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# COX

Research and Technology, Inc.

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WEST BATON ROUGE  
WASTEWATER TREATMENT PLANT  
CONTROL PANEL

Cox Research and Technology, Inc.  
14697 S. Harrells Ferry Road  
Baton Rouge, LA. 70816  
(225) 756-3271 Fax (225) 755-1030

VOLTAGE	277/480V	(480V, 277/480V, 240V, 120/240V, 208V, 120/208V)
PHASE/HZ	3/60	
NO. MOTORS	2, 1, 3	
HP	7.5, 2, 1/2	
FLA	11, 3.4, 1.5	
TYPE OF PUMP	BLOWER, BLOWER, SUBMERSIBLE	(Self-Priming, Submersible)
MANUFACTURER	, BARNES	
CATALOG NUMBER	, SE544L	
CONTROL VOLTAGE	120V	(120V, Other)
ENCLOSURE	NEMA 4X	(NEMA 1, NEMA 3R, NEMA 4, NEMA 4X)
ENCLOSURE MATERIAL	316 STAINLESS STEEL	(Painted Steel, Stainless Steel, Fiberglass)
CONTROL SENSOR	CLOCK, FLOATS	(Floats, Bubbler, Other)
CAPACITORS	No	(Yes, No)
CAPACITOR WIRING FIGURE	N/A	
THERM. & SEAL FAIL WIRING FIGURE		

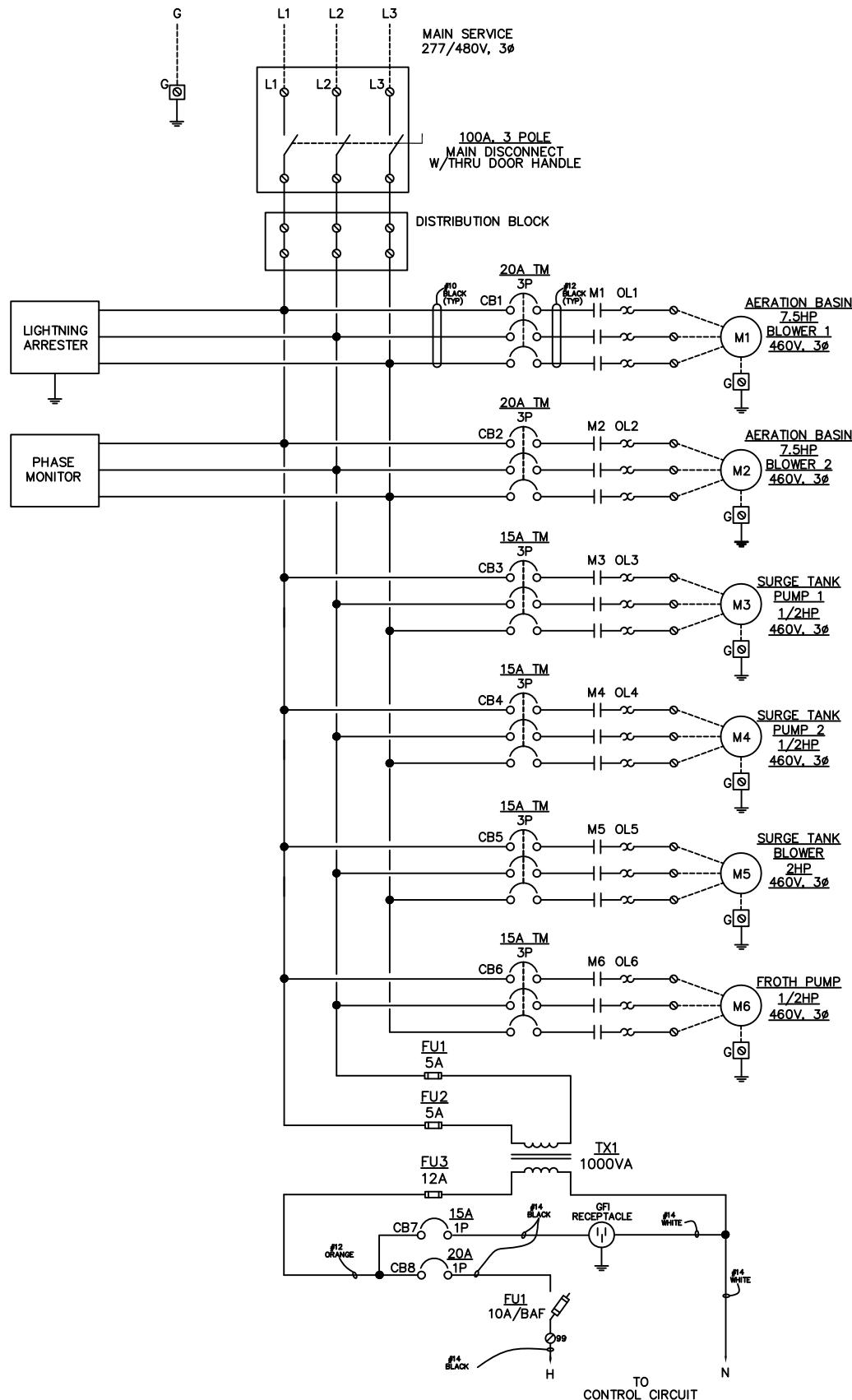
OPTIONS:

