
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

Changed Softstart #1

AUGUST 9, 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:

-

-

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

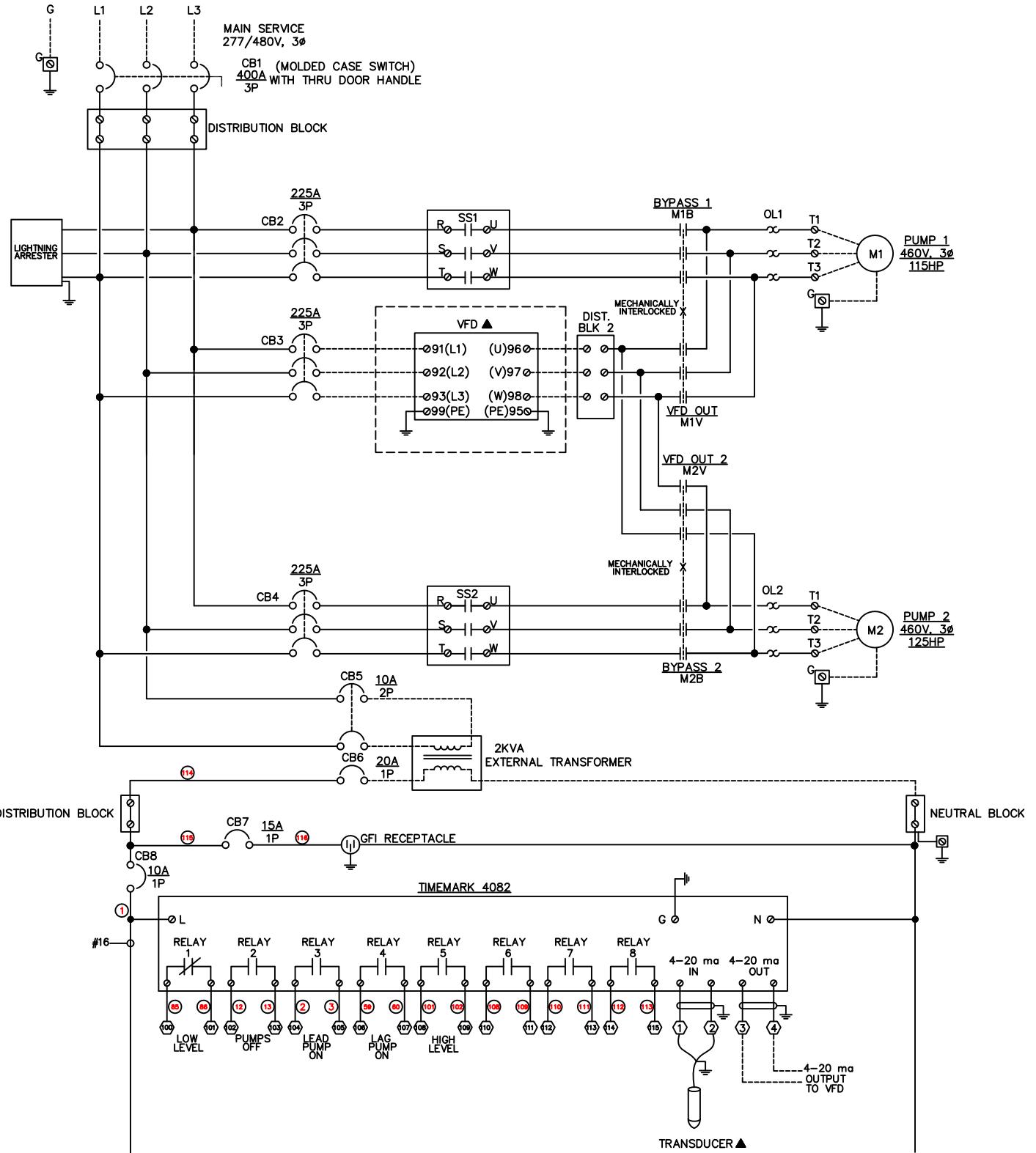
Starters - IEC

Starters - NEMA

Unpowered Alarm Circuits #

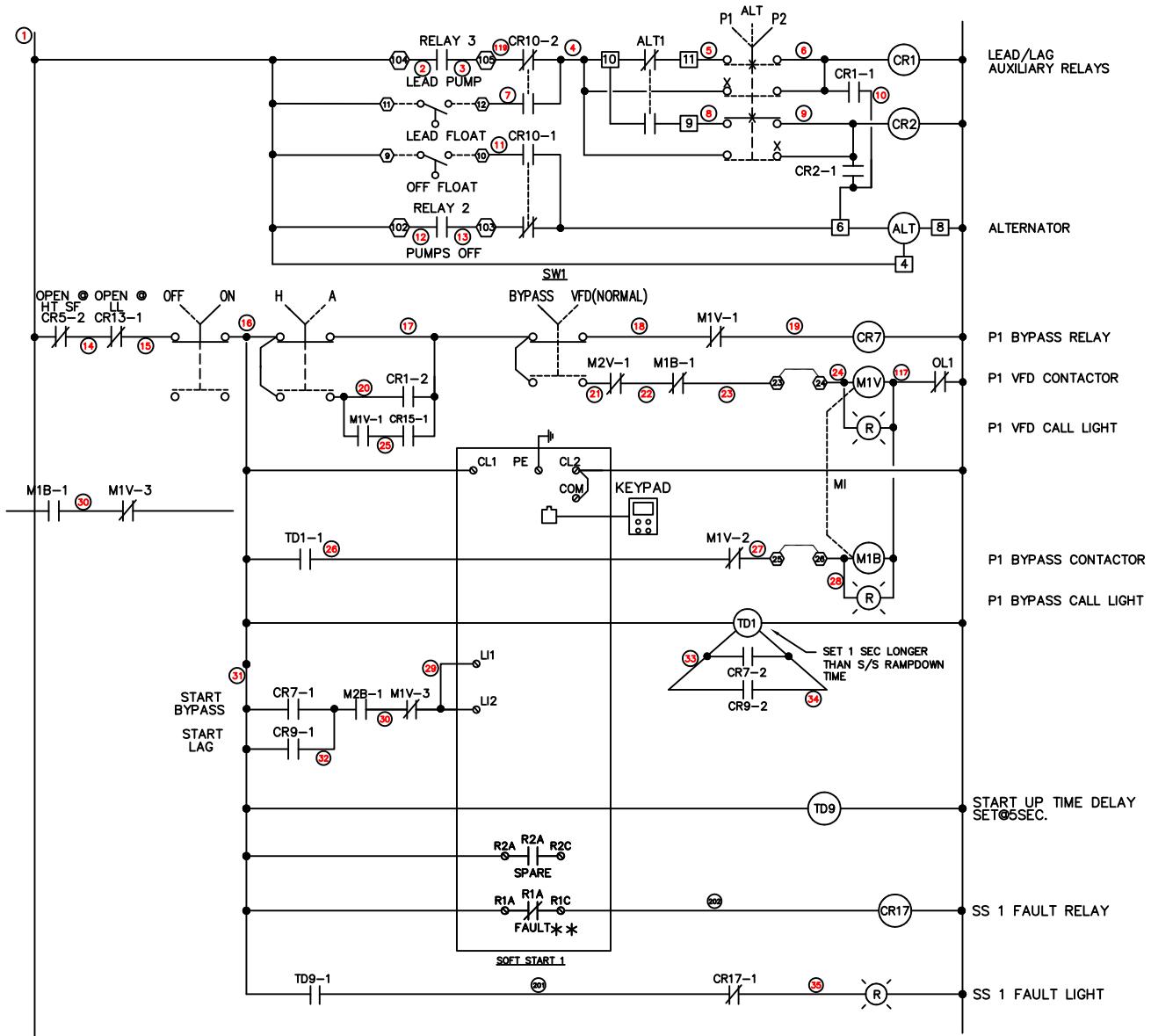
OTHER:

