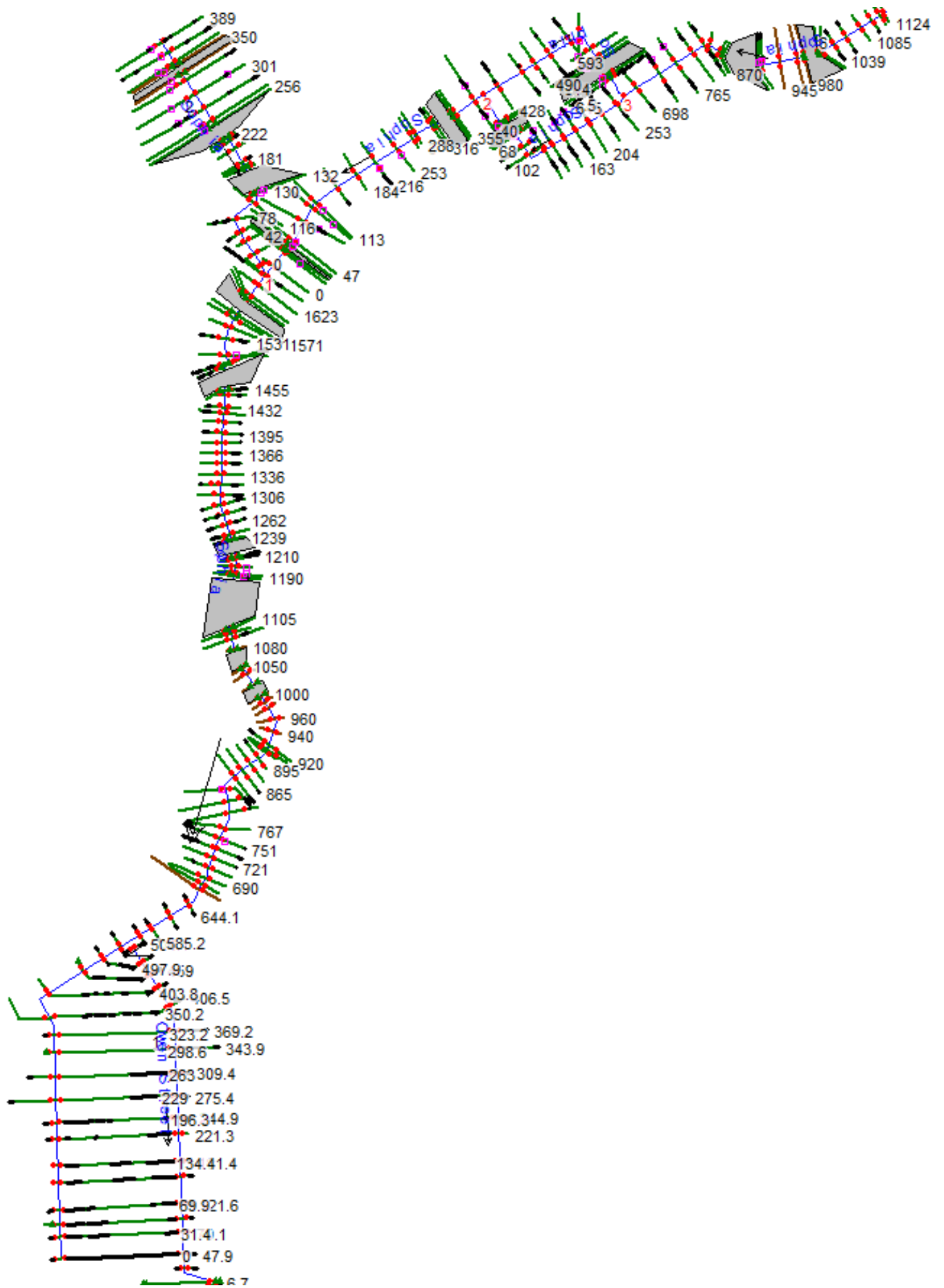


**APPENDIX H:  
ALTERNATIVE 3B MODEL RESULTS**



# Improvement Alternative 3B - HEC RAS Results Summary

HEC-RAS Plan: PR03

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	6	1124	10 YR	4.97	258.50	259.41	259.41	259.67	0.022814	2.26	2.20	4.27	1.01
Sophia	6	1124	25 YR	6.84	258.50	259.56	259.56	259.84	0.021800	2.36	2.89	5.12	1.00
Sophia	6	1124	50 YR	8.35	258.50	259.66	259.66	259.96	0.021475	2.43	3.43	5.86	1.01
Sophia	6	1124	100 YR	9.83	258.50	259.74	259.74	260.06	0.020326	2.52	3.94	6.91	1.00
Sophia	6	1118	10 YR	4.97	258.13	259.22		259.39	0.013835	1.79	2.77	5.05	0.77
Sophia	6	1118	25 YR	6.84	258.13	259.35		259.55	0.015446	1.98	3.46	6.02	0.83
Sophia	6	1118	50 YR	8.35	258.13	259.43	259.35	259.65	0.016448	2.11	3.96	6.58	0.87
Sophia	6	1118	100 YR	9.83	258.13	259.50	259.43	259.75	0.017137	2.21	4.45	7.19	0.90
Sophia	6	1104	10 YR	4.97	258.14	259.07	258.95	259.20	0.012024	1.59	3.13	6.66	0.74
Sophia	6	1104	25 YR	6.84	258.14	259.20	259.07	259.34	0.011404	1.66	4.12	7.94	0.74
Sophia	6	1104	50 YR	8.35	258.14	259.29	259.16	259.44	0.010896	1.71	4.88	8.73	0.73
Sophia	6	1104	100 YR	9.83	258.14	259.38	259.22	259.53	0.010515	1.74	5.64	9.59	0.73
Sophia	6	1085	10 YR	4.97	257.86	258.64	258.64	258.88	0.023331	2.17	2.29	4.85	1.01
Sophia	6	1085	25 YR	6.84	257.86	258.77	258.77	259.04	0.022315	2.31	2.97	5.58	1.01
Sophia	6	1085	50 YR	8.35	257.86	258.86	258.86	259.15	0.021705	2.38	3.50	6.16	1.01
Sophia	6	1085	100 YR	9.83	257.86	258.94	258.94	259.24	0.021206	2.45	4.02	6.70	1.01
Sophia	6	1060	10 YR	4.97	257.20	258.34		258.42	0.005853	1.20	4.16	7.84	0.52
Sophia	6	1060	25 YR	6.84	257.20	258.47		258.56	0.006245	1.32	5.18	8.90	0.55
Sophia	6	1060	50 YR	8.35	257.20	258.54		258.64	0.006764	1.42	5.87	9.60	0.58
Sophia	6	1060	100 YR	9.83	257.20	258.60		258.72	0.007412	1.53	6.47	12.42	0.61
Sophia	6	1039	10 YR	4.97	257.05	258.07		258.22	0.015157	1.73	2.87	6.24	0.82
Sophia	6	1039	25 YR	6.84	257.05	258.24	258.11	258.38	0.011256	1.67	4.36	12.22	0.73
Sophia	6	1039	50 YR	8.35	257.05	258.33	258.22	258.47	0.010064	1.69	5.57	14.94	0.70
Sophia	6	1039	100 YR	9.83	257.05	258.42		258.55	0.008490	1.64	7.05	16.81	0.65
Sophia	6	1017	10 YR	4.97	256.64	257.99		258.04	0.003724	1.05	4.87	11.27	0.43
Sophia	6	1017	25 YR	6.84	256.64	258.19		258.24	0.002653	1.01	7.72	15.88	0.37
Sophia	6	1017	50 YR	8.35	256.64	258.29		258.34	0.002695	1.07	9.31	19.14	0.38
Sophia	6	1017	100 YR	9.83	256.64	258.38		258.43	0.002647	1.10	11.22	23.28	0.38
Sophia	6	1013	10 YR	4.97	256.41	257.62	257.62	257.88	0.028869	2.29	2.18	4.04	0.99
Sophia	6	1013	25 YR	6.84	256.41	257.76	257.76	258.06	0.027548	2.46	2.78	4.93	1.01
Sophia	6	1013	50 YR	8.35	256.41	257.88	257.88	258.17	0.025324	2.38	3.50	6.01	1.00
Sophia	6	1013	100 YR	9.83	256.41	257.98	257.98	258.27	0.023374	2.36	4.20	8.83	0.98
Sophia	6	1000		Culvert									
Sophia	6	980	10 YR	4.97	255.92	256.63	256.58	256.82	0.014951	1.92	2.59	5.54	0.85
Sophia	6	980	25 YR	6.84	255.92	256.74	256.69	256.98	0.015095	2.18	3.13	6.09	0.88
Sophia	6	980	50 YR	8.35	255.92	256.81	256.77	257.10	0.015429	2.38	3.51	6.48	0.91
Sophia	6	980	100 YR	9.83	255.92	256.88	256.84	257.21	0.015661	2.55	3.85	6.84	0.93
Sophia	6	970	10 YR	4.97	255.75	256.49		256.65	0.013836	1.78	2.80	5.69	0.81
Sophia	6	970	25 YR	6.84	255.75	256.59	256.53	256.80	0.015494	2.01	3.40	6.21	0.87
Sophia	6	970	50 YR	8.35	255.75	256.66	256.61	256.90	0.016419	2.17	3.85	6.57	0.90
Sophia	6	970	100 YR	9.83	255.75	256.74	256.69	257.00	0.016580	2.27	4.33	6.94	0.92
Sophia	6	945	10 YR	4.97	255.37	256.07	256.03	256.26	0.017641	1.94	2.56	5.48	0.91
Sophia	6	945	25 YR	6.84	255.37	256.23		256.42	0.014538	1.97	3.48	6.29	0.84
Sophia	6	945	50 YR	8.35	255.37	256.37		256.55	0.011397	1.89	4.41	7.01	0.76
Sophia	6	945	100 YR	9.83	255.37	256.50		256.67	0.008969	1.81	5.44	7.74	0.69
Sophia	6	920	10 YR	4.97	255.00	255.87	255.86	255.97	0.006998	1.38	3.61	6.42	0.59
Sophia	6	920	25 YR	6.84	255.00	256.11	255.78	256.20	0.004735	1.30	5.28	7.66	0.50
Sophia	6	920	50 YR	8.35	255.00	256.29	255.86	256.36	0.003695	1.24	6.71	8.58	0.45
Sophia	6	920	100 YR	9.83	255.00	256.45	255.94	256.52	0.003030	1.20	8.16	9.43	0.41
Sophia	6	914	10 YR	4.97	254.91	255.85	255.57	255.92	0.005049	1.21	4.10	6.95	0.50
Sophia	6	914	25 YR	6.84	254.91	256.10	255.69	256.16	0.003131	1.15	5.95	8.31	0.42
Sophia	6	914	50 YR	8.35	254.91	256.28	255.78	256.34	0.002348	1.14	7.30	9.29	0.37
Sophia	6	914	100 YR	9.83	254.91	256.44	255.85	256.50	0.001943	1.15	8.53	10.18	0.35
Sophia	6	911		Culvert									
Sophia	6	870	10 YR	4.97	254.50	255.33	255.01	255.38	0.003653	1.04	4.77	8.02	0.43
Sophia	6	870	25 YR	6.84	254.50	255.50	255.12	255.56	0.003266	1.09	6.25	8.98	0.42
Sophia	6	870	50 YR	8.35	254.50	255.62	255.19	255.69	0.003099	1.13	7.37	9.63	0.41
Sophia	6	870	100 YR	9.83	254.50	255.72	255.26	255.79	0.002915	1.18	8.34	10.17	0.41
Sophia	6	860	10 YR	4.97	254.44	255.30		255.35	0.003151	0.99	5.05	8.29	0.40
Sophia	6	860	25 YR	6.84	254.44	255.47		255.53	0.002825	1.03	6.62	9.28	0.39
Sophia	6	860	50 YR	8.35	254.44	255.60		255.65	0.002693	1.07	7.78	9.96	0.39
Sophia	6	860	100 YR	9.83	254.44	255.70		255.76	0.002659	1.12	8.81	10.52	0.39
Sophia	6	830	10 YR	4.97	254.27	255.24		255.27	0.001837	0.80	6.22	9.32	0.31
Sophia	6	830	25 YR	6.84	254.27	255.42		255.46	0.001716	0.85	8.05	10.43	0.31
Sophia	6	830	50 YR	8.35	254.27	255.55		255.59	0.001678	0.89	9.38	11.18	0.31

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	6	830	100 YR	9.83	254.27	255.65		255.69	0.001694	0.93	10.54	11.78	0.31
Sophia	6	815	10 YR	4.97	254.10	255.00		255.19	0.014106	1.95	2.55	4.05	0.79
Sophia	6	815	25 YR	6.84	254.10	255.16		255.38	0.015019	2.10	3.25	4.95	0.83
Sophia	6	815	50 YR	8.35	254.10	255.28		255.51	0.014857	2.15	3.89	5.75	0.83
Sophia	6	815	100 YR	9.83	254.10	255.35	255.26	255.61	0.016070	2.27	4.33	6.31	0.87
Sophia	6	794	10 YR	4.97	253.89	254.85		254.96	0.007538	1.46	3.41	5.53	0.59
Sophia	6	794	25 YR	6.84	253.89	255.01		255.13	0.008034	1.58	4.33	6.58	0.62
Sophia	6	794	50 YR	8.35	253.89	255.11		255.25	0.008787	1.63	5.11	8.05	0.65
Sophia	6	794	100 YR	9.83	253.89	255.17		255.33	0.009460	1.75	5.86	10.52	0.68
Sophia	6	765	10 YR	4.97	253.95	254.61	254.49	254.72	0.009160	1.46	3.40	6.70	0.65
Sophia	6	765	25 YR	6.84	253.95	254.76	254.58	254.88	0.009680	1.48	4.63	9.51	0.68
Sophia	6	765	50 YR	8.35	253.95	254.88	254.68	254.98	0.009495	1.40	5.94	13.13	0.67
Sophia	6	765	100 YR	9.83	253.95	254.96	254.75	255.06	0.008377	1.39	7.08	14.55	0.63
Sophia	6	737	10 YR	4.97	253.59	254.47	254.15	254.53	0.004640	1.10	4.51	8.12	0.47
Sophia	6	737	25 YR	6.84	253.59	254.59	254.25	254.67	0.005354	1.23	5.59	9.65	0.51
Sophia	6	737	50 YR	8.35	253.59	254.69	254.35	254.77	0.005746	1.26	6.60	11.57	0.53
Sophia	6	737	100 YR	9.83	253.59	254.76	254.44	254.85	0.006507	1.30	7.56	14.04	0.57
Sophia	6	698	10 YR	9.11	252.92	254.14		254.25	0.009434	1.48	6.25	15.20	0.67
Sophia	6	698	25 YR	12.34	252.92	254.27		254.39	0.008487	1.55	8.44	18.60	0.65
Sophia	6	698	50 YR	15.21	252.92	254.36		254.48	0.008213	1.61	10.23	21.56	0.65
Sophia	6	698	100 YR	17.77	252.92	254.42		254.56	0.007752	1.67	11.84	28.44	0.64
Sophia	4	645	10 YR	6.99	252.48	253.80	253.35	253.89	0.004419	1.30	5.35	6.84	0.47
Sophia	4	645	25 YR	8.35	252.48	253.94	253.44	254.03	0.004557	1.31	6.40	8.51	0.48
Sophia	4	645	50 YR	9.48	252.48	254.03	253.52	254.12	0.005010	1.32	7.17	10.22	0.50
Sophia	4	645	100 YR	10.68	252.48	254.10	253.59	254.19	0.005360	1.34	7.97	11.84	0.52
Sophia	4	639	10 YR	6.99	252.37	253.58	253.48	253.80	0.016989	2.09	3.34	5.19	0.83
Sophia	4	639	25 YR	8.35	252.37	253.79	253.58	253.97	0.009741	1.86	4.50	6.77	0.66
Sophia	4	639	50 YR	9.48	252.37	253.84	253.65	254.04	0.010294	1.99	4.77	7.23	0.69
Sophia	4	639	100 YR	10.68	252.37	253.74	253.70	254.07	0.019319	2.52	4.24	6.41	0.92
Sophia	4	625		Culvert									
Sophia	4	614	10 YR	6.99	252.27	253.46	253.34	253.71	0.015033	2.23	3.13	6.33	0.79
Sophia	4	614	25 YR	8.35	252.27	253.54	253.43	253.84	0.015620	2.43	3.44	7.01	0.82
Sophia	4	614	50 YR	9.48	252.27	253.68	253.50	253.85	0.014211	1.85	5.11	9.15	0.79
Sophia	4	614	100 YR	10.68	252.27	253.76	253.57	253.93	0.012391	1.79	6.04	12.63	0.75
Sophia	4	608	10 YR	6.99	252.19	253.46	253.16	253.58	0.009529	1.52	4.60	8.75	0.65
Sophia	4	608	25 YR	8.35	252.19	253.57	253.27	253.68	0.007777	1.49	5.79	11.78	0.60
Sophia	4	608	50 YR	9.48	252.19	253.66	253.36	253.76	0.007025	1.46	6.87	13.52	0.58
Sophia	4	608	100 YR	10.68	252.19	253.75	253.46	253.84	0.006627	1.41	8.21	16.67	0.57
Sophia	4	593	10 YR	6.99	252.19	253.26	252.99	253.42	0.010381	1.81	3.87	5.37	0.68
Sophia	4	593	25 YR	8.35	252.19	253.37	253.10	253.54	0.010502	1.85	4.51	6.21	0.69
Sophia	4	593	50 YR	9.48	252.19	253.45	253.20	253.63	0.010489	1.88	5.03	6.82	0.70
Sophia	4	593	100 YR	10.68	252.19	253.52	253.28	253.71	0.010534	1.92	5.56	7.41	0.71
Sophia	4	567	10 YR	6.99	251.95	253.14	252.68	253.22	0.004690	1.28	5.45	7.31	0.47
Sophia	4	567	25 YR	8.35	251.95	253.25	252.76	253.34	0.004654	1.32	6.33	8.17	0.48
Sophia	4	567	50 YR	9.48	251.95	253.34	252.83	253.43	0.004642	1.35	7.02	8.80	0.48
Sophia	4	567	100 YR	10.68	251.95	253.41	252.92	253.51	0.004669	1.39	7.71	9.38	0.49
Sophia	4	550	10 YR	6.99	252.04	252.89		253.09	0.012063	1.98	3.53	4.82	0.74
Sophia	4	550	25 YR	8.35	252.04	252.97		253.20	0.013929	2.11	3.96	5.57	0.80
Sophia	4	550	50 YR	9.48	252.04	253.04		253.28	0.015095	2.18	4.35	6.28	0.84
Sophia	4	550	100 YR	10.68	252.04	253.10	252.99	253.36	0.015839	2.24	4.77	6.93	0.86
Sophia	4	515	10 YR	6.99	251.71	252.89		252.93	0.001506	0.85	8.35	14.57	0.29
Sophia	4	515	25 YR	8.35	251.71	252.98		253.02	0.001614	0.92	9.81	18.60	0.30
Sophia	4	515	50 YR	9.48	251.71	253.05		253.09	0.001654	0.95	11.19	20.86	0.31
Sophia	4	515	100 YR	10.68	251.71	253.11		253.16	0.001697	0.98	12.64	22.05	0.31
Sophia	4	490	10 YR	6.99	251.68	252.82		252.87	0.003326	0.97	7.24	14.01	0.40
Sophia	4	490	25 YR	8.35	251.68	252.92		252.97	0.002858	0.99	8.87	19.96	0.38
Sophia	4	490	50 YR	9.48	251.68	252.99		253.04	0.002513	0.99	10.62	25.95	0.37
Sophia	4	490	100 YR	10.68	251.68	253.06		253.11	0.002238	1.00	12.58	29.89	0.35
Sophia	4	469	10 YR	6.99	251.62	252.67		252.77	0.007224	1.39	5.66	13.44	0.59
Sophia	4	469	25 YR	8.35	251.62	252.80		252.88	0.005614	1.27	7.84	19.99	0.53
Sophia	4	469	50 YR	9.48	251.62	252.91		252.97	0.003915	1.19	10.11	24.49	0.45
Sophia	4	469	100 YR	10.68	251.62	253.00		253.06	0.002992	1.12	12.90	34.97	0.40
Sophia	4	428	10 YR	6.99	251.38	252.56		252.60	0.002251	0.89	8.14	17.04	0.34
Sophia	4	428	25 YR	8.35	251.38	252.73		252.76	0.001410	0.82	11.78	24.36	0.28
Sophia	4	428	50 YR	9.48	251.38	252.86		252.89	0.001035	0.77	15.35	34.64	0.25

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	4	428	100 YR	10.68	251.38	252.96		252.99	0.000869	0.75	19.24	41.02	0.23
Sophia	2	389	10 YR	7.73	252.90	253.62	253.52	253.78	0.012123	1.77	4.36	8.22	0.78
Sophia	2	389	25 YR	11.33	252.90	253.78	253.68	253.98	0.012142	1.97	5.74	9.17	0.80
Sophia	2	389	50 YR	14.12	252.90	253.89	253.78	254.11	0.011953	2.09	6.76	9.82	0.80
Sophia	2	389	100 YR	16.99	252.90	254.03	253.87	254.25	0.010157	2.07	8.21	10.66	0.75
Sophia	2	372	10 YR	7.73	252.69	253.43	253.31	253.58	0.011182	1.72	4.49	8.31	0.75
Sophia	2	372	25 YR	11.33	252.69	253.56	253.46	253.77	0.012379	1.99	5.70	9.14	0.80
Sophia	2	372	50 YR	14.12	252.69	253.70	253.56	253.91	0.010945	2.02	6.98	9.95	0.77
Sophia	2	372	100 YR	16.99	252.69	253.91	253.66	254.08	0.007346	1.84	9.24	11.23	0.65
Sophia	2	356	10 YR	7.73	252.47	253.10	253.10	253.33	0.020489	2.13	3.62	7.66	0.99
Sophia	2	356	25 YR	11.33	252.47	253.28	253.24	253.53	0.016624	2.21	5.12	8.76	0.92
Sophia	2	356	50 YR	14.12	252.47	253.60	253.34	253.75	0.006984	1.72	8.22	10.67	0.62
Sophia	2	356	100 YR	16.99	252.47	253.86	253.44	253.98	0.004284	1.51	11.24	12.49	0.50
Sophia	2	350	10 YR	7.73	251.65	252.97	252.31	253.01	0.001567	0.91	8.50	9.00	0.30
Sophia	2	350	25 YR	11.33	251.65	253.36	252.47	253.40	0.001205	0.92	12.35	10.53	0.27
Sophia	2	350	50 YR	14.12	251.65	253.64	252.59	253.68	0.001015	0.92	15.43	11.61	0.25
Sophia	2	350	100 YR	16.99	251.65	253.89	252.69	253.93	0.000859	0.92	18.53	13.76	0.24
Sophia	2	344		Culvert									
Sophia	2	335	10 YR	7.73	251.52	252.26	252.17	252.45	0.013277	1.94	3.98	6.84	0.81
Sophia	2	335	25 YR	11.33	251.52	252.45	252.34	252.68	0.012266	2.11	5.36	7.60	0.80
Sophia	2	335	50 YR	14.12	251.52	252.54	252.45	252.82	0.013623	2.34	6.04	7.95	0.86
Sophia	2	335	100 YR	16.99	251.52	252.75	252.56	252.99	0.009722	2.18	7.79	8.78	0.74
Sophia	2	325	10 YR	7.73	251.36	252.14	252.04	252.32	0.012505	1.90	4.07	6.95	0.79
Sophia	2	325	25 YR	11.33	251.36	252.25	252.21	252.52	0.016352	2.33	4.86	7.43	0.92
Sophia	2	325	50 YR	14.12	251.36	252.41	252.32	252.68	0.013353	2.30	6.13	8.15	0.85
Sophia	2	325	100 YR	16.99	251.36	252.68	252.42	252.88	0.007793	1.99	8.52	9.35	0.67
Sophia	2	301	10 YR	7.73	250.98	251.69	251.68	251.94	0.019879	2.19	3.52	6.92	0.98
Sophia	2	301	25 YR	11.33	250.98	251.97	251.85	252.17	0.011297	1.99	5.71	8.48	0.77
Sophia	2	301	50 YR	14.12	250.98	252.32	251.95	252.44	0.005152	1.58	8.95	10.38	0.54
Sophia	2	301	100 YR	16.99	250.98	252.65	252.06	252.74	0.002882	1.34	12.72	12.22	0.42
Sophia	2	277	10 YR	7.73	250.50	251.52	251.27	251.63	0.006718	1.49	5.18	7.97	0.59
Sophia	2	277	25 YR	11.33	250.50	251.92	251.44	252.00	0.003377	1.28	8.87	10.26	0.44
Sophia	2	277	50 YR	14.12	250.50	252.30	251.55	252.35	0.001836	1.08	13.11	12.38	0.33
Sophia	2	277	100 YR	16.99	250.50	252.64	251.65	252.69	0.001187	0.96	17.71	14.33	0.28
Sophia	2	256	10 YR	7.73	250.25	251.50	250.94	251.54	0.001905	0.92	8.41	10.49	0.33
Sophia	2	256	25 YR	11.33	250.25	251.91	251.10	251.95	0.001187	0.85	13.30	12.98	0.27
Sophia	2	256	50 YR	14.12	250.25	252.29	251.21	252.32	0.000742	0.76	18.65	15.26	0.22
Sophia	2	256	100 YR	16.99	250.25	252.64	251.30	252.66	0.000508	0.70	24.29	17.21	0.19
Sophia	2	248	10 YR	7.73	250.15	251.49	250.85	251.52	0.001413	0.82	9.39	11.03	0.28
Sophia	2	248	25 YR	11.33	250.15	251.91	251.01	251.94	0.000883	0.78	14.48	13.55	0.24
Sophia	2	248	50 YR	14.12	250.15	252.29	251.11	252.32	0.000523	0.73	19.42	15.84	0.19
Sophia	2	248	100 YR	16.99	250.15	252.64	251.20	252.66	0.000408	0.66	26.00	17.65	0.17
Sophia	2	241		Culvert									
Sophia	2	222	10 YR	7.73	250.02	251.40	250.78	251.44	0.001646	0.88	8.82	10.53	0.31
Sophia	2	222	25 YR	11.33	250.02	251.73	250.95	251.77	0.001313	0.91	12.50	12.47	0.28
Sophia	2	222	50 YR	14.12	250.02	251.98	251.06	252.03	0.000980	0.91	15.59	24.81	0.25
Sophia	2	222	100 YR	16.99	250.02	252.28	251.16	252.31	0.000706	0.78	26.01	34.68	0.22
Sophia	2	217	10 YR	7.73	250.00	251.40		251.43	0.001055	0.74	10.50	11.69	0.25
Sophia	2	217	25 YR	11.33	250.00	251.73		251.76	0.000926	0.78	14.61	13.65	0.24
Sophia	2	217	50 YR	14.12	250.00	251.99		252.01	0.000768	0.76	19.35	25.74	0.22
Sophia	2	217	100 YR	16.99	250.00	252.28		252.31	0.000523	0.69	28.68	34.92	0.19
Sophia	2	203	10 YR	7.73	249.92	251.38		251.41	0.001359	0.82	9.46	10.87	0.28
Sophia	2	203	25 YR	11.33	249.92	251.71		251.74	0.001161	0.85	13.34	12.83	0.27
Sophia	2	203	50 YR	14.12	249.92	251.97		252.00	0.000923	0.82	18.55	25.93	0.24
Sophia	2	203	100 YR	16.99	249.92	252.27		252.30	0.000594	0.73	28.13	35.30	0.20
Sophia	2	181	10 YR	7.73	249.81	251.36		251.38	0.001048	0.74	10.42	11.38	0.25
Sophia	2	181	25 YR	11.33	249.81	251.69		251.72	0.000926	0.78	14.51	13.37	0.24
Sophia	2	181	50 YR	14.12	249.81	251.95		251.98	0.000775	0.77	18.35	20.42	0.22
Sophia	2	181	100 YR	16.99	249.81	252.26		252.29	0.000541	0.71	27.37	35.92	0.19
Sophia	2	174	10 YR	7.73	249.78	251.35		251.38	0.000798	0.67	11.57	12.08	0.22
Sophia	2	174	25 YR	11.33	249.78	251.68		251.71	0.000730	0.71	15.90	14.06	0.21
Sophia	2	174	50 YR	14.12	249.78	251.95		251.98	0.000623	0.71	19.89	17.49	0.20
Sophia	2	174	100 YR	16.99	249.78	252.26		252.28	0.000454	0.66	28.60	36.56	0.18
Sophia	2	170	10 YR	8.45	249.76	251.26	250.71	251.35	0.004099	1.33	6.37	6.88	0.44

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	2	170	25 YR	12.41	249.76	251.58	250.96	251.68	0.003715	1.41	8.81	8.39	0.43
Sophia	2	170	50 YR	15.43	249.76	251.85	251.10	251.95	0.002743	1.39	11.11	10.14	0.39
Sophia	2	170	100 YR	18.68	249.76	252.16	251.24	252.26	0.001976	1.36	13.75	27.92	0.34
Sophia	2	142		Culvert									
Sophia	2	132	10 YR	8.45	249.68	251.22	250.76	251.30	0.003394	1.30	6.51	7.87	0.43
Sophia	2	132	25 YR	12.41	249.68	251.41	250.95	251.54	0.004148	1.56	7.98	8.92	0.49
Sophia	2	132	50 YR	15.43	249.68	251.54	251.07	251.69	0.004532	1.72	8.95	10.08	0.52
Sophia	2	132	100 YR	18.68	249.68	251.65	251.18	251.83	0.004820	1.90	9.86	12.19	0.55
Sophia	2	130	10 YR	8.45	249.67	251.20	250.72	251.29	0.004077	1.35	6.26	6.99	0.46
Sophia	2	130	25 YR	12.41	249.67	251.39	250.94	251.53	0.005022	1.62	7.67	7.63	0.51
Sophia	2	130	50 YR	15.43	249.67	251.51	251.08	251.67	0.005708	1.80	8.58	8.01	0.55
Sophia	2	130	100 YR	18.68	249.67	251.62	251.20	251.82	0.006342	1.97	9.50	8.37	0.59
Sophia	2	116	10 YR	8.45	249.64	251.18		251.24	0.002568	1.08	7.87	12.23	0.38
Sophia	2	116	25 YR	12.41	249.64	251.39		251.46	0.002531	1.21	12.72	33.07	0.38
Sophia	2	116	50 YR	15.43	249.64	251.53		251.60	0.002231	1.21	18.76	50.29	0.36
Sophia	2	116	100 YR	18.68	249.64	251.68		251.73	0.001716	1.13	27.10	57.61	0.32
Sophia	2	78	10 YR	8.45	249.56	251.12		251.16	0.001561	0.93	9.57	13.03	0.30
Sophia	2	78	25 YR	12.41	249.56	251.32		251.38	0.001774	1.11	12.43	15.49	0.33
Sophia	2	78	50 YR	15.43	249.56	251.45		251.52	0.001878	1.21	14.62	19.71	0.34
Sophia	2	78	100 YR	18.68	249.56	251.58		251.66	0.001984	1.32	18.07	30.64	0.35
Sophia	2	57	10 YR	8.45	249.52	251.05		251.12	0.002290	1.14	7.47	7.65	0.36
Sophia	2	57	25 YR	12.41	249.52	251.22		251.32	0.003042	1.44	8.77	7.82	0.42
Sophia	2	57	50 YR	15.43	249.52	251.32		251.46	0.003596	1.64	9.59	7.93	0.46
Sophia	2	57	100 YR	18.68	249.52	251.42		251.59	0.004207	1.84	10.52	17.17	0.50
Sophia	2	42	10 YR	8.45	249.49	251.05		251.09	0.001028	0.84	10.34	9.58	0.25
Sophia	2	42	25 YR	12.41	249.49	251.22		251.28	0.001426	1.07	12.01	9.85	0.30
Sophia	2	42	50 YR	15.43	249.49	251.33		251.41	0.001718	1.23	13.09	10.02	0.33
Sophia	2	42	100 YR	18.68	249.49	251.43		251.53	0.002074	1.40	14.75	24.02	0.36
Sophia	2	20	10 YR	8.45	249.45	250.95		251.04	0.004542	1.34	6.34	9.12	0.49
Sophia	2	20	25 YR	12.41	249.45	251.07		251.22	0.005953	1.68	7.58	10.78	0.57
Sophia	2	20	50 YR	15.43	249.45	251.14		251.33	0.007206	1.93	8.33	11.68	0.64
Sophia	2	20	100 YR	18.68	249.45	251.18		251.43	0.009182	2.23	8.81	12.21	0.72
Sophia	2	0	10 YR	8.45	249.41	250.94		250.98	0.001168	0.93	11.73	21.21	0.28
Sophia	2	0	25 YR	12.41	249.41	251.08		251.14	0.001569	1.16	14.67	22.99	0.32
Sophia	2	0	50 YR	15.43	249.41	251.15		251.23	0.001895	1.32	16.51	27.72	0.36
Sophia	2	0	100 YR	18.68	249.41	251.20		251.30	0.002324	1.50	17.99	28.07	0.40
Sophia	5	253	10 YR	2.12	253.44	253.86		253.90	0.006519	1.02	3.51	21.79	0.54
Sophia	5	253	25 YR	3.97	253.44	254.02		254.04	0.003498	0.95	7.36	26.27	0.42
Sophia	5	253	50 YR	5.73	253.44	254.10		254.13	0.003366	1.04	9.76	28.45	0.42
Sophia	5	253	100 YR	7.10	253.44	254.16		254.19	0.003315	1.09	11.41	29.32	0.43
Sophia	5	227	10 YR	2.12	253.32	253.80		253.81	0.001843	0.59	5.65	24.04	0.29
Sophia	5	227	25 YR	3.97	253.32	253.98		253.99	0.001181	0.60	10.87	30.16	0.25
Sophia	5	227	50 YR	5.73	253.32	254.06		254.08	0.001332	0.70	13.43	30.72	0.27
Sophia	5	227	100 YR	7.10	253.32	254.12		254.13	0.001439	0.77	15.13	31.15	0.29
Sophia	5	204	10 YR	2.12	253.17	253.78		253.79	0.000466	0.37	8.80	26.37	0.16
Sophia	5	204	25 YR	3.97	253.17	253.97		253.97	0.000467	0.44	13.94	29.41	0.16
Sophia	5	204	50 YR	5.73	253.17	254.05		254.06	0.000626	0.55	16.35	30.53	0.19
Sophia	5	204	100 YR	7.10	253.17	254.10		254.11	0.000729	0.62	17.96	30.74	0.21
Sophia	5	182	10 YR	2.12	253.11	253.77	253.49	253.77	0.000670	0.44	8.24	25.18	0.19
Sophia	5	182	25 YR	3.97	253.11	253.95	253.59	253.96	0.000643	0.52	13.36	30.00	0.19
Sophia	5	182	50 YR	5.73	253.11	254.03	253.63	254.04	0.000776	0.61	16.67	32.92	0.21
Sophia	5	182	100 YR	7.10	253.11	254.08	253.68	254.09	0.000899	0.68	18.32	33.11	0.23
Sophia	5	163	10 YR	2.12	252.93	253.75	253.34	253.76	0.000686	0.52	6.61	22.01	0.20
Sophia	5	163	25 YR	3.97	252.93	253.93	253.51	253.95	0.000751	0.63	11.59	32.17	0.21
Sophia	5	163	50 YR	5.73	252.93	254.01	253.59	254.03	0.000749	0.66	17.58	44.41	0.22
Sophia	5	163	100 YR	7.10	252.93	254.06	253.70	254.08	0.000848	0.73	19.72	44.57	0.23
Sophia	5	143	10 YR	2.12	253.02	253.53	253.53	253.70	0.019217	1.90	1.26	4.28	0.94
Sophia	5	143	25 YR	3.97	253.02	253.79	253.79	253.90	0.008308	1.72	4.25	21.57	0.67
Sophia	5	143	50 YR	5.73	253.02	253.86	253.86	253.98	0.008749	1.89	6.16	31.97	0.70
Sophia	5	143	100 YR	7.10	253.02	253.91	253.91	254.03	0.008587	1.96	7.98	39.81	0.70
Sophia	5	130	10 YR	2.12	252.78	253.27	253.27	253.43	0.021443	1.77	1.26	4.59	0.96
Sophia	5	130	25 YR	3.97	252.78	253.46	253.46	253.65	0.016142	2.04	2.31	8.34	0.89
Sophia	5	130	50 YR	5.73	252.78	253.65	253.65	253.77	0.007785	1.75	5.76	24.68	0.65
Sophia	5	130	100 YR	7.10	252.78	253.69	253.69	253.83	0.008550	1.90	6.79	25.66	0.69
Sophia	5	102	10 YR	2.12	252.20	252.63		252.66	0.004364	0.82	2.61	7.38	0.44

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	5	102	25 YR	3.97	252.20	252.89		252.92	0.002735	0.84	4.72	8.93	0.37
Sophia	5	102	50 YR	5.73	252.20	253.14		253.17	0.001744	0.80	7.19	10.46	0.31
Sophia	5	102	100 YR	7.10	252.20	253.27		253.30	0.001653	0.83	8.54	11.21	0.30
Sophia	5	87	10 YR	2.12	251.90	252.62		252.63	0.000669	0.43	4.98	9.05	0.18
Sophia	5	87	25 YR	3.97	251.90	252.88		252.90	0.000731	0.53	7.52	10.60	0.20
Sophia	5	87	50 YR	5.73	251.90	253.14		253.15	0.000618	0.55	10.43	12.13	0.19
Sophia	5	87	100 YR	7.10	251.90	253.26		253.28	0.000645	0.59	11.99	12.88	0.20
Sophia	5	68	10 YR	2.12	251.80	252.61	252.09	252.62	0.000576	0.41	5.15	8.78	0.17
Sophia	5	68	25 YR	3.97	251.80	252.87	252.22	252.88	0.000682	0.52	7.61	10.32	0.19
Sophia	5	68	50 YR	5.73	251.80	253.13	252.32	253.14	0.000595	0.55	10.46	11.87	0.19
Sophia	5	68	100 YR	7.10	251.80	253.25	252.40	253.27	0.000630	0.59	11.99	12.61	0.19
Sophia	5	64	10 YR	2.12	251.78	252.61	252.08	252.62	0.000546	0.43	4.91	8.52	0.17
Sophia	5	64	25 YR	3.97	251.78	252.86	252.22	252.88	0.000642	0.58	6.80	10.03	0.20
Sophia	5	64	50 YR	5.73	251.78	253.11	252.33	253.14	0.000592	0.66	8.70	11.55	0.20
Sophia	5	64	100 YR	7.10	251.78	253.25	252.40	253.27	0.000673	0.61	11.66	12.35	0.20
Sophia	5	57		Culvert									
Sophia	5	40	10 YR	2.12	251.67	252.58	251.93	252.59	0.000239	0.31	6.76	10.32	0.12
Sophia	5	40	25 YR	3.97	251.67	252.76	252.05	252.78	0.000403	0.47	8.41	11.41	0.16
Sophia	5	40	50 YR	5.73	251.67	252.90	252.14	252.91	0.000542	0.60	9.60	12.20	0.18
Sophia	5	40	100 YR	7.10	251.67	253.00	252.21	253.02	0.000612	0.67	10.51	12.82	0.20
Sophia	5	37	10 YR	2.12	251.65	252.58		252.59	0.000258	0.30	6.99	10.30	0.12
Sophia	5	37	25 YR	3.97	251.65	252.76		252.77	0.000449	0.44	8.97	11.40	0.16
Sophia	5	37	50 YR	5.73	251.65	252.89		252.91	0.000603	0.54	10.52	12.19	0.19
Sophia	5	37	100 YR	7.10	251.65	253.00		253.01	0.000675	0.60	11.80	12.80	0.20
Sophia	3	389	10 YR	9.27	251.35	252.46	251.95	252.51	0.002125	0.97	9.52	11.89	0.35
Sophia	3	389	25 YR	12.53	251.35	252.63	252.07	252.69	0.002082	1.08	11.82	16.82	0.35
Sophia	3	389	50 YR	15.39	251.35	252.76	252.16	252.82	0.002044	1.16	14.23	21.81	0.36
Sophia	3	389	100 YR	17.95	251.35	252.85	252.24	252.93	0.002027	1.22	16.52	26.79	0.36
Sophia	3	355	10 YR	9.27	251.20	252.05	252.05	252.33	0.020542	2.34	3.96	7.21	1.01
Sophia	3	355	25 YR	12.53	251.20	252.19	252.19	252.50	0.019682	2.50	5.02	8.05	1.01
Sophia	3	355	50 YR	15.39	251.20	252.29	252.29	252.64	0.019183	2.61	5.90	8.68	1.01
Sophia	3	355	100 YR	17.95	251.20	252.40	252.38	252.75	0.017088	2.60	6.91	9.35	0.97
Sophia	3	350	10 YR	9.27	251.12	251.91	251.80	252.08	0.011166	1.86	4.97	8.75	0.76
Sophia	3	350	25 YR	12.53	251.12	252.13	251.92	252.30	0.007408	1.83	6.85	10.09	0.65
Sophia	3	350	50 YR	15.39	251.12	252.30	252.02	252.48	0.005928	1.86	8.29	11.10	0.60
Sophia	3	350	100 YR	17.95	251.12	252.44	252.10	252.62	0.005163	1.90	9.47	11.94	0.57
Sophia	3	340		Culvert									
Sophia	3	321	10 YR	9.27	250.78	251.79	251.48	251.89	0.004325	1.36	6.82	10.57	0.49
Sophia	3	321	25 YR	12.53	250.78	251.93	251.60	252.06	0.004702	1.55	8.06	11.11	0.52
Sophia	3	321	50 YR	15.39	250.78	252.04	251.69	252.19	0.005052	1.71	9.00	11.57	0.55
Sophia	3	321	100 YR	17.95	250.78	252.12	251.76	252.29	0.005434	1.84	9.74	12.05	0.58
Sophia	3	316	10 YR	9.27	250.77	251.76		251.86	0.005655	1.41	6.59	9.87	0.55
Sophia	3	316	25 YR	12.53	250.77	251.91		252.03	0.005921	1.55	8.09	10.85	0.57
Sophia	3	316	50 YR	15.39	250.77	252.01		252.15	0.006210	1.66	9.27	11.60	0.59
Sophia	3	316	100 YR	17.95	250.77	252.09		252.25	0.006454	1.75	10.25	12.18	0.61
Sophia	3	288	10 YR	9.27	250.53	251.65		251.72	0.004037	1.23	7.52	10.68	0.47
Sophia	3	288	25 YR	12.53	250.53	251.78		251.88	0.004328	1.39	9.03	11.23	0.49
Sophia	3	288	50 YR	15.39	250.53	251.88		252.00	0.004628	1.52	10.32	16.95	0.52
Sophia	3	288	100 YR	17.95	250.53	251.96		252.09	0.004839	1.61	11.75	21.19	0.54
Sophia	3	281	10 YR	9.27	250.62	251.61		251.69	0.004470	1.27	7.29	10.73	0.49
Sophia	3	281	25 YR	12.53	250.62	251.75		251.85	0.004957	1.42	8.84	11.92	0.53
Sophia	3	281	50 YR	15.39	250.62	251.84		251.96	0.005277	1.54	10.00	12.46	0.55
Sophia	3	281	100 YR	17.95	250.62	251.92		252.05	0.005614	1.64	10.93	12.95	0.57
Sophia	3	253	10 YR	9.27	250.23	251.54	251.01	251.59	0.002698	1.02	9.08	12.67	0.38
Sophia	3	253	25 YR	12.53	250.23	251.66	251.16	251.73	0.003173	1.17	10.73	13.76	0.42
Sophia	3	253	50 YR	15.39	250.23	251.75	251.26	251.84	0.003429	1.29	11.97	14.05	0.44
Sophia	3	253	100 YR	17.95	250.23	251.82	251.35	251.92	0.003669	1.39	12.94	15.14	0.46
Sophia	3	216	10 YR	9.27	250.17	251.47	250.90	251.51	0.001758	0.79	11.78	17.85	0.31
Sophia	3	216	25 YR	12.53	250.17	251.59	251.02	251.63	0.001947	0.90	13.97	18.73	0.33
Sophia	3	216	50 YR	15.39	250.17	251.68	251.11	251.73	0.002079	0.99	15.62	19.32	0.35
Sophia	3	216	100 YR	17.95	250.17	251.75	251.19	251.80	0.002153	1.05	17.95	31.97	0.36
Sophia	3	184	10 YR	9.27	250.02	251.43		251.46	0.001185	0.79	11.86	17.46	0.26
Sophia	3	184	25 YR	12.53	250.02	251.54		251.58	0.001470	0.94	14.16	24.80	0.30
Sophia	3	184	50 YR	15.39	250.02	251.61		251.67	0.001676	1.06	16.25	27.94	0.32
Sophia	3	184	100 YR	17.95	250.02	251.67		251.74	0.001855	1.15	18.03	31.10	0.34

