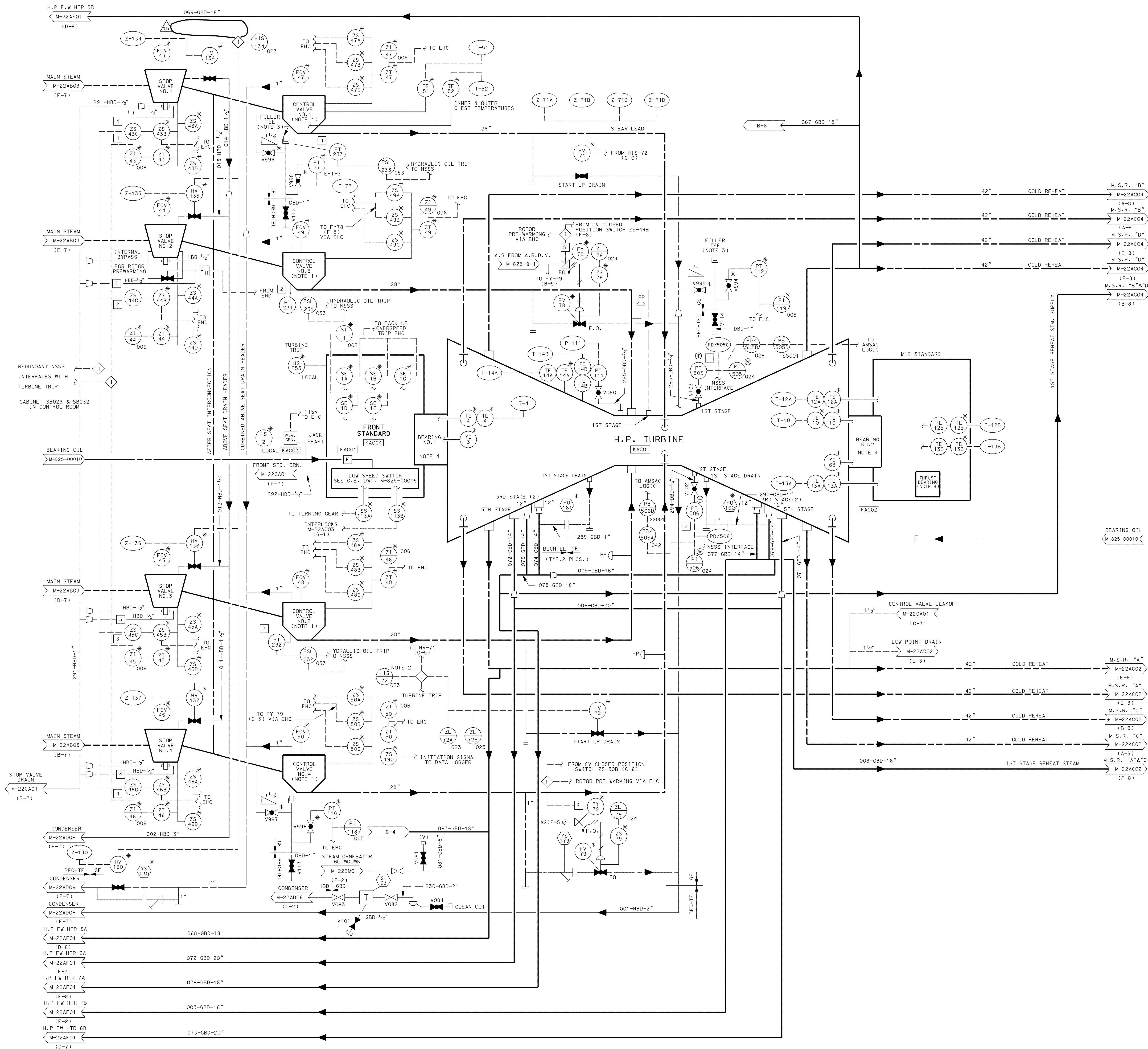


P	Pressure	psia	Generator_Output	1284130 KW
T	Temperature	°F	Reactor_Thermal_Output	3579.0 MJ/s
M	Enthalpy	Btu/lb	Heat_Rate	9510.0 Btu/kWh
M	Massflow	lb/h		
TS	Saturation temperature	°F		

NOTES:
 1. DATA TAKEN FROM ALSTOM HEAT BALANCE
 75V1741-110a DATED JULY 28, 2004. REFER
 TO CALLAWAY DRAWING M-2000-00001.

Figure 10.1-3 Deleted



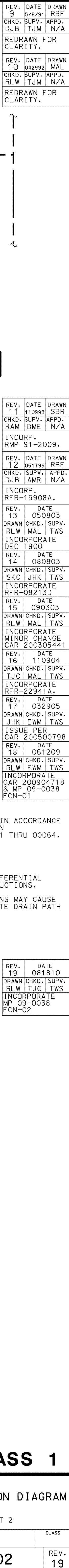
⊗ SUPPLIED BY WESTINGHOUSE
* SUPPLIED BY G.E.

NOTES:

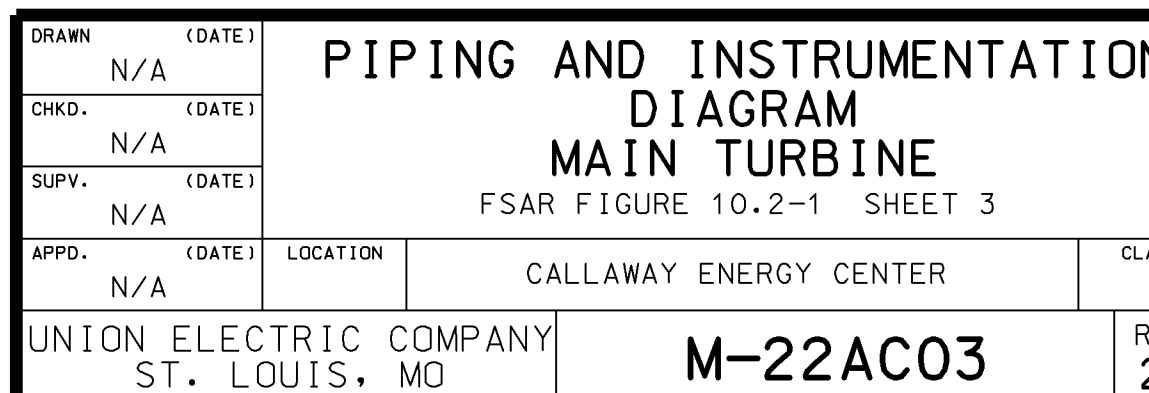
- CONTROL VALVE NUMBERS REPRESENT THE SEQUENCE OF VALVE OPENING. VALVES 1 AND 2 OPEN TOGETHER.
- JOGGING CONTROL
- FOR PRESSURE TRANSMITTER PIPING INSTRUCTIONS AND FLUSHING REQUIREMENTS SEE G.E. DWG. NO. 27244312 (BECHTEL FOREIGN PRINT NO. M-855-00152).
- SHAFT RIDERS ARE MOUNTED ON THE BEARINGS AS INDICATED ON THIS DRAWING. HOWEVER, THEY ARE USED FOR BACKUP STATIC VIBRATION DATA COLLECTION ONLY. FOR VIBRATION MONITORING INSTRUMENTATION INCLUDING VIBRATION, DIFFERENTIAL/SHELL EXPANSION, ECCENTRICITY, AND THRUST BEARING WEAR, SEE DWG. NO. M-22AC05.

AS-BUILT CLASS 1

DRAWN	(DATE)	DATE	REV.
N/A			
CHKD.	(DATE)	DATE	REV.
N/A			
SUPV.	(DATE)	DATE	REV.
N/A			
APPD.	(DATE)	LOCATION	CALLAWAY PLANT
N/A			
UNION ELECTRIC COMPANY	ST. LOUIS, MO	M-22AC01	REV. 15



<table border="1"> <tr> <td>DRAWN</td> <td>(DATE)</td> </tr> <tr> <td>N/A</td> <td></td> </tr> <tr> <td>CHECKD.</td> <td>(DATE)</td> </tr> <tr> <td>N/A</td> <td></td> </tr> <tr> <td>SUPPLY</td> <td>(DATE)</td> </tr> <tr> <td>N/A</td> <td></td> </tr> <tr> <td>APPRO.</td> <td>(DATE)</td> </tr> <tr> <td>N/A</td> <td></td> </tr> </table>	DRAWN	(DATE)	N/A		CHECKD.	(DATE)	N/A		SUPPLY	(DATE)	N/A		APPRO.	(DATE)	N/A		PIPING & INSTRUMENTATION DIAGRAM MAIN TURBINE FSAR FIGURE 10.2-1 SHEET 2		CLASS
DRAWN	(DATE)																		
N/A																			
CHECKD.	(DATE)																		
N/A																			
SUPPLY	(DATE)																		
N/A																			
APPRO.	(DATE)																		
N/A																			
LOCATION CALLAWAY PLANT		UNIT M-22AC02																	
UNION ELECTRIC COMPANY ST. LOUIS, MO		REV. 19																	



PIPING AND INSTRUMENTATION DIAGRAM MAIN TURBINE

DRAWN	(DATE)	L
N/A		
CHKD.	(DATE)	
N/A		
SUPV.	(DATE)	
N/A		
APPD.	(DATE)	
N/A		

UNION ELECTRIC
ST. LOUIS

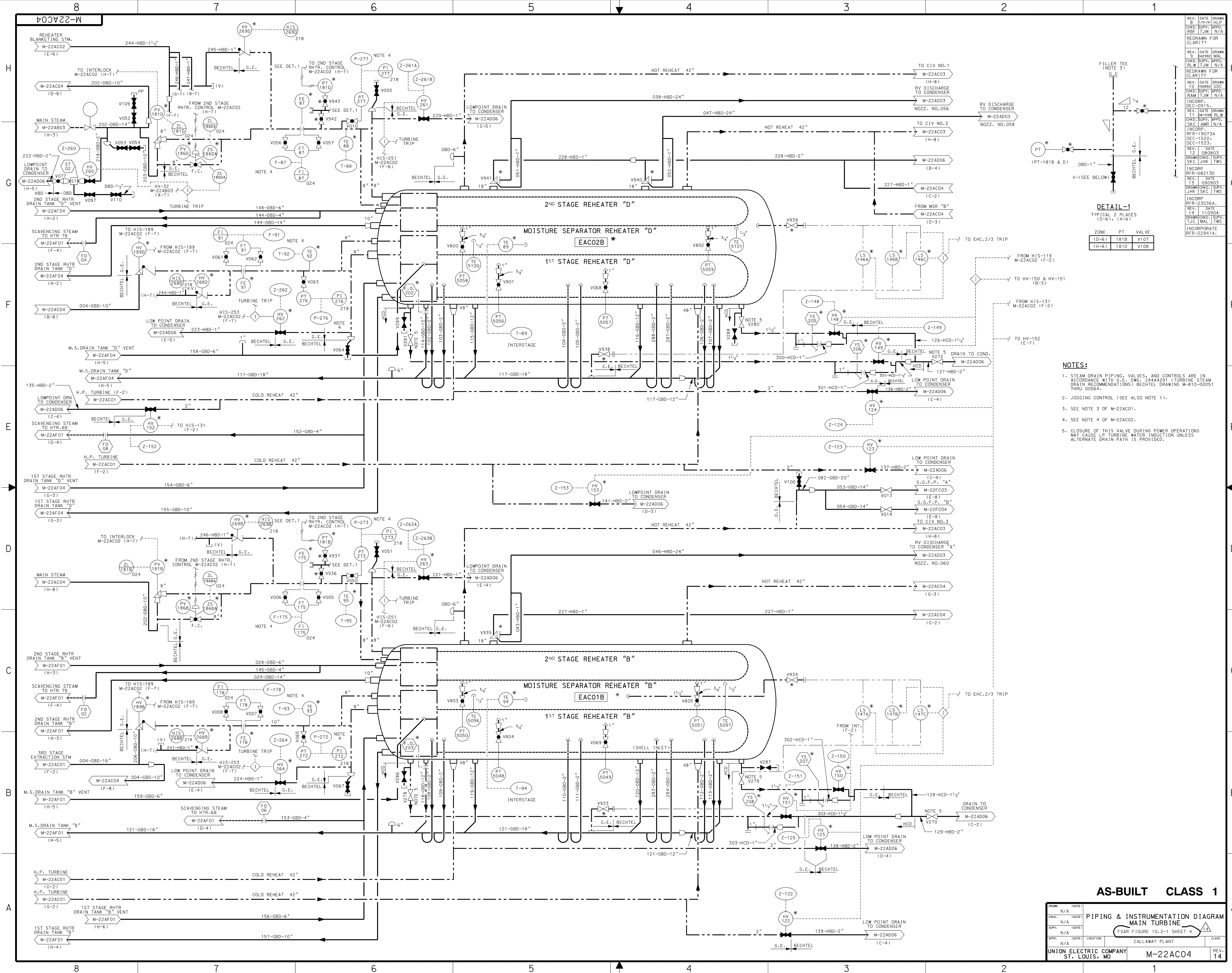
REV. 10	DATE 04/20/95	DI
CHKD. RAM	SUPV. AMR	AF
INCPOR RMP 93-200		
REV. 11	DATE 05/13/97	DI
CHKD. DUB	SUPV. AMR	AF
INCPOR DEC-1420		
REV. 12	DATE 04/21/98	DI
CHKD. DUB	SUPV. AEW	AF
INCPOR EMP 96-300		
REV. 13	DATE 11/23/98	DI
CHKD. DLBr	SUPV. AMR	AF
INCPOR RFR-19315A		

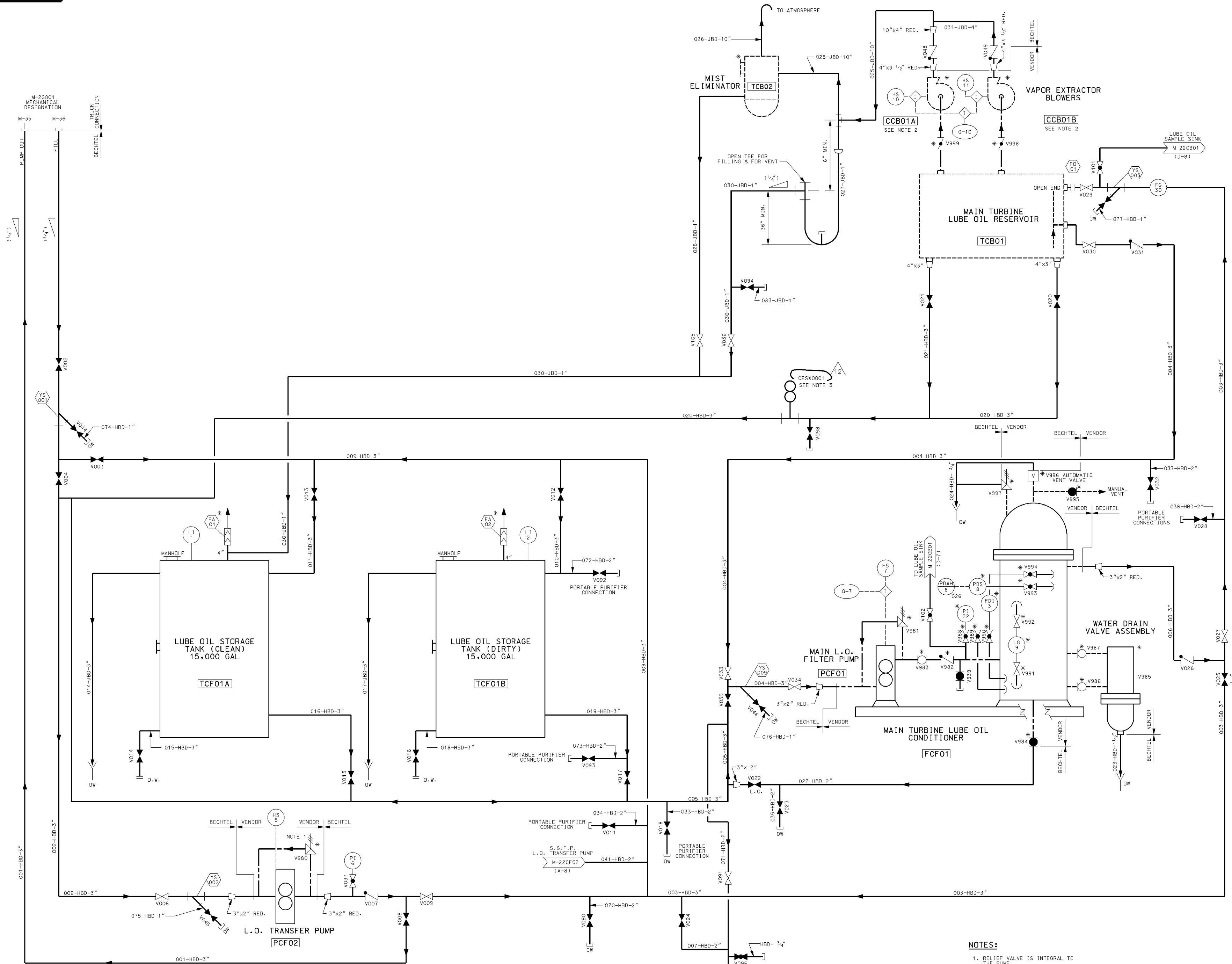
-00017.

REV. 14	DATE 031404
DRAWN JHK	CHKD. S T
INCORP. DEC-1881.	
REV. 15	DATE 110504
DRAWN RLW	CHKD. S T
INCORPORATED MINOR CHANGES CAR 20040405	
REV. 16	DATE 110904
DRAWN TJC	CHKD. S T
INCORPORATED RFR-22941A	
REV. 17	DATE 100804
DRAWN EWM	CHKD. S T
INCORPORATED MP 03-2006 FCN 02	
REV. 18	DATE 101204
DRAWN RLW	CHKD. S T
INCORPORATED MP 03-2006	

19	03060
DRAWN JHK	CHKD. MAL S
INCORP.	
MP 03-2006	
FCN-06.	
REV. 20	DATE 09060
DRAWN JHK	CHKD. MAL S
INCORP.	
TM 06-0015.	
REV. 21	DATE 11080
DRAWN JHK	CHKD. MAL S
INCORP.	
TM 06-0015	
REV. 1.	
REV. 22	DATE 04210
DRAWN JHK	CHKD. MAL S
EWM	TJTC S
INCORPORATE	
MP 06-0005A	

REV. 23	DATE 10290
DRAWN EWM	CHKD. RLW
INCORPORATE MP 07-0033 FCN 02	
REV. 24	DATE 02091
DRAWN RLW	CHKD. TJC
INCORPORATE AC 15-00003 RFR 2015049	
REV. 25	DATE 11241
DRAWN RLW	CHKD. MAL
INCORPORATE MP 08-0056 REV. 0	





- NOTES:**
- 1. RELIEF VALVE IS INTEGRAL TO THE PUMP.
 - 2. INSTRUMENTS LOGIC AND SCHEMATIC DIAGRAMS ASSOCIATED WITH CCB01A AND CCB01B ARE SHOWN IN SYSTEM CB.
 - 3. CRIFICE FLANGE TO BE INSTALLED ONLY WHEN DRAINING RESERVOIR. BLANK FLANGE TO BE INSTALLED WHEN TURBINE IS OPERATING.
 - 4. DELETED.
 - 5. DELETED.

AS-BUILT CLASS 1

PIPING AND INSTRUMENTATION DIAGRAM
LUBE OIL STORAGE,
TRANSFER AND PURIFICATION SYSTEM

DRWN	N/A	(DATE)	
CHKD	N/A	(DATE)	
SUPV	N/A	(DATE)	
APPD	N/A	(DATE)	
LOCATION	CALLAWAY ENERGY CENTER		
REV.	12		

UNION ELECTRIC COMPANY
ST. LOUIS, MO

M-22CF01

REV. 12

REV.	DATE	DRWN	CHKD	SUPV	APPD	DJB	TJM	N/A
1	082991	JHK	RBF	ITJM	N/A			
2	081793	RBF						
3	070897	RBF						
4	111497	RBF						
5	03-2035	FCN-01						
6	041198	SKC						
7	110904	SKC						
8	110504	SKC						
9	021405	SKC						
10	021405	SKC						
11	052512	SKC						
12	072214	SKC						
13	20110631	SKC						
14	20110631	SKC						
15	20110631	SKC						

DRWN	N/A	(DATE)	
CHKD	N/A	(DATE)	
SUPV	N/A	(DATE)	
APPD	N/A	(DATE)	
LOCATION	CALLAWAY ENERGY CENTER		
REV.	12		

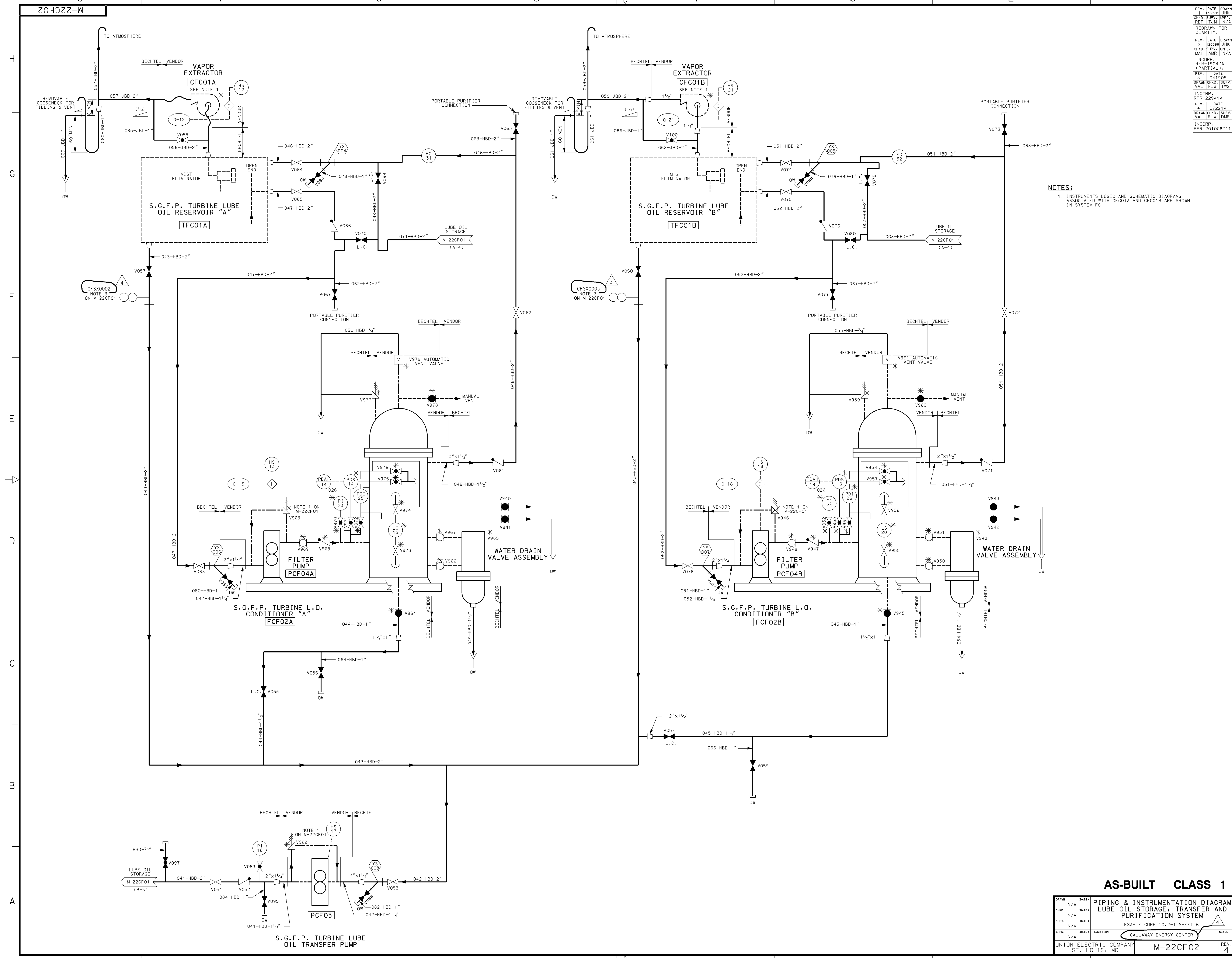
REV.	DATE	DRAWN
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2	02/29/91	JHK
3	04/19/95	JHK
4	07/22/14	JHK
5	07/22/14	JHK
6	07/22/14	JHK
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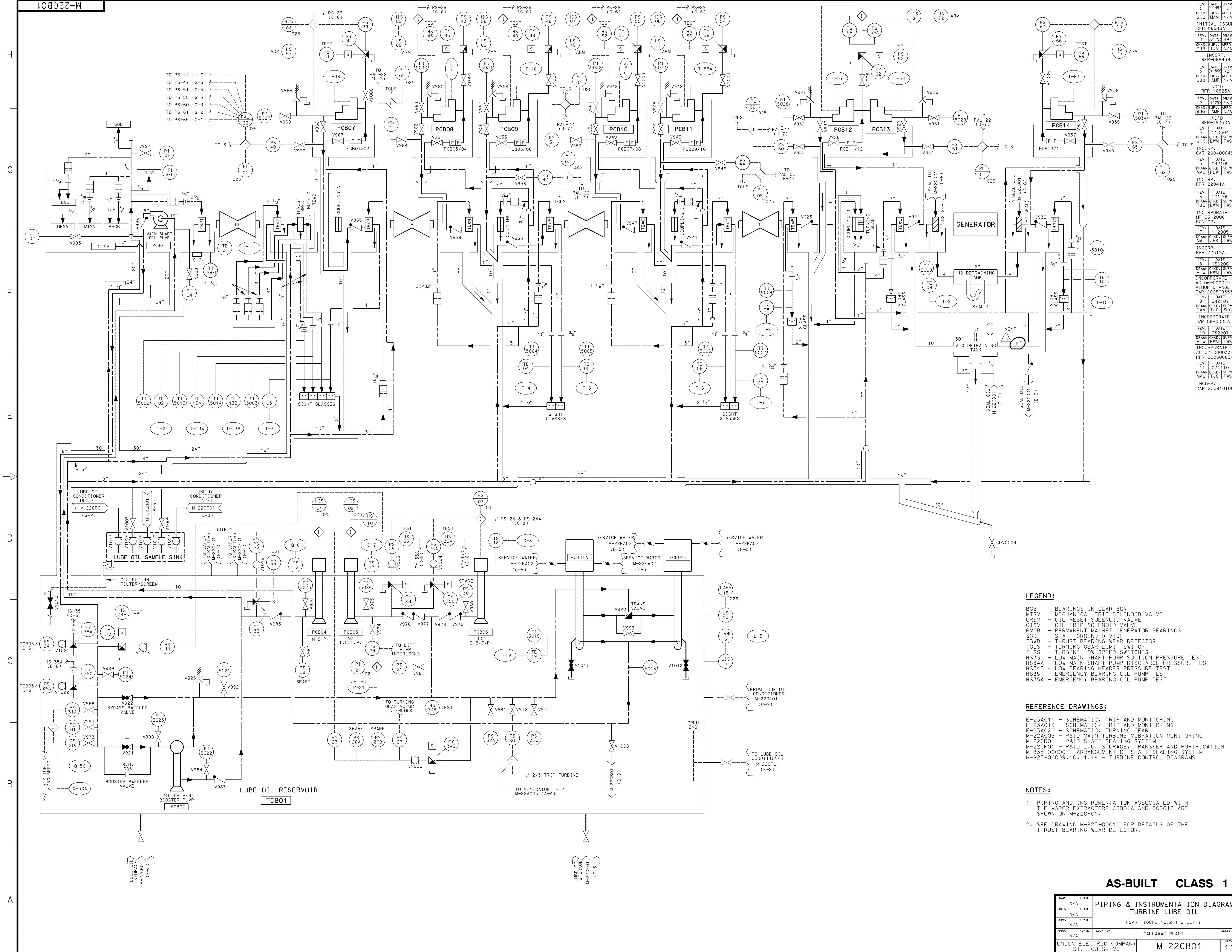
INCORP. RFR 201008711.

NOTES:
1. INSTRUMENTS LOGIC AND SCHEMATIC DIAGRAMS ASSOCIATED WITH CFC01A AND CFC01B ARE SHOWN IN SYSTEM FC.

AS-BUILT CLASS 1

Drawn	DATE	Checked	DATE	Supv.	DATE	Appr.	DATE	Location	Class
N/A		N/A		N/A		N/A		CALLAWAY ENERGY CENTER	4
N/A		N/A		N/A		N/A		UNION ELECTRIC COMPANY	4
N/A		N/A		N/A		N/A		ST. LOUIS, MO	4
N/A		N/A		N/A		N/A		M-22CF02	4





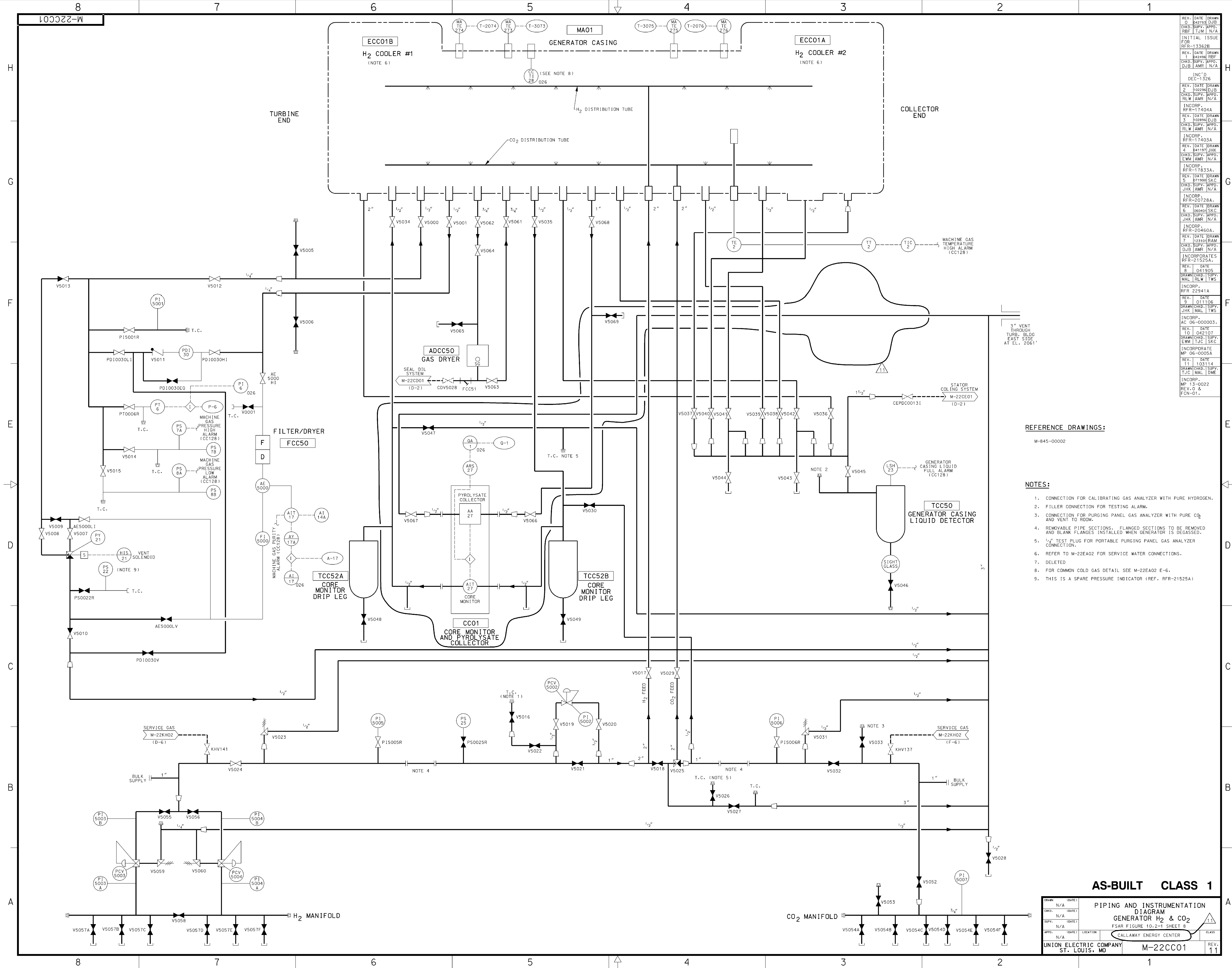
- LEGEND:**
- BGB - BEARINGS IN GEAR BOX
 - MTSV - MECHANICAL TRIP SOLENOID VALVE
 - ORSV - OIL RESET SOLENOID VALVE
 - OTSV - OIL TRIP SOLENOID VALVE
 - PMGB - PERMANENT MAGNET GENERATOR BEARINGS
 - SGD - SHAFT GROUND DEVICE
 - TBWD - THRUST BEARING WEAR DETECTOR
 - TLSS - TURBINE LOW SPEED SWITCHES
 - HS33 - LOW MAIN SHAFT PUMP SUCTION PRESSURE TEST
 - HS34 - LOW MAIN SHAFT PUMP DISCHARGE PRESSURE TEST
 - HS34B - LOW BEARING HEADER PRESSURE TEST
 - HS35 - EMERGENCY BEARING OIL PUMP TEST
 - HS35A - EMERGENCY BEARING OIL PUMP TEST

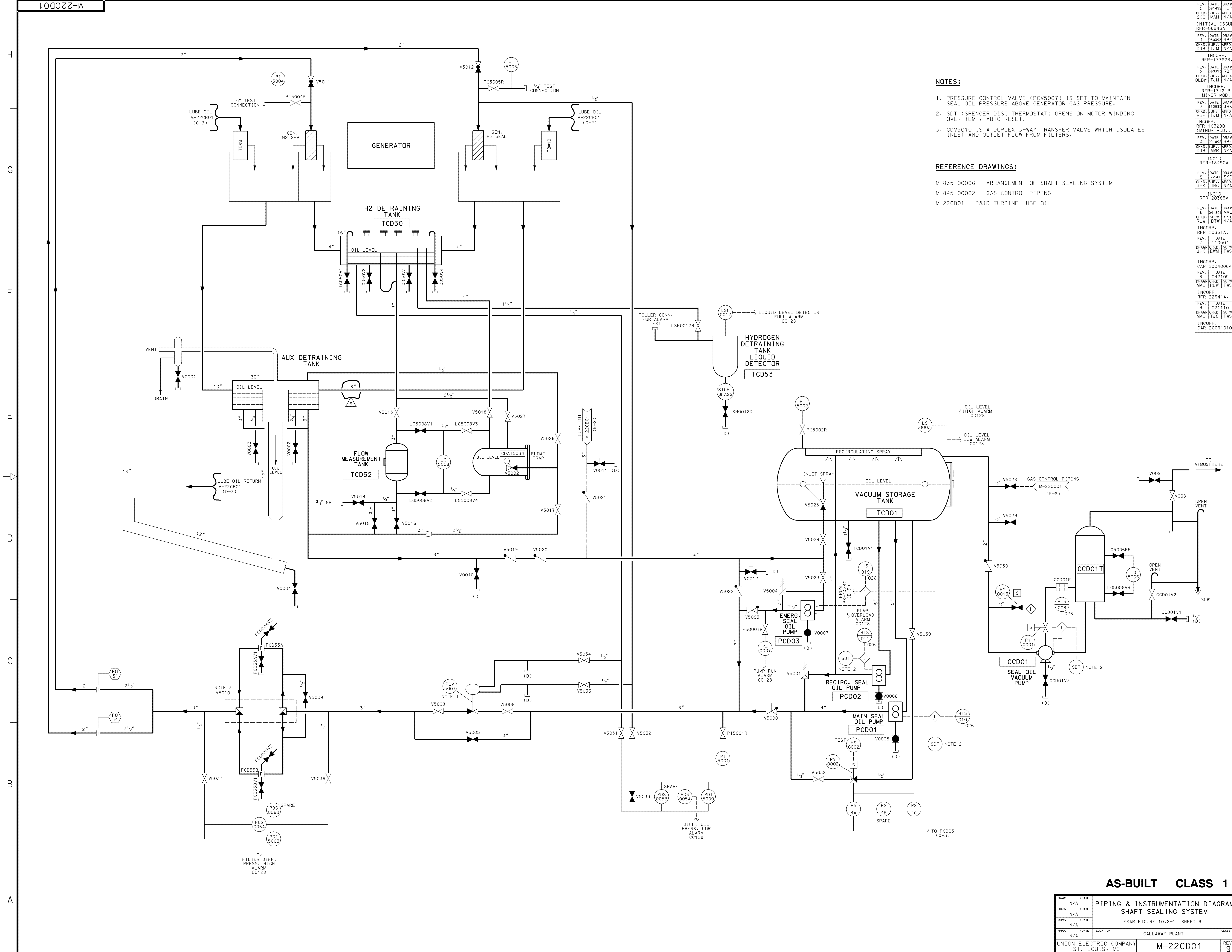
- REFERENCE DRAWINGS:**
- E-23AC11 - SCHEMATIC, TRIP AND MONITORING
 - E-23AC13 - SCHEMATIC, TRIP AND MONITORING
 - E-23AC20 - SCHEMATIC, TURNING GEAR
 - M-22AC05 - P&ID MAIN TURBINE VIBRATION MONITORING
 - M-22CD01 - P&ID SHAFT SEALING SYSTEM
 - M-835-00006 - ARRANGEMENT OF SHAFT SEALING SYSTEM
 - M-825-00009, 10, 11, 18 - TURBINE CONTROL DIAGRAMS

- NOTES:**
- PIPING AND INSTRUMENTATION ASSOCIATED WITH THE VAPOR EXTRACTORS CCB01A AND CCB01B ARE SHOWN ON M-22CF01.
 - SEE DRAWING M-825-00010 FOR DETAILS OF THE THRUST BEARING WEAR DETECTOR.

AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	PIPING & INSTRUMENTATION DIAGRAM	
CHKD	N/A	(DATE)	TURBINE LUBE OIL	
SUPV	N/A	(DATE)	FSAR FIGURE 10.2-1 SHEET 7	
APPD	N/A	(DATE)	LOCATION	CLASS
UNION ELECTRIC COMPANY			CALLAWAY PLANT	
ST. LOUIS, MO			M-22CB01	11





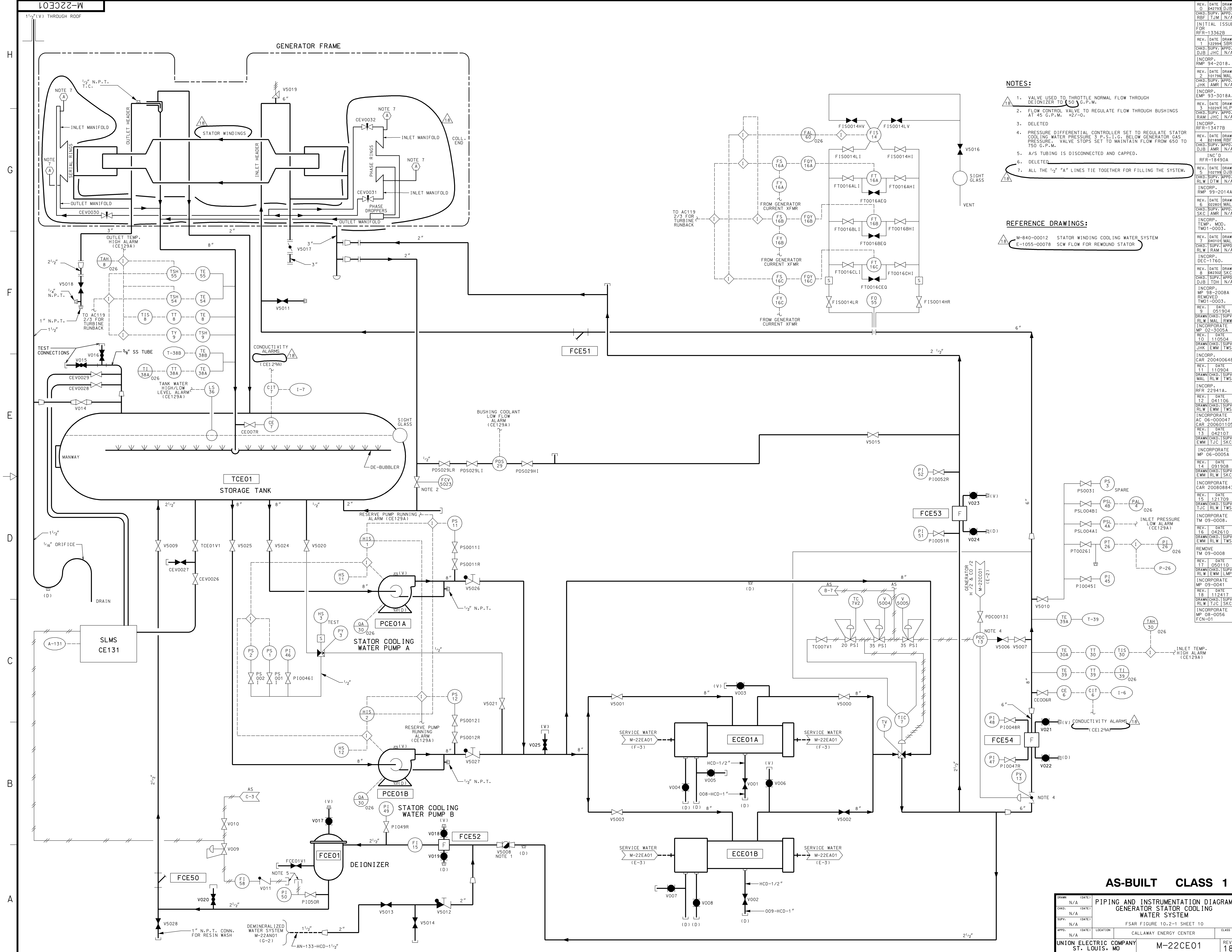
- NOTES:**
- 1. PRESSURE CONTROL VALVE (PCV5007) IS SET TO MAINTAIN SEAL OIL PRESSURE ABOVE GENERATOR GAS PRESSURE.
 - 2. SDT (SPENCER DISC THERMOSTAT) OPENS ON MOTOR WINDING OVER TEMP, AUTO RESET.
 - 3. CDV5010 IS A DUPLEX 3-WAY TRANSFER VALVE WHICH ISOLATES INLET AND OUTLET FLOW FROM FILTERS.