	Drawing Title PANEL DESCRIPTION			R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.
				R2	SCHNEIDER SOFT START				
DATE 08/09/22	REFERENCE DRAWING S/N	Sales Engineer C.C.	Application Engineer R.C.	R3	INSTALLED SULZER PUMP 1 CHANGED S.S. #1, M1V, M1B		01/24/22	T.L.	
				REVISION-LOCATION	ECN	DATE	BY		
				NO.	DRAWN	APPROVED			
				BY NCR	BY	DATE			
	Project Title DUPLEX PUMP CONTROL PANEL	<hr/> <hr/> COX <hr/> <hr/> Research and Technology, Inc. <hr/> <hr/>				P.O. Box 77808 Baton Rouge, LA 70809	PURCHASE ORDER NUMBER		
						DRAWING NUMBER CP-2206R3			
						SHEET NUMBER 1			

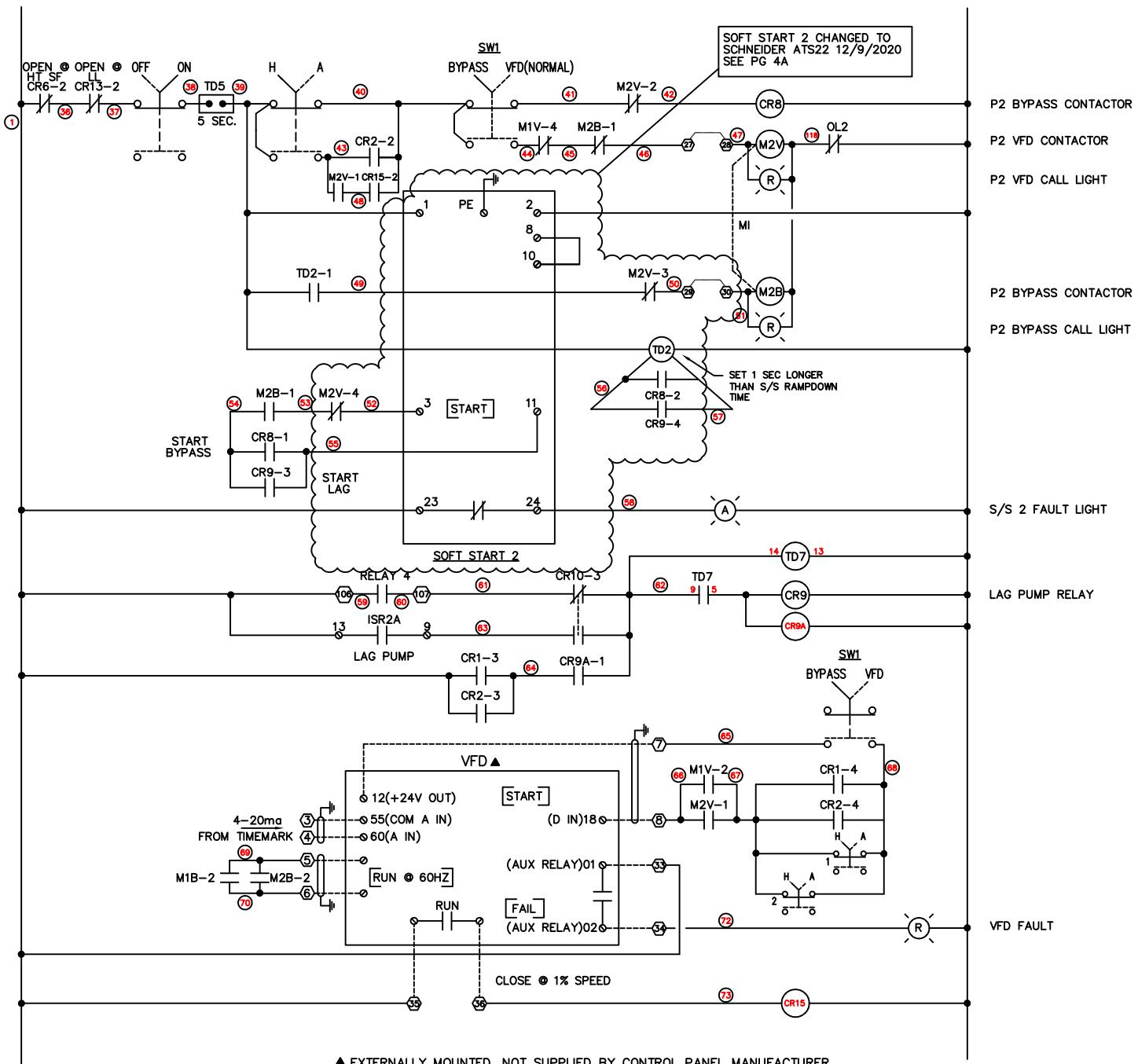


▲ EXTERNALLY MOUNTED, NOT SUPPLIED BY CONTROL PANEL MANUFACTURER

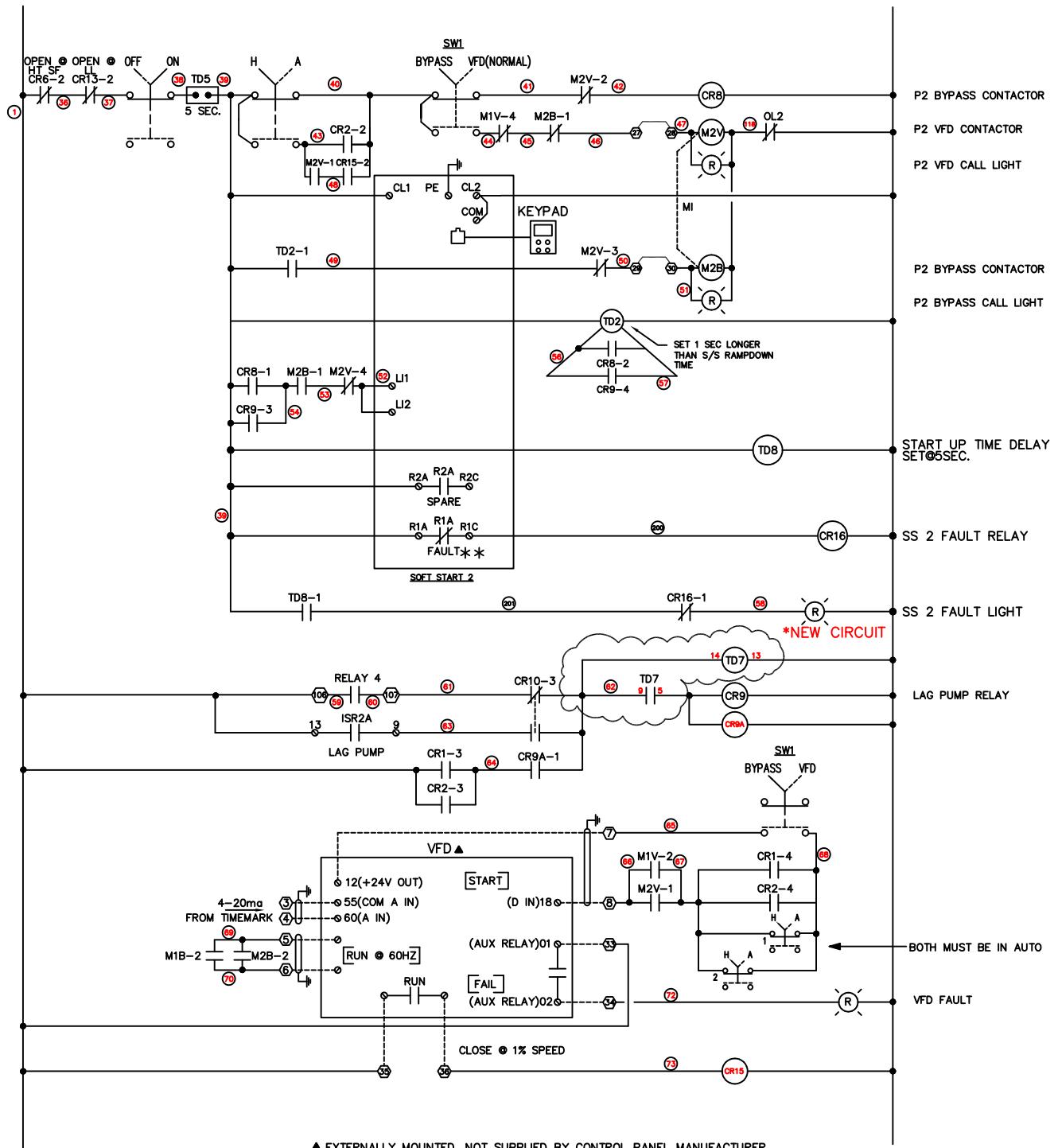
	Drawing Title			R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.			
				R2	SCHNEIDER SOFT START							
DATE 08/09/22	POWER DIAGRAM	REFERENCE DRAWING		R3	INSTALLED SULZER PUMP 1			01/24/22	T.L.			
		S/N	Sales Engineer	Application Engineer	REVISION-LOCATION	ECN	DATE	BY				
Project Title				R.C.	DRAWN	APPROVED						
