

Current Downstream Floodway Model

Plan

Profile

Summary

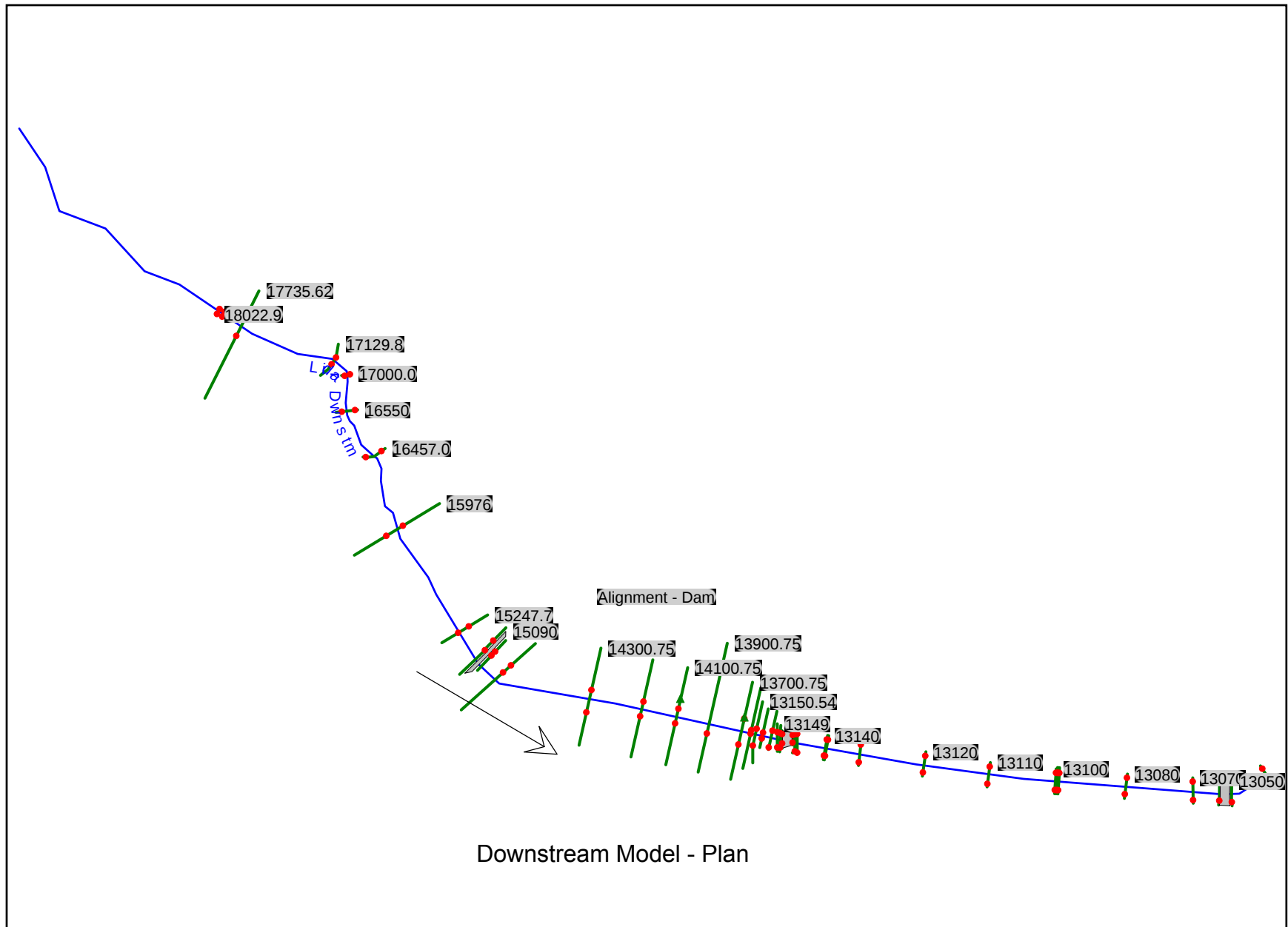
Cross Sections

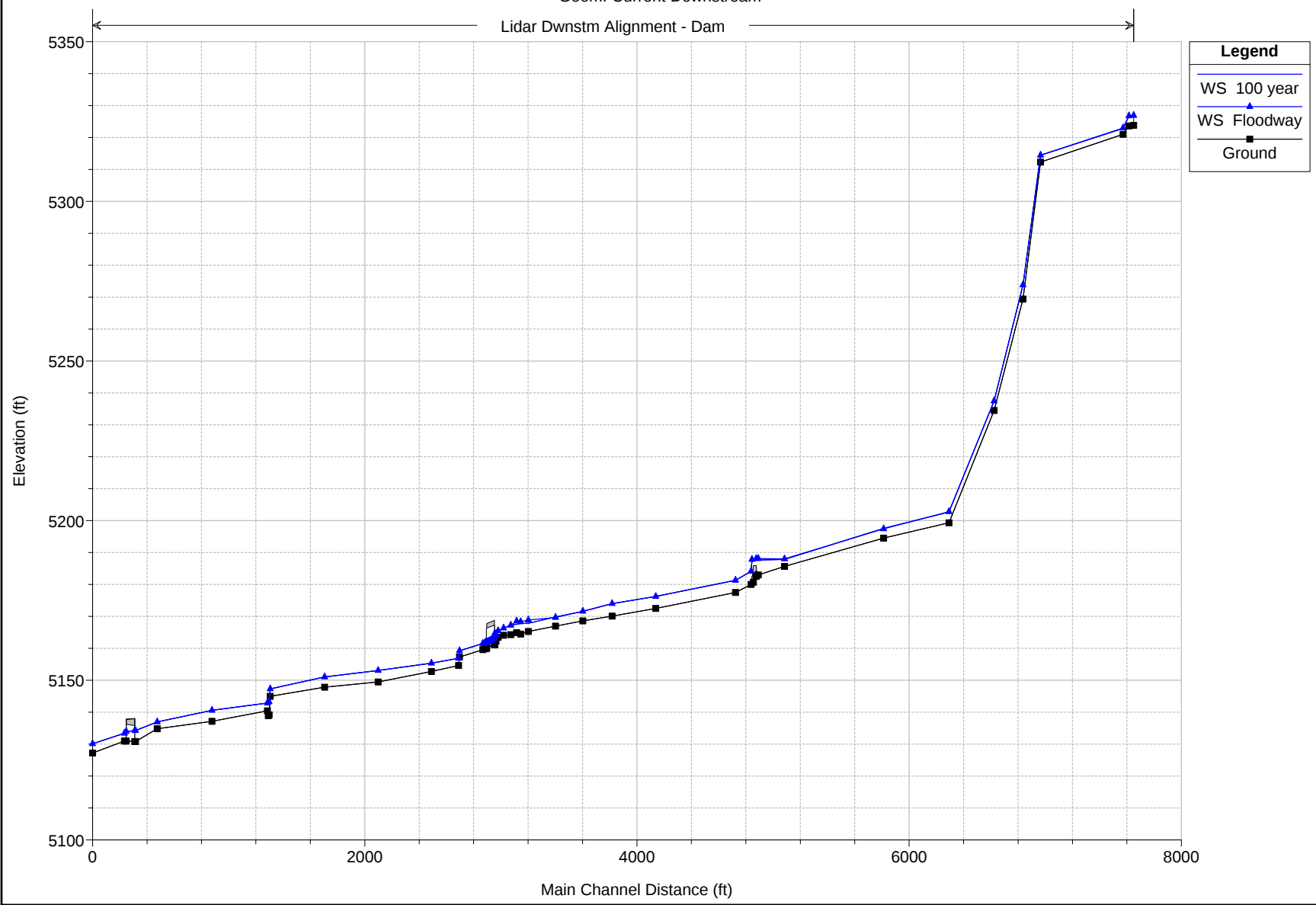
Input/output Report

Hydraulics Model – HEC-RAS Analysis (CD)

Current Downstream Floodway Files

i.Project:	BNA-Current Dstm Floodway	CurrentDownFloodway.prj
ii.Plan:	Current Downstream 2015 Floodway CurrentDownFloodway.p01	
iii.Geometry:	Current Downstream	CurrentDownFloodway.g07
iv.Flow:	Updated 2015 - Downstream	CurrentDownFloodway.f07





