

Current Upstream Model – 500 year storm event

Plan

Profile

Summary

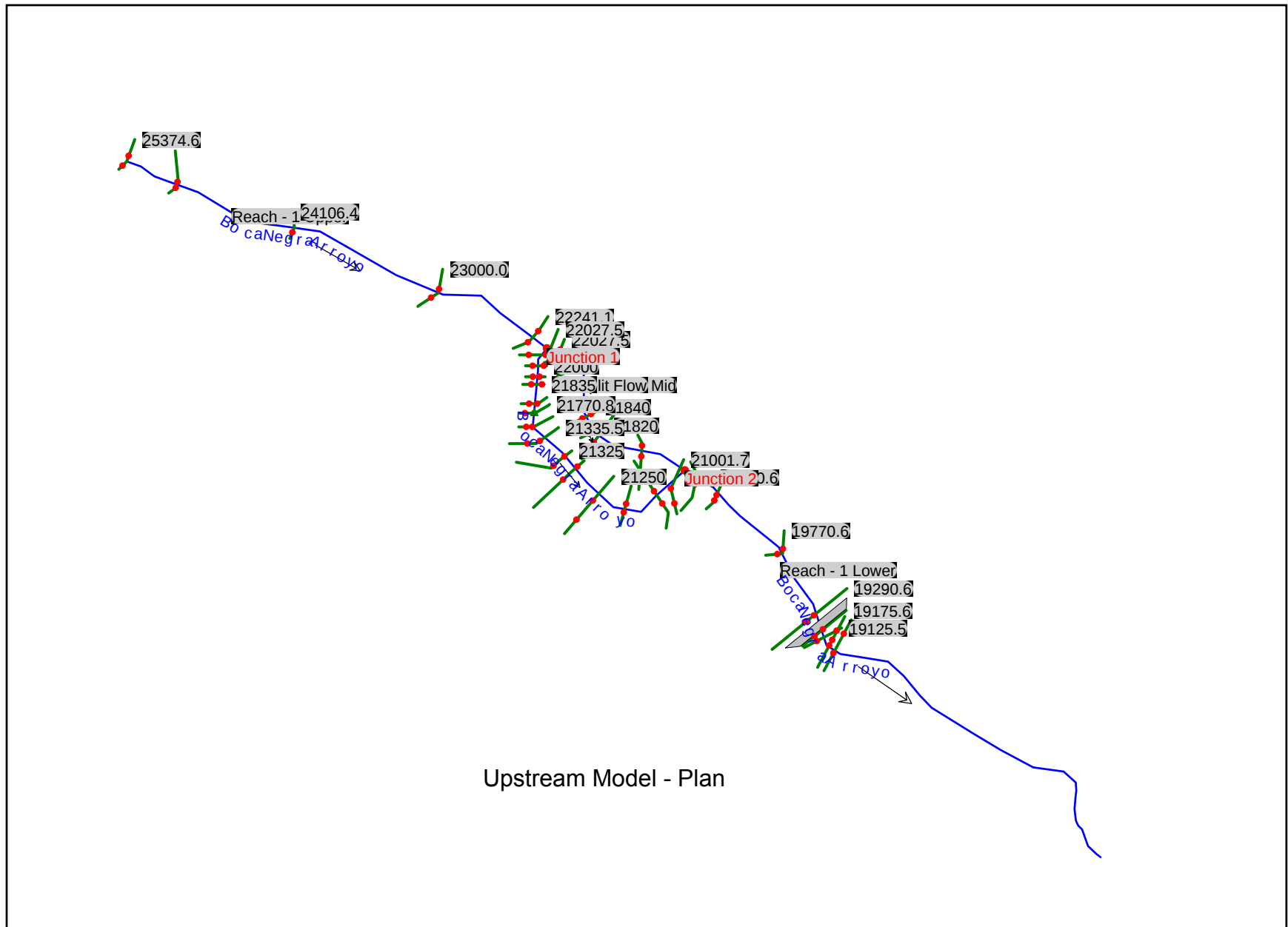
Cross Sections

Input/output Report

Hydraulics Model – HEC-RAS Analysis (CD)

Current Upstream Files

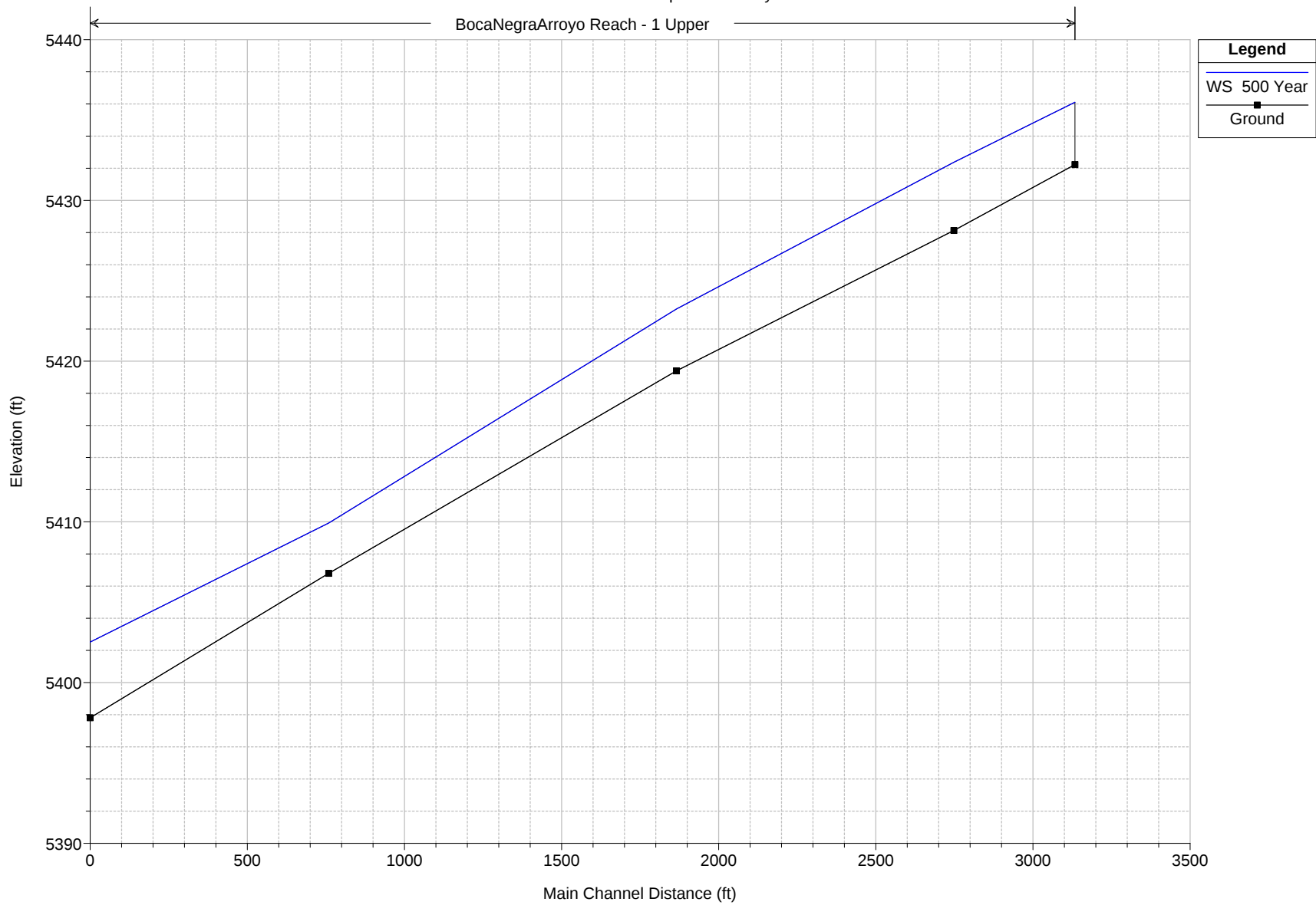
i.Project:	BNA Current Upstm BNACurrentUpstm.prj	
ii.Plan:	Current Upstream-500 yr	BNACurrentUpstm.p07
iii.Geometry:	Current Upstream 500 yr	BNACurrentUpstm.g06
iv.Flow:	Updated 2014-500 yr	BNACurrentUpstm.f04



