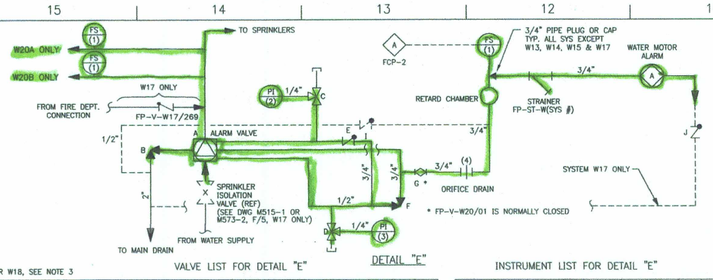


DETAIL "E"

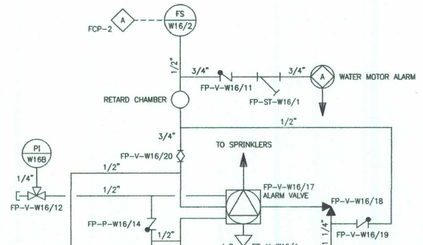
FOR W18, SEE NOTE 3

VALVE LIST FOR DETAIL "E"

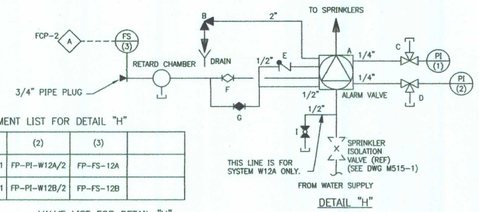
SYSTEM	DESCRIPTION	VALVE NO PREFIX	A	B	C	D	E	F	G		I	J
W1	TG BUILDING EL 441' BOILER ROOM	FP-V-W1/	001	003	004	005	006	007	008		–	–
W2	TG BUILDING EL 441' MECH VAC PMP RM	FP-V-W2/	020	022	023	024	025	026	027		–	–
W3A	TG BUILDING EL 441' SJAE ROOM A	FP-V-W3A/	040	042	043	044	045	046	047		–	–
W3B	TG BUILDING EL 441' SJAE ROOM B	FP-V-W3B/	060	062	063	064	065	066	067		–	–
W4	TG BUILDING EL 441' CONDENSER-NORTH	FP-V-W4/	080	081	082	084	083	085	086		–	–
W5	TG BUILDING EL 441' CONDENSER-SOUTH	FP-V-W5/	100	102	103	104	105	106	107		–	–
W6	TG BUILDING EL 441' WEST END	FP-V-W6/	120	122	123	124	125	126	127		–	–
W7	TG BUILDING EL 471' ELECT SWGR BAY	FP-V-W7/	140	142	143	144	145	146	147		148	–
W8	TG BUILDING EL 471' FW HEATER BAY	FP-V-W8/	160	161	162	163	164	165	166		–	–
W9	TG BUILDING EL 471' EAST MEZZANINE	FP-V-W9/	180	181	182	183	184	185	186		–	–
W10	SERVICE BLDG EL 441' MACHINE SHOP	FP-V-W10/	200	201	202	203	204	205	206		–	–
W11	SERVICE BLDG EL 420' STORAGE AREA	FP-V-W11/	220	221	222	223	224	225	226		–	–
W13	CIRCULATING WATER PUMP HOUSE	FP-V-W13/	240	242	243	244	245	246	247		–	–
W14	PRIMARY GUARD HOUSE	FP-V-W14/	01	02	03	04	07	05	06		–	–
W15	SECONDARY GUARD HOUSE	FP-V-W15/	01	02	03	04	07	05	06		08	–
W17	WATER TREATMENT BUILDING	FP-V-W17/	260	262	263	264	265	266	267		268	261
W19	TSC EL 441' TSC & AAP	FP-V-W19/	287	02	03	04	05	06	07		08	–
W20A	RW BLDG EL 467' DECON FACILITY	FP-V-W20/	05	02	03	04	07	06	01*		08	–
W20B	RW BLDG EL 467' & 487' STORAGE AREA AND TOOL CRIB											
W21	RW BLDG EL 437' TRUCK BAY	FP-V-W21/	280	282	283	284	285	287	01		288	–
W22	RW BLDG EL 487' CHEM LAB	FP-V-W22/	377	02	03	04	07	01	06		08	–
W24	TG BUILDING EL 501' KELLY OFFICES	FP-V-W24/	385	06	05	04	03	02	01		07	–
	NOT USED											
	NOT USED											
	NOT USED											
	NOT USED											
W56	TG BUILDING EL 441' CONDENSER NORTH	FP-V-W56/	420	421	423	424	422	427	425		428	–
W67	TG BUILDING EL 501' TG-BEARINGS	FP-V-W67/	17	16	03	05	04	13	02		–	–
	NOT USED											