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	3	151	10 YR	9.27	250.08	251.37		251.41	0.002083	0.89	10.44	14.87	0.34
Sophia	3	151	25 YR	12.53	250.08	251.45		251.51	0.002905	1.06	11.83	16.55	0.40
Sophia	3	151	50 YR	15.39	250.08	251.52		251.59	0.003316	1.19	13.00	20.58	0.43
Sophia	3	151	100 YR	17.95	250.08	251.56		251.65	0.003729	1.31	14.00	22.84	0.46
Sophia	3	113	10 YR	9.27	250.02	251.34	250.60	251.36	0.000663	0.61	16.27	26.70	0.20
Sophia	3	113	25 YR	12.53	250.02	251.42	250.70	251.45	0.000928	0.75	18.57	37.56	0.24
Sophia	3	113	50 YR	15.39	250.02	251.48	250.79	251.51	0.001127	0.86	21.27	50.56	0.27
Sophia	3	113	100 YR	17.95	250.02	251.52	250.85	251.56	0.001313	0.96	23.52	58.04	0.29
Sophia	3	102	10 YR	9.27	250.02	251.33	250.71	251.35	0.000951	0.70	14.72	37.44	0.24
Sophia	3	102	25 YR	12.53	250.02	251.40	250.83	251.43	0.001280	0.85	17.63	44.90	0.28
Sophia	3	102	50 YR	15.39	250.02	251.45	250.91	251.50	0.001525	0.96	20.69	64.14	0.31
Sophia	3	102	100 YR	17.95	250.02	251.50	250.96	251.54	0.001479	0.98	29.77	108.52	0.31
Sophia	3	79	10 YR	9.27	250.23	251.27	250.96	251.32	0.002515	0.93	12.65	45.65	0.37
Sophia	3	79	25 YR	12.53	250.23	251.33	251.05	251.39	0.003250	1.12	15.41	54.66	0.43
Sophia	3	79	50 YR	15.39	250.23	251.37	251.14	251.44	0.003705	1.25	18.15	64.45	0.46
Sophia	3	79	100 YR	17.95	250.23	251.42	251.22	251.49	0.003791	1.31	20.98	66.78	0.47
Sophia	3	47	10 YR	9.27	250.23	251.14	251.11	251.18	0.007651	1.22	14.40	81.87	0.60
Sophia	3	47	25 YR	12.53	250.23	251.19	251.14	251.23	0.007611	1.30	18.28	84.95	0.61
Sophia	3	47	50 YR	15.39	250.23	251.26	251.17	251.29	0.005183	1.18	24.52	89.48	0.51
Sophia	3	47	100 YR	17.95	250.23	251.32	251.19	251.35	0.003946	1.11	30.68	101.20	0.46
Sophia	3	40	10 YR	9.27	249.95	251.02	251.02	251.09	0.011672	1.49	10.98	56.55	0.71
Sophia	3	40	25 YR	12.53	249.95	251.14	251.06	251.18	0.005983	1.20	18.03	73.79	0.53
Sophia	3	40	50 YR	15.39	249.95	251.23	251.09	251.26	0.003932	1.08	25.21	90.16	0.44
Sophia	3	40	100 YR	17.95	249.95	251.30	251.10	251.33	0.002958	1.01	32.07	97.52	0.39
Sophia	3	35		Culvert									
Sophia	3	30	10 YR	9.27	249.82	251.03	250.90	251.05	0.002886	0.84	18.65	60.61	0.36
Sophia	3	30	25 YR	12.53	249.82	251.16	250.93	251.17	0.001935	0.79	26.61	67.50	0.30
Sophia	3	30	50 YR	15.39	249.82	251.24	250.95	251.25	0.001682	0.79	32.33	72.00	0.29
Sophia	3	30	100 YR	17.95	249.82	251.31	250.99	251.32	0.001521	0.80	37.73	81.65	0.28
Sophia	3	27	10 YR	9.27	249.88	251.03	250.82	251.05	0.001351	0.79	22.28	63.06	0.28
Sophia	3	27	25 YR	12.53	249.88	251.15	250.88	251.17	0.001093	0.78	30.42	67.47	0.25
Sophia	3	27	50 YR	15.39	249.88	251.23	250.92	251.25	0.001042	0.80	36.06	71.59	0.25
Sophia	3	27	100 YR	17.95	249.88	251.30	250.95	251.32	0.001002	0.82	41.22	78.41	0.25
Sophia	3	0	10 YR	9.27	249.73	250.95		250.99	0.002635	1.05	15.85	62.54	0.37
Sophia	3	0	25 YR	12.53	249.73	251.11		251.13	0.001635	0.88	25.89	70.47	0.30
Sophia	3	0	50 YR	15.39	249.73	251.19		251.22	0.001420	0.88	32.18	73.54	0.28
Sophia	3	0	100 YR	17.95	249.73	251.27		251.29	0.001287	0.88	37.71	82.68	0.27
Sophia	1	1640	10 YR	21.17	249.38	250.79		250.91	0.005109	1.76	20.23	56.37	0.56
Sophia	1	1640	25 YR	30.35	249.38	250.91		251.06	0.005763	2.01	27.76	69.87	0.60
Sophia	1	1640	50 YR	37.33	249.38	250.98	250.90	251.14	0.006136	2.17	33.11	77.16	0.63
Sophia	1	1640	100 YR	44.39	249.38	251.05		251.21	0.006192	2.26	38.71	82.20	0.64
Sophia	1	1623	10 YR	21.17	249.19	250.73	250.64	250.82	0.004643	1.62	23.90	71.57	0.52
Sophia	1	1623	25 YR	30.35	249.19	250.86	250.74	250.95	0.004442	1.73	34.11	81.72	0.52
Sophia	1	1623	50 YR	37.33	249.19	250.93		251.03	0.004551	1.82	40.30	86.36	0.53
Sophia	1	1623	100 YR	44.39	249.19	251.00		251.10	0.004775	1.93	46.05	92.85	0.55
Sophia	1	1604	10 YR	21.17	249.07	250.50	250.50	250.69	0.009704	2.17	16.09	49.61	0.74
Sophia	1	1604	25 YR	30.35	249.07	250.64	250.64	250.82	0.009696	2.31	23.65	63.76	0.75
Sophia	1	1604	50 YR	37.33	249.07	250.72	250.72	250.90	0.009568	2.40	28.94	69.29	0.75
Sophia	1	1604	100 YR	44.39	249.07	250.77	250.77	250.97	0.010094	2.53	32.57	69.95	0.77
Sophia	1	1597	10 YR	21.17	248.00	249.73	249.17	249.88	0.003832	1.70	12.42	10.48	0.49
Sophia	1	1597	25 YR	30.35	248.00	250.41	249.42	250.54	0.001858	1.58	19.15	40.56	0.36
Sophia	1	1597	50 YR	37.33	248.00	250.57	249.61	250.74	0.002166	1.80	20.71	60.44	0.40
Sophia	1	1597	100 YR	44.39	248.00	250.67	249.76	250.88	0.002627	2.05	21.68	70.44	0.44
Sophia	1	1584		Bridge									
Sophia	1	1571	10 YR	21.17	247.88	249.58	249.05	249.74	0.004409	1.75	12.10	10.30	0.52
Sophia	1	1571	25 YR	30.35	247.88	249.85	249.30	250.06	0.004833	2.02	15.06	12.83	0.55
Sophia	1	1571	50 YR	37.33	247.88	250.02	249.49	250.27	0.004977	2.21	16.90	20.06	0.57
Sophia	1	1571	100 YR	44.39	247.88	250.15	249.66	250.45	0.005302	2.41	18.40	32.36	0.60
Sophia	1	1563	10 YR	21.17	247.86	249.55		249.67	0.004484	1.52	13.90	15.51	0.51
Sophia	1	1563	25 YR	30.35	247.86	249.83		249.96	0.004722	1.61	18.83	20.57	0.53
Sophia	1	1563	50 YR	37.33	247.86	250.00		250.14	0.004307	1.66	22.74	23.69	0.52
Sophia	1	1563	100 YR	44.39	247.86	250.14		250.30	0.004013	1.73	26.23	28.53	0.51
Sophia	1	1549	10 YR	21.17	247.82	249.33		249.57	0.008456	2.22	10.05	14.83	0.70
Sophia	1	1549	25 YR	30.35	247.82	249.55	249.40	249.85	0.009037	2.50	13.58	17.03	0.74



HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	1	1549	50 YR	37.33	247.82	249.73		250.04	0.008118	2.58	16.79	19.07	0.72
Sophia	1	1549	100 YR	44.39	247.82	249.82	249.68	250.19	0.008727	2.81	18.70	20.07	0.75
Sophia	1	1531	10 YR	21.17	247.77	249.25		249.41	0.007059	1.77	11.96	15.14	0.64
Sophia	1	1531	25 YR	30.35	247.77	249.49		249.68	0.006739	1.92	15.83	17.17	0.64
Sophia	1	1531	50 YR	37.33	247.77	249.70		249.88	0.005562	1.90	19.75	19.99	0.59
Sophia	1	1531	100 YR	44.39	247.77	249.81		250.02	0.005752	2.04	21.98	21.29	0.61
Sophia	1	1508	10 YR	21.17	247.70	249.17	248.78	249.28	0.003321	1.52	16.88	26.10	0.46
Sophia	1	1508	25 YR	30.35	247.70	249.44	249.01	249.56	0.002824	1.62	24.56	30.56	0.44
Sophia	1	1508	50 YR	37.33	247.70	249.68	249.13	249.78	0.002215	1.59	31.97	32.98	0.40
Sophia	1	1508	100 YR	44.39	247.70	249.79	249.25	249.91	0.002353	1.72	35.80	34.28	0.42
Sophia	1	1496	10 YR	21.17	247.67	249.11		249.24	0.005157	1.56	13.54	16.26	0.55
Sophia	1	1496	25 YR	30.35	247.67	249.37		249.51	0.005057	1.68	18.07	19.24	0.55
Sophia	1	1496	50 YR	37.33	247.67	249.62		249.75	0.003963	1.61	23.67	26.87	0.50
Sophia	1	1496	100 YR	44.39	247.67	249.72		249.87	0.004530	1.72	26.74	30.01	0.53
Sophia	1	1490	10 YR	22.73	247.65	249.10	248.41	249.19	0.002660	1.35	16.82	13.86	0.39
Sophia	1	1490	25 YR	32.52	247.65	249.35	248.62	249.48	0.003035	1.60	20.38	16.83	0.43
Sophia	1	1490	50 YR	39.92	247.65	249.58	248.77	249.72	0.002902	1.68	23.81	20.08	0.43
Sophia	1	1490	100 YR	47.43	247.65	249.69	248.91	249.85	0.004047	1.74	27.27	21.89	0.50
Sophia	1	1473		Bridge									
Sophia	1	1455	10 YR	22.73	247.21	248.85	247.99	248.94	0.002006	1.31	17.34	10.78	0.33
Sophia	1	1455	25 YR	32.52	247.21	249.07	248.20	249.21	0.002795	1.65	19.71	10.83	0.39
Sophia	1	1455	50 YR	39.92	247.21	249.17	248.35	249.36	0.003589	1.92	20.79	10.86	0.44
Sophia	1	1455	100 YR	47.43	247.21	249.23	248.49	249.48	0.004617	2.21	21.45	10.87	0.50
Sophia	1	1449	10 YR	22.73	247.15	248.59	248.37	248.82	0.008831	2.15	10.59	12.11	0.72
Sophia	1	1449	25 YR	32.52	247.15	248.83	248.64	249.10	0.007788	2.33	15.73	23.49	0.70
Sophia	1	1449	50 YR	39.92	247.15	249.00		249.27	0.006866	2.39	19.90	25.92	0.67
Sophia	1	1449	100 YR	47.43	247.15	249.14		249.42	0.006404	2.47	23.53	26.42	0.66
Sophia	1	1432	10 YR	22.73	246.98	248.46		248.68	0.008061	2.08	10.95	11.83	0.69
Sophia	1	1432	25 YR	32.52	246.98	248.67	248.44	248.96	0.008208	2.39	14.22	19.05	0.72
Sophia	1	1432	50 YR	39.92	246.98	248.83	248.61	249.15	0.007572	2.51	17.95	26.37	0.71
Sophia	1	1432	100 YR	47.43	246.98	248.99	248.81	249.30	0.006868	2.57	22.11	28.37	0.68
Sophia	1	1423	10 YR	22.73	246.90	248.44		248.60	0.005121	1.80	13.01	14.49	0.56
Sophia	1	1423	25 YR	32.52	246.90	248.66		248.88	0.005467	2.11	16.48	18.42	0.60
Sophia	1	1423	50 YR	39.92	246.90	248.82		249.07	0.005363	2.27	19.72	22.36	0.61
Sophia	1	1423	100 YR	47.43	246.90	248.96		249.23	0.005302	2.40	23.13	25.67	0.61
Sophia	1	1410	10 YR	22.73	246.85	248.37		248.53	0.004828	1.77	13.38	16.03	0.55
Sophia	1	1410	25 YR	32.52	246.85	248.59		248.80	0.005180	2.07	17.41	22.74	0.59
Sophia	1	1410	50 YR	39.92	246.85	248.77		248.99	0.004764	2.17	21.75	26.36	0.57
Sophia	1	1410	100 YR	47.43	246.85	248.92		249.16	0.004470	2.25	26.01	28.27	0.57
Sophia	1	1395	10 YR	22.73	246.80	248.29		248.46	0.005175	1.81	13.05	15.93	0.57
Sophia	1	1395	25 YR	32.52	246.80	248.50		248.72	0.005515	2.11	16.61	17.76	0.60
Sophia	1	1395	50 YR	39.92	246.80	248.67		248.92	0.005290	2.25	19.72	19.50	0.60
Sophia	1	1395	100 YR	47.43	246.80	248.78		249.07	0.005722	2.46	22.04	23.00	0.64
Sophia	1	1381	10 YR	22.73	246.75	248.21		248.38	0.005327	1.82	13.26	17.96	0.57
Sophia	1	1381	25 YR	32.52	246.75	248.43		248.64	0.005467	2.09	17.46	20.89	0.60
Sophia	1	1381	50 YR	39.92	246.75	248.61		248.84	0.004910	2.18	21.44	22.70	0.58
Sophia	1	1381	100 YR	47.43	246.75	248.73		248.98	0.005126	2.34	24.16	23.88	0.60
Sophia	1	1366	10 YR	22.73	246.69	248.12		248.30	0.005960	1.87	13.26	20.05	0.60
Sophia	1	1366	25 YR	32.52	246.69	248.35		248.56	0.005646	2.10	18.32	25.02	0.61
Sophia	1	1366	50 YR	39.92	246.69	248.55		248.76	0.004665	2.11	24.02	31.38	0.57
Sophia	1	1366	100 YR	47.43	246.69	248.68		248.90	0.004596	2.22	28.24	34.37	0.57
Sophia	1	1351	10 YR	22.73	246.62	248.05		248.21	0.005269	1.80	14.71	27.62	0.57
Sophia	1	1351	25 YR	32.52	246.62	248.32		248.47	0.004075	1.85	22.83	31.68	0.52
Sophia	1	1351	50 YR	39.92	246.62	248.54		248.68	0.003073	1.79	30.26	35.40	0.47
Sophia	1	1351	100 YR	47.43	246.62	248.68		248.82	0.003014	1.88	35.33	39.54	0.47
Sophia	1	1336	10 YR	22.73	246.47	248.03		248.13	0.003081	1.48	18.98	27.43	0.45
Sophia	1	1336	25 YR	32.52	246.47	248.30		248.41	0.002683	1.60	26.84	30.85	0.43
Sophia	1	1336	50 YR	39.92	246.47	248.53		248.63	0.002175	1.59	34.17	34.94	0.40
Sophia	1	1336	100 YR	47.43	246.47	248.66		248.77	0.002227	1.69	38.93	38.22	0.41
Sophia	1	1321	10 YR	22.73	246.42	248.06		248.09	0.000816	0.91	33.44	30.10	0.24
Sophia	1	1321	25 YR	32.52	246.42	248.32		248.37	0.000878	1.05	41.61	31.24	0.26
Sophia	1	1321	50 YR	39.92	246.42	248.55		248.60	0.000886	1.15	48.92	35.67	0.26
Sophia	1	1321	100 YR	47.43	246.42	248.68		248.74	0.000995	1.27	53.77	38.68	0.28
Sophia	1	1306	10 YR	22.73	246.39	247.95		248.06	0.003021	1.51	17.56	22.04	0.44
Sophia	1	1306	25 YR	32.52	246.39	248.20		248.33	0.002941	1.69	23.32	23.90	0.45

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	1	1306	50 YR	39.92	246.39	248.43		248.57	0.002492	1.72	29.12	26.31	0.43
Sophia	1	1306	100 YR	47.43	246.39	248.55		248.70	0.002732	1.88	32.14	27.55	0.45
Sophia	1	1292	10 YR	22.73	246.36	247.92		248.01	0.002727	1.37	19.64	29.82	0.42
Sophia	1	1292	25 YR	32.52	246.36	248.19		248.29	0.002347	1.47	28.11	33.51	0.40
Sophia	1	1292	50 YR	39.92	246.36	248.44		248.52	0.001795	1.44	36.65	35.80	0.36
Sophia	1	1292	100 YR	47.43	246.36	248.55		248.65	0.001895	1.55	40.95	36.85	0.38
Sophia	1	1277	10 YR	22.73	246.34	247.87		247.97	0.002803	1.46	18.21	21.21	0.43
Sophia	1	1277	25 YR	32.52	246.34	248.12		248.25	0.002779	1.66	23.72	22.54	0.44
Sophia	1	1277	50 YR	39.92	246.34	248.37		248.49	0.002313	1.68	29.46	25.92	0.41
Sophia	1	1277	100 YR	47.43	246.34	248.46		248.62	0.002630	1.86	32.15	28.44	0.45
Sophia	1	1262	10 YR	22.73	246.31	247.75		247.91	0.005475	1.82	13.80	18.17	0.58
Sophia	1	1262	25 YR	32.52	246.31	248.00		248.19	0.004991	2.00	18.41	18.69	0.57
Sophia	1	1262	50 YR	39.92	246.31	248.27		248.44	0.003661	1.95	23.54	19.24	0.51
Sophia	1	1262	100 YR	47.43	246.31	248.33		248.56	0.004407	2.21	24.84	19.43	0.56
Sophia	1	1247	10 YR	22.73	246.12	247.63		247.82	0.006380	1.93	12.10	15.23	0.62
Sophia	1	1247	25 YR	32.52	246.12	247.86		248.10	0.006370	2.19	16.11	19.67	0.64
Sophia	1	1247	50 YR	39.92	246.12	248.20		248.39	0.003762	1.99	23.50	23.30	0.51
Sophia	1	1247	100 YR	47.43	246.12	248.24		248.49	0.004776	2.29	24.51	23.68	0.58
Sophia	1	1239	10 YR	22.73	246.00	247.61	246.83	247.72	0.002600	1.46	15.57	9.86	0.37
Sophia	1	1239	25 YR	32.52	246.00	247.83	247.06	248.00	0.003688	1.83	17.78	10.29	0.44
Sophia	1	1239	50 YR	39.92	246.00	248.17	247.21	248.35	0.003249	1.87	21.38	11.86	0.43
Sophia	1	1239	100 YR	47.43	246.00	248.20	247.36	248.44	0.004716	2.17	21.89	12.08	0.51
Sophia	1	1234		Bridge									
Sophia	1	1213	10 YR	22.73	245.64	246.91	246.91	247.33	0.016760	2.97	8.32	11.41	0.98
Sophia	1	1213	25 YR	32.52	245.64	247.14	247.14	247.66	0.016711	3.30	10.64	12.39	1.00
Sophia	1	1213	50 YR	39.92	245.64	247.32	247.32	247.88	0.016028	3.45	12.43	13.14	1.00
Sophia	1	1213	100 YR	47.43	245.64	247.52	247.52	247.99	0.013365	3.24	16.83	14.67	0.92
Sophia	1	1210	10 YR	22.73	245.50	246.72	246.71	247.07	0.016852	2.89	9.43	12.37	0.99
Sophia	1	1210	25 YR	32.52	245.50	246.92	246.92	247.36	0.017733	3.24	12.01	13.39	1.04
Sophia	1	1210	50 YR	39.92	245.50	247.06	247.06	247.55	0.017767	3.42	13.92	14.09	1.05
Sophia	1	1210	100 YR	47.43	245.50	247.19	247.19	247.72	0.017765	3.58	15.79	14.77	1.06
Sophia	1	1199	10 YR	22.73	245.25	246.79	246.42	246.91	0.003569	1.66	16.77	19.49	0.48
Sophia	1	1199	25 YR	32.52	245.25	247.02	246.61	247.17	0.003810	1.92	21.28	20.83	0.51
Sophia	1	1199	50 YR	39.92	245.25	247.15	246.73	247.34	0.004022	2.10	24.24	21.65	0.54
Sophia	1	1199	100 YR	47.43	245.25	247.27	246.84	247.49	0.004286	2.27	26.86	22.39	0.56
Sophia	1	1190	10 YR	22.73	245.10	246.44	246.44	246.83	0.015957	2.80	8.72	14.57	0.96
Sophia	1	1190	25 YR	32.52	245.10	246.71	246.71	247.10	0.011482	2.86	13.83	21.01	0.86
Sophia	1	1190	50 YR	39.92	245.10	246.84	246.84	247.26	0.011107	3.03	16.74	22.89	0.86
Sophia	1	1190	100 YR	47.43	245.10	246.97	246.97	247.41	0.010682	3.16	19.70	24.60	0.85
Sophia	1	1186	10 YR	23.47	244.69	246.18	245.76	246.35	0.004949	1.80	13.03	11.91	0.55
Sophia	1	1186	25 YR	33.55	244.69	246.75	245.99	246.89	0.002580	1.67	20.14	13.66	0.42
Sophia	1	1186	50 YR	41.32	244.69	246.59	246.15	246.86	0.005540	2.28	18.15	13.19	0.61
Sophia	1	1186	100 YR	49.11	244.69	246.84	246.31	247.11	0.004579	2.30	21.32	14.24	0.57
Sophia	1	1179		Bridge									
Sophia	1	1105	10 YR	23.47	244.28	245.64	245.35	245.85	0.007051	2.04	11.49	11.38	0.65
Sophia	1	1105	25 YR	33.55	244.28	246.02	245.59	246.24	0.005265	2.10	16.03	17.59	0.58
Sophia	1	1105	50 YR	41.32	244.28	246.21	245.75	246.47	0.005060	2.25	18.45	21.23	0.59
Sophia	1	1105	100 YR	49.11	244.28	246.21	245.88	246.58	0.007152	2.67	18.45	21.22	0.70
Sophia	1	1099	10 YR	23.47	244.28	245.42		245.76	0.013822	2.58	9.09	10.56	0.89
Sophia	1	1099	25 YR	33.55	244.28	245.97		246.21	0.006347	2.17	15.48	12.89	0.63
Sophia	1	1099	50 YR	41.32	244.28	246.18		246.44	0.005590	2.26	18.66	15.72	0.61
Sophia	1	1099	100 YR	49.11	244.28	246.02	245.89	246.49	0.012110	3.06	16.10	14.94	0.88
Sophia	1	1091	10 YR	25.20	244.09	245.36		245.66	0.010479	2.40	10.51	11.03	0.78
Sophia	1	1091	25 YR	35.95	244.09	245.95		246.16	0.004628	2.02	18.52	20.74	0.55
Sophia	1	1091	50 YR	44.31	244.09	246.17		246.39	0.004072	2.09	23.29	22.31	0.53
Sophia	1	1091	100 YR	52.44	244.09	245.96	245.75	246.39	0.009747	2.94	18.60	20.77	0.80
Sophia	1	1080	10 YR	25.20	243.86	245.24	244.98	245.48	0.007621	2.17	11.62	11.00	0.67
Sophia	1	1080	25 YR	35.95	243.86	245.91	245.21	246.07	0.003085	1.81	22.25	23.38	0.45
Sophia	1	1080	50 YR	44.31	243.86	246.14	245.37	246.31	0.002886	1.88	27.68	24.08	0.44
Sophia	1	1080	100 YR	52.44	243.86	245.82	245.51	246.22	0.008007	2.82	20.21	23.10	0.71
Sophia	1	1065		Bridge									
Sophia	1	1050	10 YR	25.20	243.20	244.37	244.31	244.77	0.015339	2.78	9.06	9.68	0.92
Sophia	1	1050	25 YR	35.95	243.20	244.76	244.58	245.15	0.011138	2.76	13.02	10.74	0.80
Sophia	1	1050	50 YR	44.31	243.20	245.10	244.75	245.46	0.007928	2.64	16.83	11.93	0.69

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	1	1050	100 YR	52.44	243.20	245.37	244.91	245.72	0.006559	2.65	20.16	12.94	0.64
Sophia	1	1040	10 YR	25.20	242.90	244.38		244.58	0.005833	1.95	12.93	11.88	0.60
Sophia	1	1040	25 YR	35.95	242.90	244.79		244.99	0.004404	1.99	18.22	15.04	0.54
Sophia	1	1040	50 YR	44.31	242.90	245.14		245.32	0.003102	1.94	24.13	18.94	0.47
Sophia	1	1040	100 YR	52.44	242.90	245.41		245.60	0.002559	1.94	29.80	22.04	0.44
Sophia	1	1020	10 YR	25.20	242.80	244.29	243.90	244.45	0.005183	1.78	14.16	13.94	0.56
Sophia	1	1020	25 YR	35.95	242.80	244.74	244.13	244.89	0.003242	1.74	20.81	16.87	0.47
Sophia	1	1020	50 YR	44.31	242.80	245.11	244.29	245.25	0.002228	1.68	26.71	19.40	0.40
Sophia	1	1020	100 YR	52.44	242.80	245.39	244.42	245.54	0.001888	1.71	31.22	21.32	0.38
Sophia	1	1010		Bridge									
Sophia	1	1000	10 YR	25.20	242.70	243.81	243.81	244.23	0.017637	2.87	8.78	10.45	1.00
Sophia	1	1000	25 YR	35.95	242.70	244.05	244.05	244.56	0.016849	3.15	11.42	11.35	1.00
Sophia	1	1000	50 YR	44.31	242.70	244.22	244.22	244.78	0.016586	3.32	13.33	12.03	1.01
Sophia	1	1000	100 YR	52.44	242.70	244.37	244.37	244.98	0.015705	3.45	15.20	12.79	1.00
Sophia	1	990	10 YR	25.20	241.95	243.11	243.06	243.49	0.014999	2.72	9.28	10.62	0.93
Sophia	1	990	25 YR	35.95	241.95	243.35	243.30	243.81	0.015006	3.02	11.90	11.53	0.95
Sophia	1	990	50 YR	44.31	241.95	243.51	243.47	244.03	0.014948	3.20	13.85	12.24	0.96
Sophia	1	990	100 YR	52.44	241.95	243.66	243.61	244.23	0.014972	3.35	15.67	13.27	0.97
Sophia	1	980	10 YR	25.20	241.80	242.96	242.91	243.34	0.014999	2.72	9.28	10.62	0.93
Sophia	1	980	25 YR	35.95	241.80	243.20	243.15	243.66	0.015011	3.02	11.90	11.52	0.95
Sophia	1	980	50 YR	44.31	241.80	243.36	243.32	243.88	0.014920	3.20	13.86	12.24	0.96
Sophia	1	980	100 YR	52.44	241.80	243.51	243.46	244.08	0.014952	3.35	15.68	13.31	0.97
Sophia	1	960	10 YR	25.20	241.50	242.66	242.61	243.04	0.014926	2.71	9.29	10.62	0.93
Sophia	1	960	25 YR	35.95	241.50	242.92	242.85	243.37	0.013894	2.94	12.23	11.64	0.92
Sophia	1	960	50 YR	44.31	241.50	243.10	243.02	243.59	0.013551	3.09	14.36	12.44	0.92
Sophia	1	960	100 YR	52.44	241.50	243.22	243.16	243.78	0.014231	3.30	15.93	14.48	0.95
Sophia	1	940	10 YR	25.20	241.20	242.45		242.76	0.011323	2.46	10.23	10.94	0.81
Sophia	1	940	25 YR	35.95	241.20	242.76		243.10	0.009941	2.61	13.80	12.22	0.78
Sophia	1	940	50 YR	44.31	241.20	242.95	242.72	243.33	0.009447	2.72	16.40	18.74	0.78
Sophia	1	940	100 YR	52.44	241.20	243.12	242.86	243.51	0.008306	2.78	20.55	25.34	0.74
Sophia	1	920	10 YR	25.20	240.90	242.21		242.53	0.011451	2.51	10.06	10.52	0.82
Sophia	1	920	25 YR	35.95	240.90	242.35	242.32	242.84	0.015771	3.11	11.56	11.09	0.97
Sophia	1	920	50 YR	44.31	240.90	242.49	242.49	243.06	0.016537	3.35	13.24	11.76	1.01
Sophia	1	920	100 YR	52.44	240.90	242.64	242.64	243.26	0.016177	3.48	15.10	13.86	1.01
Sophia	1	913	10 YR	25.20	240.80	242.16	242.01	242.44	0.011057	2.31	10.91	12.82	0.80
Sophia	1	913	25 YR	35.95	240.80	242.30	242.26	242.71	0.015206	2.82	12.77	14.20	0.95
Sophia	1	913	50 YR	44.31	240.80	242.43	242.42	242.90	0.015188	3.03	14.97	23.47	0.96
Sophia	1	913	100 YR	52.44	240.80	242.57	242.57	243.06	0.013981	3.11	18.41	25.63	0.94
Sophia	1	909	10 YR	25.20	240.80	241.99	241.99	242.37	0.018248	2.72	9.26	12.39	1.01
Sophia	1	909	25 YR	35.95	240.80	242.24	242.24	242.65	0.015775	2.84	13.28	22.50	0.96
Sophia	1	909	50 YR	44.31	240.80	242.38	242.38	242.82	0.014421	2.97	16.69	24.82	0.94
Sophia	1	909	100 YR	52.44	240.80	242.50	242.50	242.97	0.013770	3.10	19.77	26.31	0.93
Sophia	1	895	10 YR	25.20	240.40	241.82		242.09	0.010612	2.31	11.03	14.50	0.79
Sophia	1	895	25 YR	35.95	240.40	242.02	241.89	242.37	0.011048	2.64	14.72	21.98	0.82
Sophia	1	895	50 YR	44.31	240.40	242.10	242.08	242.55	0.012960	2.98	16.66	23.60	0.90
Sophia	1	895	100 YR	52.44	240.40	242.21	242.21	242.71	0.013264	3.17	19.37	25.89	0.92
Sophia	1	880	10 YR	25.20	240.30	241.52	241.48	241.88	0.016147	2.68	9.41	11.82	0.96
Sophia	1	880	25 YR	35.95	240.30	241.76	241.76	242.17	0.015315	2.83	13.32	24.92	0.95
Sophia	1	880	50 YR	44.31	240.30	241.91	241.91	242.34	0.013940	2.95	17.10	27.14	0.93
Sophia	1	880	100 YR	52.44	240.30	242.03	242.03	242.49	0.013257	3.07	20.49	28.89	0.92
Sophia	1	865	10 YR	25.20	240.00	241.30	241.24	241.65	0.014439	2.63	9.63	12.71	0.91
Sophia	1	865	25 YR	35.95	240.00	241.53	241.53	241.94	0.013102	2.87	14.81	26.30	0.90
Sophia	1	865	50 YR	44.31	240.00	241.68	241.68	242.11	0.012242	3.00	18.98	28.42	0.88
Sophia	1	865	100 YR	52.44	240.00	241.83	241.79	242.26	0.011023	3.04	23.32	29.28	0.85
Sophia	1	850	10 YR	25.20	239.60	241.24		241.47	0.007111	2.14	13.02	19.62	0.66
Sophia	1	850	25 YR	35.95	239.60	241.37	241.24	241.72	0.010050	2.68	15.67	22.33	0.80
Sophia	1	850	50 YR	44.31	239.60	241.45	241.43	241.90	0.012146	3.04	17.61	23.60	0.88
Sophia	1	850	100 YR	52.44	239.60	241.55	241.55	242.07	0.012755	3.26	20.18	27.19	0.91
Sophia	1	826	10 YR	25.20	239.40	241.27	240.90	241.31	0.001939	1.12	44.61	54.77	0.34
Sophia	1	826	25 YR	35.95	239.40	241.45	240.94	241.50	0.002300	1.25	54.74	57.13	0.38
Sophia	1	826	50 YR	44.31	239.40	241.59	241.02	241.64	0.002356	1.33	62.67	62.06	0.39
Sophia	1	826	100 YR	52.44	239.40	241.70	241.09	241.76	0.002398	1.43	69.98	66.31	0.40
Sophia	1	808	10 YR	25.20	238.95	241.23		241.28	0.001543	1.14	44.29	65.52	0.32
Sophia	1	808	25 YR	35.95	238.95	241.39		241.46	0.001921	1.34	55.93	72.44	0.36
Sophia	1	808	50 YR	44.31	238.95	241.53		241.60	0.001971	1.41	65.92	74.10	0.36

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	1	808	100 YR	52.44	238.95	241.65		241.71	0.002026	1.47	74.62	75.42	0.37
Sophia	1	791	10 YR	25.20	238.80	241.17		241.24	0.001936	1.36	36.00	54.55	0.36
Sophia	1	791	25 YR	35.95	238.80	241.31		241.41	0.002672	1.66	44.02	59.52	0.42
Sophia	1	791	50 YR	44.31	238.80	241.44		241.55	0.002884	1.78	51.80	62.39	0.44
Sophia	1	791	100 YR	52.44	238.80	241.55		241.67	0.003042	1.88	58.76	64.10	0.46
Sophia	1	767	10 YR	25.20	238.50	241.16		241.21	0.000819	1.08	43.45	52.09	0.25
Sophia	1	767	25 YR	35.95	238.50	241.29		241.37	0.001266	1.40	50.89	61.36	0.31
Sophia	1	767	50 YR	44.31	238.50	241.41		241.50	0.001482	1.58	58.29	64.52	0.34
Sophia	1	767	100 YR	52.44	238.50	241.51		241.62	0.001673	1.72	64.91	66.77	0.36
Sophia	1	751	10 YR	25.20	238.30	241.17	239.80	241.19	0.000350	0.77	60.98	47.00	0.17
Sophia	1	751	25 YR	35.95	238.30	241.30	240.04	241.34	0.000593	1.04	68.06	61.68	0.22
Sophia	1	751	50 YR	44.31	238.30	241.42	240.23	241.47	0.000724	1.19	75.68	66.55	0.24
Sophia	1	751	100 YR	52.44	238.30	241.52	240.34	241.58	0.000841	1.31	82.56	68.83	0.26
Sophia	1	736	10 YR	25.20	238.05	241.17		241.19	0.000323	0.82	67.12	41.02	0.16
Sophia	1	736	25 YR	35.95	238.05	241.30		241.33	0.000556	1.11	72.89	46.16	0.21
Sophia	1	736	50 YR	44.31	238.05	241.41		241.46	0.000715	1.29	78.28	49.40	0.24
Sophia	1	736	100 YR	52.44	238.05	241.51		241.57	0.000855	1.44	83.19	49.54	0.27
Sophia	1	721	10 YR	25.20	237.90	241.17		241.18	0.000181	0.59	78.26	51.76	0.12
Sophia	1	721	25 YR	35.95	237.90	241.30		241.32	0.000299	0.78	85.20	53.94	0.16
Sophia	1	721	50 YR	44.31	237.90	241.42		241.45	0.000386	0.92	91.79	61.25	0.18
Sophia	1	721	100 YR	52.44	237.90	241.52		241.55	0.000474	1.04	98.38	71.18	0.20
Sophia	1	706	10 YR	25.20	237.75	241.17		241.18	0.000136	0.60	83.04	60.58	0.11
Sophia	1	706	25 YR	35.95	237.75	241.29		241.32	0.000230	0.81	91.02	62.19	0.14
Sophia	1	706	50 YR	44.31	237.75	241.41		241.44	0.000297	0.94	98.25	62.51	0.16
Sophia	1	706	100 YR	52.44	237.75	241.51		241.55	0.000363	1.06	104.44	62.70	0.18
Sophia	1	690	10 YR	25.20	237.45	241.16		241.18	0.000140	0.53	65.42	66.66	0.11
Sophia	1	690	25 YR	35.95	237.45	241.29		241.31	0.000234	0.71	74.22	71.02	0.14
Sophia	1	690	50 YR	44.31	237.45	241.41		241.44	0.000297	0.82	82.56	74.16	0.16
Sophia	1	690	100 YR	52.44	237.45	241.50		241.54	0.000359	0.93	89.95	76.56	0.17
Sophia	1	680	10 YR	15.20	237.30	241.17		241.17	0.000104	0.43	51.43	65.10	0.08
Sophia	1	680	25 YR	22.95	237.30	241.29		241.31	0.000191	0.60	60.14	68.91	0.11
Sophia	1	680	50 YR	31.31	237.30	241.41		241.43	0.000293	0.76	67.92	69.19	0.14
Sophia	1	680	100 YR	39.44	237.30	241.50		241.54	0.000397	0.91	74.54	69.38	0.17
Sophia	1	671.2	10 YR	15.20	240.60	241.01	241.01	241.16	0.002139	1.92	14.66	57.75	0.97
Sophia	1	671.2	25 YR	22.95	240.60	241.11	241.11	241.29	0.001994	2.16	20.94	63.56	0.98
Sophia	1	671.2	50 YR	31.31	240.60	241.20	241.20	241.41	0.002024	2.41	26.35	66.06	1.01
Sophia	1	671.2	100 YR	39.44	240.60	241.27	241.27	241.51	0.002002	2.60	31.41	68.15	1.02
Sophia	1	644.1	10 YR	15.20	239.61	240.26	240.26	240.55	0.002609	2.61	8.43	15.81	1.12
Sophia	1	644.1	25 YR	22.95	239.61	240.44	240.44	240.81	0.002390	3.00	11.23	16.36	1.13
Sophia	1	644.1	50 YR	31.31	239.61	240.61	240.61	241.07	0.002148	3.29	14.19	16.99	1.11
Sophia	1	644.1	100 YR	39.44	239.61	240.76	240.76	241.29	0.002038	3.55	16.77	17.39	1.11
Sophia	1	612.2	10 YR	15.20	238.57	239.12	239.12	239.38	0.002715	2.55	9.54	19.62	1.13
Sophia	1	612.2	25 YR	22.95	238.57	239.28	239.28	239.61	0.002503	2.93	12.70	20.10	1.14
Sophia	1	612.2	50 YR	31.31	238.57	239.43	239.43	239.84	0.002352	3.25	15.79	20.56	1.14
Sophia	1	612.2	100 YR	39.44	238.57	239.57	239.57	240.04	0.002219	3.50	18.65	20.97	1.14
Sophia	1	585.2	10 YR	15.20	238.04	238.69	238.69	238.96	0.002501	2.56	8.73	17.00	1.10
Sophia	1	585.2	25 YR	22.95	238.04	238.86	238.86	239.22	0.002295	2.94	11.70	17.50	1.10
Sophia	1	585.2	50 YR	31.31	238.04	238.99	238.99	239.47	0.002471	3.40	13.97	17.87	1.17
Sophia	1	585.2	100 YR	39.44	238.04	239.20	239.20	239.70	0.001927	3.47	18.28	23.23	1.07
Sophia	1	559.7	10 YR	15.20	237.69	238.36	238.36	238.63	0.002187	2.48	9.09	18.53	1.04
Sophia	1	559.7	25 YR	22.95	237.69	238.50	238.50	238.88	0.002407	2.99	11.66	19.28	1.13
Sophia	1	559.7	50 YR	31.31	237.69	238.71	238.71	239.11	0.001794	3.08	16.38	22.46	1.02
Sophia	1	559.7	100 YR	39.44	237.69	238.84	238.84	239.30	0.001791	3.35	19.28	22.46	1.04
Sophia	1	545		Lat Struct									
Sophia	1	527.4	10 YR	15.20	237.10	237.67	237.67	237.88	0.002405	2.38	11.82	28.80	1.07
Sophia	1	527.4	25 YR	22.95	237.10	237.80	237.80	238.08	0.002405	2.77	15.54	28.80	1.11
Sophia	1	527.4	50 YR	31.31	237.10	237.93	237.93	238.26	0.002377	3.10	19.10	28.80	1.13
Sophia	1	527.4	100 YR	39.44	237.10	238.04	238.04	238.43	0.002337	3.36	22.28	28.80	1.15
Sophia	1	497.9	10 YR	15.20	236.32	236.53	236.53	236.70	0.015928	2.15	8.33	28.96	2.11
Sophia	1	497.9	25 YR	22.95	236.32	236.61	236.61	236.88	0.015946	3.16	10.85	31.12	2.32
Sophia	1	497.9	50 YR	31.31	236.32	236.73	236.73	237.06	0.010771	3.63	14.88	35.28	2.08
Sophia	1	497.9	100 YR	39.44	236.32	236.87	236.87	237.22	0.006849	3.70	20.16	39.18	1.76
Sophia	1	464.6	10 YR	15.20	236.05	236.09	236.09	236.20	0.009017	0.46	10.27	21.13	1.16
Sophia	1	464.6	25 YR	22.95	236.05	236.18	236.09	236.35	0.011142	1.12	12.71	32.57	1.57
Sophia	1	464.6	50 YR	31.31	236.05	236.27	236.27	236.46	0.011720	2.13	16.09	44.77	1.88

HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sophia	1	464.6	100 YR	39.44	236.05	236.32	236.32	236.56	0.013282	2.80	18.29	45.61	2.11
Sophia	1	403.8	10 YR	15.20	235.78	235.35	235.35	235.44	0.018014		11.77	62.61	0.00
Sophia	1	403.8	25 YR	22.95	235.78	235.43	235.41	235.52	0.016221		17.15	79.01	0.00
Sophia	1	403.8	50 YR	31.31	235.78	235.52	235.52	235.60	0.011172		25.11	86.87	0.00
Sophia	1	403.8	100 YR	39.44	235.78	235.60	235.60	235.68	0.008942		32.06	92.70	0.00
Sophia	1	350.2	10 YR	15.20	234.42	235.05	235.05	235.17	0.001843	1.83	17.73	88.89	0.90
Sophia	1	350.2	25 YR	22.95	234.42	235.13	235.13	235.28	0.001909	2.10	25.33	94.49	0.95
Sophia	1	350.2	50 YR	31.31	234.42	235.21	235.21	235.38	0.001963	2.33	32.47	99.05	0.98
Sophia	1	350.2	100 YR	39.44	234.42	235.27	235.27	235.47	0.002005	2.53	38.76	102.90	1.01
Sophia	1	323.2	10 YR	15.20	234.04	234.48	234.48	234.62	0.003027	2.04	16.16	69.84	1.12
Sophia	1	323.2	25 YR	22.95	234.04	234.60	234.60	234.76	0.002408	2.22	26.52	107.64	1.05
Sophia	1	323.2	50 YR	31.31	234.04	234.71	234.71	234.85	0.001816	2.21	39.31	126.30	0.94
Sophia	1	323.2	100 YR	39.44	234.04	234.75	234.75	234.91	0.002099	2.48	44.16	126.34	1.02
Sophia	1	298.6	10 YR	15.20	233.66	234.13	234.13	234.24	0.001915	1.82	19.83	100.52	0.92
Sophia	1	298.6	25 YR	22.95	233.66	234.22	234.22	234.35	0.001813	2.02	29.27	119.27	0.92
Sophia	1	298.6	50 YR	31.31	233.66	234.28	234.28	234.43	0.001995	2.29	36.22	123.95	0.99
Sophia	1	298.6	100 YR	39.44	233.66	234.34	234.34	234.50	0.001996	2.45	43.13	124.34	1.00
Sophia	1	263	10 YR	15.20	233.18	233.54	233.54	233.64	0.003179	1.88	20.03	112.53	1.12
Sophia	1	263	25 YR	22.95	233.18	233.77	233.77	233.81	0.000704	1.31	47.14	122.52	0.58
Sophia	1	263	50 YR	31.31	233.18	233.89	233.89	233.93	0.000567	1.35	62.17	124.92	0.54
Sophia	1	263	100 YR	39.44	233.18	233.99	233.99	234.03	0.000530	1.43	73.96	126.76	0.53
Sophia	1	229	10 YR	15.20	232.72	233.57	233.57	233.58	0.000113	0.67	56.55	125.05	0.25
Sophia	1	229	25 YR	22.95	232.72	233.78	233.78	233.79	0.000093	0.72	84.88	141.54	0.23
Sophia	1	229	50 YR	31.31	232.72	233.90	233.90	233.92	0.000107	0.83	102.72	157.00	0.26
Sophia	1	229	100 YR	39.44	232.72	234.00	234.00	234.02	0.000119	0.93	117.61	160.40	0.27
Sophia	1	196.3	10 YR	15.20	232.67	233.32	233.32	233.55	0.001780	2.25	9.85	27.77	0.94
Sophia	1	196.3	25 YR	22.95	232.67	233.49	233.49	233.76	0.001601	2.51	14.95	34.24	0.93
Sophia	1	196.3	50 YR	31.31	232.67	233.69	233.69	233.89	0.001002	2.33	33.36	111.08	0.76
Sophia	1	196.3	100 YR	39.44	232.67	233.77	233.77	233.99	0.001047	2.51	42.07	111.08	0.79
Sophia	1	173	10 YR	15.20	231.82	232.49	232.49	232.77	0.002168	2.46	8.35	17.57	1.04
Sophia	1	173	25 YR	22.95	231.82	232.67	232.67	233.02	0.001902	2.77	11.75	19.75	1.02
Sophia	1	173	50 YR	31.31	231.82	232.84	232.84	233.25	0.001750	3.04	15.30	22.20	1.01
Sophia	1	173	100 YR	39.44	231.82	233.01	233.01	233.45	0.001541	3.19	19.22	24.61	0.97
Sophia	1	134.4	10 YR	15.20	230.30	230.92	230.92	231.17	0.001888	2.32	8.81	20.27	0.97
Sophia	1	134.4	25 YR	22.95	230.30	231.08	231.08	231.40	0.001807	2.67	12.07	20.27	0.98
Sophia	1	134.4	50 YR	31.31	230.30	231.23	231.23	231.62	0.001777	2.98	15.06	20.27	1.01
Sophia	1	134.4	100 YR	39.44	230.30	231.35	231.35	231.82	0.001758	3.24	17.67	20.27	1.02
Sophia	1	109.4	10 YR	15.20	229.32	229.95	229.95	230.18	0.001987	2.31	9.74	21.64	0.99
Sophia	1	109.4	25 YR	22.95	229.32	230.10	230.10	230.41	0.001924	2.67	13.13	26.47	1.01
Sophia	1	109.4	50 YR	31.31	229.32	230.26	230.26	230.61	0.001754	2.90	17.79	32.50	1.00
Sophia	1	109.4	100 YR	39.44	229.32	230.39	230.39	230.78	0.001672	3.11	22.18	36.33	0.99
Sophia	1	69.9	10 YR	15.20	227.68	227.71	227.70	227.80	0.024303	0.74	11.20	55.76	1.90
Sophia	1	69.9	25 YR	22.95	227.68	227.77	227.77	227.89	0.021585	1.32	15.02	63.15	2.10
Sophia	1	69.9	50 YR	31.31	227.68	227.83	227.83	227.97	0.019820	1.87	18.72	69.87	2.22
Sophia	1	69.9	100 YR	39.44	227.68	227.87	227.87	228.04	0.019809	2.49	21.58	74.62	2.38
Sophia	1	49.2	10 YR	15.20	227.16	227.15	227.15	227.27	0.028056		10.11	54.18	0.00
Sophia	1	49.2	25 YR	22.95	227.16	227.25	227.25	227.36	0.019837	1.30	15.24	76.74	2.03
Sophia	1	49.2	50 YR	31.31	227.16	227.31	227.31	227.44	0.018514	1.83	19.54	87.00	2.16
Sophia	1	49.2	100 YR	39.44	227.16	227.34	227.34	227.51	0.021424	2.45	21.67	88.37	2.45
Sophia	1	31.4	10 YR	15.20	226.53	226.86	226.86	226.98	0.004573	2.09	16.10	72.60	1.32
Sophia	1	31.4	25 YR	22.95	226.53	226.94	226.94	227.09	0.004147	2.38	22.12	79.85	1.32
Sophia	1	31.4	50 YR	31.31	226.53	227.02	227.02	227.20	0.003617	2.57	28.85	86.66	1.27
Sophia	1	31.4	100 YR	39.44	226.53	227.16	227.08	227.30	0.001943	2.30	42.12	95.52	0.98
Sophia	1	0	10 YR	15.20	225.95	226.48	226.45	226.66	0.002048	2.04	10.44	24.79	0.97
Sophia	1	0	25 YR	22.95	225.95	226.60	226.58	226.85	0.002048	2.40	13.55	24.79	1.01
Sophia	1	0	50 YR	31.31	225.95	226.72	226.70	227.04	0.002048	2.72	16.47	24.79	1.04
Sophia	1	0	100 YR	39.44	225.95	226.82	226.81	227.21	0.002047	2.99	19.11	26.42	1.07
Owen Street	1	504.1	10 YR	0.05	237.52	237.58	237.58	237.59	0.006356	0.52	0.12	5.58	1.05
Owen Street	1	504.1	25 YR	0.12	237.52	237.60	237.60	237.62	0.009172	0.73	0.21	7.66	1.31
Owen Street	1	504.1	50 YR	0.17	237.52	237.63	237.63	237.64	0.001603	0.40	0.54	11.55	0.59
Owen Street	1	504.1	100 YR	0.17	237.52	237.63	237.63	237.64	0.001603	0.40	0.54	11.55	0.59
Owen Street	1	480.5	10 YR	0.05	237.14	237.08	237.08	237.12	0.047605		0.06	0.92	0.00
Owen Street	1	480.5	25 YR	0.12	237.14	237.14	237.14	237.19	0.036755	0.28	0.13	1.47	1.73
Owen Street	1	480.5	50 YR	0.17	237.14	237.18	237.18	237.21	0.022495	0.85	0.20	2.60	1.90
Owen Street	1	480.5	100 YR	0.17	237.14	237.18	237.18	237.21	0.022495	0.85	0.20	2.60	1.90

