East Prong of the Roaring River at Stone Mountain State Park
Stream Restoration
Annual Monitoring Report

Monitoring Year: 2007
Measurement Year: 7
As-built Date: 2000
NCEEP Project Number: 364

Submitted to: NCDENR-Ecosystem Enhancement Program
1619 Mail Service Center
Raleigh, NC 27699-1619

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EAST PRONG OF THE ROARING RIVER at STONE MOUNTAIN STREAM RESTORATION
2007 MONITORING REPORT

CONDUCTED FOR THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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I. Executive Summary/Project Abstract

This report represents monitoring year 7 for Reach 2 and Reach 4 of the East Prong of the Roaring River restoration located in Stone Mountain State Park. The project background is summarized in Section II of this report. Overall, the majority of the restored stream is functioning well. Multiple areas of concern from previous monitoring years were addressed with significant repair work in fall 2006 and summer 2007. Several failing vanes were replaced or repaired and areas of bank erosion on the outside of meander bends were stabilized with new rock and log vane structures. These areas shall be monitored for continued stability in the upcoming monitoring years.

A summary of monitoring measurement results is found in Table VII. The majority of the restored stream classifies as a C4 with rock cross vanes to establish grade control. The channel dimension for most of the restored section, as represented by the permanent cross-sections, has not changed significantly from as-built conditions and appears stable. Both reaches have well defined riffles, runs, pools and glides. These features are located in the expected plan-form locations.

Planted vegetation is not succeeding to levels required for mitigation credit. Natural regeneration was surveyed with the regular plots again this growing season. Seedlings ranging from 1 to 7 years old are abundant throughout the project area. Overall naturally regenerating stems per acre for the entire project area in 2007 is approximately 5060. Bare root survival was poor in all plots. Overall planted bare root stems per acre for the entire project area in 2007 is approximately 40. Herbaceous cover was determined in bare root plots and was again greater than 90% in all plots. No more seeding is required at present.

Invasive vegetation continues to be an issue on this project site. Maintenance is highly recommended for next season. Kudzu has not been controlled and continues to expand throughout the floodplain, overtopping riparian vegetation.

II. Project Background

Project planning was initiated for the East Prong of the Roaring River Restoration in 1999 for the implementation of a developing watershed stream restoration project at Stone Mountain State Park in North Carolina (Figure 1 and Figure 2). Natural Channel Design techniques and procedures were employed in the restoration of the East Prong Roaring River in Wilkes County, NC.

The East Prong Roaring River stream restoration project has been a collaborative effort between the North Carolina Ecosystem Enhancement Program, North Carolina Division of Parks and Recreation, the North Carolina Stream Restoration Program at NCSU, and Buck Engineering. The project includes nearly two miles of stream restoration within the boundaries of Stone Mountain State Park in Wilkes and Alleghany Counties. The drainage area for the section of river being restored is approximately 22 square miles. This project was constructed from July 2000 to October 2000. Floodplain and stream bank planting continued through February 2001.

Stone Mountain State Park was purchased by the State of North Carolina in the early 1960s. Prior to this purchase, all of the streams in the alluvial valley portion of the park were modified to improve agricultural production. Field observations suggest that tributary streams in the alluvial valley were straightened. A large area of the downstream portion of the restoration site was used for gravel mining. As part of this operation, the East Prong was channelized, impounded, and moved several times, resulting in destabilization of the channel. Spoil piles that were created during the mining

operation created overly high bank heights and as a result were being eroded away during high flows. Aerial photos and the USGS Glade Valley Quadrangle indicate locations of the historic channels.

The project consisted of the analysis of the 22.0 square mile portion of the East Prong Roaring River watershed (located within USGS Hydrologic Unit Code 03040101, NCDWQ Sub-basin 03-07-01 of the Upper Yadkin River Basin) that contributes drainage to the project site. The restoration of these portions of the East Prong of the Roaring River Restoration, located in Stone Mountain State Park, was conducted to correct identified system deficiencies including severe bank erosion, channel widening, and the loss of aquatic habitat resulting from stream channelization, the loss of riparian vegetation, and watershed development. The goal of the project was to develop a stable stream channel with reduced bank erosion, efficient sediment transport, enhanced warm water fisheries, and improved overall stream habitat and site aesthetics. Implementation of the project was completed by October 2000.

Table I. Project Mitigation Structure and Objectives
East Prong of the Roaring River at Stone Mountain State Park/Project # 364

Project Segment or Reach ID	Mitigation Type	Approach	Linear Footage or Acreage	Stationing	Comment
Reach 2	R	P1	1,500 lf	0+00 to 15+00	
Reach 4	R	P1	3,500 lf	0+00 to 35+00	
Total Project			**5,000 lf**		

R = Restoration P1 = Priority I
EI = Enhancement I P2 = Priority II
EII = Enhancement II P3 = Priority III
S = Stabilization SS = Stream Bank stabilization

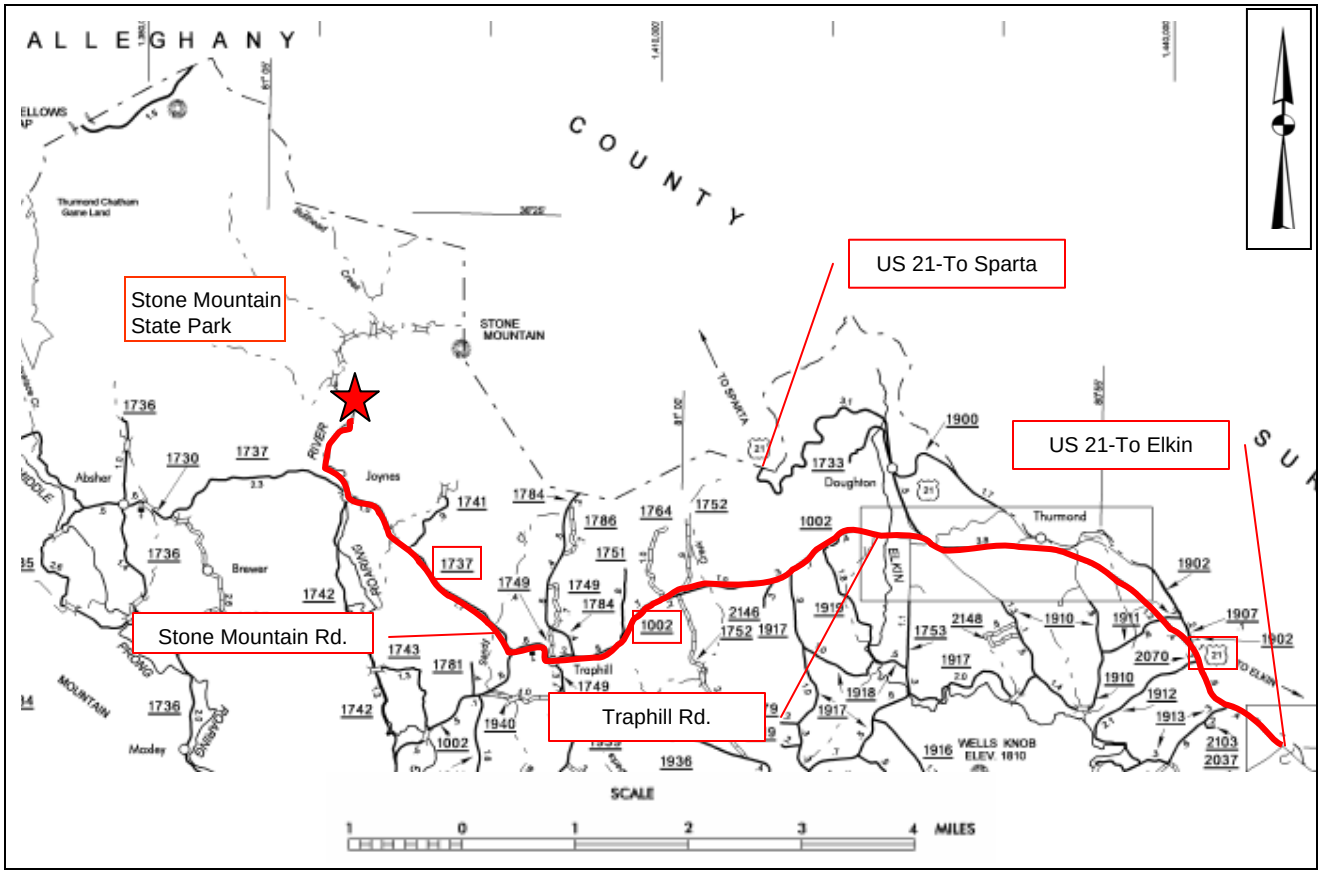
Table II. Project Activity and Reporting History East Prong of the Roaring River at Stone Mountain State Park/Project # 364			
Activity or Report	**Scheduled Completion**	**Data Collection Complete**	**Actual Completion or Delivery**
Restoration Plan	1999	1999	1999
Final Design - 90%	2000	N/A	N/A
Construction	2000	N/A	2000
Temporary S&E mix applied to entire project area	October 2000	N/A	Oct - 2000
Permanent seed mix applied to reach	Winter 2001	N/A	Winter 2001
Containerized and B&B plantings	N/A	N/A	N/A
Mitigation Plan / As-built (Year 0 Monitoring – baseline)	December 2000	Dec - 00	Dec - 00
Initial – Year 1 monitoring	June 2001	June 2001	Dec-01
Year 2 Monitoring	June 2002	June 2002	Dec-02
Structural maintenance (Bank repair and revegetation)	Summer 2002	NA	Summer 2002
Year 3 Monitoring	June 2003	June 2003	Dec-03
Year 4 Monitoring	June 2004	June 2004	Dec-04
Year 5 Monitoring	June 2005	June 2005	Dec-05
Year 6 Monitoring	June 2006	June 2006	Dec-06
Structural maintenance (Bank repair and revegetation)	Fall 2006 and Summer 2007	NA	Fall 2006 and Summer 2007
Year 7 Monitoring	July 2007	July 2007	Dec-07

*Historical documents necessary to provide these data were unavailable at the time of report submission

Table III. Project Contact Table East Prong of the Roaring River at Stone Mountain State Park/Project # 364	
Designer	Biological & Agricultural Engineering North Carolina State University Campus Box 7625 Raleigh, NC 27695
Primary project design POC	(919) 515-6771
Construction Contractor	SEI Environmental
Construction contractor POC	(704) 596-8624
Planting Contractor	SEI Environmental
Planting contractor POC	(704) 596-8624
Seeding Contractor	SEI Environmental
Seeding contractor point of contact	(704) 596-8624
Seed Mix Sources	N/A
Nursery Stock Suppliers	N/A
Monitoring Performers	Biological & Agricultural Engineering North Carolina State University Campus Box 7625 Raleigh, NC 27695
Stream Monitoring POC	Zan Price (828) 545-8347
Vegetation Monitoring POC	Zan Price (828) 545-8347

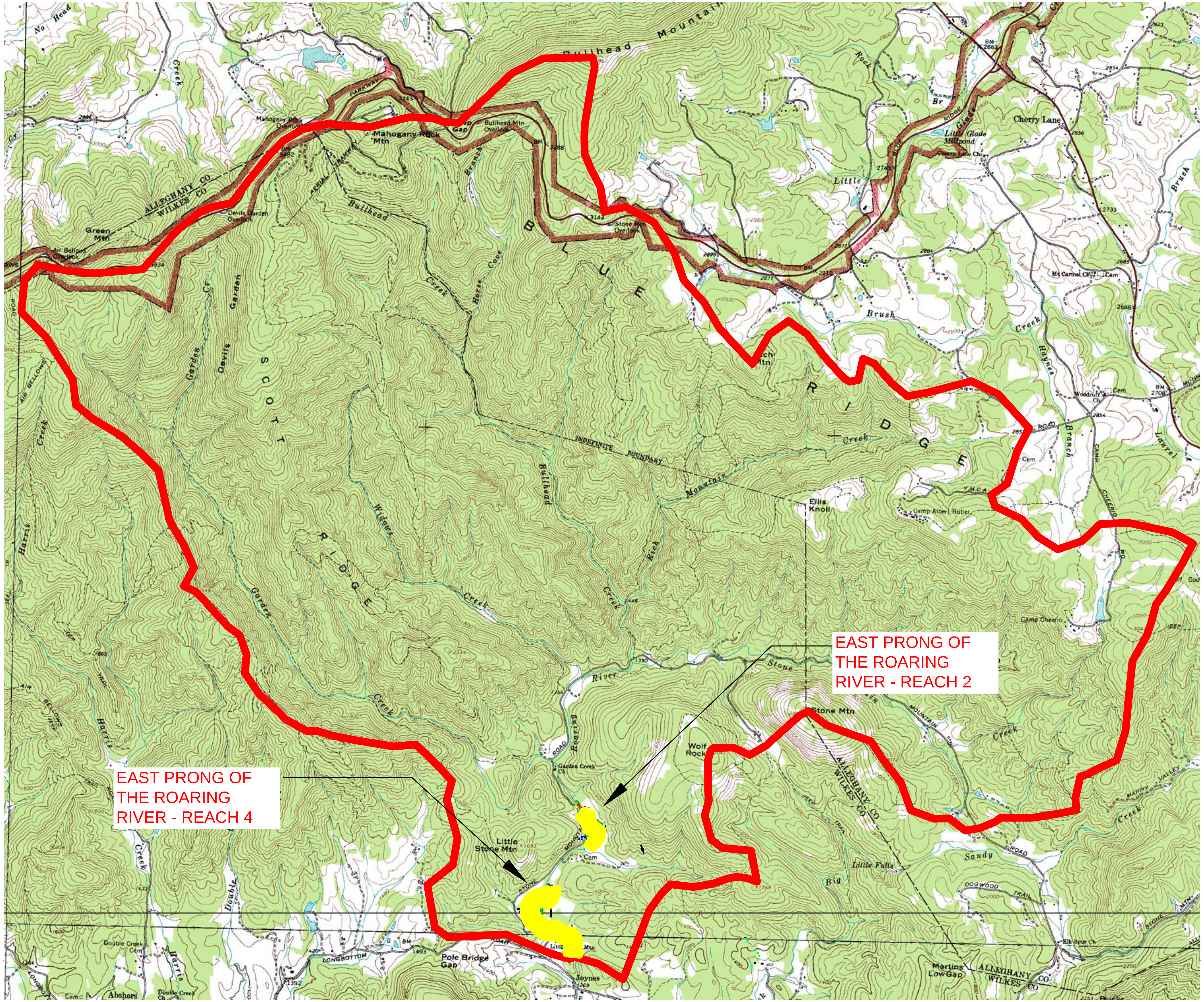
Table IV. Project Background Table East Prong of the Roaring River at Stone Mountain State Park/Project # 364	
Project County	Wilkes
Drainage Area	22.0 sq miles
Drainage impervious cover estimate (%)	Estimated at <5%
Stream Order	4th order
Physiographic Region	Piedmont
Ecoregion	Northern Inner Piedmont (45e)
Rosgen Classification of As-built	C-Stream Type
Cowardin Classification	Riverine
Dominant soil types	Enon
Reference site ID	Basin Creek, Wilkes County
USGS HUC for Project and Reference	3040101
NCDWQ Sub-basin for Project and Reference	03-07-01 – Upper Yadkin
NCDWQ classification for Project and Reference	C
Any portion of any project segment 303d listed?	No
Any portion of any project segment upstream of a 303d listed segment?	No
Reasons for 303d listing or stressor	N/A
% of project easement fenced	0%

Figure 1. Project Location



Directions from NC 421 and I-77 intersection:

Follow I-77 North to US-21 at Elkin. Follow US-21 bypass toward Sparta for 7.9 miles. Turn left onto Traphill Road (SR 1002) and follow for 5.1 miles. Turn Right onto Long Bottom Road (SR 1737) and follow for 2.9 miles to Stone Mountain Road. Turn Right on to Stone Mountain Road and follow into Stone Mountain State Park. The upstream end of Reach 4 is located at the first parking lot on the right. Reach 2 begins at the next parking lot down the road.



Note: Bold red line indicates the watershed boundary.

SCALE 1" = 3000'

1500 0 1500 3000

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING REPORT	DAB	DRC	02/08/06

NC STATE UNIVERSITY

BIOLOGICAL & AGRICULTURAL ENGINEERING
Weaver Labs Campus Box 7625
North Carolina State University
Raleigh, NC 27695

STONE MOUNTAIN STATE PARK
EAST PRONG OF THE ROARING RIVER
WILKES COUNTY, N.C.

22 SQUARE MILES (17.5 SQMI)
WATERSHED WITH USGS QUAD

DATE 02/08/2006
PROJECT NO.
FILENAME STONE MTN.DWG
SHEET NO.
DRAWING NO.

NC GRID NAD 1983

STA: 6+94 RIFFLE
CROSS-SECTION #3

NORTH
POND
0.19 AC

0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00

STA: 2+05 RIFFLE
CROSS-SECTION #1

Veg Plot #1

STA: 12+12 RIFFLE
CROSS-SECTION #4

SOUTH
POND
0.29 AC

STA: 5+75 POOL
CROSS-SECTION #2

LEGEND

- ROCK CROSS VANE
- ROCK J-HOOK
- LOG J-HOOK
- STATION ALIGNMENT & ASBUILT THALWEG (2000)
- 2007 THALWEG
- 2007 WATER EDGE
- 2007 TOP OF BANK

Ecosystem Enhancement PROGRAM

SCALE 1" = 100'

50 0 50 100

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING	JMP	DRC	12/01/06
2	Review Edits	JMP	DRC	01/11/07
3	2007 MONITORING	ZP	JP	12/01/07

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BIOLOGICAL & AGRICULTURAL ENGINEERING
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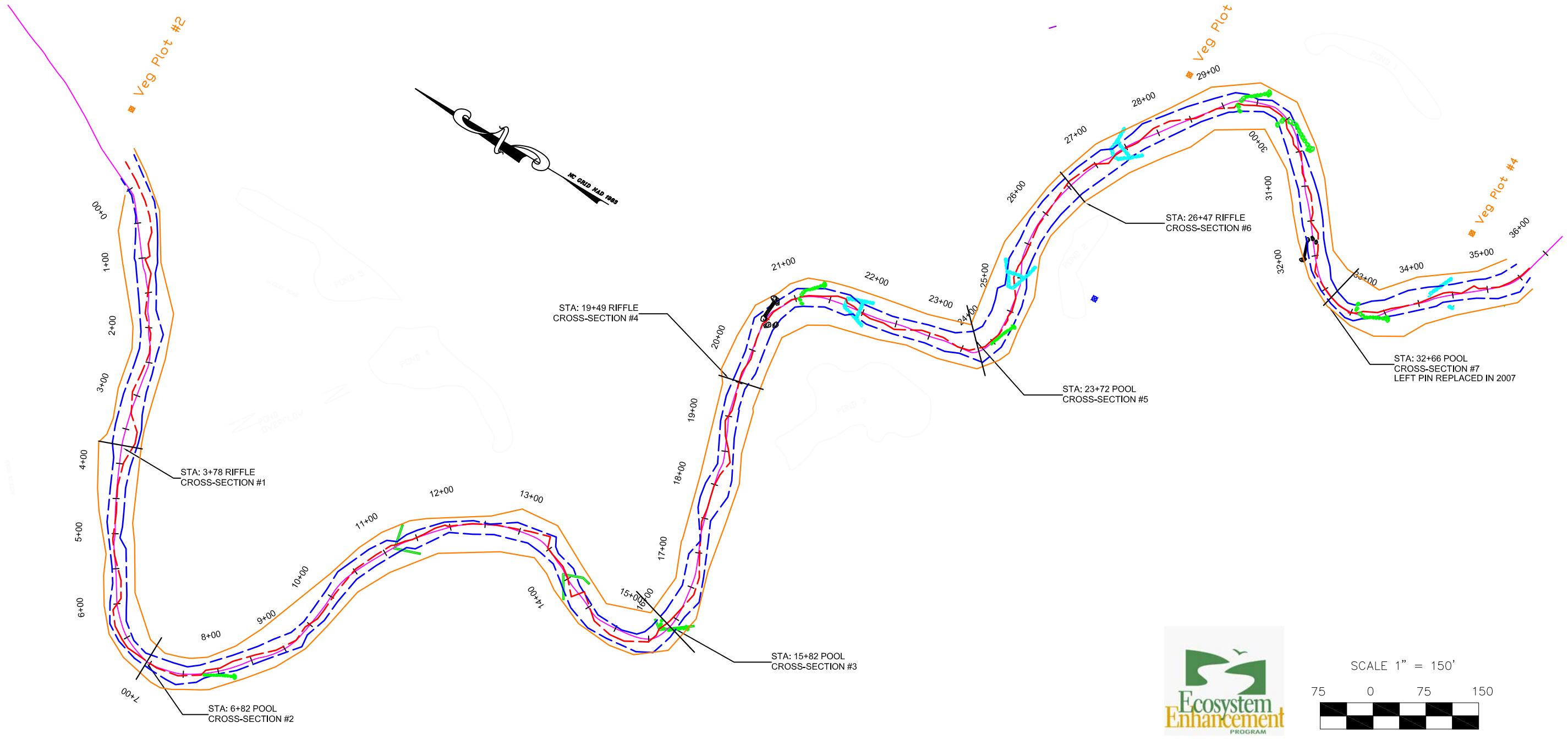
STONE MOUNTAIN STATE PARK
EAST PRONG OF THE ROARING RIVER
WILKES COUNTY, N.C.

2007 MONITORING WITH CONTOURS
FIGURE 3a. PLAN VIEW REACH-2

DATE 12/01/2007
PROJECT NO.
FILENAME STONE MTN.DWG
SHEET NO.
DRAWING NO.

LEGEND

- ROCK CROSS VANE
- ROCK J-HOOK
- LOG J-HOOK
- STATION ALIGNMENT & ASBUILT THALWEG (2000)
- 2007 THALWEG
- 2007 WATER EDGE
- 2007 TOP OF BANK



Ecosystem Enhancement PROGRAM

SCALE 1" = 150'

75 0 75 150

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING	JMP	DRC	12/01/06
2	REVIEW EDITS	JMP	DRC	01/11/07
3	2007 MONITORING	ZP	JP	12/01/07

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Raleigh, NC 27695

STONE MOUNTAIN STATE PARK
EAST PRONG OF THE ROARING RIVER
WILKES COUNTY, N.C.

2007 MONITORING WITH CONTOURS
FIGURE 3b. PLAN VIEW REACH-4

DATE	12/01/2007
PROJECT NO.	
FILENAME	STONE MTN.DWG
SHEET NO.	
DRAWING NO.	

III. Project Condition and Monitoring Results

A. Vegetation Assessment

As part of the stream channel repairs, it appeared that additional large trees and live stakes were installed in select areas in 2007. Several large trees were noted along the streamside. Mortality of these trees was approximately 75%. Bare root plants planted in previous years in Reach 2 and Reach 4 had survival rates similar to that in 2006-low survival. Deer browse continues to be a problem at this site. A very few bare root plants and live stakes have survived deer browse, but have been limited in vertical growth as a result. Browse has occurred from the top down. Only the taller planted trees performed well against the deer browse. Sycamore (Platanus occidentalis) continues to be the least browsed species. Increased beaver activity was observed again this year. No indication of deer scraping was seen on any of the surveyed trees.

Natural regeneration was surveyed with the regular plots again this growing season. Seedlings ranging from 1 to 7 years old are abundant throughout the project area. The majority species is sycamore, tulip poplar (Liriodendron tulipifera), river birch (Betula nigra), Virginia pine (Pinus virginiana), sweet gum (Liquidambar styraciflua), black cherry (Prunus serotina), tag alder (Alnus serrulata), and spice bush (Lindera benzoin). Virginia pine, tag alder, and sycamore continued to have robust growth. Point bars in certain areas had high densities of natural regeneration, though these areas are prone to frequent disturbance. Overall naturally regenerating stems per acre for the entire project area in 2007 is approximately **5060.**

Bare root survival was poor in all plots. As in 2006, only one plot had a total of 4 planted trees. These were sycamores. All other plots contained dead planted trees or no evidence of planted trees. It should be noted however that naturally regenerating sycamore in select areas continues to have heights close to that of the 4 remaining planted sycamores. Overall planted bare root stems per acre for the entire project area in 2007 is approximately **40.**

Live stake survival was again extremely low, despite the apparent new planting of livestakes along areas where repair was performed. Deer browse continued to be evident. As with last year, it was noted that foot traffic up and down the staked banks was often heavy in select places and that many stakes were dislodged or removed completely.

Herbaceous cover was determined in bare root plots and was again greater than 90% in all plots. Switchgrass, rushes, and sedges continue to dominate the floodplain and wetter areas. No more seeding is required at present.

Invasive vegetation control was again not employed this growing season. Maintenance is highly recommended for next season. Kudzu (Pueraria lobata) was observed in even larger patches throughout the area than in 2006 and continues regaining a strong foothold in areas where it had been continually maintained and controlled in past years.

Vegetation table 1 in Appendix A summarizes the stem count results for the 2007 monitoring period.

B. Stream Assessment

Both reaches of the East Prong of the Roaring River at Stone Mountain State Park have had significant channel stability concerns during previous monitoring years. Extensive repair work was completed on both reaches in October 2006 and again in summer 2007 by Shamrock Environmental. Problem areas identified in previous monitoring reports were repaired by installing new rock and log vane structures. Additionally, existing cross vanes that had water piping around the structure were repaired. No new problems arose in the 2007 monitoring period.

The following summarizes the hydrologic, bank stability, and channel morphology monitoring results of the 2007 monitoring period. Data was collected in July and August 2007.

Hydrologic Assessment

Peak Stage Recorders were installed in the winter of 2005. August 2006 they were inspected. Both recorders were bent over as a result of flow events and the tops were popped off. No actual elevation could be recorded but the flow was clearly greater then bankfull. New recorders were installed in November 2006. Table V lists the number of events equal to or greater then bankfull.

The maximum stage measured from the crest gauge during the 2007 monitoring period was below the bankfull elevation.

Table V. Verification of Bankfull Events
East Prong of the Roaring River at Stone Mountain State Park/Project # 364

Date of Data Collection	Date of Occurrence	Method	Photo # (if available)	Notes
8/1/2006	Spring/Summer 06	Crest Gauge	N/A	Peak Stage Recorders were installed in the winter of 2005 and damaged in the summer 2006. New recorders were installed in November 2006.

Note: No peak flow data was collected prior to 2006. Peak flow during the 2007 monitoring period was below the bankfull elevation.

Table VI. BEHI and Sediment Export Estimates is not included in the monitoring year 7 report.

Project Problem Areas

The problem area Table B1, plan sheet and photographs can be found in Appendix B. As mentioned earlier in the report, many of the problem areas identified in previous monitoring reports were repaired in fall 2006 and summer 2007. These areas were removed from the problem area table, photograph log, and plan sheet since they are not currently considered problem areas. However, these areas shall continue to be monitored on an annual basis for stability.

Stability Assessment Table

Table VII lists the results of a visual assessment that was conducted over each study reach. The data used to calculate the percentages listed in this table is found in Table B2 in Appendix B.

Table VII. Categorical Stream Feature Visual Stability Assessment
East Prong of the Roaring River at Stone Mountain State Park/Project # 364
Reach 2 - 1500 Feet, Reach 4 - 3500 Feet

Feature	Initial	MY-01 through MY-05	MY-06	MY-07
A. Riffles		Data not collected		
Reach 2	100%		96%	100%
Reach 4	100%		100%	96%
B. Pools				
Reach 2	100%		85%	100%
Reach 4	100%		90%	100%
C. Thalweg				
Reach 2	100%		50%	100%
Reach 4	100%		63%	100%
D. Meanders				
Reach 2	100%		63%	100%
Reach 4	100%		100%	100%
E. Bed General				
Reach 2	100%		93%	100%
Reach 4	100%		86%	100%
F. Bank Condition				
Reach 2	100%			100%
Reach 4	100%			98%
F. Vanes / J Hooks etc.				
Reach 2	100%		96%	95%
Reach 4	100%		55%	97%
G. Wads and Boulders				
Reach 2	N/A		50%	100%
Reach 4	N/A		33%	50%

*Note: Significant repairs completed in 2006/2007 after the 2006 monitoring event and prior to the 2007 monitoring event. As shown in this table, the 2007 data was impacted by the repairs.

Quantitative Measures Summary Tables

The tables below present all of the quantitative summary data from the survey cross-sectional surveys, longitudinal surveys, and pebble counts. The associated raw data and plots are located in Appendix B of this report.

Table VIII. Baseline Morphology and Hydraulic Summary
East Prong of the Roaring River at Stone Mountain State Park/Project # 364
Reach 2 (1500 Feet) and Reach 4 (3500 Feet)

Parameter	USGS Gage Data			Regional Curve Interval			Pre-Existing Condition			Project Reference Stream			Design			As-built		
Dimension	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
BF Width (ft)						60	48	110	75			31			60			60
Floodprone Width (ft)						300	125	300	220			90			240			240
BF Cross Sectional Area (ft^2)						180	190	400	310			57			180			180
BF Mean Depth (ft)						3	4.5	5.8	5			2			3			3
BF Max Depth (ft)							5	7.5	6.2			2.8			4			4
Width/Depth Ratio							12	28	18			16			15			15
Entrenchment Ratio							3.2	8.5	5			2.8			4			4
Bank Height Ratio																		
Wetted Perimeter(ft)							60	120	80			36			70			70
Hydraulic radius (ft)							3.5	5.6	5			1.8			3			3
Pattern																		
Channel Beltwidth (ft)							120	250	180	60	105	75			240			240
Radius of Curvature (ft)							75	200	120	40	77	60			100			100
Meander Wavelength (ft)							450	900	700			350			480			480
Meander Width ratio							2.5	5	4	2	3.5	2.5			4			4
Profile																		
Riffle length (ft)							60	180	120			55			120			120
Riffle slope (ft/ft)							0.02	0.04	0.03	0.018	0.1	0.035	0.01	0.03	0.02	0.01	0.03	0.02
Pool length (ft)							90	180	135			70	60	90	75	60	90	75
Pool spacing (ft)							150	350	250	270	330	300	120	240	180	120	240	180
Substrate																		
d50 (mm)							1	50	20			38			25			25
d84 (mm)							80	120	100			130			120			120
Additional Reach Parameters																		
Valley Length (ft)								4000				1000			4000			4000
Channel Length (ft)								5800				1020			6000			6000
Sinuosity								1.4				1.02			1.5			1.5
Water Surface Slope (ft/ft)								0.005				0.014			0.005			0.005
BF slope (ft/ft)								0.007				0.014			0.007			0.007
Rosgen Classification								C4				C4			C4			C4
Number of Bankfull Events								NA				NA			NA			NA
*Habitat Index								NA				NA			NA			NA
*Macrobenthos								NA				NA			NA			low

Table IXa. Morphology and Hydraulic Monitoring Summary
East Prong of the Roaring River at Stone Mountain State Park Reach 2/Project # 364
Reach 2 - 1500 Feet

Parameter	Cross Section 1							Cross Section 2							Cross Section 3							Cross Section 4						
	Riffle							Pool							Riffle							Riffle						
Dimension	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7
BF Width (ft)	61.9	62	62	61.1	61.8	61.9	62.1	53.9	53	53.4	53.3	53.5	60.3	51.1	60.2	59.7	58.3	60.1	60.1	60.1	59.1	54	53	56.5	52.9	52.8	53.2	53
Floodprone Width (ft)																												
BF Cross Sectional Area (ft^2)	319.8	306	297	307	319	295	310	158.4	158.7	170.3	155.6	165.8	166	176	166.2	169.5	169.6	194.5	191.7	195	194	136.3	124.8	156.5	130.6	135	150.1	169
BF Mean Depth (ft)	5.2	4.9	4.8	5	5.2	4.8	5.0	2.9	3	3.2	2.9	3.1	2.8	3.4	2.8	2.8	2.9	3.2	3.2	3.2	3.6	2.5	2.4	2.8	2.5	2.6	2.8	3.2
BF Max Depth (ft)	6.4	6.1	5.7	5.9	5.9	6	5.8	5.6	4.6	5.7	5.6	5.8	5.9	5.2	4.7	4.5	4.5	5.8	5.5	5.5	5.1	3.5	3.4	4.3	3.8	4	4.3	5.1
Width/Depth Ratio	12	12.6	13	12.2	12	13.0	12.4	18.3	17.7	16.7	18.3	17.3	21.9	14.8	21.8	21	20	18.6	18.8	18.5	15.2	21.4	22.5	20.4	21.4	20.7	18.9	16.7
Entrenchment Ratio	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0
Bank Height Ratio	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Wetted Perimeter(ft)	72.3	71.8	71.6	71.1	72.2	71.4	72.1	59.7	59.0	59.8	59.1	59.7	65.8	57.9	65.8	65.3	64.1	66.5	66.5	66.6	66.3	59.0	57.8	62.1	57.9	58.0	58.8	59.4
Hydraulic radius (ft)	4.4	4.3	4.1	4.3	4.4	4.1	4.3	2.7	2.7	2.8	2.6	2.8	2.5	3.0	2.5	2.6	2.6	2.9	2.9	2.9	2.9	2.3	2.2	2.5	2.3	2.3	2.6	2.8
Substrate																												
d50 (mm)				38	16	26	39				3.5		2.9	37	18	17	19	20	24	12	16	15		14	36	17	11	12
d84 (mm)				147	72	143	127				91		76	99	54	71	77	83	50	46	88	64		71	82	53	50	37

Parameter	MY-01 (2001)			MY-02 (2002)			MY-03 (2003)			MY-04 (2004)			MY-05 (2005)			MY6 (2006)			MY7 (2007)		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)										162	328	177	162	332	178	177	343	260	163	333	177
Radius of Curvature (ft)										145	196	166	145	198	166	144	157	145	144	157	145
Meander Wavelength (ft)										507	614	559	505	616	559			614	557	588	586
Meander Width ratio										3.2	6.6	3.5	3.2	6.6	3.6	3.3	6.5	4.9	3.1	6.3	3.3
Profile																					
Riffle length (ft)										35	104	61	35	85	52	33	161	86	39	72	63
Riffle slope (ft/ft)										0.004	0.024	0.013	0.004	0.025	0.013	0.008	0.028	0.016	0.009	0.024	0.012
Pool length (ft)										45	77	66	52	81	65	62	209	189	60	191	156
Pool spacing (ft)										83	391	163	83	285	158	117	367	218	101	372	234
Additional Reach Parameters																					
Valley Length (ft)	1160																				
Channel Length (ft)													1500						1500		
Sinuosity													1.3						1.3		
Water Surface Slope (ft/ft)													0.0058			0.0051			0.0061		
BF slope (ft/ft)													0.0066						0.006		
Rosgen Classification													C4						C4		
Habitat Index*																					
Macrobenthos*																					

Note: Missing data not collected or not reported.