INSTRUMENT LIST FOR DETAIL "E"

SYSTEM	(1)	(2)	(3)	(4)
W1	FP-FS-1	FP-PI-W1A	FP-PI-W1B	YES
W2	FP-FS-2	FP-PI-W2A	FP-PI-W2B	YES
W3A	FP-FS-3A	FP-PI-W3A/1	FP-PI-W3A/2	YES
W3B	FP-FS-3B	FP-PI-W3B/1	FP-PI-W3B/2	YES
W4	FP-FS-4	FP-PI-W4A	FP-PI-W4B	YES
W5	FP-FS-5	FP-PI-W5A	FP-PI-W5B	YES
W6	FP-FS-6	FP-PI-W6A	FP-PI-W6B	YES
W7	FP-FS-7	FP-PI-W7A	FP-PI-W7B	NO
W8	FP-FS-8	FP-PI-W8A	FP-PI-W8B	–
W9	FP-FS-9	FP-PI-W9A	FP-PI-W9B	YES
W10	FP-FS-10	FP-PI-W10A	FP-PI-W10B	YES
W11	FP-FS-11	FP-PI-W11A	FP-PI-W11B	YES
W13	FP-FS-13	FP-PI-W13A	FP-PI-W13B	YES
W14	FP-FS-14	FP-PI-W14A	FP-PI-W14B	YES
W15	FP-FS-15	FP-PI-W15A	FP-PI-W15B	NO
W17	FP-FS-17	FP-PI-W17A	FP-PI-W17B	NO
W19	FP-FS-19	FP-PI-W19A	FP-PI-W19B	NO
W20A	FP-FS-20A	FP-PI-W20A	FP-PI-W20B	NO
W20B	FP-FS-20B			
W21	FP-FS-21	FP-PI-W21A	FP-PI-W21B	NO
W22	FP-FS-22	FP-PI-W22A	FP-PI-W22B	NO
W24	FP-FS-24	FP-PI-W24A	FP-PI-W24B	NO
W56	FP-FS-56/1	FP-PI-W56A	FP-PI-W56B	NO
W67	FP-FS-67/1	FP-PI-W67A	FP-PI-W67B	–



DETAIL "G"



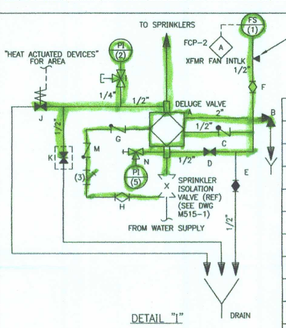
DETAIL "H"

INSTRUMENT LIST FOR DETAIL "H"

SYSTEM	(1)	(2)	(3)	
W12A	FP-PI-W12A/1	FP-PI-W12A/2	FP-FS-12A	
W12B	FP-PI-W12B/1	FP-PI-W12B/2	FP-FS-12B	

VALVE LIST FOR DETAIL "H"

SYSTEM	DESCRIPTION	VALVE NO PREFIX	A	B	C	D	E	F	G		I
W12A	SERVICE BLDG EL 456' OFFICE AREA	FP-V-W12A/	00	01	02	03	04	246	06		08
W12B	SERVICE BLDG EL 441' OFFICE AREA	FP-V-W12B/	20	21	22	23	24	266	26		–



DETAIL "I"

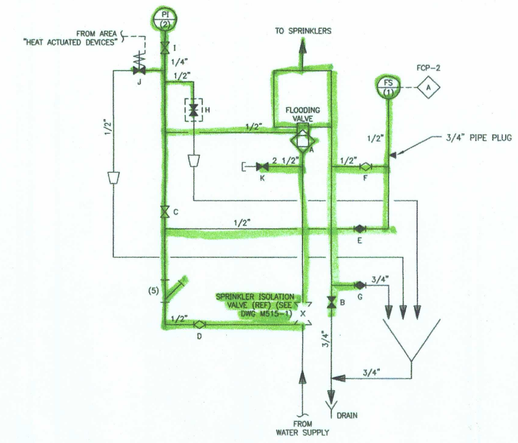
INSTRUMENT LIST FOR DETAIL "I"

