TABLE 1: ANNUNCIATORS/ALARM LIGHTS

INDICATION	FUNCTION	SOURCE OF SIGNAL
ALARM	LOW REACTOR WATER LEVEL 1.5	LOGIC OUTPUT
ALARM	HIGH DRYWELL PRESSURE	LOGIC OUTPUT
ALARM	HPCF PUMP MOTOR OVERLOAD LOOP B	M/C HPCF PUMP B POWER FAILURE
ALARM	HPCF PUMP MOTOR OVERLOAD LOOP C	M/C HPCF PUMP C POWER FAILURE
ALARM	OVERLOAD ANY HPCF VLV MOTOR LOOP B	MOTOR CONTROL CENTER
ALARM	OVERLOAD ANY HPCF VLV MOTOR LOOP C	MOTOR CONTROL CENTER
ALARM	HPCF LOOP B MANUAL INITIATION ARMED	PBS
ALARM	HPCF LOOP C MANUAL INITIATION ARMED	PBS
ALARM	HIGH REACTOR WATER LEVEL 8	LOGIC OUTPUT
ALARM	HPCF LOOP B INITIATED	LOGIC OUTPUT
ALARM	HPCF LOOP C AUTO INITIATION	LOGIC OUTPUT
ALARM	HPCF LOOP B OUT OF SERVICE	LOGIC OUTPUT, COS
ALARM	HPCF LOOP C OUT OF SERVICE	LOGIC OUTPUT, COS
ALARM	HPCF PUMP B LOW-LOW SUCTION PRESSURE	PSZ603B
ALARM	HPCF PUMP C LOW-LOW SUCTION PRESSURE	PSZ603C (NOT HARDWIRED)
ALARM	HPCF PUMP B DISCHARGE LINE NOT FILLED	PSZ602B-2
ALARM	HPCF PUMP B HIGH SUCTION PRESSURE	PSZ602B-1
ALARM	HPCF PUMP C DISCHARGE LINE NOT FILLED	PSZ602C-2
ALARM	HPCF PUMP C HIGH SUCTION PRESSURE	PSZ602C-1
WHITE LIGHT	HPCF PUMP B MANUAL OVERRIDE	LOGIC OUTPUT, CS
WHITE LIGHT	HPCF PUMP C MANUAL OVERRIDE OF AUTO INITIATION	LOGIC OUTPUT, CS
WHITE LIGHT	HPCF INJECTION VALVE F003B MANUAL OVERRIDE	LOGIC OUTPUT, CS
WHITE LIGHT	HPCF INJECTION VALVE F003C MANUAL OVERRIDE OF AUTO INITIATION	LOGIC OUTPUT, CS
WHITE LIGHT	HPCF LOOP B INITIATION SEALED-IN	LOGIC OUTPUT
WHITE LIGHT	HPCF LOOP C AUTO INITIATION SEALED-IN	LOGIC OUTPUT
ALARM	HPCF C MANUAL INITIATION (DIVERSE)	LOGIC OUTPUT
ALARM	HPCF C PUMP C LOW-LOW SUCTION PRESSURE	PS603C (HARDWIRED)
WHITE LIGHT	HPCF C MANUAL INITIATION SEALED-IN	LOGIC OUTPUT
WHITE LIGHT	HPCF C INJECTION VALVE F003C MANUAL OVERRIDE OF (DIVERSE) MANUAL INITIATION	LOGIC OUTPUT, CS (DIVERSE)

TABLE 1: ANNUNCIATORS/ALARM LIGHTS (CONT'D)

INDICATION	FUNCTION	SOURCE OF SIGNAL
ALARM	HPCF LOOP B LOW CST WATER LEVEL	LOGIC OUTPUT
ALARM	HPCF LOOP B HIGH SUPPR POOL WATER LEVEL	LOGIC OUTPUT
ALARM	HPCF LOOP C LOW CST WATER LEVEL	LOGIC OUTPUT
ALARM	HPCF LOOP C HIGH SUPPR POOL WATER LEVEL	LOGIC OUTPUT
WHITE LIGHT	HPCF LOOP B HIGH REACTOR WATER LEVEL 8 SEALED-IN	LOGIC OUTPUT
WHITE LIGHT	HPCF LOOP C HIGH REACTOR WATER LEVEL 8 SEALED-IN	LOGIC OUTPUT
ALARM	HPCF LOOP B PUMP CONTROL SW IN PULL LOCK	PULL LOCK
ALARM	HPCF LOOP C PUMP CONTROL SW IN PULL LOCK	PULL LOCK
ALARM	HPCF LOOP B LOSS OF LOGIC POWER SOURCE	LOGIC OUTPUT
ALARM	HPCF LOOP C LOSS OF LOGIC POWER SOURCE	LOGIC OUTPUT
ALARM	HPCF LOOP B TESTING	CS
ALARM	HPCF LOOP C TESTING	CS
ALARM	HPCF PUMP B TRIP	LOGIC OUTPUT
ALARM	HPCF PUMP C TRIP	LOGIC OUTPUT
ALARM	EMERGENCY CONTAINMENT FLOODING-CST/SP SUCTION TRANSFER OVERRIDE LOOP B	KOS
ALARM	EMERGENCY CONTAINMENT FLOODING-CST/SP SUCTION TRANSFER OVERRIDE LOOP C	KOS
ALARM	MCC EQUIPMENT IN TEST MODE (THERMAL RELAY NOT BYPASSED) FOR LOOP B	KOS
ALARM	MCC EQUIPMENT IN TEST MODE (THERMAL RELAY NOT BYPASSED) FOR LOOP C	KOS
ALARM	HPCF LOOP B FLOW LOW	FIS-Z608B, PS-Z607B
ALARM	HPCF LOOP C FLOW LOW	FIS-Z608C, PS-Z607C

FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 2 of 17)

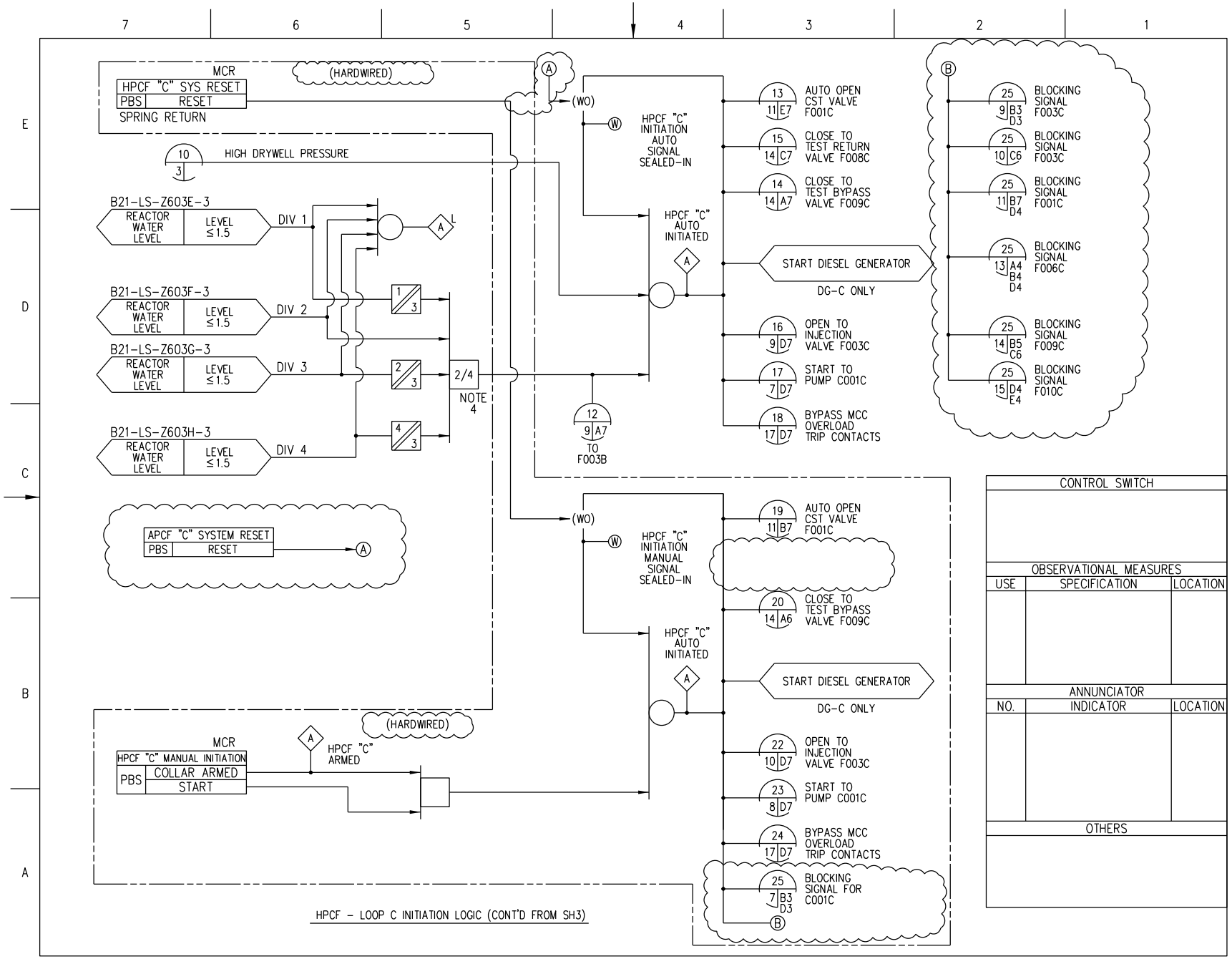


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 5 of 17)

STP 3 & 4 Rev.2

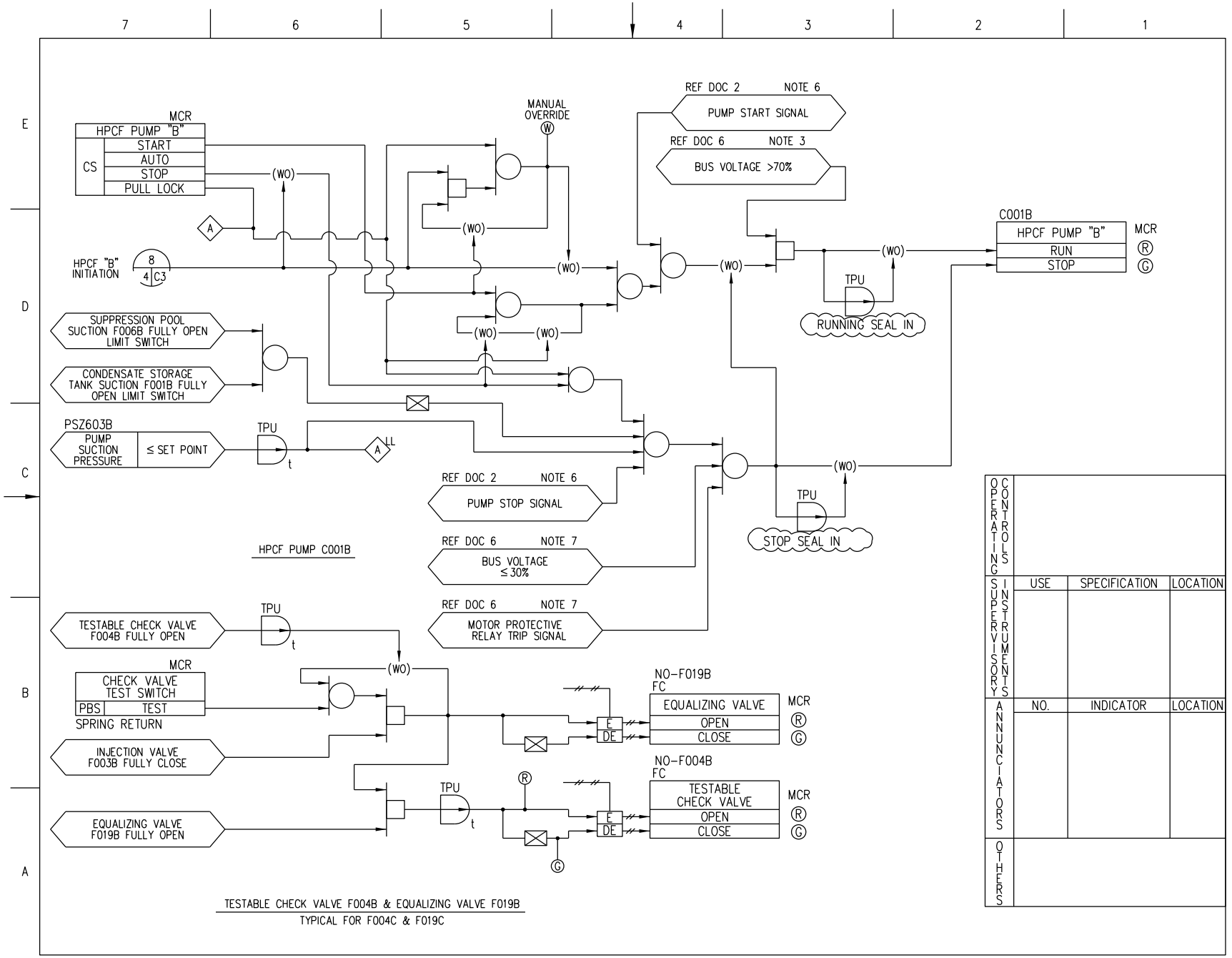


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 6 of 17)

STP 3 & 4 Rev.2

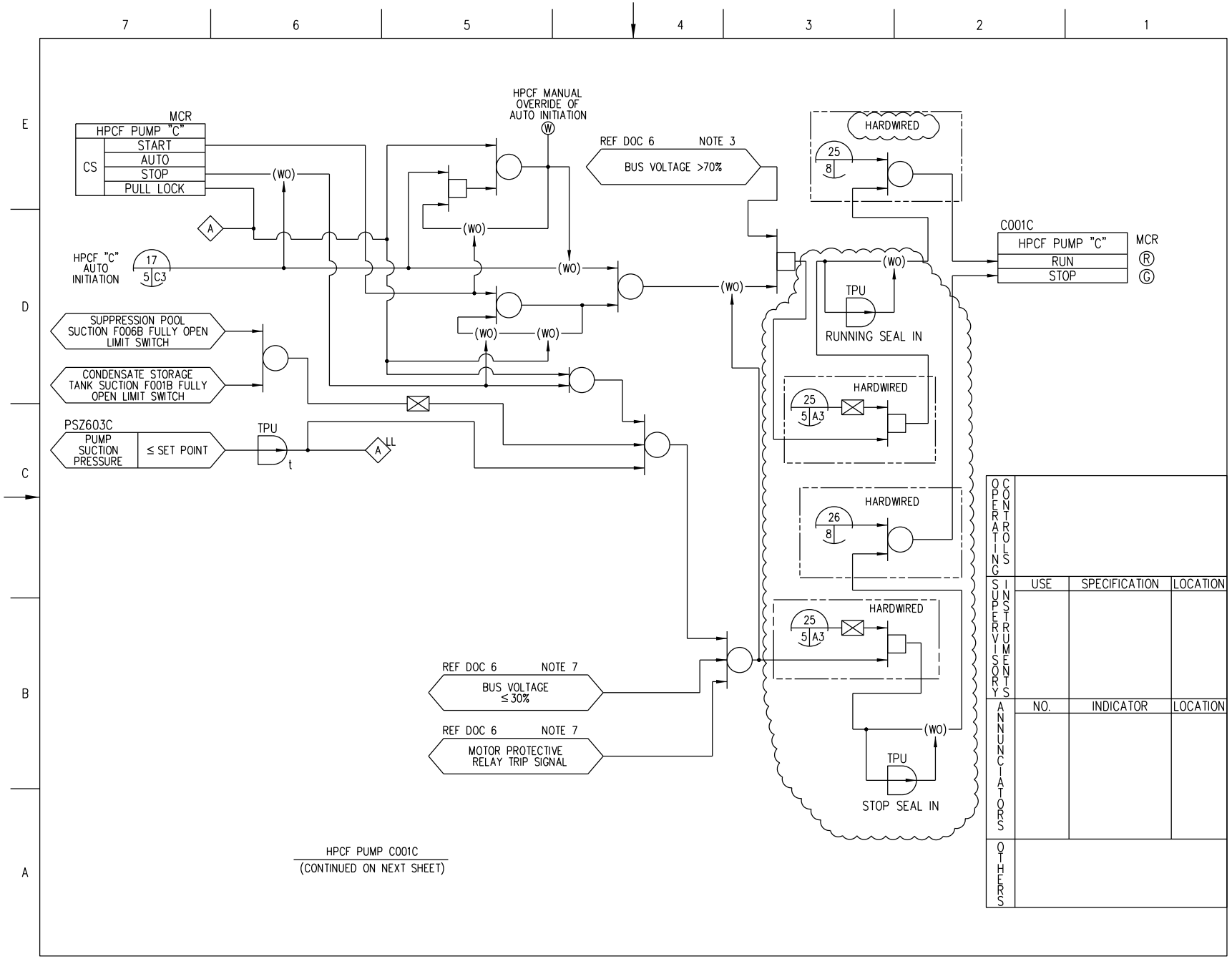


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 7 of 17)

STP 3 & 4 Rev.2

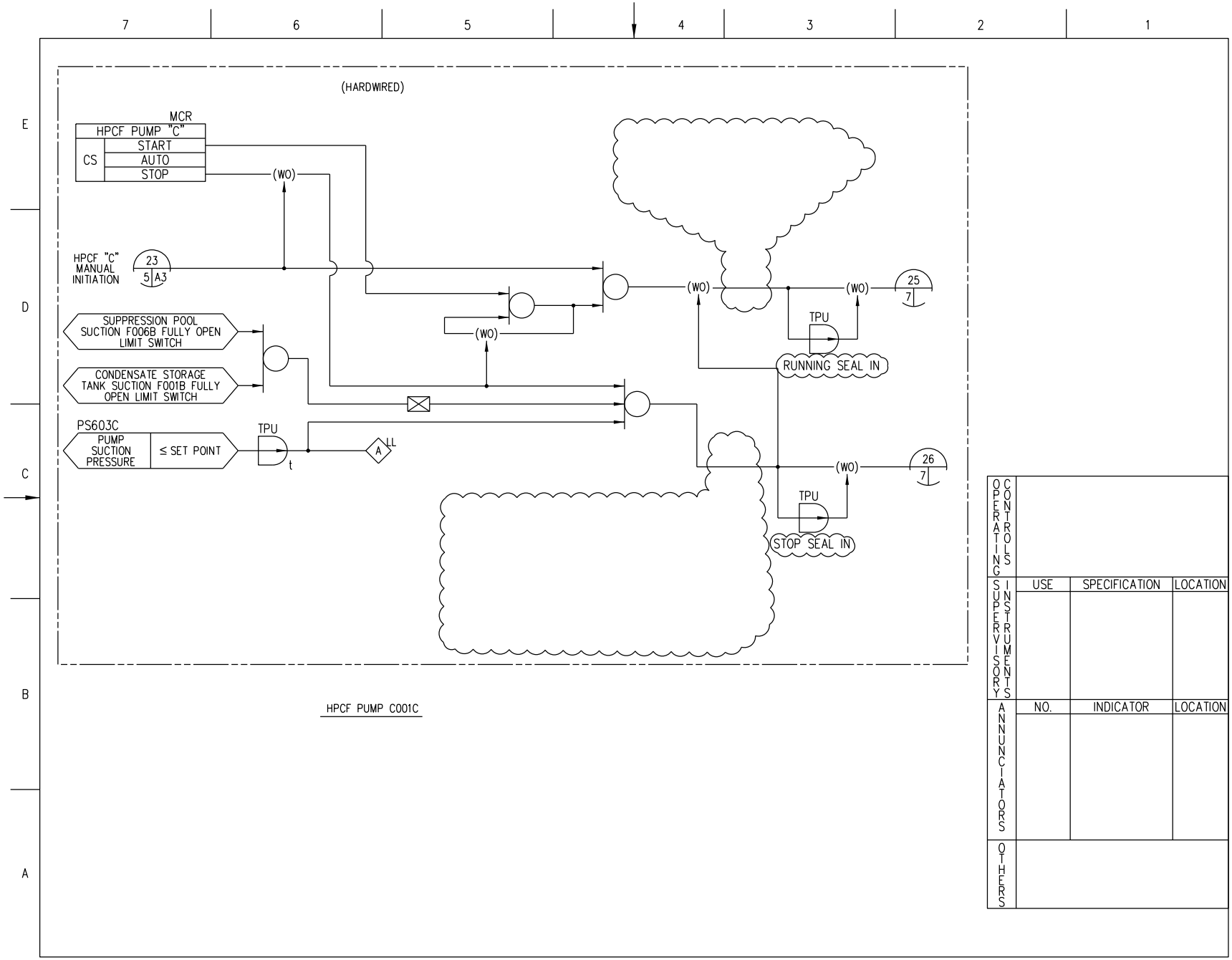


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 8 of 17)

STP 3 & 4 Rev.2

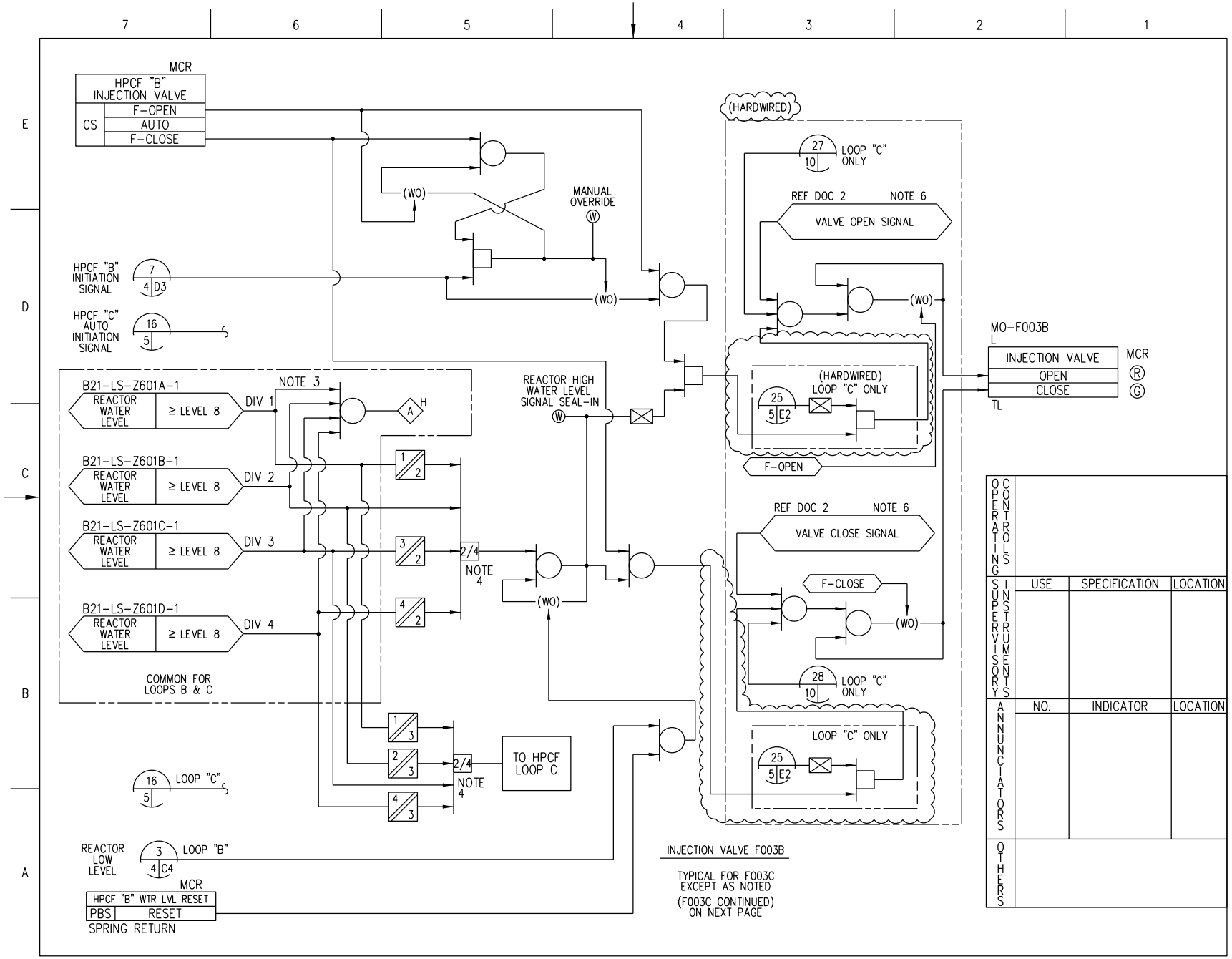
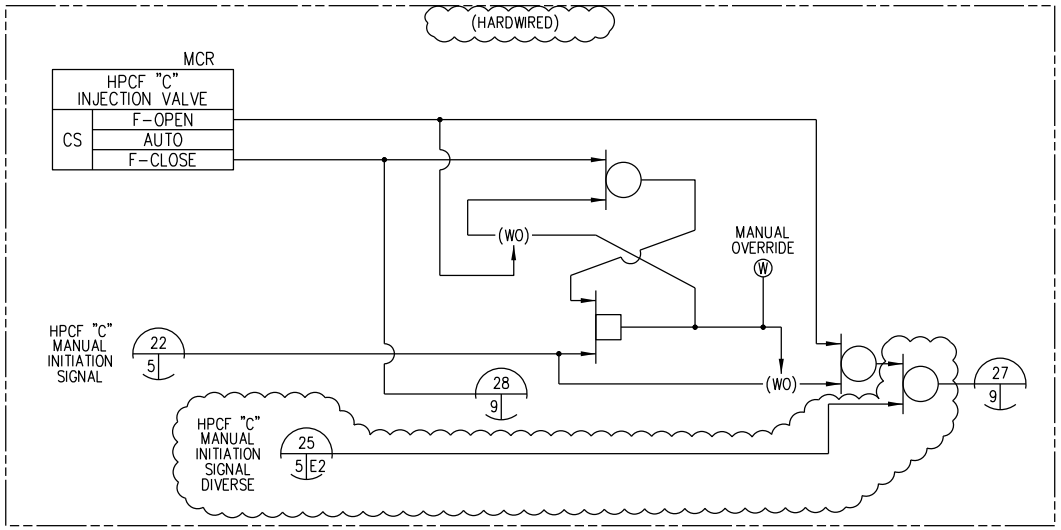


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 9 of 17)

STP 3 & 4 Rev.2



INJECTION VALVE F003C

OPERATING CONTROLS				
SUPERVISORY INSTRUMENTS		USE	SPECIFICATION	LOCATION
ANNUNCIATORS		NO.	INDICATOR	LOCATION
OTHERS				

FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 10 of 17)

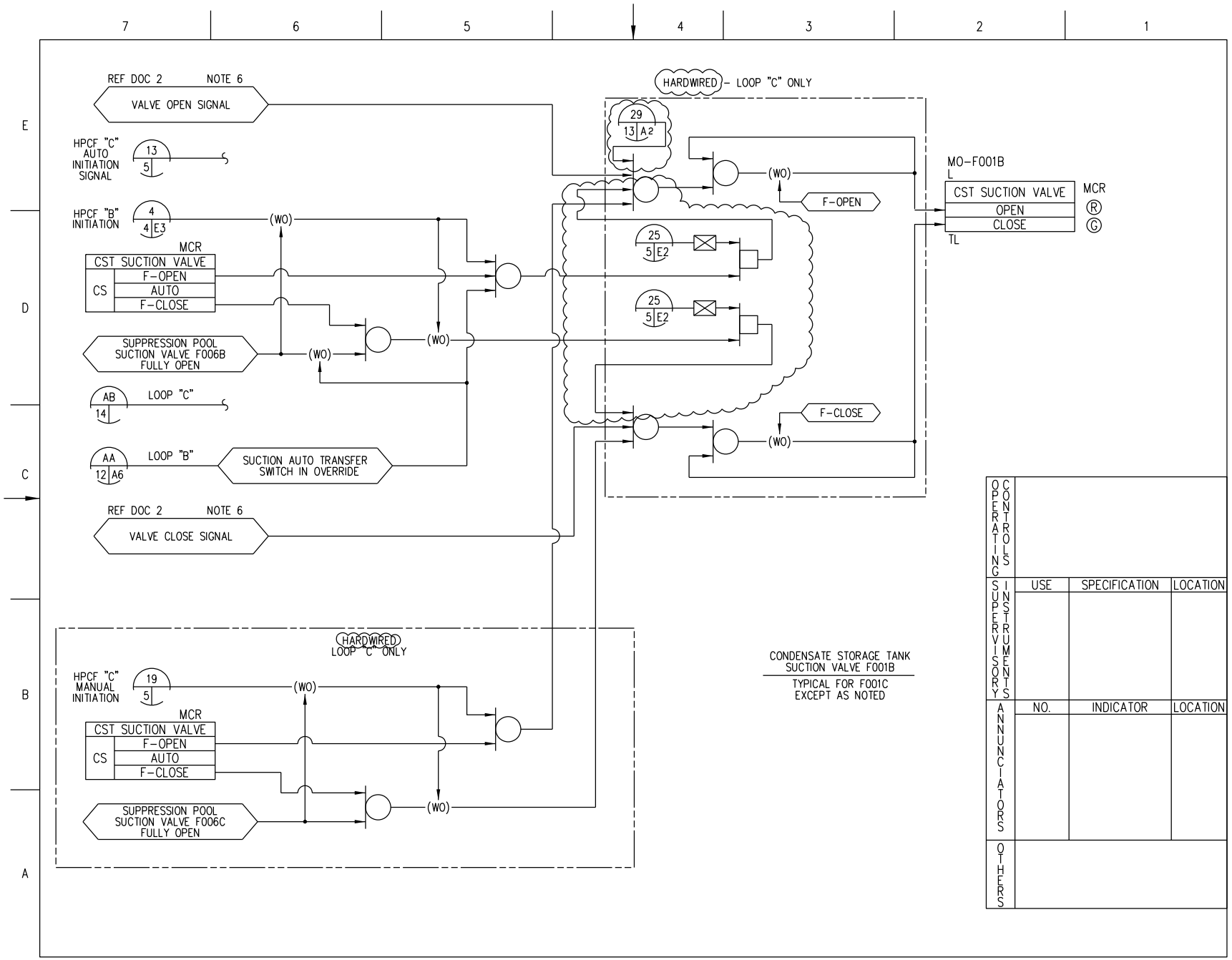


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 11 of 17)

STP 3 & 4 Rev.2

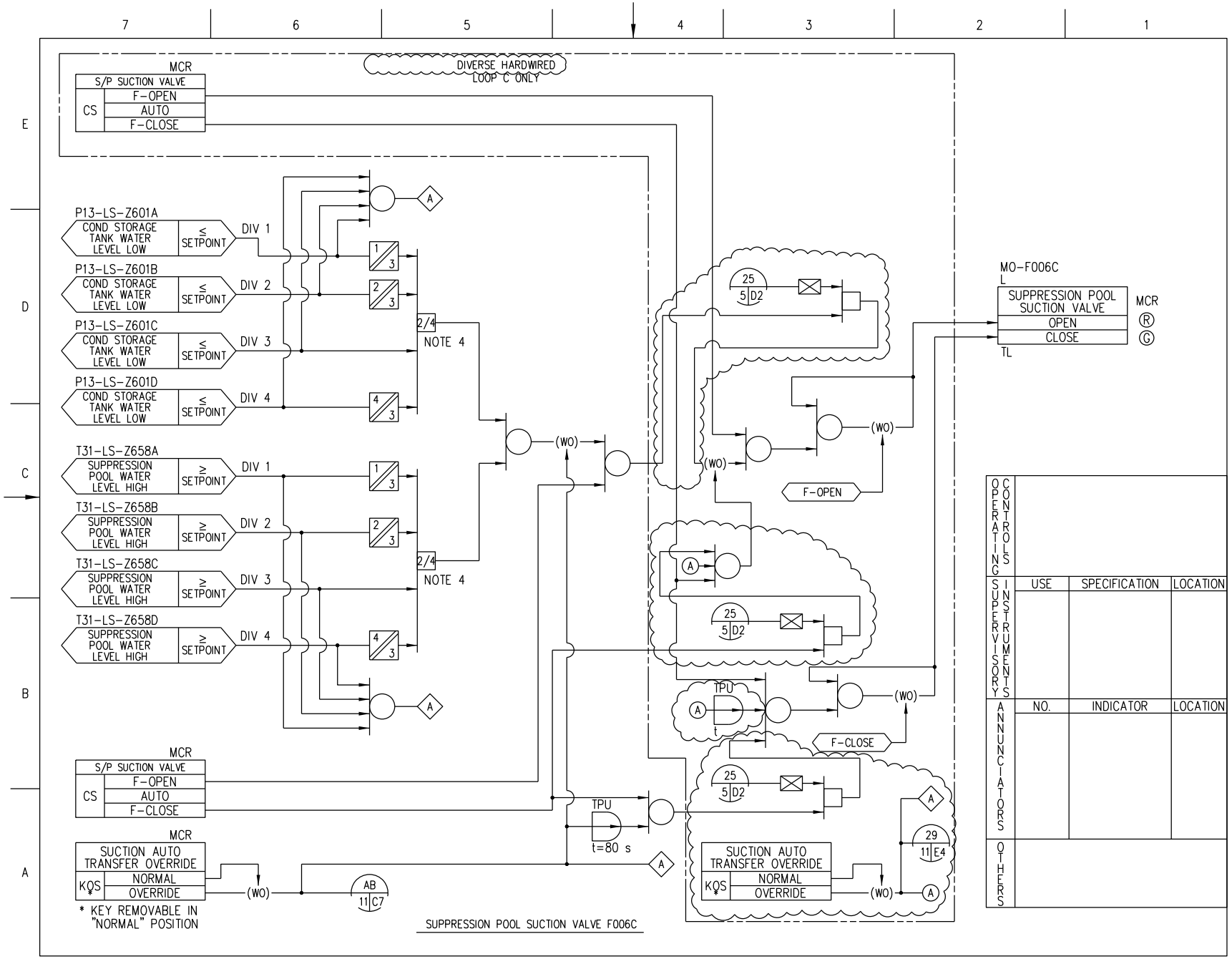


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 13 of 17)

STP 3 & 4 Rev.2

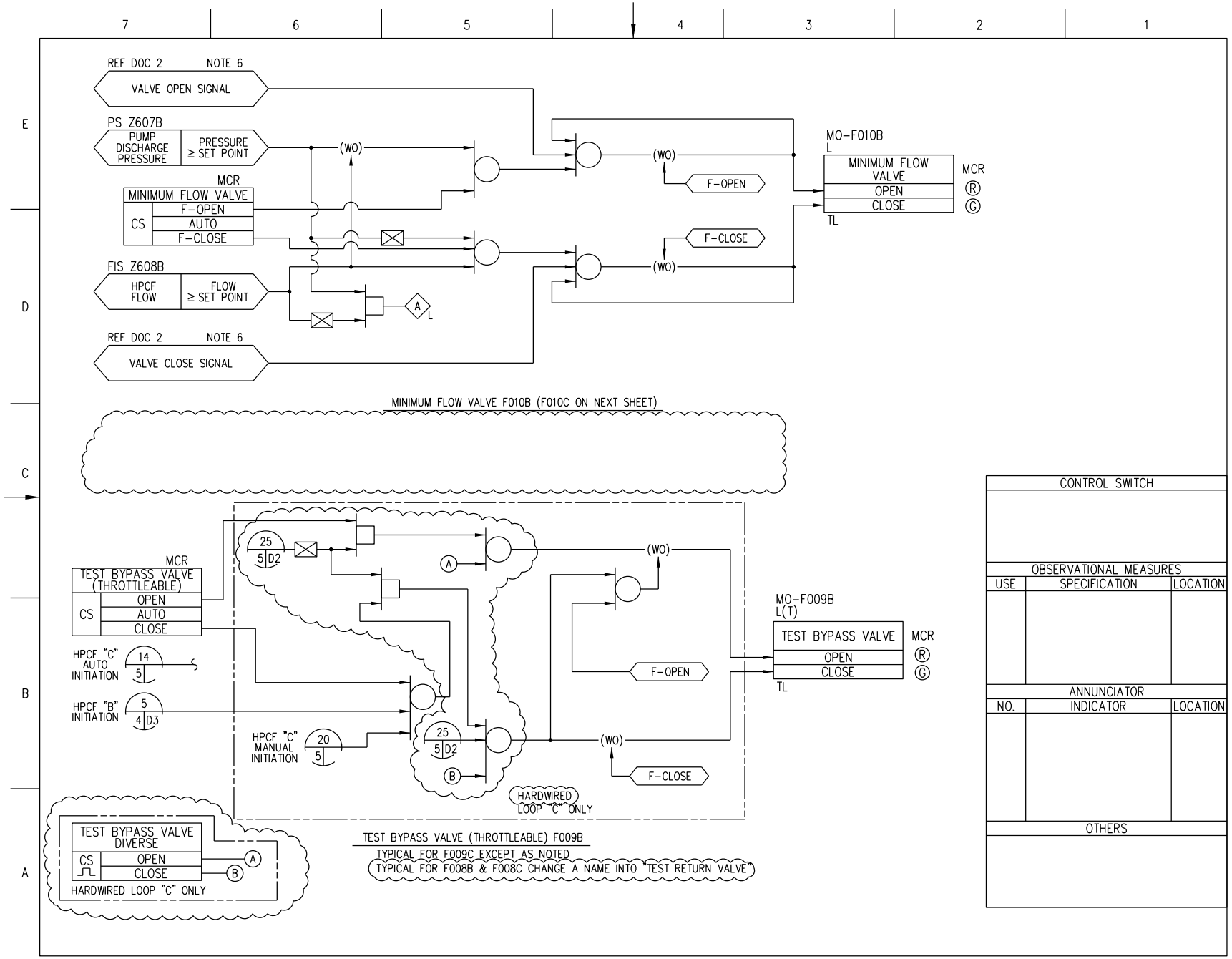


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 14 of 17)

STP 3 & 4 Rev.2

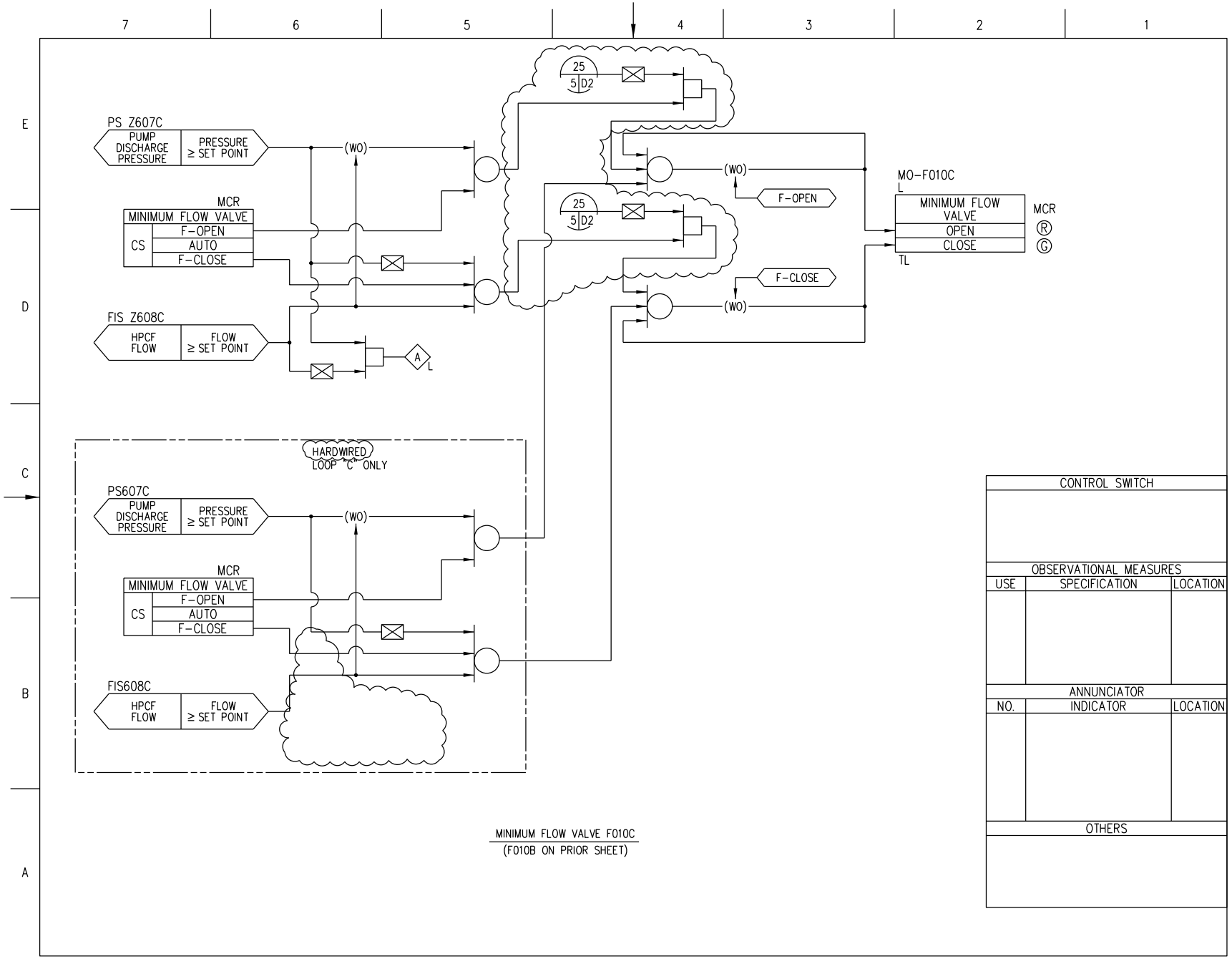
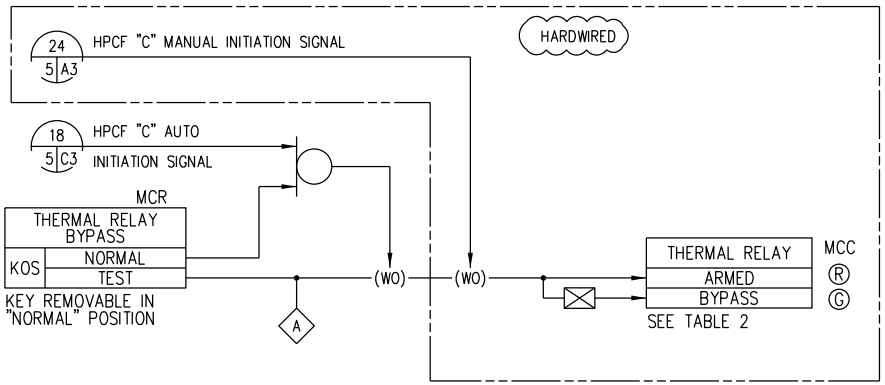


FIGURE 7.3-1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 15 of 17)



HPCF LOOP "C" – THERMAL RELAY BYPASS LOGIC
(LOOP "B" ON PRIOR SHEET)

CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	SPECIFICATION	LOCATION
ANNUNCIATOR		
NO.	INDICATOR	LOCATION
OTHERS		

FIGURE 7.3–1 HIGH PRESSURE CORE FLOODER SYSTEM IBD (Sheet 17 of 17)

SH. NO.	TITLES
1	CONTENTS
2	NOTES AND REFERENCES
3	SRV LOGIC AND CONTROL DIVISION 1 FOR SRV F010P
4	SRV LOGIC AND CONTROL DIVISION 2 FOR SRV F010J
5	SRV LOGIC AND CONTROL DIVISION 3(2,3) FOR SRV'S F010M(F010S, F010B)
6	SRV LOGIC AND CONTROL DIVISION 1 FOR SRV F010G
7	SRV LOGIC AND CONTROL DIVISION 1 FOR SRV F010K
8	SRV LOGIC AND CONTROL DIVISIONS 2(3,1) FOR SRV'S F010E(F010U, F010D)
9	SRV LOGIC AND CONTROL DIVISIONS 2(3,1,2) FOR SRV'S F010N(F010H, F010T, F010C)
10	SRV LOGIC AND CONTROL DIVISIONS 3(1,2,3) FOR SRV'S F010L(F010F, F010R, F010A)
11	ADS LOGIC AND CONTROL
12	ADS LOGIC AND CONTROL (CONTINUED)
13	ADS LOGIC AND CONTROL (CONTINUED)
14	ADS LOGIC AND CONTROL (CONTINUED)
15	ADS LOGIC AND CONTROL (CONTINUED)
16	ADS LOGIC AND CONTROL (CONTINUED)
17	ADS LOGIC AND CONTROL (CONTINUED)
18	ADS LOGIC AND CONTROL (CONTINUED)
19	FEEDWATER VALVES F001A(F001B)
20	FEEDWATER CHECK VALVES F003A(F003B)
21	FEEDWATER GATE VALVES F005A(F005B)
22	CUW RETURN FW LOOP SELECTOR VALVES F007A(F007B)
23	MAIN STEAM BYPASS/DRAIN ISOLATION VALVE F011(F012)
24	STEAM LINE DRAIN VALVES F013(F014, F016)
25	MAIN STEAM DRAIN LINE AOV'S F015(F017)
26	RPV HEAD VENT VALVES F018(F019, F020)
27	RPV WATER LEVEL ALARMS AND INDICATORS
28	LOW RPV METAL & BOTTOM DRAIN TEMPERATURE ALARM & RECORDER
29	HIGH DRYWELL PRESSURE ALARMS AND INDICATORS
30	SRV VALVE STEM POSITION ALARM
31	SRV DISCHARGE LINE AND RPV VENT DISCHARGE LINE HIGH TEMP ALARM
32	MSIV VALVE STEM POSITION SWITCHES
33	RPV HEAD SEAL LEAKOFF HIGH PRESSURE ALARM
34	ANNUNCIATOR LIST
35	ANNUNCIATOR LIST (CONTINUED)
36	ELCS (LDS/ECCS) BLOCK DIAGRAM DIV 1 (TYPICAL FOR DIV 2 & DIV 3)
37	ELCS (LDS/ECCS) BLOCK DIAGRAM (CONTINUED)

MPL NO. B21-1030

CONTENTS

Figure 7.3-2 Nuclear Boiler System IBD (Sheet 1 of 37)
STP 3&4 Rev. 2

NOTES:

1. PRESSURES SHALL BE IN MPa g.
2. THE ADS LOAD DRIVERS SHALL BE CONNECTED SO THAT IT IS NECESSARY TO ENERGIZE BOTH ADS CHANNELS TO ACTUATE THE ADS VALVES.
3. PARTS OF THE LOGIC AND CONTROL SYSTEM FOR THE OPERATION OF THE SRV'S IN THE RELIEF MODE ARE CLASSIFIED AS NON-SAFETY RELATED BUT THE TOTAL SYSTEM IS DESIGNED AS A SAFETY RELATED SYSTEM.
4. DIVISION 2 IS THE SAME AS DIVISION 1 EXCEPT THAT DIVISION 2 SUFFIX LETTERS ARE THOSE IDENTIFIED IN (PARENTHESES).
5. NUMBERS OR LETTERS IN (PARENTHESES) DESIGNATE THOSE APPLICABLE TO THE SRV'S WHICH FOLLOW IN SEQUENCE AFTER THE FIRST IN THE GROUP OF 3 OR 4 SRV'S.
6. THE LOGIC SHALL INCORPORATE PROVISIONS TO REVERT 2/4 LOGIC TO 2/3 LOGIC DURING BYPASS OF A SINGLE DIVISION OF SENSORS. ALSO, THE LOGIC DIAGRAM SHALL NOT PERMIT THE BYPASS OF MORE THAN ONE DIVISION OF SENSORS AT A TIME. THE PROVISIONS ARE ILLUSTRATED IN THE (ELCS) BLOCK DIAGRAM, SH 36, ZONES B4 & C4.
7. ISOLATORS ARE NOT REQUIRED WHERE THE SAME DIVISIONAL LOGIC IS USED FOR BOTH INPUT SIGNALS AND LOGIC.
8. (A) FO IS "FAIL OPEN", FOR EXAMPLE, VALVE OPENS ON LOSS OF POWER AND/OR LOSS OF PNEUMATIC OR HYDRAULIC PRESSURE.
   (B) FC IS "FAIL CLOSED", FOR EXAMPLE, VALVE CLOSES ON LOSS OF POWER AND/OR LOSS OF PNEUMATIC OR HYDRAULIC PRESSURE.
9. SEE TABLE 1 FOR ANNUNCIATOR/ALARM LIGHT INFORMATION, SH 34 & 35.
10. ALL ANNUNCIATORS ARE LOCATED IN THE MAIN CONTROL ROOM UNLESS OTHERWISE NOTED.

12. ADS OUTPUT LOGIC SHALL NOT INCLUDE PROVISIONS TO BYPASS THE DUAL OUTPUTS. SINGLE CHANNEL FAILURE IN ONE ADS DIVISION SHALL CAUSE LOSS OF OUTPUT FUNCTION IN THAT ADS DIVISION ONLY AS SHOWN ON SH 37.
13. MONITOR THE CONTINUITY OF THE SRV ADS SOLENOIDS BY APPLICATION OF A NON-ENERGIZING CURRENT TO EACH SOLENOID.
14. INTERMEDIATE PROCESSOR WHICH PREVENTS THE FAILURE OF THE NON-SAFETY RELATED DATA FROM AFFECTING THE SAFETY RELATED LOGIC.
15. THIS SIGNAL LINE SHALL BE HARDWIRED. INDICATORS REQUIRED TO BE HARDWIRED ARE SHOWN ON THIS DRAWING.
16. SIGNALS TO ANNUNCIATORS AND NON-SAFETY INDICATORS SHALL BE OPTICALLY ISOLATED FROM THE SAFETY RELATED INPUT SIGNAL.

REFERENCE DOCUMENTS UNDER THE FOLLOWING IDENTITIES ARE TO BE USED IN CONJUNCTION WITH THIS DRAWING.

