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# COX

Research and Technology, Inc.

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DUPLEX PUMP  
CONTROL PANEL  
WEST KENTUCKY

# AS BUILTS

JUNE 29, 2010  
FIELD REVISIONS  
DECEMBER 9, 2020

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

SOLD TO:
TAG: West Kentucky Duplex Pump Control Panel
-

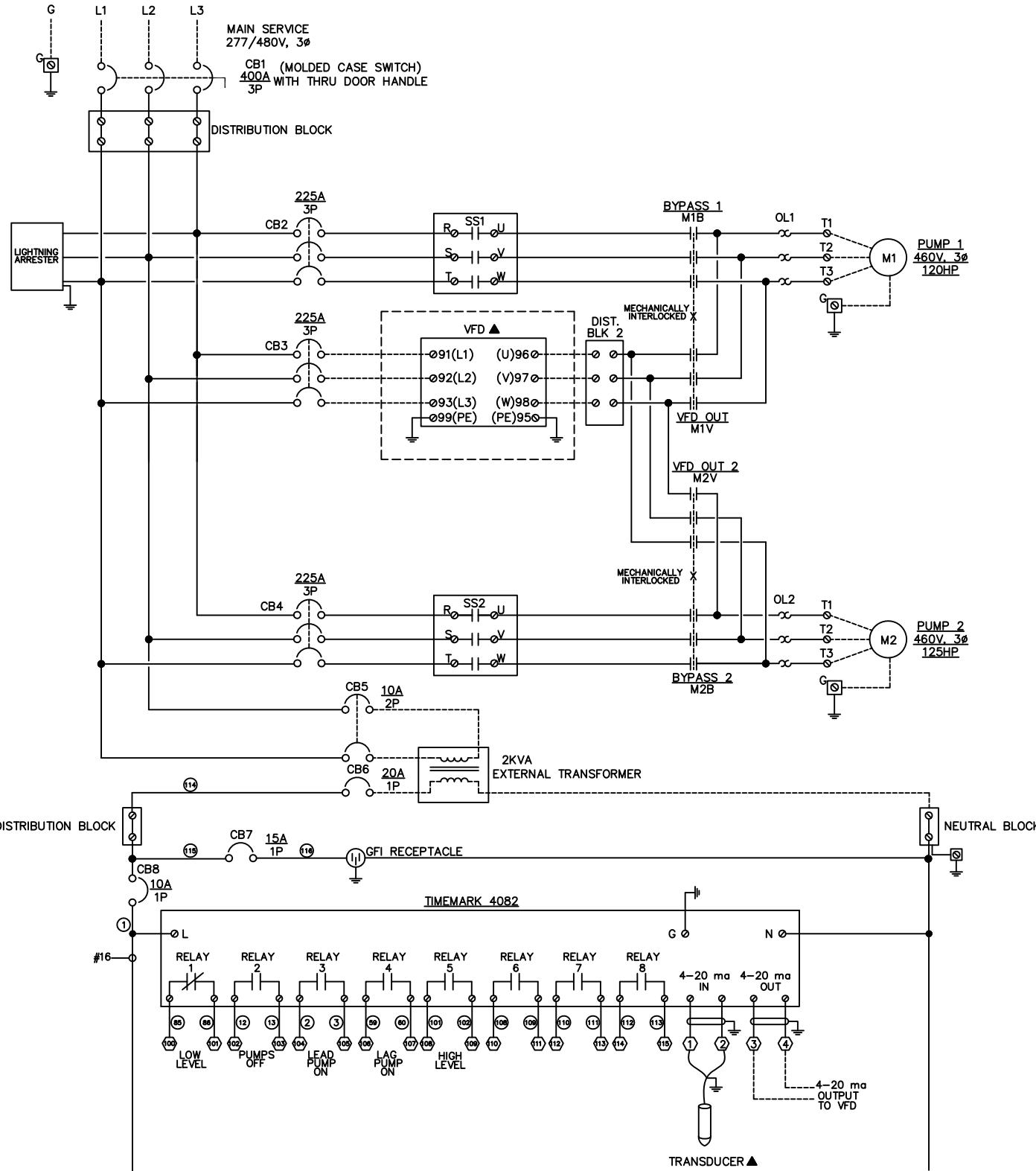
SHIP TO:
-
-

**SPECIAL NOTES:**

Panel Type	Duplex
Voltage	277/480
Phase/HZ	3/60
No. Motors	2
HP	120, 125
FLA	148, 169.4
Pump Manufacturer	GR, Barnes
Type of Pump	Submersible
Catalog Number	JS8AD60-E120,8SHTM125044
Capacitors	No
Control Voltage	120
Control Power Transformer = 2KVA	Yes
Enclosure NEMA Rating	3R
Enclosure Material	Painted Steel
Enclosure Size	60x48x16
Inner Swing Panel	-
Conrol Sensor	Transducer
UL508A Labeling	No
UL698A Labeling	No

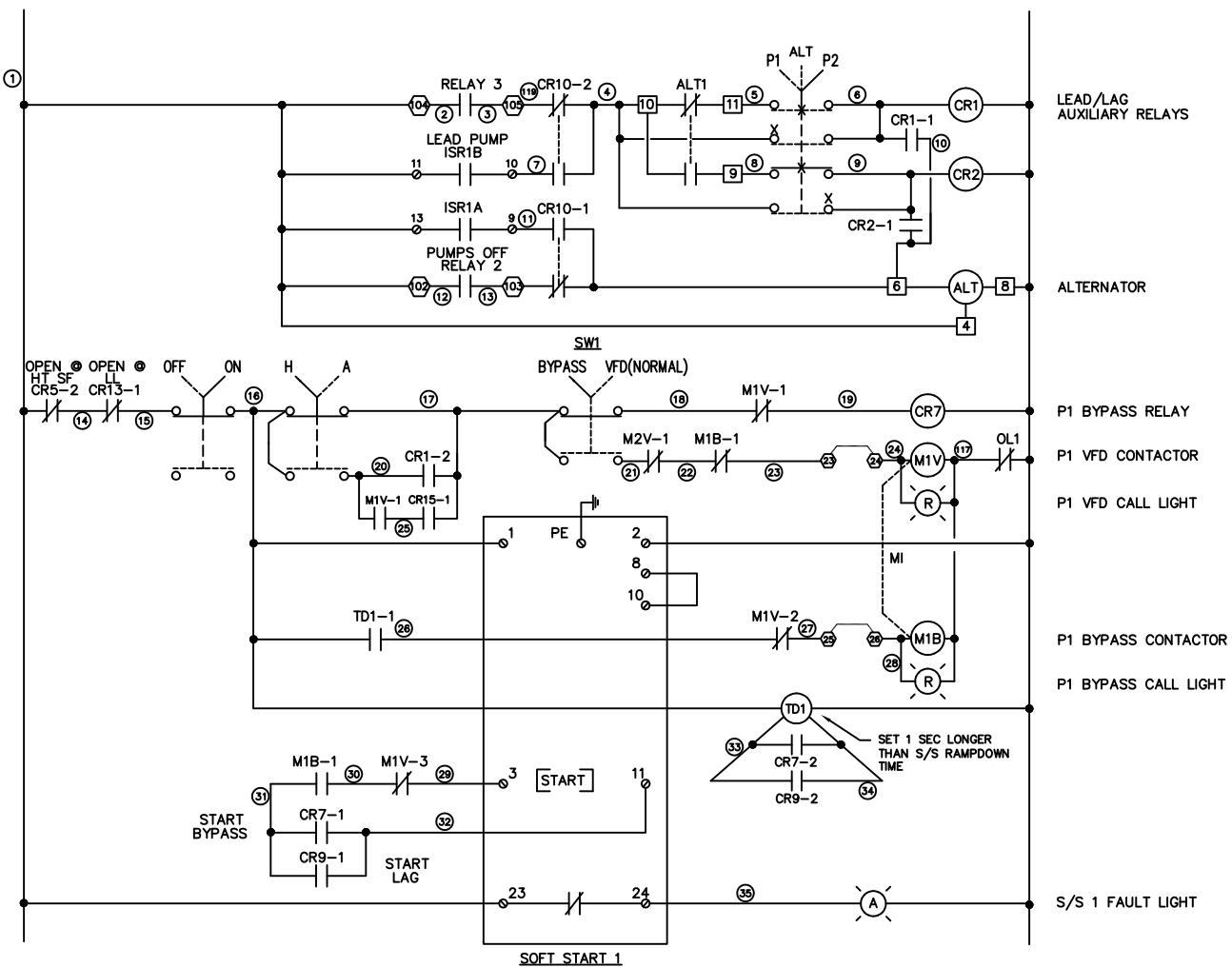
Alarm Light - Panel Door Mount	
Alarm Light - Panel Top Mount	
Alarm Light - Remote	
Alarm Test Switch	
Alarm Silence Switch	
Alarm Acknowledge Switch	
Alternator with Lead Pump Selector Switch	
Audible Alarm - Bell	
Audible Alarm - Horn	X
Audible Alarm - Piezo	
COX™ CAMO™ System	
Cycle Counters	
Economy Version	
Elapsed Time Meter	X
Flasher	
Green Run Lights vs. Red	
Ground Fault Receptacle	X
High Temp Lights	
High Temp Pump Shutdown - Auto Reset	
High Temp Pump Shutdown - Manual Reset	X
Intrinsically Safe Relays Pts.	X
Lightning Arrestor	X
Main Disconnect with Door Mt. Handle	
Opti-Float® Level Dector Pts.	
Panel Heater / Thermostat W=	
Phase Monitor	
Pole, Box, Seal	
Seal Fail Lights	X
Seal Fail Relay - Fixed	
Seal Fail Relay - Adjustable	
Seal Fail Shutdown	
Starters - IEC	
Starters - NEMA	
Unpowered Alarm Circuits #	
OTHER:	