SYSTEM	(1)	(2)	(3)		(5)
D51	FP-FS-51/1	FP-PI-D51	FP-ST-D51/1		FP-PI-D51/1
D53A	FP-FS-53A/1	FP-PI-D53A	FP-ST-D53A/1		FP-PI-D53A/1
D53B	FP-FS-53B/1	FP-PI-D53B	FP-ST-D53B/1		FP-PI-D53B/1
D55	FP-FS-55/1	FP-PI-D55	FP-ST-D55/1		FP-PI-D55/1
D57	FP-FS-57/1	FP-PI-D57	FP-ST-D57/1		FP-PI-D57/1
D58	FP-FS-58/1	FP-PI-D58	FP-ST-D58/1		FP-PI-D58/1
D59	FP-FS-59/1	FP-PI-D59	FP-ST-D59/1		FP-PI-D59/1
D60	FP-FS-60/2	FP-PI-D60	FP-ST-D60/1		FP-PI-D60/1
D61	FP-FS-61/1	FP-PI-D61	FP-ST-D61/1		FP-PI-D61/1
D62	FP-FS-62/1	FP-PI-D62	FP-ST-D62/1		FP-PI-D62/1
D63	FP-FS-63/1	FP-PI-D63	FP-ST-D63/1		FP-PI-D63/1
D64	FP-FS-D64/2	FP-PI-D64/3	FP-ST-D64/3		FP-PI-D64/4

VALVE LIST FOR DETAIL "I"

SYSTEM	DESCRIPTION	VALVE NO PREFIX	A	B	C	D	E	F	G	H	I	J	K		M	N
D51	TG BUILDING EL 441' LUBE OIL ROOM	FP-V-D51/	300	301	303	304	302	308	307	306	309	310	305		312	313
D53A	TG BUILDING EL 441' RFW PUMP ROOM A	FP-V-D53A/	341	342	344	345	343	349	348	347	352	351	346		353	354
D53B	TG BUILDING EL 441' RFW PUMP ROOM B	FP-V-D53B/	361	362	364	365	363	369	368	367	370	371	366		375	376
D55	TG BUILDING EL 471' TG OIL RESERVOIR ROOM	FP-V-D55/	400	401	403	404	402	408	407	406	409	410	405		414	415
D57	MAIN TRANSFORMER TR-M1	FP-V-D57/	440	442	444	446	443	445	448	447	450	451	449		455	456
D58	MAIN TRANSFORMER TR-M2	FP-V-D58/	460	462	464	466	463	465	468	467	470	471	469		475	476
D59	MAIN TRANSFORMER TR-M3	FP-V-D59/	480	482	484	486	483	485	488	487	490	491	489		495	496
D60	BACKUP TRANSFORMER TR-B	FP-V-D60/	00	11	15	14	13	12	09	10	06	07	08		17	18
D61	NORMAL TRANSFORMER TR-N1	FP-V-D61/	500	502	504	506	503	505	508	507	510	511	509		514	515
D62	NORMAL TRANSFORMER TR-N2	FP-V-D62/	520	522	524	526	523	525	528	527	530	531	529		534	535
D63	MAIN TRANSFORMER TR-M4	FP-V-D63/	540	542	544	546	543	545	548	547	550	551	549		555	556
D64	START-UP TRANSFORMER TR-S	FP-V-D64/	07	11	12	13	14	15	16	17	18	19	20		21	22

FOR DELUGE SYSTEMS D39 THRU D49 SEE NOTE 3



DETAIL "K"

VALVE LIST FOR DETAIL "K"

SYSTEM	DESCRIPTION	VALVE NO PREFIX	A	B	C	D	E	F	G	H	I	J	K	
D52	TG BUILDING EL 441' TRACE OIL PIPING	FP-V-D52/	320	325	321	326	322	327	324	329	323	328	330	
D54	TG BUILDING EL 441' H2 SEAL OIL ROOM	FP-V-D54/	380	385	381	386	382	387	384	389	383	388	390	

INSTRUMENT LIST FOR DETAIL "K"

SYSTEM	(1)	(2)			(5)
D52	FP-FS-52/1	FP-PI-D52			FP-ST-D52/2
D54	FP-FS-54/1	FP-PI-D54			———

NOTES:

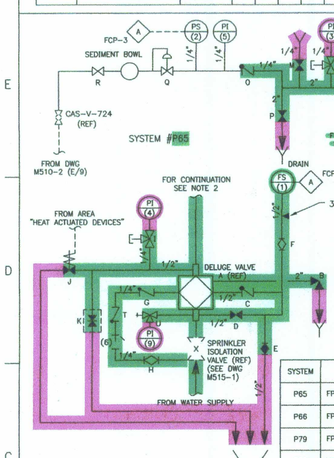
1. THE WET PIPE SPRINKLER SYSTEMS (PREFIXED BY "W") ARE ACTIVATED WHEN A FUSIBLE LINK ON THE SPRINKLER HEADS MELT. THE DRY PIPE PRE-ACTION SPRINKLER SYSTEM (PREFIXED BY "P") HAS TWO INDEPENDENT DETECTION SYSTEMS, SMOKE AND THERMAL DETECTORS. WHEN THE SMOKE DETECTOR IS ACTUATED, AN ALARM IS INITIATED ON THE FIRE CONTROL PANEL. ACTUATION OF THE THERMAL DETECTORS CAUSE THE DRY PIPES TO FILL WITH WATER. ACTIVATION THEN OCCURS UPON MELTING OF A FUSIBLE LINK ON THE SPRINKLER HEADS. THE DELUGE SYSTEMS (PREFIXED BY "D") ARE ACTIVATED BY SIGNAL INPUTS FROM HAD'S (HEAT ACTUATED DEVICE). ACTUATION OF THE HAD'S OCCUR DUE TO FAST TEMPERATURE RISE. ALL SYSTEMS CAN BE ACTIVATED BY A MANUAL PULL STATION.
2. SYSTEM #P65: FOR CONTINUATION SEE ZONE E/14-15
   SYSTEM #P66: FOR CONTINUATION SEE ZONE D/11-13
   SYSTEM #P79 THRU #P84: FOR CONTINUATION SEE ZONE E/11-13
3.

SYSTEM #	DESCRIPTION	LOCATION
D39	WMA EMERGENCY FILTER UNIT 54A RADWASTE BLDG EL 525'	M548 (E/2-3)
D40	WMA EMERGENCY FILTER UNIT 54B RADWASTE BLDG EL 525'	M548 (D/2-3)
D41	REA CARBON FILTER UNIT REA-CF-2A REACTOR BLDG EL 572'	M545-3 (G/11)
D42	REA CARBON FILTER UNIT REA-CF-2B REACTOR BLDG EL 572'	M545-3 (E/11)
D43	SGT PRE-FILTER UNIT SGT-FL-1A REACTOR BLDG EL 572'	M544 (F/12)
D44	SGT CARBON FILTER UNIT SGT-FL-1A1 REACTOR BLDG EL 572'	M544 (F/11)
D45	SGT CARBON FILTER UNIT SGT-FL-1A2 REACTOR BLDG EL 572'	M544 (F/9-10)
D46	SGT PRE-FILTER UNIT SGT-FL-1B REACTOR BLDG EL 572'	M544 (B/13)
D47	SGT CARBON FILTER UNIT SGT-FL-1B1 REACTOR BLDG EL 572'	M544 (B/11)
D48	SGT CARBON FILTER UNIT SGT-FL-1B2 REACTOR BLDG EL 572'	M544 (B/9-10)
D49	HVAC FILTER UNIT AMA-CF-52 TECHNICAL SUPPORT CENTER EL 441'	M785 (C-D/11)
W18	CONTROL ROOM OFFICE SPRINKLERS RW BLDG STAIRWELL A-7 EL 511'-0"	M515-1 (B/9)

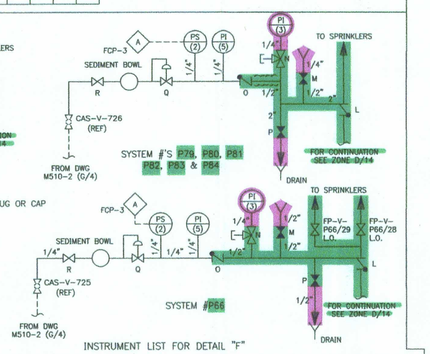
4. THE FOLLOWING TABLE LISTS SPRINKLER ALARM ISOLATION VALVE NUMBERS FOR OFFICE BUILDINGS INSIDE THE PROTECTED AREA.

