

- NOTES**
1. DETELED.
  2. SPRAY ADDITIVE PUMP TO BE INSTALLED IN 1/2" HIGH TEST.
  3. SPRAY ADDITIVE PUMP TO BE INSTALLED IN 1/2" HIGH TEST.
  4. INSTRUMENTS TO BE INSTALLED IN 1/2" HIGH TEST.
  5. INSTRUMENTS TO BE INSTALLED IN 1/2" HIGH TEST.
  6. INSTRUMENTS TO BE INSTALLED IN 1/2" HIGH TEST.

USAR FIG. 6.2-2-1-00  
**ESSENTIAL DRAWING**  
 WOLF GREEN ENGINEERING  
 PIPING AND INSTRUMENTATION  
 DIAGRAM SYSTEM  
 M-12EN01



TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
1	A	4737	EL. 61.65 ± 0.4	-18					
2	A	4738	EL. 61.65 ± 0.4	-18					
3	A	4739	EL. 61.65 ± 0.4	-18					
4	A	4740	EL. 61.65 ± 0.4	-18					
5	A	4741	EL. 61.65 ± 0.4	-18					
6	A	4742	EL. 61.65 ± 0.4	-18					
7	A	4743	EL. 61.65 ± 0.4	-18					
8	A	4744	EL. 61.65 ± 0.4	-18					
9	A	4745	EL. 61.65 ± 0.4	-18					
10	A	4746	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
11	A	4747	EL. 61.65 ± 0.4	-18					
12	A	4748	EL. 61.65 ± 0.4	-18					
13	A	4749	EL. 61.65 ± 0.4	-18					
14	A	4750	EL. 61.65 ± 0.4	-18					
15	A	4751	EL. 61.65 ± 0.4	-18					
16	A	4752	EL. 61.65 ± 0.4	-18					
17	A	4753	EL. 61.65 ± 0.4	-18					
18	A	4754	EL. 61.65 ± 0.4	-18					
19	A	4755	EL. 61.65 ± 0.4	-18					
20	A	4756	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
21	A	4757	EL. 61.65 ± 0.4	-18					
22	A	4758	EL. 61.65 ± 0.4	-18					
23	A	4759	EL. 61.65 ± 0.4	-18					
24	A	4760	EL. 61.65 ± 0.4	-18					
25	A	4761	EL. 61.65 ± 0.4	-18					
26	A	4762	EL. 61.65 ± 0.4	-18					
27	A	4763	EL. 61.65 ± 0.4	-18					
28	A	4764	EL. 61.65 ± 0.4	-18					
29	A	4765	EL. 61.65 ± 0.4	-18					
30	A	4766	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
31	A	4767	EL. 61.65 ± 0.4	-18					
32	A	4768	EL. 61.65 ± 0.4	-18					
33	A	4769	EL. 61.65 ± 0.4	-18					
34	A	4770	EL. 61.65 ± 0.4	-18					
35	A	4771	EL. 61.65 ± 0.4	-18					
36	A	4772	EL. 61.65 ± 0.4	-18					
37	A	4773	EL. 61.65 ± 0.4	-18					
38	A	4774	EL. 61.65 ± 0.4	-18					
39	A	4775	EL. 61.65 ± 0.4	-18					
40	A	4776	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
41	A	4777	EL. 61.65 ± 0.4	-18					
42	A	4778	EL. 61.65 ± 0.4	-18					
43	A	4779	EL. 61.65 ± 0.4	-18					
44	A	4780	EL. 61.65 ± 0.4	-18					
45	A	4781	EL. 61.65 ± 0.4	-18					
46	A	4782	EL. 61.65 ± 0.4	-18					
47	A	4783	EL. 61.65 ± 0.4	-18					
48	A	4784	EL. 61.65 ± 0.4	-18					
49	A	4785	EL. 61.65 ± 0.4	-18					
50	A	4786	EL. 61.65 ± 0.4	-18					

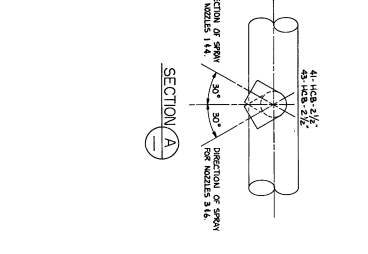
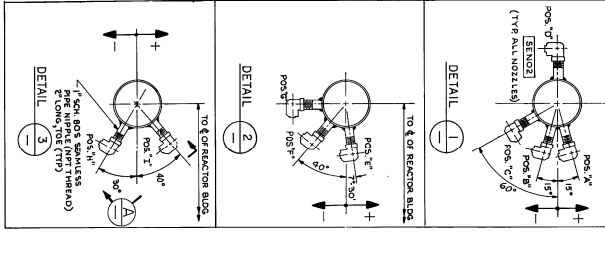
TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
51	A	4787	EL. 61.65 ± 0.4	-18					
52	A	4788	EL. 61.65 ± 0.4	-18					
53	A	4789	EL. 61.65 ± 0.4	-18					
54	A	4790	EL. 61.65 ± 0.4	-18					
55	A	4791	EL. 61.65 ± 0.4	-18					
56	A	4792	EL. 61.65 ± 0.4	-18					
57	A	4793	EL. 61.65 ± 0.4	-18					
58	A	4794	EL. 61.65 ± 0.4	-18					
59	A	4795	EL. 61.65 ± 0.4	-18					
60	A	4796	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
61	A	4797	EL. 61.65 ± 0.4	-18					
62	A	4798	EL. 61.65 ± 0.4	-18					
63	A	4799	EL. 61.65 ± 0.4	-18					
64	A	4800	EL. 61.65 ± 0.4	-18					
65	A	4801	EL. 61.65 ± 0.4	-18					
66	A	4802	EL. 61.65 ± 0.4	-18					
67	A	4803	EL. 61.65 ± 0.4	-18					
68	A	4804	EL. 61.65 ± 0.4	-18					
69	A	4805	EL. 61.65 ± 0.4	-18					
70	A	4806	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
71	A	4807	EL. 61.65 ± 0.4	-18					
72	A	4808	EL. 61.65 ± 0.4	-18					
73	A	4809	EL. 61.65 ± 0.4	-18					
74	A	4810	EL. 61.65 ± 0.4	-18					
75	A	4811	EL. 61.65 ± 0.4	-18					
76	A	4812	EL. 61.65 ± 0.4	-18					
77	A	4813	EL. 61.65 ± 0.4	-18					
78	A	4814	EL. 61.65 ± 0.4	-18					
79	A	4815	EL. 61.65 ± 0.4	-18					
80	A	4816	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
81	A	4817	EL. 61.65 ± 0.4	-18					
82	A	4818	EL. 61.65 ± 0.4	-18					
83	A	4819	EL. 61.65 ± 0.4	-18					
84	A	4820	EL. 61.65 ± 0.4	-18					
85	A	4821	EL. 61.65 ± 0.4	-18					
86	A	4822	EL. 61.65 ± 0.4	-18					
87	A	4823	EL. 61.65 ± 0.4	-18					
88	A	4824	EL. 61.65 ± 0.4	-18					
89	A	4825	EL. 61.65 ± 0.4	-18					
90	A	4826	EL. 61.65 ± 0.4	-18					

