
COX

Research and Technology, Inc.

DUPLEX PUMP
CONTROL PANEL
WEST KENTUCKY

AS BUILTS

JUNE 29, 2010

FIELD REVISIONS

DECEMBER 9, 2020

PUMP 1 SWAPPED OUT FOR SULZER 115HP

JANUARY 24, 2022

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
-

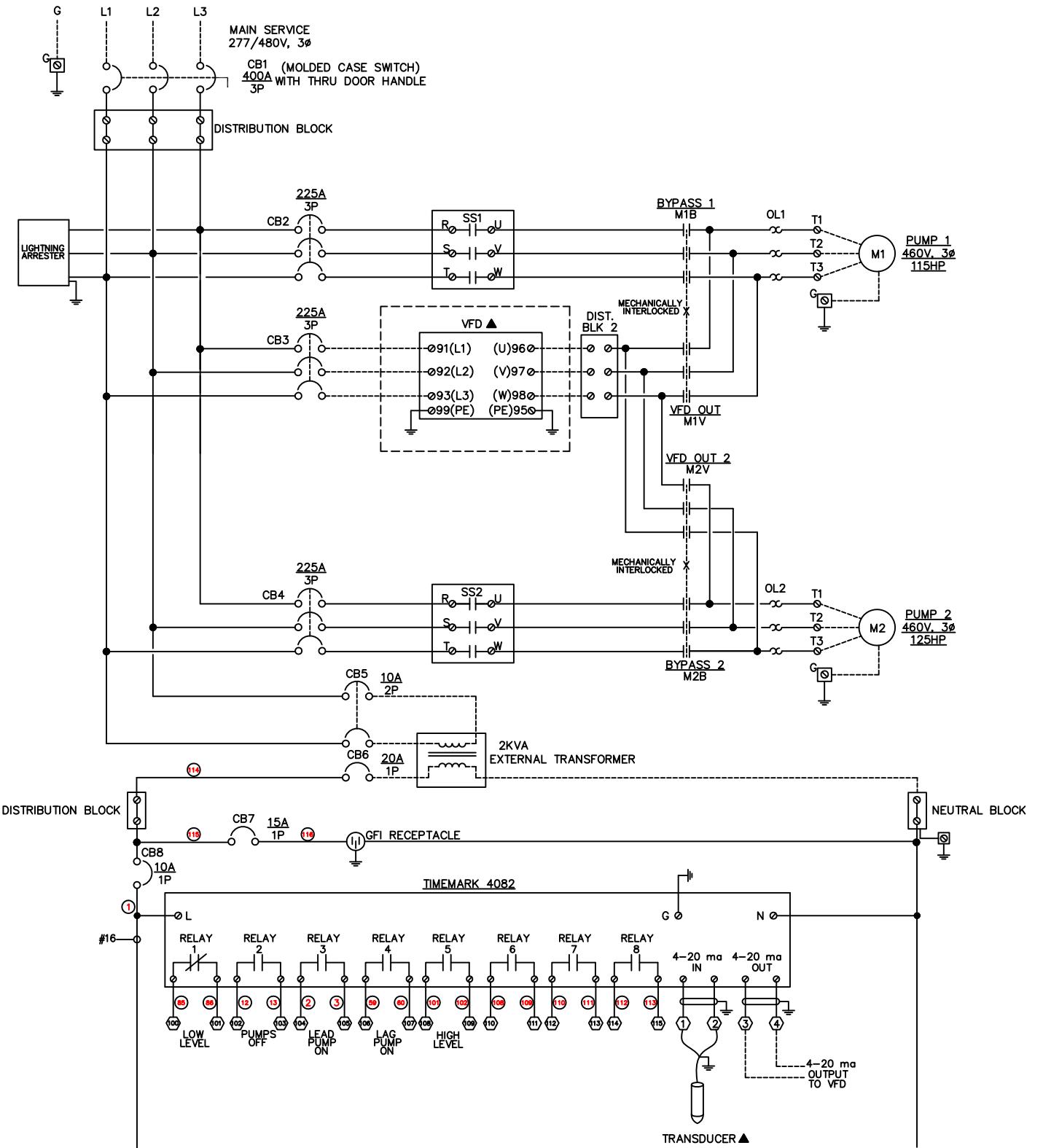
SHIP TO:
-
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SPECIAL NOTES:

Panel Type	Duplex
Voltage	277/480
Phase/HZ	3/60
No. Motors	2
HP	115, 125
FLA	148, 169.4
Pump Manufacturer	Sulzer, Barnes
Type of Pump	Submersible
Catalog Number	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

