

APPENDIX 6.4:
EXISTING HEC-RAS MODEL AND RESULTS

Geometry Plan

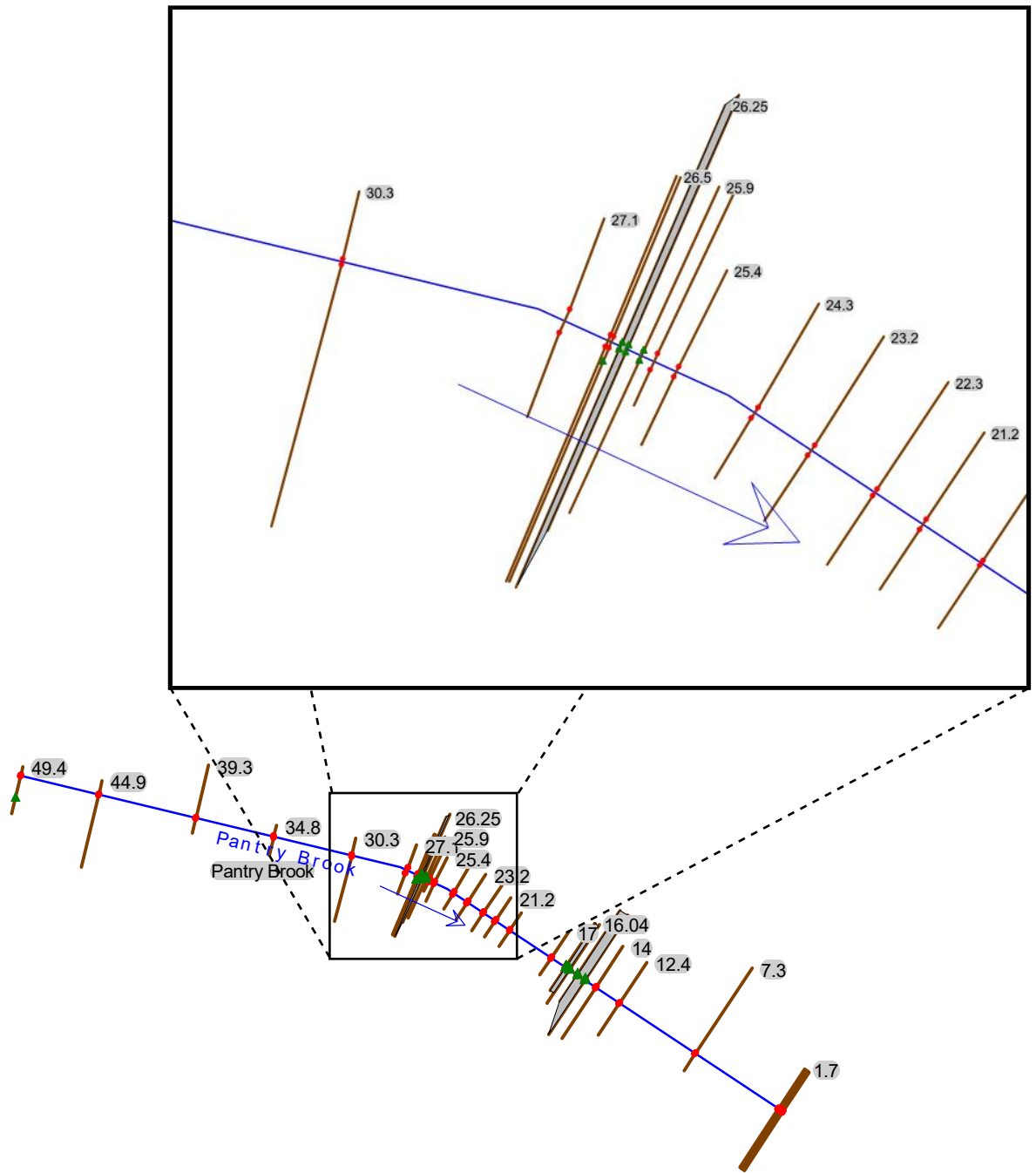
Stream Profile

Stream Cross Sections

Cross Section Output Table

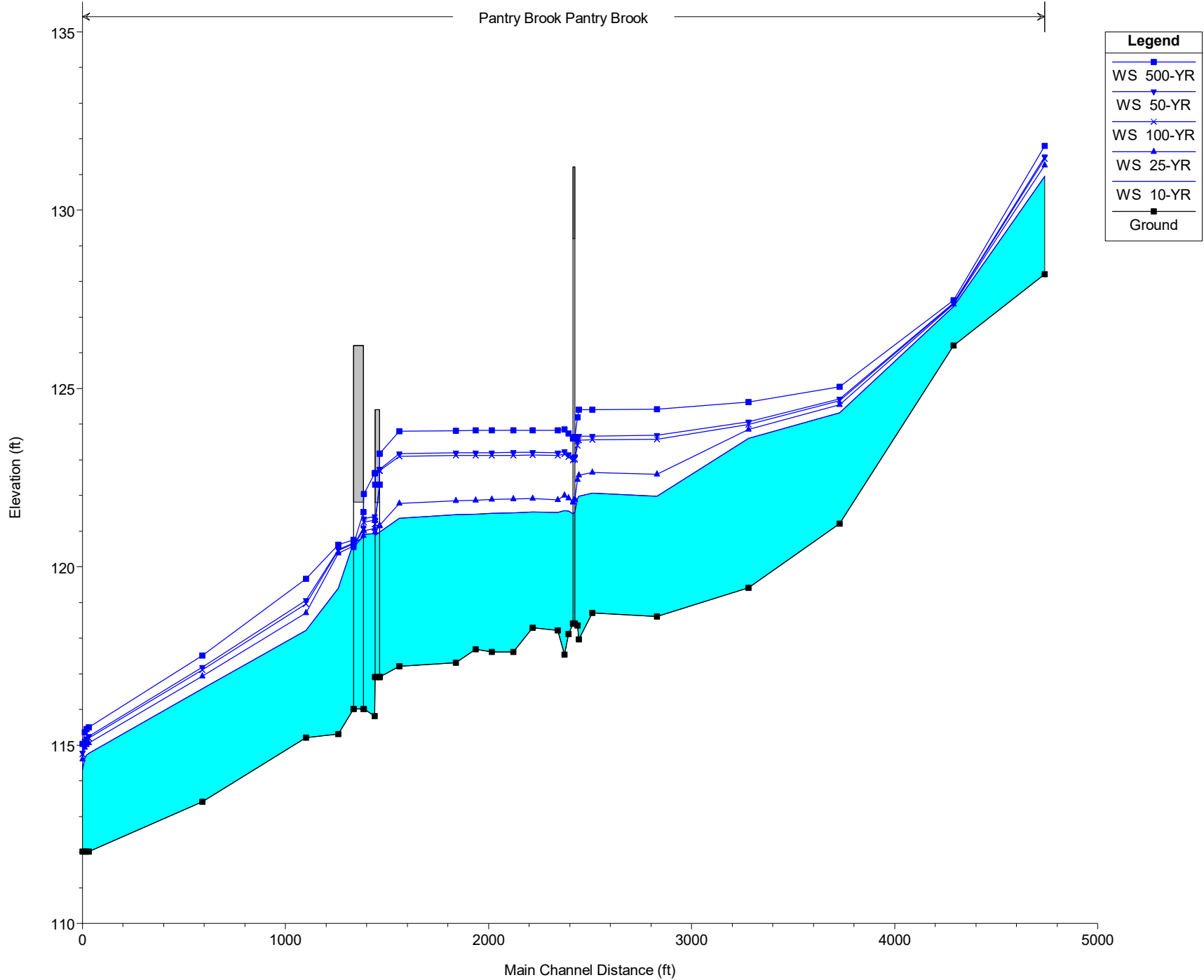
Detailed Bridge Output

Detailed Output for Cross Section 26.4



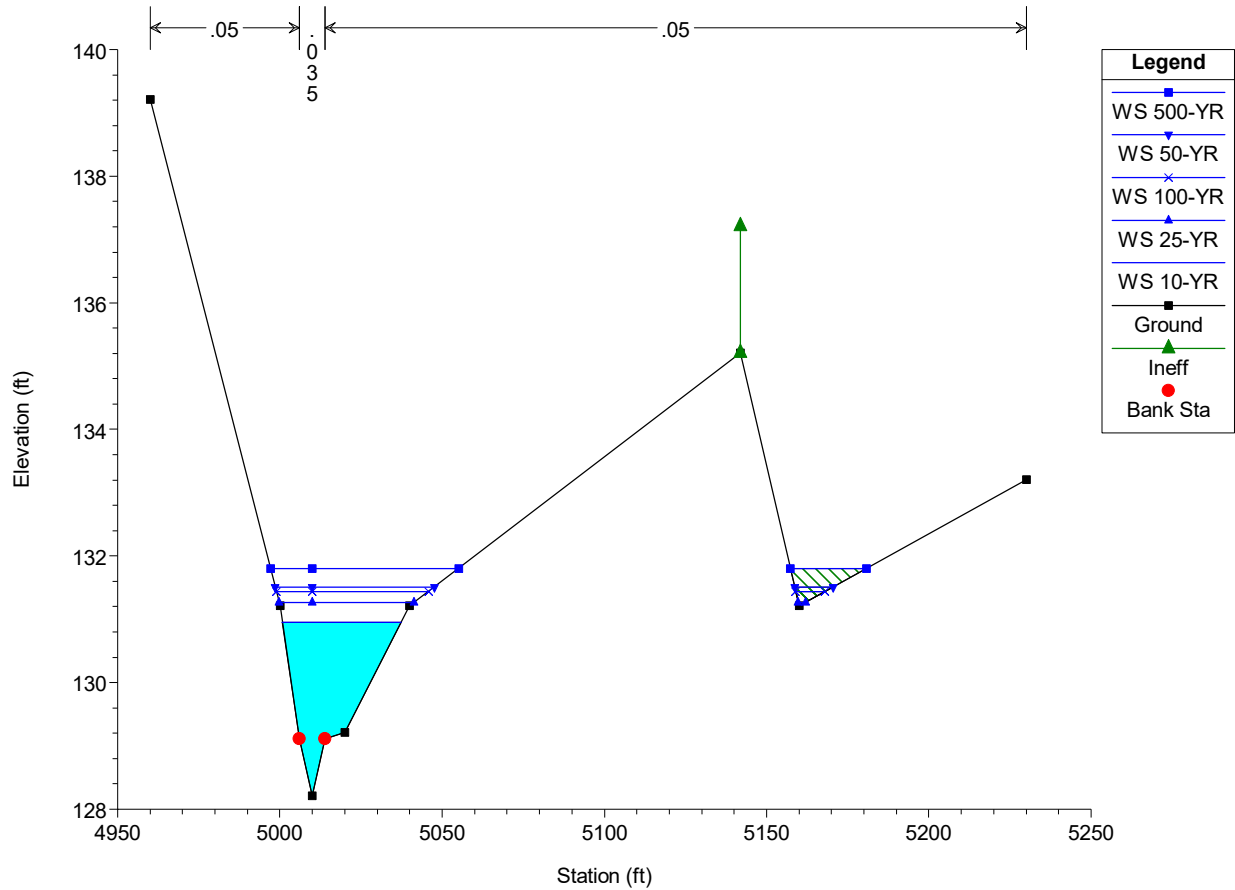
HEC-RAS Geometry Data
 Bruce Freeman Rail Trail
 over Pantry Brook

Pantry Brook Pantry Brook

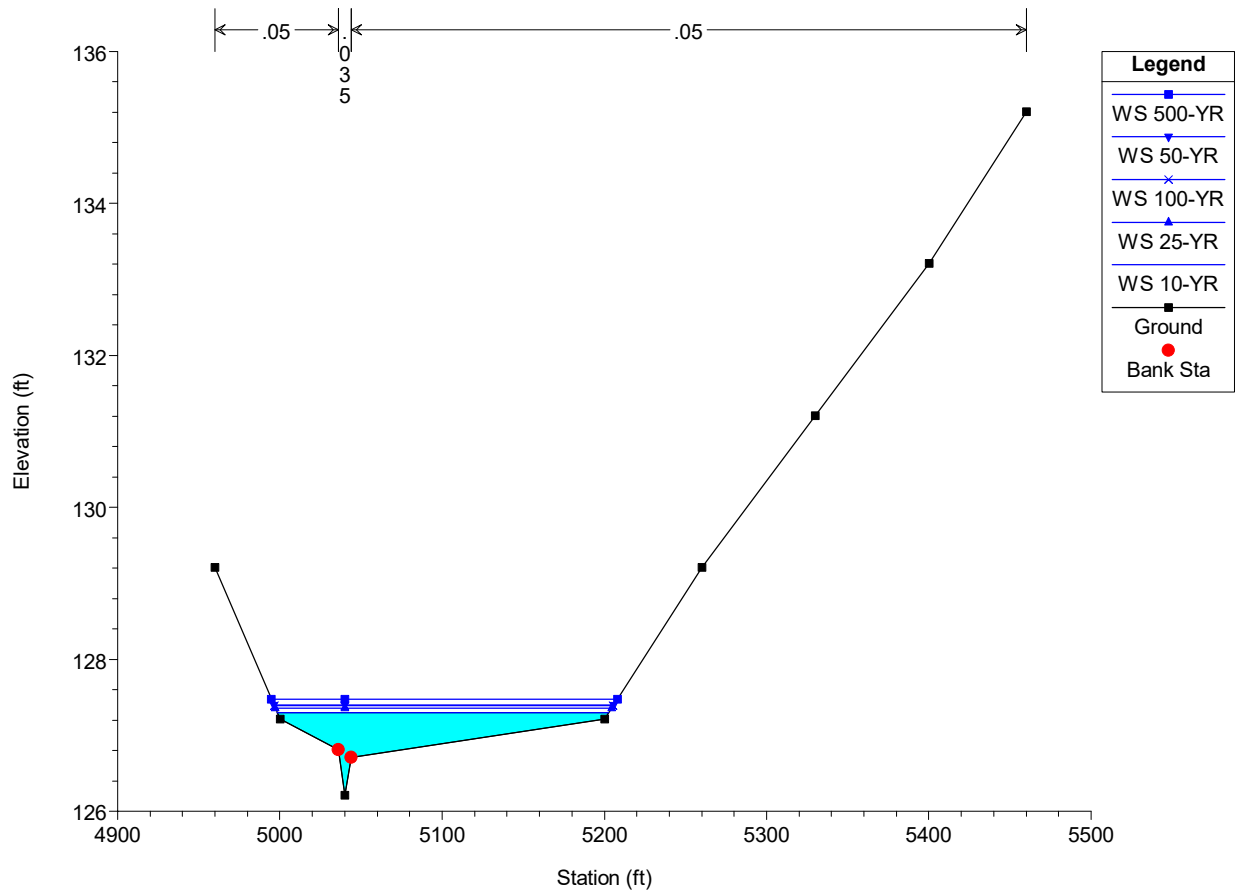


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

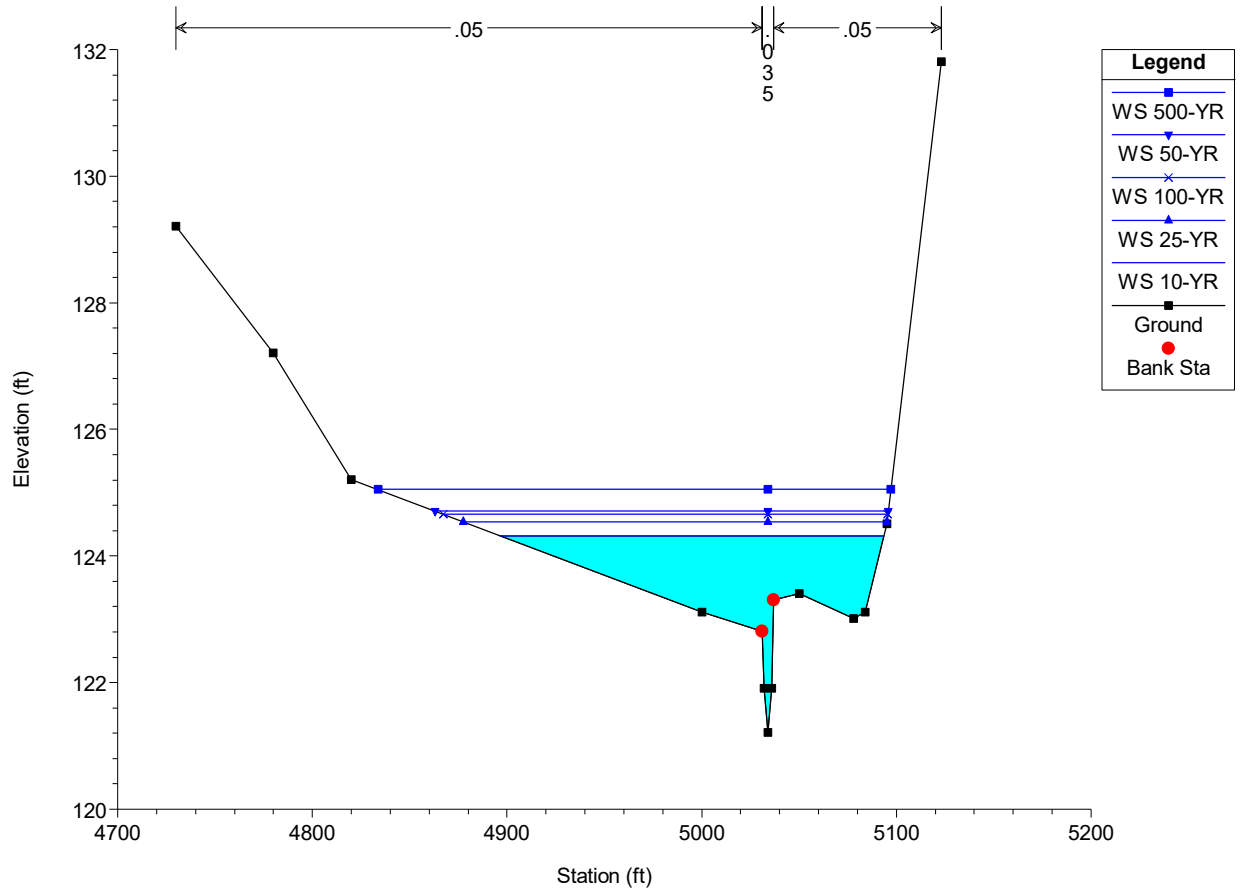
FEMA Section E



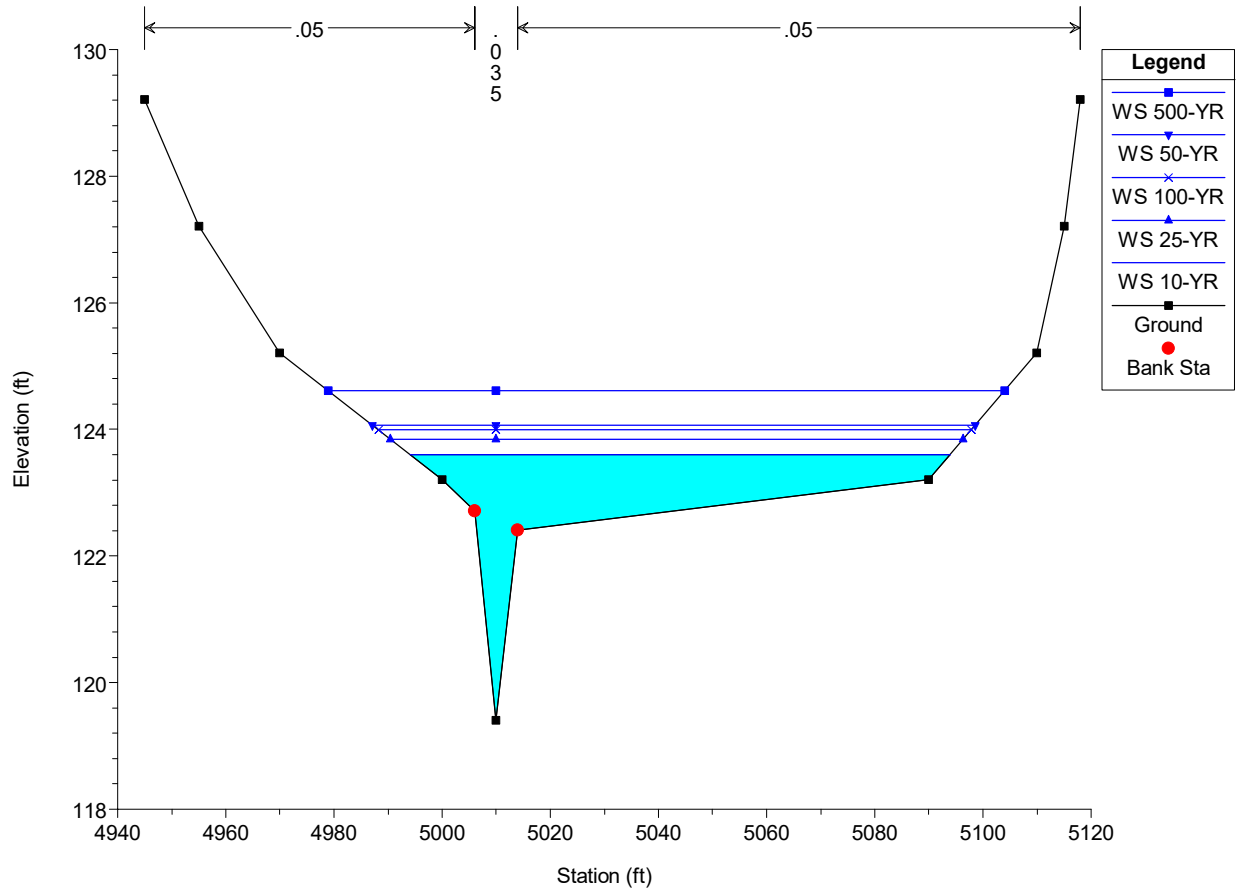
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