HEC-RAS Plan: Down Floodway River: Lidar Dwnstm Reach: Alignment - Dam

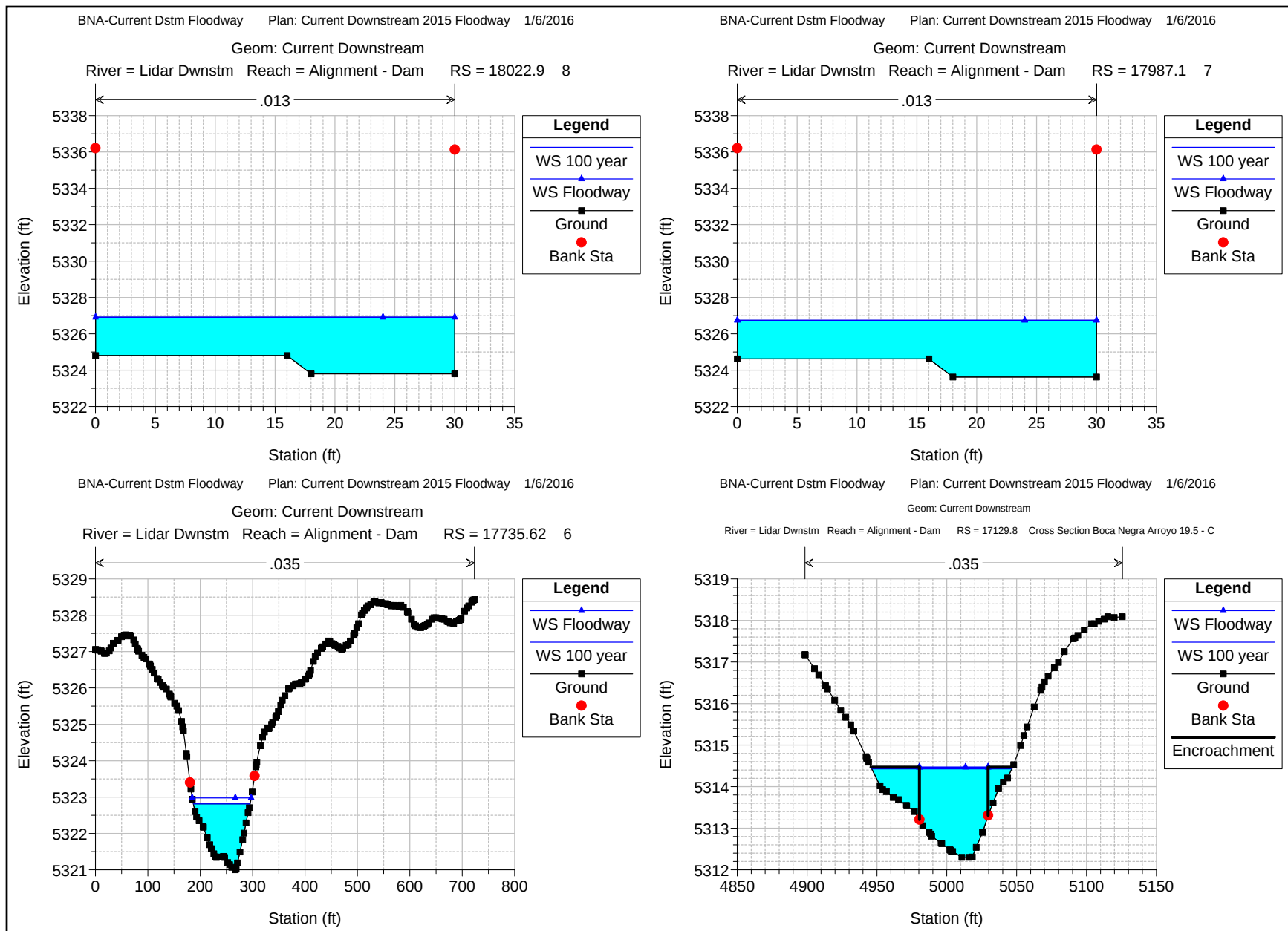
Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Wdth Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Alignment - Dam	18022.9	100 year	5326.91		5328.20	29.99		695.00			0.00	30.01	
Alignment - Dam	18022.9	Floodway	5326.91	0.00	5328.20	29.99		695.00		0.00	0.00	30.01	30.01
Alignment - Dam	17987.1	100 year	5326.74		5328.02	29.99		695.00			0.00	30.01	
Alignment - Dam	17987.1	Floodway	5326.74	0.00	5328.02	29.99		695.00		0.00	0.00	30.01	30.01
Alignment - Dam	17735.62	100 year	5322.81		5323.34	108.22		695.00			180.50	303.61	
Alignment - Dam	17735.62	Floodway	5322.98	0.16	5323.37	112.48		695.00		180.50	180.50	303.61	303.61
Alignment - Dam	17129.8	100 year	5314.43		5315.05	100.14	82.13	588.48	24.39		4980.40	5029.57	
Alignment - Dam	17129.8	Floodway	5314.47	0.04	5315.40	49.17		695.00		4980.40	4980.40	5029.57	5029.57
Alignment - Dam	17000.0	100 year	5273.82		5275.19	27.59		695.00			4980.13	5014.51	
Alignment - Dam	17000.0	Floodway	5273.82	0.00	5275.19	27.59		695.00		4980.13	4980.13	5014.51	5014.51
Alignment - Dam	16550	100 year	5237.45		5238.48	42.35		695.00			16.00	96.23	
Alignment - Dam	16550	Floodway	5237.45	0.00	5238.48	42.34		695.00		16.00	16.00	96.23	96.23
Alignment - Dam	16457.0	100 year	5202.71		5203.11	94.36		695.00			4944.16	5049.59	
Alignment - Dam	16457.0	Floodway	5202.82	0.11	5203.17	97.38		695.00		4944.16	4944.16	5049.59	5049.59
Alignment - Dam	15976	100 year	5197.56		5198.12	78.18		695.00			257.57	375.02	
Alignment - Dam	15976	Floodway	5197.40	-0.15	5198.10	75.55		695.00		257.57	257.57	375.02	375.02
Alignment - Dam	15247.7	100 year	5187.85		5188.49	95.01	1.34	682.75	10.92		132.79	207.43	
Alignment - Dam	15247.7	Floodway	5188.03	0.18	5188.56	74.64		695.00		132.79	132.79	207.43	207.43
Alignment - Dam	15100	100 year	5187.66		5187.72	207.98	27.41	594.84	72.75		56.90	144.58	
Alignment - Dam	15100	Floodway	5188.10	0.44	5188.17	87.68		695.00		56.90	56.90	144.58	144.58
Alignment - Dam	15090		Culvert										
Alignment - Dam	15080	100 year	5184.11		5185.11	59.42	0.67	678.59	15.74		83.06	115.37	
Alignment - Dam	15080	Floodway	5184.12	0.00	5185.11	46.94		678.02	16.98	83.06	83.06	115.37	130.00
Alignment - Dam	14886.4	100 year	5181.32		5182.51	54.13		1110.00			197.15	261.93	
Alignment - Dam	14886.4	Floodway	5181.32	0.00	5182.51	54.13		1110.00		197.15	197.15	261.93	261.93
Alignment - Dam	14300.75	100 year	5176.26		5176.61	109.21		1147.00			259.21	397.40	
Alignment - Dam	14300.75	Floodway	5176.25	-0.01	5176.60	108.76		1147.00		259.21	259.21	397.40	397.40
Alignment - Dam	14200	100 year	5173.99		5174.63	112.12	0.16	1144.37	2.47		258.53	348.88	
Alignment - Dam	14200	Floodway	5174.02	0.03	5174.64	113.51	0.24	1143.49	3.27	235.00	258.53	348.88	375.00
Alignment - Dam	14100.75	100 year	5171.59		5172.33	125.76	15.06	1132.07	1.88		254.13	344.48	
Alignment - Dam	14100.75	Floodway	5171.60	0.01	5172.37	90.35		1149.00		254.13	254.13	344.48	344.48

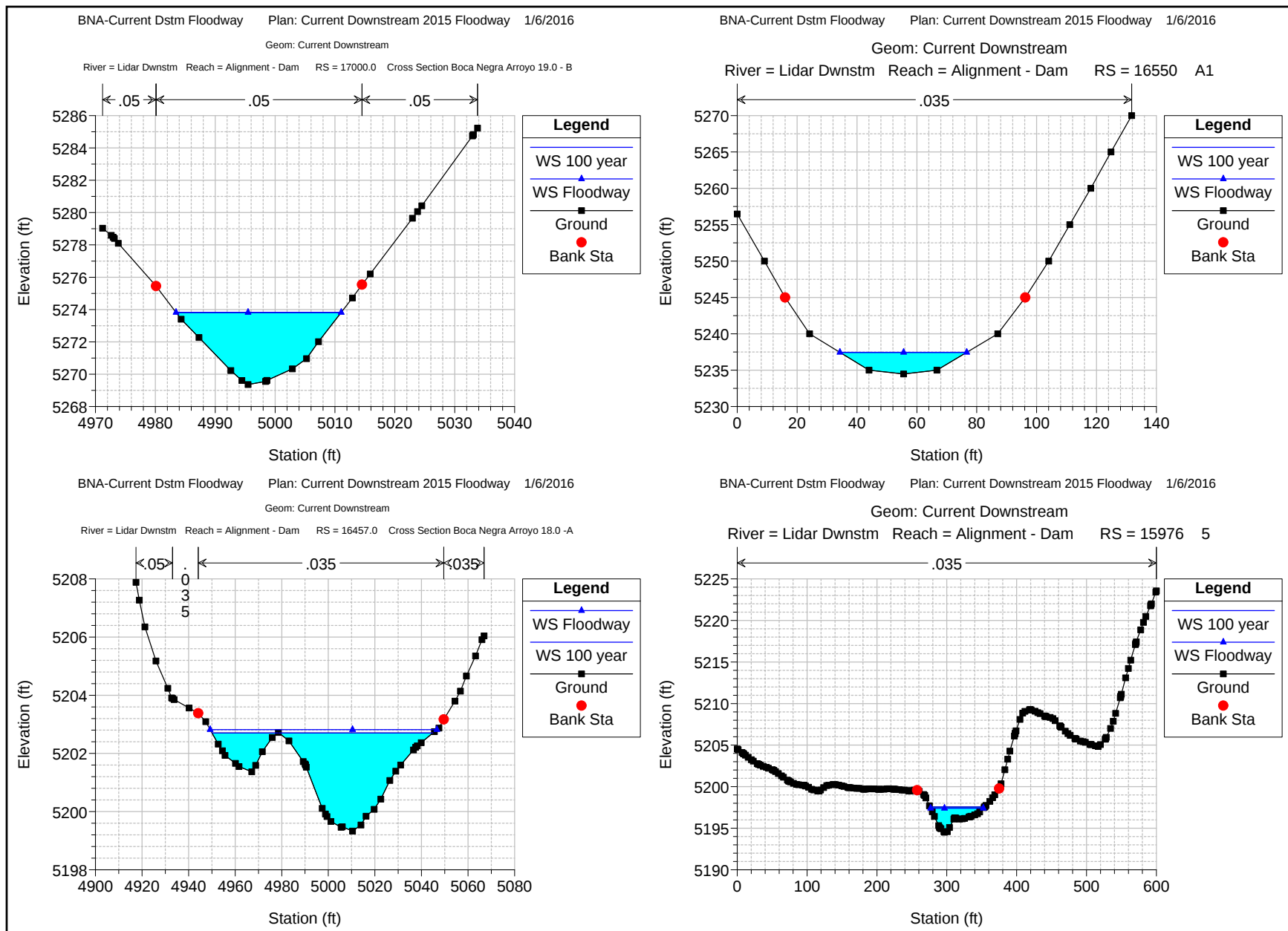
HEC-RAS Plan: Down Floodway River: Lidar Dwnstm Reach: Alignment - Dam (Continued)

