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COX

Research and Technology, Inc.

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SIMPLEX PUMP  
CONTROL PANEL  
SPRINGFIELD TERRACE WATER SYSTEM

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

CP-1937

VOLTAGE	<u>277/480V</u>	(480V, 277/480V, 240V, 120/240V, 208V, 120/208V)
PHASE/HZ	<u>3/60</u>	
NO. MOTORS	<u>1</u>	
HP	<u>20</u>	
FLA	<u>27</u>	
TYPE OF PUMP	<u>Self Priming</u>	(Self-Priming, Submersible)
MANUFACTURER	<u></u>	
CATALOG NUMBER	<u></u>	
CONTROL VOLTAGE	<u>120V</u>	(120V, Other)
ENCLOSURE	<u>NEMA 3R</u>	(NEMA 1, NEMA 3R, NEMA 4, NEMA 4X)
ENCLOSURE MATERIAL	<u>Painted Steel</u>	(Painted Steel, Stainless Steel, Fiberglass)
CONTROL SENSOR	<u>Remote Contact</u>	(Floats, Bubbler, Other)
CAPACITORS	<u>No</u>	(Yes, No)
CAPACITOR WIRING FIGURE	<u>N/A</u>	
THERM. & SEAL FAIL WIRING FIGURE	<u></u>	

OPTIONS:

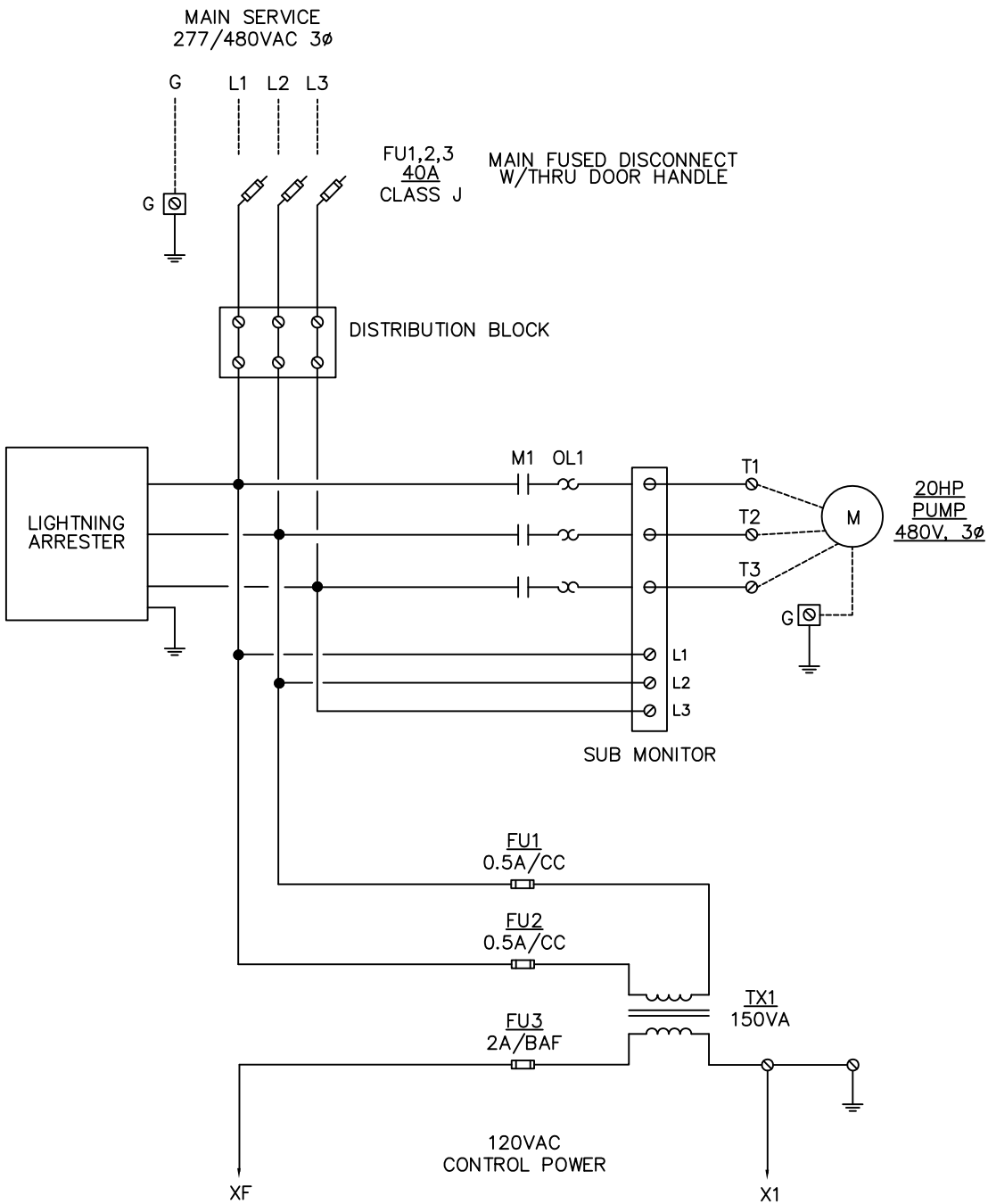
SEAL FAIL LIGHTS	<u></u>	(Submersible Only)
SEAL FAIL RELAYS	<u></u>	(Submersible Only)
SEAL FAIL PUMP SHUTDOWN	<u></u>	(Submersible Only)
HT PUMP SHUTDOWN	<u>X</u>	(Self-Primer, Submersible)
ALARM HORN	<u></u>	
ALARM LIGHT	<u></u>	
LIGHT PANEL MTD	<u></u>	
LIGHT REMOTE MTD	<u></u>	
LIGHT FLASHER	<u>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

