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FIGURE 1.2-23a RADWASTE BUILDING AT ELEVATION -1500 MM

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FIGURE 1.2-23b RADWASTE BUILDING AT ELEVATION 4800 MM

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FIGURE 1.2-23c RADWASTE BUILDING AT ELEVATION 12300 MM

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FIGURE 1.2-23d RADWASTE BUILDING AT ELEVATION 21000 MM

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FIGURE 1.2-23e RADWASTE BUILDING, SECTION A-A

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FIGURE 1.2-24 TURBINE BUILDING, GENERAL ARRANGEMENT AT ELEVATION 5300 MM

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FIGURE 1.2-25 TURBINE BUILDING, GENERAL ARRANGEMENT AT ELEVATION 12300 MM

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FIGURE 1.2-26 TURBINE BUILDING, GENERAL ARRANGEMENT AT ELEVATION 20300 MM

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FIGURE 1.2-27 TURBINE BUILDING, GENERAL ARRANGEMENT AT ELEVATION 30300 MM

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FIGURE 1.2-28 TURBINE BUILDING, GENERAL ARRANGEMENT LONGITUDINAL SECTION A-A

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FIGURE 1.2-29 TURBINE BUILDING, GENERAL ARRANGEMENT, SECTION B-B

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FIGURE 1.2-30 TURBINE BUILDING, GENERAL ARRANGEMENT, SECTION C-C

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FIGURE 1.2-31 TURBINE BUILDING, GENERAL ARRANGEMENT, SECTION D-D

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FIGURE 1.2-32 GENERAL ARRANGEMENT UHS PUMP HOUSE - PLAN VIEW EL. 50'

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FIGURE 1.2-34 GENERAL ARRANGEMENT UHS PUMP HOUSE - PARTIAL PLAN VIEWS AND SECTIONS

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FIGURE 1.2-35 REVISED SITE PLAN

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FIGURE 1.2-36 GENERAL ARRANGEMENT, REACTOR SERVICE WATER PUMP HOUSE AND UHS BASIN

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FIGURE 1.2-37 PLOT PLAN

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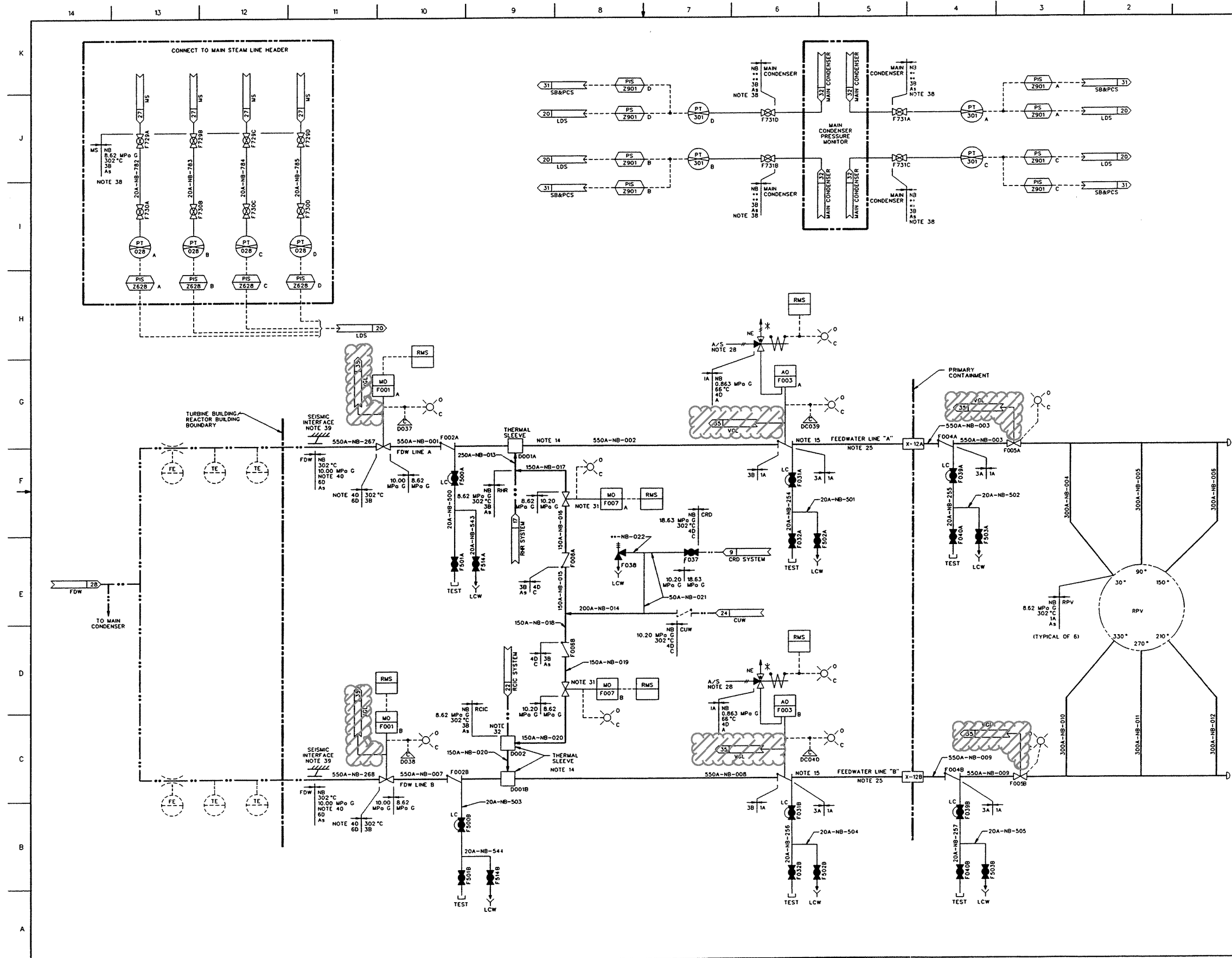


FIGURE 5.1-3 NUCLEAR BOILER SYSTEM P&ID (Sheet 4 of 11)

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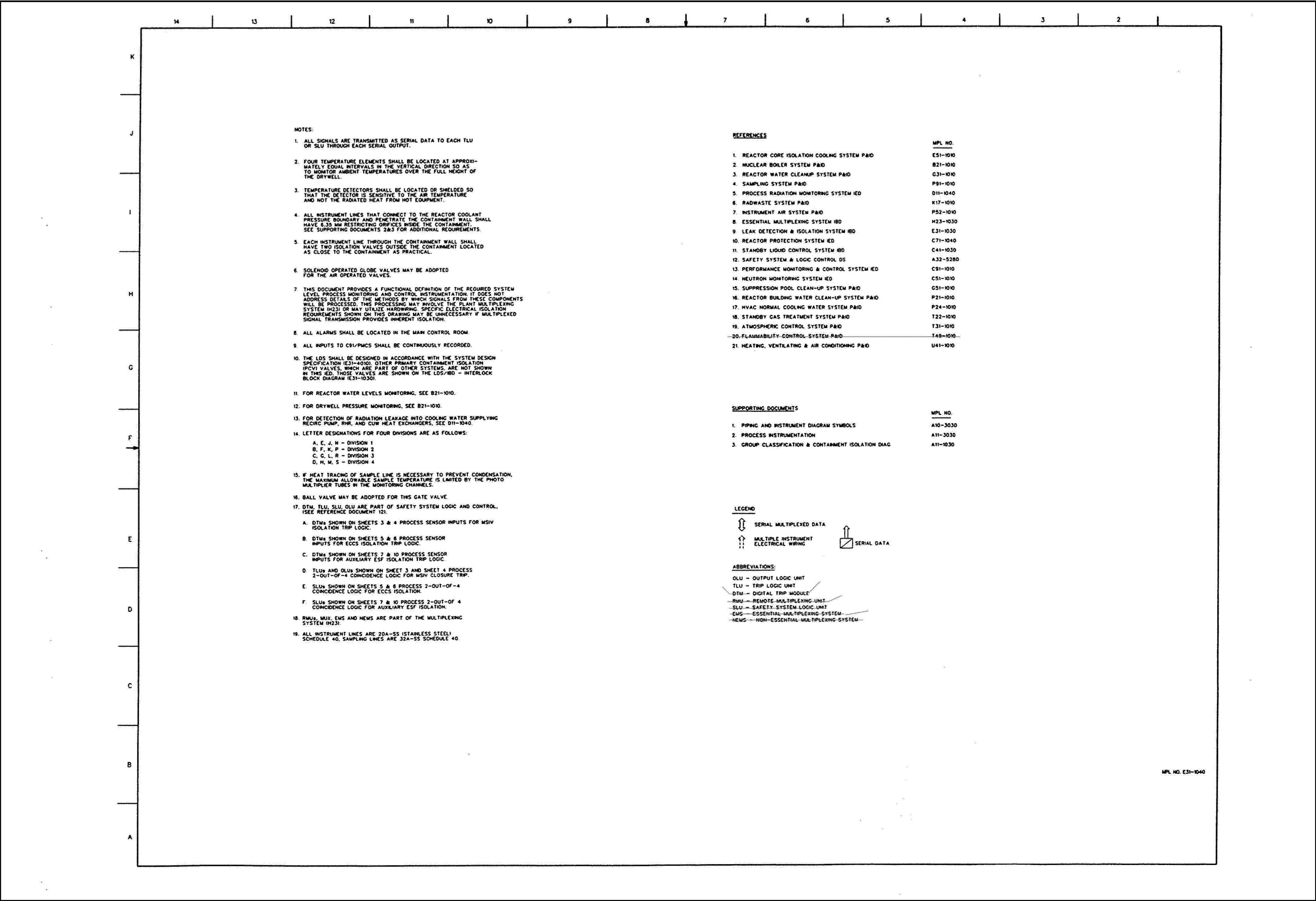


FIGURE 5.2-8 LEAK DETECTION AND ISOLATION SYSTEM IED (SHEET 1 OF 10)

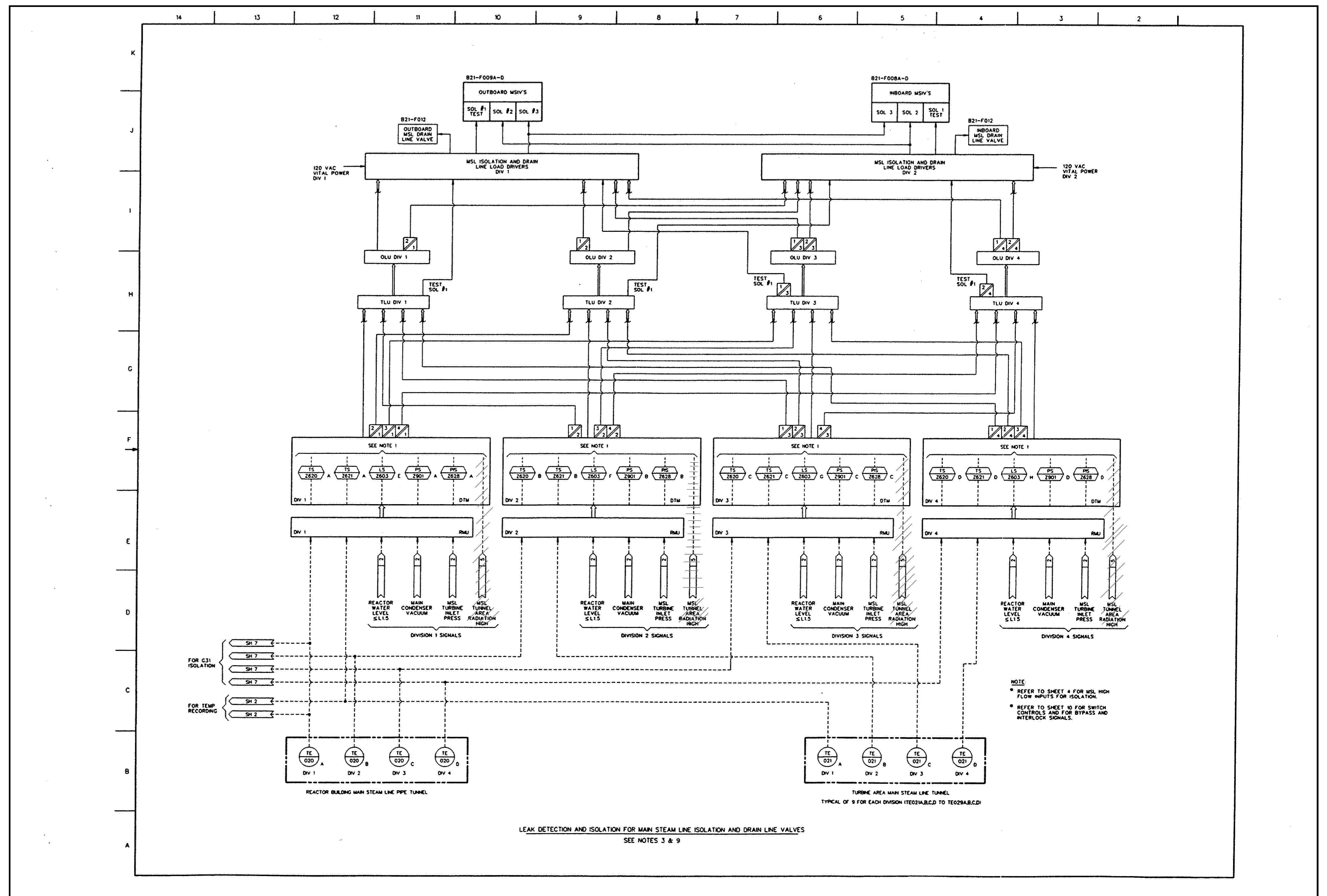


FIGURE 5.2-8 LEAK DETECTION AND ISOLATION SYSTEM IED (SHEET 3 OF 10)

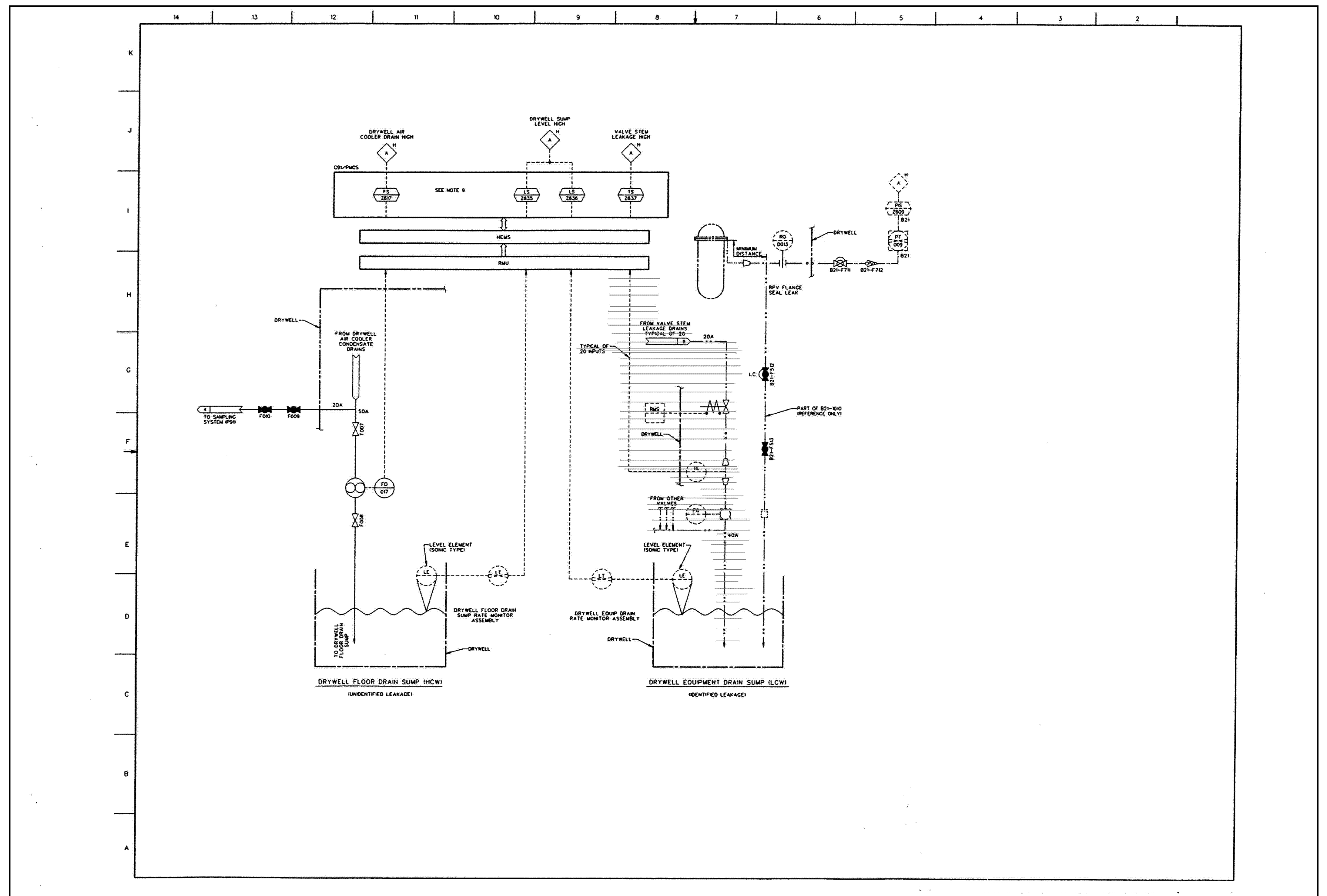


FIGURE 5.2-8 LEAK DETECTION AND ISOLATION SYSTEM IED (SHEET 8 OF 10)

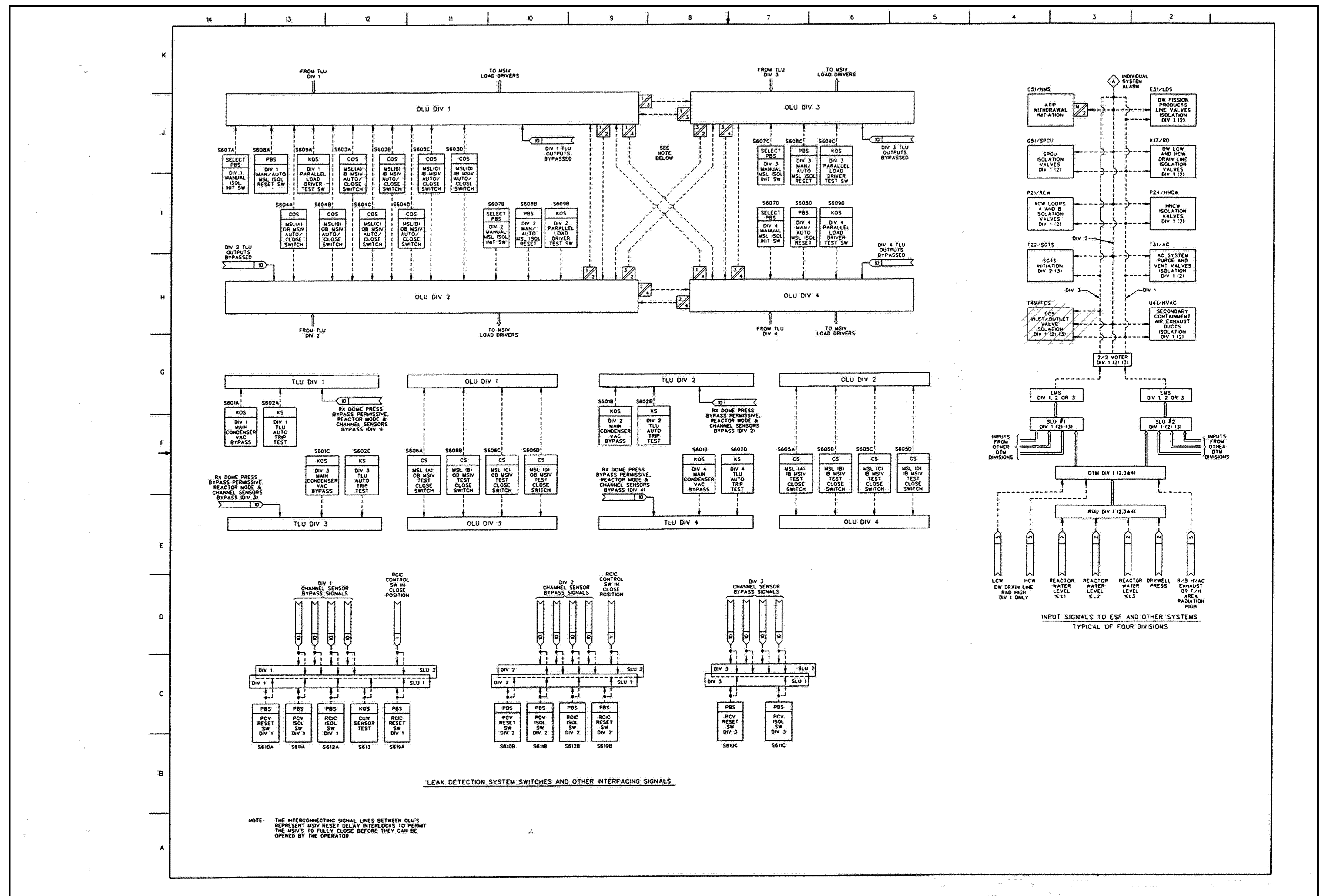


FIGURE 5.2-8 LEAK DETECTION AND ISOLATION SYSTEM IED (SHEET 10 OF 10)

FIGURE 5.4-10 RESIDUAL HEAT REMOVAL SYSTEM P&ID (SHEET 3 OF 7)

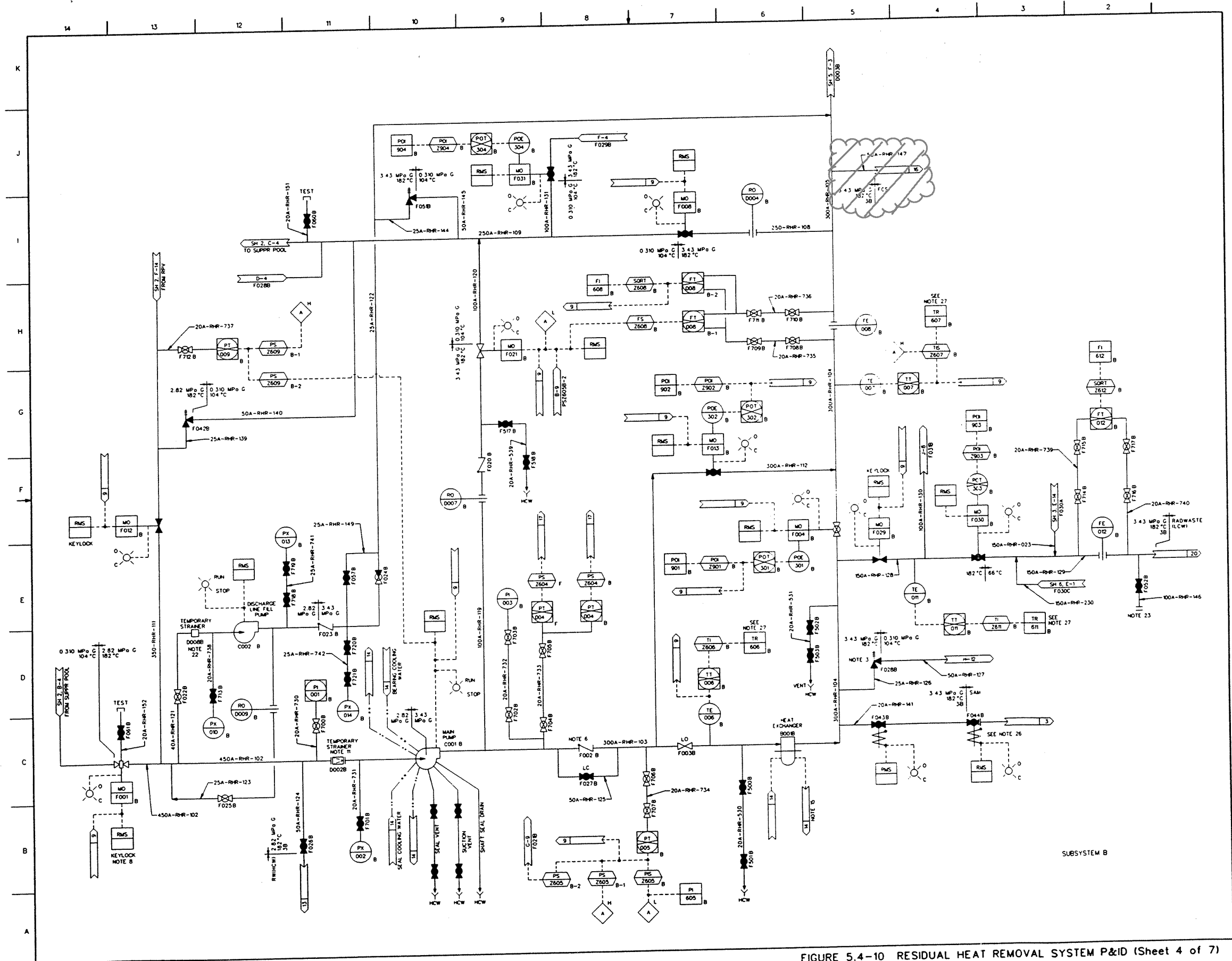


FIGURE 5.4-10 RESIDUAL HEAT REMOVAL SYSTEM P&ID (Sheet 4 of 7)
ABWR DCD/Tier 2 Rev. 0