	Drawing Title  PANEL DESCRIPTION			R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
				SCHNEIDER SOFT START				
DATE 3/07/06	REFERENCE DRAWING S/N	NO. C.C.		REVISION-LOCATION DRAWN BY C. RACHAL		ECN	DATE APPROVED BY DATE	
		Sales Engineer	Application Engineer R.C.	BY	C. RACHAL			
	Project Title  DUPLEX PUMP CONTROL PANEL	<hr/> <hr/> <b>COX</b> <hr/> <hr/> Research and Technology, Inc. <hr/> <hr/>		P.O. Box 77808 Baton Rouge, LA 70809  Ph. (225)756-3271 Fax (225)755-1030		PURCHASE ORDER NUMBER  DRAWING NUMBER CP-2206R1 SHEET NUMBER 1		



▲ EXTERNALLY MOUNTED, NOT SUPPLIED BY CONTROL PANEL MANUFACTURER

	Drawing Title	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
	POWER DIAGRAM		SCHNEIDER SOFT START			
DATE 3/07/06	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					
	DUPLEX PUMP CONTROL PANEL		COX Research and Technology, Inc.		P.O. Box 77808 Baton Rouge, LA 70809	PURCHASE ORDER NUMBER
					Ph. (225)756-3271 Fax (225)755-1030	DRAWING NUMBER CP-2206R1
						SHEET NUMBER 2



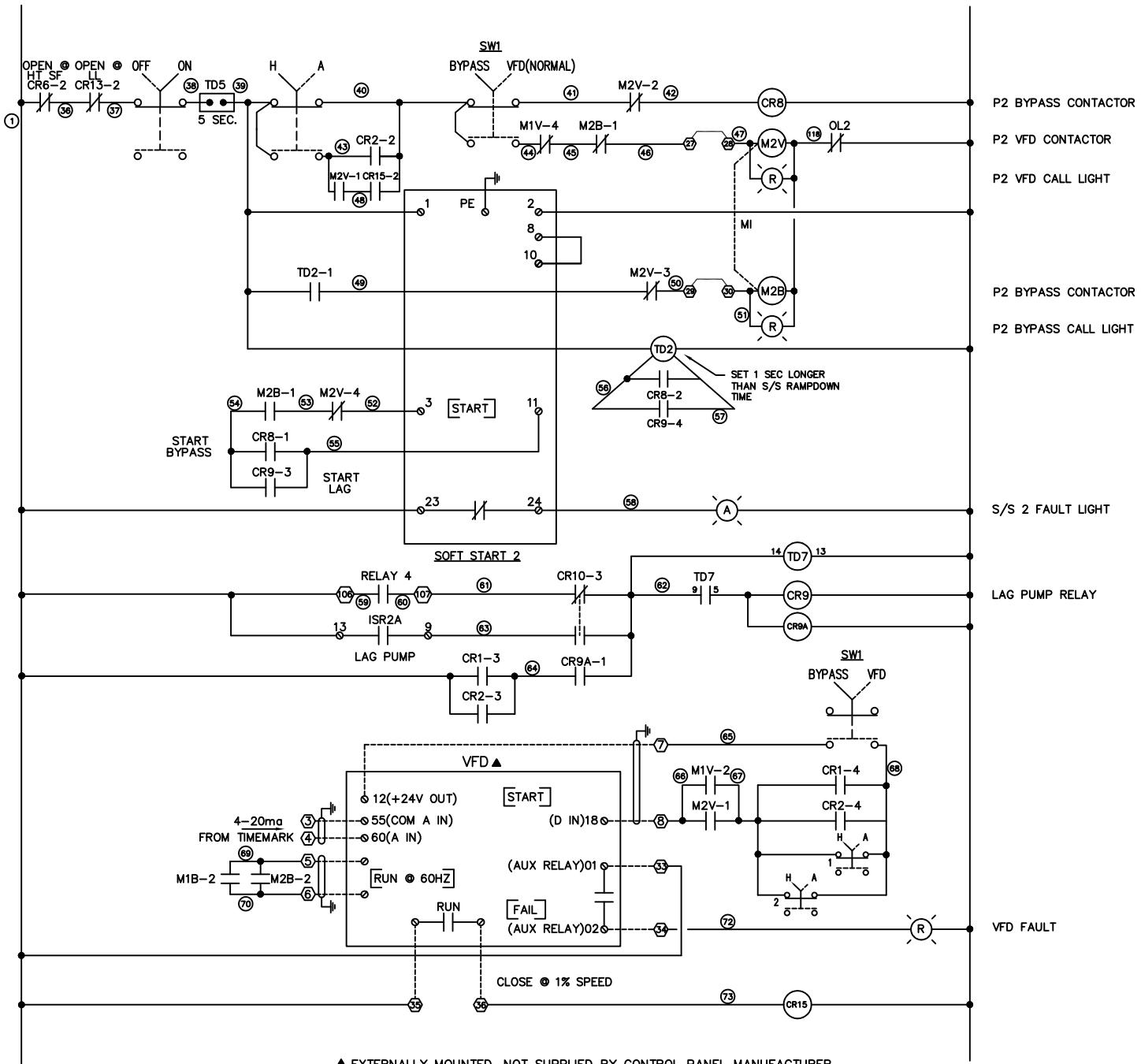
**NOTES:**

1. VFD RAMP DOWN TIME MUST BE LONGER THAN SOFT START RAMP DOWN TIME.(RECOMMEND 8 SEC. MINIMUM.)
2. TO RESET SOFT START FAULT, TURN "OFF-ON" SWITCH OFF, THEN BACK ON.
3. LOW LEVEL WILL LOCK OUT SOFT STARTS AND CAUSE FAULT LIGHTS TO COME ON. PRESS RESET BUTTON WHEN LEVEL RISES.
4. ON OVERLOAD TRIP, TURN POWER OFF BEFORE RESETTING OVERLOADS.

