

Current Downstream Model – 10 year to 100 year storm event

Plan

Profile

Summary

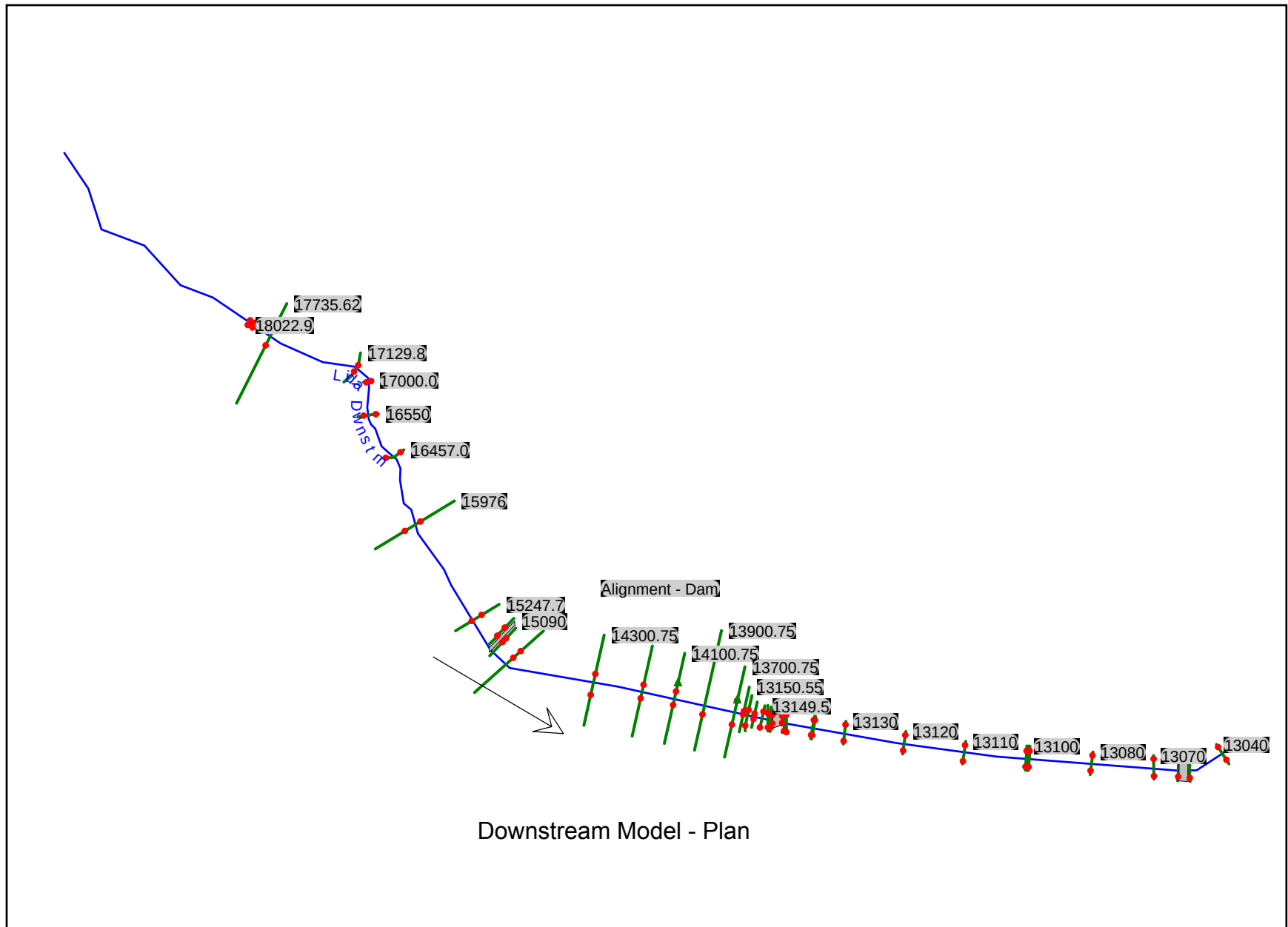
Cross Sections

Input/output Report

Hydraulics Model – HEC-RAS Analysis (CD)

Current Downstream Files

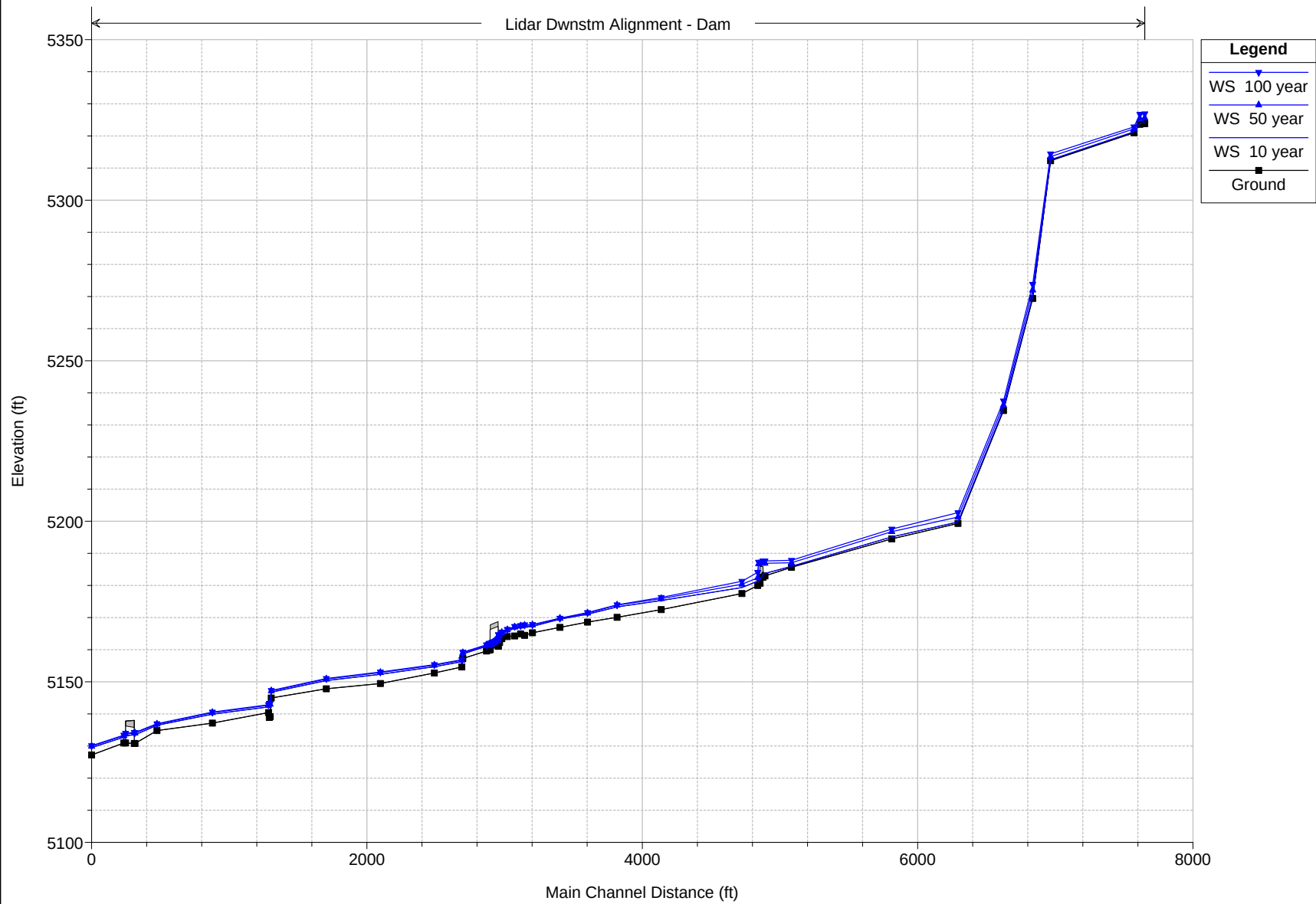
i.Project:	Boca Negra Arroyo– Current Downstream BNADwstn-.prj	
ii.Plan:	Current Downstream 2015	BNADwstn-.p10
iii.Geometry:	Current Downstream 2015	BNADwstn-.g07
iv.Flow:	Updated 2015 - Downstream	BNADwstn-.f07



Boca Negra Arroyo-Current Downstream Plan: Current Downstream 2015 1/5/2016

Geom: Current Downstream

Lidar Dwnstm Alignment - Dam



HEC-RAS Plan: Dwnstm15 River: Lidar Dwnstm Reach: Alignment - Dam

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
Alignment - Dam	18022.9	10 year	10.00	5323.80	5324.08	5324.08	5324.21	0.004021	2.97	3.37	12.54	1.01
Alignment - Dam	18022.9	50 year	234.00	5323.80	5325.60	5325.60	5326.22	0.002632	6.34	36.90	29.99	1.01
Alignment - Dam	18022.9	100 year	695.00	5323.80	5326.91	5326.91	5328.20	0.002278	9.10	76.37	29.99	1.00
Alignment - Dam	17987.1	10 year	10.00	5323.62	5323.90	5323.90	5324.03	0.003927	2.94	3.40	12.54	1.00
Alignment - Dam	17987.1	50 year	234.00	5323.62	5325.41	5325.41	5326.04	0.002662	6.36	36.77	29.99	1.01
Alignment - Dam	17987.1	100 year	695.00	5323.62	5326.74	5326.74	5328.02	0.002254	9.07	76.64	29.99	1.00
Alignment - Dam	17735.62	10 year	10.00	5321.00	5321.30	5321.30	5321.38	0.031946	2.36	4.24	24.45	1.00
Alignment - Dam	17735.62	50 year	234.00	5321.00	5322.23	5322.08	5322.45	0.011578	3.77	62.03	82.59	0.77
Alignment - Dam	17735.62	100 year	695.00	5321.00	5322.81	5322.79	5323.34	0.016567	5.83	119.27	108.22	0.98
Alignment - Dam	17129.8	10 year	10.00	5312.30	5312.58	5312.58	5312.66	0.029352	2.36	4.24	23.02	0.97
Alignment - Dam	17129.8	50 year	234.00	5312.30	5313.55	5313.55	5313.96	0.017219	5.21	46.11	61.27	0.96
Alignment - Dam	17129.8	100 year	695.00	5312.30	5314.43	5314.43	5315.05	0.011505	6.70	119.60	100.14	0.88
Alignment - Dam	17000.0	10 year	10.00	5269.36	5270.00	5270.00	5270.19	0.052086	3.49	2.86	7.61	1.00
Alignment - Dam	17000.0	50 year	234.00	5269.36	5272.02	5272.02	5272.86	0.033578	7.36	31.79	19.35	1.01
Alignment - Dam	17000.0	100 year	695.00	5269.36	5273.82	5273.82	5275.19	0.028670	9.36	74.22	27.59	1.01
Alignment - Dam	16550	10 year	10.00	5234.48	5234.90	5234.90	5235.01	0.029739	2.59	3.86	18.36	0.99
Alignment - Dam	16550	50 year	234.00	5234.48	5236.16	5236.16	5236.76	0.017424	6.21	37.69	32.02	1.01
Alignment - Dam	16550	100 year	695.00	5234.48	5237.45	5237.45	5238.48	0.014622	8.12	85.55	42.35	1.01
Alignment - Dam	16457.0	10 year	10.00	5199.33	5199.79		5199.87	0.015381	2.24	4.46	16.04	0.75
Alignment - Dam	16457.0	50 year	234.00	5199.33	5201.32	5201.09	5201.71	0.010341	5.03	46.56	36.79	0.79
Alignment - Dam	16457.0	100 year	695.00	5199.33	5202.71	5202.32	5203.11	0.008900	5.10	136.33	94.36	0.75
Alignment - Dam	15976	10 year	10.00	5194.51	5195.13	5194.97	5195.18	0.006723	1.81	5.53	14.72	0.52
Alignment - Dam	15976	50 year	234.00	5194.51	5196.79	5196.53	5197.02	0.009054	3.87	60.50	64.26	0.70
Alignment - Dam	15976	100 year	695.00	5194.51	5197.56	5197.40	5198.12	0.012124	6.03	115.21	78.18	0.88
Alignment - Dam	15247.7	10 year	10.00	5185.66	5185.95	5185.95	5186.05	0.031072	2.44	4.10	21.99	1.00
Alignment - Dam	15247.7	50 year	234.00	5185.66	5187.06	5187.06	5187.43	0.020768	4.90	47.77	66.54	1.02
Alignment - Dam	15247.7	100 year	695.00	5185.66	5187.85	5187.85	5188.49	0.014488	6.44	111.57	95.01	0.95
Alignment - Dam	15100	10 year	10.00	5183.00	5183.76	5183.53	5183.82	0.005784	2.03	4.91	9.60	0.50
Alignment - Dam	15100	50 year	234.00	5183.00	5186.94	5184.96	5186.95	0.000142	0.94	269.44	135.26	0.10
Alignment - Dam	15100	100 year	695.00	5183.00	5187.66	5185.64	5187.72	0.000487	2.07	395.10	207.98	0.20
Alignment - Dam	15090		Culvert									

HEC-RAS Plan: Dwnstm15 River: Lidar Dwnstm Reach: Alignment - Dam (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
Alignment - Dam	15080	10 year	10.00	5180.00	5181.34		5181.35	0.000278	0.66	15.07	16.24	0.12
Alignment - Dam	15080	50 year	234.00	5180.00	5182.36	5182.29	5183.07	0.014471	6.73	34.76	22.23	0.95
Alignment - Dam	15080	100 year	695.00	5180.00	5184.11	5184.11	5185.11	0.010626	8.09	91.42	59.42	0.88
Alignment - Dam	14886.4	10 year	270.00	5177.49	5179.37	5179.37	5180.01	0.017082	6.42	42.05	33.49	1.01
Alignment - Dam	14886.4	50 year	635.00	5177.49	5180.40	5180.40	5181.34	0.014988	7.78	81.60	44.04	1.01
Alignment - Dam	14886.4	100 year	1110.00	5177.49	5181.32	5181.32	5182.51	0.013818	8.74	127.00	54.13	1.01
Alignment - Dam	14300.75	10 year	643.00	5172.48	5175.32		5175.60	0.004430	4.19	153.49	84.77	0.55
Alignment - Dam	14300.75	50 year	948.00	5172.48	5175.90		5176.23	0.004371	4.59	206.52	98.42	0.56
Alignment - Dam	14300.75	100 year	1147.00	5172.48	5176.26		5176.61	0.004246	4.71	243.50	109.21	0.56
Alignment - Dam	14200	10 year	643.00	5170.08	5173.31		5173.75	0.007671	5.27	121.96	71.92	0.71
Alignment - Dam	14200	50 year	948.00	5170.08	5173.87	5173.37	5174.37	0.007875	5.67	167.66	105.86	0.73
Alignment - Dam	14200	100 year	1147.00	5170.08	5173.99	5173.69	5174.63	0.009301	6.42	180.80	112.12	0.81
Alignment - Dam	14100.75	10 year	682.00	5168.60	5171.02	5170.94	5171.59	0.013203	6.06	112.52	81.06	0.91
Alignment - Dam	14100.75	50 year	992.00	5168.60	5171.38	5171.38	5172.11	0.014069	6.86	146.75	161.37	0.96
Alignment - Dam	14100.75	100 year	1149.00	5168.60	5171.59	5171.59	5172.33	0.012330	6.96	171.35	183.18	0.91
Alignment - Dam	13900.75	10 year	682.00	5166.95	5169.51	5169.16	5169.62	0.006731	2.75	247.89	352.93	0.58
Alignment - Dam	13900.75	50 year	992.00	5166.95	5169.74	5169.39	5169.87	0.005919	2.95	336.01	390.82	0.56
Alignment - Dam	13900.75	100 year	1149.00	5166.95	5169.84	5169.49	5169.98	0.005603	3.07	374.57	394.73	0.55
Alignment - Dam	13700.75	10 year	682.00	5165.29	5167.26	5167.18	5167.73	0.013527	5.47	124.61	106.68	0.89
Alignment - Dam	13700.75	50 year	992.00	5165.29	5167.67	5167.54	5168.19	0.012250	5.76	172.32	126.96	0.87
Alignment - Dam	13700.75	100 year	1149.00	5165.29	5167.85	5167.70	5168.39	0.011479	5.89	195.11	132.31	0.85
Alignment - Dam	13150.55	10 year	682.00	5164.49	5167.11		5167.29	0.003510	4.35	216.46	163.63	0.51
Alignment - Dam	13150.55	50 year	992.00	5164.49	5167.57		5167.77	0.003203	4.69	294.90	187.57	0.50
Alignment - Dam	13150.55	100 year	1149.00	5164.49	5167.76		5167.98	0.003175	4.89	332.41	202.42	0.50
Alignment - Dam	13150.54	10 year	682.00	5164.94	5166.92		5167.16	0.004992	4.03	175.78	127.91	0.57
Alignment - Dam	13150.54	50 year	992.00	5164.94	5167.35		5167.65	0.004447	4.48	236.22	151.80	0.56
Alignment - Dam	13150.54	100 year	1149.00	5164.94	5167.53		5167.86	0.004375	4.71	264.19	162.93	0.56
Alignment - Dam	13150	10 year	682.00	5164.30	5166.62	5166.23	5166.93	0.005426	5.03	159.22	105.50	0.62
Alignment - Dam	13150	50 year	992.00	5164.30	5167.05	5166.58	5167.43	0.005262	5.62	215.63	152.75	0.63
Alignment - Dam	13150	100 year	1149.00	5164.30	5167.26	5166.66	5167.65	0.004857	5.70	248.10	156.53	0.61