BNA Current Upstm Plan: Current Upstream-500 yr 1/7/2016

Geom: Current Upstream 500 yr

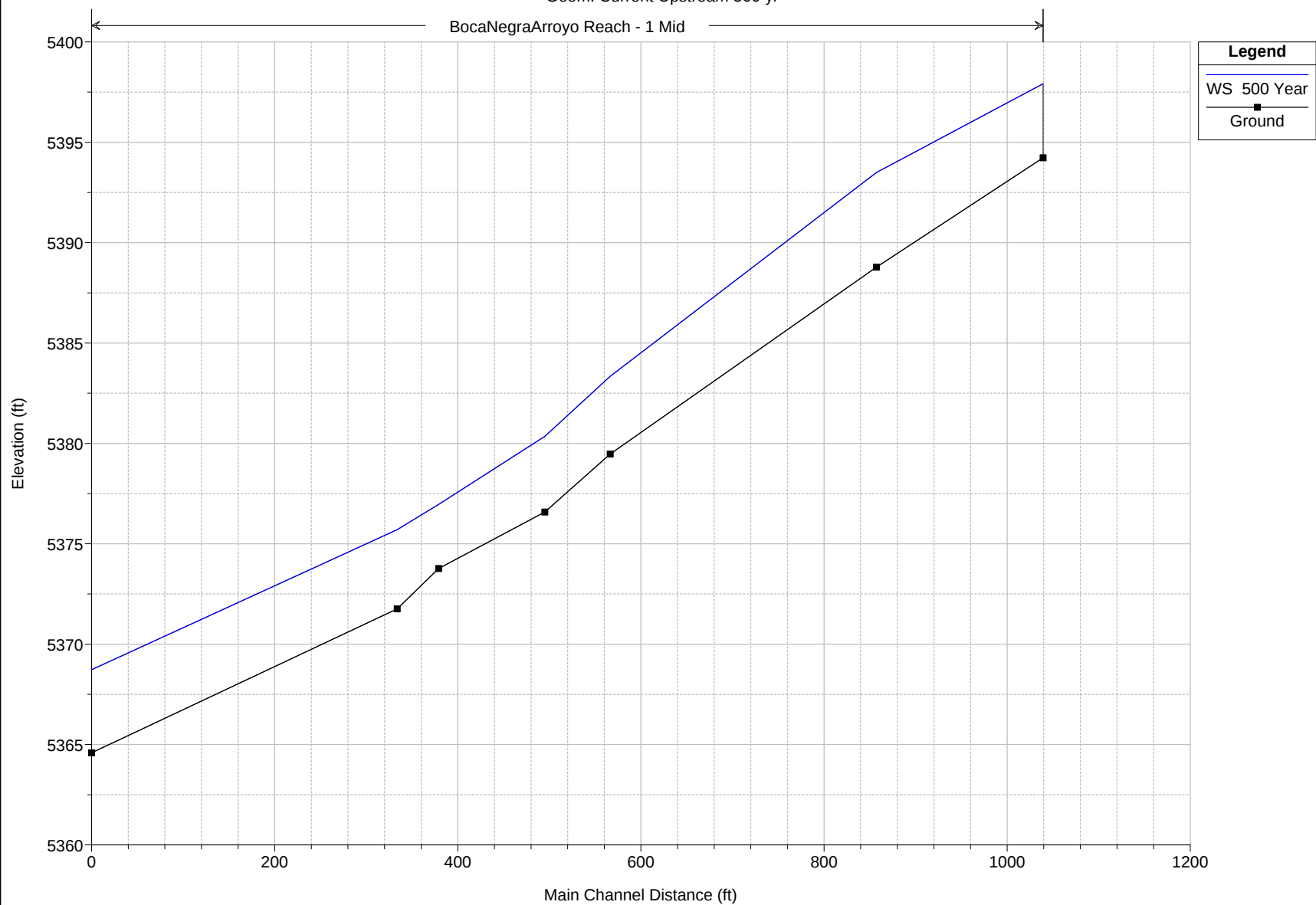
BocaNegraArroyo Reach - 1 Upper



BNA Current Upstm Plan: Current Upstream-500 yr 1/7/2016

Geom: Current Upstream 500 yr

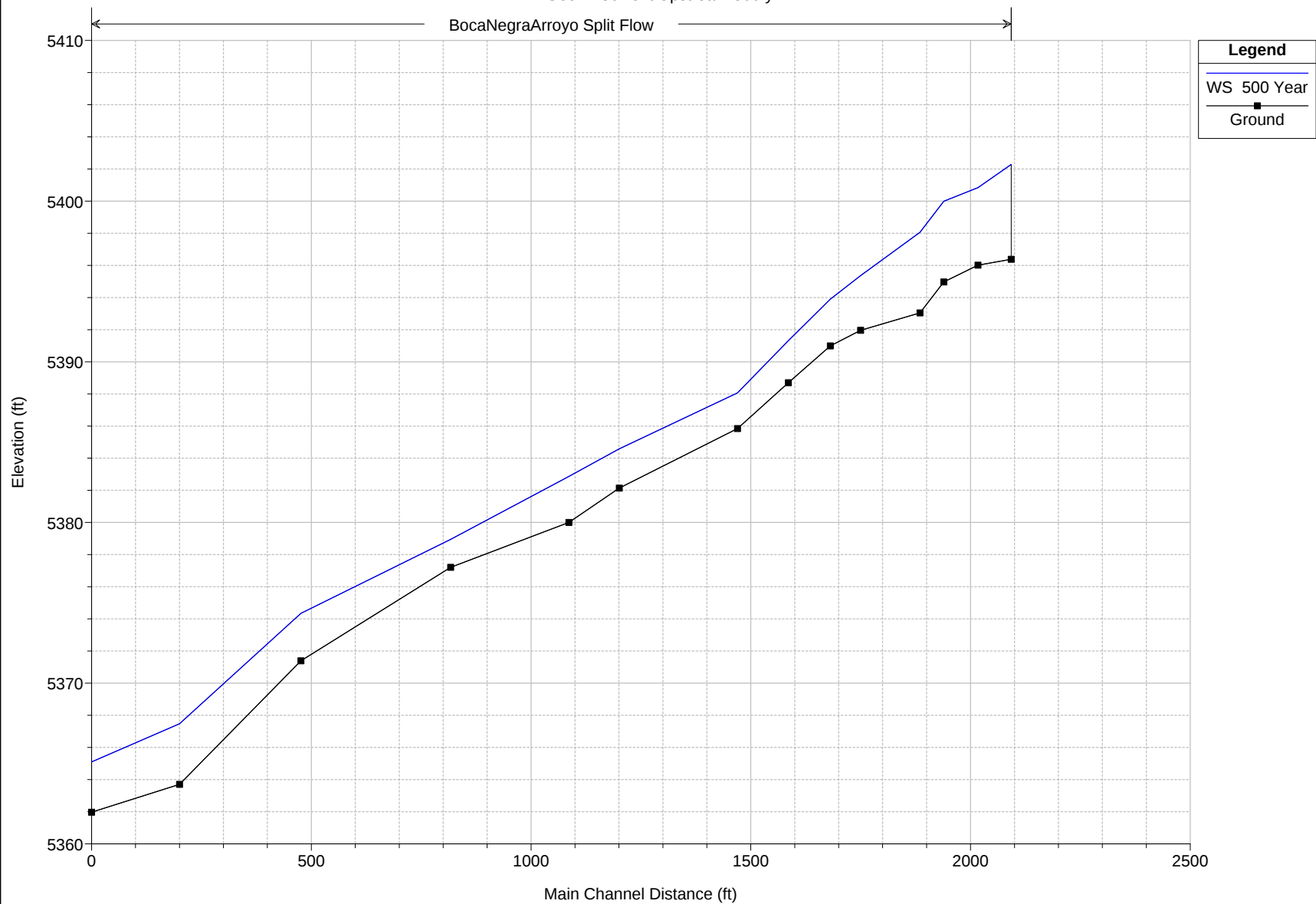
BocaNegraArroyo Reach - 1 Mid



BNA Current Upstm Plan: Current Upstream-500 yr 1/7/2016

Geom: Current Upstream 500 yr

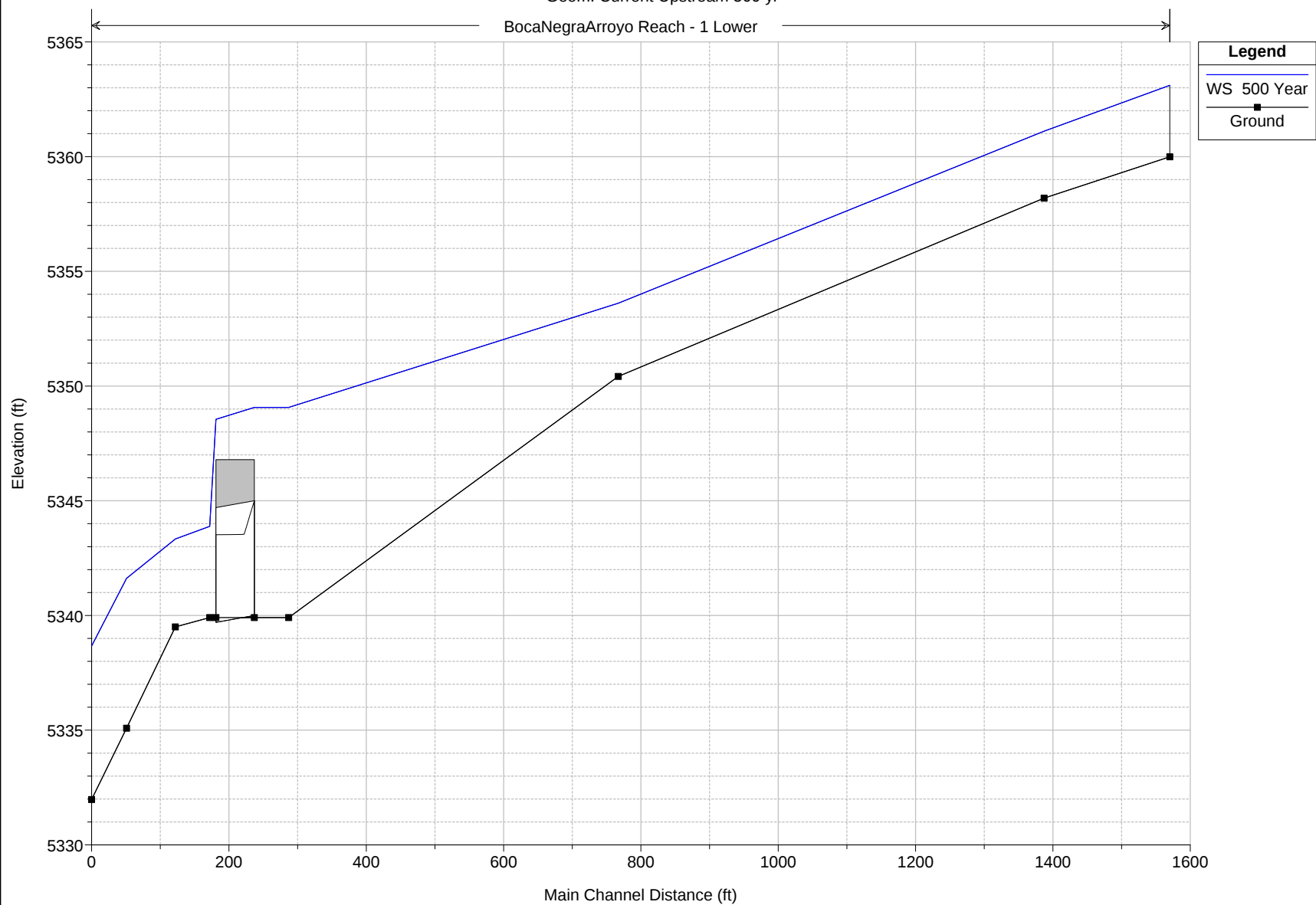
BocaNegraArroyo Split Flow



BNA Current Upstm Plan: Current Upstream-500 yr 1/7/2016

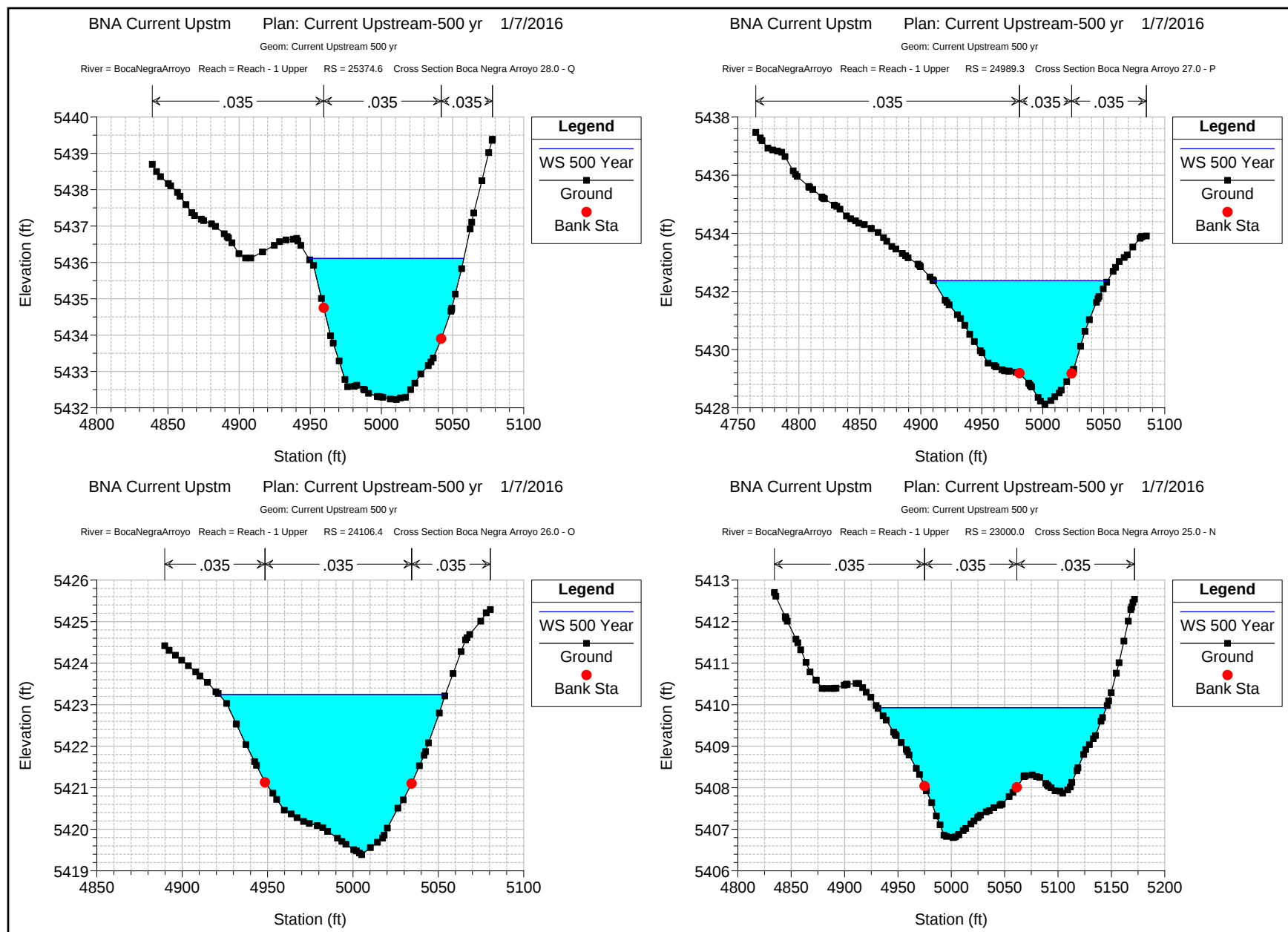
Geom: Current Upstream 500 yr

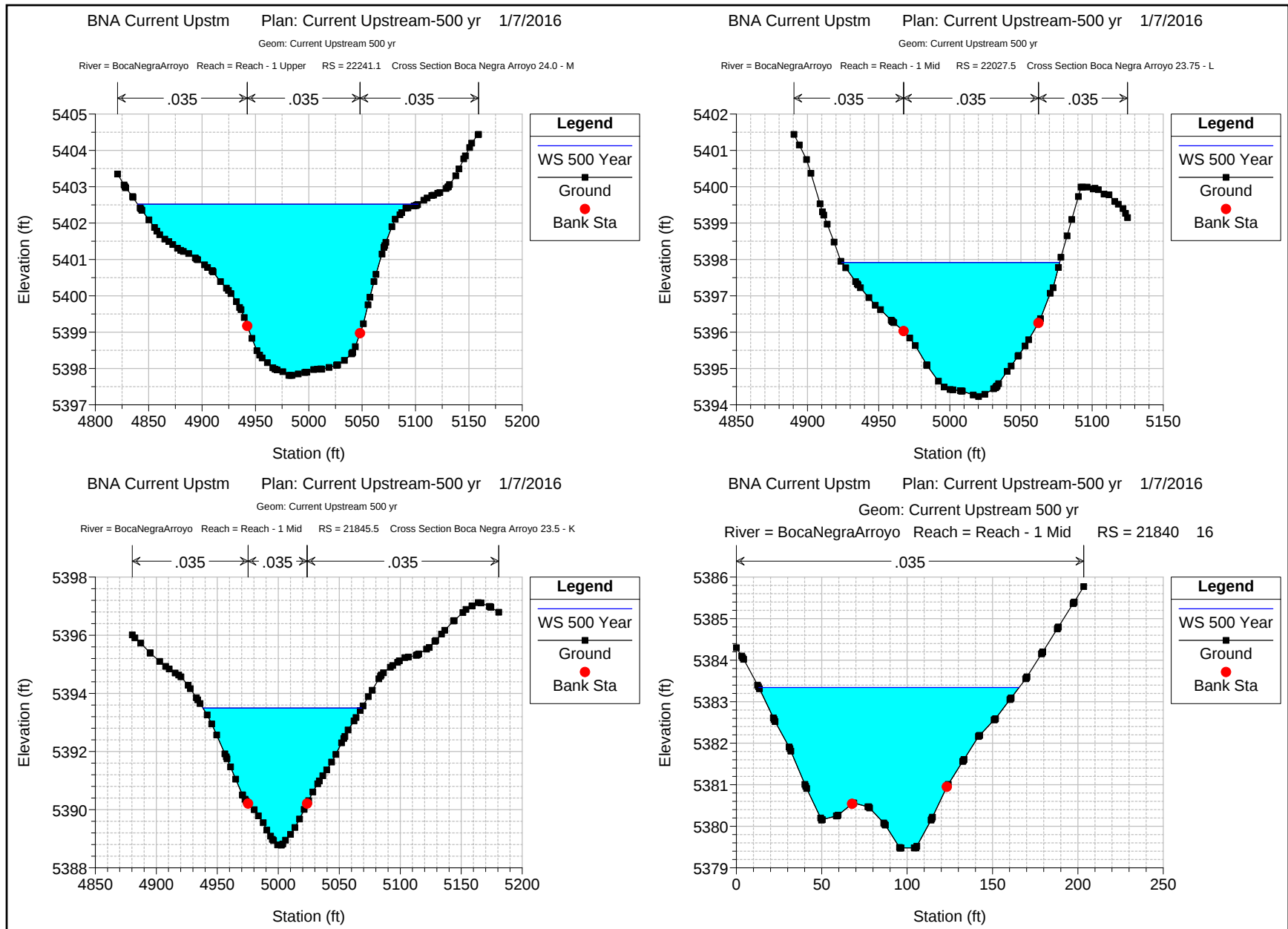
BocaNegraArroyo Reach - 1 Lower

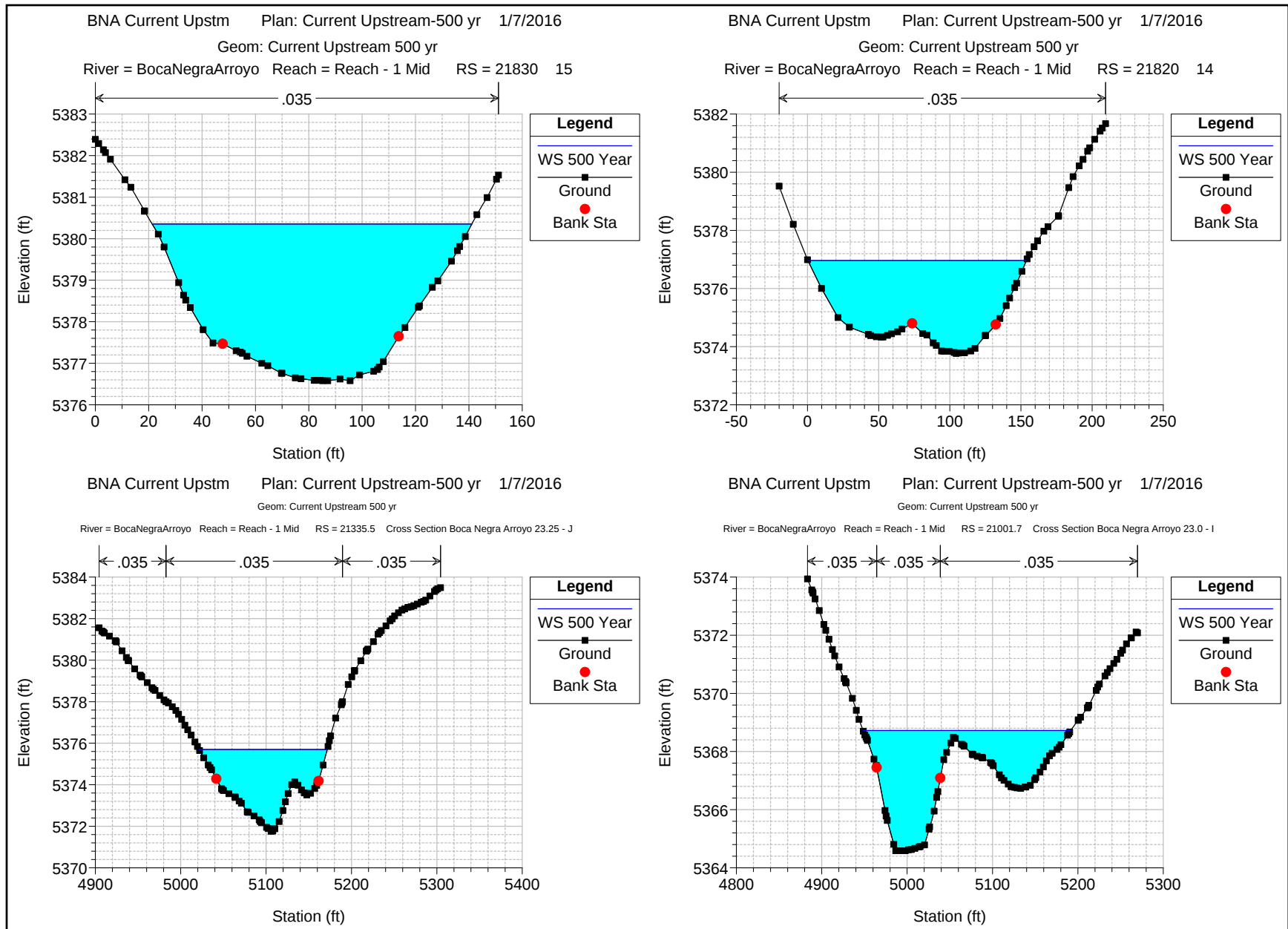


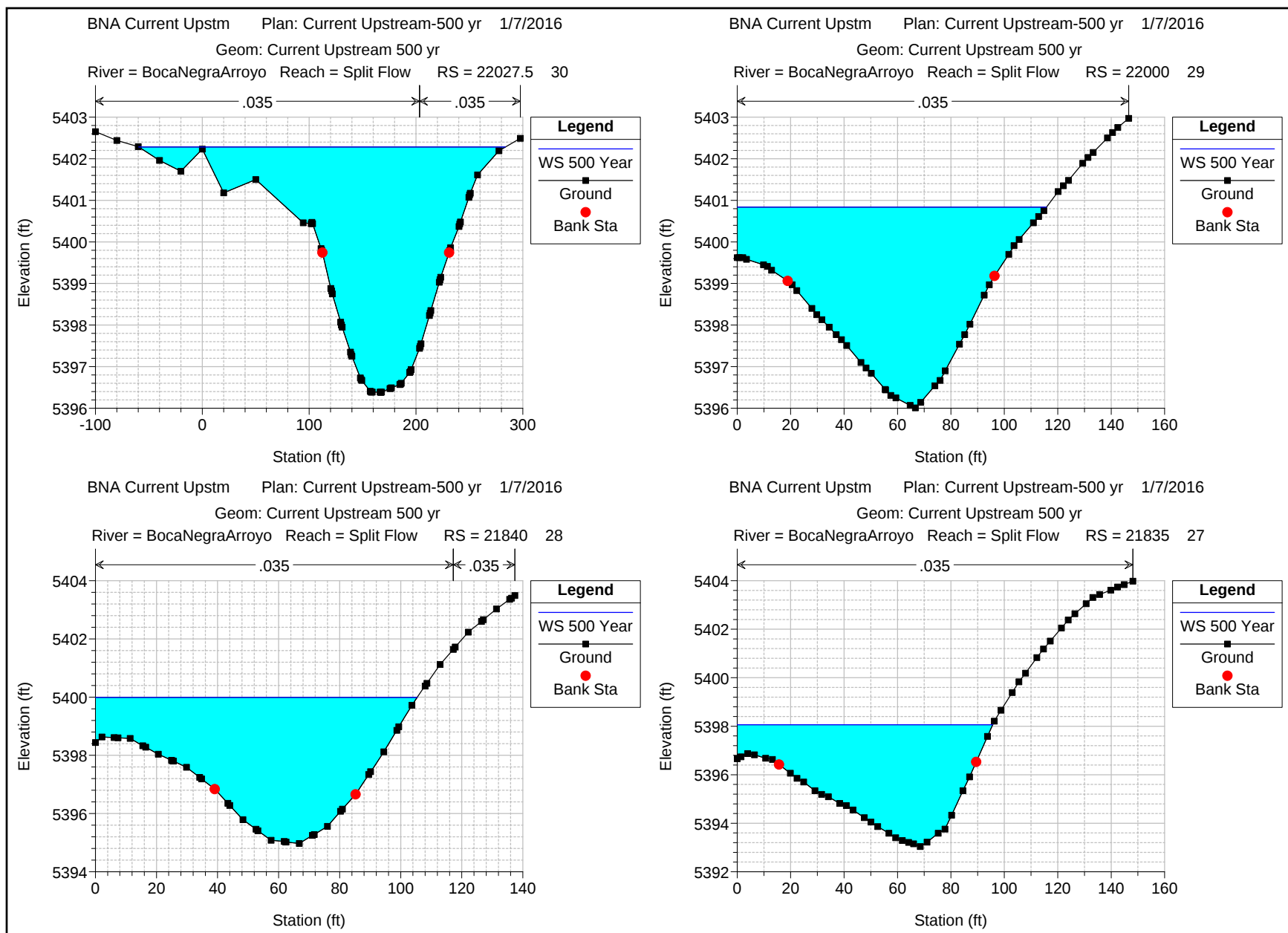
HEC-RAS Plan: 500 yr Profile: 500 Year

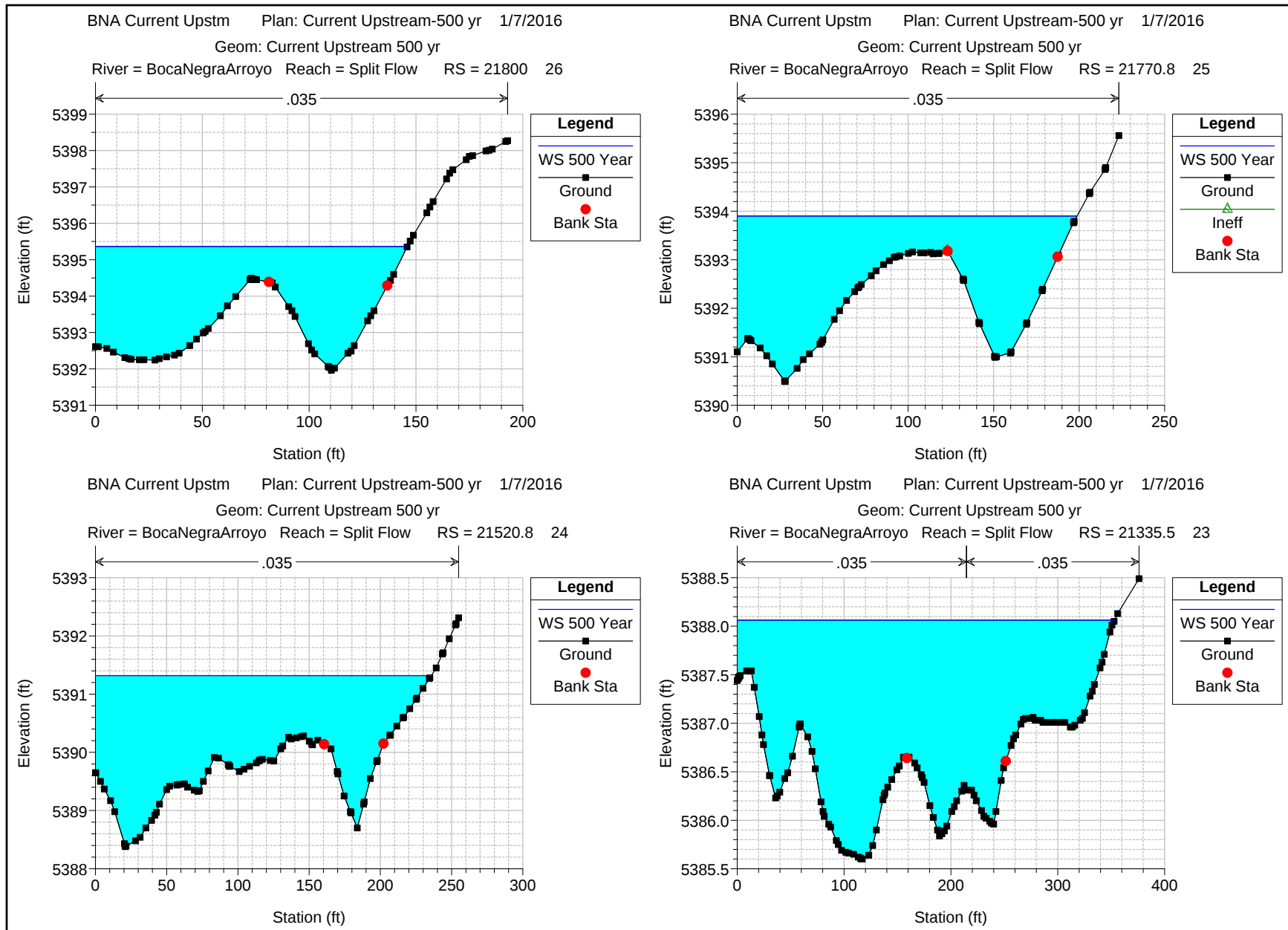
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach - 1 Upper	25374.6	500 Year	2765.00	5432.23	5436.11	5436.09	5437.55	0.010885	9.78	296.32	108.92	0.95
Reach - 1 Upper	24989.3	500 Year	2765.00	5428.13	5432.37	5432.32	5433.55	0.009552	10.04	344.20	142.79	0.91
Reach - 1 Upper	24106.4	500 Year	2765.00	5419.39	5423.24	5423.24	5424.55	0.010875	9.46	317.71	132.44	0.94
Reach - 1 Upper	23000.0	500 Year	2765.00	5406.80	5409.93	5409.93	5410.84	0.011113	8.45	386.05	214.40	0.92
Reach - 1 Upper	22241.1	500 Year	2765.00	5397.81	5402.52		5402.84	0.001851	4.88	682.68	262.86	0.41
Reach - 1 Mid	22027.5	500 Year	2778.00	5394.23	5397.92	5397.92	5399.07	0.010285	8.92	341.58	153.09	0.91
Reach - 1 Mid	21845.5	500 Year	2778.00	5388.78	5393.50	5393.50	5394.83	0.009076	10.30	330.79	130.31	0.90
Reach - 1 Mid	21840	500 Year	2778.00	5379.47	5383.34	5383.34	5384.51	0.010709	9.67	341.56	152.52	0.94
Reach - 1 Mid	21830	500 Year	2778.00	5376.58	5380.35	5380.35	5381.72	0.010467	9.96	313.66	119.87	0.94
Reach - 1 Mid	21820	500 Year	2778.00	5373.77	5376.96	5376.96	5378.08	0.012197	9.35	338.03	153.51	0.98
Reach - 1 Mid	21335.5	500 Year	2778.00	5371.76	5375.70	5375.70	5376.85	0.011908	8.71	331.52	150.21	0.96
Reach - 1 Mid	21001.7	500 Year	2778.00	5364.59	5368.73	5368.73	5369.58	0.007352	8.23	433.23	243.49	0.78
Split Flow	22027.5	500 Year	2778.00	5396.38	5402.28		5402.56	0.001328	4.41	766.48	343.17	0.36
