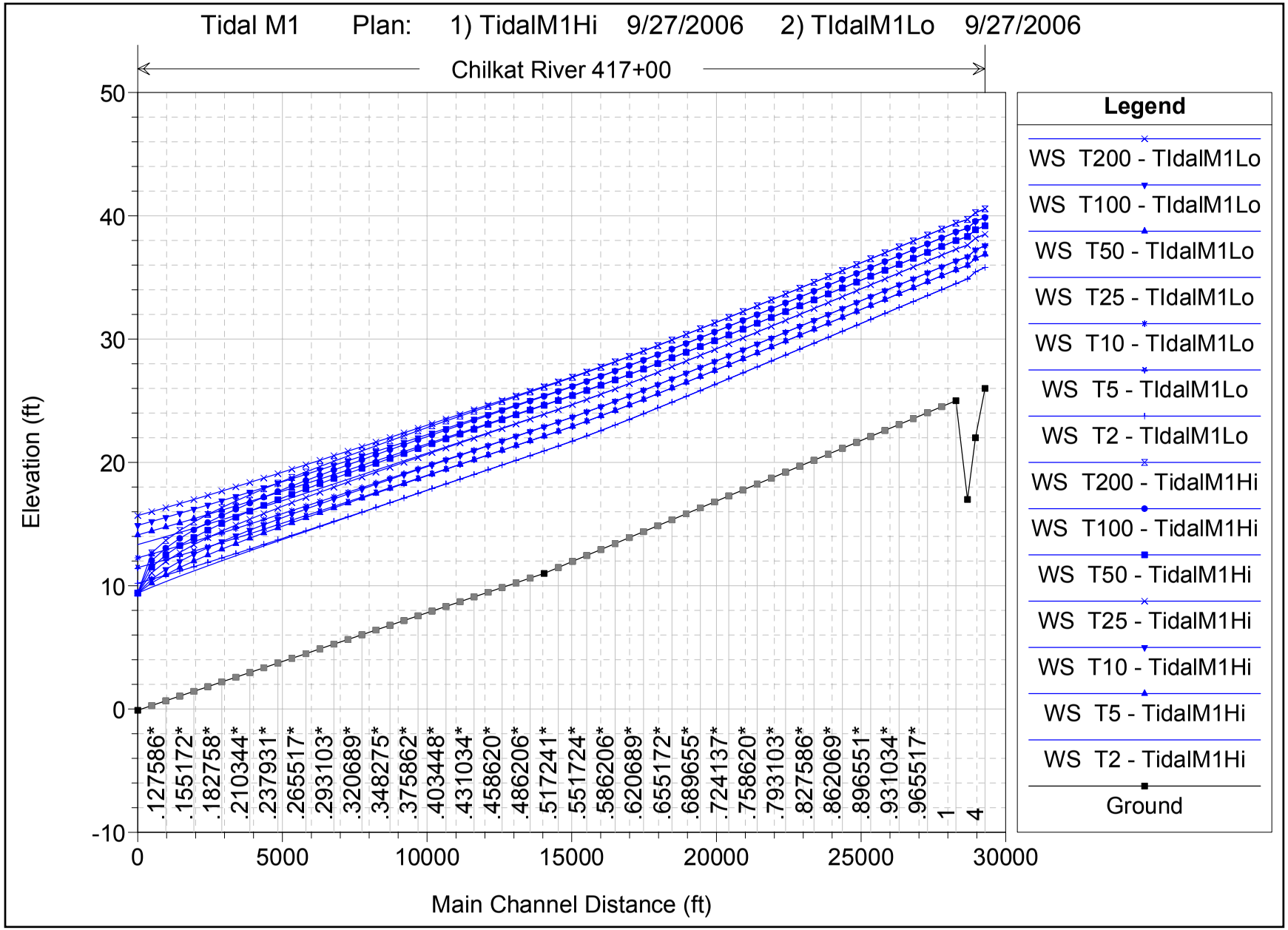
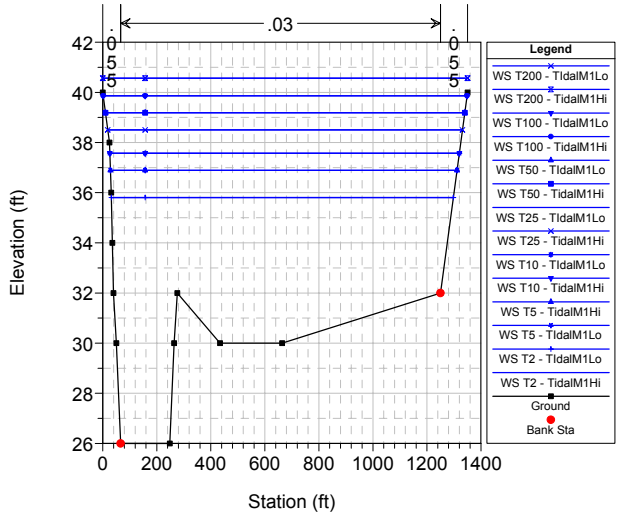

Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006
Chilkat River 417+00
Elevation (ft)
Main Channel Distance (ft)
50
40
30
20
10
0
-10
0
5000
10000
15000
20000
25000
30000
.127586*
.155172*
.182758*
.210344*
.237931*
.265517*
.293103*
.320689*
.348275*
.375862*
.403448*
.431034*
.458620*
.486206*
.517241*
.551724*
.586206*
.620689*
.655172*
.689655*
.724137*
.758620*
.793103*
.827586*
.862069*
.896551*
.931034*
.965517*
1
4
Legend
WS T200 - TIdalM1Lo
WS T100 - TIdalM1Lo
WS T50 - TIdalM1Lo
WS T25 - TIdalM1Lo
WS T10 - TIdalM1Lo
WS T5 - TIdalM1Lo
WS T2 - TIdalM1Lo
WS T200 - TidalM1Hi
WS T100 - TidalM1Hi
WS T50 - TidalM1Hi
WS T25 - TidalM1Hi
WS T10 - TidalM1Hi
WS T5 - TidalM1Hi
WS T2 - TidalM1Hi
Ground

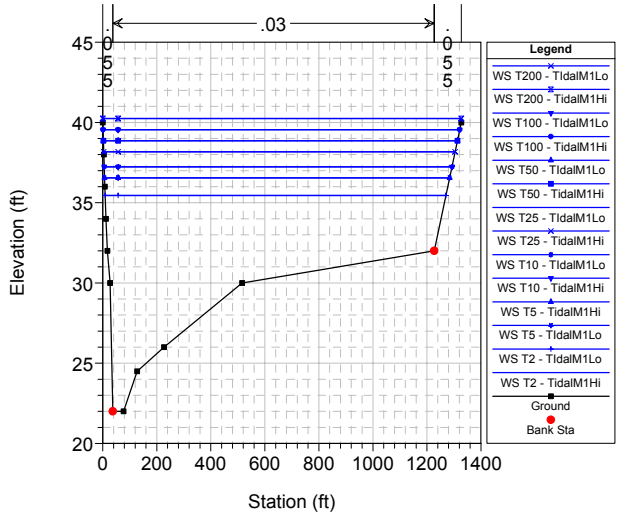
Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006

RS = 4 2-points added for typical average depth = 4-ft



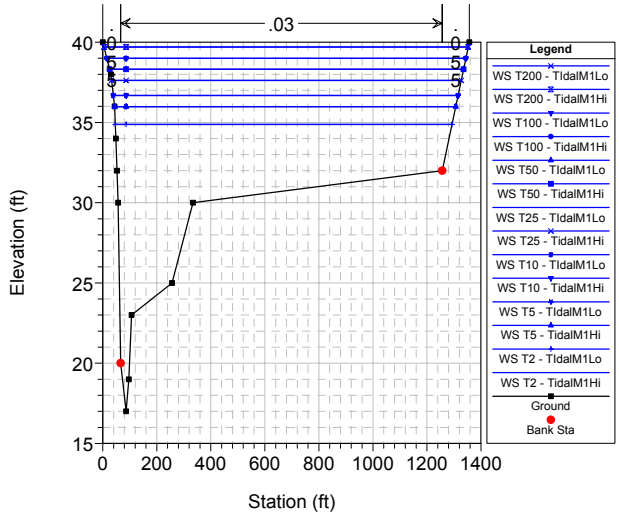
Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006

RS = 3 Boat based soundings w. offset visual estimates included



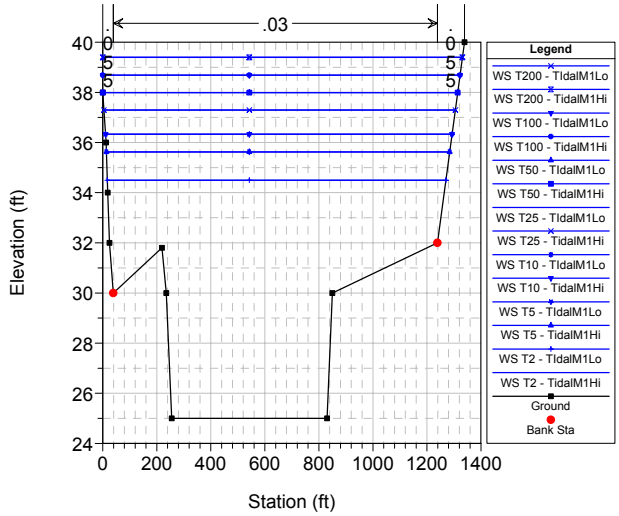
Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006

RS = 2 Boat based soundings w. offset visual estimates included



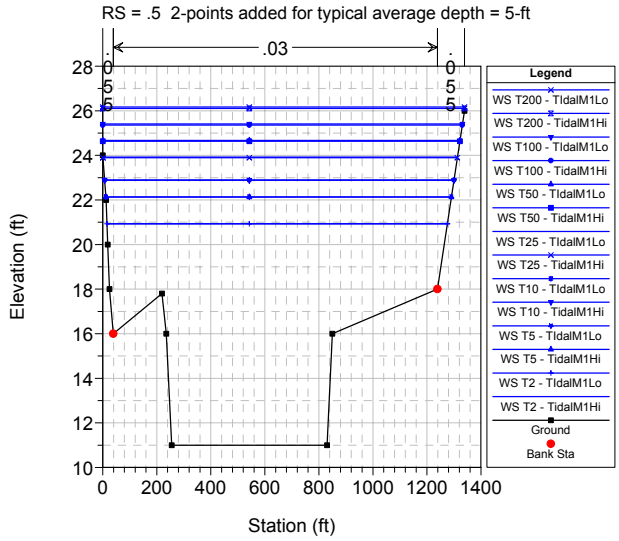
Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006

RS = 1 2-points added for typical average depth = 5-ft



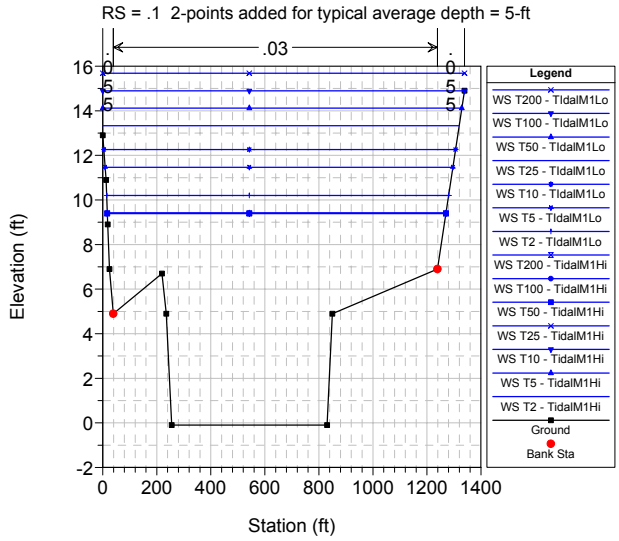
Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006

RS = .5 2-points added for typical average depth = 5-ft



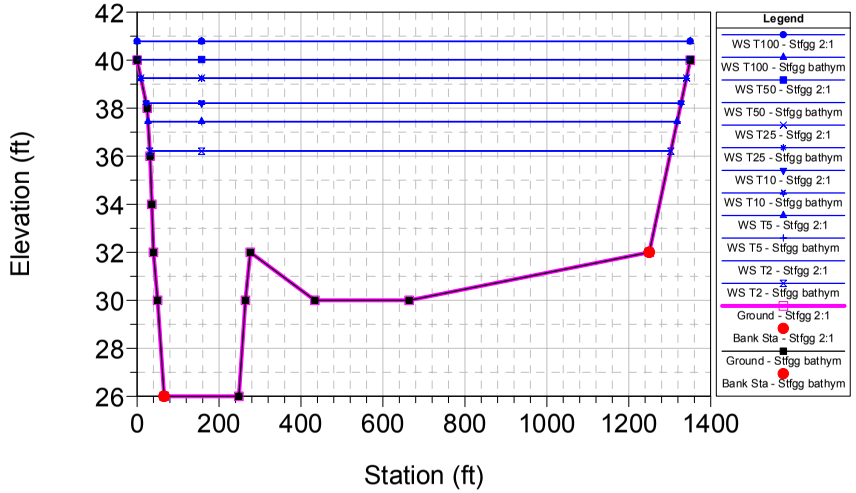
Tidal M1 Plan: 1) TidalM1Hi 9/27/2006 2) TIdalM1Lo 9/27/2006

