

APPENDIX 6.5:
PROPOSED HEC-RAS MODEL AND RESULTS

Geometry Plan

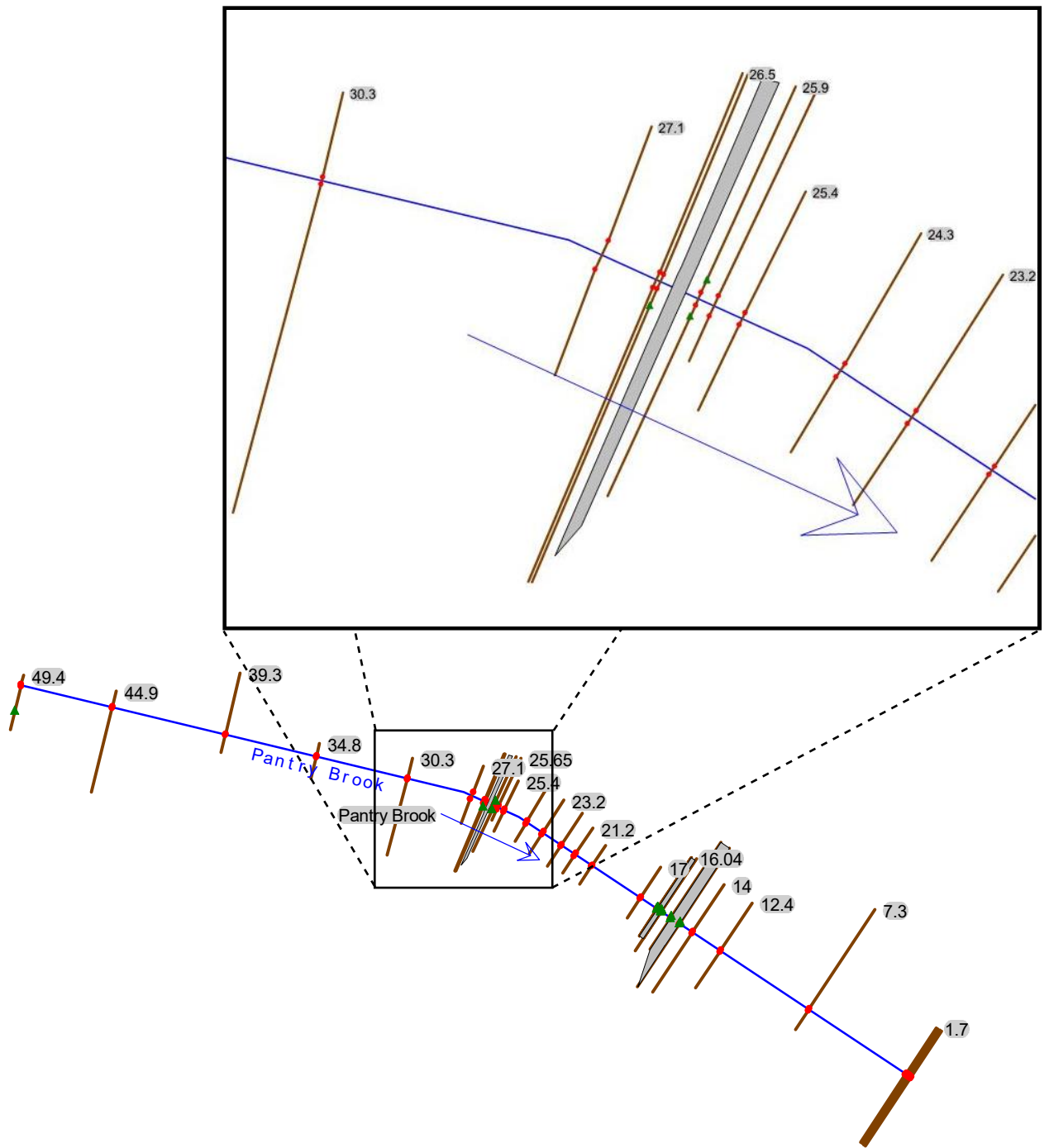
Stream Profile

Stream Cross Sections

Cross Section Output Table

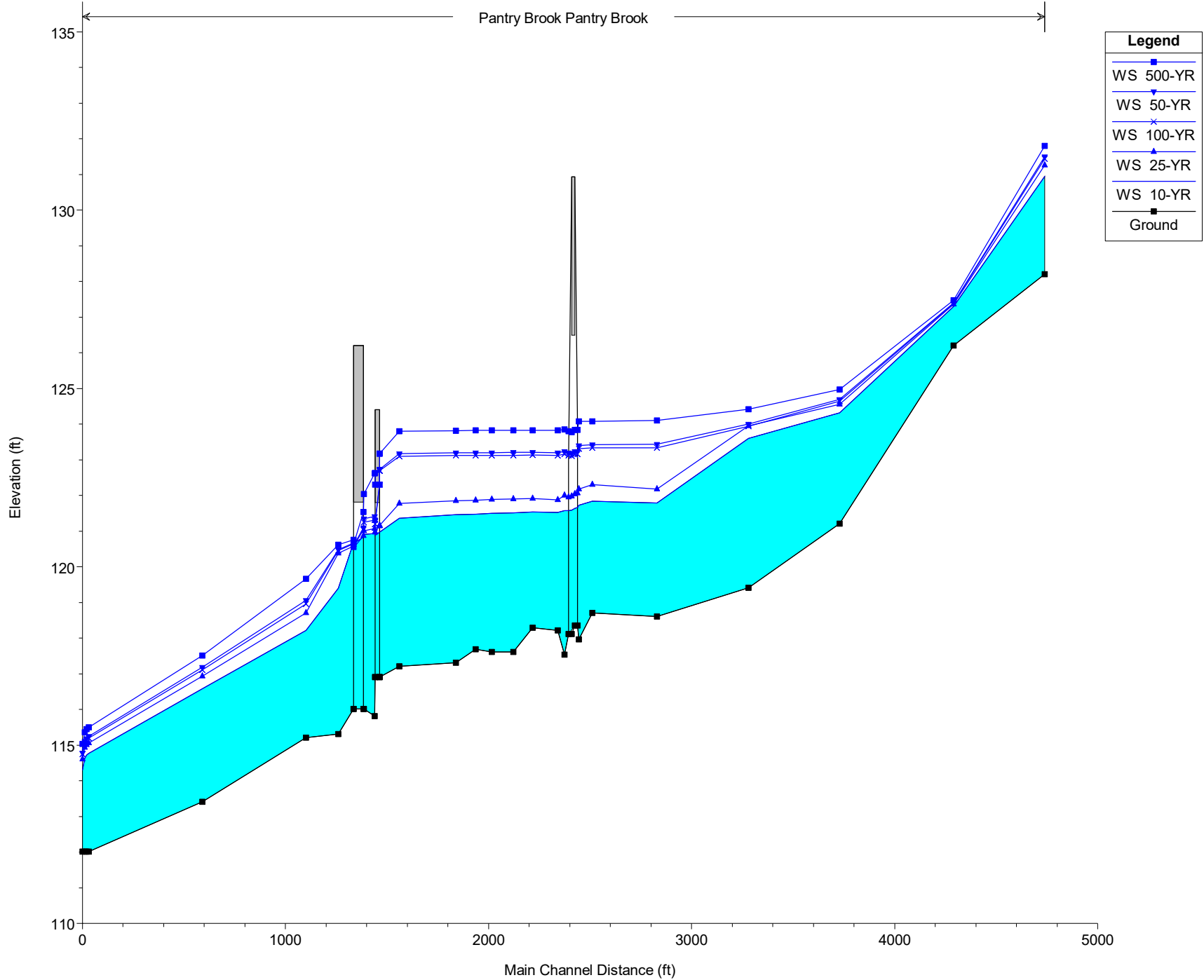
Detailed Bridge Output

Detailed Output for Cross Section 26.4

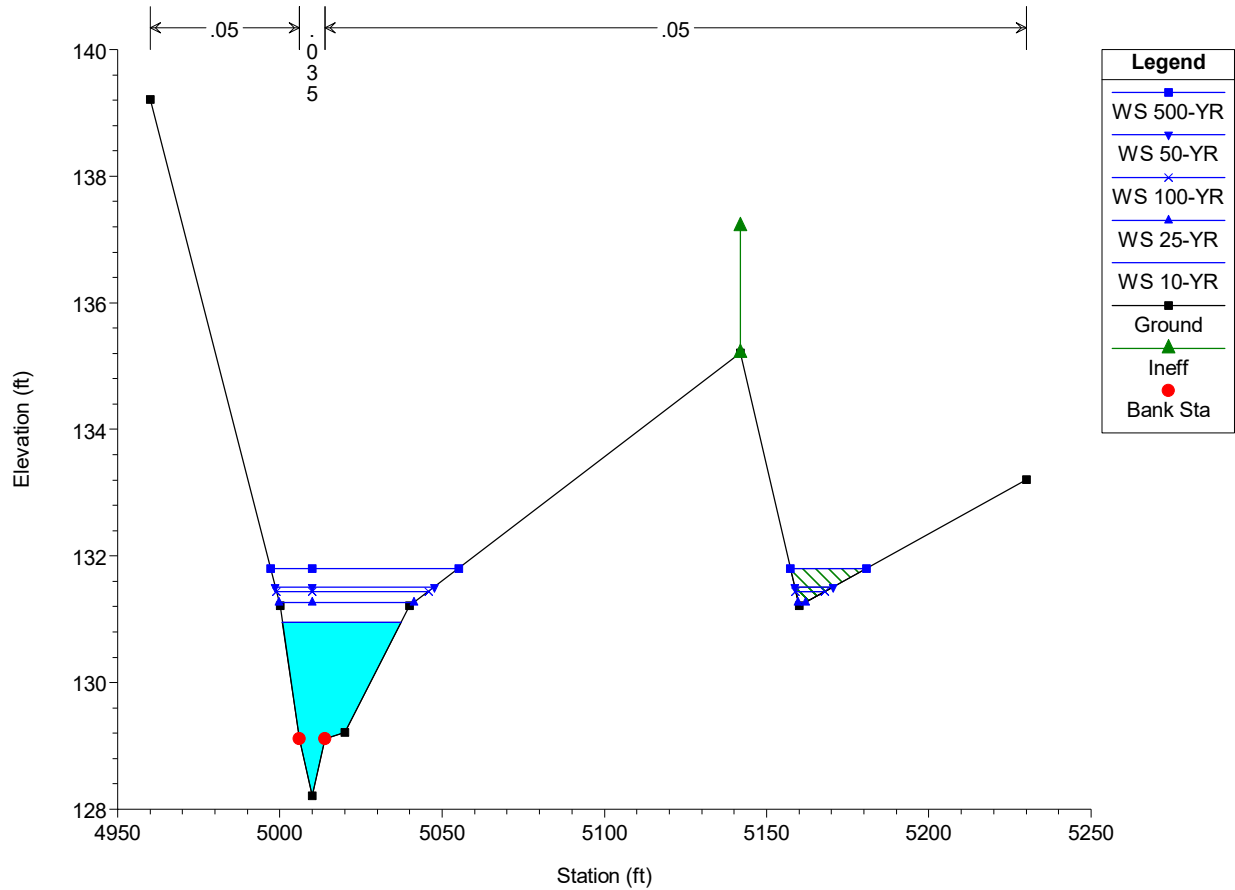


HEC-RAS Geometry Data
 Bruce Freeman Rail Trail
 over Pantry Brook

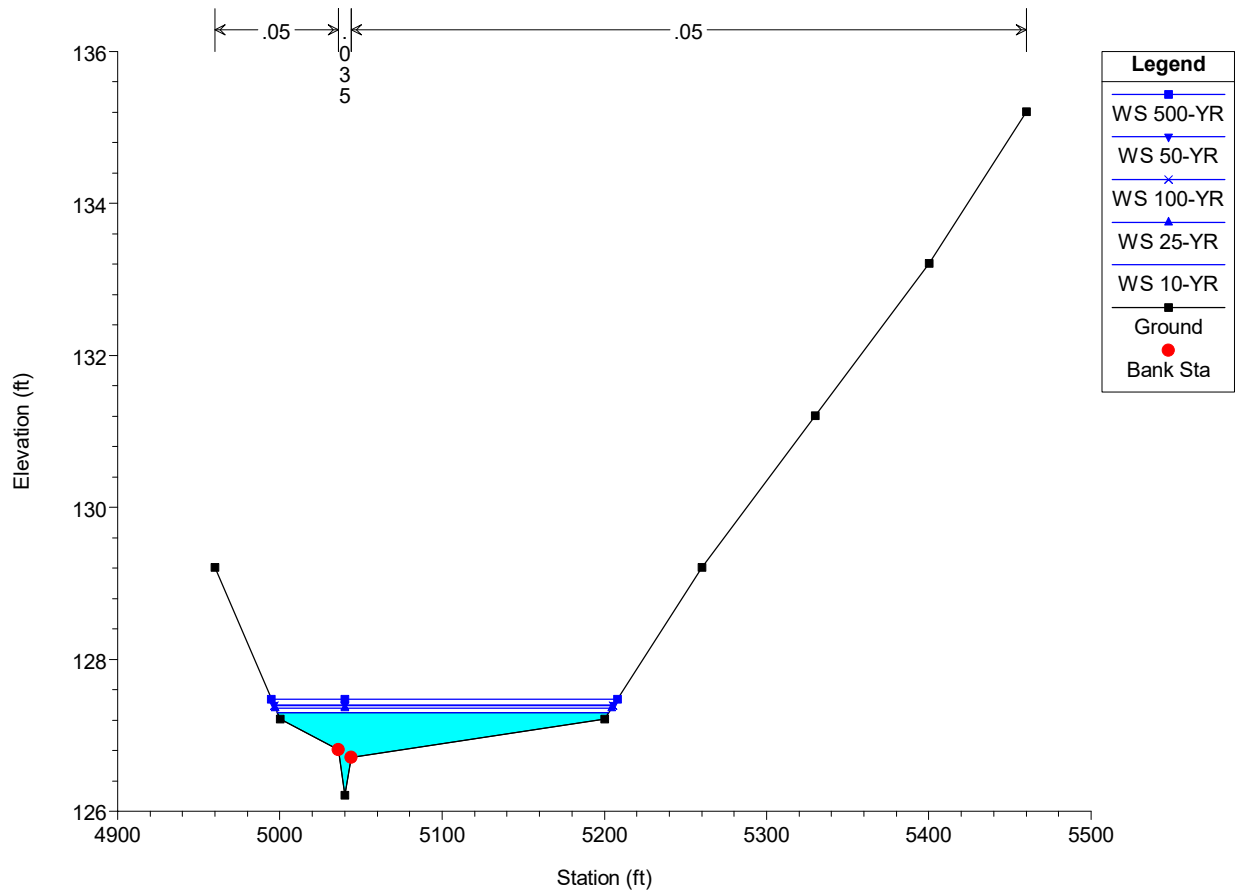
Pantry Brook Pantry Brook



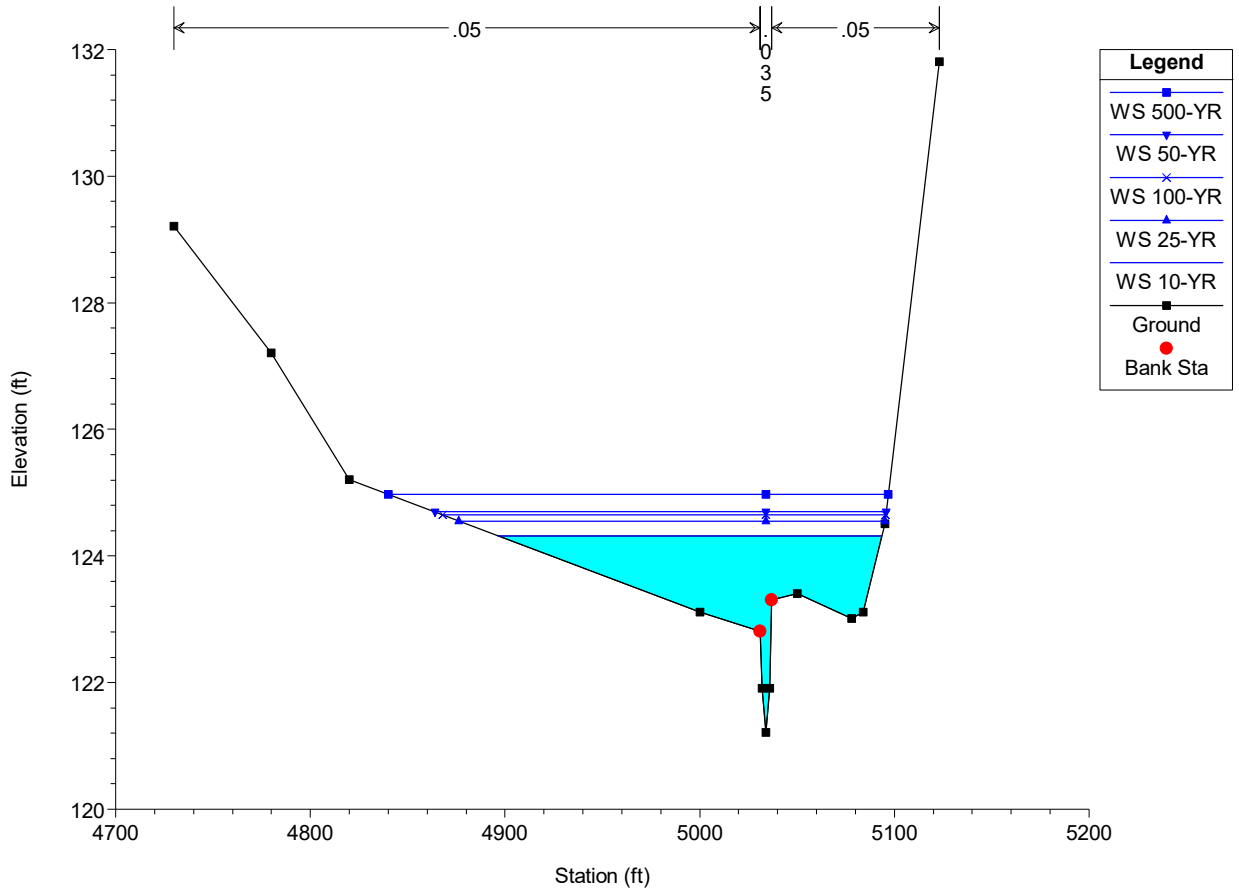
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 FEMA Section E