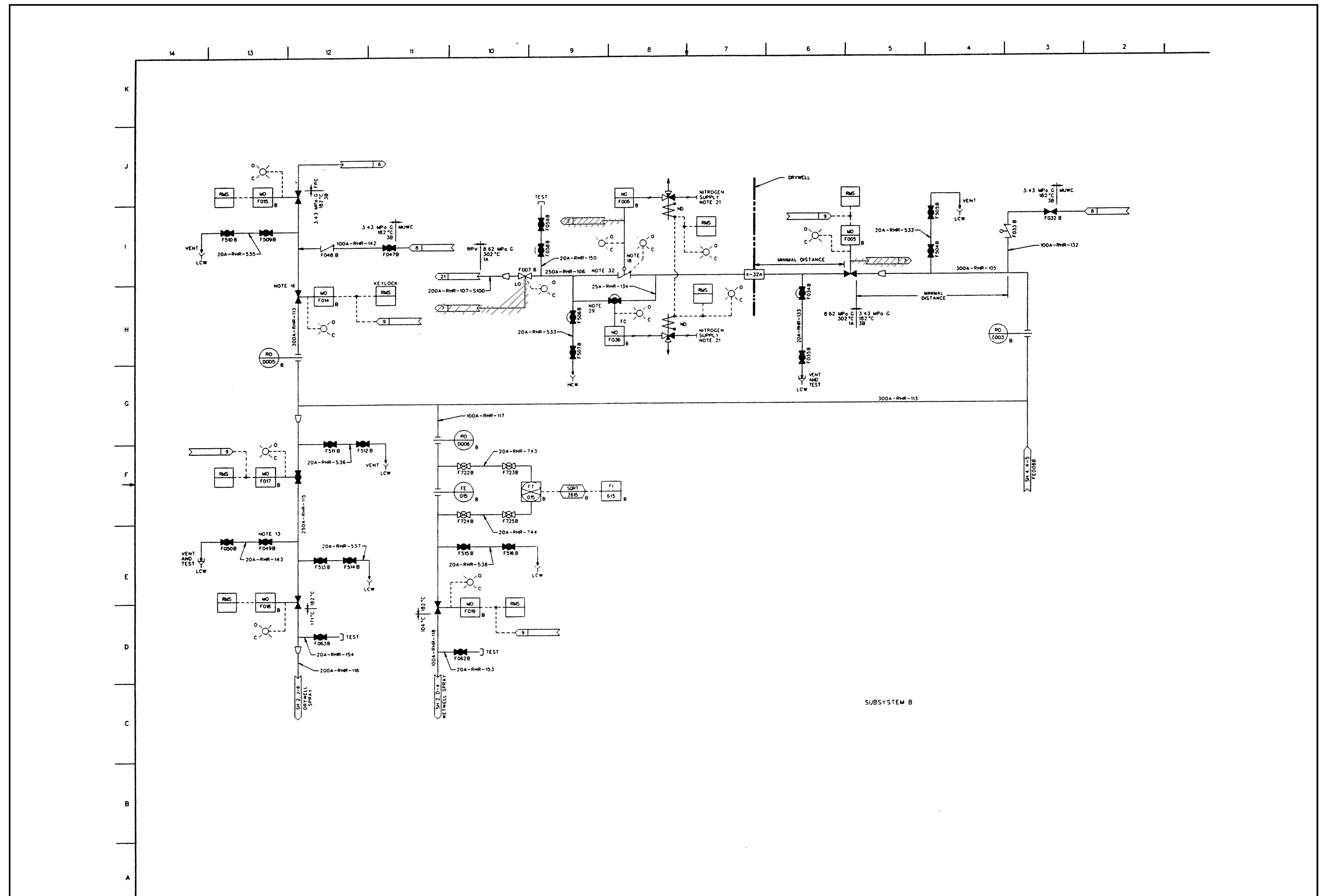


FIGURE 5.4-10 RESIDUAL HEAT REMOVAL SYSTEM P&ID (SHEET 5 OF 7)

FIGURE 5.4-10 RESIDUAL HEAT REMOVAL SYSTEM P&ID (SHEET 7 OF 7)

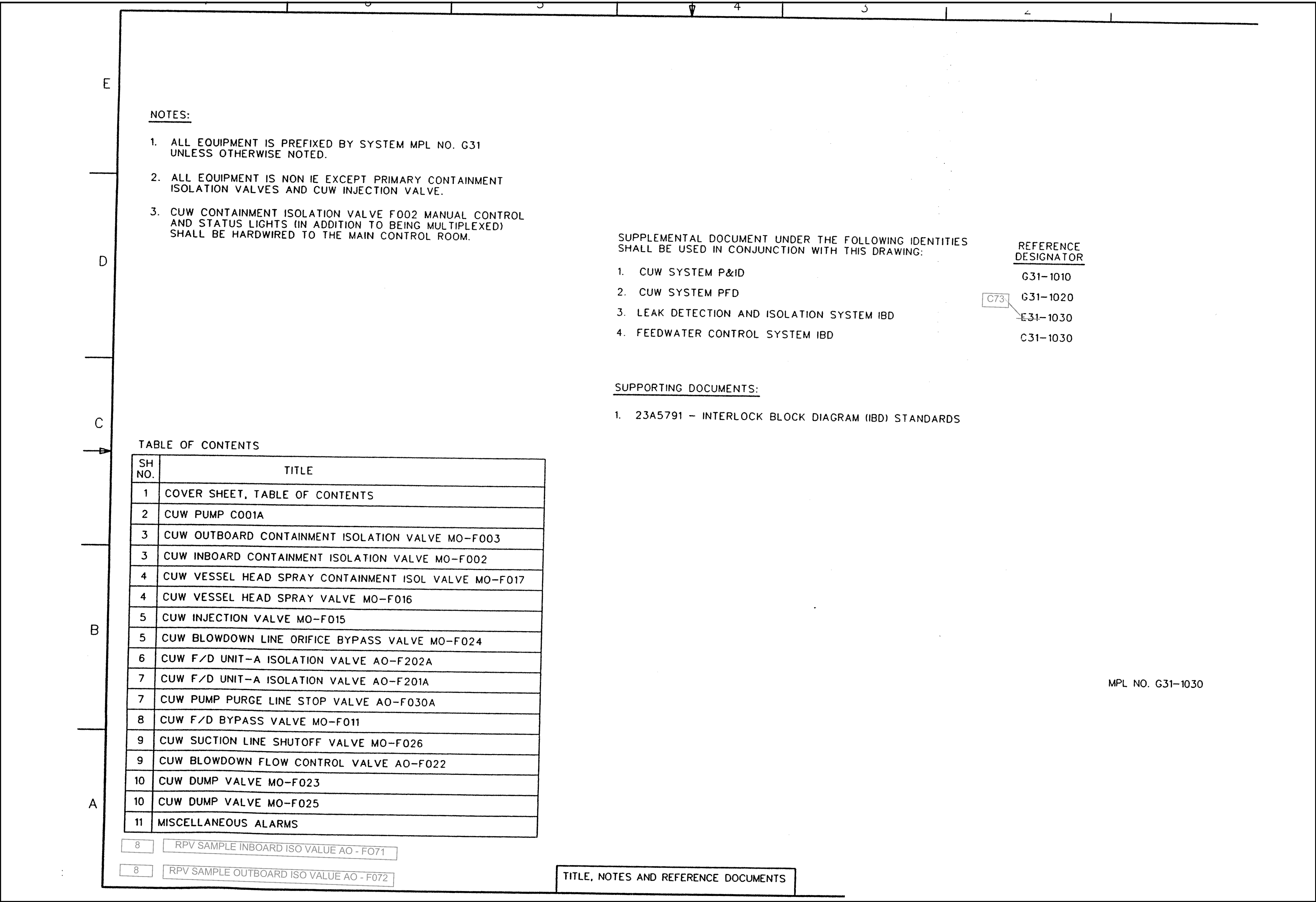


FIGURE 5.4-14 REACTOR WATER CLEANUP SYSTEM IBD (SHEET 1 OF 11)

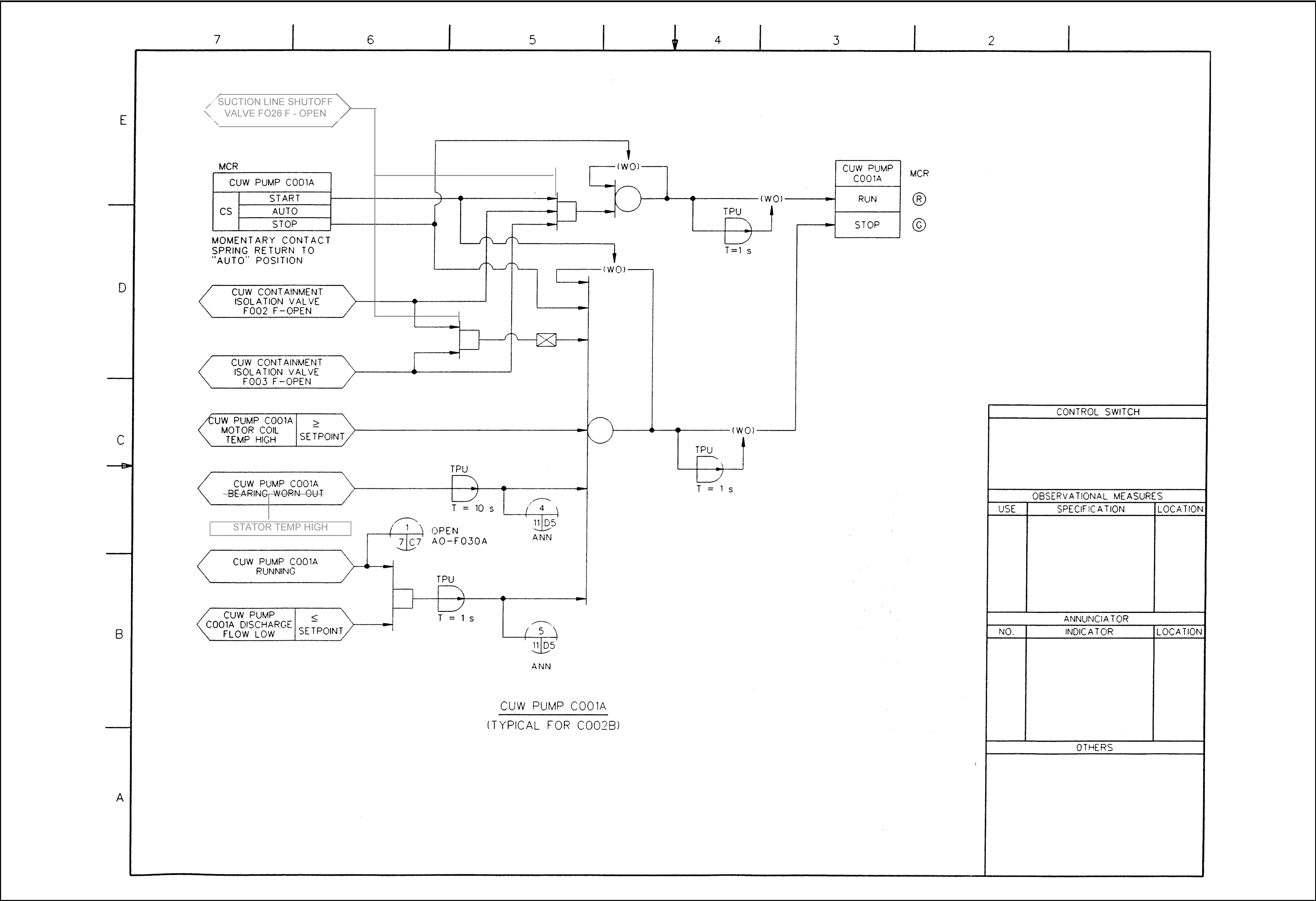


FIGURE 5.4-14 REACTOR WATER CLEANUP SYSTEM IBD (SHEET 2 OF 11)

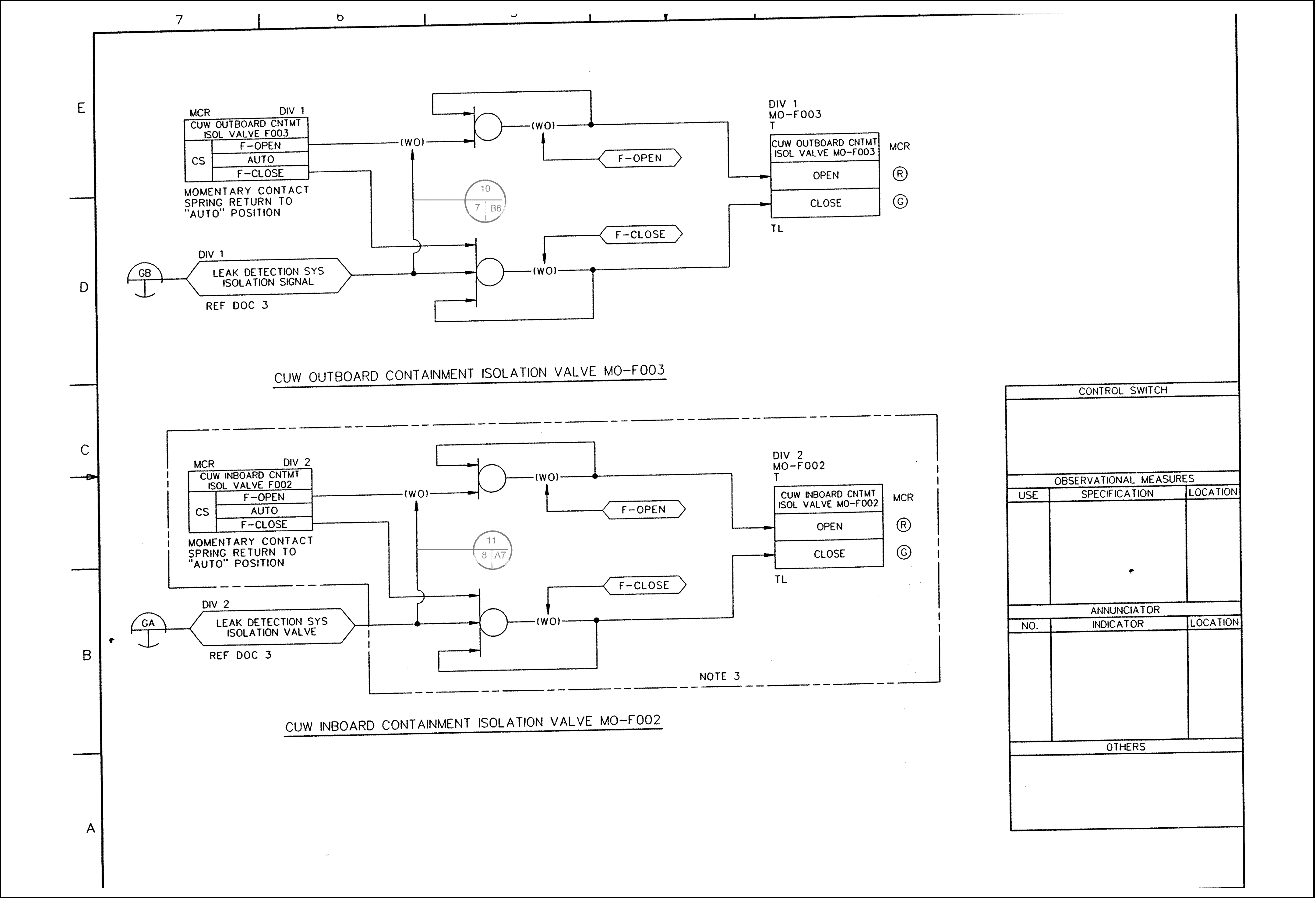


FIGURE 5.4-14 REACTOR WATER CLEANUP SYSTEM IBD (SHEET 3 OF 11)

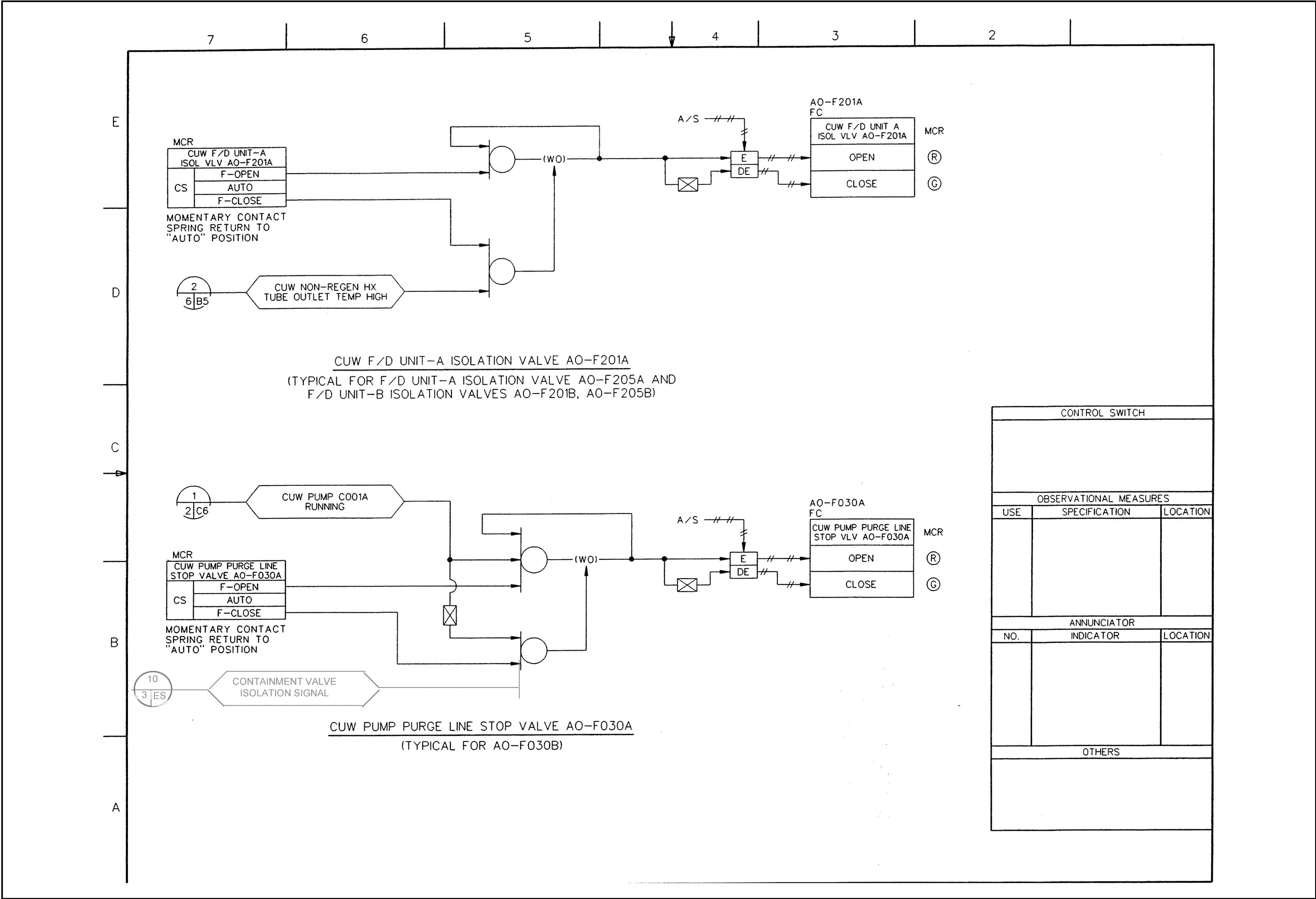


FIGURE 5.4-14 REACTOR WATER CLEANUP SYSTEM IBD (SHEET 7 OF 11)

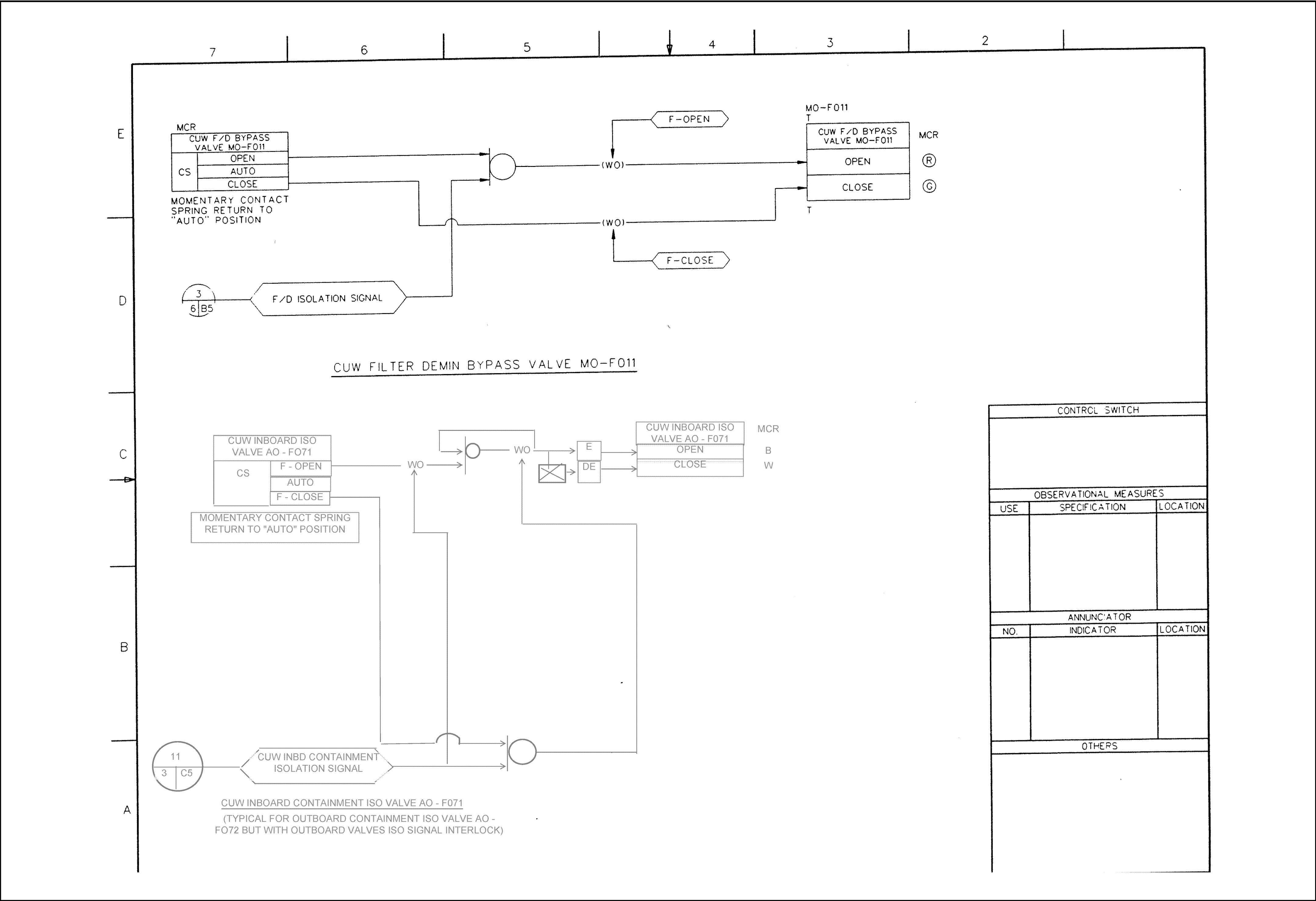


FIGURE 5.4-14 REACTOR WATER CLEANUP SYSTEM IBD (SHEET 8 OF 11)