		MPL NO.
1.	NUCLEAR BOILER SYSTEM, P&ID	B21-1010
2.	REMOTE SHUTDOWN SYS, IBD	C61-1030
3.	RESIDUAL HEAT REMOVAL SYSTEM, P&ID	E11-1010
4.	HIGH PRESSURE CORE FLOODER, P&ID	E22-1010
5.	LEAK DETECTION SYSTEM, IBD	E31-1030
6.	REACTOR PROTECTION SYSTEM, IED	C71-1040
7.	TURBINE CONTROL SYSTEM, IBD	N32-1030

SUPPORTING DOCUMENTS		MPL NO.
1.	INTERLOCK BLOCK DIAGRAM (IBD) STANDARD	A10-3070

NOTES AND REFERENCES

FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 2 of 37)

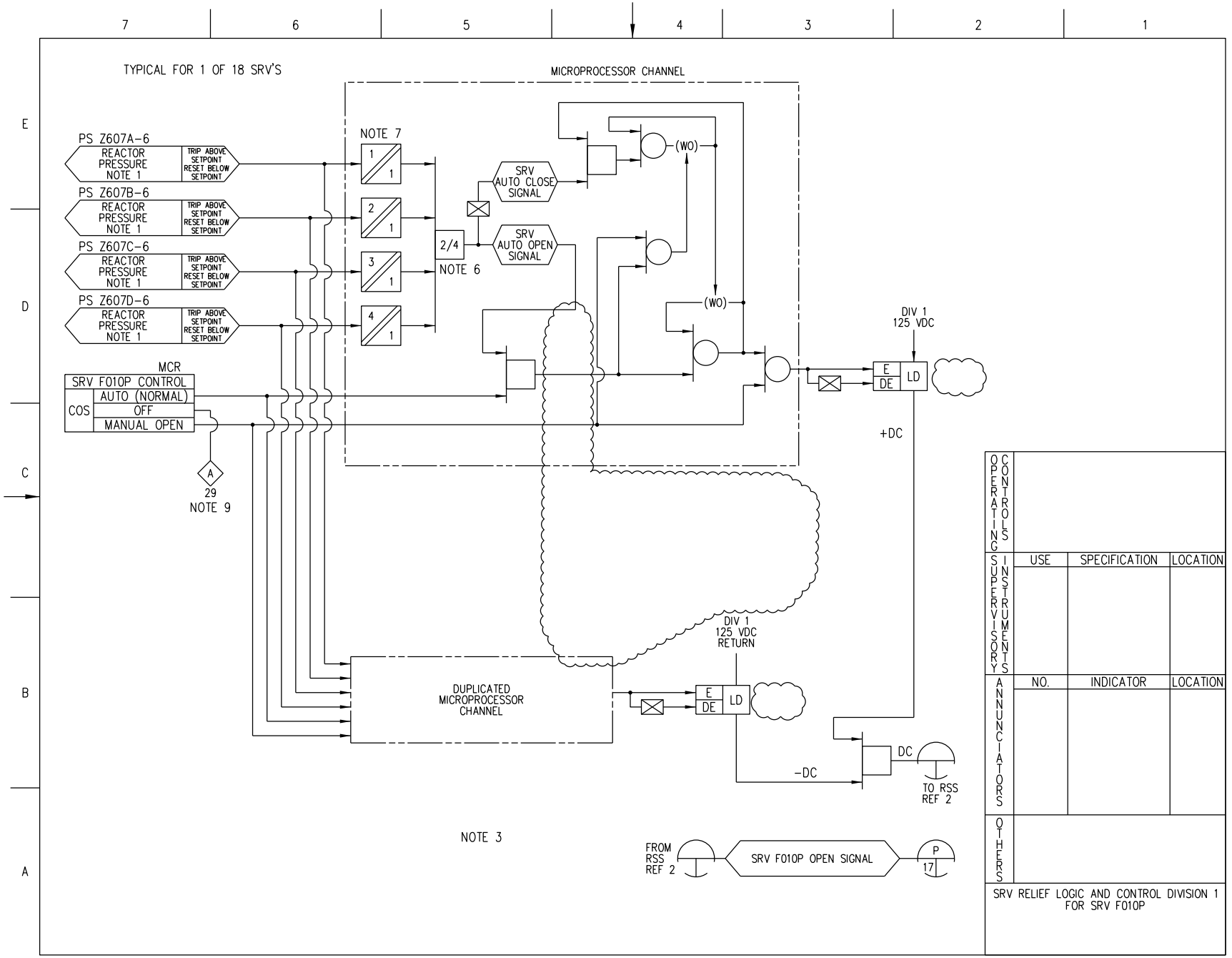


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 3 of 37)

STP 3 & 4 Rev.2

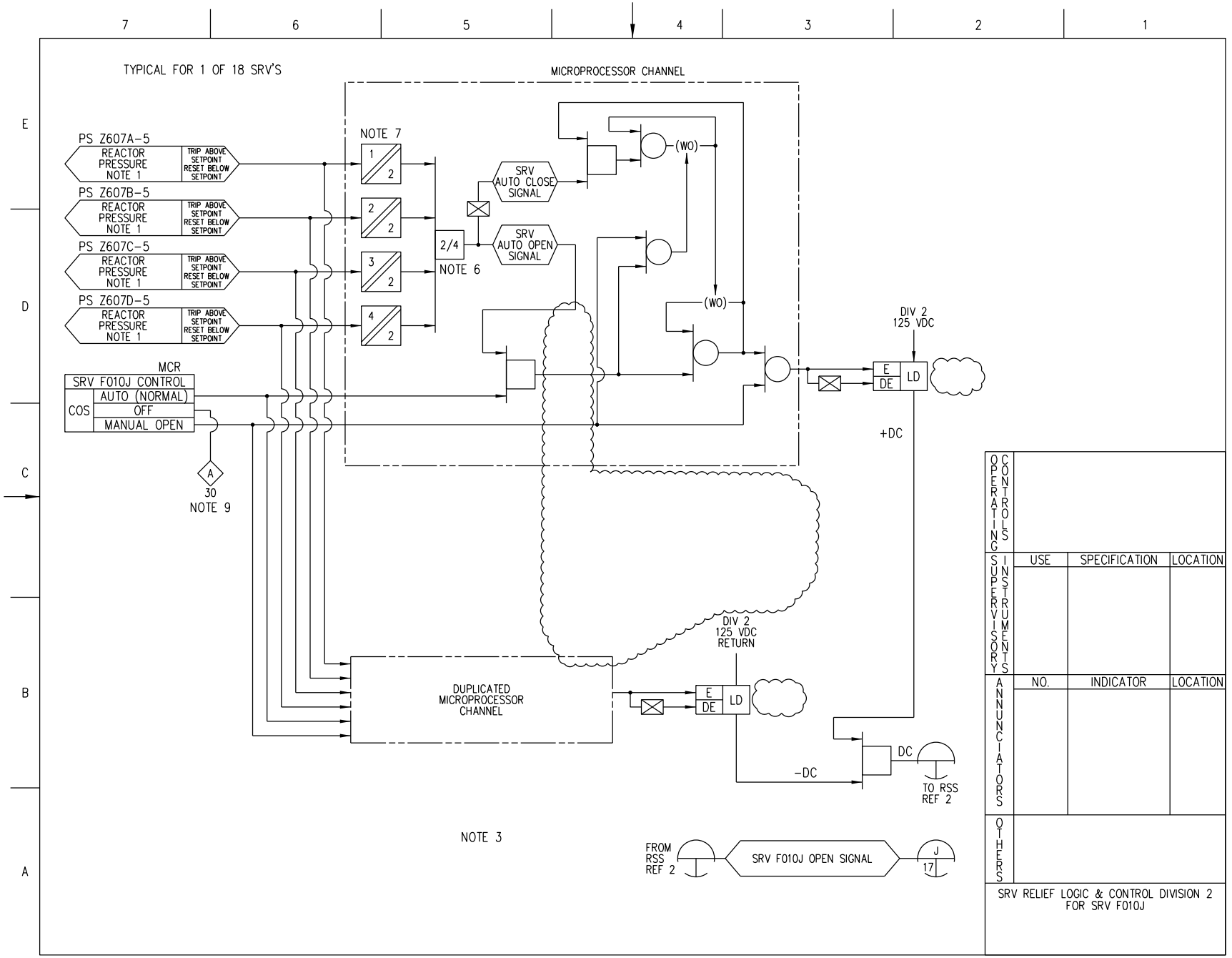


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 4 of 37)

STP 3 & 4 Rev.2

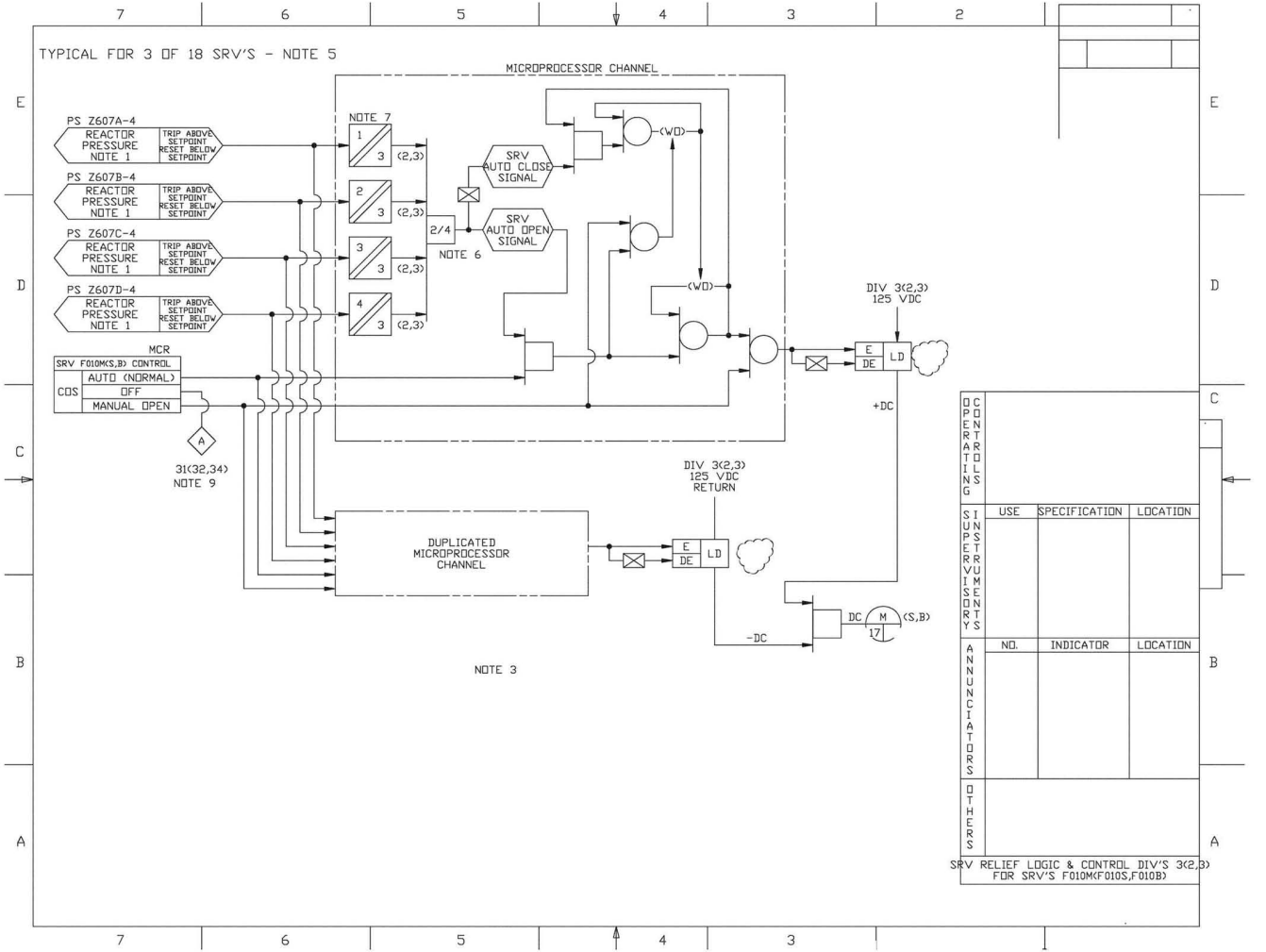


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 5 of 37)
STP 3&4 Rev. 2

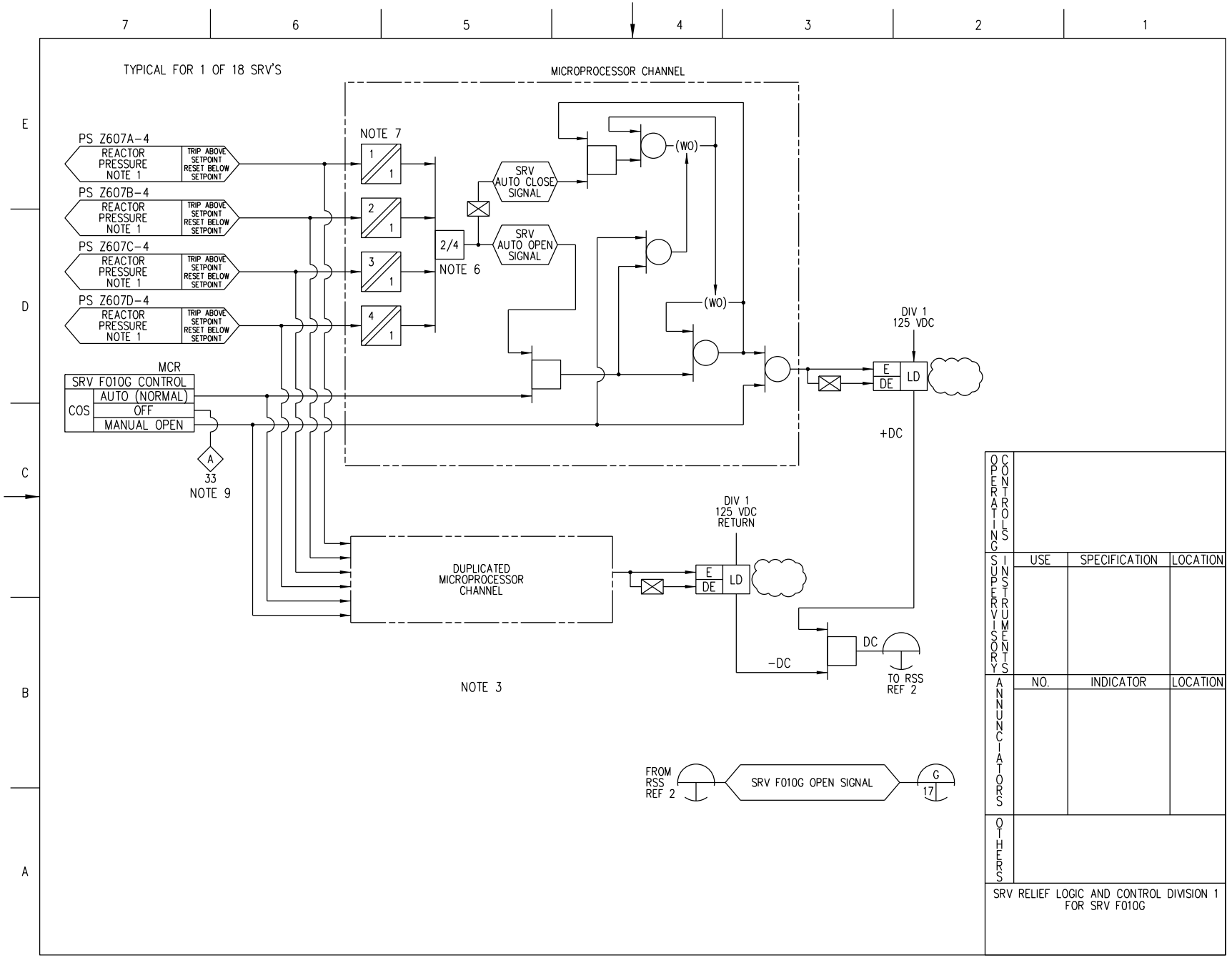


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 6 of 37)

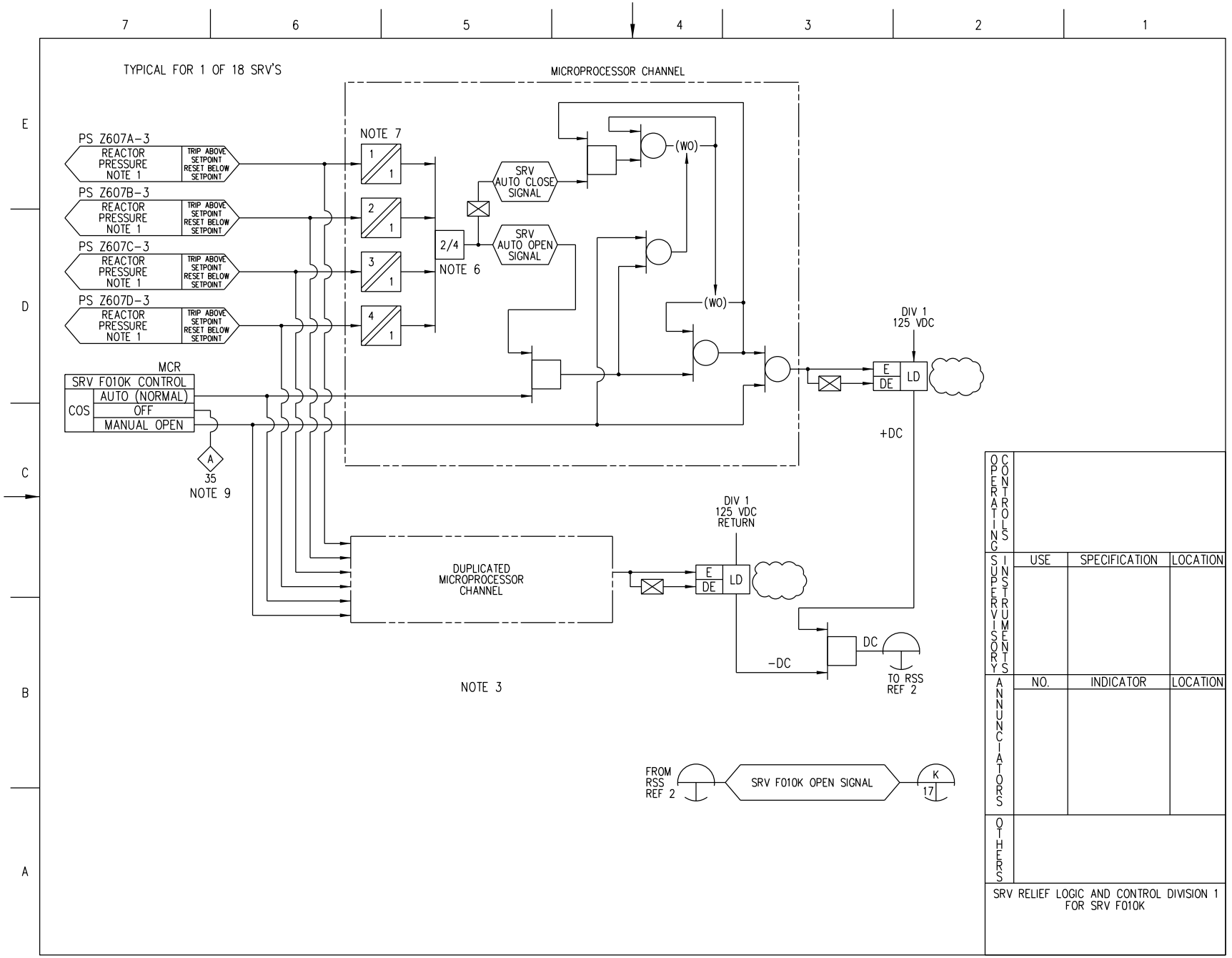


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 7 of 37)

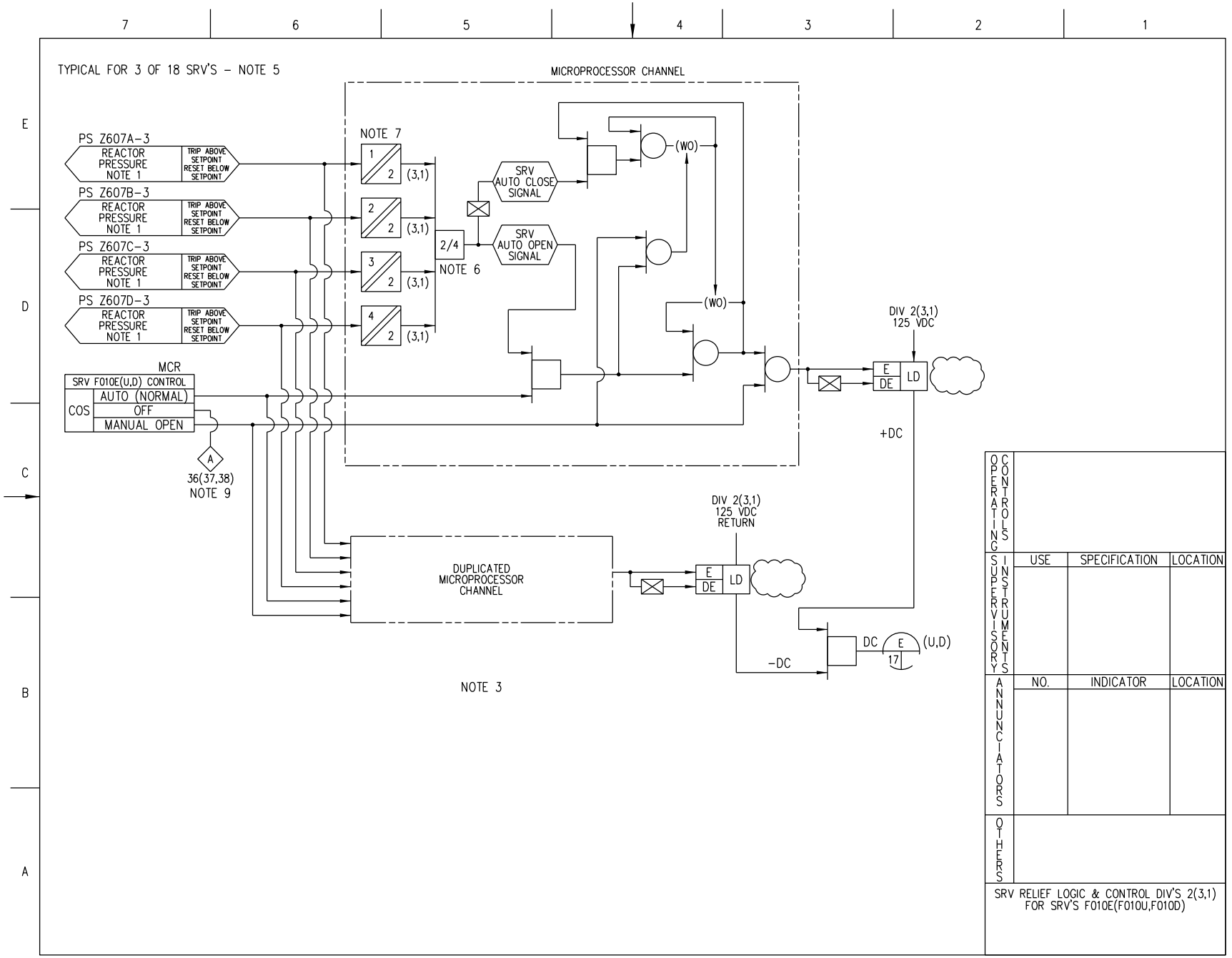


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 8 of 37)

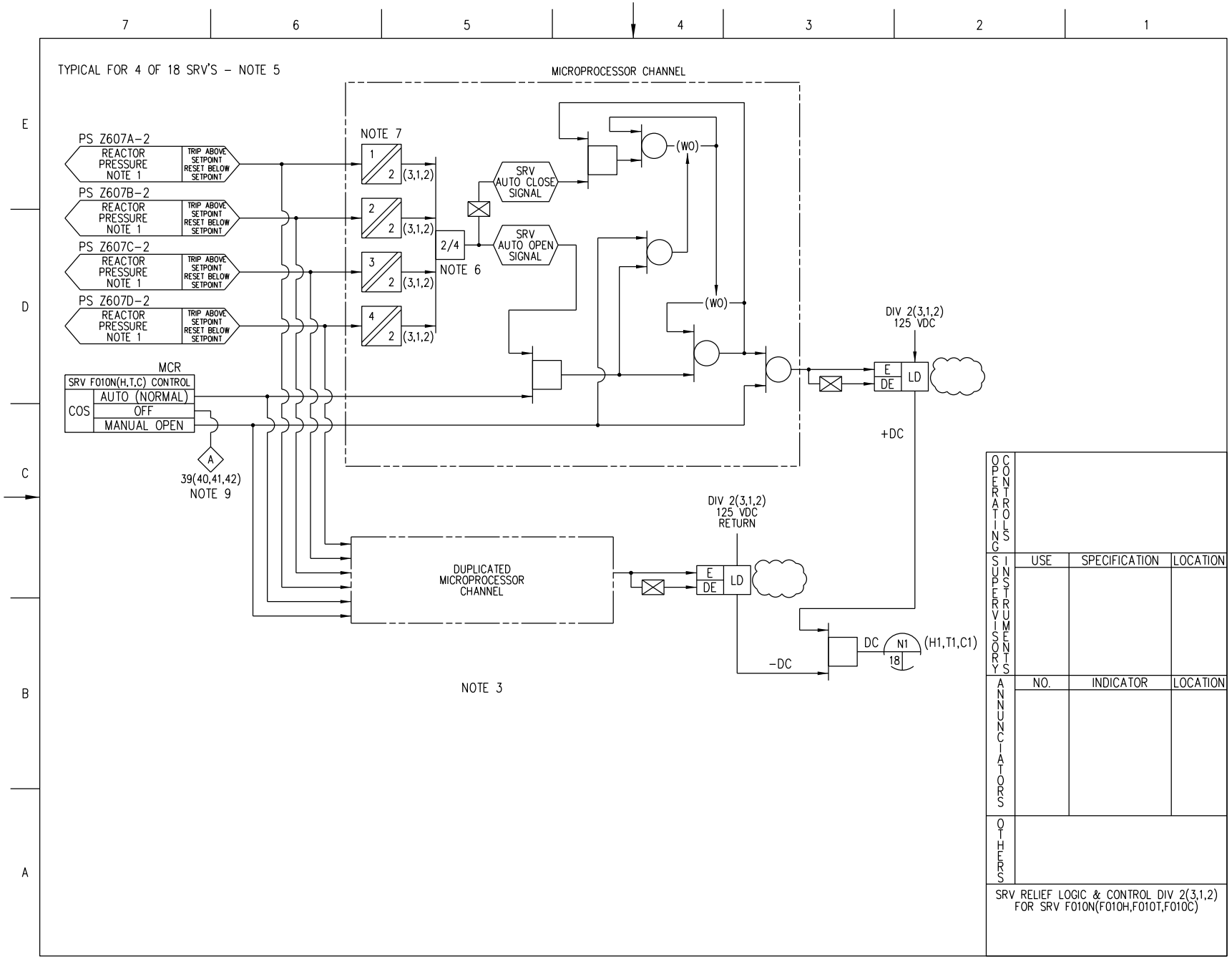


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 9 of 37)

STP 3 & 4 Rev.2

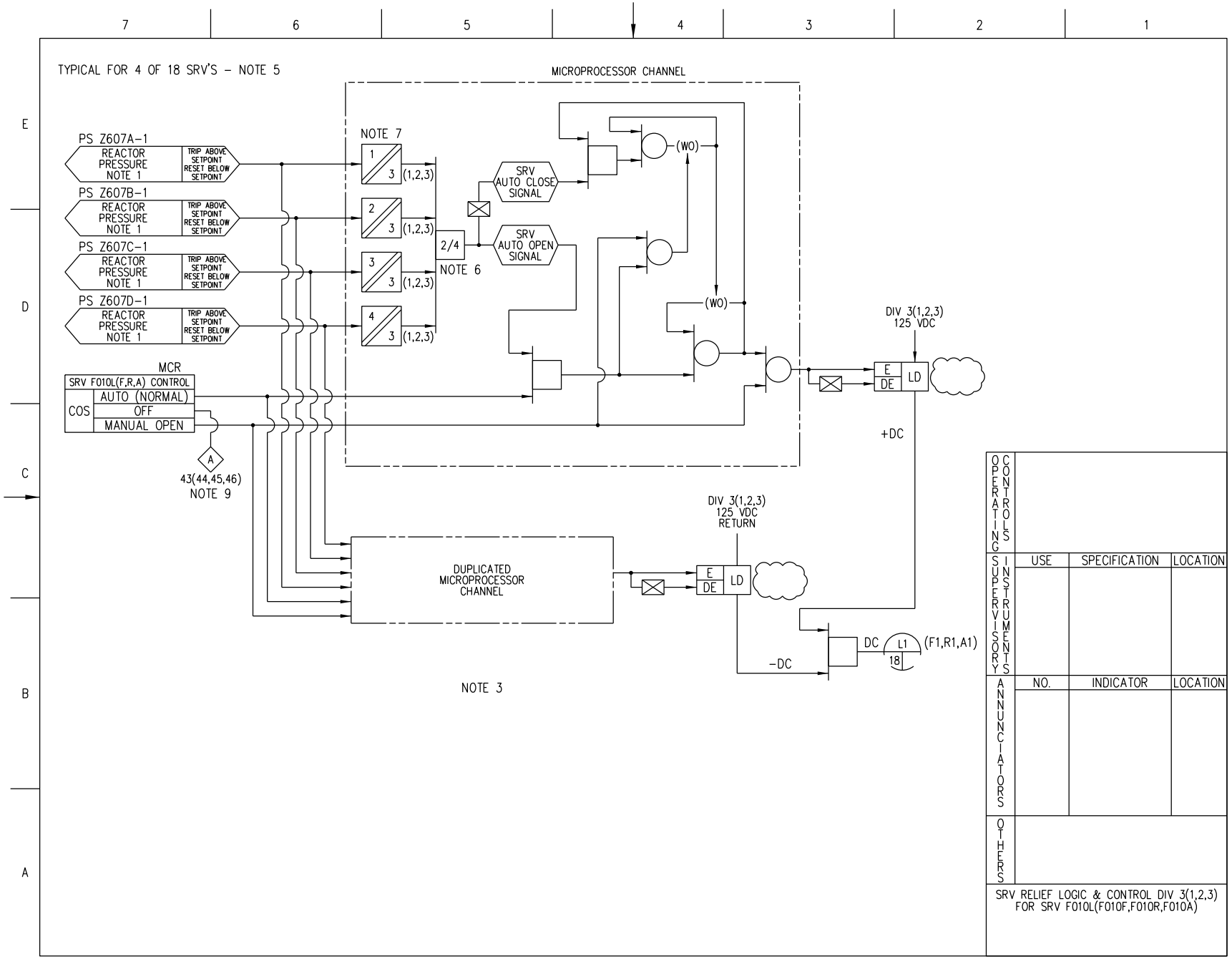


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 10 of 37)

STP 3 & 4 Rev.2

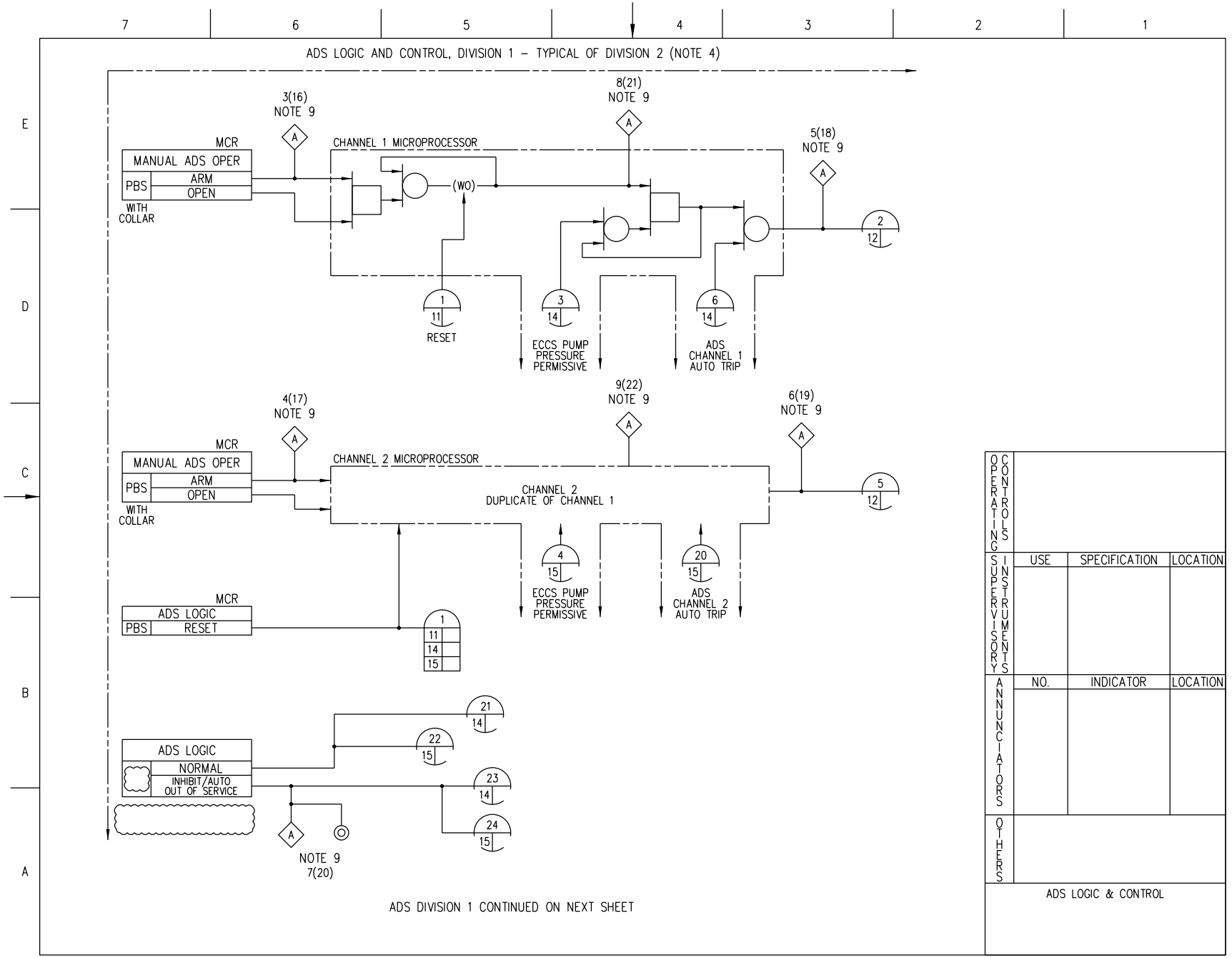


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 11 of 37)

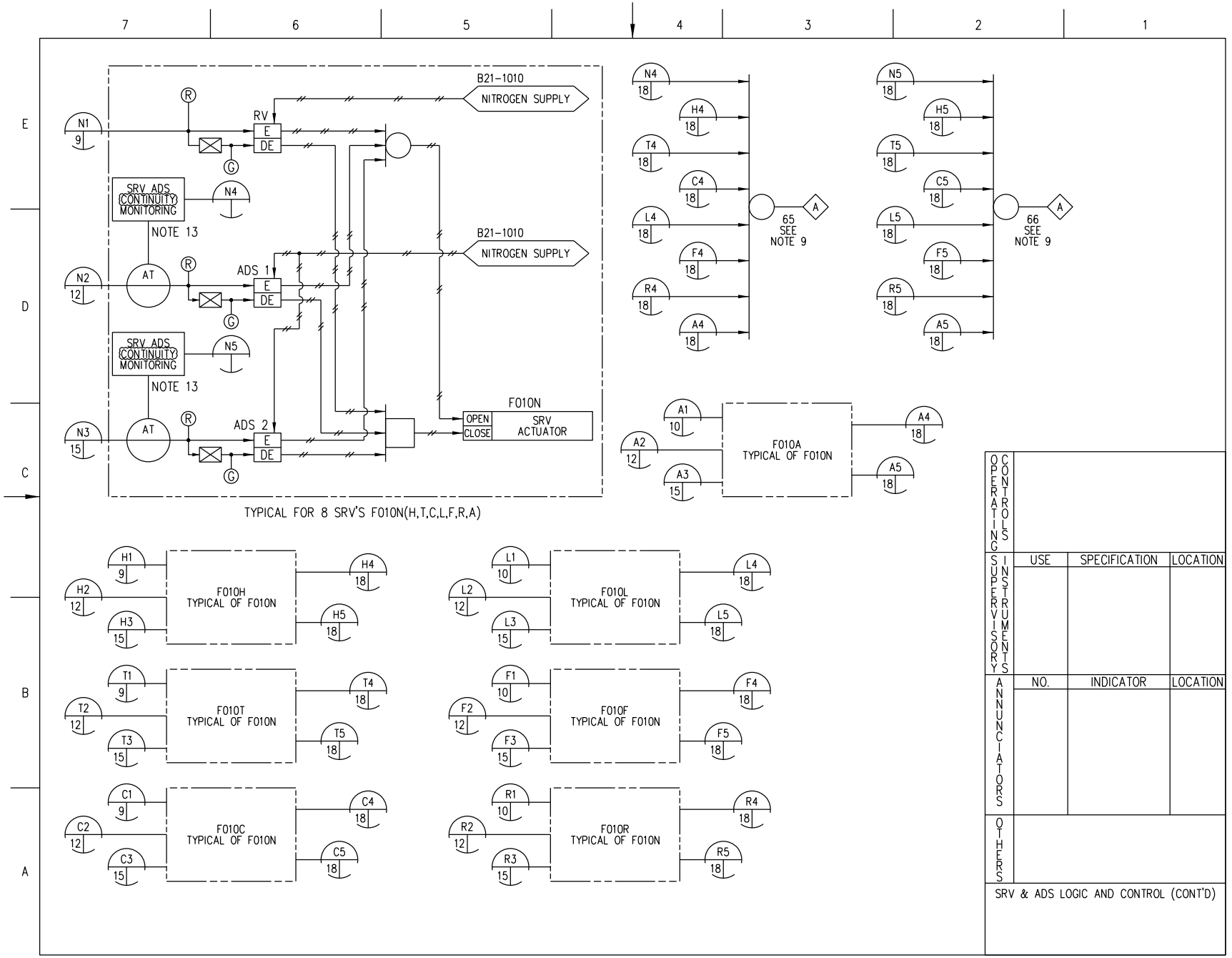


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 18 of 37)

STP 3 & 4 Rev.2

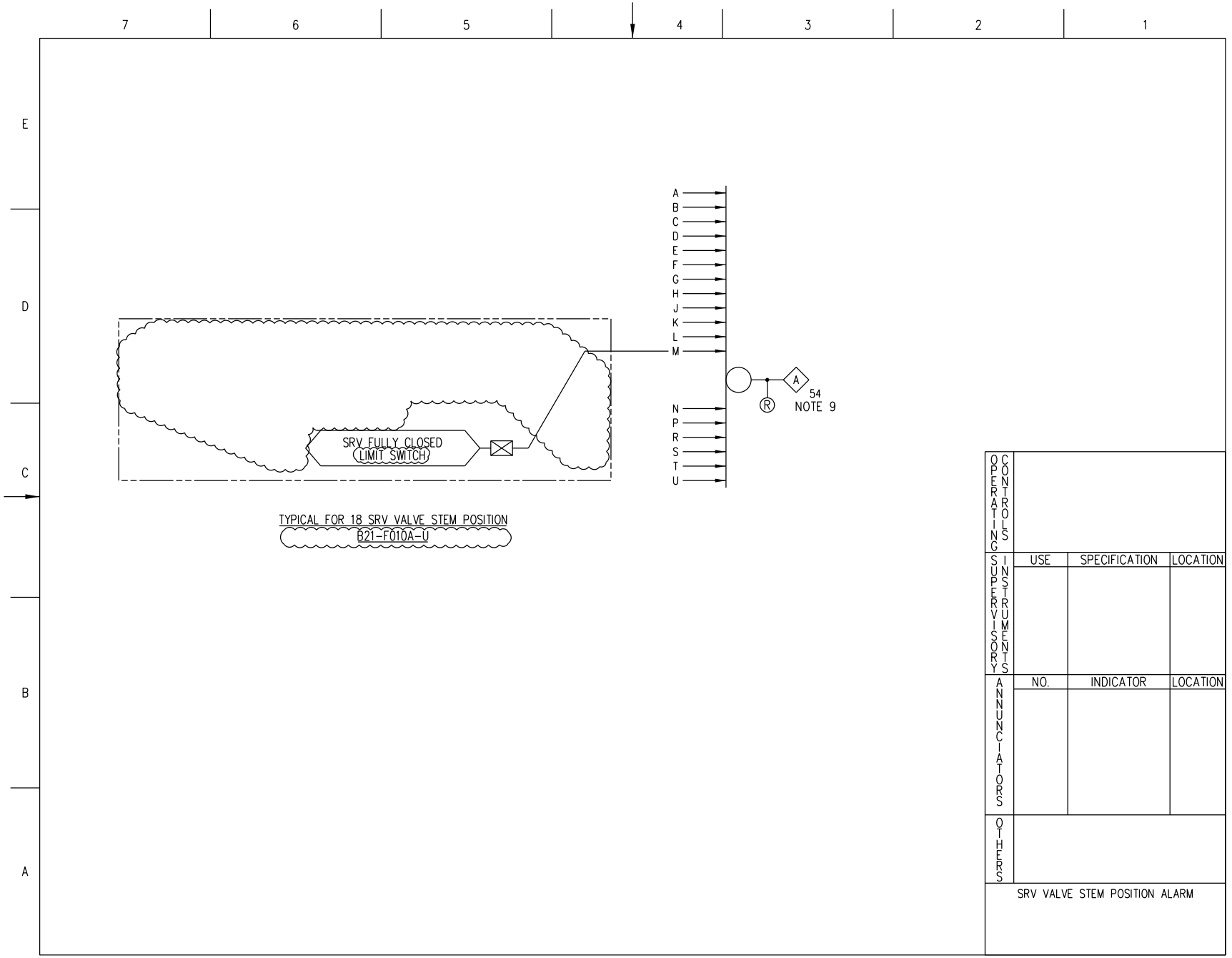


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 30 of 37)

TABLE 1: ANNUNCIATOR/ALARM LIGHTS – NOTE 10

ALARM NO.	INDICATION	FUNCTION	SOURCE OF SIGNAL
3	ALARM	ADS CHANNEL 1 ARMED DIVISION 1	LOGIC OUTPUT SHEET 11
4	ALARM	ADS CHANNEL 2 ARMED DIVISION 1	LOGIC OUTPUT SHEET 11
5	ALARM	ADS CHANNEL 1 TRIP DIVISION 1	LOGIC OUTPUT SHEET 11
6	ALARM	ADS CHANNEL 2 TRIP DIVISION 1	LOGIC OUTPUT SHEET 11
7	ALARM/ORANGE LIGHT	ADS INHIBIT SWITCH IN INHIBIT POSITION DIVISION 1	LOGIC OUTPUT SHEET 11
8	ALARM	ADS CHANNEL 1 MANUAL PERMISSIVE DIVISION 1	LOGIC OUTPUT SHEET 11
9	ALARM	ADS CHANNEL 2 MANUAL PERMISSIVE DIVISION 1	LOGIC OUTPUT SHEET 11
10	ALARM	ADS 29 SECOND TIMER RUNNING CHANNEL 1 DIVISION 1	LOGIC OUTPUT SHEET 14
11	ALARM	ADS 29 SECOND TIMER RUNNING CHANNEL 2 DIVISION 1	LOGIC OUTPUT SHEET 15
12	ALARM	ADS HIGH DRYWELL PRESSURE PERMISSIVE CHANNEL 1 DIV 1	LOGIC OUTPUT SHEET 14
13	ALARM	ADS HIGH DRYWELL PRESSURE PERMISSIVE CHANNEL 2 DIV 1	LOGIC OUTPUT SHEET 15
14	ALARM	ADS ECCS PUMP DISC PRESS PERMISSIVE CHANNEL 1 DIV 1	LOGIC OUTPUT SHEET 14
15	ALARM	ADS ECCS PUMP DISC PRESS PERMISSIVE CHANNEL 2 DIV 1	LOGIC OUTPUT SHEET 15
16	ALARM	ADS CHANNEL 1 ARMED DIVISION 2	LOGIC OUTPUT SHEET 11
17	ALARM	ADS CHANNEL 2 ARMED DIVISION 2	LOGIC OUTPUT SHEET 11
18	ALARM	ADS CHANNEL 1 TRIP DIVISION 2	LOGIC OUTPUT SHEET 11
19	ALARM	ADS CHANNEL 2 TRIP DIVISION 2	LOGIC OUTPUT SHEET 11
20	ALARM/ORANGE LIGHT	ADS INHIBIT SWITCH IN INHIBIT POSITION DIVISION 2	LOGIC OUTPUT SHEET 11
21	ALARM	ADS CHANNEL 1 MANUAL PERMISSIVE DIVISION 2	LOGIC OUTPUT SHEET 11
22	ALARM	ADS CHANNEL 2 MANUAL PERMISSIVE DIVISION 2	LOGIC OUTPUT SHEET 11
23	ALARM	ADS 29 SECOND TIMER RUNNING CHANNEL 1 DIVISION 2	LOGIC OUTPUT SHEET 14
24	ALARM	ADS 29 SECOND TIMER RUNNING CHANNEL 2 DIV 2	LOGIC OUTPUT SHEET 15
25	ALARM	ADS HIGH DRYWELL PRESS PERMISSIVE CHANNEL 1 DIV 2	LOGIC OUTPUT SHEET 14
26	ALARM	ADS HIGH DRYWELL PRESS PERMISSIVE CHANNEL 2 DIV 2	LOGIC OUTPUT SHEET 15
27	ALARM	ADS ECCS PUMP DISCH PRESS PERMISSIVE CHANNEL 1 DIV 2	LOGIC OUTPUT SHEET 14
28	ALARM	ADS ECCS PUMP DISCH PRESS PERMISSIVE CHANNEL 2 DIV 2	LOGIC OUTPUT SHEET 15
29	ALARM	SRV RELIEF "P" SWITCHED OFF	SWITCH OUTPUT SHEET 3

TABLE 1: (CONT)

ALARM NO.	INDICATION	FUNCTION	SOURCE OF SIGNAL
30	ALARM	SRV RELIEF "J" SWITCHED OFF	SWITCH OUTPUT SHEET 4
31	ALARM	SRV RELIEF "M" SWITCHED OFF	SWITCH OUTPUT SHEET 5
32	ALARM	SRV RELIEF "S" SWITCHED OFF	SWITCH OUTPUT SHEET 5
33	ALARM	SRV RELIEF "G" SWITCHED OFF	SWITCH OUTPUT SHEET 6
34	ALARM	SRV RELIEF "B" SWITCHED OFF	SWITCH OUTPUT SHEET 5
35	ALARM	SRV RELIEF "K" SWITCHED OFF	SWITCH OUTPUT SHEET 7
36	ALARM	SRV RELIEF "E" SWITCHED OFF	SWITCH OUTPUT SHEET 8
37	ALARM	SRV RELIEF "U" SWITCHED OFF	SWITCH OUTPUT SHEET 8
38	ALARM	SRV RELIEF "D" SWITCHED OFF	SWITCH OUTPUT SHEET 8
39	ALARM	SRV RELIEF "N" SWITCHED OFF	SWITCH OUTPUT SHEET 9
40	ALARM	SRV RELIEF "H" SWITCHED OFF	SWITCH OUTPUT SHEET 9
41	ALARM	SRV RELIEF "T" SWITCHED OFF	SWITCH OUTPUT SHEET 9
42	ALARM	SRV RELIEF "C" SWITCHED OFF	SWITCH OUTPUT SHEET 9
43	ALARM	SRV RELIEF "L" SWITCHED OFF	SWITCH OUTPUT SHEET 10
44	ALARM	SRV RELIEF "F" SWITCHED OFF	SWITCH OUTPUT SHEET 10
45	ALARM	SRV RELIEF "R" SWITCHED OFF	SWITCH OUTPUT SHEET 10
46	ALARM	SRV RELIEF "A" SWITCHED OFF	SWITCH OUTPUT SHEET 10
47	ALARM/RED LIGHT	ENHANCED RPV WATER LEVEL LOW DIV 1	LOGIC OUTPUT SHEET 27
48	ALARM/RED LIGHT	ENHANCED RPV WATER LEVEL LOW DIV 2	LOGIC OUTPUT SHEET 27
49	ALARM/ORANGE LIGHT	LOW RPV METAL OR BOTTOM DRAIN TEMP	LOGIC OUTPUT SHEET 28
50	ALARM/RED LIGHT	HIGH DRYWELL PRESSURE DIVISION 1	LOGIC OUTPUT SHEET 29

ANNUNCIATOR LIST

FIGURE 7.3–2 NUCLEAR BOILER SYSTEM IBD (Sheet 34 of 37)

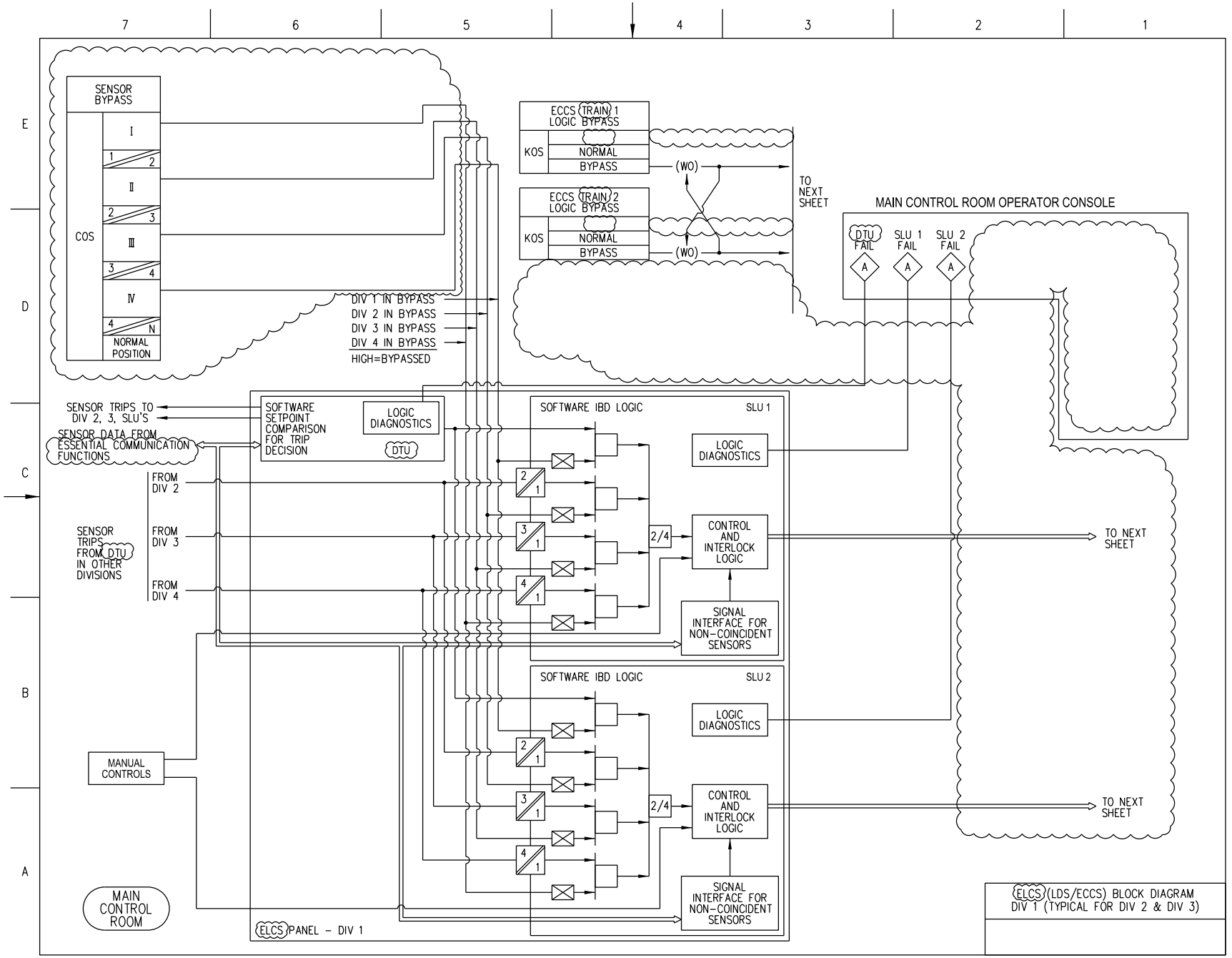


FIGURE 7.3–2 NUCLEAR BOILER SYSTEM IBD (Sheet 36 of 37)

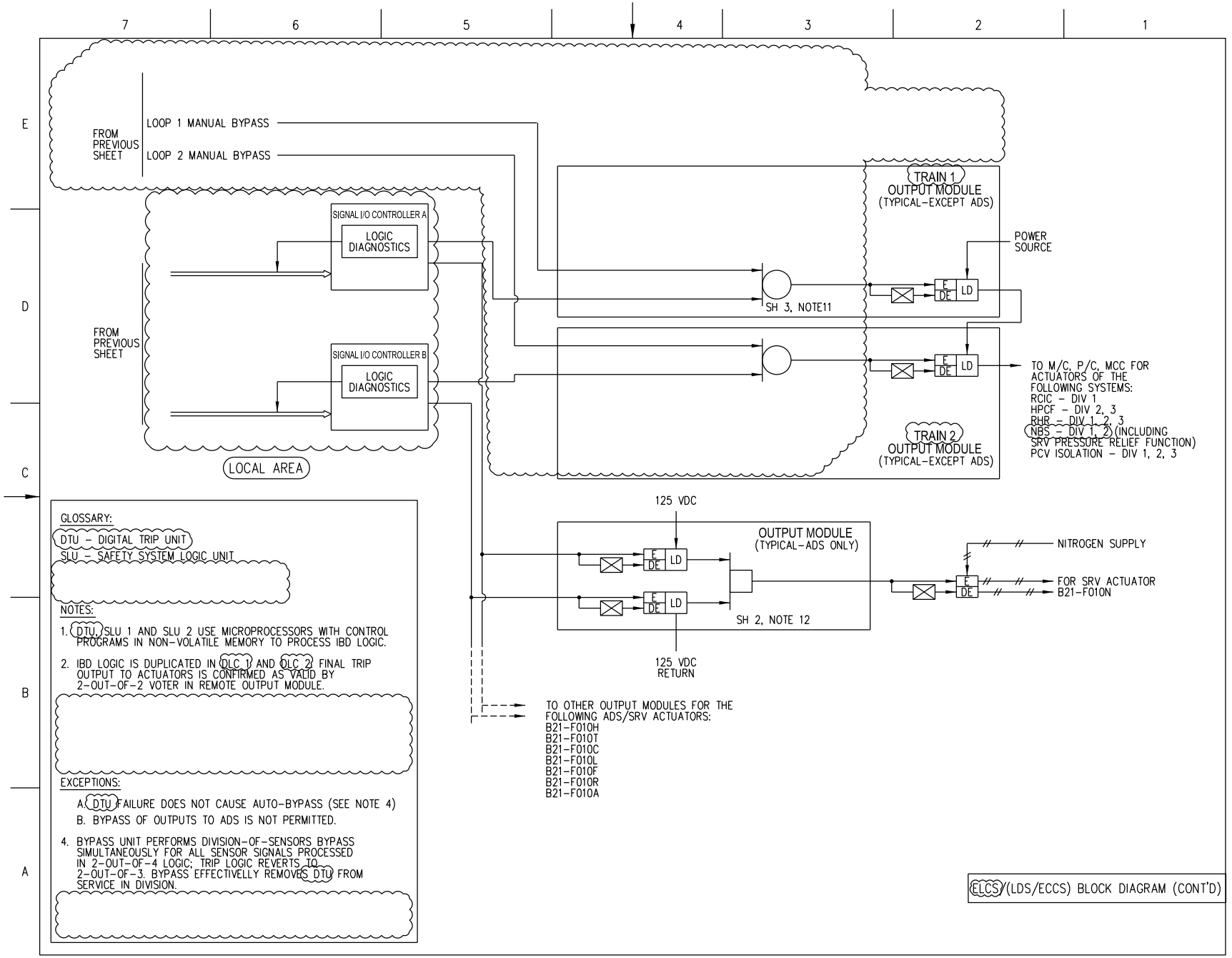


FIGURE 7.3-2 NUCLEAR BOILER SYSTEM IBD (Sheet 37 of 37)

NOTES:

1. ALL EQUIPMENT AND INSTRUMENT PREFIXED BY SYSTEM NO. E51– UNLESS OTHERWISE NOTED.
2. DIVISIONAL SIGNALS TO ANNUNCIATORS SHALL BE ISOLATED FROM NON–IE ALARM.
3. THE POWER TO CONTROL LOGIC AND TO THE MOTOR OPERATED F036 VALVE SHALL BE SUPPLIED FROM DIVISION 2 POWER.
4. THE LOGIC DESIGN SHALL INCORPORATE PROVISIONS TO REVERT 2/4 LOGIC TO 2/3 LOGIC DURING BYPASS OF A SINGLE DIVISION OF SENSORS. ALSO, THE LOGIC DESIGN SHALL NOT PERMIT THE BYPASS OF MORE THAN ONE DIVISION OF SENSORS AT A TIME.
5. SETPOINT VALVE IS NOT SUBJECT TO APPROVAL OF THIS DOCUMENT.
6. POWER SUPPLY SHALL BE DIVISION 1 UNLESS OTHERWISE SPECIFIED.
7. THE INBOARD CONTAINMENT ISOLATION VALVE F035 MANUAL CONTROL AND VALVE POSITION STATUS INDICATION (IN ADDITION TO ESSENTIAL COMMUNICATION FUNCTION(ECF)) SHALL BE HARDWIRED TO THE MAIN CONTROL ROOM.