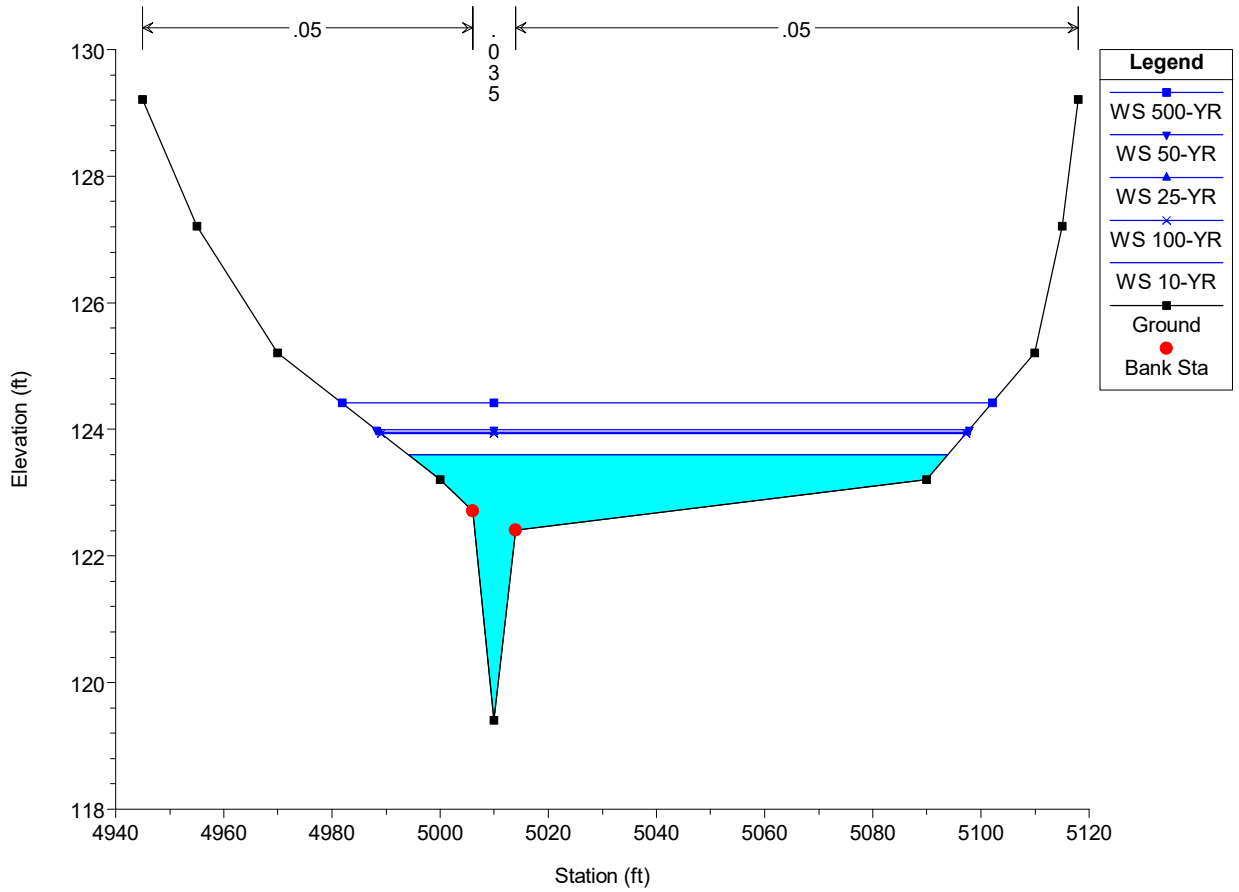
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



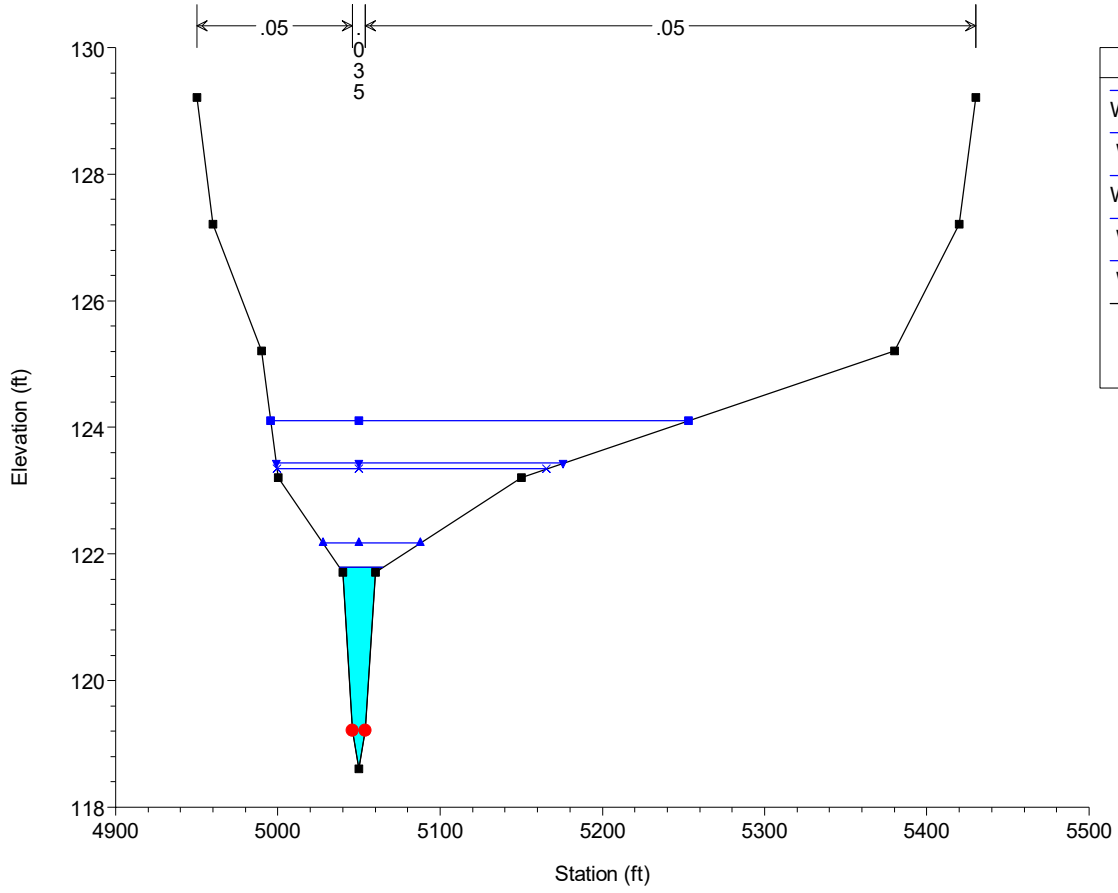
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

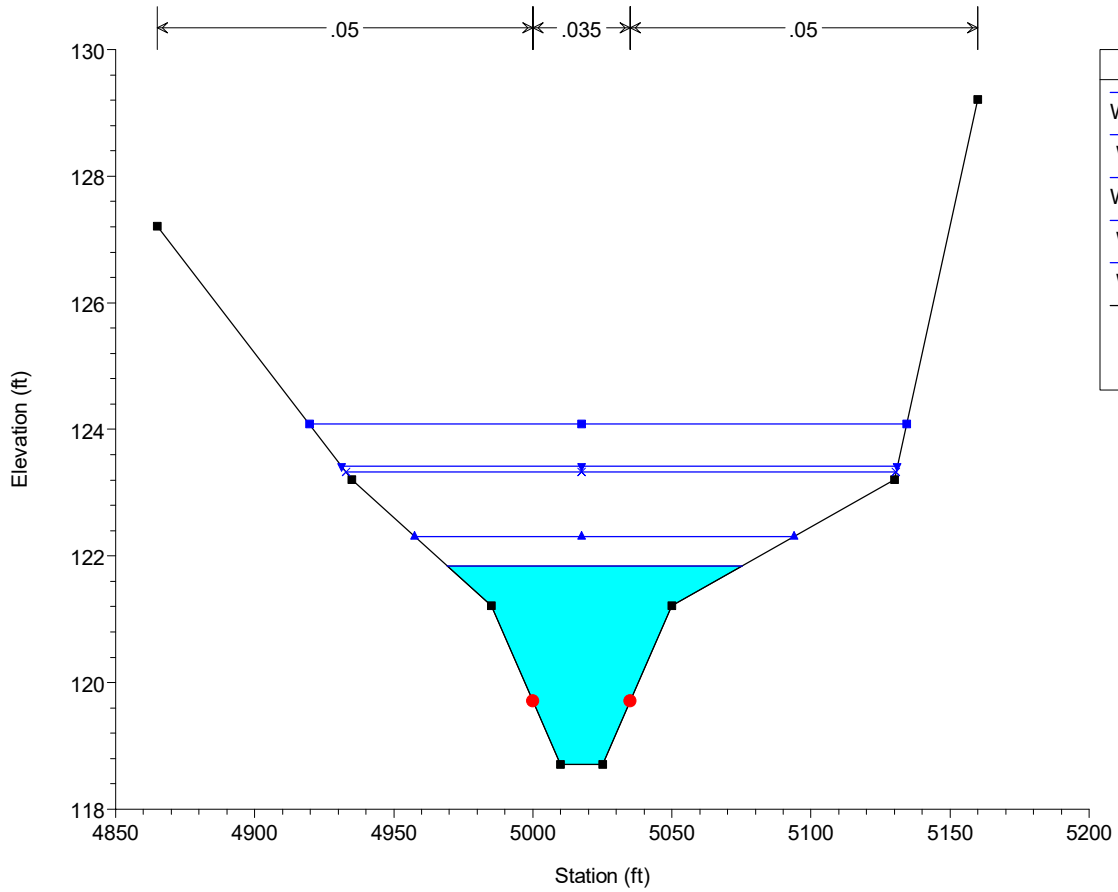


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 FEMA Section C



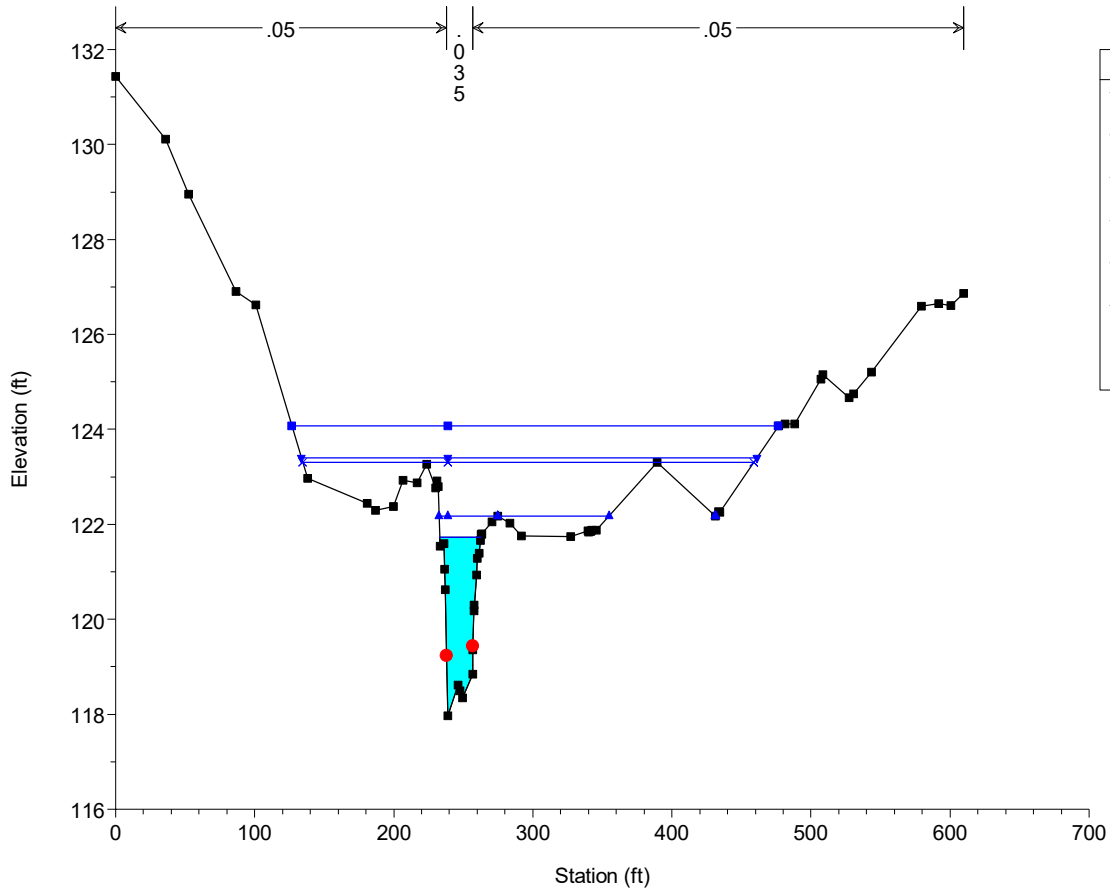
Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



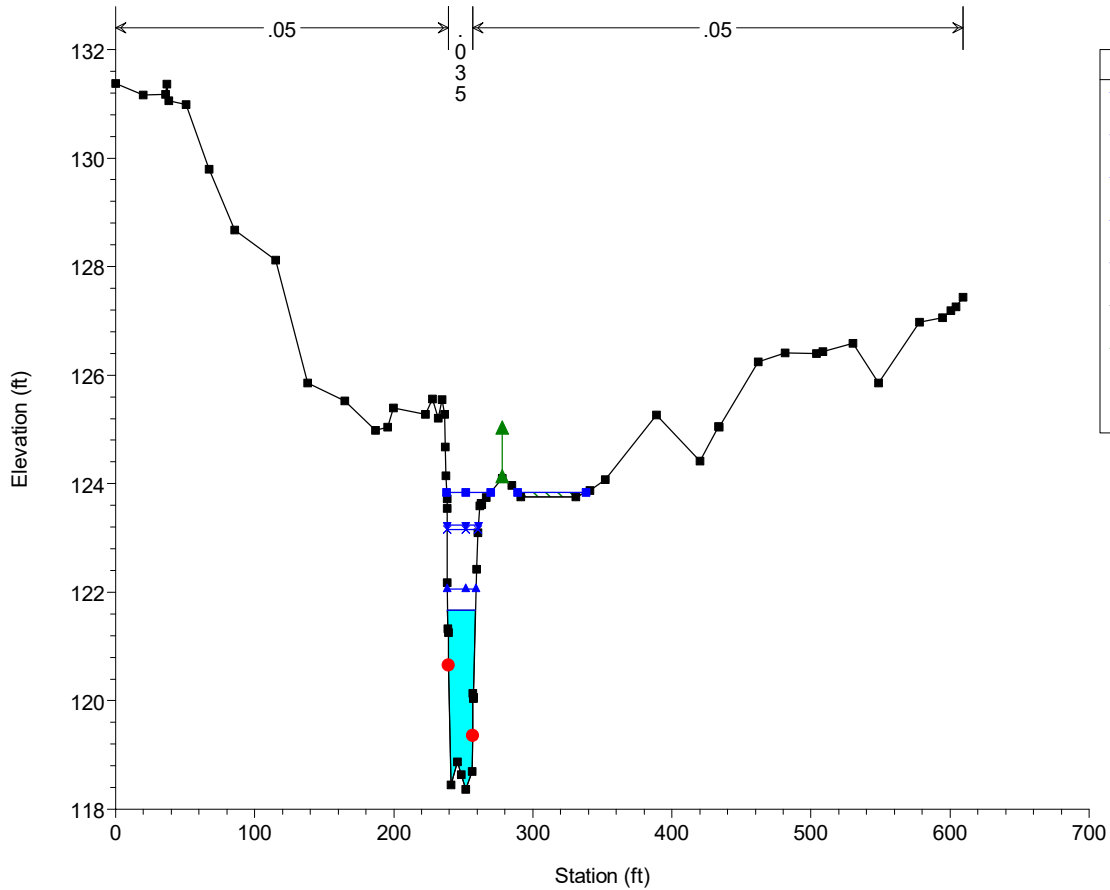
Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
New XS 510



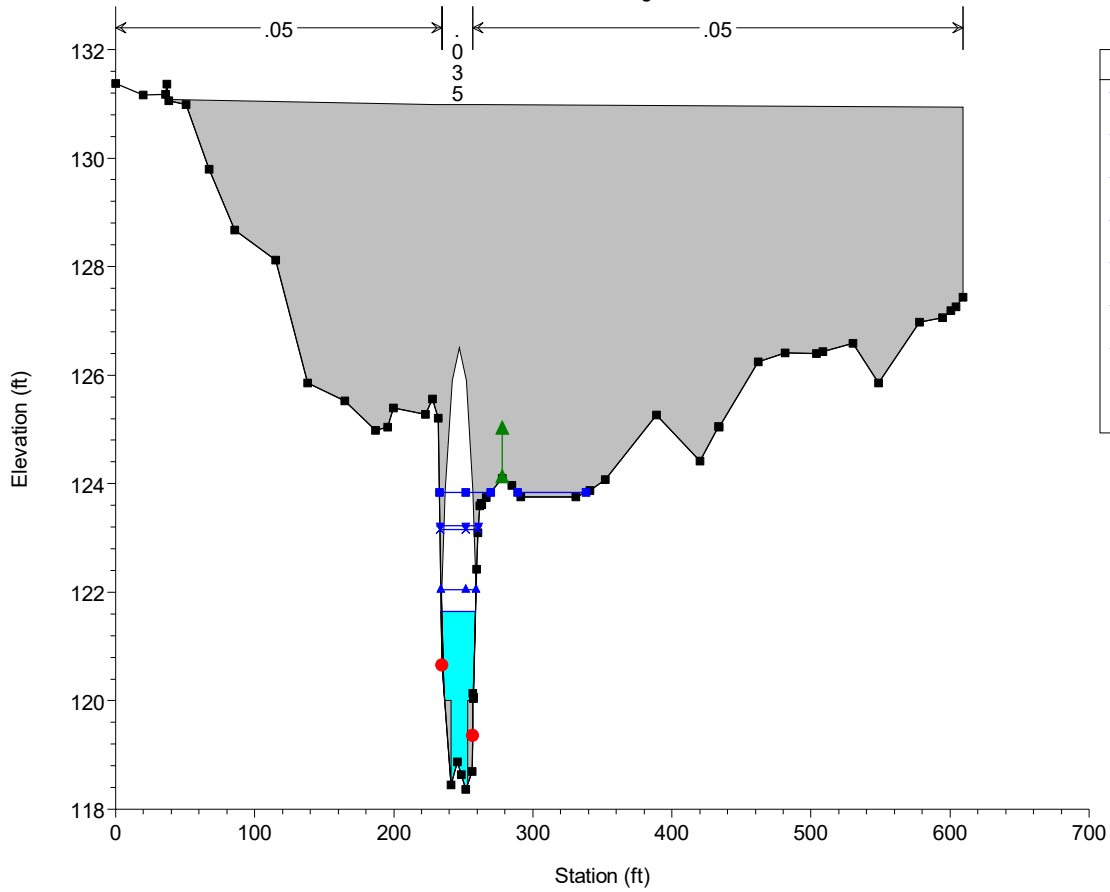
Legend	
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—▼—	WS 50-YR
—×—	WS 100-YR
—▲—	WS 25-YR
—◆—	WS 10-YR
—■—	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
New XS 505

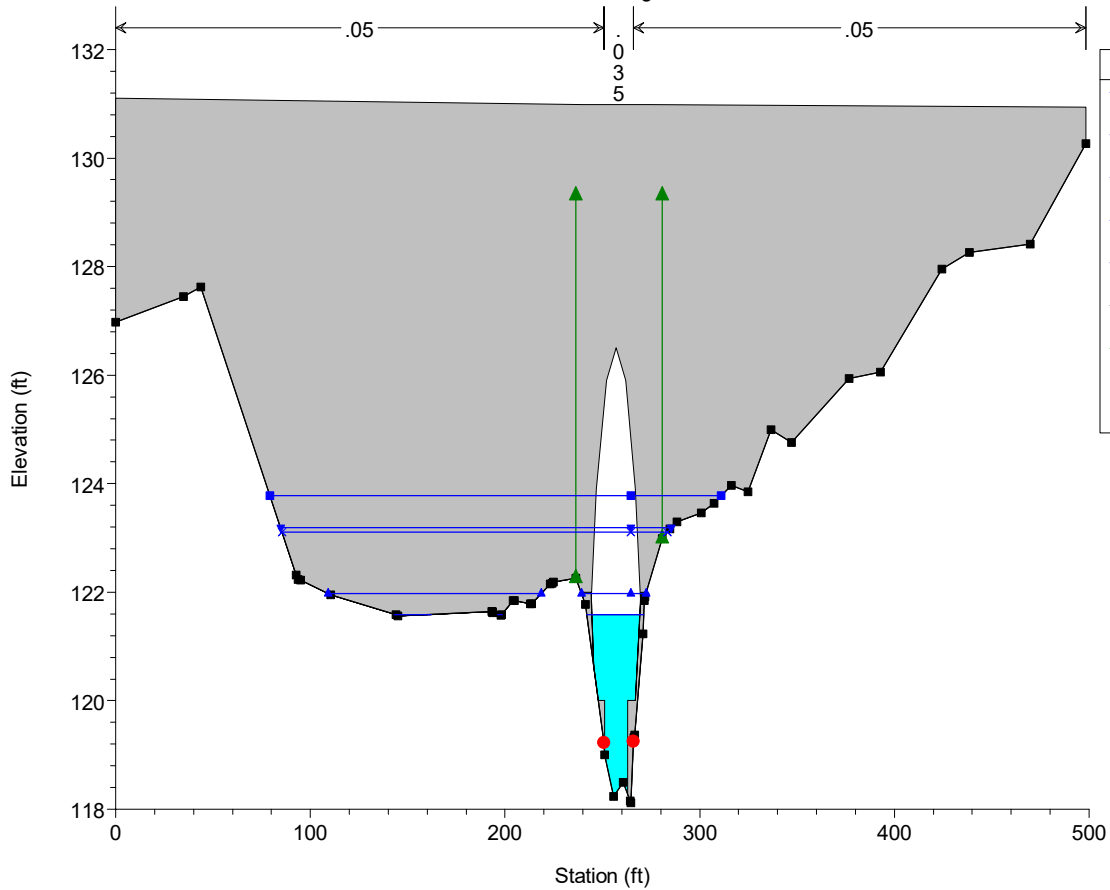


Legend	
—■—	WS 500-YR
—▼—	WS 50-YR
—×—	WS 100-YR
—▲—	WS 25-YR
—◆—	WS 10-YR
—■—	Ground
▲	Ineff
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 Railroad Bridge SU-29