HEC-RAS Plan: Dwnstm15 River: Lidar Dwnstm Reach: Alignment - Dam (Continued)

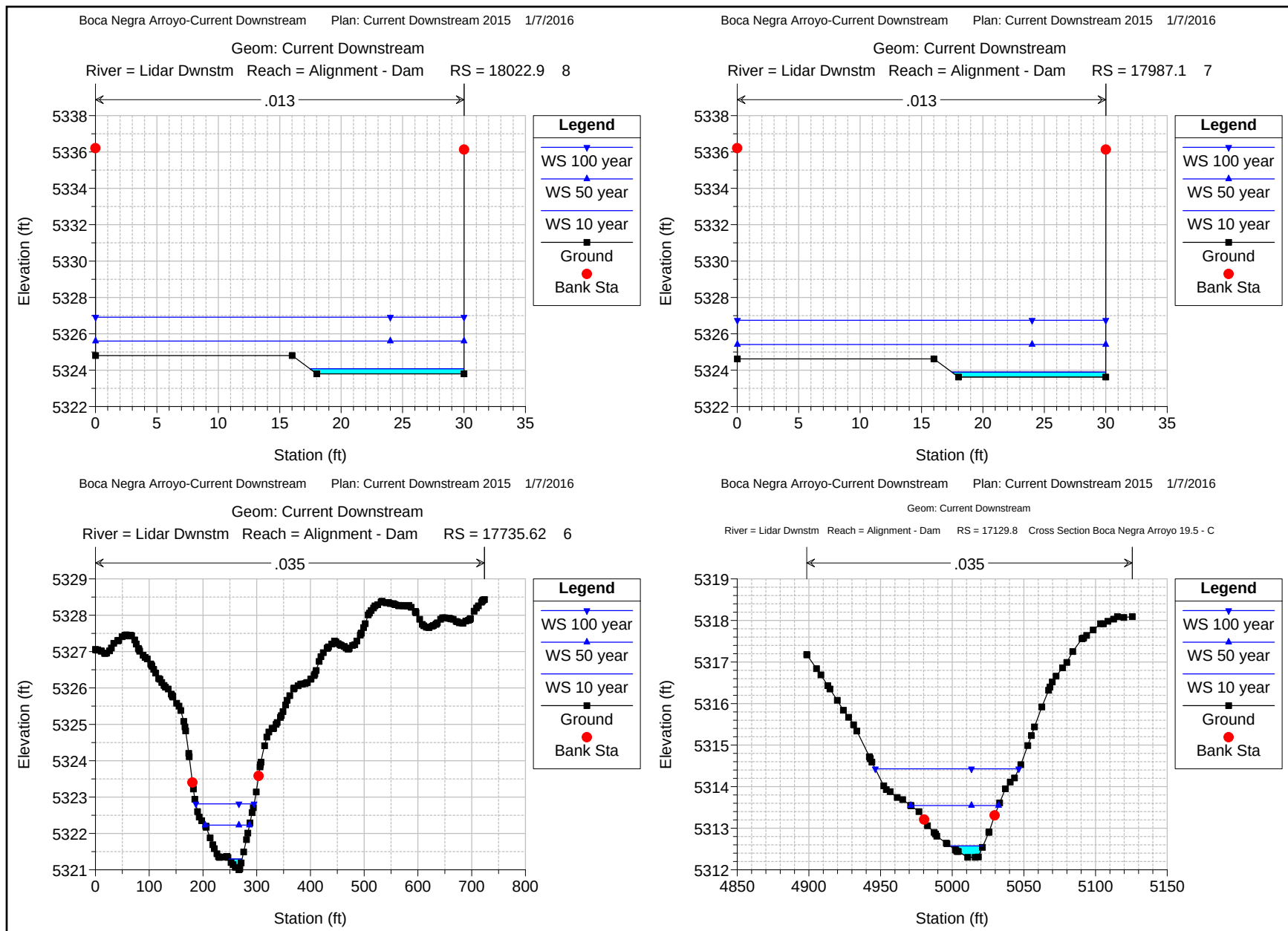
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Alignment - Dam	13149.5	10 year	682.00	5164.10	5165.80	5165.80	5166.43	0.016931	6.35	107.38	86.91	1.01
Alignment - Dam	13149.5	50 year	992.00	5164.10	5166.17	5166.17	5166.95	0.015734	7.06	140.55	91.86	1.01
Alignment - Dam	13149.5	100 year	1149.00	5164.10	5166.34	5166.34	5167.18	0.015442	7.37	155.85	94.06	1.01
Alignment - Dam	13149	10 year	682.00	5163.46	5164.94	5164.94	5165.62	0.002272	6.61	103.14	76.47	1.00
Alignment - Dam	13149	50 year	992.00	5163.46	5165.33	5165.33	5166.19	0.002115	7.45	133.13	78.04	1.01
Alignment - Dam	13149	100 year	1149.00	5163.46	5165.51	5165.51	5166.46	0.002074	7.83	146.83	78.74	1.01
Alignment - Dam	13148.5	10 year	682.00	5162.28	5163.87	5163.87	5164.57	0.002275	6.71	101.68	73.82	1.01
Alignment - Dam	13148.5	50 year	992.00	5162.28	5164.27	5164.27	5165.15	0.002085	7.52	131.97	75.46	1.00
Alignment - Dam	13148.5	100 year	1149.00	5162.28	5164.45	5164.45	5165.42	0.002043	7.89	145.63	76.19	1.01
Alignment - Dam	13148	10 year	682.00	5161.09	5163.69	5162.71	5163.95	0.000431	4.11	166.10	68.81	0.47
Alignment - Dam	13148	50 year	992.00	5161.09	5164.38	5163.13	5164.72	0.000402	4.64	213.96	68.98	0.46
Alignment - Dam	13148	100 year	1149.00	5161.09	5164.71	5163.32	5165.08	0.000392	4.86	236.28	69.06	0.46
Alignment - Dam	13146		Culvert									
Alignment - Dam	13145	10 year	682.00	5159.94	5161.46	5161.46	5162.16	0.002347	6.75	100.99	72.40	1.01
Alignment - Dam	13145	50 year	992.00	5159.94	5161.86	5161.86	5162.76	0.002171	7.63	129.99	72.45	1.00
Alignment - Dam	13145	100 year	1149.00	5159.94	5162.04	5162.04	5163.04	0.002125	8.03	143.15	72.47	1.01
Alignment - Dam	13144	10 year	682.00	5159.86	5161.21	5161.21	5161.86	0.015236	6.46	105.56	81.66	1.00
Alignment - Dam	13144	50 year	992.00	5159.86	5161.58	5161.58	5162.41	0.013934	7.29	136.05	83.31	1.01
Alignment - Dam	13144	100 year	1149.00	5159.86	5161.76	5161.76	5162.66	0.013440	7.64	150.36	84.08	1.01
Alignment - Dam	13143	10 year	682.00	5159.58	5161.07		5161.53	0.009937	5.43	125.66	90.91	0.81
Alignment - Dam	13143	50 year	992.00	5159.58	5161.40	5161.22	5162.03	0.010342	6.37	155.71	92.25	0.86
Alignment - Dam	13143	100 year	1149.00	5159.58	5161.54	5161.39	5162.26	0.010500	6.78	169.40	92.85	0.88
Alignment - Dam	13140	10 year	682.00	5157.25	5158.67	5158.67	5159.31	0.017035	6.43	105.99	84.06	1.01
Alignment - Dam	13140	50 year	992.00	5157.25	5159.03	5159.03	5159.85	0.015622	7.23	137.13	85.30	1.01
Alignment - Dam	13140	100 year	1149.00	5157.25	5159.21	5159.21	5160.09	0.015079	7.57	151.84	85.88	1.00
Alignment - Dam	13135	10 year	682.00	5154.62	5156.28		5156.73	0.009479	5.40	126.40	83.59	0.77
Alignment - Dam	13135	50 year	992.00	5154.62	5156.69		5157.28	0.009228	6.18	160.46	84.50	0.79
Alignment - Dam	13135	100 year	1149.00	5154.62	5156.87		5157.53	0.009152	6.52	176.14	84.92	0.80
Alignment - Dam	13130	10 year	682.00	5152.76	5154.71		5155.10	0.006987	5.00	136.52	81.10	0.68
Alignment - Dam	13130	50 year	992.00	5152.76	5155.15		5155.66	0.007046	5.75	172.50	83.34	0.70
Alignment - Dam	13130	100 year	1149.00	5152.76	5155.35		5155.92	0.006995	6.05	189.82	84.40	0.71

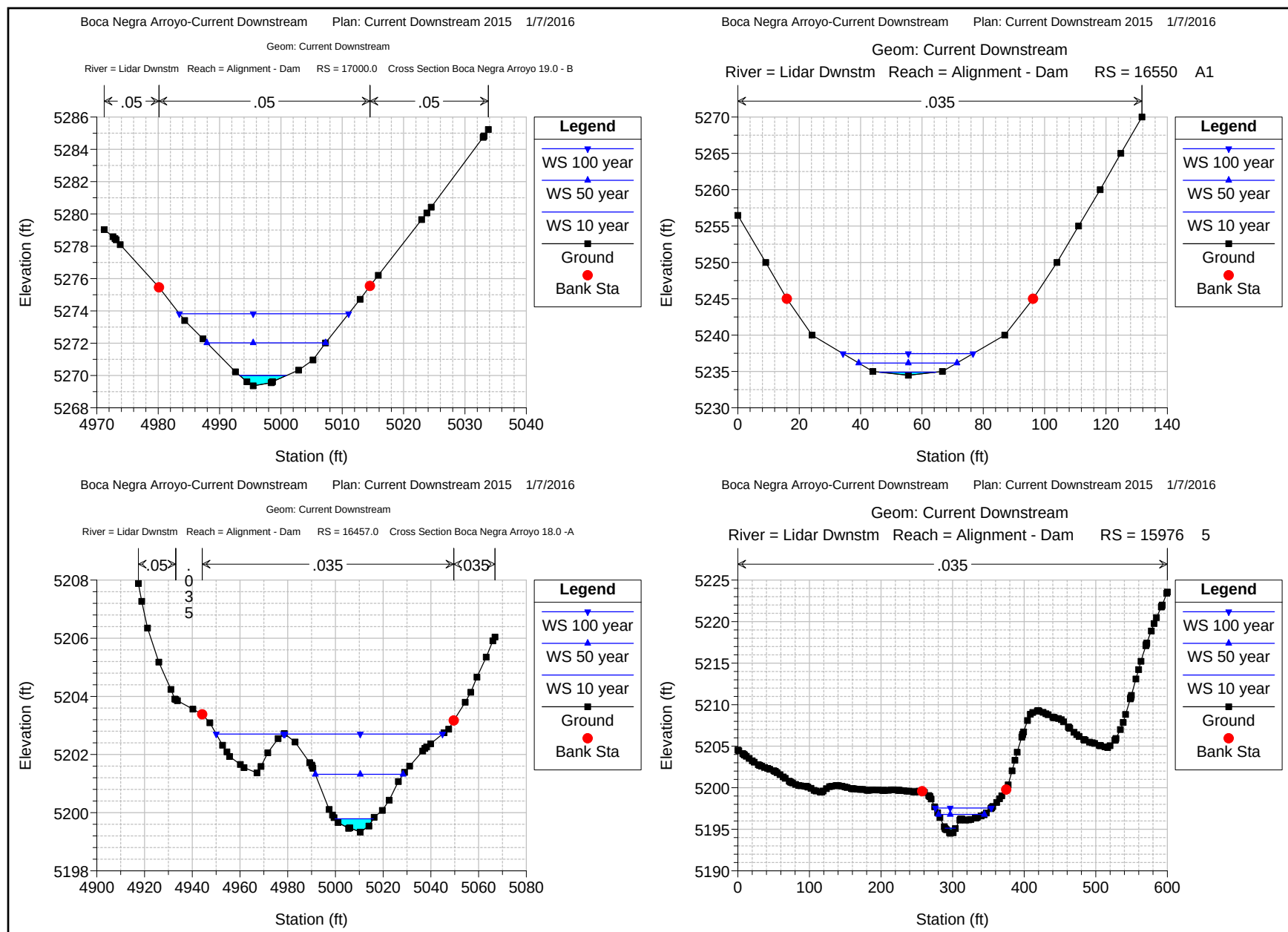
HEC-RAS Plan: Dwnstm15 River: Lidar Dwnstm Reach: Alignment - Dam (Continued)

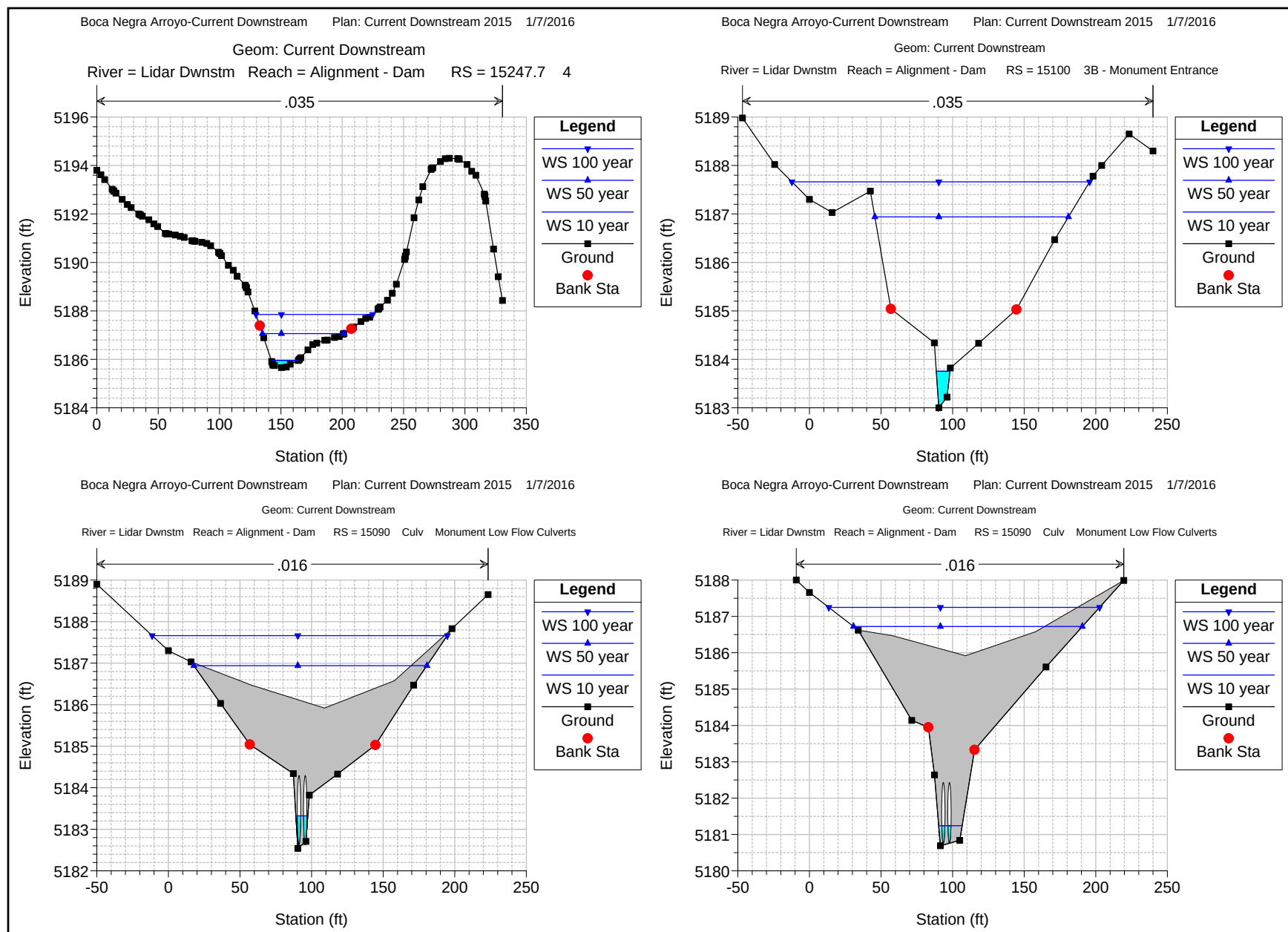
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Alignment - Dam	13120	10 year	682.00	5149.46	5152.34		5152.68	0.005445	4.62	147.48	81.80	0.61
Alignment - Dam	13120	50 year	992.00	5149.46	5152.85		5153.28	0.005186	5.22	189.93	84.44	0.61
Alignment - Dam	13120	100 year	1149.00	5149.46	5153.08		5153.55	0.005174	5.50	208.78	85.59	0.62
Alignment - Dam	13110	10 year	689.00	5147.82	5150.37	5149.72	5150.69	0.004739	4.52	152.52	78.67	0.57
Alignment - Dam	13110	50 year	1001.00	5147.82	5150.84	5150.13	5151.27	0.005049	5.28	189.76	81.20	0.61
Alignment - Dam	13110	100 year	1150.00	5147.82	5151.04	5150.29	5151.52	0.005122	5.57	206.53	82.31	0.62
Alignment - Dam	13100	10 year	689.00	5144.96	5146.75	5146.75	5147.41	0.016852	6.53	105.46	81.38	1.01
Alignment - Dam	13100	50 year	1001.00	5144.96	5147.14	5147.14	5147.96	0.015294	7.28	137.46	83.71	1.00
Alignment - Dam	13100	100 year	1150.00	5144.96	5147.30	5147.30	5148.20	0.015093	7.63	150.69	84.65	1.01
Alignment - Dam	13095	10 year	689.00	5139.15	5142.49		5142.68	0.001809	3.44	200.49	75.01	0.37
Alignment - Dam	13095	50 year	1001.00	5139.15	5143.01		5143.28	0.002179	4.17	239.87	76.87	0.42
Alignment - Dam	13095	100 year	1150.00	5139.15	5143.24		5143.55	0.002314	4.47	257.23	77.67	0.43
Alignment - Dam	13093	10 year	689.00	5138.89	5142.54		5142.65	0.000800	2.57	268.38	83.69	0.25
Alignment - Dam	13093	50 year	1001.00	5138.89	5143.08		5143.24	0.001030	3.19	313.86	85.05	0.29
Alignment - Dam	13093	100 year	1150.00	5138.89	5143.32		5143.50	0.001119	3.45	333.77	85.64	0.31
Alignment - Dam	13090	10 year	689.00	5140.41	5142.19		5142.60	0.007572	5.14	133.99	80.52	0.70
Alignment - Dam	13090	50 year	1001.00	5140.41	5142.67		5143.19	0.007056	5.80	172.60	81.85	0.70
Alignment - Dam	13090	100 year	1150.00	5140.41	5142.88		5143.45	0.006868	6.06	189.77	82.43	0.70
Alignment - Dam	13080	10 year	689.00	5137.16	5139.92	5139.25	5140.23	0.004516	4.44	155.15	79.36	0.56
Alignment - Dam	13080	50 year	1001.00	5137.16	5140.40	5139.64	5140.82	0.004770	5.17	193.75	82.13	0.59
Alignment - Dam	13080	100 year	1150.00	5137.16	5140.60	5139.82	5141.06	0.004914	5.48	209.90	83.27	0.61
Alignment - Dam	13070	10 year	690.00	5134.83	5136.44	5136.44	5137.06	0.016618	6.31	109.31	87.89	1.00
Alignment - Dam	13070	50 year	1004.00	5134.83	5136.79	5136.79	5137.58	0.015832	7.16	140.15	89.76	1.01
Alignment - Dam	13070	100 year	1151.00	5134.83	5136.94	5136.94	5137.81	0.015278	7.46	154.37	90.61	1.01
Alignment - Dam	13060	10 year	690.00	5130.80	5133.48	5132.57	5133.69	0.003619	3.62	190.63	91.75	0.44
Alignment - Dam	13060	50 year	1004.00	5130.80	5134.01	5132.92	5134.28	0.003733	4.20	239.19	94.15	0.46
Alignment - Dam	13060	100 year	1151.00	5130.80	5134.23	5133.07	5134.53	0.003762	4.42	260.22	95.17	0.47
Alignment - Dam	13055		Bridge									
Alignment - Dam	13050	10 year	690.00	5130.97	5132.77		5133.25	0.013075	5.56	124.15	82.43	0.80
Alignment - Dam	13050	50 year	1004.00	5130.97	5133.20		5133.81	0.012342	6.27	160.18	84.91	0.80