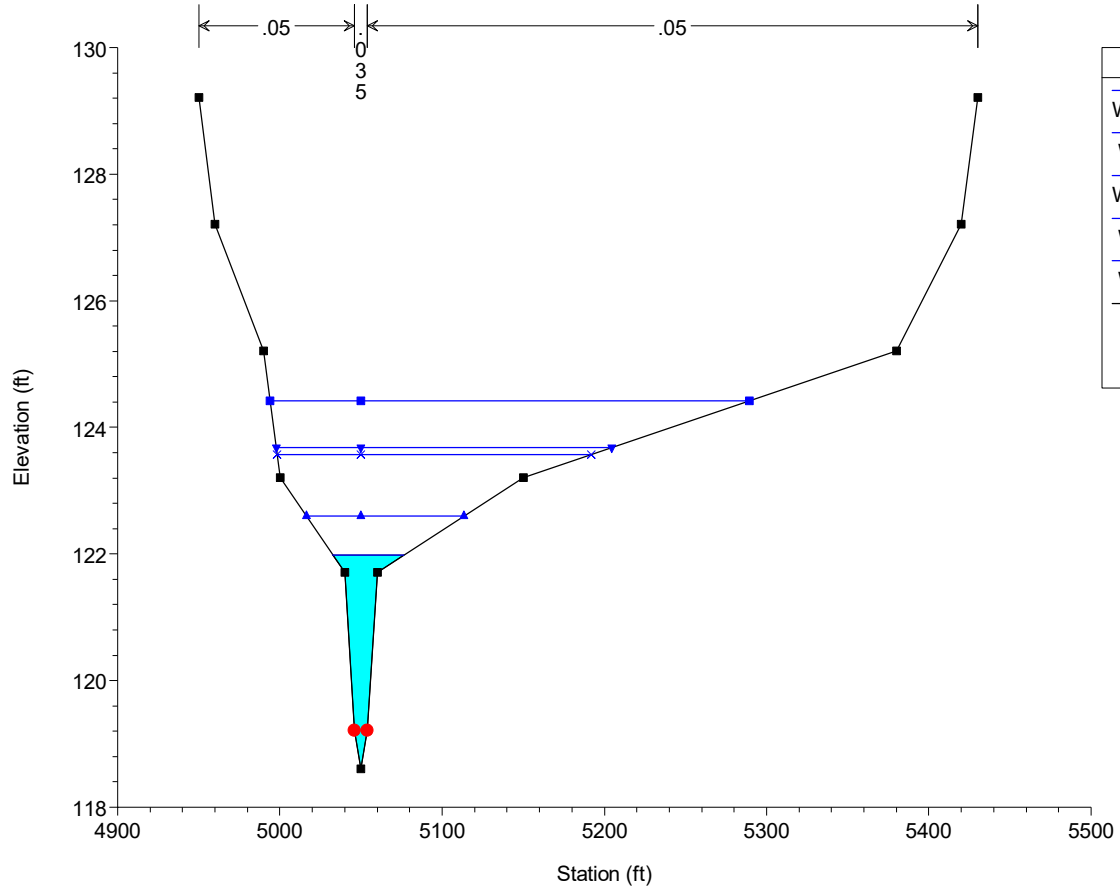


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

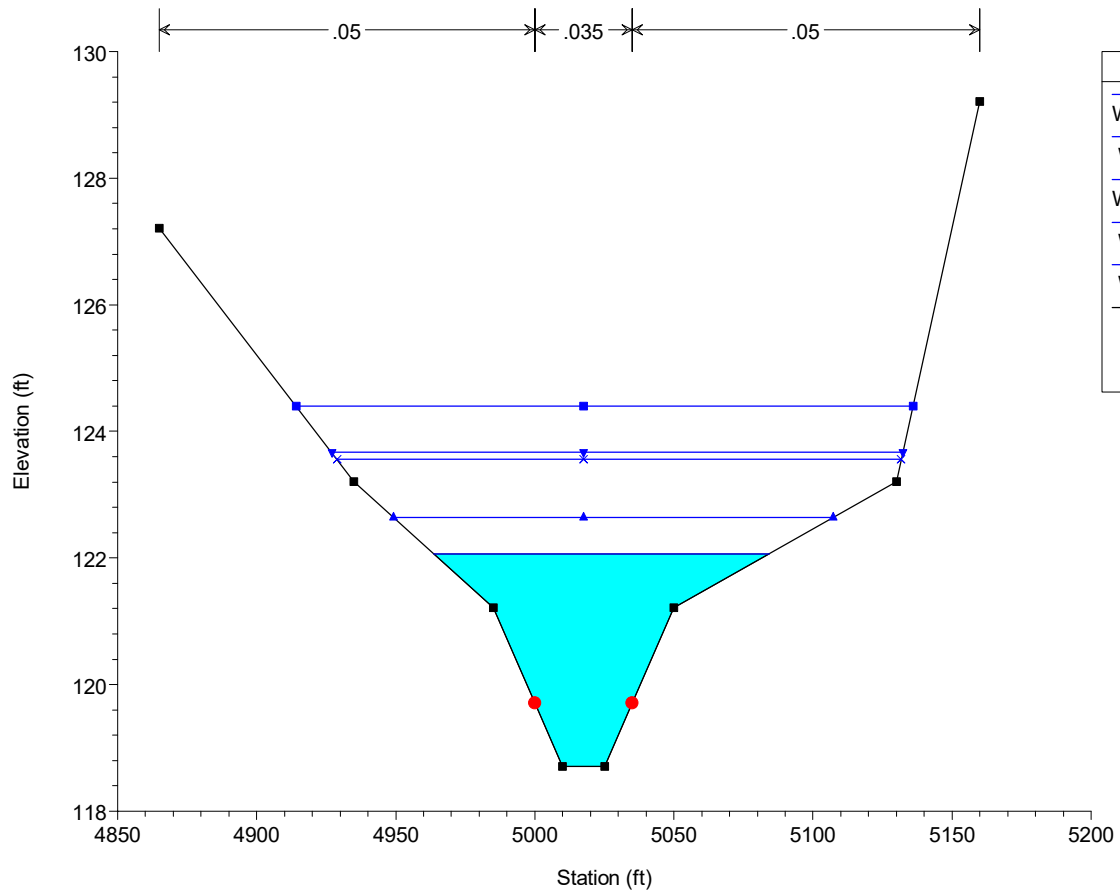


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

FEMA Section C

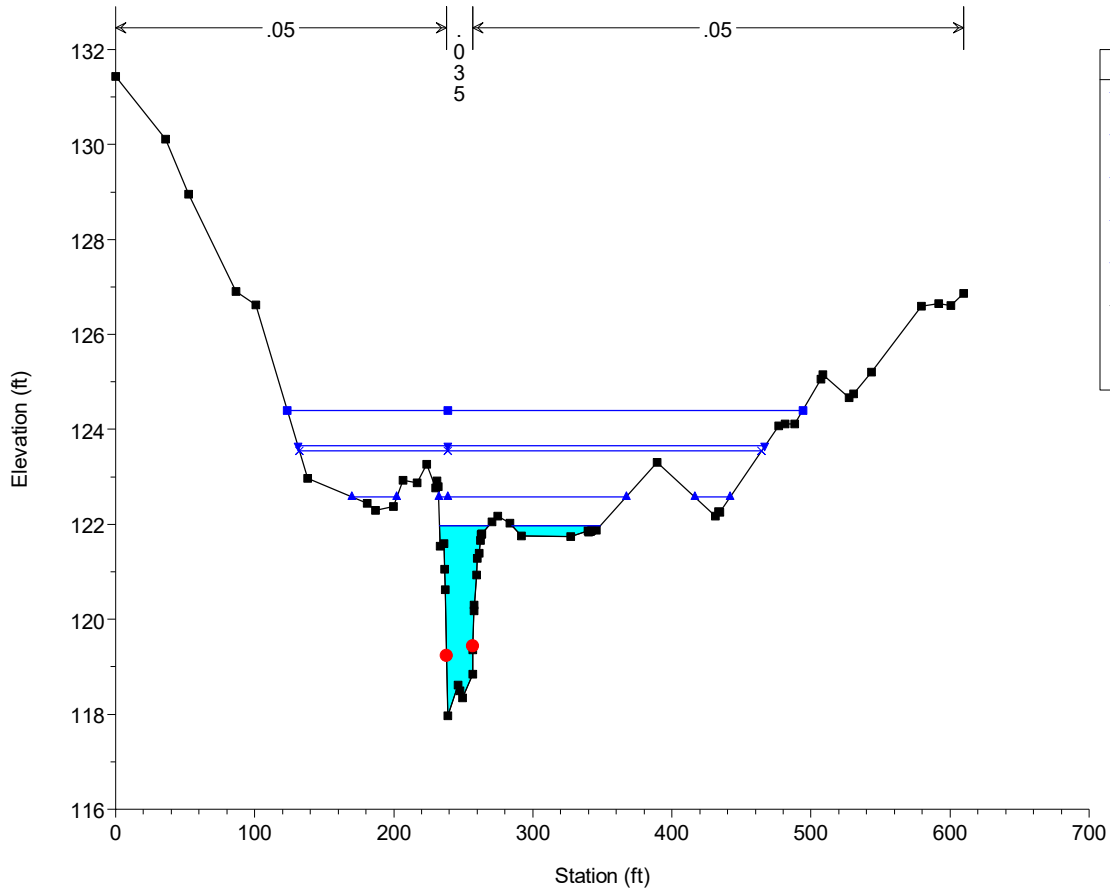


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

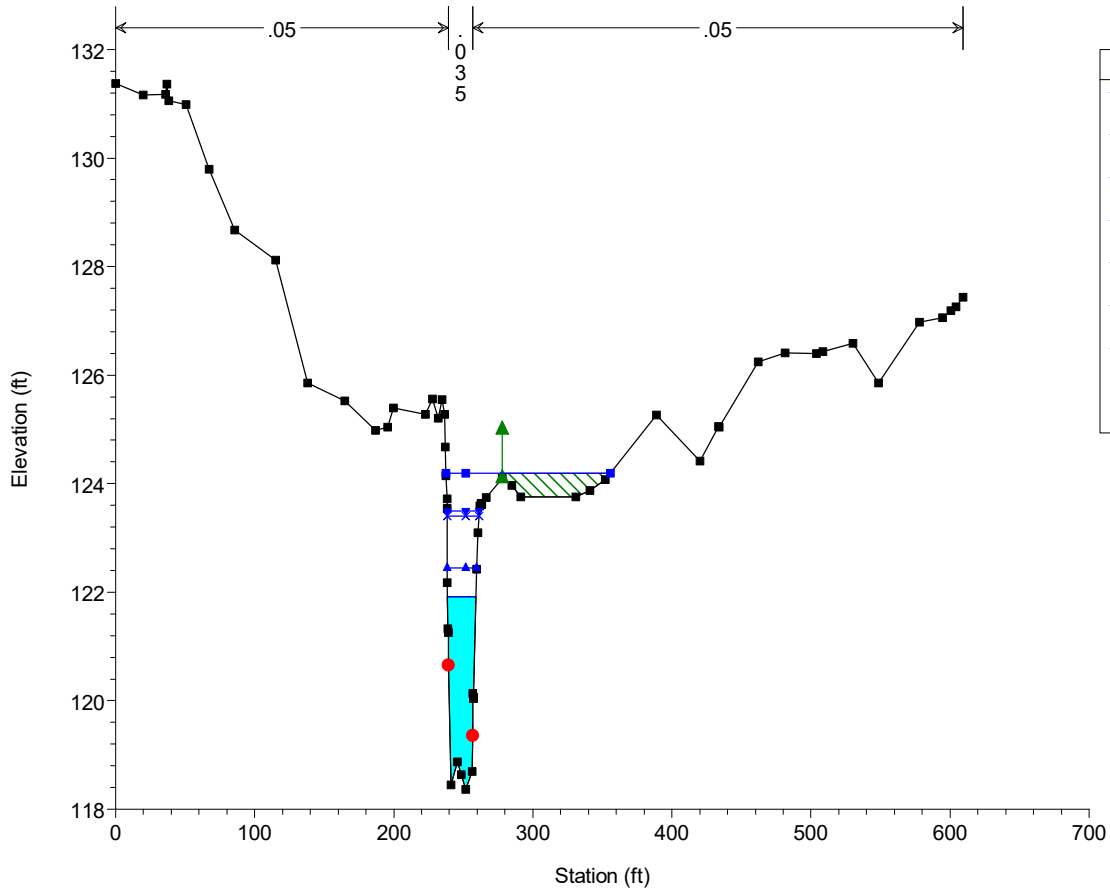
New XS 510



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

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

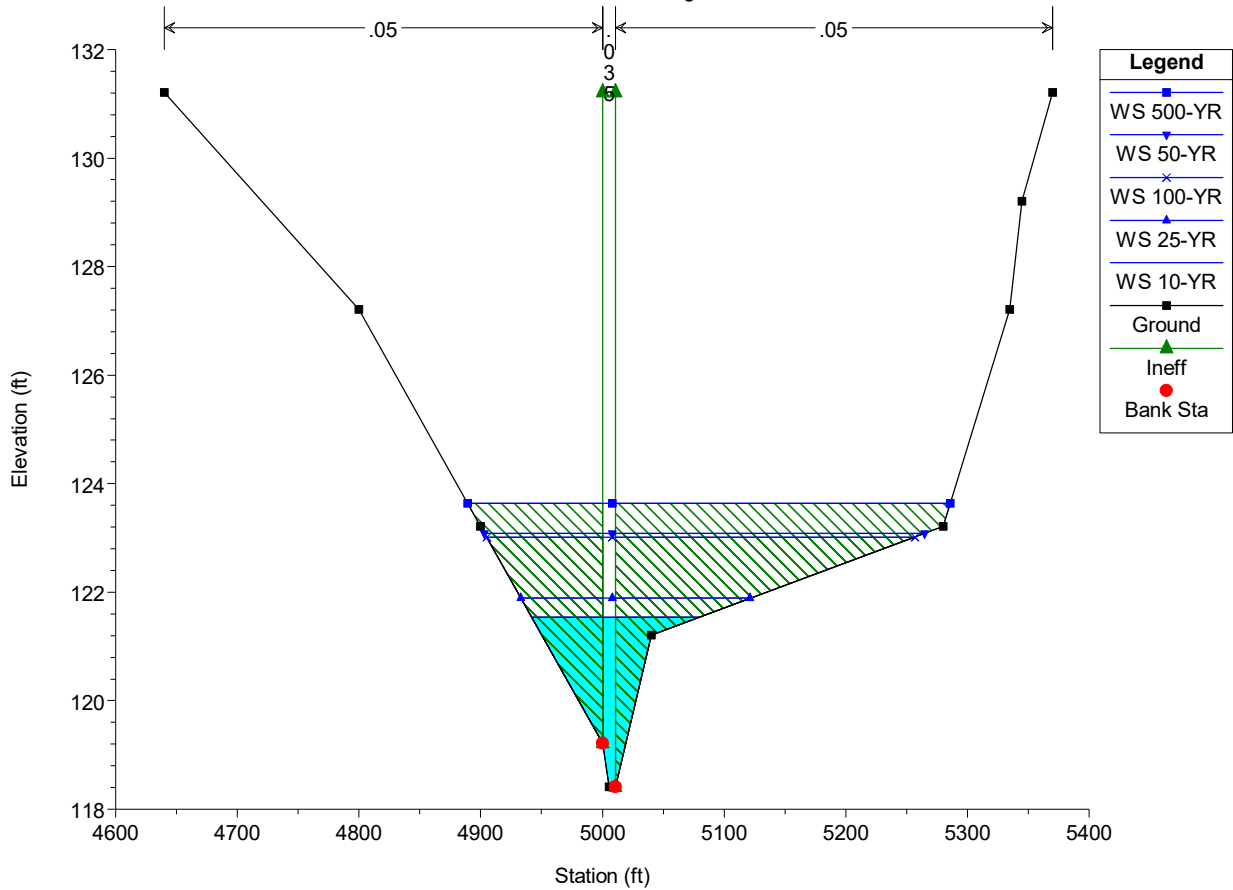
New XS 505



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

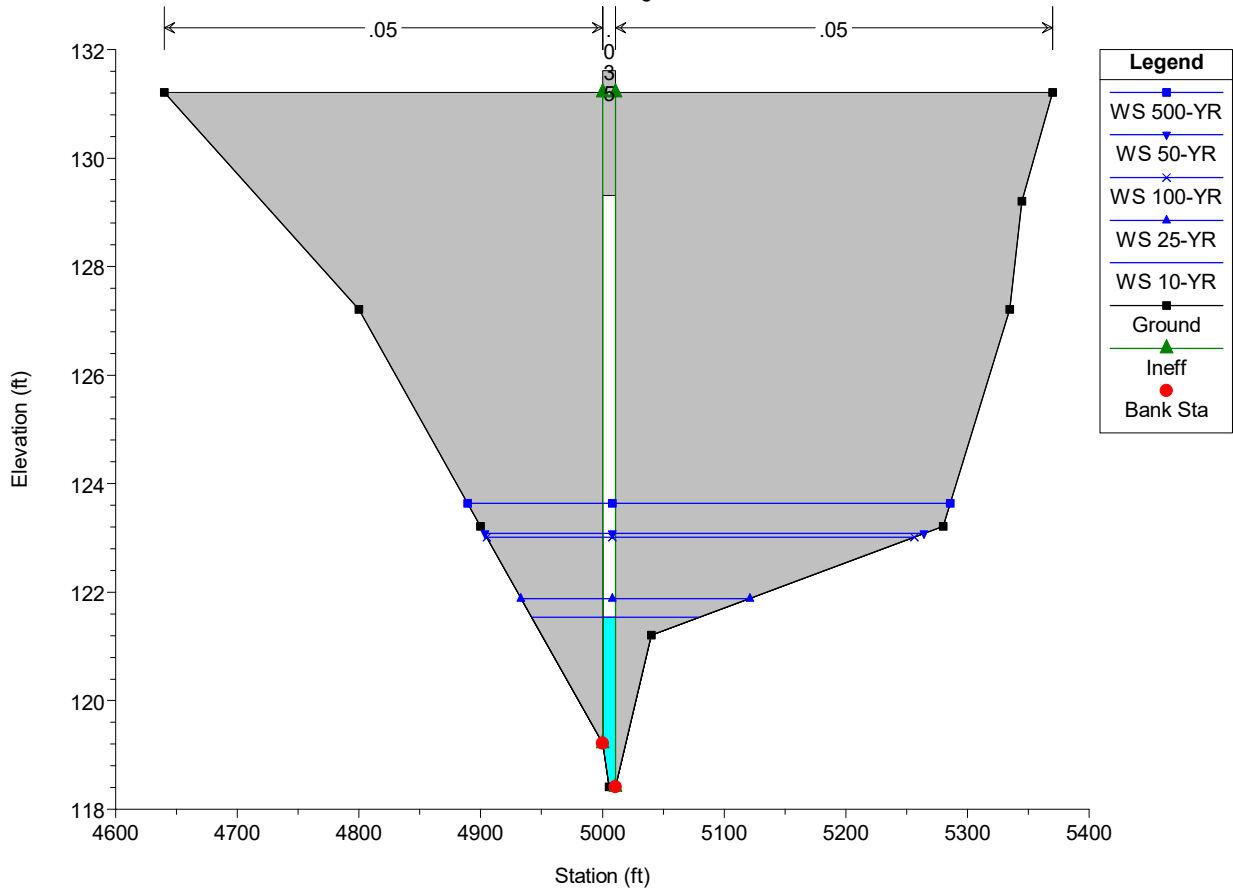