SOLD TO: Armco Electric

TAG : Springfield Terrace Water Plant

SHIP TO: Armco Electric

	Drawing Title						
	PANEL DESCRIPTION						
DATE 10/26/04		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	DRAWN BY C. RACHAL	ECN	DATE
	Project Title	<div style="text-align: center;"> <b>COX</b>  Research and Technology, Inc. </div>			P.O. Box 77808 Baton Rouge, LA 70809		PURCHASE ORDER NUMBER
	SIMPLEX PUMP CONTROL PANEL				Ph. (225)756-3271 Fax (225)756-1030		DRAWING NUMBER CP-1937
							SHEET NUMBER 1



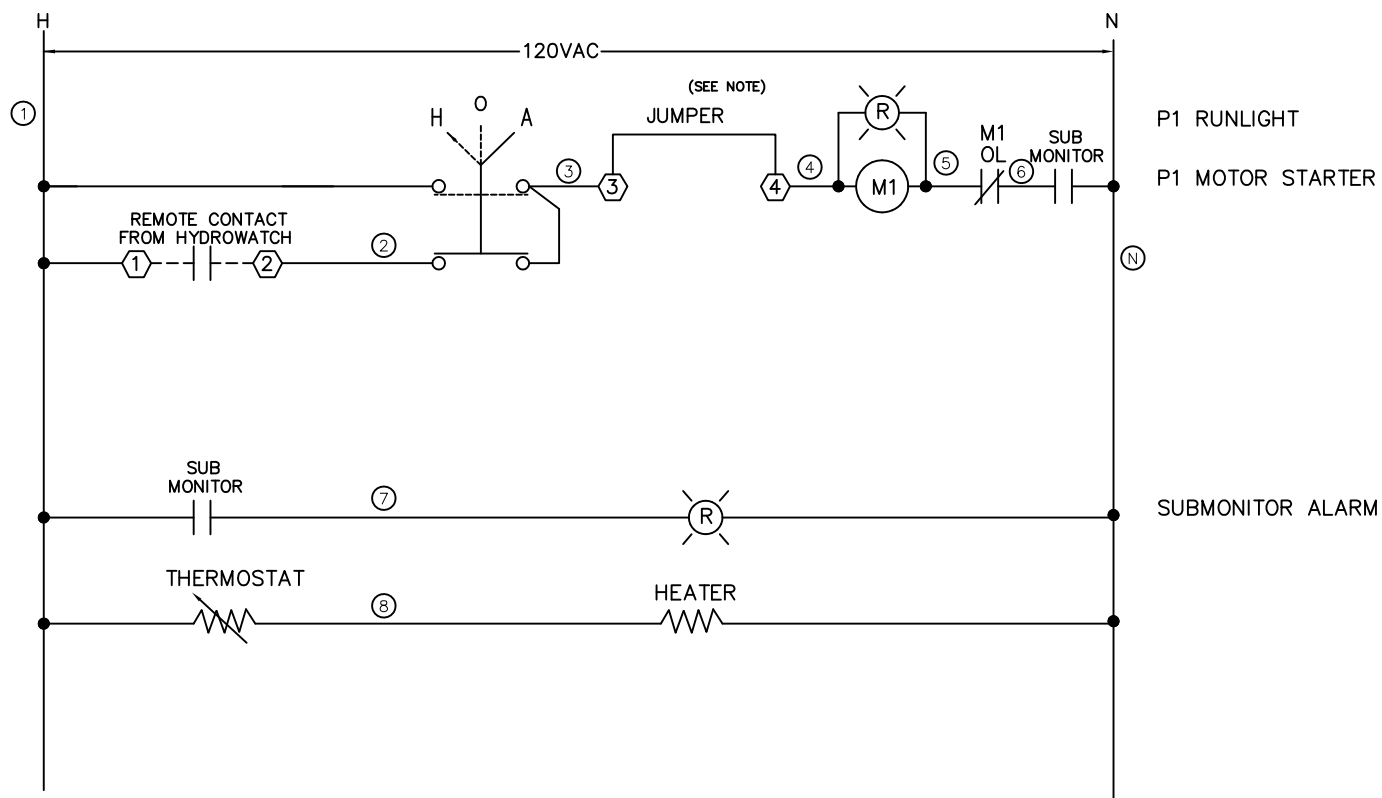
	Drawing Title								
	POWER DIAGRAM								
DATE		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY		
10/26/04		S/N	Sales Engineer	Application Engineer					
			C.C.	R.C.	BY	C. RACHAL	BY	DATE	
	Project Title								PURCHASE ORDER NUMBER
	SIMPLEX PUMP								DRAWING NUMBER
	CONTROL PANEL								CP-1937
									SHEET NUMBER
									2