Split Flow	22000	500 Year	2778.00	5396.01	5400.84	5400.84	5402.23	0.010189	9.72	307.69	115.78	0.93
Split Flow	21840	500 Year	2778.00	5394.97	5399.99	5399.99	5401.44	0.008708	10.54	312.32	105.43	0.89
Split Flow	21835	500 Year	2778.00	5393.04	5398.06	5398.06	5399.61	0.010742	10.17	286.79	95.63	0.95
Split Flow	21800	500 Year	2778.00	5391.96	5395.36	5395.36	5396.52	0.013753	8.63	324.58	145.96	1.00
Split Flow	21770.8	500 Year	2778.00	5390.99	5393.90	5393.90	5394.81	0.013875	7.84	365.63	198.80	0.98
Split Flow	21520.8	500 Year	2778.00	5388.70	5391.32	5391.32	5392.16	0.014285	7.60	383.34	235.75	0.99
Split Flow	21335.5	500 Year	2778.00	5385.84	5388.06		5388.52	0.008342	5.84	529.12	353.26	0.76
Split Flow	21325	500 Year	2778.00	5382.14	5384.58	5384.58	5385.53	0.014873	8.72	388.17	278.77	1.04
Split Flow	21315	500 Year	2778.00	5380.00	5382.87	5382.87	5383.51	0.008308	6.99	494.03	384.33	0.79
Split Flow	21250	500 Year	2778.00	5377.21	5378.95	5378.79	5379.42	0.011781	5.97	519.18	435.99	0.87
Split Flow	21200	500 Year	2778.00	5371.39	5374.35	5374.35	5375.25	0.012470	8.20	378.09	226.80	0.96
Split Flow	21194.9	500 Year	2778.00	5363.70	5367.47	5367.47	5368.15	0.009059	7.49	478.15	350.47	0.83
Split Flow	21001.7	500 Year	2778.00	5361.97	5365.10		5365.38	0.003928	4.16	662.66	362.64	0.52
Reach - 1 Lower	20573.7	500 Year	2777.00	5359.99	5363.11		5363.69	0.007169	7.29	481.35	253.30	0.76
Reach - 1 Lower	20390.6	500 Year	2777.00	5358.19	5361.11	5361.11	5362.00	0.011762	8.92	384.96	212.44	0.96
Reach - 1 Lower	19770.6	500 Year	2777.00	5350.42	5353.61	5353.61	5354.53	0.011841	8.76	380.68	206.61	0.96
Reach - 1 Lower	19290.6	500 Year	2777.00	5339.91	5349.07	5343.89	5349.10	0.000116	1.90	2147.41	538.82	0.11
Reach - 1 Lower	19200		Culvert									
Reach - 1 Lower	19175.6	500 Year	2777.00	5339.91	5343.88	5343.88	5344.98	0.009454	9.12	368.35	186.68	0.89
Reach - 1 Lower	19125.5	500 Year	2777.00	5339.50	5343.33	5343.33	5344.54	0.001689	8.89	327.27	153.10	0.96
Reach - 1 Lower	19054.6	500 Year	2777.00	5335.09	5341.62	5341.62	5343.01	0.008296	10.42	322.80	113.94	0.86
Reach - 1 Lower	19003.57	500 Year	2777.00	5331.98	5338.67	5335.65	5338.89	0.000961	3.76	739.07	151.76	0.30