SEAL FAIL LIGHTS	_____	(Submersible Only)
SEAL FAIL RELAYS	_____	(Submersible Only)
SEAL FAIL PUMP SHUTDOWN	_____	(Submersible Only)
HT PUMP SHUTDOWN	_____	(Self-Primer, Submersible)
ALARM HORN	_____	
ALARM LIGHT	X	
LIGHT PANEL MTD	X	
LIGHT REMOTE MTD	_____	
LIGHT FLASHER	_____	
LIGHTNING ARRESTER	X	
ELAPSED TIME METER	X	
PHASE MONITOR	X	
NEMA RATED STARTERS	X	
GROUND FAULT RECPT.	X	
GREEN RUN LIGHTS VS. RED	_____	
POLE, BOX, SEAL	_____	
INTRINSICALLY SAFE RELAYS	_____	
HIGH TEMP. LOCKOUT, MANUAL RESET	_____	
ECONOMY VERSION	_____	

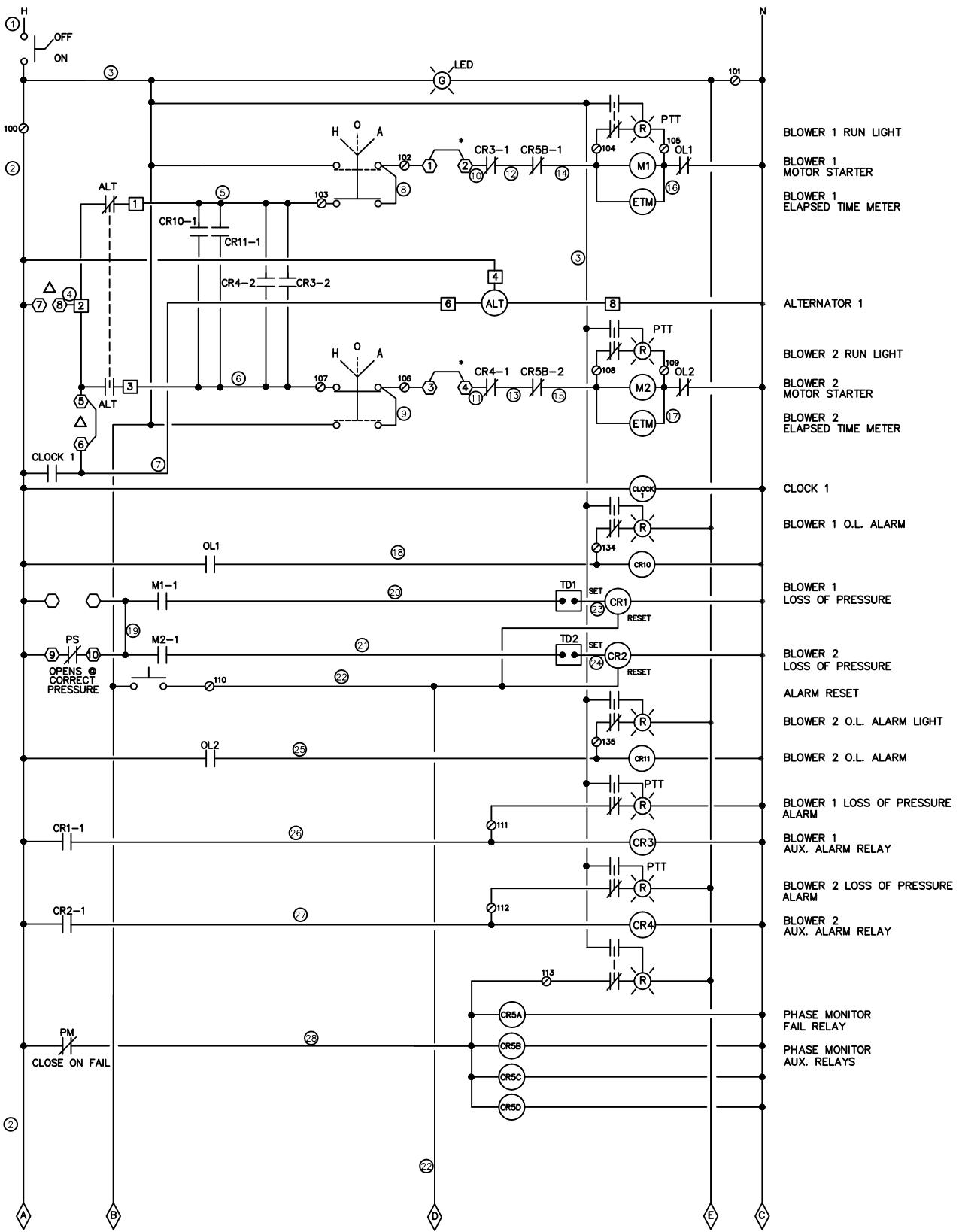
SOLD TO: Delta Process - Denham Springs, LA  
TAG : WEST BATON ROUGE WWTP