DUPLEX PUMP CONTROL PANEL				BY NCR	BY	DATE		BY				
				P.O. Box 77808 Baton Rouge, LA 70809		PURCHASE ORDER NUMBER						
				Ph. (225)756-3271 Fax (225)755-1030		DRAWING NUMBER CP-2206R3						
				SHEET NUMBER 2								



Drawing Title		R1	P2 CHANGES TO BARNES NEW	12/09/20	N.B.
CONTROL DIAGRAM		R2	SCHNEIDER SOFT START		
REFERENCE DRAWING		R3	INSTALLED SULZER PUMP 1	01/24/22	T.L.
S/N			CHANGED S.S. #1, M1V, M1B	8/9/22	T.L.
C.C.		R.C.			
Project Title		DRAWN	APPROVED		
DUPLEX PUMP CONTROL PANEL		BY NCR	BY DATE		
COX		P.O. Box 77808 Baton Rouge, LA 70809			
Research and Technology, Inc.		Ph. (225)756-3271 Fax (225)755-1030	DRAWING NUMBER CP-2206R3		
			SHEET NUMBER 3		



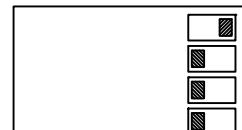
	Drawing Title CONTROL DIAGRAM	R1	P2 CHANGES TO BARNES NEW	12/09/20	N.B.
		R2	SCHNEIDER SOFT START		
		R3	INSTALLED SULZER PUMP 1	01/24/22	T.L.
	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE BY
DATE 5/10/06	S/N	Sales Engineer	DRAWN	APPROVED	
	C.C.	Application Engineer	BY NCR	BY DATE	
Project Title 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-2206R3	SHEET NUMBER	
					4



