



POWERTECH (USA) INC.

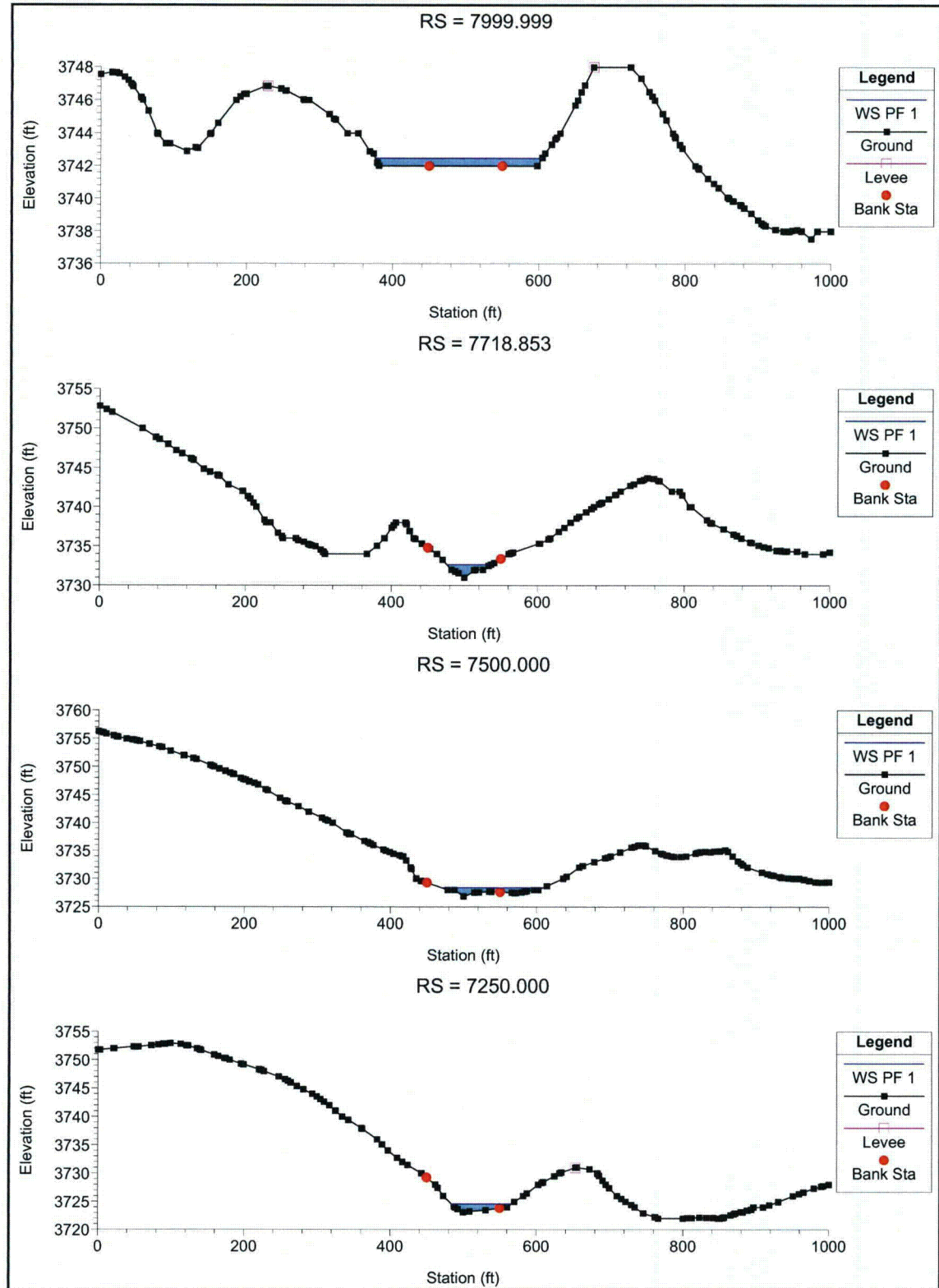
Attachment 23

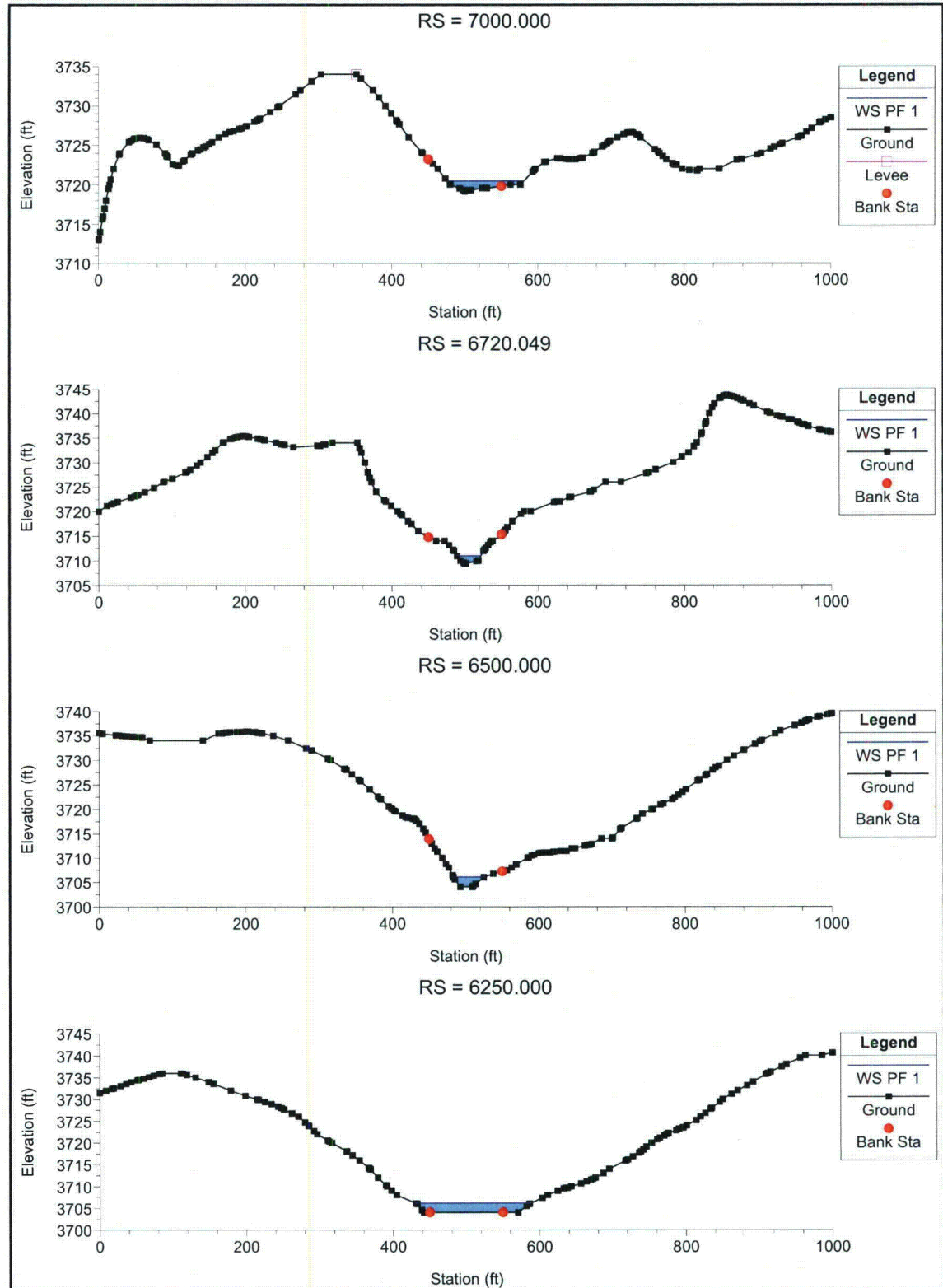
HES-RAS Channel 12

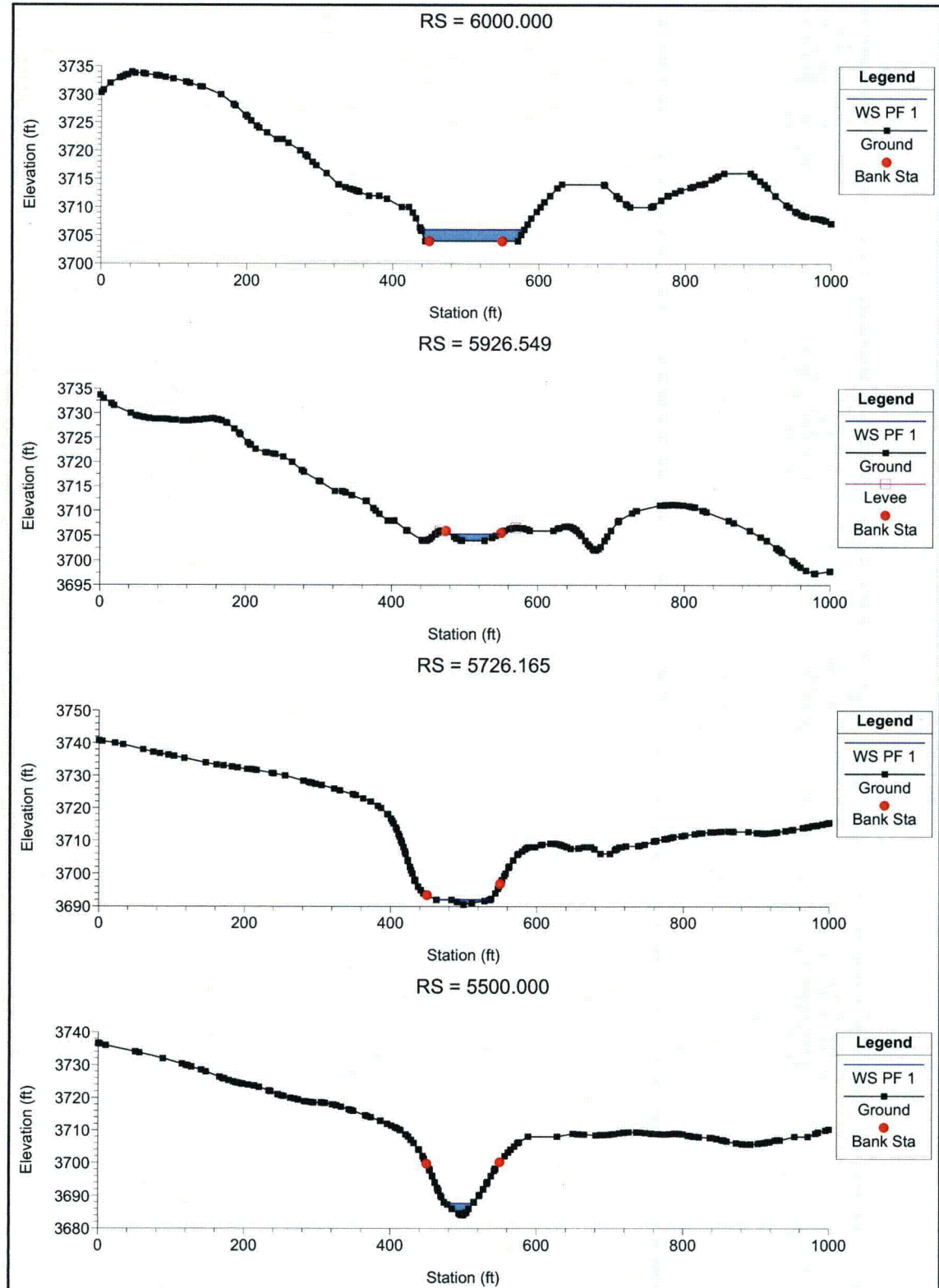
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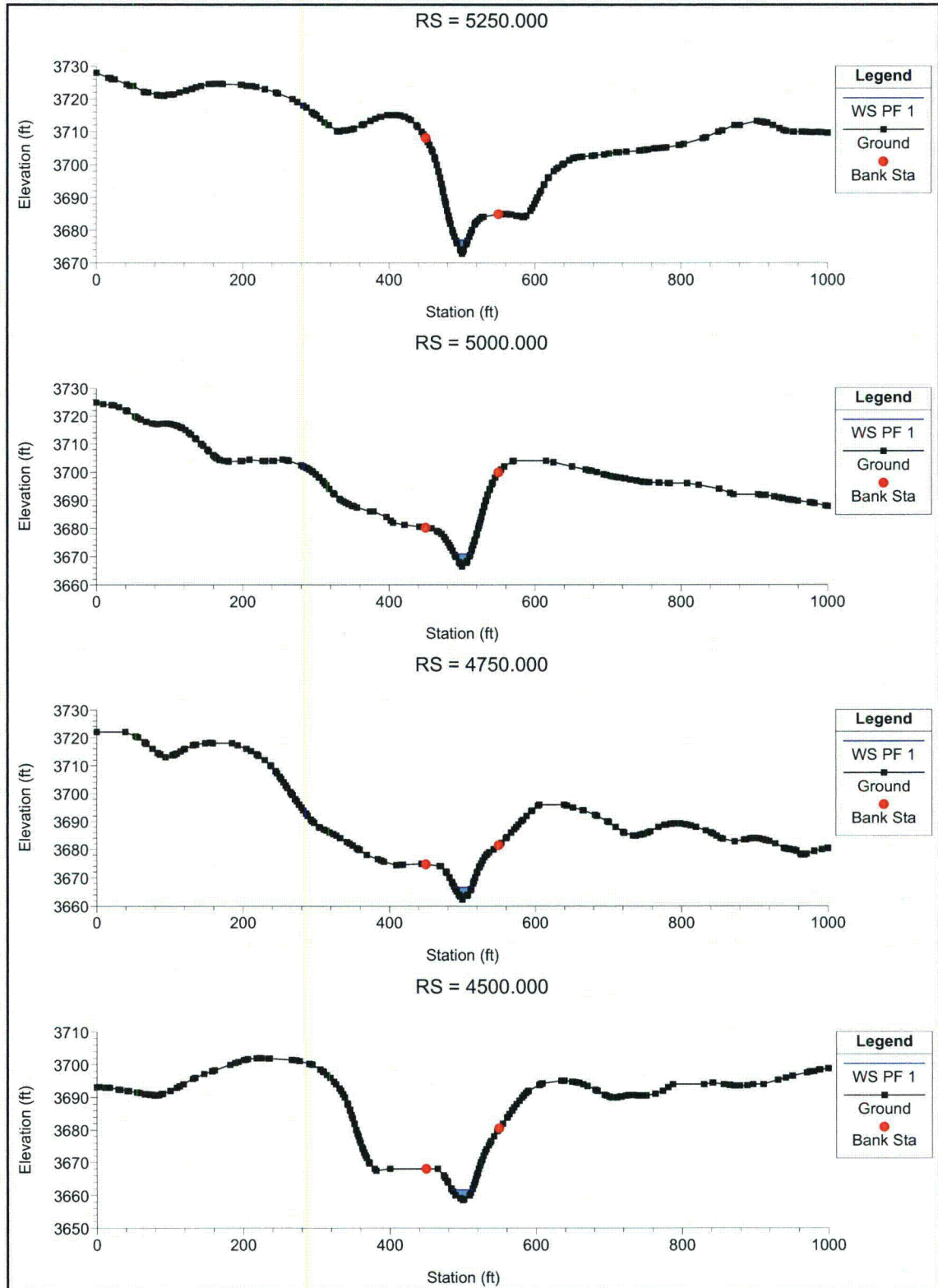


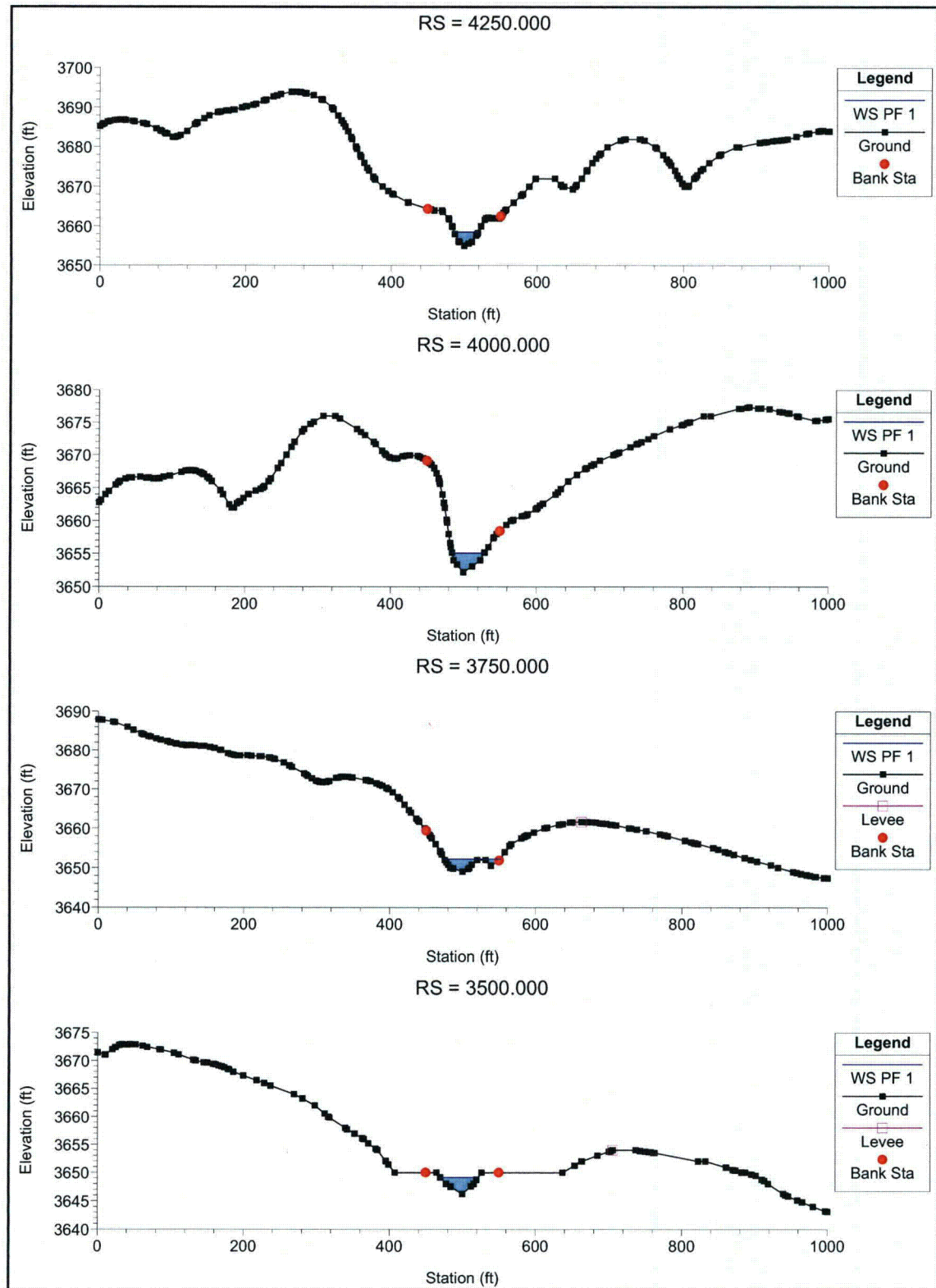
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
12	7999.999	PF 1	413	3742	3742.48	3742.48	3742.71	0.022715	3.93	106.93	228.07	1
12	7718.853	PF 1	413	3731.02	3732.66	3733.01	3733.77	0.052436	8.46	48.84	60.08	1.65
12	7500	PF 1	413	3726.86	3728.39	3728.29	3728.65	0.013987	4.23	101.34	139.15	0.85
12	7250	PF 1	413	3723.11	3724.56	3724.56	3725.03	0.016705	5.63	76.49	81.79	0.97
12	7000	PF 1	413	3719.15	3720.49	3720.5	3720.91	0.018123	5.35	82.35	105.25	0.99
12	6720.049	PF 1	413	3709.38	3711.04	3711.62	3712.92	0.057536	11.01	37.51	33.08	1.82
12	6500	PF 1	413	3704	3706.06	3706.07	3706.79	0.016657	6.87	60.14	42.51	1.02
12	6250	PF 1	413	3704	3706.14	3704.68	3706.17	0.000414	1.44	304.76	157.47	0.17
12	6000	PF 1	413	3704	3706.02		3706.06	0.000541	1.58	270.59	141.51	0.2
12	5926.549	PF 1	413	3704	3705.37	3705.37	3705.89	0.01792	5.82	70.99	68.42	1.01
12	5726.165	PF 1	601	3690.6	3692.1	3692.79	3695.1	0.224699	13.91	43.21	75.1	3.23
12	5500	PF 1	601	3684.08	3687.65	3687.65	3688.66	0.014621	8.05	74.62	37.16	1
12	5250	PF 1	601	3672.76	3677	3678.41	3681.51	0.069142	17.03	35.29	16.6	2.06
12	5000	PF 1	601	3666.5	3670.94	3671.22	3672.64	0.019017	10.44	57.55	22.3	1.15
12	4750	PF 1	601	3662.44	3666.67	3666.93	3668.29	0.019081	10.23	58.73	23.88	1.15
12	4500	PF 1	601	3658.55	3661.63	3662.24	3663.71	0.033039	11.57	51.94	27.44	1.48
12	4250	PF 1	601	3655	3658.53	3658.46	3659.57	0.013299	8.18	73.49	33.09	0.97
12	4000	PF 1	601	3652.2	3655.11	3655.11	3656.02	0.01529	7.65	78.52	44.01	1.01
12	3750	PF 1	601	3649.04	3652.24	3651.87	3652.67	0.008853	5.25	114.91	77.33	0.75
12	3500	PF 1	601	3646.24	3649.12	3649.12	3649.93	0.015309	7.19	83.55	51.78	1
12	3250	PF 1	601	3643.06	3646.16	3645.89	3646.54	0.010767	4.98	122.22	115.98	0.8
12	3000	PF 1	601	3640.32	3642.87	3642.87	3643.39	0.01661	5.76	105.97	106.62	0.98
12	2891.053	PF 1	601	3640	3641.54	3640.98	3641.68	0.00358	3.09	203.25	166.56	0.47
12	2770.872	PF 1	651	3637.53	3640.69	3640.61	3640.98	0.010486	4.93	160.51	192.19	0.79
12	2500	PF 1	651	3634.95	3636.98	3636.98	3637.45	0.018384	5.6	120.32	136.17	1.01
12	2250	PF 1	651	3631.99	3632.79	3632.66	3632.99	0.008998	2.81	186.08	249.21	0.65
12	1951.087	PF 1	651	3628.23	3628.96	3628.96	3629.32	0.017868	3.25	139.2	196.62	0.87
12	1750	PF 1	651	3625.27	3626.01	3626.01	3626.01	0.000037	0.14	1316.36	608.51	0.04
12	1500	PF 1	651	3620.11	3621.47	3622.39	3625.57	0.243728	16.25	40.06	58.62	3.46
12	1250	PF 1	651	3617.24	3619.36	3619.01	3619.53	0.004733	3.58	207.14	201.16	0.54
12	1000	PF 1	651	3615.73	3617.03	3617.03	3617.48	0.018023	5.72	123.42	141.09	1
12	750	PF 1	651	3613.3	3614	3614	3614.01	0.000128	0.3	946.36	620.63	0.07
12	500	PF 1	651	3610	3610.46	3610.93	3613.58	0.409921	13.38	46.08	123.54	4.01
12	250	PF 1	651	3605.46	3607	3606.94	3607.3	0.014962	4.4	149.94	196.07	0.88
12	0	PF 1	651	3600	3603.37	3603.37	3603.82	0.014505	5.76	123.61	120.53	0.92