REFERENCE DOCUMENTS UNDER THE FOLLOWING IDENTITIES SHALL BE USED IN CONJUNCTION WITH THIS DRAWING.

		MPL NO.
1.	MAKEUP WATER CONDENSATE SYSTEM IBD	P13–1030
2.	RCIC SYSTEM P&ID	E51–1010
3.	NUCLEAR BOILER SYSTEM P&ID	B21–1010
4.	LEAK DETECTION & ISOLATION SYSTEM IBD	E31–1030
5.	ATMOSPHERIC CONTROL SYSTEM IBD	T31–1030

SH NO.	TITLE
1	COVER/CONTENTS/NOTES
2	TABLE 1: ANNUNCIATOR/ALARM LIST
3	RCIC INITIATION LOGIC
4	RCIC AUTO SHUTDOWN
4	LEAK DETECTION ISOLATION
5	DRAIN POT SYSTEM ISOLATION VALVE F040
5	STEAM INLET TRAP BYPASS VALVE F058
5	DRAIN POT SYSTEM ISOLATION VALVE F041
7	TESTABLE CHECK VALVE F005 AND EQUALIZING VALVE F026
8	INJECTION VALVE F004
8	MINIMUM FLOW BYPASS TO SUPPRESSION POOL VALVE F011
9	CONDENSATE STORAGE TANK SUCTION VALVE F001
9	SUPPRESSION POOL SUCTION VALVE F006
10	STEAM SUPPLY TO TURBINE VALVE F037
11	TEST BYPASS TO SUPPRESSION POOL VALVE F008
11	TEST BYPASS TO SUPPRESSION POOL VALVE F009

SH NO.	TITLE
12	STEAM SUPPLY LINE INBOARD ISOL VALVE F035
12	STEAM SUPPLY LINE OUTBOARD ISOL VALVE F036
12	TURBINE EXHAUST TO SUPPRESSION POOL VALVE F039
13	STEAM LINE WARM UP VALVE F048
14	TURBINE TRIP & THROTTLE VALVE
15	THERMAL OVERLOAD RELAY BYPASS
15	TABLE 2: LIST OF EQUIPMENT WITH THERMAL OVERLOAD RELAY BYPASS
16	TURBINE EXHAUST HIGH PRESS ISOLATION
16	RCIC OUT–OF–SERVICE ALARM
17	MISCELLANEOUS ALARMS

MPL NO. E51–1030

FIGURE 7.3–3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 1 of 17)

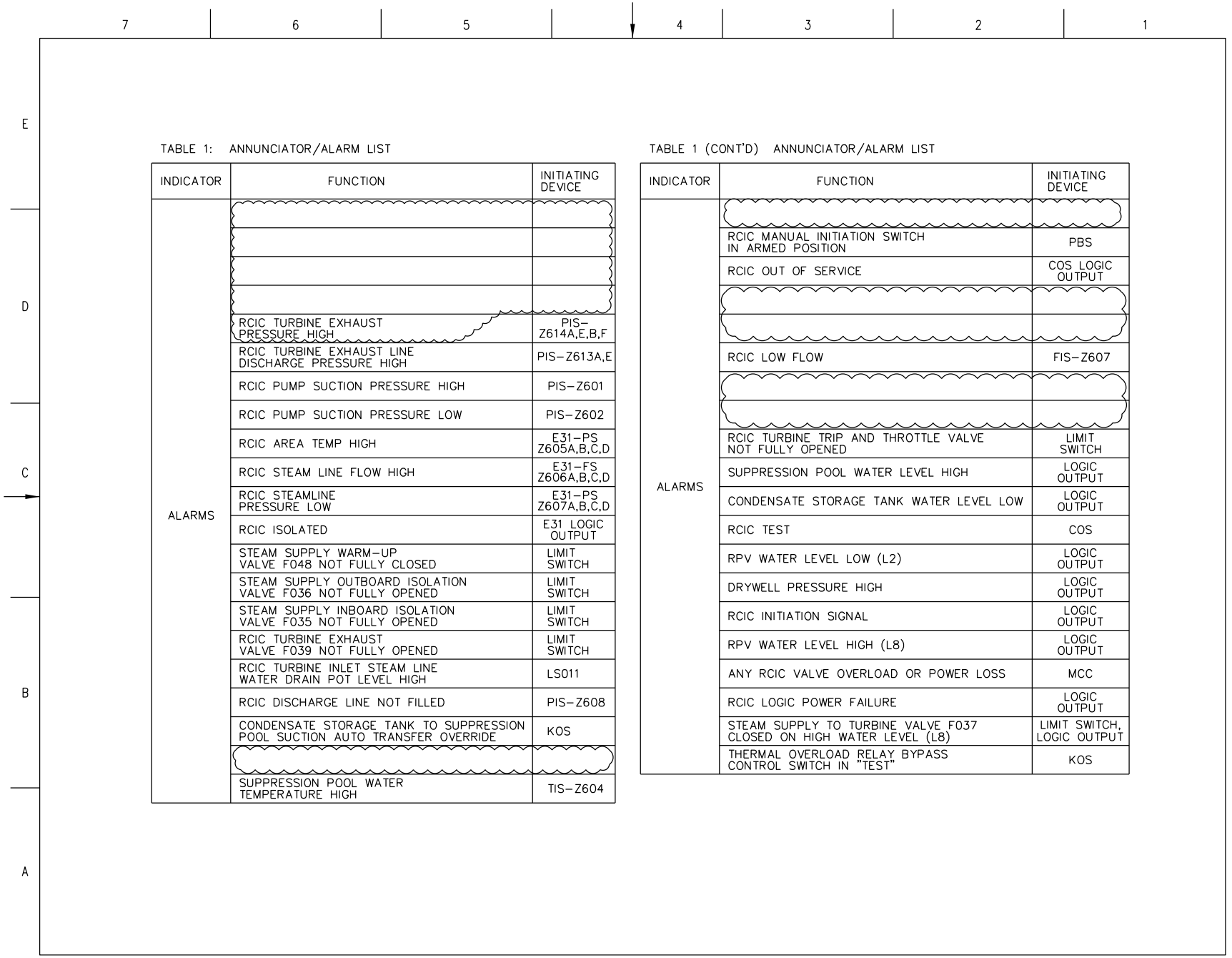


TABLE 1: ANNUNCIATOR/ALARM LIST

INDICATOR	FUNCTION	INITIATING DEVICE
ALARMS		
	RCIC TURBINE EXHAUST PRESSURE HIGH	PIS-Z614A,E,B,F
	RCIC TURBINE EXHAUST LINE DISCHARGE PRESSURE HIGH	PIS-Z613A,E
	RCIC PUMP SUCTION PRESSURE HIGH	PIS-Z601
	RCIC PUMP SUCTION PRESSURE LOW	PIS-Z602
	RCIC AREA TEMP HIGH	E31-PS Z605A,B,C,D
	RCIC STEAM LINE FLOW HIGH	E31-FS Z606A,B,C,D
	RCIC STEAMLINE PRESSURE LOW	E31-PS Z607A,B,C,D
	RCIC ISOLATED	E31 LOGIC OUTPUT
	STEAM SUPPLY WARM-UP VALVE F048 NOT FULLY CLOSED	LIMIT SWITCH
	STEAM SUPPLY OUTBOARD ISOLATION VALVE F036 NOT FULLY OPENED	LIMIT SWITCH
	STEAM SUPPLY INBOARD ISOLATION VALVE F035 NOT FULLY OPENED	LIMIT SWITCH
	RCIC TURBINE EXHAUST VALVE F039 NOT FULLY OPENED	LIMIT SWITCH
	RCIC TURBINE INLET STEAM LINE WATER DRAIN POT LEVEL HIGH	LS011
	RCIC DISCHARGE LINE NOT FILLED	PIS-Z608
	CONDENSATE STORAGE TANK TO SUPPRESSION POOL SUCTION AUTO TRANSFER OVERRIDE	KOS
	SUPPRESSION POOL WATER TEMPERATURE HIGH	TIS-Z604

TABLE 1 (CONT'D) ANNUNCIATOR/ALARM LIST

INDICATOR	FUNCTION	INITIATING DEVICE
ALARMS		
	RCIC MANUAL INITIATION SWITCH IN ARMED POSITION	PBS
	RCIC OUT OF SERVICE	COS LOGIC OUTPUT
	RCIC LOW FLOW	FIS-Z607
	RCIC TURBINE TRIP AND THROTTLE VALVE NOT FULLY OPENED	LIMIT SWITCH
	SUPPRESSION POOL WATER LEVEL HIGH	LOGIC OUTPUT
	CONDENSATE STORAGE TANK WATER LEVEL LOW	LOGIC OUTPUT
	RCIC TEST	COS
	RPV WATER LEVEL LOW (L2)	LOGIC OUTPUT
	DRYWELL PRESSURE HIGH	LOGIC OUTPUT
	RCIC INITIATION SIGNAL	LOGIC OUTPUT
	RPV WATER LEVEL HIGH (L8)	LOGIC OUTPUT
	ANY RCIC VALVE OVERLOAD OR POWER LOSS	MCC
	RCIC LOGIC POWER FAILURE	LOGIC OUTPUT
	STEAM SUPPLY TO TURBINE VALVE F037 CLOSED ON HIGH WATER LEVEL (L8)	LIMIT SWITCH, LOGIC OUTPUT
	THERMAL OVERLOAD RELAY BYPASS CONTROL SWITCH IN "TEST"	KOS

FIGURE 7.3-3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 2 of 17)

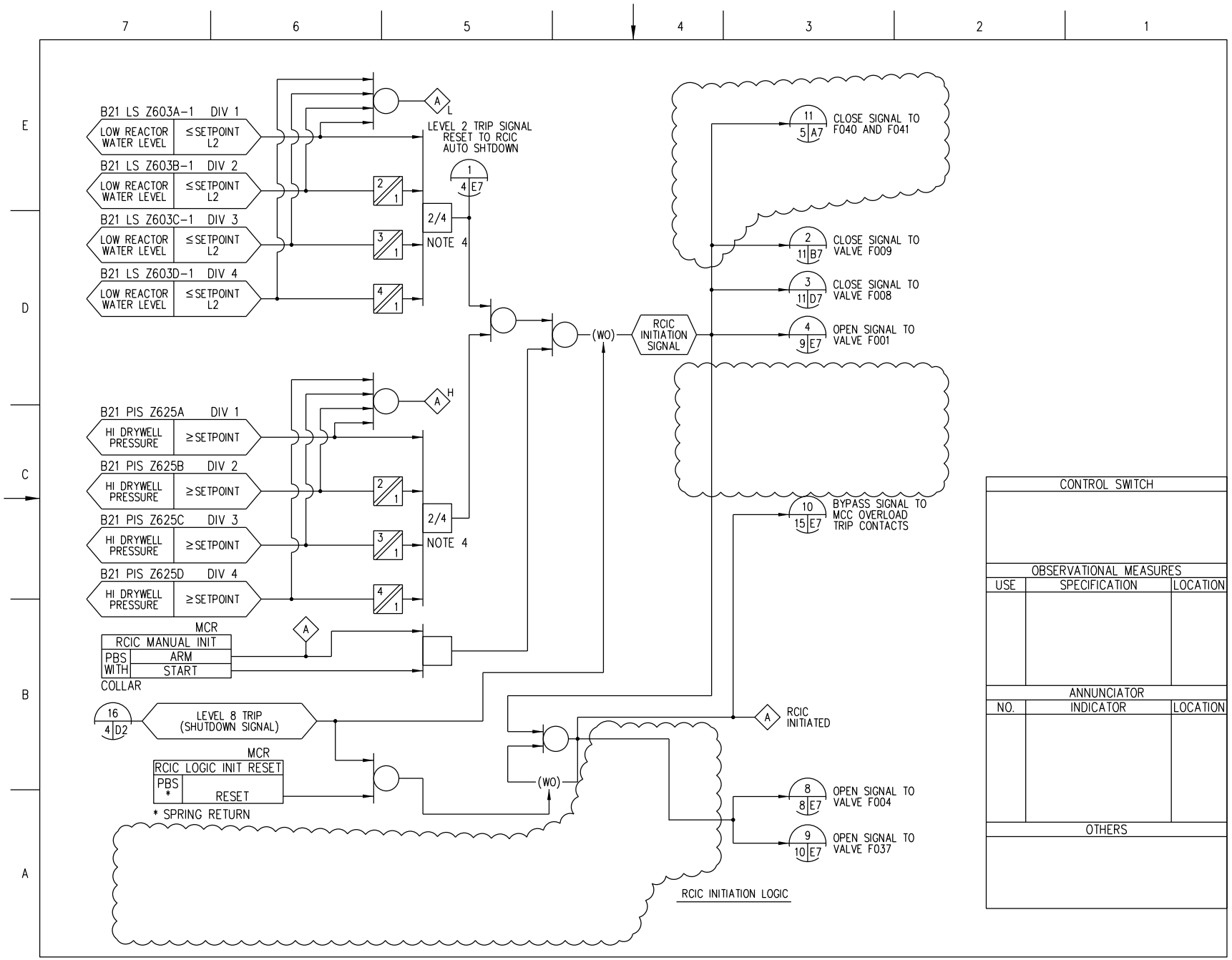


FIGURE 7.3-3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 3 of 17)

STP 3 & 4 Rev.2

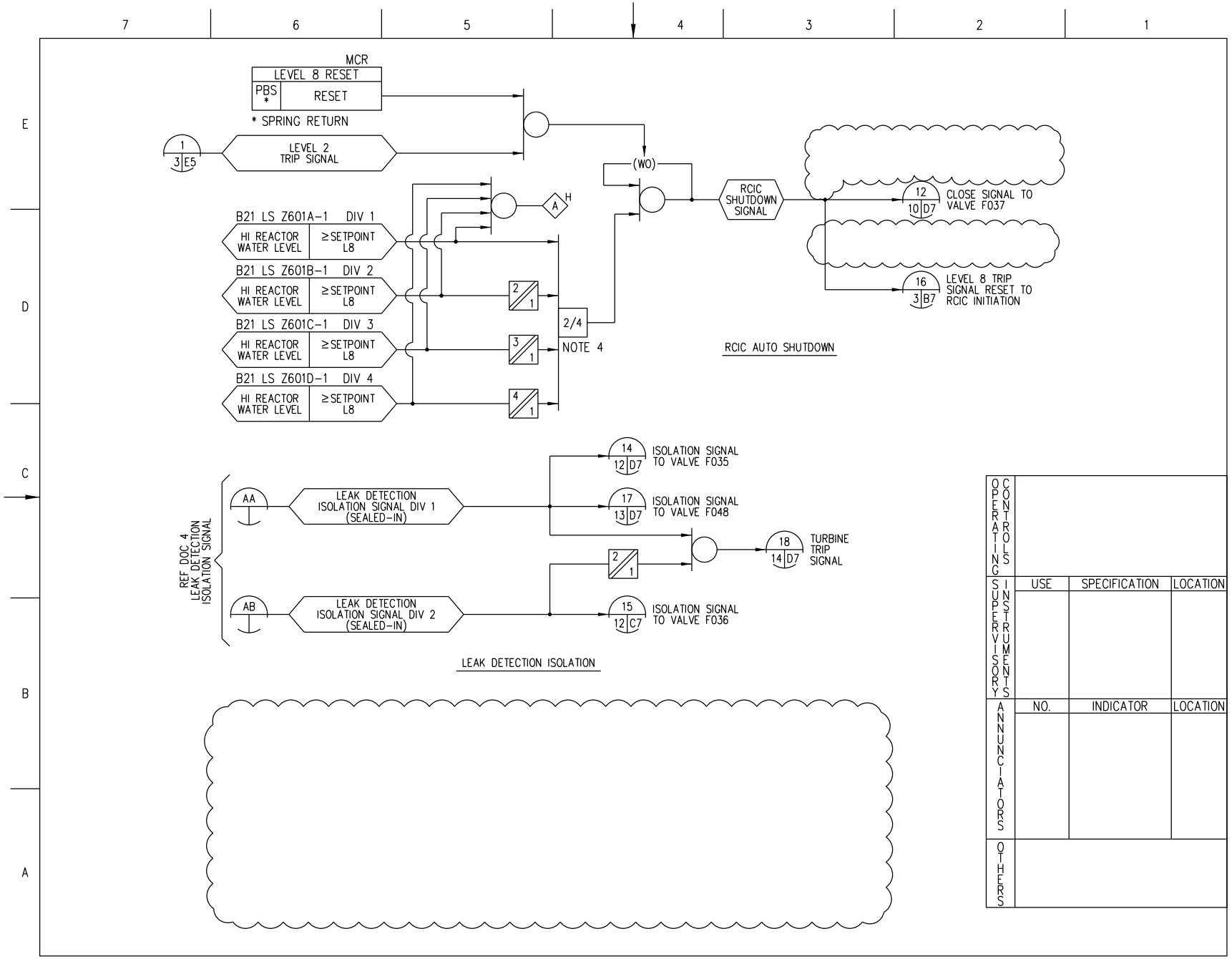


FIGURE 7.3-3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 4 of 17)

STP 3 & 4 Rev.2

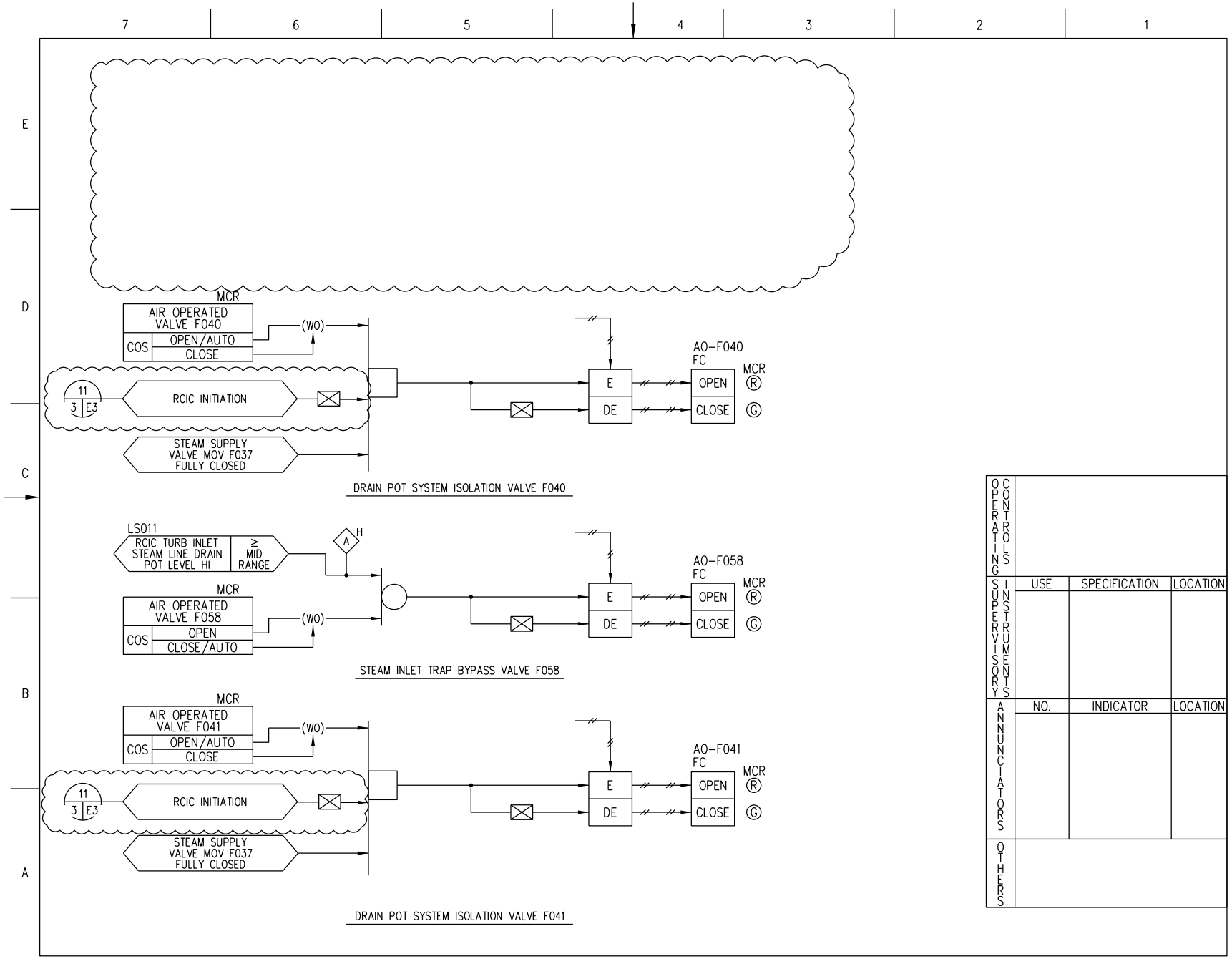


FIGURE 7.3-3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 5 of 17)

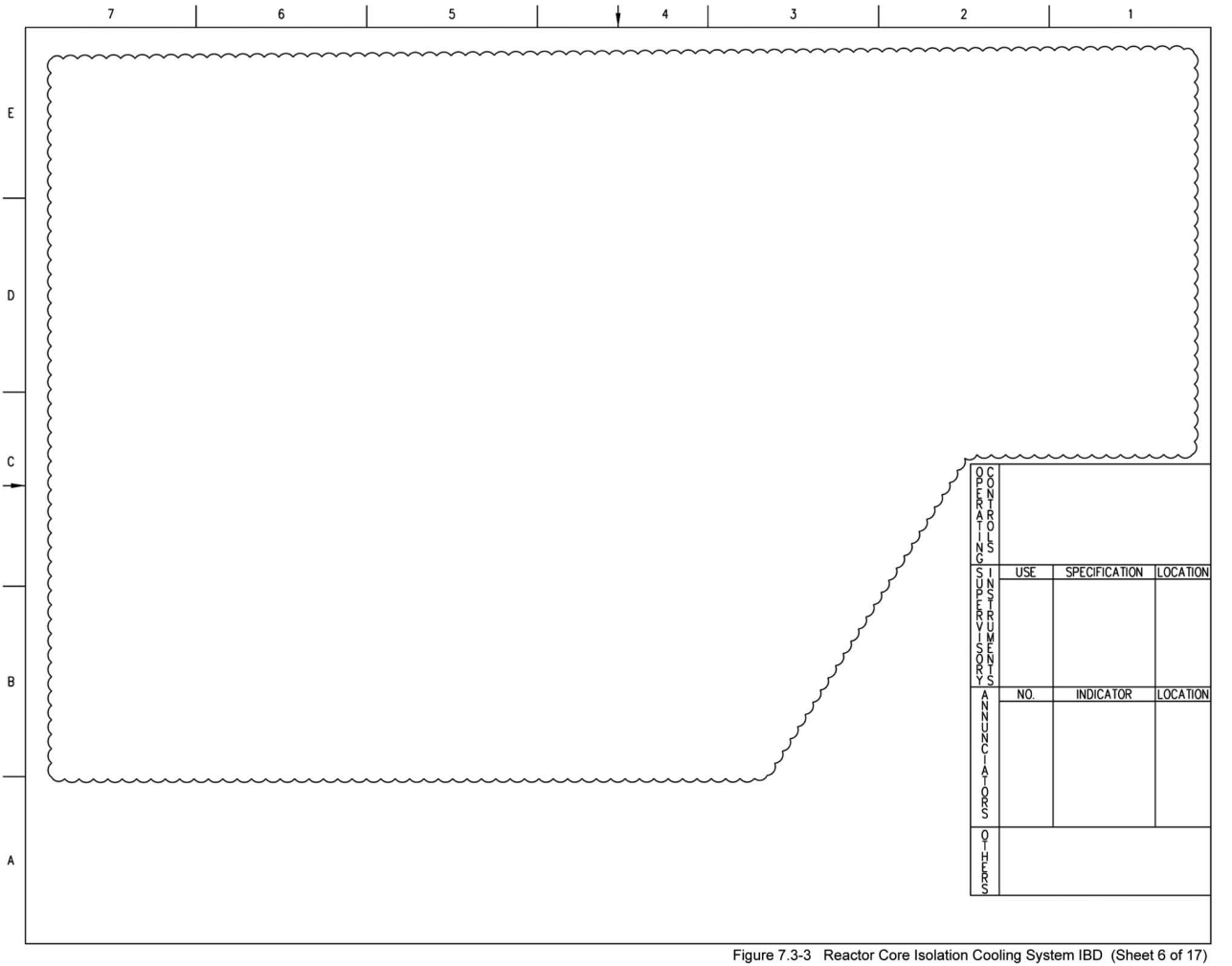


Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 6 of 17)
STP 3&4 Rev. 2

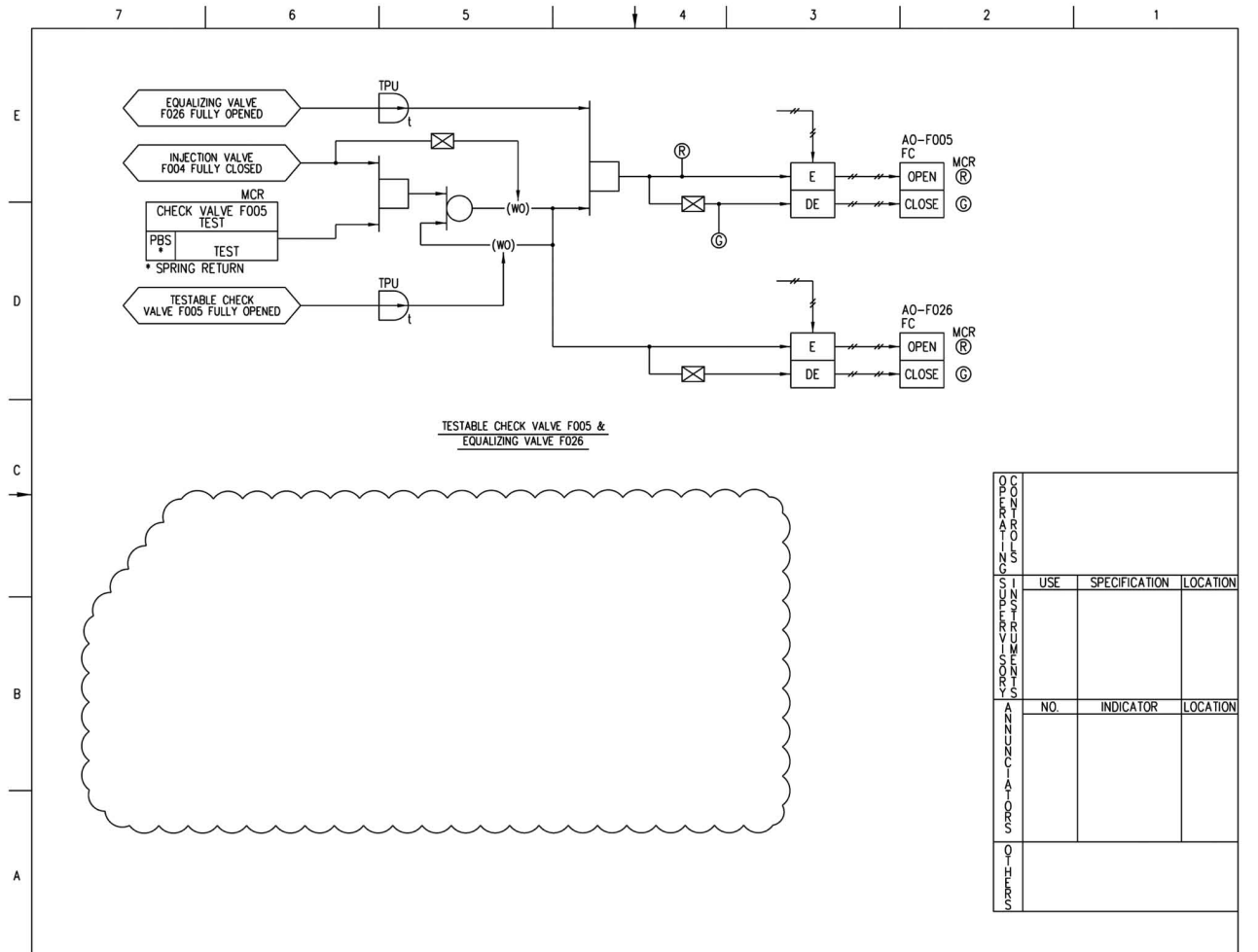


Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 7 of 17)

STP 3&4 Rev. 2

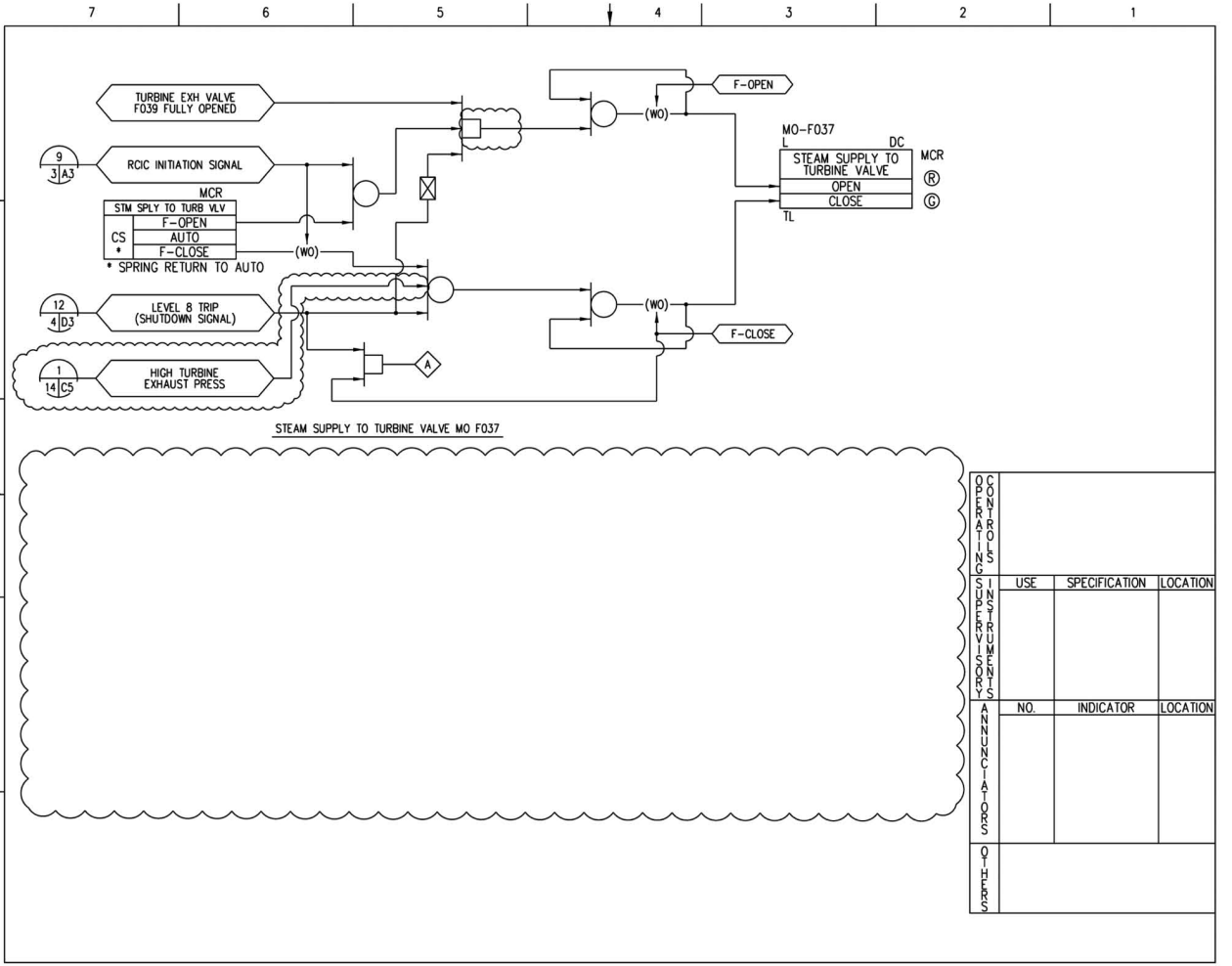
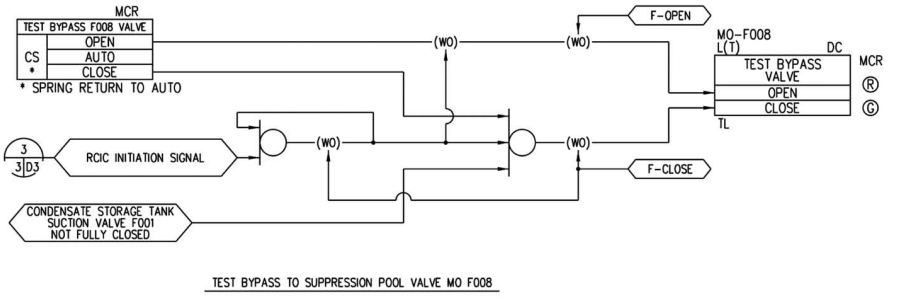
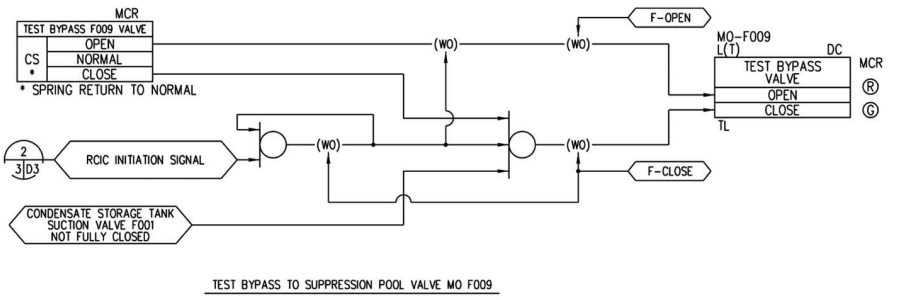


Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 10 of 17)



TEST BYPASS TO SUPPRESSION POOL VALVE MO F008



TEST BYPASS TO SUPPRESSION POOL VALVE MO F009

OPERATING CONTROLS				
SURVEILLANCE INSTRUMENTS		USE	SPECIFICATION	LOCATION
ANNUNCIATORS		NO.	INDICATOR	LOCATION
OTHERS				

Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 11 of 17)

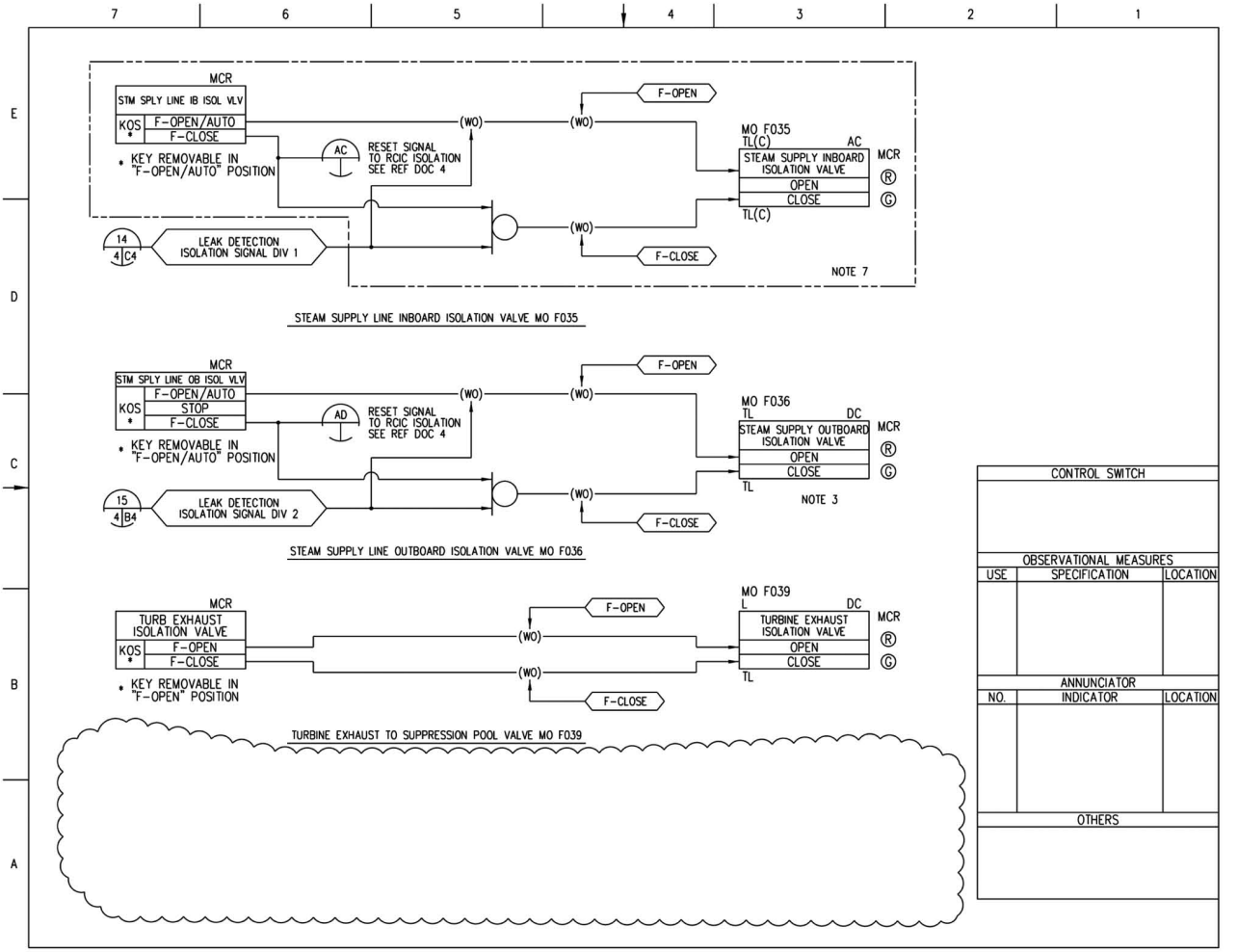


Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 12 of 17)
STP 3&4 Rev. 2

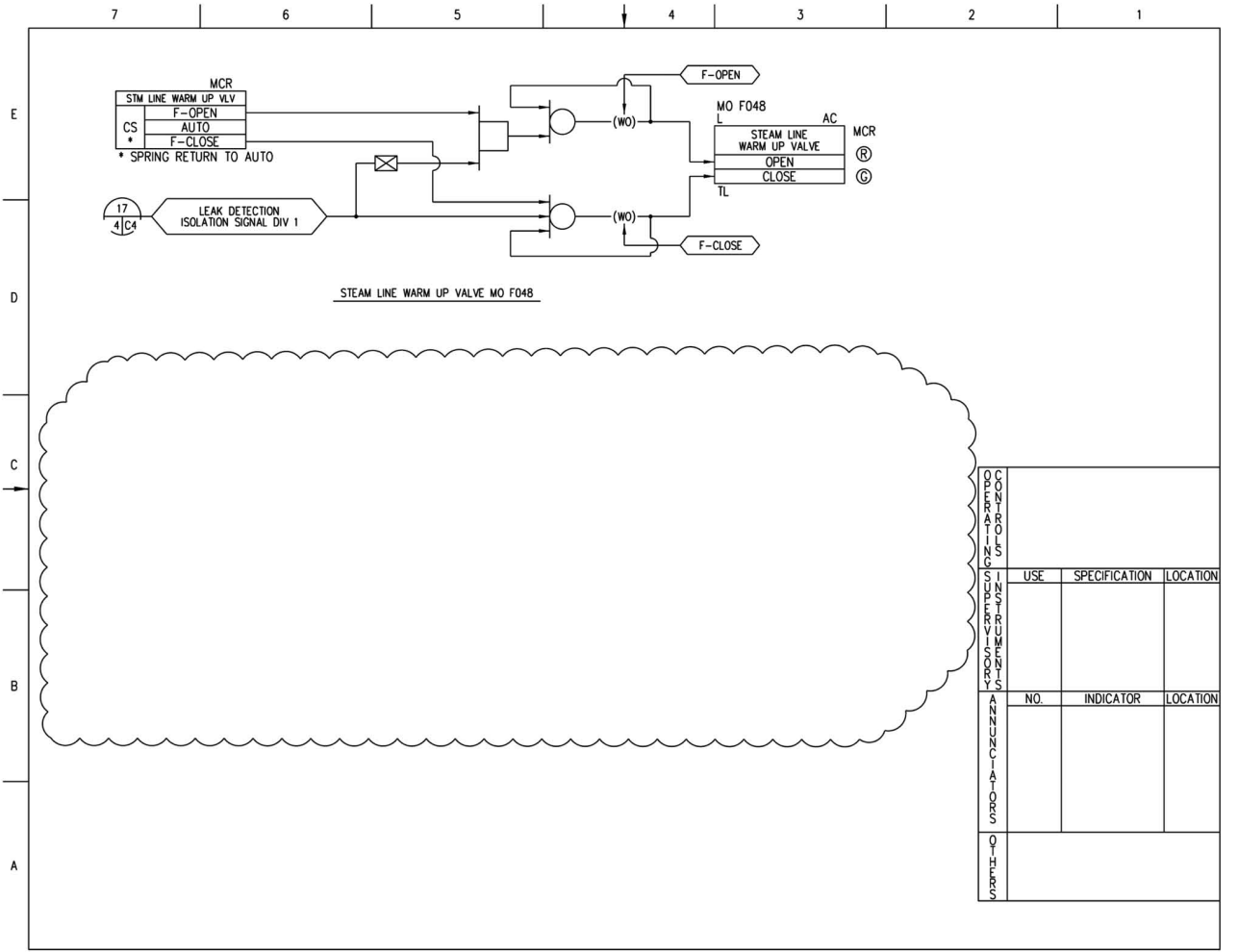


Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 13 of 17)