TABLE FOR PIPE NOZZLES									
NO	DESCRIPTION	AZ	EL. TOP	NOTE					
91	A	4827	EL. 61.65 ± 0.4	-18					
92	A	4828	EL. 61.65 ± 0.4	-18					
93	A	4829	EL. 61.65 ± 0.4	-18					
94	A	4830	EL. 61.65 ± 0.4	-18					
95	A	4831	EL. 61.65 ± 0.4	-18					
96	A	4832	EL. 61.65 ± 0.4	-18					
97	A	4833	EL. 61.65 ± 0.4	-18					
98	A	4834	EL. 61.65 ± 0.4	-18					
99	A	4835	EL. 61.65 ± 0.4	-18					
100	A	4836	EL. 61.65 ± 0.4	-18					



NO	DESCRIPTION	AZ	EL. TOP	NOTE
101	A	4837	EL. 61.65 ± 0.4	-18
102	A	4838	EL. 61.65 ± 0.4	-18
103	A	4839	EL. 61.65 ± 0.4	-18
104	A	4840	EL. 61.65 ± 0.4	-18
105	A	4841	EL. 61.65 ± 0.4	-18
106	A	4842	EL. 61.65 ± 0.4	-18
107	A	4843	EL. 61.65 ± 0.4	-18
108	A	4844	EL. 61.65 ± 0.4	-18
109	A	4845	EL. 61.65 ± 0.4	-18
110	A	4846	EL. 61.65 ± 0.4	-18

REVIEW LEVEL 4

**BECHTEL**  
 10466 M-13EN04  
 REACTOR BUILDING A&B TRAINS  
 UNIT 1/2

DRAWN APPROVED TO SCALE  
 2444 E SIZE  
 A B C D E F G H

**NOTES:**  
 1 FOR GENERAL UNITS AND REFERENCES SEE DWG. K-93011.  
 2 WORK THIS DRAWING WITH M-13EN03-A IN CONJUNCTION.  
 3 WHEN INSTALLING CONTAINMENT SPRAY NOZZLES, NOZZLE BY HAND UNTIL BOLT IS USING A GREEN MARK FOR ORIENTATION. REQUIRED NOZZLE ORIENTATION IS OBTAINED ONCE LOCATED AND ORIENTATION SHOULD BE MARKED ON THE AND ORIENTATION SHOULD BE MARKED ON THE BACK OF TO DESIGN ORIENTATION AND TACK WELD TWO PLATES TOGETHER. THIS SHALL BE PERMITTED WHEN REPAIRING NOZZLES. AS BUILT ANGLES OF NOZZLES AS COMPARED TO DETAILS 1 & 3, IS IN DEGREES BELOW HORIZONTAL. (VERTICAL IS 0°) ANGLE Dwg. M-13EN03-A, REV. 1.  
 4 FOR ORIGINAL DESIGN LOCATIONS OF SPRAY NOZZLES SEE Dwg. M-13EN03-A, REV. 1.

CONTAINMENT SPRAY SYSTEM  
 REACTOR BUILDING A&B TRAINS  
 UNIT 1/2

DRAWING APPROVED TO SCALE  
 2444 E SIZE  
 A B C D E F G H

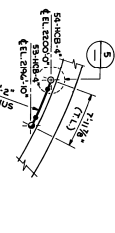
**(D) SONEN31-W**

**VALVE INFORMATION TABLE**

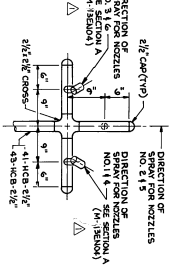
VALVE NO.	CTR OF GRAVITY LOC FOR VALVE & OR	VALVE PRINT NO.	VENDOR	VALVE IDENT.	ITEM NO.
VO8A	X	Y	Z	180	M-221-001 BECHTEL 2.07
VO8B	—	—	—	180	M-221-001 BECHTEL 2.07
VO8C	—	—	—	180	M-221-001 BECHTEL 2.07
VO18	+24 1/2"	-5 3/4"	5 3/4"	405	M-221-001 BECHTEL 2.02
VO19	+19 3/8"	-4 3/8"	4 3/8"	405	M-221-001 BECHTEL 2.02
VO14	+19 3/8"	-4 3/8"	4 3/8"	405	M-221-001 BECHTEL 2.02
VO15	+19 3/8"	-4 3/8"	4 3/8"	405	M-221-001 BECHTEL 2.02
VO17	—	—	—	712	M-221A-102 BECHTEL 2.23
VO81	—	—	—	712	M-221A-102 BECHTEL 2.23