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

US Face Railroad Bridge SU-29



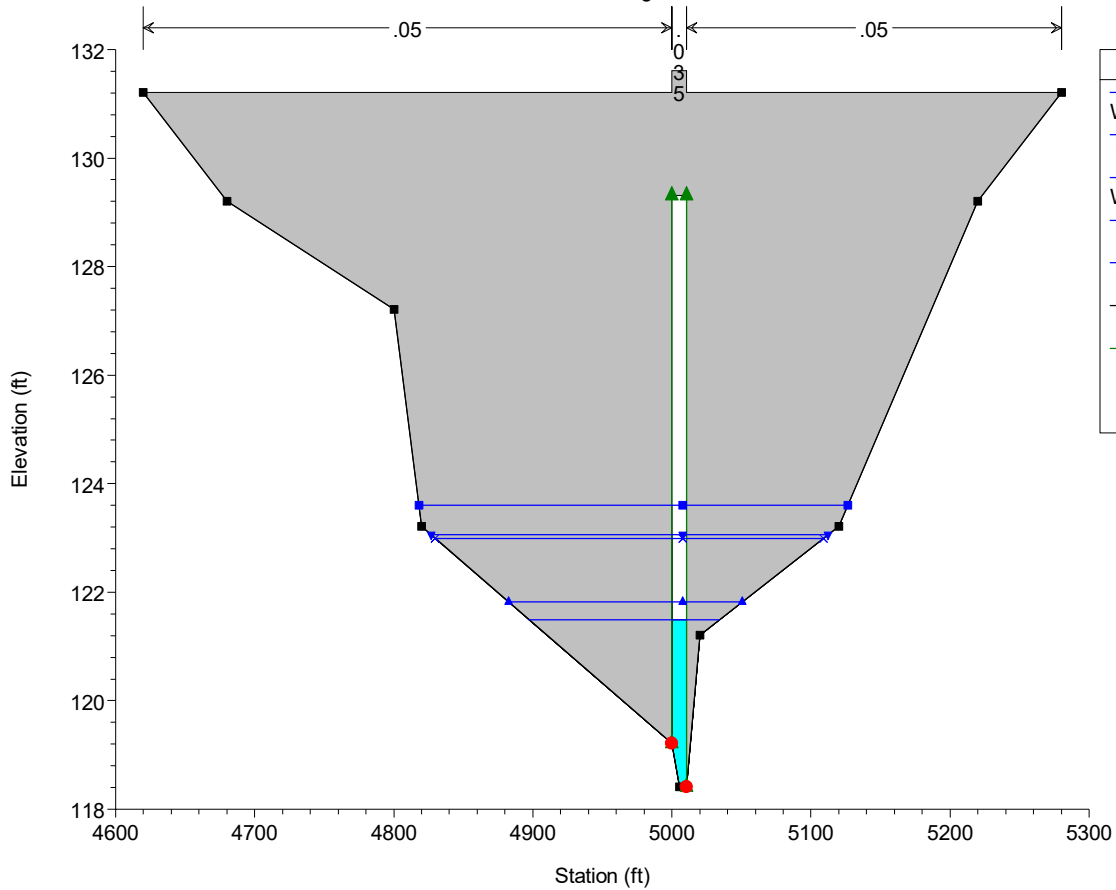
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

Railroad Bridge SU-29



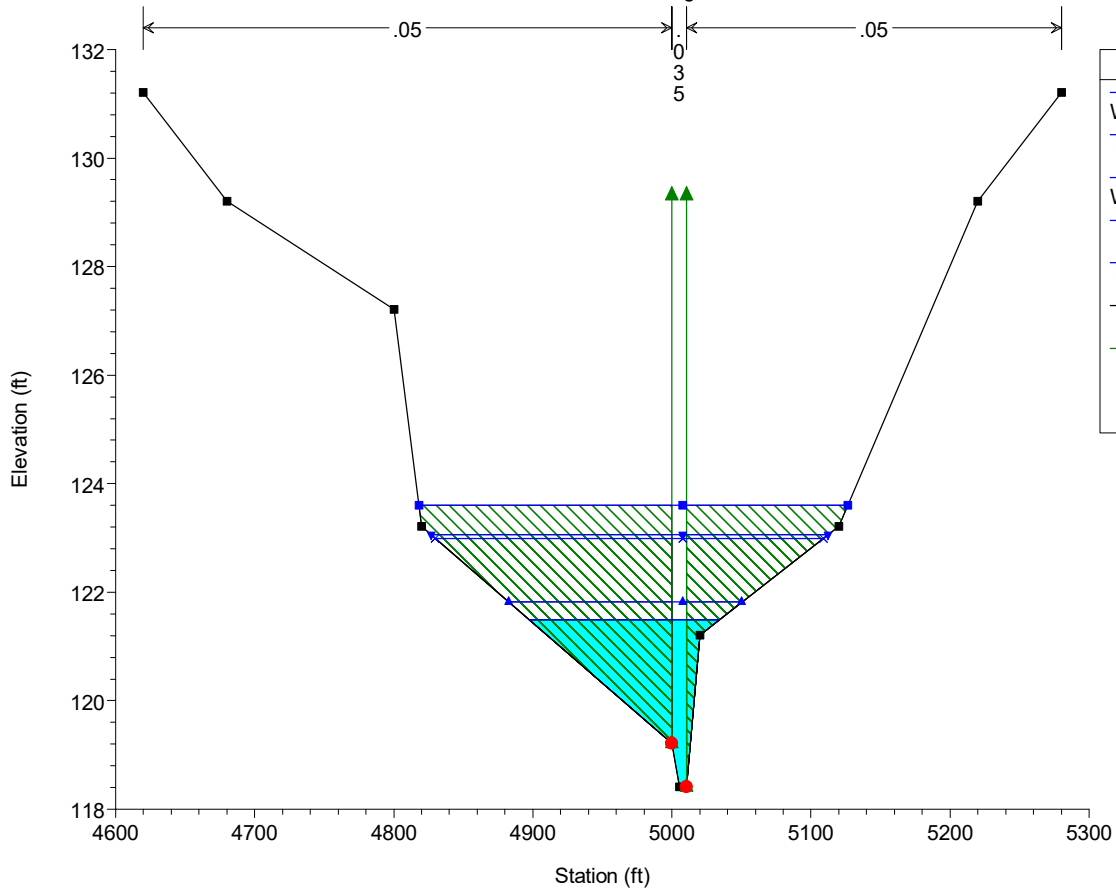
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

Railroad Bridge SU-29

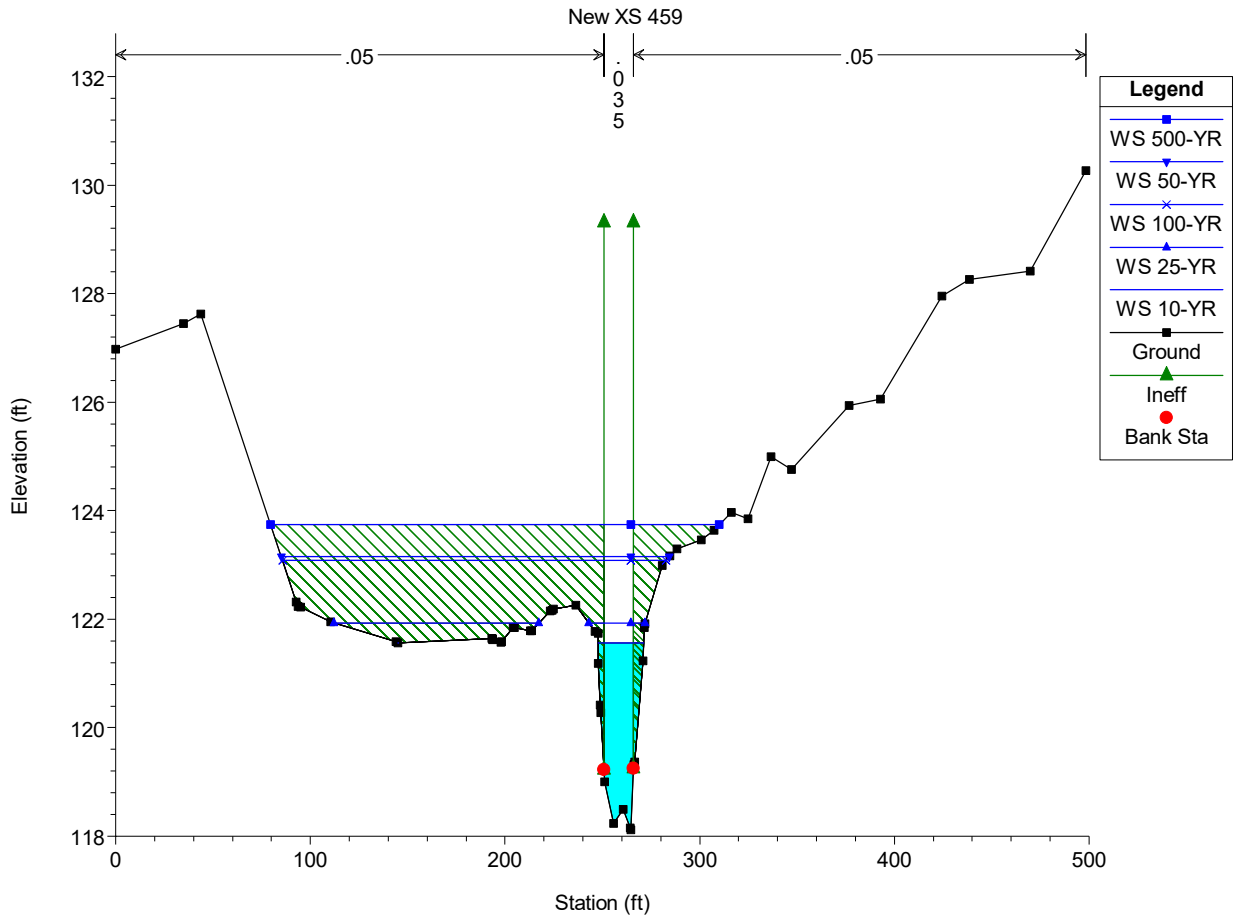


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

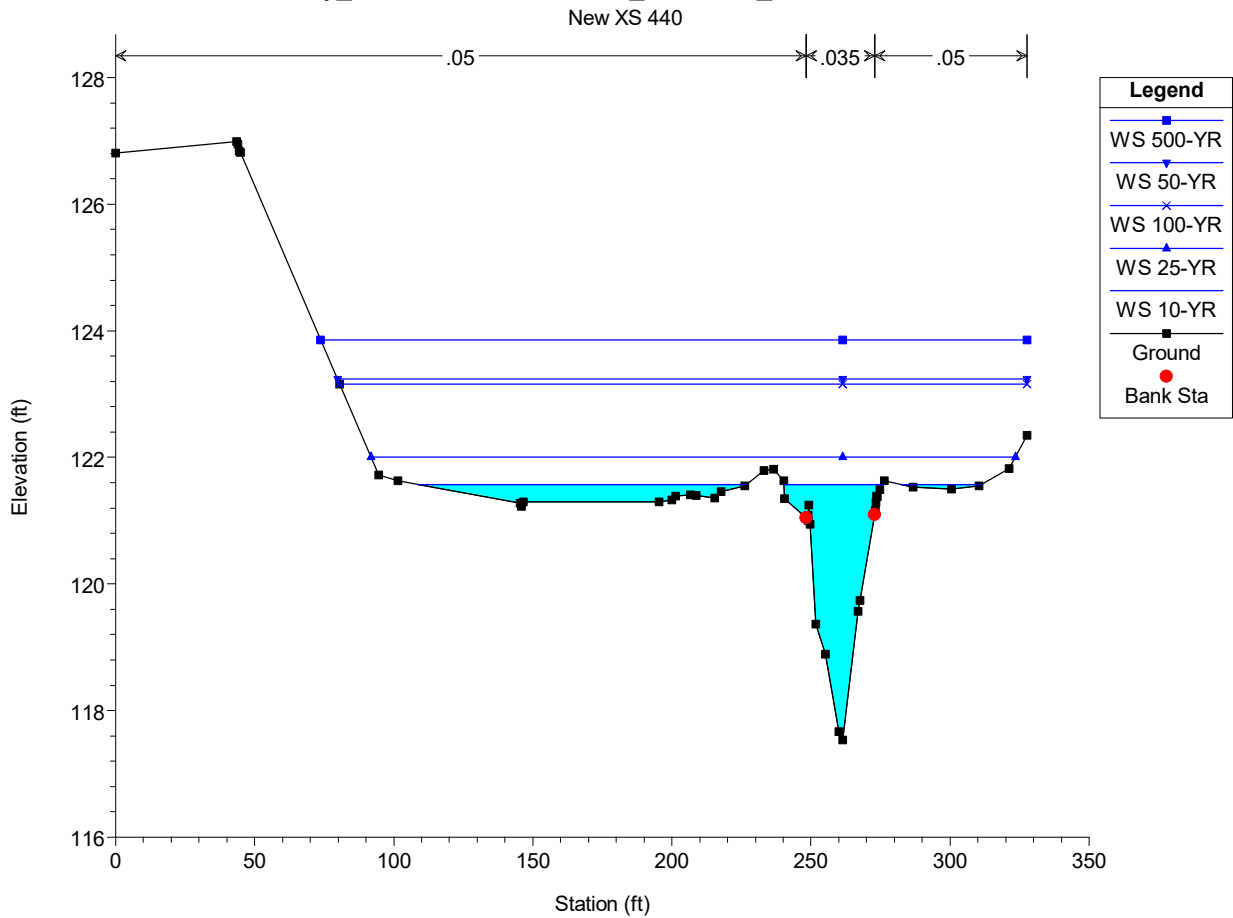
DS Face Railroad Bridge SU-29



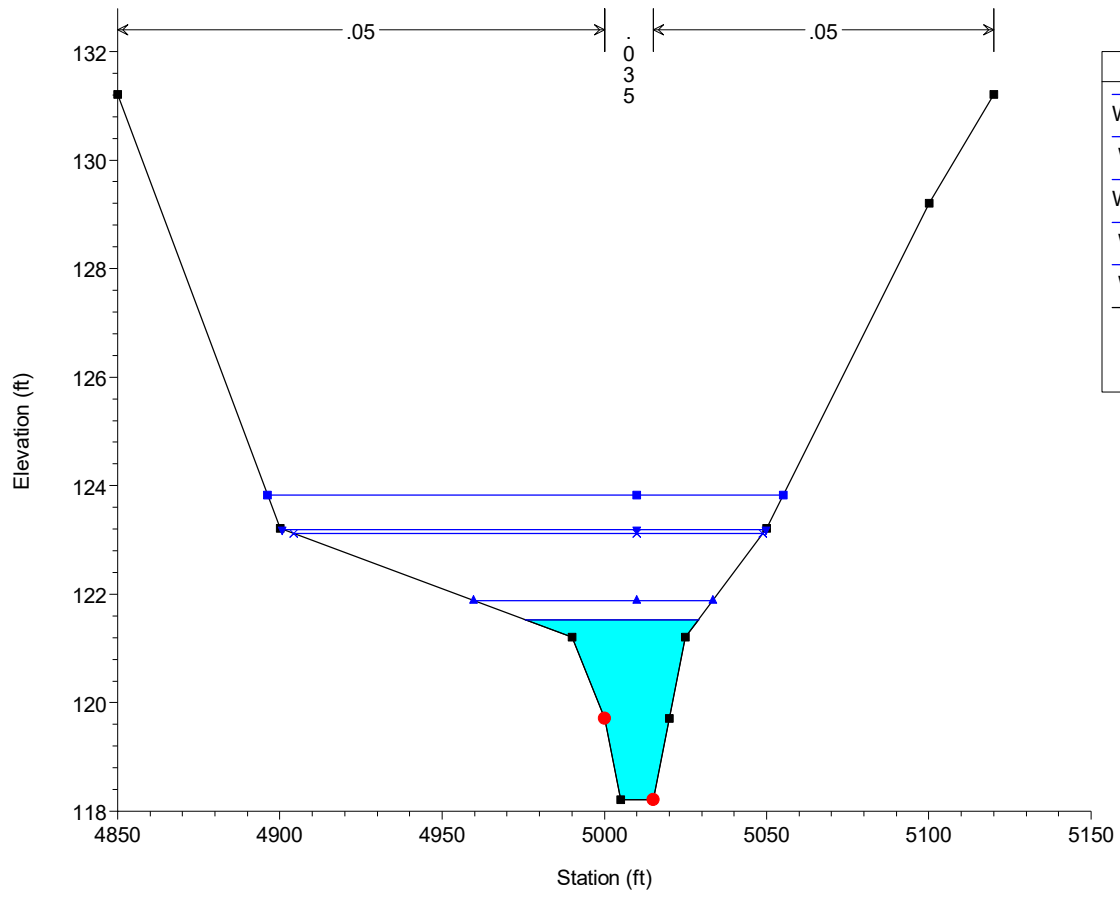
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



