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

Monitoring Year: 2006
Measurement Year: 6
As-built Date: 2000
NCEEP Project Number: 364

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1619 Mail Service Center
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Prepared by: Biological & Agricultural Engineering, North Carolina State University
Campus Box 7625
Raleigh, NC 27695

Project Designed By: Biological & Agricultural Engineering, North Carolina State University
Campus Box 7625
Raleigh, NC 27695

Submitted: December, 2006

Ecosystem Enhancement PROGRAM

NCDENR

EAST PRONG OF THE ROARING RIVER at STONE MTN STREAM RESTORATION
2006 MONITORING REPORT

CONDUCTED FOR THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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TABLES

I. Executive Summary/Project Abstract

Overall, while the majority of the stream is functioning well, there are multiple areas of concern and areas of immediate need. A summary of monitoring measurement results is found in Table XII. The majority of the restored stream classifies as a C4 with rock cross vanes to establish grade control. There are cross vanes located on both reaches that have water piping around the structure and are in risk of failure. There are areas of bank erosion and migration that occur on the outside of most of the meander bends. Most of the bank erosion on this project is localized and a result of high Near Bank Stress on the outside of meander bends after construction. There are locations throughout both reaches were the placement of structures was not effective in minimizing near bank stress. The channel dimension for most of the restored section, as represented by the permanent cross-sections and has not changed significantly from as-built conditions. A depositional bench has formed at two of the permanent riffle cross-sections; this bench appears to be forming at an elevation that is lower than the designed bankfull elevation. Both reaches have well defined riffles, runs, pools and glides. These features are located in the expected plan-form locations. Most structures are holding grade and functioning. The structures that are failing are significantly increasing the total overall erosion and mass wasting from the reaches. The bank erosion on the outside of the meander bends and the failure of the rock structures require immediate attention. Vegetation is not succeeding to levels required for mitigation credit, replanting trees to obtain mitigation requirements and live stakes only in areas where erosion is problematic. Invasive vegetation is an issue on this project site. The Kudzu and fescue should be monitored however, and may need control so more diverse herbaceous vegetation can develop.

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 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 Institute 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 Allegany Counties. The drainage area for the section of river being restored is approximately 22 square miles. This project was constructed from July 2000 to the October 2000. Floodplain and stream bank planting continued through the winter until 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 portion 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	MitigationType	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
EI = Enhancement I
EII = Enhancement II
S = Stabilization
P1 = Priority I
P2 = Priority II
P3 = Priority III
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)	December 2000	Dec - 00	December 2000
Structural maintenance (Bank repair and revegetation)	Summer 2002 and 2006	-	Summer 2002 and 2006
Initial – Year 1 monitoring	June 2001	June 2001	December 2001
Year 2 Monitoring	June 2002	June 2002	December 2002
Year 3 Monitoring	June 2003	June 2003	December 2003
Year 4 Monitoring	June 2004	June 2004	December 2004
Year 5 Monitoring	June 2005	June 2005	December 2005
Year 6 Monitoring	June 2006	June 2006	December 2006

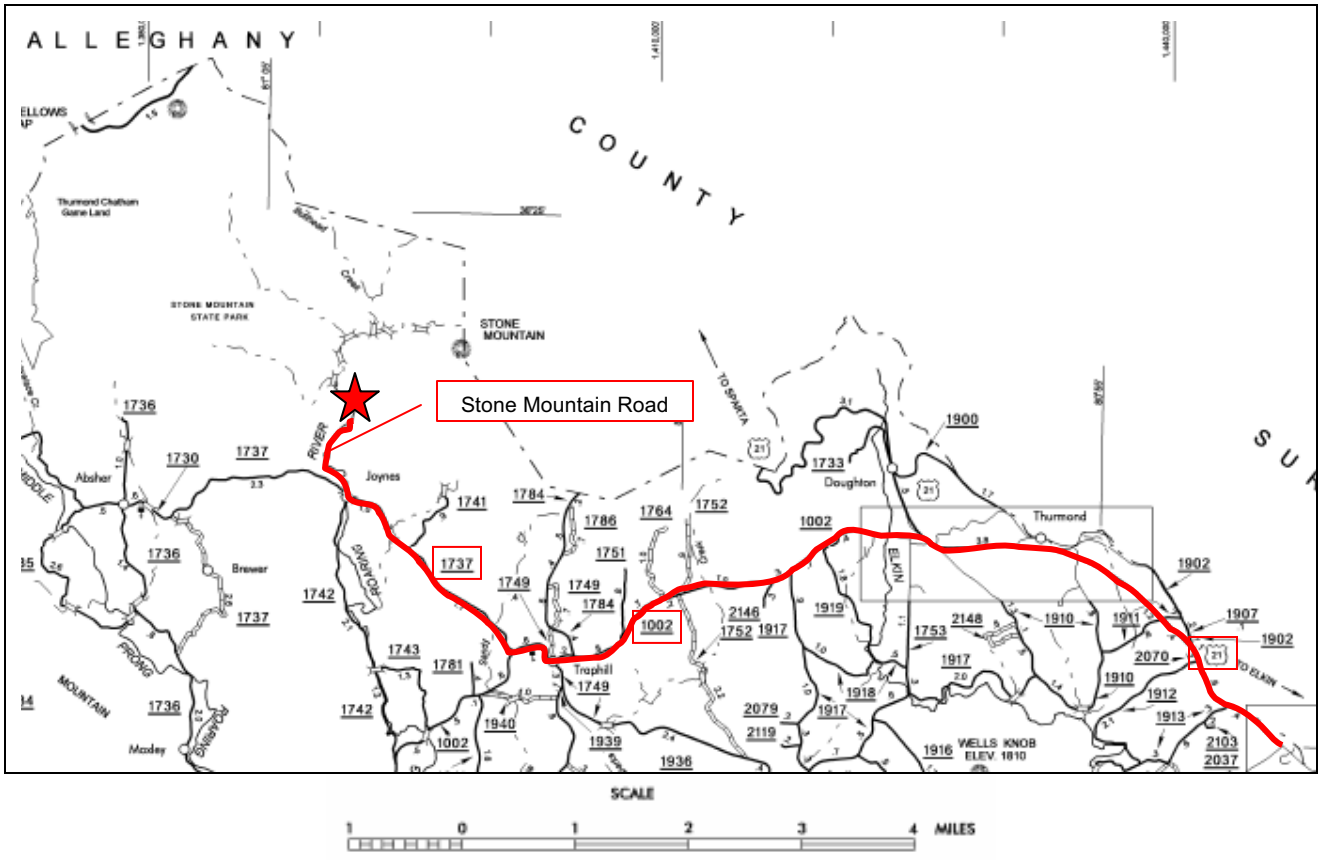
*Historical documents necessary to provide these data were unavailable at the time of report submission

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
Construction contractor POC	
Planting Contractor	SEI
Planting contractor POC	
Seeding Contractor	SEI
Planting contractor point of contact	
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	Jan Patterson (919) 515-6771
Vegetation Monitoring POC	Jan Patterson (919) 515-6771

Note: SEI contact information unavailable

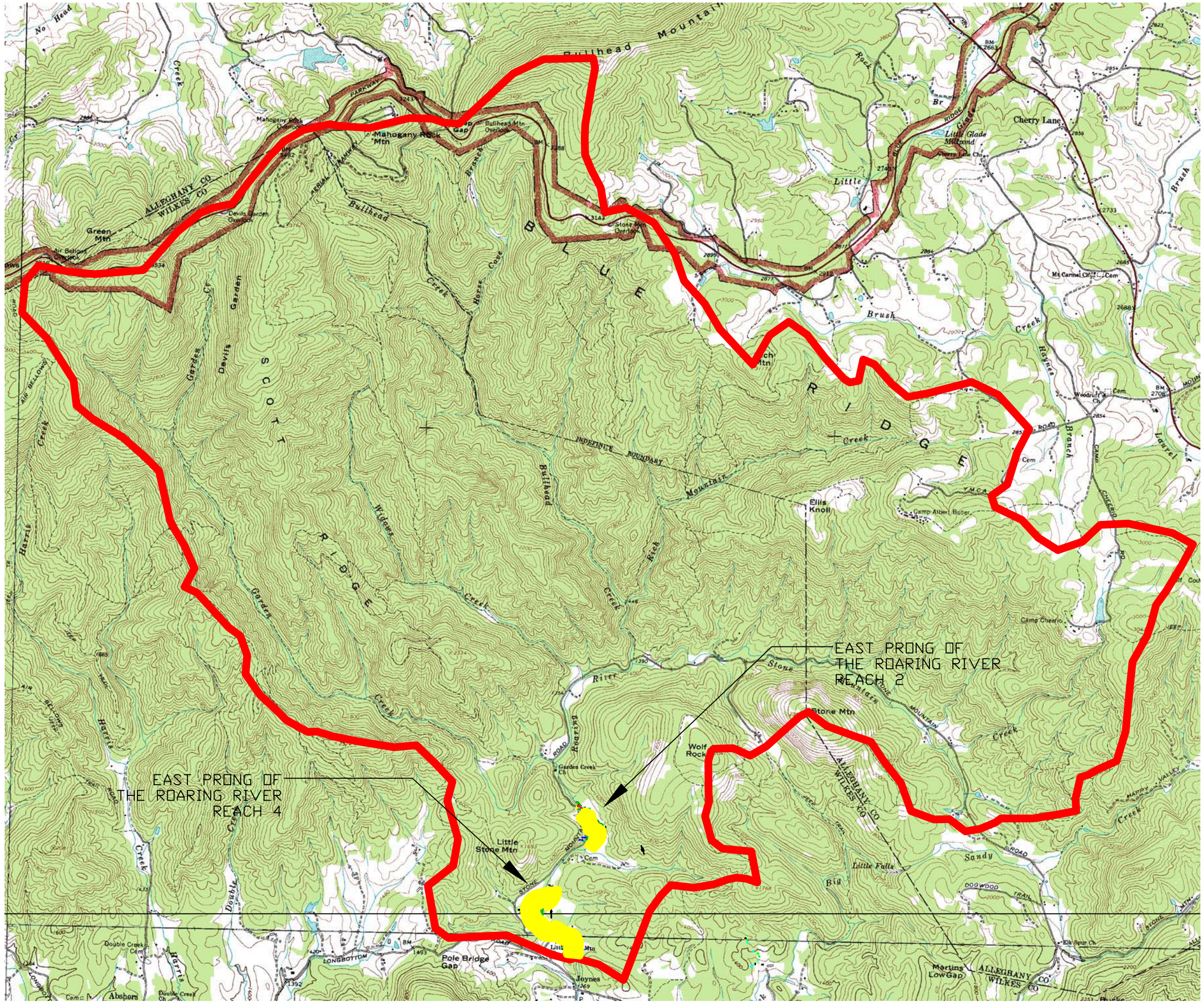
Table IV. Project Background Table East Prong of the Roaring River at Stone Mountain State Park/Project # 364	
Project County	Wilkes
Drainage Area	17.5 sq miles (22.0 sq miles SA)
Drainage impervious cover estimate (%)	Estimated at <5%
Stream Order	4th order
Physiographic Region	Piedmont
Ecoregion	Northern 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

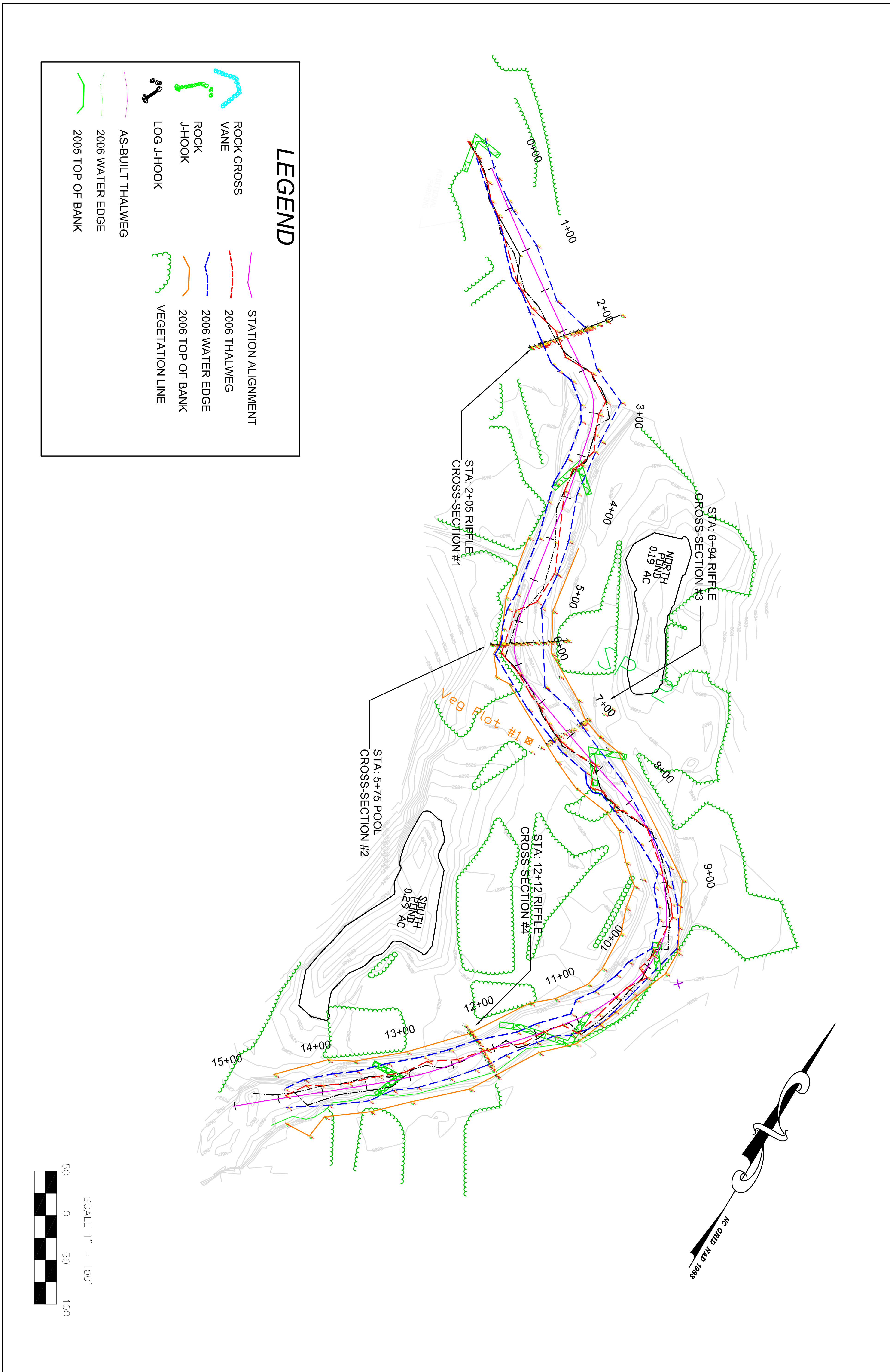
NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING REPORT	DAB	DRC	02/08/06

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.	



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

DATE 12/01/2006
PROJECT NO.
FILENAME STONE MTN.DWG
SHEET NO.
DRAWING NO.

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

2006 MONITORING WITH CONTOURS
FIGURE 3a. PLAN VIEW REACH–2

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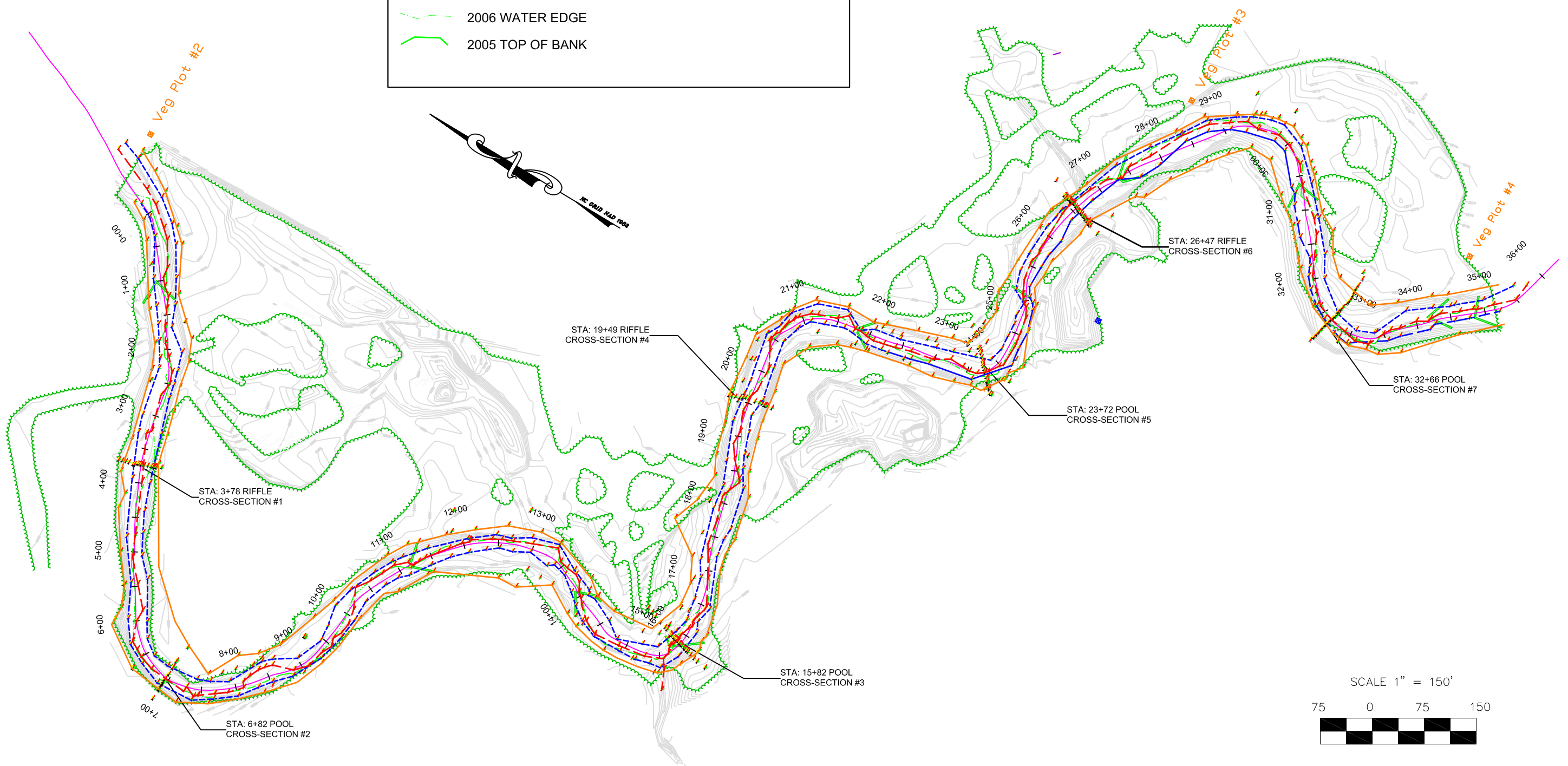
LEGEND

- ROCK CROSS VANE
- ROCK J-HOOK
- LOG J-HOOK
- AS-BUILT THALWEG
- 2006 WATER EDGE
- 2005 TOP OF BANK
- STATION ALIGNMENT
- 2006 THALWEG
- 2006 WATER EDGE
- 2006 TOP OF BANK
- VEGETATION LINE

NC GRID NAD 1983



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

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North Carolina State University
Raleigh, NC 27695

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

2006 MONITORING WITH CONTOURS
FIGURE 3b. PLAN VIEW REACH-4

DATE	12/01/2006
PROJECT NO.	
FILENAME	STONE MTN.DWG
SHEET NO.	
DRAWING NO.	

III. Project Condition and Monitoring Results

A. Vegetation Assessment

No additional plants were installed in 2006. Bare root plants in Reach 2 and Reach 4 had survival rates similar to that in 2005. 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*) seems to be the least browsed species. Recent 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 6 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 had robust growth as compared to last year. Point bars in certain areas had high densities of natural regeneration, though these areas are prone to frequent disturbance.

Bare root survival was poor in all plots. As in 2005, only one plot had a total of 4 planted trees. All other plots were free of planted trees. It should be noted however that naturally regenerating sycamore in select areas has heights close to that of the 4 remaining planted sycamores.

Live stake survival was again extremely low. Deer browse was 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. Continued erosion in some spots resulted in several stake plots being sloughed off during high water events.

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 large patches throughout the area and continues regaining a strong foothold in areas where it had been continually maintained and controlled in past years.

Table V lists the various soil types found during a 2005 soil investigation. Table VI lists problem areas long the project and Table VII summarizes the stem count results for the 2006 monitoring period. Photos of problem areas and vegetation plots are found in Appendix A.

Table V. Preliminary Soil Data East Prong of the Roaring River at Stone Mountain State Park/Project # 364					
Series	**Max Depth (in.)**	**% Clay on Surface**	**K**	**T**	**OM %**
Enon (EnB)	60		0.34	4	
Helena (HeB)	64		0.37	3	
Monacan (MO)	65		0.28	4	
Wilkes (WkD)	45		0.28	2	

Table VI. Vegetative Problem Areas East Prone of the Roaring River at Stone Mountain State Park/Project # 364			
Feature/Issue	**Station # / Range**	**Probable Cause**	**Photo #**
Bare Bank	All erosion areas (see stream problem table)	Compacted soils Poor soil preparation	
Bare Floodplain	Various locations	Compacted soils Poor soil preparation	
Invasive/Exotic Populations	Various locations	Existing or upland seed source	No photo taken

Table VII - Stem Counts by Plot East Prong of the Roaring River at Stone Mountain State Park/Project # 364						
Bare Root Plants Plots	Living	Stems from Natural Regeneration	% Herbaceous Cover	**2005 totals (Living and Regen)**	**2006 totals (Living and Regen)**	**Survival %**
Reach 2 Plot #1)	0	5	>90%	11	5	45%
Reach 4 (Plot #2)	4	>100	>90%	>104	>104	100%
Reach 4 (Plot #3)	0	23	>90%	53	23	43%
Reach 4	0	>200	>90%	>200	>200	100%
Bare Root Totals	**4**	**>328**	**>90%**	**>368**	**>332**	**>90%**
Live Stake Plots						
Reach 2	0	9		18	9	50%
Reach 2	2	28		44	30	68%
Reach 2	3	30		38	33	87%
Reach 4	1	8		16	9	56%
Reach 4	2	0		0	2	>100%
Reach 4	3	42		0	45	>100%
Reach 4	4	0		0	4	>100%
Reach 4	5	0		0	5	>100%
Live Stake Totals	**20**	**117**		**116**	**137**	**>100%**

B. Stream Assessment

Both reaches of the East Prong of the Roaring River at Stone Mountain State Park have significant channel stability concerns. No new problems arose in the 2006 monitoring period but the previous problem areas continue to worsen. In October 2006, the problem locations were repaired after the data for this report was collected. The repair activities and results of those repairs will be addressed in the 2007 monitoring report. The following summarizes the hydrologic, bank stability, and channel morphology monitoring results of the 2006 monitoring period. Data was collected in August 2006.

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 VIII lists the number of events equal to or greater then bankfull. Over the past year there was at least 1 event documented that was out of bank.

Table VIII. 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.

Bank Stability Assessment

Table IX lists the results of a BEHI (Bank Hazard Erosion Assessment) conducted during the 2006 monitoring period. 25% of the banks rated High to Extreme in BEHI condition. These areas were typically areas with active erosion. The high to extreme rating indicate that further degradation is likely. As stated before, repairs were conducted and it is anticipated that the BEHI measurement for the 2007 monitoring period will improve. Estimated sediment yield was not calculated.

Table IX. Project BEHI Conditions
East Prong of the Roaring River at Stone Mountain State Park/Project # 364

Time Point	Segment/ Reach	Linear Footage	Extreme		Very High		High		Moderate		Low		Very low	
	lf		ft	%	ft	%	ft	%	ft	%	ft	%	ft	%
2006	Reach 2	1500	50	3%	260	17%	170	11%	250	17%	440	29%	330	22%
	Reach 4	3500	150	4%	600	17%	50	1%	450	13%	1260	36%	990	28%
	Project Total	**5000**	**200**	**4%**	**860**	**17%**	**220**	**4%**	**700**	**14%**	**1700**	**34%**	**1320**	**26%**

Project Problem Areas

Table X lists the project problem areas for 2006. Problem area plan sheet can be found in Appendix B.

Stream Visual Assessment

Table XI 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 B1 in Appendix B.

Channel Morphology

Table XII lists baseline channel morphology and hydraulic conditions for the East Prong of the Roaring River at Stone Mountain State Park. Channel morphology results from the current years survey and prior years surveys are listed in Tables XIII a though c. Results from each study area are described below. Problem area photos, problem area plan views, and raw and analyzed data can be found in Appendix B.

Reach 2

The East Prong of the Roaring River is a gravel bed channel with well defined bed features. The restoration created a C4 channel. This reach is approximately 1,500 feet in length. The channel was restored by changing the dimension, pattern and profile of the river. The river slope for this reach is 0.5%, an entrenchment ratio greater than 5.0 and the ratio of the top of bank height to the bankfull height is typically <1.2. Rock cross vanes are used to hold grade along this reach. The channel profile along Reach 2 has not shown signs of down-cutting or deposition between the as-build profile and this year's monitoring except for the lower end as described below. In general, the stream features are still located in the correct plan form locations throughout this reach.

The majority of the rock cross vanes are holding the grade of the stream. The last two vanes are at risk of failure. The river has cut around the left vane arm on both of the cross vanes at the end of the reach. The vanes are located at approximately Sta: 13+00 and 14+50. There is a significant risk to the entire reach if these vanes fail. Failure of these vanes will result in a head-cut that would continue upstream in the reach until it reached a stable grade control. There is a potential of a 4.5ft head-cut if these structures are allowed to fail this would related to a head cut approximately 500 ft or more upstream from the rock cross vane at Sta: 13+00.

Cross-sectional trends were analyzed by looking at the cross-sections, change in planform, BEHI, and the longitudinal profile. Riffle cross sections (1, 3, and 4) varied in change over the past year. Cross section 1 reduced area from 319 to 295 sq feet, cross section 4 enlarged from 135 to 150 sq feet, and cross section 3 remained similar to previous surveys. All three riffles appear very stable and show no signs of degrading. The pool cross section (2) has not changed much over the past three years. Three years ago, the bank cut back six feet. Since that time, the bank has not eroded much despite lacking vegetation. This area needs to be reworked and stabilized to reduce the risk of further degradation.

Streambanks in the riffle areas are well vegetated and appear stable. The majority of instability in this reach is occurring along the outside meanders. The lack of dense and deep rooting vegetation has impacted the stability of this reach. Further degradation is likely if these banks are not stabilized soon.

Reach 4

The restoration construction created a C4 channel from an existing C4/D4 channel with a very low sinuosity. This reach is approximately 3,500 feet in length. The channel was restored by

changing the dimension, pattern and profile of the river. The river slope for this reach is 0.58%, the entrenchment ratio is greater than 5.0 and the ratio of the top of bank height to the bankfull height is typically < 1.2. Rock cross vanes are used to hold grade on this reach. For the past 3 years, the channel has maintained its current bed elevation. Downcutting that occurred in the first two years has appeared to stabilize. In general for this reach of stream, bedform features are located in the correct plan form locations.

Several structures along this reach are no longer performing their purpose or are at risk of failure. For bank protection, single vanes need repaired throughout the reach. Rock cross vanes are currently holding the grade of the stream but several are at risk of failure. The river has cut around the right vane arm on the cross vanes at Sta: 24+80. If this vane is not repaired the river will continue to erode around the vane arms. There is a potential of a 3.0ft head-cut if this structure is fails. The headcut would degrade approximately 300 ft or more of channel above the cross vane until it reaches the rock cross vane at Sta: 22+00.

Cross-sectional trends were analyzed by looking at the cross-sections, change in planform, BEHI, and the longitudinal profile. Riffle cross sections (1, 4, and 6) maintained similar dimensions to prior year's surveys. All three riffles appear very stable and show no signs of degrading. The majority of bank instability throughout this reach is located along the outside meander bends. The pool cross sections were similar in dimension to previous surveys. Cross section five did increase in area through deepening rather then widening. Initial widening that occurred during the first few years after construction has ceased over the past three years. Banks remain susceptible to further degradation due to their lack of deep rooting vegetation. The channel substrate in both reaches was similar to previous surveys.