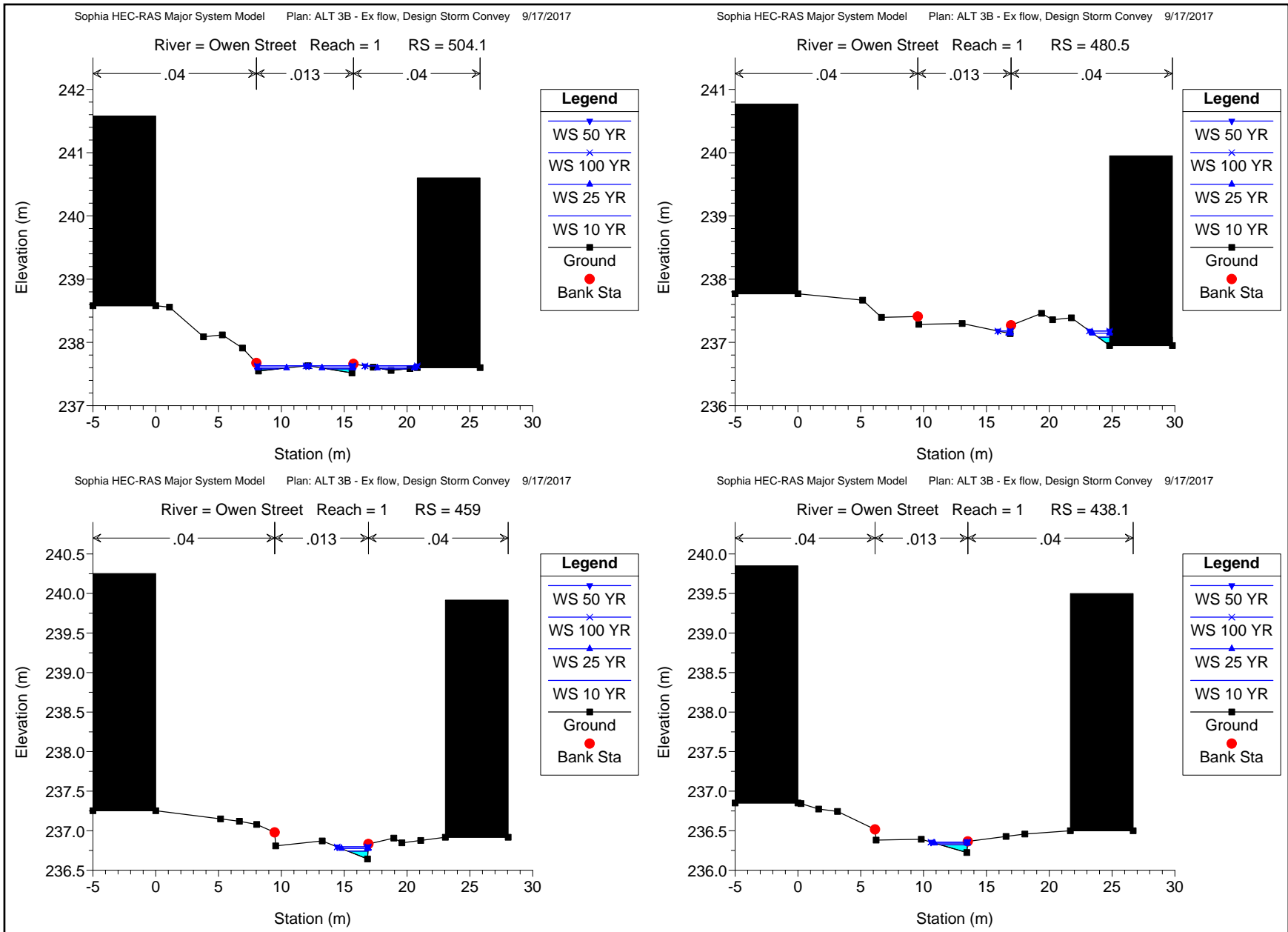
HEC-RAS Plan: PR03 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Owen Street	1	459	10 YR	0.05	236.64	236.74	236.74	236.76	0.003816	0.63	0.08	1.61	0.89
Owen Street	1	459	25 YR	0.12	236.64	236.77	236.77	236.81	0.004966	0.86	0.14	2.12	1.07
Owen Street	1	459	50 YR	0.17	236.64	236.80	236.80	236.83	0.004171	0.87	0.19	2.47	1.00
Owen Street	1	459	100 YR	0.17	236.64	236.80	236.80	236.83	0.004171	0.87	0.19	2.47	1.00
Owen Street	1	438.1	10 YR	0.05	236.22	236.32	236.32	236.33	0.002017	0.46	0.11	2.20	0.66
Owen Street	1	438.1	25 YR	0.12	236.22	236.34	236.34	236.37	0.004384	0.76	0.16	2.64	1.00
Owen Street	1	438.1	50 YR	0.17	236.22	236.36	236.36	236.39	0.004800	0.86	0.19	2.92	1.06
Owen Street	1	438.1	100 YR	0.17	236.22	236.36	236.36	236.39	0.004800	0.86	0.19	2.92	1.06
Owen Street	1	406.5	10 YR	0.05	235.51	235.60	235.60	235.62	0.004537	0.65	0.08	2.50	0.97
Owen Street	1	406.5	25 YR	0.12	235.51	235.64	235.64	235.66	0.003908	0.74	0.25	7.31	0.95
Owen Street	1	406.5	50 YR	0.17	235.51	235.65	235.65	235.68	0.003151	0.73	0.40	9.76	0.87
Owen Street	1	406.5	100 YR	0.17	235.51	235.65	235.65	235.68	0.003151	0.73	0.40	9.76	0.87
Owen Street	1	369.2	10 YR	0.05	234.84	234.90	234.90	234.91	0.004356	0.44	0.11	4.38	0.87
Owen Street	1	369.2	25 YR	0.12	234.84	234.91	234.91	234.93	0.006440	0.63	0.19	5.82	1.11
Owen Street	1	369.2	50 YR	0.17	234.84	234.95	234.95	234.96	0.001170	0.35	0.46	9.26	0.51
Owen Street	1	369.2	100 YR	0.17	234.84	234.95	234.95	234.96	0.001170	0.35	0.46	9.26	0.51
Owen Street	1	343.9	10 YR	0.05	234.34	234.38	234.38	234.39	0.008720	0.55	0.10	5.10	1.20
Owen Street	1	343.9	25 YR	0.12	234.34	234.40	234.40	234.42	0.006599	0.61	0.22	7.82	1.12
Owen Street	1	343.9	50 YR	0.17	234.34	234.41	234.41	234.43	0.005026	0.60	0.32	9.41	1.00
Owen Street	1	343.9	100 YR	0.17	234.34	234.41	234.41	234.43	0.005026	0.60	0.32	9.41	1.00
Owen Street	1	309.4	10 YR	0.05	233.81	233.86	233.86	233.87	0.003649	0.38	0.13	6.10	0.79
Owen Street	1	309.4	25 YR	0.12	233.81	233.87	233.87	233.89	0.005383	0.55	0.23	8.37	1.01
Owen Street	1	309.4	50 YR	0.17	233.81	233.88	233.88	233.90	0.007329	0.67	0.26	9.01	1.19
Owen Street	1	309.4	100 YR	0.17	233.81	233.88	233.88	233.90	0.007329	0.67	0.26	9.01	1.19
Owen Street	1	275.4	10 YR	0.05	233.55	233.61	233.61	233.62	0.006571	0.56	0.09	4.00	1.09
Owen Street	1	275.4	25 YR	0.12	233.55	233.65	233.65	233.66	0.001439	0.39	0.36	8.39	0.56
Owen Street	1	275.4	50 YR	0.17	233.55	233.65	233.65	233.66	0.002721	0.54	0.36	8.39	0.77
Owen Street	1	275.4	100 YR	0.17	233.55	233.65	233.65	233.66	0.002721	0.54	0.36	8.39	0.77
Owen Street	1	244.9	10 YR	0.05	233.24	233.31	233.31	233.34	0.006325	0.69	0.07	1.87	1.11
Owen Street	1	244.9	25 YR	0.12	233.24	233.36	233.36	233.38	0.003350	0.68	0.18	2.92	0.87
Owen Street	1	244.9	50 YR	0.17	233.24	233.37	233.37	233.40	0.004429	0.81	0.20	3.12	1.02
Owen Street	1	244.9	100 YR	0.17	233.24	233.37	233.37	233.40	0.004429	0.81	0.20	3.12	1.02
Owen Street	1	221.3	10 YR	0.05	233.03	233.12	233.12	233.13	0.002390	0.47	0.11	2.32	0.71
Owen Street	1	221.3	25 YR	0.12	233.03	233.14	233.14	233.17	0.004391	0.74	0.16	2.88	0.99
Owen Street	1	221.3	50 YR	0.17	233.03	233.15	233.15	233.19	0.005260	0.86	0.19	3.14	1.10
Owen Street	1	221.3	100 YR	0.17	233.03	233.15	233.15	233.19	0.005260	0.86	0.19	3.14	1.10
Owen Street	1	181.4	10 YR	0.05	232.32	232.39	232.39	232.42	0.008302	0.75	0.07	1.88	1.26
Owen Street	1	181.4	25 YR	0.12	232.32	232.43	232.43	232.46	0.005345	0.79	0.15	2.84	1.09
Owen Street	1	181.4	50 YR	0.17	232.32	232.45	232.45	232.48	0.004310	0.79	0.21	3.33	1.00
Owen Street	1	181.4	100 YR	0.17	232.32	232.45	232.45	232.48	0.004310	0.79	0.21	3.33	1.00
Owen Street	1	159.8	10 YR	0.05	231.84	231.94	231.94	231.95	0.002603	0.50	0.10	2.11	0.74
Owen Street	1	159.8	25 YR	0.12	231.84	231.96	231.96	231.99	0.004384	0.76	0.16	2.66	1.00
Owen Street	1	159.8	50 YR	0.17	231.84	231.97	231.97	232.01	0.005477	0.90	0.18	3.01	1.13
Owen Street	1	159.8	100 YR	0.17	231.84	231.97	231.97	232.01	0.005477	0.90	0.18	3.01	1.13
Owen Street	1	121.6	10 YR	0.05	230.54	230.60	230.60	230.61	0.005721	0.48	0.10	4.31	0.99
Owen Street	1	121.6	25 YR	0.12	230.54	230.64	230.64	230.64	0.001895	0.39	0.31	7.67	0.62
Owen Street	1	121.6	50 YR	0.17	230.54	230.64	230.64	230.65	0.003583	0.54	0.31	7.67	0.86
Owen Street	1	121.6	100 YR	0.17	230.54	230.64	230.64	230.65	0.003583	0.54	0.31	7.67	0.86
Owen Street	1	98.9	10 YR	0.05	228.55	228.61	228.61	228.63	0.007190	0.61	0.08	2.83	1.13
Owen Street	1	98.9	25 YR	0.12	228.55	228.64	228.64	228.66	0.005106	0.66	0.18	4.19	1.02
Owen Street	1	98.9	50 YR	0.17	228.55	228.66	228.66	228.68	0.004057	0.66	0.28	9.71	0.93
Owen Street	1	98.9	100 YR	0.17	228.55	228.66	228.66	228.68	0.004057	0.66	0.28	9.71	0.93
Owen Street	1	79.1	10 YR	0.05	227.22	227.28	227.28	227.29	0.005648	0.52	0.10	3.54	1.00
Owen Street	1	79.1	25 YR	0.12	227.22	227.31	227.31	227.32	0.002818	0.50	0.24	5.60	0.76
Owen Street	1	79.1	50 YR	0.17	227.22	227.31	227.31	227.33	0.003725	0.60	0.28	6.18	0.88
Owen Street	1	79.1	100 YR	0.17	227.22	227.31	227.31	227.33	0.003725	0.60	0.28	6.18	0.88
Owen Street	1	47.9	10 YR	0.05	225.60	225.66	225.66	225.67	0.006145	0.52	0.10	3.73	1.03
Owen Street	1	47.9	25 YR	0.12	225.60	225.70	225.70	225.71	0.001700	0.40	0.31	7.99	0.60
Owen Street	1	47.9	50 YR	0.17	225.60	225.70	225.70	225.71	0.003215	0.55	0.31	7.99	0.82
Owen Street	1	47.9	100 YR	0.17	225.60	225.70	225.70	225.71	0.003215	0.55	0.31	7.99	0.82
Owen Street	1	26.8	10 YR	0.05	224.59	224.66	224.66	224.68	0.006905	0.65	0.08	2.31	1.15
Owen Street	1	26.8	25 YR	0.12	224.59	224.69	224.69	224.71	0.003513	0.63	0.19	3.64	0.88
Owen Street	1	26.8	50 YR	0.17	224.59	224.70	224.70	224.73	0.004389	0.74	0.22	3.94	1.00
Owen Street	1	26.8	100 YR	0.17	224.59	224.70	224.70	224.73	0.004389	0.74	0.22	3.94	1.00
Owen Street	1	6.7	10 YR	0.05	224.06	224.10	224.10	224.12	0.009266	0.53	0.09	4.84	1.22
Owen Street	1	6.7	25 YR	0.12	224.06	224.12	224.12	224.14	0.007063	0.60	0.20	7.07	1.14

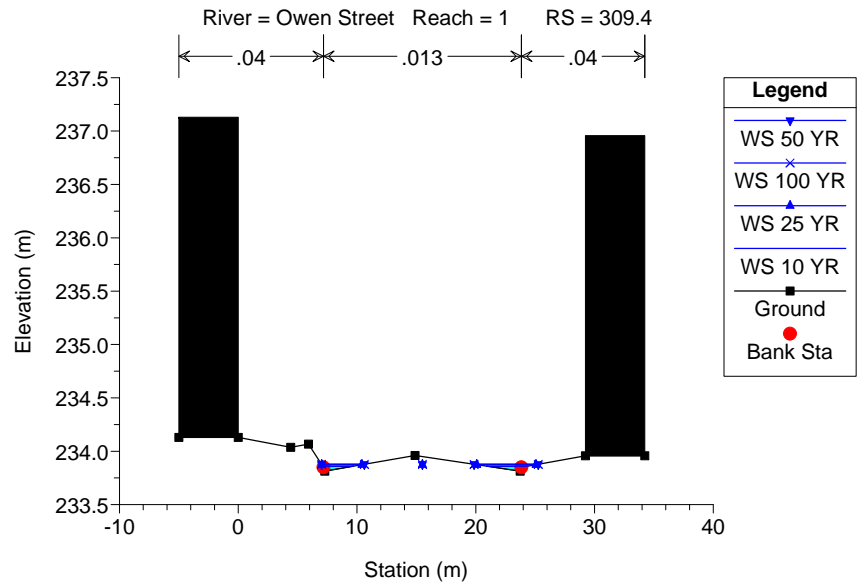
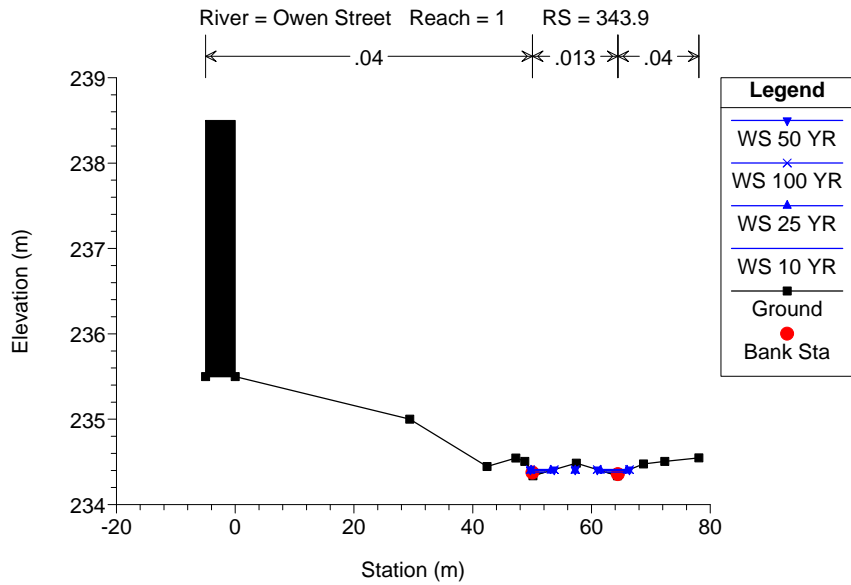
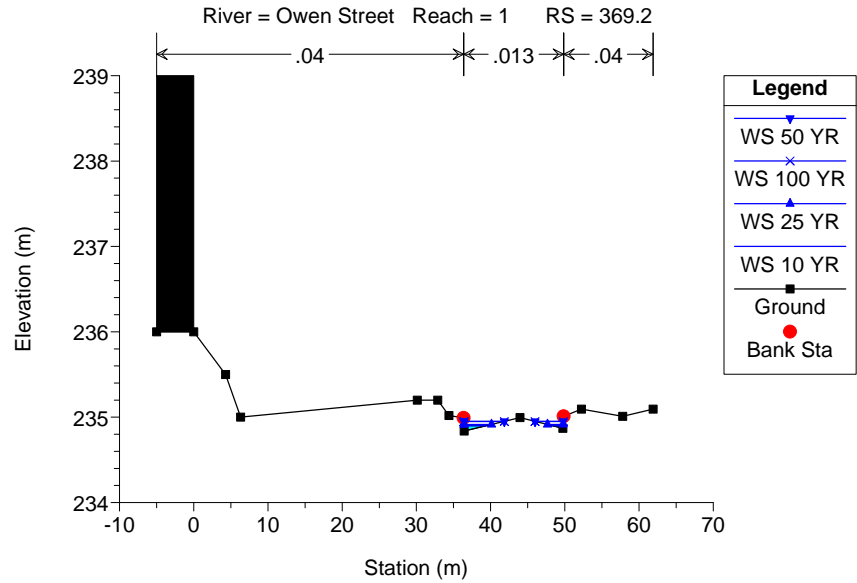
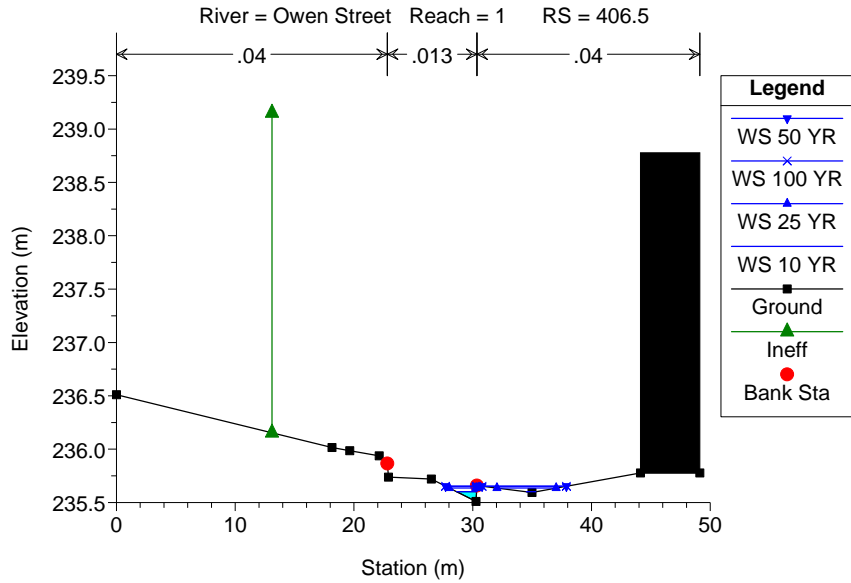
HEC-RAS Plan: PR03 (Continued)

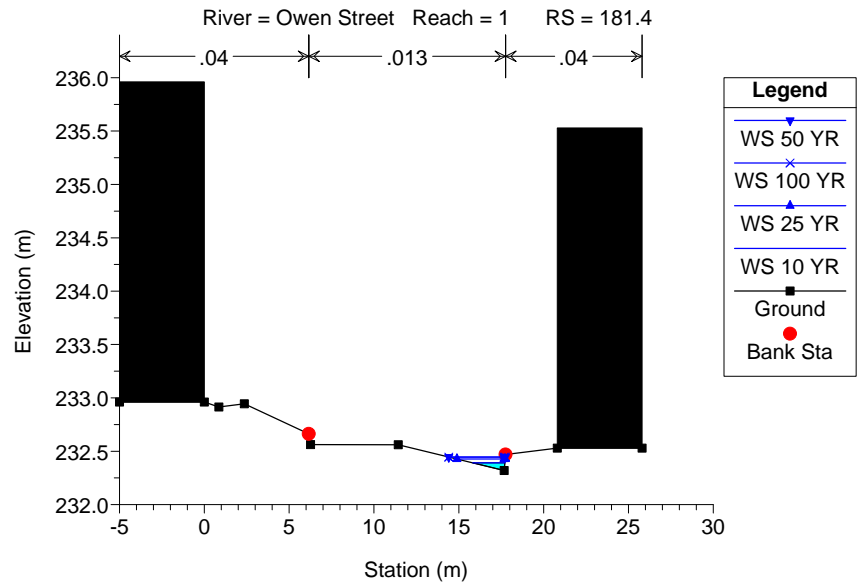
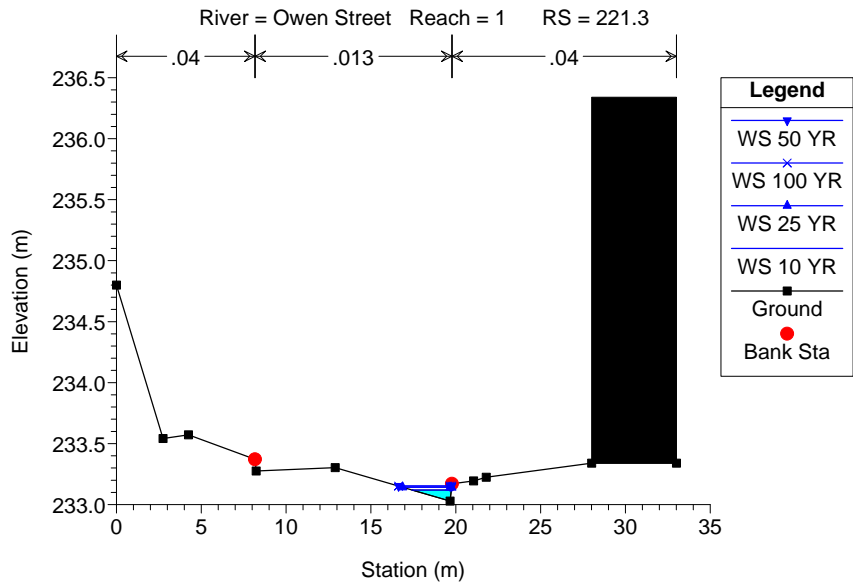
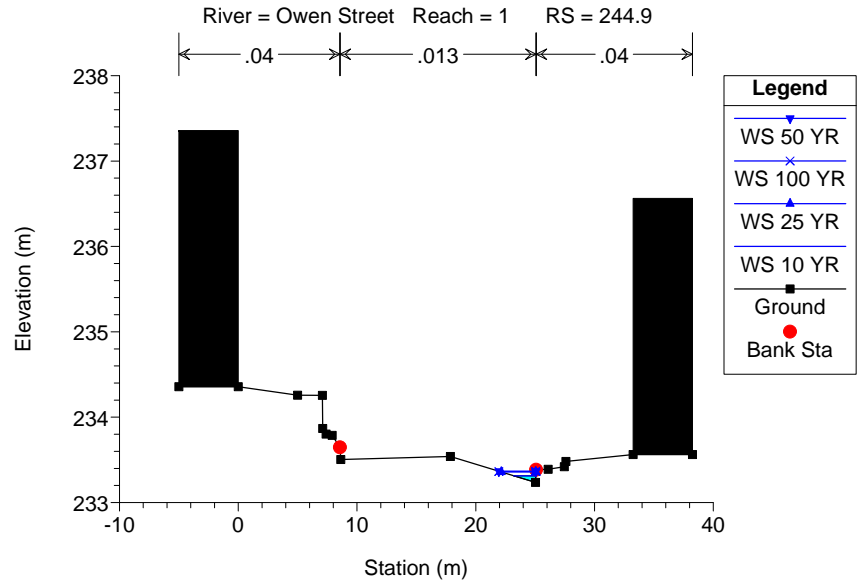
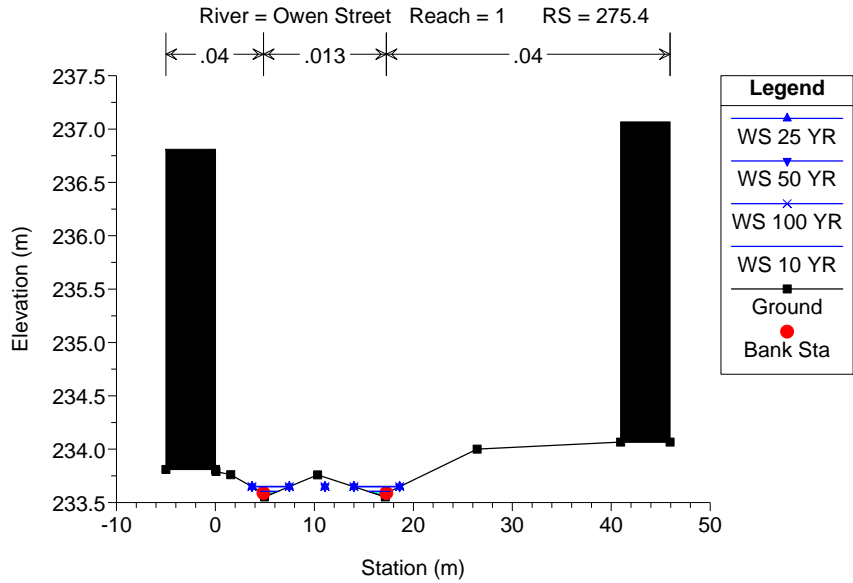
River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Owen Street	1	6.7	50 YR	0.17	224.06	224.13	224.13	224.15	0.006113	0.61	0.27	8.19	1.08
Owen Street	1	6.7	100 YR	0.17	224.06	224.13	224.13	224.15	0.006113	0.61	0.27	8.19	1.08
Owen Street	1	0	10 YR	0.05	223.75	223.83	223.81	223.84	0.001362	0.32	0.15	3.96	0.52
Owen Street	1	0	25 YR	0.12	223.75	223.86	223.86	223.87	0.001362	0.40	0.30	5.50	0.55
Owen Street	1	0	50 YR	0.17	223.75	223.88	223.86	223.89	0.001360	0.44	0.38	6.20	0.56
Owen Street	1	0	100 YR	0.17	223.75	223.88	223.86	223.89	0.001360	0.44	0.38	6.20	0.56

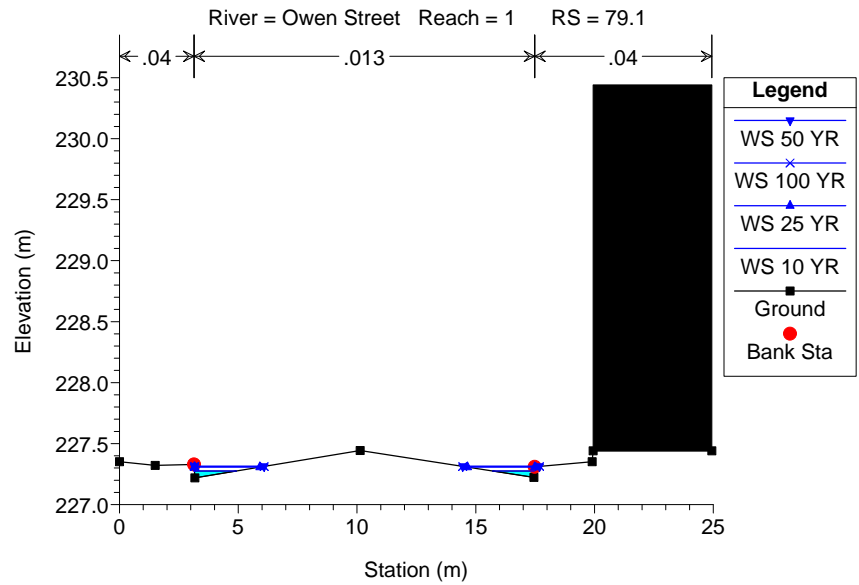
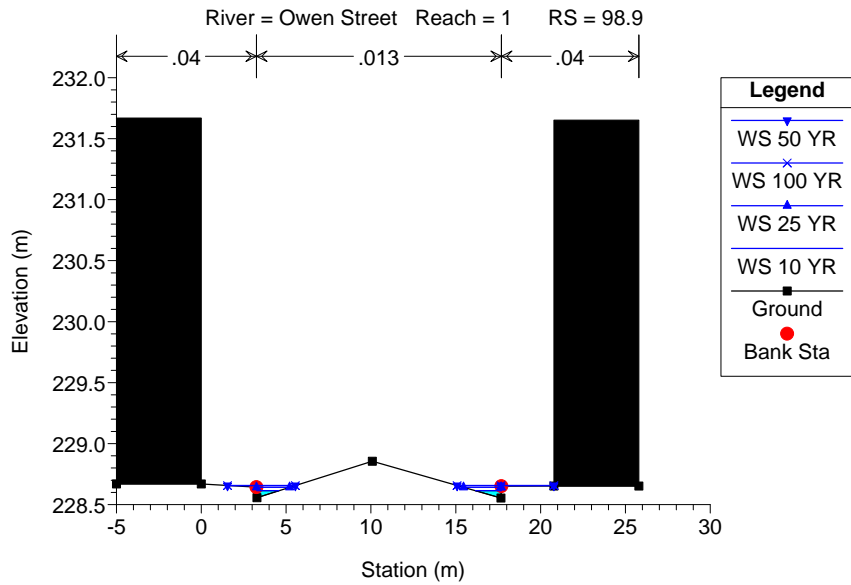
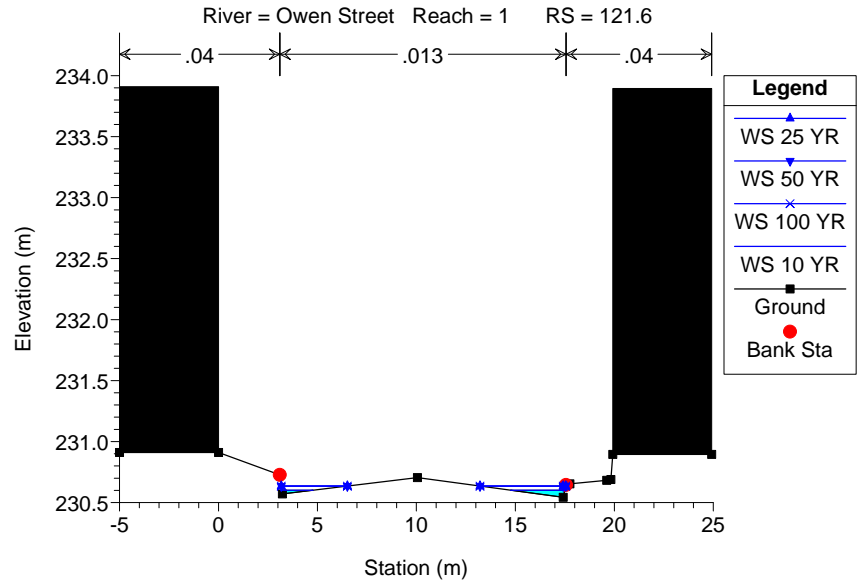
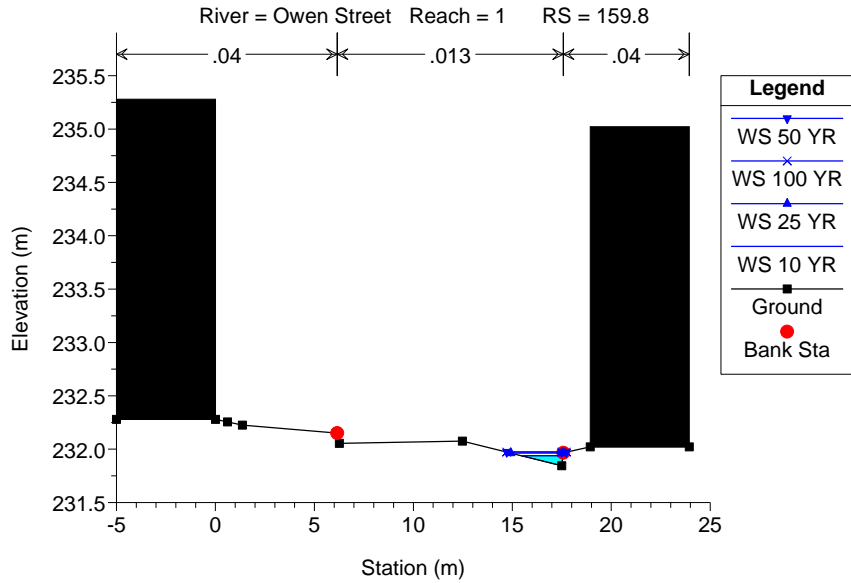
# Improvement Alternative 3B - HEC RAS Results Summary

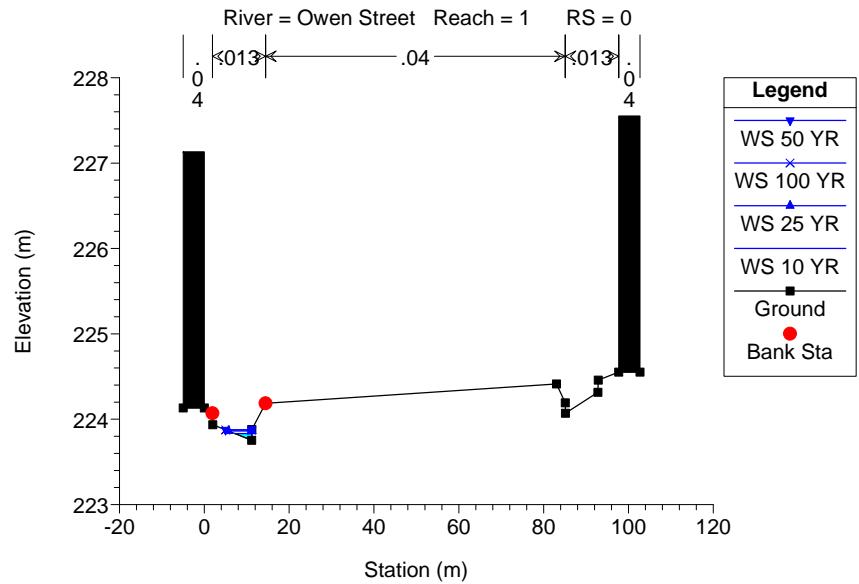
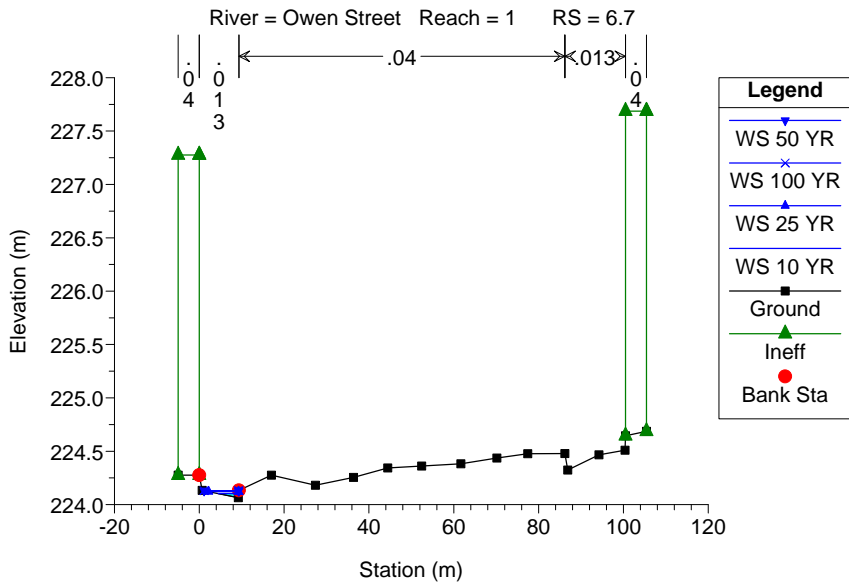
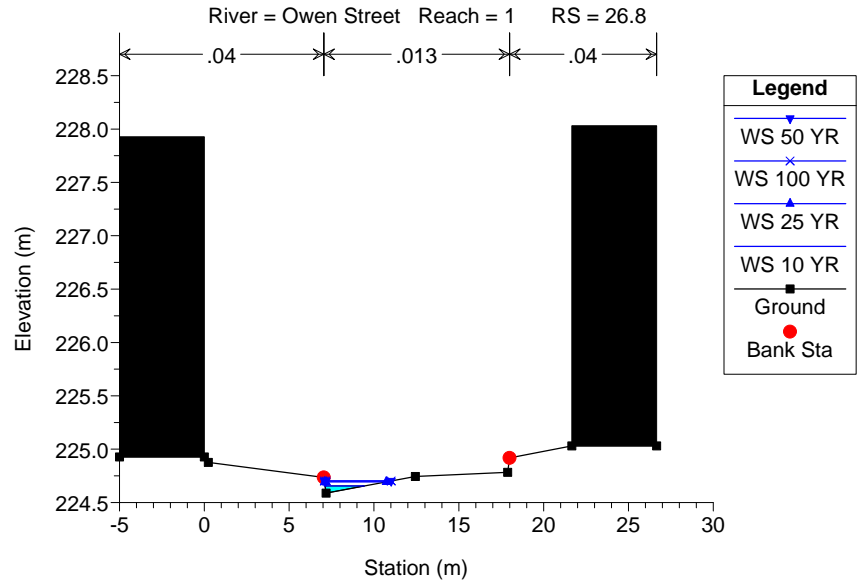
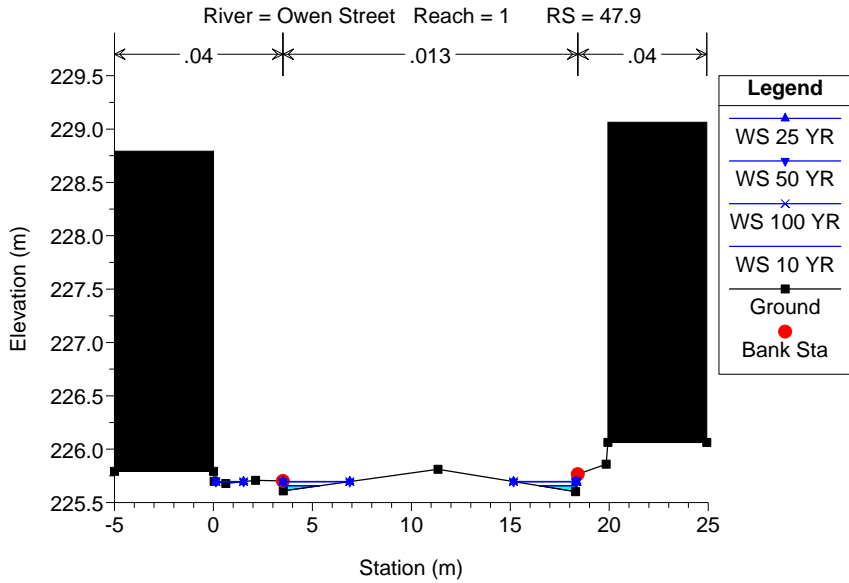


