Floogie Mitigation Project
Bertie County, North Carolina

DENR-EEP Contract No. D06011

Year 5 Monitoring Report

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1.0 SUMMARY

This Annual Report details the monitoring activities during the 2012 growing season on the Floogie Mitigation Site. Construction of the site, including planting of trees, was completed in February 2008. The 2012 data represents results from the fifth year of hydrology and vegetation monitoring for both wetlands and streams.

The design for the Floogie Site involved stream restoration and riverine wetland restoration. After construction, it was determined that the project generated 11,149 feet of stream restoration and 25.19 acres of wetland restoration. The As-Built survey is included as **Appendix A**.

This Annual Report presents the data from nine automated hydrology monitoring stations, 18 vegetation monitoring plots, one crest gauge, two rain gauges, 20 cross sections, a minimum of 3,100 linear feet of profile survey, and photographic reference locations, as specified in the approved Restoration Plan for the site.

Weather station data from the Greens Cross Weather Station were used in conjunction with manual and tipping bucket rain gauges located on the site to document precipitation amounts. The manual gauge is used to validate observations made at the automated stations.

In 2012, all hydrology monitoring gauges exceeded the seven percent hydrologic success criterion as defined in the Restoration Plan for the site. The gauges exhibited consecutive hydroperiods ranging from 8 to 10 percent of the growing season.

In 2012, vegetation monitoring documented the survival of planted woody vegetation of between 390 and 5,600 stems per acre with an average of 636 stems per acre. The site has achieved the final success criterion of 260-planted stems per acre by the end of year five.

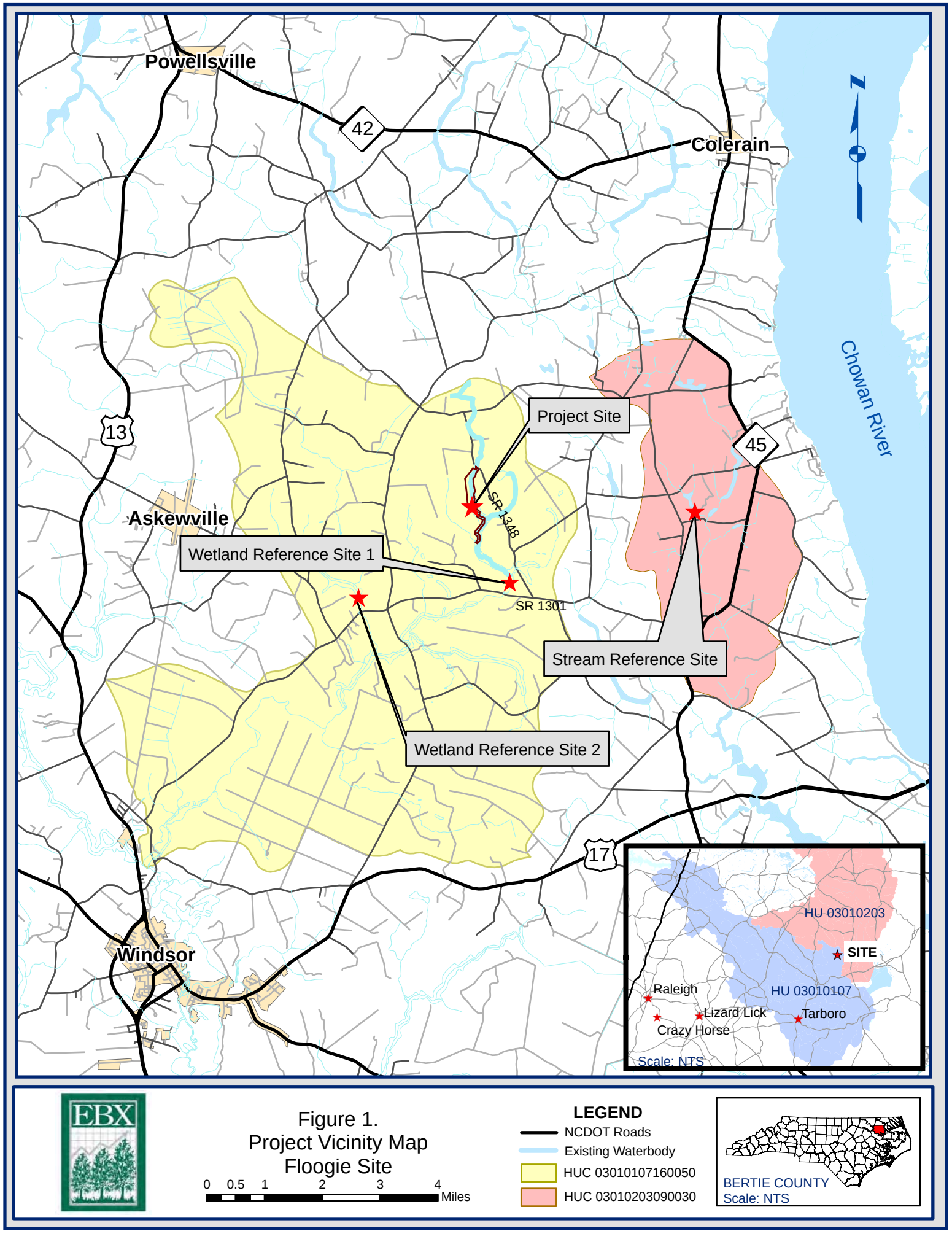
One bankfull event was recorded at the site during the 2012 growing season from crest gauges. The restored stream channel has remained stable and is providing the intended habitat and hydrologic functions. All monitored cross sections and longitudinal profile for 2012 show very little adjustment in stream dimension. There are seven beaver dams located within the project that may require further action.