Table X. Stream Problem Areas
East Prone of the Roaring River at Stone Mountain State Park/Project # 364

Problem Number	Feature Issue	Station numbers	Suspected Cause	Photo number
PA 1	Outside Meander Bend Erosion	2+70 to 3+50 R2	Poor deep rooting vegetation establishment Vane ineffective or improperly located	PA 1
PA 2	Extreme Bank Erosion/Migration	5+50 to 7+00 R2	Lack of deep rooting vegetation Tight radius of curvature	PA 2 - 5
PA 6	Outside Meander Bend Erosion	9+50 to 10+00 R2	Poor deep rooting vegetation establishment Vane ineffective or improperly located	PA 6 and 7
PA 8	Lateral Channel Bar	10+40 to 11+10 R2	Over wide chanel Area is improving. It was a central bar	PA 8, 9 and 11
PA 10	Scour and slump along outside bank	10+80 to 11+50 R2	Lack of deep rooting vegetation Structures appear not to be fully effective	PA 10
PA 13	Stream cutting around left arm of cross vane.	13+30 - R2	Lack of deep rooting vegetation Matting on repair area not adequetly secured	PA 13 and 14
PA 15	Overflow scour from floodplain pond	14+25 - R2	No stable outlet planned for overflow	PA 15
PA 16	Erosion on left bank between structures	14+50 - R2	Lack of deep rooting vegetation	PA 16
PA 18	Minor Bank Slump	3+25 to 3+75 R4	Lack of deep rooting vegetation	PA 18
PA 19	Rills forming along channel bank/slope	8+50 to 10+00 R4	Lack of deep rooting vegetation Bar forming on opposite bank	PA 19
PA 20	Scour around rootwad	12+20 to 12+60 R4	Lack of deep rooting vegetation Matting on repair area not adequetly secured	PA 20
PA 21	Left Bank Scour and Slump	18+90 to 19+20 R4	Lack of deep rooting vegetation Excessive scour along the toe	PA 21
PA 22	Severe Left Bank Erosion	20+00 to 22+00 R4	Lack of deep rooting vegetation Tight meander radius Ineffective structures	PA 22 - 25
PA 26	Right Bank Erosion, Scour and Slumping	23+60 to24+60	Lack of deep rooting vegetation Tight meander radius with little sturcture to hold the turn.	PA 26 and 27
PA 28	Stream cutting around and piping through the vane arm	25+00 to 25+40	Large grade drop below vane	PA 28
PA 29	Right Bank Erosion	25+20 to 25+70	Due to the large drop on the cross vane and lack of deep rooted vegetation	PA 29
PA 30	Log vane piping and scour behind	26+00 to 26+80	Lack of deep rooted vegetation Improper placed vane	PA 30
PA 31	Sever left bank erosion and J-hook cut around	29+20 to 29+30	Lack of deep rooted vegetation Improper placed vane	PA 31
PA 32	Sever left bank erosion with large woody debris caught on bank	29+30 to 30+20	Lack of deep rooted vegetation Tight meander	PA 32
PA 33	Scour behind left vane are and piping	30+40 to 30+80	Lack of deep rooted vegetation Improper placed vane	PA 33
PA 34	Scour behind rootwad	32+30 to 32+50	Lack of deep rooted vegetation Large spacing between rootwads	PA 34
PA 35 & 36	Severe right bank erosion with channel cut around single vane	33+00 to 34+50	Lack of deep rooted vegetation Floodplain convergence	PA 35 & 36

Table XI. Categorical Stream Feature Visual Stability Assessment East Prong of the Roaring River at Stone Mountain State Park/Project # 364			
Feature	**Initial**	**MY-01 through MY-05**	**MY-05**
A. Riffles		Data not collected	
Reach 2	100%		96%
Reach 4	100%		100%
B. Pools			
Reach 2	100%		85%
Reach 4	100%		90%
C. Thalweg			
Reach 2	100%		50%
Reach 4	100%		63%
D. Meanders			
Reach 2	100%		63%
Reach 4	100%		100%
E. Bed General			
Reach 2	100%		93%
Reach 4	100%		86%
F. Vanes / J Hooks etc.			
Reach 2	100%		96%
Reach 4	100%		55%
G. Wads and Boulders			
Reach 2	N/A		50%
Reach 4	N/A		33%

Table XII. Baseline Morphology and Hydraulic Summary
East Prong of the Roaring River at Stone Mountain State Park/Project # 364

Parameter	USGS Gage Data			Regional Curve			Pre-Existing Condition			Project Reference			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
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	
Extent of BF floodplain (acres)								40			5			40			40	
*BEHI								Extreme to Moderate			Low			Low			Low	
*Habitat Index								NA			NA			NA			NA	
*Macrobenthos								NA			NA			NA			NA	

Table XIIIa. Morphology and Hydraulic Monitoring Summary

East Prong of the Roaring River at Stone Mountain State Park Reach 2/Project # 364

Parameter	Cross Section 1						Cross Section 2						Cross Section 3						Cross Section 4					
	Riffle						Pool						Riffle						Riffle					
Dimension	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6
BF Width (ft)	61.9	62	62	61.1	61.8	61.9	53.9	53	53.4	53.3	53.5	60.3	60.2	59.7	58.3	60.1	60.1	60.1	54	53	56.5	52.9	52.8	53.2
Floodprone Width (ft)																								
BF Cross Sectional Area (ft^2)	319.8	306	297	307	319	295	158.4	158.7	170.3	155.6	165.8	166	166.2	169.5	169.6	194.5	191.7	195	136.3	124.8	156.5	130.6	135	150.1
BF Mean Depth (ft)	5.2	4.9	4.8	5	5.2	4.8	2.9	3	3.2	2.9	3.1	2.8	2.8	2.8	2.9	3.2	3.2	3.2	2.5	2.4	2.8	2.5	2.6	2.8
BF Max Depth (ft)	6.4	6.1	5.7	5.9	5.9	6	5.6	4.6	5.7	5.6	5.8	5.9	4.7	4.5	4.5	5.8	5.5	5.5	3.5	3.4	4.3	3.8	4	4.3
Width/Depth Ratio	12	12.6	13	12.2	12	13.0	18.3	17.7	16.7	18.3	17.3	21.9	21.8	21	20	18.6	18.8	18.5	21.4	22.5	20.4	21.4	20.7	18.9
Entrenchment Ratio	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.0	>5.1	>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)	56	56	56	56	56	56	62	62	62	62	62	62	55	55	55	55	55	55	53	53	53	53	53	53
Hydraulic radius (ft)	5.7	5.5	5.3	5.5	5.7	5.3	2.6	2.6	2.7	2.5	2.7	2.7	3	3.1	3.1	3.5	3.5	3.5	2.6	2.4	3.0	2.5	2.5	2.8
Substrate																								
d50 (mm)				38	16	26				3.5		2.9	18	17	19	20	24	12	15		14	36	17	11
d84 (mm)				147	72	143				91		76	54	71	77	83	50	46	64		71	82	53	50

Parameter	MY-01 (2001)			MY-02 (2002)			MY-03 (2003)			MY-04 (2004)			MY-05 (2005)			MY6 (2006)		
Pattern	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
Radius of Curvature (ft)										145	196	166	145	198	166	144	157	145
Meander Wavelength (ft)										507	614	559	505	616	559			614
Meander Width ratio										3.2	6.6	3.5	3.2	6.6	3.6	3.3	6.4	4.9
Profile																		
Riffle length (ft)										35	104	61	35	85	52	33	161	86
Riffle slope (ft/ft)										0.004	0.024	0.013	0.004	0.025	0.013	0.008	0.028	0.016
Pool length (ft)										45	77	66	52	81	65	62	209	189
Pool spacing (ft)										83	391	163	83	285	158	117	367	218
Additional Reach Parameters																		
Valley Length (ft)	1160																	
Channel Length (ft)													1500					
Sinuosity													1.3					
Water Surface Slope (ft/ft)													0.0058			0.0051		
BF slope (ft/ft)													0.0066					
Rosgen Classification													C4					

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 Reach 4/Project # 364

Parameter	Cross Section 1						Cross Section 2						Cross Section 3						Cross Section 4					
	Riffle						Pool						Pool						Riffle					
Dimension	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6
BF Width (ft)	57	58.2	59.3	57.7	58.3	62.6	43	42.1	41.5	42.5	41.3	42.7	66	65	61.3	58	50.7	53.8	46	45.9	45.5	46.5	46.4	45.5
Floodprone Width (ft)																								
BF Cross Sectional Area (ft^2)	206.6	202.5	215.8	196.1	195.9	187.3	179.6	182.8	210.6	224.4	223.7	220.3	170	181.3	173	162.2	161.8	161.1	139.7	140.7	139.1	140.4	154.7	141.2
BF Mean Depth (ft)	3.6	3.5	3.6	3.4	3.4	3.0	4.2	4.3	5.1	5.3	5.4	5.2	2.6	2.8	2.8	2.8	3.2	3.0	3	3.1	3.1	3	3.3	3.1
BF Max Depth (ft)	4.7	4.9	5.6	5.9	4.9	4.8	6.8	6.9	7.8	8.1	8.1	7.8	5.7	5.4	5.6	5.5	5.5	5.9	3.9	4	4.5	5	4.9	4.9
Width/Depth Ratio	15.7	16.7	16.3	16.9	17.3	20.9	10.3	9.7	8.2	8.1	7.6	8.3	25.6	23.3	21.7	20.7	15.9	18.0	15.1	15	14.9	15.4	13.9	14.7
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
Wetted Perimeter(ft)	65	65	65	65	65	65	55	55	55	55	55	55	60	60	60	60	60	60	52	52	52	52	52	52
Hydraulic radius (ft)	3.2	3.1	3.3	3	3	2.9	3.3	3.3	3.8	4.1	4.1	4.0	2.8	3	2.9	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3	2.7
Substrate																								
d50 (mm)					14	27						14						0.5	15		14	36	11	29
d84 (mm)					46	54						61						8.7	64		71	81	57	63

Parameter	MY-01 (2001)			MY-02 (2002)			MY-03 (2003)			MY-04 (2004)			MY-05 (2005)			MY6 (2006)		
Pattern	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
Radius of Curvature (ft)										78	296	122	85	296	122	69	207	107
Meander Wavelength (ft)										534	767	596	536	767	596	533	766	595
Meander Width ratio										4.5	10.1	6	4.6	10.1	6	4.9	11.3	6.6
Profile																		
Riffle length (ft)										35	170	80	35	145	75	69	173	76
Riffle slope (ft/ft)										0.004	0.007	0.005	0.006	0.007	0.005	0.004	0.021	0.006
Pool length (ft)										60	130	85	60	130	85	35	233	79
Pool spacing (ft)										175	335	255	175	335	255	212	465	223
Additional Reach Parameters																		
Valley Length (ft)	2190																	
Channel Length (ft)													3500					
Sinuosity													1.6					
Water Surface Slope (ft/ft)													0.0055			0.0058		
BF slope (ft/ft)													0.005					
Rosgen Classification													C4					

Note: Missing data not collected or not reported.

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

Parameter	Cross Section 5						Cross Section 6						Cross Section 7					
	Pool						Riffle						Pool					
Dimension	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6	MY1	MY2	MY3	MY4	MY5	MY6
BF Width (ft)	60	54.2	56	54.2	64	54.5	46.3	43.7	45.2	45.6	45.1	44.7	64.5	66.5		71.3	79	73.9
Floodprone Width (ft)																		
BF Cross Sectional Area (ft^2)	183.6	183.9	175.1	180.7	184.6	202.1	210.1	207.3	223.1	215.6	210.3	212.1	188.6	221.1		201.7	210.1	214.6
BF Mean Depth (ft)	3.1	3.4	3.1	3.3	2.9	3.7	4.5	4.7	4.9	4.7	4.7	4.7	2.9	3.3		2.8	2.7	2.9
BF Max Depth (ft)	4.8	5.8	5.8	5.8	5.8	6.6	6	7.4	7.3	7.4	7.4	7.3	7.5	8.2		7.4	7.3	7.4
Width/Depth Ratio	19.6	16.0	17.9	16.3	22.2	14.7	10.2	9.2	9.2	9.6	9.7	9.4	22.1	20.0		25.2	29.7	25.4
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
Wetted Perimeter(ft)	60	60	60	60	60	60	57	57	57	57	57	57	75	75		75	75	75
Hydraulic radius (ft)	3.1	3.1	2.9	3.0	3.1	3.4	3.7	3.6	3.9	3.8	3.7	3.7	2.5	2.9		2.7	2.8	2.9
Substrate																		
d50 (mm)						48	19	17	19		8	47						23
d84 (mm)						99	53	71	106		68	109						76

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.

References:

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

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

APPENDIX A

Vegetation Raw Data

1. Vegetation Photo Log

Note: Vegetation problem areas are shown in problem are plan view in Appendix B

Stone Mt. Reach 2. Corner of plot 1

PA38 Stone Mt. Reach 4. Kudzu

Stone Mt. Reach 4. Corner plot 2

Stone Mt. Reach 4. Corner plot 3

Stone Mt. Reach 4. Corner plot 4

APPENDIX B

Morphology Raw Data

1. Visual Morphological Stability Assessment Tables
2. Problem Area Plan View
3. Project Photo Log/Stream Problem Area Photos
4. Cross section and Pebble Count Plots and Raw Data Tables
5. Longitudinal Plots and Raw Data Tables
6. Slope Calculation Table
7. Pattern Data
8. GPS Coordinates

Table B1a. Visual Morphological Stability Assessment East Prone of the Roaring River at Stone Mountain State Park Reach 2/Project # 364						
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?	4	5	1/70	85	
	5. Length appropriate?	5	5	0/0	100	**96%**
B. Pools	1. Present? (e.g not subject to severe aggrad. or migrat.?) [4]	2	5	3/350	55	
	2. Sufficiently deep (Max Pool D:Mean Bkf >1.6?)	5	5	0/0	100	
	3. Length appropriate?	5	5	0/0	100	**85%**
C. Thalweg	1. Upstream of meander bend (run/inflection) centering? [5]	3	3	0/0	100	
	2. Downstream of meander (glide/inflection) centering? [5]	0	3	3/350	0	**50%**
D. Meanders	1. Outer bend in state of limited/controlled erosion?	0	3	3/350	55	
	2. Of those eroding, # w/concomitant point bar formation?	0	3	NA	NA	
	3. Apparent Rc within spec?	1	3	NA	33	
	4. Sufficient floodplain access and relief? [6]	3	3	NA	100	**63%**
E. Bed General	1. General channel bed aggradation areas (bar formation)	1	5	1/70	85	
	2. Channel bed degradation – areas of increasing down-cutting or head cutting?	0	5	0/0	100	**93%**
F. Vanes	1. Free of back or arm scour?	1	6	NA	84	
	2. Height appropriate?	6	6	NA	100	
	3. Angle and geometry appear appropriate?	6	6	NA	100	
	4. Free of piping or other structural failures?	6	6	NA	100	**96%**
G. Wads/ Boulders	1. Free of scour?	2	4	2/270	50	
	2. Footing stable?	2	4	2/270	50	**50%**

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 [illegible] 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 Prone of the Roaring River at Stone Mountain State Park Reach 4/Project # 364						
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]	11	9	0/0	100	
	2. Armor stable (e.g. no displacement)?	11	9	0/0	100	
	3. Facet grade appears stable?	11	9	0/0	100	
	4. Minimal evidence of embedding/fining?	11	9	3/58	100	
	5. Length appropriate?	11	9	0/0	100	**100%**
B. Pools	1. Present? (e.g not subject to severe aggrad. or migrat.?) [4]	10	15	5/525	70	
	2. Sufficiently deep (Max Pool D:Mean Bkf >1.6?)	15	15	0/0	100	
	3. Length appropriate?	15	15	0/0	100	**90%**
C. Thalweg	1. Upstream of meander bend (run/inflection) centering? [5]	7	7	0/0	100	
	2. Downstream of meander (glide/inflection) centering? [5]	2	7	5/525	26	**63%**
D. Meanders	1. Outer bend in state of limited/controlled erosion?	2	7	5/525	70	
	2. Of those eroding, # w/concomitant point bar formation?	6	7	NA	86	
	3. Apparent Rc within spec?	7	7	0/0	100	
	4. Sufficient floodplain access and relief? [6]	7	7	0/0	100	**89%**
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	2/400	77	**86%**
F. Vanes	1. Free of back or arm scour?	4	10	NA	40	
	2. Height appropriate?	10	10	NA	100	
	3. Angle and geometry appear appropriate?	4	10	NA	40	
	4. Free of piping or other structural failures?	4	10	NA	40	**55%**
G. Wads/ Boulders	1. Free of scour?	2	6	NA	33	
	2. Footing stable?	2	6	NA	33	**33%**

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 / [illegible] 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

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?

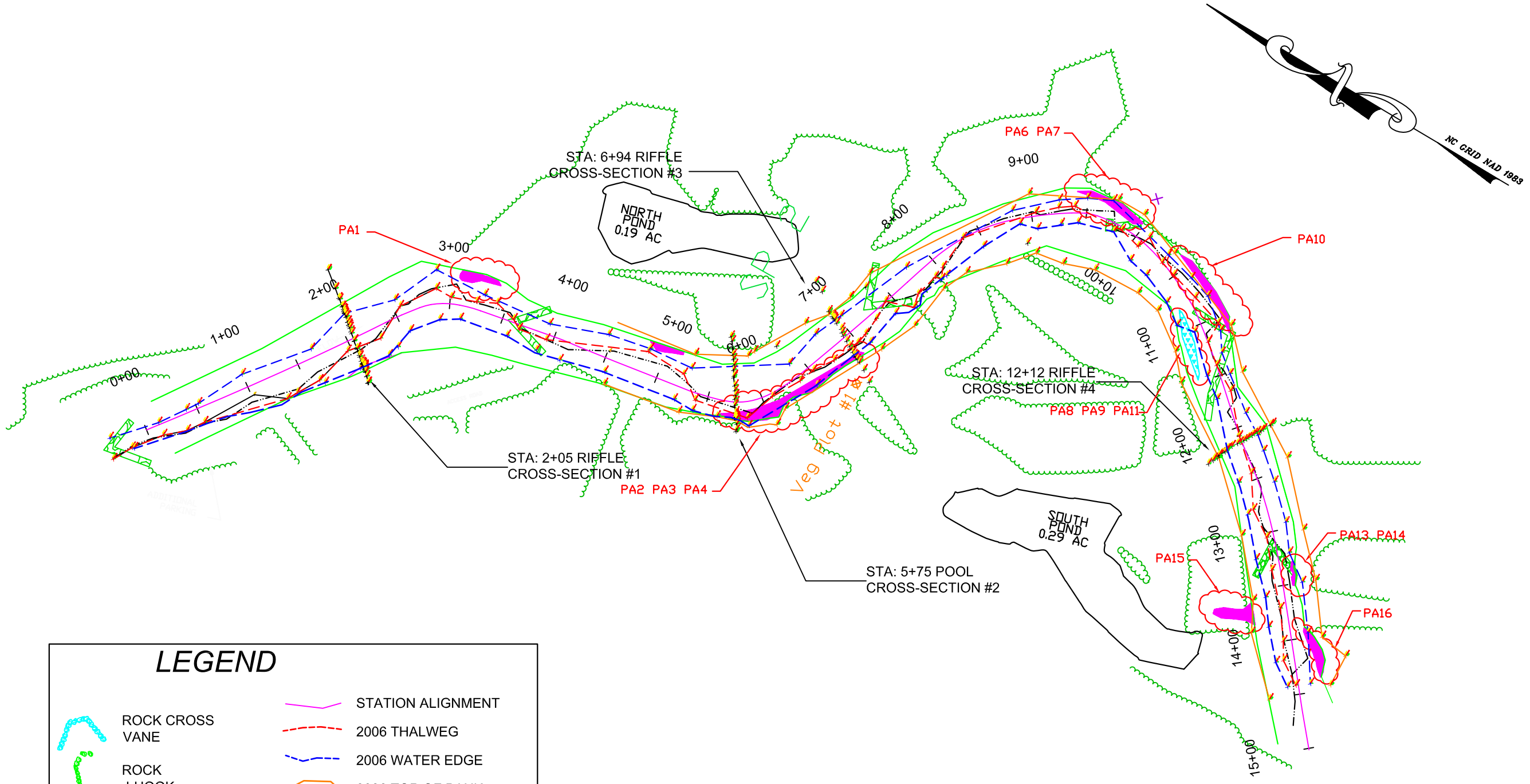
6 Is the meander bend in a state of constriction?

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



LEGEND

- ROCK CROSS VANE
- ROCK J-HOOK
- LOG J-HOOK
- AS-BUILT THALWEG
- 2006 WATER EDGE
- 2005 TOP OF BANK
- STATION ALIGNMENT
- 2006 THALWEG
- 2006 WATER EDGE
- 2006 TOP OF BANK
- VEGETATION LINE
- 2006 EROSIONAL AREA
- PA # — 2006 PROBLEM AREA
- 2006 DEPOSITIONAL AREA

SCALE 1" = 100'

50 0 50 100

B-4

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING	JMP	DRC	12/01/06

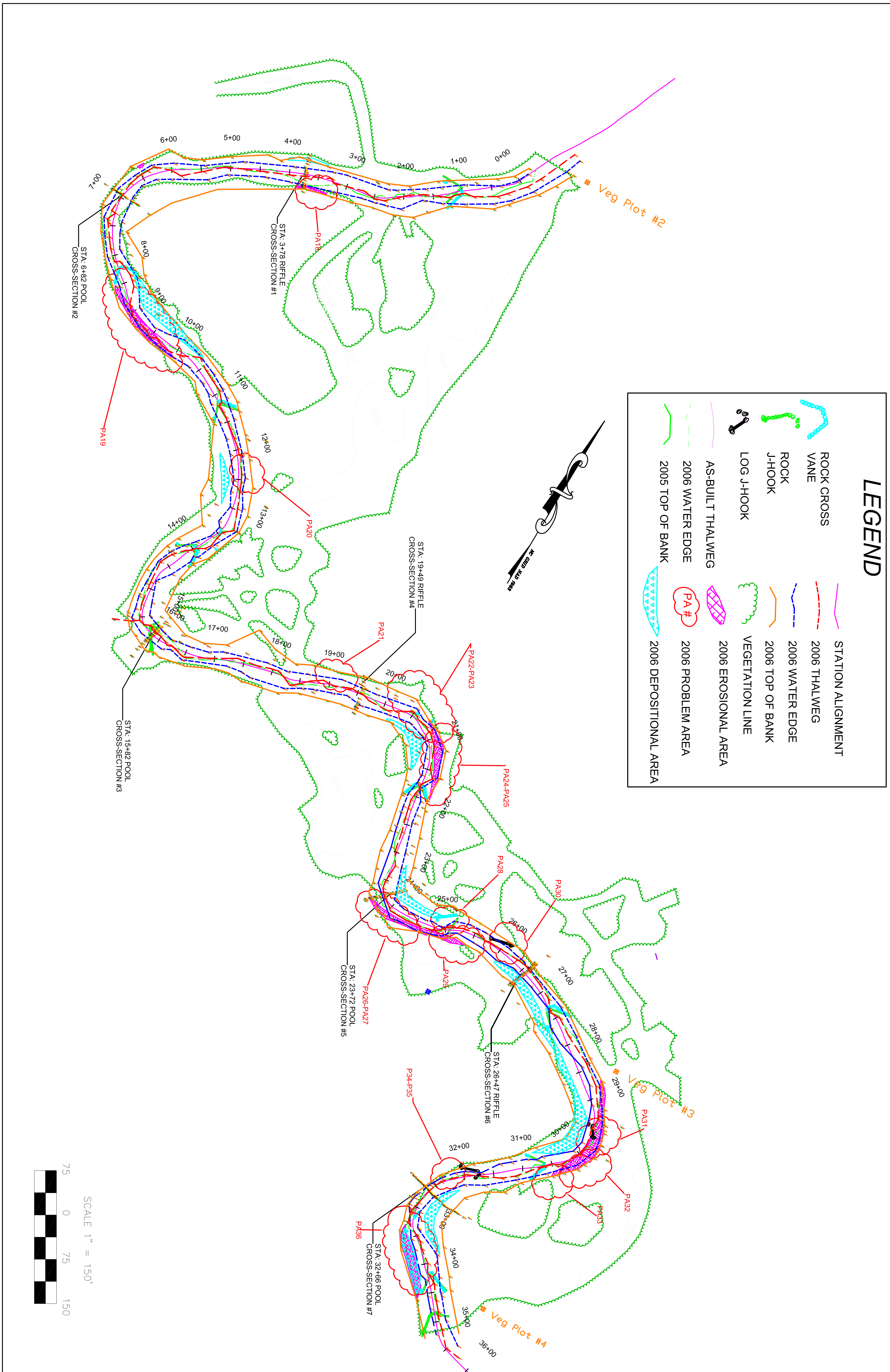
NC STATE UNIVERSITY

BIOLOGICAL & AGRICULTURAL ENGINEERING
Wetland Science Group, Box 7625
North Carolina State University
Raleigh, NC 27695

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

2006 MONITORING
PLAN VIEW REACH-2

DATE	12/01/2006
PROJECT NO.	
FILENAME	STONE MTN.DWG
SHEET NO.	
DRAWING NO.	



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

2006 PROBLEM AREA
PLAN VIEW REACH-4

NC STATE UNIVERSITY

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

NO	REVISIONS	DRN	CHK	DATE
1	2005 MONITORING	JMP	DRC	12/01/06

DATE 12/01/2006
PROJECT NO.
FILENAME STONE MTN.DWG
SHEET NO.
DRAWING NO.

B-5

REACH 2 ISSUE PHOTOS

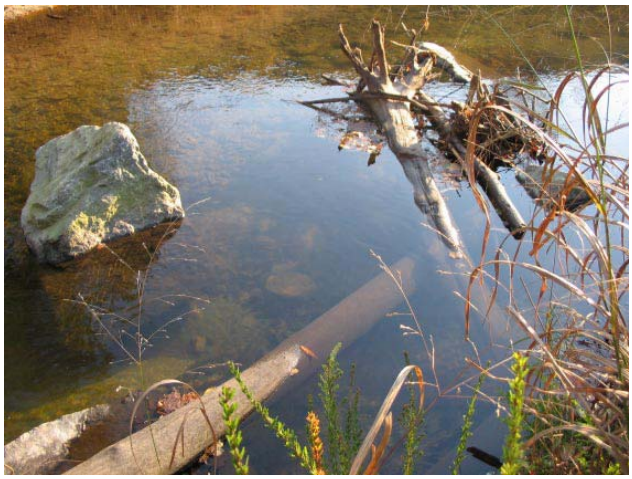
2005 **2006**

PA1 Left Bank STA 3+50 Bank Erosion

PA2 Looking Down stream STA 5+75 Right Bank Erosion

PA3 Looking Upstream STA 6+25 Right Bank Erosion

2005 **2006**



PA4 Look from Right Bank STA 6+50 Root Wads Bank Erosion

PA5 Looking Upstream STA 7+00 Rock Cross-Vane

PA6 Left Bank Root Wads and Boulders STA 10+00

2005 **2006**

PA7 Looking Upstream STA 10+75 at J-hook and Left Bank Erosion

PA8 Looking Downstream STA 11+00 Lateral Channel Bar and Bank Erosion

PA9 Right Bank Erosion STA 11+25

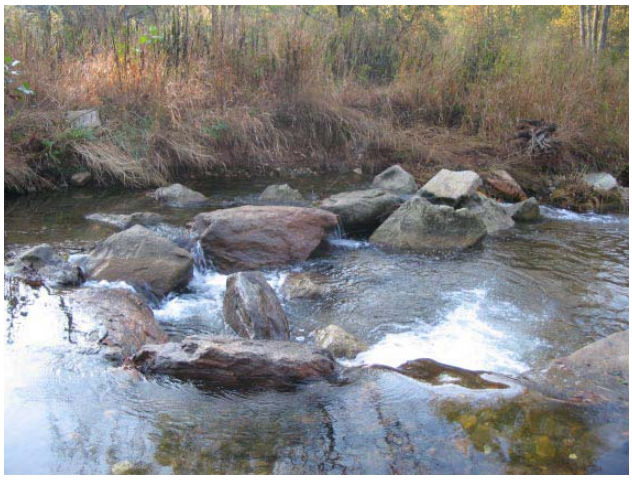
2005 **2006**

PA10 Left Bank STA 11+25 Erosion Behind Vane

PA11 Looking Downstream STA 11+50 Lateral Bar

PA12 Looking Upstream STA 11+75 Random Boulder Cluster

2005 **2006**



PA 13 Looking Downstream STA 13+00 Bank Erosion and Piping around Structure Arm

PA 14 Looking Upstream STA 13+75 Bank Erosion Left Bank

PA 15 Right Bank Erosion STA 14+25 Overflow Drainage from North Pond Phase II

2005 **2006**

PA 16 Looking Upstream STA 14+50 Bank Erosion Left Bank

2005 **2006**


PA 18 Looking Downstream STA 3+50 Left Bank Erosion


PA 19 Looking Upstream STA 10+00 Right Bank Erosion


PA 20 Left Bank Root Wad STA 12+00

2005 **2006**


PA 21 Left Bank Erosion STA 19+00


PA 22 Looking Downstream STA 20+25 Left Bank Erosion


PA 23 Left Bank Erosion and Migration STA 20+75

2005 **2006**


PA 24 Left Bank Erosion Outside Meander Bend STA 20+75


PA 25 Left Bank Erosion and Migration STA 21+00


PA 26 Right Bank Erosion Exposed Root Wads STA 24+00

2005 **2006**


PA 27 Right Bank Erosion and Migration Lower Third of Meander STA 24+25


PA 28 Failed Rock Cross Vane Piping Behind Right Vane Arm STA 25+00


PA 29 Right Undercut Bank Below Rock Vane 25+25

2005 **2006**

PA 30 Failed Log Vane Left Bank 26+00

PA 31 Failed Log J-Hook Left Bank Erosion and Migration STA 29+50

PA 32 Left Bank Erosion and Migration STA 29+75

2005 **2006**


PA 33 Left Bank Erosion STA 30+50


PA 34 Looking Downstream STA 32+50 Right Bank Erosion


PA 35 Right Bank Exposed Root Wad STA 32+50

2005 **2006**

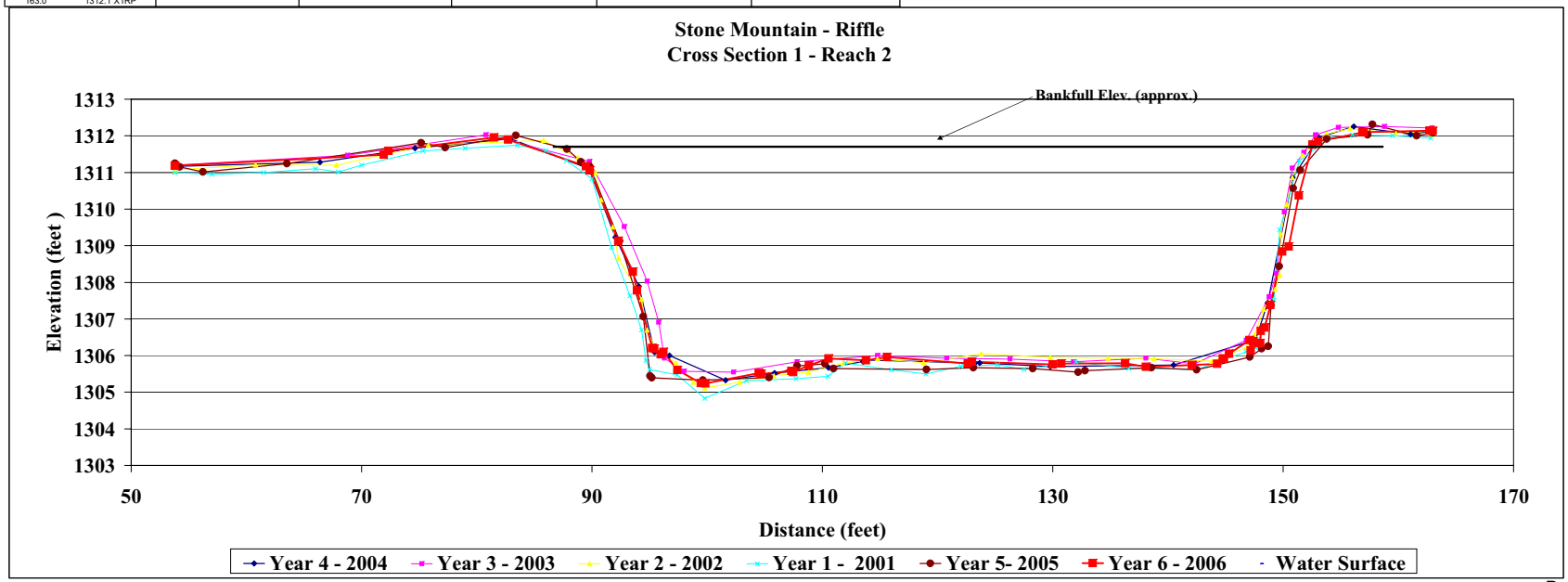
PA 36 Looking Upstream STA 33+50 Right Bank Migration and Erosion