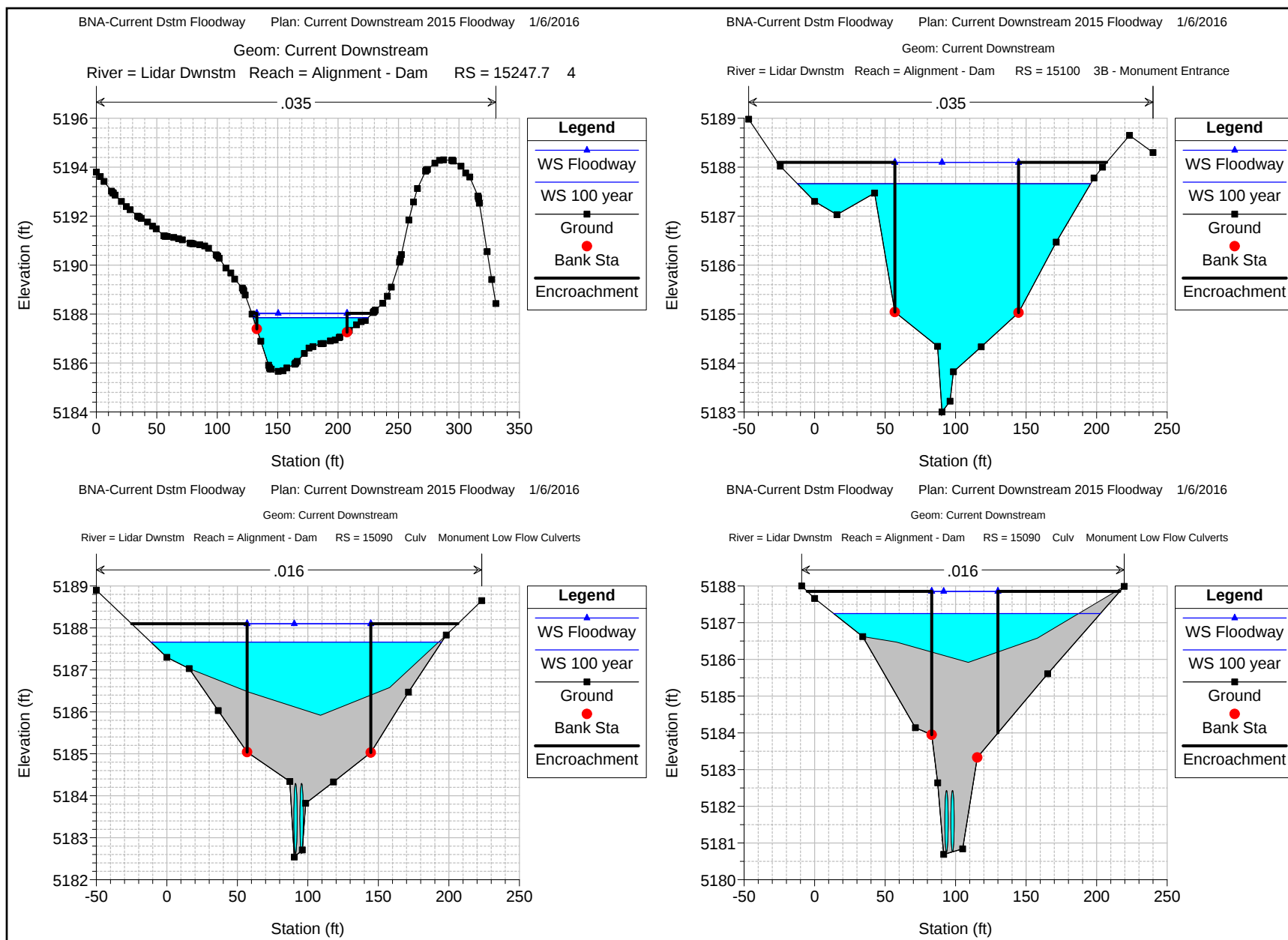
Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Wdth Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Alignment - Dam	13900.75	100 year	5169.84		5169.98	394.73		1149.00			154.43	557.47	
Alignment - Dam	13900.75	Floodway	5169.66	-0.17	5169.88	386.23		1149.00		154.43	154.43	557.47	557.47
Alignment - Dam	13700.75	100 year	5167.85		5168.39	132.31		1149.00			224.22	384.62	
Alignment - Dam	13700.75	Floodway	5168.85	1.00	5169.02	160.40		1149.00		224.22	224.22	384.62	384.62
Alignment - Dam	13150.55	100 year	5167.76		5167.98	202.42	369.06	312.35	467.59		77.26	98.97	
Alignment - Dam	13150.55	Floodway	5168.32	0.55	5168.82	67.00	335.66	481.48	331.86	55.00	77.26	98.97	122.00
Alignment - Dam	13150.54	100 year	5167.53		5167.86	162.93	46.21	1062.66	40.13		96.40	200.40	
Alignment - Dam	13150.54	Floodway	5168.53	1.00	5168.65	160.00	126.62	971.31	51.07	51.00	96.40	200.40	211.00
Alignment - Dam	13150	100 year	5167.26		5167.65	156.53	87.16	547.14	514.70		57.45	93.24	
Alignment - Dam	13150	Floodway	5167.23	-0.03	5168.43	56.00	76.86	883.96	188.17	50.00	57.45	93.24	106.00
Alignment - Dam	13149.5	100 year	5166.34		5167.18	94.06		1149.00			39.62	144.23	
Alignment - Dam	13149.5	Floodway	5166.34	0.00	5167.18	94.06		1149.00		39.62	39.62	144.23	144.23
Alignment - Dam	13149	100 year	5165.51		5166.46	78.74		1149.00			51.17	143.40	
Alignment - Dam	13149	Floodway	5165.51	0.00	5166.46	78.74		1149.00		51.17	51.17	143.40	143.40
Alignment - Dam	13148.5	100 year	5164.45		5165.42	76.19		1149.00			46.79	135.36	
Alignment - Dam	13148.5	Floodway	5164.45	0.00	5165.42	76.19		1149.00		46.79	46.79	135.36	135.36
Alignment - Dam	13148	100 year	5164.71		5165.08	69.06		1149.00			25.58	95.72	
Alignment - Dam	13148	Floodway	5164.71	0.00	5165.08	69.06		1149.00		25.58	25.58	95.72	95.72
Alignment - Dam	13146		Culvert										
Alignment - Dam	13145	100 year	5162.04		5163.04	72.47		1149.00			21.31	94.56	
Alignment - Dam	13145	Floodway	5162.04	0.00	5163.04	72.47		1149.00		21.31	21.31	94.56	94.56
Alignment - Dam	13144	100 year	5161.76		5162.66	84.08		1149.00			18.37	122.23	
Alignment - Dam	13144	Floodway	5161.76	0.00	5162.66	84.08		1149.00		18.37	18.37	122.23	122.23
Alignment - Dam	13143	100 year	5161.55		5162.26	92.87		1149.00			3.24	116.32	
Alignment - Dam	13143	Floodway	5161.55	0.00	5162.26	92.87		1149.00		3.24	3.24	116.32	116.32
Alignment - Dam	13140	100 year	5159.20		5160.09	85.86		1149.00			25.43	124.40	
Alignment - Dam	13140	Floodway	5159.20	0.00	5160.09	85.86		1149.00		25.43	25.43	124.40	124.40
Alignment - Dam	13135	100 year	5156.87		5157.53	84.92		1149.00			25.43	124.40	
Alignment - Dam	13135	Floodway	5156.87	0.00	5157.53	84.92		1149.00		25.43	25.43	124.40	124.40
Alignment - Dam	13130	100 year	5155.35		5155.92	84.40		1149.00			22.22	129.39	
Alignment - Dam	13130	Floodway	5155.35	0.00	5155.92	84.40		1149.00		22.22	22.22	129.39	129.39

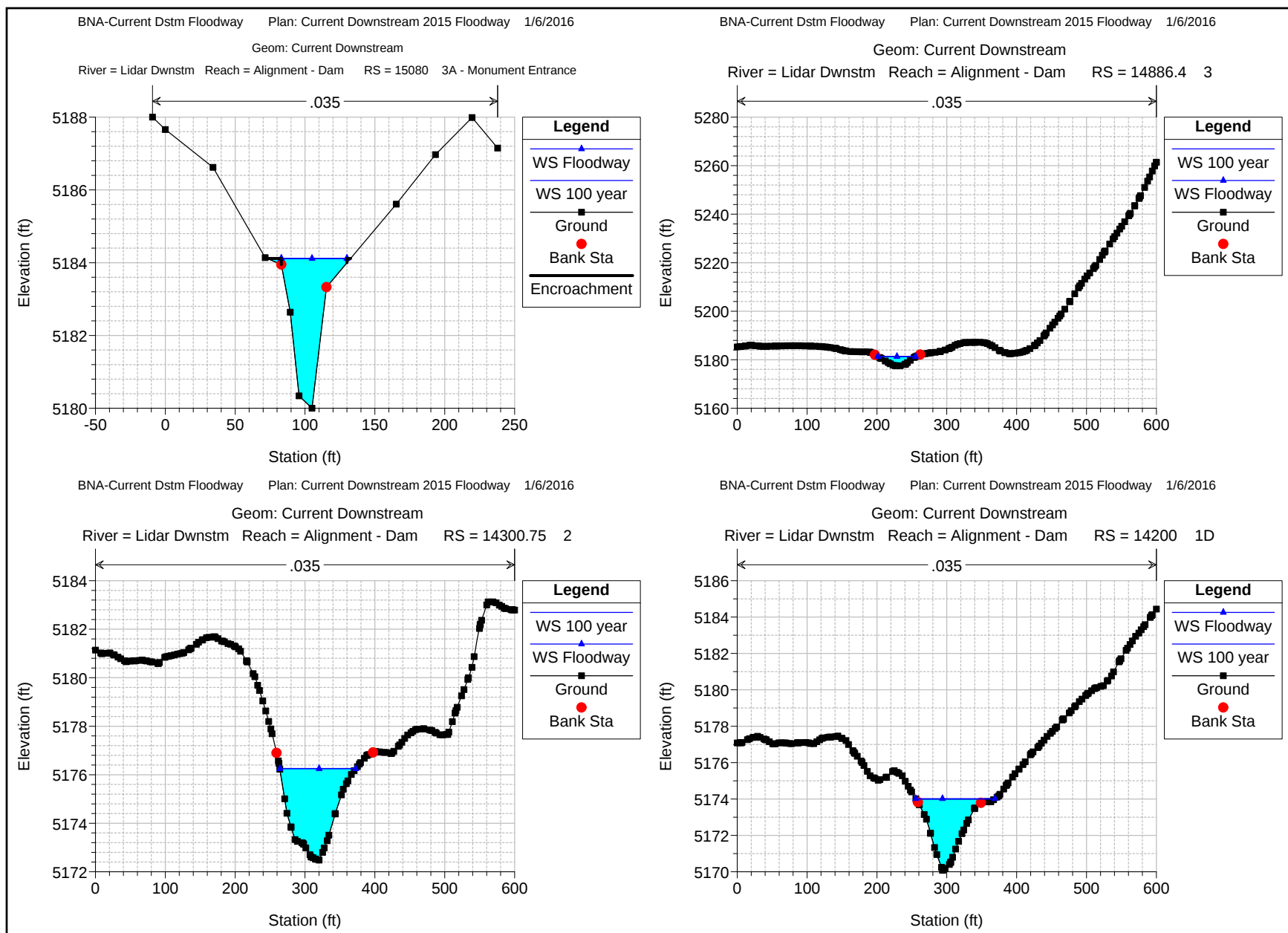
HEC-RAS Plan: Down Floodway River: Lidar Dwnstm Reach: Alignment - Dam (Continued)