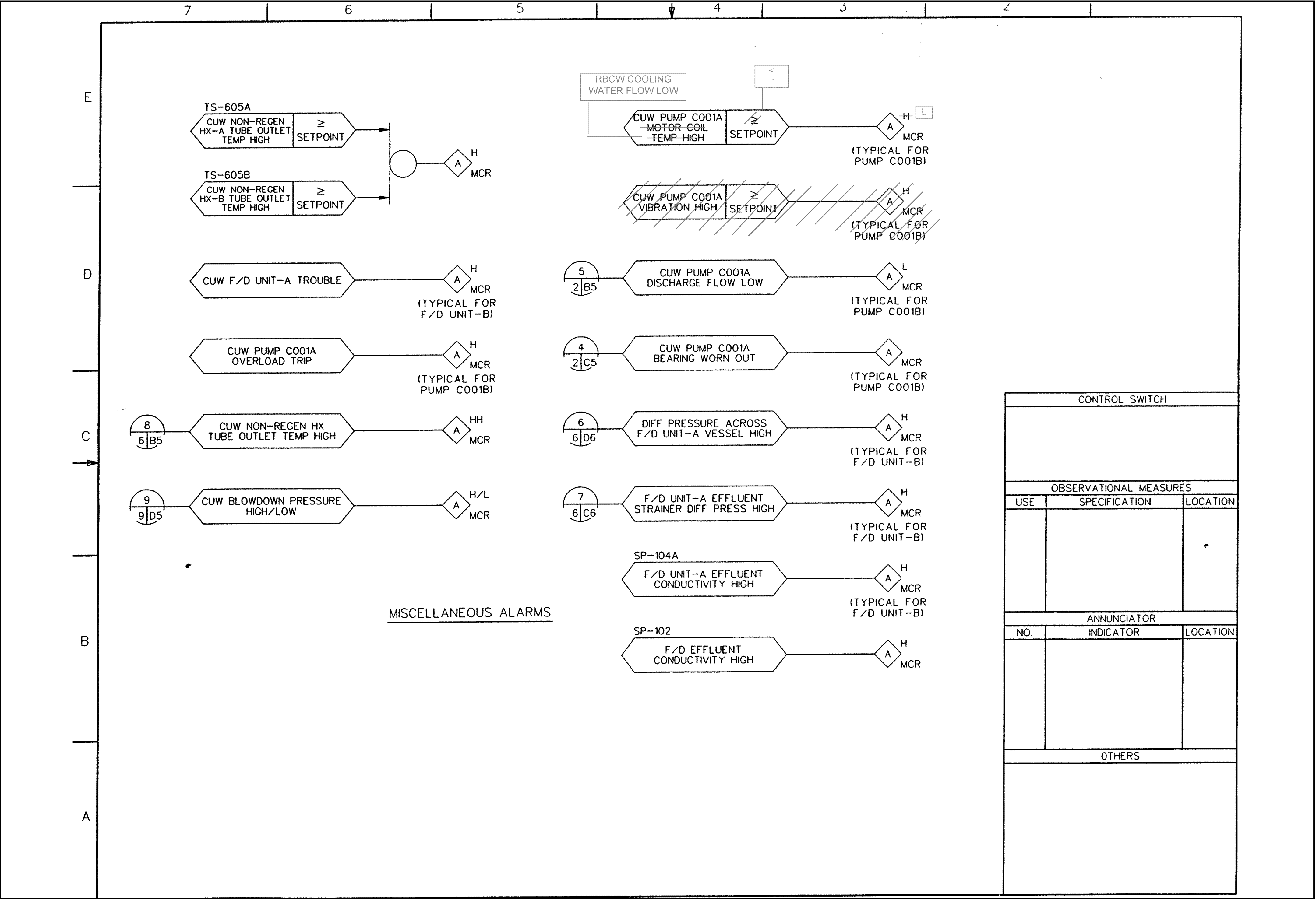
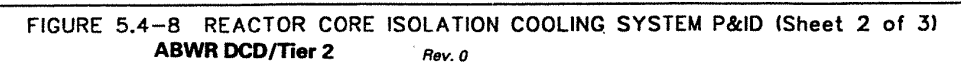
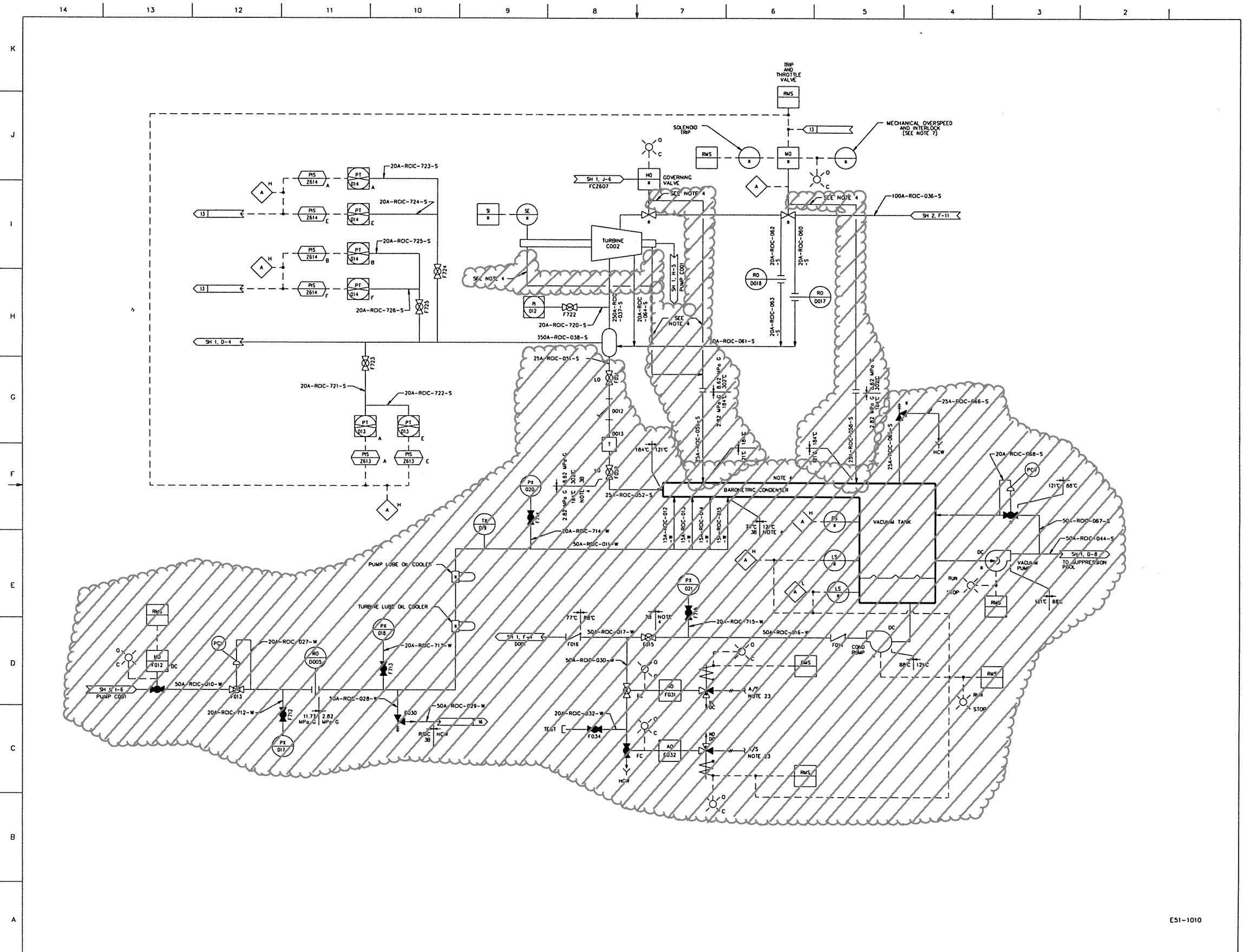
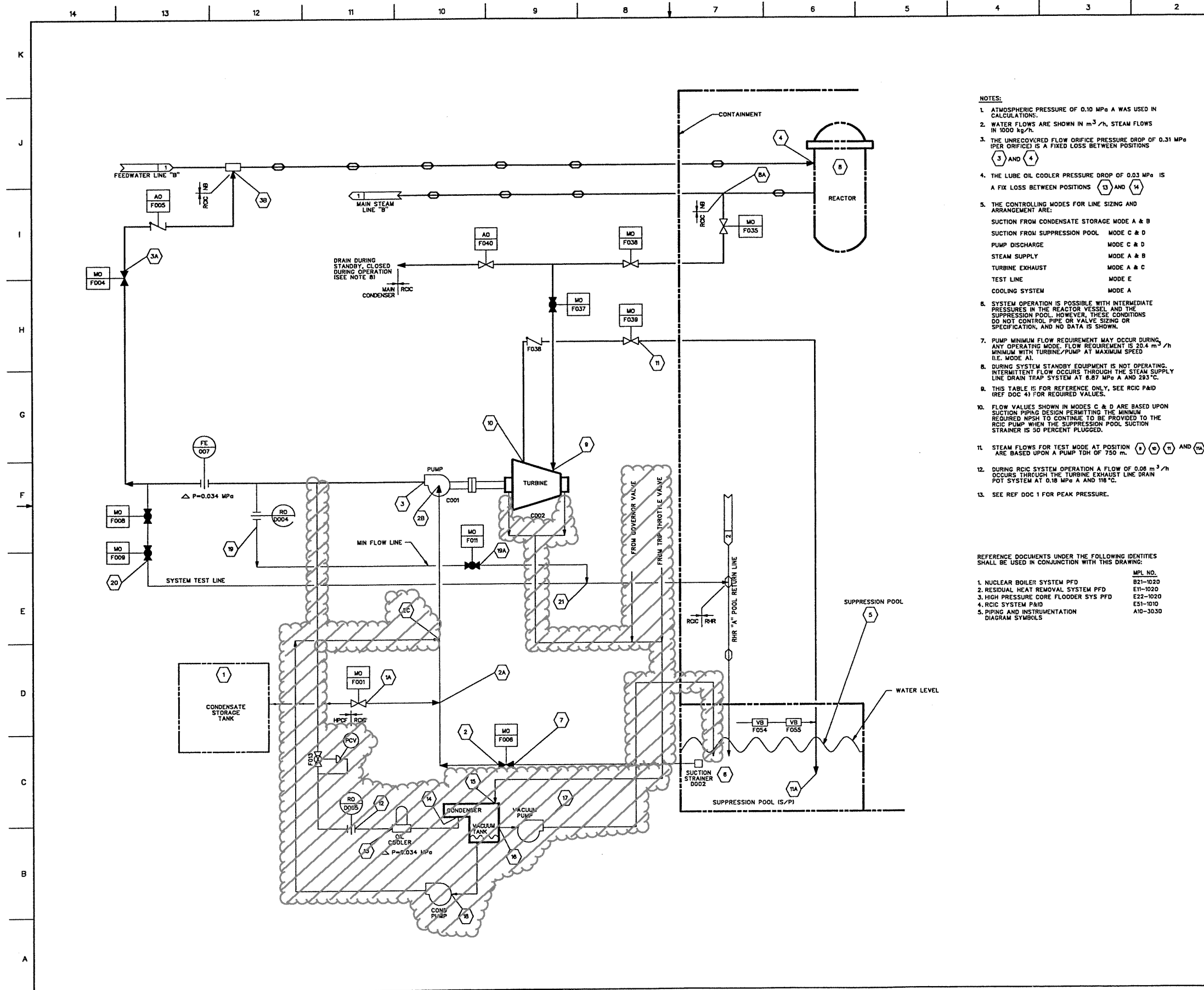


FIGURE 5.4-14 REACTOR WATER CLEANUP SYSTEM IBD (SHEET 11 OF 11)





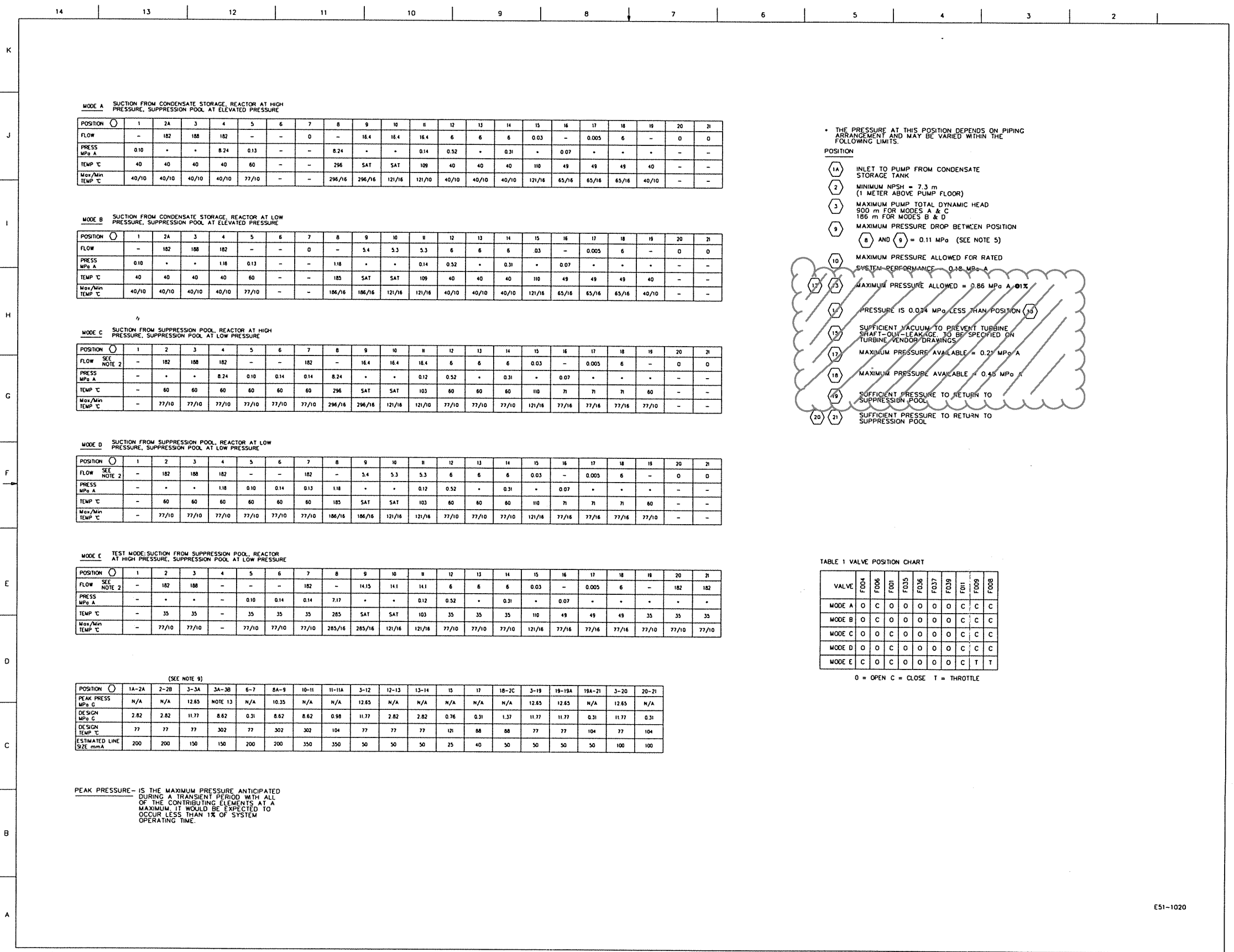


- NOTES:**
1. ATMOSPHERIC PRESSURE OF 0.10 MPa A WAS USED IN CALCULATIONS.
 2. WATER FLOWS ARE SHOWN IN m^3/h , STEAM FLOWS IN $1000 kg/h$.
 3. THE UNRECOVERED FLOW ORIFICE PRESSURE DROP OF 0.31 MPa (PER ORIFICE) IS A FIXED LOSS BETWEEN POSITIONS (3) AND (4).
 4. THE LUBE OIL COOLER PRESSURE DROP OF 0.03 MPa IS A FIXED LOSS BETWEEN POSITIONS (13) AND (14).
 5. THE CONTROLLING MODES FOR LINE SIZING AND ARRANGEMENT ARE:
 SUCTION FROM CONDENSATE STORAGE MODE A & B
 SUCTION FROM SUPPRESSION POOL MODE C & D
 PUMP DISCHARGE MODE C & D
 STEAM SUPPLY MODE A & B
 TURBINE EXHAUST MODE A & C
 TEST LINE MODE E
 COOLING SYSTEM MODE A
 6. SYSTEM OPERATION IS POSSIBLE WITH INTERMEDIATE PRESSURES IN THE REACTOR VESSEL AND THE SUPPRESSION POOL, HOWEVER, THESE CONDITIONS DO NOT CONTROL PIPE OR VALVE SIZING OR SPECIFICATION, AND NO DATA IS SHOWN.
 7. PUMP MINIMUM FLOW REQUIREMENT MAY OCCUR DURING ANY OPERATING MODE. FLOW REQUIREMENT IS $20.4 m^3/h$ MINIMUM WITH TURBINE/PUMP AT MAXIMUM SPEED (I.E. MODE A).
 8. DURING SYSTEM STANDBY EQUIPMENT IS NOT OPERATING. INTERMITTENT FLOW OCCURS THROUGH THE STEAM SUPPLY LINE DRAIN TRAP SYSTEM AT 0.87 MPa A AND 293 °C.
 9. THIS TABLE IS FOR REFERENCE ONLY, SEE RCIC P&ID (REF DOC 4) FOR REQUIRED VALUES.
 10. FLOW VALUES SHOWN IN MODES C & D ARE BASED UPON SUCTION PIPING DESIGN PERMITTING THE MINIMUM REQUIRED NPSH TO CONTINUE TO BE PROVIDED TO THE RCIC PUMP WHEN THE SUPPRESSION POOL SUCTION STRAINER IS 90 PERCENT PLUGGED.
 11. STEAM FLOWS FOR TEST MODE AT POSITION (8) (9) (11) AND (10A) ARE BASED UPON A PUMP TDH OF 750 m.
 12. DURING RCIC SYSTEM OPERATION A FLOW OF $0.08 m^3/h$ OCCURS THROUGH THE TURBINE EXHAUST LINE DRAIN POT SYSTEM AT 0.18 MPa A AND 110 °C.
 13. SEE REF DOC 1 FOR PEAK PRESSURE.

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

	MPL NO.
1. NUCLEAR BOILER SYSTEM PFD	B21-1020
2. RESIDUAL HEAT REMOVAL SYSTEM PFD	E11-1020
3. HIGH PRESSURE CORE FLOODER SYS PFD	E22-1020
4. RCIC SYSTEM P&ID	E31-1010
5. PIPING AND INSTRUMENTATION DIAGRAM SYMBOLS	A10-3030

FIGURE 5.4-9 REACTOR CORE ISOLATION COOLING SYSTEM PFD (Sheet 1 of 2)
 ABWR DCD/Tier 2 Rev. 0



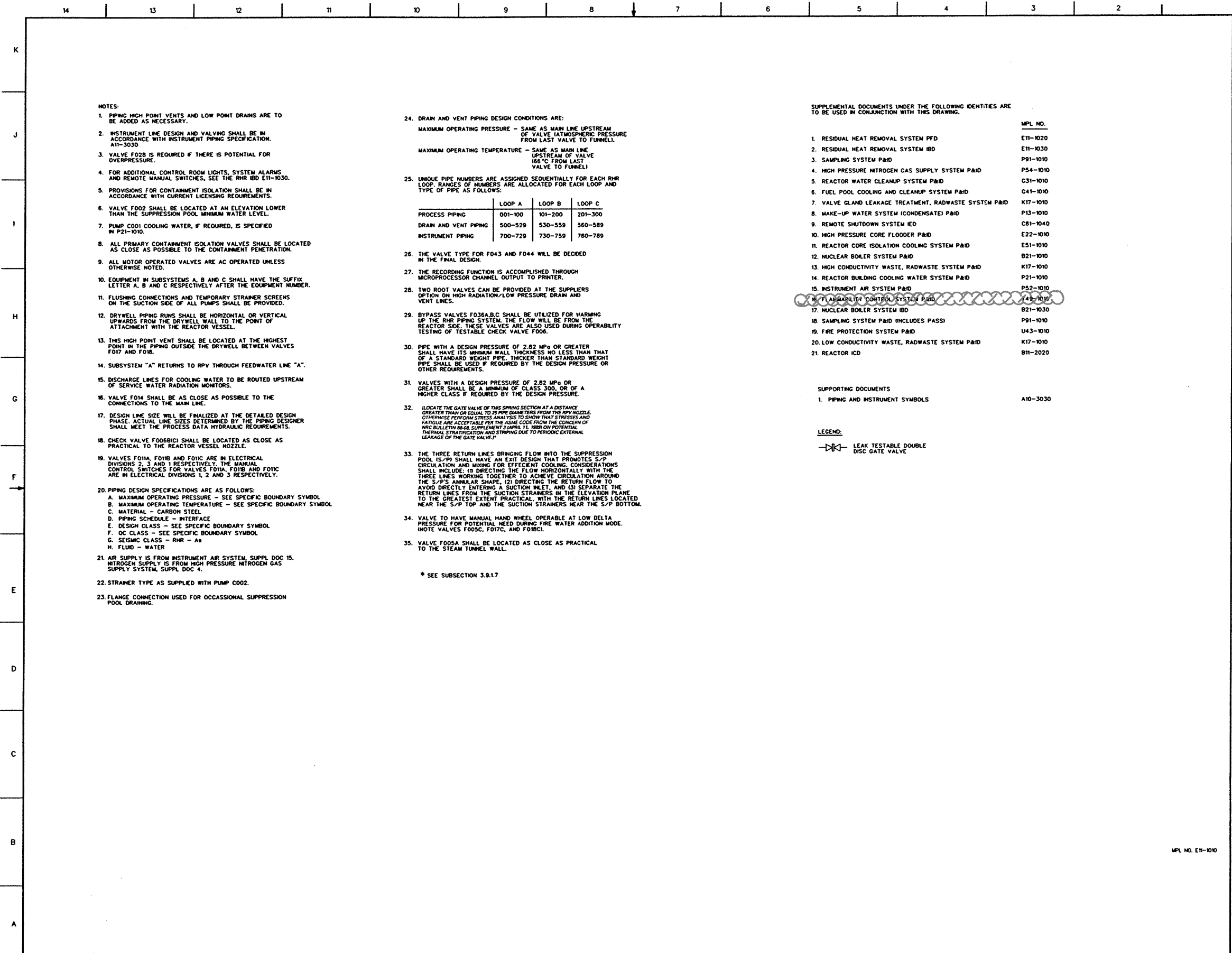
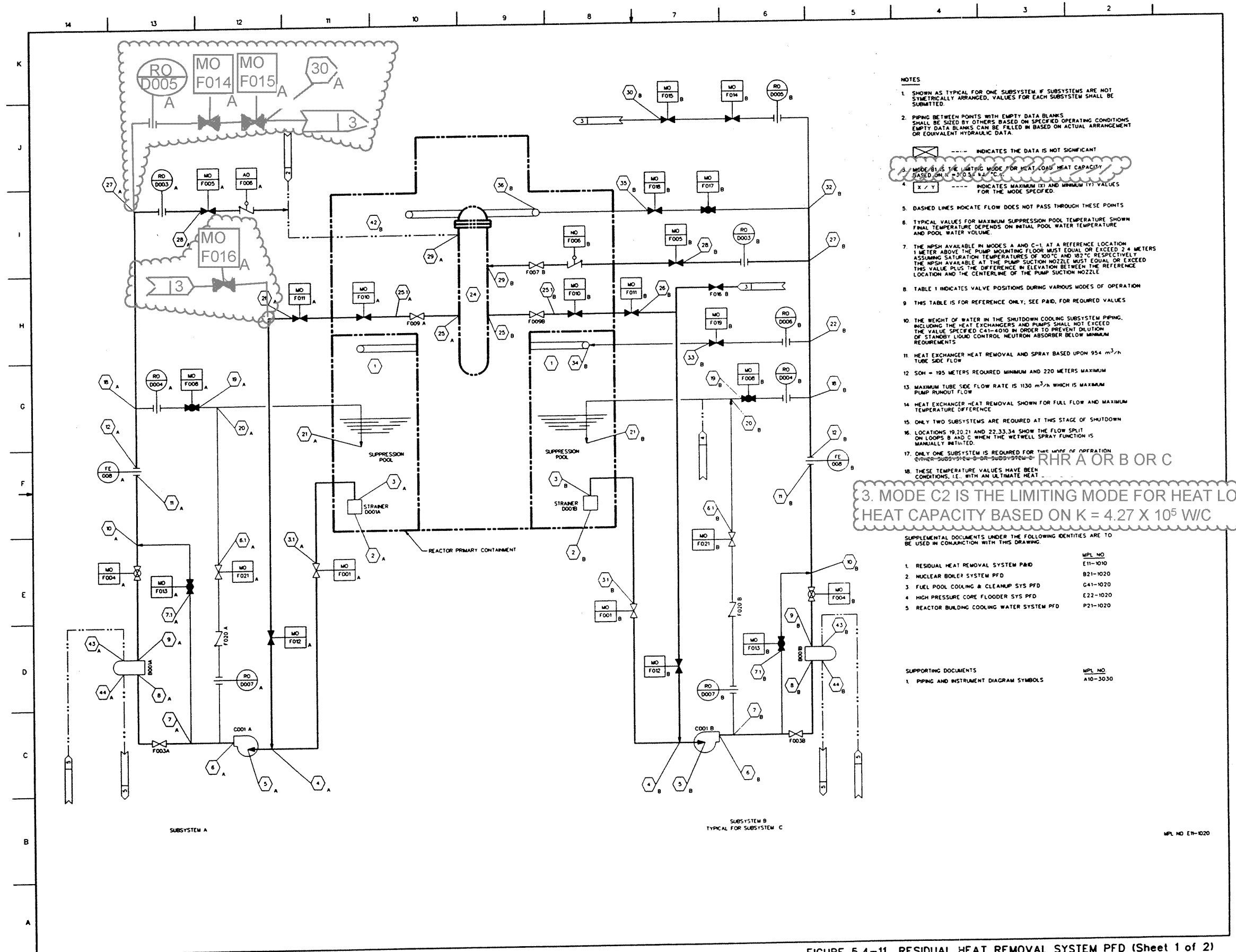
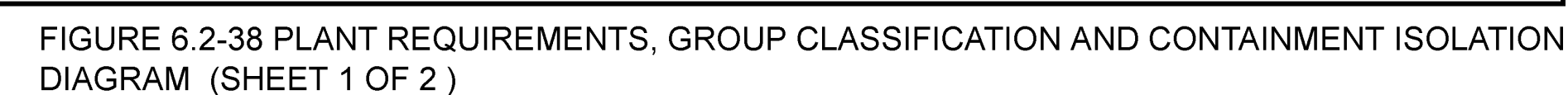


FIGURE 5.4-10 RESIDUAL HEAT REMOVAL SYSTEM P&ID (Sheet 1 of 7)
ABWR DCD/Tier 2 REV 0





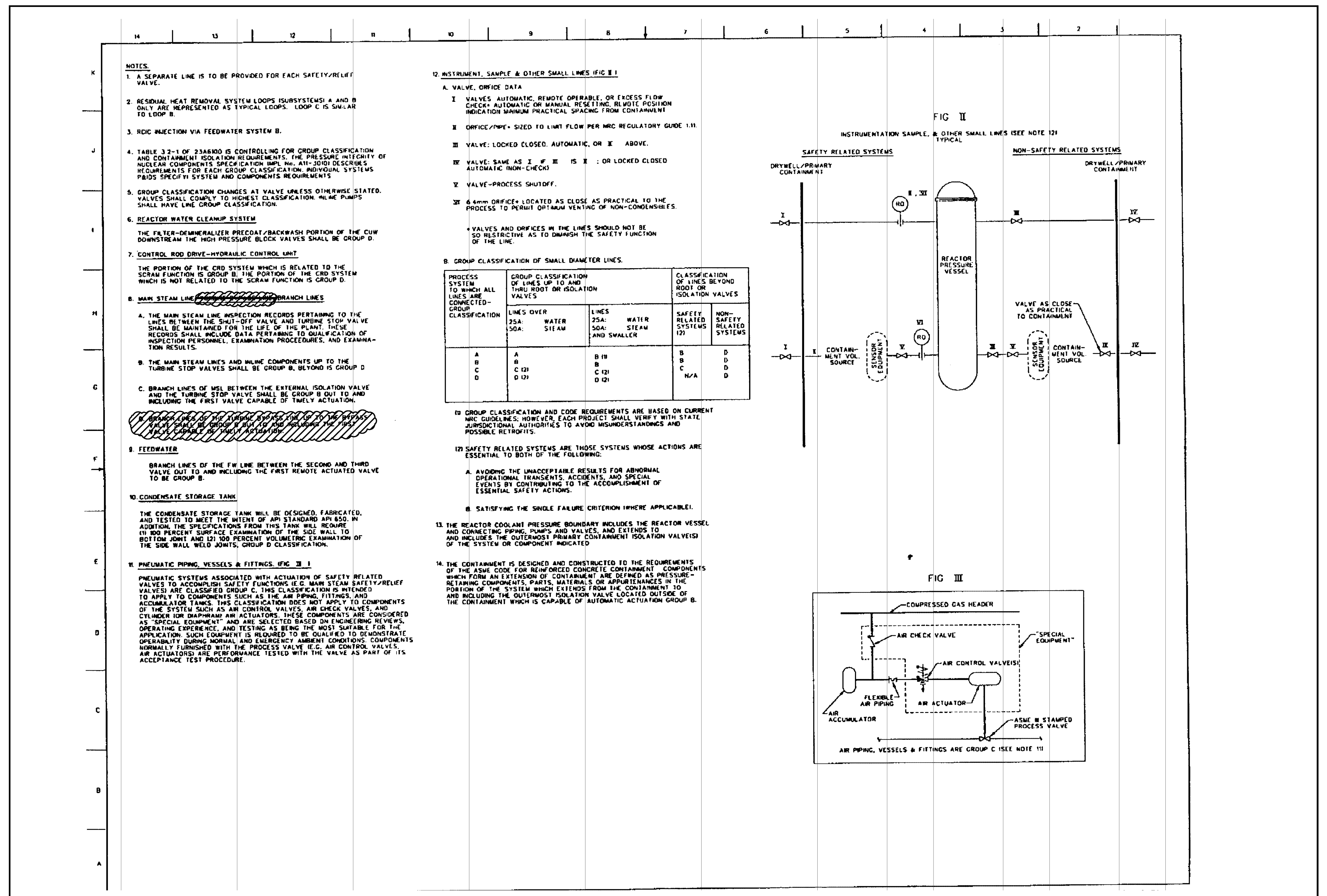
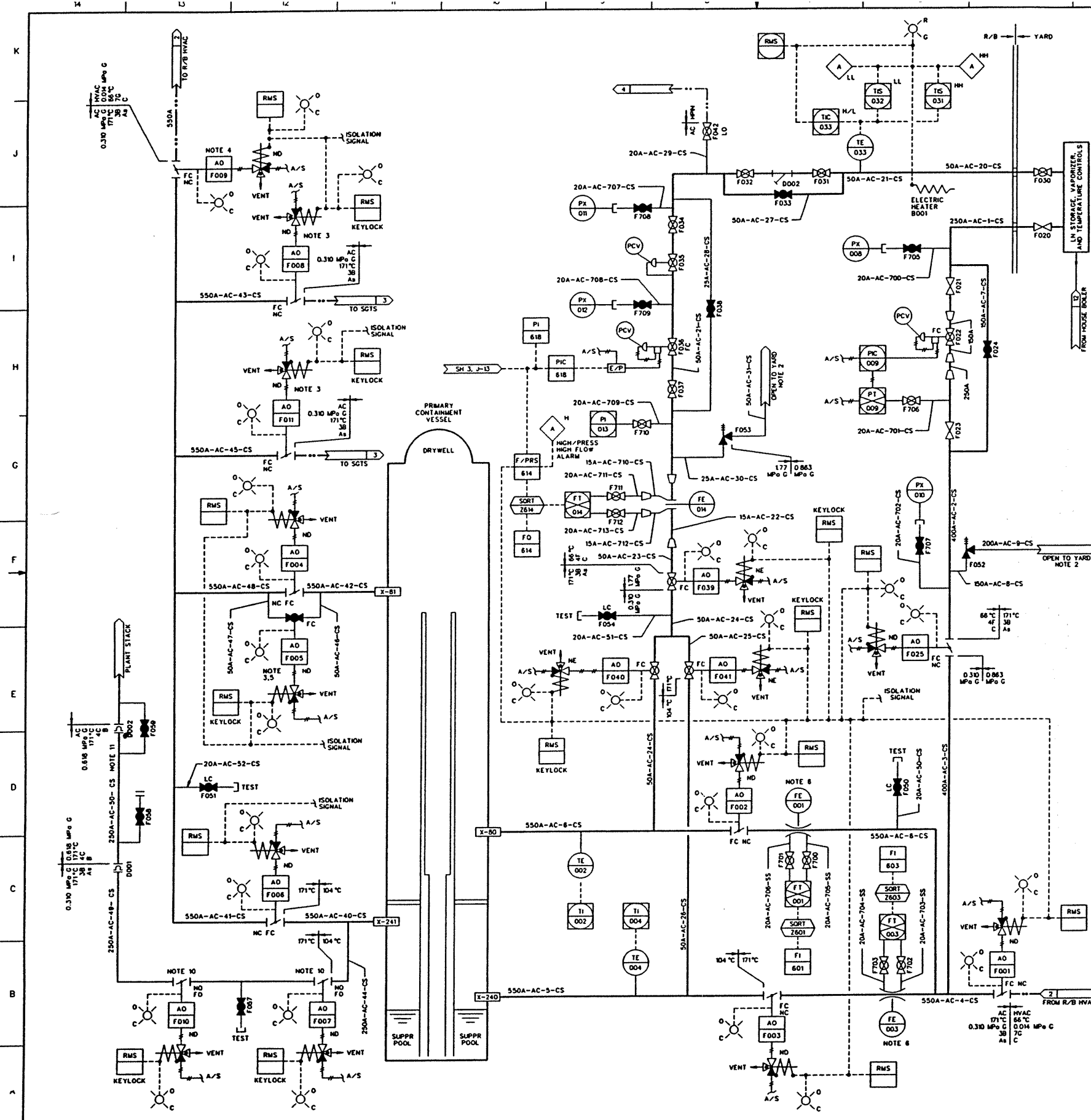