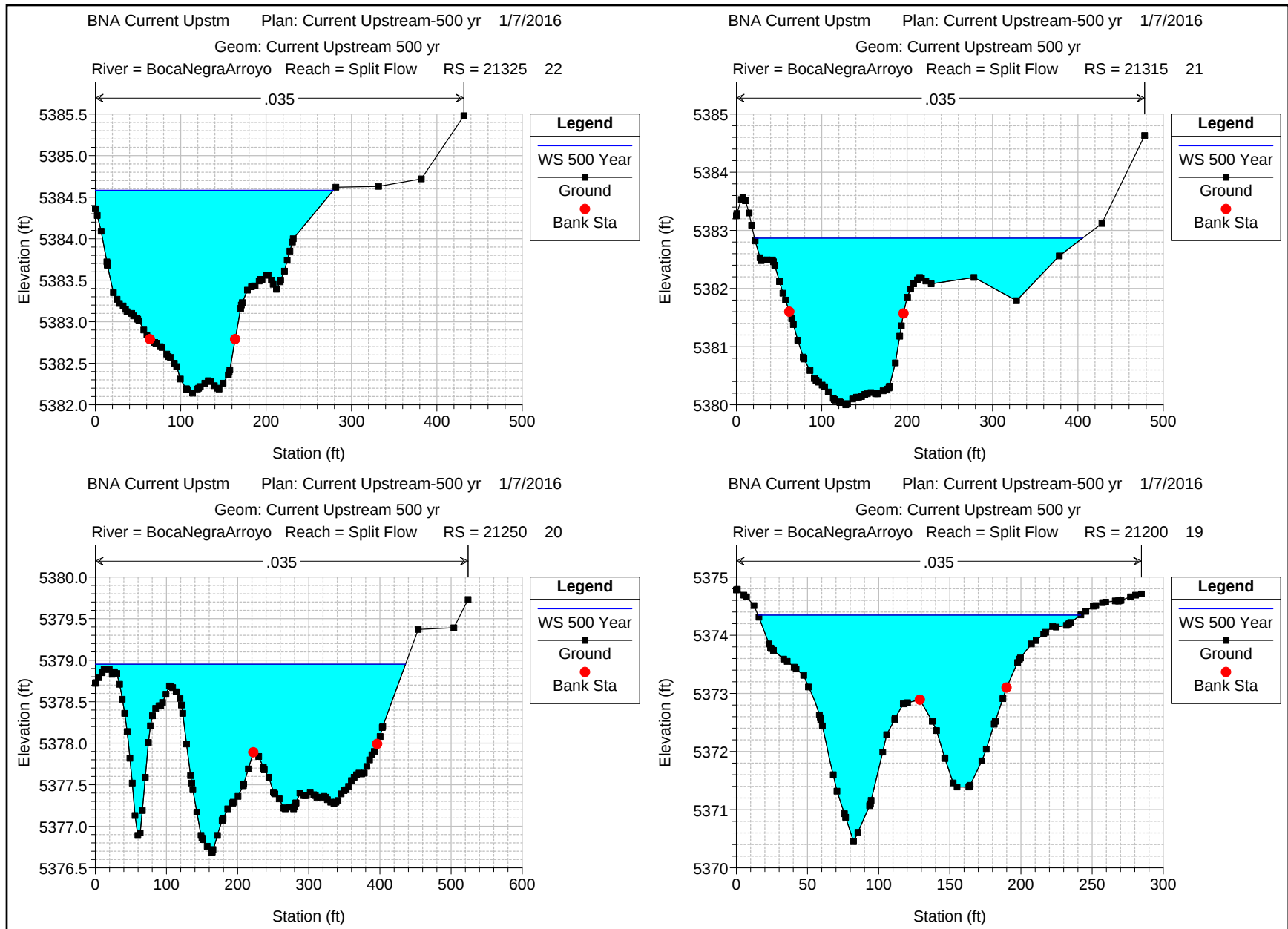


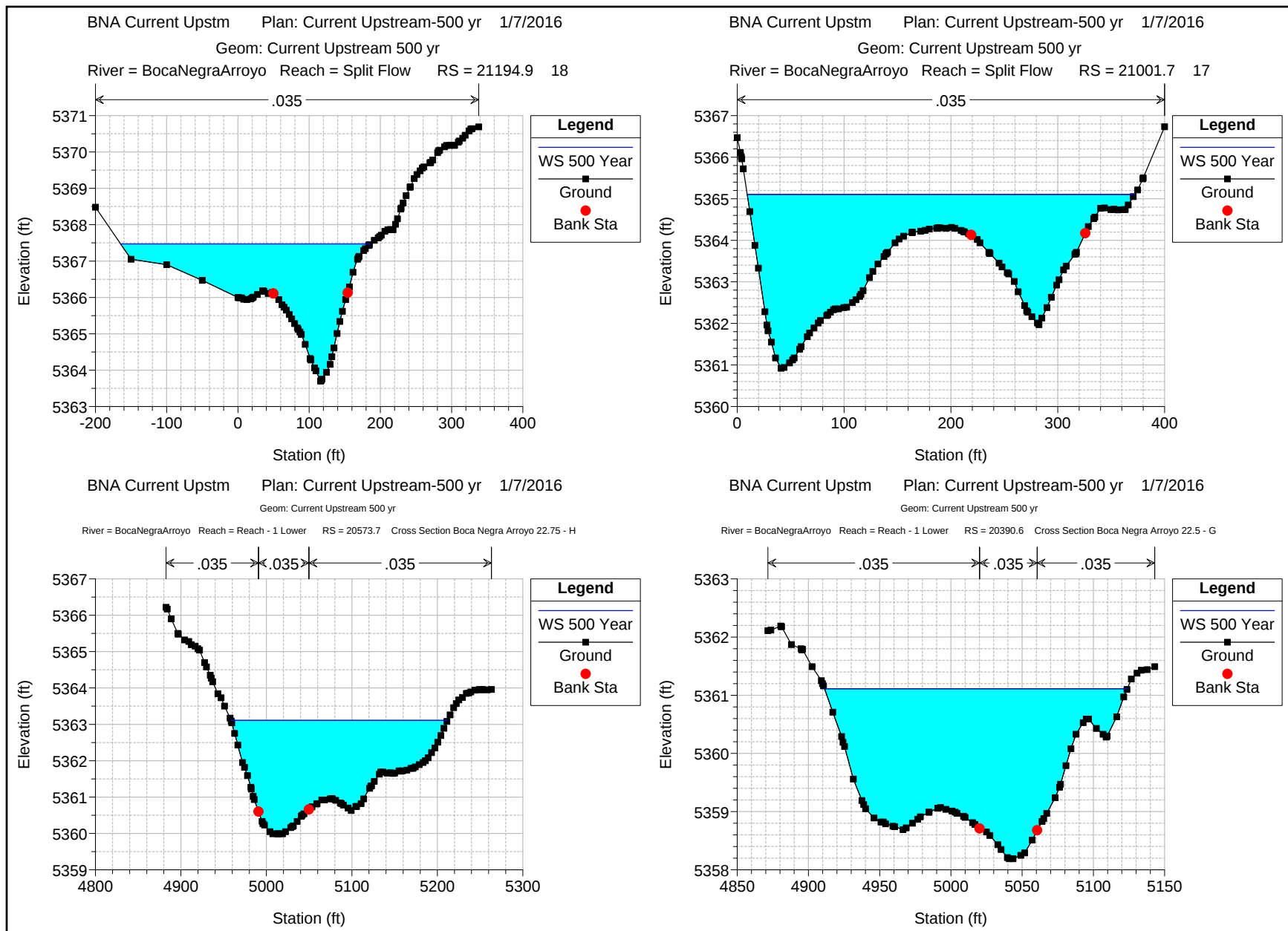


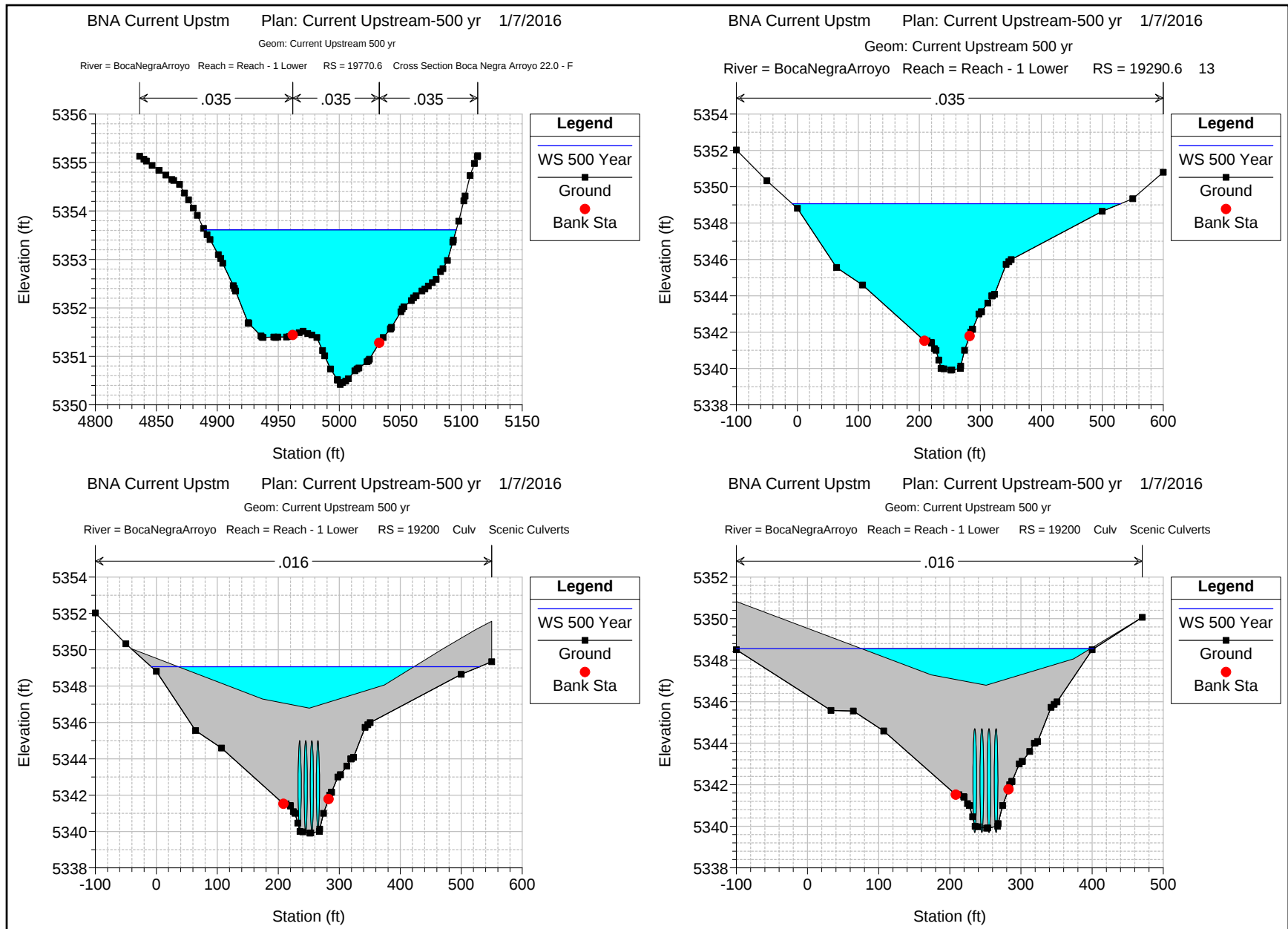


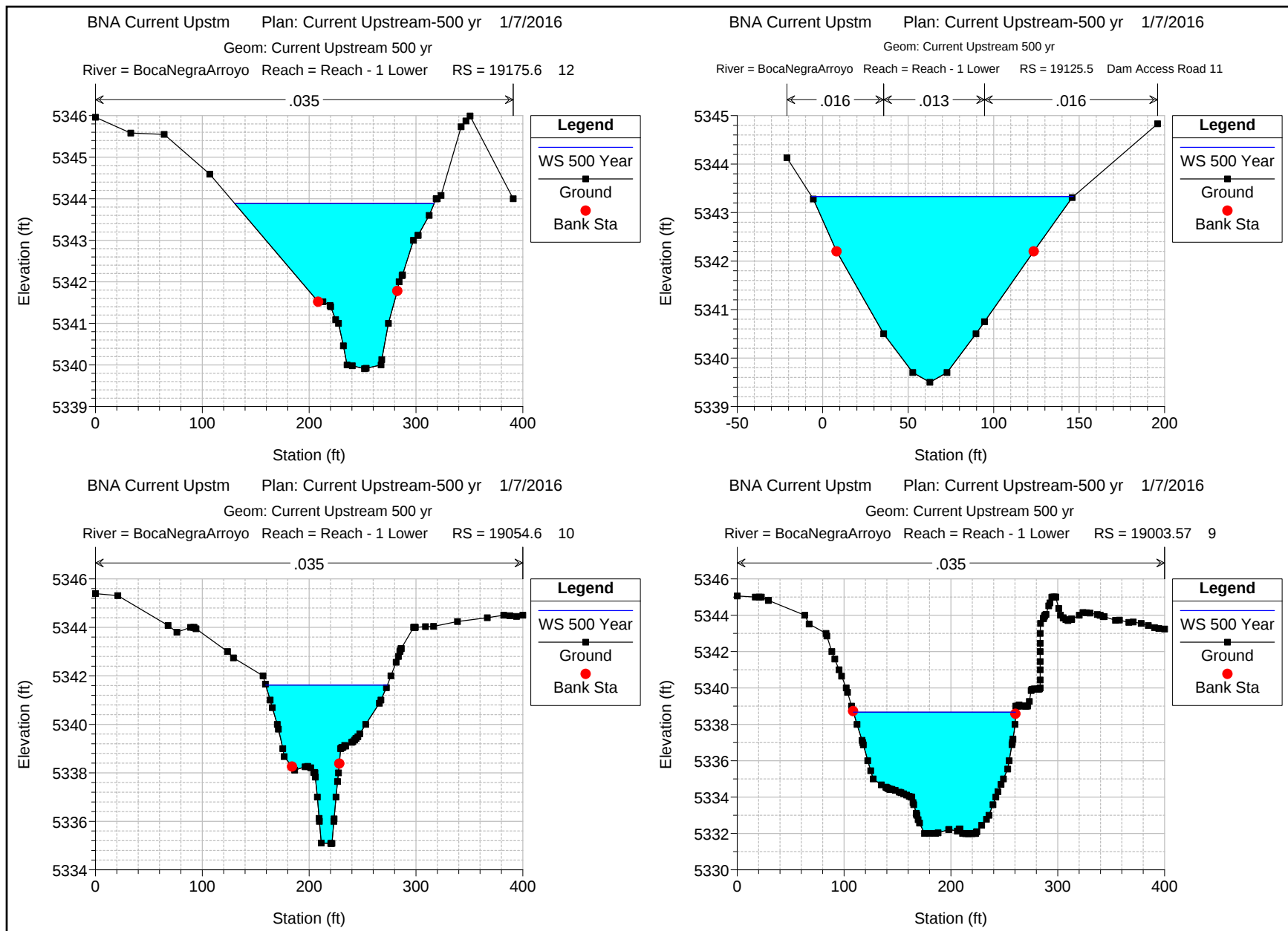












HEC-RAS Version 4.1.0 Jan 2010
 U.S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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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
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PROJECT DATA

Project Title: BNA Current Upstm
 Project File : BNACurrentUpstm.prj
 Run Date and Time: 1/7/2016 9:26:00 AM

Project in English units

PLAN DATA

Plan Title: Current Upstream-500 yr
 Plan File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final Construction
 Acceptance Reports\H&H\LOMR - RAS\BNACurrentUpstm.p07

Geometry Title: Current Upstream 500 yr
 Geometry File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final
 Construction Acceptance Reports\H&H\LOMR - RAS\BNACurrentUpstm.g06

Flow Title : Updated 2014-500 yr
 Flow File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final
 Construction Acceptance Reports\H&H\LOMR - RAS\BNACurrentUpstm.f04

Plan Summary Information:

Number of:	Cross Sections =	34	Multiple Openings =	0
	Culverts =	1	Inline Structures =	0
	Bridges =	0	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 2014-500 yr
 Flow File : t:\Projects\321807802\Eng\2012 Final Plans_Specifications_Estimate_Reports\2014 Final Construction
 Acceptance Reports\H&H\LOMR - RAS\BNACurrentUpstm.f04

Flow Data (cfs)

River	Reach	RS	500 Year
BocaNegraArroyo	Reach - 1 Upper	25374.6	2765
BocaNegraArroyo	Reach - 1 Mid	22027.5	2778
BocaNegraArroyo	Reach - 1 Mid	21840	2778
BocaNegraArroyo	Split Flow	22027.5	2778
BocaNegraArroyo	Split Flow	21800	2778
BocaNegraArroyo	Reach - 1 Lower	20573.7	2777

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
BocaNegraArroyo	Reach - 1 Lower	500 Year		Known WS = 5338.67

GEOMETRY DATA

Geometry Title: Current Upstream 500 yr

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
BocaNegraArroyo	Reach - 1 Upper		Junction 1
BocaNegraArroyo	Reach - 1 Mid	Junction 1	Junction 2
BocaNegraArroyo	Split Flow	Junction 1	Junction 2
BocaNegraArroyo	Reach - 1 Lower	Junction 2	

JUNCTION INFORMATION

Name: Junction 1
 Description:
 Energy computation Method

Length across Junction	Tributary	Length	Angle
River Reach	River Reach		
BocaNegraArroyo Reach - 1 Upper	to BocaNegraArroyo Reach - 1 Mid	213.6	
BocaNegraArroyo Reach - 1 Upper	to BocaNegraArroyo Split Flow	173	

Name: Junction 2
 Description:
 Energy computation Method

Length across Junction	Tributary	Length	Angle
River Reach	River Reach		
BocaNegraArroyo Reach - 1 Mid	to BocaNegraArroyo Reach - 1 Lower	428	
BocaNegraArroyo Split Flow	to BocaNegraArroyo Reach - 1 Lower	321	

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Upper RS: 25374.6

INPUT

Description: Cross Section Boca Negra Arroyo 28.0 - Q

Station	Elevation	Data	num=	71	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4839	5438.7	4841.95	5438.5	4844.7	5438.36	4850.23	5438.17	4851.86	5438.11			
4856.66	5437.93	4858.5	5437.82	4862.65	5437.59	4866.78	5437.37	4868.62	5437.29			
4873.39	5437.19	4875.06	5437.15	4880.58	5437.06	4883.34	5436.99	4889.55	5436.79			
4891.62	5436.71	4892.54	5436.67	4894.92	5436.54	4899.9	5436.24	4904.5	5436.12			
4908.18	5436.12	4916.45	5436.29	4916.46	5436.29	4924.73	5436.47	4928.41	5436.57			
4933.01	5436.62	4937.99	5436.64	4940.37	5436.66	4941.29	5436.59	4943.35	5436.47			
4949.57	5436.07	4952.33	5435.92	4957.85	5435.01	4959.52	5434.75	4964.29	5433.98			
4966.13	5433.78	4970.25	5433.29	4974.4	5432.78	4976.25	5432.58	4981.05	5432.59			
4982.68	5432.62	4987.45	5432.51	4988.21	5432.49	4990.96	5432.4	4997.15	5432.31			
4997.8	5432.31	4999.05	5432.3	5000.96	5432.29	5006.21	5432.24	5010.47	5432.23			
5013.37	5432.27	5016.93	5432.29	5020.53	5432.5	5023.46	5432.68	5027.69	5432.93			
5032.9	5433.16	5034.85	5433.26	5036.44	5433.37	5042.01	5433.9	5048.87	5434.66			
5049.18	5434.7	5049.43	5434.74	5051.87	5435.13	5056.34	5435.83	5062.41	5436.92			
5063.5	5437.11	5064.84	5437.36	5070.66	5438.25	5075.4	5439.02	5077.82	5439.36			
5078.02	5439.39											

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
4839	.035	4959.52	.035	5042.01	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
4959.52	5042.01	385.3	385.3	385.3	.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Upper RS: 24989.3

INPUT

Description: Cross Section Boca Negra Arroyo 27.0 - P

Station	Elevation	Data	num=	96	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4764.7	5437.47	4768.41	5437.28	4769.76	5437.19	4774.65	5436.93	4778.51	5436.87			
4782.55	5436.83	4785.93	5436.79	4788.61	5436.64	4795.33	5436.15	4797.22	5436.03			
4798.71	5435.96	4808.12	5435.61	4808.5	5435.59	4808.8	5435.58	4811.38	5435.51			
4818.9	5435.25	4819.79	5435.21	4820.91	5435.19	4829	5434.97	4831.07	5434.93			
4833.69	5434.83	4839.1	5434.6	4842.36	5434.5	4846.48	5434.43	4849.2	5434.35			
4853.64	5434.3	4859.27	5434.17	4859.3	5434.16	4864.93	5434.03	4869.4	5433.85			
4872.06	5433.73	4876.21	5433.55	4879.5	5433.46	4884.84	5433.31	4887.5	5433.23			
4889.6	5433.16	4897.63	5432.94	4898.78	5432.9	4899.7	5432.85	4907.47	5432.5			
4909.8	5432.4	4910.07	5432.38	4910.42	5432.37	4919.9	5431.7	4921.36	5431.63			
4923.2	5431.54	4929.99	5431.2	4932.64	5431.07	4935.99	5430.84	4940.09	5430.53			
4943.93	5430.28	4948.78	5429.96	4950.19	5429.89	4955.21	5429.54	4960.29	5429.45			
4961.56	5429.41	4966.5	5429.31	4968.63	5429.27	4971.93	5429.26	4972.45	5429.26			
4978.17	5429.22	4980.99	5429.19	4988.45	5428.85	4989.52	5428.79	4989.93	5428.76			
4990.83	5428.72	4996.15	5428.36	4998.06	5428.23	5001.69	5428.13	5006.6	5428.25			
5009.73	5428.38	5013.45	5428.51	5015.13	5428.61	5019.59	5428.9	5023.67	5429.18			

BNADwstm-.rep
5025.04 5429.3 5025.31 5429.33 5031.03 5430.12 5034.57 5430.63 5038.17 5431.03
5044 5431.63 5045.31 5431.76 5046.12 5431.83 5049.54 5432.09 5052.45 5432.32
5057.67 5432.69 5059.58 5432.83 5062.69 5433.03 5066.72 5433.17 5069.22 5433.26
5073.86 5433.53 5079.78 5433.83 5080.76 5433.88 5081 5433.89 5081.37 5433.89
5084.93 5433.91

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
4764.7 .035 4980.99 .035 5023.67 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
4980.99 5023.67 882.9 882.9 882.9 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Reach - 1 Upper RS: 24106.4

INPUT

Description: Cross Section Boca Negra Arroyo 26.0 - 0

Station Elevation Data num= 56
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
4889.8 5424.42 4892.33 5424.31 4896.03 5424.19 4899.68 5424.07 4903.57 5423.94
4907.9 5423.79 4910.36 5423.69 4914.81 5423.54 4919.76 5423.31 4921.04 5423.27
4926.06 5423.03 4931.62 5422.54 4931.73 5422.53 4937.3 5422.04 4942.41 5421.63
4943.49 5421.54 4948.54 5421.13 4953.1 5420.87 4955.35 5420.72 4959.79 5420.46
4963.78 5420.37 4967.22 5420.28 4971.03 5420.19 4974.47 5420.14 4979.08 5420.09
4982.27 5420.04 4985.15 5419.95 4990.95 5419.79 4993.52 5419.71 4995.83 5419.64
5000.47 5419.51 5002.06 5419.48 5003.76 5419.43 5005.11 5419.39 5010.15 5419.56
5014.35 5419.69 5017.27 5419.79 5018.23 5419.86 5020.14 5420.03 5026.32 5420.51
5029.43 5420.71 5034.4 5421.1 5038.86 5421.53 5041.58 5421.78 5042.48 5421.87
5044.27 5422.08 5050.57 5422.8 5053.74 5423.21 5058.65 5423.75 5063.36 5424.28
5065.9 5424.56 5066.74 5424.61 5068.4 5424.69 5074.82 5425.01 5078.06 5425.21
5080.45 5425.29

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
4889.8 .035 4948.54 .035 5034.4 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
4948.54 5034.4 1106.4 1106.4 1106.4 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Reach - 1 Upper RS: 23000.0