REFERENCE DRAWINGS:

M-835-00006 - ARRANGEMENT OF SHAFT SEALING SYSTEM
M-845-00002 - GAS CONTROL PIPING
M-22CB01 - P&ID TURBINE LUBE OIL

REV.	DATE	DRAWN	CHKD.	SUPV.	APPR.	SKC	MAM	N/A
1	091492	JHL						
2	090393	RBF						
3	110893	JHK						
4	021896	RBF						
5	021110	TWS						
6	042105	TWS						
7	022304	SKC						
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100	022304	SKC						

AS-BUILT CLASS 1									
DRAWING (DATE) PIPING & INSTRUMENTATION DIAGRAM									
CHD: N/A (DATE) SHAFT SEALING SYSTEM									
SUPV: N/A (DATE) FSAR FIGURE 10.2-1 SHEET 9									
APPR: N/A (DATE) LOCATION CALLAWAY PLANT CLASS									
UNION ELECTRIC COMPANY ST. LOUIS, MO M-22CD01 REV. 9									

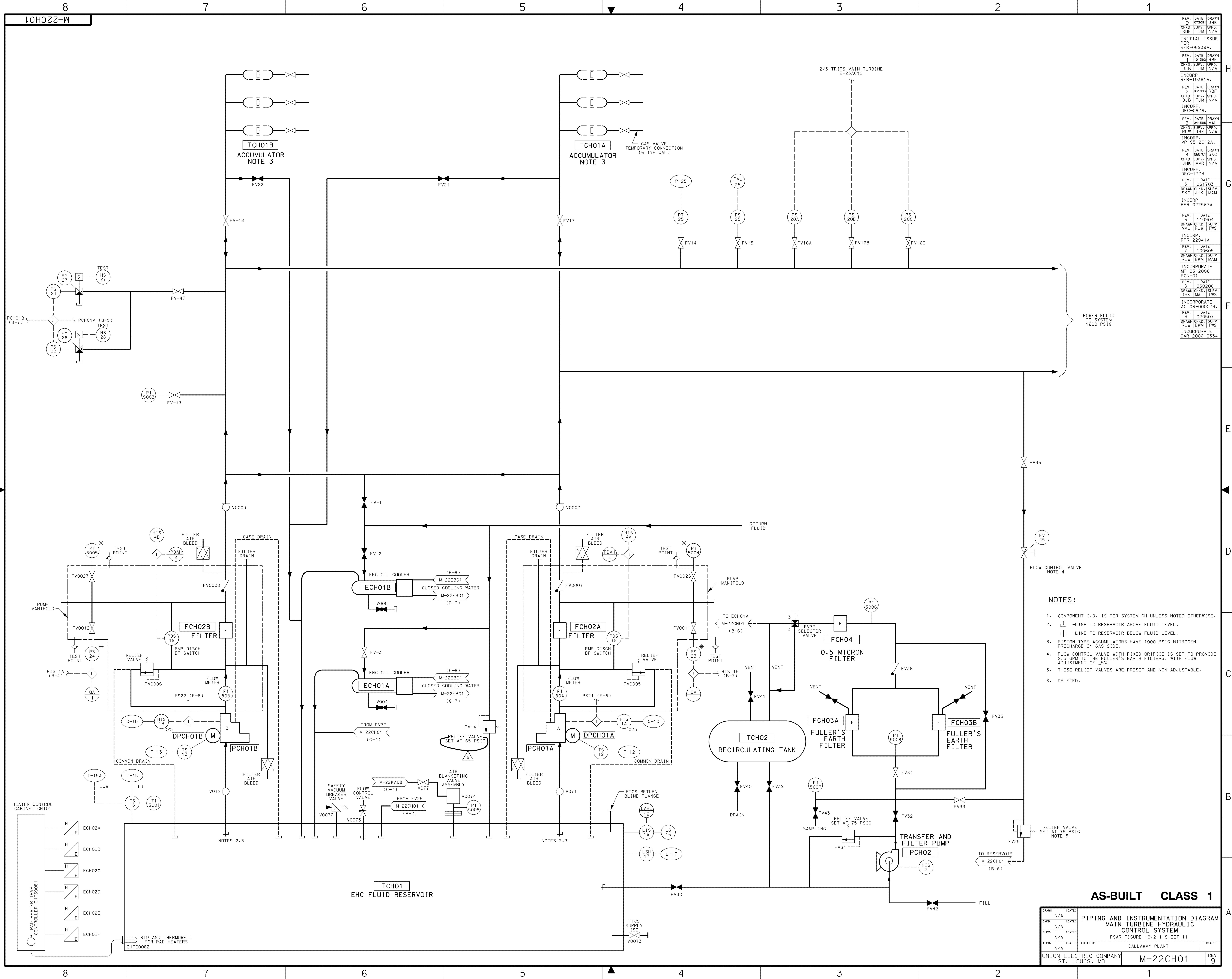


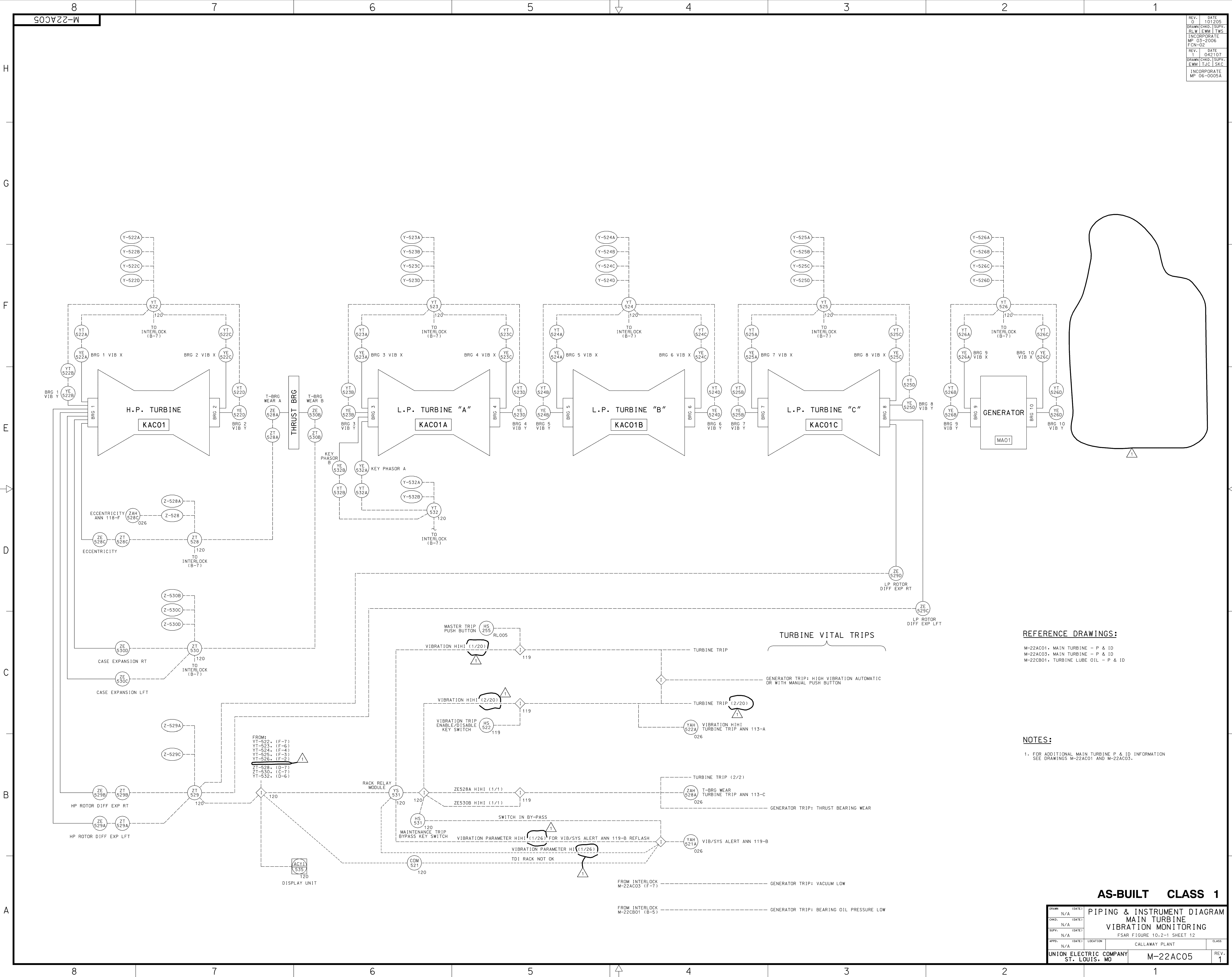
- NOTES:**
- 1. VALVE USED TO THROTTLE NORMAL FLOW THROUGH DEIONIZER TO 150 G.P.M.
 - 2. FLOW CONTROL VALVE TO REGULATE FLOW THROUGH BUSHINGS AT 45 G.P.M. +/-0.
 - 3. DELETED
 - 4. PRESSURE DIFFERENTIAL CONTROLLER SET TO REGULATE STATOR COOLING WATER PRESSURE 3 P.S.I.G. BELOW GENERATOR GAS PRESSURE. VALVE STOPS SET TO MAINTAIN FLOW FROM 650 TO 750 G.P.M.
 - 5. A/S TUBING IS DISCONNECTED AND CAPPED.
 - 6. DELETED
 - 7. ALL THE 1/2" "A" LINES TIE TOGETHER FOR FILLING THE SYSTEM.

- REFERENCE DRAWINGS:**
- M-840-00012 STATOR WINDING COOLING WATER SYSTEM
 - E-1055-00078 SCW FLOW FOR REWOUND STATOR

AS-BUILT CLASS 1			
PIPING AND INSTRUMENTATION DIAGRAM GENERATOR STATOR COOLING WATER SYSTEM			
FSAR FIGURE 10.2-1 SHEET 10			
UNION ELECTRIC COMPANY ST. LOUIS, MO		M-22CE01	
		REV. 18	

REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
1	042793	DJB	RBF	TJM	N/A	1	042793	DJB	RBF	TJM	N/A
2	042793	DJB	RBF	TJM	N/A	2	042793	DJB	RBF	TJM	N/A
3	042793	DJB	RBF	TJM	N/A	3	042793	DJB	RBF	TJM	N/A
4	042793	DJB	RBF	TJM	N/A	4	042793	DJB	RBF	TJM	N/A
5	042793	DJB	RBF	TJM	N/A	5	042793	DJB	RBF	TJM	N/A
6	042793	DJB	RBF	TJM	N/A	6	042793	DJB	RBF	TJM	N/A
7	042793	DJB	RBF	TJM	N/A	7	042793	DJB	RBF	TJM	N/A
8	042793	DJB	RBF	TJM	N/A	8	042793	DJB	RBF	TJM	N/A
9	042793	DJB	RBF	TJM	N/A	9	042793	DJB	RBF	TJM	N/A
10	042793	DJB	RBF	TJM	N/A	10	042793	DJB	RBF	TJM	N/A
11	042793	DJB	RBF	TJM	N/A	11	042793	DJB	RBF	TJM	N/A
12	042793	DJB	RBF	TJM	N/A	12	042793	DJB	RBF	TJM	N/A
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14	042793	DJB	RBF	TJM	N/A	14	042793	DJB	RBF	TJM	N/A
15	042793	DJB	RBF	TJM	N/A	15	042793	DJB	RBF	TJM	N/A
16	042793	DJB	RBF	TJM	N/A	16	042793	DJB	RBF	TJM	N/A
17	042793	DJB	RBF	TJM	N/A	17	042793	DJB	RBF	TJM	N/A
18	042793	DJB	RBF	TJM	N/A	18	042793	DJB	RBF	TJM	N/A





REV.	DATE
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1	04/21/07
2	06/05/05

REFERENCE DRAWINGS:

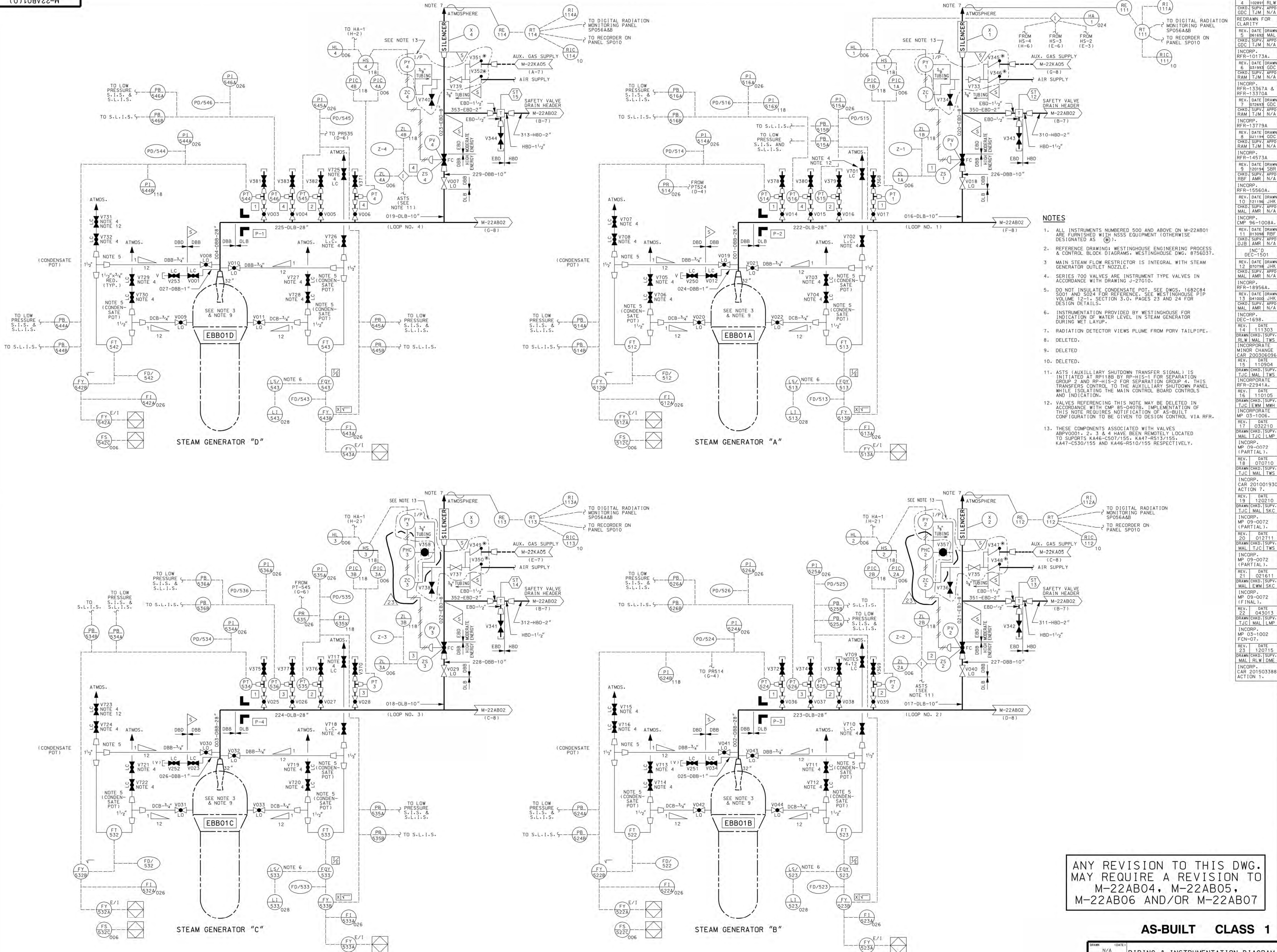
- M-22AC01, MAIN TURBINE - P & ID
- M-22AC03, MAIN TURBINE - P & ID
- M-22CB01, TURBINE LUBE OIL - P & ID

NOTES:

- 1. FOR ADDITIONAL MAIN TURBINE P & ID INFORMATION SEE DRAWINGS M-22AC01 AND M-22AC03.

AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	PIPING & INSTRUMENT DIAGRAM	
CHD.	N/A	(DATE)	MAIN TURBINE	
SUPV.	N/A	(DATE)	VIBRATION MONITORING	
APPD.	N/A	(DATE)	FSAR FIGURE 10.2-1 SHEET 12	
LOCATION	CALLAWAY PLANT		CLASS	
UNION ELECTRIC COMPANY			REV. 1	
ST. LOUIS, MO			M-22AC05	

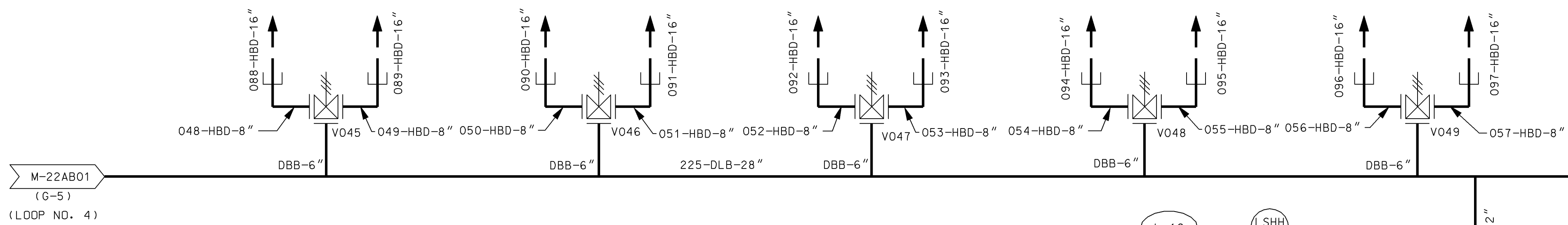


ANY REVISION TO THIS DWG. MAY REQUIRE A REVISION TO M-22AB04, M-22AB05, M-22AB06 AND/OR M-22AB07

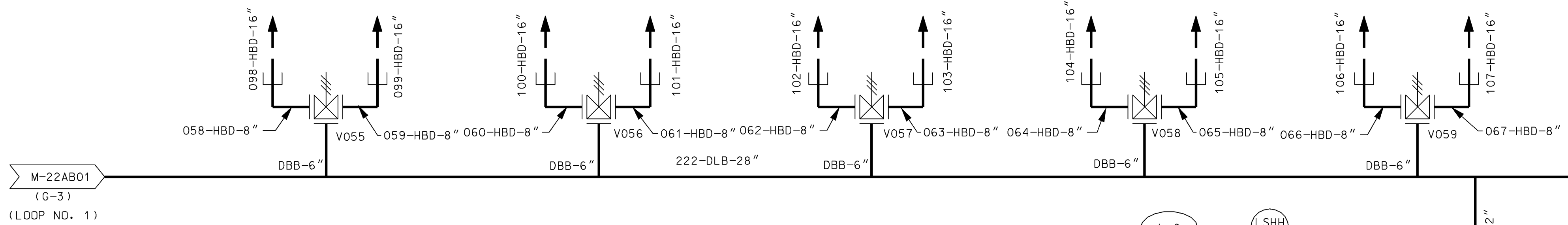
AS-BUILT CLASS 1

DATE	10/27/11	REVISION	1
CHG	N/A	DATE	10/27/11
APP	N/A	DATE	10/27/11
LOC	N/A	DATE	10/27/11
CALL	N/A	DATE	10/27/11
UNION ELECTRIC COMPANY	ST. LOUIS, MO	M-22AB01(Q)	REV. 23

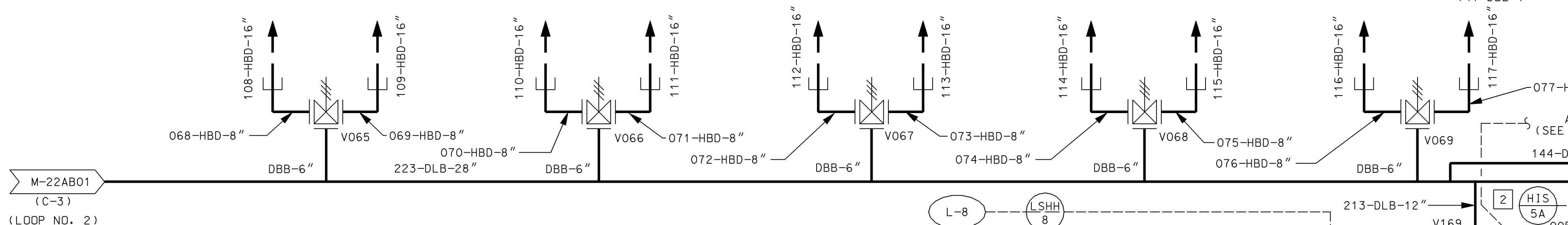
SPRING LOADED SAFETY VALVES



SPRING LOADED SAFETY VALVES



SPRING LOADED SAFETY VALVES



SPRING LOADED SAFETY VALVES

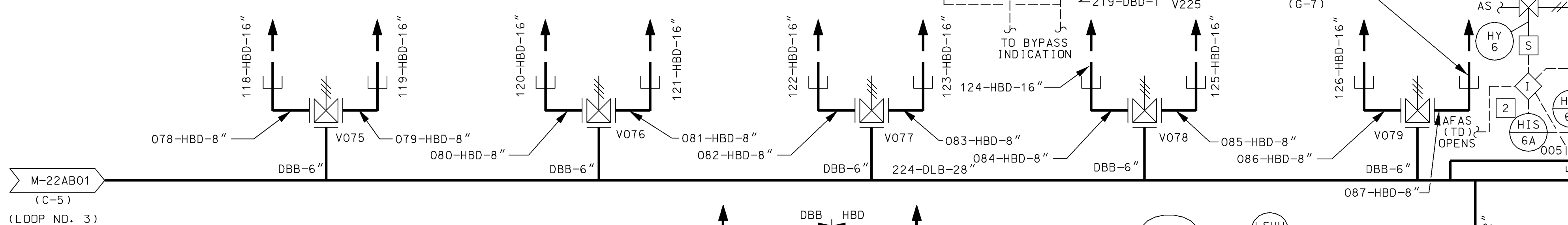
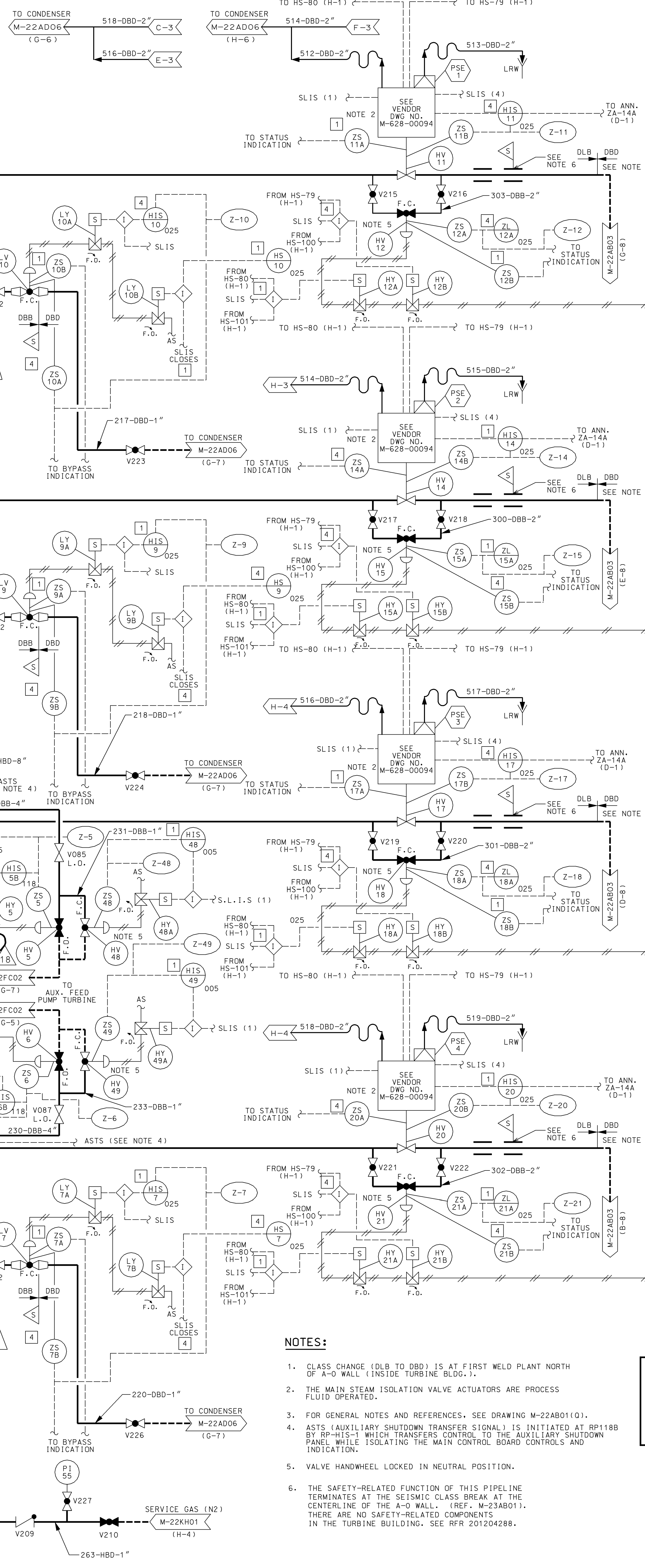
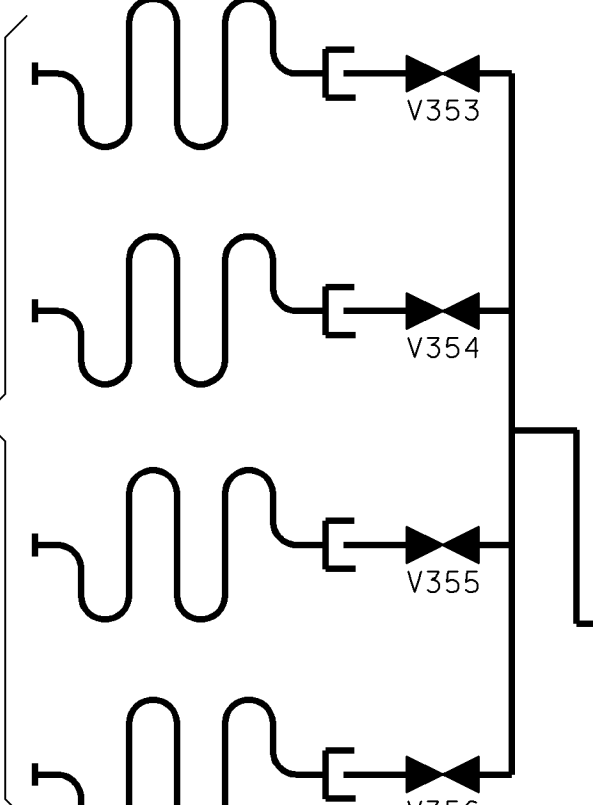


TABLE FOR LINE NUMBERS

DESCRIPTION	SAFETY VALVE NUMBERS																		
	V045	V046	V047	V048	V049	V050	V051	V052	V053	V054	V055	V056	V057	V058	V059	V060	V061	V062	V063
"A"	483	488	493	498	503	456	461	466	471	476	429	434	439	444	449	402	407	412	417
"B"	484	489	494	499	504	457	462	467	472	477	430	435	440	445	450	403	408	413	418
"C"	485	490	495	500	505	458	463	468	473	478	431	436	441	446	451	404	409	414	419
"D"	486	491	496	501	506	459	464	469	474	479	432	437	442	447	452	405	410	415	420
"E"	487	492	497	502	507	460	465	470	475	480	433	438	443	448	453	406	411	416	421
"F"	481	481	481	481	481	454	454	454	454	454	427	427	427	427	427	400	400	400	400
"G"	323	323	323	323	323	310	310	310	310	310	321	321	321	321	321	312	312	312	312
"H"	313	313	313	313	313	322	322	322	322	322	311	311	311	311	311	320	320	320	320
"I"	482	482	482	482	482	455	455	455	455	455	428	428	428	428	428	401	401	401	401

TYPICAL FOR EACH SAFETY VALVE ARRANGEMENT



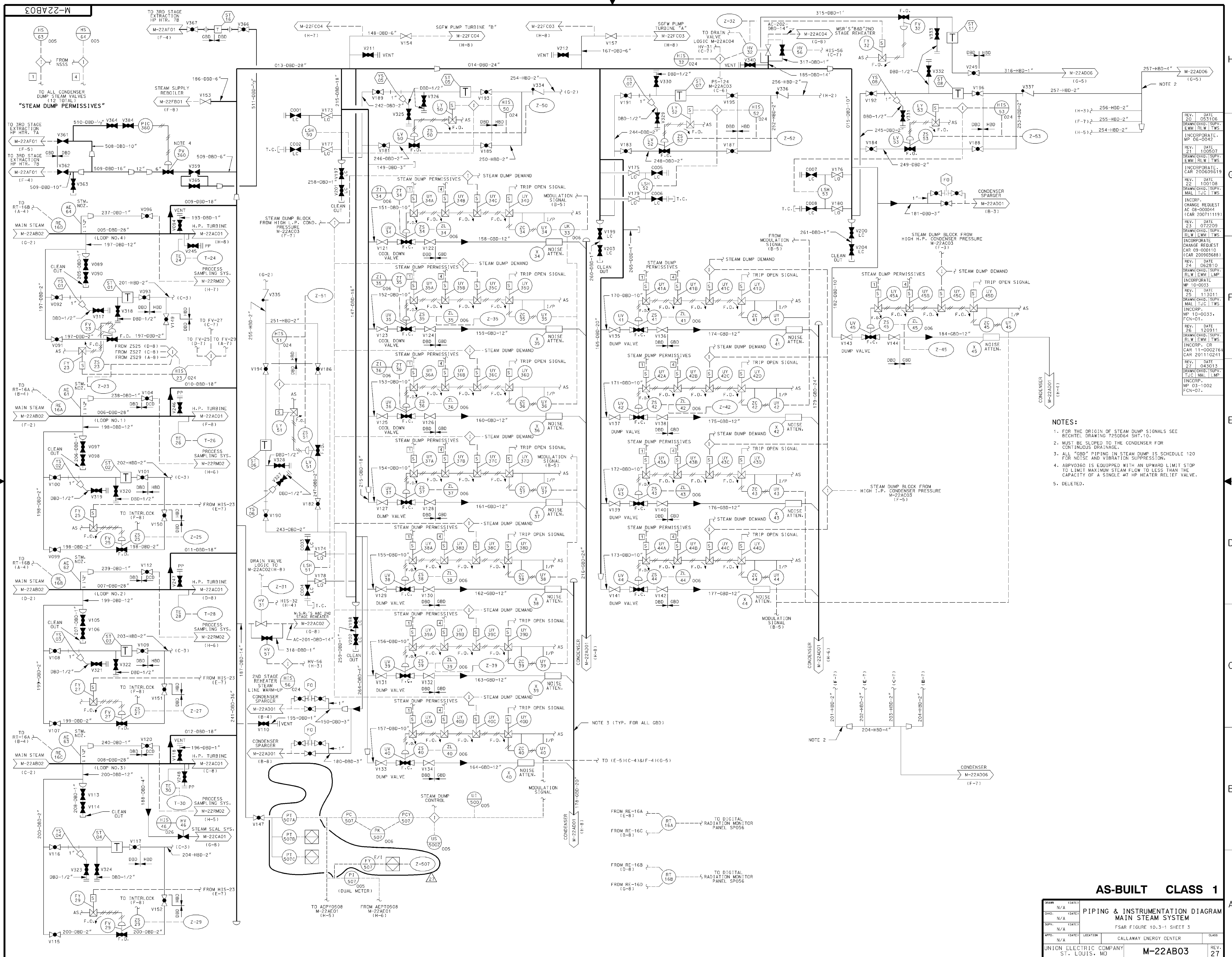
NOTES:

- CLASS CHANGE (DLB TO DBD) IS AT FIRST WELD PLANT NORTH OF A-O WALL (INSIDE TURBINE BLDG.).
- THE MAIN STEAM ISOLATION VALVE ACTUATORS ARE PROCESS FLUID OPERATED.
- FOR GENERAL NOTES AND REFERENCES, SEE DRAWING M-22AB01(0).
- ASTS (AUXILIARY SHUTDOWN TRANSFER SIGNAL) IS INITIATED AT RP118B BY RP-HIS-1 WHICH TRANSFERS CONTROL TO THE AUXILIARY SHUTDOWN PANEL WHILE ISOLATING THE MAIN CONTROL BOARD CONTROLS AND INDICATION.
- VALVE HANDWHEEL LOCKED IN NEUTRAL POSITION.
- THE SAFETY-RELATED FUNCTION OF THIS PIPELINE TERMINATES AT THE SEISMIC CLASS BREAK A AT THE CENTERLINE OF THE A-O WALL. (REF. M-23AB01). THERE ARE NO SAFETY-RELATED COMPONENTS IN THE TURBINE BUILDING. SEE RFR 201204288.

ANY REVISION TO THIS DWG. MAY REQUIRE A REVISION TO M-22AB04, M-22AB05, M-22AB06 AND/OR M-22AB07

AS-BUILT CLASS 1

DRAWN		(DATE)		PIPING AND INSTRUMENTATION DIAGRAM MAIN STEAM SYSTEM FSAR FIGURE 10.3-1 SHEET 2							
N/A											
CHKD.		(DATE)									
N/A											
SUPV.		(DATE)		FSAF FIGURE 10.3-1 SHEET 2							
N/A											
APPRO.		(DATE)		LOCATION		CALLAWAY ENERGY CENTER				CLA	
N/A											
UNION ELECTRIC COMPANY ST. LOUIS, MO				M-22AB02(Q)				R1			

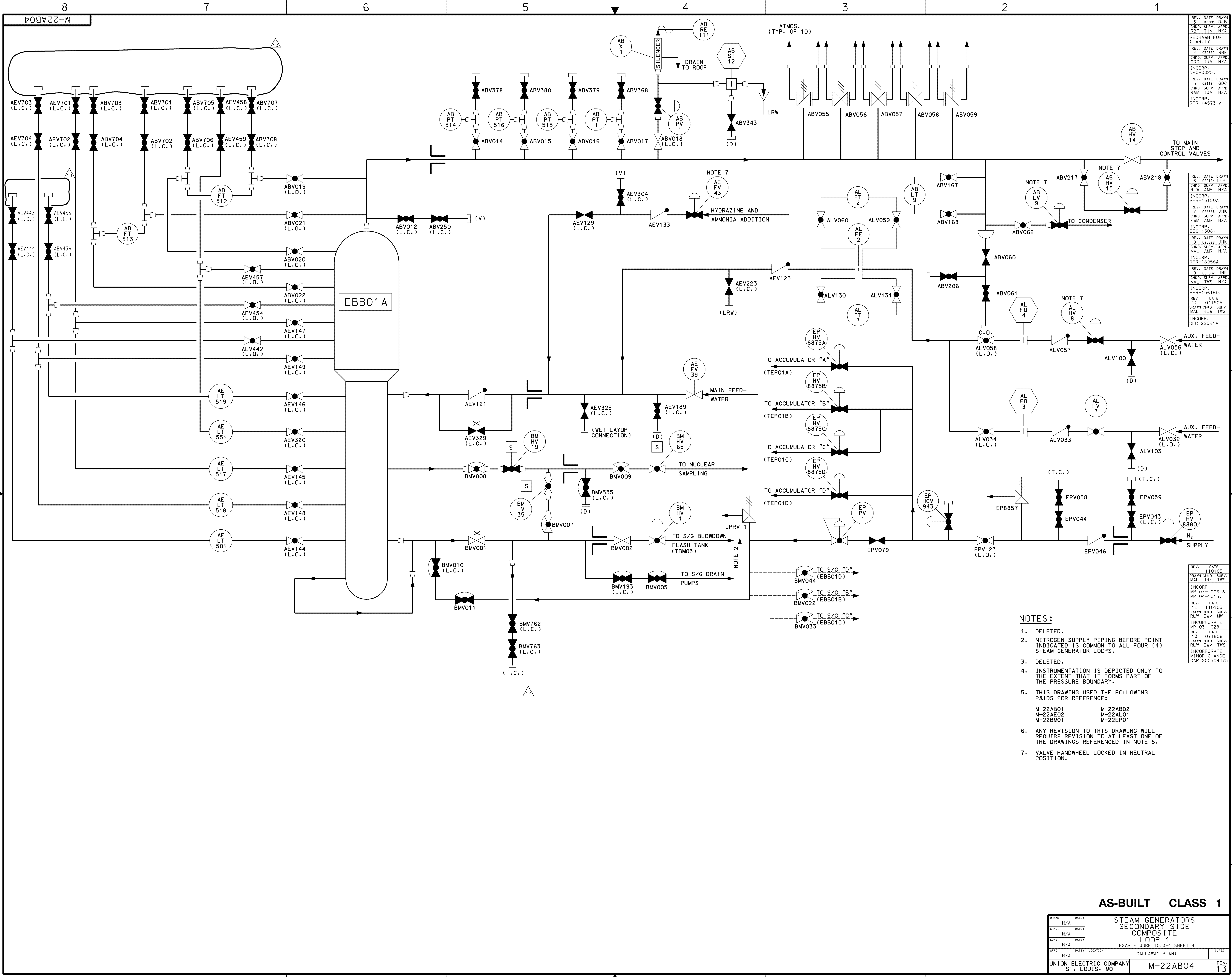


REV.	DATE	DESCRIPTION
1	03/10/06	DRAWN CHD, SUPV. EWM, LFW, TWS
2	05/07/07	DRAWN CHD, SUPV. EWM, LFW, TWS
3	07/22/09	INCORPORATE CAR 200609619
4	08/08/04	INCORPORATE CAR 200711119
5	08/08/04	INCORPORATE CAR 200711119
6	08/08/04	INCORPORATE CAR 200711119
7	08/08/04	INCORPORATE CAR 200711119
8	08/08/04	INCORPORATE CAR 200711119
9	08/08/04	INCORPORATE CAR 200711119
10	08/08/04	INCORPORATE CAR 200711119
11	08/08/04	INCORPORATE CAR 200711119
12	08/08/04	INCORPORATE CAR 200711119
13	08/08/04	INCORPORATE CAR 200711119
14	08/08/04	INCORPORATE CAR 200711119
15	08/08/04	INCORPORATE CAR 200711119
16	08/08/04	INCORPORATE CAR 200711119
17	08/08/04	INCORPORATE CAR 200711119
18	08/08/04	INCORPORATE CAR 200711119
19	08/08/04	INCORPORATE CAR 200711119
20	08/08/04	INCORPORATE CAR 200711119

- NOTES:
- FOR THE ORIGIN OF STEAM DUMP SIGNALS SEE BECHTEL DRAWING T25064 SHT.10.
 - MUST BE SLOPED TO THE CONDENSER FOR CONTINUOUS DRAINAGE.
 - ALL "GDB" PIPING IN STEAM DUMP IS SCHEDULE 120 FOR NOISE AND VIBRATION SUPPRESSION.
 - ASPV0360 IS EQUIPPED WITH AN UPWARD LIMIT STOP TO LIMIT MAXIMUM STEAM FLOW TO LESS THAN THE CAPACITY OF A SINGLE #7 HP HEATER RELIEF VALVE.
 - DELETED.

AS-BUILT CLASS 1

NO.	DATE	DESCRIPTION
1	03/10/06	DRAWN CHD, SUPV. EWM, LFW, TWS
2	05/07/07	DRAWN CHD, SUPV. EWM, LFW, TWS
3	07/22/09	INCORPORATE CAR 200609619
4	08/08/04	INCORPORATE CAR 200711119
5	08/08/04	INCORPORATE CAR 200711119
6	08/08/04	INCORPORATE CAR 200711119
7	08/08/04	INCORPORATE CAR 200711119
8	08/08/04	INCORPORATE CAR 200711119
9	08/08/04	INCORPORATE CAR 200711119
10	08/08/04	INCORPORATE CAR 200711119
11	08/08/04	INCORPORATE CAR 200711119
12	08/08/04	INCORPORATE CAR 200711119
13	08/08/04	INCORPORATE CAR 200711119
14	08/08/04	INCORPORATE CAR 200711119
15	08/08/04	INCORPORATE CAR 200711119
16	08/08/04	INCORPORATE CAR 200711119
17	08/08/04	INCORPORATE CAR 200711119
18	08/08/04	INCORPORATE CAR 200711119
19	08/08/04	INCORPORATE CAR 200711119
20	08/08/04	INCORPORATE CAR 200711119



REV.	DATE	DRAWN
1	04/19/05	DJB
CHKD.	SUPV.	APPD.
RBF	TJM	N/A
REDRAWN	FOR	CLARITY

REV.	DATE	DRAWN
2	03/28/02	RBF
CHKD.	SUPV.	APPD.
GDC	TJM	N/A
INCORP.	DEC-08/25.	

REV.	DATE	DRAWN
3	02/11/04	GDC
CHKD.	SUPV.	APPD.
RAM	TJM	N/A
INCORP.	RFR-14573 A.	

REV.	DATE	DRAWN
4	09/01/04	DJB
CHKD.	SUPV.	APPD.
RLW	AMR	N/A
INCORP.	RFR-15150A	

REV.	DATE	DRAWN
5	07/06/98	JHK
CHKD.	SUPV.	APPD.
EWM	AMR	N/A
INCORP.	DEC-15/08.	

REV.	DATE	DRAWN
6	07/06/02	JHK
CHKD.	SUPV.	APPD.
MAL	TWS	N/A
INCORP.	RFR-18356A.	

REV.	DATE	DRAWN
7	04/19/05	JHK
CHKD.	SUPV.	APPD.
MAL	TWS	N/A
INCORP.	RFR-15616D.	

REV.	DATE	DRAWN
8	11/01/05	TWS
CHKD.	SUPV.	APPD.
MAL	JHK	TWS
INCORP.	MP 03-1006 & MP 04-1015.	