FIGURE 6.2-38 PLANT REQUIREMENTS, GROUP CLASSIFICATION AND CONTAINMENT ISOLATION DIAGRAM (SHEET 2 OF 2)



- NOTES:**
- QUALITY CONTROL GROUP AND QUALITY GROUP CLASSIFICATION ARE PROVIDED IN FOLLOWING TABLE.
- | ITEM | QUALITY CLASSIFICATION | DESIGN CLASSIFICATION |
|-----------------------------------|------------------------|-----------------------|
| AC SYS EXCEPT FOR FOLLOWING ITEMS | F | 4 |
| PCV BOUNDARY | B | 3 |
| HVAC SYS | G | 7 |
| TEST TAP | UPSTREAM OF VALVE | SAME AS PROCESS LINE |
| | DOWNSTREAM OF VALVE | G |
| DRAIN | UPSTREAM OF VALVE | SAME AS PROCESS LINE |
| | DOWNSTREAM OF VALVE | G |
| INSTRUMENT PIPING | | SAME AS PROCESS LINE |
| TEST TAP (FROM VALVE TO CAP) | G | 7 |
- THE EXHAUST TO THE YARD SHALL BE LOCATED AWAY FROM NORMALLY OCCUPIED AREAS. THE EXHAUST SHALL HAVE A STRUCTURE THAT PREVENTS ENTRY OF RAIN.
 - THESE VALVES SHALL BE ABLE TO BE OPENED MANUALLY BY SWITCHES THAT OVERRIDE THE PCV ISOLATION SIGNAL.
 - THIS VALVE IS MANUALLY OPENED AFTER EACH PCV LEAK TEST BY THE HAND WHEEL.
 - THIS VALVE SHALL BE USED FOR LIMITING FLOW RATE DURING DEPRESSURIZATION FOLLOWING PCV INTEGRATED LEAK RATE TEST.
 - THIS FLOW ELEMENT SHALL BE ANNULAR-TYPE.
 - DESIGN CONDITIONS OF PIPING ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED.

A. MATERIAL	----- CARBON STEEL
B. SCHEDULE	----- 75A AND OVER - SCH 40
	50A AND LESS - SCH 80
C. RADIOACTIVE	----- PCV BOUNDARY AND EXHAUST LINE: $2.37 \times 10^{-6} \mu\text{Bq/cc}$
	CONCENTRATION
D. SEISMIC CLASS	----- PCV BOUNDARY: Aa, COPS: B
	OTHER AREAS: C
E. FLUID	----- N2 OR AIR
 - DESIGN CONDITIONS OF TEST, DRAIN AND INSTRUMENT PIPING ARE AS FOLLOWS:

ITEM	MAX OPERATING PRESSURE	MAX OPERATING TEMPERATURE	MATERIAL
TEST TAP	UPSTREAM OF VALVE	SAME AS PROCESS LINE	
	DOWNSTREAM OF VALVE	SAME AS PROCESS LINE	
DRAIN	UPSTREAM OF VALVE	SAME AS PROCESS LINE	
	DOWNSTREAM OF VALVE	ATMOSPHERIC PRESSURE	66°C
INSTRUMENT PIPING		SAME AS PROCESS LINE	
INSTRUMENT PIPING CONNECTED TO DRYWELL	0.310 MPa G	171°C	SS
INSTRUMENT PIPING CONNECTED TO SUPPRESSION POOL	0.310 MPa G	104°C	SS
TEST TAP	UPSTREAM OF VALVE	0.310 MPa G	171°C
	DOWNSTREAM OF VALVE	0.310 MPa G	66°C
 - SUPPRESSION POOL WATER TEMPERATURE MONITORING IS PROVIDED BY SPTM SYSTEM, REF 6.
 - THESE VALVES ARE NOT PROVIDED WITH AN ISOLATION SIGNAL. CONTROL SWITCHES SHOULD BE LOCKED OPEN.
 - MEANS SHALL BE PROVIDED FOR MAINTAINING INERT CONTAINMENT OVERPRESSURE PROTECTION SYSTEM (COPSI) PIPING VOLUME BETWEEN THE RUPTURE DISKS. D001 IS LOCATED AS CLOSE AS PRACTICAL TO THE CONTAINMENT AND D002 TO THE STACK.
- REFERENCE DOCUMENTS:**
- | | |
|---|----------|
| 1. PIPING AND INSTRUMENT SYMBOLS DIAGRAM | A10-3030 |
| 2. HVAC SYSTEM P&ID | U41-1010 |
| 3. STANDBY GAS TREATMENT SYSTEM P&ID | T22-1010 |
| 4. HIGH PRESS. NITROGEN GAS SUPPLY SYS P&ID | P54-1010 |
| 5. NUCLEAR BOILER SYSTEM P&ID | B21-1010 |
| 6. SUPPR POOL WATER TEMP MONITORING SYS IED | T53-1010 |
| 7. DRYWELL COOLING SYSTEM | T41-1010 |
| 8. REMOTE SHUTDOWN SYSTEM IED | C61-1010 |
| 9. HIGH PRESSURE CORE FLOODER SYS P&ID | E22-1010 |
| 10. REACTOR CORE ISOLATION COOLING SYS P&ID | E51-1010 |
| 11. SUPPRESSION POOL CLEANUP SYSTEM P&ID | G51-1010 |
| 12. HOUSE BOKER SYS P&ID | P62-1010 |

FIGURE 6.2-39 ATMOSPHERIC CONTROL SYSTEM P&ID (Sheet 1 of 3)
ABWR DCD/Tier 2 Rev. 0

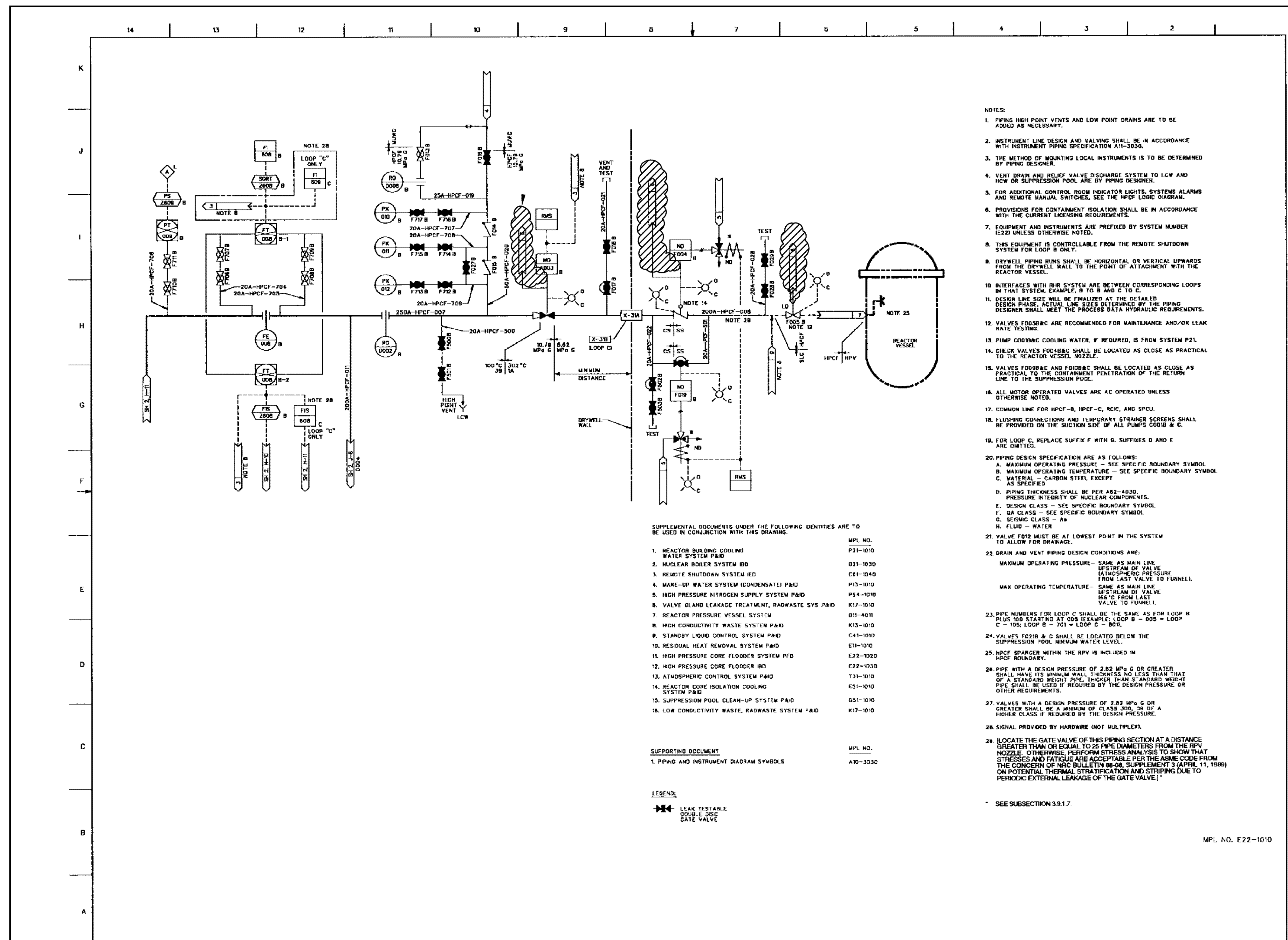


FIGURE 6.3-7 HIGH PRESSURE CORE FLOODER SYSTEM P&ID (SHEET 1 OF 2)

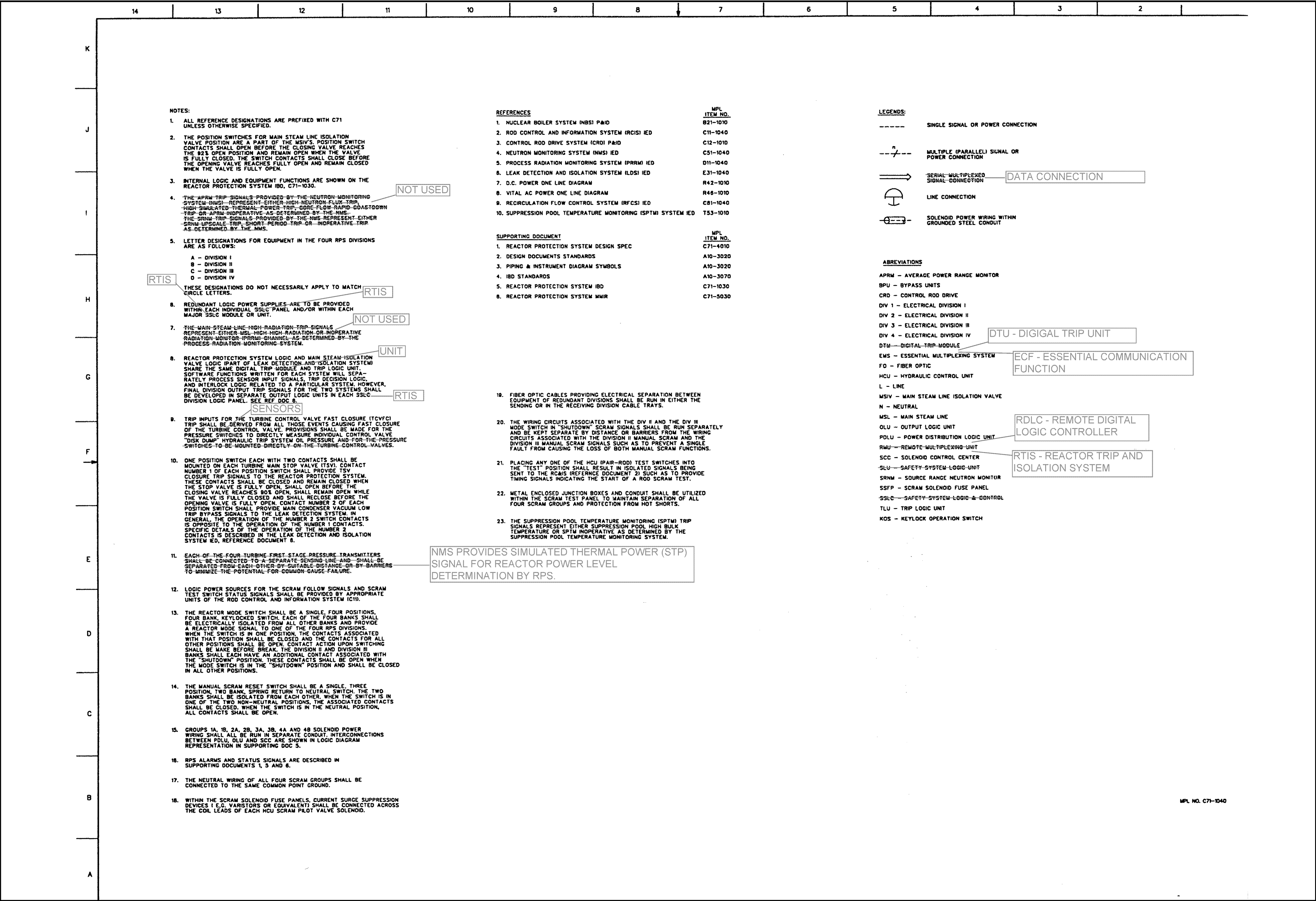


FIGURE 7.2-9 REACTOR PROTECTION SYSTEM IED (Sheet 1 of 11)

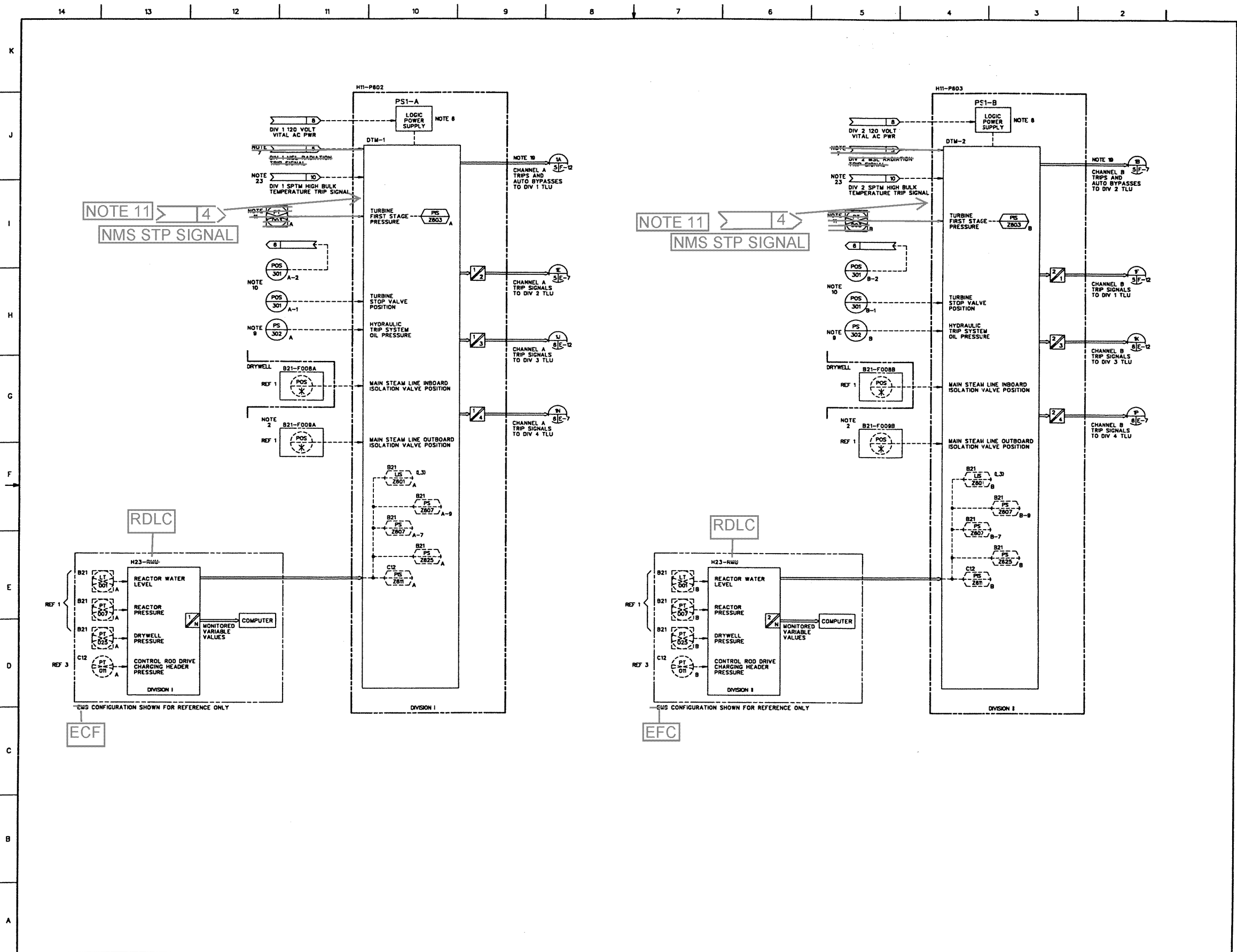


Figure 7.2-9 REACTOR PROTECTION SYSTEM IED (SHEET 2 OF 11)
ABWR DCD/Tier 2 Rev. 0

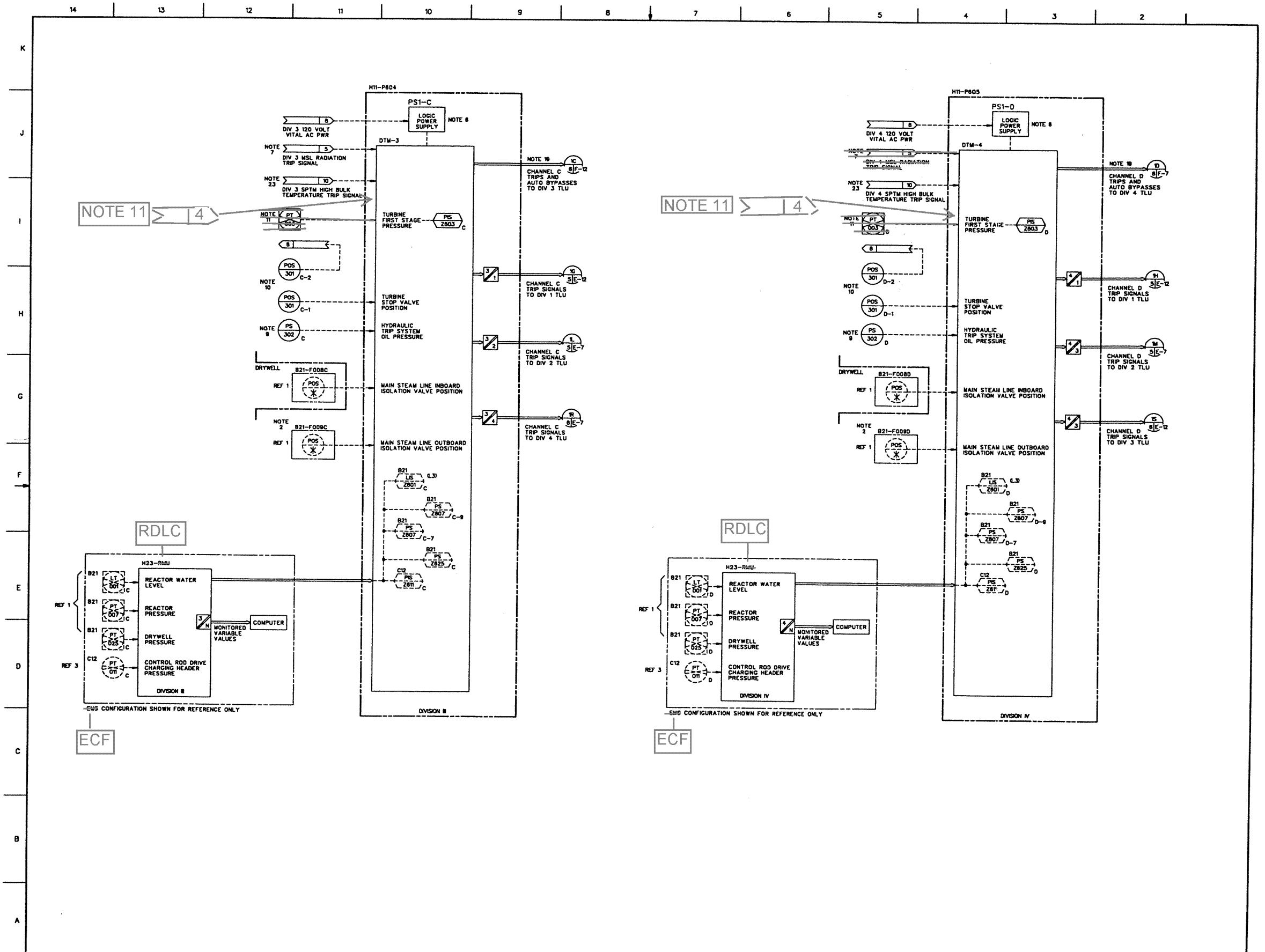


Figure 7.2-9 REACTOR PROTECTION SYSTEM IED (SHEET 3 OF 11)

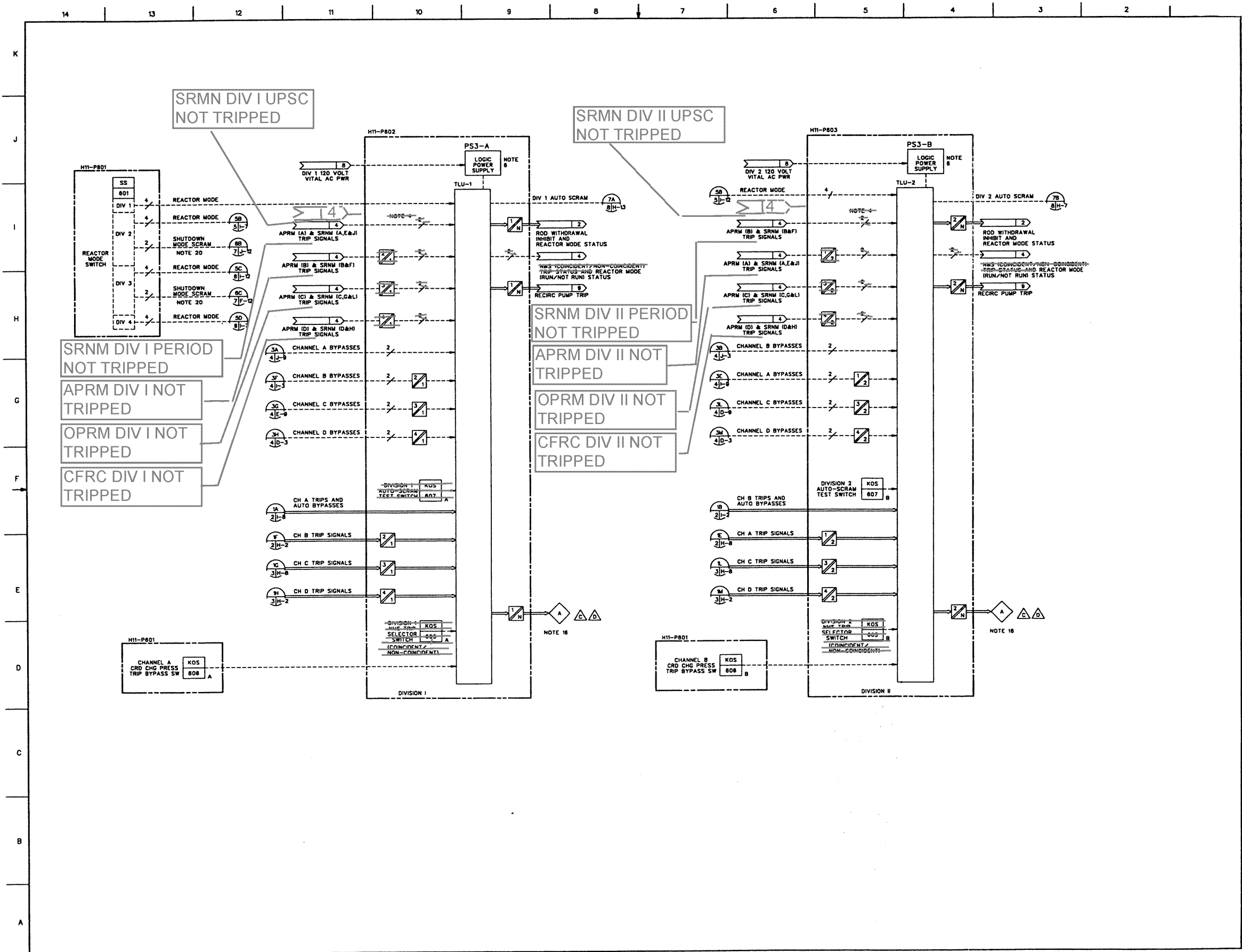


Figure 7.2-9 REACTOR PROTECTION SYSTEM IED (SHEET 5 OF 11)