BUILDING NO.	ALARM ISOLATION VALVE NO.
1	FP-V-662
13	FP-V-663
17	FP-V-659
88	FP-V-664

THESE VALVES ARE AS SHOWN IN POSITION 'G' OF DETAIL E, OF THIS DRAWING



DETAIL "F"

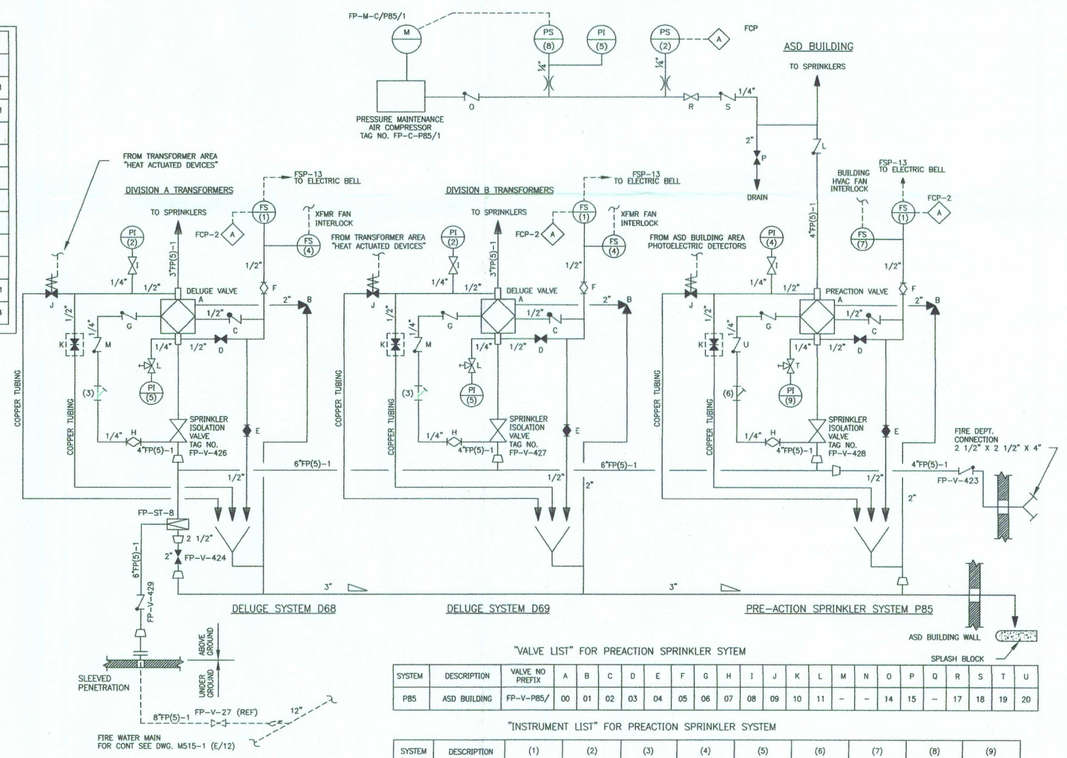


INSTRUMENT LIST FOR DETAIL "F"

SYSTEM	(1)	(2)	(3)	(4)	(5)	(6)			(9)
P65	FP-FS-65/1	FP-PS-P65/2	FP-PI-P65/1	FP-PI-P65/2	FP-PI-P65/3	FP-ST-P65/1			FP-PI-P65/4
P66	FP-FS-66/1	FP-PS-P66/2	FP-PI-P66/1	FP-PI-P66/2	FP-PI-P66/3	FP-ST-P66/1			FP-PI-P66/4
P79	FP-FS-79/1	FP-PS-P79/2	FP-PI-P79/1	FP-PI-P79/2	FP-PI-P79/3	FP-ST-P79/1			FP-PI-P79/4
P80	FP-FS-80/1	FP-PS-P80/2	FP-PI-P80/1	FP-PI-P80/2	FP-PI-P80/3	FP-ST-P80/1			FP-PI-P80/4
P81	FP-FS-81/1	FP-PS-P81/2	FP-PI-P81/1	FP-PI-P81/2	FP-PI-P81/3	FP-ST-P81/1			FP-PI-P81/4
P82	FP-FS-82/1	FP-PS-P82/2	FP-PI-P82/1	FP-PI-P82/2	FP-PI-P82/3	FP-ST-P82/1			FP-PI-P82/4
P83	FP-FS-83/1	FP-PS-P83/2	FP-PI-P83/1	FP-PI-P83/2	FP-PI-P83/3	FP-ST-P83/1			FP-PI-P83/4
P84	FP-FS-84/1	FP-PS-P84/2	FP-PI-P84/1	FP-PI-P84/2	FP-PI-P84/3	FP-ST-P84/1			FP-PI-P84/4

VALVE LIST FOR DETAIL "F"