Table XIIIb. Morphology and Hydraulic Monitoring Summary
East Prong of the Roaring River at Stone Mountain State Park /Project # 364
Reach 4 - 3500 Feet

Parameter	Cross Section 1							Cross Section 2							Cross Section 3							Cross Section 4						
	Riffle							Pool							Pool							Riffle						
Dimension	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7
BF Width (ft)	57	58.2	59.3	57.7	58.3	62.6	57.7	43	42.1	41.5	42.5	41.3	42.7	43.3	66	65	61.3	58	50.7	53.8	52.8	46	45.9	45.5	46.5	46.4	45.5	44.2
Floodprone Width (ft)																												
BF Cross Sectional Area (ft^2)	206.6	202.5	215.8	196.1	195.9	187.3	198.5	179.6	182.8	210.6	224.4	223.7	220.3	208.6	170	181.3	173	162.2	161.8	161.1	151.2	139.7	140.7	139.1	140.4	154.7	141.2	143.9
BF Mean Depth (ft)	3.6	3.5	3.6	3.4	3.4	3.0	3.4	4.2	4.3	5.1	5.3	5.4	5.2	4.8	2.6	2.8	2.8	2.8	3.2	3.0	2.9	3	3.1	3.1	3	3.3	3.1	3.3
BF Max Depth (ft)	4.7	4.9	5.6	5.9	4.9	4.8	4.9	6.8	6.9	7.8	8.1	8.1	7.8	7.3	5.7	5.4	5.6	5.5	5.5	5.9	6	3.9	4	4.5	5	4.9	4.9	4.7
Width/Depth Ratio	15.7	16.7	16.3	16.9	17.3	20.9	16.8	10.3	9.7	8.2	8.1	7.6	8.3	9.0	25.6	23.3	21.7	20.7	15.9	18.0	18.5	15.1	15	14.9	15.4	13.9	14.7	13.6
Entrenchment Ratio	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0
Bank Height Ratio	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Wetted Perimeter(ft)	64.2	65.2	66.5	64.5	65.1	68.6	64.5	51.4	50.7	51.7	53.1	52.1	53.0	52.9	71.2	70.6	66.9	63.6	57.1	59.8	58.6	52.0	52.1	51.7	52.5	53.0	51.7	50.8
Hydraulic radius (ft)	3.2	3.1	3.2	3.0	3.0	2.7	3.1	3.5	3.6	4.1	4.2	4.3	4.2	3.9	2.4	2.6	2.6	2.6	2.8	2.7	2.6	2.7	2.7	2.7	2.7	2.9	2.7	2.8
Substrate																												
d50 (mm)					14	27	55						14	18						0.5	10	15		14	36	11	29	36
d84 (mm)					46	54	125						61	92						8.7	38	64		71	81	57	63	92

Parameter	MY-01 (2001)			MY-02 (2002)			MY-03 (2003)			MY-04 (2004)			MY-05 (2005)			MY6 (2006)			MY7 (2007)		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)										222	503	301	222	503	301	222	515	301	222	503	301
Radius of Curvature (ft)										78	296	122	85	296	122	69	207	107	69	207	107
Meander Wavelength (ft)										534	767	596	536	767	596	533	766	595	534	766	595
Meander Width ratio										4.5	10.1	6	4.6	10.1	6	4.9	11.3	6.6	4.6	10.4	6.2
Profile																					
Riffle length (ft)										35	170	80	35	145	75	69	173	76	45	145	82
Riffle slope (ft/ft)										0.004	0.007	0.005	0.006	0.007	0.005	0.004	0.021	0.006	0.003	0.018	0.005
Pool length (ft)										60	130	85	60	130	85	35	233	79	35	142	116
Pool spacing (ft)										175	335	255	175	335	255	212	465	223	112	398	222
Additional Reach Parameters																					
Valley Length (ft)	2190																				
Channel Length (ft)													3500						3500		
Sinuosity													1.6						1.6		
Water Surface Slope (ft/ft)													0.0055			0.0058			0.0059		
BF slope (ft/ft)													0.005						0.0055		
Rosgen Classification													C4			C4			C4		
Habitat Index*													NA			NA			NA		
Macrobenthos*													NA			NA			NA		

Table XIIIc. Morphology and Hydraulic Monitoring Summary
East Prong of the Roaring River at Stone Mountain State Park /Project # 364
Reach 4 - 3500 Feet

Parameter	Cross Section 5							Cross Section 6							Cross Section 7						
	Pool							Riffle							Pool						
Dimension	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7	MY1	MY2	MY3	MY4	MY5	MY6	MY7
BF Width (ft)	60	54.2	56	54.2	64	54.5	59.8	46.3	43.7	45.2	45.6	45.1	44.7	42.6	64.5	66.5		71.3	79	73.9	67.0
Floodprone Width (ft)																					
BF Cross Sectional Area (ft^2)	183.6	183.9	175.1	180.7	184.6	202.1	200	210.1	207.3	223.1	215.6	210.3	212.1	225	188.6	221.1		201.7	210.1	214.6	202.0
BF Mean Depth (ft)	3.1	3.4	3.1	3.3	2.9	3.7	3.4	4.5	4.7	4.9	4.7	4.7	4.7	5.3	2.9	3.3		2.8	2.7	2.9	3.0
BF Max Depth (ft)	4.8	5.8	5.8	5.8	5.8	6.6	5.3	6	7.4	7.3	7.4	7.4	7.3	8.5	7.5	8.2		7.4	7.3	7.4	6.3
Width/Depth Ratio	19.6	16.0	17.9	16.3	22.2	14.7	17.8	10.2	9.2	9.2	9.6	9.7	9.4	8.1	22.1	20.0		25.2	29.7	25.4	22.3
Entrenchment Ratio	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0		>5.0	>5.0	>5.0	>5.0
Wetted Perimeter(ft)	66.1	61.0	62.3	60.9	69.8	61.9	66.6	55.4	53.2	55.1	55.1	54.4	54.2	53.2	70.3	73.1		77.0	84.3	79.7	73.0
Hydraulic radius (ft)	2.8	3.0	2.8	3.0	2.6	3.3	3.0	3.8	3.9	4.1	3.9	3.9	3.9	4.2	2.7	3.0		2.6	2.5	2.7	2.8
Substrate																					
d50 (mm)						48	0.3	19	17	19		8	47	0.2						23	38.0
d84 (mm)						99	19	53	71	106		68	109	13						76	91.0

Note: Missing data not collected or not reported.

IV. Methodology Section

Monitoring methods used are based on US Army Corps of Engineering and NC Division of Water Quality Guides as referenced below.

The taxonomic standard for vegetation used in this report was based on "Manual of the Vascular Flora of the Carolinas", by Albert E. Radford et al. The vegetation monitoring protocol used for collecting vegetation data was established for this project in 2000 by the Wetland Restoration Program (WRP) and Karen Hall with NCSU.

References:

Radford, Albert E., Harry E. Ahles, and C. Ritchie Bell. 1968. *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press: Chapel Hill, North Carolina.

Rosgen, D L. (1996) *Applied River Morphology*. Wildland Hydrology Books, Pagosa Springs, CO.

USACOE (2003) *Stream Mitigation Guidelines*. USACOE, USEPA, NCWRC, NCDENR-DWQ

WRP 2000 Stem Counting Protocol

APPENDIX A

Vegetation Data Tables

1. Stem Counts by Plot
2. Vegetation Problem Areas

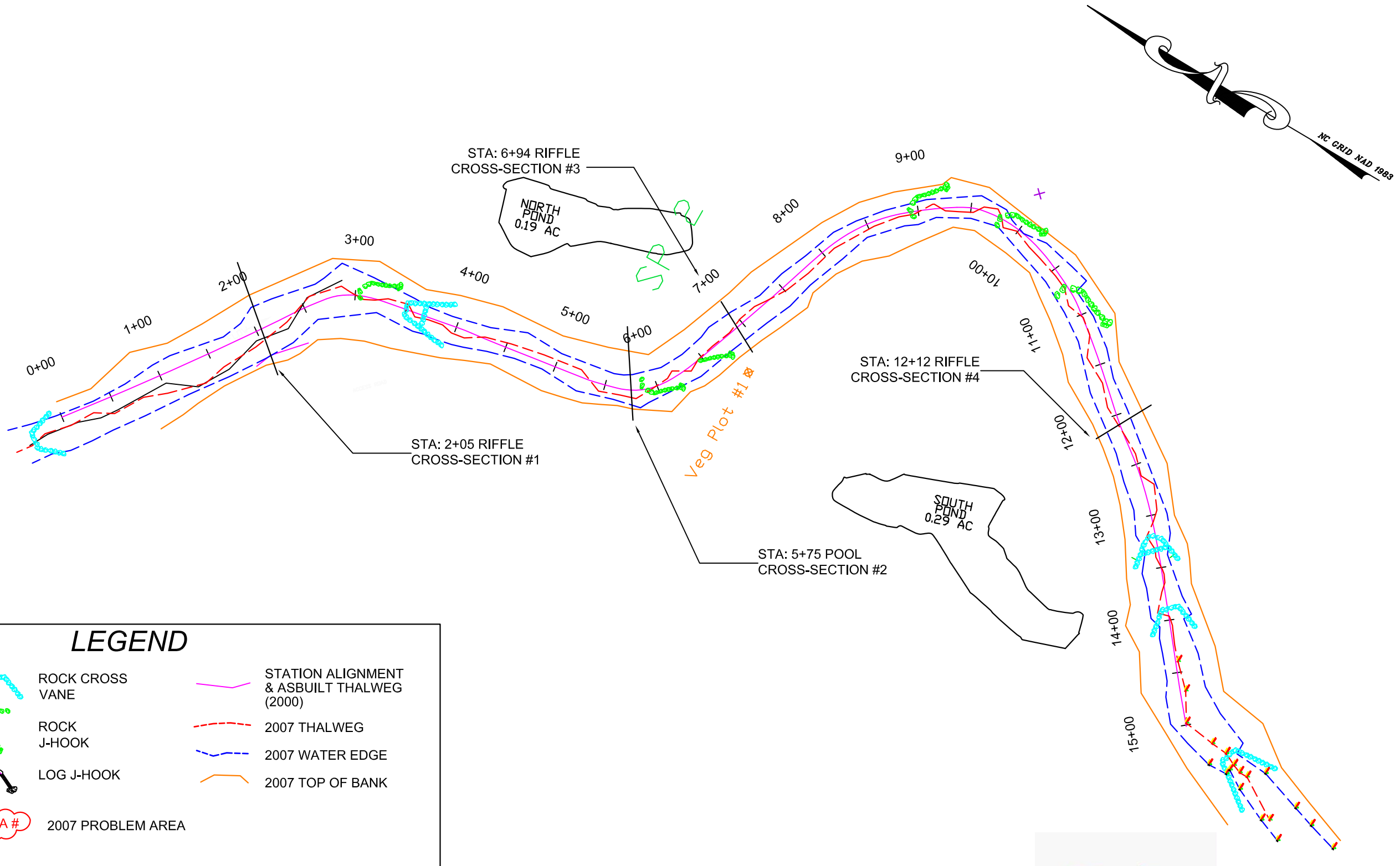
Exhibit Table 1 -2007 Stem Counts by Plot East Prong of the Roaring River at Stone Mountain State Park/Project # 364			
Bare Root Plants Plots	Stems from Planted Bare Roots	Stems from Natural Regeneration	% Herbaceous Cover
Reach 2 (Plot #1)	0	14	>90%
Reach 4 (Plot #2)	4	>150	>90%
Reach 4 (Plot #3)	0	37	>90%
Reach 4 (Plot #4)	0	>300	>90%
Plot Totals	**4**	**>501**	**>90%**
Overall Total Plot Average	**1**	**125**	**>90%**
Overall Project Stems/Acre	**40**	**5060**	
Live Stake Plots			
Reach 2	0	13	
Reach 2	4	22	
Reach 2	5	30	
Reach 4	1	6	
Reach 4	0	0	
Reach 4	0	36	
Reach 4	6	2	
Reach 4	0	5	
Live Stake Totals	**16**	**114**	
Overall Total Live Stake Plot Average	**2**	**14**	
Overall Project Live Stake Stems/Acre	**81**	**577**	

Exhibit Table 2 Vegetative Problem Areas East Prong of the Roaring River at Stone Mountain State Park/Project # 364			
Feature/Issue	**Station #/Range**	**Probable Cause**	**Photo #**
Invasive/Exotic Populations	Various Locations	Existing or upland seed source	No photo taken

APPENDIX B

Morphology Raw Data

1. Current Condition Plan View
2. Stream Problem Area Table
3. Stream Problem Area Photos
4. Qualitative Visual Stability Assessment Tables
5. Cross section and Pebble Count Plots and Raw Data Tables
6. Longitudinal Plots and Raw Data Tables
7. Slope Calculation Table
8. Pattern Data
9. GPS Coordinates



LEGEND

- ROCK CROSS VANE
- ROCK J-HOOK
- LOG J-HOOK
- PA # — 2007 PROBLEM AREA
- STATION ALIGNMENT & ASBUILT THALWEG (2000)
- 2007 THALWEG
- 2007 WATER EDGE
- 2007 TOP OF BANK

Ecosystem Enhancement PROGRAM

SCALE 1" = 100'

50 0 50 100

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING	JMP	DRC	12/01/06
2	2007 MONITORING	ZP	JP	12/01/07

NC STATE UNIVERSITY

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STONE MOUNTAIN STATE PARK
EAST PRONG OF THE ROARING RIVER
WILKES COUNTY, N.C.

2007 CURRENT CONDITION PLAN VIEW REACH–2

DATE 12/01/2007
PROJECT NO.
FILENAME STONE MTN.DWG
SHEET NO.
DRAWING NO.

LEGEND

- ROCK CROSS VANE
- ROCK J-HOOK
- LOG J-HOOK
- PA # — 2007 PROBLEM AREA
- STATION ALIGNMENT & ASBUILT THALWEG (2000)
- 2007 THALWEG
- 2007 WATER EDGE
- 2007 TOP OF BANK

NC GRID NAD 1983

Veg Plot #2

Veg Plot #3

Veg Plot #4

PA18

STA: 3+78 RIFFLE
CROSS-SECTION #1

STA: 6+82 POOL
CROSS-SECTION #2

STA: 15+82 POOL
CROSS-SECTION #3

STA: 19+49 RIFFLE
CROSS-SECTION #4

STA: 23+72 POOL
CROSS-SECTION #5

STA: 26+47 RIFFLE
CROSS-SECTION #6

STA: 32+66 POOL
CROSS-SECTION #7
LEFT PIN REPLACED IN 2007

Ecosystem Enhancement PROGRAM

SCALE 1" = 150'

75 0 75 150

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING	JMP	DRC	12/01/06
2	2007 MONITORING	ZP	JP	12/01/07

NC STATE UNIVERSITY

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STONE MOUNTAIN STATE PARK
EAST PRONG OF THE ROARING RIVER
WILKES COUNTY, N.C.

2007 CURRENT CONDITION
PLAN VIEW REACH-4

DATE 12/01/2007
PROJECT NO.
FILENAME STONE MTN.DWG
SHEET NO.
DRAWING NO.

Exhibit Table B1. Stream Problem Areas

East Prong of the Roaring River at Stone Mountain State Park/Project # 364

Reach 2 and Reach 4

Problem Number	Feature Issue	Station numbers	Suspected Cause
PA 18	Bank Slump on left bank	3+25 to 3+75 R4	Lack of deep rooting vegetation and steep bank slope

2006 **2007**

PA 18 Looking Downstream STA 3+50 Left Bank Erosion

Table B2a. Visual Morphological Stability Assessment

East Prong of the Roaring River at Stone Mountain State Park/Project # 364

Reach 2 - 1500 Feet

Feature Category	Metric (per As-built and reference baselines)	(# Stable) Number Performing as Intended	Total number per As-built	Total Number / feet in unstable state[1]	% Perform in Stable Condition[2]	Feature Perform. Mean or Total[3]
A. Riffles	1. Present?[4]	5	5	0/0	100	
	2. Armor stable (e.g. no displacement)?	5	5	0/0	100	
	3. Facet grade appears stable?	5	5	0/0	100	
	4. Minimal evidence of embedding/fining?	5	5	0/0	100	
	5. Length appropriate?	5	5	0/0	100	**100%**
B. Pools	1. Present? (e.g not subject to severe aggrad. or migrat.?)[4]	5	5	0/0	100	
	2. Sufficiently deep (Max Pool D:Mean Bkf >1.6?)	5	5	0/0	100	
	3. Length appropriate?	5	5	0/0	100	**100%**
C. Thalweg	1. Upstream of meander bend (run/inflection) centering?[5]	3	3	0/0	100	
	2. Downstream of meander (glide/inflection) centering?[5]	3	3	0/0	100	**100%**
D. Meanders	1. Outer bend in state of limited/controlled erosion?	3	3	0/0	100	
	2. Of those eroding, # w/concomitant point bar formation?	NA	NA	NA	NA	
	3. Apparent Rc within spec?	3	3	NA	100	
	4. Sufficient floodplain access and relief?[6]	3	3	NA	100	**100%**
E. Bed General	1. General channel bed aggradation areas (bar formation)	NA	NA	0/0	100	
	2. Channel bed degradation – areas of increasing down-cutting or head cutting?	NA	NA	0/0	100	**100%**
F. Bank	1. Actively eroding, wasting, or slumping bank	NA	NA	0/0	100	**100%**
F. Vanes	1. Free of back or arm scour?	10	10	NA	100	
	2. Height appropriate?	10	10	NA	100	
	3. Angle and geometry appear appropriate?	9	10	NA	90	
	4. Free of piping or other structural failures?	9	10	NA	90	**95%**
G. Wads/ Boulders	1. Free of scour?	0	0	0/0	100	
	2. Footing stable?	0	0	0/0	100	**100%**

*Note: Significant repairs completed in 2006/2007

Footnotes:

The above table should be completed using the visual assessment data form for each project reach/segment

It is recognized that the various metrics within a feature category may not have equal influence on the overall stability of that feature and that this does not incorporate weighting or scoring; however, at this time, EEP requires documentation of the relevant observations for these feature categories.

1 Metrics that are spatial estimates should be entered as: The number of locales over the reach for which the failing condition is observed / followed by the total linear distance (feet) or area for which the failing or unstable condition is observed.

2 In the case of categorical metrics for which a feature count is involved, this is simply calculated as the number of functional features that are in a state of stability as a percentage of the total. In the case of those metrics based on footage or aerial extent it is that amount in a state of failure or instability expressed as a proportion of the total amount of that feature. The resulting proportion is then subtracted from 1 and then multiplied by 100 to give a percentage that represents the proportion of that feature category in a state of apparent stability.

3 The mean of the metrics for a given feature category.

4 Was the feature actually present as compared to the As-built or has the feature been completely obscured (aggraded) or removed (degraded).

5 Is the Thalweg centering up on the channel in between meander bends?

6 Is the meander bend in a state of constriction?

Documents referenced in the construct of the above assessment table

USDA-NRCS (1998) *Stream Visual Assessment Protocol* National Water and Climate Center (Technical Note 99–1)

Rosgen, D L. (1996) *Applied River Morphology* . Wildland Hydrology Books, Pagosa Springs, CO.

Phankuch, D.J. (1975) Stream reach inventory and channel stability evaluation. USDA Forest Service, R1-75-002. GPO #696-260/200

Table B1b. Visual Morphological Stability Assessment
East Prong of the Roaring River at Stone Mountain State Park/Project # 364
Reach 4 - 3500 Feet

Feature Category	Metric (per As-built and reference baselines)	(# Stable) Number Performing as Intended	Total number per As-built	Total Number / feet in unstable state[1]	% Perform in Stable Condition[2]	Feature Perform. Mean or Total[3]
A. Riffles	1. Present?[4]	10	9	0/0	100	
	2. Armor stable (e.g. no displacement)?	10	9	0/0	100	
	3. Facet grade appears stable?	10	9	0/0	100	
	4. Minimal evidence of embedding/fining?	8	9	2/60	80	
	5. Length appropriate?	10	9	0/0	100	**96%**
B. Pools	1. Present? (e.g not subject to severe aggrad. or migrat.?)[4]	15	15	0/0	100	
	2. Sufficiently deep (Max Pool D:Mean Bkf >1.6?)	15	15	0/0	100	
	3. Length appropriate?	15	15	0/0	100	**100%**
C. Thalweg	1. Upstream of meander bend (run/inflection) centering?[5]	7	7	0/0	100	
	2. Downstream of meander (glide/inflection) centering?[5]	7	7	0/0	100	**100%**
D. Meanders	1. Outer bend in state of limited/controlled erosion?	7	7	0/0	100	
	2. Of those eroding, # w/concomitant point bar formation?	7	7	NA	100	
	3. Apparent Rc within spec?	7	7	0/0	100	
	4. Sufficient floodplain access and relief?[6]	7	7	0/0	100	**100%**
E. Bed General	1. General channel bed aggradation areas (bar formation)	NA	NA	0/0	100	
	2. Channel bed degradation – areas of increasing down-cutting or head cutting?	NA	NA	0/0	100	**100%**
F. Bank	1. Actively eroding, wasting, or slumping bank	NA	NA	2/70	98	**98%**
G. Vanes	1. Free of back or arm scour?	15	15	NA	100	
	2. Height appropriate?	13	15	NA	87	
	3. Angle and geometry appear appropriate?	15	15	NA	100	
	4. Free of piping or other structural failures?	15	15	NA	100	**97%**
H. Wads/ Boulders	1. Free of scour?	2	4	NA	50	
	2. Footing stable?	2	4	NA	50	**50%**

*Note: Significant repairs completed in 2006/2007

Footnotes:

The above table should be completed using the visual assessment data form for each project reach/segment

It is recognized that the various metrics within a feature category may not have equal influence on the overall stability of that feature and that this does not incorporate weighting or scoring; however, at this time, EEP requires documentation of the relevant observations for these feature categories.

1 Metrics that are spatial estimates should be entered as: The number of locales over the reach for which the failing condition is observed / followed

2 In the case of categorical metrics for which a feature count is involved, this is simply calculated as the number of functional features that are in a state of stability as a percentage of the total. In the case of those metrics based on footage or aerial extent it is that amount in a state of failure or instability expressed as a proportion of the total amount of that feature. The resulting proportion is then subtracted from 1 and then multiplied by 100 to give a percentage that represents the proportion of that feature category in a state of apparent stability.

3 The mean of the metrics for a given feature category.

4 Was the feature actually present as compared to the As-built or has the feature been completely obscured (aggraded) or removed (degraded).

5 Is the Thalweg centering up on the channel in between meander bends?

6 Is the meander bend in a state of constriction?

Documents referenced in the construct of the above assessment table

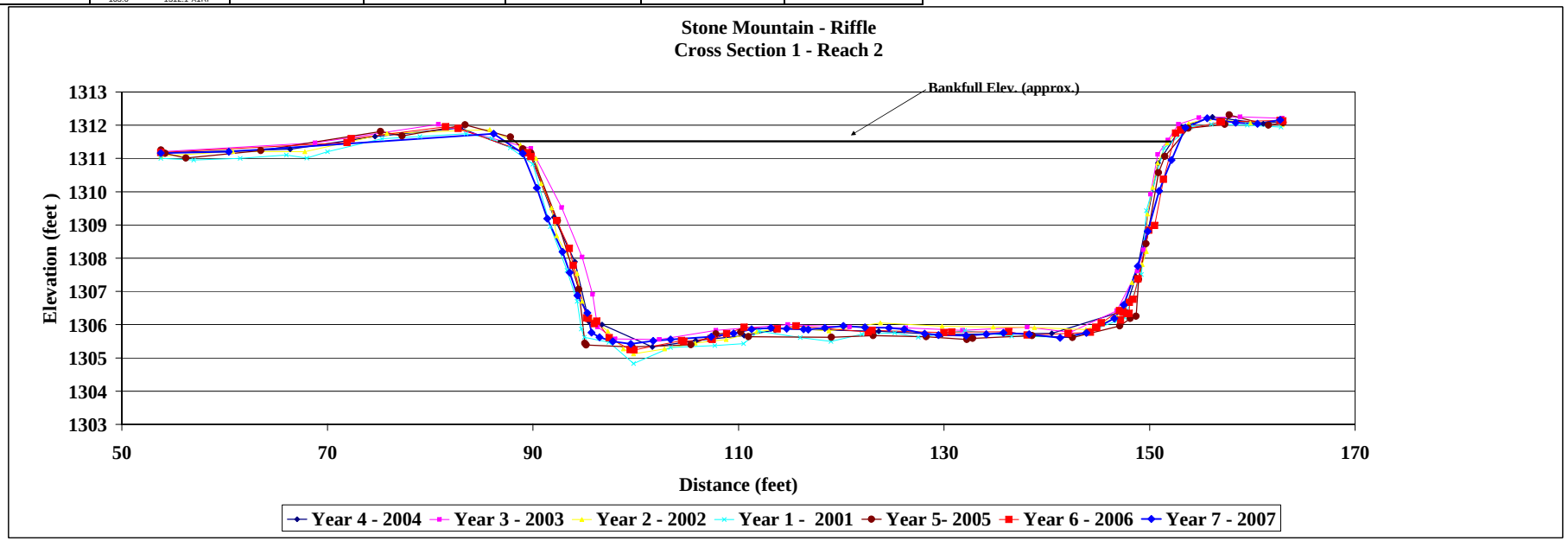
USDA-NRCS (1998) *Stream Visual Assessment Protocol* National Water and Climate Center (Technical Note 99–1)
Rosgen, D L. (1996) *Applied River Morphology* . Wildland Hydrology Books, Pagosa Springs, CO.
Phankuch, D.J. (1975) Stream reach inventory and channel stability evaluation. USDA Forest Service, R1-75-002. GPO #696-260/200

Project Name Stone Mountain
Cross Section Reach 2 Cross-Section 1
Feature Riffle
Date 8/1/07
Crew Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2004 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
53.8	1311.16	X1LP	53.8	1311.2	X1LP	53.8	1311.3	Lpin1	53.8	1311.2	Lpin1	53.8	1311.2		53.8	1311.2	LPIN	53.8	1311.0	
60.42	1311.2		71.9	1311.5		54.2	1311.2		54.0	1311.2		68.8	1311.5		53.8	1311.1	GRND	57.0	1311.0	
86.18	1311.74		72.3	1311.6		56.3	1311.0		66.4	1311.3		80.8	1312.0		60.8	1311.2		61.5	1311.0	
89.01	1311.15		81.5	1312.0		63.5	1311.2		74.6	1311.7		89.8	1311.3		67.8	1311.2		66.0	1311.1	
90.38	1310.11		82.7	1311.9		75.2	1311.8		82.9	1311.9		92.8	1309.5		75.8	1311.8		68.0	1311.0	
91.39	1309.19		89.5	1311.2		77.3	1311.7		89.8	1311.1		94.8	1308.0		85.8	1311.9		70.0	1311.2	
92.88	1308.19		89.8	1311.1		83.4	1312.0		92.0	1309.2		95.8	1306.9		88.8	1311.4		75.3	1311.6	
93.57	1307.57		92.3	1309.1		87.8	1311.6		94.1	1307.9		96.3	1305.9		89.8	1311.2		79.0	1311.7	
94.33	1306.88		93.6	1308.3		89.0	1311.3	LBKF	95.5	1306.1		98.0	1305.6		90.3	1311.0		83.5	1311.7	
95.29	1306.35		93.9	1307.8		89.8	1311.2		96.7	1306.0		102.3	1305.6		90.8	1310.3		86.0	1311.6	
95.69	1305.76		95.2	1306.2		92.4	1309.1		101.6	1305.3		107.8	1305.8		91.8	1309.5		87.8	1311.3	LBKF
96.48	1305.62		95.4	1306.2		94.5	1307.1		105.9	1305.5		114.8	1306.0		92.3	1308.7		90.0	1310.8	
97.77	1305.5		96.0	1306.0		95.1	1305.4		110.5	1305.7		120.8	1305.9		93.8	1307.8		91.7	1309.0	
99.53	1305.42		96.2	1306.1	X1W	95.2	1305.4		113.5	1305.8		126.3	1305.9		94.3	1307.5		93.3	1307.6	
101.7	1305.51		97.4	1305.6		99.7	1305.3		113.6	1305.8		131.8	1305.8		94.8	1306.7		94.3	1306.7	
103.39	1305.55		99.5	1305.3		105.4	1305.4		113.7	1305.9		138.1	1305.9		95.4	1306.3		94.7	1305.9	
107.36	1305.64		99.8	1305.2		107.8	1305.7		123.2	1305.8		142.3	1305.8		97.3	1305.8		95.0	1305.6	
109.53	1305.74		104.5	1305.5		110.2	1305.8		123.2	1305.8		146.8	1306.4		98.8	1305.3		97.4	1305.5	
111.29	1305.86		104.7	1305.5		111.0	1305.6		123.7	1305.8		148.8	1307.6		99.8	1305.1		99.8	1304.8	
113.15	1305.9		107.3	1305.6		119.0	1305.6		129.8	1305.7		149.4	1308.3		102.8	1305.3		103.4	1305.3	
114.7	1305.88		107.5	1305.6		123.1	1305.7		140.5	1305.7		150.1	1309.9		105.8	1305.5		107.7	1305.4	
116.34	1305.86		108.9	1305.7		128.3	1305.6		147.6	1306.4		150.8	1311.1		108.8	1305.6		110.5	1305.4	
116.78	1305.85		110.5	1305.9		132.2	1305.6		148.7	1307.4		151.8	1311.6		111.8	1305.8		112.0	1305.8	
118.41	1305.9		113.8	1305.9		132.8	1305.6		150.8	1310.9		152.8	1312.0		114.8	1305.9		116.0	1305.6	
120.2	1305.96		115.6	1306.0		138.6	1305.7		153.1	1312.0		154.8	1312.2		118.8	1305.8		119.0	1305.5	
122.3	1305.92		122.6	1305.8		142.5	1305.6		156.1	1312.3		158.8	1312.3		123.8	1306.1		122.0	1305.7	
124.65	1305.9		123.0	1305.8		147.1	1306.0		161.1	1312.0		162.9	1312.2		129.8	1306.0		125.2	1305.8	
126.13	1305.86		130.0	1305.8		148.1	1306.2		163.0	1312.13	Rpin1	162.9	1312.1		134.8	1305.9		127.5	1305.6	
128.12	1305.73		130.7	1305.8		148.7	1306.3		163.0	1312.1					138.8	1305.9		132.0	1305.8	
129.45	1305.69		136.3	1305.8		148.9	1307.4								143.8	1305.9		136.6	1305.7	
132.15	1305.67		138.1	1305.7		149.7	1308.4								146.8	1306.2		142.5	1305.6	
134.12	1305.71		142.1	1305.7		150.9	1310.6								147.5	1306.6		146.8	1306.1	
135.79	1305.75		144.3	1305.8		151.5	1311.1								148.3	1307.3		147.6	1306.2	
138.29	1305.71		144.8	1305.9		153.8	1311.9								149.3	1307.8		149.2	1307.5	
141.3	1305.6		144.9	1305.9		157.3	1312.0								149.7	1308.2		149.7	1309.4	
143.84	1305.75		145.3	1306.1		157.8	1312.3								149.8	1309.3		151.4	1311.3	RBKF
146.58	1306.19		147.1	1306.4		161.6	1312.0								150.3	1310.1		154.0	1311.9	
147.48	1306.59		147.2	1306.1		163.0	1312.1								150.8	1310.9		156.0	1312.0	
148.85	1307.76		147.4	1306.4	X1W										151.7	1311.5		159.5	1312.0	
149.82	1308.81		147.8	1306.3											152.8	1311.9		162.8	1311.9	
150.93	1310.02		148.0	1306.3											153.8	1312.1				
152.14	1310.95		148.1	1306.7											155.8	1312.2				
153.48	1311.93		148.4	1306.8											159.8	1312.1				
155.62	1312.21		148.9	1307.4											162.9	1312.1				
158.39	1312.08		149.9	1308.8											162.9	1312.0				
160.5	1312.04		150.5	1309.0																
162.72	1312.16	X1RP	151.4	1310.4																
			152.5	1311.8																
			153.0	1311.9																
			156.9	1312.1																
			157.0	1312.1																
			162.7	1312.1																
			163.0	1312.1	X1RP															

Photo of Cross-Section 1 - Reach 2 - Looking Downstream @ STA 2+00

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	309.9	310.1	318.5	307.0	296.5	306.0	319.8	
Width	62.1	61.9	61.8	61.1	62.0	62.0	61.9	
Mean Depth	5.0	5.0	5.2	5.0	4.8	4.9	5.2	
Max Depth	5.8	6.0	5.9	5.9	5.7	6.1	6.4	
W/D	12.4	12.4	12.0	12.2	13.0	12.6	12.0	

