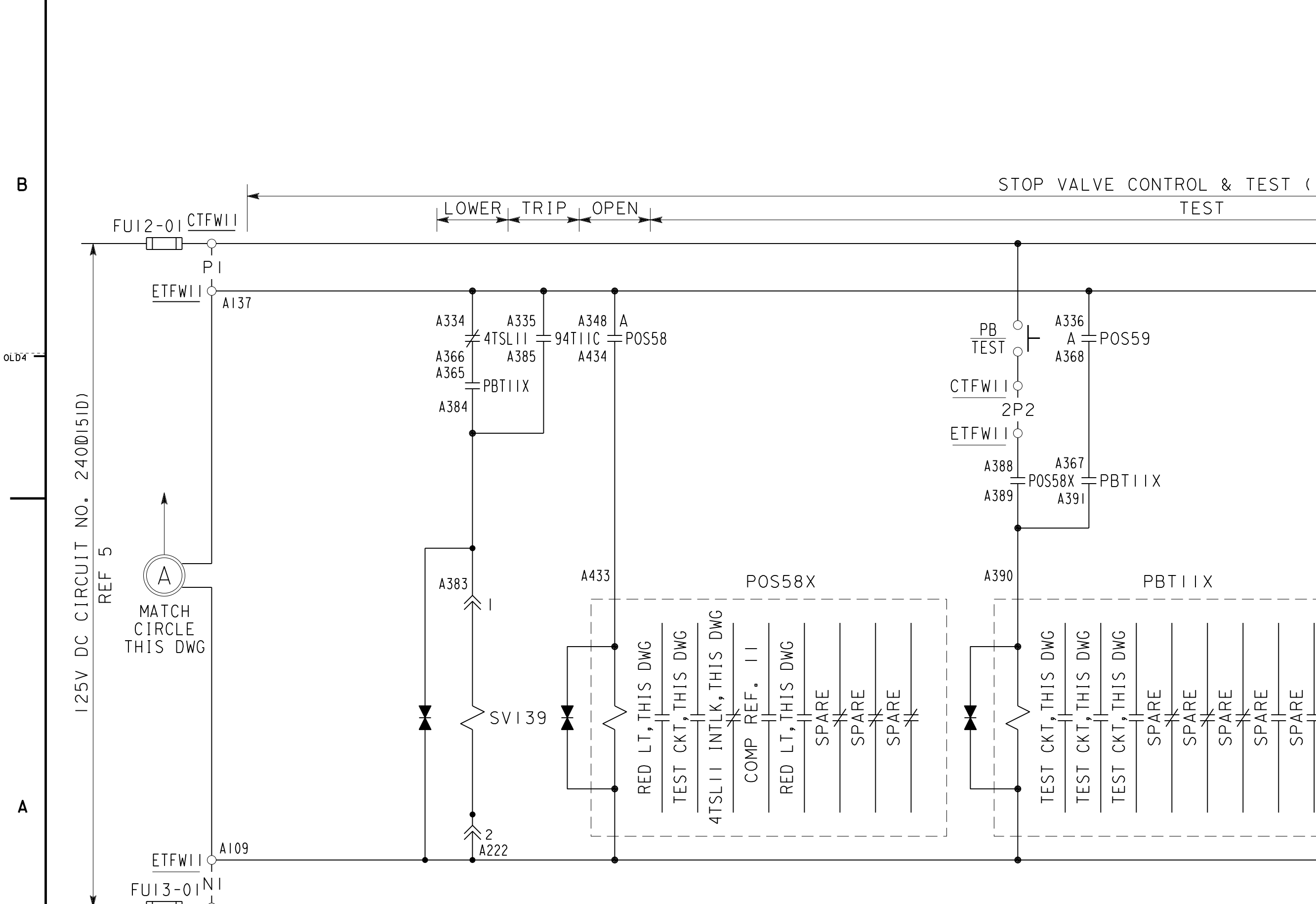
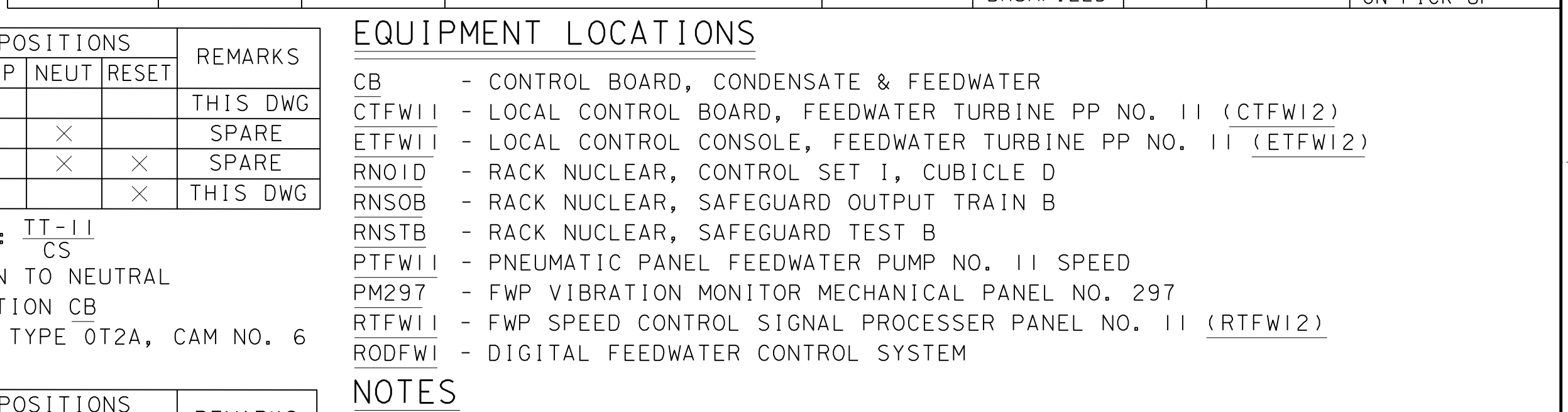