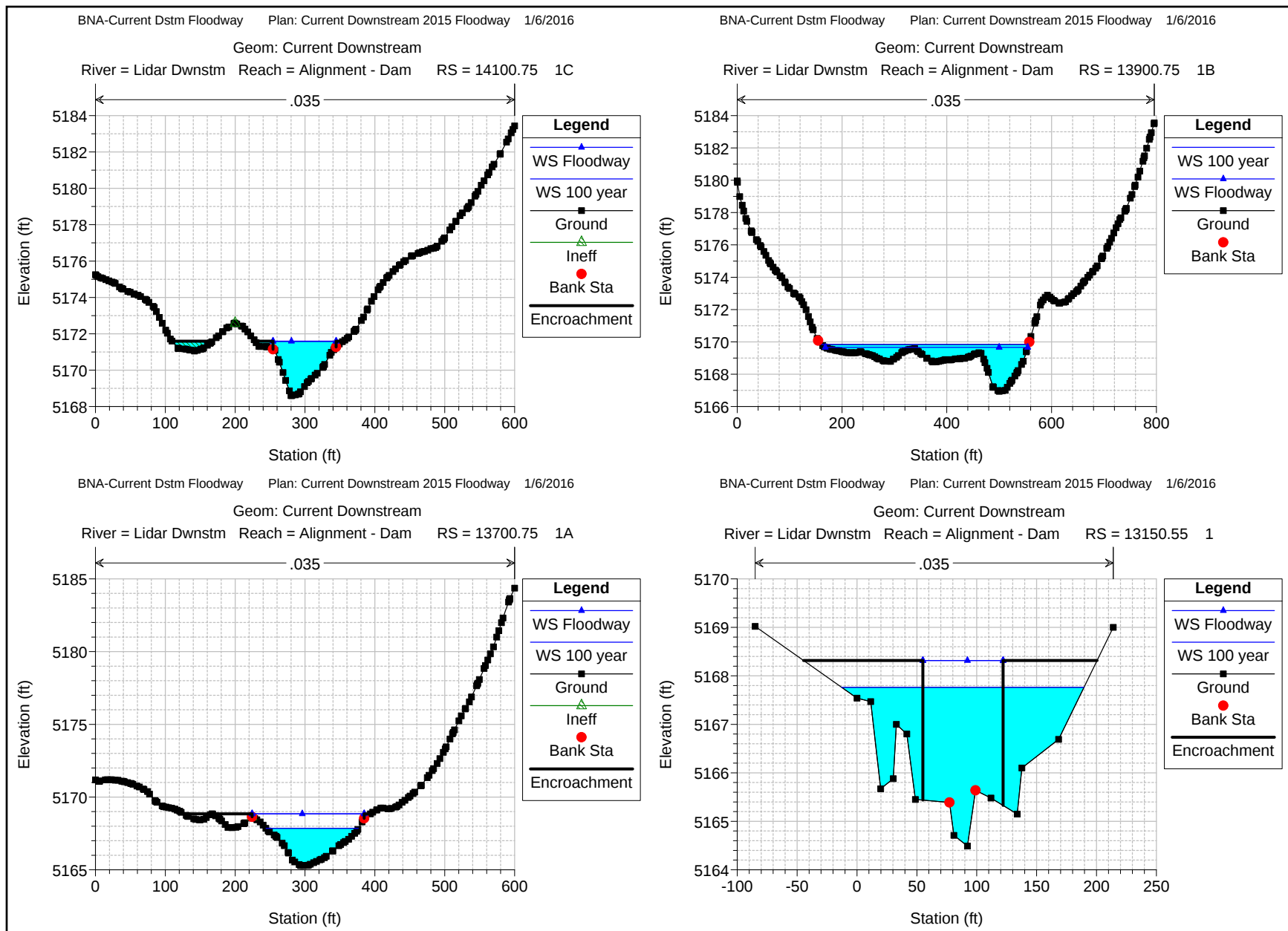
Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Wdth Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Alignment - Dam	13120	100 year	5153.08		5153.55	85.59		1149.00			25.27	126.10	
Alignment - Dam	13120	Floodway	5153.08	0.00	5153.55	85.59		1149.00		25.27	25.27	126.10	126.10
Alignment - Dam	13110	100 year	5151.04		5151.52	82.32		1150.00			25.32	129.96	
Alignment - Dam	13110	Floodway	5151.04	0.00	5151.52	82.32		1150.00		25.32	25.32	129.96	129.96
Alignment - Dam	13100	100 year	5147.29		5148.20	84.64		1150.00			32.06	135.74	
Alignment - Dam	13100	Floodway	5147.29	0.00	5148.20	84.64		1150.00		32.06	32.06	135.74	135.74
Alignment - Dam	13095	100 year	5143.24		5143.55	77.67		1150.00			32.06	135.74	
Alignment - Dam	13095	Floodway	5143.24	0.00	5143.55	77.67		1150.00		32.06	32.06	135.74	135.74
Alignment - Dam	13093	100 year	5143.32		5143.50	85.64		1150.00			32.06	135.74	
Alignment - Dam	13093	Floodway	5143.32	0.00	5143.50	85.64		1150.00		32.06	32.06	135.74	135.74
Alignment - Dam	13090	100 year	5142.88		5143.45	82.43		1150.00			32.06	135.74	
Alignment - Dam	13090	Floodway	5142.88	0.00	5143.45	82.43		1150.00		32.06	32.06	135.74	135.74
Alignment - Dam	13080	100 year	5140.60		5141.06	83.28		1150.00			23.15	122.75	
Alignment - Dam	13080	Floodway	5140.60	0.00	5141.06	83.28		1150.00		23.15	23.15	122.75	122.75
Alignment - Dam	13070	100 year	5136.95		5137.81	90.61		1151.00			22.48	134.28	
Alignment - Dam	13070	Floodway	5136.95	0.00	5137.81	90.61		1151.00		22.48	22.48	134.28	134.28
Alignment - Dam	13060	100 year	5134.23		5134.53	95.17		1151.00			26.64	136.90	
Alignment - Dam	13060	Floodway	5134.23	0.00	5134.53	95.17		1151.00		26.64	26.64	136.90	136.90
Alignment - Dam	13055 BR U	100 year	5134.23		5134.49	97.03		1151.00			26.64	133.38	
Alignment - Dam	13055 BR U	Floodway	5134.23	0.00	5134.49	97.03		1151.00		26.64	26.64	133.38	136.90
Alignment - Dam	13055 BR D	100 year	5133.99		5134.25	104.60		1151.00			13.34	133.38	
Alignment - Dam	13055 BR D	Floodway	5133.99	0.00	5134.25	104.60		1151.00		13.34	13.34	133.38	127.98
Alignment - Dam	13050	100 year	5133.39		5134.05	85.99		1151.00			13.34	127.98	
Alignment - Dam	13050	Floodway	5133.39	0.00	5134.05	85.99		1151.00		13.34	13.34	127.98	127.98
Alignment - Dam	13040	100 year	5130.11		5131.09	68.16		1151.00			20.80	119.45	
Alignment - Dam	13040	Floodway	5130.11	0.00	5131.09	68.16		1151.00		20.80	20.80	119.45	119.45