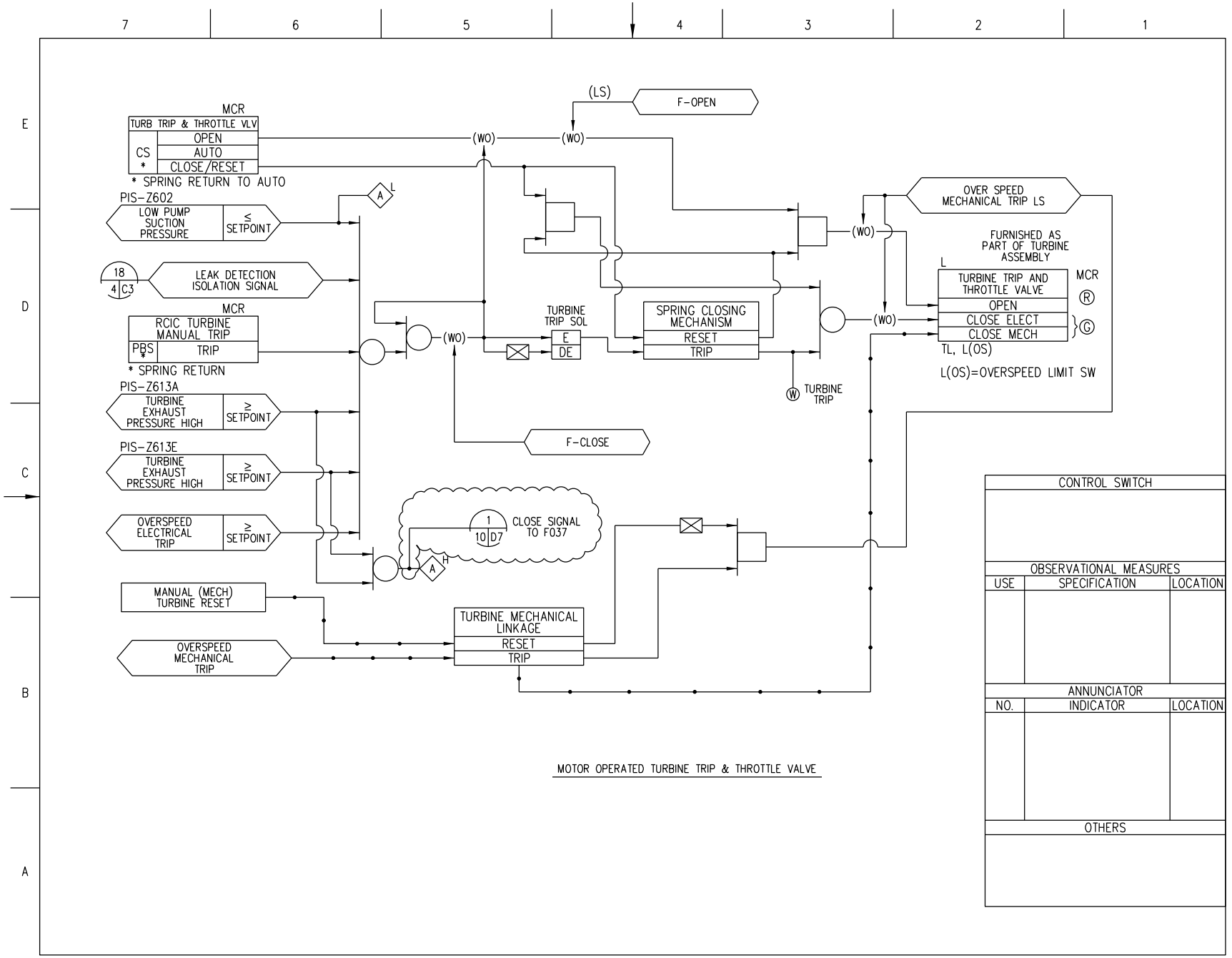
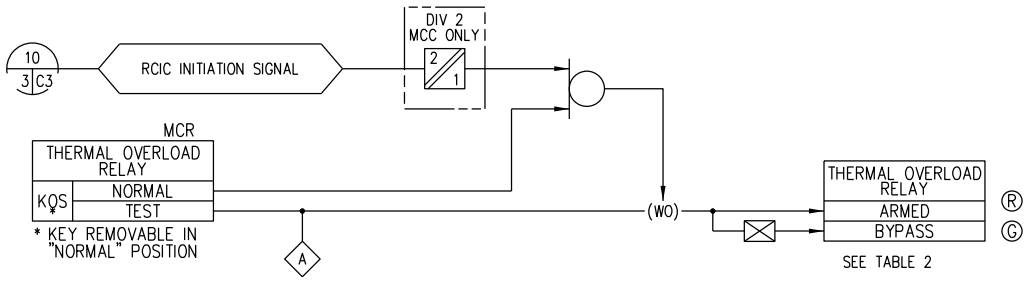


FIGURE 7.3-3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 14 of 17)

STP 3 & 4 Rev.2



MOTOR CONTROL CENTER THERMAL OVERLOAD RELAY BYPASS
(TYPICAL FOR DIV 2 MCC EXCEPT AS NOTED)

TABLE 2: LIST OF EQUIPMENT WITH THERMAL OVERLOAD RELAY BYPASS

SYSTEM	VALVE NO.	NAME	POWER SUPPLY
RCIC	E51–F001	CST SUCTION VALVE	DIV 1 DC
RCIC	E51–F004	INJECTION VALVE	DIV 1 DC
RCIC	E51–F006	S/P SUCTION VALVE	DIV 1 DC
RCIC	E51–F008	TEST RETURN VALVE	DIV 1 DC
RCIC	E51–F009	TEST RETURN VALVE	DIV 1 DC
RCIC	E51–F011	MINIMUM FLOW VALVE	DIV 1 DC
RCIC	E51–F035	STEAM SUPPLY INBOARD ISOL VALVE	DIV 1 DC
RCIC	E51–F036	STEAM SUPPLY OUTBOARD ISOL VALVE	DIV 2 DC
RCIC	E51–F037	STEAM SUPPLY VALVE	DIV 1 DC
RCIC	E51–F039	TURBINE EXHAUST VALVE	DIV 1 DC
RCIC	E51–F048	STEAM LINE WARM–UP VALVE	DIV 1 DC
RCIC	*	TURBINE TRIP AND THROTTLE VALVE	DIV 1 DC

* SUPPLIED WITH RCIC TURBINE, E51–C002

OPERATING CONTROLS			
SUPERVISORY INSTRUMENTS	USE	SPECIFICATION	LOCATION
ANNUNCIATORS	NO.	INDICATOR	LOCATION
OTHERS			

FIGURE 7.3–3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 15 of 17)
STP 3 & 4 Rev.2

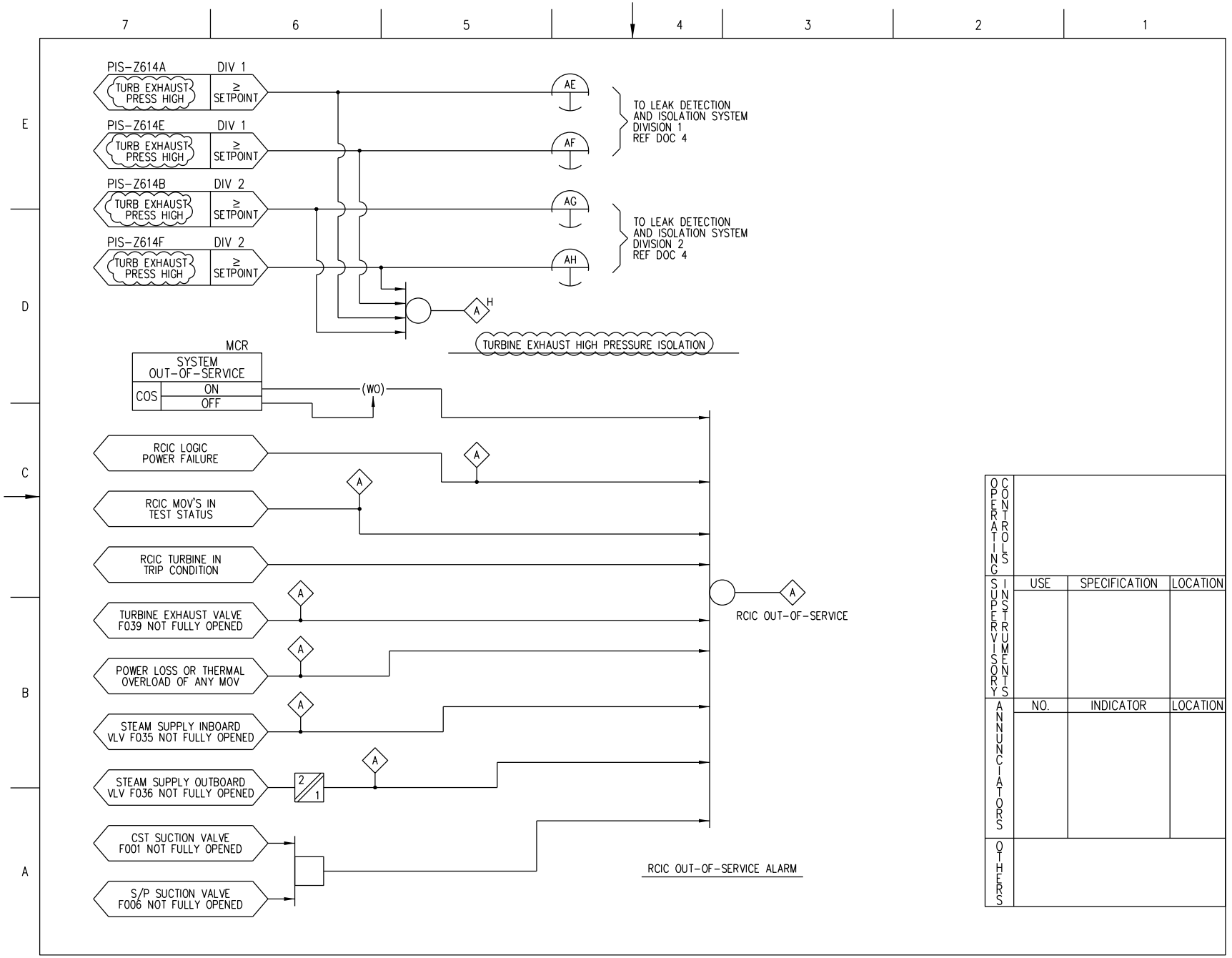


FIGURE 7.3-3 REACTOR CORE ISOLATION COOLING SYSTEM IBD (Sheet 16 of 17)

STP 3 & 4 Rev.2

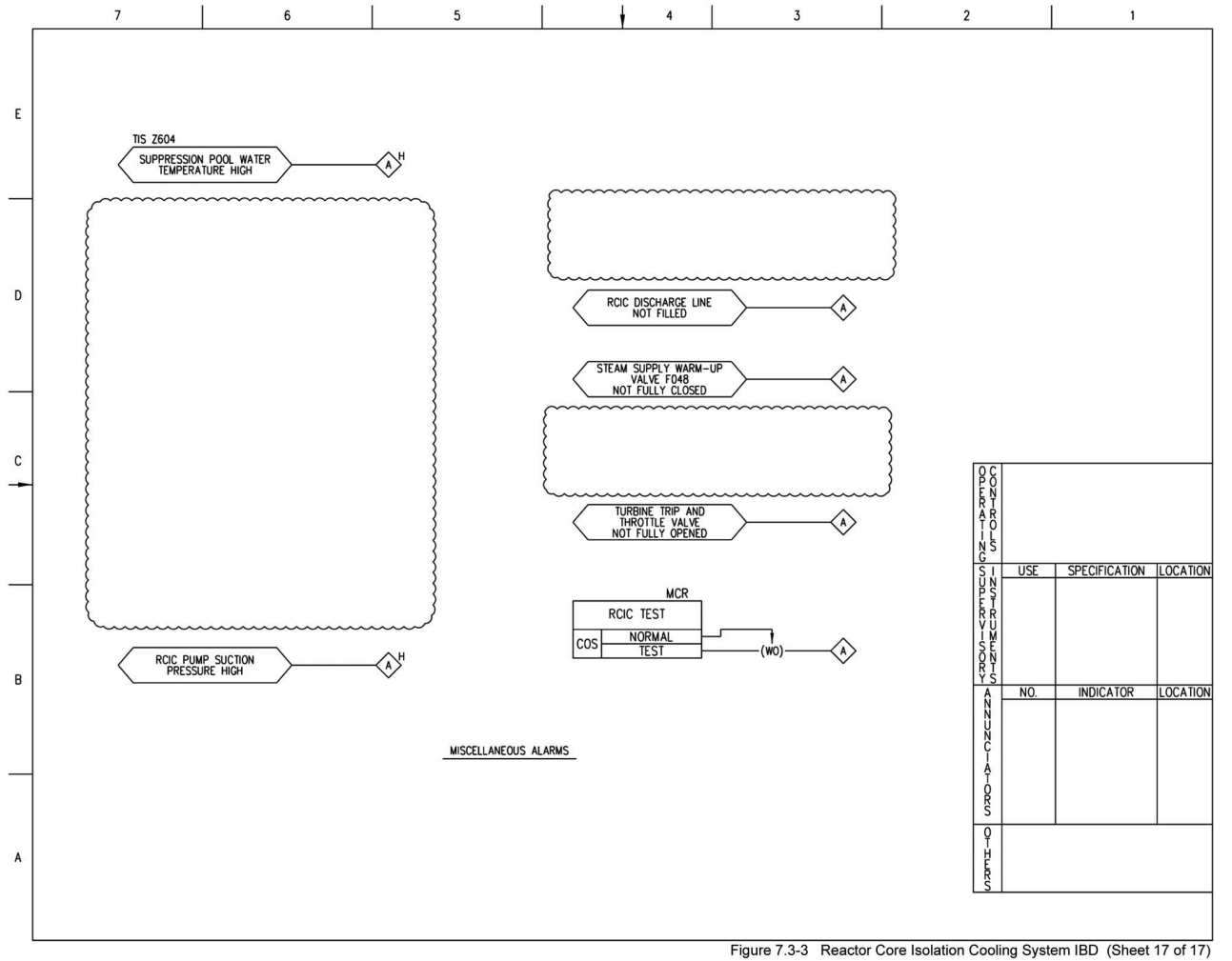


Figure 7.3-3 Reactor Core Isolation Cooling System IBD (Sheet 17 of 17)

STP 3&4 Rev. 2

NOTES:

1. RHR LOOP "A" LOGIC IS SHOWN. RHR LOOP B, & C LOGIC IS IDENTICAL TO "A" EXCEPT AS NOTED.
2. ALL EQUIPMENT AND INSTRUMENTS ARE PREFIXED BY SYSTEM NUMBER E11 UNLESS OTHERWISE NOTED.
3. VALVES F011A, F011B AND F011C ARE IN ELECTRICAL DIVISION 2, 3 AND 1 RESPECTIVELY. THE MANUAL CONTROL SWITCH FOR VALVES F011A, F011B AND F011C ARE IN ELECTRICAL DIVISIONS 1, 2 AND 3 RESPECTIVELY.
4. SYSTEM R10, ELECTRICAL POWER DISTRIBUTION SYSTEM, SHALL PERMIT MOTOR TO START ONLY FOR PUMP VOLTAGE >70 PERCENT OF NOMINAL.
5. DIVISIONAL SIGNALS SHALL BE ISOLATED FROM THE NON-1E ALARM.
6. THE LOGIC DESIGN SHALL INCORPORATE PROVISIONS TO REVERT 2/4 LOGIC TO 2/3 LOGIC DURING BYPASS OF A SINGLE DIVISION OF SENSORS. ALSO, THE LOGIC DESIGN SHALL NOT PERMIT THE BYPASS OF MORE THAN ONE DIVISION OF SENSORS AT A TIME.
7. SETPOINT VALVES ARE PRELIMINARY AND WILL BE FINALIZED IN DETAILED DESIGN.
8. UNLESS OTHERWISE SPECIFIED, POWER AND CONTROL CIRCUITS ARE DIVISION 1, 2 AND 3 FOR LOOPS A, B AND C RESPECTIVELY.
9. THIS EQUIPMENT IS ALSO CONTROLLED BY REMOTE SHUTDOWN SYSTEM (REFERENCE DOCUMENT 11) FOR RHR LOOPS A AND B ONLY.
10. THE ELECTRICAL POWER DISTRIBUTION SYSTEM SHALL PROVIDE PUMP C001A,B,C STOP SIGNALS DUE TO BUS UNDER VOLTAGE (≤ 30% VOLTAGE) AND ANY OF THE FOLLOWING MOTOR PROTECTIVE RELAY TRIP SIGNALS:
    A. MOTOR OVERCURRENT
    B. BUS DIFFERENTIAL CURRENT
    C. GROUND OVERCURRENT

REFERENCE DOCUMENTS

		MPL NO.
1.	NUCLEAR BOILER SYSTEM P&ID	B21-1010
2.	SUPPRESSION POOL TEMPERATURE MONITORING SYSTEM IBD	T53-1030
3.	RHR SYSTEM P&ID	E11-1010
4.	LEAK DETECTION & ISOLATION SYSTEM IBD	E31-1030
5.	DELETED	
7.	NUCLEAR BOILER SYSTEM IBD	B21-1030
8.	REACTOR WATER CLEAN-UP SYSTEM IBD	G31-1030
9.	FUEL POOL COOLING SYSTEM IBD	G41-1030
10.	REACTOR BLDG COOLING WATER SYSTEM/ REACTOR SERVICE WATER SYSTEM IBD	P21/P41-1030
11.	REMOTE SHUTDOWN SYSTEM IBD	C61-1030
12.	CONTAINMENT ATMOSPHERE MONITORING SYSTEM IBD	D23-1030
13.	INTERLOCK BLOCK DIAGRAM (IBD) STANDARDS	A10-3070
14.	REACTOR BLDG COOLING WATER SYSTEM P&ID	P21-1010

FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 1 of 20)

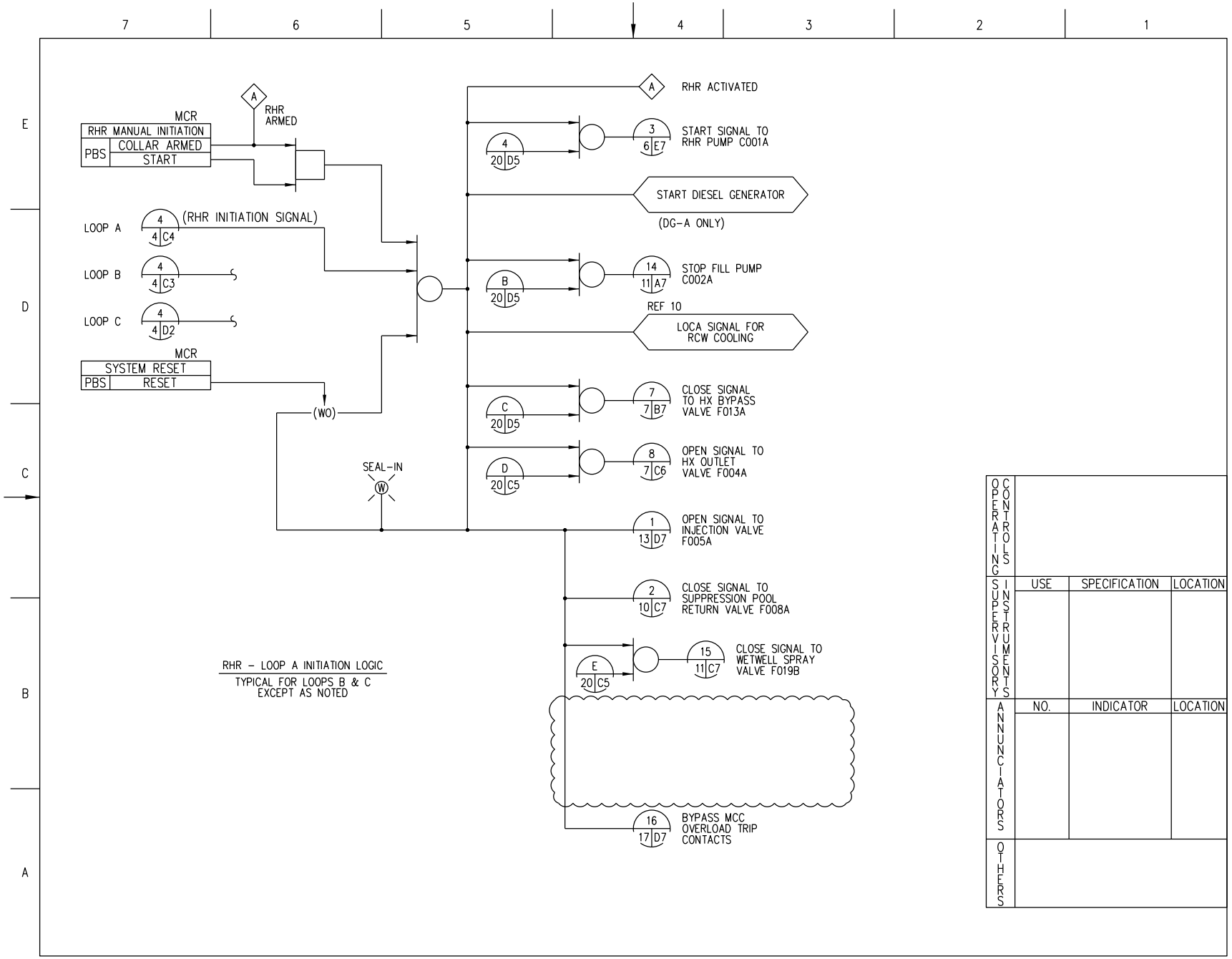


FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 3 of 20)

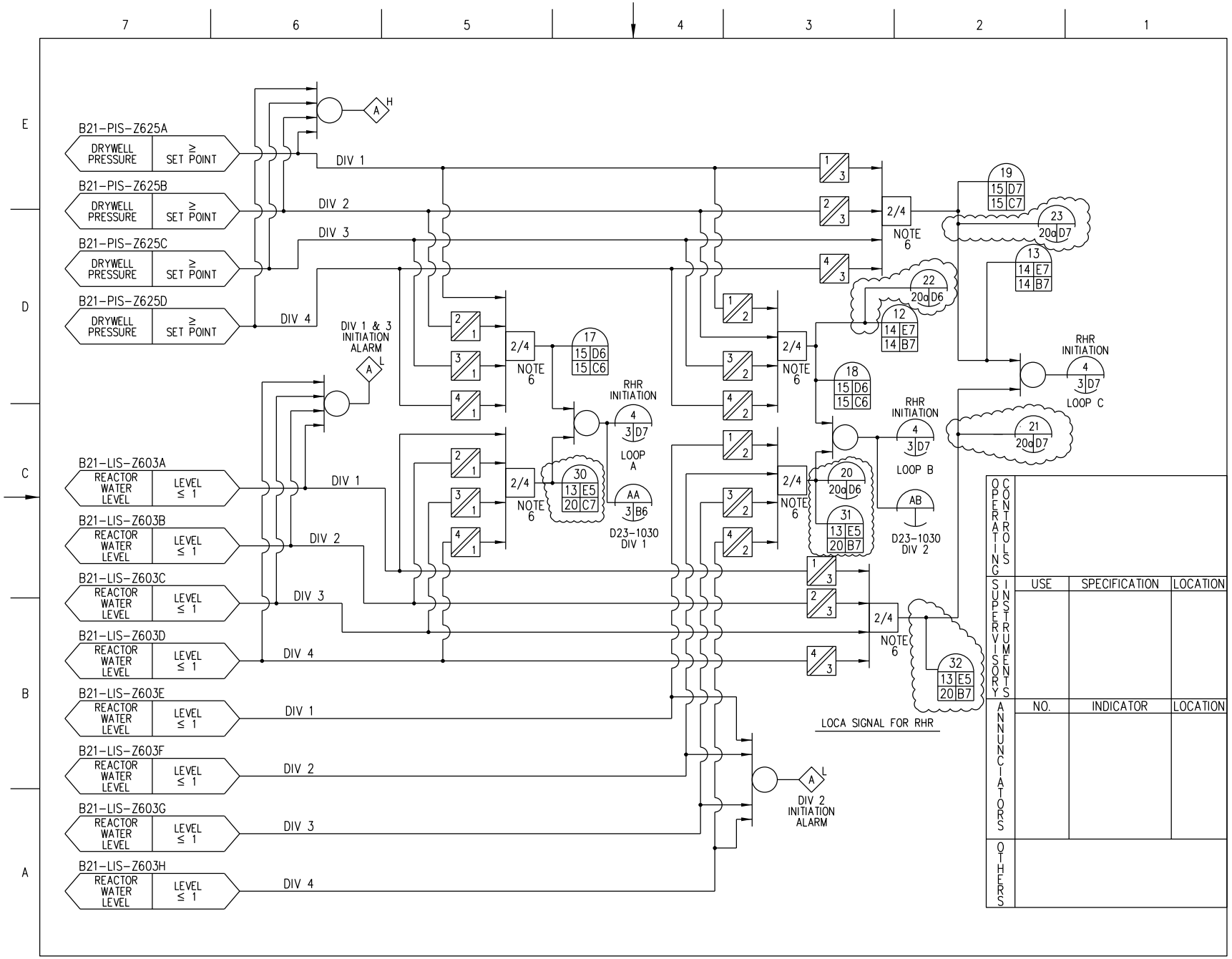


FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 4 of 20)

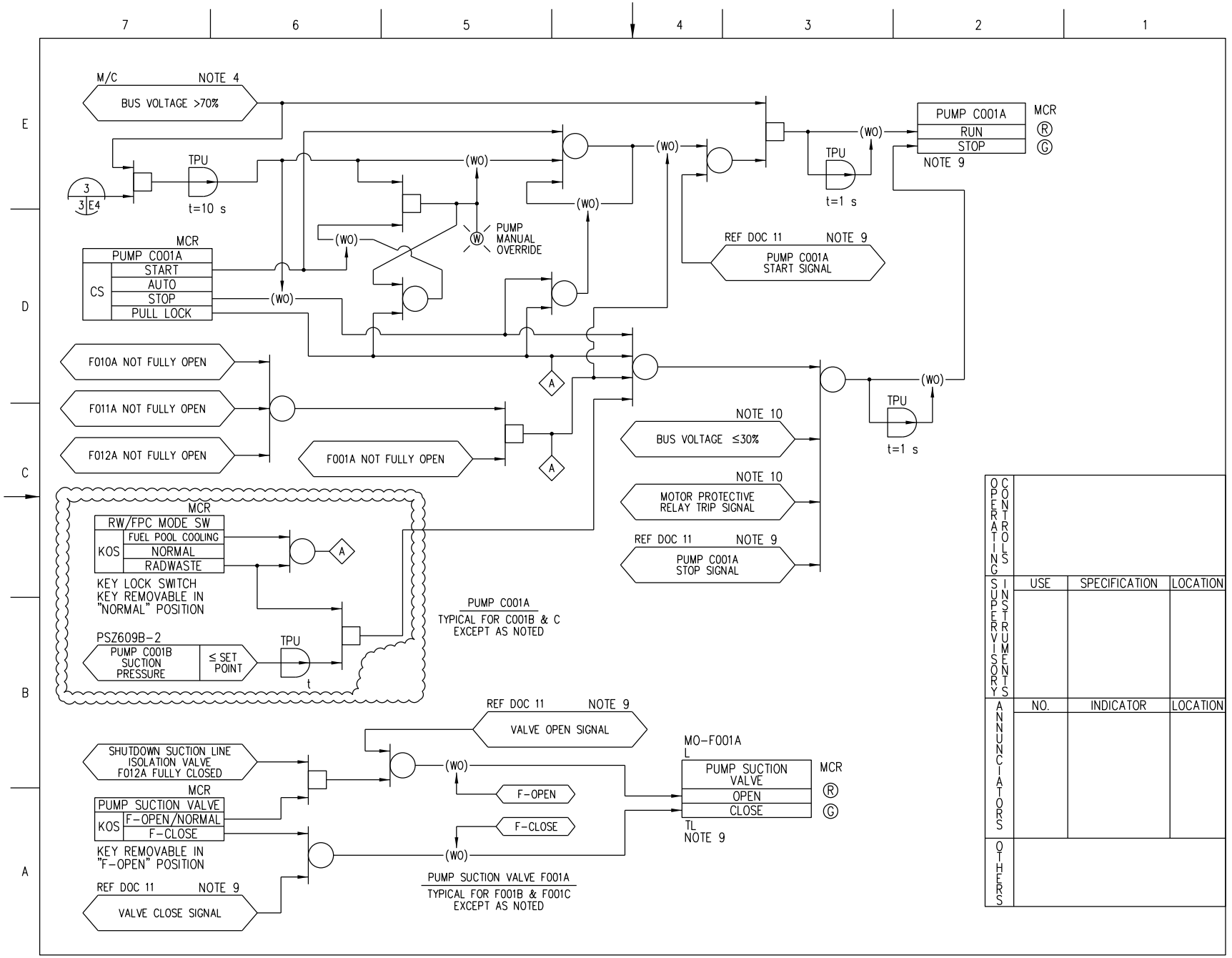


FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 6 of 20)

STP 3 & 4 Rev.2

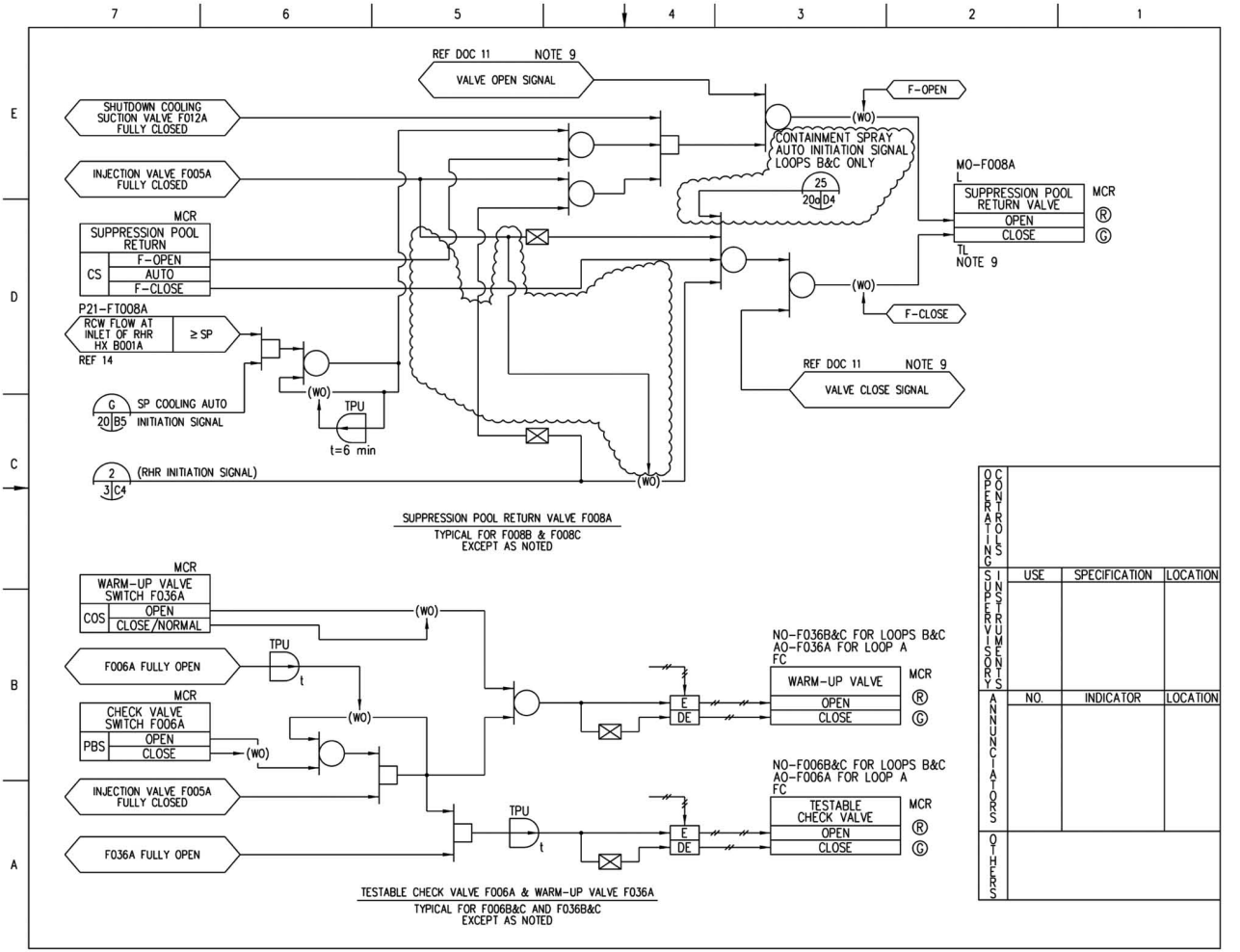


Figure 7.3-4 Residual Heat Removal System IBD (Sheet 10 of 20)

STP 3&4 Rev. 2

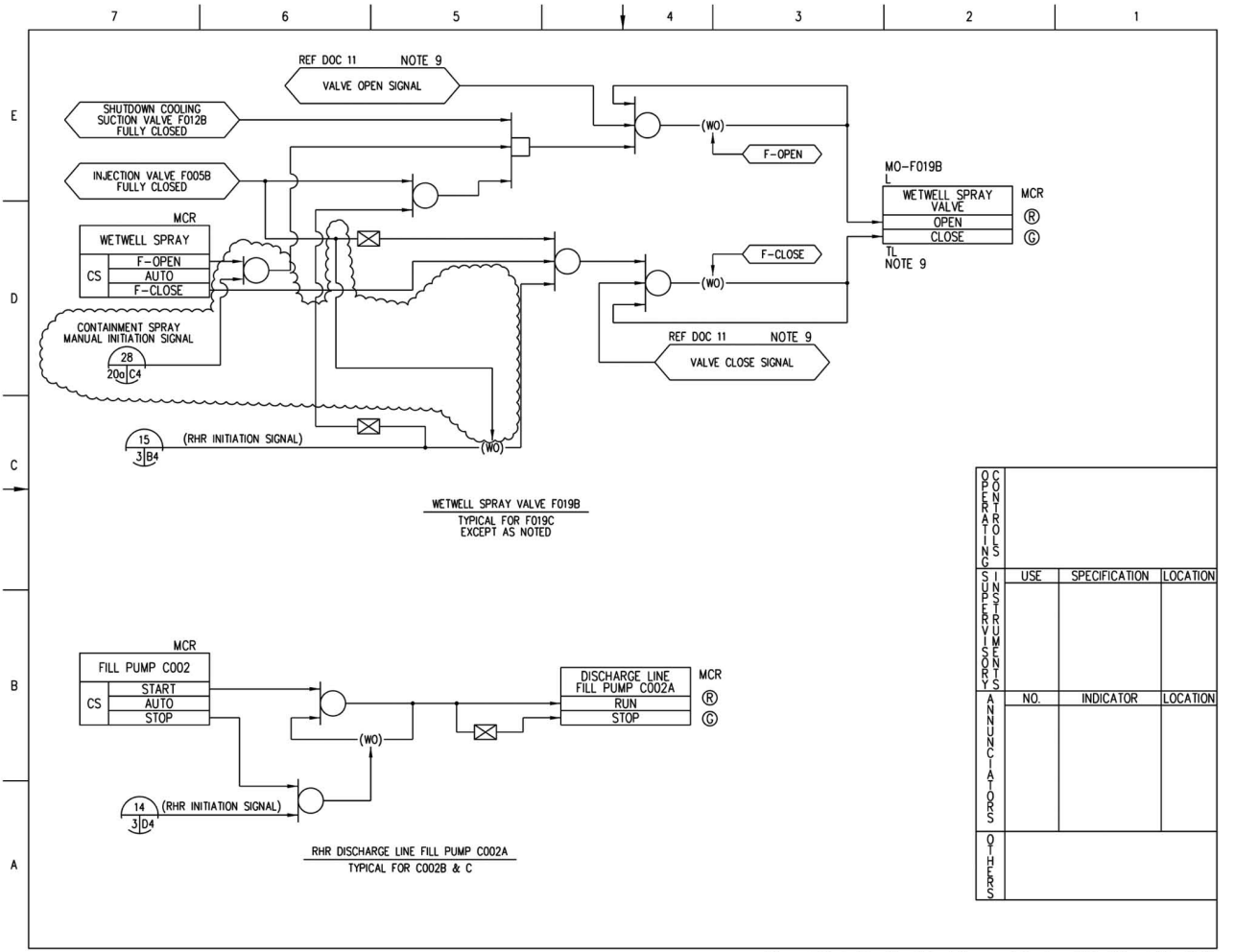


Figure 7.3-4 Residual Heat Removal System IBD (Sheet 11 of 20)
STP 3&4 Rev. 2

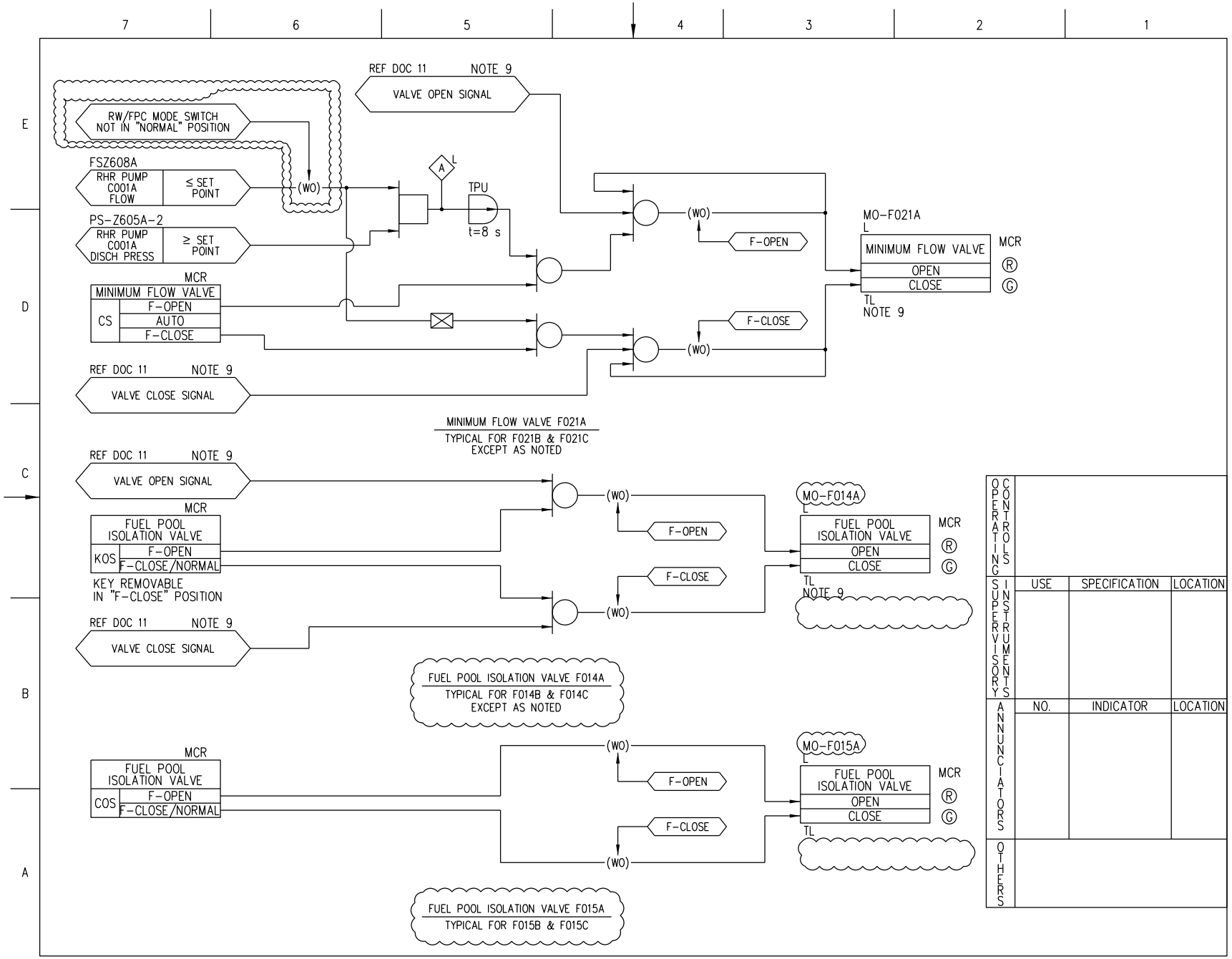


FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 12 of 20)

STP 3 &4 Rev.2

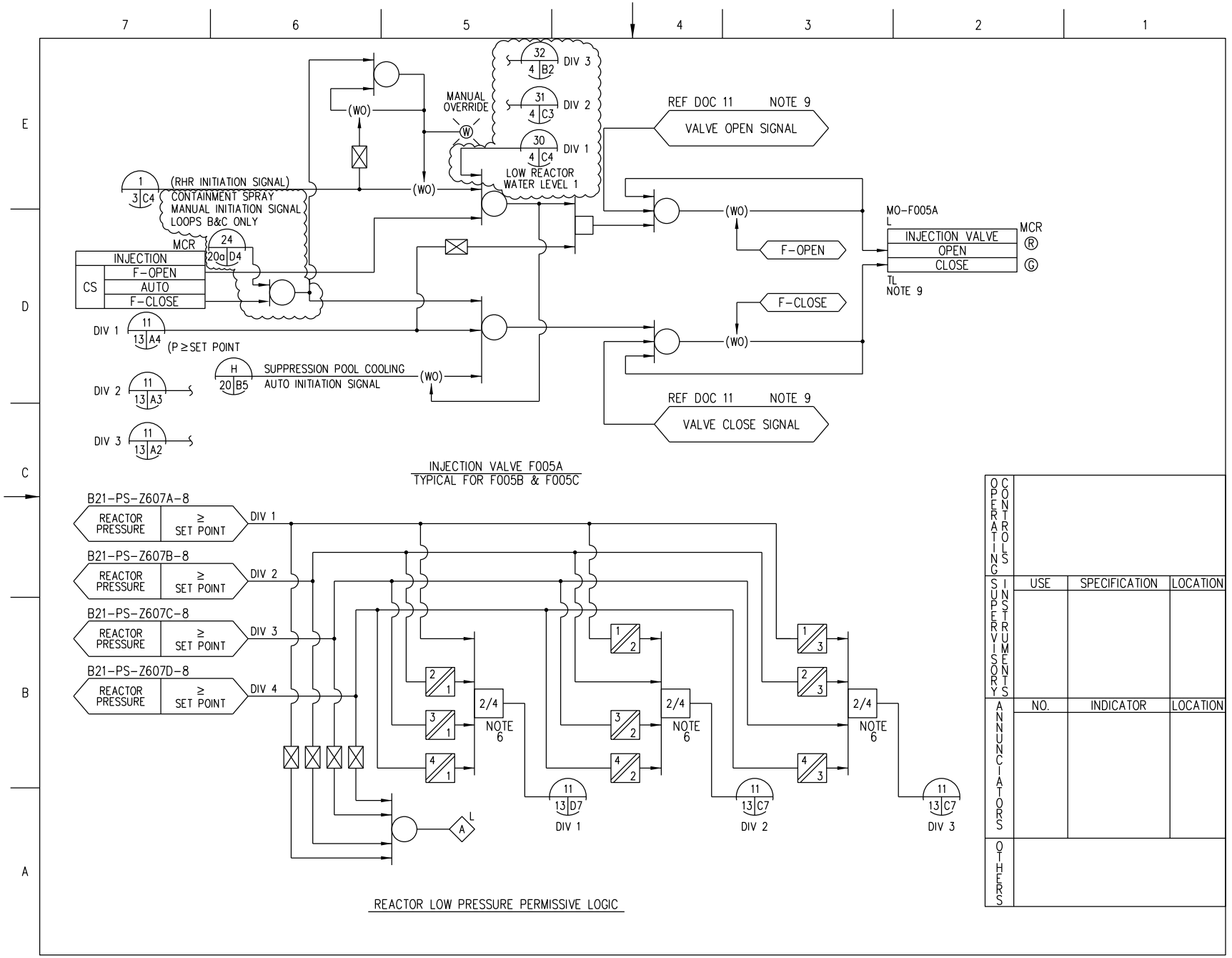


FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 13 of 20)

STP 3 & 4 Rev.2

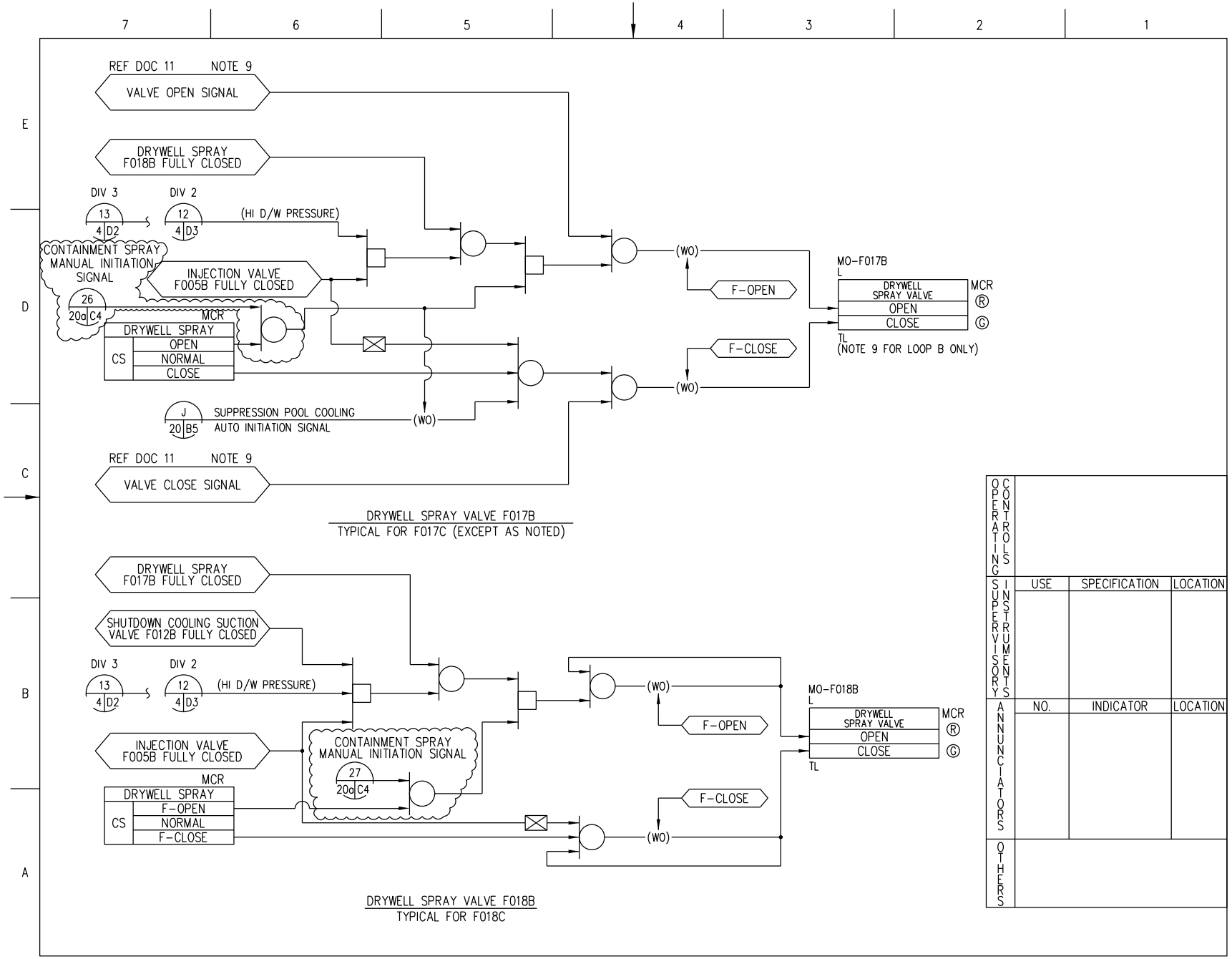


FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 14 of 20)

STP 3 & 4 Rev.2

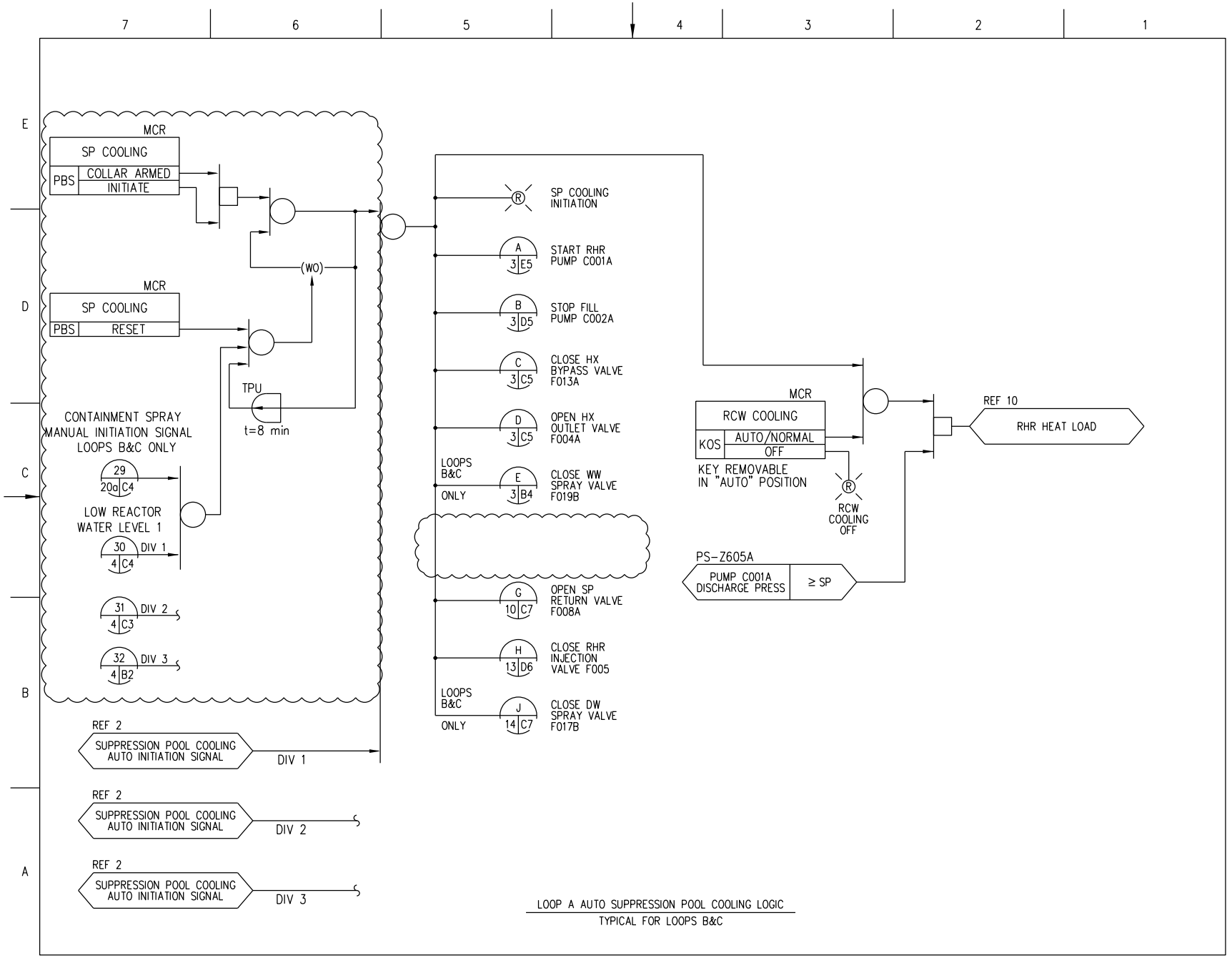
TABLE 2

ANNUNCIATOR / ALARM LIGHTS / STATUS LIGHTS		
INDICATOR	FUNCTION	INITIATING DEVICE
ALARMS	HIGH DRYWELL PRESSURE	LOGIC OUTPUT
	HIGH SUPPRESSION POOL TEMPERATURE	LOGIC OUTPUT
	LOW REACTOR WATER LEVEL 1	LOGIC OUTPUT
	HIGH WETWELL AIR SPACE TEMPERATURE	LOGIC OUTPUT
	RHR PUMP C001A,B,C HIGH DISCHARGE PRESSURE	PSZ605A-1, B-1, C-1
	RHR LOOP A,B,C ACTIVATED	LOGIC OUTPUT
	RHR PUMP C001A,B,C MOTOR OVERLOAD	METAL CLAD SWITCHGEAR
	LOW REACTOR PRESSURE	LOGIC OUTPUT
	RHR LOOP A,B,C MANUAL INITIATION SWITCH IN ARMED POSITION	PBS
	RHR LOOP A,B,C OUT-OF-SERVICE	COS, LOGIC OUTPUT
	HIGH SHUTDOWN SUCTION PRESSURE LOOP A,B,C	PSZ609A-1, B-1, C-1
	RHR PUMP C001A,B,C DISCHARGE PIPING WATER FILL LOW	PSZ604A, B, C
	RHR LOOP A,B,C LOGIC POWER FAILURE	LOGIC OUTPUT
	POWER LOSS OR THERMAL OVERLOAD OF ANY RHR LOOP A,B,C MOV	MCC
	RHR LOOP A,B,C MOV'S IN TEST STATUS	CS
	RHR C001A,B,C PUMP MOTOR AUTO TRIP	LOGIC OUTPUT
	FILL PUMP C002A,B,C TRIP	MCC
	RHR HEAT EXCHANGER B001A,B,C OUTLET FLOW TEMP HIGH	TIS-Z607A,B,C
	RHR PUMP C001A,B,C OPERATION SWITCH IN PULL-LOCK	PULL LOCK
	RHR PUMPS C001A,B,C SUCTION VALVES CLOSED	LOGIC OUTPUT
	MODE SWITCH IN RW/FPC FOR RHR LOOPS B&C	KOS
	MCC EQUIPMENT IN TEST MODE (THERMAL OVERLOAD RELAY NOT BYPASSED)	KOS
	RHR PUMP C001A,B,C FLOW LOW	LOGIC OUTPUT