RS = .1 2-points added for typical average depth = 5-ft



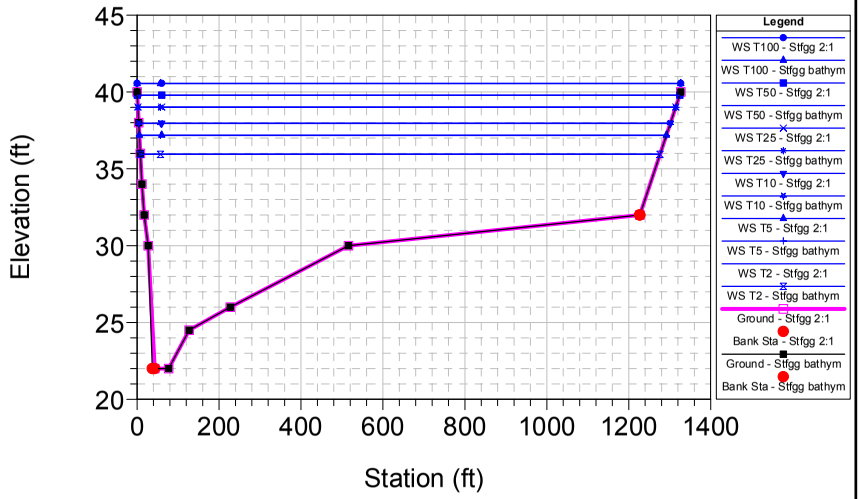
417 Plan: 1) Stfgg bathym 2) Stfgg 2:1

RS = 4 2-points added for typical average depth = 4-ft



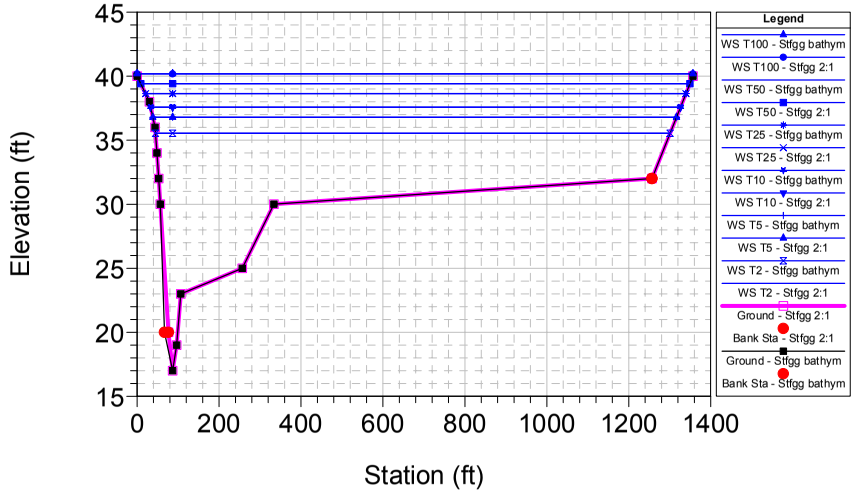
417 Plan: 1) Stfgg bathym 2) Stfgg 2:1

RS = 3 Boat based soundings w. offset visual estimates included



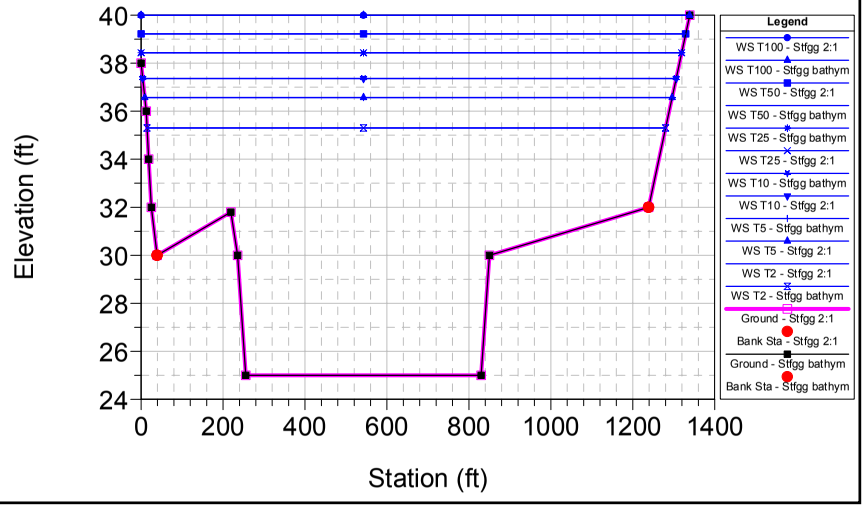
417 Plan: 1) Stfgg bathym 2) Stfgg 2:1

RS = 2 Boat based soundings w. offset visual estimates included



417 Plan: 1) Stfgg bathym 2) Stfgg 2:1

RS = 1 2-points added for typical average depth = 5-ft

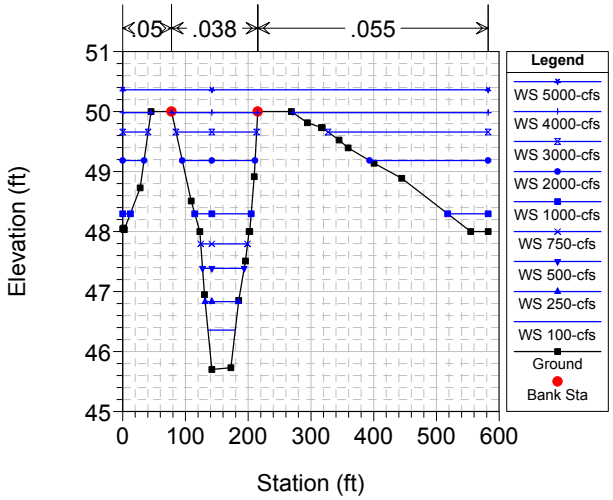


HEC-RAS River: Chilkat River Reach: 417+00

Reach	River Sta	Profile	Plan	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
417+00	1	T2	Stfgg bathym	42300.00		25.00	35.30	30.94	35.66	0.000664	10.30	7.31	4.80	8914.87	1265.64	1200.00	0.31	0.30
417+00	1	T2	Stfgg 2:1	42300.00		25.00	35.30	30.94	35.66	0.000664	10.30	7.31	4.80	8914.87	1265.64	1200.00	0.31	0.30
417+00	1	T5	Stfgg bathym	55300.00		25.00	36.57	32.01	37.01	0.000664	11.57	8.57	5.34	10528.34	1287.01	1200.00	0.32	0.36
417+00	1	T5	Stfgg 2:1	55300.00		25.00	36.57	32.01	37.01	0.000664	11.57	8.57	5.34	10528.34	1287.01	1200.00	0.32	0.36
417+00	1	T10	Stfgg bathym	64200.00		25.00	37.36	32.46	37.86	0.000664	12.36	9.37	5.67	11558.89	1301.94	1200.00	0.33	0.39
417+00	1	T10	Stfgg 2:1	64200.00		25.00	37.36	32.46	37.86	0.000664	12.36	9.37	5.67	11558.89	1301.94	1200.00	0.33	0.39
417+00	1	T25	Stfgg bathym	77100.00		25.00	38.43	33.03	39.01	0.000665	13.43	10.44	6.10	12963.40	1319.31	1200.00	0.33	0.43
417+00	1	T25	Stfgg 2:1	77100.00		25.00	38.43	33.03	39.01	0.000665	13.43	10.44	6.10	12963.40	1319.31	1200.00	0.33	0.43
417+00	1	T50	Stfgg bathym	87100.00		25.00	39.22	33.45	39.85	0.000664	14.22	11.22	6.40	14003.48	1329.13	1200.00	0.34	0.46
417+00	1	T50	Stfgg 2:1	87100.00		25.00	39.22	33.45	39.85	0.000664	14.22	11.22	6.40	14003.48	1329.13	1200.00	0.34	0.46
417+00	1	T100	Stfgg bathym	97500.00		25.00	39.99	33.88	40.68	0.000664	14.99	12.00	6.69	15038.15	1338.83	1200.00	0.34	0.50
417+00	1	T100	Stfgg 2:1	97500.00		25.00	39.99	33.88	40.68	0.000664	14.99	12.00	6.69	15038.15	1338.83	1200.00	0.34	0.50
417+00	2	T2	Stfgg bathym	42300.00	400.00	17.00	35.54		36.06	0.001244	18.54	6.06	5.80	7422.88	1256.07	1190.00	0.42	0.47
417+00	2	T2	Stfgg 2:1	42300.00	400.00	17.00	35.54		36.07	0.001303	18.54	5.96	5.87	7357.82	1256.07	1180.00	0.42	0.48
417+00	2	T5	Stfgg bathym	55300.00	400.00	17.00	36.79		37.40	0.001138	19.79	7.30	6.28	9002.95	1278.07	1190.00	0.41	0.52
417+00	2	T5	Stfgg 2:1	55300.00	400.00	17.00	36.79		37.41	0.001186	19.79	7.21	6.36	8935.98	1278.04	1180.00	0.42	0.53
417+00	2	T10	Stfgg bathym	64200.00	400.00	17.00	37.58		38.24	0.001088	20.58	8.09	6.58	10015.19	1293.27	1190.00	0.41	0.55
417+00	2	T10	Stfgg 2:1	64200.00	400.00	17.00	37.58		38.25	0.001132	20.58	8.00	6.66	9947.03	1293.22	1180.00	0.41	0.56
417+00	2	T25	Stfgg bathym	77100.00	400.00	17.00	38.64		39.39	0.001039	21.64	9.15	6.98	11399.40	1319.04	1190.00	0.41	0.59
417+00	2	T25	Stfgg 2:1	77100.00	400.00	17.00	38.64		39.40	0.001079	21.64	9.06	7.06	11329.29	1318.94	1180.00	0.41	0.61
417+00	2	T50	Stfgg bathym	87100.00	400.00	17.00	39.42		40.22	0.001008	22.42	9.93	7.26	12434.42	1340.53	1190.00	0.41	0.62
417+00	2	T50	Stfgg 2:1	87100.00	400.00	17.00	39.41		40.23	0.001045	22.41	9.83	7.34	12362.83	1340.39	1180.00	0.41	0.64
417+00	2	T100	Stfgg bathym	97500.00	400.00	17.00	40.19		41.05	0.000981	23.19	10.70	7.53	13474.71	1356.60	1190.00	0.41	0.65
417+00	2	T100	Stfgg 2:1	97500.00	400.00	17.00	40.18		41.06	0.001016	23.18	10.60	7.61	13402.02	1356.60	1180.00	0.41	0.67
417+00	3	T2	Stfgg bathym	42300.00	675.00	22.00	35.94		36.35	0.000853	13.94	6.78	5.18	8332.41	1268.53	1190.00	0.35	0.36
417+00	3	T2	Stfgg 2:1	42300.00	675.00	22.00	35.96		36.37	0.000861	13.96	6.76	5.19	8330.56	1268.78	1184.10	0.35	0.36
417+00	3	T5	Stfgg bathym	55300.00	675.00	22.00	37.17		37.67	0.000832	15.17	8.01	5.72	9906.55	1286.28	1190.00	0.36	0.42
417+00	3	T5	Stfgg 2:1	55300.00	675.00	22.00	37.19		37.69	0.000840	15.19	7.99	5.74	9902.83	1286.50	1184.10	0.36	0.42
417+00	3	T10	Stfgg bathym	64200.00	675.00	22.00	37.95		38.51	0.000821	15.95	8.79	6.05	10914.32	1297.51	1190.00	0.36	0.45
417+00	3	T10	Stfgg 2:1	64200.00	675.00	22.00	37.97		38.53	0.000829	15.97	8.77	6.06	10909.83	1297.73	1184.10	0.36	0.45
417+00	3	T25	Stfgg bathym	77100.00	675.00	22.00	39.01		39.65	0.000809	17.01	9.85	6.47	12290.56	1312.75	1190.00	0.36	0.50
417+00	3	T25	Stfgg 2:1	77100.00	675.00	22.00	39.02		39.66	0.000816	17.02	9.82	6.49	12285.87	1312.96	1184.10	0.36	0.50
417+00	3	T50	Stfgg bathym	87100.00	675.00	22.00	39.78		40.48	0.000800	17.78	10.62	6.77	13310.62	1323.93	1190.00	0.37	0.53
417+00	3	T50	Stfgg 2:1	87100.00	675.00	22.00	39.79		40.50	0.000807	17.79	10.60	6.79	13305.86	1324.14	1184.10	0.37	0.53
417+00	3	T100	Stfgg bathym	97500.00	675.00	22.00	40.55		41.31	0.000793	18.55	11.39	7.06	14326.58	1327.10	1190.00	0.37	0.56
417+00	3	T100	Stfgg 2:1	97500.00	675.00	22.00	40.56		41.32	0.000799	18.56	11.36	7.08	14321.32	1327.10	1184.10	0.37	0.57
417+00	4	T2	Stfgg bathym	42300.00	1005.00	26.00	36.21		36.70	0.001139	10.21	6.21	5.65	7671.74	1271.94	1184.00	0.40	0.44
417+00	4	T2	Stfgg 2:1	42300.00	1005.00	26.00	36.23		36.72	0.001127	10.23	6.23	5.63	7697.29	1272.26	1184.00	0.40	0.44
417+00	4	T5	Stfgg bathym	55300.00	1005.00	26.00	37.43		38.01	0.001070	11.43	7.43	6.17	9231.23	1291.29	1184.00	0.40	0.50
417+00	4	T5	Stfgg 2:1	55300.00	1005.00	26.00	37.45		38.02	0.001061	11.45	7.45	6.15	9255.66	1291.59	1184.00	0.40	0.49
417+00	4	T10	Stfgg bathym	64200.00	1005.00	26.00	38.20		38.84	0.001036	12.20	8.20	6.48	10232.66	1305.34	1184.00	0.40	0.53
417+00	4	T10	Stfgg 2:1	64200.00	1005.00	26.00	38.22		38.86	0.001028	12.22	8.22	6.47	10256.68	1305.80	1184.00	0.40	0.53
417+00	4	T25	Stfgg bathym	77100.00	1005.00	26.00	39.24		39.97	0.001000	13.24	9.25	6.90	11609.83	1331.30	1184.00	0.40	0.58
417+00	4	T25	Stfgg 2:1	77100.00	1005.00	26.00	39.26		39.98	0.000994	13.26	9.27	6.89	11634.24	1331.76	1184.00	0.40	0.57
417+00	4	T50	Stfgg bathym	87100.00	1005.00	26.00	40.01		40.80	0.000976	14.01	10.02	7.19	12639.03	1350.10	1184.00	0.40	0.61
417+00	4	T50	Stfgg 2:1	87100.00	1005.00	26.00	40.03		40.81	0.000970	14.03	10.03	7.17	12663.84	1350.10	1184.00	0.40	0.61
417+00	4	T100	Stfgg bathym	97500.00	1005.00	26.00	40.77		41.62	0.000953	14.77	10.78	7.46	13667.52	1350.10	1184.00	0.40	0.64
417+00	4	T100	Stfgg 2:1	97500.00	1005.00	26.00	40.79		41.63	0.000948	14.79	10.79	7.44	13691.92	1350.10	1184.00	0.40	0.64