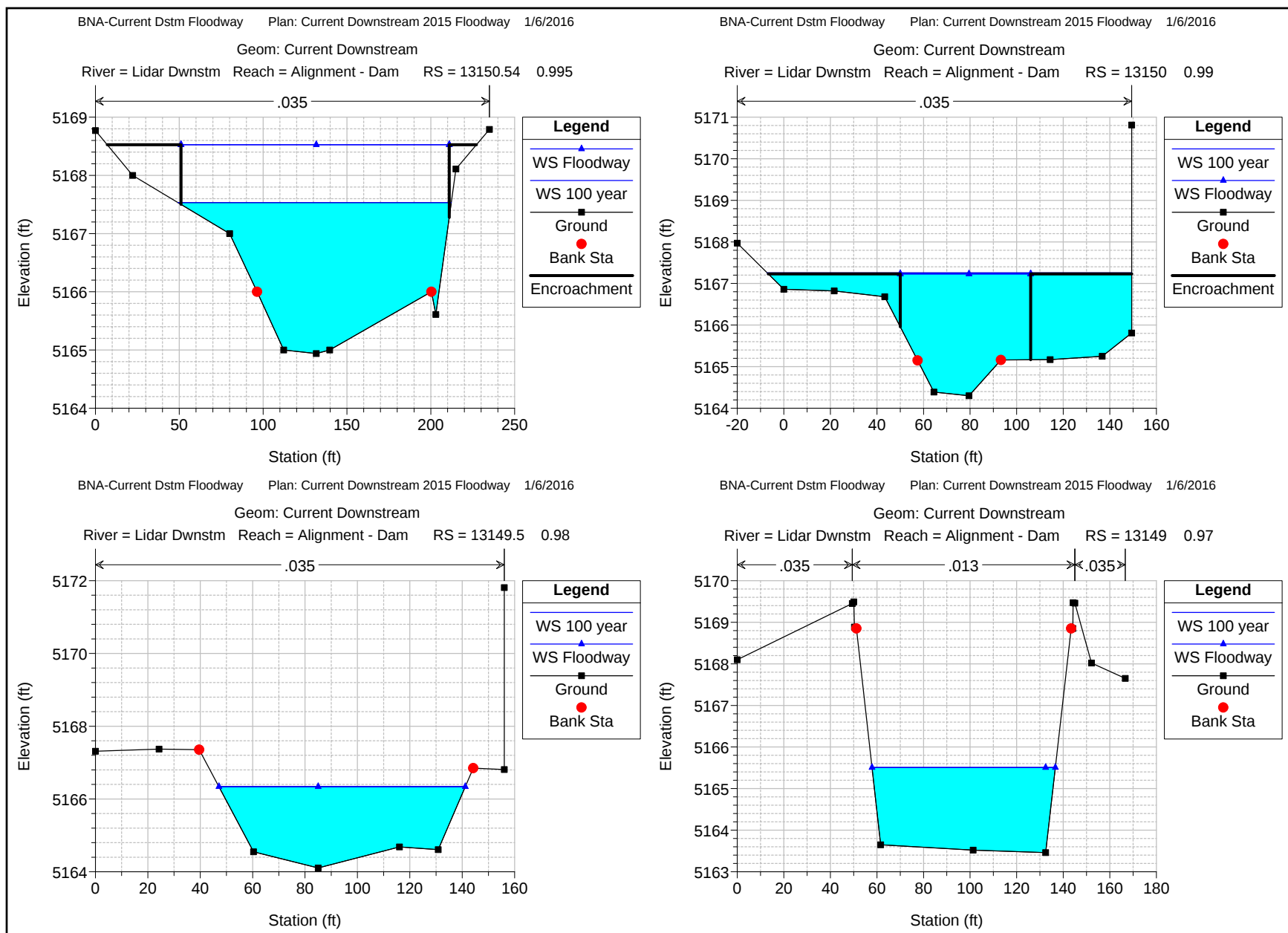


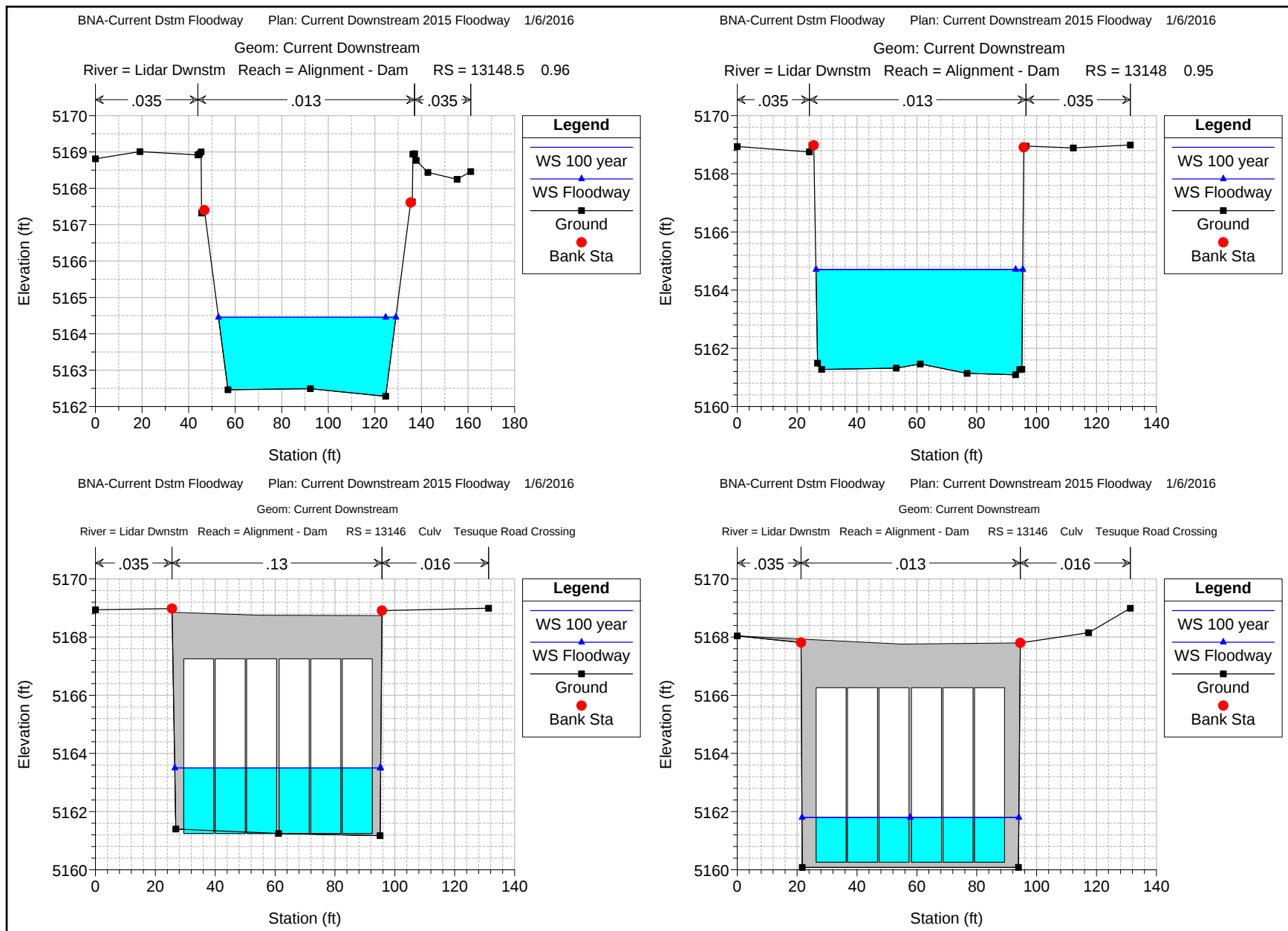


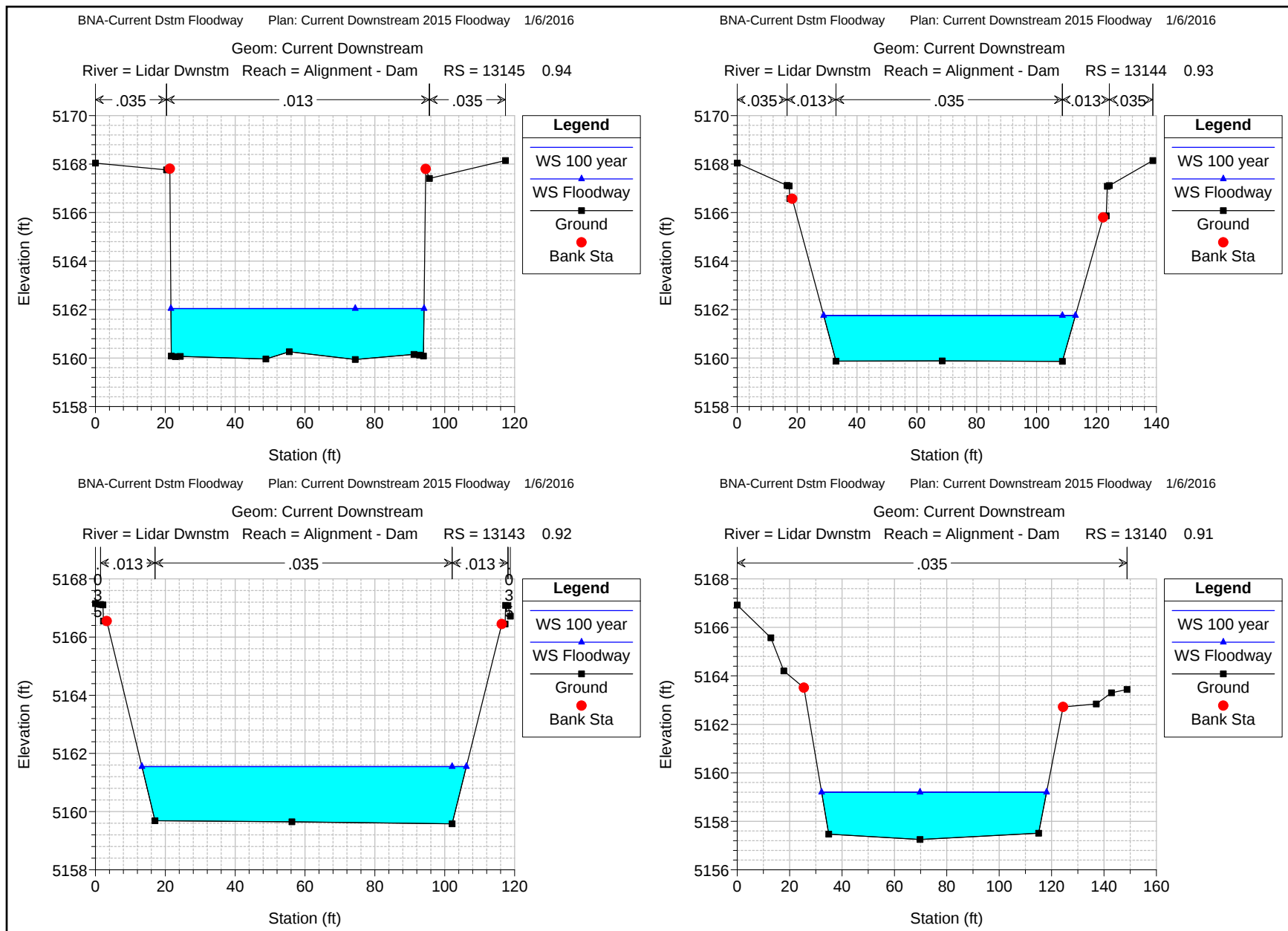


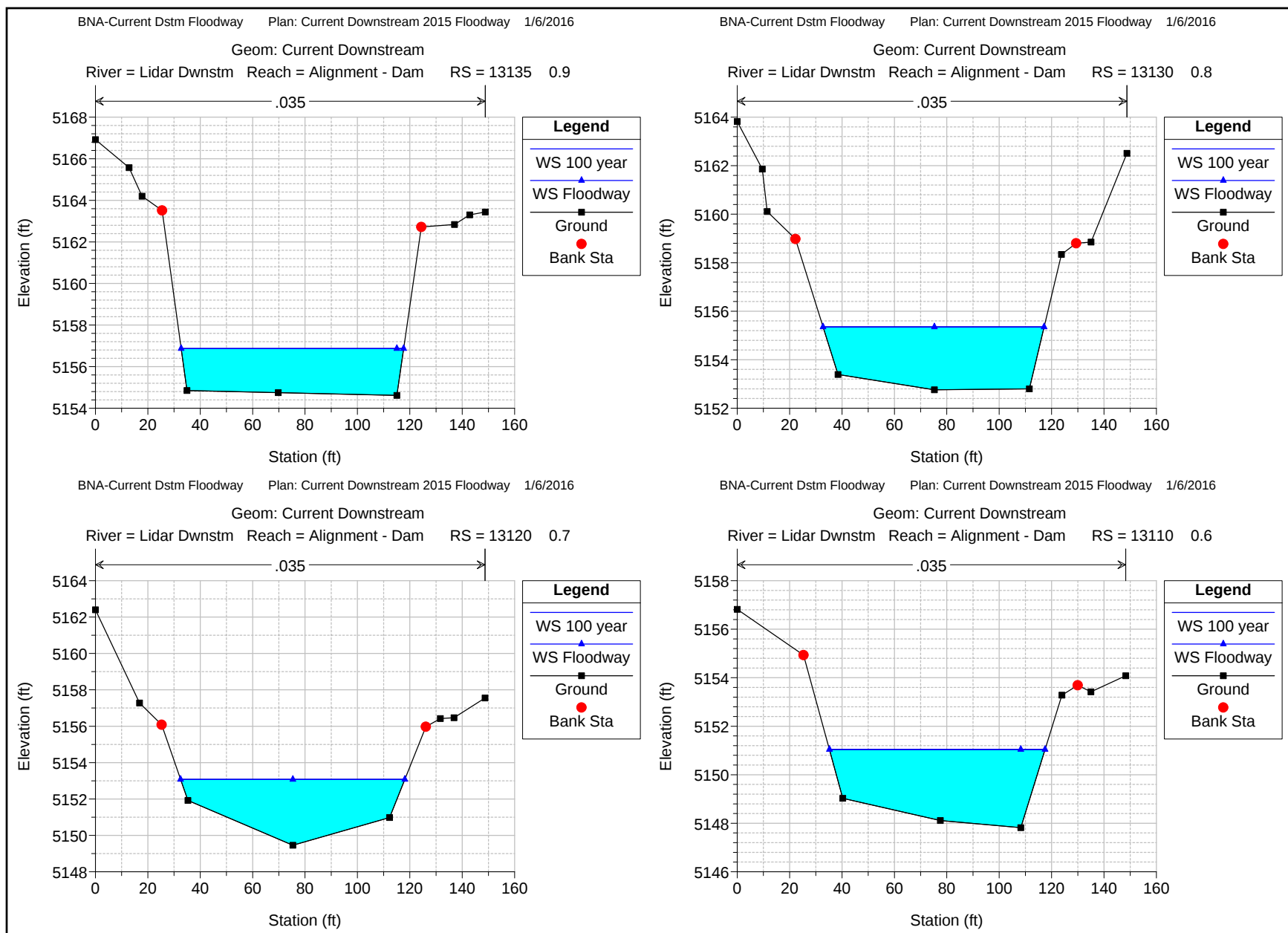


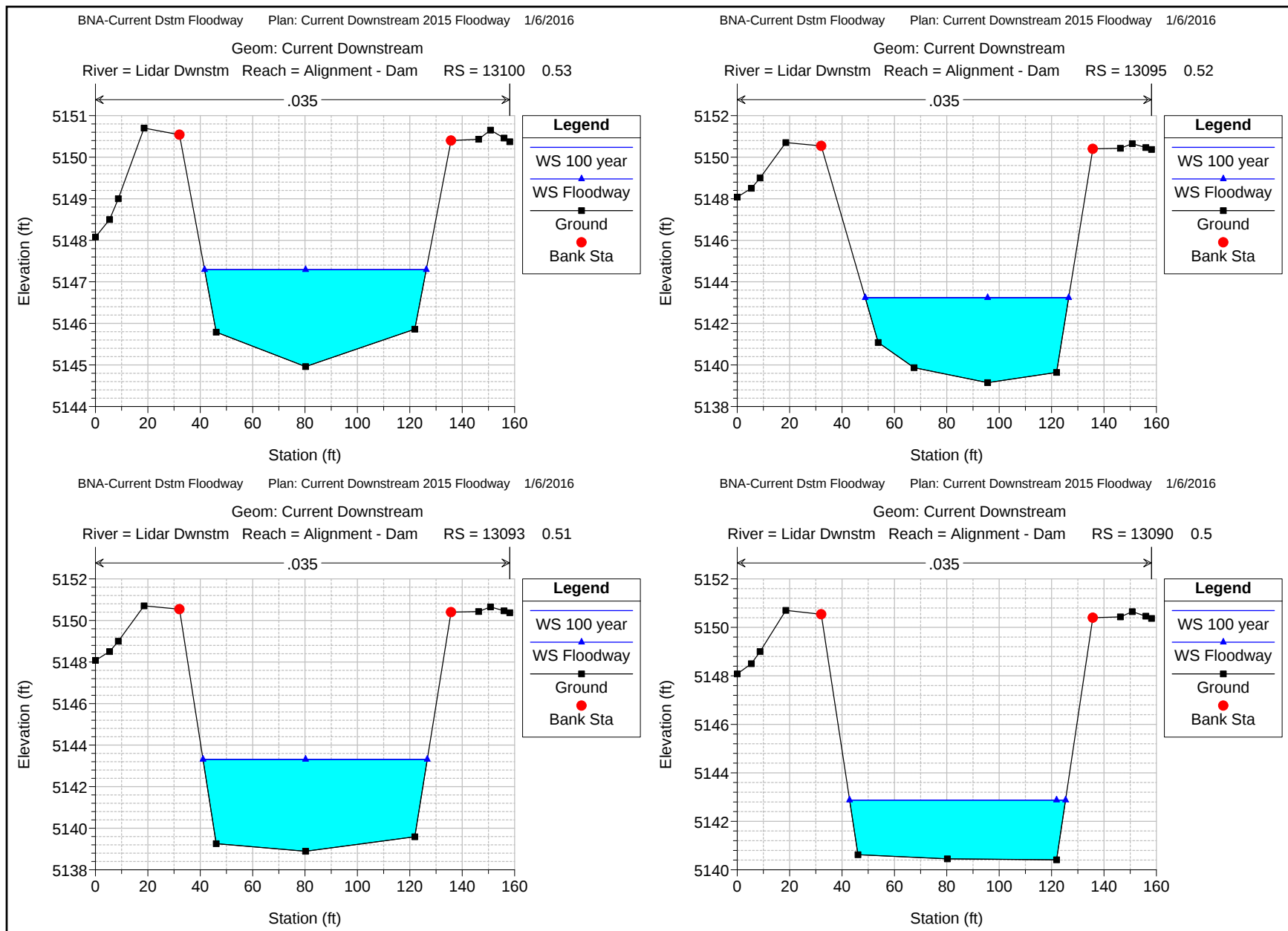


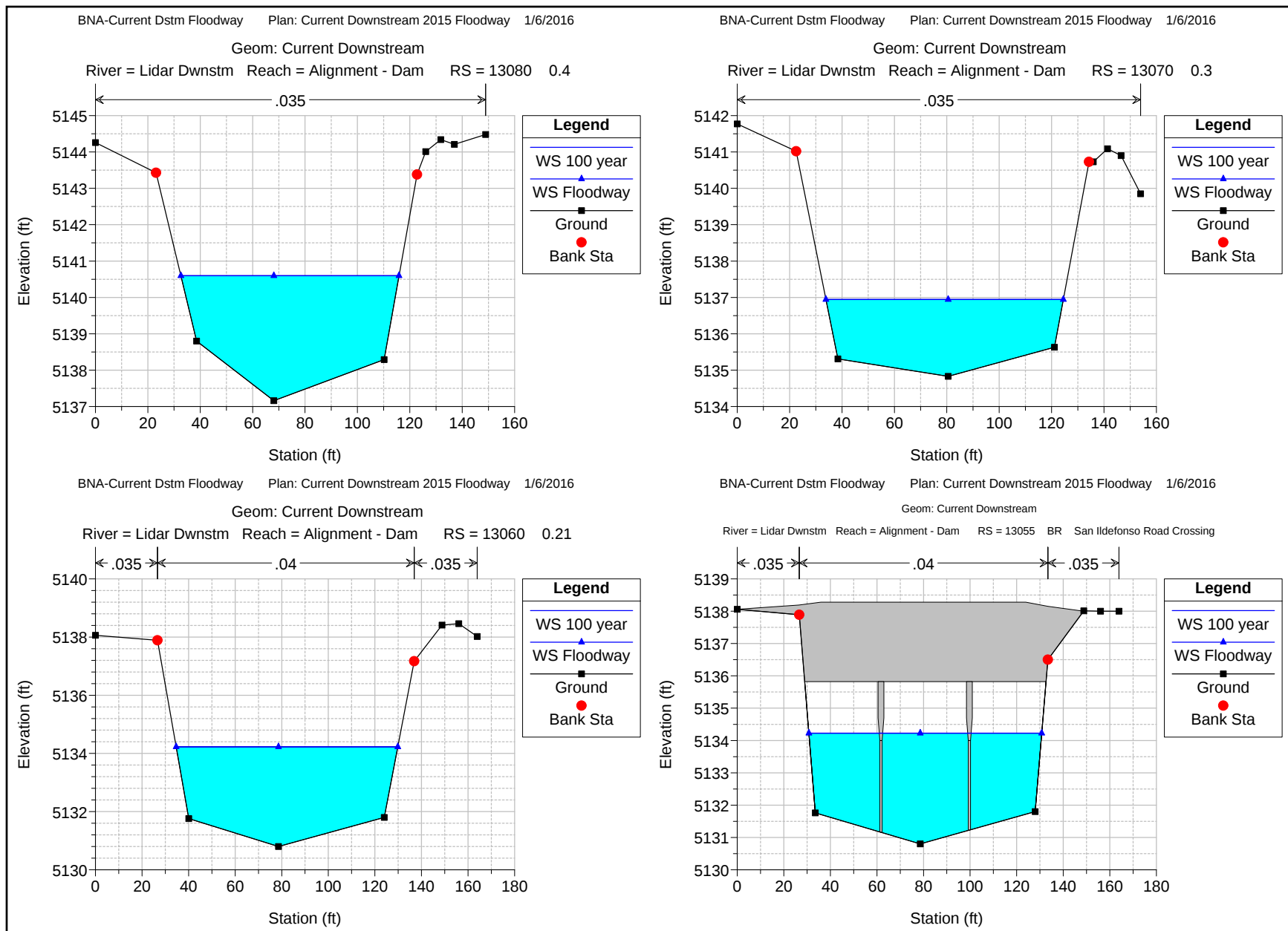


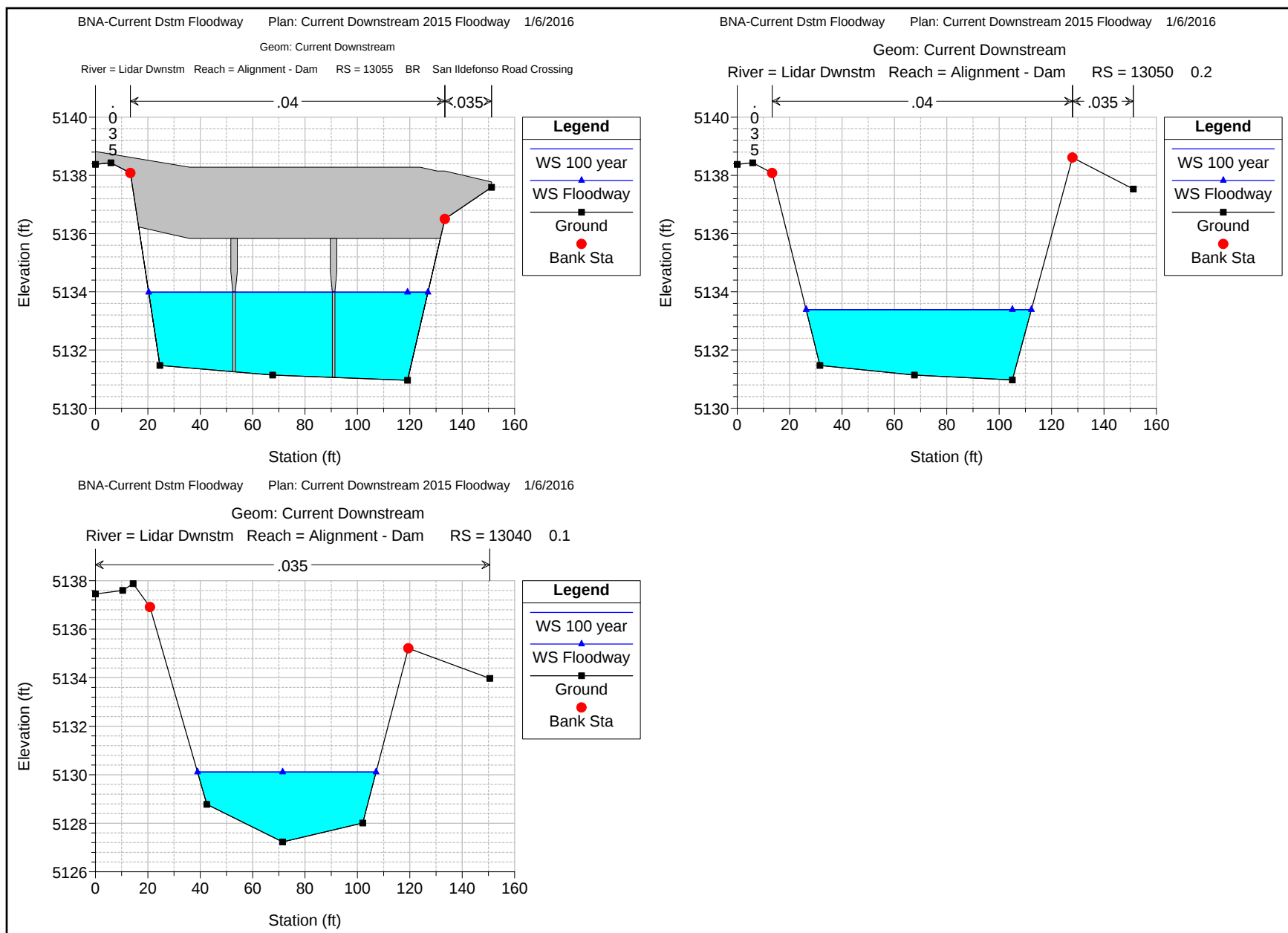












HEC-RAS Version 4.1.0 Jan 2010
 U.S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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

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PROJECT DATA

Project Title: BNA-Current Dstm Floodway
 Project File : CurrentDownFloodway.prj
 Run Date and Time: 1/6/2016 12:56:20 PM

Project in English units

PLAN DATA

Plan Title: Current Downstream 2015 Floodway
 Plan File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final Construction
 Acceptance Reports\H&H\LOMR - RAS\BNA RAS FLOODWAY\CurrentDownFloodway.p01

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\BNA RAS FLOODWAY\CurrentDownFloodway.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\BNA RAS FLOODWAY\CurrentDownFloodway.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

Encroachment Data

Equal Conveyance = False
 Left Offset = 0
 Right Offset = 0

River = Lidar Dwnstm	Reach = Alignment - Dam	RS	Profile	Method	Value1	Value2
18022.9 Floodway	1	0	30.01			
17987.1 Floodway	1	0	30.01			
17735.62Floodway	1	180.5	303.61			
17129.8 Floodway	1	4980.4	5029.57			
17000.0 Floodway	1	4980.13	5014.51			
16550 Floodway	1	16	96.23			
16457.0 Floodway	1	4944.16	5049.59			
15976 Floodway	1	257.57	375.02			
15247.7 Floodway	1	132.79	207.43			
15100 Floodway	1	56.9	144.58			
15080 Floodway	1	83.06	130			
14886.4 Floodway	1	197.15	261.93			
14300.75Floodway	1	259.21	397.4			
14200 Floodway	1	235	375			
14100.75Floodway	1	254.13	344.48			
13900.75Floodway	1	154.43	557.47			
13700.75Floodway	1	224.22	384.62			
13150.55Floodway	1	55	122			
13150.54Floodway	1	51	211			
13150 Floodway	1	50	106			
13149.5 Floodway	1	39.62	144.23			
13149 Floodway	1	51.17	143.4			
13148.5 Floodway	1	46.785	135.357			
13148 Floodway	1	25.58	95.72			

BNADwstm-.rep

13145	Floodway	1	21.31	94.56
13144	Floodway	1	18.37	122.23
13143	Floodway	1	3.24	116.32
13140	Floodway	1	25.43	124.4
13135	Floodway	1	25.43	124.4
13130	Floodway	1	22.22	129.39
13120	Floodway	1	25.27	126.1