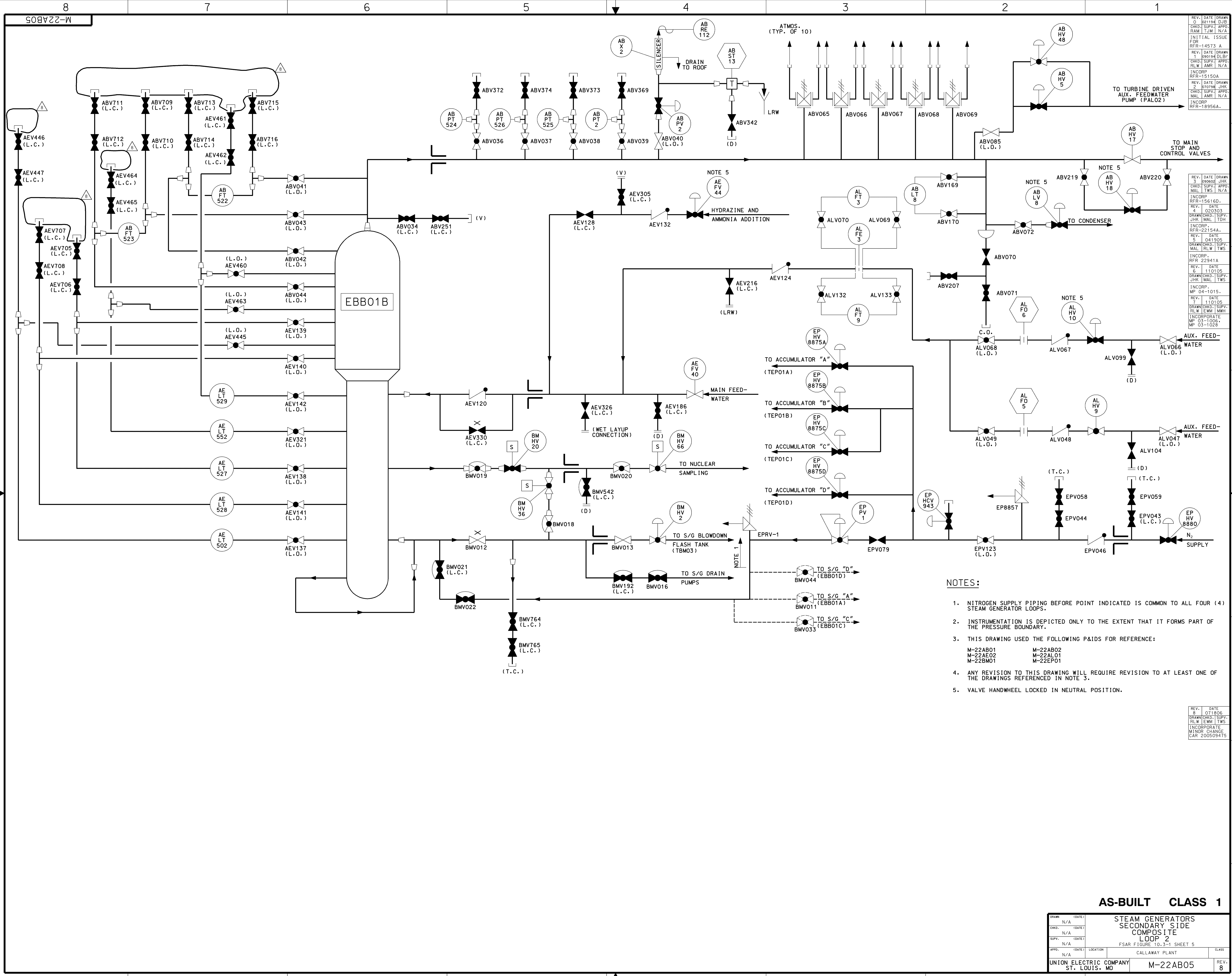
REV.	DATE	DRAWN
9	11/01/05	TWS
CHKD.	SUPV.	APPD.
RLW	EWM	MWH
INCORPORATE	MP 03-1028	

REV.	DATE	DRAWN
10	07/19/06	TWS
CHKD.	SUPV.	APPD.
RLW	EWM	TWS
INCORPORATE	MINOR CHANGE CAR 200509475	

- NOTES:
- DELETED.
 - NITROGEN SUPPLY PIPING BEFORE POINT INDICATED IS COMMON TO ALL FOUR (4) STEAM GENERATOR LOOPS.
 - DELETED.
 - INSTRUMENTATION IS DEPICTED ONLY TO THE EXTENT THAT IT FORMS PART OF THE PRESSURE BOUNDARY.
 - THIS DRAWING USED THE FOLLOWING P&IDS FOR REFERENCE:
M-22AB01 M-22AB02
M-22AE02 M-22AL01
M-22BM01 M-22EP01
 - ANY REVISION TO THIS DRAWING WILL REQUIRE REVISION TO AT LEAST ONE OF THE DRAWINGS REFERENCED IN NOTE 5.
 - VALVE HANDWHEEL LOCKED IN NEUTRAL POSITION.

AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	STEAM GENERATORS SECONDARY SIDE COMPOSITE LOOP 1	
CHKD.	N/A	(DATE)	FSAR FIGURE 10.3-1 SHEET 4	
SUPV.	N/A	(DATE)	CALLAWAY PLANT	
APPD.	N/A	(DATE)	LOCATION	CLASS
UNION ELECTRIC COMPANY ST. LOUIS, MO			M-22AB04	REV. 13



REV. DATE DRAWN
0 021194 DJG
CHKD: SUPV: APPD:
RAM TJM N/A
INITIAL ISSUE
FOR
RFR-14573 A
REV. DATE DRAWN
1 090194 DJG
CHKD: SUPV: APPD:
RLW JMW N/A
INCORP
RFR-15150A
REV. DATE DRAWN
2 070794 JHK
CHKD: SUPV: APPD:
MAL AMR N/A
INCORP
RFR-18956A

REV. DATE DRAWN
3 090902 JHK
CHKD: SUPV: APPD:
MAL TWS N/A
INCORP
RFR-15616D
REV. DATE DRAWN
4 020303
DRAWN: CHKD: SUPV:
JHK MAL JYDH
INCORP
RFR-22154A
REV. DATE
5 041905
DRAWN: CHKD: SUPV:
MAL RLW TWS
INCORP
RFR-22941A
REV. DATE
6 110105
DRAWN: CHKD: SUPV:
JHK MAL TWS
INCORP
MP 04-1015
REV. DATE
7 110105
DRAWN: CHKD: SUPV:
RLW EWM JMW
INCORP
MP 03-1006
MP 03-1028

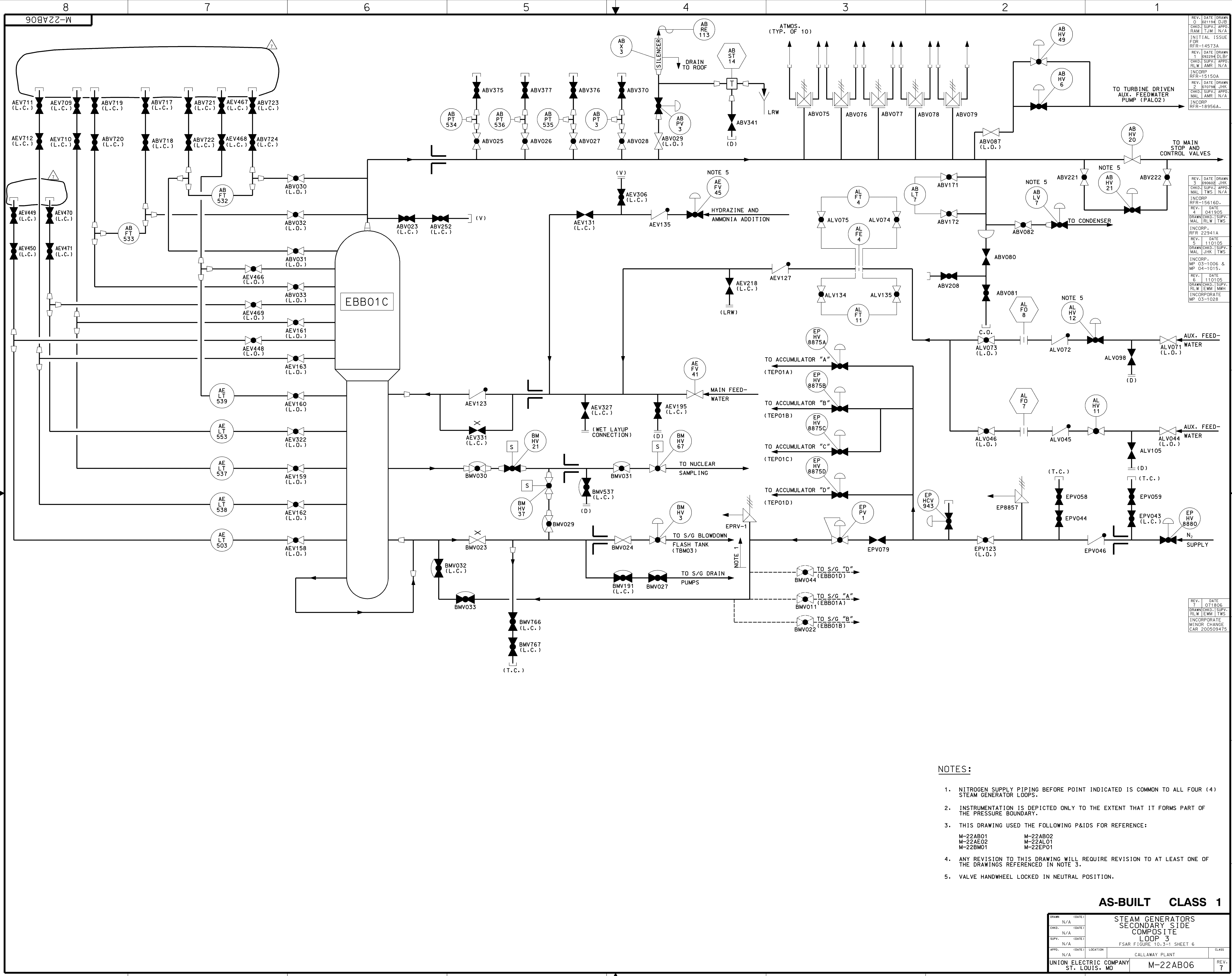
- NOTES:
1. NITROGEN SUPPLY PIPING BEFORE POINT INDICATED IS COMMON TO ALL FOUR (4) STEAM GENERATOR LOOPS.
 2. INSTRUMENTATION IS DEPICTED ONLY TO THE EXTENT THAT IT FORMS PART OF THE PRESSURE BOUNDARY.
 3. THIS DRAWING USED THE FOLLOWING P&IDS FOR REFERENCE:
M-22AB01 M-22AB02
M-22AE02 M-22AL01
M-22BM01 M-22EP01
 4. ANY REVISION TO THIS DRAWING WILL REQUIRE REVISION TO AT LEAST ONE OF THE DRAWINGS REFERENCED IN NOTE 3.
 5. VALVE HANDWHEEL LOCKED IN NEUTRAL POSITION.

REV. DATE
8 071906
DRAWN: CHKD: SUPV:
RLW EWM TWS
INCORP
MINOR CHANGE
CAR 200509475

AS-BUILT CLASS 1

DRAWN (DATE)		N/A	
CHKD: (DATE)		N/A	
SUPV: (DATE)		N/A	
APPD: (DATE)		N/A	
LOCATION		CALLAWAY PLANT	
UNION ELECTRIC COMPANY ST. LOUIS, MO		M-22AB05	
REV. 8			

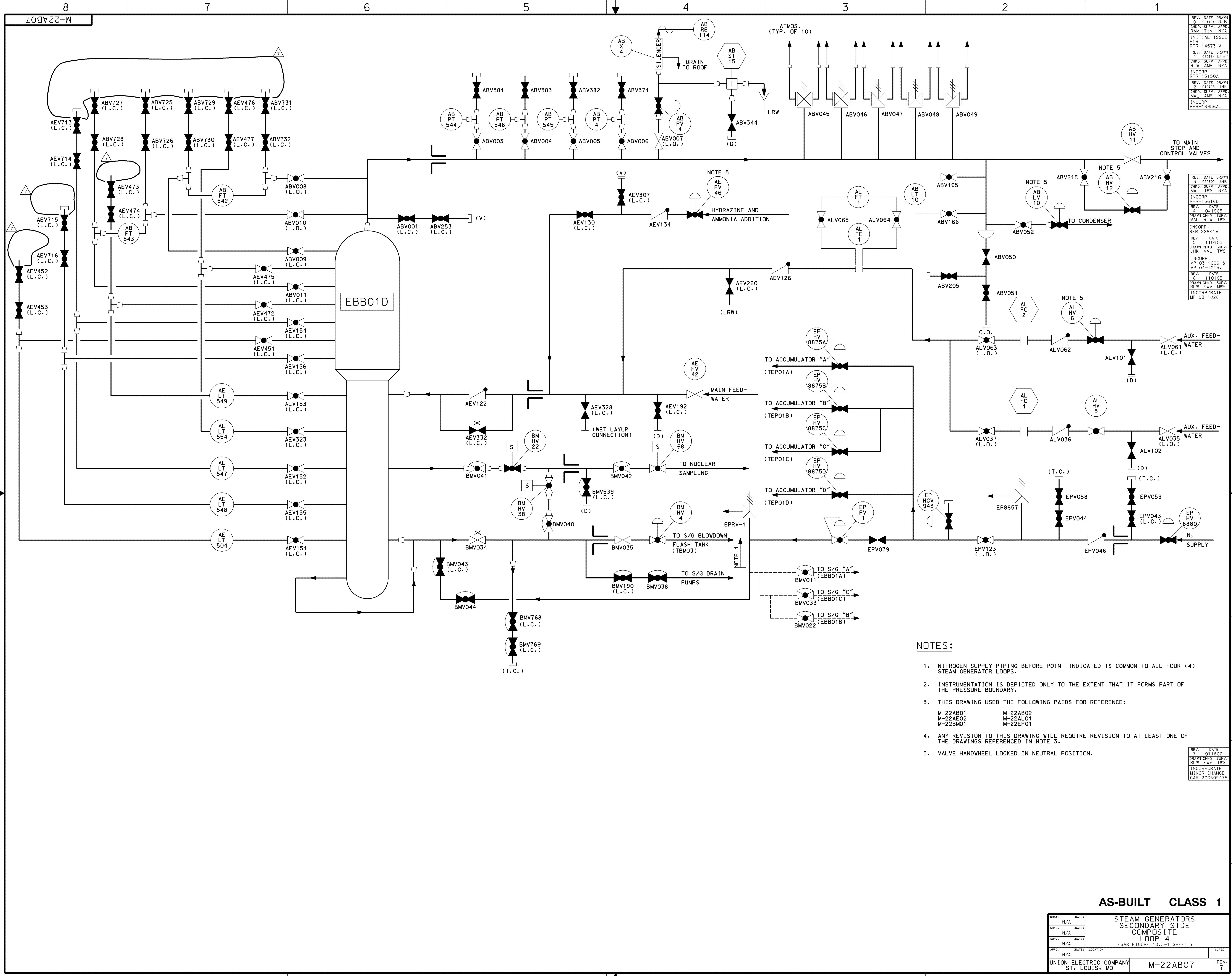
STEAM GENERATORS
SECONDARY SIDE
COMPOSITE
LOOP 2
FSAR FIGURE 10.3-1 SHEET 5
CLASS 1

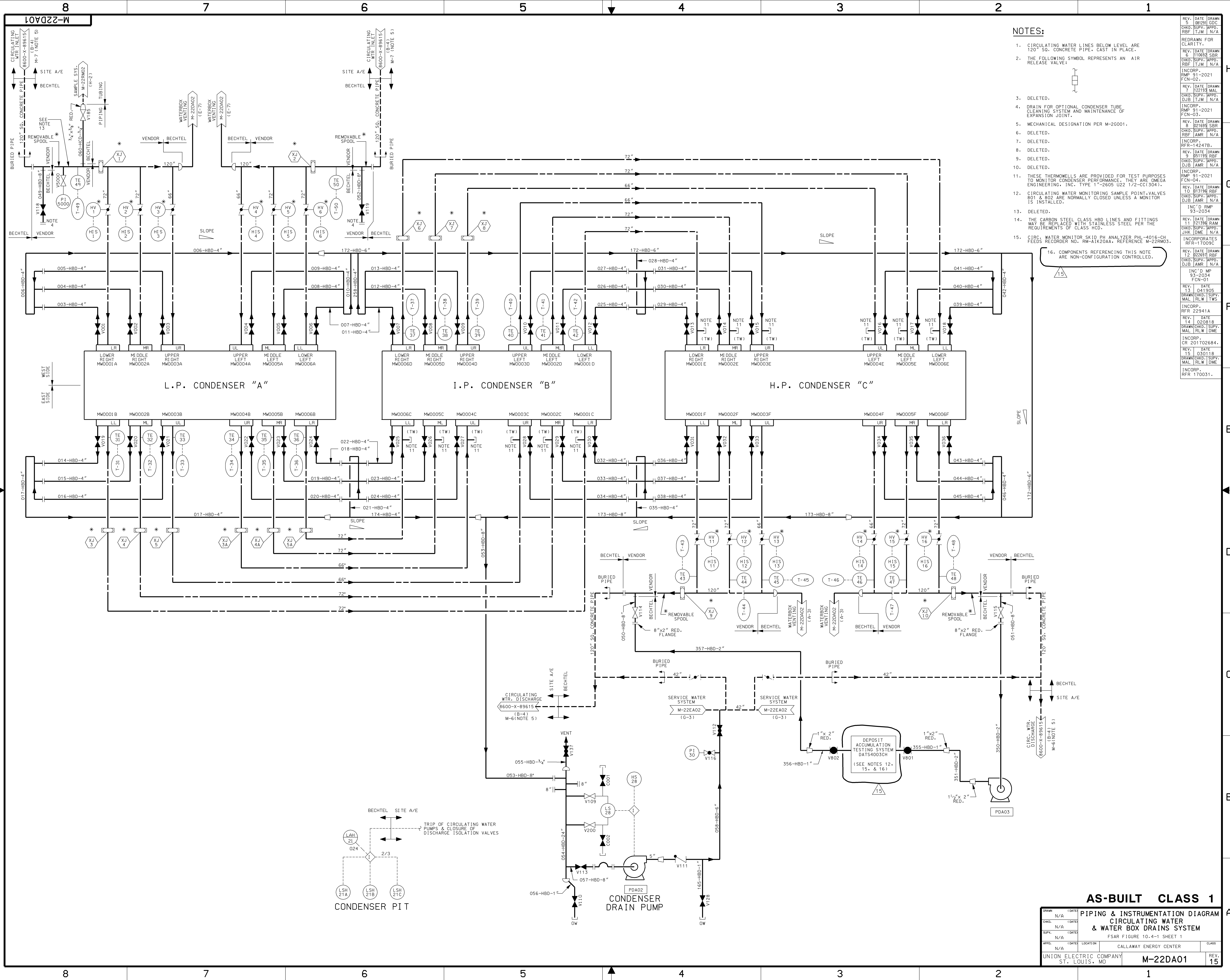


- NOTES:
- NITROGEN SUPPLY PIPING BEFORE POINT INDICATED IS COMMON TO ALL FOUR (4) STEAM GENERATOR LOOPS.
 - INSTRUMENTATION IS DEPICTED ONLY TO THE EXTENT THAT IT FORMS PART OF THE PRESSURE BOUNDARY.
 - THIS DRAWING USED THE FOLLOWING P&IDS FOR REFERENCE:
M-22AB01 M-22AB02
M-22AE02 M-22AL01
M-22BM01 M-22EP01
 - ANY REVISION TO THIS DRAWING WILL REQUIRE REVISION TO AT LEAST ONE OF THE DRAWINGS REFERENCED IN NOTE 3.
 - VALVE HANDWHEEL LOCKED IN NEUTRAL POSITION.

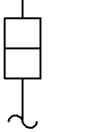
AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	STEAM GENERATORS SECONDARY SIDE COMPOSITE LOOP 3	
CHKD	N/A	(DATE)	FSAR FIGURE 10.3-1 SHEET 6	
SUPV	N/A	(DATE)	CALLAWAY PLANT	
APPD	N/A	(DATE)	LOCATION	CLASS
UNION ELECTRIC COMPANY ST. LOUIS, MO			M-22AB06	REV. 7





NOTES:

- CIRCULATING WATER LINES BELOW LEVEL ARE 120\"/>
- THE FOLLOWING SYMBOL REPRESENTS AN AIR RELEASE VALVE:

- DELETED.
- DRAIN FOR OPTIONAL CONDENSER TUBE CLEANING SYSTEM AND MAINTENANCE OF EXPANSION JOINT.
- MECHANICAL DESIGNATION PER M-20001.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- DELETED.
- THESE THERMOWELLS ARE PROVIDED FOR TEST PURPOSES TO MONITOR CONDENSER PERFORMANCE. THEY ARE OMEGA ENGINEERING, INC. TYPE 1\"/>
- CIRCULATING WATER MONITORING SAMPLE POINT VALVES 801 & 802 ARE NORMALLY CLOSED UNLESS A MONITOR IS INSTALLED.
- DELETED.
- THE CARBON STEEL CLASS HBD LINES AND FITTINGS MAY BE REPLACED WITH STAINLESS STEEL PER THE REQUIREMENTS OF CLASS HCD.
- CIRC. WATER MONITOR SKID PH ANALYZER PHL-4016-CH FEEDS RECORDER NO. RM-AIK20AA, REFERENCE M-22RM03.
- COMPONENTS REFERENCING THIS NOTE ARE NON-CONFIGURATION CONTROLLED.

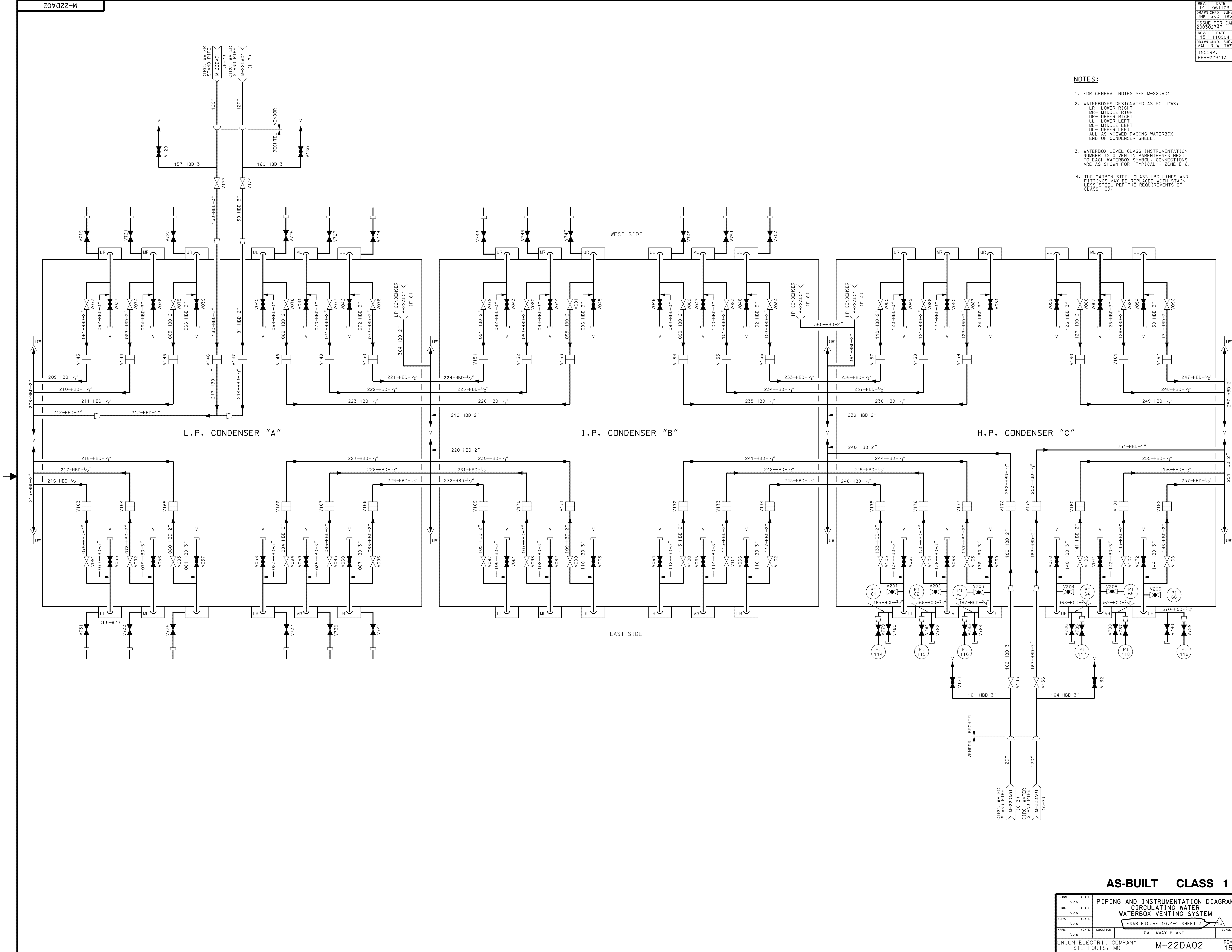
AS-BUILT CLASS 1

PIPING & INSTRUMENTATION DIAGRAM
CIRCULATING WATER
& WATER BOX DRAINS SYSTEM

FSAR FIGURE 10.4-1 SHEET 1

DRAWN	DATE	LOCATION	CLASS
N/A			
CHKD.	DATE		
N/A			
SUPV.	DATE		
N/A			
APPD.	DATE	LOCATION	CLASS
N/A		CALLAWAY ENERGY CENTER	
UNION ELECTRIC COMPANY ST. LOUIS, MO			REV. 15

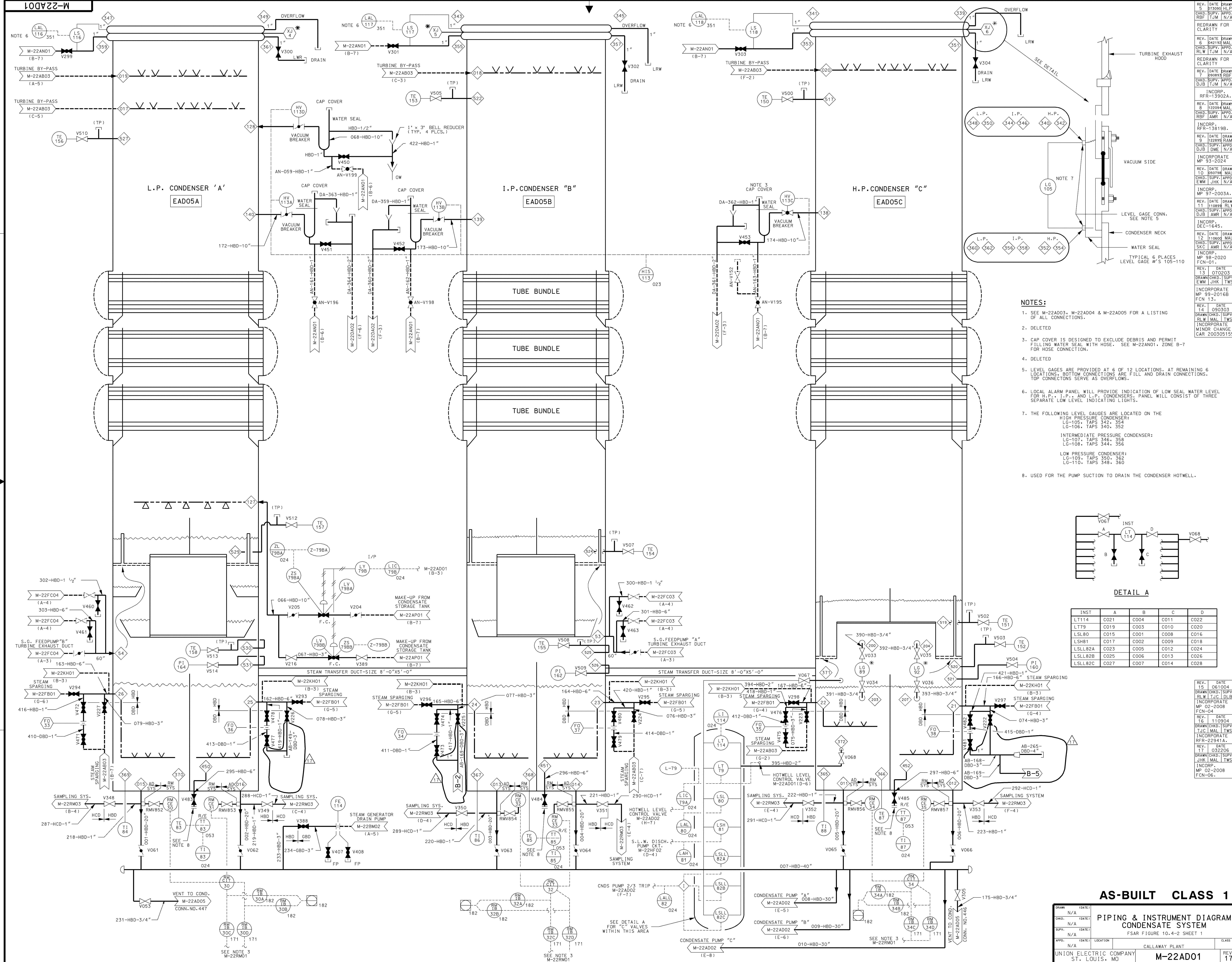
Figure 10.4-1 (Sheet 2) Deleted



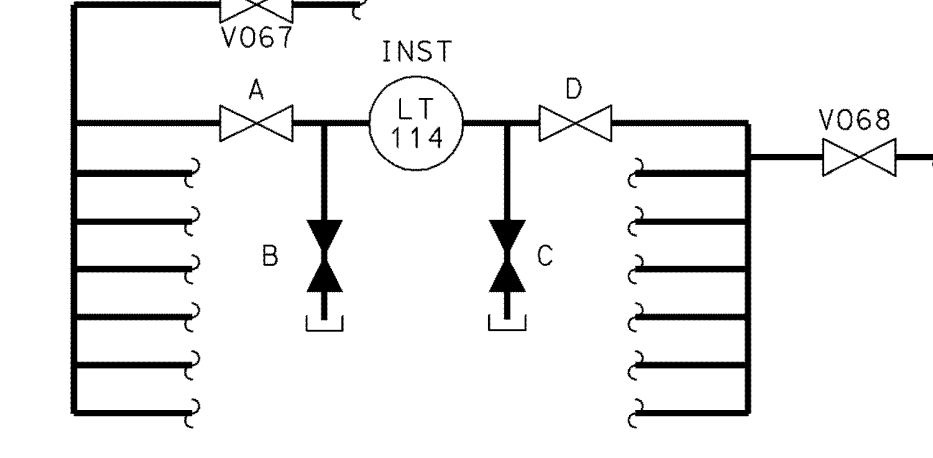
- NOTES:**
- FOR GENERAL NOTES SEE M-22DA01
 - WATERBOXES DESIGNATED AS FOLLOWS:
LR - LOWER RIGHT
MR - MIDDLE RIGHT
UR - UPPER RIGHT
LL - LOWER LEFT
ML - MIDDLE LEFT
UL - UPPER LEFT
ALL AS VIEWED FACING WATERBOX
END OF CONDENSER SHELL.
 - WATERBOX LEVEL GLASS INSTRUMENTATION
NUMBER IS GIVEN IN PARENTHESES NEXT
TO EACH WATERBOX SYMBOL. CONNECTIONS
ARE AS SHOWN FOR "TYPICAL". ZONE B-6.
 - THE CARBON STEEL CLASS HBD LINES AND
FITTINGS MAY BE REPLACED WITH STAIN-
LESS STEEL PER THE REQUIREMENTS OF
CLASS HCD.

AS-BUILT CLASS 1

DRWN	N/A	DATE		PIPING AND INSTRUMENTATION DIAGRAM CIRCULATING WATER WATERBOX VENTING SYSTEM FSAR FIGURE 10.4-1 SHEET 3	CLASS
CHD	N/A	DATE			
SUPV	N/A	DATE			
APPD	N/A	DATE			
LOC	N/A	LOCATION	CALLAWAY PLANT		
UNION ELECTRIC COMPANY ST. LOUIS, MO	M-22DA02	REV.	15		



- NOTES:**
- SEE M-22AD03, M-22AD04 & M-22AD05 FOR A LISTING OF ALL CONNECTIONS.
 - DELETED
 - CAP COVER IS DESIGNED TO EXCLUDE DEBRIS AND PERMIT FILLING WATER SEAL WITH HOSE. SEE M-22AN01, ZONE B-7 FOR HOSE CONNECTION.
 - DELETED
 - LEVEL GAGES ARE PROVIDED AT 6 OF 12 LOCATIONS. AT REMAINING 6 LOCATIONS, BOTTOM CONNECTIONS ARE FILL AND DRAIN CONNECTIONS. TOP CONNECTIONS SERVE AS OVERFLOWS.
 - LOCAL ALARM PANEL WILL PROVIDE INDICATION OF LOW SEAL WATER LEVEL FOR H.P., I.P., AND L.P. CONDENSERS. PANEL WILL CONSIST OF THREE SEPARATE LOW LEVEL INDICATING LIGHTS.
 - THE FOLLOWING LEVEL GAUGES ARE LOCATED ON THE:
HIGH PRESSURE CONDENSER:
LG-105, TAPS 342, 354
LG-106, TAPS 340, 352
INTERMEDIATE PRESSURE CONDENSER:
LG-107, TAPS 346, 358
LG-108, TAPS 344, 356
LOW PRESSURE CONDENSER:
LG-109, TAPS 350, 362
LG-110, TAPS 348, 360
 - USED FOR THE PUMP SUCTION TO DRAIN THE CONDENSER HOTWELL.



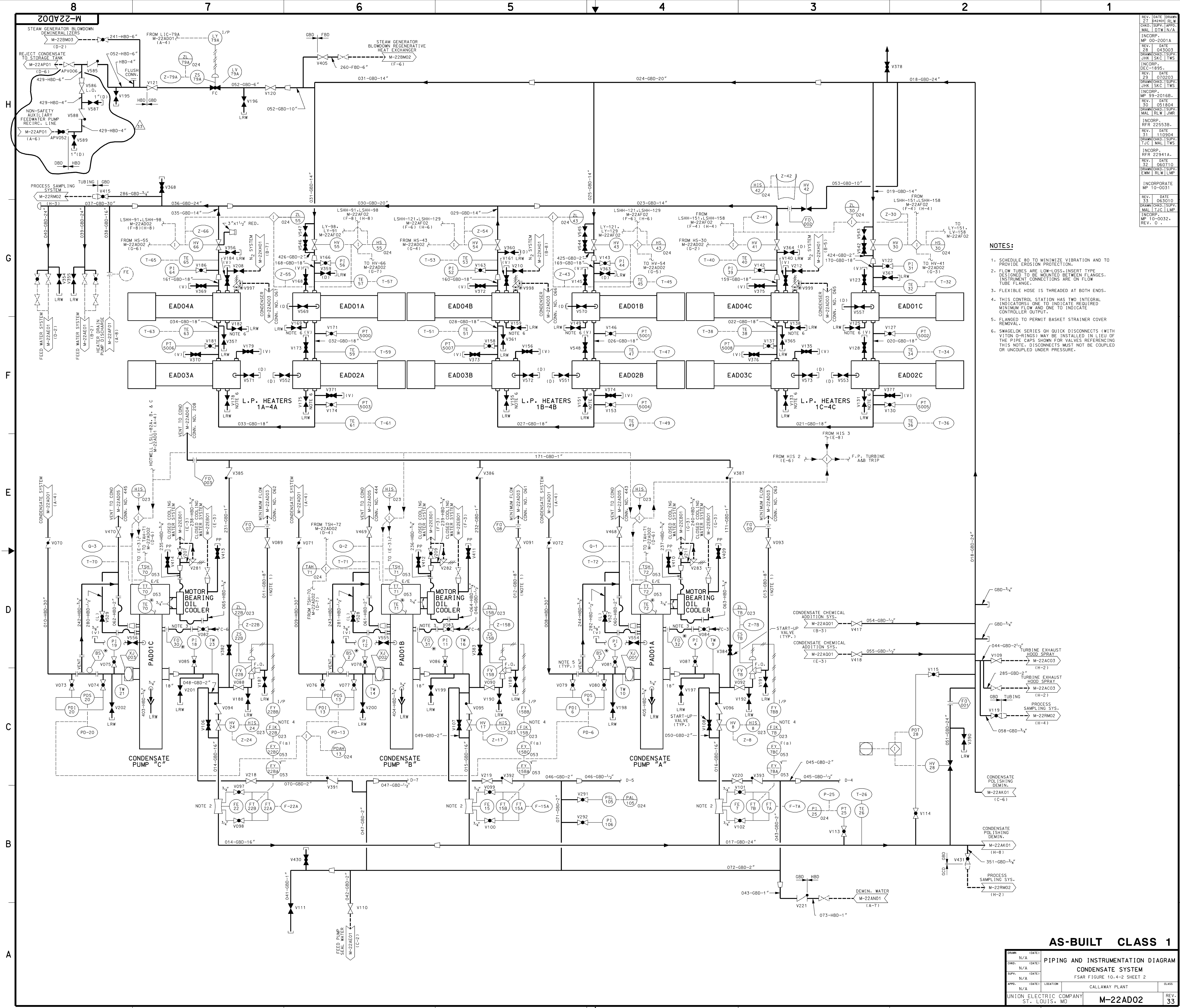
INST	A	B	C	D
LT114	C021	C004	C011	C022
LT79	C019	C003	C010	C020
LSL80	C015	C001	C008	C016
LSH81	C017	C002	C009	C018
LSLL82A	C023	C005	C012	C024
LSLL82B	C025	C006	C013	C026
LSLL82C	C027	C007	C014	C028

AS-BUILT CLASS 1

CHD.	DATE	REV.	DATE	REV.	DATE	REV.	DATE	REV.	DATE
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)
N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)	N/A	(DATE)

PIPING & INSTRUMENT DIAGRAM
CONDENSATE SYSTEM
FSAR FIGURE 10.4-2 SHEET 1

UNION ELECTRIC COMPANY ST. LOUIS, MO	M-22AD01	REV. 17
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- NOTES:**
- 1. SCHEDULE 80 TO MINIMIZE VIBRATION AND TO PROVIDE EROSION PROTECTION.
 - 2. FLOW TUBES ARE LOW-LOSS, INSERT TYPE. INSTRUMENT CONNECTIONS ARE ON FLOW TUBE FLANGE.
 - 3. FLEXIBLE HOSE IS THREADED AT BOTH ENDS.
 - 4. THIS CONTROL STATION HAS TWO INTEGRAL INDICATORS: ONE TO INDICATE REQUIRED MINIMUM FLOW AND ONE TO INDICATE CONTROLLER OUTPUT.
 - 5. FLANGED TO PERMIT BASKET STRAINER COVER REMOVAL.
 - 6. SWAGelok SERIES OR QUICK DISCONNECTS (WITH VITON O-RINGS) MAY BE INSTALLED IN LIEU OF THE PIPE CAPS SHOWN FOR VALVES REFERRING THIS NOTE. DISCONNECTS MUST NOT BE COUPLED OR UNCOUPLED UNDER PRESSURE.