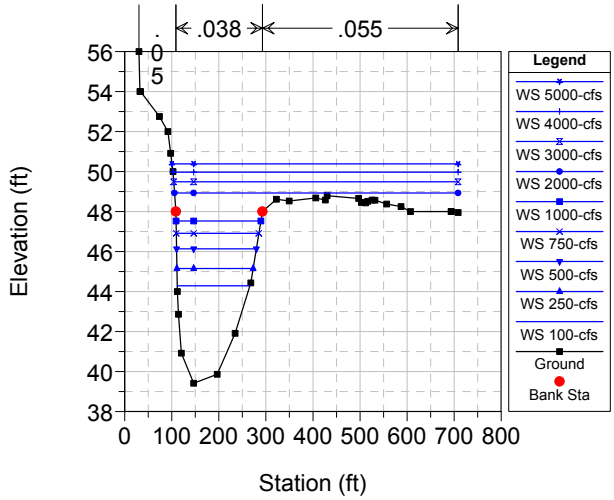
645 Plan: 645 - Existing 11/15/2005

RS = 10 Add/move points for estimated 2-ft depth along glide/riffle



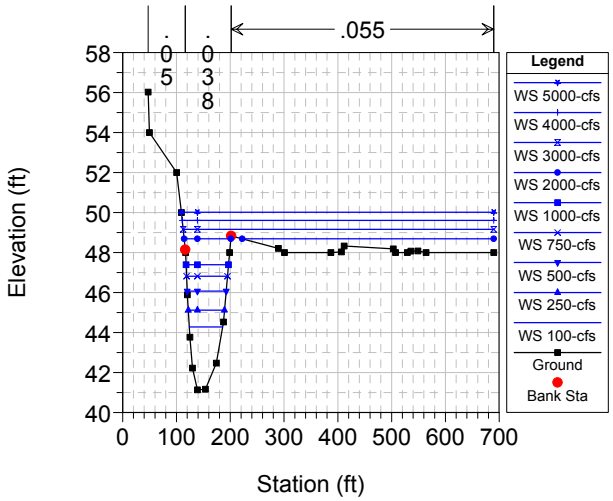
645 Plan: 645 - Existing 11/15/2005

RS = 9 Add 7 points to approx 9.5-ft scour



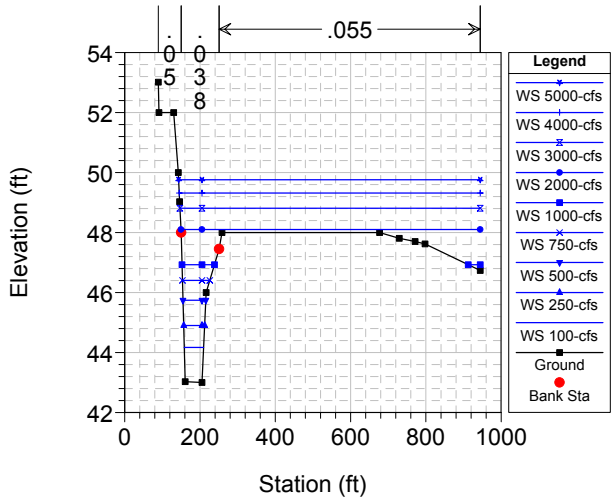
645 Plan: 645 - Existing 11/15/2005

RS = 8 Add 7points to approx 7-ft scour



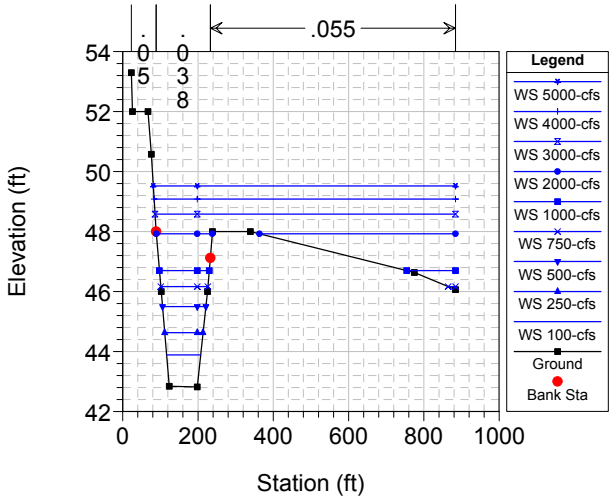
645 Plan: 645 - Existing 11/15/2005

RS = 7 moved two points for 3-ft depth



645 Plan: 645 - Existing 11/15/2005

RS = 6 Add two points for 3-ft depth

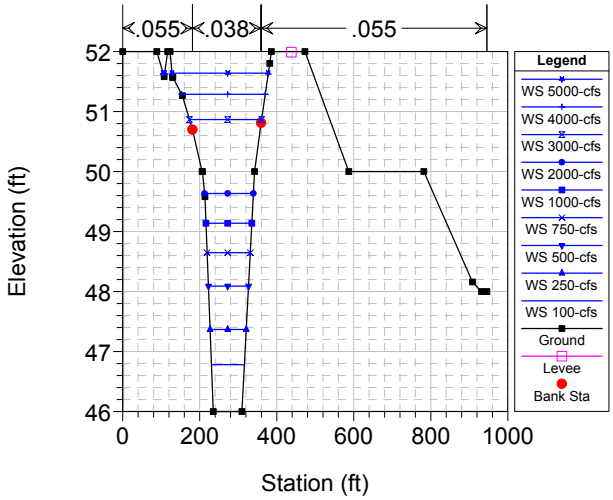


HEC-RAS Plan: 645 River: Chilkat Reach: 645+00

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
645+00	6	100-cfs	100.00		42.82	43.89	43.21	43.91	0.000901	1.07	0.96	1.14	87.39	90.61	90.61	0.21	0.05
645+00	6	250-cfs	250.00		42.82	44.63	43.52	44.67	0.000901	1.81	1.56	1.57	158.75	101.94	101.94	0.22	0.09
645+00	6	500-cfs	500.00		42.82	45.50	43.90	45.56	0.000901	2.68	2.19	1.98	252.78	115.18	115.18	0.24	0.12
645+00	6	750-cfs	750.00		42.82	46.17	44.22	46.24	0.000901	3.35	2.66	2.25	334.36	144.77	125.15	0.24	0.15
645+00	6	1000-cfs	1000.00		42.82	46.70	44.50	46.79	0.000902	3.88	3.03	2.45	440.47	261.92	132.42	0.25	0.17
645+00	6	2000-cfs	2000.00		42.82	47.92	45.39	48.04	0.000901	5.10	3.98	2.94	1012.20	669.79	143.67	0.26	0.22
645+00	6	3000-cfs	3000.00		42.82	48.58	46.11	48.70	0.000901	5.76	4.62	3.25	1525.76	798.19	144.18	0.27	0.26
645+00	6	4000-cfs	4000.00		42.82	49.08	47.04	49.21	0.000901	6.26	5.13	3.48	1926.51	800.62	144.18	0.27	0.29
645+00	6	5000-cfs	5000.00		42.82	49.52	47.62	49.66	0.000900	6.70	5.57	3.67	2279.87	802.76	144.18	0.27	0.31
645+00	7	100-cfs	100.00	236.00	43.00	44.17		44.22	0.001945	1.17	1.08	1.80	55.43	51.40	51.40	0.31	0.13
645+00	7	250-cfs	250.00	236.00	43.00	44.90		45.01	0.002282	1.90	1.70	2.64	94.69	55.68	55.68	0.36	0.24
645+00	7	500-cfs	500.00	236.00	43.00	45.74		45.93	0.002566	2.74	2.37	3.48	143.53	60.58	60.58	0.40	0.37
645+00	7	750-cfs	750.00	236.00	43.00	46.40		46.65	0.003067	3.40	2.57	4.02	186.45	72.49	72.49	0.44	0.48
645+00	7	1000-cfs	1000.00	236.00	43.00	46.93		47.23	0.003490	3.93	2.65	4.38	231.11	117.87	86.05	0.47	0.57
645+00	7	2000-cfs	2000.00	236.00	43.00	48.10		48.51	0.003772	5.10	3.39	5.37	558.59	794.66	100.79	0.51	0.79
645+00	7	3000-cfs	3000.00	236.00	43.00	48.81		49.07	0.002473	5.81	4.10	4.93	1122.16	797.56	100.79	0.43	0.62
645+00	7	4000-cfs	4000.00	236.00	43.00	49.32		49.55	0.002071	6.32	4.61	4.88	1529.81	799.51	100.79	0.40	0.59
645+00	7	5000-cfs	5000.00	236.00	43.00	49.76		49.97	0.001852	6.76	5.05	4.90	1883.74	801.09	100.79	0.38	0.58
645+00	8	100-cfs	100.00	440.00	41.14	44.28		44.29	0.000122	3.14	2.21	0.73	136.98	61.85	61.85	0.09	0.02
645+00	8	250-cfs	250.00	440.00	41.14	45.12		45.14	0.000282	3.98	2.84	1.31	191.40	67.36	67.36	0.14	0.05
645+00	8	500-cfs	500.00	440.00	41.14	46.07		46.13	0.000462	4.93	3.56	1.94	258.15	72.56	72.56	0.18	0.10
645+00	8	750-cfs	750.00	440.00	41.14	46.81		46.90	0.000584	5.67	4.12	2.39	313.24	76.10	76.10	0.21	0.15
645+00	8	1000-cfs	1000.00	440.00	41.14	47.39		47.52	0.000698	6.25	4.54	2.79	358.30	78.88	78.88	0.23	0.19
645+00	8	2000-cfs	2000.00	440.00	41.14	48.68		48.91	0.001105	7.54	5.46	3.96	726.58	554.68	84.94	0.30	0.37
645+00	8	3000-cfs	3000.00	440.00	41.14	49.16		49.47	0.001521	8.02	5.91	4.90	1001.40	577.63	85.50	0.36	0.55
645+00	8	4000-cfs	4000.00	440.00	41.14	49.61		49.96	0.001721	8.47	6.35	5.47	1259.50	579.36	85.50	0.38	0.67
645+00	8	5000-cfs	5000.00	440.00	41.14	50.01		50.39	0.001837	8.87	6.76	5.89	1493.68	580.93	85.50	0.40	0.76
645+00	9	100-cfs	100.00	570.00	39.42	44.29		44.29	0.000005	4.87	3.39	0.19	523.85	154.33	154.33	0.02	0.00
645+00	9	250-cfs	250.00	570.00	39.42	45.15		45.15	0.000015	5.73	4.08	0.38	660.19	161.87	161.87	0.03	0.00
645+00	9	500-cfs	500.00	570.00	39.42	46.14		46.14	0.000030	6.72	4.86	0.61	824.09	169.52	169.52	0.05	0.01
645+00	9	750-cfs	750.00	570.00	39.42	46.91		46.92	0.000042	7.49	5.46	0.78	957.73	175.51	175.51	0.06	0.01
645+00	9	1000-cfs	1000.00	570.00	39.42	47.53		47.54	0.000055	8.11	5.92	0.94	1067.29	180.27	180.27	0.07	0.02
645+00	9	2000-cfs	2000.00	570.00	39.42	48.93		48.96	0.000105	9.51	7.20	1.48	1546.00	602.69	183.91	0.10	0.05
645+00	9	3000-cfs	3000.00	570.00	39.42	49.49		49.55	0.000171	10.07	7.76	1.98	1885.56	604.41	183.91	0.13	0.08
645+00	9	4000-cfs	4000.00	570.00	39.42	49.97		50.05	0.000231	10.55	8.24	2.40	2175.78	605.88	183.91	0.15	0.12
645+00	9	5000-cfs	5000.00	570.00	39.42	50.39		50.49	0.000287	10.97	8.66	2.76	2430.04	608.08	183.91	0.17	0.15
645+00	10	100-cfs	100.00	838.00	45.70	46.36	46.36	46.63	0.026149	0.66	0.55	4.22	23.71	43.47	43.47	1.01	0.89
645+00	10	250-cfs	250.00	838.00	45.70	46.83	46.83	47.28	0.022378	1.13	0.88	5.36	46.68	53.18	53.18	1.01	1.22
645+00	10	500-cfs	500.00	838.00	45.70	47.39	47.39	48.00	0.020146	1.69	1.20	6.27	79.75	66.26	66.26	1.01	1.51
645+00	10	750-cfs	750.00	838.00	45.70	47.79	47.79	48.54	0.018992	2.09	1.46	6.91	108.58	74.61	74.61	1.01	1.72
645+00	10	1000-cfs	1000.00	838.00	45.70	48.30	48.30	48.96	0.014408	2.60	1.66	6.57	165.05	166.57	89.98	0.90	1.49
645+00	10	2000-cfs	2000.00	838.00	45.70	49.18	49.18	49.82	0.011832	3.48	2.08	6.92	387.97	339.08	116.06	0.85	1.53
645+00	10	3000-cfs	3000.00	838.00	45.70	49.66	49.66	50.34	0.011885	3.96	2.33	7.48	569.99	423.86	128.42	0.86	1.73
645+00	10	4000-cfs	4000.00	838.00	45.70	49.98	49.98	50.75	0.012843	4.28	2.50	8.15	718.85	492.86	136.85	0.91	2.00
645+00	10	5000-cfs	5000.00	838.00	45.70	50.36	50.36	51.10	0.010787	4.66	2.88	8.19	939.47	582.35	137.32	0.85	1.93

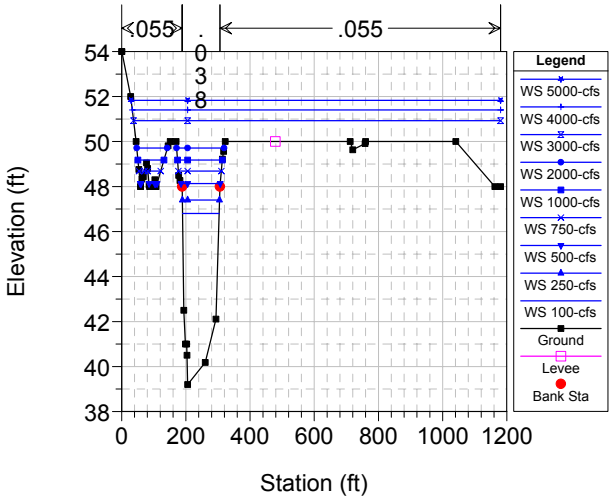
663 Plan: 663 Lidar w soundings 11/16/2005