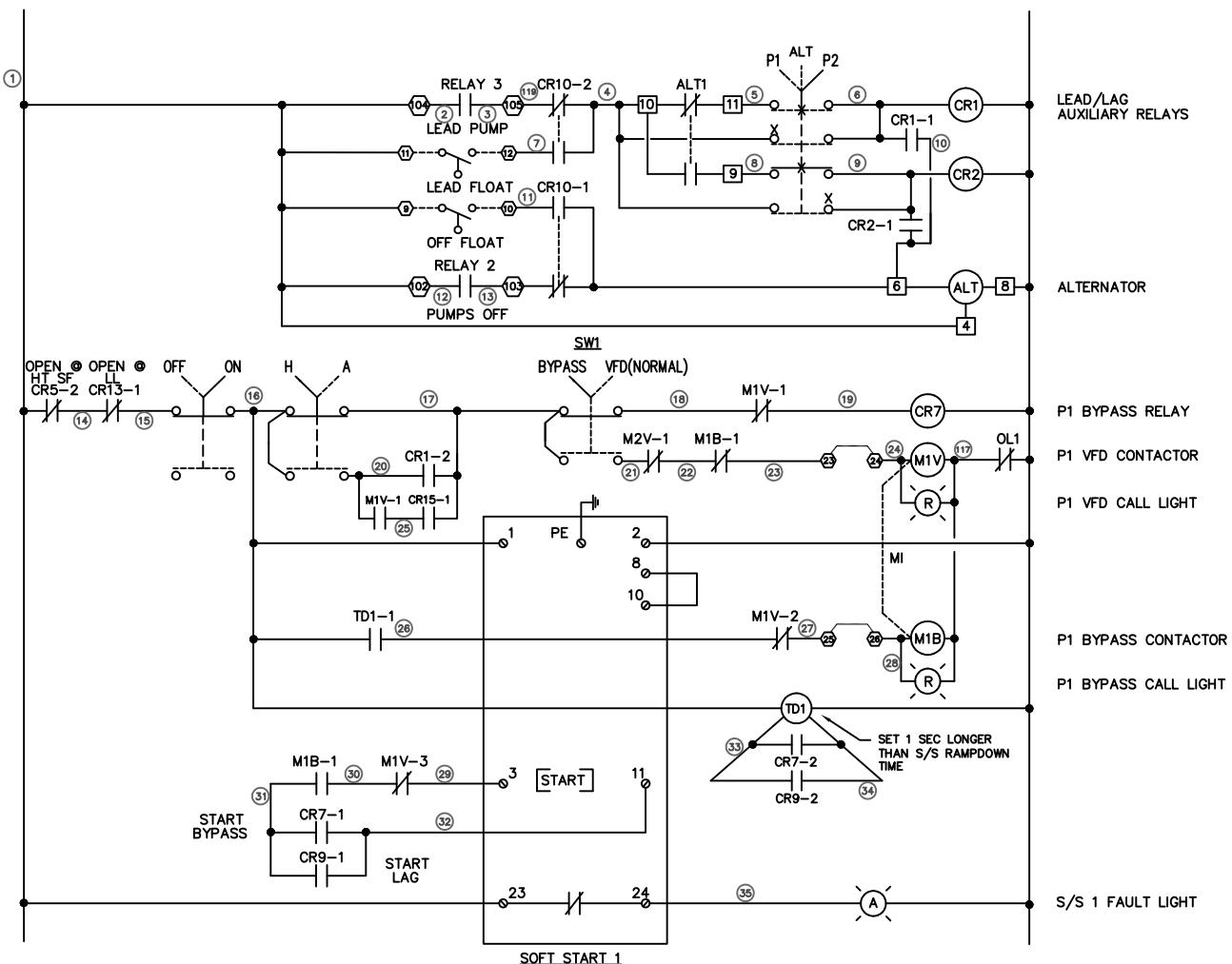
Alarm Light - Panel Door Mount	
Alarm Light - Panel Top Mount	
Alarm Light - Remote	
Alarm Test Switch	
Alarm Silence Switch	
Alarm Acknowledge Switch	
Alternator with Lead Pump Selector Switch	
Audible Alarm - Bell	
Audible Alarm - Horn	X
Audible Alarm - Piezo	
COX™ CAMO™ System	
Cycle Counters	
Economy 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.
				R2	INSTALLED SULZER PUMP 1		01/24/22	T.L.
DATE 3/07/06	REFERENCE DRAWING S/N	REFERENCE DRAWING NO. C.C.		REVISION-LOCATION DRAWN BY C. RACHAL		ECN	DATE	BY
							APPROVED	
	Project Title DUPLEX PUMP CONTROL PANEL	<hr/> COX <hr/> Research and Technology, Inc. <hr/>		P.O. Box 77808 Baton Rouge, LA 70809		PURCHASE ORDER NUMBER		
						DRAWING NUMBER		
						CP-2206R2		
						SHEET NUMBER		
						1		



▲ EXTERNALLY MOUNTED, NOT SUPPLIED BY CONTROL PANEL MANUFACTURER

	Drawing Title POWER DIAGRAM			R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.
				R2	INSTALLED SULZER PUMP 1			01/24/22	T.L.
DATE 3/07/06	REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY	
	S/N	Sales Engineer	Application Engineer	DRAWN	APPROVED	BY	DATE	BY	
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-2206R2		SHEET NUMBER 2		

