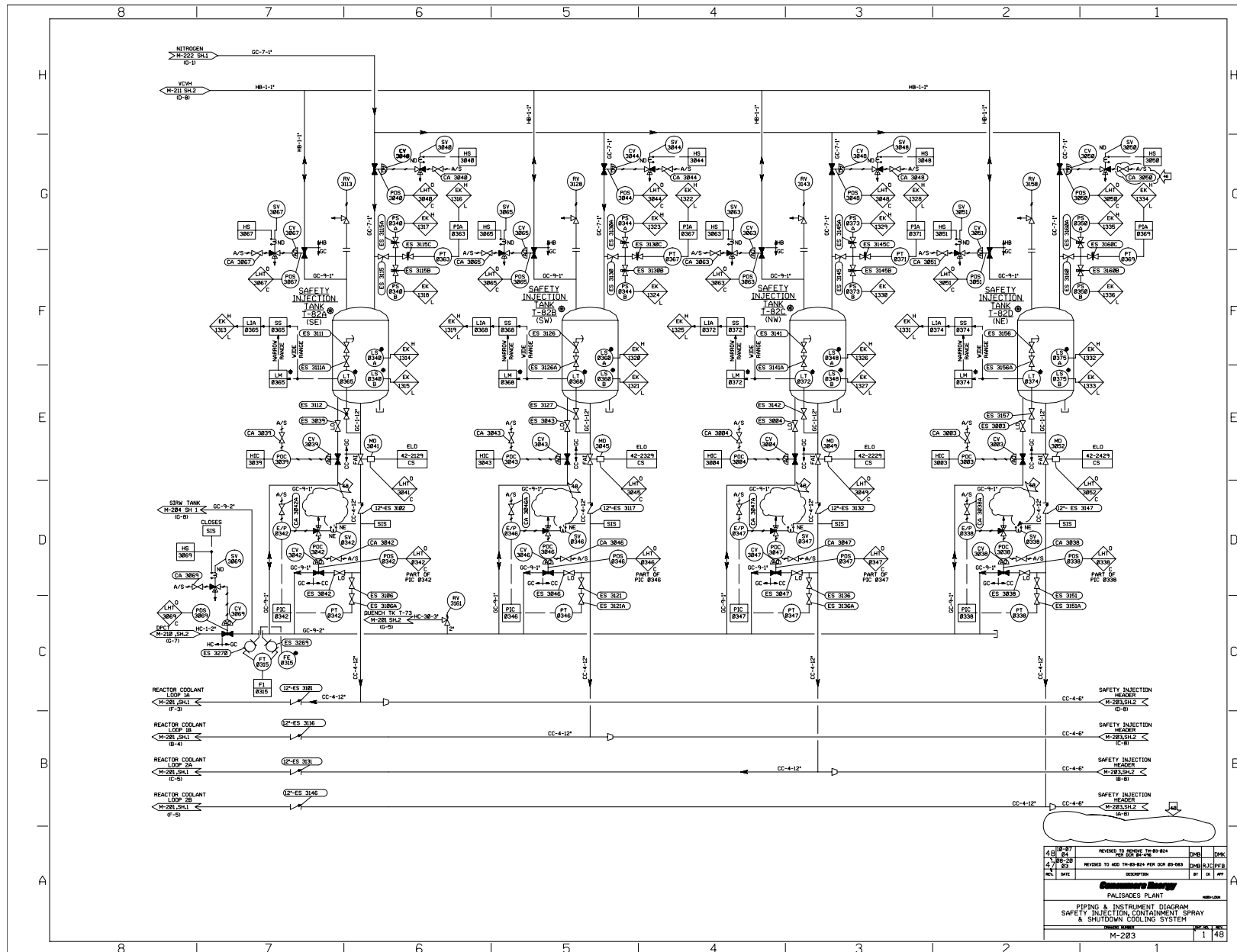


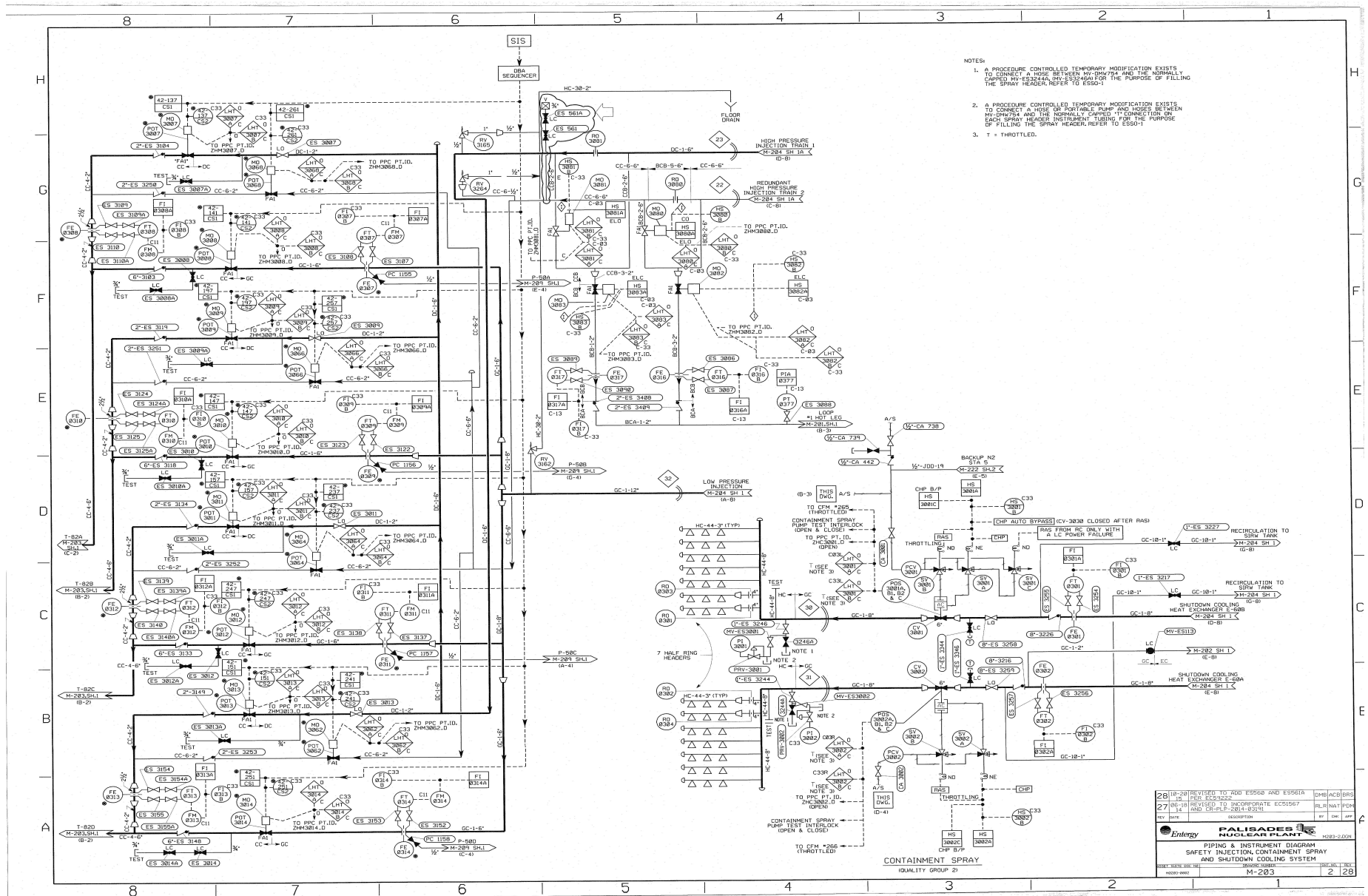
PIPING & INSTRUMENT DIAGRAM
SAFETY INJECTION CONTAINMENT SPRAY AND SHUTDOWN COOLING SYSTEM



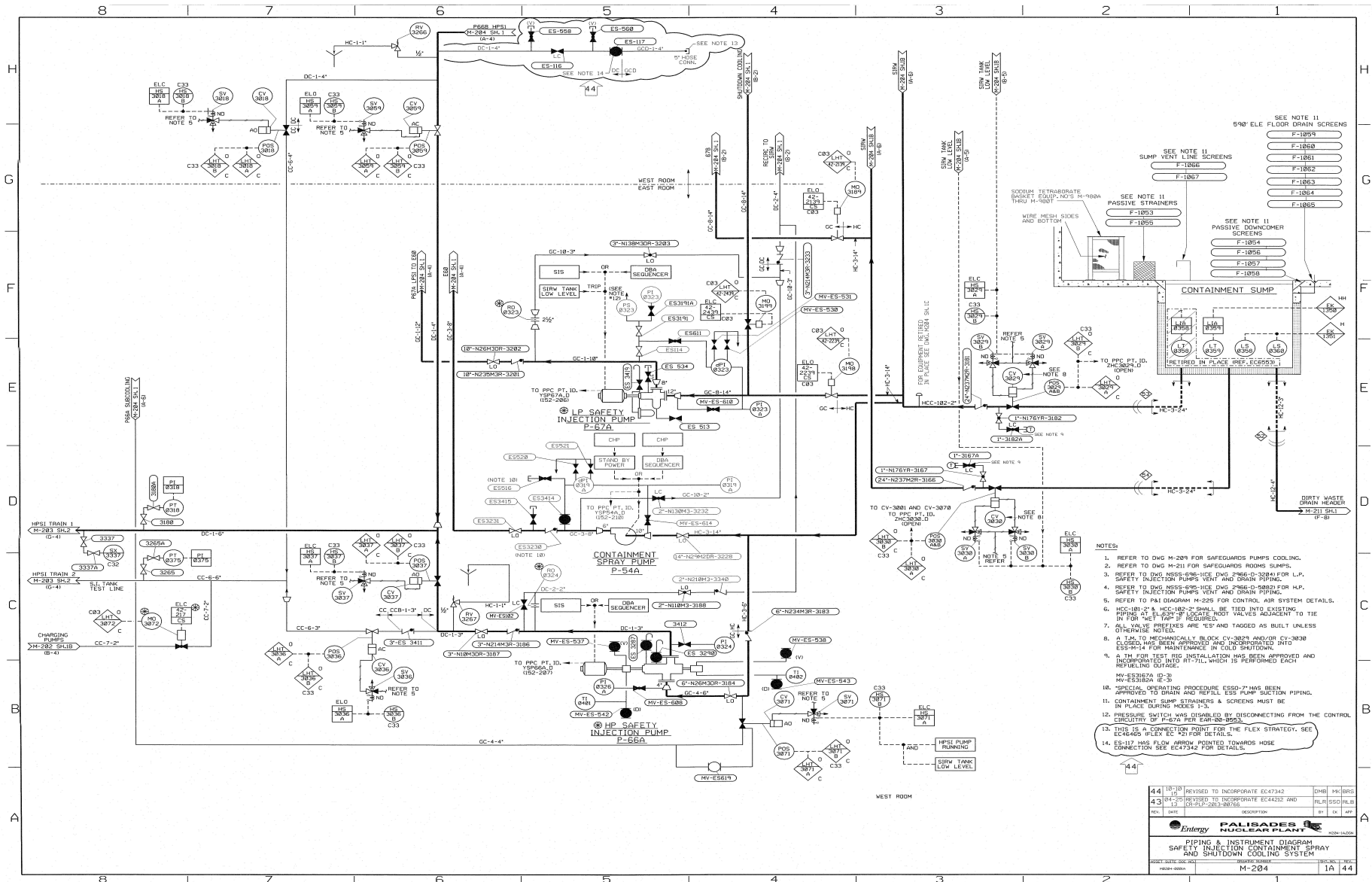
REV. 25	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 24	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 23	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 22	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 21	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 20	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 19	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 18	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 17	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 16	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 15	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 14	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 13	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 12	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 11	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 10	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 9	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 8	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 7	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 6	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 5	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 4	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 3	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 2	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86
REV. 1	REVISED TO ADD TO 89-004 PER 89-004	3/86	3/86