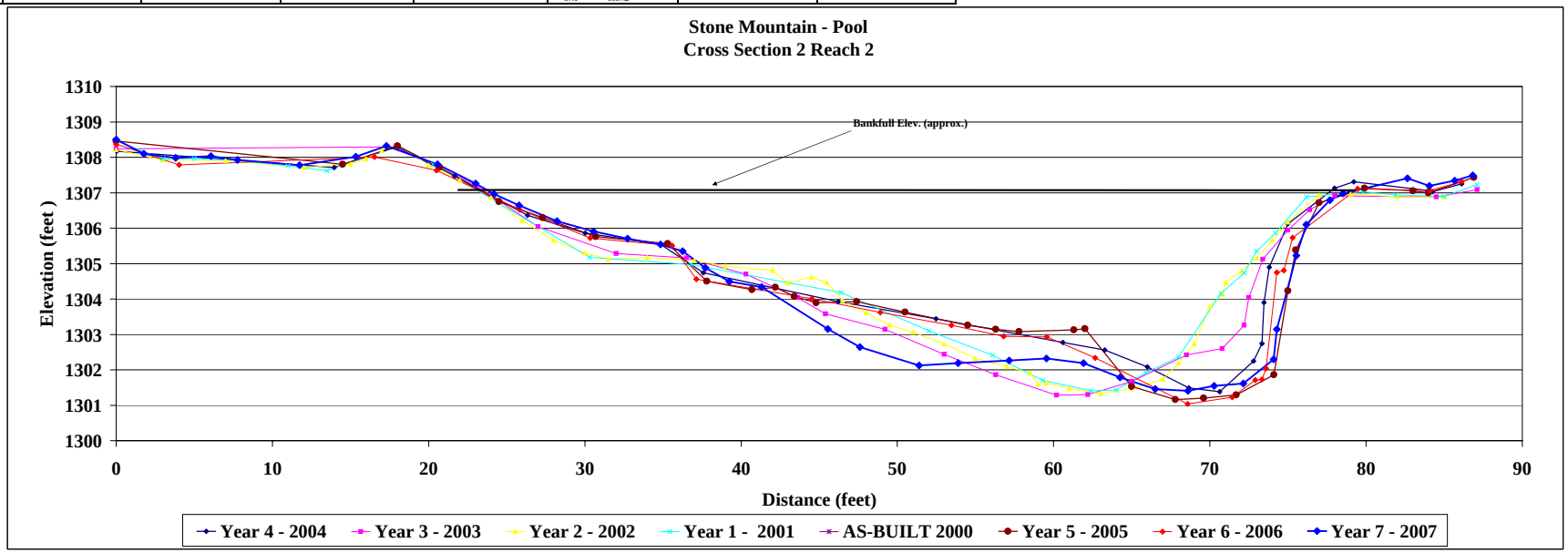


Project Name Stone Mountain
Cross Section Reach 2 Cross-Section 2
Feature Pool
Date 8/1/07
Crew Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2004 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
0	1308.5	X2LP	0	1308.37	X2LP	0.0	1308.5	LPIN	0.0	1308.5	LPIN	0.0	1308.5	LPIN	0.0	1308.5		0.0	1308.5	LPIN			
1.77	1308.1		4.04	1307.79	X2	14.5	1307.8	1308.0	0.0	1308.2		0.0	1308.2	GRND	0.0	1308.2		3.0	1308.0				
3.81	1307.98		16.53	1308.01	X2	18.0	1308.3	1307.4	14.0	1307.7		18.0	1308.3		3.0	1307.9		5.0	1308.0				
6.07	1308.03		20.5	1307.63	X2	20.7	1307.7	1307.6	17.9	1308.3		23.0	1307.2		7.0	1307.9		7.8	1307.9				
7.77	1307.93		25.8	1306.53	X2	24.5	1306.8	1307.2	21.7	1307.5		27.0	1306.0		12.0	1307.7		11.0	1307.8				
11.74	1307.78		30.35	1305.72	X2	27.3	1306.3	1306.1	26.3	1306.4		32.0	1305.3		15.0	1307.8		13.5	1307.6				
15.33	1308.02		35.59	1305.51	X2	30.7	1305.8	1305.3	30.0	1305.9		36.5	1305.2		16.0	1308.0		18.0	1308.3	LBKF			
17.29	1308.32		37.14	1304.56	X2	35.3	1305.6	1305.1	34.9	1305.5		40.3	1304.7		17.0	1308.2		20.3	1307.8				
20.56	1307.8		44.52	1304.01	X2	37.8	1304.5	1304.1	37.6	1304.7		43.6	1304.0	LEW	18.0	1308.4		30.3	1305.2				
23	1307.26		48.91	1303.62	X2	40.7	1304.3	1303.6	46.2	1303.9		45.4	1303.6		20.0	1307.8		36.8	1305.0				
24.19	1306.96		53.47	1303.26	X2	42.2	1304.3	1303.2	52.5	1303.4		49.2	1303.1		22.0	1307.4		46.4	1304.2				
25.79	1306.64		56.81	1302.95	X2	43.4	1304.1	1302.8	60.6	1302.8		53.0	1302.4		24.0	1306.9		52.0	1303.1				
28.21	1306.2		59.57	1302.93	X2	44.8	1303.9	1302.5	63.3	1302.6		56.3	1301.9		26.0	1306.2		56.1	1302.4				
30.55	1305.91		62.67	1302.34	X2	47.4	1303.9	1302.5	66.0	1302.1		60.2	1301.3		28.0	1305.7		59.3	1301.7				
32.73	1305.7		68.57	1301.04	X2	50.5	1303.6	1301.9	68.7	1301.5		62.2	1301.3		30.0	1305.3		62.4	1301.4				
34.83	1305.54		71.43	1301.23	X2	54.5	1303.3	1300.6	70.6	1301.4		65.0	1301.7		31.5	1305.1		64.0	1301.4				
36.26	1305.35		72.9	1301.71	X2	56.3	1303.1	1300.8	72.8	1302.3		68.5	1302.4		34.0	1305.2		65.9	1301.9				
37.71	1304.88		73.33	1301.73	X2	57.8	1303.1	1301.3	73.3	1302.7		70.8	1302.6		37.0	1305.1		68.0	1302.4				
39.24	1304.49		73.6	1302.04	X2	61.3	1303.1	1301.3	73.5	1303.9		72.2	1303.3	REW	39.0	1304.9		70.7	1304.2				
41.32	1304.34		74.28	1304.75	X2	62.0	1303.2	1301.6	73.8	1304.9		72.5	1304.0		42.0	1304.8		72.2	1304.7				
45.55	1303.15		74.73	1304.81	X2	65.0	1301.5	1304.3	75.0	1306.1		73.4	1305.1		43.0	1304.5		73.0	1305.4				
47.61	1302.64		75.3	1305.73	X2	67.8	1301.2	1304.4	78.0	1307.1		75.0	1305.9		44.5	1304.6		74.2	1305.9	RBKF			
51.39	1302.12		79.46	1307.11	X2	69.6	1301.2	1305.3	79.2	1307.3		76.4	1306.5		45.5	1304.5		76.2	1306.9				
53.89	1302.19		84.1	1307.06	X2	71.7	1301.3	1306.7	84.0	1307.1		78.0	1306.9		46.5	1304.0		79.8	1307.0				
57.16	1302.26		86.12	1307.32	X2RP	74.1	1301.9	1306.6	84.3	1307.0		84.5	1306.9		48.0	1303.6		81.9	1306.9				
59.55	1302.32					75.0	1304.2	1306.9	86.1	1307.3		87.1	1307.1		49.5	1303.3		85.0	1306.9				
61.91	1302.19					75.5	1305.4	-0.4							51.0	1303.1		87.1	1307.2				
64.24	1301.79					77.0	1306.7	-0.4							53.0	1302.7							
66.5	1301.46					79.9	1307.1	-0.4							55.0	1302.3							
68.59	1301.41					83	1307.1	-0.4							57	1302.1							
70.27	1301.55					84	1307.0	-0.4							58.5	1301.9							
72.14	1301.61					86.9	1307.4	-0.4							59	1301.6							
74.09	1302.3														59.5	1301.6							
74.28	1303.14														61	1301.5							
75.54	1305.23		down 0.42 feet												63	1301.3							
76.17	1306.1														65	1301.5							
77.69	1306.79														67	1301.7							
78.53	1306.98														68	1302.2							
82.64	1307.41														69	1302.7							
84.05	1307.19														70	1303.8							
85.67	1307.34														70.8	1304.1							
86.83	1307.49	X2RP													71	1304.5							
															72	1304.8							
															73	1305.2							
															74	1305.7							
down 0.22 feet															75	1306.2							
															77	1306.9							
															79	1307.0							
															82	1306.9							
															85	1306.9							
															87.1	1307.4							
															87.1	1307.2							

Photo of Cross-Section 2 - Reach 2 - Looking Downstream @ STA 5+75

	Year 7 - 2007	Year 6 - 2006	Year 6 - 2006	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	176.0	166.0	166.1	155.6	170.3	158.7	158.4	
Width	51.1	60.3	56.3	53.3	53.4	53.0	53.9	
Mean Depth	3.4	2.8	3.0	2.9	3.2	3.0	2.9	
Max Depth	5.2	5.9	5.8	5.6	5.7	4.6	5.6	
W/D	14.8	21.9	19.1	18.3	16.7	17.7	18.3	



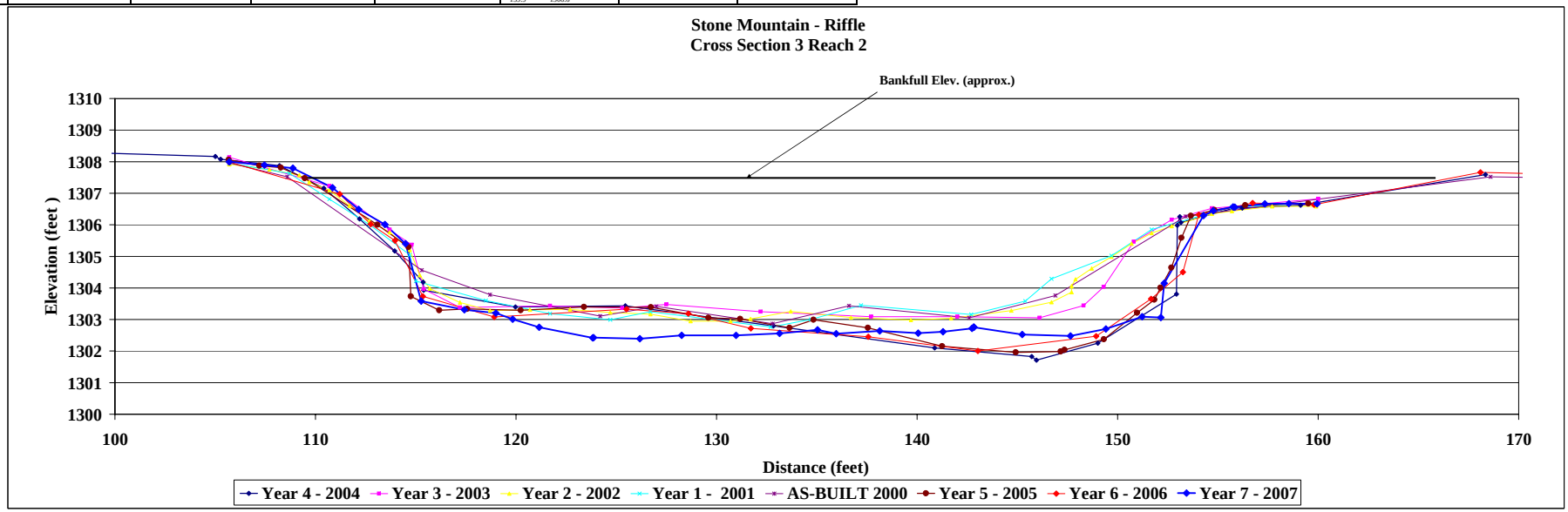
Project Name Stone Mountain
Cross Section Reach 2 Cross-Section 3
Feature Riffle
Date 8/1/07
Crew Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
105.7	1308	X3LP	105.7	1307.99	X3LP	105.7	1308.1	Lpin	97.2	1308.3		105.7	1308.1		105.7	1307.9		105.7	1308.0		105.7	1308.0	
107.46	1307.89		111.21	1306.97	X3	107.2	1307.9	1307.6	105.0	1308.2	Lpin	110.7	1307.2		105.7	1307.9		108.7	1307.6		108.6	1307.5	LBKF
108.87	1307.79		112.75	1306.02	X3	108.3	1307.8	1306.6	105.3	1308.1		113.7	1305.8		107.7	1307.8		110.7	1306.8		115.3	1304.6	
110.85	1307.18		113.97	1305.5	X3	109.5	1307.5	1305.6	108.2	1307.9		114.8	1305.4		109.2	1307.6		112.7	1306.0		118.7	1303.8	
112.15	1306.49		115.35	1303.73	X3	113.1	1306.0	1305.1	110.4	1307.2		115.4	1304.0		109.7	1307.4		114.7	1305.1		124.2	1303.1	
113.47	1306.01		118.91	1303.08	X3	114.6	1305.3	1303.3	112.2	1306.2		117.2	1303.4		110.7	1307.1		115.0	1304.2		127.0	1303.4	
114.49	1305.4		125.51	1303.33	X3	114.8	1303.7	1302.7	114.0	1305.2		121.7	1303.4		111.7	1306.6		118.5	1303.6		132.8	1302.9	
115.27	1303.58		128.6	1303.19	X3	116.2	1303.3	1302.9	115.4	1304.2		125.3	1303.4		112.7	1306.1		121.7	1303.2		136.6	1303.4	
117.43	1303.31		131.71	1302.72	X3	117.6	1303.3	1302.8	115.4	1303.9		127.5	1303.5		113.7	1305.8		124.7	1303.0		142.6	1303.1	
119	1303.2		137.56	1302.45	X3	120.2	1303.3	1302.3	120.0	1303.4		132.2	1303.3		114.7	1305.2		126.7	1303.3		146.9	1303.8	
119.84	1303.01		143.03	1302	X3	123.4	1303.4	1302	125.5	1303.4		137.7	1303.1		115.2	1304.4		132.7	1302.8		153.4	1306.3	
121.15	1302.75		148.93	1302.47	X3	126.7	1303.4	1301.6	132.8	1302.8		142.0	1303.1		115.7	1304.0		134.7	1303.0		168.6	1307.5	RBKF
123.82	1302.42		151.67	1303.65	X3W	129.6	1303.1	1302.1	140.9	1302.1		146.1	1303.1		117.2	1303.5		137.2	1303.5		184.0	1307.4	
123.87	1302.43		153.25	1304.5	X3	131.2	1303.0	1303.2	145.7	1301.8		148.3	1303.4		118.7	1303.3		142.7	1303.2				
126.17	1302.39		154.05	1306.32	X3	133.6	1302.7	1304.1	146.0	1301.7		149.3	1304.0		120.7	1303.3		145.4	1303.6				
128.26	1302.5		156.73	1306.69	X3	134.8	1303.0	1305.9	149.0	1302.3		150.8	1305.5		122.7	1303.3		146.7	1304.3				
130.97	1302.5		159.79	1306.64	X3RP	137.6	1302.7	1306.3	152.9	1303.8		152.7	1306.2		124.7	1303.2		149.7	1305.0				
133.15	1302.56		168.1	1307.66	X3	141.3	1302.2	1306.2	153.0	1306.0		154.7	1306.5		126.7	1303.2		151.7	1305.9				
135.03	1302.67		180.02	1307.48	X3	144.9	1302.0	1307.2	153.1	1306.3		160.0	1306.8		128.7	1303.0		155.7	1306.6				
135.97	1302.55					147.2	1302.0	1307.1	153.2	1306.1		160.0	1306.8		130.7	1303.0		159.9	1306.7				
138.13	1302.64					147.4	1302.0		155.8	1306.5					131.7	1303.0							
140.05	1302.57					149.3	1302.4		156.2	1306.5					133.7	1303.3							
141.3	1302.61		down 0.42 feet			151.0	1303.2		159.1	1306.6	Rpin				136.7	1303.1							
142.74	1302.72					151.8	1303.6		168.4	1307.6					139.7	1303.0							
142.82	1302.76					152.1	1304.0								141.7	1303.0							
142.84	1302.75					152.7	1304.6								144.7	1303.3							
145.24	1302.52					153.2	1305.6								146.7	1303.6							
147.65	1302.48					153.7	1306.3								147.7	1303.9							
149.41	1302.7					154.8	1306.5								147.7	1304.1							
151.22	1303.09					156.4	1306.6								147.9	1304.27							
152.16	1303.06					159.5	1306.7								148.7	1304.62							
152.32	1304.15					168.4	1307.6								149.7	1305.0							
154.28	1306.29														150.7	1305.4							
154.77	1306.44														151.7	1305.7							
155.76	1306.57														152.7	1306.0							
155.84	1306.56														154.7	1306.4							
157.35	1306.66														155.7	1306.4							
158.54	1306.67														157.7	1306.6							
159.94	1306.66	X3RP													159.9	1306.6							

down 0.3 feet

Photo of Cross-Section 3 - Reach 2 - Looking Downstream @ STA 7+00

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000	Bench -2004
Area	193.5	195.0	191.7	194.5	169.6	169.5	166.2	165.5	148.1
Width	54.2	60.1	60.1	60.1	58.3	59.7	60.2	60.0	45.4
Mean Depth	3.6	3.2	3.2	3.2	2.9	2.8	2.8	2.8	3.3
Max Depth	5.1	5.5	5.5	5.8	4.5	4.5	4.7	4.6	4.7
W/D	15.2	18.5	18.8	18.6	20.0	21.0	21.8	21.7	13.9

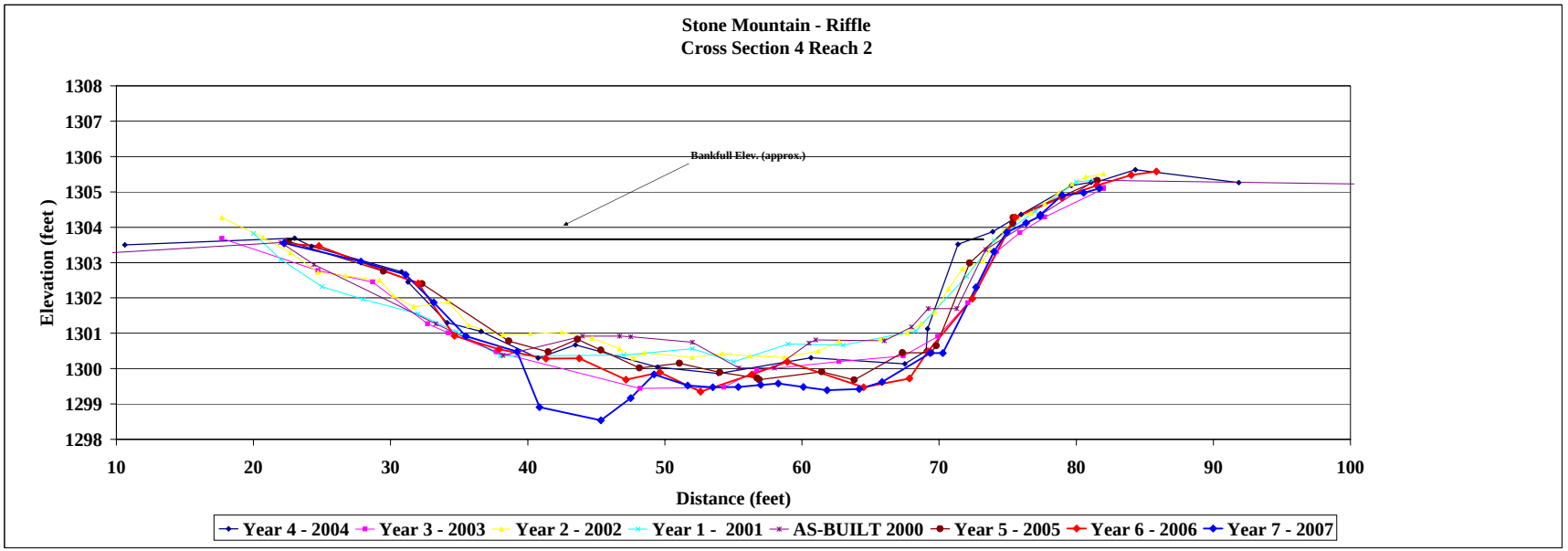


Project Name	Stone Mountain
Cross Section	Reach 2 Cross-Section 4
Feature	Riffle
Date	8/1/07
Crew	Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
22.23	1303.55	X4LP	22.23	1303.5	X4LP	22.6	1303.6	1303.1	10.6	1303.5		17.7	1303.7		17.7	1304.3		20.0	1303.8		0.0	1303.1	
27.83	1303.03		24.77	1303.5	X4	29.5	1302.8	1303.1	23.0	1303.7	Lpin	24.7	1302.8		20.7	1303.7		22.0	1303.1	LPIN	22.0	1303.6	LBKF
31.09	1302.66		32.02	1302.4	X4	32.3	1302.4	1302.0	24.2	1303.5		28.7	1302.5		22.7	1303.3		25.0	1302.3		24.4	1303.0	
33.14	1301.87		34.66	1300.9	X4	38.6	1300.8	1300.5	30.8	1302.7		32.7	1301.3		24.7	1302.7		28.0	1302.0		33.3	1301.3	
35.49	1300.92		37.91	1300.6	X4	41.5	1300.5	1300.1	31.3	1302.5		34.2	1301.0		26.7	1302.6		32.0	1301.6		38.2	1300.4	
39.21	1300.48		41.32	1300.3	X4	43.6	1300.8	1299.9	34.1	1301.3		37.7	1300.5		29.2	1302.5		34.8	1301.0		44.0	1300.9	
40.87	1298.91		43.75	1300.3	X4	45.3	1300.5	1299.9	36.6	1301.1		48.2	1299.4		30.2	1302.1		38.0	1300.4		46.7	1300.9	
45.33	1298.54		47.16	1299.7	X4	48.1	1300.0	1299.3	40.8	1300.3		54.3	1299.5		31.7	1301.8		47.0	1300.4		47.5	1300.9	
47.5	1299.17		49.63	1299.9	X4	51.1	1300.2	1299.5	43.5	1300.7		56.7	1300.0		34.2	1301.9		52.0	1300.6		52.0	1300.8	
49.21	1299.84		52.6	1299.4	X4	54.0	1299.9	1298.9	49.5	1300.0		62.7	1300.2		35.7	1301.2		55.0	1300.2		55.4	1300.0	
51.67	1299.52		56.35	1299.8	X4	56.7	1299.7	1299.4	53.9	1299.9		67.4	1300.4		38.2	1301.0		59.0	1300.7		58.0	1300.0	
53.49	1299.47		58.93	1300.2	X4	56.9	1299.7	1299.8	60.7	1300.3		69.9	1300.9		40.2	1301.0		63.0	1300.7		60.5	1300.7	
55.35	1299.48		64.5	1299.5	X4	61.4	1299.9	1299.1	67.5	1300.1		72.1	1301.9		42.5	1301.0		68.3	1301.1		61.0	1300.8	
57	1299.54		67.83	1299.7	X4	63.8	1299.7	1299.3	69.1	1300.5		74.2	1303.3		44.7	1300.9		72.0	1302.6		66.0	1300.8	
58.28	1299.58		69.19	1300.5	X4W	67.3	1300.5	1300.1	69.2	1301.1		75.9	1303.9		46.7	1300.6		74.0	1303.6		68.0	1301.2	
60.1	1299.48		72.43	1302.0	X4	69.4	1300.5	1301.6	71.4	1303.5		77.7	1304.3		47.7	1300.3		77.0	1304.5		69.2	1301.7	
61.83	1299.39		75.55	1304.3	X4	69.8	1300.7	1303.9	73.9	1303.9		82.0	1305.1		48.5	1300.5		80.0	1305.3		71.3	1301.7	
64.18	1299.42		78.94	1304.9	X4	72.2	1303.0	1304.4	76.0	1304.4		82.0	1305.1		52.0	1300.3		81.2	1305.3	RPIN	73.4	1303.4	RBKF
65.83	1299.62		78.95	1304.8	X4	75.4	1304.1	1304.4	79.6	1305.2					54.2	1300.4					81.4	1305.3	RPIN
69.36	1300.44		81.5	1305.2	X4RP	75.4	1304.3	1304.8	81.1	1305.3					56.2	1300.4					143.0	1305.0	
70.28	1300.44		84.01	1305.5	X4	81.5	1305.3	1305.1	81.5	1305.3	Rpin				58.7	1300.3							
72.7	1302.3		85.84	1305.6	X4			1305.2	84.3	1305.6					61.2	1300.5							
73.99	1303.31								91.9	1305.3					62.7	1300.8							
74.93	1303.86														65.7	1300.8							
76.35	1304.12														67.7	1301.0							
77.36	1304.31														68.7	1301.3							
77.39	1304.35														69.7	1301.6							
78.97	1304.91														70.7	1302.3							
80.55	1304.97														71.7	1302.8							
81.7	1305.1	X4RP													73.2	1303.04							
															73.7	1303.36							
															74.7	1303.9							
															75.7	1304.26							
															76.7	1304.39							
															77.7	1304.67							
															78.7	1304.97							
															79.7	1305.22							
															80.7	1305.42							
															82	1305.51							

Photo of Cross-Section 4 - Reach 2 - Looking Downstream @ STA 12+25

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	168.5	150.1	135.0	130.6	156.5	124.8	136.3	
Width	53.0	53.2	52.8	52.9	56.5	53.0	54.0	
Mean Depth	3.2	2.8	2.6	2.5	2.8	2.4	2.5	
Max Depth	5.2	4.3	4.0	3.8	4.3	3.4	3.5	
W/D	16.7	18.8	20.7	21.4	20.4	22.5	21.4	



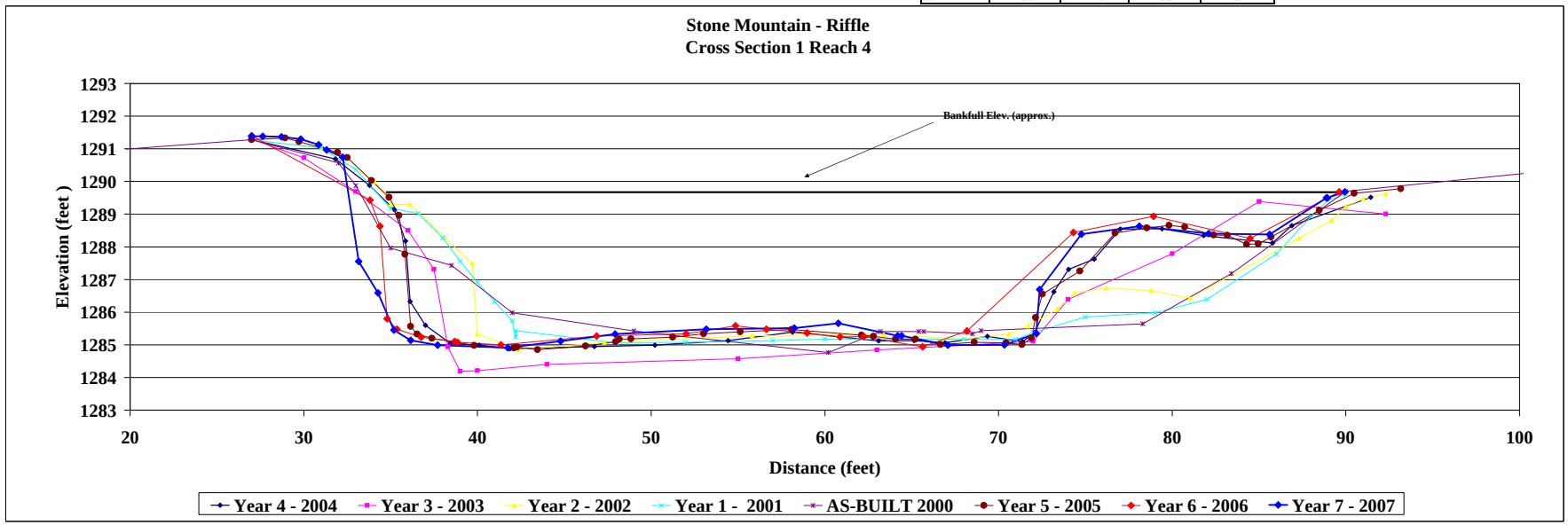
Project Name Stone Mountain
Cross Section Reach 4 Cross-Section 1
Feature Riffle
Date 7/30/07
Crew Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
27	1291.38	X1LP	27	1291.4	X1LP	27.0	1291.3	Left Pin	27.0	1291.3	Left Pin	27.0	1291.3		27.0	1291.3	LPIN	27.0	1291.3		0.0	1290.2	
27.63	1291.38		33.82	1289.43		28.9	1291.3		31.8	1290.7		30.0	1290.7		31.0	1291.0	LTOB	31.0	1291.0		27.0	1291.3	
28.71	1291.37		34.39	1288.63		29.7	1291.2		33.8	1289.9		33.0	1289.7		34.1	1290.0		33.0	1290.4		32.0	1290.6	
29.82	1291.3		34.8	1285.8		32.0	1290.9		35.2	1289.1		36.0	1288.5		35.0	1289.3		35.0	1289.2		33.0	1289.9	LBKF
30.86	1291.12		35.37	1285.48	X1W	32.5	1290.7		35.9	1288.2		37.5	1287.3		36.1	1289.3		36.6	1289.0		35.0	1288.0	
31.32	1290.97		36.76	1285.23		33.9	1290.0		36.1	1286.3		38.3	1284.9		39.7	1287.5		38.0	1288.3		38.5	1287.4	
32.24	1290.74		38.68	1285.1		34.9	1289.5		37.0	1285.6	Water	39.0	1284.2		40.0	1285.3	LEW	39.0	1287.6		42.0	1286.0	
33.16	1287.55		38.85	1285.08		35.5	1289.0		38.4	1285.0		40.0	1284.2		42.4	1284.9		40.0	1286.9		49.0	1285.4	
34.27	1286.59		41.36	1285		35.8	1287.8		40.1	1285.0		44.0	1284.4		47.3	1285.1		41.0	1286.3		60.2	1284.8	
35.19	1285.45	X1W	46.86	1285.27		36.2	1285.6		41.9	1284.9	XST	55.0	1284.6		55.8	1285.3		42.0	1285.7		63.2	1285.4	
36.15	1285.14		52.01	1285.34		36.5	1285.3		46.7	1285.0		63.0	1284.8		63.4	1285.3		42.2	1285.2		65.4	1285.4	
37.71	1284.99		54.86	1285.58		37.4	1285.2		50.2	1285.0		72.0	1285.1		68.0	1285.2		42.2	1285.4		65.7	1285.4	
41.75	1284.91		56.64	1285.48		39.8	1285.0		54.4	1285.1		74.0	1286.4		70.6	1285.3		48.0	1285.1		68.5	1285.3	
44.78	1285.11		58.98	1285.36		42.1	1284.9		58.2	1285.4		80.0	1287.8		71.7	1285.6	REW/WS	52.0	1285.1		69.0	1285.4	
47.93	1285.33		60.87	1285.24		42.3	1284.9		63.1	1285.1		85.0	1289.4		73.4	1286.1	BAR	57.0	1285.1		78.3	1285.6	
53.17	1285.48		62.25	1285.25		43.5	1284.9		65.1	1285.1		92.3	1289.0		74.4	1286.6		60.0	1285.2		83.4	1287.2	
58.25	1285.51		65.63	1284.94		46.2	1285.0		66.9	1285.1					76.2	1286.7		64.0	1285.2		90.0	1289.7	RBKF
60.77	1285.66		68.18	1285.42	X1W	48.0	1285.1		69.4	1285.3					78.8	1286.7		68.0	1285.2		105.0	1290.5	
64.2	1285.28		74.31	1288.44		48.2	1285.2		71.4	1285.1					81.0	1286.4		71.0	1285.2		107.0	1288.6	
64.43	1285.28		78.93	1288.93		48.8	1285.2		72.1	1285.4					87.3	1288.3		72.0	1285.4				
67.08	1284.99		84.48	1288.26		51.3	1285.2		73.2	1286.6					89.2	1288.8		75.0	1285.9				
70.34	1285		89.62	1289.68	X1RP	53.0	1285.3		74.0	1287.3					90.0	1289.2	RTOB	79.0	1286.0				
72.17	1285.35	X1W				55.1	1285.4		75.5	1287.6					91.0	1289.5		82.0	1286.4				
72.37	1286.69					58.1	1285.5		77.0	1288.5					92.3	1289.6		86.0	1287.8				
74.78	1288.39		Right 26.38 feet			62.1	1285.3		79.4	1288.6								88.0	1288.9				
78.1	1288.63					62.8	1285.3		81.8	1288.3								89.0	1289.4				
82.1	1288.4					64.1	1285.2		85.8	1288.1								90.0	1289.6				
85.62	1288.38					65.2	1285.2		86.9	1288.7													
88.88	1289.5					66.7	1285.0		91.4	1289.5	Right Pin												
88.93	1289.5					68.6	1285.08																
89.95	1289.68	X1RP				70.4	1285.06																
						71.4	1285.01																
						71.9	1285.21																
						72.1	1285.83																
						72.5	1286.55																
						74.7	1287.26																
						76.7	1288.42																
						78.6	1288.58																
						79.8	1288.66																
						80.7	1288.6																
						82.4	1288.36																
						83.2	1288.35																
						84.3	1288.07																
						85.0	1288.09																
						85.7	1288.3																
						88.5	1289.12																
						90.5	1289.64																
						93.2	1289.78																

Photo of Cross-Section 1 - Reach 4 - Looking Downstream @ STA 4+50

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	198.5	187.3	195.9	196.1	215.8	202.5	206.6	206.3
Width	57.7	62.6	58.3	57.7	59.3	58.2	57.0	57.0
Mean Depth	3.4	3.0	3.4	3.4	3.6	3.5	3.6	3.6
Max Depth	4.9	4.8	4.9	4.9	5.6	4.9	4.7	5.0
W/D	16.8	20.9	17.3	16.9	16.3	16.7	15.7	15.7

	Bench 2007	Bench 2006	Bench 2005	Bench 2004
Area	150.2	137.6	127.0	132.0
Width	53.4	55.8	49.5	50.6
Mean Depth	2.8	2.5	2.6	2.6
Max Depth	4.0	3.9	3.7	3.7
W/D	19.0	22.6	19.3	19.4