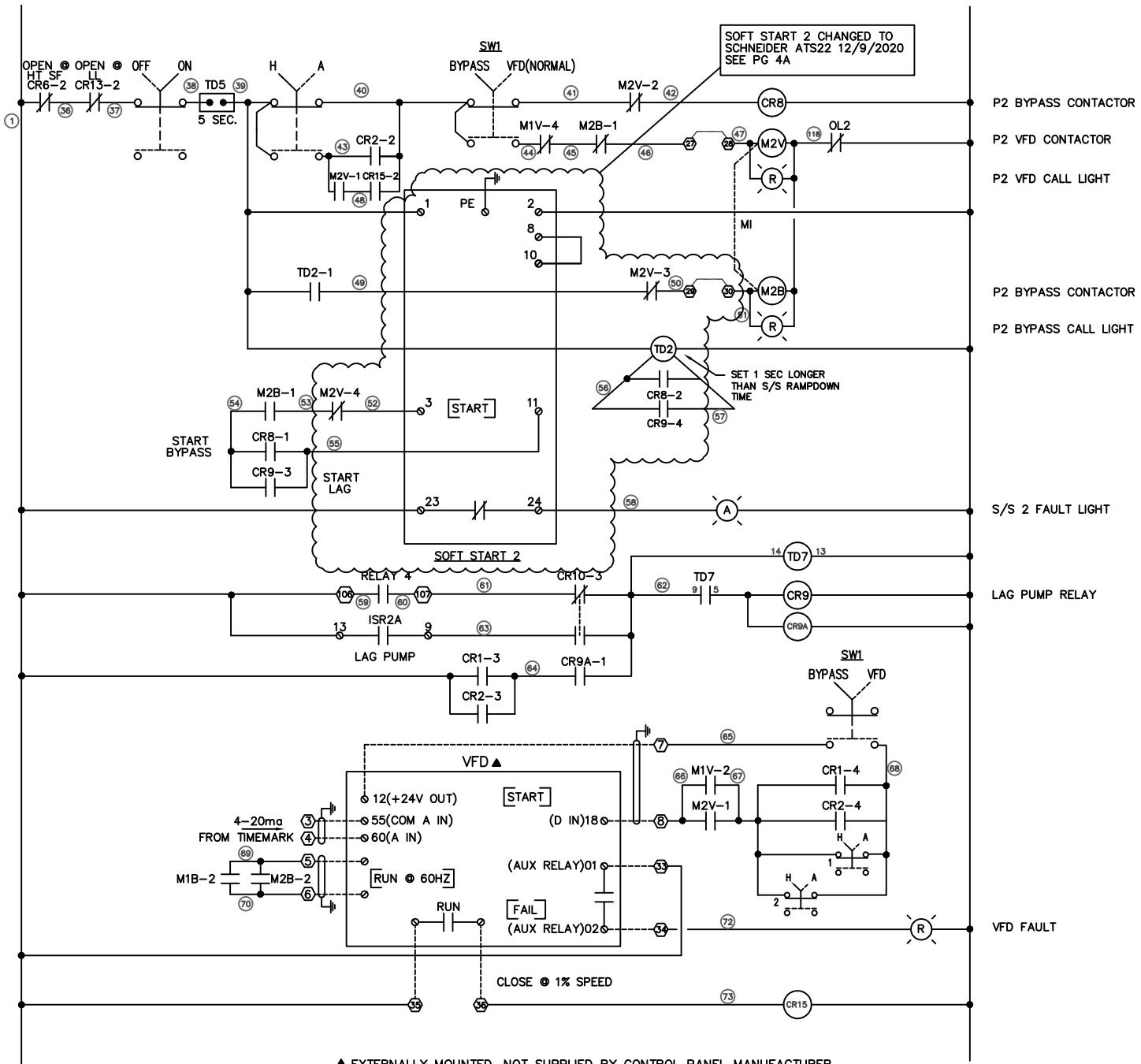

NOTES:

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.