General Energy
 PALISADES PLANT
 PIPING & INSTRUMENT DIAGRAM
 SAFETY INJECTION CONTAINMENT SPRAY
 & SHUTDOWN COOLING SYSTEM
 DRAWING NUMBER: M-283
 SHEET: 1 OF 1

PIPING & INSTRUMENT DIAGRAM
SAFETY INJECTION CONTAINMENT SPRAY AND SHUTDOWN COOLING SYSTEM



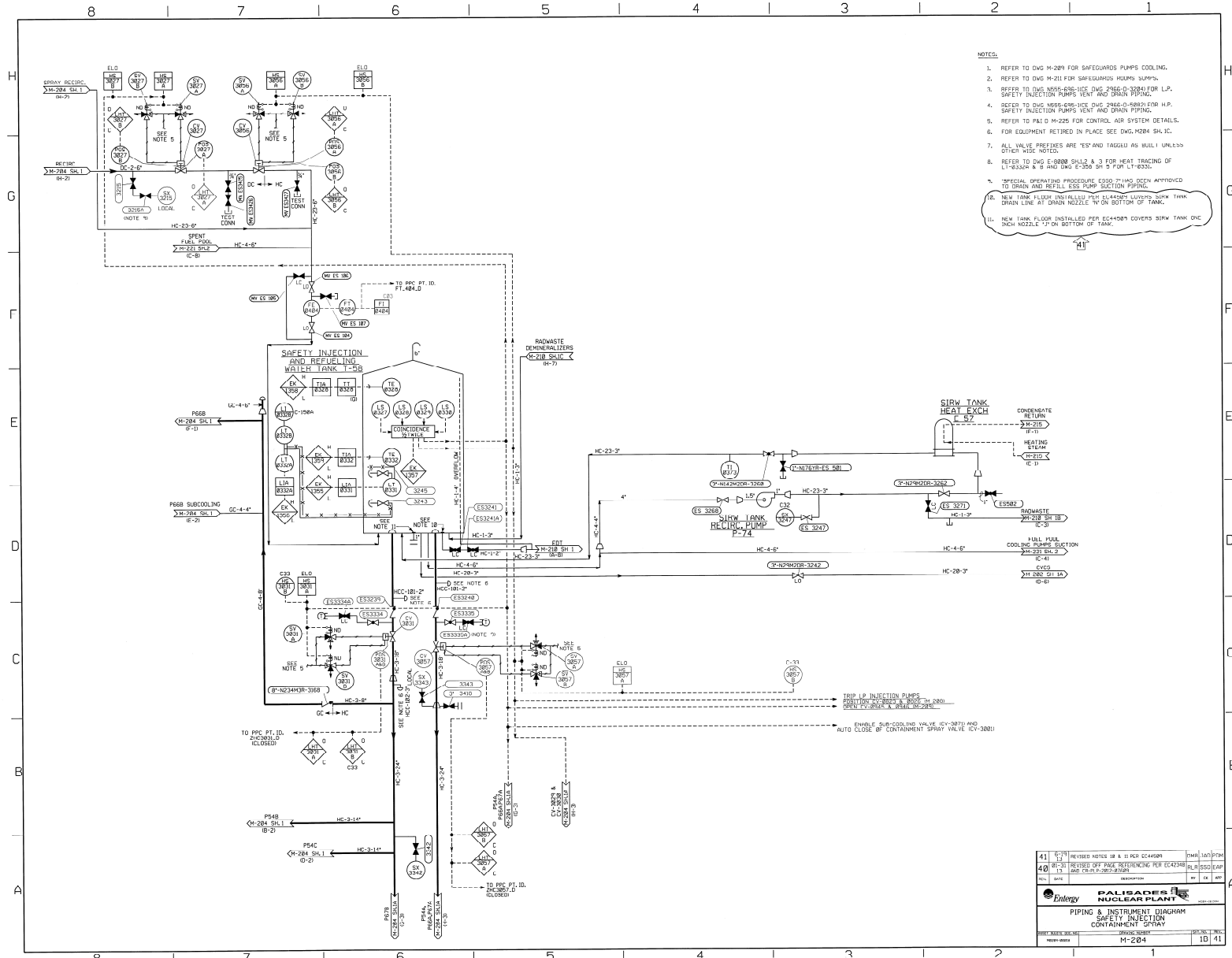
PIPING & INSTRUMENT DIAGRAM
SAFETY INJECTION CONTAINMENT SPRAY AND SHUTDOWN COOLING SYSTEM