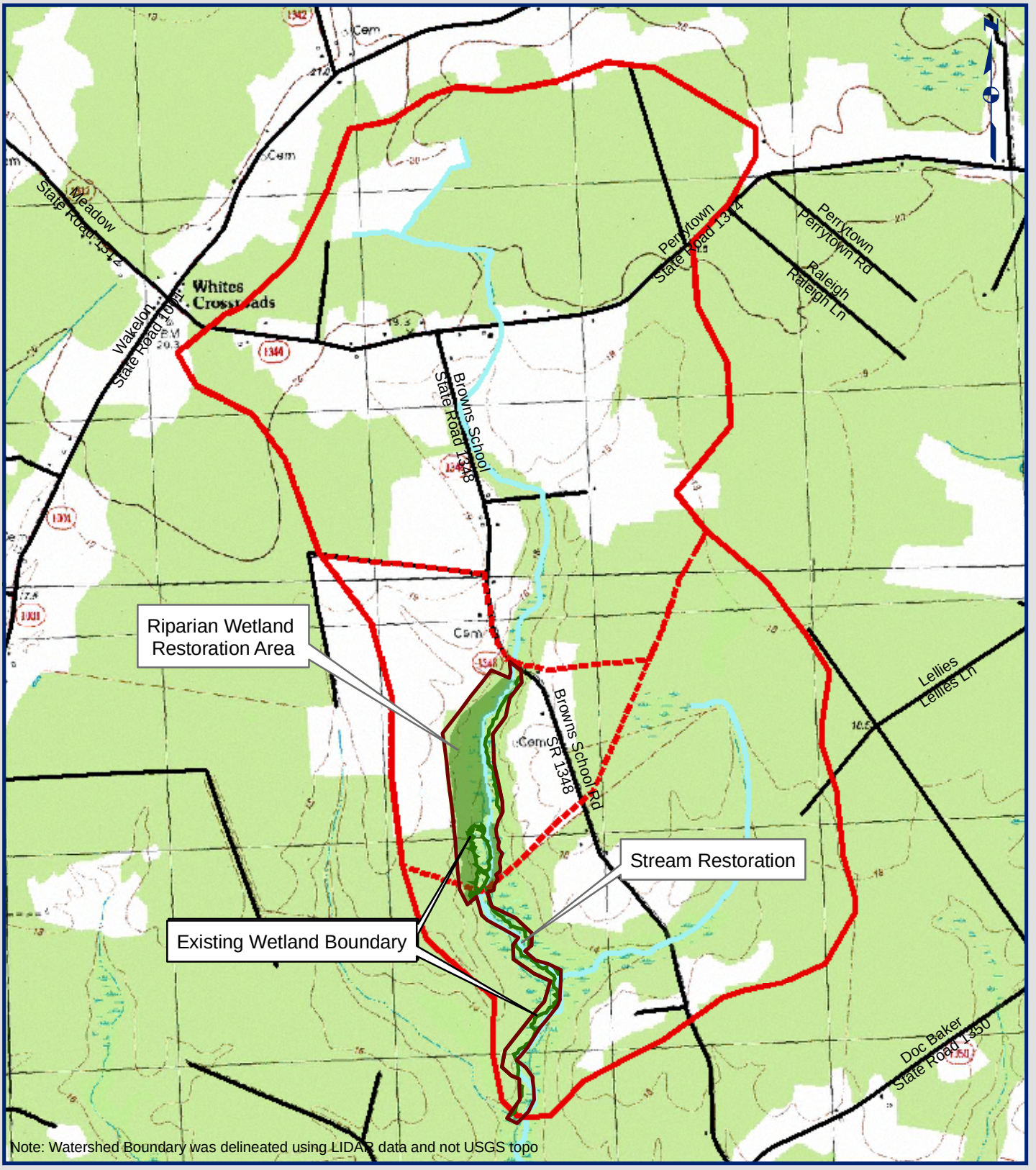
2.0 INTRODUCTION

2.1 PROJECT DESCRIPTION

The Floogie Site is located nine miles northeast of Windsor (**Figure 1**). The property is 104 acres located immediately southwest of SR 1348 (Browns School Road) and is accessed via a farm road that runs adjacent to the channel (Flat Swamp Creek). Construction at the site was completed in February 2008. Groundwater, surface water, and rain gauges were functional beginning in March 2008.

Flat Swamp Creek has a drainage area of 1,168 acres (1.83 mi^2) at the upstream end of the restoration project and 2,150 acres (3.36 mi^2) at the downstream end. The wetland restoration area has a drainage area of 1,456 acres (2.28 mi^2). The dominant historic land use was


Powellsville
42
Colerain
N
Chowan River
13
45
Project Site
SR 1348
Askewville
Wetland Reference Site 1
SR 1301
Stream Reference Site
Wetland Reference Site 2
17
Windsor
HU 03010203
SITE
Raleigh
HU 03010107
Lizard Lick
Tarboro
Crazy Horse
Scale: NTS
EBX
Figure 1.
Project Vicinity Map
Floogie Site
0 0.5 1 2 3 4 Miles
LEGEND
NCDOT Roads
Existing Waterbody
HUC 03010107160050
HUC 03010203090030
BERTIE COUNTY
Scale: NTS