PUMP	TIME DELAY CONTROL ALARM			LOC.	RTFW11	SPEED CONTROL ALARM			ANNUNCIATOR
	CIRCUIT NO.	RELAYS	LOC.			WOODWARD GOVERNOR MICRONET TMR 5009 CONTACT	VENDOR DWG. NO.	CIRCUIT NO.	
FEEDWATER PUMP NO. 1	FPI12C	I1TD1, I1TD2, I1TD3	RTFW11			663301-43	AY2444D		
FEEDWATER PUMP NO. 2	FPI25C	I2TD1, I2TD2, I2TD3	RTFW12			663301-44	AY2446D		



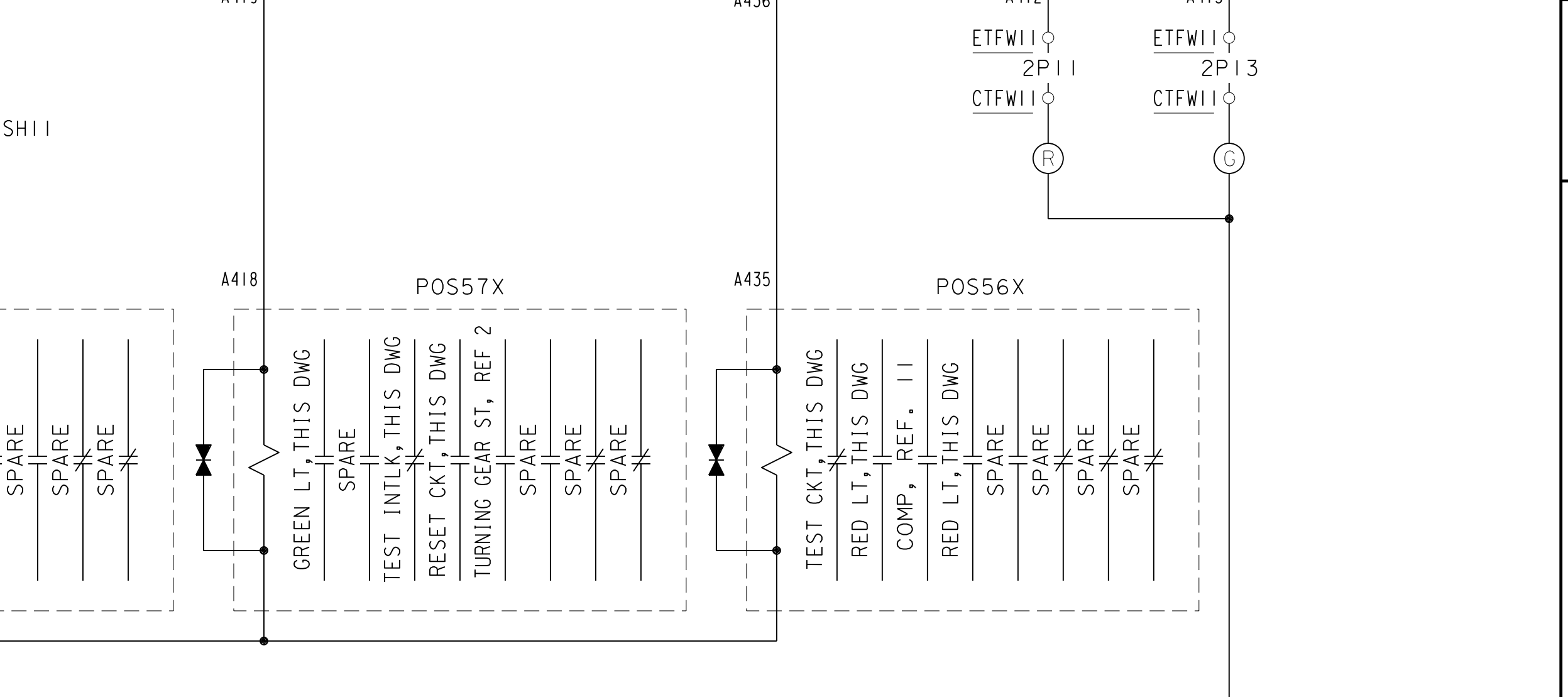
FEEDWATER PUMP NO. 1-1 SPEED CONTROL ALARM CIRCUIT NO. FPI12C  
 FWP #11 CKTS. ARE ROUTED IN "E" TRAY & FWP #12 IN "D" TRAY