- NOTES:
1. REFER TO DWG M-209 FOR SAFEGUARDS PUMPS COOLING.
 2. REFER TO DWG M-211 FOR SAFEGUARDS ROOMS SLUMPS.
 3. REFER TO DWG M-210 FOR SAFEGUARDS PUMPS VENT AND DRAIN PIPING.
 4. REFER TO DWG M-208 FOR SAFEGUARDS PUMPS VENT AND DRAIN PIPING.
 5. REFER TO PAI DIAGRAM M-220 FOR CONTROL AIR SYSTEM DETAILS.
 6. HCC-102-2* HCC-102-2* SHALL BE TIED INTO EXISTING PIPING AT 102-2* TO LOCATE ROOT VALVES ADJACENT TO THE IN FOR NET 1* IF REQUIRED.
 7. ALL VALVE PREFIXES ARE 'ES' AND TAGGED AS BUILT UNLESS OTHERWISE NOTED.
 8. A LIM TO MECHANICALLY BLOCK CV-3024 AND/OR CV-3030 (ES-514) HAS BEEN APPROVED AND INCORPORATED INTO ES-514 FOR MAINTENANCE IN COLLOCATION.
 9. A 1M FOR TEST RID INSTALLATION HAS BEEN APPROVED AND INCLUDING OUTLINE.
 10. MV-ES-538 (E-3)
 11. SPECIAL OPERATING PROCEDURE ESSO-7 HAS BEEN APPROVED TO DRAIN AND REFILL ESS PUMP SECTION PIPING.
 12. CONTAINMENT SUMP STRAINERS & SCREENS MUST BE IN PLACE DURING MEXES 3-3.
 13. THIS IS A CONNECTION POINT FOR THE FLEX STRATEGY. SEE EC48405 FLEX EC #2 FOR DETAILS.
 14. ES-117 HAS FLOW ARROW POINTED TOWARDS HOSE CONNECTION SEE EC47342 FOR DETAILS.

44	10-19	REVISED TO INCORPORATE EC47342	DHB	HL/BOG
43	01-20	REVISED TO INCORPORATE EC44132 AND EC44133	RLR	SSC/PLB
REV	DATE	DESCRIPTION	BY	CHK