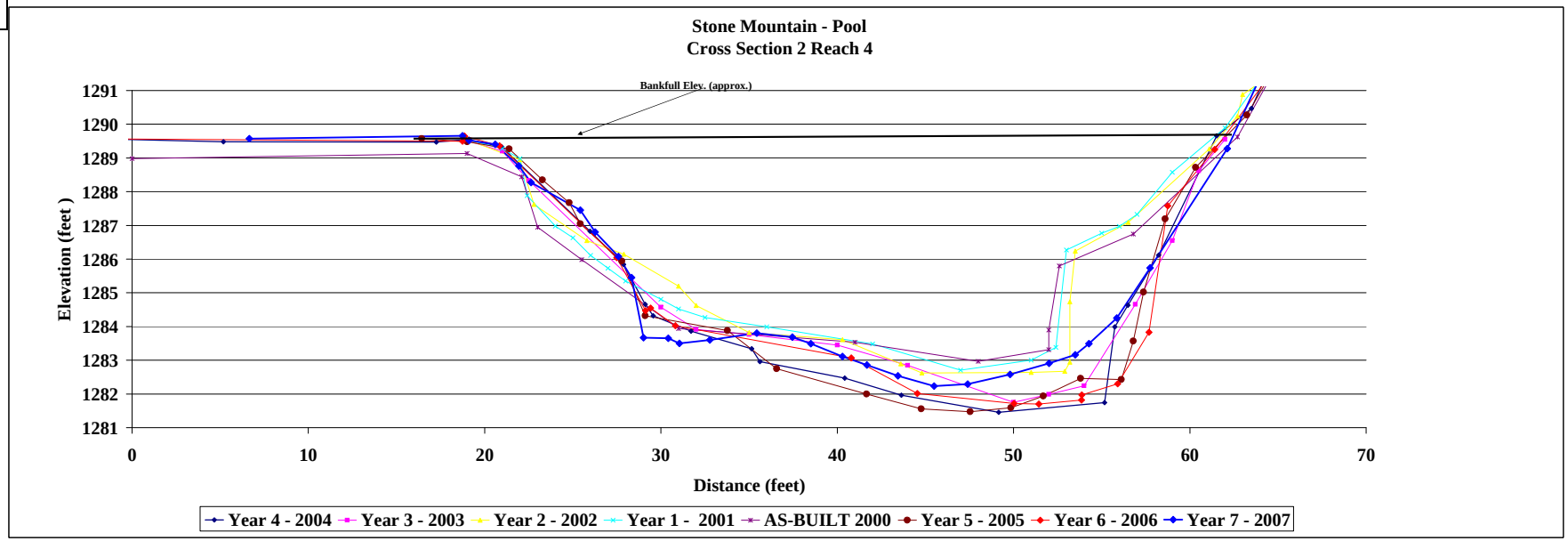


Project Name Stone Mountain
Cross Section Reach 4 Cross-Section 2
Feature Pool
Date 7/30/07
Crew Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
6.65	1289.57		-5.85	1289.58		16.4	1289.6		-8.3	1289.5		19.0	1289.6	Left Pin	19.0	1289.6	Left Pin	19.0	1289.6	Left Pin	0.0	1289.0	
18.74	1289.66	X2LP	18.74	1289.5	X2LP	19.0	1289.5	Left Pin	-8.9	1289.7		19.0	1289.5		22.0	1289.0		21.0	1289.3		19.0	1289.1	LBKF
19.11	1289.52		18.8	1289.63	X2LP	21.4	1289.3		5.2	1289.5		21.0	1289.2		22.8	1287.6		22.0	1289.0		22.1	1288.4	
20.6	1289.4		18.86	1289.65		23.3	1288.4		17.3	1289.5		22.5	1288.3		25.8	1286.6		22.4	1287.9		23.0	1287.0	
21.94	1288.76		20.84	1289.36		24.8	1287.7		19.0	1289.6	Left Pin	30.0	1284.6		27.9	1286.1		24.0	1287.0		25.5	1286.0	
22.63	1288.27		27.49	1286.04		25.4	1287.1		21.0	1289.3		32.0	1283.9		31.0	1285.2		25.0	1286.6		31.0	1283.9	
25.42	1287.45		29.13	1284.47		27.8	1285.9		26.0	1286.8		35.0	1283.8		32.0	1284.6		26.0	1286.1		41.0	1283.5	
26.26	1286.8		29.41	1284.55	X2W	29.1	1284.3		27.9	1285.8		40.0	1283.5		35.0	1283.8		27.0	1285.7		48.0	1283.0	
27.59	1286.08		30.82	1284.02		33.8	1283.9	Water	29.1	1284.7	Water	44.0	1282.9		40.3	1283.6		28.0	1285.4		52.0	1283.3	
28.33	1285.45		40.8	1283.07		36.6	1282.8		29.6	1284.3		50.0	1281.8		43.6	1282.9		30.0	1284.8		52.0	1283.9	
29.01	1283.67		44.54	1282.01		41.7	1282.0		31.7	1283.9		52.0	1282.0		44.8	1282.6		31.0	1284.5		52.6	1285.8	
30.41	1283.65		50.03	1281.72		44.8	1281.6		35.1	1283.3		54.0	1282.2		51.0	1282.6		32.5	1284.3		56.8	1286.7	
31.04	1283.5		51.44	1281.7		47.6	1281.5		35.6	1283.0		56.9	1284.7		52.9	1282.7		36.0	1284.0		62.7	1289.6	RBKF
32.77	1283.6		53.86	1281.82		49.9	1281.6		40.4	1282.5		59.0	1286.6		53.2	1282.9		42.0	1283.5		67.0	1293.7	
35.43	1283.8		53.87	1281.97		51.7	1281.9		43.6	1282.0		60.5	1288.6		53.2	1284.7		47.0	1282.7		68.6	1293.9	
37.46	1283.69		55.9	1282.3		53.8	1282.5		49.2	1281.5		62.0	1289.6	RBKFL	53.5	1286.2		51.0	1283.0		80.0	1293.9	
38.51	1283.49	X2W	57.69	1283.83		56.1	1282.4		55.2	1281.7		64.5	1291.4		56.5	1287.1		52.4	1283.4		100.0	1293.9	
40.29	1283.11		58.74	1287.58		56.8	1283.6		55.7	1284.0		68.0	1294.3	RTOB	61.1	1289.3	BKF	53.0	1286.3				
41.68	1282.86		61.41	1289.25		57.4	1285.0	Water	56.5	1284.6	Water				62.7	1290.2		55.0	1286.8				
43.45	1282.54		65.19	1291.9		58.6	1287.2		58.2	1286.1					63.0	1290.9		56.0	1287.0				
45.49	1282.23		67.28	1294.35		60.3	1288.7		61.5	1289.7					64.1	1291.3		57.0	1287.3				
47.4	1282.29		68.03	1294.54	X2RP	63.2	1290.3		63.5	1290.5					65.3	1292.7		59.0	1288.6				
49.81	1282.58	X2RP	68.04	1294.38	X2RP	65.3	1292.1		65.5	1292.8					67.0	1294.0		62.0	1289.9				
52.02	1282.91		83.15	1294.48		66.5	1293.9		67.5	1294.2					68.6	1294.4		64.0	1291.3				
53.5	1283.16					68.0	1294.4	Right Pin	79.4	1294.4								67.0	1294.1				
54.3	1283.5					68.2	1294.4		99.7	1294.5								68.4	1294.4				
55.9	1284.3		right 22.22 ft			73.0	1294.4		117.4	1294.0								68.4	1294.4				
57.8	1285.7					78.0	1294.4		127.2	1294.1													
62.1	1289.3								68.0	1294.4	Right Pin												
64.51	1291.99																						
68.06	1294.26	X2RP																					
74.93	1294.55																						

Photo of Cross-Section 2 - Reach 4 - Looking Downstream @ STA 7+65

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	208.6	220.3	223.7	224.4	210.6	182.8	179.6	189.6
Width	43.4	42.7	41.3	42.5	41.5	42.1	43.0	43.7
Mean Depth	4.8	5.2	5.4	5.3	5.1	4.3	4.2	4.3
Max Depth	7.3	7.8	8.1	8.1	7.8	6.9	6.8	6.6
W/D	9.0	8.3	7.6	8.1	8.2	9.7	10.3	10.1

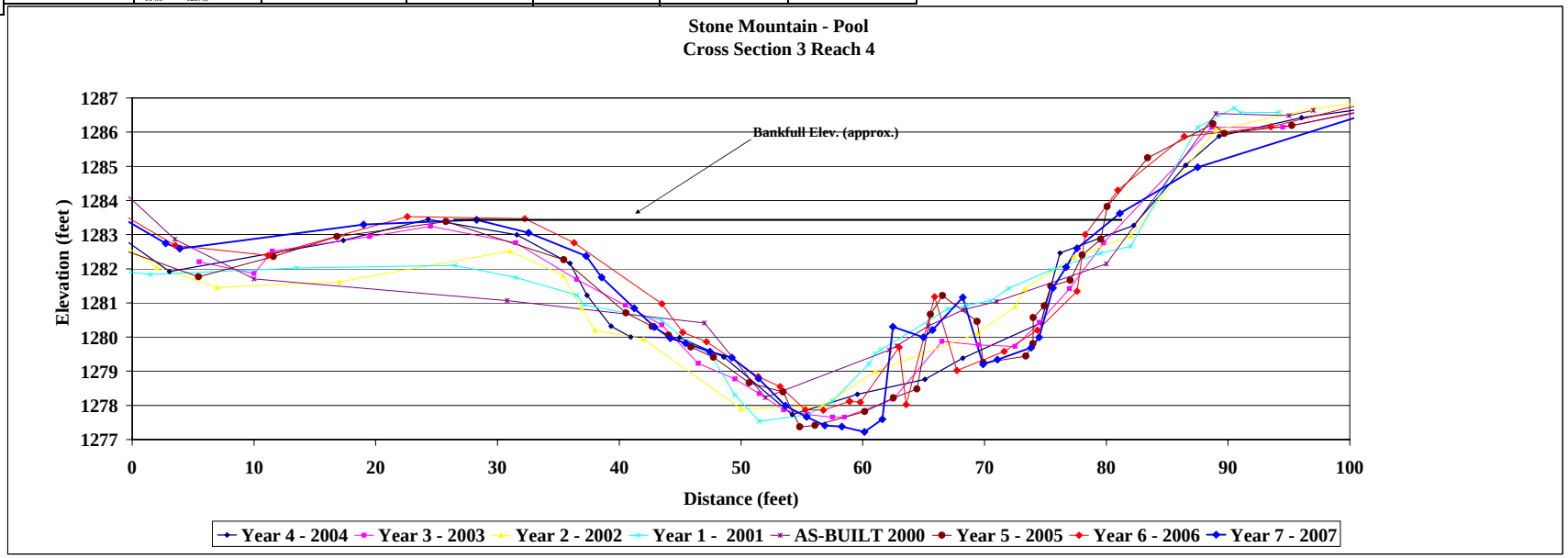


Project Name Stone Mountain
Cross Section Reach 4 Cross-Section 3
Feature Pool
Date 7/30/07
Crew Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
-5.05	1284.6	X3LP	-5.05	1284.63	X3LP	-6.9	1284.4		-6.9	1284.4		5.5	1282.2		-8.0	1284.5		-12.5	1284.5		-3.0	1285.0	
-3.24	1283.86	X3	-5.04	1284.48	X3	-3.3	1282.9		3.1	1281.9		10.0	1281.9		2.0	1282.1		-8.5	1283.8		3.5	1282.9	LBKF
-1.26	1283.55	X3	3.54	1282.68	X3	5.4	1281.8		17.3	1282.8		11.5	1282.5		7.0	1281.5		-6.5	1283.0		10.0	1281.7	
-0.07	1283.33	X3	11.16	1282.39	X3	11.6	1282.4		24.3	1283.5		19.5	1282.9		17.0	1281.6		-2.5	1282.0		30.8	1281.1	
2.74	1282.74	X3	22.59	1283.53	X3	16.8	1282.9		31.6	1283.0		24.5	1283.2	top bar	31.0	1282.5		1.5	1281.8		47.0	1280.4	
3.91	1282.59	X3	32.24	1283.47	X3	25.8	1283.4		36.0	1282.2		31.5	1282.8		35.4	1281.8		13.5	1282.0		52.0	1278.2	
19	1283.29	X3	36.29	1282.76	X3	35.5	1282.3		37.4	1281.2		36.5	1281.7		36.9	1280.8		26.5	1282.1		62.2	1279.6	
28.28	1283.43	X3	43.49	1280.97	X3	40.6	1280.7		39.3	1280.3	Water	40.5	1280.9		38.0	1280.2		31.5	1281.8		62.8	1279.7	
32.56	1283.05	X3W	45.22	1280.14	X3W	42.7	1280.3		41.0	1280.0		43.5	1280.4	lew	42.0	1279.9		36.5	1281.2		65.4	1280.3	
37.28	1282.37	X3	47.16	1279.86	X3	44.1	1280.1		45.0	1280.0		46.5	1279.2		50.0	1277.9		37.1	1281.0		68.3	1280.8	
38.56	1281.75	X3	51.4	1278.84	X3	45.9	1279.7		48.6	1279.4		49.5	1278.8		56.7	1278.0		43.5	1280.5		71.0	1281.0	
41.23	1280.84	X3	53.23	1278.55	X3	47.8	1279.4		54.2	1277.7		51.5	1278.3		61.0	1279.0		45.5	1279.9		80.0	1282.1	
42.91	1280.29	X3	55.29	1277.87	X3	50.7	1278.7		59.6	1278.3		53.5	1277.9		69.4	1280.1		47.5	1279.5		89.0	1286.5	RBKF
44.19	1279.97	X3	56.76	1277.86	X3	53.5	1278.4		65.1	1278.8		55.5	1277.7		72.5	1280.9		49.5	1278.3		95.0	1286.5	
45.45	1279.82	X3	58.92	1278.12	X3	54.8	1277.4		68.2	1279.4		57.5	1277.7		73.3	1281.4		51.5	1277.5		97.0	1286.6	
47.46	1279.57	X3	58.93	1278.12	X3	56.1	1277.4		74.6	1280.4	Water	58.5	1277.7		77.3	1282.3		55.5	1277.7				
49.24	1279.4	X3	59.81	1278.09	X3	60.2	1277.8		76.2	1282.5		62.5	1278.2		82.0	1283.0		57.5	1278.1				
51.43	1278.79	X3	62.99	1279.7	X3	62.5	1278.2		82.3	1283.3		66.5	1279.9		89.0	1286.1		60.5	1279.2				
53.66	1277.99	X3	63.56	1278.02	X3	64.5	1278.5		86.5	1285.0		69.5	1279.8		97.0	1286.7		61.0	1279.5				
55.39	1277.66	X3	65.9	1281.18	X3	65.6	1280.7		89.3	1285.9		72.5	1279.7		104.0	1287.0	Right Pin	61.5	1279.6				
56.89	1277.41	X3	67.73	1279.02	X3	66.6	1281.2		96.0	1286.4		74.5	1280.4	rew	113.2	1297.8		67.0	1280.8				
58.28	1277.38	X3	71.63	1279.58	X3	69.4	1280.5		107.2	1287.0		77.0	1281.4					68.5	1280.9				
60.15	1277.22	X3W	74.35	1280.2	X3W	69.9	1279.2		114.0	1287.8	Right Pin	79.8	1282.8					70.5	1281.1				
61.6	1277.59	X3	77.6	1281.34	X3	73.4	1279.4		118.3	1288.2		88.7	1286.1					72.0	1281.4				
62.47	1280.3	X3	78.28	1283	X3	74.0	1279.8					94.5	1286.1					75.5	1282.0				
64.98	1279.99	X3	80.96	1284.3	X3	74.0	1280.6					103.5	1286.8					79.5	1282.5				
65.74	1280.21	X3	86.39	1285.87	X3	74.9	1280.9					114.0	1287.8	Right Pin				82.0	1282.7				
68.22	1281.16	X3	93.51	1286.16	X3	75.5	1281.5					114.0	1287.7					87.5	1286.1				
69.88	1279.2	X3LP	100.09	1286.73	X3LP	77.0	1281.7											90.5	1286.7				
71.06	1279.34	X3RP	114.01	1287.96	X3RP	78.0	1282.4											91.0	1286.6				
73.84	1279.69	X3RP	114.13	1287.96	X3RP	79.6	1282.9											94.2	1286.6				
74.49	1279.99					80.1	1283.8			0.0								94.2	1286.7				
75.61	1281.44		left 8.6 feet			83.4	1285.3											94.2	1286.6				
76.7	1282.05					88.8	1286.2																
77.6	1282.6					89.7	1286.0																
81.11	1283.62					95.3	1286.2																
87.5	1284.97					107.2	1287.1																
108.96	1287.38					114.0	1287.8																
114.07	1287.88																						

Photo of Cross-Section 3 - Reach 4 - Looking Downstream @ STA 16+35

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	151.2	161.1	161.8	162.2	173.0	181.3	170.0	183.9
Width	52.8	53.8	50.7	58.0	61.3	65.0	66.0	70.0
Mean Depth	2.9	3.0	3.2	2.8	2.8	2.8	2.6	2.6
Max Depth	6.0	5.9	5.5	5.5	5.6	5.4	5.7	5.0
W/D	18.5	18.0	15.9	20.7	21.7	23.3	25.6	26.7

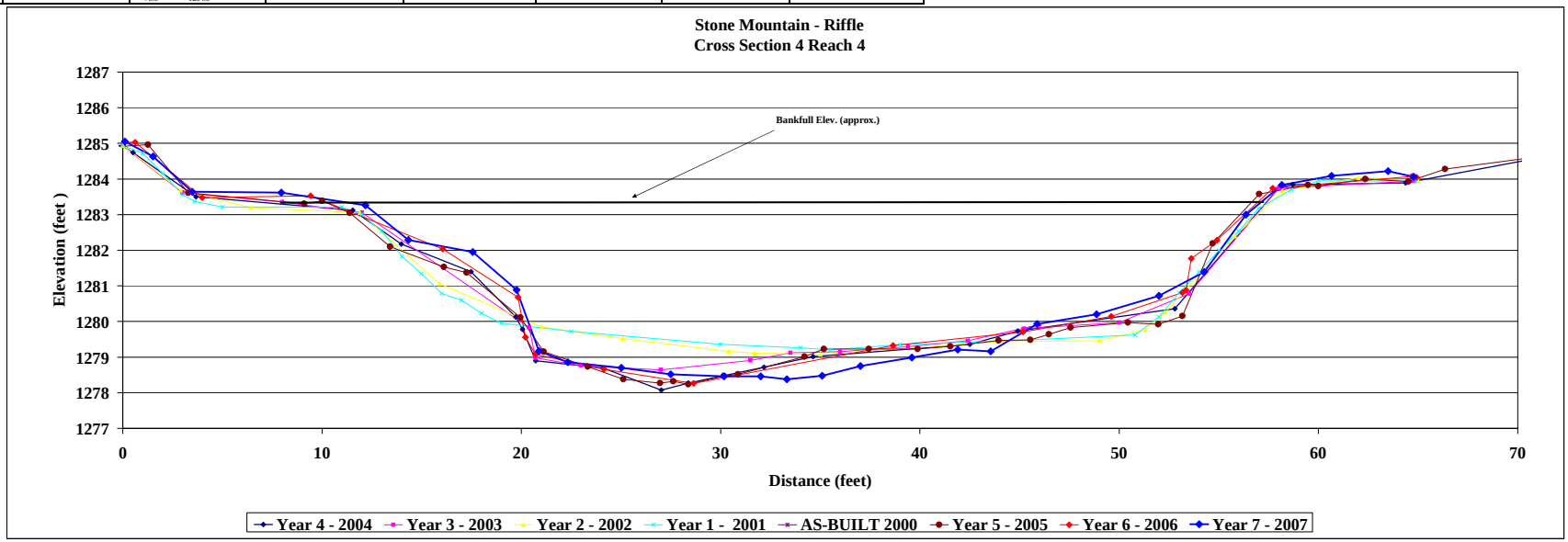


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 4
Feature	Riffle
Date	7/30/07
Crew	Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2004 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
0.1	1285.05	X4LP	0.1	1285.0	X4LP	-5.0	1285.3		-47.0	1287.2		0.0	1284.9	Left Pin	0.0	1284.9	Left Pin	0.0	1284.9	Left Pin			
1.52	1284.63		0.6	1285.0	X4LP	-1.4	1285.2		-28.9	1287.3		3.0	1283.6		2.9	1283.7		1.0	1284.7				
3.49	1283.64		4.0	1283.5	X4	-0.1	1284.9		-17.6	1285.8		8.0	1283.4		6.4	1283.2		2.0	1284.2				
7.96	1283.62		9.4	1283.5	X4	1.3	1285.0	Left Pin	0.0	1284.9	Left Pin	12.0	1283.1		11.9	1283.1		3.0	1283.6				
12.18	1283.26		16.1	1282.0	X4	3.3	1283.6		0.5	1284.7		20.4	1279.8		15.9	1281.1		3.6	1283.4				
14.33	1282.29		19.8	1280.7	X4	9.1	1283.3		3.7	1283.5		20.7	1279.0		21.0	1279.9		5.0	1283.2				
17.56	1281.95		20.2	1279.6	X4W	10.0	1283.4		11.5	1283.1		23.0	1278.8		25.1	1279.5		11.0	1283.2	LBKF			
19.76	1280.89		20.7	1279.1	X4	11.4	1283.1		14.0	1282.2		27.0	1278.6		30.4	1279.2		12.0	1283.0				
20.89	1279.17		24.1	1278.7	X4	13.4	1282.1		17.5	1281.4		31.5	1278.9		31.7	1279.1		13.0	1282.5				
22.33	1278.86		28.6	1278.3	X4	16.1	1281.5		19.7	1280.1		33.5	1279.1		35.0	1279.1		14.0	1281.8				
25.02	1278.7		38.7	1279.3	X4	17.3	1281.4	Water	20.1	1279.8	Water	36.0	1279.2		44.0	1279.4		15.0	1281.3				
27.5	1278.52		45.2	1279.7	X4W	20.0	1280.1		20.7	1278.9		39.4	1279.3		49.0	1279.5		16.0	1280.8				
30.16	1278.46		49.6	1280.1	X4	21.1	1279.2		24.1	1278.7		42.4	1279.5		51.3	1279.8		17.0	1280.6				
32.01	1278.46		53.2	1280.8	X4	23.3	1278.7		27.0	1278.1		46.0	1279.9		52.3	1280.3		18.0	1280.2				
33.32	1278.38		53.4	1280.9	X4	25.1	1278.4	Thalweg	28.4	1278.3	Thalweg	45.2	1279.8		55.8	1282.4		19.0	1280.0				
35.1	1278.48		53.6	1281.8	X4	27.0	1278.3		32.2	1278.7		50.0	1280.0		58.2	1283.7		22.5	1279.7				
37.01	1278.75		54.9	1282.3	X4	27.6	1278.3		34.6	1279.0		53.5	1280.8		62.0	1284.0		30.0	1279.4				
39.6	1278.99		57.7	1283.7	X4	28.4	1278.2		42.5	1279.4		58.0	1283.7		65.0	1284.0	Right Pin	34.0	1279.3				
41.9	1279.21		64.7	1284.1	X4RP	30.2	1278.5	Water	44.9	1279.7	Water	64.8	1283.9	Right Pin				35.5	1279.2				
43.55	1279.16		64.9	1284.1	X4	30.9	1278.5		52.8	1280.4								39.0	1279.4				
45.89	1279.93					34.2	1279.0	Bankfull	58.0	1283.8	Bankfull							45.5	1279.5				
48.87	1280.2					35.2	1279.2		58.7	1283.8								50.8	1279.6				
52	1280.72					37.4	1279.2	Right Pin	64.4	1283.9	Right Pin							52.0	1280.1				
54.27	1281.39					39.9	1279.2		71.8	1284.7								53.0	1280.8				
56.37	1283					41.5	1279.3											54.0	1281.4				
58.17	1283.83					44.0	1279.5											55.0	1282.0				
60.66	1284.09					45.5	1279.5											56.0	1282.5				
63.49	1284.22					46.5	1279.6											57.0	1283.2	RBKF			
64.78	1284.06	X4RP				47.6	1279.8											58.6	1283.7				
						50.4	1280.0											60.0	1284.0				
						52.0	1279.9											64.9	1283.9				
						53.2	1280.2																
						54.7	1282.2																
						57.0	1283.6																
						59.5	1283.8																
						60.0	1283.8																
						62.4	1284.0																
						64.5	1283.9																
						66.4	1284.3																
						70.8	1284.6																

Photo of Cross-Section 4 - Reach 4 - Looking Downstream @ STA 20+00

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	143.9	141.2	147.3	141.4	139.5	140.7	139.5	
Width	44.2	45.5	44.7	41.3	45.5	45.9	45.0	
Mean Depth	3.3	3.1	3.3	3.4	3.1	3.1	3.1	
Max Depth	4.7	4.9	4.9	5.0	4.5	4.0	3.9	
W/D	13.6	14.6	13.6	12.0	14.8	15.0	14.5	

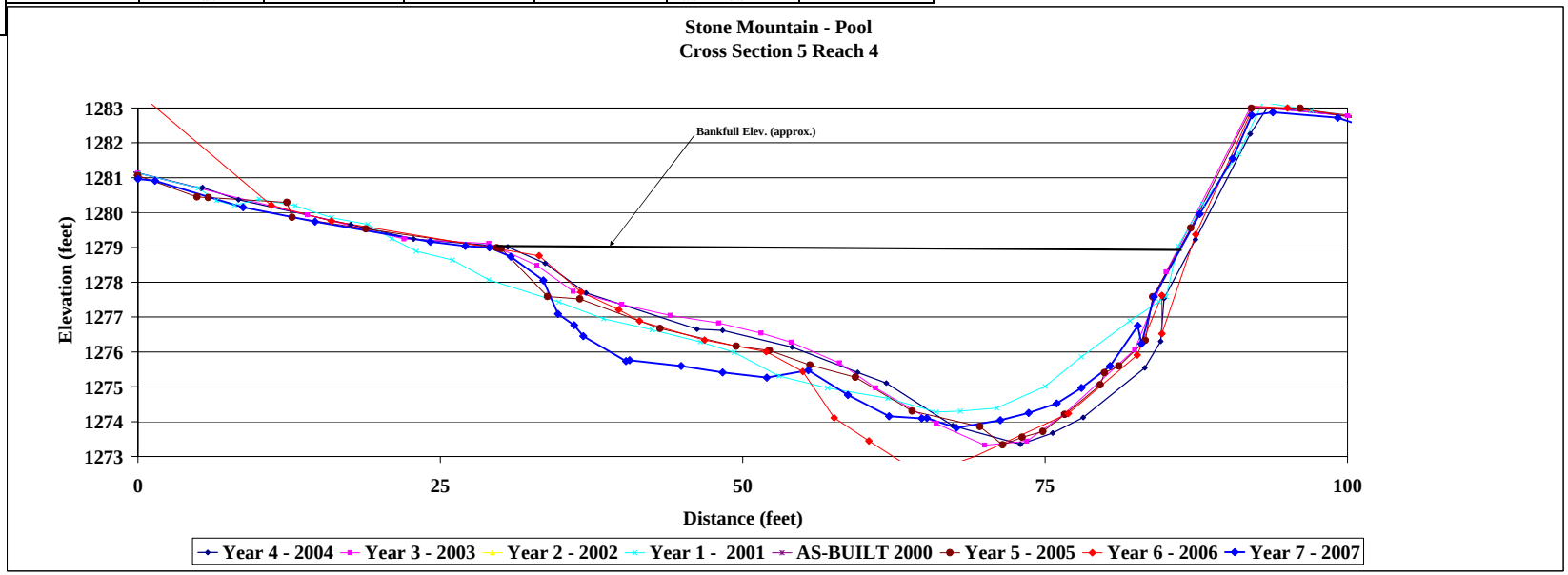


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 5
Feature	Pool
Date	7/30/07
Crew	Price, Roberts

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
0	1280.96	XSLP	0	1283.45	XSLPR4	-11.2	1281.6		-37.8	1280.7		0.0	1281.1					0.0	1281.1				
1.42	1280.91		11.02	1280.21	X5	-1.6	1281.1		-18.3	1281.6		14.0	1279.9					5.0	1280.7				
8.7	1280.15		16.01	1279.76	X5	0.0	1281.1	Left Pin	-7.6	1281.6		22.0	1279.2					6.5	1280.3				
14.65	1279.74		33.16	1278.76	X5	4.9	1280.5		0.0	1281.1	Left Pin	29.0	1279.1					8.0	1280.2				
24.16	1279.16		36.62	1277.72	X5	5.8	1280.4		5.2	1280.7		33.0	1278.5					10.0	1280.4				
27.06	1279.04		39.74	1277.21	X5	12.3	1280.3		5.4	1280.7	Bankfull	36.0	1277.7					13.0	1280.2				
29.06	1279		41.46	1276.89	X5	12.8	1279.9		8.3	1280.4		40.0	1277.4					16.0	1279.9				
30.82	1278.73		46.85	1276.34	X5	18.9	1279.5		17.6	1279.7		44.0	1277.1					19.0	1279.7				
33.53	1278.05		51.94	1276.01	X5W	29.7	1279.0		22.8	1279.2		48.0	1276.8					21.0	1279.3	LBKF			
34.73	1277.09		54.97	1275.44	X5	30.1	1279.0		30.6	1279.0		51.5	1276.5					23.0	1278.9				
36.07	1276.77		57.55	1274.11	X5	33.9	1277.6		33.7	1278.5		54.0	1276.3					26.0	1278.6				
36.81	1276.45		60.43	1273.45	X5	36.6	1277.5		37.0	1277.7		58.0	1275.7					29.0	1278.1				
40.35	1275.74		64.83	1272.47	X5	43.2	1276.7		46.2	1276.7		61.0	1275.0					34.8	1277.4				
40.65	1275.76		69.1	1272.99	X5	49.5	1276.2		48.3	1276.6		66.0	1273.9					38.5	1277.0				
44.91	1275.6		76.91	1274.23	X5	52.2	1276.0		54.1	1276.1		70.0	1273.3					42.5	1276.6				
48.33	1275.41		82.61	1275.91	X5W	55.6	1275.6		59.5	1275.4		73.5	1273.4					46.5	1276.3				
51.99	1275.26		84.64	1277.62	X5	59.3	1275.3		61.9	1275.1		76.5	1274.2					49.3	1276.0				
55.42	1275.47		84.65	1276.52	X5	64.0	1274.3		67.4	1273.9		82.4	1276.1	rew				53.0	1275.3				
58.7	1274.77		87.44	1279.37	X5	69.6	1273.9		73.0	1273.4		85.0	1278.3					57.0	1275.0				
62.09	1274.15		92.25	1283.04	X5	71.5	1273.3		75.6	1273.7		92.0	1283.0	rtob				62.0	1274.7				
64.8	1274.09		92.46	1283.04	X5	73.1	1273.6		78.2	1274.1		100.0	1282.8	tpin				66.0	1274.3				
65.21	1274.1		95.03	1283	X5	74.8	1273.7		83.2	1275.5								68.0	1274.3				
67.67	1273.82		100.83	1282.76	XSRP	76.7	1274.2		84.6	1276.3								71.0	1274.4				
71.29	1274.04		102.71	1282.77	xSr5	79.6	1275.1		84.8	1277.5								75.0	1275.0				
73.65	1274.25					79.9	1275.4		87.4	1279.2								78.0	1275.9				
75.96	1274.52					81.1	1275.6		92.0	1282.3								82.0	1276.9				
78	1274.97		up 0.3 feet			83.3	1276.3		93.4	1283.0								84.4	1277.4				
80.37	1275.6					83.9	1277.6		100.9	1282.8								85.0	1277.6				
82.67	1276.75					87.0	1279.6		101.2	1282.8	Right Pin							86.0	1279.0	RBKF			
82.97	1276.23					92.1	1283.0		109.6	1283.07								88.0	1280.3				
83.99	1277.58					96.1	1283.0		130.2	1283.14								91.0	1281.7				
87.78	1279.96					100.5	1282.7											93.0	1283.2				
90.51	1281.55					106.1	1283.1											97.0	1282.9				
92.08	1282.79					111.4	1283.0											100.8	1282.8				
93.82	1282.88																						
99.19	1282.72																						
100.32	1282.59	XSRP																					

Photo of Cross-Section 5 - Reach 4 - Looking Downstream @ STA 24+10

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	200.4	202.1	184.6	180.7	175.1	183.9	183.6	
Width	59.8	54.5	64.0	54.2	56.0	54.2	60.0	
Mean Depth	3.4	3.7	2.9	3.3	3.1	3.4	3.1	
Max Depth	5.3	6.6	5.8	5.8	5.8	5.8	4.8	
W/D	17.8	14.7	22.2	16.3	17.9	16.0	19.6	

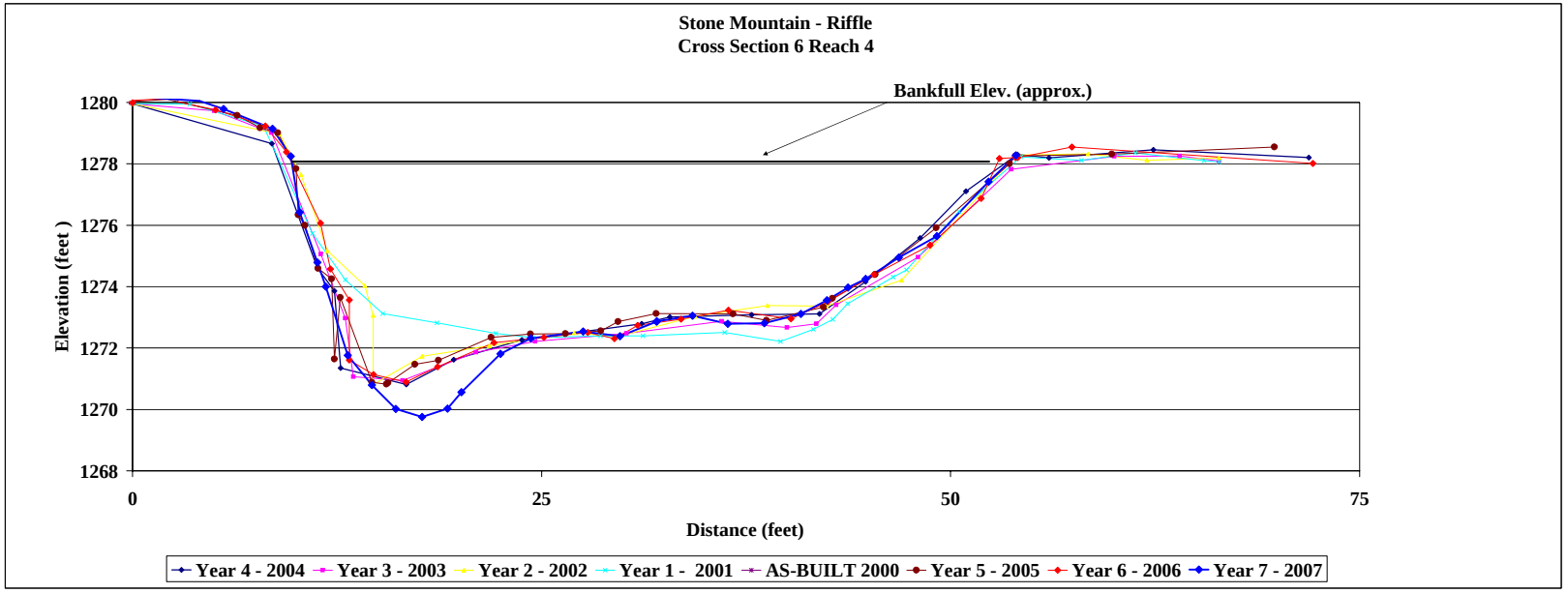


Project Name Stone Mountain
Cross Section Reach 4 Cross-Section 6
Feature Riffle
Date 7/30/07
Crew Price, Roberts