AS-BUILT CLASS 1

DATE	10/20/02	CLASS	CLASS 1
CHG	N/A	DATE	
REV	N/A	DATE	
APP	N/A	DATE	
UNION ELECTRIC COMPANY	ST. LOUIS, MO	M-22AD02	REV. 33

CONDENSER CONNECTION NUMBER				CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECT IN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS
C	B	A	HP	TP	LP										
001				X			HBD	120"	120"			CIRC. WATER INLET (STANDPIPE)	DA01	G-6	
002				X			HBD	120"	120"			CIRC. WATER INLET (STANDPIPE)	DA01	G-8	
004	X						HBD	120"	120"			CIRC. WATER OUTLET (STANDPIPE)	DA01	D-2	
005	X						HBD	120"	120"			CIRC. WATER OUTLET (STANDPIPE)	DA01	D-4	
011	X				005	HBD	20"	20"	ADV-065	CONDENSATE OUTLET		AD01	B-3		
012	X				006	HBD	20"	20"	ADV-066	CONDENSATE OUTLET		AD01	B-3		
013		X			003	HBD	20"	20"	ADV-063	CONDENSATE OUTLET		AD01	B-5		
014		X			004	HBD	20"	20"	ADV-064	CONDENSATE OUTLET		AD01	B-5		
015			X		001	HBD	20"	20"	ADV-061	CONDENSATE OUTLET		AD01	B-7		
016			X		002	HBD	20"	20"	ADV-062	CONDENSATE OUTLET		AD01	B-7		
017			X			GBD	24"	24"		TURBINE BYPASS (4 VALVES)		AD01	H-8		SCH.120(NOTE 3)
018		X				GBD	24"	24"		TURBINE BYPASS (4 VALVES)		AD01	H-6		SCH.120(NOTE 3)
019			X			GBD	20"	20"		TURBINE BYPASS (3 VALVES)		AD01	H-8		SCH.120(NOTE 3)
020	X					GBD	12"	12"		TURBINE BYPASS (1 VALVE)		AD01	H-4		SCH.120(NOTE 3)
021	X				166	HBD	6"	6"	ADV-222/297	LOW LOAD CONDENSATE HEATING SYSTEM SPARGER		AD01	B-2		
022	X				167	HBD	6"	6"	ADV-223/298	LOW LOAD CONDENSATE HEATING SYSTEM SPARGER		AD01	B-4		
023		X			164	HBD	6"	6"	ADV-224/295	LOW LOAD CONDENSATE HEATING SYSTEM SPARGER		AD01	B-4		
024		X			165	HBD	6"	6"	ADV-225/296	LOW LOAD CONDENSATE HEATING SYSTEM SPARGER		AD01	B-6		
025			X		162	HBD	6"	6"	ADV-226/293	LOW LOAD CONDENSATE HEATING SYSTEM SPARGER		AD01	C-7		
026			X		163	HBD	6"	6"	ADV-227/294	LOW LOAD CONDENSATE HEATING SYSTEM SPARGER		AD01	C-8		
027	X				082	HBD	8"	12"	ADV-230	HTR 1C SHELL NORMAL OUTLET		AF02	G-3		12"x8" REDUCER AT CONDENSER
028		X			081	HBD	8"	12"	ADV-229	HTR 1B SHELL NORMAL OUTLET		AF02	G-5		
029			X		080	HBD	8"	12"	ADV-228	HTR 1A SHELL NORMAL OUTLET		AF02	G-8		
030	X				085	HBD	6"	6"	ADV-233	HTR 4C SHELL DUMP		AF02	B-3		
031		X			084	HBD	6"	6"	ADV-232	HTR 4B SHELL DUMP		AF02	B-5		
032			X		083	HBD	6"	6"	ADV-231	HTR 4A SHELL DUMP		AF02	B-8		
033	X				088	HBD	8"	12"	ADV-236	HTR 1C SHELL DUMP		AF02	G-3		12"x8" REDUCER AT CONDENSER
034		X			087	HBD	8"	12"	ADV-235	HTR 1B SHELL DUMP		AF02	G-5		
035			X		086	HBD	8"	12"	ADV-234	HTR 1A SHELL DUMP		AF02	G-8		
036	X				AF-144	HBD	12"	12"		HTR 1C SHELL DUMP		AF02	G-3		LINES PASS THRU COND. SHELLS
037		X			AF-142	HBD	12"	12"		HTR 1B SHELL DUMP		AF02	G-5		
038			X		AF-140	HBD	12"	12"		HTR 1A SHELL DUMP		AF02	G-7		
039	X				091	HBD	8"	10"	ADV-239	HTR 2C SHELL DUMP		AF02	E-3		10"x8" REDUCER AT CONDENSER
040		X			090	HBD	8"	10"	ADV-238	HTR 2B SHELL DUMP		AF02	E-5		
041			X		089	HBD	8"	10"	ADV-237	HTR 2A SHELL DUMP		AF02	E-8		
042	X				094	HBD	6"	8"	ADV-242	HTR 3C SHELL DUMP		AF02	C-3		8"x6" REDUCER AT CONDENSER
043		X			093	HBD	6"	8"	ADV-241	HTR 3B SHELL DUMP		AF02	C-5		
044			X		092	HBD	6"	8"	ADV-240	HTR 3A SHELL DUMP		AF02	C-8		
045	X				123	HBD	20"	20"	NONE	MISC. DRAIN HEADER		AD06	A-4		SCH.80 NOTE 3
046			X		125	HBD	20"	20"	NONE	MISC. DRAIN HEADER		AD06	C-8		SCH.80 NOTE 3
047	X					HBD	14"	16"		NINTH STG. TURBINE EXTRACTION		AF02	C-4		LINES PASS THRU COND. SHELLS
048		X				HBD	14"	16"		NINTH STG. TURBINE EXTRACTION		AF02	C-6		
049			X			HBD	14"	16"		NINTH STG. TURBINE EXTRACTION		AF02	C-8		
050	X					HBD	24"	24"		12TH STG. TURBINE EXTRACTION		AF02	E-4		
051		X				HBD	24"	24"		12TH STG. TURBINE EXTRACTION		AF02	E-6		
052			X			HBD	24"	24"		12TH STG. TURBINE EXTRACTION		AF02	E-8		
053		X				HBD	60"	60"	FCV-049	S.G.F.P. EXHAUST, FROM KFC01A		FC03	A-3		
054			X			HBD	60"	60"	FCV-050	S.G.F.P. EXHAUST, FROM KFC01B		FC04	A-3		
055	X				AC-045	HBD	24"	24"		M.S.R. R.V. DISCHARGE		AC02	D-2		
056	X				AC-038	HBD	24"	24"		M.S.R. R.V. DISCHARGE		AC04	H-2		
057		X			AC-039	HBD	24"	24"		M.S.R. R.V. DISCHARGE		AC02	D-2		
058			X		AC-047	HBD	24"	24"		M.S.R. R.V. DISCHARGE		AC04	H-2		
059			X		AC-037	HBD	24"	24"		M.S.R. R.V. DISCHARGE		AC02	H-2		
060			X		AC-046	HBD	24"	24"		M.S.R. R.V. DISCHARGE		AC04	D-2		
061	X				012	HBD	8"	10"	ADV-091	CONDENSATE PUMP "B" MIN. FLOW		AD02	E-5		10"x8" RED. AT COND. NOZZLE AND NOTE 3
062		X			011	HBD	8"	10"	ADV-089	CONDENSATE PUMP "C" MIN. FLOW		AD02	E-7		
063			X		013	HBD	8"	10"	ADV-093	CONDENSATE PUMP "A" MIN. FLOW		AD02	E-3		SCH. 100 NOTE 3
064	X						2"								PLUGGED
065	X				131	HBD	1"	1"		L.P. HTR. NO. 4C CHANNEL R.V.		AD02	G-3		
066		X			130	HBD	1"	1"		L.P. HTR. NO. 4B CHANNEL R.V.		AD02	G-5		
067			X		129	HBD	1"	1"		L.P. HTR. NO. 4A CHANNEL R.V.		AD02	G-6		
068			X		118	GCD	6"	20"	AEFV-36	FEEDWATER RECIRC.		AE01	C-5		SCH. 80 NOTE 3
069	X				116	HBD	10"	10"	ADV-258	S.G.F.P. "A" MIN. FLOW		AE01	D-6		SCH. 100 NOTE 3
070		X			117	HBD	10"	10"	ADV-259	S.G.F.P. "B" MIN. FLOW		AE01	B-6		SCH. 100 NOTE 3
071		X			122	HBD	1 1/2"	1"		S.G.F.P. "A" SEAL DRAIN		AE01	C-5		1 1/2"x1" REDUCER AT CONDENSER NOZZLE
072			X		121	HBD	1 1/2"	1"		S.G.F.P. "B" SEAL DRAIN		AE01	A-5		
073		X			AE-107	HBD	1"	1"	AEV-277	S.G.F.P. "A" WARM-UP RECIRC.		AE01	E-3		
074		X			AE-106	HBD	1"	1"	AEV-276	S.G.F.P. "B" WARM-UP RECIRC.		AE01	C-4		
075			X		132	HBD	10"	16"	ADV-267	M.S. DRAIN TANK "B" DUMP		AF01	G-5		VALVE AT CONDENSER
076		X			276	HBD	10"	16"	ADV-268	M.S. DRAIN TANK "A" DUMP		AF01	G-5		
077		X			135	GBD	6"	8"	ADV-270	1ST STG.RHT.DRAIN TANK "B" DUMP		AF01	G-3		
078		X			134	GBD	6"	8"	ADV-269	1ST STG.RHT.DRAIN TANK "A" DUMP		AF01	G-7		
079		X			136	EBD	6"	10"	ADV-271	2ND STG.RHT.DRAIN TANK "B" DUMP		AF01	G-2		
080		X			272	EBD	6"	10"	ADV-272	2ND STG.RHT.DRAIN TANK "A" DUMP		AF01	G-8		12"x10" REDUCER @ COND. NOZZLE

	CONDENSER CONNECTION NUMBER	CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECT IN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS
		HP	IP	A									
	081			X	145	GBD	12"	12"	ADV-274	H.P. HTR. NO. 7B SHELL DUMP	AF01	E-3	
	082			X	144	GBD	12"	12"	ADV-273	H.P. HTR. NO. 7A SHELL DUMP	AF01	E-8	
	083			X	147	GBD	12"	16"	ADV-276	H.P. HTR. NO. 6B SHELL DUMP	AF01	D-3	
	084			X	146	GBD	16"	16"	ADV-275	H.P. HTR. NO. 6A SHELL DUMP	AF01	D-7	
	085		X		148	HBD	16"	16"	ADV-277	HTR. DRAIN TANK "A" DUMP	AF01	B-3	
	086			X	149	HBD	16"	16"	ADV-278	HTR. DRAIN TANK "B" DUMP	AF01	B-3	
	087			X	375	HBD	8"	16"		MISC. DRAIN HEADER	AD06	A-5	
	094	X			103	HBD	3"	3"	ADV-245	HEATER NO. 1C VENT	AF03	H-5	
	095		X		102	HBD	3"	3"	ADV-244	HEATER NO. 1B VENT	AF03	H-4	
	096			X	101	HBD	3"	3"	ADV-243	HEATER NO. 1A VENT	AF03	H-3	
	097	X			106	HBD	3"	3"	ADV-248	HEATER NO. 2C VENT	AF03	F-5	
	098		X		105	HBD	3"	3"	ADV-247	HEATER NO. 2B VENT	AF03	F-4	
	099			X	104	HBD	3"	3"	ADV-246	HEATER NO. 2A VENT	AF03	F-3	
	100	X			109	HBD	3"	3"	ADV-251	HEATER NO. 3C VENT	AF03	E-5	
	101		X		108	HBD	3"	3"	ADV-250	HEATER NO. 3B VENT	AF03	E-4	
	102			X	107	HBD	3"	3"	ADV-249	HEATER NO. 3A VENT	AF03	E-3	
	103	X			112	HBD	3"	3"	ADV-254	HEATER NO. 4C VENT	AF03	C-5	
	104		X		111	HBD	3"	3"	ADV-253	HEATER NO. 4B VENT	AF03	C-4	
	105			X	110	HBD	3"	3"	ADV-252	HEATER NO. 4A VENT	AF03	C-3	
	106			X	113	HBD	2 1/2"	2 1/2"	ADV-255	H.P.HTR.NO. 5A & 5B VENT	AF03	C-6	VALVE 1S CLASS GBD
	107	X			114	HCD	2 1/2"	2 1/2"	ADV-256	H.P.HTR.NO. 6A & 6B VENT	AF03	E-6	VALVE 1S CLASS GCD
	108			X	115	HCD	2 1/2"	2 1/2"	ADV-257	H.P.HTR.NO. 7A & 7B VENT	AF03	H-6	VALVE 1S CLASS GCD
	109			X	306	HBD	8"	8"		H.P. HTR. NO. 5B RV	AF03	B-6	
	110			X	305	HBD	8"	8"		H.P. HTR. NO. 5A RV	AF03	B-8	
	111			X	307	HBD	6"	6"		H.P. HTR. NO. 6A RV	AF03	D-8	
	112			X	308	HBD	6"	6"		H.P. HTR. NO. 6B RV	AF03	D-6	
	113			X	309	HBD	6"	6"		H.P. HTR. NO. 7A RV	AF03	G-8	
	114			X	310	HBD	6"	6"		H.P. HTR. NO. 7B RV	AF03	G-6	
	115	X			AF-283	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 1C DRAIN	AF03	G-5	
	116		X		281	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 1B DRAIN	AF03	G-4	
	117			X	279	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 1A DRAIN	AF03	G-2	
	118	X			302	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 2C DRAIN	AF03	F-5	
	119		X		300	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 2B DRAIN	AF03	F-4	
	120			X	298	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 2A DRAIN	AF03	F-2	
	121	X			320	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 3C DRAIN	AF03	D-5	
	122		X		318	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 3B DRAIN	AF03	D-4	
	123			X	316	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 3A DRAIN	AF03	D-2	
	124	X			338	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 4C DRAIN	AF03	B-5	
	125		X		336	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 4B DRAIN	AF03	B-4	
	126			X	334	HBD	1 1/2"	1 1/2"		L.P. HTR. NO. 4A DRAIN	AF03	B-2	
	127	X			066	HBD	10"	10"	ADV-216/205	CONDENSATE MAKE-UP TO HOTWELL	AD01	D-7	
	128		X		068	HBD	10"	10"	ADHV-113D	VACUUM BREAKER	AD01	F-7	MOTOR OPER. VALVE
	129			X	128	HBD	12"	12"	CAV-006	STEAM PACKING UNLOADING VALVE	CA01	G-6	
	130			X	127	HBD	3"	3"	ADV-265	STM. PACKING EXHAUSTER DRAIN	CA01	A-4	
	131			X	151	HBD	4"	4"	ADV-280	MISC. DRAIN HEADER	AD06	A-8	
	132			X	152	HBD	4"	4"	ADV-406	MISC.COND.DRAIN TANK (TUBE BUNDLE)	LE04	D-7	
	133			X	056	HBD	4"	4"	ADV-266	REBOILER DRAIN TANK	FB01	C-8	
	134	X			201	HBD	6"	6"		L.P.HTR.NO.4C SHELL DUMP	AF02	B-3	
	135		X		199	HBD	6"	6"		L.P.HTR.NO.4B SHELL DUMP	AF02	B-5	
	136			X	197	HBD	6"	6"		L.P.HTR.NO.4A SHELL DUMP	AF02	B-7	
	137	X			069	HBD	4"	4"		DEMINERAL IZER FLUSH LINE	AK01	D-2	
	138	X			174	HBD	10"	10"	ADHV-113C	VACUUM BREAKER	AD01	F-3	
	139		X		173	HBD	10"	10"	ADHV-113B	VACUUM BREAKER	AD01	F-6	
	140			X	172	HBD	10"	10"	ADHV-113A	VACUUM BREAKER	AD01	F-7	
	141	X						14"					CAPPED
	142			X		HBD	4"	4"		STEAM GEN. BLOWDOWN SYSTEM	BM01	H-2	
	143			X		HBD	8"	8"		AIR VAPOR TAKEOFF FOR L.P. UPPER SOUTH TUBE BUNDLE	CG01	G-7	
	144			X		HBD	8"	8"		AIR VAPOR TAKEOFF FOR L.P. MIDDLE SOUTH TUBE BUNDLE	CG01	G-7	
	145			X		HBD	8"	8"		AIR VAPOR TAKEOFF FOR L.P. LOWER SOUTH TUBE BUNDLE	CG01	G-7	
	146			X		HBD	8"	8"		AIR VAPOR TAKEOFF FOR L.P. UPPER NORTH TUBE BUNDLE	CG01	G-7	
	147			X		HBD	8"	8"		AIR VAPOR TAKEOFF FOR L.P. MIDDLE NORTH TUBE BUNDLE	CG01	G-7	
	148			X		HBD	8"	8"		AIR VAPOR TAKEOFF FOR L.P. LOWER NORTH TUBE BUNDLE	CG01	G-7	

CONDENSER CONNECTION NUMBER				CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECT IN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS
C	B	A	HP	IP	LP										
161		X			154	HBD	6"	6"		L.P. HTR. NO. 4B R.V.	AF03	C-4			
162			X		156	HBD	6"	6"		L.P. HTR. NO. 3A R.V.	AF03	D-3			
163			X		153	HBD	6"	6"		L.P. HTR. NO. 4A R.V.	AF03	C-3			
164	X						66"	66"		UPPER CIRC. WTR. CONN.	DA01	E-4			
165	X						66"	66"		UPPER CIRC. WTR. CONN.	DA01	E-3			
166		X					66"	66"		UPPER CIRC. WTR. CONN.	DA01	F-5			
167		X					66"	66"		UPPER CIRC. WTR. CONN.	DA01	E-5			
168			X				66"	66"		UPPER CIRC. WTR. CONN.	DA01	F-7			
169			X				66"	66"		UPPER CIRC. WTR. CONN.	DA01	F-7			
170			X				66"	66"		UPPER CIRC. WTR. CONN.	DA01	E-7			
171	X						66"	66"		UPPER CIRC. WTR. CONN.	DA01	F-3			
172	X						66"	66"		UPPER CIRC. WTR. CONN.	DA01	F-4			
173		X					66"	66"		UPPER CIRC. WTR. CONN.	DA01	F-5			
174		X					66"	66"		UPPER CIRC. WTR. CONN.	DA01	E-5			
175			X				66"	66"		UPPER CIRC. WTR. CONN.	DA01	E-7			
176	X						72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	F-3			
177	X						72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	F-4			
178		X					72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	F-5			
179		X					72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	E-6			
180			X				72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	F-7			
181			X				72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	F-7			
182			X				72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	E-7			
183	X						72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	E-4			
184	X						72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	E-3			
185		X					72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	F-6			
186		X					72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	E-5			
187			X				72"	72"		MIDDLE CIRC. WTR. CONN.	DA01	E-7			
188	X						72"	72"		LOWER CIRC. WTR. CONN.	DA01	E-4			
189	X						72"	72"		LOWER CIRC. WTR. CONN.	DA01	E-2			
190		X					72"	72"		LOWER CIRC. WTR. CONN.	DA01	F-6			
191		X					72"	72"		LOWER CIRC. WTR. CONN.	DA01	E-5			
192			X				72"	72"		LOWER CIRC. WTR. CONN.	DA01	F-7			
193			X				72"	72"		LOWER CIRC. WTR. CONN.	DA01	F-8			
194			X				72"	72"		LOWER CIRC. WTR. CONN.	DA01	E-8			
195	X						72"	72"		LOWER CIRC. WTR. CONN.	DA01	F-2			
196	X						72"	72"		LOWER CIRC. WTR. CONN.	DA01	F-4			
197		X					72"	72"		LOWER CIRC. WTR. CONN.	DA01	F-5			
198		X					72"	72"		LOWER CIRC. WTR. CONN.	DA01	E-6			
199			X				72"	72"		LOWER CIRC. WTR. CONN.	DA01	E-6			
200	X						1"		ADV-033	HOTWELL GAUGE GLASS	AD01	C-3			
201	X						1"						PLUGGED		
202	X						1"								
203	X						1"		ADV-034	HOTWELL GAUGE GLASS	AD01	C-3			
204	X						1"		ADV-035	HOTWELL GAUGE GLASS	AD01	C-3			
205	X						1"						PLUGGED		
206	X						1"								
207	X						1"		ADV-036	HOTWELL GAUGE GLASS	AD01	B-3			
208		X			171	HBD	1"	1"	ADV-382/383/384	CONDENSATE PUMP DISCHARGE VENT	AD02	G-3			
209		X					1"						PLUGGED		
210		X					1"								
211		X			294	HBD	1"	1"	RMV-028	SAMPLE PUMP DISCHARGE	RM03	B-4			
212		X			293	HBD	1"	1"	RMV-177/233	SAMPLE PUMP VENT	RM03	G-3			
213		X					1"								
214		X					1"								
215		X					1"						PLUGGED		
216			X				1"								
217			X				1"								
218			X				1"								
219		X			AF-345	HBD	1"	1"	AFV-594	HTR. DRAIN PUMP SEAL WATER RETURN	AF01	A-6	PLUGGED		
220		X					1"								
221		X					1"						PLUGGED		
222		X					1"								
223			X				1"								
224	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-2			
225	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-2			
226	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-2			
227	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-1			
228	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-3			
229	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-1			
230	X					HBD	3"	3"		WTR. BOX VENTS	DA02	F-2			
231	X					HBD	3"	3"		WTR. BOX VENTS	DA02	F-2			
232	X					HBD	3"	3"		WTR. BOX VENTS	DA02	F-2			
233	X					HBD	3"	3"		WTR. BOX VENTS	DA02	F-2			
234	X					HBD	3"	3"		WTR. BOX VENTS	DA02	F-1			
235	X					HBD	3"	3"		WTR. BOX VENTS	DA02	F-3			
236	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-2			
237	X					HBD	3"	3"		WTR. BOX VENTS	DA02	C-2			
238		X				HBD	3"	3"		WTR. BOX VENTS	DA02	F-4			
239		X				HBD	3"	3"		WTR. BOX VENTS	DA02	F-5			
240		X				HBD	3"	3"		WTR. BOX VENTS	DA02	F-4			

	CONDENSER CONNECTION NUMBER	CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECTIN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS
		C	B	A									
		HP	IP	LP									
	241		X			HBD	3"	3"		WTR. BOX VENTS	DA02	F-5	
	242		X			HBD	3"	3"		WTR. BOX VENTS	DA02	F-4	
	243		X			HBD	3"	3"		WTR. BOX VENTS	DA02	F-5	
	244		X			HBD	3"	3"		WTR. BOX VENTS	DA02	C-5	
	245		X			HBD	3"	3"		WTR. BOX VENTS	DA02	C-4	
	246		X			HBD	3"	3"		WTR. BOX VENTS	DA02	C-5	
	247		X			HBD	3"	3"		WTR. BOX VENTS	DA02	C-4	
	248		X			HBD	3"	3"		WTR. BOX VENTS	DA02	C-5	
	249		X			HBD	3"	3"		WTR. BOX VENTS	DA02	C-4	
	252			X		HBD	3"	3"		WTR. BOX VENTS	DA02	F-7	
	253			X		HBD	3"	3"		WTR. BOX VENTS	DA02	F-7	
	254			X		HBD	3"	3"		WTR. BOX VENTS	DA02	F-7	
	255			X		HBD	3"	3"		WTR. BOX VENTS	DA02	F-7	
	256			X		HBD	3"	3"		WTR. BOX VENTS	DA02	F-6	
	257			X		HBD	3"	3"		WTR. BOX VENTS	DA02	F-8	
	258			X		HBD	3"	3"		WTR. BOX VENTS	DA02	C-7	
	259			X		HBD	3"	3"		WTR. BOX VENTS	DA02	C-7	
	260			X		HBD	3"	3"		WTR. BOX VENTS	DA02	C-7	
	261			X		HBD	3"	3"		WTR. BOX VENTS	DA02	C-7	
	262			X		HBD	3"	3"		WTR. BOX VENTS	DA02	C-8	
	263			X		HBD	3"	3"		WTR. BOX VENTS	DA02	C-6	
	264			X		HBD	3"	3"		WTR. BOX VENTS	DA02	G-7	
	265			X		HBD	3"	3"		WTR. BOX VENTS	DA02	G-7	
	266	X				HBD	4"	4"		WTR. BOX DRAINS	DA01	E-4	
	267	X				HBD		4"		WTR. BOX DRAINS	DA01	E-3	
	268	X				HBD		4"		WTR. BOX DRAINS	DA01	E-4	
	269	X				HBD		4"		WTR. BOX DRAINS	DA01	E-3	
	270	X				HBD		4"		WTR. BOX DRAINS	DA01	E-4	
	271	X				HBD		4"		WTR. BOX DRAINS	DA01	E-3	
	272	X				HBD		4"		WTR. BOX DRAINS	DA01	F-3	
	273	X				HBD		4"		WTR. BOX DRAINS	DA01	F-4	
	274	X				HBD		4"		WTR. BOX DRAINS	DA01	F-3	
	275	X				HBD		4"		WTR. BOX DRAINS	DA01	F-4	
	276	X				HBD		4"		WTR. BOX DRAINS	DA01	F-3	
	277	X				HBD		4"		WTR. BOX DRAINS	DA01	F-4	
	278		X			HBD		4"		WTR. BOX DRAINS	DA01	F-5	
	279		X			HBD		4"		WTR. BOX DRAINS	DA01	F-5	
	280		X			HBD		4"		WTR. BOX DRAINS	DA01	F-5	
	281		X			HBD		4"		WTR. BOX DRAINS	DA01	F-6	
	282		X			HBD		4"		WTR. BOX DRAINS	DA01	F-5	
	283		X			HBD		4"		WTR. BOX DRAINS	DA01	F-6	
	284		X			HBD		4"		WTR. BOX DRAINS	DA01	E-5	
	285		X			HBD		4"		WTR. BOX DRAINS	DA01	E-5	
	286		X			HBD		4"		WTR. BOX DRAINS	DA01	E-5	
	287		X			HBD		4"		WTR. BOX DRAINS	DA01	E-5	
	288		X			HBD		4"		WTR. BOX DRAINS	DA01	E-6	
	289		X			HBD		4"		WTR. BOX DRAINS	DA01	E-5	
	290			X		HBD		4"		WTR. BOX DRAINS	DA01	F-7	
	291			X		HBD		4"		WTR. BOX DRAINS	DA01	F-7	
	292			X		HBD		4"		WTR. BOX DRAINS	DA01	F-7	
	293			X		HBD		4"		WTR. BOX DRAINS	DA01	F-8	
	294			X		HBD		4"		WTR. BOX DRAINS	DA01	F-7	
	295			X		HBD		4"		WTR. BOX DRAINS	DA01	F-8	
	296			X		HBD		4"		WTR. BOX DRAINS	DA01	E-7	
	297			X		HBD		4"		WTR. BOX DRAINS	DA01	E-7	
	298			X		HBD		4"		WTR. BOX DRAINS	DA01	E-8	
	299			X		HBD		4"		WTR. BOX DRAINS	DA01	E-7	
	300			X		HBD		4"		WTR. BOX DRAINS	DA01	E-8	
	301			X		HBD		4"		WTR. BOX DRAINS	DA01	E-7	
	302			X		HBD		6"		STEAM GEN. BLOWDOWN SYSTEM	BM03	C-2	
	303	X				HBD		3"		CONDUCTIVITY TAP			PLUGGED
	304	X				HBD		3"		CONDUCTIVITY TAP			
	305	X				HBD		3"		CONDUCTIVITY TAP			
	306	X				HBD		3"		CONDUCTIVITY TAP			
	307	X				HBD		3"		CONDUCTIVITY TAP			
	308	X				HBD		3"		CONDUCTIVITY TAP			
	309	X				HBD		3"		CONDUCTIVITY TAP			
	310	X				HBD		3"		CONDUCTIVITY TAP			
	311	X				HBD		3"		CONDUCTIVITY TAP			
	312	X				HBD		3"		CONDUCTIVITY TAP			
	313	X				HBD		3"		CONDUCTIVITY TAP			
	314	X				HBD		3"		CONDUCTIVITY TAP			
	315		X			HBD		3"		CONDUCTIVITY TAP			
	316		X			HBD		3"		CONDUCTIVITY TAP			
	317		X			HBD		3"		CONDUCTIVITY TAP			
	318		X			HBD		3"		CONDUCTIVITY TAP			
	319		X			HBD		3"		CONDUCTIVITY TAP			
	320		X			HBD		3"		CONDUCTIVITY TAP			

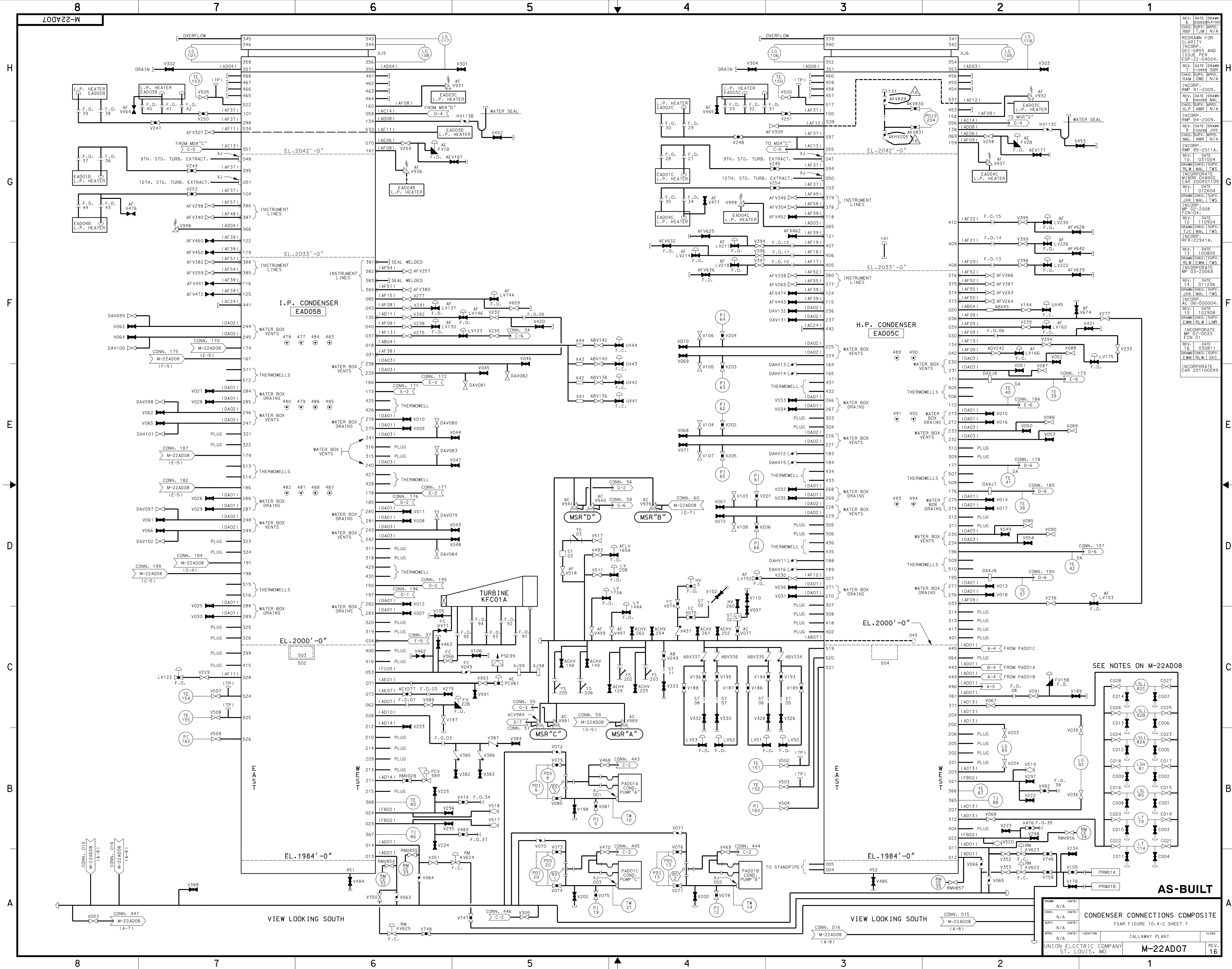
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CONDENSER CONNECTION NUMBER	CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECTIN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS				
	C	B	A													
321		X					3"		CONDUCTIVITY TAP			PLUGGED				
322		X					3"		CONDUCTIVITY TAP							
323		X					3"		CONDUCTIVITY TAP							
324		X					3"		CONDUCTIVITY TAP							
325		X					3"		CONDUCTIVITY TAP							
326		X					3"		CONDUCTIVITY TAP							
327			X				3"		CONDUCTIVITY TAP							
328			X				3"		CONDUCTIVITY TAP							
329			X				3"		CONDUCTIVITY TAP							
330			X				3"		CONDUCTIVITY TAP							
331			X				3"		CONDUCTIVITY TAP							
332			X				3"		CONDUCTIVITY TAP							
333			X				3"		CONDUCTIVITY TAP							
334			X				3"		CONDUCTIVITY TAP							
335			X				3"		CONDUCTIVITY TAP							
336			X				3"		CONDUCTIVITY TAP							
337			X				3"		CONDUCTIVITY TAP							
338			X				3"		CONDUCTIVITY TAP							
339	X						1"		WATER SEAL OVERFLOW	AD01	H-2					
340	X						1"		WATER SEAL GAUGE GLASS (TOP)	AD01	G-2					
341	X						1"		WATER SEAL OVERFLOW	AD01	H-3					
342	X						1"		WATER SEAL GAUGE GLASS (TOP)	AD01	G-2					
343		X					1"		WATER SEAL OVERFLOW	AD01	H-5					
344		X					1"		WATER SEAL GAUGE GLASS (TOP)	AD01	G-2					
345		X					1"		WATER SEAL OVERFLOW	AD01	H-4					
346		X					1"		WATER SEAL GAUGE GLASS (TOP)	AD01	G-2					
347			X				1"		WATER SEAL OVERFLOW	AD01	H-8					
348			X				1"		WATER SEAL GAUGE GLASS (TOP)	AD01	G-2					
349			X				1"		WATER SEAL OVERFLOW	AD01	H-7					
350			X				1"		WATER SEAL GAUGE GLASS (TOP)	AD01	G-2					
351	X						1"		WATER SEAL DRAIN	AD01	H-2					
352	X						1"		WATER SEAL GAUGE GLASS (BOT.)	AD01	G-2					
353	X						1"		WATER SEAL FILL	AD01	H-3					
354	X						1"		WATER SEAL GAUGE GLASS (BOT.)	AD01	G-2					
355		X					1"		WATER SEAL FILL	AD01	H-5					
356		X					1"		WATER SEAL GAUGE GLASS (BOT.)	AD01	G-2					
357		X					1"		WATER SEAL DRAIN	AD01	H-4					
358		X					1"		WATER SEAL GAUGE GLASS (BOT.)	AD01	G-2					
359			X				1"		WATER SEAL FILL	AD01	H-8					
360			X				1"		WATER SEAL GAUGE GLASS (BOT.)	AD01	G-2					
361			X				1"		WATER SEAL DRAIN	AD01	H-7					
362			X				1"		WATER SEAL GAUGE GLASS (BOT.)	AD01	G-2					
363	24	24	24				3/4"		WATER BOX GAUGE GLASS			PLUGGED				
364	12	12	12				3/4"		WATER BOX VENT							
365	X						1"	NONE	HOTWELL TEMPERATURE INST.	AD01	B-3					
366	X						1"	NONE	HOTWELL TEMPERATURE INST.	AD01	B-3					
367		X					1"	NONE	HOTWELL TEMPERATURE INST.	AD01	B-5					
368		X					1"	NONE	HOTWELL TEMPERATURE INST.	AD01	B-5					
369			X				1"	NONE	HOTWELL TEMPERATURE INST.	AD01	B-7					
370			X				1"	NONE	HOTWELL TEMPERATURE INST.	AD01	B-7					
371	X						2"	ADV-067	HOTWELL LEVEL INSTRUMENTATION	AD01						
372	X						2"	ADV-068	HOTWELL LEVEL INSTRUMENTATION	AD01						
373	X						1"		L.P. HEATER#1C-LEVEL POINT BOTTOM CONN.							
374	X						2"		L.P. HEATER#1C-INSTRUMENTATION TREE BOTTOM CONN.							
375	X						1"		L.P. HEATER#4C-LEVEL POINT (GAUGE GLASS) BOTTOM CONN.							
376	X						2"		L.P. HEATER #4C-INSTRUMENTATION TREE (LC174, LSH173) BOTTOM CONN.							
377	X						2"		L.P. HEATER#1C-INSTRUMENTATION TREE BOTTOM CONN.							
378	X						2"		L.P. HEATER#2C-INSTRUMENTATION TREE BOTTOM CONN.							
379	X						2"		L.P. HEATER#3C-INSTRUMENTATION TREE (LC167, LSH165) BOTTOM CONN.							
380	X						2"		L.P. HEATER#4C-INSTRUMENTATION TREE (LC175, LSL176, LSH177)BOTT. CONN.							
381		X					1"		L.P. HEATER#1B-LEVEL POINT (GAUGE GLASS) BOTTOM CONN.							
382		X					2"		L.P. HEATER#1B-INSTRUMENTATION TREE (LC123, LSL124, LSH125) BOTTOM CONN.							
383		X					1"		L.P. HEATER#4B-LEVEL POINT (GAUGE GLASS) BOTTOM CONN.							
384		X					2"		L.P. HEATER#4B-INSTRUMENTATION TREE (LC143, LSH144) BOTTOM CONN.							
385		X					2"		L.P. HEATER#1B-INSTRUMENTATION TREE BOTTOM CONN.							
386		X					2"		L.P. HEATER#2B-INSTRUMENTATION TREE BOTTOM CONN.							
387		X					2"		L.P. HEATER#3B-INSTRUMENTATION TREE (LC135, LSH136) BOTTOM CONN.							
388		X					2"		L.P. HEATER#4B-INSTRUMENTATION TREE (LC146, LSL147, LSH148) BOTTOM CONN.							
389			X				1"		L.P. HEATER#1A LEVEL POINT (GAUGE GLASS) BOTTOM CONN.							
390			X				2"		L.P. HEATER#1A-INSTRUMENTATION TREE (LC93, LSL94, LSH95) BOTTOM CONN.							
391			X				1"		L.P. HEATER#4A-LEVEL POINT (GAUGE GLASS) BOTTOM CONN.							
392			X				2"		L.P. HEATER#4A-INSTRUMENTATION TREE (LC115, LSL116, LSH117) BOTTOM CONN.							
393			X				2"		L.P. HEATER#1A-INSTRUMENTATION TREE (LC92, LSH91) BOTTOM CONN.							
394			X				2"		L.P. HEATER#2A-INSTRUMENTATION TREE BOTTOM CONN.							
395			X				2"		L.P. HEATER#3A-INSTRUMENTATION TREE (LC105, LSH106) BOTTOM CONN.							
396			X				2"		L.P. HEATER#4A-INSTRUMENTATION TREE (LC114, LSH113) BOTTOM CONN.							
397			X				6"		CONDUCTIVITY TAP RETURN							
398			X				6"		CONDUCTIVITY TAP RETURN							
399			X				6"		CONDUCTIVITY TAP RETURN							
400			X				6"		CONDUCTIVITY TAP RETURN							

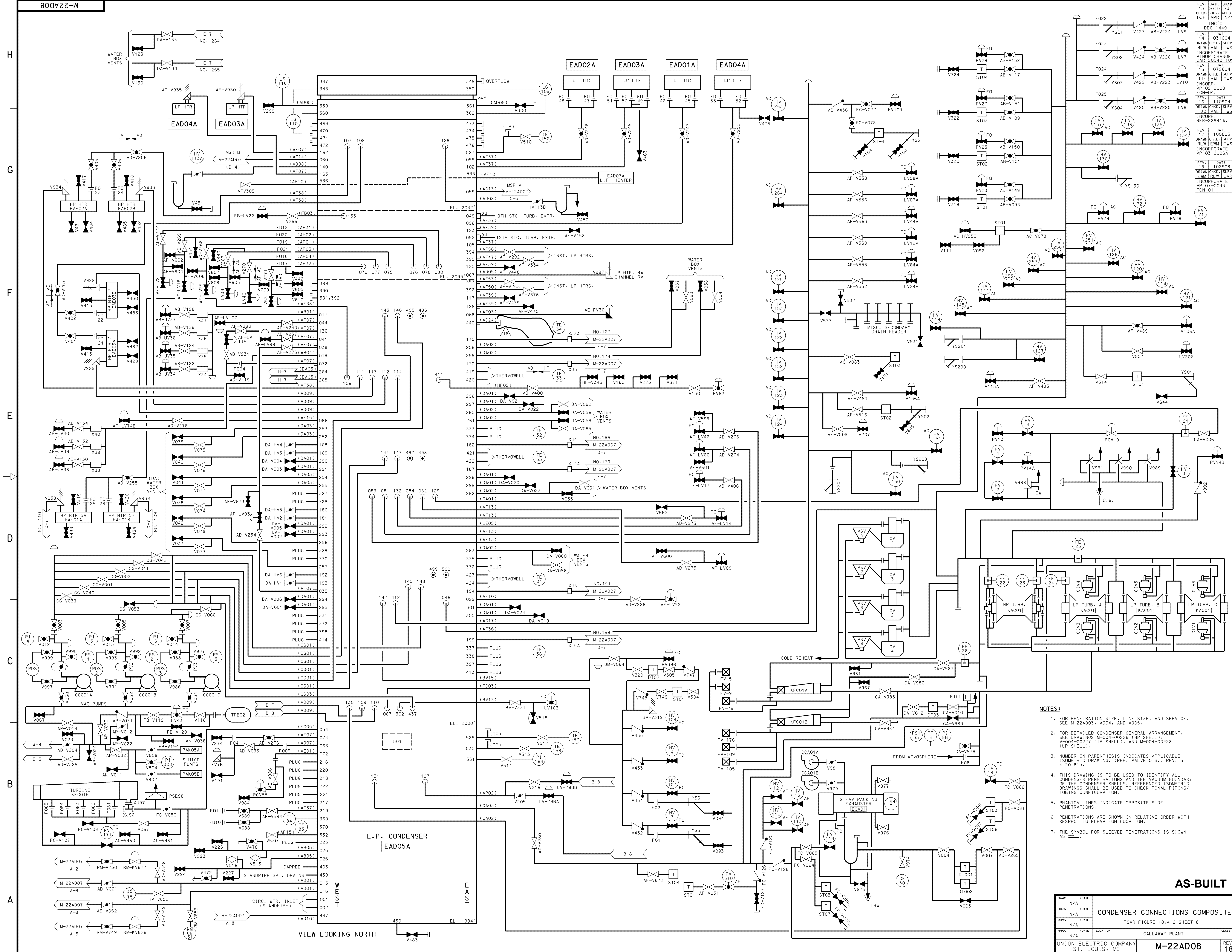
CONDENSER CONNECTION NUMBER	CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECTIN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS
	C	B	A									
401	X						6"		CONDUCTIVITY TAP RETURN			PLUGGED
402	X						6"		CONDUCTIVITY TAP RETURN			PLUGGED
403				X			2" 2"					CAPPED
404	X						2"		LEVEL INSTRUMENTATION CONN.			PLUGGED
405	X				277	HBD	10" 16"	ADV-397	MS DRAIN TANK "C" DUMP	AF04	D-5	
406	X				270	GBD	6" 8"	ADV-396	1st STAGE DRAIN TANK "C" DUMP	AF04	D-7	
407	X				273	EBD	6" 10"	ADV-394	2nd STAGE DRAIN TANK "C" DUMP	AF04	D-8	
408	X				275	HBD	10" 16"	ADV-398	MS DRAIN TANK "D" DUMP	AF04	D-5	
409	X				271	GBD	6" 8"	ADV-399	1st STAGE DRAIN TANK "D" DUMP	AF04	D-2	
410	X				274	EBD	6" 10"	ADV-395	2nd STAGE DRAIN TANK "D" DUMP	AF04	D-1	
411			X	312	HBD	3" 3"	ADV-400		SECONDARY LIQ. WASTE SYSTEM DISCH.	HF02	E-3	
412			X	311	HBD	20" 20"	NONE		MISCELLANEOUS DRAINS	AD06	B-3	NOTE 3 SCH. 80
413			X				6"		CONDUCTIVITY TAP RETURN			PLUGGED
414			X				6"		CONDUCTIVITY TAP RETURN			
415		X					6"		CONDUCTIVITY TAP RETURN			
416		X					6"		CONDUCTIVITY TAP RETURN			
417	X						6"		CONDUCTIVITY TAP RETURN			
418	X						6"		CONDUCTIVITY TAP RETURN			
419			X						THERMOWELL			
420			X						THERMOWELL			
421			X						THERMOWELL			
422			X						THERMOWELL			
423			X						THERMOWELL			
424			X						THERMOWELL			
425		X							THERMOWELL			
426		X							THERMOWELL			
427		X							THERMOWELL			
428		X							THERMOWELL			
429		X							THERMOWELL			
430		X							THERMOWELL			
431	X								THERMOWELL			
432	X								THERMOWELL			
433	X								THERMOWELL			
434	X								THERMOWELL			
435	X								THERMOWELL			
436	X								THERMOWELL			
437			X	043	HBD	4" 4"			CONDENSATE AIR REMOVAL PIPING CONDENSATE DRAIN	CG01	G-7	
439			X	049,050,051,052	HBD	8" 8"			STANDPIPE SPOOL DRAINS	DA01	6-8, G-6 C-2, C-4	
440			X				2 1/2"					CAPPED
441		X					2 1/2"					
442	X						2 1/2"					
443	X			060	HBD	2" 2"	ADV-468		CONDENSATE PUMP "A" VENT	AD02	E-4	
444	X			061	HBD	2" 2"	ADV-469		CONDENSATE PUMP "B" VENT	AD02	E-6	
445	X			062	HBD	2" 2"	ADV-470		CONDENSATE PUMP "C" VENT	AD02	E-8	
446	X			175	HBD	3/4" 1"	ADV-305		COND. PUMP SUCT. HEADER VENT	AD01	A-3	1"X 3/4" AT CONDENSER
447		X		231	HBD	3/4" 1"	ADV-053		COND. PUMP SUCT. HEADER VENT	AD01	A-7	
450			X	295	HBD	6" 6"	ADV-483		L.P. HOTWELL DRAIN	AD01	B-7	
451		X		296	HBD	6" 6"	ADV-484		I.P. HOTWELL DRAIN	AD01	B-5	
452	X			297	HBD	6" 6"	ADV-485		H.P. HOTWELL DRAIN	AD01	B-3	
453	X						3/4"					
454	X						3/4"					
455	X						3/4"					
456	X						3/4"					
457	X						3/4"					
458	X						3/4"					
459	X						3/4"					
460	X						3/4"					
461		X					3/4"					
462		X					3/4"					
463		X					3/4"					
464		X					3/4"					
465		X					3/4"					
466		X					3/4"					
467		X					3/4"					
468		X					3/4"					
469			X				3/4"					
470			X				3/4"					
471			X				3/4"					
472			X				3/4"					
473			X				3/4"					
474			X				3/4"					
475			X				3/4"					
476			X				3/4"					
477		X					8" 8"		AIR VAPOR TAKEOFF FOR I.P. UPPER			SHELL TO SHELL
478		X					8" 8"		AIR VAPOR TAKEOFF FOR I.P. UPPER			
479		X					8" 8"		AIR VAPOR TAKEOFF FOR I.P. MIDDLE			
480		X					8" 8"		AIR VAPOR TAKEOFF FOR I.P. MIDDLE			

