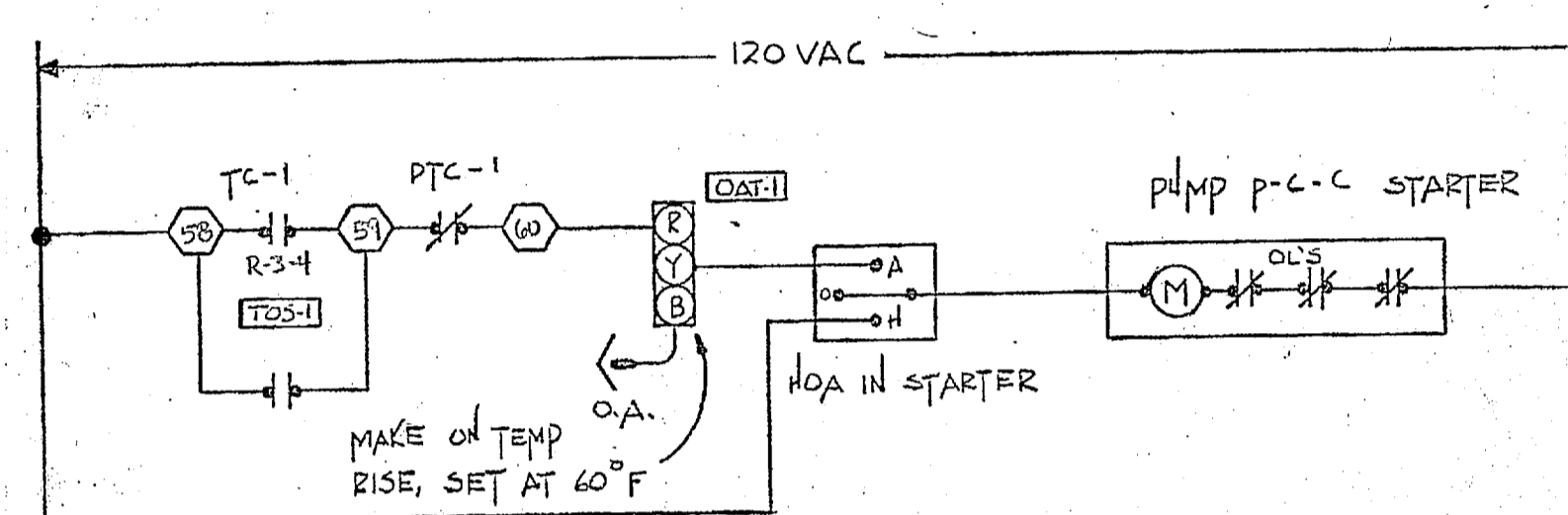
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SALES ENGR. F.N.H.	APPLICATION ENGR. J.A.L.	DRAWN BY K.L. DATE 10-24-86	APPROVED DATE _____ BY _____	CONTRACT NUMBER 6128-0080 DRAWING NUMBER 30 OF 40
PROJECT CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		JOHNSON CONTROLS Systems & Services Division		CONTRACTOR GENERAL HTG. & A/C