SHIP TO: Delta Process - Denham Springs, LA

Drawing Title	PANEL DESCRIPTION	REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
		S/N	Sales Engineer	Application Engineer	DRAWN	BY C. RACHAL	BY	APPROVED	DATE
DATE 10/06/04	Project Title  WBR-WWTP CONTROL PANEL	COX		P.O. Box 77808 Baton Rouge, LA 70809	PURCHASE ORDER NUMBER				
				Ph. (225)756-3271 Fax (225)756-1030	DRAWING NUMBER CP-1922	SHEET NUMBER 1			

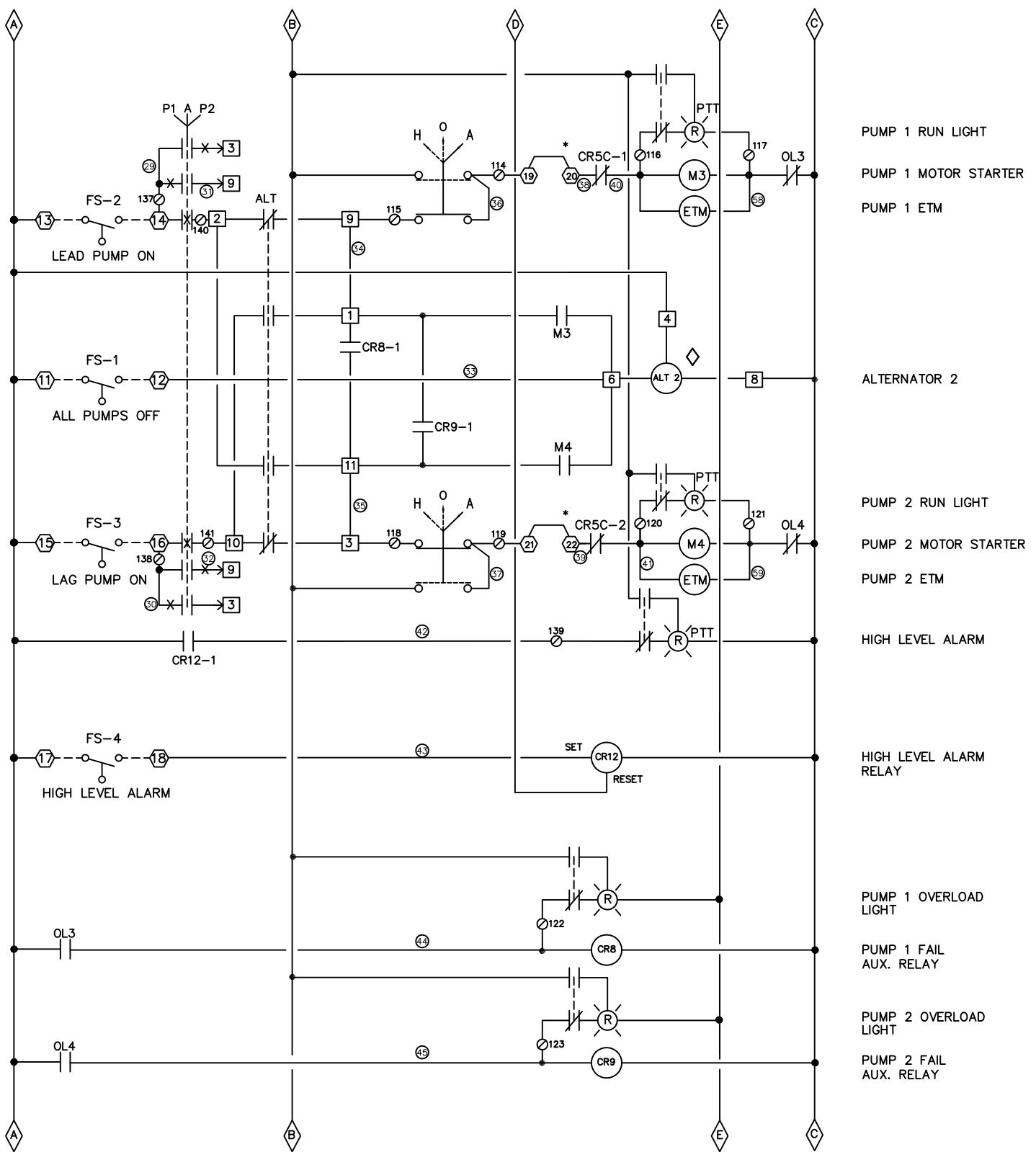


	Drawing Title  <b>POWER DIAGRAM</b>				
		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	ECN DRAWN BY C. RACHAL
DATE 10/06/04				APPROVED BY	DATE DATE