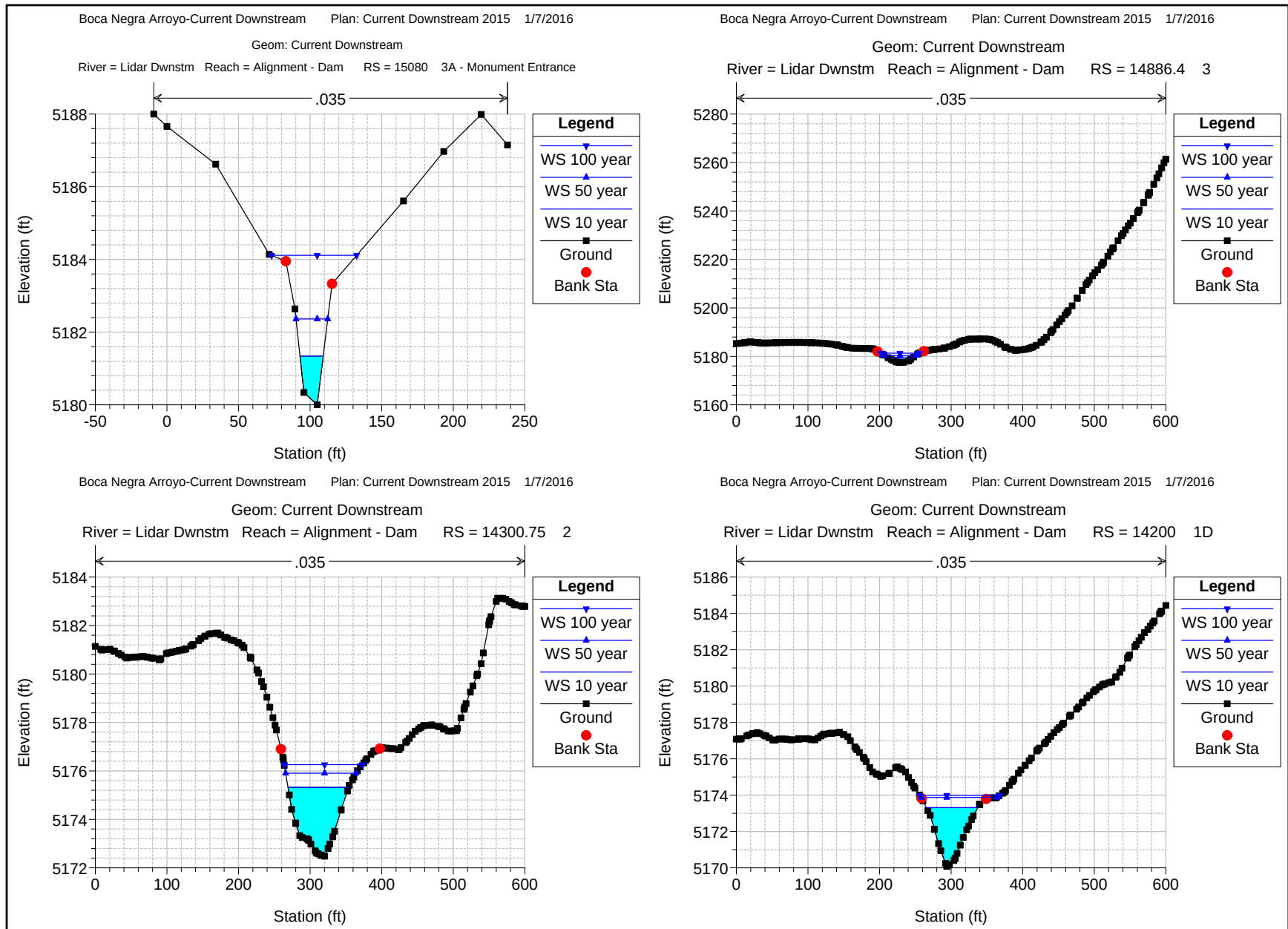
HEC-RAS Plan: Dwnstm15 River: Lidar Dwnstm Reach: Alignment - Dam (Continued)

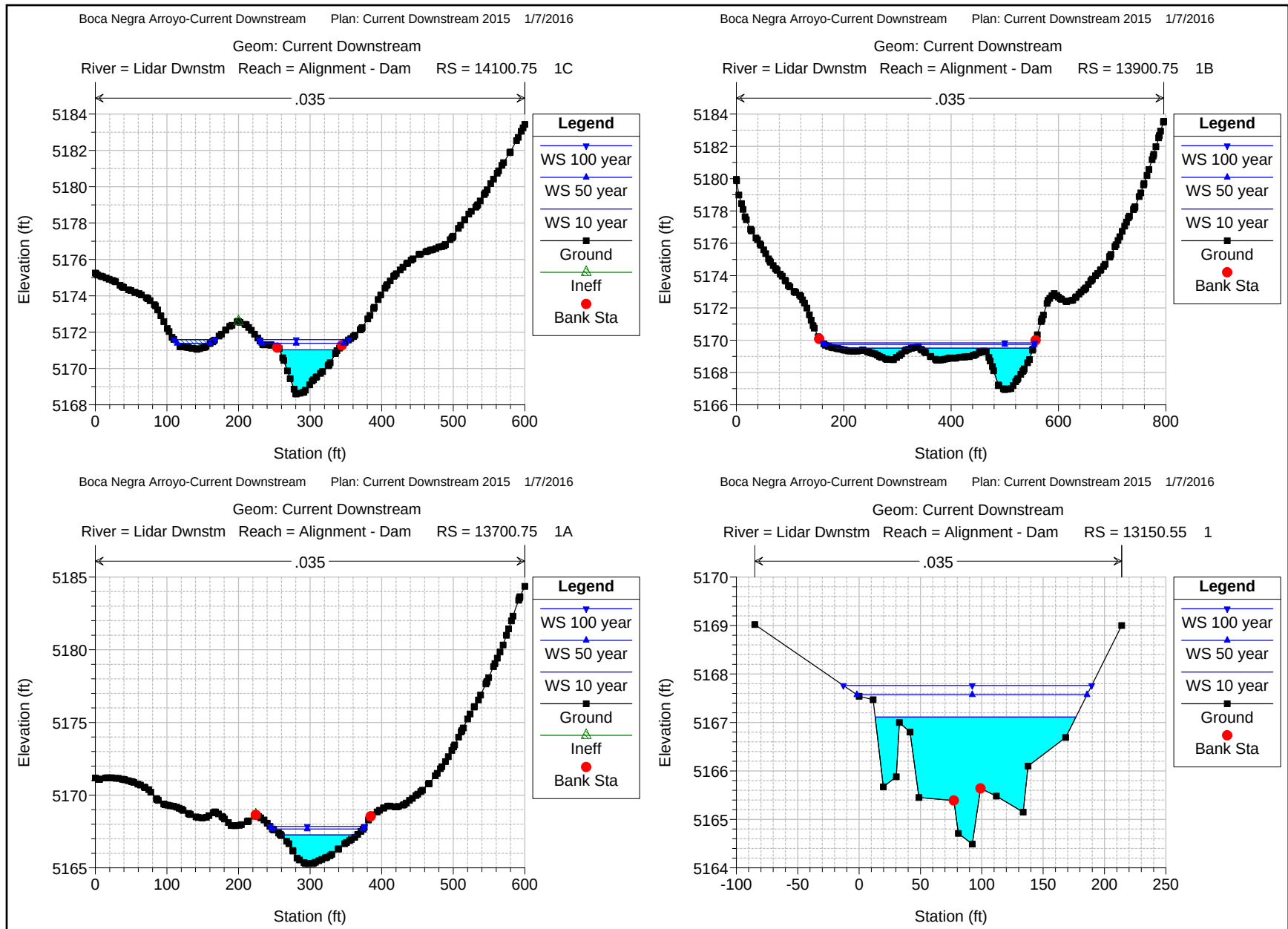
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Alignment - Dam	13050	100 year	1151.00	5130.97	5133.39		5134.05	0.012033	6.54	176.12	85.99	0.80
Alignment - Dam	13040	10 year	690.00	5127.23	5129.50	5129.41	5130.18	0.013015	6.61	104.44	65.08	0.92
Alignment - Dam	13040	50 year	1004.00	5127.23	5129.93	5129.85	5130.82	0.013003	7.57	132.68	67.25	0.95
Alignment - Dam	13040	100 year	1151.00	5127.23	5130.11	5130.05	5131.09	0.013003	7.95	144.84	68.16	0.96