22" x 34" ORIGINAL

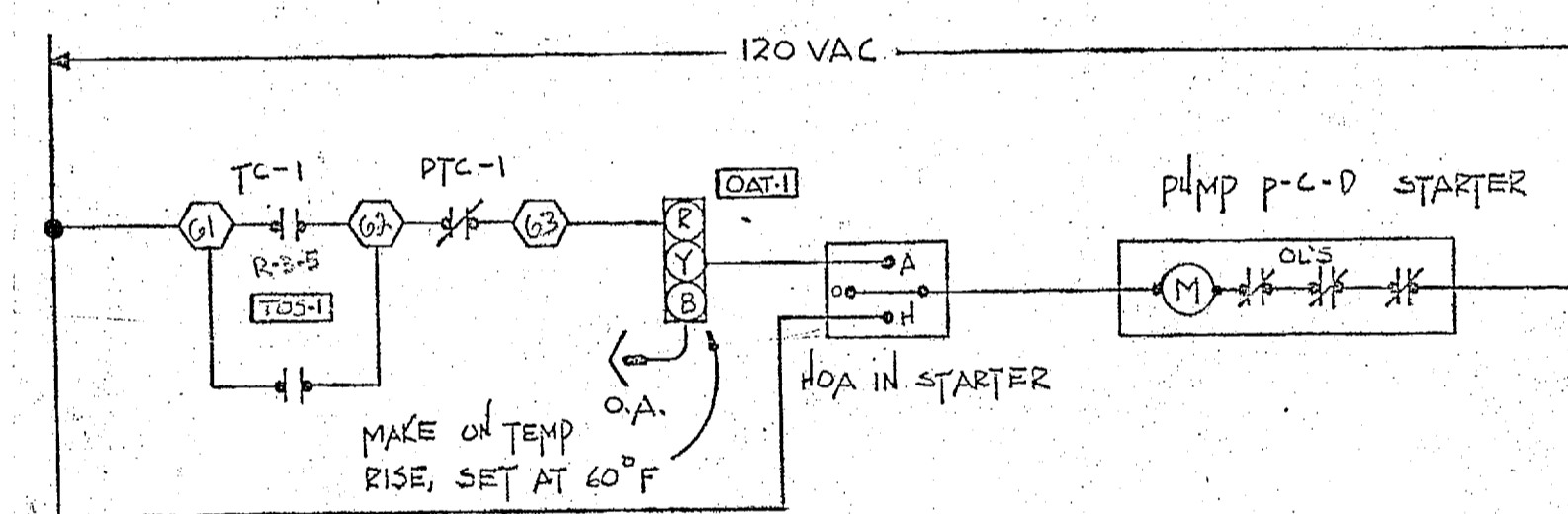




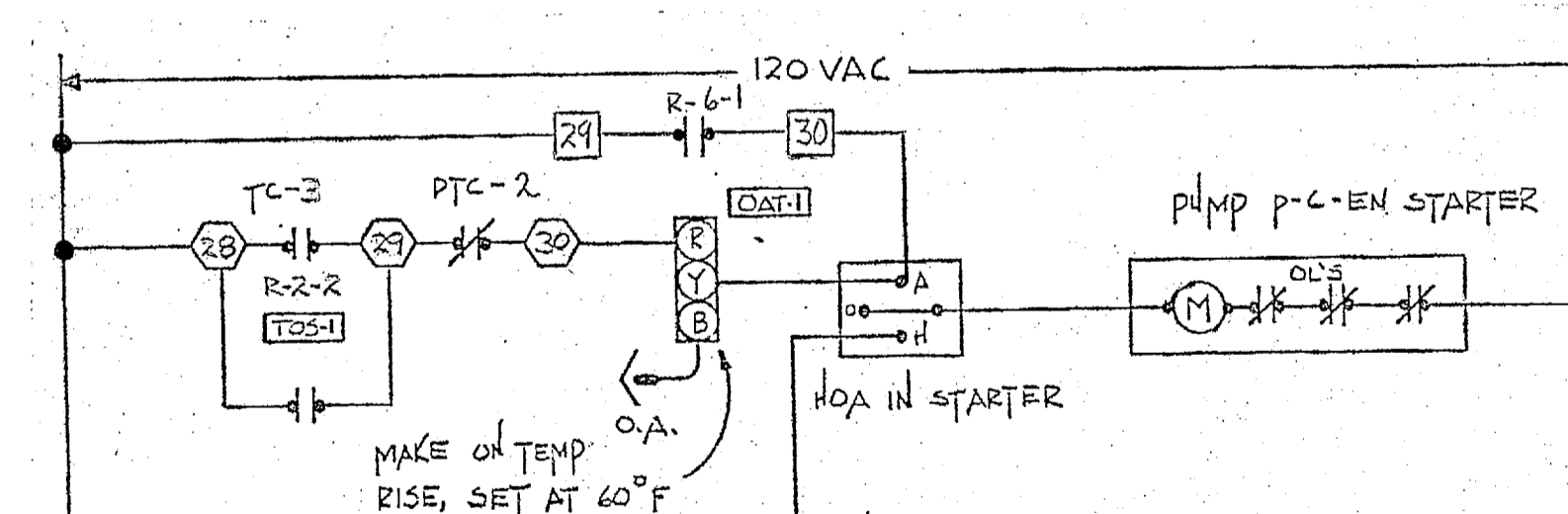
SECONDARY CHWP P-C-AB CONTROL DIAGRAM



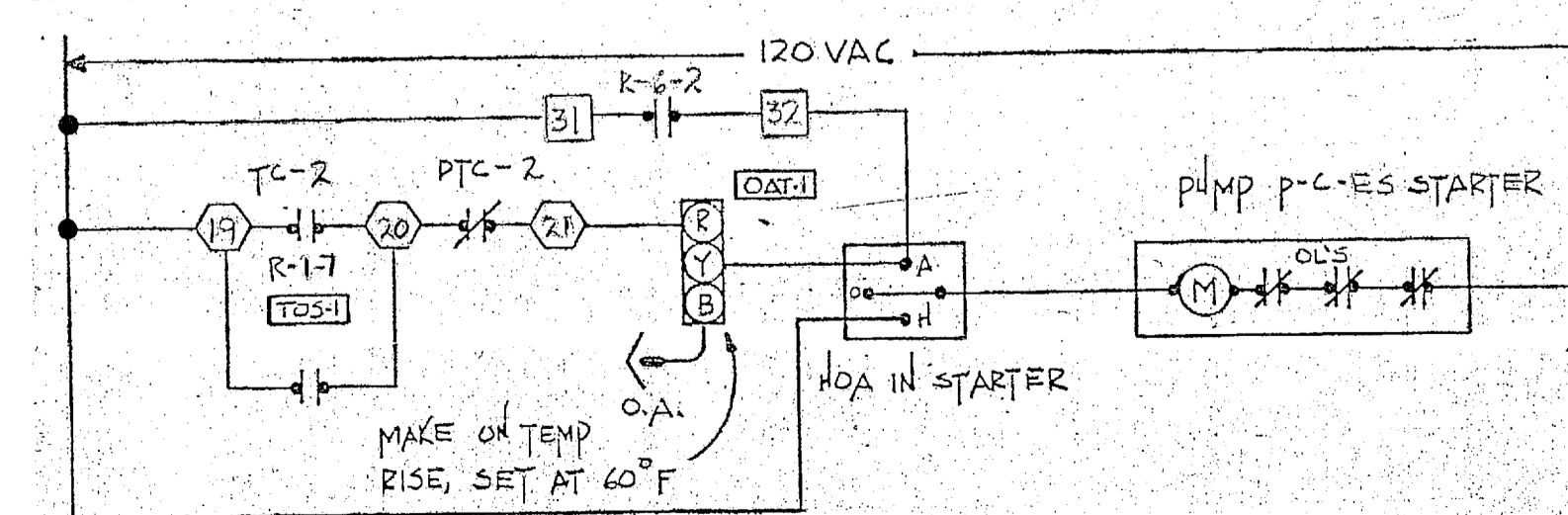
SECONDARY CHWP P-C-C CONTROL DIAGRAM



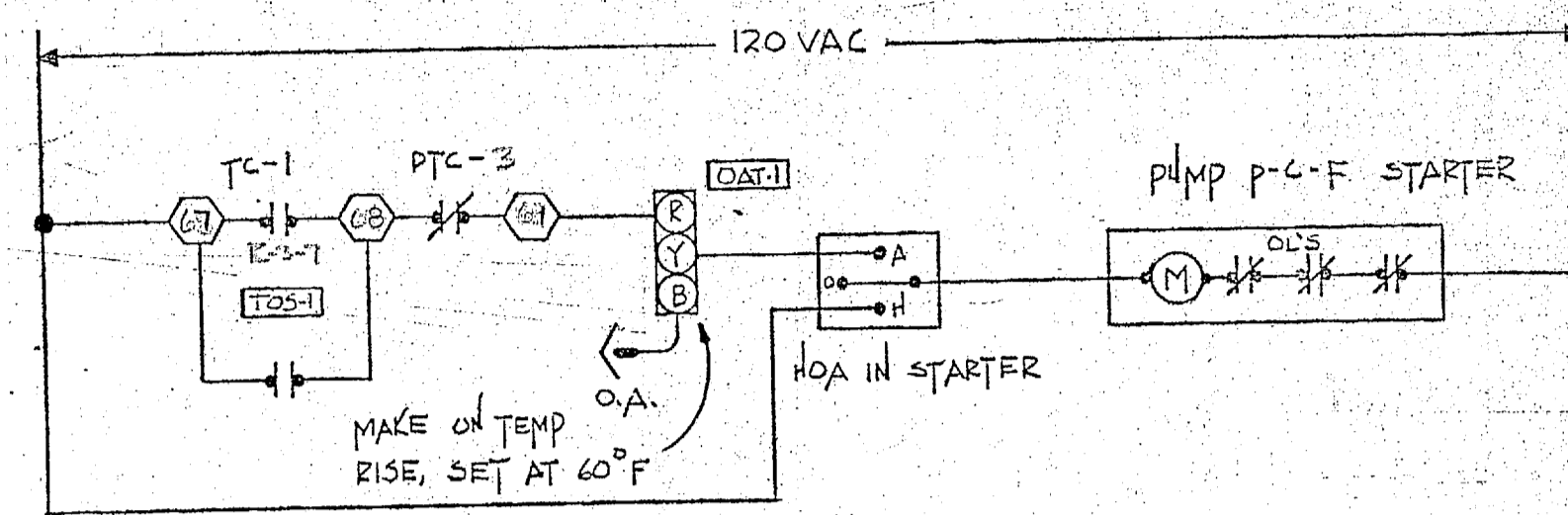
SECONDARY CHWP P-C-D CONTROL DIAGRAM



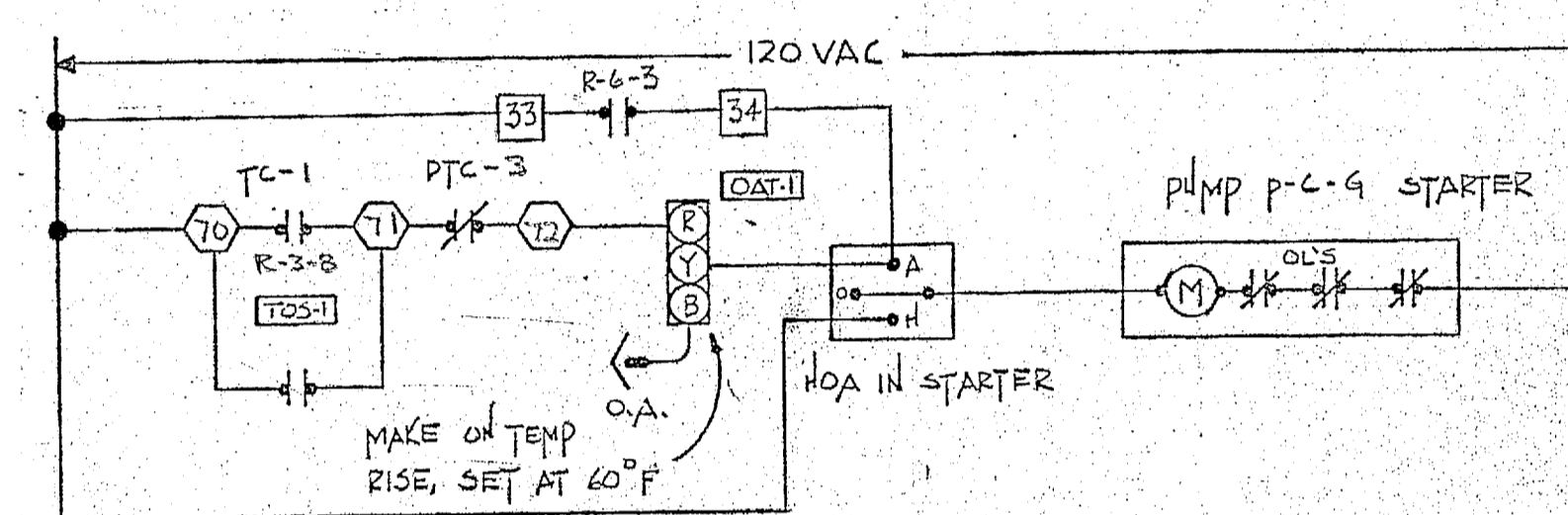
SECONDARY CHWP P-C-EH CONTROL DIAGRAM



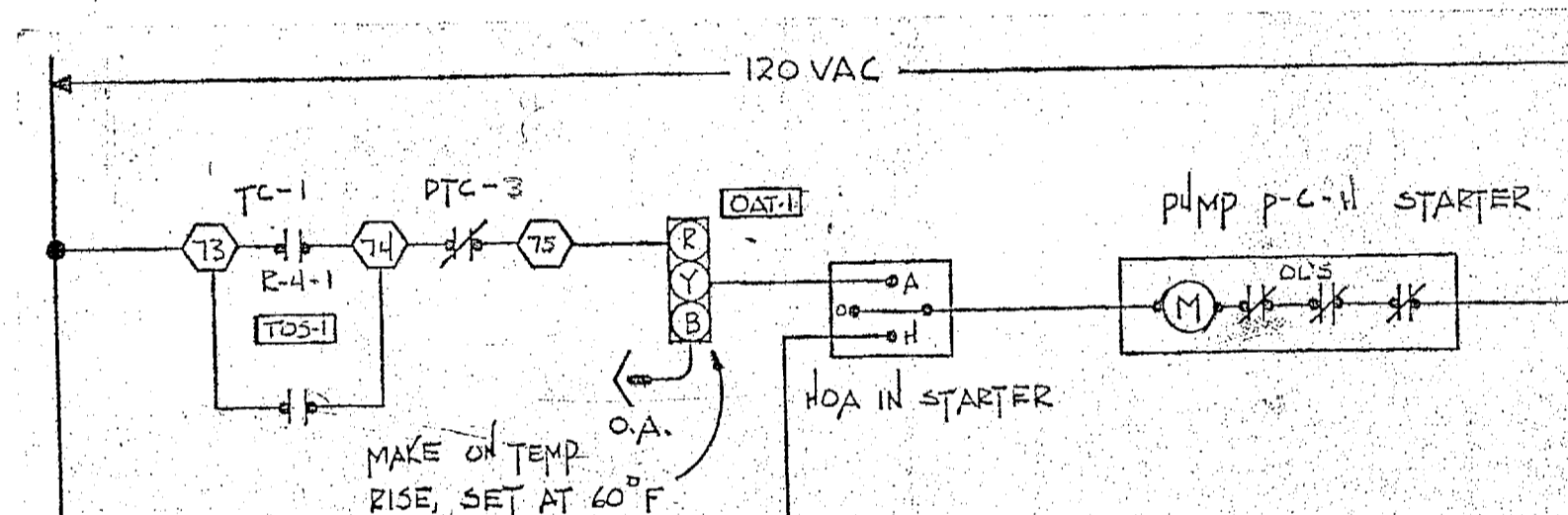
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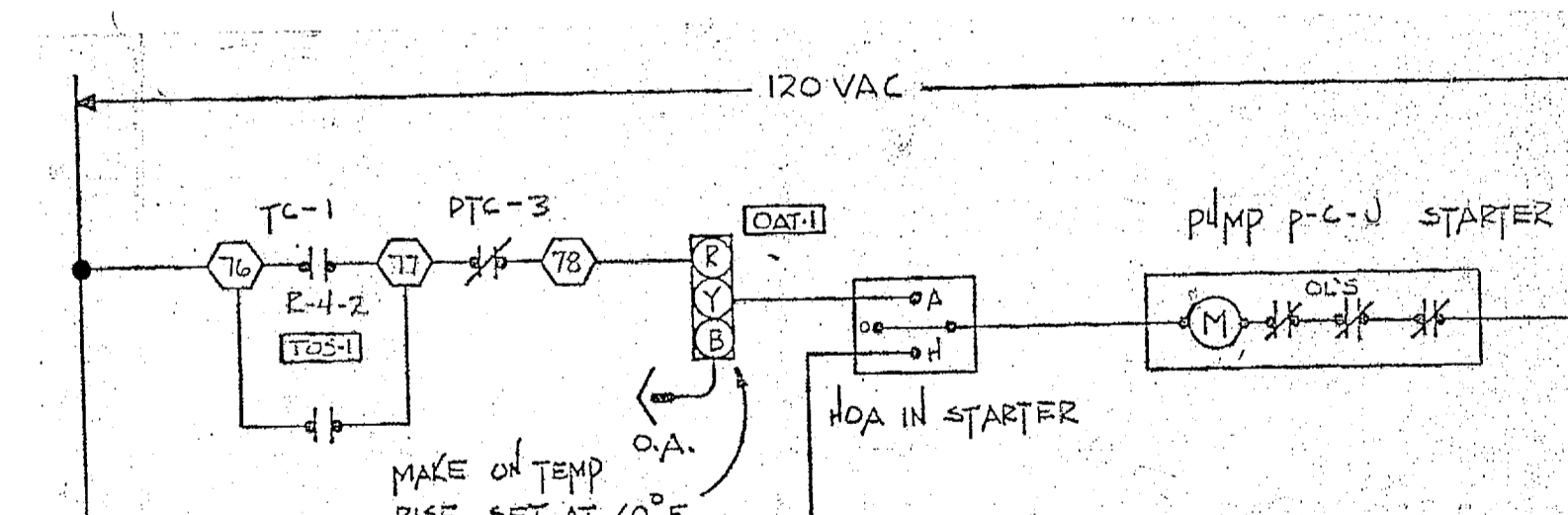
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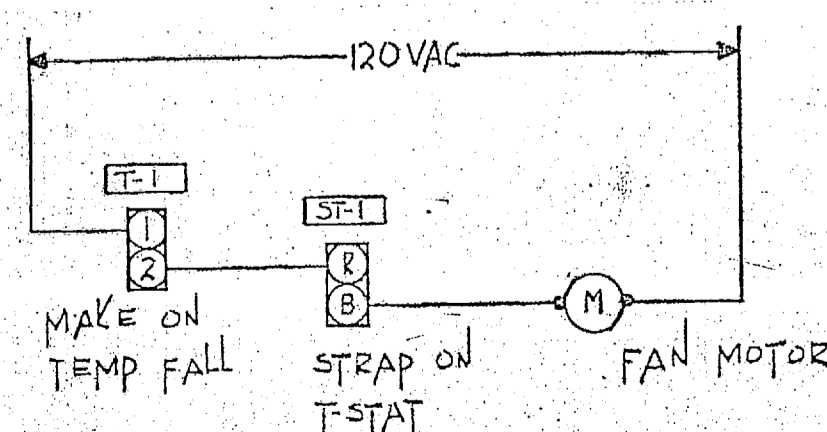
SECONDARY CHWP P-C-G CONTROL DIAGRAM



SECONDARY CHWP P-C-H CONTROL DIAGRAM

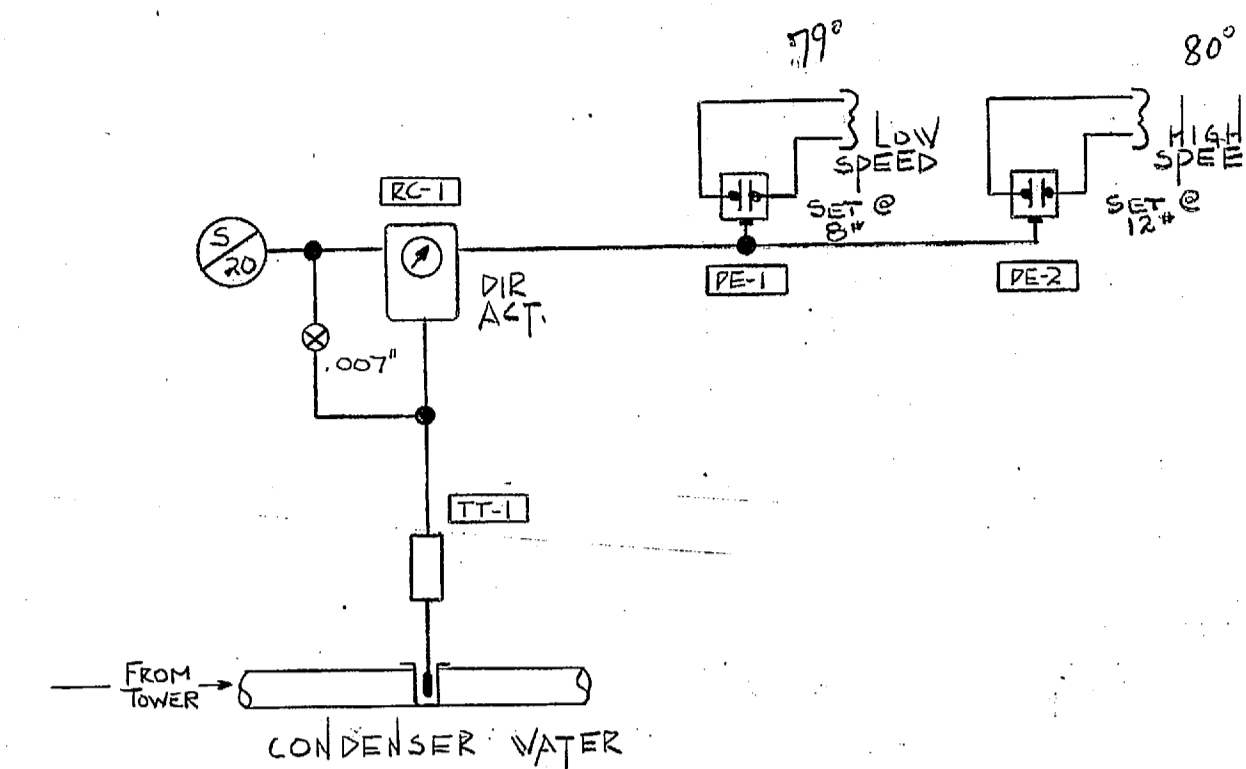


SECONDARY CHWP P-C-J CONTROL DIAGRAM



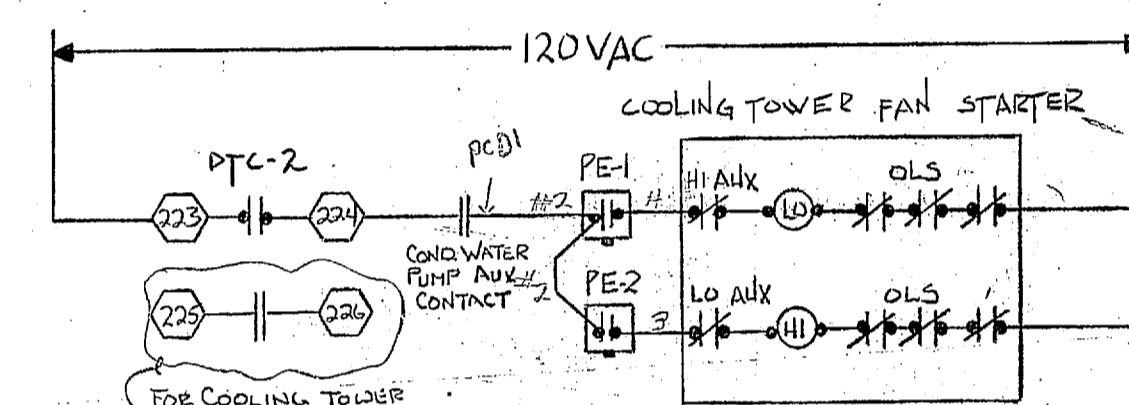
UNIT HEATER CONTROL

(2 REQ'D)

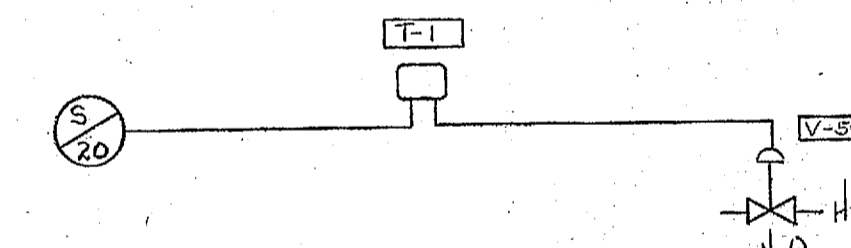
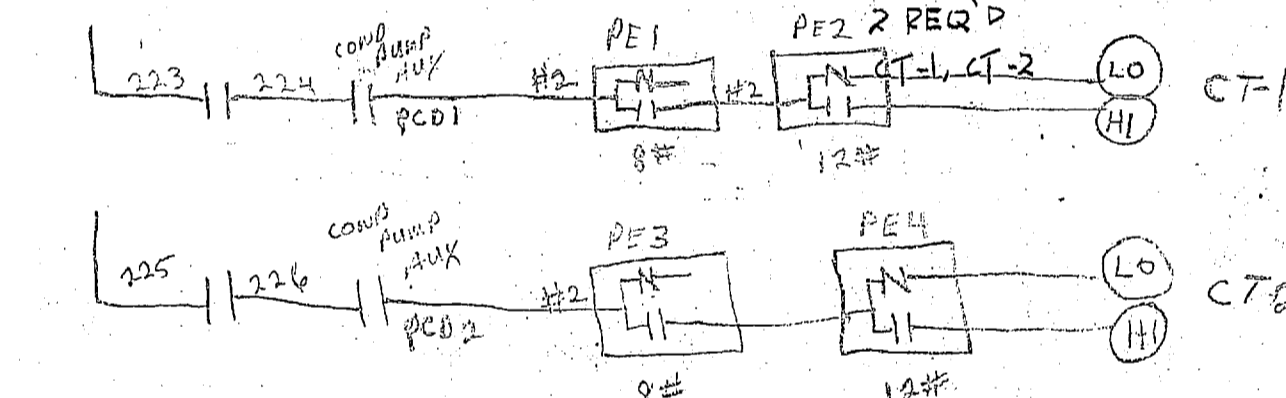


COOLING TOWER FAN CONTROL

TYPICAL OF 2, CT-1/CT-2



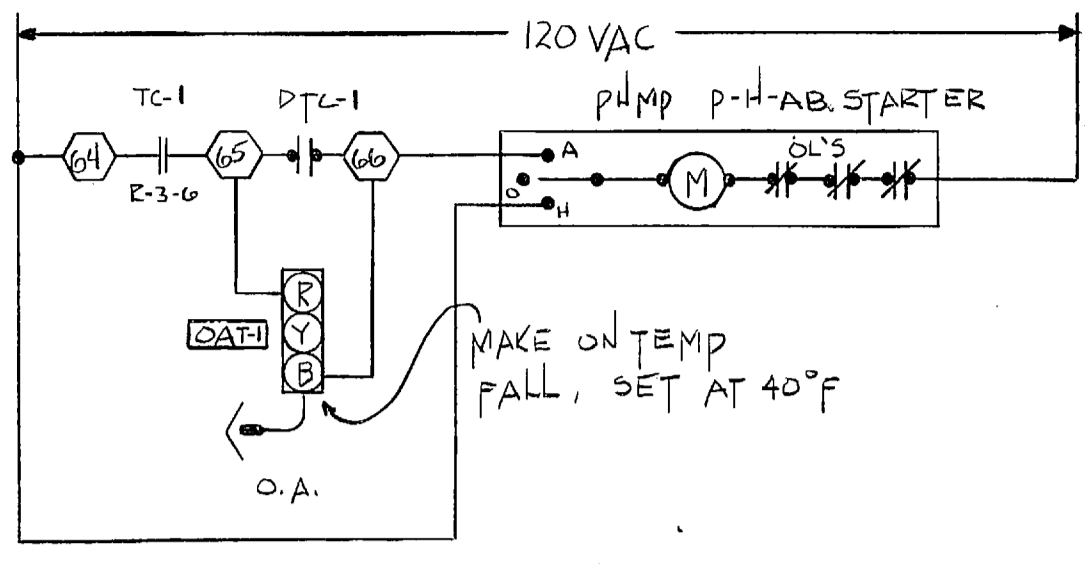
COOLING TOWER FAN WIRING DIAGRAM



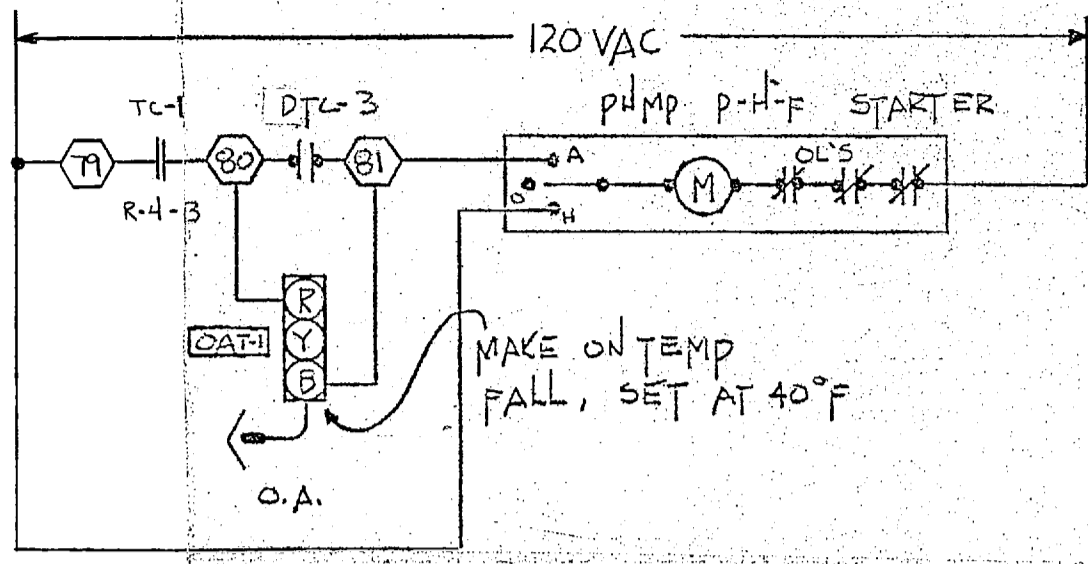
CABINET UNIT HEATERS

(15 REQ'D)