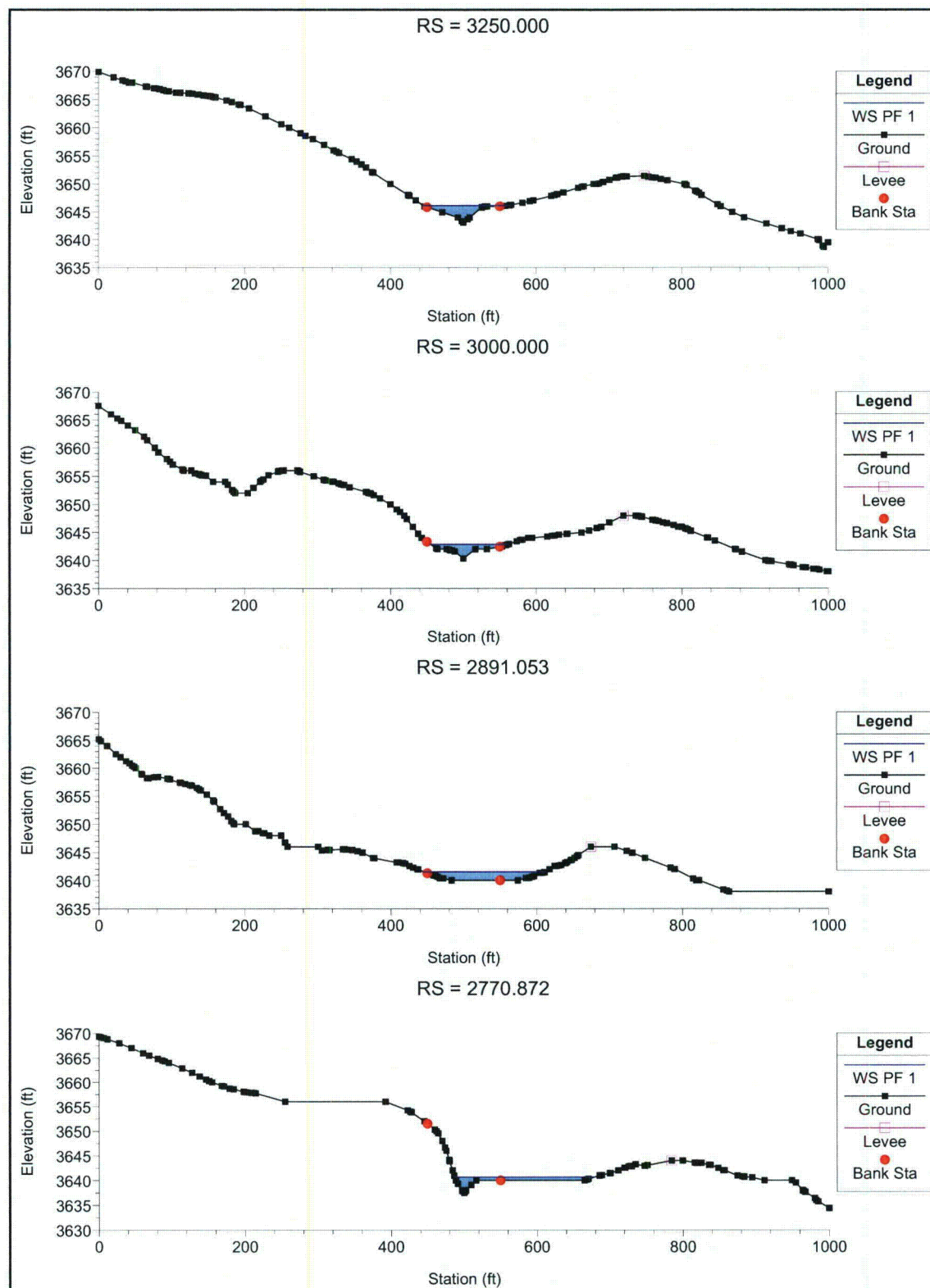


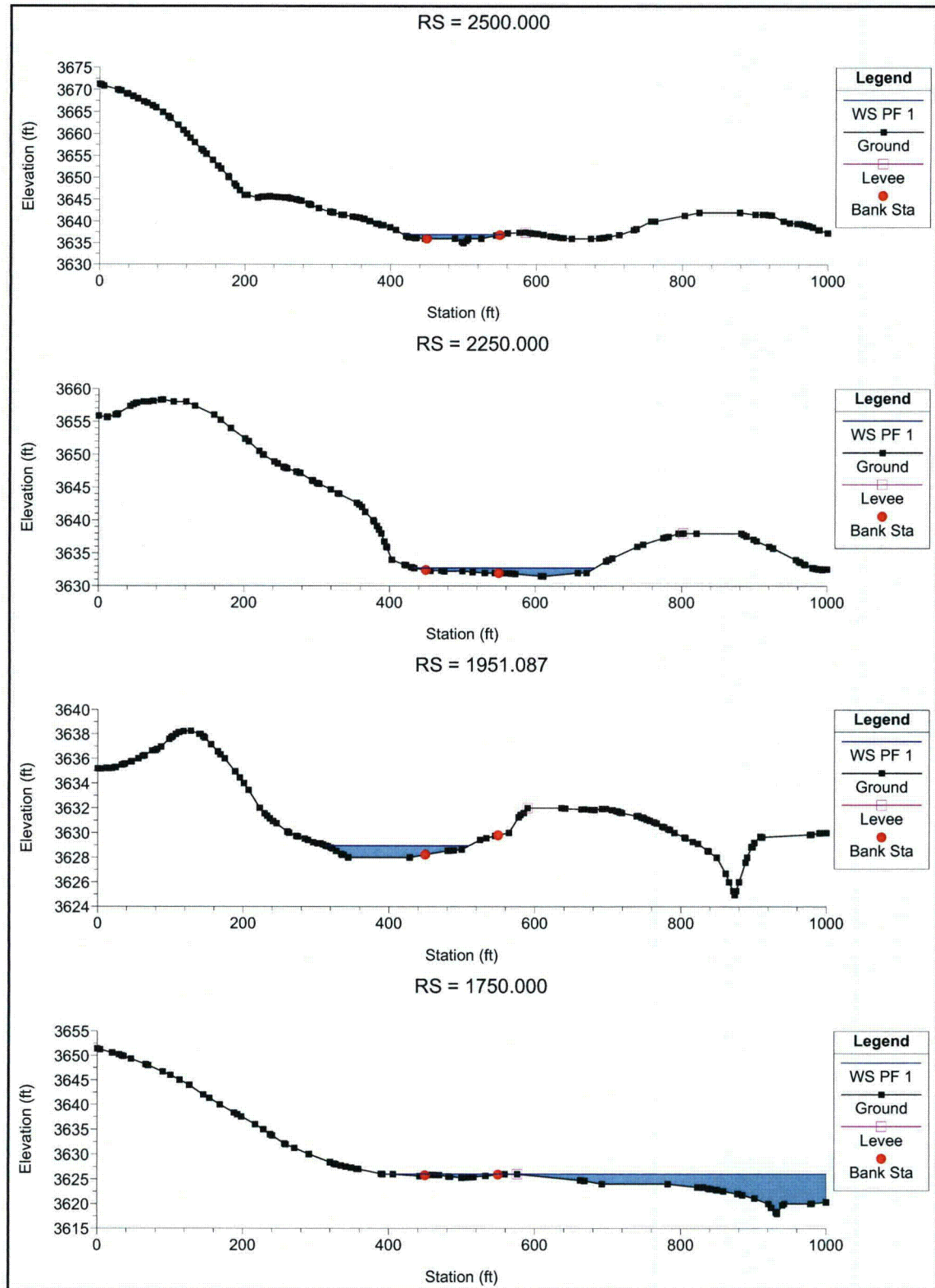


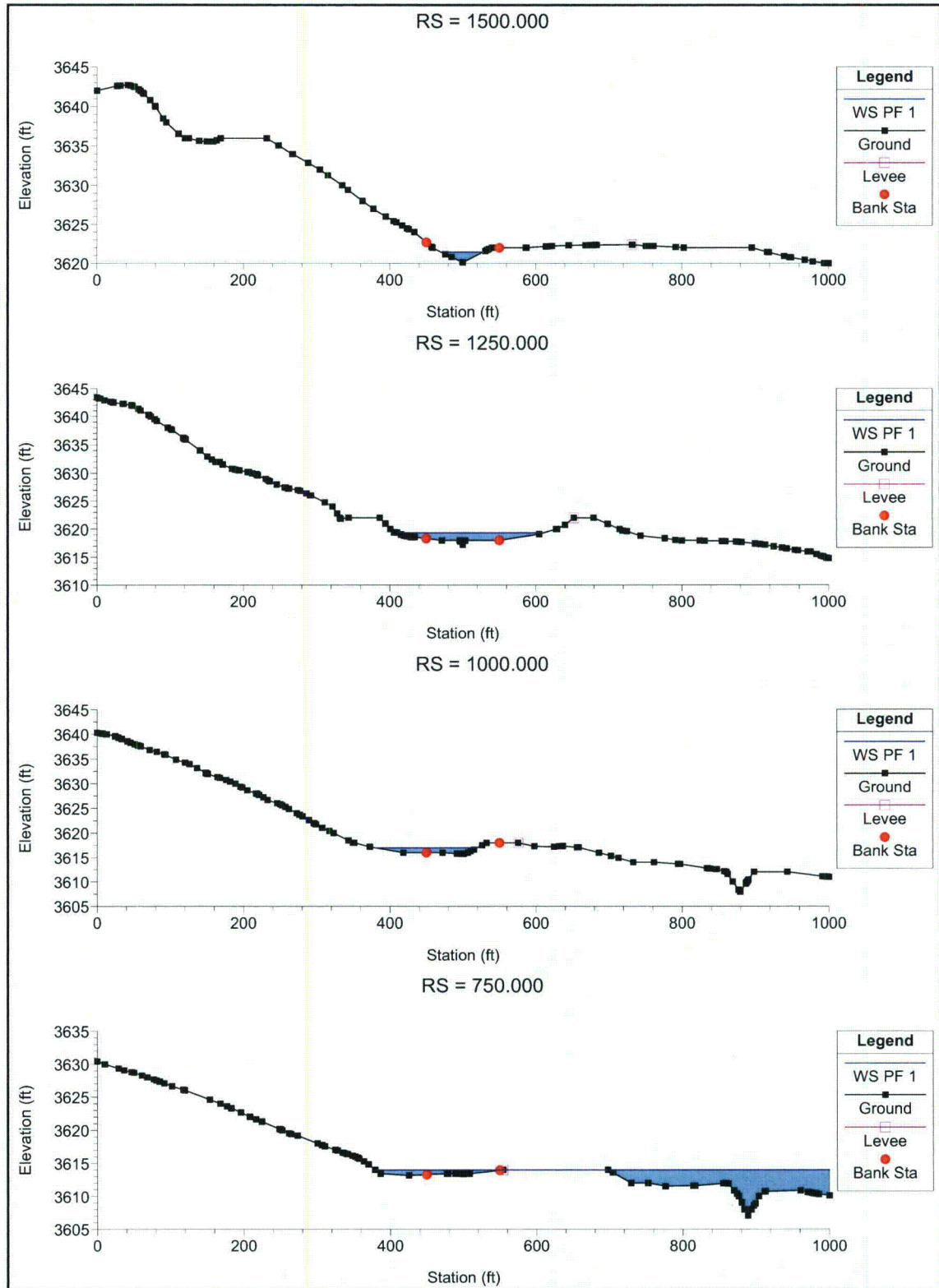


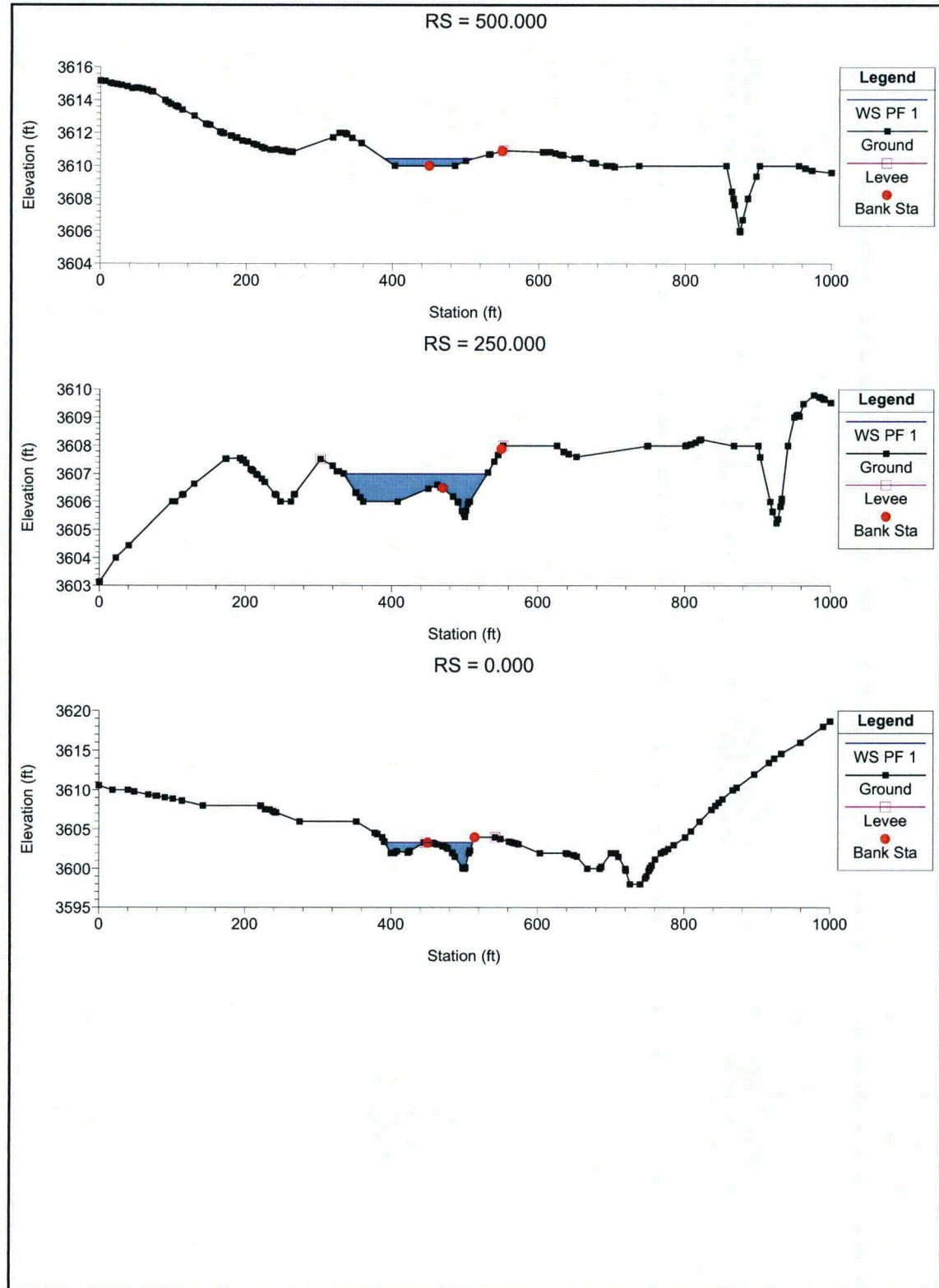














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Attachment 24

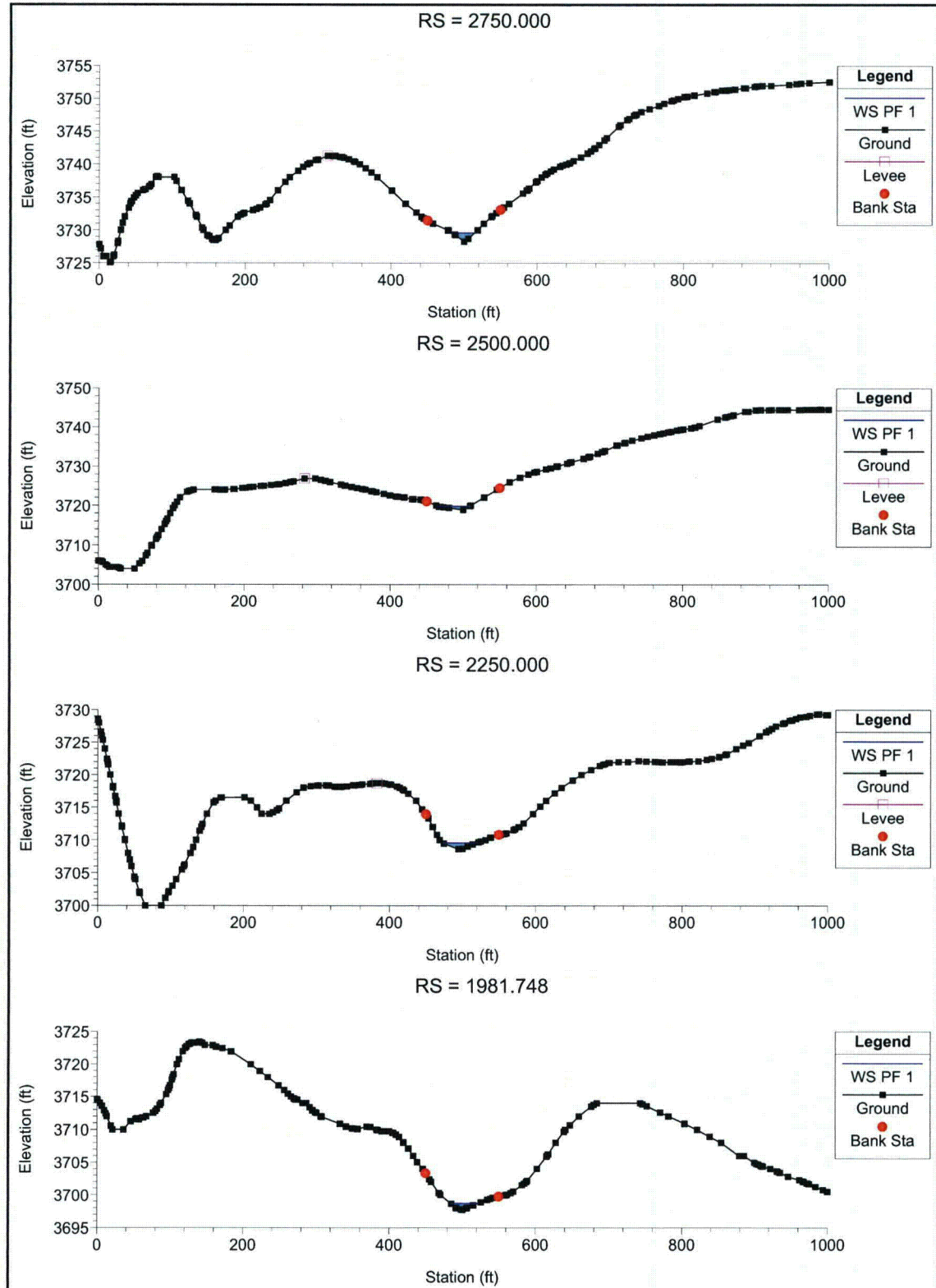
HES-RAS Channel 13

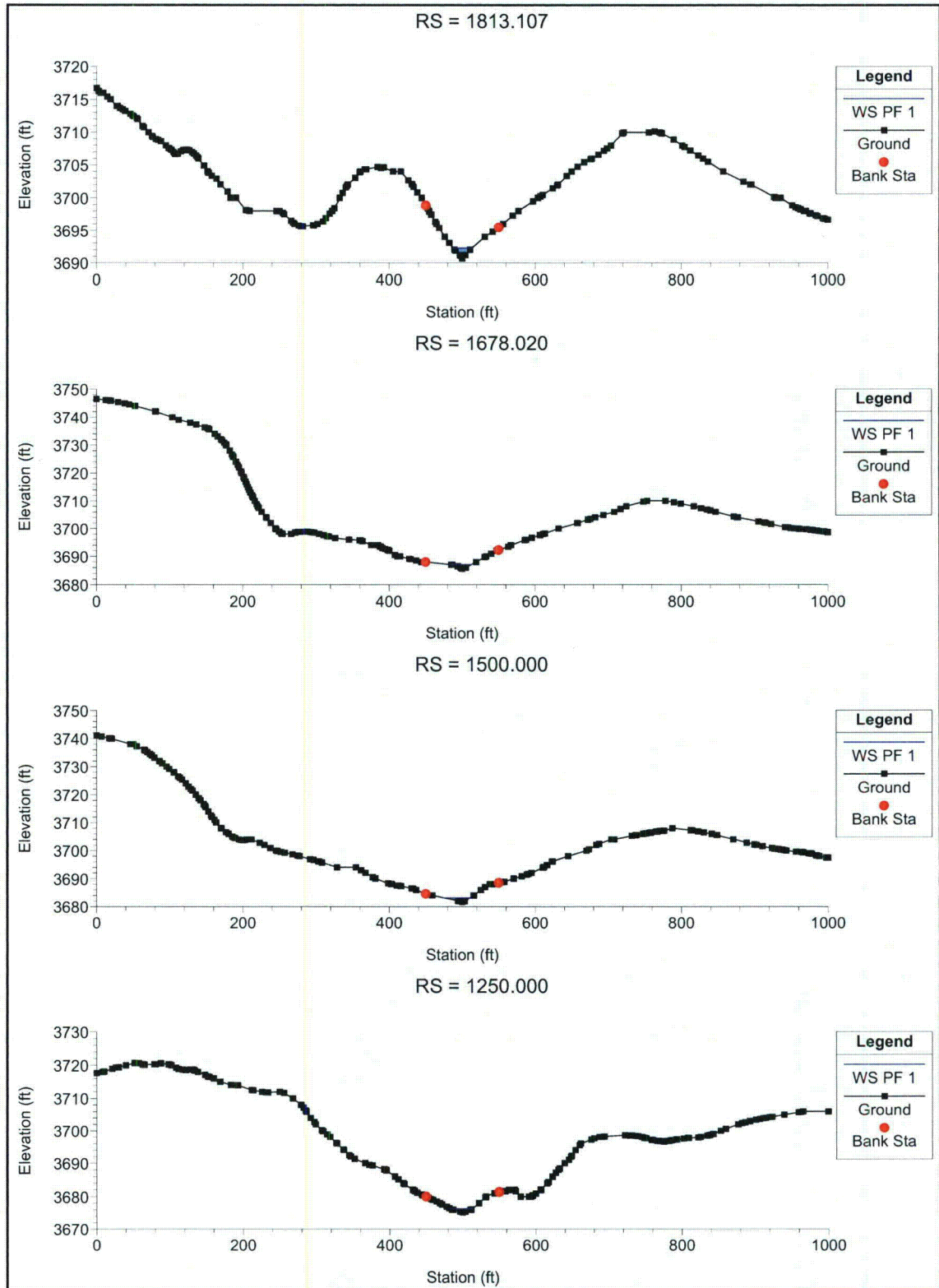
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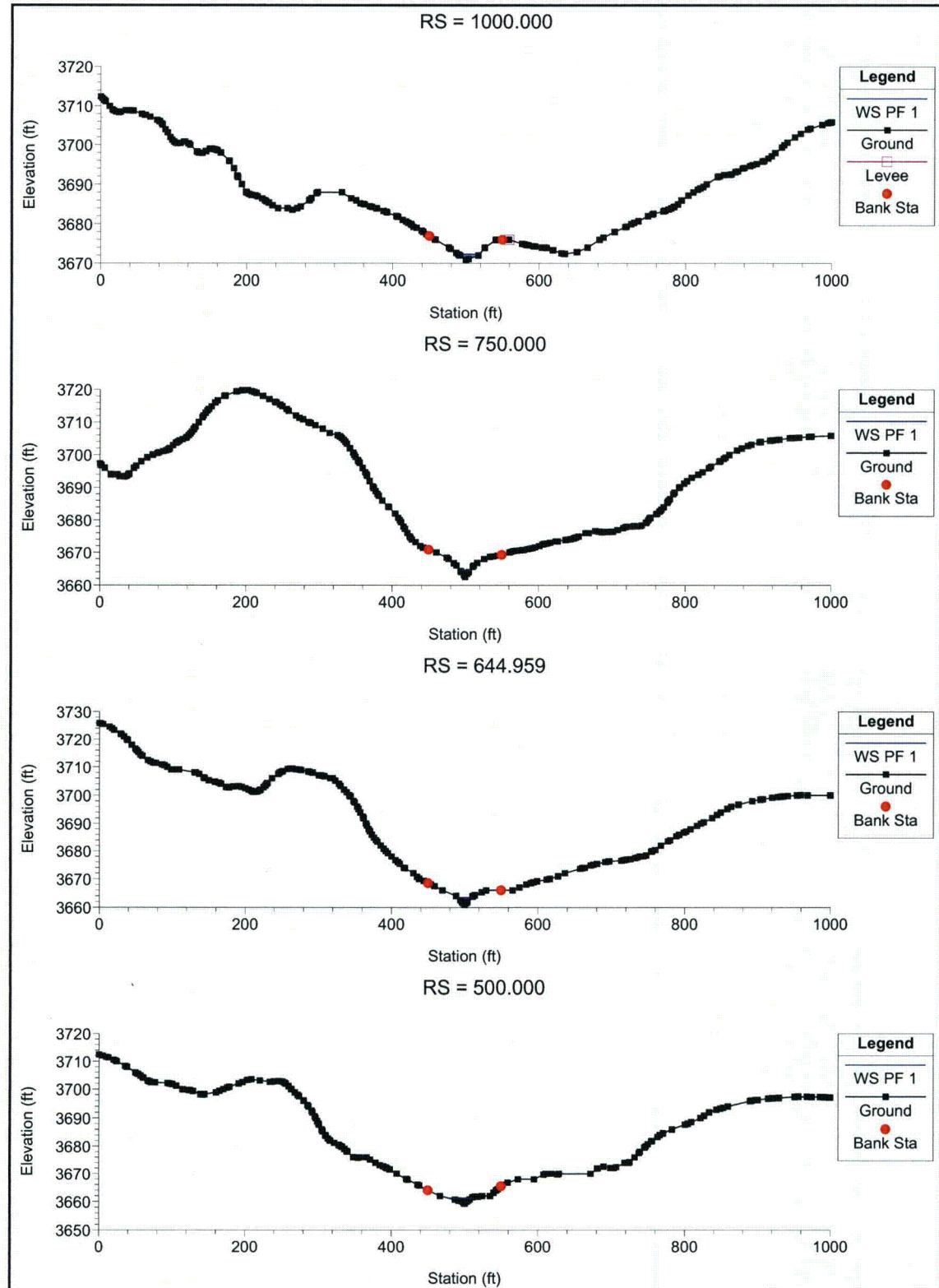


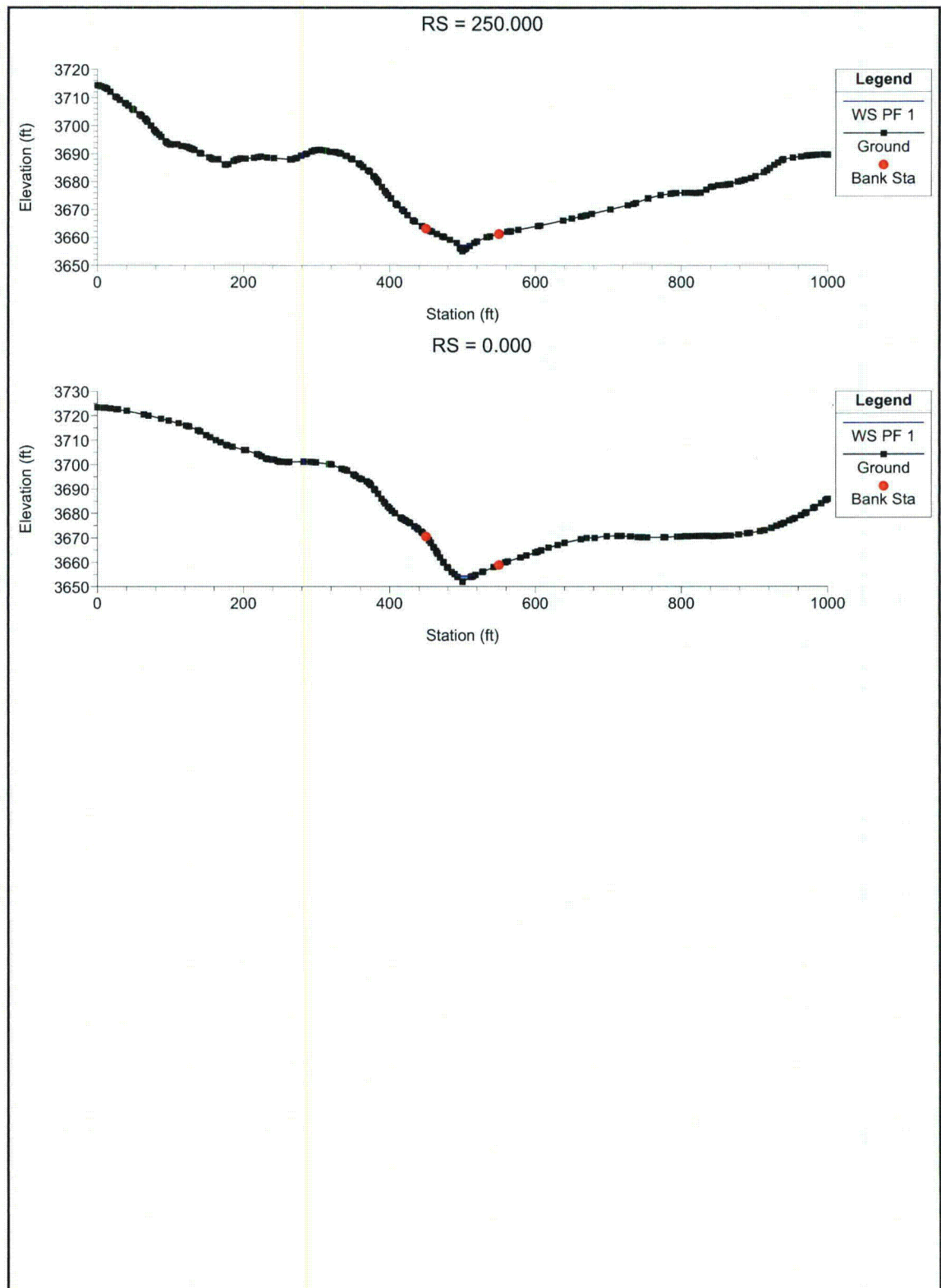
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Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
13	2750	PF 1	126	3728.28	3729.62	3729.76	3730.17	0.033005	5.93	21.24	31.39	1.27
13	2500	PF 1	126	3718.87	3719.82	3719.97	3720.35	0.048909	5.85	21.55	43.78	1.47
13	2250	PF 1	126	3708.64	3709.58	3709.69	3710.01	0.037366	5.28	23.86	46.2	1.29
13	1981.748	PF 1	126	3697.7	3698.68	3698.87	3699.31	0.050598	6.33	19.9	36.79	1.52
13	1813.107	PF 1	126	3690.65	3692.29	3692.42	3692.88	0.02992	6.17	20.42	26.31	1.23
13	1678.02	PF 1	126	3685.6	3687.06	3687.29	3687.78	0.049553	6.83	18.44	29.81	1.53
13	1500	PF 1	126	3681.7	3683.12	3683.12	3683.5	0.020603	4.9	25.71	35.51	1.01
13	1250	PF 1	126	3675.16	3676.35	3676.51	3676.97	0.039212	6.31	19.96	30.55	1.38
13	1000	PF 1	126	3670.89	3672.36	3672.36	3672.77	0.019738	5.19	24.28	29.73	1.01
13	750	PF 1	126	3662.6	3664.62	3665.02	3665.89	0.049274	9.04	13.94	14.26	1.61
13	644.959	PF 1	126	3660.93	3663.48	3663.33	3663.94	0.013051	5.43	23.21	18.92	0.86
13	500	PF 1	126	3659.32	3661.25	3661.25	3661.66	0.020521	5.14	24.52	31.21	1.02
13	250	PF 1	126	3655.02	3657.2	3657.34	3657.93	0.025987	6.85	18.39	17.71	1.19
13	0	PF 1	126	3652	3654.41	3654.15	3654.75	0.010008	4.62	27.27	23.51	0.76