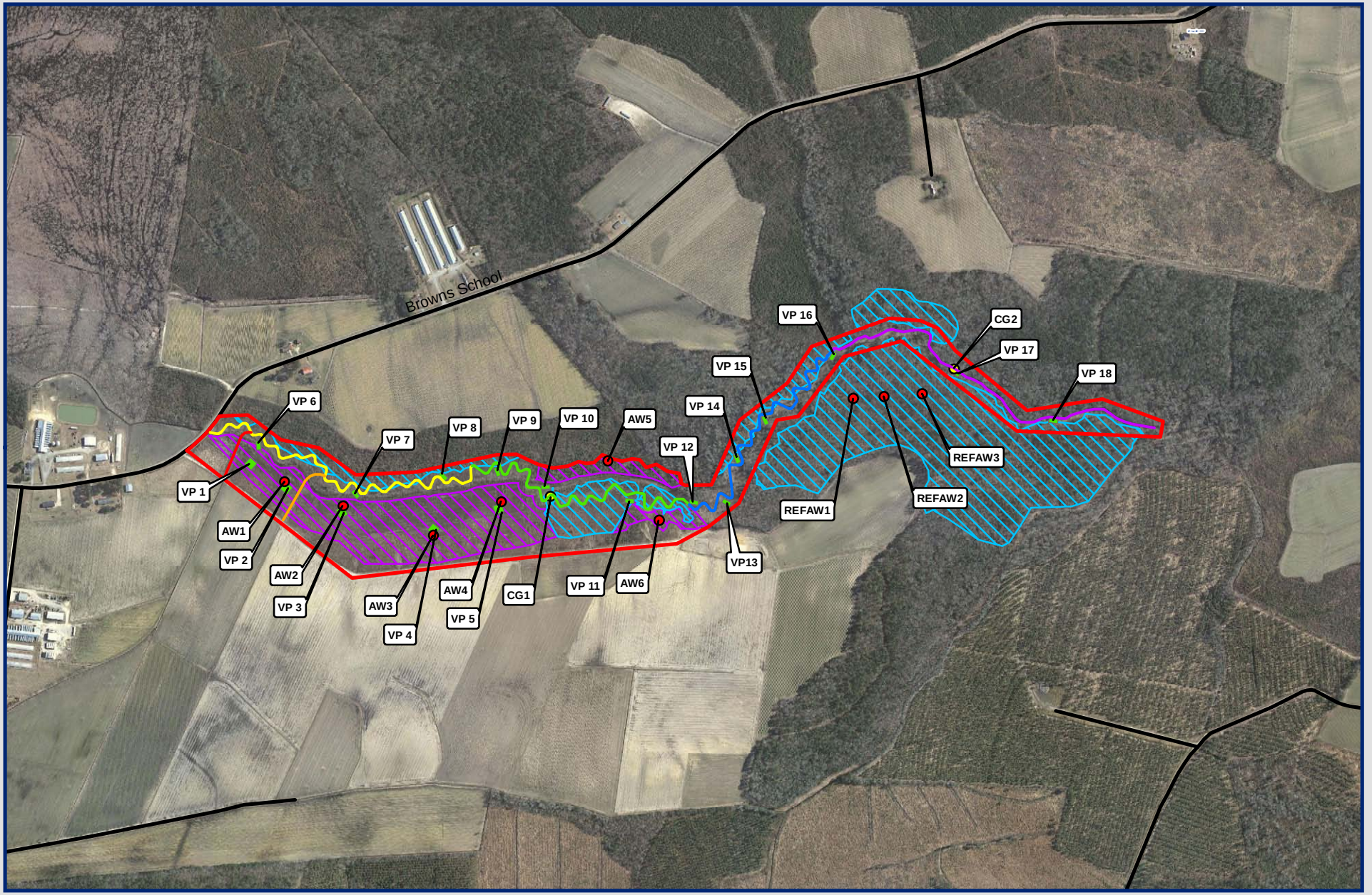
EBX

Figure 2.
USGS Quadrangle Map
Floogie Site

0 1,000 2,000 4,000
Feet

LEGEND

- NCDOT Roads
- Stream
- Project Area
- Potential Riverine Wetland Restoration
- Watershed Boundary



2010 NC OneMap Aerial Photography

0 250 500 1,000 1,500 2,000 Feet

1 inch = 1,000 feet

Figure 3
Monitoring Overview
Floogie Mitigation Site

Stream Reach Segments
- Headwater 1A
- Headwater 1B
- Reach 1
- Reach 2
- Reach 3
- Reach 4

- Crest Gauge
- Monitoring Well
- Easement
- Vegetation Plots
- NCDOT Roads
- Existing Wetlands
- Wetland Restoration

agricultural production of crops including cotton, soybeans, corn, and timber, although some areas were woodlands. Natural drainage patterns throughout the watershed had been historically altered to drain wetlands and promote agricultural production as seen on the USGS Merry Hill, NC topographic quadrangle (**Figure 2**). Numerous agricultural ditches had been constructed on the site, and streams had been channelized to route water off the site, draining areas that were once wetland. The restoration areas are protected by a conservation easement.

2.2 PROJECT PURPOSE

The objective of this project is to produce a minimum of 11,149 stream mitigation units (SMU) and 25.19 riverine wetland mitigation units (WMU) to the NC EEP through the full delivery process in the Lower Roanoke River 03010107 hydrologic unit, and to maximize the improvement of riparian and aquatic habitats and water quality through ecological restoration practices. Stream mitigation was provided through restoration on Flat Swamp Creek. Riverine wetland mitigation was provided through restoration. The site was identified and developed by EBX to support the NC EEP full delivery mitigation process. Monitoring of the Floogie Site is required to demonstrate successful mitigation based on the criteria found in the Restoration Plan and through a comparison to reference site conditions. The success criteria components will adhere to NC EEP and USACE guidelines. Hydrology, vegetation, and stream monitoring are conducted on an annual basis. This Annual Monitoring Report details the results of the monitoring efforts for 2012 (Year 5) at the Floogie Mitigation Site.