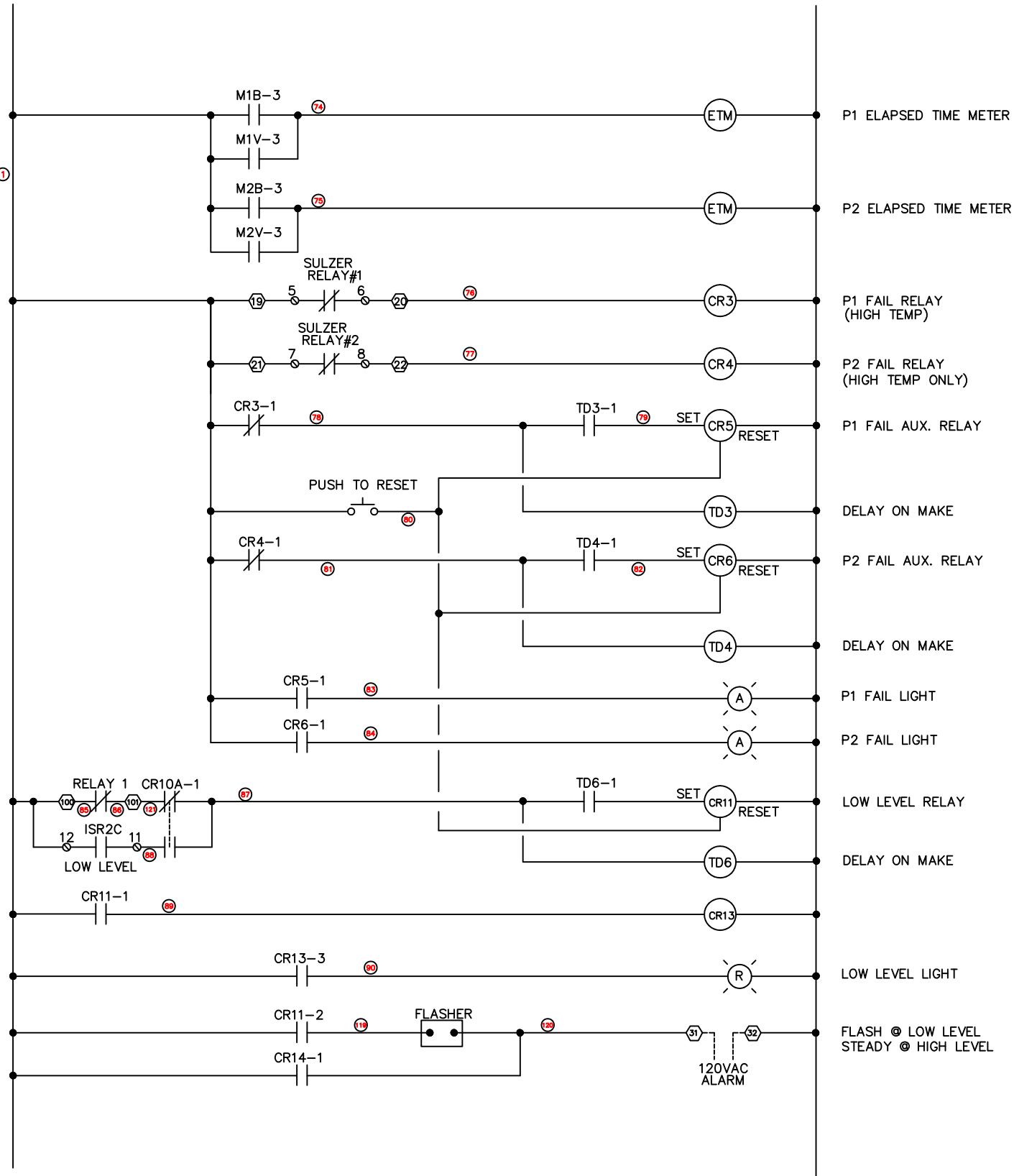
▲ EXTERNALLY MOUNTED, NOT SUPPLIED BY CONTROL PANEL MANUFACTURER

* 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

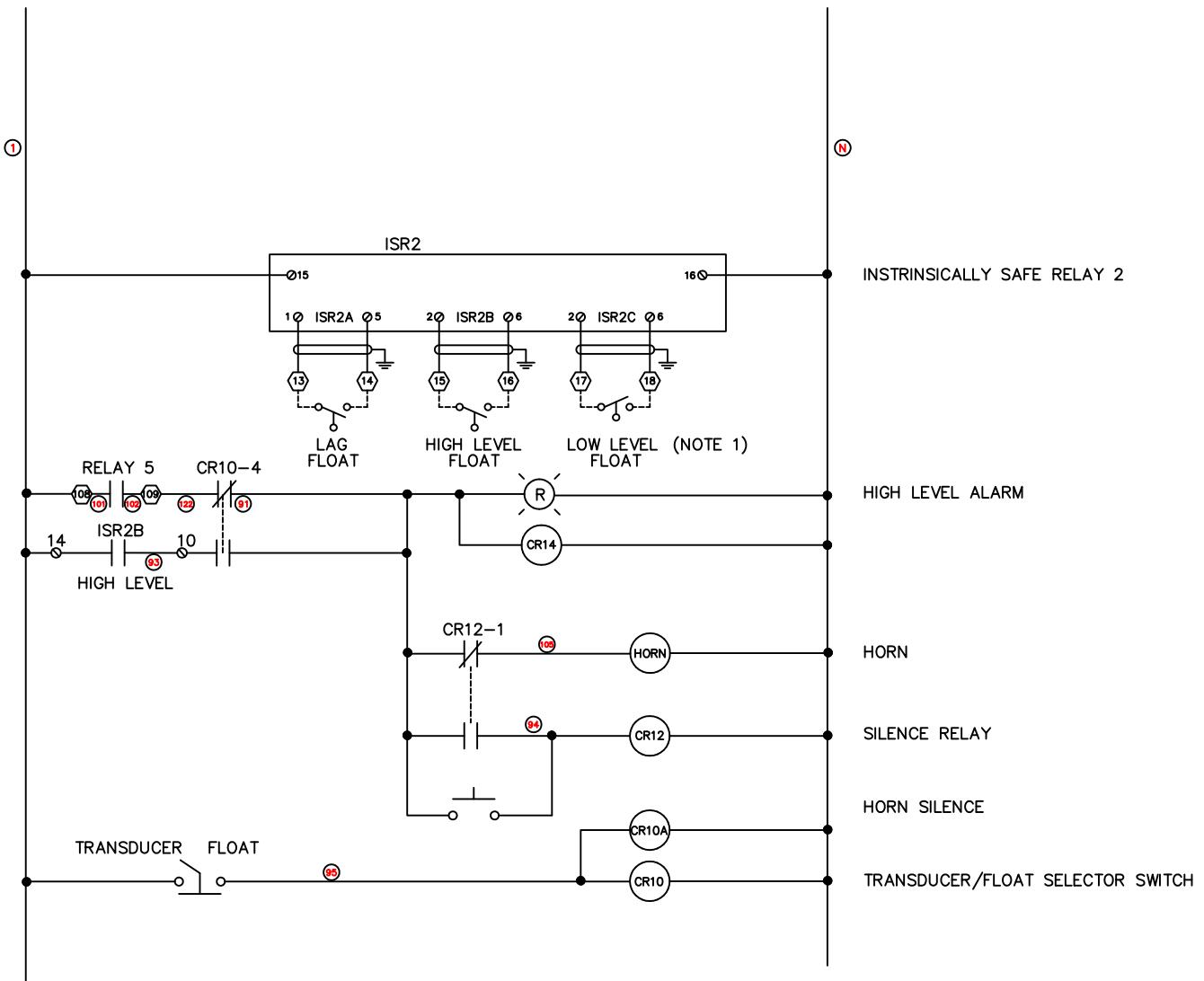
** UPON SOFT START ENERGIZATION, RELAY CLOSES IF NO FAULT. RELAY OPENS ON FAULT.



	Drawing Title LAG PUMP TIME DELAY CIRCUIT		R1	P2 CHANGES TO BARNES NEW SCHNEIDER SOFT START		12/09/20	N.B.
			R2	INSTALLED SULZER PUMP I		01/24/22	T.L.
			R3	CHANGED S.S. #1, MIV, MIB		8/9/22	T.L.
		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN Application Engineer R.C.	ECN BY NCR	DATE BY	BY
DATE 5/10/06							APPROVED
	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-2206R3	
						SHEET NUMBER 4A	

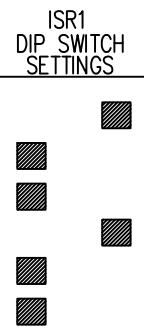


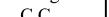
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		R2	SCHNEIDER SOFT START		
		R3	INSTALLED SULZER PUMP 1	01/24/22	T.L.
	REFERENCE DRAWING <th>NO.</th> <th>REVISION-LOCATION</th> <th>ECN</th> <th>DATE BY</th>	NO.	REVISION-LOCATION	ECN	DATE BY
DATE 08/09/22	S/N	Sales Engineer	DRAWN	APPROVED	
	C.C.	Application Engineer	BY NCR	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-2206R3
					SHEET NUMBER 5