RS = 15 adjust from toe of bank to 2-ft depth



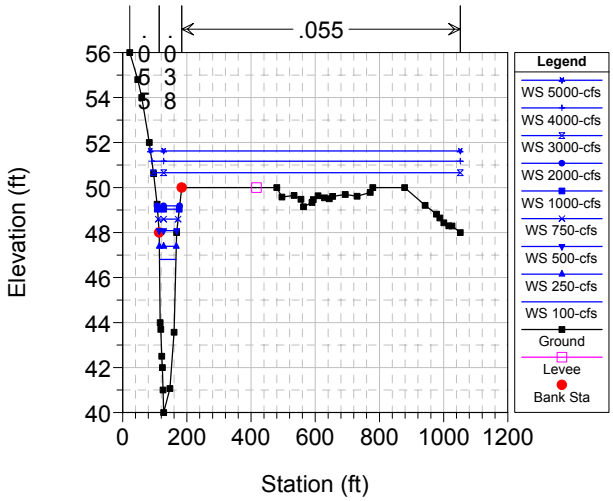
663 Plan: 663 Lidar w soundings 11/16/2005

RS = 14 Depth sounder readings (to ~15' from left bank) included, XS app



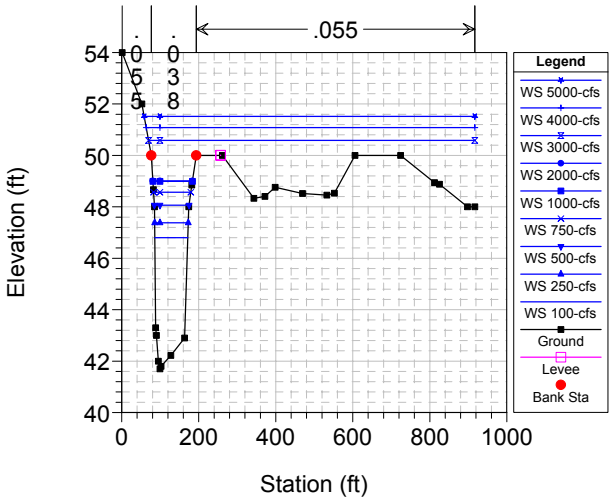
663 Plan: 663 Lidar w soundings 11/16/2005

RS = 13 Depth sounder readings (to ~15' from left bank) included, XS app



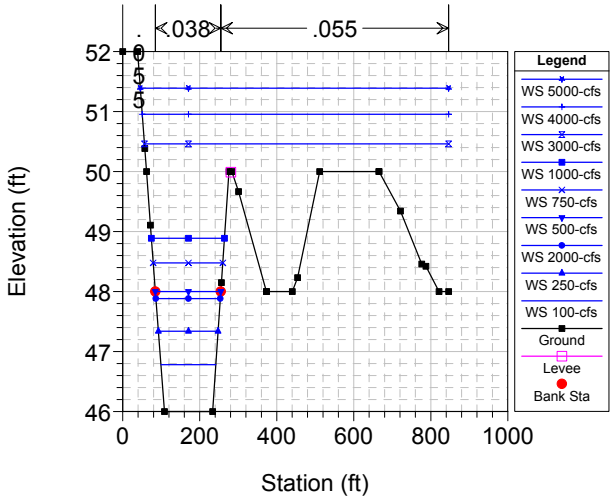
663 Plan: 663 Lidar w soundings 11/16/2005

RS = 12 Depth sounder readings (to ~15' from left bank) included, XS app



663 Plan: 663 Lidar w soundings 11/16/2005

RS = 11 add two points for 2-ft depth at riffle

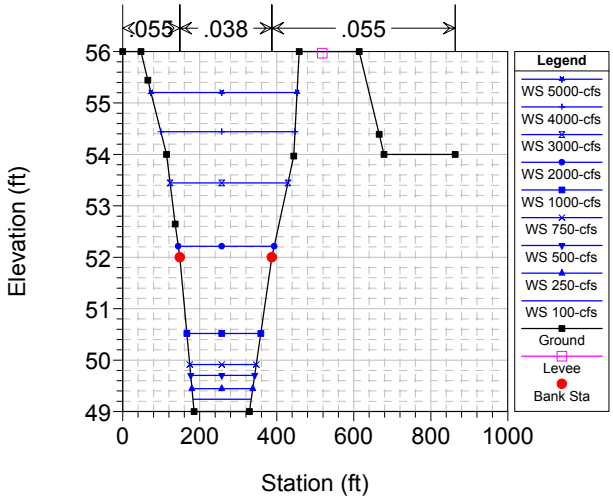


HEC-RAS Plan: 663 w sndgs River: Chilkat Reach: 663+00

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
663+00	11	100-cfs	100.00		46.00	46.78	46.27	46.80	0.000902	0.78	0.73	0.95	104.71	142.68	142.68	0.20	0.04
663+00	11	250-cfs	250.00		46.00	47.34	46.49	47.37	0.000901	1.34	1.21	1.33	187.74	155.22	155.22	0.21	0.07
663+00	11	500-cfs	500.00		46.00	48.00	46.77	48.04	0.000900	2.00	1.74	1.69	295.24	170.09	170.08	0.23	0.10
663+00	11	750-cfs	750.00		46.00	48.48	47.00	48.54	0.000901	2.48	2.21	1.99	378.79	180.77	170.08	0.24	0.12
663+00	11	1000-cfs	1000.00		46.00	48.89	47.21	48.97	0.000900	2.89	2.62	2.23	455.22	190.00	170.08	0.24	0.15
663+00	11	2000-cfs	2000.00		46.00	47.88	47.88	48.70	0.017813	1.88	1.64	7.27	275.28	167.43	167.43	1.00	1.83
663+00	11	3000-cfs	3000.00		46.00	50.46	48.40	50.57	0.000900	4.46	4.20	3.05	1548.17	790.02	170.08	0.26	0.24
663+00	11	4000-cfs	4000.00		46.00	50.95	48.87	51.07	0.000901	4.95	4.69	3.29	1939.03	795.70	170.08	0.27	0.26
663+00	11	5000-cfs	5000.00		46.00	51.39	49.29	51.52	0.000900	5.39	5.13	3.49	2286.53	800.71	170.08	0.27	0.29
663+00	12	100-cfs	100.00	181.00	41.70	46.80	42.61	46.80	0.000008	5.10	4.17	0.28	357.17	85.69	85.69	0.02	0.00
663+00	12	250-cfs	250.00	181.00	41.70	47.38	43.01	47.39	0.000033	5.68	4.67	0.61	407.26	87.29	87.29	0.05	0.01
663+00	12	500-cfs	500.00	181.00	41.70	48.07	43.43	48.08	0.000088	6.37	5.20	1.07	467.86	89.93	89.93	0.08	0.03
663+00	12	750-cfs	750.00	181.00	41.70	48.57	43.78	48.60	0.000158	6.87	5.31	1.46	514.39	96.88	96.88	0.11	0.05
663+00	12	1000-cfs	1000.00	181.00	41.70	48.99	44.08	49.04	0.000233	7.29	5.42	1.80	557.08	102.74	102.74	0.14	0.08
663+00	12	2000-cfs	2000.00	181.00	41.70	49.01	45.10	49.21	0.000925	7.31	5.43	3.58	558.80	102.98	102.98	0.27	0.30
663+00	12	3000-cfs	3000.00	181.00	41.70	50.59	45.96	50.69	0.000515	8.89	6.30	2.96	1787.24	847.03	116.85	0.21	0.20
663+00	12	4000-cfs	4000.00	181.00	41.70	51.08	46.71	51.19	0.000567	9.38	6.79	3.26	2207.90	853.06	116.85	0.22	0.23
663+00	12	5000-cfs	5000.00	181.00	41.70	51.52	47.38	51.64	0.000602	9.82	7.23	3.50	2582.39	858.39	116.85	0.23	0.26
663+00	13	100-cfs	100.00	450.00	40.00	46.80	41.42	46.81	0.000015	6.80	4.72	0.42	240.90	51.03	51.03	0.03	0.00
663+00	13	250-cfs	250.00	450.00	40.00	47.39	42.14	47.40	0.000068	7.39	5.17	0.92	271.15	52.47	52.47	0.07	0.02
663+00	13	500-cfs	500.00	450.00	40.00	48.08	42.96	48.12	0.000189	8.08	5.64	1.62	308.32	55.11	54.66	0.12	0.06
663+00	13	750-cfs	750.00	450.00	40.00	48.59	43.58	48.67	0.000346	8.59	5.74	2.22	338.23	61.97	58.78	0.16	0.12
663+00	13	1000-cfs	1000.00	450.00	40.00	49.04	44.08	49.15	0.000512	9.04	5.84	2.74	366.83	67.89	62.34	0.20	0.17
663+00	13	2000-cfs	2000.00	450.00	40.00	49.19	45.60	49.63	0.001926	9.19	5.88	5.35	377.17	69.91	63.55	0.39	0.66
663+00	13	3000-cfs	3000.00	450.00	40.00	50.66	46.84	50.90	0.001160	10.66	6.76	4.57	1372.13	956.19	70.12	0.31	0.46
663+00	13	4000-cfs	4000.00	450.00	40.00	51.17	47.91	51.39	0.001106	11.17	7.28	4.69	1866.31	961.31	70.12	0.31	0.47
663+00	13	5000-cfs	5000.00	450.00	40.00	51.62	49.10	51.82	0.001057	11.62	7.73	4.77	2299.87	965.79	70.12	0.30	0.48
663+00	14	100-cfs	100.00	724.00	39.20	46.81	40.15	46.81	0.000001	7.61	5.96	0.15	678.98	114.01	114.01	0.01	0.00
663+00	14	250-cfs	250.00	724.00	39.20	47.40	40.55	47.41	0.000006	8.20	6.46	0.33	747.67	115.83	115.83	0.02	0.00
663+00	14	500-cfs	500.00	724.00	39.20	48.13	41.06	48.14	0.000018	8.93	7.08	0.60	836.15	147.28	117.64	0.04	0.01
663+00	14	750-cfs	750.00	724.00	39.20	48.69	41.42	48.70	0.000032	9.49	7.63	0.83	930.93	191.32	117.64	0.05	0.01
663+00	14	1000-cfs	1000.00	724.00	39.20	49.18	41.73	49.19	0.000045	9.98	8.12	1.03	1031.68	220.24	117.64	0.06	0.02
663+00	14	2000-cfs	2000.00	724.00	39.20	49.71	42.66	49.76	0.000142	10.51	8.66	1.92	1155.19	243.29	117.64	0.11	0.07
663+00	14	3000-cfs	3000.00	724.00	39.20	50.93	43.40	50.99	0.000149	11.73	9.88	2.14	2456.52	1143.35	117.64	0.12	0.09
663+00	14	4000-cfs	4000.00	724.00	39.20	51.41	44.03	51.48	0.000189	12.21	10.35	2.49	3002.37	1147.44	117.64	0.14	0.12
663+00	14	5000-cfs	5000.00	724.00	39.20	51.83	44.62	51.92	0.000221	12.63	10.78	2.77	3487.66	1151.06	117.64	0.15	0.14
663+00	15	100-cfs	100.00	1238.00	46.00	46.78	46.38	46.82	0.002558	0.78	0.73	1.60	62.41	85.50	85.50	0.33	0.12
663+00	15	250-cfs	250.00	1238.00	46.00	47.37	46.69	47.44	0.002369	1.37	1.22	2.18	114.94	93.88	93.88	0.35	0.18
663+00	15	500-cfs	500.00	1238.00	46.00	48.09	47.08	48.20	0.002162	2.09	1.79	2.68	186.78	104.27	104.27	0.35	0.24
663+00	15	750-cfs	750.00	1238.00	46.00	48.65	47.41	48.79	0.002119	2.65	2.20	3.04	246.87	112.22	112.22	0.36	0.29
663+00	15	1000-cfs	1000.00	1238.00	46.00	49.14	47.68	49.31	0.002046	3.14	2.55	3.29	303.87	119.27	119.27	0.36	0.32
663+00	15	2000-cfs	2000.00	1238.00	46.00	49.63	48.59	50.10	0.004841	3.63	2.87	5.49	364.61	126.85	126.85	0.57	0.87
663+00	15	3000-cfs	3000.00	1238.00	46.00	50.87	49.31	51.33	0.004311	4.87	3.09	5.44	552.40	187.47	178.43	0.54	0.83
663+00	15	4000-cfs	4000.00	1238.00	46.00	51.29	49.95	51.92	0.004989	5.29	3.51	6.37	637.33	217.08	178.43	0.60	1.09
663+00	15	5000-cfs	5000.00	1238.00	46.00	51.64	50.64	52.44	0.005609	5.64	3.87	7.20	720.44	253.85	178.43	0.65	1.35

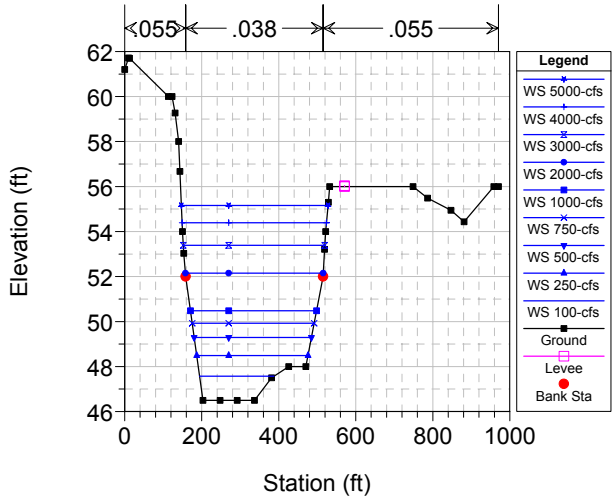
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 23 Add 2-points for 3-ft depth



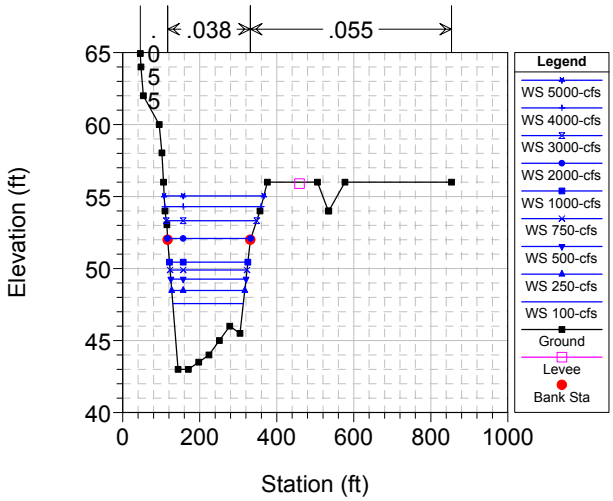
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 22 Boat based soundings proportioned across XS included