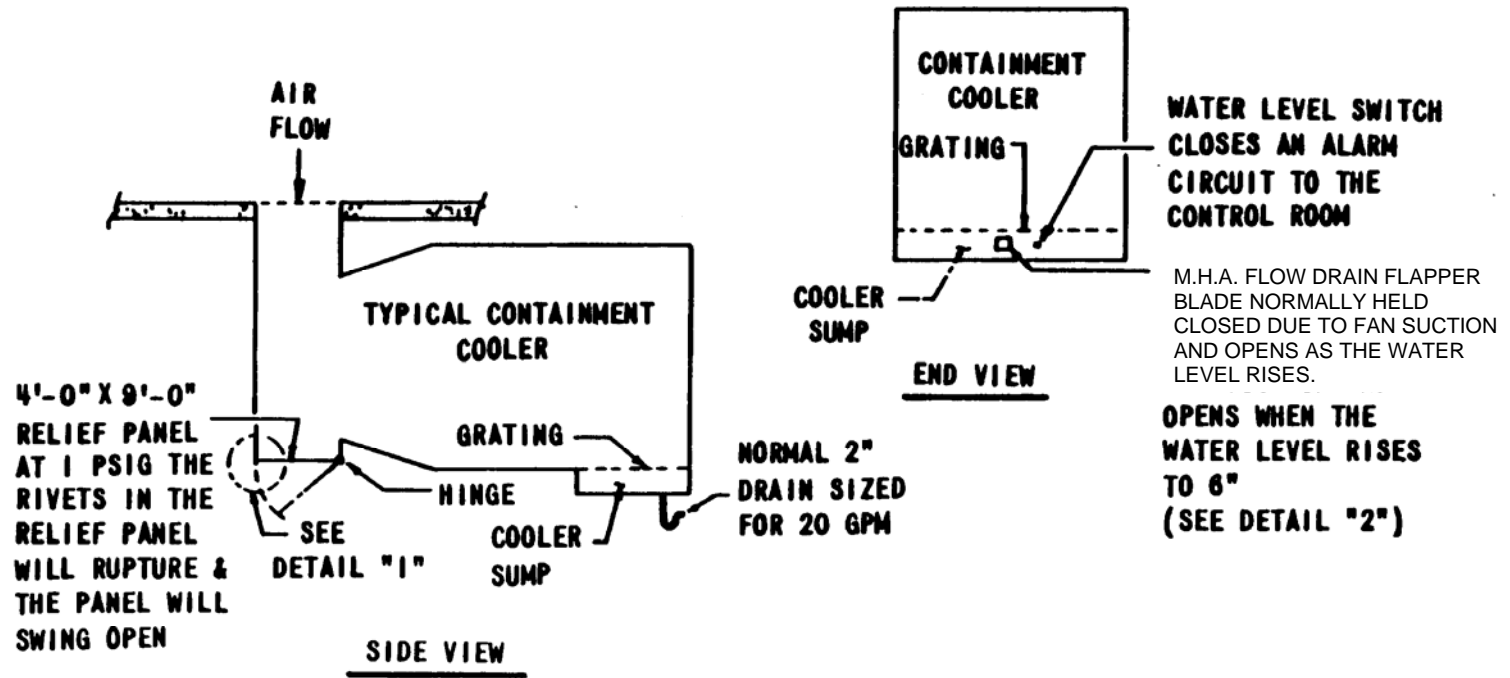
PIPING & INSTRUMENT DIAGRAM
SAFETY INJECTION CONTAINMENT SPRAY



- NOTES:
1. REFER TO DWG M-209 FOR SAFEGUARDS PUMPS COOLING.
 2. REFER TO DWG M-211 FOR SAFEGUARDS HDQMS SUPPLYS.
 3. REFER TO DWG M-205-636-1102 DWG 2366-D-32801 FOR L.P. SAFETY INJECTION PUMPS VENT AND DRAIN PIPING.
 4. REFER TO DWG M-205-636-1102 DWG 2366-D-32801 FOR H.P. SAFETY INJECTION PUMPS VENT AND DRAIN PIPING.
 5. REFER TO PAI D M-225 FOR CONTROL AIR SYSTEM DETAILS.
 6. FOR EQUIPMENT RETIRED IN PLACE SEE DWG M-204 SH-1C.
 7. ALL VALVE PRETTIES ARE "E" AND TAGGED AS BUILT UNLESS OTHER WISE NOTED.
 8. REFER TO DWG E-0808 SH-1A & 3 FOR HEAT TRACING OF LI-6338A & B AND DWG E-2308 SH-2 FOR LI-6333.
 9. SPECIAL OPERATING PROCEDURE E330-7 HAS BEEN APPROVED TO DRAIN AND REFILL LESS PUMP SUCTION PIPING.
 10. NEW TANK FLOOR INSTALLED PER EC44089 LUMPS SIRW TANK BRON LINE AT DRAIN NOZZLE TO ON BOTTOM OF TANK.
 11. NEW TANK FLOOR INSTALLED PER EC44089 COVERS SIRW TANK DNG INCH NOZZLE 1" ON BOTTOM OF TANK.

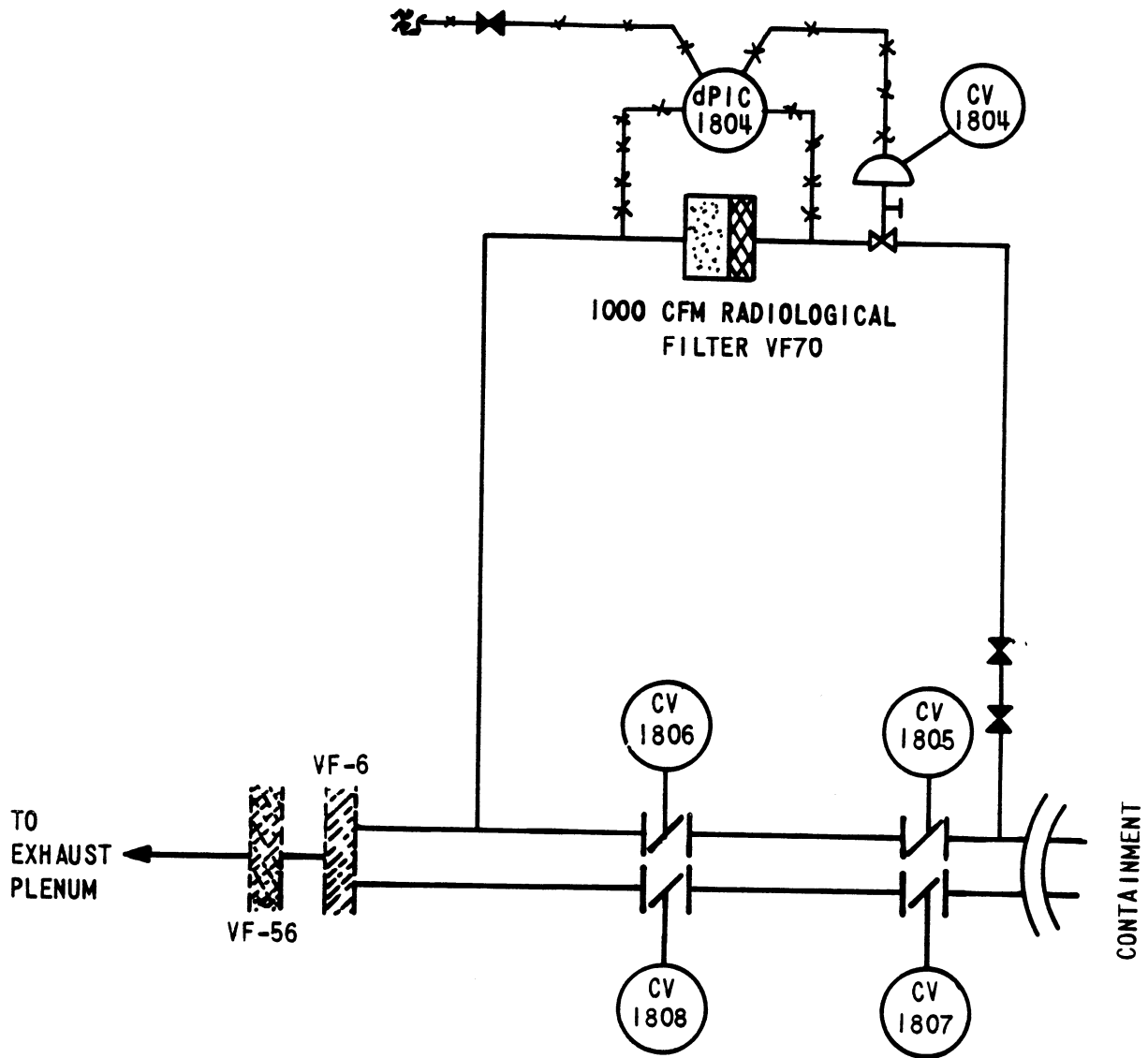
41	07-29	REVISED NOTES 08 & 11 PER EC44580	TRAP	10/17/20
40	07-28	REVISED OFF PAGE REFERENCING PER EC42848	RLP	10/17/20
	13	ADD EC44580 & EC44589	RLP	10/17/20
			BY	10/17/20
PIPING & INSTRUMENT DIAGRAM SAFETY INJECTION CONTAINMENT SPRAY				
REV. NO.	DATE	DESCRIPTION	BY	DATE
M-204				41