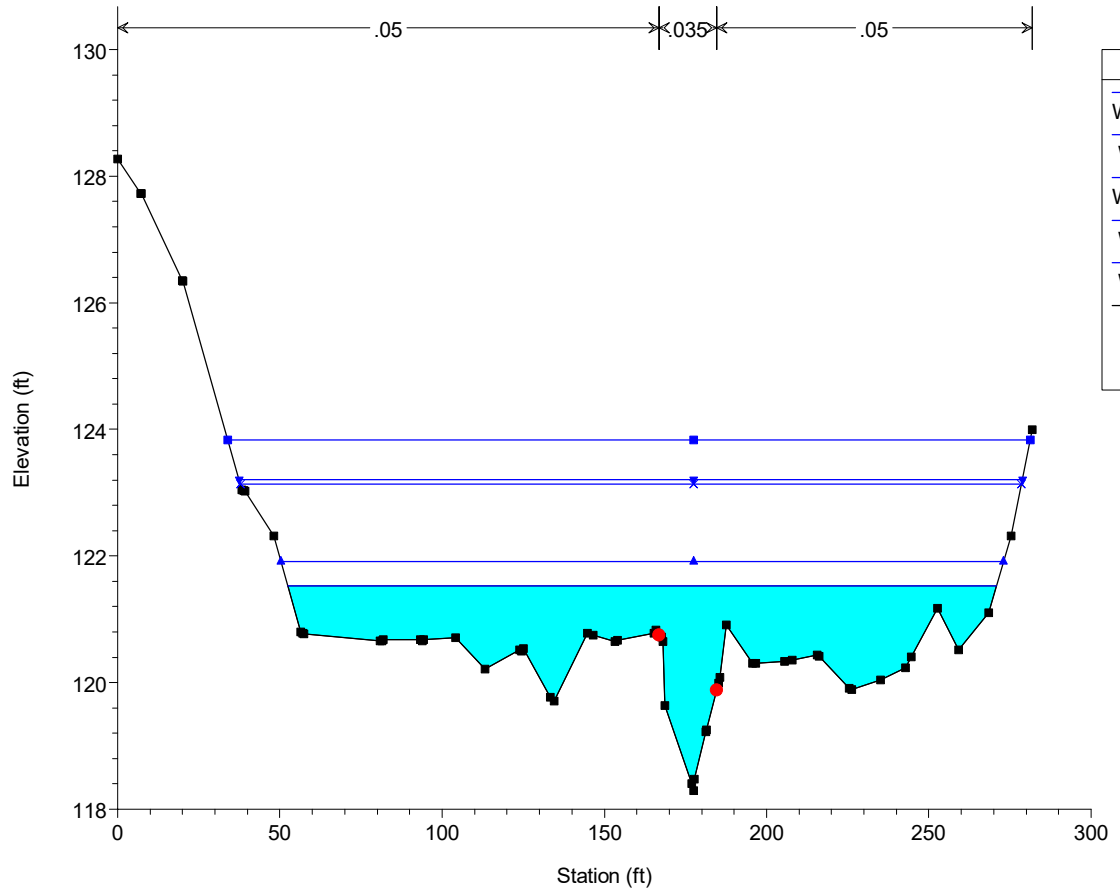
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

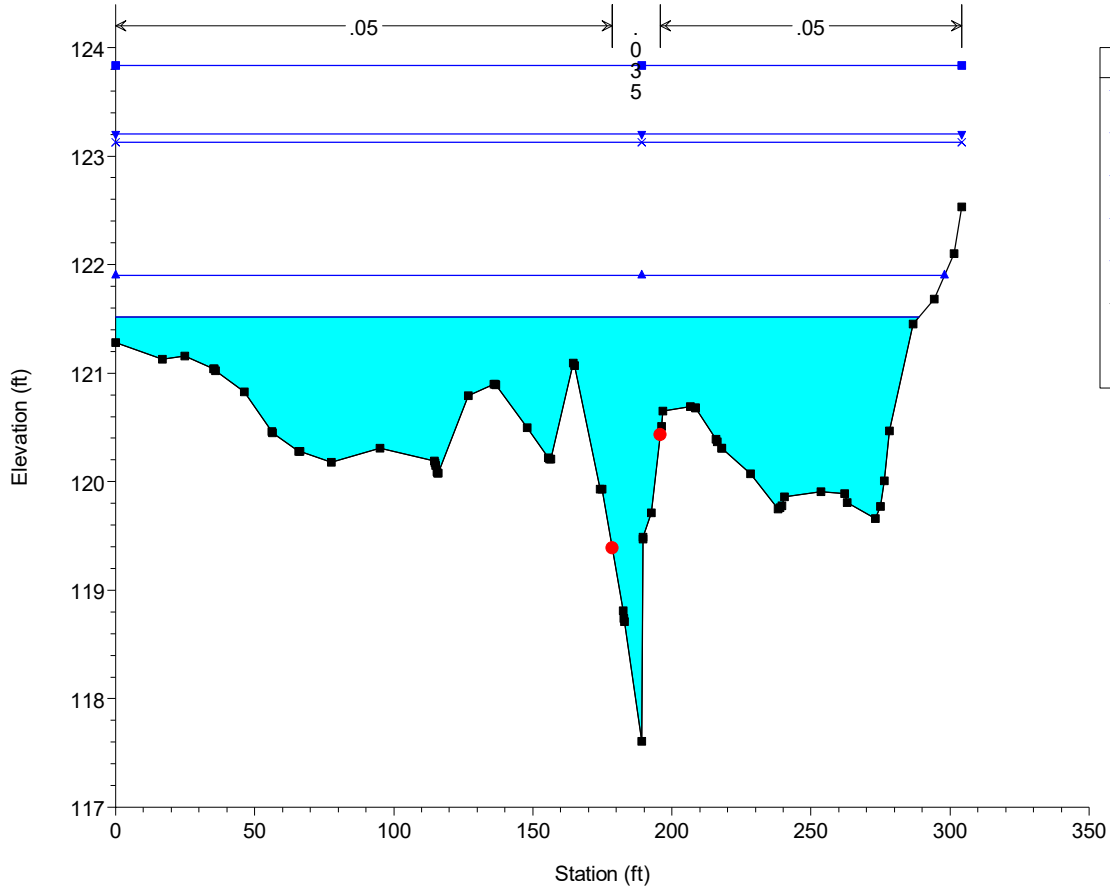


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020
New XS 283



Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

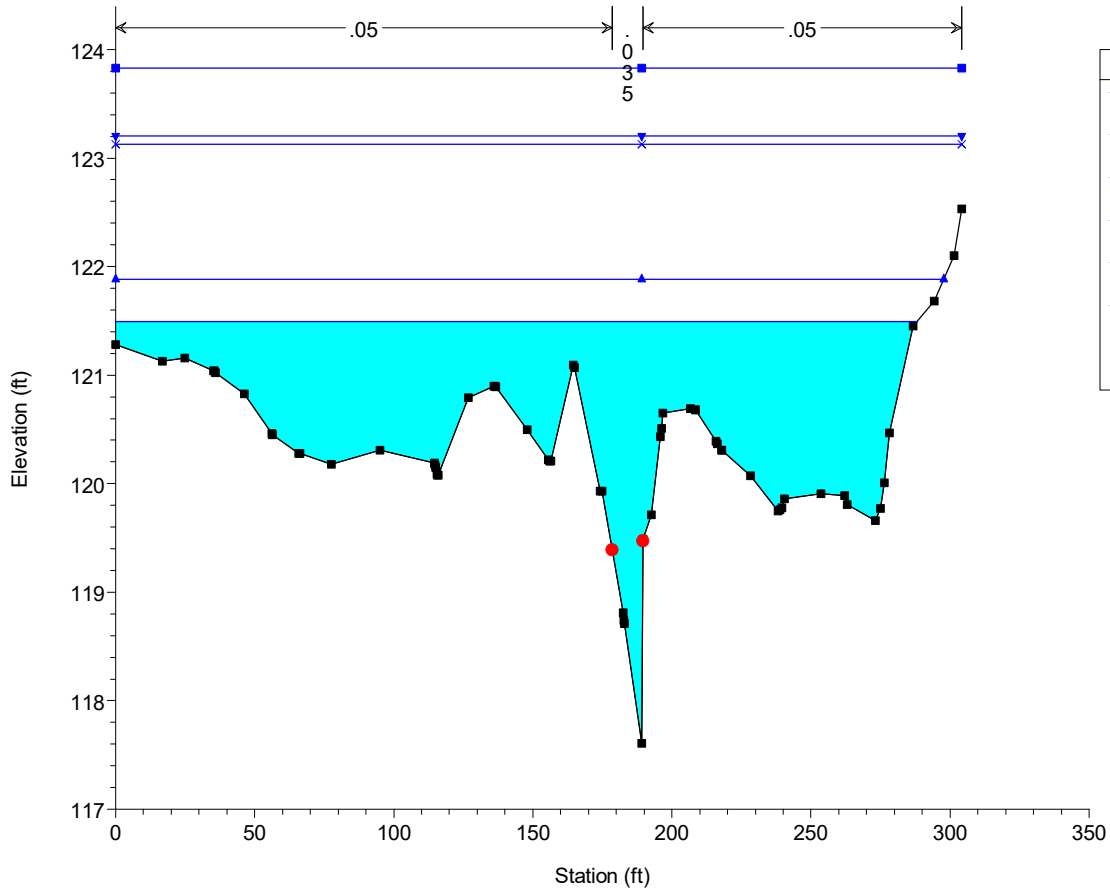
New XS 189



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

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

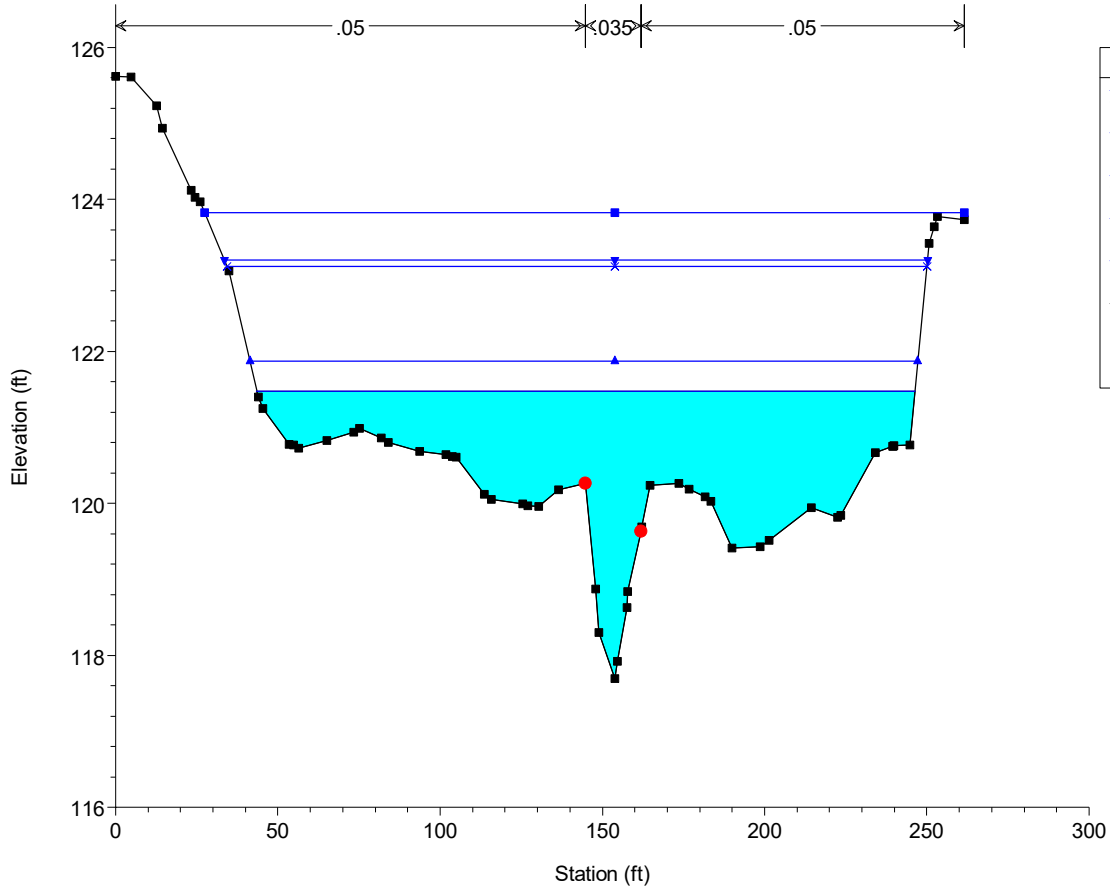
New XS 83



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

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

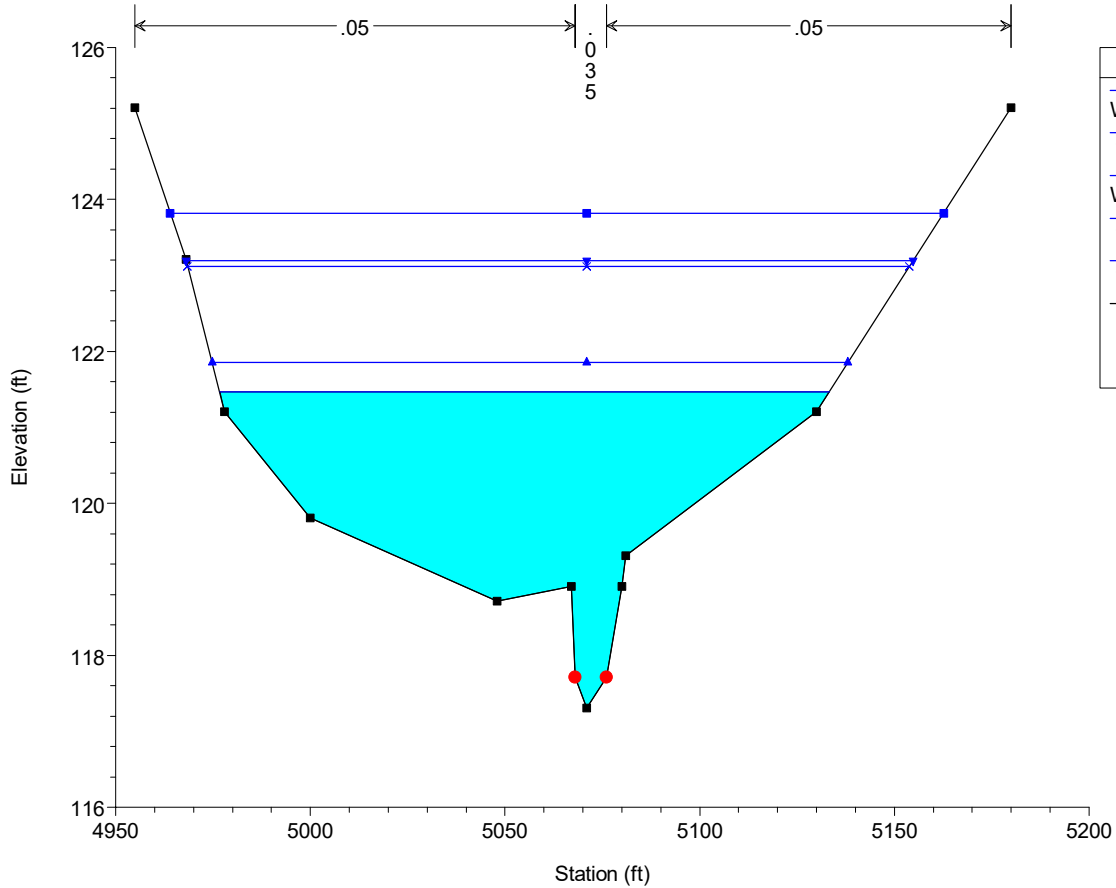
New XS 3



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

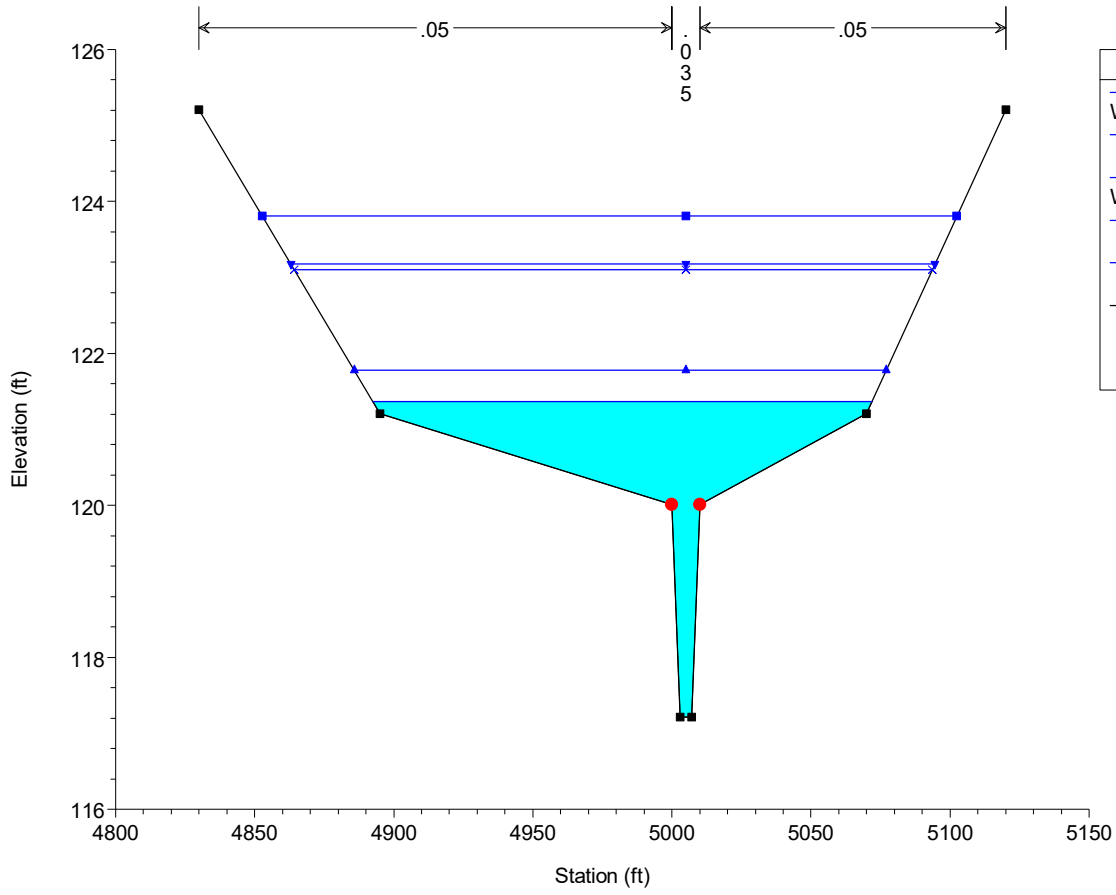
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

