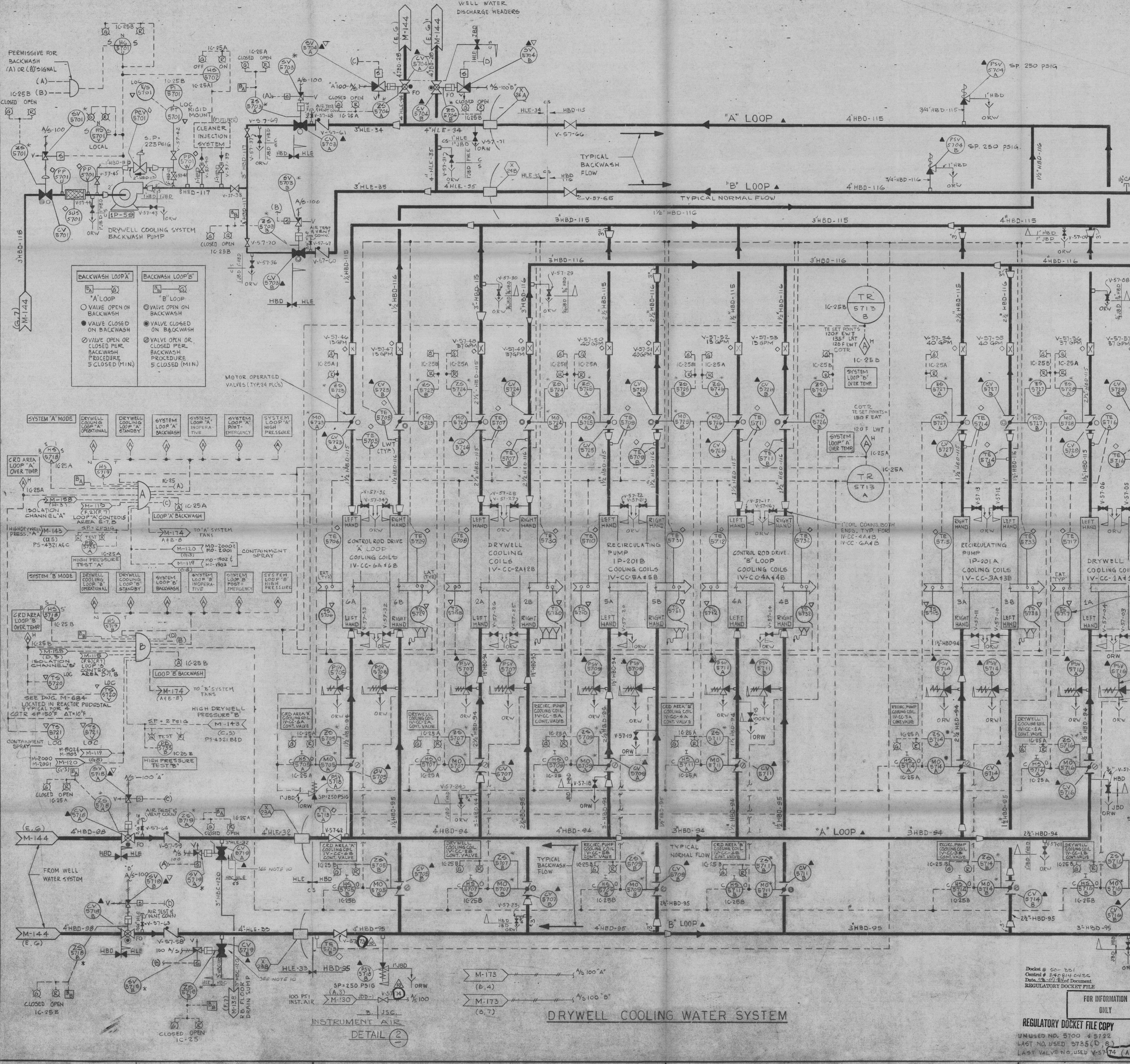


- NOTES:
- 1) FOR SYMBOLS & ABBREVIATIONS NOT SHOWN ON THIS DRAWING SEE M-173
 - 2) OVER TEMPERATURE, HIGH PRESSURE OR ISOLATION SIGNAL, ALL VALVES POSITION TO FULL OPEN EXCEPT THOSE IN LOCKOUT. BACKWASH STOPS IF IN OPERATION.
 - 3) HANDSWITCH (HS) LEGEND
 C/O - CLOSED - AUTO - OPEN
 C/AO - OFF - AUTO - ON
 L/C - LOCK - BACKWASH - STANDBY - ON
 C/I - CLOSE - INOPERATIVE - OPEN
 S/N - STOP - NEUTRAL - START
 4) START STANDBY MOTOR ON HIGH DRYWELL PRESSURE.
 - 5) BUTTER FLY VALVE MOTOR ACTUATOR SHALL BE INSTALLED W/ HORIZONTAL SHAFT.
 - 6) SEISMIC CLASS 1E Q.A. - ALL COOLING WATER PIPING INSIDE DRYWELL IS SEISMIC CLASS I.
 - 7) * FURNISHED WITH ASSOCIATED EQUIPMENT.
 - 8) CONTROL SUPPLIED BY HVAC INST. CONTRACTOR.
 - 9) O SYMBOL OF SIGNATES FIELD PURCHASED ITEMS.
 - 10) VALVE OPEN ON BACKWASH IF HS IS IN OPEN POSITION.



BACKWASH LOOP 'A'	BACKWASH LOOP 'B'
○ VALVE OPEN ON BACKWASH	○ VALVE OPEN ON BACKWASH
● VALVE CLOSED ON BACKWASH	● VALVE CLOSED ON BACKWASH
○ VALVE OPEN OR CLOSED PER BACKWASH PROCEDURE 5 CLOSED (MIN)	○ VALVE OPEN OR CLOSED PER BACKWASH PROCEDURE 5 CLOSED (MIN)

- COIL VENTS
3/4" HBD-116/115 (TYP. 12 PLACES)
- 1/2" JBD-189 DUSTWORK DRAIN TO FLOOR TRAP & DEEP TRAP (TYP. 6 PLACES)
- SET POINT 150 F (TYP. 6 PLACES - FAT) COTR