Project Name	Stone Mountain
Cross Section	Reach 2 Cross-Section 1
Feature	Riffle
Date	7/6/06
Crew	Clinton

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**
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	
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	
72.3	1311.6		56.3	1311.0		66.4	1311.3		80.8	1312.0		60.8	1311.2		61.5	1311.0	
81.5	1312.0		63.5	1311.2		74.6	1311.7		89.8	1311.3		67.8	1311.2		66.0	1311.1	
82.7	1311.9		75.2	1311.8		82.9	1311.9		92.8	1309.5		75.8	1311.8		68.0	1311.0	
89.5	1311.2		77.3	1311.7		89.8	1311.1		94.8	1308.0		85.8	1311.9		70.0	1311.2	
89.8	1311.1		83.4	1312.0		92.0	1309.2		95.8	1306.9		88.8	1311.4		75.3	1311.6	
92.3	1309.1		87.8	1311.6		94.1	1307.9		96.3	1305.9		89.8	1311.2		79.0	1311.7	
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	
93.9	1307.8		89.8	1311.2		96.7	1306.0		102.3	1305.6		90.8	1310.3		86.0	1311.6	
95.2	1306.2		92.4	1309.1		101.6	1305.3		107.8	1305.8		91.8	1309.5		87.8	1311.3	LBKF
95.4	1306.2		94.5	1307.1		105.9	1305.5		114.8	1306.0		92.3	1308.7		90.0	1310.8	
96.0	1306.0		95.1	1305.4		110.5	1305.7		120.8	1305.9		93.8	1307.8		91.7	1309.0	
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	
97.4	1305.6		99.7	1305.3		113.6	1305.8		131.8	1305.8		94.8	1306.7		94.3	1306.7	
99.5	1305.3		105.4	1305.4		113.7	1305.9		138.1	1305.9		95.4	1306.3		94.7	1305.9	
99.8	1305.2		107.8	1305.7		123.2	1305.8		142.3	1305.8		97.3	1305.8		95.0	1305.6	
104.5	1305.5		110.2	1305.8		123.2	1305.8		146.8	1306.4		98.8	1305.3		97.4	1305.5	
104.7	1305.5		111.0	1305.6		123.7	1305.8		148.8	1307.6		99.8	1305.1		99.8	1304.8	
107.3	1305.6		119.0	1305.6		129.8	1305.7		149.4	1308.3		102.8	1305.3		103.4	1305.3	
107.5	1305.6		123.1	1305.7		140.5	1305.7		150.1	1309.9		105.8	1305.5		107.7	1305.4	
108.9	1305.7		128.3	1305.6		147.6	1306.4		150.8	1311.1		108.8	1305.6		110.5	1305.4	
110.5	1305.9		132.2	1305.6		148.7	1307.4		151.8	1311.6		111.8	1305.8		112.0	1305.8	
113.8	1305.9		132.8	1305.6		150.8	1310.9		152.8	1312.0		114.8	1305.9		116.0	1305.6	
115.6	1306.0		138.6	1305.7		153.1	1312.0		154.8	1312.2		118.8	1305.8		119.0	1305.5	
122.6	1305.8		142.5	1305.6		156.1	1312.3		158.8	1312.3		123.8	1306.1		122.0	1305.7	
123.0	1305.8		147.1	1306.0		161.1	1312.0		162.9	1312.2		129.8	1306.0		125.2	1305.8	
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	
130.7	1305.8		148.7	1306.3		163.0	1312.1					138.8	1305.9		132.0	1305.8	
136.3	1305.8		148.9	1307.4								143.8	1305.9		136.6	1305.7	
138.1	1305.7		149.7	1308.4								146.8	1306.2		142.5	1305.6	
142.1	1305.7		150.9	1310.6								147.5	1306.6		146.8	1306.1	
144.3	1305.8		151.5	1311.1								148.3	1307.3		147.6	1306.2	
144.8	1305.9		153.8	1311.9								149.3	1307.8		149.2	1307.5	
144.9	1305.9		157.3	1312.0								149.7	1308.2		149.7	1309.4	
145.3	1306.1		157.8	1312.3								149.8	1309.3		151.4	1311.3	RBKF
147.1	1306.4		161.6	1312.0								150.3	1310.1		154.0	1311.9	
147.2	1306.1		163.0	1312.1								150.8	1310.9		156.0	1312.0	
147.4	1306.4	X1W										151.7	1311.5		159.5	1312.0	
147.8	1306.3											152.8	1311.9		162.8	1311.9	
148.0	1306.3											153.8	1312.1				
148.1	1306.7											155.8	1312.2				
148.4	1306.8											159.8	1312.1				
148.9	1307.4											162.9	1312.1				
149.9	1308.8											162.9	1312.0				
150.5	1309.0																
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 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	295.0	318.5	307.0	296.5	306.0	319.8	
Width	61.9	61.8	61.1	62.0	62.0	61.9	
Mean Depth	4.8	5.2	5.0	4.8	4.9	5.2	
Max Depth	6.0	5.9	5.9	5.7	6.1	6.4	
W/D	13.0	12.0	12.2	13.0	12.6	12.0	



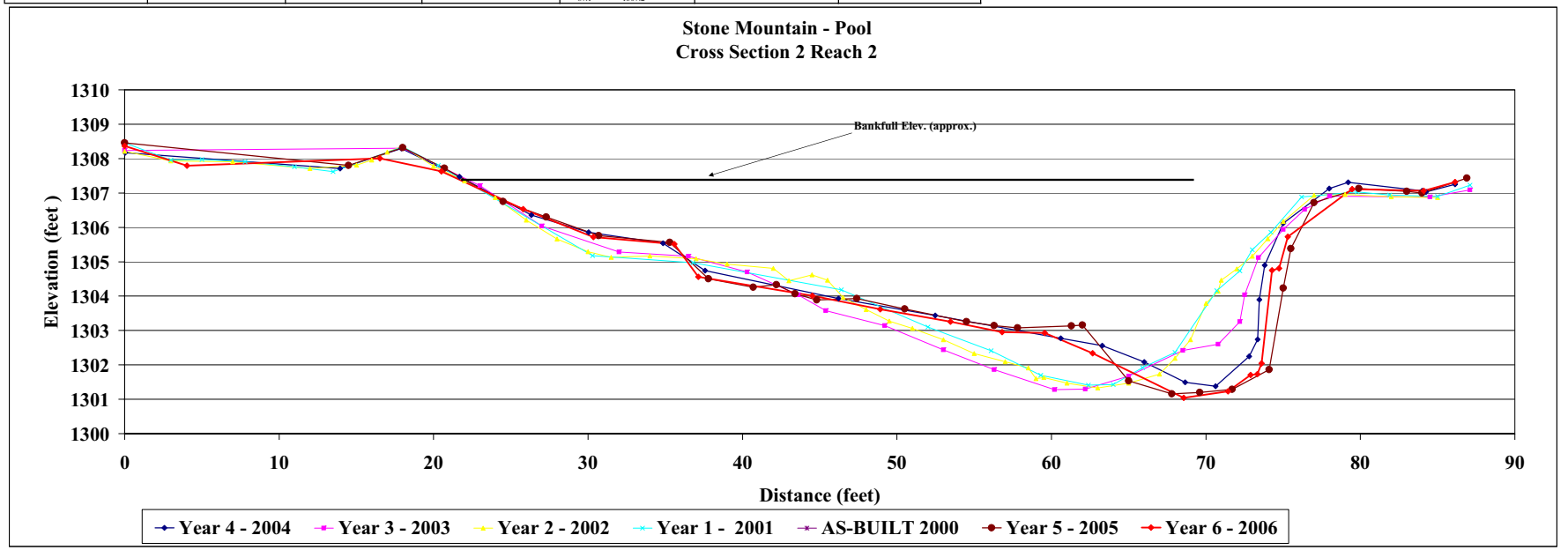
Project Name	Stone Mountain
Cross Section	Reach 2 Cross-Section 2
Feature	Pool
Date	7/6/06
Crew	Clinton

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
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			
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				
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				
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				
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				
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				
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			
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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			
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				
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				
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				
			75.0	1304.2	1306.9	86.1	1307.3		87.1	1307.1		49.5	1303.3		85.0	1306.9				
			75.5	1305.4	-0.4							51.0	1303.1		87.1	1307.2				
			77.0	1306.7	-0.4							53.0	1302.7							
			79.9	1307.1	-0.4							55.0	1302.3							
			83	1307.1	-0.4							57	1302.1							
			84	1307.0	-0.4							58.5	1301.9							
			86.9	1307.4	-0.4							59	1301.6							
												59.5	1301.6							
												61	1301.5							
												63	1301.3							
												65	1301.5							
												67	1301.7							
												68	1302.2							
												69	1302.7							
												70	1303.8							
												70.8	1304.1							
												71	1304.5							
												72	1304.8							
												73	1305.2							
												74	1305.7							
												75	1306.2							
												77	1306.9							
												79	1307.0							
												82	1306.9							
												85	1306.9							
												87.1	1307.4							
												87.1	1307.2							

down 0.42 feet

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

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

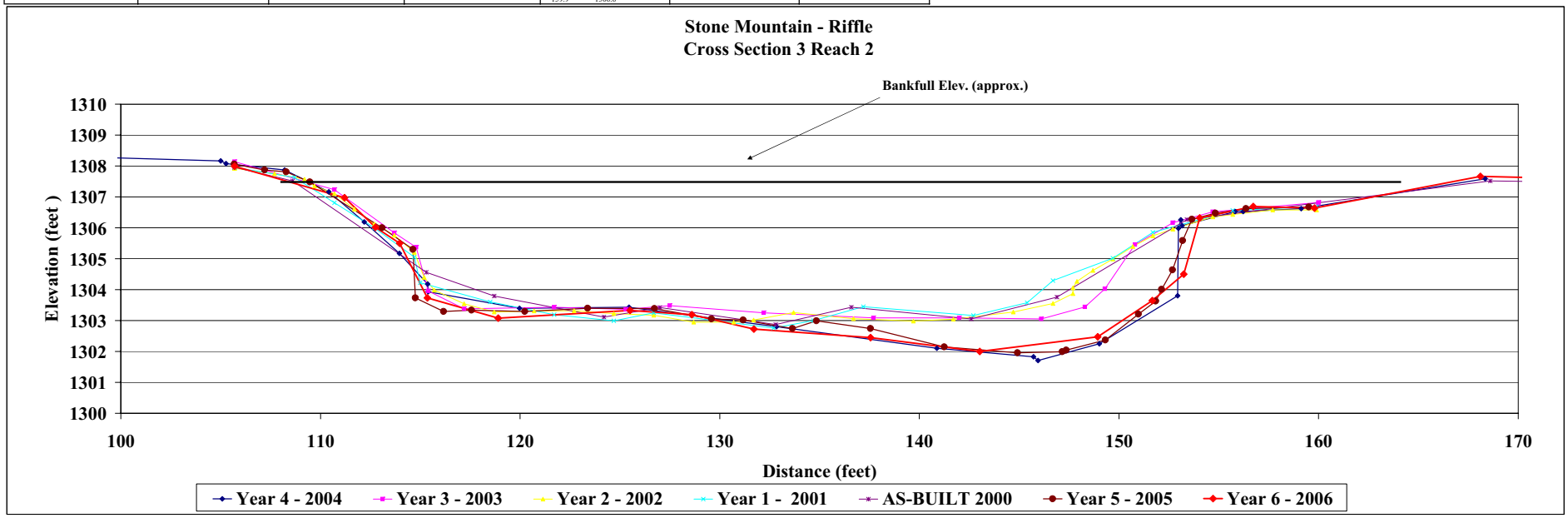


Project Name	Stone Mountain
Cross Section	Reach 2 Cross-Section 3
Feature	Riffle
Date	7/6/06
Crew	Clinton

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**
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	
111.21	1306.97	X3	107.2	1307.9	1307.57	105.0	1308.2	Lpin	110.7	1307.2		105.7	1307.9		108.7	1307.6		108.6	1307.5	LBKF
112.75	1306.02	X3	108.3	1307.8	1306.55	105.3	1308.1		113.7	1305.8		107.7	1307.8		110.7	1306.8		115.3	1304.6	
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	
115.35	1303.73	X3	113.1	1306.0	1305.08	110.4	1307.2		115.4	1304.0		109.7	1307.4		114.7	1305.1		124.2	1303.1	
118.91	1303.08	X3	114.6	1305.3	1303.31	112.2	1306.2		117.2	1303.4		110.7	1307.1		115.0	1304.2		127.0	1303.4	
125.51	1303.33	X3	114.8	1303.7	1302.66	114.0	1305.2		121.7	1303.4		111.7	1306.6		118.5	1303.6		132.8	1302.9	
128.6	1303.19	X3	116.2	1303.3	1302.91	115.4	1304.2		125.3	1303.4		112.7	1306.1		121.7	1303.2		136.6	1303.4	
131.71	1302.72	X3	117.6	1303.3	1302.77	115.4	1303.9		127.5	1303.5		113.7	1305.8		124.7	1303.0		142.6	1303.1	
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	
143.03	1302	X3	123.4	1303.4	1302.03	125.5	1303.4		137.7	1303.1		115.2	1304.4		132.7	1302.8		153.4	1306.3	
148.93	1302.47	X3	126.7	1303.4	1301.58	132.8	1302.8		142.0	1303.1		115.7	1304.0		134.7	1303.0		168.6	1307.5	RBKF
151.67	1303.65	X3W	129.6	1303.1	1302.05	140.9	1302.1		146.1	1303.1		117.2	1303.5		137.2	1303.5		184.0	1307.4	
153.25	1304.5	X3	131.2	1303.0	1303.23	145.7	1301.8		148.3	1303.4		118.7	1303.3		142.7	1303.2				
154.05	1306.32	X3	133.6	1302.7	1304.08	146.0	1301.7		149.3	1304.0		120.7	1303.3		145.4	1303.6				
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				
159.79	1306.64	X3RP	137.6	1302.7	1306.27	152.9	1303.8		152.7	1306.2		124.7	1303.2		149.7	1305.0				
168.1	1307.66	X3	141.3	1302.2	1306.22	153.0	1306.0		154.7	1306.5		126.7	1303.2		151.7	1305.9				
180.02	1307.48	X3	144.9	1302.0	1307.24	153.1	1306.3		160.0	1306.8		128.7	1303.0		155.7	1306.6				
			147.2	1302.0	1307.06	153.2	1306.1		160.0	1306.8		130.7	1303.0		159.9	1306.7				
			147.4	1302.0		155.8	1306.5					131.7	1303.0							
			149.3	1302.4		156.2	1306.5					133.7	1303.3							
down 0.42 feet			151.0	1303.2		159.1	1306.6	Rpin				136.7	1303.1							
			151.8	1303.6		168.4	1307.6					139.7	1303.0							
			152.1	1304.0								141.7	1303.0							
			152.7	1304.6								144.7	1303.3							
			153.2	1305.6								146.7	1303.6							
			153.7	1306.3								147.7	1303.9							
			154.8	1306.5								147.7	1304.1							
			156.4	1306.6								147.9	1304.27							
			159.5	1306.7								148.7	1304.62							
			168.4	1307.6								149.7	1305.0							
												150.7	1305.4							
												151.7	1305.7							
												152.7	1306.0							
												154.7	1306.4							
												155.7	1306.4							
												157.7	1306.6							
												159.9	1306.6							

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

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

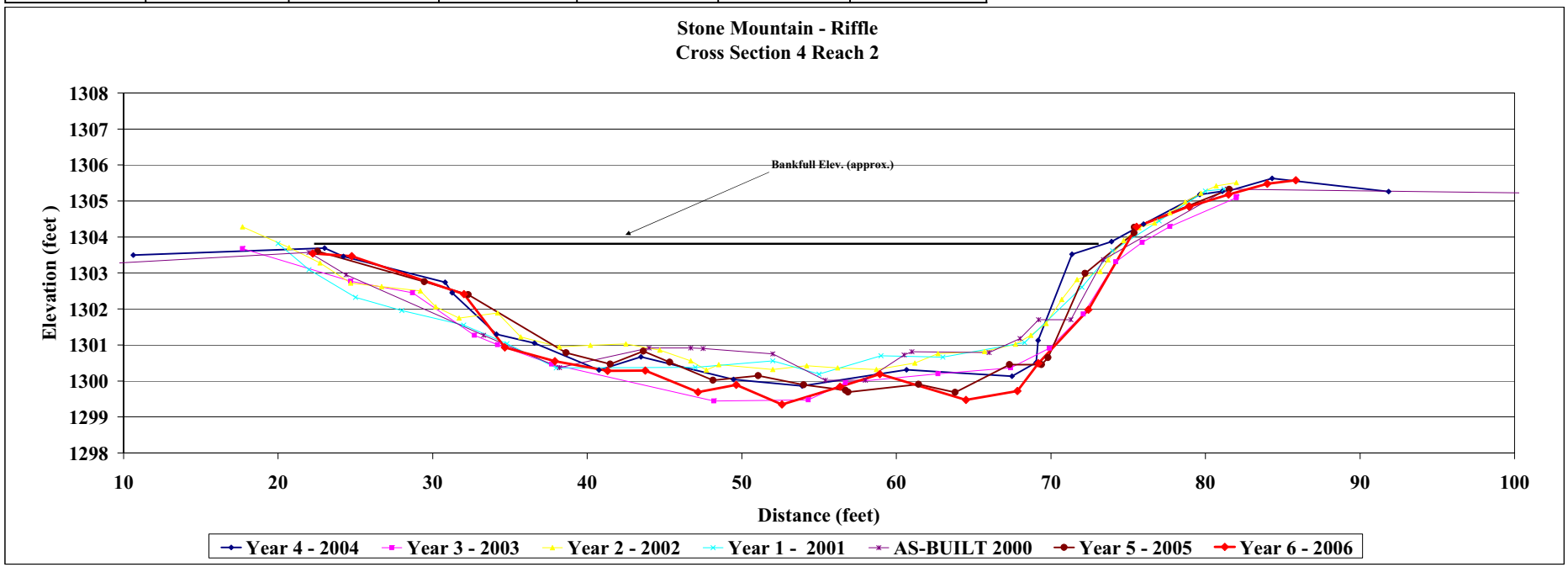


Project Name	Stone Mountain
Cross Section	Reach 2 Cross-Section 4
Feature	Riffle
Date	7/6/06
Crew	Clinton

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**
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	
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
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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
78.95	1304.8	X4	75.4	1304.1	1304.4	79.6	1305.2					54.2	1300.4					81.4	1305.3	RPIN
81.5	1305.2	X4RP	75.4	1304.3	1304.8	81.1	1305.3					56.2	1300.4					143.0	1305.0	
84.01	1305.5	X4	81.5	1305.3	1305.1	81.5	1305.3	Rpin				58.7	1300.3							
85.84	1305.6	X4			1305.2	84.3	1305.6					61.2	1300.5							
						91.9	1305.3					62.7	1300.8							
												65.7	1300.8							
												67.7	1301.0							
												68.7	1301.3							
												69.7	1301.6							
												70.7	1302.3							
												71.7	1302.8							
												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+2

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

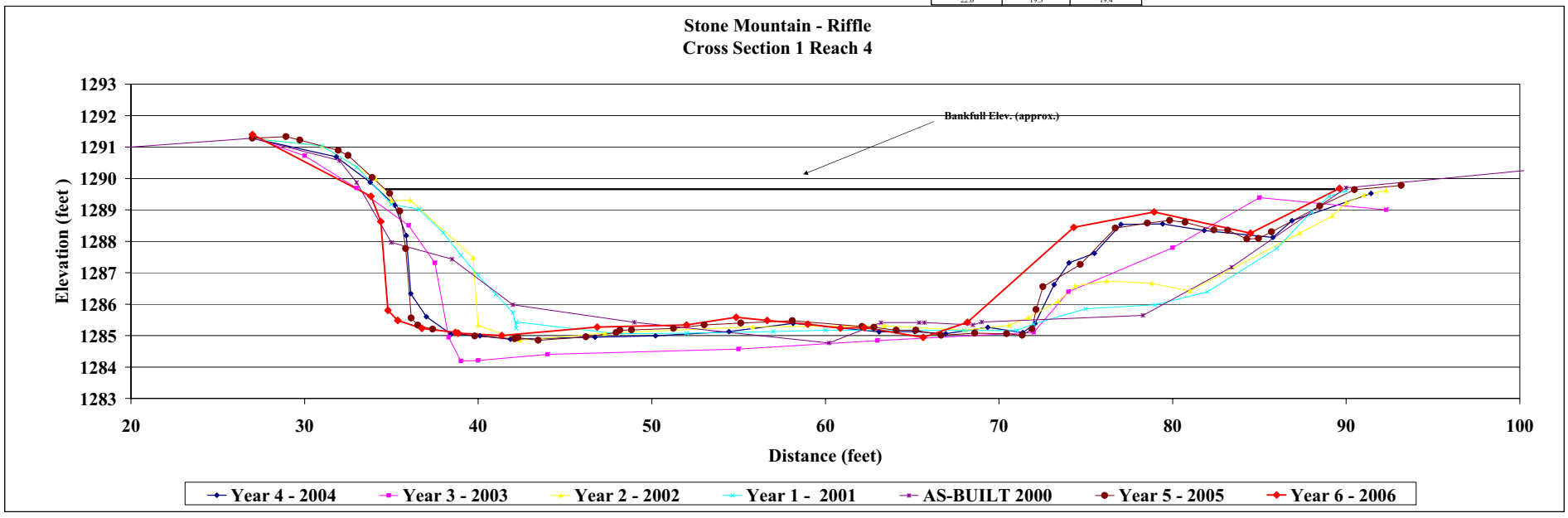


Project Name Stone Mountain
Cross Section Reach 4 Cross-Section 1
Feature Riffle
Date 7/6/06
Crew Clinton

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
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	
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	
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	
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
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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
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	
74.31	1288.44		48.2	1285.2		71.4	1285.1					81.0	1286.4		71.0	1285.2		107.0	1288.6	
78.93	1288.93		48.8	1285.2		72.1	1285.4					87.3	1288.3		72.0	1285.4				
84.48	1288.26		51.3	1285.2		73.2	1286.6					89.2	1288.8		75.0	1285.9				
89.62	1289.68	X1RP	53.0	1285.3		74.0	1287.3					90.0	1289.2	RTOB	79.0	1286.0				
			55.1	1285.4		75.5	1287.6					91.0	1289.5		82.0	1286.4				
			58.1	1285.5		77.0	1288.5					92.3	1289.6		86.0	1287.8				
Right 26.38 feet			62.1	1285.3		79.4	1288.6								88.0	1288.9				
			62.8	1285.3		81.8	1288.3								89.0	1289.4				
			64.1	1285.2		85.8	1288.1								90.0	1289.6				
			65.2	1285.2		86.9	1288.7													
			66.7	1285.0		91.4	1289.5	Right Pin												
			68.6	1285.08																
			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 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	187.3	195.9	196.1	215.8	202.5	206.6	206.3
Width	62.6	58.3	57.7	59.3	58.2	57.0	57.0
Mean Depth	3.0	3.4	3.4	3.6	3.5	3.6	3.6
Max Depth	4.8	4.9	4.9	5.6	4.9	4.7	5.0
W/D	20.9	17.3	16.9	16.3	16.7	15.7	15.7
	Bench 2006	Bench 2005	Bench 2004				
	137.6	127.0	132.0				
	55.8	49.5	50.6				
	2.5	2.6	2.6				
	3.9	3.7	3.7				
	22.6	19.3	19.4				

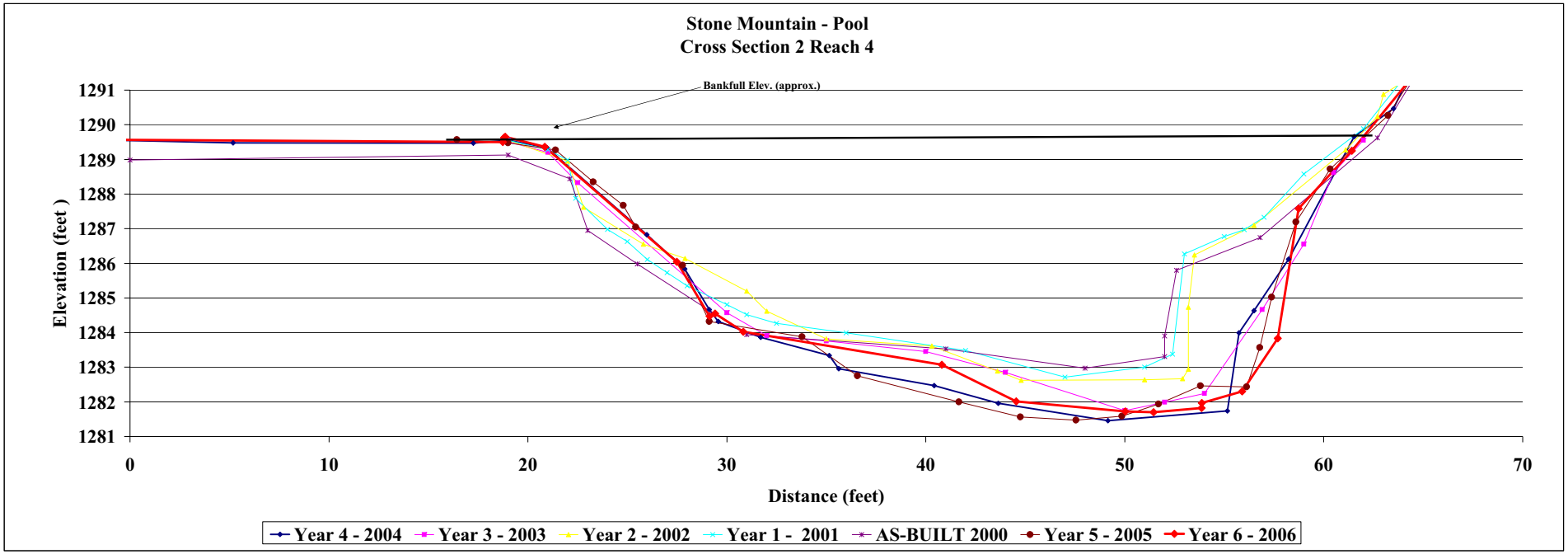


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 2
Feature	Pool
Date	7/6/06
Crew	Clinton

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**
-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	1289.5	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
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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
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	
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	
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	
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	
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				
61.41	1289.25		57.4	1285.0	Water	56.5	1284.6	Water				62.7	1290.2		55.0	1286.8				
65.19	1291.9		58.6	1287.2		58.2	1286.1					63.0	1290.9		56.0	1287.0				
67.28	1294.35		60.3	1288.7		61.5	1289.7					64.1	1291.3		57.0	1287.3				
68.03	1294.54	X2RP	63.2	1290.3		63.5	1290.5					65.3	1292.7		59.0	1288.6				
68.04	1294.38	X2RP	65.3	1292.1		65.5	1292.8					67.0	1294.0		62.0	1289.9				
83.15	1294.48		66.5	1293.9		67.5	1294.2					68.6	1294.4		64.0	1291.3				
			68.0	1294.4	Right Pin	79.4	1294.4								67.0	1294.1				
			68.2	1294.4		99.7	1294.5								68.4	1294.4				
right 22.22 ft			73.0	1294.4		117.4	1294.0								68.4	1294.4				
			78.0	1294.4		127.2	1294.1													
						68.0	1294.4	Right Pin												

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

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

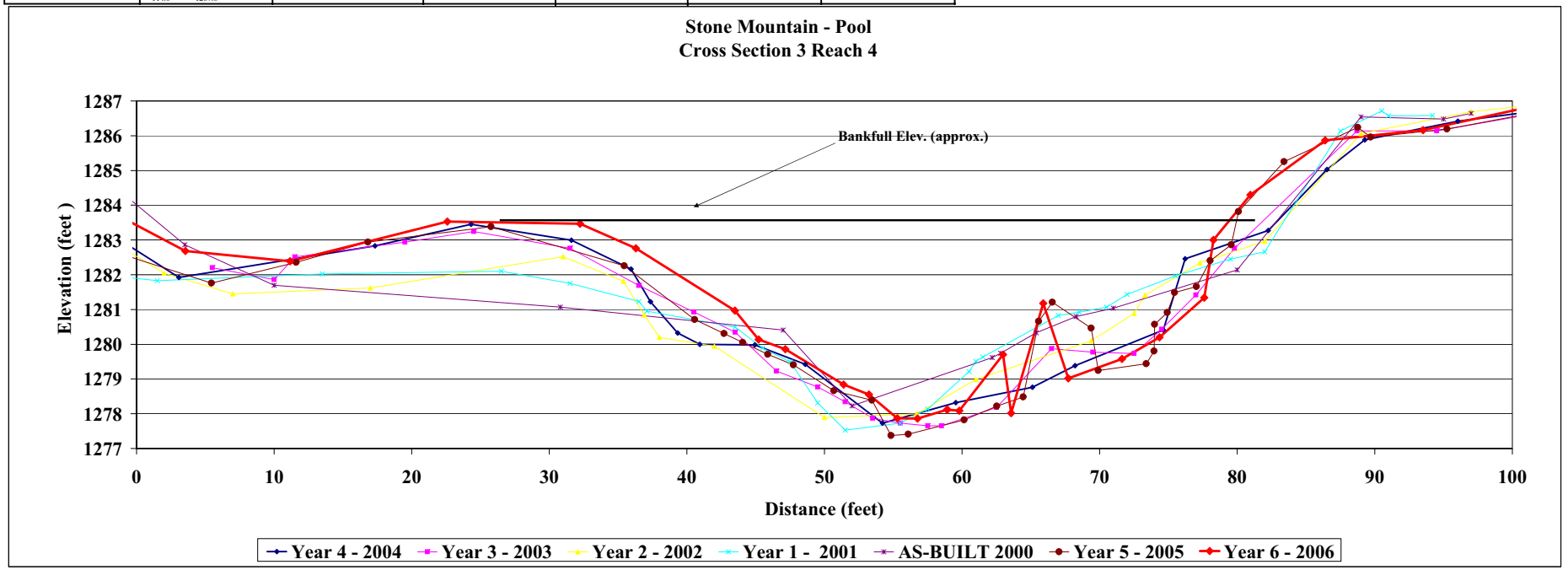


Project Name Stone Mountain
Cross Section Reach 4 Cross-Section 3
Feature Pool
Date 7/6/06
Crew Clinton