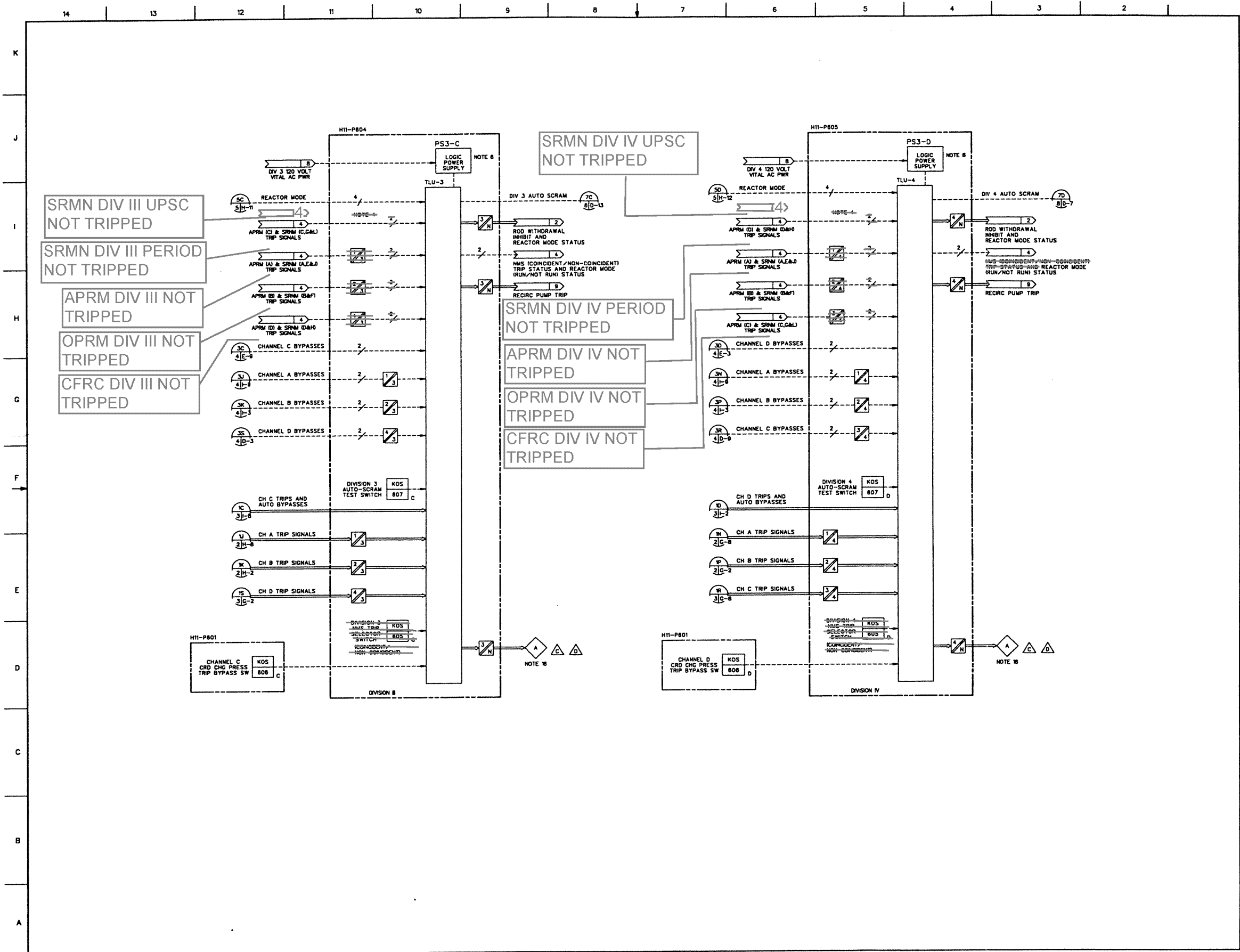
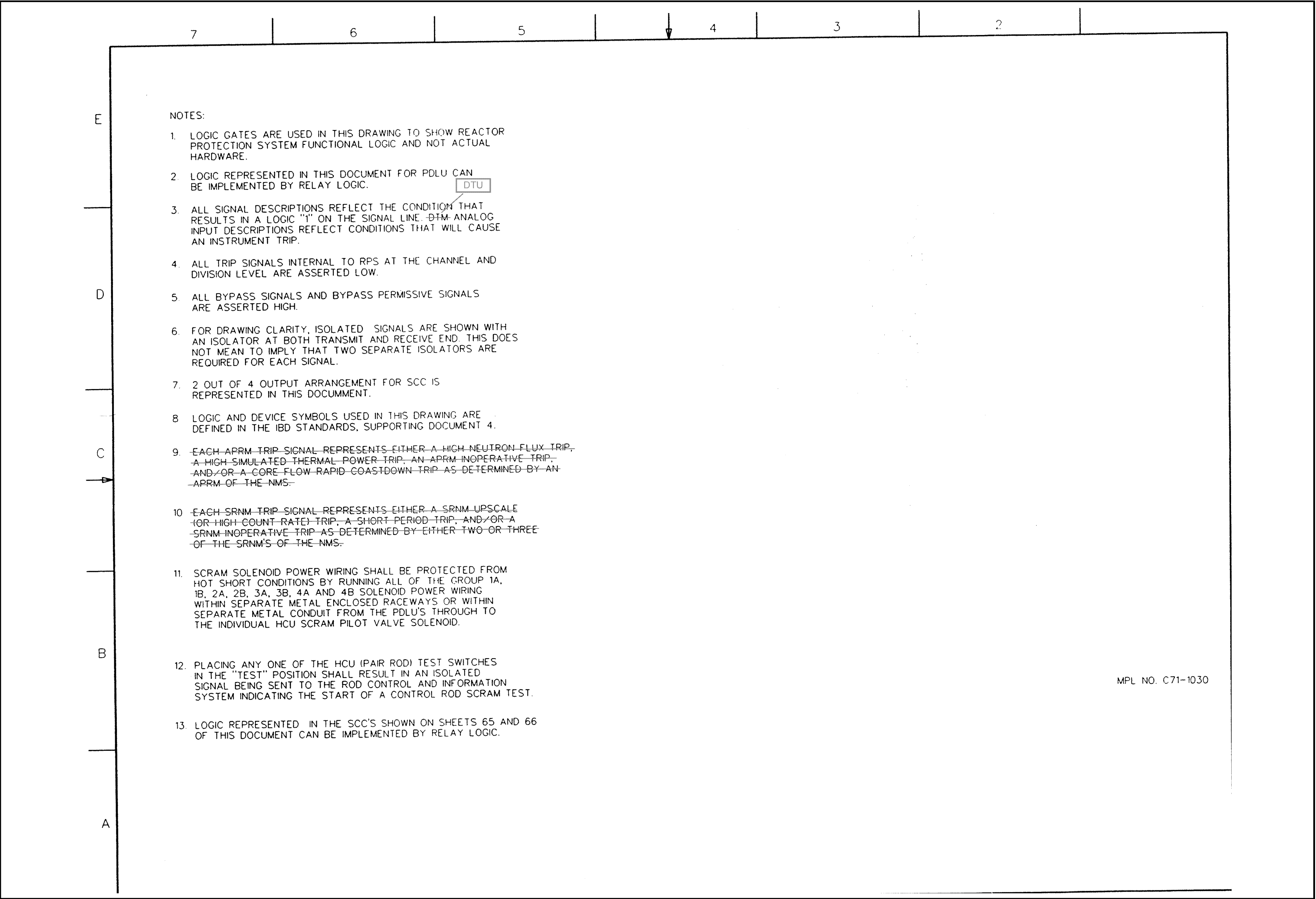
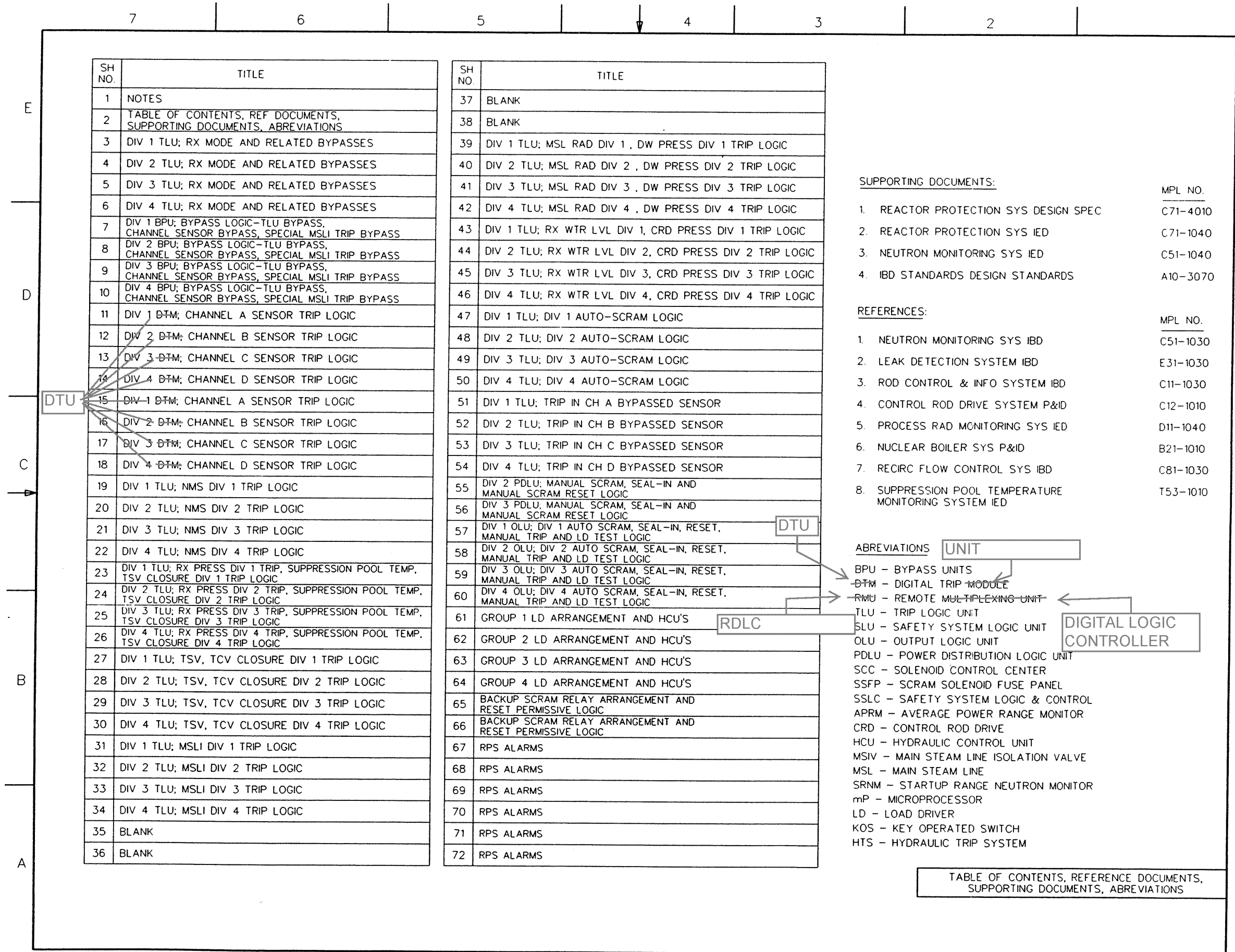


Figure 7.2-9 REACTOR PROTECTION SYSTEM IED (SHEET 6 OF 11)
ABWR DCD/Tier 2 Rev. 0



MPL NO. C71-1030

FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 1 of 72)



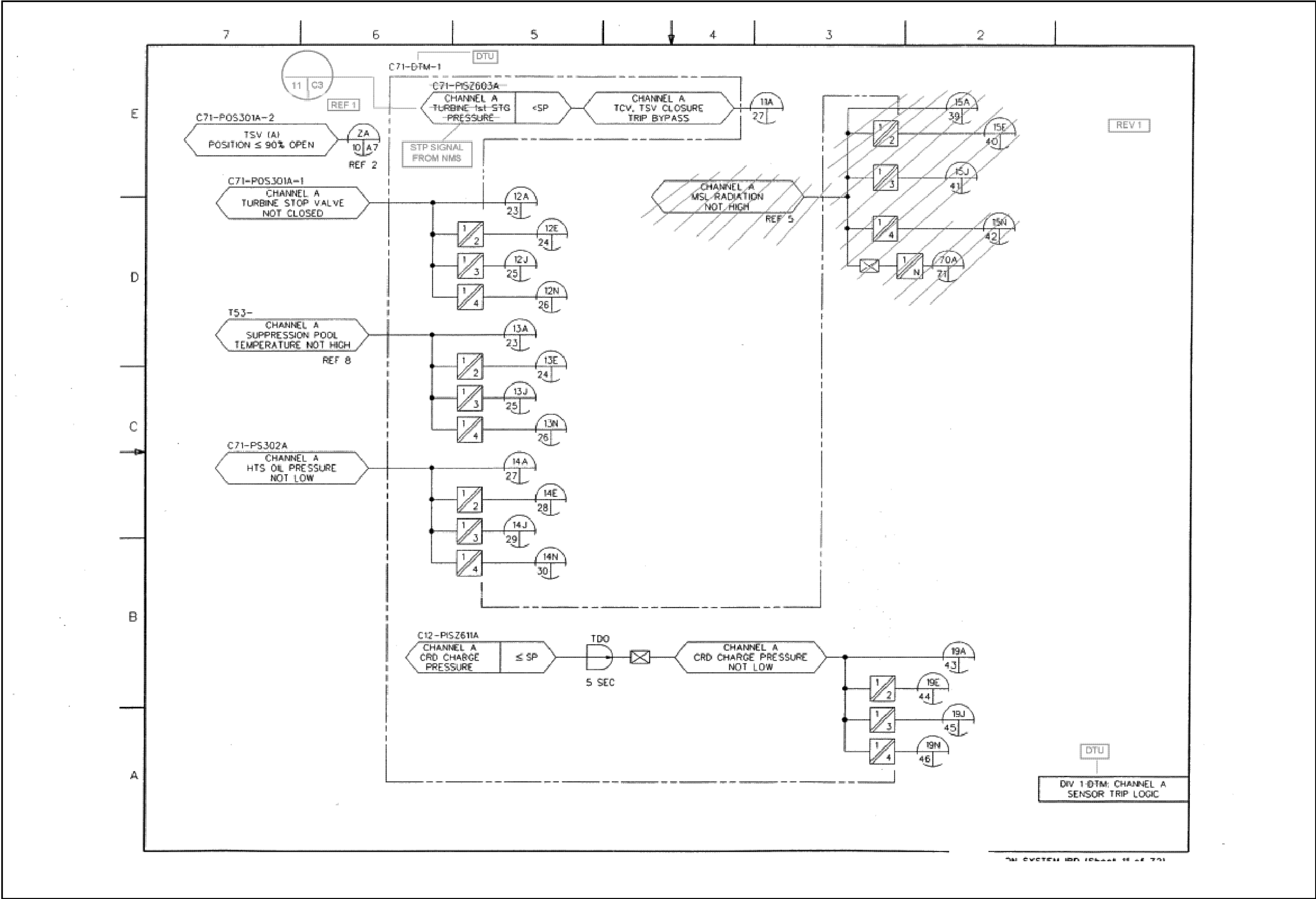


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 11 of 72)

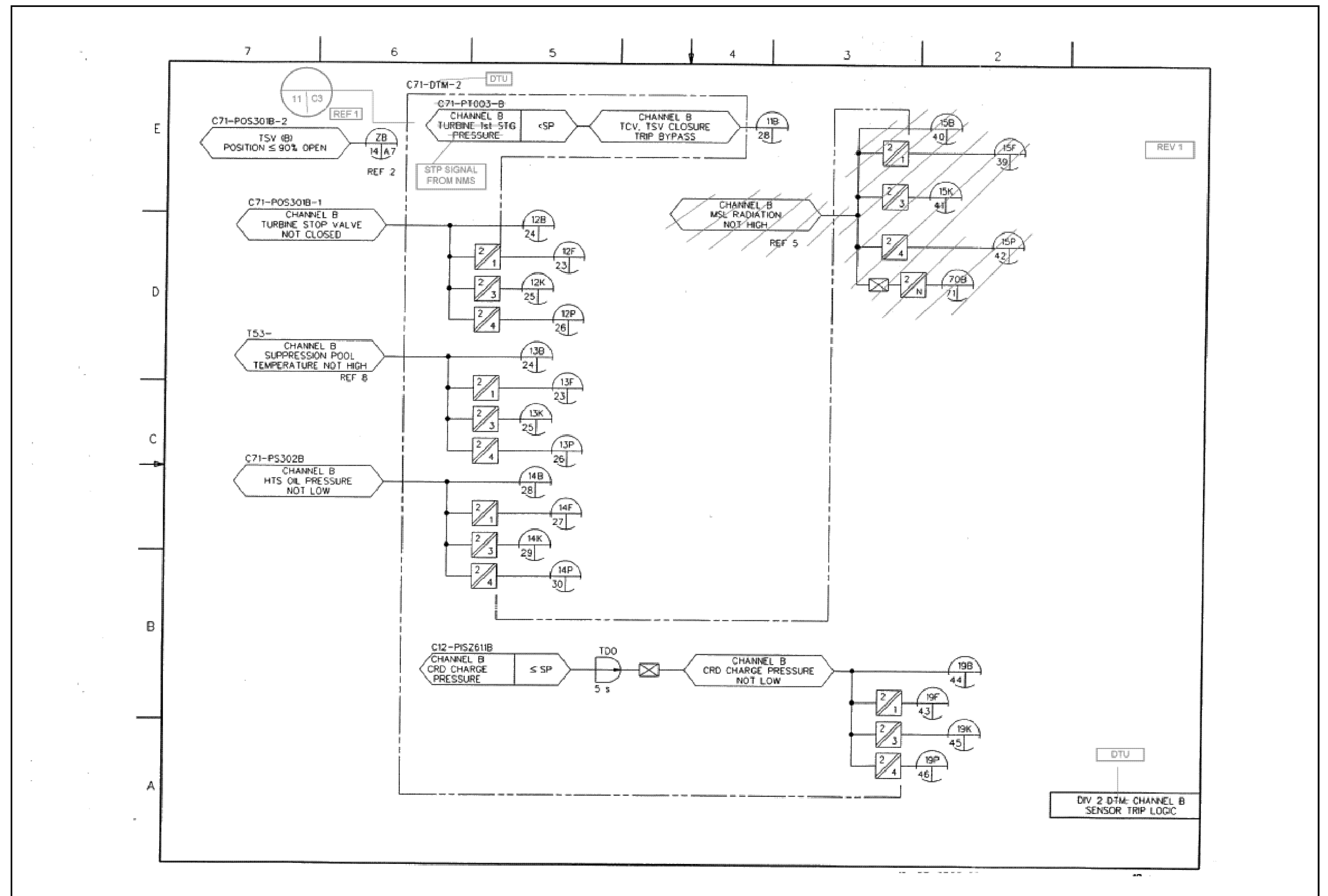


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 12 of 72)

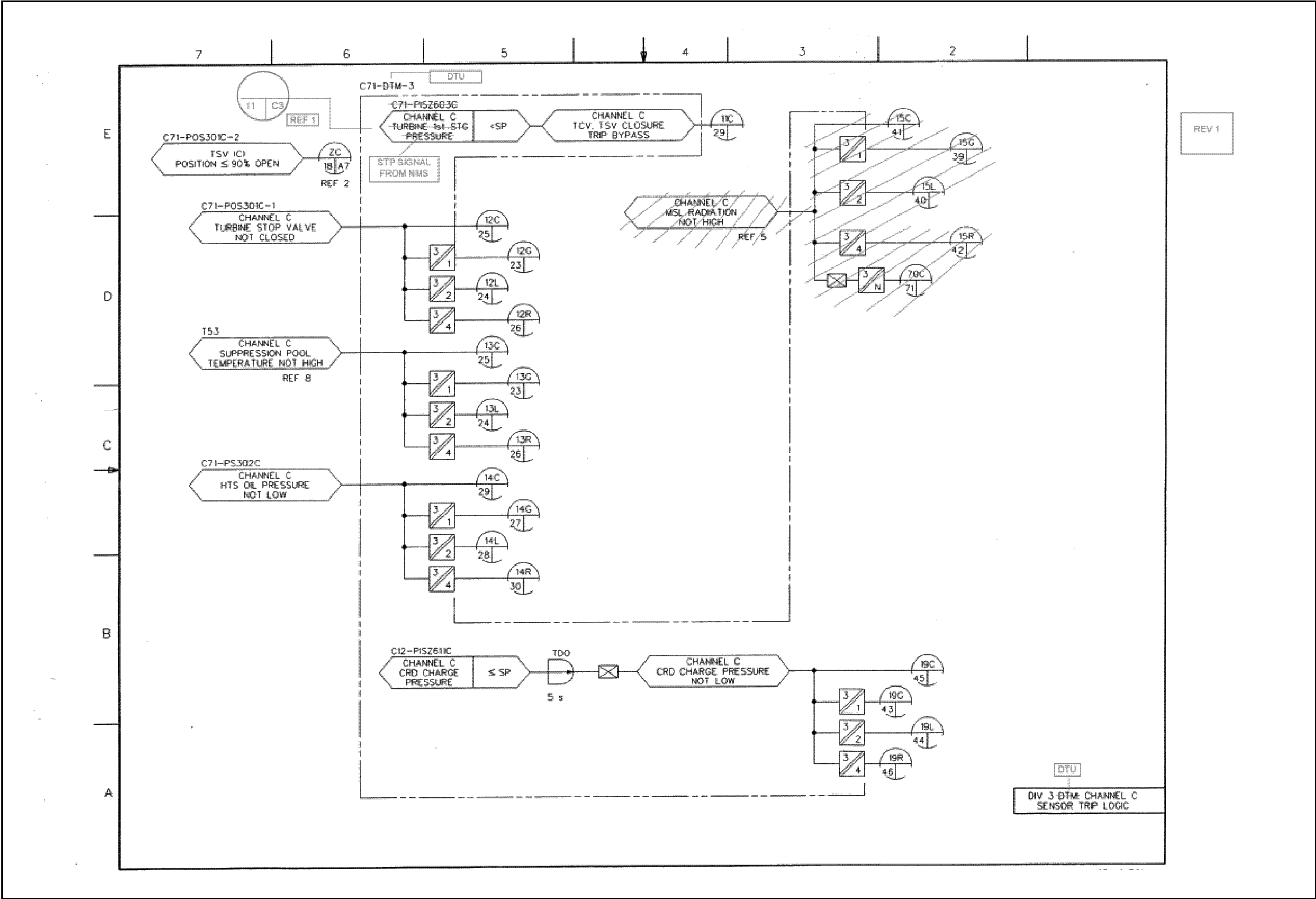


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 13 of 72)

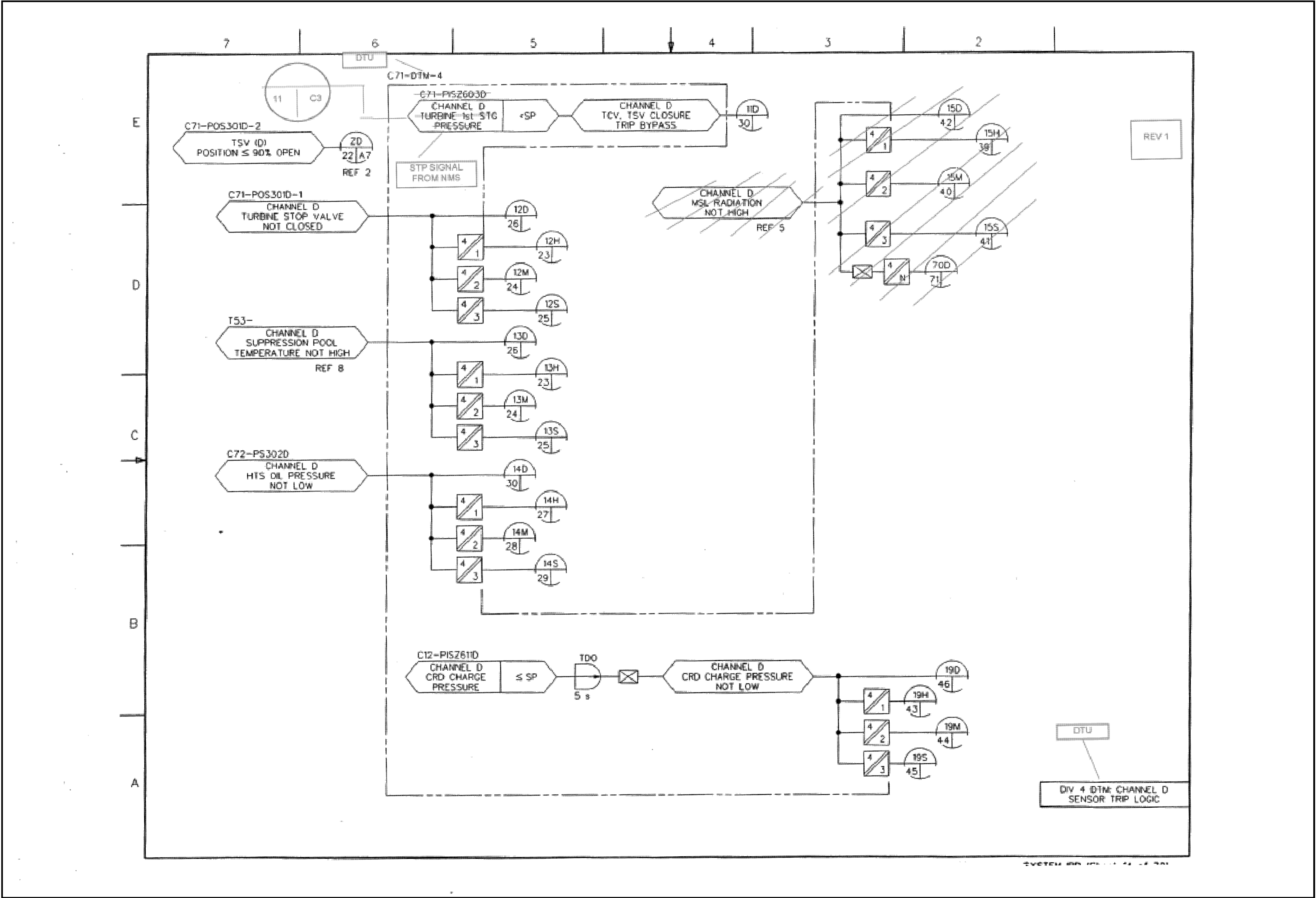


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 14 of 72)