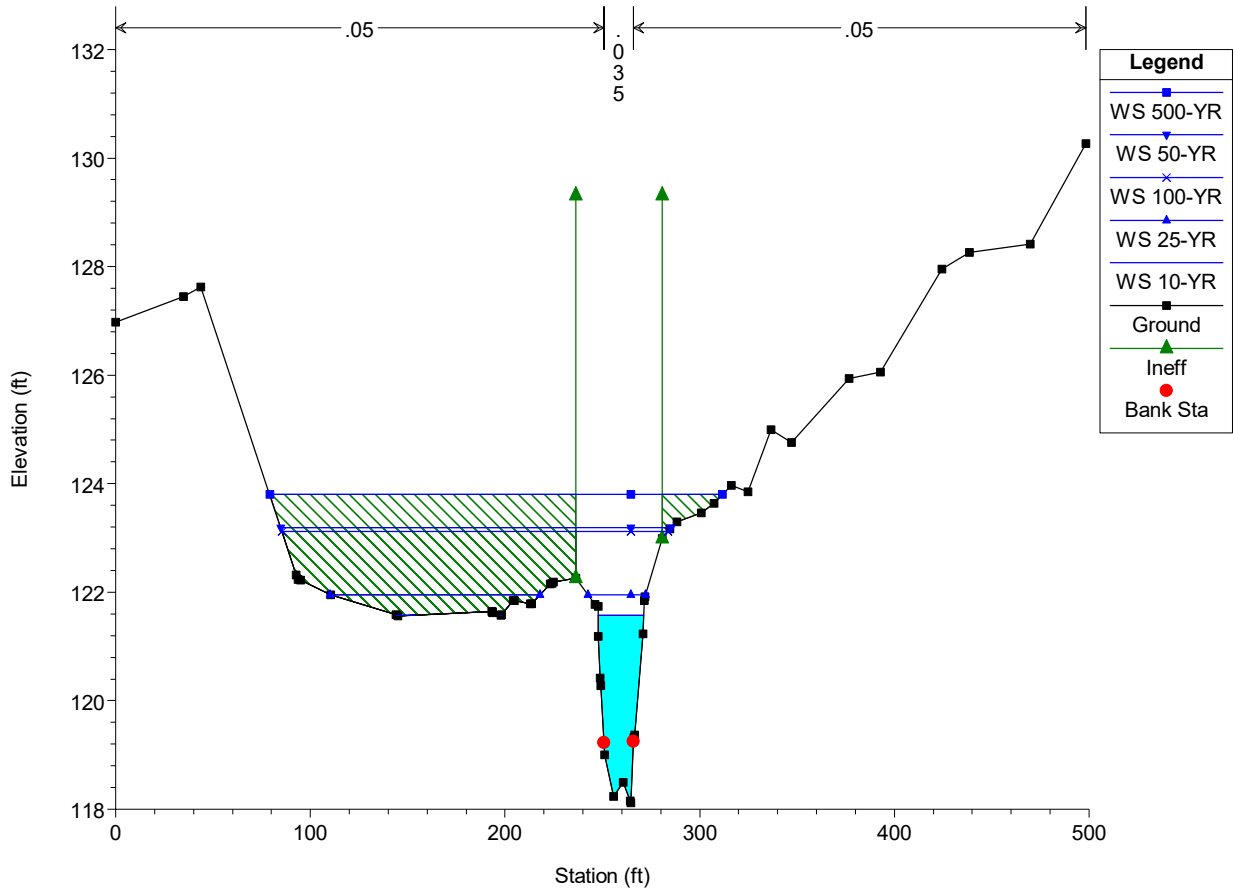


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 Railroad Bridge SU-29



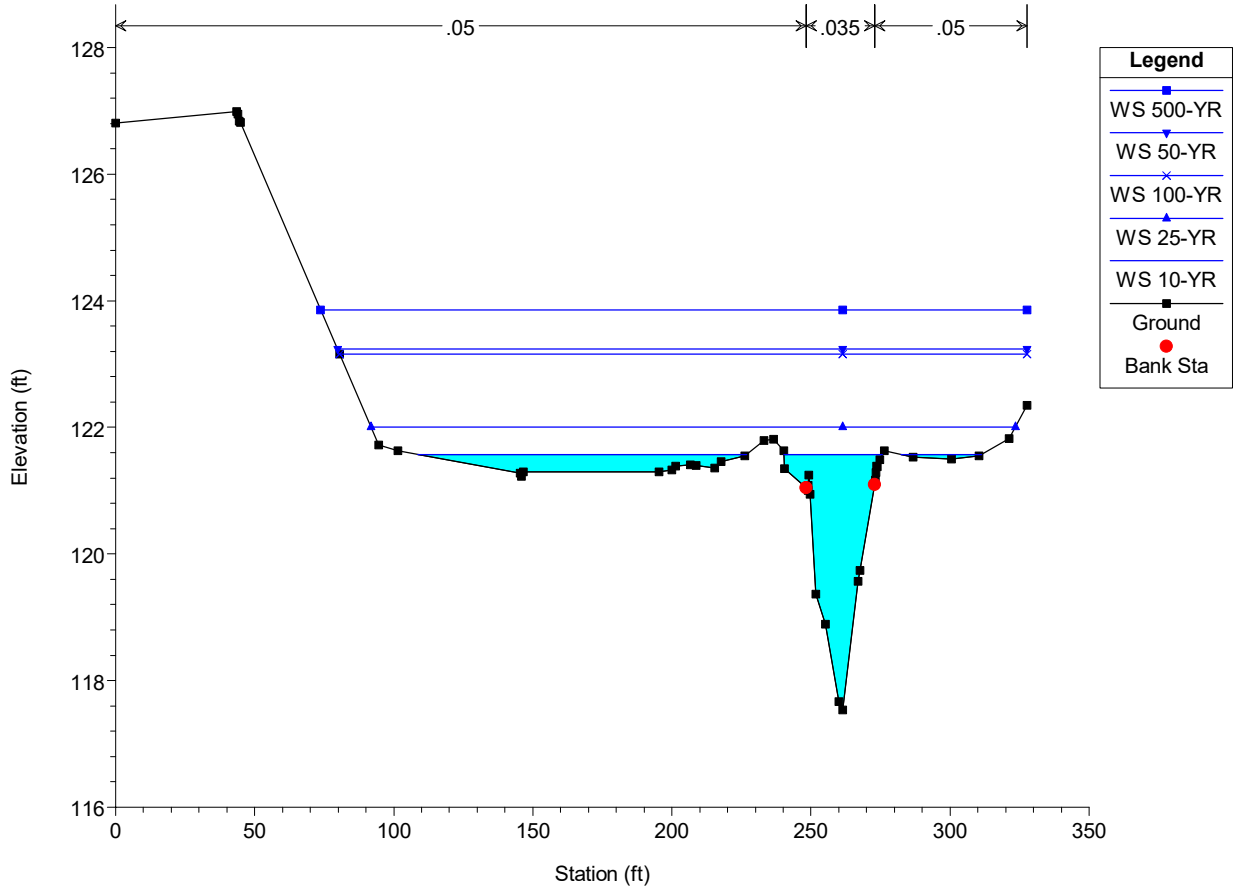
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

New XS 459

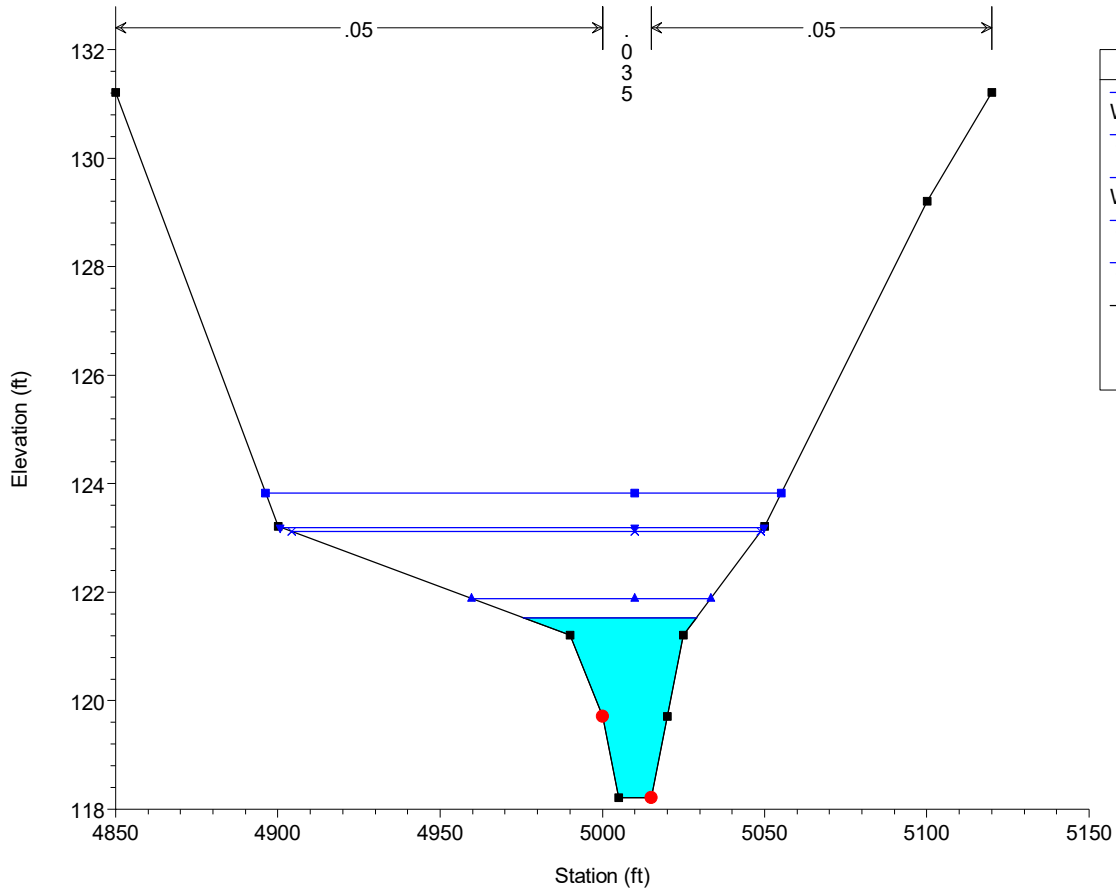


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

New XS 440

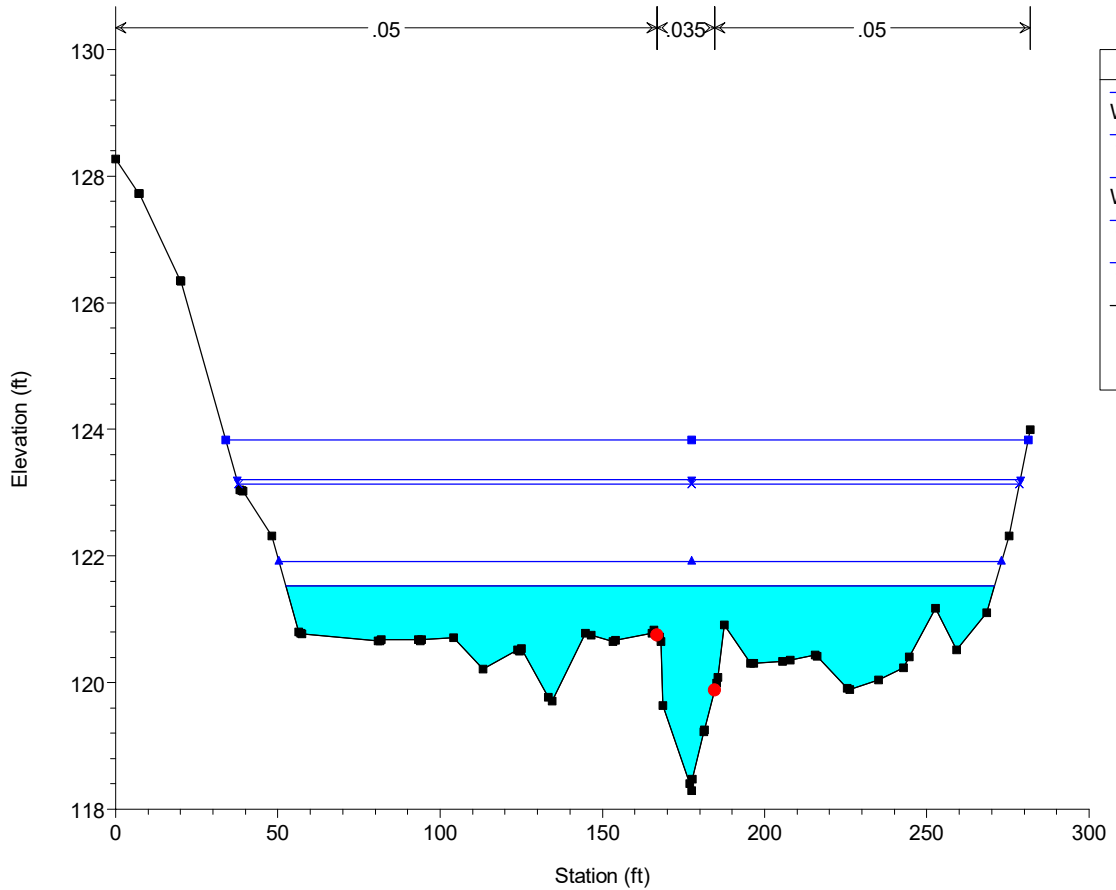


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
■	WS 10-YR
■	Ground
●	Bank Sta

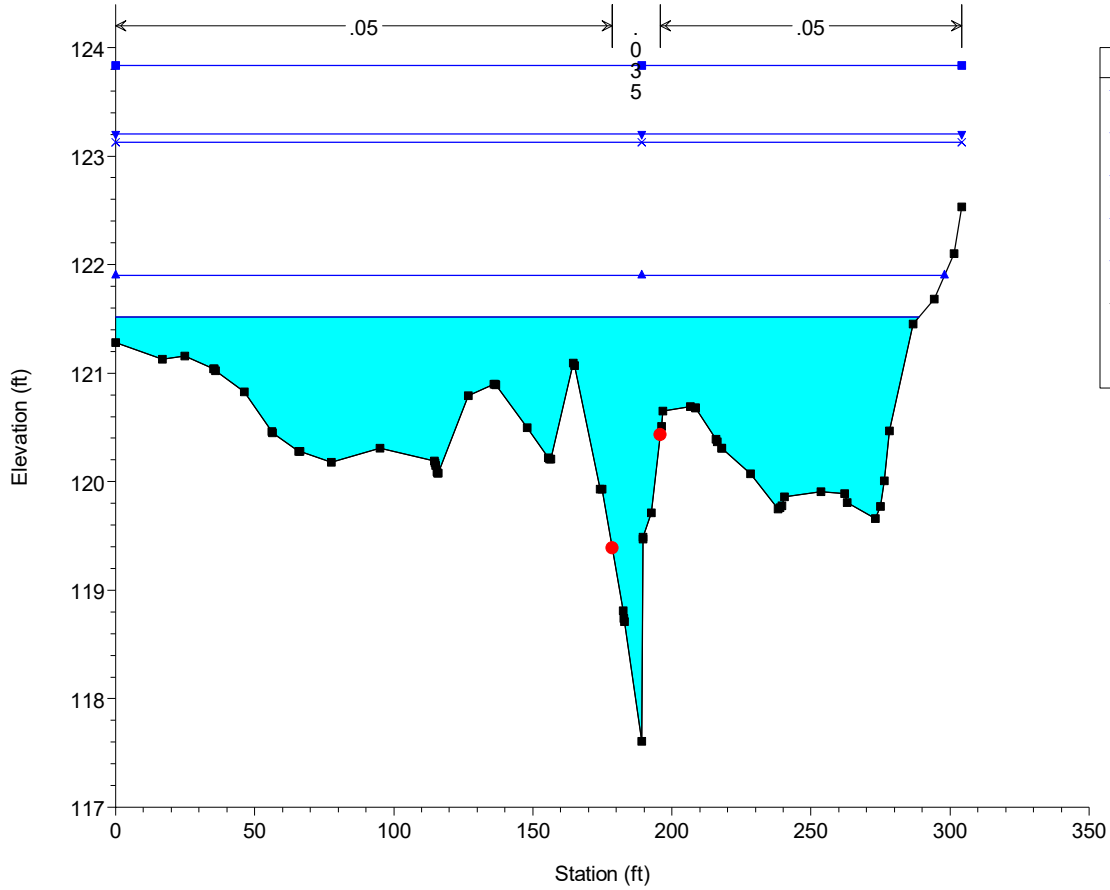
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
New XS 283



Legend	
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▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
■	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

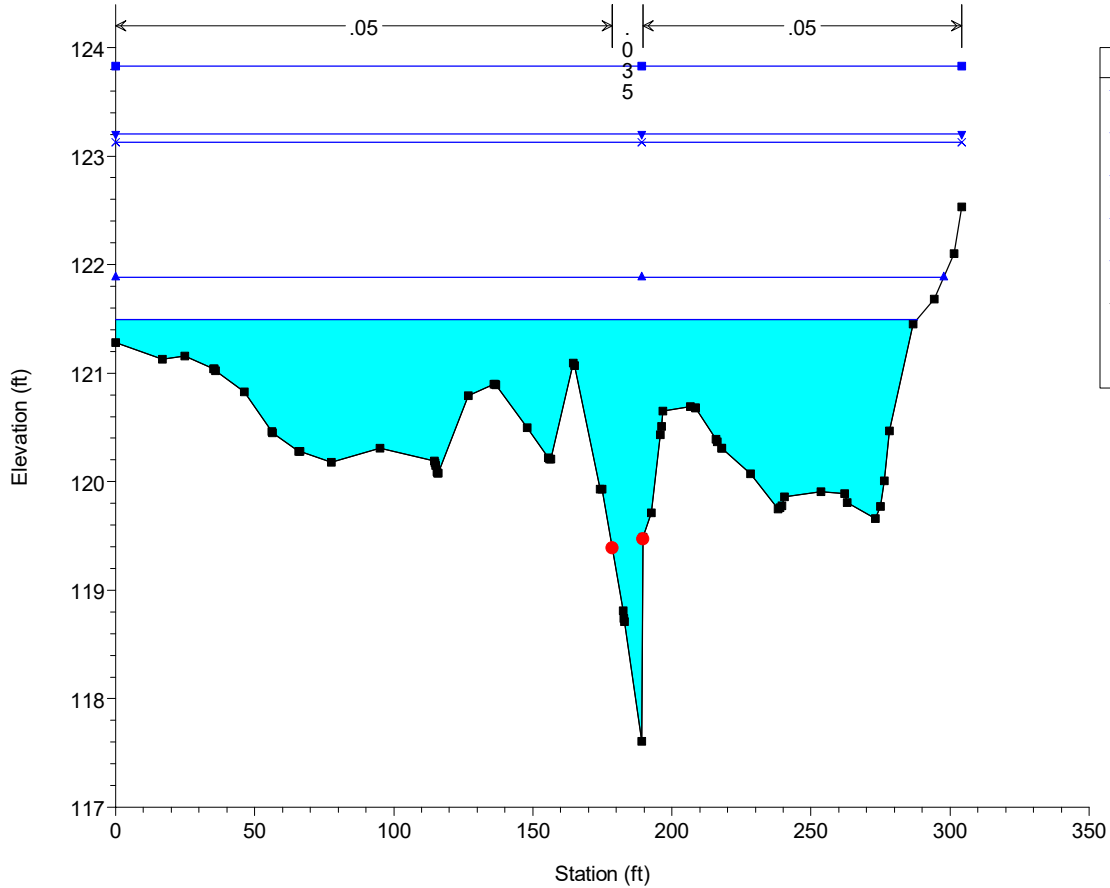
New XS 189



Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
◆	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