CONDENSER CONNECTION NUMBER	CONDENSER LOCATION			LINE NUMBER	LINE CLASS	LINE SIZE	CONNECTIN SIZE	CONDENSER ISOLATION VALVE NUMBER	SERVICE	DRAWING INTERFACE NUMBER	INTERFACE DRAWING ZONE	REMARKS
	C	B	A									
481		X					8" 8"		AIR VAPOR TAKEOFF FOR I.P. LOWER			
482		X					8" 8"		AIR VAPOR TAKEOFF FOR I.P. LOWER			
483		X</										

REV.	DATE		
5.	11/29/93	JHK	
CHKO.	SUPV.	APPD.	
RFB	TJM	N/A	
INCORPORATE RMP 92-2016.			
REV.	DATE		
6.	10/23/96	JHK	
CHKO.	SUPV.	APPD.	
ML	AMR	N/A	
INCORPORATE RMP 95-2011.			
REV.	DATE		
7.	06/10/04		
CHKO.	SUPV.		
RLW	TJC	DLB	
INCORPORATE MP 02-2008 FCN-04			
REV.	DATE		
8.	11/09/04		
DRAWN	CHKD.	TWS	
TJC	ML	SUPV.	
INCORPORATE RFR-22941A			
REV.	DATE		
9.	10/29/08		
DRAWN	CHKD.	SUPV.	
EWL	RLW	LMR	
INCORPORATE MP 07-0033 FCN 01			

AS-BUILT				CLASS 1		PCN 01	
DRAWN N/A CHKD. N/A SUPV. N/A APPD. N/A	(DATE) (DATE) (DATE) (DATE)	PIPING & INSTRUMENTATION DIAGRAM CONDENSATE SYSTEM					
FSR FIGURE 10-4-2 SHEET 5 CALLAWAY PLANT						CLASS	
UNION ELECTRIC COMPANY ST. LOUIS, MO				M-22AD05		REV. 9	

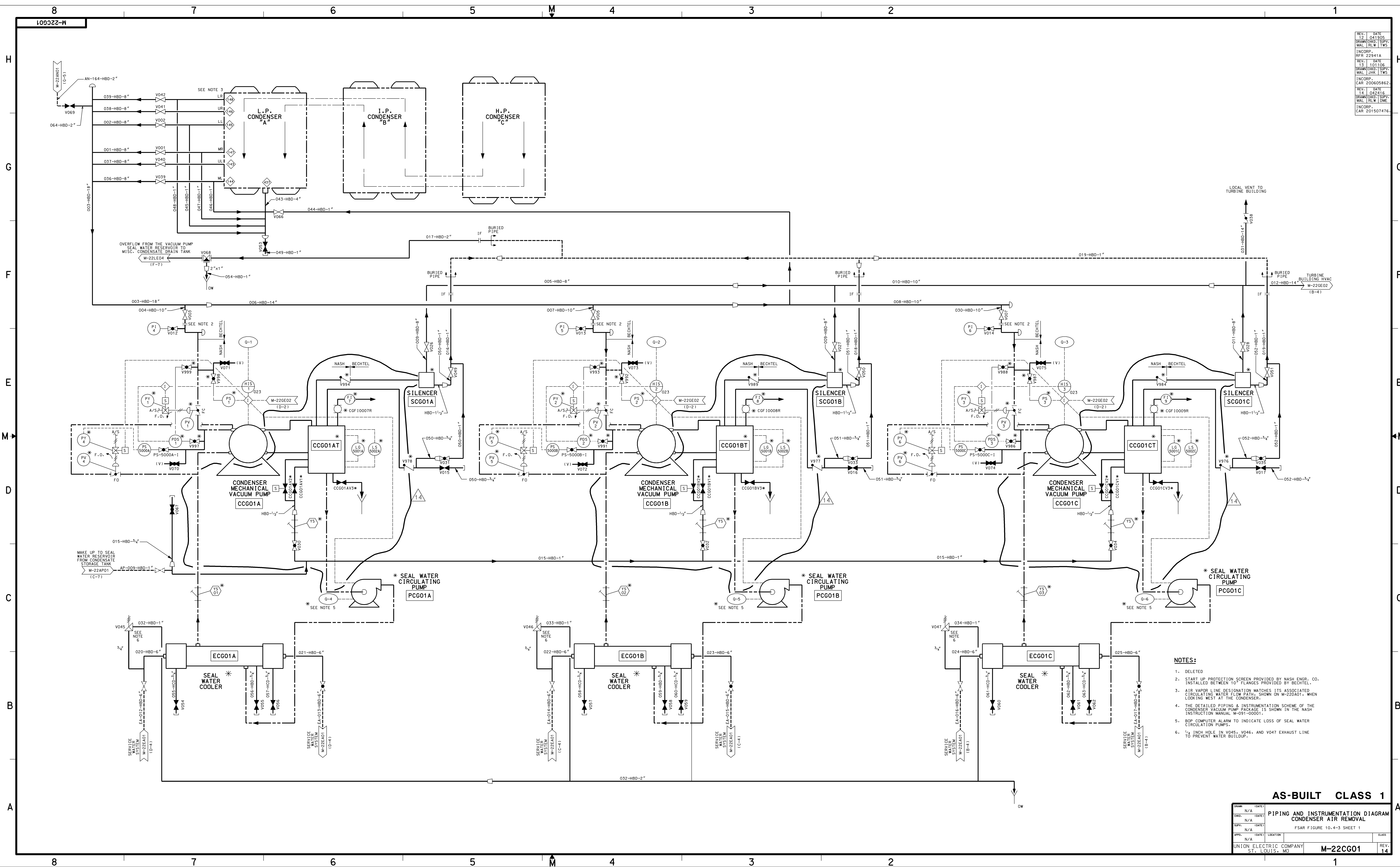


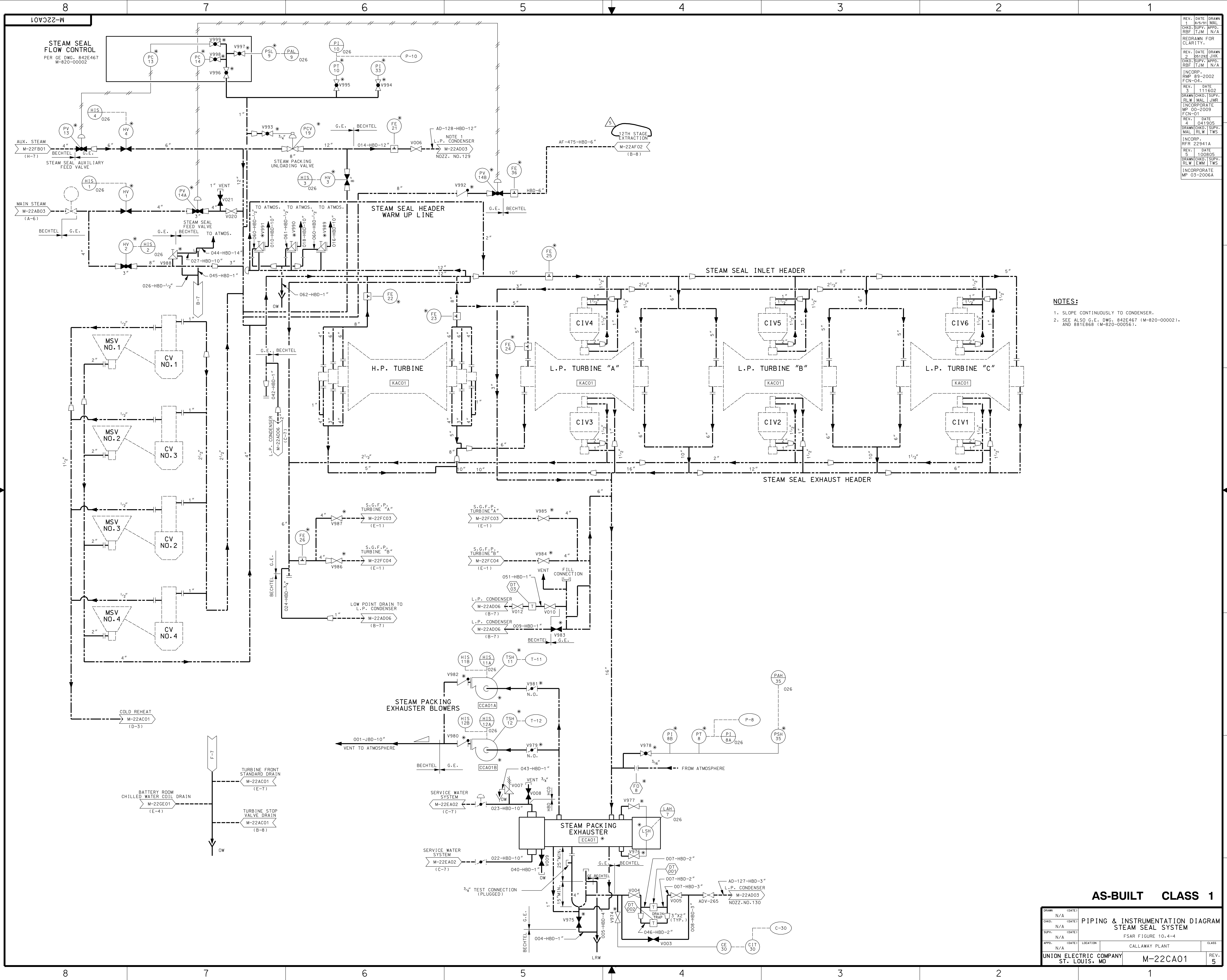


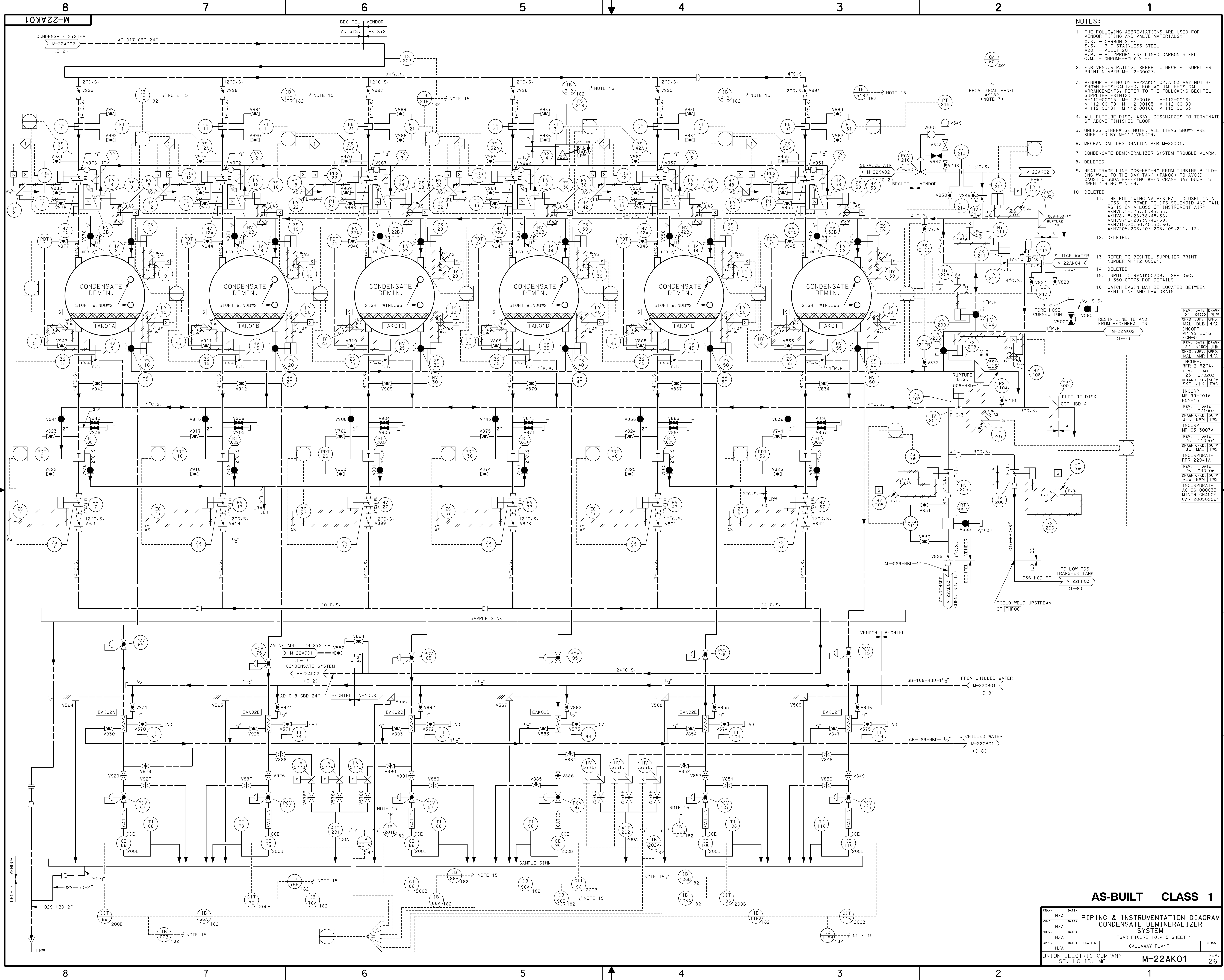
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20	07/28/91	N/A	N/A	N/A	N/A

- NOTES:**
- FOR PENETRATION SIZE, LINE SIZE, AND SERVICE, SEE M-22AD03, AD04, AND AD05.
 - FOR DETAILED CONDENSER GENERAL ARRANGEMENT, SEE DRAWINGS M-004-00226 (HP SHELL), M-004-00227 (IP SHELL), AND M-004-00228 (LP SHELL).
 - NUMBER IN PARENTHESIS INDICATES APPLICABLE ISOMETRIC DRAWING. (REF. VALVE QTS., REV. 5 4-20-81).
 - THIS DRAWING IS TO BE USED TO IDENTIFY ALL CONDENSER PENETRATIONS AND THE VACUUM BOUNDARY OF THE CONDENSER SHELLS. REFERENCED ISOMETRIC DRAWINGS SHALL BE USED TO CHECK FINAL PIPING/TUBING CONFIGURATION.
 - PHANTOM LINES INDICATE OPPOSITE SIDE PENETRATIONS.
 - PENETRATIONS ARE SHOWN IN RELATIVE ORDER WITH RESPECT TO ELEVATION LOCATION.
 - THE SYMBOL FOR SLEEVED PENETRATIONS IS SHOWN AS

AS-BUILT					
CONDENSER CONNECTIONS COMPOSITE					
FSAR FIGURE 10.4-2 SHEET 8					
DRAWN	DATE	CHKD.	DATE	APPD.	DATE
N/A		N/A		N/A	
N/A		N/A		N/A	
N/A		N/A		N/A	
N/A		N/A		N/A	
N/A		N/A		N/A	
UNION ELECTRIC COMPANY ST. LOUIS, MO				CALLAWAY PLANT CL455	
M-22AD08				REV. 18	







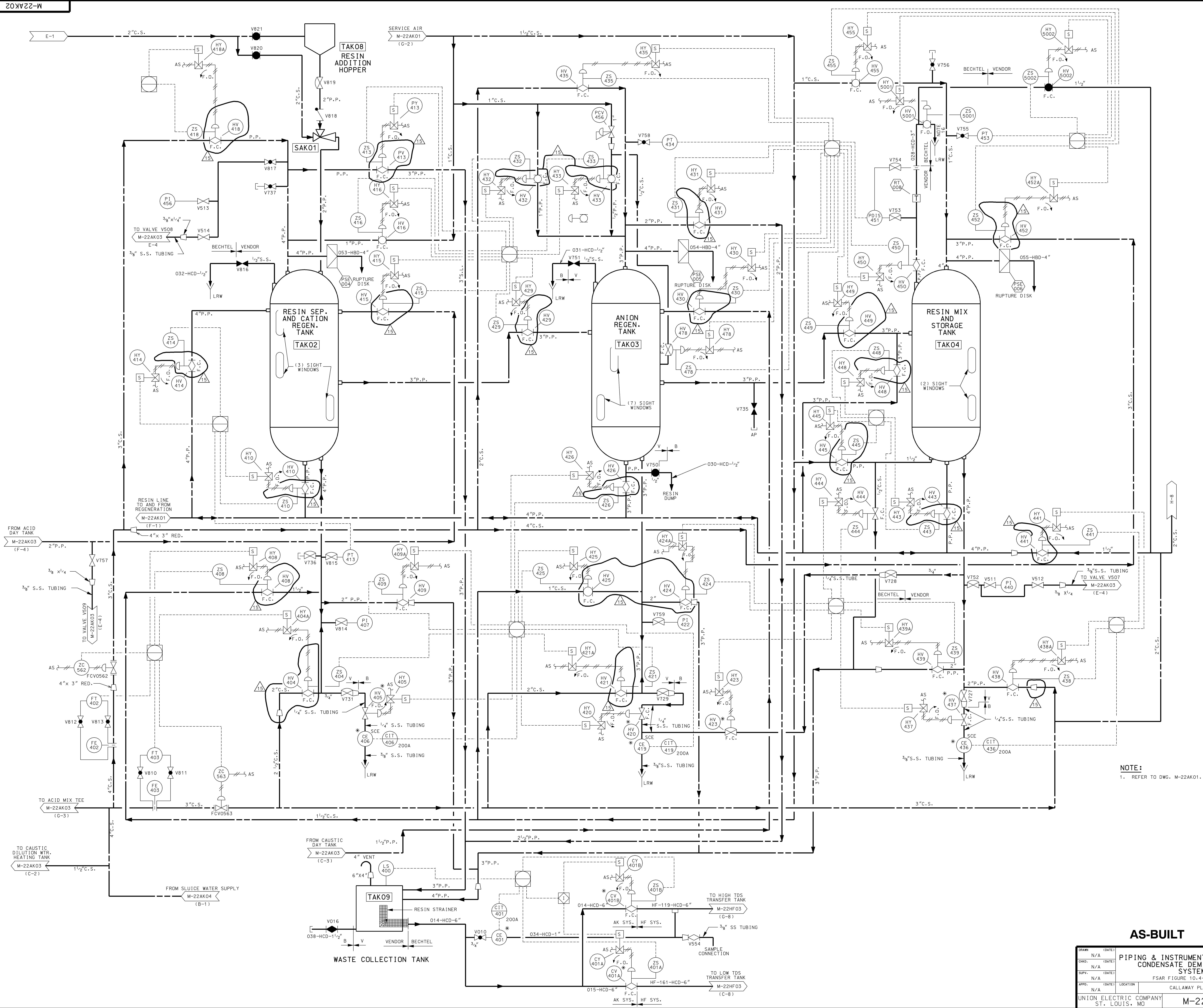
NOTES:

- THE FOLLOWING ABBREVIATIONS ARE USED FOR VENDOR PIPING AND VALVE MATERIALS:
C.S. = CARBON STEEL
S.S. = 316 STAINLESS STEEL
A20 = ALLOY 20
P.P. = POLYPROPYLENE LINED CARBON STEEL
C.M. = CHROME-MOLY STEEL
- FOR VENDOR P&ID'S, REFER TO BECHTEL SUPPLIER PRINT NUMBER M-112-00023.
- VENDOR PIPING ON M-22AK01.02 & 03 MAY NOT BE SHOWN PHYSICALLY. FOR ACTUAL PHYSICAL ARRANGEMENTS, REFER TO THE FOLLOWING BECHTEL SUPPLIER PRINTS:
M-112-00015 M-112-00161 M-112-00164
M-112-00179 M-112-00165 M-112-00180
M-112-00181 M-112-00166 M-112-00163
- ALL RUPTURE DISC, ASSY. DISCHARGES TO TERMINATE 6" ABOVE FINISHED FLOOR.
- UNLESS OTHERWISE NOTED ALL ITEMS SHOWN ARE SUPPLIED BY M-112 VENDOR.
- MECHANICAL DESIGNATION PER M-20001.
- CONDENSATE DEMINERALIZER SYSTEM TROUBLE ALARM.
- DELETED
- HEAT TRACE LINE 006-HBD-4" FROM TURBINE BUILDING WALL TO THE DAY TANK (TAK06) TO AVOID AUSTIC SODA FREEZING WHEN CRANE BAY DOOR IS OPEN DURING WINTER.
- DELETED
- THE FOLLOWING VALVES FAIL CLOSED ON A LOSS OF POWER TO ITS SOLENOID AND FAIL AS IS ON A LOSS OF INSTRUMENT AIR:
AKHV15, 26, 35, 45, 55
AKHV18, 28, 38, 48, 58
AKHV19, 29, 39, 49, 59
AKHV10, 20, 30, 40, 50, 60
AKHV205, 206, 207, 208, 209, 211, 212.
- DELETED.
- REFER TO BECHTEL SUPPLIER PRINT NUMBER M-112-00061.
- DELETED.
- INPUT TO RMAJK0020B, SEE DWG. J-350-00073 FOR DETAILS.
- CATCH BASIN MAY BE LOCATED BETWEEN VENT LINE AND LRW DRAIN.

REV.	DATE	DRAWN	CHKD.	DATE	REV.	DATE	DRAWN	CHKD.	DATE
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AS-BUILT CLASS 1

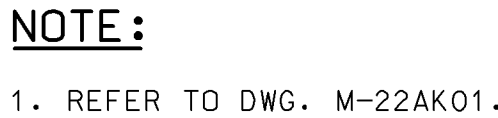
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CHKD.	(DATE)				
N/A					
SUPV.	(DATE)				
N/A					
APPD.	(DATE)	LOCATION			CLASS
N/A		CALLAWAY PLANT			
UNION ELECTRIC COMPANY		M-22AK01			REV. 26
ST. LOUIS, MO					



NOTE:
1. REFER TO DWG. M-22AK01.

AS-BUILT CLASS 1

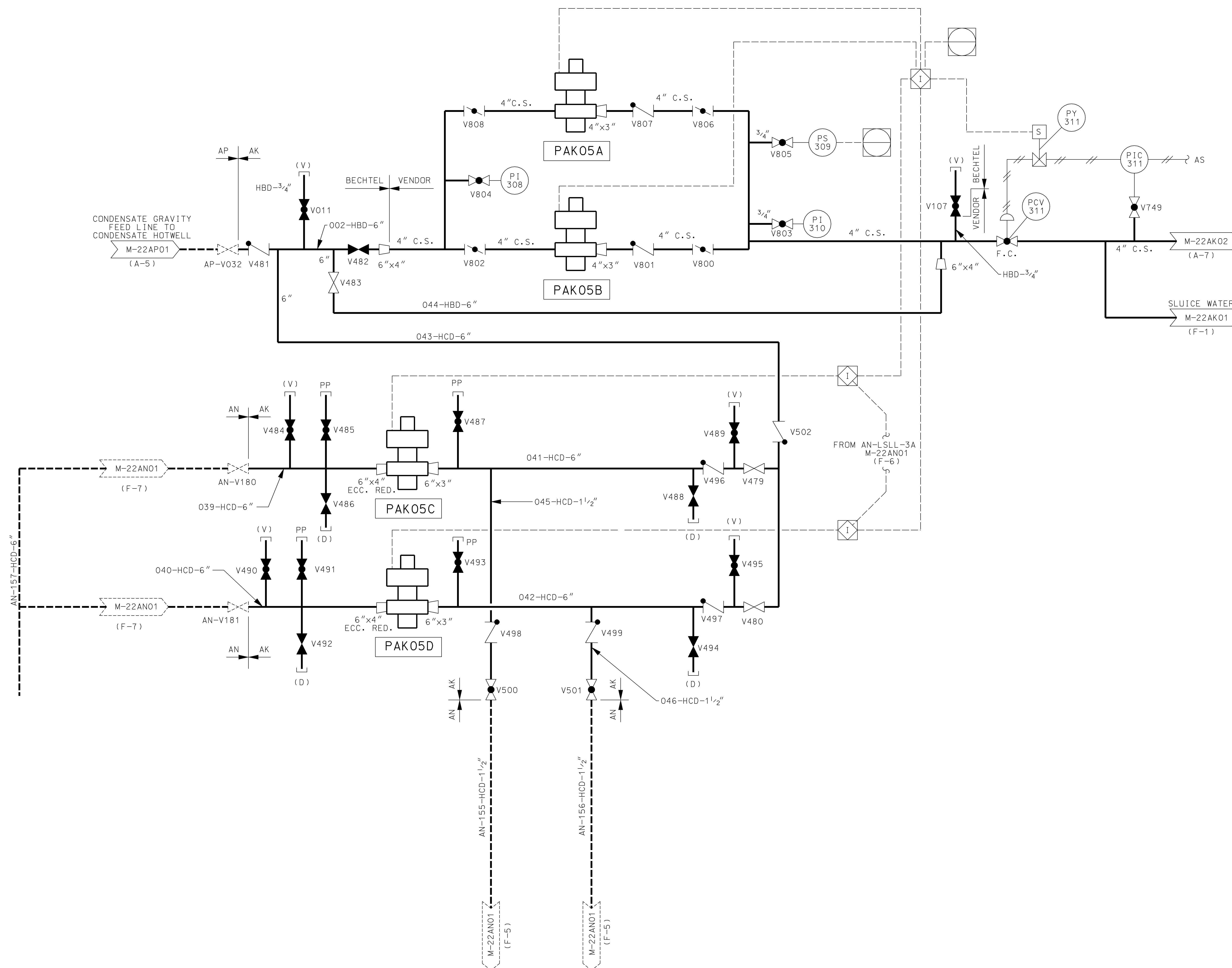
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APPR.		N/A					
APPR.		(DATE)		LOCATION		CALLAWAY PLANT	
UNION ELECTRIC COMPANY ST. LOUIS, MO				M-22AK02		REV. 15	



REV. 24	DATE 071608	
DRAWN RLW	CHKD. EWM	SUPV. JHK
INCORPORATE MP 99-2016 FCN-15		

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DRAWN	(DATE)																				
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UNION ELECTRIC COMPANY ST. LOUIS, MO		M-22AK03		REV. 24																	

REV. 5	DATE 8/5/91	DRAWN JHK
CHKD. RBF	SUPV. TJM	APPD. N/A
REDRAWN FOR CLARITY		
REV. 6	DATE 11/11/96	DRAWN RBF
CHKD. JHK	SUPV. AMR	APPD. N/A
INC'D RFR-16146A		
REV. 7	DATE 06/11/03	DRAWN JHK
CHKD. SKC	SUPV. TWS	APPD. N/A
ISSUE PER CFW 200303755.		
REV. 8	DATE 07/02/03	DRAWN SKC
CHKD. JHK	SUPV. TWS	APPD. N/A
INCORP MP 99-2016B		
REV. 9	DATE 11/09/04	DRAWN JHK
CHKD. TJM	SUPV. MAL	APPD. N/A
INCORPORATE RFR-22941A.		

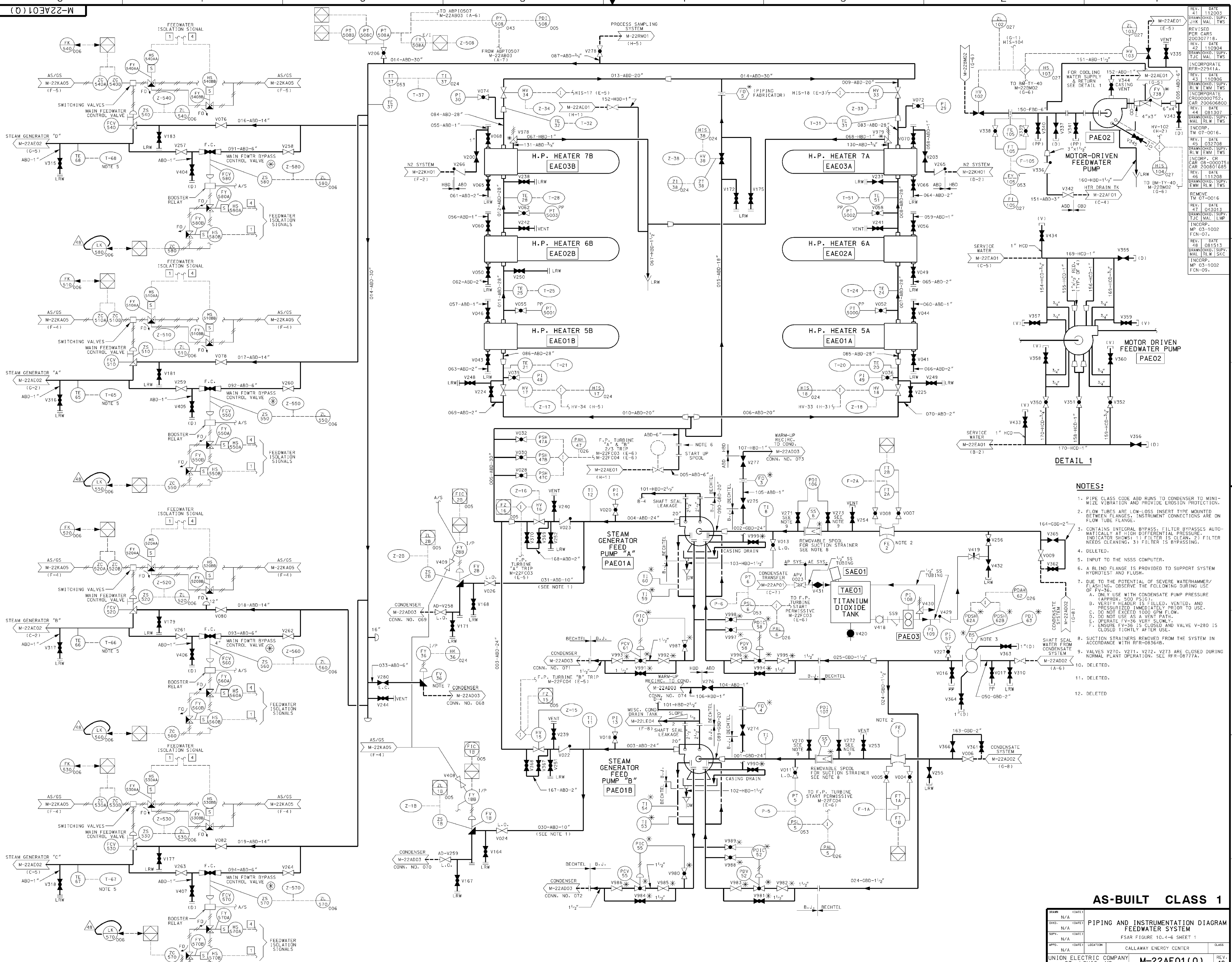


REFERENCE DWGS.:

M-220102
M-220103
M-220104

AS-BUILT CLASS 1

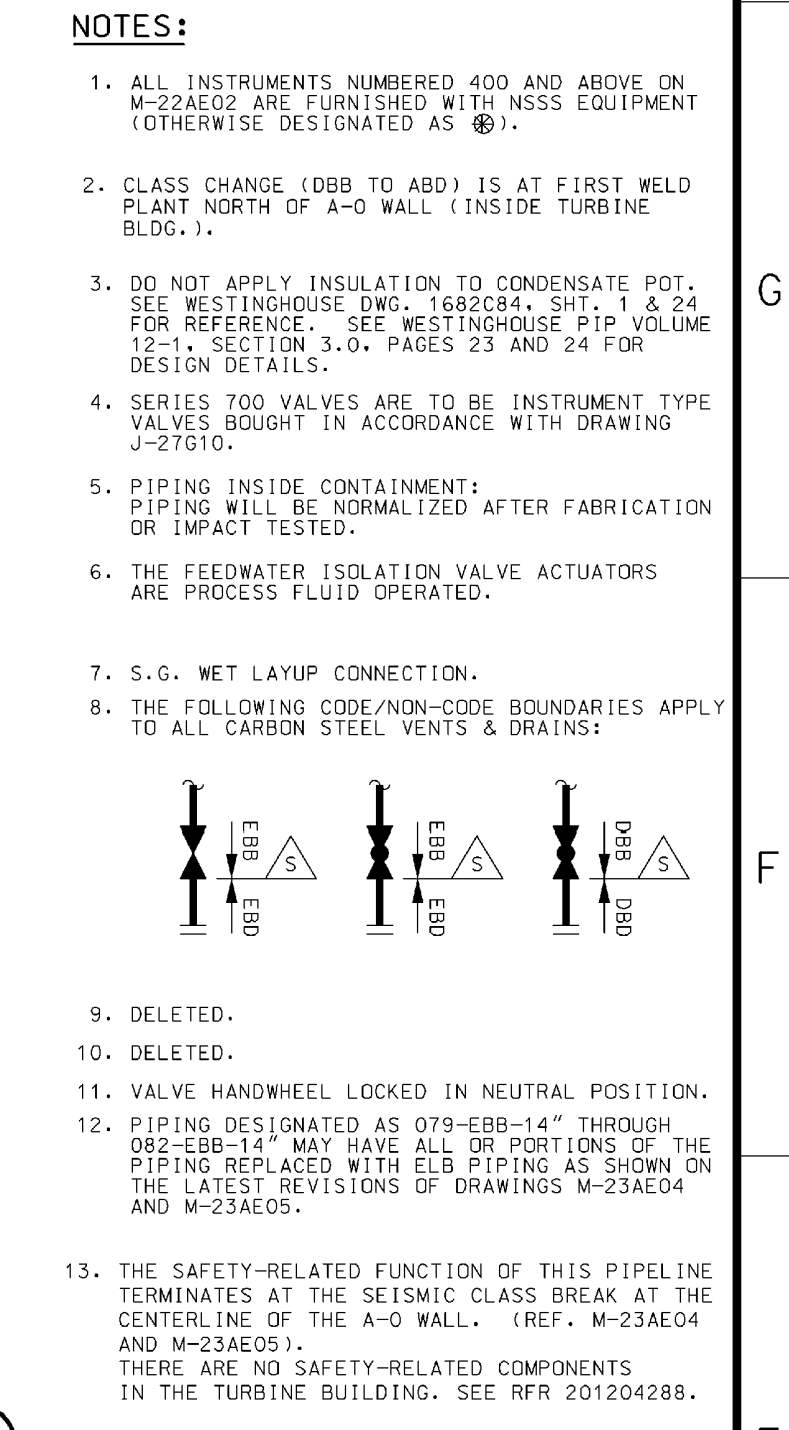
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N/A		CONDENSATE DEMINERALIZER			
CHECKED	(DATE)	SYSTEM			
N/A		FSAR FIGURE 10.4-5 SHEET 4			
SUPV.	(DATE)				
N/A					
APPROD.	(DATE)	LOCATION	CALLAWAY PLANT	CLASS	
N/A					
UNION ELECTRIC COMPANY		M-22AK04		REV	9
ST. LOUIS, MO					



- NOTES:**
- PIPE CLASS CODE ABD RUNS TO CONDENSER TO MINIMIZE VIBRATION AND PROVIDE EROSION PROTECTION.
 - FLOW TUBES ARE LOW-LOSS INSERT TYPE MOUNTED BETWEEN FLANGES. INSTRUMENT CONNECTIONS ARE ON FLOW TUBE FLANGE.
 - CONTAINS INTEGRAL BYPASS. FILTER BYPASSES AUTOMATICALLY AT HIGH DIFFERENTIAL PRESSURE. INDICATOR SHOWS: 1) FILTER IS CLEAN, 2) FILTER NEEDS CLEANING, 3) FILTER IS BYPASSING.
 - DELETED.
 - INPUT TO THE NSSS COMPUTER.
 - A BLIND FLANGE IS PROVIDED TO SUPPORT SYSTEM HYDROTEST AND FLUSH.
 - DUE TO THE POTENTIAL OF SEVERE WATERHAMMER/FLASHING, OBSERVE THE FOLLOWING DURING USE OF FV-36:
A. ONLY USE WITH CONDENSATE PUMP PRESSURE (APPROX. 500 PSIG).
B. VERIFY HEADER IS FILLED, VENTED, AND PRESSURIZED IMMEDIATELY PRIOR TO USE.
C. DO NOT EXCEED 1000 GPM FLOW.
D. DO NOT USE AS A VENT PATH.
E. OPERATE FV-36 VERY SLOWLY.
F. ENSURE FV-36 IS CLOSED AND VALVE V-280 IS CLOSED TIGHTLY AFTER USE.
 - SUCTION STRAINERS REMOVED FROM THE SYSTEM IN ACCORDANCE WITH RFR-083648.
 - VALVES V270, V271, V272, V273 ARE CLOSED DURING NORMAL PLANT OPERATION. SEE RFR-08777A.
 - DELETED.
 - DELETED.
 - DELETED.

AS-BUILT CLASS 1

DRWN	(DATE)	PIPING AND INSTRUMENTATION DIAGRAM FEEDWATER SYSTEM			CLASS
N/A					
CHKD	(DATE)	FSAR FIGURE 10.4-6 SHEET 1			REV.
N/A					
SUPV	(DATE)	CALLAWAY ENERGY CENTER			48
N/A					
APPR	(DATE)	LOCATION			
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UNION ELECTRIC COMPANY ST. LOUIS, MO			M-22AE01 (Q)		



REV. DATE DRAWN
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INCORP.
REF R-21904A

REV. DATE DRAWN
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REF R-21920A

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INCORPORATE
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REV. DATE
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RLW EWM TWS
INCORP.
REF 20040454
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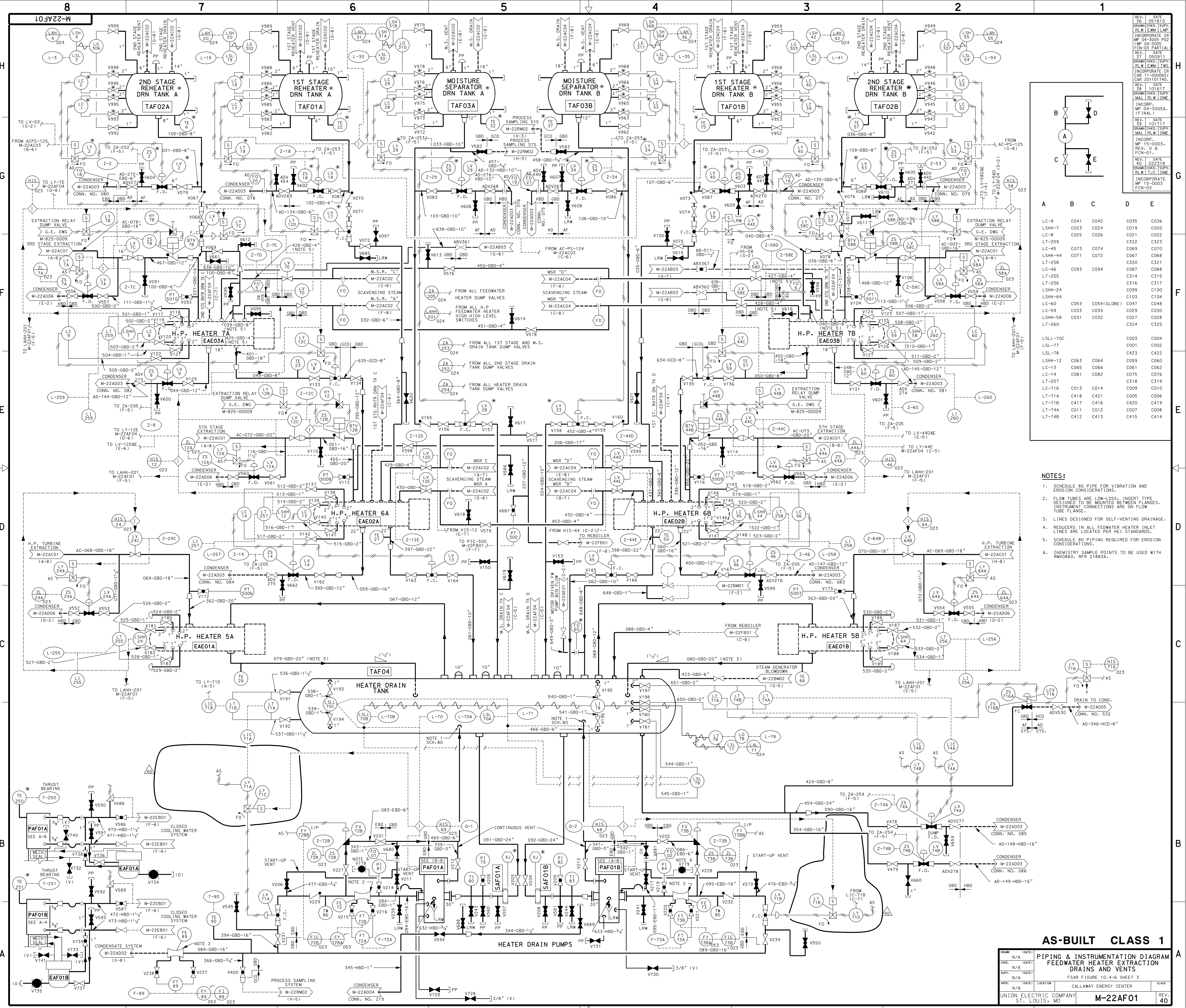
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26 071806
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INCORPORATE
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29 071806
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JHK EWM TWS
INCORP.
REF 201001930
ACT 031-1006

REV. DATE
30 041000
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JHK MAL
INCORP.
REF 031-1002
FCN-07,
31 070913
DRAWN CORP. SUPV.
MAL FLW DME
INCORP.
REF 20042888,
REV. DATE
32 032619
DRAWN CORP. SUPV.
MAL FLW JHK
INCORP.
REF 031-1002,
FCN-12.

AS-BUILT CLASS 1

ANY REVISION TO THIS DWG.
MAY REQUIRE A REVISION TO
M-22AB04, M-22AB05,
M-22AB06 AND/OR M-22AB07

N/A		PIPING AND INSTRUMENTATION DIAGRAM FEEDWATER SYSTEM FSAR FIGURE 10.4-6 SHEET 2		CLASS
CHNGD.	(DATE)			
SUPV.	(DATE)			
ISSUED	(DATE)			
N/A		LOCATION	CALLAWAY ENERGY CENTER	
UNION ELECTRIC COMPANY ST. LOUIS, MO			M-22AE02 (Q)	
			REV. 32	



A	B	C	D	E
LC-9	C041	C042	C035	C036
LSHH-7	C023	C024	C019	C020
LC-8	C025	C026	C021	C022
LT-259			C322	C323
LC-45	C073	C074	C069	C070
LSHH-44	C071	C072	C067	C068
LT-258			C320	C321
LC-46	C093	C094	C087	C088
LT-255			C314	C315
LSHH-24			C316	C317
LSHH-64			C099	C100
LC-60	C053	C054 (GLOBE)	C047	C048
LC-59	C033	C034	C029	C030
LSHH-58	C031	C032	C027	C028
LT-260			C324	C325
LSLL-70C			C003	C004
LSL-77			C001	C002
LSL-78			C423	C422
LSHH-12	C063	C064	C059	C060
LC-13	C065	C066	C061	C062
LC-14	C081	C082	C075	C076
LT-257			C318	C319
LC-716	C013	C014	C009	C010
LT-71A	C418	C421	C005	C006
LT-71B	C417	C416	C420	C419
LT-74A	C011	C012	C007	C008
LT-74B	C412	C413	C415	C414

- NOTES:
- SCHEDULE 80 PIPE FOR VIBRATION AND EROSION CONSIDERATIONS.
 - FLOW TUBES ARE LOW-LOSS, INSERT TYPE DESIGNED TO BE MOUNTED BETWEEN FLANGES. INSTRUMENT CONNECTIONS ARE ON FLOW TUBE FLANGE.
 - LINES DESIGNED FOR SELF-VENTING DRAINAGE.
 - REDUCERS IN ALL FEEDWATER HEATER INLET LINES ARE LOCATED PER NEI STANDARDS.
 - SCHEDULE 80 PIPING POINTS FOR EROSION CONSIDERATIONS.
 - CHEMISTRY SAMPLE REQUIRED TO BE USED WITH RMV060, RFR 21883A.