	Project Title  <b>WBR-WWTP CONTROL PANEL</b>		<b>COX</b> Research and Technology, Inc.	P.O. Box 77808 Baton Rouge, LA 70809 Ph. (225)756-3271 Fax (225)756-1030	PURCHASE ORDER NUMBER  DRAWING NUMBER CP-1922 SHEET NUMBER 2



△ SEE ATTACHED NOTE 1  
\* REMOVE JUMPERS AND INSTALL LOCKOUT DEVICES IF REQUIRED

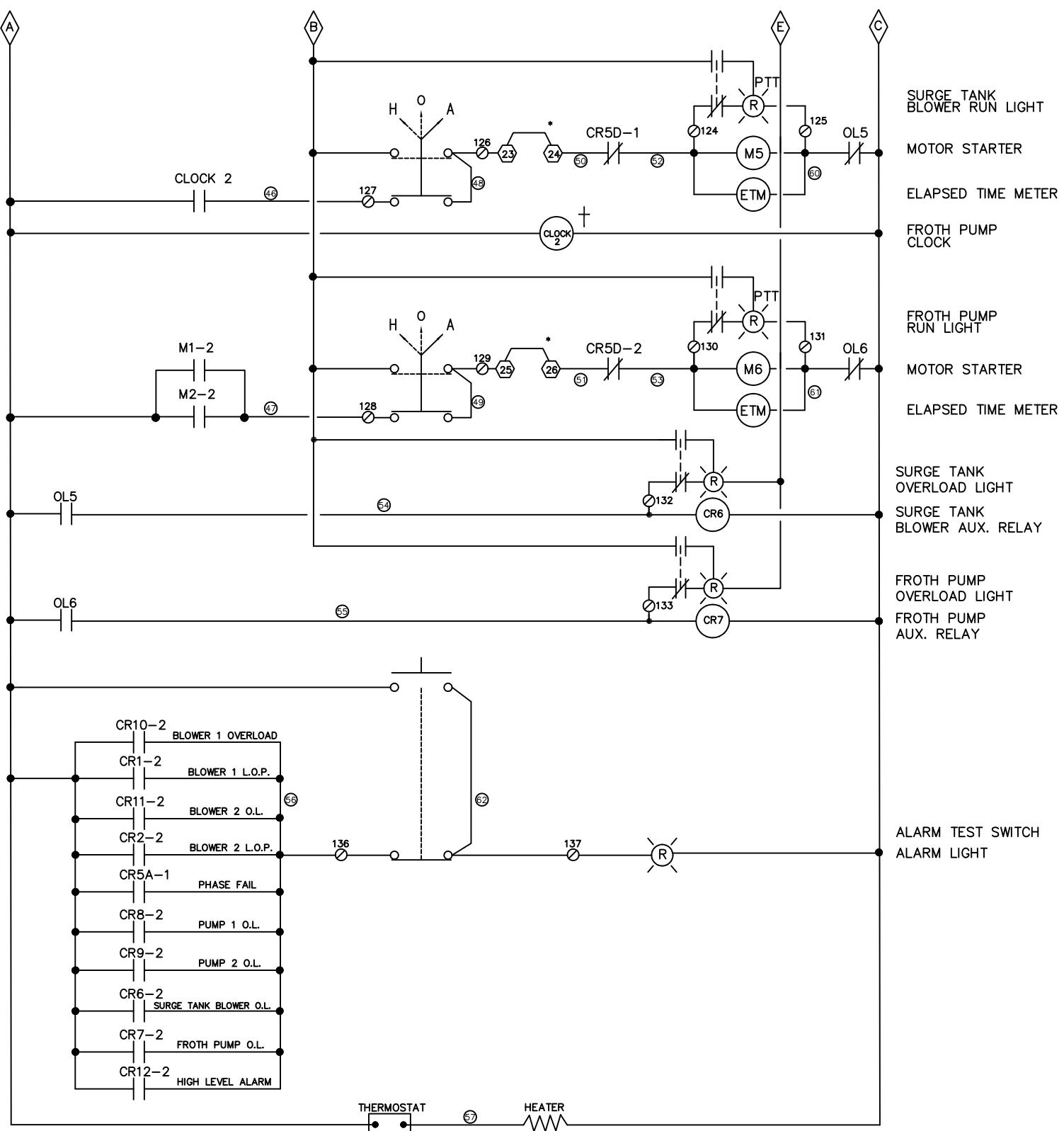
Drawing Title	CONTROL DIAGRAM						REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN	DATE APPROVED BY DATE		
DATE 10/06/04	Project Title <b>WBR-WWTP CONTROL PANEL</b>	<hr/> <b>COX</b> Research and Technology, Inc. <hr/>						P.O. Box 77808 Baton Rouge, LA 70809	Ph. (225)756-3271 Fax (225)756-1030	PURCHASE ORDER NUMBER DRAWING NUMBER SHEET NUMBER			
										CP-1922 3			