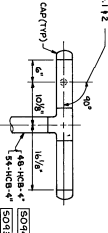
**SECTION C**  
M-JENSONS  
SEE DRAWING M-JENSONS (C-5)



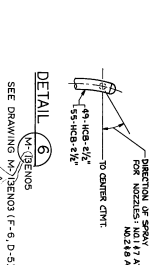
**SECTION D**  
M-JENSONS  
SEE DRAWING M-JENSONS (F-5)



**DETAIL A**  
M-JENSONS  
SEE DRAWING M-JENSONS (D-5)



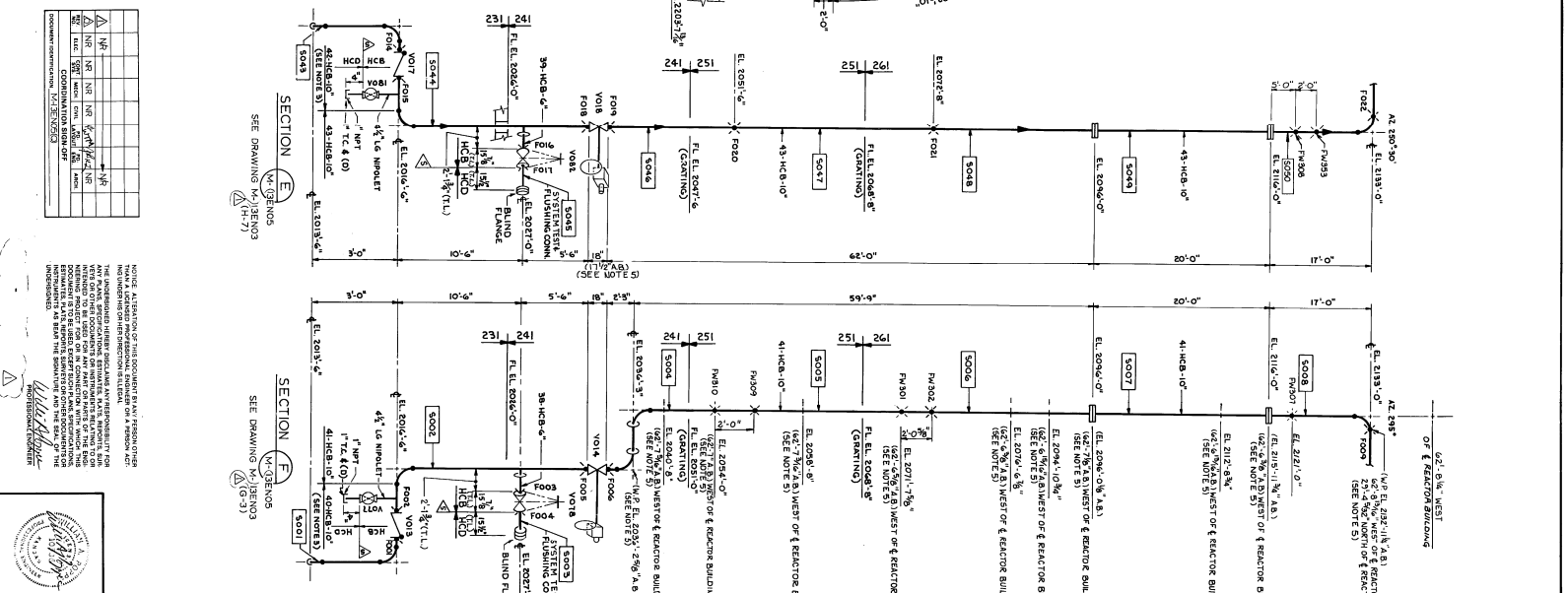
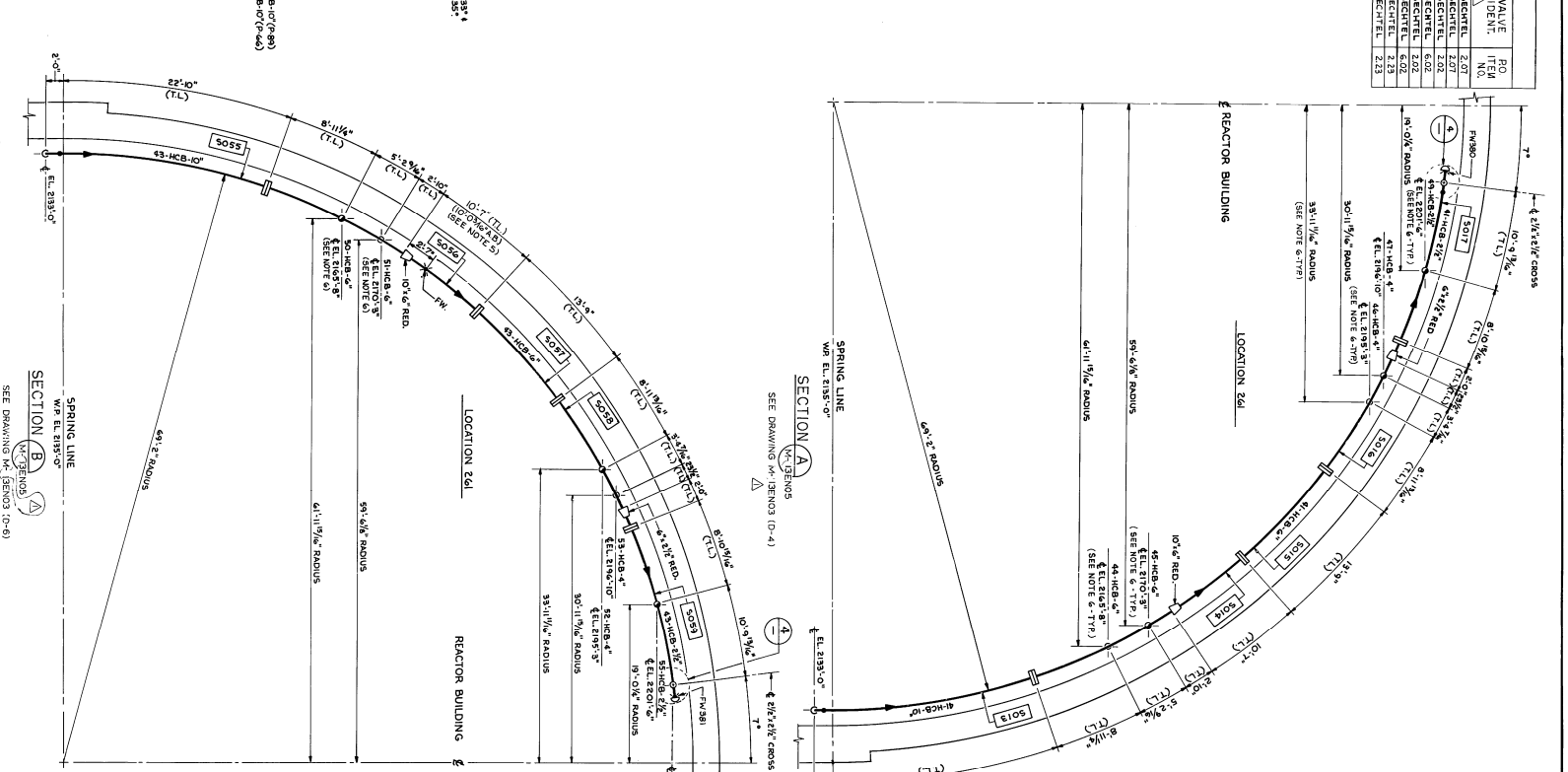
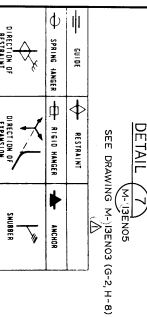
**DETAIL B**  
M-JENSONS  
SEE DRAWING M-JENSONS (C-5, F-5)