Year 7 - 2007 Survey			Year 6 - 2006 Survey			Year 5 - 2005 Survey			Year 4 - 2004 Survey			Year 3 - 2003 Survey			Year 2 - 2002 Survey			Year 1 - 2001 Survey			AS-BUILT 2000 Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
0	1280.19	X6LP	-24.49	1279.99	x6	-6.6	1279.8		-25.3	1280.1		0.0	1280.0	Left Pin	0.0	1280.0	Left Pin	0.0	1280.0	Left Pin			
4.08	1280.05		-1	1280.05	X6LP	-4.0	1279.9		-4.8	1279.9		5.0	1279.7		9.0	1279.0	LTOB	3.5	1280.0				
5.56	1279.79		0	1279.99	x6lpr4	0.3	1280.0	Left Pin	0.0	1280.0	Left Pin	8.5	1279.0	ltob	10.3	1277.7		8.0	1279.2	LBKF			
8.56	1279.14		0.12	1280.07	x6lp	2.1	1280.1		8.5	1278.7		11.5	1275.1		11.9	1275.2		11.0	1275.7				
9.68	1278.25		2.74	1280.14	x6	6.4	1279.6		11.3	1274.6		13.0	1273.0	lew	14.2	1274.0		13.0	1274.2				
10.23	1276.42		2.79	1280.02	x6	7.8	1279.2		12.4	1273.9		13.5	1271.1		14.7	1273.1		15.3	1273.1				
11.3	1274.79		5.07	1279.76	x6	8.9	1279.0		12.7	1271.4		16.5	1270.9		14.7	1270.8	LEW	18.6	1272.8				
11.82	1274		8.12	1279.23	x6	10.0	1277.8		16.7	1270.8		21.0	1271.9		17.7	1271.7		22.2	1272.5				
13.15	1271.76		9.41	1278.39	x6	10.1	1276.3		19.6	1271.6		24.6	1272.2		21.8	1272.1		24.5	1272.3				
14.63	1270.79		11.49	1276.07	x6	10.5	1276.0		23.8	1272.3		30.2	1272.5		27.0	1272.5		28.6	1272.4				
16.09	1270.02		12.1	1274.57	x6	11.3	1274.6		31.1	1272.8		36.0	1272.9		29.6	1272.4		31.2	1272.4				
17.7	1269.75		13.26	1273.57	x6	12.2	1274.3	Water	32.9	1273.0	Water	40.0	1272.7		34.4	1273.0		36.2	1272.5				
19.25	1270.03		13.26	1271.61	x6	12.3	1271.6		37.9	1273.1		41.8	1272.8	rew	38.8	1273.4		39.6	1272.2				
20.11	1270.56		14.72	1271.14	x6	12.7	1273.7		42.0	1273.1		43.0	1273.4		42.4	1273.4		41.6	1272.6				
22.49	1271.81		16.72	1270.89	x6	14.6	1270.9		44.8	1274.2		48.0	1275.0		47.0	1274.2		42.8	1272.9				
24.35	1272.32		18.64	1271.39	x6	15.5	1270.8		48.1	1275.6		53.7	1277.8	rtob	54.0	1278.3	RTOB	43.7	1273.5				
27.55	1272.54		22.1	1272.17	x6	15.6	1270.9		50.9	1277.1		60.0	1278.3		58.4	1278.3		46.5	1274.3				
29.8	1272.39		25.13	1272.35	x6	17.3	1271.5	Right Pin	54.1	1278.3	Right Pin	64.0	1278.3		62.0	1278.1		47.3	1274.5				
32.02	1272.86		27.83	1272.51	x6	18.7	1271.6		56.0	1278.2		66.4	1278.1		66.4	1278.2		50.5	1276.5				
32.04	1272.87		29.45	1272.31	x6	21.9	1272.4		62.4	1278.5								54.3	1278.2	RBKF			
34.22	1273.05		30.88	1272.74	x6w	24.3	1272.5		71.9	1278.2								58.0	1278.1				
36.39	1272.79		33.53	1272.94	x6	26.5	1272.5											61.3	1278.4				
38.62	1272.81		36.42	1273.23	x6	28.6	1272.6											65.5	1278.1				
40.85	1273.11		40.24	1272.95	x6	29.7	1272.9											66.4	1278.1				
42.45	1273.56		42.49	1273.51	x6	32.0	1273.1																
43.72	1273.97		45.32	1274.39	x6	36.7	1273.1																
44.81	1274.25		48.75	1275.35	x6	38.7	1272.9																
46.83	1274.95		51.87	1276.87	x6	42.2	1273.3																
49.17	1275.64		52.98	1278.17	X6RP	42.8	1273.6																
52.32	1277.42		53.97	1278.21	x6rpr4	45.4	1274.4																
53.99	1278.28	x6rp	54.1	1278.2	x6rp	49.1	1275.9																
lowered 0.3 feet			57.42	1278.55	x6	53.6	1278.0																
			72.15	1278.01	x6	54.0	1278.3																
			lowered 0.3 feet			59.9	1278.3																
						69.8	1278.6																

Photo of Cross-Section 6 - Reach 4 - Looking Downstream @ STA 26+70

	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	224.5	212.1	210.3	223.1		193.4	210.1	
Width	42.6	44.7	44.7	45.2		36.7	46.3	
Mean Depth	5.3	4.7	4.7	4.9		5.3	4.5	
Max Depth	8.5	7.3	7.4	7.3		7.4	6.0	
W/D	8.1	9.4	9.5	9.2		7.0	10.2	



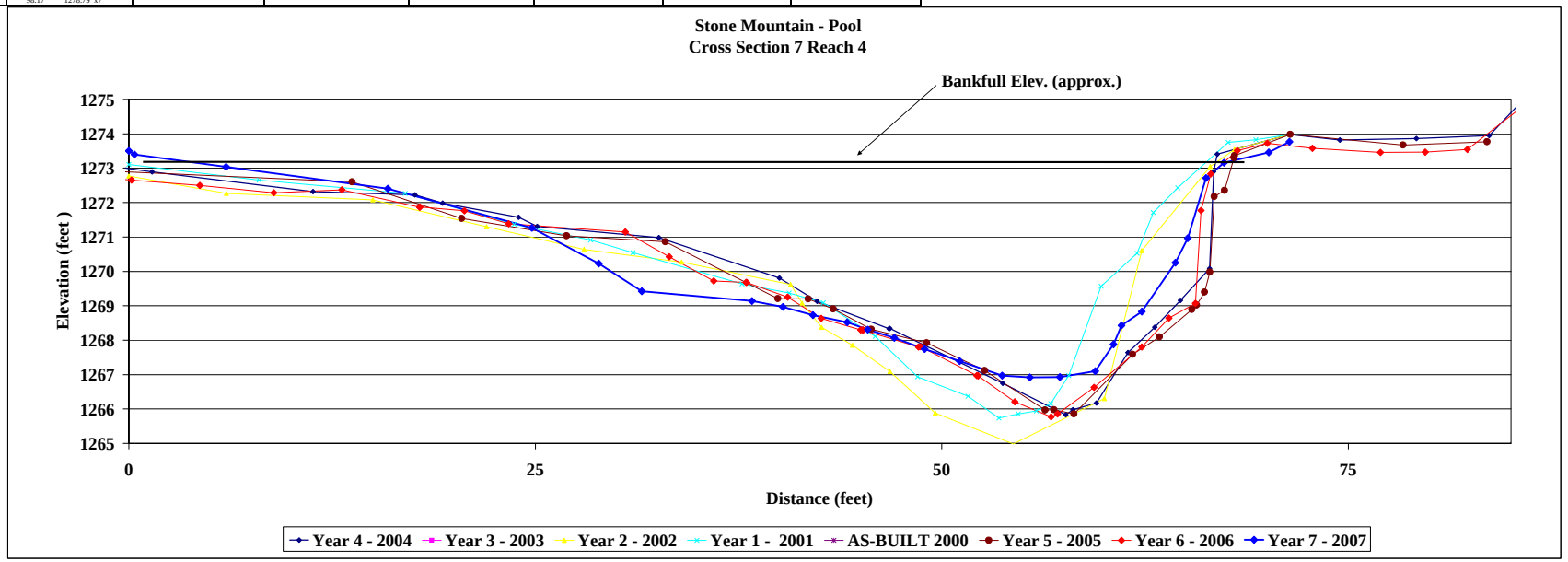
Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 7
Feature	Pool
Date	7/30/07
Crew	Price, Roberts

***NOTE: The left pin was replaced in 2007 because the original pin was buried during repair work completed that year.**

Year 7 - 2007 2007 Survey			Year 6 - 2006 2006 Survey			Year 5 - 2005 2005 Survey			Year 4 - 2004 2004 Survey			Year 3 - 2003 2003 Survey			Year 2 - 2002 2002 Survey			Year 1 - 2001 2001 Survey			AS-BUILT 2000 AS-BUILT Survey		
Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes	Station	Elev	Notes
0	1273.5	x7lpnew	-17.7	1273.8	x7	-19.4	1274.3		-22.6	1274.3					0.0	1272.8		0.0	1273.1	LBKF			
0.35	1273.4		-7.3	1273.2	x7	-11.6	1273.7		-10.5	1273.7					6.0	1272.3		8.0	1272.7				
5.98	1273.04		-1.8	1272.7	x7lp	-3.0	1273.0		1.4	1272.9					15.0	1272.1		17.0	1272.3				
15.93	1272.4		0.2	1272.7	x7	13.7	1272.6		11.3	1272.3					22.0	1271.3		23.7	1271.4				
24.79	1271.26		4.4	1272.5	x7	20.5	1271.5		17.6	1272.2	Bankfull				28.0	1270.6		28.4	1270.9				
28.9	1270.23		8.9	1272.3	x7	26.9	1271.0		19.3	1272.0					34.0	1270.3		31.0	1270.5				
31.54	1269.42		13.1	1272.4	x7	33.0	1270.9		24.0	1271.6					40.7	1269.6		37.7	1269.6				
38.33	1269.14		17.9	1271.9	x7	39.9	1269.2		25.1	1271.3					41.4	1269.1	LEW	40.6	1269.4				
40.23	1268.97		17.9	1271.9	x7	41.8	1269.2		32.6	1271.0					42.6	1268.4		42.7	1269.1				
42.07	1268.73		20.6	1271.8	x7	43.3	1268.9		40.0	1269.8					44.5	1267.9		45.9	1268.1				
44.17	1268.52		23.4	1271.4	x7bkf	45.7	1268.3		42.3	1269.1	Water				46.8	1267.1		48.5	1266.9				
45.44	1268.31		30.5	1271.1	x7	49.1	1267.9		46.8	1268.3					49.6	1265.9		51.6	1266.4				
47.08	1268.07		33.2	1270.4	x7	52.6	1267.1		46.8	1268.3					54.4	1265.0		53.5	1265.7				
48.95	1267.74		36.0	1269.7	x7	56.4	1266.0		53.7	1266.8					60.0	1266.3		54.7	1265.9				
51.1	1267.39		38.0	1269.7	x7	56.9	1266.0		57.6	1265.8	Max Pool				62.3	1270.6		55.8	1265.9				
53.7	1266.97		38.0	1269.7	x7	58.1	1265.9		58.1	1266.0					66.5	1273.1	RTOB	56.7	1266.2				
55.41	1266.92		40.5	1269.3	x7	61.7	1267.6		59.5	1266.2					68.0	1273.5		57.8	1267.0				
57.25	1266.93		42.6	1268.6	x7w	63.4	1268.1		61.4	1267.6					71.4	1274.0	RPIN	59.8	1269.6				
59.44	1267.1		45.0	1268.3	x7	65.4	1268.9		63.1	1268.4								62.0	1270.5				
60.55	1267.88		45.1	1268.3	x7	65.7	1269.0		64.7	1269.2	Water							63.0	1271.7				
61.05	1268.43		45.2	1268.3	x7	66.2	1269.4		66.5	1270.1								64.5	1272.4				
62.3	1268.83		48.6	1267.8	x7	66.5	1270.0		66.7	1272.9								67.6	1273.8	RBKF			
64.36	1270.25		48.7	1267.8	x7	66.8	1272.2		66.9	1273.4								69.3	1273.8				
65.13	1270.96		52.2	1267.0	x7	67.4	1272.4		71.4	1274.0	Right Pin							71.4	1274.0				
66.25	1272.71		52.2	1267.0	x7	68.0	1273.3		74.5	1273.8													
67.35	1273.16		54.5	1266.2	x7	68.0	1273.4		79.2	1273.9													
70.1	1273.46		56.7	1265.8	x7	71.4	1274.0		83.7	1274.0													
71.38	1273.77	x7rp	57.1	1265.9	x7	78.4	1273.7		93.7	1278.9													
			59.4	1266.6	x7	83.5	1273.8		113.2	1279.0													
			62.3	1267.8	x7				132.16	1279.55													
			63.96	1268.64	x7																		
			65.59	1269.07	x7																		
			65.93	1271.77	x7																		
			66.53	1272.83	x7																		
			68.17	1273.51	x7																		
			70.01	1273.72	x7rp																		
			72.78	1273.58	x7																		
			76.97	1273.46	x7																		
			79.72	1273.47	x7																		
			82.31	1273.54	x7																		
			86.09	1274.93	x7																		
			91.25	1278.5	x7																		
			92.65	1278.82	x7																		
			98.17	1278.79	x7																		

Photo of Cross-Section 7 - Reach 4 - Looking Downstream @ STA 32+70

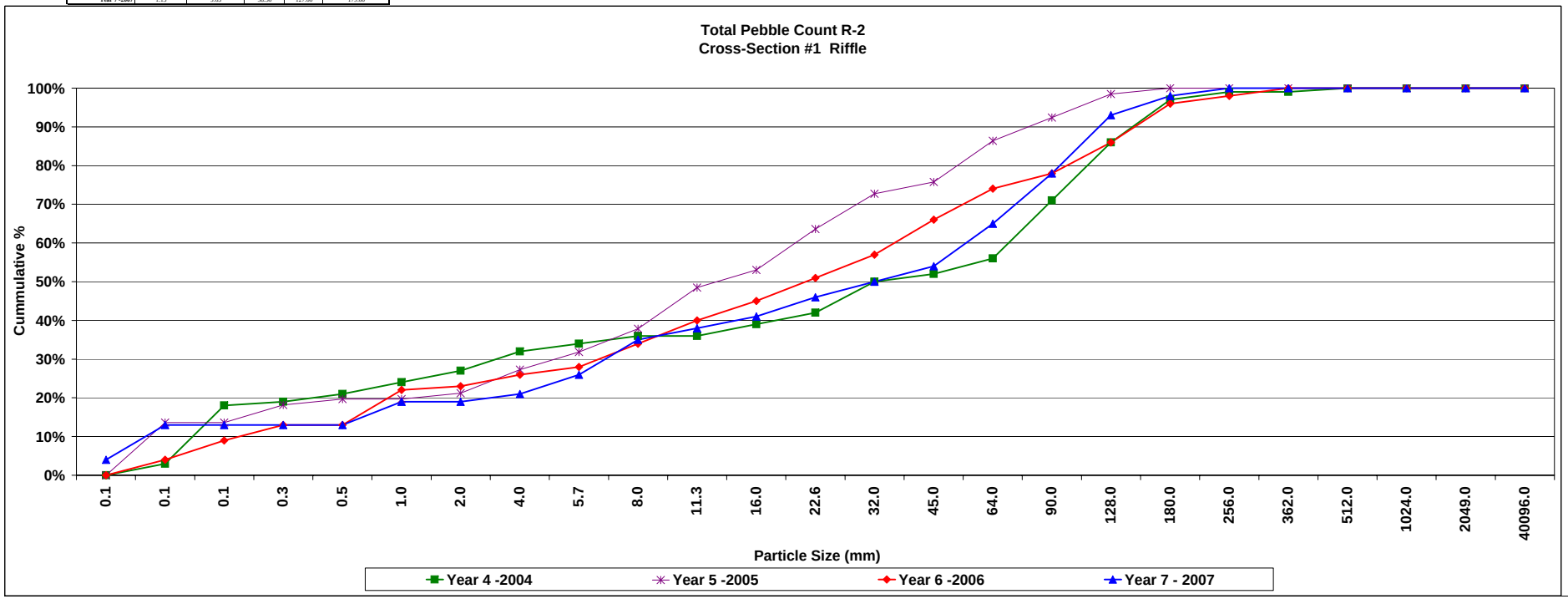
	Year 7 - 2007	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	201.7	214.6	210.1	201.7		221.1	188.6	
Width	67.0	73.9	79.0	71.3		66.5	64.5	
Mean Depth	3.0	2.7	2.7	2.8		3.1	2.6	
Max Depth	6.3	7.4	7.3	7.4		8.2	7.5	
W/D	22.3	25.4	25.4	25.5		23.4	27.4	



Project Name	Stone Mountain Reach 2
Cross Section	#1
Feature	Riffle
Date	8/1/07
Crew	Roberts, Price, George

			As-Built -2000			Year 4 -2004				Year 5 -2005				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	1	100.0%	100.0%	0	0	0.00	0.0	0	0	0.0%	0.0%	0	0	0.0%	0.0%	4	0	4.0%	4.0%
Sand	very fine sand	0.062	0	0.0%	100.0%	3	0	0.03	0.0	9	0	13.6%	13.6%	4	0	4.0%	4.0%	6	3	9.0%	13.0%
	fine sand	0.125	0	0.0%	100.0%	12	3	0.15	0.2	0	0	0.0%	13.6%	4	1	5.0%	9.0%	0	0	0.0%	13.0%
	medium sand	0.25	0	0.0%	100.0%	0	1	0.01	0.2	1	2	4.5%	18.2%	2	2	4.0%	13.0%	0	0	0.0%	13.0%
	course sand	0.50	0	0.0%	100.0%	0	2	0.02	0.2	0	1	1.5%	19.7%	0	0	0.0%	13.0%	0	0	0.0%	13.0%
	very course sand	1.0	0	0.0%	100.0%	0	3	0.03	0.2	0	0	0.0%	19.7%	0	9	9.0%	22.0%	0	6	6.0%	19.0%
G r a v e l	very fine gravel	2.0	0	0.0%	100.0%	0	3	0.03	0.3	0	1	1.5%	21.2%	0	1	1.0%	23.0%	0	0	0.0%	19.0%
	fine gravel	4.0	0	0.0%	100.0%	0	5	0.05	0.3	0	4	6.1%	27.3%	0	3	3.0%	26.0%	0	2	2.0%	21.0%
	fine gravel	5.7	0	0.0%	100.0%	0	2	0.02	0.3	0	3	4.5%	31.8%	0	2	2.0%	28.0%	0	5	5.0%	26.0%
	medium gravel	8.0	0	0.0%	100.0%	0	2	0.02	0.4	0	4	6.1%	37.9%	0	6	6.0%	34.0%	0	9	9.0%	35.0%
	medium gravel	11.3	0	0.0%	100.0%	0	0	0.00	0.4	0	7	10.6%	48.5%	0	6	6.0%	40.0%	0	3	3.0%	38.0%
	course gravel	16.0	0	0.0%	100.0%	0	3	0.03	0.4	0	3	4.5%	53.0%	0	5	5.0%	45.0%	0	3	3.0%	41.0%
	course gravel	22.6	0	0.0%	100.0%	0	3	0.03	0.4	0	7	10.6%	63.6%	0	6	6.0%	51.0%	0	5	5.0%	46.0%
	very course gravel	32	0	0.0%	100.0%	0	8	0.08	0.5	0	6	9.1%	72.7%	0	6	6.0%	57.0%	0	4	4.0%	50.0%
	very course gravel	45	0	0.0%	100.0%	0	2	0.02	0.5	0	2	3.0%	75.8%	0	9	9.0%	66.0%	0	4	4.0%	54.0%
Cobble	small cobble	64	0	0.0%	100.0%	0	4	0.04	0.6	0	7	10.6%	86.4%	0	8	8.0%	74.0%	0	11	11.0%	65.0%
	medium cobble	90	0	0.0%	100.0%	0	15	0.15	0.7	0	4	6.1%	92.4%	0	4	4.0%	78.0%	0	13	13.0%	78.0%
	large cobble	128	0	0.0%	100.0%	0	15	0.15	0.9	0	4	6.1%	98.5%	0	8	8.0%	86.0%	0	15	15.0%	93.0%
	very large cobble	180	0	0.0%	100.0%	0	11	0.11	1.0	0	1	1.5%	100.0%	0	10	10.0%	96.0%	0	5	5.0%	98.0%
Boulder	small boulder	256	0	0.0%	100.0%	0	2	0.02	1.0	0	0	0.0%	100.0%	0	2	2.0%	98.0%	0	2	2.0%	100.0%
	small boulder	362	0	0.0%	100.0%	0	0	0.00	1.0	0	0	0.0%	100.0%	0	2	2.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0.0%	100.0%	0	1	0.01	1.0	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0	0.00	1.0	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0	0.00	1.0	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0	0.00	1.0	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
TOTAL / %of whole count			1	100.0%		15	85	100.0%		10	56	100.0%		10	90	100.0%		10	90	100.0%	

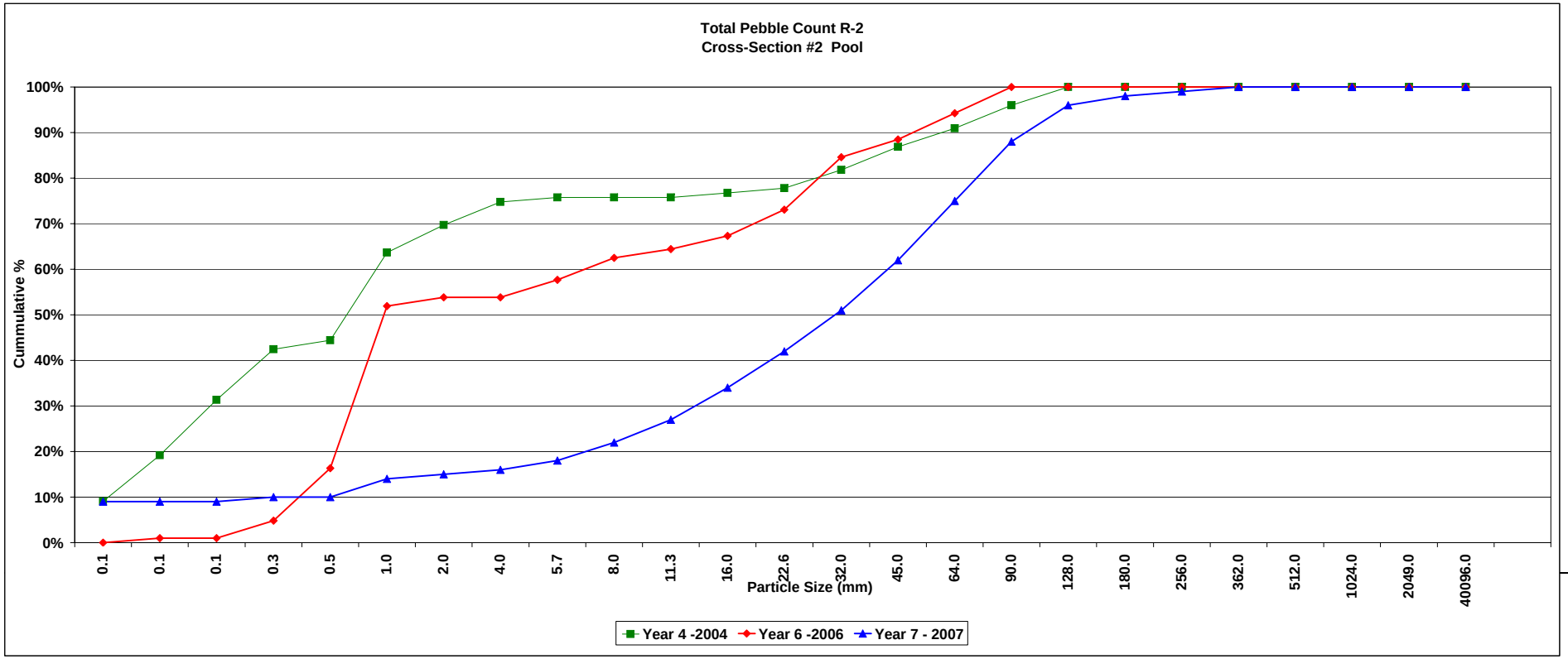
	d16	**d35**	**d50**	**d84**	**d95**
Year 4 -2004	0.17	8.25	38.50	148.08	206.36
Year 5 -2005	0.29	8.32	15.53	71.99	128.13
Year 6 -2006	1.00	10.32	25.97	142.75	211.60
Year 7 -2007	1.13	9.65	38.50	127.00	179.60



Project Name	Stone Mountain Reach 2
Cross Section	#2
Feature	Pool
Date	7/31/07
Crew	Roberts, Price, George

		As-Built -2000				Year 4 -2004				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Pool - Bed**	**%**	**Cum %**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**	**- Bank**	**- Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	1	100.0%	100.0%	9	0	9.1%	9.1%	0	0	0.0%	0.0%	9	0	9.0%	9.0%
Sand	very fine sand	0.062	0	0.0%	100.0%	10	0	10.1%	19.2%	1	0	1.0%	1.0%	0	0	0.0%	9.0%
	fine sand	0.125	0	0.0%	100.0%	10	2	12.1%	31.3%	0	0	0.0%	1.0%	0	0	0.0%	9.0%
	medium sand	0.25	0	0.0%	100.0%	10	1	11.1%	42.4%	2	2	3.8%	4.8%	1	0	1.0%	10.0%
	course sand	0.50	0	0.0%	100.0%	0	2	2.0%	44.4%	2	10	11.5%	16.3%	0	0	0.0%	10.0%
	very course sand	1.0	0	0.0%	100.0%	0	19	19.2%	63.6%	16	21	35.6%	51.9%	0	4	4.0%	14.0%
G r a v e l	very fine gravel	2.0	0	0.0%	100.0%	0	6	6.1%	69.7%	2	0	1.9%	53.8%	0	1	1.0%	15.0%
	fine gravel	4.0	0	0.0%	100.0%	0	5	5.1%	74.7%	0	0	0.0%	53.8%	0	1	1.0%	16.0%
	fine gravel	5.7	0	0.0%	100.0%	0	1	1.0%	75.8%	0	4	3.8%	57.7%	0	2	2.0%	18.0%
	medium gravel	8.0	0	0.0%	100.0%	0	0	0.0%	75.8%	1	4	4.8%	62.5%	0	4	4.0%	22.0%
	medium gravel	11.3	0	0.0%	100.0%	0	0	0.0%	75.8%	0	2	1.9%	64.4%	0	5	5.0%	27.0%
	course gravel	16.0	0	0.0%	100.0%	0	1	1.0%	76.8%	1	2	2.9%	67.3%	0	7	7.0%	34.0%
	course gravel	22.6	0	0.0%	100.0%	0	1	1.0%	77.8%	2	4	5.8%	73.1%	0	8	8.0%	42.0%
	very course gravel	32	0	0.0%	100.0%	0	4	4.0%	81.8%	2	10	11.5%	84.6%	0	9	9.0%	51.0%
	very course gravel	45	0	0.0%	100.0%	0	5	5.1%	86.9%	0	4	3.8%	88.5%	0	11	11.0%	62.0%
Cobble	small cobble	64	0	0.0%	100.0%	0	4	4.0%	90.9%	2	4	5.8%	94.2%	0	13	13.0%	75.0%
	medium cobble	90	0	0.0%	100.0%	0	5	5.1%	96.0%	1	5	5.8%	100.0%	0	13	13.0%	88.0%
	large cobble	128	0	0.0%	100.0%	0	4	4.0%	100.0%	0	0	0.0%	100.0%	0	8	8.0%	96.0%
	very large cobble	180	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	2	2.0%	98.0%
Boulder	small boulder	256	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	1	1.0%	99.0%
	small boulder	362	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	1	1.0%	100.0%
	medium boulder	512	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
TOTAL / %of whole count			1	100.0%		39	60	100.0%		32	72	100.0%		10	90	100.0%	

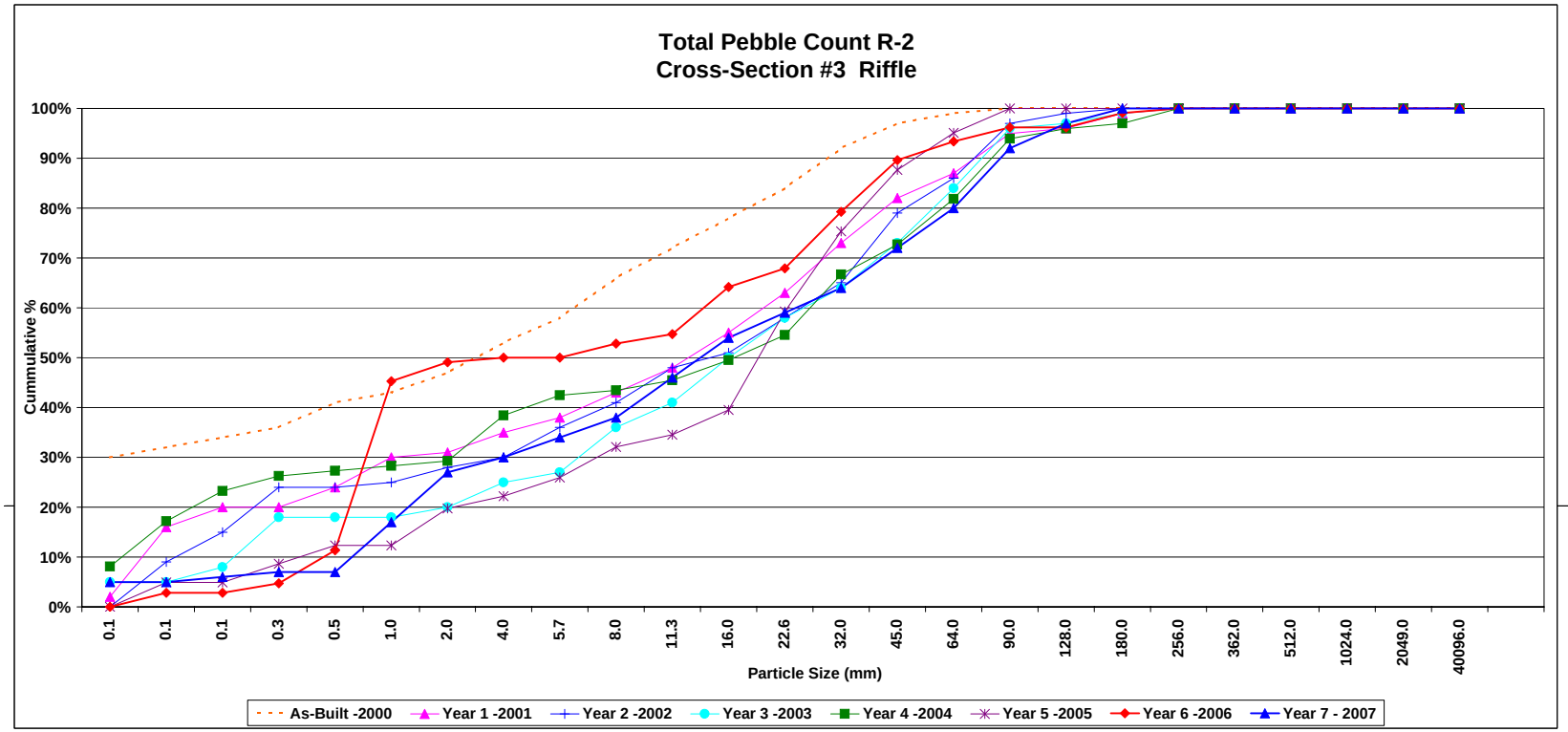
	d16	**d35**	**d50**	**d84**	**d95**
Year 4 -2004	0.32	1.00	3.54	90.82	205.84
Year 6 -2006	1.48	2.29	2.92	75.80	162.53
Year 7 -2007	4.85	20.30	37.26	99.15	148.38



Project Name	Stone Mountain Reach 2
Cross Section	#3
Feature	Riffle
Date	8/1/07
Crew	Roberts, Price, George

			As-Built -2000			Year 1 -2001			Year 2 -2002			Year 3 -2003			Year 4 -2004				Year 5 -2005				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle**	**%**	**Cum %**	**Riffle**	**%**	**Cum %**	**Riffle**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**- Bank**	**- Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	30	30.0%	30.0%	0	0.0%	0.0%	0	0.0%	0.0%	5	5.00%	5.0%	8	0	8.1%	8.1%	0	0	0.0%	0.0%	0	0	0.0%	0.0%	5	0	5.0%	5.0%
Sand	very fine sand	0.062	2	2.0%	32.0%	4	4.0%	4.0%	9	9.0%	9.0%	0	0.00%	5.0%	9	0	9.1%	17.2%	4	0	4.9%	4.9%	1	2	2.8%	2.8%	0	0	0.0%	5.0%
	fine sand	0.125	2	2.0%	34.0%	7	7.0%	11.0%	6	6.0%	15.0%	3	3.00%	8.0%	4	2	6.1%	23.2%	0	0	0.0%	4.9%	0	0	0.0%	2.8%	1	0	1.0%	6.0%
	medium sand	0.25	2	2.0%	36.0%	4	4.0%	15.0%	9	9.0%	24.0%	10	10.00%	18.0%	0	3	3.0%	26.3%	2	1	3.7%	8.6%	2	0	1.9%	4.7%	1	0	1.0%	7.0%
	course sand	0.50	5	5.0%	41.0%	2	2.0%	17.0%	0	0.0%	24.0%	0	0.00%	18.0%	0	1	1.0%	27.3%	0	3	3.7%	12.3%	2	5	6.6%	11.3%	0	0	0.0%	7.0%
	very course sand	1.0	2	2.0%	43.0%	0	0.0%	17.0%	1	1.0%	25.0%	0	0.00%	18.0%	0	1	1.0%	28.3%	0	0	0.0%	12.3%	16	20	34.0%	45.3%	3	7	10.0%	17.0%
G r a v e l	very fine gravel	2.0	4	4.0%	47.0%	3	3.0%	20.0%	3	3.0%	28.0%	2	2.00%	20.0%	0	1	1.0%	29.3%	0	6	7.4%	19.8%	2	2	3.8%	49.1%	0	10	10.0%	27.0%
	fine gravel	4.0	6	6.0%	53.0%	5	5.0%	25.0%	2	2.0%	30.0%	5	5.00%	25.0%	0	9	9.1%	38.4%	0	2	2.5%	22.2%	0	1	0.9%	50.0%	0	3	3.0%	30.0%
	fine gravel	5.7	5	5.0%	58.0%	7	7.0%	32.0%	6	6.0%	36.0%	2	2.00%	27.0%	0	4	4.0%	42.4%	2	1	3.7%	25.9%	0	0	0.0%	50.0%	0	4	4.0%	34.0%
	medium gravel	8.0	8	8.0%	66.0%	7	7.0%	39.0%	5	5.0%	41.0%	9	9.00%	36.0%	0	1	1.0%	43.4%	1	4	6.2%	32.1%	1	2	2.8%	52.8%	0	4	4.0%	38.0%
	medium gravel	11.3	6	6.0%	72.0%	5	5.0%	44.0%	7	7.0%	48.0%	5	5.00%	41.0%	0	2	2.0%	45.5%	0	2	2.5%	34.6%	0	2	1.9%	54.7%	0	8	8.0%	46.0%
	course gravel	16.0	6	6.0%	78.0%	7	7.0%	51.0%	3	3.0%	51.0%	9	9.00%	50.0%	0	4	4.0%	49.5%	0	4	4.9%	39.5%	1	9	9.4%	64.2%	0	8	8.0%	54.0%
	course gravel	22.6	6	6.0%	84.0%	8	8.0%	59.0%	7	7.0%	58.0%	8	8.00%	58.0%	0	5	5.1%	54.5%	1	15	19.8%	59.3%	2	2	3.8%	67.9%	0	5	5.0%	59.0%
	very course gravel	32	8	8.0%	92.0%	10	10.0%	69.0%	7	7.0%	65.0%	6	6.00%	64.0%	0	12	12.1%	66.7%	1	12	16.0%	75.3%	2	10	11.3%	79.2%	0	5	5.0%	64.0%
	very course gravel	45	5	5.0%	97.0%	16	16.0%	85.0%	14	14.0%	79.0%	9	9.00%	73.0%	0	6	6.1%	72.7%	1	9	12.3%	87.7%	0	11	10.4%	89.6%	0	8	8.0%	72.0%
Cobble	small cobble	64	2	2.0%	99.0%	7	7.0%	92.0%	7	7.0%	86.0%	11	11.00%	84.0%	0	9	9.1%	81.8%	0	6	7.4%	95.1%	2	2	3.8%	93.4%	0	8	8.0%	80.0%
	medium cobble	90	1	1.0%	100.0%	5	5.0%	97.0%	11	11.0%	97.0%	12	12.00%	96.0%	0	12	12.1%	93.9%	0	4	4.9%	100.0%	1	2	2.8%	96.2%	0	12	12.0%	92.0%
	large cobble	128	0	0.0%	100.0%	3	3.0%	100.0%	2	2.0%	99.0%	1	1.00%	97.0%	0	2	2.0%	96.0%	0	0	0.0%	100.0%	0	0	0.0%	96.2%	0	5	5.0%	97.0%
	very large cobble	180	0	0.0%	100.0%	0	0.0%	100.0%	1	1.0%	100.0%	2	2.00%	99.0%	0	1	1.0%	97.0%	0	0	0.0%	100.0%	0	3	2.8%	99.1%	0	3	3.0%	100.0%
Boulder	small boulder	256	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	1	1.00%	100.0%	0	3	3.0%	100.0%	0	0	0.0%	100.0%	0	1	0.9%	100.0%	0	0	0.0%	100.0%
	small boulder	362	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.00%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.00%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.00%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.00%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.00%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
TOTAL / %of whole count			100	100.0%		100	100.0%		100	100%		100	100.0%		21	78	100.0%		12	69	100.0%		32	74	100.0%		10	90	100.0%	