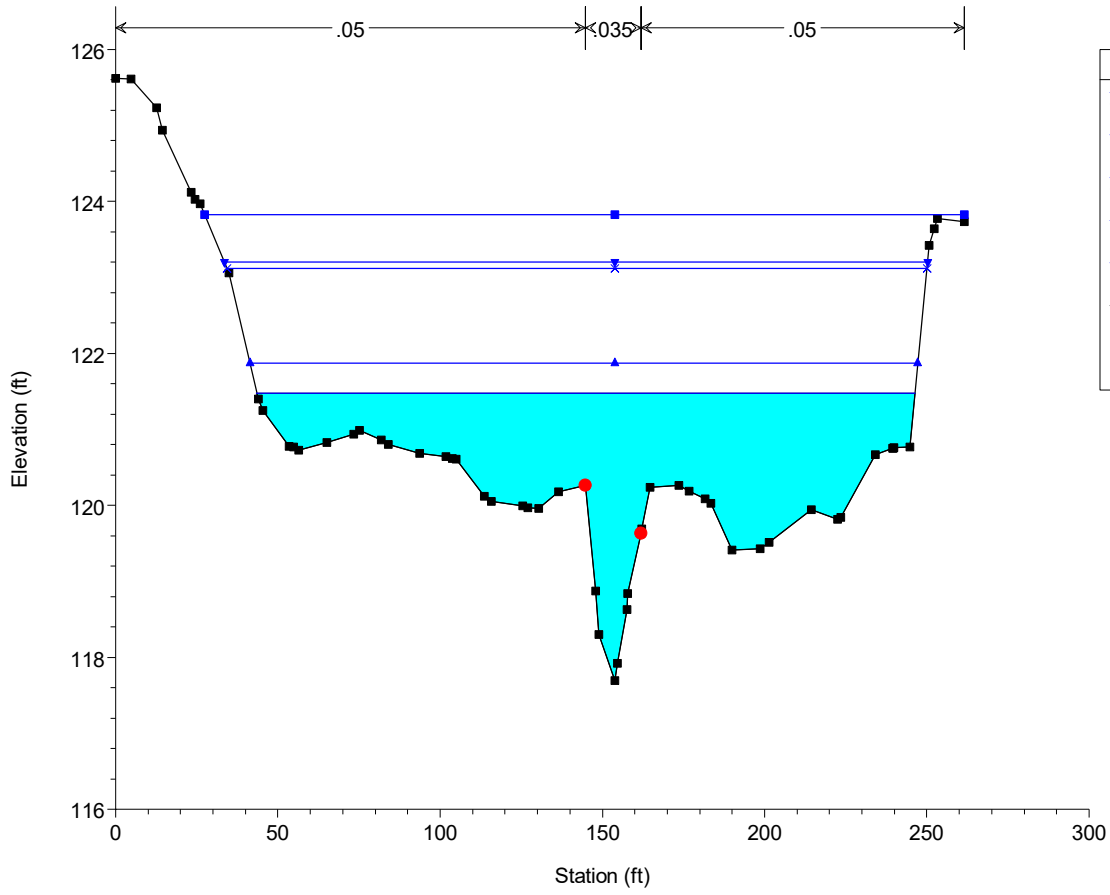
New XS 83



Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
◆	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

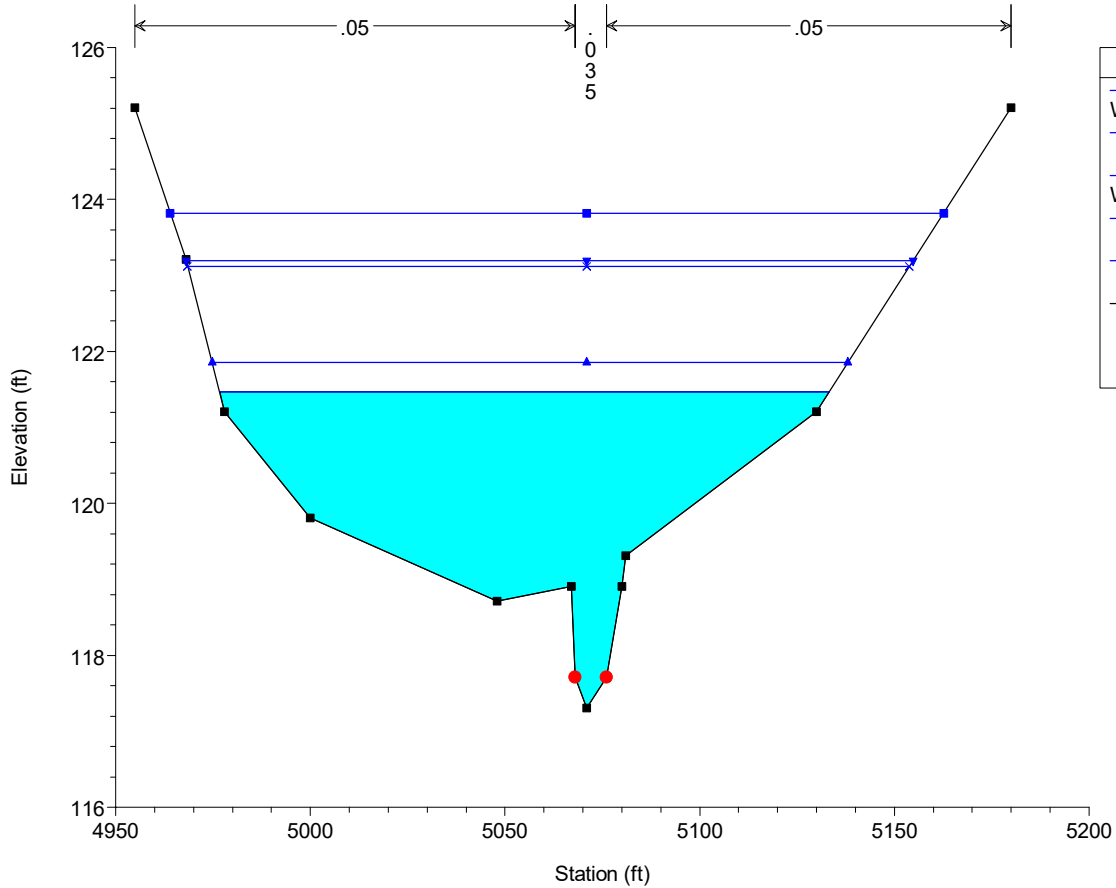
New XS 3



Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
●	Bank Sta

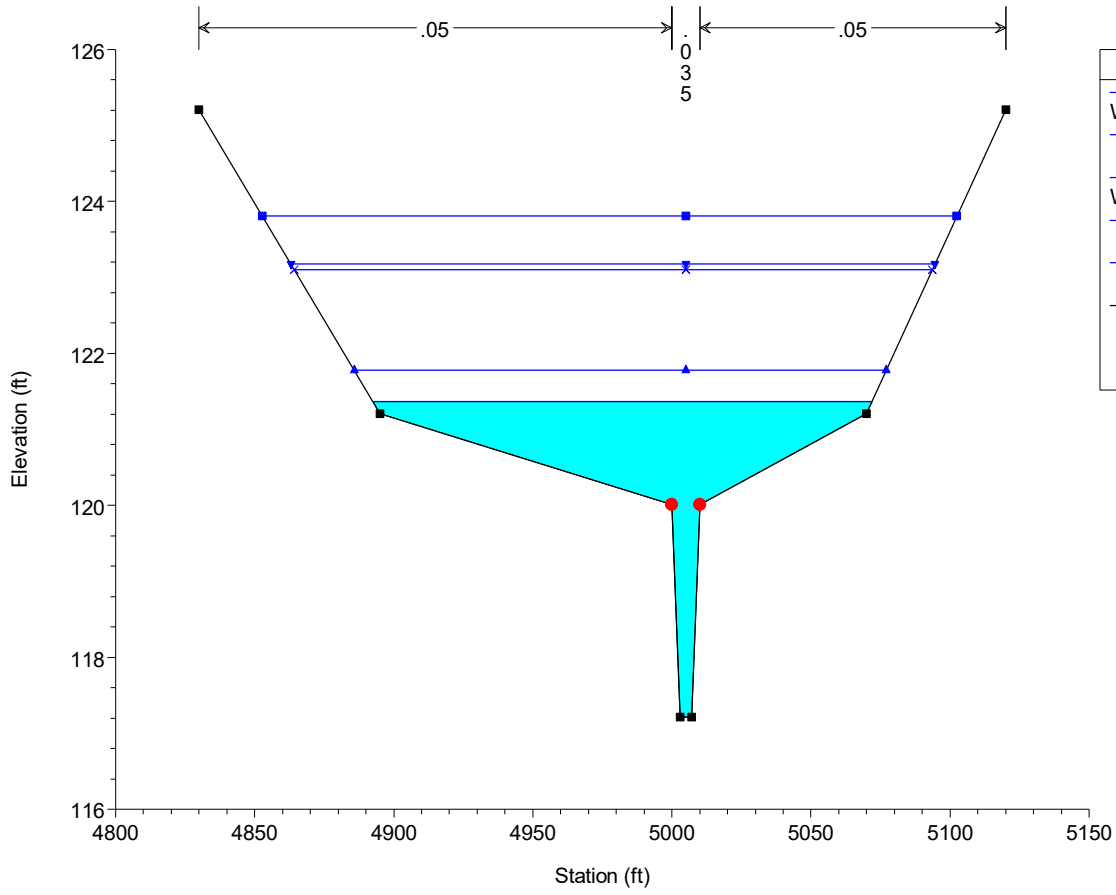
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

FEMA Section B



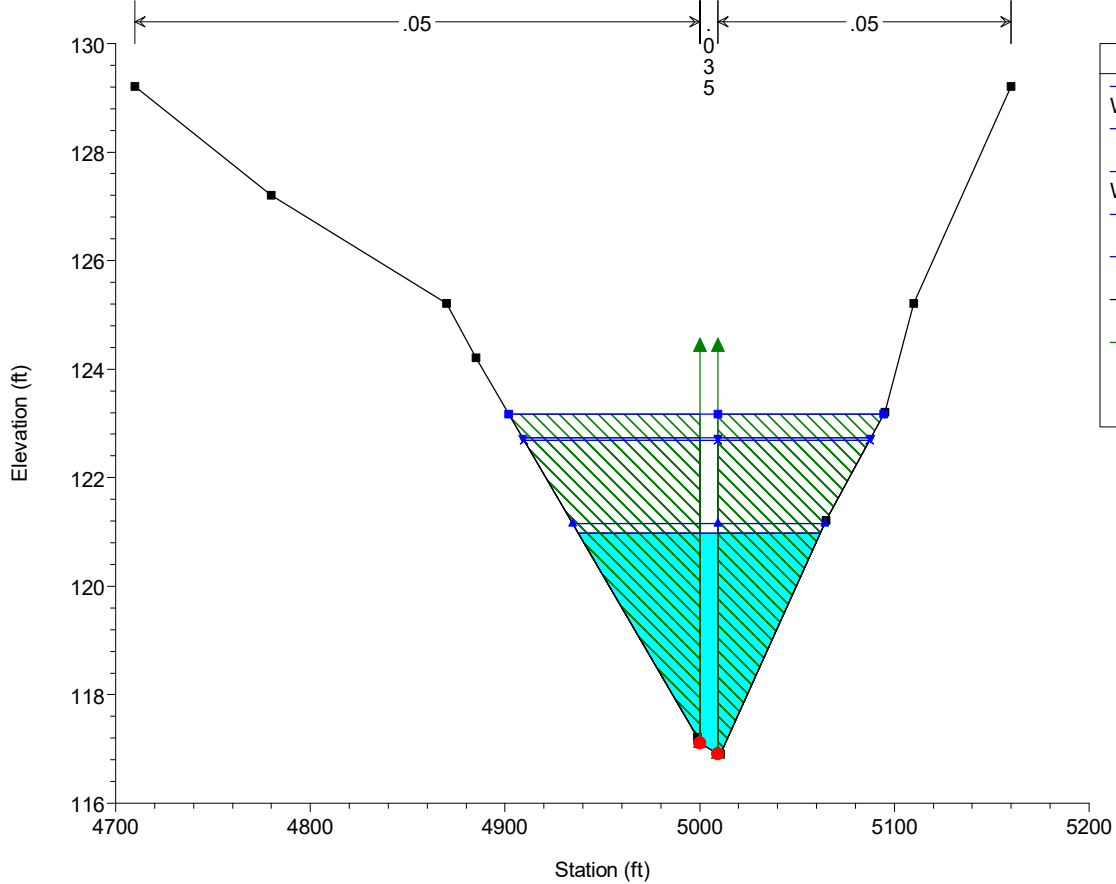
Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
●	Bank Sta

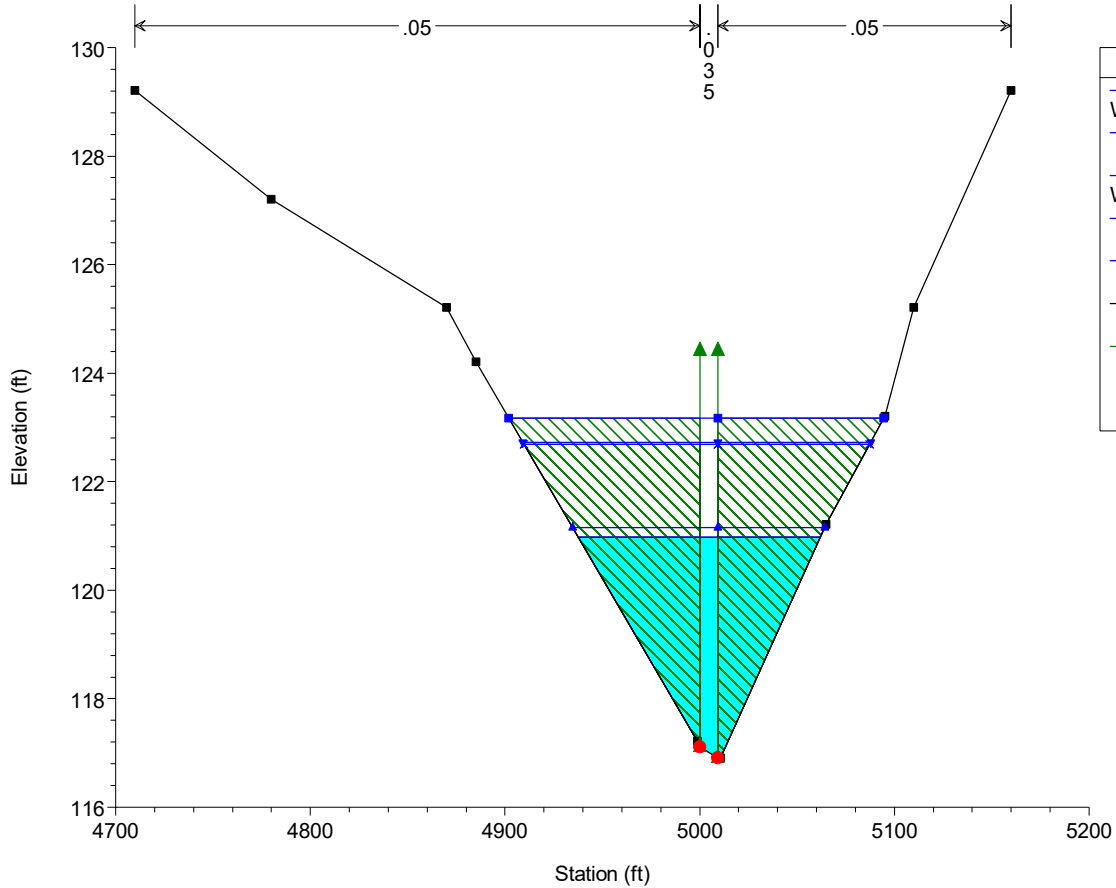
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
US Face Old Concord Road SU-28



Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
▲	Ineff
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

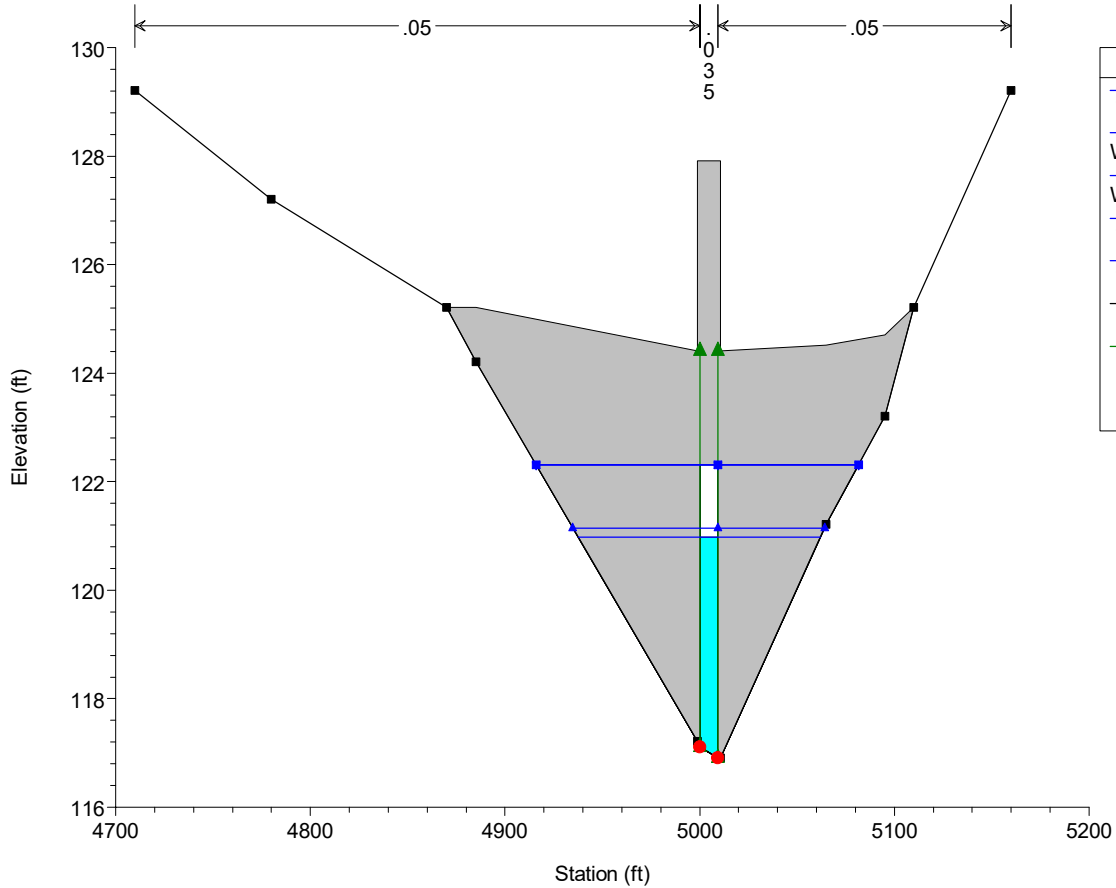
US Face Old Concord Road SU-28



Legend	
WS 500-YR	Blue square
WS 50-YR	Blue inverted triangle
WS 100-YR	Blue cross
WS 25-YR	Blue triangle
WS 10-YR	Blue inverted triangle
Ground	Black square
Ineff	Green triangle
Bank Sta	Red circle