FEMA Section B



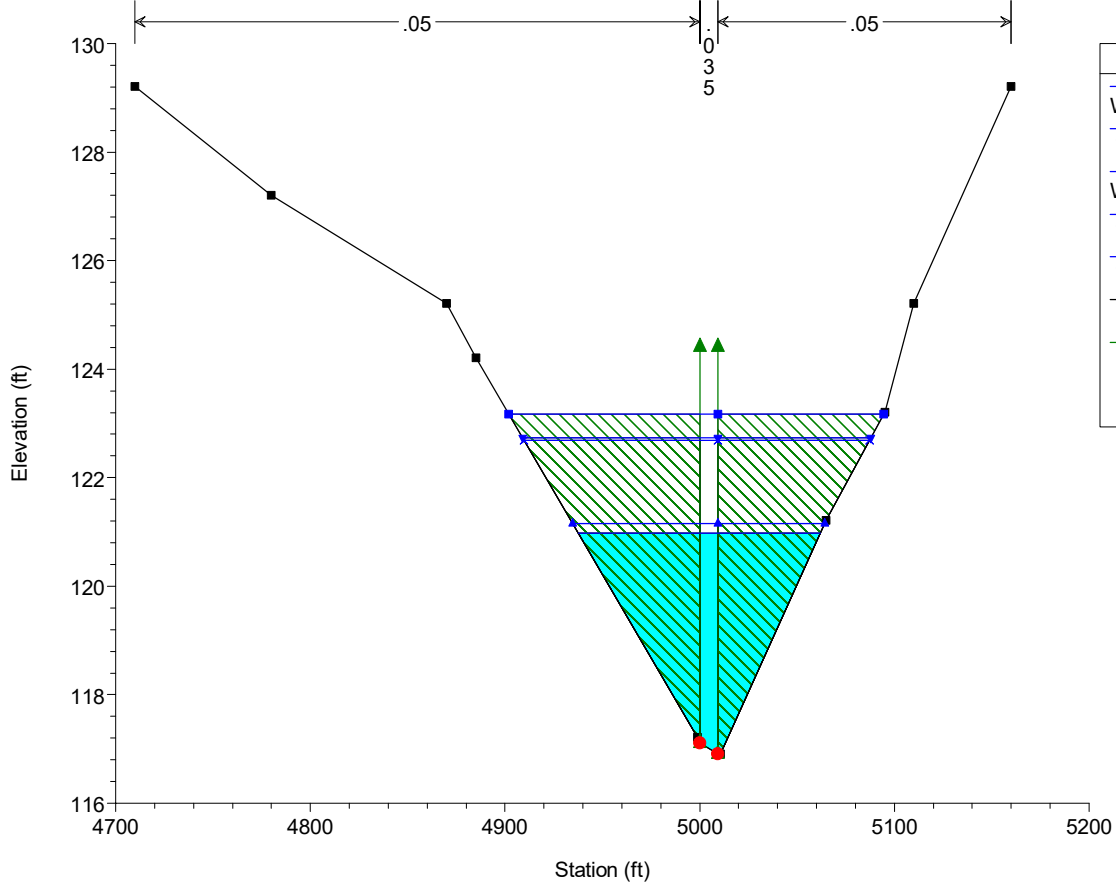
Legend	
■	WS 500-YR
▼	WS 50-YR
×	WS 100-YR
▲	WS 25-YR
▲	WS 10-YR
■	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



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

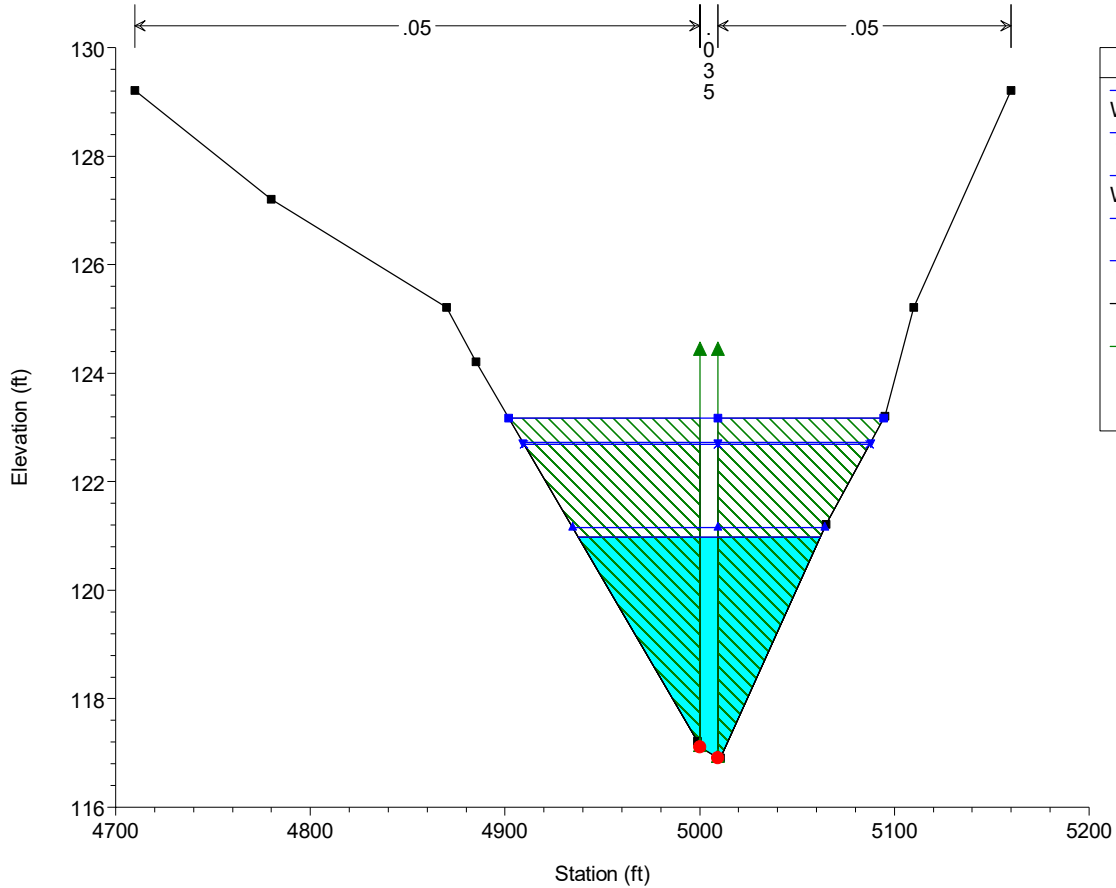
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020
US Face Old Concord Road SU-28



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

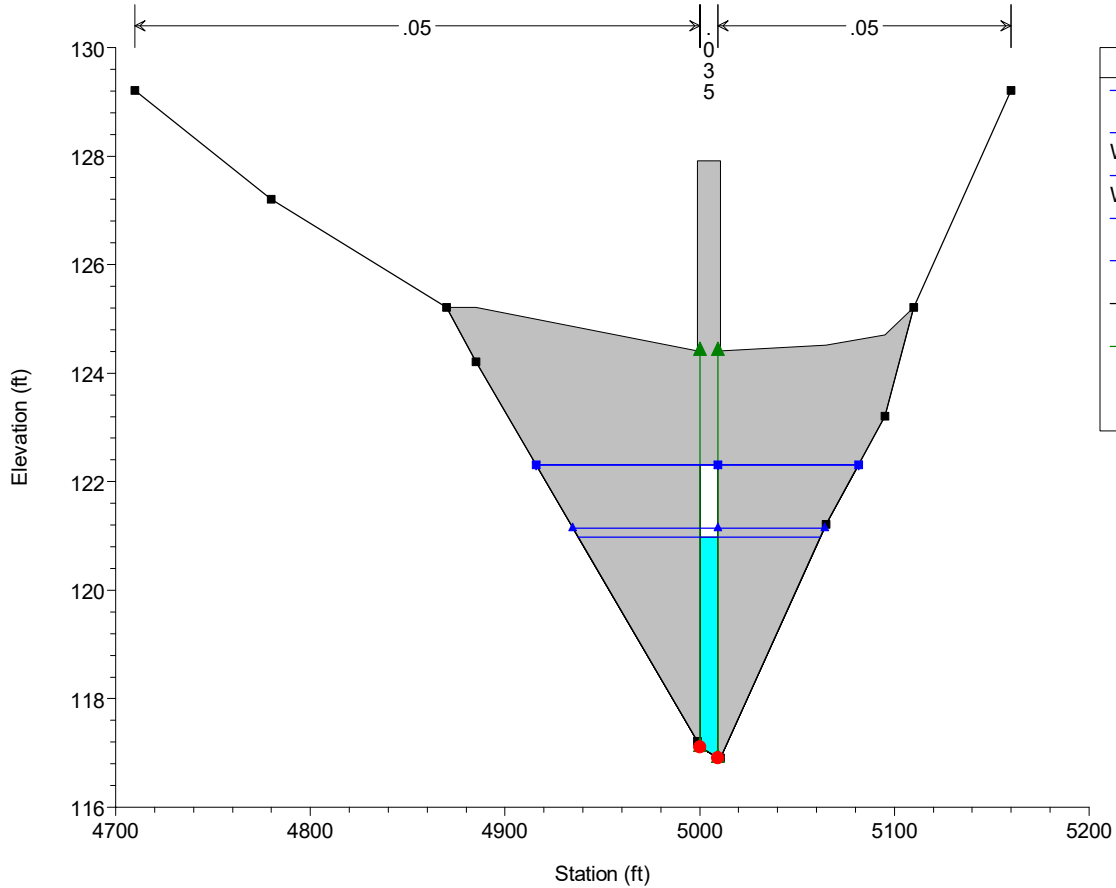
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

US Face Old Concord Road SU-28

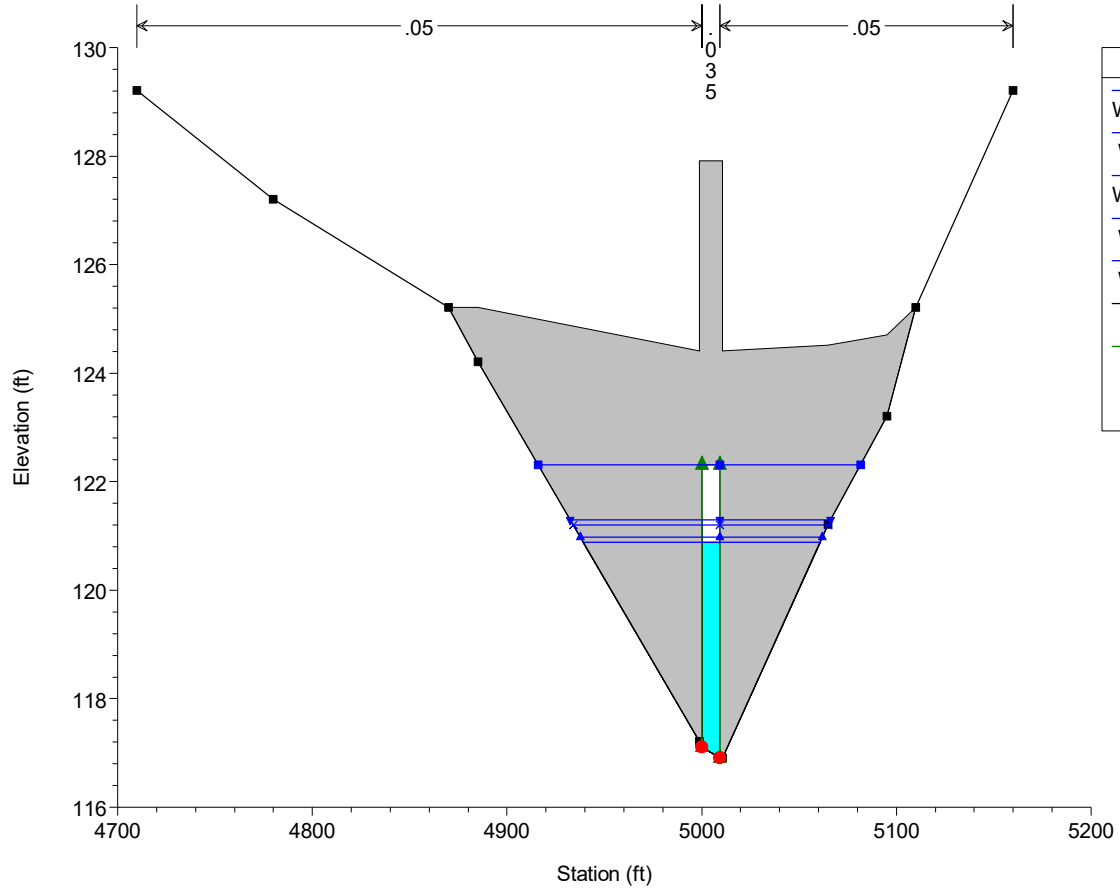


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

Old Concord Road SU-28

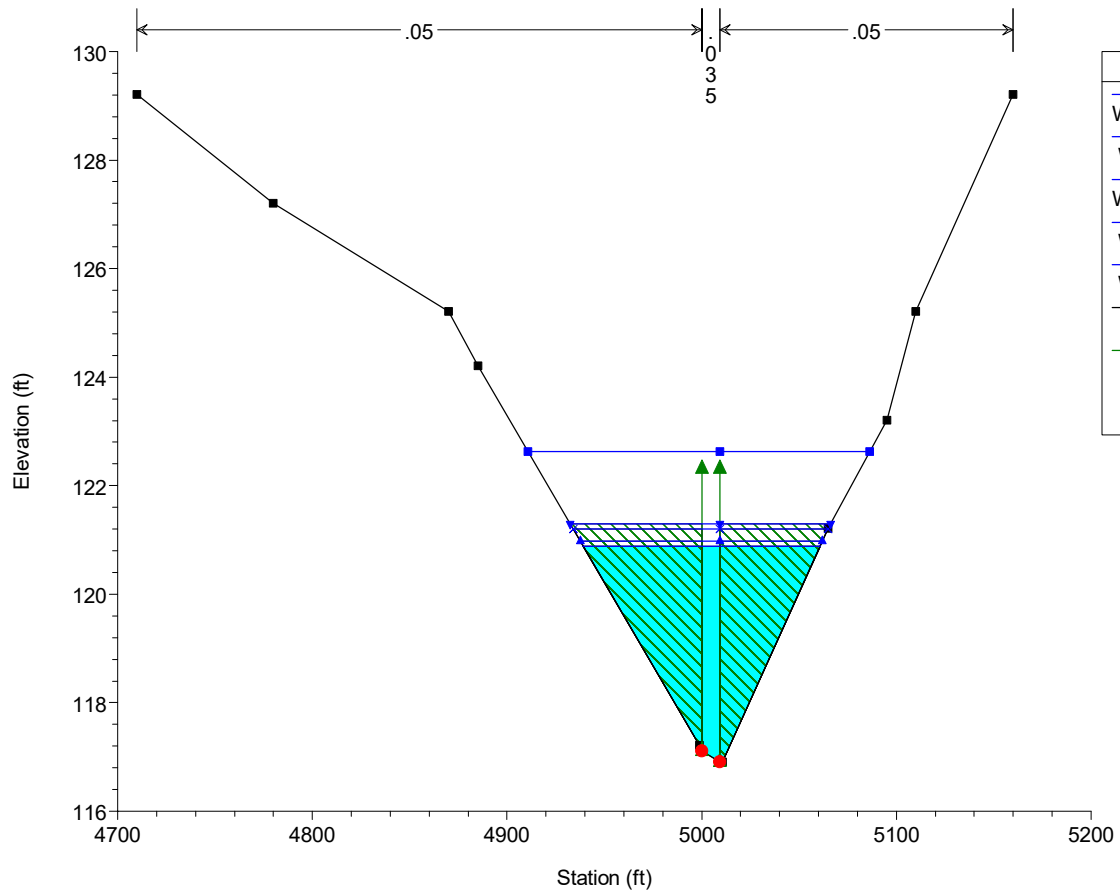


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020
 Old Concord Road SU-28



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

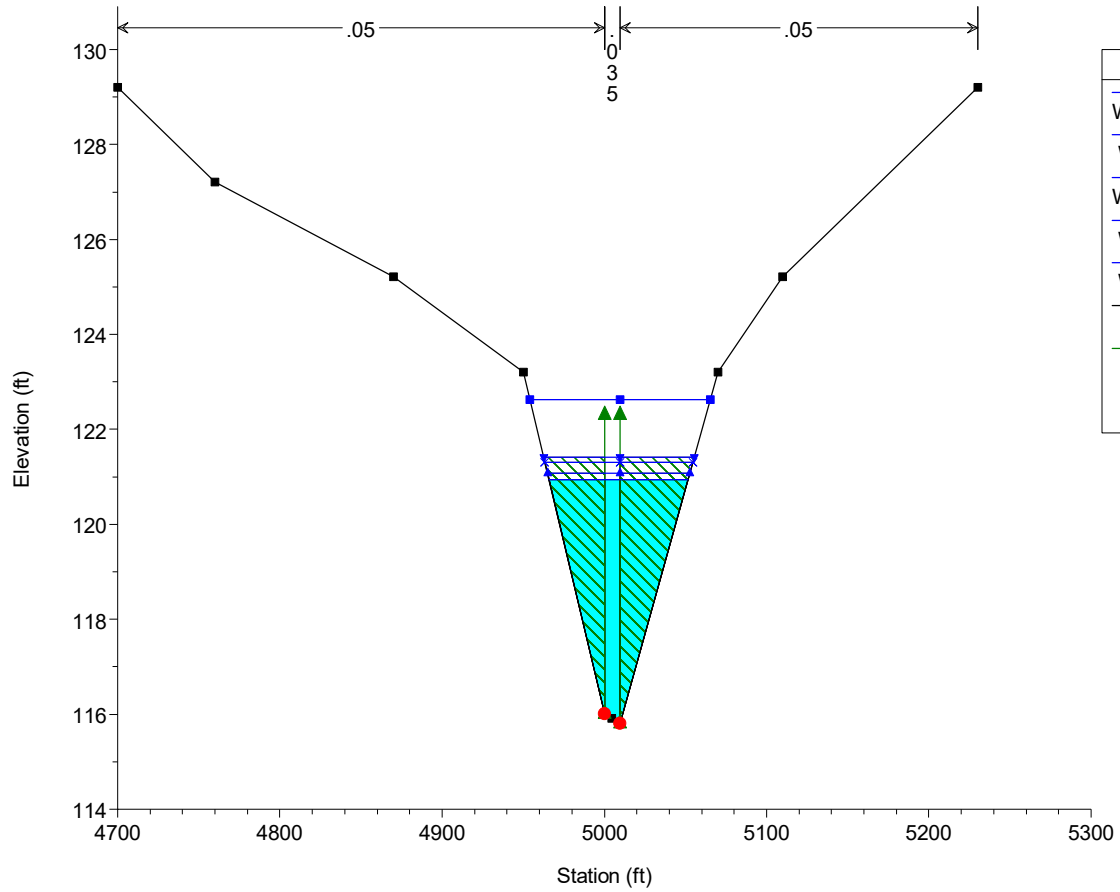
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