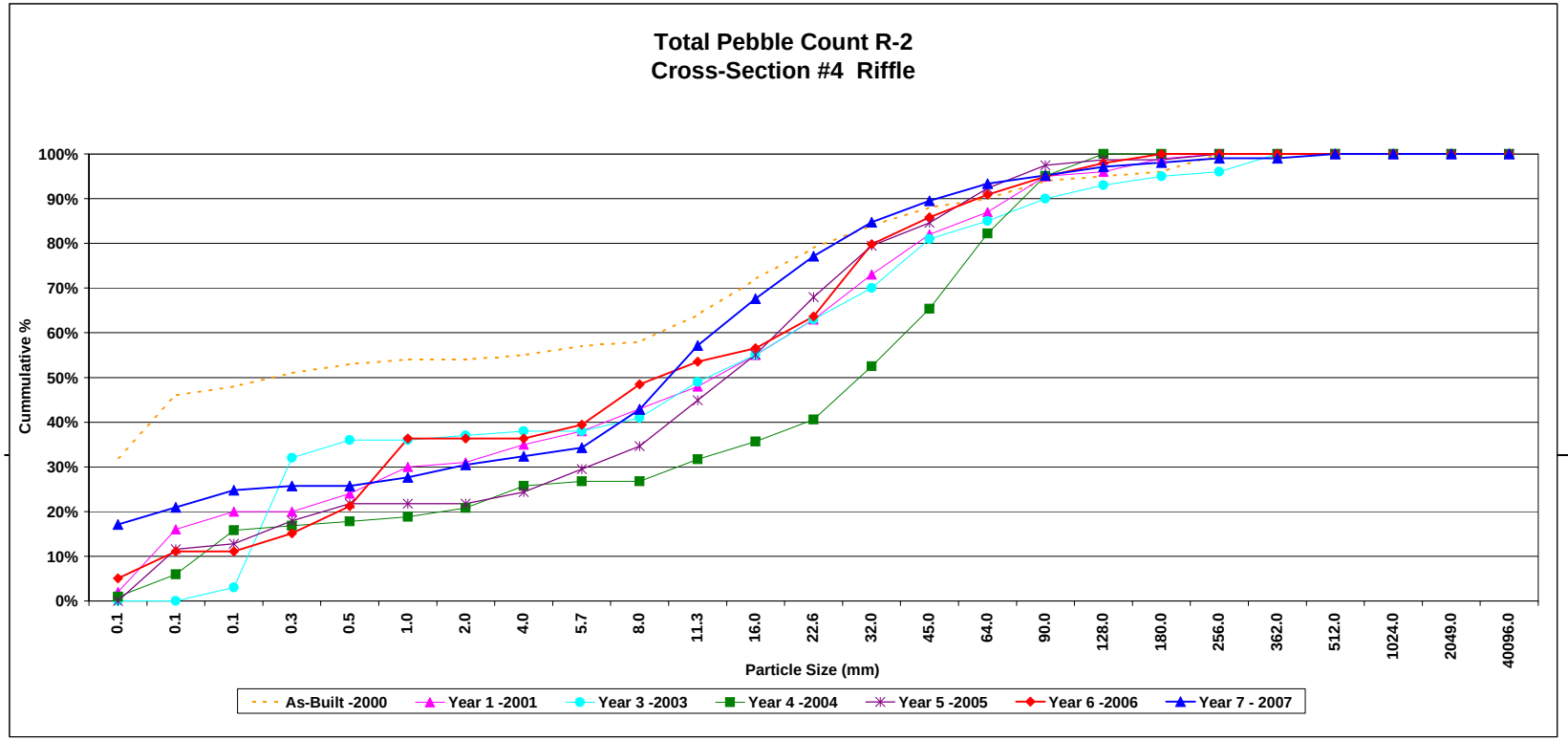
	d16	d35	d50	d84	d95
As-Built -2000	0.00	0.28	3.93	27.30	48.10
Year 1 -2001	0.56	8.05	18.49	53.50	96.20
Year 2 -2002	0.21	6.52	17.42	70.57	103.18
Year 3 -2003	0.34	9.34	19.30	77.00	106.33
Year 4 -2004	0.09	4.16	20.10	82.76	132.62
Year 5 -2005	2.24	14.14	23.55	49.76	76.81
Year 6 -2006	0.85	1.27	11.70	45.83	95.13
Year 7 -2007	1.43	7.55	16.48	87.67	136.00



Project Name	Stone Mountain Reach 2
Cross Section	#4
Feature	Riffle
Date	8/1/07
Crew	Roberts, Price, George

			As-Built -2000			Year 1 -2001			Year 3 -2003			Year 4 -2004			Year 5 -2005				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	32	32.0%	32.0%	2	2.0%	2.0%	0	0.0%	0.0%	1	0	1.0%	1.0%	0	0	0.0%	0.0%	5	0	5.1%	5.1%	14	4.0	17.1%	17.1%
Sand	very fine sand	0.062	14	14.0%	46.0%	14	14.0%	16.0%	0	0.0%	0.0%	5	0	5.0%	5.9%	7	2	11.5%	11.5%	6	0	6.1%	11.1%	2	2.0	3.8%	21.0%
	fine sand	0.125	2	2.0%	48.0%	4	4.0%	20.0%	3	3.0%	3.0%	10	0	9.9%	15.8%	0	1	1.3%	12.8%	0	0	0.0%	11.1%	4	0.0	3.8%	24.8%
	medium sand	0.25	3	3.0%	51.0%	0	0.0%	20.0%	29	29.0%	32.0%	1	0	1.0%	16.8%	3	1	5.1%	17.9%	2	2.0	4.0%	15.2%	0	1.0	1.0%	25.7%
	course sand	0.50	2	2.0%	53.0%	4	4.0%	24.0%	4	4.0%	36.0%	1	0	1.0%	17.8%	0	3	3.8%	21.8%	6	0	6.1%	21.2%	0	0.0	0.0%	25.7%
	very course sand	1.0	1	1.0%	54.0%	6	6.0%	30.0%	0	0.0%	36.0%	0	1	1.0%	18.8%	0	0	0.0%	21.8%	4	11.0	15.2%	36.4%	0	2.0	1.9%	27.6%
Gravel	very fine gravel	2.0	0	0.0%	54.0%	1	1.0%	31.0%	1	1.0%	37.0%	0	2	2.0%	20.8%	0	0	0.0%	21.8%	0	0.0	0.0%	36.4%	0	3.0	2.9%	30.5%
	fine gravel	4.0	1	1.0%	55.0%	4	4.0%	35.0%	1	1.0%	38.0%	0	5	5.0%	25.7%	0	2	2.6%	24.4%	0	0.0	0.0%	36.4%	0	2.0	1.9%	32.4%
	fine gravel	5.7	2	2.0%	57.0%	3	3.0%	38.0%	0	0.0%	38.0%	0	1	1.0%	26.7%	0	4	5.1%	29.5%	0	3.0	3.0%	39.4%	0	2.0	1.9%	34.3%
	medium gravel	8.0	1	1.0%	58.0%	5	5.0%	43.0%	3	3.0%	41.0%	0	0	0.0%	26.7%	0	4	5.1%	34.6%	0	9.0	9.1%	48.5%	0	9.0	8.6%	42.9%
	medium gravel	11.3	6	6.0%	64.0%	5	5.0%	48.0%	8	8.0%	49.0%	0	5	5.0%	31.7%	0	8	10.3%	44.9%	0	5.0	5.1%	53.5%	0	15.0	14.3%	57.1%
	course gravel	16.0	8	8.0%	72.0%	7	7.0%	55.0%	6	6.0%	55.0%	1	3	4.0%	35.6%	0	8	10.3%	55.1%	0	3.0	3.0%	56.6%	0	11.0	10.5%	67.6%
	course gravel	22.6	7	7.0%	79.0%	8	8.0%	63.0%	8	8.0%	63.0%	1	4	5.0%	40.6%	0	10	12.8%	67.9%	0	7.0	7.1%	63.6%	0	10.0	9.5%	77.1%
	very course gravel	32	5	5.0%	84.0%	10	10.0%	73.0%	7	7.0%	70.0%	0	12	11.9%	52.5%	0	9	11.5%	79.5%	0	16.0	16.2%	79.8%	0	8.0	7.6%	84.8%
	very course gravel	45	4	4.0%	88.0%	9	9.0%	82.0%	11	11.0%	81.0%	0	13	12.9%	65.3%	0	4	5.1%	84.6%	0	6.0	6.1%	85.9%	0	5.0	4.8%	89.5%
Cobble	small cobble	64	2	2.0%	90.0%	5	5.0%	87.0%	4	4.0%	85.0%	0	17	16.8%	82.2%	0	6	7.7%	92.3%	0	5.0	5.1%	90.9%	0	4.0	3.8%	93.3%
	medium cobble	90	4	4.0%	94.0%	8	8.0%	95.0%	5	5.0%	90.0%	0	13	12.9%	95.0%	0	4	5.1%	97.4%	0	4.0	4.0%	94.9%	0	2.0	1.9%	95.2%
	large cobble	128	1	1.0%	95.0%	1	1.0%	96.0%	3	3.0%	93.0%	0	5	5.0%	100.0%	0	1	1.3%	98.7%	0	3.0	3.0%	98.0%	0	2.0	1.9%	97.1%
	very large cobble	180	1	1.0%	96.0%	3	3.0%	99.0%	2	2.0%	95.0%	0	0	0.0%	100.0%	0	0	0.0%	98.7%	0	2.0	2.0%	100.0%	0	1.0	1.0%	98.1%
Boulder	small boulder	256	4	4.0%	100.0%	1	1.0%	100.0%	1	1.0%	96.0%	0	0	0.0%	100.0%	1	0	1.3%	100.0%	0	0.0	0.0%	100.0%	0	1.0	1.0%	99.0%
	small boulder	362	0	0.0%	100.0%	0	0.0%	100.0%	4	4.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0.0	0.0%	100.0%	0	0.0	0.0%	99.0%
	medium boulder	512	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0.0	0.0%	100.0%	0	1.0	1.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0.0	0.0%	100.0%	0	0.0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0.0	0.0%	100.0%	0	0.0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0.0	0.0%	100.0%	0	0.0	0.0%	100.0%
TOTAL / %of whole count			100	100.0%		100	100.0%		100	100.0%		20	81	100.0%		11	67	100.0%		23	76	100.0%		20	85	100.0%	

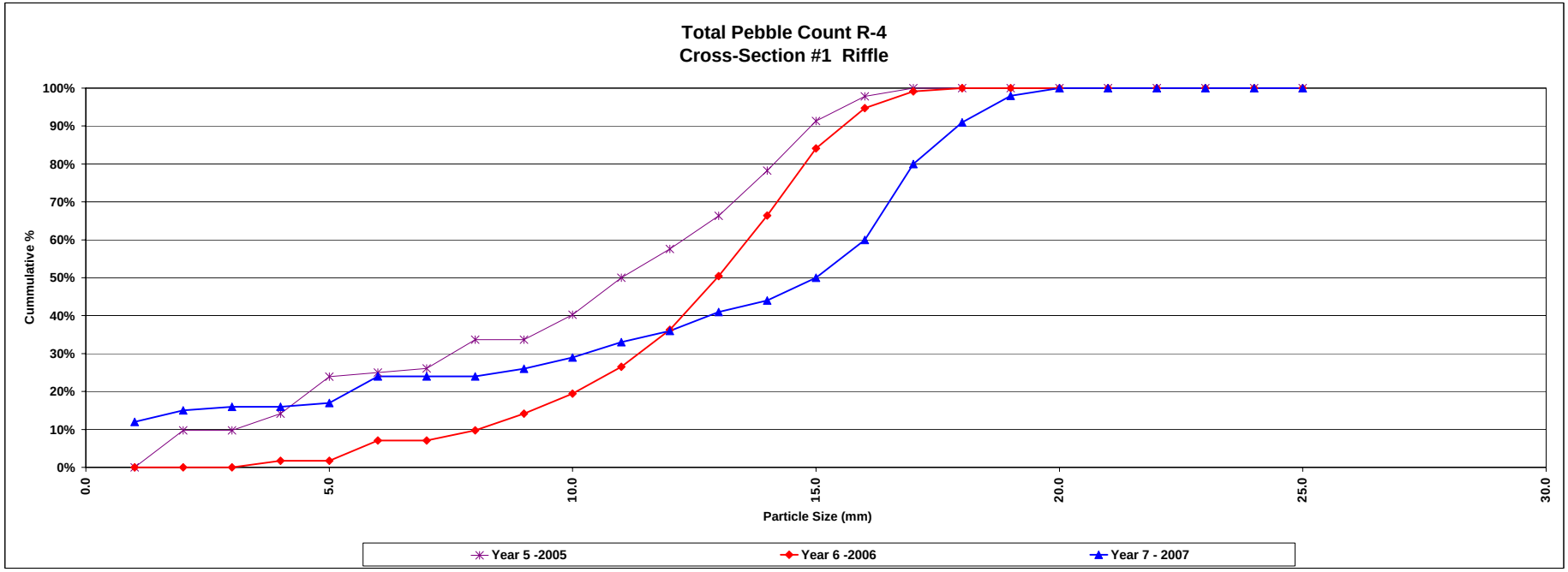
	d16	d35	d50	d84	d95
As-Built -2000	0.00	0.07	0.31	38.50	154.00
Year 1 -2001	0.09	4.85	15.26	63.50	109.00
Year 3 -2003	0.27	0.66	14.59	71.37	218.00
Year 4 -2004	0.22	18.38	36.17	81.53	108.88
Year 5 -2005	0.30	9.80	16.48	52.58	93.80
Year 6 -2006	0.43	1.43	10.85	49.59	109.75
Year 7 -2007	0.00	7.08	11.65	37.38	105.00



Project Name	Stone Mountain Reach 4
Cross Section	#1
Feature	Riffle
Date	7/31/07
Crew	Roberts, Price, George

			As-Built -2000			Year 5 -2005				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**- Bank**	**- Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	1	100.0%	100.0%	0	0	0.0%	0.0%	0	0	0.0%	0.0%	8	4	12.0%	12.0%
Sand	very fine sand	0.062	0	0.0%	100.0%	9	0	9.8%	9.8%	0	0	0.0%	0.0%	2	1	3.0%	15.0%
	fine sand	0.125	0	0.0%	100.0%	0	0	0.0%	9.8%	0	0	0.0%	0.0%	0	1	1.0%	16.0%
	medium sand	0.25	0	0.0%	100.0%	3	1	4.3%	14.1%	0	2	1.8%	1.8%	0	0	0.0%	16.0%
	course sand	0.50	0	0.0%	100.0%	4	5	9.8%	23.9%	0	0	0.0%	1.8%	0	1	1.0%	17.0%
	very course sand	1.0	0	0.0%	100.0%	0	1	1.1%	25.0%	0	6	5.3%	7.1%	0	7	7.0%	24.0%
G r a v e l	very fine gravel	2.0	0	0.0%	100.0%	0	1	1.1%	26.1%	0	0	0.0%	7.1%	0	0	0.0%	24.0%
	fine gravel	4.0	0	0.0%	100.0%	1	6	7.6%	33.7%	0	3	2.7%	9.7%	0	0	0.0%	24.0%
	fine gravel	5.7	0	0.0%	100.0%	0	0	0.0%	33.7%	0	5	4.4%	14.2%	0	2	2.0%	26.0%
	medium gravel	8.0	0	0.0%	100.0%	0	6	6.5%	40.2%	0	6	5.3%	19.5%	0	3	3.0%	29.0%
	medium gravel	11.3	0	0.0%	100.0%	0	9	9.8%	50.0%	0	8	7.1%	26.5%	0	4	4.0%	33.0%
	course gravel	16.0	0	0.0%	100.0%	0	7	7.6%	57.6%	1	10	9.7%	36.3%	0	3	3.0%	36.0%
	course gravel	22.6	0	0.0%	100.0%	0	8	8.7%	66.3%	6	10	14.2%	50.4%	0	5	5.0%	41.0%
	very course gravel	32	0	0.0%	100.0%	0	11	12.0%	78.3%	8	10	15.9%	66.4%	0	3	3.0%	44.0%
	very course gravel	45	0	0.0%	100.0%	0	12	13.0%	91.3%	10	10	17.7%	84.1%	0	6	6.0%	50.0%
Cobble	small cobble	64	0	0.0%	100.0%	0	6	6.5%	97.8%	2	10	10.6%	94.7%	0	10	10.0%	60.0%
	medium cobble	90	0	0.0%	100.0%	0	2	2.2%	100.0%	0	5	4.4%	99.1%	0	20	20.0%	80.0%
	large cobble	128	0	0.0%	100.0%	0	0	0.0%	100.0%	0	1	0.9%	100.0%	0	11	11.0%	91.0%
	very large cobble	180	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	7	7.0%	98.0%
Boulder	small boulder	256	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	2	2.0%	100.0%
	small boulder	362	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	TOTAL / %of whole count		1	100.0%		17	75	100.0%		27	86	100.0%		10	90	100.0%	

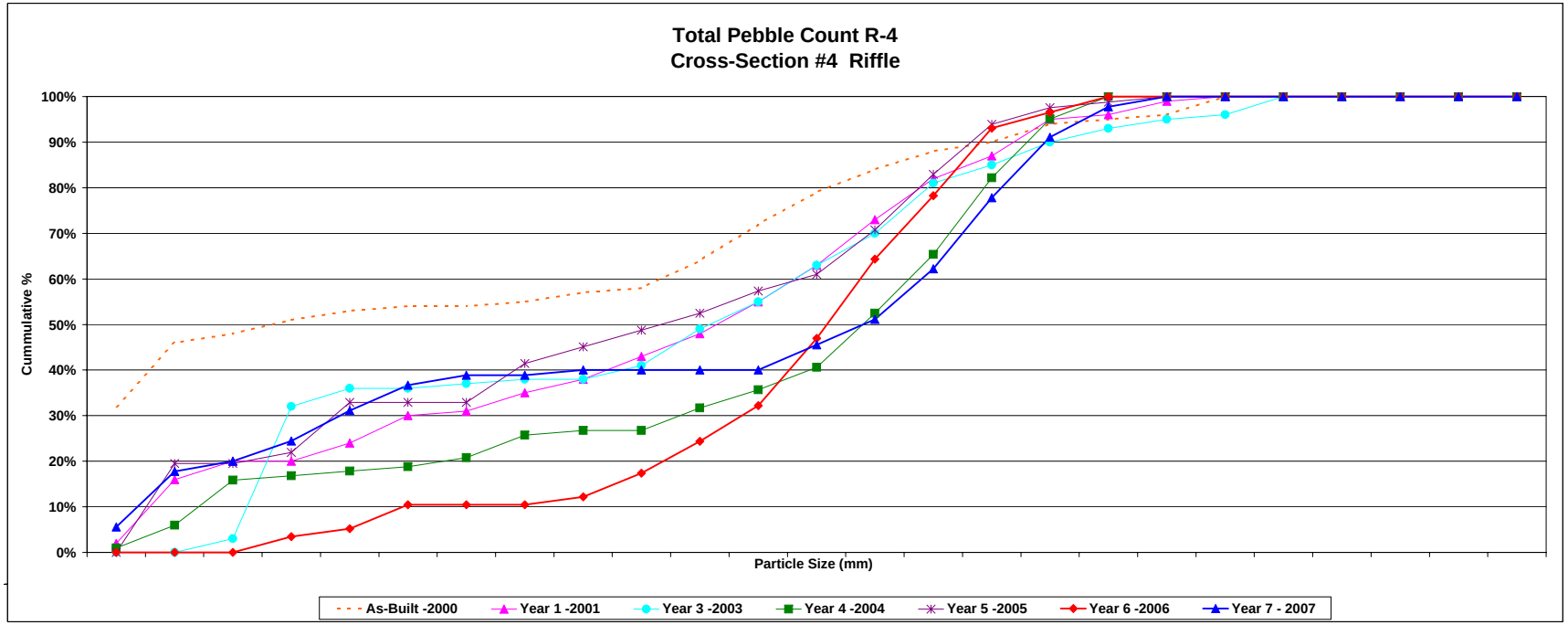
	d16	d35	d50	d84	d95
Year 5 -2005	0.4	7.4	13.7	45.5	67.2
Year 6 -2006	7.8	18.6	27.1	54.4	79.2
Year 7 -2007	0.28	17.42	54.50	125.36	190.57



Project Name	Stone Mountain Reach 4
Cross Section	#4
Feature	Riffle
Date	7/31/07
Crew	Roberts, Price, George

			As-Built -2000			Year 1 -2001			Year 3 -2003			Year 4 -2004				Year 5 -2005				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	32	32.0%	32.0%	2	2.0%	2.0%	0	0.0%	0.0%	1	0	1.0%	1.0%	0	0	0.0%	0.0%	0	0	0.0%	0.0%	5	0	5.6%	5.6%
Sand	very fine sand	0.062	14	14.0%	46.0%	14	14.0%	16.0%	0	0.0%	0.0%	5	0	5.0%	5.9%	10	6	19.5%	19.5%	0	0	0.0%	0.0%	10	1	12.2%	17.8%
	fine sand	0.125	2	2.0%	48.0%	4	4.0%	20.0%	3	3.0%	3.0%	10	0	9.9%	15.8%	0	0	0.0%	19.5%	0	0	0.0%	0.0%	0	2	2.2%	20.0%
	medium sand	0.25	3	3.0%	51.0%	0	0.0%	20.0%	29	29.0%	32.0%	1	0	1.0%	16.8%	2	0	2.4%	22.0%	0	4	3.5%	3.5%	0	4	4.4%	24.4%
	course sand	0.50	2	2.0%	53.0%	4	4.0%	24.0%	4	4.0%	36.0%	1	0	1.0%	17.8%	2	7	11.0%	32.9%	0	2	1.7%	5.2%	0	6	6.7%	31.1%
	very course sand	1.0	1	1.0%	54.0%	6	6.0%	30.0%	0	0.0%	36.0%	0	1	1.0%	18.8%	0	0	0.0%	32.9%	0	6	5.2%	10.4%	0	5	5.6%	36.7%
Gravel	very fine gravel	2.0	0	0.0%	54.0%	1	1.0%	31.0%	1	1.0%	37.0%	0	2	2.0%	20.8%	0	0	0.0%	32.9%	0	0	0.0%	10.4%	0	2	2.2%	38.9%
	fine gravel	4.0	1	1.0%	55.0%	4	4.0%	35.0%	1	1.0%	38.0%	0	5	5.0%	25.7%	1	6	8.5%	41.5%	0	0	0.0%	10.4%	0	0	0.0%	38.9%
	fine gravel	5.7	2	2.0%	57.0%	3	3.0%	38.0%	0	0.0%	38.0%	0	1	1.0%	26.7%	0	3	3.7%	45.1%	0	2	1.7%	12.2%	0	1	1.1%	40.0%
	medium gravel	8.0	1	1.0%	58.0%	5	5.0%	43.0%	3	3.0%	41.0%	0	0	0.0%	26.7%	0	3	3.7%	48.8%	0	6	5.2%	17.4%	0	0	0.0%	40.0%
	medium gravel	11.3	6	6.0%	64.0%	5	5.0%	48.0%	8	8.0%	49.0%	0	5	5.0%	31.7%	0	3	3.7%	52.4%	0	8	7.0%	24.3%	0	0	0.0%	40.0%
	course gravel	16.0	8	8.0%	72.0%	7	7.0%	55.0%	6	6.0%	55.0%	1	3	4.0%	35.6%	0	4	4.9%	57.3%	0	9	7.8%	32.2%	0	0	0.0%	40.0%
	course gravel	22.6	7	7.0%	79.0%	8	8.0%	63.0%	8	8.0%	63.0%	1	4	5.0%	40.6%	0	3	3.7%	61.0%	7	10	14.8%	47.0%	0	5	5.6%	45.6%
	very course gravel	32	5	5.0%	84.0%	10	10.0%	73.0%	7	7.0%	70.0%	0	12	11.9%	52.5%	0	8	9.8%	70.7%	10	10	17.4%	64.3%	0	5	5.6%	51.1%
	very course gravel	45	4	4.0%	88.0%	9	9.0%	82.0%	11	11.0%	81.0%	0	13	12.9%	65.3%	0	10	12.2%	82.9%	6	10	13.9%	78.3%	0	10	11.1%	62.2%
Cobble	small cobble	64	2	2.0%	90.0%	5	5.0%	87.0%	4	4.0%	85.0%	0	17	16.8%	82.2%	0	9	11.0%	93.9%	7	10	14.8%	93.0%	0	14	15.6%	77.8%
	medium cobble	90	4	4.0%	94.0%	8	8.0%	95.0%	5	5.0%	90.0%	0	13	12.9%	95.0%	0	3	3.7%	97.6%	0	4	3.5%	96.5%	0	12	13.3%	91.1%
	large cobble	128	1	1.0%	95.0%	1	1.0%	96.0%	3	3.0%	93.0%	0	5	5.0%	100.0%	0	1	1.2%	98.8%	0	4	3.5%	100.0%	0	6	6.7%	97.8%
	very large cobble	180	1	1.0%	96.0%	3	3.0%	99.0%	2	2.0%	95.0%	0	0	0.0%	100.0%	0	1	1.2%	100.0%	0	0	0.0%	100.0%	0	2	2.2%	100.0%
Boulder	small boulder	256	4	4.0%	100.0%	1	1.0%	100.0%	1	1.0%	96.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	small boulder	362	0	0.0%	100.0%	0	0.0%	100.0%	4	4.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
TOTAL / %of whole count			100	100.0%		100	100.0%		100	100.0%		20	81	100.0%		15	67	100.0%		30	85	100.0%		15	75	100.0%	

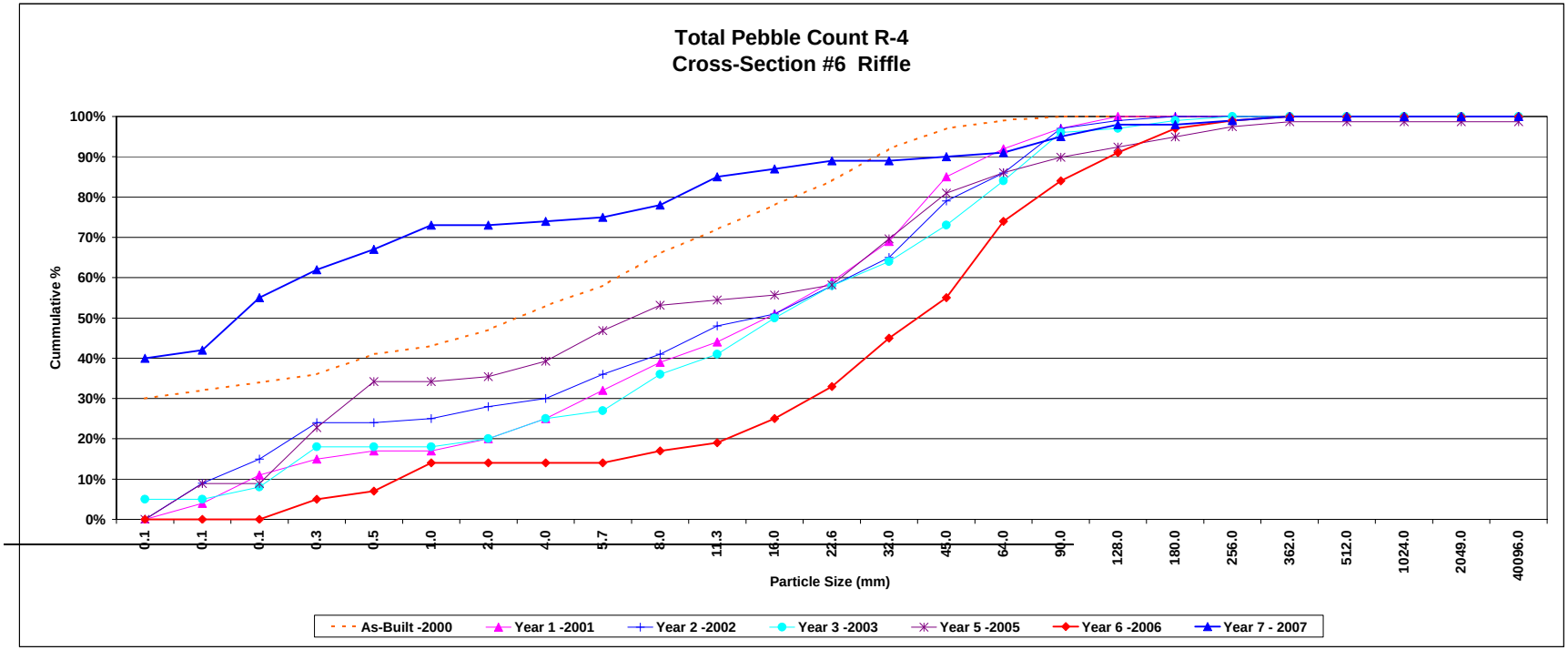
	d16	d35	d50	d84	d95
As-Built -2000	0.0	0.1	0.3	38.5	154.0
Year 1 -2001	0.1	4.9	15.3	63.5	109.0
Year 3 -2003	0.3	0.7	14.6	71.4	218.0
Year 4 -2004	0.2	18.4	36.2	81.5	108.9
Year 5 -2005	0.1	3.4	11.0	56.7	86.6
Year 6 -2006	8.9	20.8	29.3	63.2	95.0
Year 7 -2007	0.1	1.3	36.3	91.9	135.3



Project Name	Stone Mountain Reach 4
Cross Section	#6
Feature	Riffle
Date	7/31/07
Crew	Roberts, Price, George

			As-Built -2000			Year 1 -2001			Year 2 -2002			Year 3 -2003			Year 5 -2005				Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	30	30.0%	30.0%	0	0.0%	0.0%	0	0.0%	0.0%	5	5.0%	5.0%	1	0	0.0%	0.0%	0	0	0.0%	0.0%	25	15	40.0%	40.0%
Sand	very fine sand	0.062	2	2.0%	32.0%	4	4.0%	4.0%	9	9.0%	9.0%	0	0.0%	5.0%	7	0	8.9%	8.9%	0	0	0.0%	0.0%	0	2	2.0%	42.0%
	fine sand	0.125	2	2.0%	34.0%	7	7.0%	11.0%	6	6.0%	15.0%	3	3.0%	8.0%	0	0	0.0%	8.9%	0	0	0.0%	0.0%	0	13	13.0%	55.0%
	medium sand	0.25	2	2.0%	36.0%	4	4.0%	15.0%	9	9.0%	24.0%	10	10.0%	18.0%	5	6	13.9%	22.8%	1	4	5.0%	5.0%	0	7	7.0%	62.0%
	course sand	0.50	5	5.0%	41.0%	2	2.0%	17.0%	0	0.0%	24.0%	0	0.0%	18.0%	2	7	11.4%	34.2%	0	2	2.0%	7.0%	0	5	5.0%	67.0%
	very course sand	1.0	2	2.0%	43.0%	0	0.0%	17.0%	1	1.0%	25.0%	0	0.0%	18.0%	0	0	0.0%	34.2%	0	7	7.0%	14.0%	0	6	6.0%	73.0%
G r a v e l	very fine gravel	2.0	4	4.0%	47.0%	3	3.0%	20.0%	3	3.0%	28.0%	2	2.0%	20.0%	0	1	1.3%	35.4%	0	0	0.0%	14.0%	0	0	0.0%	73.0%
	fine gravel	4.0	6	6.0%	53.0%	5	5.0%	25.0%	2	2.0%	30.0%	5	5.0%	25.0%	0	3	3.8%	39.2%	0	0	0.0%	14.0%	0	1	1.0%	74.0%
	fine gravel	5.7	5	5.0%	58.0%	7	7.0%	32.0%	6	6.0%	36.0%	2	2.0%	27.0%	0	6	7.6%	46.8%	0	0	0.0%	14.0%	0	1	1.0%	75.0%
	medium gravel	8.0	8	8.0%	66.0%	7	7.0%	39.0%	5	5.0%	41.0%	9	9.0%	36.0%	0	5	6.3%	53.2%	2	1	3.0%	17.0%	0	3	3.0%	78.0%
	medium gravel	11.3	6	6.0%	72.0%	5	5.0%	44.0%	7	7.0%	48.0%	5	5.0%	41.0%	0	1	1.3%	54.4%	2	0	2.0%	19.0%	0	7	7.0%	85.0%
	course gravel	16.0	6	6.0%	78.0%	7	7.0%	51.0%	3	3.0%	51.0%	9	9.0%	50.0%	0	1	1.3%	55.7%	2	4	6.0%	25.0%	0	2	2.0%	87.0%
	course gravel	22.6	6	6.0%	84.0%	8	8.0%	59.0%	7	7.0%	58.0%	8	8.0%	58.0%	0	2	2.5%	58.2%	3	5	8.0%	33.0%	0	2	2.0%	89.0%
	very course gravel	32	8	8.0%	92.0%	10	10.0%	69.0%	7	7.0%	65.0%	6	6.0%	64.0%	0	9	11.4%	69.6%	3	9	12.0%	45.0%	0	0	0.0%	89.0%
	very course gravel	45	5	5.0%	97.0%	16	16.0%	85.0%	14	14.0%	79.0%	9	9.0%	73.0%	0	9	11.4%	81.0%	1	9	10.0%	55.0%	0	1	1.0%	90.0%
Cobble	small cobble	64	2	2.0%	99.0%	7	7.0%	92.0%	7	7.0%	86.0%	11	11.0%	84.0%	0	4	5.1%	86.1%	3	16	19.0%	74.0%	0	1	1.0%	91.0%
	medium cobble	90	1	1.0%	100.0%	5	5.0%	97.0%	11	11.0%	97.0%	12	12.0%	96.0%	0	3	3.8%	89.9%	4	6	10.0%	84.0%	0	4	4.0%	95.0%
	large cobble	128	0	0.0%	100.0%	3	3.0%	100.0%	2	2.0%	99.0%	1	1.0%	97.0%	0	2	2.5%	92.4%	1	6	7.0%	91.0%	0	3	3.0%	98.0%
	very large cobble	180	0	0.0%	100.0%	0	0.0%	100.0%	1	1.0%	100.0%	2	2.0%	99.0%	0	2	2.5%	94.9%	1	5	6.0%	97.0%	0	0	0.0%	98.0%
Boulder	small boulder	256	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	1	1.0%	100.0%	0	2	2.5%	97.5%	1	1	2.0%	99.0%	0	1	1.0%	99.0%
	small boulder	362	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	1	1.3%	98.7%	1	0	1.0%	100.0%	0	1	1.0%	100.0%
	medium boulder	512	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	98.7%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	98.7%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	98.7%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0	0.0%	98.7%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
TOTAL / %of whole count			100	100.0%		100	100.0%		100	100.0%		100	100.0%		15	64	100.0%		25	75	100.0%		25	75	100.0%	