TABLE 2 (CON'T)

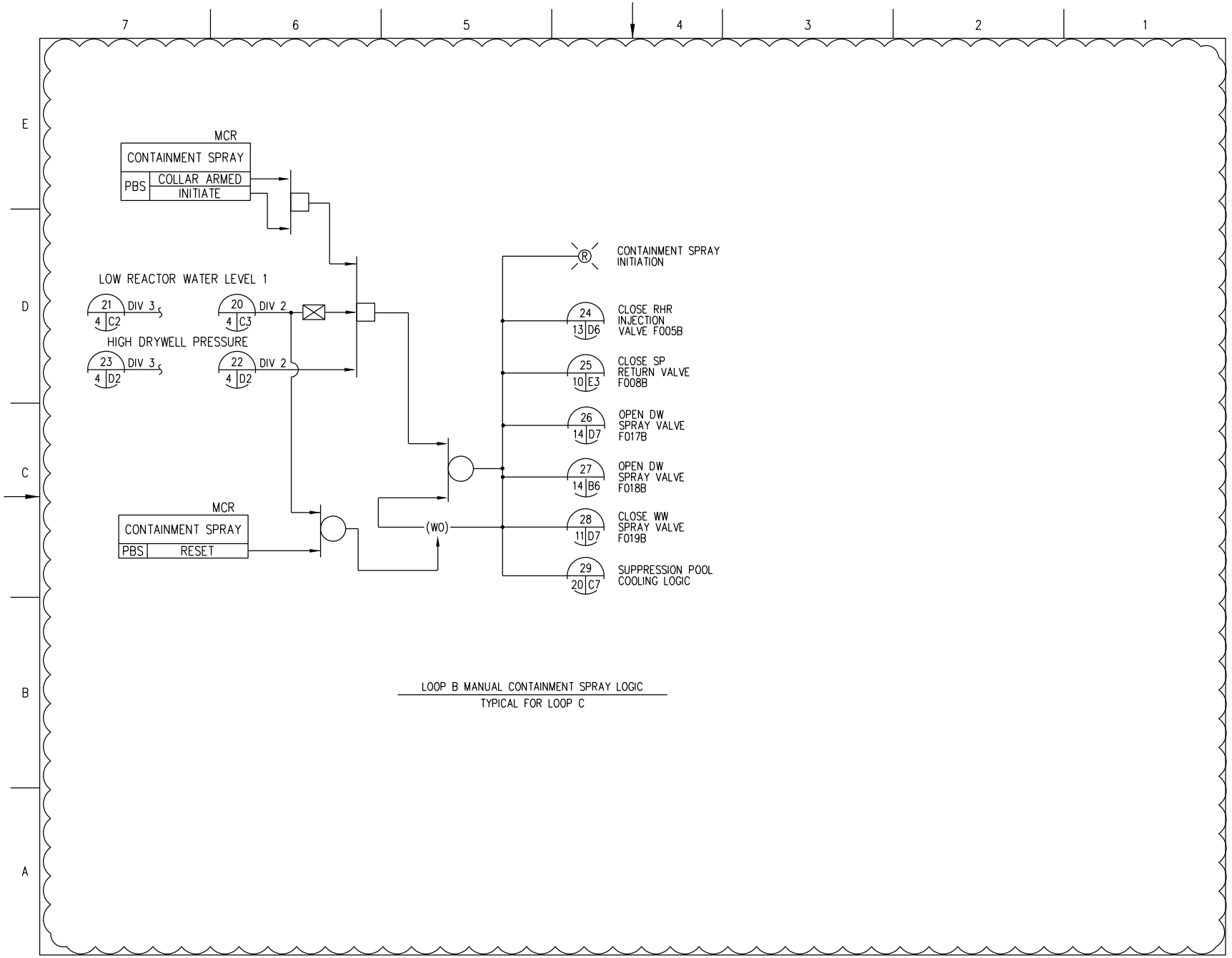
ANNUNCIATOR / ALARM LIGHTS / STATUS LIGHTS		
INDICATOR	FUNCTION	INITIATING DEVICE
WHITE LIGHT	RHR LOOPS A,B,C INITIATION SIGNAL SEALED-IN	LOGIC OUTPUT
WHITE LIGHT	RHR INJECTION VALVE F005A,B,C MANUAL OVERRIDE	CS, LOGIC OUTPUT
WHITE LIGHT	RHR PUMP C001A,B,C MANUAL OVERRIDE	CS, LOGIC OUTPUT
RED LIGHT	SUPPRESSION POOL COOLING INITIATION	LOGIC OUTPUT
RED LIGHT	RCW COOLING OFF FOR TEST OR DRAIN	KOS
RED LIGHT	CONTAINMENT SPRAY INITIATION	LOGIC OUTPUT

FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 19 of 20)



LOOP A AUTO SUPPRESSION POOL COOLING LOGIC
TYPICAL FOR LOOPS B&C

FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 20 of 20)
STP 3 & 4 Rev.2



LOOP B MANUAL CONTAINMENT SPRAY LOGIC
TYPICAL FOR LOOP C

FIGURE 7.3-4 RESIDUAL HEAT REMOVAL SYSTEM IBD (Sheet 20a of 20)

NOTES:

1. ALL REFERENCE LDS MPL DESIGNATORS ARE PREFIXED BY E31 UNLESS INDICATED OTHERWISE.
2. NEGATIVE TRUE LOGIC IS USED IN THIS IBD TO DEPICT FAIL SAFE CONCEPTS FOR ALL SYSTEM ISOLATION FUNCTIONS. HIGH OR STATE 1 FOR THE UNTRIPPED NORMAL CONDITION AND LOW OR STATE 0 FOR THE TRIPPED CONDITION.
3. ALL 2/4 LOGIC SHALL REVERT TO 2/3 LOGIC DURING BYPASS OF A SINGLE DIVISION OF SENSORS. NOT MORE THAN ONE DIVISION OF SENSOR SHALL BE BYPASSED AT ANY ONE TIME.
4. THE MSIV PILOT SOLENOIDS SHALL BE POWERED FROM SAFETY DIVISIONS 1 AND 2 AS FOLLOWS:

SOLENOID / MSIV	1*	2	3
B21-F008A-D INBD	DIV II	DIV II	DIV I
B21-F009A-D OUTBD	DIV I	DIV II	DIV I

5. ALL SIGNAL OUTPUTS TO ALARMS AND COMPUTER SHALL BE OPTICALLY ISOLATED FROM ESSENTIAL CIRCUIT.
6. THE LAST TWO SHEETS OF THIS IBD DEPICT THE ELCS HARDWARE CONFIGURATION FOR PROCESSING THE CONTROL AND INTERLOCK LOGIC IN THIS IBD EXCEPT MSIV. THE BLOCK DIAGRAM ILLUSTRATES THE FOLLOWING SPECIAL FEATURES:
   A. BYPASS UNIT FOR DIVISION-OF-SENSORS BYPASS. (ONE UNIT PER DIVISION).
   B. DUAL REDUNDANT SLU MICROPROCESSORS WITH 2/2 OUTPUT VOTER TO PREVENT INADVERTENT INITIATION.
   C. AUTO-BYPASS OF EACH REDUNDANT MICROPROCESSOR CHANNEL ON LOOP FAILURE, WITH MANUAL BACKUP.

MSIV OPERATIONAL MODES

SOLENOID VALVES / OPERATING MODES	1*	2	3
(1) MSIV AUTO/OPEN (PLANT NORMAL OPER.)	DE DE DE	E DE E	DE E E
(2) MSIV QUICK CLOSED	DE	DE	DE
(3) MSIV TEST CLOSED	E E E	DE E E	E E DE

E = ENERGIZED
DE =DE-ENERGIZED
* = TEST SOLENOID

REFERENCE DOCUMENTS

	MPL NO.
1. NUCLEAR BOILER SYSTEM, IBD	B21-1030
2. NUCLEAR BOILER SYSTEM, P&ID	B21-1010
3. STANDBY LIQUID CONTROL SYSTEM, IBD	C41-1030
4. NEUTRON MONITORING SYSTEM, IBD	C51-1030
5. REACTOR PROTECTION SYSTEM, IBD	C71-1030
6. PROCESS RADIATION MONITORING SYSTEM, IBD	D11-1030
7. RESIDUAL HEAT REMOVAL SYSTEM, IBD	E11-1030
8. INTERLOCK BLOCK DIAGRAM STANDARD	A10-3070
9. LEAK DETECTION AND ISOLATION SYSTEM, IED	E31-1040
10. REACTOR CORE ISOLATION SYSTEM, IBD	E51-1030
11. REACTOR WATER CLEAN-UP SYSTEM, IBD	G31-1030
12. SUPPRESSION POOL CLEAN-UP SYSTEM, IBD	G51-1030
13. RADIOACTIVE WASTE SYSTEM, P&ID	K17-1010
14. REACTOR BUILDING COOLING WATER SYSTEM, IBD	P21-1030
15. HVAC NORMAL COOLING WATER SYSTEM, IBD	P24-1030
16. STANDBY GAS TREATMENT SYSTEM, IBD	T22-1030
17. ATOMOSPHERIC CONTROL SYSTEM, IBD	T31-1030
19. HEATING, VENTILLATING & AIR CONDITIONING SYSTEM, P&ID	U41-1010

ABBREVIATIONS:

OLU - OUTPUT LOGIC UNIT
TLF - TRIP LOGIC FUNCTION
DTF - DIGITAL TRIP FUNCTION
SLF - SAFETY SYSTEM LOGIC FUNCTION

MPL NO. E31-1030

NOTES AND REFERENCE DOCUMENTS

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 1 of 77)
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7 6 5 4 3 2 1

E D C B A

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FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 2 of 77)

E31/LDS ANNUNCIATOR LIST

ITM. NO.	ALARM FUNCTION	SH NO.
1	MSL AUTO TRIP – ONE PER LOGIC DIVISION	33–36
2	MSL MANUAL TRIP – ONE PER LOGIC DIVISION	33–36
3	MSL TUNNEL TEMP HIGH – ONE COMMON TO FOUR DIVISIONS	39
4	MSL TURBINE AREA AMBIENT TEMP HIGH – SAME AS 3 ABOVE	39
		39
6	REACTOR WATER LEVEL LOW – SAME AS 3 ABOVE	39
7	MSL A STEAM FLOW HIGH – SAME AS 3 ABOVE	39
8	MSL B STEAM FLOW HIGH – SAME AS 3 ABOVE	39
9	MSL C STEAM FLOW HIGH – SAME AS 3 ABOVE	39
10	MSL D STEAM FLOW HIGH – SAME AS 3 ABOVE	39
11	MAIN CONDENSER VACUUM LOW – SAME AS 3 ABOVE	39
12	MSL PRESSURE LOW – SAM AS 3 ABOVE	39
13	TRIPPED MSIV VARIABLE IN BYPASSED CHANNEL A	40
14	TRIPPED MSIV VARIABLE IN BYPASSED CHANNEL B	40
15	TRIPPED MSIV VARIABLE IN BYPASSED CHANNEL C	40
16	TRIPPED MSIV VARIABLE IN BYPASSED CHANNEL D	40
17	RHR EQUIPMENT AREA A TEMP HIGH	48
18	RHR EQUIPMENT AREA B TEMP HIGH	49
19	RHR EQUIPMENT AREA C TEMP HIGH	50
20	RHR ISOLATED – LOOP A	51
21	RHR ISOLATED – LOOP B	52
22	RHR ISOLATED – LOOP C	53
23	RCIC EQUIPMENT AREA TEMP HIGH	54
24	RCIC STEAMLINE PRESSURE LOW	55
25	RCIC STEAMLINE FLOW HIGH	56
26	RCIC ISOLATED	57

ITM. NO.	ALARM FUNCTION	SH NO.
27	CUW REGEN HX AREA TEMP HIGH	59
28	CUW NON–REGEN HX AREA TEMP HIGH	60
29	CUW VALVE ROOM TEMP HIGH	61
30	CUW INBOARD VALVE ISOLATED	62
31	CUW OUTBOARD VALVE ISOLATED	63
32	CUW INJECTION VALVE ISOLATED	64
33	CUW HEAD SPRAY VALVE ISOLATED	65
34	DW INBOARD PCV VALVES ISOLATED	67
35	DW OUTBOARD PCV VALVES ISOLATED	67
36	DW FISSION PRODUCT SAMPLING SYSTEM ABNORMAL	68
37	SPCU ISOLATED	69
38	DRYWELL LCW DRAIN LINE ISOLATED	70
39	DRYWELL HCW DRAIN LINE ISOLATED	70
40	RCW/HNCW PCV VALVES ISOLATED	71
41	AC SYSTEM/HVAC ISOLATED	72
42	SGTS INTIATED ONE EACH PER TRAINS B & C	73
43	FC SYSTEM ISOLATED ONE EACH PER TRAINS B & C	74
44	MONITORED AREA DIFF TEMP HIGH	75
45	DRYWELL AREA TEMP HIGH – ONE COMMON TO FOUR DIVISIONS	75
46	CUW MASS DIFF FLOW HIGH	75
47	CUW MASS DIFF FLOW HIGH WARNING	75
48	DRYWELL AIR COOLER CONDENSATE FLOW HIGH	75
		75
50	DRYWELL DRAIN SUMPS WATER LEVEL HIGH	75

FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 3 of 77)

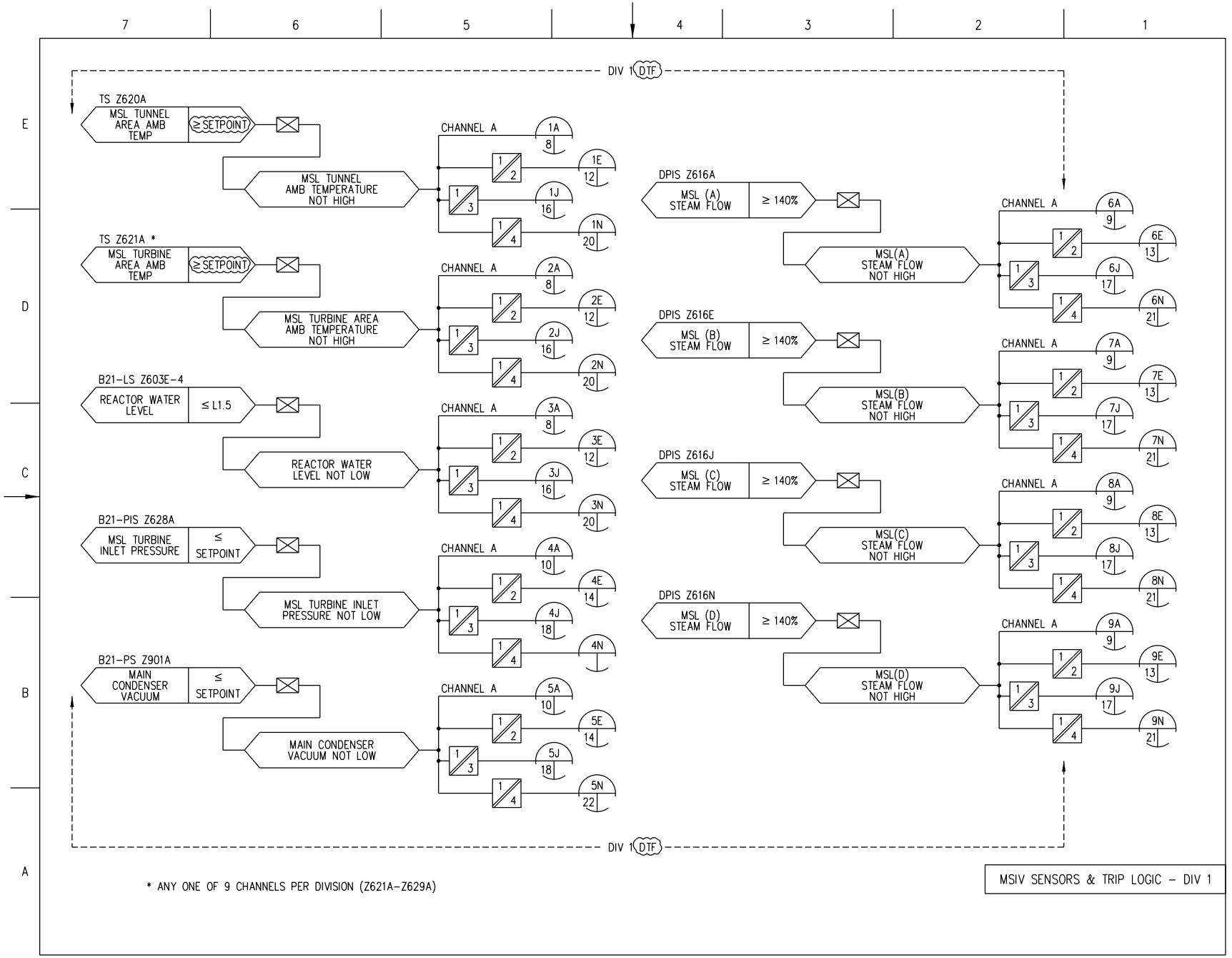

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 4 of 77)

STP 3 & 4 Rev.2

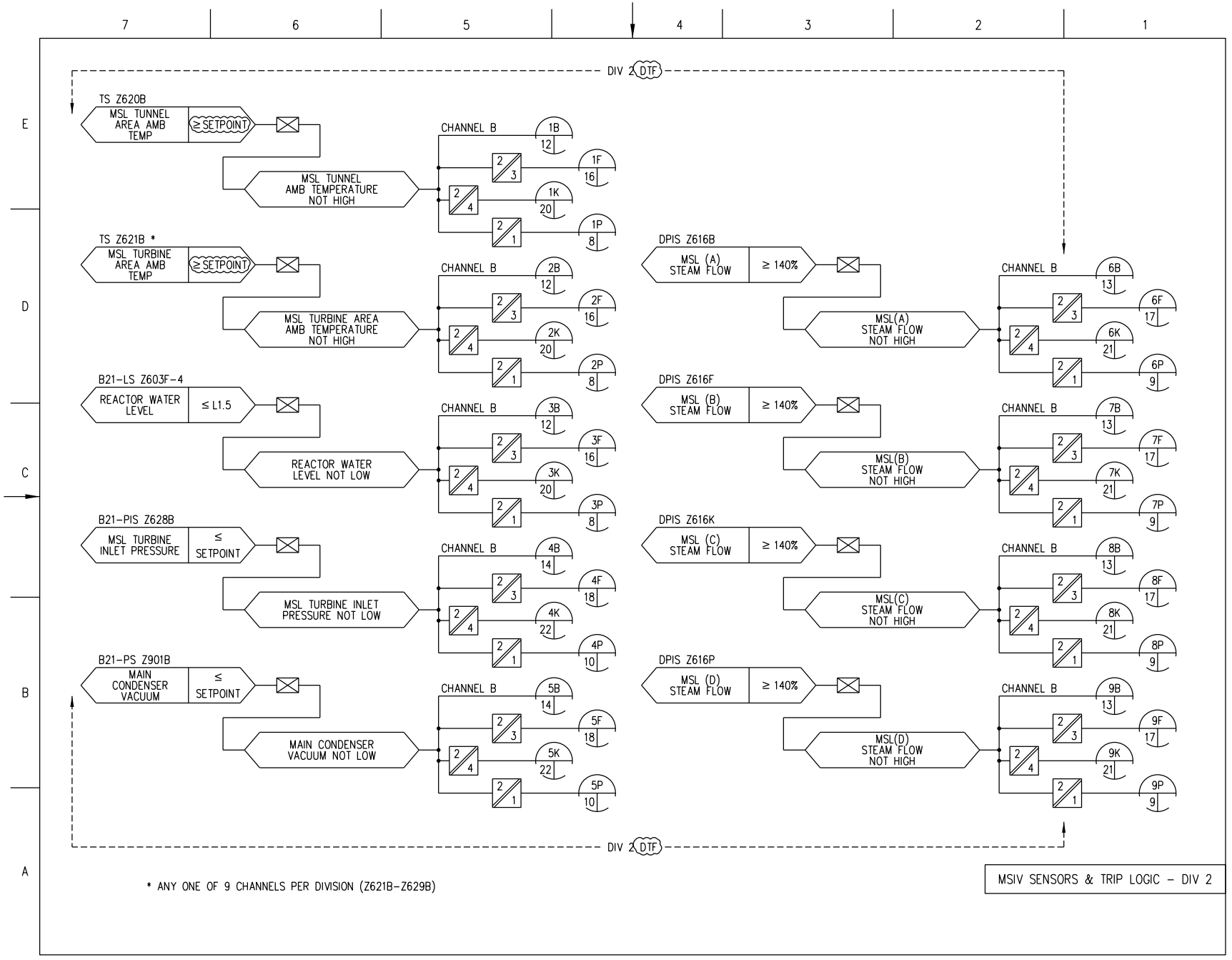

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 5 of 77)
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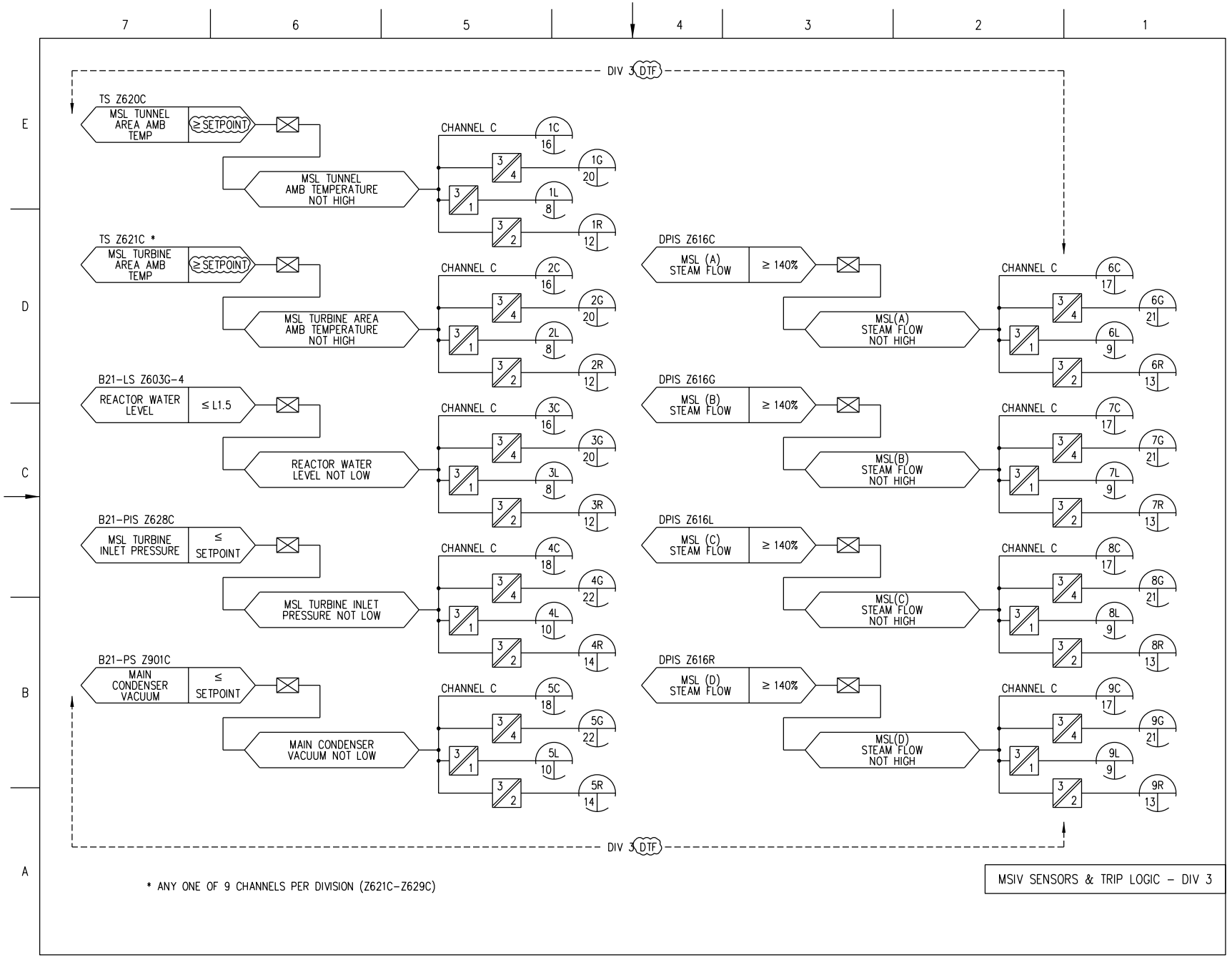

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 6 of 77)

STP 3 & 4 Rev.2

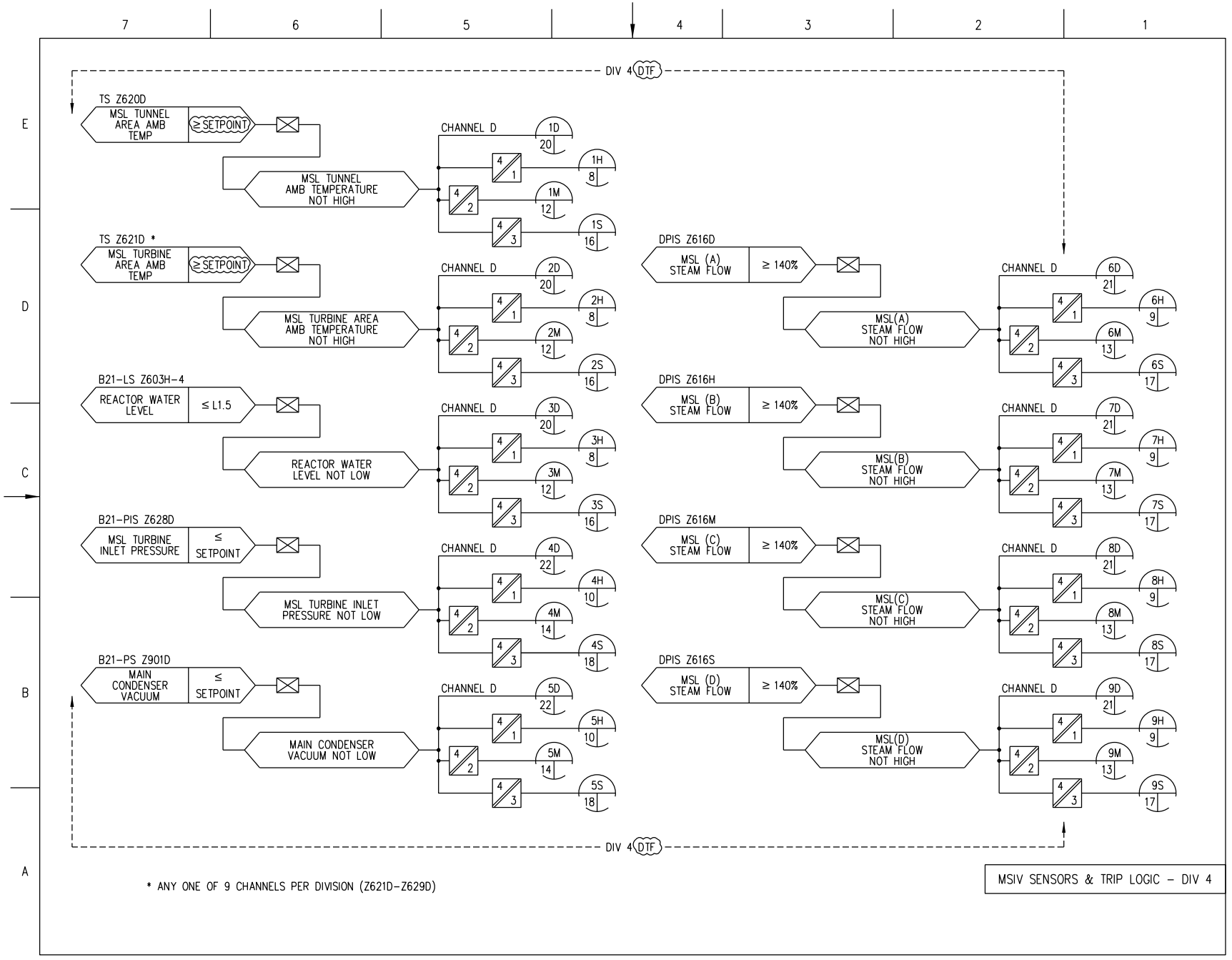

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 7 of 77)

STP 3 & 4 Rev.2

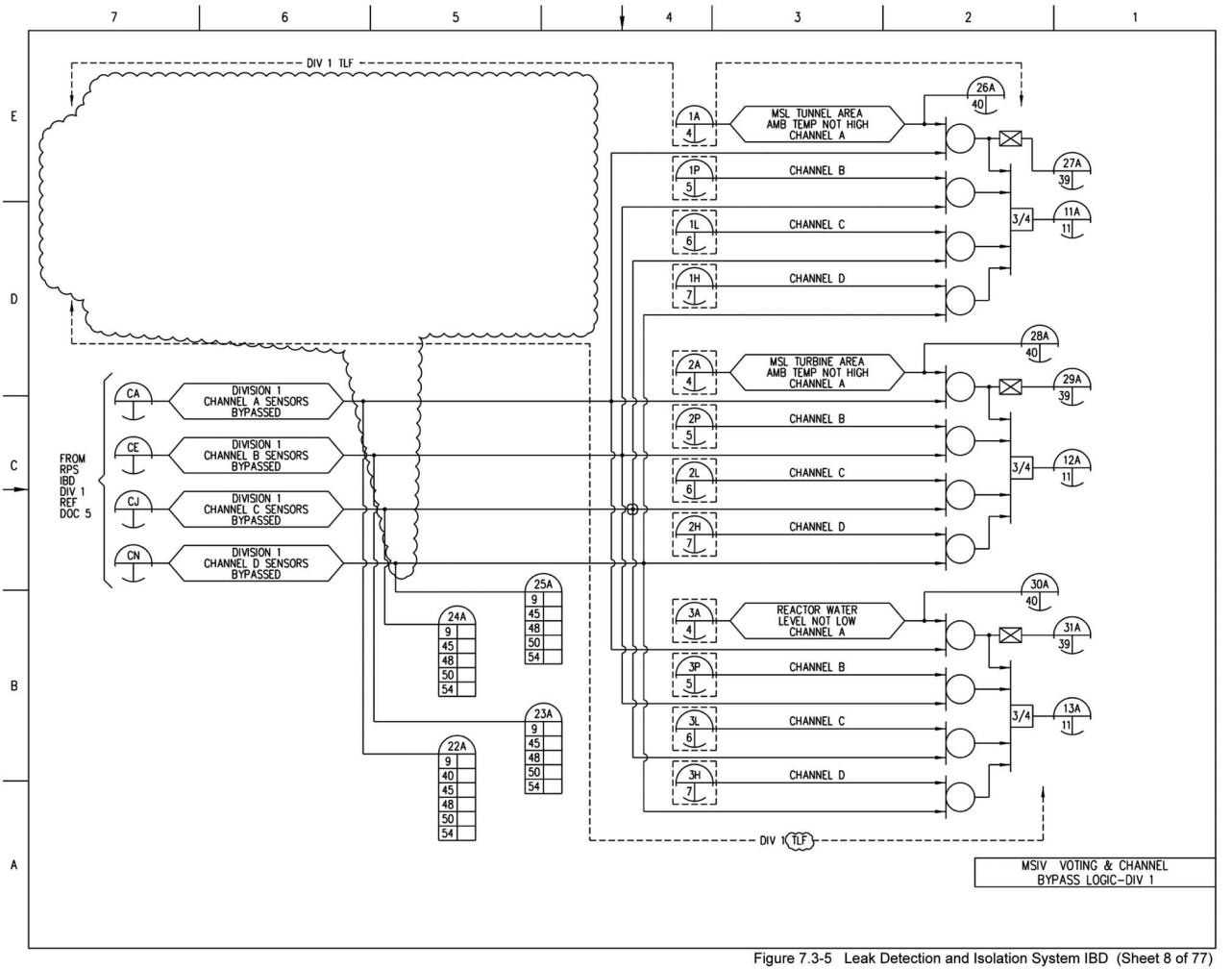

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 8 of 77)
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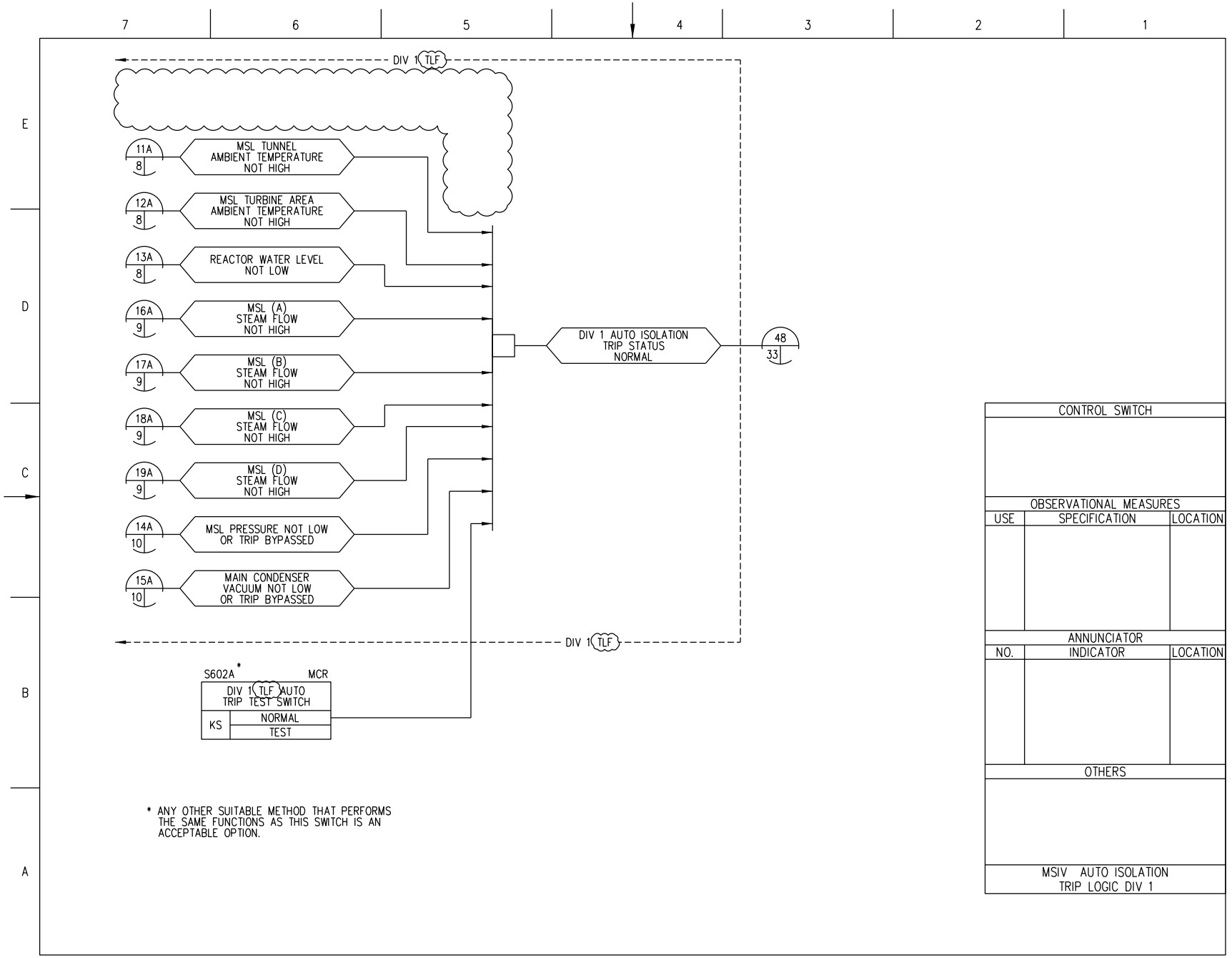

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 11 of 77)

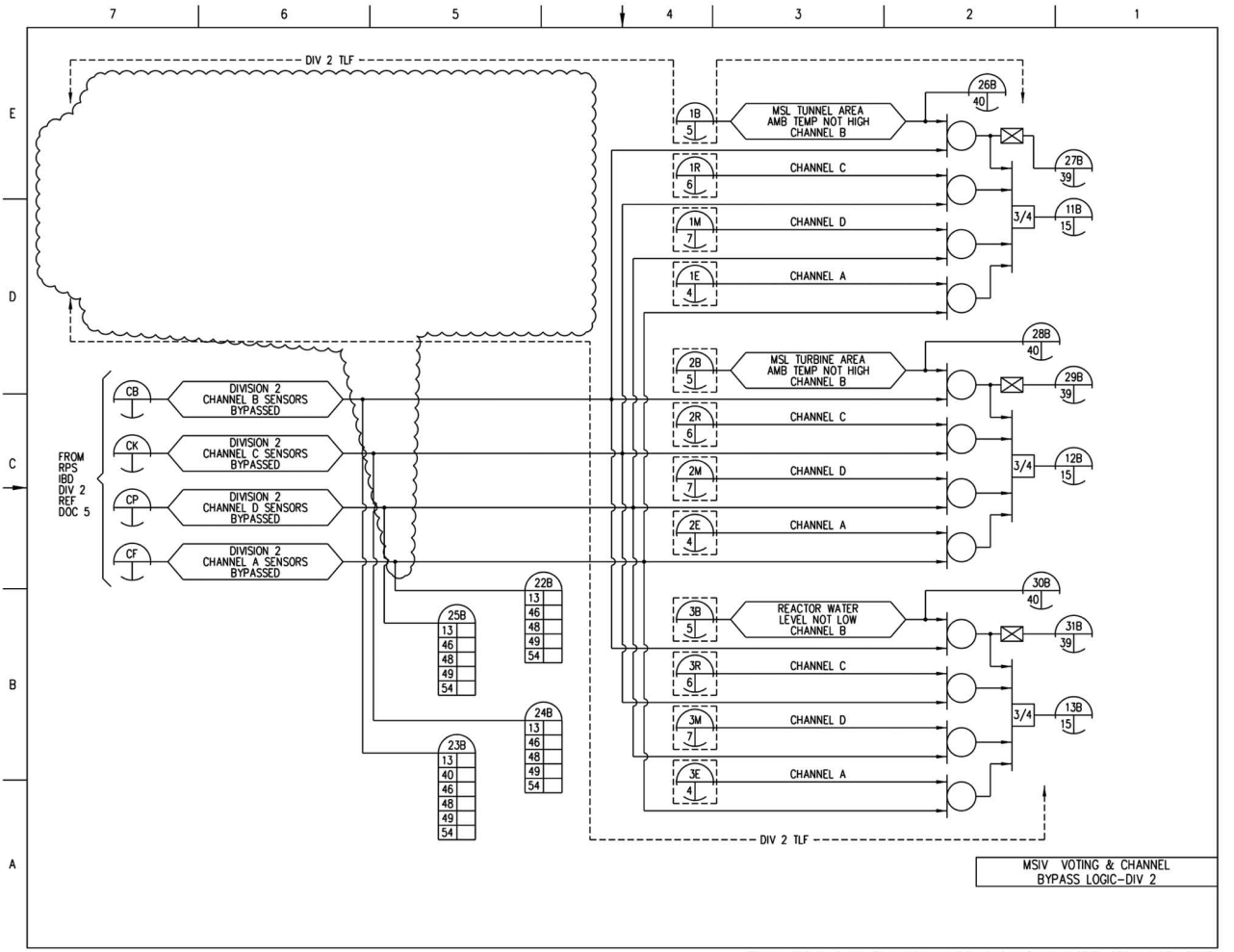

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 12 of 77)

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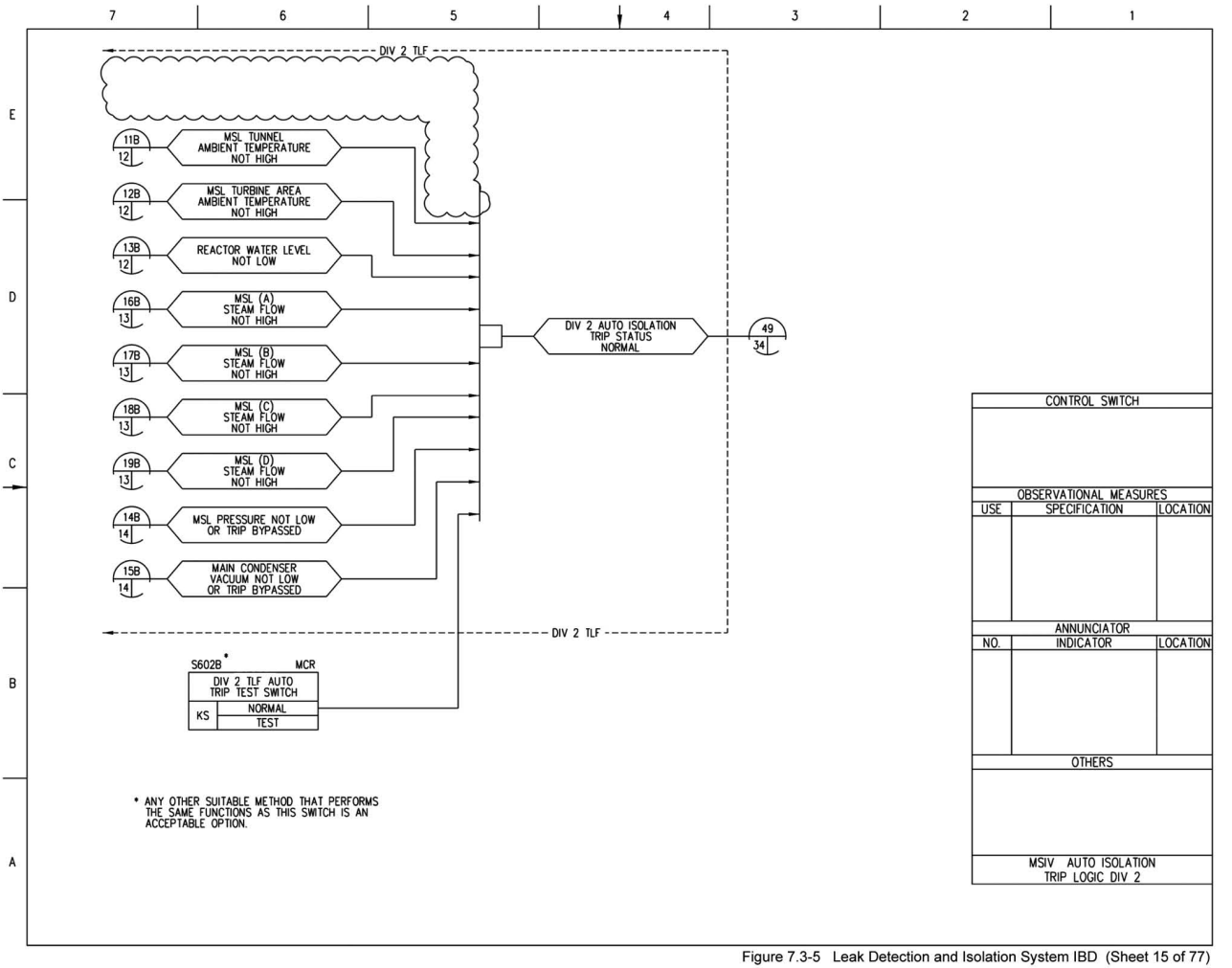

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 15 of 77)

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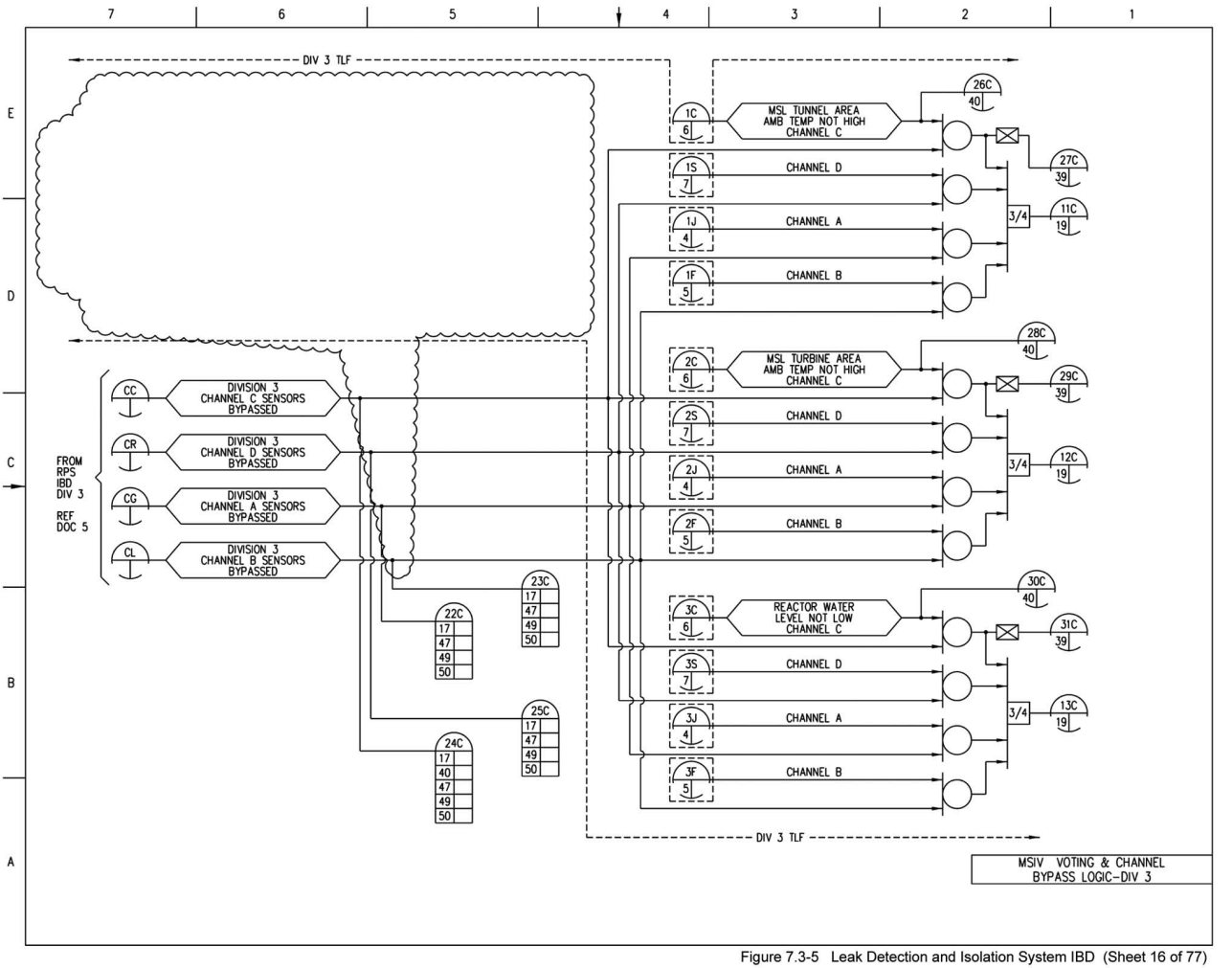

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 16 of 77)
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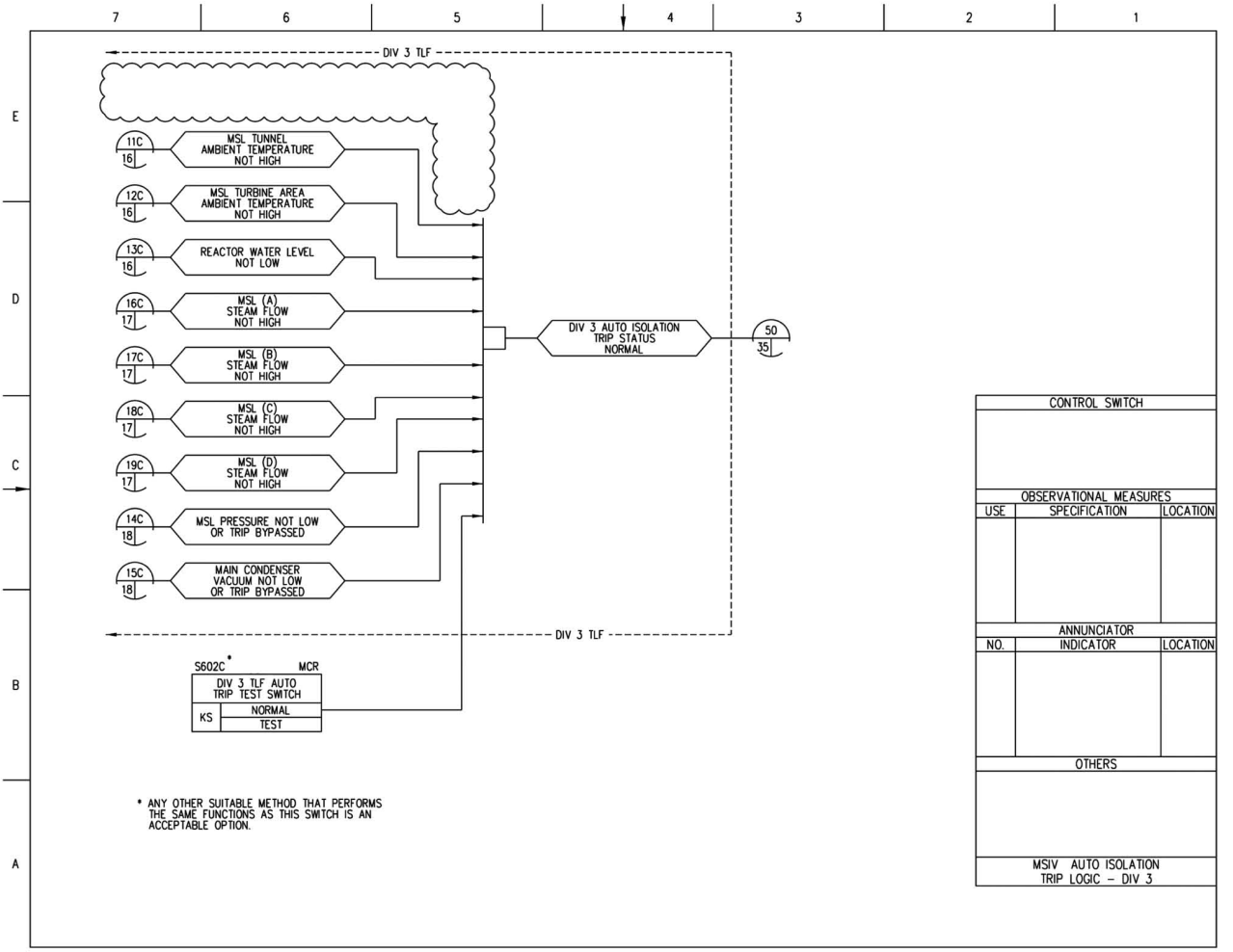