13110	Floodway	1	25.32	129.96
13100	Floodway	1	32.06	135.74
13095	Floodway	1	32.06	135.74
13093	Floodway	1	32.06	135.74
13090	Floodway	1	32.06	135.74
13080	Floodway	1	23.15	122.75
13070	Floodway	1	22.48	134.28
13060	Floodway	1	26.64	136.9
13050	Floodway	1	13.34	127.98
13040	Floodway	1	20.8	119.45

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\BNA RAS FLOODWAY\CurrentDownFloodway.f07

Flow Data (cfs)

River	Reach	RS	100 year	Floodway
Lidar Dwnstm	Alignment - Dam	18022.9	695	695
Lidar Dwnstm	Alignment - Dam	14886.4	1110	1110
Lidar Dwnstm	Alignment - Dam	14300.75	1147	1147
Lidar Dwnstm	Alignment - Dam	14100.75	1149	1149
Lidar Dwnstm	Alignment - Dam	13110	1150	1150
Lidar Dwnstm	Alignment - Dam	13070	1151	1151

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Lidar Dwnstm	Alignment - Dam	100 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\BNA RAS FLOODWAY\CurrentDownFloodway.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
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
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.

BNADwstm-.rep

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
4980.4	5029.57	129.8	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	Sta	n Val	Sta	n Val	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	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	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035										

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
16	96.23	331	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	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	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	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	90002	5203.0828	53003	5202.78		
30.09998	5202.7	30.88	5202.6733	22998	5202.5937	29999	5202.4541	67999	5202.33		

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44.51001	5202.2250.17999	5202.0551.71002	5201.9852.46997	5201.96	54.75	5201.82
58.91998	5201.5763.27002	5201.31	66.12	5201.1471.84003	5200.7973.32001	5200.7
74.06	5200.6676.27002	5200.5880.53003	5200.4184.85999	5200.2787.72998	5200.23	
93.48999	5200.1994.92999	5200.1895.64999	5200.1797.79999	5200.08	102.14	5199.93
106.45	5199.69	109.34	5199.6	115.15	5199.49	116.55
119.32	5199.61	123.75	5199.89	128.04	5200.13	130.95