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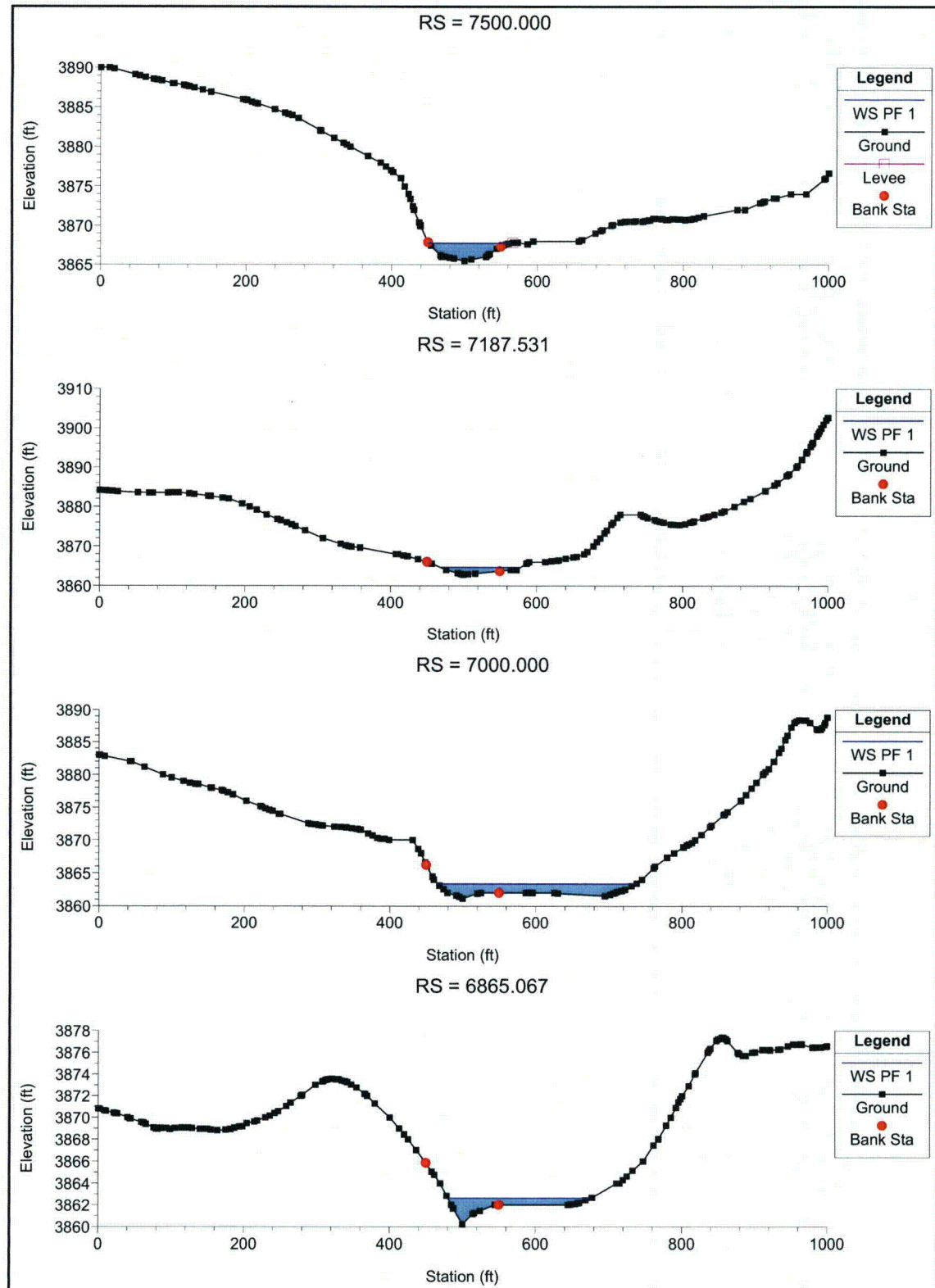
Attachment 25

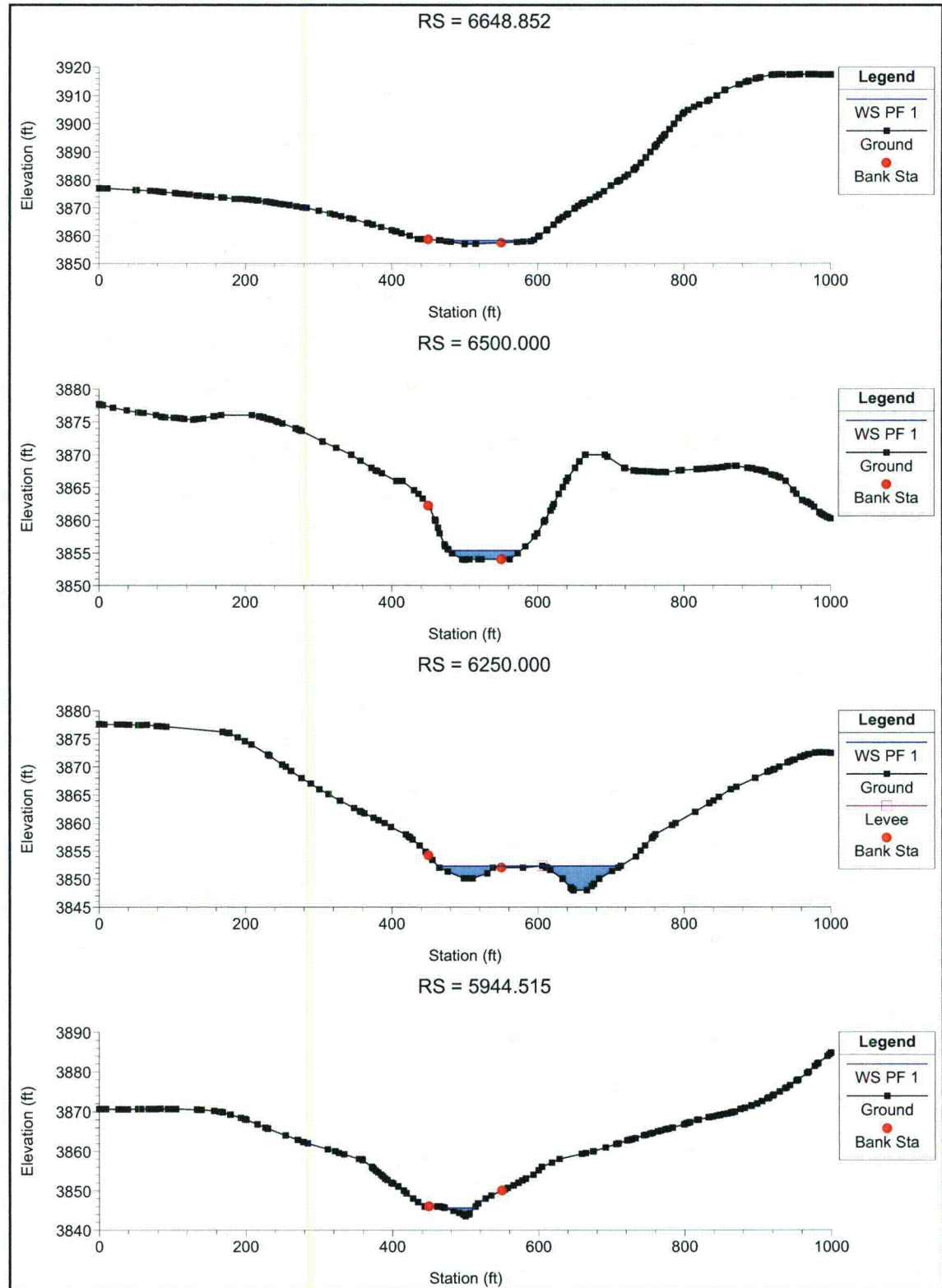
HES-RAS Channel 14

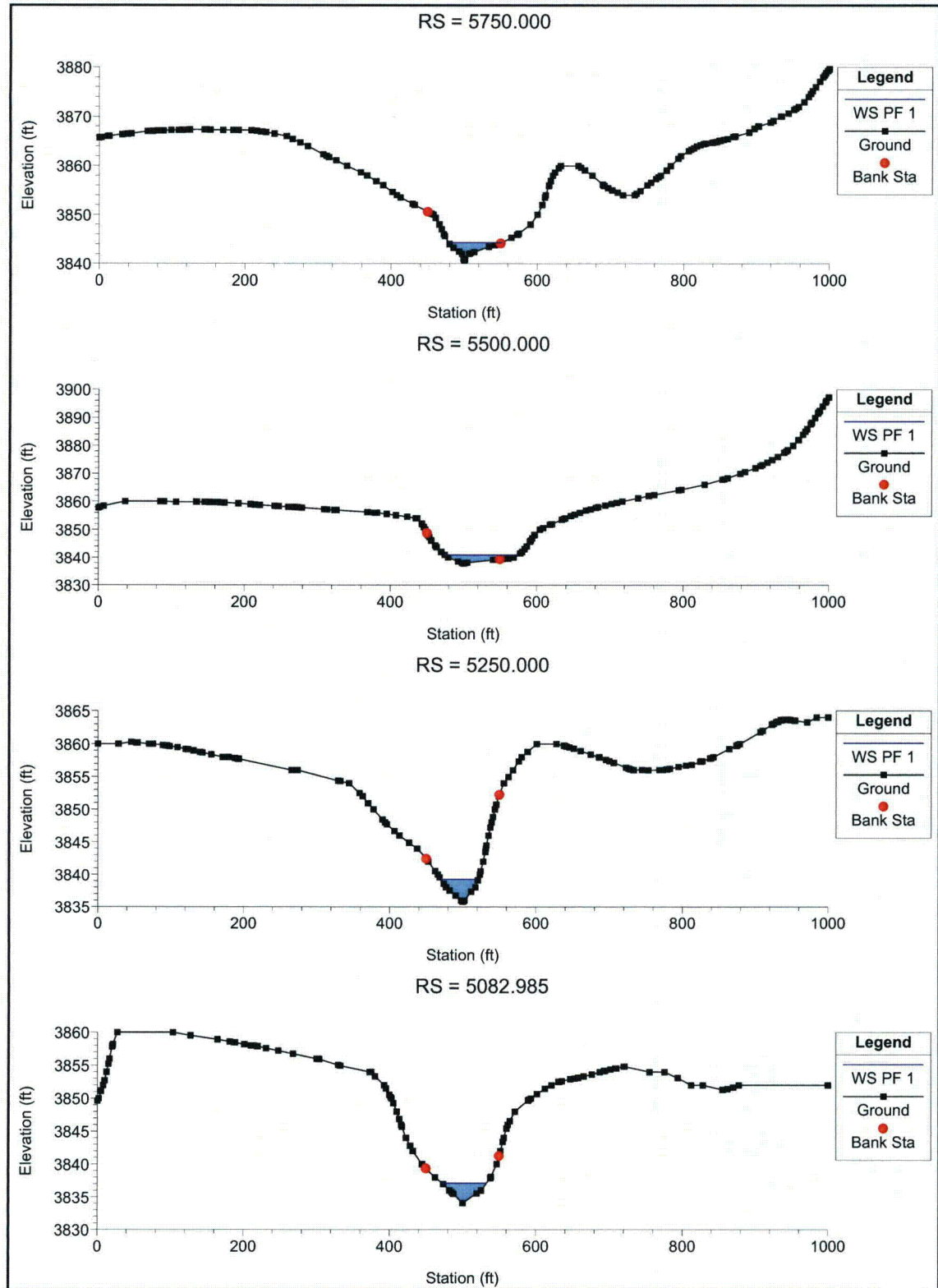
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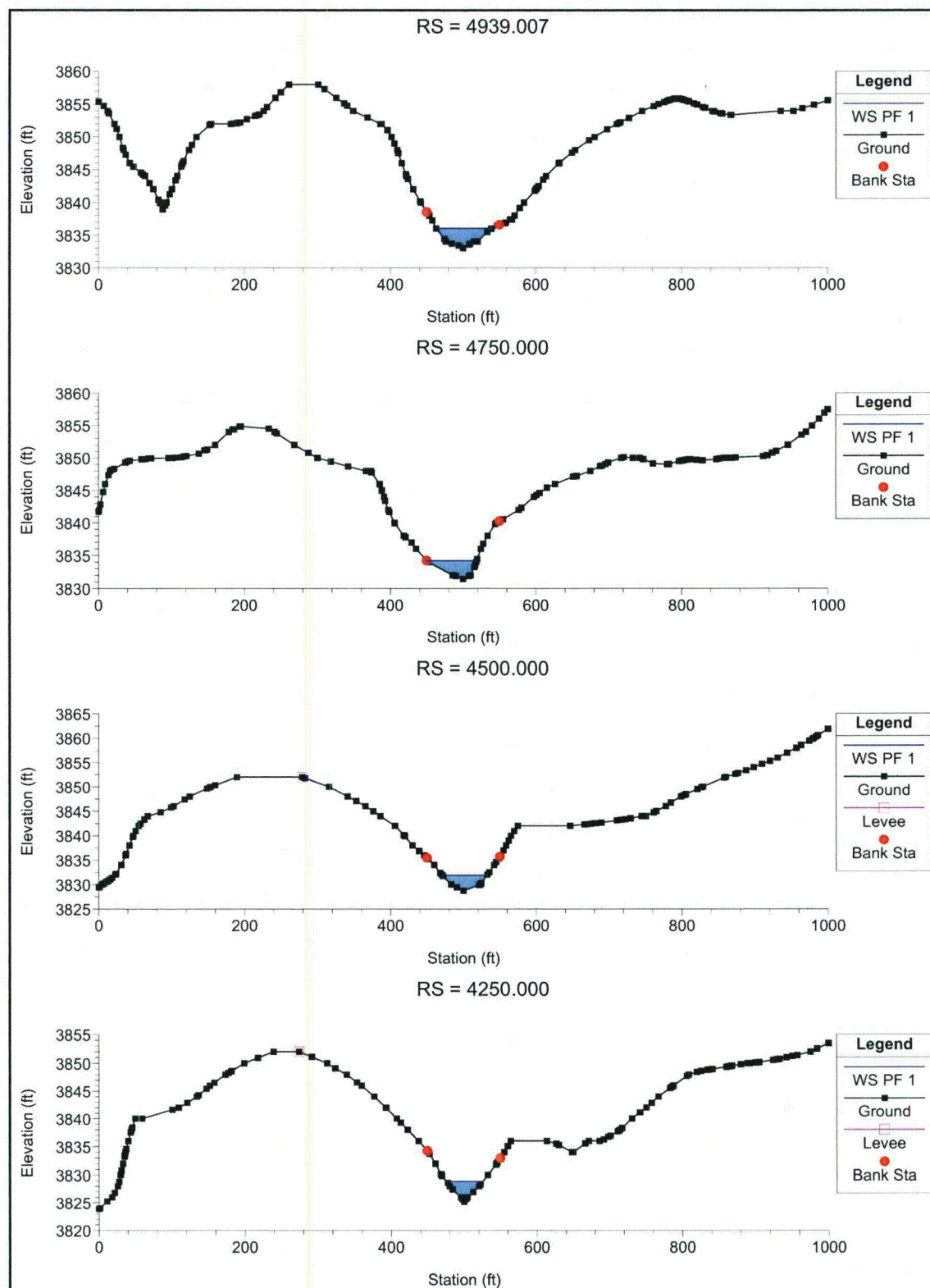


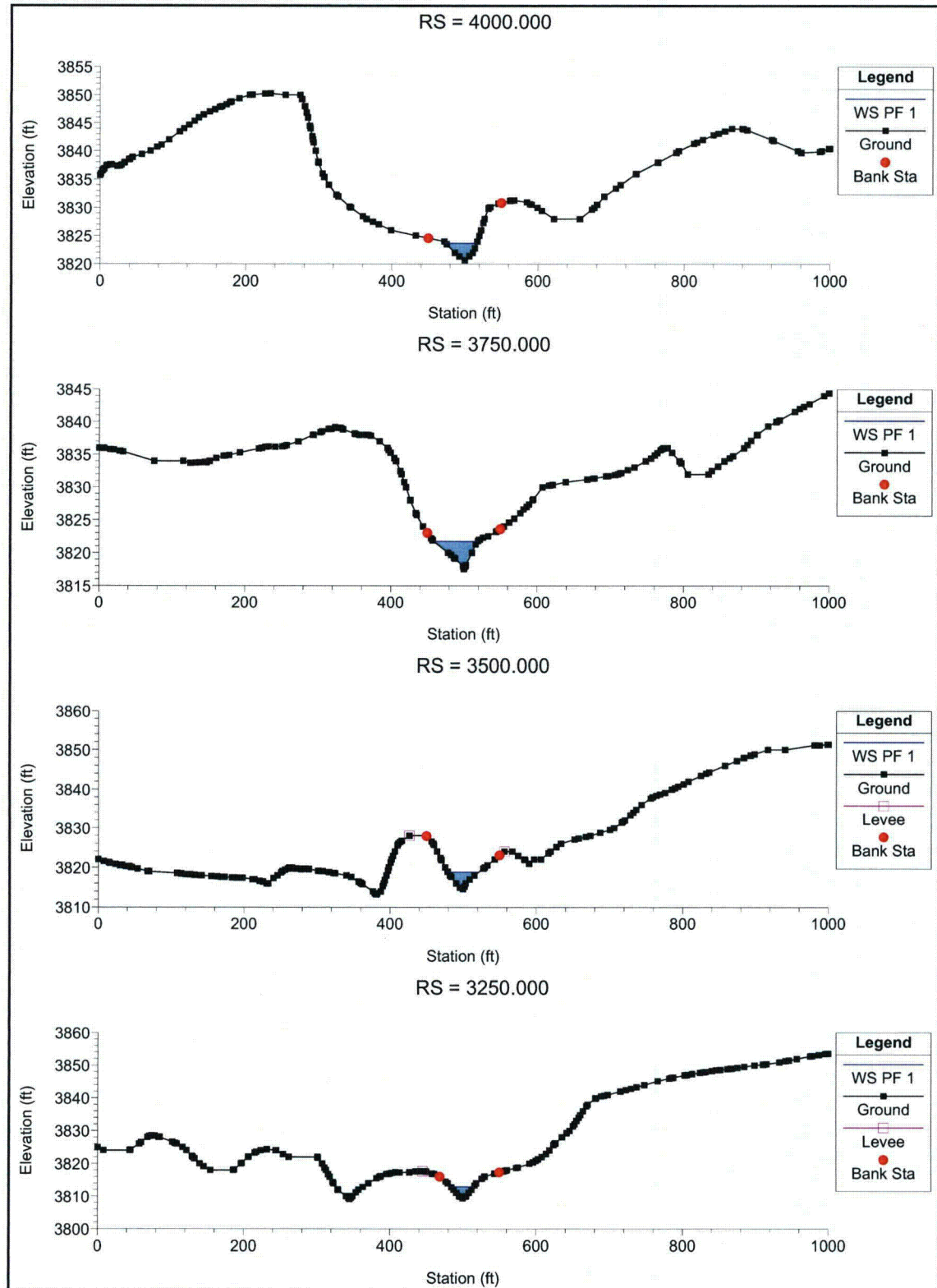
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
14	7500	PF 1	730	3865.49	3867.77	3867.33	3868.09	0.006234	4.59	160.82	111.96	0.64
14	7187.531	PF 1	730	3862.78	3864.69	3864.69	3865.25	0.015655	6.22	123.86	110.57	0.97
14	7000	PF 1	730	3861.17	3863.36	3862.52	3863.42	0.001273	1.95	382.78	270.93	0.28
14	6865.067	PF 1	730	3860.22	3862.63	3862.63	3863.02	0.013369	5.65	158.01	195.65	0.89
14	6648.852	PF 1	730	3856.93	3858.38	3858.55	3859.08	0.027492	7.03	111.19	127.78	1.24
14	6500	PF 1	730	3853.94	3855.39	3855.42	3856.02	0.01794	6.55	115.04	98.15	1.04
14	6250	PF 1	730	3850.09	3852.3	3852.3	3852.36	0.001214	1.77	375.66	250.62	0.27
14	5944.515	PF 1	730	3843.49	3845.61	3846.72	3850.92	0.192711	18.49	39.49	39.68	3.27
14	5750	PF 1	730	3840.62	3844.35	3844.35	3845.09	0.015912	6.9	105.92	73.89	1
14	5500	PF 1	730	3837.8	3841	3840.21	3841.23	0.003193	4	192.48	100.58	0.48
14	5250	PF 1	730	3835.79	3839.28	3839.08	3840.06	0.011159	7.09	102.9	51.16	0.88
14	5082.985	PF 1	730	3834.06	3837.13	3837.12	3837.96	0.015318	7.3	100.02	60.77	1
14	4939.007	PF 1	730	3833	3836.04		3836.46	0.006825	5.22	139.78	76.62	0.68
14	4750	PF 1	730	3831.44	3834.23	3834.09	3834.88	0.012111	6.48	112.7	68.74	0.89
14	4500	PF 1	730	3828.74	3831.92	3831.5	3832.46	0.007851	5.93	123.15	61.83	0.74
14	4250	PF 1	730	3825.16	3828.89	3828.89	3829.82	0.014646	7.76	94.02	50.02	1
14	4000	PF 1	730	3820.65	3823.72	3824.16	3825.2	0.025324	9.78	74.66	42.35	1.3
14	3750	PF 1	730	3817.52	3821.77	3821.4	3822.37	0.009102	6.25	116.78	60.15	0.79
14	3500	PF 1	730	3814.57	3818.87	3818.87	3819.9	0.014115	8.16	89.41	42.41	0.99
14	3250	PF 1	730	3809.36	3812.92	3813.58	3815.08	0.031349	11.78	61.96	30.69	1.46
14	3000	PF 1	2032	3804	3811.34	3811.08	3812.79	0.010023	9.64	210.75	59.58	0.9
14	2750	PF 1	2032	3802.2	3808.99	3808.73	3810.25	0.010107	9.01	225.61	72.26	0.9
14	2500	PF 1	2032	3800.13	3807.35		3808.19	0.006148	7.37	275.79	82.39	0.71
14	2250	PF 1	2032	3798.06	3805.2		3806.37	0.008627	8.65	234.92	70.66	0.84
14	2000	PF 1	2032	3795.83	3803.53		3804.35	0.006866	7.29	282.09	103.37	0.74
14	1750	PF 1	2032	3794.66	3802.24		3802.86	0.004827	6.35	320.64	104.3	0.63
14	1500	PF 1	2032	3793.45	3799.71	3799.67	3801.07	0.011662	9.36	219.58	83.7	0.96
14	1250	PF 1	2032	3791.77	3797.59	3797.35	3798.61	0.008151	8.33	265.52	111.3	0.81
14	1125.154	PF 1	2032	3790.2	3796.39	3796.25	3797.49	0.010894	8.44	243.15	100.28	0.91
14	1000	PF 1	2032	3789.44	3794.93	3794.93	3796.03	0.012457	8.44	245.97	129.65	0.96
14	750	PF 1	2032	3787.73	3792.54	3792.34	3793.35	0.008065	7.93	304.99	149.53	0.8
14	500	PF 1	2032	3785.6	3791.34		3791.93	0.005113	6.7	348.7	143.98	0.65
14	250	PF 1	2032	3784.13	3789.15	3789.06	3790.4	0.010771	9.09	231.91	91.25	0.93
14	0	PF 1	2032	3782	3787.13	3786.66	3788.04	0.00801	7.66	265.15	91.93	0.8