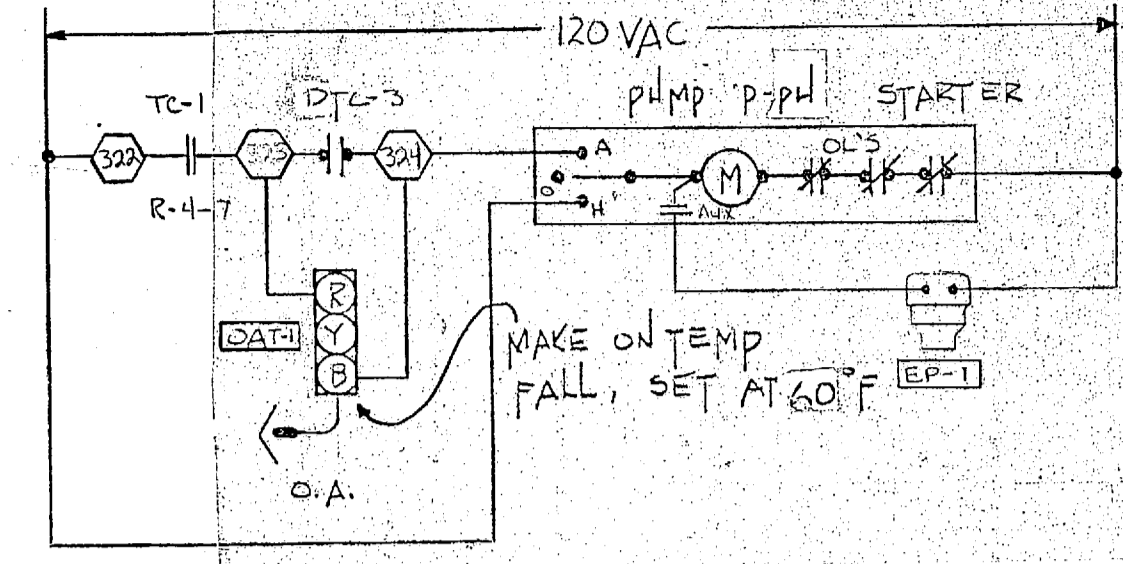
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<p>SALES ENGR. F.N.H.</p>		<p>APPLICATION ENGR. J.A.L.</p>		<p>DRAWN BY KL DATE 10-24-86</p>		<p>APPROVED DATE</p>	
<p>PROJECT CAMP LEBLANC HOSPITAL CONVERSION DEVISION HEADQUARTERS OMG LEBLANC, N.C.</p>		<p>CONTRACTOR JOHNSON CONTROLS Systems & Services Division</p>		<p>CONTRACT NUMBER 612B-0000</p>		<p>DRAWING NUMBER 31 OF 40</p>	



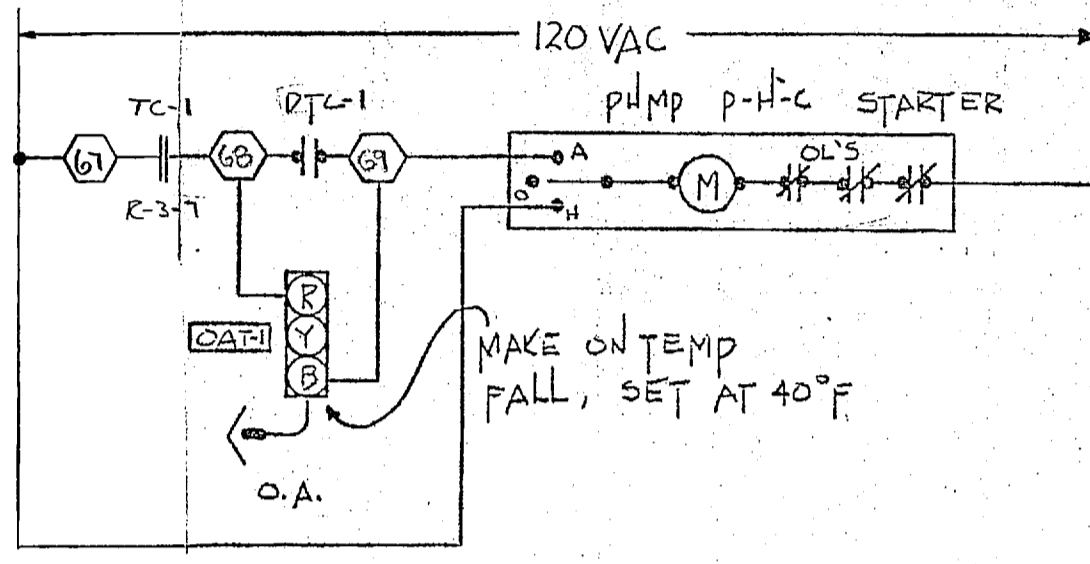
SECONDARY H.W.P. P.H-AB CONTROL DIAGRAM



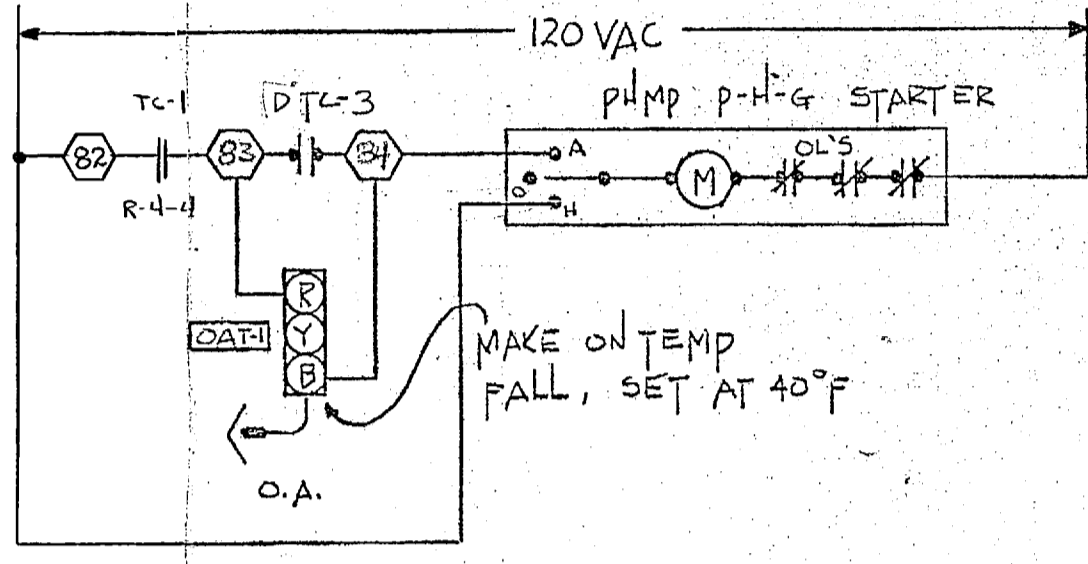
SECONDARY H.W.P. P.H-F CONTROL DIAGRAM



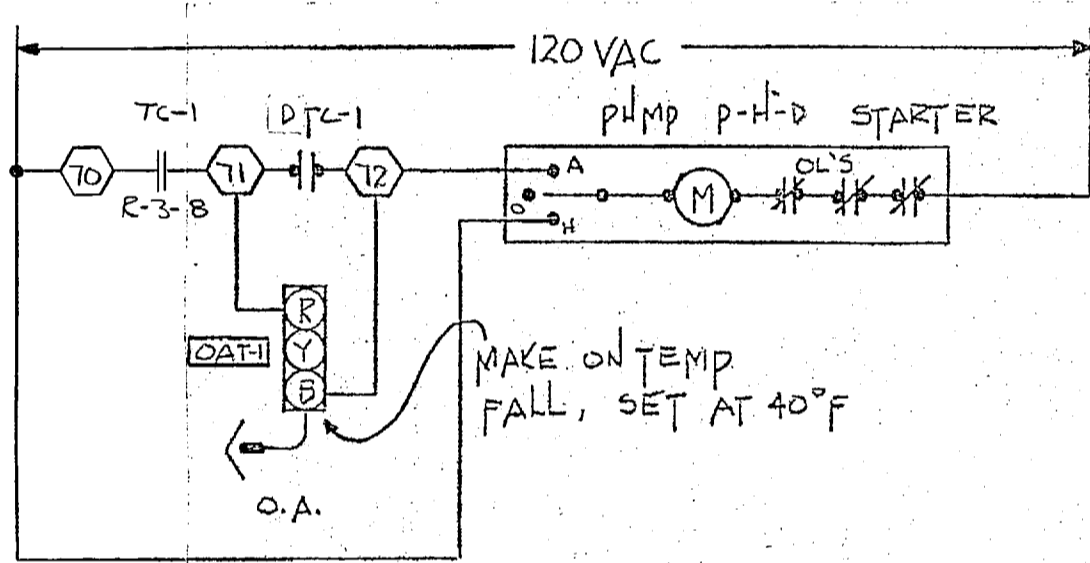
PRIMARY H.W.P. P.H CONTROL DIAGRAM



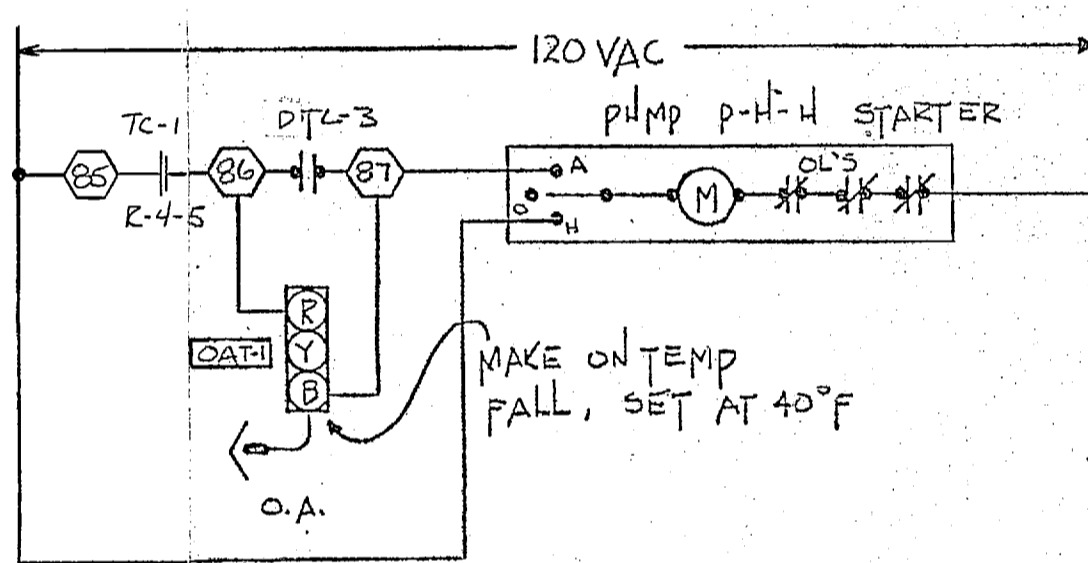
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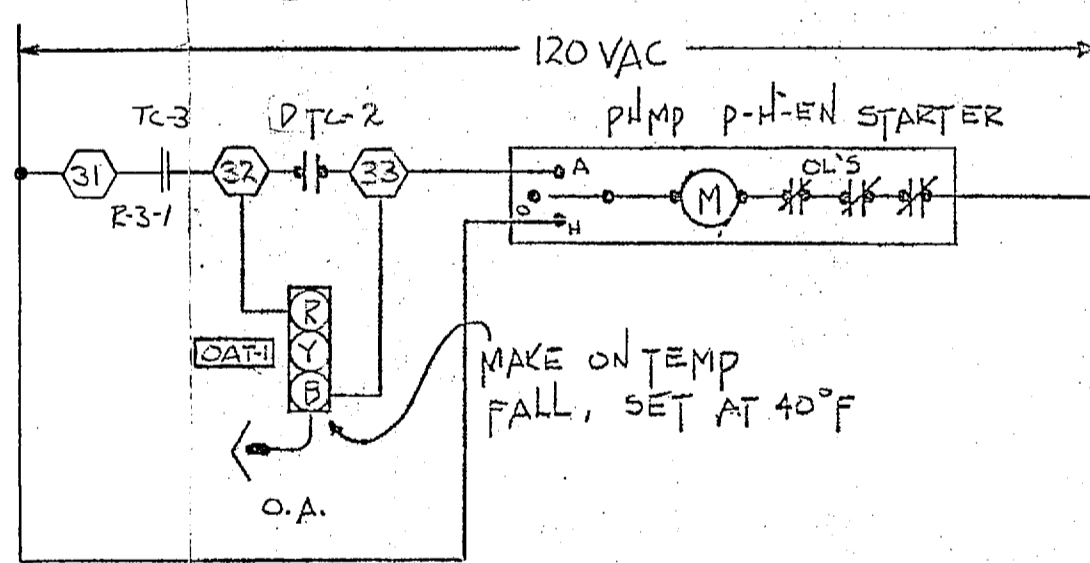
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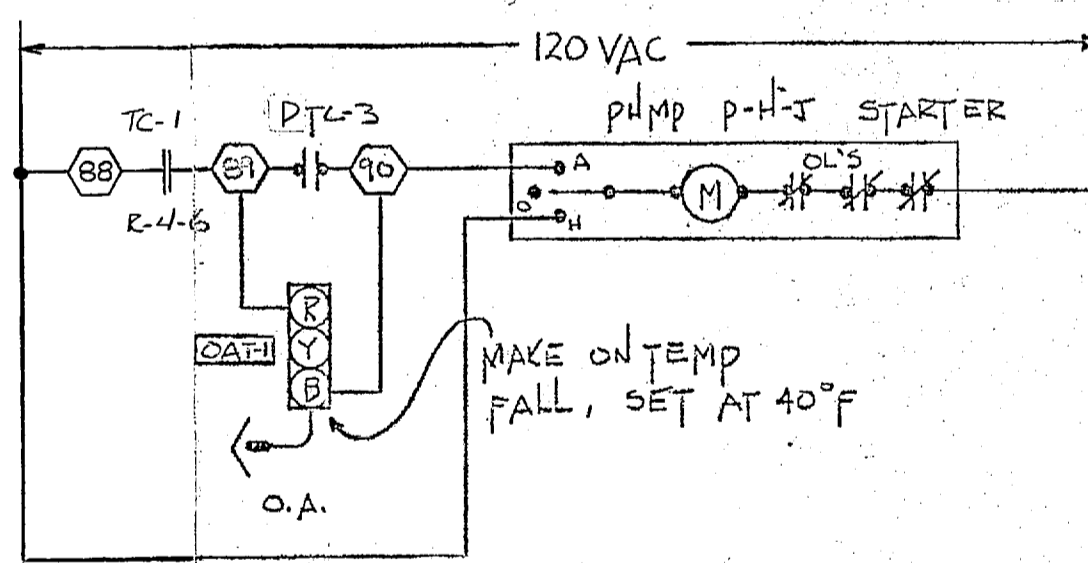
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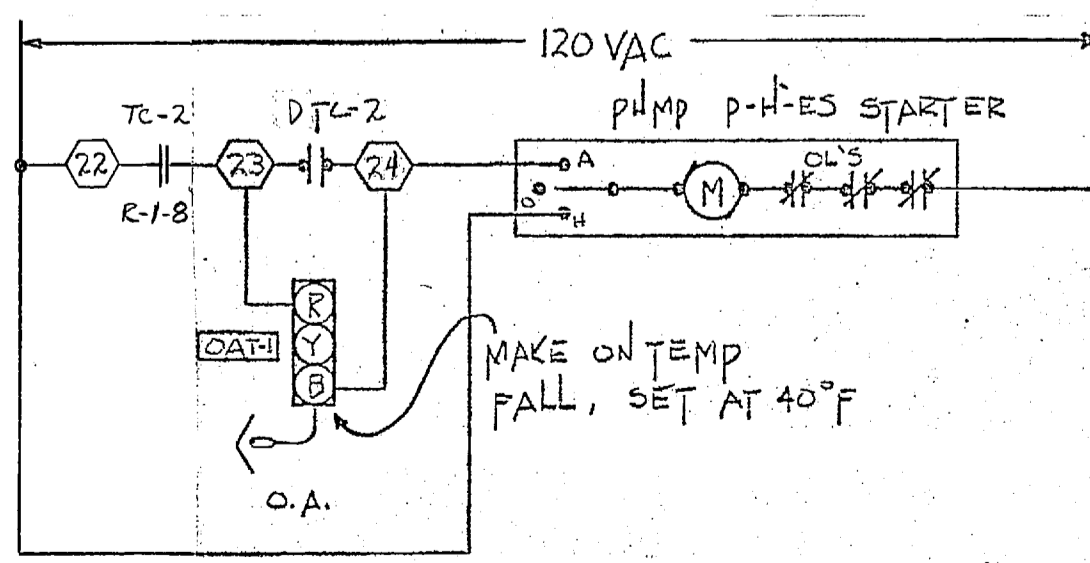
SECONDARY H.W.P. P.H-H CONTROL DIAGRAM