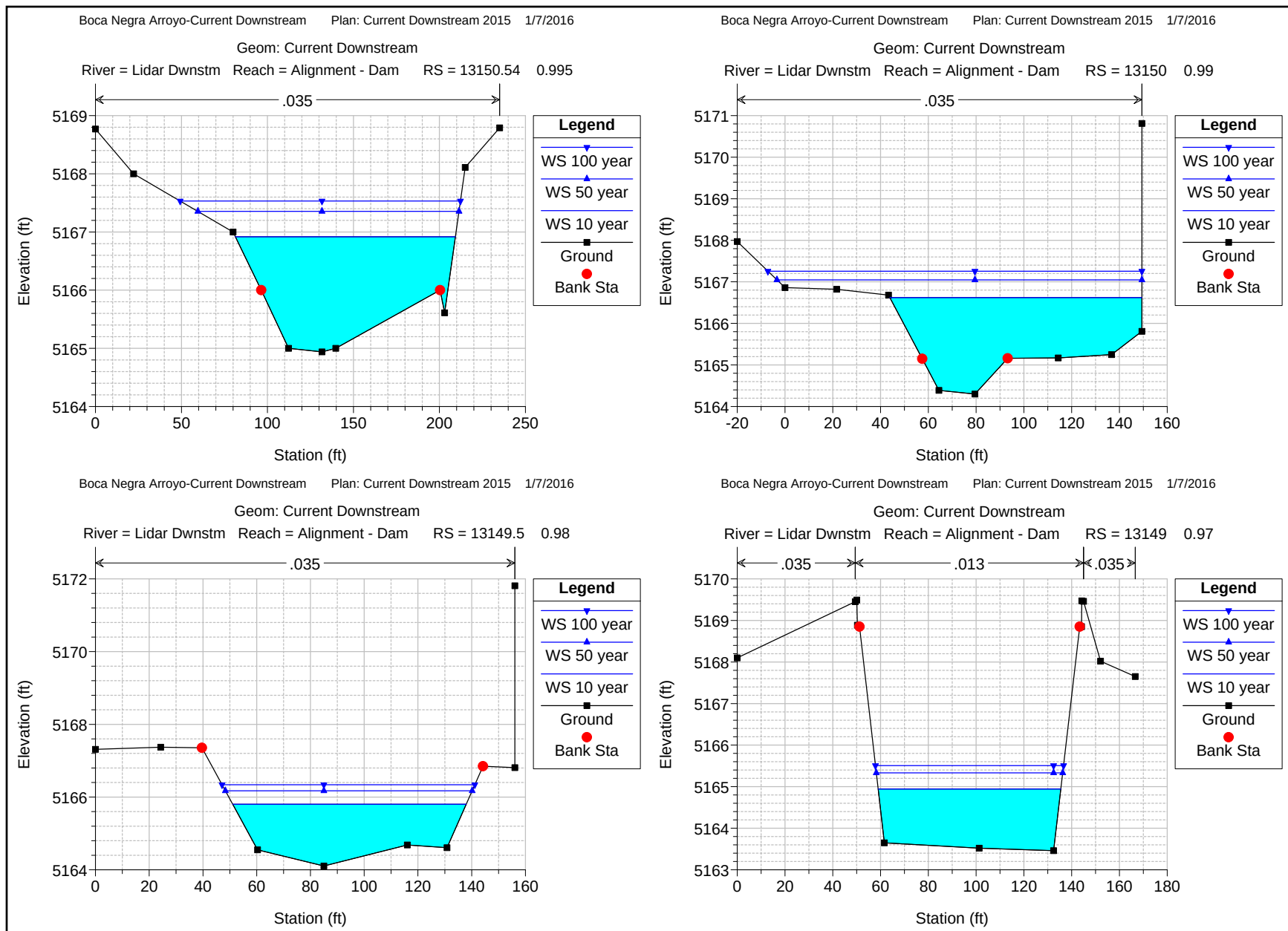


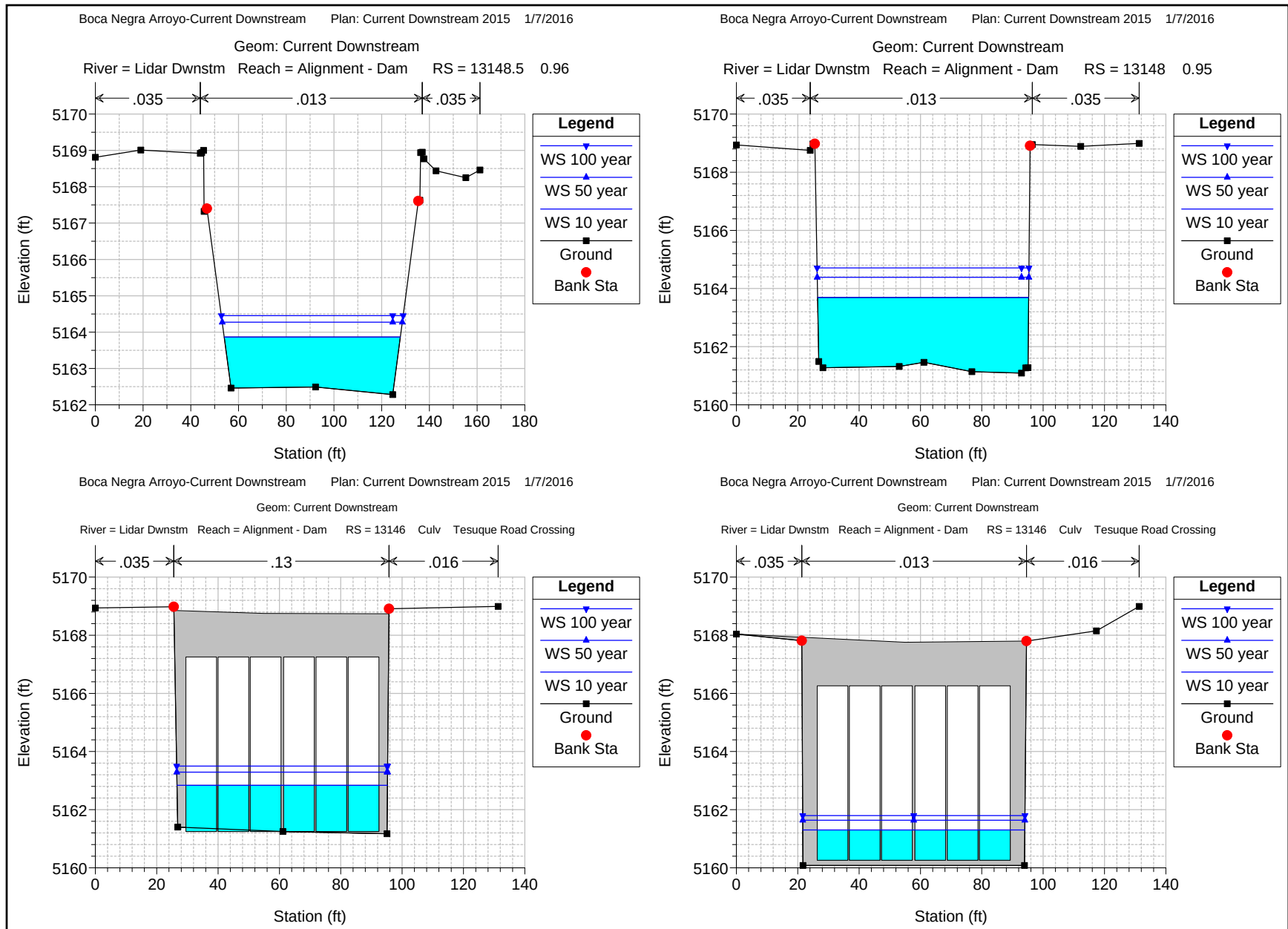


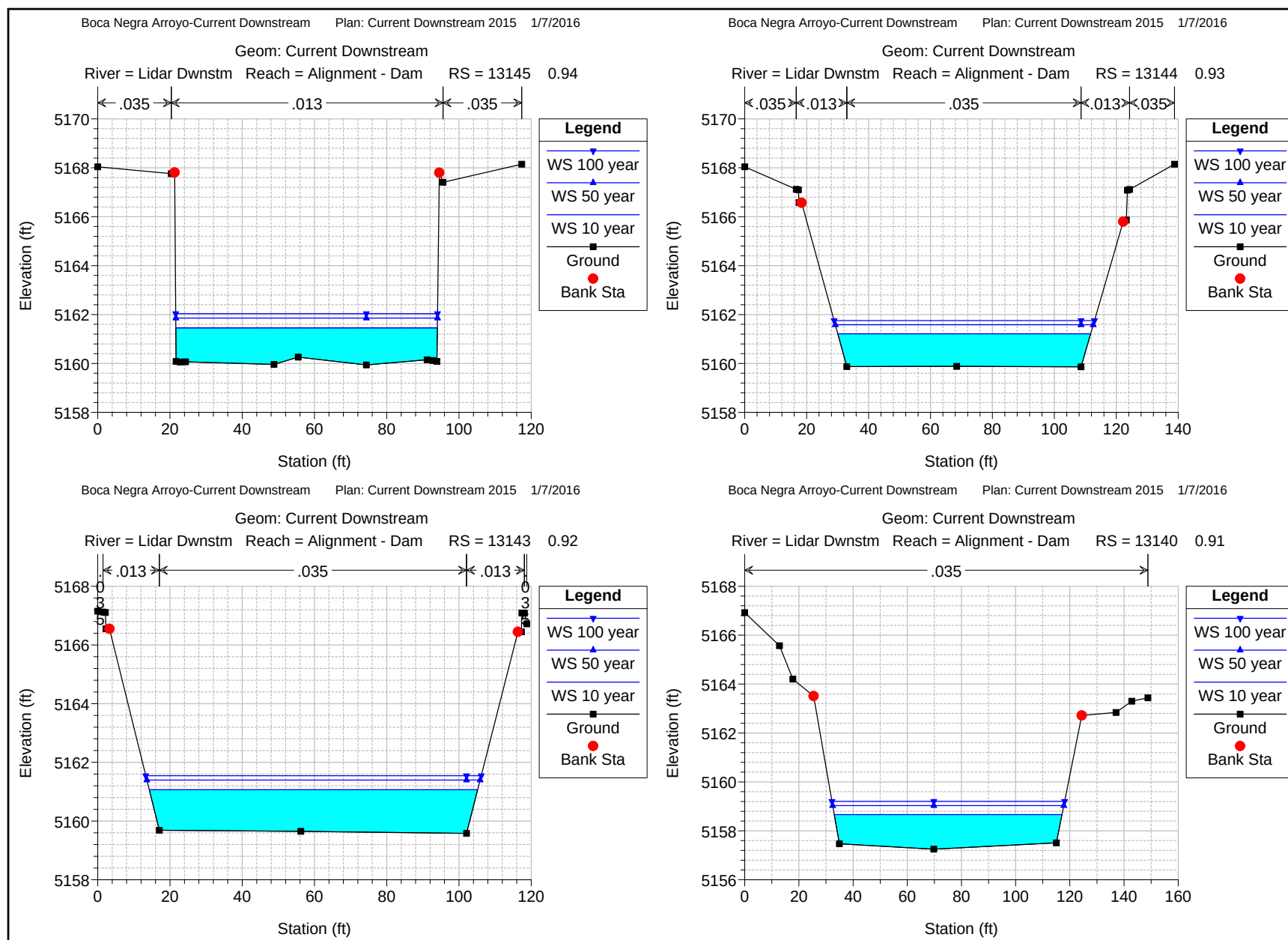


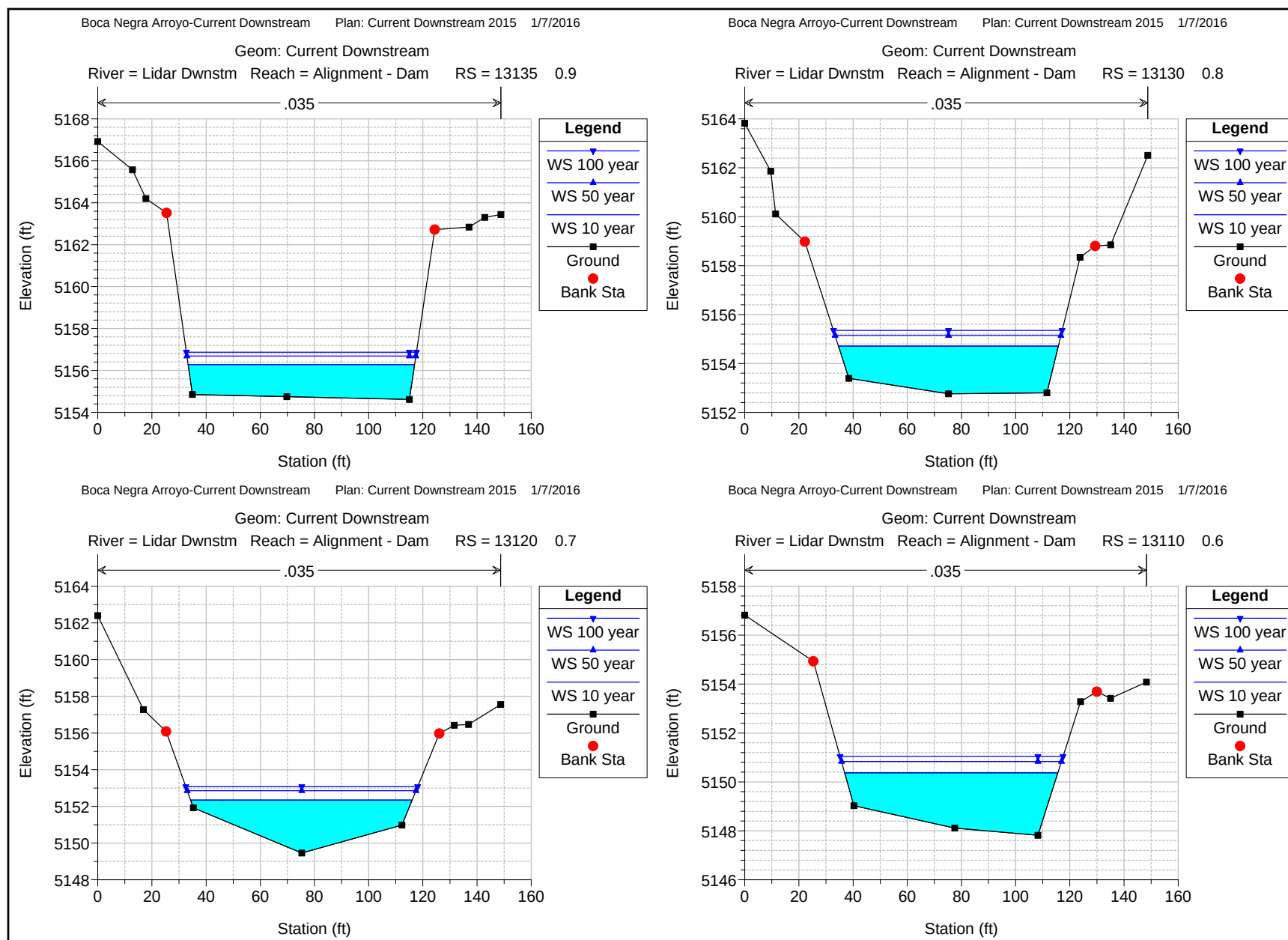


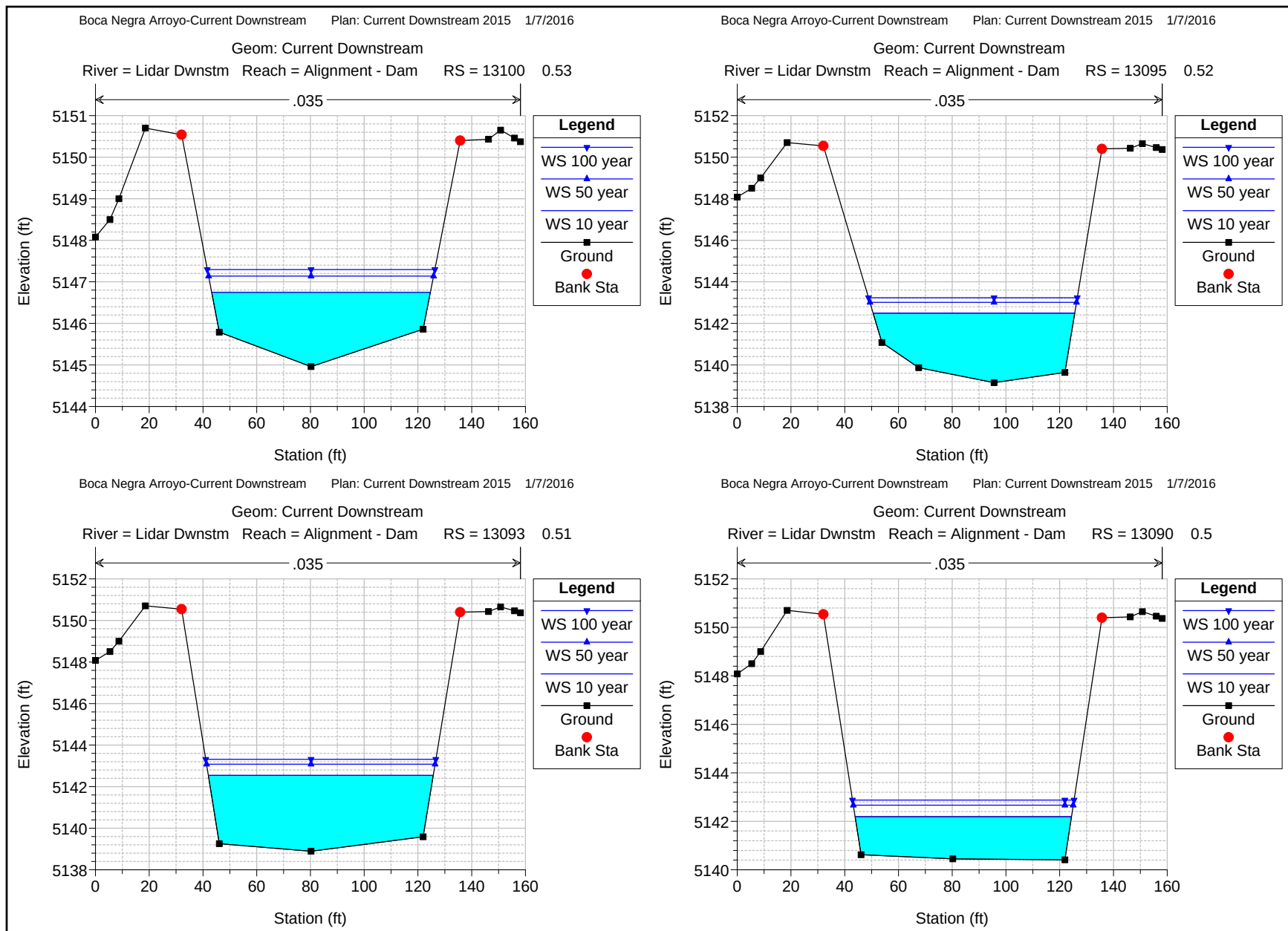


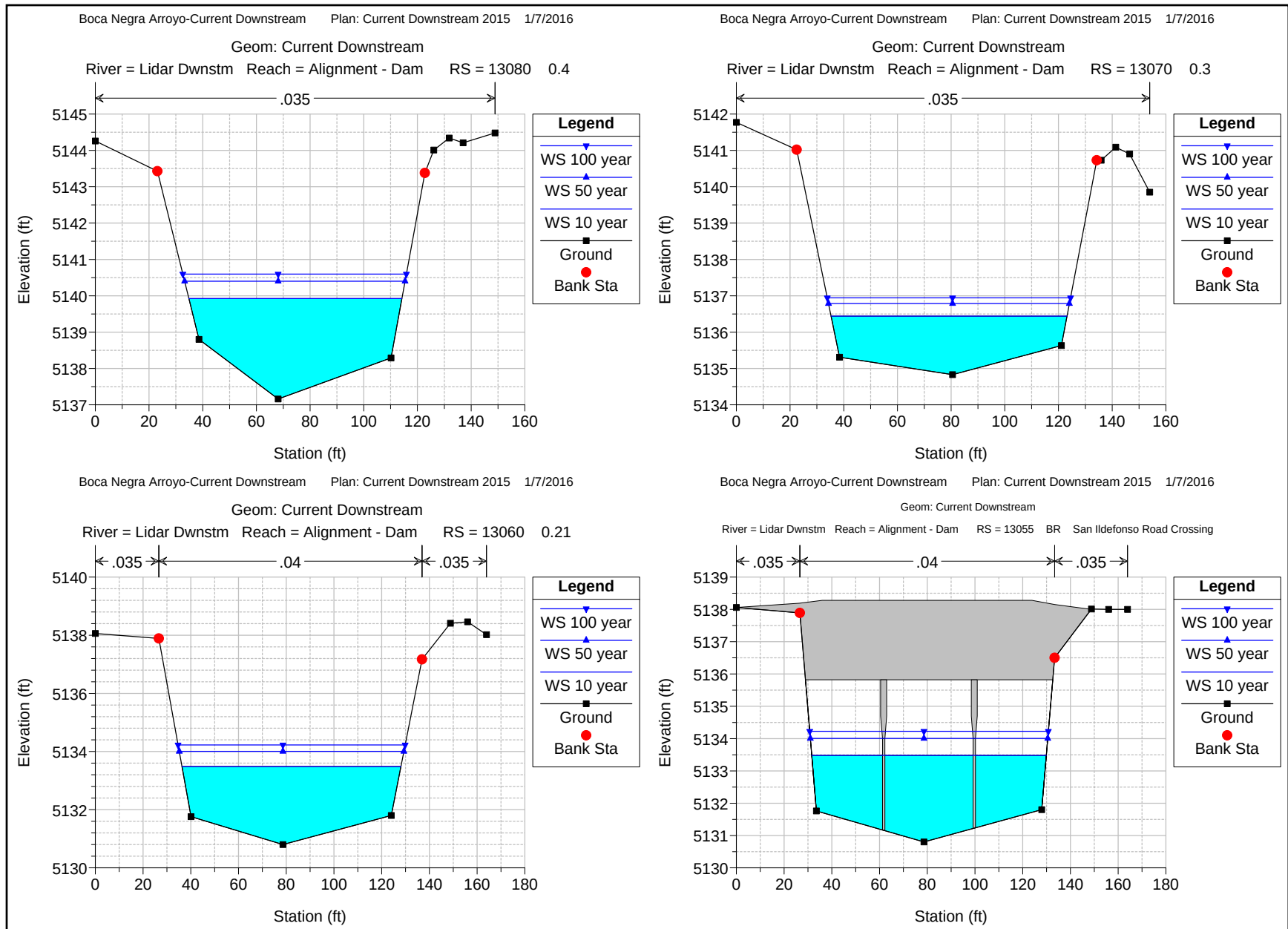


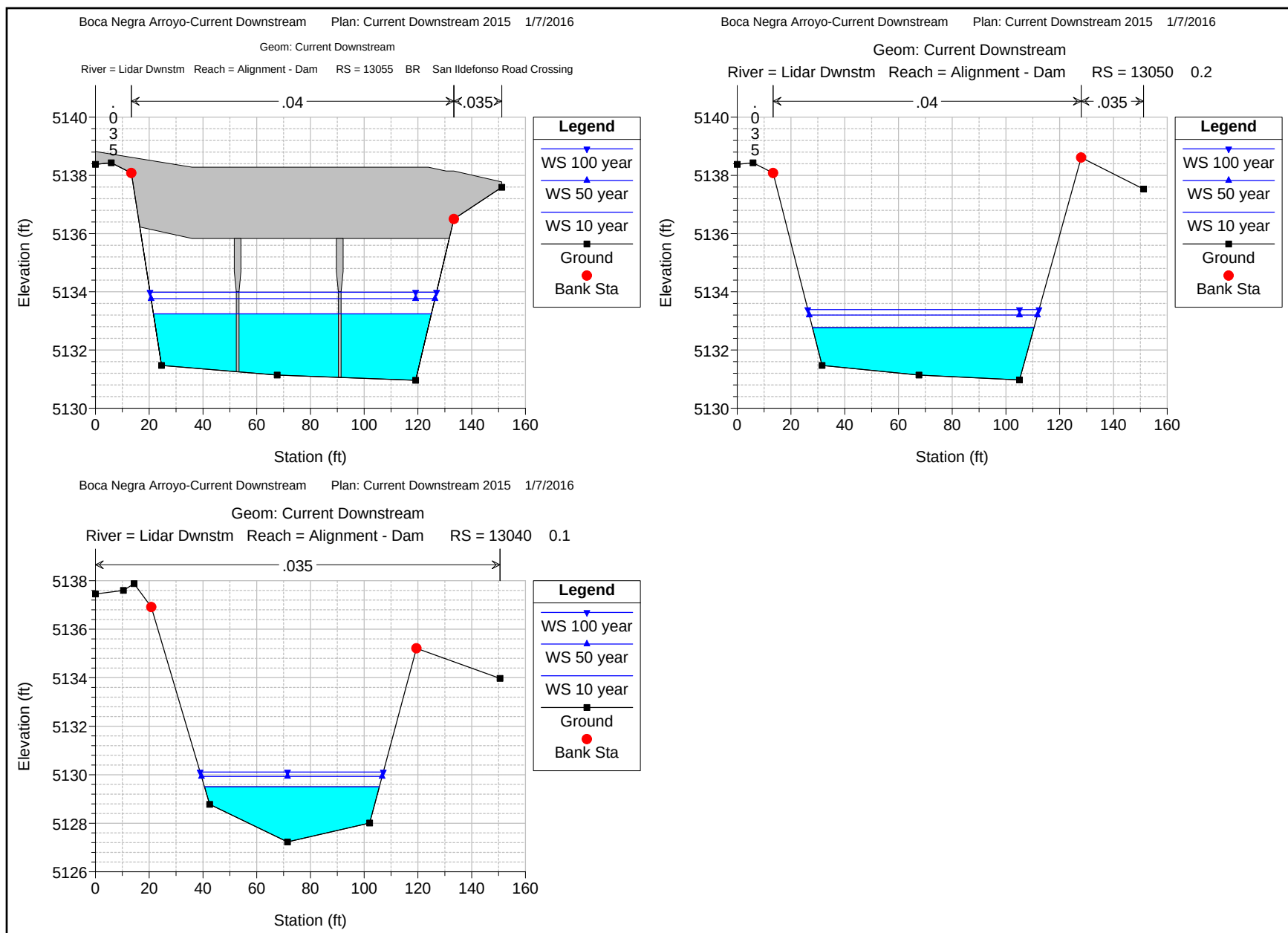












BNADwstm-.rep

HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X   X   XXXXX   XXXX   XXXX   XX   XXXX
X   X   X       X   X   X   X   X   X
X   X   X       X   X   X   X   X   X
XXXXXXX XXXX   X   XXX XXXX XXXXXX XXXX
X   X   X       X   X   X   X   X   X
X   X   X       X   X   X   X   X   X
X   X   XXXXXX   XXXX   X   X   X   X   XXXXX

```

PROJECT DATA

Project Title: Boca Negra Arroyo-Current Downstream
Project File : BNADwstm-.prj
Run Date and Time: 1/7/2016 9:15:25 AM

Project in English units

PLAN DATA

Plan Title: Current Downstream 2015
Plan File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final Construction
Acceptance Reports\H&H\LOMR - RAS\BNADwstm-.p10

Geometry Title: Current Downstream
Geometry File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final
Construction Acceptance Reports\H&H\LOMR - RAS\BNADwstm-.g07

Flow Title : Updated 2015 - Downstream
Flow File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final
Construction Acceptance Reports\H&H\LOMR - RAS\BNADwstm-.f07

Plan Summary Information:

Number of: Cross Sections = 41 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 1 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Updated 2015 - Downstream
Flow File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final Construction
Acceptance Reports\H&H\LOMR - RAS\BNADwstm-.f07

Flow Data (cfs)

River	Reach	RS	10 year	50 year	100 year
Lidar Dwnstm	Alignment - Dam	18022.9	10	234	695
Lidar Dwnstm	Alignment - Dam	14886.4	270	635	1110
Lidar Dwnstm	Alignment - Dam	14300.75	643	948	1147
Lidar Dwnstm	Alignment - Dam	14100.75	682	992	1149
Lidar Dwnstm	Alignment - Dam	13110	689	1001	1150
Lidar Dwnstm	Alignment - Dam	13070	690	1004	1151

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Lidar Dwnstm	Alignment - Dam	10 year		Normal S = 0.013

GEOMETRY DATA

Geometry Title: Current Downstream

Geometry File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final Construction Acceptance Reports\H&H\LOMR - RAS\BNADwstm-.g07

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 18022.9

INPUT

Description: 8

Station	Elevation	Data	num=	6						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	5336.21	.01	5324.8	16.01	5324.8	18.01	5323.8	30	5323.8	
30.01	5336.13									

Manning's n Values

num= 1

Sta	n Val
0	.013

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	0	30.01	35	35	35		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 17987.1

INPUT

Description: 7

Station	Elevation	Data	num=	6						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	5336.21	.01	5324.62	16.01	5324.62	18.01	5323.62	30	5323.62	
30.01	5336.13									

Manning's n Values

num= 1

Sta	n Val
0	.013

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	0	30.01	43	43	43		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 17735.62

INPUT

Description: 6

Station	Elevation	Data	num=	212						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	5327.06	3200073	5327.052	849976	5327.044	400024	5327.0510	65002	5327.02	
10.88	5327.0116	97998	5326.9518	45001	5326.9520	83002	5326.9626	23999	5327.02	
29.56	5327.134	03998	5327.2341	33997	5327.341	83997	5327.342	14001	5327.3	
43.40002	5327.31	49.63	5327.4154	71997	5327.4557	42999	5327.4661	84998	5327.43	
65.22998	5327.4567	29999	5327.4473	02002	5327.3275	92999	5327.21	79.88	5327.09	
80.82001	5327.0682	35999	5327.01	88.62	5326.992	45001	5326.8496	40997	5326.8	
102.87	5326.66	104.21	5326.63	105.03	5326.6	108.45	5326.51	112.01	5326.41	
117.61	5326.26	119.81	5326.24	123.38	5326.15	127.6	5326.07	130.19	5326.02	
135.4	5325.97	140.98	5325.83	142.77	5325.79	143.2	5325.78	143.89	5325.75	
150.99	5325.58	155.35	5325.5	158.79	5325.38	164.4	5325.08	166.59	5324.93	
167.92	5324.82	173.51	5324.2	174.38	5324.11	180.5	5323.4	182.18	5323.22	
184.91	5322.94	189.98	5322.6	193.08	5322.45	197.77	5322.35	205.43	5322.2	
205.57	5322.19	205.66	5322.19	206.03	5322.17	213.37	5321.88	218.24	5321.69	
221.16	5321.58	225.94	5321.44	228.96	5321.36	230.82	5321.34	236.76	5321.35	
238.51	5321.35	238.56	5321.35	243.39	5321.36	244.55	5321.37	246.45	5321.34	
252.35	5321.2	255.97	5321.14	260.15	5321.07	266.96	5321	267.94	5321.02	
268.55	5321.03	271.08	5321.19	275.74	5321.49	281.13	5321.83	283.54	5322.01	
287.47	5322.29	291.34	5322.57	293.71	5322.71	299.13	5323.14	303.61	5323.58	
306.29	5323.83	306.93	5323.89	307.98	5323.96	314.73	5324.41	318.87	5324.65	
322.52	5324.79	328.49	5324.89	330.32	5324.88	331.44	5324.89	336.13	5325	
338.12	5325.05	344.02	5325.19	345.91	5325.24	349	5325.35	353.71	5325.53	
356.6	5325.66	361.51	5325.79	368.66	5325.97	369.18	5325.99	369.3	5325.99	
369.51	5325.99	377.1	5326.06	381.76	5326.11	384.9	5326.11	390.02	5326.12	
392.69	5326.14	394.34	5326.15	400.49	5326.24	401.18	5326.25	406.91	5326.34	
408.29	5326.38	410.53	5326.48	416.08	5326.73	419.49	5326.86	423.88	5326.97	
431.04	5327.09	431.68	5327.1	432.07	5327.1	433.71	5327.13	439.48	5327.21	
444.65	5327.29	447.27	5327.27	451.55	5327.22	455.07	5327.19	457.23	5327.17	
462.87	5327.14	466.24	5327.1	469.81	5327.07	470.66	5327.07	472.06	5327.09	
478.46	5327.17	482.38	5327.19	486.26	5327.29	492.57	5327.45	494.05	5327.5	
494.96	5327.51	498.76	5327.66	501.85	5327.77	507.54	5328.01	509.65	5328.06	
513.08	5328.13	517.44	5328.2	520.12	5328.26	525.24	5328.29	531.29	5328.36	
532.7	5328.38	533.04	5328.38	533.59	5328.38	540.83	5328.34	545.28	5328.35	
548.63	5328.32	554.1	5328.32	556.43	5328.3	557.86	5328.29	563.81	5328.27	
564.22	5328.26	570.43	5328.27	572.02	5328.26	574.61	5328.26	579.82	5328.25	
583.01	5328.27	587.61	5328.22	595.12	5328.1	595.41	5328.1	595.59	5328.09	
596.34	5328.07	603.21	5327.89	608.17	5327.75	611.01	5327.71	615.63	5327.67	
618.8	5327.67	620.75	5327.66	626.6	5327.7	628.86	5327.72	633.33	5327.75	

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634.4	5327.76	636.14	5327.79	642.19	5327.89	645.9	5327.93	649.99	5327.93
656.65	5327.92	657.79	5327.92	658.48	5327.92	661.39	5327.9	665.58	5327.89
671.06	5327.83	673.38	5327.82	677.16	5327.79	681.18	5327.79	683.64	5327.78
688.97	5327.84	693.92	5327.86	696.22	5327.88	696.77	5327.89	697.67	5327.91
704.57	5328.11	708.8	5328.2	712.36	5328.26	718.18	5328.36	720.16	5328.4
721.38	5328.42	723.62	5328.43						

Manning's n Values num= 1
Sta n Val
0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	180.5	303.61		605.82	605.82		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 17129.8

INPUT

Description: Cross Section Boca Negra Arroyo 19.5 - C

Station Elevation Data		num= 69									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4898.5	5317.18	4898.64	5317.17	4905.28	5316.84	4908.38	5316.69	4913.17	5316.43		
4914.67	5316.35	4919.79	5316.08	4924.06	5315.84	4927.7	5315.67	4931.19	5315.49		
4933.45	5315.34	4942.22	5314.72	4942.6	5314.69	4942.84	5314.67	4943.98	5314.59		
4952.23	5314.02	4954.01	5313.93	4956.75	5313.88	4961.62	5313.74	4965.41	5313.69		
4971.01	5313.55	4971.27	5313.54	4976.82	5313.4	4980.4	5313.21	4982.77	5313.06		
4987.32	5312.9	4988.36	5312.86	4989.19	5312.81	4995.84	5312.64	4996.39	5312.63		
5002.14	5312.48	5002.6	5312.47	5003.31	5312.44	5004.21	5312.44	5010.79	5312.3		
5016.02	5312.3	5018.26	5312.31	5021.09	5312.54	5025.58	5312.9	5025.73	5312.91		
5029.57	5313.31	5033.1	5313.61	5037.08	5313.95	5040.47	5314.11	5043.47	5314.21		
5047.83	5314.53	5052.75	5314.99	5055.2	5315.23	5057.37	5315.44	5062.56	5315.92		
5067.22	5316.32	5068.12	5316.4	5069.84	5316.52	5072.49	5316.66	5076.97	5316.86		
5079.9	5316.99	5084.11	5317.25	5090.57	5317.56	5091.24	5317.57	5091.67	5317.58		
5093.74	5317.64	5098.37	5317.77	5103.45	5317.92	5105.5	5317.92	5108.65	5317.98		
5112.63	5318.03	5115.23	5318.09	5119.77	5318.07	5125.6	5318.09				

Manning's n Values num= 1
Sta n Val
4898.5 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	4980.4	5029.57		129.8	129.8		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 17000.0

INPUT

Description: Cross Section Boca Negra Arroyo 19.0 - B

Station Elevation Data		num= 27									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4971.2	5279.03	4972.63	5278.59	4972.96	5278.47	4973.15	5278.4	4973.81	5278.1		
4980.13	5275.45	4984.31	5273.4	4987.29	5272.27	4992.6	5270.23	4994.45	5269.61		
4995.48	5269.36	4998.4	5269.55	4998.52	5269.58	4998.64	5269.62	5002.89	5270.33		
5005.24	5270.96	5007.26	5272.01	5012.91	5274.72	5014.51	5275.54	5015.88	5276.2		
5022.93	5279.65	5023.78	5280.06	5024.5	5280.42	5032.96	5284.74	5033.04	5284.79		
5033.12	5284.83	5033.8	5285.23								

Manning's n Values num= 3
Sta n Val Sta n Val
4971.2 .05 4980.13 .05 5014.51 .05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	4980.13	5014.51		212	212		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 16550

INPUT

Description: A1

Station Elevation Data		num= 14									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5256.48	9.1	5250	16	5245	24.17	5240	44.01	5235		
55.58	5234.48	66.69	5235	87	5240	96.23	5245	104.03	5250		
111.06	5255	118.1	5260	124.84	5265	131.73	5270				

Manning's n Values num= 1
Sta n Val
0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	16	96.23		331	331		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 16457.0

INPUT

Description: Cross Section Boca Negra Arroyo 18.0 -A

Station Elevation Data		num= 53		Sta Elev		Sta Elev		Sta Elev		Sta Elev	
4917.4	5207.88	4918.82	5207.27	4921.23	5206.35	4925.96	5205.18	4931.06	5204.24		
4932.7	5203.91	4933.1	5203.89	4933.77	5203.85	4940.24	5203.56	4944.16	5203.38		
4947.38	5203.09	4952.7	5202.32	4954.52	5202.09	4955.63	5201.93	4960.13	5201.66		
4961.67	5201.55	4967.1	5201.37	4968.81	5201.59	4971.63	5202.06	4975.95	5202.55		
4978.56	5202.72	4983.09	5202.43	4989.2	5201.72	4990.03	5201.64	4990.23	5201.6		
4990.56	5201.53	4997.37	5200.11	4998.74	5199.92	4999.41	5199.83	5001.09	5199.66		
5005.5	5199.46	5006.02	5199.48	5010.38	5199.33	5014.02	5199.54	5016.21	5199.84		
5019.66	5200.08	5022.55	5200.43	5026.39	5201.07	5028.94	5201.39	5031.08	5201.6		
5036.58	5202.12	5037.48	5202.21	5038.22	5202.26	5039.89	5202.37	5045.53	5202.75		
5047.47	5202.87	5049.59	5203.17	5054.36	5203.8	5056.71	5204.14	5059.29	5204.66		
5063.19	5205.35	5065.96	5205.91	5066.87	5206.04						

Manning's n Values		num= 4		Sta n Val		Sta n Val		Sta n Val	
4917.4	.05	4933.1	.035	4944.16	.035	5049.59	.035		

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	4944.16	5049.59		481	481	481		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 15976

INPUT

Description: 5

Station Elevation Data		num= 198		Sta Elev		Sta Elev		Sta Elev		Sta Elev	
0	5204.531	280029	5204.456	869995	5204.12	8.48999	52049.289978	5203.94			
11.70001	5203.79	15.69	5203.5320	09003	5203.2522	9.00002	5203.0828	53003	5202.78		