138.16	5200.27	138.83	5200.27	140.84	5200.24	145.36
152.57	5200.03	158.46	5199.91	159.77	5199.89	160.42
166.97	5199.83	171.22	5199.79	174.18	5199.8	180.12
182.01	5199.7	183.89	5199.71	188.58	5199.75	192.8
201.78	5199.69	202.99	5199.68	203.6	5199.68	205.41
214.39	5199.75	217.4	5199.75	223.43	5199.71	224.6
226.94	5199.68	231.81	5199.65	235.98	5199.59	239.01
246.22	5199.51	246.78	5199.5	248.46	5199.51	253.42
260.62	5199.43	266.74	5199.06	267.83	5198.98	268.37
275.03	5197.71	279.16	5196.99	282.24	5196.42	288.4
289.96	5195.03	291.5	5194.95	295.77	5194.59	296.64
303.85	5195.09	310.06	5196.1	311.05	5196.22	311.55
318.25	5196.1	322.34	5196.13	325.46	5196.19	331.71
333.14	5196.39	334.55	5196.44	339.87	5196.6	343.93
353.37	5197.49	354.27	5197.57	354.73	5197.61	356.07
365.52	5198.68	368.68	5199.03	375.02	5199.78	375.89
377.6	5200.35	383.09	5202.04	387.11	5203.3	390.29
397.5	5206.34	397.9	5206.45	399.12	5206.72	404.7
411.91	5209.07	418.34	5209.25	419.11	5209.27	419.49
426.31	5209.08	430.29	5208.91	433.52	5208.79	439.99
441.08	5208.46	442.17	5208.43	447.92	5208.34	451.88
461.65	5207.34	462.33	5207.27	462.67	5207.23	463.69
473.47	5206.39	476.74	5206.16	483.31	5205.8	483.94
485.21	5205.72	491.15	5205.49	495.06	5205.42	498.35
505.56	5205.08	505.85	5205.08	506.74	5205.06	512.76
519.96	5205.06	526.62	5205.71	527.17	5205.75	527.44
534.37	5207	538.24	5207.86	541.58	5208.82	548.27
549.03	5210.89	549.78	5211.12	555.98	5213.09	559.83
569.93	5217.09	570.39	5217.21	570.62	5217.27	571.31
581.42	5219.77	584.8	5220.49	591.59	5221.75	592
592.83	5222	599.21	5223.42	600	5223.56	592.83

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
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	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	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		.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	Sta	Hi Cord	Lo Cord
15.86	5187.03	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	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	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
34.09	5186.62	5186.62	58	5186.47		109	5185.92				
158	5186.58		219.55	5187.99							

Downstream Bridge Cross Section Data

Station Elevation Data		num= 11									
Sta	Elev	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