CONTAINMENT AIR COOLERS RELIEF PANEL & CONDENSATE DRAIN

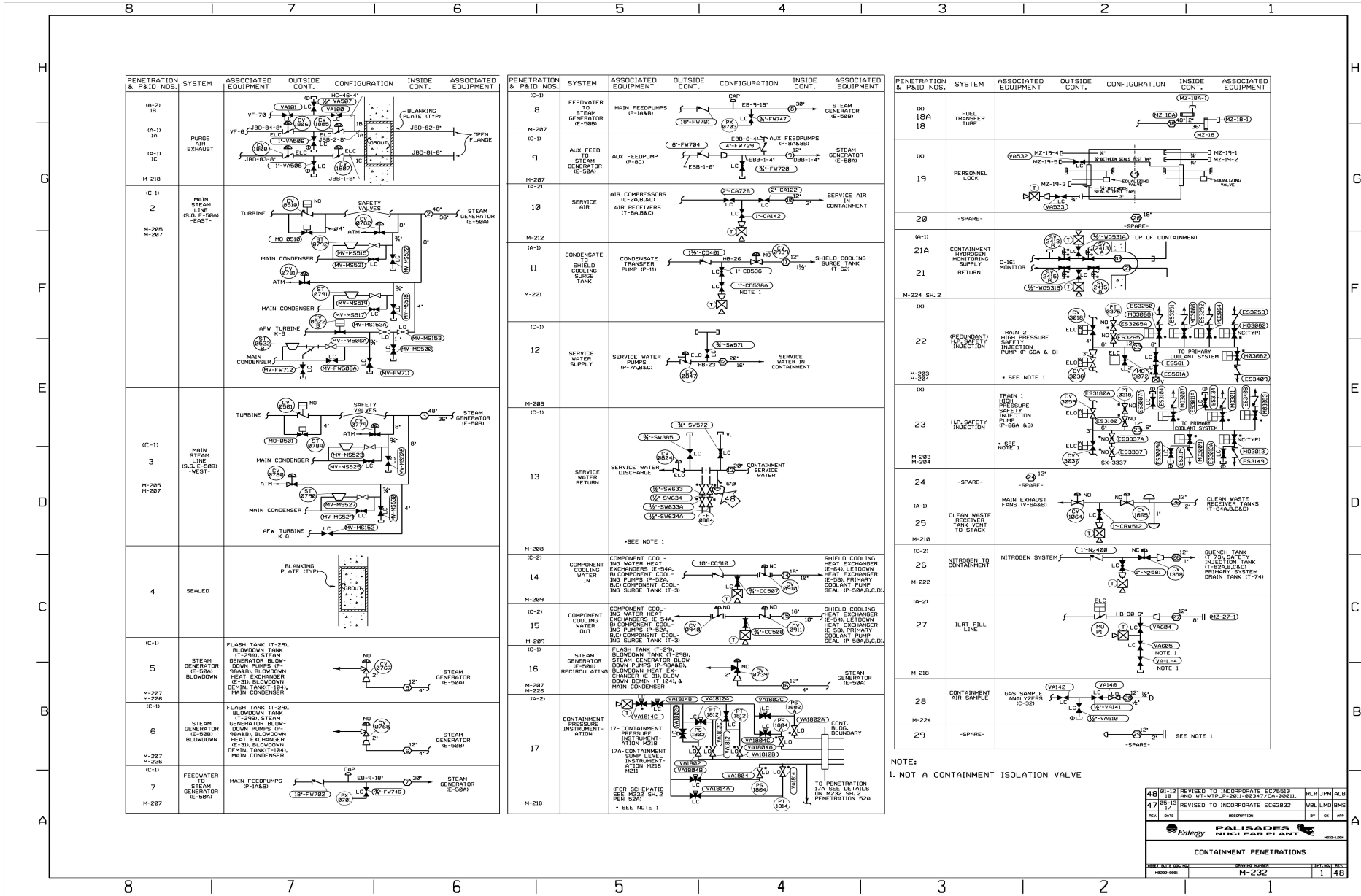


(TYPICAL - SEE PLANT DRAWING M-123 AND M-124 FOR ACTUAL "AS-BUILT" FOR EACH PANEL.)