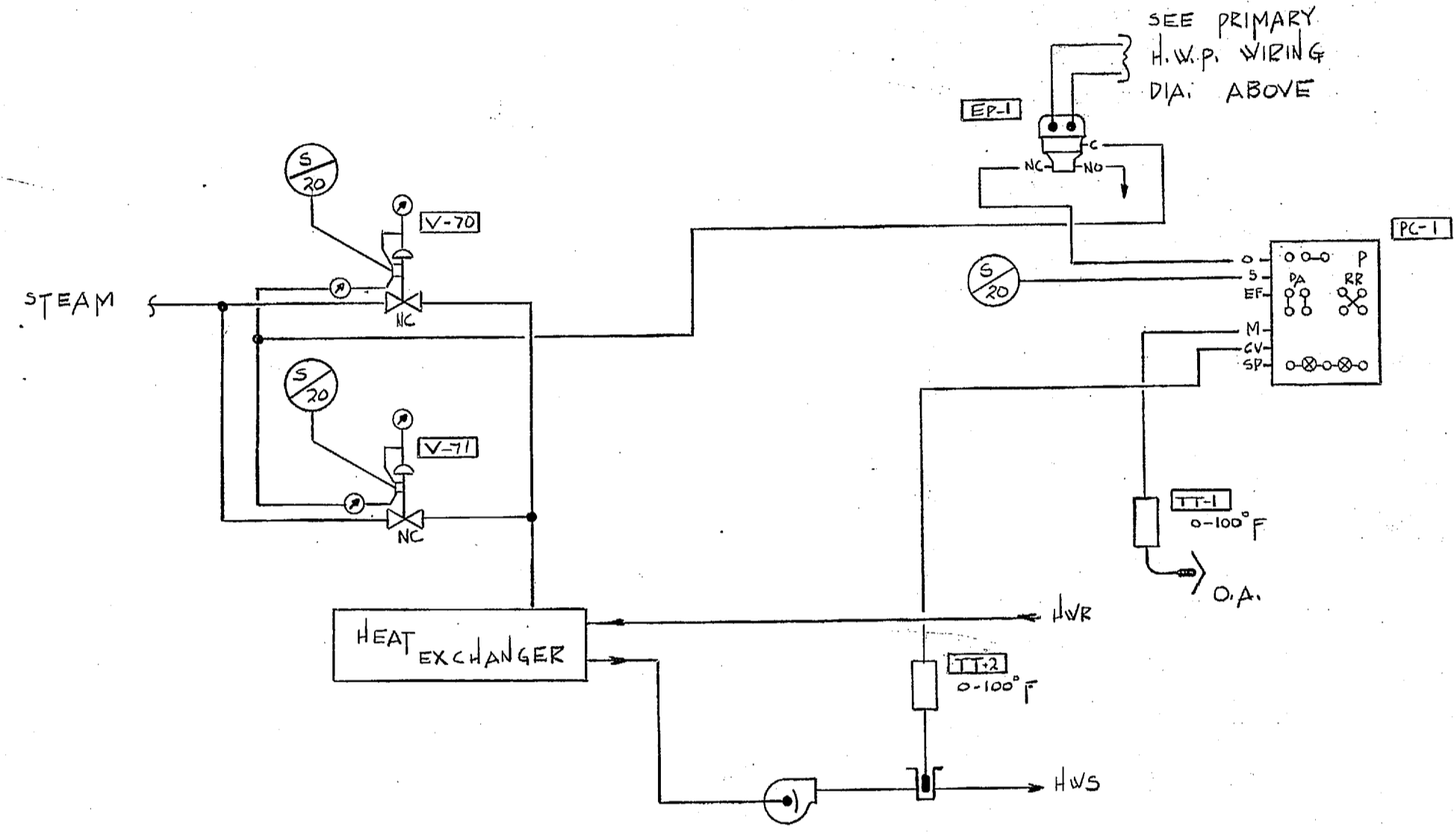
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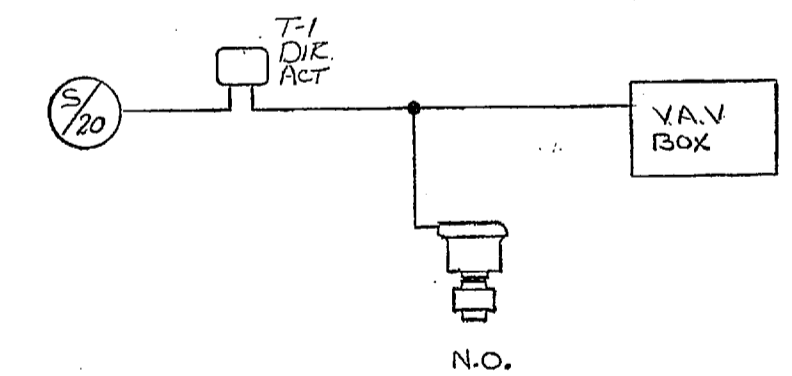
SECONDARY H.W.P. P.H-T CONTROL DIAGRAM



SECONDARY H.W.P. P.H-ES CONTROL DIAGRAM



HEAT EXCHANGER CONTROL



RESET SCHEDULE	
O.A. TEMP	HWS TEMP
25	180
70	70
RATIO: 1:2	

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DRAWING TITLE
HOT WATER SYSTEM CONTROLS

REFERENCE DRAWINGS	NO.	REVISION - LOCATION	ECN	DATE	BY
SALES ENGR. F.N.H.	APPLICATION ENGR. JAL	BY VL DATE 10-24-86			

PROJECT
CMP LEJEUNE HOSPITAL CONVERSION
DIVISION HEADQUARTERS
CMP LEJEUNE, N.C.

CONTRACTOR
GENERAL HTG + AC.

CONTRACT NUMBER
6128-0080

DRAWING NUMBER
32 OF 40

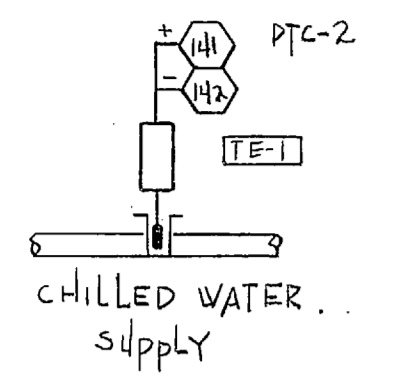
APPROVED
DATE

DATE
2-12-87

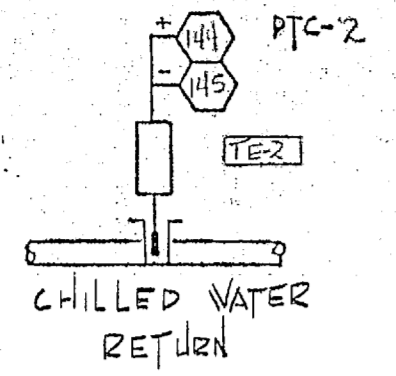
BY
J.L.

JOHNSON CONTROLS
Systems & Services Division

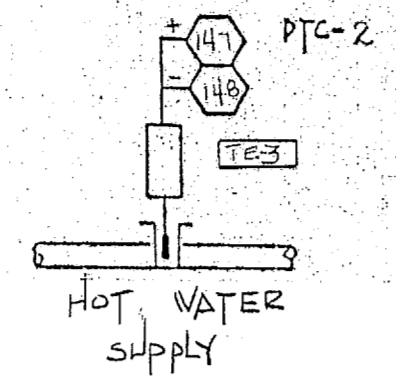
G
F
E
D
C
B
A



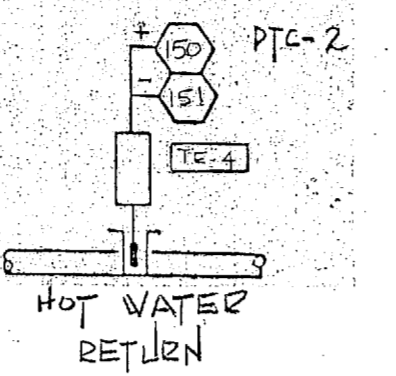
CHILLED WATER SUPPLY TEMP



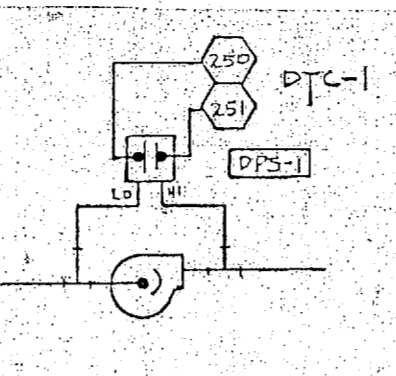
CHILLED WATER RETURN TEMP



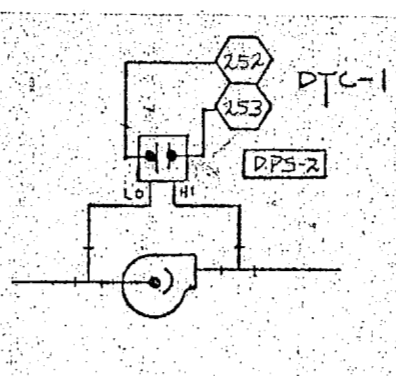
HOT WATER SUPPLY TEMP



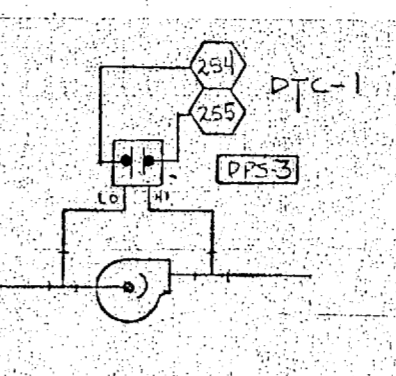
HOT WATER RETURN TEMP



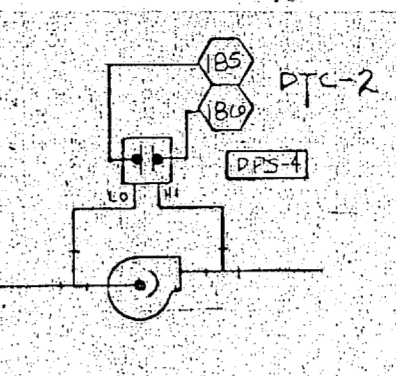
PUMP P-H-AB STATUS



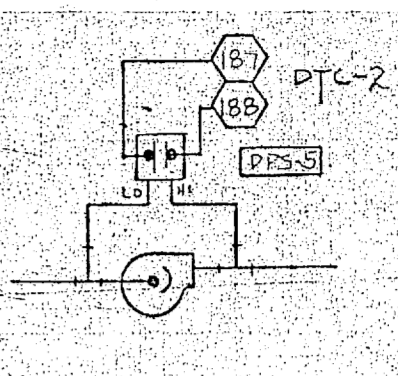
PUMP P-H-C STATUS



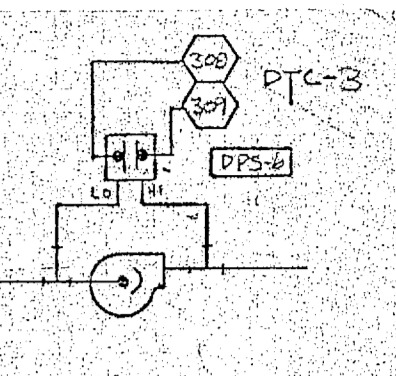
PUMP P-H-D STATUS



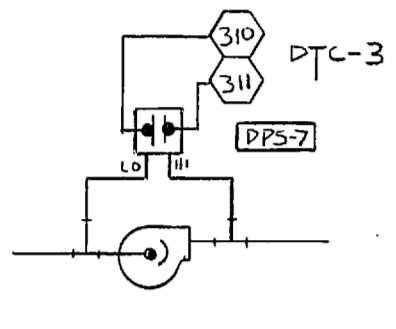
PUMP P-H-E STATUS



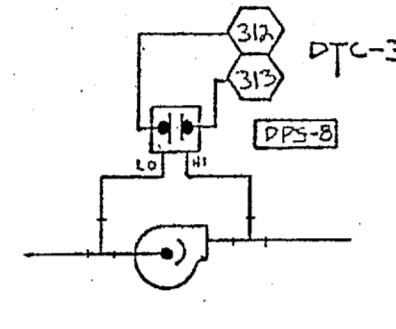
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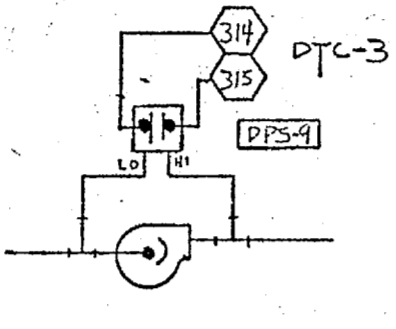
PUMP P-H-G STATUS



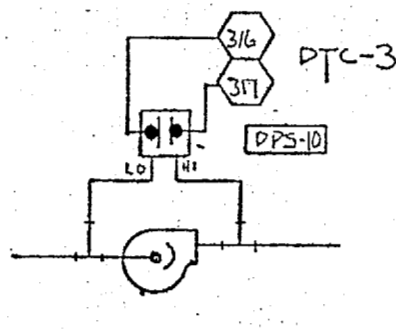
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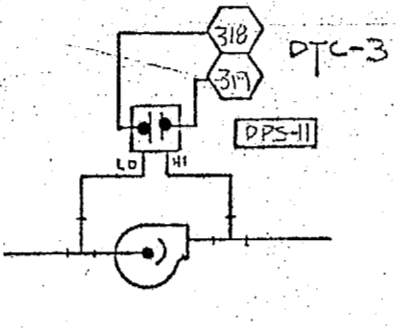
PUMP P-H-I STATUS



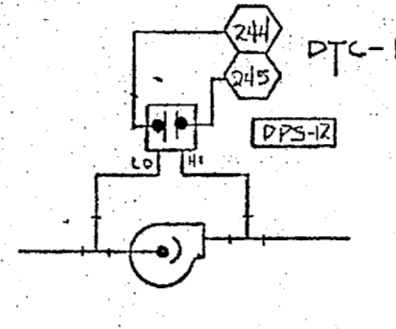
PUMP P-DFAB STATUS



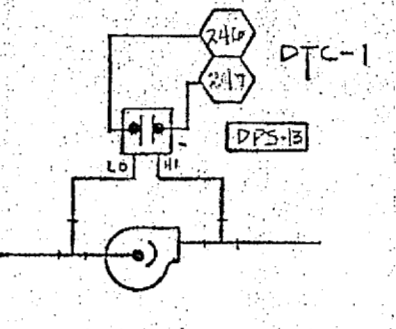
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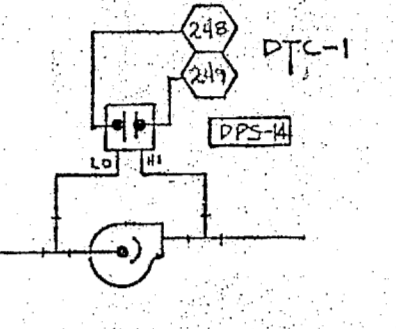
PUMP P-CH STATUS