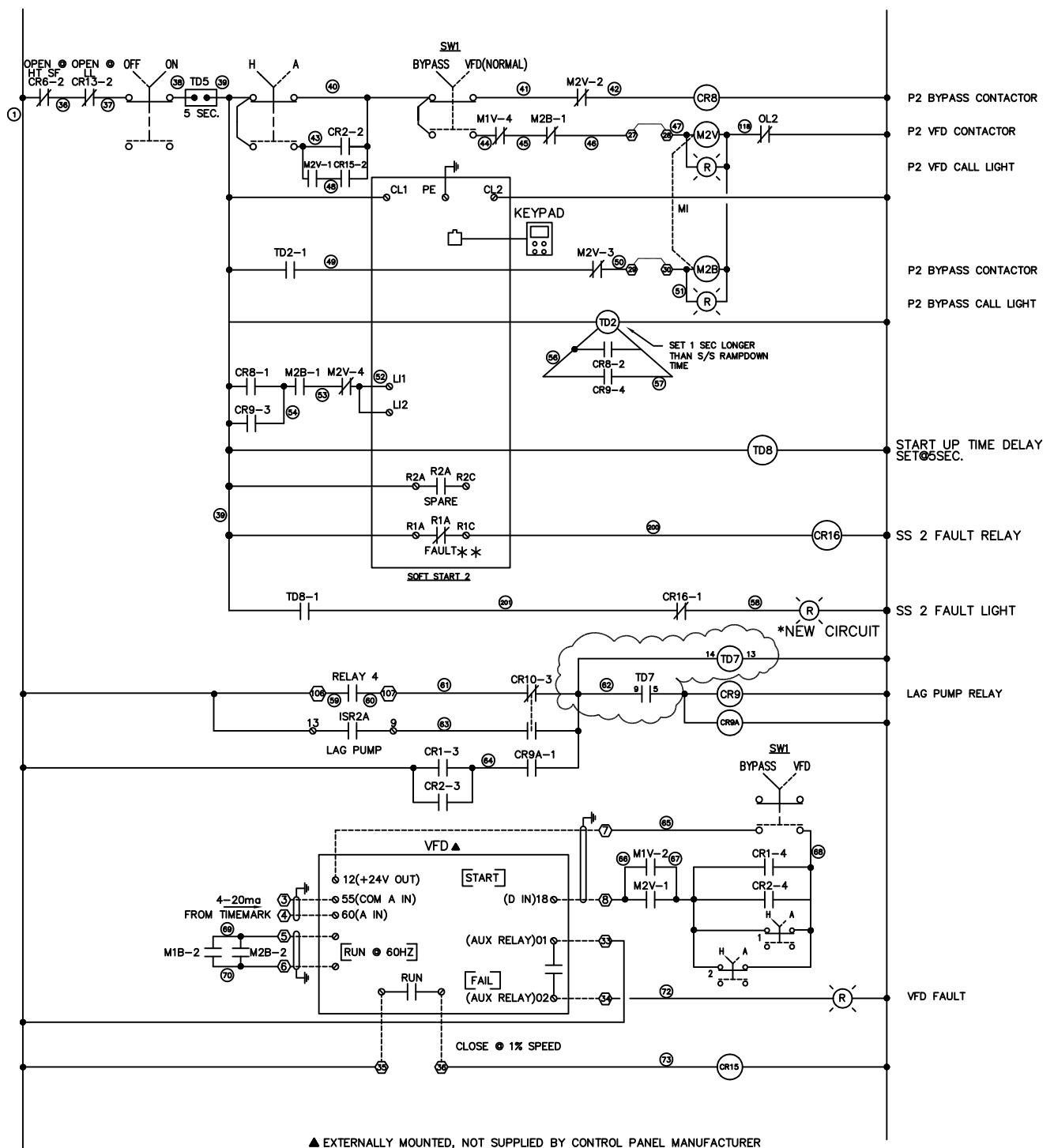
**FACTORY TIME DELAY SETTINGS:**

TD1: 6 SEC.	TD4: 2 SEC.	SS1 RAMP UP: 5 SEC.
TD2: 6 SEC.	TD5: 5 SEC.	SS1 RAMP DN: 3 SEC.
TD3: 2 SEC.	TD6: 2 SEC.	SS2 RAMP UP: 5 SEC. SS2 RAMP DN: 3 SEC.

	Drawing Title  <b>CONTROL DIAGRAM</b>	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
			SCHNEIDER SOFT START			
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 3/07/06	S/N	Sales Engineer C.C.	Application Engineer R.C.	DRAWN BY C. RACHAL	APPROVED BY DATE	
	Project Title  <b>DUPLEX PUMP CONTROL PANEL</b>	<hr/> <hr/> <b>COX</b> <hr/> <hr/> Research and Technology, Inc. <hr/> <hr/>	P.O. Box 77808 Baton Rouge, LA 70809  Ph. (225)756-3271 Fax (225)755-1030	PURCHASE ORDER NUMBER  DRAWING NUMBER CP-2206R1  SHEET NUMBER 3		



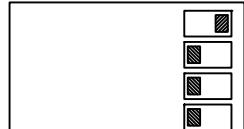
	Drawing Title <b>CONTROL DIAGRAM</b>	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.	
		REFERENCE DRAWING S/N		NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN	DATE APPROVED BY DATE
DATE 5/10/06	Project Title <b>DUPLEX PUMP CONTROL PANEL</b>	<b>COX</b> Research and Technology, Inc.		P.O. Box 77808 Baton Rouge, LA 70809 Ph. (225)756-3271 Fax (225)755-1030	PURCHASE ORDER NUMBER DRAWING NUMBER CP-2206R1 SHEET NUMBER 4		