**COX**

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P.O. Box 77808  
Baton Rouge, LA  
70809

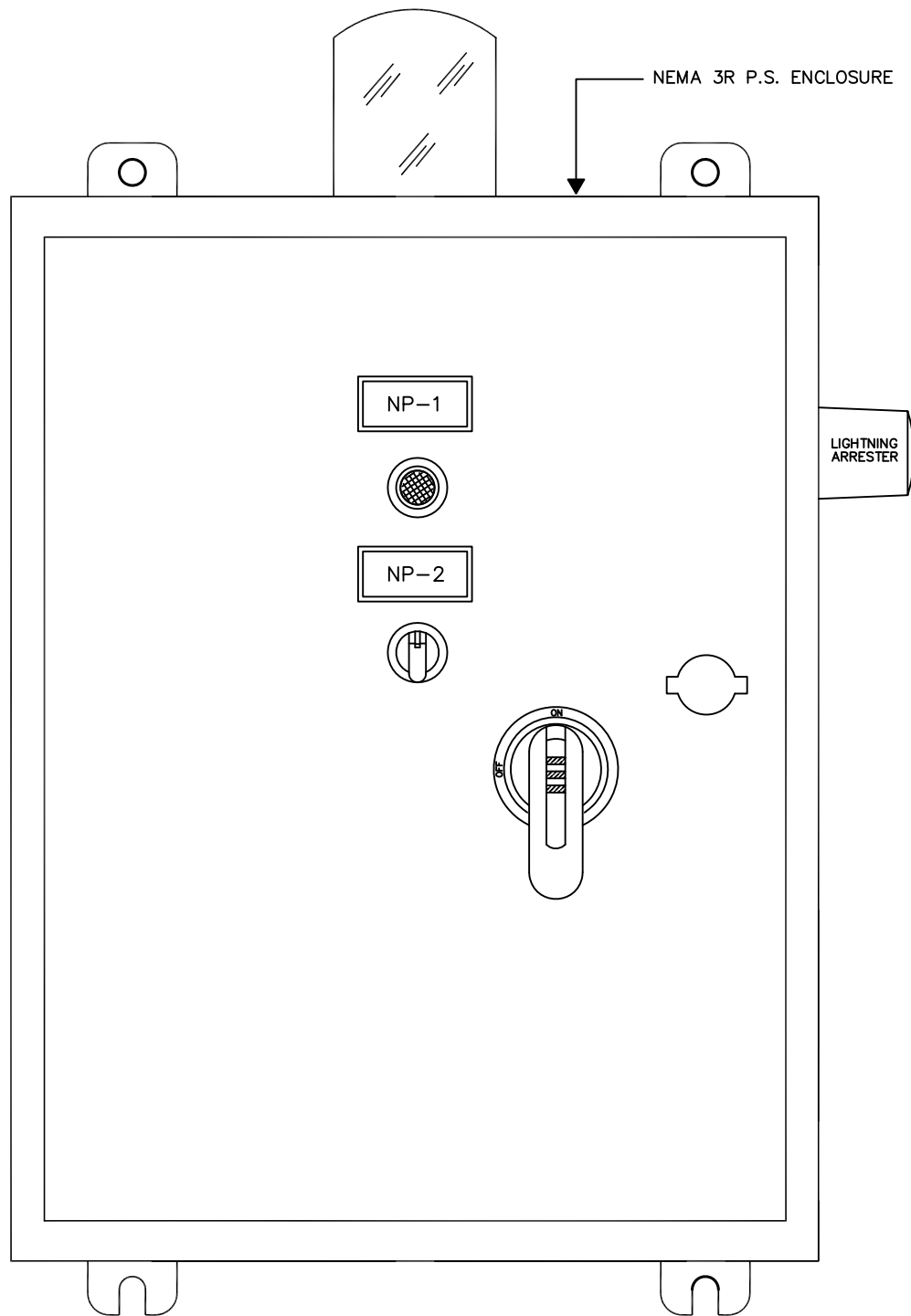
Ph. (225)756-3271  
Fax (225)756-1030



**NOTE:**

REMOVE JUMPER AND INSTALL LOCKOUT DEVICES IF REQUIRED.

	Drawing Title							
	CONTROL DIAGRAM							
DATE		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY	
10/26/04		S/N	Sales Engineer C.C.	Application Engineer R.C.	BY C. RACHAL	APPROVED	BY	DATE