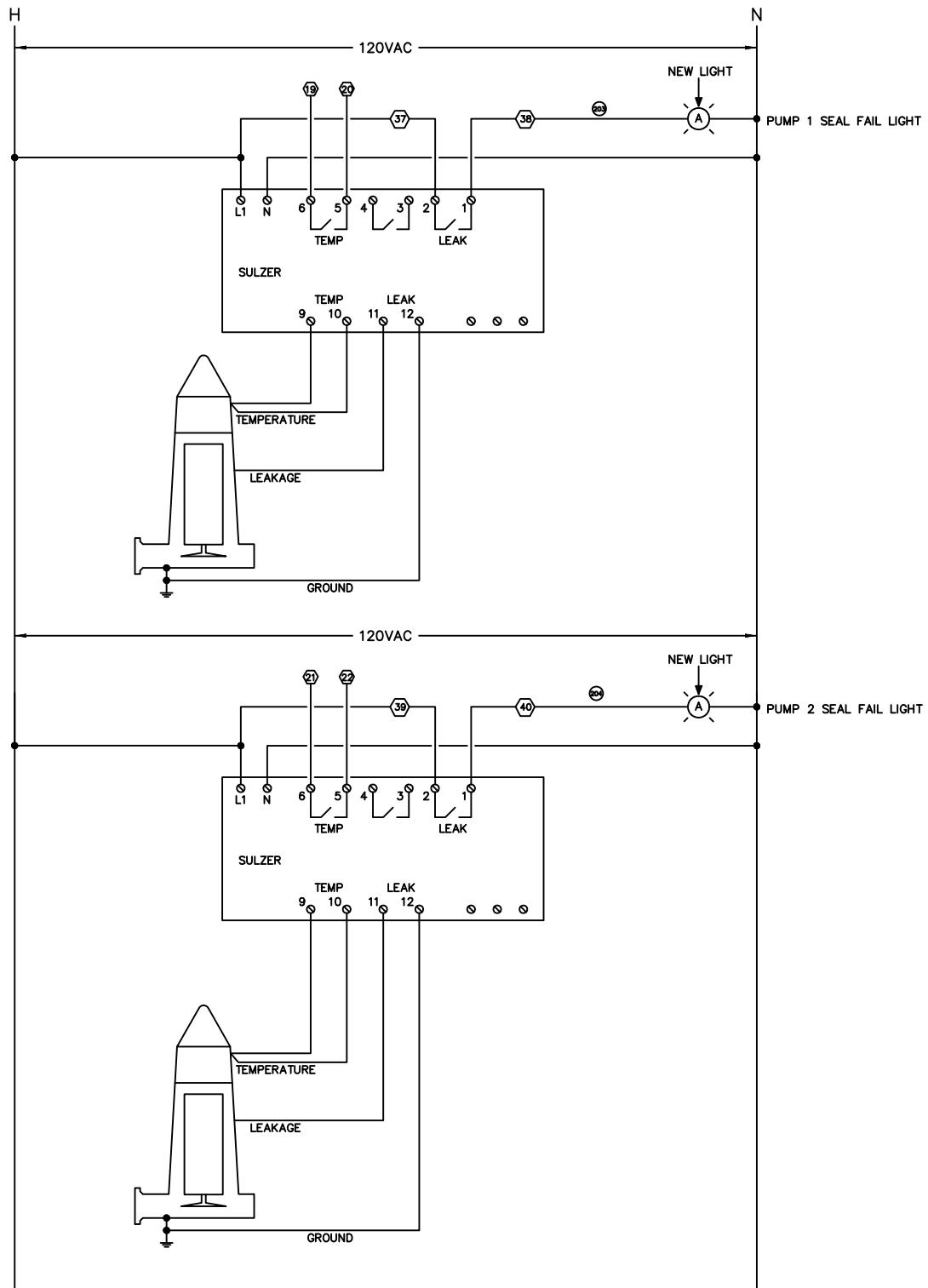


NOTE:

- 1. THIS FLOAT MUST BE A
NORMALLY CLOSED FLOAT**

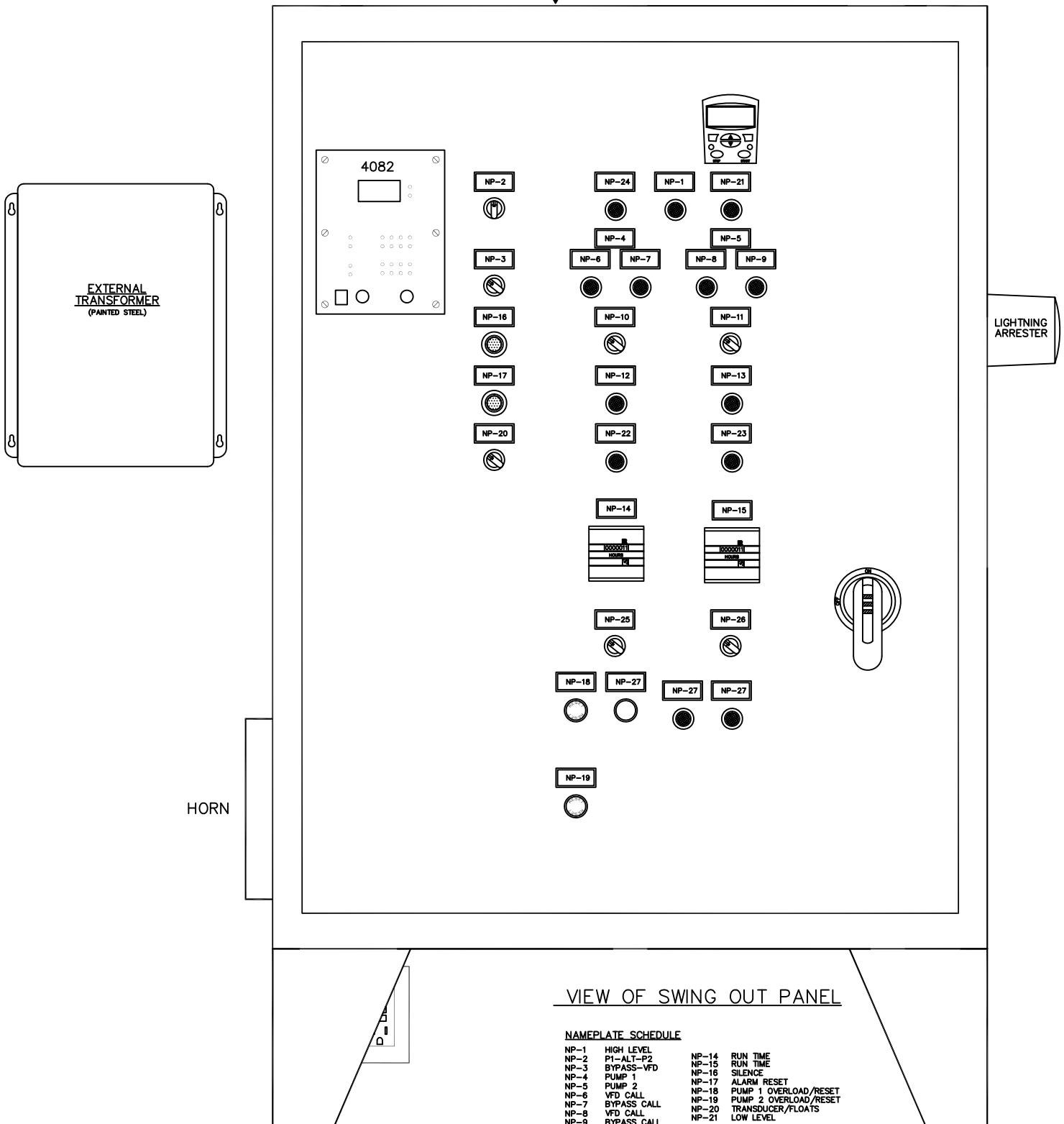


	Drawing Title CONTROL DIAGRAM		R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.
				SCHNEIDER SOFT START			
			R2	INSTALLED SULZER PUMP 1		01/24/22	T.L.
			R3	CHANGED S.S. #1, M1V, M1B		8/9/22	T.L.
DATE 08/09/22		REFERENCE DRAWING S/N	NO. Sales Engineer C.C.	REVISION-LOCATION DRAWN Application Engineer R.C.	ECN BY NCR	DATE BY	BY
						APPROVED BY	DATE
	Project Title DUPLEX PUMP CONTROL PANEL		 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-2206R3		
					SHEET NUMBER 6		



	Drawing Title CONTROL DIAGRAM		R1	P2 CHANGES TO BARNES NEW		12/09/20	N.B.	
				SCHNEIDER SOFT START				
			R2	INSTALLED SULZER PUMP 1		01/24/22	T.L.	
			R3	CHANGED S.S. #1, M1V, M1B		8/9/22	T.L.	
DATE 08/09/22		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY	
		S/N	Sales Engineer C.C.	Application Engineer R.C.	DRAWN	APPROVED		
	Project Title DUPLEX PUMP CONTROL PANEL			BY NCR	BY	DATE		
		 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-2206R3		
					SHEET NUMBER		7	

- NEMA 3R PAINTED STEEL ENCLOSURE



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

VIEW OF SWING OUT PANEL

NAMEPLATE SCHEDULE

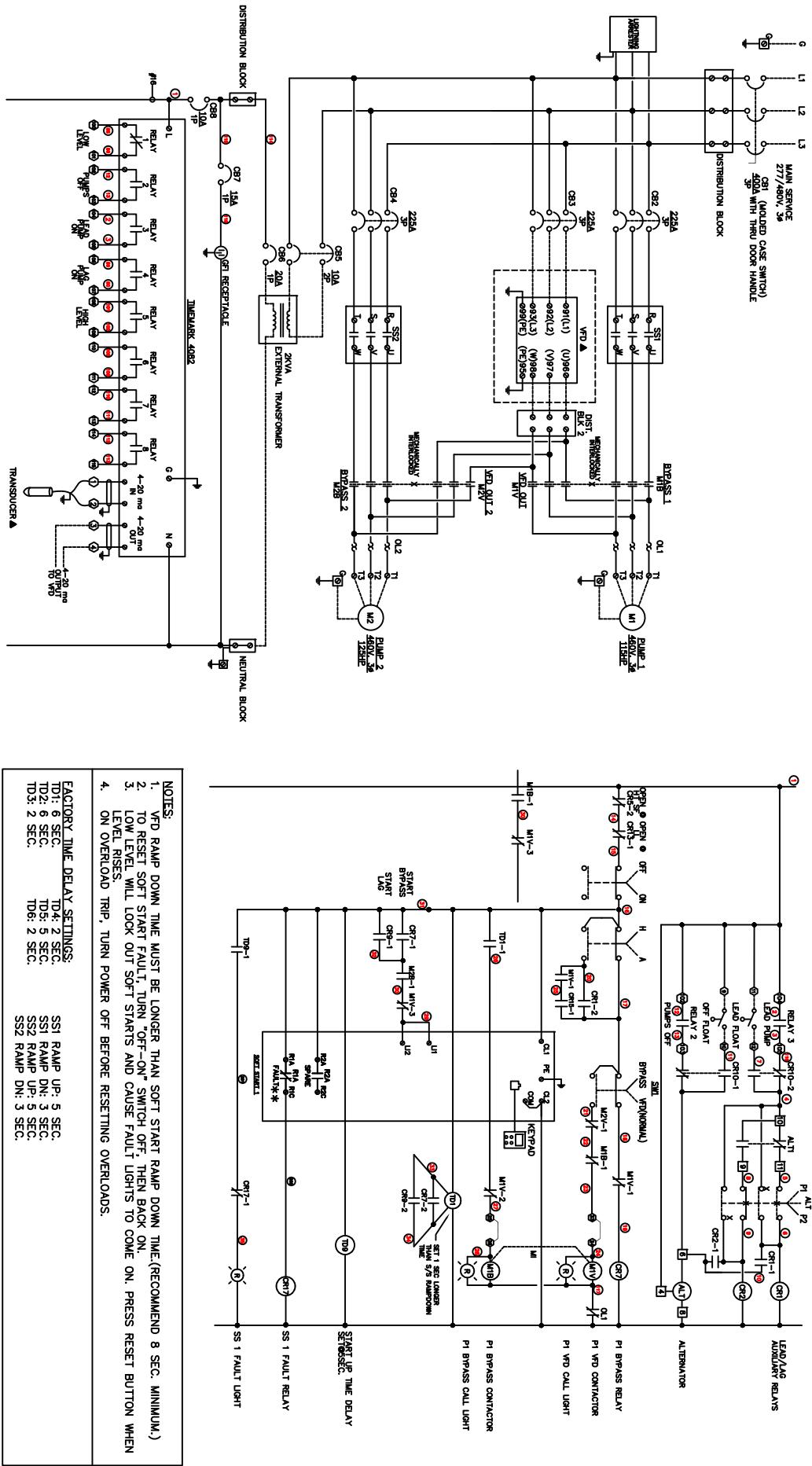
NP-1	HIGH LEVEL	NP-14	RUN TIME
NP-2	P1-ALT-P2	NP-15	RUN TIME
NP-3	BYPASS-VFD	NP-16	SILENCE
NP-4	PUMP 1	NP-17	ALARM RESET
NP-5	PUMP 2	NP-18	PUMP 2 OVERLOAD/RESET
NP-6	VFD CALL	NP-19	PUMP 2 OVERLOAD/RESET
NP-7	BYPASS CALL	NP-20	TRANSDUCER/FLOATS
NP-8	VFD CALL	NP-21	LOW LEVEL
NP-9	BYPASS CALL	NP-22	SOFT START FAULT
NP-10	PUMP 1-OFF	NP-23	SOFT START FAULT
NP-11	OFF-ON	NP-24	VFD FAULT
NP-12	PUMP FAIL	NP-25	H-A
NP-13	PUMP FAIL	NP-26	H-A
		NP-27	SEAL FAIL