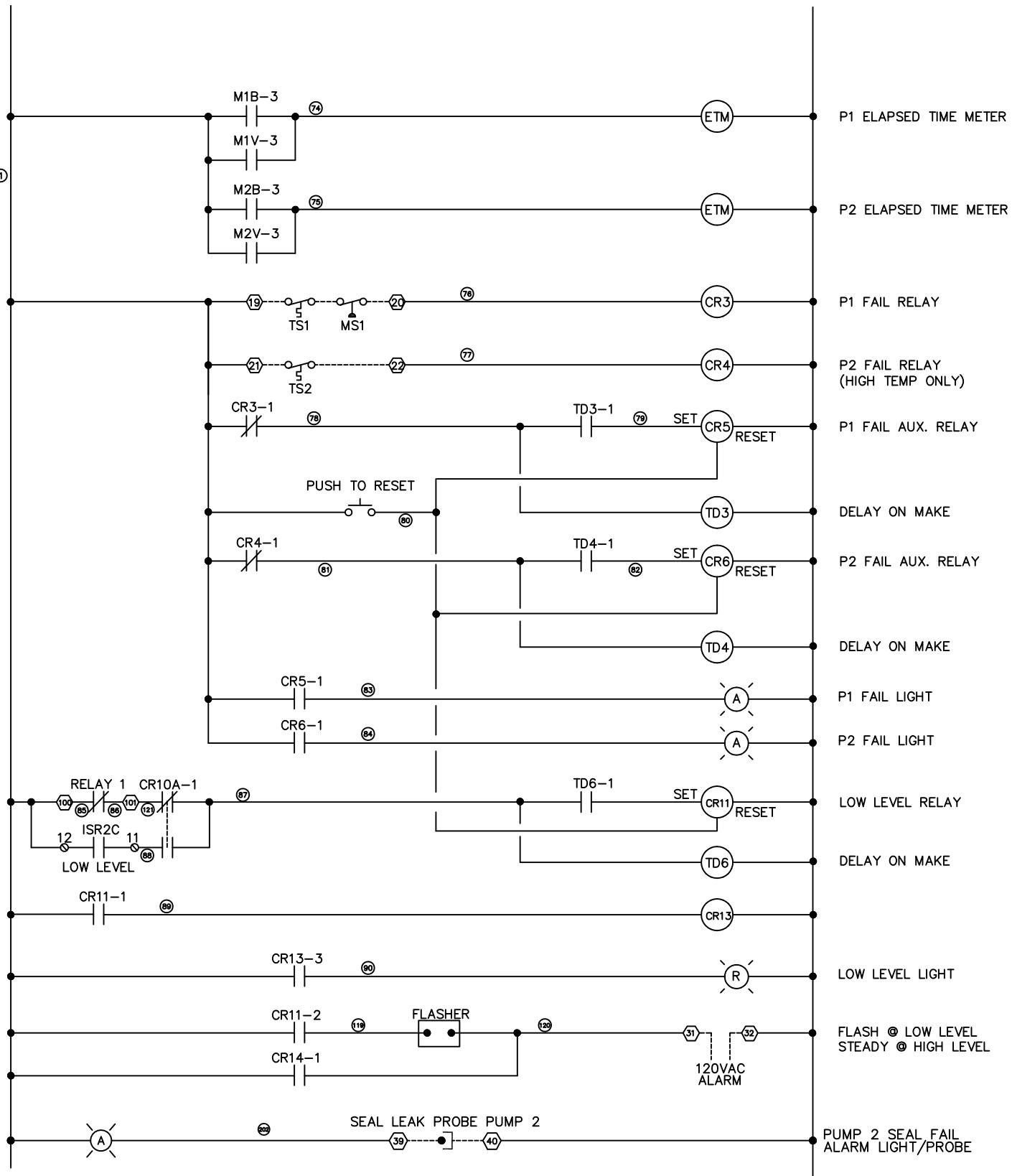
\* REMOVE WIRE #62 FROM CR9 & 9A, MOVE TO TD7 Ø 9, 14  
RUN NEW WIRE FROM TD7 Ø 5 TO CR9, 9A  
RUN NEW WIRE FROM CR9 NEUTRAL TO TD7 Ø 13

\*\* UPON SOFT START ENERGIZATION, RELAY CLOSES IF NO FAULT. RELAY OPENS ON FAULT.

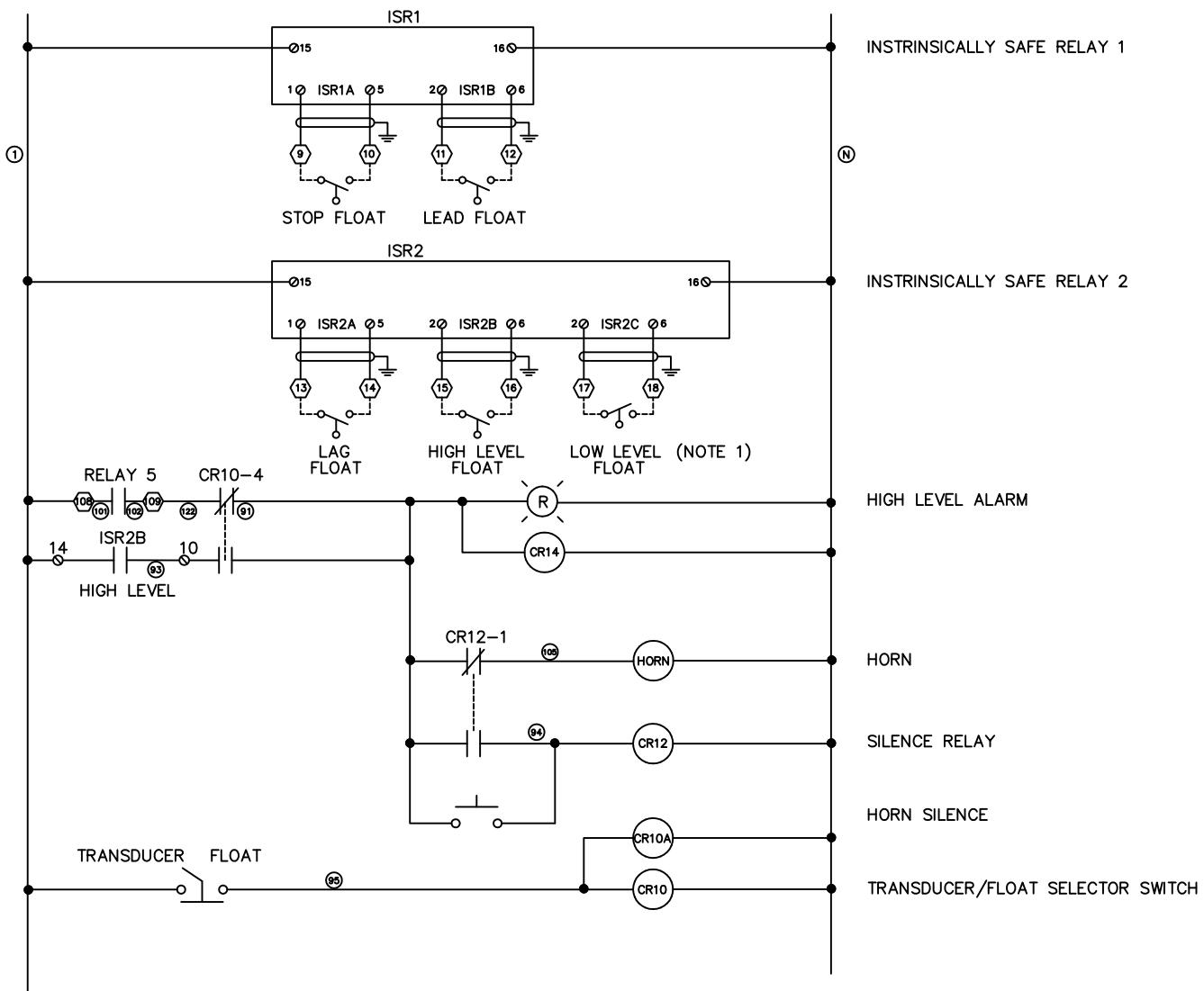
DIP SWITCH SETTINGS



	Drawing Title	R1	P2 CHANGES TO BARNES NEW	12/09/20	N.B.
	LAG PUMP TIME DELAY CIRCUIT		SCHNEIDER SOFT START		
DATE 5/10/06	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			P.O. Box 77808 Baton Rouge, LA 70809	PURCHASE ORDER NUMBER
	DUPLEX PUMP CONTROL PANEL		COX Research and Technology, Inc.	Ph. (225)756-3271 Fax (225)755-1030	DRAWING NUMBER CP-2206R1
					SHEET NUMBER 4A



	Drawing Title  CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
			SCHNEIDER SOFT START			
		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN	DATE APPROVED BY DATE
DATE 3/07/06						
	Project Title  DUPLEX PUMP 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-2206R1  SHEET NUMBER 5	