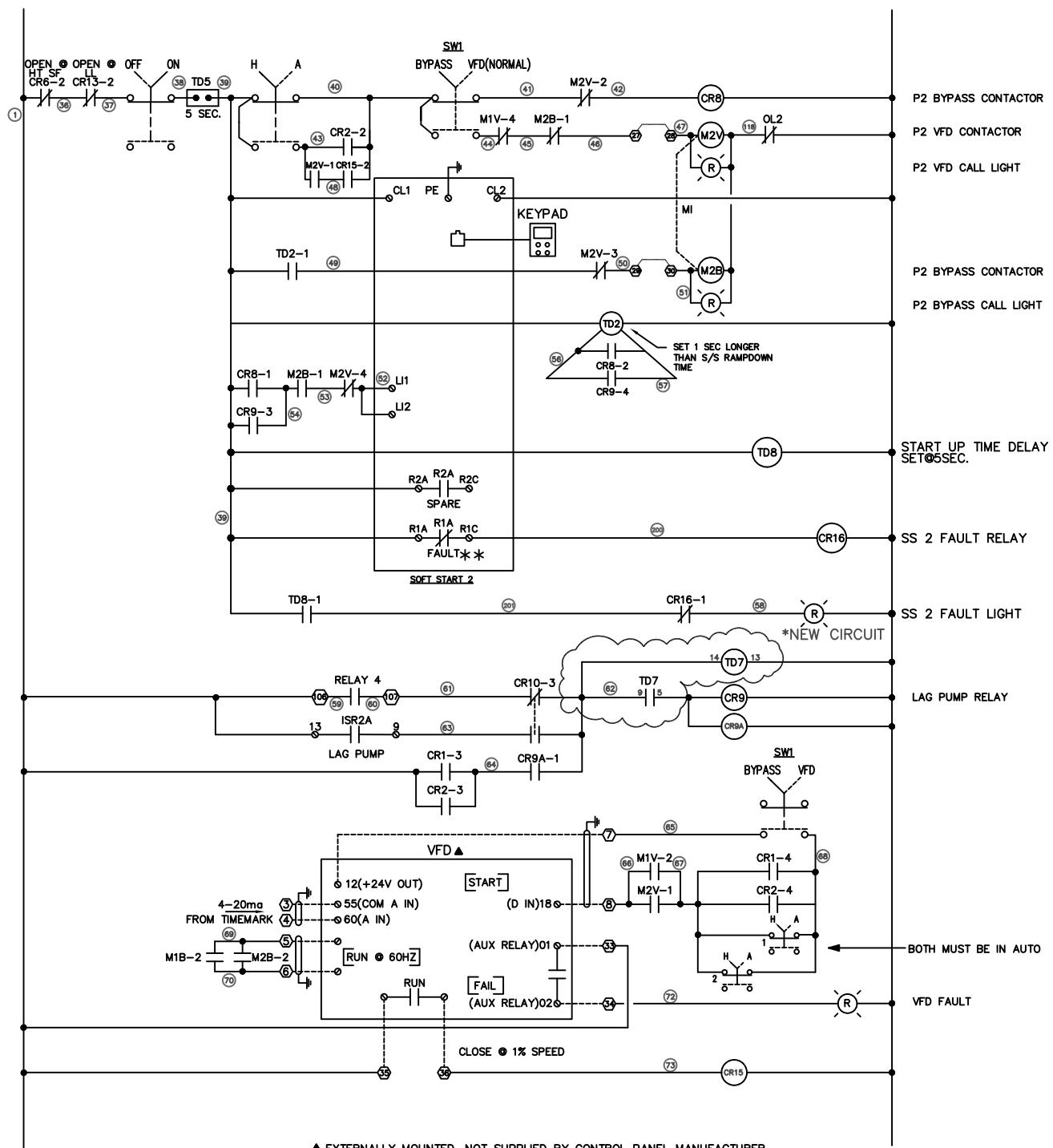
FACTORY TIME DELAY SETTINGS:

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	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
	CONTROL DIAGRAM		SCHNEIDER SOFT START			
		R2	INSTALLED SULZER PUMP I		01/24/22	T.L.
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 3/07/06	S/N	Sales Engineer	DRAWN		APPROVED	
	C.C.	Application Engineer	BY C. RACHAL	BY	DATE	
	Project Title	COX Research and Technology, Inc.			PURCHASE ORDER NUMBER	
	DUPLEX PUMP CONTROL PANEL				DRAWING NUMBER	
					CP-2206R2	
					SHEET NUMBER	
					3	



	Drawing Title CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
			SCHNEIDER SOFT START			
		R2	INSTALLED SULZER PUMP I		01/24/22	T.L.
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 5/10/06	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-2206R2	
					SHEET NUMBER 4	