**DETAIL C**  
M-JENSONS  
SEE DRAWING M-JENSONS (F-6, D-5)



**DETAIL D**  
M-JENSONS  
SEE DRAWING M-JENSONS (G-2, H-8)



**NOTES:**

- FOR GENERAL NOTES AND REFERENCES SEE DRAWING M-13801.
- WORK THIS DRAWING WITH DRAWING M-13803 AND M-13804.
- LINE NUMBERS 40-HB-10" AND 42-HB-10" SHALL BE MICHIGAN 800.
- THIS DRAWING WAS EXEMPTED FROM M-JENSONS AND M-JENSON.
- EXEMPTION DIMENSIONS & TOLERANCES DIMENSIONS (A, B) CONFORM TO ASSOCIATED DIMS THAT ARE WITHIN ALLOWABLE TOLERANCES HAVE NOT BEEN ADJUSTED.
- FOR AS-BUILT ELEVATIONS AND RADI OF SPRAY RINGS, SEE DWG. M-13804 (Q).

**REACTOR BUILDING**

**SECTION A**  
M-JENSONS  
SEE DRAWING M-JENSONS (D-4)

**SECTION B**  
M-JENSONS  
SEE DRAWING M-JENSONS (C-6)

**SECTION C**  
M-JENSONS  
SEE DRAWING M-JENSONS (C-5)

**SECTION D**  
M-JENSONS  
SEE DRAWING M-JENSONS (D-5)

**SECTION E**  
M-JENSONS  
SEE DRAWING M-JENSONS (H-7)

**SECTION F**  
M-JENSONS  
SEE DRAWING M-JENSONS (G-3)

**SECTION G**  
M-JENSONS  
SEE DRAWING M-JENSONS (G-3)

**SECTION H**  
M-JENSONS  
SEE DRAWING M-JENSONS (G-3)

**WALL THICKNESS**

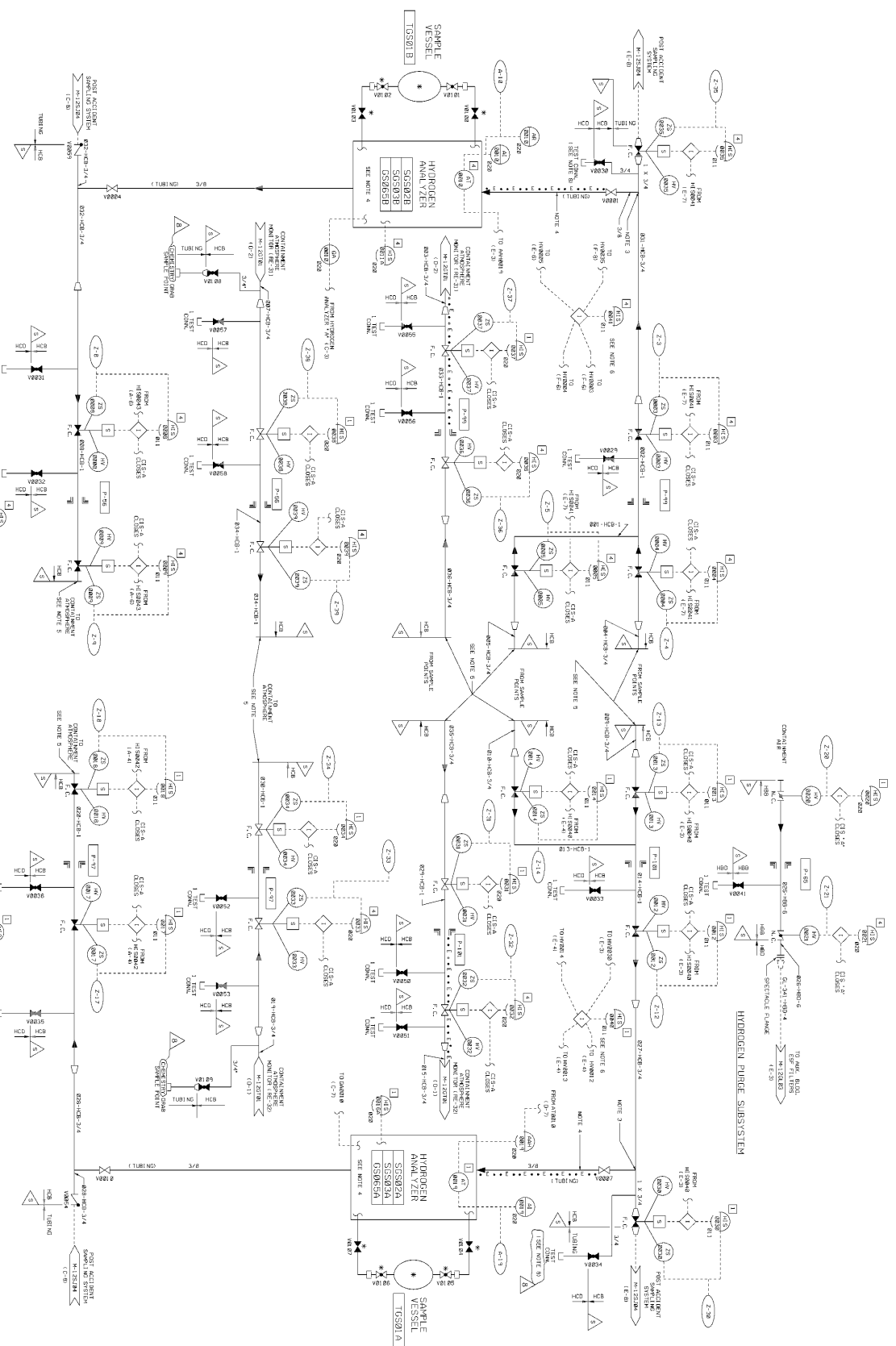
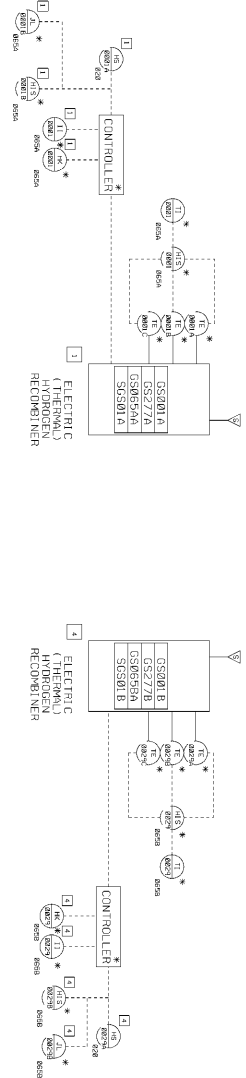
NO.	DATE	REVISIONS	SCALE	NO. DATE	REVISIONS
1	11/11/05	ISSUED FOR CONSTRUCTION	AS SHOWN	1	11/11/05
2	11/11/05	REVISED FOR CONSTRUCTION	AS SHOWN	2	11/11/05
3	11/11/05	REVISED FOR CONSTRUCTION	AS SHOWN	3	11/11/05
4	11/11/05	REVISED FOR CONSTRUCTION	AS SHOWN	4	11/11/05
5	11/11/05	REVISED FOR CONSTRUCTION	AS SHOWN	5	11/11/05