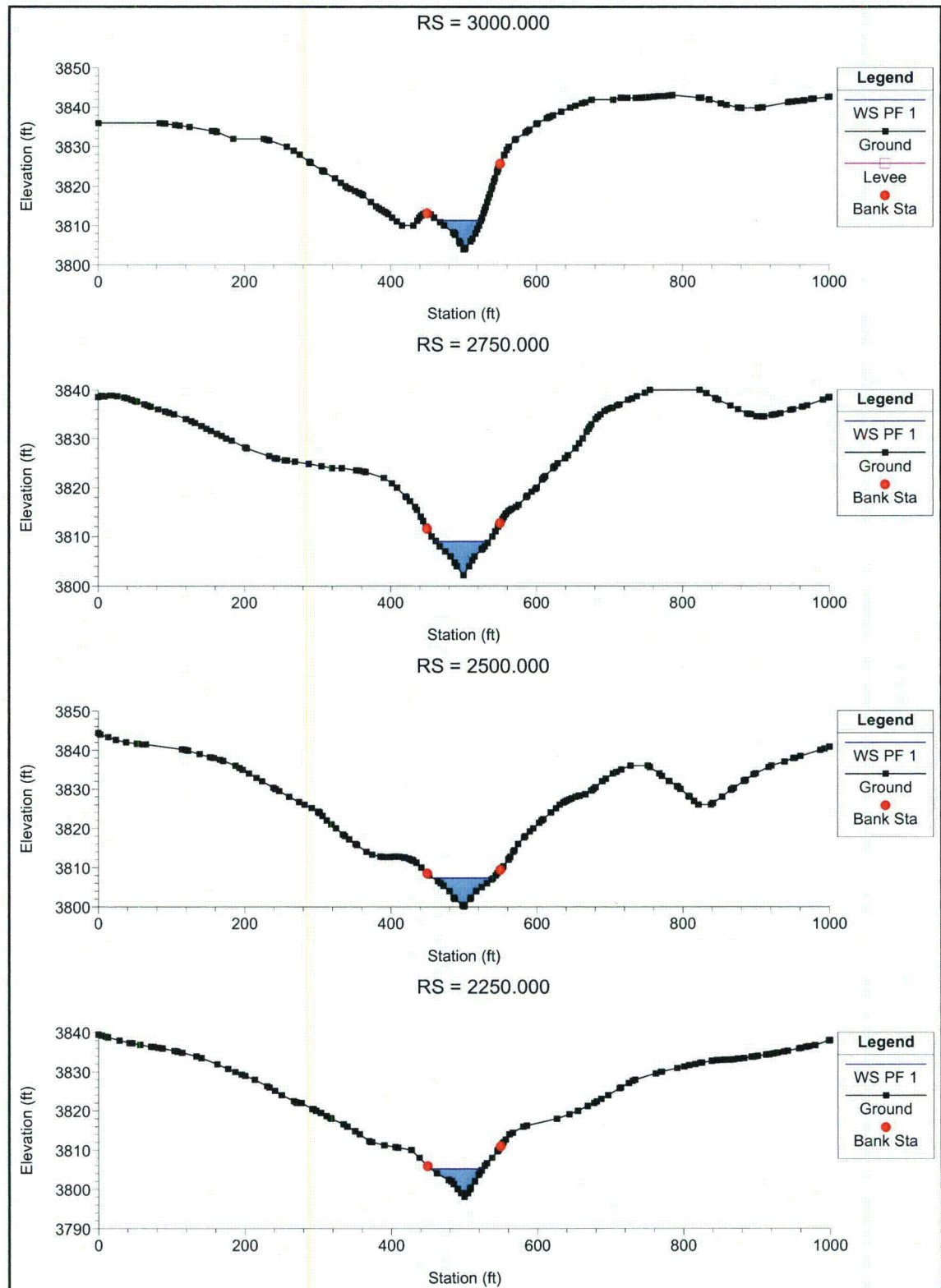


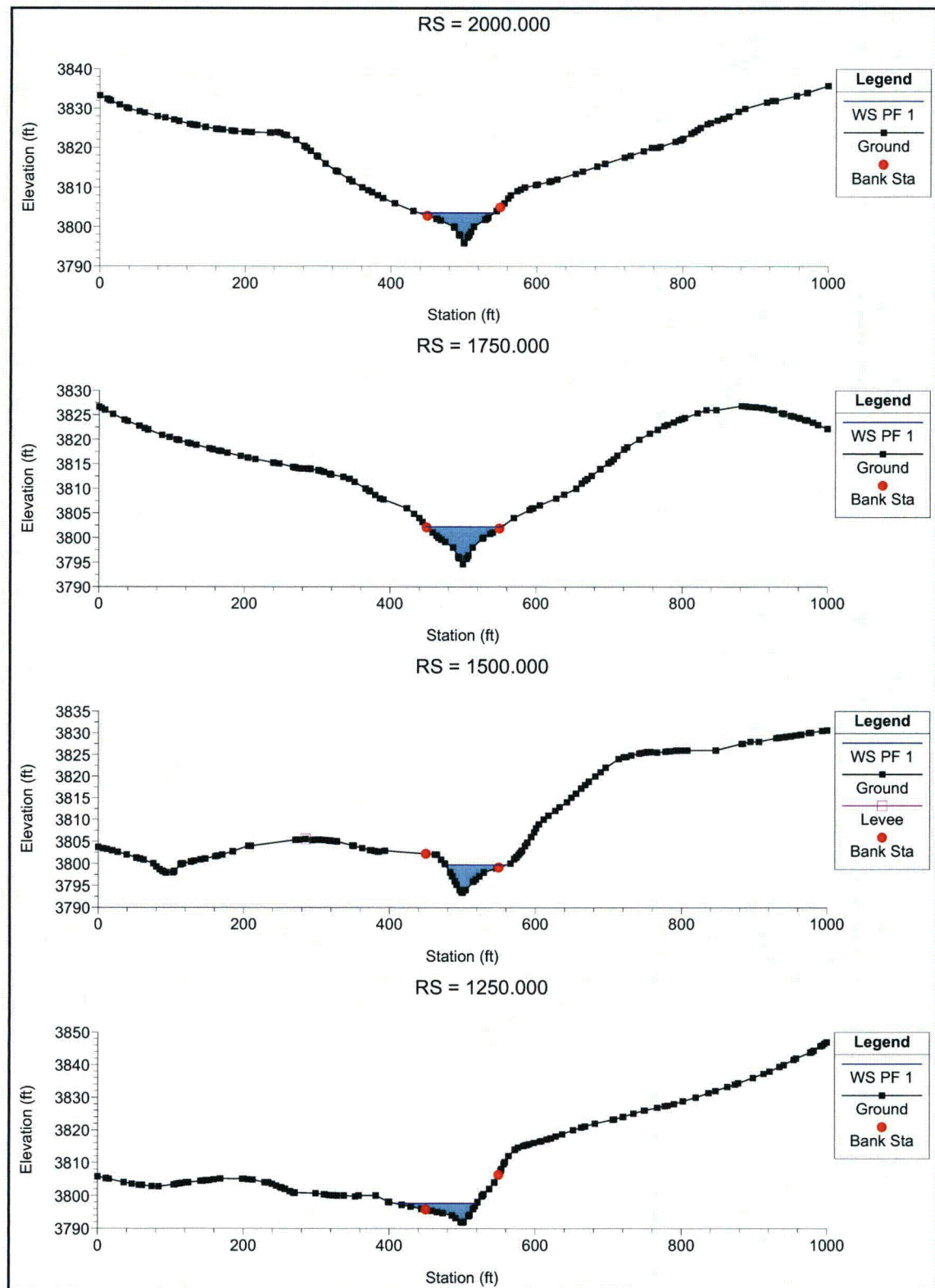


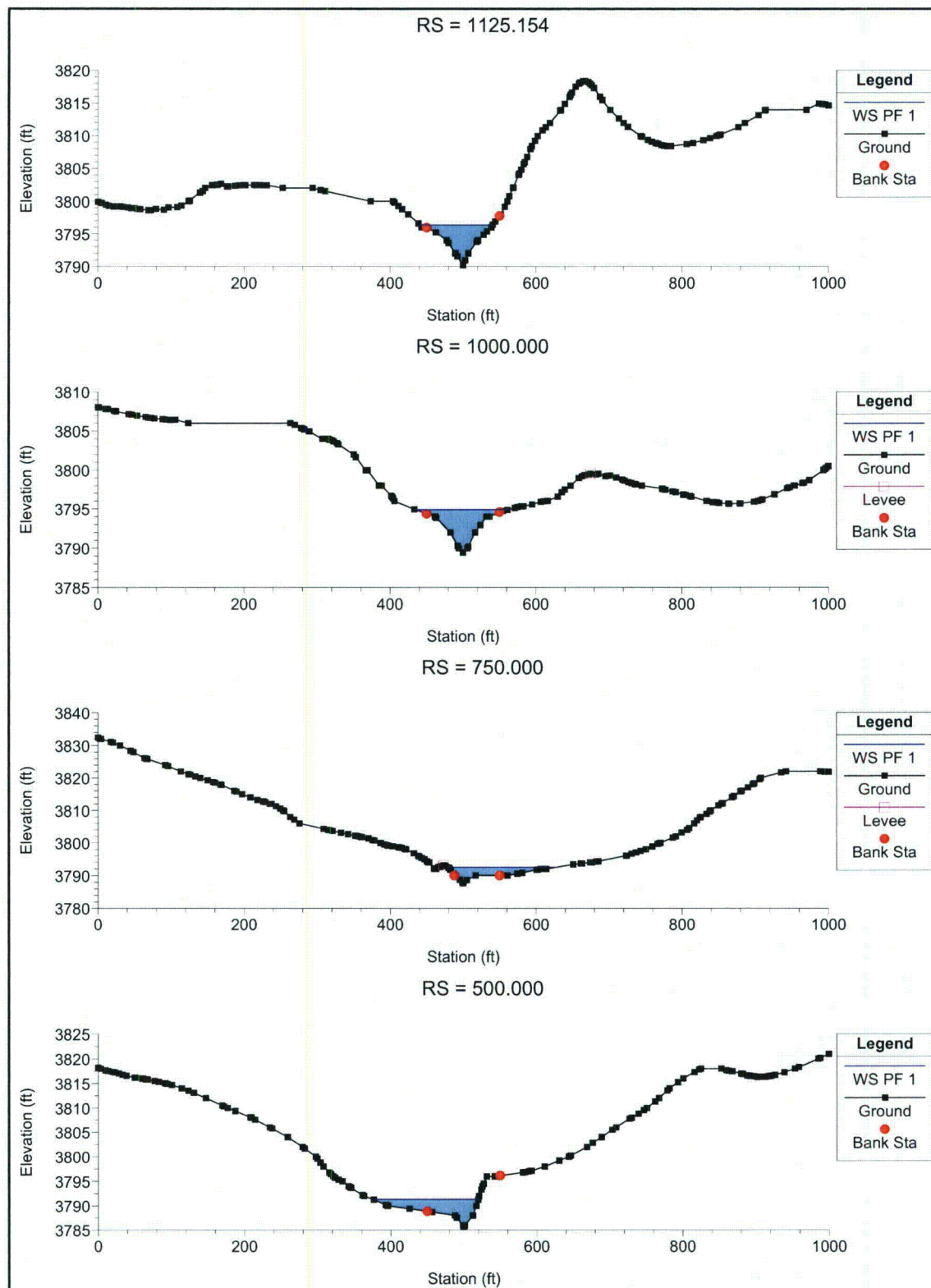


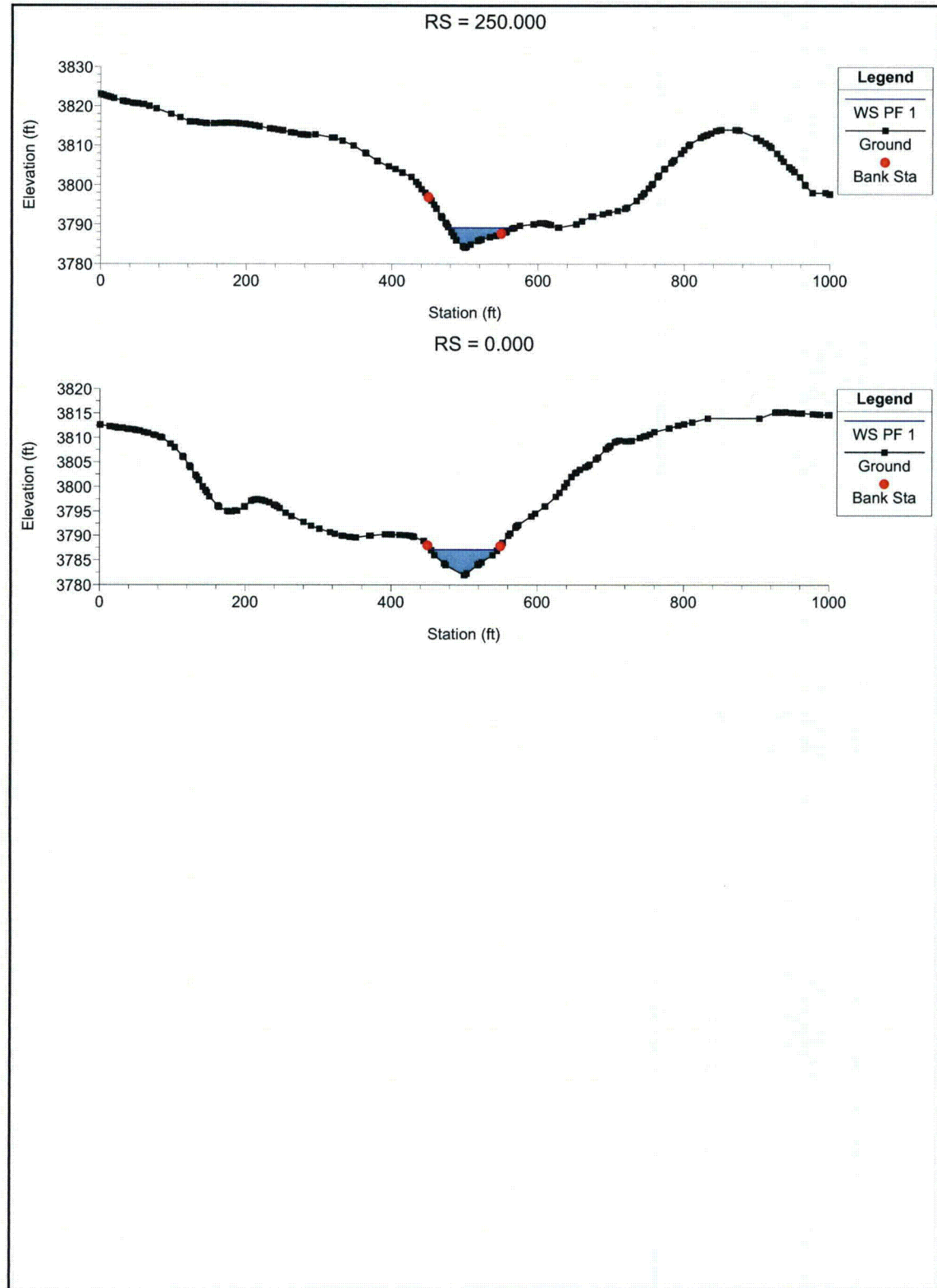














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Attachment 26

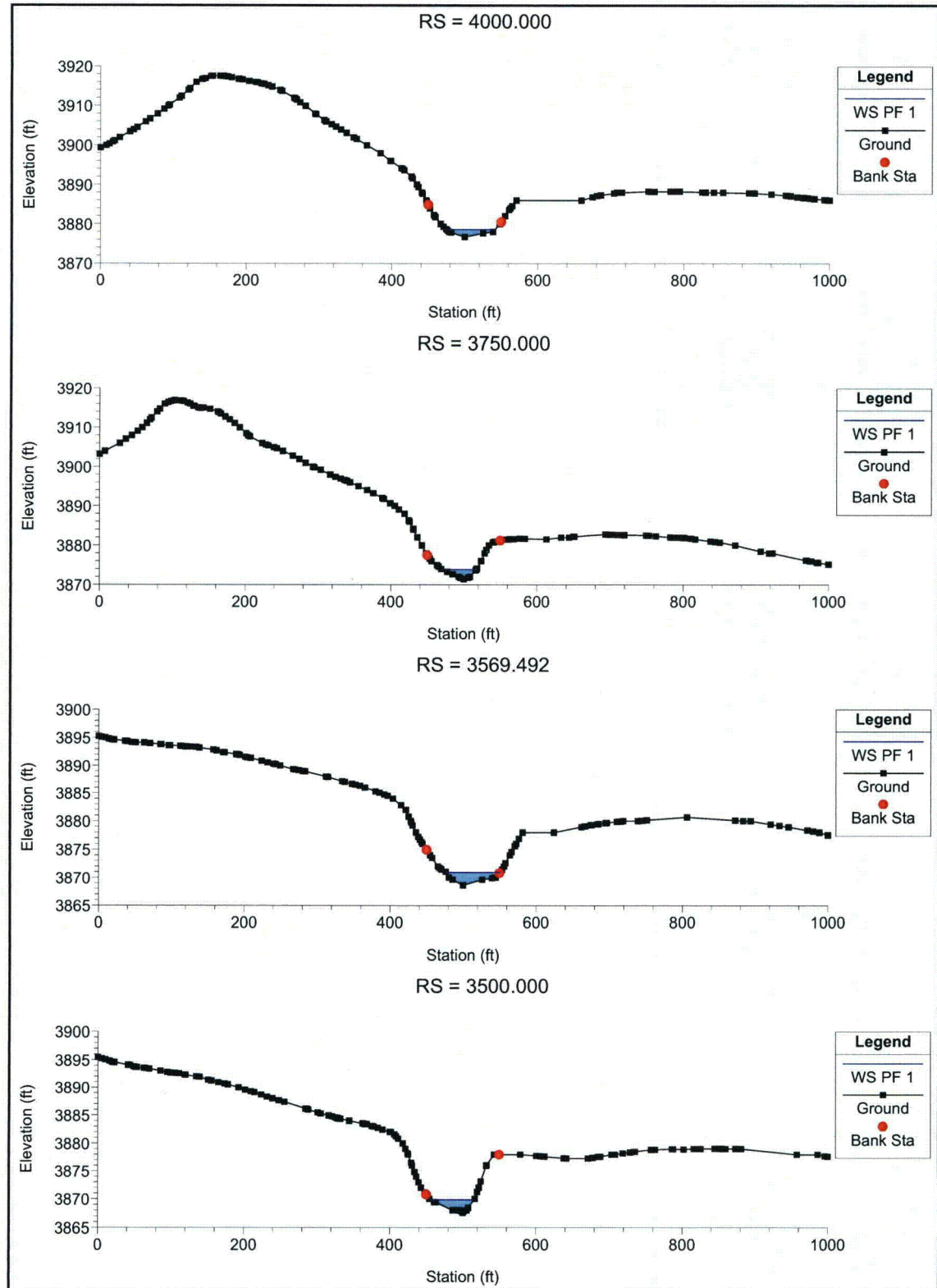
HES-RAS Channel 14A

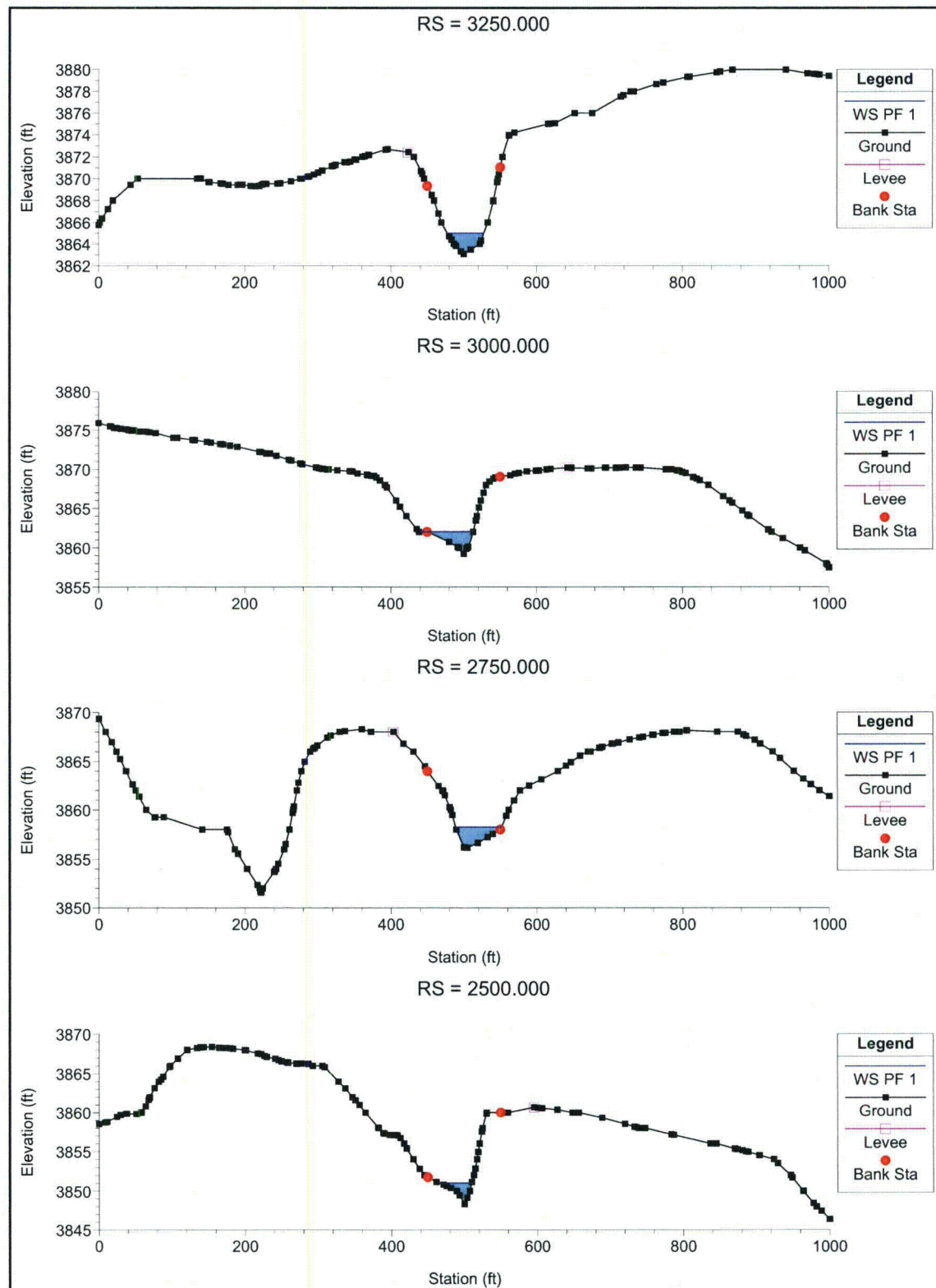
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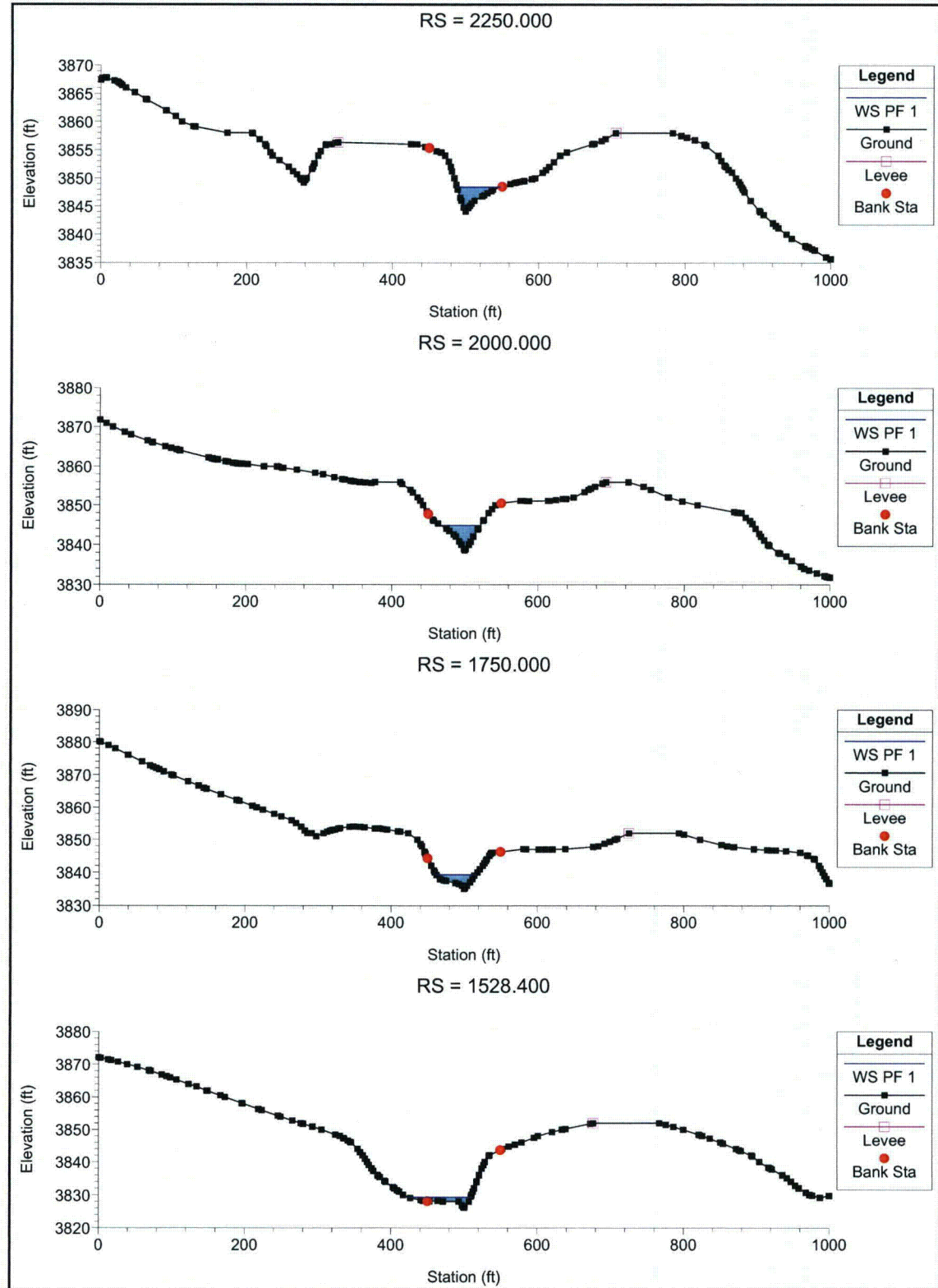


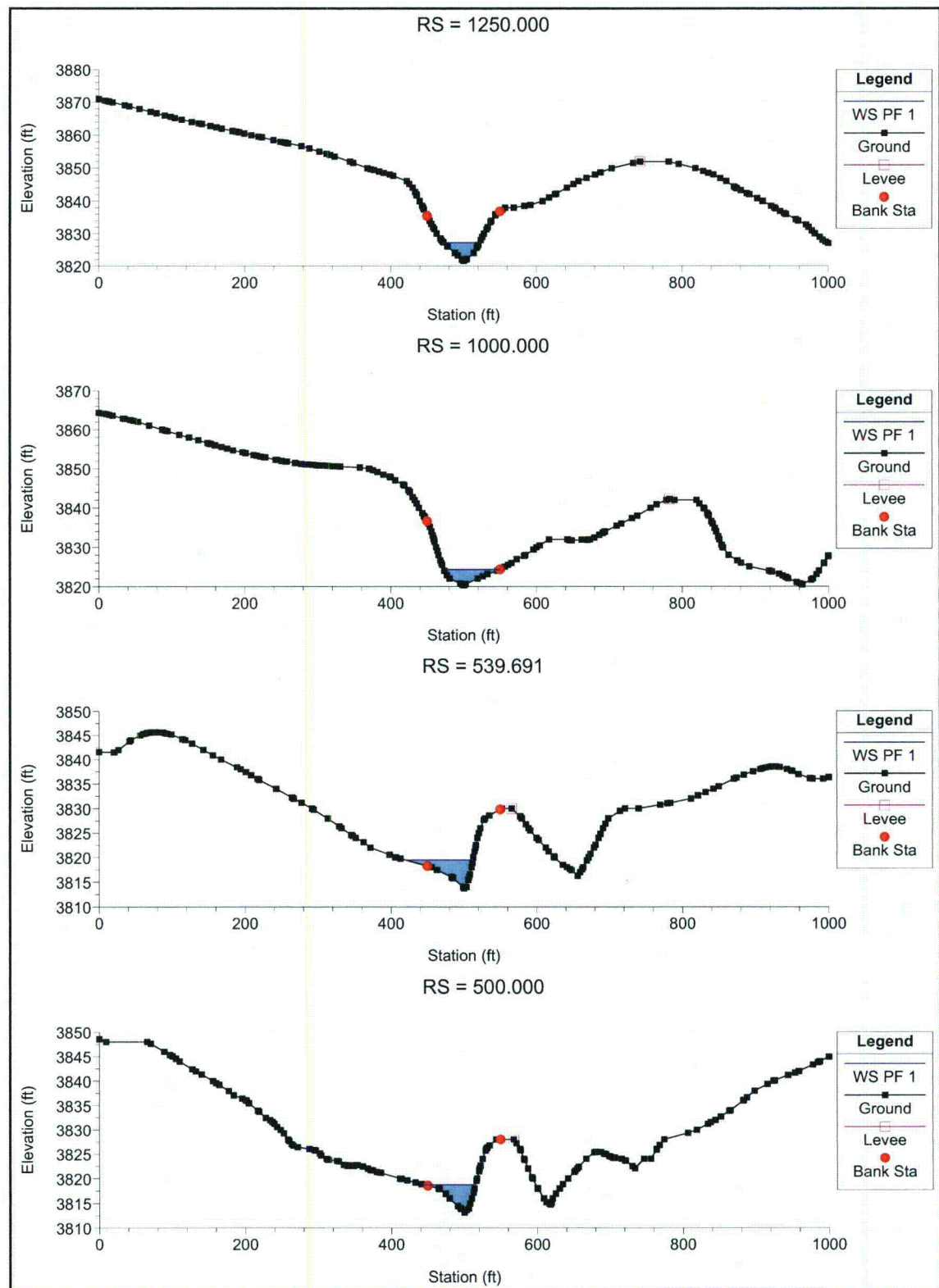
POWERTECH (USA) INC.