30.09998	5202.7	30.88	5202.6733	22998	5202.5937	2.99999	5202.4541	6.79999	5202.33		
44.51001	5202.2250	17999	5202.0551	71002	5201.9852	4.69997	5201.96	54.75	5201.82		
58.91998	5201.5763	27002	5201.31	66.12	5201.1471	8.4003	5200.7973	3.2001	5200.7		
74.06	5200.6676	27002	5200.5880	53003	5200.4184	8.59999	5200.2787	7.29998	5200.23		
93.48999	5200.1994	92999	5200.1895	64999	5200.1797	7.99999	5200.08	102.14	5199.93		
106.45	5199.69	109.34	5199.6	115.15	5199.49	116.55	5199.48	117.24	5199.49		
119.32	5199.61	123.75	5199.89	128.04	5200.13	130.95	5200.18	136.81	5200.25		
138.16	5200.27	138.83	5200.27	140.84	5200.24	145.36	5200.19	149.63	5200.11		
152.57	5200.03	158.46	5199.91	159.77	5199.89	160.42	5199.89	162.37	5199.87		
166.97	5199.83	171.22	5199.79	174.18	5199.8	180.12	5199.71	181.38	5199.7		
182.01	5199.7	183.89	5199.71	188.58	5199.75	192.8	5199.73	195.79	5199.73		
201.78	5199.69	202.99	5199.68	203.6	5199.68	205.41	5199.69	210.2	5199.69		
214.39	5199.75	217.4	5199.75	223.43	5199.71	224.6	5199.69	225.19	5199.7		
226.94	5199.68	231.81	5199.65	235.98	5199.59	239.01	5199.59	245.09	5199.51		
246.22	5199.51	246.78	5199.5	248.46	5199.51	253.42	5199.59	257.57	5199.57		
260.62	5199.43	266.74	5199.06	267.83	5198.98	268.37	5198.93	269.98	5198.64		
275.03	5197.71	279.16	5196.99	282.24	5196.42	288.4	5195.32	289.44	5195.11		
289.96	5195.03	291.5	5194.95	295.77	5194.59	296.64	5194.51	300.75	5194.59		
303.85	5195.09	310.06	5196.1	311.05	5196.22	311.55	5196.25	313.03	5196.23		
318.25	5196.1	322.34	5196.13	325.46	5196.19	331.71	5196.35	332.66	5196.37		
333.14	5196.39	334.55	5196.44	339.87	5196.6	343.93	5196.75	347.07	5196.96		
353.37	5197.49	354.27	5197.57	354.73	5197.61	356.07	5197.75	361.48	5198.23		
365.52	5198.68	368.68	5199.03	375.02	5199.78	375.89	5199.88	376.32	5199.95		
377.6	5200.35	383.09	5202.04	387.11	5203.3	390.29	5204.28	396.68	5206.09		
397.5	5206.34	397.9	5206.45	399.12	5206.72	404.7	5208.1	408.7	5208.85		
411.91	5209.07	418.34	5209.25	419.11	5209.27	419.49	5209.27	420.64	5209.24		
426.31	5209.08	430.29	5208.91	433.52	5208.79	439.99	5208.51	440.72	5208.47		
441.08	5208.46	442.17	5208.43	447.92	5208.34	451.88	5208.2	455.13	5207.94		
461.65	5207.34	462.33	5207.27	462.67	5207.23	463.69	5207.15	469.54	5206.68		
473.47	5206.39	476.74	5206.16	483.31	5205.8	483.94	5205.77	484.26	5205.75		
485.21	5205.72	491.15	5205.49	495.06	5205.42	498.35	5205.33	504.96	5205.1		
505.56	5205.08	505.85	5205.08	506.74	5205.06	512.76	5204.92	516.65	5204.83		
519.96	5205.06	526.62	5205.71	527.17	5205.75	527.44	5205.78	528.26	5205.94		
534.37	5207	538.24	5207.86	541.58	5208.82	548.27	5210.69	548.78	5210.83		
549.03	5210.89	549.78	5211.12	555.98	5213.09	559.83	5214.23	563.19	5215.23		
569.93	5217.09	570.39	5217.21	570.62	5217.27	571.31	5217.43	577.59	5218.87		
581.42	5219.77	584.8	5220.49	591.59	5221.75	592	5221.83	592.21	5221.87		
592.83	5222	599.21	5223.42	600	5223.56						

Manning's n Values		num= 1		Sta n Val	
0	.035				

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	257.57	375.02		728.26	728.26	728.26		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 15247.7

INPUT

Description: 4

Station	Elevation	Data	num=	109	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5193.8	3.25	5193.626	339996	5193.4212	51999	5193.0213	54001	5192.96			
14.04999	5192.94	15.56	5192.8620	73999	5192.6	24.84	5192.3927	95001	5192.26			
34.17999	519235.14999	5191.9735	64001		5191.9637	07999	5191.9142	35999	5191.76			
46.42999	5191.59	49.56	5191.48	55.84	5191.256	76001	5191.1857	23001	5191.18			
58.60999	5191.17	63.97	5191.1368	01999	5191.0871	17001	5191.0377	48999	5190.9			
78.37	5190.89	78.81	5190.88	80.13	5190.8785	57999	5190.8389	60999	5190.78			
92.78	5190.6999	14999	5190.4299	98999	5190.38	100.4	5190.36	101.65	5190.28			
107.19	5189.88	111.2	5189.68	114.39	5189.43	120.8	5189.06	121.6	5188.99			
121.99	5188.95	123.18	5188.78	128.8	5188	132.79	5187.39	136.01	5186.89			
142.46	5185.91	143.21	5185.81	143.58	5185.76	144.7	5185.75	150.41	5185.66			
154.38	5185.68	157.62	5185.8	164.12	5185.95	164.82	5185.99	165.17	5186.01			
166.22	5186.07	172.03	5186.39	175.97	5186.61	179.23	5186.67	185.77	5186.79			
186.43	5186.79	186.76	5186.79	187.75	5186.8	193.64	5186.9	197.56	5186.94			
200.84	5187.04	201.44	5187.06	207.43	5187.26	208.04	5187.28	208.35	5187.29			
209.27	5187.33	215.25	5187.56	219.15	5187.69	222.45	5187.74	229.08	5188.06			
229.66	5188.09	229.94	5188.11	230.79	5188.16	236.86	5188.44	240.74	5188.73			
244.06	5189.1	250.74	5190.12	251.27	5190.21	251.53	5190.26	252.32	5190.43			
258.47	5191.84	262.33	5192.58	265.68	5193.13	272.4	5193.84	272.88	5193.88			
273.12	5193.89	273.84	5193.91	280.08	5194.16	283.91	5194.28	287.29	5194.3			
294.05	5194.28	294.49	5194.28	294.71	5194.28	295.36	5194.25	301.7	5194.04			
305.5	5193.76	308.9	5193.6	315.71	5192.82	316.1	5192.76	316.3	5192.71			
316.88	5192.53	323.31	5190.55	327.09	5189.41	330.51	5188.43					

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 132.79 207.43 139 192 259 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 15100

INPUT

Description: 3B - Monument Entrance

Station	Elevation	Data	num=	17	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-46.73	5188.98	-24.33	5188.02	0	5187.3	15.86	5187.03	42.56	5187.47			
56.9	5185.04	87.21	5184.34	90.38	5183	96.07	5183.22	98.45	5183.82			
118.18	5184.33	144.58	5185.03	171.35	5186.47	198.12	5187.78	204.13	5188			
223.32	5188.65	240	5188.3									

Manning's n Values num= 1
 Sta n Val
 -46.73 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 56.9 144.58 53 53 53 .3 .5

CULVERT

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 15090

INPUT

Description: Monument Low Flow Culverts

Distance from Upstream XS = 15.3

Deck/Roadway Width = 21

Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num=	5	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
15.86	5187.03	58	5186.47	109	5185.92					
158	5186.58	198.12	5187.83							

Upstream Bridge Cross Section Data

Station	Elevation	Data	num=	14	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-50	5188.9	0	5187.3	15.86	5187.03	36.38	5186.03	56.9	5185.04			
87.21	5184.34	90.38	5182.54	96.07	5182.71	98.45	5183.82	118.18	5184.33			
144.58	5185.03	171.35	5186.47	198.12	5187.83	223.32	5188.65					

Manning's n Values num= 1
 Sta n Val
 -50 .016

Bank Sta: Left Right Coeff Contr. Expan.
 56.9 144.58 .3 .5

Downstream Deck/Roadway Coordinates

num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	BNADwstm-.rep
34.09	5186.62	5186.62	58	5186.47		Sta Hi Cord Lo Cord
158	5186.58		219.55	5187.99		109 5185.92

Downstream Bridge Cross Section Data

Station	Elevation	Data	num=	11					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-9.2	5188	0	5187.66	34.09	5186.62	71.5	5184.14	83.06	5183.95
87.3	5182.64	91.5	5180.69	105	5180.84	115.37	5183.33	165.26	5185.61
219.55	5187.99								

Manning's n Values num= 1

Sta	n Val
-9.2	.016

Bank Sta: Left Right Coeff Contr. Expan.

83.06	115.37	.1	.3
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Upstream Embankment side slope = 2 horiz. to 1.0 vertical
 Downstream Embankment side slope = 2 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span

Culvert #1 Ellipse 1.67 2.33

FHWA Chart # 29- Horizontal Ellipse; Concrete

FHWA Scale # 1 - Square edge with headwall

Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
15.3	31.8	.024	.024	0	.9	1

Number of Barrels = 2

Upstream Elevation = 5182.625

Centerline Stations

Sta.	Sta.
91.23	95.55

Downstream Elevation = 5180.76

Centerline Stations

Sta.	Sta.
93.52	97.8

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 15080

INPUT

Description: 3A - Monument Entrance

Station	Elevation	Data	num=	13					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-9.2	5188	0	5187.66	34.09	5186.62	71.5	5184.14	83.06	5183.95
89.37	5182.64	95.67	5180.34	105	5180	115.37	5183.33	165.26	5185.61
193.38	5186.97	219.55	5187.99	237.86	5187.15				

Manning's n Values num= 1

Sta	n Val
-9.2	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

83.06	115.37	115	115	115	.1	.3
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CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 14886.4

INPUT

Description: 3

Station	Elevation	Data	num=	184					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5185.273	880005	5185.43	5	5185.455	820007	5185.471	11.16998	5185.64
12.14001	5185.671	8.20001	5185.971	9.28003	5185.97	20.75	5185.972	6.40997	5185.75
30.57001	5185.663	3.54999	5185.543	7.60999	5185.49	40.69	5185.542	9.95001	5185.52
47.82001	5185.595	4.46997	5185.685	4.96002	5185.685	5.32001	5185.685	7.66998	5185.69
62.09998	5185.767	7.00001	5185.716	9.23999	5185.737	1.33002	5185.75	76.37	5185.79
80.07001	5185.798	3.51001	5185.778	8.20001	5185.769	0.64999	5185.759	2.45001	5185.74
97.78	5185.7	104.16	5185.69	104.82	5185.69	104.92	5185.69	105.06	5185.69
112.06	5185.56	117.19	5185.47	119.19	5185.43	121.92	5185.39	126.33	5185.26
129.57	5185.12	133.47	5184.98	138.78	5184.79	140.61	5184.71	141.94	5184.62
147.74	5184.15	150.65	5183.93	154.32	5183.65	154.88	5183.61	155.65	5183.57
162.02	5183.39	166.69	5183.32	169.15	5183.31	172.51	5183.29	176.29	5183.28
179.07	5183.25	183.43	5183.28	189.37	5183.19	190.56	5183.04	191.44	5182.91
197.15	5181.99	197.7	5181.9	203.82	5180.92	204.84	5180.73	206.23	5180.47
211.98	5179.46	216.19	5178.81	219.11	5178.33	223.1	5177.77	226.25	5177.55
228.56	5177.49	233.39	5177.54	239.96	5178.03	240.52	5178.11	240.94	5178.18

BNADwstm-.rep											
243.64	5178.81	247.66	5179.76	253.31	5180.94	254.8	5181.23	256.82	5181.53		
261.93	5182.1	265.69	5182.39	269.07	5182.51	273.68	5182.71	276.21	5182.81		
278.06	5182.92	283.35	5183.1	290.14	5183.38	290.44	5183.39	290.48	5183.39		
290.55	5183.4	297.62	5184.03	302.81	5184.57	304.76	5184.81	307.41	5185.2		
311.89	5185.92	315.19	5186.3	319.03	5186.68	324.27	5187.01	326.17	5187.07		
326.59	5187.08	327.56	5187.09	333.31	5187.14	336.63	5187.16	339.93	5187.19		
340.44	5187.19	341.13	5187.2	347.58	5187.21	352.31	5187.09	354.72	5186.97		
358	5186.67	361.85	5186.18	364.68	5185.73	368.99	5184.99	374.86	5183.9		
376.13	5183.69	377.06	5183.57	383.12	5182.95	383.26	5182.94	389.43	5182.53		
390.4	5182.49	391.72	5182.47	397.54	5182.65	401.81	5182.81	404.68	5182.97		
408.58	5183.25	411.81	5183.57	414.18	5183.85	418.95	5184.58	425.45	5185.79		
426.09	5185.92	426.56	5186.02	429.62	5186.92	433.22	5187.95	438.93	5189.79		
440.36	5190.3	442.31	5191.08	447.5	5192.97	451.3	5194.36	454.63	5195.48		
459.17	5197.11	461.77	5198.07	463.68	5198.84	468.91	5200.87	476.03	5203.98		
476.05	5203.99	476.11	5204.02	483.18	5207.17	488.43	5209.65	490.32	5210.4		
492.9	5211.48	497.46	5213.23	500.8	5214.52	504.59	5215.78	509.76	5217.6		
511.73	5218.31	513.18	5218.88	518.87	5221.33	522.6	5223.05	525.55	5224.39		
526	5224.59	526.62	5224.85	533.14	5227.71	537.93	5229.77	540.28	5230.78		
543.48	5232.2	547.42	5233.87	550.3	5235.01	554.55	5236.87	560.35	5239.31		
561.69	5239.94	562.68	5240.37	568.83	5243.4	569.1	5243.53	575.05	5246.46		