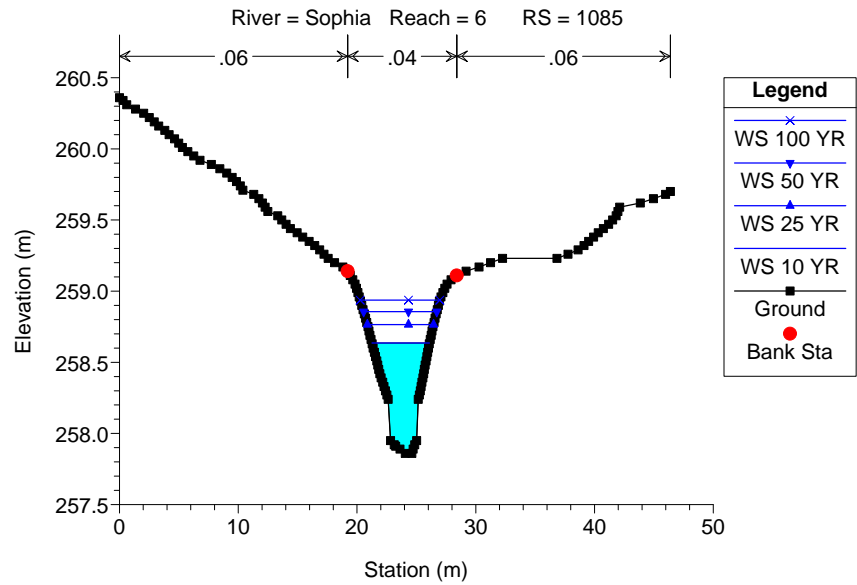
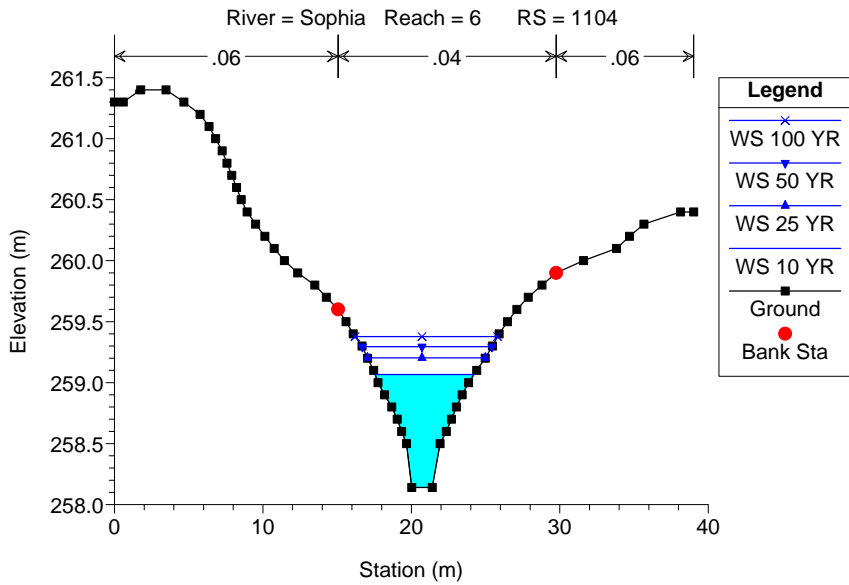
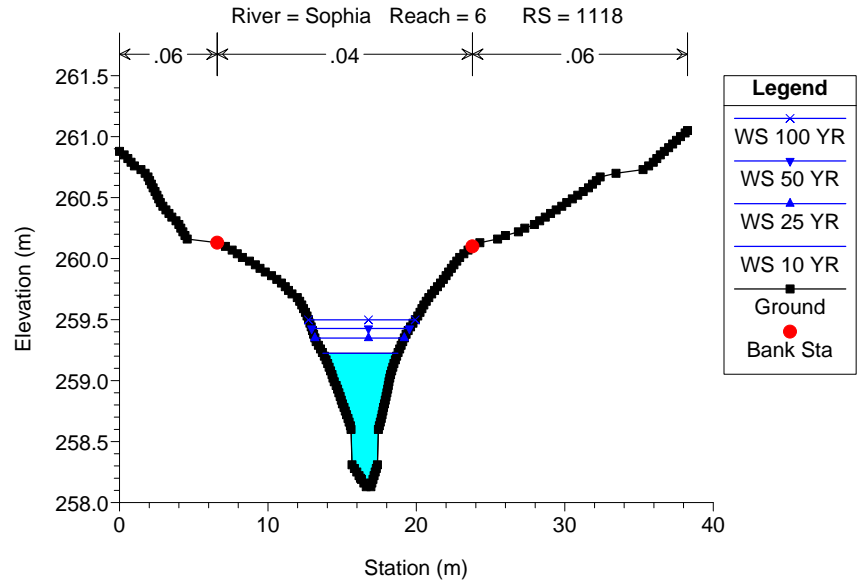
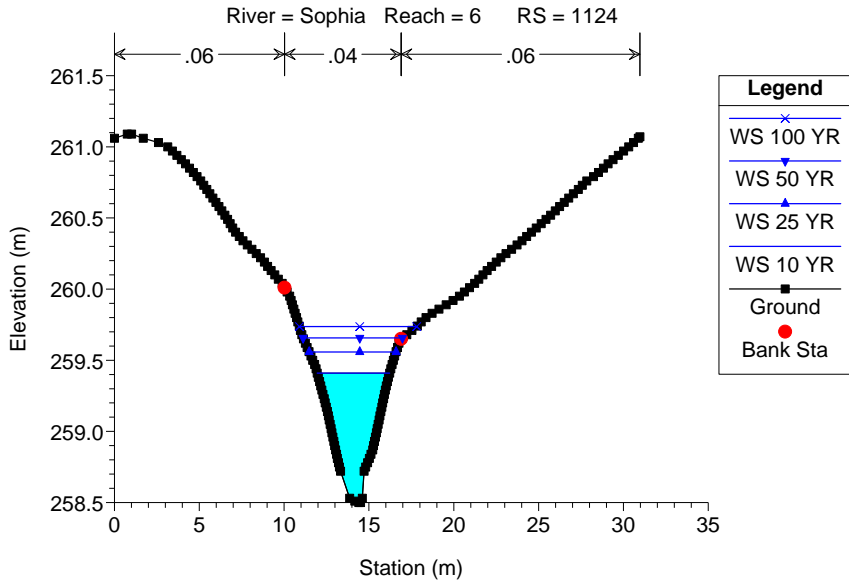


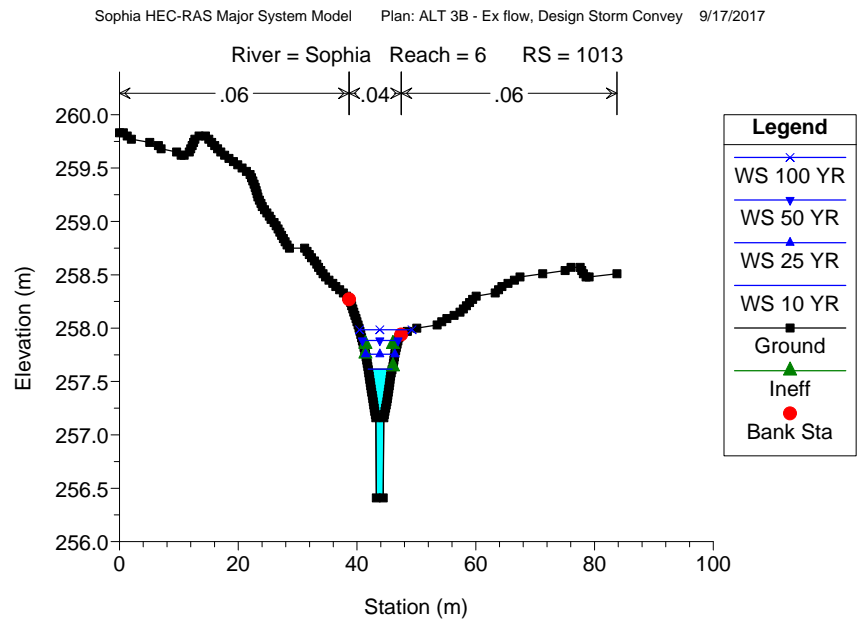
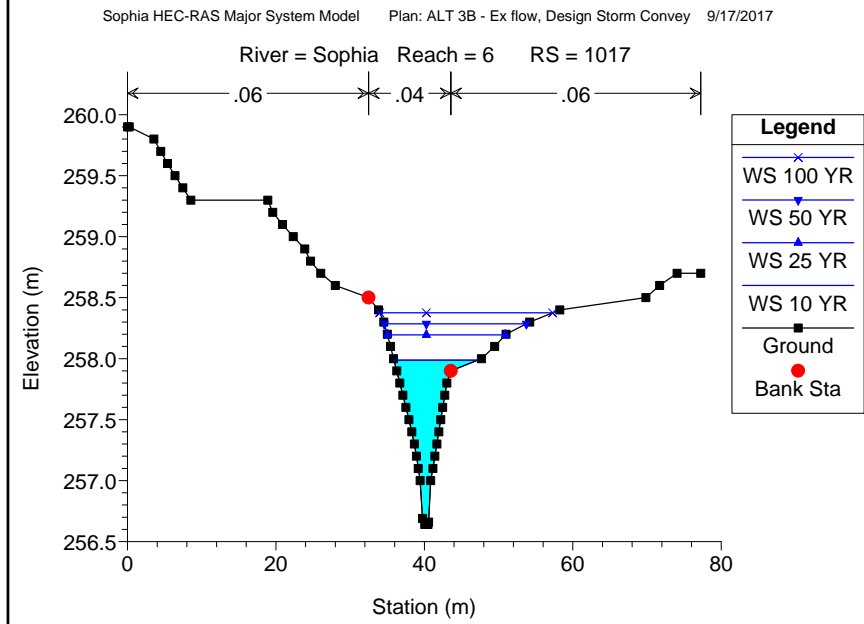
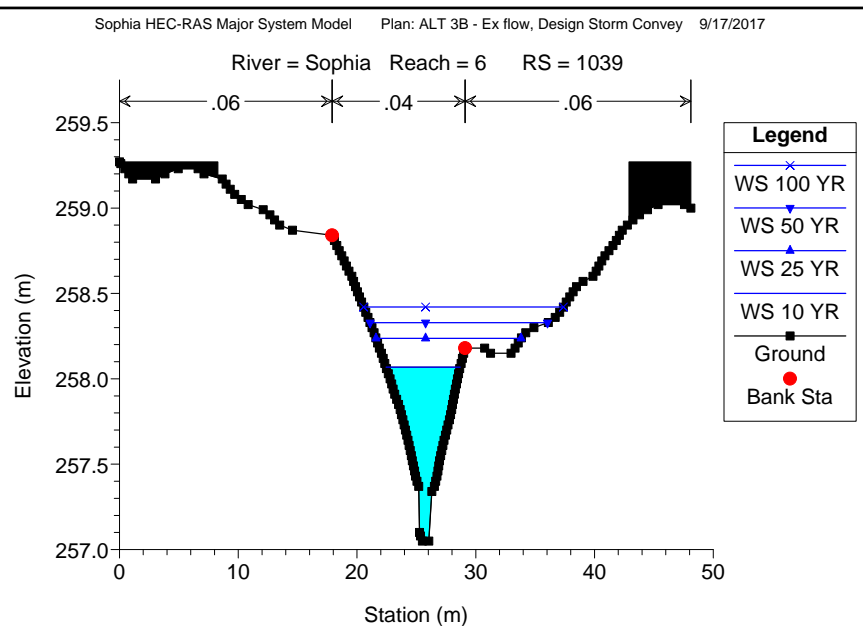
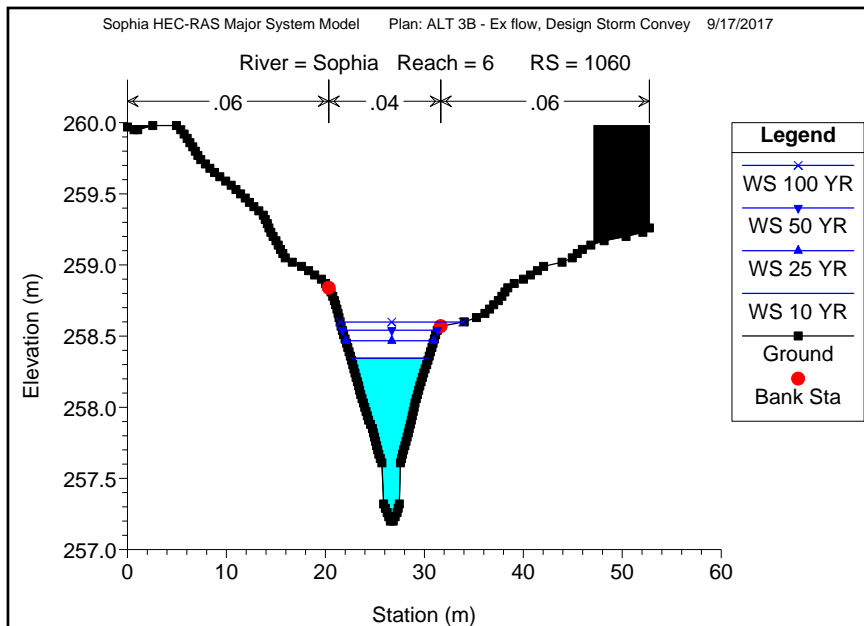


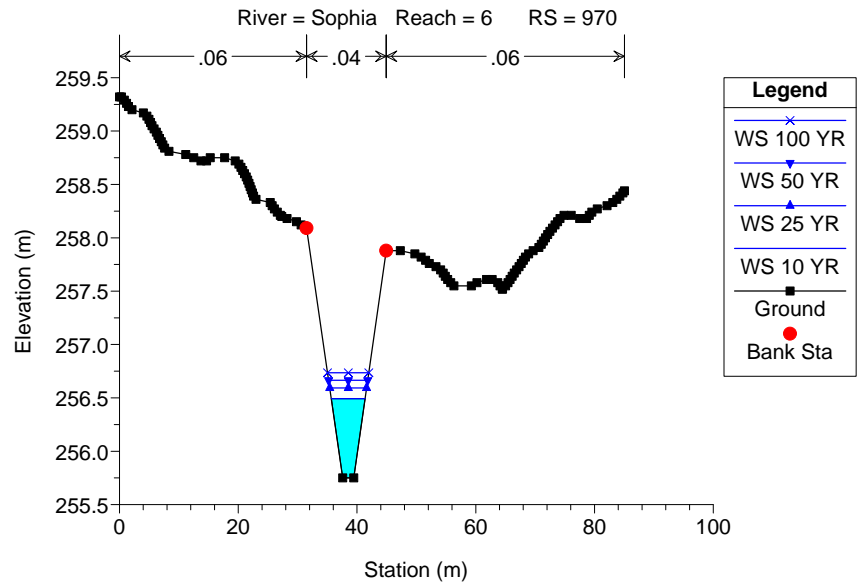
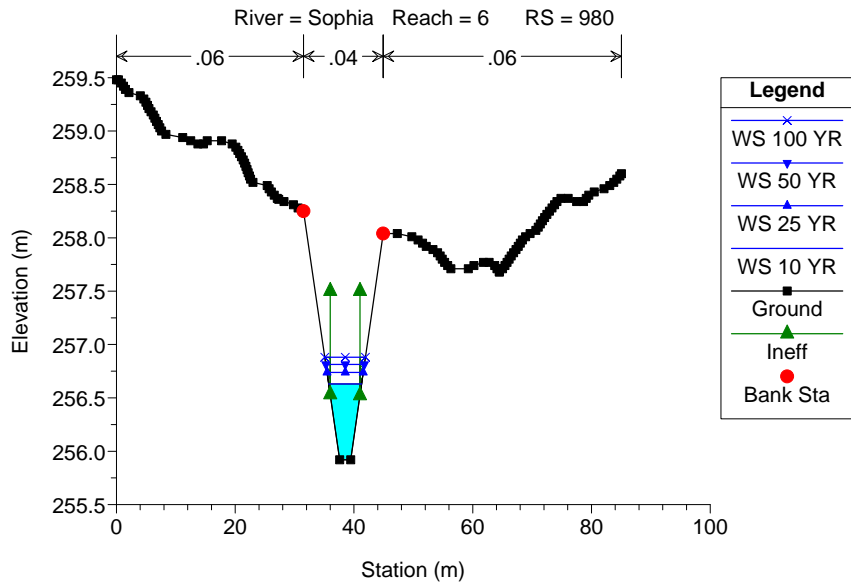
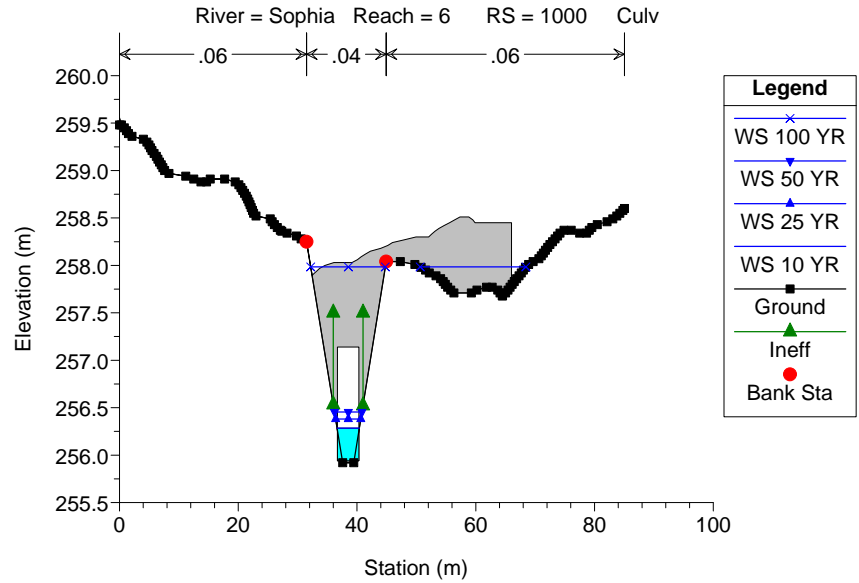
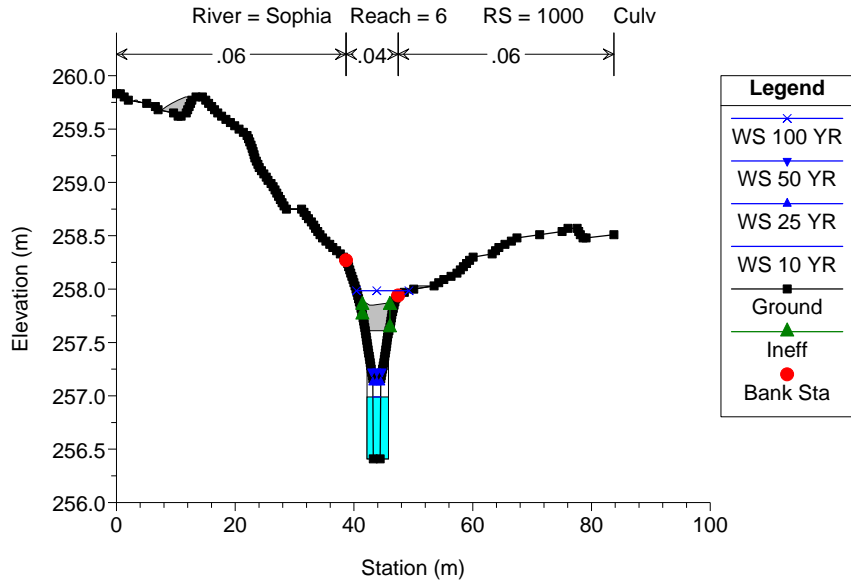


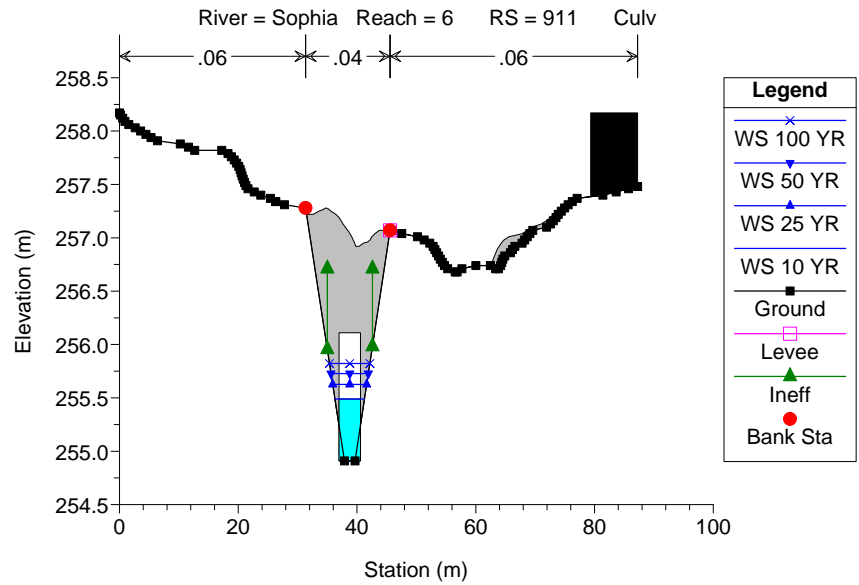
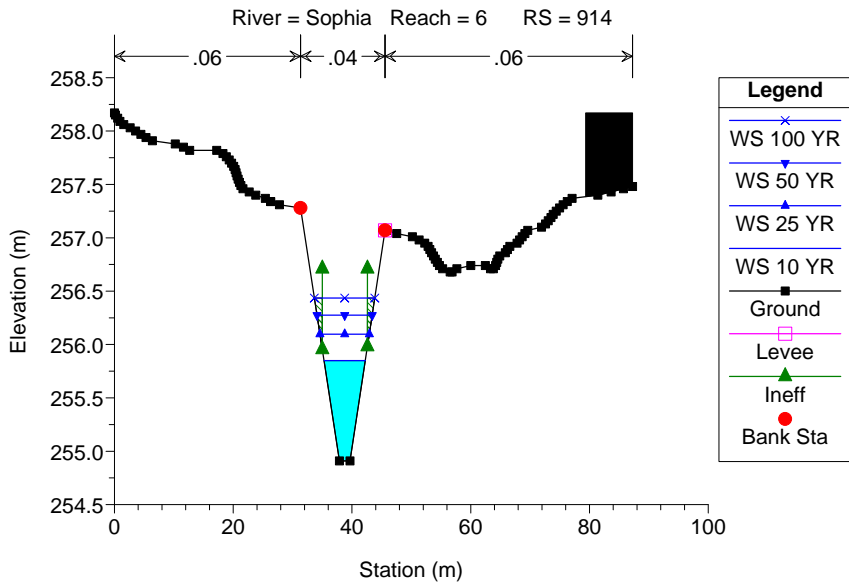
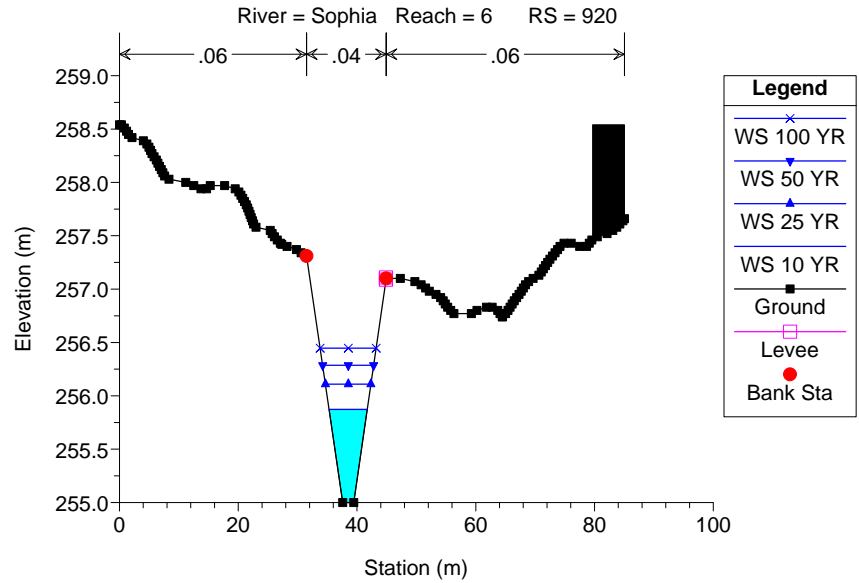
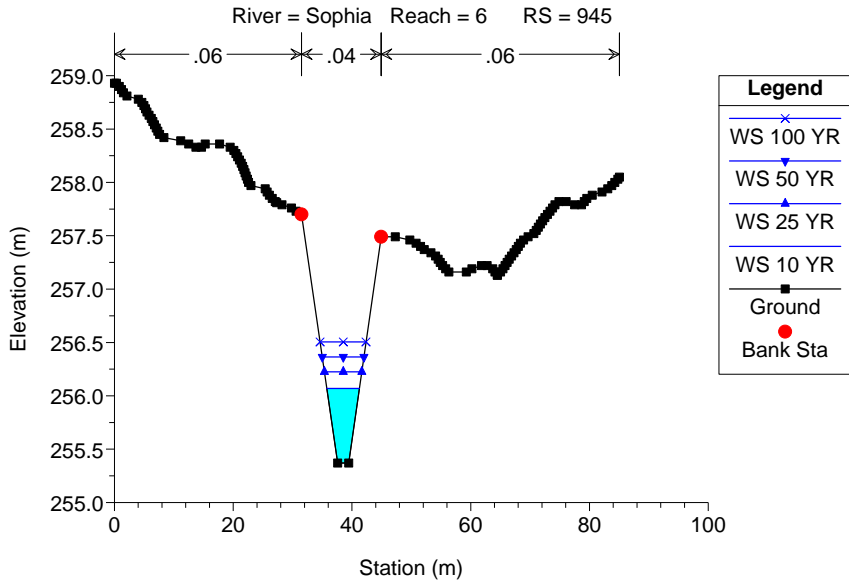




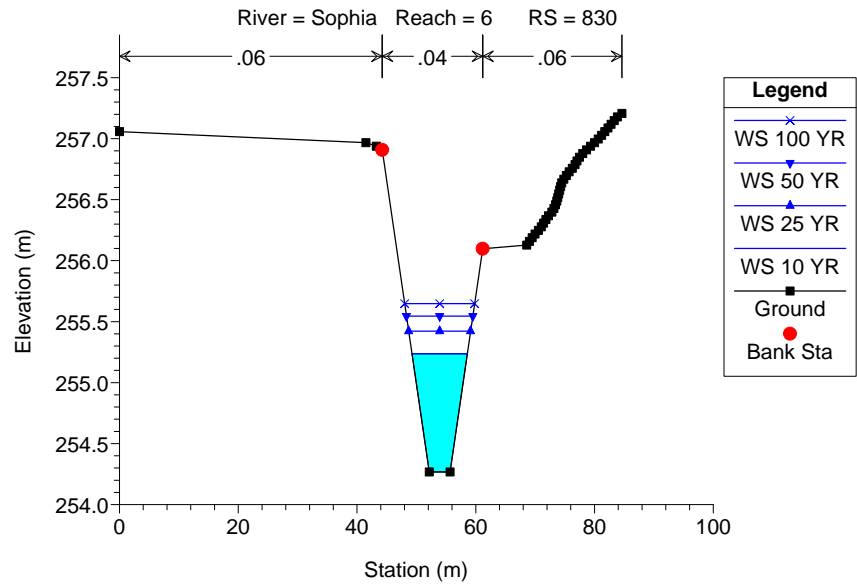
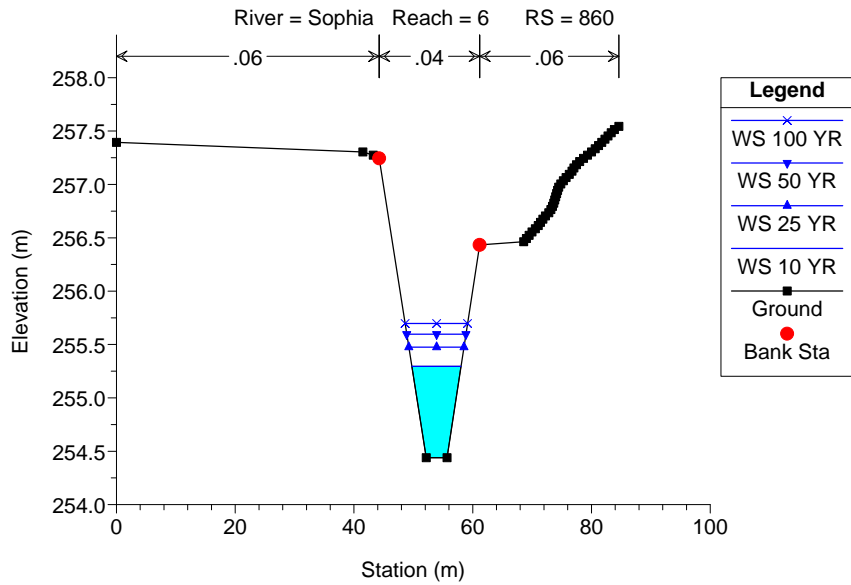
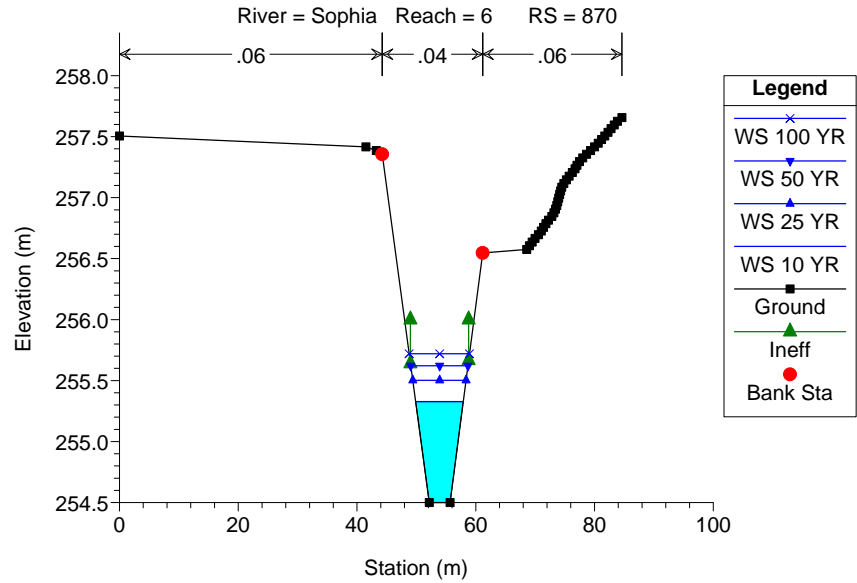
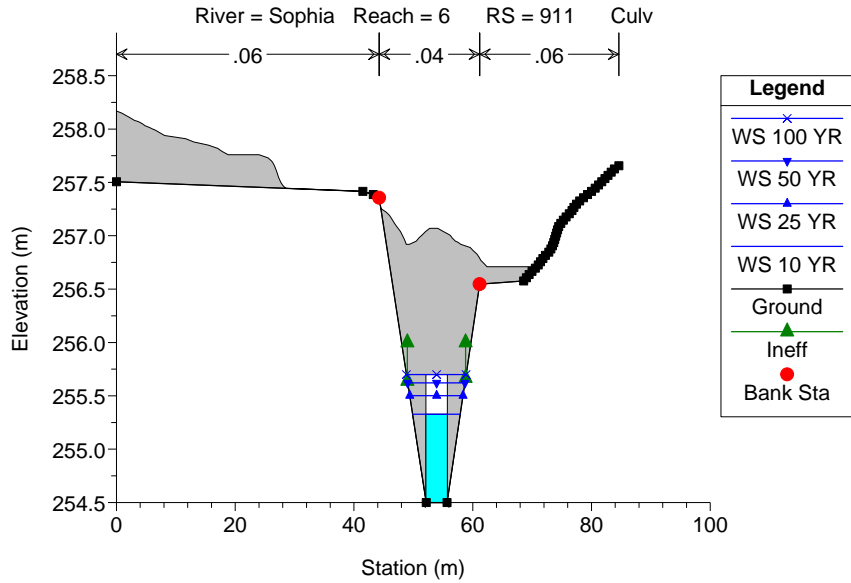


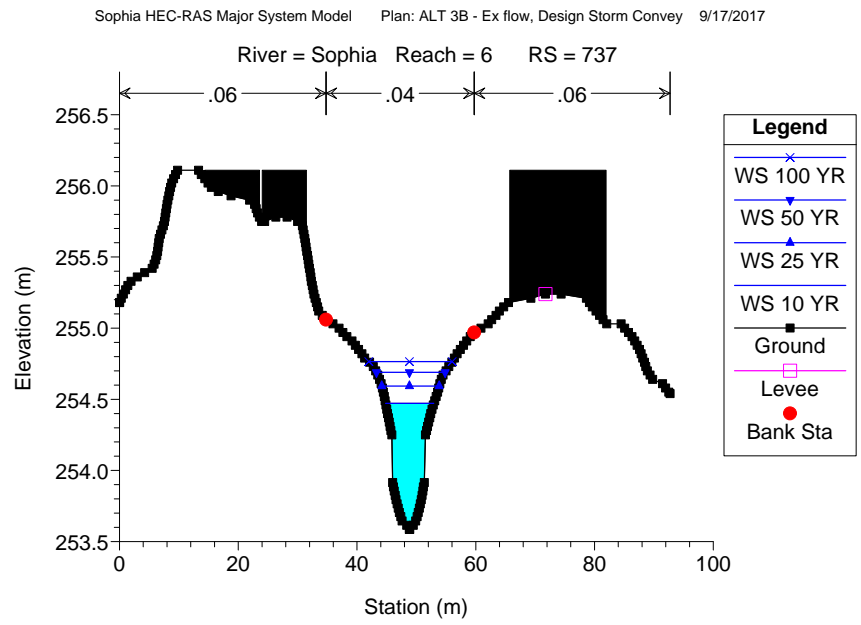
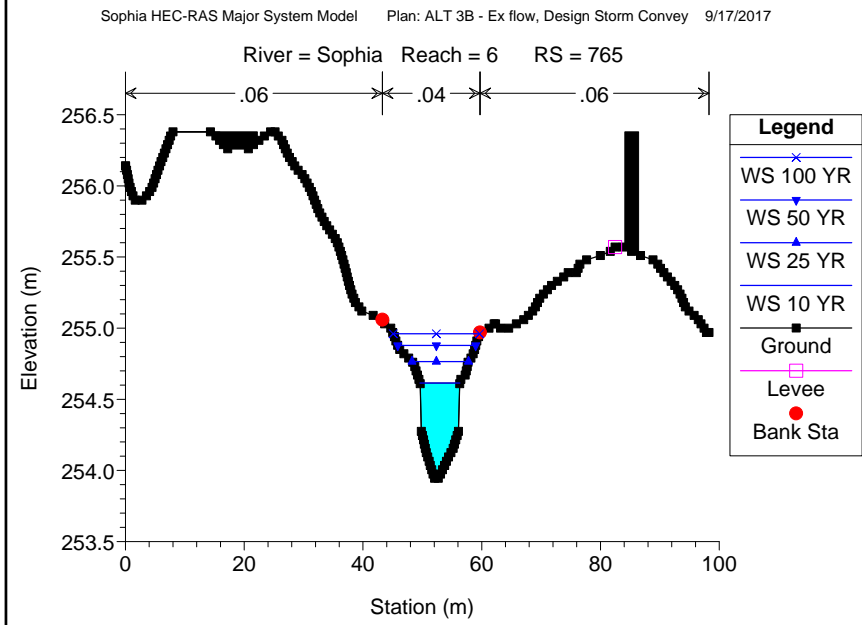
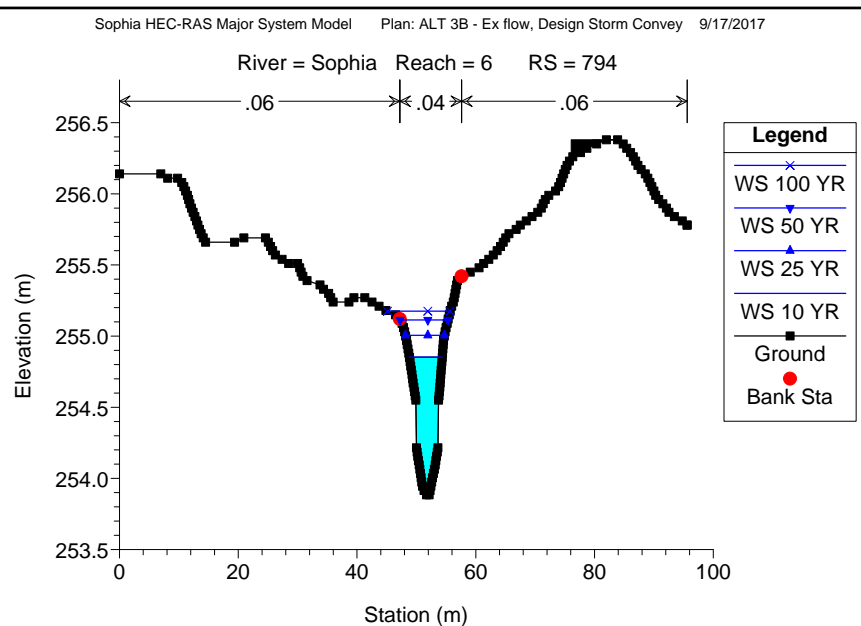
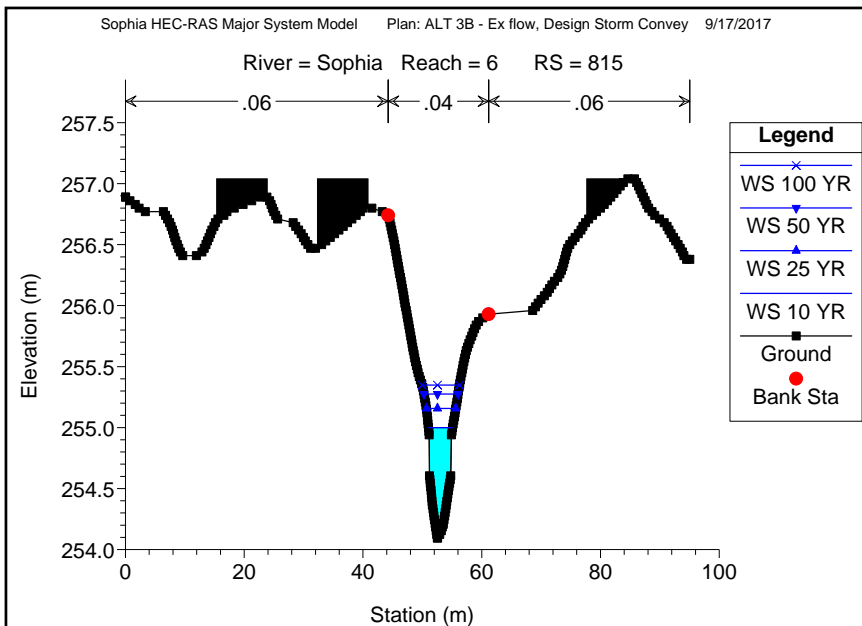


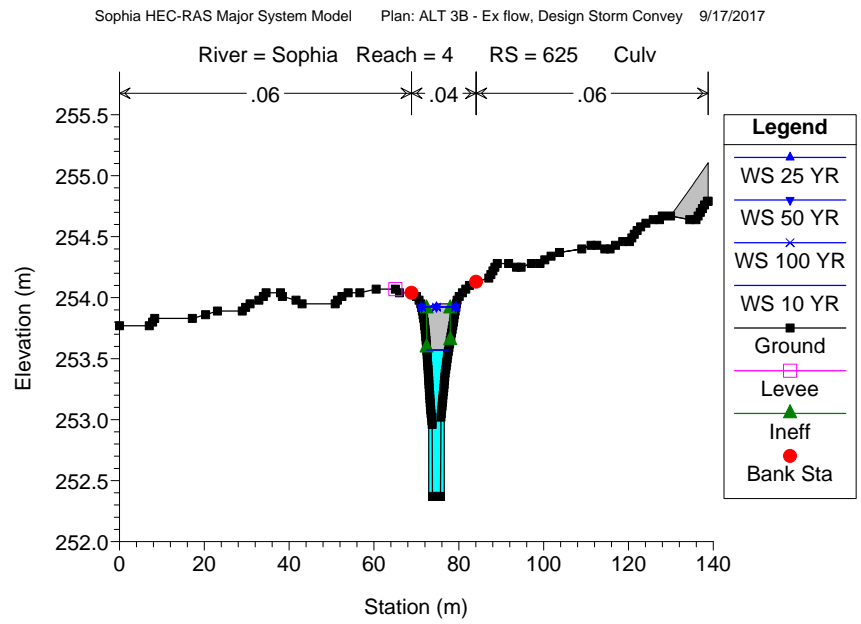
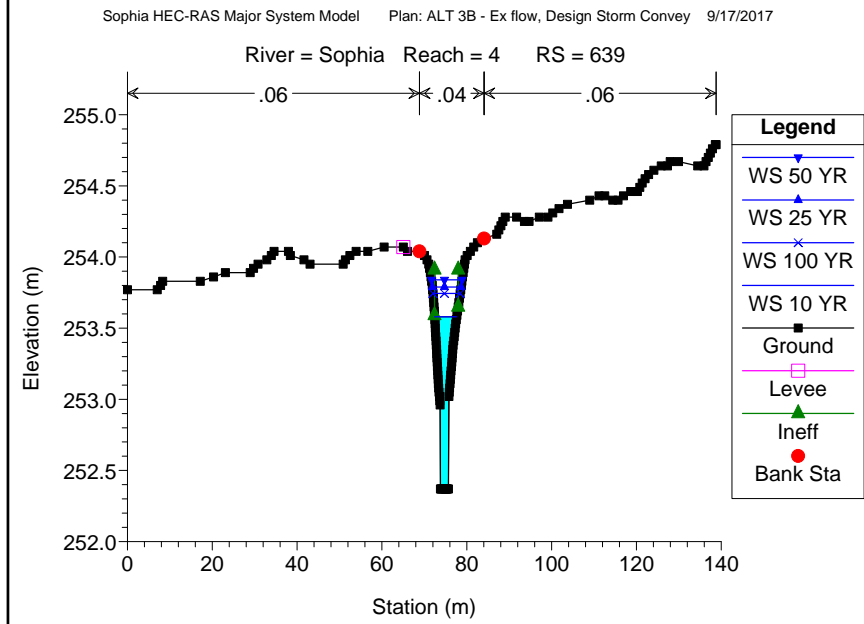
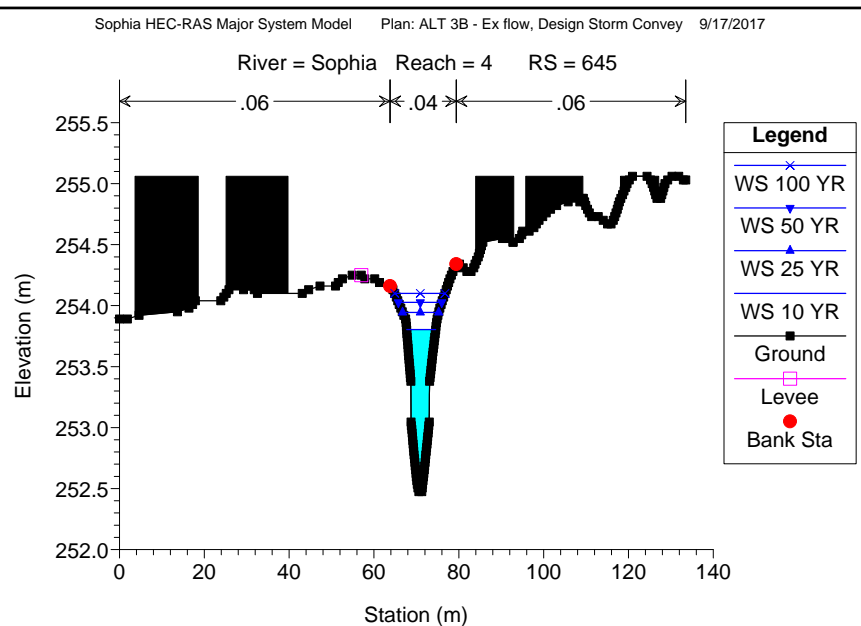
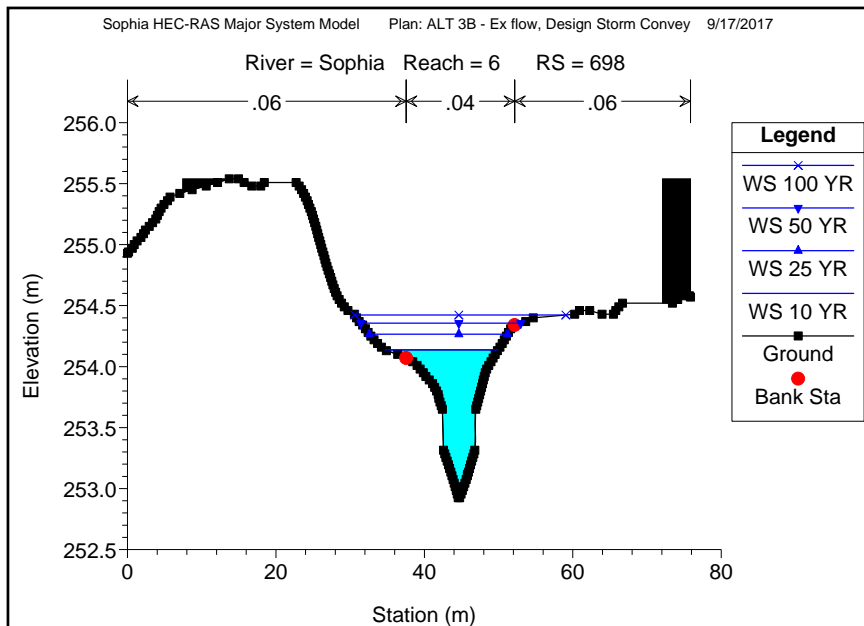