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

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 Sta Elev
0	5185.273	880005	5185.43	5 5185.455
12.14001	5185.6718	20001	5185.9719	28003 5185.97 20.75 5185.9726
30.57001	5185.6633	54999	5185.5437	60999 5185.49 40.69 5185.542
47.82001	5185.5954	46997	5185.6854	96002 5185.6855
62.09998	5185.767	70001	5185.7169	23999 5185.7371
80.07001	5185.7983	51001	5185.7788	20001 5185.7690
97.78	5185.7	104.16	5185.69	104.82 5185.69 104.92 5185.69
112.06	5185.56	117.19	5185.47	119.19 5185.43 121.92 5185.39
129.57	5185.12	133.47	5184.98	138.78 5184.79 140.61 5184.71
147.74	5184.15	150.65	5183.93	154.32 5183.65 154.88 5183.61
162.02	5183.39	166.69	5183.32	169.15 5183.31 172.51 5183.29
179.07	5183.25	183.43	5183.28	189.37 5183.19 190.56 5183.04
197.15	5181.99	197.7	5181.9	203.82 5180.92 204.84 5180.73
211.98	5179.46	216.19	5178.81	219.11 5178.33 223.1 5177.77
228.56	5177.49	233.39	5177.54	239.96 5178.03 240.52 5178.11
243.64	5178.81	247.66	5179.76	253.31 5180.94 254.8 5181.23
261.93	5182.1	265.69	5182.39	269.07 5182.51 273.68 5182.71
278.06	5182.92	283.35	5183.1	290.14 5183.38 290.44 5183.39
290.55	5183.4	297.62	5184.03	302.81 5184.57 304.76 5184.81
311.89	5185.92	315.19	5186.3	319.03 5186.68 324.27 5187.01
326.59	5187.08	327.56	5187.09	333.31 5187.14 336.63 5187.16
340.44	5187.19	341.13	5187.2	347.58 5187.21 352.31 5187.09
358	5186.67	361.85	5186.18	364.68 5185.73 368.99 5184.99
376.13	5183.69	377.06	5183.57	383.12 5182.95 383.26 5182.94
390.4	5182.49	391.72	5182.47	397.54 5182.65 401.81 5182.81
408.58	5183.25	411.81	5183.57	414.18 5183.85 418.95 5184.58
426.09	5185.92	426.56	5186.02	429.62 5186.92 433.22 5187.95
440.36	5190.3	442.31	5191.08	447.5 5192.97 451.3 5194.36
459.17	5197.11	461.77	5198.07	463.68 5198.84 468.91 5200.87
476.05	5203.99	476.11	5204.02	483.18 5207.17 488.43 5209.65
492.9	5211.48	497.46	5213.23	500.8 5214.52 504.59 5215.78
511.73	5218.31	513.18	5218.88	518.87 5221.33 522.6 5223.05
526	5224.59	526.62	5224.85	533.14 5227.71 537.93 5229.77
543.48	5232.2	547.42	5233.87	550.3 5235.01 554.55 5236.87
561.69	5239.94	562.68	5240.37	568.83 5243.4 569.1 5243.53
575.96	5246.95	577.21	5247.65	583.1 5251.06 587.42 5253.62
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
0	5181.147	580017	5181.028	909973 5181 9.27002 5180.999
17.94	5181.0120	78998	5181.0225	78998 5180.9526

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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

Station	Elevation	Data	num=	174	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 BNADwstm-.rep
 258.53 348.88 215 215 215 Coeff Contr. Expan.
 .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
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					

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	Elev	Sta	Elev
0	5179.96	4100342	5179.87	4.72998	5178.999	440002	5178.4612	32001	5178.1			
16.23999	5177.6418	47998	5177.4626	60004	5176.8727	51001	5176.8127	76001	5176.79			
28.20001	5176.7736	54999	5176.3339	28003	5176.2244	07001	5175.9645	58002	5175.88			
50.79004	5175.59	54.62	5175.3659	95001	5175.03	62.31	5174.8963	65002	5174.83			
68.54004	5174.6272	67999	5174.4473	82001	5174.475	82001	5174.3381	72003	5174.09			
85.34003	5173.97	90.75	5173.71	91.69	5173.6696	85004	5173.3999	79004	5173.3			
107.57	5173.02	108.37	5172.99	108.82	5172.99	110.48	5172.95	117.86	5172.79			
119.88	5172.72	123.44	5172.5	126.89	5172.29	131.4	5171.99	135.93	5171.57			
139.32	5171.24	142.91	5170.9	144.96	5170.75	152.42	5170.21	154	5170.11			
154.43	5170.08	155.19	5170.06	163.03	5169.77	165.94	5169.69	171.06	5169.62			
172.07	5169.61	177.46	5169.55	181.1	5169.53	186.94	5169.49	188.98	5169.48			
190.14	5169.47	194.36	5169.44	199.17	5169.4	200.49	5169.39	202.81	5169.38			
208.2	5169.34	212.01	5169.33	217.24	5169.32	218.69	5169.33	223.52	5169.33			
226.27	5169.33	234.56	5169.38	235.04	5169.38	235.31	5169.38	236.3	5169.37			
244.34	5169.28	246.55	5169.26	250.43	5169.22	253.38	5169.19	258.07	5169.15			
262.41	5169.08	266.31	5169	269.58	5168.95	271.45	5168.93	278.24	5168.84			
280.48	5168.82	281.1	5168.81	282.18	5168.81	289.52	5168.8	292.61	5168.79			
298.06	5168.93	298.55	5168.94	304.13	5169.05	307.59	5169.15	313.93	5169.33			
315.64	5169.38	316.62	5169.39	320.17	5169.43	325.65	5169.5	327.16	5169.52			
329.8	5169.54	334.69	5169.56	338.68	5169.58	343.72	5169.43	345.68	5169.39			
350.19	5169.28	352.76	5169.23	361.55	5168.99	361.71	5168.99	361.79	5168.99			
362.11	5168.98	370.83	5168.82	373.22	5168.76	377.43	5168.77	379.86	5168.77			

BNADwstm-.rep

384.74	5168.79	388.9	5168.83	393.3	5168.86	396.25	5168.89	397.93	5168.9
404.05	5168.89	406.97	5168.89	407.77	5168.89	409.17	5168.9	416	5168.95
419.28	5168.95	425.04	5168.96	425.05	5168.96	430.8	5168.99	434.07	5168.98
440.92	5169.06	442.31	5169.06	443.11	5169.08	445.99	5169.12	452.14	5169.23
453.83	5169.26	456.8	5169.27	461.17	5169.33	465.34	5169.29	470.21	5168.93
472.67	5168.71	476.86	5168.37	479.24	5168.11	487.93	5167.23	488.28	5167.2
488.38	5167.19	488.54	5167.19	497.31	5166.99	499.89	5166.95	500.03	5166.95
504.42	5166.97	506.35	5166.98	511.41	5167	515.38	5167.19	520.29	5167.43
522.92	5167.56	524.42	5167.63	529.87	5167.89	533.45	5168.07	534.44	5168.12
536.17	5168.23	542.49	5168.6	545.95	5168.8	551.52	5169.38	552.04	5169.43
557.47	5169.99	560.56	5170.34	567.91	5171.16	568.98	5171.28	569.59	5171.33
571.8	5171.56	578.63	5172.28	580.5	5172.47	583.79	5172.59	587.66	5172.75
592.01	5172.89	596.69	5172.77	599.66	5172.67	603.53	5172.57	605.73	5172.53
613.74	5172.41	614.76	5172.4	615.04	5172.4	615.54	5172.4	623.8	5172.45
626.56	5172.48	631.41	5172.64	632.83	5172.69	638.07	5172.86	641.87	5172.99
647.28	5173.11	649.59	5173.18	650.9	5173.24	655.68	5173.45	659.94	5173.65
661.11	5173.7	663.16	5173.78	668.97	5173.99	672.62	5174.13	678.01	5174.33
679.03	5174.37	684.14	5174.56	687.04	5174.7	694.91	5175.14	695.65	5175.18
696.08	5175.21	697.62	5175.31	705.11	5175.79	707.17	5175.91	710.78	5176.17
714.15	5176.41	718.68	5176.74	723.18	5177.06	726.65	5177.31	730.2	5177.57
732.21	5177.68	739.56	5178.08	741.25	5178.17	741.71	5178.19	742.53	5178.26
750.28	5178.89	753.23	5179.12	758.4	5179.61	759.32	5179.7	764.74	5180.19
768.35	5180.57	774.28	5181.18	776.26	5181.39	777.39	5181.51	781.5	5181.98
786.42	5182.53	787.77	5182.67	790.15	5182.94	795.46	5183.49	796.01	5183.55

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	Elev	Sta	Elev
0	5171.184	200012	5171.15	159973	5171.095	419983	5171.085	890015	5171.09			
14.20001	5171.18	16.94	5171.221	76001	5171.1923	22998	5171.1928	45001	5171.16			
32.26001	5171.1637	64001	5171.0939	96997	5171.0841	29999	5171.0546	14001	5170.99			
50.33002	5170.9451	48999	5170.9353	51001	5170.88	59.37	5170.76	63	5170.69			
68.40002	5170.55	69.38	5170.5274	52002	5170.38	77.44	5170.285	26001	5169.76			
86.03003	5169.7186	46997	5169.6988	07999	5169.6495	51001	5169.3997	54999	5169.34			
101.13	5169.31	104.54	5169.27	109.06	5169.24	113.58	5169.17	117.01	5169.1			
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	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	29		.1	.3

CROSS SECTION

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

INPUT

Description: 0.995									
Station Elevation Data									
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.
	96.4	200.4		43	43	43		
							.1	Expan.
								.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	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.
	57.45	93.24		53	53	53	.1
							Expan.
							.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
05167.313 24.295167.371 39.625167.354 60.325164.549 85.015164.104
116.025164.682 130.835164.608 144.235166.849 156.055166.808 156.06 5171.81

```

Manning's n Values		num=		1			
Sta	n Val						
0	.035						
Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.
	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
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 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 19.065 5169.01 43.977 5168.92 44.59 5168.94 45.38 5169
 45.595 5167.32 46.785 5167.4 56.885 5162.462 92.275 5162.49 124.64 5162.28
 135.357 5167.61 136.04 5167.63 136.31 5168.94 137.01 5168.95 137.718 5168.77
 142.765 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 43.977 .013 137.01 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 46.785 135.357 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
 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 62 .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 num= 3
 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

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Downstream Bridge Cross Section Data

Station	Elevation	Data	num=	7	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	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

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	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

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	BNADwstm-.rep	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 3.24 Right 116.32 Lengths: Left Channel 183 Right 172 Coeff Contr. .1 Expan. .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	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
0	.035

Bank Sta: Left 25.43 Right 124.4 Lengths: Left Channel 7 Right 7 Coeff Contr. .1 Expan. .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	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
0	.035

Bank Sta: Left 25.43 Right 124.4 Lengths: Left Channel 199 Right 199 Coeff Contr. .1 Expan. .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 22.22 Right 129.39 Lengths: Left Channel 394 Right 392 Coeff Contr. .1 Expan. .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

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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
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
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		

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	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

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Manning's n Values num= 3
 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			
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				
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

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BNADwstm-.rep				
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	BNADwstm-.rep
Alignment - Dam	13070		.1	.3	
Alignment - Dam	13060		.3	.5	
Alignment - Dam	13055	Bridge			
Alignment - Dam	13050		.1	.3	
Alignment - Dam	13040		.1	.3	