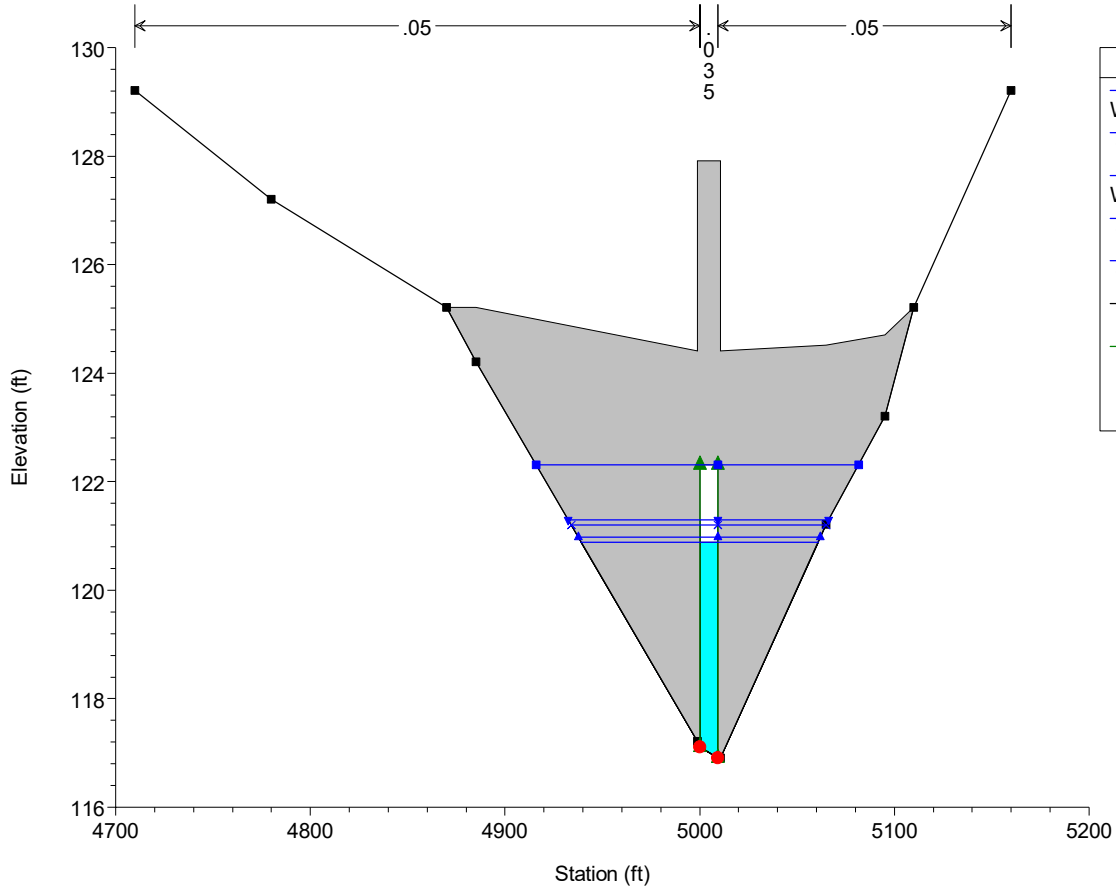
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

Old Concord Road SU-28

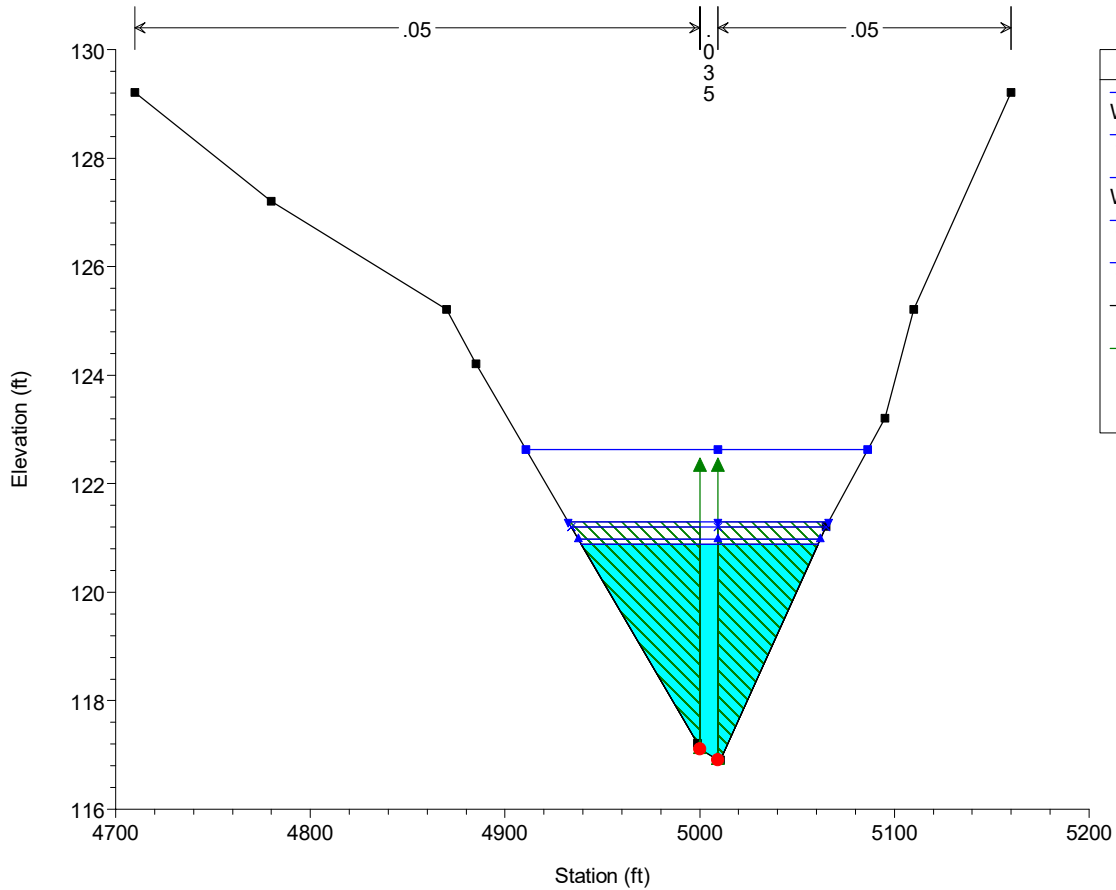


Legend	
WS 50-YR	Blue inverted triangle
WS 100-YR	Blue cross
WS 500-YR	Blue square
WS 25-YR	Blue triangle
WS 10-YR	Blue inverted triangle
Ground	Black square
Ineff	Green triangle
Bank Sta	Red circle

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 Old Concord Road SU-28

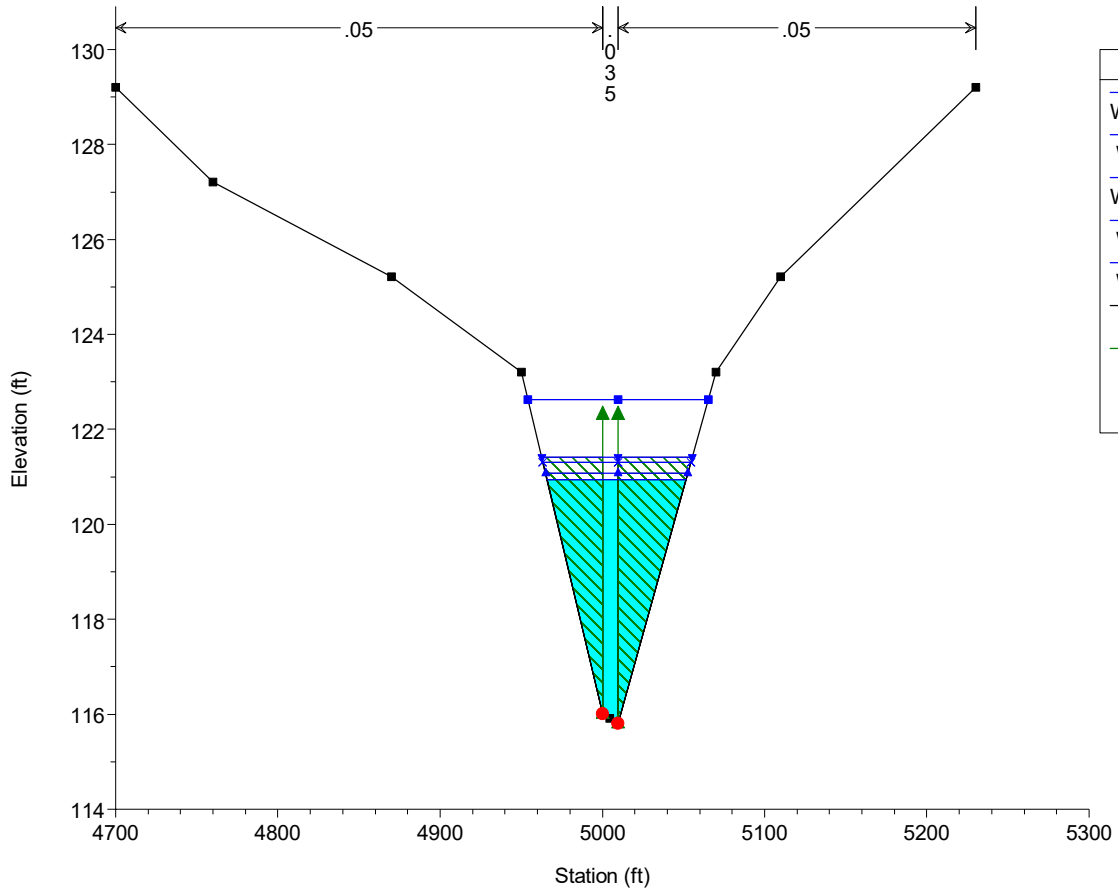


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



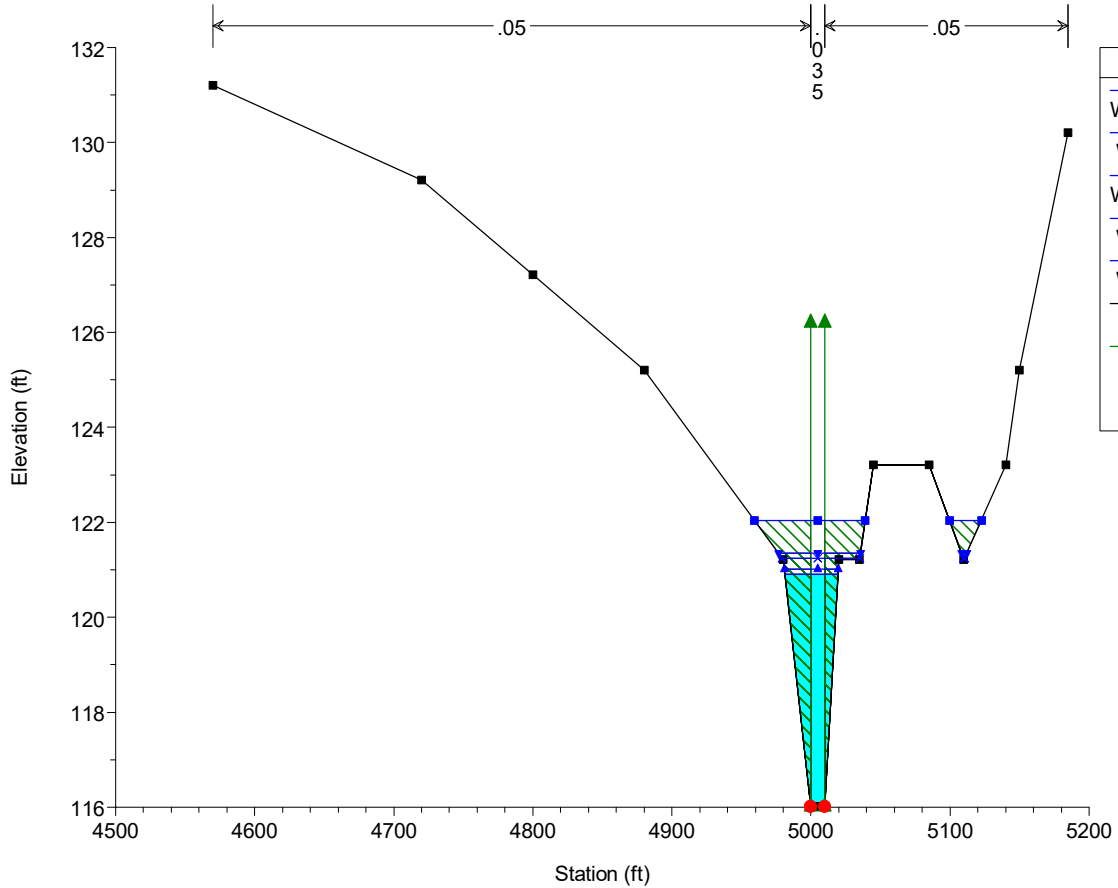
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