AS-BUILT CLASS 1

PIPING & INSTRUMENTATION DIAGRAM
FEEDWATER HEATER EXTRACTION DRAINS AND VENTS

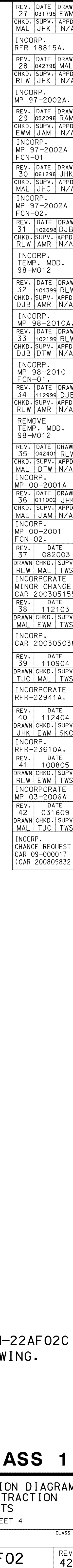
FSAR FIGURE 10.4-6 SHEET 3

CALLAWAY ENERGY CENTER

UNION ELECTRIC COMPANY
ST. LOUIS, MO

M-22AF01


REV. 40



AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	PIPING & INSTRUMENTATION DIAGRAM FEEDWATER HEATER EXTRACTION DRAINS & VENTS FSAR FIGURE 10.4-6 SHEET 4				CLASS
CHKD.	N/A	(DATE)					
SUPV.	N/A	(DATE)					
APPD.	N/A	(DATE)					
N/A			LOCATION	CALLAWAY PLANT			
UNION ELECTRIC COMPANY ST. LOUIS, MO				M-22AF02			REV 42

NOTES:

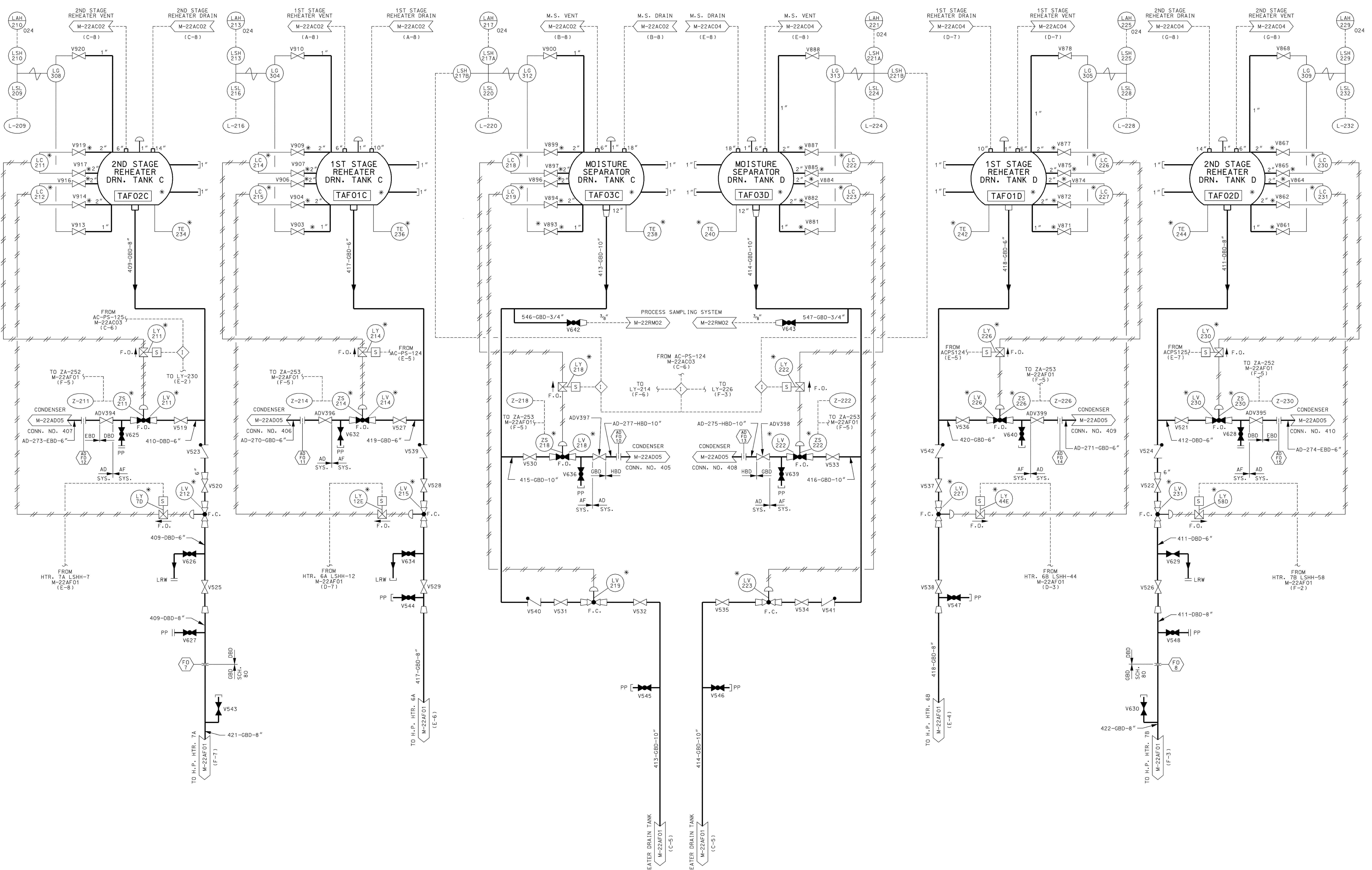
1.  REPRESENTS CONDENSER CONNECTION NO. SEE M-22AD03 AND M-22AD04 FOR MORE INFORMATION.
2. ORIFICES ARE INTEGRAL WITH NOZZLES.
3. DELETED.
4. DELETED.

REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.	MAL	DTW	N/A
INCORP.	MP	00-2001A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.
INCORP.	MP	00-1016A	REV.	DATE	DRAWN	CHKD.	SUPV.	APPD.

AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	PIPING AND INSTRUMENTATION DIAGRAM					
CHKD.	N/A	(DATE)	FEEDWATER HEATER EXTRACTION					
SUPV.	N/A	(DATE)	DRAINS AND VENTS					
APPD.	N/A	(DATE)	FSAR FIGURE 10.4-6 SHEET 5					
LOCATION	CALLAWAY PLANT		CLASS				REV.	
UNION ELECTRIC COMPANY ST. LOUIS, MO			M-22AF03				20	

M-22AF04

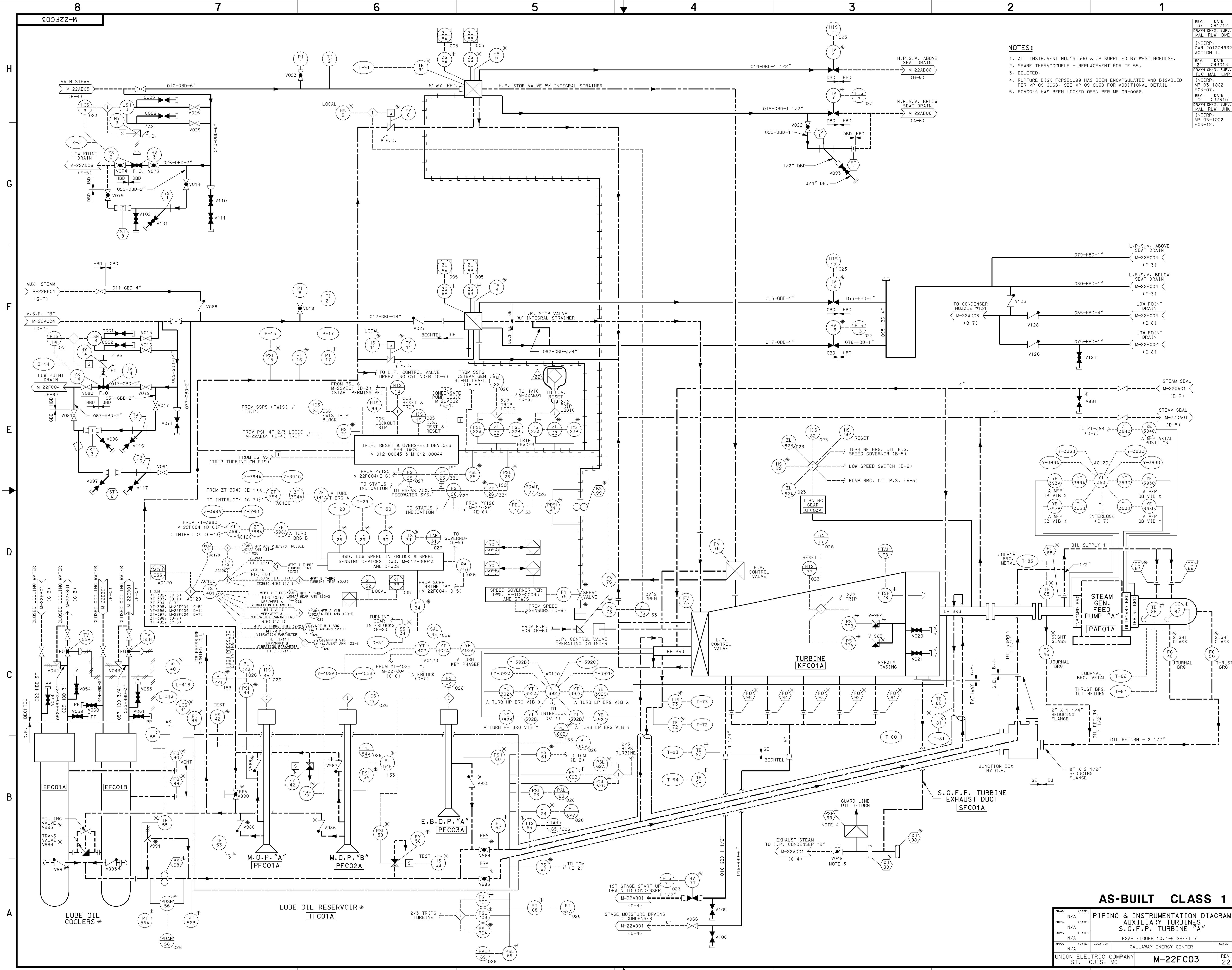


AS-BUILT CLASS 1

DRWN	N/A	(DATE)	
CHKD	N/A	(DATE)	
SUPV	N/A	(DATE)	
APPD	N/A	(DATE)	
LOCATION	CALLAWAY PLANT		
UNION ELECTRIC COMPANY			REV. 10
ST. LOUIS, MO			

PIPING & INSTRUMENTATION DIAGRAM
FEEDWATER HEATER EXTRACTION
DRAINS AND VENTS
FSAR FIGURE 10.4-6 SHEET 6

M-22AF04



NOTES:

1. ALL INSTRUMENT NO.'S 500 & UP SUPPLIED BY WESTINGHOUSE.
2. SPARE THERMOCOUPLE - REPLACEMENT FOR TE 55.
3. DELETED.
4. RUPTURE DISK FCPSE0098 HAS BEEN ENCAPSULATED AND DISABLED PER MP 09-0068. SEE MP 09-0068 FOR ADDITIONAL DETAIL.
5. FCV0049 HAS BEEN LOCKED OPEN PER MP 09-0068.

REV.	DATE	BY	CHKD.
20	091712	MAJ. RLW	DME
21	043013	MAJ. RLW	DME
22	032615	MAJ. RLW	DME
23	031002	MAJ. RLW	DME
24	031002	MAJ. RLW	DME
25	031002	MAJ. RLW	DME
26	031002	MAJ. RLW	DME
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AS-BUILT CLASS 1

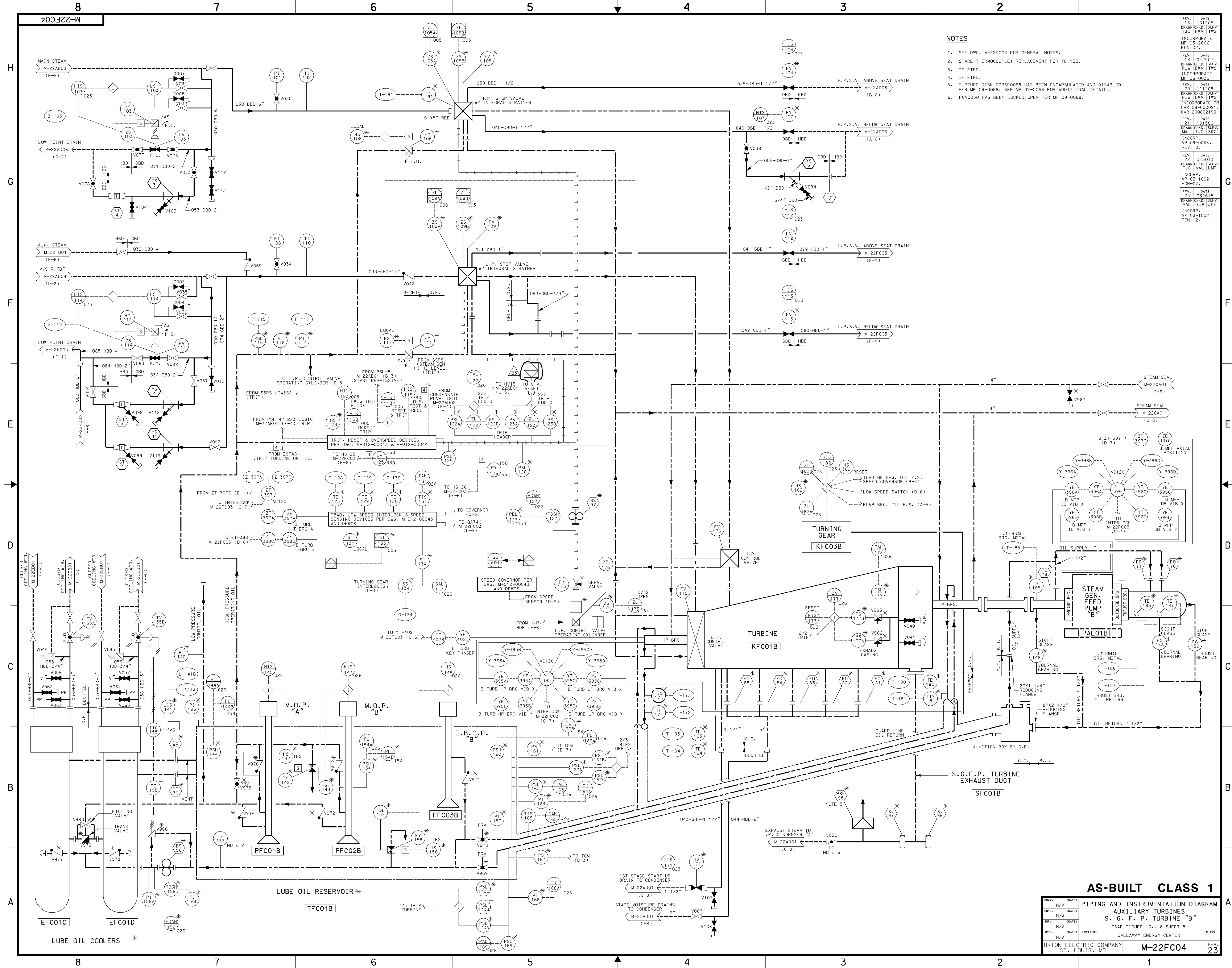
PIPING & INSTRUMENTATION DIAGRAM
AUXILIARY TURBINES
S.G.F.P. TURBINE "A"

FSAR FIGURE 10.4-6 SHEET 7
CALLAWAY ENERGY CENTER

UNION ELECTRIC COMPANY
ST. LOUIS, MO

M-22FC03

REV. 22



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REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

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INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

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REV. DATE DRAWN BY

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INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

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REV. DATE DRAWN BY

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REV. DATE DRAWN BY

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INCORP. TEMP. MOD. 98-M012

REV. DATE DRAWN BY

CHD: SUPV. APPD. DJS JHK N/A

INCORP. TEMP. MOD. 98-M012

AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	
CHD:	N/A	(DATE)	
SUPV.	N/A	(DATE)	
APPD.	N/A	(DATE)	
LOCATION	CALLAWAY PLANT		
UNION ELECTRIC COMPANY	M-22AF02C		
ST. LOUIS, MO			
REV.	4		

PIPING & INSTRUMENTATION DIAGRAM
FEEDWATER HEATER EXTRACTION
DRAINS & VENTS

FSAR FIGURE 10.4-6 SHEET 9

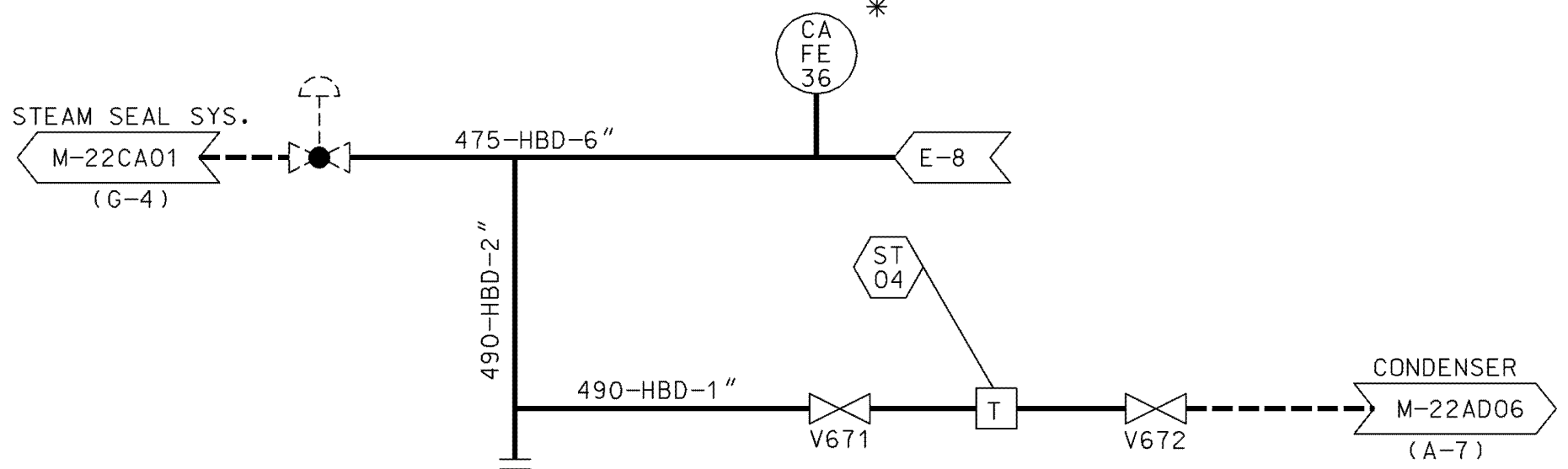
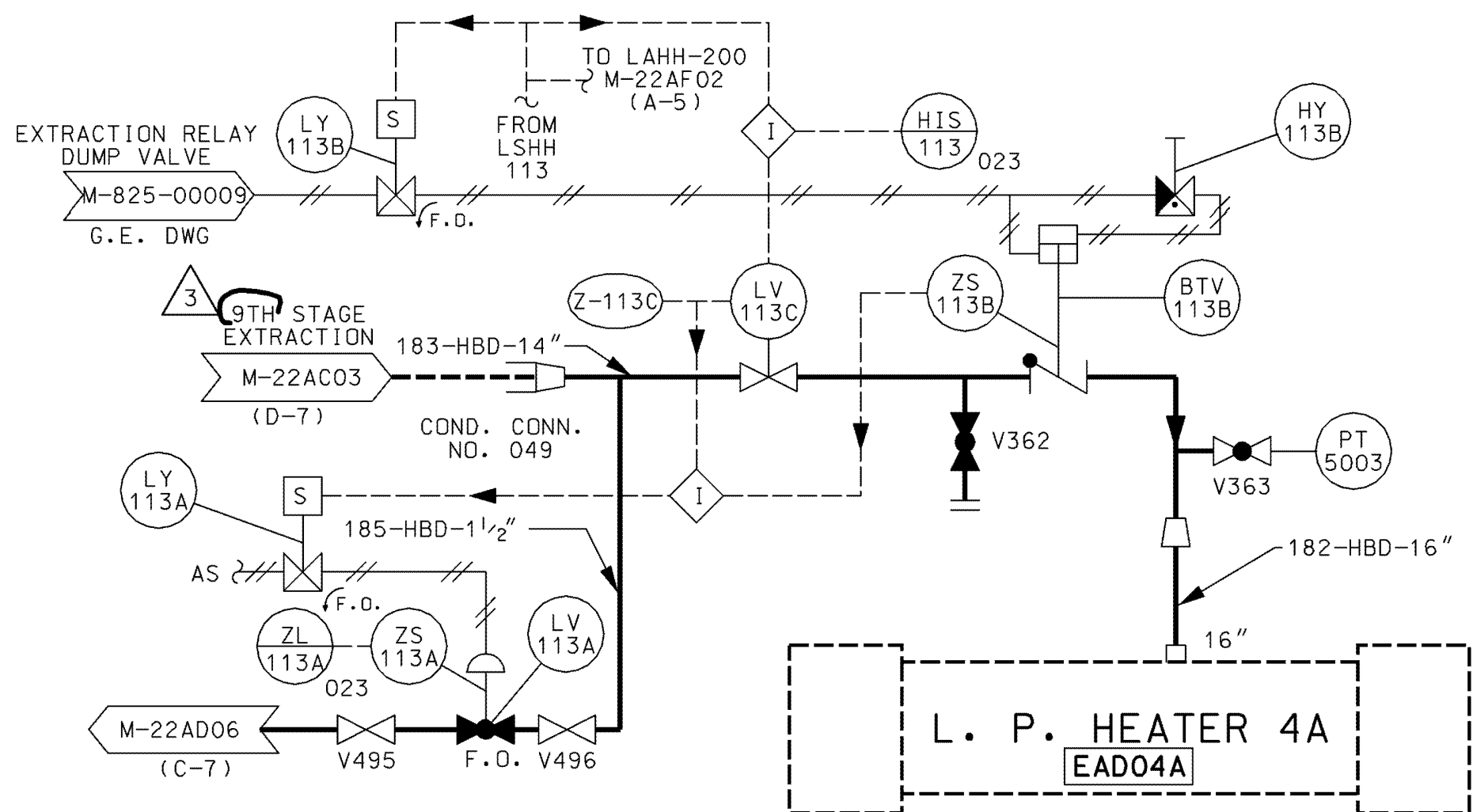
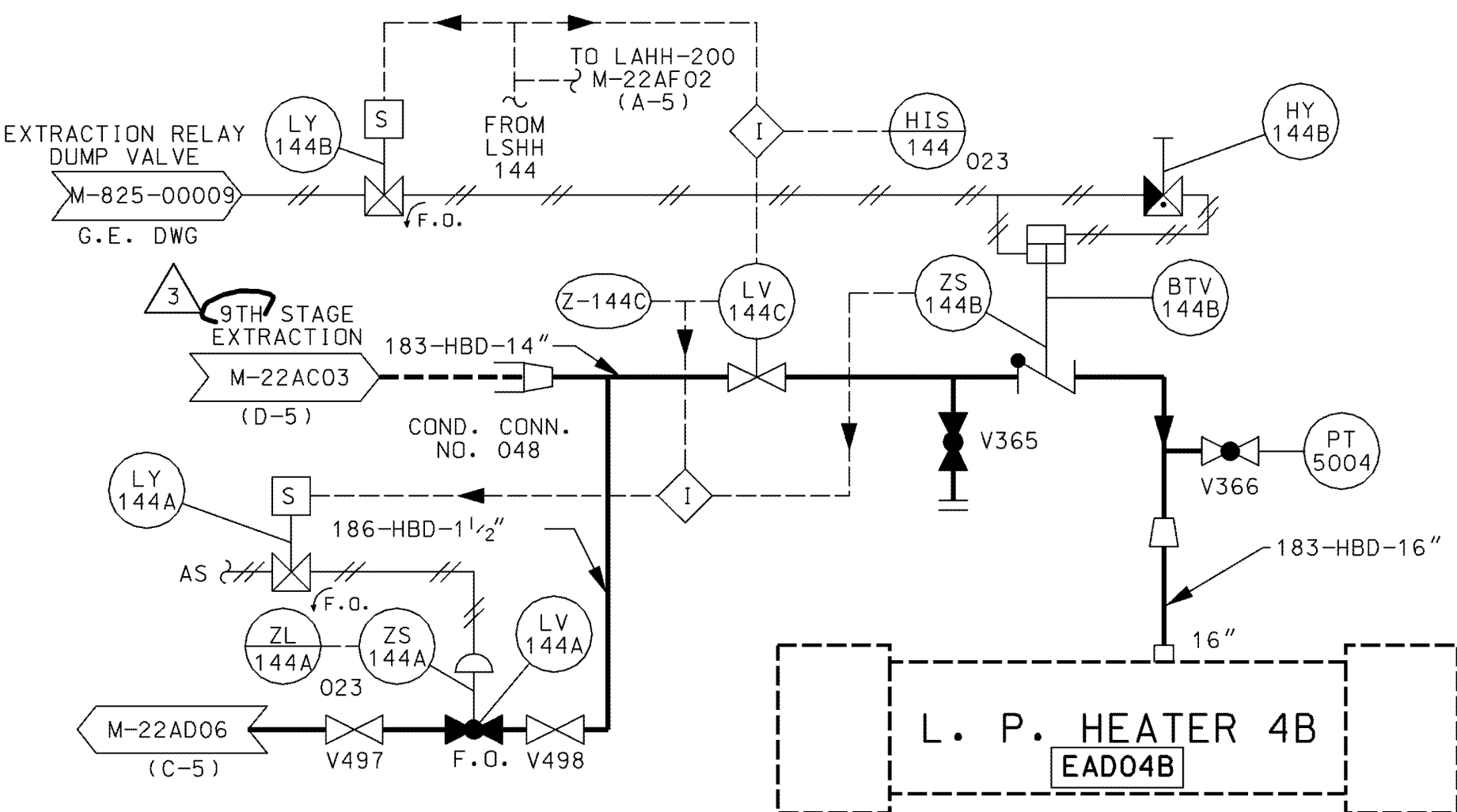
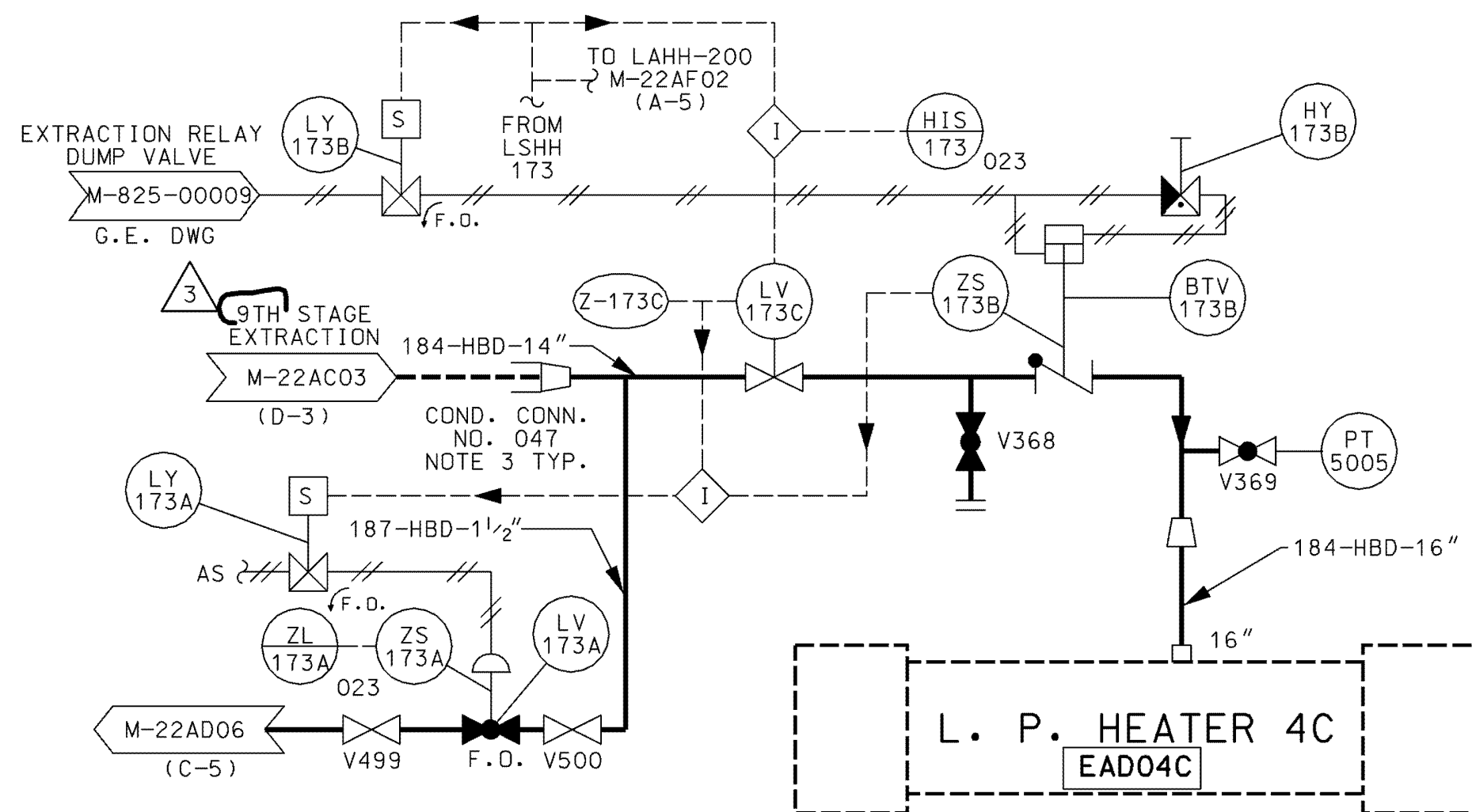
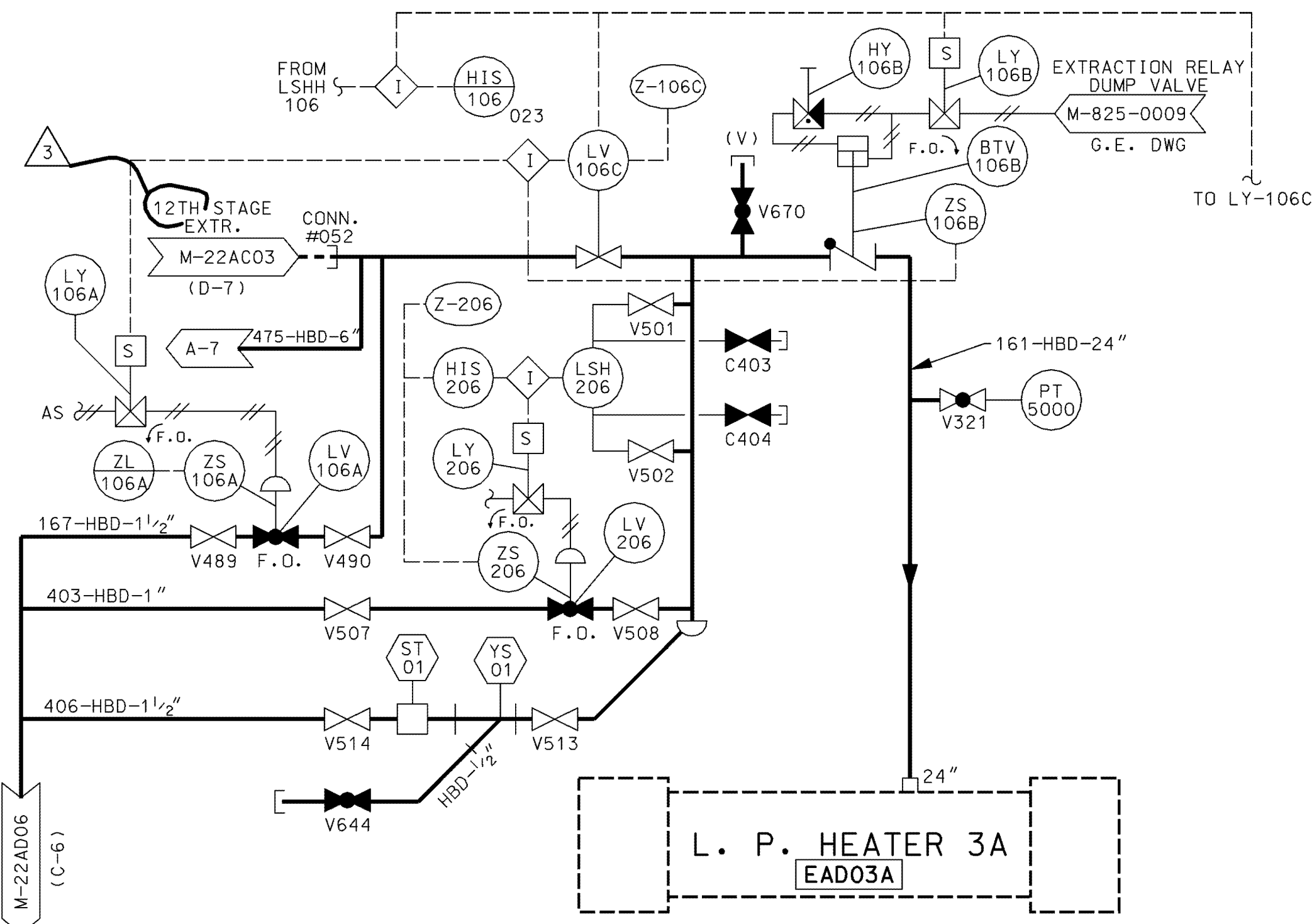
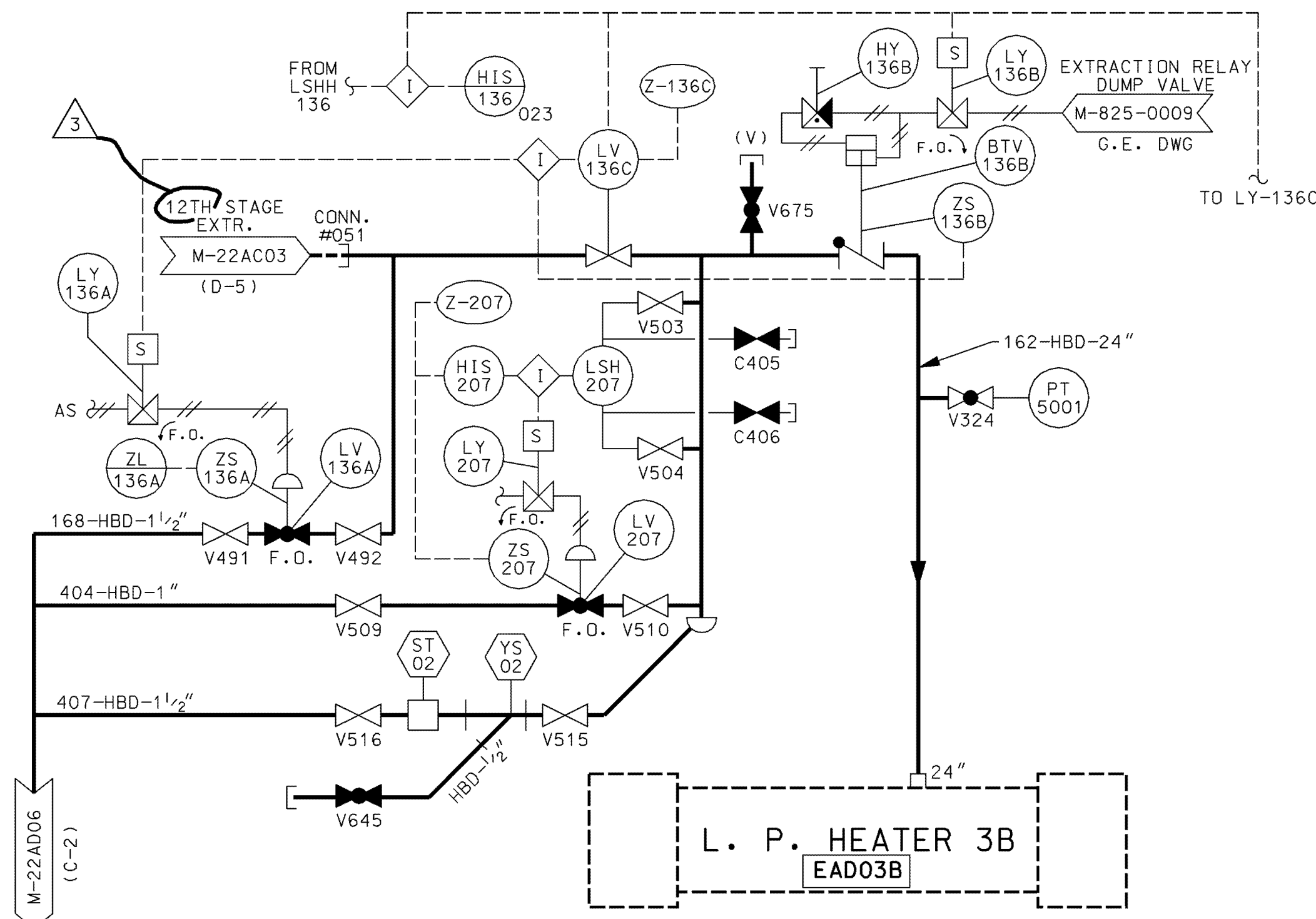
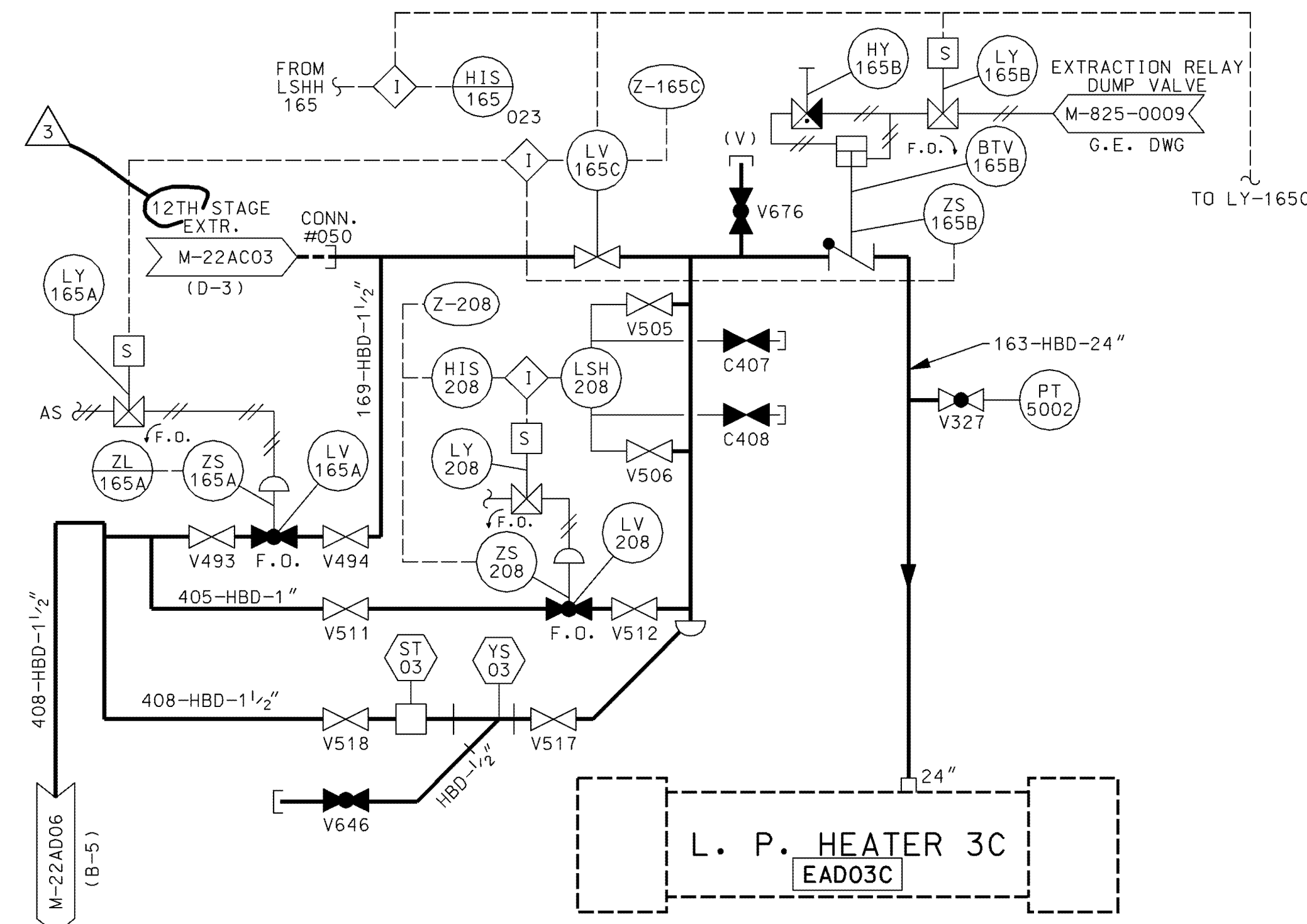
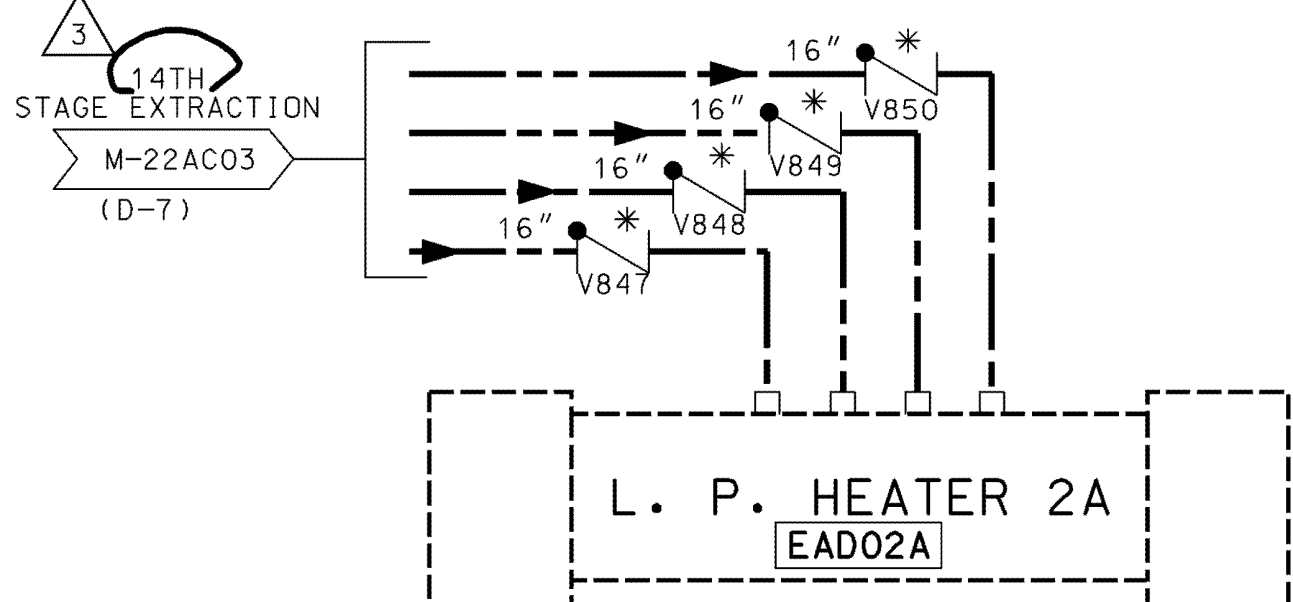
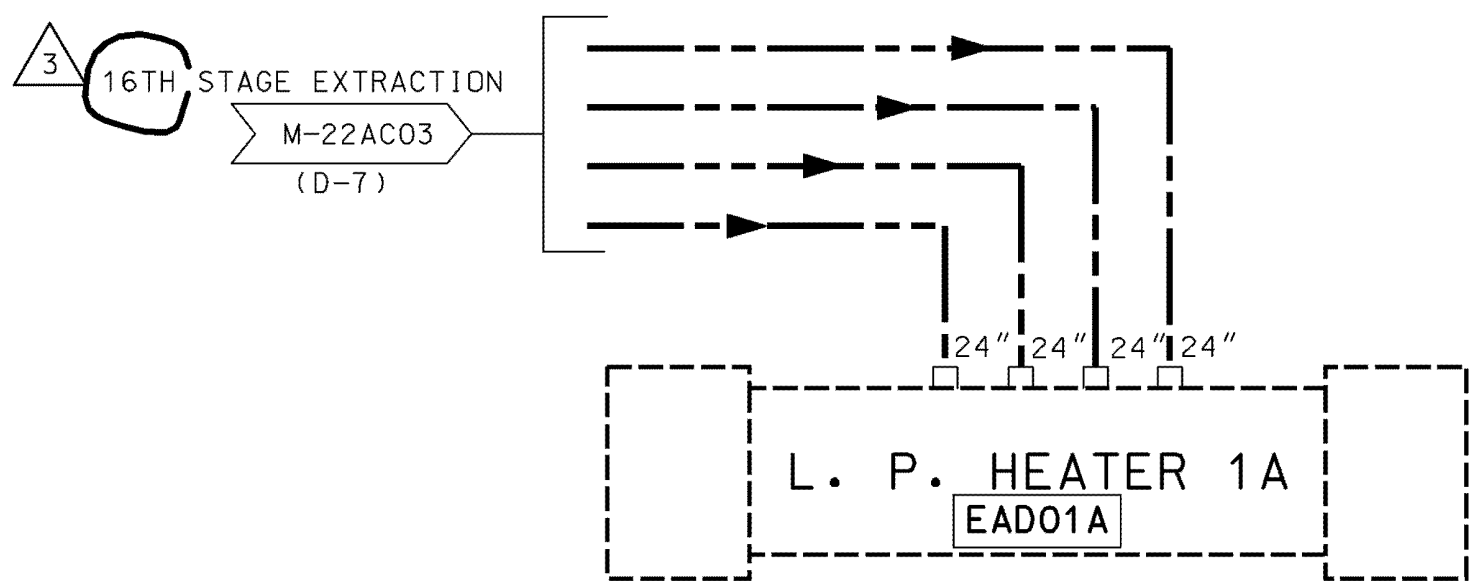
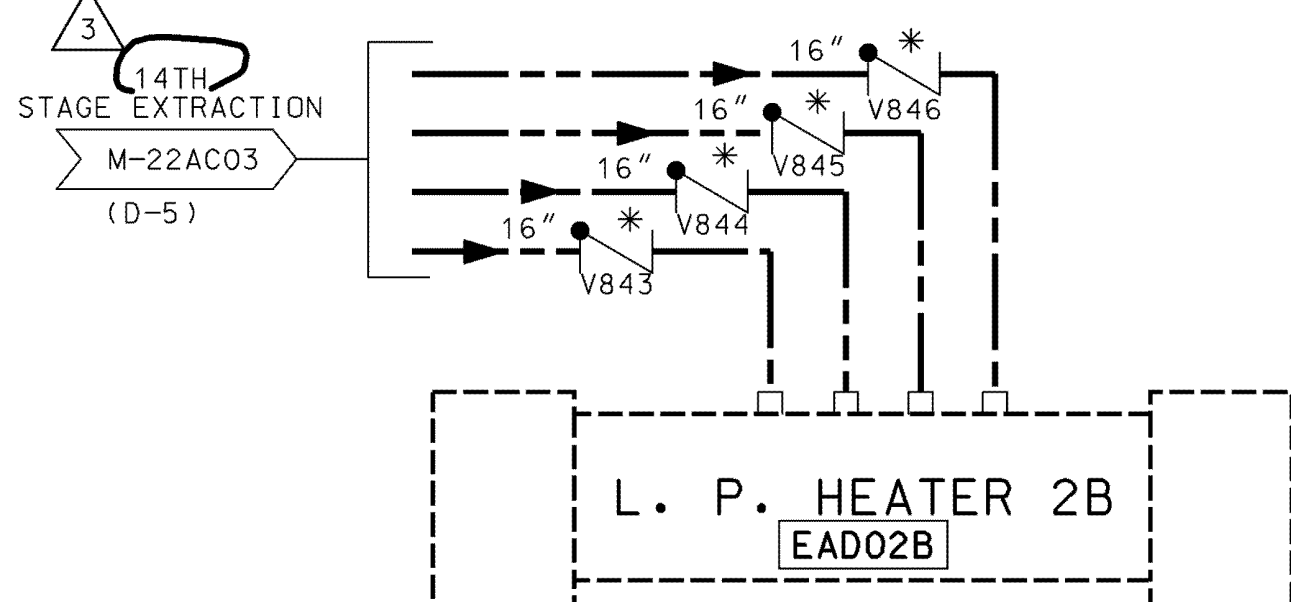
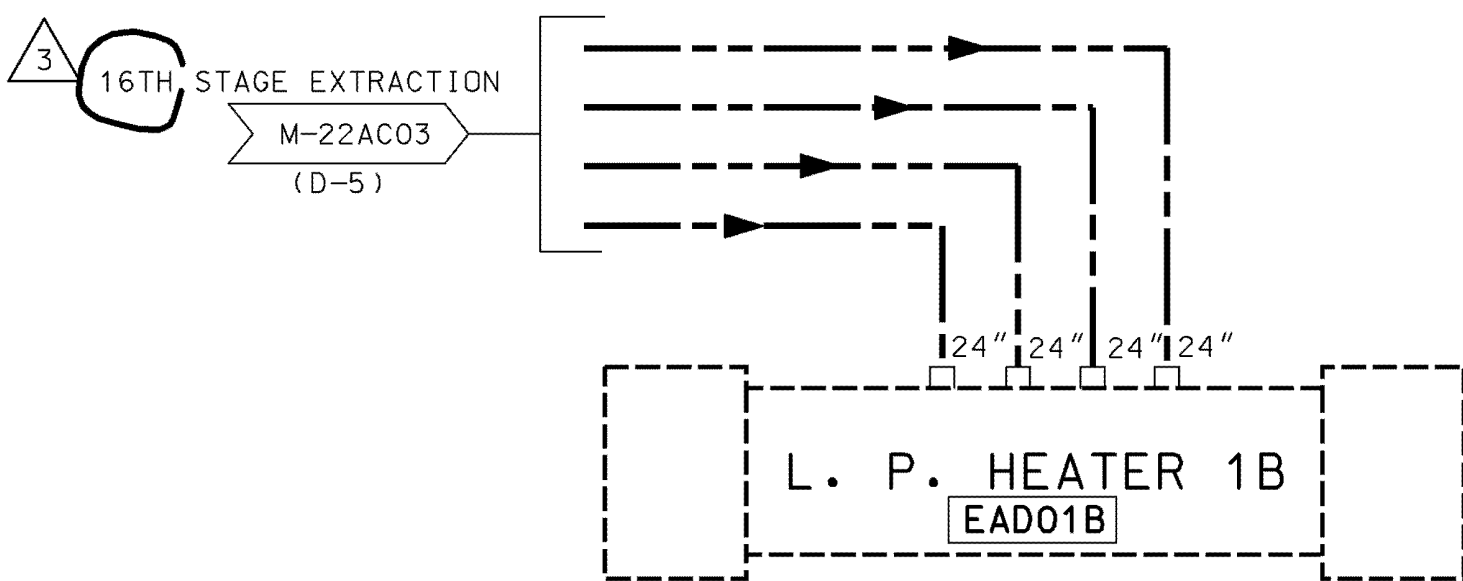
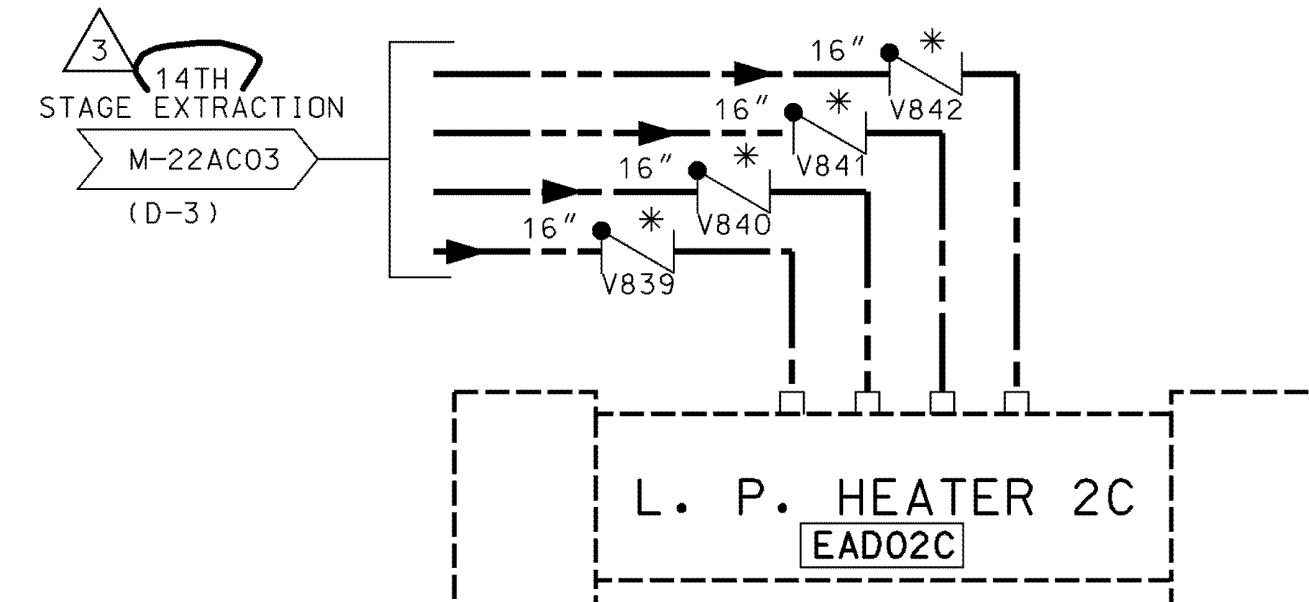
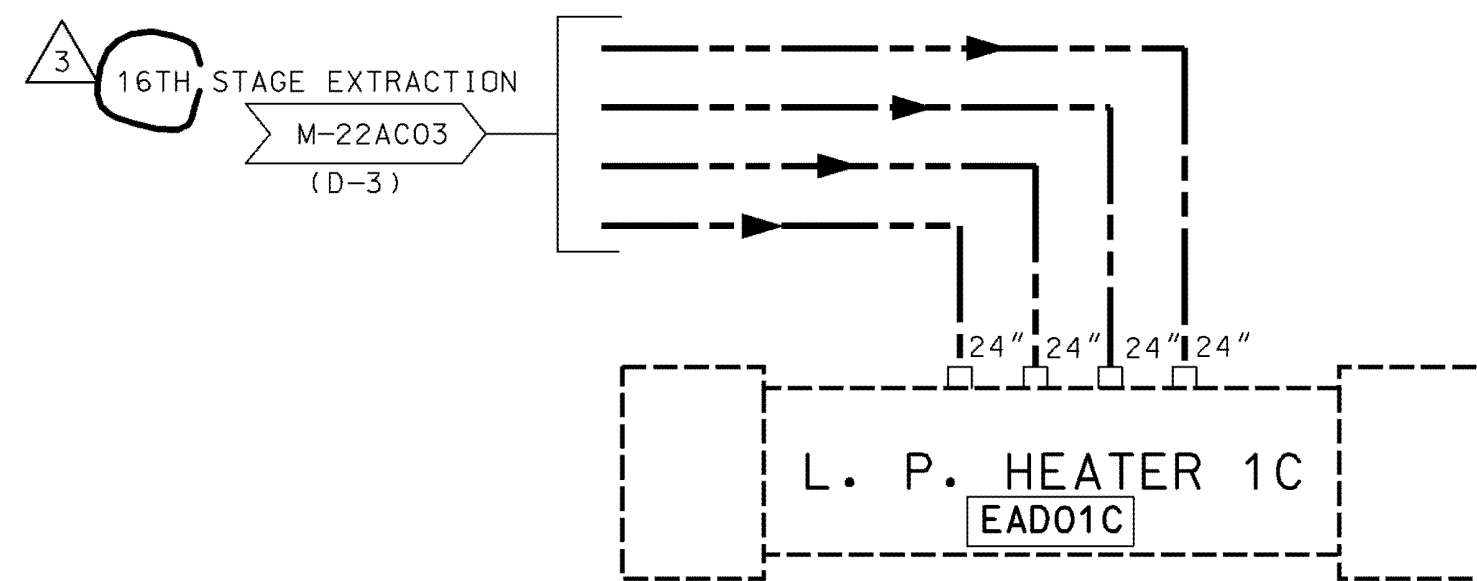
NOTES:

1. DELETED.

FROM ALL LP FEEDWATER
HEATER HIGH HIGH
LEVEL SWITCHES

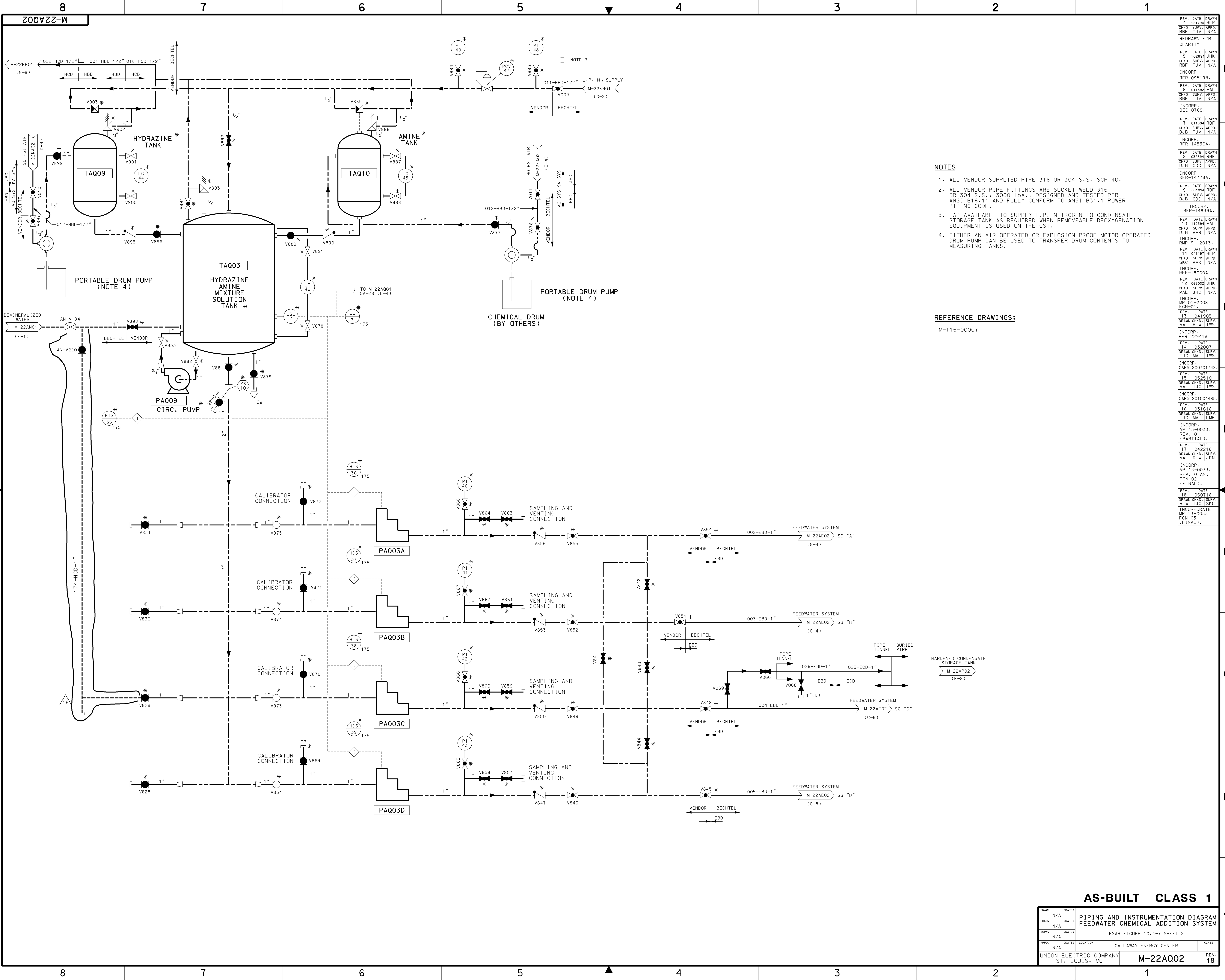
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INITIAL	ISSUE	
PER	RFR-14529A.	
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CHKD.	SUPV.	APPD.
RAM	AMR	N/A
INCORP.	DEC 1813	
REV.	DATE	DRAWN
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CHKD.	SUPV.	APPD.
MAL	RLW	TWS
INCORP.	RFR 22941A	
REV.	DATE	DRAWN
3	100805	
CHKD.	SUPV.	APPD.
RLW	LEW	TWS
INCORPORATE	MP 03-2006A	



AS-BUILT CLASS 1

DRAWN	N/A	(DATE)	PIPING & INSTRUMENTATION DIAGRAM		
CHKD.	N/A	(DATE)	FEEDWATER HEATER EXTRACTION		
SUPV.	N/A	(DATE)	DRAINS & VENTS		
APPD.	N/A	(DATE)	FSAR FIGURE 10.4-6 SHEET 10		
LOCATION	CALLAWAY PLANT		CLASS		
UNION ELECTRIC COMPANY	ST. LOUIS, MO		M-22AF02A	REV.	3



- NOTES**
- ALL VENDOR SUPPLIED PIPE 316 OR 304 S.S. SCH 40.
 - ALL VENDOR PIPE FITTINGS ARE SOCKET WELD 316 OR 304 S.S., 3000 LBS., DESIGNED AND TESTED PER ANSI B16.11 AND FULLY CONFORM TO ANSI B31.1 POWER PIPING CODE.
 - TAP AVAILABLE TO SUPPLY L.P. NITROGEN TO CONDENSATE STORAGE TANK AS REQUIRED WHEN REMOVEABLE DEOXYGENATION EQUIPMENT IS USED ON THE CST.
 - EITHER AN AIR OPERATED OR EXPLOSION PROOF MOTOR OPERATED DRUM PUMP CAN BE USED TO TRANSFER DRUM CONTENTS TO MEASURING TANKS.

REFERENCE DRAWINGS:
M-116-00007

AS-BUILT CLASS 1			
DRAWN (DATE)		PIPING AND INSTRUMENTATION DIAGRAM	
CHKD. (DATE)	N/A	FEEDWATER CHEMICAL ADDITION SYSTEM	
SUPV. (DATE)	N/A	FSAR FIGURE 10.4-7 SHEET 2	
APPD. (DATE)	N/A	LOCATION	CLASS
UNION ELECTRIC COMPANY		CALLAWAY ENERGY CENTER	
ST. LOUIS, MO		M-22AQ02	REV. 18

REV.	DATE	BY	CHKD.	APPD.
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89	02/21/14	DRWING	DRWING	DRWING
90	02/21/14	DRWING	DRWING	DRWING
91	02/21/14	DRWING	DRWING	DRWING
92	02/21/14	DRWING	DRWING	DRWING
93	02/21/14	DRWING	DRWING	DRWING
94	02/21/14	DRWING	DRWING	DRWING
95	02/21/14	DRWING	DRWING	DRWING
96	02/21/14	DRWING	DRWING	DRWING
97	02/21/14	DRWING	DRWING	DRWING
98	02/21/14	DRWING	DRWING	DRWING
99	02/21/14	DRWING	DRWING	DRWING
100	02/21/14	DRWING	DRWING	DRWING

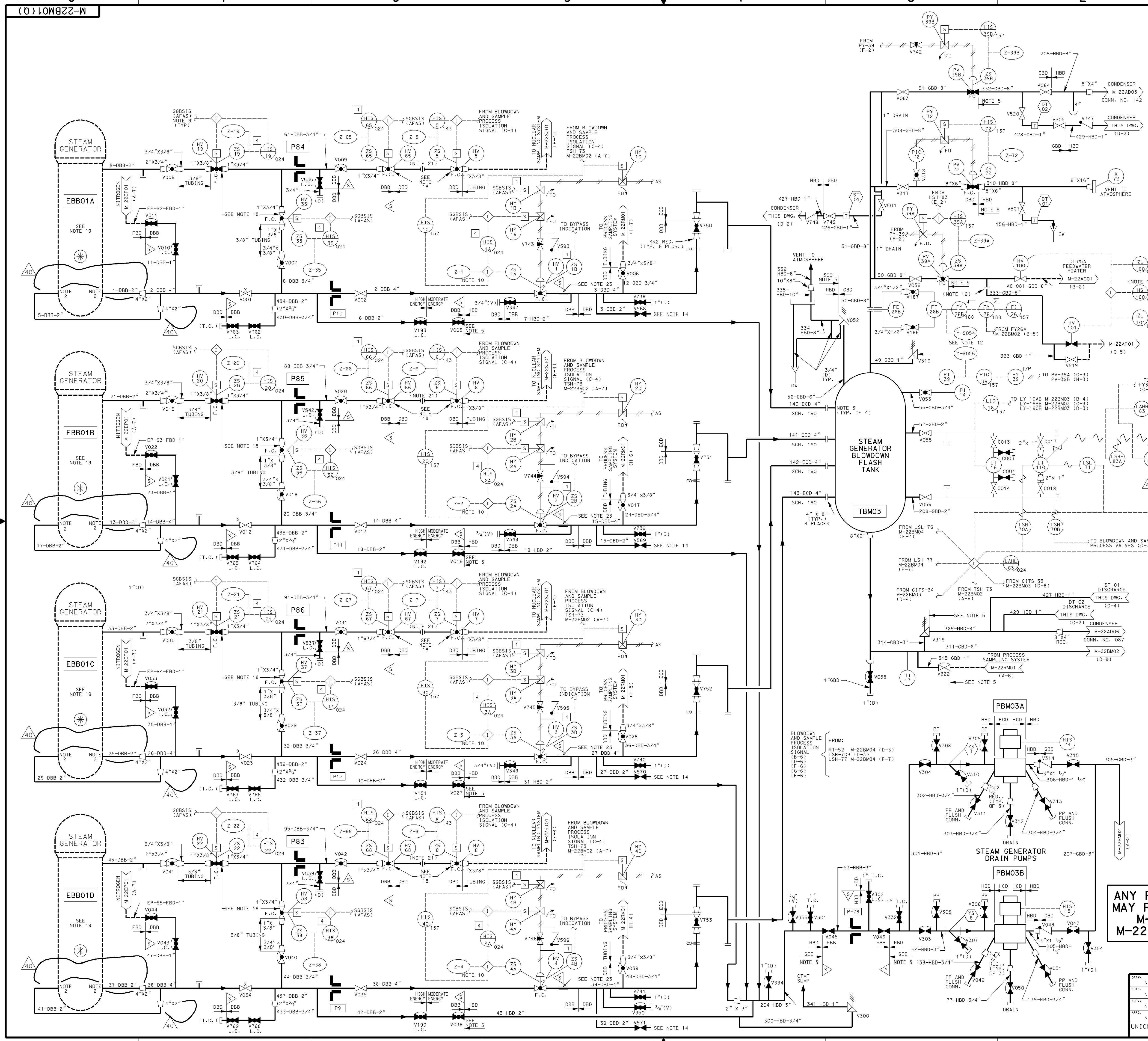
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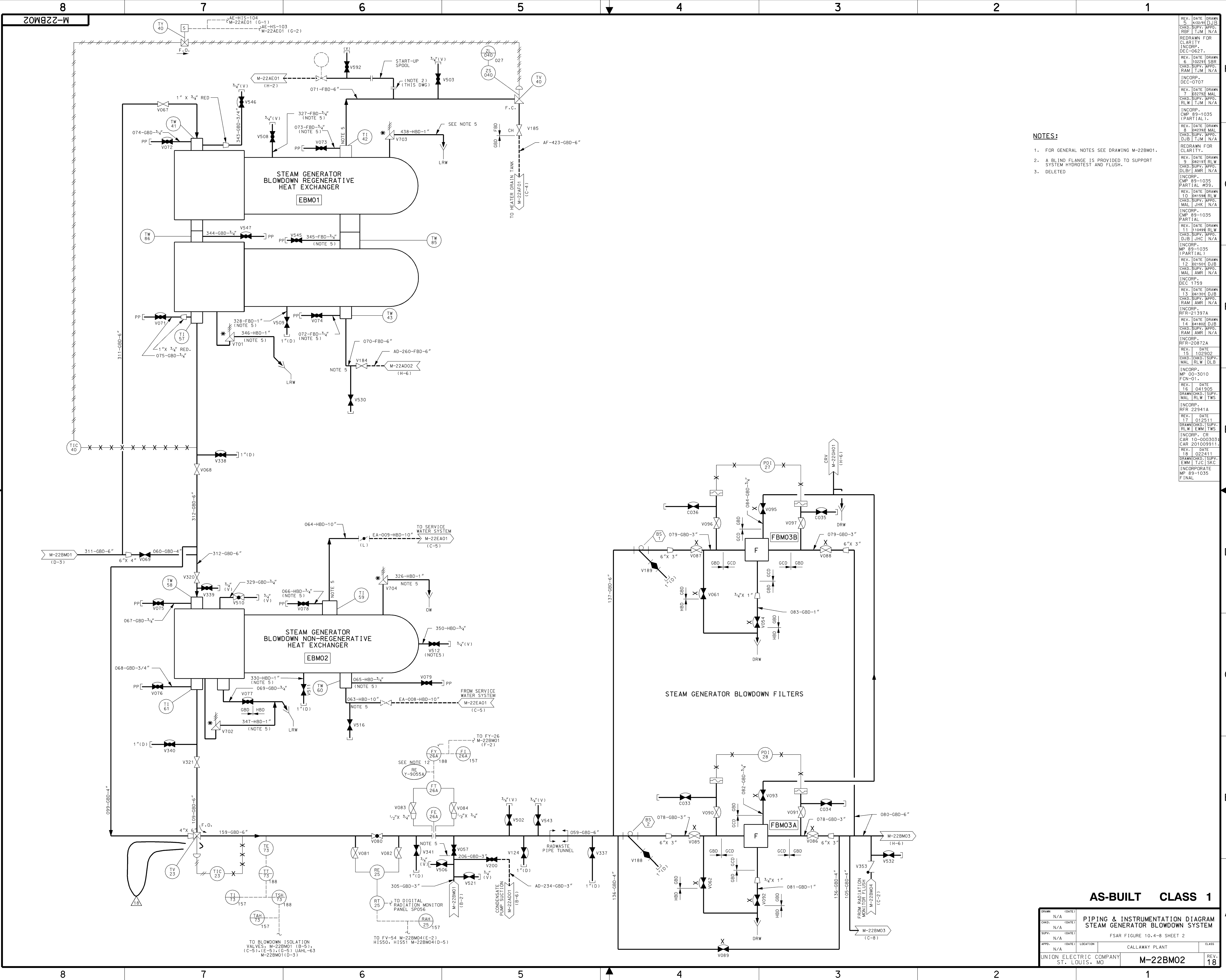
- DELETED
- STEAM GENERATOR BLOWDOWN LINE.
- NOZZLES TO ENTER TANGENTIALLY.
- PORTIONS OF THIS SYSTEM THAT CONTAIN RADIO-ACTIVE FLUIDS AND ARE IDENTIFIED BY QUALITY CLASSIFICATION "D" SHALL MEET THE AUGMENTING REQUIREMENTS AS GIVEN IN TABLE 3.2.2 OF THE SAR.
- INDICATED PORTIONS OF THIS SYSTEM IDENTIFIED BY THIS NOTE ARE QUALITY GROUP "D" NONAUGMENTED.
- THE PORTION OF THIS SYSTEM THAT IS Q-LISTED INCLUDES LINES EMANATING FROM THE STEAM GENERATORS WHICH SERVE AS AN EXTENSION OF THE CONTAINMENT PRESSURE BOUNDARY.
- BLOWDOWN PIPING UPSTREAM OF THE BLOWDOWN FLASH TANK SHALL BE SCH. 160.
- OVERFLOW LOOP SEAL TO EXTEND 12" BELOW TANK CONNECTION AND TO TOP OF TANK WITH STIFFENING BREAKER ON TOP OF LOOP SEAL.
- SGBSIS (AFAS) IS THE STEAM GENERATOR BLOWDOWN AND SAMPLE ISOLATION SIGNAL. THIS SIGNAL IS COMPOSED OF MOTOR DRIVEN AUXILIARY FEEDWATER PUMP ACTUATION SIGNALS WITH THE SAFETY INJECTION SIGNAL AND AN UNDERVOLTAGE ON NB01 OR NB02.
- THREE LIMIT SWITCHES TO BE PROVIDED: TWO SWITCHES INDICATING CLOSED POSITIONS (SEPARATION GROUP 1 AND 4) ONE SWITCH INDICATING OPEN POSITION (SEPARATION GROUP 4).
- DELETED
- Y9056 IS UTILIZED TO COMPENSATE Y9054 FOR DENSITY. Y9054 AND Y9055 ARE ADDED TO GIVE TOTAL BLOWDOWN FLOW.
- DELETED
- STEAM GENERATOR WET LAYOUT CONN.
- VALVES ARE CONNECTED BY A 1" SOCKET WELD COUPLING.
- A BLIND FLANGE IS PROVIDED TO SUPPORT SYSTEM HYDROTEST.
- ALIGNS STEAM GENERATOR BLOWDOWN FLASH TANK STEAM TO FEEDWATER HEATERS 5A AND 5B FOR FEEDWATER HEATING DURING START-UP.
- THE VALVES CALLED OUT BY THIS NOTE ARE PURCHASED UNDER SPECIFICATION J-603A AND ARE STAINLESS STEEL, VALVE CLASS C05.
- WELDS TO THE STEAM GENERATOR ARE SUBJECT TO PS/ISI EXAMINATION AS DELINEATED IN THE PS/ISI WORK PLANS PROVIDED UNDER SPECIFICATION M-189.
- DELETED
- VALVES ARE CONNECTED BY A 1" SOCKET WELD UNION.
- DELETED
- THE SAFETY-RELATED FUNCTION OF THIS PIPELINE TERMINATES AT THE SEISMIC CLASS BREAK AT THE CENTERLINE OF THE A-O WALL. (REF. M-22BM01 AND M-22BM02). THERE ARE NO SAFETY-RELATED COMPONENTS IN THE TURBINE BUILDING. SEE RFR 201204288.

ANY REVISION TO THIS DWG. MAY REQUIRE A REVISION TO M-22AB04, M-22AB05, M-22AB06 AND/OR M-22AB07

AS-BUILT CLASS 1

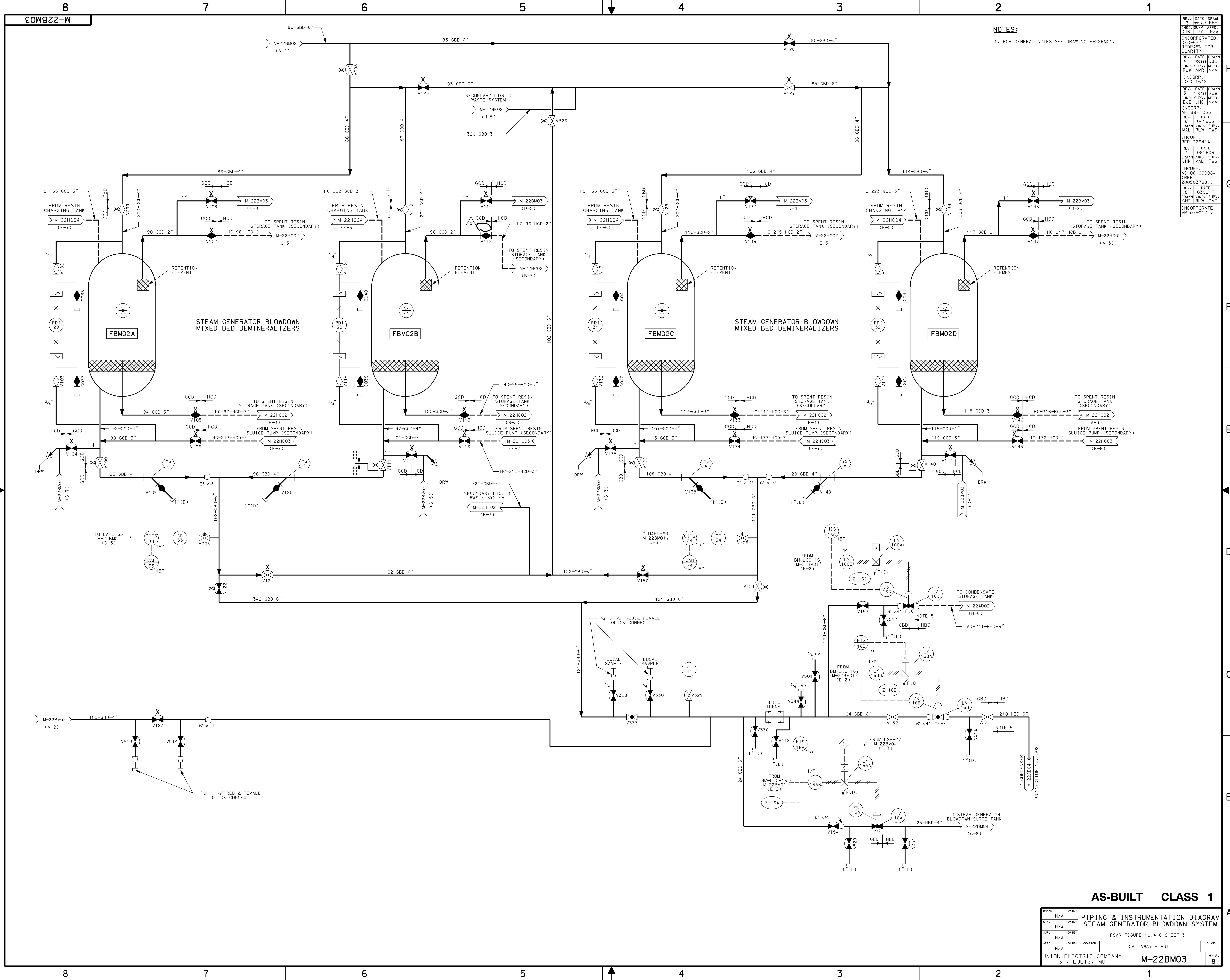
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N/A					
CHKD	(DATE)				
N/A					
SUPV	(DATE)	CALLAWAY ENERGY CENTER			
N/A					
APPR	(DATE)	LOCATION			CLASS
N/A					
UNION ELECTRIC COMPANY ST. LOUIS, MO			M-22BM01 (Q)		REV. 40





- NOTES:
- FOR GENERAL NOTES SEE DRAWING M-22BM01.
 - A BLIND FLANGE IS PROVIDED TO SUPPORT SYSTEM HYDROTEST AND FLUSH.
 - DELETED

AS-BUILT CLASS 1			
DRAWING INFORMATION			
DRAWN	N/A	(DATE)	
CHKD.	N/A	(DATE)	
SUPV.	N/A	(DATE)	
APPD.	N/A	(DATE)	
LOCATION			
CALLAWAY PLANT			
CLASS			
REV.			
M-22BM02			
REV. 18			



NOTES:
1. FOR GENERAL NOTES SEE DRAWING M-22BM01.

REV.	DATE	DRAWN	BY
1	03/27/91	RLW	N/A
2	04/19/91	RLW	N/A
3	04/19/91	RLW	N/A
4	04/19/91	RLW	N/A
5	04/19/91	RLW	N/A
6	04/19/91	RLW	N/A
7	04/19/91	RLW	N/A
8	04/19/91	RLW	N/A
9	04/19/91	RLW	N/A
10	04/19/91	RLW	N/A
11	04/19/91	RLW	N/A
12	04/19/91	RLW	N/A
13	04/19/91	RLW	N/A
14	04/19/91	RLW	N/A
15	04/19/91	RLW	N/A
16	04/19/91	RLW	N/A
17	04/19/91	RLW	N/A
18	04/19/91	RLW	N/A
19	04/19/91	RLW	N/A
20	04/19/91	RLW	N/A

AS-BUILT CLASS 1

DRAWN

N/A

DATE

CHKD.

N/A

DATE

SUPV.

N/A

DATE

APPD.

N/A

DATE

LOCATION

CALLAWAY PLANT

CLASS

UNION ELECTRIC COMPANY

ST. LOUIS, MO

REV.

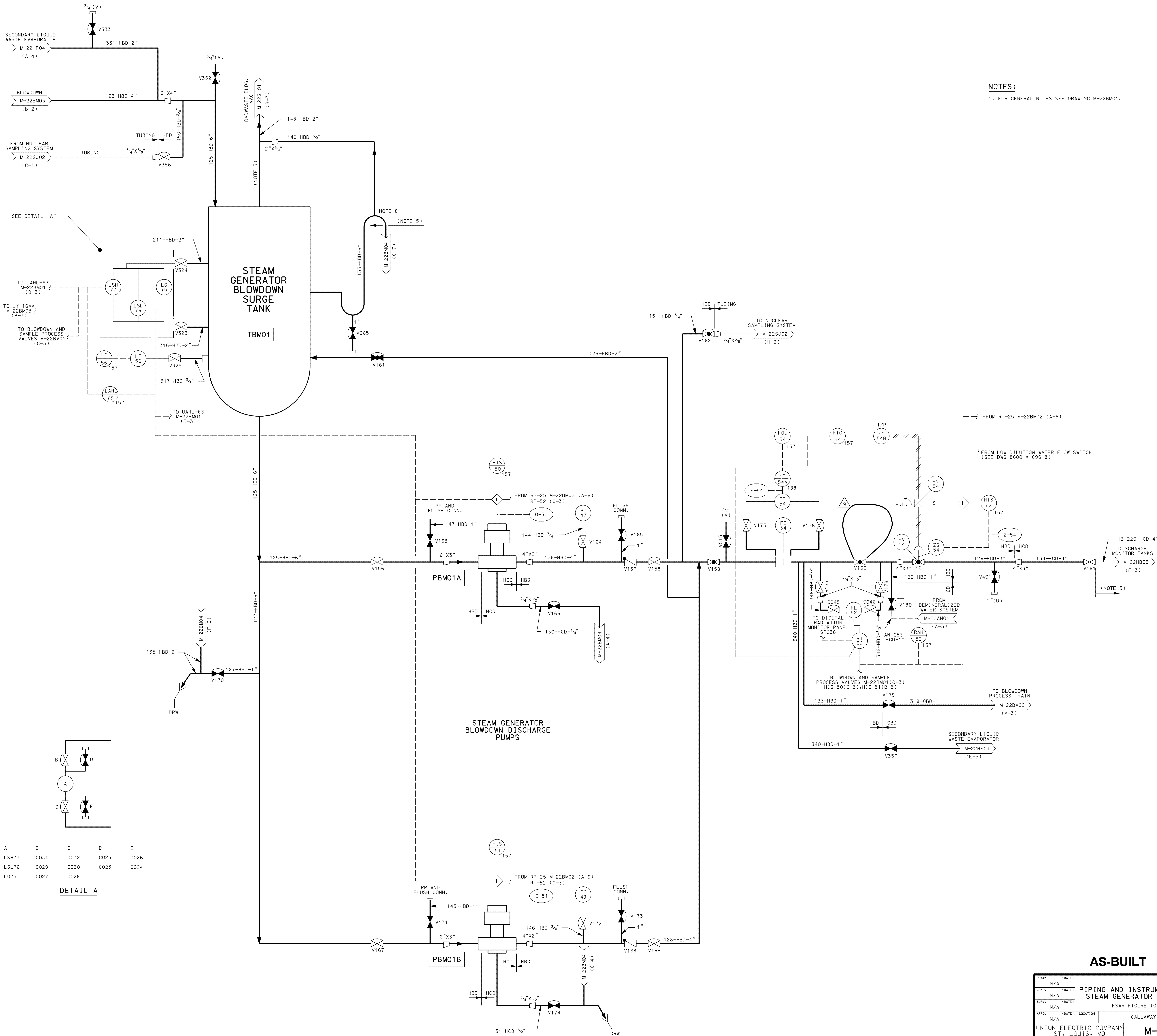
8

PIPING & INSTRUMENTATION DIAGRAM

STEAM GENERATOR BLOWDOWN SYSTEM

FSAR FIGURE 10.4-8 SHEET 3

M-22BM03



A	B	C	D	E
LSH77	C031	C032	C025	C026
LSL76	C029	C030	C023	C024
LG75	C027	C028		

DETAIL A

NOTES:

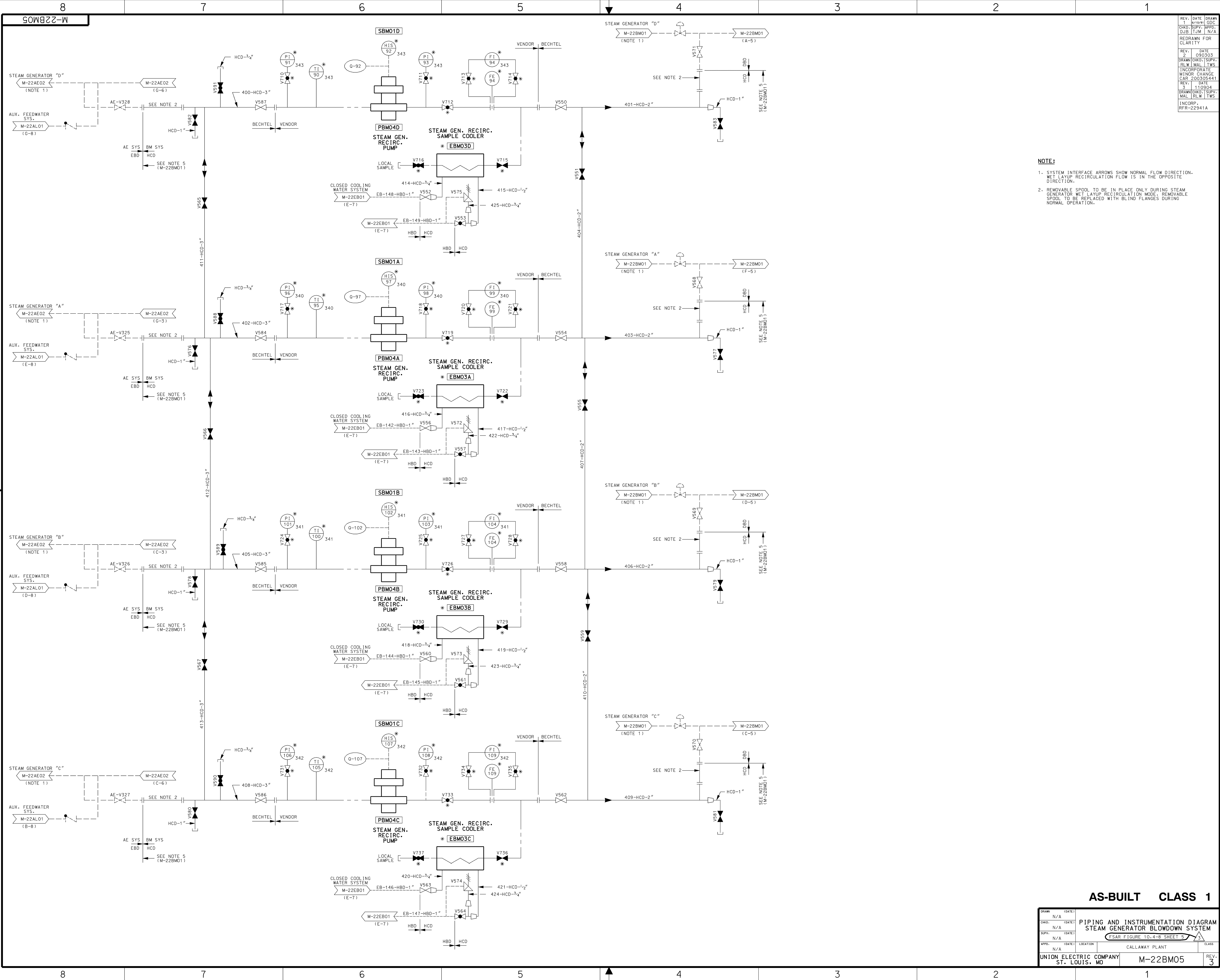
1. FOR GENERAL NOTES SEE DRAWING M-22BM01.