575.96	5246.95	577.21	5247.65	583.1	5251.06	587.42	5253.62	590.24	5255.37		
594.07	5257.78	597.37	5259.9	599.8	5261.32	600	5261.45				

Manning's n Values num= 1
Sta n Val
0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
197.15 261.93 585.65 585.65 585.65 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 14300.75

INPUT

Description: 2											
Station	Elevation	Data	num=	174							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5181.147	580017	5181.028	909973	5181	9.27002	5180.999	909973	5181		
17.94	5181.0120	78998	5181.0225	78998	5180.9526	97998	5180.9332	29999	5180.85		
36.01001	5180.7841	65997	5180.743	82001	5180.6645	04999	5180.6749	52002	5180.69		
54.08002	5180.755	33002	5180.6957	53003	5180.763	10999	5180.7166	84998	5180.73		
72.15002	5180.773	40997	5180.6978	35999	5180.6681	17999	5180.65	89.28	5180.59		
89.88	5180.59	90.22	5180.691	45999	5180.63	99.25	5180.84	101.39	5180.87		
105.16	5180.89	108.29	5180.91	112.91	5180.94	117.32	5180.97	121.03	5180.99		
124.43	5181.01	126.36	5181.04	133.39	5181.15	135.39	5181.19	135.94	5181.2		
136.9	5181.22	144.43	5181.38	147.46	5181.46	152.78	5181.55	153.46	5181.57		
158.97	5181.65	162.5	5181.67	168.65	5181.68	170.49	5181.69	171.53	5181.67		
175.33	5181.61	180.57	5181.51	182	5181.51	184.53	5181.48	189.6	5181.41		
193.52	5181.38	198.63	5181.31	200.4	5181.27	205.03	5181.19	207.67	5181.09		
216.27	5180.7	216.55	5180.69	216.7	5180.68	217.27	5180.65	225.74	5180.17		
228.06	5180.04	232.15	5179.69	234.77	5179.47	239.58	5179.04	243.81	5178.63		
248.02	5178.2	251.09	5177.89	252.84	5177.69	259.21	5176.9	261.88	5176.57		
262.61	5176.47	263.9	5176.23	270.91	5175.01	274.12	5174.41	279.77	5173.85		
279.95	5173.83	285.64	5173.33	288.98	5173.25	295.64	5173.2	297.16	5173.17		
298.02	5173.13	301.15	5172.98	307.05	5172.7	308.67	5172.61	311.52	5172.58		
314.63	5172.53	316.09	5172.51	320.19	5172.48	325.12	5172.8	327.39	5172.98		
331.7	5173.28	334.15	5173.51	343.09	5174.38	343.19	5174.39	343.22	5174.39		
343.27	5174.4	352.22	5175.17	354.73	5175.4	359.14	5175.63	361.26	5175.75		
366.25	5176.01	370.29	5176.17	375.01	5176.33	377.76	5176.44	379.33	5176.5		
385.03	5176.68	388.36	5176.79	389.28	5176.81	390.89	5176.83	397.4	5176.92		
400.79	5176.96	406.43	5176.94	406.76	5176.94	412.31	5176.92	415.47	5176.92		
422.64	5176.88	423.82	5176.88	424.5	5176.9	426.96	5176.97	433.54	5177.17		
435.34	5177.23	438.51	5177.34	442.57	5177.5	446.86	5177.64	451.61	5177.73		
454.38	5177.79	458.37	5177.86	460.64	5177.88	468.9	5177.89	469.67	5177.89		
469.89	5177.89	470.26	5177.89	478.71	5177.84	481.4	5177.82	486.13	5177.75		
487.74	5177.72	492.92	5177.65	496.78	5177.64	502.01	5177.66	504.43	5177.66		
505.81	5177.76	510.84	5178.19	514.85	5178.54	515.95	5178.64	517.88	5178.78		
523.88	5179.25	527.46	5179.51	532.92	5179.93	533.75	5180	538.98	5180.43		
541.95	5180.87	549.63	5182.03	550.49	5182.16	550.99	5182.21	552.78	5182.37		
560.02	5183	562.01	5183.13	565.5	5183.12	569.06	5183.13	573.52	5183.09		
578.09	5182.99	581.38	5182.94	585.04	5182.87	587.12	5182.85	594.72	5182.81		
596.16	5182.8	596.56	5182.8	597.25	5182.8	600	5182.79				

Manning's n Values num= 1
Sta n Val
0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
259.21 397.4 321 321 321 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 14200

INPUT

Description: 1D

BNADwstm-.rep									
Station	Elevation	Data	num=	174					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5177.084	030029	5177.095	559998	5177.1	5.97998	5177.096	719971	5177.11
14.59003	5177.2617	48999	5177.3222	59003	5177.38	23.63	5177.3929	01001	5177.45
32.65997	5177.3838	46002	5177.340	52002	5177.2641	70001	5177.2545	96997	5177.15
50.72998	5177.0452	03998	5177.0254	34003	5177.0359	77002	5177.0963	54999	5177.09
68.79999	5177.0970	21002	5177.0775	07001	5177.0577	84003	5177.0486	09003	5177.09
86.59003	5177.09	86.87	5177.0987	90997	5177.0995	89999	5177.198	10001	5177.11
101.96	5177.09	104.94	5177.05	109.62	5177.04	113.97	5177.15	117.83	5177.25
121.13	5177.33	123.01	5177.36	129.84	5177.39	132.04	5177.4	132.65	5177.4
133.71	5177.4	141.08	5177.43	144.16	5177.46	149.58	5177.34	150.11	5177.33
155.68	5177.21	159.15	5177	165.46	5176.66	167.19	5176.56	168.18	5176.51
171.78	5176.35	177.22	5176.09	178.71	5176.01	181.33	5175.84	186.25	5175.52
190.22	5175.28	195.29	5175.17	197.2	5175.13	201.74	5175.03	204.32	5175.07
213.08	5175.19	213.25	5175.19	213.36	5175.19	213.72	5175.21	222.39	5175.51
224.77	5175.56	228.95	5175.46	231.42	5175.41	236.29	5175.28	240.46	5174.97
244.83	5174.7	247.8	5174.49	249.49	5174.39	255.66	5174.01	258.53	5173.83
259.32	5173.79	260.7	5173.68	267.56	5173.15	270.83	5172.89	276.57	5172.12
276.6	5172.11	282.35	5171.33	285.63	5170.95	292.45	5170.24	293.86	5170.08
294.67	5170.09	297.6	5170.19	303.7	5170.4	305.38	5170.5	305.75	5170.54
308.32	5170.8	312.74	5171.25	316.89	5171.67	321.77	5172.1	324.2	5172.3
328.41	5172.66	330.81	5172.85	339.54	5173.47	339.84	5173.49	339.92	5173.49
340.07	5173.5	348.88	5173.79	351.44	5173.85	355.94	5173.85	357.91	5173.86
362.95	5173.85	366.94	5173.96	371.82	5174.1	374.47	5174.17	375.98	5174.26
381.48	5174.55	385.01	5174.74	385.99	5174.79	387.69	5174.88	394.05	5175.21
397.5	5175.39	403.08	5175.63	403.57	5175.65	409.02	5175.89	412.12	5176.04
419.44	5176.43	420.53	5176.48	421.15	5176.51	423.41	5176.59	430.19	5176.83
432.05	5176.91	435.31	5177.06	439.22	5177.24	443.56	5177.44	448.26	5177.61
451.19	5177.72	455.08	5177.87	457.29	5177.96	465.35	5178.34	466.33	5178.38
466.59	5178.39	467.06	5178.41	475.36	5178.73	478.11	5178.85	482.94	5179.06
484.39	5179.13	489.62	5179.35	493.43	5179.49	498.81	5179.69	501.14	5179.78
502.46	5179.81	507.29	5179.95	511.5	5180.07	512.65	5180.1	514.68	5180.12
520.53	5180.19	524.17	5180.23	529.57	5180.48	530.56	5180.52	535.69	5180.76
538.6	5180.99	546.43	5181.54	547.2	5181.59	547.64	5181.62	549.23	5181.71
556.67	5182.17	558.72	5182.29	562.31	5182.49	565.71	5182.69	570.23	5182.94
574.74	5183.12	578.18	5183.3	581.75	5183.47	583.78	5183.58	591.17	5183.98
592.81	5184.07	593.26	5184.09	594.05	5184.13	600	5184.44		

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 258.53 348.88 215 215 215 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 14100.75

INPUT

Description: 1C

Station	Elevation	Data	num=	174					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5175.251	159973	5175.213	539978	5175.147	719971	5175.08	10.19	5175.05
15.04999	5174.9819	22998	5174.9123	59003	5174.8526	57001	5174.8128	26001	5174.77
34.42999	5174.5837	29999	5174.538	08002	5174.4839	46002	5174.4646	33002	5174.33
49.59998	5174.2955	34003	5174.19	55.37	5174.1961	10999	5174.1264	40002	5174.05
71.21002	5173.9	72.63	5173.87	73.44	5173.84	76.37	5173.7382	46997	5173.51
84.15002	5173.4587	09003	5173.2291	51001	5172.9	95.66	5172.58	100.54	5172.2
102.96	5172.03	107.18	5171.71	109.57	5171.6	118.31	5171.21	118.61	5171.2
118.69	5171.19	118.83	5171.19	127.64	5171.17	130.21	5171.15	134.71	5171.11
136.68	5171.1	141.72	5171.05	145.71	5171.09	150.58	5171.14	153.24	5171.17
154.75	5171.22	160.25	5171.37	163.78	5171.47	164.75	5171.5	166.46	5171.56
172.82	5171.78	176.27	5171.89	181.85	5172.11	182.33	5172.12	187.78	5172.32
190.89	5172.38	198.2	5172.57	199.3	5172.59	199.92	5172.58	202.19	5172.54
208.96	5172.43	210.81	5172.41	214.08	5172.26	217.99	5172.1	222.33	5171.89
227.03	5171.67	229.95	5171.51	233.84	5171.31	236.06	5171.3	244.13	5171.29
245.09	5171.29	245.36	5171.29	245.83	5171.28	254.13	5171.15	256.88	5171.09
261.7	5170.59	263.16	5170.44	268.39	5169.87	272.2	5169.44	277.57	5168.86
279.91	5168.6	281.23	5168.6	286.07	5168.64	290.27	5168.68	291.42	5168.7
293.45	5168.81	299.3	5169.1	302.94	5169.31	304.86	5169.38	308.34	5169.51
309.32	5169.54	314.45	5169.73	317.37	5169.83	325.2	5170.15	325.97	5170.18
326.41	5170.2	328	5170.31	335.44	5170.82	337.48	5170.98	341.07	5171.12
344.48	5171.27	349	5171.44	353.51	5171.57	356.95	5171.65	360.51	5171.75
362.55	5171.83	369.94	5172.12	371.58	5172.19	372.03	5172.2	372.82	5172.25
380.61	5172.73	383.54	5172.92	388.69	5173.3	389.65	5173.37	395.06	5173.79
398.68	5174.05	404.57	5174.42	406.58	5174.55	407.72	5174.61	411.88	5174.82
416.75	5175.07	418.09	5175.12	420.44	5175.21	425.79	5175.42	429.61	5175.57
434.82	5175.76	436.32	5175.8	441.12	5175.96	443.86	5176.03	452.19	5176.27
452.64	5176.28	452.89	5176.29	453.82	5176.3	461.93	5176.42	464.15	5176.46
468.06	5176.51	470.96	5176.53	475.67	5176.6	480	5176.68	483.94	5176.71
487.18	5176.75	489.03	5176.82	495.76	5177.09	498.06	5177.18	498.7	5177.21
499.81	5177.28	507.1	5177.71	510.21	5177.89	515.69	5178.17	516.13	5178.19
521.73	5178.5	525.17	5178.65	531.56	5178.88	533.24	5178.95	534.2	5179.01
537.7	5179.22	543.24	5179.57	544.76	5179.66	547.43	5179.83	552.27	5180.17
556.28	5180.42	561.31	5180.74	563.31	5180.88	567.79	5181.18	570.34	5181.33
579.18	5181.88	579.31	5181.89	579.38	5181.89	579.64	5181.91	588.41	5182.54
590.82	5182.72	595.06	5183.05	597.45	5183.24	600	5183.43		

BNADwstm-.rep

Manning's n Values num= 1

Sta n Val

0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

 254.13 344.48 200 200 200 .1 .3

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 199.92 5172.58 F

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13900.75

INPUT

Description: 1B

Station	Elevation	Data	num=	230
Sta	Elev	Sta	Elev	Sta
0	5179.96	4100342	5179.87	4.72998
16.23999	5177.64	18.47998	5177.46	26.60004
28.20001	5176.77	36.54999	5176.33	39.28003
50.79004	5175.59	54.62	5175.36	59.95001
68.54004	5174.62	72.67999	5174.44	73.82001
85.34003	5173.97	90.75	5173.71	91.69
107.57	5173.02	108.37	5172.99	108.82
119.88	5172.72	123.44	5172.5	126.89
139.32	5171.24	142.91	5170.9	144.96
154.43	5170.08	155.19	5170.06	163.03
172.07	5169.61	177.46	5169.55	181.1
190.14	5169.47	194.36	5169.44	199.17
208.2	5169.34	212.01	5169.33	217.24
226.27	5169.33	234.56	5169.38	235.04
244.34	5169.28	246.55	5169.26	250.43
262.41	5169.08	266.31	5169	269.58
280.48	5168.82	281.1	5168.81	282.18
298.06	5168.93	298.55	5168.94	304.13
315.64	5169.38	316.62	5169.39	320.17
329.8	5169.54	334.69	5169.56	338.68
350.19	5169.28	352.76	5169.23	361.55
362.11	5168.98	370.83	5168.82	373.22
384.74	5168.79	388.9	5168.83	393.3
404.05	5168.89	406.97	5168.89	407.77
419.28	5168.95	425.04	5168.96	425.05
440.92	5169.06	442.31	5169.06	443.11
453.83	5169.26	456.8	5169.27	461.17
472.67	5168.71	476.86	5168.37	479.24
488.38	5167.19	488.54	5167.19	497.31
504.42	5166.97	506.35	5166.98	511.41
522.92	5167.56	524.42	5167.63	529.87
536.17	5168.23	542.49	5168.6	545.95
557.47	5169.99	560.56	5170.34	567.91
571.8	5171.56	578.63	5172.28	580.5
592.01	5172.89	596.69	5172.77	599.66
613.74	5172.41	614.76	5172.4	615.04
626.56	5172.48	631.41	5172.64	632.83
647.28	5173.11	649.59	5173.18	650.9
661.11	5173.7	663.16	5173.78	668.97
679.03	5174.37	684.14	5174.56	687.04
696.08	5175.21	697.62	5175.31	705.11
714.15	5176.41	718.68	5176.74	723.18
732.21	5177.68	739.56	5178.08	741.25
750.28	5178.89	753.23	5179.12	758.4
768.35	5180.57	774.28	5181.18	776.26
786.42	5182.53	787.77	5182.67	790.15