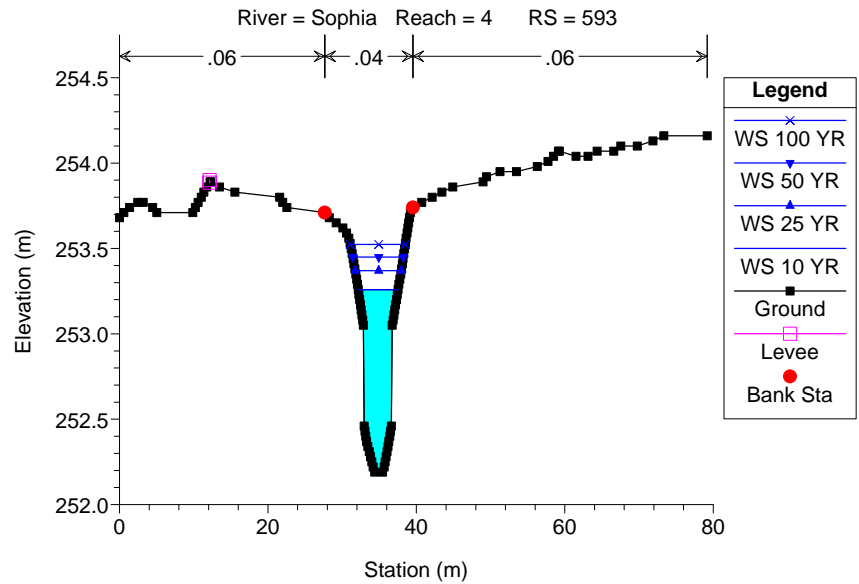
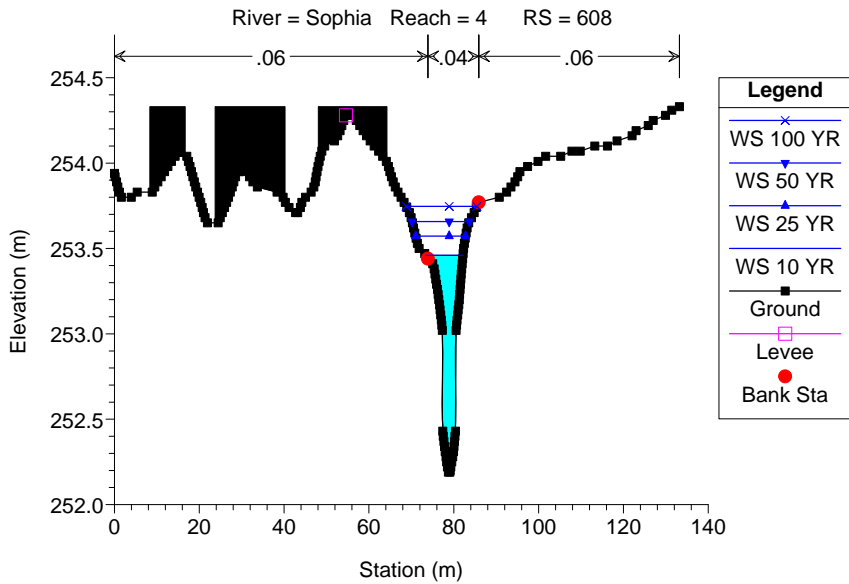
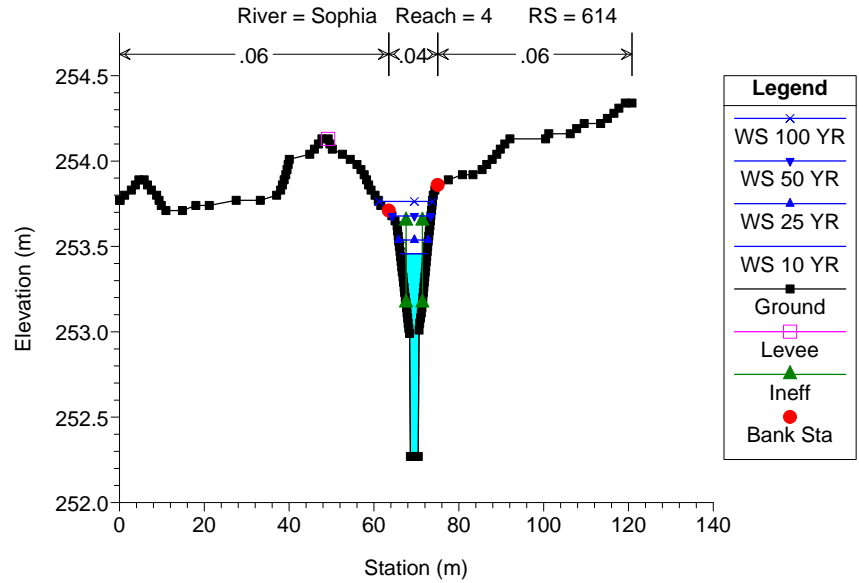
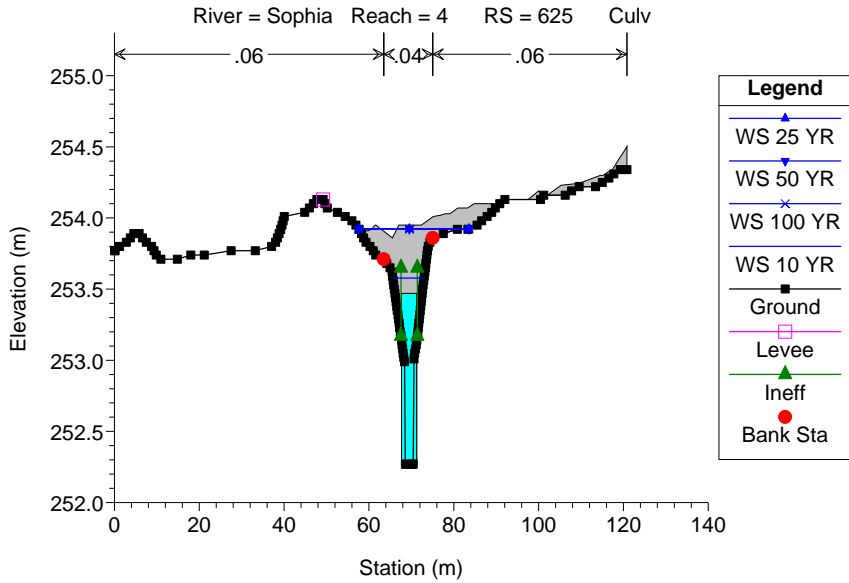


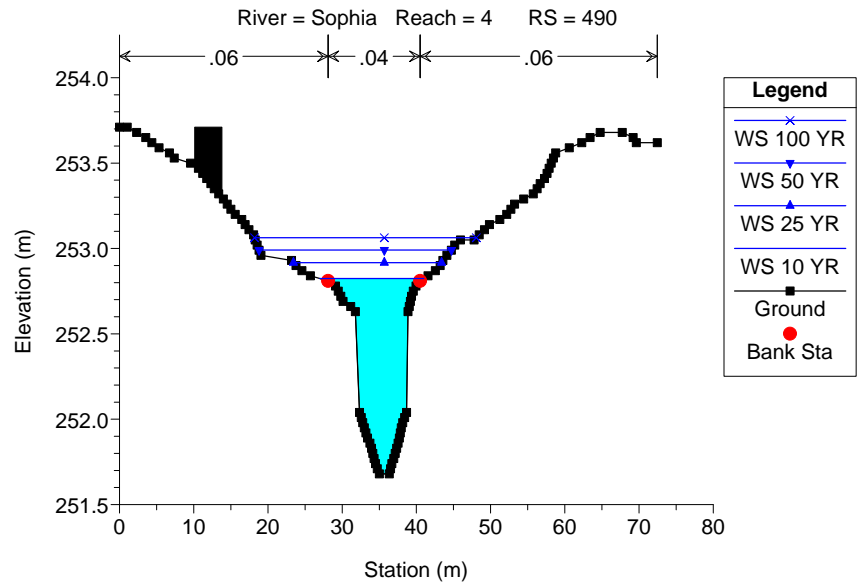
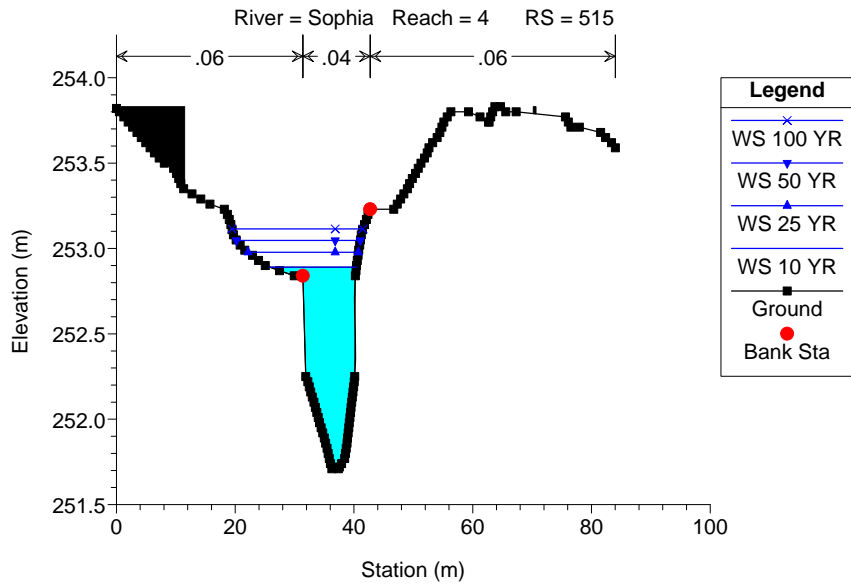
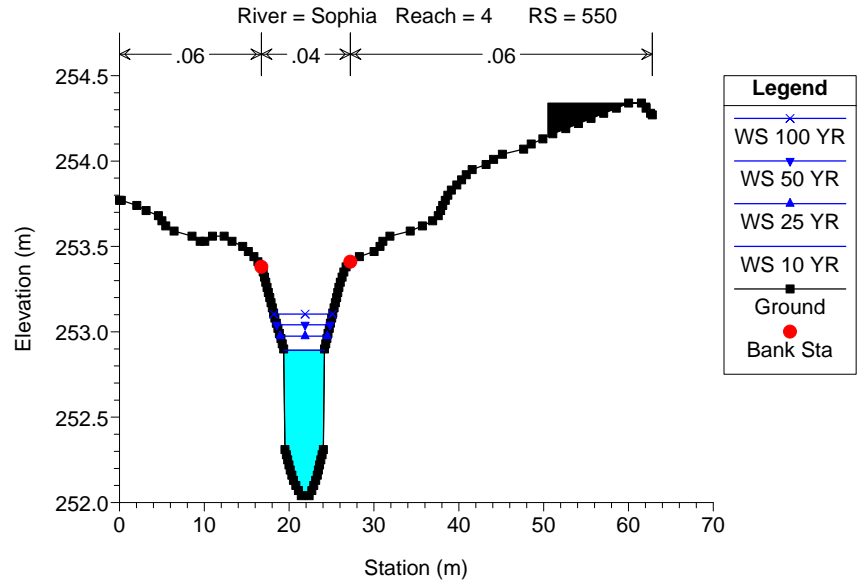
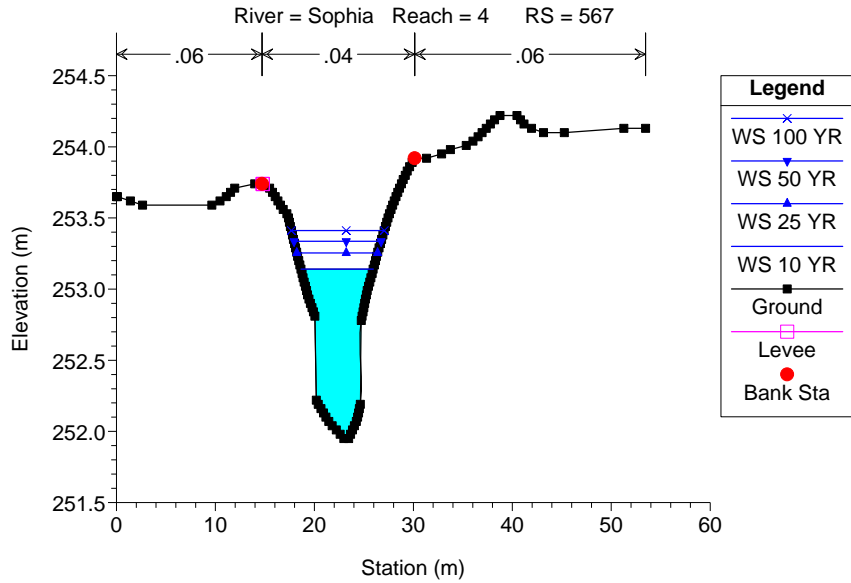


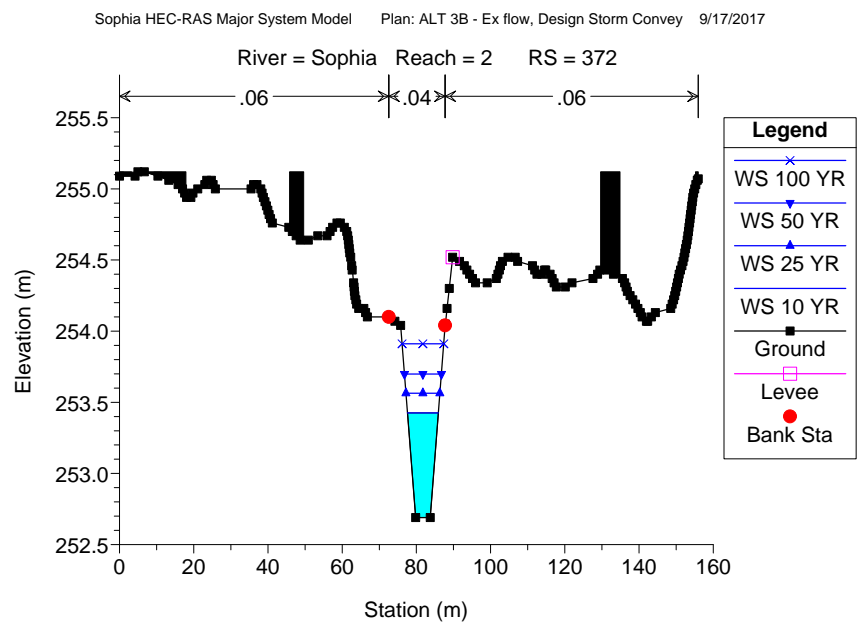
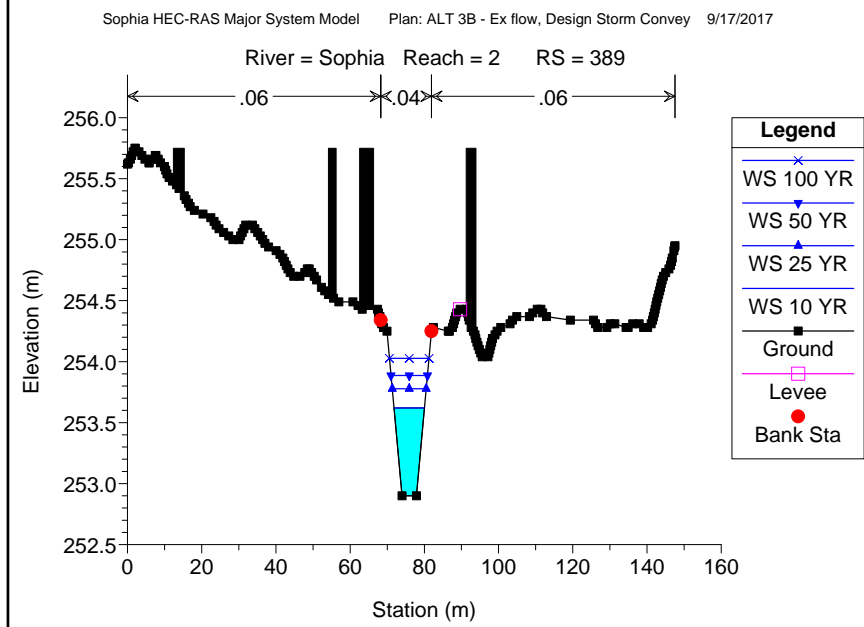
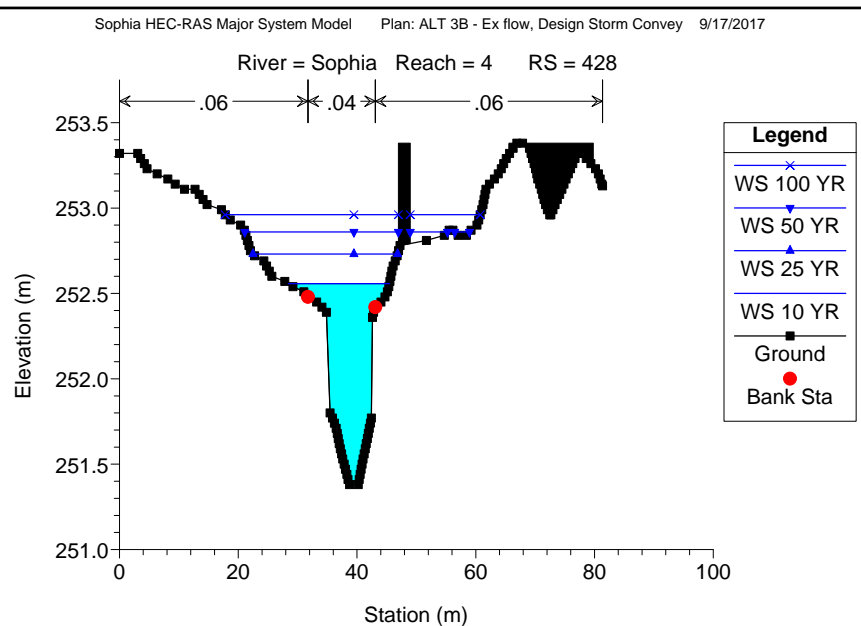
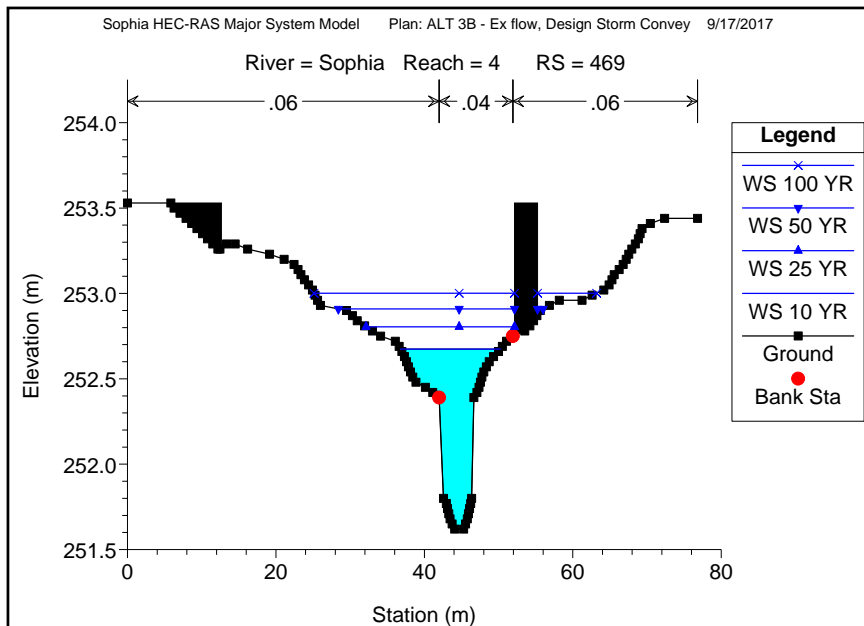


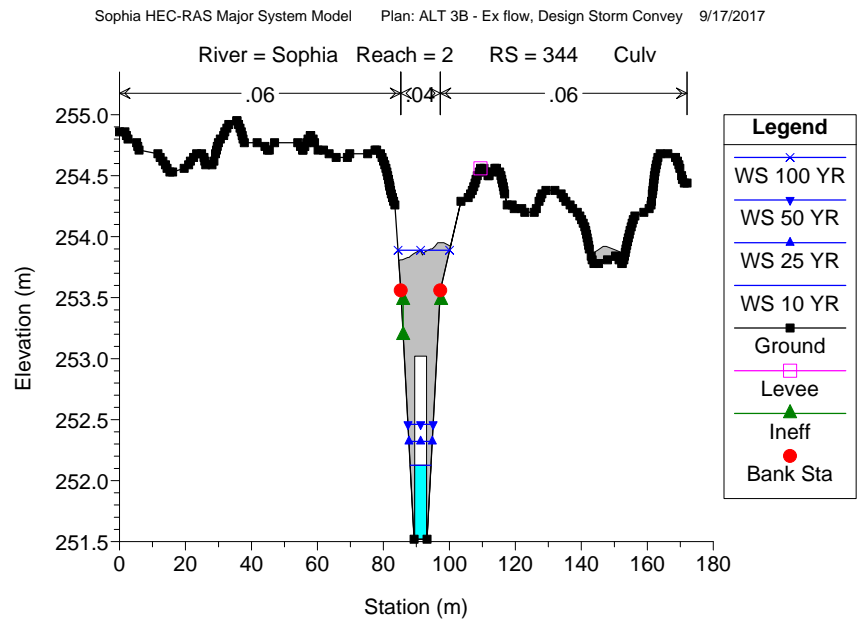
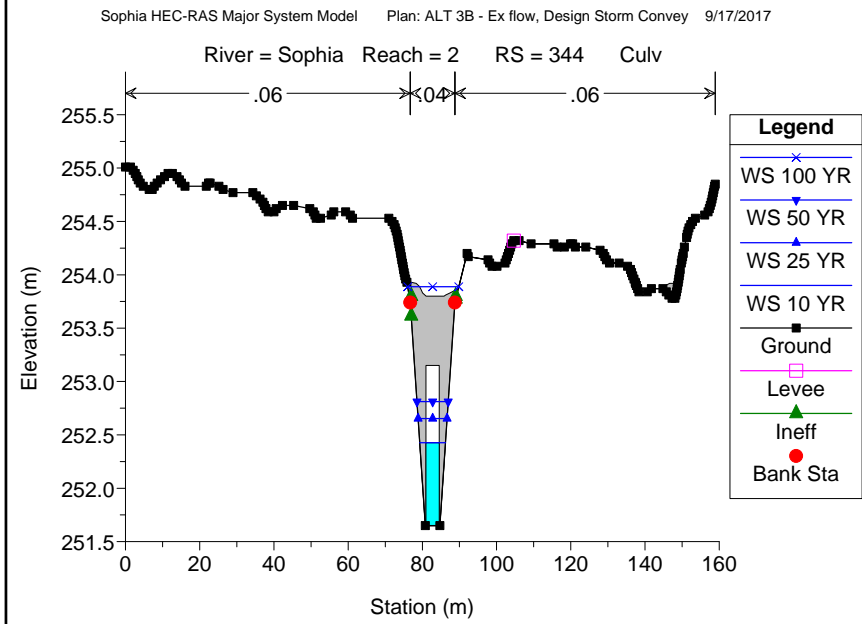
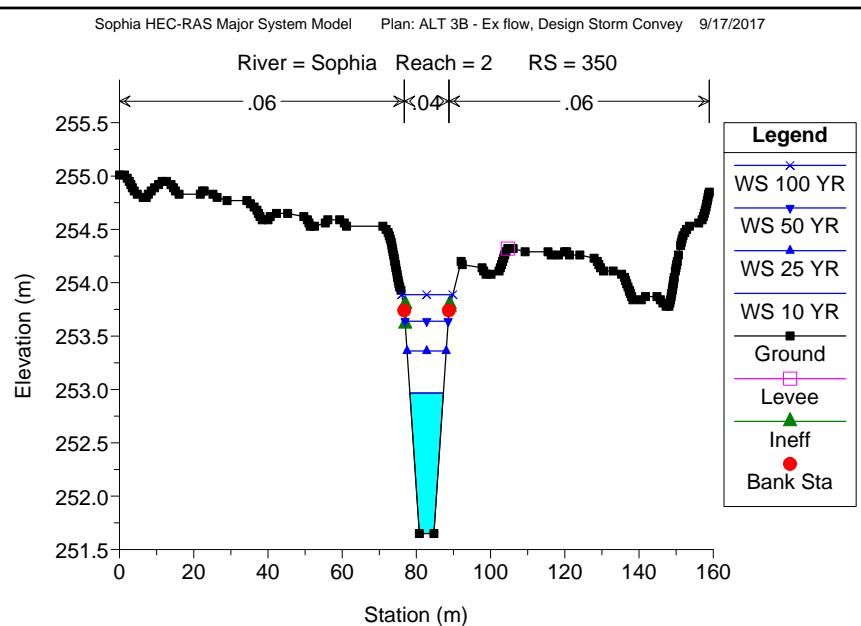
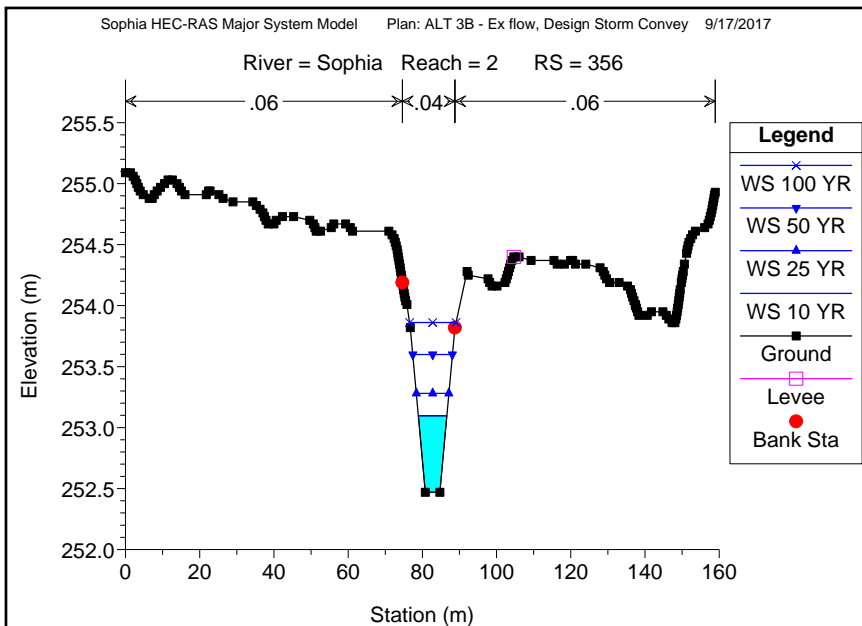


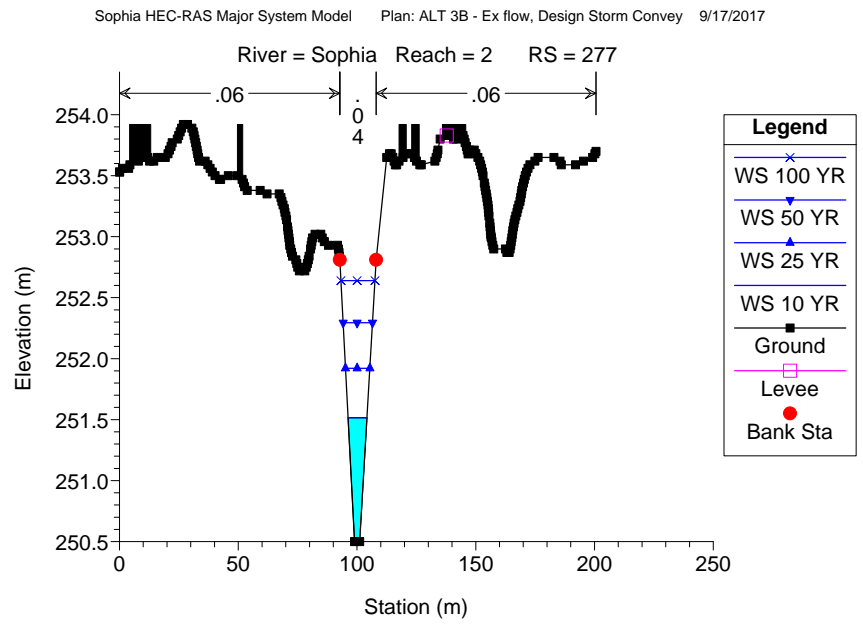
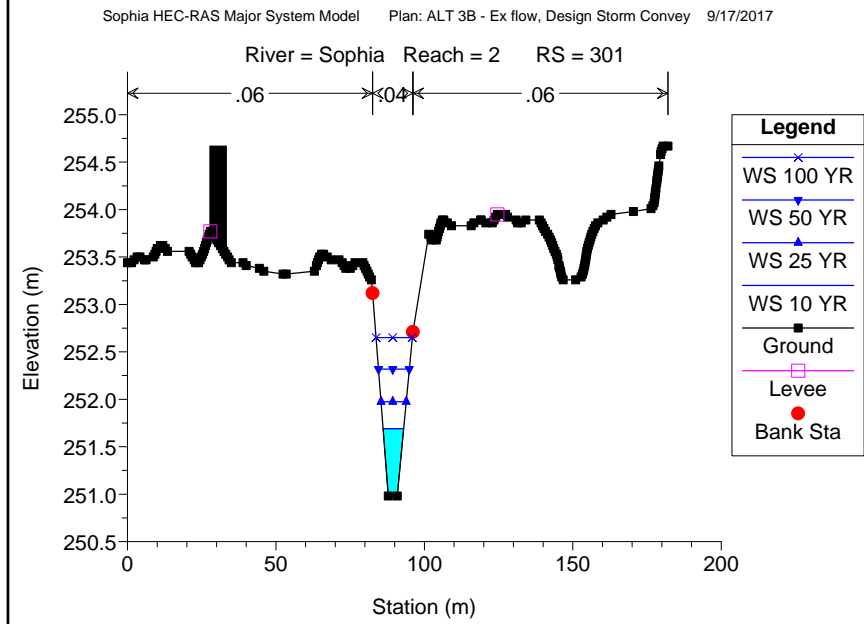
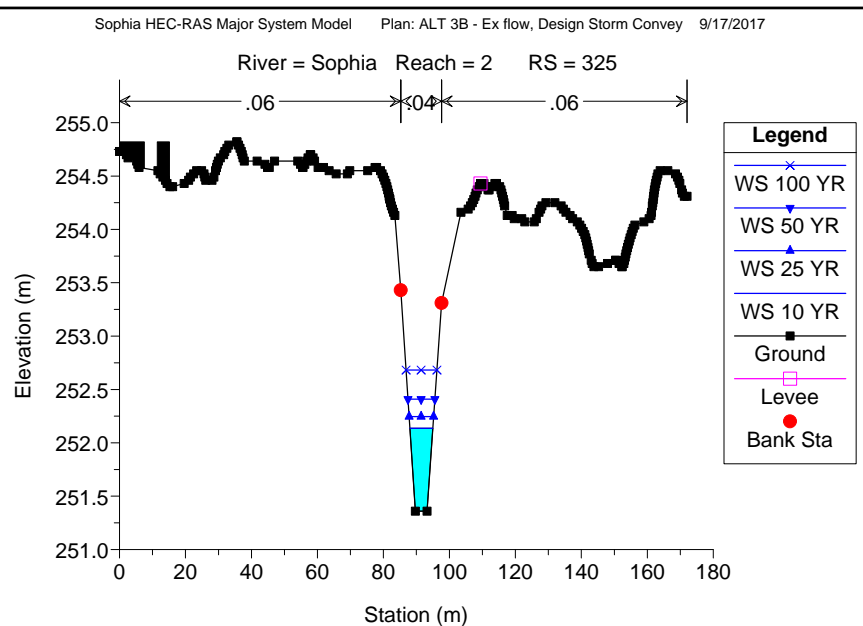
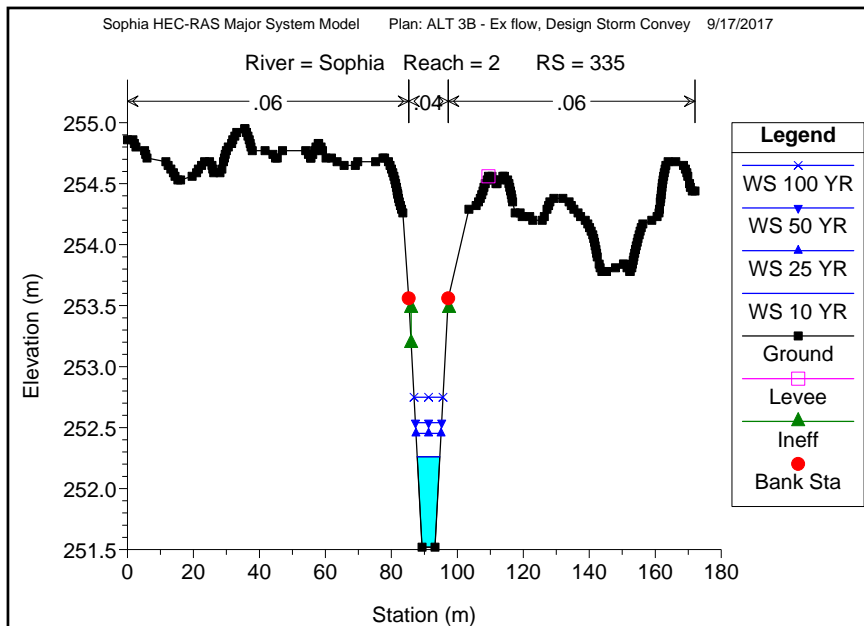




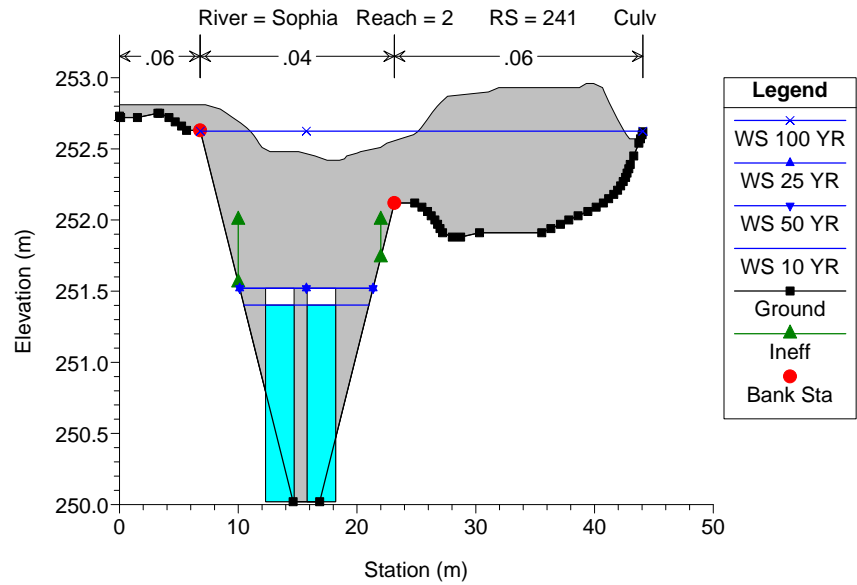
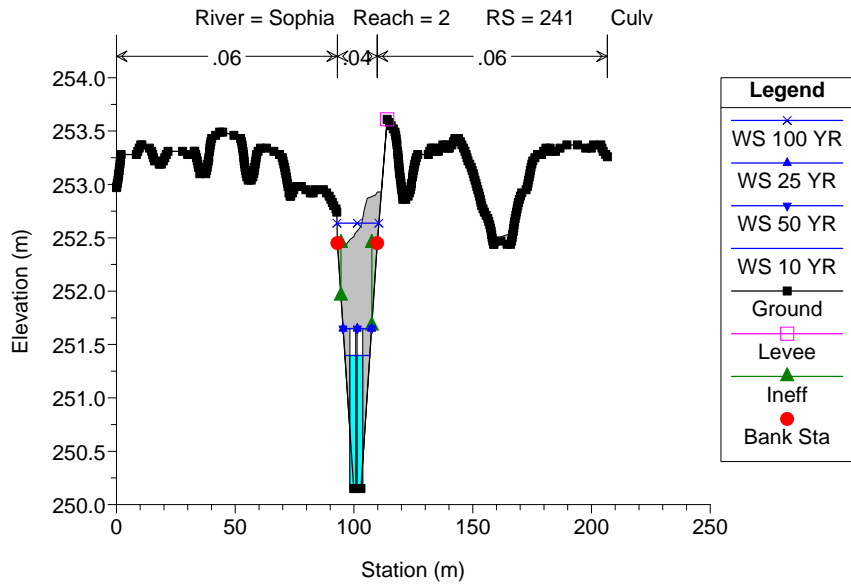
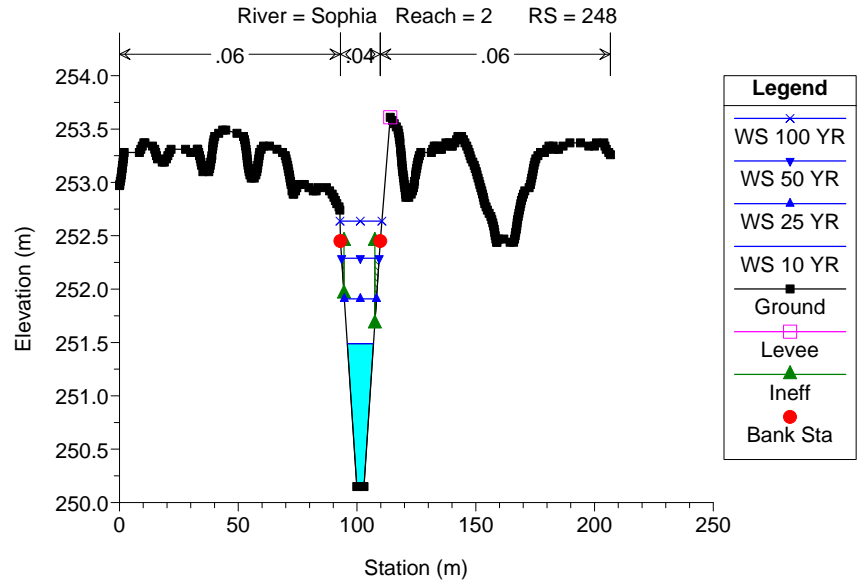
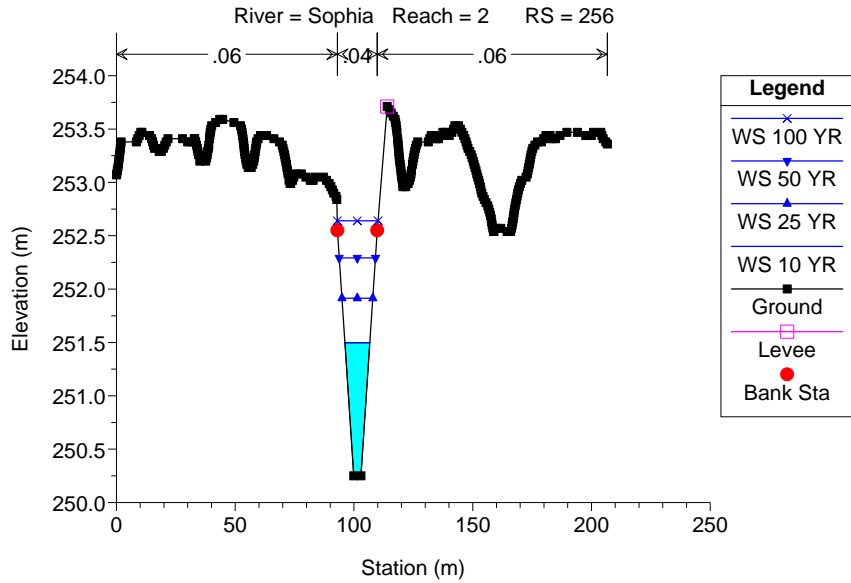


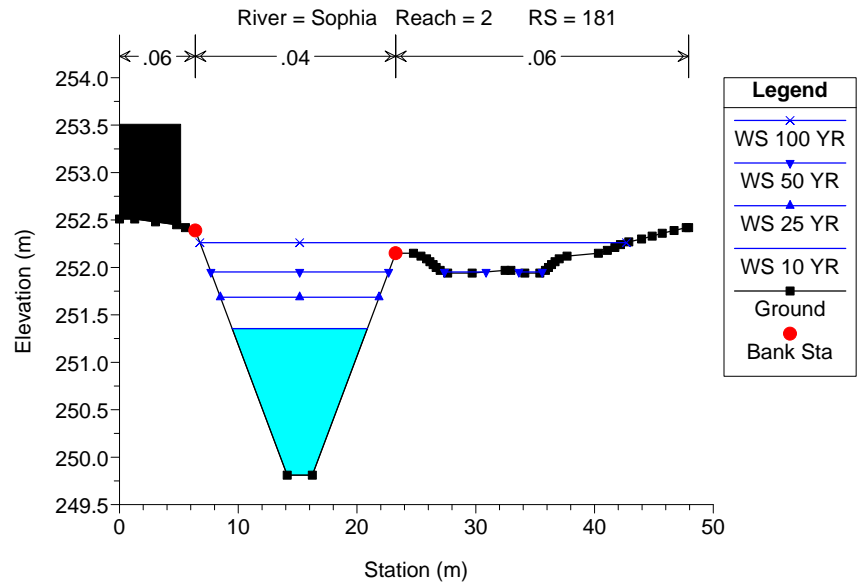
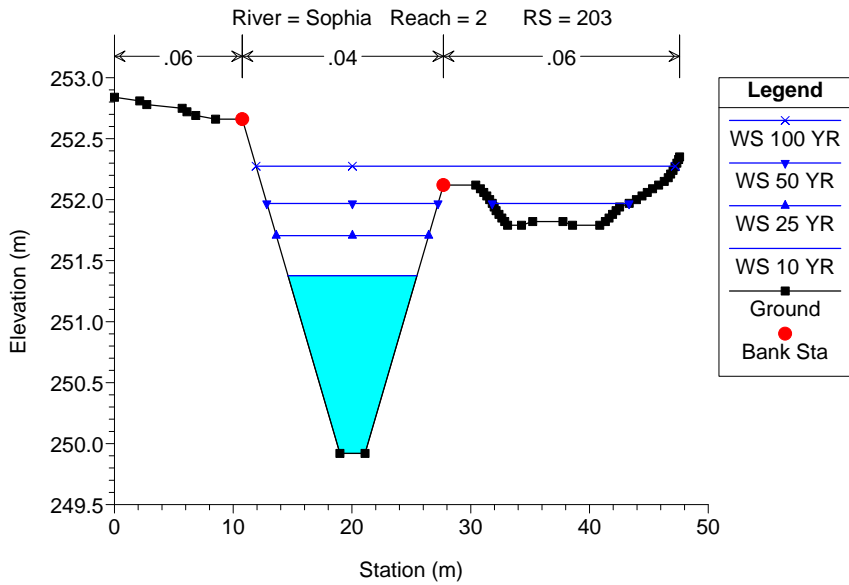
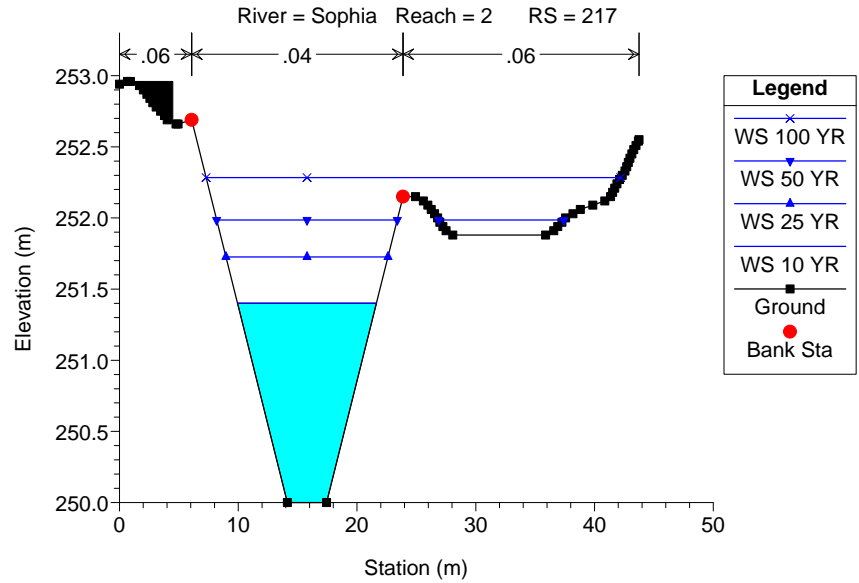
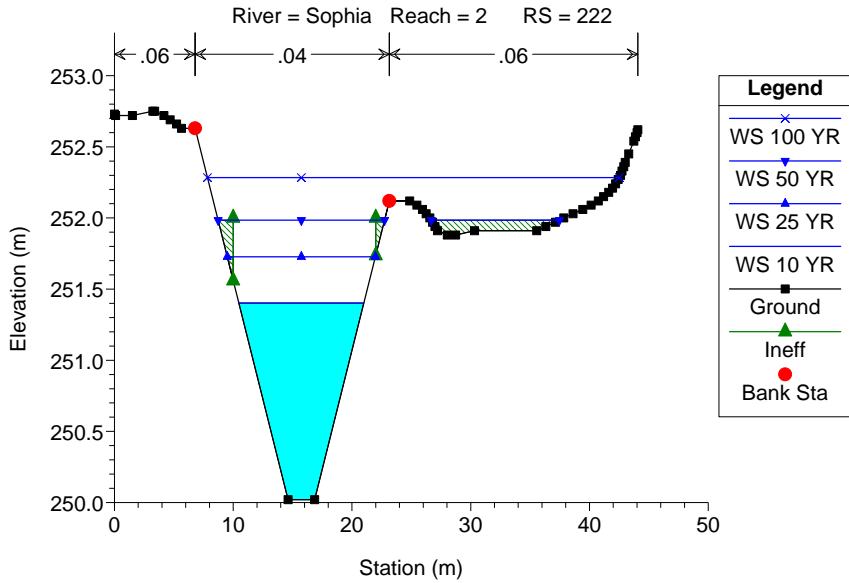