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
-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	
-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
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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
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	
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	
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				
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				
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				
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				
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				
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				
71.63	1279.58	X3	69.4	1280.5		107.2	1287.0		77.0	1281.4					68.5	1280.9				
74.35	1280.2	X3W	69.9	1279.2		114.0	1287.8	Right Pin	79.8	1282.8					70.5	1281.1				
77.6	1281.34	X3	73.4	1279.4		118.3	1288.2		88.7	1286.1					72.0	1281.4				
78.28	1283	X3	74.0	1279.8					94.5	1286.1					75.5	1282.0				
80.96	1284.3	X3	74.0	1280.6					103.5	1286.8					79.5	1282.5				
86.39	1285.87	X3	74.9	1280.9					114.0	1287.8	Right Pin				82.0	1282.7				
93.51	1286.16	X3	75.5	1281.5					114.0	1287.7					87.5	1286.1				
100.09	1286.73	X3LP	77.0	1281.7											90.5	1286.7				
114.01	1287.96	X3RP	78.0	1282.4											91.0	1286.6				
114.13	1287.96	X3RP	79.6	1282.9											94.2	1286.6				
			80.1	1283.8			0.0								94.2	1286.7				
left 8.6 feet			83.4	1285.3											94.2	1286.6				
			88.8	1286.2																
			89.7	1286.0																
			95.3	1286.2																
			107.2	1287.1																
			114.0	1287.8																

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

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

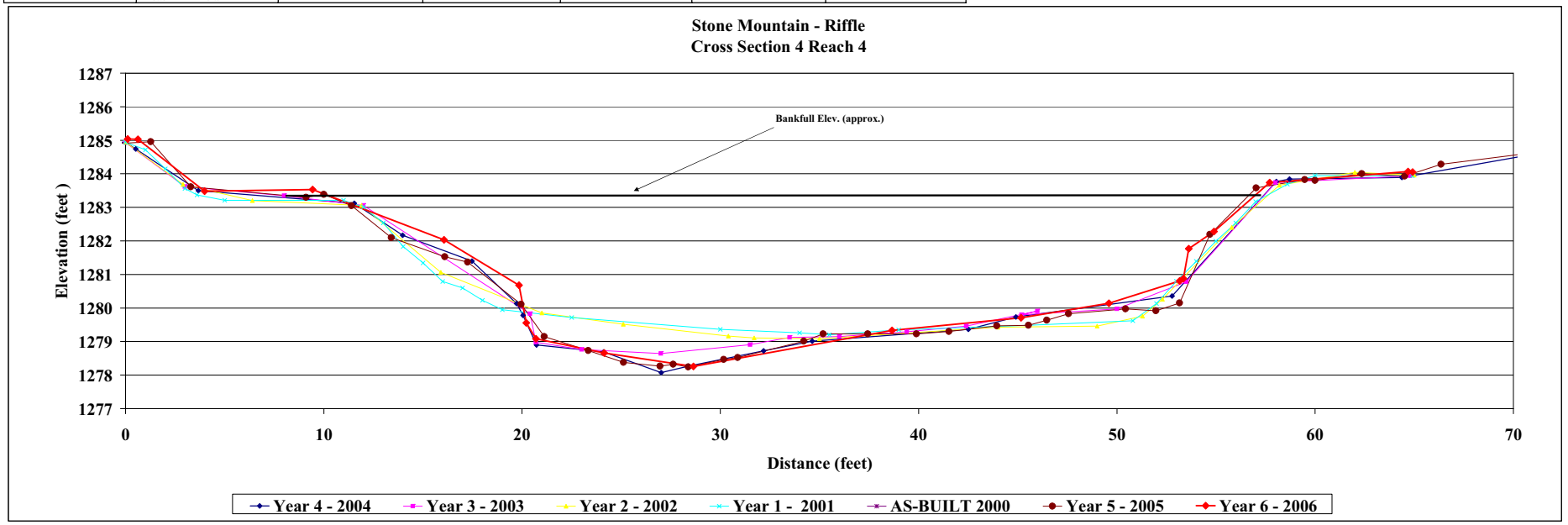


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 4
Feature	Riffle
Date	7/6/06
Crew	Clinton

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**
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			
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				
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				
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				
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				
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				
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			
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
64.9	1284.1	X4	30.9	1278.5		52.8	1280.4								39.0	1279.4				
			34.2	1279.0	Bankfull	58.0	1283.8	Bankfull							45.5	1279.5				
			35.2	1279.2		58.7	1283.8								50.8	1279.6				
			37.4	1279.2	Right Pin	64.4	1283.9	Right Pin							52.0	1280.1				
			39.9	1279.2		71.8	1284.7								53.0	1280.8				
			41.5	1279.3											54.0	1281.4				
			44.0	1279.5											55.0	1282.0				
			45.5	1279.5											56.0	1282.5				
			46.5	1279.6											57.0	1283.2	RBKF			
			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 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	141.2	147.3	141.4	139.5	140.7	139.5	
Width	45.5	44.7	41.3	45.5	45.9	45.0	
Mean Depth	3.1	3.3	3.4	3.1	3.1	3.1	
Max Depth	4.9	4.9	5.0	4.5	4.0	3.9	
W/D	14.6	13.6	12.0	14.8	15.0	14.5	

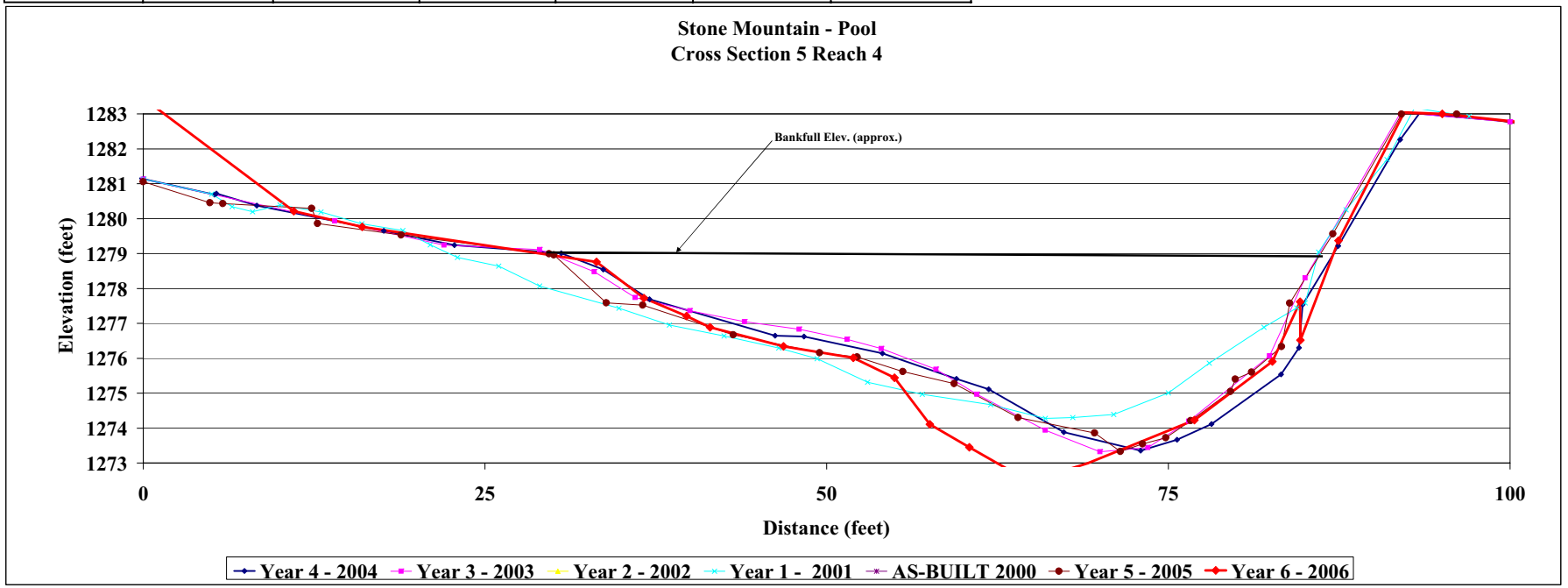


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 5
Feature	Pool
Date	7/6/06
Crew	Clinton

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**
0	1283.45	X5LPR4	-11.2	1281.6		-37.8	1280.7		0.0	1281.1					0.0	1281.1				
11.02	1280.21	X5	-1.6	1281.1		-18.3	1281.6		14.0	1279.9					5.0	1280.7				
16.01	1279.76	X5	0.0	1281.1	Left Pin	-7.6	1281.6		22.0	1279.2					6.5	1280.3				
33.16	1278.76	X5	4.9	1280.5		0.0	1281.1	Left Pin	29.0	1279.1					8.0	1280.2				
36.62	1277.72	X5	5.8	1280.4		5.2	1280.7		33.0	1278.5					10.0	1280.4				
39.74	1277.21	X5	12.3	1280.3		5.4	1280.7	Bankfull	36.0	1277.7					13.0	1280.2				
41.46	1276.89	X5	12.8	1279.9		8.3	1280.4		40.0	1277.4					16.0	1279.9				
46.85	1276.34	X5	18.9	1279.5		17.6	1279.7		44.0	1277.1					19.0	1279.7				
51.94	1276.01	X5W	29.7	1279.0		22.8	1279.2		48.0	1276.8					21.0	1279.3	LBKF			
54.97	1275.44	X5	30.1	1279.0		30.6	1279.0		51.5	1276.5					23.0	1278.9				
57.55	1274.11	X5	33.9	1277.6		33.7	1278.5		54.0	1276.3					26.0	1278.6				
60.43	1273.45	X5	36.6	1277.5		37.0	1277.7		58.0	1275.7					29.0	1278.1				
64.83	1272.47	X5	43.2	1276.7		46.2	1276.7		61.0	1275.0					34.8	1277.4				
69.1	1272.99	X5	49.5	1276.2		48.3	1276.6		66.0	1273.9					38.5	1277.0				
76.91	1274.23	X5	52.2	1276.0		54.1	1276.1		70.0	1273.3					42.5	1276.6				
82.61	1275.91	X5W	55.6	1275.6		59.5	1275.4		73.5	1273.4					46.5	1276.3				
84.64	1277.62	X5	59.3	1275.3		61.9	1275.1		76.5	1274.2					49.3	1276.0				
84.65	1276.52	X5	64.0	1274.3		67.4	1273.9		82.4	1276.1	rew				53.0	1275.3				
87.44	1279.37	X5	69.6	1273.9		73.0	1273.4		85.0	1278.3					57.0	1275.0				
92.25	1283.04	X5	71.5	1273.3		75.6	1273.7		92.0	1283.0	rtob				62.0	1274.7				
92.46	1283.04	X5	73.1	1273.6		78.2	1274.1		100.0	1282.8	tpin				66.0	1274.3				
95.03	1283	X5	74.8	1273.7		83.2	1275.5								68.0	1274.3				
100.83	1282.76	X5RP	76.7	1274.2		84.6	1276.3								71.0	1274.4				
102.71	1282.77	x5r5	79.6	1275.1		84.8	1277.5								75.0	1275.0				
			79.9	1275.4		87.4	1279.2								78.0	1275.9				
			81.1	1275.6		92.0	1282.3								82.0	1276.9				
up 0.3 feet			83.3	1276.3		93.4	1283.0								84.4	1277.4				
			83.9	1277.6		100.9	1282.8								85.0	1277.6				
			87.0	1279.6		101.2	1282.8	Right Pin							86.0	1279.0	RBKF			
			92.1	1283.0		109.6	1283.07								88.0	1280.3				
			96.1	1283.0		130.2	1283.14								91.0	1281.7				
			100.5	1282.7											93.0	1283.2				
			106.1	1283.1											97.0	1282.9				
			111.4	1283.0											100.8	1282.8				

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

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

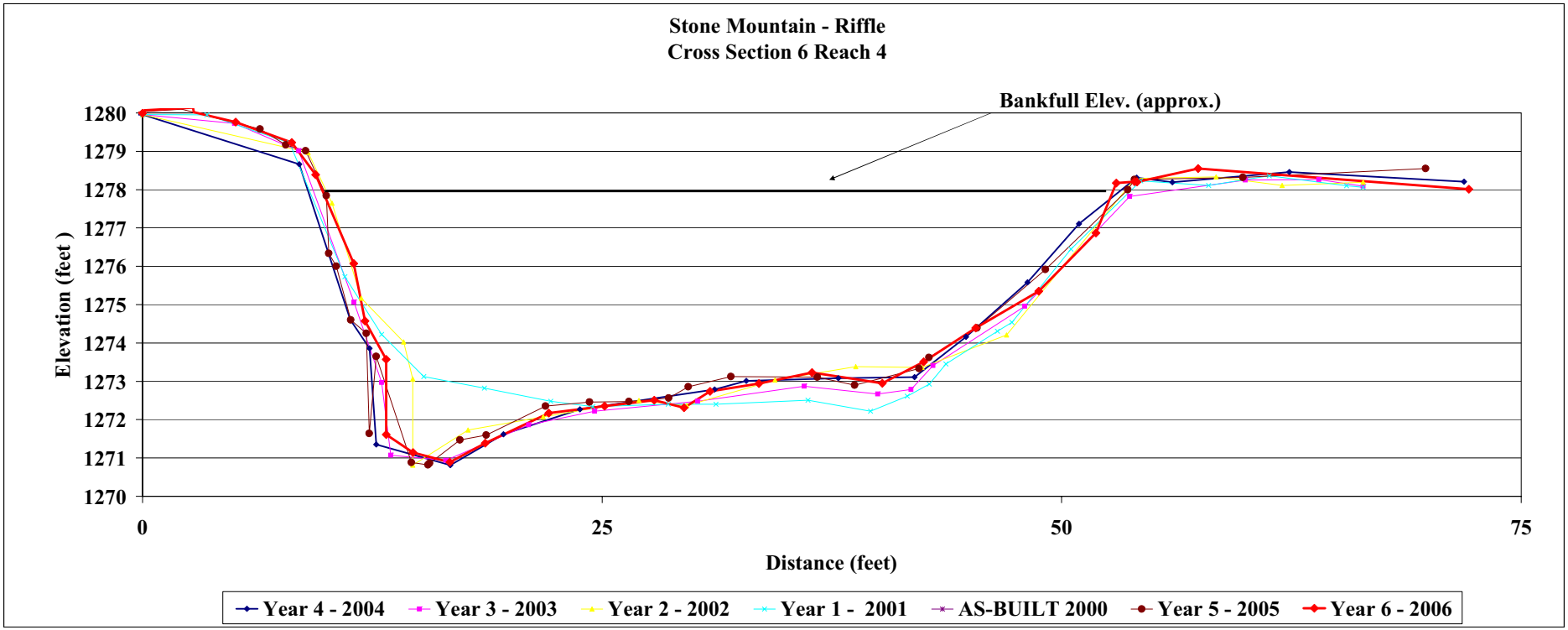


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 6
Feature	Riffle
Date	7/6/06
Crew	Clinton

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**
-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			
-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				
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			
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
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				
29.45	1272.31	x6	21.9	1272.4		62.4	1278.5								54.3	1278.2	RBKF			
30.88	1272.74	x6w	24.3	1272.5		71.9	1278.2								58.0	1278.1				
33.53	1272.94	x6	26.5	1272.5											61.3	1278.4				
36.42	1273.23	x6	28.6	1272.6											65.5	1278.1				
40.24	1272.95	x6	29.7	1272.9											66.4	1278.1				
42.49	1273.51	x6	32.0	1273.1																
45.32	1274.39	x6	36.7	1273.1																
48.75	1275.35	x6	38.7	1272.9																
51.87	1276.87	x6	42.2	1273.3																
52.98	1278.17	X6RP	42.8	1273.6																
53.97	1278.21	x6rpr4	45.4	1274.4																
54.1	1278.2	x6rp	49.1	1275.9																
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 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	212.1	210.3	223.1		193.4	210.1	
Width	44.7	44.7	45.2		36.7	46.3	
Mean Depth	4.7	4.7	4.9		5.3	4.5	
Max Depth	7.3	7.4	7.3		7.4	6.0	
W/D	9.4	9.5	9.2		7.0	10.2	

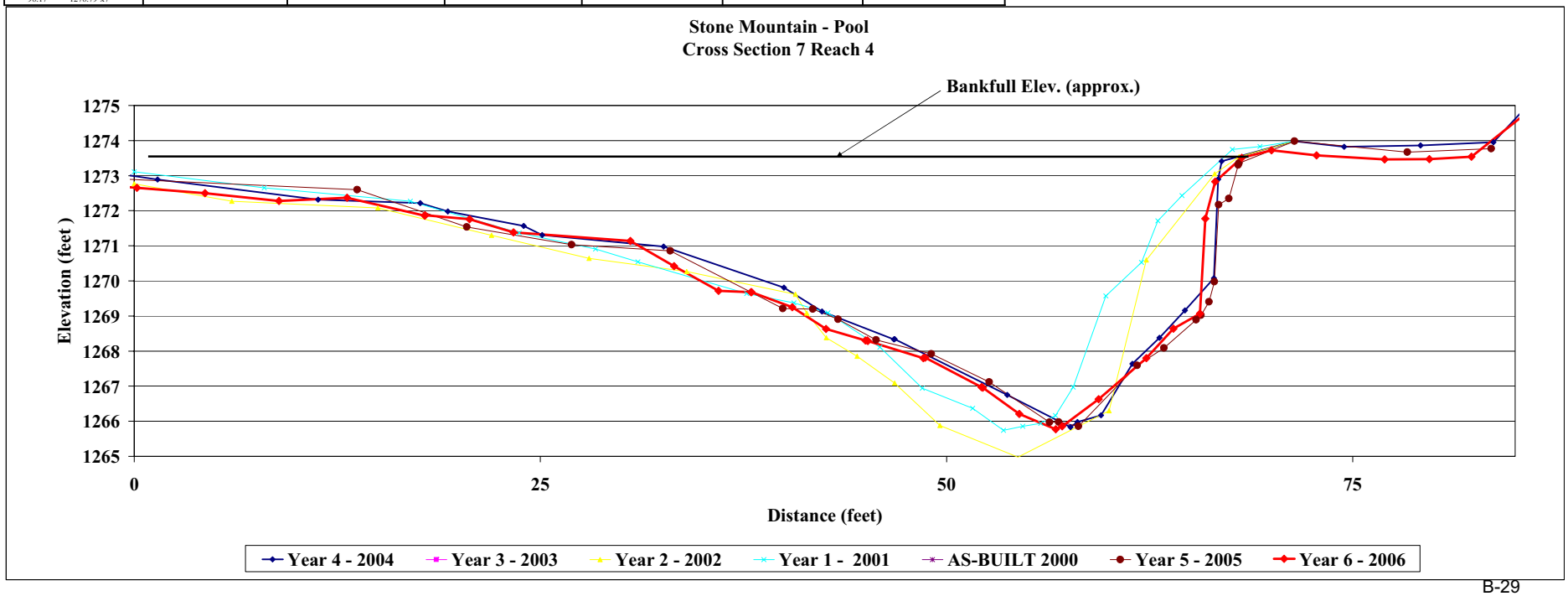


Project Name	Stone Mountain
Cross Section	Reach 4 Cross-Section 7
Feature	Pool
Date	7/6/06
Crew	Bidelspach, Clinton

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
-17.7	1273.8	x7	-19.4	1274.3		-22.6	1274.3					0.0	1272.8		0.0	1273.1	LBKF			
-7.3	1273.2	x7	-11.6	1273.7		-10.5	1273.7					6.0	1272.3		8.0	1272.7				
-1.8	1272.7	x7lp	-3.0	1273.0		1.4	1272.9					15.0	1272.1		17.0	1272.3				
0.2	1272.7	x7	13.7	1272.6		11.3	1272.3					22.0	1271.3		23.7	1271.4				
4.4	1272.5	x7	20.5	1271.5		17.6	1272.2	Bankfull				28.0	1270.6		28.4	1270.9				
8.9	1272.3	x7	26.9	1271.0		19.3	1272.0					34.0	1270.3		31.0	1270.5				
13.1	1272.4	x7	33.0	1270.9		24.0	1271.6					40.7	1269.6		37.7	1269.6				
17.9	1271.9	x7	39.9	1269.2		25.1	1271.3					41.4	1269.1	LEW	40.6	1269.4				
17.9	1271.9	x7	41.8	1269.2		32.6	1271.0					42.6	1268.4		42.7	1269.1				
20.6	1271.8	x7	43.3	1268.9		40.0	1269.8					44.5	1267.9		45.9	1268.1				
23.4	1271.4	x7bkf	45.7	1268.3		42.3	1269.1	Water				46.8	1267.1		48.5	1266.9				
30.5	1271.1	x7	49.1	1267.9		46.8	1268.3					49.6	1265.9		51.6	1266.4				
33.2	1270.4	x7	52.6	1267.1		46.8	1268.3					54.4	1265.0		53.5	1265.7				
36.0	1269.7	x7	56.4	1266.0		53.7	1266.8					60.0	1266.3		54.7	1265.9				
38.0	1269.7	x7	56.9	1266.0		57.6	1265.8	Max Pool				62.3	1270.6		55.8	1265.9				
38.0	1269.7	x7	58.1	1265.9		58.1	1266.0					66.5	1273.1	RTOB	56.7	1266.2				
40.5	1269.3	x7	61.7	1267.6		59.5	1266.2					68.0	1273.5		57.8	1267.0				
42.6	1268.6	x7w	63.4	1268.1		61.4	1267.6					71.4	1274.0	RPIN	59.8	1269.6				
45.0	1268.3	x7	65.4	1268.9		63.1	1268.4								62.0	1270.5				
45.1	1268.3	x7	65.7	1269.0		64.7	1269.2	Water							63.0	1271.7				
45.2	1268.3	x7	66.2	1269.4		66.5	1270.1								64.5	1272.4				
48.6	1267.8	x7	66.5	1270.0		66.7	1272.9								67.6	1273.8	RBKF			
48.7	1267.8	x7	66.8	1272.2		66.9	1273.4								69.3	1273.8				
52.2	1267.0	x7	67.4	1272.4		71.4	1274.0	Right Pin							71.4	1274.0				
52.2	1267.0	x7	68.0	1273.3		74.5	1273.8													
54.5	1266.2	x7	68.0	1273.4		79.2	1273.9													
56.7	1265.8	x7	71.4	1274.0		83.7	1274.0													
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

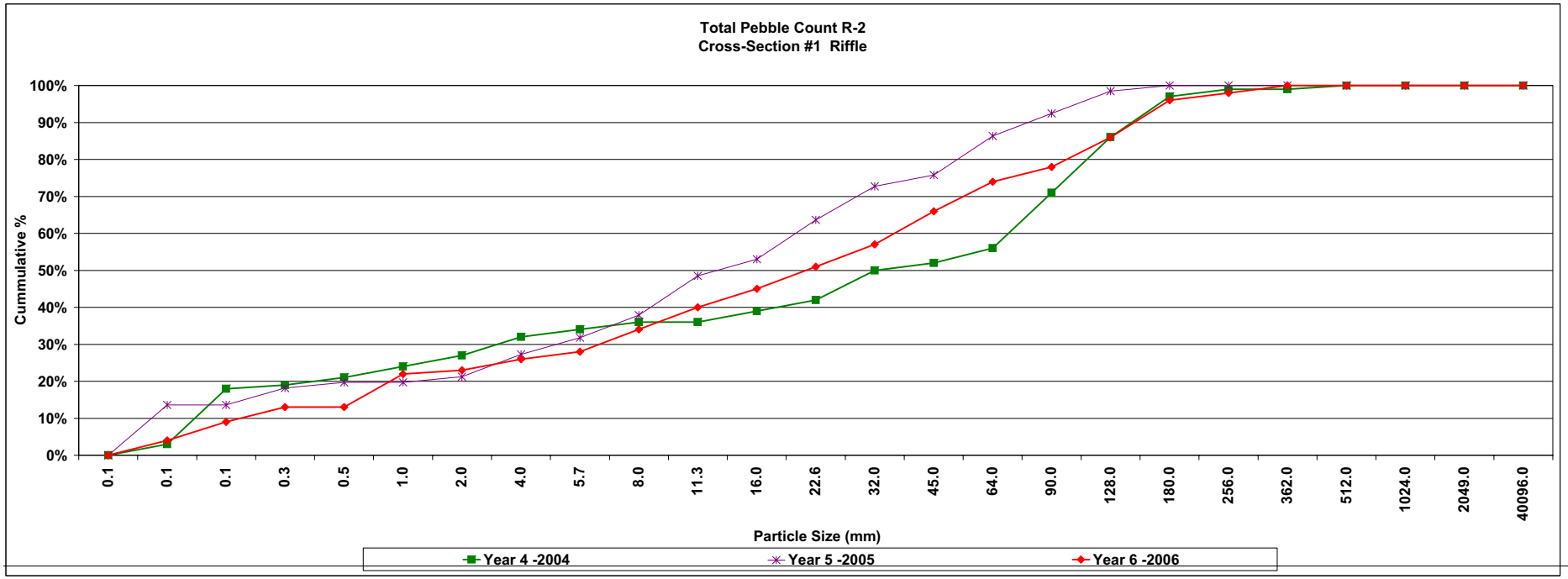
	Year 6 - 2006	Year 5 - 2005	Year 4 - 2004	Year 3 - 2003	Year 2 - 2002	Year 1 - 2001	AS-BUILT 2000
Area	214.6	210.1	201.7		221.1	188.6	
Width	73.9	79.0	71.3		66.5	64.5	
Mean Depth	2.7	2.7	2.8		3.1	2.6	
Max Depth	7.4	7.3	7.4		8.2	7.5	
W/D	25.4	25.4	25.5		23.4	27.4	



Project Name	Stone Mountain Reach 2
Cross Section	#1
Feature	Riffle
Date	7/6/06
Crew	Clinton

			As-Built -2000			Year 4 -2004				Year 5 -2005				Year 6 -2006			
Description	**Material**	**Size (mm)**	**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%
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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
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%
TOTAL / %of whole count			1	100.0%		15	85	100.0%		10	56	100.0%		10	90	100.0%	

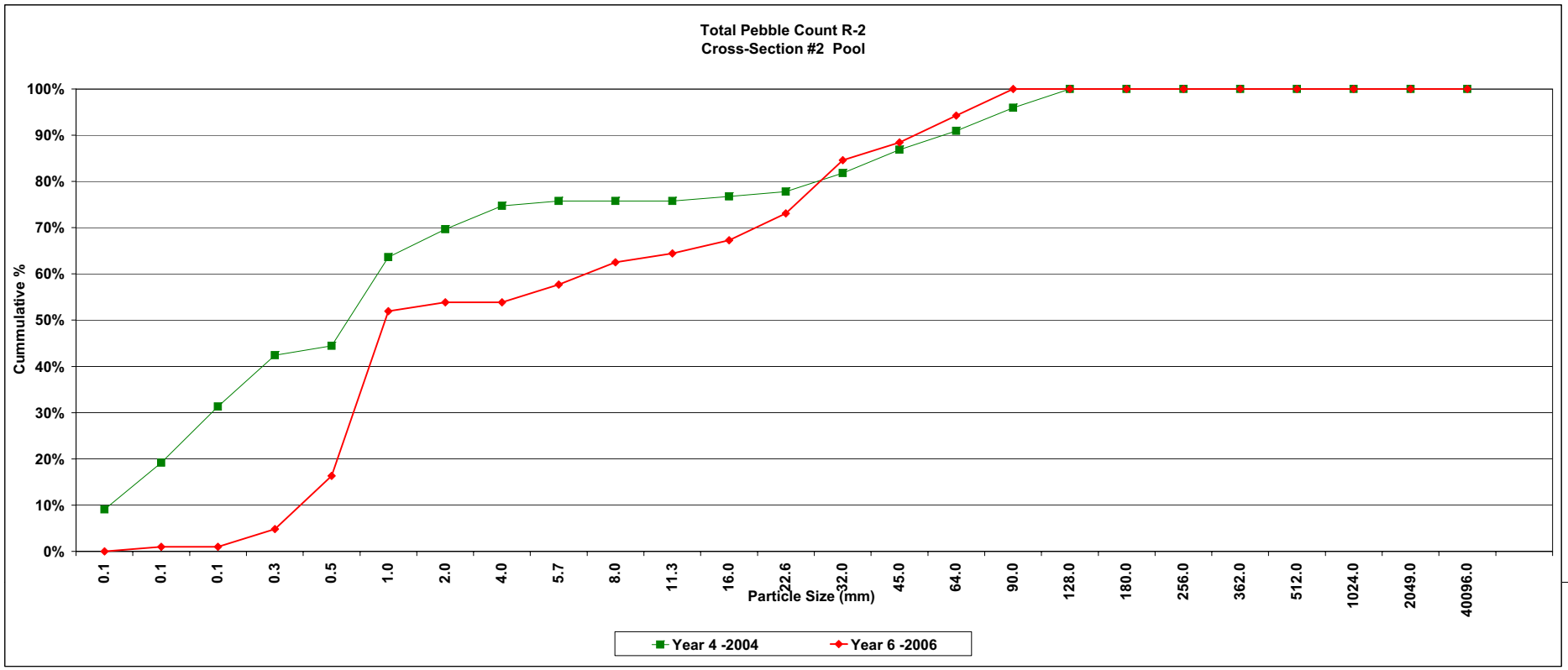
	d16	d35	d50	d84	d95
Year 4 -2004	0.17	8.25	38.50	148.00	206.36
Year 5 -2005	0.29	8.32	15.53	71.99	128.13
Year 6 -2006	1.00	10.32	25.97	142.75	211.60



Project Name	Stone Mountain Reach 2
Cross Section	#2
Feature	Pool
Date	7/6/06
Crew	Clinton