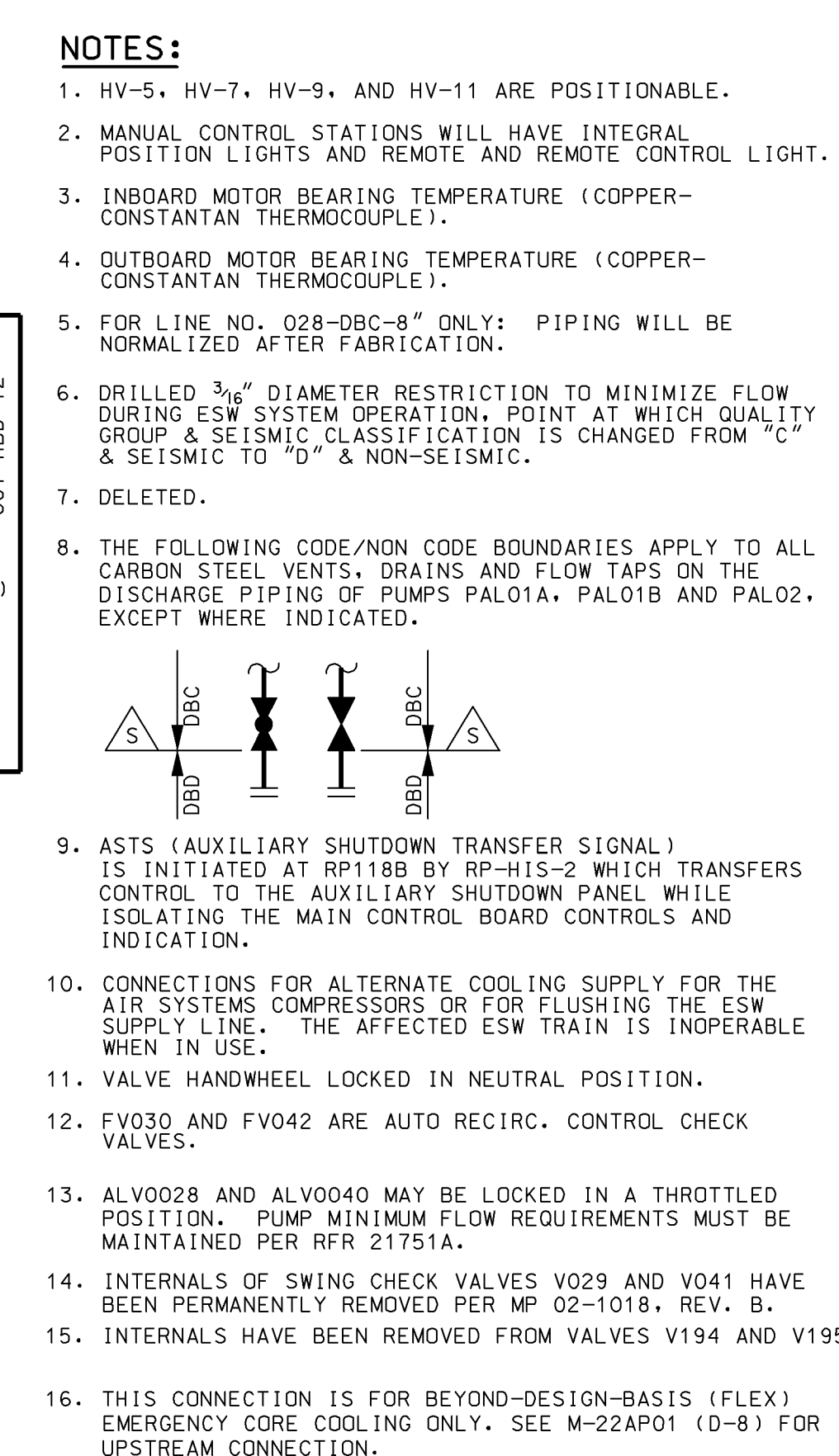
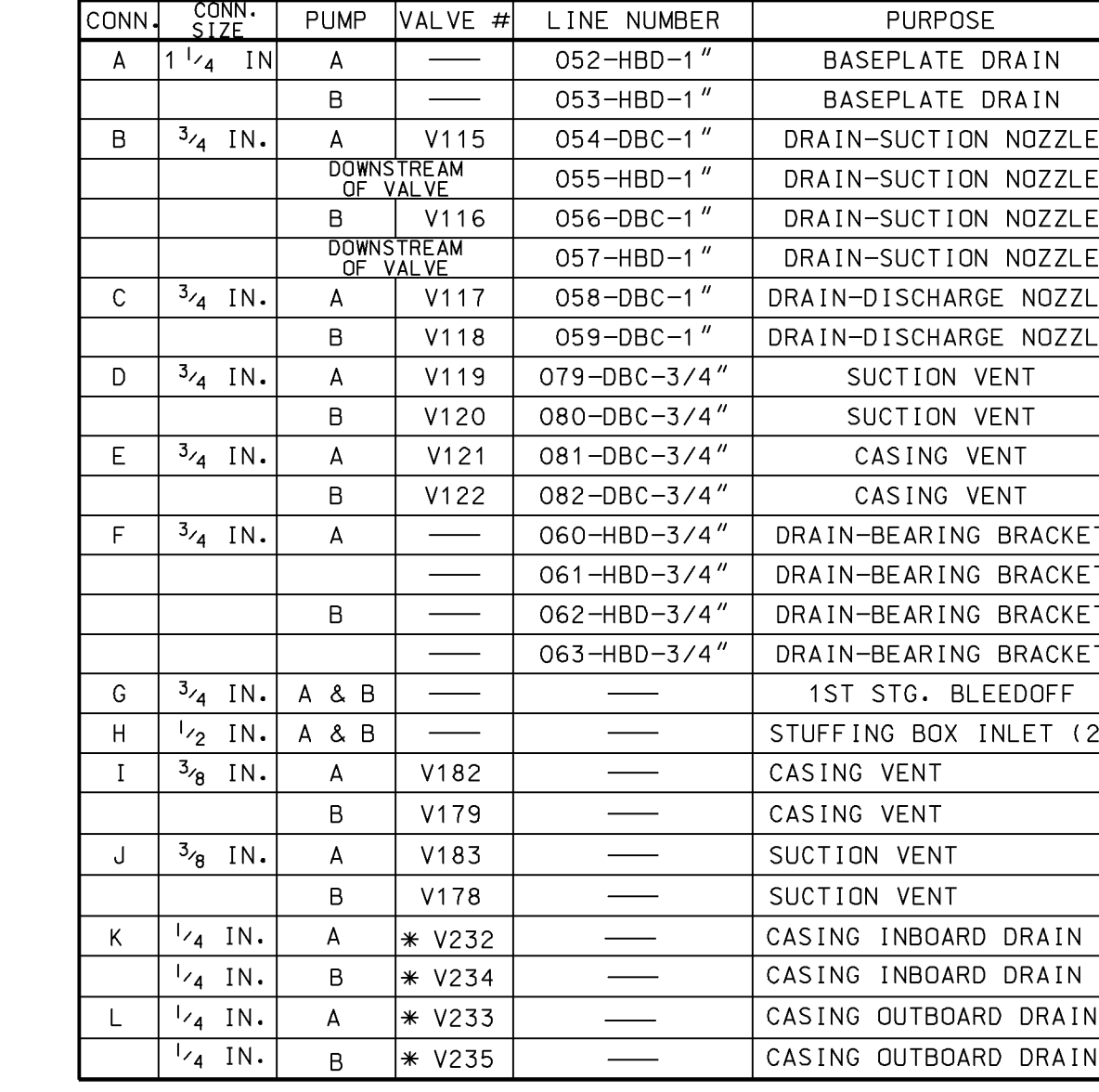
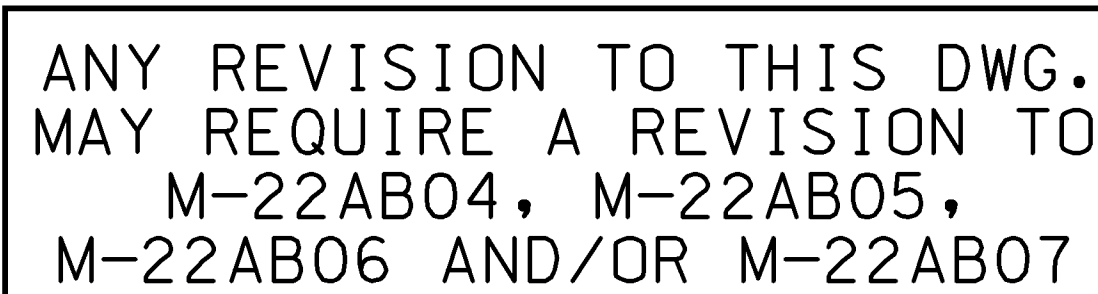
AS-BUILT CLASS 1

DRAWN	N/A	(DATE)			
CHKD.	N/A	(DATE)			
SUPV.	N/A	(DATE)			
APPD.	N/A	(DATE)			
LOCATION	CALLAWAY PLANT				
ST. LOUIS, MO					
REV.	9				

PIPING AND INSTRUMENTATION DIAGRAM
STEAM GENERATOR BLOWDOWN SYSTEM
FSAR FIGURE 10.4-8 SHEET 4

M-22BM04





CONN.	CONJ. SIZE	PUMP	VALVE #	LINE NUMBER	PURPOSE
A	1 1/4 IN.	A	---	052-HDD-11"	BASEPATE DRAIN
				053-HDD-11"	BASEPATE DRAIN
B	3/4 IN.	A	V115	054-DCB-11"	DRAIN-SUCTION NOZZLE
			DOWNSTREAM OF VALVE	055-HDD-11"	DRAIN-SUCTION NOZZLE
		B	V116	056-DCB-11"	DRAIN-SUCTION NOZZLE
			DOWNSTREAM OF VALVE	057-HDD-11"	DRAIN-SUCTION NOZZLE
C	3/4 IN.	A	V117	058-DCB-11"	DRAIN-DISCHARGE NOZZL
		B	V118	059-DCB-11"	DRAIN-DISCHARGE NOZZL
D	3/4 IN.	A	V119	079-DBC-3/4"	SUCTION VENT
		B	V120	080-DBC-3/4"	SUCTION VENT
E	3/4 IN.	A	V121	081-DBC-3/4"	CASING VENT
		B	V122	082-DBC-3/4"	CASING VENT
F	3/4 IN.	A	---	060-HDD-3/4"	DRAIN-BEARING BRACKET
			---	061-HDD-3/4"	DRAIN-BEARING BRACKET
		B	---	062-HDD-3/4"	DRAIN-BEARING BRACKET
			---	063-HDD-3/4"	DRAIN-BEARING BRACKET
G	3/4 IN.	A & B	---	---	1ST STG. BLEEDOFF
H	1 1/2 IN.	A & B	---	---	STUFFING BOX INLET (2)
I	3/8 IN.	A	V182	---	CASING VENT
		B	V179	---	CASING VENT
J	3/8 IN.	A	V183	---	SUCTION VENT
		B	V178	---	SUCTION VENT
K	1 1/4 IN.	A	V*232	---	CASING INBOARD DRAIN
		B	V*234	---	CASING INBOARD DRAIN
L	1 1/4 IN.	A	V*233	---	CASING OUTBOARD DRAIN
		B	V*235	---	CASING OUTBOARD DRAIN

NOTES:

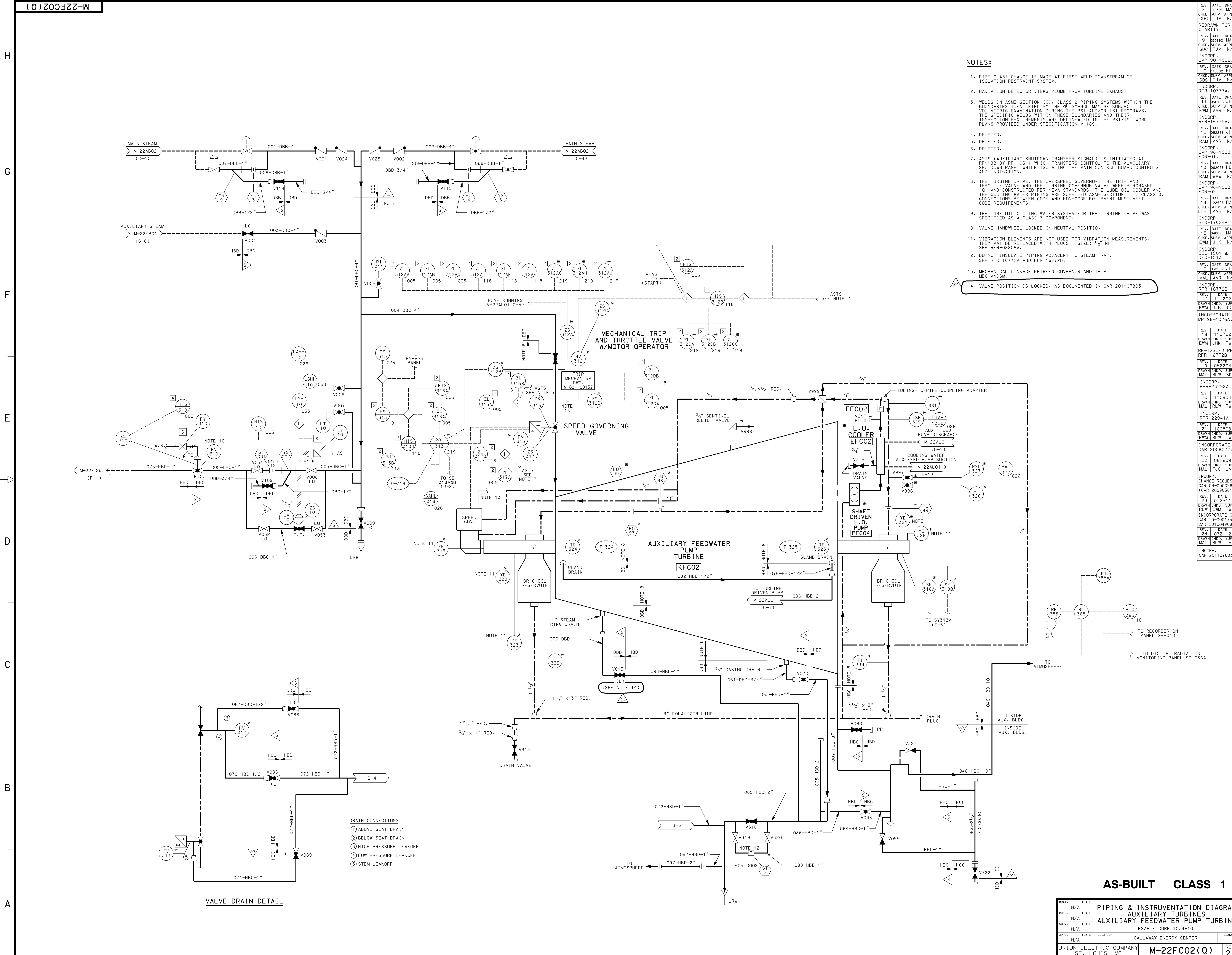
1. HV-5, HV-7, HV-9, and HV-11 ARE POSITIONABLE.
2. MANUAL CONTROL STATIONS WILL HAVE INTEGRAL POSITION LIGHTS AND REMOTE AND REMOTE CONTROL LIGHT.
3. INBOARD MOTOR BEARING TEMPERATURE (COPPER-CONSTANTAN THERMOCOUPLE).
4. OUTBOARD MOTOR BEARING TEMPERATURE (COPPER-CONSTANTAN THERMOCOUPLE).
5. FOR LINE NO. 028-98-0" ONLY: PIPING WILL BE NORMALIZED AFTER FABRICATION.
6. DRILLED $\frac{3}{16}$ " DIAMETER RESTRICTION TO MINIMIZE FLOW DURING ESW SYSTEM OPERATION. POINT AT WHICH QUALITY GRADE SEISMIC CLASSIFICATION IS CHANGED FROM "C" & SEISMIC TO "D" & NON-SEISMIC.
7. DELETED.
8. THE FOLLOWING CODE/NON CODE BOUNDARIES APPLY TO ALL CARBON STEEL VESSELS, DRAINS AND FLOW TAPS ON THE DISCHARGE PIPING OF PUMPS PALOW, PALOB AND PALOZ, EXCEPT WHERE INDICATED.

9. ASTS (AUXILIARY SHUTDOWN TRIP SIGNAL) IS INITIATED AT RP1198B BY RP-H15-2 WHICH TRANSFERS CONTROL TO THE AUXILIARY SHUTDOWN PANEL WHILE ISOLATING THE MAIN CONTROL BOARD CONTROLS AND INDICATING.
10. CONNECTIONS FOR ALTERNATE COOLING SUPPLY FOR THE ESW SYSTEM COMPARTMENT FOR FLUSHING THE ESW SUPPLY LINE. THE AFFECTED ESW TRAIN IS INOPERABLE WHEN IN USE.
11. VALUE HANDWHEEL LOCKED IN NEUTRAL POSITION.
12. FV030 AND FV042 ARE AUTO RECIRC. CONTROL CHECK VALVES.
13. ALV0028 AND ALV0040 MAY BE LOCKED IN A THROTTLED POSITION. PUMP MINIMUM FLOW REQUIREMENTS MUST BE MAINTAINED PER 4757A.
14. INTERNALS OF SWING CHECK VALVES V029 AND V041 HAVE BEEN PERMANENTLY REMOVED PER MP 02-1018, REV4.
15. INTERNALS HAVE BEEN REMOVED FROM VALVES V181 AND V191.

THIS CONNECTION IS FOR BEYOND-DESIGN-BASED (B-E) EMERGENCY CORE COOLING ONLY. USE M-22A01 (F-8) FOR UPSTREAM CONNECTION.

AS-BUILT CLASS 1

OWNER	(DATE)	PUMP & INSTRUMENTATION DIAGRAM					
DRAWN	N/A	AUXILIARY FEEDWATER SYSTEM					
CHECKED	(DATE)						
SUPV.	(DATE)	FSAR FIGURE 10.4-9					
APP'D	(DATE)	LOCATION	CALLAWAY ENERGY CENTER			CLASS	
	N/A						
UNION ELECTRIC COMPANY ST. LOUIS, MO				M-22AL01(Q)		REV 50	



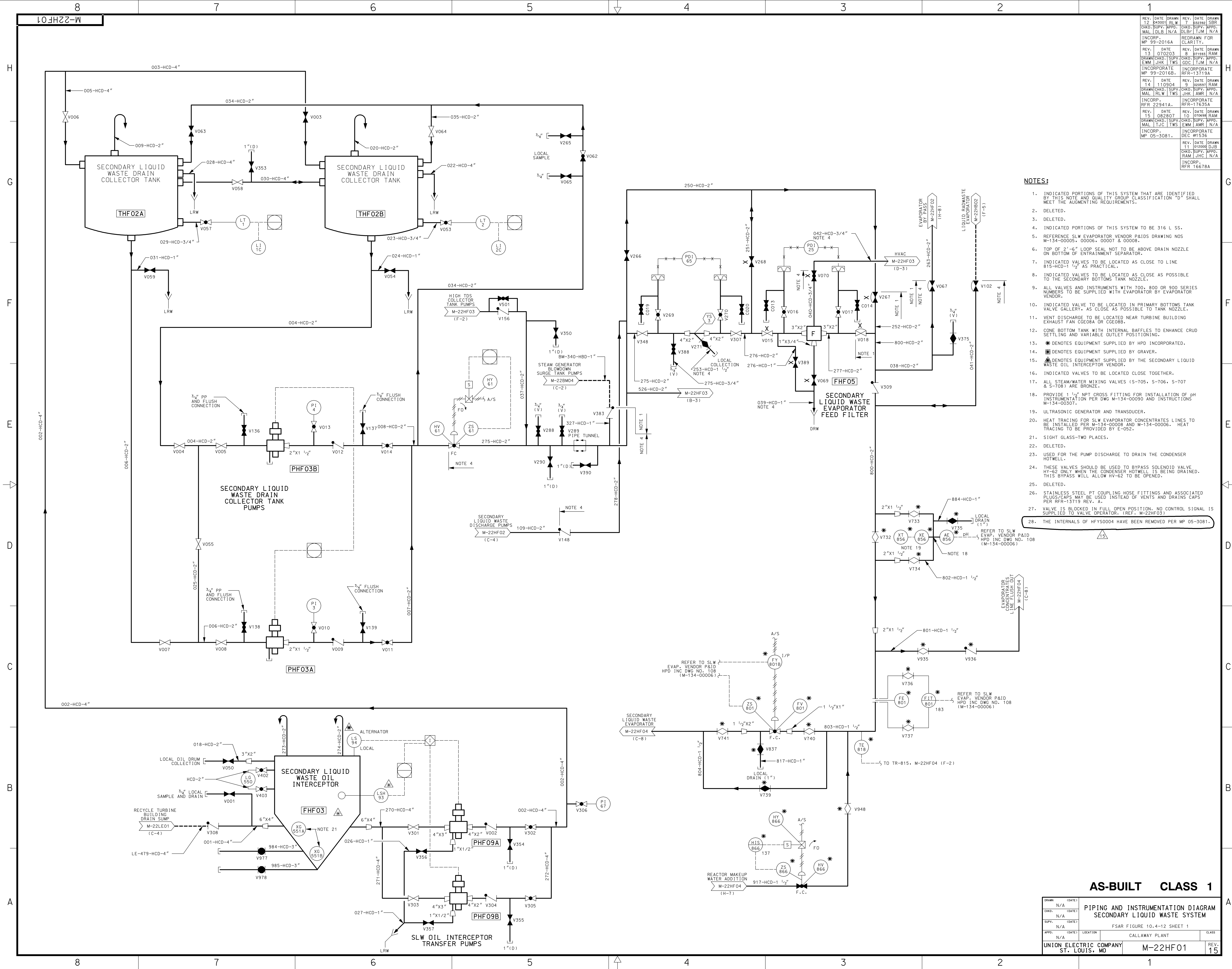
- NOTES:
- PIPE CLASS CHANGE IS MADE AT FIRST WELD DOWNSTREAM OF ISOLATION RESTRAINT SYSTEM.
 - RADIATION DETECTOR VIEWS PLUME FROM TURBINE EXHAUST.
 - WELDS IN ASME SECTION III, CLASS 2 PIPING SYSTEMS WITHIN THE BOUNDARIES IDENTIFIED BY THE SYMBOL MAY BE SUBJECT TO VOLUMETRIC EXAMINATION DURING THE PSI AND/OR ISI PROGRAMS. THE SPECIFIC WELDS WITHIN THESE BOUNDARIES AND THEIR INSPECTION REQUIREMENTS ARE DELINEATED IN THE PSI/ISI WORK PLANS PROVIDED UNDER SPECIFICATION M-189.
 - DELETED.
 - DELETED.
 - DELETED.
 - ASTS (AUXILIARY SHUTDOWN TRANSFER SIGNAL) IS INITIATED AT RP118B BY RP-HIS-1 WHICH TRANSFERS CONTROL TO THE AUXILIARY SHUTDOWN PANEL WHILE ISOLATING THE MAIN CONTROL BOARD CONTROLS AND INDICATION.
 - THE TURBINE DRIVE, THE OVERSPEED GOVERNOR, THE TRIP AND THROTTLE VALVE AND THE TURBINE GOVERNOR VALVE WERE PURCHASED 'O' AND CONSTRUCTED PER NEMA STANDARDS. THE LUBE OIL COOLER AND THE COOLING WATER PIPING ARE SUPPLIED ASME SECTION III, CLASS 3. CONNECTIONS BETWEEN CODE AND NON-CODE EQUIPMENT MUST MEET CODE REQUIREMENTS.
 - THE LUBE OIL COOLING WATER SYSTEM FOR THE TURBINE DRIVE WAS SPECIFIED AS A CLASS 3 COMPONENT.
 - VALVE HANDWHEEL LOCKED IN NEUTRAL POSITION.
 - VIBRATION ELEMENTS ARE NOT USED FOR VIBRATION MEASUREMENTS. THEY MAY BE REPLACED WITH PLUGS. SIZE: 1/2" NPT. SEE RFR-080904.
 - DO NOT INSULATE PIPING ADJACENT TO STEAM TRAP. SEE RFR 16772A AND RFR 16772B.
 - MECHANICAL LINKAGE BETWEEN GOVERNOR AND TRIP MECHANISM.
 - VALVE POSITION IS LOCKED, AS DOCUMENTED IN CAR 201107803.

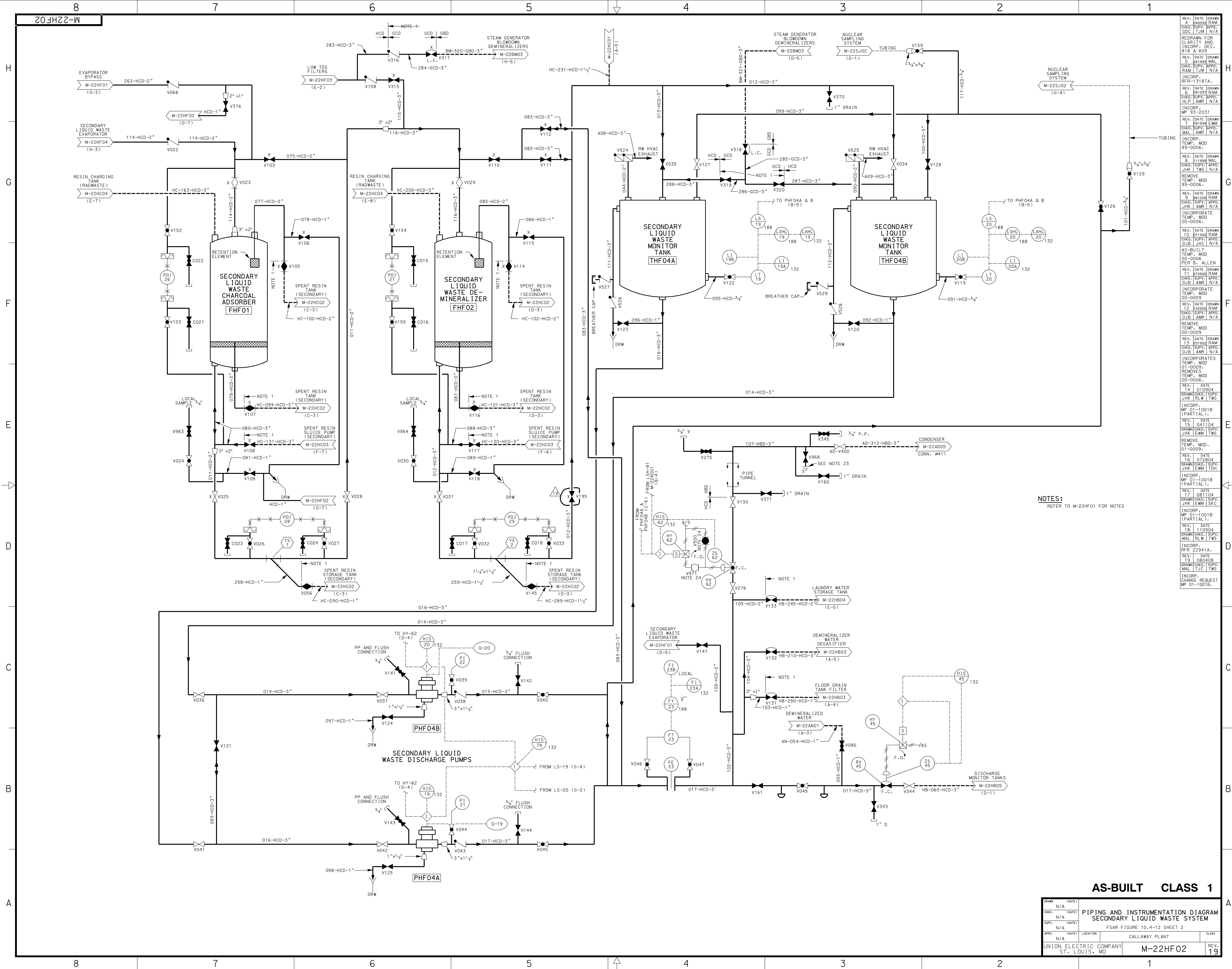
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CHKD.		DATE		MAL	
N/A		(DATE)		N/A	
SURV.		DATE		N/A	
N/A		(DATE)		N/A	
APPD.		DATE		N/A	
N/A		(DATE)		N/A	
UNION ELECTRIC COMPANY		ST. LOUIS, MO		M-22FC02(Q)	
CLASS		CALLAWAY ENERGY CENTER		REV. 24	

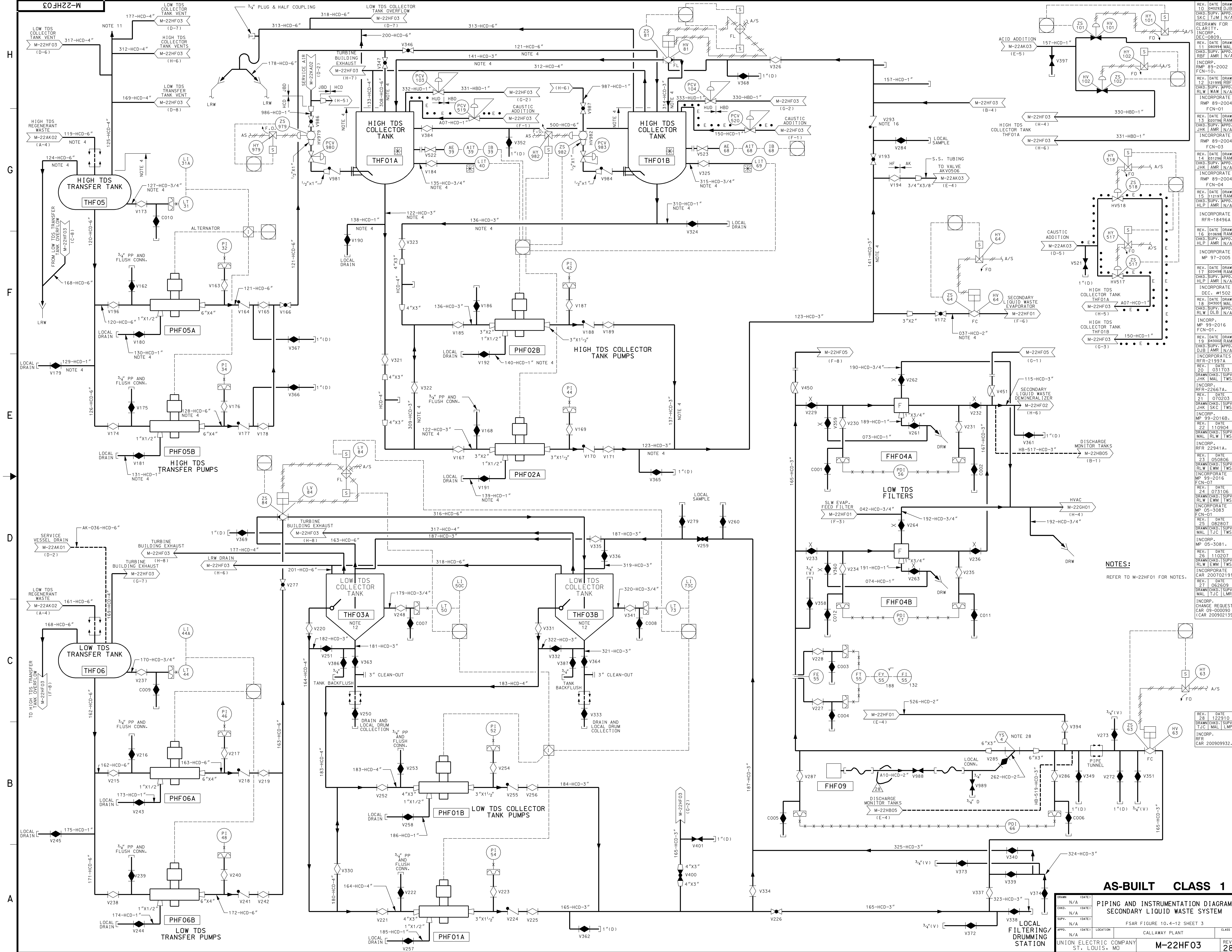
CALLAWAY - SP

FIGURE 10.4-11 is deleted

Rev. OL-10
11/98





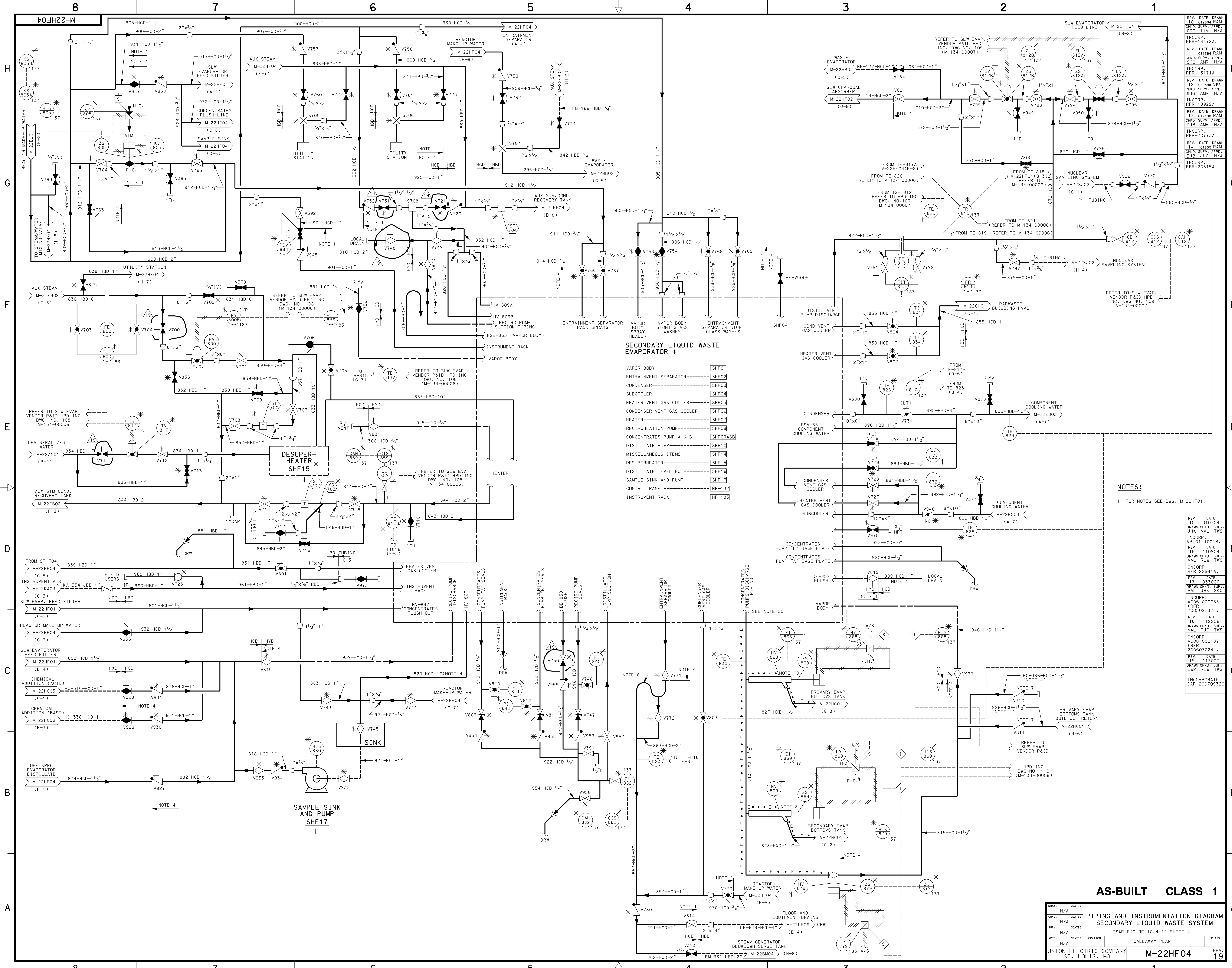


NOTES:
REFER TO M-22HF01 FOR NOTES.

AS-BUILT CLASS 1			
PIPING AND INSTRUMENTATION DIAGRAM SECONDARY LIQUID WASTE SYSTEM			
DRWN	N/A	DATE	
CHKD	N/A	DATE	
SUPV	N/A	DATE	
APPD	N/A	LOCATION	
UNION ELECTRIC COMPANY ST. LOUIS, MO			REV. 28

FSAR FIGURE 10.4-12 SHEET 3
CALLAWAY PLANT

REV. DATE DRAWN 0 040394 DJB
CHKD: SUPV: APPD: SKC TJM N/A
REDRAWN FOR CLARITY
INCORP: DEC-0809
REV. DATE DRAWN 11 080994 MAL
CHKD: SUPV: APPD: RBF AMR N/A
INCORP: RMP 89-2002 FCN-01
REV. DATE DRAWN 12 121998 RBF
CHKD: SUPV: APPD: RLW WAM N/A
INCORP: RMP 89-2004 FCN-01
REV. DATE DRAWN 13 020798 RAM
CHKD: SUPV: APPD: JHK AMR N/A
INCORP: RMP 89-2004 FCN-04
REV. DATE DRAWN 15 112191 RAM
CHKD: SUPV: APPD: HLP AMR N/A
INCORP: RFR-18496A
REV. DATE DRAWN 16 010898 RAM
CHKD: SUPV: APPD: HLP AMR N/A
INCORP: MP 97-2005
REV. DATE DRAWN 17 020498 RAM
CHKD: SUPV: APPD: JHK AMR N/A
INCORP: DEC. #1502
REV. DATE DRAWN 18 040300 MAL
CHKD: SUPV: APPD: RLW WAM N/A
INCORP: MP 99-2016 FCN-01
REV. DATE DRAWN 19 040300 RAM
CHKD: SUPV: APPD: DJB AMR N/A
INCORP: RFR-21397A
REV. DATE DRAWN 20 031703
CHKD: SUPV: APPD: JHK MAL TWS
INCORP: RFR-22667A
REV. DATE DRAWN 21 070203
CHKD: SUPV: APPD: JHK SKC TWS
INCORP: MP 99-2016B
REV. DATE DRAWN 22 110904
CHKD: SUPV: APPD: MAL RLW TWS
INCORP: RFR 22941A
REV. DATE DRAWN 23 050806
CHKD: SUPV: APPD: RLW LEM TWS
INCORP: MP 99-2016 FCN-01
REV. DATE DRAWN 24 031006
CHKD: SUPV: APPD: RLW LEM TWS
INCORP: MP 05-3083
REV. DATE DRAWN 25 082807
CHKD: SUPV: APPD: MAL TJC LMR
INCORP: CAR 200702191
REV. DATE DRAWN 27 062609
CHKD: SUPV: APPD: MAL TJC LMR
INCORP: CHANGE REQUEST CAR 09-000090
REV. DATE DRAWN 28 122910
CHKD: SUPV: APPD: TJC MAL LMP
INCORP: RFR CAR 200909932



AS-BUILT CLASS 1			
DRAWING			
CHG.	N/A	DATE	
SUPV.	N/A	DATE	
APP.	N/A	DATE	
LOC.	N/A	DATE	
CLASS	N/A	DATE	
UNION ELECTRIC COMPANY			
ST. LOUIS, MO			
M-22HF04			
REV. 19			