INPUT

Description: Cross Section Boca Negra Arroyo 25.0 - N

Station Elevation Data num= 106
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
4834.3 5412.7 4835.65 5412.61 4844.38 5412.12 4844.78 5412.09 4845.05 5412.08
4846.28 5412.01 4854.44 5411.58 4856.19 5411.49 4858.88 5411.32 4863.84 5411.02
4867.59 5410.79 4873.24 5410.59 4873.39 5410.59 4879 5410.39 4882.63 5410.39
4887.89 5410.39 4890.4 5410.39 4892.03 5410.4 4899.65 5410.47 4901.43 5410.49
4901.81 5410.49 4902.4 5410.49 4910.82 5410.51 4913.21 5410.51 4916.9 5410.41
4920.22 5410.3 4924.62 5410.18 4929.62 5409.98 4931.4 5409.91 4936.02 5409.73
4939.01 5409.63 4945.91 5409.34 4947.43 5409.29 4948.41 5409.26 4953.01 5409.09
4957.81 5408.92 4958.83 5408.87 4960.41 5408.79 4967.2 5408.47 4970.24 5408.32
4974.92 5408.04 4976.6 5407.93 4981.64 5407.64 4986 5407.32 4989.42 5407.11
4993.05 5406.86 4995.39 5406.83 5001.4 5406.8 5002.43 5406.81 5003.99 5406.82
5006.86 5406.87 5006.89 5406.87 5011.16 5406.97 5013.48 5407.02 5018.33 5407.13
5021.29 5407.2 5024.54 5407.28 5025.5 5407.3 5027.28 5407.34 5032.67 5407.42
5035.59 5407.45 5039.84 5407.52 5045.38 5407.58 5046.64 5407.6 5047.01 5407.6
5047.7 5407.61 5054.18 5407.79 5057.69 5407.89 5061.35 5408.01 5068.12 5408.27
5068.52 5408.29 5068.74 5408.29 5069.47 5408.29 5075.7 5408.31 5079.79 5408.27
5082.87 5408.25 5088.54 5408.11 5090.04 5408.07 5090.84 5408.04 5093.55 5408
5097.21 5407.93 5101.89 5407.92 5104.38 5407.87 5108.97 5407.95 5111.55 5408.02
5112.95 5408.13 5117.64 5408.41 5118.72 5408.48 5124 5408.8 5125.89 5408.92
5129.39 5409.04 5133.06 5409.18 5135.05 5409.26 5140.23 5409.6 5141.73 5409.69
5146.1 5409.98 5147.4 5410.09 5149.81 5410.29 5154.57 5410.76 5157.15 5411.01
5161.74 5411.53 5165.81 5412.01 5168.2 5412.29 5168.91 5412.35 5170.23 5412.46
5171.65 5412.54

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
4834.3 .035 4974.92 .035 5061.35 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
4974.92 5061.35 758.9 758.9 758.9 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Reach - 1 Upper RS: 22241.1

INPUT

Description: Cross Section Boca Negra Arroyo 24.0 - M

BNADwstm-.rep

Station Elevation Data										num=	106
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4820.81	5403.35	4826.92	5403.05	4827.77	5403	4828.45	5402.97	4834.88	5402.73		
4835.23	5402.71	4841.93	5402.42	4842.68	5402.39	4843.61	5402.35	4850.14	5402.09		
4855.42	5401.88	4857.6	5401.78	4860.3	5401.68	4865.05	5401.56	4868.9	5401.49		
4872.51	5401.41	4876.98	5401.31	4879.97	5401.25	4882.38	5401.22	4887.43	5401.16		
4893.67	5401.04	4894.88	5401.01	4895.86	5400.99	4902.34	5400.85	4905.09	5400.78		
4909.35	5400.69	4909.8	5400.68	4910.36	5400.66	4917.26	5400.39	4922.83	5400.21		
4924.71	5400.15	4927.05	5400.06	4932.17	5399.84	4935.12	5399.68	4936.44	5399.62		
4939.49	5399.4	4942.34	5399.17	4946.71	5398.83	4951.4	5398.49	4953.94	5398.37		
4956.32	5398.29	4961.17	5398.16	4966.35	5398.02	4968.39	5397.98	4970.3	5397.96		
4975.62	5397.91	4981.31	5397.81	4982.84	5397.81	4984.28	5397.81	4990.07	5397.85		
4996.26	5397.89	4997.29	5397.9	4998.26	5397.9	5004.52	5397.97	5008.04	5397.98		
5011.21	5397.99	5011.74	5397.98	5012.24	5397.98	5018.97	5398.03	5026.17	5398.09		
5026.2	5398.09	5026.22	5398.09	5026.99	5398.1	5033.42	5398.22	5040.2	5398.4		
5040.65	5398.42	5041.12	5398.44	5043.57	5398.6	5048.02	5398.97	5051.13	5399.23		
5055.49	5399.75	5057.32	5399.96	5061.08	5400.39	5062.97	5400.59	5068.64	5401.15		
5070.44	5401.33	5071.04	5401.38	5072.22	5401.47	5077.91	5401.9	5080.99	5402.11		
5085.39	5402.23	5087.12	5402.29	5090.94	5402.41	5092.86	5402.42	5098.63	5402.47		
5100.33	5402.48	5100.9	5402.49	5102.02	5402.51	5107.8	5402.63	5110.85	5402.69		
5115.28	5402.76	5116.92	5402.77	5120.8	5402.82	5122.75	5402.84	5128.61	5402.95		
5130.22	5402.99	5130.76	5403	5131.82	5403.06	5137.7	5403.3	5140.71	5403.49		
5145.17	5403.77	5146.72	5403.85	5150.67	5404.08	5152.64	5404.2	5158.6	5404.43		
5159.07	5404.44										

Manning's n Values				num=	3
Sta	n Val	Sta	n Val	Sta	n Val
4820.81	.035	4942.34	.035	5048.02	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	4942.34	5048.02		0	0		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo

REACH: Reach - 1 Mid RS: 22027.5

INPUT

Description: Cross Section Boca Negra Arroyo 23.75 - L

Station Elevation Data										num=	76
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4890.5	5401.44	4894.23	5401.15	4899.28	5400.75	4902.37	5400.37	4908.78	5399.53		
4910.52	5399.31	4911.36	5399.22	4913.78	5398.97	4918.67	5398.48	4923.45	5397.95		
4926.82	5397.77	4933.78	5397.39	4934.96	5397.33	4935.54	5397.3	4937.18	5397.22		
4943.11	5396.95	4947.62	5396.74	4951.26	5396.62	4958.78	5396.33	4959.41	5396.3		
4959.71	5396.29	4960.59	5396.26	4967.55	5396.03	4971.8	5395.84	4975.7	5395.63		
4983.78	5395.1	4983.85	5395.09	4983.89	5395.09	4983.99	5395.08	4992	5394.65		
4995.97	5394.49	5000.14	5394.42	5002.14	5394.41	5007.39	5394.39	5008.06	5394.38		
5008.29	5394.38	5008.77	5394.38	5016.44	5394.27	5020.15	5394.23	5024.59	5394.29		
5030.8	5394.44	5032.23	5394.47	5032.73	5394.5	5032.96	5394.51	5033.28	5394.52		
5034.26	5394.58	5040.31	5394.92	5043.1	5395.07	5047.87	5395.34	5048.29	5395.36		
5052.93	5395.62	5055.43	5395.79	5062.32	5396.25	5062.75	5396.27	5062.99	5396.3		
5063.77	5396.37	5070.54	5397.07	5072.58	5397.22	5076.34	5397.78	5078.1	5398.06		
5082.4	5398.65	5085.66	5399.1	5090.37	5399.73	5092.22	5399.99	5093.22	5399.99		
5096.55	5399.99	5100.78	5399.94	5102.05	5399.96	5104.4	5399.92	5108.34	5399.8		
5111.87	5399.78	5115.9	5399.6	5118.42	5399.52	5121.69	5399.4	5123.46	5399.27		
5124.92	5399.15										

Manning's n Values				num=	3
Sta	n Val	Sta	n Val	Sta	n Val
4890.5	.035	4967.55	.035	5062.32	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	4967.55	5062.32		182	182		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo

REACH: Reach - 1 Mid RS: 21845.5

INPUT

Description: Cross Section Boca Negra Arroyo 23.5 - K

Station Elevation Data										num=	99
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4880.3	5396.01	4882.41	5395.91	4887.22	5395.73	4894.99	5395.39	4895	5395.39		
4895.01	5395.39	4902.79	5395.1	4907.6	5394.93	4910.58	5394.84	4915.41	5394.7		
4918.37	5394.63	4920.19	5394.57	4926.16	5394.28	4927.91	5394.16	4932.79	5393.85		
4933.94	5393.78	4935.81	5393.65	4941.73	5393.26	4945.38	5392.95	4949.52	5392.57		
4956.21	5391.92	4957.31	5391.82	4957.98	5391.75	4960.83	5391.47	4965.09	5391.05		
4970.58	5390.51	4970.7	5390.5	4972.78	5390.36	4973.6	5390.3	4975.28	5390.21		
4980.22	5390	4983.61	5389.79	4987.66	5389.55	4990.59	5389.3	4993.63	5389.09		
4995.1	5388.98	4996.09	5388.94	4999.37	5388.79	5002.54	5388.78	5003.64	5388.82		
5005.9	5388.95	5009.98	5389.15	5013.66	5389.39	5017.42	5389.68	5021.21	5390.01		
5023.67	5390.21	5024.86	5390.31	5028.32	5390.61	5032.3	5390.89	5033.68	5390.99		
5036.52	5391.17	5039.74	5391.37	5043.7	5391.64	5047.18	5391.9	5051.83	5392.3		
5053.71	5392.45	5054.62	5392.52	5057.26	5392.74	5062.06	5393.05	5063.72	5393.17		
5067.14	5393.41	5069.5	5393.57	5073.74	5393.89	5076.94	5394.11	5082.45	5394.5		
5083.75	5394.59	5084.38	5394.63	5086.21	5394.71	5091.82	5394.9	5093.77	5394.96		
5097.76	5395.07	5099.26	5395.12	5103.78	5395.23	5106.7	5395.25	5113.07	5395.31		

BNADwstm-.rep
5113.79 5395.32 5114.14 5395.33 5115.16 5395.36 5121.58 5395.52 5123.81 5395.58
5128.38 5395.79 5129.02 5395.82 5133.82 5396.04 5136.46 5396.17 5143.69 5396.49
5143.83 5396.5 5143.9 5396.5 5144.1 5396.5 5151.34 5396.78 5153.85 5396.89
5158.78 5397.01 5159 5397.01 5163.86 5397.12 5166.22 5397.11 5173.05 5396.99
5173.66 5396.98 5173.88 5396.98 5174.31 5396.96 5180.71 5396.79

Manning's n Values num= 3
Sta n Val Sta n Val
4880.3 .035 4975.28 .035 5023.67 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
4975.28 5023.67 290.81 290.81 290.81 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Reach - 1 Mid RS: 21840

INPUT

Description: 16

Station Elevation Data num= 69
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 5384.3 3.12999 5384.13.699997 5384.064.259995 5384.02 12.37 5383.4
12.92 5383.36 13.48 5383.31 21.61 5382.6122.14999 5382.57 22.69 5382.52
30.84999 5381.9131.37999 5381.87 31.91 5381.81 40.09 5381.01 40.61 5380.96
41.12999 5380.91 49.33 5380.2 49.84 5380.1550.34999 5380.1658.56999 5380.25
59.06999 5380.2559.56999 5380.27 67.81 5380.54 68.3 5380.5668.78999 5380.56
77.05 5380.47 77.53 5380.4778.00999 5380.4486.28999 5380.0886.75999 5380.05
87.21999 5380.03 95.53 5379.49 95.99 5379.4796.43999 5379.48 104.12 5379.48
104.77 5379.48 105.21 5379.48 105.66 5379.52 114.01 5380.15 114.44 5380.18
114.88 5380.22 123.25 5380.95 123.67 5380.98 124.1 5381.01 132.48 5381.56
132.9 5381.58 133.32 5381.61 141.72 5382.16 142.13 5382.18 142.54 5382.19
150.96 5382.56 151.36 5382.57 151.75 5382.59 160.2 5383.05 160.59 5383.07
160.97 5383.09 169.44 5383.55 169.82 5383.57 170.19 5383.6 178.68 5384.15
179.05 5384.17 179.41 5384.2 187.92 5384.75 188.28 5384.78 188.63 5384.8
197.16 5385.36 197.5 5385.38 197.85 5385.4 203.45 5385.77

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

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
67.81 123.25 71.4 71.4 71.4 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Reach - 1 Mid RS: 21830

INPUT

Description: 15

Station Elevation Data num= 54
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 5382.391.240005 5382.29 3.01001 5382.143.770004 5382.075.660004 5381.91
11.10001 5381.4213.29001 5381.24 18.41 5380.6718.43001 5380.6623.56001 5380.11
25.76001 5379.8 31.23 5378.94 33.09 5378.64 33.84 5378.52 35.59 5378.34
40.42001 5377.8144.11001 5377.4947.75001 5377.4752.76001 5377.3 54.38 5377.27
55.08001 5377.24 56.8 5377.1762.40001 5377 64.66 5376.94 69.73 5376.76
69.94 5376.7674.93001 5376.6577.06001 5376.6382.01001 5376.5982.36001 5376.59
84.39001 5376.59 85.2 5376.58 87.11 5376.58 91.72 5376.6295.48001 5376.58
99.05 5376.72 104.29 5376.81 105.75 5376.85 106.38 5376.91 107.93 5377.04
113.71 5377.65 116.03 5377.86 121.03 5378.35 121.46 5378.38 126.3 5378.83
128.36 5378.98 133.5 5379.46 135.69 5379.71 136.57 5379.81 138.64 5380.05
143.02 5380.58 146.85 5380.99 150.35 5381.43 151.1 5381.53

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

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
47.75001 113.71 115.95 115.95 115.95 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Reach - 1 Mid RS: 21820

INPUT

Description: 14

Station Elevation Data num= 64
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
-20 5379.52 -10 5378.21 0 5376.99 9.8 5376 21.4 5375
29.39 5374.67 42.77 5374.42 44.38 5374.38 48.39 5374.34 51.71 5374.33
53.04 5374.33 56.17 5374.39 59.04 5374.44 63.32 5374.51 66.37 5374.61
73.34 5374.79 73.59 5374.8 73.69 5374.79 73.95 5374.78 81.02 5374.45
83.86 5374.4 88.35 5374.13 90.52 5374.04 94.14 5373.85 95.68 5373.84
99.52 5373.84 103.01 5373.8 104.41 5373.77 106.14 5373.78 107.7 5373.79
110.34 5373.79 114.68 5373.85 117.67 5373.94 124.87 5374.38 124.96 5374.39

125	5374.39	125.09	5374.39	132.32	5374.76	135.23	5374.97	139.65	5375.41
142.05	5375.67	145.51	5376.03	146.98	5376.18	150.66	5376.59	154.31	5377.02
155.78	5377.17	159.22	5377.44	161.64	5377.64	166.05	5377.97	168.97	5378.13
176.22	5378.49	176.3	5378.49	176.33	5378.49	176.4	5378.5	183.63	5379.47
186.6	5379.85	190.95	5380.22	193.57	5380.44	196.87	5380.72	198.28	5380.84
201.79	5381.13	205.61	5381.41	207.15	5381.52	209.44	5381.67		

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	73.59	132.32		45.3	45.3	45.3		.1	.3

RIVER: BocaNegraArroyo
REACH: Reach - 1 Mid RS: 21335.5

Station		Elevation Data		num=		115					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4904.44	5381.56	4907.59	5381.4	4909.19	5381.36	4910.62	5381.31	4916.55	5381.16		
4923.18	5380.94	4923.91	5380.92	4924.56	5380.88	4931.27	5380.45	4936.31	5380.13		
4938.5	5379.99	4938.63	5379.98	4938.76	5379.97	4945.98	5379.58	4952.44	5379.28		
4953.34	5379.24	4954.35	5379.19	4960.7	5378.92	4966.38	5378.67	4968.06	5378.6		
4969.93	5378.54	4975.42	5378.3	4980.32	5378.09	4982.78	5378	4985.52	5377.94		
4990.13	5377.76	4994.26	5377.58	4997.49	5377.39	5001.1	5377.15	5004.85	5376.87		
5008.2	5376.65	5012.21	5376.39	5016.69	5376.06	5019.57	5375.84	5022.14	5375.65		
5026.93	5375.3	5032.27	5374.95	5034.28	5374.83	5036.08	5374.72	5041.64	5374.29		
5047.86	5373.81	5049	5373.75	5050.02	5373.72	5056.36	5373.57	5063.45	5373.41		
5063.72	5373.4	5063.96	5373.39	5068.34	5373.22	5071.08	5373.11	5077.9	5372.7		
5078.44	5372.68	5079.03	5372.67	5085.79	5372.5	5091.84	5372.31	5093.15	5372.23		
5094.62	5372.17	5100.51	5371.95	5102.29	5371.89	5105.78	5371.76	5107.87	5371.77		
5110.2	5371.88	5115.23	5372.23	5119.72	5372.76	5122.59	5373.18	5125.79	5373.58		
5129.94	5374.01	5133.66	5374.14	5137.3	5373.98	5141.37	5373.75	5144.66	5373.61		
5147.6	5373.51	5152.02	5373.59	5156.96	5373.82	5159.38	5373.97	5161.54	5374.18		
5166.74	5374.95	5172.54	5375.84	5174.09	5376.12	5175.48	5376.35	5181.45	5377.21		
5188.13	5377.85	5188.81	5377.93	5189.42	5378	5196.17	5378.83	5200.37	5379.2		
5203.36	5379.47	5203.53	5379.49	5203.71	5379.5	5210.89	5379.97	5217.3	5380.43		
5218.24	5380.48	5219.3	5380.53	5225.6	5380.89	5231.24	5381.25	5232.96	5381.33		
5234.89	5381.42	5240.32	5381.65	5245.18	5381.89	5247.68	5381.99	5250.47	5382.13		
5255.04	5382.28	5259.12	5382.41	5262.4	5382.47	5266.06	5382.54	5269.75	5382.57		
5273.06	5382.62	5277.11	5382.7	5281.64	5382.79	5284.47	5382.83	5287	5382.89		
5291.83	5383.09	5297.23	5383.31	5299.19	5383.38	5300.94	5383.44	5304.37	5383.49		

Bank	Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
		5041.64	5161.54		333.8	333.8	333.8		.1	.3