TABLE OF DEVICES									
MANUFACTURER'S EQUIVALENT	DEVICE NO. PUMP NO. 11	DEVICE NO. PUMP NO. 12	FUNCTION	RATING	MFR	TYPE	CATALOG OR REF DWG	REMARKS	
FTM104A	FTM104A/DO/1	FTM104A/DO/1	TRIPS TURBINE TRIP SV		WOODWARD		REF 12		
FTM104AA	FTM104AA/DO/5	FTM104AA/DO/5	LP ACTUATOR DEMAND AT 0%		WOODWARD		REF 12		
FTM104AA	FTM104AA/DO/6	FTM104AA/DO/6	HP ACTUATOR DEMAND AT 0%		WOODWARD		REF 12		
FTM104A	FTM104A/DO/2	FTM104A/DO/2	SPEED CONTROL ALARM		WOODWARD		REF 12		
R/SVOP(LP)	POS58X	POST2X	LP STOP VALVE OPEN RELAY	120VDC 12W	WE CORP		BFD44S		
R/SVOP(HP)	POS56X	POST07X	HP STOP VALVE OPEN RELAY	120VDC 12W	WE CORP		BFD44S		
R/SVTL(LP)	4TSL11	4TSL12	LP STOP VALVE TEST RELAY	120VDC 12W	WE CORP		BFD62S		
R/SVCL(LP)	POS65X	POST9X	LP STOP VALVE CLOSED RELAY	120VDC 12W	WE CORP		BFD53S		
R/SVTL(HP)	4TSH11	4TSH12	HP STOP VALVE TEST RELAY	120VDC 12W	WE CORP		BFD62S		
R/SVCL(HP)	POS57X	POST11X	HP STOP VALVE CLOSED RELAY	120VDC 12W	WE CORP		BFD53S		
R/RP/SVTL(LP)	PBT11X	PBT12X	LP STOP VALVE TEST PB RELAY	120VDC 12W	WE CORP		BFD53S		
	YS614 CH3	YS614 CH7	FWP TURB THRUST BEARING RELAY	120V AC	BENTLY NEVADA	33007 33-01-30	6009299-191 & 195		
	CT614B	CT614D	FWP TURB THRUST BRG TRIP C/O SWITCH		ALLEN BRADLEY	800T-4201	6009299-191 & 195		
	PB804C	PB804D	SSPS TEST PUSHBUTTON						
	I1TD1	I2TD1	SPEED CONTROL ALARM TIME DELAY RELAY	24V DC	POTTER & BRUMFIELD	CNS	CNS-35-92	I1TD1-1 SEC DELAY, I1TD3-3 SEC DELAY	
	I1TD2	I2TD2	SPEED CONTROL ALARM TIME DELAY RELAY	24V DC	POTTER & BRUMFIELD	CDD	CDD-38-30014	2 SEC DELAY	
	94SV143X	94SV157X	ELECTRICAL TRIP	120VDC 12W	WE CORP		BFD22S		
R/RS	3TR11	3TR12	TURBINE RESET RELAY	120VDC 12W	WE CORP		BFD53S	(9)	
K621	K621	K621	TURB & MAIN FWP TRIP RELAY, TRAIN B	120VDC 12W	WE CORP		BFD53S	ESF "F" SIGNAL	
K804	K804	K804	TURB & MAIN FWP TRIP TEST RELAY	120VDC 12W	WE CORP		BFD53S		
R/TT-1	94T11A	94T12A	TURBINE TRIP RELAY	120VDC 12W	WE CORP		BFD84S		
R/TT-2	94T11B	94T12B	TURBINE TRIP RELAY	120VDC 12W	WE CORP		BFD24S		
	94T11C	94T12C	TRIP SEAL IN RELAY	120VDC 12W	WE CORP		BFD44S		
	94T11AX	94T12AX	TURBINE TRIP RELAY	120V AC	WE CORP	AR	AR440A		
33/SVOP(HP)	POS56	POST0	HP STOP VALVE OPEN LIMIT SWITCH	125VDC 5A	NATIONAL ACME	SL-3			
33/SVCL(HP)	POS57	POST11	HP STOP VALVE CLOSED LIMIT SWITCH	125VDC 5A	NATIONAL ACME	SL-3			
33/SVOP(LP)	POS58	POST2	LP STOP VALVE OPEN LIMIT SWITCH	125VDC 5A	NATIONAL ACME	SL-3			