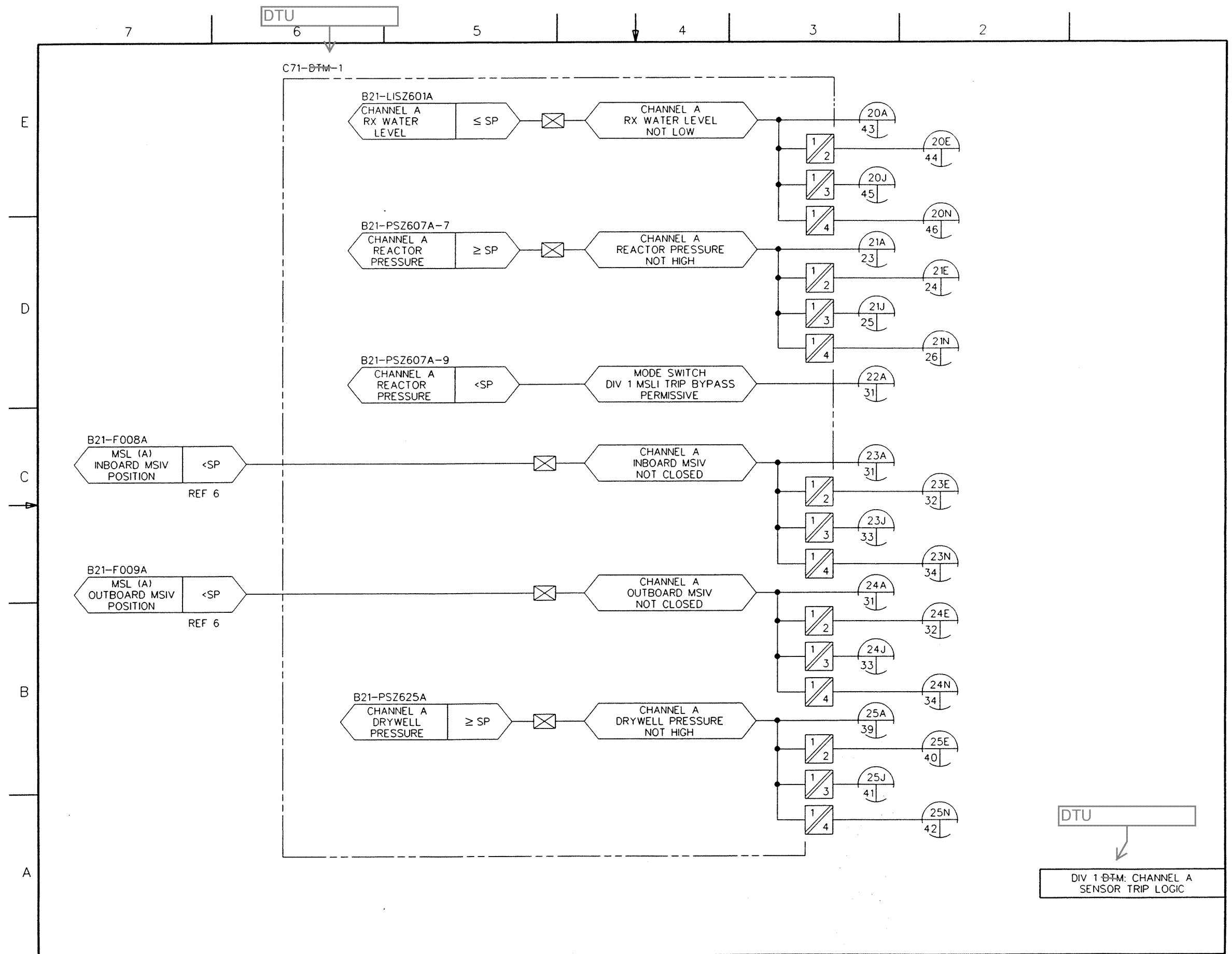


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 15 of 72)

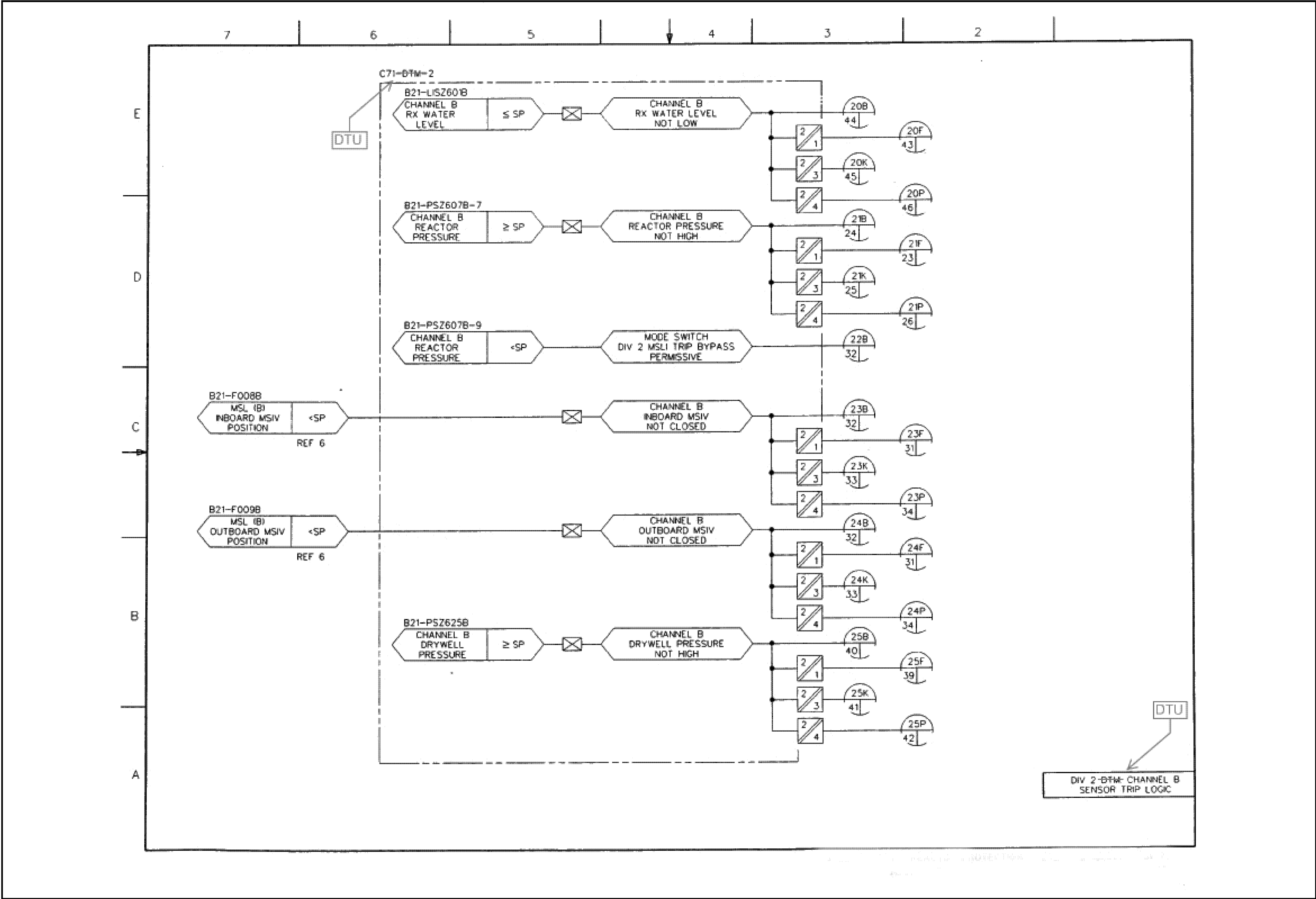


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 16 of 72)

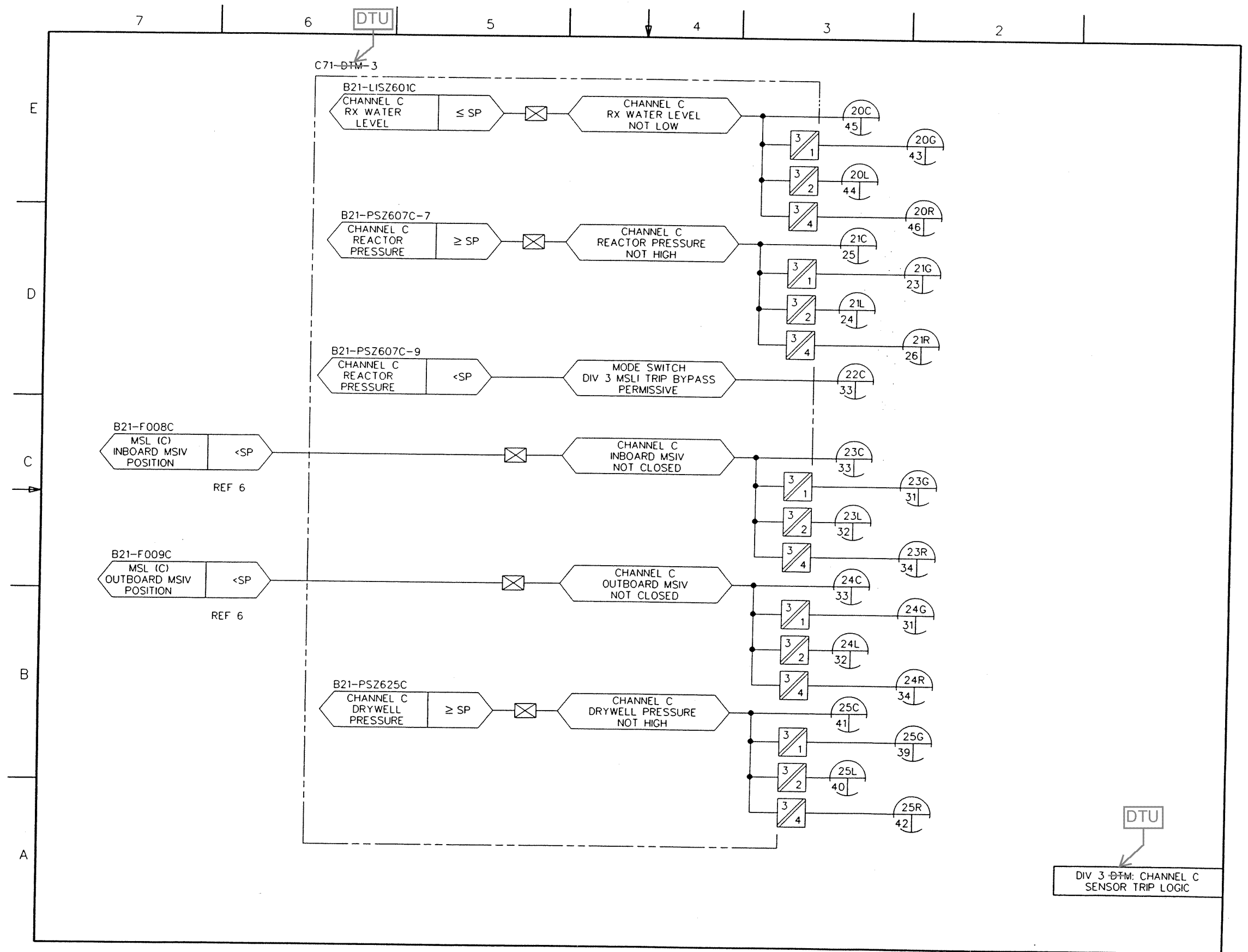


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 17 of 72)
 ABWR DCD/Tier 2 Rev. 0

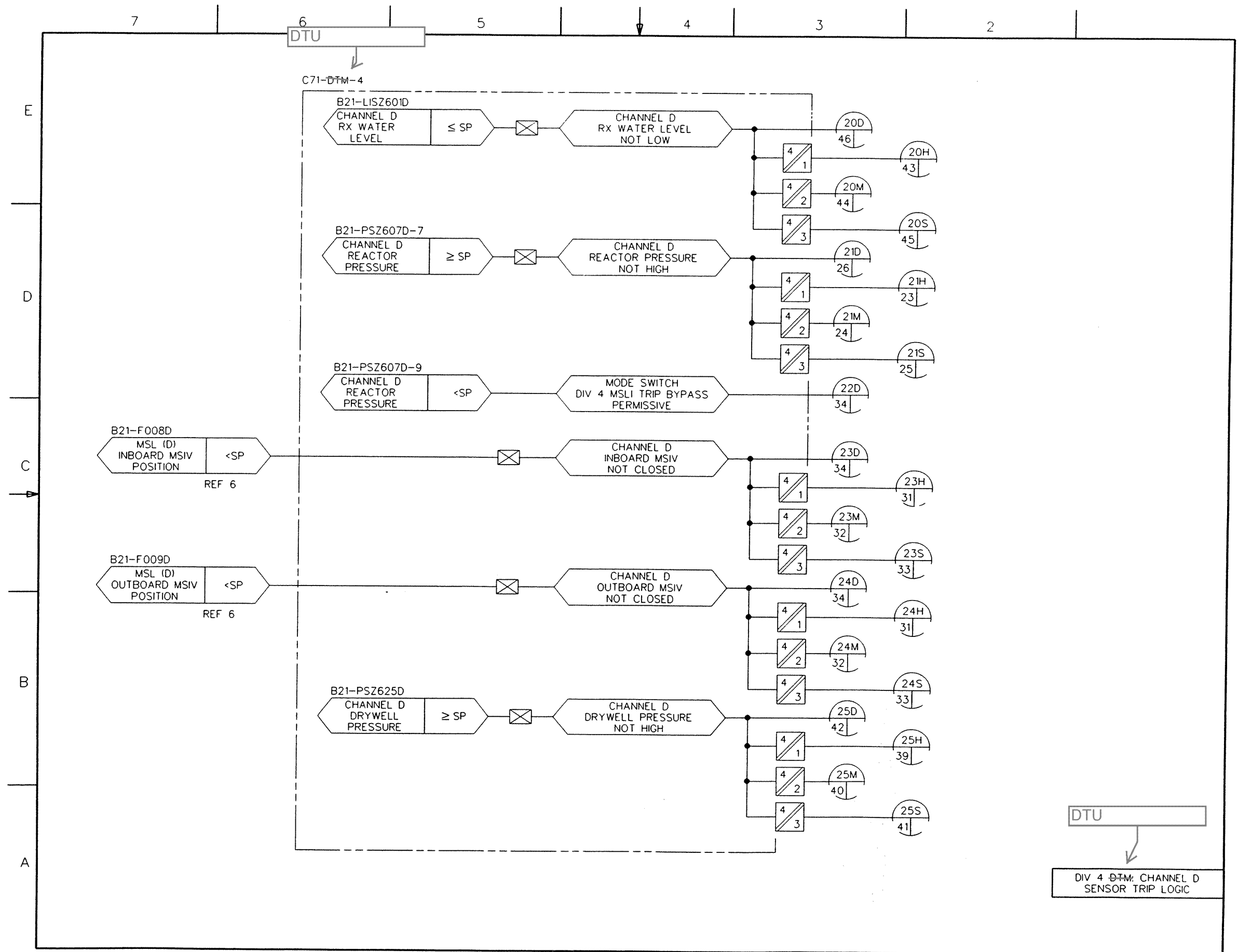


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 18 of 72)
ABWR DCD/Tier 2 Rev. 0

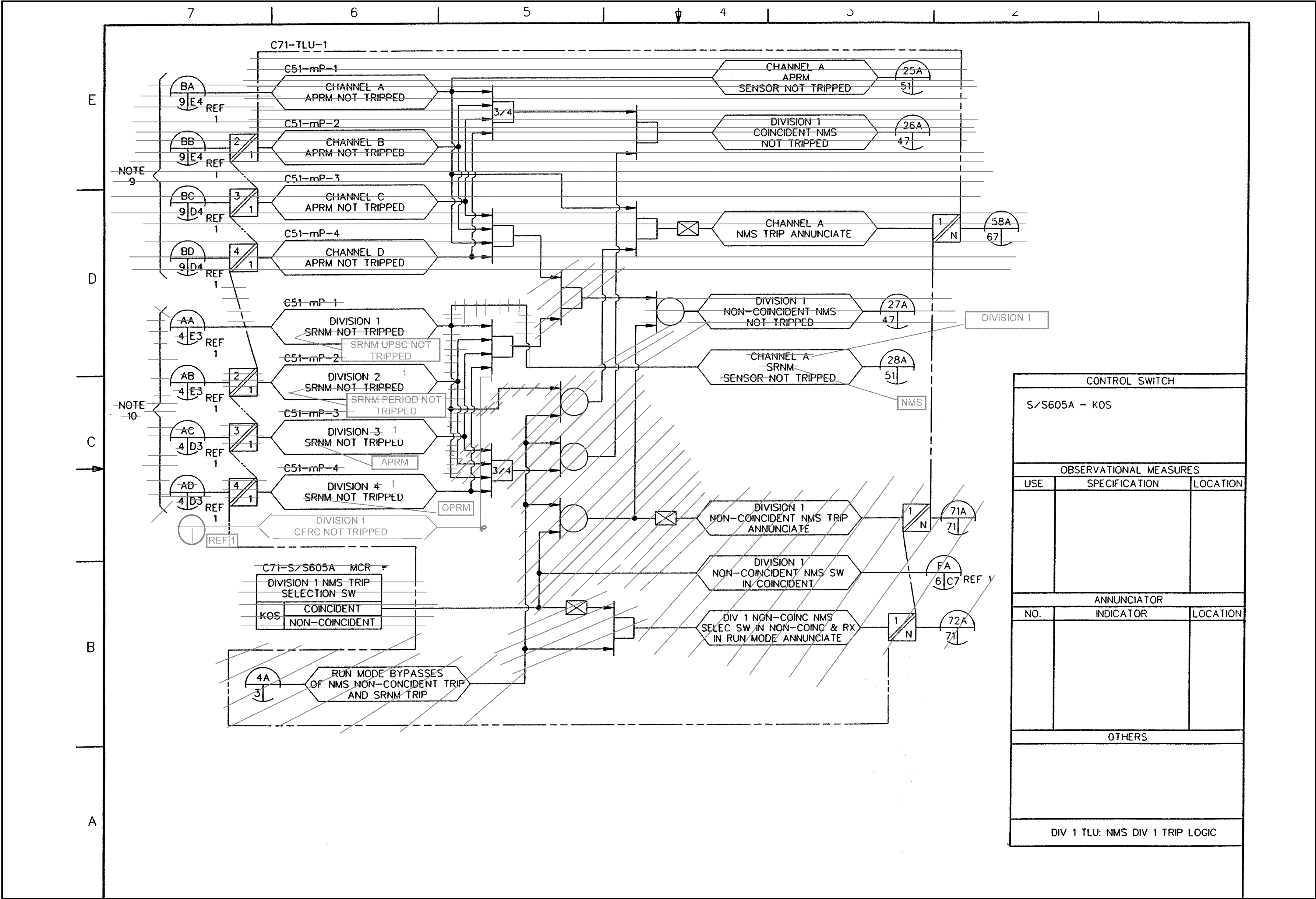


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 19 of 72)

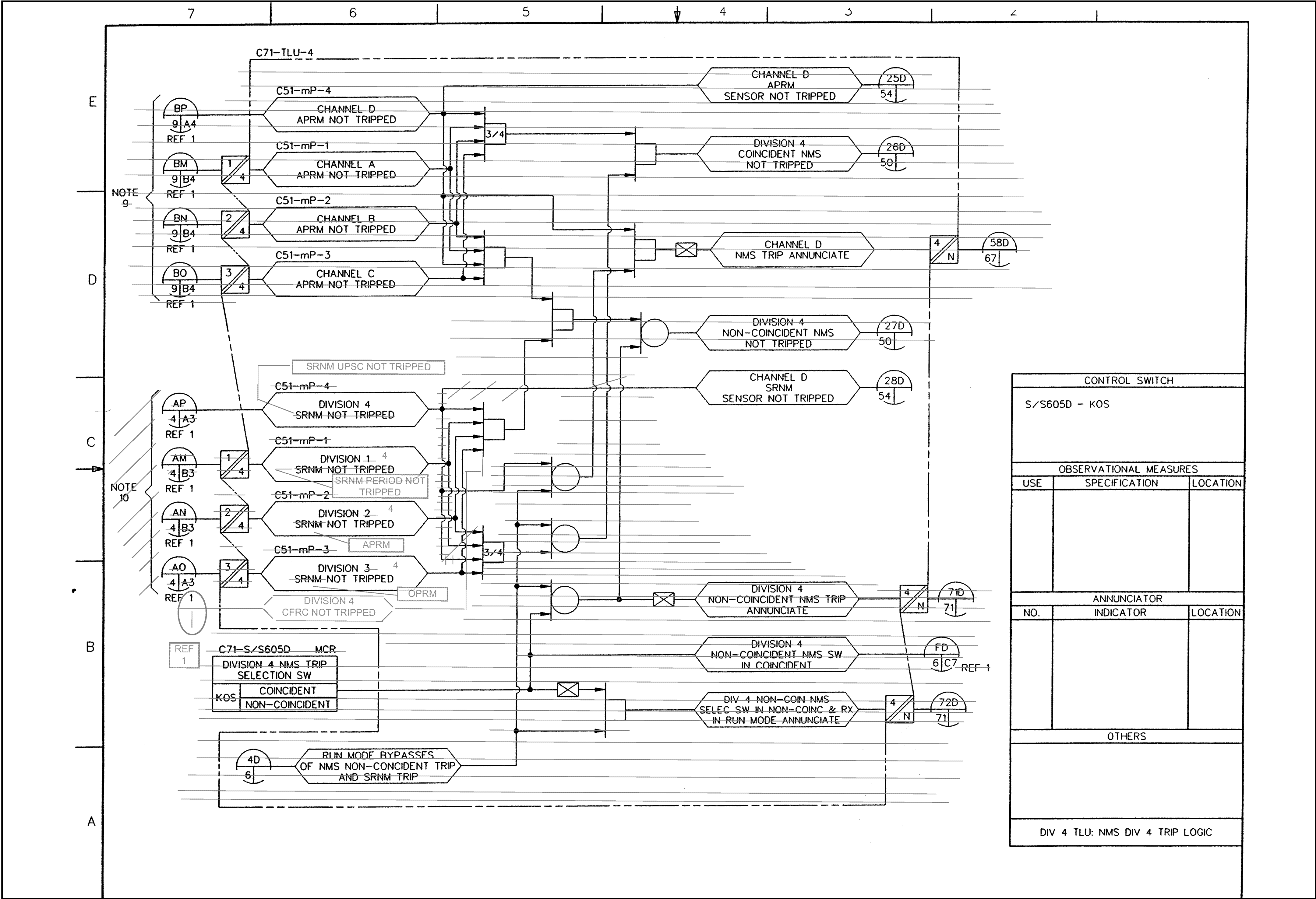


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 22 of 72)

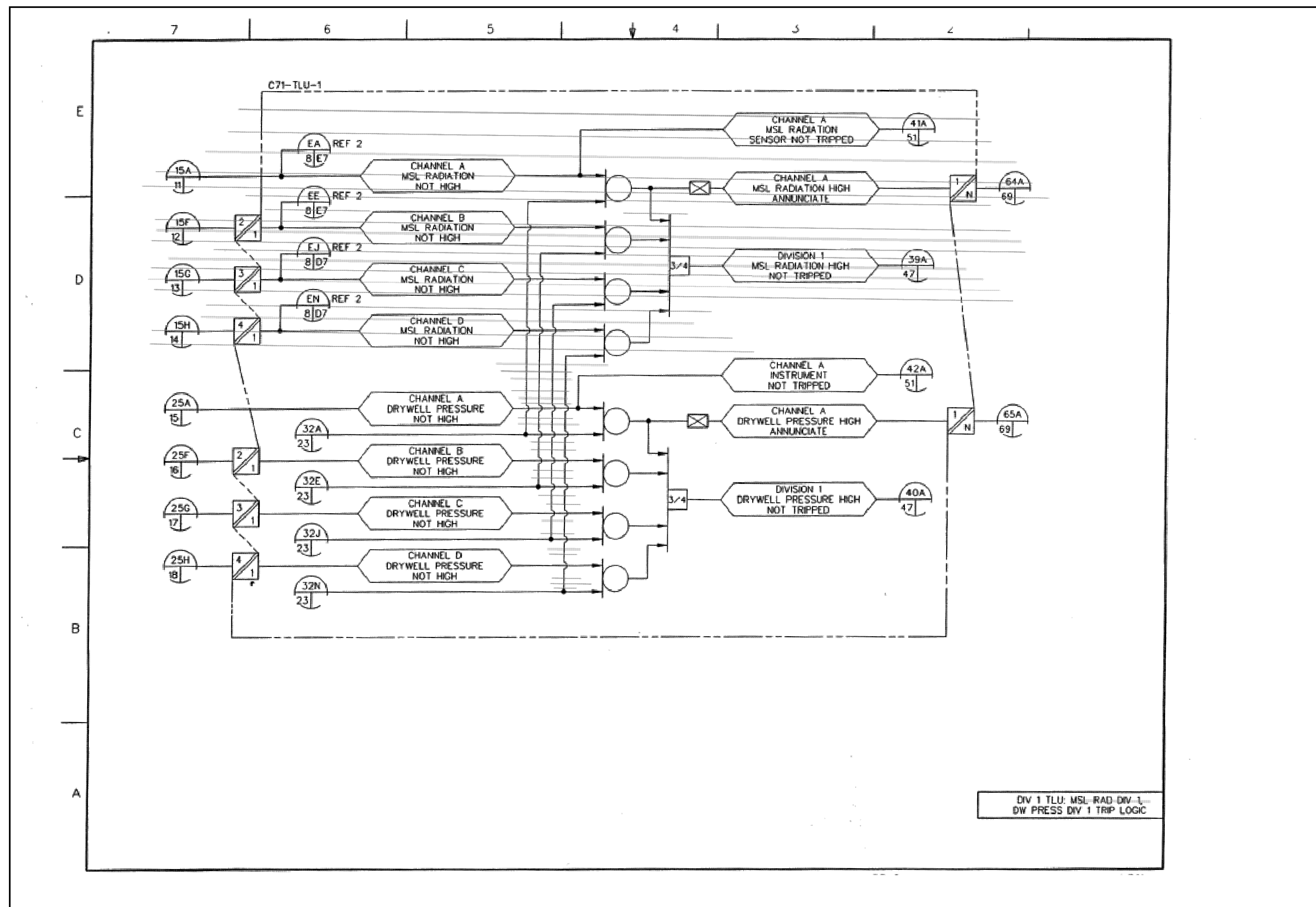


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 39 of 72)