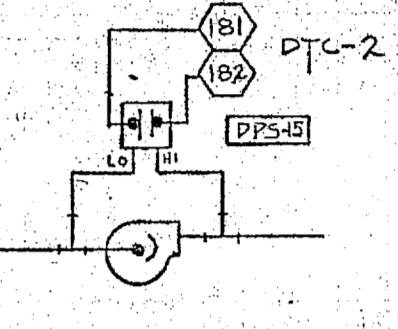
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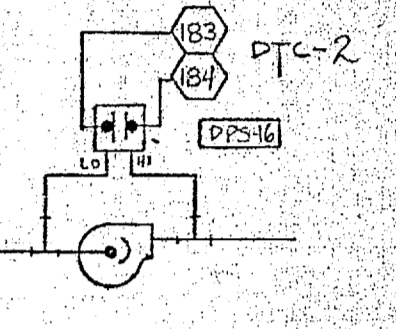
PUMP P-CC STATUS



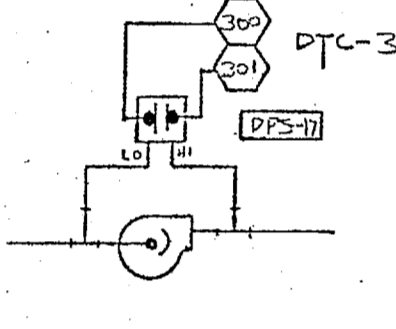
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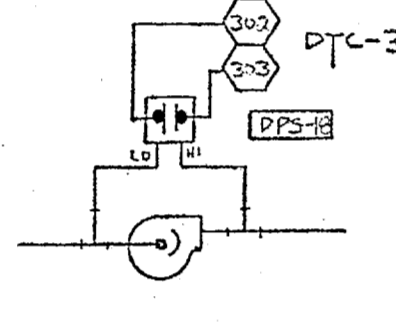
PUMP P-CE STATUS



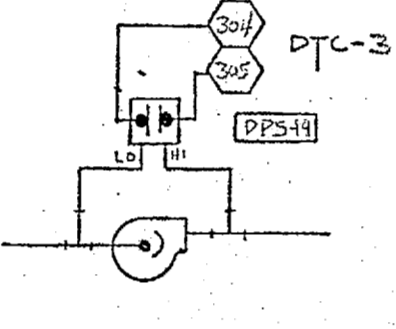
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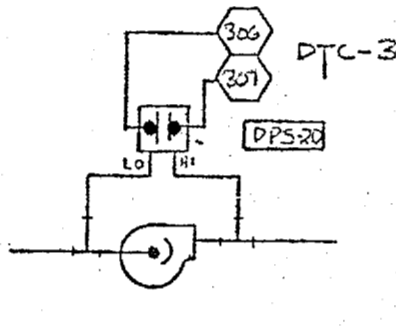
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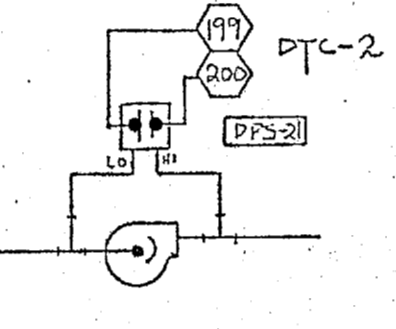
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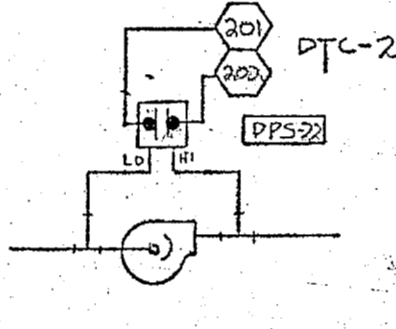
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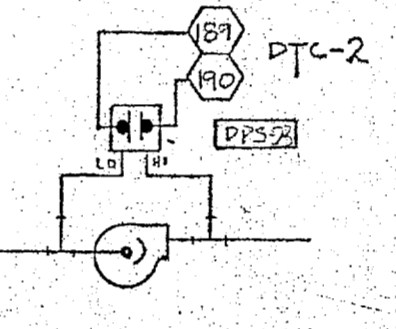
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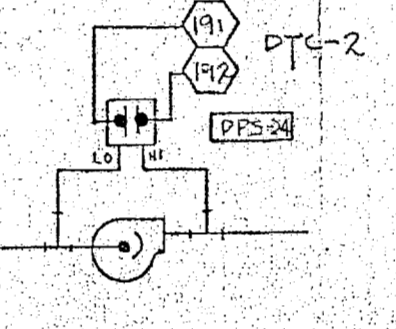
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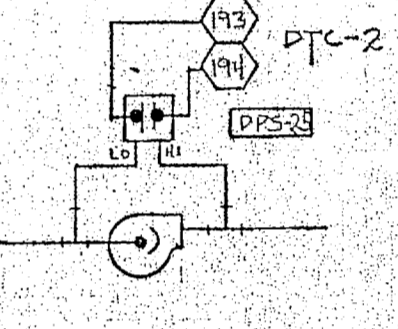
PUMP P-C2 STATUS



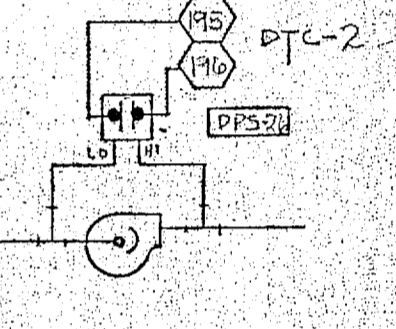
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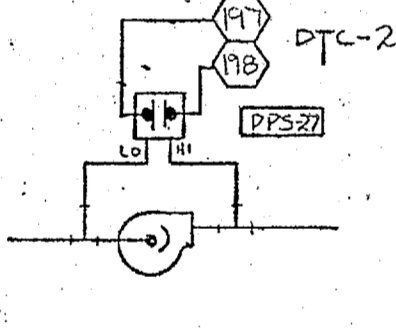
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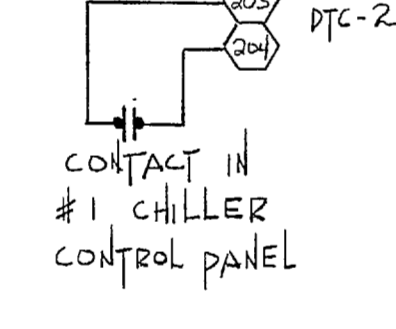
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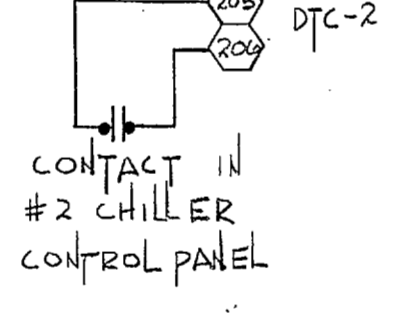
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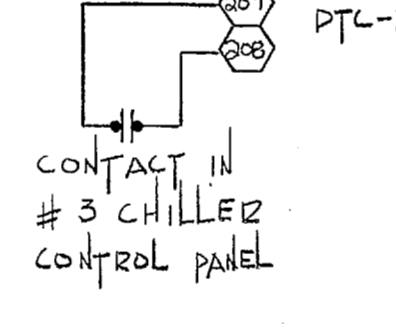
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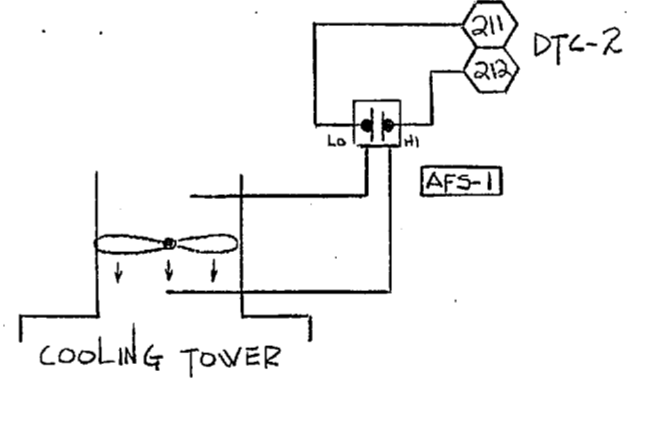
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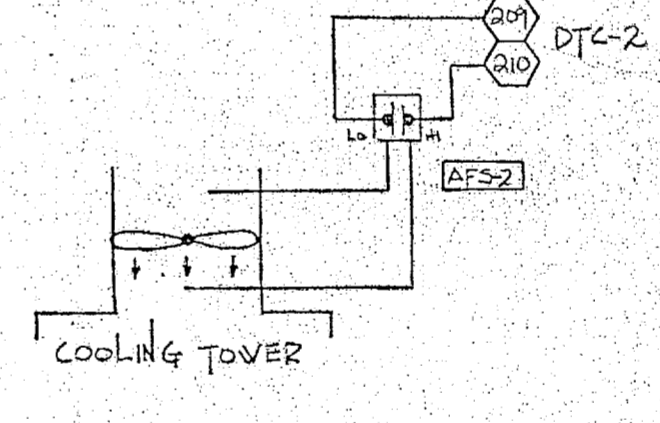
CHILLER #2 STATUS



CHILLER #3 STATUS

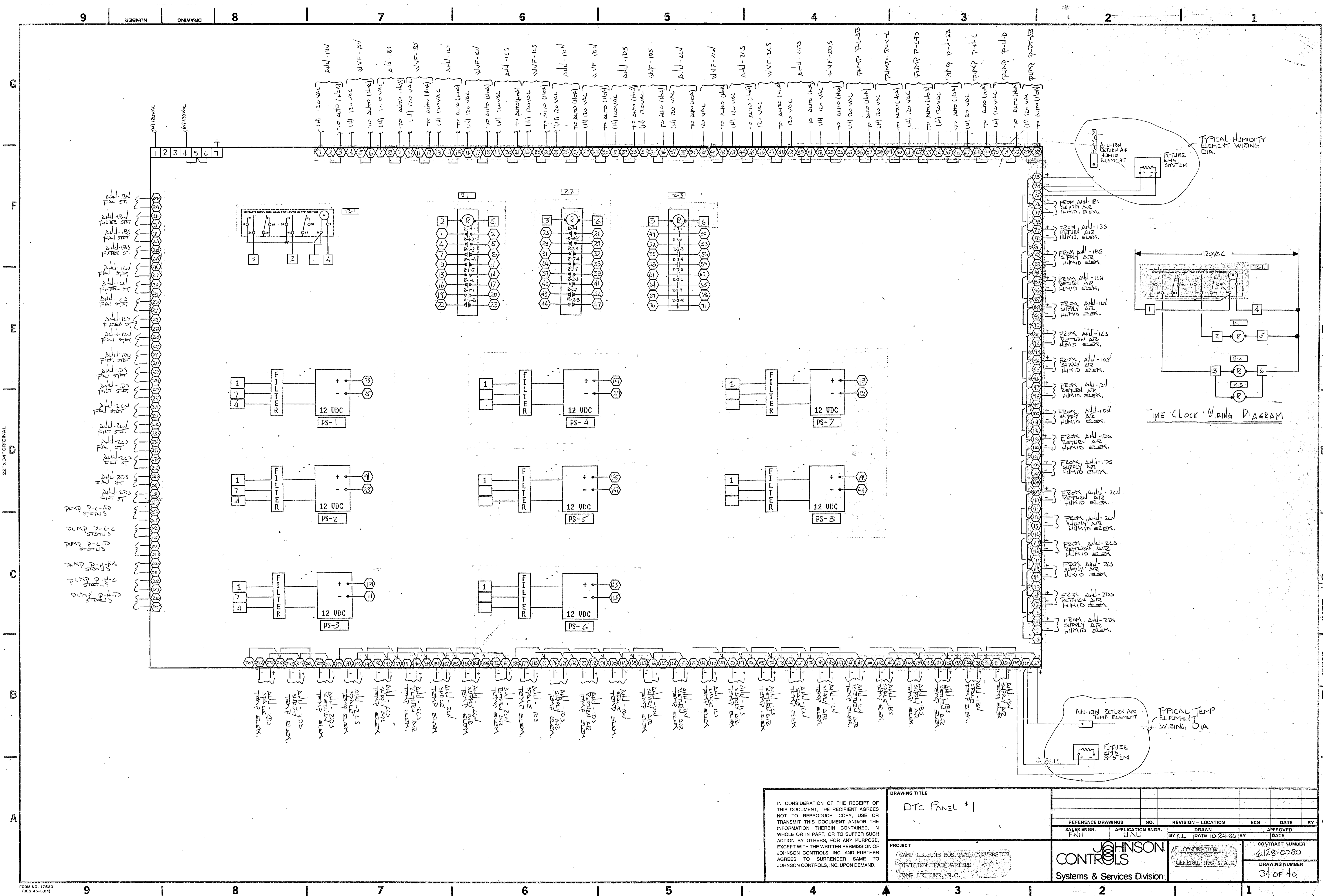


COOLING TOWER CT-1 FAN STATUS



COOLING TOWER CT-2 FAN STATUS

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	MISC. TEMPERATURE & STATUS POINTS						
	PROJECT		SALES ENGR.		APPROVED		
	CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		F.N.H.		DATE		
		APPLICATION ENGR.		BY		DATE	
		J. A. L.		BY		DATE	
		DATE 10-10-84		BY		DATE	
		JOHNSON CONTROLS		CONTRACTOR		CONTRACT NUMBER	
		Systems & Services Division		GENERAL HTG + AC.		6128-0080	
						DRAWING NUMBER	
						33 of 40	