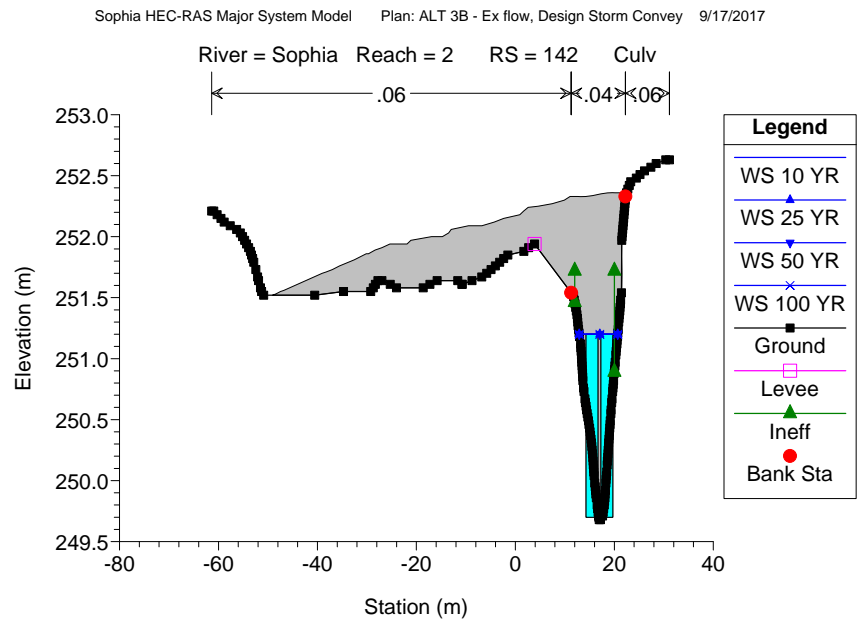
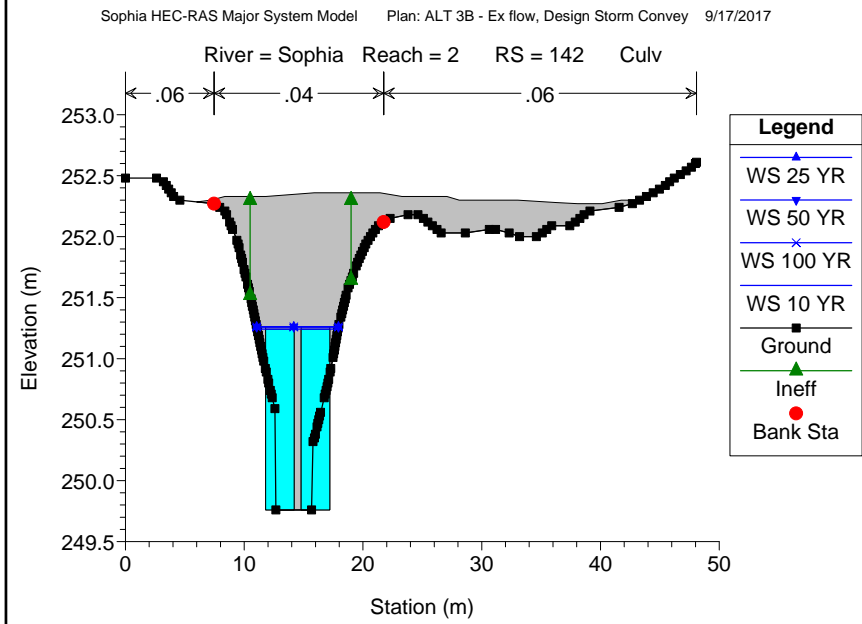
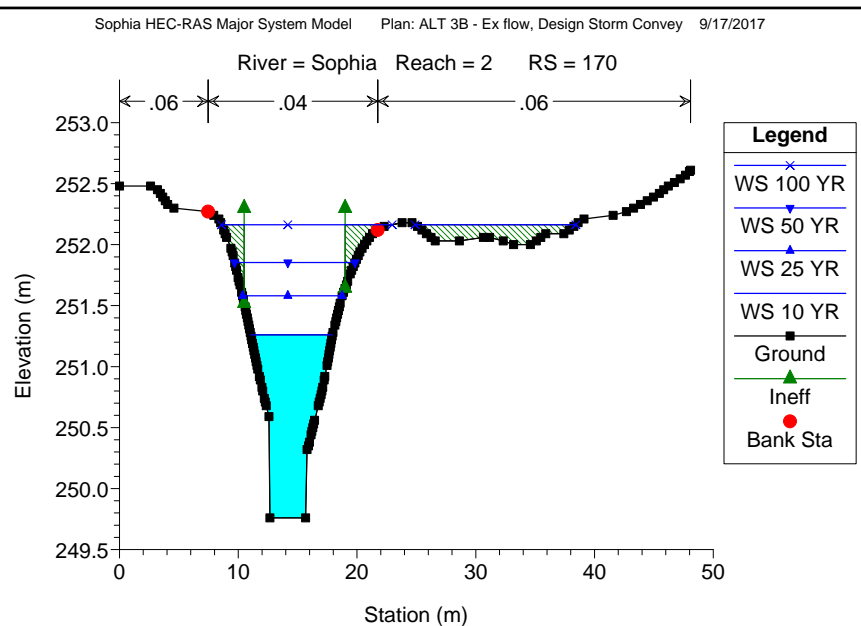
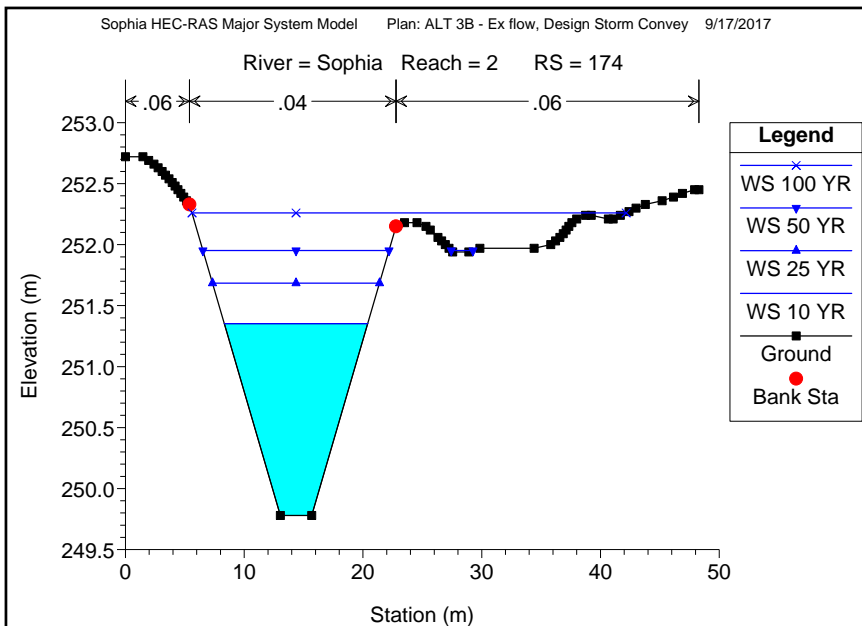


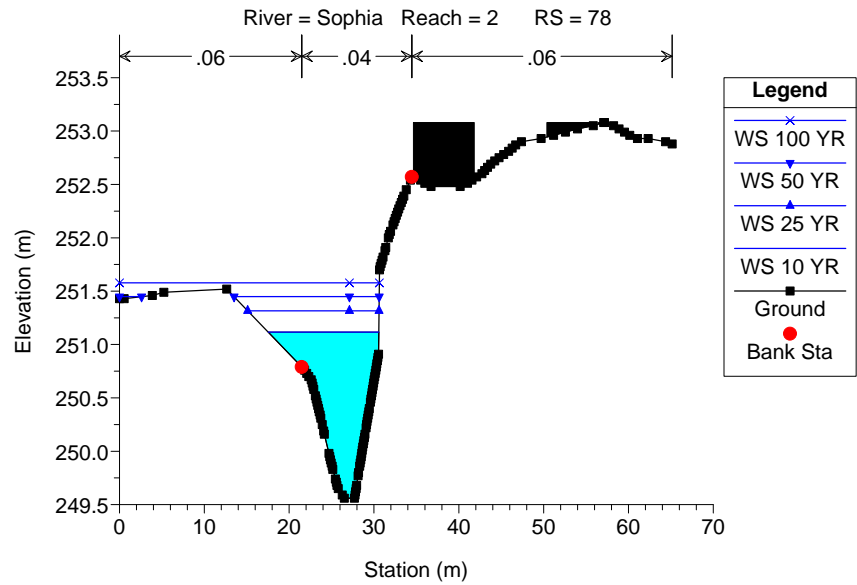
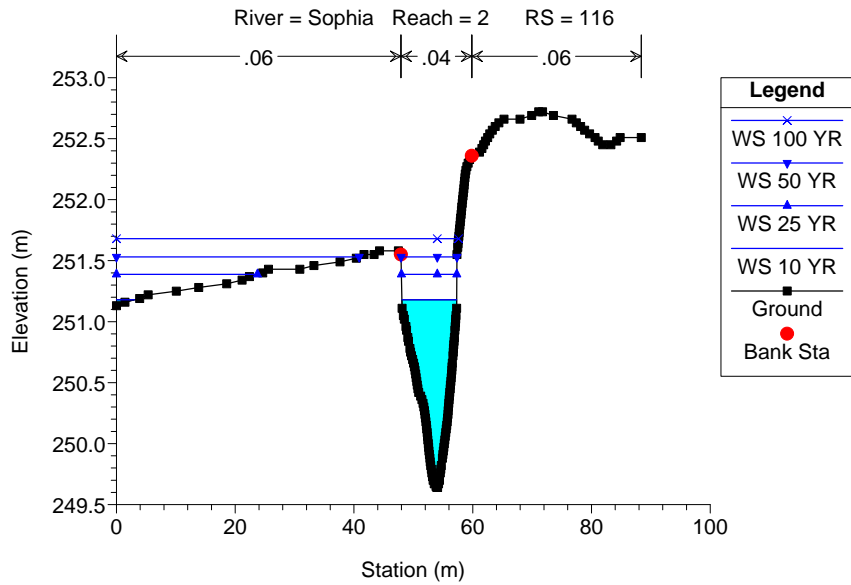
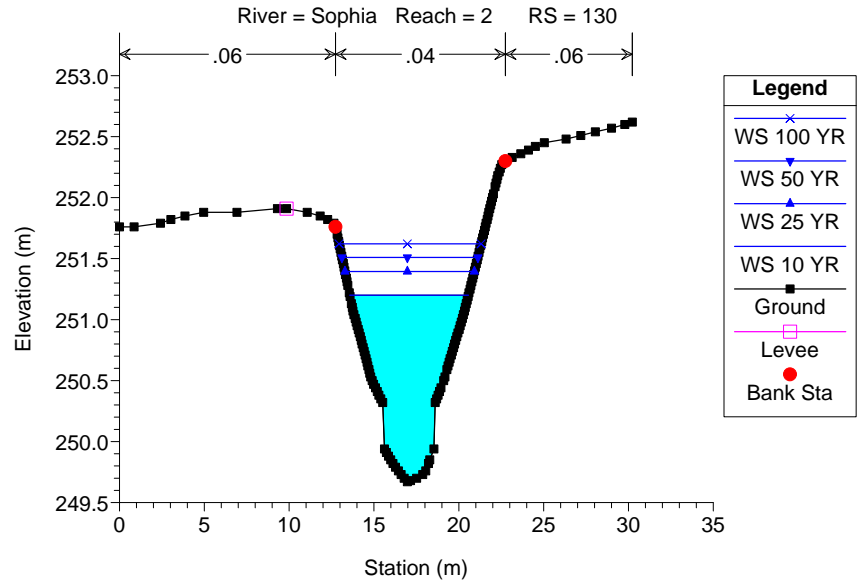
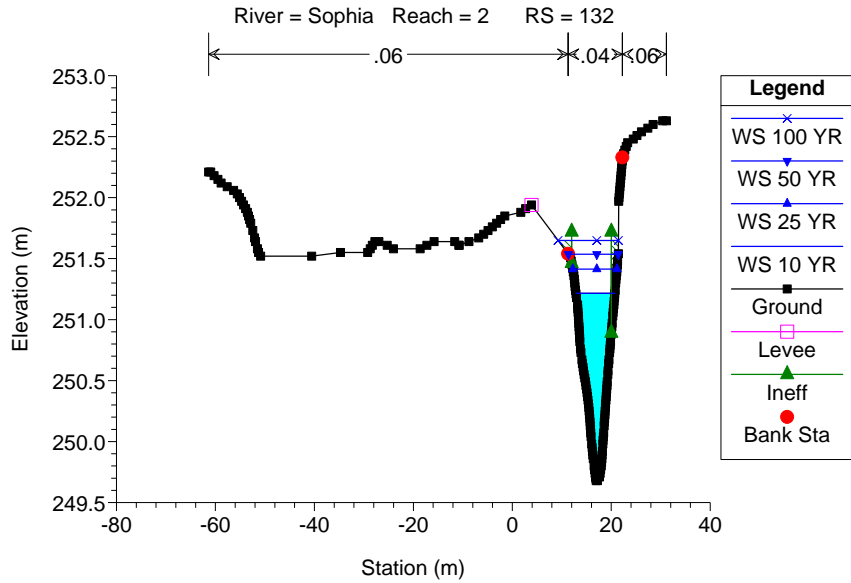


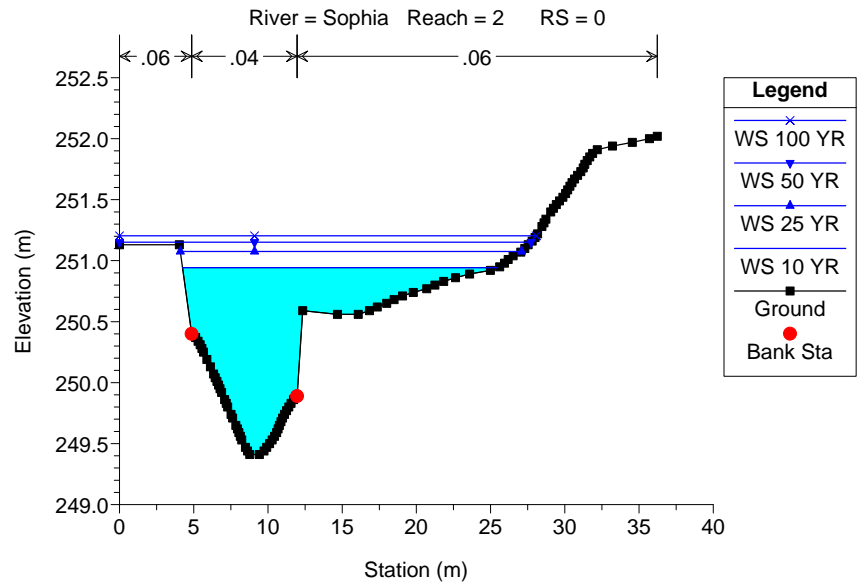
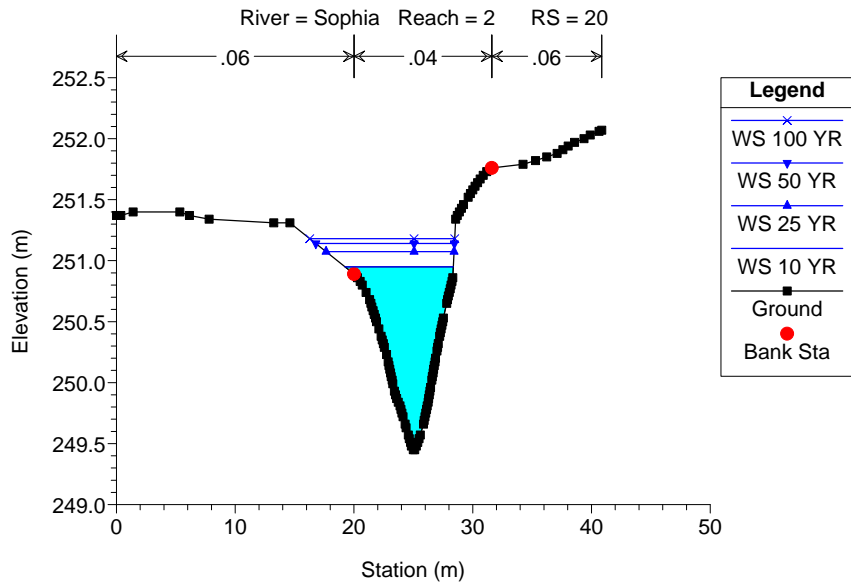
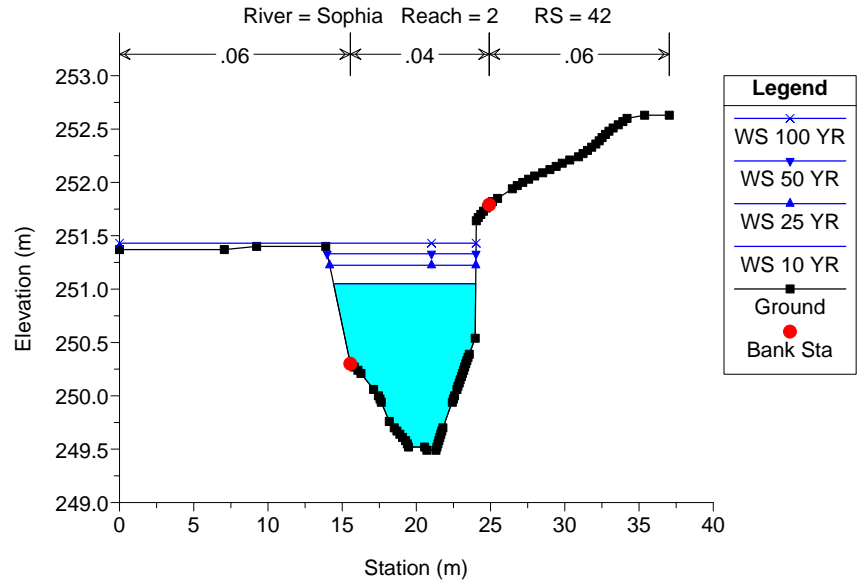
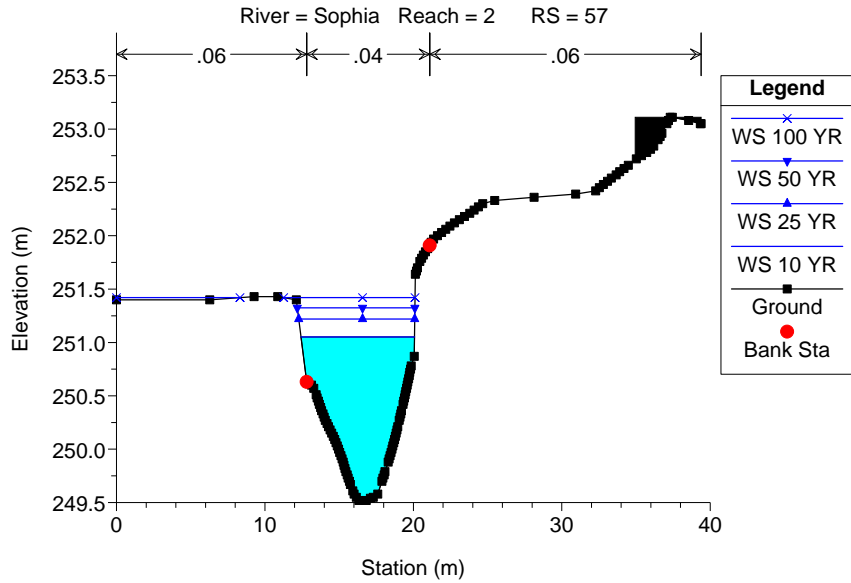


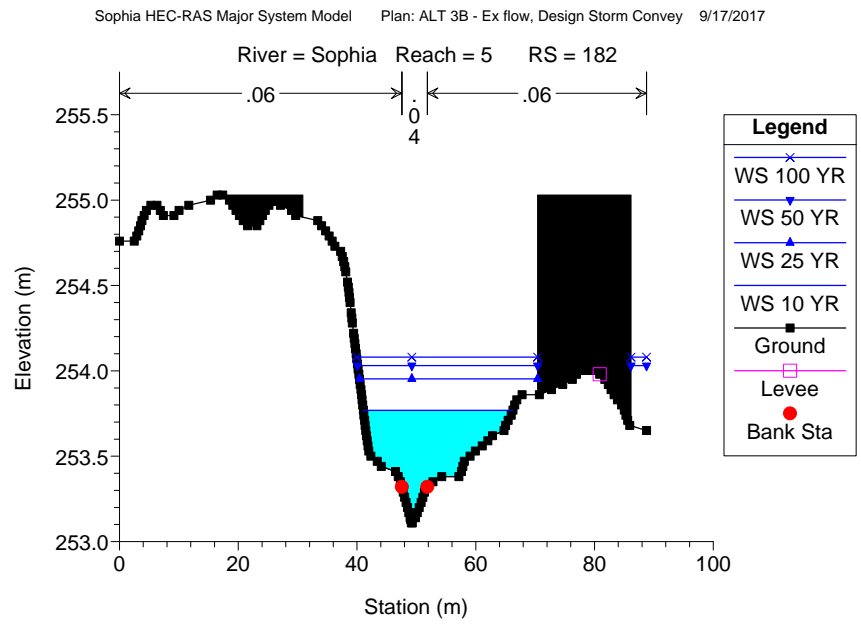
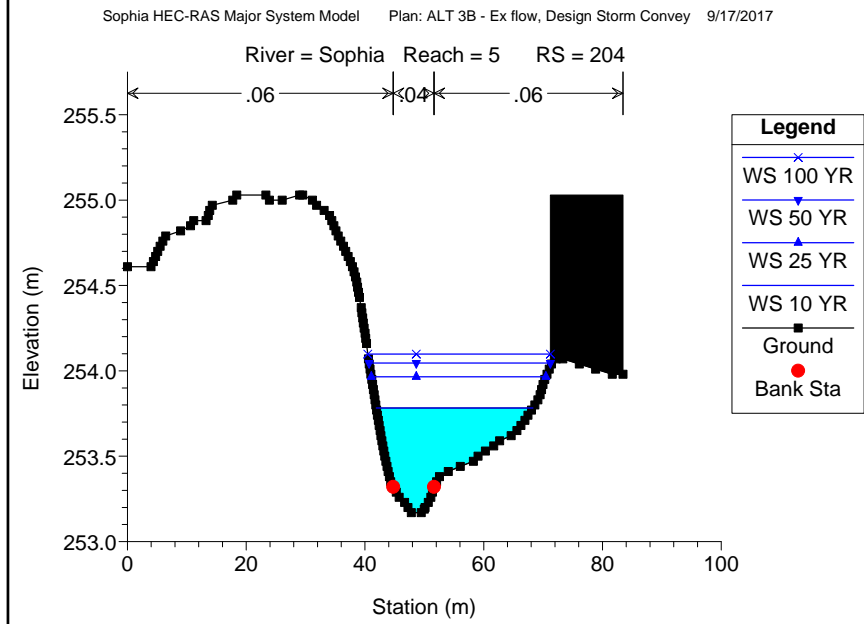
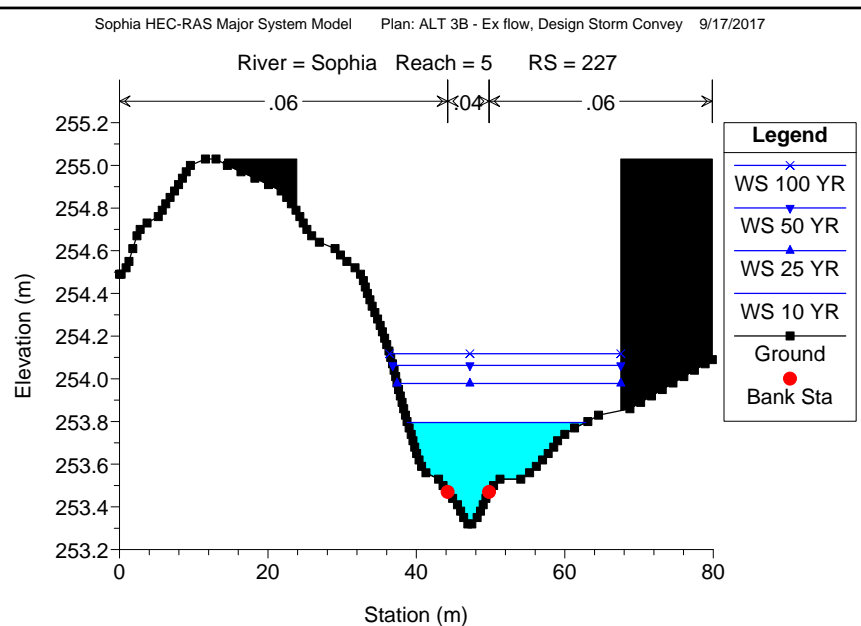
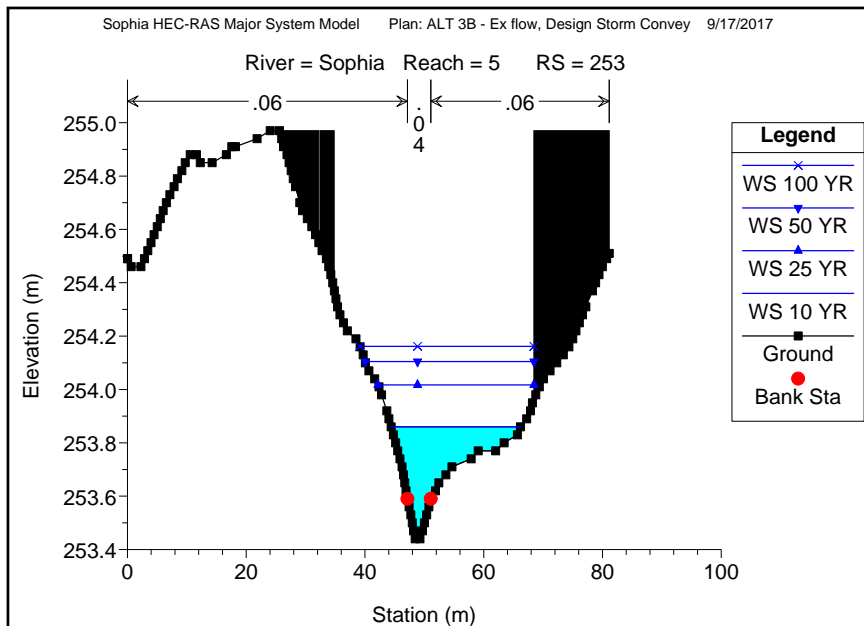


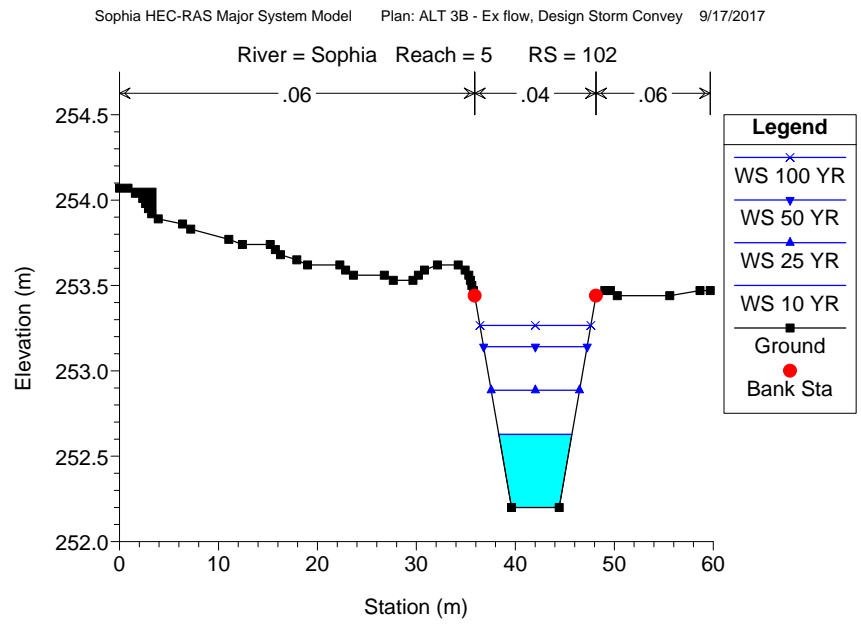
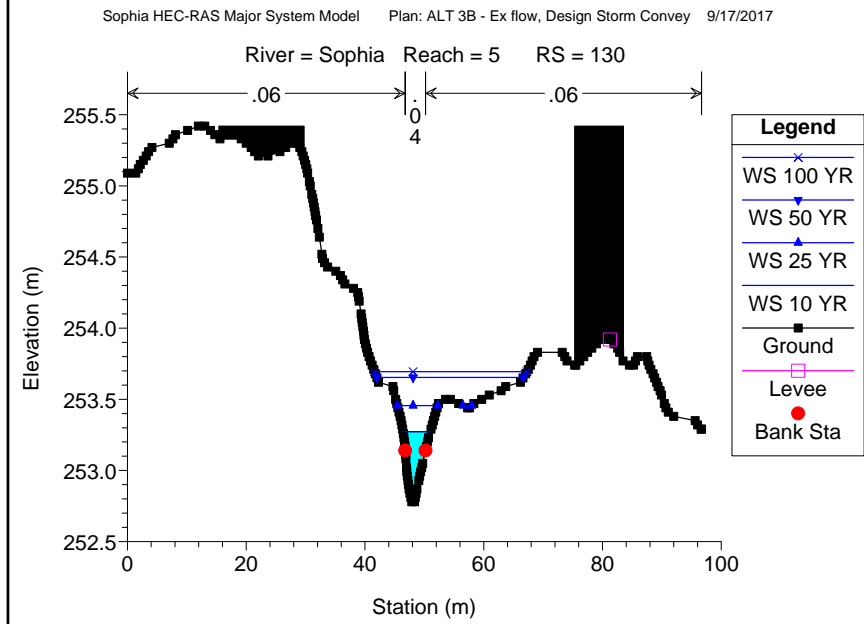
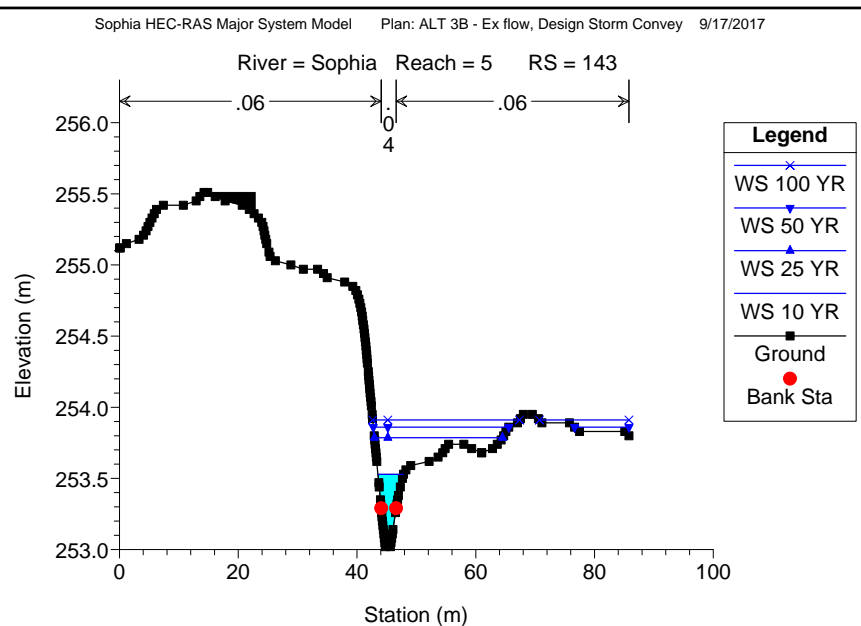
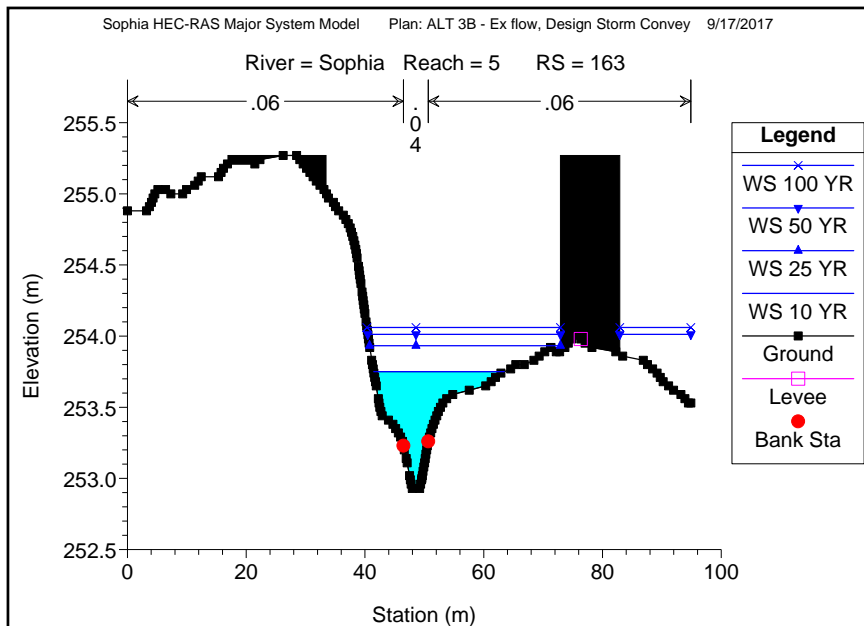


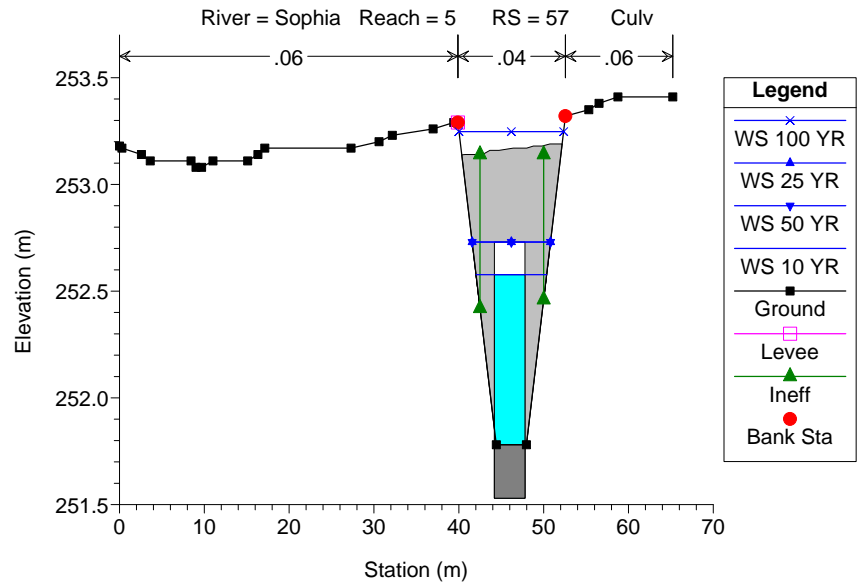
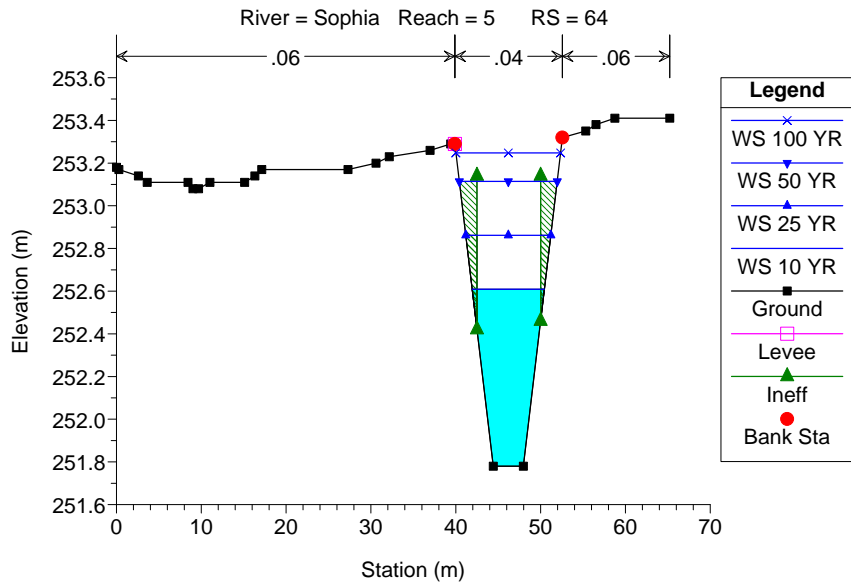
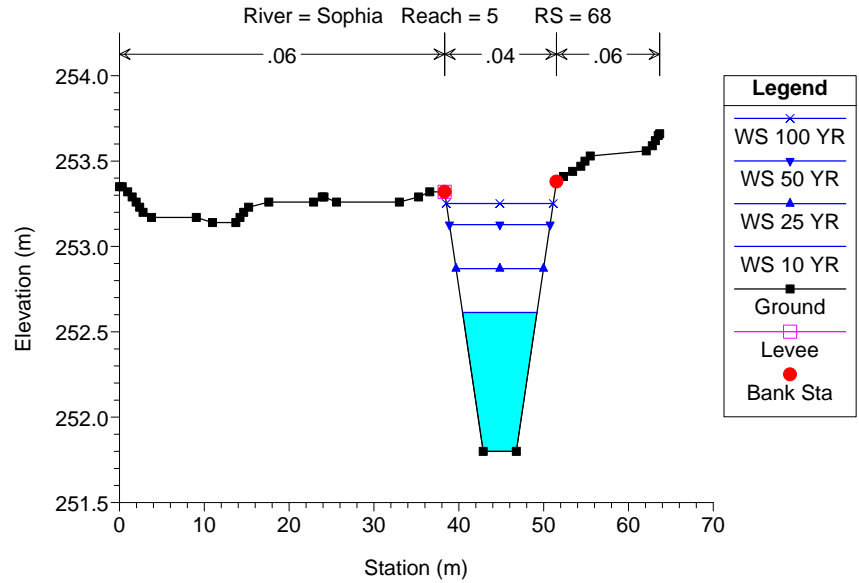
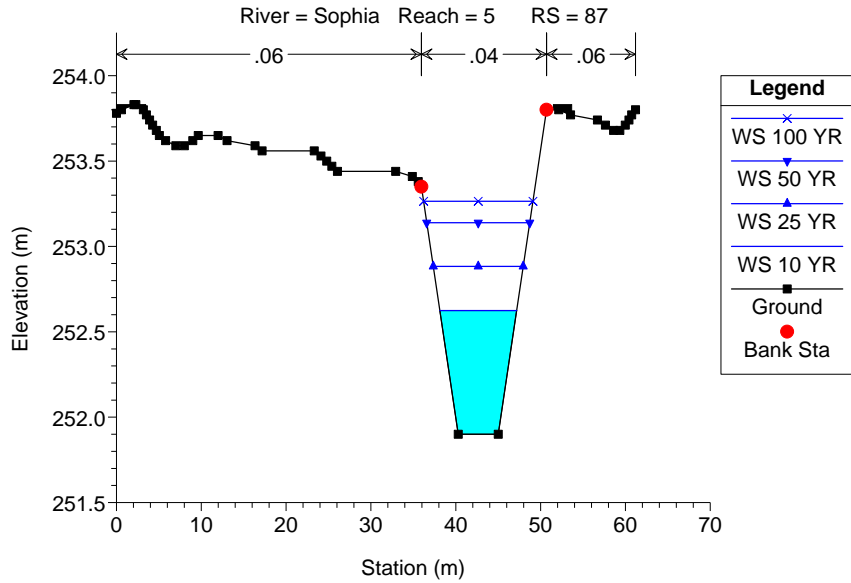




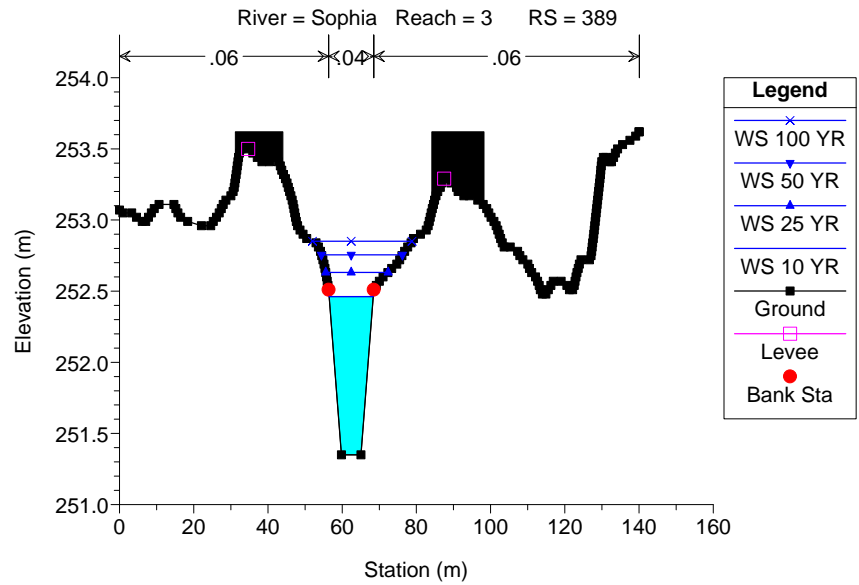
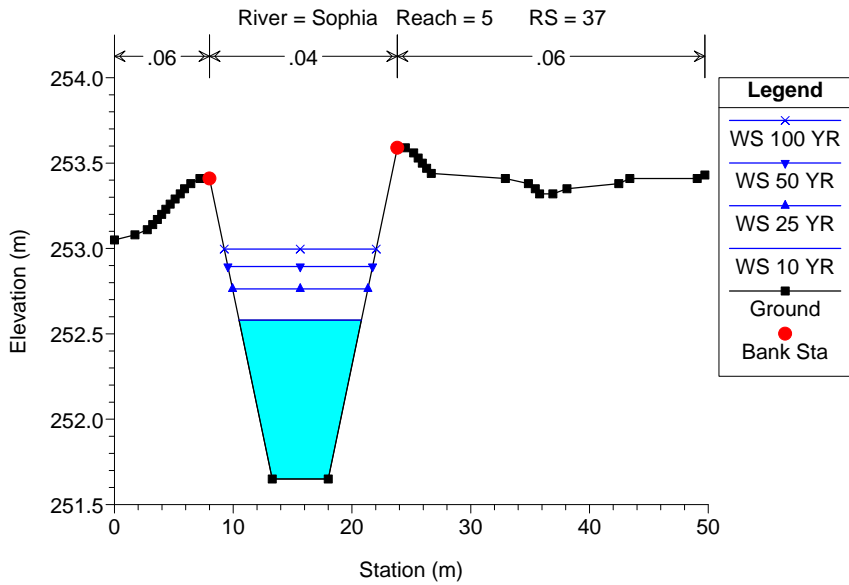
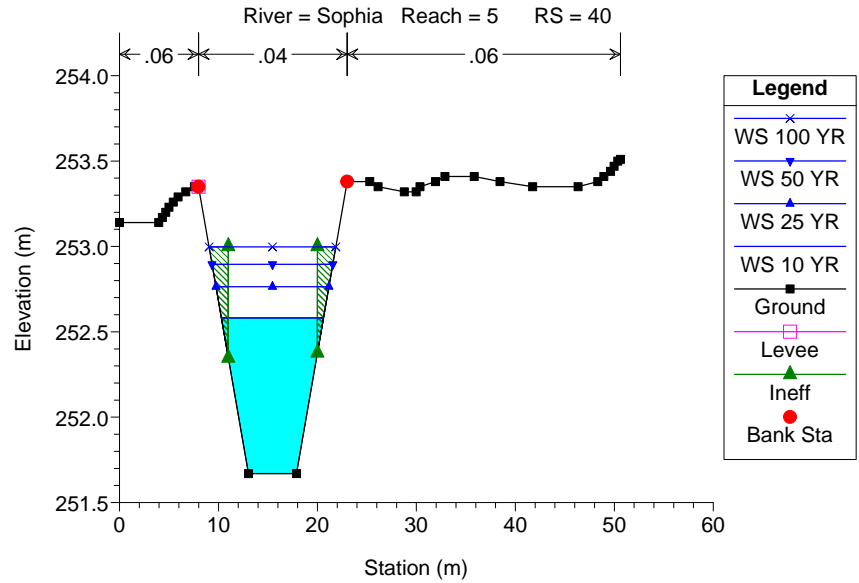
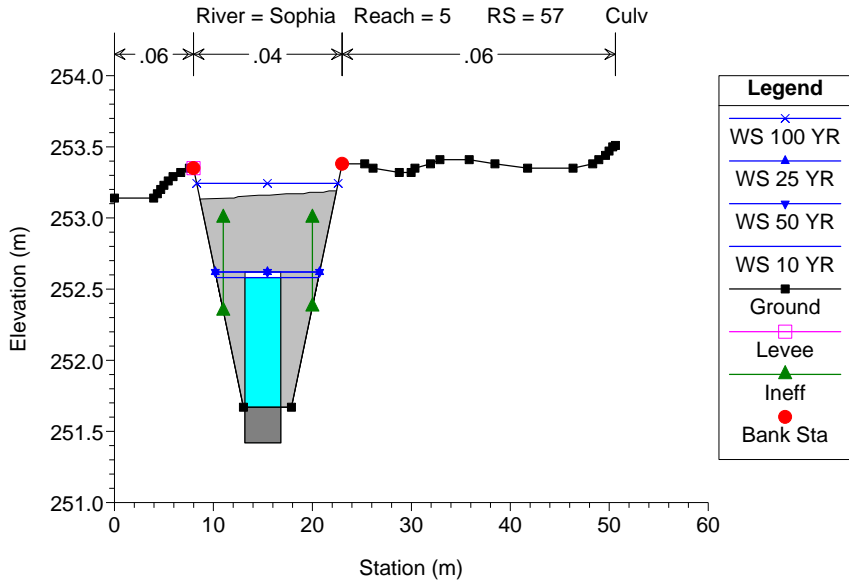