			As-Built -2000			Year 4 -2004					Year 6 -2006			
Description	**Material**	**Size (mm)**	**Pool - Bed**	**%**	**Cum %**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**	**- Bank**	**- 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%
Sand	very fine sand	0.062	0	0.0%	100.0%	10	0	10.1%	19.2%	1	0	1.0%	1.0%
	fine sand	0.125	0	0.0%	100.0%	10	2	12.1%	31.3%	0	0	0.0%	1.0%
	medium sand	0.25	0	0.0%	100.0%	10	1	11.1%	42.4%	2	2	3.8%	4.8%
	course sand	0.50	0	0.0%	100.0%	0	2	2.0%	44.4%	2	10	11.5%	16.3%
	very course sand	1.0	0	0.0%	100.0%	0	19	19.2%	63.6%	16	21	35.6%	51.9%
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%
	fine gravel	4.0	0	0.0%	100.0%	0	5	5.1%	74.7%	0	0	0.0%	53.8%
	fine gravel	5.7	0	0.0%	100.0%	0	1	1.0%	75.8%	0	4	3.8%	57.7%
	medium gravel	8.0	0	0.0%	100.0%	0	0	0.0%	75.8%	1	4	4.8%	62.5%
	medium gravel	11.3	0	0.0%	100.0%	0	0	0.0%	75.8%	0	2	1.9%	64.4%
	course gravel	16.0	0	0.0%	100.0%	0	1	1.0%	76.8%	1	2	2.9%	67.3%
	course gravel	22.6	0	0.0%	100.0%	0	1	1.0%	77.8%	2	4	5.8%	73.1%
	very course gravel	32	0	0.0%	100.0%	0	4	4.0%	81.8%	2	10	11.5%	84.6%
	very course gravel	45	0	0.0%	100.0%	0	5	5.1%	86.9%	0	4	3.8%	88.5%
Cobble	small cobble	64	0	0.0%	100.0%	0	4	4.0%	90.9%	2	4	5.8%	94.2%
	medium cobble	90	0	0.0%	100.0%	0	5	5.1%	96.0%	1	5	5.8%	100.0%
	large cobble	128	0	0.0%	100.0%	0	4	4.0%	100.0%	0	0	0.0%	100.0%
	very large cobble	180	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Boulder	small boulder	256	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	0.0%	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%
	large boulder	1024	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%
Bedrock	bedrock	40096	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%	

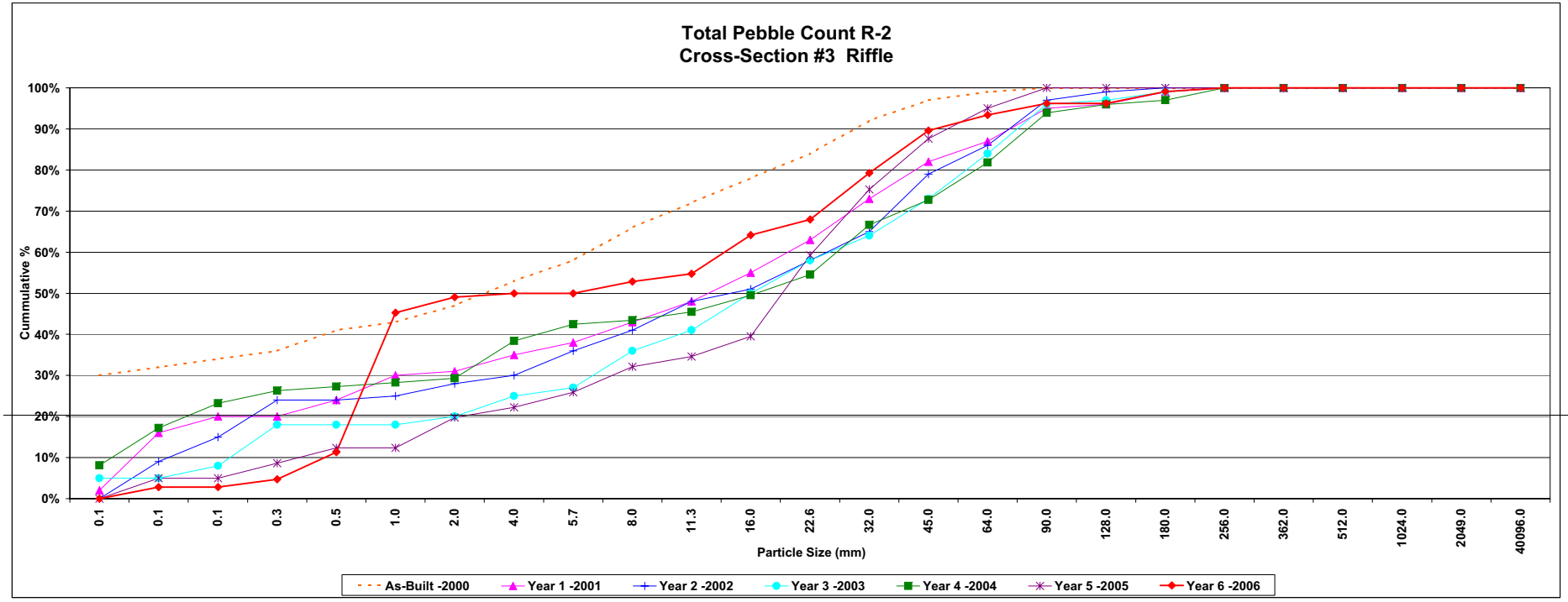
	d16	**d35**	**d50**	**d84**	**d95**
Year 4 -2004	0.32	1.80	3.54	90.82	205.84
Year 6 -2006	1.48	2.29	2.92	75.80	162.53



Project Name	Stone Mountain Reach 2
Cross Section	#3
Feature	Riffle
Date	7/6/06
Crew	Clinton

			As-Built -2000			Year 1 -2001			Year 2 -2002			Year 3 -2003			Year 4 -2004				Year 5 -2005				Year 6 -2006			
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 %**
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%
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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
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%
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%	

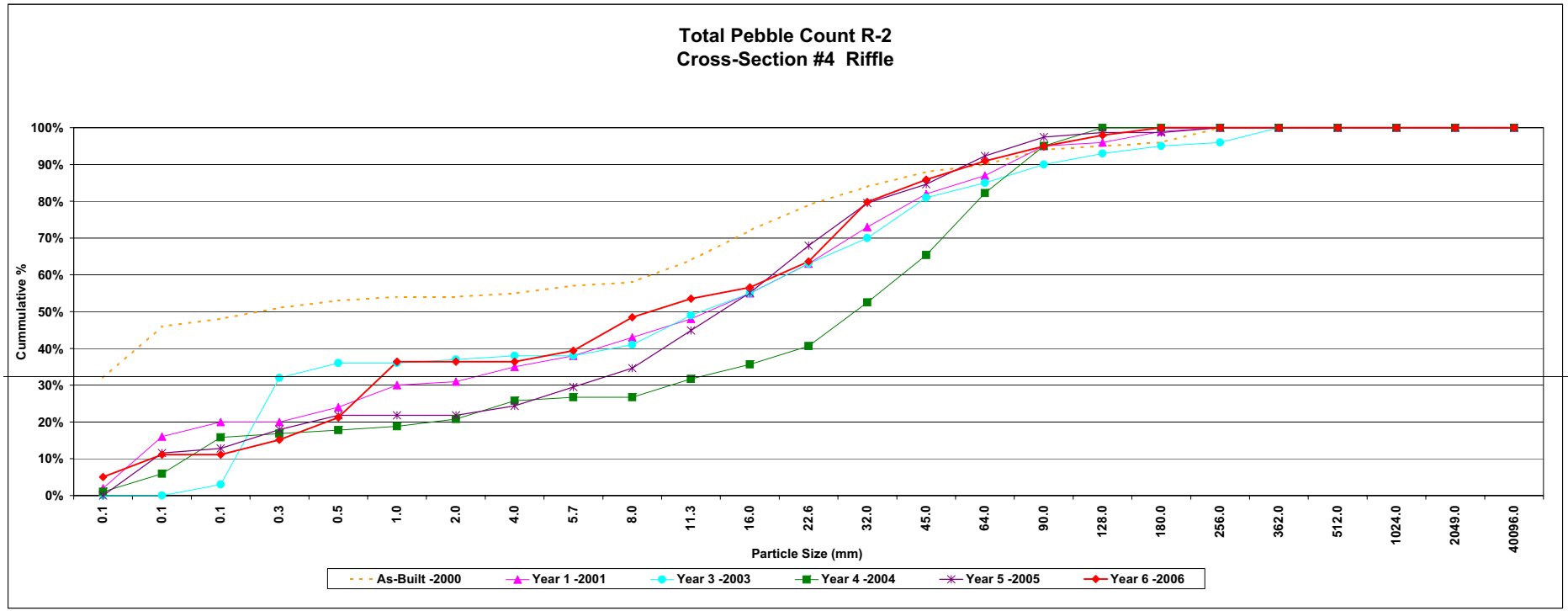
	d16	d35	d50	d84	d95
As-Built -2000	0.00	0.28	3.93	27.30	48.10
Year 1 -2001	0.56	8.05	18.49	53.50	96.20
Year 2 -2002	0.21	6.52	17.42	70.57	103.18
Year 3 -2003	0.34	9.34	19.30	77.00	106.33
Year 4 -2004	0.09	4.16	20.10	82.76	132.62
Year 5 -2005	2.24	14.14	23.55	49.76	76.81
Year 6 -2006	0.85	1.27	11.70	45.83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



Project Name	Stone Mountain Reach 2
Cross Section	#4
Feature	Riffle
Date	7/6/06
Crew	Clinton

			As-Built -2000			Year 1 -2001			Year 3 -2003			Year 4 -2004			Year 5 -2005				Year 6 -2006			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bed**	**Riffle - Bank**	**%**	**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	0.0	5.1%	5.1%
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	0.0	6.1%	11.1%
	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	0.0%	11.1%
	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%
	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	0.0	6.1%	21.2%
	very course sand	1.0	1	1.0%	54.0%	6	6.0%	30.0%	0	0.0%	36.0%	0	0	1.0%	18.8%	0	0	0.0%	21.8%	4	11.0	15.2%	36.4%
G r a v e l	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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
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%
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%	

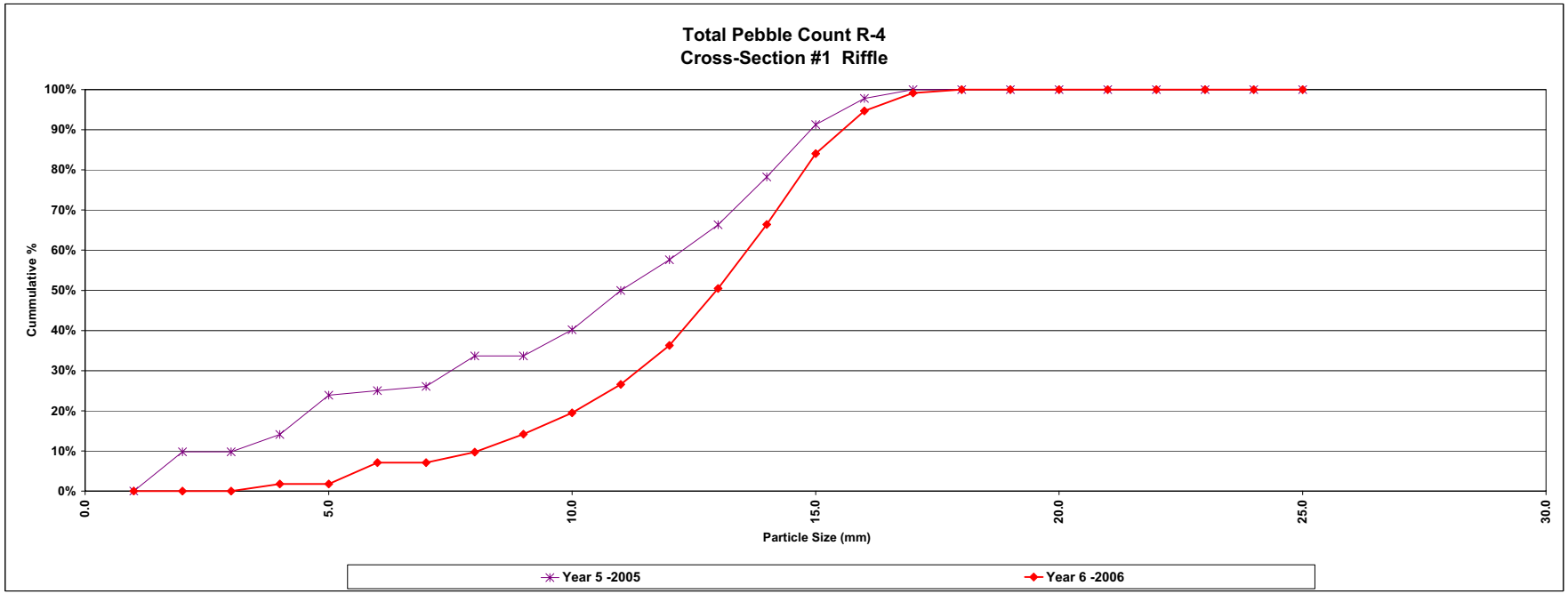
	d16	d35	d50	d84	d95
As-Built -2000	0.00	0.07	0.31	38.50	154.00
Year 1 -2001	0.09	4.85	15.26	63.50	109.00
Year 3 -2003	0.27	0.66	14.59	71.37	218.00
Year 4 -2004	0.22	18.38	36.17	81.53	108.88
Year 5 -2005	0.30	9.80	16.48	52.58	93.86
Year 6 -2006	0.43	1.43	10.85	49.59	109.75



Project Name	Stone Mountain Reach 4
Cross Section	#1
Feature	Riffle
Date	7/11/06
Crew	Clinton

			As-Built -2000			Year 5 -2005				Year 6 -2006			
Description	**Material**	**Size (mm)**	**Riffle - Bed**	**%**	**Cum %**	**Riffle - Bank**	**Riffle - Bed**	**%**	**Cum %**	**- Bank**	**- 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%
Sand	very fine sand	0.062	0	0.0%	100.0%	9	0	9.8%	9.8%	0	0	0.0%	0.0%
	fine sand	0.125	0	0.0%	100.0%	0	0	0.0%	9.8%	0	0	0.0%	0.0%
	medium sand	0.25	0	0.0%	100.0%	3	1	4.3%	14.1%	0	2	1.8%	1.8%
	course sand	0.50	0	0.0%	100.0%	4	5	9.8%	23.9%	0	0	0.0%	1.8%
	very course sand	1.0	0	0.0%	100.0%	0	1	1.1%	25.0%	0	6	5.3%	7.1%
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%
	fine gravel	4.0	0	0.0%	100.0%	1	6	7.6%	33.7%	0	3	2.7%	9.7%
	fine gravel	5.7	0	0.0%	100.0%	0	0	0.0%	33.7%	0	5	4.4%	14.2%
	medium gravel	8.0	0	0.0%	100.0%	0	6	6.5%	40.2%	0	6	5.3%	19.5%
	medium gravel	11.3	0	0.0%	100.0%	0	9	9.8%	50.0%	0	8	7.1%	26.5%
	course gravel	16.0	0	0.0%	100.0%	0	7	7.6%	57.6%	1	10	9.7%	36.3%
	course gravel	22.6	0	0.0%	100.0%	0	8	8.7%	66.3%	6	10	14.2%	50.4%
	very course gravel	32	0	0.0%	100.0%	0	11	12.0%	78.3%	8	10	15.9%	66.4%
	very course gravel	45	0	0.0%	100.0%	0	12	13.0%	91.3%	10	10	17.7%	84.1%
Cobble	small cobble	64	0	0.0%	100.0%	0	6	6.5%	97.8%	2	10	10.6%	94.7%
	medium cobble	90	0	0.0%	100.0%	0	2	2.2%	100.0%	0	5	4.4%	99.1%
	large cobble	128	0	0.0%	100.0%	0	0	0.0%	100.0%	0	1	0.9%	100.0%
	very large cobble	180	0	0.0%	100.0%	0	0	0.0%	100.0%	0	0	0.0%	100.0%
Boulder	small boulder	256	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	0.0%	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%
	large boulder	1024	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%
Bedrock	bedrock	40096	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%	

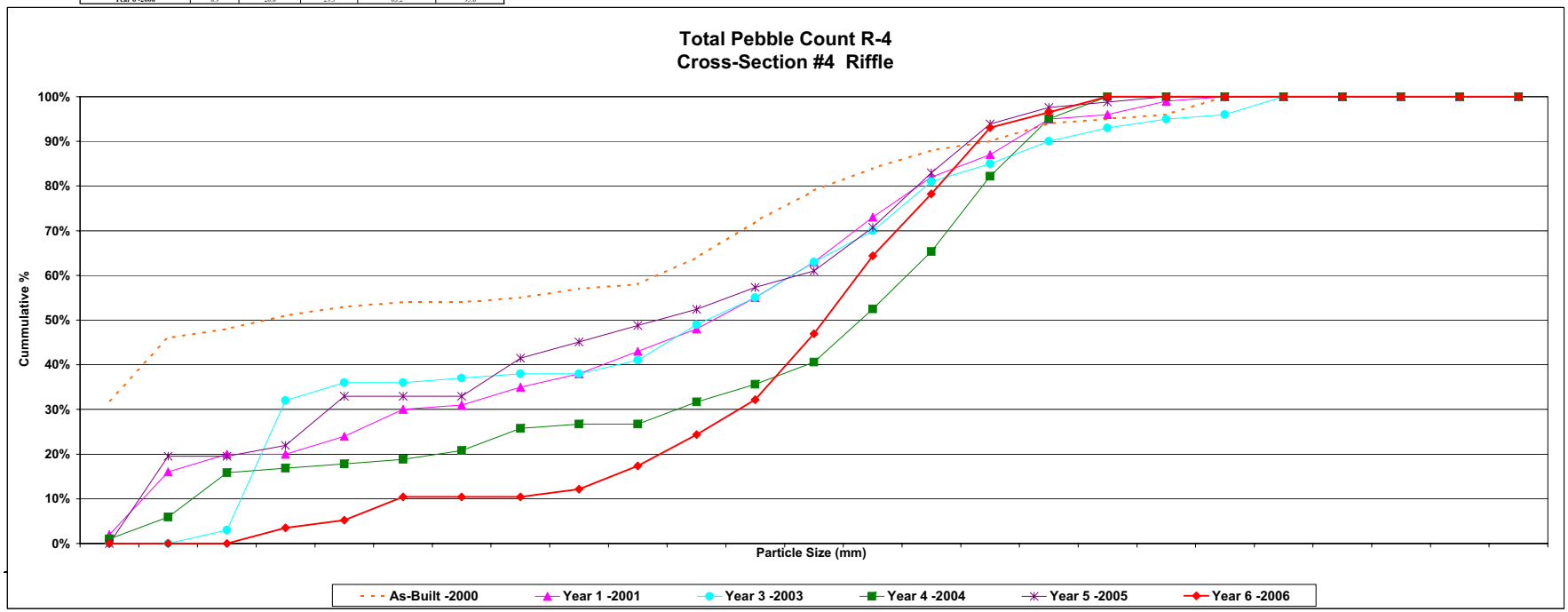
	d16	**d35**	**d50**	**d84**	**d95**
Year 5 -2005	0.4	7.4	13.7	45.5	67.2
Year 6 -2006	7.8	18.6	27.1	54.4	79.2



Project Name	Stone Mountain Reach 4
Cross Section	#4
Feature	Riffle
Date	7/11/06
Crew	Clinton

			As-Built -2000			Year 1 -2001			Year 3 -2003			Year 4 -2004				Year 5 -2005				Year 6 -2006			
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 %**
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%
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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
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%
	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%	

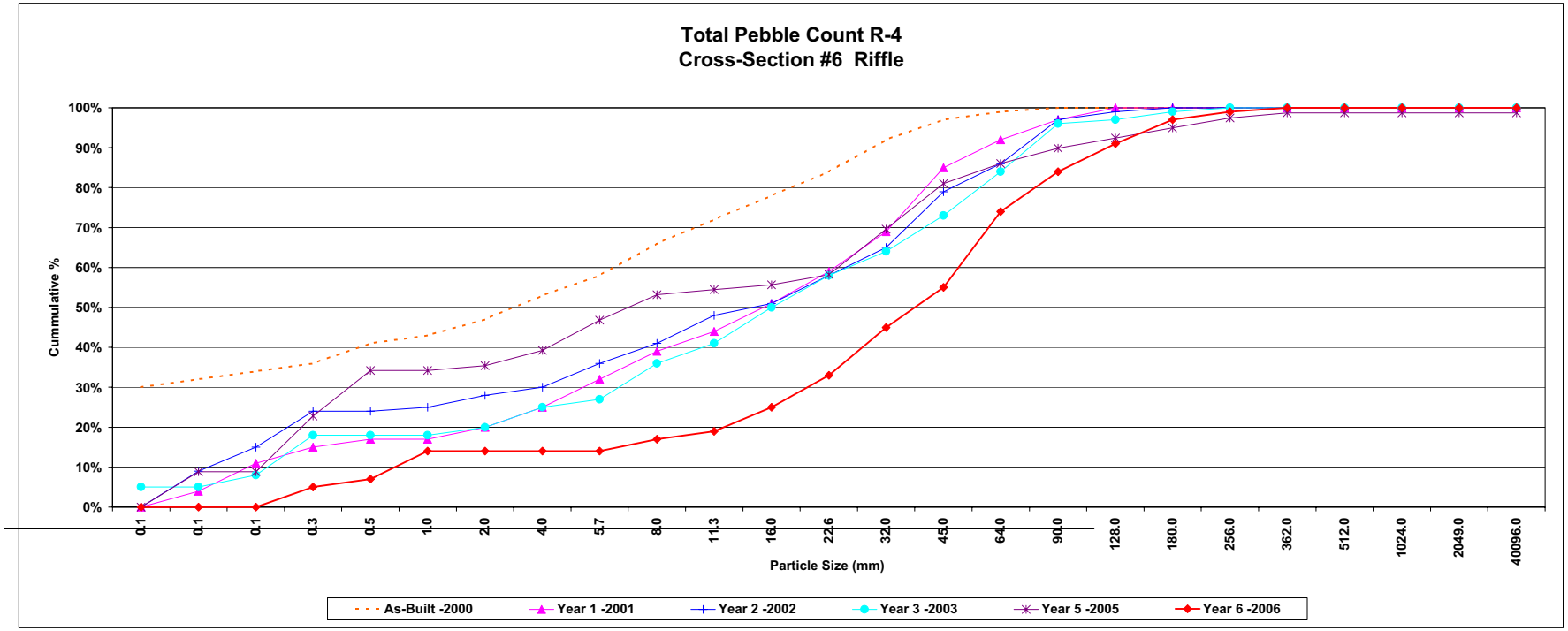
	d16	d35	d50	d84	d95
As-Built -2000	0.0	0.1	0.3	38.5	154.0
Year 1 -2001	0.1	4.9	15.3	63.5	109.0
Year 3 -2003	0.3	0.7	14.6	71.4	218.0
Year 4 -2004	0.2	18.4	36.2	81.5	108.9
Year 5 -2005	0.1	3.4	11.0	56.7	86.6
Year 6 -2006	8.9	20.8	29.3	63.2	95.0



Project Name	Stone Mountain Reach 4
Cross Section	#6
Feature	Riffle
Date	7/11/06
Crew	Clinton

			As-Built -2000			Year 1 -2001			Year 2 -2002			Year 3 -2003			Year 5 -2005				Year 6 -2006			
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 %**
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%
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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
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%
	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%
	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%
	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%
	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%
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%
	TOTAL / %of whole count		100	100.0%		100	100.0%		100	100.0%		100	100.0%		15	64	100.0%		25	75	100.0%	

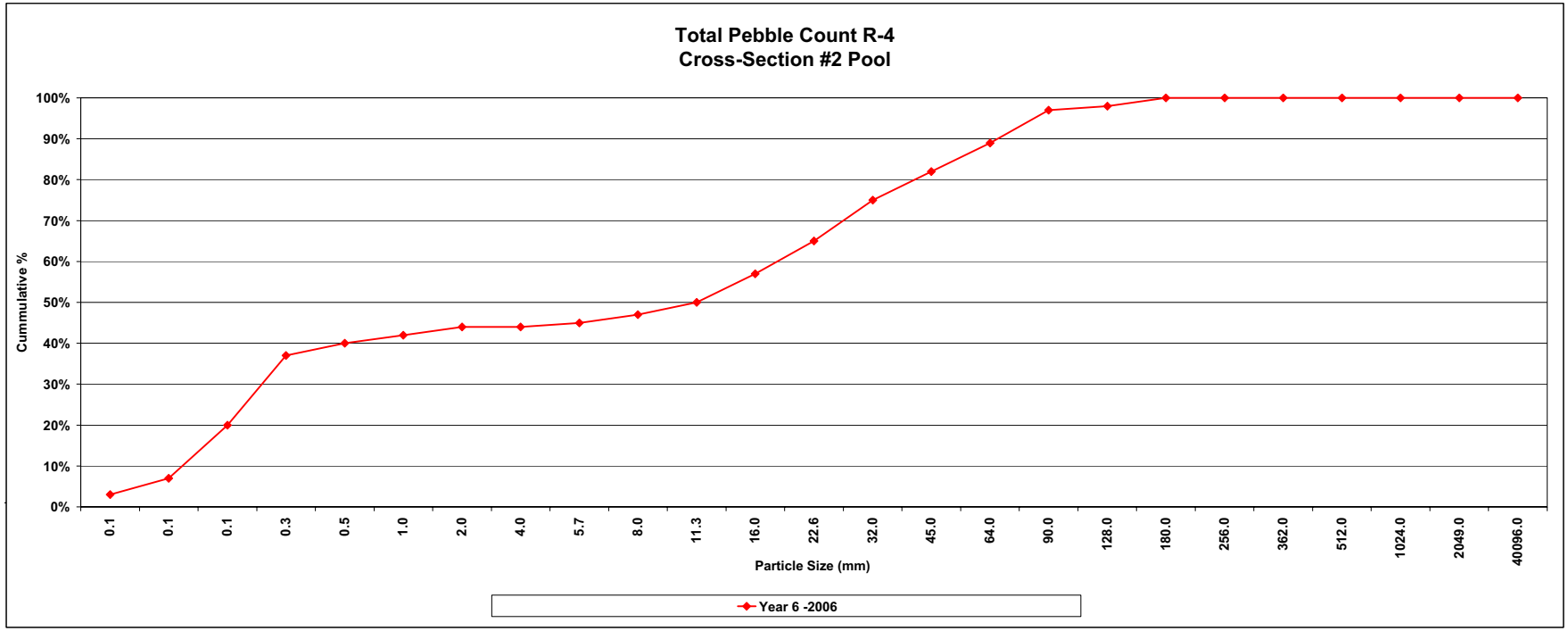
	d16	d35	d50	d84	d95
As-Built -2000	0.0	0.3	3.9	27.3	48.1
Year 1 -2001	0.6	8.1	18.5	53.5	96.2
Year 2 -2002	0.2	6.5	17.4	70.6	103.2
Year 3 -2003	0.3	9.3	19.3	106.3	106.3
Year 5 -2005	0.3	2.5	8.2	67.8	220.3
Year 6 -2006	8.7	29.2	46.5	109.0	196.7



Project Name	Stone Mountain Reach 4
Cross Section	#2
Feature	Pool
Date	7/11/06
Crew	Clinton

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

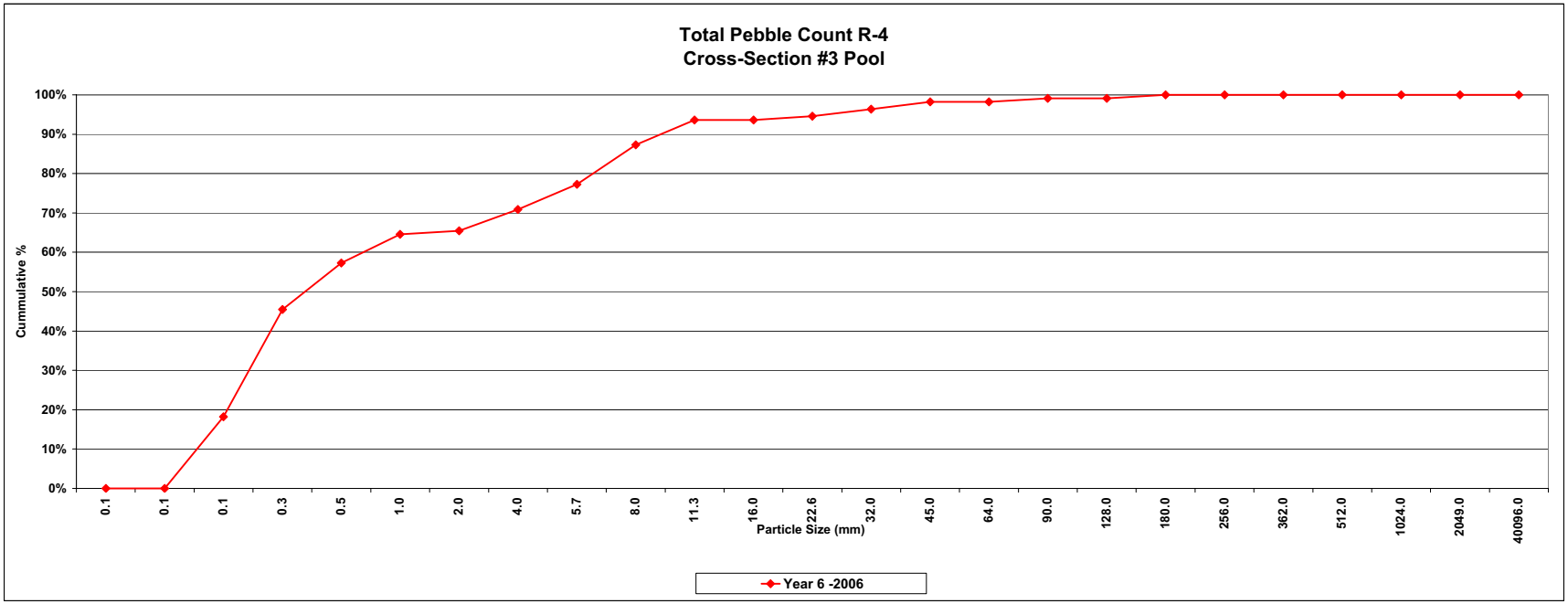
	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	0.16	0.35	13.65	60.93	101.00



Project Name	Stone Mountain Reach 4
Cross Section	#3
Feature	Pool
Date	7/11/06
Crew	Clinton

			Year 6 -2006			
Description	**Material**	**Size (mm)**	**Pool - Bank**	**Pool - Bed**	**%**	**Cum %**
Silt/Clay	silt/clay	0.061	0	0	0.0%	0.0%
	very fine sand	0.062	0	0	0.0%	0.0%
Sand	fine sand	0.125	10	10	18.2%	18.2%
	medium sand	0.25	10	20	27.3%	45.5%
	course sand	0.50	0	13	11.8%	57.3%
	very course sand	1.0	0	8	7.3%	64.5%
G	very fine gravel	2.0	0	1	0.9%	65.5%
r	fine gravel	4.0	0	6	5.5%	70.9%
a	fine gravel	5.7	0	7	6.4%	77.3%
v	medium gravel	8.0	0	11	10.0%	87.3%
e	medium gravel	11.3	0	7	6.4%	93.6%
l	course gravel	16.0	0	0	0.0%	93.6%
	course gravel	22.6	0	1	0.9%	94.5%
	very course gravel	32	0	2	1.8%	96.4%
	very course gravel	45	0	2	1.8%	98.2%
Cobble	small cobble	64	0	0	0.0%	98.2%
	medium cobble	90	0	1	0.9%	99.1%
	large cobble	128	0	0	0.0%	99.1%
	very large cobble	180	0	1	0.9%	100.0%
Boulder	small boulder	256	0	0	0.0%	100.0%
	small boulder	362	0	0	0.0%	100.0%
	medium boulder	512	0	0	0.0%	100.0%
	large boulder	1024	0	0	0.0%	100.0%
	very large boulder	2049	0	0	0.0%	100.0%
Bedrock	bedrock	40096	0	0	0.0%	100.0%
	TOTAL / %of whole count		20	90	100.0%	