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						8	

BILL OF MATERIALS

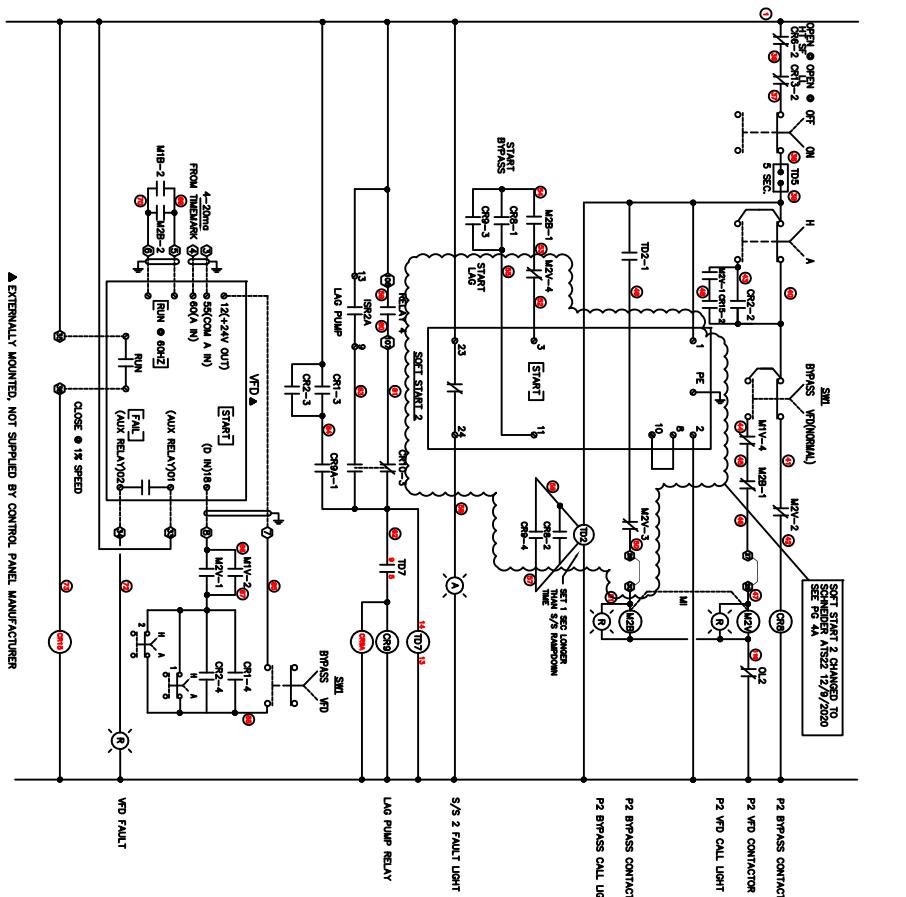
ITEM	QTY	MANUFACTURER	PART NO.	DESCRIPTION
1	1	C&I	C604816DRH	ENCLOSURE
1a	1	C&I	CI-6048P	BACKPLATE
1b	1	C&I	CI-6048SPA	DEAD FRONT
2	1	ABB	S5H400DW	MOLDED CASE SWITCH
3	2	ABB	A260N5-30-11-84	MOTOR STARTERS
4	2	ABB	TA200DU175	OVERLOAD 1,2
5	3	ABB	S3N225TW	CB2, CB3, CB4
6	1	SQUARE D	2S1F	TRANSFORMER
7	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	W388AMILCPX-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	IDEDEC	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	8	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	1	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	2	FINDER	55.34.8.120.0050	CR16, CR17
49	2	FINDER	85.04.0.125.0000	TD8, 9
50	4	FINDER	94.04	RELAY BASE
51	2	SCHNEIDER	ATS22C21S6U	SOFT START 1,2
52	2	SIEMENS	52PYA	SEAL FAIL LIGHT
53	2	ABB	AF265N5-30-11-13	MOTOR STARTER
54	1	ABB	VM19	MECHANICAL INTERLOCK
55	6	ABB	CAL19-118	AUX CONTACT BLOCK

DATE 08/09/22	Drawing Title			R1	P2 CHANGES TO BARNES NEW			12/09/20	N.B.
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	REFERENCE DRAWING			NO.	CHANGED S.S. #1, M1V, M1B			8/9/22	T.L.
	S/N		Sales Engineer	Application Engineer	DRAWN			APPROVED	
			C.C.	R.C.	BY NCR			BY	DATE
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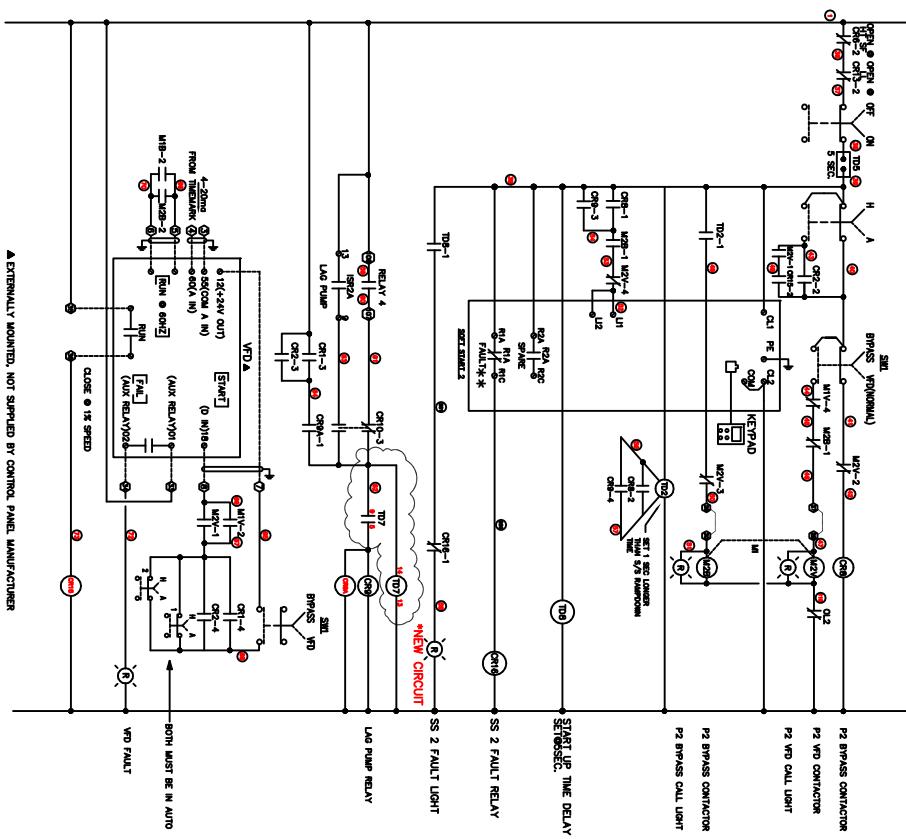
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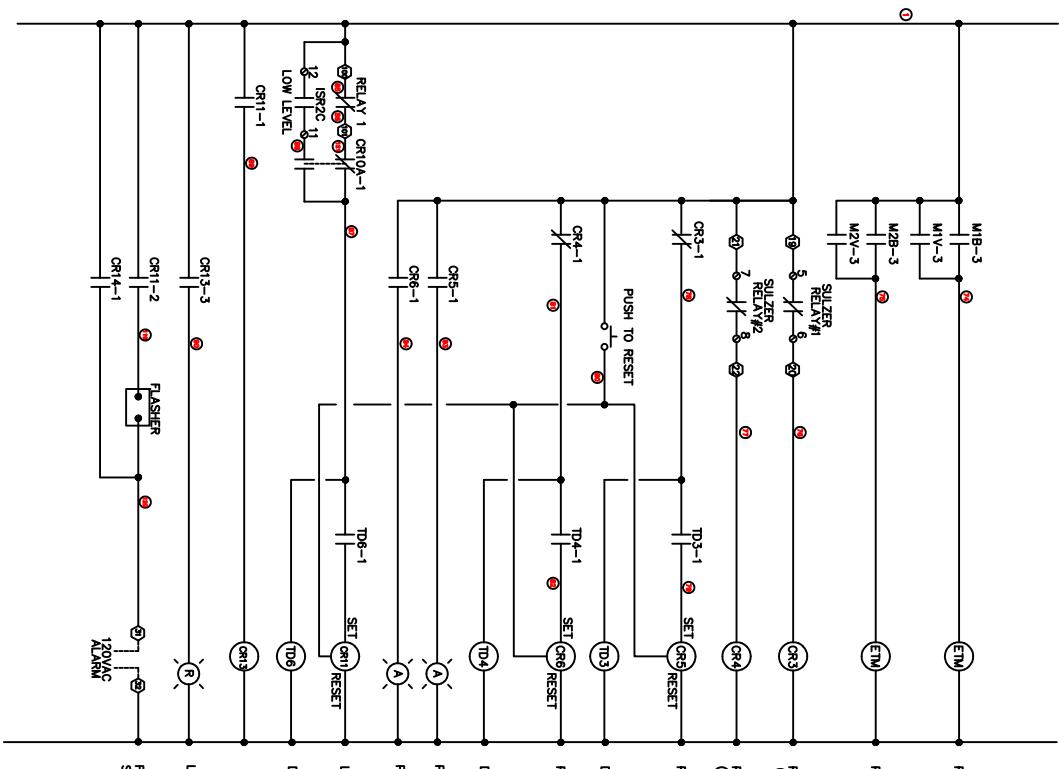
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* REMOVE WIRE #62 FROM CR9 & #9, MOVE TO TD7 #9, 14
RUN NEW WIRE FROM TD7 #5 TO CR9, #9
RUN NEW WIRE FROM CR9 NEUTRAL TO TD7 #13