	Project Title				P.O. Box 77808 Baton Rouge, LA 70809	PURCHASE ORDER NUMBER		
	SIMPLEX PUMP CONTROL PANEL	<div>COX</div> <div>Research and Technology, Inc.</div>			Ph. (225)756-3271 Fax (225)756-1030	DRAWING NUMBER CP-1937		
						SHEET NUMBER 3		



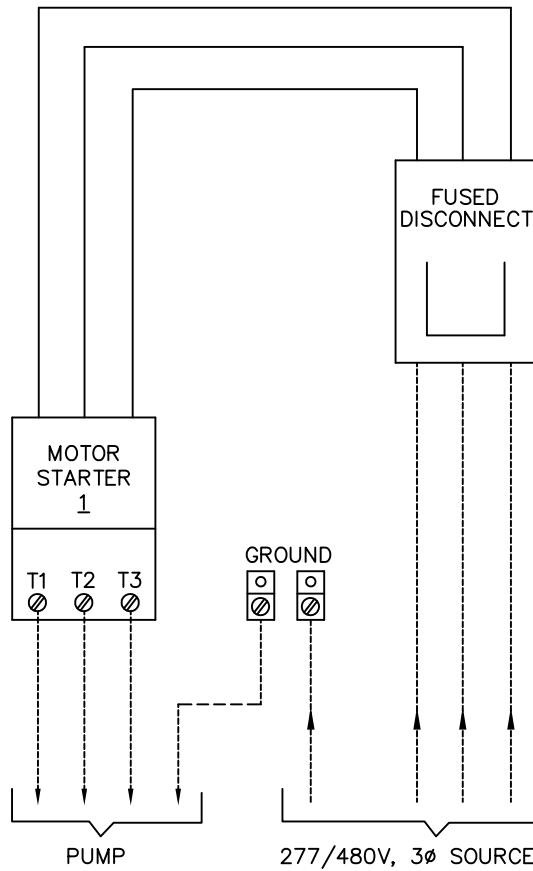
VIEW OF FRONT OF ENCLOSURE

NAMEPLATE SCHEDULE

NP-1 PUMP RUN  
NP-2 HOA

**NOTE:**  
SEWER GASSES WILL DESTROY COMPONENTS IN PANEL.  
PROPER SEALS MUST BE INSTALLED EXTERNAL TO THE  
PANEL TO PREVENT ENTRY OF GASSES.