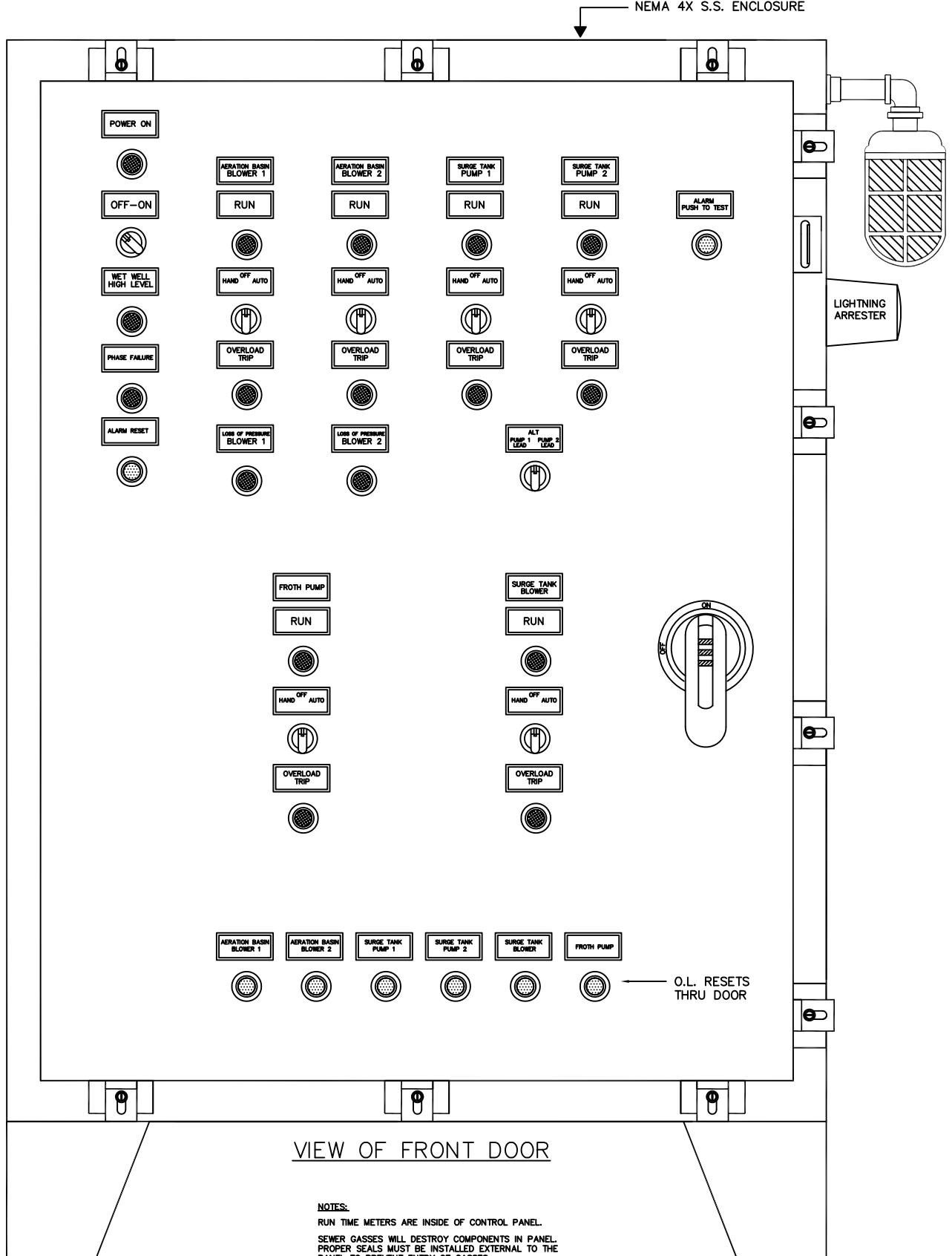
◊ SEE ATTACHED NOTE 3

\* REMOVE JUMPERS AND INSTALL LOCKOUT DEVICES IF REQUIRED

	Drawing Title									
	CONTROL DIAGRAM									
DATE 10/06/04			REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
	S/N	Sales Engineer C.C.	Application Engineer R.C.			DRAWN BY C. RACHAL		APPROVED BY		DATE
	Project Title									
	WBR-WWTP CONTROL PANEL		<u>COX</u> Research and Technology, Inc.				P.O. Box 77808 Baton Rouge, LA 70809 Ph. (225)756-3271 Fax (225)756-1030		PURCHASE ORDER NUMBER  DRAWING NUMBER CP-1922 SHEET NUMBER 4	



	Drawing Title  CONTROL DIAGRAM							
		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE
DATE 10/06/04	S/N	Sales Engineer C.C.	Application Engineer R.C.	DRAWN BY C. RACHAL	APPROVED BY	DATE	BY	
	Project Title  WBR-WWTP CONTROL PANEL			<b>COX</b> Research and Technology, Inc.		PURCHASE ORDER NUMBER		
				P.O. Box 77808 Baton Rouge, LA 70809		DRAWING NUMBER		
				Ph. (225)756-3271 Fax (225)756-1030		SHEET NUMBER		
						5		



	Drawing Title					
	ENCLOSURE					
DATE 10/06/04	REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	ECN DRAWN BY C. RACHAL	DATE APPROVED BY DATE	BY
Project Title  WBR-WWTP CONTROL PANEL	<b>COX</b> Research and Technology, Inc.			P.O. Box 77808 Baton Rouge, LA 70809  Ph. (225)756-3271 Fax (225)756-1030	PURCHASE ORDER NUMBER  DRAWING NUMBER CP-1922 SHEET NUMBER	