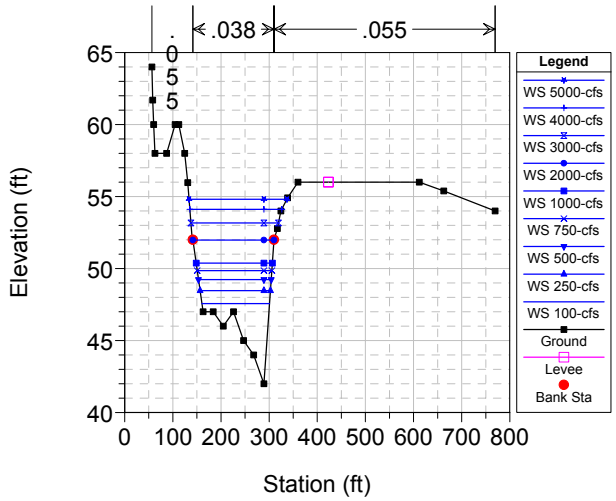
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 21 Boat based soundings proportioned across XS included



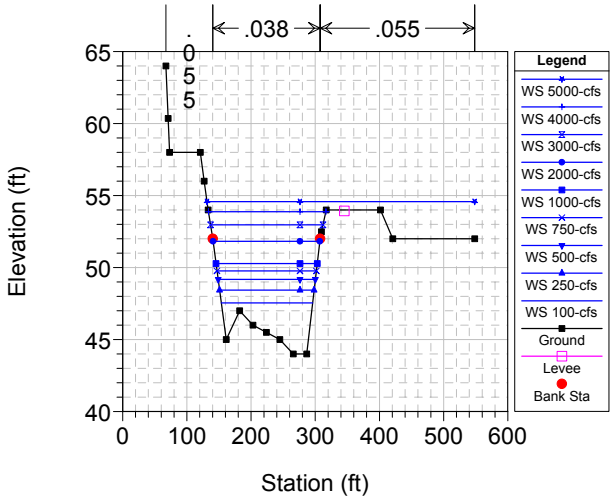
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 20 Boat based soundings proportioned across XS included



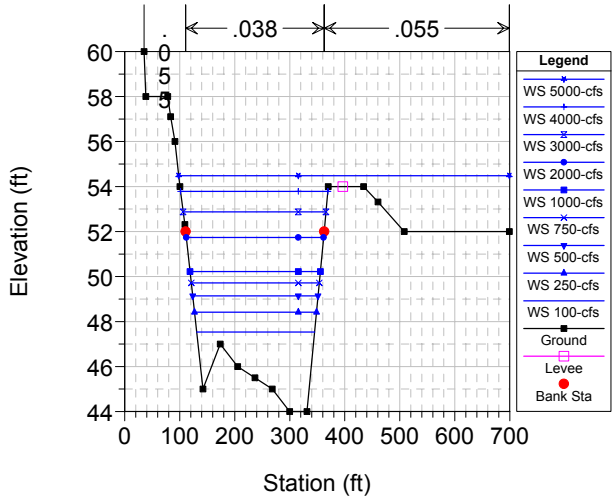
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 19 Boat based soundings proportioned across XS included



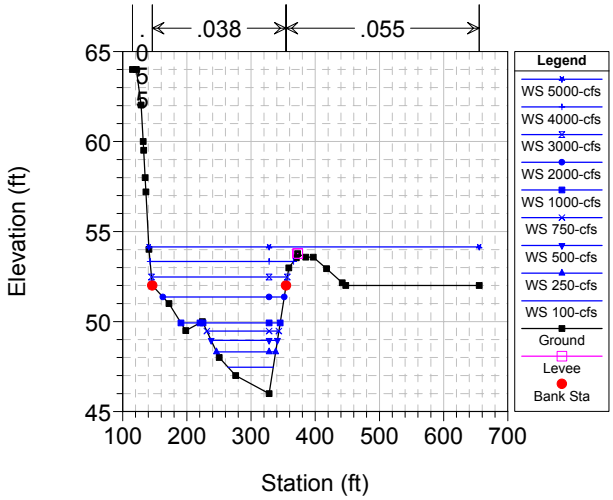
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 18 Boat based soundings proportioned across XS included



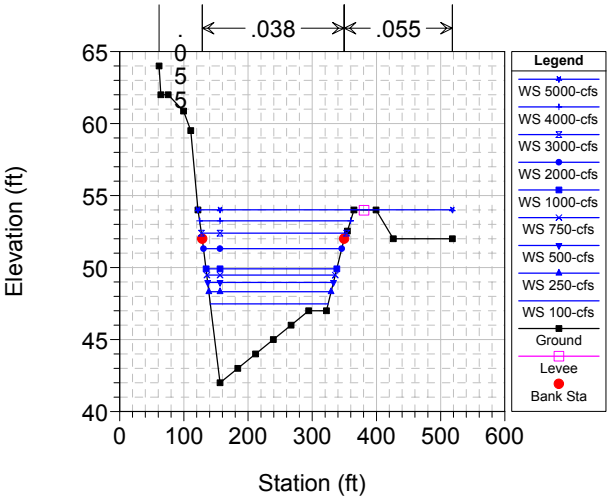
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 17 Boat based soundings proportioned across XS included



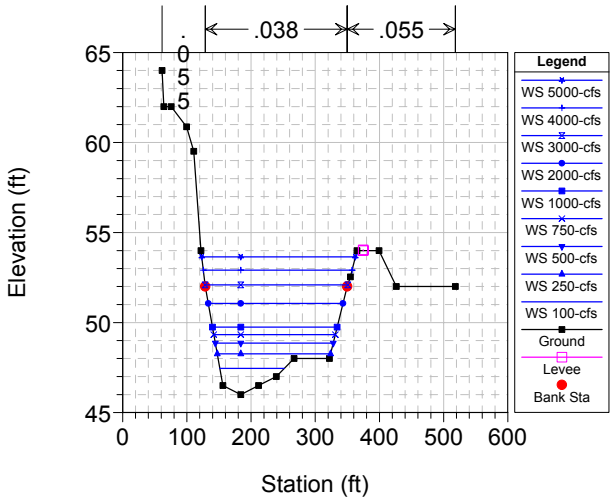
693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 16 Boat based soundings proportioned across XS included