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

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

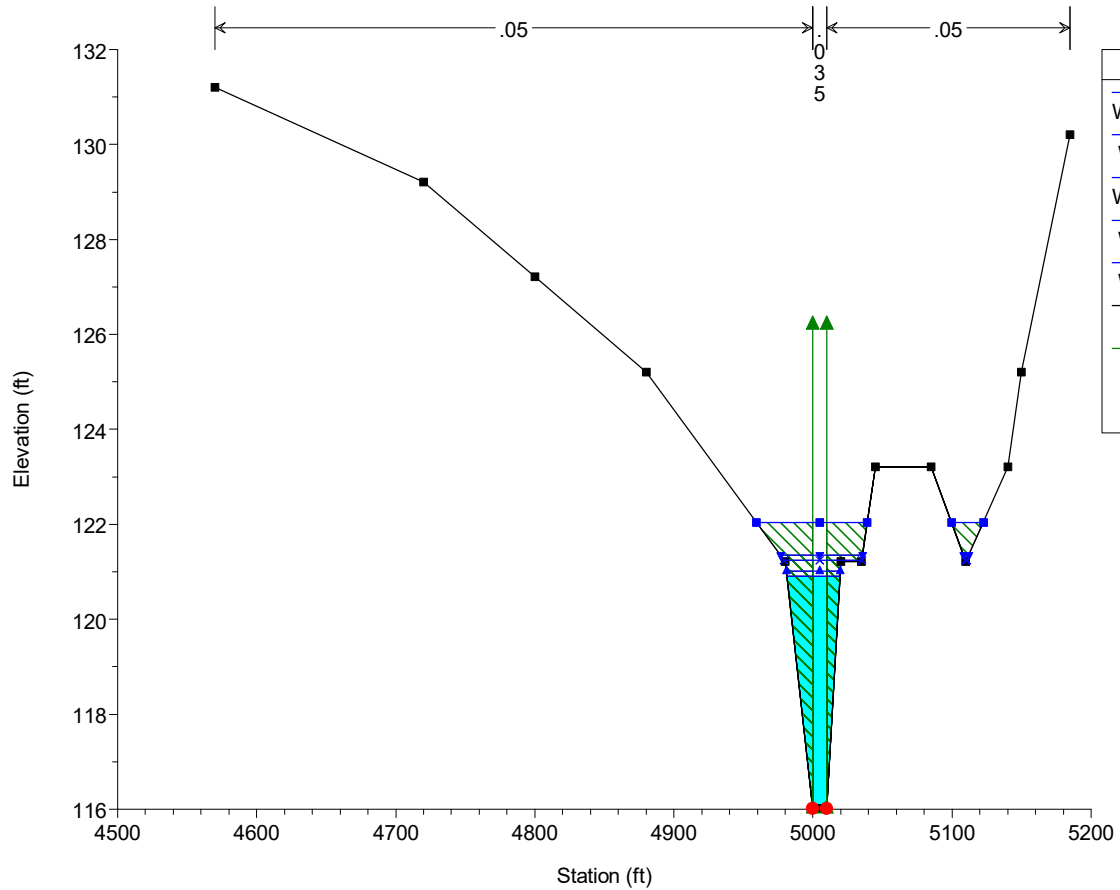
DS Face Concord Road SU-28



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

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

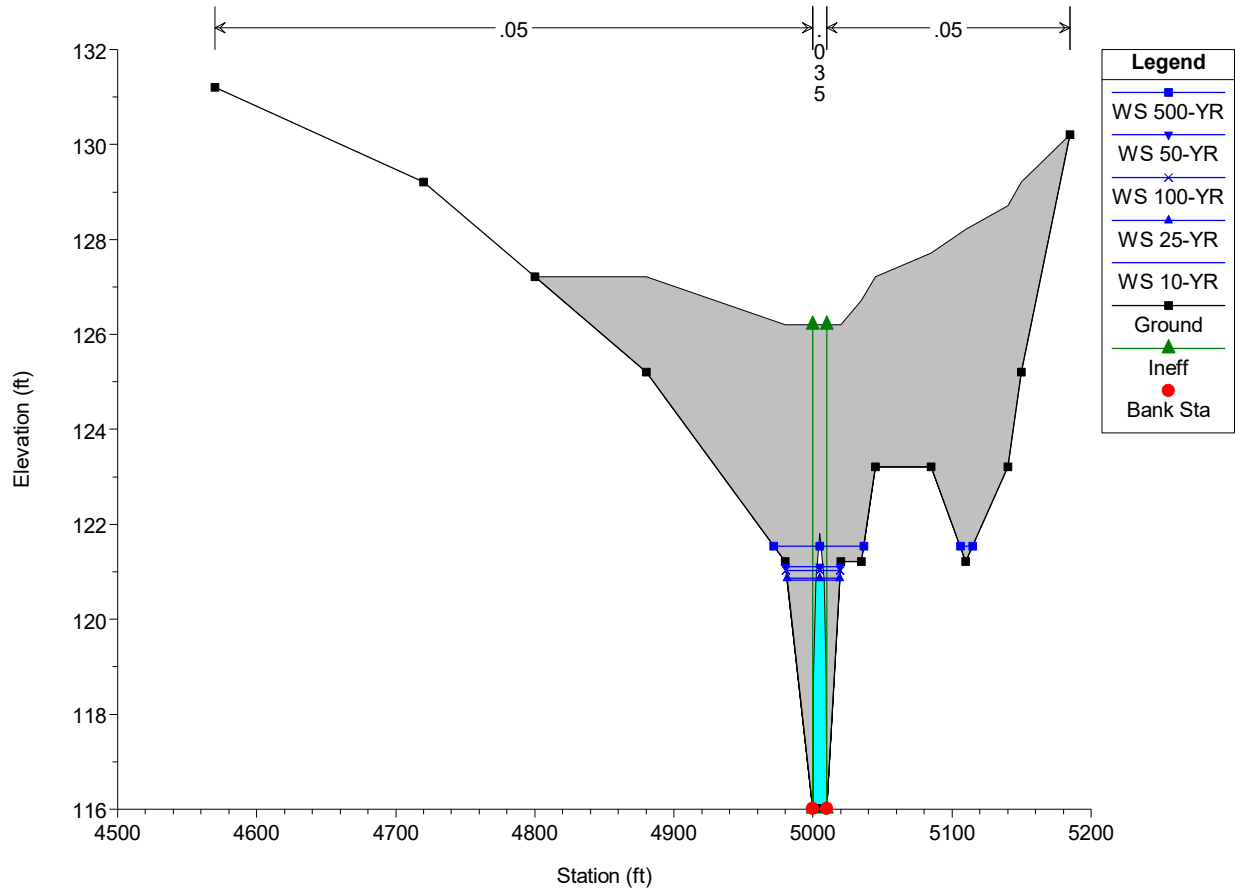
US Face Concord Road SU-27



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

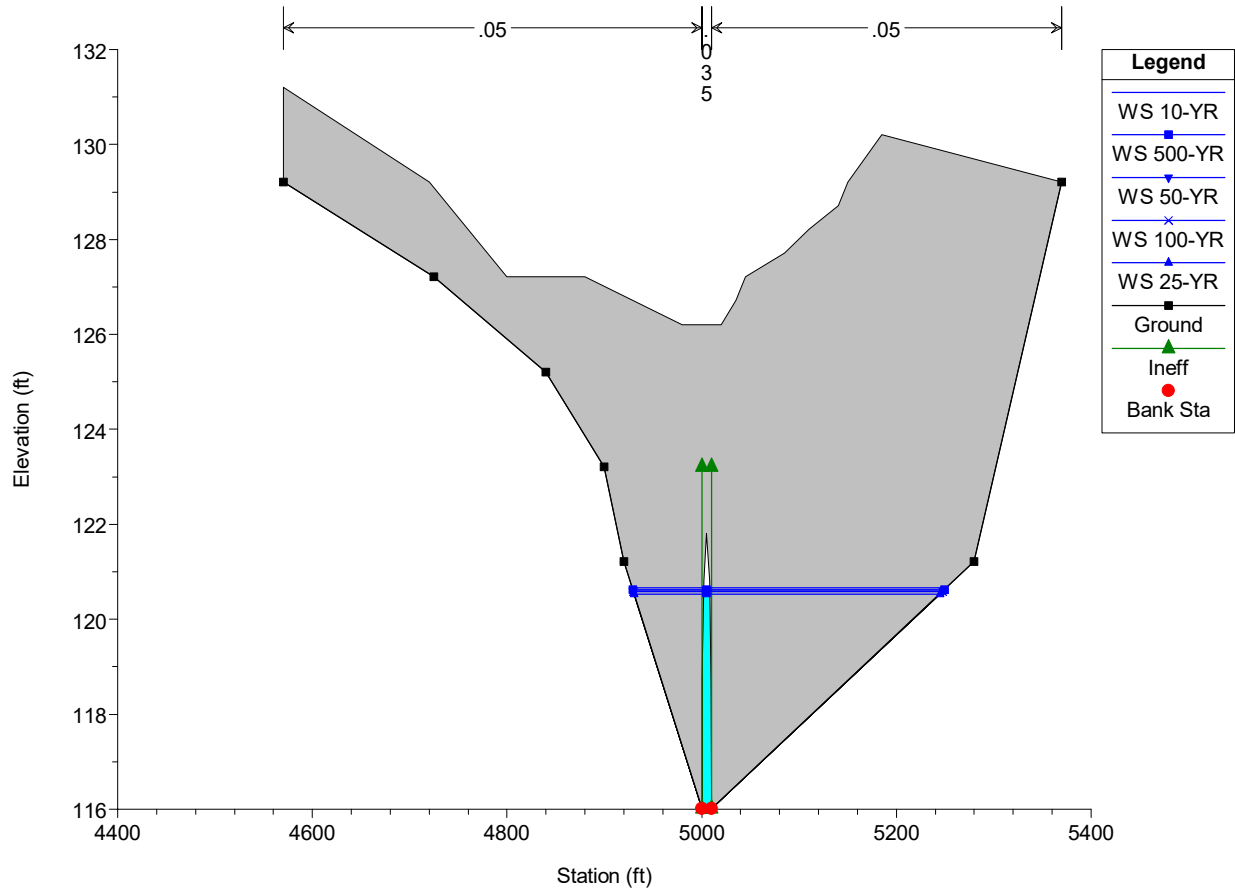
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

Concord Road SU-27



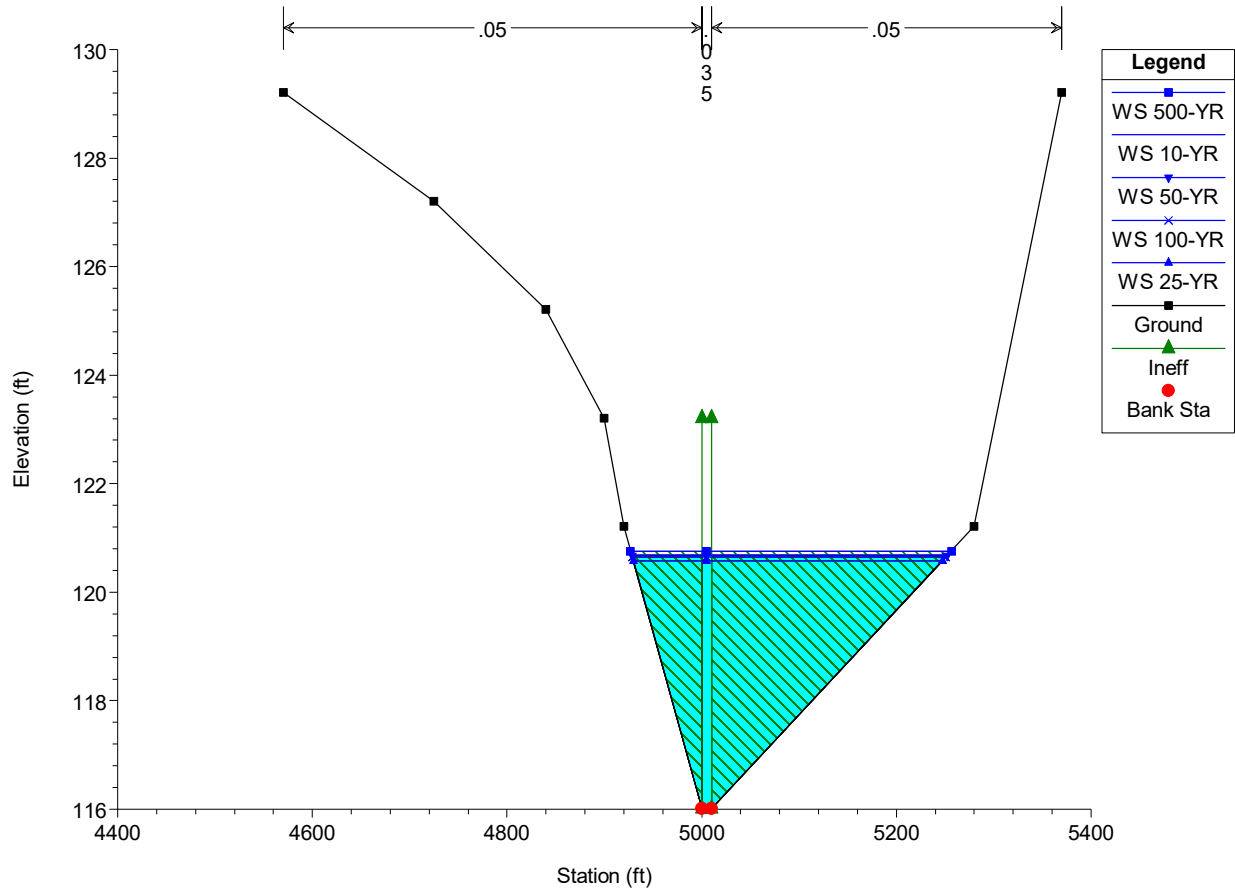
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