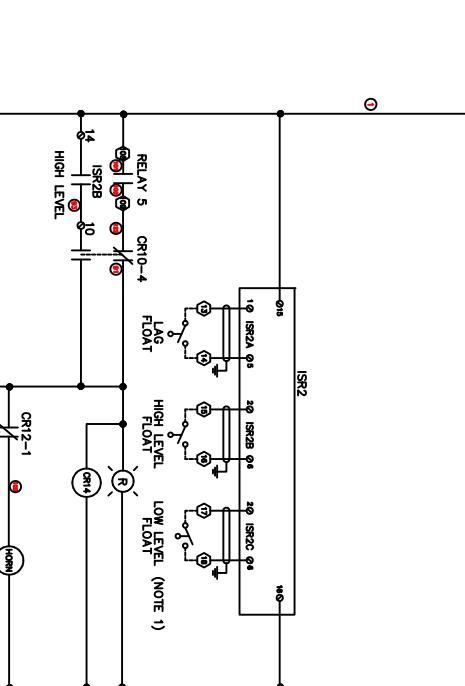
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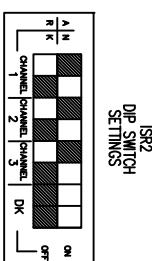
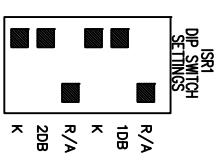


P1 ELAPSED TIME METER
P2 ELAPSED TIME METER

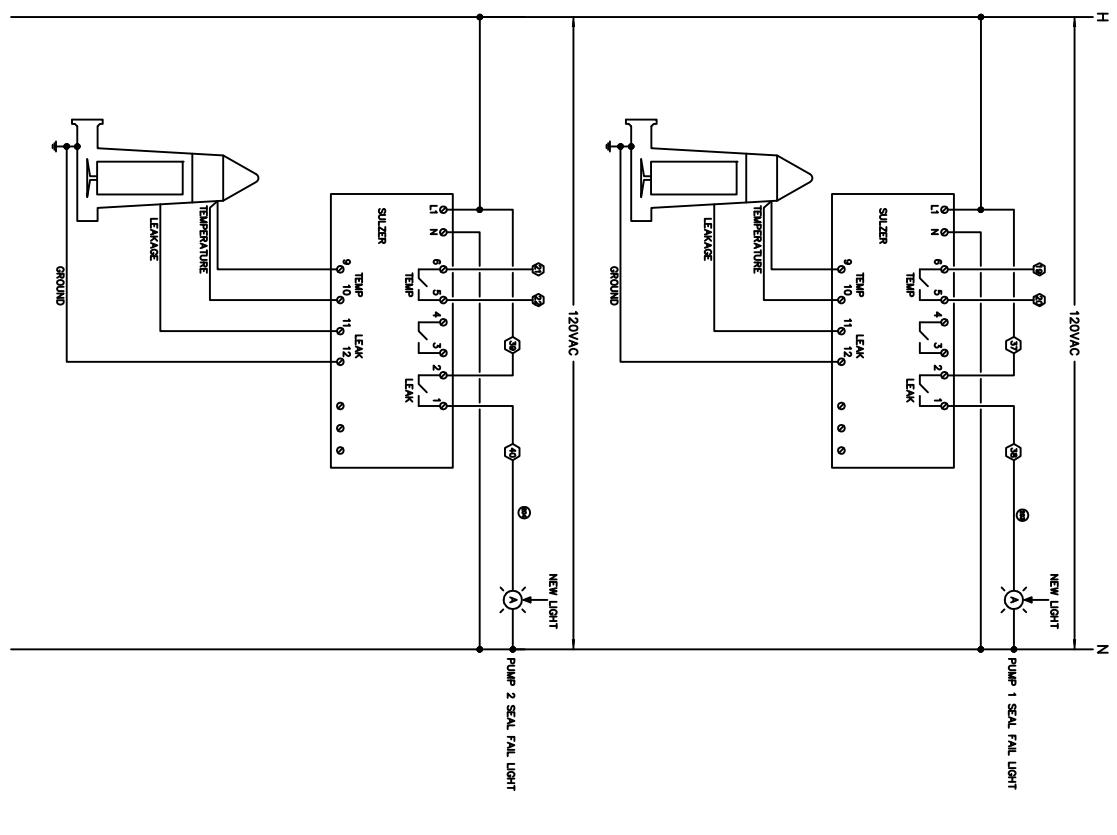


INSTRINSICALLY SAFE RELAY 2

NOTE:
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