693-730+00 Plan: 700+00 LIDAR w. Soundings 11/16/2005

RS = 15.5 Boat based soundings proportioned across XS included

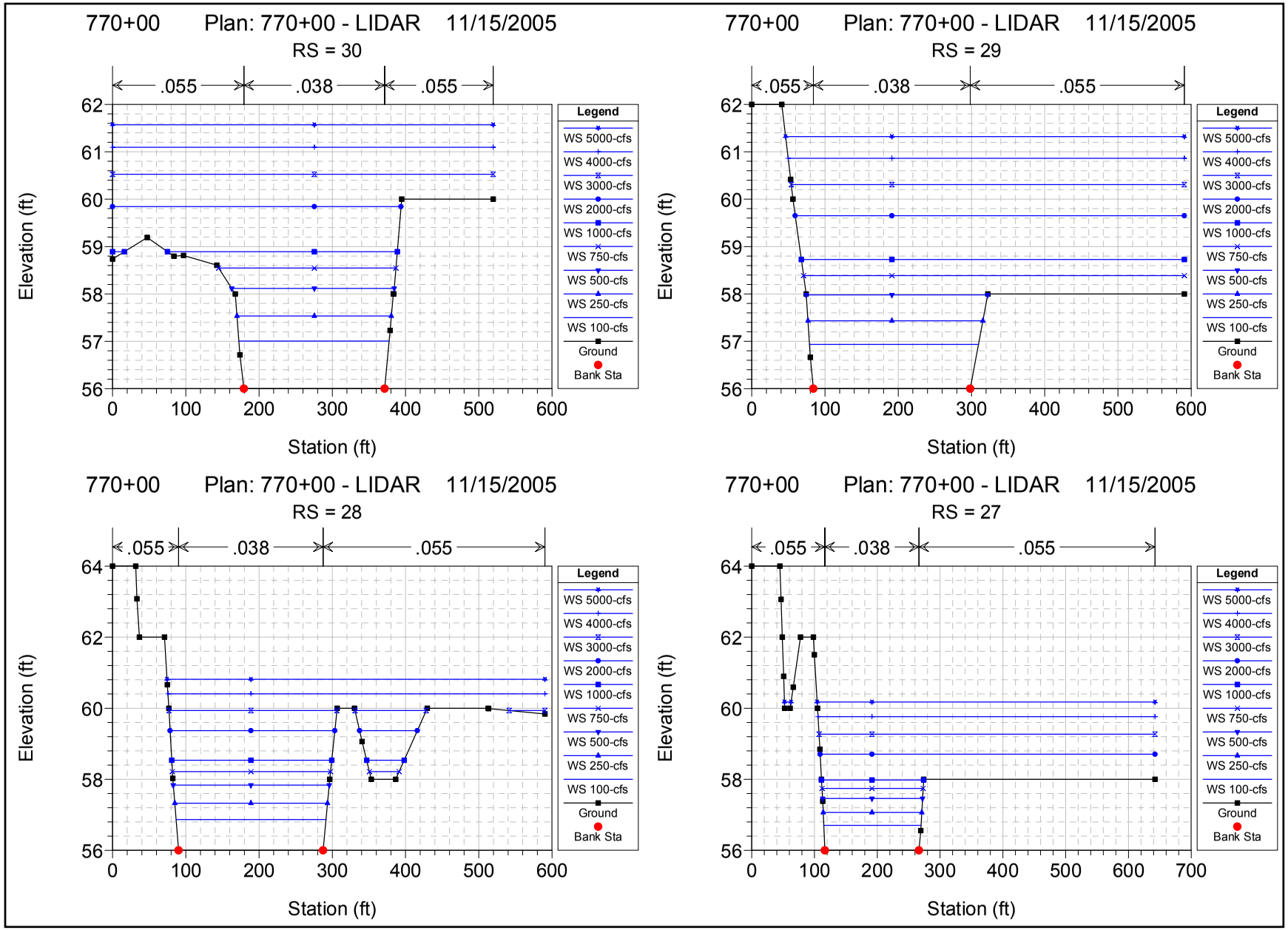


HEC-RAS Plan: 700 bathym River: Chilkat Reach: 700+00

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
700+00	15.5	100-cfs	100.00		46.00	47.45	46.73	47.47	0.000901	1.45	0.91	1.10	91.02	100.41	100.41	0.20	0.05
700+00	15.5	250-cfs	250.00		46.00	48.27	47.07	48.29	0.000901	2.27	1.12	1.26	197.73	176.59	176.59	0.21	0.06
700+00	15.5	500-cfs	500.00		46.00	48.86	47.46	48.90	0.000901	2.86	1.66	1.64	304.45	183.63	183.63	0.22	0.09
700+00	15.5	750-cfs	750.00		46.00	49.33	47.76	49.39	0.000901	3.33	2.08	1.91	393.07	189.28	189.28	0.23	0.12
700+00	15.5	1000-cfs	1000.00		46.00	49.75	48.14	49.82	0.000900	3.75	2.43	2.12	472.14	194.18	194.18	0.24	0.14
700+00	15.5	2000-cfs	2000.00		46.00	51.06	48.74	51.18	0.000901	5.06	3.52	2.71	738.19	209.84	209.84	0.25	0.20
700+00	15.5	3000-cfs	3000.00		46.00	52.10	49.23	52.25	0.000901	6.10	4.35	3.12	961.45	222.21	220.98	0.26	0.24
700+00	15.5	4000-cfs	4000.00		46.00	52.91	49.68	53.10	0.000902	6.91	5.17	3.50	1147.13	231.74	220.98	0.27	0.29
700+00	15.5	5000-cfs	5000.00		46.00	53.65	50.07	53.88	0.000901	7.65	5.90	3.82	1320.59	239.36	220.98	0.28	0.33
700+00	16	100-cfs	100.00	500.00	42.00	47.48	43.22	47.48	0.000009	5.48	2.55	0.21	467.46	183.54	183.54	0.02	0.00
700+00	16	250-cfs	250.00	500.00	42.00	48.32	43.76	48.32	0.000022	6.32	3.28	0.40	624.39	190.49	190.49	0.04	0.00
700+00	16	500-cfs	500.00	500.00	42.00	48.96	44.32	48.97	0.000049	6.96	3.82	0.67	747.76	195.79	195.79	0.06	0.01
700+00	16	750-cfs	750.00	500.00	42.00	49.47	44.73	49.48	0.000075	7.47	4.24	0.88	848.93	200.03	200.03	0.08	0.02
700+00	16	1000-cfs	1000.00	500.00	42.00	49.91	45.07	49.93	0.000098	7.91	4.61	1.07	938.00	203.68	203.68	0.09	0.03
700+00	16	2000-cfs	2000.00	500.00	42.00	51.31	46.04	51.35	0.000171	9.31	5.72	1.63	1230.35	215.25	215.25	0.12	0.06
700+00	16	3000-cfs	3000.00	500.00	42.00	52.39	46.75	52.45	0.000222	10.39	6.64	2.04	1468.05	225.96	220.98	0.14	0.09
700+00	16	4000-cfs	4000.00	500.00	42.00	53.25	47.39	53.34	0.000263	11.25	7.49	2.41	1665.44	235.17	220.98	0.16	0.12
700+00	16	5000-cfs	5000.00	500.00	42.00	54.01	47.79	54.12	0.000283	12.01	8.26	2.67	2061.60	396.15	220.98	0.16	0.14
700+00	17	100-cfs	100.00	917.00	46.00	47.46	46.95	47.51	0.002580	1.46	0.82	1.74	57.64	70.41	70.41	0.34	0.13
700+00	17	250-cfs	250.00	917.00	46.00	48.31	47.37	48.37	0.001634	2.31	1.39	1.96	127.53	92.02	92.02	0.29	0.14
700+00	17	500-cfs	500.00	917.00	46.00	48.95	47.84	49.06	0.002014	2.95	1.84	2.63	190.09	103.20	103.20	0.34	0.23
700+00	17	750-cfs	750.00	917.00	46.00	49.47	48.18	49.61	0.002156	3.47	2.19	3.05	245.66	112.20	112.20	0.36	0.29
700+00	17	1000-cfs	1000.00	917.00	46.00	49.93	48.48	50.09	0.002736	3.93	2.04	3.28	304.99	149.72	149.72	0.40	0.35
700+00	17	2000-cfs	2000.00	917.00	46.00	51.37	49.42	51.57	0.002082	5.37	2.91	3.63	551.09	189.24	189.24	0.37	0.38
700+00	17	3000-cfs	3000.00	917.00	46.00	52.47	50.25	52.70	0.001708	6.47	3.72	3.87	776.13	211.74	208.47	0.35	0.39
700+00	17	4000-cfs	4000.00	917.00	46.00	53.34	50.76	53.61	0.001510	7.34	4.58	4.18	962.82	223.52	208.47	0.34	0.43
700+00	17	5000-cfs	5000.00	917.00	46.00	54.15	51.21	54.35	0.001014	8.15	5.40	3.82	1677.42	514.68	208.47	0.29	0.34
700+00	18	100-cfs	100.00	1461.00	44.00	47.54	44.60	47.54	0.000012	3.54	2.13	0.22	455.55	214.33	214.33	0.03	0.00
700+00	18	250-cfs	250.00	1461.00	44.00	48.42	45.03	48.42	0.000024	4.42	2.92	0.39	647.12	221.74	221.74	0.04	0.00
700+00	18	500-cfs	500.00	1461.00	44.00	49.14	45.52	49.15	0.000046	5.14	3.56	0.62	810.01	227.85	227.85	0.06	0.01
700+00	18	750-cfs	750.00	1461.00	44.00	49.72	45.83	49.73	0.000064	5.72	4.05	0.80	943.30	232.73	232.73	0.07	0.02
700+00	18	1000-cfs	1000.00	1461.00	44.00	50.22	46.06	50.23	0.000079	6.22	4.48	0.94	1060.91	236.96	236.96	0.08	0.02
700+00	18	2000-cfs	2000.00	1461.00	44.00	51.74	46.75	51.77	0.000126	7.74	5.73	1.40	1429.86	249.74	249.74	0.10	0.04
700+00	18	3000-cfs	3000.00	1461.00	44.00	52.88	47.23	52.92	0.000156	8.88	6.81	1.75	1720.22	259.65	251.97	0.12	0.07
700+00	18	4000-cfs	4000.00	1461.00	44.00	53.78	47.63	53.85	0.000183	9.78	7.72	2.05	1959.13	267.81	251.97	0.13	0.09
700+00	18	5000-cfs	5000.00	1461.00	44.00	54.48	47.99	54.55	0.000185	10.48	8.42	2.19	2763.08	600.97	251.97	0.13	0.10
700+00	19	100-cfs	100.00	2058.00	44.00	47.55	44.77	47.55	0.000026	3.55	2.13	0.33	303.65	142.31	142.31	0.04	0.00
700+00	19	250-cfs	250.00	2058.00	44.00	48.43	45.32	48.44	0.000053	4.43	2.93	0.58	432.16	147.29	147.29	0.06	0.01
700+00	19	500-cfs	500.00	2058.00	44.00	49.17	45.83	49.19	0.000103	5.17	3.58	0.92	542.83	151.44	151.44	0.09	0.02
700+00	19	750-cfs	750.00	2058.00	44.00	49.77	46.17	49.79	0.000143	5.77	4.09	1.18	633.31	154.76	154.76	0.10	0.04
700+00	19	1000-cfs	1000.00	2058.00	44.00	50.28	46.44	50.31	0.000175	6.28	4.52	1.40	712.99	157.62	157.62	0.12	0.05
700+00	19	2000-cfs	2000.00	2058.00	44.00	51.82	47.24	51.88	0.000277	7.82	5.79	2.08	962.71	166.28	166.28	0.15	0.10
700+00	19	3000-cfs	3000.00	2058.00	44.00	52.97	47.82	53.07	0.000343	8.97	6.91	2.60	1159.03	175.27	167.30	0.17	0.15
700+00	19	4000-cfs	4000.00	2058.00	44.00	53.88	48.34	54.03	0.000401	9.88	7.82	3.05	1322.67	183.05	167.30	0.19	0.19
700+00	19	5000-cfs	5000.00	2058.00	44.00	54.58	48.81	54.74	0.000410	10.58	8.52	3.27	1861.52	417.18	167.30	0.20	0.21
700+00	20	100-cfs	100.00	2637.00	42.00	47.56	43.73	47.56	0.000032	5.56	2.02	0.35	283.63	140.49	140.49	0.04	0.00
700+00	20	250-cfs	250.00	2637.00	42.00	48.47	44.52	48.47	0.000061	6.47	2.83	0.61	413.12	146.20	146.20	0.06	0.01
700+00	20	500-cfs	500.00	2637.00	42.00	49.24	45.23	49.25	0.000113	7.24	3.49	0.95	527.63	151.08	151.08	0.09	0.02
700+00	20	750-cfs	750.00	2637.00	42.00	49.85	45.72	49.87	0.000152	7.85	4.01	1.21	621.58	154.96	154.96	0.11	0.04
700+00	20	1000-cfs	1000.00	2637.00	42.00	50.38	46.21	50.41	0.000184	8.38	4.45	1.42	704.37	158.30	158.30	0.12	0.05
700+00	20	2000-cfs	2000.00	2637.00	42.00	51.98	47.38	52.05	0.000280	9.98	5.73	2.07	965.82	168.43	168.43	0.15	0.10
700+00	20	3000-cfs	3000.00	2637.00	42.00	53.17	47.98	53.27	0.000336	11.17	6.92	2.57	1175.23	182.02	168.56	0.17	0.14

HEC-RAS Plan: 700 bathym River: Chilkat Reach: 700+00 (Continued)

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
700+00	20	4000-cfs	4000.00	2637.00	42.00	54.12	48.49	54.26	0.000387	12.12	7.87	3.01	1351.54	190.93	168.56	0.19	0.19
700+00	20	5000-cfs	5000.00	2637.00	42.00	54.81	48.97	55.00	0.000453	12.81	8.56	3.44	1489.07	203.13	168.56	0.21	0.24
700+00	21	100-cfs	100.00	3113.00	43.00	47.57	43.61	47.57	0.000005	4.57	3.10	0.18	567.90	183.27	183.27	0.02	0.00
700+00	21	250-cfs	250.00	3113.00	43.00	48.48	43.99	48.48	0.000012	5.48	3.89	0.34	738.14	189.76	189.76	0.03	0.00
700+00	21	500-cfs	500.00	3113.00	43.00	49.27	44.39	49.27	0.000028	6.27	4.56	0.56	889.95	195.37	195.37	0.05	0.01
700+00	21	750-cfs	750.00	3113.00	43.00	49.90	44.71	49.91	0.000041	6.90	5.08	0.74	1014.47	199.85	199.85	0.06	0.01
700+00	21	1000-cfs	1000.00	3113.00	43.00	50.44	44.98	50.46	0.000054	7.44	5.52	0.89	1124.03	203.71	203.71	0.07	0.02
700+00	21	2000-cfs	2000.00	3113.00	43.00	52.09	45.90	52.12	0.000095	9.09	6.84	1.36	1469.86	216.15	214.78	0.09	0.04
700+00	21	3000-cfs	3000.00	3113.00	43.00	53.32	46.45	53.37	0.000123	10.32	8.07	1.73	1746.21	234.92	214.78	0.11	0.06
700+00	21	4000-cfs	4000.00	3113.00	43.00	54.31	46.89	54.37	0.000148	11.31	9.06	2.05	1985.85	250.27	214.78	0.12	0.08
700+00	21	5000-cfs	5000.00	3113.00	43.00	55.05	47.31	55.13	0.000176	12.05	9.80	2.36	2174.76	258.76	214.78	0.13	0.11
700+00	22	100-cfs	100.00	3557.00	46.50	47.57	46.76	47.58	0.000250	1.07	0.90	0.58	173.73	193.42	193.42	0.11	0.01
700+00	22	250-cfs	250.00	3557.00	46.50	48.49	46.97	48.50	0.000159	1.99	1.40	0.62	405.37	289.05	289.05	0.09	0.01
700+00	22	500-cfs	500.00	3557.00	46.50	49.29	47.23	49.30	0.000147	2.79	2.11	0.78	642.33	304.44	304.44	0.09	0.02
700+00	22	750-cfs	750.00	3557.00	46.50	49.93	47.43	49.94	0.000142	3.43	2.65	0.89	840.39	316.72	316.72	0.10	0.02
700+00	22	1000-cfs	1000.00	3557.00	46.50	50.48	47.62	50.49	0.000140	3.98	3.11	0.98	1017.21	327.30	327.30	0.10	0.03
700+00	22	2000-cfs	2000.00	3557.00	46.50	52.15	48.22	52.17	0.000141	5.65	4.46	1.26	1590.87	357.81	356.63	0.10	0.04
700+00	22	3000-cfs	3000.00	3557.00	46.50	53.39	48.59	53.43	0.000140	6.89	5.70	1.47	2041.90	367.31	356.63	0.11	0.05
700+00	22	4000-cfs	4000.00	3557.00	46.50	54.39	48.91	54.44	0.000144	7.89	6.71	1.67	2413.56	374.77	356.63	0.11	0.06
700+00	22	5000-cfs	5000.00	3557.00	46.50	55.16	49.21	55.21	0.000157	8.66	7.47	1.87	2701.53	380.95	356.63	0.12	0.07
700+00	23	100-cfs	100.00	4016.00	49.00	49.24	49.24	49.36	0.036322	0.24	0.23	2.83	35.40	151.64	151.64	1.03	0.53
700+00	23	250-cfs	250.00	4016.00	49.00	49.45	49.45	49.66	0.028268	0.45	0.43	3.72	67.25	158.15	158.15	1.00	0.75
700+00	23	500-cfs	500.00	4016.00	49.00	49.70	49.70	50.03	0.023980	0.70	0.66	4.58	109.29	166.36	166.36	0.99	0.98
700+00	23	750-cfs	750.00	4016.00	49.00	49.91	49.91	50.33	0.022173	0.91	0.84	5.17	144.96	173.02	173.02	1.00	1.16
700+00	23	1000-cfs	1000.00	4016.00	49.00	50.52	50.11	50.76	0.006884	1.52	1.33	3.92	255.18	192.13	192.13	0.60	0.57
700+00	23	2000-cfs	2000.00	4016.00	49.00	52.21	50.70	52.37	0.001853	3.21	2.62	3.20	626.88	249.21	239.06	0.35	0.30
700+00	23	3000-cfs	3000.00	4016.00	49.00	53.44	51.18	53.60	0.001127	4.44	3.85	3.22	968.82	305.98	239.06	0.29	0.27
700+00	23	4000-cfs	4000.00	4016.00	49.00	54.44	51.60	54.61	0.000891	5.44	4.85	3.34	1295.67	348.47	239.06	0.27	0.27
700+00	23	5000-cfs	5000.00	4016.00	49.00	55.20	51.98	55.39	0.000822	6.20	5.61	3.54	1573.30	379.55	239.06	0.26	0.29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Station (ft)
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WS 4000-cfs
WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta
770+00 Plan: 770+00 - LIDAR 11/15/2005
RS = 29
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
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WS 4000-cfs
WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta
770+00 Plan: 770+00 - LIDAR 11/15/2005
RS = 28
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Station (ft)
Legend
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WS 250-cfs
WS 100-cfs
Ground
Bank Sta
770+00 Plan: 770+00 - LIDAR 11/15/2005
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.038
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Station (ft)
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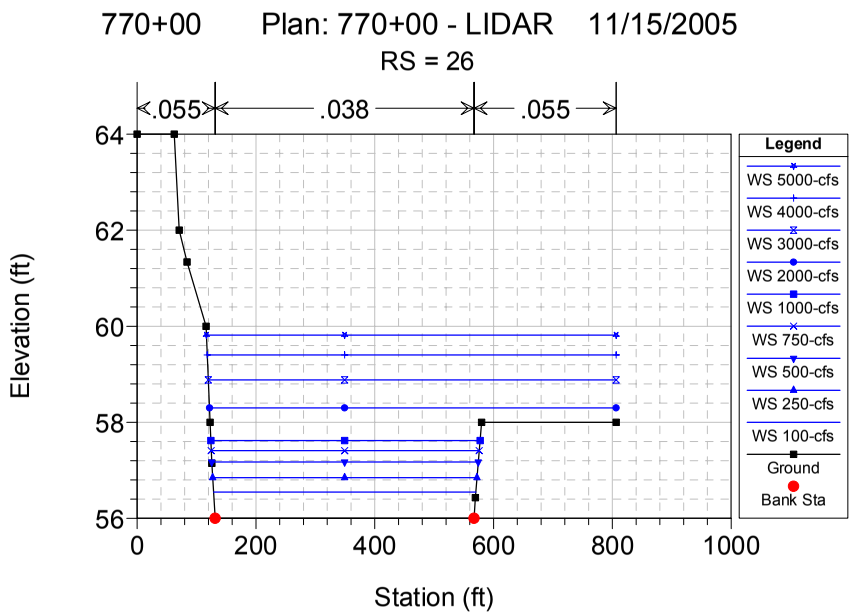
Ground
Bank Sta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Station (ft)
Legend
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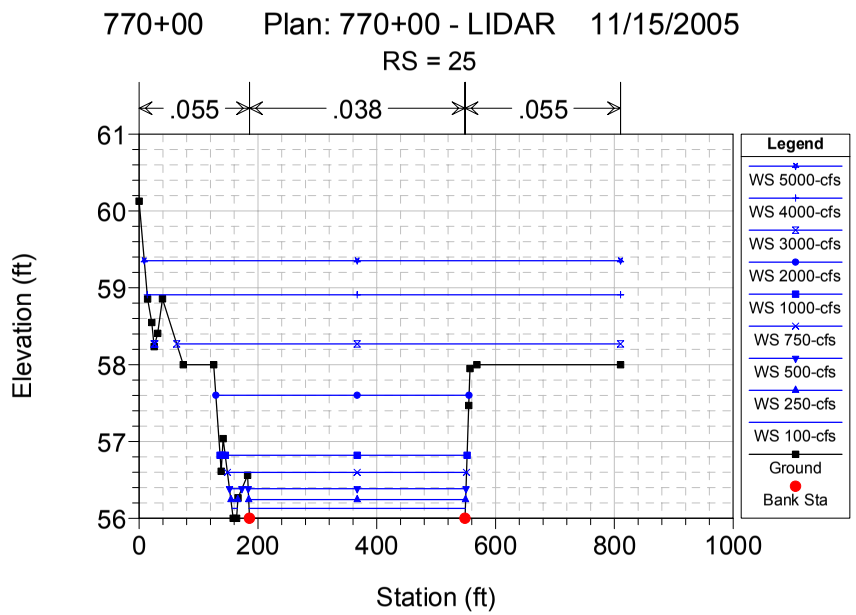
Ground
Bank Sta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Station (ft)
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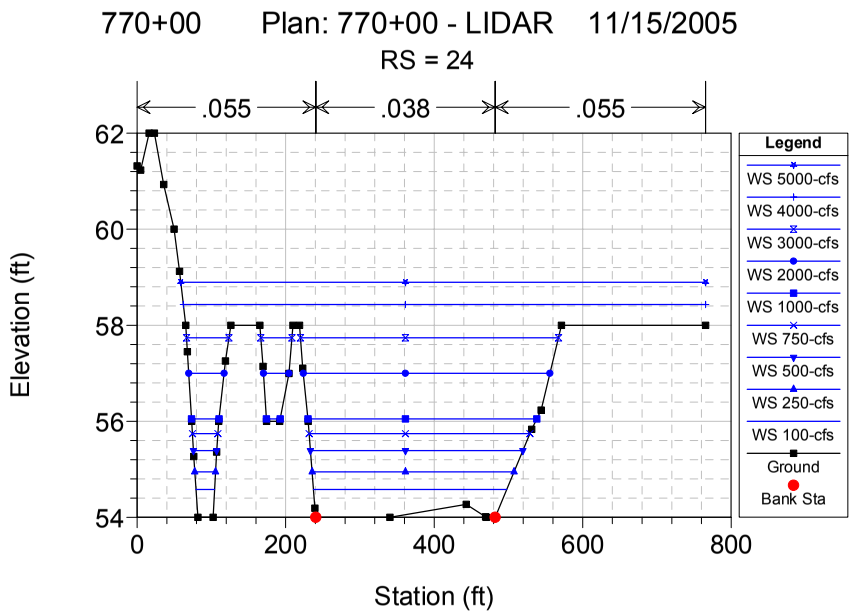
Ground
Bank Sta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Station (ft)
Legend
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WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
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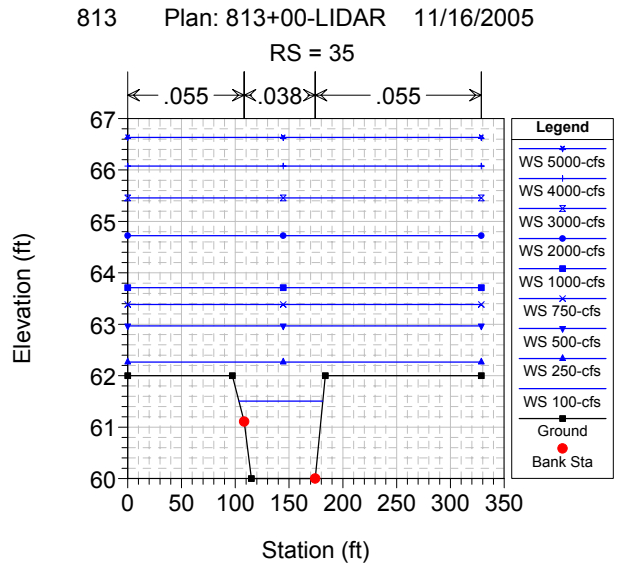
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta

HEC-RAS Plan: 770 LIDAR River: Chilkat Reach: 770+00

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
770+00	24	100-cfs	100.00		54.00	54.58	54.22	54.59	0.000902	0.58	0.51	0.75	140.85	285.28	241.56	0.18	0.03
770+00	24	250-cfs	250.00		54.00	54.95	54.37	54.96	0.000901	0.95	0.87	1.07	248.63	299.88	241.56	0.20	0.05
770+00	24	500-cfs	500.00		54.00	55.39	54.54	55.42	0.000901	1.39	1.32	1.41	385.05	317.32	241.56	0.22	0.07
770+00	24	750-cfs	750.00		54.00	55.74	54.69	55.78	0.000901	1.74	1.67	1.65	499.65	331.42	241.56	0.23	0.09
770+00	24	1000-cfs	1000.00		54.00	56.05	54.82	56.10	0.000901	2.05	1.97	1.85	603.64	363.52	241.56	0.23	0.11
770+00	24	2000-cfs	2000.00		54.00	57.00	55.26	57.08	0.000900	3.00	2.93	2.40	974.70	414.23	241.56	0.25	0.16
770+00	24	3000-cfs	3000.00		54.00	57.74	55.62	57.84	0.000901	3.74	3.66	2.79	1292.48	446.59	241.56	0.26	0.21
770+00	24	4000-cfs	4000.00		54.00	58.43	55.93	58.56	0.000901	4.43	4.36	3.13	1713.72	703.39	241.56	0.26	0.25
770+00	24	5000-cfs	5000.00		54.00	58.90	56.25	59.04	0.000900	4.90	4.82	3.35	2041.28	706.86	241.56	0.27	0.27
770+00	25	100-cfs	100.00	407.00	56.00	56.13	56.13	56.20	0.044458	0.13	0.13	2.11	47.88	372.86	362.68	1.03	0.36
770+00	25	250-cfs	250.00	407.00	56.00	56.24	56.24	56.36	0.033779	0.24	0.24	2.80	90.47	376.87	362.68	1.00	0.51
770+00	25	500-cfs	500.00	407.00	56.00	56.38	56.38	56.58	0.029101	0.38	0.38	3.53	144.53	387.26	362.68	1.00	0.70
770+00	25	750-cfs	750.00	407.00	56.00	56.60	56.50	56.77	0.014831	0.60	0.60	3.38	228.81	402.35	362.68	0.77	0.55
770+00	25	1000-cfs	1000.00	407.00	56.00	56.82	56.61	56.98	0.008984	0.82	0.82	3.25	319.27	410.45	362.68	0.63	0.46
770+00	25	2000-cfs	2000.00	407.00	56.00	57.60		57.76	0.003680	1.60	1.60	3.25	647.77	426.17	362.68	0.45	0.37
770+00	25	3000-cfs	3000.00	407.00	56.00	58.27		58.44	0.002538	2.27	2.27	3.40	1018.33	748.76	362.68	0.40	0.36
770+00	25	4000-cfs	4000.00	407.00	56.00	58.91		59.06	0.001699	2.91	2.91	3.28	1514.20	796.83	362.68	0.34	0.31
770+00	25	5000-cfs	5000.00	407.00	56.00	59.35		59.50	0.001489	3.35	3.35	3.38	1869.56	801.80	362.68	0.33	0.31
770+00	26	100-cfs	100.00	794.00	56.00	56.55		56.55	0.000255	0.55	0.55	0.42	240.23	441.38	435.54	0.10	0.01
770+00	26	250-cfs	250.00	794.00	56.00	56.85		56.85	0.000374	0.85	0.85	0.68	371.97	444.90	435.54	0.13	0.02
770+00	26	500-cfs	500.00	794.00	56.00	57.17		57.19	0.000498	1.17	1.17	0.97	519.07	448.74	435.54	0.16	0.04
770+00	26	750-cfs	750.00	794.00	56.00	57.41		57.43	0.000609	1.41	1.41	1.21	624.74	451.08	435.54	0.18	0.05
770+00	26	1000-cfs	1000.00	794.00	56.00	57.62		57.65	0.000680	1.62	1.62	1.41	719.42	453.17	435.54	0.19	0.07
770+00	26	2000-cfs	2000.00	794.00	56.00	58.30		58.36	0.000823	2.30	2.30	1.95	1097.38	684.37	435.54	0.23	0.12
770+00	26	3000-cfs	3000.00	794.00	56.00	58.88		58.96	0.000803	2.88	2.88	2.24	1497.83	686.38	435.54	0.23	0.14
770+00	26	4000-cfs	4000.00	794.00	56.00	59.40		59.49	0.000771	3.40	3.40	2.46	1853.99	688.17	435.54	0.23	0.16
770+00	26	5000-cfs	5000.00	794.00	56.00	59.81		59.92	0.000788	3.81	3.81	2.68	2138.51	689.59	435.54	0.24	0.19
770+00	27	100-cfs	100.00	1163.00	56.00	56.70		56.72	0.000930	0.70	0.70	0.94	107.12	154.88	149.91	0.20	0.04
770+00	27	250-cfs	250.00	1163.00	56.00	57.07		57.10	0.001435	1.07	1.07	1.55	163.90	156.96	149.91	0.26	0.10
770+00	27	500-cfs	500.00	1163.00	56.00	57.46		57.54	0.002012	1.46	1.46	2.26	225.76	159.25	149.91	0.33	0.18
770+00	27	750-cfs	750.00	1163.00	56.00	57.74		57.86	0.002489	1.74	1.74	2.82	271.26	161.12	149.91	0.38	0.27
770+00	27	1000-cfs	1000.00	1163.00	56.00	57.98		58.15	0.002887	1.98	1.98	3.31	309.45	162.67	149.91	0.41	0.36
770+00	27	2000-cfs	2000.00	1163.00	56.00	58.71		58.93	0.002914	2.71	2.71	4.10	688.64	533.38	149.91	0.44	0.49
770+00	27	3000-cfs	3000.00	1163.00	56.00	59.27		59.50	0.002657	3.27	3.27	4.44	989.60	535.16	149.91	0.43	0.54
770+00	27	4000-cfs	4000.00	1163.00	56.00	59.76		60.01	0.002460	3.76	3.76	4.69	1254.14	536.77	149.91	0.43	0.58
770+00	27	5000-cfs	5000.00	1163.00	56.00	60.17		60.44	0.002406	4.17	4.17	4.97	1476.99	548.51	149.91	0.43	0.63
770+00	28	100-cfs	100.00	1507.00	56.00	56.87		56.87	0.000266	0.87	0.87	0.58	174.35	204.70	197.38	0.11	0.01
770+00	28	250-cfs	250.00	1507.00	56.00	57.33		57.34	0.000398	1.33	1.33	0.94	269.47	208.59	197.38	0.14	0.03
770+00	28	500-cfs	500.00	1507.00	56.00	57.83		57.86	0.000537	1.83	1.83	1.36	376.37	212.87	197.38	0.18	0.06
770+00	28	750-cfs	750.00	1507.00	56.00	58.22		58.26	0.000636	2.22	2.22	1.68	466.22	256.48	197.38	0.20	0.09
770+00	28	1000-cfs	1000.00	1507.00	56.00	58.54		58.59	0.000707	2.54	2.54	1.93	550.45	269.65	197.38	0.21	0.11
770+00	28	2000-cfs	2000.00	1507.00	56.00	59.37		59.48	0.001033	3.37	3.37	2.82	788.57	303.60	197.38	0.27	0.22
770+00	28	3000-cfs	3000.00	1507.00	56.00	59.93		60.11	0.001325	3.93	3.93	3.55	969.21	375.37	197.38	0.32	0.33
770+00	28	4000-cfs	4000.00	1507.00	56.00	60.41		60.65	0.001568	4.41	4.41	4.16	1203.85	514.69	197.38	0.35	0.43
770+00	28	5000-cfs	5000.00	1507.00	56.00	60.82		61.10	0.001671	4.82	4.82	4.56	1415.43	515.97	197.38	0.37	0.50
770+00	29	100-cfs	100.00	1823.00	56.00	56.94		56.94	0.000172	0.94	0.94	0.49	208.31	230.71	214.17	0.09	0.01
770+00	29	250-cfs	250.00	1823.00	56.00	57.43		57.44	0.000256	1.43	1.43	0.79	324.77	238.79	214.17	0.12	0.02
770+00	29	500-cfs	500.00	1823.00	56.00	57.98		58.00	0.000342	1.98	1.98	1.14	457.64	247.69	214.17	0.14	0.04
770+00	29	750-cfs	750.00	1823.00	56.00	58.39		58.41	0.000382	2.39	2.39	1.36	663.66	519.76	214.17	0.16	0.06
770+00	29	1000-cfs	1000.00	1823.00	56.00	58.73		58.76	0.000389	2.73	2.73	1.50	840.59	522.83	214.17	0.16	0.07
770+00	29	2000-cfs	2000.00	1823.00	56.00	59.65		59.70	0.000457	3.65	3.65	1.98	1327.57	531.19	214.17	0.18	0.10
770+00	29	3000-cfs	3000.00	1823.00	56.00	60.31		60.38	0.000521	4.31	4.31	2.36	1678.55	536.60	214.17	0.20	0.14

HEC-RAS Plan: 770 LIDAR River: Chilkat Reach: 770+00 (Continued)