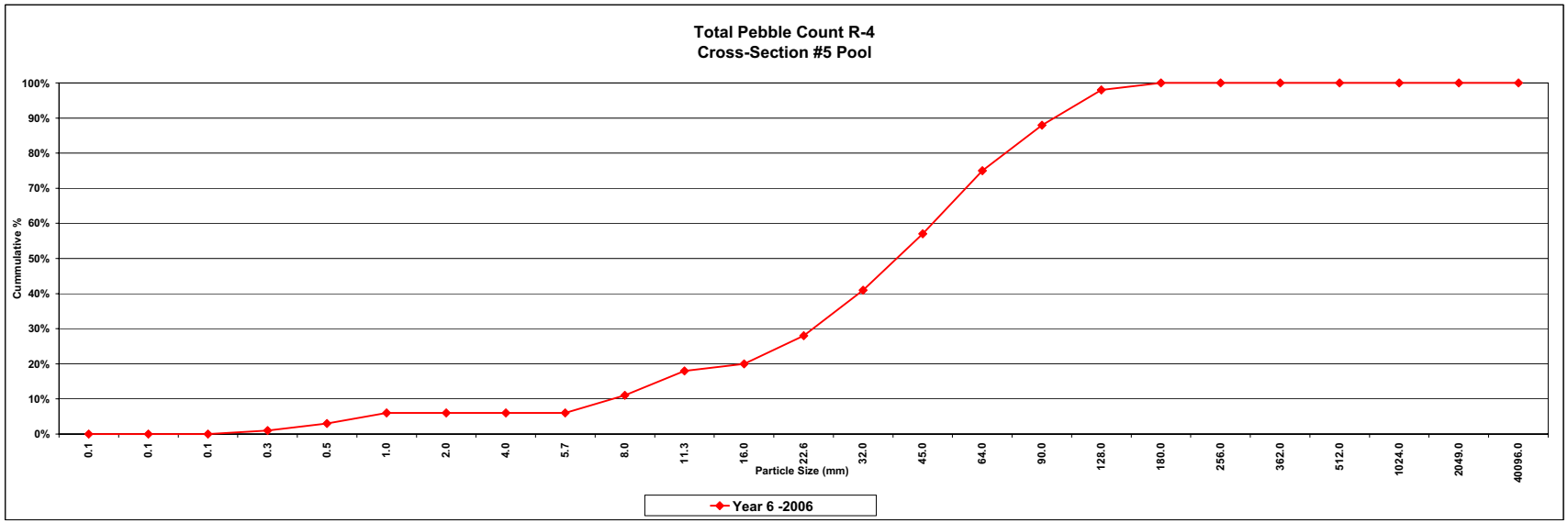
	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	0.2	0.3	0.5	8.7	30.1



Project Name	Stone Mountain Reach 4
Cross Section	#5
Feature	Pool
Date	7/11/06
Crew	Clinton

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

	d16	**d35**	**d50**	**d84**	**d95**
Year 6 -2006	12.5	33.3	47.5	99.2	140.5

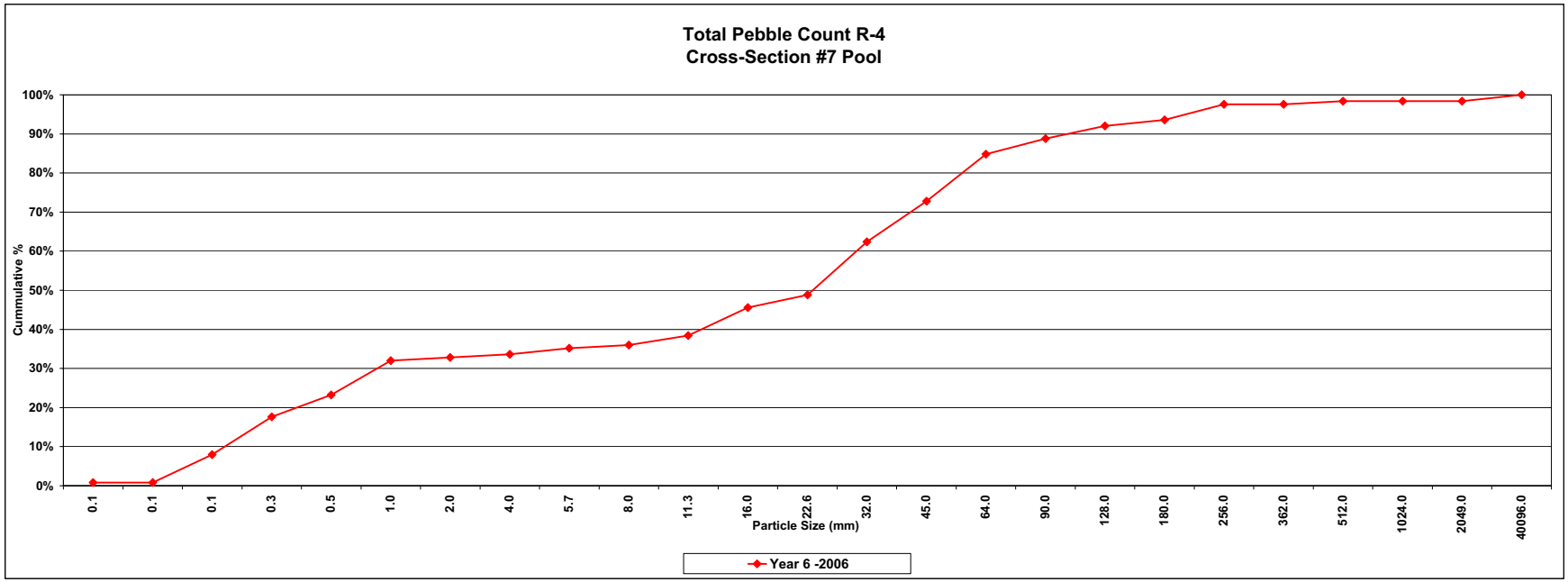


Project Name	Stone Mountain Reach 4
Cross Section	#7
Feature	Pool
Date	7/11/06
Crew	Clinton

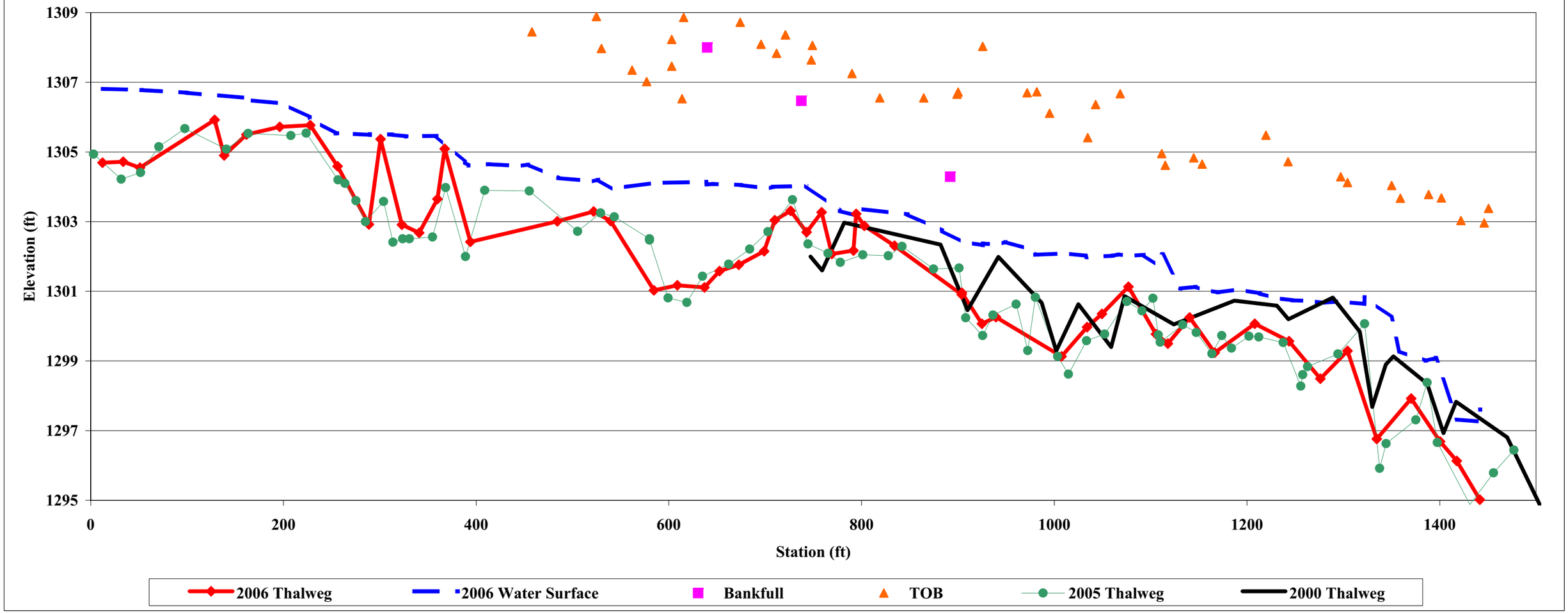
Year 6 -2006

Description	Material	Size (mm)	Pool - Bank	Pool - Bed	%	Cum %
Silt/Clay	silt/clay	0.061	1	0	0.8%	0.8%
Sand	very fine sand	0.062	0	0	0.0%	0.8%
	fine sand	0.125	0	9	7.2%	8.0%
	medium sand	0.25	3	9	9.6%	17.6%
	course sand	0.50	3	4	5.6%	23.2%
	very course sand	1.0	3	8	8.8%	32.0%
Gravel	very fine gravel	2.0	0	1	0.8%	32.8%
	fine gravel	4.0	0	1	0.8%	33.6%
	fine gravel	5.7	0	2	1.6%	35.2%
	medium gravel	8.0	0	1	0.8%	36.0%
	medium gravel	11.3	2	1	2.4%	38.4%
	course gravel	16.0	2	7	7.2%	45.6%
	course gravel	22.6	0	4	3.2%	48.8%
	very course gravel	32	3	14	13.6%	62.4%
	very course gravel	45	3	10	10.4%	72.8%
Cobble	small cobble	64	2	13	12.0%	84.8%
	medium cobble	90	2	3	4.0%	88.8%
	large cobble	128	0	4	3.2%	92.0%
	very large cobble	180	0	2	1.6%	93.6%
Boulder	small boulder	256	1	4	4.0%	97.6%
	small boulder	362	0	0	0.0%	97.6%
	medium boulder	512	0	1	0.8%	98.4%
	large boulder	1024	0	0	0.0%	98.4%
	very large boulder	2049	0	0	0.0%	98.4%
Bedrock	bedrock	40096	0	2	1.6%	100.0%
	TOTAL / %of whole count		25	100	100.0%	

	d16	d35	d50	d84	d95
Year 6 -2006	0.3	6.6	28.3	75.5	249.9



Stone Mountain Longitudinal Profile
Reach 2 - 2006



2006 Survey Data Stone Mountain- Reach 2

Point	Station	Elevation	Description
4066	12.24	1304.69	T
4068	33.64	1304.72	T
4070	51.11	1304.55	G
4074	128.62	1305.92	T
4075	138.53	1304.9	T
4076	161.66	1305.5	T
4079	196.12	1305.72	T
4082	227.83	1305.77	T
4084	256.23	1304.59	T
4092	288.72	1302.92	MP
4091	300.88	1305.37	RV
4094	323.01	1302.91	T
4098	340.82	1302.68	T
4099	359.83	1303.65	T
4097	367.36	1305.09	RV
4100	393.97	1302.42	T
4110	484.28	1303.01	T
4111	521.95	1303.29	T
4113	539.54	1303.02	P
4168	584.57	1301.03	T
4171	608.74	1301.17	T
4174	637.05	1301.11	T
4175	652.55	1301.58	T
4228	672.5	1301.76	T
4224	698.84	1302.15	T
4226	709.86	1303.04	G
4221	726.28	1303.31	T
4219	742.93	1302.7	T
4220	758.5	1303.27	T
4217	769.12	1302.07	T
4213	791.6	1302.17	T
4214	794.48	1303.22	T
4210	802.83	1302.88	T
4207	834.18	1302.31	T
4202	903.97	1300.91	T
4199	904.02	1300.96	T
4200	924.81	1300.07	T
4196	939.42	1300.26	T
4240	1007.57	1299.13	P
4239	1034.07	1299.97	T
4243	1049.5	1300.35	T
4245	1076.95	1301.13	T
4249	1105.39	1299.77	T
4251	1117.85	1299.5	T
4254	1140.48	1300.25	T
4257	1166.49	1299.24	T
4260	1208.05	1300.07	T
4330	1243.56	1299.57	T
4329	1276.18	1298.49	T
4326	1304.35	1299.29	T
4322	1334.68	1296.76	T
4320	1370.37	1297.92	T
4314	1400.46	1296.69	T
4312	1417.65	1296.13	T
4309	1441.71	1295.02	T

Point	Station	Elevation	Description
4067	12.6	1306.81	W
4069	40.3	1306.79	W
4071	52.64	1306.78	W
4073	99.81	1306.7	W
4077	165.19	1306.54	W
4078	166.64	1306.48	W
4080	199.68	1306.39	W
4083	227.39	1305.99	W
4086	238.52	1305.81	W
4085	254.21	1305.53	W
4088	255.95	1305.54	W
4090	289.71	1305.49	W
4089	289.86	1305.51	W
4093	312.18	1305.5	W
4095	327.77	1305.45	W
4096	359.03	1305.46	W
4103	388.53	1304.7	W
4101	392.2	1304.61	W
4102	412.7	1304.65	W
4105	445.21	1304.6	W
4106	454.11	1304.64	W
4109	485.18	1304.25	W
4107	522.09	1304.16	W
4112	526.6	1304.21	W
4108	540	1303.94	W
4117	585.07	1304.11	W
4137	638.76	1304.14	W
4169	639.11	1304.07	W
4170	646.1	1304.08	W
4223	674.88	1304.05	W
4218	703.06	1303.95	W
4225	707.86	1304	W
4222	742.38	1304.03	W
4212	777.55	1303.31	W
4216	794.18	1303.17	W
4215	794.29	1303.15	W
4208	799.98	1303.36	W
4206	847.85	1303.21	W
4205	883.58	1302.74	W
4204	903.79	1302.42	W
4198	925.71	1302.32	W
4201	926.06	1302.37	W
4197	942.18	1302.35	W
4195	949.29	1302.42	W
4192	968.36	1302.25	W
4233	980.2	1302.05	W
4235	1011.16	1302.09	W
4237	1032.29	1302.02	W
4238	1033.66	1301.98	W
4242	1060.57	1302.02	W
4241	1066.56	1302.06	W
4246	1081.05	1302.02	W
4244	1092.87	1302.05	W
4247	1104.74	1301.77	W
4250	1112.36	1302.06	W
4252	1131.12	1301.08	W
4253	1146.74	1301.13	W
4255	1151.71	1301.06	W
4256	1169.78	1300.97	W
4258	1189.76	1301.05	W
4332	1213.26	1300.94	W
4331	1228.87	1300.81	W
4327	1247.16	1300.74	W
4328	1257.83	1300.73	W
4323	1279.13	1300.67	W
4324	1294.59	1300.71	W
4321	1321.83	1300.64	W
4319	1322.03	1300.83	W
4318	1349.86	1300.25	W
4317	1358.13	1299.28	W
4313	1385.4	1299	W
4315	1395.86	1299.09	W
4311	1418.2	1297.32	W
4308	1441.96	1297.26	W
4310	1442.17	1297.61	W

Point	Station	Elevation	Description
4148	457.89	1308.45	TOB
4146	524.86	1308.89	TOB
4147	530.06	1307.97	TOB
4145	561.83	1307.35	TOB
4143	577.03	1307.02	TOB
4144	602.91	1308.23	TOB
4180	602.97	1307.46	TOB
4179	613.66	1306.53	TOB
4177	615.4	1308.86	TOB
4178	674.1	1308.72	TOB
4181	695.75	1308.09	TOB
4185	711.7	1307.83	TOB
4183	720.91	1308.36	TOB
4182	720.94	1308.36	TOB
4186	747.84	1307.64	TOB
4184	748.96	1308.06	TOB
4187	790.14	1307.25	TOB
4188	818.91	1306.55	TOB
4189	864.6	1306.55	TOB
4190	899.04	1306.66	TOB
4232	900.18	1306.72	TOB
4194	925.66	1308.03	TOB
4271	971.85	1306.7	TOB
4270	981.93	1306.73	TOB
4269	995.14	1306.11	TOB
4267	1034.71	1305.41	TOB
4268	1042.86	1306.36	TOB
4266	1068.36	1306.67	TOB
4265	1111.5	1304.95	TOB
4264	1115.15	1304.62	TOB
4262	1144.78	1304.83	TOB
4263	1153.38	1304.65	TOB
4297	1219.73	1305.48	TOB
4298	1242.66	1304.72	TOB
4299	1297.36	1304.29	TOB
4300	1304.31	1304.12	TOB
4303	1350.02	1304.04	TOB
4301	1359.12	1303.67	TOB
4302	1388.57	1303.78	TOB
4304	1401.69	1303.68	TOB
4306	1422.08	1303.03	TOB
4307	1446.22	1302.96	TOB
4305	1450.67	1303.38	TOB

Point	Station	Elevation	Description
4075	138.53	1304.9	RV
4076	161.66	1305.5	RV
4077	165.19	1306.54	RV
4078	166.64	1306.48	RV

Point	Station	Elevation	Description
4176	639.83	1308	B
4227	737.61	1306.47	B
4230	892.03	1304.29	B

2005 R2 Survey		
TW Station	TW Elevation	Feature
3.04	1304.94	Thalweg
31.69	1304.22	Thalweg
51.79	1304.41	Thalweg
70.79	1305.15	Thalweg
97.83	1305.67	Riffle
140.86	1305.08	Run
163.44	1305.53	Thalweg
207.76	1305.47	Thalweg
223.74	1305.54	Riffle
256.73	1304.2	Thalweg
263.99	1304.1	Thalweg
275.33	1303.6	Pool
285.25	1303	Pool
303.94	1303.58	Thalweg
313.75	1302.41	Pool
323.76	1302.51	Thalweg
330.82	1302.51	Thalweg
354.79	1302.56	Thalweg
368.34	1303.98	Rock Vane
389	1302	Scour Pool
409	1303.9	Thalweg
455.17	1303.88	Riffle
505.39	1302.72	Thalweg
529.1	1303.25	Thalweg
543.39	1303.14	Pool
580	1302.51	Thalweg
580	1302.47	Thalweg
599.2	1300.81	Thalweg
618.63	1300.68	Thalweg
635.01	1301.43	Thalweg
662.22	1301.78	Thalweg
683.97	1302.21	Thalweg
702.89	1302.71	Thalweg
728.3	1303.63	Thalweg
744.52	1302.36	Thalweg
765.19	1302.09	Thalweg
778.05	1301.83	Thalweg
801.38	1302.05	Thalweg
827.82	1302.02	Thalweg
842.11	1302.29	Riffle
874.79	1301.64	Thalweg
901.31	1301.67	Thalweg
908.08	1300.24	Thalweg
925.78	1299.73	Pool
936.37	1300.32	Thalweg
960.37	1300.63	Thalweg
972.44	1299.3	Thalweg
980.43	1300.83	Thalweg
1003.5	1299.13	Thalweg
1014.71	1298.62	Thalweg
1033.51	1299.58	Thalweg
1052.38	1299.77	Thalweg
1075.37	1300.71	Thalweg
1090.99	1300.44	Thalweg
1102.48	1300.8	Thalweg
1108	1299.75	Thalweg
1110.01	1299.54	Thalweg
1133.28	1300.04	Thalweg
1147.34	1299.82	Thalweg
1163.63	1299.21	Thalweg
1173.82	1299.73	Thalweg
1183.97	1299.37	Thalweg
1202.12	1299.71	Riffle
1212.25	1299.69	Thalweg
1237.58	1299.53	Run
1255.9	1298.28	Thalweg
1257.93	1298.61	Thalweg
1262.93	1298.84	Thalweg
1294.35	1299.2	Thalweg
1322.07	1300.07	Rock Vane
1337.75	1295.92	Pool
1344.34	1296.63	Thalweg
1375.17	1297.31	Thalweg
1386.94	1298.38	Rock Vane
1397.6	1296.66	Thalweg
1431.21	1294.88	Thalweg
1455.82	1295.79	Thalweg
1477.04	1296.44	Thalweg

2004 R2 Survey		
TW Station	TW Elevation	Feature
31.9	1304.72	Thalweg
45.16	1304.68	Thalweg
60.72	1304.8	Thal-ground
94.94	1305.99	Head of Riffle
138.93	1305.08	Thalweg
154	1305.65	Head of Run
167.6	1305.8	Thalweg
204.32	1305.8	Head of Riffle
209	1305.78	Head of Riffle
220.35	1305.72	Head of Riffle
253.24	1304.81	Head of Run
274.78	1304.21	Head of Pool
288.52	1303.58	Max Pool
300.83	1302.96	Thalweg
301.24	1302.66	Max Pool
350.9	1303.81	Thalweg
369.72	1305.05	Rock Vane
376.45	1303.81	Max Pool
384.52	1303.01	Thalweg
385.5	1302.22	Max Pool
389.2	1302.11	Max Pool
409.8	1303.91	Thal-ground
449.25	1303.83	Head of Riffle
490.86	1303.3	Head of Run
548.44	1303.47	Head of Pool
553.71	1303.41	Thalweg
594	1302.3	Head of Pool
614.76	1301.11	Max Pool
660.66	1302.59	Thal-ground
723.58	1303.36	Head of Riffle
725.96	1303.89	Rock Vane
739.75	1302.49	Thalweg
743.05	1302.55	Rock Vane
775.63	1302.85	Head of Run
836.23	1302.39	Head of Riffle
970.42	1300.22	Max Pool
1005.6	1299.19	Max Pool
1068.08	1300.99	Thal-ground
1096.27	1301.29	Head of Riffle
1108.82	1299.87	Max Pool
1146.57	1299.79	Max Pool
1174.42	1299.91	Thal-ground
1203.89	1300	Head of Riffle
1248.8	1298.79	Max Pool
1320.41	1300.47	Rock Vane
1331.09	1296.36	Max Pool
1370.97	1297.69	Thal-ground
1382.56	1298.12	Thal-ground
1384.08	1298.78	Rock Vane
1403.98	1296.73	Max Pool
1441.67	1294.94	Thal-ground
1492.4	1296.61	Head of Riffle
1492.4	1296.61	Head of Riffle

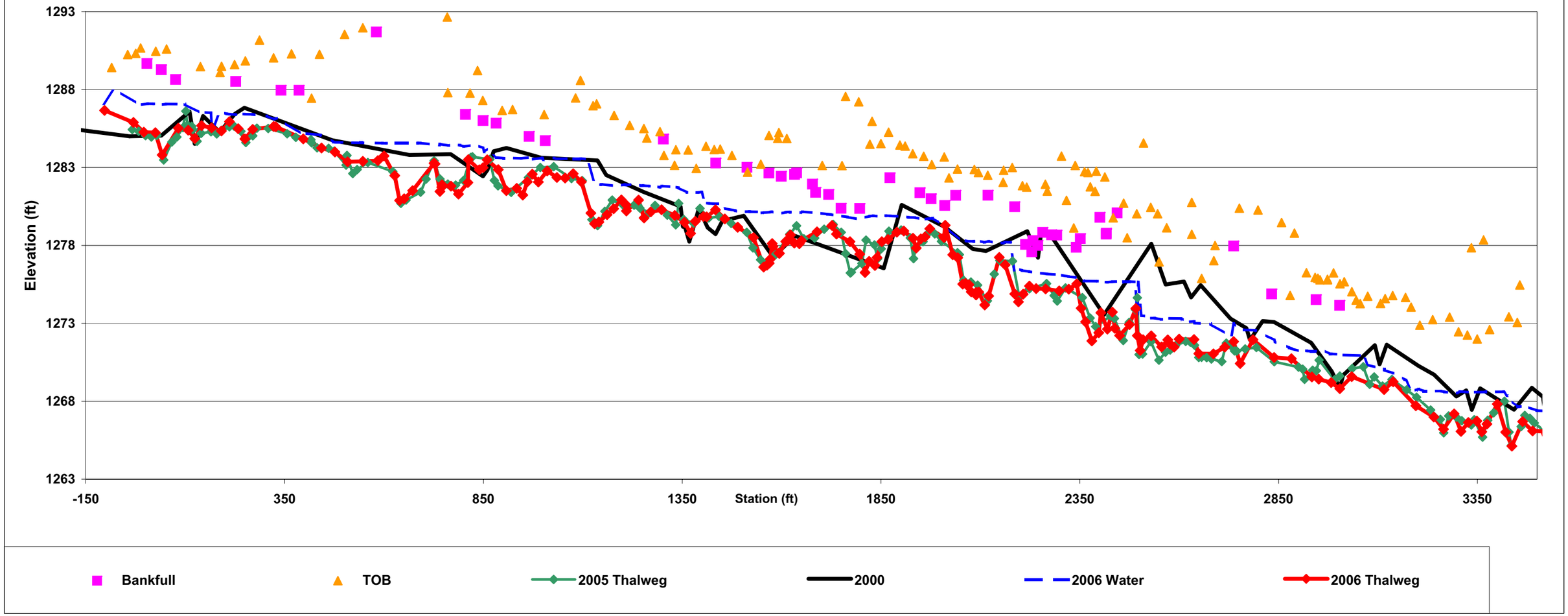
2003 R2 Survey		
TW Station	TW Elevation	Feature
162.0	1305.79	Thalweg
179.0	1306.02	Thalweg
195.0	1306.11	Thalweg
232.5	1304.78	Thalweg
258.5	1304.43	Thalweg
278.0	1303.39	Thalweg
297.0	1302.67	Thalweg
335.0	1304.67	Thalweg
364.5	1304.91	Thalweg
370.7	1304.17	Thalweg
406.9	1303.68	Thalweg
427.4	1303.93	Thalweg
461.8	1303.78	Thalweg
497.7	1303.88	Thalweg
512.4	1303.23	Thalweg
531.4	1302.25	Thalweg
559.7	1301.82	Thalweg
603.8	1301.68	Thalweg
623.5	1303.33	Thalweg
655.0	1302.91	Thalweg
726.0	1303.55	Thalweg
732.0	1303.28	Thalweg
761.5	1302.54	Thalweg
769.0	1302.73	Thalweg
812.0	1302.65	Thalweg
839.0	1302.59	Thalweg
886.0	1302.01	Thalweg
896.0	1301.38	Thalweg
908.0	1300.48	Thalweg
930.0	1301.57	Thalweg
973.0	1301.08	Thalweg
984.0	1300.15	Thalweg
1010.0	1299.94	Thalweg
1039.0	1300.42	Thalweg
1058.0	1300.99	Thalweg
1094.0	1301.13	Thalweg
1097.0	1300.1	Thalweg
1115.0	1299.42	Thalweg
1135.0	1300.83	Thalweg
1158.0	1299.77	Thalweg
1200.0	1300.71	Thalweg
1217.0	1300.39	Thalweg
1223.0	1300.05	Thalweg
1241.0	1298.96	Thalweg
1273.0	1299.67	Thalweg
1317.0	1300.23	Thalweg
1324.0	1297.63	Thalweg
1329.0	1297.6	Thalweg
1357.0	1298.03	Thalweg
1364.0	1298.33	Thalweg
1387.2	1299.01	Thalweg
1392.0	1298.57	Thalweg
1401.0	1297.07	Thalweg
1417.0	1296.5	Thalweg
1425.0	1296.54	Thalweg

2002 R2 Survey		
TW Station	TW Elevation	Feature
169.0	1305.9	Thalweg
215.0	1305.5	Thalweg
226.0	1305.3	Thalweg
249.0	1304.6	Thalweg
257.0	1304.2	Thalweg
271.0	1302.3	Thalweg
279.0	1302.9	Thalweg
292.0	1302.5	Thalweg
295.0	1302.6	Thalweg
296.0	1302.3	Thalweg
305.0	1302.6	Thalweg
315.0	1303.3	Thalweg
328.0	1302.7	Thalweg
333.0	1303.4	Thalweg
336.6	1304.6	Thalweg
343.0	1303.7	Thalweg
354.8	1303.5	Thalweg
362.1	1304.9	Thalweg
366.6	1304.2	Thalweg
372.1	1303.0	Thalweg
379.4	1302.4	Thalweg
393.9	1303.3	Thalweg
403.9	1303.8	Thalweg
456.6	1303.4	Thalweg
494.8	1302.9	Thalweg
514.8	1302.1	Thalweg
546.6	1301.6	Thalweg
562.0	1300.9	Thalweg
572.9	1301.9	Thalweg
609.3	1302.4	Thalweg
621.1	1303.6	Thalweg
652.0	1303.9	Thalweg
726.0	1303.8	Thalweg
729.0	1302.8	Thalweg
738.0	1302.4	Thalweg
767.0	1302.4	Thalweg
774.0	1303.0	Thalweg
851.0	1302.8	Thalweg
872.0	1302.2	Thalweg
881.0	1302.0	Thalweg
886.0	1301.1	Thalweg
901.0	1300.7	Thalweg
904.0	1300.2	Thalweg
922.0	1300.5	Thalweg
928.0	1301.7	Thalweg
963.0	1301.1	Thalweg
976.0	1300.9	Thalweg
982.0	1299.8	Thalweg
993.0	1299.6	Thalweg
1007.0	1299.7	Thalweg
1038.0	1299.9	Thalweg
1052.0	1300.7	Thalweg
1067.0	1300.9	Thalweg
1084.0	1300.6	Thalweg
1096.0	1300.5	Thalweg
1101.0	1300.4	Thalweg
1107.5	1300.0	Thalweg
1115.0	1299.6	Thalweg
1126.0	1300.5	Thalweg
1148.0	1300.1	Thalweg
1190.0	1300.5	Thalweg
1213.0	1300.5	Thalweg
1222.0	1300.7	Thalweg
1236.0	1299.8	Thalweg
1260.0	1299.7	Thalweg
1272.0	1300.3	Thalweg
1317.0	1299.8	Thalweg
1325.0	1297.9	Thalweg
1333.0	1298.1	Thalweg
1361.0	1298.3	Thalweg
1384.0	1298.8	Thalweg
1387.0	1298.4	Thalweg
1418.0	1297.2	Thalweg
1426.0	1297.0	Thalweg
1458.0	1296.1	Thalweg
1464.0	1296.6	Thalweg
1508.0	1295.1	Thalweg