RIVER: BocaNegraArroyo
REACH: Reach - 1 Mid RS: 21001.7

[illegible]

Manning's n Values	num=	3
Sta	n Val	Sta n Val Sta n Val

BNADwstm-.rep

4883.3 .035 4964.29 .035 5038.83 .035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
4964.29	5038.83	0	0	0		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow RS: 22027.5

INPUT

Description: 30

Station	Elevation	Data	num=	64	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-100	5402.65	-80	5402.44	-60	5402.29	-40	5401.96	-20	5401.7			
0	5402.23	20	5401.18	50	5401.5	94.42	5400.46	101.84	5400.44			
102.51	5400.47	103.18	5400.44	111.07	5399.84	111.74	5399.8	112.42	5399.74			
120.29	5398.88	120.97	5398.82	121.64	5398.75	129.52	5398.07	130.2	5398			
130.87	5397.95	138.75	5397.35	139.42	5397.29	140.1	5397.25	147.98	5396.73			
148.65	5396.69	149.33	5396.67	157.2	5396.41	157.88	5396.39	158.56	5396.39			
159.11	5396.39	166.43	5396.39	167.11	5396.38	167.79	5396.39	175.66	5396.47			
176.34	5396.48	177.03	5396.49	184.88	5396.57	185.57	5396.58	186.26	5396.6			
194.11	5396.86	194.8	5396.88	195.49	5396.93	203.34	5397.44	204.03	5397.49			
204.72	5397.55	212.56	5398.23	213.26	5398.29	213.95	5398.35	221.79	5399.03			
222.49	5399.09	223.18	5399.15	231.02	5399.74	231.72	5399.8	232.41	5399.86			
240.25	5400.37	240.94	5400.43	241.64	5400.48	249.47	5401.07	250.17	5401.13			
250.87	5401.17	257.62	5401.61	277.62	5402.19	297.62	5402.49					

Manning's n Values	num=	2
Sta n Val	Sta n Val	
-100 .035	203.34	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
112.42	231.02	75.7	75.7	75.7		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow RS: 22000

INPUT

Description: 29

Station	Elevation	Data	num=	52	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5399.62	7599945	5399.622	089996	5399.623	470001	5399.589	820007	5399.45			
11.32001	5399.41	12.87	5399.32	18.89	5399.06	20.55	5398.97	22.28	5398.83			
27.96	5398.4	29.78	5398.25	31.68	5398.13	34.42	5397.95	37.07	5397.77			
39.01	5397.65	40.96	5397.51	46.3	5397.148	24001	5396.97	50.19	5396.84			
55.4	5396.45	55.53	5396.44	57.47	5396.31	59.42	5396.25	64.76	5396.07			
66.7	5396.01	68.64	5396.1473	99001	5396.54	75.93	5396.67	77.87	5396.9			
83.21001	5397.54	85.16	5397.7787	10001	5398.02	92.44	5398.72	94.39	5398.97			
96.33	5399.18	101.67	5399.7	103.62	5399.91	105.56	5400.06	110.9	5400.46			
112.85	5400.61	114.79	5400.75	120.13	5401.21	122.07	5401.35	124.02	5401.48			
129.36	5401.89	131.3	5402.03	133.25	5402.15	138.59	5402.5	140.53	5402.63			
142.48	5402.75	146.58	5402.97									

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.
18.89	96.33	77.63	77.63	77.63		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow RS: 21840

INPUT

Description: 28

Station	Elevation	Data	num=	49	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5398.442	150009	5398.636	110001	5398.617	400009	5398.6	11.38	5398.58			
15.51	5398.33	16.47	5398.28	20.61	5398.04	24.91	5397.83	25.25	5397.81			
25.54	5397.8	29.84	5397.59	34.15	5397.24	34.77	5397.1939	07001	5396.84			
43.38	5396.35	44	5396.28	48.3	5395.79	52.61	5395.46	53.23	5395.41			
57.53001	5395.08	61.84	5395.04	62.29	5395.02	62.45	5395.02	66.76	5394.97			
71.07001	5395.25	71.68	5395.2875	99001	5395.5680	29001	5396.08	80.91	5396.15			
85.22	5396.66	89.52	5397.34	90.14	5397.44	94.45	5398.12	98.75	5398.86			
99.37	5398.98	103.68	5399.72	107.98	5400.38	108.6	5400.47	112.9	5401.12			
117.21	5401.64	117.83	5401.72	122.13	5402.23	126.44	5402.6	127.06	5402.66			
131.36	5403.03	135.67	5403.36	136.29	5403.4	137.41	5403.49					

Manning's n Values	num=	2
Sta n Val	Sta n Val	
0 .035	117.21	.035

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

39.07001 85.22 54.1 54.1 54.1 BNADwstm-.rep .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Split Flow RS: 21835

INPUT

Description: 27

Station	Elevation	Data	num=	51							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5396.661	15.66	5396.63	15.66	5396.4219	87999	5396.06	22.38	5395.8524	88999	5395.7
13.15999	5396.63	15.66	5396.4219	87999	5396.06	22.38	5395.8524	88999	5395.7		
29.10999	5395.3431	60999	5395.19	34.12	5395.09	38.34	5394.82	40.84	5394.73		
43.35	5394.55	47.56	5394.2350	06999	5394.0552	57999	5393.8656	78999	5393.59		
59.3	5393.4	61.81	5393.2964	17999	5393.21	66.02	5393.15	68.53	5393.04		
71.03999	5393.2275	24999	5393.5977	75999	5393.7680	25999	5394.33	84.48	5395.34		
86.98999	5395.91	89.49	5396.5393	70999	5397.5896	21999	5398.2198	71999	5398.66		
102.94	5399.39	105.45	5399.83	107.95	5400.19	112.17	5400.83	114.67	5401.18		
117.18	5401.51	121.4	5402.05	123.9	5402.38	126.41	5402.64	130.63	5403.05		
133.13	5403.31	135.64	5403.43	139.85	5403.61	142.36	5403.74	144.87	5403.84		
148.12	5403.98										

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

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	15.66	89.49	135.23	135.23	135.23		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Split Flow RS: 21800

INPUT

Description: 26

Station	Elevation	Data	num=	66							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5392.611	259995	5392.615	330002	5392.568	410004	5392.4613	74001	5392.31		
15.56	5392.28	16.61	5392.26	20.53	5392.2522	71001	5392.25	27.89	5392.24		
29.86	5392.28	33.27	5392.3337	00999	5392.38	39.17	5392.43	44.16	5392.64		
47.25	5392.8250	46001	5392.99	51.31	5393.03	52.8	5393.11	58.47	5393.46		
61.74001	5393.73	65.62	5393.99	72.33	5394.45	72.77	5394.48	73.02	5394.49		
73.98	5394.47	75.43	5394.45	81.22	5394.39	82.69	5394.36	84.16	5394.25		
90.45	5393.71	91.92	5393.6	93.39	5393.44	99.68	5392.69	101.15	5392.52		
102.61	5392.41	108.91	5392.07	109.32	5392.04	110.38	5391.96	111.84	5392.02		
118.14	5392.43	119.61	5392.49	121.07	5392.64	127.37	5393.32	128.83	5393.46		
130.3	5393.6	136.6	5394.29	138.06	5394.43	139.53	5394.6	145.83	5395.35		
147.29	5395.51	148.76	5395.67	155.05	5396.29	156.52	5396.45	157.99	5396.6		
164.28	5397.22	165.75	5397.38	167.22	5397.47	173.51	5397.75	174.98	5397.84		
176.45	5397.86	182.74	5397.99	184.21	5398.01	185.68	5398.04	191.97	5398.25		
192.86	5398.27										

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

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	81.22	136.6	68.96	68.96	68.96		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Split Flow RS: 21770.8

INPUT

Description: 25

Station	Elevation	Data	num=	77							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5391.16	020004	5391.376	179993	5391.386	300003	5391.387	349991	5391.35		
8.050003	5391.33	13.39	5391.18	17.25	5391.02	20.61	5390.85	27.69	5390.5		
27.84	5390.49	27.91	5390.49	28.11	5390.535	06999	5390.7638	56999	5390.94		
42.3	5391.0648	39999	5391.26	49.23	5391.29	49.53	5391.3150	14999	5391.35		
56.75	5391.77	59.89	5391.95	63.98	5392.16	68.69	5392.34	70.55	5392.42		
71.20999	5392.4472	59999	5392.49	78.44	5392.6781	20999	5392.77	85.66	5392.9		
88.98999	5392.98	91.87	5393.05	92.89	5393.06	95.05	5393.08	100.12	5393.13		
102.52	5393.16	107.35	5393.14	109.28	5393.14	113.18	5393.15	114.57	5393.12		
117.5	5393.13	118.02	5393.13	122.85	5393.18	123.06	5393.18	123.27	5393.17		
132.08	5392.6	132.29	5392.59	132.5	5392.57	141.31	5391.71	141.52	5391.69		
141.73	5391.68	150.54	5391.01	150.75	5390.99	150.96	5390.99	151.64	5391		
159.76	5391.08	159.98	5391.08	160.19	5391.1	168.99	5391.67	169.21	5391.68		
169.42	5391.7	178.22	5392.36	178.44	5392.38	178.65	5392.39	187.45	5393.06		
187.66	5393.08	187.88	5393.09	196.68	5393.76	196.89	5393.77	197.11	5393.79		
205.91	5394.36	206.12	5394.38	206.34	5394.39	215.14	5394.86	215.35	5394.88		
215.56	5394.9	223.2	5395.56								

Manning's n Values num= 1

BNADwstm-.rep

Sta n Val
0 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
123.06 187.45 95.48 95.48 95.48 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
0 122.85 5393.18 F

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Split Flow RS: 21520.8

INPUT

Description: 24

Station	Elevation	Data	num=	89	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5389.65	230011	5389.653	520004	5389.56	190002	5389.37	10.60001	5389.17			
13.49001	5388.98	20.34001	5388.43	20.79001	5388.39	20.97	5388.38	21.43001	5388.39			
28.09001	5388.48	31.34001	5388.54	35.38	5388.73	35.001	5388.83	41.72	5388.92			
42.68001	5388.97	44.97	5389.11	49.98001	5389.36	52.09001	5389.42	57.26001	5389.44			
57.28	5389.44	58.97	5389.45	62.49001	5389.46	64.55	5389.46	69.29001	5389.35			
71.83	5389.33	72.94	5389.34	75.77	5389.57	79.10001	5389.68	83.39	5389.91			
86.38	5389.99	93.20001	5389.79	93.65001	5389.77	93.85001	5389.76	94.35001	5389.76			
100.93	5389.67	104.3	5389.71	108.2	5389.76	112.92	5389.82	114.76	5389.85			
115.47	5389.87	117.12	5389.88	122.75	5389.86	125.21	5389.85	130.02	5390.06			
131.49	5390.11	135.66	5390.26	137.3	5390.23	141.04	5390.25	144.57	5390.27			
146.12	5390.28	150.06	5390.19	151.85	5390.14	152.43	5390.13	156.09	5390.21			
160.48	5390.14	160.92	5390.13	165.31	5390.06	169.71	5389.67	170.15	5389.63			
174.54	5389.25	178.94	5388.98	179.38	5388.97	179.45	5388.96	183.77	5388.7			
188.17	5389.11	188.6	5389.15	193	5389.55	197.4	5389.84	197.83	5389.86			
202.23	5390.15	206.63	5390.29	207.06	5390.3	211.46	5390.45	215.86	5390.59			
216.29	5390.6	220.69	5390.75	225.09	5390.91	225.52	5390.93	229.92	5391.1			
234.32	5391.27	234.75	5391.28	239.15	5391.45	243.54	5391.69	243.98	5391.71			
248.38	5391.95	252.77	5392.19	253.21	5392.21	254.99	5392.31					

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

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
160.48 202.23 115.6 115.6 115.6 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
REACH: Split Flow RS: 21335.5

INPUT

Description: 23

Station	Elevation	Data	num=	121	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5387.44	9900208	5387.46	1.27002	5387.47	1.660004	5387.48	1.890015	5387.48			
2.77002	5387.49	8.00018	5387.54	13.24002	5387.54	15.95001	5387.37	20.55002	5387.07			
23.10001	5386.88	24.60001	5386.78	30.24002	5386.46	30.39001	5386.46	35.95001	5386.23			
37.39001	5386.25	39.84	5386.29	44.54001	5386.43	47.30002	5386.49	51.67999	5386.66			
58	5386.96	58.66	5386.99	58.83002	5386.99	59.12	5386.99	65.98001	5386.86			
70.01001	5386.71	73.12	5386.53	78.39999	5386.19	80.27002	5386.09	81.37	5386.04			
85.62	5385.96	87.42001	5385.93	92.72	5385.79	94.56	5385.75	97.69	5385.69			
101.71	5385.67	104.08	5385.66	108.85	5385.65	113.23	5385.62	115.43	5385.61			
116	5385.6	116.97	5385.6	123.15	5385.64	126.79	5385.74	130.29	5385.9			
136.25	5386.21	137.44	5386.26	138.14	5386.28	140.84	5386.34	144.59	5386.42			
149.49	5386.52	151.73	5386.56	155.54	5386.65	158.88	5386.64	160.85	5386.65			
166.03	5386.59	168.46	5386.54	172.2	5386.47	173.17	5386.44	174.82	5386.39			
180.32	5386.15	183.56	5386.03	187.47	5385.9	189.3	5385.84	191.57	5385.86			
193.86	5385.89	196.14	5385.94	200.82	5386.09	203.09	5386.14	205.35	5386.2			
210.07	5386.3	212.32	5386.36	214.56	5386.31	219.32	5386.31	221.55	5386.26			
223.77	5386.2	228.57	5386.1	230.78	5386.04	232.98	5386.02	236.3	5385.99			
237.82	5385.97	240.01	5385.96	242.19	5386.09	247.07	5386.41	249.24	5386.54			
251.4	5386.61	256.32	5386.77	258.47	5386.84	260.61	5386.88	265.57	5386.99			
267.7	5387.04	269.82	5387.05	274.82	5387.05	276.92	5387.06	279.02	5387.03			
284.06	5387.03	286.15	5387.01	288.23	5387.01	293.31	5387.01	295.38	5387.01			
297.44	5387.01	302.56	5387.01	304.61	5387.01	306.65	5387.01	311.81	5386.96			
313.84	5386.96	315.86	5386.98	321.06	5387.03	323.07	5387.05	325.07	5387.11			
330.31	5387.28	332.3	5387.33	334.28	5387.4	339.56	5387.57	341.53	5387.63			
343.49	5387.71	348.81	5387.94	350.76	5388.01	352.7	5388.05	356.1	5388.13			
376.1	5388.49											

Manning's n Values num= 2
Sta n Val Sta n Val
0 .035 214.56 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
158.88 251.4 268.96 268.96 268.96 .1 .3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow

RS: 21325

INPUT

Description: 22

Station	Elevation	Data	num=	79	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5384.362	229996	5384.286	819992	5384.091	13.42999	5383.72	13.86	5383.7			
13.95999	5383.69	14.11	5383.68	21.09	5383.35	25.48	5383.27	28.23	5383.22			
32.59	5383.19	35.36	5383.15	37.11	5383.12	42.5	5383.144	76999	5383.07			
48.73	5383.0449	62999	5383.03	51.06	5383.0156	76999	5382.960	34999	5382.84			
63.9	5382.7969	53999	5382.7571	03999	5382.74	71.98	5382.74	76.12	5382.7			
78.17	5382.6983	59999	5382.61	85.31	5382.5888	01999	5382.5792	43999	5382.5			
95.23	5382.46	99.58	5382.31	106.49	5382.19	106.71	5382.19	106.75	5382.19			
106.86	5382.19	108.02	5382.18	113.86	5382.14	119.53	5382.19	121.01	5382.2			
122.91	5382.22	128.15	5382.26	132.2	5382.29	135.3	5382.28	139.31	5382.23			
142.45	5382.2	144.87	5382.19	149.59	5382.26	155.7	5382.36	156.74	5382.39			
157.54	5382.42	163.82	5382.79	163.89	5382.79	170.22	5383.16	171.03	5383.2			
172.09	5383.23	178.18	5383.38	182.89	5383.42	185.33	5383.43	187.1	5383.43			
191.89	5383.49	193.35	5383.51	195.28	5383.51	200.11	5383.56	202.71	5383.56			
206.15	5383.5	208.32	5383.45	212.07	5383.39	216.54	5383.48	217.02	5383.5			
221.43	5383.61	224.76	5383.74	227.9	5383.85	230.79	5383.96	231.76	5384			
281.76	5384.62	331.76	5384.63	381.76	5384.72	431.76	5385.48					

Manning's n Values

Sta	n Val
0	.035

num= 1

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	63.9	163.82		114.8	114.8		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow

RS: 21315

INPUT

Description: 21

Station	Elevation	Data	num=	75	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5383.25	5599976	5383.295	639999	5383.537	699997	5383.56	10.58	5383.51			
14.83	5383.3	17.86	5383.09	21.97	5382.8227	73001	5382.5329	10001	5382.48			
30.07001	5382.49	35.89	5382.4936	23001	5382.4942	29001	5382.4943	37001	5382.46			
44.88	5382.4	50.5	5382.1254	51001	5381.92	57.63	5381.8	62.02	5381.6			
64.77	5381.48	66.72	5381.3871	90001	5381.1178	35001	5380.82	78.94	5380.79			
79.03	5380.79	79.17	5380.79	86.17	5380.5991	15001	5380.45	93.3	5380.42			
96.32001	5380.39	100.43	5380.34	103.37	5380.31	107.57	5380.22	113.46	5380.11			
114.7	5380.09	115.58	5380.08	120.82	5380.05	121.3	5380.04	121.83	5380.04			
128.04	5380	128.98	5380.01	130.2	5380.02	136.13	5380.1	140.71	5380.13			
143.28	5380.13	146.6	5380.14	150.42	5380.18	153.38	5380.19	157.57	5380.21			
162.99	5380.19	164.72	5380.19	166.05	5380.19	171.86	5380.24	176.48	5380.27			
178.72	5380.29	179.01	5380.3	179.38	5380.32	186.16	5380.72	191.39	5381.18			
193.3	5381.36	195.78	5381.57	200.45	5381.85	204.07	5381.99	207.6	5382.08			
212.17	5382.15	214.75	5382.19	216.74	5382.18	221.89	5382.13	228.16	5382.08			
278.16	5382.19	328.16	5381.79	378.16	5382.56	428.16	5383.12	478.165	5384.63			

Manning's n Values

Sta	n Val
0	.035

num= 1

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	62.02	195.78		268.94	268.94		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow

RS: 21250

INPUT

Description: 20

Station	Elevation	Data	num=	119	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5378.72	5499878	5378.735	089996	5378.799	440002	5378.8512	32999	5378.89			
15.35999	5378.8919	57001	5378.8923	60999	5378.83	26.81	5378.86	30.16	5378.84			
34.04999	5378.71	37.78	5378.5341	29001	5378.3644	95999	5378.14	48.53	5377.82			
51.94998	5377.5255	76999	5377.1359	76999	5376.8963	01001	5376.92	66.12	5377.19			
70.25	5377.5974	57001	5378.0177	48999	5378.2180	29001	5378.3384	72998	5378.42			
89.37	5378.45	91.97	5378.45	94.47	5378.4999	20999	5378.59	104.17	5378.69			
106.45	5378.68	108.64	5378.67	113.69	5378.62	118.98	5378.54	120.93	5378.46			
122.81	5378.36	128.17	5377.99	133.78	5377.61	135.41	5377.52	136.98	5377.44			
142.65	5377.17	148.58	5376.89	149.89	5376.86	151.15	5376.84	157.13	5376.76			
163.39	5376.68	164.37	5376.69	165.32	5376.72	171.61	5376.89	178.19	5377.07			
178.85	5377.08	179.49	5377.09	186.09	5377.21	192.99	5377.28	193.33	5377.28			
193.66	5377.29	200.57	5377.36	207.8	5377.49	207.81	5377.49	207.83	5377.49			
208.59	5377.51	215.05	5377.69	222	5377.89	222.29	5377.89	222.6	5377.89			
229.53	5377.84	236.17	5377.71	236.77	5377.69	237.4	5377.68	244.01	5377.59			
250.34	5377.41	251.25	5377.4	252.21	5377.39	258.49	5377.33	264.51	5377.22			
265.73	5377.22	267.01	5377.21	272.97	5377.23	278.68	5377.21	280.21	5377.24			
281.81	5377.28	281.95	5377.28	287.45	5377.4	292.85	5377.37	294.69	5377.37			

BNADwstm-.rep

296.61	5377.37	301.93	5377.41	307.02	5377.38	309.17	5377.37	311.42	5377.35
316.41	5377.35	321.19	5377.36	323.65	5377.35	326.22	5377.32	330.89	5377.29
335.37	5377.27	338.13	5377.29	341.02	5377.31	345.37	5377.39	349.54	5377.43
352.61	5377.44	355.83	5377.48	359.85	5377.55	363.71	5377.59	367.09	5377.62
370.63	5377.64	374.33	5377.63	377.88	5377.64	381.57	5377.72	385.43	5377.8
388.81	5377.86	392.05	5377.9	396.05	5377.99	400.23	5378.08	403.29	5378.19
403.87	5378.2	453.87	5379.37	503.87	5379.39	523.87	5379.73		

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

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	222	396.05	340.84	340.84	340.84		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow RS: 21200

INPUT
 Description: 19
 Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5374.78	6799927	5374.795	279999	5374.697	119995	5374.66	12.34	5374.51
15.82001	5374.3122	94998	5373.85	24	5373.78	24.53	5373.77	26.06	5373.74
33.23	5373.59	35.67	5373.5540	60999	5373.4541	92999	5373.4247	32999	5373.31
50.64	5373.11	58.28	5372.6358	98999	5372.58	59.34	5372.54	60.37	5372.44
68.04999	5371.670	65999	5371.32	75.95	5370.93	76.75	5370.8782	31999	5370.45
85.45999	5370.61	93.62	5371.07	93.98	5371.0994	15999	5371.194	68999	5371.16
102.87	5371.99	105.64	5372.29	111.28	5372.55	111.57	5372.57	117.31	5372.82
120.27	5372.84	128.95	5372.89	128.97	5372.89	128.98	5372.89	129	5372.89
137.68	5372.52	140.63	5372.36	146.39	5371.89	146.62	5371.88	152.3	5371.46
155.09	5371.39	163.32	5371.39	163.8	5371.4	163.96	5371.4	164.17	5371.41
164.29	5371.42	172.5	5371.84	175.62	5372.04	181.21	5372.47	181.95	5372.52
187.28	5372.91	189.91	5373.1	197.64	5373.53	198.61	5373.58	198.95	5373.59
199.62	5373.61	207.32	5373.85	210.61	5373.91	216.02	5374.02	217.29	5374.05
222.27	5374.15	224.73	5374.14	231.95	5374.17	233.43	5374.19	233.94	5374.21
234.96	5374.22	242.14	5374.35	245.6	5374.41	250.84	5374.5	252.62	5374.51
257.26	5374.56	259.54	5374.57	266.27	5374.59	268.25	5374.59	268.92	5374.59
270.29	5374.6	276.95	5374.66	280.59	5374.69	284.68	5374.71		

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

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	128.95	189.91	276.3	276.3	276.3		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow RS: 21194.9

INPUT
 Description: 18
 Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-200	5368.48	-150	5367.05	-100	5366.9	-50	5366.47	0	5366
1.440002	5365.995	089996	5365.998	049988	5365.9512	54001	5365.94	18.09	5365.96
20	5365.9921	54001	5366.0127	44998	5366.0834	73999	5366.1834	89999	5366.18
35.04001	5366.1836	35001	5366.1742	35999	5366.1148	54001	5366.14	49.81	5366.11
51.38	5366.0757	26999	5365.94	62.03	5365.8	64.72	5365.73	68.03	5365.65
72.16998	5365.53	75.53	5365.41	79.63	5365.2883	54999	5365.1684	67999	5365.12
87.07999	5365.05	89.03	5364.9894	53999	5364.71	101.33	5364.32	101.99	5364.3
102.52	5364.28	107.62	5364.06	109.44	5363.98	116.02	5363.7	116.9	5363.72
117.98	5363.75	124.35	5363.94	129.52	5364.16	131.81	5364.37	134.63	5364.61
139.26	5365.01	143.01	5365.34	146.71	5365.62	151.28	5365.94	154.17	5366.13
156.51	5366.29	161.62	5366.69	167.93	5367.05	169.08	5367.1	170	5367.13
176.53	5367.29	178.89	5367.34	183.5	5367.43	183.98	5367.43	184.58	5367.45
191.44	5367.57	197	5367.64	198.89	5367.67	201.23	5367.71	206.35	5367.82
210.49	5367.86	213.8	5367.87	217.88	5367.86	221.25	5368.01	223.99	5368.16
228.71	5368.43	229.21	5368.46	232.05	5368.6	236.17	5368.8	241.71	5369.03
242.02	5369.04	247.51	5369.27	251.38	5369.38	255.76	5369.48	258.86	5369.56
261.05	5369.59	269.49	5369.7	270.21	5369.71	270.71	5369.71	273.6	5369.78
280.38	5369.98	281.56	5370.03	283.23	5370.05	290.04	5370.14	292.9	5370.18
296.97	5370.18	299.71	5370.19	304.25	5370.18	309.38	5370.27	310.7	5370.3
315.6	5370.38	319.04	5370.46	324.44	5370.58	326.95	5370.63	328.71	5370.64
338.15	5370.69								

Manning's n Values num= 1
 Sta n Val
 -200 .035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	49.81	154.17	200	200	200		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Split Flow

RS: 21001.7

INPUT

Description: 17

Station	Elevation	Data	num=	115	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5366.47	3.02002	5366.113	820007	5366.01	4.25	5365.965	660004	5365.72			
11.82	5364.69	16.52002	5363.88	19.81	5363.33	25.97	5362.28	27.81	5361.96			
28.79001	5361.82	32.02002	5361.55	35.80002	5361.17	41.06	5360.92	43.80002	5360.94			
48.93002	5361.05	51.79001	5361.12	53.32001	5361.17	58.37003	5361.38	59.79001	5361.44			
65.59003	5361.68	67.78	5361.77	71.88	5361.89	75.78	5362.01	77.86002	5362.07			
83.77002	5362.19	84.72	5362.21	87.22	5362.27	90.13	5362.33	91.77002	5362.35			
94.84003	5362.35	99.76001	5362.38	102.4	5362.39	107.76	5362.5	111.07	5362.57			
114.67	5362.65	115.76	5362.7	117.8	5362.79	123.75	5363.1	126.93	5363.25			
131.75	5363.43	137.42	5363.61	139.2	5363.67	139.74	5363.69	140.75	5363.71			
147.74	5363.94	151.47	5364.03	155.73	5364.1	163.71	5364.19	163.73	5364.19			
163.74	5364.19	163.78	5364.19	171.72	5364.22	176.01	5364.24	179.72	5364.27			
186.66	5364.29	187.71	5364.3	188.27	5364.3	190.13	5364.3	195.71	5364.29			
200.54	5364.31	203.7	5364.29	209.62	5364.24	211.7	5364.21	212.81	5364.2			
216.48	5364.16	219	5364.13	220.41	5364.1	224.72	5364.02	227.11	5363.94			
235.47	5363.71	236.08	5363.69	236.26	5363.69	236.58	5363.68	245.05	5363.45			
247.8	5363.36	252.75	5363.22	254.02	5363.19	259.34	5363.01	262.99	5362.76			
268.91	5362.43	270.88	5362.3	271.97	5362.27	275.77	5362.16	280.94	5362.01			
282.42	5361.97	285.08	5362.13	289.91	5362.38	293.96	5362.63	298.88	5362.92			
301.25	5363.05	305.5	5363.29	307.85	5363.38	316.07	5363.66	316.82	5363.68			
317.04	5363.68	317.42	5363.71	325.79	5364.17	328.58	5364.33	333.59	5364.52			
334.76	5364.56	340.12	5364.77	343.73	5364.78	349.76	5364.74	351.66	5364.74			
352.71	5364.75	356.38	5364.73	361.68	5364.74	363.19	5364.74	365.93	5364.85			
370.65	5365.05	374.73	5365.21	379.62	5365.48	379.95	5365.5	399.95	5366.73			

Manning's n Values

num= 1

Sta	n Val
0	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	219	325.79	130	130	130		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Lower

RS: 20573.7

INPUT

Description: Cross Section Boca Negra Arroyo 22.75 - H

Station	Elevation	Data	num=	112	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4882.6	5366.22	4883.94	5366.17	4888.67	5365.9	4896.32	5365.5	4896.46	5365.49			
4896.54	5365.49	4896.9	5365.48	4904.24	5365.32	4909.14	5365.28	4912.03	5365.19			
4916.71	5365.15	4919.82	5365.08	4921.74	5365.04	4927.6	5364.7	4929.87	5364.58			
4934.33	5364.35	4935.39	5364.27	4937.09	5364.17	4943.17	5363.84	4946.93	5363.73			
4950.96	5363.5	4957.48	5363.17	4958.75	5363.09	4959.53	5363.04	4962.85	5362.75			
4966.53	5362.43	4972.13	5361.95	4974.32	5361.82	4977.87	5361.59	4981.89	5361.27			
4982.32	5361.22	4984.47	5361.02	4985.75	5360.93	4990.78	5360.6	4994.9	5360.33			
4995.95	5360.27	4997.71	5360.23	5004.05	5360.05	5007.42	5359.99	5013.1	5359.99			
5013.2	5359.99	5014.7	5359.99	5018.9	5359.99	5022.35	5360.05	5028.49	5360.16			
5030.38	5360.19	5031.5	5360.21	5035.9	5360.33	5040.65	5360.47	5041.85	5360.5			
5043.88	5360.54	5049.79	5360.66	5053.33	5360.73	5058.94	5360.81	5059.27	5360.82			
5064.8	5360.92	5068.09	5360.92	5074.66	5360.95	5076.28	5360.96	5077.24	5360.95			
5081.02	5360.91	5086.39	5360.84	5087.75	5360.82	5090.05	5360.78	5095.54	5360.7			
5099.23	5360.63	5104.69	5360.74	5105.44	5360.74	5110.71	5360.82	5113.84	5360.95			
5120.83	5361.24	5122.18	5361.3	5122.99	5361.31	5126.15	5361.43	5132.13	5361.63			
5133.66	5361.69	5136.22	5361.69	5141.28	5361.66	5145.13	5361.67	5147.97	5361.65			
5149.91	5361.66	5155.18	5361.72	5157.14	5361.71	5159.23	5361.72	5164.36	5361.74			
5169.16	5361.79	5171.59	5361.79	5174.19	5361.83	5178.81	5361.89	5183.14	5361.95			
5186.04	5362	5189.15	5362.08	5193.27	5362.22	5197.11	5362.35	5200.49	5362.51			
5204.1	5362.69	5207.72	5362.89	5211.09	5363.08	5214.94	5363.26	5219.06	5363.46			
5222.17	5363.57	5225.07	5363.67	5229.39	5363.74	5234.02	5363.85	5236.62	5363.86			
5239.04	5363.89	5243.84	5363.94	5248.98	5363.96	5251.07	5363.95	5253.02	5363.96			
5258.29	5363.95	5263.23	5363.96									

Manning's n Values

num= 3

Sta	n Val	Sta	n Val	Sta	n Val
4882.6	.035	4990.78	.035	5049.79	.035

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	4990.78	5049.79	183.1	183.1	183.1		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Lower

RS: 20390.6

INPUT

Description: Cross Section Boca Negra Arroyo 22.5 - G

Station	Elevation	Data	num=	81	Sta	Elev	Sta	Elev	Sta	Elev
4871.5	5362.11	4873.57	5362.12	4880.55	5362.19	4880.81	5362.18	4881.09	5362.18	

BNADwstm-.rep

4888.06	5361.87	4894.79	5361.8	4895.3	5361.78	4895.84	5361.79	4902.55	5361.49
4909.03	5361.25	4909.79	5361.2	4910.59	5361.16	4917.04	5360.71	4923.27	5360.29
4924.29	5360.19	4925.33	5360.12	4931.53	5359.56	4937.52	5359.19	4938.78	5359.12
4940.08	5359.05	4946.02	5358.89	4950.87	5358.82	4952.52	5358.82	4954.15	5358.79
4959.26	5358.75	4960.57	5358.74	4966.36	5358.69	4968.61	5358.72	4972.96	5358.8
4976.65	5358.87	4978.56	5358.91	4984.59	5358.99	4984.69	5358.99	4990.77	5359.06
4992.74	5359.07	4996.53	5359.04	5000.78	5359.01	5002.98	5358.99	5004.29	5358.97
5008.82	5358.92	5009.91	5358.9	5015.19	5358.81	5016.86	5358.78	5020.1	5358.71
5024.91	5358.65	5027.39	5358.59	5032.95	5358.43	5035.23	5358.35	5039.6	5358.21
5040.99	5358.19	5043.67	5358.19	5049.03	5358.25	5051.81	5358.29	5057.07	5358.51
5060.56	5358.68	5064.02	5358.83	5065.12	5358.88	5067.24	5358.97	5073.16	5359.24
5076.23	5359.42	5076.96	5359.47	5080.72	5359.79	5084.22	5360.08	5087.86	5360.33
5092.83	5360.53	5095	5360.59	5096.58	5360.59	5102.13	5360.43	5106.79	5360.33
5108.94	5360.28	5109.27	5360.29	5109.73	5360.3	5116.41	5360.63	5121.29	5360.97
5123.54	5361.1	5126.62	5361.28	5130.68	5361.38	5133.65	5361.43	5137.82	5361.44
5143.07	5361.49								

Manning's n Values		num= 3	
Sta	n Val	Sta	n Val
4871.5	.035	5020.1	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	5020.1	5060.56		620	620		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Lower RS: 19770.6