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 19 of 77)

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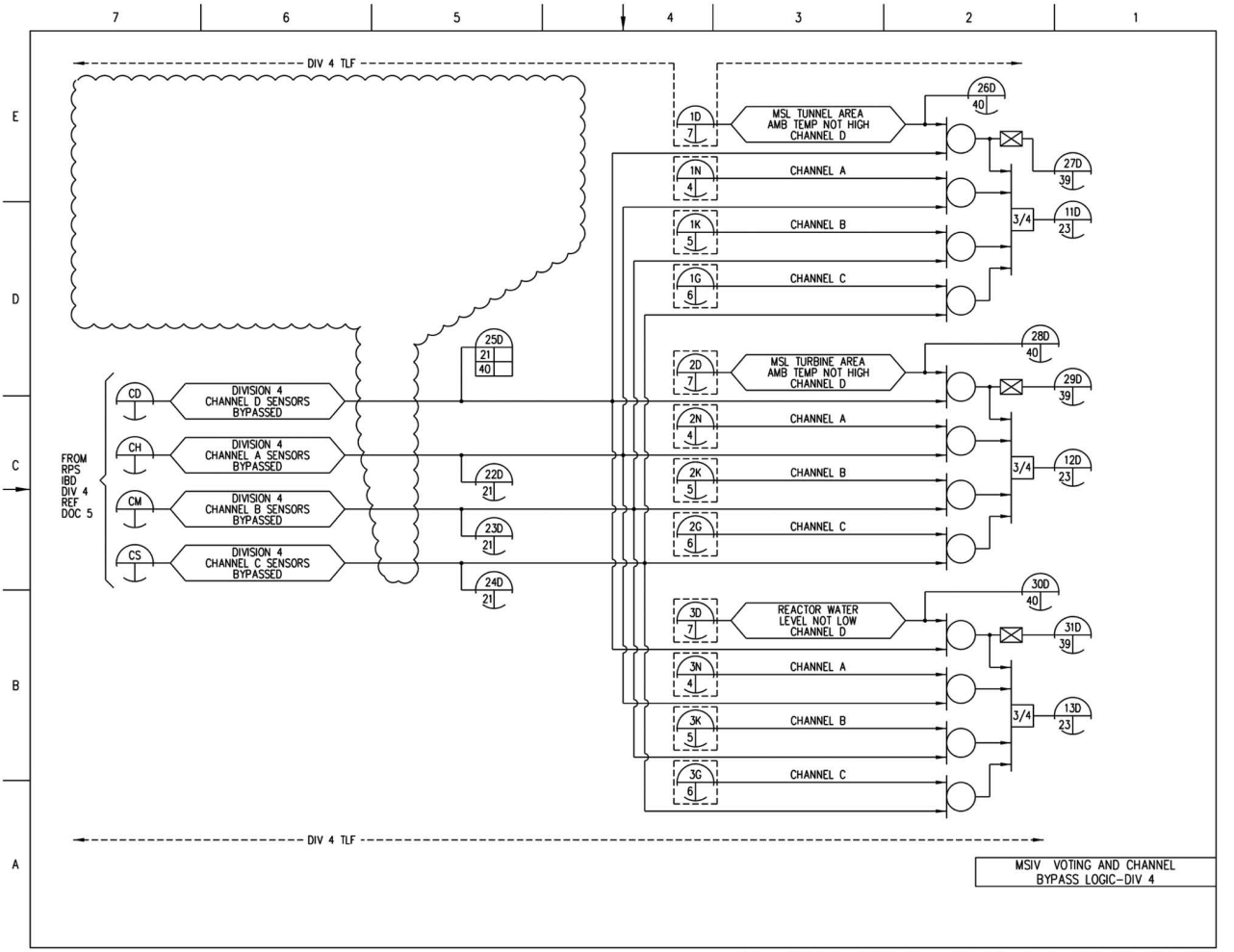

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 20 of 77)

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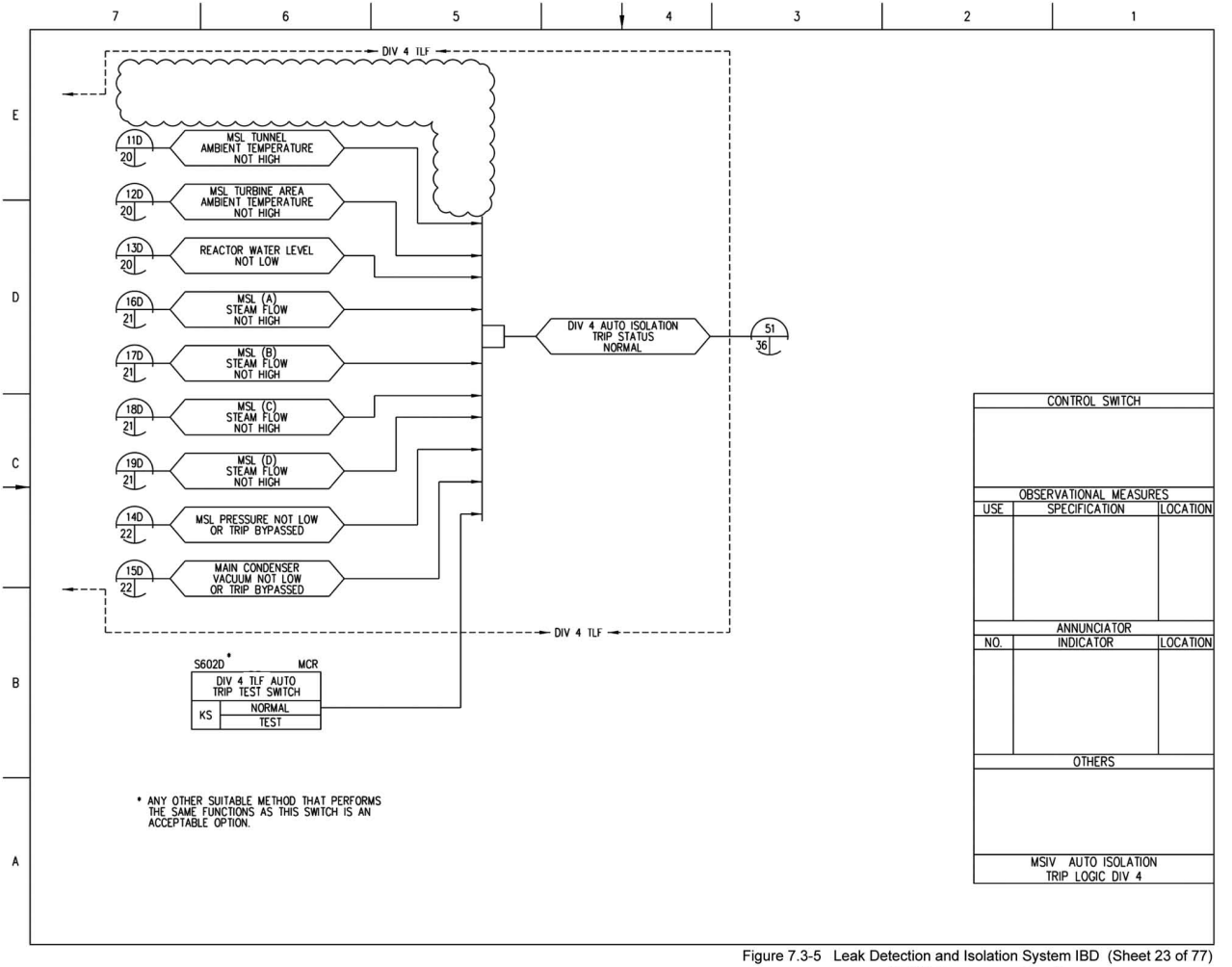

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 23 of 77)

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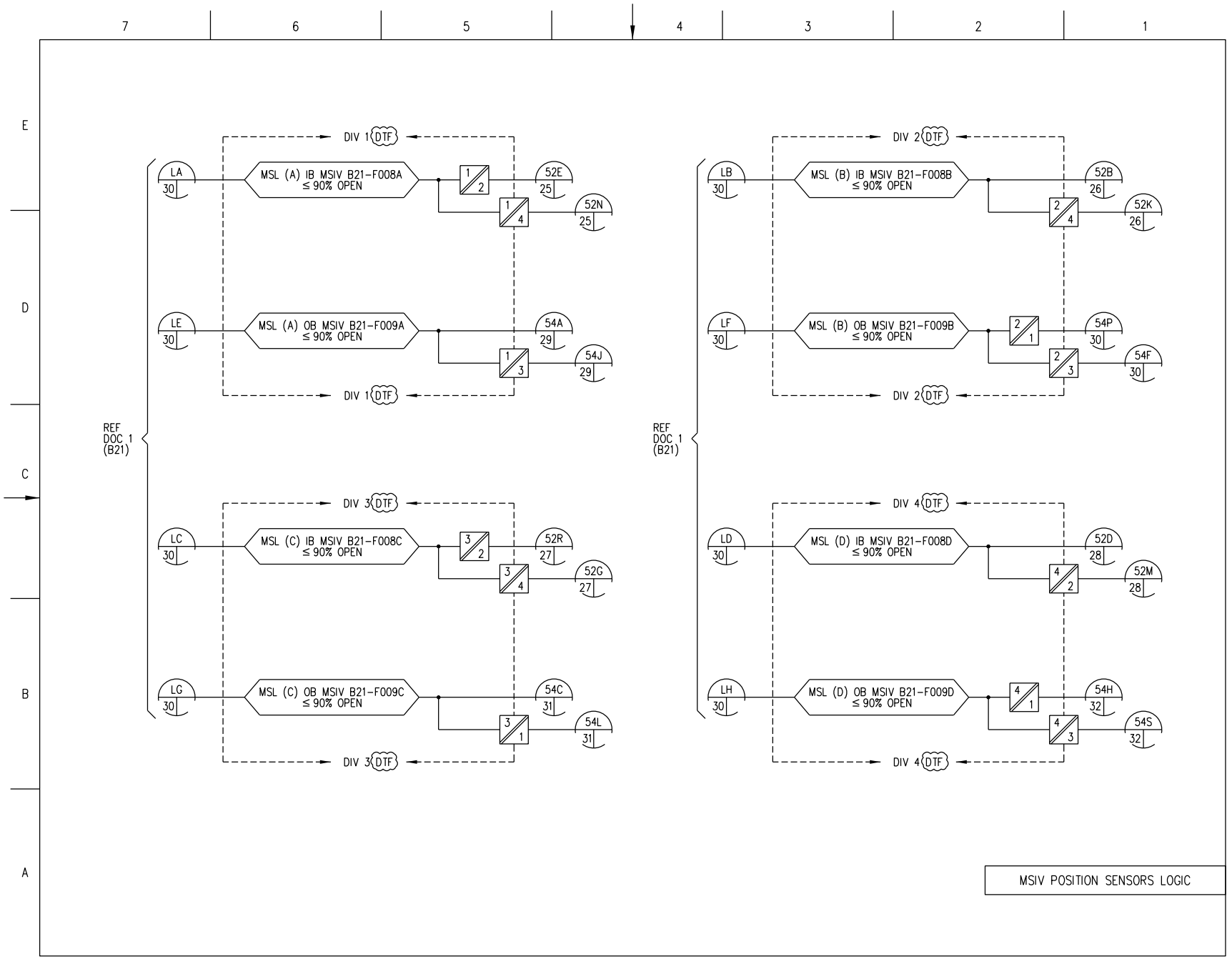

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 24 of 77)

STP 3 & 4 Rev.2

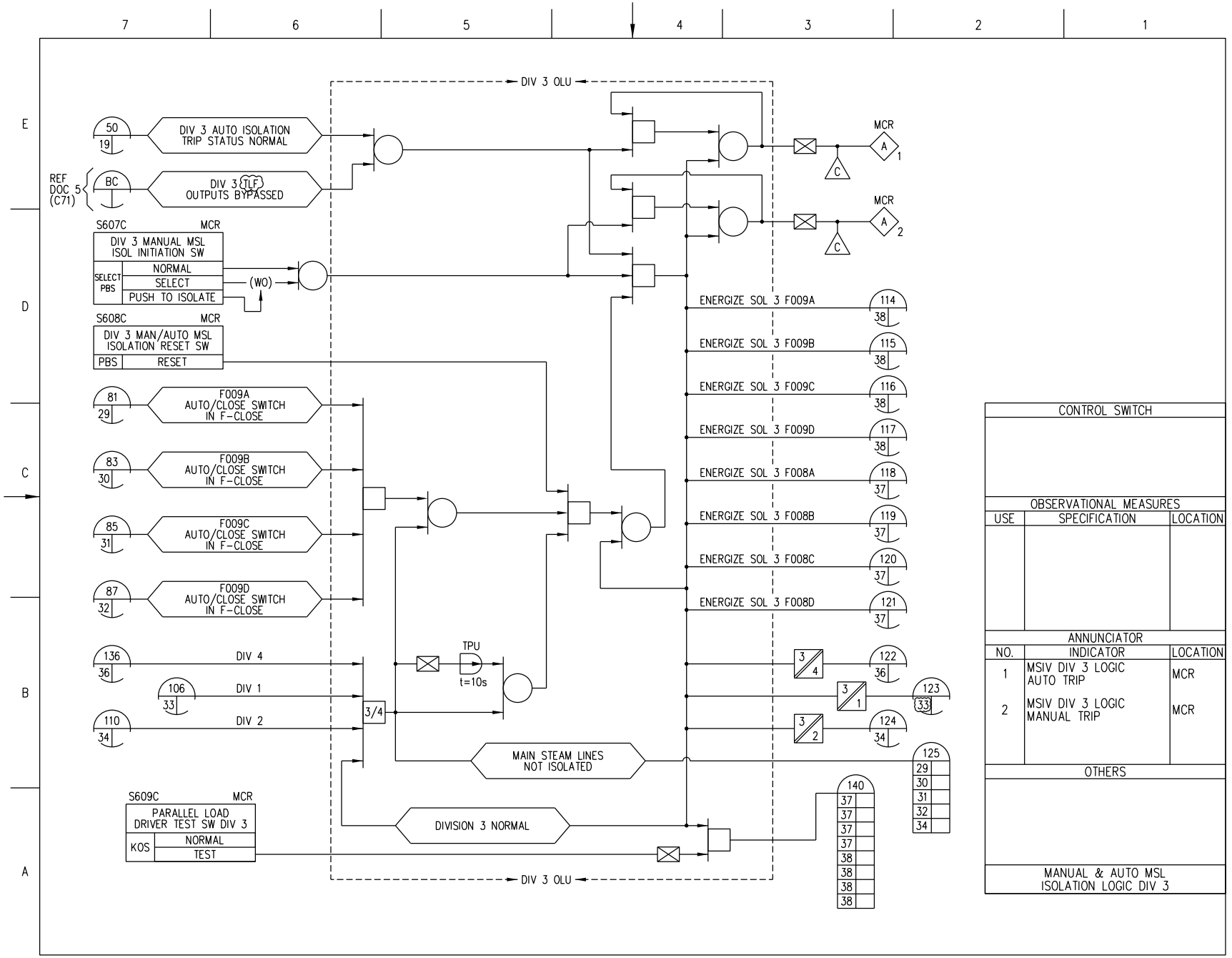

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 35 of 77)

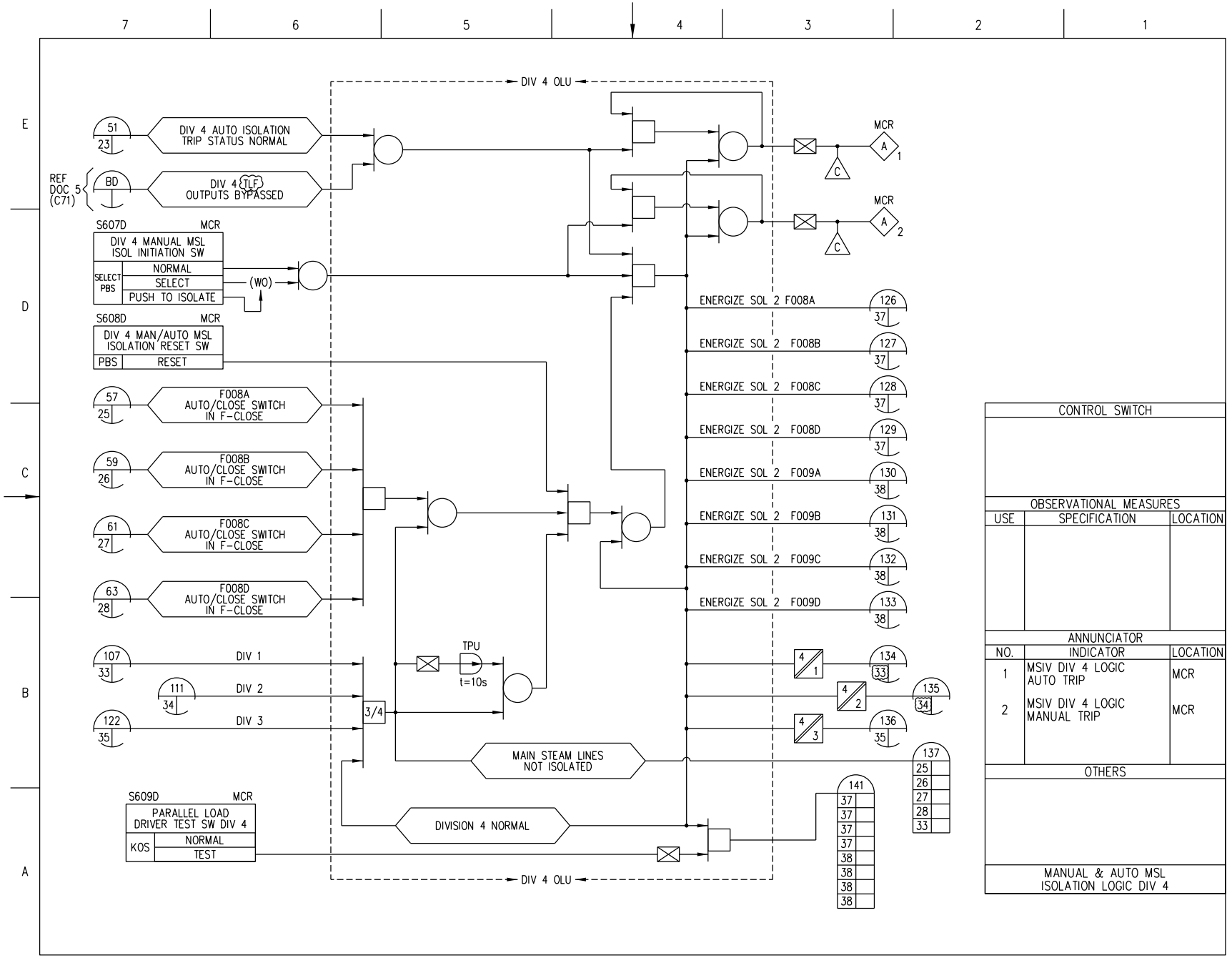

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 36 of 77)

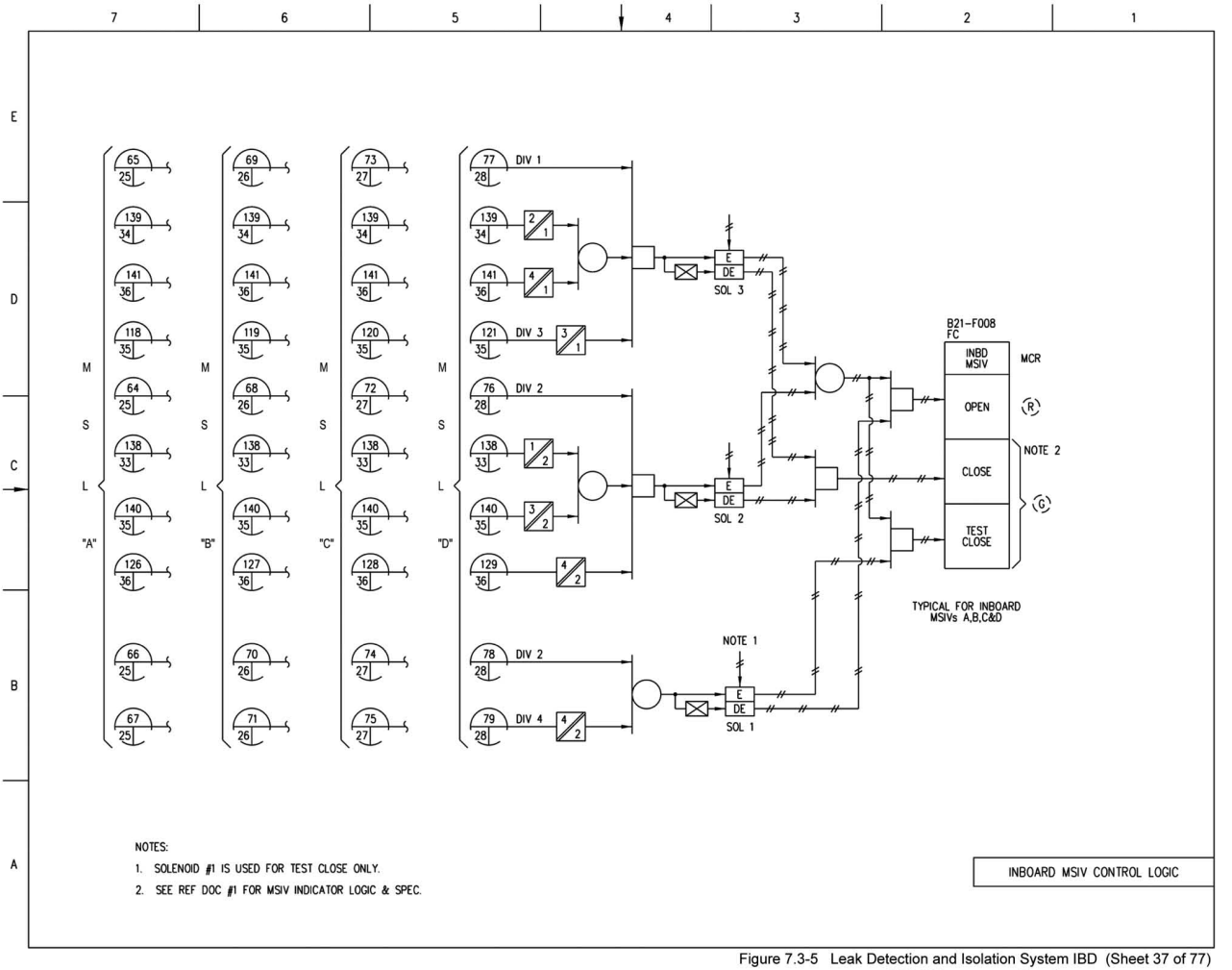

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 37 of 77)
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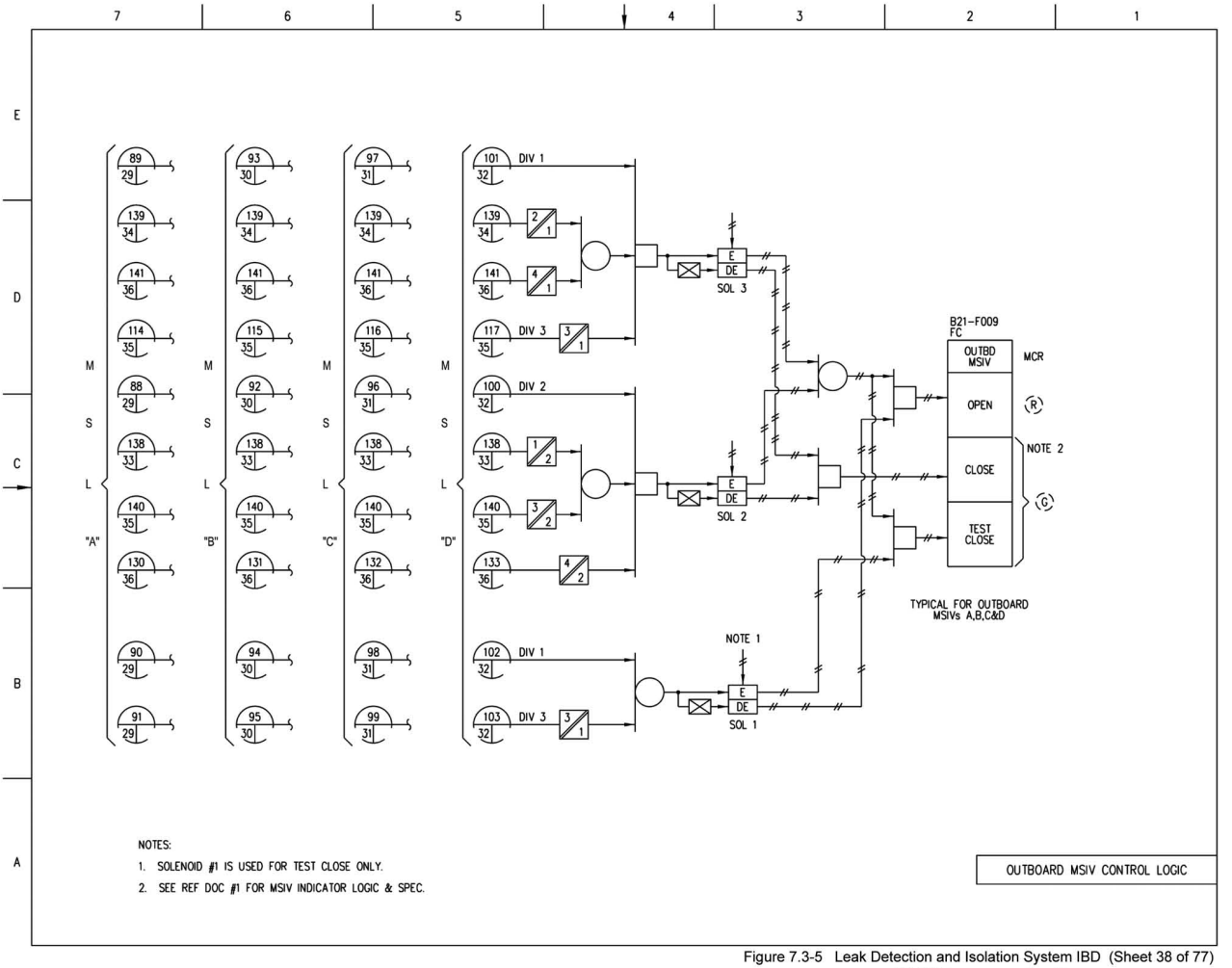

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 38 of 77)
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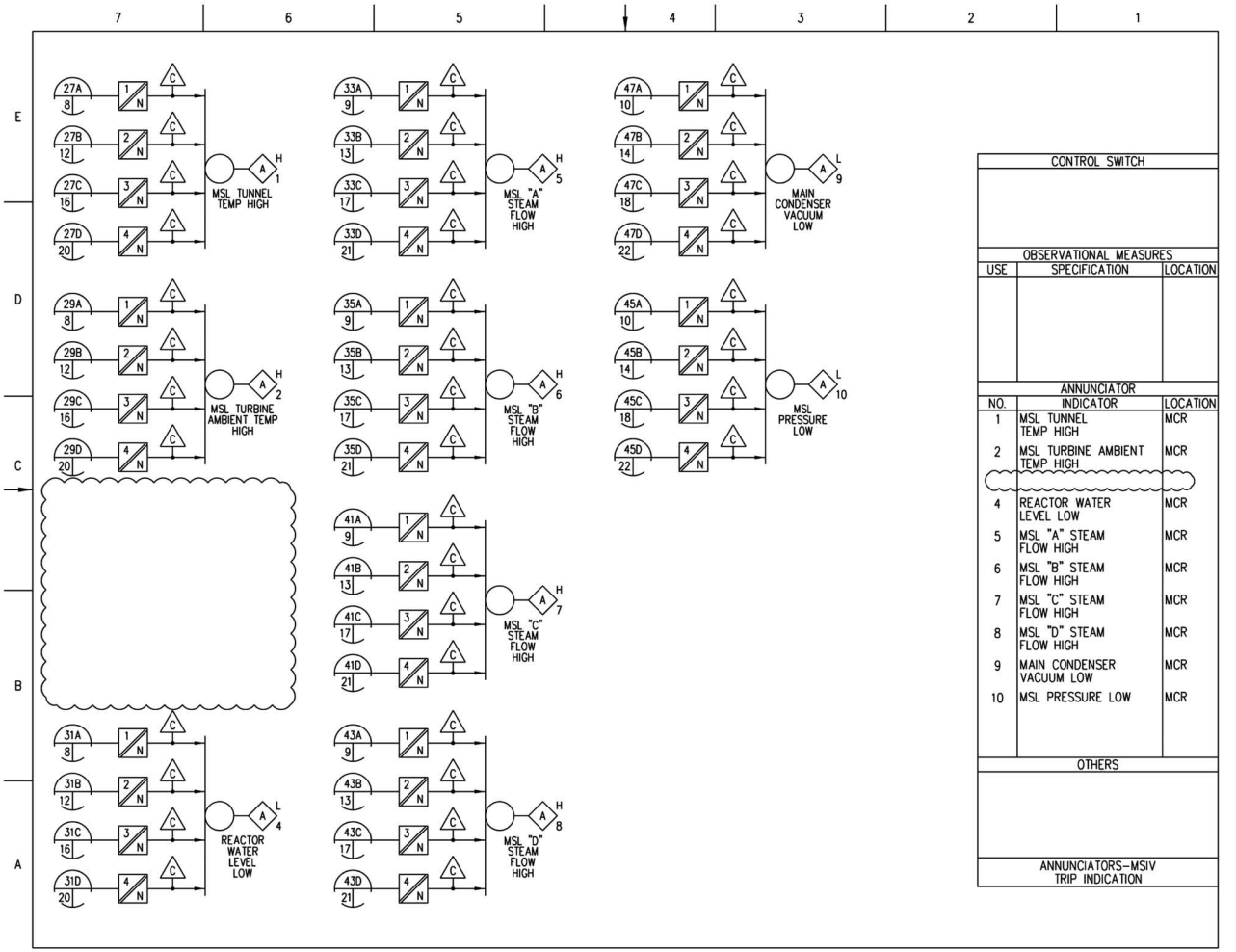

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 39 of 77)

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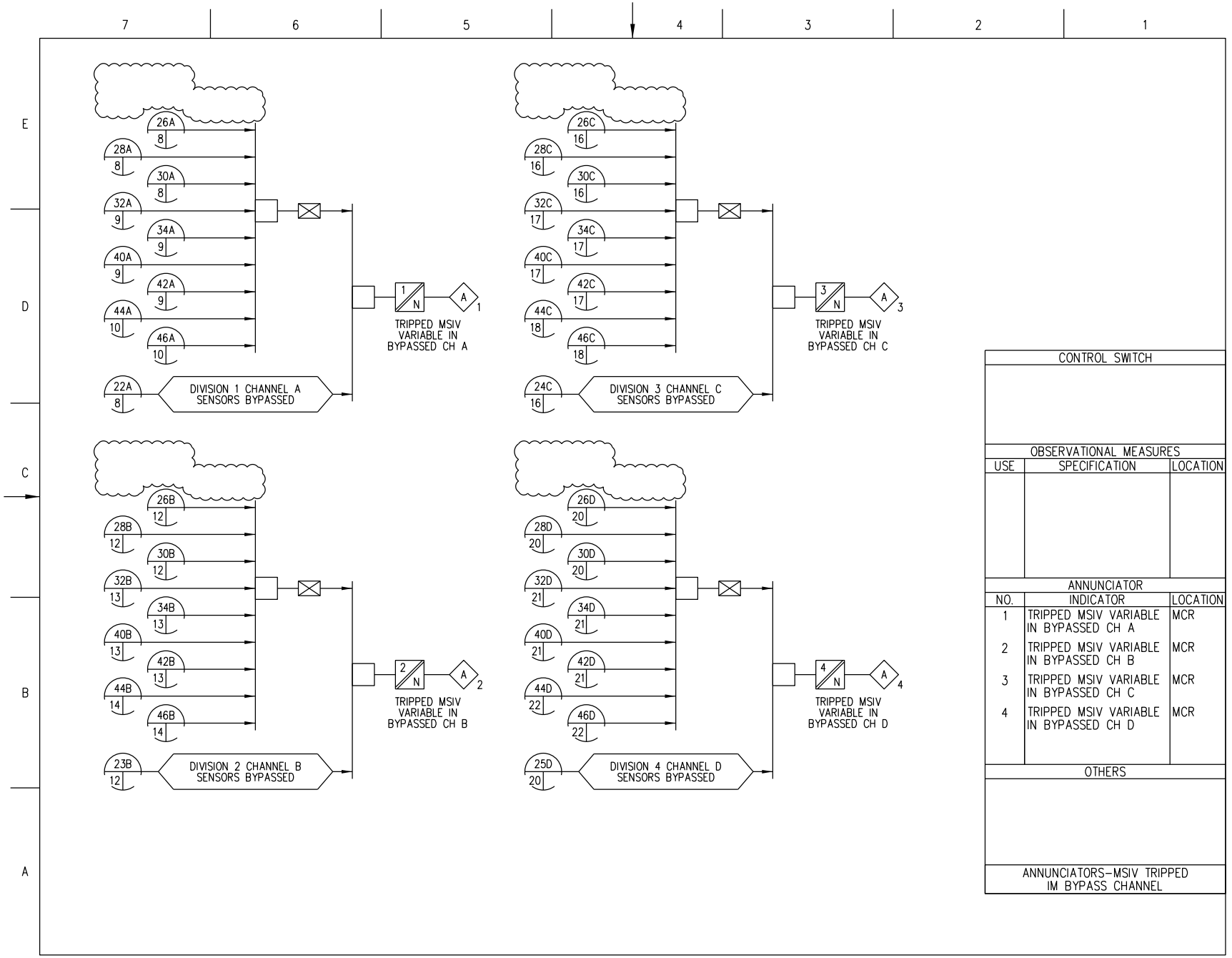

FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 40 of 77)

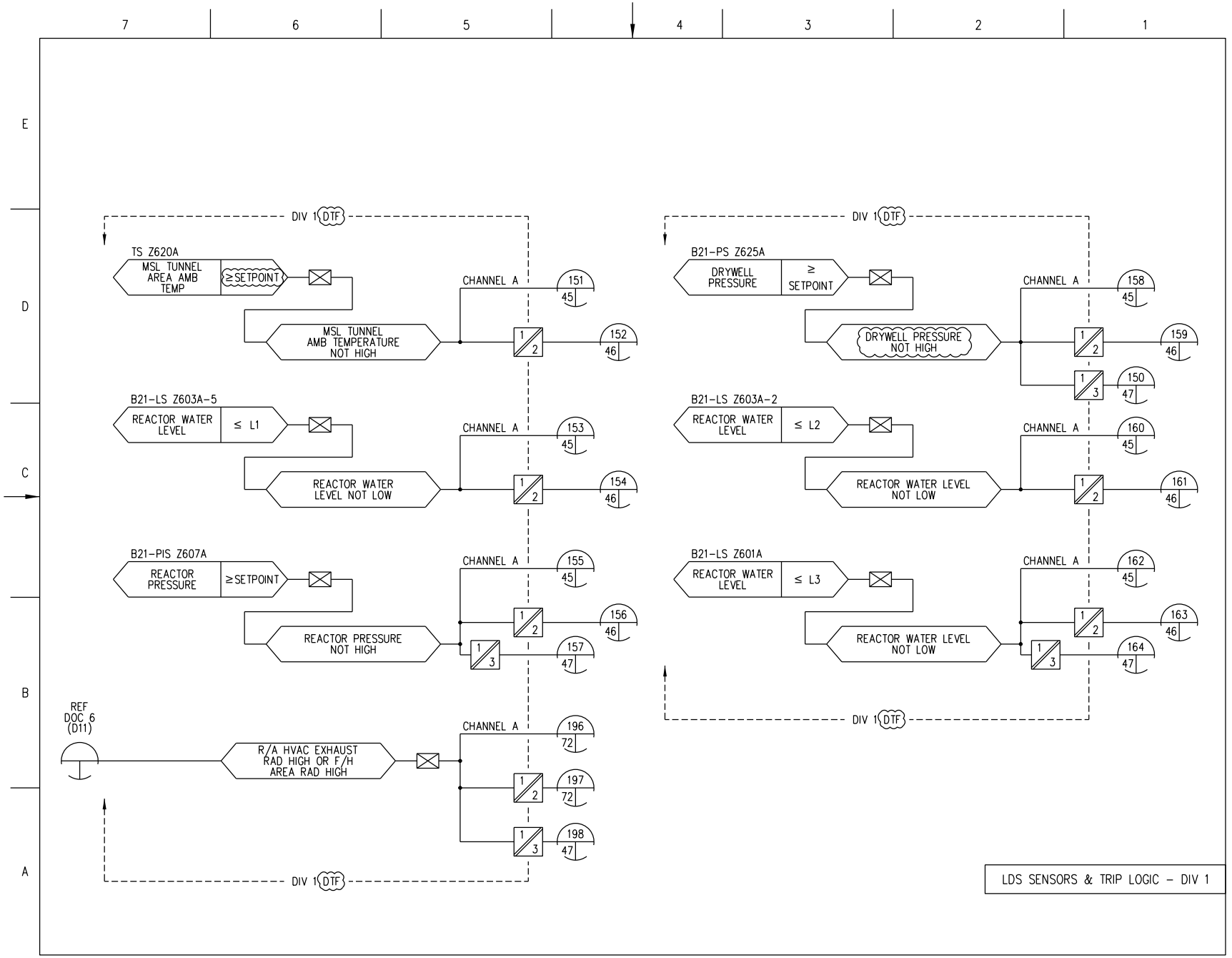

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 41 of 77)

STP 3 & 4 Rev.2

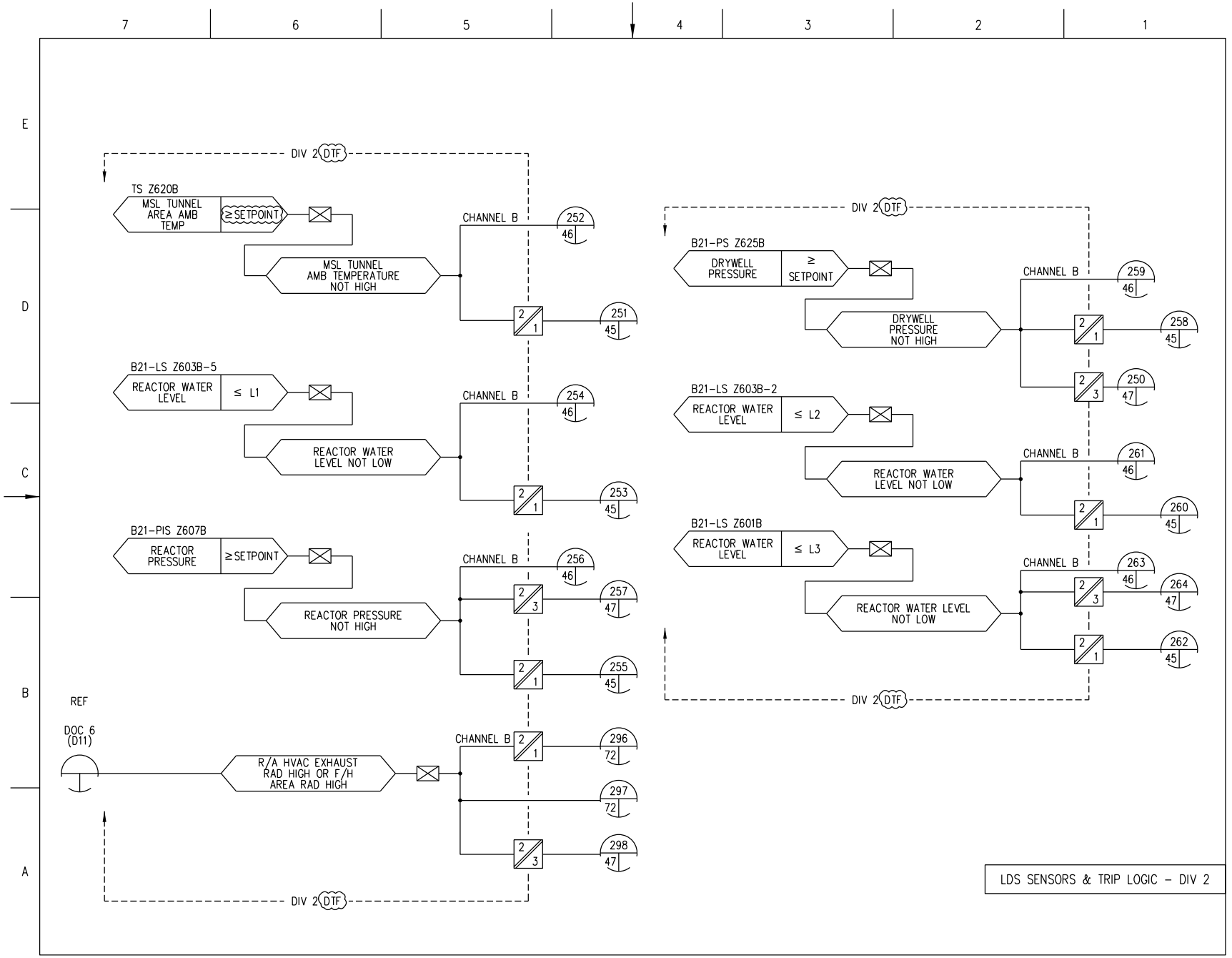

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 42 of 77)

STP 3 & 4 Rev.2

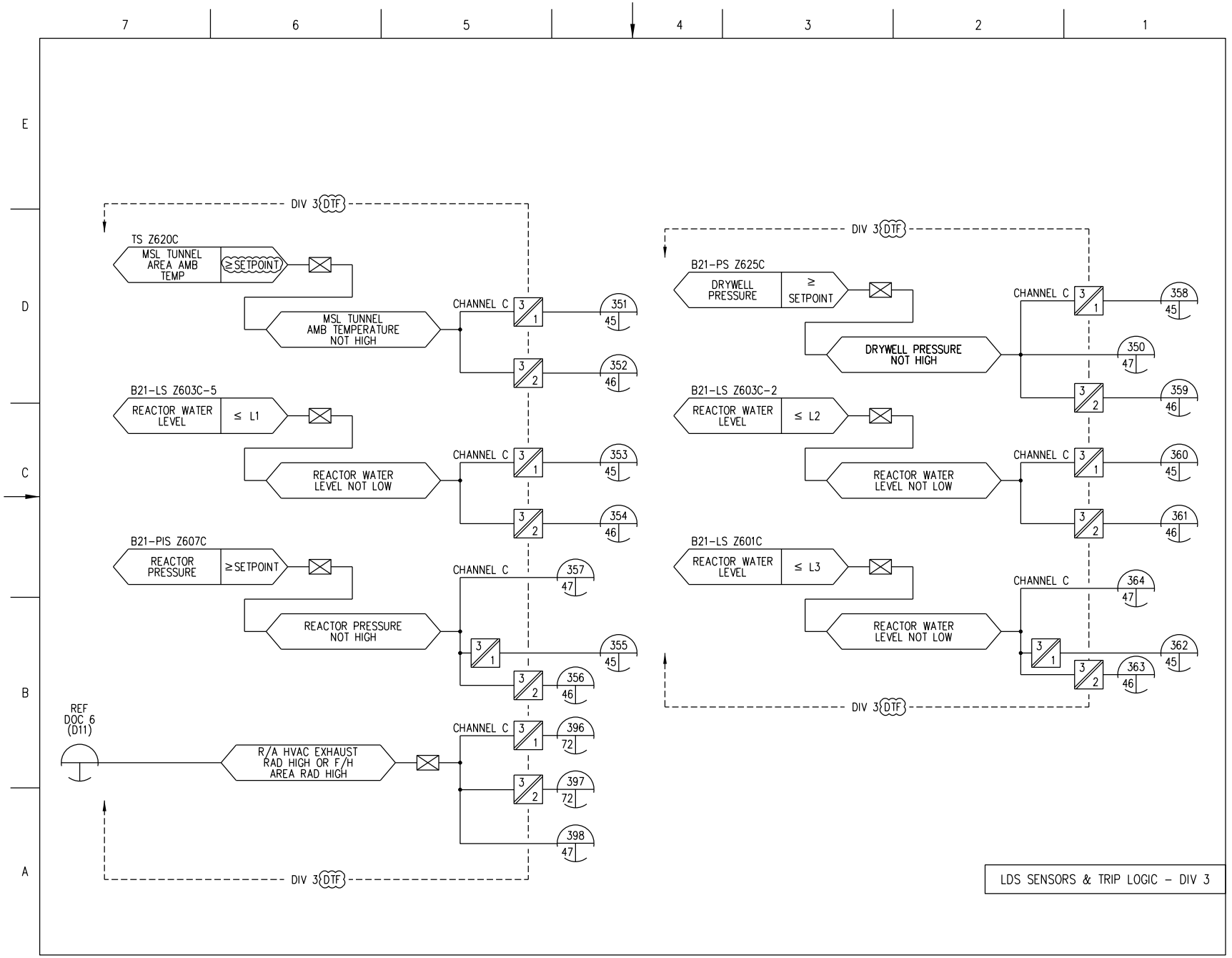

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 43 of 77)

STP 3 & 4 Rev.2

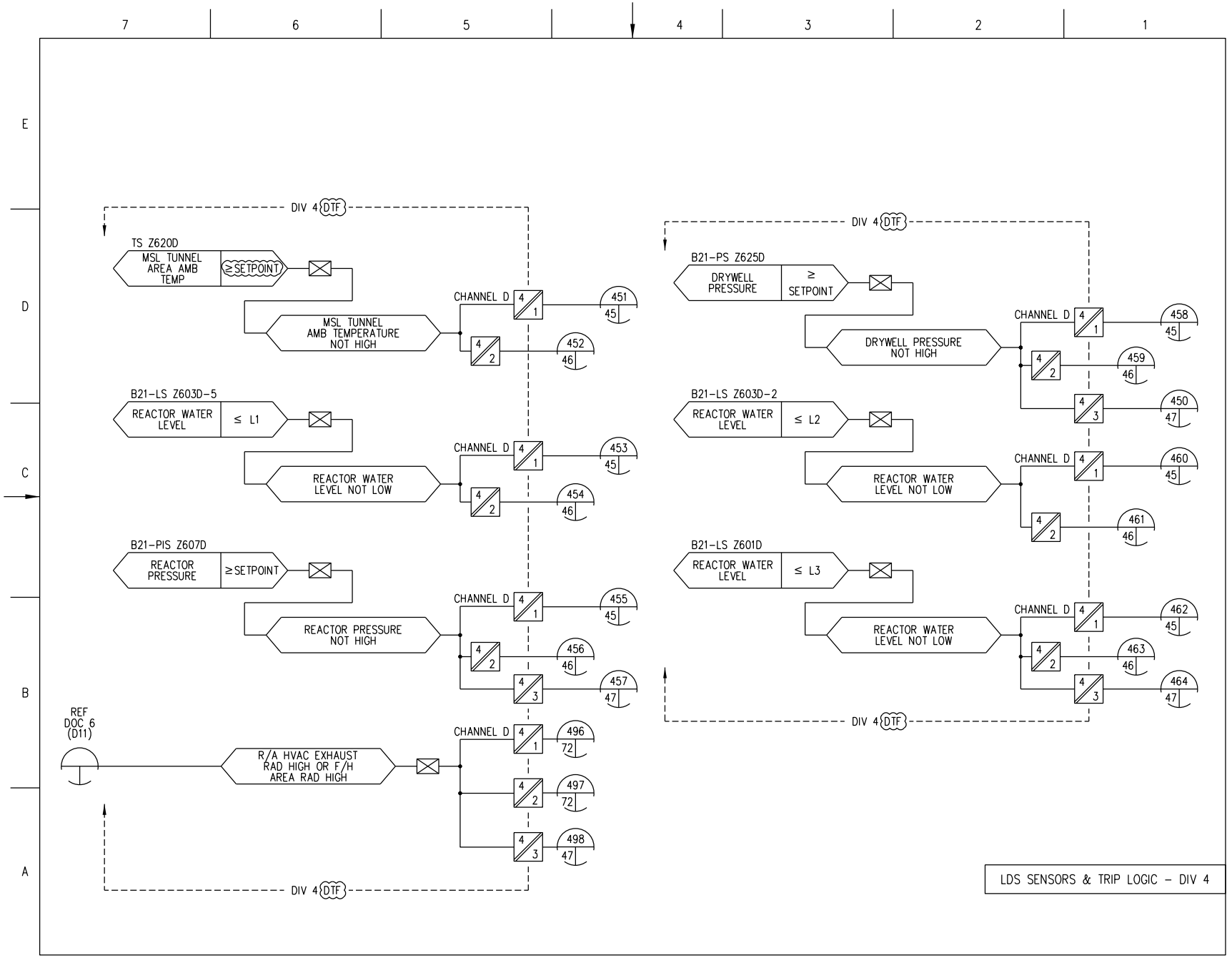

FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 44 of 77)
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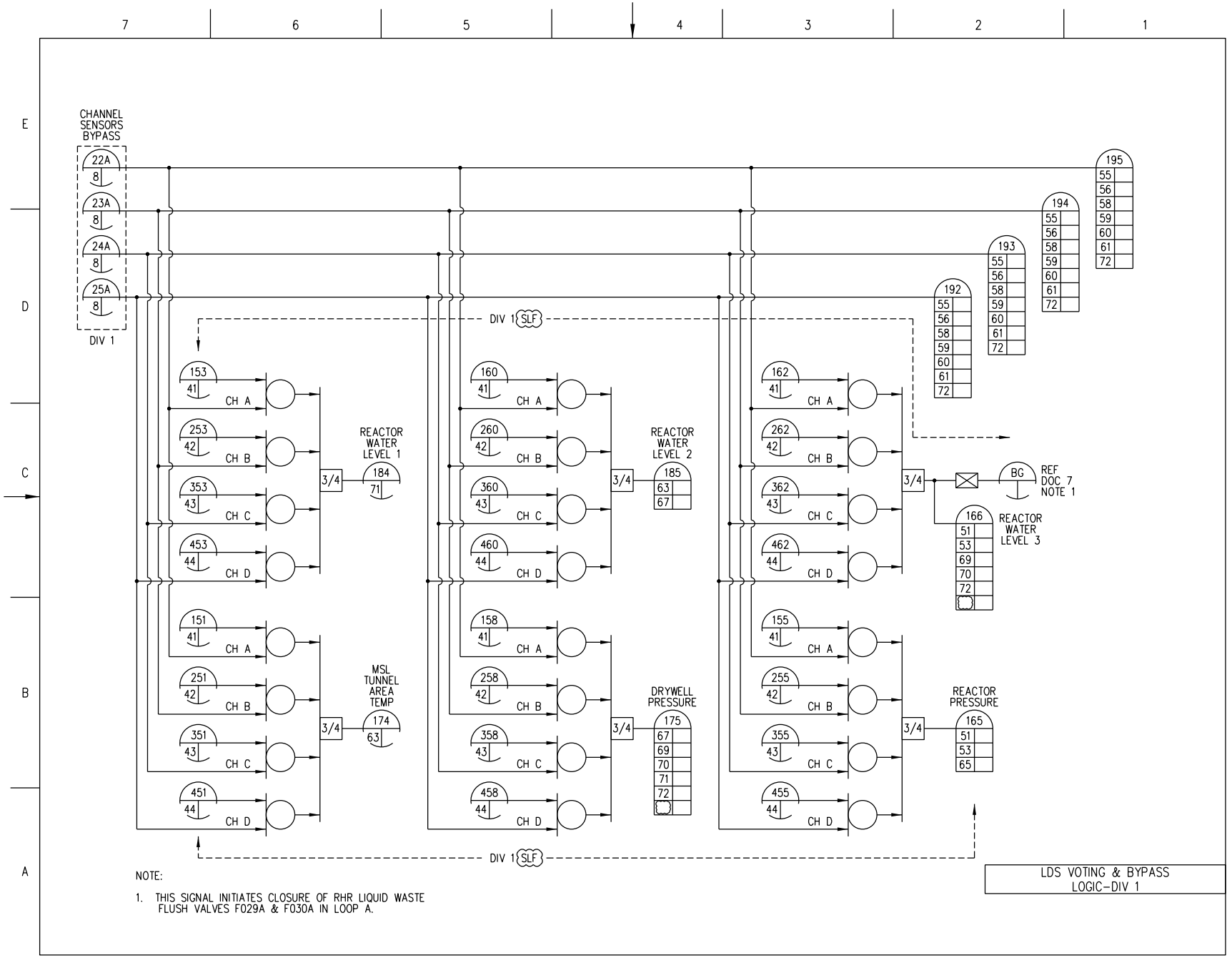


FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 45 of 77)

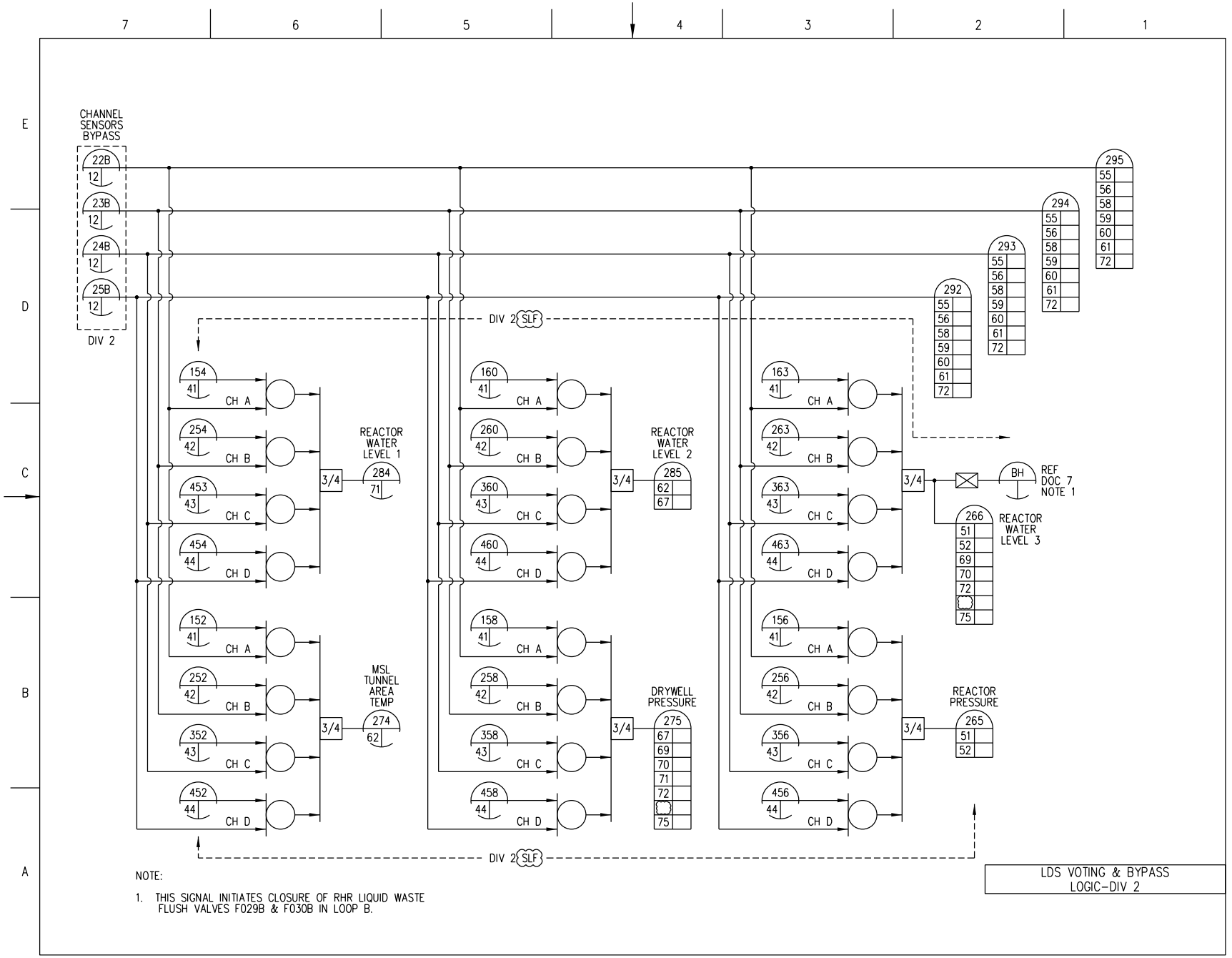
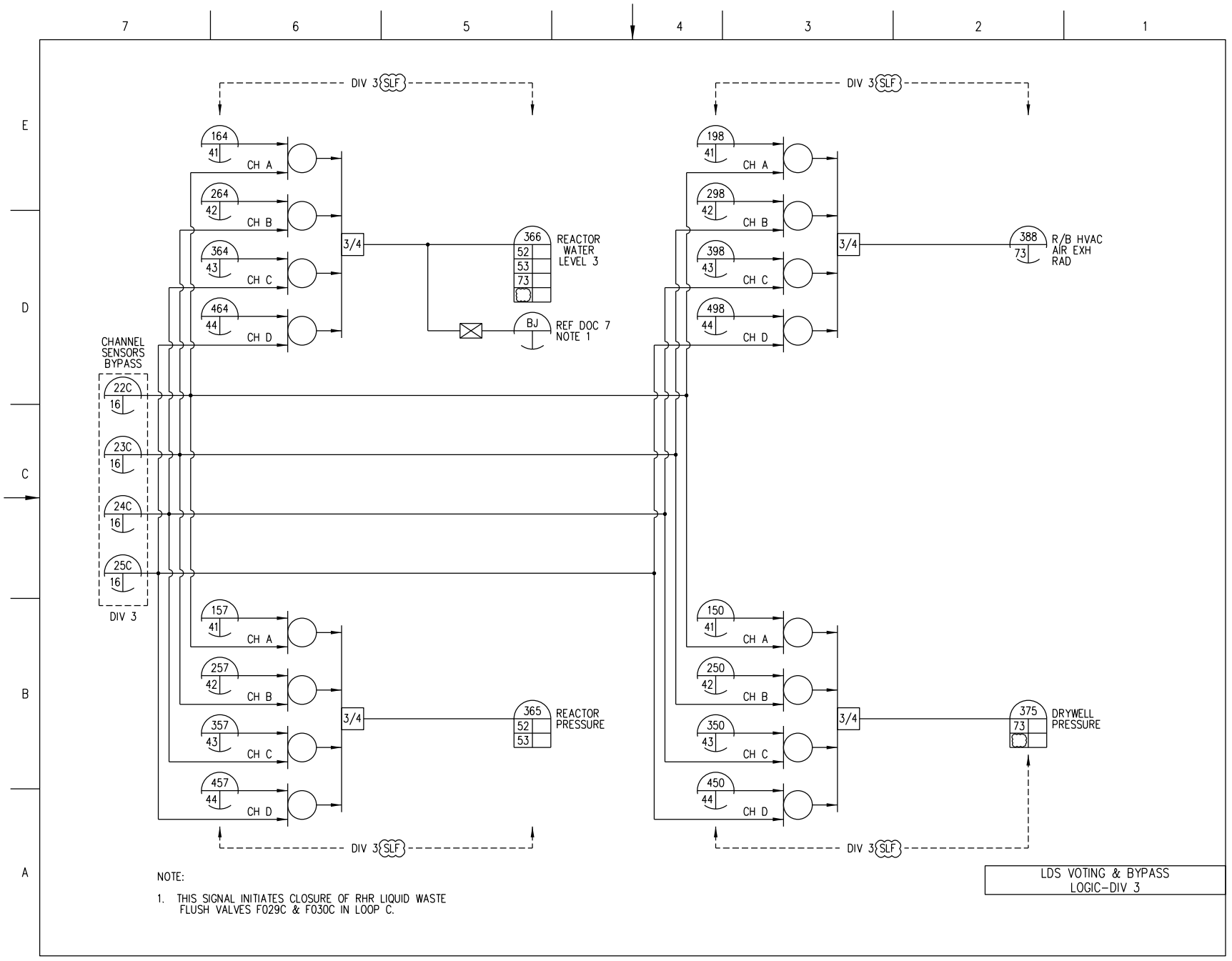


FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 46 of 77)

STP 3 & 4 Rev.2



NOTE:

1. THIS SIGNAL INITIATES CLOSURE OF RHR LIQUID WASTE FLUSH VALVES F029C & F030C IN LOOP C.

FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 47 of 77)

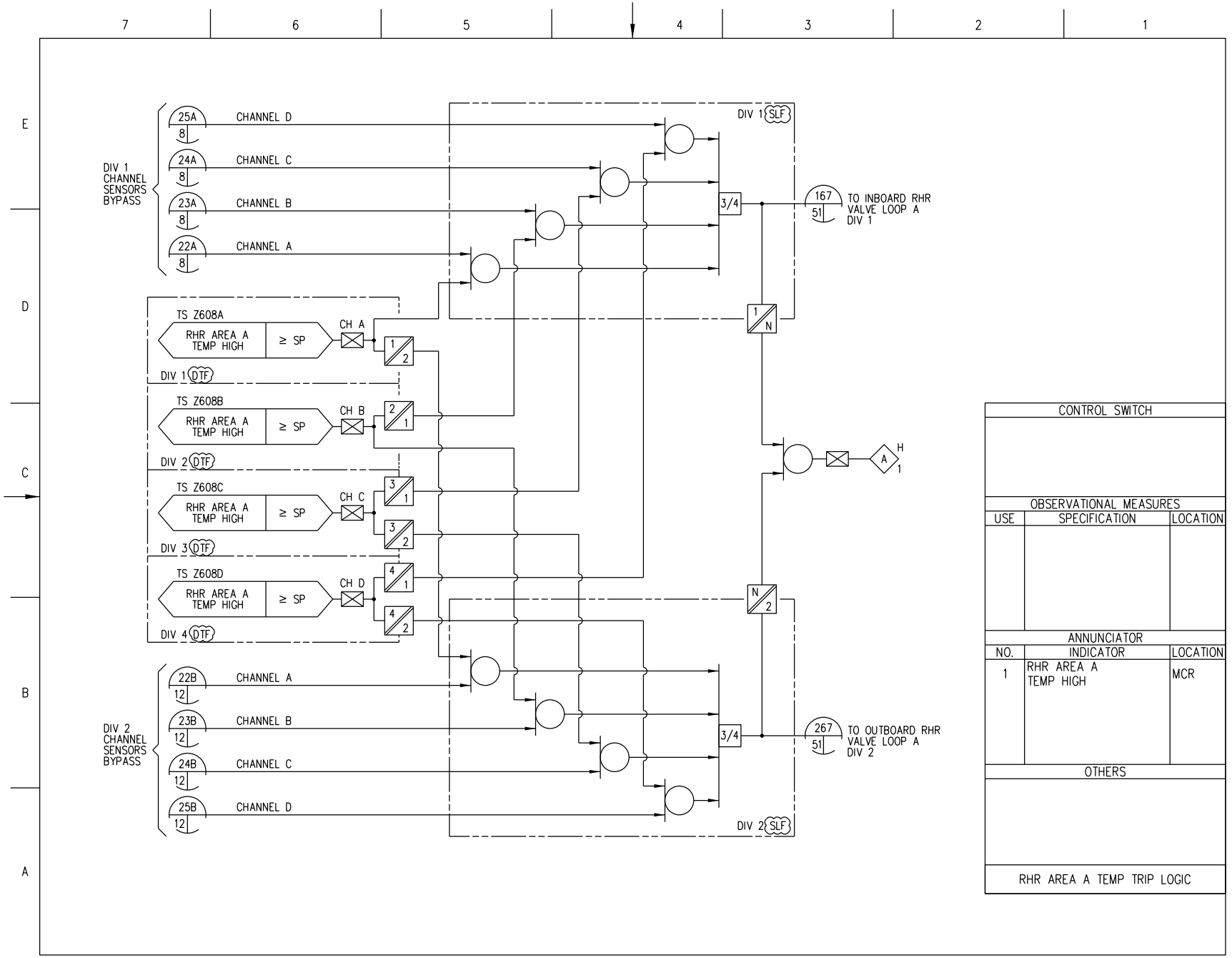


FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 48 of 77)

STP 3 & 4 Rev.2

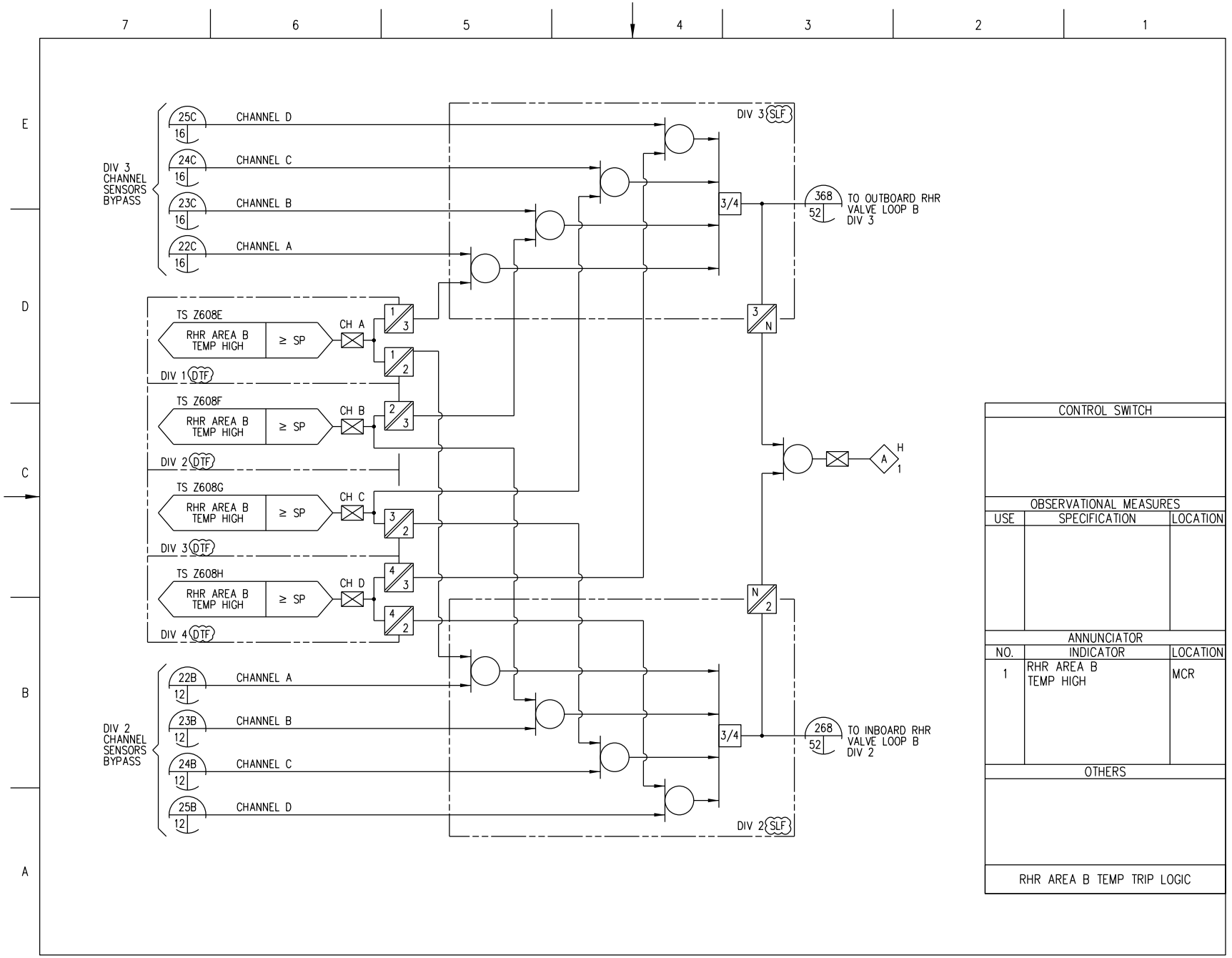


FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 49 of 77)

STP 3 & 4 Rev.2

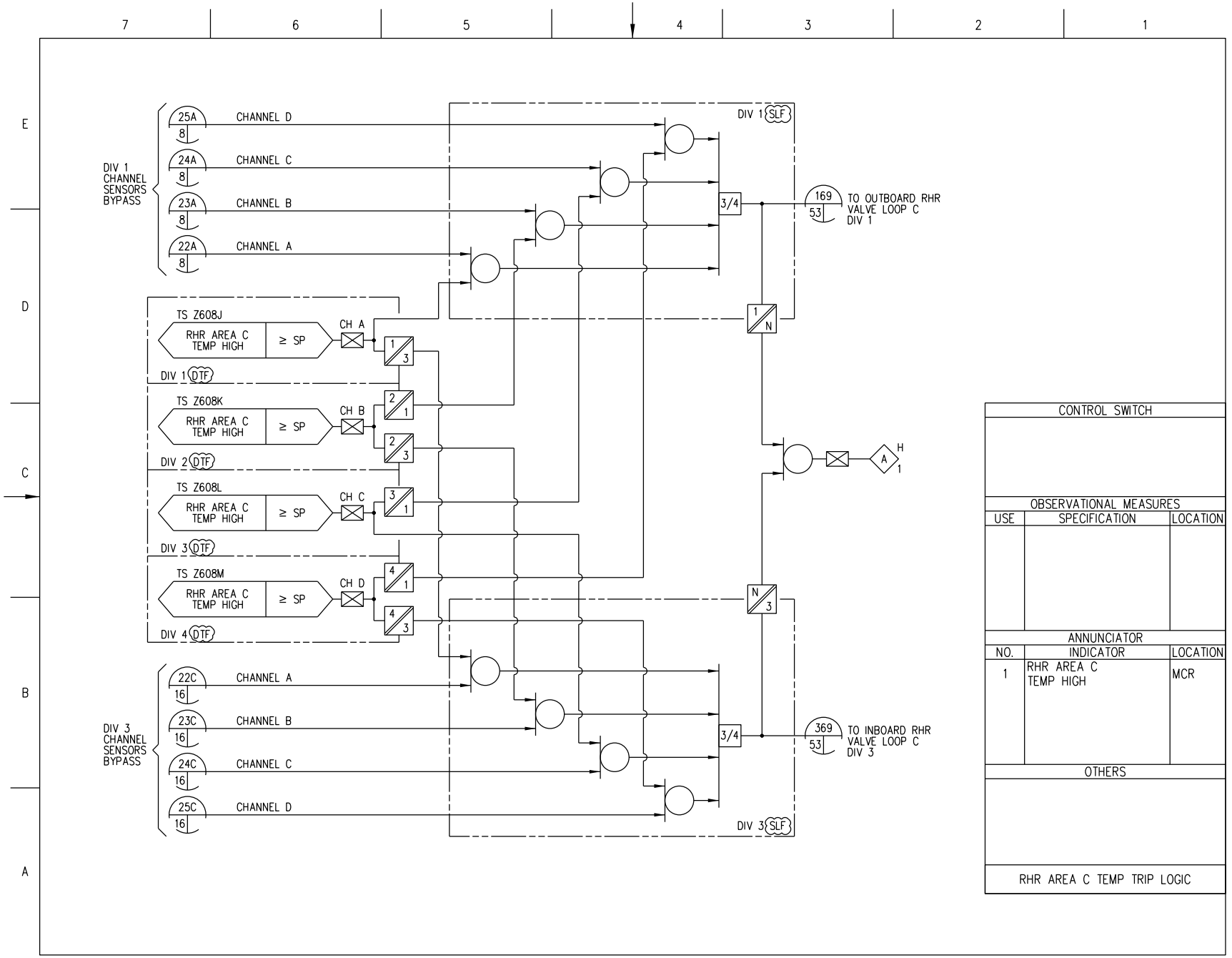


FIGURE 7.3–5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 50 of 77)

STP 3 & 4 Rev.2

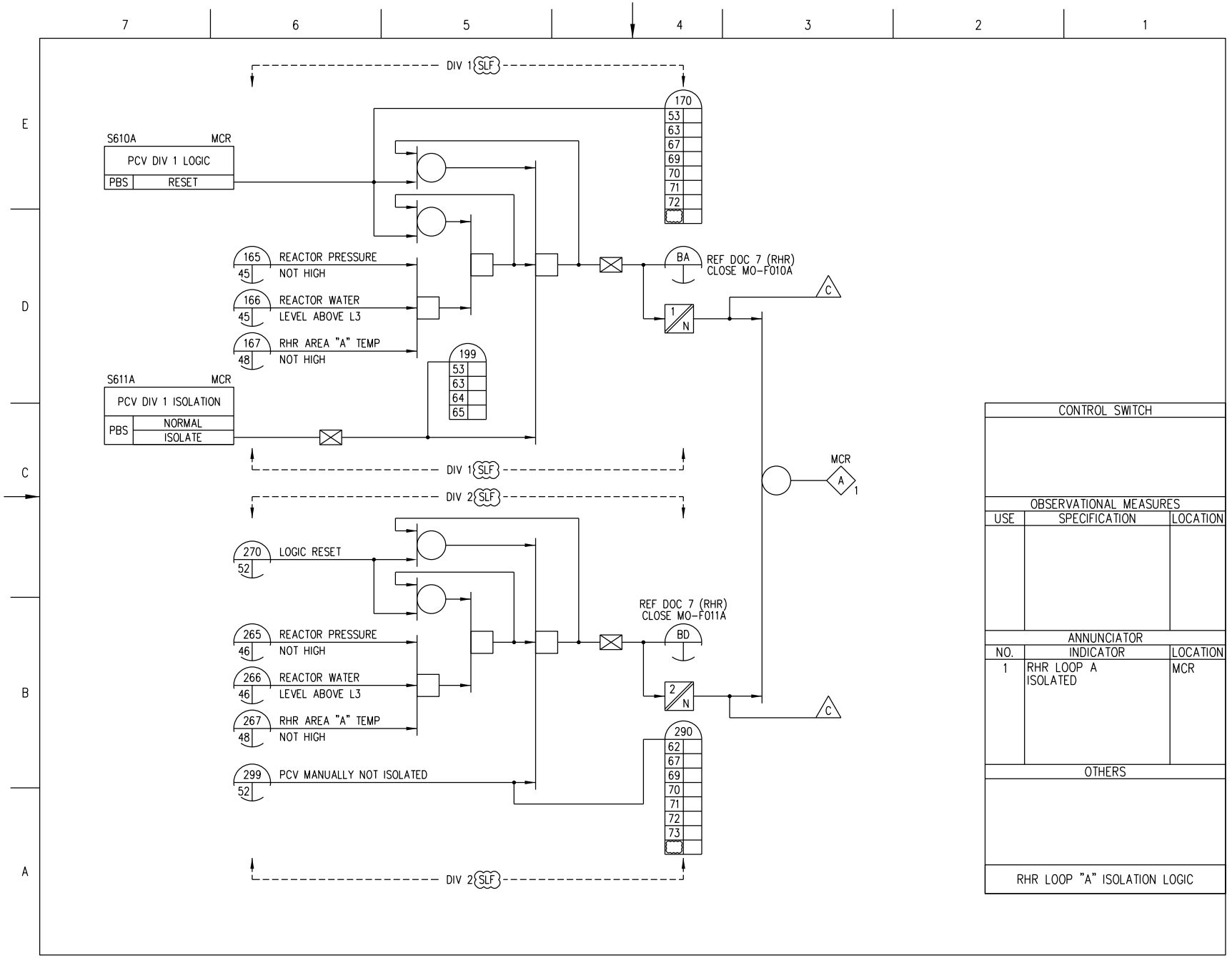


FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 51 of 77)

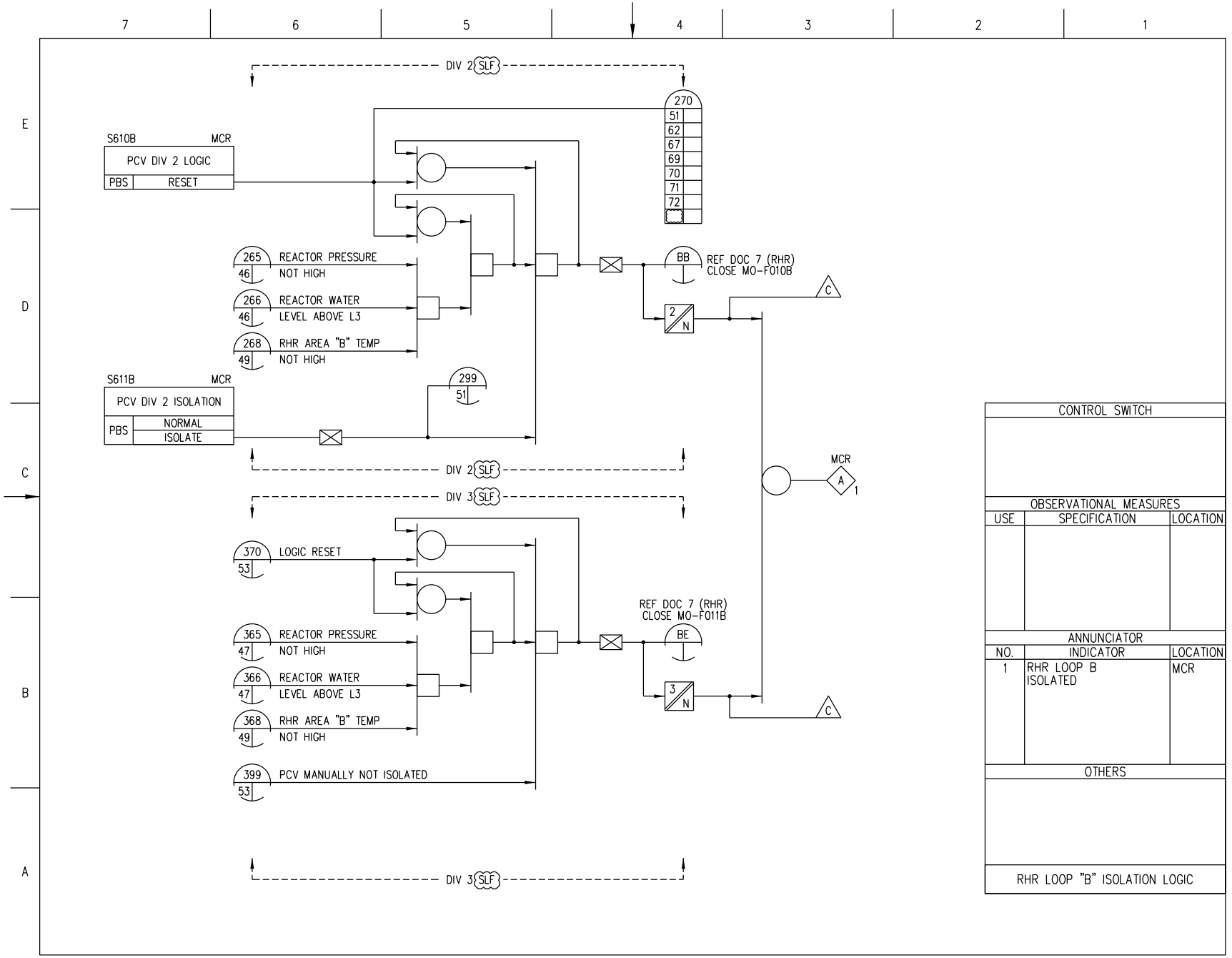
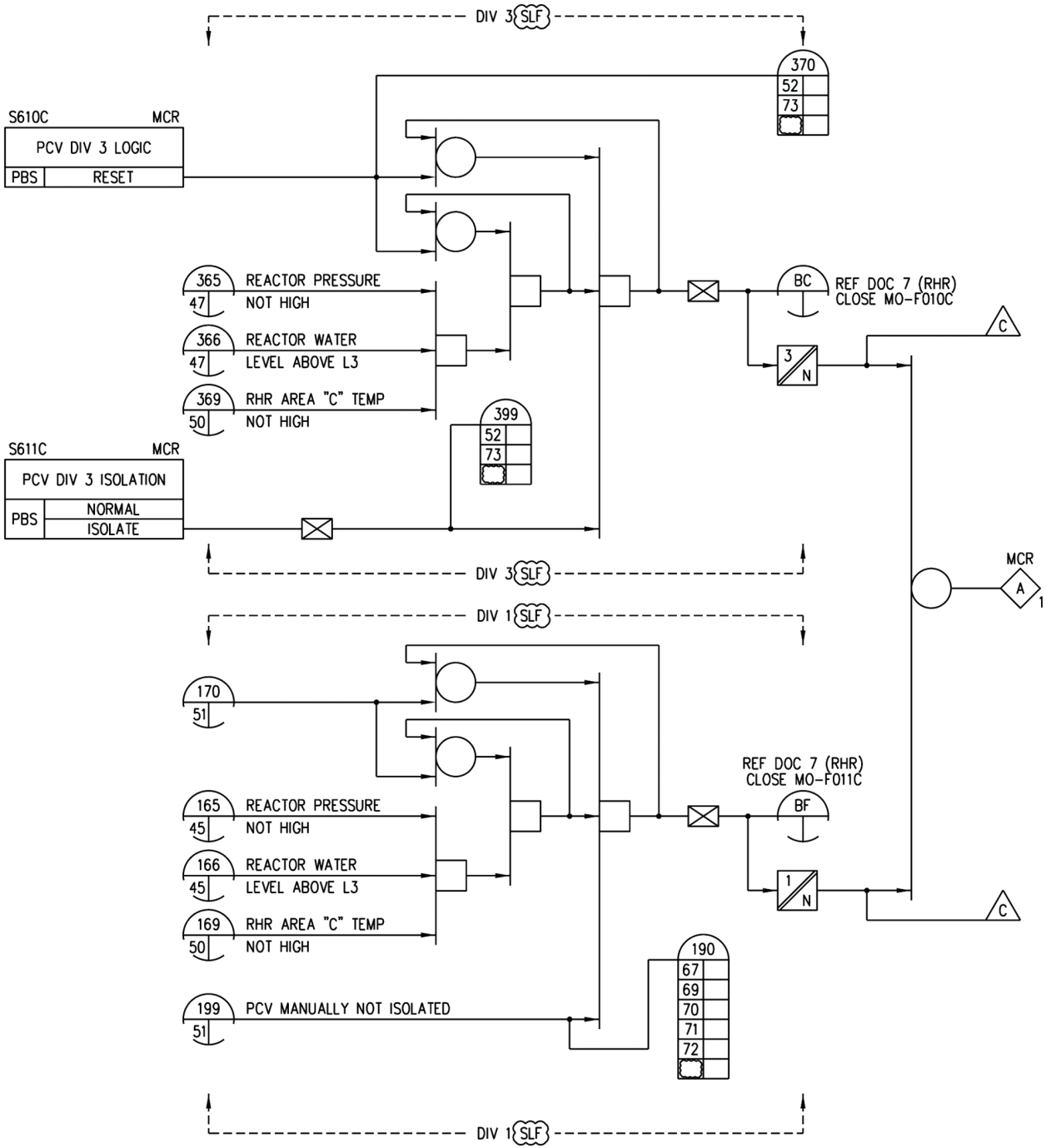
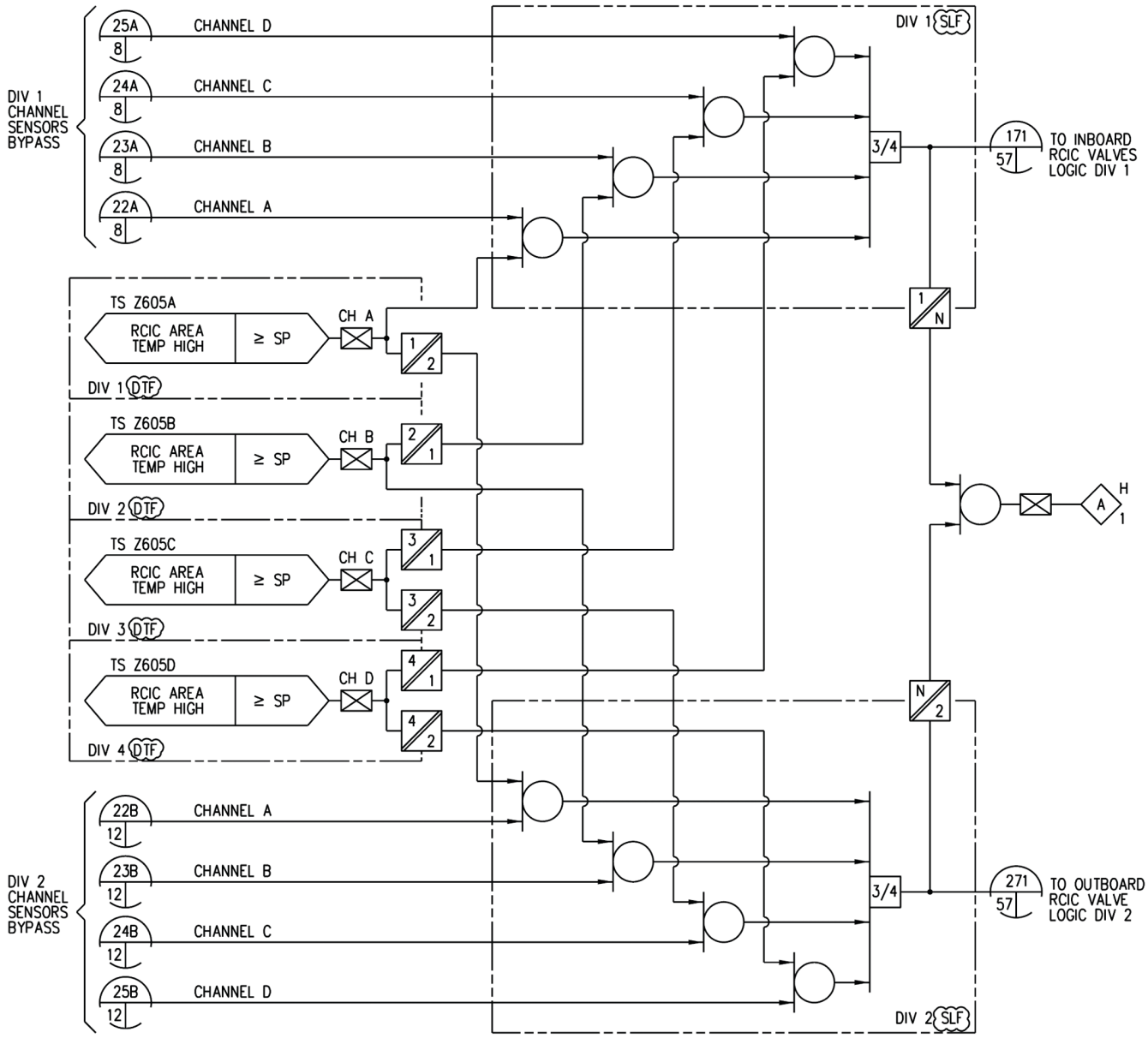


FIGURE 7.3-5 LEAK DETECTION AND ISOLATION SYSTEM IBD (Sheet 52 of 77)



CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	**SPECIFICATION**	**LOCATION**
ANNUNCIATOR		
NO.	**INDICATOR**	**LOCATION**
1	RHR LOOP C ISOLATED	MCR
OTHERS		
RHR LOOP "C" ISOLATION LOGIC		

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 53 of 77)



CONTROL SWITCH		

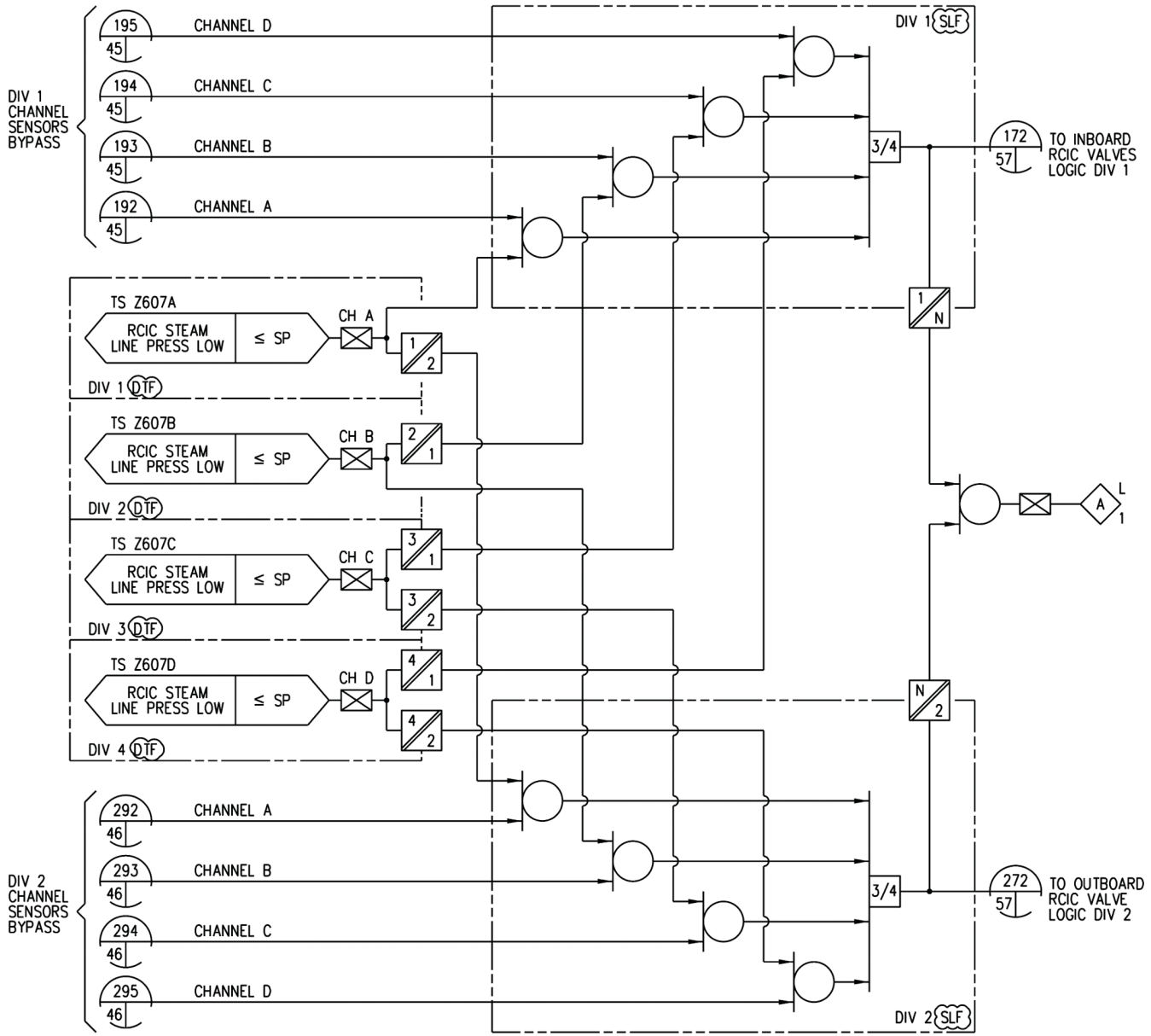
OBSERVATIONAL MEASURES		
USE	SPECIFICATION	LOCATION

ANNUNCIATOR		
NO.	INDICATOR	LOCATION
1	RCIC AREA TEMP HIGH	MCR

OTHERS

RCIC AREA TEMP TRIP LOGIC

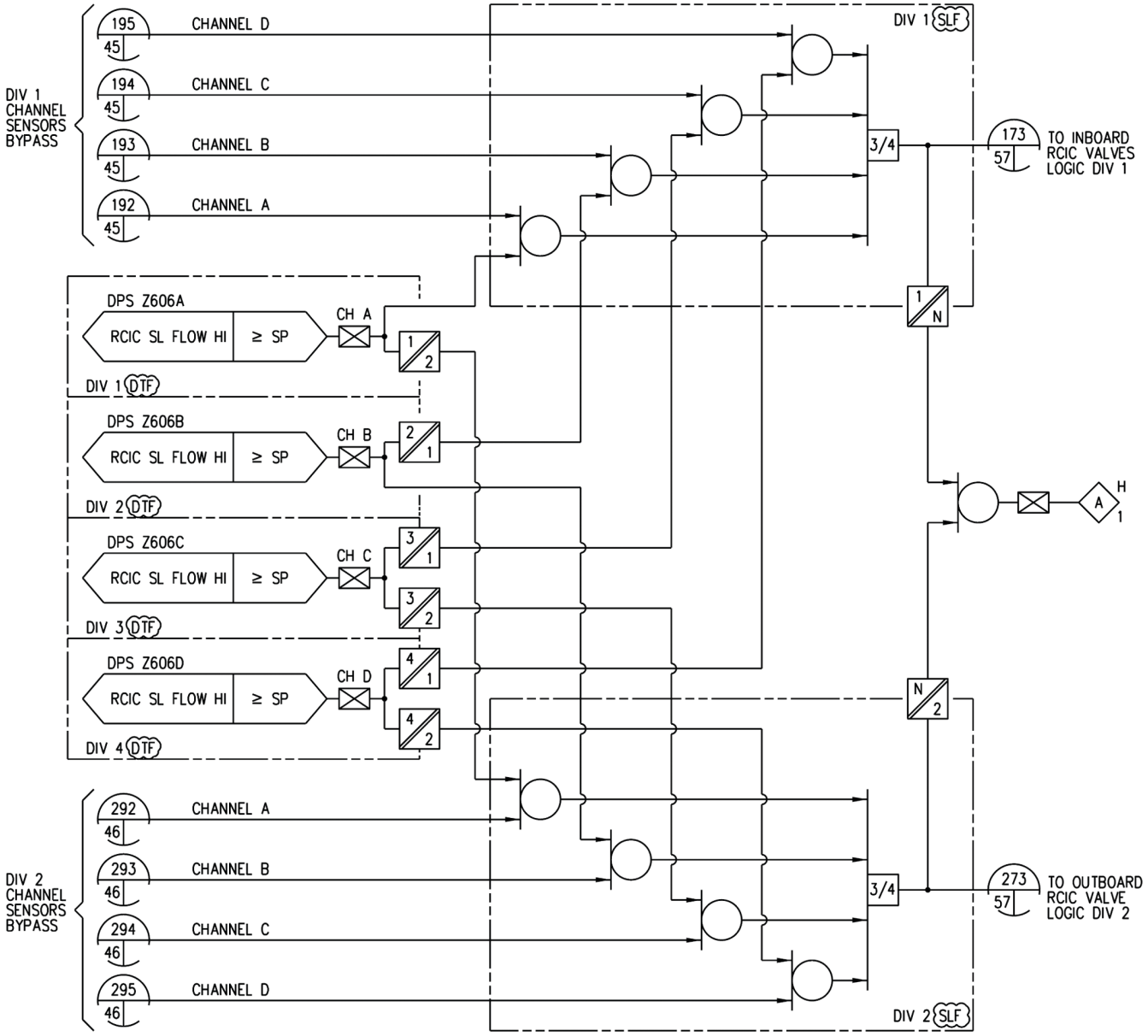
Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 54 of 77)



CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	**SPECIFICATION**	**LOCATION**
ANNUNCIATOR		
NO.	**INDICATOR**	**LOCATION**
1	RCIC SL PRESSURE LOW	MCR
OTHERS		

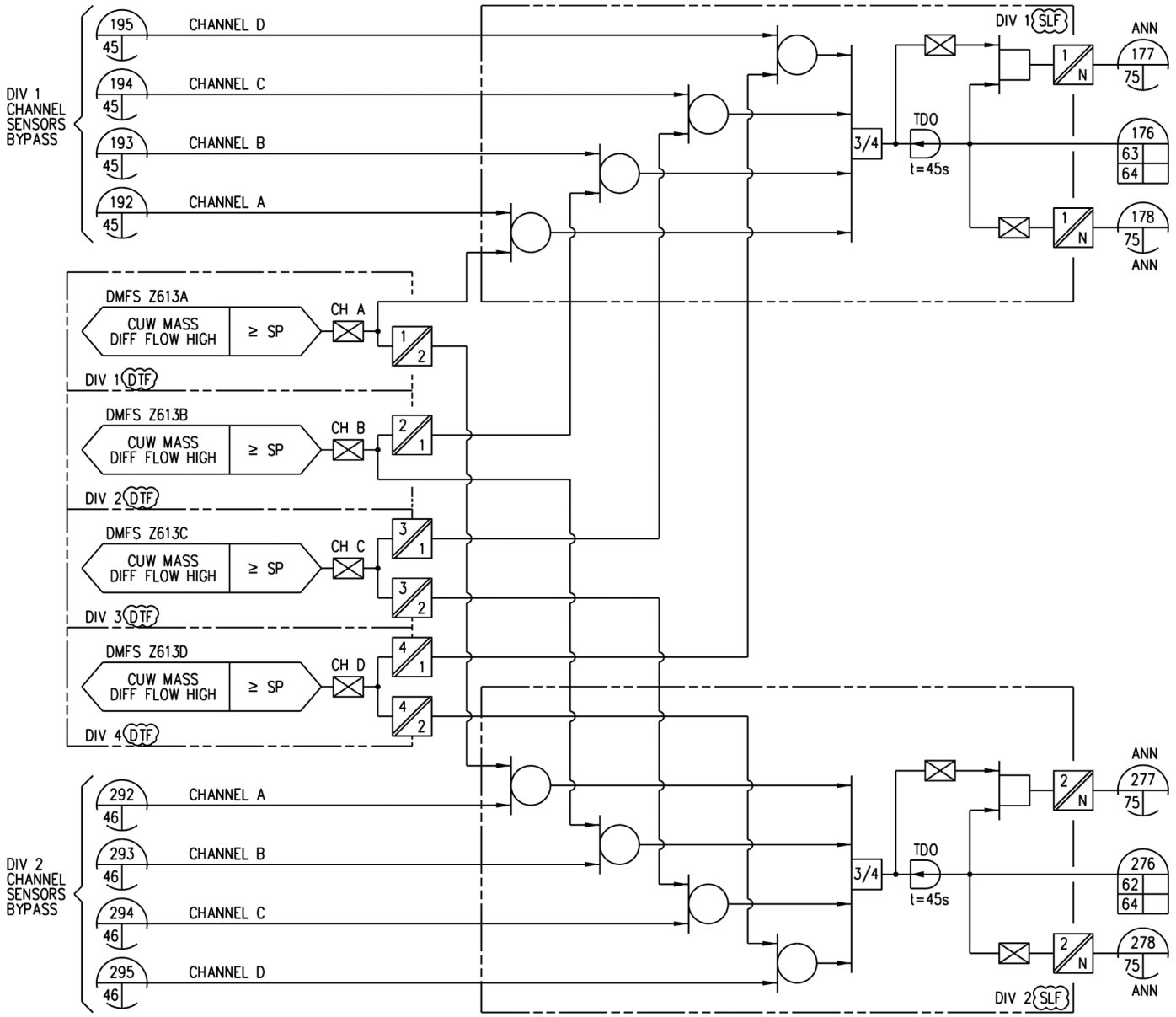
RCIC LOW SL PRESSURE TRIP LOGIC

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 55 of 77)



CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	**SPECIFICATION**	**LOCATION**
ANNUNCIATOR		
NO.	**INDICATOR**	**LOCATION**
1	RCIC HIGH SL FLOW	MCR
OTHERS		
RCIC HIGH SL FLOW TRIP LOGIC		