2001 R2 Survey		
TW Station	TW Elevation	Feature
162.0	1306.3	Thalweg
200.0	1305.3	Thalweg
227.0	1305.0	Thalweg
239.0	1304.3	Thalweg
277.0	1302.0	Thalweg
316.0	1305.0	Thalweg
365.0	1304.9	Thalweg
390.0	1302.3	Thalweg
402.0	1303.2	Thalweg
455.7	1303.3	Thalweg
488.9	1303.8	Thalweg
514.8	1302.6	Thalweg
595.6	1303.1	Thalweg
668.7	1304.3	Thalweg
726.0	1303.8	Thalweg
742.0	1300.7	Thalweg
763.0	1301.9	Thalweg
782.0	1303.2	Thalweg
890.0	1302.0	Thalweg
896.0	1301.2	Thalweg
933.0	1301.9	Thalweg
987.0	1300.3	Thalweg
1015.0	1301.2	Thalweg
1060.0	1300.5	Thalweg
1104.0	1301.1	Thalweg
1136.0	1301.3	Thalweg
1187.0	1301.0	Thalweg
1203.0	1301.1	Thalweg
1253.0	1300.4	Thalweg
1263.0	1300.5	Thalweg
1317.0	1299.7	Thalweg
1324.0	1298.9	Thalweg
1351.0	1298.8	Thalweg
1387.0	1298.4	Thalweg
1417.0	1297.8	Thalweg
1470.0	1296.6	Thalweg
1511.0	1296.4	Thalweg
1521.0	1295.9	Thalweg

2000 R2 Survey		
TW Station	TW Elevation	Feature
747.0	1302.0	Thalweg
759.0	1301.6	Thalweg
782.0	1303.0	Thalweg
882.0	1302.3	Thalweg
910.0	1300.5	Thalweg
942.0	1302.0	Thalweg
987.0	1300.7	Thalweg
1002.0	1299.3	Thalweg
1025.0	1300.6	Thalweg
1059.0	1299.4	Thalweg
1073.0	1300.9	Thalweg
1124.0	1300.1	Thalweg
1187.0	1300.7	Thalweg
1231.0	1300.6	Thalweg
1243.0	1300.2	Thalweg
1289.0	1300.8	Thalweg
1317.0	1299.8	Thalweg
1330.0	1297.7	Thalweg
1344.0	1298.9	Thalweg
1352.0	1299.1	Thalweg
1387.0	1298.4	Thalweg
1404.0	1296.9	Thalweg
1417.0	1297.8	Thalweg
1470.0	1296.8	Thalweg
1511.0	1294.5	Thalweg

2006 Stone Mountain Long Profile - Reach 4



2006 Stone Mountain Reach 4 Survey Data

Point	Station	Elev	Desc	Point	Station	Elev	Desc
5559	-102.78	1286.66	T	5170	1771.92	1278.24	T
5557	-30.3	1285.89	T	5166	1796.37	1277.44	T
5555	-4.12	1285.26	T	5165	1809.77	1276.26	T
5553	24.98	1285.23	T	5162	1819.99	1276.98	T
5550	41.91	1283.8	T	5161	1834.71	1276.71	T
5548	82.77	1285.52	T	5160	1839.9	1277.22	T
5543	107.7	1285.39	T	5158	1851.99	1278.24	T
5541	124.05	1284.85	T	5156	1867.57	1278.38	T
5540	141.17	1285.68	T	5154	1889.81	1278.85	T
5535	166.23	1285.54	T	5153	1907.35	1278.92	T
5534	190.98	1285.34	T	5150	1930.41	1278.46	T
5531	211.06	1285.94	T	5147	1938.61	1277.83	T
5528	233.09	1285.49	T	5148	1950.07	1278.42	T
5525	250.1	1284.83	T	5144	1960.91	1278.55	T
5523	269.78	1285.44	T	5143	1972.59	1279.07	T
5521	322.39	1285.63	T	5140	2008.4	1278.5	T
5490	327.86	1285.61	T	5139	2011.34	1279.29	T
5488	396.93	1284.83	T	5138	2030.33	1277.4	T
5486	442.73	1284.25	T	5137	2042.83	1277.21	T
5483	476.68	1283.99	T	5131	2055.56	1275.52	T
5481	508.53	1283.36	T	5134	2062.27	1275.56	T
5478	546.73	1283.39	T	5132	2067.94	1275.4	T
5477	584.69	1283.44	T	5070	2071.19	1275.48	T
5475	600.09	1283.74	T	5130	2076.89	1275.02	T
5472	626.99	1282.48	P	5127	2088.99	1274.82	T
5470	639.06	1280.88	T	5066	2089.15	1274.99	T
5467	650.73	1280.99	T	5064	2095.59	1275.01	T
5464	671.8	1281.51	T	5063	2110.86	1274.18	MP
5468	725.8	1283.27	T	5060	2120.68	1274.75	T
5407	728.18	1283.23	T	5057	2147.46	1277.23	T
5411	740.63	1281.46	T	5056	2162.3	1276.75	T
5409	745.11	1281.74	T	5054	2186.37	1274.89	T
5404	745.99	1281.89	T	5046	2195.66	1274.38	T
5408	768.46	1281.8	T	5045	2207.59	1274.87	T
5406	787.23	1281.29	MP	5043	2223.16	1275.39	T
5401	810.92	1282.03	T	5042	2239.95	1275.23	T
5400	812.23	1283.5	T	5039	2263.91	1275.21	T
5395	839.69	1282.85	T	5035	2298.15	1275.08	T
5393	849.25	1282.99	T	5033	2322.13	1275.19	T
5392	859.55	1283.49	T	5032	2342.16	1275.53	P
5388	887.35	1282.86	P	5031	2353.17	1273.97	T
5386	907.77	1281.51	T	5028	2364.37	1273.09	T
5383	933.74	1281.66	T	5593	2380.2	1271.87	mp
5381	949.1	1281.23	T	5595	2397.6	1272.4	t
5382	960.25	1282.08	T	5597	2402.84	1273.68	t
5379	972.92	1282.57	T	5600	2419.18	1272.63	t
5378	988.15	1282.07	T	5602	2431.93	1273.72	t
5374	1010.27	1282.78	T	5603	2437.97	1272.68	t
5372	1034.81	1282.36	T	5606	2449.99	1272.22	t
5370	1055.44	1282.32	T	5608	2474.9	1272.92	t
5367	1075.87	1282.6	T	5612	2490.71	1273.95	t
5363	1096.43	1282.08	T	5613	2494.53	1272.21	t
5362	1120.14	1280.07	T	5616	2501.86	1271.26	t
5358	1129.51	1279.39	T	5618	2508.93	1271.95	t
5356	1140.5	1279.5	T	5620	2529.55	1272.2	t
5351	1161.04	1279.97	T	5623	2555.66	1271.49	t
5350	1177.48	1280.35	T	5627	2571.04	1271.94	t
5348	1197	1280.92	T	5624	2577.02	1271.66	t
5313	1209.01	1280.6	T	5629	2587.17	1271.48	t
5346	1209.48	1280.21	T	5630	2599.66	1271.99	t
5310	1240.16	1280.91	P	5633	2637.17	1271.96	t
5307	1254.03	1279.76	MP	5636	2649.11	1271.06	t
5304	1270.85	1280.15	T	5676	2686.06	1271.04	t
5300	1298	1280.29	T	5678	2714.52	1271.48	t
5297	1331.07	1279.92	MP	5681	2736.89	1271.83	t
5296	1355.55	1279.48	T	5682	2753.24	1270.42	mp
5295	1371.02	1278.77	T	5685	2785.57	1271.95	r
5291	1382.71	1279.54	T	5687	2838.73	1270.81	t
5284	1403.46	1279.85	T	5692	2882.15	1270.73	t
5281	1411.5	1279.83	T	5696	2933.57	1269.56	mp
5278	1433.63	1280.28	T	5700	2950.72	1269.42	t
5275	1457.03	1279.7	T	5719	2982	1269.2	mp
5273	1489.44	1279.17	T	5720	3003.84	1268.81	t
5271	1489.62	1279.17	T	5724	3033.75	1269.58	t
5267	1529.37	1278.5	T	5729	3115.27	1268.75	t
5260	1554.87	1276.61	T	5733	3137.96	1269.25	r
5268	1563.16	1276.73	T	5738	3195.09	1267.71	t
5266	1568.81	1276.86	T	5744	3240.24	1266.99	mp
5263	1571.43	1277.12	T	5747	3264.52	1266.21	mp
5261	1576.27	1278.12	T	5748	3291.3	1267.19	t
5259	1578.2	1277.93	T	5752	3308.73	1266.07	t
5187	1592.98	1277.51	T	5753	3327.22	1266.64	t
5257	1594.63	1277.49	T	5756	3348.65	1266.73	t
5185	1610.41	1278.25	T	5757	3360.81	1266.04	t
5254	1615.85	1278.32	T	5759	3373.83	1266.54	t
5183	1622.28	1278.67	T	5760	3399.84	1267.82	t
5181	1631.92	1278.15	BR	5764	3420.95	1266.02	t
5180	1644.49	1278.11	T	5766	3436.55	1265.12	mp
5177	1649.96	1278.3	T	5768	3463.5	1266.7	t
5175	1688.9	1278.87	T	5770	3488.64	1266.1	t
5172	1726.92	1279.28	T	5772	3513.23	1266.07	t
5171	1737.89	1278.73	T	5774	3548.66	1263.87	t
5170	1771.92	1278.24	T	5775	3574.65	1265.7	t

Point	Station	Elev	Desc	Point	Station	Elev	Desc	Point	Station	Elev	Desc
5560	-105.86	1287.09	W	5276	1459.1	1280.36	W	5694	2908.32	1271.18	W
5562	-78.01	1288.03	W	5274	1483.4	1280.23	W	5695	2919.96	1271.24	W
5556	-17.56	1287.05	W	5272	1494.61	1280.15	W	5697	2931.97	1271.2	W
5558	-8.33	1287.03	W	5270	1518.6	1280.17	W	5698	2939.9	1271.2	W
5552	5.13	1287.09	W	5269	1520.3	1280.16	W	5701	2965.14	1271.26	W
5554	21.01	1287.08	W	5265	1537.82	1280.15	W	5717	2979.26	1271.02	W
5549	35.68	1287.02	W	5264	1546.84	1280.15	W	5718	2982.33	1271.04	W
5551	51.84	1287.07	W	5262	1550.37	1280.09	W	5721	3005.35	1271.01	W
5544	94.99	1287.06	W	5258	1571.69	1280.14	W	5722	3012	1270.97	W
5547	99.24	1287.05	W	5256	1575.41	1280.16	W	5723	3063.69	1270.93	W
5538	135.36	1286.53	W	5186	1597.02	1280.04	W	5727	3063.73	1270.94	W
5539	139.16	1286.55	W	5255	1610.32	1280.13	W	5725	3074.2	1270.34	W
5536	164.69	1286.5	W	5253	1618.82	1280.15	W	5728	3091.72	1270.19	W
5537	167.28	1285.32	W	5184	1621.79	1280.11	W	5730	3116.37	1270.05	W
5533	186.76	1286.55	W	5182	1624.9	1280.17	W	5731	3116.48	1270	W
5532	204.5	1286.44	W	5179	1648.17	1280.1	W	5732	3137.76	1269.79	W
5530	211.95	1286.42	W	5178	1652.26	1280.16	W	5734	3166.95	1269.38	W
5527	227.36	1286.39	W	5176	1687.94	1280.09	W	5735	3169.91	1269.35	W
5529	232.05	1286.44	W	5174	1715.03	1280	W	5737	3182.39	1268.75	W
5526	251.06	1286.42	W	5173	1722.47	1279.99	W	5739	3195.27	1268.71	W
5524	269.24	1286.41	W	5169	1749.84	1279.89	W	5740	3202.37	1268.8	W
5522	305.14	1286.3	W	5167	1765.58	1279.82	W	5741	3214.47	1268.65	W
5520	323.47	1286.08	W	5168	1789.06	1279.7	W	5743	3237.82	1268.65	W
5519	329.73	1286.16	W	5164	1821.76	1279.88	W	5746	3257.94	1268.66	W
5491	394.58	1285.12	W	5163	1830.53	1279.9	W	5745	3266.83	1268.6	W
5489	398.91	1285.19	W	5159	1853.89	1279.84	W	5749	3288.27	1268.55	W
5487	440.58	1285.08	W	5157	1861.89	1279.91	W	5751	3299.59	1268.52	W
5484	472.34	1284.63	W	5155	1874.18	1279.89	W	5750	3305.59	1268.63	W
5485	478.8	1284.61	W	5151	1908.08	1279.85	W	5754	3336.75	1268.57	W
5482	504.15	1284.6	W	5152	1918.83	1279.8	W	5781	3339.6	1268.58	W
5479	541.23	1284.58	W	5149	1934.66	1279.79	W	5755	3351.49	1268.59	W
5480	543.95	1284.58	W	5146	1959.95	1279.66	W	5758	3371.33	1268.6	W
5476	596.05	1284.56	W	5145	1962.8	1279.69	W	5780	3388.91	1268.6	W
5473	604.82	1284.55	W	5141	1980.17	1279.75	W	5761	3415.58	1268.61	W
5469	629.18	1284.58	W	5142	2009.78	1279.26	W	5763	3425.02	1268.36	W
5474	630.3	1284.56	W	5135	2049.8	1278.31	W	5779	3427.08	1268.18	W
5471	658.57	1284.56	W	5133	2055.1	1278.34	W	5778	3450.84	1267.64	W
5466	659.13	1284.56	W	5067	2065.76	1278.27	W	5765	3454.42	1267.66	W
5463	684.13	1284.55	W	5129	2083.27	1278.26	W	5776	3458.06	1267.67	W
5465	691.14	1284.57	W	5068	2083.43	1278.24	W	5767	3475.83	1267.64	W
5412	738.88	1284.43	W	5128	2086.64	1278.31	W	5773	3499.23	1267.4	W
5413	740.2	1284.5	W	5065	2092.14	1278.3	W	5771	3520.5	1267.38	W
5410	762.97	1284.4	W	5062	2109.72	1278.19	W	5777	3559.36	1267.39	W
5405	766.43	1284.45	W	5061	2120.89	1278.27	W				
5402	791.38	1284.43	W	5059	2130.73	1278.2	W				
5403	800.27	1284.34	W	5058	2157.73	1278.14	W				
5396	830.41	1284.45	W	5055	2161.52	1278.22	W				
5394	848.59	1284.25	W	5053	2175.7	1278.19	W				
5391	852.34	1284	W	5052	2185.51	1276.31	W				
5390	861.3	1284.23	W	5048	2200.02	1276.46	W				
5389	882.67	1283.64	W	5047	2204.51	1276.39	W				
5387	900.47	1283.59	W	5044	2222.38	1276.32	W				
5385	927.59	1283.6	W	5041	2244.49	1276.24	W				
5384	945.16	1283.58	W	5040	2267.55	1276.17	W				
5380	967.09	1283.65	W	5037	2294.12	1276.12	W				
5377	967.35	1283.51	W	5036	2296.13	1276.12	W				
5376	997.51	1283.61	W	5034	2321.54	1276	W				
5375	1001	1283.49	W	5029	2352.26	1275.91	W				
5373	1027.14	1283.62	W	5030	2360.21	1275.71	W				
5371	1032.35	1283.55	W	5594	2394.46	1275.7	W				
5369	1066.79	1283.57	W	5599	2407.45	1275.65	W				
5368	1069.72	1283.54	W	5598	2419.86	1275.64	W				
5366	1092.23	1283.54	W	5601	2431.56	1275.67	W				
5364	1095.08	1283.57	W	5604	2440.36	1275.68	W				
5359	1108.5	1283.53	W	5605	2455.47	1275.56	W				
5361	1111.6	1283.5	W	5607	2460.52	1275.68	W				
5360	1129.76	1281.99	W	5609	2474.99	1275.68	W				
5352	1144.81	1281.89	W	5610	2489.27	1275.66	W				
5353	1148.08	1281.92	W	5615	2494.88	1273.48	W				
5349	1175.57	1281.83	W	5611	2496.82	1275.65	W				
5314	1204.23	1281.89	W	5614	2504.69	1273.5	W				
5347	1206.62	1281.91	W	5617	2514.14	1273.46	W				
5312	1208.57	1281.87	W	5619	2520.43	1273.33	W				
5311	1231.3	1281.92	W	5622	2538.64	1273.34	W				
5309	1246.7	1281.82	W	5621	2554.4	1273.25	W				
5308	1251.58	1281.84	W	5625	2565.02	1273.27	W				
5305	1267.52	1281.8	W	5626	2574.97	1273.32	W				
5306	1271.82	1281.81	W	5631	2604.88	1273.31	W				
5301	1294.4	1281.72	W	5628	2608.22	1273.24	W				
5302	1298.58	1281.81	W	5632	2627.82	1273.1	W				
5298	1329.99	1281.75	W	5634	2637.4	1273.12	W				
5299	1330.9	1281.76	W	5635	2638.43	1273.02	W				
5292	1340.41	1281.7	W	5677	2678.76	1272.96	W				
5290	1361.89	1281.39	W	5679	2730.81	1272.14	W				
5293	1363.54	1281.4	W	5680	2737.41	1272.99	W				
5288	1390.03	1281.39	W	5683	2759.98	1272.58	W				
5289	1398.87	1281.43	W	5684	2788.54	1272.56	W				
5287	1405.35	1280.86	W	5686	2792.54	1272.54	W				
5282	1407.98	1280.72	W	5689	2838.78	1271.92	W				
5280	1416.47	1280.7	W	5688	2841.27	1271.82	W				
5279	1429.61	1280.67	W	5690	2876.38	1271.43	W				
5277	1452.29	1280.68	W	5691	2881.76	1271.39	W				
5276	1459.1	1280.36	W	5694	2908.32	1271.18	W				

Point	Station	Elev	Desc
5578	3.81	1289.67	BF
5579	39.89	1289.27	BF
5580	75.73	1288.64	BF
5588	226.98	1288.52	B
5590	341	1287.95	B
5591	386.33	1287.95	B
5597	580.69	1291.69	BF
5429	781.57	1294.25	B
5432	804.83	1286.4	B
5437	849.06	1286.01	B
5438	882.02	1285.84	B
5442	964.87	1284.99	B
5445	1005.48	1284.72	B
5313	1302.51	1284.82	BF
5333	1434.33	1283.28	BF
5344	1512.86	1283.01	BF
5345	1568.1	1282.64	BF
5262	1599.11	1282.43	BF
5347	1632.57	1282.55	BF
5261	1637.82	1282.65	BF
5348	1677.5	1281.93	BF
5212	1685.5	1281.4	B
5213	1718.17	1281.27	B
5214	1749.59	1280.38	B
5218	1796.31	1280.37	B
5205	1872.26	1282.34	B
5227	1947.78	1281.38	B
5226	1976.14	1280.99	B
5225	2010.15	1280.56	B
5224	2037.75	1281.21	B
5083	2119.03	1281.22	B
5087	2186.08	1280.48	B
5092	2213.31	1278.06	B
5094	2229.36	1277.59	B
5091	2231.72	1278.3	B
5095	2244.11	1278	B
5093	2256.69	1278.84	B
5099	2279	1278.68	B
5100	2292	1278.66	B
5107	2340.89	1277.88	B
5109	2351.17	1278.44	B
5110	2400.56	1279.8	B
5112	2416.48	1278.72	B
5606	2416.57	1278.78	b
5117	2443.75	1280.09	B
5721	2736.74	1277.96	bf
5720	2832.57	1274.89	bf
5857	2944.27	1274.52	bkf
5855	3003.47	1274.15	bkf

Point	Station	Elev	Desc
5049	2198.45	1280.86	RV
5050	2202.58	1281.97	RV
5051	2177.36	1277.1	RV
5069	2069.56	1282.25	JH
5071	2045.7	1278.31	JH
5136	2044.43	1278.4	JH
5249	1603.78	1284.67	RV
5250	1571.39	1279.62	RV
5283	1417.03	1282.85	RV
5285	1417.73	1283.93	RV
5286	1393.71	1280.62	RV
5294	1343.39	1280.95	RV
5331	1550.56	1279.93	TRIB
5332	1553.91	1279.16	TRIB
5354	1139.46	1287.57	RV
5355	1145.3	1287.81	RV
5357	1115.94	1282.58	RV
5365	1115.76	1283.26	RV
5397	822.66	1283.57	RV
5398	833.63	1285.69	RV
5399	849.66	1287.3	RV
5542	123.92	1287.47	VANE
5545	95.42	1285.57	CV
5726	3064.04	1270.16	cv
5762	3416.84	1267.86	cv
5769	3483.14	1266.92	rv

Point	Station	Elev	Desc	Point	Station	Elev	Desc
5571	-84.93	1289.41	TOB	5682	2545.61	1280.03	tob
5573	-44.73	1290.24	TOB	5679	2549.25	1276.94	tob
5574	-24.38	1290.32	TOB	5678	2568.52	1279.13	tob
5575	-12.2	1290.66	TOB	5677	2631.42	1280.76	tob
5576	25.97	1290.46	TOB	5676	2631.49	1278.71	tob
5577	53	1290.6	TOB	5680	2656.24	1275.88	tob
5582	138.23	1289.47	TOB	5722	2687.09	1277.02	tob
5581	187.75	1289.09	TOB	5723	2690.11	1277.99	tob
5585	191.36	1289.49	TOB	5719	2751.16	1280.39	tob
5583	224.14	1289.6	TOB	5717	2798.2	1280.27	tob
5584	251.16	1289.84	TOB	5715	2857.47	1279.47	tob
5586	286.88	1291.17	TOB	5718	2878.99	1274.79	tob
5587	322.21	1290.03	TOB	5713	2889.58	1278.79	tob
5589	367.22	1290.29	TOB	5716	2919.9	1276.25	tob
5592	417.78	1287.44	TOB	5863	2941.72	1275.95	tob
5593	437.64	1290.26	TOB	5714	2948.76	1275.89	tob
5594	500.83	1291.54	TOB	5862	2954.18	1275.79	tob
5595	546.67	1291.96	TOB	5860	2972.75	1275.79	tob
5596	597.08	1294.95	TOB	5712	2972.8	1275.83	tob
5427	720.18	1293.24	TOB	5865	2987.97	1276.24	tob
5428	759.01	1292.65	TOB	5864	3004.29	1275.54	tob
5426	760.63	1287.8	TOB	5861	3015.06	1275.67	tob
5434	816.34	1287.77	TOB	5859	3034.19	1275.03	tob
5430	835.2	1289.22	TOB	5858	3044.94	1274.49	tob
5436	848.38	1287.3	TOB	5856	3055.1	1274.27	tob
5431	897.12	1286.66	TOB	5854	3074.14	1274.74	tob
5433	923.33	1286.72	TOB	5853	3106.36	1274.28	tob
5435	1002.68	1286.39	TOB	5852	3117.93	1274.59	tob
5439	1081.77	1287.46	TOB	5851	3136.81	1274.78	tob
5444	1094.01	1288.59	TOB	5849	3169.09	1274.66	tob
5443	1125.85	1286.96	TOB	5850	3183.11	1274.04	tob
5440	1134.6	1287.08	TOB	5847	3205.14	1272.88	tob
5441	1178.74	1286.34	TOB	5848	3237.41	1273.24	tob
5325	1217.99	1285.7	TOB	5846	3280	1273.4	tob
5327	1253.54	1285.5	TOB	5844	3302.52	1272.46	tob
5326	1260.95	1284.89	TOB	5843	3324.62	1272.25	tob
5329	1294.2	1285.3	TOB	5841	3334.81	1277.85	tob
5328	1304.02	1283.77	TOB	5845	3349.41	1272	tob
5340	1330.7	1283.14	TOB	5839	3365.51	1278.35	tob
5330	1334.01	1284.14	TOB	5842	3380.55	1272.6	tob
5331	1364.94	1284.12	TOB	5840	3429.09	1273.42	tob
5337	1385.2	1282.94	TOB	5838	3450.23	1273.06	tob
5332	1409.8	1284.36	TOB	5837	3456.67	1275.46	tob
5334	1430.54	1284.15	TOB				
5335	1445.51	1284.18	TOB				
5336	1475.08	1283.77	TOB				
5338	1514.33	1282.7	TOB				
5339	1547.71	1283.21	TOB				
5343	1568.18	1285.05	TOB				
5199	1590.32	1284.87	TOB				
5346	1593.02	1285.24	TOB				
5200	1612.96	1284.86	TOB				
5201	1702.25	1283.13	TOB				
5202	1752.04	1283.12	TOB				
5215	1760.71	1287.55	TOB				
5216	1794.03	1287.21	TOB				
5203	1821.85	1284.49	TOB				
5217	1827.49	1285.96	TOB				
5204	1849.73	1284.53	TOB				
5219	1869.11	1285.26	TOB				
5206	1897.36	1284.44	TOB				
5220	1910.53	1284.37	TOB				
5207	1929.83	1283.88	TOB				
5221	1957.28	1283.72	TOB				
5208	1977.79	1283.18	TOB				
5222	2009.02	1283.67	TOB				
5210	2020.81	1282.33	TOB				
5223	2042.32	1282.9	TOB				
5211	2084.65	1282.87	TOB				
5082	2094.95	1282.68	TOB				
5085	2118.47	1282.5	TOB				
5088	2157.17	1282.05	TOB				
5084	2158.39	1282.82	TOB				
5086	2179.93	1283	TOB				
5089	2205.67	1281.83	TOB				
5090	2216.42	1281.74	TOB				
5097	2263.37	1281.92	TOB				
5096	2267.96	1281.48	TOB				
5101	2303.94	1283.73	TOB				
5102	2316.39	1280.89	TOB				
5105	2334.77	1279.12	TOB				
5103	2338.32	1283.13	TOB				
5104	2361.86	1282.73	TOB				
5106	2370.51	1282.68	TOB				
5098	2376.35	1281.76	TOB				
5048	2388.33	1281.47	TOB				
5108	2391.2	1282.76	TOB				
5113	2412.9	1282.39	TOB				
5111	2433.91	1279.77	TOB				
5115	2460.25	1280.71	TOB				
5685	2469.05	1278.49	tob				
5684	2493.21	1280.03	tob				
5683	2510.24	1284.57	tob				

2005 Survey Reach 4

TW Station	TW Elevation	Feature	TW Station	TW Elevation	Feature
-33.02	1285.43	Thalweg	2134.61	1276.16	Thalweg
-17.14	1285.32	Thalweg	2148.66	1277.03	Head of Glide
0.25	1285.04	Thalweg	2180.69	1276.99	Thalweg
14.88	1284.95	Thalweg	2197.28	1274.75	Thalweg
28.51	1285.05	Thalweg	2223.35	1275.22	Thalweg
45.95	1283.48	Head of Pool	2266.36	1275.55	Thalweg
66.22	1284.63	Thalweg	2285.41	1274.78	Thalweg
79.06	1284.95	Head of Glide	2293.11	1274.43	Thalweg
94.22	1285.55	Thalweg	2313.83	1275.27	Head of Riffle
101.49	1286.61	Thalweg	2356.25	1274.65	Head of Run
105.77	1285.72	Thalweg	2375.76	1273.34	Thalweg
108.08	1285.64	Thalweg	2389.84	1272.79	Thalweg
116.38	1285.64	Thalweg	2427.21	1273.47	Thalweg
119.41	1285.43	Thalweg	2436.98	1273.31	Thalweg
124.04	1284.8	Thalweg	2459.19	1271.9	Thalweg
129.95	1284.68	Thalweg	2473.97	1273.06	Thalweg
140.14	1285.19	Thalweg	2489.92	1273.88	Thalweg
164.92	1285.29	Thalweg	2494.54	1274.64	Thalweg
179.15	1285.15	Thalweg	2499	1271	Head of Pool
211.15	1285.61	Thalweg	2507.77	1271.03	Max Pool
223.28	1285.64	Thalweg	2528.75	1271.82	Thalweg
240.17	1285.32	Thalweg	2548.99	1270.64	Max Pool
252.54	1284.6	Thalweg	2565.41	1271.15	Thalweg
269.96	1285.03	Thalweg	2577.03	1271.29	Thalweg
280.3	1285.52	Thalweg	2590.8	1271.58	Thalweg
308.7	1285.5	Head of Riffle	2616.2	1271.84	Thalweg
356.5	1285.16	Thalweg	2628.14	1271.79	Head of Riffle
378.21	1284.93	Thalweg	2638.5	1271.6	Head of Run
416.29	1284.78	Thalweg	2649.19	1270.81	Thalweg
417.93	1284.58	Thalweg	2656.03	1270.82	Thalweg
431.75	1284.26	Thalweg	2668.89	1270.8	Thalweg
460.74	1284.23	Thalweg	2680.89	1270.71	Head of Poo
474.88	1284.05	Head of Run	2707	1270.55	Thalweg
504.54	1283.15	Thalweg	2718.43	1271.73	Head of Glide
506.79	1283.77	Thalweg	2729.6	1271.57	Thalweg
521.5	1282.61	Thalweg	2738.99	1271.23	Thalweg
532.31	1282.86	Thalweg	2744.59	1271.22	Head of Pool
559.32	1283.32	Thalweg	2765.71	1271.36	Thalweg
622.01	1282.74	Thalweg	2794.03	1271.45	Head of Riffle
642.41	1280.7	Thalweg	2839.08	1270.54	Thalweg
655.36	1280.91	Thalweg	2900	1270.19	Head of Run
691.94	1281.41	Thalweg	2910.46	1270.06	Thalweg
705.83	1282.25	Thalweg	2915.28	1269.41	Thalweg
725.94	1283.43	Thalweg	2935.52	1269.99	Thalweg
740.77	1282.26	Thalweg	2944.76	1269.96	Thalweg
760.57	1281.93	Thalweg	2951.88	1270.64	Thalweg
780	1281.87	Thalweg	2990.77	1269.38	Thalweg
799.97	1282.17	Thalweg	3003.88	1269.62	Thalweg
818.31	1283.65	Thalweg	3034.94	1270.1	Thalweg
822.54	1283.68	Thalweg	3062.84	1270.21	Thalweg
866.17	1283.52	Thalweg	3079.03	1269.09	Max Pool
877.41	1282.17	Thalweg	3090.28	1269.56	Thalweg
886.59	1281.82	Thalweg	3111.25	1268.98	Thalweg
919.9	1281.4	Thalweg	3135.04	1269.4	Head of Riffle
963.03	1282.35	Thalweg	3171.72	1268.73	Head of Run
993.13	1283	Head of Glide	3196.95	1268.26	Thalweg
1026.88	1283.05	Thalweg	3232.34	1267.44	Head of Run
1071.45	1282.29	Thalweg	3256.7	1266.84	Head of Pool
1098.63	1282.15	Thalweg	3265.21	1265.98	Thalweg
1122.98	1279.65	Thalweg	3277.54	1267.06	Thalweg
1137.16	1279.27	Thalweg	3296.9	1266.98	Thalweg
1155.48	1280.19	Thalweg	3310.71	1266.75	Thalweg
1173.85	1280.91	Thalweg	3334.55	1266.48	Max Pool
1201.88	1280.57	Thalweg	3342	1266.82	Thalweg
1228.88	1280.58	Thalweg	3362.9	1265.7	Thalweg
1238.65	1280.56	Thalweg	3376	1266.78	Thalweg
1243.74	1280.39	Thalweg	3390.69	1267.26	Head of Glide
1267.1	1280.1	Thalweg	3417.87	1268	Thalweg
1281.5	1280.56	Thalweg	3429.42	1266.02	Head of Pool
1312.51	1279.94	Head of Pool	3434.99	1265.16	Max Pool
1333.61	1279.32	Max Pool	3459.9	1266.38	Head of Glide
1340.98	1280.69	Thalweg	3469.21	1267.09	Thalweg
1353.88	1279.66	Thalweg	3481.79	1266.91	Thalweg
1378.19	1279.43	Thalweg	3493.1	1266.61	Thalweg
1394.66	1280.37	Thalweg	3506.6	1266.34	Head of Run
1416.8	1279.76	Thalweg	3528.31	1265.59	Head of Poo
1442.84	1279.85	Thalweg			
1473.05	1279.41	Thalweg			
1512.25	1278.84	Thalweg			
1527.89	1277.84	Head of Pool			
1546.95	1277.08	Max Pool			
1564.11	1276.93	Max Pool			
1579.01	1277.28	Thalweg			
1584.96	1277.41	Thalweg			
1620.54	1278.72	Thalweg			
1637.53	1279.26	Thalweg			
1655.8	1278.43	Thalweg			
1683.11	1278.47	Thalweg			
1706.97	1279.04	Head of Glide			
1729.65	1279.35	Head of Riffle			
1749.85	1278.84	Head of Run			
1760.74	1277.47	Head of Pool			
1772.67	1276.23	Max Pool			
1775.44	1276.28	Max Poo			
1801.81	1276.84	Max Pool			
1812.29	1278.34	Thalweg			
1833.36	1278.03	Thalweg			
1841.49	1277.14	Thalweg			
1850.5	1277.78	Head of Glide			
1869.78	1278.91	Thalweg			
1900.59	1278.99	Head of Riffle			
1923.62	1278.48	Thalweg			
1931.86	1277.15	Thalweg			
1936.69	1277.77	Thalweg			
1955.72	1278.24	Thalweg			
1966.45	1278.73	Head of Riffle			
1985.07	1278.74	Thalweg			
2002.06	1278.26	Head of Run			
2042.3	1277.53	Thalweg			
2047.04	1277.41	Thalweg			
2057.79	1275.76	Thalweg			
2076	1275.65	Thalweg			
2092.87	1275.45	Max Pool			
2117.33	1274.44	Thalweg			