Concord Road SU-27

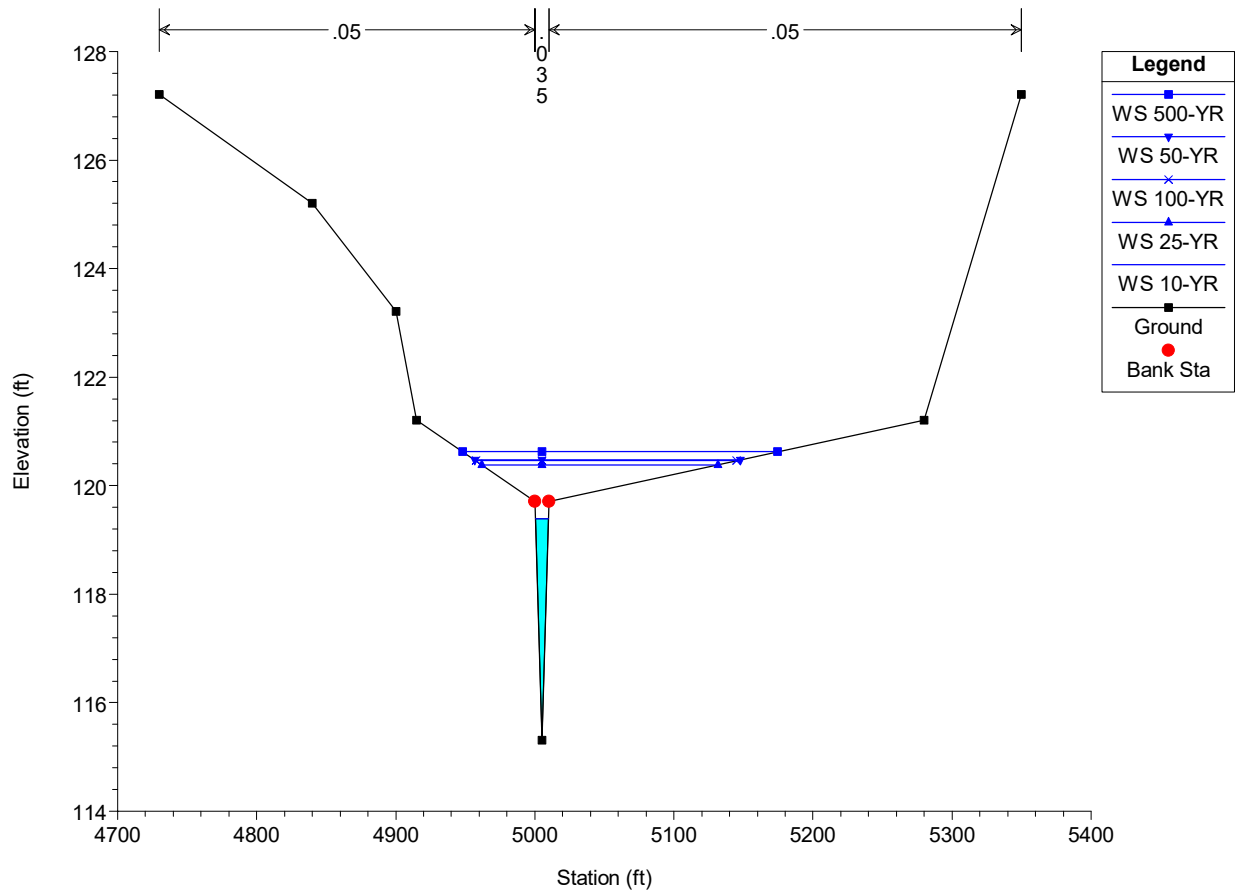


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

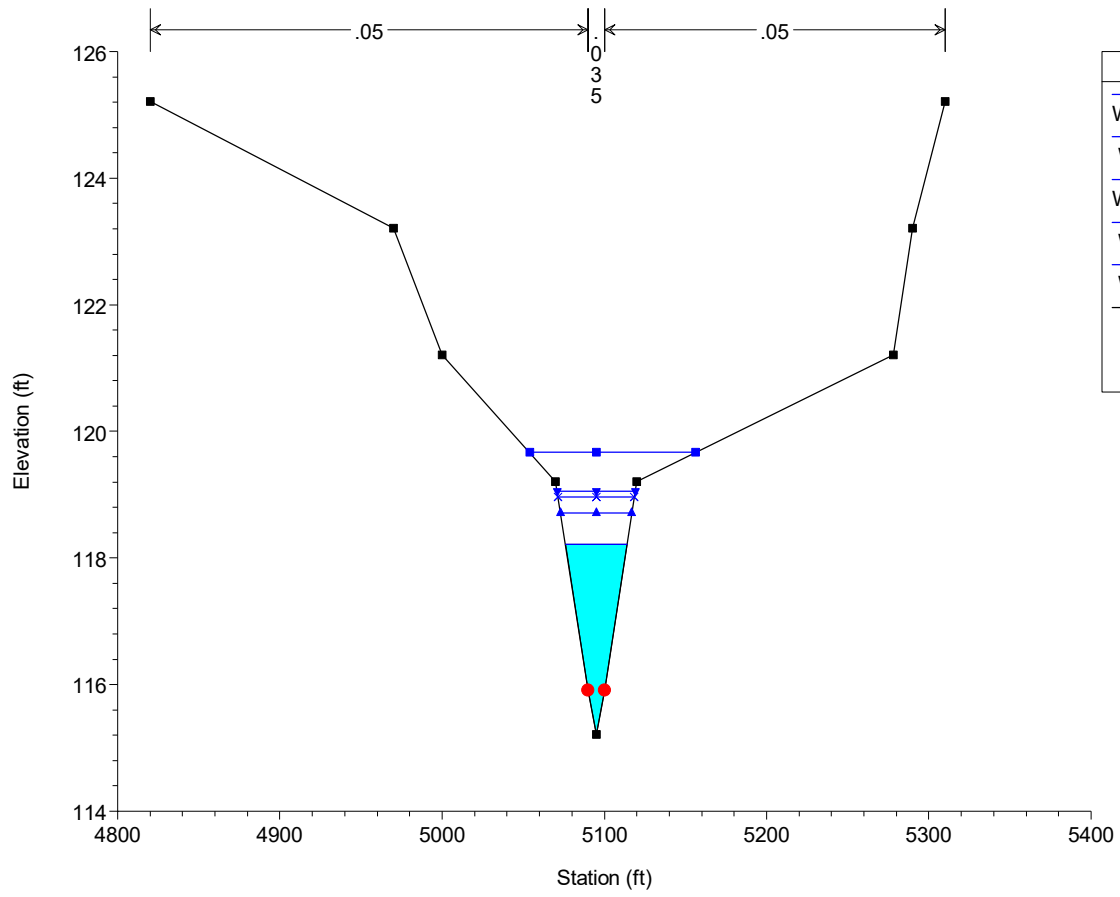
DS Face Concord Road SU-27



Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

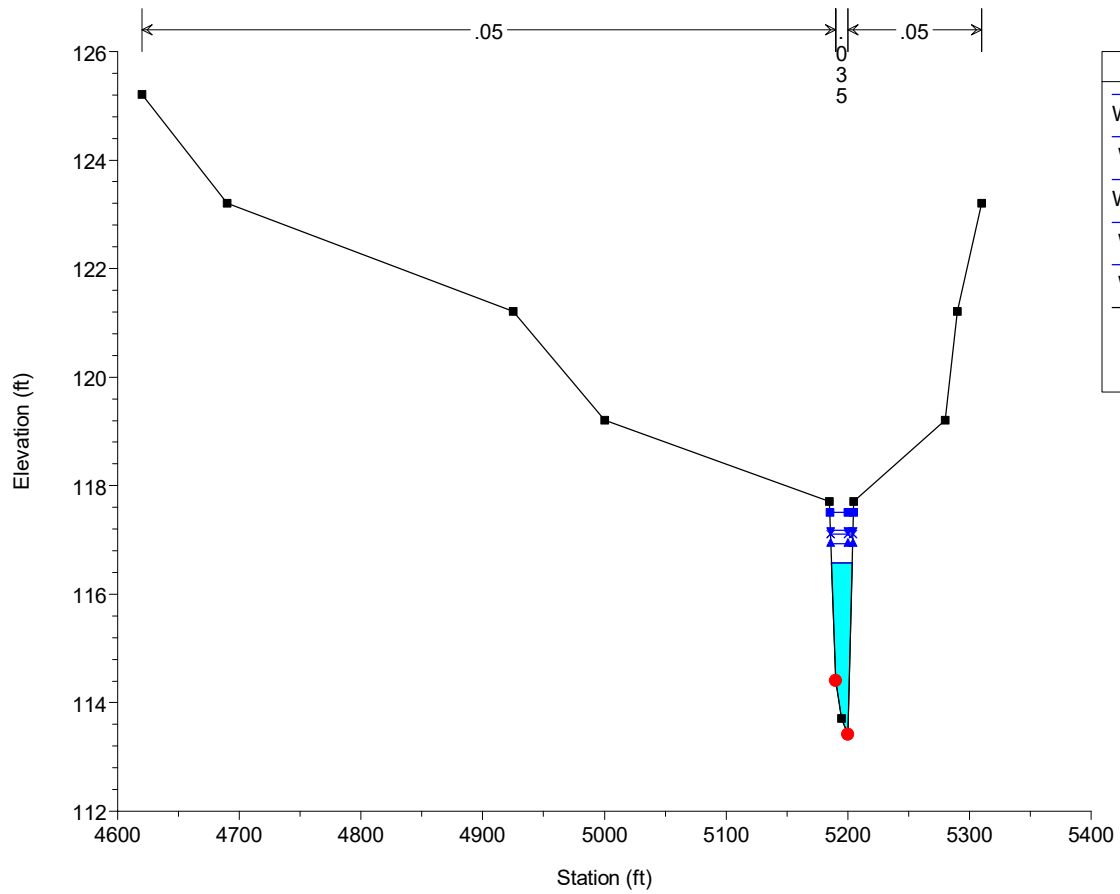


Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



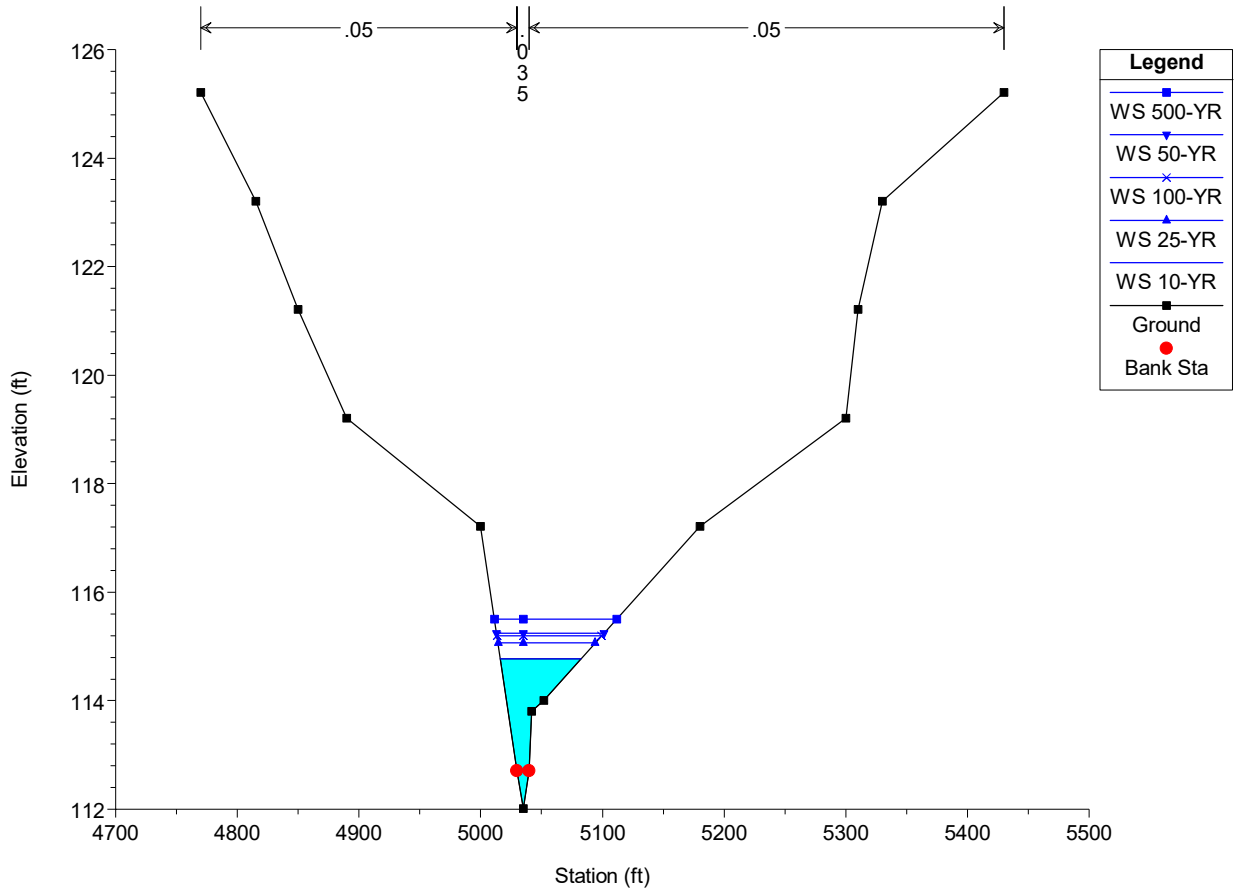
Legend	
—■—	WS 500-YR
—▼—	WS 50-YR
—×—	WS 100-YR
—▲—	WS 25-YR
—■—	WS 10-YR
—■—	Ground
●	Bank Sta

Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020

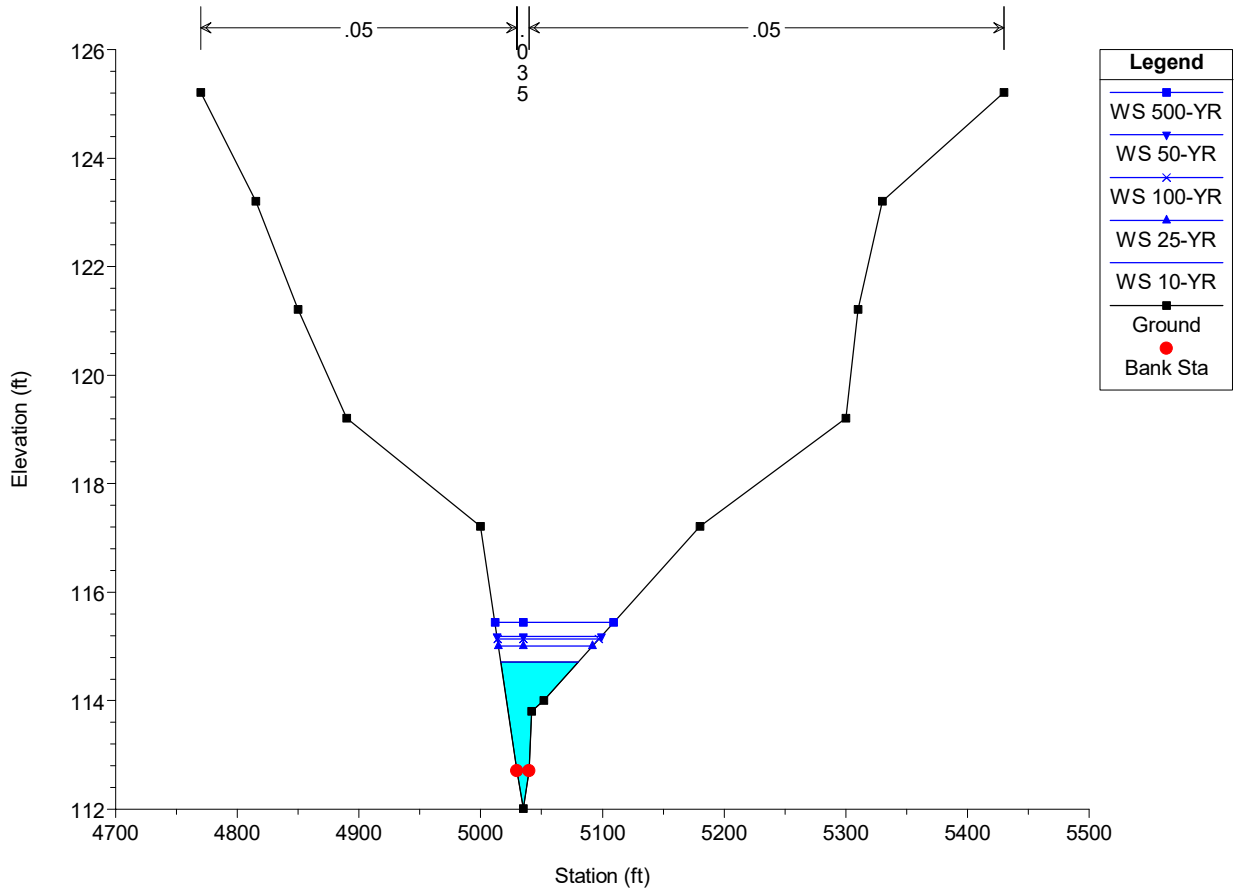


Legend	
—■—	WS 500-YR
—▼—	WS 50-YR
—×—	WS 100-YR
—▲—	WS 25-YR
—■—	WS 10-YR
—■—	Ground
●	Bank Sta

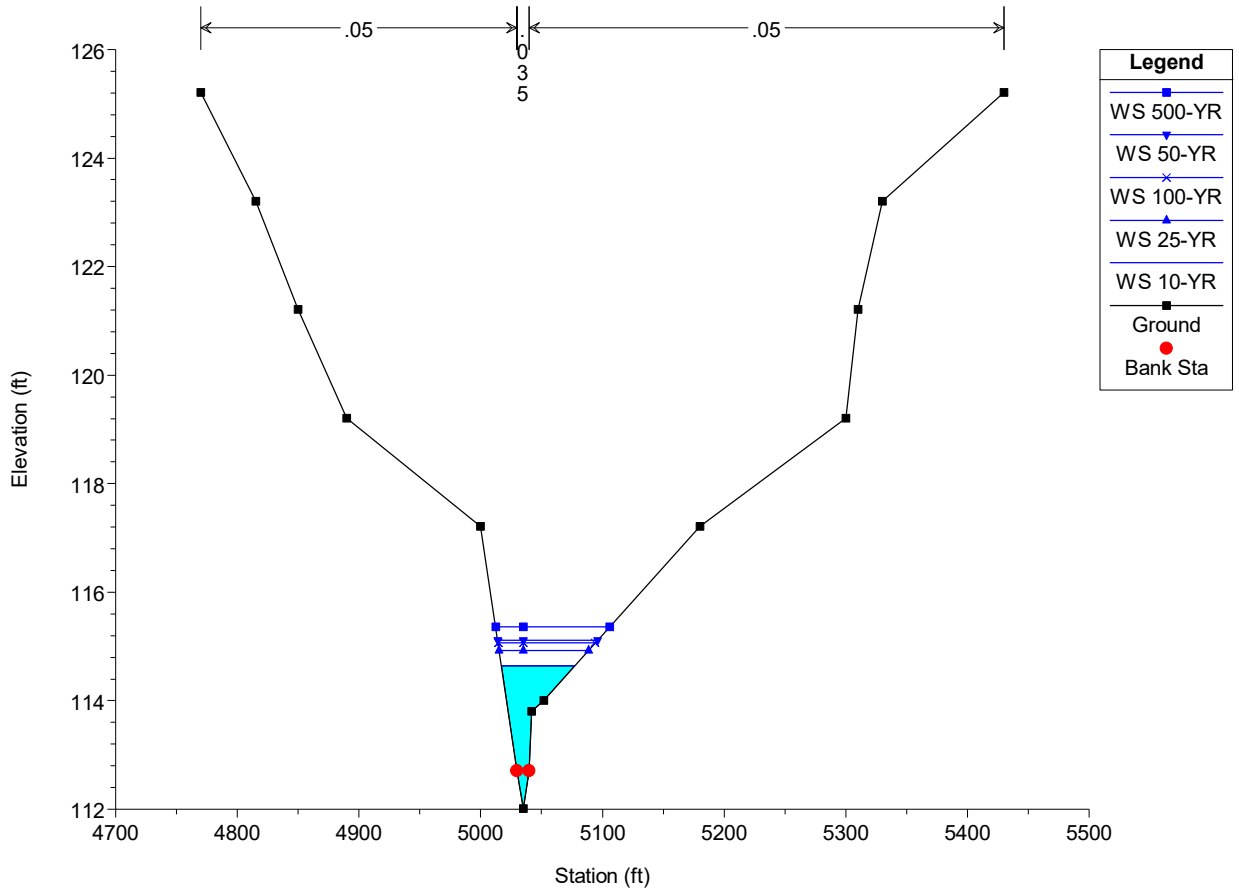
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



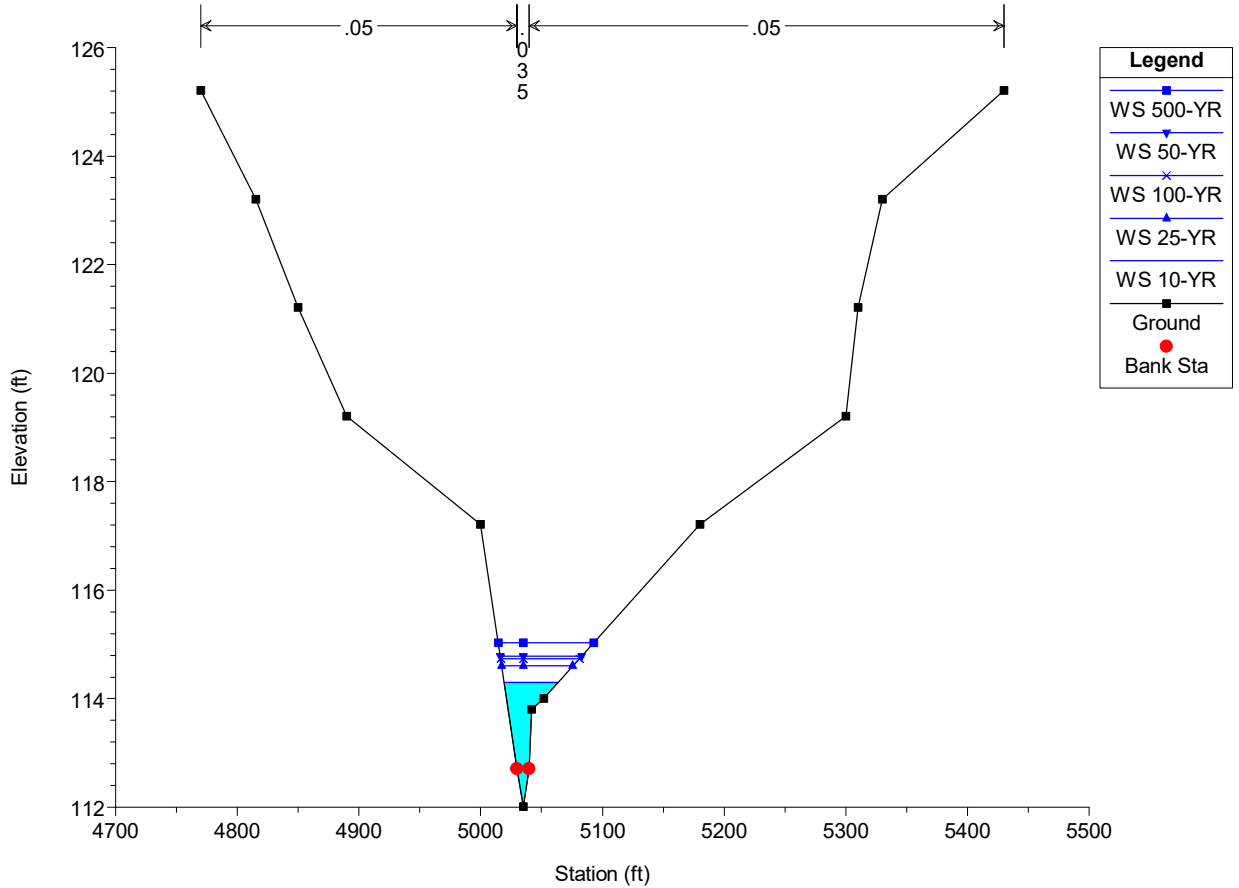
Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