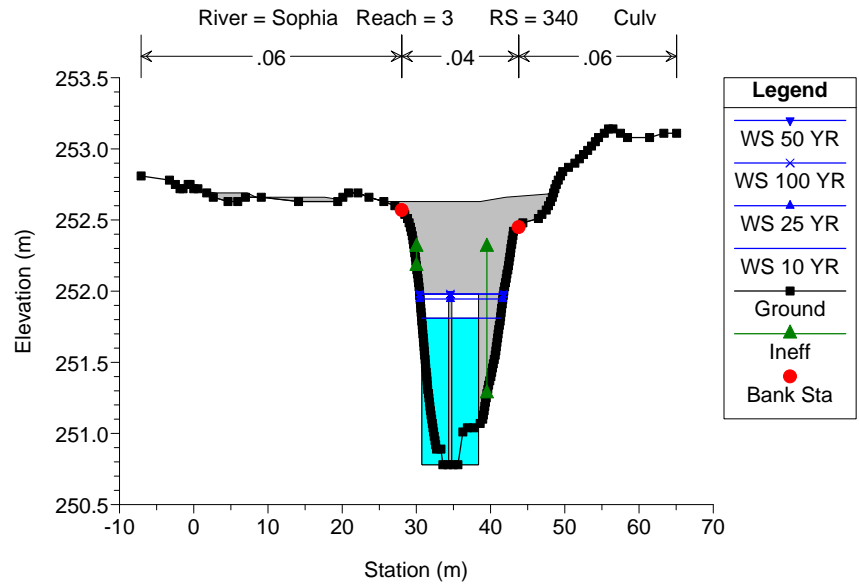
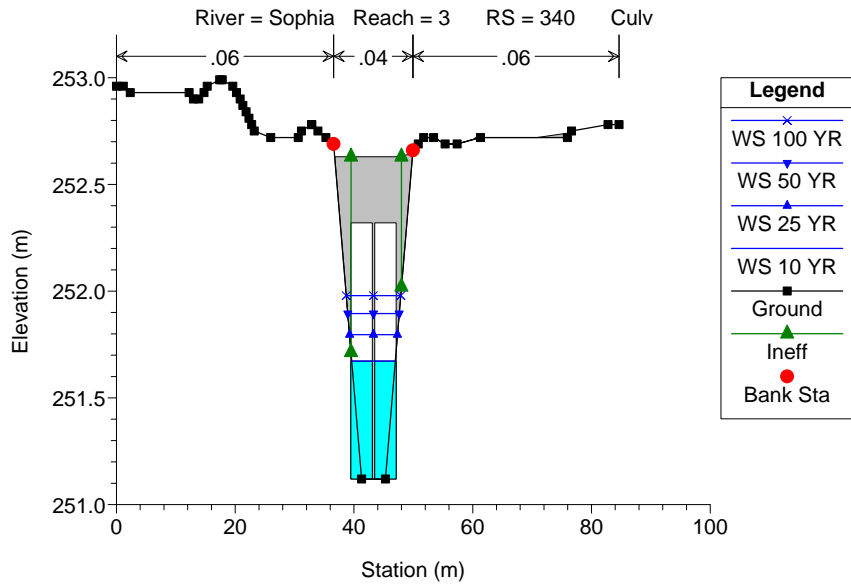
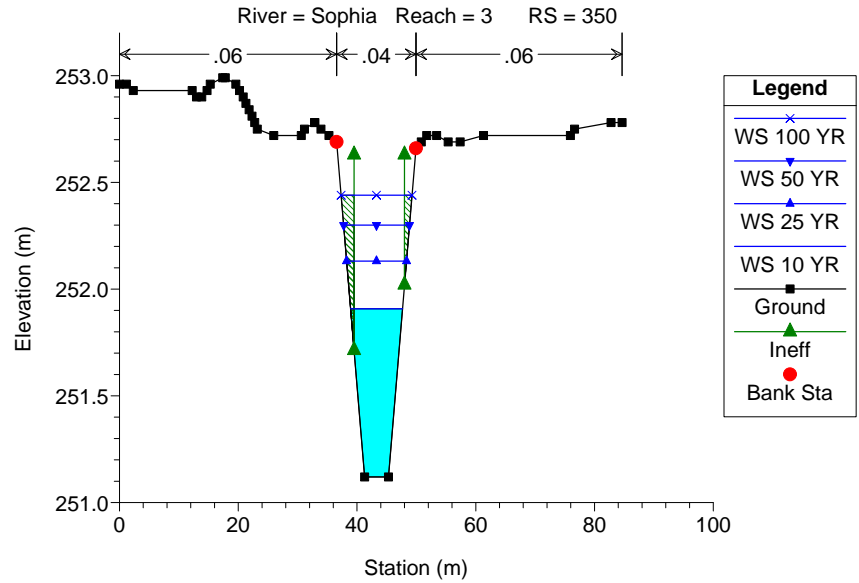
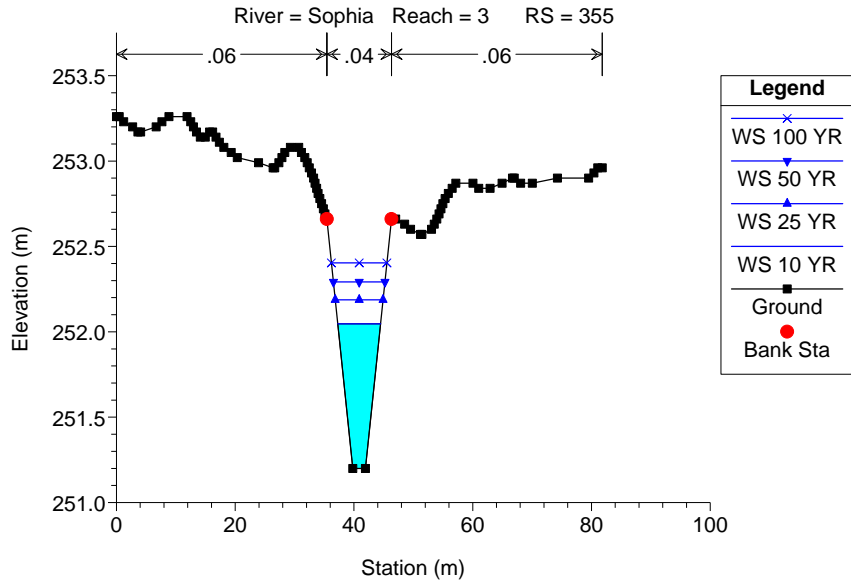


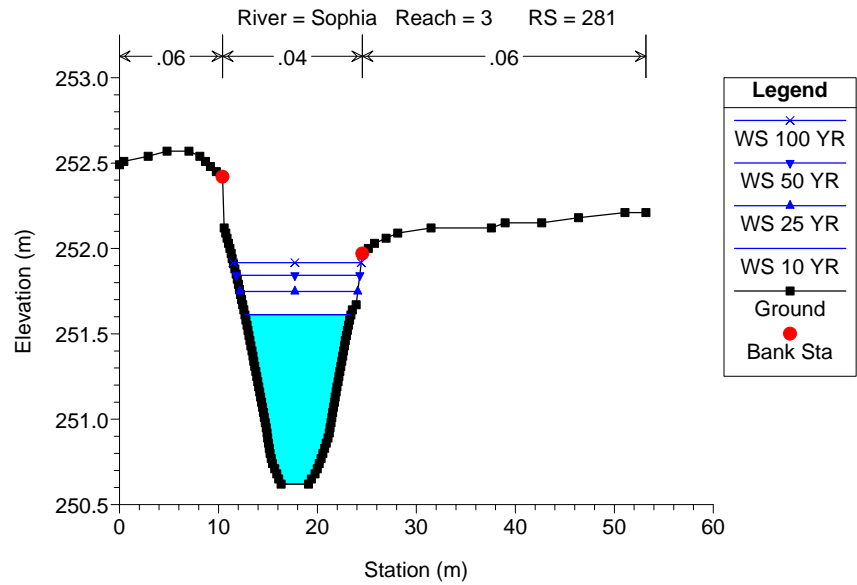
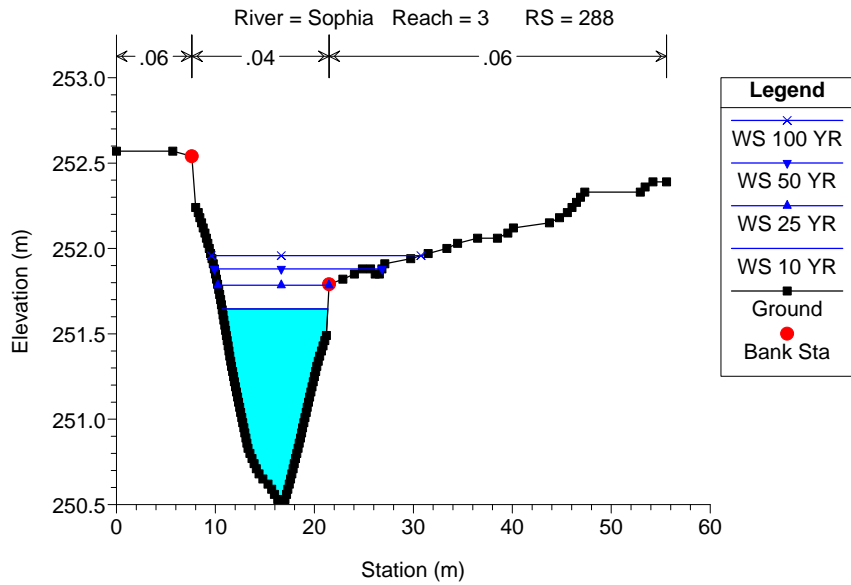
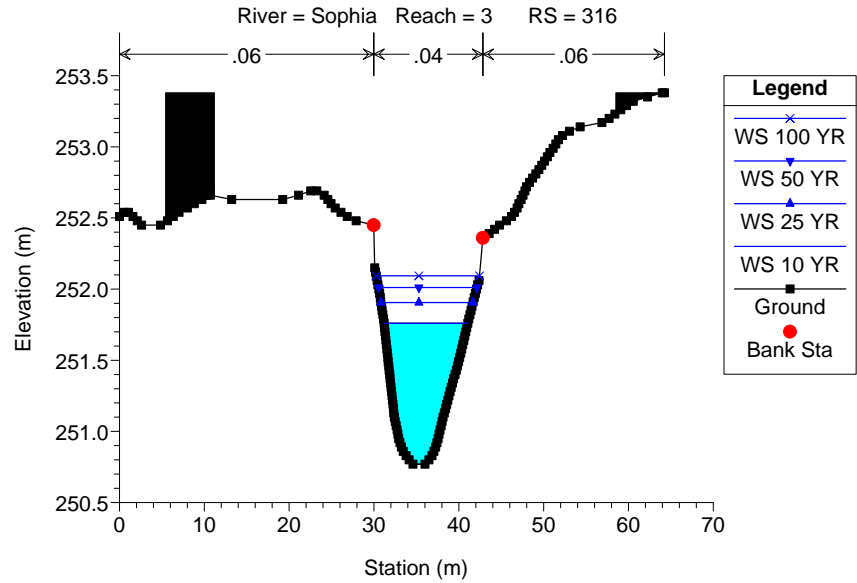
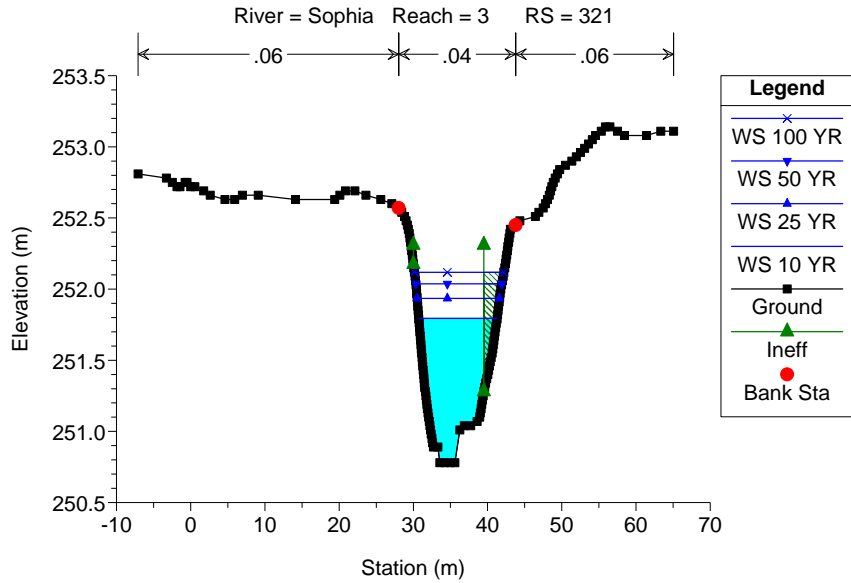


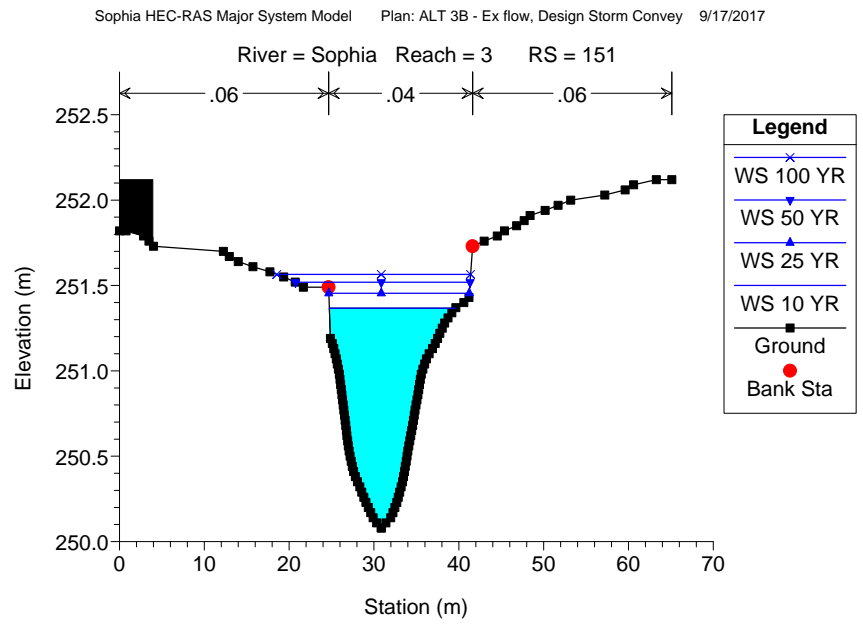
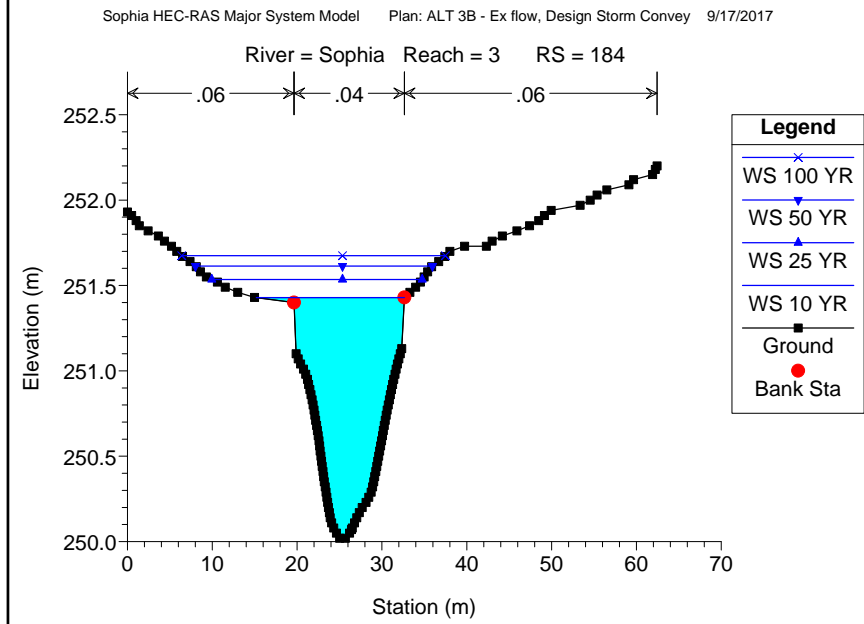
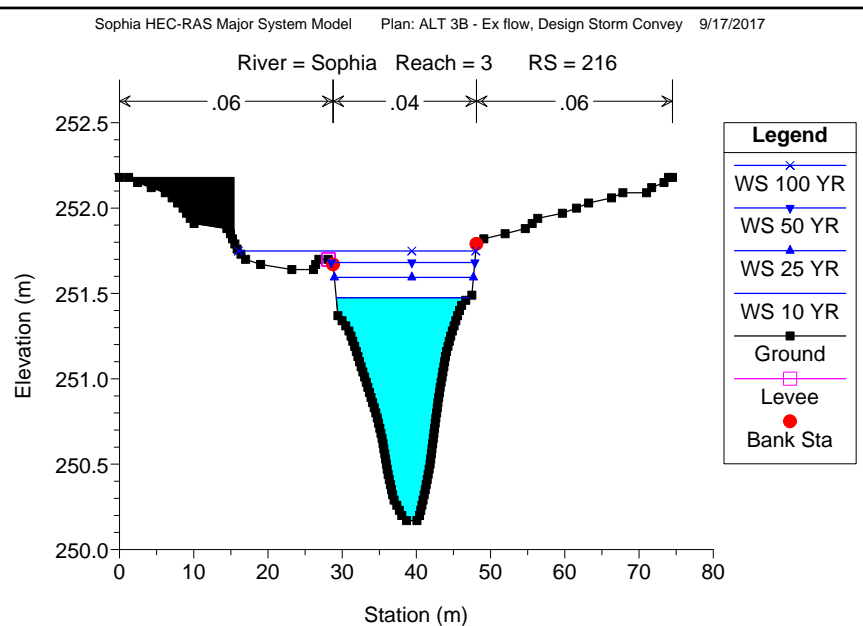
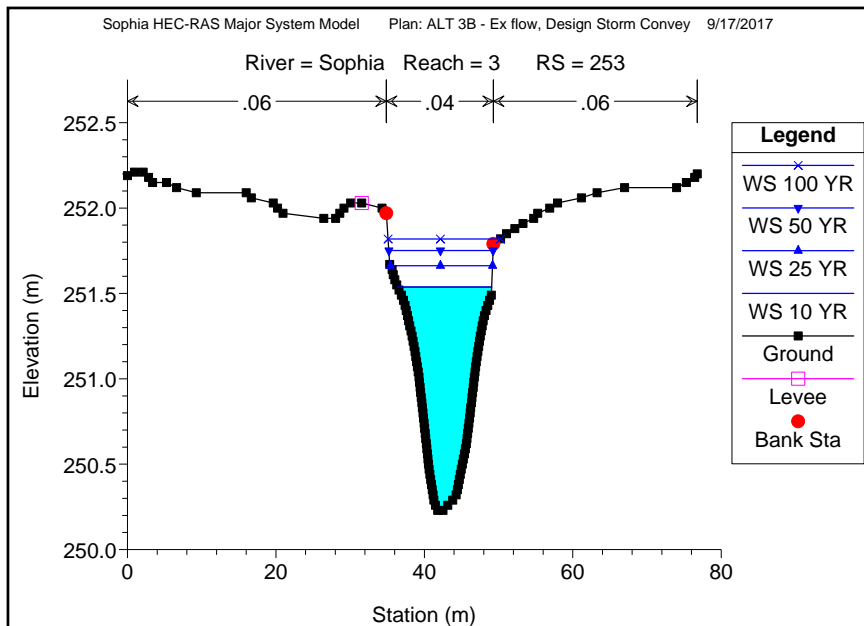


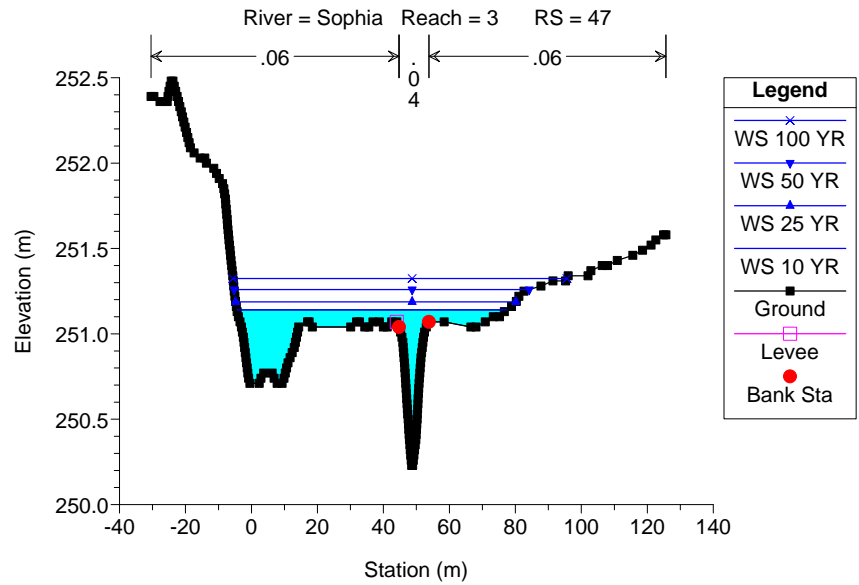
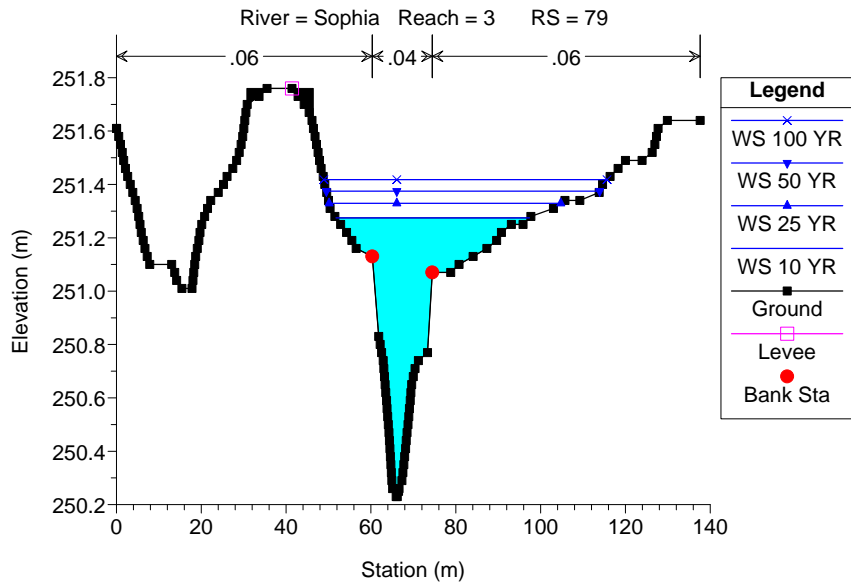
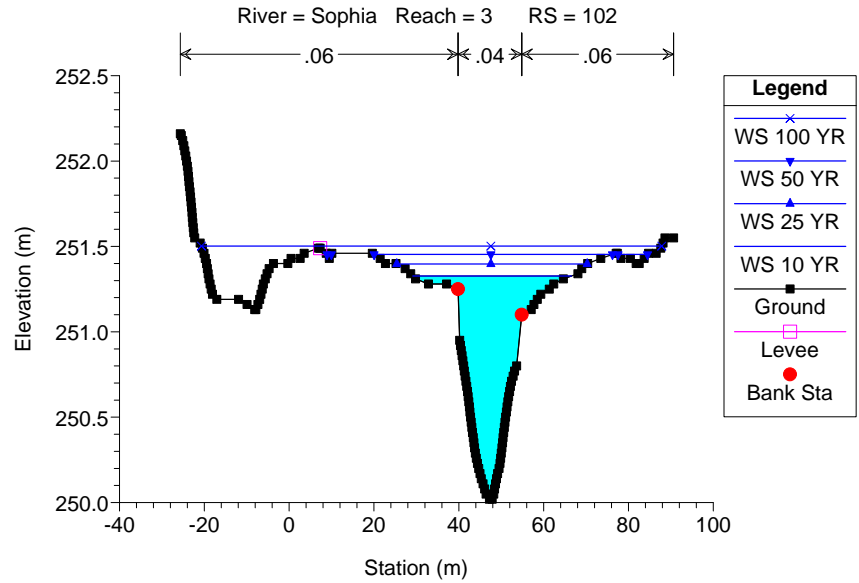
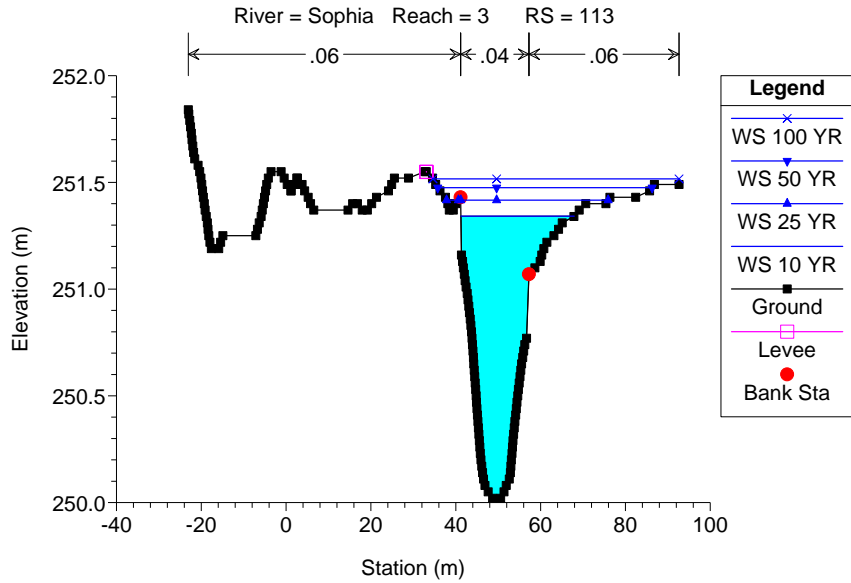


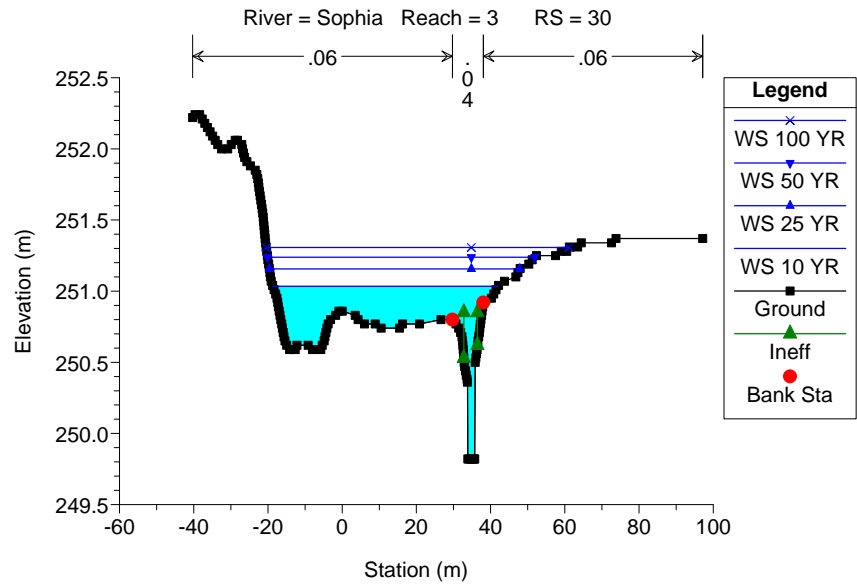
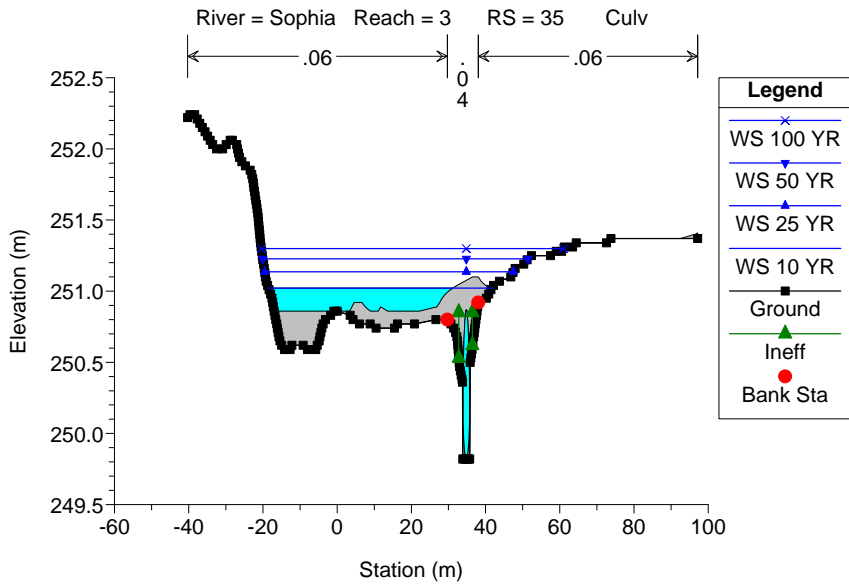
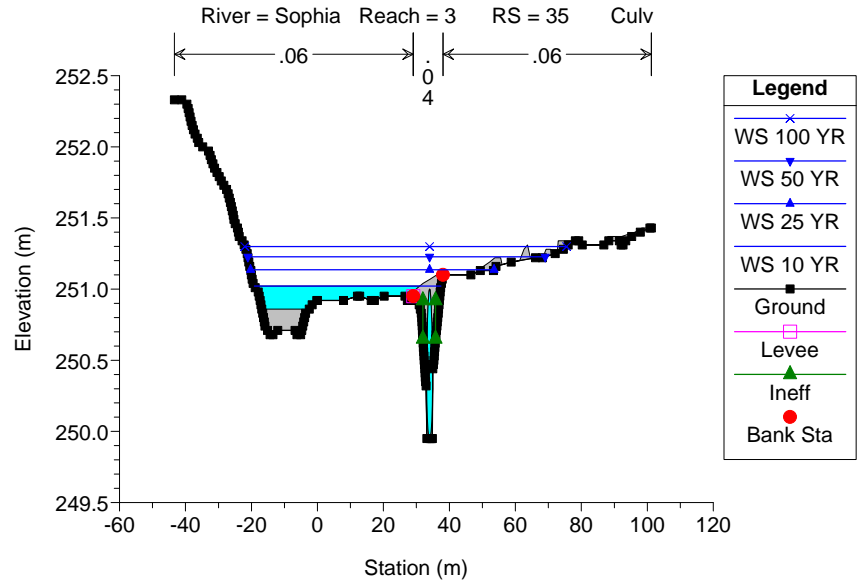
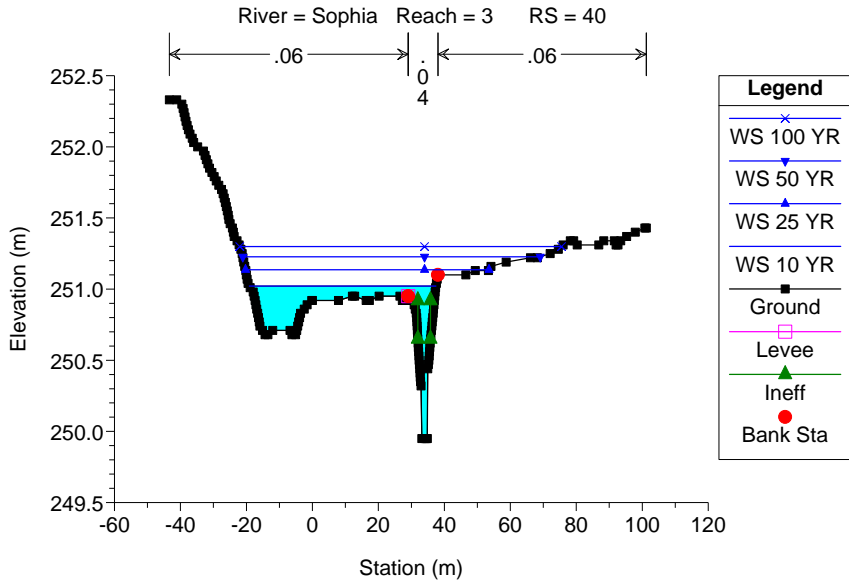


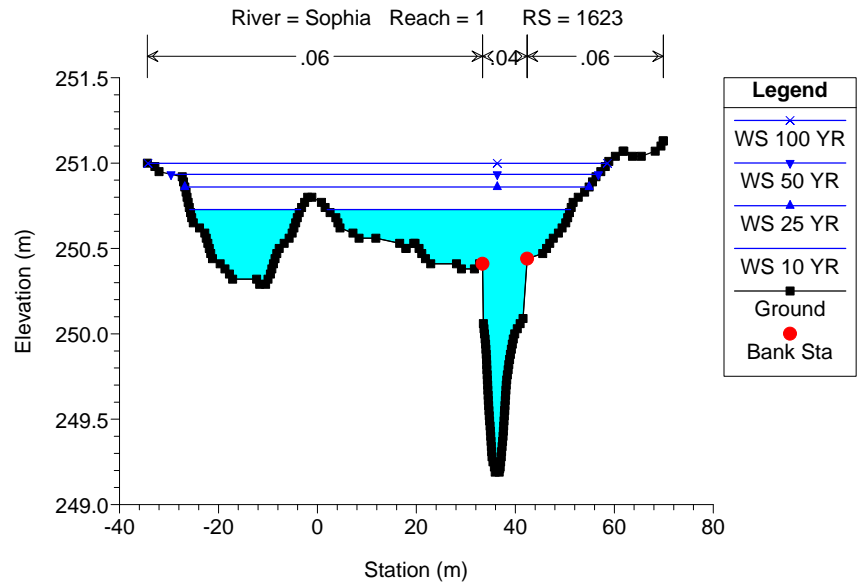
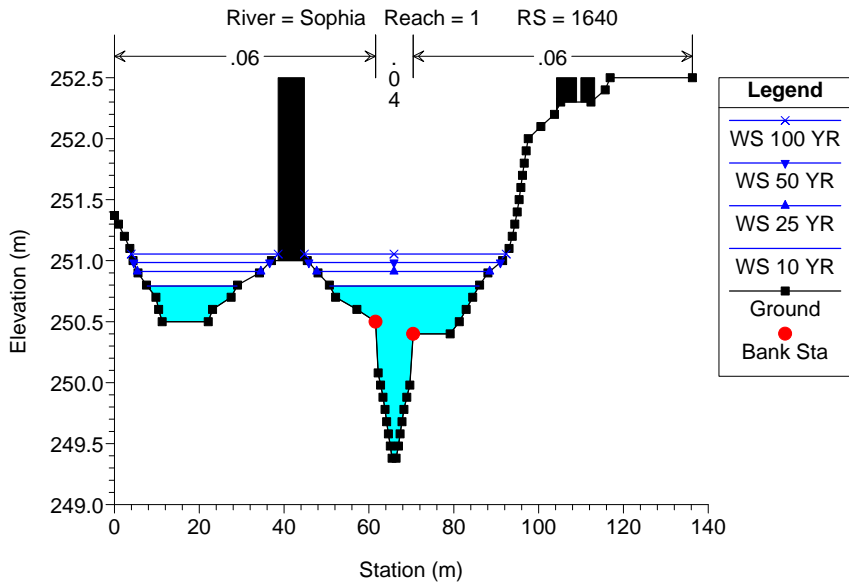
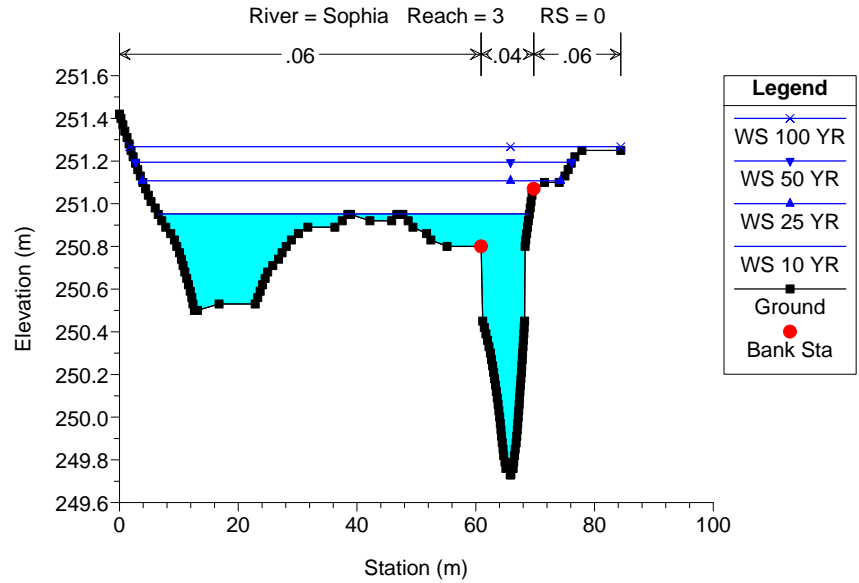
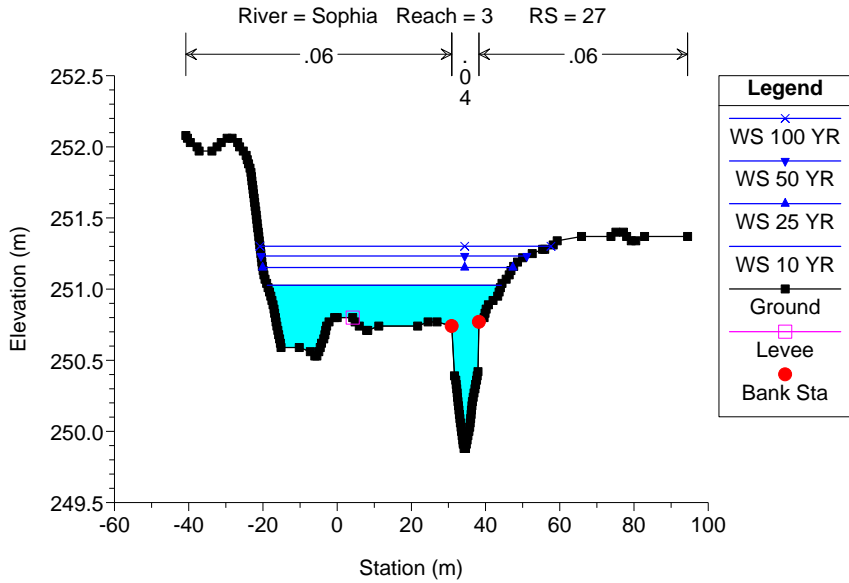


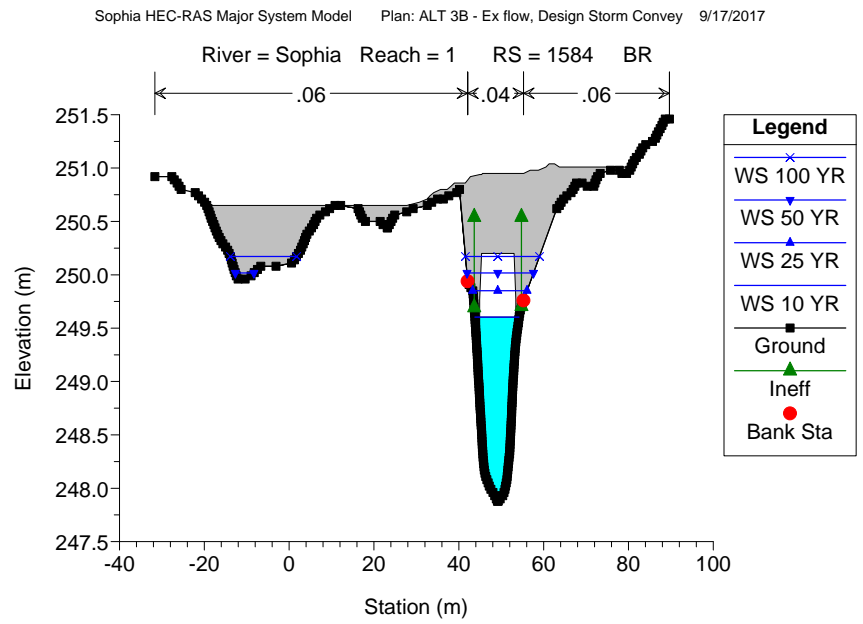
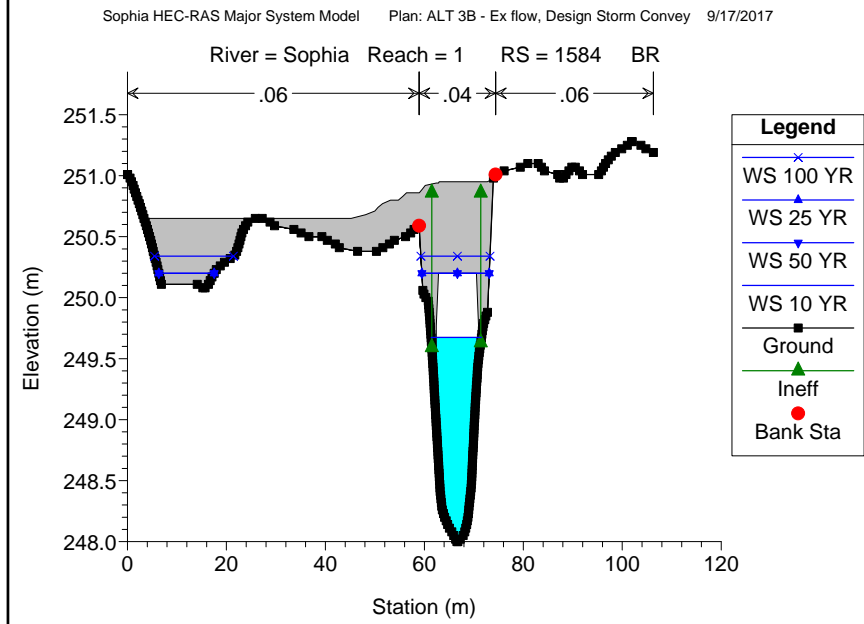
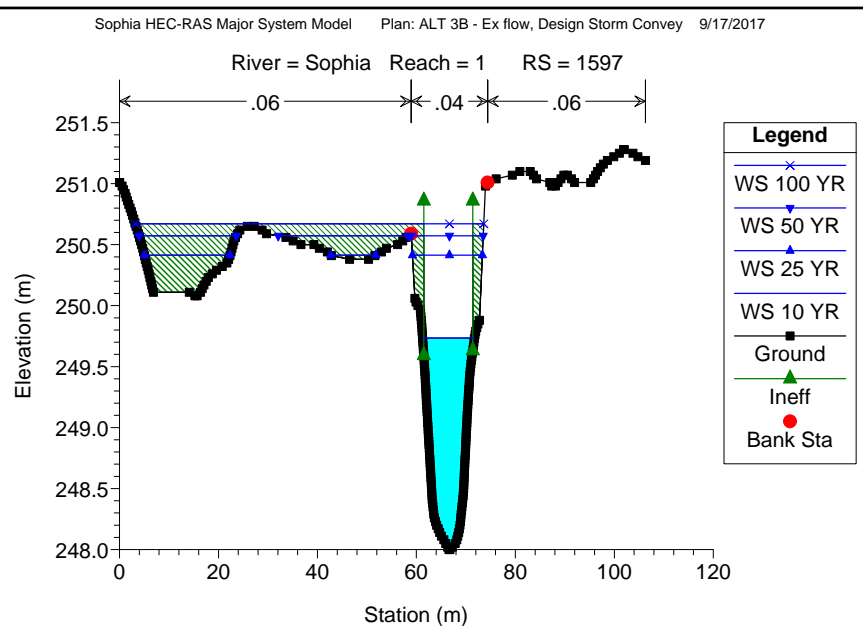
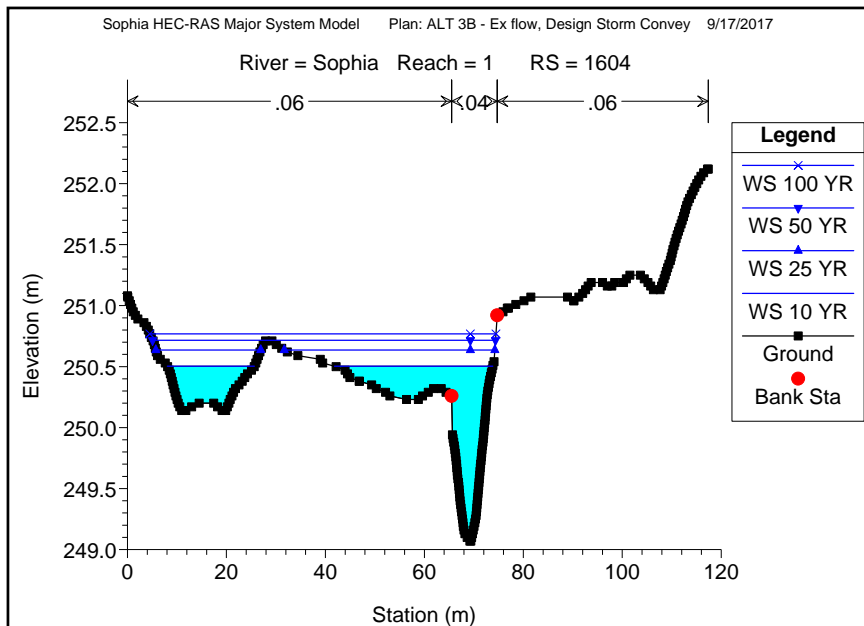