NOTE:

1. THIS FLOAT MUST BE A  
NORMALLY CLOSED FLOAT

ISR1  
DIP SWITCH  
SETTINGS

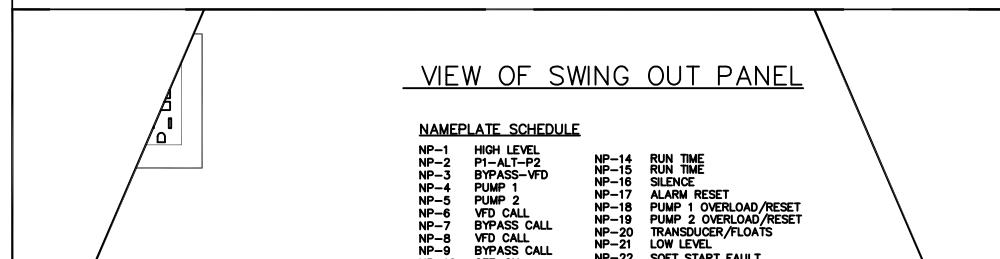
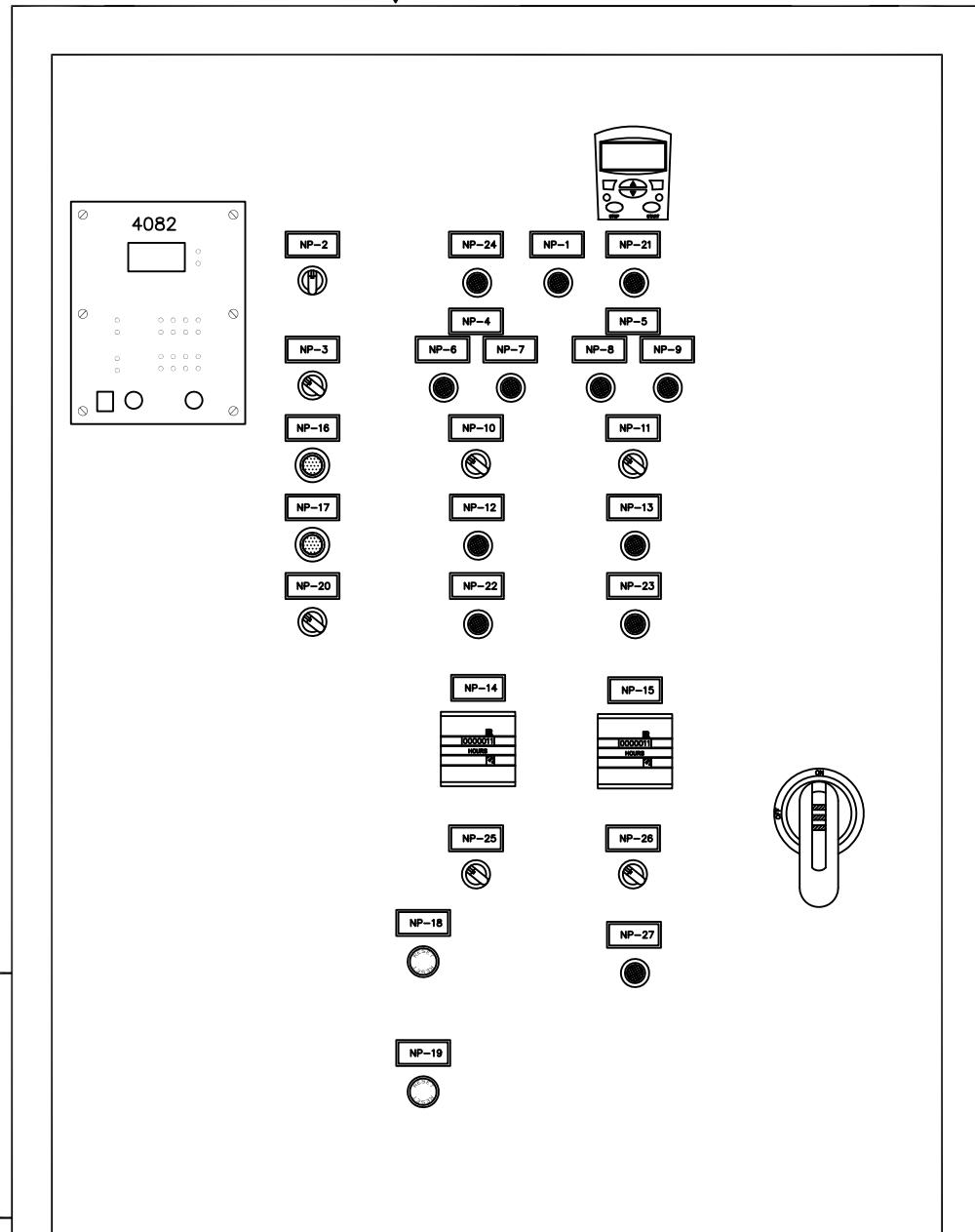
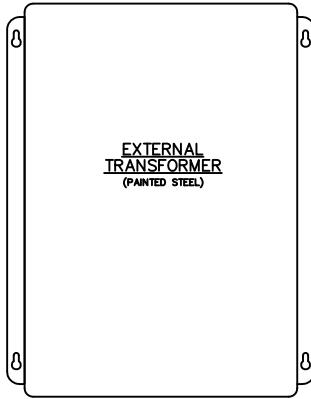
R/A	<input checked="" type="checkbox"/>
1DB	<input checked="" type="checkbox"/>
K	<input checked="" type="checkbox"/>
R/A	<input checked="" type="checkbox"/>
2DB	<input checked="" type="checkbox"/>
K	<input checked="" type="checkbox"/>

ISR2  
DIP SWITCH  
SETTINGS

A	N	R	K	CHANNEL 1	CHANNEL 2	CHANNEL 3	DK	ON	OFF
<input checked="" type="checkbox"/>									

	Drawing Title  CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW SCHNEIDER SOFT START	12/09/20	N.B.
	REFERENCE DRAWING S/N	NO. C.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN	DATE APPROVED BY DATE
DATE 3/07/06	Application Engineer	R.C.			
Project Title  DUPLEX PUMP 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-2206R1 SHEET NUMBER 6		

NEMA 3R PAINTED STEEL ENCLOSURE



#### VIEW OF SWING OUT PANEL

##### NAMEPLATE SCHEDULE

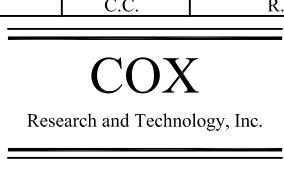
NP-1	HIGH LEVEL	NP-14	RUN TIME
NP-2	PI-ALT-P2	NP-15	SILENCE
NP-3	BYPASS-VFD	NP-17	ALARM RESET
NP-4	PUMP 1	NP-18	PUMP 1 OVERLOAD/RESET
NP-5	PUMP 2	NP-19	PUMP 2 OVERLOAD/RESET
NP-6	VFD CALL	NP-20	TRANSDUCER/FLOATS
NP-7	BYPASS CALL	NP-21	LOW LEVEL
NP-8	VFD CALL	NP-22	SOFT START FAULT
NP-9	BYPASS CALL	NP-23	SOFT START FAULT
NP-10	OFF-ON	NP-24	VFD FAULT
NP-11	OFF-ON	NP-25	H-A
NP-12	PUMP FAIL	NP-26	H-A
NP-13	PUMP FAIL	NP-27	SEAL FAIL