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
770+00	29	4000-cfs	4000.00	1823.00	56.00	60.86		60.95	0.000569	4.86	4.86	2.68	1977.45	540.83	214.17	0.21	0.17
770+00	29	5000-cfs	5000.00	1823.00	56.00	61.32		61.42	0.000622	5.32	5.32	2.97	2225.05	544.34	214.17	0.23	0.21
770+00	30	100-cfs	100.00	2236.00	56.00	57.01		57.01	0.000169	1.01	1.01	0.51	199.99	205.14	192.13	0.09	0.01
770+00	30	250-cfs	250.00	2236.00	56.00	57.54		57.55	0.000253	1.54	1.54	0.83	310.26	210.79	192.13	0.12	0.02
770+00	30	500-cfs	500.00	2236.00	56.00	58.12		58.14	0.000344	2.12	2.12	1.20	434.98	221.90	192.13	0.14	0.05
770+00	30	750-cfs	750.00	2236.00	56.00	58.55		58.58	0.000414	2.55	2.55	1.48	534.45	242.02	192.13	0.16	0.07
770+00	30	1000-cfs	1000.00	2236.00	56.00	58.89		58.94	0.000478	2.89	2.89	1.73	630.45	329.87	192.13	0.18	0.09
770+00	30	2000-cfs	2000.00	2236.00	56.00	59.84		59.93	0.000639	3.84	3.84	2.43	994.40	393.87	192.13	0.22	0.15
770+00	30	3000-cfs	3000.00	2236.00	56.00	60.53		60.64	0.000750	4.53	4.53	2.93	1328.63	519.66	192.13	0.24	0.21
770+00	30	4000-cfs	4000.00	2236.00	56.00	61.10		61.23	0.000798	5.10	5.10	3.27	1624.97	519.66	192.13	0.26	0.25
770+00	30	5000-cfs	5000.00	2236.00	56.00	61.57		61.73	0.000852	5.57	5.57	3.59	1871.53	519.66	192.13	0.27	0.30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.038
.055
Elevation (ft)
Station (ft)
Legend
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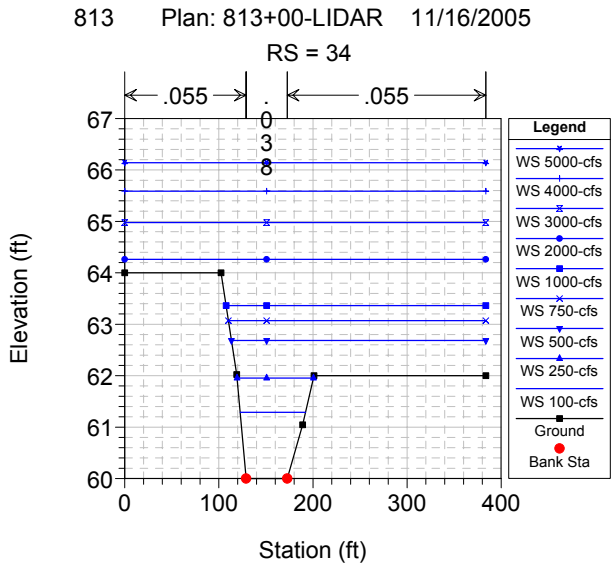
WS 4000-cfs
WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta


813 Plan: 813+00-LIDAR 11/16/2005
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.038
.055
Elevation (ft)
Station (ft)
Legend
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WS 4000-cfs
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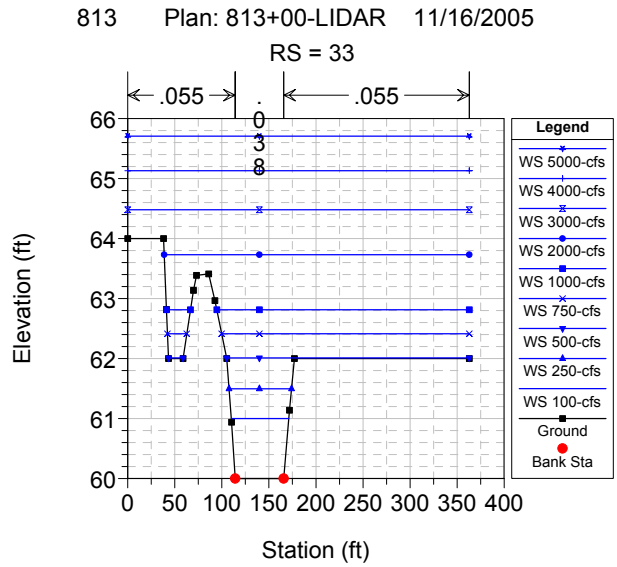
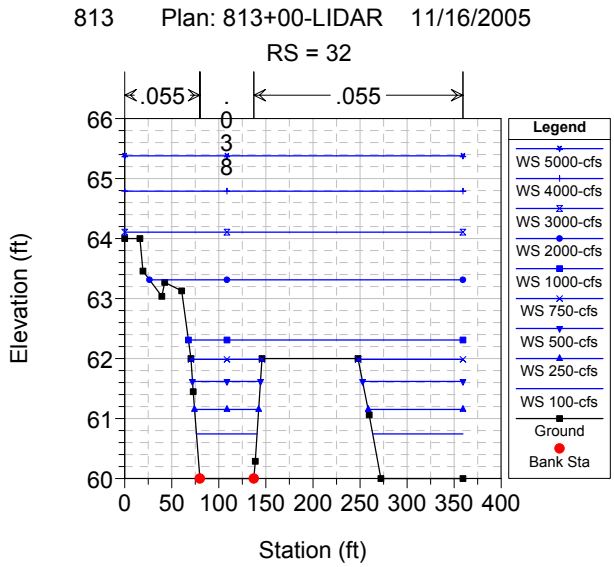
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta


813 Plan: 813+00-LIDAR 11/16/2005
RS = 33
.055
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 5000-cfs
WS 4000-cfs
WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta


813 Plan: 813+00-LIDAR 11/16/2005
RS = 32
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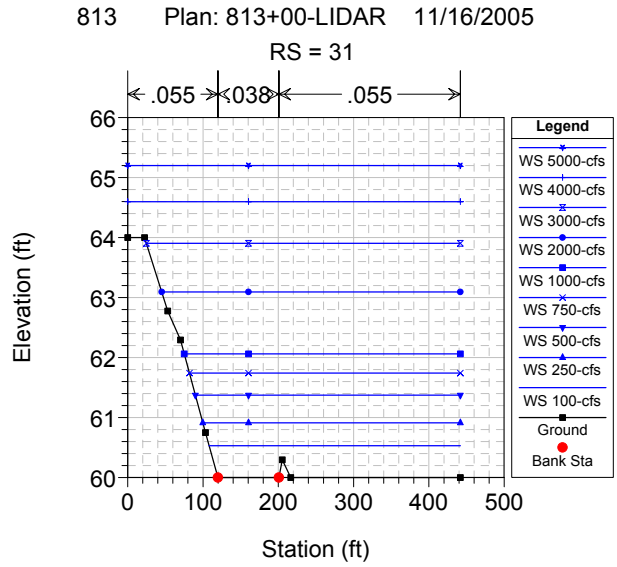
.038
.055
Elevation (ft)
Station (ft)
Legend
WS 5000-cfs
WS 4000-cfs
WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta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.038
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Elevation (ft)
Station (ft)
Legend
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WS 4000-cfs
WS 3000-cfs
WS 2000-cfs
WS 1000-cfs
WS 750-cfs
WS 500-cfs
WS 250-cfs
WS 100-cfs
Ground
Bank Sta

HEC-RAS Plan: 813 LIDAR River: Chilkat Reach: 813+00

Reach	River Sta	Profile	Q Total	Cum Ch Len	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Max Chl Dpth	Hydr Depth C	Vel Chnl	Flow Area	Top Width	Top W Chnl	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft/s)	(sq ft)	(ft)	(ft)		(lb/sq ft)
813+00	31	100-cfs	100.00		60.00	60.53	60.15	60.54	0.000901	0.53	0.53	0.77	171.75	333.76	80.92	0.19	0.03
813+00	31	250-cfs	250.00		60.00	60.91	60.28	60.92	0.000901	0.91	0.91	1.10	300.43	342.10	80.92	0.20	0.05
813+00	31	500-cfs	500.00		60.00	61.37	60.44	61.39	0.000900	1.37	1.37	1.45	460.20	351.95	80.92	0.22	0.08
813+00	31	750-cfs	750.00		60.00	61.74	60.58	61.77	0.000901	1.74	1.74	1.70	591.74	359.85	80.92	0.23	0.10
813+00	31	1000-cfs	1000.00		60.00	62.06	60.69	62.10	0.000900	2.06	2.06	1.90	708.19	366.71	80.92	0.23	0.12
813+00	31	2000-cfs	2000.00		60.00	63.09	61.09	63.15	0.000901	3.09	3.09	2.49	1101.13	396.63	80.92	0.25	0.17
813+00	31	3000-cfs	3000.00		60.00	63.90	61.42	63.98	0.000900	3.90	3.90	2.91	1431.83	417.03	80.92	0.26	0.22
813+00	31	4000-cfs	4000.00		60.00	64.60	61.72	64.70	0.000901	4.60	4.60	3.25	1736.04	441.79	80.92	0.27	0.26
813+00	31	5000-cfs	5000.00		60.00	65.20	61.99	65.31	0.000901	5.20	5.20	3.52	2001.32	441.79	80.92	0.27	0.29
813+00	32	100-cfs	100.00	209.00	60.00	60.74		60.76	0.001222	0.74	0.74	1.12	113.37	160.32	57.37	0.23	0.06
813+00	32	250-cfs	250.00	209.00	60.00	61.15		61.19	0.001740	1.15	1.15	1.79	180.50	168.88	57.37	0.29	0.13
813+00	32	500-cfs	500.00	209.00	60.00	61.62		61.69	0.002180	1.62	1.62	2.52	261.91	178.96	57.37	0.35	0.22
813+00	32	750-cfs	750.00	209.00	60.00	61.99		62.08	0.002436	1.99	1.99	3.05	328.87	186.69	57.37	0.38	0.30
813+00	32	1000-cfs	1000.00	209.00	60.00	62.31		62.45	0.003099	2.31	2.31	3.80	421.50	291.70	57.37	0.44	0.45
813+00	32	2000-cfs	2000.00	209.00	60.00	63.31		63.48	0.002502	3.31	3.31	4.34	721.98	332.96	57.37	0.42	0.52
813+00	32	3000-cfs	3000.00	209.00	60.00	64.11		64.30	0.002216	4.11	4.11	4.72	994.85	359.39	57.37	0.41	0.57
813+00	32	4000-cfs	4000.00	209.00	60.00	64.79		65.00	0.002034	4.79	4.79	5.01	1240.06	359.39	57.37	0.40	0.61
813+00	32	5000-cfs	5000.00	209.00	60.00	65.38		65.62	0.001953	5.38	5.38	5.31	1452.26	359.39	57.37	0.40	0.66
813+00	33	100-cfs	100.00	383.00	60.00	61.00		61.05	0.002276	1.00	1.00	1.87	56.29	61.02	51.61	0.33	0.14
813+00	33	250-cfs	250.00	383.00	60.00	61.50		61.64	0.003579	1.50	1.50	3.06	87.88	66.35	51.61	0.44	0.33
813+00	33	500-cfs	500.00	383.00	60.00	62.01	61.39	62.33	0.005503	2.01	2.01	4.62	125.49	273.31	51.61	0.57	0.69
813+00	33	750-cfs	750.00	383.00	60.00	62.41		62.73	0.004907	2.41	2.41	4.93	237.69	283.60	51.61	0.56	0.74
813+00	33	1000-cfs	1000.00	383.00	60.00	62.81		63.07	0.003722	2.81	2.81	4.75	353.07	293.81	51.61	0.50	0.65
813+00	33	2000-cfs	2000.00	383.00	60.00	63.73		64.00	0.003286	3.73	3.73	5.39	637.42	324.13	51.61	0.49	0.77
813+00	33	3000-cfs	3000.00	383.00	60.00	64.48		64.77	0.002948	4.48	4.48	5.77	898.61	362.90	51.61	0.48	0.82
813+00	33	4000-cfs	4000.00	383.00	60.00	65.13		65.43	0.002643	5.13	5.13	5.98	1134.86	362.90	51.61	0.47	0.85
813+00	33	5000-cfs	5000.00	383.00	60.00	65.71		66.02	0.002476	5.71	5.71	6.21	1343.71	362.90	51.61	0.46	0.88
813+00	34	100-cfs	100.00	554.00	60.00	61.29		61.32	0.001149	1.29	1.29	1.57	73.26	69.51	43.70	0.24	0.09
813+00	34	250-cfs	250.00	554.00	60.00	61.95		62.03	0.001600	1.95	1.95	2.44	123.42	81.21	43.70	0.31	0.20
813+00	34	500-cfs	500.00	554.00	60.00	62.68		62.77	0.001361	2.68	2.68	2.79	310.10	270.16	43.70	0.30	0.23
813+00	34	750-cfs	750.00	554.00	60.00	63.07		63.17	0.001446	3.07	3.07	3.14	414.99	273.41	43.70	0.32	0.28
813+00	34	1000-cfs	1000.00	554.00	60.00	63.36		63.47	0.001577	3.36	3.36	3.49	495.45	275.88	43.70	0.33	0.33
813+00	34	2000-cfs	2000.00	554.00	60.00	64.26		64.44	0.001962	4.26	4.26	4.55	773.85	383.62	43.70	0.39	0.52
813+00	34	3000-cfs	3000.00	554.00	60.00	64.98		65.18	0.001947	4.98	4.98	5.03	1047.78	383.62	43.70	0.40	0.60
813+00	34	4000-cfs	4000.00	554.00	60.00	65.59		65.81	0.001930	5.59	5.59	5.41	1281.67	383.62	43.70	0.40	0.67
813+00	34	5000-cfs	5000.00	554.00	60.00	66.14		66.39	0.001905	6.14	6.14	5.72	1494.05	383.62	43.70	0.41	0.73
813+00	35	100-cfs	100.00	855.00	60.00	61.50		61.52	0.000414	1.50	1.45	1.02	101.99	78.01	66.11	0.15	0.04
813+00	35	250-cfs	250.00	855.00	60.00	62.27		62.30	0.000542	2.27	2.21	1.54	230.14	328.74	66.11	0.18	0.07
813+00	35	500-cfs	500.00	855.00	60.00	62.97		63.00	0.000486	2.97	2.91	1.76	461.31	328.74	66.11	0.18	0.09
813+00	35	750-cfs	750.00	855.00	60.00	63.38		63.43	0.000547	3.38	3.33	2.04	597.63	328.74	66.11	0.20	0.11
813+00	35	1000-cfs	1000.00	855.00	60.00	63.71		63.76	0.000609	3.71	3.66	2.29	705.40	328.74	66.11	0.21	0.14
813+00	35	2000-cfs	2000.00	855.00	60.00	64.72		64.81	0.000772	4.72	4.67	3.03	1037.31	328.74	66.11	0.25	0.22
813+00	35	3000-cfs	3000.00	855.00	60.00	65.46		65.57	0.000910	5.46	5.40	3.63	1278.92	328.74	66.11	0.28	0.31
813+00	35	4000-cfs	4000.00	855.00	60.00	66.08		66.23	0.001018	6.08	6.02	4.13	1482.86	328.74	66.11	0.30	0.38
813+00	35	5000-cfs	5000.00	855.00	60.00	66.63		66.82	0.001102	6.63	6.58	4.55	1665.84	328.74	66.11	0.31	0.45