**BECHTEL**  
ENGINEERING, ARCHITECTURE & CONSTRUCTION

**WALL THICKNESS**

**CONTAINMENT SPRAY SYSTEM**  
**REACTOR BUILDING AREA TRAINS**

**10466 M-13805 (Q) 01**

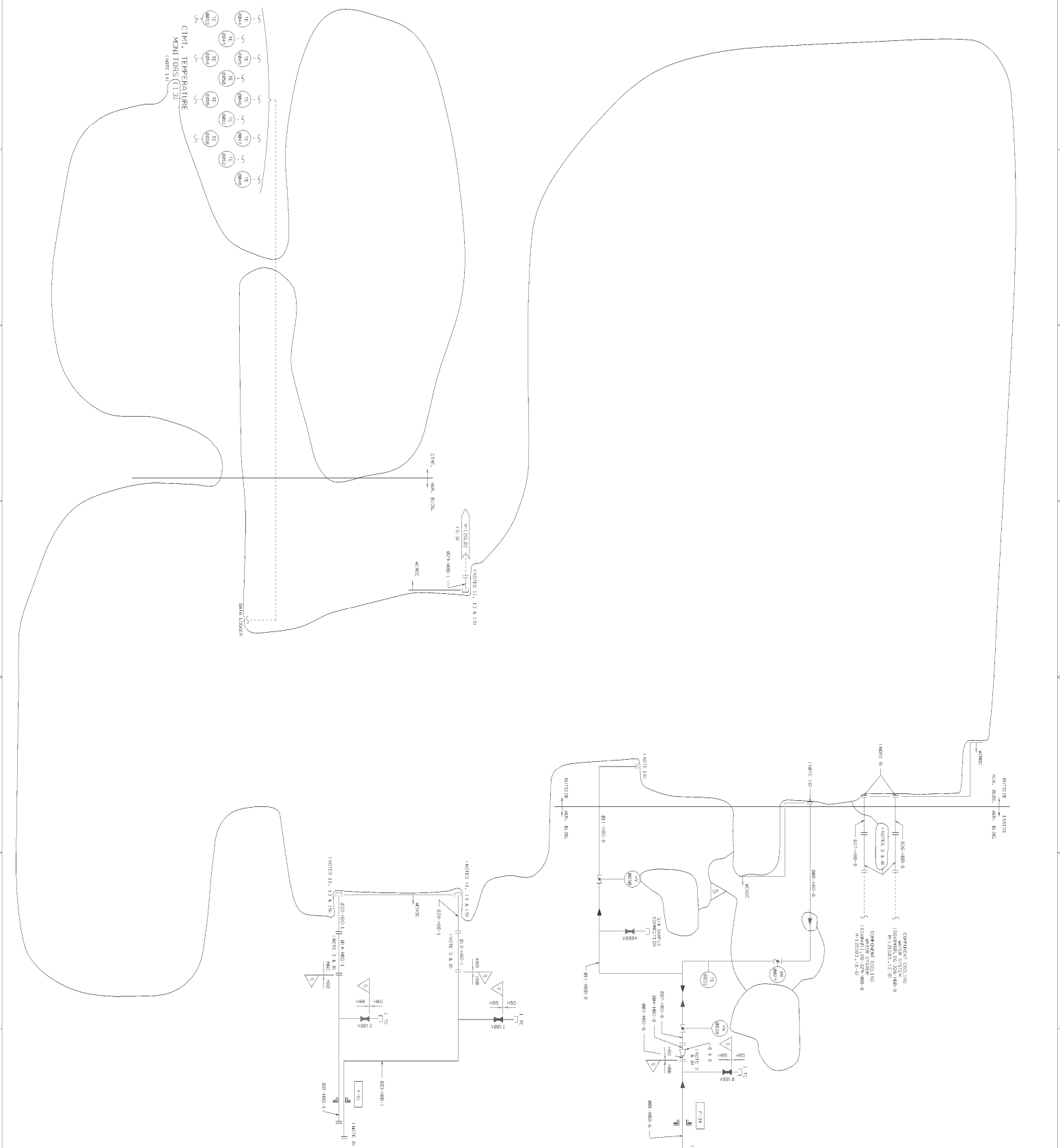


**NOTES**

1. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
2. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
3. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
4. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
5. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
6. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
7. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
8. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
9. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.
10. THE HYDROGEN PURGE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE HYDROGEN PURGE SYSTEM AT A PRESSURE OF 1.5 PSIG.

USAR FIG. 6.2-5-1  
**ESSENTIAL DRAWING**  
 WOLFE ENGINEERING  
 ELECTRONIC APPROVAL  
 PIPING & INSTRUMENTATION  
 DIAGRAM CONTROL HYDROGEN  
 CONTROL SYSTEM  
 DATE: 08/08/01  
 DRAWN BY: M-TCOS01  
 CHECK BY: 108

- NOTES**
1. DELTETS.
  2. DELTETS.
  3. DELTETS.
  4. DELTETS.
  5. DELTETS.
  6. DELTETS.
  7. DELTETS.
  8. DELTETS.
  9. DELTETS.
  10. DELTETS.
  11. DELTETS.
  12. DELTETS.
  13. DELTETS.
  14. DELTETS.
  15. DELTETS.