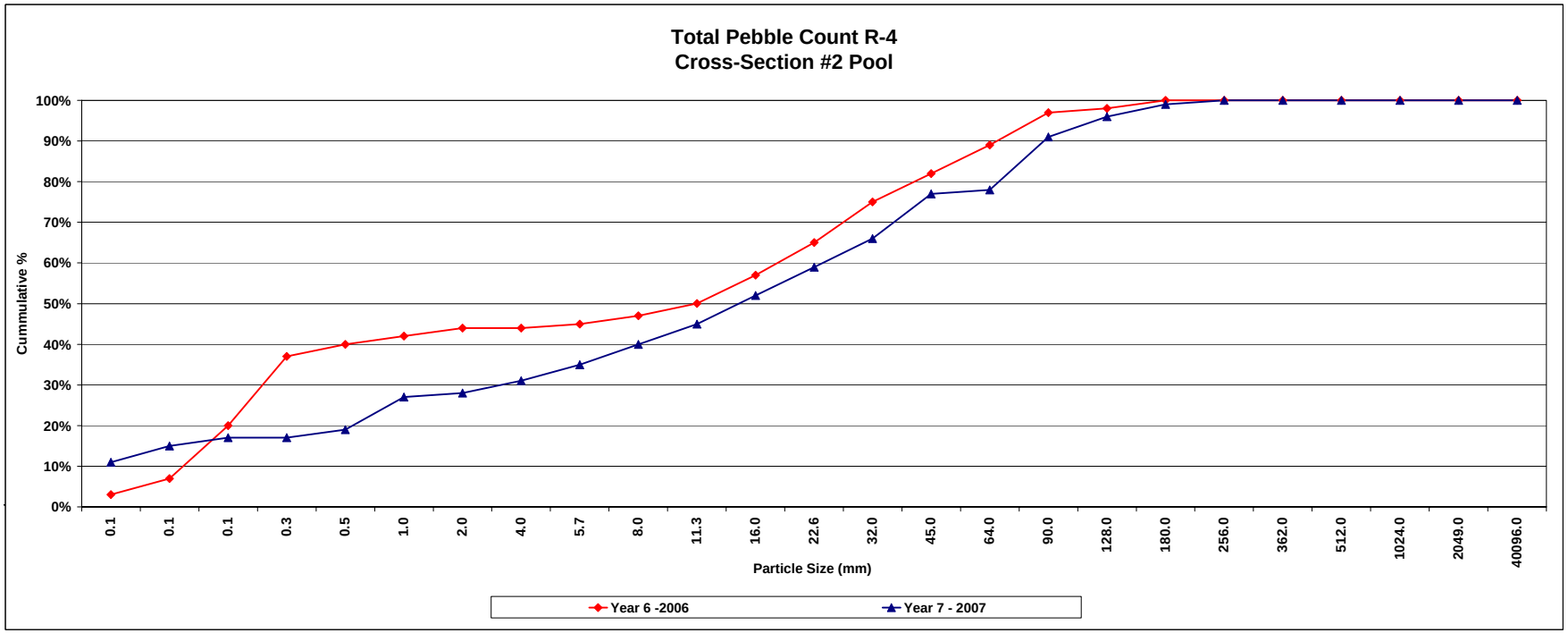
	d16	d35	d50	d84	d95
As-Built -2000	0.0	0.3	3.9	27.3	48.1
Year 1 -2001	0.6	8.1	18.5	53.5	96.2
Year 2 -2002	0.2	6.5	17.4	70.6	103.2
Year 3 -2003	0.3	9.3	19.3	106.3	106.3
Year 5 -2005	0.3	2.5	8.2	67.8	220.3
Year 6 -2006	8.7	29.2	46.5	109.0	196.7
Year 7 -2007	0.0	0.0	0.2	13.1	109.0



Project Name	Stone Mountain Reach 4
Cross Section	#2
Feature	Pool
Date	7/31/07
Crew	Roberts, Price, George

			Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	0	3	3.0%	3.0%	8	3	11.0%	11.0%
Sand	very fine sand	0.062	0	4	4.0%	7.0%	2	2	4.0%	15.0%
	fine sand	0.125	3	10	13.0%	20.0%	0	2	2.0%	17.0%
	medium sand	0.25	7	10	17.0%	37.0%	0	0	0.0%	17.0%
	course sand	0.50	0	3	3.0%	40.0%	0	2	2.0%	19.0%
	very course sand	1.0	0	2	2.0%	42.0%	0	8	8.0%	27.0%
G r a v e l	very fine gravel	2.0	0	2	2.0%	44.0%	0	1	1.0%	28.0%
	fine gravel	4.0	0	0	0.0%	44.0%	0	3	3.0%	31.0%
	fine gravel	5.7	0	1	1.0%	45.0%	0	4	4.0%	35.0%
	medium gravel	8.0	0	2	2.0%	47.0%	0	5	5.0%	40.0%
	medium gravel	11.3	0	3	3.0%	50.0%	0	5	5.0%	45.0%
	course gravel	16.0	0	7	7.0%	57.0%	0	7	7.0%	52.0%
	course gravel	22.6	0	8	8.0%	65.0%	0	7	7.0%	59.0%
	very course gravel	32	0	10	10.0%	75.0%	0	7	7.0%	66.0%
	very course gravel	45	0	7	7.0%	82.0%	0	11	11.0%	77.0%
Cobble	small cobble	64	0	7	7.0%	89.0%	0	1	1.0%	78.0%
	medium cobble	90	0	8	8.0%	97.0%	0	13	13.0%	91.0%
	large cobble	128	0	1	1.0%	98.0%	0	5	5.0%	96.0%
	very large cobble	180	0	2	2.0%	100.0%	0	3	3.0%	99.0%
Boulder	small boulder	256	0	0	0.0%	100.0%	0	1	1.0%	100.0%
	small boulder	362	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	TOTAL / %of whole count		10	90	100.0%		10	90	100.0%	

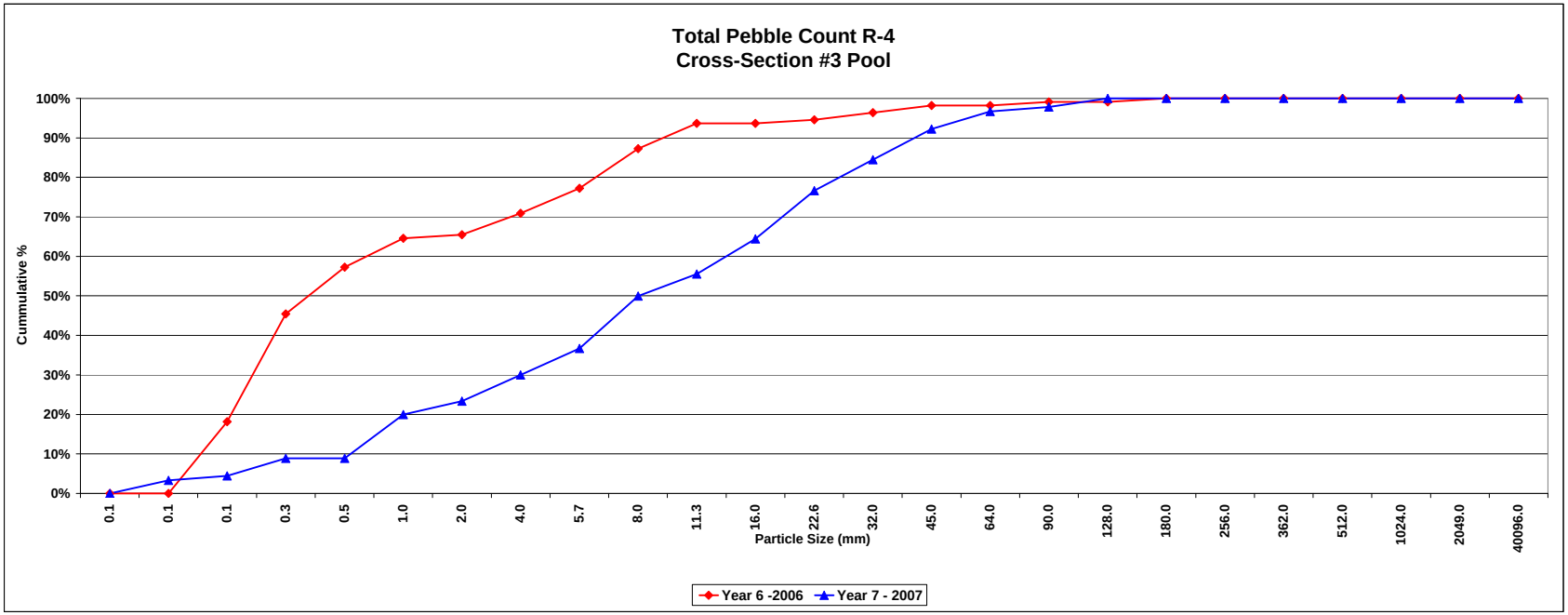
	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	0.16	0.35	13.65	60.93	101.00
Year 7 -2007	0.14	6.85	17.69	91.77	145.00



Project Name	Stone Mountain Reach 4
Cross Section	#3
Feature	Pool
Date	7/31/07
Crew	Roberts, Price, George

			Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	0	0	0.0%	0.0%	0	0	0.0%	0.0%
Sand	very fine sand	0.062	0	0	0.0%	0.0%	3	0	3.3%	3.3%
	fine sand	0.125	10	10	18.2%	18.2%	1	0	1.1%	4.4%
	medium sand	0.25	10	20	27.3%	45.5%	4	0	4.4%	8.9%
	course sand	0.50	0	13	11.8%	57.3%	0	0	0.0%	8.9%
	very course sand	1.0	0	8	7.3%	64.5%	2	8	11.1%	20.0%
G r a v e l	very fine gravel	2.0	0	1	0.9%	65.5%	0	3	3.3%	23.3%
	fine gravel	4.0	0	6	5.5%	70.9%	0	6	6.7%	30.0%
	fine gravel	5.7	0	7	6.4%	77.3%	0	6	6.7%	36.7%
	medium gravel	8.0	0	11	10.0%	87.3%	0	12	13.3%	50.0%
	medium gravel	11.3	0	7	6.4%	93.6%	0	5	5.6%	55.6%
	course gravel	16.0	0	0	0.0%	93.6%	0	8	8.9%	64.4%
	course gravel	22.6	0	1	0.9%	94.5%	0	11	12.2%	76.7%
	very course gravel	32	0	2	1.8%	96.4%	0	7	7.8%	84.4%
	very course gravel	45	0	2	1.8%	98.2%	0	7	7.8%	92.2%
Cobble	small cobble	64	0	0	0.0%	98.2%	0	4	4.4%	96.7%
	medium cobble	90	0	1	0.9%	99.1%	0	1	1.1%	97.8%
	large cobble	128	0	0	0.0%	99.1%	0	2	2.2%	100.0%
	very large cobble	180	0	1	0.9%	100.0%	0	0	0.0%	100.0%
Boulder	small boulder	256	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	small boulder	362	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	TOTAL / %of whole count		20	90	100.0%		10	80	100.0%	

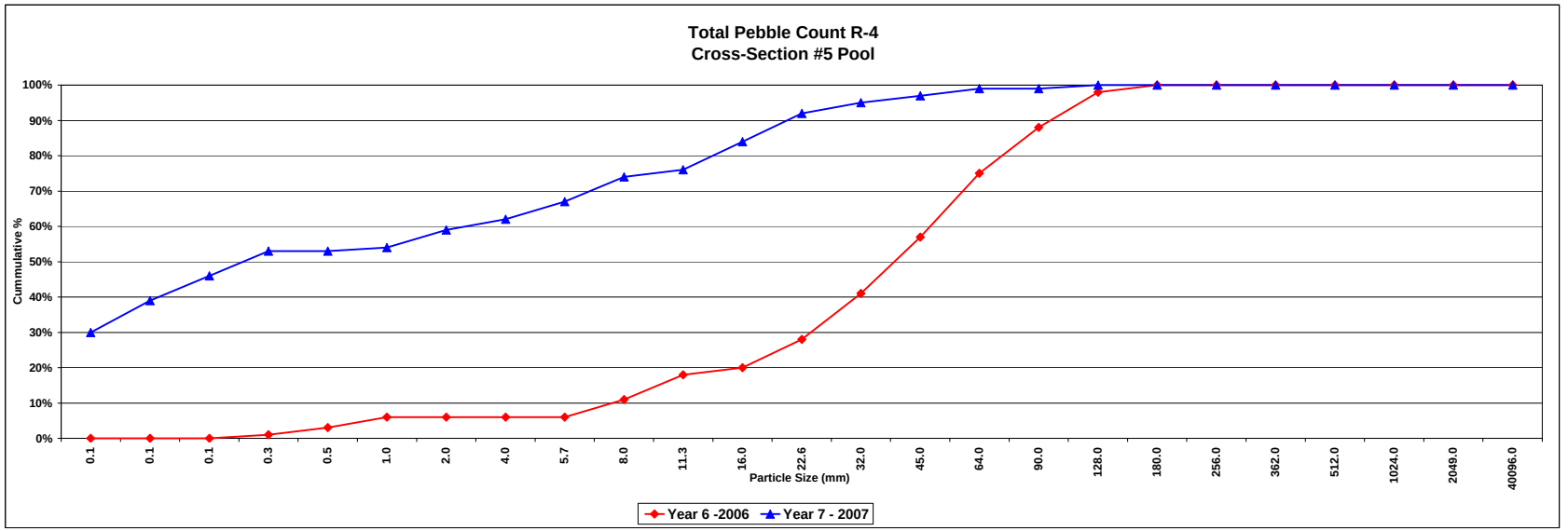
	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	0.2	0.3	0.5	8.7	30.1
Year 7 -2007	1.2	6.4	9.7	37.9	68.6



Project Name	Stone Mountain Reach 4
Cross Section	#5
Feature	Pool
Date	7/31/07
Crew	Roberts, Price, George

			Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	0	0	0.0%	0.0%	15	15	30.0%	30.0%
Sand	very fine sand	0.062	0	0	0.0%	0.0%	0	9	9.0%	39.0%
	fine sand	0.125	0	0	0.0%	0.0%	0	7	7.0%	46.0%
	medium sand	0.25	0	1	1.0%	1.0%	0	7	7.0%	53.0%
	course sand	0.50	1	1	2.0%	3.0%	0	0	0.0%	53.0%
	very course sand	1.0	0	3	3.0%	6.0%	0	1	1.0%	54.0%
G r a v e l	very fine gravel	2.0	0	0	0.0%	6.0%	0	5	5.0%	59.0%
	fine gravel	4.0	0	0	0.0%	6.0%	0	3	3.0%	62.0%
	fine gravel	5.7	0	0	0.0%	6.0%	0	5	5.0%	67.0%
	medium gravel	8.0	0	5	5.0%	11.0%	0	7	7.0%	74.0%
	medium gravel	11.3	2	5	7.0%	18.0%	0	2	2.0%	76.0%
	course gravel	16.0	0	2	2.0%	20.0%	0	8	8.0%	84.0%
	course gravel	22.6	1	7	8.0%	28.0%	0	8	8.0%	92.0%
	very course gravel	32	2	11	13.0%	41.0%	0	3	3.0%	95.0%
	very course gravel	45	2	14	16.0%	57.0%	0	2	2.0%	97.0%
Cobble	small cobble	64	3	15	18.0%	75.0%	0	2	2.0%	99.0%
	medium cobble	90	3	10	13.0%	88.0%	0	0	0.0%	99.0%
	large cobble	128	1	9	10.0%	98.0%	0	1	1.0%	100.0%
	very large cobble	180	0	2	2.0%	100.0%	0	0	0.0%	100.0%
Boulder	small boulder	256	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	small boulder	362	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	medium boulder	512	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	large boulder	1024	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	very large boulder	2049	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0	0.0%	100.0%	0	0	0.0%	100.0%
	TOTAL / %of whole count		15	85	100.0%		15	85	100.0%	

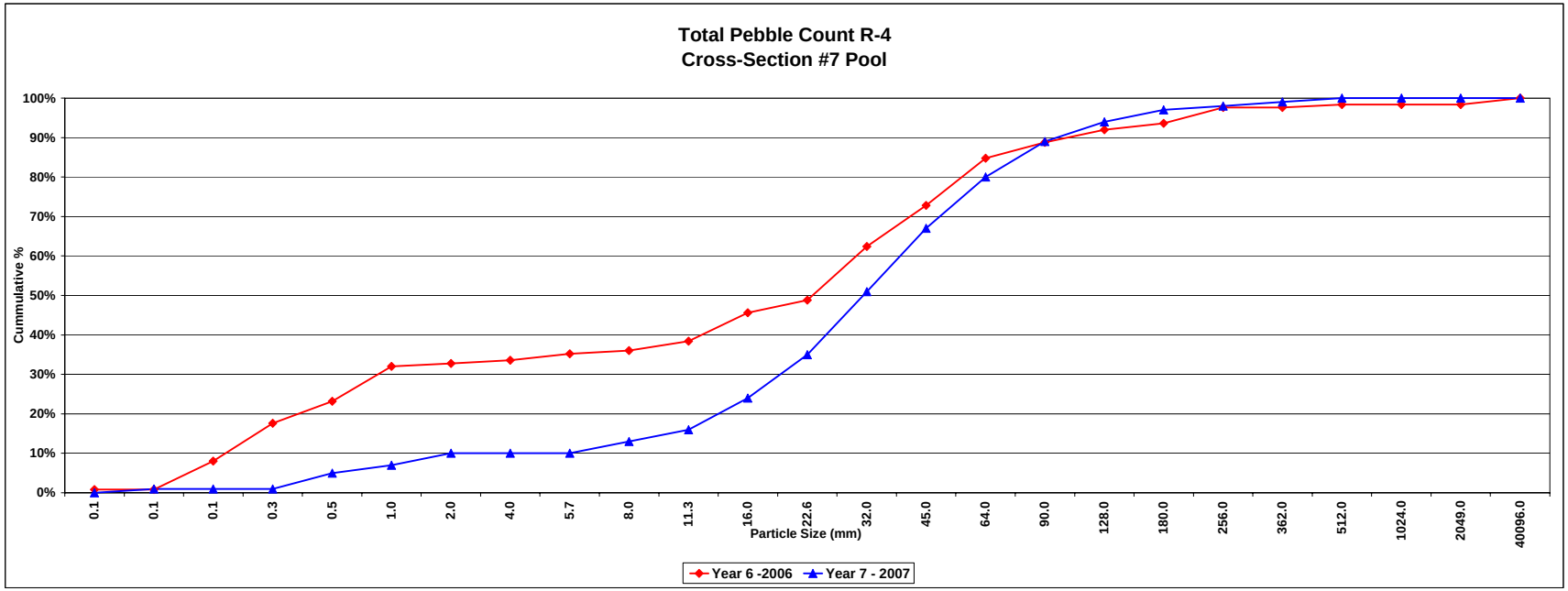
	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	12.5	33.3	47.5	99.2	140.5
Year 7 -2007	0.0	0.1	0.3	19.3	38.5



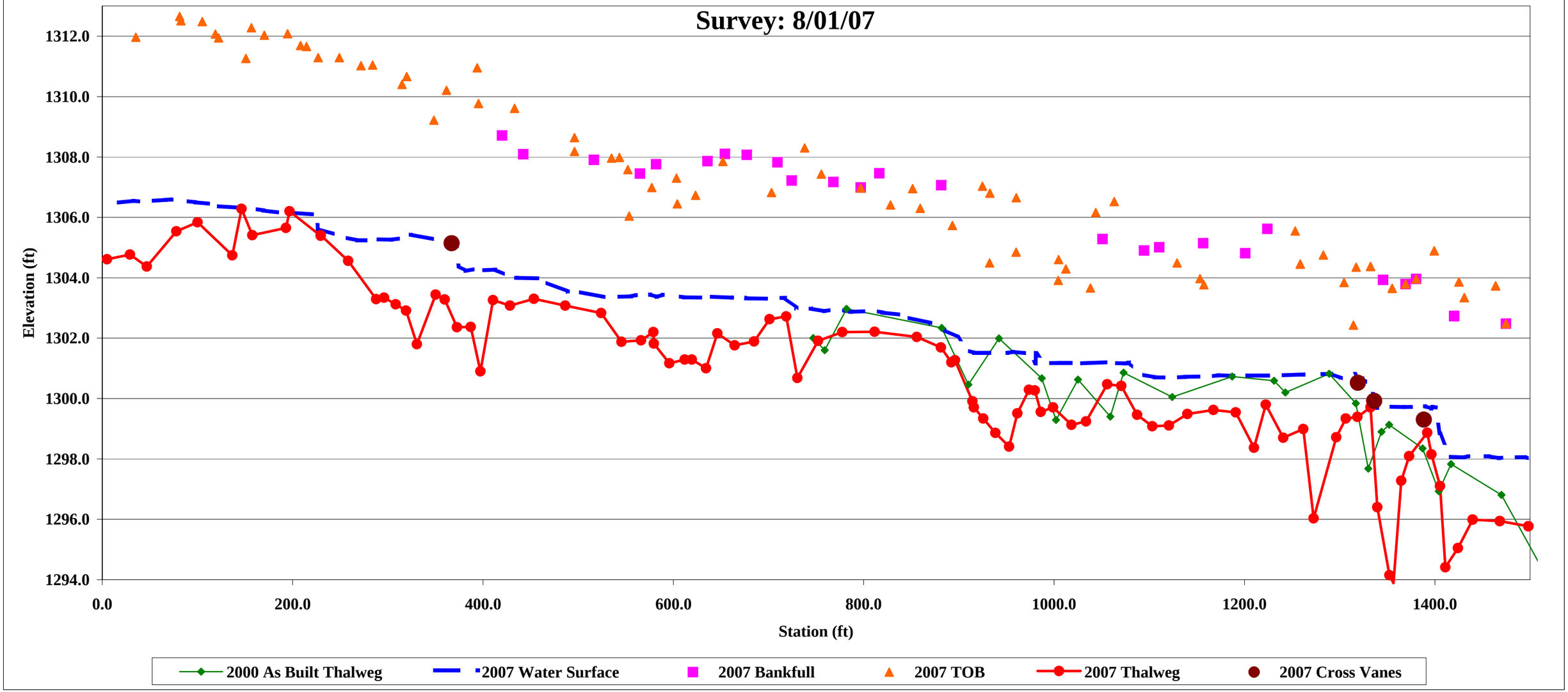
Project Name	Stone Mountain Reach 4
Cross Section	#7
Feature	Pool
Date	7/31/07
Crew	Roberts, Price, George

			Year 6 -2006				Year 7 -2007			
Description	**Material**	**Size (mm)**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	1	0	0.8%	0.8%	0	0	0.0%	0.0%
Sand	very fine sand	0.062	0	0	0.0%	0.8%	1	0	1.0%	1.0%
	fine sand	0.125	0	9	7.2%	8.0%	0	0	0.0%	1.0%
	medium sand	0.25	3	9	9.6%	17.6%	0	0	0.0%	1.0%
	course sand	0.50	3	4	5.6%	23.2%	4	0	4.0%	5.0%
	very course sand	1.0	3	8	8.8%	32.0%	2	0	2.0%	7.0%
G r a v e l	very fine gravel	2.0	0	1	0.8%	32.8%	3	0	3.0%	10.0%
	fine gravel	4.0	0	1	0.8%	33.6%	0	0	0.0%	10.0%
	fine gravel	5.7	0	2	1.6%	35.2%	0	0	0.0%	10.0%
	medium gravel	8.0	0	1	0.8%	36.0%	0	3	3.0%	13.0%
	medium gravel	11.3	2	1	2.4%	38.4%	0	3	3.0%	16.0%
	course gravel	16.0	2	7	7.2%	45.6%	0	8	8.0%	24.0%
	course gravel	22.6	0	4	3.2%	48.8%	0	11	11.0%	35.0%
	very course gravel	32	3	14	13.6%	62.4%	0	16	16.0%	51.0%
	very course gravel	45	3	10	10.4%	72.8%	0	16	16.0%	67.0%
Cobble	small cobble	64	2	13	12.0%	84.8%	0	13	13.0%	80.0%
	medium cobble	90	2	3	4.0%	88.8%	0	9	9.0%	89.0%
	large cobble	128	0	4	3.2%	92.0%	0	5	5.0%	94.0%
	very large cobble	180	0	2	1.6%	93.6%	0	3	3.0%	97.0%
Boulder	small boulder	256	1	4	4.0%	97.6%	0	1	1.0%	98.0%
	small boulder	362	0	0	0.0%	97.6%	0	1	1.0%	99.0%
	medium boulder	512	0	1	0.8%	98.4%	0	1	1.0%	100.0%
	large boulder	1024	0	0	0.0%	98.4%	0	0	0.0%	100.0%
	very large boulder	2049	0	0	0.0%	98.4%	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	2	1.6%	100.0%	0	0	0.0%	100.0%
	TOTAL / %of whole count		25	100	100.0%		10	90	100.0%	

	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	0.3	6.6	28.3	75.5	249.9
Year 7 -2007	13.7	27.3	37.8	91.2	175.3



Stone Mountain Longitudinal Profile
Reach 2 - 2007
Survey: 8/01/07



2007 Survey Data Stone Mountain- Reach 2

Point	Station	Elevation	Description
8019	5.07	1304.61	T
8023	29.2	1304.77	T
8025	46.86	1304.37	T
8026	77.87	1305.54	T
8028	100.16	1305.84	HRSTART
8032	136.67	1304.74	T
8037	146.34	1306.28	T
8034	157.79	1305.41	T
8036	193.06	1305.65	T
8038	196.85	1306.2	T
8042	229.51	1305.39	T
8039	229.65	1305.41	T
8045	258.4	1304.56	T
8049	287.84	1303.29	T
8098	296.12	1303.34	T
8099	308.42	1303.12	T
8105	319.25	1302.91	T
8109	330.65	1301.8	T
8114	350.35	1303.44	T
8121	359.84	1303.28	T
8124	372.77	1302.36	T
8129	387.09	1302.37	T
8131	397.4	1300.9	T
8134	410.63	1303.26	T
8136	428.38	1303.08	T
8139	453.55	1303.3	T
8142	486.39	1303.08	T
8144	524.12	1302.83	T
8147	545.58	1301.88	T
8149	566.15	1301.93	T
8194	578.97	1302.2	T
8151	579.53	1301.82	T
8201	595.9	1301.17	T
8203	611.94	1301.29	T
8206	619.37	1301.29	T
8208	634.36	1301	T
8210	646.32	1302.16	T
8213	664.46	1301.76	T
8215	684.8	1301.89	T
8216	701.18	1302.63	T
8219	718.67	1302.72	T
8222	730.27	1300.68	T
8225	752	1301.91	T
8228	777.5	1302.2	T
8231	811.55	1302.21	T
8234	855.72	1302.04	T
8236	881.16	1301.69	T
8239	892.19	1301.2	T
8352	895.83	1301.27	T
8243	914.23	1299.91	T
8353	915.7	1299.71	T
8354	925.52	1299.34	T
8355	938.38	1298.86	T
8356	952.71	1298.41	T
8357	961.37	1299.51	T
8358	973.7	1300.29	T
8359	979.68	1300.27	T
8364	986.09	1299.56	T
8365	998.89	1299.71	T
8366	1018.27	1299.13	T
8367	1033.49	1299.24	T
8368	1055.89	1300.47	T
8369	1070.52	1300.42	T
8374	1087.19	1299.46	T
8375	1103.18	1299.08	T
8376	1120.74	1299.11	T
8377	1140.03	1299.49	T
8378	1167.33	1299.62	T
8379	1190.76	1299.54	T
8380	1210.05	1298.37	T
8433	1222.4	1299.8	T
8436	1240.64	1298.7	T
8438	1261.75	1298.99	T
8440	1272.72	1296.03	T
8443	1296.38	1298.72	T
8446	1306.35	1299.34	T
8448	1318.67	1299.39	T
8457	1332.48	1299.71	T
8463	1339.5	1296.4	T
8505	1352.22	1294.15	T
8506	1356.49	1293.89	T
8507	1364.6	1297.28	T
8513	1373.01	1298.09	T
8514	1391.94	1298.87	T
8515	1396.35	1298.15	T
8518	1405.37	1297.1	T
8522	1410.96	1294.41	T
8523	1424.26	1295.05	T
8527	1439.79	1295.99	T
8442	1439.79	1295.99	T
8577	1468.3	1295.94	T
8533	1468.3	1295.94	T
8580	1498.31	1295.77	T
8536	1498.31	1295.77	T

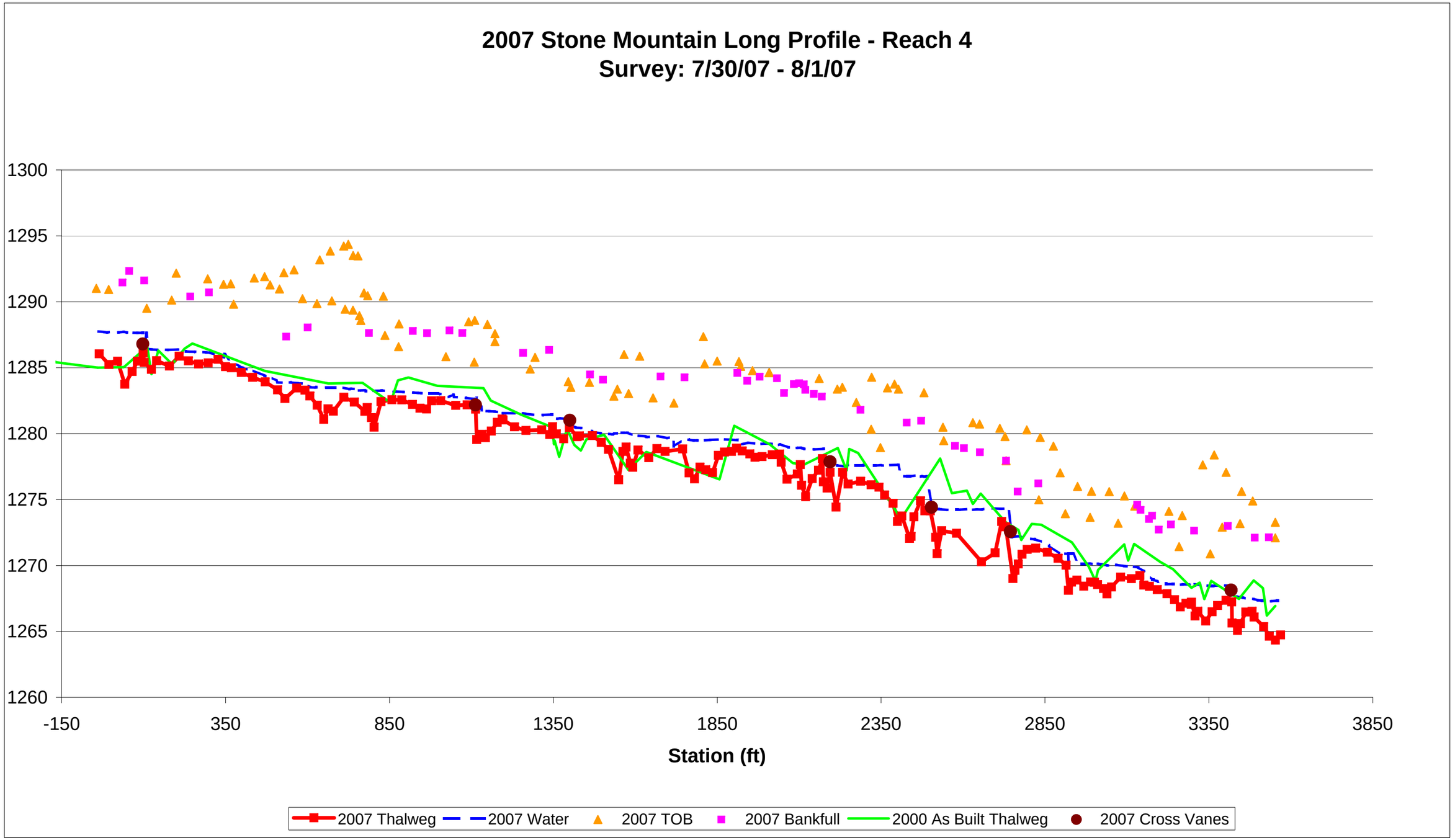
Point	Station	Elevation	Description
8017	17.43	1306.49	W
8027	33.02	1306.55	W
8020	40.1	1306.52	W
8029	67.01	1306.58	W
8022	72.83	1306.59	W
8031	97.57	1306.5	W
8033	116.11	1306.44	W
8030	117.84	1306.38	W
8035	158.76	1306.29	W
8040	169.45	1306.23	W
8043	189.7	1306.14	W
8041	197.04	1306.16	W
8044	225.9	1306.09	W
8048	226.53	1305.62	W
8047	257.64	1305.32	W
8102	267.72	1305.24	W
8104	276.29	1305.24	W
8106	289.63	1305.27	W
8110	304.14	1305.26	W
8107	313.69	1305.31	W
8108	324.14	1305.43	W
8118	354.03	1305.24	W
8115	362.4	1305.16	W
8126	371.3	1305.27	W
8122	374.5	1304.39	W
8125	381.79	1304.22	W
8130	393.21	1304.3	W
8133	400.93	1304.25	W
8135	412.94	1304.27	W
8132	430.05	1304.02	W
8138	434.84	1304	W
8140	461.49	1303.98	W
8137	464.46	1303.87	W
8143	489.15	1303.54	W
8141	501.12	1303.53	W
8146	526.69	1303.36	W
8145	555.53	1303.38	W
8150	560.66	1303.43	W
8202	565.55	1303.38	W
8148	575.66	1303.45	W
8152	582.61	1303.36	W
8198	588.94	1303.44	W
8204	611.28	1303.35	W
8207	636.99	1303.34	W
8205	638.36	1303.37	W
8211	661.77	1303.34	W
8214	673.12	1303.39	W
8218	676.54	1303.32	W
8217	698.87	1303.31	W
8221	717.41	1303.34	W
8220	729.38	1302.99	W
8224	744.2	1302.98	W
8223	758.42	1302.89	W
8227	771.23	1302.96	W
8226	786.05	1302.87	W
8230	812.07	1302.9	W
8229	819.6	1302.85	W
8233	842.42	1302.76	W
8232	844.99	1302.69	W
8235	870.04	1302.5	W
8237	884.83	1302.27	W
8240	898.23	1302.04	W
8242	909.13	1301.59	W
8382	916.3	1301.51	W
8384	951.02	1301.51	W
8383	956.75	1301.55	W
8385	974.97	1301.49	W
8386	980.67	1301.17	W
8387	980.81	1301.5	W
8388	989.71	1301.17	W
8390	1005.57	1301.18	W
8389	1020.82	1301.18	W
8392	1026.76	1301.16	W
8391	1054.89	1301.2	W
8395	1057.23	1301.18	W
8397	1075.35	1301.16	W
8398	1078.67	1301.2	W
8393	1091.93	1300.8	W
8400	1105.78	1300.7	W
8394	1122.77	1300.69	W
8401	1137.71	1300.72	W
8403	1166.42	1300.74	W
8396	1172.69	1300.77	W
8435	1197.8	1300.74	W
8399	1203.06	1300.76	W
8434	1233.02	1300.76	W
8439	1261.9	1300.8	W
8441	1291.38	1300.82	W
8458	1301.38	1300.67	W
8445	1315.78	1300.81	W
8462	1319.91	1300.65	W
8465	1324.13	1300.67	W
8453	1332.52	1300.45	W
8466	1339.07	1299.69	W
8455	1340.33	1299.8	W
8459	1352.86	1299.73	W
8461	1367.38	1299.72	W