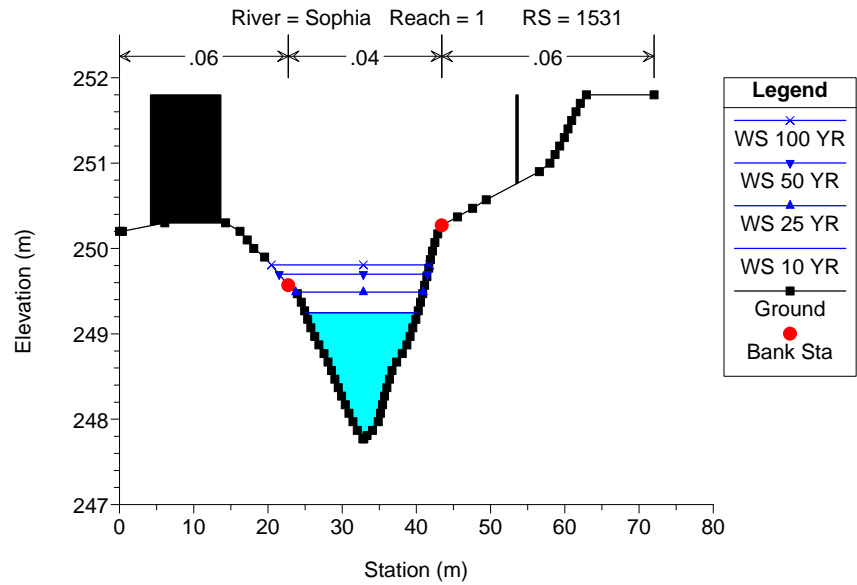
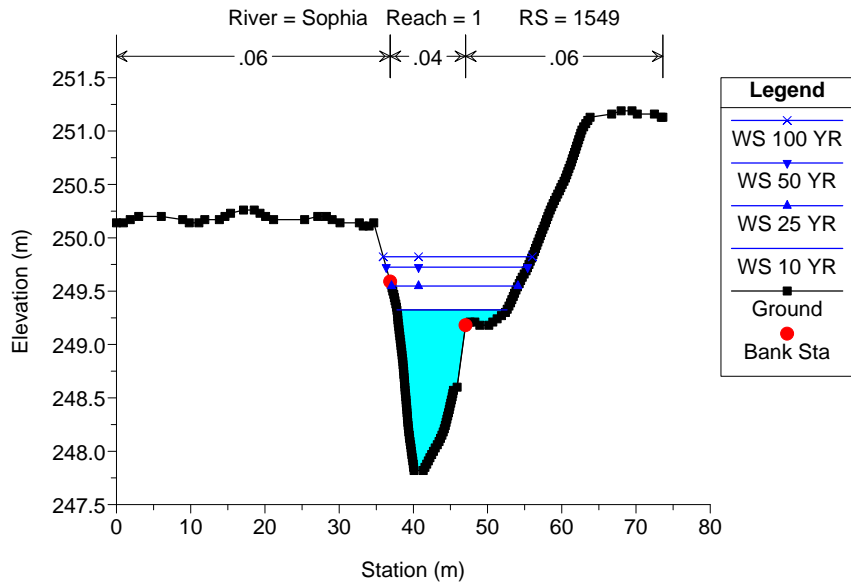
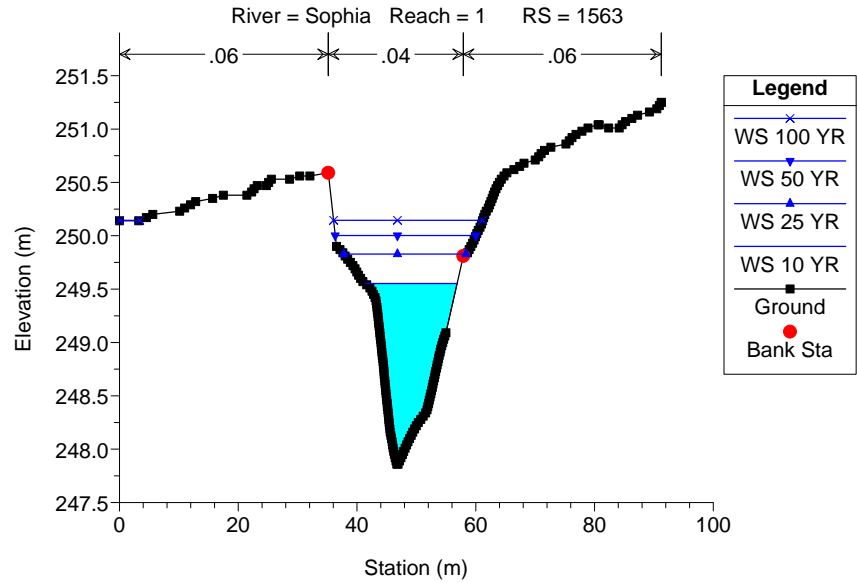
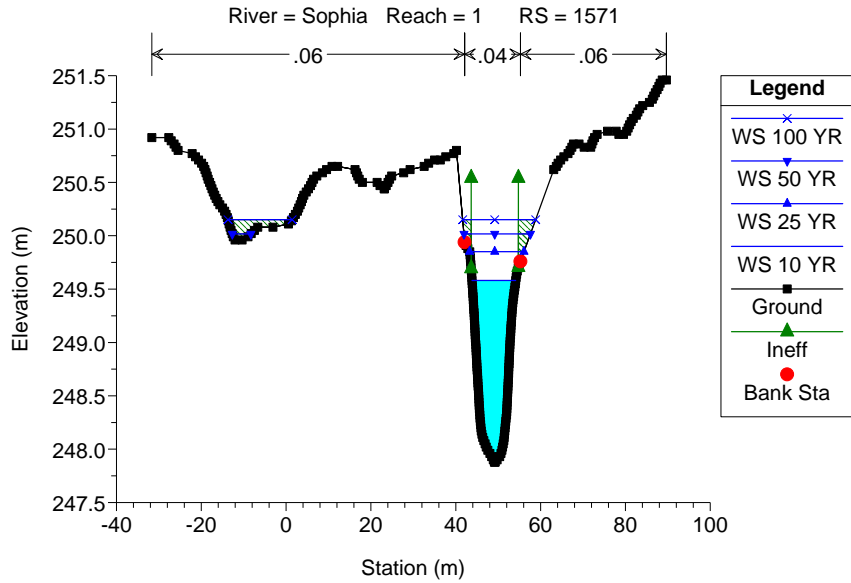


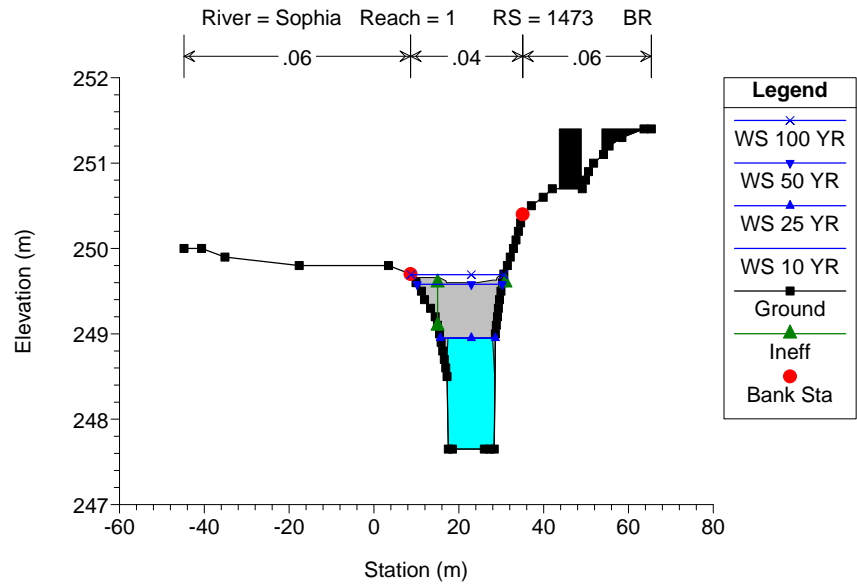
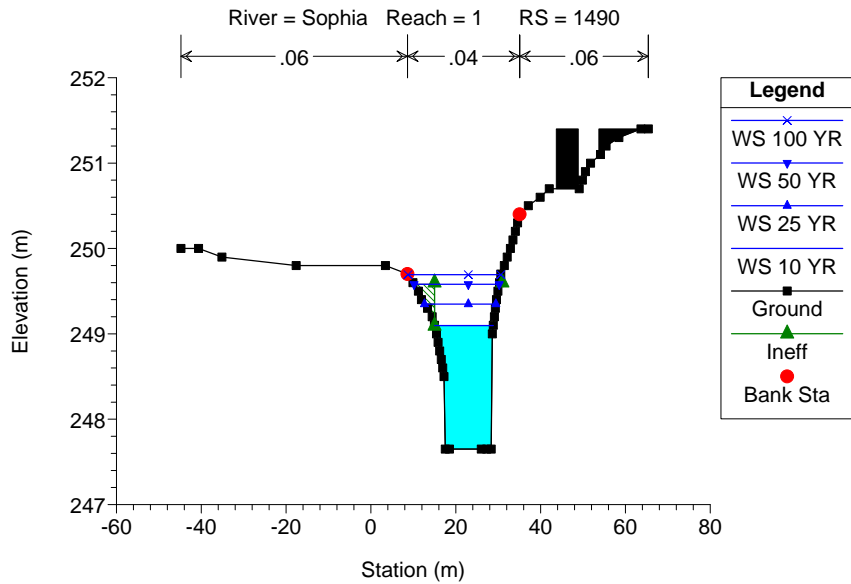
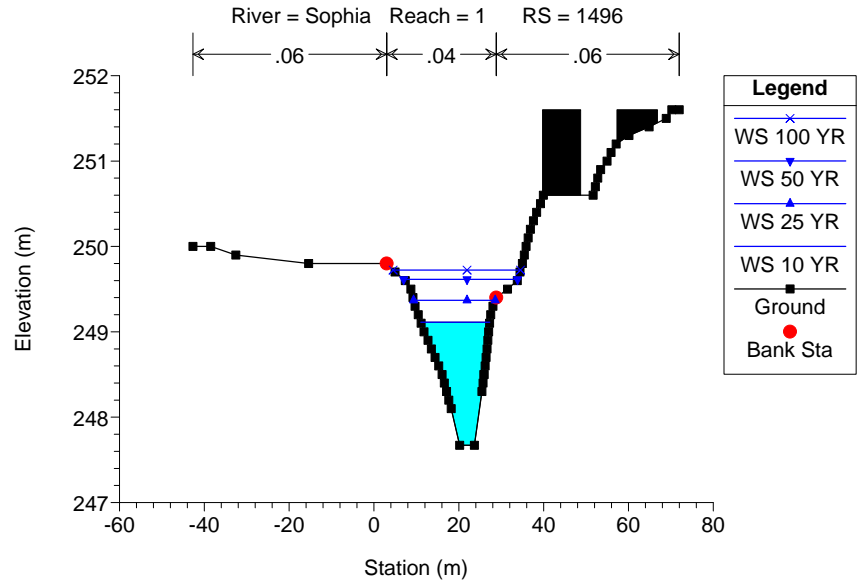
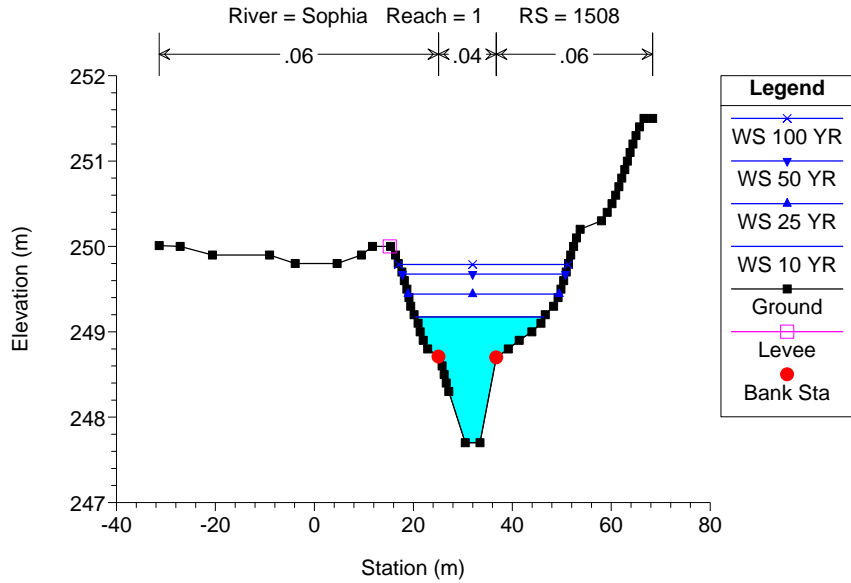


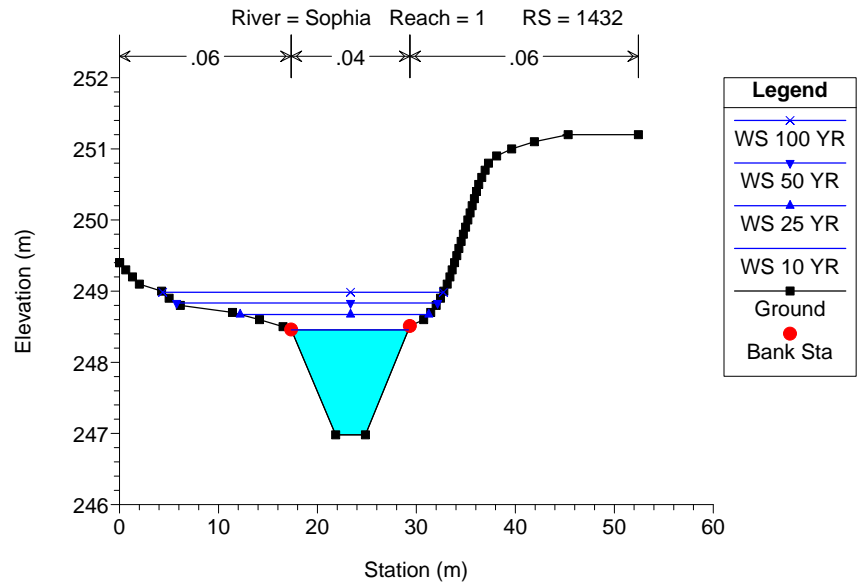
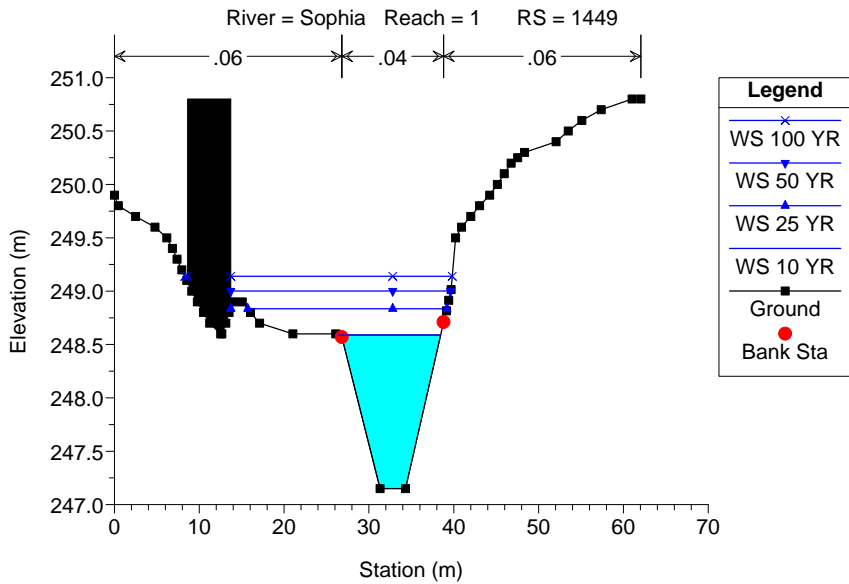
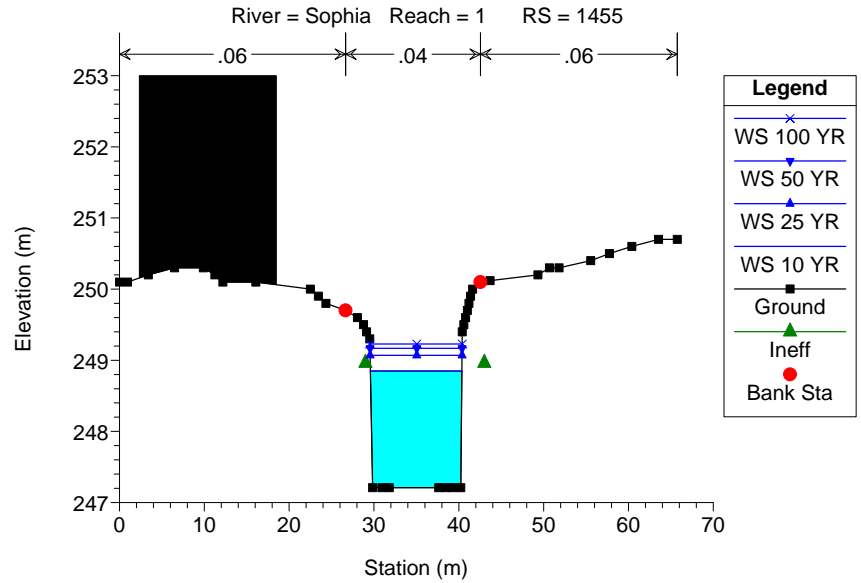
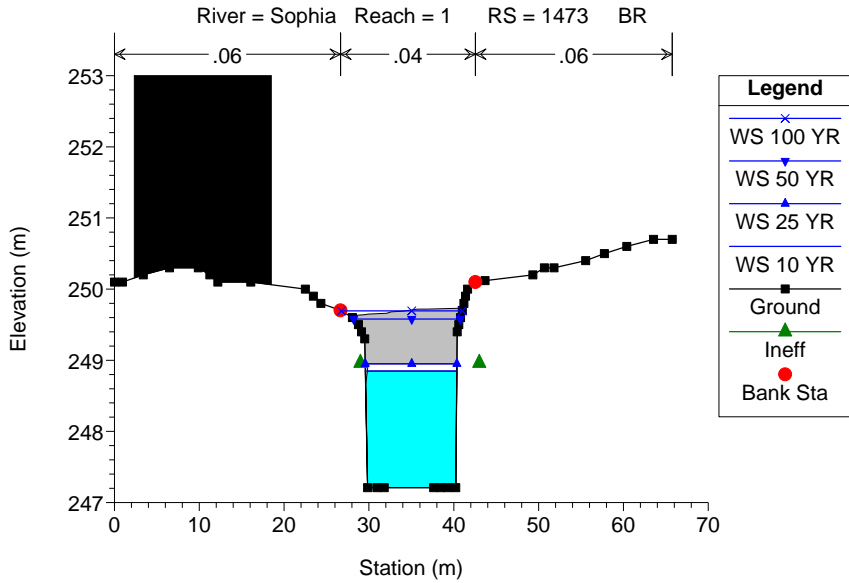




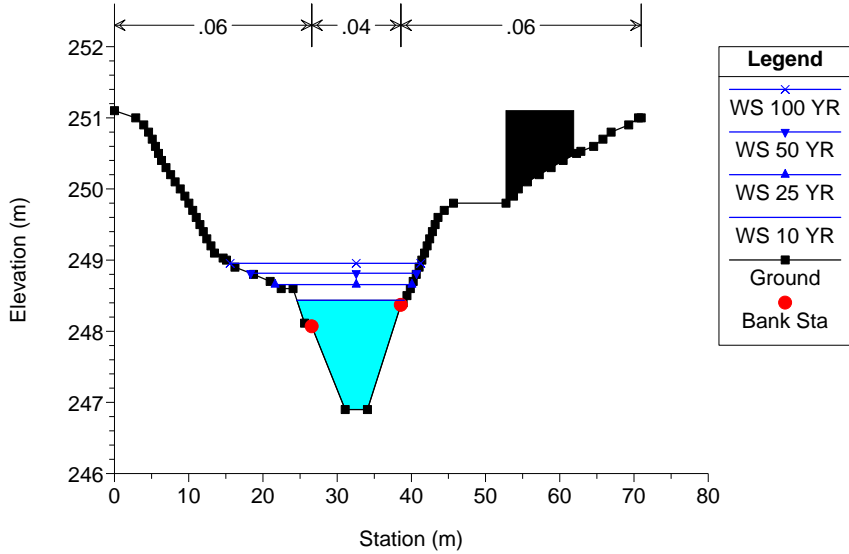




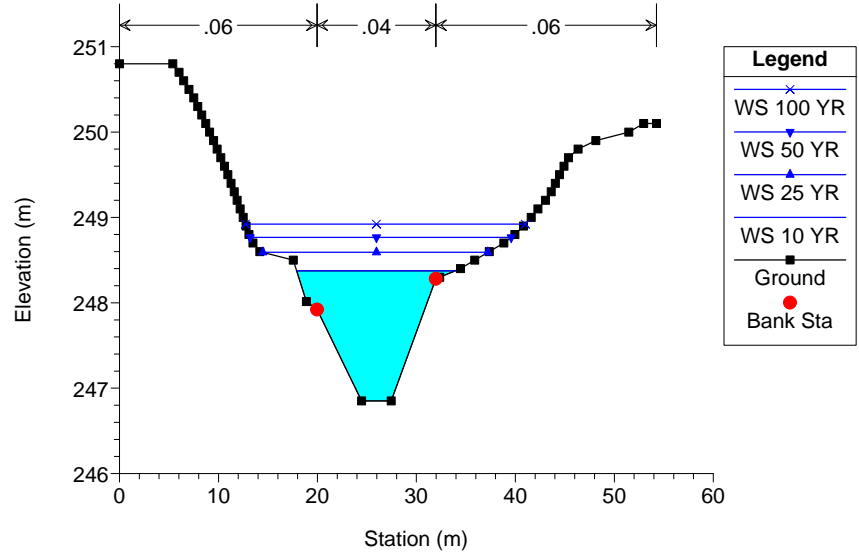




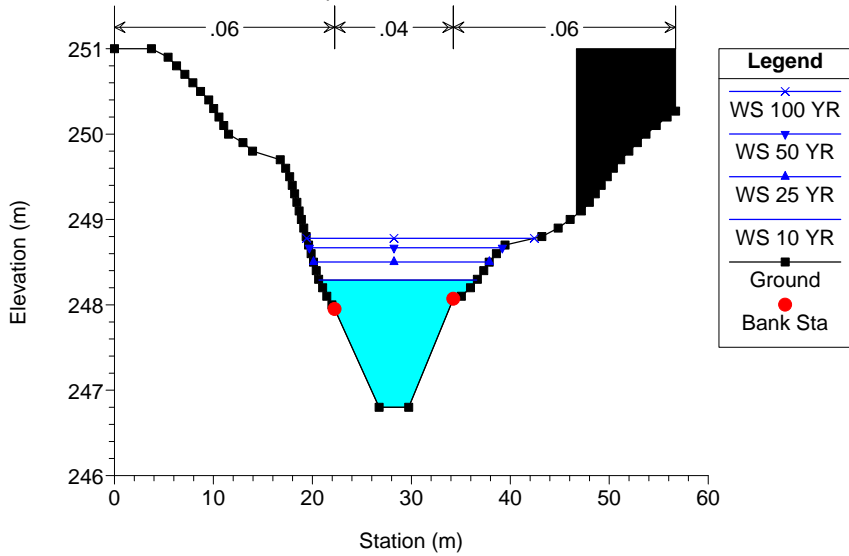
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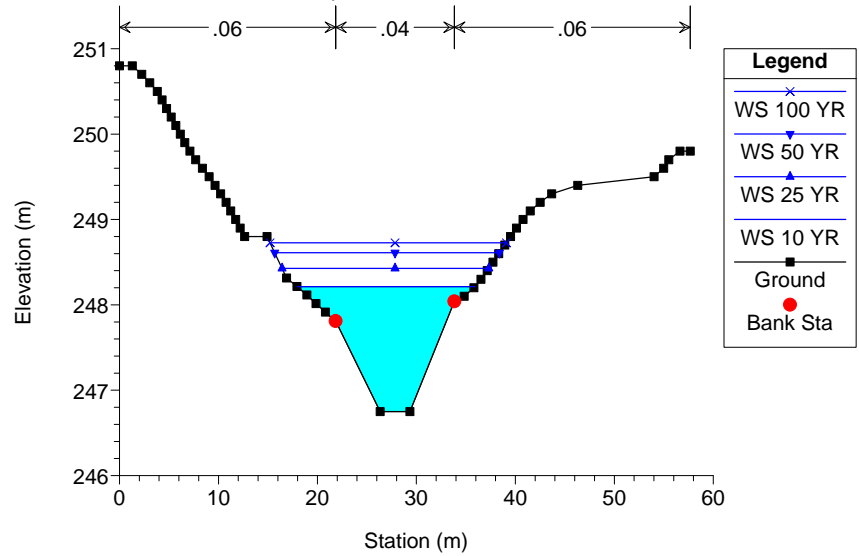
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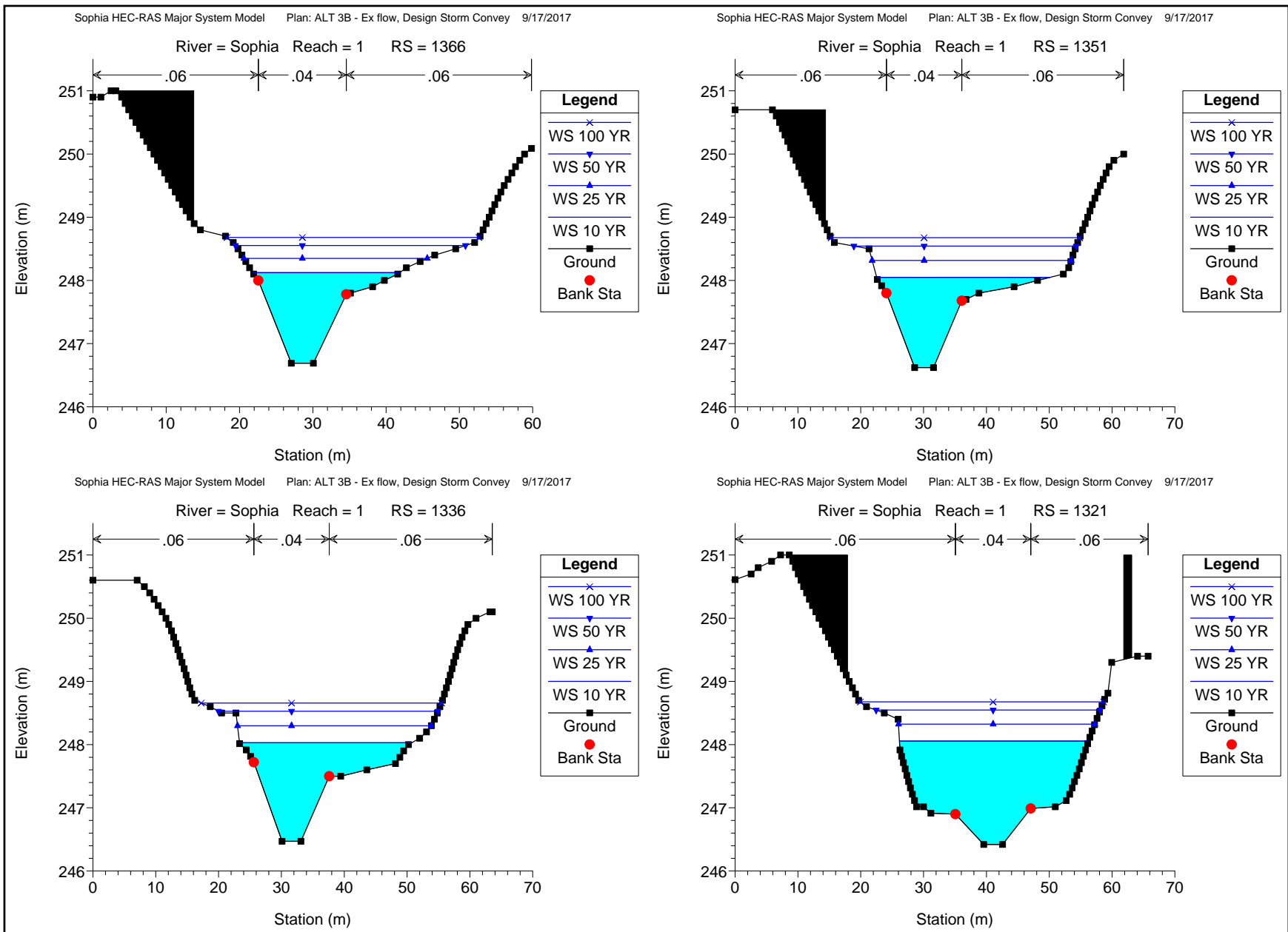


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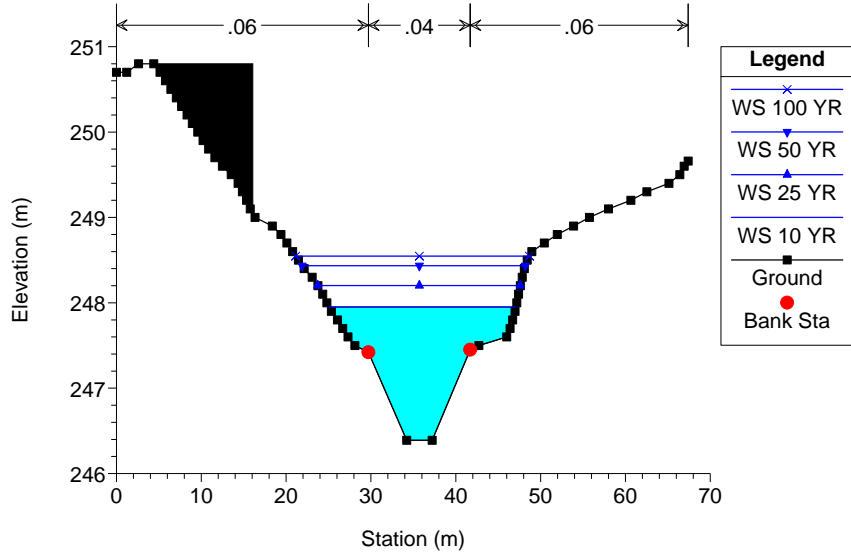


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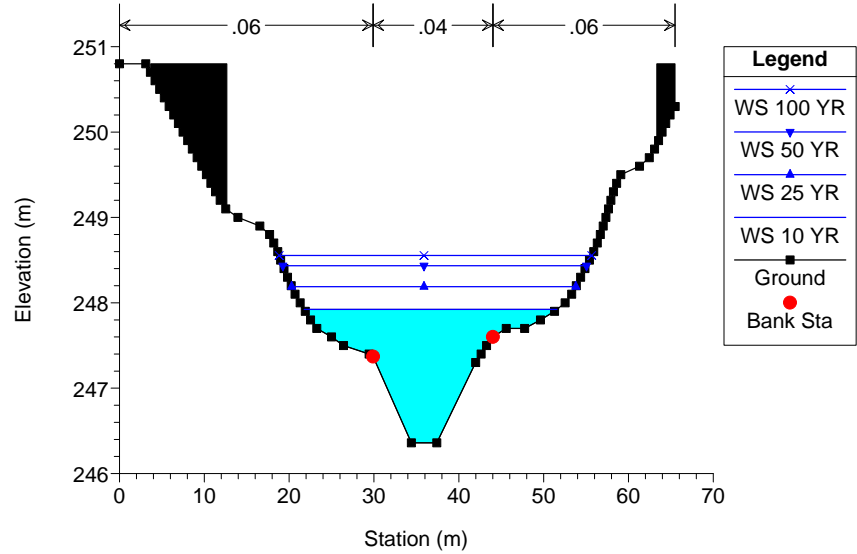




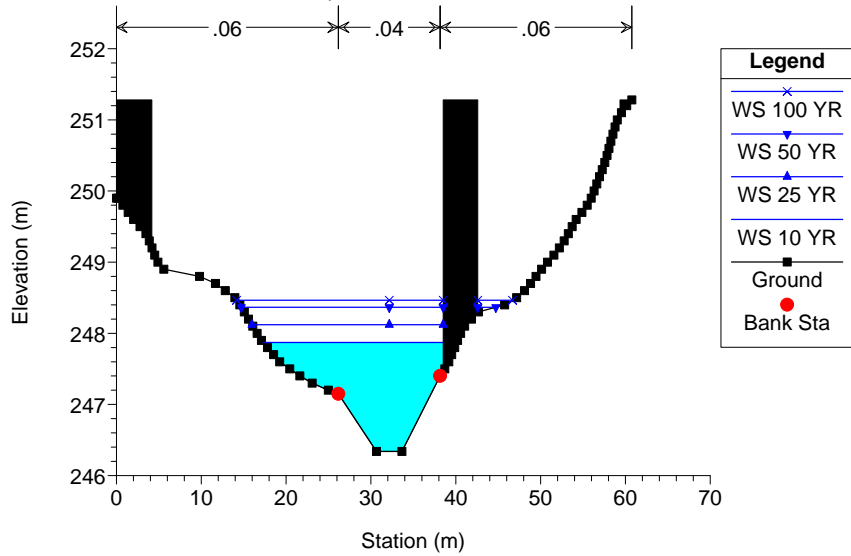
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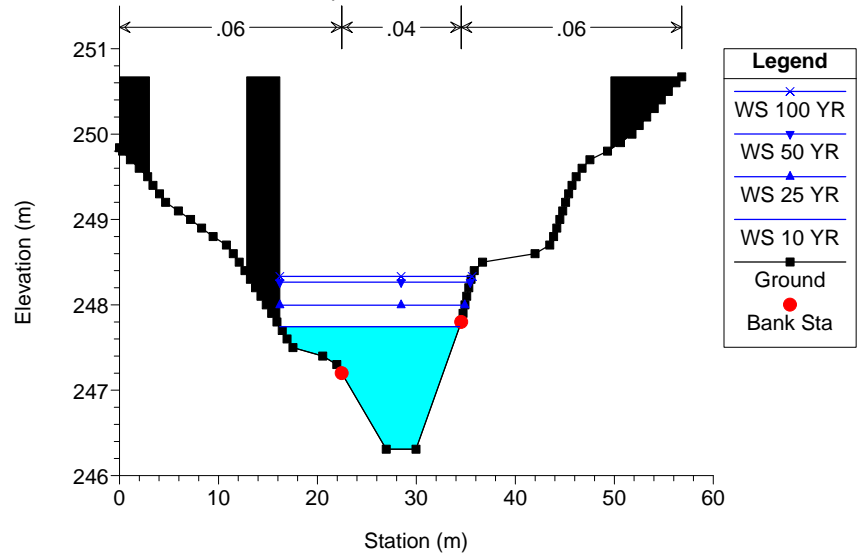
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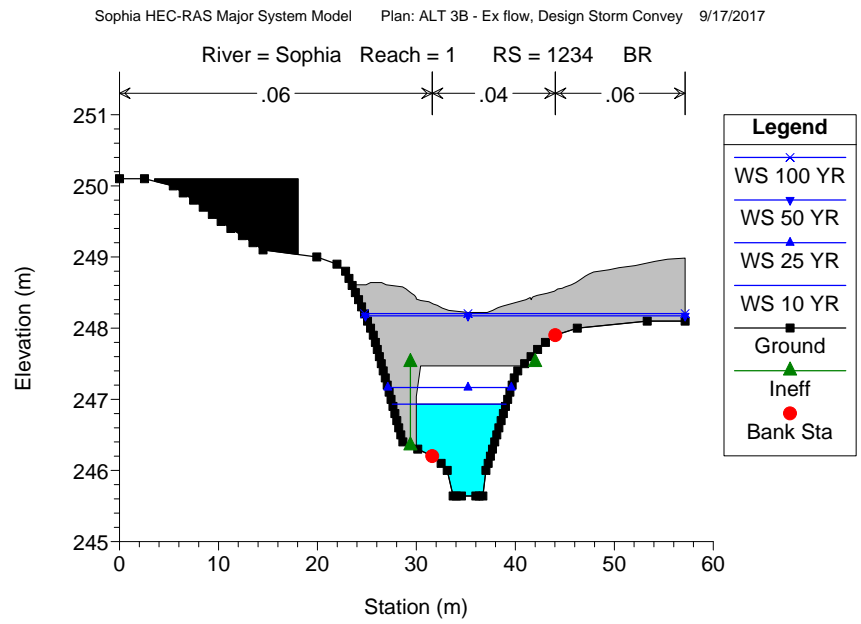
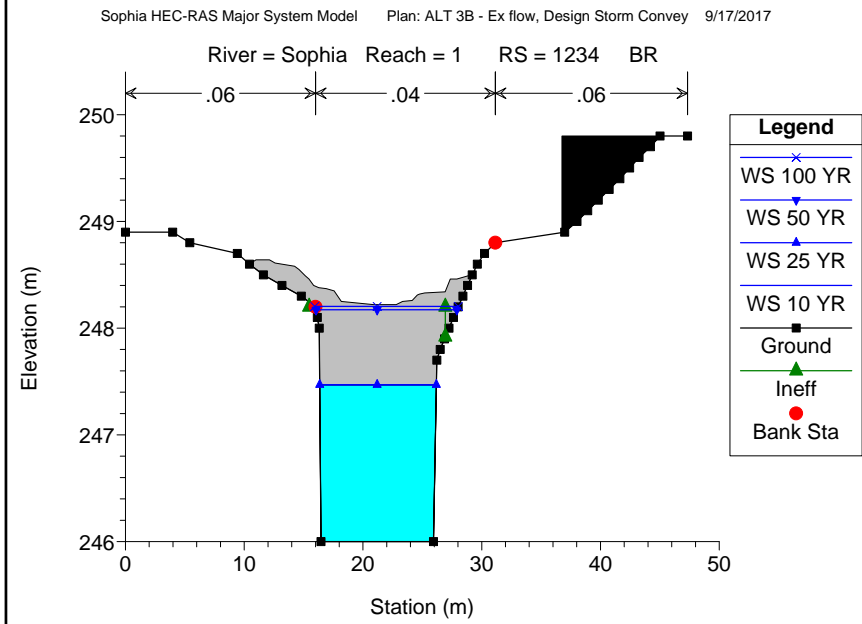
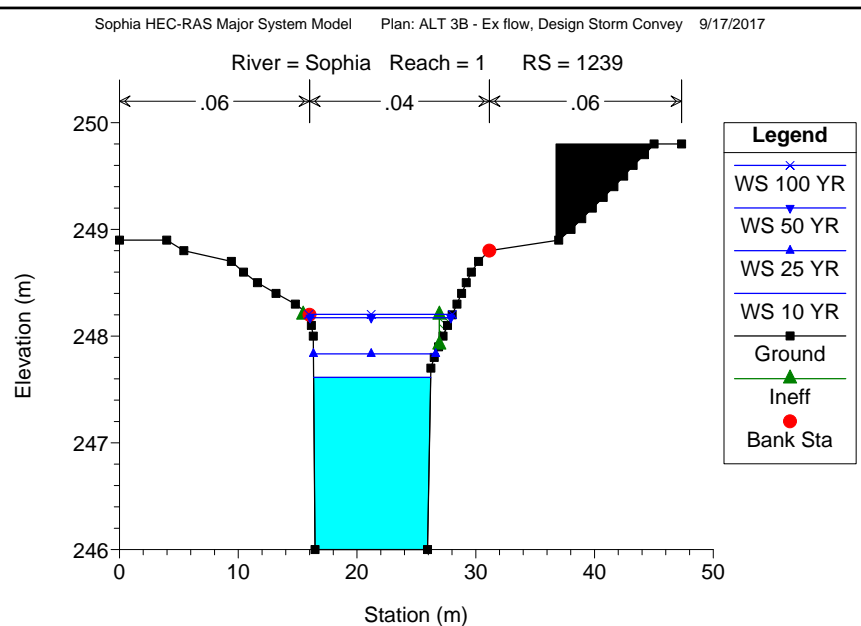
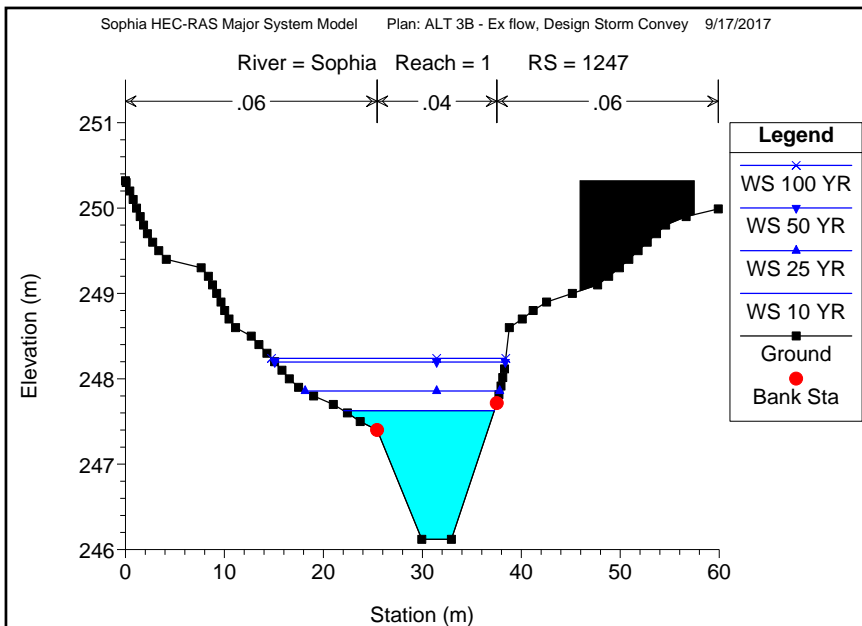


River = Sophia Reach = 1 RS = 1277

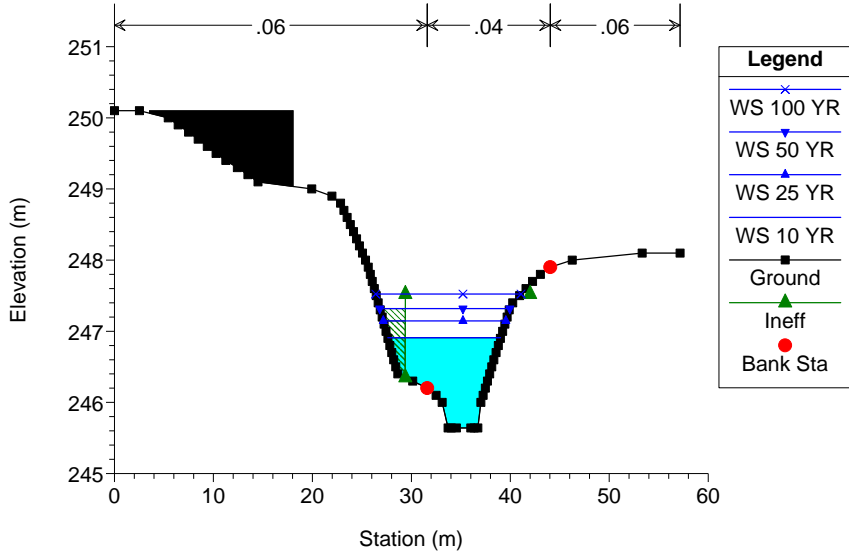


River = Sophia Reach = 1 RS = 1262

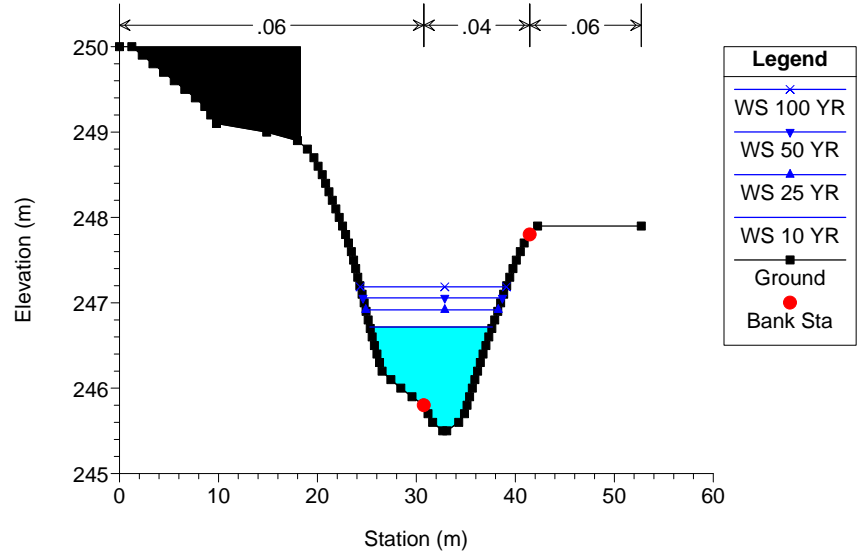




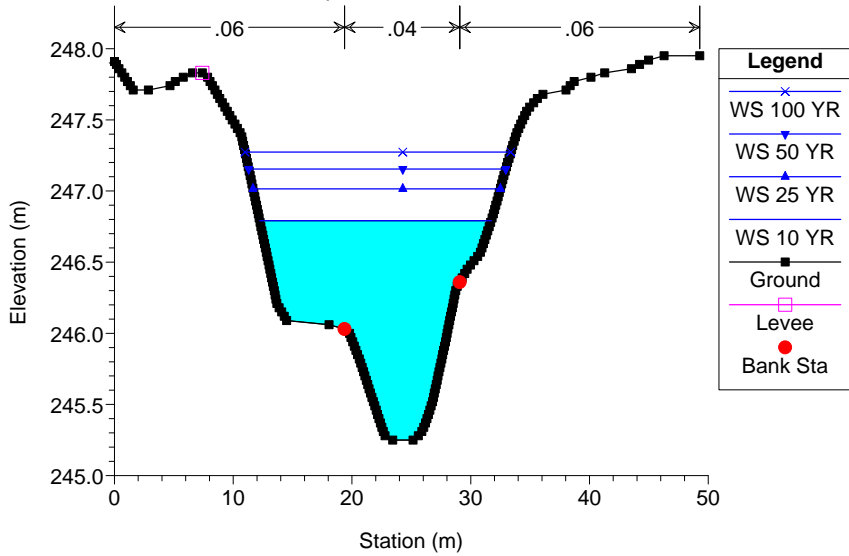
River = Sophia Reach = 1 RS = 1213



River = Sophia Reach = 1 RS = 1210



River = Sophia Reach = 1 RS = 1199



River = Sophia Reach = 1 RS = 1190