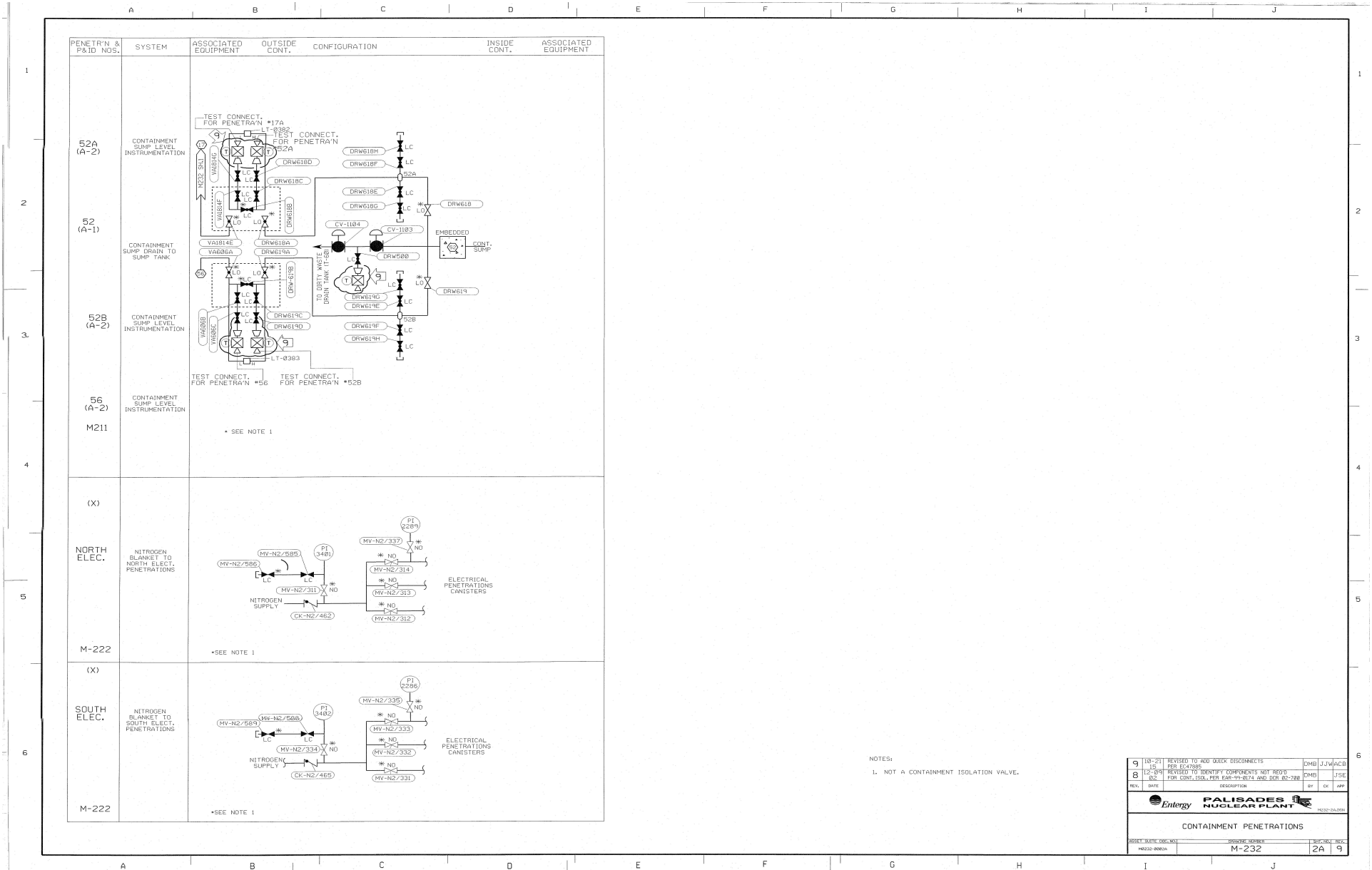
CONTAINMENT VENT FILTER



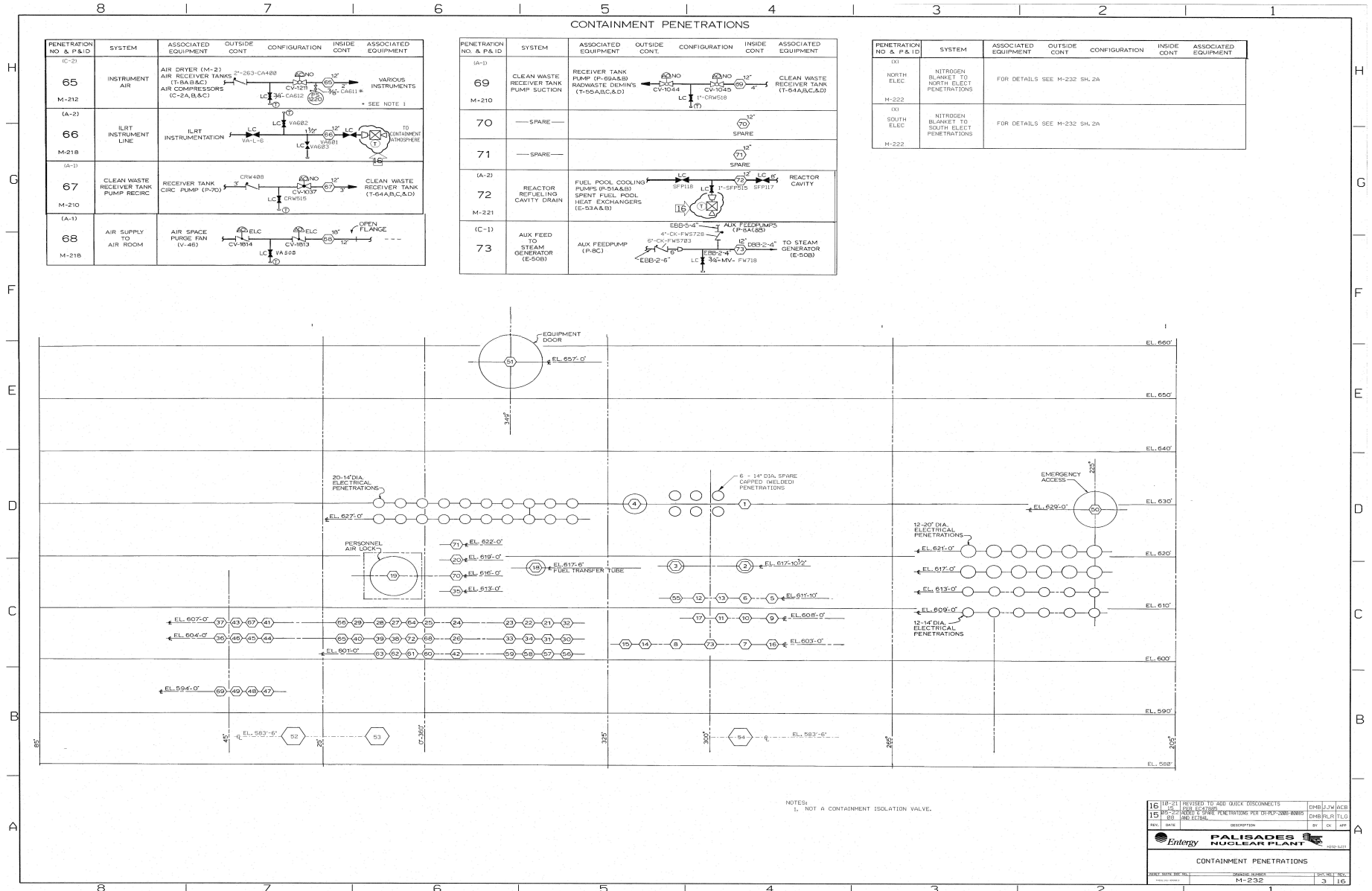
CONTAINMENT PENETRATIONS



CONTAINMENT PENETRATIONS



CONTAINMENT PENETRATIONS

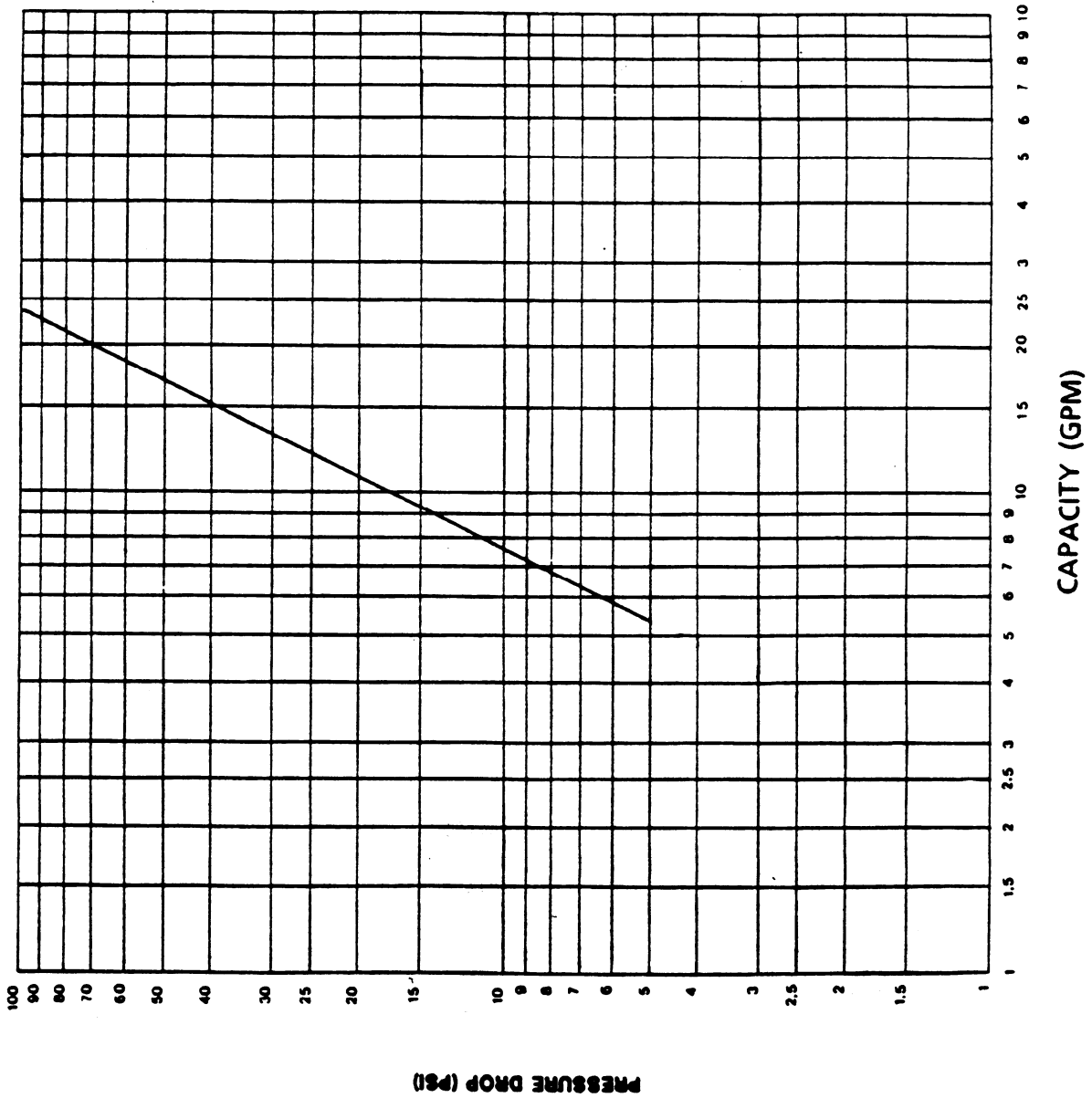


REACTOR CAVITY FLOODING SYSTEM

Portions of this page have been
redacted per 10 CFR 2.390(d)(1).

CAPACITY CURVE 1713A NOZZLE

R-5334



NOTE:
MINIMUM FLOW IS 5.5 (GPM)

FLOW DATA

Pressure Drop (PSI)	Flow (GPM)
10	7.6
20	10.7
30	13.3
40	15.2
50	17.0