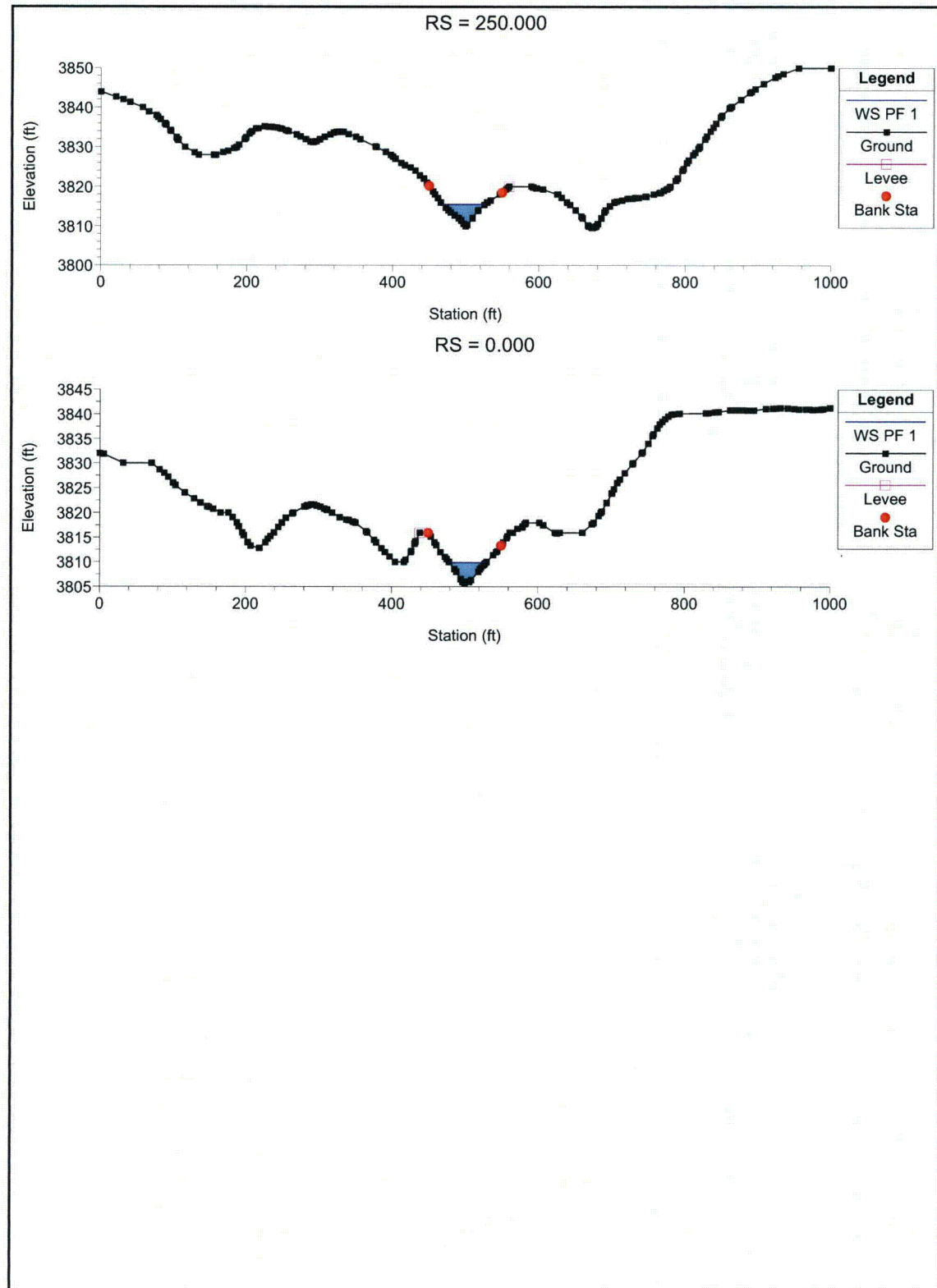
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
14A	4000	PF 1	486	3876.71	3878.63	3878.64	3879.24	0.017538	6.23	78.07	66.82	1.01
14A	3750	PF 1	486	3871.4	3873.94	3874.03	3874.78	0.019636	7.37	65.95	47.5	1.1
14A	3569.492	PF 1	486	3868.61	3870.95	3870.58	3871.27	0.007083	4.56	106.51	74.26	0.67
14A	3500	PF 1	486	3867.62	3869.87	3869.87	3870.51	0.017001	6.45	75.37	59.66	1.01
14A	3250	PF 1	486	3863.07	3865.01	3865.27	3866.03	0.029115	8.12	59.86	50.25	1.31
14A	3000	PF 1	486	3859.23	3862.07	3862.05	3862.64	0.015007	6.07	80.78	75.14	0.95
14A	2750	PF 1	486	3856.16	3858.25	3858.25	3858.86	0.01634	6.3	77.28	62.95	0.99
14A	2500	PF 1	486	3848.34	3851.04	3851.6	3852.74	0.059203	10.48	46.38	44.87	1.82
14A	2250	PF 1	486	3844.06	3848.43	3847.68	3848.74	0.00532	4.52	107.42	59.79	0.59
14A	2000	PF 1	1428	3838.63	3844.89	3844.89	3846.27	0.01295	9.42	151.65	54.16	0.99
14A	1750	PF 1	1428	3835.03	3839.33	3840	3841.62	0.02955	12.16	117.41	53.53	1.45
14A	1528.4	PF 1	1428	3826.16	3829.31	3830.23	3832.45	0.074781	14.75	103.65	84.87	2.16
14A	1250	PF 1	1428	3821.59	3827.23	3827.03	3828.55	0.010668	9.21	155.01	49.48	0.92
14A	1000	PF 1	1428	3820.37	3824.39	3824.39	3825.48	0.013745	8.39	170.3	77.57	1
14A	539.691	PF 1	1428	3813.73	3819.49	3818.89	3820.21	0.005845	6.92	219.24	93.18	0.68
14A	500	PF 1	1428	3813.21	3818.77	3818.63	3819.86	0.011181	8.38	170.89	71.07	0.91
14A	250	PF 1	1428	3809.98	3815.55	3815.55	3816.85	0.01295	9.17	155.66	58.39	0.99
14A	0	PF 1	1428	3805.77	3809.89	3810.64	3812.27	0.028592	12.38	115.33	50.15	1.44













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Attachment 27

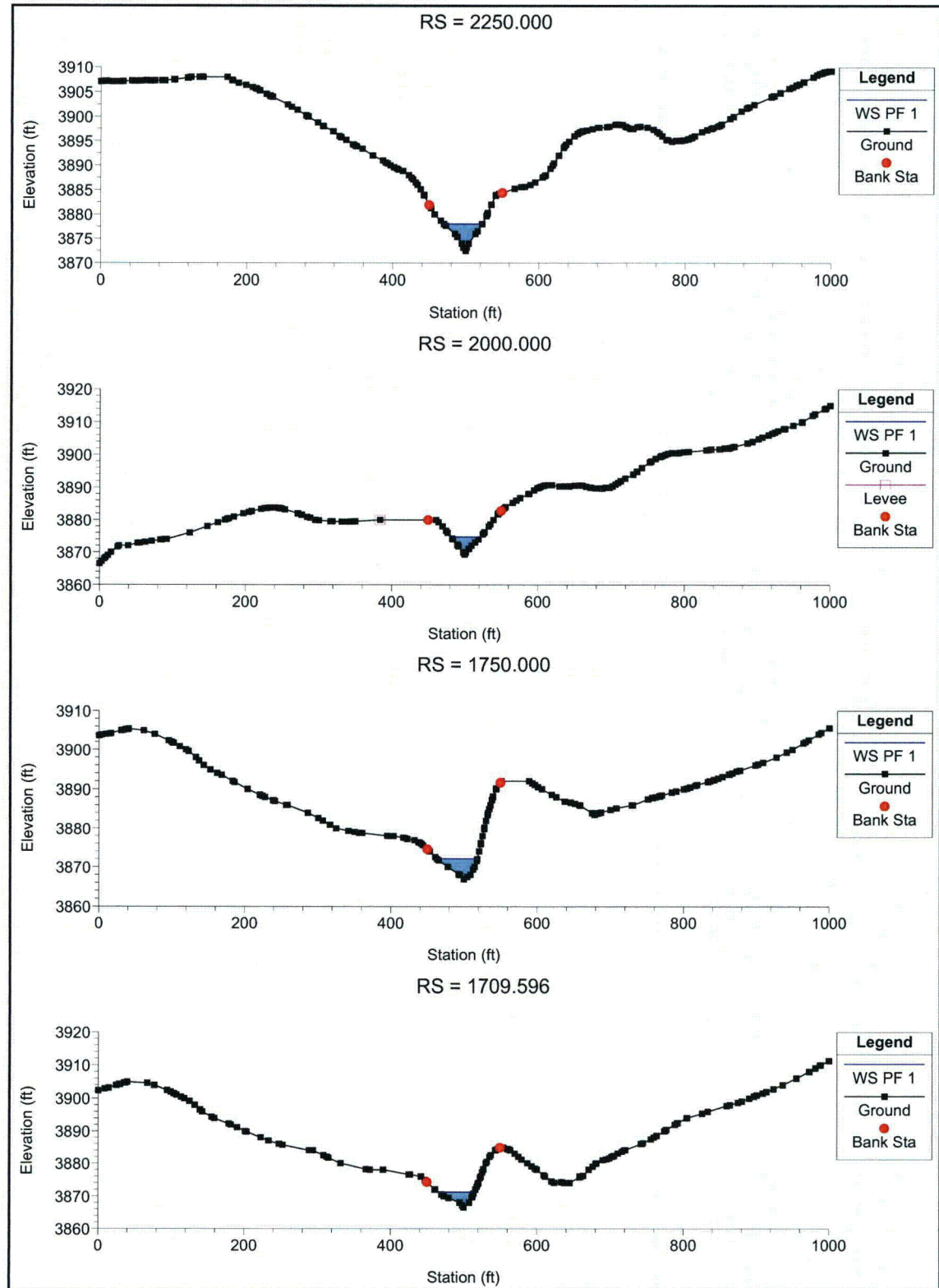
HES-RAS Channel 14B

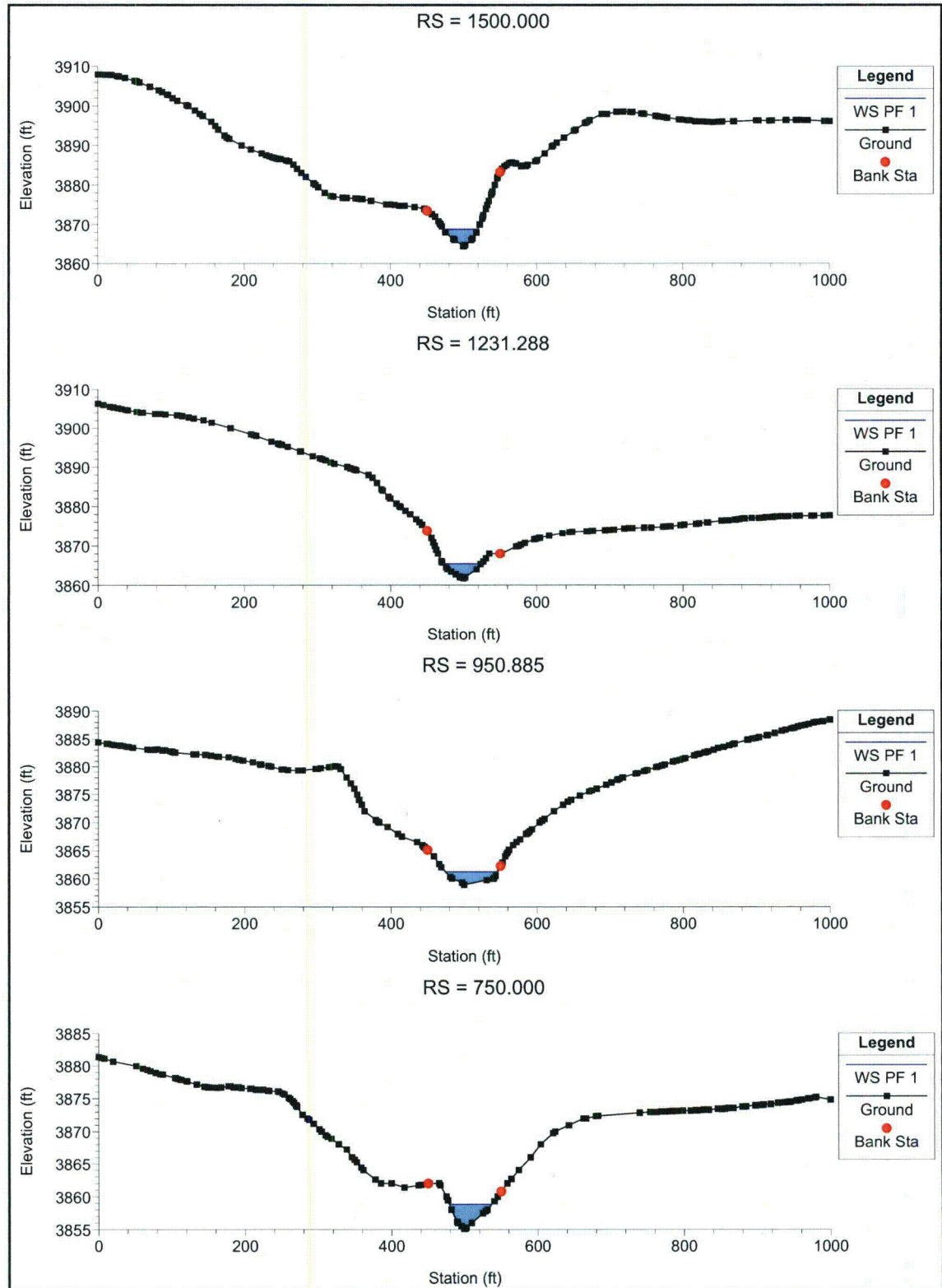
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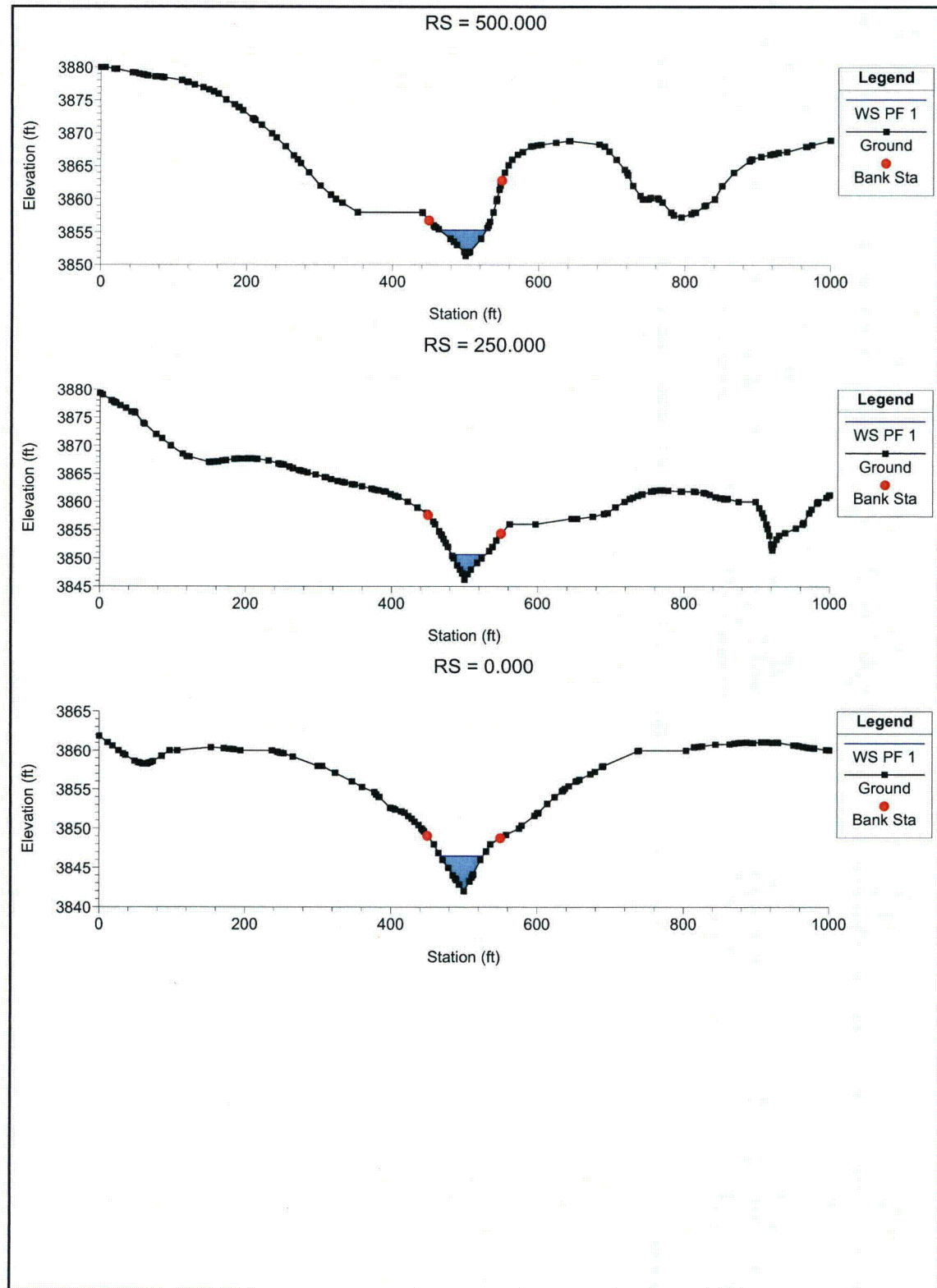


POWERTECH (USA) INC.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
14B	2250	PF 1	972	3872.5	3878.06	3877.75	3878.95	0.009944	7.55	128.7	52.71	0.85
14B	2000	PF 1	972	3869.32	3874.79	3874.79	3876.1	0.013853	9.2	105.69	40.82	1.01
14B	1750	PF 1	972	3866.89	3872.13	3871.23	3872.71	0.005297	6.12	158.9	55.7	0.64
14B	1709.596	PF 1	972	3866.52	3871.21	3871.16	3872.34	0.013384	8.5	114.34	48.98	0.98
14B	1500	PF 1	972	3864.41	3868.79	3868.58	3869.82	0.010785	8.12	119.64	46.88	0.9
14B	1231.288	PF 1	972	3861.74	3865.5	3865.5	3866.6	0.013988	8.43	115.32	52.4	1
14B	950.885	PF 1	972	3858.88	3861.24	3861.48	3862.43	0.023974	8.76	110.96	71.84	1.24
14B	750	PF 1	972	3855.09	3858.82	3858.79	3859.82	0.013709	8.05	120.69	57.94	0.98
14B	500	PF 1	972	3851.37	3855.35	3855.35	3856.31	0.014573	7.87	123.45	64.26	1
14B	250	PF 1	972	3846.2	3850.7	3851.08	3852.3	0.022469	10.13	95.93	46.81	1.25
14B	0	PF 1	972	3842	3846.5	3846.21	3847.33	0.010007	7.29	133.39	58.65	0.85









POWERTECH (USA) INC.

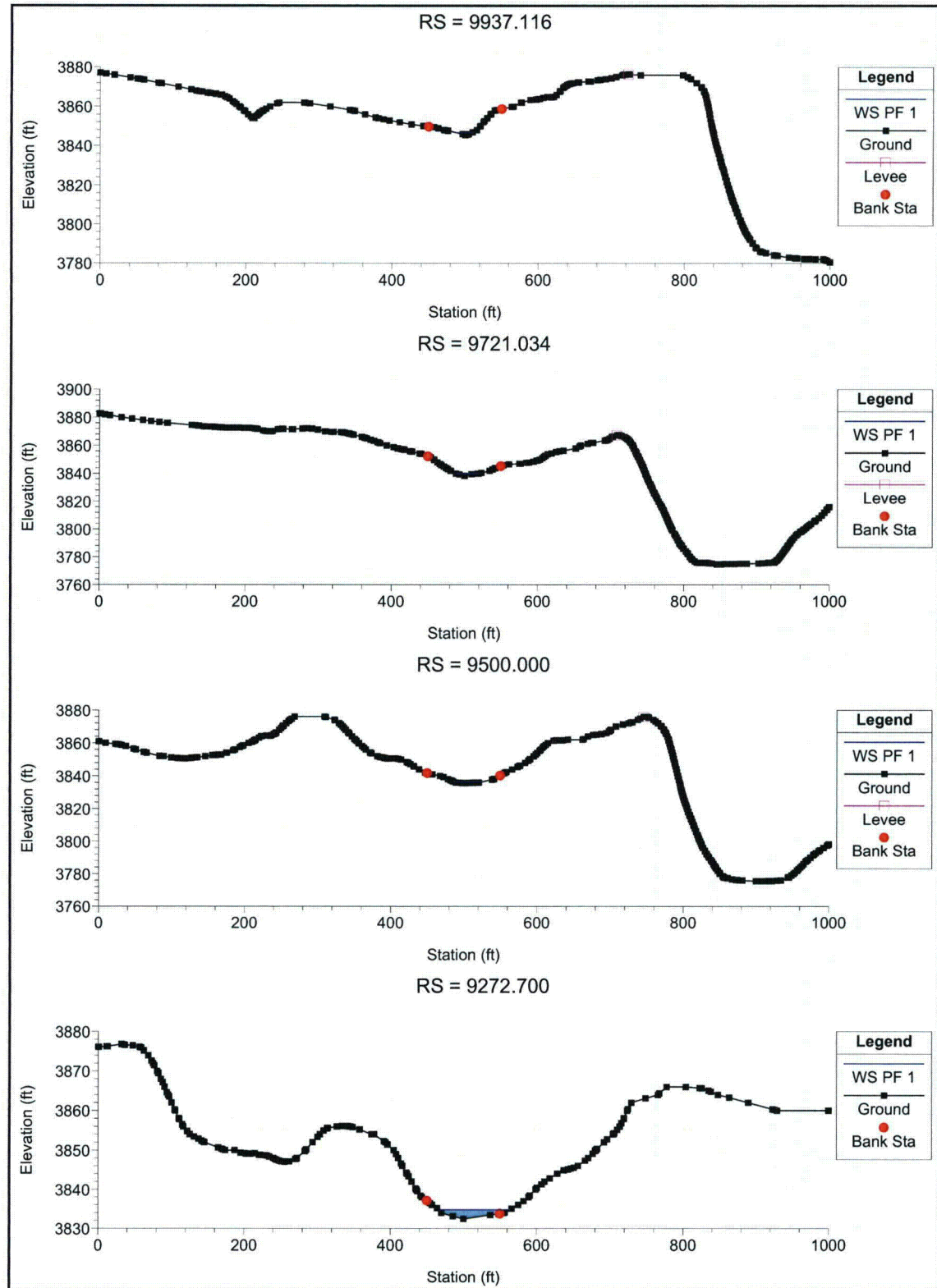
Attachment 28

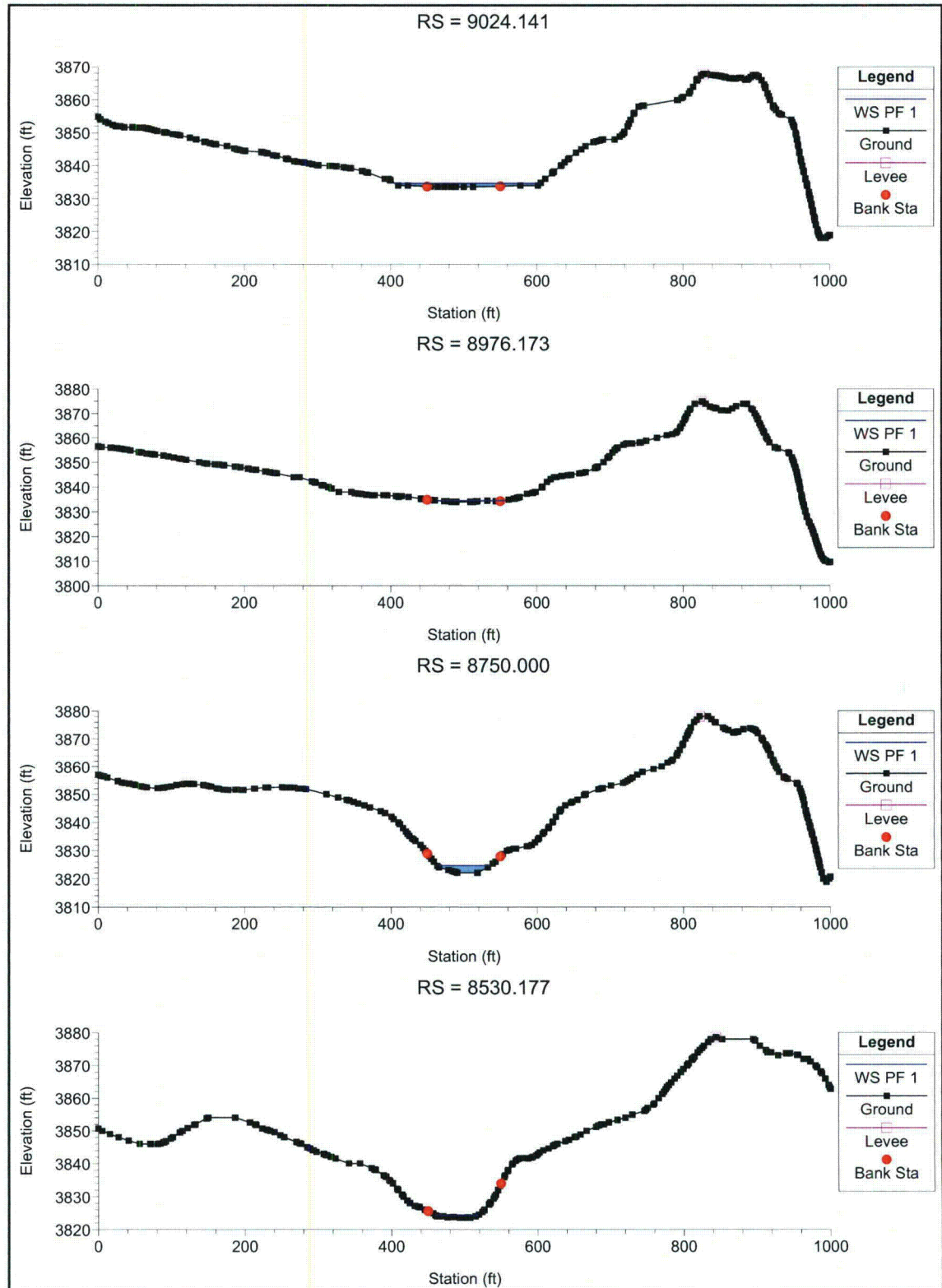
HES-RAS Channel 15

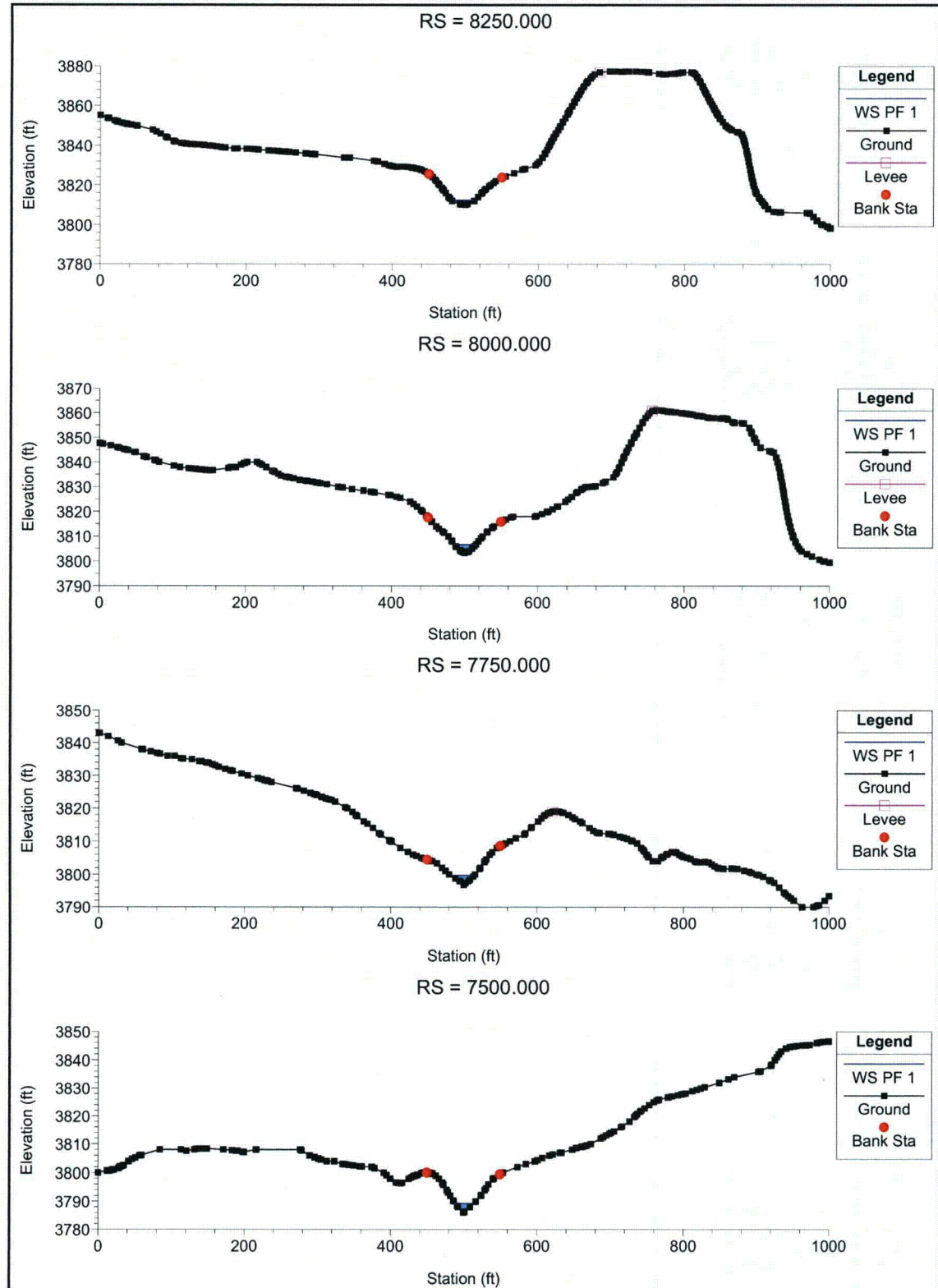
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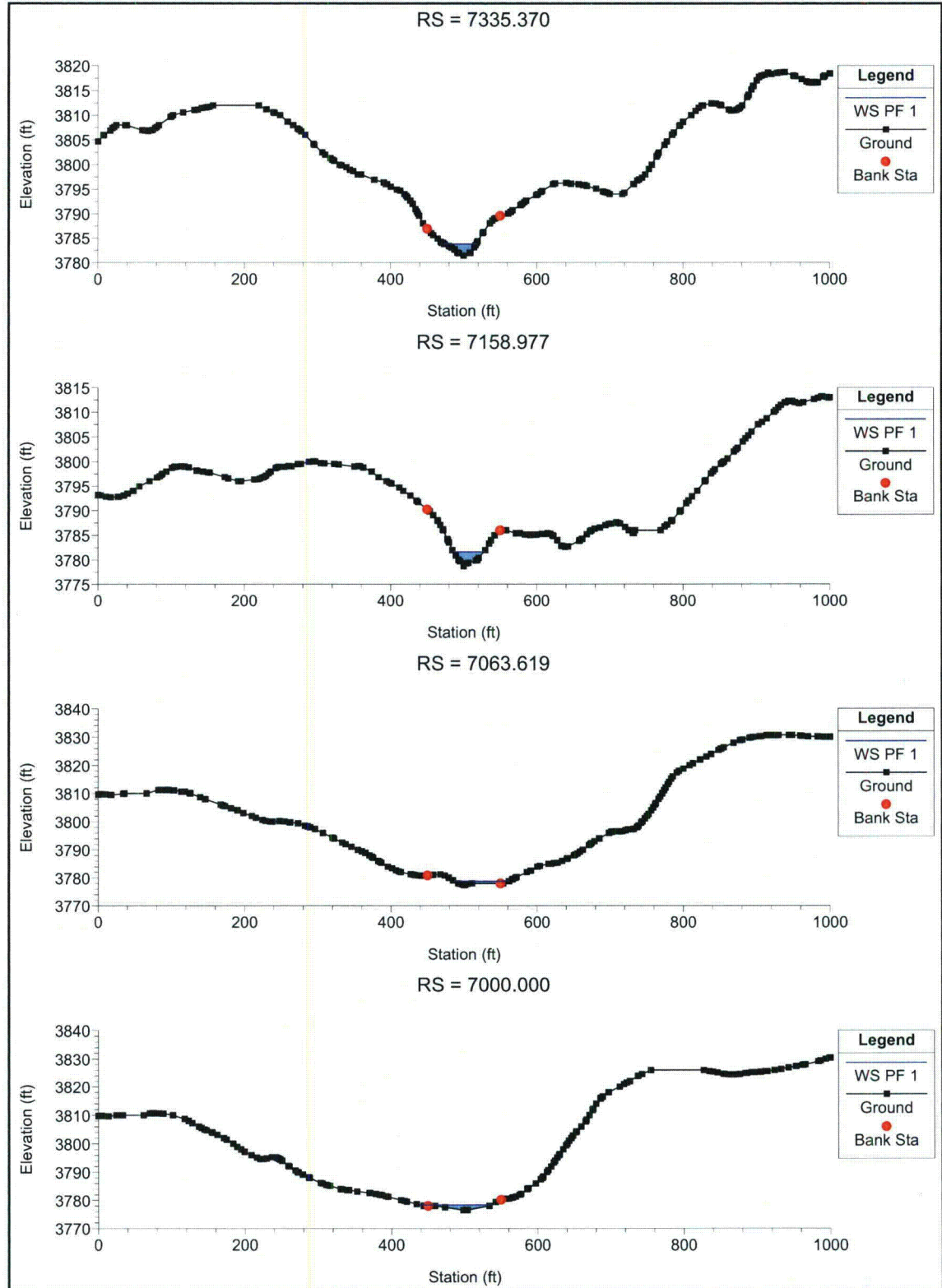