33/SVTL(LP)	POS59	POST3	LP STOP VALVE TEST LIMIT SWITCH	125VDC 5A	NATIONAL ACME	SL-3			
33/SVCL(LP)	POS60	POST4	LP STOP VALVE CLOSED LIMIT SWITCH	125VDC 5A	NATIONAL ACME	SL-3			
33/VTR-1	POS61	POST5	VACUUM TRIP RESET LIMIT SWITCH	115VDC 10A	MERCOD	9-5-1			
33/VTR-2	POS62	POST6	VACUUM TRIP RESET LIMIT SWITCH	115VDC 10A	MERCOD	9-5-1	(7)	ALARM ONLY	
33/SVCL(LP)	POS65	POST9	LP STOP VALVE CLOSED	125VDC 5A	NATIONAL ACME	SL-3			
OP-VIEW	LPFW11	LPFW12	LOCAL SPEED CONTROL		WOODWARD				
63/GVP-1	PS86	PS99	GOVERNOR VALVE POSITIONER PRESS SW	115VDC 10A	MERCOD		DAW-1033-153-B	CONTACT CLOSING ON DECREASING PRESSURE @ 60PSI	
63/GVP-2	PS87	PS100	GOVERNOR VALVE POSITIONER PRESS SW	115VDC 10A	MERCOD		DPAW33-2	RANGE 0-100LBS	
63/LV	PS85	PS98	LOW VACUUM PRESSURE SWITCH	115VDC 10A	MERCOD		DAW33-2 (7)	ALARM ONLY	
63/RS	PS89	PS102	RESET PRESSURE SWITCH	115VDC 10A	MERCOD		DAW33-103	RANGE 0-200LBS	
	POST06, 708	POST07, 709	PUMP DISCHARGE PRESSURE SWITCH				102003		
71/OLLL	LS119	LS125	OIL LEVEL VERY LOW TRIP LEVEL SW	125VDC 0.4A	MAGTROL	C15	(7)	W.E. DWG-871C398 (CONTACT CLOSING ON LOW-OIL LEVEL)	
20/VTR	SV137	SV151	VACUUM TRIP RESET SOLENOID VALVE	125VDC 10W	AUTO-SW			W.E. DWG 390A685	
20/SVCL(LP)	SV139	SV153	LP STOP VALVE LOWER SOLENOID VALVE	115VDC 19W	PACIFIC FLUID		GS04-06-00VC	ENERGIZE TO CLOSE	
20/SVTL(HP)	SV141	SV155	HP STOP VALVE LOWER SOLENOID VALVE	115VDC 19W	PACIFIC FLUID		GS04-06-00VC	ENERGIZE TO CLOSE	
20/RSV	SV142	SV156	TURBINE RESET SOLENOID VALVE	125VDC 10W	AUTO-SW			W.E. DWG 390A685	
20/TT	SV143	SV157	TURBINE TRIP SOLENOID VALVE	110VDC 20W	SAVILLE		37-3A-110D (HBL82106206)		
20ASD/LPSV	SV449	SV450	LP ABOVE SEAT DRAIN SOLENOID VALVE	115VAC 10.5W	AUTO-SW		HTB3146	ENERGIZE TO CLOSE DRAIN VALVE	
20ASD/HPSV	SV448	SV451	HP ABOVE SEAT DRAIN SOLENOID VALVE	115VAC 10.5W	AUTO-SW		HTB3146		
33ASDC/LPSV	POS66	POS131	LP ABOVE SEAT DRAIN CLOSED LIMIT SW	125VDC 5A	NATIONAL ACME	SL-3			
33ASDC/HPSV	POS67	POS132	LP ABOVE SEAT DRAIN OPEN LIMIT SW	125VDC 5A	NATIONAL ACME	SL-3			
33ASDC/LPSV	POS68	POS133	HP ABOVE SEAT DRAIN CLOSED LIMIT SW	125VDC 5A	NATIONAL ACME	SL-3			
33ASDC/HPSV	POS69	POS134	HP ABOVE SEAT DRAIN OPEN LIMIT SW	125VDC 5A	NATIONAL ACME	SL-3			
TDR/TT	62TTSV11	62TTSV12	TURBINE TRIP TIME DELAY RELAY	125VDC	POTTER & BRUMFIELD		CNS-35-92	5 SEC. DELAY ON PICK-UP	