DS Face Concord Road SU-28

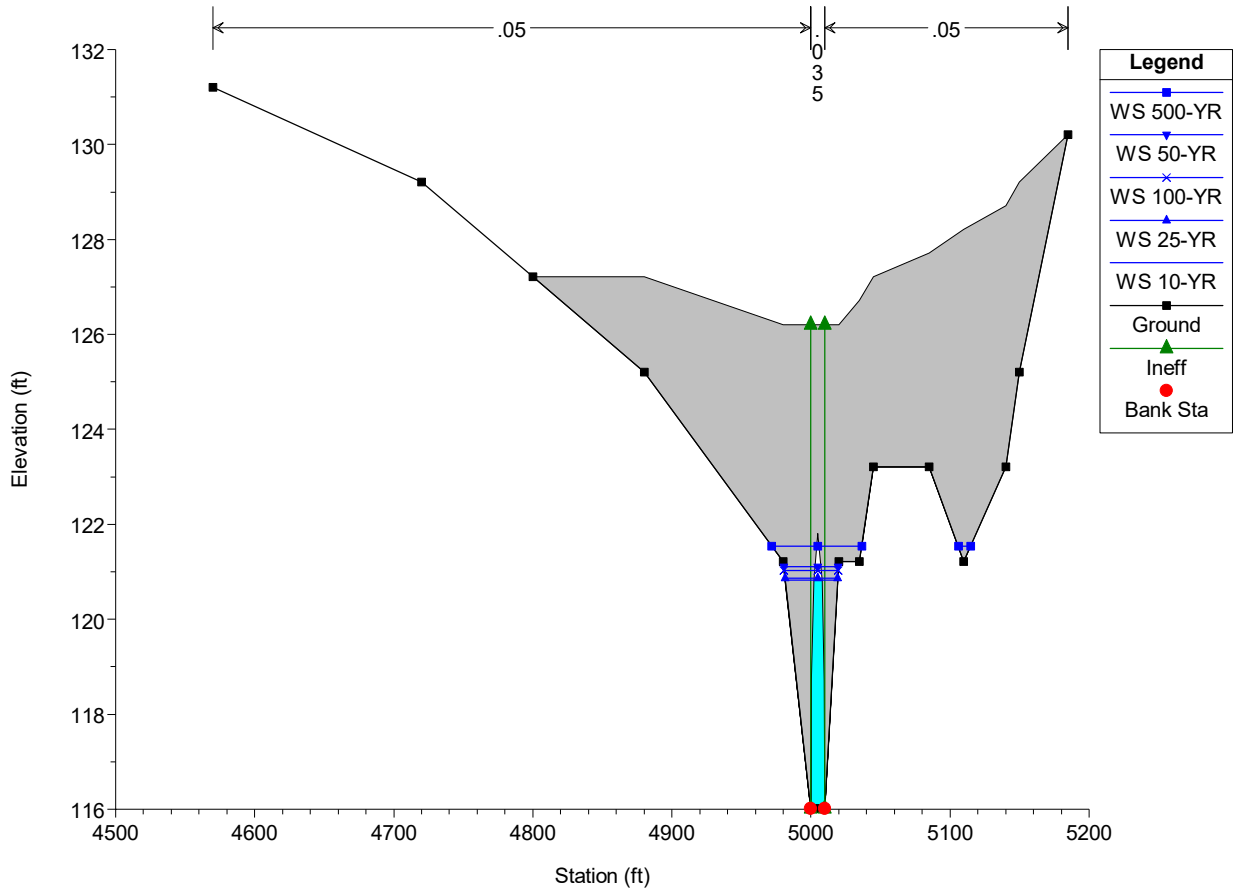


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

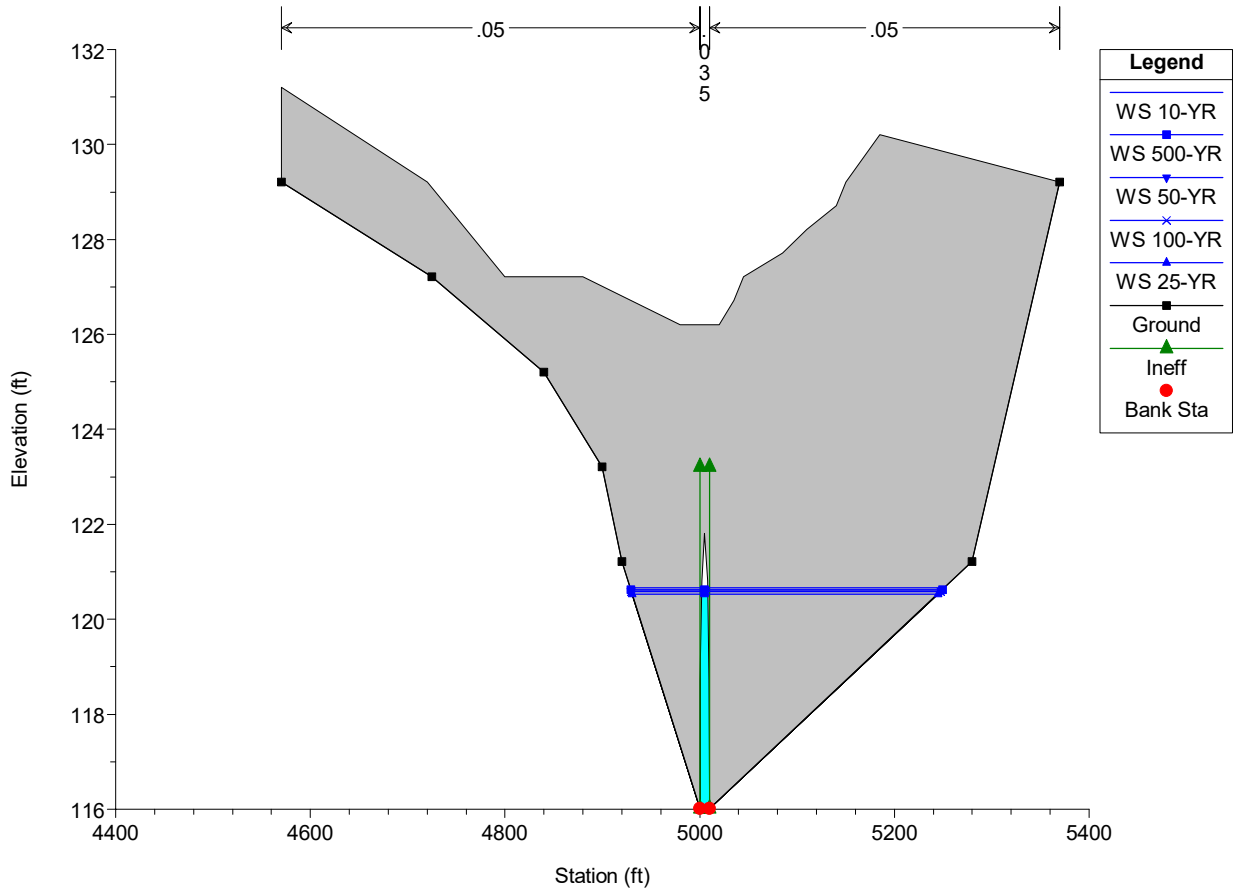
US Face Concord Road SU-27



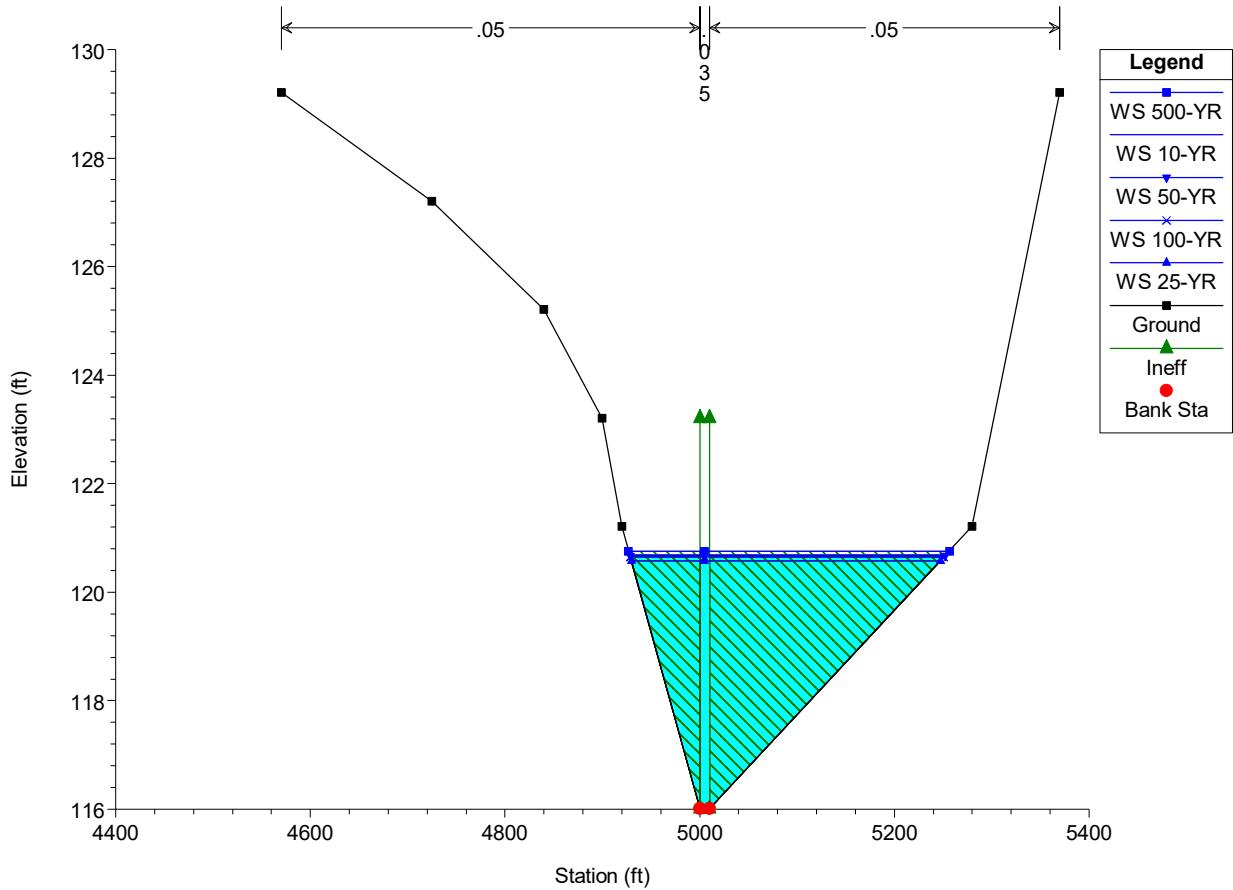
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 Concord Road SU-27



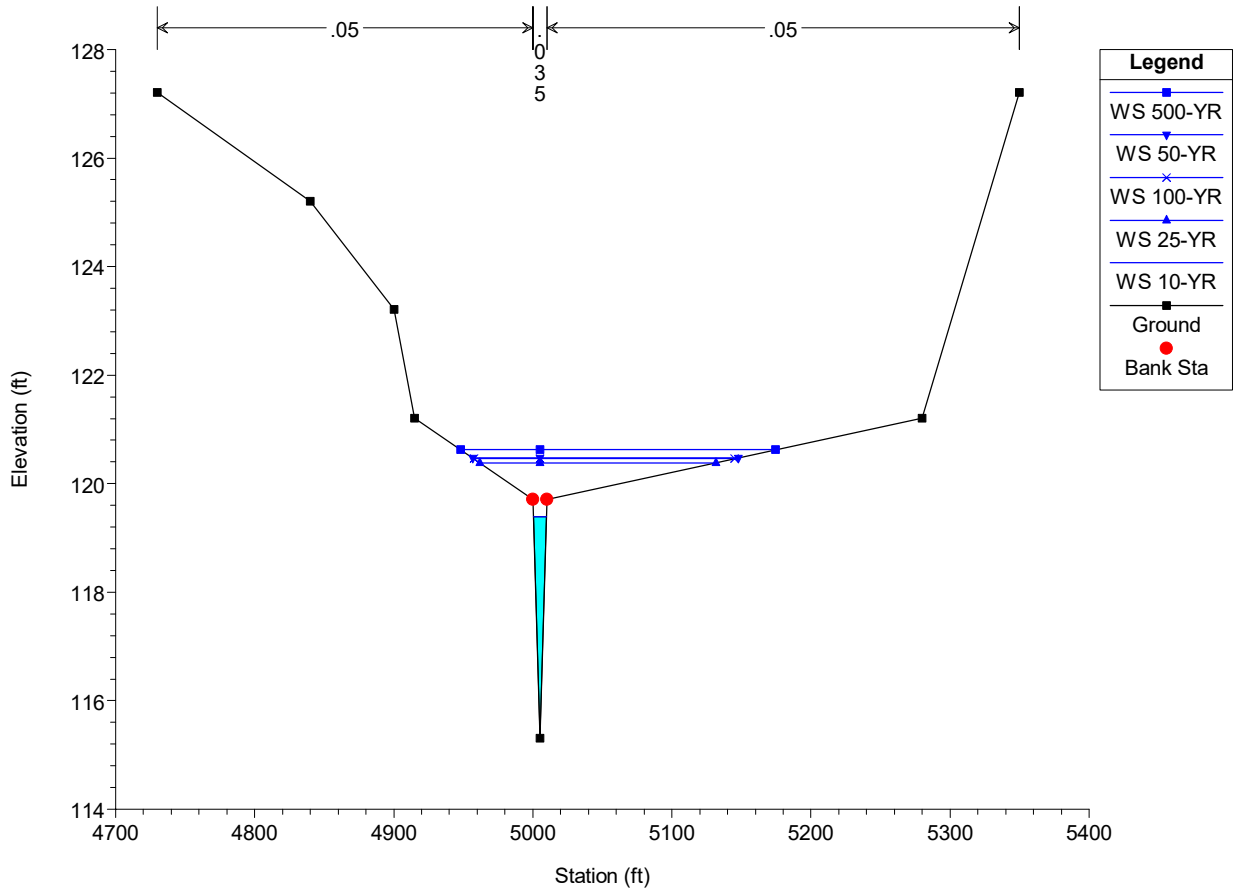
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 Concord Road SU-27



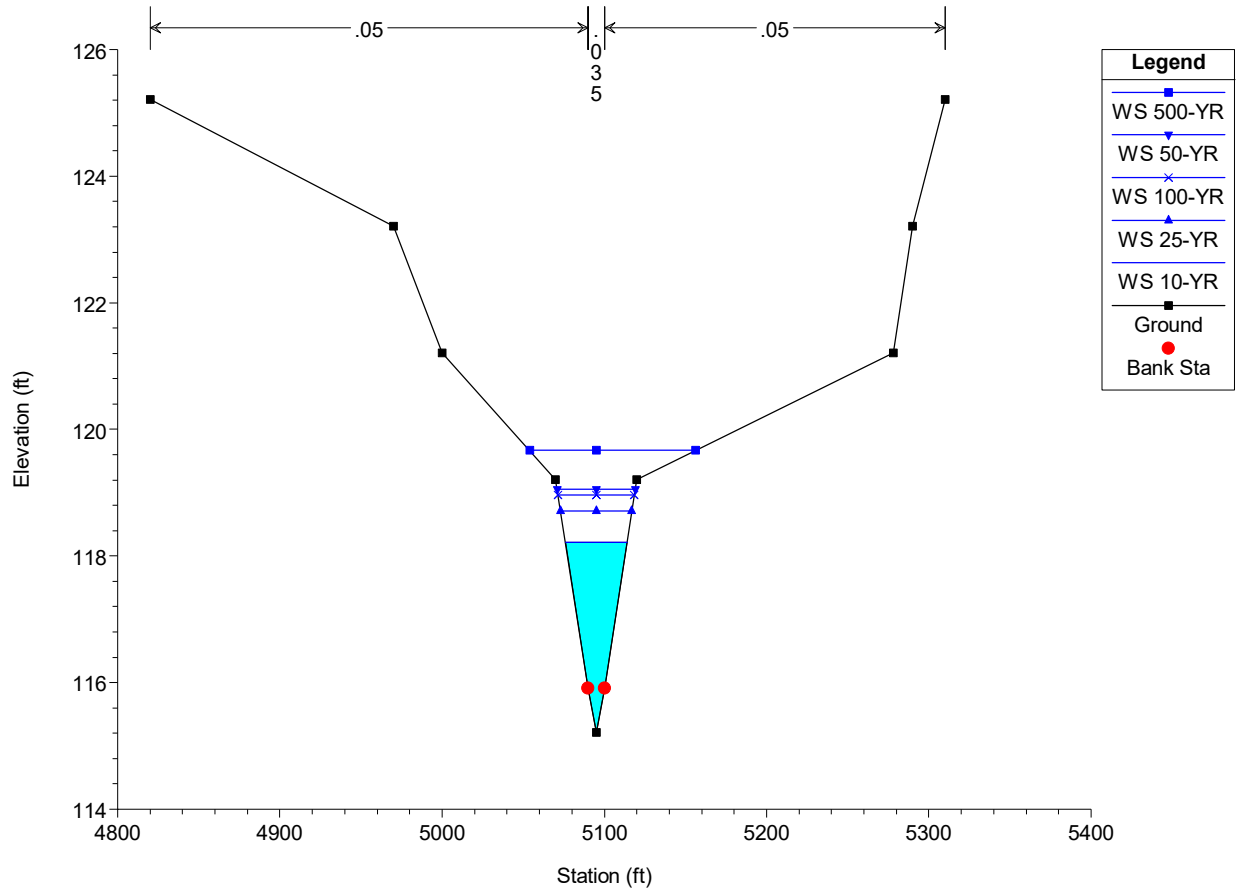
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
 DS Face Concord Road SU-27



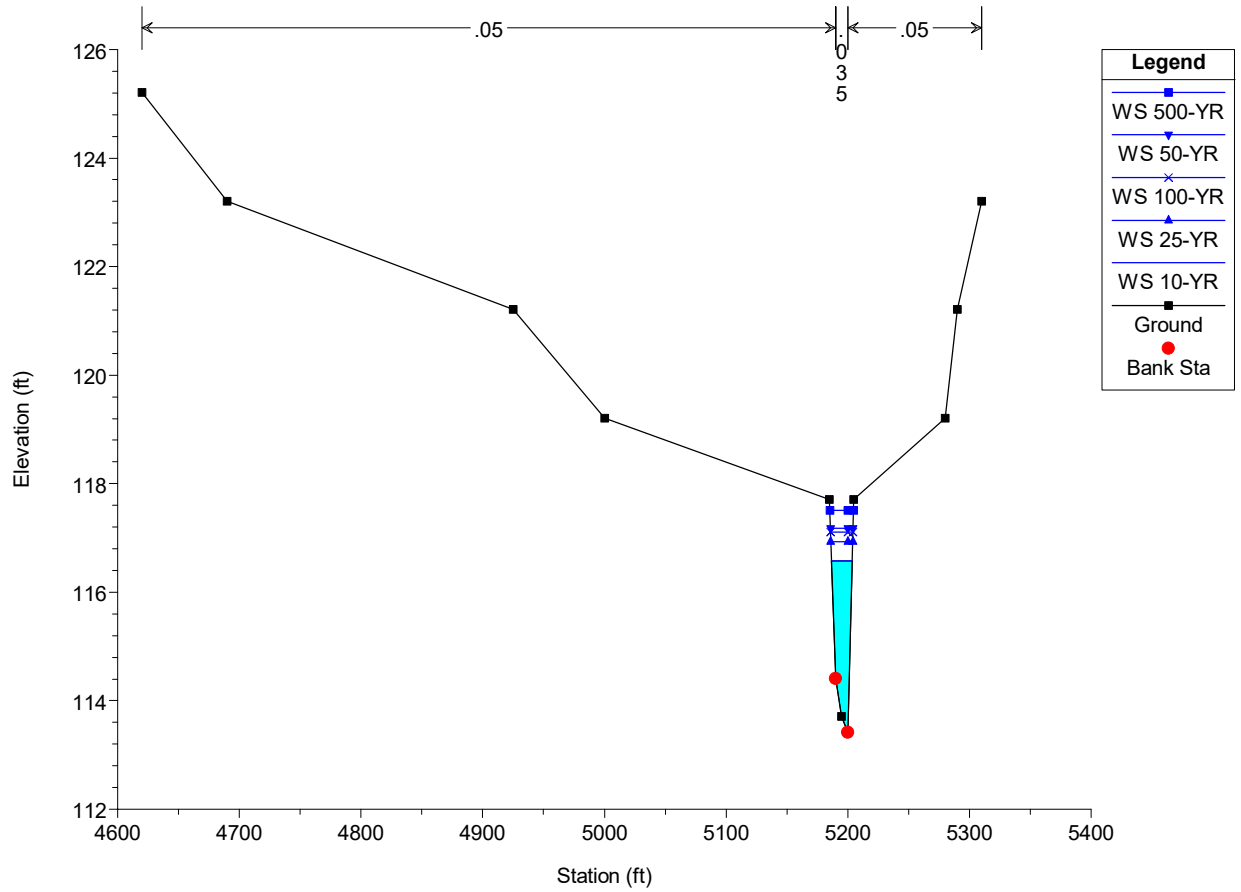
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



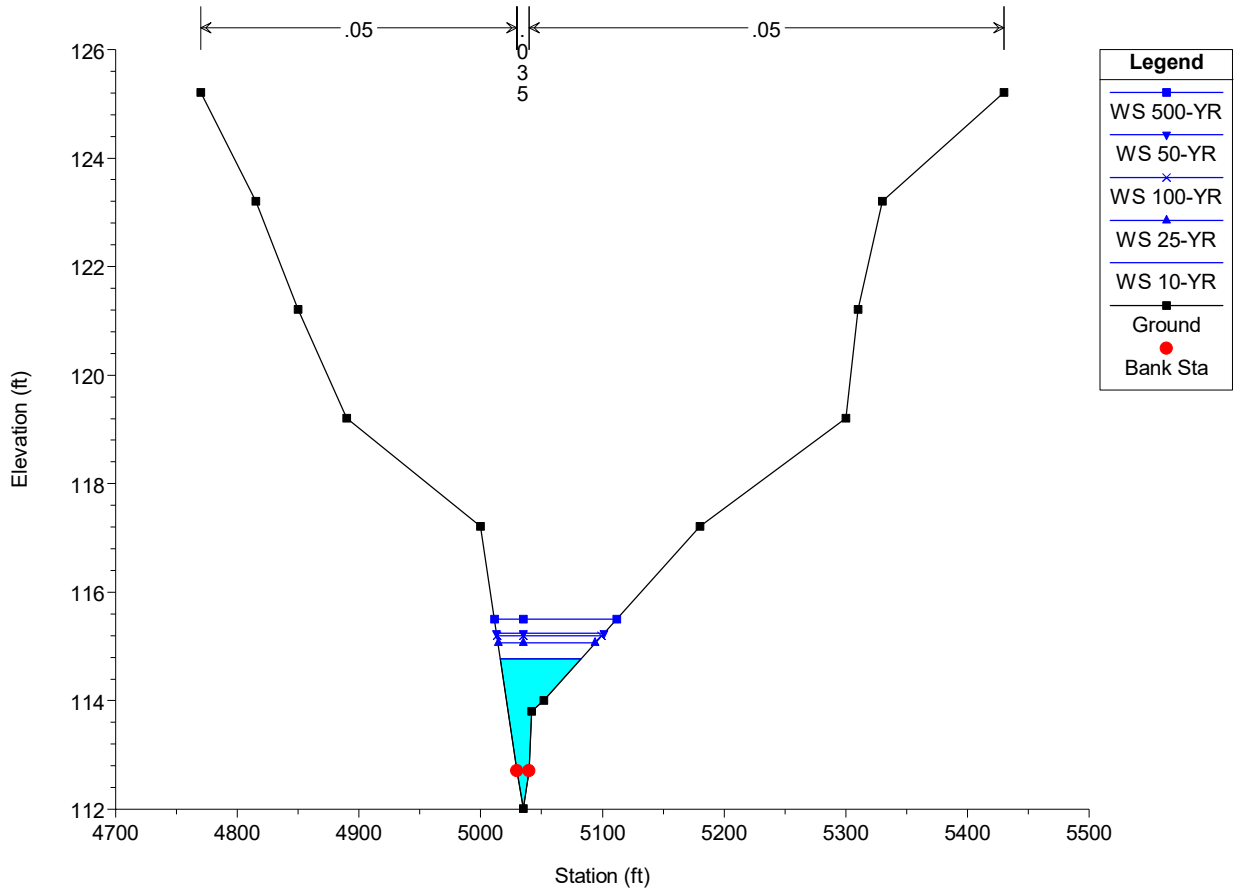
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



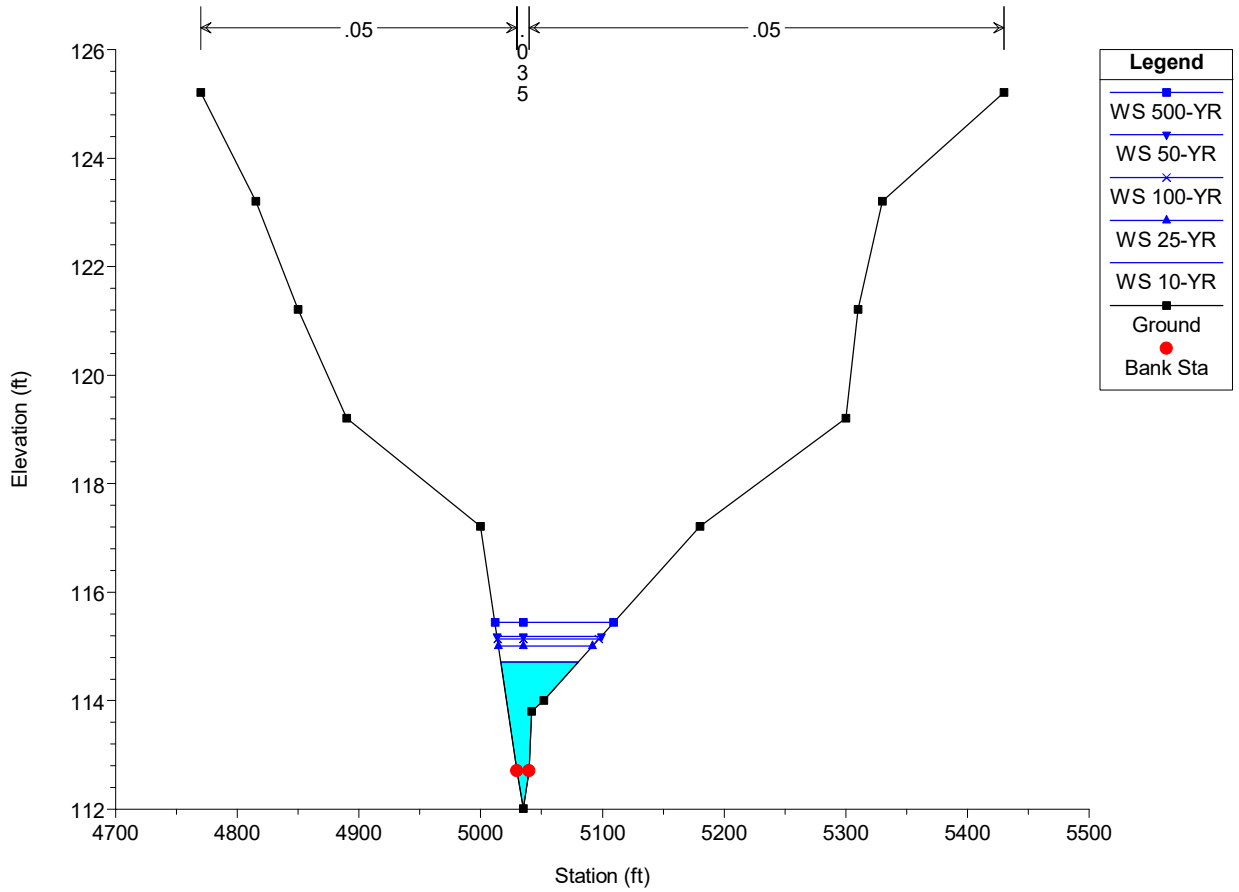
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