						6

# BILL OF MATERIALS

ITEM	QTY	MANUFACTURER	PART NO.	DESCRIPTION
1	1	EBE	S603612N4X-6	ENCLOSURE
1a	1	EBE	6036P	BACKPLATE
2	1	EBE	SFK1212	FLOOR STAND SS
3	1	ABB	OT63E3	MAIN DISC. SWITCH
4	1	ABB	OXP5X265	SHAFT
5	1	ABB	OHB65L5	HANDLE
6	1	BUSSMAN	16370-3	DISTRIBUTION BLOCK
7	1	SQUARE D	SDSA3650	LIGHTNING ARRESTER
8	1	SYMCOM	MOTOR SAVER 102A	PHASE MONITOR
9	2	ABB	S3N020TW	CB1,2
10	4	ABB	S3N015TW	CB3-6
11	6	ABB	A16-30-10-84	MOTOR STARTERS 1-6
12	6	ABB	TA25DU14	O.L. 1,2 (10-14A)
13	2	ABB	TA25DU1.4	O.L. 3,4,6 (1.0-1.4A)
14	2	MARATHON	1321580	DISTRIBUTION BLOCKS
15	1	SQUARE D	QOU115	CB7
16	1	SQUARE D	QOU120	CB8
17	1	STOCK		GFI RECEPTACLE
18	2	TIMEMARK	261DT120	ALTERNATOR
19	16	A-B	800H-QRT10R	RED PUSH TO TEST LIGHT
20	6	A-B	800H-JR2A	HOA SWITCH
21	2	A-B	800H-AR2A	PUSH BUTTON
22	2	DAYTON	2A561	TIME DELAY RELAY
23	1	A-B	800H-QR10G	GREEN PILOT LIGHT
24	2	INTERMATIC	T1975R	CLOCK 1,2
25	3	P & B	KUL-11A15S120S	LATCHING RELAY
26	6	REDINGTON	711-0190	ETM DIN RAIL MOUNT
27	12	P & B	KRPA-11AN-120	CONTROL RELAYS
28	1	A-B	836-C3A	PRESSURE SWITCH
29	1	A-B	800H-JR2KCD7	P1-ALT-P2-SWITCH
30	1	SAGINAW	SCE-TEMNC	THERMOSTAT
31	1	DAYTON	4BA54	HEATER 30 WATT
32	1	LUMAPRO	3RB18	ALARM LIGHT
33	1	SQUARE D	9070TF1000D1	TRANSFORMER