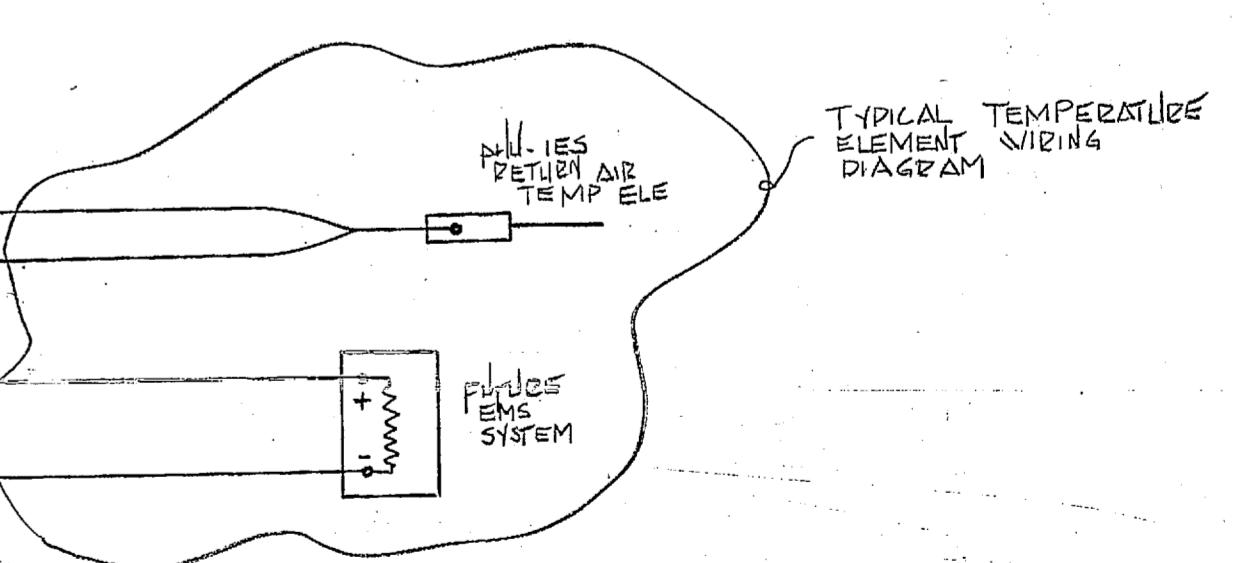
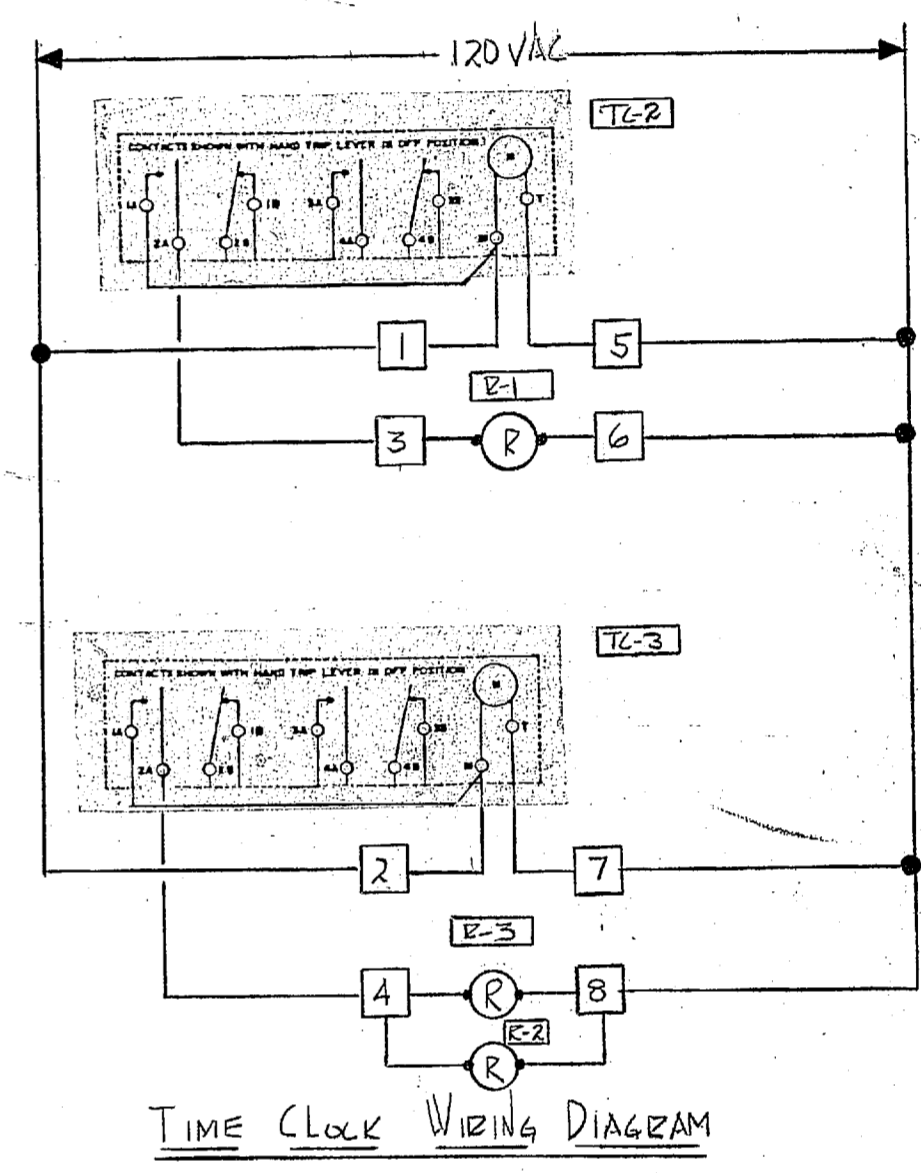
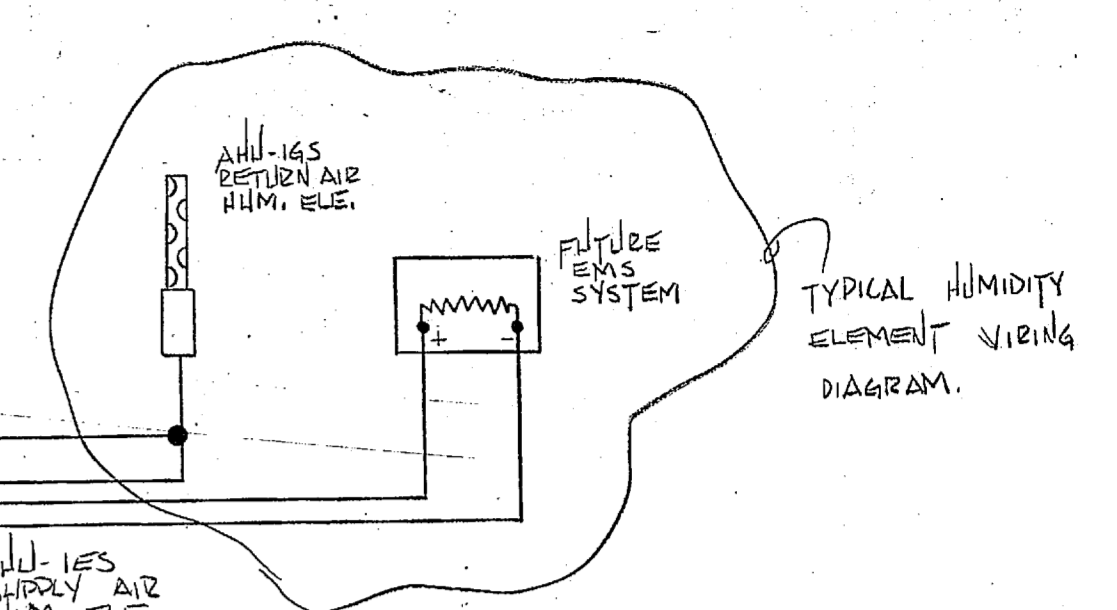
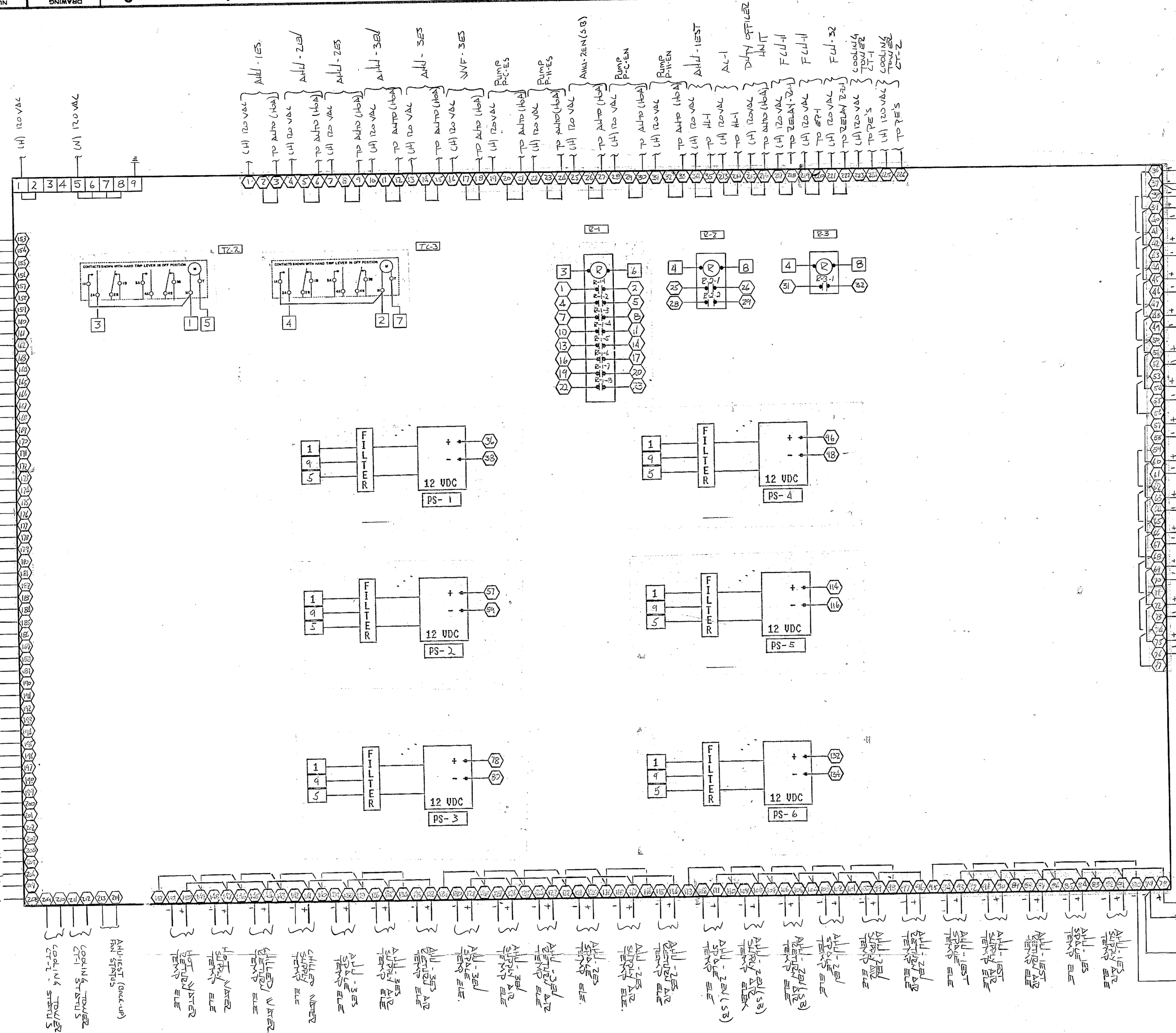
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22" x 34" ORIGINAL

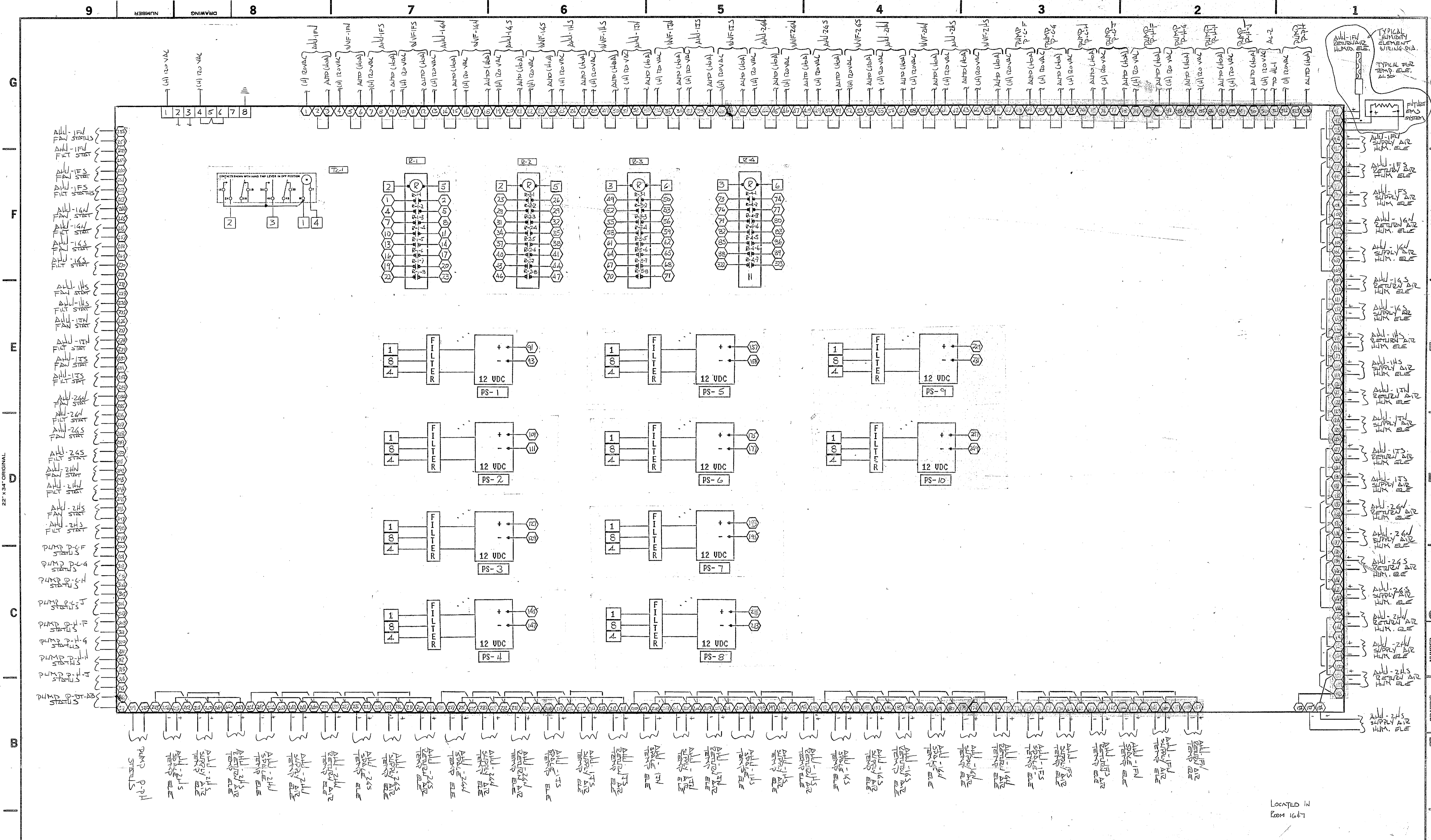
FORM NO. 1752D
ISS 45-0011

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PROJECT CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.		SALES ENGR. FNH		APPLICATION ENGR. JAL	
JOHNSON CONTROLS Systems & Services Division		CONTRACTOR GENERAL HTG. & A.C.		CONTRACT NUMBER 6128-0080 DRAWING NUMBER 34 of 40	
DATE 10-24-86		BY K.L.		APPROVED DATE	



22" x 34" ORIGINAL

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<p>SALES ENGR. FNH</p>		<p>APPLICATION ENGR. JAL</p>		<p>CONTRACT NUMBER 6128-0080</p>	
<p>DATE 10-24-86</p>		<p>DATE 10-24-86</p>		<p>DRAWING NUMBER 35 OF 40</p>	
<p>NO. 1</p>		<p>REVISION - LOCATION</p>		<p>DATE BY</p>	
<p>ECN</p>		<p>APPROVED</p>		<p>DATE</p>	
<p>JOHNSON CONTROLS Systems & Services Division</p>		<p>CONTRACTOR GENERAL ETC & A.C.</p>		<p>DATE 2-12-87</p>	
<p>BY J.L.</p>		<p>BY J.L.</p>		<p>DATE 2-12-87</p>	



PUMP P-24
 PUMP P-25
 PUMP P-26
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LOCATED IN ROOM 1647

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		PROJECT		CAMP LEJUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJUNE, N.C.	
REFERENCE DRAWINGS	NO.	REVISION - LOCATION	ECN	DATE	BY
SALES ENGR.	FNH	APPLICATION ENGR.	JAL	DRAWN BY	APPROVED BY
		DATE	10-24-86		
JOHNSON CONTROLS Systems & Services Division			CONTRACTOR GENERAL HFG & A.C.		CONTRACT NUMBER 6128-0080
					DRAWING NUMBER 36 of 40

JOHNSON CONTROLS BILL OF MATERIAL

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			AHU - CONTROL			
			FIELD MATERIAL			
OAT-1	1	APABC-24	OUTSIDE AIR T'STAT		SET @ 55°F	
LL-1&2	2	A11A-1	LOW LIMIT T'STAT		SET @ 40°F	
HL-1&2	2	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 120°F	
TLL-1	1	T-3610-1001	MIXED AIR LOW LIMIT			
TT-1&2	2	T-5210-1009	TEMP. TRANSMITTER	0-100°F		
DPS-1	1	AFS-222	DIFF. PRESS. TRANS.			
AFS-1	1	AFS-222	DIFF. PRESS. TRANS.			
TE-1&2	2	TE-210-B	TEMPERATURE ELEMENT			
TE-3	1	TE-210-A	TEMPERATURE ELEMENT			
HE-1&2	2	HT-101L	HUMIDITY ELEMENT			
EP-5	1	V-2410-2	SOLENOID AIR VALVE		120 VAC	
PCD-1	1	R-317-6	AIR FLOW CONTROLLER	3-6" W.G.	SET @ 2" W.G.	