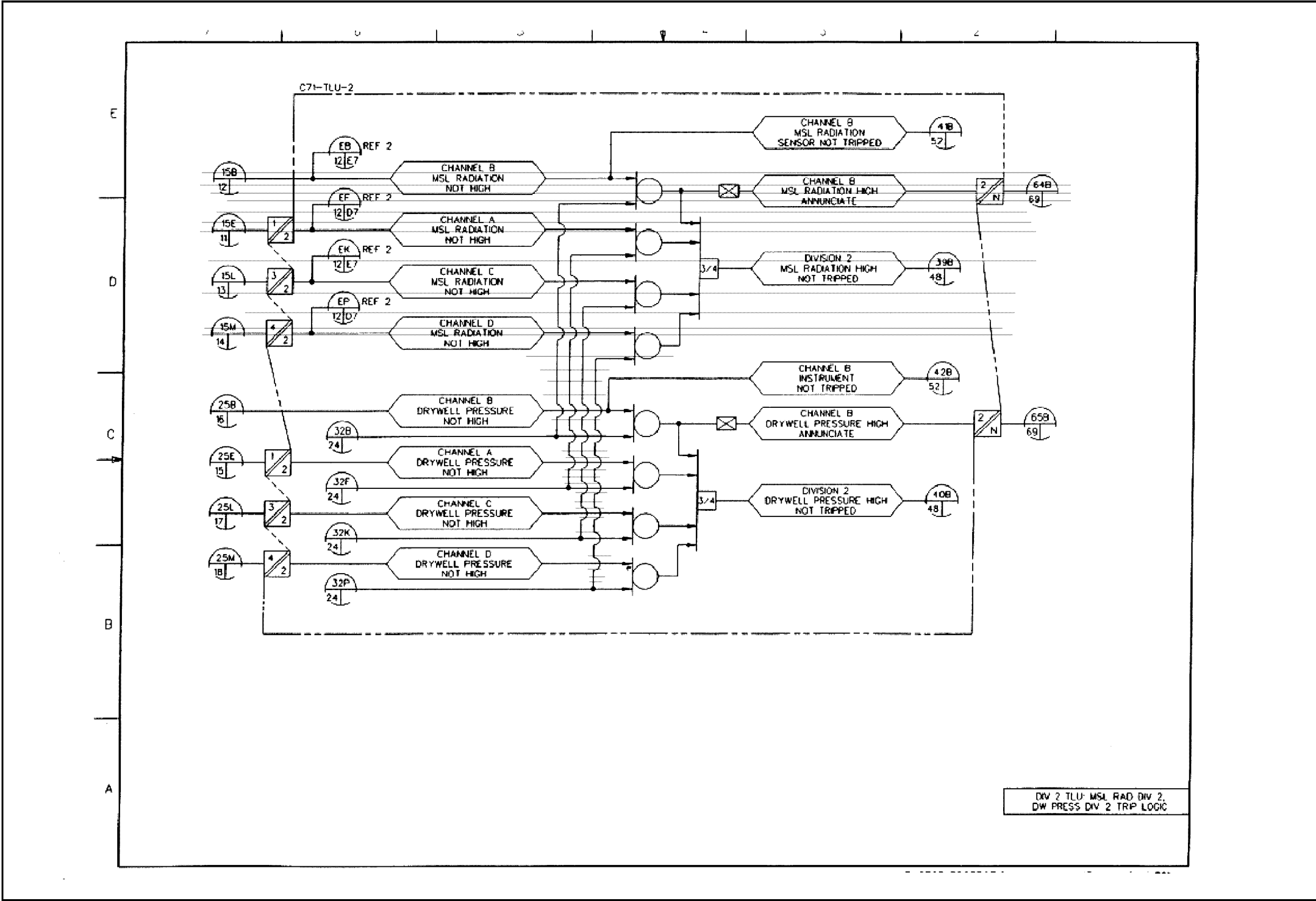


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 40 of 72)

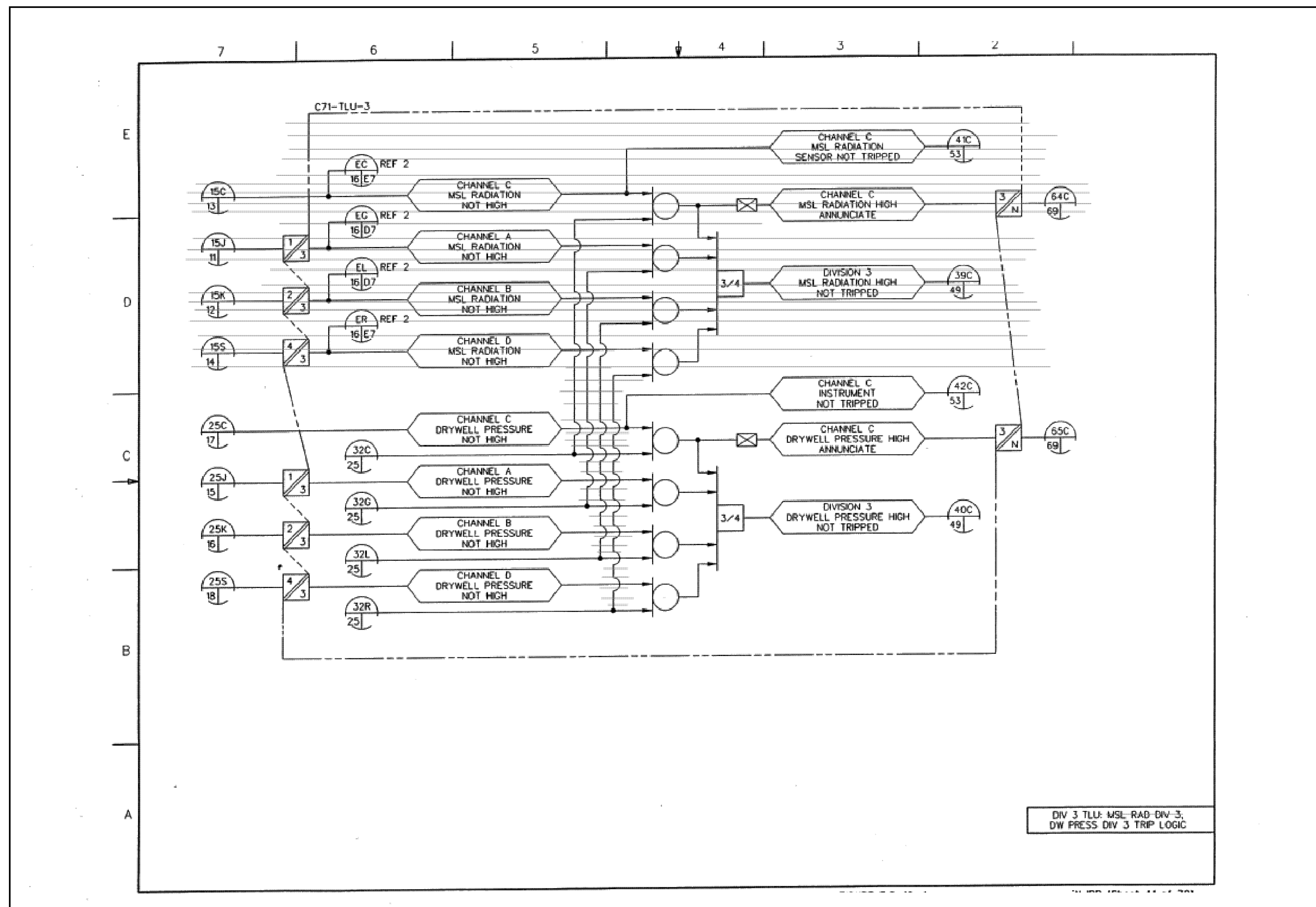


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 41 of 72)

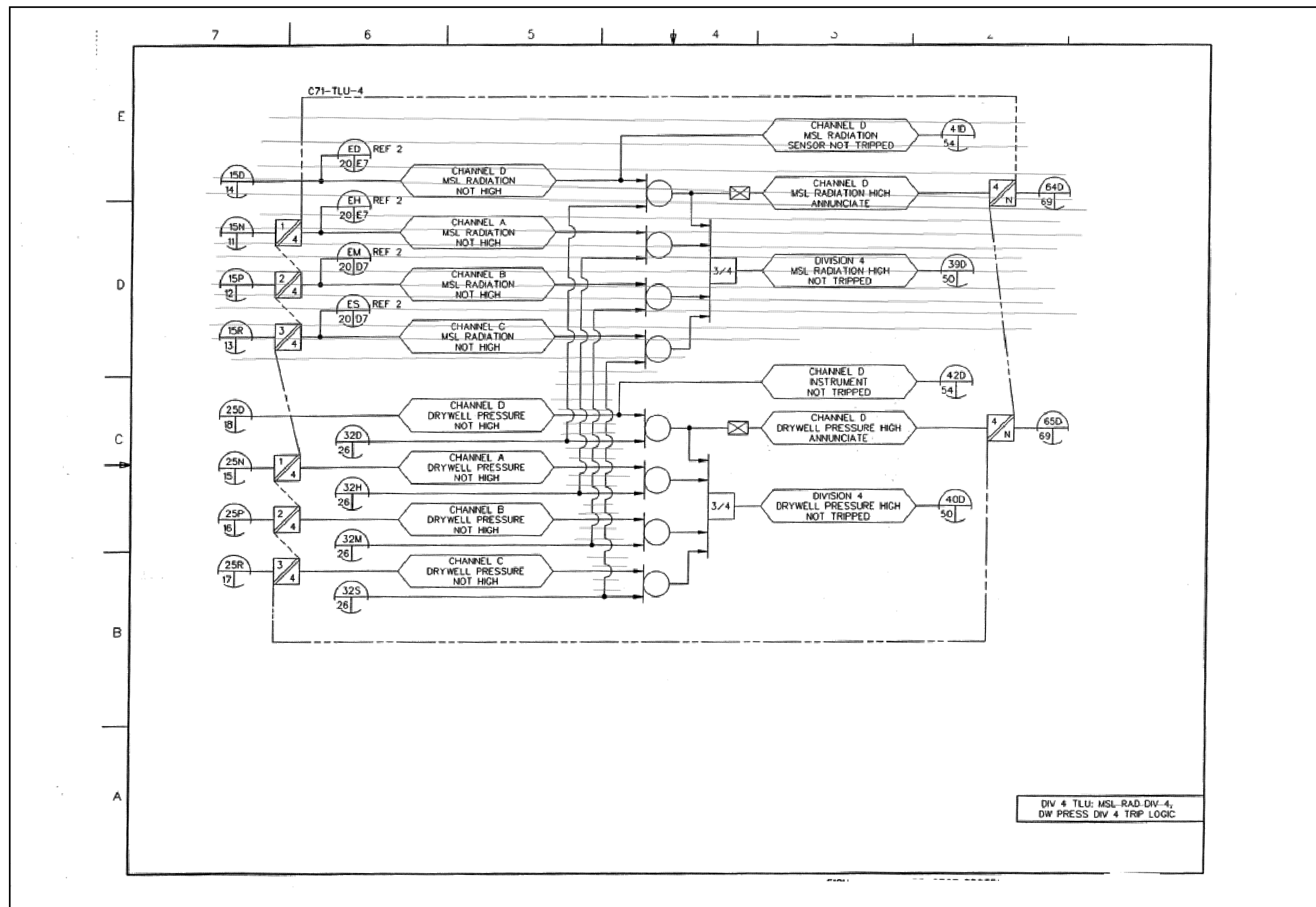


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 42 of 72)

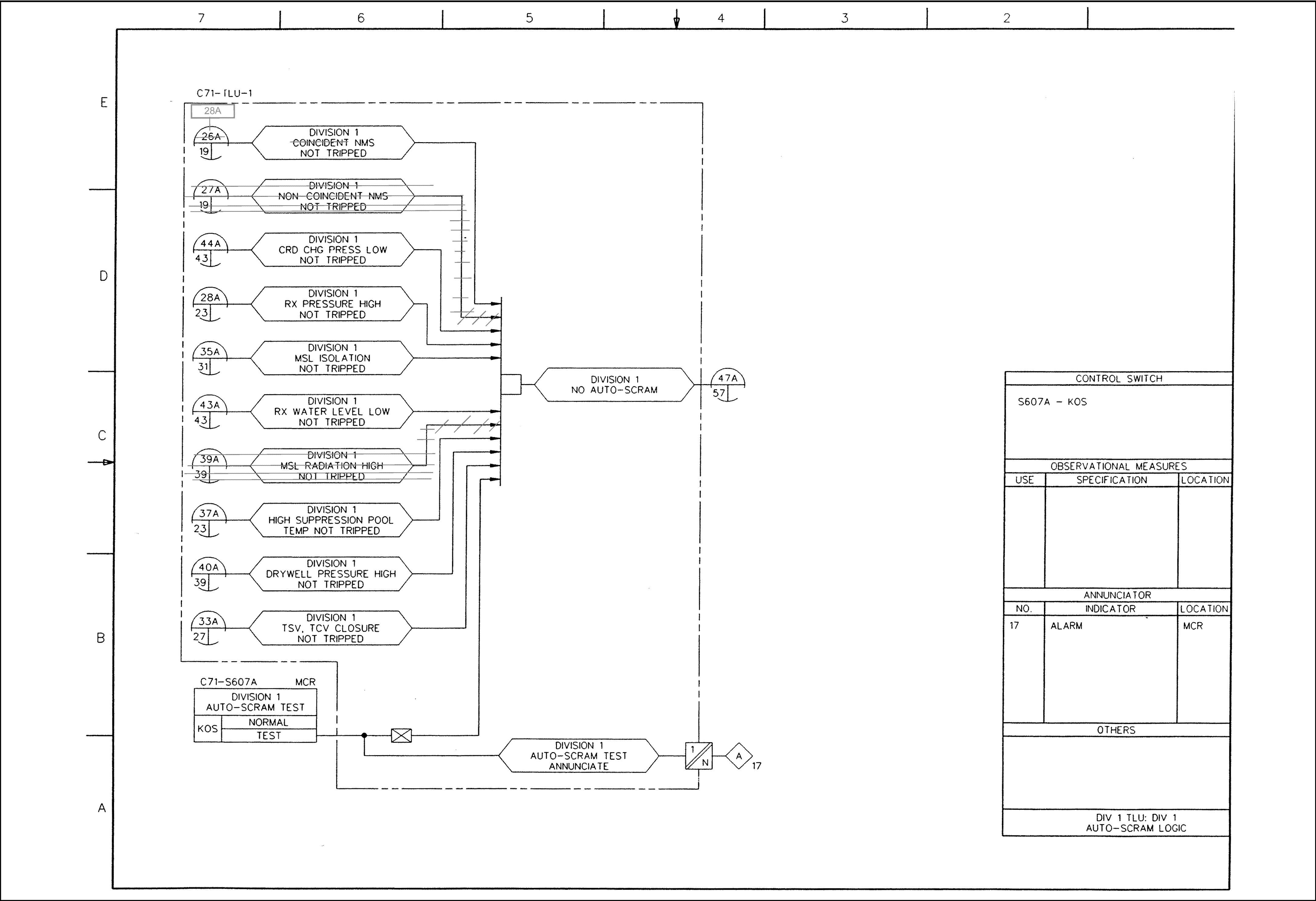


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 47 of 72)

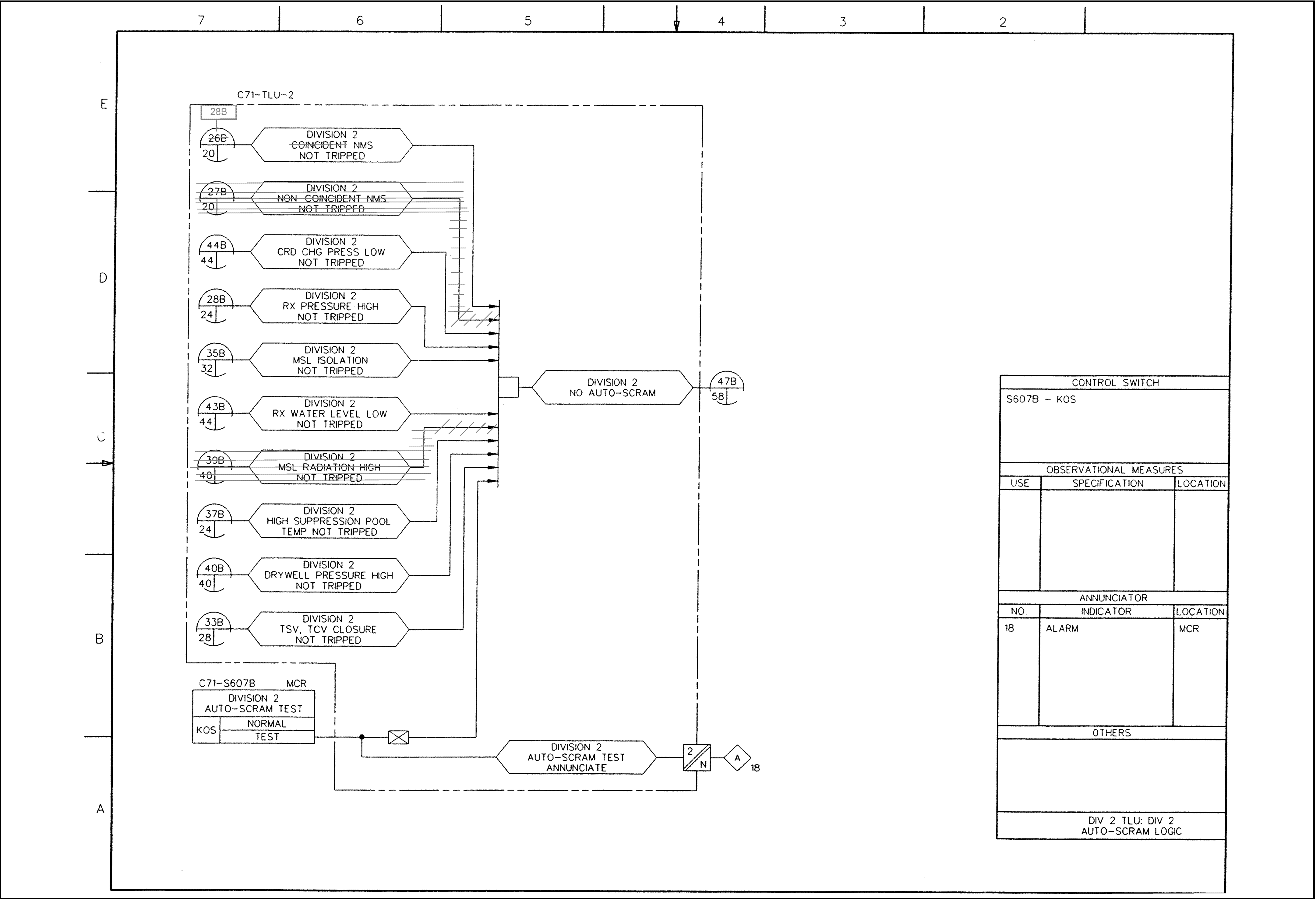


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 48 of 72)

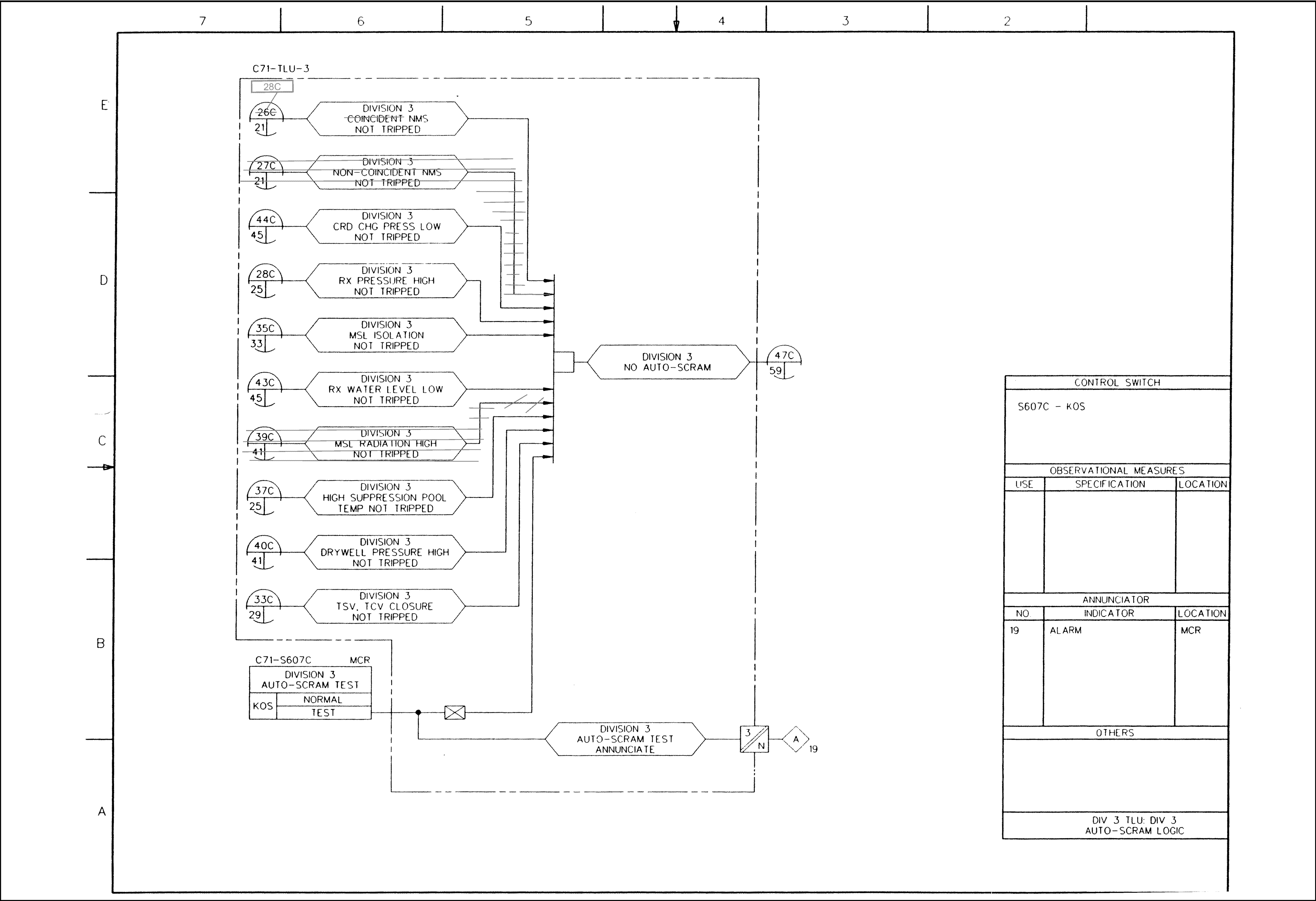


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 49 of 72)

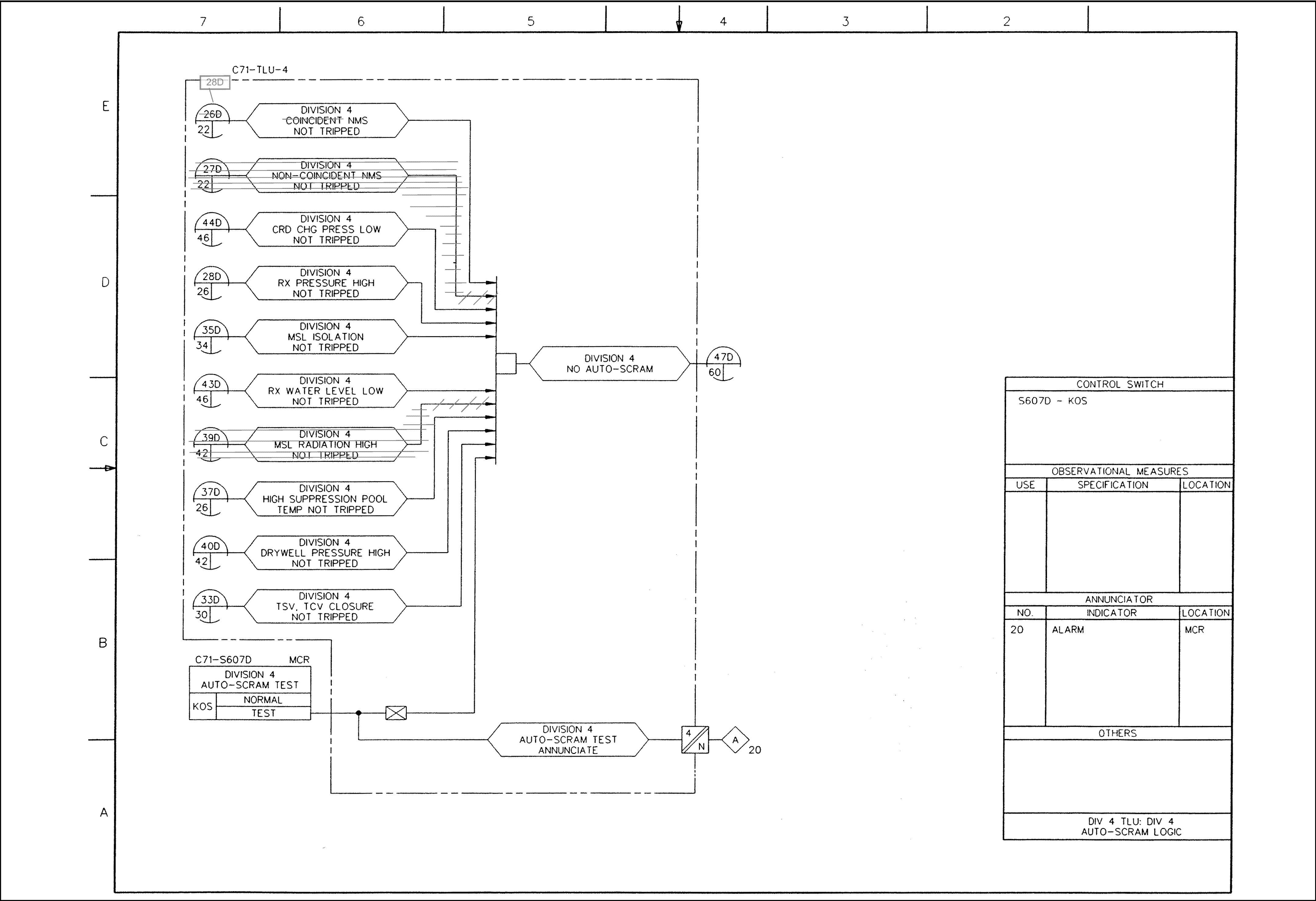


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 50 of 72)