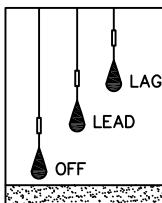
	Drawing Title						
	<b>BILL OF MATERIALS</b>						
			REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN	DATE
DATE 10/06/04	Application Engineer R.C.		DRAWN BY	APPROVED BY			
	Project Title		COX Research and Technology, Inc.		PURCHASE ORDER NUMBER		
	WBR-WWTP CONTROL PANEL				DRAWING NUMBER CP-1922		
					SHEET NUMBER 7		

NOTES:

1. PANEL IS DESIGNED TO RUN AERATORS WITH A MINIMUM OF 15 MINUTES OF OFF TIME BETWEEN ALTERNATION. PINS PUSHED IN ON CLOCK INDICATE RUN TIME. PINS PUSHED OUT INDICATE OFF TIME. EACH PIN IS EQUAL TO 15 MINUTES.  
IF NO OFF TIME IS REQUIRED BETWEEN ALTERNATION, REMOVE JUMPER FROM TERMINALS ⑤ AND ⑥ PLACE JUMPER ACROSS TERMINALS ⑦ AND ⑧ NOW AERATORS WILL RUN CONTINUOUSLY. SET 1 PIN IN AT THE TIME YOU WISH THE AERATORS TO ALTERNATE.  
ALL REMAINING PINS SHOULD BE PUSHED OUT.
2. PANEL IS DESIGNED TO RUN AERATORS WITH A MINIMUM OF 15 MINUTES OF RUN TIME. PINS PUSHED OUT ON CLOCK INDICATE RUN TIME. PINS PUSHED IN INDICATE OFF TIME. EACH PIN IS EQUAL TO 15 MINUTES.
2. THIS CONTROL PANEL IS DESIGNED TO OPERATE THE PUMPS IN A SEQUENTIAL ON-SIMULTANEOUS OFF (SOSO) FASHION.  
SEE ATTACHED SHEET FOR DESCRIPTION.

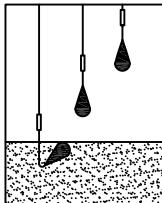
	Drawing Title						
	NOTES						
DATE 10/06/04	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY	
	S/N	Sales Engineer	Application Engineer	DRAWN	APPROVED		
		C.C.	R.C.	BY C. RACHAL	BY	DATE	
	Project Title	<hr/> <hr/> <hr/> <b>COX</b> <hr/> <hr/> <hr/> Research and Technology, Inc. <hr/> <hr/>			P.O. Box 77808 Baton Rouge, LA 70809	PURCHASE ORDER NUMBER	
	WBR-WWTP CONTROL PANEL				Ph. (225)756-3271 Fax (225)755-1030	DRAWING NUMBER CP-1922	
						SHEET NUMBER 8	

## SEQUENTIAL ON/SIMULTANEOUS OFF



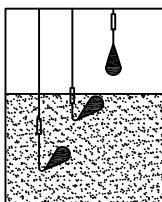
THIS EXAMPLE ILLUSTRATES THE NORMAL OPERATION OF THE DUPLEX CONTROLLER IN A PUMP DOWN APPLICATION WITH THREE NORMALLY OPEN DRY FLOAT SWITCHES. THE SWITCHES ARE DESIGNATED OFF, LEAD, LAG. THE EXAMPLE BEGINS WITH ALL SWITCHES OPEN AND ALL LOADS DE-ENERGIZED.

### STEP 2



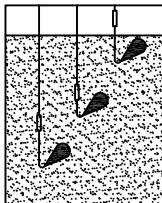
AS THE FLUID LEVEL RISES, THE OFF SWITCH CLOSES, NO LOADS ARE ENERGIZED.

### STEP 3



IF THE FLUID LEVEL CONTINUES TO RISE, THE LEAD SWITCH CLOSES AND LOAD 1 ENERGIZES.

### STEP 4



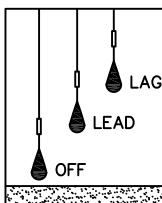
AS THE FLUID LEVEL CONTINUES TO RISE, THE LAG FLOAT SWITCH CLOSURE ENERGIZES A CORRESPONDING LOAD.

### STEP 5



WHEN THE FLUID LEVEL FALLS AND EACH FLOAT SWITCH OPENS, THE LOADS REMAIN ENERGIZED SO LONG AS THE OFF SWITCH REMAINS CLOSED. NO EXTERNAL AUXILIARY CONTACTS ARE REQUIRED TO ACCOMPLISH THIS LATCH FEATURE.