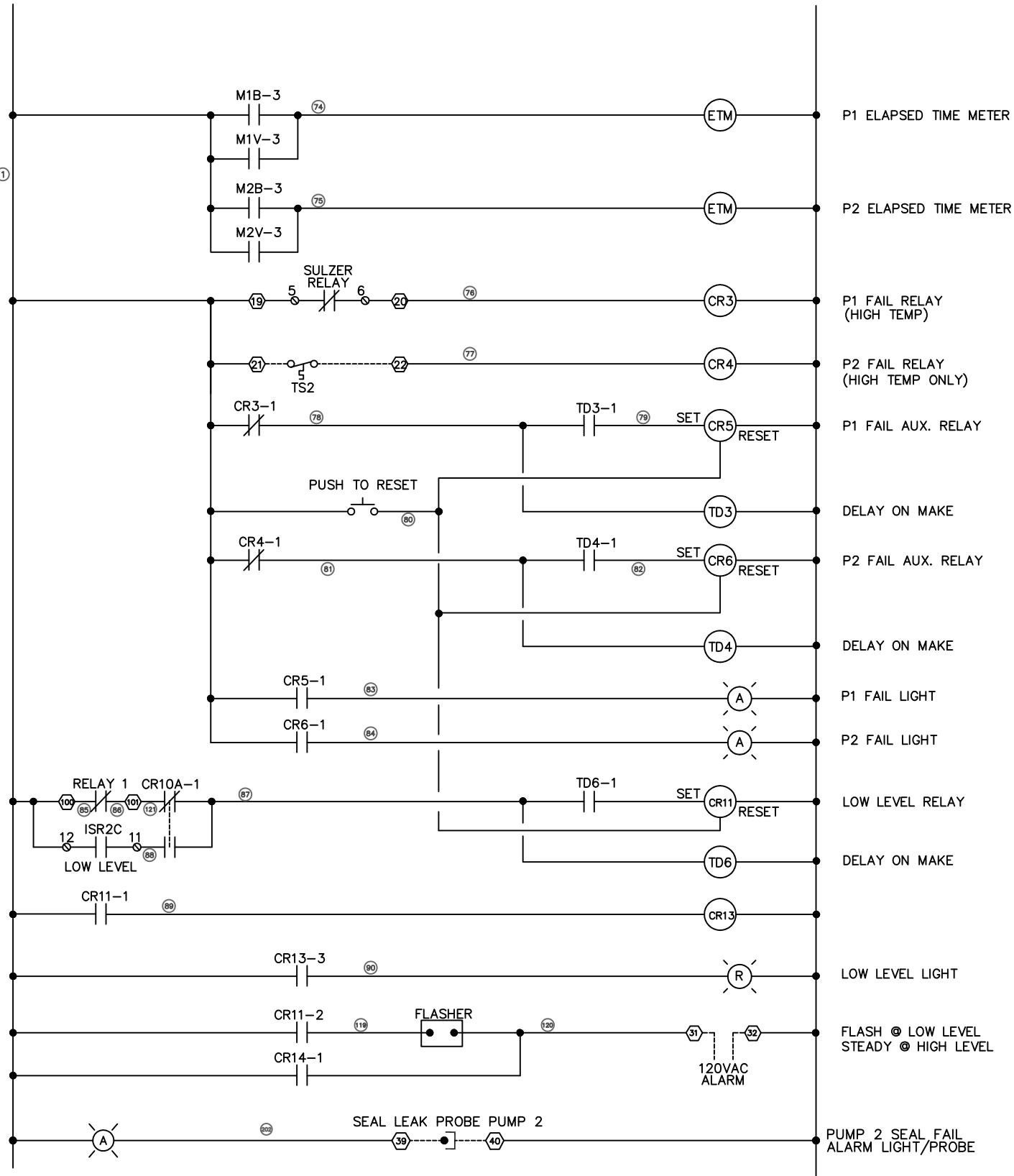
* REMOVE WIRE #62 FROM CR9 & 9A, MOVE TO TD7 Ø 9, 14
RUN NEW WIRE FROM TD7 Ø 5 TO CR9, 9A
RUN NEW WIRE FROM CR9 NEUTRAL TO TD7 Ø 13