Point	Station	Elevation	Description
8503	1379.54	1299.73	W
8500	1389.64	1299.75	W
8464	1396.03	1299.67	W
8496	1397.54	1299.72	W
8498	1400.79	1299.7	W
8502	1405.1	1298.85	W
8504	1415.78	1298.07	W
8508	1430.34	1298.05	W
8511	1435.14	1298.09	W
8510	1456.33	1298.09	W
8516	1467.44	1298.02	W
8512	1470.85	1298.05	W
8519	1494.88	1298.06	W
8517	1496.58	1298.03	W

Point	Station	Elevation	Description
8200	553.53	1306.04	TOB
8486	1004.34	1303.91	TOB
8491	1012.33	1304.29	TOB
8481	1038.08	1303.66	TOB
8475	1157.31	1303.77	TOB
8470	1314.45	1302.43	TOB
8190	0.91	1313.74	TOB
8188	35.33	1311.96	TOB
8186	81.27	1312.65	TOB
8187	82.73	1312.51	TOB
8184	105.15	1312.48	TOB
8183	118.91	1312.07	TOB
8182	122.27	1311.94	TOB
8180	151.01	1311.26	TOB
8181	156.7	1312.28	TOB
8178	170.24	1312.03	TOB
8177	194.76	1312.08	TOB
8179	208.3	1311.69	TOB
8175	214.66	1311.66	TOB
8174	226.89	1311.29	TOB
8173	249.14	1311.29	TOB
8171	271.79	1311.02	TOB
8176	284.11	1311.04	TOB
8172	315.03	1310.4	TOB
8169	319.98	1310.66	TOB
8167	348.44	1309.22	TOB
8170	361.61	1310.21	TOB
8168	393.92	1310.95	TOB
8166	395.25	1309.77	TOB
8164	433.13	1309.61	TOB
8163	496.22	1308.18	TOB
8193	496.23	1308.64	TOB
8159	535.06	1307.96	TOB
8197	543.44	1307.98	TOB
8156	552.24	1307.58	TOB
8154	577.31	1306.99	TOB
8306	603.3	1307.3	TOB
8307	604.22	1306.45	TOB
8304	623.32	1306.73	TOB
8301	651.95	1307.85	TOB
8257	703.12	1306.82	TOB
8258	737.9	1308.3	TOB
8255	755.42	1307.43	TOB
8252	796.82	1306.97	TOB
8249	828.17	1306.41	TOB
8251	851.41	1306.95	TOB
8247	859.41	1306.3	TOB
8246	893.18	1305.73	TOB
8245	924.67	1307.03	TOB
8489	932.15	1304.49	TOB
8494	932.58	1306.8	TOB
8488	960.02	1304.85	TOB
8493	960.17	1306.65	TOB
8485	1004.62	1304.6	TOB
8480	1043.68	1306.16	TOB
8479	1063.11	1306.52	TOB
8477	1129.12	1304.49	TOB
8484	1153.23	1303.97	TOB
8471	1253.26	1305.55	TOB
8616	1258.63	1304.45	TOB
8572	1258.63	1304.45	TOB
8469	1282.83	1304.75	TOB
8472	1304.55	1303.84	TOB
8468	1317.32	1304.35	TOB
8613	1332.34	1304.37	TOB
8569	1332.34	1304.37	TOB
8614	1355.19	1303.65	TOB
8570	1355.19	1303.65	TOB
8567	1369.31	1303.79	TOB
8612	1380.26	1303.96	TOB
8610	1399.27	1304.89	TOB
8566	1399.27	1304.89	TOB
8607	1425.32	1303.86	TOB
8563	1425.32	1303.86	TOB
8606	1430.89	1303.34	TOB
8562	1430.89	1303.34	TOB
8605	1463.75	1303.73	TOB
8561	1463.75	1303.73	TOB
8560	1474.74	1302.48	TOB

Point	Station	Elevation	Description
8615	1420.29	1302.73	BNKF
8571	1420.29	1302.73	BNKF
8165	420.16	1308.71	BNKF
8161	442.37	1308.09	BNKF
8162	516.57	1307.9	BNKF
8155	564.92	1307.45	BNKF
8308	581.83	1307.76	BNKF
8303	635.95	1307.86	BNKF
8302	654.26	1308.1	BNKF
8300	677.2	1308.07	BNKF
8264	709.44	1307.82	BNKF
8256	724.31	1307.22	BNKF
8253	768.15	1307.17	BNKF
8250	796.82	1306.99	BNKF
8254	816.37	1307.46	BNKF
8248	881.4	1307.06	BNKF
8490	1050.81	1305.28	BNKF
8478	1094.52	1304.9	BNKF
8487	1110.49	1305.01	BNKF
8476	1156.61	1305.14	BNKF
8474	1200.84	1304.81	BNKF
8473	1224.05	1305.62	BNKF
8467	1345.59	1303.93	BNKF
8611	1369.31	1303.79	BNKF
8568	1380.26	1303.96	BNKF
8604	1474.74	1302.48	BNKF

2007 Stone Mountain Long Profile - Reach 4
Survey: 7/30/07 - 8/1/07



2007 Stone Mountain Reach 4 Survey Data

Point	Station	Elev	Desc	Point	Station	Elev	Desc
6083	-35.46	1286.05	T	6532	2045.21	1277.83	T
6081	-5.47	1285.24	T	6534	2062.93	1276.54	T
6080	20.57	1285.49	T	6538	2094.71	1276.93	T
6077	42.43	1283.74	T	6540	2103.81	1277.65	T
6074	65.2	1284.71	T	6546	2107.6	1276.08	T
6071	80.73	1285.49	T	6548	2119.87	1275.21	T
6067	98.6	1286.11	T	6549	2139.71	1276.59	T
6060	102.09	1285.4	T	6550	2158.89	1277.22	T
6057	123.75	1284.87	T	6556	2170.95	1278.1	T
6054	139.94	1285.52	T	6557	2174.02	1276.34	T
6051	178.75	1285.12	T	6564	2185.29	1275.86	T
6047	208.6	1285.87	T	6566	2194.4	1277.07	T
6045	236.55	1285.51	T	6568	2212.68	1274.43	T
6042	267.68	1285.28	T	6572	2232.68	1277.07	T
6039	297.21	1285.36	T	6575	2249.41	1276.17	T
6035	327.18	1285.63	T	6579	2287.6	1276.39	T
6033	350.23	1285.08	T	6581	2319.85	1276.12	T
6032	367.67	1284.99	T	6584	2343.44	1275.93	T
6108	398.41	1284.64	T	6587	2360.83	1275.34	T
6113	432.74	1284.27	T	6590	2386.6	1274.71	T
6116	470.89	1283.92	T	6666	2400.23	1273.33	T
6119	508.63	1283.32	T	6669	2413.37	1273.75	T
6123	531.17	1282.66	T	6662	2437.05	1272.05	T
6135	567.07	1283.46	T	6677	2441.4	1272.21	T
6137	592.6	1283.29	T	6681	2450.05	1273.69	T
6140	607.26	1282.85	T	6684	2470.09	1274.9	T
6142	629.78	1282.15	T	6687	2483.86	1274.14	T
6145	649.67	1281.08	T	6688	2500.22	1274.14	T
6148	662.65	1281.88	T	6697	2516.81	1272.13	T
6151	679.03	1281.7	T	6700	2520.85	1270.9	T
6153	711.11	1282.76	T	6703	2534.71	1272.63	T
6156	743.1	1282.39	T	6705	2580.07	1272.44	T
6210	775.11	1281.69	T	6708	2656.03	1270.28	T
6215	782.44	1281.97	T	6742	2697.88	1270.96	T
6217	794.98	1281.21	T	6743	2718	1273.33	T
6220	803.2	1280.49	T	6745	2730.13	1272.93	T
6223	824.16	1282.42	T	6763	2752.58	1269.01	T
6226	857.61	1282.57	T	6767	2758.72	1269.63	T
6227	888.08	1282.56	T	6770	2768.37	1270.11	T
6231	920.43	1282.21	T	6773	2780.03	1270.85	T
6234	943.18	1281.92	T	6775	2796.08	1271.22	T
6238	963.28	1281.87	T	6778	2821.74	1271.31	T
6241	978.88	1282.48	T	6782	2857.49	1271	T
6244	1006.45	1282.49	T	6789	2890.12	1270.54	T
6246	1052.39	1282.14	T	6792	2914.64	1270.02	T
6249	1087.16	1282.17	T	6798	2921.45	1268.12	T
6253	1112.89	1281.85	T	6801	2930.96	1268.73	T
6255	1116.47	1279.55	T	6804	2947.62	1268.89	T
6260	1130.83	1279.71	T	6806	2968.33	1268.43	T
6263	1133.27	1279.94	T	6809	2988.78	1268.75	T
6267	1143.21	1279.69	T	6811	3000.83	1268.72	T
6269	1160.83	1280.19	T	6814	3010.63	1268.54	T
6271	1179.13	1280.85	T	6817	3028.57	1268.25	T
6273	1193.85	1281.11	T	6819	3039.1	1267.84	T
6305	1196.85	1281.03	T	6822	3053.2	1268.37	T
6308	1231.45	1280.51	T	6824	3080.99	1269.12	T
6311	1266.29	1280.24	T	6827	3113.78	1269	T
6314	1314.93	1280.28	T	6829	3139.56	1269.23	T
6318	1339.23	1279.93	T	6832	3151.55	1268.51	T
6320	1347.86	1280.52	T	6835	3168.77	1268.41	T
6322	1359.49	1279.98	T	6838	3192.86	1268.16	T
6325	1381.63	1279.61	T	6842	3222.36	1267.86	T
6328	1399.12	1280.45	T	6845	3245.38	1267.4	T
6332	1422.81	1279.76	T	6847	3262.83	1266.86	T
6335	1429.31	1279.82	T	6850	3280.34	1267.13	T
6337	1469.43	1279.84	T	6925	3296.22	1267.05	T
6339	1496.68	1279.34	T	6853	3297.11	1267.21	T
6342	1518.31	1278.8	T	6854	3297.17	1267.2	T
6414	1549.3	1276.5	T	6928	3307.73	1266.17	T
6420	1562.58	1278.65	T	6932	3316.71	1266.53	T
6423	1571.89	1278.98	T	6936	3340.32	1265.79	T
6429	1584.7	1277.75	T	6939	3360.15	1266.49	T
6431	1592.79	1277.45	T	6942	3376.62	1266.96	T
6434	1608.32	1278.75	T	6945	3402.42	1267.36	T
6436	1641.36	1278.17	T	6948	3419.78	1267.24	T
6438	1666.35	1278.86	T	6951	3420.76	1265.63	T
6439	1691.24	1278.65	T	6958	3437.61	1265.07	T
6445	1744.48	1278.84	T	6960	3446.4	1265.59	T
6447	1764.32	1277.02	T	6965	3462.92	1266.47	T
6450	1781.1	1276.57	T	6966	3481.99	1266.52	T
6452	1797.71	1277.46	T	6969	3487.9	1266.09	HREND
6454	1815.26	1277.26	T	6971	3517.22	1265.36	T
6456	1835.89	1277.04	T	6973	3534.25	1264.64	T
6457	1853.7	1278.35	T	6975	3553.12	1264.34	T
6459	1872.07	1278.6	T	6976	3568.75	1264.73	T
6460	1893.63	1278.65	T				
6462	1908.93	1278.89	T				
6465	1926.45	1278.68	T				
6467	1949.51	1278.45	T				
6519	1965.51	1278.2	T				
6521	1987.1	1278.25	T				
6525	2017.88	1278.39	T				
6528	2040.43	1278.44	T				

Point	Station	Elev	Desc	Point	Station	Elev	Desc	Point	Station	Elev	Desc
6085	-37	1287.75	W	6304	1196.29	1281.56	W	6675	2489.11	1276.75	W
6078	-19.38	1287.7	W	6306	1231.59	1281.54	W	6689	2507.19	1274.25	W
6084	-11.11	1287.66	W	6309	1233.6	1281.49	W	6695	2525.83	1274.28	W
6075	8.81	1287.74	W	6312	1257.28	1281.55	W	6690	2531.85	1274.26	W
6082	23.22	1287.67	W	6310	1264.23	1281.51	W	6698	2552.11	1274.21	W
6072	39.3	1287.73	W	6316	1293.67	1281.41	W	6691	2559.58	1274.24	W
6079	49.46	1287.66	W	6313	1317.48	1281.41	W	6701	2582.92	1274.24	W
6070	66.66	1287.63	W	6321	1343.93	1281.45	W	6693	2589.65	1274.22	W
6076	68.05	1287.65	W	6315	1345.56	1281.45	W	6706	2610.9	1274.27	W
6073	81.13	1287.64	W	6324	1352.81	1281.42	W	6702	2613.06	1274.2	W
6069	97.62	1287.65	W	6327	1362.31	1281.13	W	6709	2641.79	1274.26	W
6065	99.03	1287.65	W	6317	1370.89	1281.17	W	6704	2657.68	1274.24	W
6061	104.68	1287.02	W	6331	1388.76	1281.12	W	6744	2676.51	1274.35	W
6066	109.29	1287.64	W	6319	1397.5	1281.07	W	6746	2690.7	1274.33	W
6056	113.68	1286.43	W	6326	1407.91	1280.61	W	6747	2714.61	1274.3	W
6062	124.47	1286.38	W	6333	1418.25	1280.45	W	6752	2732.98	1274.32	W
6055	141.63	1286.36	W	6330	1435.09	1280.43	W	6766	2738.77	1274.27	W
6052	162.57	1286.37	W	6341	1467.58	1280.18	W	6769	2749.27	1272.17	W
6053	174.05	1286.35	W	6334	1469.2	1280.12	W	6765	2766.88	1272.22	W
6046	205.39	1286.38	W	6340	1495.16	1280.02	W	6774	2774.62	1272.21	W
6050	211.84	1286.25	W	6344	1508.96	1280.02	W	6771	2783.45	1272.09	W
6043	229.14	1286.24	W	6409	1531.48	1279.93	W	6777	2818.57	1271.98	W
6049	237.28	1286.22	W	6343	1536.23	1280.02	W	6776	2819.29	1271.99	W
6041	257.54	1286.2	W	6410	1543.24	1280.01	W	6780	2851.72	1271.72	W
6048	263.44	1286.21	W	6411	1551.28	1280.07	W	6779	2862.73	1271.5	W
6044	291.26	1286.16	W	6419	1553.33	1280.04	W	6783	2892.98	1270.91	W
6038	304.19	1286.13	W	6421	1557.29	1280.07	W	6781	2903.99	1270.9	W
6040	324.18	1285.95	W	6412	1564.68	1280.06	W	6784	2910.37	1270.9	W
6037	344.95	1285.79	W	6424	1576.67	1280.07	W	6785	2920.62	1270.89	W
6036	346.81	1286.03	W	6418	1603.51	1279.79	W	6788	2922.18	1270.17	W
6034	365.57	1285.45	W	6430	1608.09	1279.84	W	6787	2922.7	1270.9	W
6111	392.25	1285.1	W	6432	1630.87	1279.8	W	6793	2936.06	1270.9	W
6112	403.37	1284.98	W	6435	1634.57	1279.74	W	6797	2950.63	1270.17	W
6115	433.52	1284.75	W	6422	1647.85	1279.76	W	6790	2961.92	1270.13	W
6114	435	1284.78	W	6437	1668.02	1279.82	W	6800	2969.41	1270.12	W
6118	468.89	1284.38	W	6425	1697.04	1279.66	W	6794	2987.58	1270.15	W
6117	483.23	1284.32	W	6440	1717.05	1279.75	W	6803	2995.25	1270.1	W
6136	490.82	1284.24	W	6443	1717.28	1279.02	W	6799	2999.47	1270.1	W
6121	504.83	1284.02	W	6442	1748.53	1279.57	W	6808	3011.32	1270.14	W
6120	508.58	1283.89	W	6441	1762.74	1279.54	W	6816	3033.32	1270.05	W
6134	522.4	1283.86	W	6448	1777.84	1279.48	W	6802	3042.11	1270	W
6122	546.68	1283.89	W	6446	1788.23	1279.49	W	6820	3061.93	1270.02	W
6132	570.55	1283.82	W	6451	1798.17	1279.48	W	6812	3067.48	1270.05	W
6138	588.35	1283.8	W	6449	1812.87	1279.49	W	6825	3092.56	1269.95	W
6133	596.94	1283.7	W	6458	1828.56	1279.53	W	6815	3104.54	1269.94	W
6141	609.66	1283.5	W	6461	1860.2	1279.55	W	6828	3116.18	1269.93	W
6139	624.55	1283.49	W	6453	1870.29	1279.56	W	6831	3134.8	1269.85	W
6144	627.12	1283.52	W	6463	1893.09	1279.54	W	6833	3151.32	1269.56	W
6143	648.92	1283.49	W	6455	1912.13	1279.5	W	6818	3155.05	1269.42	W
6146	658.93	1283.5	W	6517	1913.79	1279.45	W	6836	3176.87	1268.92	W
6147	679.63	1283.5	W	6464	1926.64	1279.19	W	6821	3180.3	1268.92	W
6149	684.63	1283.5	W	6518	1943.82	1279.31	W	6826	3192.28	1268.79	W
6150	705.03	1283.51	W	6466	1965.69	1279.24	W	6839	3197.39	1268.62	W
6152	728.38	1283.36	W	6520	1970.88	1279.18	W	6841	3219.33	1268.64	W
6154	732.46	1283.41	W	6523	1995.56	1279.25	W	6834	3219.59	1268.58	W
6155	742.16	1283.39	W	6522	1997.34	1279.26	W	6843	3239.82	1268.59	W
6157	755.76	1283.29	W	6524	2023.6	1279.2	W	6837	3248.02	1268.59	W
6211	757.28	1283.27	W	6526	2037.17	1279.12	W	6846	3265.11	1268.55	W
6209	767.85	1283.28	W	6527	2041.99	1279.2	W	6840	3270.5	1268.57	W
6214	775.01	1283.29	W	6536	2067.72	1278.94	W	6848	3288.76	1268.56	W
6212	778.52	1283.25	W	6535	2072.66	1278.98	W	6926	3291.31	1268.53	W
6219	797.6	1283.26	W	6542	2093.16	1278.91	W	6844	3295.59	1268.53	W
6218	799.4	1283.24	W	6537	2105.1	1278.93	W	6852	3300.34	1268.55	W
6221	825.27	1283.26	W	6544	2109.72	1278.89	W	6849	3306.59	1268.56	W
6222	826.75	1283.28	W	6547	2115.81	1278.84	W	6933	3307.92	1268.5	W
6225	862.96	1283.16	W	6543	2140.24	1278.84	W	6927	3309.35	1268.53	W
6224	867.99	1283.2	W	6551	2145.71	1278.8	W	6851	3316.17	1268.56	W
6228	891.98	1283.16	W	6552	2174.34	1278.85	W	6935	3335.7	1268.48	W
6229	920.11	1283.13	W	6553	2177.86	1278.87	W	6934	3340.9	1268.49	W
6230	922.94	1283.11	W	6560	2188.1	1277.99	W	6938	3355.89	1268.46	W
6232	936.46	1283.09	W	6563	2193.45	1278	W	6937	3363.35	1268.46	W
6233	947.84	1283.07	W	6565	2194.84	1277.59	W	6940	3389.69	1268.48	W
6237	967.33	1283.04	W	6569	2210.87	1277.6	W	6941	3395.56	1268.49	W
6239	972.15	1283.03	W	6570	2216.05	1277.59	W	6943	3420.92	1268.47	W
6240	998.37	1283.03	W	6573	2242.41	1277.51	W	6944	3423.01	1268.49	W
6242	1005.68	1283	W	6571	2249.06	1277.63	W	6950	3431.52	1267.65	W
6247	1031.29	1282.77	W	6577	2266.88	1277.59	W	6949	3433.96	1267.64	W
6243	1045.21	1282.96	W	6580	2294.13	1277.59	W	6954	3450.99	1267.58	W
6250	1047.8	1282.78	W	6574	2297.45	1277.63	W	6955	3454.67	1267.56	W
6245	1080.14	1282.72	W	6582	2319.88	1277.55	W	6956	3482.74	1267.41	W
6256	1083.22	1282.71	W	6576	2329.45	1277.58	W	6957	3485.63	1267.48	W
6259	1110.97	1282.61	W	6585	2332.58	1277.58	W	6964	3499.53	1267.35	W
6248	1115.69	1282.7	W	6578	2349.41	1277.61	W	6963	3512.08	1267.34	W
6261	1123.02	1281.89	W	6589	2355.14	1277.58	W	6968	3525.68	1267.34	W
6265	1128.7	1282.06	W	6583	2375.25	1277.61	W	6967	3539.96	1267.29	W
6264	1130.06	1282.03	W	6588	2402.21	1277.64	W	6970	3558.97	1267.34	W
6266	1131.65	1281.77	W	6667	2411.14	1276.78	W	6972	3560.33	1267.34	W
6272	1138.35	1281.66	W	6665	2430.54	1276.75	W				
6268	1142.59	1281.71	W	6670	2439	1276.76	W				
6274	1154.67	1281.7	W	6672	2457.95	1276.83	W				
6270	1171.07	1281.68	W	6671	2461.97	1276.69	W				
6275	1184.28	1281.63	W	6673	2474.36	1276.78	W				
6307	1194.46	1281.64	W	6679	2482.42	1276.73	W				

Point	Station	Elev	Desc
6088	35.29	1291.45	BNKF
6090	55.87	1292.34	BNKF
6094	101.84	1291.61	BNKF
6101	242.33	1290.4	BNKF
6102	299.49	1290.71	BNKF
6173	535.19	1287.35	BNKF
6169	600.41	1288.05	BF
6296	787.41	1287.63	BNKF
6292	921.47	1287.78	BNKF
6289	964.96	1287.62	BNKF
6286	1033.11	1287.82	BNKF
6290	1072.42	1287.63	BNKF
6363	1257.72	1286.12	BNKF
6357	1337.47	1286.34	BNKF
6349	1462.24	1284.48	BNKF
6350	1501.83	1284.09	BNKF
6476	1677.04	1284.32	BNKF
6474	1750.16	1284.27	BNKF
6482	1911.64	1284.6	BNKF
6481	1941.75	1284	BNKF
6609	1979.24	1284.31	BNKF
6608	2032.22	1284.2	BNKF
6619	2054.06	1283.08	BNKF
6621	2084.04	1283.75	BNKF
6622	2099.85	1283.82	BNKF
6606	2113.94	1283.73	BNKF
6620	2119.09	1283.32	BNKF
6618	2144.6	1283.01	BNKF
6615	2169.1	1282.81	BNKF
6616	2287.33	1281.81	BNKF
6758	2428.29	1280.83	BNKF
6676	2472.15	1280.97	BNKF
6754	2575.58	1279.07	BNKF
6751	2602.67	1278.89	BNKF
6748	2651.55	1278.58	BNKF
6887	2731.42	1277.94	BNKF
6884	2766.8	1275.6	BNKF
6882	2829.87	1276.22	BNKF
6861	3131.33	1274.61	BNKF
6863	3141.4	1274.21	BNKF
6858	3167.37	1273.52	BNKF
6864	3176.82	1273.77	BNKF
6859	3196.72	1272.71	BNKF
6980	3234.05	1273.11	BNKF
6855	3304.83	1272.64	BNKF
6988	3407.65	1273	BNKF
6983	3489.97	1272.11	BNKF
6985	3533.07	1272.13	BNKF

Point	Station	Elev	Desc	Point	Station	Elev	Desc
6086	-44.27	1291.02	TOB	6856	3259.31	1271.43	TOB
6087	-6.4	1290.93	TOB	6860	3268.8	1273.78	TOB
6091	109.49	1289.51	TOB	6999	3331.33	1277.63	TOB
6097	185.45	1290.12	TOB	6984	3354.26	1270.89	TOB
6098	199.64	1292.17	TOB	6994	3366.31	1278.38	TOB
6104	295.45	1291.74	TOB	6990	3390.78	1272.91	TOB
6106	343.75	1291.32	TOB	6993	3402.65	1277.07	TOB
6099	365.78	1291.36	TOB	6986	3445.18	1273.18	TOB
6109	374.49	1289.82	TOB	6992	3449.68	1275.61	TOB
6127	437.53	1291.8	TOB	6989	3483.97	1274.89	TOB
6125	469.22	1291.91	TOB	6977	3552.62	1272.1	TOB
6131	486.03	1291.28	TOB	6979	3552.67	1273.27	TOB
6171	514.5	1290.97	TOB				
6124	527.98	1292.21	TOB				
6167	559.19	1292.42	TOB				
6170	584.8	1290.23	TOB				
6168	628.75	1289.86	TOB				
6165	637.22	1293.18	TOB				
6164	669.21	1293.84	TOB				
6166	674.08	1290.07	TOB				
6162	710.45	1294.22	TOB				
6163	714.91	1289.43	TOB				
6301	724.51	1294.36	TOB				
6161	738.68	1289.36	TOB				
6160	739.32	1293.51	TOB				
6300	754.26	1293.47	TOB				
6159	758.2	1288.95	TOB				
6298	762.74	1288.58	TOB				
6158	772.19	1290.67	TOB				
6299	783.87	1290.46	TOB				
6297	831.52	1290.42	TOB				
6294	836.11	1287.45	TOB				
6293	877.83	1286.6	TOB				
6295	879.42	1288.32	TOB				
6285	1022.19	1285.83	TOB				
6282	1091.72	1288.48	TOB				
6279	1108.96	1285.42	TOB				
6280	1110.11	1288.59	TOB				
6277	1149.05	1288.28	TOB				
6276	1172.04	1287.58	TOB				
6303	1172.09	1286.97	TOB				
6358	1279.65	1284.9	TOB				
6362	1294.02	1285.79	TOB				
6352	1395.47	1283.94	TOB				
6356	1403.08	1283.5	TOB				
6354	1460	1283.88	TOB				
6346	1534.75	1282.84	TOB				
6480	1545.33	1283.38	TOB				
6479	1565.66	1286	TOB				
6416	1579.7	1283.04	TOB				
6478	1613.79	1285.87	TOB				
6483	1654.45	1282.71	TOB				
6484	1717.76	1282.32	TOB				
6485	1807.86	1287.35	TOB				
6473	1811.73	1285.29	TOB				
6471	1849.9	1285.5	TOB				
6468	1916.28	1285.47	TOB				
6611	1921.33	1285.1	TOB				
6472	1957.87	1284.78	TOB				
6477	2007.83	1284.62	TOB				
6617	2008.94	1284.63	TOB				
6602	2160.76	1284.18	TOB				
6614	2216.63	1283.37	TOB				
6600	2231.65	1283.52	TOB				
6598	2274.34	1282.36	TOB				
6599	2319.65	1280.33	TOB				
6595	2321.16	1284.28	TOB				
6663	2348.01	1278.94	TOB				
6593	2369.61	1283.47	TOB				
6591	2390.74	1283.76	TOB				
6592	2402.82	1283.37	TOB				
6757	2480.71	1283.1	TOB				
6755	2538.65	1280.49	TOB				
6692	2541.25	1279.46	TOB				
6756	2630.18	1280.83	TOB				
6741	2650.42	1280.72	TOB				
6753	2712.26	1280.4	TOB				
6885	2727.99	1279.78	TOB				
6886	2731.36	1277.95	TOB				
6883	2794.44	1280.29	TOB				
6878	2831.24	1274.98	TOB				
6879	2835.49	1279.71	TOB				
6877	2875.89	1279.05	TOB				
6875	2896.12	1277.03	TOB				
6872	2911.93	1273.93	TOB				
6873	2949.23	1276	TOB				
6871	2987.67	1273.65	TOB				
6870	2991.83	1275.63	TOB				
6868	3045.99	1275.6	TOB				
6869	3073.15	1273.2	TOB				
6865	3092.22	1275.27	TOB				
6867	3123.78	1274.5	TOB				
6862	3228.23	1274.11	TOB				

Project Name	Stone Mountain
Task	Feature Slope and Length Calculations
Date	8/1/07
Crew	Roberts, Price

Reach 2 - 2007

Riffle Station	Change	Water Elev	change	slope	Pool Station	length	p-p spacing
197		1306.16			256		
257	60	1305.32	0.84	1.40%	350	94	
354		1305.24			374		
393	39	1304.3	0.94	2.41%	434	60	101
461		1303.98			526		
527	66	1303.36	0.62	0.94%	717	191	217.5
812		1302.9			909		
884	72	1302.27	0.63	0.88%	1078	169	372
					1166		
					1322	156	250.5

	237		
n:	4		
			670
n:			5
	min	max	median
Length	39	72	63
Slope	0.88%	2.41%	1.17%

	min	max	median
Length	60	191	156
Spacing	101	372	234

Reach 4 - 2007

Riffle Station	Change	Water Elev	change	slope	Pool Station	length	p-p spacing
104		1287.0			-17		
229	125	1286.24	0.78	0.62%	99	116	
324		1285.95			232		
469	144.82	1284.38	1.57	1.08%	305	73	227.5
825		1283.28			604		
892	67	1283.1	0.18	0.27%	728	124	397.5
1408		1280.61			728		
1490	82	1280	0.61	0.74%	840	112	118
1914		1279.45			900		
1970	56	1279.18	0.27	0.48%	967	67	149.5
2249		1277.63			1129		
2332	83	1277.3	0.33	0.40%	1208	79	235
2613		1274.3			1363		
2658	45	1274.15	0.15	0.33%	1398	35	212
2819		1272			1537		
2922	103	1270.17	1.83	1.78%	1668	131	222
3134		1269.9			1749		
3219	85	1268.6	1.3	1.53%	1880	131	212
3450		1267.58			2049		
3499	49	1267.35	0.23	0.47%	2175	126	297.5
					2185		
					2263	78	112
					2360		
	839.82				2489	129	200.5
n:	10				2585		
					2714	129	225
					2950		
					3092	142	371.5
					3300		
					3415	115	336.5
					3512		
					3560	48	178.5
						1519	
					n:	15	

	min	max	median
Length	45.0	144.8	82.0
Slope	0.27%	1.78%	0.48%

	min	max	median
Length	35.0	142.0	115.5
Spacing	112	398	222

Project Name	East Prong of the Roaring River @ Stone Mountain
Task	Channel Pattern Measurements
Date	8/1/07
Crew	Roberts, Price

Reach 2 2007				**Reach 4** 2007		
Radius of Curvature	**Meander Wavelength**	**Channel Beltwidth**		**Radius of Curvature**	**Meander Wavelength**	**Channel Beltwidth**
157	557	163		140	766	503
144	586	177		207	534	222
145	588	333		75	595	326
				124	712	275
				69	547	225
				107		368
				96		
144	557	163	***min***	69	534	222
157	588	333	***max***	207	766	503
145	586	177	***median***	107	595	301

GPS Coordinates

Stone Mountain State Park

	NAD 1983 State Plane North Carolina		UTM	
Description	Northing	Easting	EASTING	NORTHING
Reach 2				
PA#1	965572.8919	1391855.313	13211584.84	1620998.99
PA#2 PA#3 PA#4	965284.6839	1391886.104	13211298.24	1621042.24
PA#6 PA#7	965117.995	1392209.266	13211145.71	1621372.32
PA#10	965003.4988	1392190.438	13211030.51	1621358.47
PA#8 PA#9 PA#11	964988.7876	1392132.395	13211013.29	1621301.12
PA#13 PA#14	964797.1319	1392007.416	13210816.40	1621184.56
PA#15	964822.4968	1391949.209	13210839.22	1621125.31
PA#16	964746.2009	1391957.234	13210763.35	1621136.64
Reach 4				
PA#18	962791.0201	1390158.116	13208732.05	1619423.92
PA#19	962447.6132	1390010.445	13208382.56	1619291.27
PA#20	962324.6846	1390298.863	13208272.25	1619584.74
PA#21	962110.3553	1390608.684	13208071.54	1619903.56
PA#22 PA#23	962122.6055	1390785.892	13208091.46	1620080.07
PA#24 PA#25	962064.4962	1390836.616	13208035.60	1620133.26
PA#26 PA#27	961805.3008	1390903.761	13207779.56	1620211.58
PA#28	961846.9449	1390974.611	13207824.24	1620280.56
PA#29	961825.1658	1391006.65	13207803.87	1620313.51
PA#30	961870.1744	1391090.513	13207852.47	1620395.34
PA#31	961675.1076	1391395.54	13207670.80	1620708.54
PA#32	961617.9719	1391387.763	13207613.38	1620703.24
PA#33	961578.2225	1391358.143	13207572.38	1620675.37
PA#34	961483.8307	1391202.214	13207471.33	1620523.68
PA#36	961347.6247	1391207.992	13207335.50	1620535.35

Reach - Field number	Location	Northern	Easting
R2	X1LP	965688.6900	1391798.7100
	X1RP	965604.8168	1391728.8033
	X2LP	965295.1823	1391863.1564
	X2RP	965343.1217	1391934.6939
	X3LP	965278.9577	1392000.3779
	X3RP	965231.1556	1391975.0301
	X4LP	964880.2011	1392120.0650
	X4RP	964907.3310	1392067.3695
R4	X1LP	962.776.1743	1390145.2360
	X1RP	962834.9718	1390122.9670
	X2LP	962613.7084	1389917.1320
	X2RP	962614.9065	1389887.7780
	X3LP	961968.5762	1390302.5390
	X3RP	961954.3593	1390301.1240
	X4LP	962126.5572	1390656.2580
	X4RP	962064.4786	1390672.3770
	X5LP	961877.0900	1390922.9100
	X5RP	961805.3300	1390851.9900
	X6LP	961860.5515	1391152.8720
	X6RP	961809.4108	1391135.8120
	X7LP	961429.6593	1391254.9960
	X7RP	961441.0453	1391184.4540