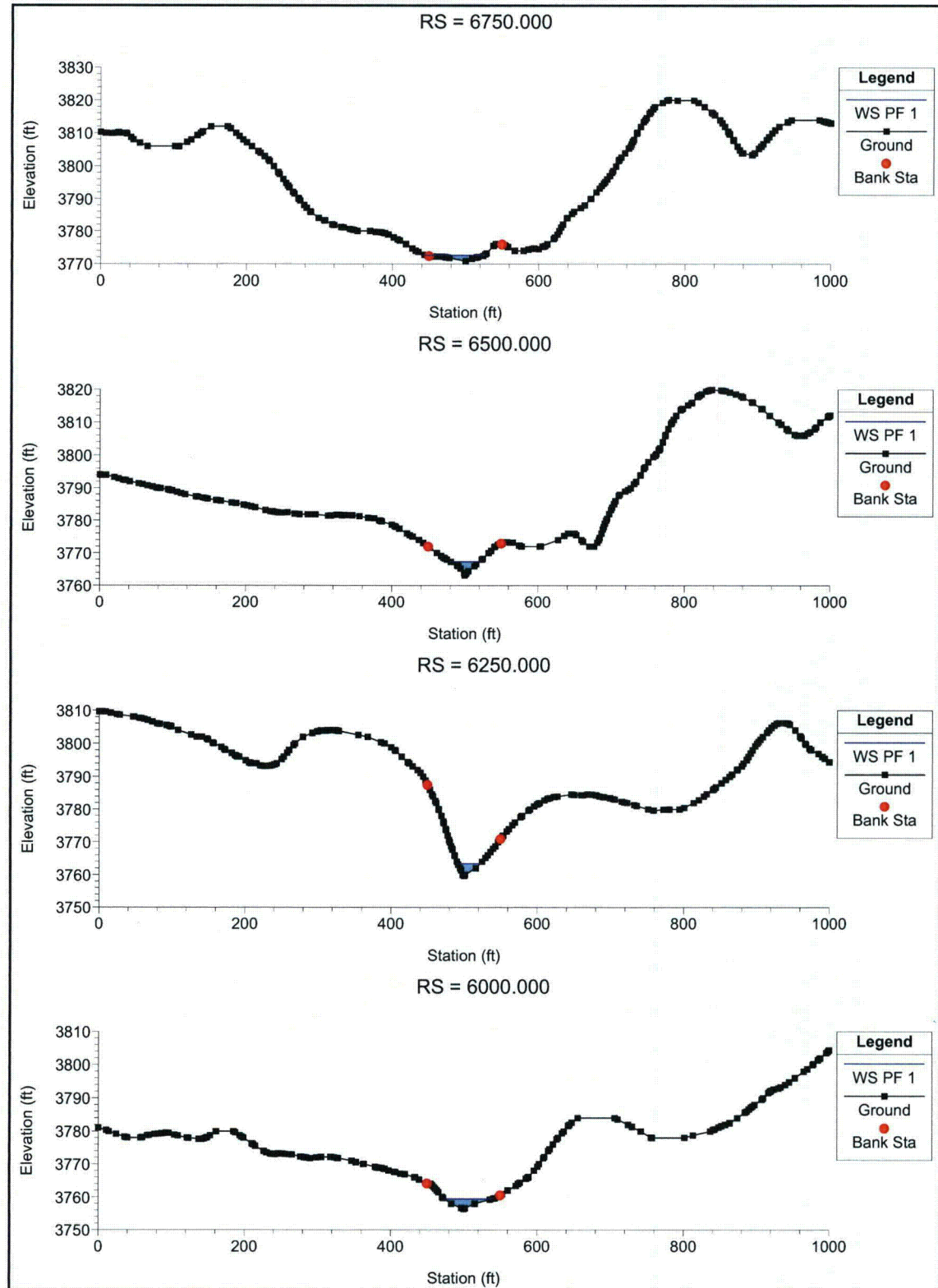
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
15	9937.116	PF 1	93	3845.42	3846.79	3846.97	3847.4	0.040061	6.27	14.82	23.19	1.38
15	9721.034	PF 1	93	3838.34	3840.08	3839.94	3840.31	0.012367	3.89	23.89	31.7	0.79
15	9500	PF 1	93	3835.75	3836.51	3836.51	3836.79	0.021918	4.25	21.9	39.36	1
15	9272.7	PF 1	93	3832.43	3834.77	3833.34	3834.78	0.000141	0.68	140.18	97.16	0.1
15	9024.141	PF 1	93	3833.61	3834.74	3833.98	3834.74	0.00016	0.56	181.51	199.6	0.1
15	8976.173	PF 1	93	3833.99	3834.54	3834.54	3834.7	0.024392	3.19	29.47	91.35	0.97
15	8750	PF 1	124	3822	3824.72	3822.8	3824.73	0.000173	0.87	142.47	72.91	0.11
15	8530.177	PF 1	124	3823.57	3824.3	3824.3	3824.57	0.024353	4.22	29.4	57.82	1.04
15	8250	PF 1	523	3810.09	3812.43	3813.03	3814.35	0.042955	11.11	47.07	32.72	1.63
15	8000	PF 1	523	3803.33	3806.7	3806.81	3807.88	0.016915	8.72	59.97	29.33	1.07
15	7750	PF 1	523	3796.82	3799.75	3800.34	3801.66	0.043507	11.12	47.05	32.9	1.64
15	7500	PF 1	523	3786.04	3789.28	3790.03	3791.61	0.042957	12.25	42.71	25.17	1.66
15	7335.37	PF 1	523	3781.41	3783.78	3784.18	3785.12	0.034549	9.31	56.18	43.5	1.44
15	7158.977	PF 1	523	3778.69	3781.67	3781.67	3782.53	0.015629	7.45	70.18	41.63	1.01
15	7063.619	PF 1	523	3777.34	3778.82	3779.18	3780.03	0.056273	9	59.8	75.03	1.72
15	7000	PF 1	523	3776.44	3778.38	3778.38	3778.88	0.01729	5.73	93.07	97.63	0.99
15	6750	PF 1	523	3770.82	3772.7	3772.94	3773.6	0.037033	7.63	69	80.42	1.41
15	6500	PF 1	523	3763.16	3767.41	3767.41	3768.3	0.016011	7.58	69.02	39.9	1.02
15	6250	PF 1	523	3759.68	3763.41	3763.46	3764.52	0.016253	8.44	61.97	30.62	1.05
15	6000	PF 1	523	3756.41	3759.42	3759.18	3759.9	0.010415	5.55	94.23	64.67	0.81
15	5750	PF 1	523	3751.98	3755.83	3755.83	3756.85	0.014681	8.08	64.73	31.87	1
15	5500	PF 1	523	3747.75	3751.45	3751.64	3752.38	0.022705	7.74	67.55	49.93	1.17
15	5250	PF 1	523	3744.35	3748.27	3748.27	3749.24	0.015193	7.89	66.33	34.94	1.01
15	5000	PF 1	523	3739.7	3742.77	3743.23	3744.34	0.028989	10.04	52.07	31.14	1.37
15	4750	PF 1	523	3735.92	3739.8	3739.72	3740.56	0.013521	7.02	74.55	42.93	0.94
15	4527.43	PF 1	523	3733.1	3737.09	3737.09	3737.93	0.015544	7.36	71.03	42.36	1
15	4190.778	PF 1	523	3727.11	3730.47	3730.84	3731.9	0.027596	9.59	54.52	33.59	1.33
15	4000	PF 1	523	3724.23	3728.15	3728.15	3729.08	0.015037	7.73	67.67	36.53	1
15	3813.78	PF 1	523	3721.34	3724.97	3725.14	3726.07	0.019013	8.4	62.24	35.41	1.12
15	3500	PF 1	523	3717.4	3721.32	3720.76	3721.75	0.006799	5.24	99.82	53.81	0.68
15	3250	PF 1	523	3715.17	3718.5	3718.5	3719.34	0.015309	7.39	70.78	41.84	1
15	2988.407	PF 1	523	3710.51	3713.37	3713.73	3714.69	0.030562	9.22	56.72	40.47	1.37
15	2750	PF 1	523	3706.6	3710.8	3710.8	3711.71	0.015765	7.67	68.18	38.37	1.01
15	2500	PF 1	523	3703.2	3708.02	3707.67	3708.78	0.009812	6.99	74.77	33.08	0.82
15	2250	PF 1	523	3700.67	3704.82	3704.82	3705.79	0.014999	7.87	66.43	34.63	1
15	2000	PF 1	523	3696.86	3701.17	3701.5	3702.66	0.022959	9.78	53.47	27.05	1.23
15	1750	PF 1	523	3693.49	3697.87	3697.85	3698.85	0.01433	7.97	65.63	32.06	0.98
15	1500	PF 1	523	3691.45	3695.08	3695.08	3696.07	0.014878	7.99	65.44	33	1
15	1250	PF 1	523	3689.43	3693.29	3692.47	3693.7	0.005377	5.14	101.8	47.22	0.62
15	967.464	PF 1	523	3686.56	3690.49	3690.49	3691.31	0.01579	7.27	71.91	44.04	1
15	750	PF 1	523	3683.27	3686.8	3686.95	3687.95	0.018216	8.62	60.69	31.99	1.1
15	573.458	PF 1	523	3680.47	3684.8	3684.76	3685.76	0.014161	7.85	66.65	33.26	0.98
15	500	PF 1	523	3679.53	3684.28		3684.86	0.00841	6.14	85.2	41.82	0.76
15	250	PF 1	523	3676.58	3681.16	3681.16	3682.19	0.015196	8.15	64.13	31.37	1.01
15	0	PF 1	523	3674	3677.86	3677.6	3678.55	0.010017	6.69	78.58	40.65	0.83