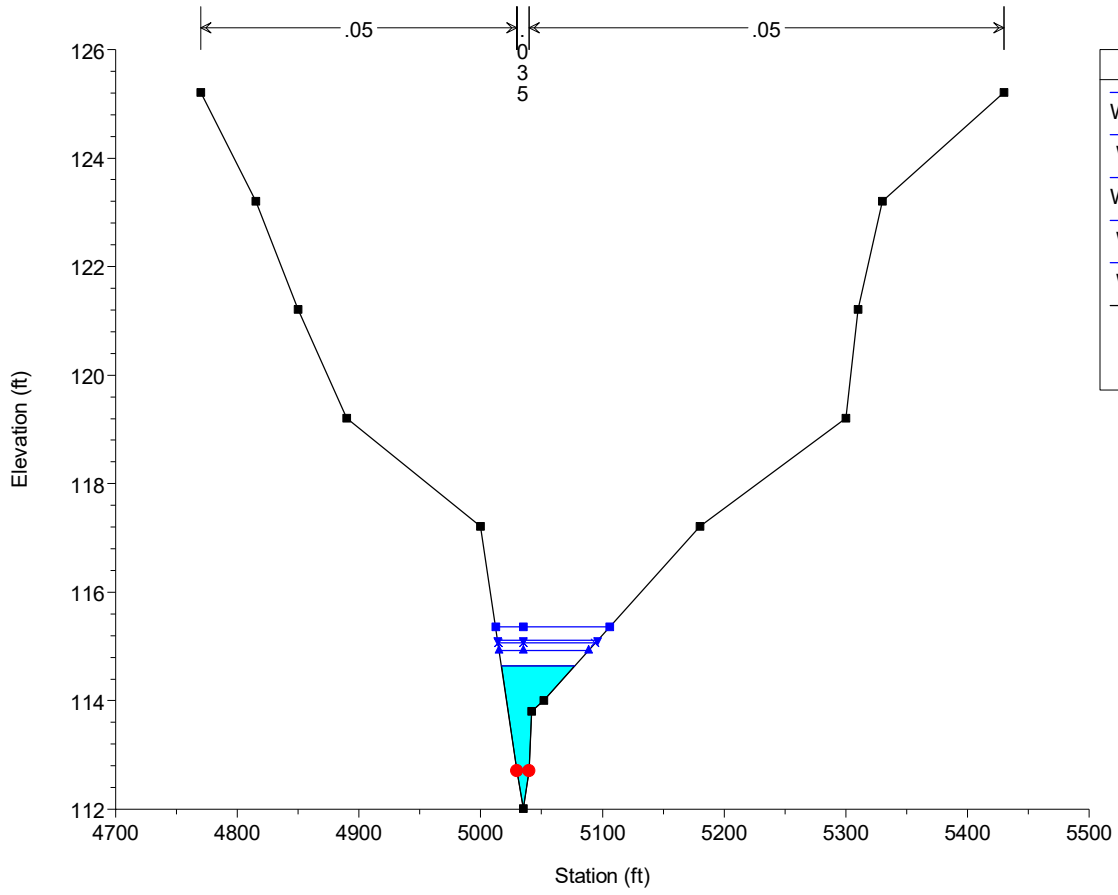
Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020

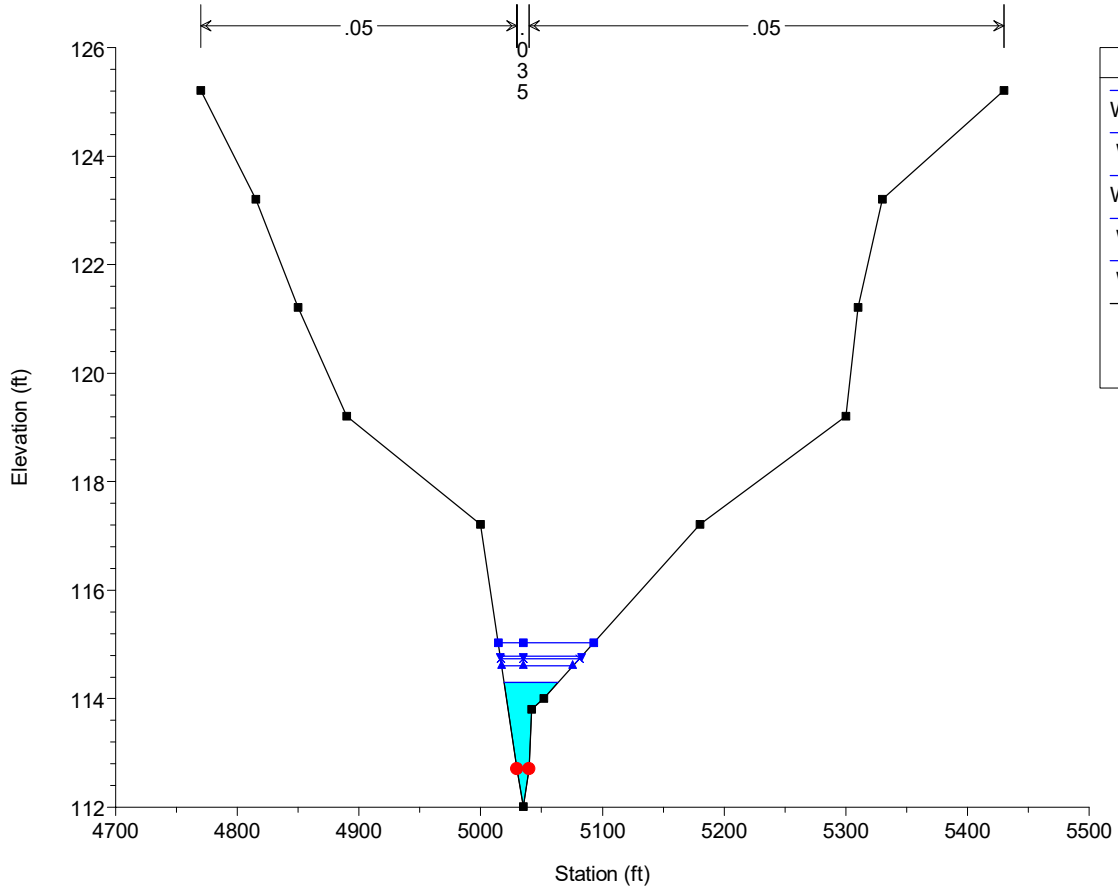


Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020



Legend	
—■—	WS 500-YR
—▼—	WS 50-YR
—×—	WS 100-YR
—▲—	WS 25-YR
—▲—	WS 10-YR
—■—	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Prop_Condition_Model 4/16/2020
FEMA Section A



Legend	
—■—	WS 500-YR
—▼—	WS 50-YR
—×—	WS 100-YR
—▲—	WS 25-YR
—▲—	WS 10-YR
—■—	Ground
●	Bank Sta

HEC-RAS Plan: Prop_Cond River: Pantry Brook Reach: Pantry Brook

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Pantry Brook	49.4	10-YR	155.00	128.21	130.95	130.45	131.20	0.004583	4.92	49.19	36.71	0.57
Pantry Brook	49.4	25-YR	209.00	128.21	131.27	130.75	131.56	0.004864	5.52	61.27	43.88	0.60
Pantry Brook	49.4	50-YR	253.00	128.21	131.51	130.93	131.84	0.005029	5.95	72.30	60.90	0.62
Pantry Brook	49.4	100-YR	240.00	128.21	131.44	130.88	131.77	0.005005	5.84	68.96	56.03	0.62
Pantry Brook	49.4	500-YR	326.00	128.21	131.80	131.21	132.20	0.005460	6.62	87.97	81.38	0.66
Pantry Brook	44.9	10-YR	155.00	126.21	127.30	127.30	127.43	0.019398	5.11	69.27	204.27	1.00
Pantry Brook	44.9	25-YR	209.00	126.21	127.36	127.36	127.51	0.021242	5.61	82.02	207.37	1.06
Pantry Brook	44.9	50-YR	253.00	126.21	127.40	127.40	127.58	0.023275	6.05	90.28	209.35	1.12
Pantry Brook	44.9	100-YR	240.00	126.21	127.39	127.39	127.56	0.022469	5.90	88.21	208.86	1.10
Pantry Brook	44.9	500-YR	326.00	126.21	127.47	127.47	127.68	0.023314	6.40	106.59	213.21	1.13
Pantry Brook	39.3	10-YR	155.00	121.21	124.31		124.33	0.000859	1.98	175.46	196.73	0.22
Pantry Brook	39.3	25-YR	209.00	121.21	124.55		124.57	0.000806	2.04	225.21	218.95	0.22
Pantry Brook	39.3	50-YR	253.00	121.21	124.70		124.72	0.000826	2.14	257.30	231.70	0.22
Pantry Brook	39.3	100-YR	240.00	121.21	124.65		124.67	0.000834	2.13	246.49	227.48	0.22
Pantry Brook	39.3	500-YR	326.00	121.21	124.98		125.00	0.000729	2.14	325.68	256.77	0.21
Pantry Brook	34.8	10-YR	155.00	119.41	123.60	123.27	123.70	0.002647	3.53	86.45	99.69	0.38
Pantry Brook	34.8	25-YR	209.00	119.41	123.95	123.41	124.03	0.001929	3.28	123.15	108.50	0.34
Pantry Brook	34.8	50-YR	253.00	119.41	124.00		124.10	0.002529	3.79	128.39	109.70	0.39
Pantry Brook	34.8	100-YR	240.00	119.41	123.94		124.04	0.002631	3.81	121.57	108.14	0.39
Pantry Brook	34.8	500-YR	326.00	119.41	124.42		124.50	0.001769	3.46	176.79	120.23	0.33
Pantry Brook	30.3	10-YR	155.00	118.61	121.79		122.19	0.004216	5.53	39.17	26.60	0.58
Pantry Brook	30.3	25-YR	209.00	118.61	122.17	121.45	122.69	0.004741	6.38	55.97	60.16	0.62
Pantry Brook	30.3	50-YR	253.00	118.61	123.43		123.51	0.000781	3.22	201.63	176.96	0.27
Pantry Brook	30.3	100-YR	240.00	118.61	123.34		123.43	0.000821	3.26	185.90	165.95	0.27
Pantry Brook	30.3	500-YR	326.00	118.61	124.11		124.15	0.000419	2.59	347.68	257.62	0.20
Pantry Brook	27.1	10-YR	155.00	118.71	121.84		121.87	0.000248	1.34	154.11	106.11	0.14
Pantry Brook	27.1	25-YR	209.00	118.71	122.31		122.33	0.000236	1.45	210.52	136.35	0.14
Pantry Brook	27.1	50-YR	253.00	118.71	123.42		123.43	0.000086	1.06	401.46	199.73	0.09
Pantry Brook	27.1	100-YR	240.00	118.71	123.33		123.34	0.000086	1.05	383.71	197.72	0.09
Pantry Brook	27.1	500-YR	326.00	118.71	124.08		124.09	0.000069	1.04	538.89	214.65	0.08
Pantry Brook	26.5	10-YR	155.00	117.97	121.73		121.82	0.000761	2.47	68.58	29.54	0.24
Pantry Brook	26.5	25-YR	209.00	117.97	122.18		122.29	0.000784	2.73	110.86	122.66	0.25
Pantry Brook	26.5	50-YR	253.00	117.97	123.40		123.42	0.000160	1.49	397.54	327.34	0.12
Pantry Brook	26.5	100-YR	240.00	117.97	123.31		123.33	0.000171	1.52	367.61	324.29	0.12
Pantry Brook	26.5	500-YR	326.00	117.97	124.08		124.09	0.000089	1.22	626.45	349.84	0.09
Pantry Brook	26.4	10-YR	155.00	118.36	121.66	120.03	121.80	0.001335	3.01	53.60	20.24	0.31
Pantry Brook	26.4	25-YR	209.00	118.36	122.06	120.35	122.25	0.001580	3.56	61.77	20.79	0.34
Pantry Brook	26.4	50-YR	253.00	118.36	123.23	120.58	123.38	0.000833	3.15	86.95	22.37	0.26
Pantry Brook	26.4	100-YR	240.00	118.36	123.16	120.52	123.30	0.000795	3.04	85.24	22.15	0.25
Pantry Brook	26.4	500-YR	326.00	118.36	123.84	120.94	124.03	0.000914	3.59	102.00	81.08	0.28
Pantry Brook	26.2		Bridge									
Pantry Brook	25.9	10-YR	155.00	118.12	121.58	119.95	121.71	0.001159	3.00	58.43	34.39	0.30
Pantry Brook	25.9	25-YR	209.00	118.12	121.96	120.28	122.14	0.001424	3.60	68.09	137.47	0.34
Pantry Brook	25.9	50-YR	253.00	118.12	123.19	120.52	123.30	0.000616	2.90	117.73	200.64	0.24
Pantry Brook	25.9	100-YR	240.00	118.12	123.12	120.45	123.22	0.000596	2.82	114.36	198.12	0.23
Pantry Brook	25.9	500-YR	326.00	118.12	123.80	120.88	123.92	0.000593	3.08	144.96	232.72	0.24
Pantry Brook	25.65	10-YR	155.00	117.54	121.57		121.66	0.001235	2.52	86.05	182.47	0.29
Pantry Brook	25.65	25-YR	209.00	117.54	122.00		122.06	0.000737	2.18	180.29	231.73	0.23
Pantry Brook	25.65	50-YR	253.00	117.54	123.24		123.25	0.000093	0.99	478.49	247.81	0.09
Pantry Brook	25.65	100-YR	240.00	117.54	123.16		123.17	0.000095	0.99	459.12	247.04	0.09
Pantry Brook	25.65	500-YR	326.00	117.54	123.86		123.86	0.000069	0.94	633.41	253.85	0.08
Pantry Brook	25.4	10-YR	155.00	118.21	121.53		121.63	0.000956	2.75	77.93	53.43	0.28
Pantry Brook	25.4	25-YR	209.00	118.21	121.88		122.01	0.001105	3.17	100.27	73.65	0.30
Pantry Brook	25.4	50-YR	253.00	118.21	123.19		123.23	0.000295	2.04	246.45	149.12	0.16
Pantry Brook	25.4	100-YR	240.00	118.21	123.12		123.16	0.000292	2.00	235.05	144.65	0.16
Pantry Brook	25.4	500-YR	326.00	118.21	123.82		123.85	0.000218	1.90	343.63	158.96	0.14
Pantry Brook	24.3	10-YR	155.00	118.29	121.53		121.54	0.000296	1.24	243.67	218.45	0.14
Pantry Brook	24.3	25-YR	209.00	118.29	121.91		121.92	0.000222	1.19	327.43	222.70	0.13
Pantry Brook	24.3	50-YR	253.00	118.29	123.21		123.21	0.000045	0.69	627.79	241.40	0.06
Pantry Brook	24.3	100-YR	240.00	118.29	123.13		123.13	0.000045	0.68	609.04	240.67	0.06
Pantry Brook	24.3	500-YR	326.00	118.29	123.83		123.84	0.000038	0.70	780.55	247.27	0.06
Pantry Brook	23.2	10-YR	155.00	117.61	121.52		121.52	0.000164	0.94	329.35	288.86	0.10
Pantry Brook	23.2	25-YR	209.00	117.61	121.90		121.90	0.000126	0.90	442.34	298.05	0.09
Pantry Brook	23.2	50-YR	253.00	117.61	123.21		123.21	0.000025	0.51	838.47	304.11	0.04
Pantry Brook	23.2	100-YR	240.00	117.61	123.13		123.13	0.000024	0.50	814.81	304.11	0.04
Pantry Brook	23.2	500-YR	326.00	117.61	123.83		123.83	0.000021	0.52	1028.73	304.11	0.04
Pantry Brook	22.3	10-YR	155.00	117.61	121.50		121.50	0.000176	1.05	324.02	288.26	0.11
Pantry Brook	22.3	25-YR	209.00	117.61	121.89		121.89	0.000133	0.99	438.20	297.80	0.10
Pantry Brook	22.3	50-YR	253.00	117.61	123.20		123.21	0.000025	0.54	837.67	304.11	0.04
Pantry Brook	22.3	100-YR	240.00	117.61	123.13		123.13	0.000025	0.53	814.02	304.11	0.04
Pantry Brook	22.3	500-YR	326.00	117.61	123.83		123.83	0.000022	0.54	1028.05	304.11	0.04