	Drawing Title    ENCLOSURE								
DATE 10/26/04			REFERENCE DRAWING S/N		NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.		ECN DRAWN BY C. RACHAL	DATE APPROVED BY
	Project Title		COX Research and Technology, Inc.			P.O. Box 77808 Baton Rouge, LA 70809  Ph. (225)756-3271 Fax (225)756-1030		PURCHASE ORDER NUMBER	
	SIMPLEX PUMP CONTROL PANEL							DRAWING NUMBER CP-1937	
								SHEET NUMBER 4	



	Drawing Title							
	EXTERNAL CONNECTIONS							
DATE 10/26/04		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	ECN	DATE	BY	
	Project Title	DRAWN BY C. RACHAL			APPROVED BY DATE			
	SIMPLEX PUMP CONTROL PANEL	PURCHASE ORDER NUMBER						
		DRAWING NUMBER CP-1937						
		SHEET NUMBER			5			

## BILL OF MATERIAL

ITEM	QTY	MANUFACTURER	PART NO.	DESCRIPTION
1	1	EBE	242010REPL	ENCLOSURE
1a	1	EBE	A2420P	BACKPLATE
2	1	ABB	A40-30-10-84	MOTOR STARTER
3	1	ABB	TA42DU32	O.L. RELAY (22-32A)
4	1	ABB	OS60J12	FUSED DISCONNECT
5	1	ACI	JR22FR	RED PILOT LIGHT
6	1	ACI	JR22P3M20B	HOA SWITCH
7	1	ABB	T4150PSF1	TRANSFORMER
8	1	MARATHON	1323580	DISTRIBUTION BLOCK
9	1	ABB	OX6X210	SHAFT
10	1	ABB	OHB65J6	HANDLE
11	1	FRANKLIN ELECTRIC	SUB MONITOR	PUMP MONITOR
12	1	AC/DC	BL5-R-120	ALARM LIGHT
13	1	DAYTON	4BA54	HEATER
14	1	DELTA	LA603	LIGHTNING ARRESTER
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22				
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24				
25				

	Drawing Title						
	BILL OF MATERIALS						
DATE 10/26/04		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION Application Engineer R.C.	DRAWN BY C.RACHAL	ECN	DATE
	Project Title	<div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 150px;"> <b>COX</b>  <small>Research and Technology, Inc.</small> </div>			<small>P.O. Box 77808 Baton Rouge, LA 70809</small>  <small>Ph. (225)756-3271 Fax (225)756-1030</small>		<small>PURCHASE ORDER NUMBER</small>  <small>DRAWING NUMBER</small> CP-1937 <small>SHEET NUMBER</small> 6
	SIMPLEX PUMP CONTROL PANEL						

## SUB MONITOR FEATURES

- BUILT IN ADJUSTABLE TIME DELAY TO PREVENT RAPID CYCLING
- PROTECTION AGAINST PHASE LOSS AND PHASE REVERSAL
- UNDER CURRENT PROTECTION (COULD POSSIBLY SIGNIFY INADEQUATE WATER FLOW)
- OVER CURRENT PROTECTION TO PROTECT MOTOR ON HIGH AMPS
- OVER/UNDER VOLTAGE PROTECTION
- CURRENT UNBALANCE



## SEQUENCE OF OPERATION

PLACING THE SWITCH IN THE HAND POSITION STARTS THE PUMP MANUALLY.

PLACING THE SWITCH IN THE OFF POSITION KEEPS THE PUMP FROM RUNNING.

IF THE SWITCH IS PLACED IN THE AUTO POSTION, THE PUMP WILL RUN

WHEN A SIGNAL IS RECEIVED FROM THE HYDROWATCH. THIS SIGNAL

WILL START AND STOP THE PUMP. SHOULD THE PUMP DRAW AN OVER

CURRENT, THE MOTOR OVERLOAD WILL TRIP AND STOP THE PUMP.

THE OVERLOAD WILL HAVE TO BE MANUALLY RESET ONCE THE CAUSE OF

THE OVER CURRENT IS RESOLVED.

THE SUB MONITOR FEATURES RAPID CYCLING PREVENTION, PROTECTION

AGAINST PHASE LOSS, PHASE REVERSAL, UNDER AND OVER CURRENT,

UNDER AND OVER VOLTAGE, AND CURRENT UNBALANCE. IF THE

SUB MONITOR SHOULD SENSE ANY OF THESE FAULTS, A CONTACT WILL

OPEN AND SHUT THE PUMP DOWN. AN INTERNAL TIME DELAY WILL RESTART

THE PUMP AFTER THE FAULT HAS CLEARED.