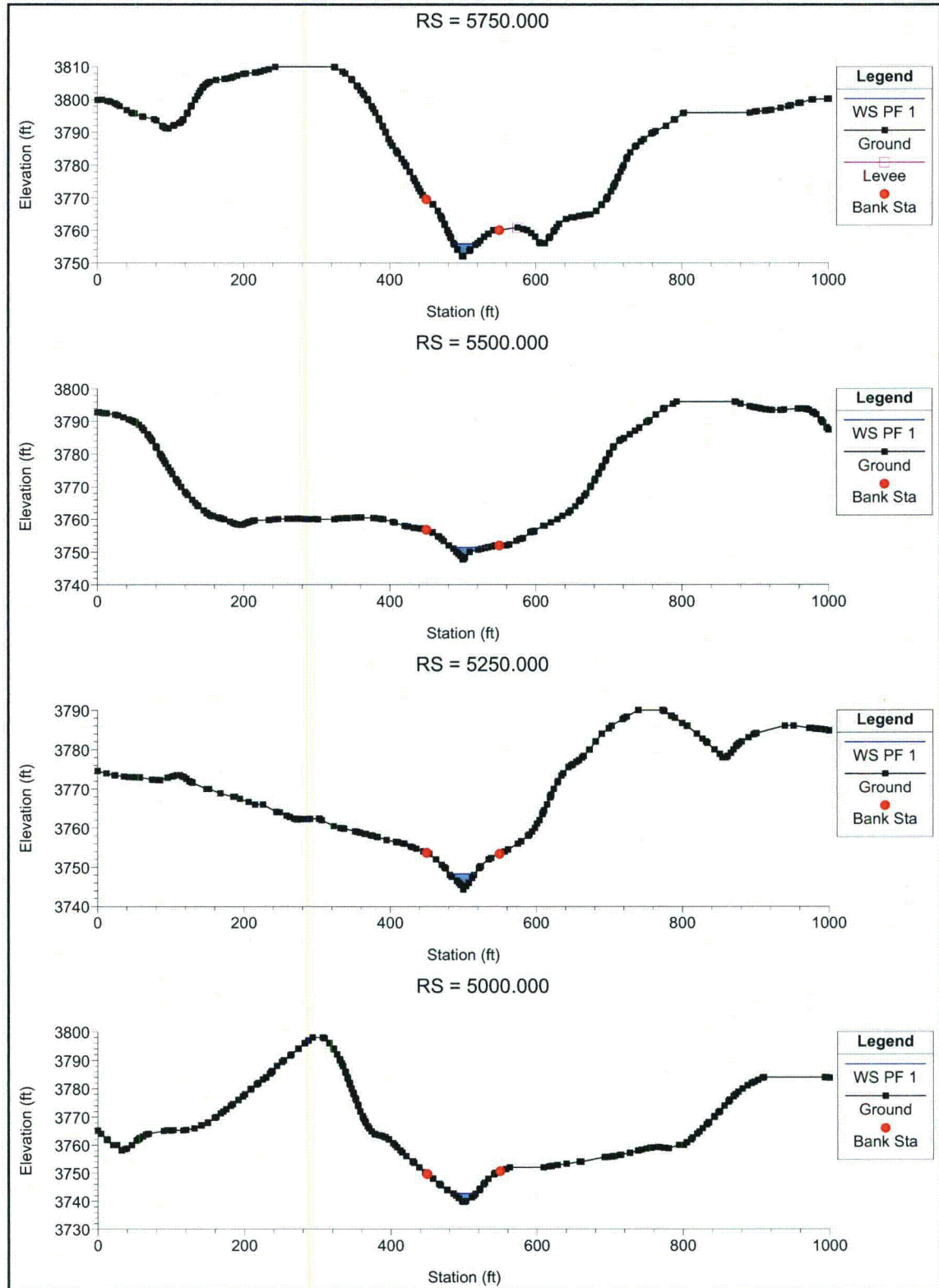


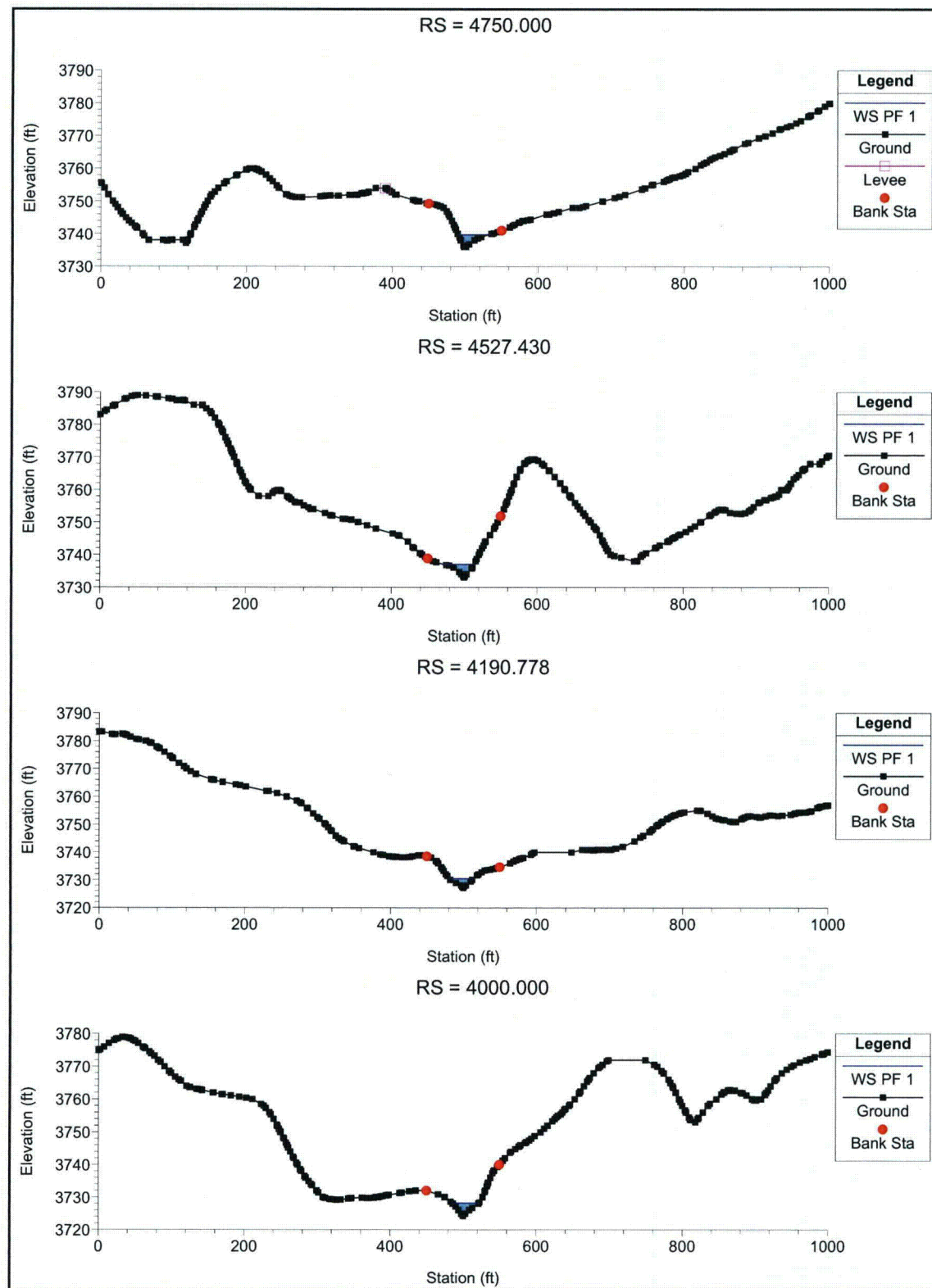


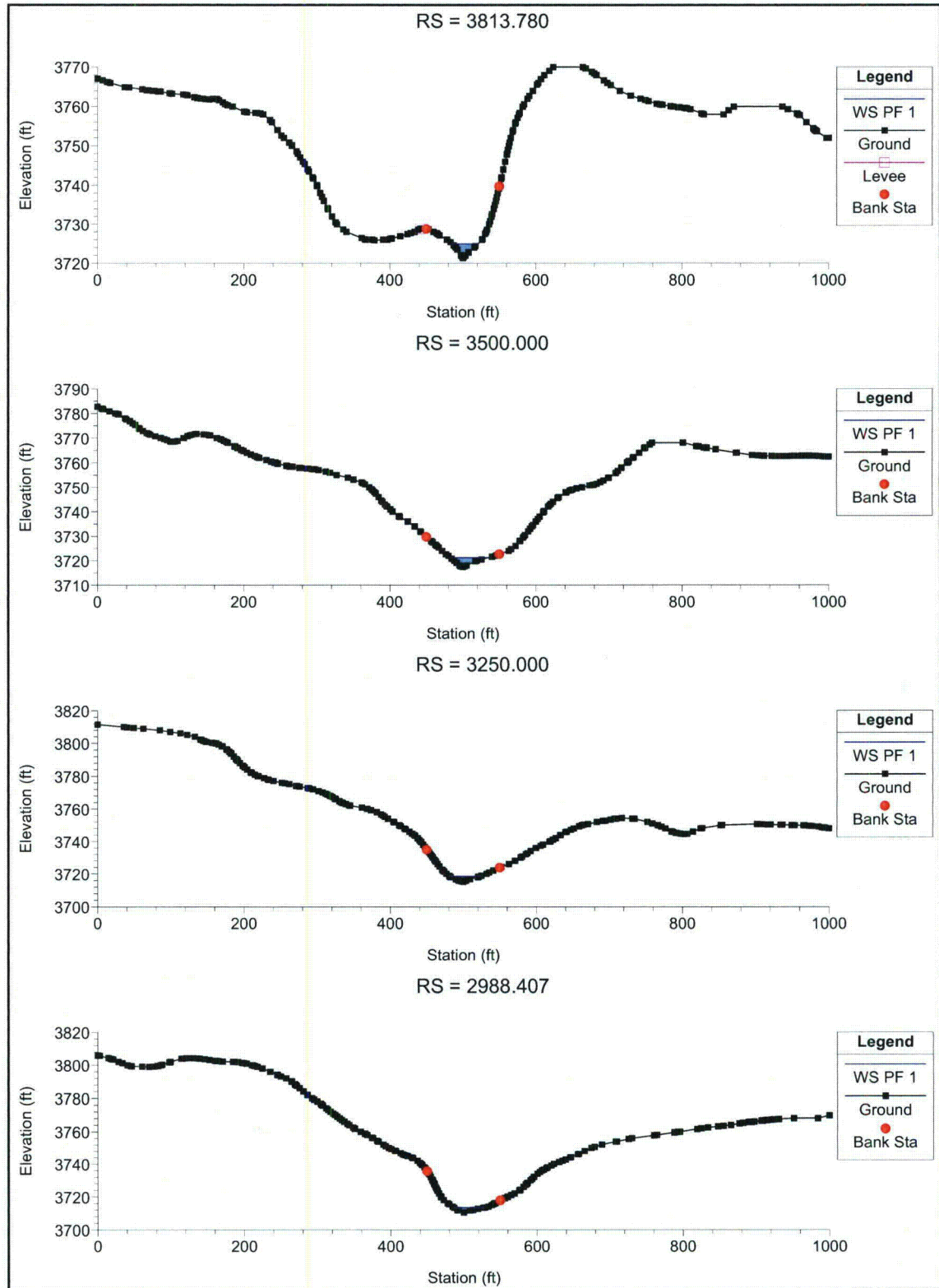


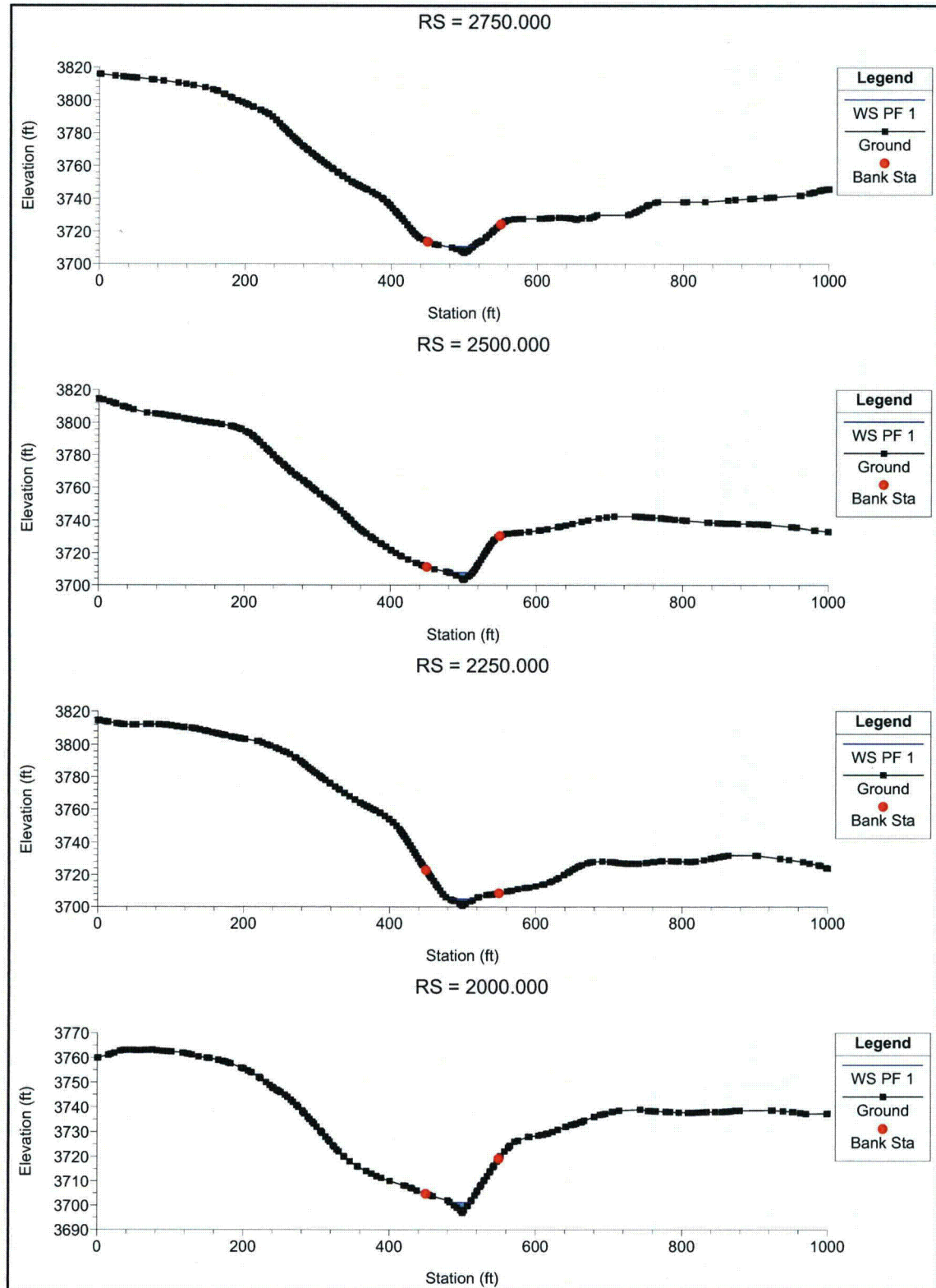


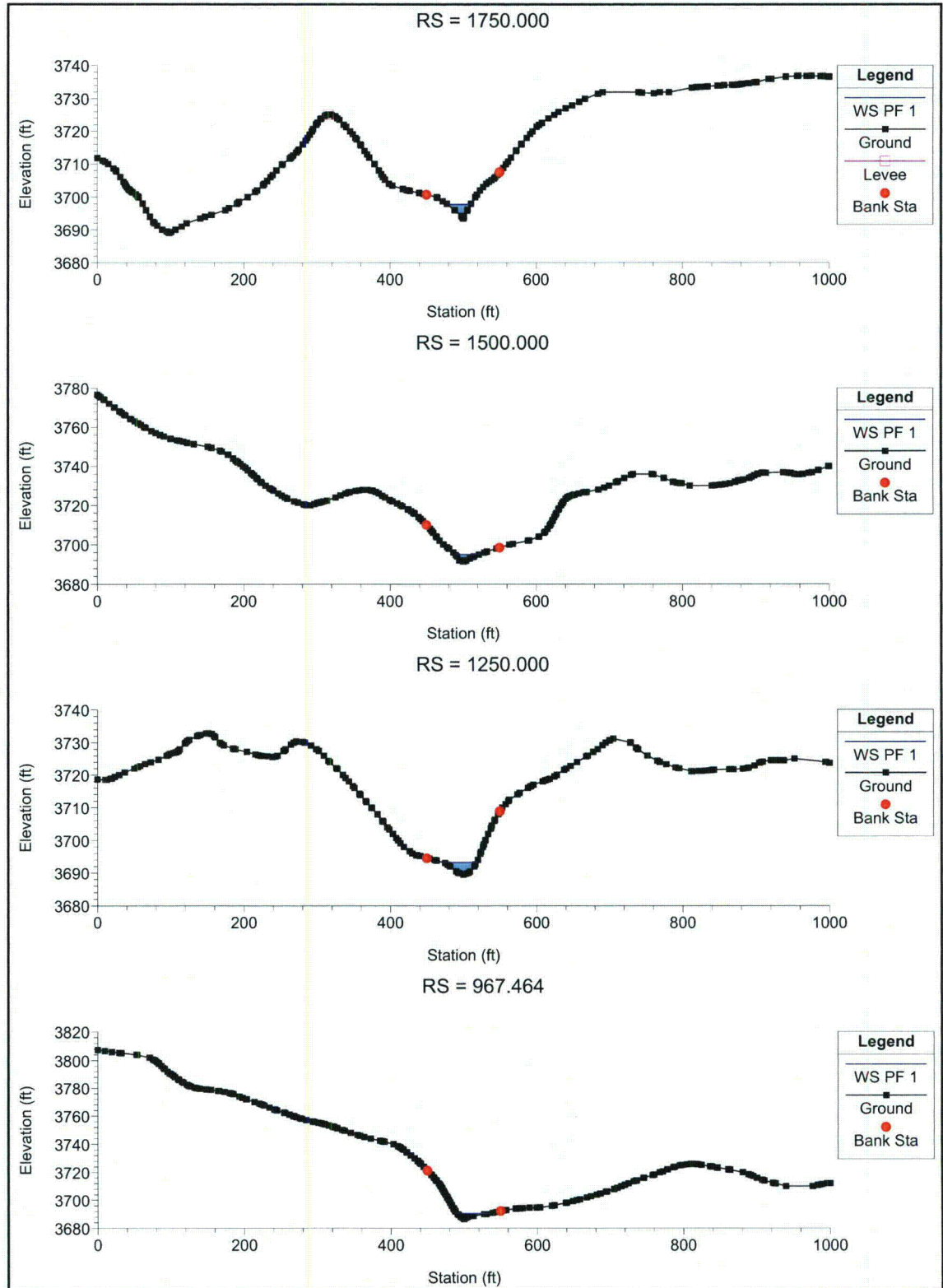


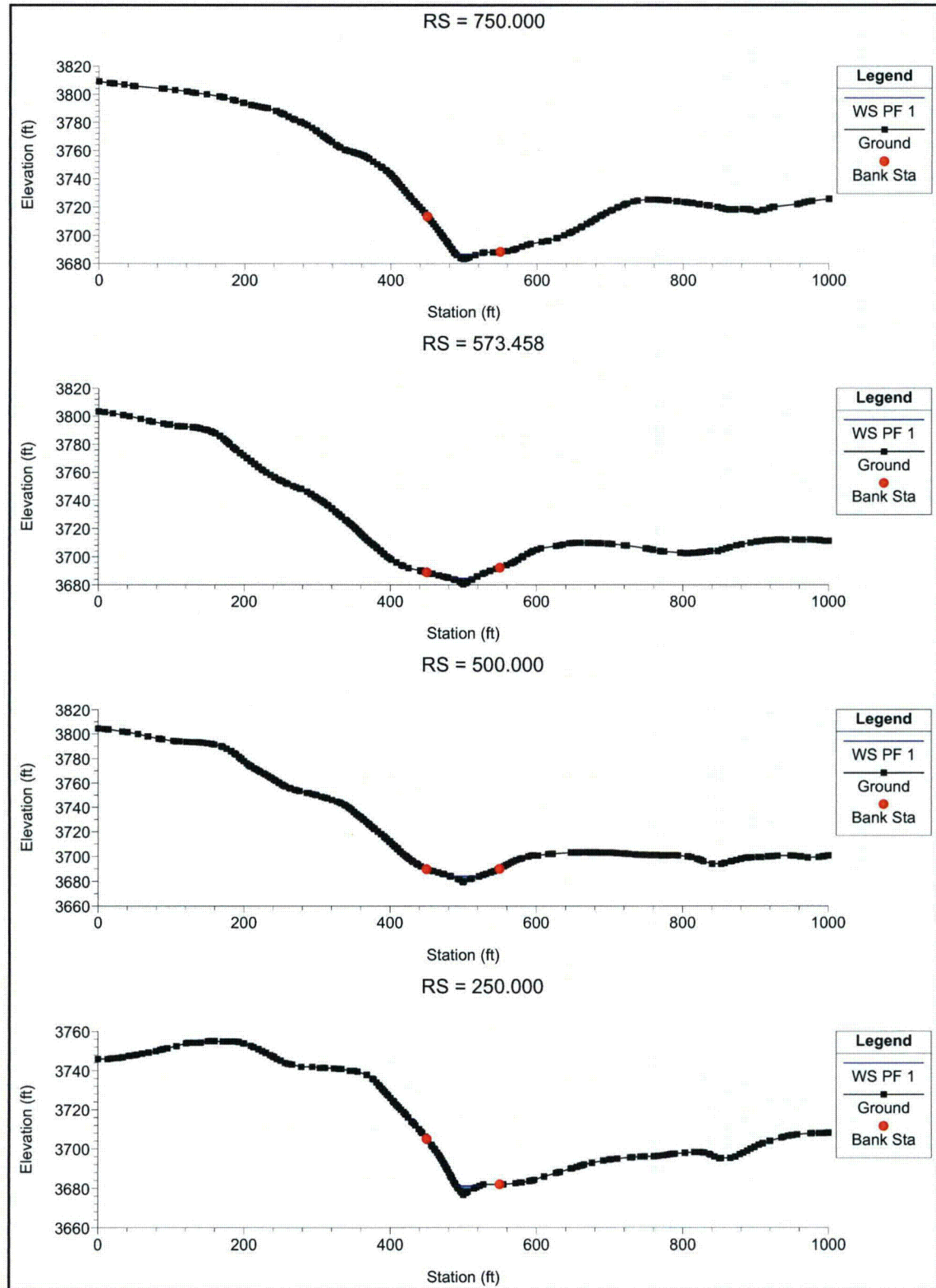


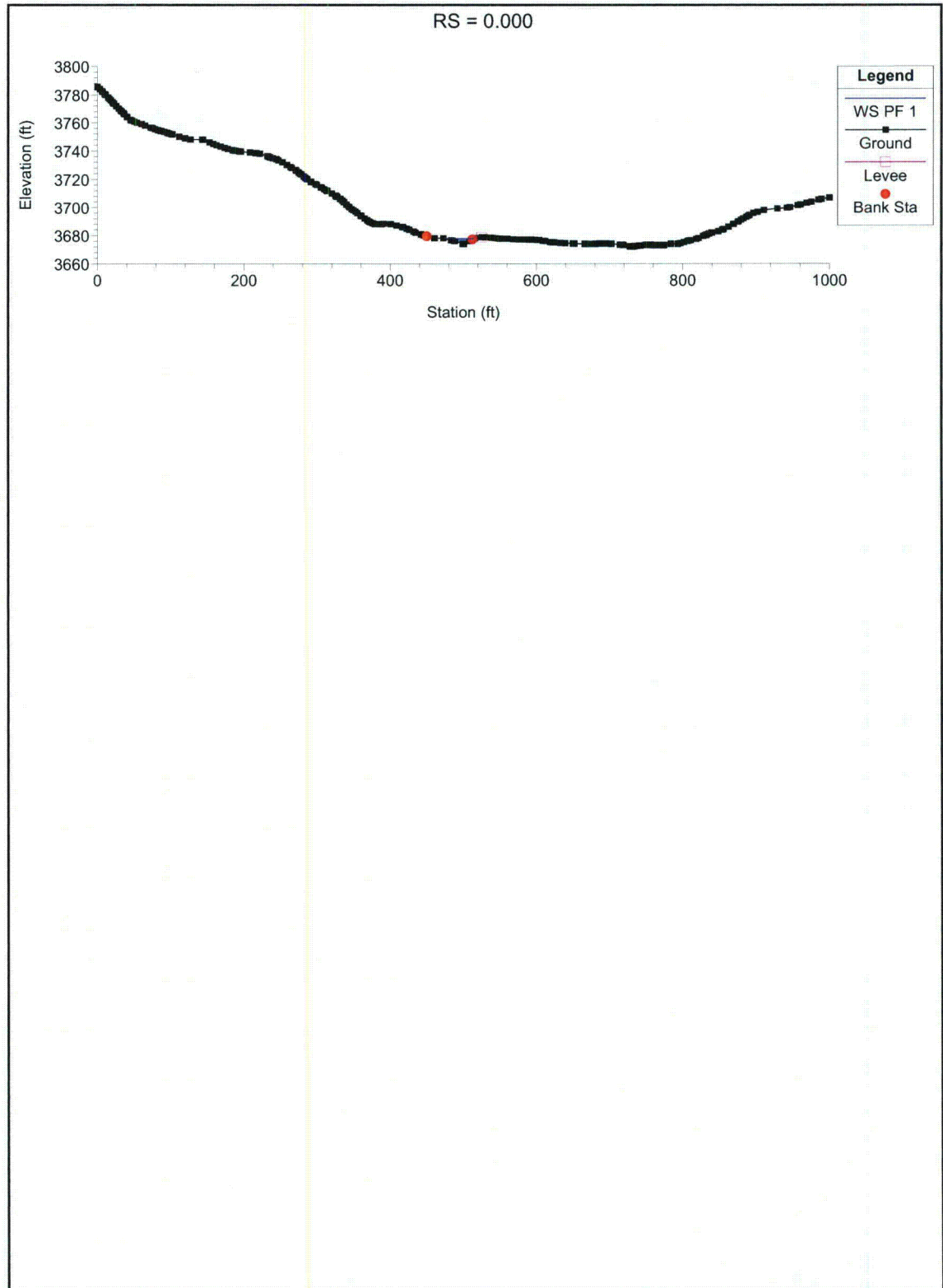












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Attachment 29

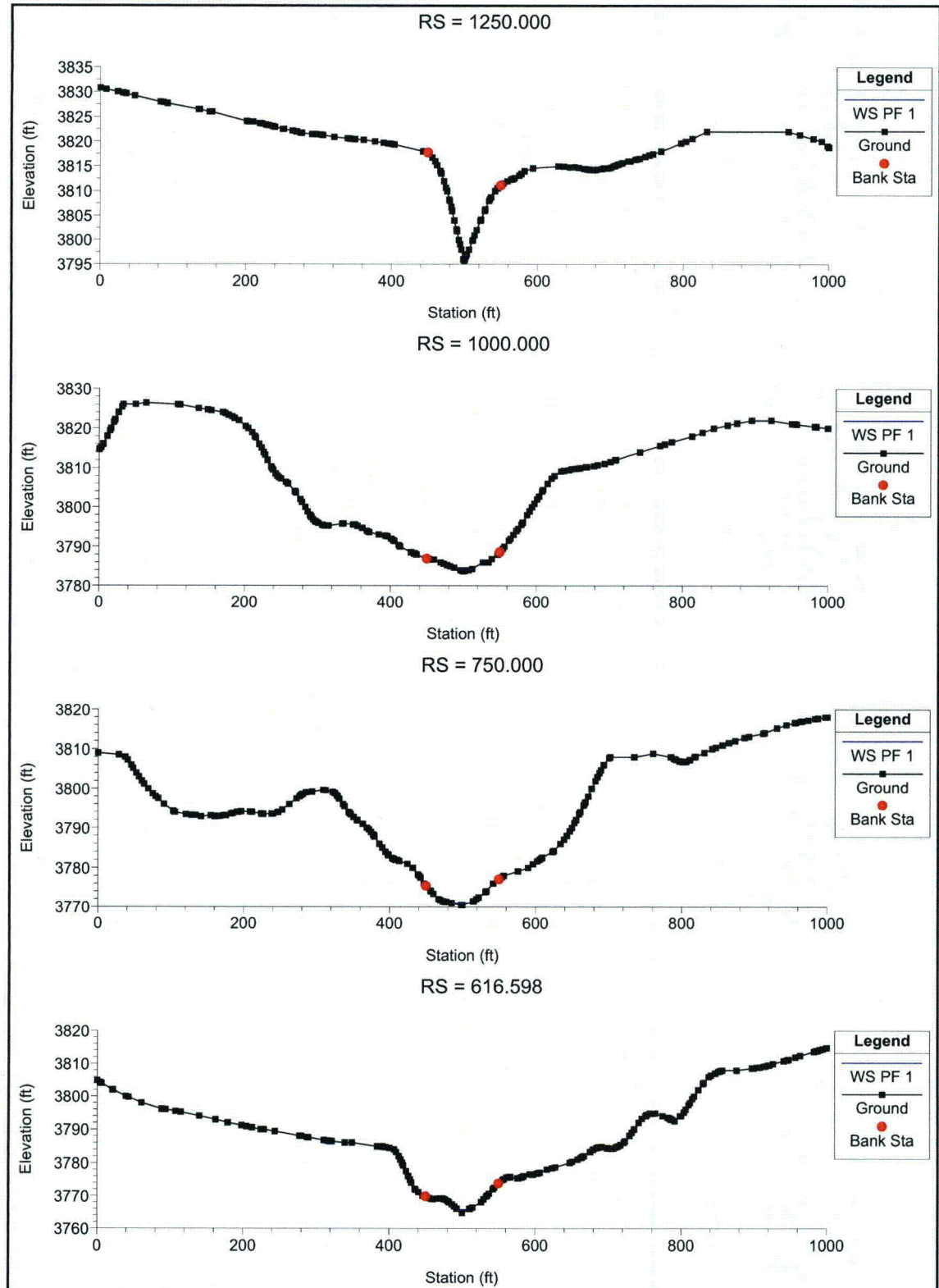
HES-RAS Channel 16

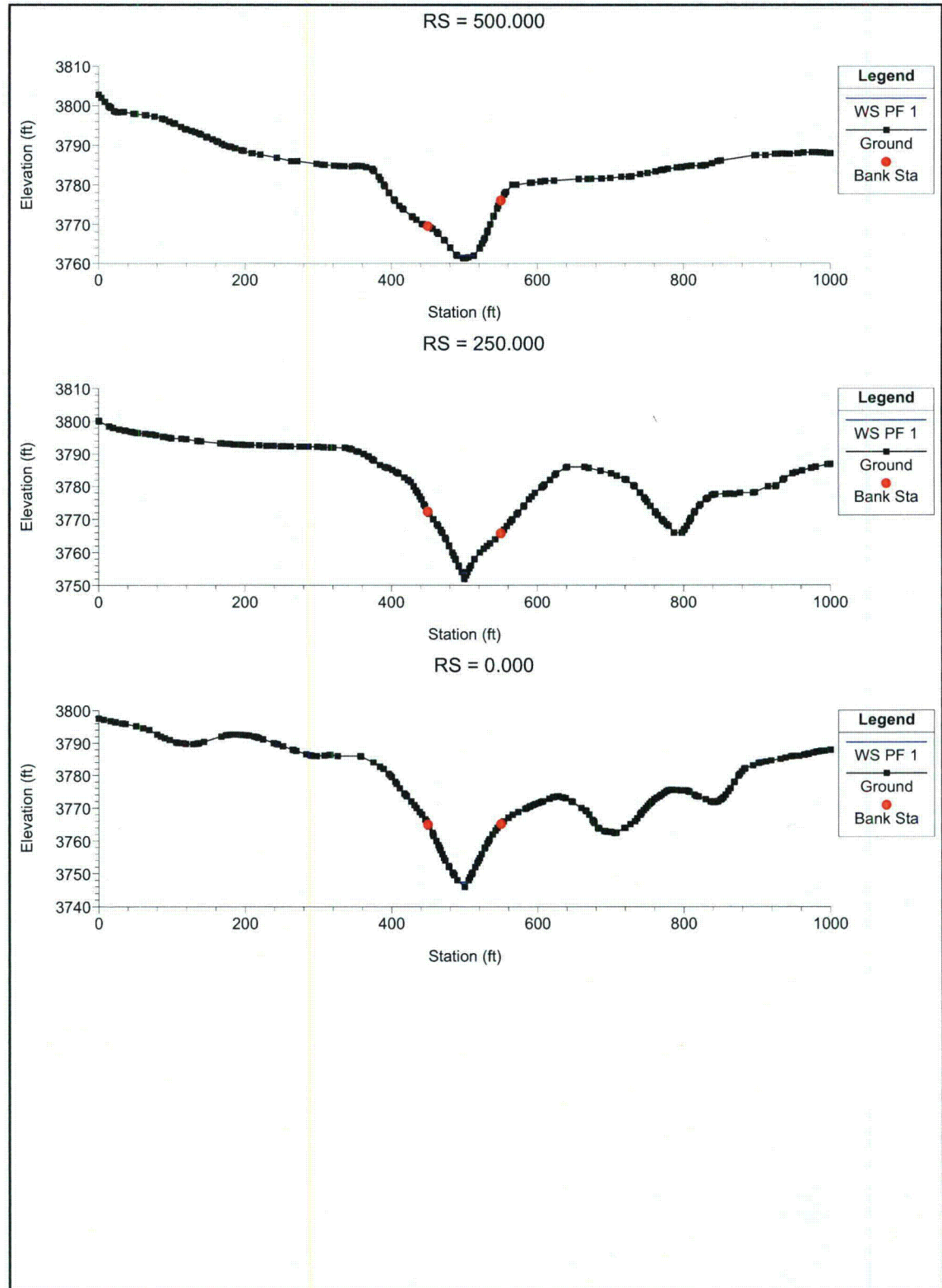
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POWERTECH (USA) INC.

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
16	1250	PF 1	30	3795.73	3796.84	3797.23	3798.06	0.092013	8.87	3.38	5.33	1.96
16	1000	PF 1	30	3783.76	3784.38	3784.43	3784.63	0.035834	4.02	7.45	20.98	1.19
16	750	PF 1	30	3770.48	3770.96	3771.1	3771.41	0.100246	5.36	5.59	22.18	1.88
16	616.598	PF 1	30	3764.7	3765.66	3765.71	3765.98	0.030673	4.52	6.63	13.83	1.15
16	500	PF 1	30	3761.3	3761.94	3762.02	3762.24	0.046039	4.33	6.93	21.13	1.33
16	250	PF 1	30	3751.96	3753.65	3753.68	3754.12	0.024863	5.46	5.5	6.64	1.06
16	0	PF 1	30	3746	3747.44	3747.31	3747.67	0.013009	3.8	7.89	10.93	0.79





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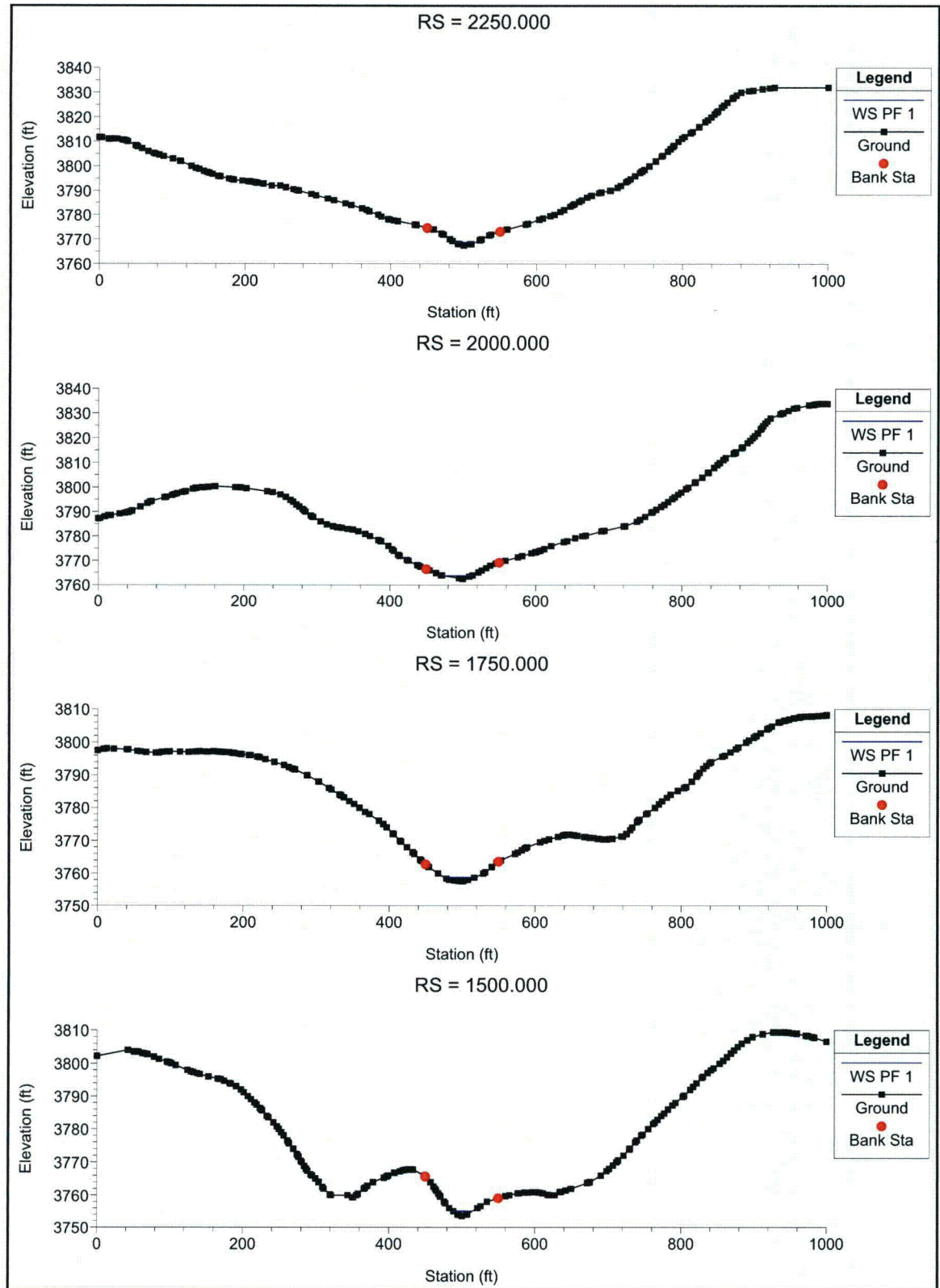
Attachment 30