USARF FILE: 6.2-6-1-00

**ESSENTIAL DRAWING**

WOLF CREEK  
NUTLEY CONSTRUCTION CORPORATION

ELECTRONIC APPROVAL

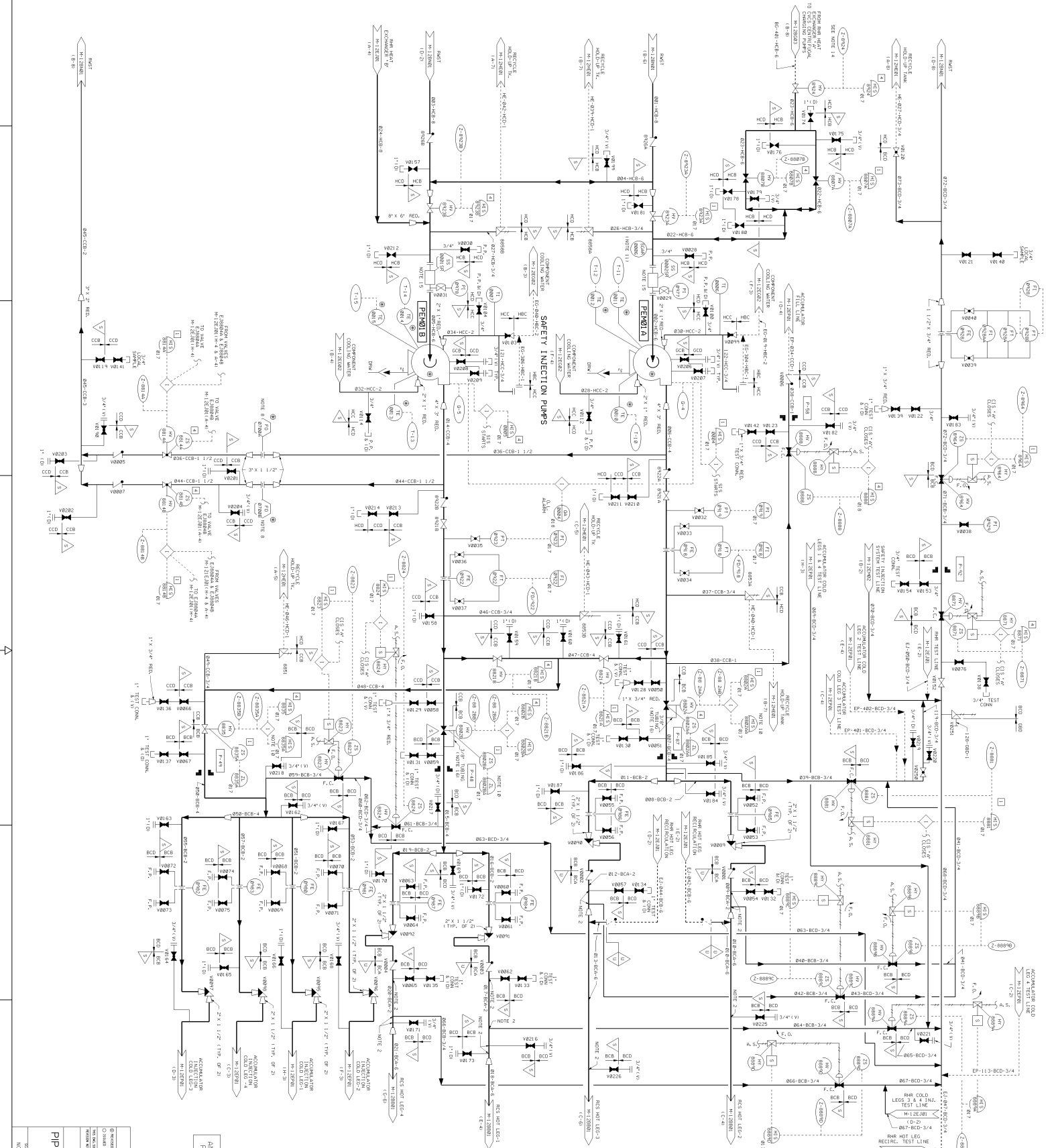
PIPING & INSTRUMENTATION DIAGRAM  
CONTAINMENT INTEGRATED  
LEAK RATE TEST

DATE: 05/01/01

SCALE: AS SHOWN

PROJECT NO: M-129F01