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

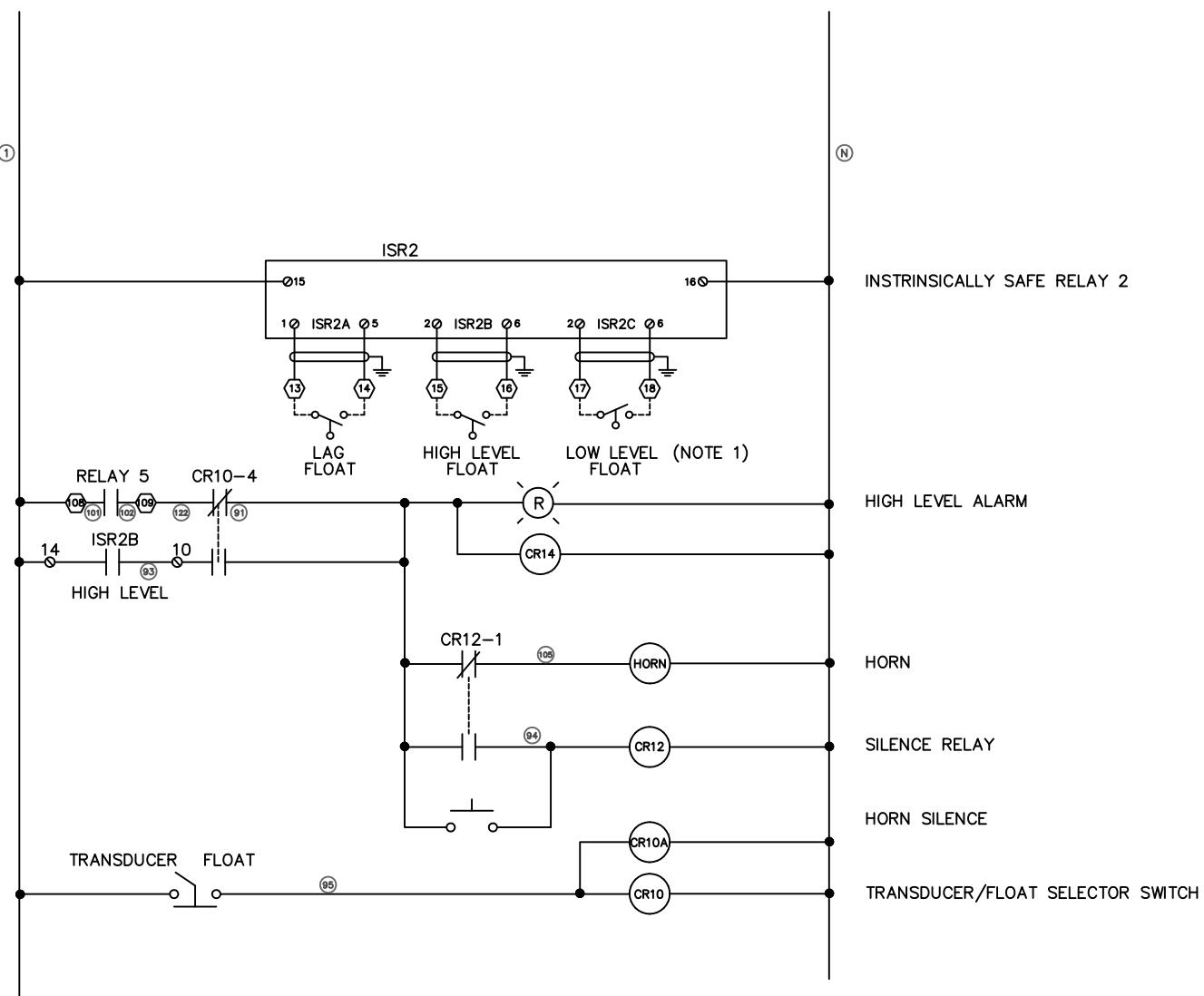
DIP SWITCH SETTINGS



	Drawing Title		R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
	LAG PUMP TIME DELAY CIRCUIT			SCHNEIDER SOFT START			
		R2		INSTALLED SULZER PUMP I		01/24/22	T.L.
DATE 5/10/06	REFERENCE DRAWING S/N	Sales Engineer C.C.	NO. R.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN APPROVED BY DATE		
	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-2206R2 SHEET NUMBER 4A		



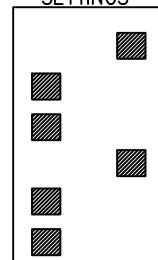
	Drawing Title CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
		R2	SCHNEIDER SOFT START			
		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN BY C. RACHAL	ECN	DATE T.L.
DATE 3/07/06		Application Engineer R.C.			APPROVED BY	DATE
	Project Title DUPLEX PUMP CONTROL PANEL	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-2206R2 SHEET NUMBER 5



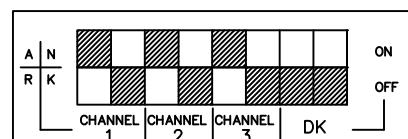
NOTE:

1. THIS FLOAT MUST BE A NORMALLY CLOSED FLOAT

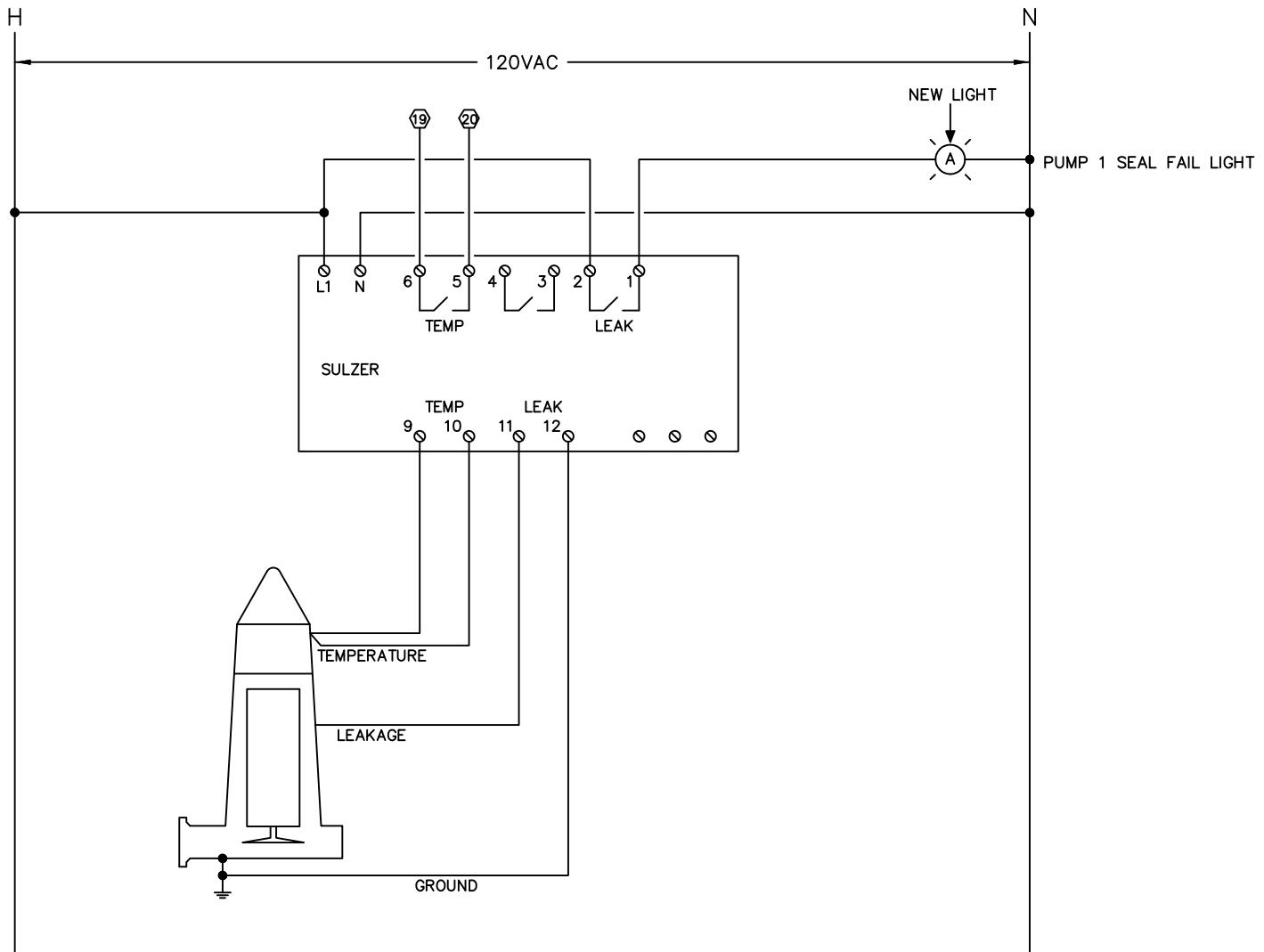
ISR1
DIP SWITCH SETTINGS



ISR2
DIP SWITCH SETTINGS

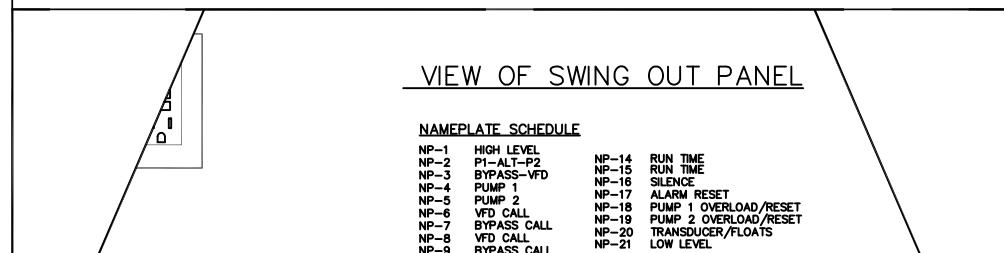
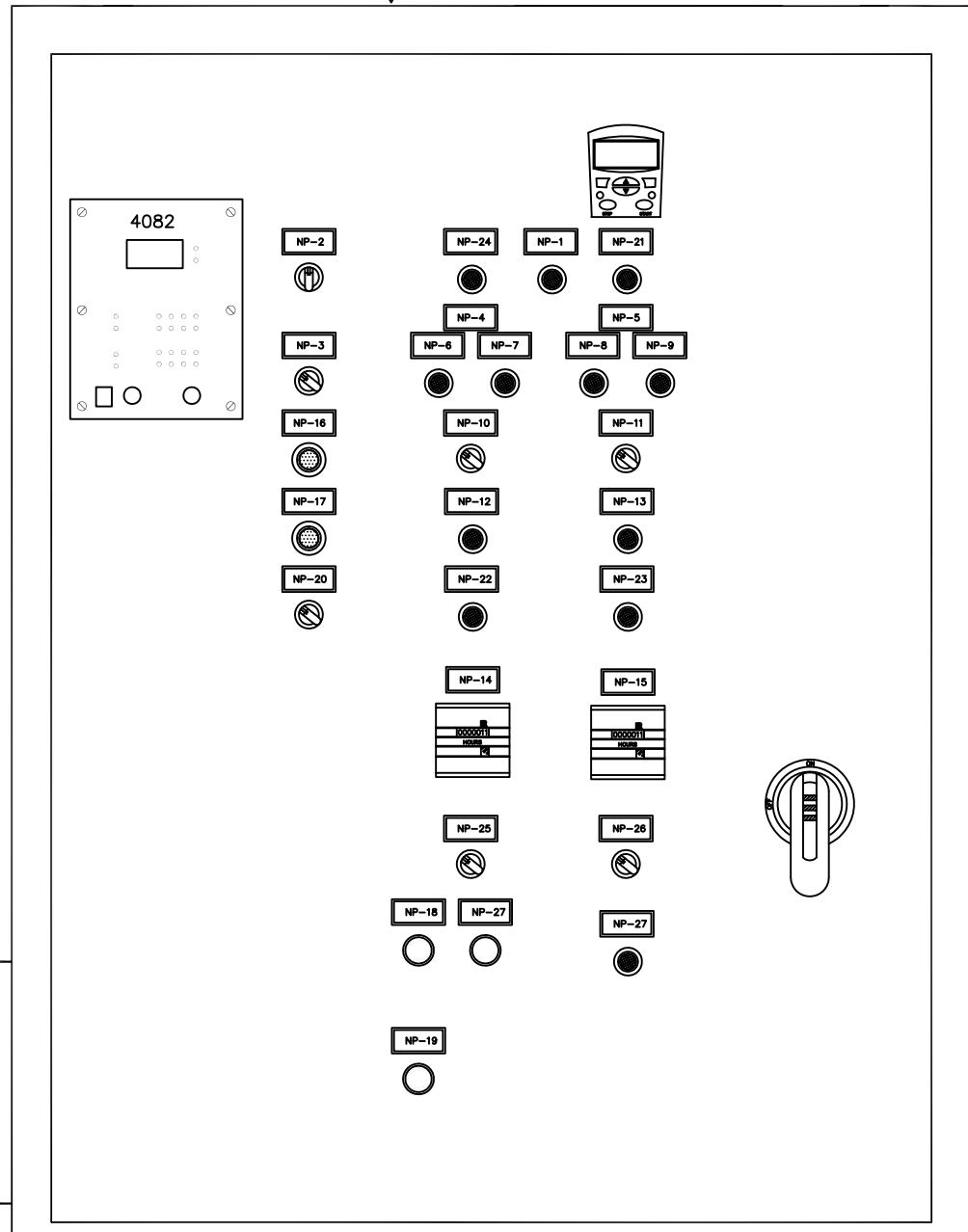
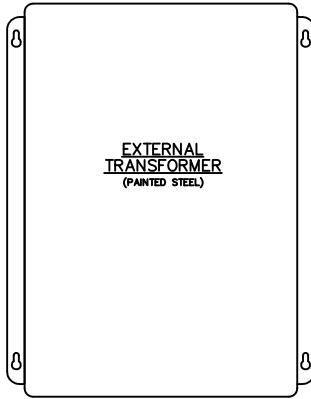