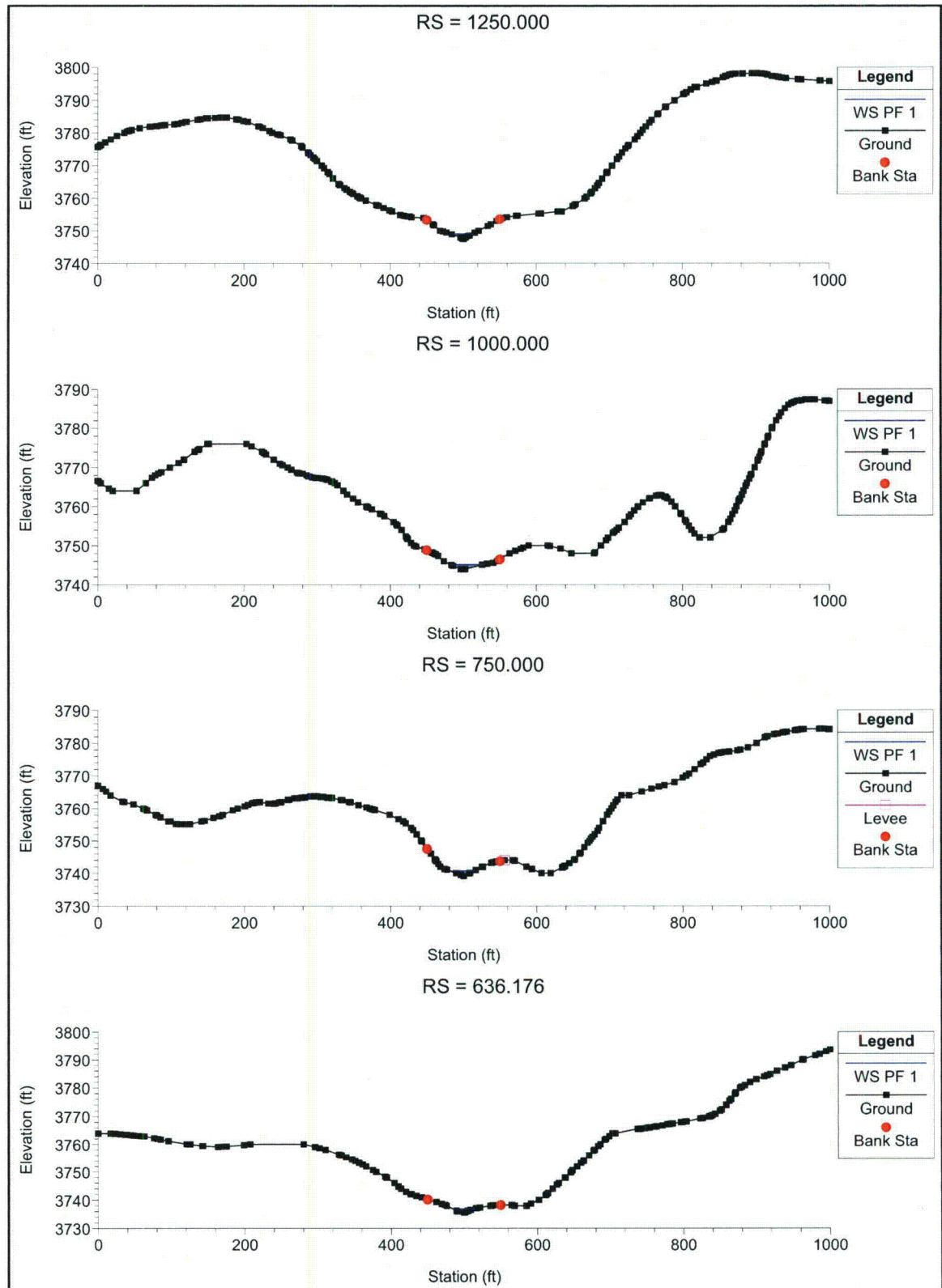
HES-RAS Channel 17

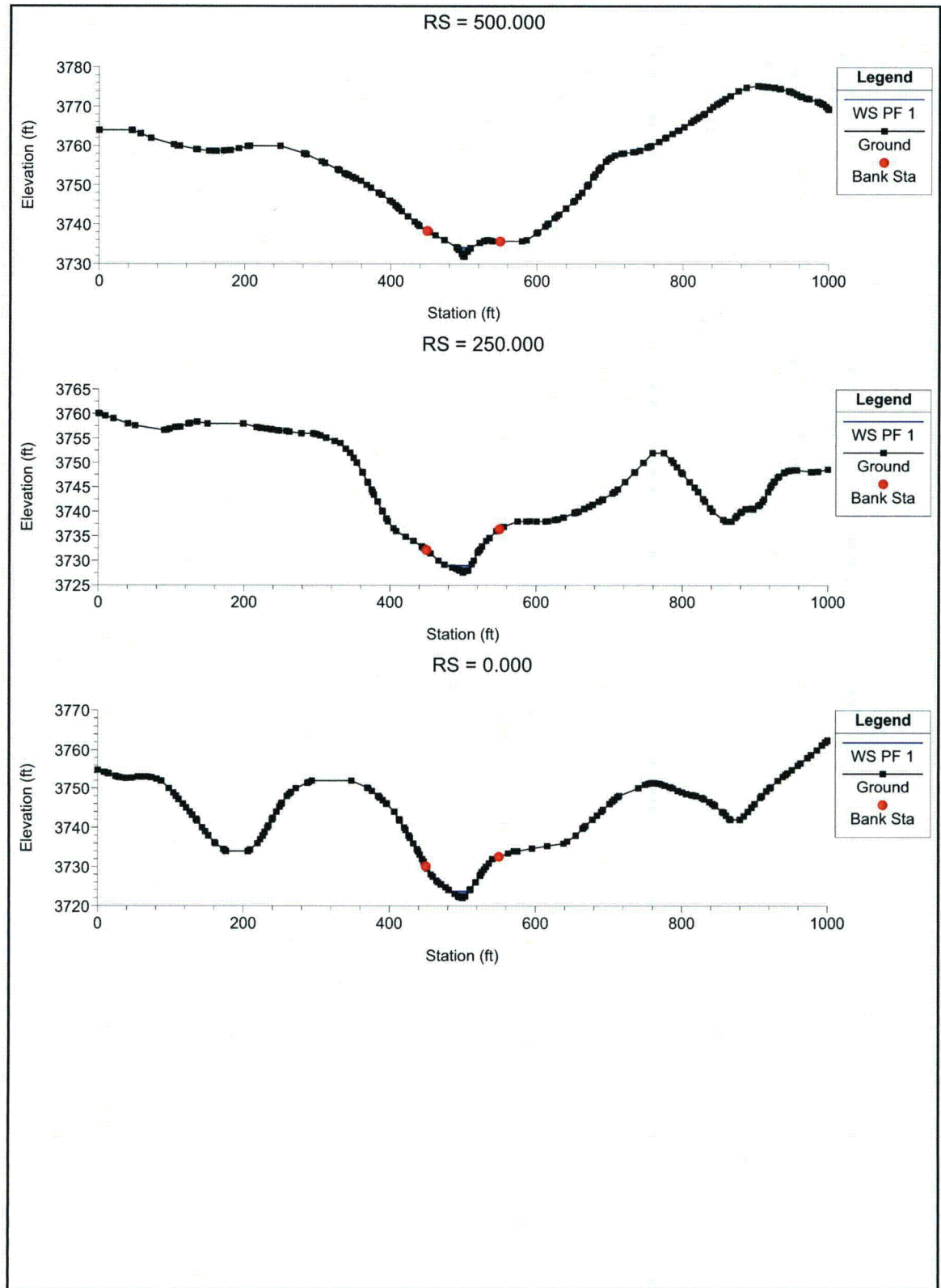
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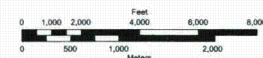
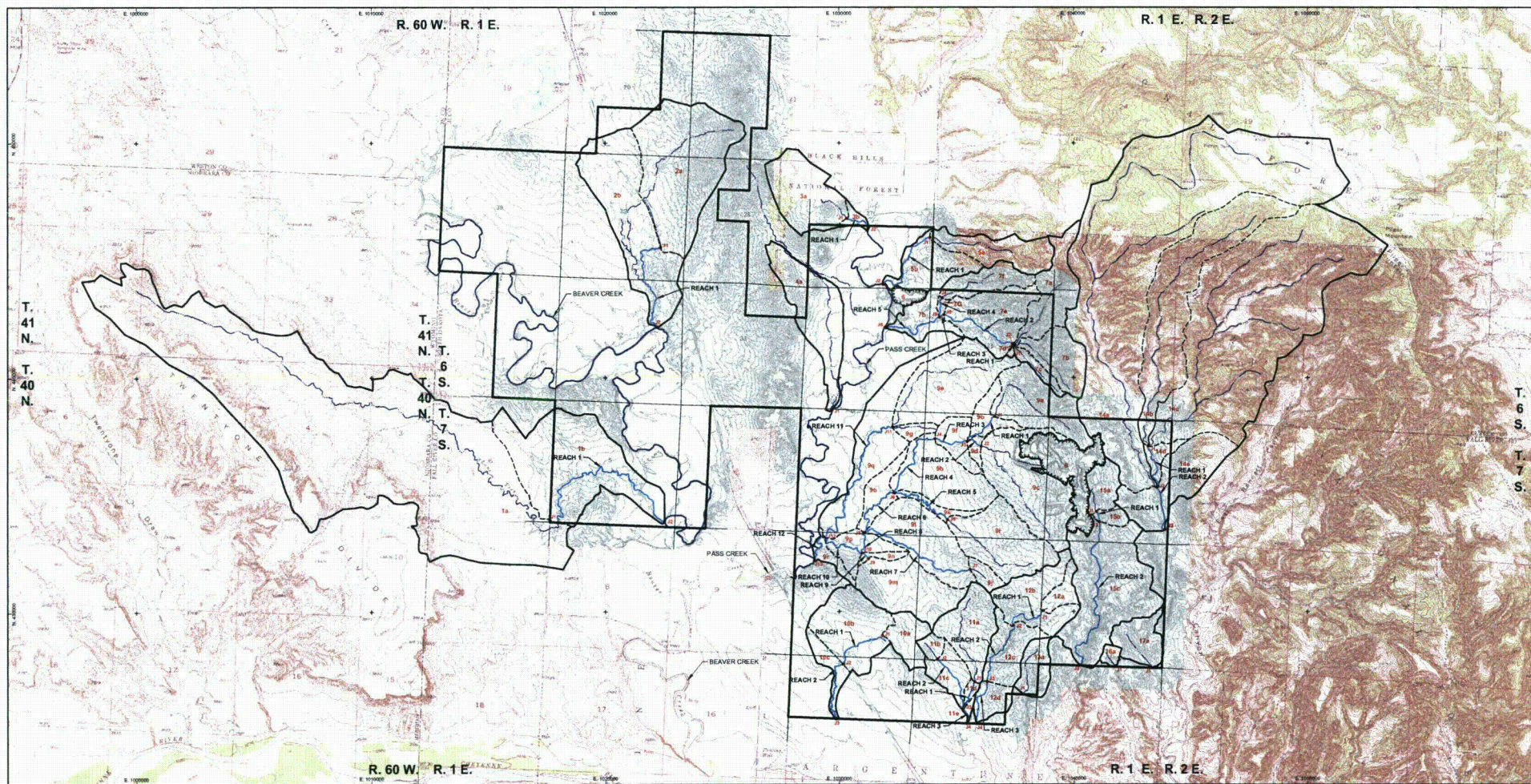


Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
17	2250	PF 1	133	3767.49	3768.84	3768.91	3769.34	0.024033	5.68	23.42	29.08	1.11
17	2000	PF 1	133	3762.49	3763.92	3763.92	3764.28	0.020727	4.79	27.74	39.82	1.01
17	1750	PF 1	133	3757.56	3758.84	3758.67	3759.07	0.010953	3.86	34.45	42.44	0.75
17	1500	PF 1	133	3753.54	3755.1	3755.1	3755.57	0.019095	5.47	24.3	26.75	1.01
17	1250	PF 1	133	3747.37	3749.05	3749.18	3749.62	0.031642	6.04	22.03	30.6	1.25
17	1000	PF 1	133	3743.91	3745.17	3745.13	3745.46	0.017706	4.32	30.75	45.84	0.93
17	750	PF 1	133	3739.14	3740.73	3740.73	3741.13	0.019475	5.07	26.22	32.94	1
17	636.176	PF 1	133	3735.7	3736.87	3737.14	3737.69	0.052677	7.27	18.29	28.25	1.59
17	500	PF 1	133	3731.86	3734.17	3734.17	3734.72	0.018403	5.93	22.43	20.93	1.01
17	250	PF 1	133	3727.63	3729.02	3729.08	3729.48	0.025155	5.43	24.51	33.68	1.12
17	0	PF 1	133	3722	3723.66	3723.68	3724.17	0.020047	5.73	23.19	24.63	1.04









This exhibit is provided to fulfill the requirements of ARSD 74-29-02:11(3) and SDCL 45-6B-10-4

LEGEND

- | | |
|--|--------------------------------------|
| | PERMIT BOUNDARY |
| | PRIMARY DRAINAGE BASIN |
| | SECONDARY DRAINAGE BASIN |
| | CLOSED DRAINAGE BASIN |
| | PREVIOUSLY ANALYZED CHANNEL |
| | EPHEMERAL STREAM CHANNEL |
| | HEC-RMS REACH |
| | HEC-RMS SUB BASIN IDENTIFIER |
| | HEC-RMS JUNCTION LOCATION AND NUMBER |



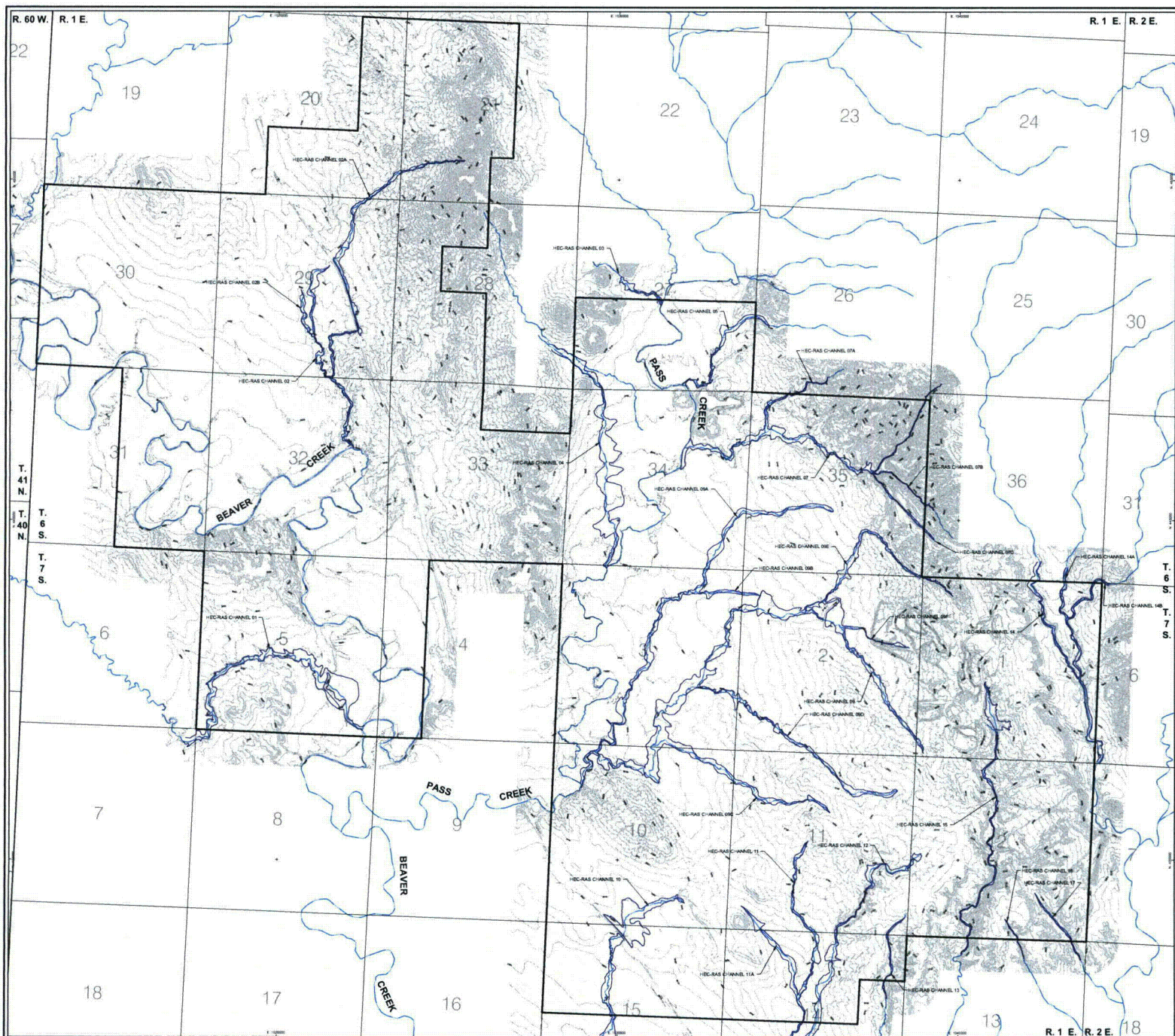
 WWC ENGINEERING	FIGURE 1 (cont.)			
	REVISIONS			
	#	DRAWN	CHECKED	APPROVED DATE
SIGNATURE OF PREPARATOR <i>Kate C. Johnson</i>				
CHECK SCALES When you draw, use ☐ 1 inch = 1 foot ☐ 1 inch = 1/2 foot ☐ 1 inch = 1/4 foot				
POST DATE 13 November 2012 DRAWN BY DAVE C. JOHNSON CHECKED BY DESIGNED BY		DATE 13 November 2012 POST FILE POST FILE		



Drainage Basins

Dewey-Burdock Project

COORRES	NAD 27, South Dakota State Plane South (feet)
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LOCATION MAP

SCALE: 1" = 1000'

CL = 2"

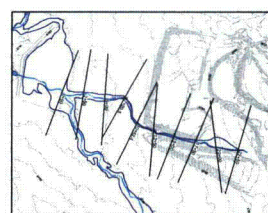
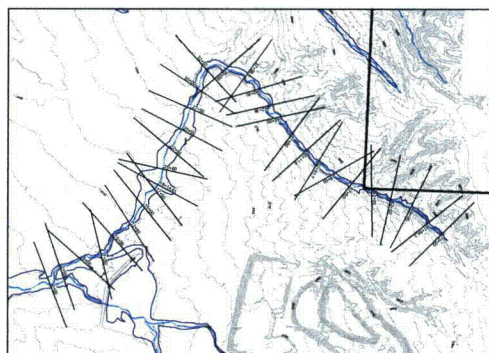
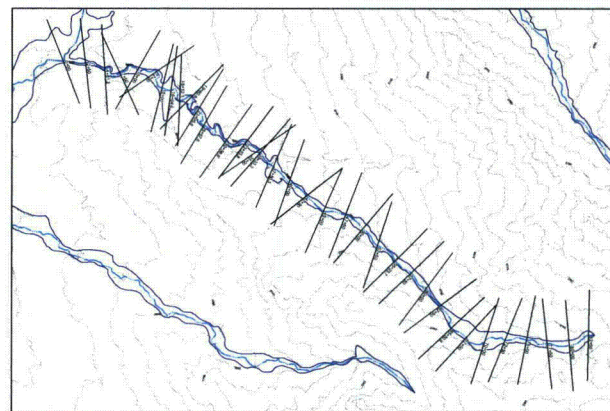
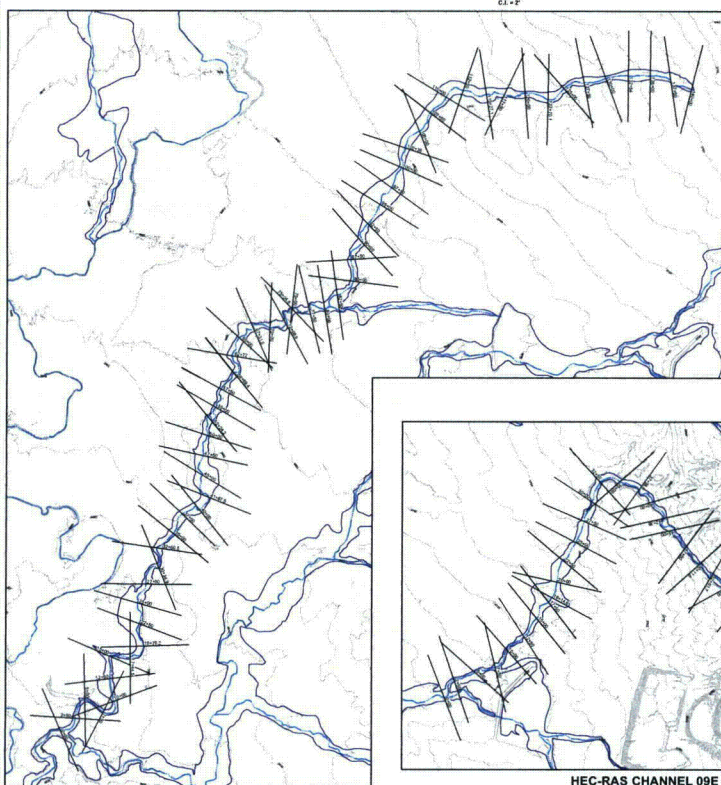
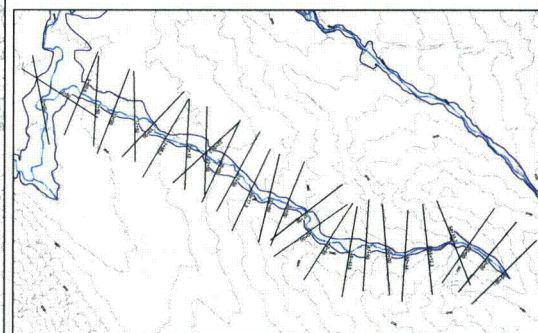
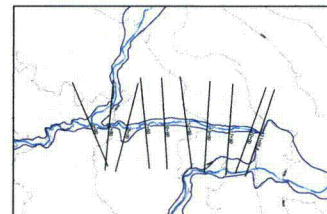
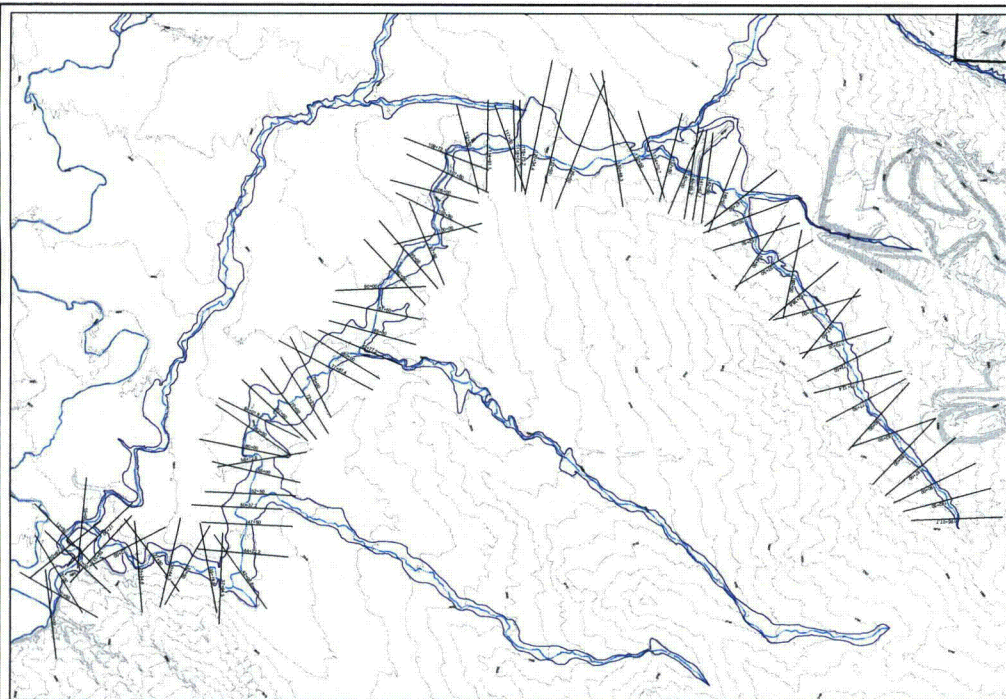
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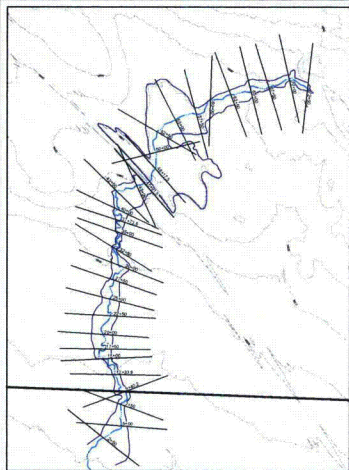
PERMIT BOUNDARY
(20-FOOT BOUNDARY BOUNDARY)



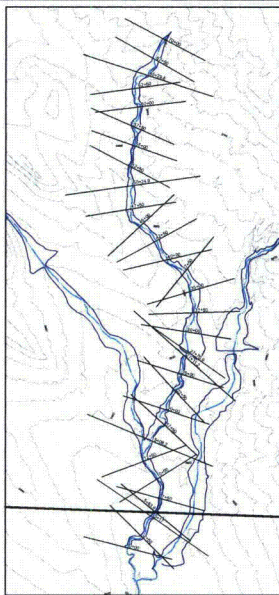
REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	11/11/2011	Initial	J. J. J.
2	11/11/2011	Revised	J. J. J.
3	11/11/2011	Approved	J. J. J.
4	11/11/2011	Final	J. J. J.

POWERTECH USA, INC.
Exhibit 3.5-A-2
HEC-RAS Location and
100-year Inundation Map
 Dewey-Burdock Project

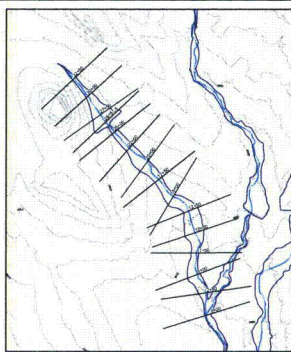
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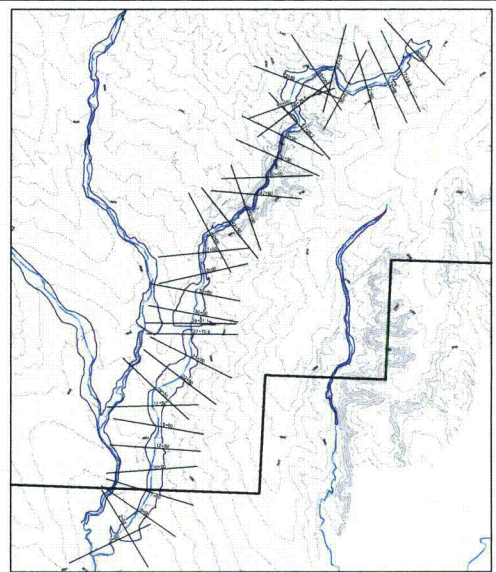
HEC-RAS CHANNEL 10
SCALE: 1" = 500'
CL = 2"



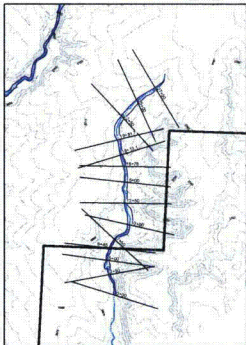
HEC-RAS CHANNEL 11
SCALE: 1" = 500'
CL = 2"



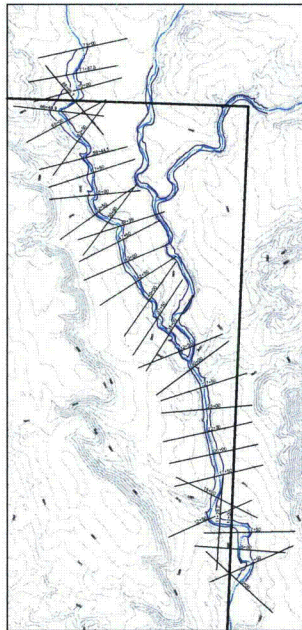
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CL = 2"



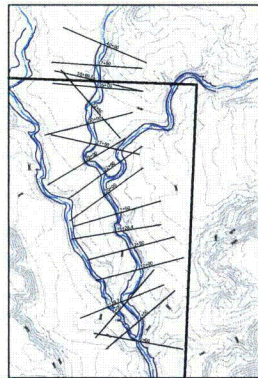
HEC-RAS CHANNEL 12
SCALE: 1" = 500'
CL = 2"



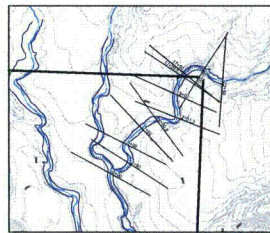
HEC-RAS CHANNEL 13
SCALE: 1" = 500'
CL = 2"



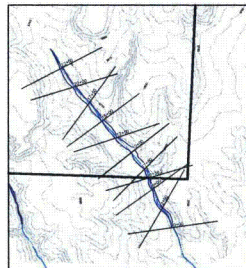
HEC-RAS CHANNEL 14
SCALE: 1" = 500'
CL = 2"



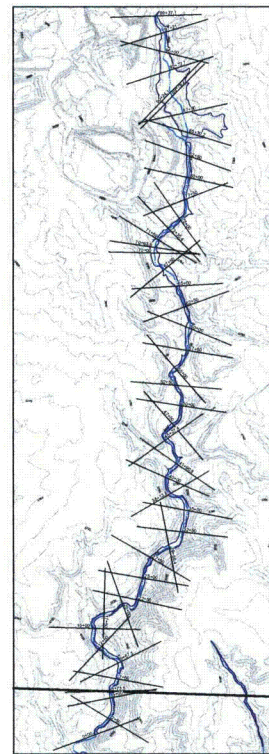
HEC-RAS CHANNEL 14A
SCALE: 1" = 500'
CL = 2"



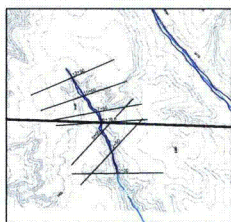
HEC-RAS CHANNEL 14B
SCALE: 1" = 500'
CL = 2"



HEC-RAS CHANNEL 17
SCALE: 1" = 500'
CL = 2"



HEC-RAS CHANNEL 15
SCALE: 1" = 500'
CL = 2"



HEC-RAS CHANNEL 16
SCALE: 1" = 500'
CL = 2"

LEGEND
 RIVER BOUNDARY
 100 YEAR FLOODPLAIN BOUNDARY



 WWC CONSULTING	REVISIONS # DRAWN C-CHECKED APPROVED DATE			 POWERWATCH USA INC. Exhibit 3.5-A-3 HEC-RAS Cross Sections Dewey-Burlock Project 100 Year Floodplain Boundary
	APPROVED BY: [Signature] DATE: 11/11/2011			
DEDIC SCALE: 1" = 500' CL = 2"	BY: [Signature] DATE: 11/11/2011	BY: [Signature] DATE: 11/11/2011	SHEET 3 OF 3	