Sudbury_No-Rise Plan: Exist_Condition_Model 4/16/2020



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



HEC-RAS Plan: Exist_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	0.000858	1.98	175.47	196.74	0.22
Pantry Brook	39.3	25-YR	209.00	121.21	124.54		124.56	0.000837	2.07	222.04	217.65	0.22
Pantry Brook	39.3	50-YR	253.00	121.21	124.71		124.73	0.000803	2.12	260.08	232.77	0.22
Pantry Brook	39.3	100-YR	240.00	121.21	124.66		124.68	0.000818	2.11	248.31	228.20	0.22
Pantry Brook	39.3	500-YR	326.00	121.21	125.05		125.07	0.000625	2.01	344.90	263.39	0.20
Pantry Brook	34.8	10-YR	155.00	119.41	123.60	123.27	123.71	0.002616	3.51	86.86	99.79	0.38
Pantry Brook	34.8	25-YR	209.00	119.41	123.85	123.41	123.95	0.002464	3.62	112.23	105.96	0.38
Pantry Brook	34.8	50-YR	253.00	119.41	124.07		124.16	0.002150	3.55	136.42	111.52	0.36
Pantry Brook	34.8	100-YR	240.00	119.41	123.99		124.09	0.002296	3.61	127.96	109.60	0.37
Pantry Brook	34.8	500-YR	326.00	119.41	124.61		124.68	0.001249	3.02	200.77	125.11	0.28
Pantry Brook	30.3	10-YR	155.00	118.61	121.98		122.34	0.003430	5.22	46.07	43.63	0.52
Pantry Brook	30.3	25-YR	209.00	118.61	122.60		122.85	0.002327	4.85	89.34	96.97	0.45
Pantry Brook	30.3	50-YR	253.00	118.61	123.68		123.73	0.000511	2.70	249.26	206.75	0.22
Pantry Brook	30.3	100-YR	240.00	118.61	123.57		123.63	0.000555	2.77	227.25	193.56	0.23
Pantry Brook	30.3	500-YR	326.00	118.61	124.42		124.45	0.000255	2.10	435.08	295.54	0.16
Pantry Brook	27.1	10-YR	155.00	118.71	122.06		122.08	0.000181	1.20	179.19	120.50	0.12
Pantry Brook	27.1	25-YR	209.00	118.71	122.64		122.66	0.000153	1.24	259.53	158.00	0.11
Pantry Brook	27.1	50-YR	253.00	118.71	123.67		123.68	0.000065	0.95	451.47	205.28	0.08
Pantry Brook	27.1	100-YR	240.00	118.71	123.56		123.57	0.000066	0.95	429.47	202.86	0.08
Pantry Brook	27.1	500-YR	326.00	118.71	124.40		124.41	0.000050	0.92	608.73	221.85	0.07
Pantry Brook	26.5	10-YR	155.00	117.97	121.97		122.05	0.000570	2.25	88.12	98.90	0.21
Pantry Brook	26.5	25-YR	209.00	117.97	122.57		122.63	0.000424	2.15	172.27	192.48	0.19
Pantry Brook	26.5	50-YR	253.00	117.97	123.66		123.67	0.000103	1.24	482.29	335.85	0.10
Pantry Brook	26.5	100-YR	240.00	117.97	123.55		123.56	0.000111	1.27	445.68	332.20	0.10
Pantry Brook	26.5	500-YR	326.00	117.97	124.40		124.41	0.000059	1.02	743.93	370.71	0.07
Pantry Brook	26.4	10-YR	155.00	118.36	121.91	120.03	122.03	0.001012	2.76	58.73	20.59	0.27
Pantry Brook	26.4	25-YR	209.00	118.36	122.45	120.35	122.60	0.001090	3.18	69.89	21.25	0.29
Pantry Brook	26.4	50-YR	253.00	118.36	123.50	120.58	123.63	0.000684	2.97	93.06	23.15	0.24
Pantry Brook	26.4	100-YR	240.00	118.36	123.40	120.52	123.53	0.000661	2.88	90.81	22.87	0.23
Pantry Brook	26.4	500-YR	326.00	118.36	124.20	120.94	124.36	0.000714	3.32	115.30	118.35	0.25
Pantry Brook	26.25	10-YR	155.00	118.41	121.54	120.49	121.93	0.003328	4.99	31.04	137.57	0.51
Pantry Brook	26.25	25-YR	209.00	118.41	121.89	120.91	122.45	0.004151	6.01	34.75	188.40	0.59
Pantry Brook	26.25	50-YR	253.00	118.41	123.08	121.22	123.52	0.002162	5.34	47.40	361.41	0.44
Pantry Brook	26.25	100-YR	240.00	118.41	123.02	121.12	123.43	0.002043	5.14	46.71	351.95	0.43
Pantry Brook	26.25	500-YR	326.00	118.41	123.64	121.70	124.22	0.002432	6.12	53.27	396.50	0.48
Pantry Brook	26.2		Bridge									
Pantry Brook	26.15	10-YR	155.00	118.41	121.49	120.49	121.89	0.003521	5.08	30.52	136.50	0.53
Pantry Brook	26.15	25-YR	209.00	118.41	121.82	120.91	122.40	0.004473	6.15	33.98	167.56	0.61
Pantry Brook	26.15	50-YR	253.00	118.41	123.05	121.22	123.50	0.002206	5.37	47.11	285.21	0.45
Pantry Brook	26.15	100-YR	240.00	118.41	122.99	121.13	123.41	0.002083	5.17	46.44	279.19	0.44
Pantry Brook	26.15	500-YR	326.00	118.41	123.60	121.70	124.19	0.002484	6.16	52.93	308.53	0.49
Pantry Brook	25.9	10-YR	155.00	118.12	121.56	119.94	121.73	0.001378	3.26	47.48	23.74	0.33
Pantry Brook	25.9	25-YR	209.00	118.12	121.93	120.26	122.17	0.001716	3.93	53.20	134.08	0.37
Pantry Brook	25.9	50-YR	253.00	118.12	123.15	120.51	123.34	0.000917	3.51	71.98	199.24	0.29
Pantry Brook	25.9	100-YR	240.00	118.12	123.08	120.43	123.26	0.000869	3.39	70.89	196.99	0.28
Pantry Brook	25.9	500-YR	326.00	118.12	123.74	120.88	123.99	0.001027	4.02	81.01	230.35	0.31
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

HEC-RAS Plan: Exist_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	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
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

HEC-RAS Plan: Exist_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	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
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: Exist_Cond Pantry Brook Pantry Brook RS: 26.2 Profile: 10-YR

E.G. US. (ft)	121.93	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	121.54	E.G. Elev (ft)	121.92	121.89
Q Total (cfs)	155.00	W.S. Elev (ft)	121.54	121.49
Q Bridge (cfs)	155.00	Crit W.S. (ft)	120.49	120.49
Q Weir (cfs)		Max Chl Dpth (ft)	3.13	3.08
Weir Sta Lft (ft)		Vel Total (ft/s)	5.00	5.08
Weir Sta Rgt (ft)		Flow Area (sq ft)	31.01	30.54
Weir Submerg		Froude # Chl	0.52	0.53
Weir Max Depth (ft)		Specif Force (cu ft)	69.80	68.80
Min El Weir Flow (ft)	131.22	Hydr Depth (ft)	2.93	2.88
Min El Prs (ft)	129.20	W.P. Total (ft)	10.66	10.66
Delta EG (ft)	0.04	Conv. Total (cfs)	2683.4	2615.3
Delta WS (ft)	0.05	Top Width (ft)	10.60	10.60
BR Open Area (sq ft)	113.42	Frctn Loss (ft)	0.03	0.00
BR Open Vel (ft/s)	5.08	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.61	0.63
BR Sel Method	Energy only	Power Total (lb/ft s)	3.03	3.19

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

E.G. US. (ft)	122.45	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	121.89	E.G. Elev (ft)	122.45	122.41
Q Total (cfs)	209.00	W.S. Elev (ft)	121.89	121.82
Q Bridge (cfs)	209.00	Crit W.S. (ft)	120.91	120.91
Q Weir (cfs)		Max Chl Dpth (ft)	3.48	3.41
Weir Sta Lft (ft)		Vel Total (ft/s)	6.02	6.14
Weir Sta Rgt (ft)		Flow Area (sq ft)	34.72	34.01
Weir Submerg		Froude # Chl	0.59	0.60
Weir Max Depth (ft)		Specif Force (cu ft)	96.32	94.84
Min El Weir Flow (ft)	131.22	Hydr Depth (ft)	3.28	3.21
Min El Prs (ft)	129.20	W.P. Total (ft)	10.66	10.66
Delta EG (ft)	0.05	Conv. Total (cfs)	3239.0	3129.7
Delta WS (ft)	0.07	Top Width (ft)	10.60	10.60
BR Open Area (sq ft)	113.42	Frctn Loss (ft)	0.04	0.00
BR Open Vel (ft/s)	6.14	C & E Loss (ft)	0.01	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.85	0.89
BR Sel Method	Energy only	Power Total (lb/ft s)	5.10	5.46

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

E.G. US. (ft)	123.52	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	123.08	E.G. Elev (ft)	123.52	123.50
Q Total (cfs)	253.00	W.S. Elev (ft)	123.08	123.06
Q Bridge (cfs)	253.00	Crit W.S. (ft)	121.22	121.22
Q Weir (cfs)		Max Chl Dpth (ft)	4.67	4.65
Weir Sta Lft (ft)		Vel Total (ft/s)	5.34	5.37
Weir Sta Rgt (ft)		Flow Area (sq ft)	47.39	47.12
Weir Submerg		Froude # Chl	0.45	0.45
Weir Max Depth (ft)		Specif Force (cu ft)	148.26	147.32
Min El Weir Flow (ft)	131.22	Hydr Depth (ft)	4.47	4.45
Min El Prs (ft)	129.20	W.P. Total (ft)	10.66	10.66
Delta EG (ft)	0.02	Conv. Total (cfs)	5439.0	5388.7
Delta WS (ft)	0.03	Top Width (ft)	10.60	10.60
BR Open Area (sq ft)	113.42	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.37	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)	0.60	0.61
BR Sel Method	Momentum	Power Total (lb/ft s)	3.21	3.27

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

E.G. US. (ft)	123.43	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	123.02	E.G. Elev (ft)	123.43	123.41
Q Total (cfs)	240.00	W.S. Elev (ft)	123.02	122.99
Q Bridge (cfs)	240.00	Crit W.S. (ft)	121.12	121.13
Q Weir (cfs)		Max Chl Dpth (ft)	4.61	4.58
Weir Sta Lft (ft)		Vel Total (ft/s)	5.14	5.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	46.70	46.45
Weir Submerg		Froude # Chl	0.43	0.44
Weir Max Depth (ft)		Specif Force (cu ft)	141.55	140.67
Min El Weir Flow (ft)	131.22	Hydr Depth (ft)	4.41	4.38
Min El Prs (ft)	129.20	W.P. Total (ft)	10.66	10.66
Delta EG (ft)	0.02	Conv. Total (cfs)	5307.5	5261.1
Delta WS (ft)	0.03	Top Width (ft)	10.60	10.60
BR Open Area (sq ft)	113.42	Frctn Loss (ft)		
BR Open Vel (ft/s)	5.17	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)	0.56	0.57
BR Sel Method	Momentum	Power Total (lb/ft s)	2.87	2.92

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

E.G. US. (ft)	124.22	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	123.64	E.G. Elev (ft)	124.22	124.19
Q Total (cfs)	326.00	W.S. Elev (ft)	123.63	123.61
Q Bridge (cfs)	326.00	Crit W.S. (ft)	121.70	121.70
Q Weir (cfs)		Max Chl Dpth (ft)	5.22	5.20
Weir Sta Lft (ft)		Vel Total (ft/s)	6.12	6.16
Weir Sta Rgt (ft)		Flow Area (sq ft)	53.26	52.95
Weir Submerg		Froude # Chl	0.48	0.49
Weir Max Depth (ft)		Specif Force (cu ft)	196.16	194.98
Min El Weir Flow (ft)	131.22	Hydr Depth (ft)	5.02	5.00
Min El Prs (ft)	129.20	W.P. Total (ft)	10.66	10.66
Delta EG (ft)	0.02	Conv. Total (cfs)	6607.6	6544.2
Delta WS (ft)	0.03	Top Width (ft)	10.60	10.60
BR Open Area (sq ft)	113.42	Frctn Loss (ft)		
BR Open Vel (ft/s)	6.16	C & E Loss (ft)		
BR Sluice Coef		Shear Total (lb/sq ft)	0.76	0.77
BR Sel Method	Momentum	Power Total (lb/ft s)	4.65	4.74

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

E.G. Elev (ft)	122.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	121.91	Reach Len. (ft)	15.00	14.00	12.00
Crit W.S. (ft)	120.03	Flow Area (sq ft)	0.68	55.13	2.92
E.G. Slope (ft/ft)	0.001012	Area (sq ft)	0.68	55.13	2.92
Q Total (cfs)	155.00	Flow (cfs)	0.34	152.37	2.29
Top Width (ft)	20.59	Top Width (ft)	0.97	17.07	2.55
Vel Total (ft/s)	2.64	Avg. Vel. (ft/s)	0.50	2.76	0.78
Max Chl Dpth (ft)	3.55	Hydr. Depth (ft)	0.70	3.23	1.15
Conv. Total (cfs)	4871.8	Conv. (cfs)	10.7	4789.3	71.9
Length Wtd. (ft)	13.99	Wetted Per. (ft)	1.74	18.83	3.89
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.02	0.18	0.05
Alpha	1.08	Stream Power (lb/ft s)	0.01	0.51	0.04
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	3.01	1.80	2.66
C & E Loss (ft)	0.08	Cum SA (acres)	2.69	0.62	2.14

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

E.G. Elev (ft)	122.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	122.45	Reach Len. (ft)	15.00	14.00	12.00
Crit W.S. (ft)	120.35	Flow Area (sq ft)	1.22	64.23	4.44
E.G. Slope (ft/ft)	0.001090	Area (sq ft)	1.22	64.23	4.44
Q Total (cfs)	209.00	Flow (cfs)	0.79	204.00	4.21
Top Width (ft)	21.25	Top Width (ft)	1.05	17.07	3.13
Vel Total (ft/s)	2.99	Avg. Vel. (ft/s)	0.65	3.18	0.95
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)	1.17	3.76	1.42
Conv. Total (cfs)	6330.4	Conv. (cfs)	24.0	6179.0	127.5
Length Wtd. (ft)	13.98	Wetted Per. (ft)	2.29	18.83	4.68
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.04	0.23	0.06
Alpha	1.10	Stream Power (lb/ft s)	0.02	0.74	0.06
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	4.09	2.04	3.51
C & E Loss (ft)	0.12	Cum SA (acres)	2.97	0.62	2.70

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

E.G. Elev (ft)	123.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	123.50	Reach Len. (ft)	15.00	14.00	12.00
Crit W.S. (ft)	120.58	Flow Area (sq ft)	2.35	82.22	8.49
E.G. Slope (ft/ft)	0.000684	Area (sq ft)	2.35	82.22	8.49
Q Total (cfs)	253.00	Flow (cfs)	1.45	243.95	7.60
Top Width (ft)	23.15	Top Width (ft)	1.09	17.07	4.99
Vel Total (ft/s)	2.72	Avg. Vel. (ft/s)	0.61	2.97	0.90
Max Chl Dpth (ft)	5.14	Hydr. Depth (ft)	2.16	4.82	1.70
Conv. Total (cfs)	9671.0	Conv. (cfs)	55.2	9325.2	290.6
Length Wtd. (ft)	13.97	Wetted Per. (ft)	3.34	18.83	6.86
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.03	0.19	0.05
Alpha	1.15	Stream Power (lb/ft s)	0.02	0.55	0.05
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	7.76	2.50	6.02
C & E Loss (ft)	0.09	Cum SA (acres)	3.37	0.62	3.12

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

E.G. Elev (ft)	123.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	123.40	Reach Len. (ft)	15.00	14.00	12.00
Crit W.S. (ft)	120.52	Flow Area (sq ft)	2.24	80.55	8.01
E.G. Slope (ft/ft)	0.000661	Area (sq ft)	2.24	80.55	8.01
Q Total (cfs)	240.00	Flow (cfs)	1.34	231.67	6.99
Top Width (ft)	22.87	Top Width (ft)	1.09	17.07	4.71
Vel Total (ft/s)	2.64	Avg. Vel. (ft/s)	0.60	2.88	0.87

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

Max Chl Dpth (ft)	5.04	Hydr. Depth (ft)	2.07	4.72	1.70
Conv. Total (cfs)	9335.7	Conv. (cfs)	52.2	9011.6	271.9
Length Wtd. (ft)	13.97	Wetted Per. (ft)	3.25	18.83	6.56
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.03	0.18	0.05
Alpha	1.15	Stream Power (lb/ft s)	0.02	0.51	0.04
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	7.51	2.46	5.82
C & E Loss (ft)	0.09	Cum SA (acres)	3.34	0.62	3.08

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

E.G. Elev (ft)	124.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	124.20	Reach Len. (ft)	15.00	14.00	12.00
Crit W.S. (ft)	120.94	Flow Area (sq ft)	3.41	94.08	17.81
E.G. Slope (ft/ft)	0.000714	Area (sq ft)	3.41	94.08	45.06
Q Total (cfs)	326.00	Flow (cfs)	2.22	311.95	11.82
Top Width (ft)	118.35	Top Width (ft)	2.07	17.07	99.21
Vel Total (ft/s)	2.83	Avg. Vel. (ft/s)	0.65	3.32	0.66
Max Chl Dpth (ft)	5.84	Hydr. Depth (ft)	1.65	5.51	0.83
Conv. Total (cfs)	12198.9	Conv. (cfs)	83.2	11673.3	442.4
Length Wtd. (ft)	13.97	Wetted Per. (ft)	4.58	18.83	23.30
Min Ch El (ft)	118.36	Shear (lb/sq ft)	0.03	0.22	0.03
Alpha	1.32	Stream Power (lb/ft s)	0.02	0.74	0.02
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	9.79	2.81	7.64
C & E Loss (ft)	0.13	Cum SA (acres)	3.67	0.61	3.73