CT-1	1	T-4002-201	ROOM THERMOSTAT		DIE. ACT.	
ES-1	1		END SWITCH			

TOS-1&2	2	PD-110-9	MANUAL TIMER		6 HRS	
DA-1	3	D-3073-1	DAMPER ACTUATOR		W/PILOT	
			PANEL MATERIAL			
M-1	1	M-8100-2430	CONTROL PANEL		24" W X 30" H X 9" D	
PE-1	1	PIOBC-7	PRESS/ELECTRIC SW.		SET @ 10"	
EP-1,2	3,4	V-2420-2	SOLENOID AIR VALVE		120 VAC	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
PCM-1	1	R-4000-3	MINIMUM POSITION		SET @ 5"	
RC-1&2	2	T-5800-2	RECEIVER CONTROLLER		DIE. ACT.	
ASW-1	1	PD-106-2	AUTO-SUMMER-WINTER		3-POSITION	
TDR-1	1	TDB-120-AKA-100	TIMED DELAY RELAY	0-100 SEC.		
⊙	2	R-3110-2007	RESTRICTOR		.007"	
RE-1	1	R-2090-6	REVERSING RELAY		10" IN 10" OUT	

TYPICAL FOR 21 AHU'S W/WVF

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			AHU-2EN (SIB)			
			FIELD MATERIAL			
HL-1	1	A40HA-2	REGULATED HIGH CUTOFF	100/170°F	SET @ 110°F	
TLL-1	1	T-3610-1001	MIXED AIR LO LIMIT		SET @ 55°F	
LL-1	1	A11A-1	LOW LIMIT		SET @ 45°F	
HL-1	1	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 120°F	
DPS-1	1	AFS-222	DIFF. PRESS. TRANS.			
AFS-1	1	AFS-222	DIFF. PRESS. TRANS.			
TE-1&2	2	TE-210-B	TEMP. ELEMENT			
TE-3	1	TE-210-A	SPACE TEMP. ELEMENT			
HE-1&2	2	HT-101L	HUMIDITY ELEMENT			
TOS-1	1	PD-110-9	MANUAL TIMER		6 HRS	
LL-1	1	T-265-1B	NIGHT LOW LIMIT T'STAT		SET @ 55°F	
T-1	1	T-4002-201	ROOM THERMOSTAT		DIE. ACT.	
			PANEL MATERIAL			
M-1	1	M-8100-1218	CONTROL PANEL		12" W X 18" H X 9" D	
EP-1	1	V-2420-2	SOLENOID AIR VALVE		120 VAC	
PCM-1	1	R-4000-3	MINIMUM POSITION		SET @ 7"	
⊙	1	R-3110-2007	RESTRICTOR		.007"	

JOHNSON CONTROLS BILL OF MATERIAL

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			AHU - CONTROL			
			FIELD MATERIAL			
OAT-1	1	APABC-24	OUTSIDE AIR T'STAT		SET @ 55°F	
HL-1	1	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 120°F	
TLL-1	1	T-3610-1001	MIXED AIR LOW LIMIT			
LL-1	1	A11A-1	LOW LIMIT		SET @ 40°F	
TT-1	1	T-5210-1009	TEMP. TRANSMITTER	0-100°F		
DPS-1	1	AFS-222	DIFF. PRESS. TRANS.			
AFS-1	1	AFS-222	DIFF. PRESS. TRANS.			
PCD-1	1	R-317-6	AIR FLOW CONTROLLER	3-6" W.G.	SET @ 2" W.G.	

EP-4	1	V-2410-2	SOLENOID AIR VALVE		120 VAC	
TE-1&2	2	TE-210-B	TEMPERATURE ELEMENT			
TE-3	1	TE-210-A	TEMPERATURE ELEMENT			
HE-1&2	2	HT-101L	HUMIDITY ELEMENT			
⊙	1	R-3110-2007	RESTRICTOR		.007"	
DA-1	3	D-3073-1	DAMPER ACTUATOR		W/PILOT	
TOS-1	1	PD-110-9	MANUAL TIMER		6 HRS	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
RR-1	1	R-2090-6	REVERSING RELAY		10" IN 10" OUT	
M-1	1	M-8100-1824	CONTROL PANEL		18" W X 24" H X 9" D	
RC-1	1	T-5800-2	RECEIVER CONTROLLER		DIE. ACT.	
EP-1,2,3	3	V-2420-2	SOLENOID AIR VALVE		120 VAC	
PCM-1	1	R-4000-3	MINIMUM POSITION		SET @ 5"	

TYPICAL FOR 4 VAV UNITS W/O WVF

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			AHU-1EST			
T-1	1	T-4002-201	ROOM THERMOSTAT		DIE. ACT.	
EP-1,2	2	V-2410-2	SOLENOID AIR VALVE		120 VAC	
HL-1	1	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 125°F	
DPS-1	1	AFS-222	DIFF. PRESS. SWITCH			
AFS-1	2	AFS-222	DIFF. PRESS. SWITCH			
TE-1&2	2	TE-210-B	TEMP. ELEMENT			
TE-3	1	TE-210-A	SPACE TEMP. ELEMENT			
HE-1&2	2	HT-101L	HUMIDITY ELEMENT			
SW-1	1	PD-106-3	NORMAL-BACKUP SWITCH		SPDT 2-POSITION	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			ALARM PANEL			
M-1	1	M-8100-1218	CONTROL PANEL		12" W X 18" H X 9" D	
PL-1	1	PD-103-55	LAMP SOCKET			
	1	PD-102-3	LAMP			
	1	PD-103-32	LENS (RED)			
ALM-1	1	PD-111-5	SIGNALLET			
DR-1	1	PD-105-1	PUSHBUTTON			
R-1	1	KZ-4000-B	RELAY		120VAC DPDT	
T-2	1	T-265-1B	ELECTRIC THERMOSTAT		SET @ 78°F	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			DUTY OFFICER UNIT			
T-1	1	T-4054-1	ROOM THERMOSTAT		DIE. ACT.	
HL-1	1	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 145°F	
			AIR COMPRESSOR			
AC-1	1	Z-15TA10	AIR COMPRESSOR	240 GAL TANK	10 HP 220/440V 3Ø	
AC-2	1	A-4210-1	AFTER COOLER		115 VAC	
AC-3	1	NE80W	DEAIN TRAP			

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			AC-1 CONTROL			
SW-1	1	PD-106-3	NORMAL-BACKUP SWITCH			
EP-1	1	V-2410-2	SOLENOID AIR VALVE		120 VAC	
T-3	1	T-4002-201	ROOM THERMOSTAT		DIE. ACT.	
HL-1	1	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 120°F	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			AC-2 CONTROL			
T-3	1	T-4002-201	ROOM THERMOSTAT		DIE. ACT.	
HL-1	1	A25AN-1	HIGH LIMIT (FIRESTAT)		SET @ 120°F	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			ALARM PANEL			
M-1	1	M-8100-1218	CONTROL PANEL		12" W X 18" H X 9" D	
T-2	1	T-265-1B	ELECTRIC THERMOSTAT		SET @ 90°F	
ALM-1	1	PD-111-5	SIGNALLET			
PB-1	1	PD-105-1	PUSHBUTTON			

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
PL-1	1	PD-103-55	LAMP SOCKET			
	1	PD-102-3	LAMP			
	1	PD-103-32	LENS (RED)			
R-1	1	KZ-4000-B	RELAY		120 VAC DPDT	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			HW RESET			
EP-1	1	V-2420-2	SOLENOID AIR VALVE		120 VAC	
M-1	1	M-8100-1824	CONTROL PANEL		18" W X 24" H X 9" D	
RC-1	1	T-5800-2	RECEIVER CONTROLLER		DIE. ACT.	
C-1	1	C-9500-1	TWO POSITION CUMULATIVE			
TT-1	1	T-5210-1114	TEMP. TRANSMITTER	0-100°F		
TT-2	1	T-5210-1004	TEMP. TRANSMITTER	40-240°F		
PE-1	1	PIOBC-7	PRESS/ELECTRIC SW.		SET @ 15"	
			SUMMER/WINTER SWITCHOVER			
S-1	1	S-233-3	PNEUMATIC SELECTOR SW.			
EP-1	1	V-2410-2	SOLENOID AIR VALVE		120 VAC	
PRV-1	1	A-4000-129	PRESS. REDUCING VALVE			
AV-1	1	V-4324-1002	3-WAY AIR VALVE			

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			FCU-11 & 32 CONTROL			
EP-2	3	V-2410-2	SOLENOID AIR VALVE		120 VAC	
LL-1	2	A11A-1	LOW LIMIT		SET @ 40°F	
T-1	2	T-3300-1	DUAL TEMP. T'STAT		20° REV - 15° DIR.	
ES-1&2	2		END SWITCH			
R-1&2	2	KZ-4000-B	RELAY		120 VAC DPDT	

Inst. ID.	QTY.	CODE NO.	DESCRIPTION	RANGE SETTING	OTHER	TASK
			CHILLED WATER SYSTEM			
M-1	1	M-8100-2430	CONTROL PANEL		24" W X 30" H X 9" D	
SW-1	1		4-POSITION SWITCH			
LLS-1	1	PD-106-5	LEAD-LAG SWITCH		DPDT	
TDR-1	1	TDB-120-AKA-100	TIMED DELAY RELAY	0-100 SEC.		
EP-1	1	V-2420-2	SOLENOID AIR VALVE		120 VAC	
R-1	5	KZ-4000-5	RELAY		120 VAC	
R-6	1	PH-109-20	RELAY		3PDT 120VAC	
AV-1	1	V-4324-1002	3-WAY AIR VALVE			
OAT-1	2	APABC-24	OUTSIDE AIR T'STAT		SET @ 60°F	
FS-1	7	F61MB-1	FLOW SWITCH			
T-1	1	APABC-24	CHW T'STAT		SET @ 55°F	

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DRAWING TITLE
BILL OF MATERIAL

PROJECT
CAMP LEBLANC HOSPITAL CONVERSION
DIVISION HEADQUARTERS
CAMP LEBLANC, N.C.

SALES ENGR. F.N.H.	APPLICATION ENGR. J.N.	DRAWN BY K.L.	DATE 10-24-86	APPROVED BY	DATE
REFERENCE DRAWINGS		NO. REVISION - LOCATION		ECN	DATE BY
CONTRACT NUMBER		DRAWING NUMBER		DATE	
6128-0080		31 OF 40		2-2-87 JL	

JOHNSON CONTROLS Systems & Services Division

22" x 34" ORIGINAL

A

JOHNSON CONTROLS

BILL OF MATERIAL

Table with columns: Instr. ID., QTY., CODE NO., DESCRIPTION, RANGE SETTING, OTHER, TASK. Rows include Secondary Chw Pumps, Manual Timer, Outside Air T-Stat, Cooling Tower Fan Ctrl, Receiver Controller, Temp Transmitter, Press/Electrical SW, Unit Heater Control, Electric T-Stat, Steam T-Stat, and Room Thermostat.

Table with columns: Instr. ID., QTY., CODE NO., DESCRIPTION, RANGE SETTING, OTHER, TASK. Rows include Exhaust Fan Control, Electric T-Stat, and Solenoid Air Valve.

Table with columns: Instr. ID., QTY., CODE NO., DESCRIPTION, RANGE SETTING, OTHER, TASK. Rows include Secondary H.W. Pumps, Outside Air T-Stat, Primary H.W. Pump, Heat Exchanger, Receiver Controller, Temp Transmitter, Solenoid Air Valve, V.A.V. Box Control, and Room Thermostat.

Table with columns: Instr. ID., QTY., CODE NO., DESCRIPTION, RANGE SETTING, OTHER, TASK. Rows include DTC Panel #1, Control Panel, Time Clock, Relay, Power Supply, DTC Panel #2, DTC Panel #3, and Control Panel.

SEQUENCE OF OPERATION

AHU- CONTROL

SUMMER VENTILATION FAN: The fan shall be started and stopped from contacts in the data terminal cabinet, or by a space thermostat CT-1. A manual Auto-Summer-Winter switch ASW-1 is provided to override the thermostat.

When the outside air temperature is above 65 degrees F the outside air damper shall close to minimum, relief damper will close and return air damper will open. If mixed air temperature drops below 55 degrees F the outside air damper will close.

WINTER VENTILATION FAN: When the space temperature drops below 75 degrees F the summer fan shall stop and its discharge damper shall close. The winter ventilation's normally closed discharge damper, return air and outside air damper shall open to 100%, 30% and 70% respectively.

TYPICAL FOR 21 VAV UNITS W/WVF

AHU-

When the time clock in the data terminal cabinet or timed override switch TOS-1 energizes the air handling unit, the outside air damper shall open to a minimum position, as per PLM-1.

When the outside air temperature is above 65 degrees F dry bulb, the outside air damper shall close to its minimum position and the relief damper shall close. A mixed air low limit thermostat TLL-1 shall close the outside air damper if the mixed air temperature falls below the setpoint of 55 degrees F.

TYPICAL FOR 4 VAV UNITS W/O WVF

AHU-2EN (SB) CONTROL: Supply fan shall be energized by contacts in DTC panel, timeclock, or a timed override switch TOS-1. When fan is energized outside air damper will open to a minimum position, as per PCM-1.

AHU - 1EST CONTROL: The system shall be energized through contacts in the DTC panel. A "normal-backup" switch SW-1 mounted adjacent to the alarm panel is provided to manually switch units.

An alarm panel located in Duty Officer Room (1R88) is provided to sound a high temperature alarm if room temperature rises above thermostats T-2 setpoint.

DUTY OFFICER FCU: The fan shall be energized by contacts in the DTC panel, and shall run continuously. Room thermostat T-1 shall modulate the hot water valve when temperature drops below 58 degrees F.

RESEP AREAS:

AC-1 and 2: Units shall be started and stopped by contacts in the DTC panel. Controls are self-contained. High limit HL-1 is provided to stop units if temperature rises above setpoint.

AIR CONDITIONING BACKUP: A high temperature alarm is provided in the space to sound an alarm if temperature rises above thermostats T-2 setpoint. A manual switch labeled "Normal-Backup" is provided adjacent to the alarm panel.

SSO/SSCT AREA: A room thermostat shall modulate a VAV terminal box to supply supplemental cooling for the computer room unit.

MUAV FCU - 11 AND 32 BILLETING AREA: Contacts in the DTC shall initiate the Start/Stop command. When a start signal is issued the normally closed outside and return air dampers shall open.

SUMMER/WINTER SWITCHOVER: Summer/Winter shall be determined by contacts in the DTC panel. A Summer/Winter/Auto switch is provided to allow manual control or auto control.

HOT WATER RESET AND CHANGEOVER: During winter operation, an outside air sensor TT-1 shall reset the hot water supply temperature as follows:

- 25 degrees F outside air - 120 degrees F hot water supply
70 degrees F outside air - 80 degrees F hot water supply
When system switches for winter to summer, valves V-61 and V-62 switch and allow chilled water to run through system.

CHILLED WATER PUMPING SYSTEMS: Each of the zone secondary chill water pumps shall be energized by a time clock, timed override switch and contacts in the DTC panel, provided the outside air temperature is above 60 degrees F.

A manual Summer/Winter/Auto/Off switch is provided. In "Auto" position the DTC panel shall select P-PC-1 or P-PC-2. In "Summer" position pump P-PC-1 shall run. When flow is proven, pump P-CH-1 or Pump P-CH-2 shall run depending on which position the lead-lag switch is in.

HOT WATER PUMPING SYSTEM: Each zone secondary hot water pumps shall be energized by contacts in the DTC panel or if outside air thermostat senses a fall in temperature below its setpoint.

HEAT EXCHANGER CONTROL: When primary hot water pump P-PH is "Off" the heat exchanger steam valves shall be closed. Pump P-PH shall be energized by DTC panel or when outside air thermostat senses a temperature below its setpoint.

- Outside air temperature 25 degrees F.
Hot water supply temperature 180 degrees F.
Outside air temperature 70 degrees F.
Hot water supply temperature 70 degrees F.

CABINET UNIT HEATER CONTROL: A manual High/Medium/Low/Off switch is provided to operate fan. A room thermostat will modulate normally open hot water valve to maintain setpoint.

UNIT HEATER CONTROL: A space thermostat will cycle fan to maintain setpoint. A thermostat mounted on the hot water line will not allow fan to run unless hot water is present.

EXHAUST FAN CONTROL: (TYP OF 54) A space thermostat will cycle fan on and off.

EXHAUST FAN CONTROL: (TYP OF 28) A space thermostat will cycle fan on and off to maintain setpoint. When fan is energized the normally closed outside air intake and relief air damper will open.

EXHAUST FAN EP-93 AND 105 CONTROL: A space thermostat will cycle fan on and off to maintain setpoint. When fan is energized the normally closed outside air intake damper will open.

Administrative and technical information including drawing title 'BILL OF MATERIAL SEQUENCE OF OPERATION', project name 'CAMP DEJEUNE HOSPITAL CONVERSION', Johnson Controls logo, and approval/signature lines.