- SET POINT 155 F (TYP. 6 PLACES - LAT) COTR
- COIL DRAINS
1" HBD-94/95 (TYP. 12 PLACES)
- 1/2" JBD-189 DUSTWORK DRAIN TO FLOOR TRAP & DEEP TRAP (TYP. 6 PLACES)
- (TYPICAL 12 PLACES)
SET POINT 250 PSIG
- 3/4" HBD-94/95 (TYP. 12 PLACES)
- 1" JBD-189 (TYP. 12 PLACES)

NO.	DATE	REVISIONS	BY	CHKD	APP'D
1	10/15/82	REV. PER DDC-487	...	...	...
2	11/10/82	REV. PER DDC-507	...	...	...
3	1/14/83	REVISED PER DDC-2388 PER POINT AS NOTED ON REV. SHEET	...	...	...
4	2/11/83	REVISED AS NOTED ON REVISION SHEET	...	...	...
5	3/11/83	REVISED AS NOTED ON REVISION SHEET	...	...	...
6	4/1/83	REVISED AS NOTED ON REVISION SHEET	...	...	...
7	5/1/83	FINAL DESIGN REVIEW	...	...	...
8	6/1/83	REVISED PIPE SIZES AS SHOWN ON REVISION SHEET	...	...	...
9	7/1/83	REVISED AS NOTED ON REVISION SHEET	...	...	...
10	8/1/83	ISSUED FOR CONSTRUCTION	...	...	...

BECHTEL
SAN FRANCISCO

DUANE ARNOLD ENERGY CENTER - UNIT NO 1
IOWA ELECTRIC LIGHT AND POWER COMPANY
CEDAR RAPIDS, IOWA

P & ID
DRYWELL COOLING WATER SYSTEM

JOB No. **7884** DRAWING No. **M-157** REV. **10**

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FOR INFORMATION ONLY
REGULATORY DOCKET FILE COPY
UNISSUED NO. 5700 45722
LAST NO. USED 5725 (D. 8)
LAST VALVE NO. USED V-5774 (A. 6)

DRYWELL COOLING WATER SYSTEM

DETAIL 2