ANY REVISION TO THIS DRAWING MAY  
REQUIRE A REVISION TO HPI-2E003.

**NOTES**

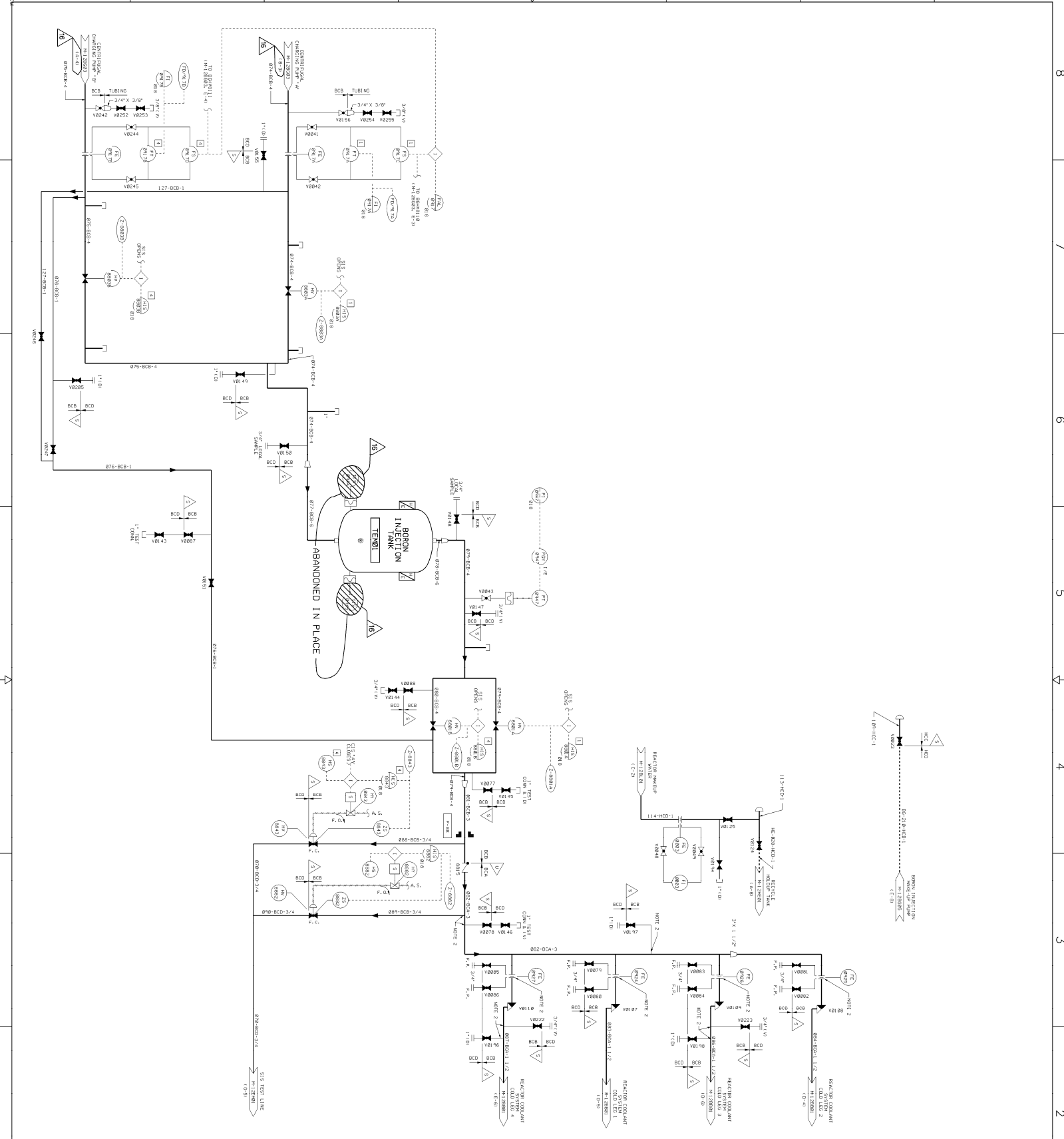
1. DETECTED
2. DETECTED
3. DETECTED
4. DETECTED
5. DETECTED
6. DETECTED
7. DETECTED
8. DETECTED
9. DETECTED
10. DETECTED
11. DETECTED
12. DETECTED
13. DETECTED
14. DETECTED
15. DETECTED
16. DETECTED