Manning's n Values num= 1

Sta n Val

0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

 154.43 557.47 200 200 200 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13700.75

INPUT

Description: 1A

Station	Elevation	Data	num=	174
Sta	Elev	Sta	Elev	Sta
0	5171.184	200012	5171.15	159973
14.20001	5171.18	16.94	5171.22	176001
32.26001	5171.1637	64001	5171.0939	96997
50.33002	5170.9451	48999	5170.9353	51001
68.40002	5170.55	69.38	5170.5274	52002
86.03003	5169.7186	46997	5169.6988	07999
101.13	5169.31	104.54	5169.27	109.06
			5169.24	113.58

BNADwstm-.rep

120.58	5169.03	122.61	5168.95	130.02	5168.74	131.65	5168.69	132.09	5168.68
132.88	5168.67	140.68	5168.5	143.61	5168.46	148.75	5168.44	149.72	5168.43
155.12	5168.47	158.75	5168.59	164.63	5168.78	166.64	5168.85	167.78	5168.84
171.95	5168.71	176.82	5168.54	178.15	5168.48	180.5	5168.36	185.85	5168.11
189.67	5167.91	194.89	5167.9	196.38	5167.91	201.19	5167.92	203.92	5167.97
212.25	5168.18	212.7	5168.19	212.96	5168.19	213.89	5168.23	221.99	5168.55
224.22	5168.64	228.12	5168.52	231.03	5168.44	235.73	5168.29	240.06	5168.07
244	5167.85	247.25	5167.67	249.1	5167.6	255.83	5167.39	258.13	5167.31
258.76	5167.28	259.87	5167.22	267.17	5166.83	270.28	5166.66	275.75	5166.19
276.2	5166.15	281.79	5165.67	285.23	5165.54	291.62	5165.36	293.31	5165.3
294.27	5165.29	297.77	5165.29	303.19	5165.3	303.3	5165.3	304.82	5165.32
307.49	5165.38	312.34	5165.49	316.34	5165.58	321.37	5165.69	323.37	5165.73
327.85	5165.83	330.41	5165.93	339.24	5166.28	339.37	5166.29	339.44	5166.29
339.71	5166.3	348.48	5166.66	350.89	5166.74	355.12	5166.87	357.51	5166.95
362.4	5167.1	366.55	5167.3	370.99	5167.51	373.92	5167.65	375.58	5167.78
381.65	5168.29	384.62	5168.54	385.43	5168.6	386.86	5168.65	393.65	5168.85
396.95	5168.96	402.69	5169.11	402.74	5169.12	408.46	5169.25	411.72	5169.25
418.61	5169.2	419.98	5169.19	420.75	5169.19	423.59	5169.22	429.79	5169.31
431.49	5169.35	434.49	5169.46	438.82	5169.64	443.01	5169.78	447.86	5169.97
450.36	5170.07	454.52	5170.24	456.89	5170.34	465.52	5170.77	465.93	5170.79
466.04	5170.79	466.23	5170.81	474.96	5171.34	477.55	5171.5	482.11	5171.82
484	5171.96	489.07	5172.31	493.03	5172.64	497.98	5173.08	500.58	5173.31
502.07	5173.45	507.46	5173.99	511.1	5174.35	512.1	5174.44	513.86	5174.62
520.14	5175.24	523.62	5175.58	529.17	5176.06	529.73	5176.1	535.13	5176.55
538.21	5176.88	545.6	5177.65	546.65	5177.76	547.24	5177.83	549.4	5178.08
556.27	5178.84	558.16	5179.05	561.48	5179.42	565.31	5179.85	569.68	5180.33
574.34	5181	577.35	5181.44	581.19	5181.99	583.38	5182.31	591.34	5183.41
592.41	5183.55	592.71	5183.59	593.23	5183.65	600	5184.36		

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	224.22	384.62		57	57		.1	.3

Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 0 224.22 5168.64 F

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13150.55

INPUT

Description: 1
 Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-85	5169.02	0	5167.54	11.41	5167.47	19.81	5165.67	30.27	5165.88
32.83	5167	41.57	5166.8	48.77	5165.45	77.26	5165.39	80.94	5164.71
92.23	5164.49	98.97	5165.64	111.85	5165.48	133.75	5165.15	137.68	5166.1
168.37	5166.69	213.99	5169						

Manning's n Values num= 1
 Sta n Val
 -85 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	77.26	98.97		29	29		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13150.54

INPUT

Description: 0.995
 Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.77	22.2	5168	80	5167	96.4	5166	112.3	5165
131.7	5164.94	139.7	5165	200.4	5166	203	5165.61	215	5168.11
235	5168.79								

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	96.4	200.4		43	43		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13150

INPUT

Description: 0.99
 Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-20	5167.97	0	5166.86	21.63	5166.82	43.34	5166.68	57.45	5165.149
64.44	5164.39	79.51	5164.3	93.24	5165.16	114.39	5165.17	136.73	5165.25
149.39	5165.81	149.39	5170.81						

Manning's n Values num= 1

Sta	n Val
-20	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	57.45	93.24	53	53	53		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13149.5

INPUT
Description: 0.98
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5167.313	24.29	5167.371	39.62	5167.354	60.32	5164.549	85.01	5164.104
116.02	5164.682	130.83	5164.608	144.23	5166.849	156.05	5166.808	156.06	5171.81

Manning's n Values num= 1

Sta	n Val
0	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	39.62	144.23	40	40	40		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13149

INPUT
Description: 0.97
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.1	49.4	5169.45	50.07	5169.49	50.35	5168.885	51.17	5168.85
61.59	5163.65	101.31	5163.52	132.46	5163.46	143.4	5168.85	144.12	5168.85
144.23	5169.47	144.98	5169.46	152.11	5168.02	166.64	5167.65		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	49.4	.013	144.98	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	51.17	143.4	16	16	16		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13148.5

INPUT
Description: 0.96
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.81	19.06	5169.01	43.97	5168.92	44.59	5168.94	45.38	5169
45.59	5167.32	46.78	5167.4	56.88	5162.462	92.27	5162.49	124.64	5162.28
135.35	5167.61	136.04	5167.63	136.31	5168.94	137.01	5168.95	137.71	5168.77
142.76	5168.44	155.28	5168.25	161.19	5168.46				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	43.97	.013	137.01	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	46.78	135.35	9	9	9		.3	.5

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13148

INPUT
Description: 0.95
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.94	24.08	5168.75	24.97	5168.97	25.58	5168.98	26.85	5161.49
28.25	5161.275	53.1	5161.32	61.14	5161.46	76.77	5161.14	92.95	5161.09
94.34	5161.27	95.08	5161.28	95.72	5168.91	96.47	5168.95	112.27	5168.89
131.3	5168.99								

Manning's n Values num= 3

BNADwstm-.rep

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	24.08	.013	96.47	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	25.58	95.72		65	63		.3	.5

CULVERT

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13146

INPUT

Description: Tesuque Road Crossing

Distance from Upstream XS = 2

Deck/Roadway Width = 57

Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	5168.94	5167.17	54.97	5168.75		119	5168.73	
182.49	5168.87							

Upstream Bridge Cross Section Data

Station	Elevation	Data	num=	7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.94	25.58	5168.98	26.85	5161.4	61.14	5161.25	95.08	5161.17
95.72	5168.91	131.3	5168.99						

Manning's n Values

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	25.58	.13	95.72	.016

Bank Sta:	Left	Right	Coeff	Contr.	Expan.
	25.58	95.72		.3	.5

Downstream Deck/Roadway Coordinates

num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	5168.04	5166.66	54.97	5167.76		94	5167.8	
119	5167.6		182.49	5168.53				

Downstream Bridge Cross Section Data

Station	Elevation	Data	num=	7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.04	21.31	5167.81	21.7	5160.08	93.91	5160.08	94.56	5167.8
117.375	5168.15	131.3	5168.99						

Manning's n Values

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	21.31	.013	94.56	.016

Bank Sta:	Left	Right	Coeff	Contr.	Expan.
	21.31	94.56		.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	6	10

FHWA Chart # 8 - flared wingwalls
 FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
 Solution Criteria = Highest U.S. EG
 Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef

2	59	.013	.013	0	.4	1
---	----	------	------	---	----	---

Number of Barrels = 6
 Upstream Elevation = 5161.25
 Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
34.51	45.01	55.51	66.36	76.93	87.43

Downstream Elevation = 5160.26
 Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
31.34	41.84	52.34	63.19	73.76	84.26

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13145

INPUT

Description: 0.94

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	BNADwstm-.rep	Sta	Elev	Sta	Elev
0	5168.04	20.36	5167.76	21.31	5167.81	21.7	5160.08	22.86	5160.06	
24.3	5160.07	48.8	5159.96	55.49	5160.26	74.36	5159.94	91.17	5160.15	
92.78	5160.12	93.91	5160.08	94.56	5167.8	95.6	5167.41	117.375	5168.15	

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.36	.013	95.6	.035

Bank	Sta: Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	21.31	94.56		9	9		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13144

INPUT
Description: 0.93

Station	Elevation	Data	num=	13	Sta	Elev	Sta	Elev	Sta	Elev
0	5168.04	16.65	5167.12	17.33	5167.1	17.53	5166.58	18.37	5166.57	
32.98	5159.87	68.47	5159.88	108.6	5159.86	122.23	5165.8	123.255	5165.865	
123.615	5167.085	124.35	5167.116	138.79	5168.15					

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	16.65	.013	32.98	.035	108.6	.013	124.3	.035

Bank	Sta: Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	18.37	122.23		15	15		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13143

INPUT
Description: 0.92

Station	Elevation	Data	num=	13	Sta	Elev	Sta	Elev	Sta	Elev
0	5167.15	1.453	5167.12	2.135	5167.105	2.29	5166.55	3.24	5166.55	
17.055	5159.686	56.23	5159.65	102.1	5159.58	116.32	5166.45	117.28	5166.45	
117.4	5167.09	118.106	5167.08	118.775	5166.717					

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1.453	.013	17.05	.035	102.1	.013	118.106	.035

Bank	Sta: Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	3.24	116.32		183	172		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13140

INPUT
Description: 0.91

Station	Elevation	Data	num=	11	Sta	Elev	Sta	Elev	Sta	Elev
0	5166.92	12.82	5165.57	17.77	5164.2	25.43	5163.51	34.93	5157.47	
69.78	5157.25	115.03	5157.51	124.4	5162.72	137.06	5162.84	142.85	5163.3	
148.81	5163.44									

Manning's n Values num= 1

Sta	n Val	Sta	n Val
0	.035		

Bank	Sta: Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	25.43	124.4		7	7		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
REACH: Alignment - Dam RS: 13135

INPUT
Description: 0.9

Station	Elevation	Data	num=	11	Sta	Elev	Sta	Elev	Sta	Elev
0	5166.92	12.82	5165.57	17.77	5164.2	25.43	5163.51	34.93	5154.85	
69.78	5154.75	115.03	5154.62	124.4	5162.72	137.06	5162.84	142.85	5163.3	
148.81	5163.44									

Manning's n Values num= 1

Sta	n Val	Sta	n Val

BNADwstm-.rep

0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	25.43	124.4		199 199	199		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13130

INPUT

Description: 0.8
 Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5163.82	9.59	5161.86	11.43	5160.11	22.22	5158.98	38.45	5153.39
75.24	5152.76	111.51	5152.8	123.76	5158.34	129.39	5158.8	135.05	5158.85
148.75	5162.51								

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	22.22	129.39		394 392	390		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13120

INPUT

Description: 0.7
 Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5162.4	16.83	5157.28	25.27	5156.08	35.28	5151.92	75.33	5149.46
112.29	5150.98	126.1	5155.97	131.63	5156.42	136.88	5156.47	148.72	5157.55