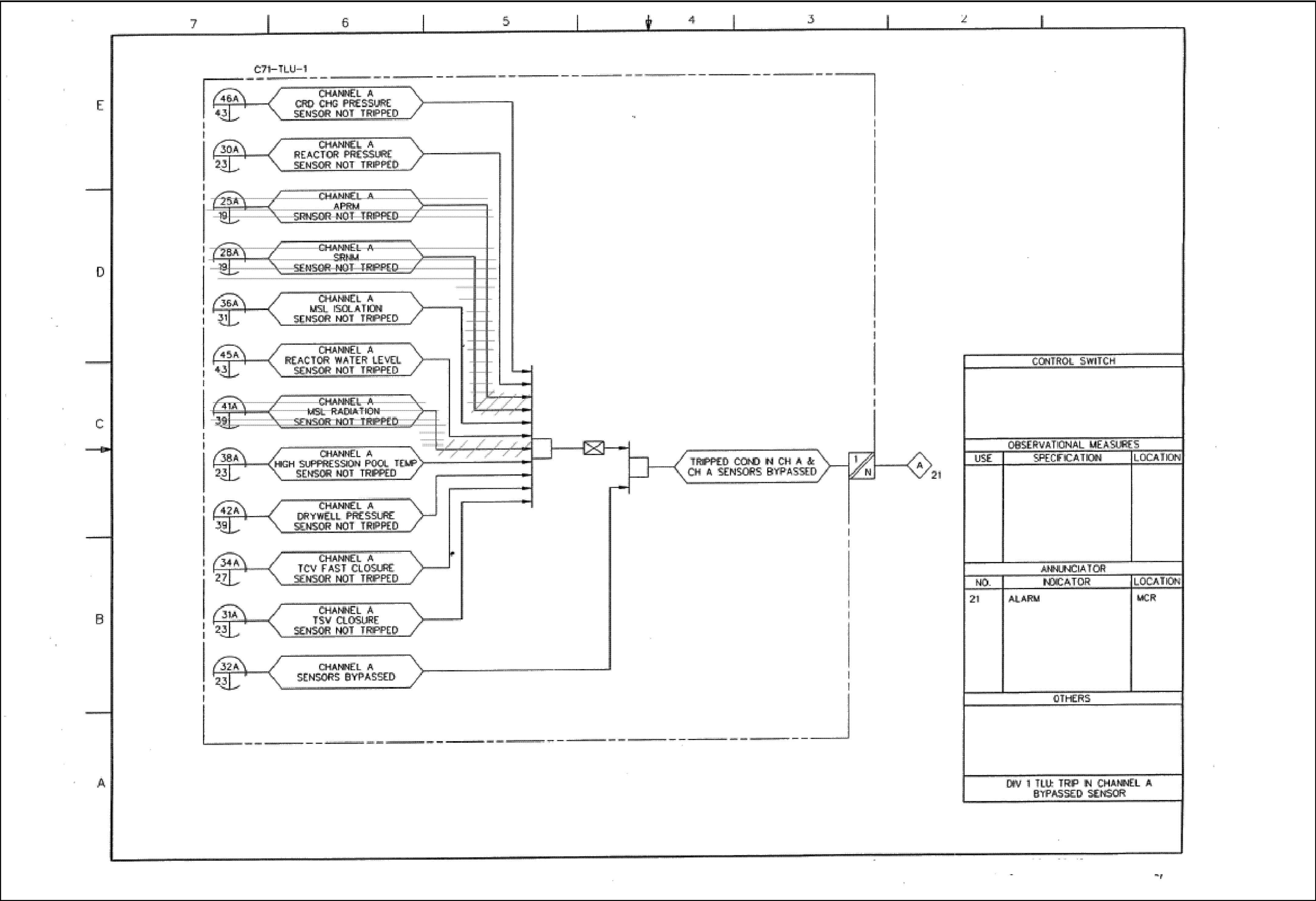


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 51 of 72)

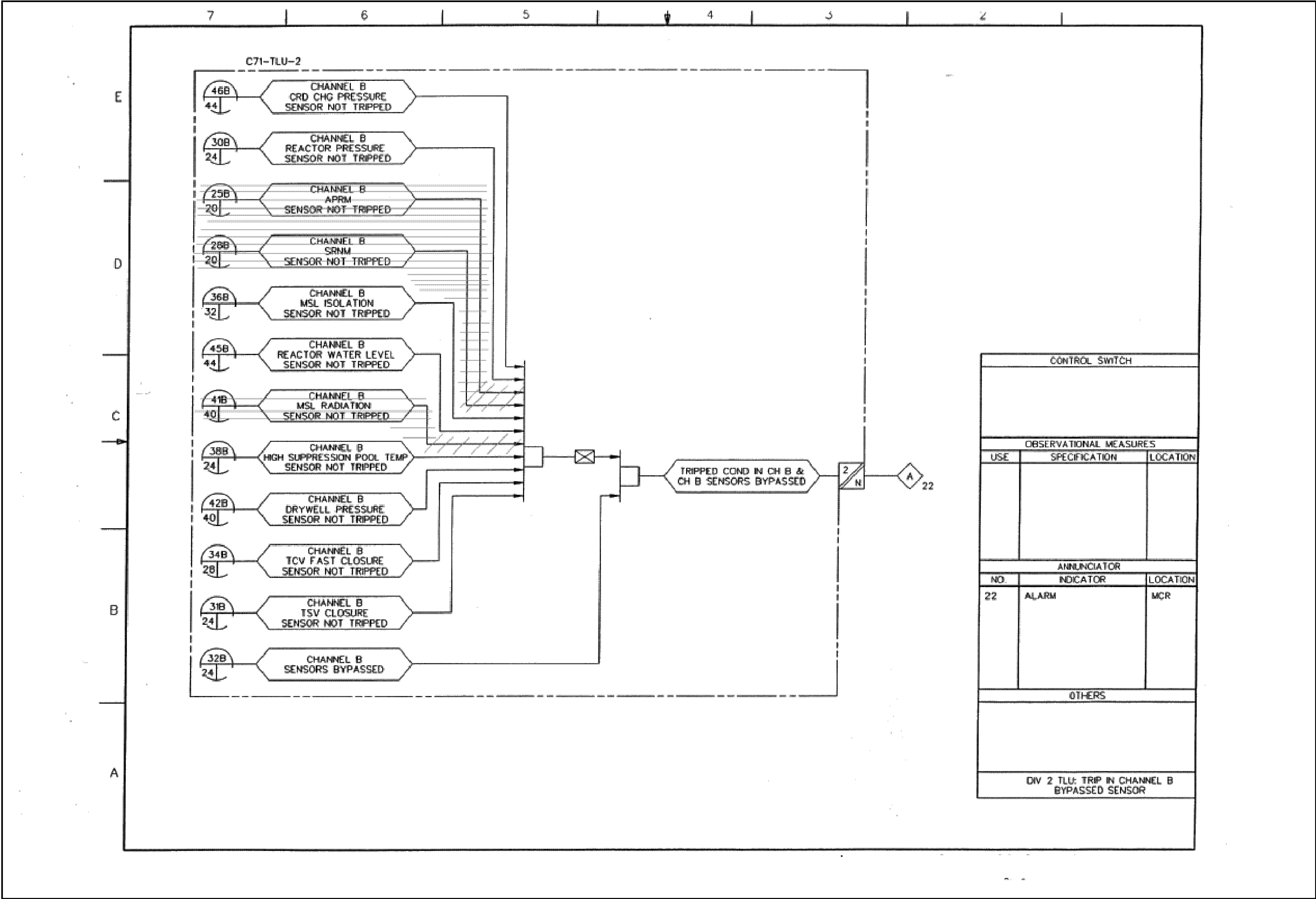


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 52 of 72)

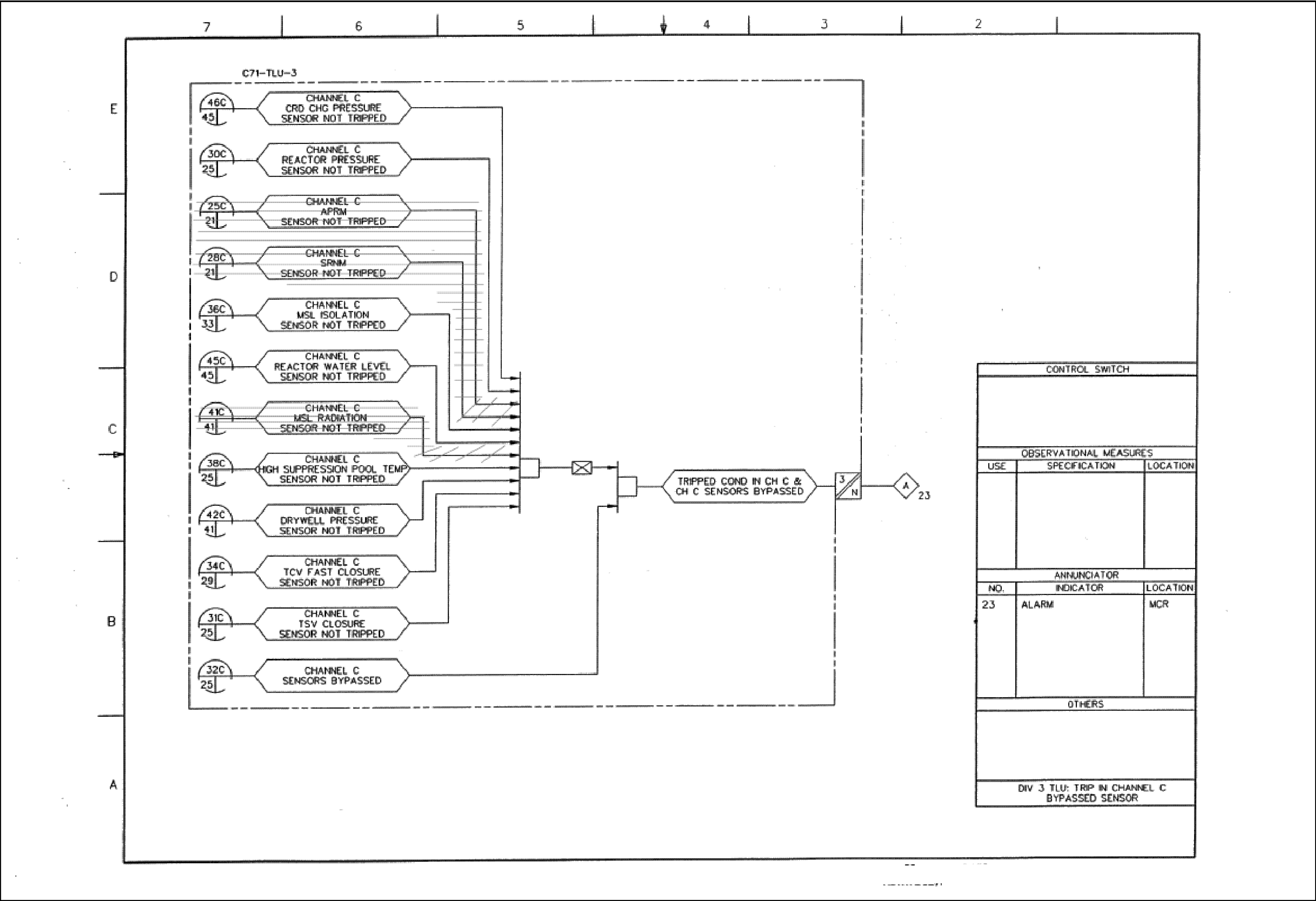


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 53 of 72)

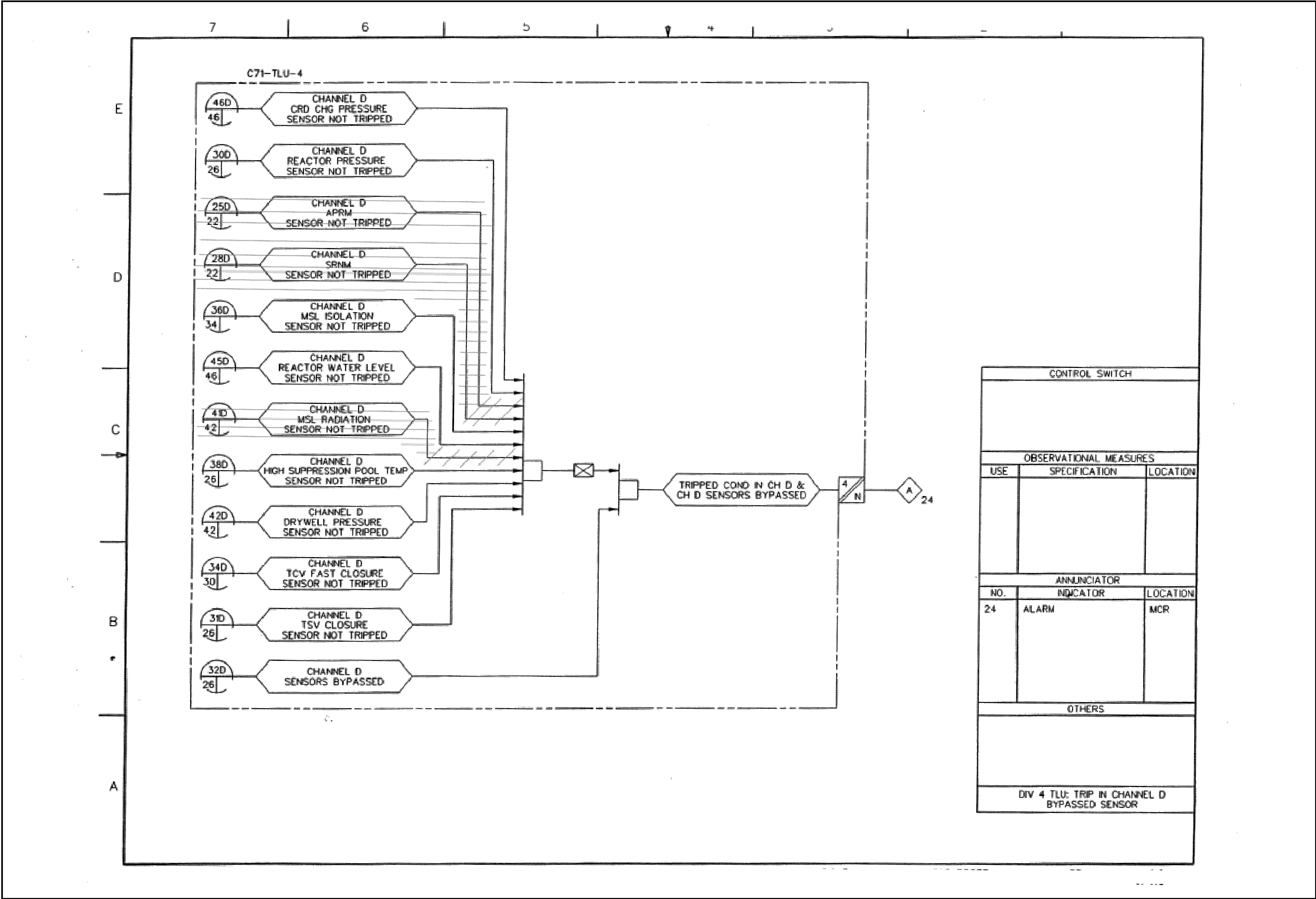


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 54 of 72)

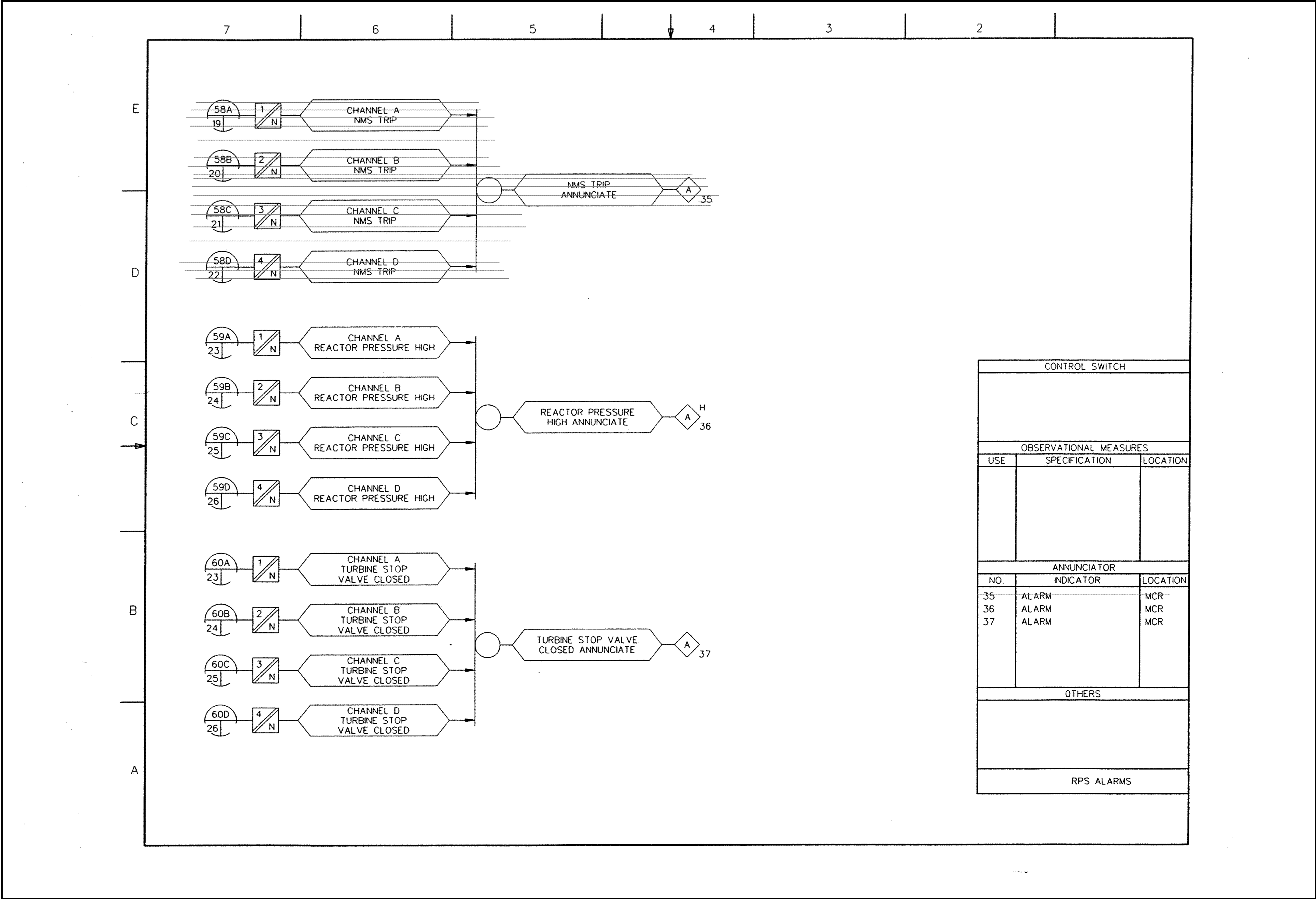


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 67 of 72)

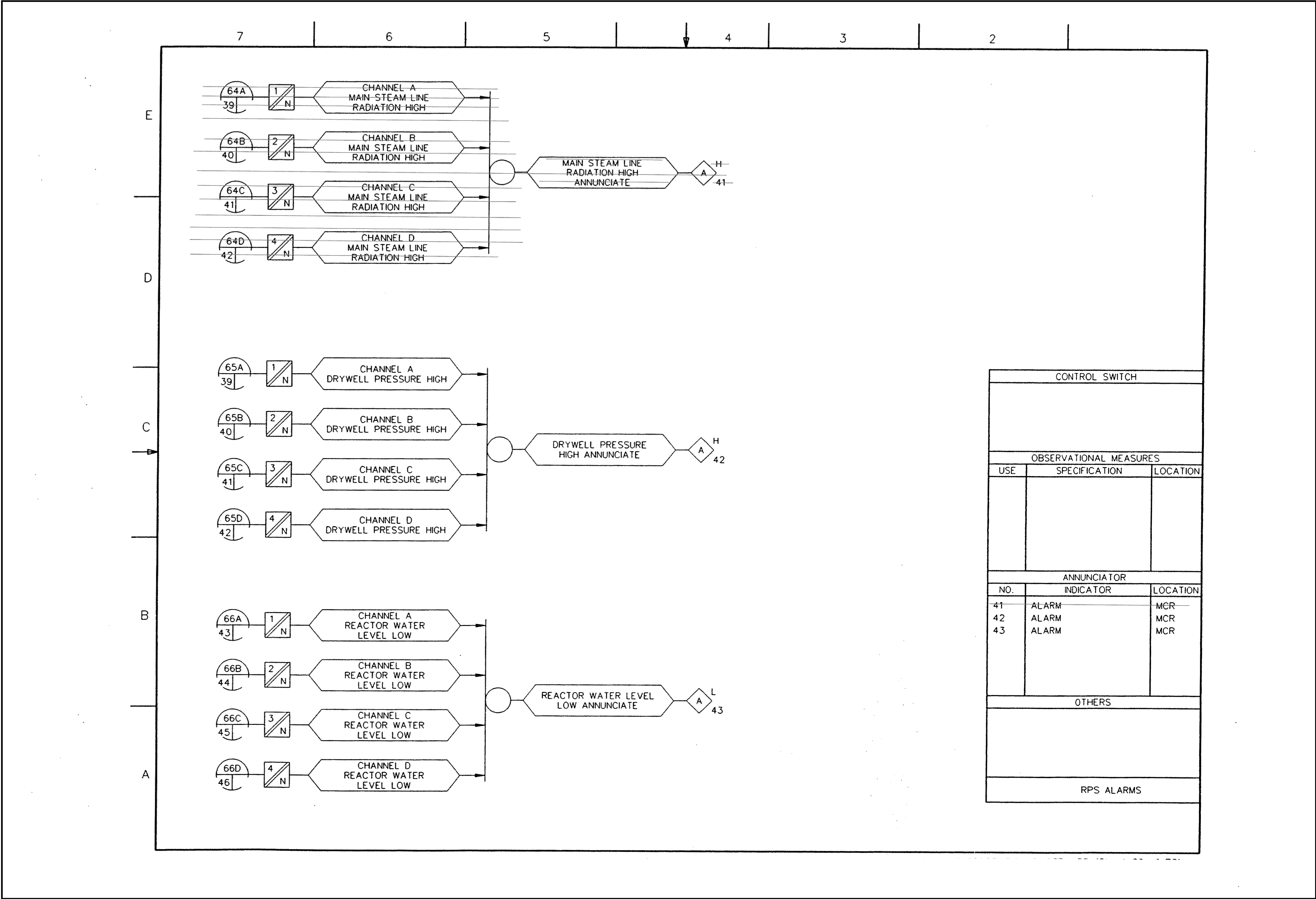


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 69 of 72)

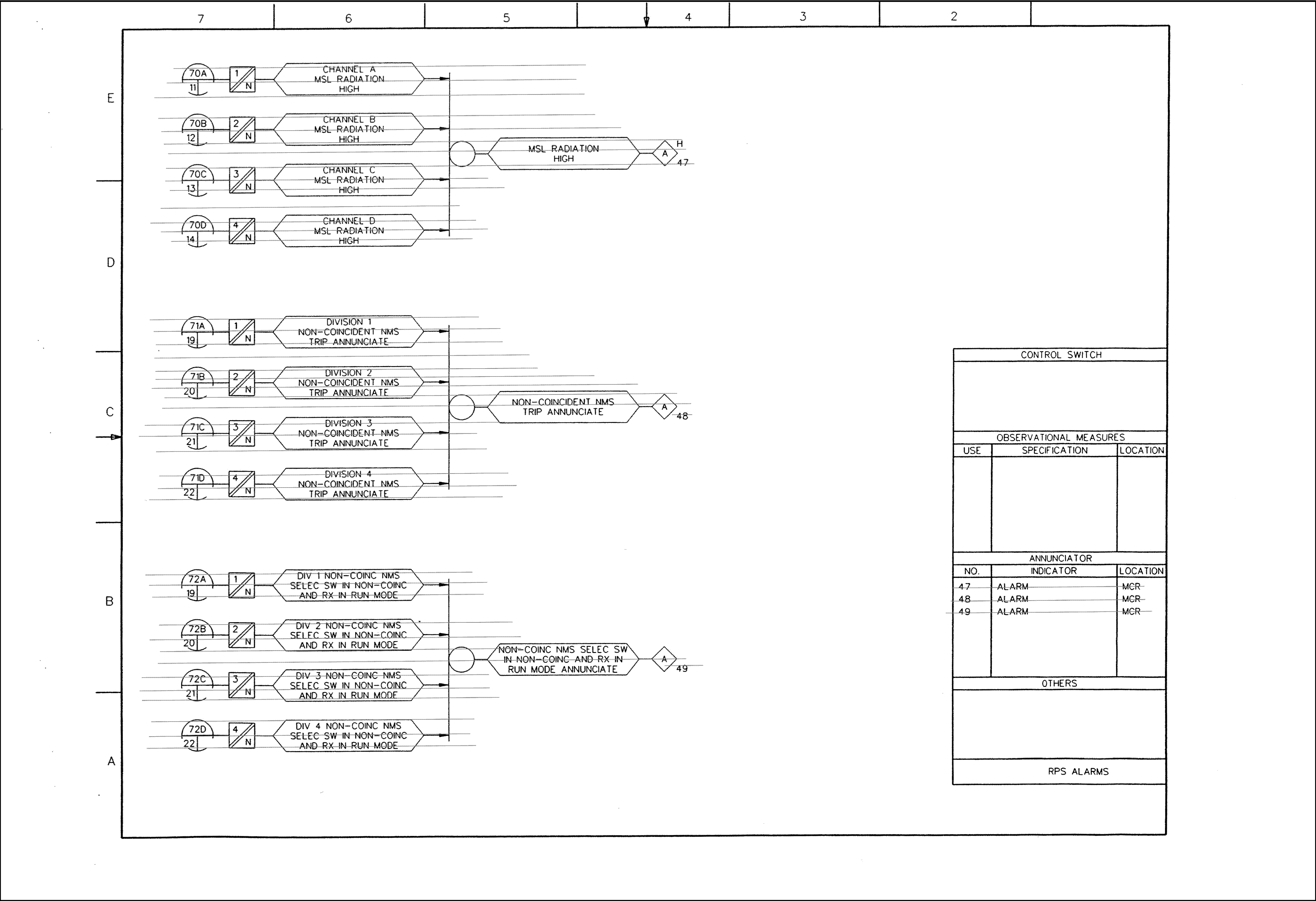


FIGURE 7.2-10 REACTOR PROTECTION SYSTEM IBD (Sheet 71 of 72)