HEC-RAS Plan: Prop_Cond River: Pantry Brook Reach: Pantry Brook (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Pantry Brook	21.2	10-YR	155.00	117.69	121.48		121.49	0.000192	1.14	262.88	202.85	0.12
Pantry Brook	21.2	25-YR	209.00	117.69	121.87		121.88	0.000162	1.14	342.84	205.86	0.11
Pantry Brook	21.2	50-YR	253.00	117.69	123.20		123.20	0.000039	0.70	623.49	216.66	0.06
Pantry Brook	21.2	100-YR	240.00	117.69	123.12		123.12	0.000038	0.69	606.71	215.73	0.06
Pantry Brook	21.2	500-YR	326.00	117.69	123.83		123.83	0.000037	0.75	762.43	233.97	0.06
Pantry Brook	19.8	10-YR	155.00	117.31	121.47		121.47	0.000116	1.14	286.71	156.47	0.10
Pantry Brook	19.8	25-YR	209.00	117.31	121.86		121.86	0.000120	1.23	349.22	163.31	0.10
Pantry Brook	19.8	50-YR	253.00	117.31	123.19		123.20	0.000040	0.86	583.53	186.74	0.06
Pantry Brook	19.8	100-YR	240.00	117.31	123.12		123.12	0.000039	0.83	569.12	185.38	0.06
Pantry Brook	19.8	500-YR	326.00	117.31	123.82		123.83	0.000039	0.91	704.15	198.61	0.06
Pantry Brook	17	10-YR	155.00	117.21	121.36		121.40	0.000726	2.23	157.69	179.40	0.22
Pantry Brook	17	25-YR	209.00	117.21	121.78		121.80	0.000481	1.96	234.54	191.31	0.18
Pantry Brook	17	50-YR	253.00	117.21	123.18		123.18	0.000074	0.95	530.87	231.60	0.07
Pantry Brook	17	100-YR	240.00	117.21	123.10		123.11	0.000073	0.93	513.08	229.38	0.07
Pantry Brook	17	500-YR	326.00	117.21	123.81		123.81	0.000060	0.93	682.06	249.67	0.07
Pantry Brook	16.04	10-YR	155.00	116.91	120.98	119.03	121.24	0.001496	4.11	37.68	124.53	0.36
Pantry Brook	16.04	25-YR	209.00	116.91	121.15	119.48	121.59	0.002350	5.31	39.37	129.65	0.46
Pantry Brook	16.04	50-YR	253.00	116.91	122.73	119.82	123.07	0.001177	4.66	54.33	178.73	0.34
Pantry Brook	16.04	100-YR	240.00	116.91	122.69	119.72	123.00	0.001083	4.45	53.97	177.53	0.33
Pantry Brook	16.04	500-YR	326.00	116.91	123.17	120.33	123.65	0.001525	5.57	58.52	192.51	0.40
Pantry Brook	16.03	10-YR	155.00	116.91	120.97	119.03	121.24	0.001498	4.12	37.66	124.48	0.36
Pantry Brook	16.03	25-YR	209.00	116.91	121.15	119.48	121.59	0.002356	5.31	39.34	129.56	0.46
Pantry Brook	16.03	50-YR	253.00	116.91	122.73	119.82	123.06	0.001178	4.66	54.32	178.69	0.34
Pantry Brook	16.03	100-YR	240.00	116.91	122.69	119.72	123.00	0.001084	4.45	53.95	177.49	0.33
Pantry Brook	16.03	500-YR	326.00	116.91	123.17	120.33	123.65	0.001527	5.57	58.50	192.44	0.40
Pantry Brook	16.0		Bridge									
Pantry Brook	15.81	10-YR	155.00	116.91	120.88	119.03	121.16	0.001619	4.21	36.79	121.84	0.38
Pantry Brook	15.81	25-YR	209.00	116.91	120.97	119.48	121.45	0.002724	5.55	37.66	124.47	0.49
Pantry Brook	15.81	50-YR	253.00	116.91	121.30	119.81	121.90	0.003079	6.21	40.71	133.94	0.53
Pantry Brook	15.81	100-YR	240.00	116.91	121.20	119.71	121.76	0.002996	6.03	39.77	130.87	0.52
Pantry Brook	15.81	500-YR	326.00	116.91	122.63	120.33	122.64	0.000090	1.28	515.66	175.73	0.09
Pantry Brook	15.8	10-YR	155.00	115.81	120.94	117.93	121.10	0.000678	3.24	47.77	85.57	0.26
Pantry Brook	15.8	25-YR	209.00	115.81	121.07	118.37	121.35	0.001130	4.26	49.03	87.58	0.33
Pantry Brook	15.8	50-YR	253.00	115.81	121.41	118.71	121.78	0.001339	4.84	52.27	92.73	0.36
Pantry Brook	15.8	100-YR	240.00	115.81	121.31	118.62	121.65	0.001284	4.68	51.28	91.15	0.36
Pantry Brook	15.8	500-YR	326.00	115.81	122.62	119.23	122.64	0.000102	1.53	405.22	111.05	0.10
Pantry Brook	15.25	10-YR	155.00	116.01	120.90	117.96	121.06	0.000670	3.17	48.94	38.24	0.25
Pantry Brook	15.25	25-YR	209.00	116.01	121.01	118.40	121.29	0.001131	4.18	50.04	38.87	0.33
Pantry Brook	15.25	50-YR	253.00	116.01	121.35	118.72	121.69	0.001338	4.74	53.35	62.77	0.36
Pantry Brook	15.25	100-YR	240.00	116.01	121.24	118.63	121.57	0.001284	4.59	52.33	56.91	0.35
Pantry Brook	15.25	500-YR	326.00	116.01	122.04	119.22	122.49	0.001477	5.41	60.30	102.74	0.39
Pantry Brook	15.0		Bridge									
Pantry Brook	14.7	10-YR	155.00	116.01	120.69	117.97	120.86	0.000779	3.31	46.78	324.85	0.27
Pantry Brook	14.7	25-YR	209.00	116.01	120.58	118.40	120.90	0.001532	4.58	45.68	317.47	0.38
Pantry Brook	14.7	50-YR	253.00	116.01	120.67	118.72	121.13	0.002106	5.43	46.57	323.43	0.44
Pantry Brook	14.7	100-YR	240.00	116.01	120.64	118.62	121.06	0.001925	5.18	46.35	321.96	0.42
Pantry Brook	14.7	500-YR	326.00	116.01	120.76	119.22	121.49	0.003278	6.87	47.48	329.57	0.56
Pantry Brook	14	10-YR	155.00	115.31	119.39	119.39	120.43	0.021004	8.18	18.95	9.28	1.01
Pantry Brook	14	25-YR	209.00	115.31	120.39	120.39	120.70	0.005495	5.26	82.83	169.99	0.55
Pantry Brook	14	50-YR	253.00	115.31	120.48	120.48	120.81	0.006121	5.66	99.03	191.21	0.58
Pantry Brook	14	100-YR	240.00	115.31	120.46	120.46	120.78	0.005796	5.49	95.91	187.30	0.56
Pantry Brook	14	500-YR	326.00	115.31	120.62	120.62	120.96	0.006412	5.99	129.97	226.29	0.60
Pantry Brook	12.4	10-YR	155.00	115.21	118.22		118.39	0.002344	3.92	58.93	38.00	0.42
Pantry Brook	12.4	25-YR	209.00	115.21	118.71		118.89	0.002064	4.12	78.94	43.92	0.41
Pantry Brook	12.4	50-YR	253.00	115.21	119.06		119.24	0.001904	4.24	95.11	48.17	0.40
Pantry Brook	12.4	100-YR	240.00	115.21	118.96		119.14	0.001947	4.21	90.33	46.96	0.40
Pantry Brook	12.4	500-YR	326.00	115.21	119.67		119.89	0.001928	4.75	137.32	102.17	0.41
Pantry Brook	7.3	10-YR	155.00	113.41	116.58		116.92	0.003558	4.97	37.03	16.96	0.53
Pantry Brook	7.3	25-YR	209.00	113.41	116.93		117.41	0.004184	5.85	43.28	17.92	0.58
Pantry Brook	7.3	50-YR	253.00	113.41	117.18		117.76	0.004667	6.49	47.76	18.58	0.62
Pantry Brook	7.3	100-YR	240.00	113.41	117.11		117.66	0.004512	6.30	46.53	18.40	0.61
Pantry Brook	7.3	500-YR	326.00	113.41	117.51		118.28	0.005502	7.51	54.10	19.47	0.69
Pantry Brook	1.7	10-YR	155.00	112.01	114.77		114.98	0.003246	4.32	61.63	66.28	0.49
Pantry Brook	1.7	25-YR	209.00	112.01	115.06		115.28	0.003234	4.65	82.66	79.73	0.50
Pantry Brook	1.7	50-YR	253.00	112.01	115.25		115.48	0.003276	4.90	98.40	88.46	0.51
Pantry Brook	1.7	100-YR	240.00	112.01	115.20		115.42	0.003262	4.83	93.85	86.03	0.51
Pantry Brook	1.7	500-YR	326.00	112.01	115.50		115.75	0.003373	5.26	122.56	100.40	0.52
Pantry Brook	1.6	10-YR	155.00	112.01	114.71		114.95	0.003684	4.53	57.84	63.56	0.52
Pantry Brook	1.6	25-YR	209.00	112.01	115.00		115.25	0.003638	4.86	78.13	77.03	0.53

HEC-RAS Plan: Prop_Cond River: Pantry Brook Reach: Pantry Brook (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Pantry Brook	1.6	50-YR	253.00	112.01	115.19		115.44	0.003670	5.11	93.30	85.73	0.54
Pantry Brook	1.6	100-YR	240.00	112.01	115.14		115.39	0.003658	5.04	88.92	83.31	0.53
Pantry Brook	1.6	500-YR	326.00	112.01	115.44		115.71	0.003765	5.48	116.59	97.58	0.55
Pantry Brook	1.5	10-YR	155.00	112.01	114.64	114.30	114.91	0.004381	4.83	52.99	59.89	0.56
Pantry Brook	1.5	25-YR	209.00	112.01	114.93	114.60	115.21	0.004261	5.16	72.37	73.45	0.57
Pantry Brook	1.5	50-YR	253.00	112.01	115.11	114.79	115.40	0.004272	5.42	86.85	82.14	0.58
Pantry Brook	1.5	100-YR	240.00	112.01	115.06	114.74	115.35	0.004264	5.34	82.67	79.73	0.57
Pantry Brook	1.5	500-YR	326.00	112.01	115.37	115.03	115.67	0.004355	5.80	109.06	93.92	0.59
Pantry Brook	1.4	10-YR	155.00	112.01	114.30	114.30	114.82	0.009465	6.38	35.50	44.21	0.81
Pantry Brook	1.4	25-YR	209.00	112.01	114.60	114.60	115.13	0.008601	6.70	50.95	58.28	0.79
Pantry Brook	1.4	50-YR	253.00	112.01	114.79	114.79	115.32	0.008404	6.98	62.52	66.90	0.79
Pantry Brook	1.4	100-YR	240.00	112.01	114.74	114.74	115.27	0.008398	6.89	59.33	64.64	0.79
Pantry Brook	1.4	500-YR	326.00	112.01	115.03	115.03	115.59	0.008370	7.43	80.25	78.31	0.80

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.2 Profile: 10-YR

E.G. US. (ft)	121.80	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	121.66	E.G. Elev (ft)	121.78	121.74
Q Total (cfs)	155.00	W.S. Elev (ft)	121.64	121.59
Q Bridge (cfs)	155.00	Crit W.S. (ft)	120.41	120.31
Q Weir (cfs)		Max Chl Dpth (ft)	3.28	3.36
Weir Sta Lft (ft)		Vel Total (ft/s)	2.88	2.88
Weir Sta Rgt (ft)		Flow Area (sq ft)	53.74	53.83
Weir Submerg		Froude # Chl	0.34	0.35
Weir Max Depth (ft)		Specif Force (cu ft)	82.85	85.34
Min El Weir Flow (ft)	131.21	Hydr Depth (ft)	2.21	2.19
Min El Prs (ft)	126.50	W.P. Total (ft)	28.78	28.35
Delta EG (ft)	0.09	Conv. Total (cfs)	3523.6	3568.1
Delta WS (ft)	0.09	Top Width (ft)	24.30	24.60
BR Open Area (sq ft)	138.16	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.88	C & E Loss (ft)	0.01	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.23	0.22
BR Sel Method	Energy only	Power Total (lb/ft s)	0.65	0.64

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.2 Profile: 25-YR

E.G. US. (ft)	122.25	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	122.06	E.G. Elev (ft)	122.22	122.18
Q Total (cfs)	209.00	W.S. Elev (ft)	122.04	121.98
Q Bridge (cfs)	209.00	Crit W.S. (ft)	120.67	120.64
Q Weir (cfs)		Max Chl Dpth (ft)	3.68	3.75
Weir Sta Lft (ft)		Vel Total (ft/s)	3.28	3.29
Weir Sta Rgt (ft)		Flow Area (sq ft)	63.62	63.53
Weir Submerg		Froude # Chl	0.31	0.33
Weir Max Depth (ft)		Specif Force (cu ft)	114.07	116.27
Min El Weir Flow (ft)	131.21	Hydr Depth (ft)	2.58	2.55
Min El Prs (ft)	126.50	W.P. Total (ft)	29.98	29.60
Delta EG (ft)	0.11	Conv. Total (cfs)	4590.2	4528.0
Delta WS (ft)	0.10	Top Width (ft)	24.66	24.93
BR Open Area (sq ft)	138.16	Frctn Loss (ft)	0.03	0.03
BR Open Vel (ft/s)	3.29	C & E Loss (ft)	0.01	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.27	0.29
BR Sel Method	Energy only	Power Total (lb/ft s)	0.90	0.94

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.2 Profile: 50-YR

E.G. US. (ft)	123.38	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	123.23	E.G. Elev (ft)	123.36	123.33
Q Total (cfs)	253.00	W.S. Elev (ft)	123.23	123.19
Q Bridge (cfs)	253.00	Crit W.S. (ft)	120.87	120.87
Q Weir (cfs)		Max Chl Dpth (ft)	4.87	4.96
Weir Sta Lft (ft)		Vel Total (ft/s)	2.77	2.76
Weir Sta Rgt (ft)		Flow Area (sq ft)	91.19	91.81
Weir Submerg		Froude # Chl	0.23	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	206.91	211.40
Min El Weir Flow (ft)	131.21	Hydr Depth (ft)	4.20	4.21
Min El Prs (ft)	126.50	W.P. Total (ft)	33.83	33.53
Delta EG (ft)	0.08	Conv. Total (cfs)	7836.1	7867.4
Delta WS (ft)	0.04	Top Width (ft)	21.72	21.83
BR Open Area (sq ft)	138.16	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.77	C & E Loss (ft)	0.01	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.18	0.18
BR Sel Method	Energy only	Power Total (lb/ft s)	0.49	0.49

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.2 Profile: 100-YR

E.G. US. (ft)	123.30	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	123.16	E.G. Elev (ft)	123.27	123.25
Q Total (cfs)	240.00	W.S. Elev (ft)	123.15	123.11
Q Bridge (cfs)	240.00	Crit W.S. (ft)	120.82	120.80
Q Weir (cfs)		Max Chl Dpth (ft)	4.79	4.88
Weir Sta Lft (ft)		Vel Total (ft/s)	2.68	2.66
Weir Sta Rgt (ft)		Flow Area (sq ft)	89.51	90.20
Weir Submerg		Froude # Chl	0.22	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	198.09	202.68
Min El Weir Flow (ft)	131.21	Hydr Depth (ft)	4.08	4.10
Min El Prs (ft)	126.50	W.P. Total (ft)	33.58	33.29
Delta EG (ft)	0.07	Conv. Total (cfs)	7621.9	7653.1
Delta WS (ft)	0.04	Top Width (ft)	21.91	22.02
BR Open Area (sq ft)	138.16	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	2.68	C & E Loss (ft)	0.01	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.17	0.17
BR Sel Method	Energy only	Power Total (lb/ft s)	0.44	0.44

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.2 Profile: 500-YR

E.G. US. (ft)	124.03	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	123.84	E.G. Elev (ft)	124.00	123.97
Q Total (cfs)	326.00	W.S. Elev (ft)	123.84	123.78
Q Bridge (cfs)	326.00	Crit W.S. (ft)	121.18	121.19
Q Weir (cfs)		Max Chl Dpth (ft)	5.48	5.55
Weir Sta Lft (ft)		Vel Total (ft/s)	3.14	3.13
Weir Sta Rgt (ft)		Flow Area (sq ft)	103.94	104.31
Weir Submerg		Froude # Chl	0.24	0.27
Weir Max Depth (ft)		Specif Force (cu ft)	276.69	280.95
Min El Weir Flow (ft)	131.21	Hydr Depth (ft)	5.16	5.14
Min El Prs (ft)	126.50	W.P. Total (ft)	35.81	35.46
Delta EG (ft)	0.11	Conv. Total (cfs)	9532.9	9641.0
Delta WS (ft)	0.03	Top Width (ft)	20.16	20.31
BR Open Area (sq ft)	138.16	Frctn Loss (ft)	0.02	0.01
BR Open Vel (ft/s)	3.14	C & E Loss (ft)	0.01	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	0.21	0.21
BR Sel Method	Energy only	Power Total (lb/ft s)	0.66	0.66

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.4 Profile: 10-YR

E.G. Elev (ft)	121.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	121.66	Reach Len. (ft)	14.00	14.00	14.00
Crit W.S. (ft)	120.03	Flow Area (sq ft)	0.44	50.84	2.32
E.G. Slope (ft/ft)	0.001335	Area (sq ft)	0.44	50.84	2.32
Q Total (cfs)	155.00	Flow (cfs)	0.21	152.88	1.91
Top Width (ft)	20.24	Top Width (ft)	0.90	17.07	2.28
Vel Total (ft/s)	2.89	Avg. Vel. (ft/s)	0.49	3.01	0.82
Max Chl Dpth (ft)	3.30	Hydr. Depth (ft)	0.49	2.98	1.02
Conv. Total (cfs)	4242.8	Conv. (cfs)	5.9	4184.7	52.2
Length Wtd. (ft)	14.00	Wetted Per. (ft)	1.48	18.83	3.52
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.02	0.22	0.05
Alpha	1.07	Stream Power (lb/ft s)	0.01	0.68	0.05
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	2.98	1.80	2.65
C & E Loss (ft)	0.00	Cum SA (acres)	2.66	0.62	2.13

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.4 Profile: 25-YR

E.G. Elev (ft)	122.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	122.06	Reach Len. (ft)	14.00	14.00	14.00
Crit W.S. (ft)	120.35	Flow Area (sq ft)	0.82	57.64	3.31
E.G. Slope (ft/ft)	0.001580	Area (sq ft)	0.82	57.64	3.31
Q Total (cfs)	209.00	Flow (cfs)	0.56	205.05	3.39
Top Width (ft)	20.79	Top Width (ft)	1.01	17.07	2.71
Vel Total (ft/s)	3.38	Avg. Vel. (ft/s)	0.68	3.56	1.02
Max Chl Dpth (ft)	3.70	Hydr. Depth (ft)	0.81	3.38	1.22
Conv. Total (cfs)	5257.5	Conv. (cfs)	14.0	5158.3	85.3
Length Wtd. (ft)	14.00	Wetted Per. (ft)	1.90	18.83	4.11
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.04	0.30	0.08
Alpha	1.09	Stream Power (lb/ft s)	0.03	1.07	0.08
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	4.04	2.05	3.49
C & E Loss (ft)	0.01	Cum SA (acres)	2.94	0.63	2.67

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.4 Profile: 50-YR

E.G. Elev (ft)	123.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	123.23	Reach Len. (ft)	14.00	14.00	14.00
Crit W.S. (ft)	120.58	Flow Area (sq ft)	2.06	77.64	7.25
E.G. Slope (ft/ft)	0.000833	Area (sq ft)	2.06	77.64	7.25
Q Total (cfs)	253.00	Flow (cfs)	1.35	244.63	7.02
Top Width (ft)	22.37	Top Width (ft)	1.08	17.07	4.22
Vel Total (ft/s)	2.91	Avg. Vel. (ft/s)	0.66	3.15	0.97
Max Chl Dpth (ft)	4.87	Hydr. Depth (ft)	1.91	4.55	1.72
Conv. Total (cfs)	8764.8	Conv. (cfs)	46.9	8474.8	243.2
Length Wtd. (ft)	14.00	Wetted Per. (ft)	3.07	18.83	6.04
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.03	0.21	0.06
Alpha	1.14	Stream Power (lb/ft s)	0.02	0.68	0.06
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	7.66	2.52	5.95
C & E Loss (ft)	0.01	Cum SA (acres)	3.32	0.62	3.07

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.4 Profile: 100-YR

E.G. Elev (ft)	123.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	123.16	Reach Len. (ft)	14.00	14.00	14.00
Crit W.S. (ft)	120.52	Flow Area (sq ft)	1.98	76.33	6.93
E.G. Slope (ft/ft)	0.000795	Area (sq ft)	1.98	76.33	6.93
Q Total (cfs)	240.00	Flow (cfs)	1.25	232.21	6.53
Top Width (ft)	22.15	Top Width (ft)	1.08	17.07	4.00
Vel Total (ft/s)	2.82	Avg. Vel. (ft/s)	0.63	3.04	0.94

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.4 Profile: 100-YR (Continued)

Max Chl Dpth (ft)	4.80	Hydr. Depth (ft)	1.84	4.47	1.73
Conv. Total (cfs)	8514.0	Conv. (cfs)	44.5	8237.7	231.8
Length Wtd. (ft)	14.00	Wetted Per. (ft)	3.00	18.83	5.81
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.03	0.20	0.06
Alpha	1.13	Stream Power (lb/ft s)	0.02	0.61	0.06
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	7.42	2.48	5.76
C & E Loss (ft)	0.01	Cum SA (acres)	3.29	0.62	3.02

Plan: Prop_Cond Pantry Brook Pantry Brook RS: 26.4 Profile: 500-YR

E.G. Elev (ft)	124.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	123.84	Reach Len. (ft)	14.00	14.00	14.00
Crit W.S. (ft)	120.94	Flow Area (sq ft)	2.77	87.99	11.24
E.G. Slope (ft/ft)	0.000914	Area (sq ft)	2.77	87.99	14.98
Q Total (cfs)	326.00	Flow (cfs)	1.98	315.69	8.32
Top Width (ft)	81.08	Top Width (ft)	1.47	17.07	62.54
Vel Total (ft/s)	3.20	Avg. Vel. (ft/s)	0.72	3.59	0.74
Max Chl Dpth (ft)	5.48	Hydr. Depth (ft)	1.88	5.15	0.85
Conv. Total (cfs)	10781.3	Conv. (cfs)	65.6	10440.5	275.2
Length Wtd. (ft)	14.00	Wetted Per. (ft)	3.88	18.83	15.05
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.04	0.27	0.04
Alpha	1.22	Stream Power (lb/ft s)	0.03	0.96	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	9.66	2.83	7.53
C & E Loss (ft)	0.02	Cum SA (acres)	3.61	0.62	3.66