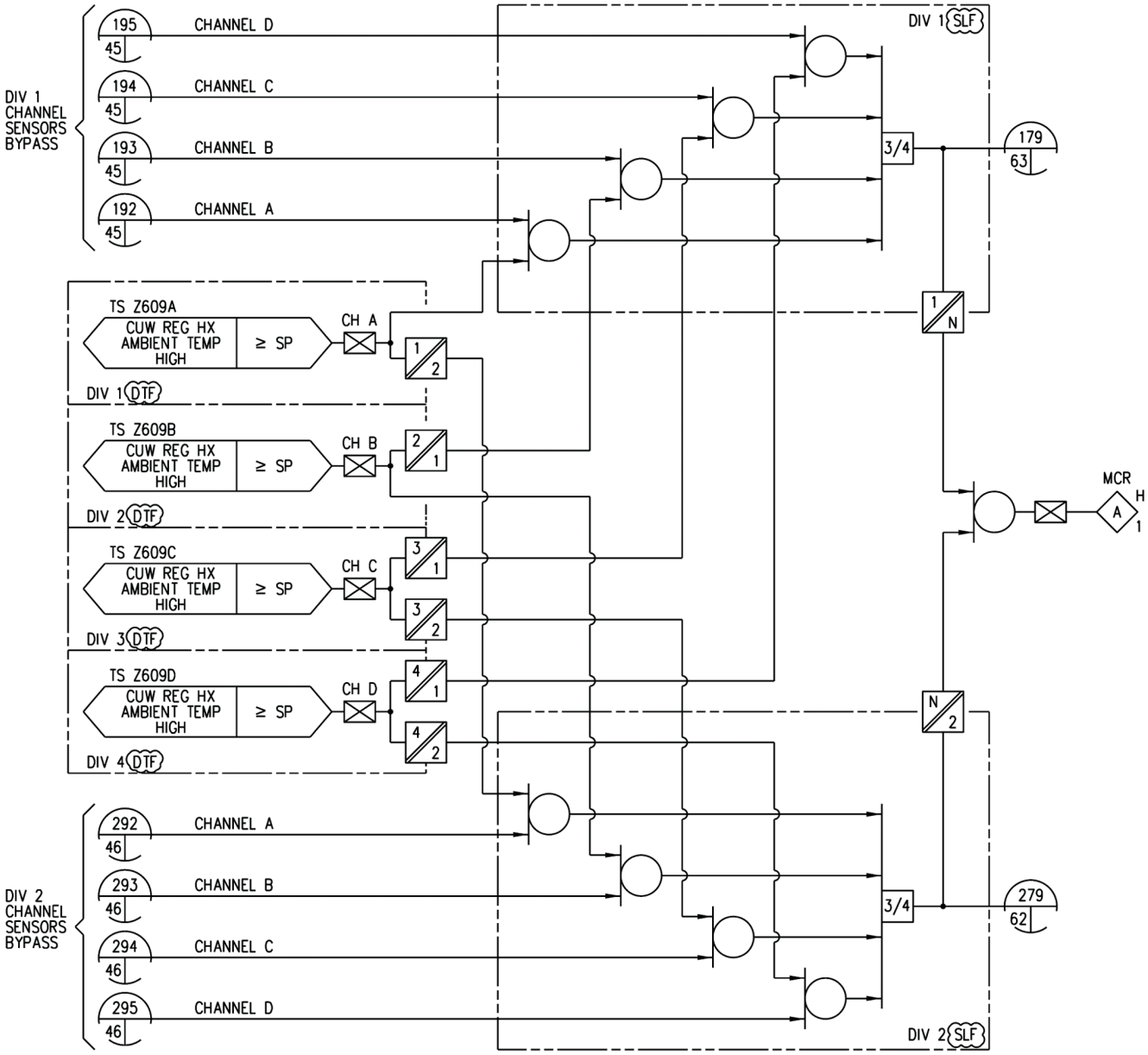
Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 56 of 77)



CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	SPECIFICATION	LOCATION
ANNUNCIATOR		
NO.	INDICATOR	LOCATION
OTHERS		

CUW MASS DIFF FLOW TRIP LOGIC

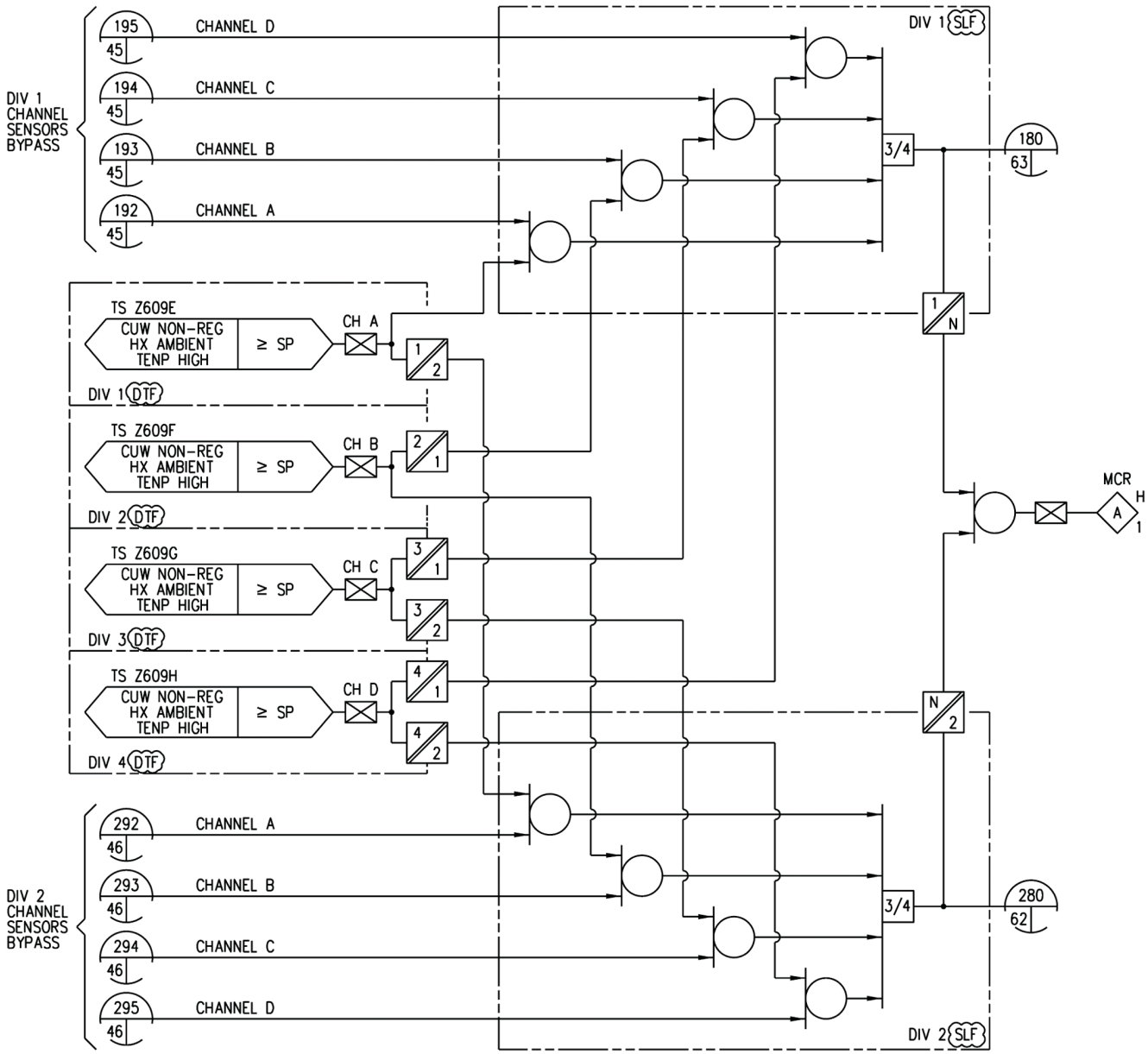
Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 58 of 77)



CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	SPECIFICATION	LOCATION
ANNUNCIATOR		
NO.	INDICATOR	LOCATION
1	CUW REG HX AREA TEMP HIGH	MCR
OTHERS		

CUW REG HX TEMP TRIP LOGIC

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 59 of 77)



CONTROL SWITCH		
OBSERVATIONAL MEASURES		
USE	**SPECIFICATION**	**LOCATION**
ANNUNCIATOR		
NO.	**INDICATOR**	**LOCATION**
1	CUW NON-REG HX AREA TEMP HIGH	MCR
OTHERS		

CUW NON-REG HX TEMP TRIP LOGIC

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 60 of 77)

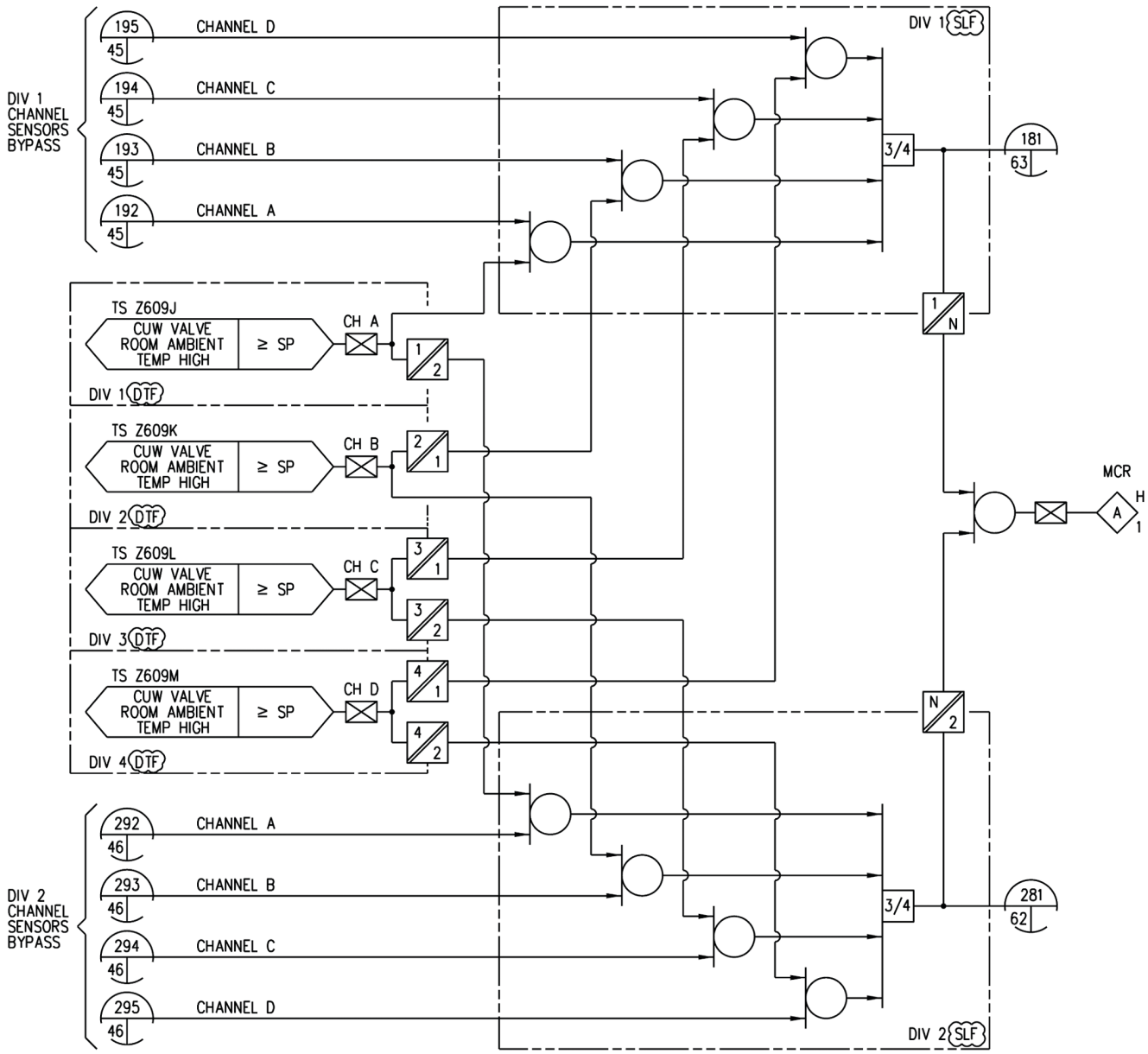


Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 61 of 77)

STP 3&4 Rev. 2

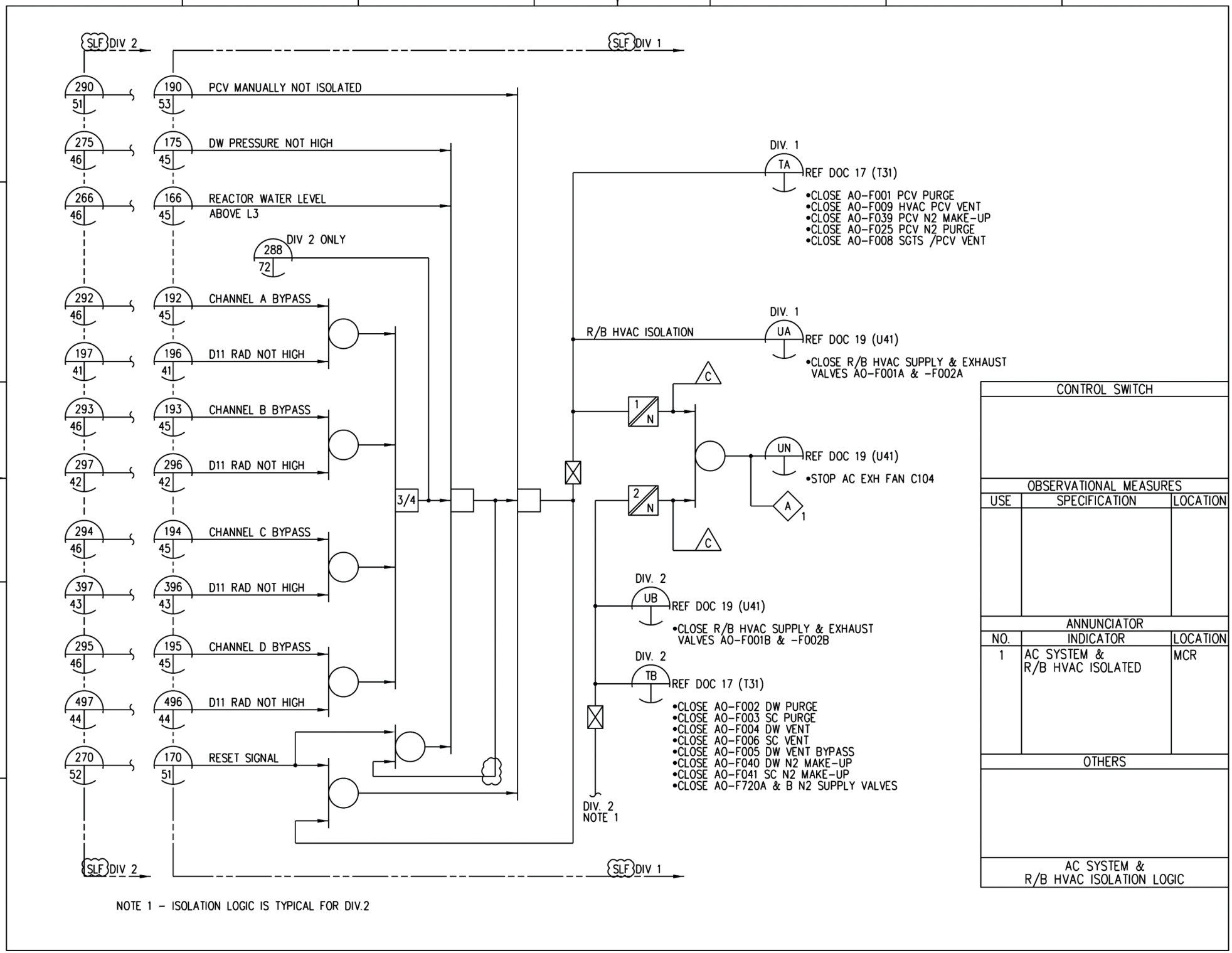


Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 72 of 77)

STP 3&4 Rev. 2

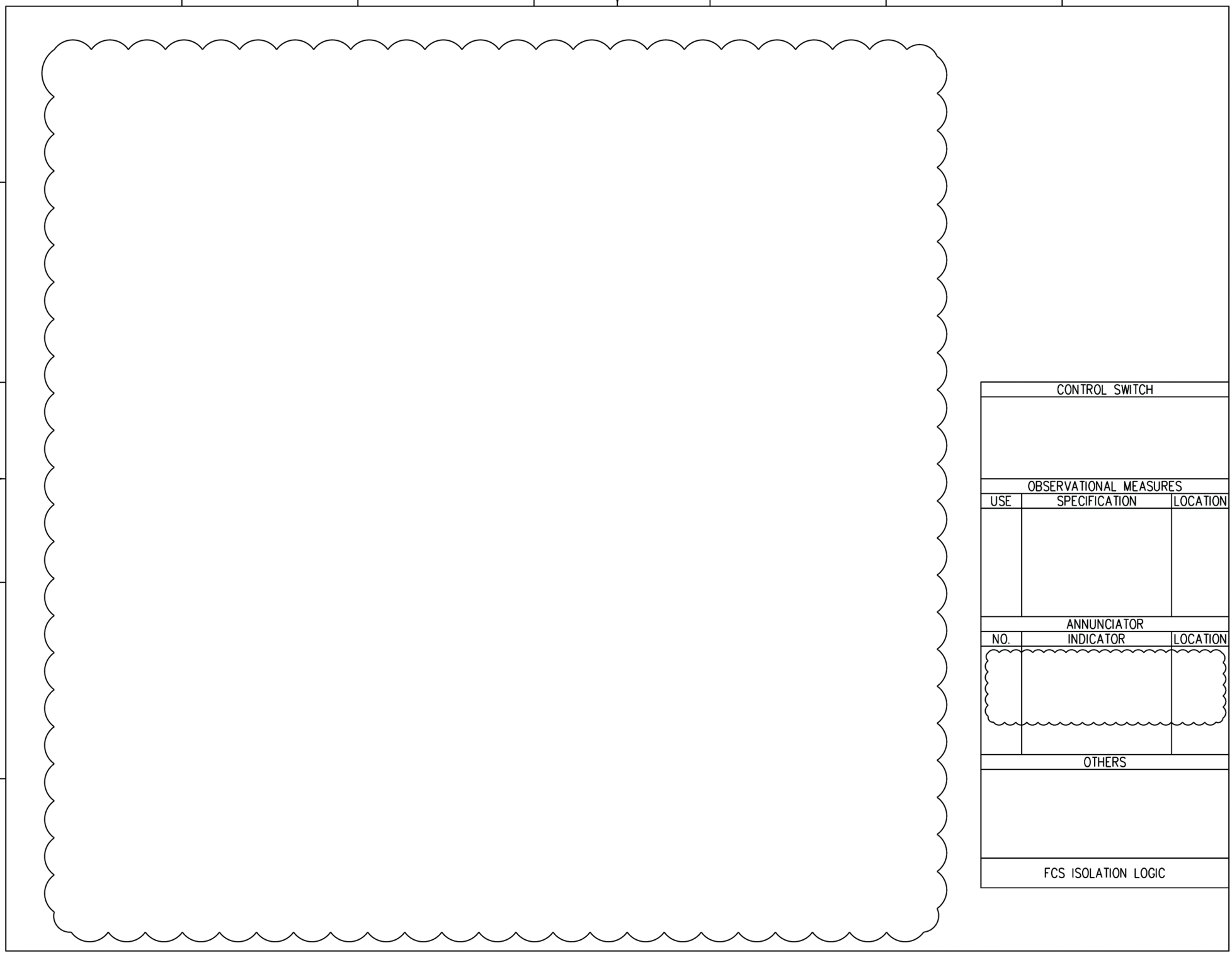
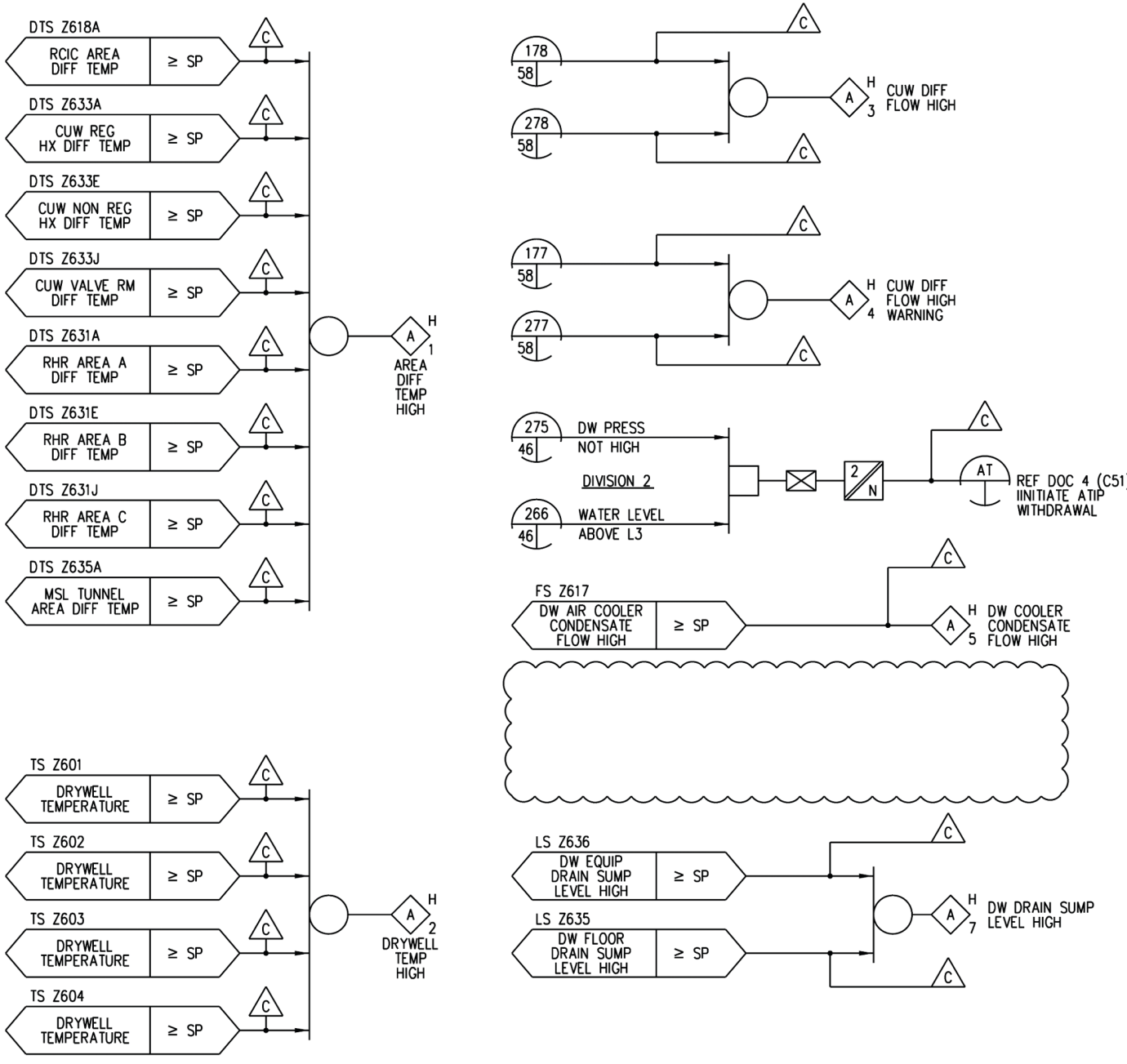


Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 74 of 77)



CONTROL SWITCH

OBSERVATIONAL MEASURES		
USE	SPECIFICATION	LOCATION

ANNUNCIATOR		
NO.	INDICATOR	LOCATION
1	AREA DIFF TEMP HIGH	MCR
2	DRYWELL AREA TEMP HI	MCR
3	CUW DIFF FLOW HIGH	MCR
4	CUW DIFF HIGH WARNING	MCR
5	DW COOLER CONDENSATE FLOW HIGH	MCR
7	DW DRAIN SUMP LEVEL HIGH	MCR

OTHERS

MISC LOGIC & ANNUNCIATORS

Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 75 of 77)

STP 3&4 Rev. 2

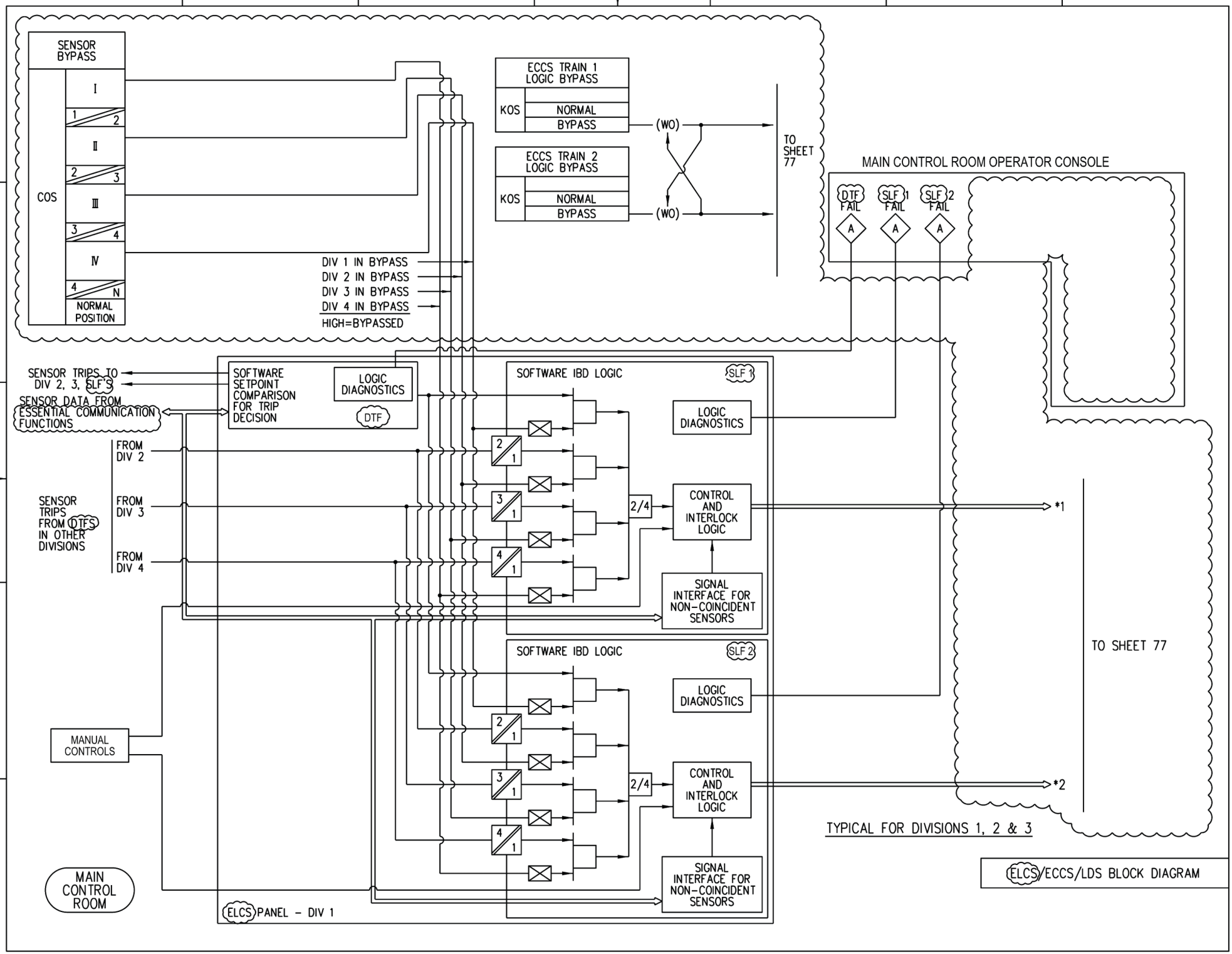


Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 76 of 77)

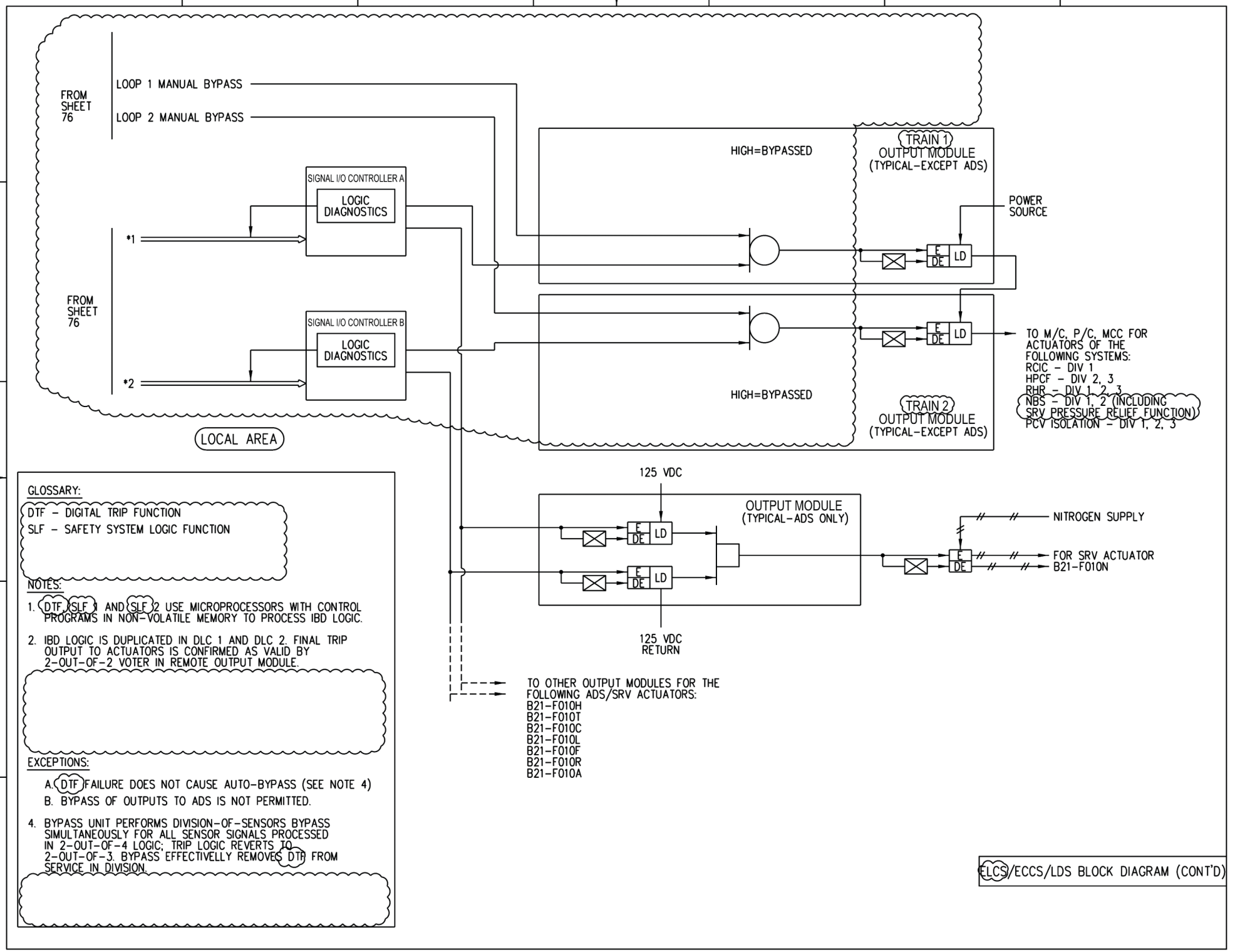
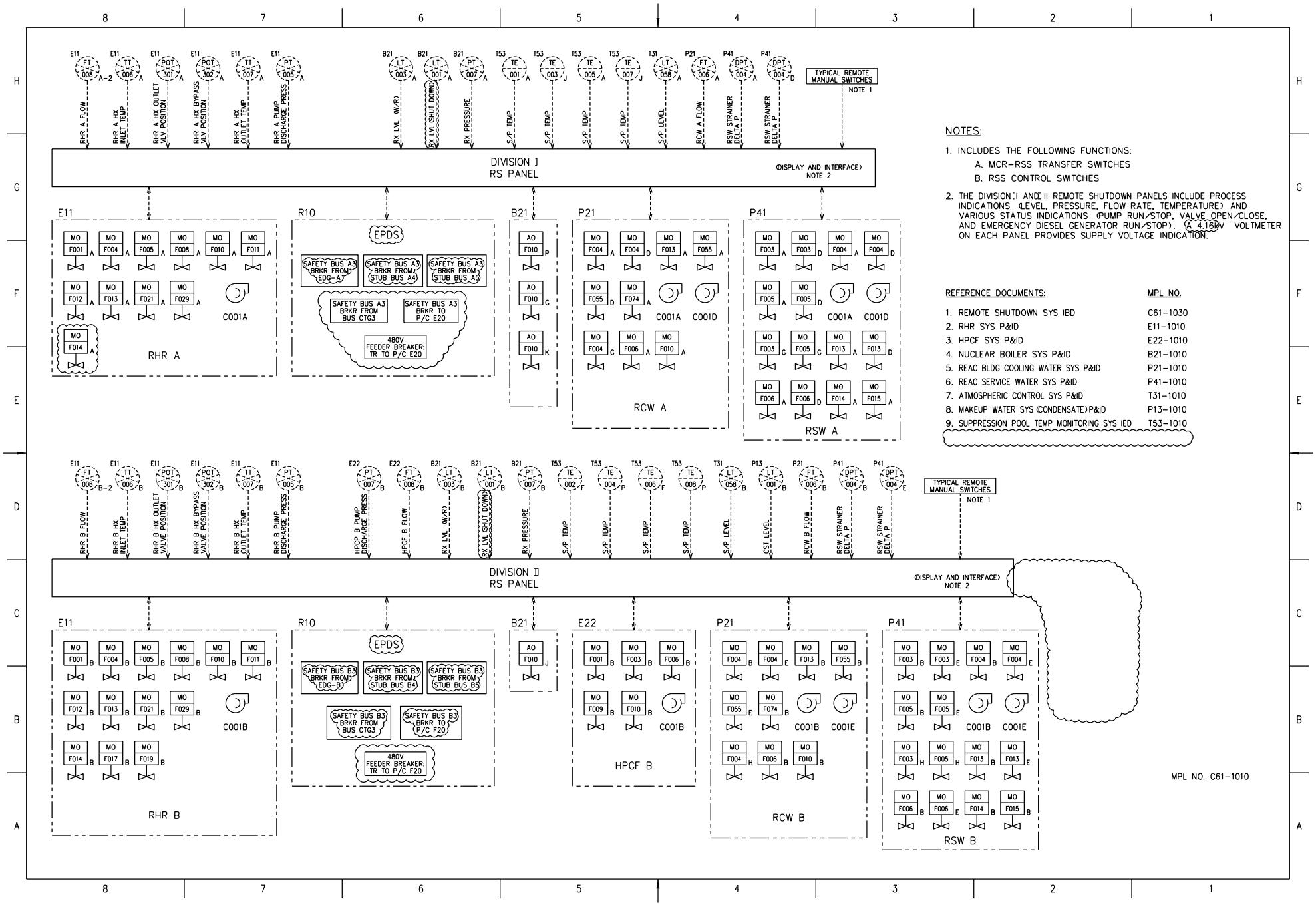


Figure 7.3-5 Leak Detection and Isolation System IBD (Sheet 77 of 77)

STP 3&4 Rev. 2



NOTES:

1. INCLUDES THE FOLLOWING FUNCTIONS:
   A. MCR-RSS TRANSFER SWITCHES
   B. RSS CONTROL SWITCHES
2. THE DIVISION I AND II REMOTE SHUTDOWN PANELS INCLUDE PROCESS INDICATIONS (LEVEL, PRESSURE, FLOW RATE, TEMPERATURE) AND VARIOUS STATUS INDICATIONS (PUMP RUN/STOP, VALVE OPEN/CLOSE, AND EMERGENCY DIESEL GENERATOR RUN/STOP). A 4.16kV VOLTMETER ON EACH PANEL PROVIDES SUPPLY VOLTAGE INDICATION.

REFERENCE DOCUMENTS:	MPL NO.
1. REMOTE SHUTDOWN SYS IBD	C61-1030
2. RHR SYS P&ID	E11-1010
3. HPCF SYS P&ID	E22-1010
4. NUCLEAR BOILER SYS P&ID	B21-1010
5. REAC BLDG COOLING WATER SYS P&ID	P21-1010
6. REAC SERVICE WATER SYS P&ID	P41-1010
7. ATMOSPHERIC CONTROL SYS P&ID	T31-1010
8. MAKEUP WATER SYS (CONDENSATE) P&ID	P13-1010
9. SUPPRESSION POOL TEMP MONITORING SYS IED	T53-1010

FIGURE 7.4-2 REMOTE SHUTDOWN SYSTEM IED (SHEET 1 OF 1)
STP 3&4 Rev.2

NOTES:

1. MOTOR OPERATED VALVE CONTROL LOGIC ON SHEETS 6 AND 8 APPLIES TO MANY VALVES AS TABULATED ON SHEETS 2 AND 3. INTERFACE INFORMATION IS AVAILABLE FROM APPLICABLE REFERENCE DOCUMENTS LISTED ON SHEET 1.

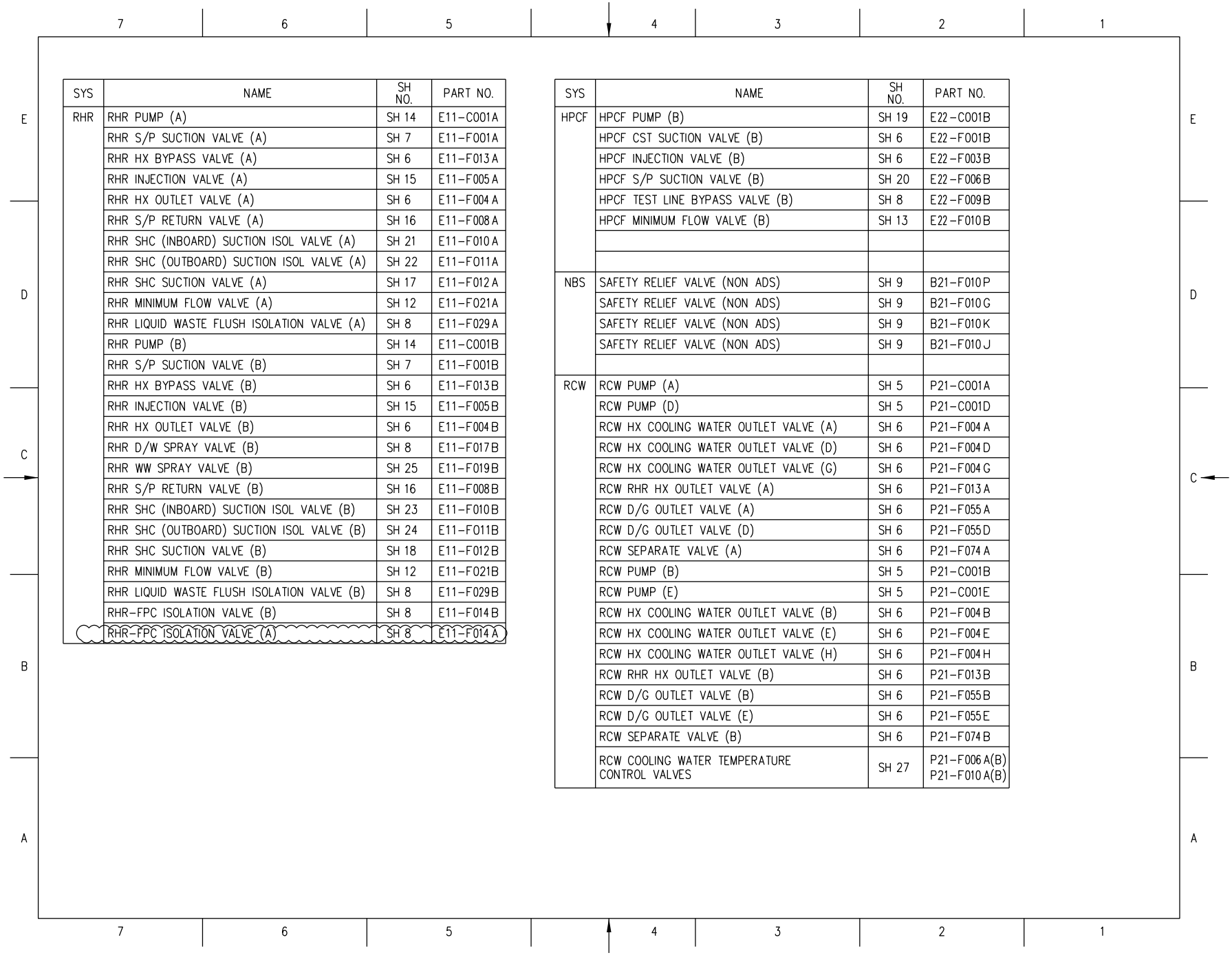
REFERENCE DOCUMENT	MPL NO.
1. REMOTE SHUTDOWN SYS IED	C61–1010
2. RESIDUAL HEAT REMOVAL SYS IBD	E11–1030
3. HIGH PRESS CORE FLOODER SYS IBD	E22–1030
4. REAC BLDG COOLING WATER SYS/ REACTOR SERVICE WATER SYS IBD	P21/P41–1030
5. NUCLEAR BOILER SYS IBD	B21–1030
7. 13.8kV/4.16kV POWER DISTRIBUTION SINGLE LINE DIAG	R10–1010
8. MAKEUP WATER SYSTEM (CONDENSATE) P&ID	P13–1010
9. ATMOSPHERIC CONTROL SYSTEM P&ID	T31–1010
10. RESIDUAL HEAT REMOVAL SYSTEM P&ID	E11–1010
11. HIGH PRESSURE CORE FLOODER SYSTEM P&ID	E22–1010
12. NUCLEAR BOILER SYSTEM P&ID	B21–1010
13. INTERLOCK BLOCK DIAGRAM (IBD) STANDARDS	A10–3070

LEGEND:

MCR = MAIN CONTROL ROOM
RSP = REMOTE SHUTDOWN CONTROL PANEL
RSTS = REMOTE SHUTDOWN TRANSFER SWITCH
RSCS = REMOTE SHUTDOWN CONTROL SWITCH

MPL NO. C61–1030

FIGURE 7.4–3 REMOTE SHUTDOWN SYSTEM IBD (Sheet 1 of 27)



SYS	NAME	SH NO.	PART NO.
RHR	RHR PUMP (A)	SH 14	E11-C001A
	RHR S/P SUCTION VALVE (A)	SH 7	E11-F001A
	RHR HX BYPASS VALVE (A)	SH 6	E11-F013A
	RHR INJECTION VALVE (A)	SH 15	E11-F005A
	RHR HX OUTLET VALVE (A)	SH 6	E11-F004A
	RHR S/P RETURN VALVE (A)	SH 16	E11-F008A
	RHR SHC (INBOARD) SUCTION ISOL VALVE (A)	SH 21	E11-F010A
	RHR SHC (OUTBOARD) SUCTION ISOL VALVE (A)	SH 22	E11-F011A
	RHR SHC SUCTION VALVE (A)	SH 17	E11-F012A
	RHR MINIMUM FLOW VALVE (A)	SH 12	E11-F021A
	RHR LIQUID WASTE FLUSH ISOLATION VALVE (A)	SH 8	E11-F029A
	RHR PUMP (B)	SH 14	E11-C001B
	RHR S/P SUCTION VALVE (B)	SH 7	E11-F001B
	RHR HX BYPASS VALVE (B)	SH 6	E11-F013B
	RHR INJECTION VALVE (B)	SH 15	E11-F005B
	RHR HX OUTLET VALVE (B)	SH 6	E11-F004B
	RHR D/W SPRAY VALVE (B)	SH 8	E11-F017B
	RHR WW SPRAY VALVE (B)	SH 25	E11-F019B
	RHR S/P RETURN VALVE (B)	SH 16	E11-F008B
	RHR SHC (INBOARD) SUCTION ISOL VALVE (B)	SH 23	E11-F010B
	RHR SHC (OUTBOARD) SUCTION ISOL VALVE (B)	SH 24	E11-F011B
	RHR SHC SUCTION VALVE (B)	SH 18	E11-F012B
	RHR MINIMUM FLOW VALVE (B)	SH 12	E11-F021B
	RHR LIQUID WASTE FLUSH ISOLATION VALVE (B)	SH 8	E11-F029B
	RHR-FPC ISOLATION VALVE (B)	SH 8	E11-F014B
	RHR-FPC ISOLATION VALVE (A)	SH 8	E11-F014A

SYS	NAME	SH NO.	PART NO.
HPCF	HPCF PUMP (B)	SH 19	E22-C001B
	HPCF CST SUCTION VALVE (B)	SH 6	E22-F001B
	HPCF INJECTION VALVE (B)	SH 6	E22-F003B
	HPCF S/P SUCTION VALVE (B)	SH 20	E22-F006B
	HPCF TEST LINE BYPASS VALVE (B)	SH 8	E22-F009B
	HPCF MINIMUM FLOW VALVE (B)	SH 13	E22-F010B
NBS	SAFETY RELIEF VALVE (NON ADS)	SH 9	B21-F010P
	SAFETY RELIEF VALVE (NON ADS)	SH 9	B21-F010G
	SAFETY RELIEF VALVE (NON ADS)	SH 9	B21-F010K
	SAFETY RELIEF VALVE (NON ADS)	SH 9	B21-F010J
RCW	RCW PUMP (A)	SH 5	P21-C001A
	RCW PUMP (D)	SH 5	P21-C001D
	RCW HX COOLING WATER OUTLET VALVE (A)	SH 6	P21-F004A
	RCW HX COOLING WATER OUTLET VALVE (D)	SH 6	P21-F004D
	RCW HX COOLING WATER OUTLET VALVE (G)	SH 6	P21-F004G
	RCW RHR HX OUTLET VALVE (A)	SH 6	P21-F013A
	RCW D/G OUTLET VALVE (A)	SH 6	P21-F055A
	RCW D/G OUTLET VALVE (D)	SH 6	P21-F055D
	RCW SEPARATE VALVE (A)	SH 6	P21-F074A
	RCW PUMP (B)	SH 5	P21-C001B
	RCW PUMP (E)	SH 5	P21-C001E
	RCW HX COOLING WATER OUTLET VALVE (B)	SH 6	P21-F004B
	RCW HX COOLING WATER OUTLET VALVE (E)	SH 6	P21-F004E
	RCW HX COOLING WATER OUTLET VALVE (H)	SH 6	P21-F004H
	RCW RHR HX OUTLET VALVE (B)	SH 6	P21-F013B
	RCW D/G OUTLET VALVE (B)	SH 6	P21-F055B
	RCW D/G OUTLET VALVE (E)	SH 6	P21-F055E
	RCW SEPARATE VALVE (B)	SH 6	P21-F074B
	RCW COOLING WATER TEMPERATURE CONTROL VALVES	SH 27	P21-F006A(B) P21-F010A(B)

FIGURE 7.4-3 REMOTE SHUTDOWN SYSTEM IBD (Sheet 2 of 27)

SYS	NAME	SH NO.	PART NO.
RSW	RSW PUMP (A)	SH 5	P41-C001A
	RSW PUMP (D)	SH 5	P41-C001D
	RCW HX SERVICE WATER INLET VALVE (A)	SH 6	P41-F003A
	RCW HX SERVICE WATER INLET VALVE (D)	SH 6	P41-F003D
	RSW STRAINER INLET VALVE (A)	SH 26	P41-F004A
	RSW STRAINER INLET VALVE (D)	SH 26	P41-F004D
	RCW HX SERVICE WATER OUTLET VALVE (A)	SH 6	P41-F005A
	RCW HX SERVICE WATER OUTLET VALVE (D)	SH 6	P41-F005D
	RCW HX SERVICE WATER INLET VALVE (G)	SH 6	P41-F003G
	RCW HX SERVICE WATER OUTLET VALVE (G)	SH 6	P41-F005G
	RSW STRAINER OUTLET VALVE (A)	SH 6	P41-F013A
	RSW STRAINER OUTLET VALVE (D)	SH 6	P41-F013D
	RSW STRAINER BACKWASH VALVE (A)	SH 6	P41-F006A
	RSW STRAINER BACKWASH VALVE (D)	SH 6	P41-F006D
	RSW (A) SUPPLY VALVE	SH 6	P41-F014A
	RSW (A) RETURN VALVE	SH 6	P41-F015A
	RSW PUMP (B)	SH 5	P41-C001B
	RSW PUMP (E)	SH 5	P41-C001E
	RCW HX SERVICE WATER INLET VALVE (B)	SH 6	P41-F003B
	RCW HX SERVICE WATER INLET VALVE (E)	SH 6	P41-F003E
	RSW STRAINER INLET VALVE (B)	SH 26	P41-F004B
	RSW STRAINER INLET VALVE (E)	SH 26	P41-F004E
	RCW HX SERVICE WATER OUTLET VALVE (B)	SH 6	P41-F005B
	RCW HX SERVICE WATER OUTLET VALVE (E)	SH 6	P41-F005E
	RCW HX SERVICE WATER INLET VALVE (H)	SH 6	P41-F003H
	RCW HX SERVICE WATER OUTLET VALVE (H)	SH 6	P41-F005H
	RSW STRAINER OUTLET VALVE (B)	SH 6	P41-F013B
	RSW STRAINER OUTLET VALVE (E)	SH 6	P41-F013E
	RSW STRAINER BACKWASH VALVE (B)	SH 6	P41-F006B
	RSW STRAINER BACKWASH VALVE (E)	SH 6	P41-F006E
	RSW (B) SUPPLY VALVE	SH 6	P41-F014B
	RSW (B) RETURN VALVE	SH 6	P41-F015B

SYS	NAME	SH NO.	PART NO.
D/G	DIESEL GENERATOR A START-UP CIRCUIT	SH 11	-
	DIESEL GENERATOR B START-UP CIRCUIT	SH 11	-

SYS	NAME	SH NO.	PART NO.
EPDS	SAFETY BUS A3 BREAKER FROM STUB BUS A4	SH 10	-
	SAFETY BUS A3 BREAKER FROM STUB BUS A5	SH 10	-
	SAFETY BUS A3 BREAKER FROM EDG-A	SH 10	-
	SAFETY BUS A3 BREAKER FROM BUS CTG3	SH 10	-
	SAFETY BUS A3 BREAKER TO P/C E20	SH 10	-
	480V FEEDER BREAKER:TR TO P/C E20	SH 10	-
	SAFETY BUS B3 BREAKER FROM STUB BUS B4	SH 10	-
	SAFETY BUS B3 BREAKER FROM STUB BUS B5	SH 10	-
	SAFETY BUS B3 BREAKER FROM EDG-B	SH 10	-
	SAFETY BUS B3 BREAKER FROM BUS CTG3	SH 10	-
	SAFETY BUS B3 BREAKER TO P/C F20	SH 10	-
	480V FEEDER BREAKER:TR TO P/C F20	SH 10	-

FIGURE 7.4-3 REMOTE SHUTDOWN SYSTEM IBD (Sheet 3 of 27)