EQUIPMENT LOCATIONS			
CB	- CONTROL BOARD, CONDENSATE & FEEDWATER		
CTFW11	- LOCAL CONTROL BOARD, FEEDWATER TURBINE PP NO. 11 (CTFW12)		
ETFW11	- LOCAL CONTROL BOARD, FEEDWATER TURBINE PP NO. 11 (ETFW12)		
RN01D	- RACK NUCLEAR, CONTROL SET 1, CUBICLE D		
RNSOB	- RACK NUCLEAR, SAFEGUARD OUTPUT TRAIN B		
RNSTB	- RACK NUCLEAR, SAFEGUARD TEST B		
PTFW11	- PNEUMATIC PANEL FEEDWATER PUMP NO. 11 SPEED		
PM297	- FWP VIBRATION MONITOR MECHANICAL PANEL NO. 297		
RTFW11	- FWP SPEED CONTROL SIGNAL PROCESSOR PANEL NO. 11 (RTFW12)		
RODFW11	- DIGITAL FEEDWATER CONTROL SYSTEM		

CONTACTS		POSITIONS		REMARKS
TRIP	NEUT	CLOSE	OPEN	
-	-	X	X	THIS DWG
-	-	X	X	THIS DWG
-	-	X	X	THIS DWG
-	-	X	X	THIS DWG



FEEDWATER PUMP NO. 1-1 SPEED CONTROL ALARM CIRCUIT NO. FPI12C  
 FWP #11 CKTS. ARE ROUTED IN "E" TRAY & FWP #12 IN "D" TRAY

RASTER=437567-1-0.dgn  
 C:\P\437567-1-0.dgn  
 C:\Users\TAZI\Desktop\03-12-2019

DATE 03-12-2019	REVISION DESCRIPTION Revised Per DFT-74824	DWG SCALES BILL OF MATL: SUPDS: SUPDS BY:
D.O. TAZI		DWG NO. 437567
R.E. RXG2		SHEET 1
T.V. N/A		PAGE 0
P.E. N/A		REV 38

UNIT 1  
 ELECTRICAL SCHEMATIC DIAGRAM  
 FEEDWATER PUMP TURBINE CONTROL

PACIFIC GAS AND ELECTRIC COMPANY  
 SAN FRANCISCO, CALIFORNIA

U2-441270