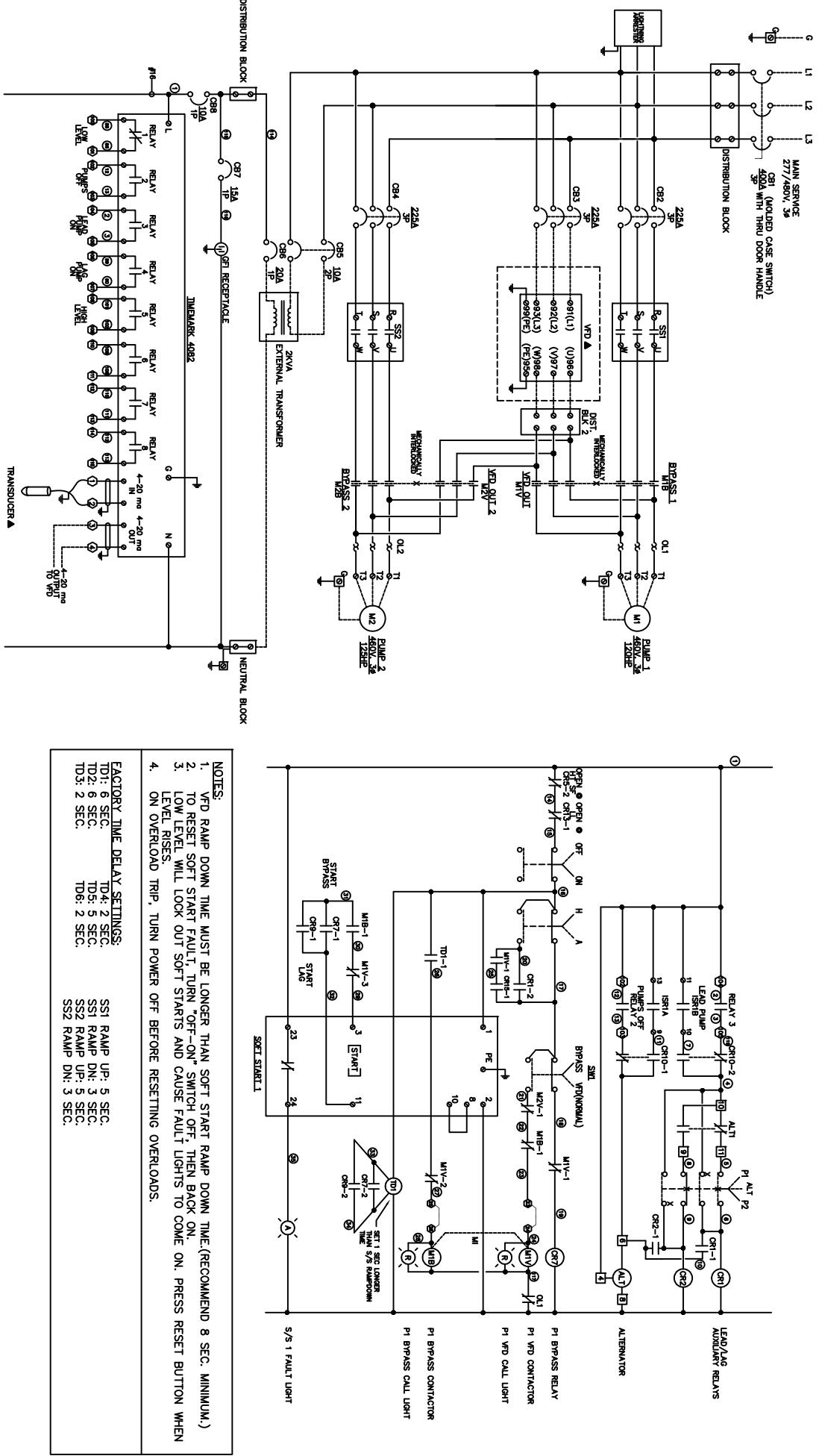
SEWER GASES WILL DESTROY COMPONENTS IN PANEL.  
PROPER SEALS MUST BE INSTALLED EXTERNAL TO THE  
PANEL TO PREVENT ENTRY OF GASES.

	Drawing Title			R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.
	<b>ENCLOSURE</b>				SCHNEIDER SOFT START				
DATE 3/07/06	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		<b>COX</b> Research and Technology, Inc.		P.O. Box 77808 Baton Rouge, LA 70809		PURCHASE ORDER NUMBER		
	DUPLEX PUMP CONTROL PANEL				Ph. (225)756-3271 Fax (225)755-1030		DRAWING NUMBER CP-2206R1		
							SHEET NUMBER 7		