	Drawing Title CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
		R2	INSTALLED SULZER PUMP 1		01/24/22	T.L.
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 3/07/06	S/N	Sales Engineer C.C.	Application Engineer R.C.	DRAWN BY C. RACHAL	APPROVED BY	DATE BY
	Project Title DUPLEX PUMP CONTROL 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-2206R2
						SHEET NUMBER
						6



	Drawing Title CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
		R2	SCHNEIDER SOFT START			
			INSTALLED SULZER PUMP 1		01/24/22	T.L.
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 3/07/06	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-2206R2
						SHEET NUMBER 7

NEMA 3R PAINTED STEEL ENCLOSURE



VIEW OF SWING OUT PANEL

NAMEPLATE SCHEDULE

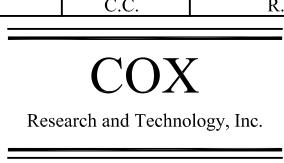
NP-1	HIGH LEVEL	NP-14	RUN TIME
NP-2	PI-ALT-P2	NP-15	SILENCE
NP-3	BYPASS-VFD	NP-17	ALARM RESET
NP-4	PUMP 1	NP-18	PUMP 1 OVERLOAD/RESET
NP-5	PUMP 2	NP-19	PUMP 2 OVERLOAD/RESET
NP-6	PTD CALL	NP-20	TRANSDUCER/FLOATS
NP-7	BYPASS CALL	NP-21	LOW LEVEL
NP-8	VFD CALL	NP-22	SOFT START FAULT
NP-9	BYPASS CALL	NP-23	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.
	ENCLOSURE		SCHNEIDER SOFT START			
		R2	INSTALLED SULZER PUMP 1		01/24/22	T.L.
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 3/07/06	S/N	Sales Engineer	DRAWN	APPROVED		
	C.C.	Application Engineer	BY C. RACHAL	BY	DATE	
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	DUPLEX PUMP CONTROL PANEL			Ph. (225)756-3271 Fax (225)755-1030	DRAWING NUMBER CP-2206R2	
					SHEET NUMBER 8	

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	1	FINDER	55.34.8.120.0050	CR16
49	1	FINDER	85.04.0.125.0000	TD8
50	2	FINDER	94.04	CR16,T8 BASE
51	1	SCHNEIDER	ATS22C21S6U	SOFT START 2
52	1	SIEMENS	52PYA	SEAL FAIL RELAY
53				
54				

	Drawing Title		49		R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.
	BILL OF MATERIALS				R2	SCHNEIDER SOFT START				
					R2	INSTALLED SULZER PUMP 1			01/24/22	T.L.
			REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
DATE 3/07/06			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 Ph. (225)756-3271 Fax (225)755-1030		PURCHASE ORDER NUMBER		
								DRAWING NUMBER		
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				9						