2004 Survey Reach 4

TW Station	TW Elevation	Feature	TW Station	TW Elevation	Feature
6.76	1285.12	Thalweg	2111.9	1274.35	Thalweg
18.05	1285.06	Thalweg	2144.83	1276.53	Head of Glide
21.59	1285.06	Thalweg	2175.68	1276.92	Thalweg
29.77	1285.02	Head of Pool	2193.61	1274.31	Thalweg
47.88	1284.99	ground	2216.4	1275.31	Thalweg
47.95	1283.56	Max Pool	2268.92	1275.73	Head of Riffle
65.57	1284.42	ground	2295.45	1274.85	Thalweg
71.1	1285.05	Max Pool	2320.68	1275.11	Thalweg
85.2	1285.12	Thalweg	2352.29	1275.1	Head of Run
103.5	1285.76	Thalweg	2372.39	1273.06	Head of Pool
120.3	1285.34	Head of Pool	2387.98	1272.5	Max Pool
129.02	1284.5	Max Pool	2423.81	1273.12	Thalweg
139.48	1284.94	ground	2449.53	1271.87	Max Pool
154.24	1285.3	Thalweg	2463.5	1272.15	Thalweg
159.91	1285.42	Thalweg	2486.38	1273.76	Thalweg
175.82	1285.25	Thalweg	2500.88	1271.19	Thalweg
188.5	1285.38	Thalweg	2517.71	1271.71	Thalweg
206.85	1285.5	Thalweg	2578.45	1271.67	Thalweg
231.23	1285.41	Thalweg	2609.71	1272.33	Head of Riffle
243.92	1285.01	Head of Pool	2640.83	1271.88	Head of Run
253.47	1284.58	Max Pool	2663.31	1271	Thalweg
269.24	1284.84	ground	2703.01	1270.65	Thalweg
287.62	1285.28	Thalweg	2726.06	1271.67	Thalweg
315.48	1285.45	Head of Riffle	2774.68	1271.47	Thalweg
346.58	1285.53	Thalweg	2794.97	1271.46	Thalweg
372.75	1284.94	Thalweg	2819.94	1271.11	Head of Run
394.82	1284.72	Thalweg	2919.54	1269.47	Max Pool
410.97	1284.62	Thalweg	2940.77	1270.01	Thalweg
437.15	1284.27	Thalweg	2951.39	1270.92	Thalweg
453.56	1284.11	Thalweg	2961.87	1269.01	Max Pool
482.03	1283.56	Thalweg	2998.74	1269.45	Max Pool
500.33	1283.13	Thalweg	3018.55	1269.95	Thalweg
512.27	1282.92	Head of Pool	3032.88	1270.32	Head of Glide
523.14	1282.47	Max Pool	3046.84	1270.88	Head of Riffle
548.1	1282.85	ground	3080.07	1269.28	Thalweg
556.31	1283.1	Thalweg	3107.74	1269.81	Head of Riffle
556.31	1283.14	Thalweg	3125.46	1268.74	Thalweg
563.8	1283.12	Thalweg	3139.68	1269.39	Thalweg
597.56	1283.34	Thalweg	3173.26	1268.68	Thalweg
621.16	1282.85	Head of Pool	3214.64	1268.34	Head of Run
638.92	1281.75	Max Pool	3249.81	1266.88	Thalweg
661.1	1281.69	Thalweg	3265.59	1265.83	Max Pool
674.66	1281.29	Max Pool	3291.37	1267.21	Thalweg
674.66	1281.29	Max Pool	3313.96	1266.67	Thalweg
700.02	1281.72	Thalweg	3346.19	1266.9	Thalweg
700.02	1281.72	Thalweg	3360.65	1265.85	Max Pool
730.75	1283.19	Head of Glide	3385.52	1267.39	Head of Glide
730.75	1283.19	Head of Glide	3413.32	1268.06	Thalweg
748.83	1283.02	Thalweg	3434.89	1265.39	Max Pool
748.83	1283.02	Thalweg	3460.6	1266.76	Thalweg
765.33	1281.56	Max Pool	3495.35	1266.85	Thalweg
765.33	1281.56	Max Pool	3518.76	1265.5	Thalweg
789.53	1281.43	Thalweg	3548.23	1264.3	Max Pool
789.53	1281.43	Thalweg	3572.26	1265.67	Thalweg
812.56	1282.74	Head of Glide	3629.79	1266.38	Head of Glide
812.56	1282.74	Head of Glide	3691.8	1267.11	Head of Riffle
830.56	1283.68	Head of Riffle			
830.56	1283.68	Head of Riffle			
867.1	1283.29	Head of Run			
867.1	1283.29	Head of Run			
902.33	1281.34	Thalweg			
902.33	1281.34	Thalweg			
909.31	1281.13	Head of Pool			
909.31	1281.13	Head of Pool			
936.46	1281.23	Thalweg			
936.47	1281.23	Thalweg			
970.42	1282.85	Head of Glide			
970.42	1282.85	Head of Glide			
1028.23	1282.77	Head of Riffle			
1028.23	1282.77	Head of Riffle			
1082.4	1282.53	Thalweg			
1125.03	1279.84	Thalweg			
1154.32	1279.82	Thalweg			
1192.56	1280.83	Thalweg			
1212.45	1280.11	Max Pool			
1250.36	1280.08	Thalweg			
1280.59	1280.74	Thalweg			
1313.83	1279.9	Thalweg			
1332.07	1279.41	Max Pool			
1336.59	1280.62	Thalweg			
1341.01	1281.06	Thalweg			
1352.26	1279.81	Thalweg			
1369.2	1279.05	Max Pool			
1383.48	1279.62	Thalweg			
1402.91	1279.46	Thalweg			
1421.09	1280.23	Head of Riffle			
1463.4	1279.77	Head of Run			
1494.02	1279.03	Thalweg			
1525.89	1278.47	Head of Pool			
1539.68	1277.43	Thalweg			
1559.7	1276.97	Max Pool			
1575.51	1278.04	Thalweg			
1592.9	1278.06	Max Pool			
1611.83	1278.7	Thalweg			
1634.52	1279.07	Head of Pool			
1643.76	1278.03	Max Pool			
1658.41	1278.48	Thalweg			
1698.11	1278.88	Thalweg			
1723.11	1279.41	Head of Riffle			
1748.35	1278.89	Head of Run			
1779.88	1277.27	Thalweg			
1816.69	1277.5	Max Pool			
1828.43	1278.5	Thalweg			
1837.34	1276.8	Max Pool			
1859.54	1278.52	Head of Glide			
1903.57	1279.05	Head of Riffle			
1929.96	1278.33	Thalweg			
1952.13	1278.27	Thalweg			
1969.56	1279.02	Thalweg			
1998.41	1278.64	Thalweg			
2041.63	1278.18	Thalweg			
2064.28	1276.43	Head of Pool			
2078.11	1276.19	Max Pool			
2091.9	1274.95	Max Pool			

2003 Survey Reach 4

TW Station	TW Elevation	Feature
-466.1	1286.3	Thalweg
-461.1	1287.1	Thalweg
-383.1	1287.0	Thalweg
-363.1	1283.4	Thalweg
-333.1	1286.6	Thalweg
-295.1	1286.3	Thalweg
-146.1	1285.6	Thalweg
-79.1	1283.9	Thalweg
-1.1	1284.7	Thalweg
60.9	1283.0	Thalweg
98.9	1286.4	Thalweg
118.9	1284.7	Thalweg
123.9	1283.8	Thalweg
144.9	1284.9	Thalweg
258.9	1284.9	Thalweg
508.9	1282.5	Thalweg
618.9	1282.6	Thalweg
647.9	1281.2	Thalweg
684.9	1280.8	Thalweg
718.9	1281.7	Thalweg
735.9	1282.6	Thalweg
752.9	1281.4	Thalweg
776.9	1280.9	Thalweg
808.9	1280.0	Thalweg
828.9	1282.0	Thalweg
837.9	1283.6	Thalweg
868.9	1283.2	Thalweg
882.9	1283.1	Thalweg
892.9	1282.3	Thalweg
905.9	1281.3	Thalweg
927.9	1280.6	Thalweg
949.9	1280.6	Thalweg
1002.9	1282.6	Thalweg
1070.9	1282.1	Thalweg
1124.9	1282.8	Thalweg
1140.9	1278.6	Thalweg
1180.9	1280.0	Thalweg
1221.9	1279.7	Thalweg
1256.9	1280.0	Thalweg
1273.9	1279.6	Thalweg
1310.9	1279.6	Thalweg
1348.9	1279.0	Thalweg
1362.9	1279.9	Thalweg
1390.9	1279.2	Thalweg
1408.9	1279.9	Thalweg
1419.9	1278.4	Thalweg
1450.9	1279.5	Thalweg
1549.9	1278.3	Thalweg
1567.9	1276.3	Thalweg
1590.9	1276.7	Thalweg
1595.9	1276.1	Thalweg
1602.9	1279.6	Thalweg
1623.9	1276.9	Thalweg
1653.9	1278.7	Thalweg
1679.9	1277.7	Thalweg
1741.9	1278.7	Thalweg
1781.9	1277.6	Thalweg
1825.9	1275.9	Thalweg
1856.9	1277.5	Thalweg
1869.9	1276.4	Thalweg
1898.9	1278.0	Thalweg
1950.9	1278.4	Thalweg
1955.9	1278.2	Thalweg
2015.9	1278.2	Thalweg
2084.9	1278.9	Thalweg
2131.9	1275.6	Thalweg
2172.9	1276.7	Thalweg
2210.9	1277.7	Thalweg
2234.9	1275.3	Thalweg
2256.9	1276.4	Thalweg
2322.9	1276.9	Thalweg
2389.9	1275.4	Thalweg
2489.9	1272.6	Thalweg
2541.9	1276.5	Thalweg
2548.9	1272.7	Thalweg
2575.9	1275.3	Thalweg
2631.9	1271.8	Thalweg
2717.9	1273.6	Thalweg
2800.9	1272.5	Thalweg
2822.9	1270.7	Thalweg
2913.9	1270.4	Thalweg
2986.9	1269.8	Thalweg
3008.9	1269.5	Thalweg
3039.9	1269.7	Thalweg
3096.9	1270.3	Thalweg
3133.9	1270.9	Thalweg
3152.9	1269.8	Thalweg
3225.9	1268.8	Thalweg
3284.9	1268.2	Thalweg
3323.9	1267.0	Thalweg
3375.9	1266.7	Thalweg
3420.9	1266.3	Thalweg
3485.9	1268.4	Thalweg
3507.9	1266.5	Thalweg

2002 Survey Reach 4

TW Station	TW Elevation	Feature
-466.1	1287.4	Thalweg
-461.1	1286.6	Thalweg
-451.8	1285.6	Thalweg
-433.1	1287.6	Thalweg
-383.1	1286.4	Thalweg
-363.1	1283.7	Thalweg
-331.1	1286.6	Thalweg
-306.1	1286.5	Thalweg
-262.1	1285.8	Thalweg
-198.4	1285.6	Thalweg
-166.1	1285.7	Thalweg
-118.1	1285.4	Thalweg
-45.2	1285.5	Thalweg
-28.1	1285.3	Thalweg
37.9	1284.1	Thalweg
61.2	1284.7	Thalweg
78.9	1284.1	Thalweg
86.9	1285.3	Thalweg
95.9	1286.0	Thalweg
107.9	1284.3	Thalweg
133.9	1285.3	Thalweg
151.5	1285.8	Thalweg
217.6	1285.3	Thalweg
307.9	1285.6	Thalweg
339.1	1285.3	Thalweg
379.3	1284.9	Thalweg
484.9	1283.7	Thalweg
534.9	1283.4	Thalweg
556.4	1283.1	Thalweg
608.9	1283.8	Thalweg
619.9	1283.4	Thalweg
665.9	1281.0	Thalweg
708.9	1282.0	Thalweg
713.9	1282.3	Thalweg
739.6	1283.0	Thalweg
757.9	1282.5	Thalweg
818.9	1282.6	Thalweg
837.9	1283.5	Thalweg
867.9	1282.4	Thalweg
915.9	1283.5	Thalweg
983.9	1282.9	Thalweg
1124.9	1283.0	Thalweg
1138.9	1279.4	Thalweg
1163.9	1280.4	Thalweg
1220.9	1281.3	Thalweg
1259.9	1280.4	Thalweg
1331.9	1280.0	Thalweg
1340.9	1278.5	Thalweg
1345.9	1279.8	Thalweg
1371.9	1279.6	Thalweg
1408.9	1280.0	Thalweg
1421.9	1278.4	Thalweg
1442.9	1279.5	Thalweg
1472.9	1279.6	Thalweg
1541.9	1278.7	Thalweg
1565.9	1276.3	Thalweg
1613.9	1280.0	Thalweg
1633.9	1276.8	Thalweg
1655.9	1278.1	Thalweg
1697.4	1278.6	Thalweg
1717.9	1278.2	Thalweg
1758.9	1278.9	Thalweg
1843.9	1276.8	Thalweg
1886.9	1278.9	Thalweg
1910.9	1279.5	Thalweg
1933.9	1279.4	Thalweg
2003.9	1278.9	Thalweg
2086.9	1278.5	Thalweg
2100.9	1279.0	Thalweg
2111.9	1276.5	Thalweg
2152.9	1276.4	Thalweg
2177.9	1277.7	Thalweg
2233.9	1278.2	Thalweg
2251.9	1278.1	Thalweg
2271.9	1276.0	Thalweg
2299.9	1277.4	Thalweg
2344.9	1277.0	Thalweg
2363.9	1275.5	Thalweg
2397.9	1275.8	Thalweg
2447.9	1275.3	Thalweg
2494.9	1276.5	Thalweg
2533.9	1276.9	Thalweg
2541.9	1276.8	Thalweg
2552.9	1274.9	Thalweg
2577.9	1274.8	Thalweg
2605.4	1274.4	Thalweg
2639.9	1273.9	Thalweg
2687.9	1273.1	Thalweg
2709.9	1272.4	Thalweg
2778.9	1273.1	Thalweg
2800.9	1273.1	Thalweg
2822.9	1271.0	Thalweg
2833.9	1271.7	Thalweg
2888.9	1272.4	Thalweg
2935.9	1271.8	Thalweg
2970.9	1271.0	Thalweg
3001.9	1268.6	Thalweg
3026.9	1268.5	Thalweg
3078.9	1269.7	Thalweg
3099.9	1270.5	Thalweg
3133.9	1270.8	Thalweg
3143.9	1268.7	Thalweg
3165.9	1270.3	Thalweg
3237.9	1269.0	Thalweg
3280.9	1268.8	Thalweg
3292.9	1268.3	Thalweg
3304.9	1267.7	Thalweg
3331.9	1266.2	Thalweg
3363.9	1267.1	Thalweg
3374.9	1267.8	Thalweg
3395.9	1266.9	Thalweg
3407.9	1267.7	Thalweg
3453.9	1268.0	Thalweg
3484.9	1268.1	Thalweg
3498.9	1266.2	Thalweg
3514.9	1267.1	Thalweg
3530.9	1267.9	Thalweg

2001 Survey Reach 4

TW Station	TW Elevation	Feature	TW Station	TW Elevation	Feature
-466.1	1288.1	Thalweg	2985.4	1271.9	Thalweg
-461.1	1286.7	Thalweg	3005.9	1270.9	Thalweg
-451.1	1286.3	Thalweg	3018.9	1269.3	Thalweg
-437.1	1288.3	Thalweg	3035.9	1269.2	Thalweg
-388.1	1287.6	Thalweg	3053.9	1268.8	Thalweg
-382.6	1286.4	Thalweg	3065.9	1270.0	Thalweg
-378.6	1287.1	Thalweg	3105.9	1270.9	Thalweg
-362.1	1283.9	Thalweg	3132.9	1271.7	Thalweg
-344.1	1286.6	Thalweg	3149.4	1272.0	Thalweg
-336.1	1287.4	Thalweg	3153.9	1269.2	Thalweg
-306.1	1286.5	Thalweg	3175.9	1271.3	Thalweg
-292.1	1285.3	Thalweg	3258.9	1270.1	Thalweg
-263.1	1286.0	Thalweg	3276.9	1268.5	Thalweg
-235.1	1286.2	Thalweg	3287.9	1269.1	Thalweg
-173.1	1285.6	Thalweg	3300.9	1269.4	Thalweg
-146.1	1285.6	Thalweg	3318.4	1268.7	Thalweg
-116.1	1286.1	Thalweg	3332.4	1268.0	Thalweg
-79.1	1286.0	Thalweg	3338.9	1268.8	Thalweg
-42.1	1285.2	Thalweg	3346.4	1267.2	Thalweg
11.9	1286.1	Thalweg	3354.9	1266.9	Thalweg
41.9	1284.8	Thalweg	3373.9	1267.4	Thalweg
82.9	1284.6	Thalweg	3395.4	1267.1	Thalweg
102.9	1286.6	Thalweg	3405.4	1267.7	Thalweg
113.9	1286.3	Thalweg	3428.9	1269.0	Thalweg
119.9	1284.8	Thalweg	3493.9	1269.4	Thalweg
138.9	1285.7	Thalweg	3501.9	1270.1	Thalweg
148.9	1286.4	Thalweg	3516.9	1267.8	Thalweg
166.9	1286.4	Thalweg	3530.4	1268.6	Thalweg
194.9	1285.9	Thalweg	3546.9	1268.7	Thalweg
257.9	1286.1	Thalweg	3567.9	1268.3	Thalweg
298.9	1286.3	Thalweg	3580.9	1266.0	Thalweg
398.9	1285.3	Thalweg	3597.4	1268.4	Thalweg
415.9	1285.3	Thalweg			
448.9	1284.9	Thalweg			
524.9	1284.1	Thalweg			
585.9	1284.1	Thalweg			
637.9	1284.4	Thalweg			
662.9	1282.6	Thalweg			
678.9	1283.0	Thalweg			
704.9	1283.7	Thalweg			
732.9	1283.6	Thalweg			
752.9	1284.5	Thalweg			
781.9	1284.0	Thalweg			
823.9	1283.8	Thalweg			
856.9	1284.3	Thalweg			
862.9	1283.4	Thalweg			
872.9	1284.5	Thalweg			
891.9	1284.3	Thalweg			
911.9	1284.6	Thalweg			
960.9	1283.9	Thalweg			
1040.9	1283.3	Thalweg			
1115.9	1283.2	Thalweg			
1137.9	1283.8	Thalweg			
1153.9	1280.3	Thalweg			
1167.9	1280.6	Thalweg			
1200.9	1282.1	Thalweg			
1266.9	1281.6	Thalweg			
1292.9	1281.5	Thalweg			
1353.9	1281.0	Thalweg			
1365.9	1279.5	Thalweg			
1373.9	1280.4	Thalweg			
1388.9	1279.0	Thalweg			
1397.9	1280.3	Thalweg			
1416.9	1280.5	Thalweg			
1439.9	1281.1	Thalweg			
1451.9	1279.2	Thalweg			
1466.9	1280.6	Thalweg			
1502.9	1280.4	Thalweg			
1530.9	1280.4	Thalweg			
1561.9	1279.2	Thalweg			
1591.9	1276.9	Thalweg			
1605.9	1277.4	Thalweg			
1631.9	1279.4	Thalweg			
1648.9	1277.6	Thalweg			
1668.9	1278.9	Thalweg			
1687.9	1279.8	Thalweg			
1701.9	1279.0	Thalweg			
1737.9	1279.1	Thalweg			
1750.9	1279.1	Thalweg			
1792.9	1279.6	Thalweg			
1810.9	1278.8	Thalweg			
1832.9	1276.2	Thalweg			
1891.9	1278.5	Thalweg			
1929.9	1280.5	Thalweg			
2042.9	1279.4	Thalweg			
2107.9	1279.3	Thalweg			
2139.9	1277.6	Thalweg			
2150.9	1278.4	Thalweg			
2163.9	1276.9	Thalweg			
2183.9	1278.6	Thalweg			
2199.9	1279.2	Thalweg			
2259.9	1279.0	Thalweg			
2264.3	1279.4	Thalweg			
2277.9	1276.6	Thalweg			
2294.9	1278.0	Thalweg			
2320.9	1278.7	Thalweg			
2347.9	1278.1	Thalweg			
2366.9	1277.3	Thalweg			
2375.9	1276.5	Thalweg			
2416.9	1276.3	Thalweg			
2468.9	1274.4	Thalweg			
2486.9	1274.4	Thalweg			
2504.9	1276.3	Thalweg			
2569.9	1277.9	Thalweg			
2583.9	1278.1	Thalweg			
2590.9	1274.5	Thalweg			
2600.4	1275.8	Thalweg			
2627.9	1275.5	Thalweg			
2658.9	1275.4	Thalweg			
2681.9	1274.1	Thalweg			
2693.9	1275.1	Thalweg			
2756.9	1273.5	Thalweg			
2817.9	1273.2	Thalweg			
2823.9	1273.4	Thalweg			
2830.9	1271.3	Thalweg			
2849.9	1271.7	Thalweg			
2891.4	1272.9	Thalweg			

2000 Survey Reach 4

TW Station	TW Elevation	Feature
-466.1	1288.9	Thalweg
-462.1	1287.6	Thalweg
-449.1	1287.4	Thalweg
-419.1	1289.5	Thalweg
-382.6	1287.1	Thalweg
-343.1	1288.2	Thalweg
-306.1	1287.2	Thalweg
-166.1	1285.4	Thalweg
-40.1	1285.0	Thalweg
39.9	1285.0	Thalweg
110.9	1286.6	Thalweg
123.9	1284.5	Thalweg
144.9	1286.3	Thalweg
186.9	1285.3	Thalweg
224.9	1286.4	Thalweg
248.9	1286.8	Thalweg
422.9	1285.2	Thalweg
469.9	1284.8	Thalweg
663.9	1283.8	Thalweg
767.9	1283.9	Thalweg
848.9	1282.4	Thalweg
860.4	1282.9	Thalweg
875.9	1284.0	Thalweg
907.9	1284.3	Thalweg
995.9	1283.6	Thalweg
1136.9	1283.5	Thalweg
1158.9	1282.5	Thalweg
1251.9	1281.4	Thalweg
1345.9	1280.5	Thalweg
1351.9	1279.2	Thalweg
1353.9	1279.5	Thalweg
1367.9	1278.2	Thalweg
1391.9	1280.4	Thalweg
1413.9	1279.1	Thalweg
1433.9	1278.7	Thalweg
1450.9	1279.6	Thalweg
1504.9	1279.9	Thalweg
1578.9	1277.3	Thalweg
1633.9	1278.6	Thalweg
1856.9	1276.5	Thalweg
1901.9	1280.6	Thalweg
2009.9	1279.2	Thalweg
2080.9	1277.8	Thalweg
2113.9	1277.6	Thalweg
2217.9	1278.9	Thalweg
2244.9	1277.2	Thalweg
2252.9	1278.8	Thalweg
2279.9	1278.5	Thalweg
2410.9	1273.6	Thalweg
2529.9	1278.1	Thalweg
2565.9	1275.5	Thalweg
2611.9	1275.7	Thalweg
2629.9	1274.7	Thalweg
2653.9	1275.5	Thalweg
2728.9	1273.3	Thalweg
2768.9	1272.7	Thalweg
2777.9	1271.9	Thalweg
2809.9	1273.2	Thalweg
2838.9	1273.1	Thalweg
2931.9	1271.8	Thalweg
2983.9	1269.9	Thalweg
3003.9	1268.8	Thalweg
3011.9	1269.7	Thalweg
3091.9	1271.6	Thalweg
3103.9	1270.4	Thalweg
3121.9	1271.6	Thalweg
3201.9	1270.3	Thalweg
3240.9	1269.7	Thalweg
3296.9	1268.3	Thalweg
3321.9	1268.7	Thalweg
3335.9	1267.5	Thalweg
3356.9	1268.8	Thalweg
3441.9	1267.5	Thalweg
3486.9	1268.9	Thalweg
3514.9	1268.3	Thalweg
3526.9	1266.2	Thalweg
3552.9	1266.9	Thalweg

Project Name	Stone Mountain
Task	Feature Slope and Length Calculations
Date	8/1/06
Crew	Shaffer, Patterson, Clinton

Reach 2 - 2006

Riffle Station	Change	Water Elev	change	slope	Pool Station	length	p-p spacing
200		1306.39			253		
253	53	1305.53	0.86	1.62%	359	106	
359		1305.46			392		
392	33	1304.61	0.85	2.58%	454	62	117
454		1304.64			540		
540	86	1303.94	0.7	0.81%	742	202	218
742		1304.03			903		
903	161	1302.42	1.61	1.00%	1112	209	366.5
1320		1300.64			1131		
1441	121	1297.26	3.38	2.79%	1320	189	218
	454					768	
	5					5	

	min	max	median
Length	33	161	86
Slope	0.81%	2.79%	1.62%

	min	max	median
Length	62	209	189
Spacing	117	366.5	218

Reach 4 - 2006

Riffle Station	Change	Water Elev	change	slope	Pool Station	length	p-p spacing
99		1287.05			-17		
232	133	1286.44	0.61	0.46%	99	116	
305		1286.3			232		
478	173	1284.61	1.69	0.98%	305	73	227.5
830		1284.45			604		
900	70	1283.59	0.86	1.23%	830	226	448.5
1407		1280.72			900		
1483	76	1280.23	0.49	0.64%	967	67	216.5
1715		1280			1129		
1789	74	1279.7	0.3	0.41%	1208	79	235
1980		1279.75			1363		
2049	69	1278.31	1.44	2.09%	1398	35	212
2222		1276.32			1483		
2360	138	1275.71	0.61	0.44%	1715	232	218.5
2608		1273.24			1789		
2638	30	1272.96	0.28	0.93%	1908	119	249.5
2792		1272.54			2049		
2908	116	1271.18	1.36	1.17%	2175	126	263.5
3074		1270.34			2185		
3169	95	1269.35	0.99	1.04%	2222	37	91.5
3450		1267.64			2360		
3499	49	1267.4	0.24	0.49%	2496	136	224.5
					2504		
	1023				2538	34	93
	11				2908		
					3063	155	464.5
					3182		
					3415	233	313
						1668	
						14	

	min	max	median
Length	69.0	173.0	76.0
Slope	0.41%	2.09%	0.64%

	min	max	median
Length	35.0	233.0	79.0
Spacing	212	465	223

Project Name	East Prong of the Roaring River @ Stone Mountain
Task	Channel Pattern Measurements
Date	
Crew	Shaffer, Patterson, Clinton

Reach 2 2006				**Reach 4** 2006		
Radius of Curvature	**Meander Wavelength**	**Channel Beltwidth**		**Radius of Curvature**	**Meander Wavelength**	**Channel Beltwidth**
157	614	343		140	766	515
144		177		207	533	222
145				75	595	326
				124	712	275
				69	547	225
				107		368
				96		
144	614	177	***min***	69	533	222
157	614	343	***max***	207	766	515
145	-	260	***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