USA# FIG. 6.3-1-02

**ESSENTIAL DRAWING**

PIPING & INSTRUMENTATION DIAGRAM  
 HIGH PRESSURE COOLANT INJECTION SYSTEM  
 M-12E001  
 31





USARF FIG. B-2-1-03

### ESSENTIAL DRAWING

1. FOR DESCRIPTIONS & REFERENCES SEE  
 2. FOR DIMENSIONS, MATERIALS, FINISHES AND WEIGHTS  
 3. FOR SPECIFICATIONS, STANDARDS, TESTS, AND QUALITY CONTROL  
 4. FOR SPECIAL REQUIREMENTS, TOLERANCES, AND SURFACE FINISHES  
 5. FOR SPECIAL HANDLING AND STORAGE INSTRUCTIONS

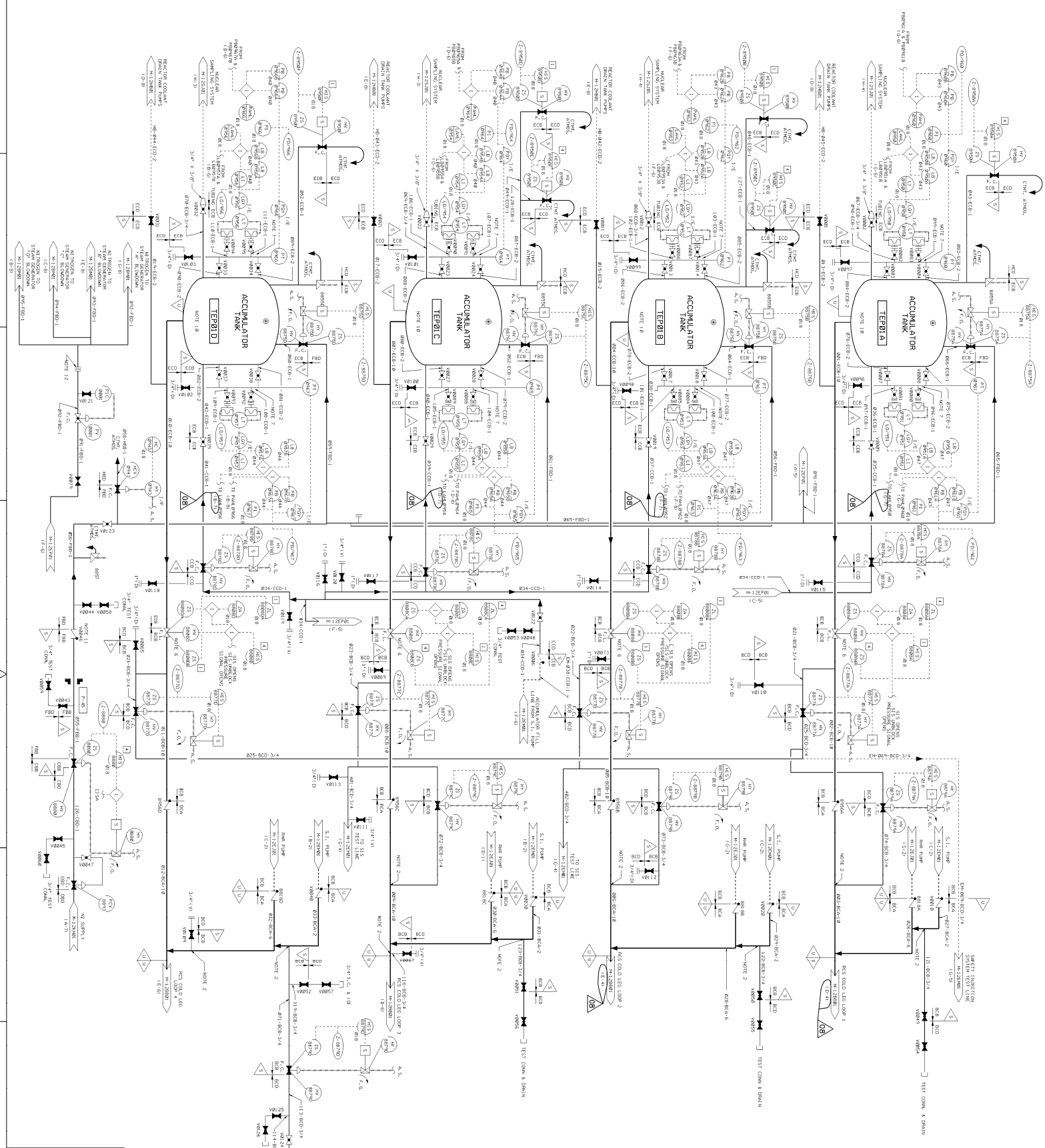
SCALE: NONE

DATE: 16

WOLFE ENGINEERING  
 ELECTRONIC APPROVAL

PIPING & INSTRUMENTATION DIAGRAM  
 HIGH PRESSURE COOLANT  
 INJECTION SYSTEM

M-DEM02



NOTES

1. ALL DEVICES IN THIS SECTION ARE SUBJECT TO THE GENERAL NOTES OF THE INSTRUMENTATION SPECIFICATION.
2. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
3. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
4. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
5. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
6. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
7. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
8. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
9. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
10. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
11. THE INSTRUMENTATION SPECIFICATION SHALL BE REFERRED TO FOR THE DEFINITION OF THE INSTRUMENTATION SYMBOLS AND TAG NUMBERS.
12. FIELD INDICATED BLENDED FLAMES. PER CP 40433 MAY BE INSTALLED.

USAP FIG. E-31-04

**ESSENTIAL DRAWING**

WOLF CREEK ELECTRONIC APPROVAL

PIPING & INSTRUMENTATION DIAGRAM  
ACCUMULATOR SAFETY INJECTION

SCALE: NONE

DATE: 08