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	25.27	126.1		393 393	393		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13110

INPUT

Description: 0.6
 Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5156.82	25.32	5154.93	40.3	5149.03	77.54	5148.11	108.22	5147.82
123.95	5153.28	129.96	5153.69	135.02	5153.42	148.3	5154.08		

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	25.32	129.96		398 400	409		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13100

INPUT

Description: 0.53
 Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5148.08	5.4	5148.5	8.71	5149	18.57	5150.7	32.06	5150.54
46.08	5145.79	80.21	5144.96	121.91	5145.86	135.74	5150.4	146.26	5150.43
150.77	5150.65	155.95	5150.46	158.16	5150.37				

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	32.06	135.74		8 8	8		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13095

INPUT

Description: 0.52

Station	Elevation	Data	num=	14							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5148.08	5.4	5148.5	8.71	5149	18.57	5150.7	32.06	5150.54		
53.82	5141.08	67.52	5139.87	95.57	5139.15	121.91	5139.64	135.74	5150.4		
146.26	5150.43	150.77	5150.65	155.95	5150.46	158.16	5150.37				

Manning's n Values

num= 1

Sta	n Val
0	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	32.06	135.74	6	6	6		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13093

INPUT

Description: 0.51

Station	Elevation	Data	num=	13							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5148.08	5.4	5148.5	8.71	5149	18.57	5150.7	32.06	5150.54		
46.08	5139.26	80.21	5138.89	121.91	5139.59	135.74	5150.4	146.26	5150.43		
150.77	5150.65	155.95	5150.46	158.16	5150.37						

Manning's n Values

num= 1

Sta	n Val
0	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	32.06	135.74	6	6	6		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13090

INPUT

Description: 0.5

Station	Elevation	Data	num=	13							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5148.08	5.4	5148.5	8.71	5149	18.57	5150.7	32.06	5150.54		
46.08	5140.62	80.21	5140.45	121.91	5140.41	135.74	5150.4	146.26	5150.43		
150.77	5150.65	155.95	5150.46	158.16	5150.37						

Manning's n Values

num= 1

Sta	n Val
0	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	32.06	135.74	410	408	401		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13080

INPUT

Description: 0.4

Station	Elevation	Data	num=	10							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5144.26	23.15	5143.43	38.59	5138.8	68.1	5137.16	110.17	5138.29		
122.75	5143.38	126.08	5144.01	131.81	5144.34	137.01	5144.21	148.91	5144.48		

Manning's n Values

num= 1

Sta	n Val
0	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	23.15	122.75	394	402	416		.1	.3

CROSS SECTION

RIVER: Lidar Dwnstm

REACH: Alignment - Dam RS: 13070

INPUT

Description: 0.3

Station	Elevation	Data	num=	10							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5141.77	22.48	5141.02	38.43	5135.31	80.51	5134.83	121.07	5135.63		
134.28	5140.73	135.9	5140.73	141.35	5141.09	146.52	5140.9	153.97	5139.85		

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Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 22.48 134.28 160 160 160 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13060

INPUT

Description: 0.21
 Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5138.06	26.64	5137.89	40.08	5131.76	78.6	5130.8	124.02	5131.8
136.9	5137.17	148.83	5138.41	156.01	5138.46	163.91	5138.02		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	26.64	.04	136.9	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 26.64 136.9 81 81 81 .3 .5

BRIDGE

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13055

INPUT

Description: San Ildefonso Road Crossing
 Distance from Upstream XS = 5
 Deck/Roadway Width = 63
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	5138.06	5137.82	26.54	5138.19	5135.82	35.95	5138.28	5135.82
123.89	5138.28	5135.82	133.38	5138.15	5135.82	191.4	5137.59	

Upstream Bridge Cross Section Data
 Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5138.06	26.64	5137.89	33.52	5131.76	78.6	5130.8	127.95	5131.8
133.38	5136.5	148.83	5138.01	156.01	5138	163.91	5138		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	26.64	.04	133.38	.035

Bank Sta: Left Right Coeff Contr. Expan.
 26.64 133.38 .3 .5

Downstream Deck/Roadway Coordinates
 num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	5138.82	5136.56	35.95	5138.28	5135.83	123.89	5138.28	5135.83
130.4	5138.15	5135.83	133.38	5138.15	5135.83	160	5137.59	

Downstream Bridge Cross Section Data
 Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5138.38	5.88	5138.43	13.34	5138.08	24.6	5131.47	67.63	5131.14
119.12	5130.96	133.38	5136.5	151.22	5137.59				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	13.34	.04	133.38	.035

Bank Sta: Left Right Coeff Contr. Expan.
 13.34 133.38 .1 .3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Piers = 2

Pier Data

Pier Station	Upstream=	Downstream=
61.72	52.9	

 Upstream num= 4

Width	Elev	Width	Elev	Width	Elev	Width	Elev

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 1 5131.5 1 5134 2.5 5134.7 2.5 5136.5
 Downstream num= 4
 Width Elev Width Elev Width Elev Width Elev
 1 5131.5 1 5134 2.5 5134.7 2.5 5136.5

Pier Data
 Pier Station Upstream= 99.7 Downstream= 90.9
 Upstream num= 4
 Width Elev Width Elev Width Elev Width Elev
 1 5131.5 1 5134 2.5 5134.7 2.5 5136.5
 Downstream num= 4
 Width Elev Width Elev Width Elev Width Elev
 1 5131.5 1 5134 2.5 5134.7 2.5 5136.5

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13050

INPUT

Description: 0.2
 Station Elevation Data num= 8
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 5138.38 5.88 5138.43 13.34 5138.08 31.58 5131.47 67.63 5131.14
 105.01 5130.97 127.98 5138.61 151.22 5137.53

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .035 13.34 .04 127.98 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 13.34 127.98 193 234 277 .1 .3

CROSS SECTION

RIVER: Lidar Dwnstm
 REACH: Alignment - Dam RS: 13040

INPUT

Description: 0.1
 Station Elevation Data num= 9
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 5137.45 10.38 5137.6 14.36 5137.88 20.8 5136.91 42.51 5128.78
 71.46 5127.23 102.04 5128.01 119.45 5135.21 150.52 5133.97

Manning's n Values num= 1
 Sta n Val
 0 .035

Bank Sta: Left Right Coeff Contr. Expan.
 20.8 119.45 .1 .3

SUMMARY OF MANNING'S N VALUES

River: Lidar Dwnstm

Reach	River Sta.	n1	n2	n3	n4	n5
Alignment - Dam	18022.9	.013				
Alignment - Dam	17987.1	.013				
Alignment - Dam	17735.62	.035				
Alignment - Dam	17129.8	.035				
Alignment - Dam	17000.0	.05	.05	.05		
Alignment - Dam	16550	.035				
Alignment - Dam	16457.0	.05	.035	.035	.035	
Alignment - Dam	15976	.035				
Alignment - Dam	15247.7	.035				
Alignment - Dam	15100	.035				
Alignment - Dam	15090	Culvert				
Alignment - Dam	15080	.035				
Alignment - Dam	14886.4	.035				

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Alignment - Dam	14300.75	.035				
Alignment - Dam	14200	.035				
Alignment - Dam	14100.75	.035				
Alignment - Dam	13900.75	.035				
Alignment - Dam	13700.75	.035				
Alignment - Dam	13150.55	.035				
Alignment - Dam	13150.54	.035				
Alignment - Dam	13150	.035				
Alignment - Dam	13149.5	.035				
Alignment - Dam	13149	.035	.013	.035		
Alignment - Dam	13148.5	.035	.013	.035		
Alignment - Dam	13148	.035	.013	.035		
Alignment - Dam	13146	Culvert				
Alignment - Dam	13145	.035	.013	.035		
Alignment - Dam	13144	.035	.013	.035	.013	.035
Alignment - Dam	13143	.035	.013	.035	.013	.035
Alignment - Dam	13140	.035				
Alignment - Dam	13135	.035				
Alignment - Dam	13130	.035				
Alignment - Dam	13120	.035				
Alignment - Dam	13110	.035				
Alignment - Dam	13100	.035				
Alignment - Dam	13095	.035				
Alignment - Dam	13093	.035				
Alignment - Dam	13090	.035				
Alignment - Dam	13080	.035				
Alignment - Dam	13070	.035				
Alignment - Dam	13060	.035	.04	.035		
Alignment - Dam	13055	Bridge				
Alignment - Dam	13050	.035	.04	.035		
Alignment - Dam	13040	.035				

SUMMARY OF REACH LENGTHS

River: Lidar Dwnstm

Reach	River Sta.	Left	Channel	Right
Alignment - Dam	18022.9	35	35	35
Alignment - Dam	17987.1	43	43	43
Alignment - Dam	17735.62	605.82	605.82	605.82
Alignment - Dam	17129.8	129.8	129.8	129.8
Alignment - Dam	17000.0	212	212	212
Alignment - Dam	16550	331	331	331
Alignment - Dam	16457.0	481	481	481
Alignment - Dam	15976	728.26	728.26	728.26
Alignment - Dam	15247.7	139	192	259
Alignment - Dam	15100	53	53	53
Alignment - Dam	15090	Culvert		
Alignment - Dam	15080	115	115	115
Alignment - Dam	14886.4	585.65	585.65	585.65
Alignment - Dam	14300.75	321	321	321
Alignment - Dam	14200	215	215	215
Alignment - Dam	14100.75	200	200	200
Alignment - Dam	13900.75	200	200	200
Alignment - Dam	13700.75	57	57	57
Alignment - Dam	13150.55	29	29	29
Alignment - Dam	13150.54	43	43	43
Alignment - Dam	13150	53	53	53
Alignment - Dam	13149.5	40	40	40
Alignment - Dam	13149	16	16	16
Alignment - Dam	13148.5	9	9	9
Alignment - Dam	13148	65	63	62
Alignment - Dam	13146	Culvert		
Alignment - Dam	13145	9	9	9
Alignment - Dam	13144	15	15	15
Alignment - Dam	13143	183	172	162
Alignment - Dam	13140	7	7	7
Alignment - Dam	13135	199	199	199
Alignment - Dam	13130	394	392	390
Alignment - Dam	13120	393	393	393
Alignment - Dam	13110	398	400	409
Alignment - Dam	13100	8	8	8
Alignment - Dam	13095	6	6	6
Alignment - Dam	13093	6	6	6
Alignment - Dam	13090	410	408	401
Alignment - Dam	13080	394	402	416
Alignment - Dam	13070	160	160	160
Alignment - Dam	13060	81	81	81
Alignment - Dam	13055	Bridge		
Alignment - Dam	13050	193	234	277
Alignment - Dam	13040			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Lidar Dwnstm

Reach	River Sta.	Contr.	Expan.
Alignment - Dam	18022.9	.1	.3
Alignment - Dam	17987.1	.1	.3
Alignment - Dam	17735.62	.1	.3
Alignment - Dam	17129.8	.1	.3
Alignment - Dam	17000.0	.1	.3
Alignment - Dam	16550	.1	.3
Alignment - Dam	16457.0	.1	.3
Alignment - Dam	15976	.1	.3
Alignment - Dam	15247.7	.1	.3
Alignment - Dam	15100	.3	.5
Alignment - Dam	15090	Culvert	
Alignment - Dam	15080	.1	.3
Alignment - Dam	14886.4	.1	.3
Alignment - Dam	14300.75	.1	.3
Alignment - Dam	14200	.1	.3
Alignment - Dam	14100.75	.1	.3
Alignment - Dam	13900.75	.1	.3
Alignment - Dam	13700.75	.1	.3
Alignment - Dam	13150.55	.1	.3
Alignment - Dam	13150.54	.1	.3
Alignment - Dam	13150	.1	.3
Alignment - Dam	13149.5	.1	.3
Alignment - Dam	13149	.1	.3
Alignment - Dam	13148.5	.3	.5
Alignment - Dam	13148	.3	.5
Alignment - Dam	13146	Culvert	
Alignment - Dam	13145	.1	.3
Alignment - Dam	13144	.1	.3
Alignment - Dam	13143	.1	.3
Alignment - Dam	13140	.1	.3
Alignment - Dam	13135	.1	.3
Alignment - Dam	13130	.1	.3
Alignment - Dam	13120	.1	.3
Alignment - Dam	13110	.1	.3
Alignment - Dam	13100	.1	.3
Alignment - Dam	13095	.1	.3
Alignment - Dam	13093	.1	.3
Alignment - Dam	13090	.1	.3
Alignment - Dam	13080	.1	.3
Alignment - Dam	13070	.1	.3
Alignment - Dam	13060	.3	.5
Alignment - Dam	13055	Bridge	
Alignment - Dam	13050	.1	.3
Alignment - Dam	13040	.1	.3