# BILL OF MATERIALS

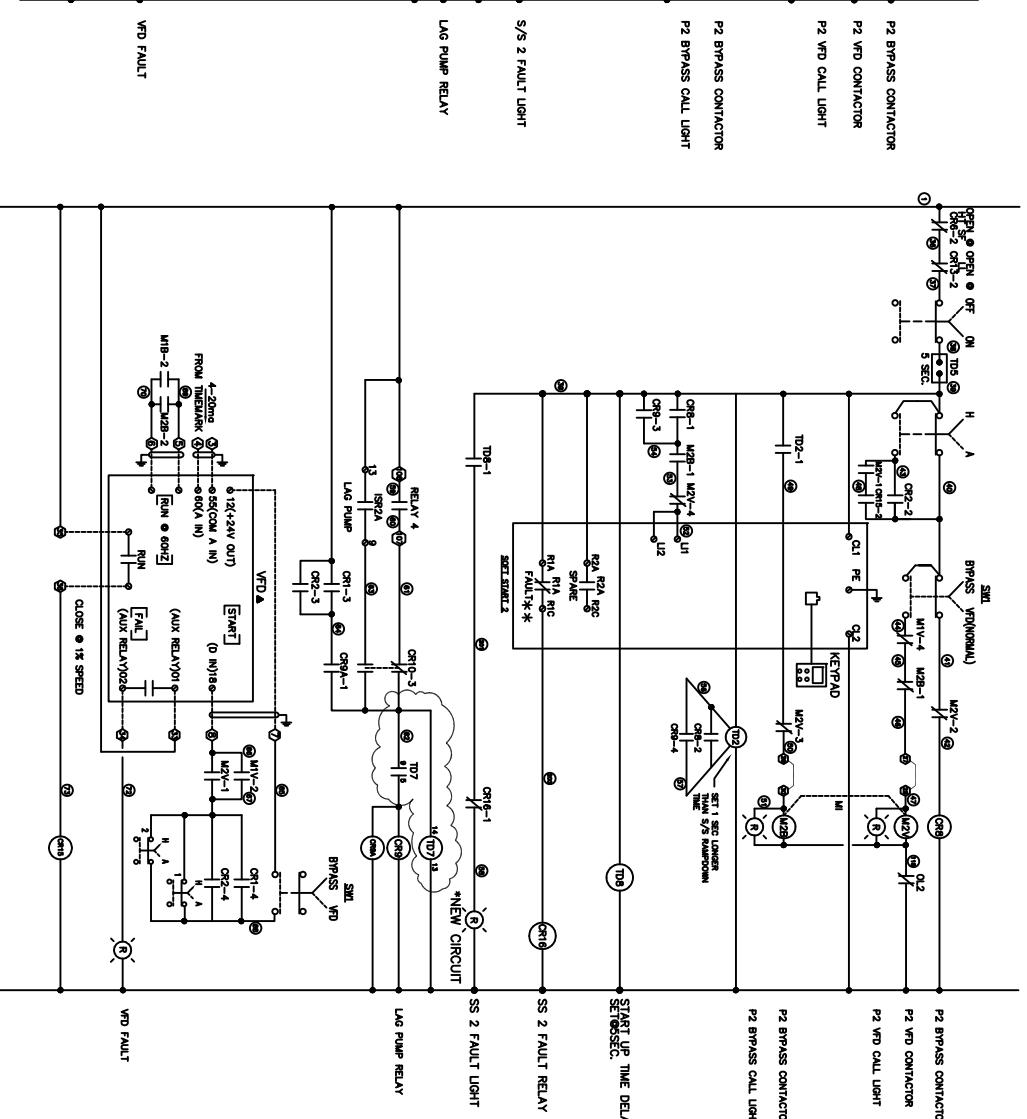
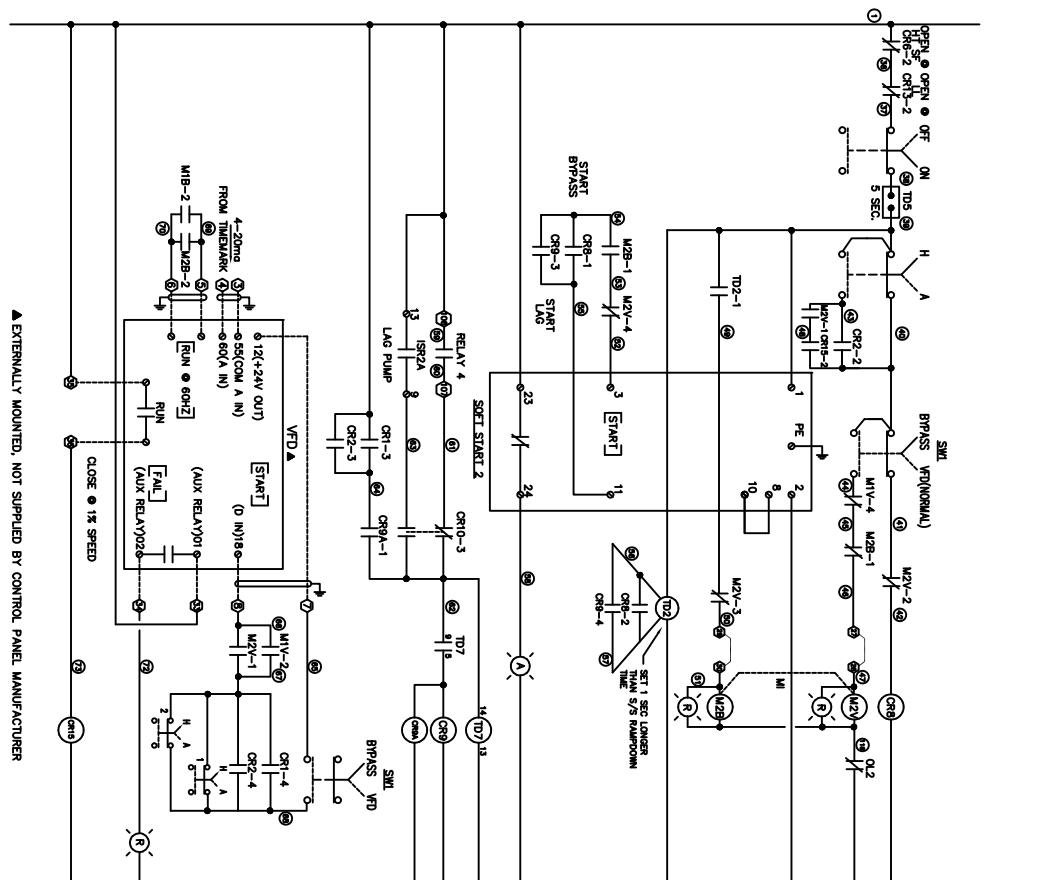
ITEM	QTY	MANUFACTURER	PART NO.	DESCRIPTION
1	1	C&I	C604816DRH	ENCLOSURE
1a	1	C&I	CI-6048P	BACKPLATE
1b	1	C&I	CI-6048SPA	DEAD FRONT
2	1	ABB	S5H400DW	MOLDED CASE SWITCH
3	4	ABB	A260N5-30-11-84	MOTOR STARTERS
4	2	ABB	TA200DU175	OVERLOAD 1,2
5	3	ABB	S3N225TW	CB2, CB3, CB4
6	1	SQUARE D	2S1F	TRANSFORMER
7	1	TIMEMARK	261DT120	ALTERNATING RELAY
8	7	A-B	800H-QR10R	RED PILOT LIGHT
9	1	DAYTON	2A561	TD5
10	1	ABB	K5VDM	MECHANICAL OPERATOR
11	1	ABB	OXP10X225	SHAFT
12	1	ABB	OHB95J10	HANDLE
13	6	A-B	800H-HR2A	2 POSITION SWITCH
14	1	SQUARE D	QOU115	CB7
15	1	SQUARE D	QOU110	CB8
16	4	A-B	800H-QR10A	AMBER PILOT LIGHT
17	2	REDINGTON	711-0190	ELAPSED TIME METER
18	3	MAGNECRAFT	W388AMLCPX-9	LATCHING RELAY CR 5,6,11
19	2	A-B	800H-AR2A	PUSH BUTTON
20	1	TIMEMARK	4082	LIQUID LEVEL CONTROLLER
21	2	MARATHON	1321580	DISTRIBUTION BLOCK
22	2	ABB	KPR3-104B	O.L. RESET
23	1	EDWARDS	870P-N5	HORN
24	14	IDEC	RU4S-A110	CR1,2,3,4,7,8,9,9A,10,10A,12,13,14,15
25	1	SQUARE D	QOU120	CB6
26	1	STOCK		GFI
27	14	ABB	CAL5-11	AUXILIARY CONTACTS
28	1	TURCK	MK13-22EXOR-115VAC	ISR1
29	1	ABB	S202UP-K10	CB5
30	1	DELTA	LA603	LIGHTNING ARRESTER
31	2	ABB	VM300H	MECHANICAL INTERLOCK
32	1	SQUARE D	9080LBA365106	DISTRIBUTION BLOCK
33	2	SQUARE D	9080LB53	DIST. BLOCK COVERS
34	1	SQUARE D	9080LBA3652021	DISTRIBUTION BLOCK
35	2	ABB	ATK300/2	TERMINAL LUG 2 POLE
36	4	ABB	ATK300	TERMINAL LUG
37	1	SSAC	FS126RC	FLASHER
38	6	ABB	K4TD	BREAKER LUGS
39	2	ABB	K5TG	BREAKER LUGS
40	1	TURCK	MK13-33EXOR/115VAC	ISR2
41	3	OMRON	H3YN2AC120	TD 3,4,6
42	2	DAYTON	5YZ88N	TD 1,2
43	1	WEG	SSW060170T2257ESZ	SOFT START 1
44	1	SQUARE D	9001KS401B	3 POSTION SWITCH
45	1	SQUARE D	9001KA1	CONTACT BLOCK
46	1	SQUARE D	9001KA2	CONTACT BLOCK
47	1	SQUARE D	9001KA3	CONTACT BLOCK
48				
49	1	FINDER	55.34.8.120.0050	CR16
50	1	FINDER	85.04.0.125.0000	TD8
51	2	FINDER	94.04	CR16,T8 BASE
52	1	SCHNEIDER	ATS22C21S6U	SOFT START 2
53	1	SIEMENS	52PYA	SEAL FAIL RELAY
54				