INPUT

Description: Cross Section Boca Negra Arroyo 22.0 - F
 Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
4836.3	5355.13	4839.83	5355.07	4841.82	5355.03	4846.53	5354.94	4852.04	5354.84
4852.26	5354.84	4857.78	5354.74	4862.7	5354.65	4864.24	5354.63	4869.04	5354.55
4873.14	5354.37	4876.45	5354.23	4880.3	5354.06	4883.59	5353.91	4888.66	5353.64
4891.55	5353.51	4894.03	5353.41	4900.86	5353.1	4902.81	5353.02	4904.47	5352.92
4913.07	5352.46	4914.06	5352.4	4914.91	5352.35	4925.28	5351.69	4925.32	5351.69
4925.36	5351.69	4925.82	5351.68	4935.8	5351.42	4936.58	5351.4	4937.49	5351.39
4946.24	5351.4	4947.83	5351.39	4949.69	5351.4	4956.68	5351.4	4959.09	5351.41
4961.9	5351.44	4967.13	5351.49	4970.34	5351.52	4974.11	5351.47	4977.57	5351.44
4981.6	5351.39	4986.31	5351.12	4988.01	5351.01	4992.86	5350.74	4998.46	5350.52
4998.52	5350.51	5000.82	5350.42	5002.71	5350.46	5005.28	5350.49	5007.48	5350.54
5012.75	5350.7	5014.55	5350.74	5016.08	5350.76	5022.79	5350.89	5023.82	5350.91
5024.69	5350.94	5032.84	5351.28	5033.08	5351.29	5033.3	5351.3	5036.05	5351.39
5041.9	5351.56	5042.35	5351.58	5042.88	5351.6	5050.51	5351.92	5051.62	5351.98
5052.92	5352.02	5059.12	5352.15	5060.89	5352.21	5062.97	5352.25	5067.72	5352.35
5070.16	5352.39	5073.01	5352.45	5076.33	5352.52	5079.43	5352.59	5083.05	5352.75
5084.94	5352.81	5088.7	5352.98	5093.1	5353.36	5093.54	5353.4	5097.97	5353.79
5102.15	5354.21	5103.14	5354.31	5107.24	5354.73	5110.76	5354.98	5113.18	5355.12
5113.51	5355.14								

Manning's n Values		num= 3	
Sta	n Val	Sta	n Val
4836.3	.035	4961.9	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	4961.9	5032.84		480	480		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Lower RS: 19290.6

INPUT

Description: 13

Station	Elevation	Data	num= 37
Sta	Elev	Sta	Elev
-100	5352.03	-50	5350.33
208.45	5341.52	212.88	5341.52
227.42	5341	231.98	5340.46
253.38	5339.92	267.29	5340
284.17	5342	286.98	5342.15
301.95	5343.12	312.36	5343.6
323.45	5344.08	342.32	5345.73
550	5349.34	600	5350.8

Manning's n Values		num= 1	
Sta	n Val	Sta	n Val
-100	.035		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	208.45	282.53		115	115		.3	.5

CULVERT

RIVER: BocaNegraArroyo
 REACH: Reach - 1 Lower RS: 19200

INPUT

Description: Scenic Culverts

Distance from Upstream XS = 50

Deck/Roadway Width = 56

Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
-176	5351.8		174	5347.29		251	5346.79	
374	5348.06		470.4	5350.06		523.98	5351.11	
577.56	5352.06							

Upstream Bridge Cross Section Data

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-100	5352.03	-50	5350.33	0	5348.81	64.3	5345.55	106.99	5344.59
208.45	5341.52	212.88	5341.52	219.55	5341.43	220.08	5341.4	224.79	5341.09
227.42	5341	231.98	5340.46	235.53	5340	240.35	5339.98	251.78	5339.91
253.38	5339.92	267.29	5340	267.99	5340.13	274.23	5341	282.53	5341.78
284.17	5342	286.98	5342.15	287.4	5342.17	297.64	5343	301.86	5343.12
301.95	5343.12	312.36	5343.6	318.87	5344	319.07	5344	319.86	5344
323.45	5344.08	342.32	5345.73	346.74	5345.87	350.63	5345.99	500	5348.65
550	5349.34								

Manning's n Values

num= 1

Sta	n Val
-100	.016

Bank	Sta: Left	Right	Coeff	Contr.	Expan.
	208.45	282.53	.3		.5

Downstream Deck/Roadway Coordinates

num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
-176	5351.8		174	5347.29		251	5346.79	
374	5348.06		470.4	5350.06		523.98	5351.11	
577.56	5352.06							

Downstream Bridge Cross Section Data

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-100	5348.5	33.06	5345.58	64.3	5345.55	106.99	5344.59	208.45	5341.52
212.88	5341.52	219.55	5341.43	220.08	5341.4	224.79	5341.09	227.42	5341
231.98	5340.46	235.53	5340	240.35	5339.98	251.78	5339.91	253.38	5339.92
267.29	5340	267.99	5340.13	274.23	5341	282.53	5341.78	284.17	5342
286.98	5342.15	287.4	5342.17	297.64	5343	301.86	5343.12	301.95	5343.12
312.36	5343.6	318.87	5344	319.07	5344	319.86	5344	323.45	5344.08
342.32	5345.73	346.74	5345.87	350.63	5345.99	400	5348.5	470.4	5350.06

Manning's n Values

num= 1

Sta	n Val
-100	.016

Bank	Sta: Left	Right	Coeff	Contr.	Expan.
	208.45	282.53	.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 Circular 5

FHWA Chart # 1 - Concrete Pipe Culvert

FHWA Scale # 2 - Groove end entrance with headwall

Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
50	56	.013	.013	0	.2	1

Number of Barrels = 4

Upstream Elevation = 5340

Centerline Stations

Sta.	Sta.	Sta.	Sta.
235	245	255	265

Downstream Elevation = 5339.7

Centerline Stations

Sta.	Sta.	Sta.	Sta.
235	245	255	265

CROSS SECTION

RIVER: BocaNegraArroyo

REACH: Reach - 1 Lower RS: 19175.6

INPUT

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Description: 12

Station	Elevation	Data	num=	34	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5345.96	33.06	5345.5864	29999	5345.55	106.99	5344.59	208.45	5341.52			
212.88	5341.52	219.55	5341.43	220.08	5341.4	224.79	5341.09	227.42	5341			
231.98	5340.46	235.53	5340	240.35	5339.98	251.78	5339.91	253.38	5339.92			
267.29	5340	267.99	5340.13	274.23	5341	282.53	5341.78	284.17	5342			
286.98	5342.15	287.4	5342.17	297.64	5343	301.86	5343.12	301.95	5343.12			
312.36	5343.6	318.87	5344	319.07	5344	319.86	5344	323.45	5344.08			
342.32	5345.73	346.74	5345.87	350.63	5345.99	391	5344					

Manning's n Values

Sta	n Val	num=	1
0	.035		

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	208.45	282.53	50.1	50.1	50.1		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo

REACH: Reach - 1 Lower RS: 19125.5

INPUT

Description: Dam Access Road 11

Station	Elevation	Data	num=	12	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-20.92	5344.13	-5.5	5343.28	8.12	5342.2	35.66	5340.5	52.7	5339.7			
62.7	5339.5	72.7	5339.7	89.7	5340.5	94.7	5340.75	123.44	5342.2			
145.9	5343.31	195.9	5344.83									

Manning's n Values

Sta	n Val	Sta	n Val	num=	3
-20.92	.016	35.66	.013	94.7	.016

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	8.12	123.44	70.95	70.95	70.95		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo

REACH: Reach - 1 Lower RS: 19054.6

INPUT

Description: 10

Station	Elevation	Data	num=	81	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5345.39	20.88	5345.31	67.91	5344.08	76.16	5343.889	01999	5344			
91.64001	5344.92	35999	5344.94	07999	5343.94	123.61	5343	129.09	5342.74			
156.79	5342	159.07	5341.66	163.51	5341	165.57	5340.69	170.22	5340			
171.22	5339.8	175.26	5339	176.6	5338.67	183.95	5338.26	186.39	5338.11			
196.19	5338.25	198.61	5338.27	201.46	5338.21	204.28	5338.02	205.25	5338.01			
205.36	5338	205.77	5337.82	207.66	5337	209.38	5336.12	209.61	5336			
211.36	5335.1	220.29	5335.09	220.45	5335.09	221.37	5335.09	223.15	5336			
223.35	5336.1	225.12	5337	226.59	5337.64	227.44	5338	228.2	5338.38			
229.46	5339	230.01	5339.03	230.9	5339.05	231.41	5339.05	231.69	5339.05			
233.21	5339.13	234.16	5339.1	239.7	5339.26	240.93	5339.28	242.58	5339.35			
243.83	5339.42	243.84	5339.42	245.64	5339.49	247.38	5339.61	252.9	5340			
265.77	5340.87	267.16	5341	272.35	5341.51	276.53	5342	281.45	5342.56			
283.53	5342.8	284.87	5343	285.07	5343.03	285.93	5343.12	286.23	5343.13			
297.83	5344	298.23	5344	298.39	5344	298.42	5344	298.83	5344			
298.91	5344	299.13	5344	299.31	5344	308.85	5344.03	316.5	5344.04			
338.87	5344.24	366.69	5344.4	382.08	5344.5	387.83	5344.48	394.15	5344.45			
400	5344.5											

Manning's n Values

Sta	n Val	num=	1
0	.035		

Bank	Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
	183.95	228.2	50.98	50.98	50.98		.1	.3

CROSS SECTION

RIVER: BocaNegraArroyo

REACH: Reach - 1 Lower RS: 19003.57

INPUT

Description: 9

Station	Elevation	Data	num=	158	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5345.0616	92999	5345.20	54001	5345.22	60999	5345.29	14999	5344.82			
29.17999	5344.82	63.16	5344	67.31	5343.5283	04999	5343.83	85001	5342.86			
88.59	5342	91.34	5341.59	95.31	5341	97.63	5340.65	102.03	5340			
103.21	5339.76	107.06	5339	108.43	5338.73	112.1	5338	116.81	5337.12			
117.45	5337	118.07	5336.87	122.18	5336	124.93	5335.45	127.27	5335			
134.93	5334.67	139.13	5334.55	139.52	5334.53	140.24	5334.51	141.05	5334.48			
141.71	5334.45	142.33	5334.44	142.98	5334.42	143.89	5334.42	144.81	5334.42			

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147.8	5334.37	151.56	5334.27	153.33	5334.24	155.72	5334.18	158.53	5334.11
161.01	5334.04	162.54	5334.01	163.09	5334	163.39	5334	164.53	5333.7
165.13	5333.58	167.54	5333.11	167.88	5333.04	168.03	5333	169.25	5332.76
170.64	5332.57	175.33	5332	179.91	5332	185.56	5332	188.03	5332.03
197.88	5332.21	198.19	5332.22	206.03	5332.13	207.66	5332.24	208.49	5332.25
210.85	5332	213.6	5331.99	213.83	5331.99	216.4	5331.98	219.51	5331.99
220.17	5331.99	222.85	5332	222.87	5332	222.89	5332	223.07	5332.01
223.97	5332.08	224.28	5332.1	228.83	5332.45	233.31	5332.78	235.6	5333
239.35	5333.58	242.07	5334	244.04	5334.3	246.93	5334.7	249.17	5335
253.16	5335.54	254.56	5336	257.2	5336.88	257.54	5337	258.11	5337.19
259.98	5338	260.42	5338.58	260.74	5339	262.19	5339	262.92	5339
263.87	5339.07	265.26	5339	269.3	5339	270.14	5339	270.55	5339
271.7	5339	273.47	5339.26	275.09	5339.86	275.78	5339.92	277.3	5339.94
277.86	5339.94	278.15	5339.94	278.88	5339.94	280.47	5339.93	280.73	5339.93
280.92	5339.93	282.27	5339.94	282.89	5339.96	282.94	5339.96	283.49	5340
283.5	5340.44	283.52	5341	283.53	5341.45	283.55	5342	283.56	5342.46
283.58	5343	283.91	5343.55	286.6	5343.81	286.7	5343.85	287.49	5343.94
288.04	5344	289.01	5344.05	291.58	5344.52	292.65	5344.68	294.51	5344.99
294.59	5345	295.97	5345	296.6	5345	297.86	5345	298.09	5345
300.92	5344.37	302.52	5344	305.14	5343.86	305.15	5343.86	307.59	5343.76
309.62	5343.71	312.64	5343.78	312.78	5343.78	312.9	5343.78	313.01	5343.78
320.13	5344	323.56	5344.15	326.8	5344.14	330.15	5344.12	337.01	5344.04
339.57	5344	339.74	5344	342.46	5343.92	343.52	5343.92	354.06	5343.72
357.77	5343.73	366.48	5343.61	370.63	5343.63	378.13	5343.55	384.76	5343.43
390.49	5343.32	394.58	5343.27	400	5343.24				

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

Bank Sta: Left Right Coeff Contr. Expan.
108.43 260.42 .1 .3

SUMMARY OF MANNING'S N VALUES

River: BocaNegraArroyo

Reach	River Sta.	n1	n2	n3
Reach - 1 Upper	25374.6	.035	.035	.035
Reach - 1 Upper	24989.3	.035	.035	.035
Reach - 1 Upper	24106.4	.035	.035	.035
Reach - 1 Upper	23000.0	.035	.035	.035
Reach - 1 Upper	22241.1	.035	.035	.035
Reach - 1 Mid	22027.5	.035	.035	.035
Reach - 1 Mid	21845.5	.035	.035	.035
Reach - 1 Mid	21840	.035		
Reach - 1 Mid	21830	.035		
Reach - 1 Mid	21820	.035		
Reach - 1 Mid	21335.5	.035	.035	.035
Reach - 1 Mid	21001.7	.035	.035	.035
Split Flow	22027.5	.035	.035	
Split Flow	22000	.035		
Split Flow	21840	.035	.035	
Split Flow	21835	.035		
Split Flow	21800	.035		
Split Flow	21770.8	.035		
Split Flow	21520.8	.035		
Split Flow	21335.5	.035	.035	
Split Flow	21325	.035		
Split Flow	21315	.035		
Split Flow	21250	.035		
Split Flow	21200	.035		
Split Flow	21194.9	.035		
Split Flow	21001.7	.035		
Reach - 1 Lower	20573.7	.035	.035	.035
Reach - 1 Lower	20390.6	.035	.035	.035
Reach - 1 Lower	19770.6	.035	.035	.035
Reach - 1 Lower	19290.6	.035		
Reach - 1 Lower	19200	Culvert		
Reach - 1 Lower	19175.6	.035		
Reach - 1 Lower	19125.5	.016	.013	.016
Reach - 1 Lower	19054.6	.035		
Reach - 1 Lower	19003.57	.035		

SUMMARY OF REACH LENGTHS

River: BocaNegraArroyo

Reach	River Sta.	Left	Channel	Right
Reach - 1 Upper	25374.6	385.3	385.3	385.3
Reach - 1 Upper	24989.3	882.9	882.9	882.9
Reach - 1 Upper	24106.4	1106.4	1106.4	1106.4
Reach - 1 Upper	23000.0	758.9	758.9	758.9
Reach - 1 Upper	22241.1	0	0	0

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Reach - 1 Mid	22027.5	182	182	182
Reach - 1 Mid	21845.5	290.81	290.81	290.81
Reach - 1 Mid	21840	71.4	71.4	71.4
Reach - 1 Mid	21830	115.95	115.95	115.95
Reach - 1 Mid	21820	45.3	45.3	45.3
Reach - 1 Mid	21335.5	333.8	333.8	333.8
Reach - 1 Mid	21001.7	0	0	0
Split Flow	22027.5	75.7	75.7	75.7
Split Flow	22000	77.63	77.63	77.63
Split Flow	21840	54.1	54.1	54.1
Split Flow	21835	135.23	135.23	135.23
Split Flow	21800	68.96	68.96	68.96
Split Flow	21770.8	95.48	95.48	95.48
Split Flow	21520.8	115.6	115.6	115.6
Split Flow	21335.5	268.96	268.96	268.96
Split Flow	21325	114.8	114.8	114.8
Split Flow	21315	268.94	268.94	268.94
Split Flow	21250	340.84	340.84	340.84
Split Flow	21200	276.3	276.3	276.3
Split Flow	21194.9	200	200	200
Split Flow	21001.7	130	130	130
Reach - 1 Lower	20573.7	183.1	183.1	183.1
Reach - 1 Lower	20390.6	620	620	620
Reach - 1 Lower	19770.6	480	480	480
Reach - 1 Lower	19290.6	115	115	115
Reach - 1 Lower	19200	Culvert		
Reach - 1 Lower	19175.6	50.1	50.1	50.1
Reach - 1 Lower	19125.5	70.95	70.95	70.95
Reach - 1 Lower	19054.6	50.98	50.98	50.98
Reach - 1 Lower	19003.57			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: BocaNegraArroyo

Reach	River Sta.	Contr.	Expan.
Reach - 1 Upper	25374.6	.1	.3
Reach - 1 Upper	24989.3	.1	.3
Reach - 1 Upper	24106.4	.1	.3
Reach - 1 Upper	23000.0	.1	.3
Reach - 1 Upper	22241.1	.1	.3
Reach - 1 Mid	22027.5	.1	.3
Reach - 1 Mid	21845.5	.1	.3
Reach - 1 Mid	21840	.1	.3
Reach - 1 Mid	21830	.1	.3
Reach - 1 Mid	21820	.1	.3
Reach - 1 Mid	21335.5	.1	.3
Reach - 1 Mid	21001.7	.1	.3
Split Flow	22027.5	.1	.3
Split Flow	22000	.1	.3
Split Flow	21840	.1	.3
Split Flow	21835	.1	.3
Split Flow	21800	.1	.3
Split Flow	21770.8	.1	.3
Split Flow	21520.8	.1	.3
Split Flow	21335.5	.1	.3
Split Flow	21325	.1	.3
Split Flow	21315	.1	.3
Split Flow	21250	.1	.3
Split Flow	21200	.1	.3
Split Flow	21194.9	.1	.3
Split Flow	21001.7	.1	.3
Reach - 1 Lower	20573.7	.1	.3
Reach - 1 Lower	20390.6	.1	.3
Reach - 1 Lower	19770.6	.1	.3
Reach - 1 Lower	19290.6	.3	.5
Reach - 1 Lower	19200	Culvert	
Reach - 1 Lower	19175.6	.1	.3
Reach - 1 Lower	19125.5	.1	.3
Reach - 1 Lower	19054.6	.1	.3
Reach - 1 Lower	19003.57	.1	.3