JOHNSON
CONTROLS

VALVE SCHEDULE

Form 1234 Rev. 2-77 (RES 45-4-05)

PROJECT/ADDRESS: **CAMP LEJEUNE HOSPITAL CONVERSION**
CONTRACT NO: **6128-0080**
DIVISION HEADQUARTERS
BUILDING DESIGNATION: **CAMP LEJEUNE, N.C.**
MECHANICAL ENGINEER: **J. LUCKWALDT**
DATE: **10-17-86**
MECHANICAL CONTRACTOR: **RALEIGH**

SHEET NO: **1** OF **5**
PREPARED BY:
DATE:
MECHANICAL CONTRACTOR:

TAG		VALVE INFORMATION										ACTUATOR INFO.			
ITEM	SYSTEM	SERVICE	Reference Drawing No.	QUAN	FAIL POS. Open/Close	VALVE CODE NO.	BODY STYLE	SIZE	Cv	CAPACITY GPM #/HR	AP	PIPING DETAILS	ACTUATOR TYPE	PILOT YES/NO	Range
V-1	AHU-1BN	CHW		1	X	V-5462-5	SCR	2"	27	53	3.8		4-R	X	9-13
V-2	WVF-1BN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	4	.82		V-3000	X	3-6
V-3	AHU-1BS	CHW		1	X	V-5462-5	SCR	2"	27	46	2.9		4-R	X	9-13
V-4	WVF-1BS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	4	.82		V-3000	X	3-6
V-5	AHU-1CS	CHW		1	X	V-5462-3	SCR	1/2"	17	35	4.2		4-R	X	9-13
V-6	WVF-1CS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	2.5	.32		V-3000	X	3-6
V-7	AHU-1CS	CHW		1	X	V-5462-5	SCR	2"	27	40	2.2		4-R	X	9-13
V-8	WVF-1CS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-9	AHU-1DN	CHW		1	X	V-3974-1011	SCR	1"	13.9	26	3.4		V-3000	X	9-13
V-10	WVF-1DN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	2.5	.32		V-3000	X	3-6
V-11	AHU-1DS	CHW		1	X	V-5462-5	SCR	2"	27	44	2.6		4-R	X	9-13
V-12	WVF-1DS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3.5	.63		V-3000	X	3-6
V-13	AHU-1FN	CHW		1	X	V-5462-3	SCR	1/2"	17	36	4.4		4-R	X	9-13
V-14	WVF-1FN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-15	AHU-1FS	CHW		1	X	V-5462-5	SCR	2"	27	38	1.98		4-R	X	9-13
V-16	WVF-1FS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6

TAG		VALVE INFORMATION										ACTUATOR INFO.			
ITEM	SYSTEM	SERVICE	Reference Drawing No.	QUAN	FAIL POS. Open/Close	VALVE CODE NO.	BODY STYLE	SIZE	Cv	CAPACITY GPM #/HR	AP	PIPING DETAILS	ACTUATOR TYPE	PILOT YES/NO	Range
V-17	AHU-1GN	CHW		1	X	V-5462-3	SCR	1/2"	17	35	4.2		4-R	X	9-13
V-18	WVF-1GN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-19	AHU-1GS	CHW		1	X	V-5462-3	SCR	1/2"	17	37	4.7		4-R	X	9-13
V-20	WVF-1GS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-21	AHU-1HS	CHW		1	X	V-3974-1011	SCR	1"	13.9	27	3.7		V-3000	X	9-13
V-22	WVF-1HS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-23	AHU-1JN	CHW		1	X	V-5462-5	SCR	2"	27	37	2.08		4-R	X	9-13
V-24	WVF-1JN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	2.5	.32		V-3000	X	3-6
V-25	AHU-1JS	CHW		1	X	V-5842-3	SCR	1/2"	21	40	3.6		4-R	X	9-13
V-26	WVF-1JS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	2.5	.32		V-3000	X	3-6
V-27	AHU-2CN	CHW		1	X	V-5462-5	SCR	2"	27	42	2.4		4-R	X	9-13
V-28	WVF-2CN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-29	AHU-2CS	CHW		1	X	V-5842-3	SCR	1/2"	21	38	3.2		4-R	X	9-13
V-30	WVF-2CS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-31	AHU-2DS	CHW		1	X	V-5842-3	SCR	1/2"	21	41	3.8		4-R	X	9-13
V-32	WVF-2DS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6

TAG		VALVE INFORMATION										ACTUATOR INFO.			
ITEM	SYSTEM	SERVICE	Reference Drawing No.	QUAN	FAIL POS. Open/Close	VALVE CODE NO.	BODY STYLE	SIZE	Cv	CAPACITY GPM #/HR	AP	PIPING DETAILS	ACTUATOR TYPE	PILOT YES/NO	Range
V-33	AHU-2GN	CHW		1	X	V-5462-5	SCR	2"	27	39	2.1		4-R	X	9-13
V-34	WVF-2GN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-35	AHU-2GS	CHW		1	X	V-5842-3	SCR	1/2"	21	36	2.9		4-R	X	9-13
V-36	WVF-2GS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-37	AHU-2HN	CHW		1	X	V-5462-3	SCR	1/2"	17	36	4.4		4-R	X	9-13
V-38	WVF-2HN	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	2.5	.32		V-3000	X	3-6
V-39	AHU-2HS	CHW		1	X	V-5842-3	SCR	1/2"	21	37	3.1		4-R	X	9-13
V-40	WVF-2HS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	2.5	.32		V-3000	X	3-6
V-41	AHU-2FS	CHW		1	X	V-5842-6	SCR	2"	30	48	2.8		4-R	X	9-13
V-42	WVF-2FS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	4	.82		V-3000	X	3-6
V-43	AHU-2ES	CHW		1	X	V-5842-3	SCR	1/2"	21	41	3.8		4-R	X	9-13
V-44	AHU-2EN	CHW		1	X	V-3974-1010	SCR	3/4"	8.6	17	3.9		V-3000	X	9-13
V-45	AHU-2ES	CHW		1	X	V-5462-5	SCR	2"	27	49	3.2		4-R	X	9-13
V-46	AHU-3EN	CHW		1	X	V-4324-1013	SCR 3-DAY	3/4"	8.6	16	3.4		V-3000	X	9-13
V-47	AHU-2ENS	CHW		1	X	V-3974-1010	SCR	3/4"	8.6	14	2.6		V-3000	X	9-13
V-48	AHU-2ENS	H.W.		1	X	V-3754-1025	SCR	1/2"	4.4	3.5	.63		V-3000	X	3-6

TAG		VALVE INFORMATION										ACTUATOR INFO.			
ITEM	SYSTEM	SERVICE	Reference Drawing No.	QUAN	FAIL POS. Open/Close	VALVE CODE NO.	BODY STYLE	SIZE	Cv	CAPACITY GPM #/HR	AP	PIPING DETAILS	ACTUATOR TYPE	PILOT YES/NO	Range
V-49	AHU-1EST	CHW		2	X	V-3974-1003	SCR	1/2"	4.4	9	4.1		V-3000	X	9-13
V-50	DUTY FC	CHW		1	X	V-3974-1003	SCR	1/2"	4.4	2	.20		V-3000	X	9-13
V-51	DUTY FC	H.W.		1	X	V-3754-1221	SCR	1/2"	4.4	2	.20		V-3000	X	3-6
V-52	TU BOX	H.W.		32	X	V-4324-1002	SCR	1/2"	4.4	1	.05		V-3000	X	4-8
V-53	TU BOX	H.W.		1	X	V-4324-1002	SCR	1/2"	4.4	2	.20		V-3000	X	4-8
V-54	TU BOX	H.W.		149	X	V-3754-1221	SCR	1/2"	4.4	1	.05		V-3000	X	3-6
V-55	TU BOX	H.W.		1	X	V-3754-1221	SCR	1/2"	4.4	1.5	.11		V-3000	X	3-6
V-56	TU BOX	H.W.		1	X	V-3754-1221	SCR	1/2"	4.4	1.5	.11		V-3000	X	3-6
V-57	FCU-11	DUAL TEMP		1	X	V-3974-1003	SCR	1/2"	4.4	9	4.1		V-3000	X	9-13
V-58	FCU-32	DUAL TEMP		1	X	V-3974-1004	SCR	3/4"	8.6	11	1.6		V-3000	X	9-13
V-59	CUI-1	H.W.		11	X	V-3754-1221	SCR	1/2"	4.4	2	.20		V-3000	X	3-6
V-60	CUI-2	H.W.		4	X	V-3754-1221	SCR	1/2"	4.4	3	.46		V-3000	X	3-6
V-61	CHGOV	H.W.		2	X	V-5842-17	FLG	3"	80	181	5.1		5-R	X	9-13
V-62	BYPASS	H.W.		1	X	V-5652-3	FLG	3"	103	181	3		5-R	X	9-13
V-63	P.C.-AB	ISOLATION		1	X	V-5252-13	FLG	3"	83	131	2.4		5-R	X	2-5
V-64	P.C.-C	ISOLATION		1	X	V-5252-13	FLG	3"	83	155	3.4		5-R	X	2-5

TAG		VALVE INFORMATION										ACTUATOR INFO.			
ITEM	SYSTEM	SERVICE	Reference Drawing No.	QUAN	FAIL POS. Open/Close	VALVE CODE NO.	BODY STYLE	SIZE	Cv	CAPACITY GPM #/HR	AP	PIPING DETAILS	ACTUATOR TYPE	PILOT YES/NO	Range
V-65	P.C.-D	ISOLATION		1	X	V-5252-8	FLG	2 1/2"	51	111	4.7		5-R	X	2-5
V-66	P.C.-F	ISOLATION		1	X	V-5252-13	FLG	3"	83	147	3.1		5-R	X	2-5
V-67	P.C.-H	ISOLATION		1	X	V-5252-13	FLG	3"	83	135	2.6		5-R	X	2-5
V-68	P.C.-J	ISOLATION		1	X	V-5252-8	FLG	2 1/2"	51	83	2.6		5-R	X	2-5
V-69	P-DT-AB	ISOLATION		1	X	V-5252-13	FLG	3"	83	181	4.7		5-R	X	2-5
V-70	HE-3 1/3	Stm		1	X	V-5462-9	FLG	3"	83	2786	6.25		5-R	X	9-13
V-71	HE-3 2/3	Stm		1	X	V-5462-14	FLG	4"	150	3973	8.65		8-R	X	9-13

IN CONSIDERATION OF THE RECEIPT OF THIS DOCUMENT, THE RECIPIENT AGREES NOT TO REPRODUCE, COPY, USE OR TRANSMIT THIS DOCUMENT AND/OR THE INFORMATION THEREIN CONTAINED, IN WHOLE OR IN PART, OR TO SUFFER SUCH ACTION BY OTHERS, FOR ANY PURPOSE, EXCEPT WITH THE WRITTEN PERMISSION OF JOHNSON CONTROLS, INC. AND FURTHER AGREES TO SURRENDER SAME TO JOHNSON CONTROLS, INC. UPON DEMAND.

DRAWING TITLE: VALVE SCHEDULE

REFERENCE DRAWINGS: SALES ENGR. F.N.H. APPLICATION ENGR. J.M.

REVISION - LOCATION: BY KL DATE 10-24-86

ECN: DATE: BY: APPROVED: [Signature]

PROJECT: CAMP LEJEUNE HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.

CONTRACTOR: JOHNSON CONTROLS Systems & Services Division

CONTRACT NUMBER: 6128-0080

DRAWING NUMBER: 39 OF 40





FORM 1326 REV. 5/00 BES 45-404

DAMPER SCHEDULE

NOTES:
 * All sizes shown are nominal.
 * Allowance should be made for duct clearances.

PROJECT ADDRESS HOSPITAL CONVERSION DIVISION HEADQUARTERS CAMP LEJEUNE, N.C.	SHEET NO. 1 of 9
BUILDING DESIGNATION GENERAL HTG. & AIR COND.	CONTRACT NO. 6128-0080
MECHANICAL CONTRACTOR GENERAL HTG. & AIR COND.	PREPARED BY J. LUCKWALDT
SHEET METAL CONTRACTOR GENERAL HTG. & AIR COND.	DATE 10-16-80
	BRANCH RALEIGH, N.C.

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-1	AHU-1BN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-2	WVF-1BN	OUTSIDE AIR	1	X	D-1300-1624	16 24		1	D-3073-2	X	9-13		△
D-3	WVF-1BN	RETURN AIR	1	X	D-1300-1210	12 18		1	D-3073-2	X	9-13		
D-4	WVF-1BN	DISCH. AIR	1	X	D-1300-1210	12 18		1	D-3073-2	X	9-13		
D-5	AHU-1BS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-6	WVF-1BS	OUTSIDE AIR	1	X	D-1300-1624	16 24		1	D-3073-2	X	9-13		△
D-7	WVF-1BS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-8	WVF-1BS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-9	AHU-1CN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-10	WVF-1CN	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-11	WVF-1CN	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-12	WVF-1CN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-13	AHU-1CS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-14	WVF-1CS	OUTSIDE AIR	1	X	D-1300-1624	16 24		1	D-3073-2	X	9-13		△
D-15	WVF-1CS	RETURN AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-16	WVF-1CS	DISCH. AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-17	AHU-1DN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-18	WVF-1DN	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-19	WVF-1DN	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-20	WVF-1DN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-21	AHU-1DS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-22	WVF-1DS	OUTSIDE AIR	1	X	D-1300-1624	16 24		1	D-3073-2	X	9-13		△
D-23	WVF-1DS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-24	WVF-1DS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-25	AHU-1FN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-26	WVF-1FN	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-27	WVF-1FN	RETURN AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-28	WVF-1FN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-29	AHU-1FS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-30	WVF-1FS	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-31	WVF-1FS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-32	WVF-1FS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-33	AHU-1GN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-34	WVF-1GN	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-35	WVF-1GN	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-36	WVF-1GN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-37	AHU-1GS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-38	WVF-1GS	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-39	WVF-1GS	RETURN AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-40	WVF-1GS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-41	AHU-1HS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-42	WVF-1HS	OUTSIDE AIR	1	X	D-1300-2424	24 24		1	D-3073-2	X	9-13		△
D-43	WVF-1HS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-44	WVF-1HS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-45	AHU-1SN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-46	WVF-1SN	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-47	WVF-1SN	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-48	WVF-1SN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-49	AHU-1JS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-50	WVF-1JS	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-51	WVF-1JS	RETURN AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-52	WVF-1JS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-53	AHU-2CN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-54	WVF-2CN	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-55	WVF-2CN	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-56	WVF-2CN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-57	AHU-2CS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-58	WVF-2CS	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-59	WVF-2CS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-60	WVF-2CS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-61	AHU-2DS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-62	WVF-2DS	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-63	WVF-2DS	RETURN AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-64	WVF-2DS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-65	AHU-2GN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-66	WVF-2GN	OUTSIDE AIR	1	X	D-1300-1620	16 20		1	D-3073-2	X	9-13		△
D-67	WVF-2GN	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-68	WVF-2GN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-69	AHU-2GS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-70	WVF-2GS	OUTSIDE AIR	1	X	D-1300-2424	24 24		1	D-3073-2	X	9-13		△
D-71	WVF-2GS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-72	WVF-2GS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-73	AHU-2HN	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-74	WVF-2HN	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-75	WVF-2HN	RETURN AIR	1	X	D-1300-1210	12 12		1	D-3073-2	X	9-13		
D-76	WVF-2HN	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-77	AHU-2HS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-78	WVF-2HS	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-79	WVF-2HS	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-80	WVF-2HS	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-81	AHU-2HS	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-82	WVF-2ES	OUTSIDE AIR	1	X	D-1300-2024	20 24		1	D-3073-2	X	9-13		△
D-83	WVF-2ES	RETURN AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-84	WVF-2ES	DISCH. AIR	1	X	D-1300-1212	12 12		1	D-3073-2	X	9-13		
D-85	AHU-2ES	RELIEF AIR	1	X	D-1300-2436	24 36		1	D-3073-1	X	4-8		
D-86	AHU-2EN	RELIEF AIR	1	X	D-1300-2720	27 20		1	D-3073-1	X	4-8		

Item	SYSTEM	SERVICE	DAMPER INFORMATION				ACTUATOR INFORMATION				REMARKS		
			Quan.	Fall Pos. Open Close	Damper Type	Damper Size** W H	* Refer to Install Detail	Quan.	Code No.	Pilot Yes No		Actuator Range	Mounting W F Other
D-87	AHU-2ES	RELIEF AIR	1	X	D-1300-2424	24 24		1	D-3073-1	X	4-8		
D-88	AHU-2EN	RELIEF AIR	1	X	D-1300-2222	22 22		1	D-3073-1	X	4-8		
D-89	AHU-2EN(S)	OUTSIDE AIR	1	X	D-1300-1212	12 12		1	D-3073-1	X	6-10		
D-90	AHU-2EN(S)	RETURN AIR	1	X	D-1300-2016	20 16		1	D-3073-1	X	6-10		
D-91	AHU-1EST	RETURN AIR	2										