	Drawing Title		49		R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.		
	BILL OF MATERIALS					SCHNEIDER SOFT START						
			REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY		
DATE 3/07/06			S/N	Sales Engineer	Application Engineer	DRAWN			APPROVED			
			R.C.	BY C. RACHAL		BY	DATE					
	Project Title  DUPLEX PUMP CONTROL PANEL		 <b>COX</b> Research and Technology, Inc. 			P.O. Box 77808 Baton Rouge, LA 70809		PURCHASE ORDER NUMBER				
										DRAWING NUMBER		
										CP-2206R1		
										SHEET NUMBER		
								8				



▲ EXTERNALLY MOUNTED, NOT SUPPLIED BY CONTROL PANEL MANUFACTURER

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CP-2206RJ



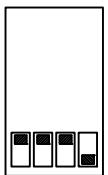
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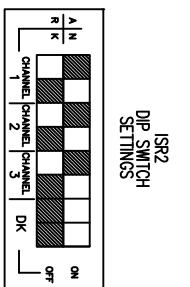
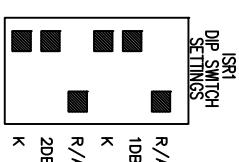
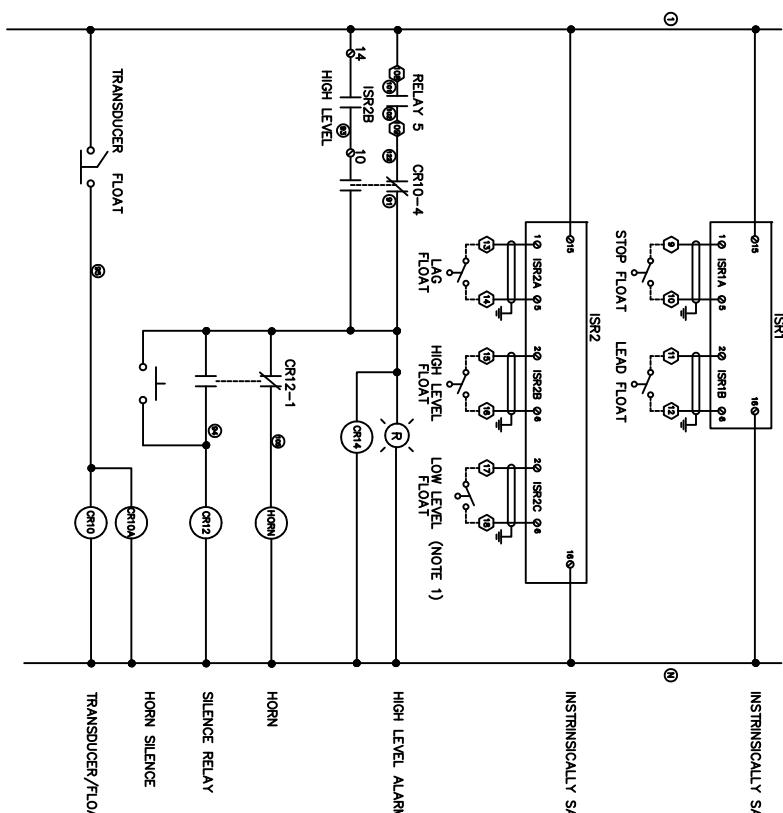
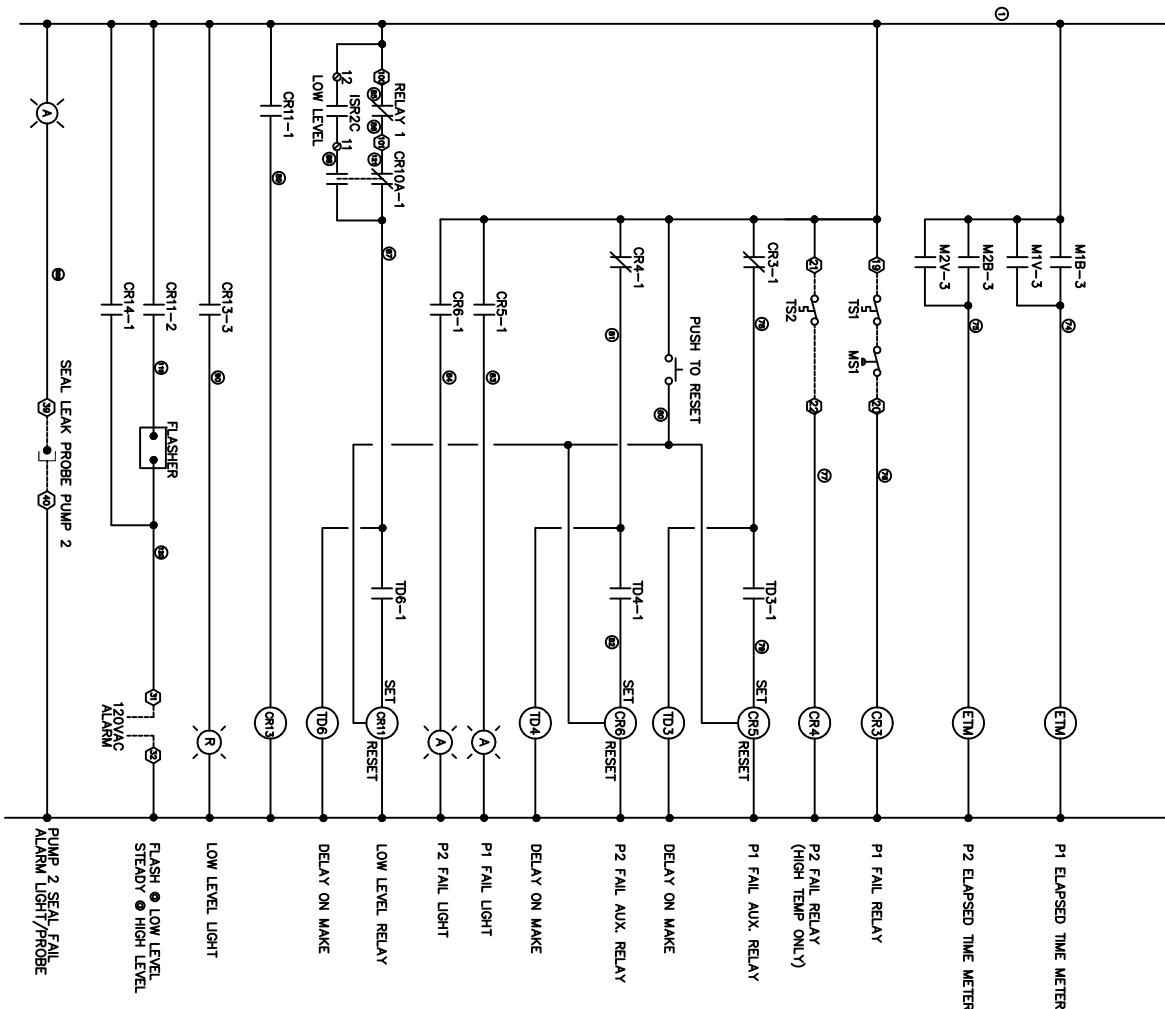
\* REMOVE WIRE #62 FROM CR9 & 9A, MOVE TO TD7 & 9, 14  
RUN NEW WIRE FROM TD7 & 5 TO CR9, 9A  
RUN NEW WIRE FROM CR9 NEUTRAL TO TD7 & 13

\*\* UPON SOFT START ENERGIZATION, RELAY CLOSES IF NO  
FAULT, RELAY OPENS ON FAULT.

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DIP SWITCH  
SETTINGS



**NOTE:**  
1. THIS FLOAT MUST BE A  
NORMALLY CLOSED FLOAT

NORMALLY CLOSED FLOAT

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erry Road  
70816

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