SYSTEM	DESCRIPTION	VALVE NO PREFIX	A (REF)	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R		T	U
P65	RW BLDG 484' CABLE SPREADING ROOM	FP-V-P65/	00	03	11	07	10	08	12	13	02	09	06	01	05	16	17	04	15	14		99	101
P66	DG BUILDING EL 441' CORRIDOR	FP-V-P66/	30	33	41	37	40	38	42	43	48	39	36	31	35	46	47	34	45	44		77	78
P79	DG-1 GENERATOR/ DAY TANK ROOM	FP-V-P79/	661	664	672	668	671	669	678	674	677	670	666	662	667	679	673	663	676	675		09	10
P80	DG-2 FUEL XFER PUMP ROOM	FP-V-P80/	691	694	702	698	701	699	708	704	707	700	696	692	697	709	703	693	706	705		712	713
P81	DG-2 GENERATOR/ DAY TANK ROOM	FP-V-P81/	721	724	732	728	731	729	738	734	737	730	726	722	727	739	733	723	736	735		742	743
P82	DG-1 FUEL XFER PUMP ROOM	FP-V-P82/	751	754	762	758	761	759	768	764	767	760	756	752	757	769	763	753	766	765		772	773
P83	DG-3 GENERATOR/ DAY TANK ROOM	FP-V-P83/	781	784	792	788	791	789	798	794	797	790	786	782	787	799	793	783	796	795		801	802
P84	DG-3 FUEL XFER PUMP ROOM	FP-V-P84/	811	814	822	818	821	819	828	824	827	820	816	812	817	829	823	813	826	825		832	833



"VALVE LIST" FOR PREACTION SPRINKLER SYTEM

SYSTEM	DESCRIPTION	VALVE NO PREFIX	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
P85	ASD BUILDING	FP-V-P85/	00	01	02	03	04	05	06	07	08	09	10	11	–	–	14	15	–	17	18	19	20

"INSTRUMENT LIST" FOR PREACTION SPRINKLER SYSTEM

SYSTEM	DESCRIPTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
P85	ASD BUILDING	FP-FS-P85/1	FP-PS-P85/1	–	FP-PI-P85/2	FP-PI-P85/3	FP-ST-P85/1	FP-FS-P85/2	FP-PS-P85/3	FP-PI-P85/4

"VALVE LIST" FOR DELUGE SYSTEMS

SYSTEM	DESCRIPTION	VALVE NO PREFIX	A	B	C	D	E	F	G	H	I	J	K	L	M
D68	DIV. A TRANSFORMER	FP-V-D68/	800	801	802	803	804	805	806	807	808	809	810	811	812
D69	DIV. B TRANSFORMER	FP-V-D69/	850	851	852	853	854	855	856	857	858	859	860	861	862

"INSTRUMENT LIST" FOR DELUGE SYSTEMS

SYSTEM	DESCRIPTION	(1)	(2)	(3)	(4)	(5)
D68	DIV. A TRANSFORMER	FP-FS-D68/1	FP-PI-D68/1	FP-ST-D68/1	FP-FS-D68/2	FP-PI-D68/2
D69	DIV. B TRANSFORMER	FP-FS-D69/1	FP-PI-D69/1	FP-ST-D69/1	FP-FS-D69/2	FP-PI-D69/2

RRC PUMP ASD BUILDING AND TRANSFORMERS
FIRE PROTECTION SYSTEM FLOW DIAGRAM AND DETAILS

LR NOTES:

A. FOR GENERAL LICENSE RENEWAL NOTES, SEE LR-M501-2.
B. ALL HIGHLIGHTED COMPONENTS SHOWN ON THIS DRAWING ARE EVALUATED IN THE FIRE PROTECTION SYSTEM.
C. COMPONENTS HIGHLIGHTED ON THIS DRAWING ARE IN SCOPE FOR (A)(3)-FIRE PROTECTION. THEREFORE, ONLY COMPONENTS IN THE MAIN FLOW PATHS AND BRANCH LINES TO THE FIRST ISOLATION VALVE ARE HIGHLIGHTED.

DRAWING CREATED FROM M515-2 REV 17

ENERGY NORTHWEST — COLUMBIA GENERATING STATION

SIGNED	DATE	TITLE
APPROVED		LICENSE RENEWAL BOUNDARY DRAWING FIRE PROTECTION SYSTEM DETAILS
DESIGN		
CHECKED		DRAWING # LR-M515-2
DRAWN		SCALE N/A — REV. 1 B

TOP TIER