### STEP 6



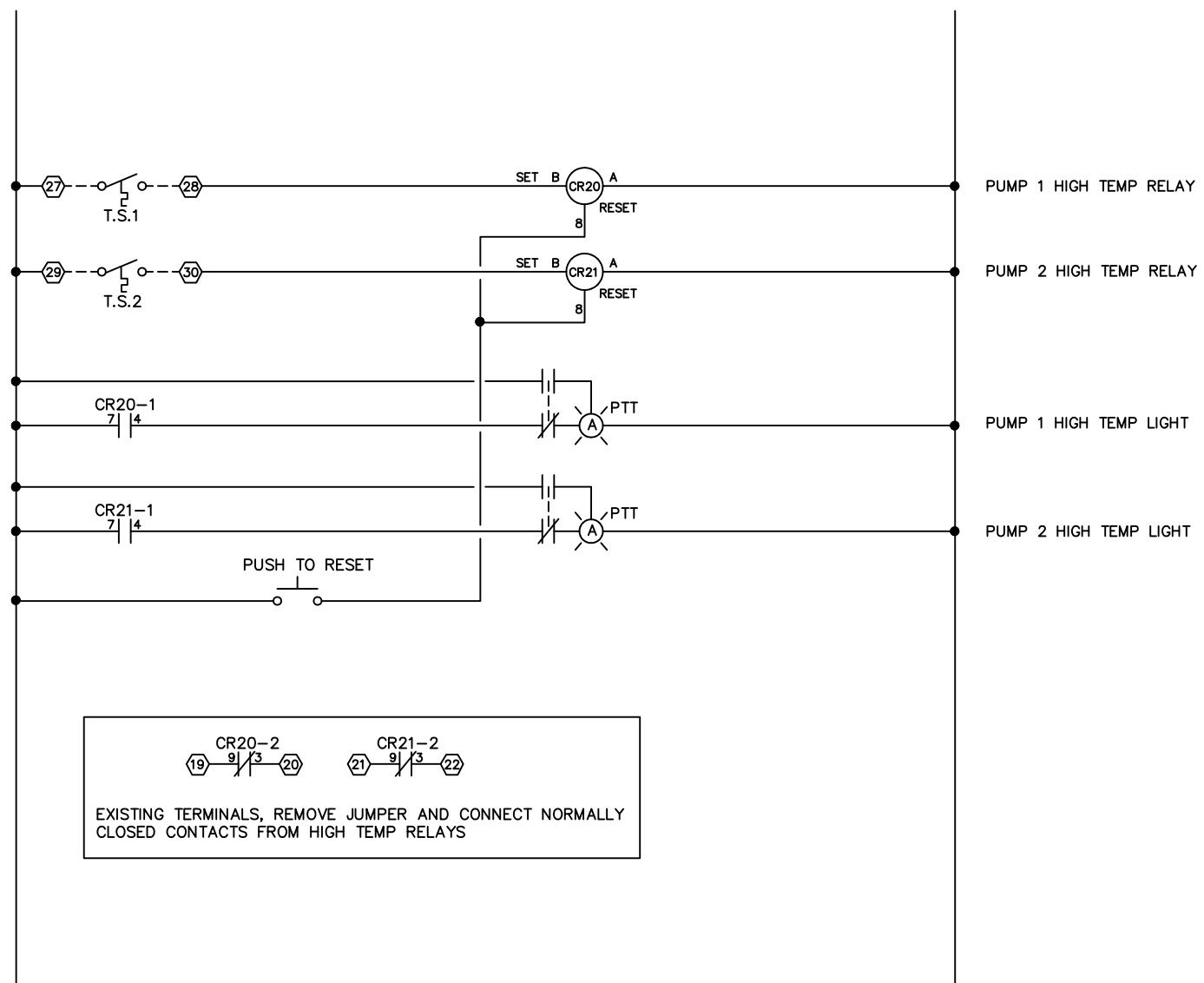
WHEN THE FLUID LEVEL FALLS BELOW THE OFF SWITCH, ALL LOADS SIMULTANEOUSLY DE-ENERGIZE, AND THE ALTERNATING LOGIC ADVANCES ONE POSITION.

	Drawing Title  SOSO OPERATION  DATE 10/06/04						
		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	ECN DRAWN BY C. RACHAL	DATE APPROVED BY DATE	BY
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						DRAWING NUMBER	
						CP-1922	
						SHEET NUMBER	
						9	

# ADDENDUM

H (FROM TERMINAL 17)

N (FROM NEUTRAL BLOCK)



	Drawing Title					
	ADDENDUM					
DATE 1/30/06	REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	ECN DRAWN BY C. RACHAL	DATE APPROVED BY DATE	BY
	Project Title WBR-WWTP CONTROL PANEL	COX Research and Technology, Inc.	P.O. Box 77808 Baton Rouge, LA 70809 Ph. (225)756-3271 Fax (225)755-1030	PURCHASE ORDER NUMBER DRAWING NUMBER CP-1922 SHEET NUMBER 10		