The as-built survey documented 11,149 linear feet of stream restoration (**Table 1**). Overbank stream flows will provide a portion of the hydrology for the wetlands. The wetland and stream restoration project will provide multiple ecological and water quality benefits within the Roanoke River Basin. Benefits include nutrient removal, sediment reduction, water storage, improved groundwater recharge, improved in-stream and riparian habitat, and restored wetland habitat. **Table 2** and **Table 3** list the project schedule and contacts, respectively.

Table 1. Project Mitigation Structure and Objectives

Reach Name	As-Built Length (ft)	Restoration Approach
Stream		
R1	2,800	Stream Restoration
R2	2,500	Stream Restoration
R3	2,400	Stream Restoration
R4	2,771	Stream Restoration
1A	322	Headwater Valley Restoration
1B	356	Headwater Valley Restoration
Total	**11,149**	
Wetlands		
	25.19 ac	Riverine Wetland Restoration

2.3 PROJECT HISTORY & SCHEDULE

Table 2. Project Activity and Reporting History

Month	Activity
October 2007	Construction Began
February 2008	Construction Completed
March 2008	Planting Completed
March 2008	Post Construction Monitoring Gauges Installed
April 2008	As-Built Report Submitted
August 2008	1st Annual Monitoring Report
September 2009	2nd Annual Monitoring Report
September 2010	3rd Annual Monitoring Report
October 2011	4th Annual Monitoring Report
September 2012	5th Annual Monitoring Report

Table 3. Project Contacts

Contact	Firm Information
Project Manager Norton Webster	EBX-Neuse 1, LLC (919) 608-9688
Designer Jeff Keaton, PE	WK Dickson and Co., Inc (919) 782-0495
Monitoring Contractor Daniel Ingram	WK Dickson and Co., Inc (919) 782-0495

3.0 HYDROLOGY

3.1 HYDROLOGIC SUCCESS CRITERIA

As stated in the Restoration Plan, the hydrology success criterion for the site is to restore the water table at the site so that it will remain within 12 inches of the soil surface for at least seven percent of the growing season continuously (approximately 16 days). The growing season is from March 22 to November 8. Based on a daily minimum temperature greater than 28 degrees Fahrenheit occurring in five of ten years, the growing season for Bertie County is 232 days long. Gauge data will be compared to reference wetland well data in growing seasons with less than normal rainfall. In periods of low rainfall, if a restoration gauge hydroperiod exceeds the reference gauge hydroperiods, and both exceed five percent of the growing season, then the gauge will be deemed successful. The results of hydrology monitoring across the wetland restoration site are presented in this annual monitoring report.

3.2 DESCRIPTION OF HYDROLOGY MONITORING EFFORTS

Six automated HOBO groundwater gauges, one manual rain gauge, and one tipping bucket rain gauge were installed prior to the beginning of the first growing season (**Figure 3**). Three additional automated groundwater gauges were installed in a reference wetland. Groundwater gauges were installed to a minimum depth of 40 inches below the ground surface. The monitoring protocol for the site specifies that automated monitoring stations will be downloaded and checked for malfunctions on a monthly basis. During monthly site visits, each groundwater gauge is downloaded and rainfall totals are collected from the on-site rain gauge. During the 2011 growing season, all nine automated data loggers performed as expected, and no periods of missing data were encountered. The tipping bucket rain gauge data logger malfunctioned and was replaced in May 2011, but has still not functioned properly. Data has not been recovered for the current growing season.

Automated Gauges
Automated groundwater gauges record water table elevations four times daily at 06:00, 12:00, 18:00, and 24:00. These automatic gauges employ pressure sensors that record water elevation above the bottom of the sensor (with atmospheric pressure compensation). The calibration water table depth is recorded at monthly downloads. To determine wetland hydroperiods, the automatically recorded data are compared to the calibration data to determine a standard correction factor between the calibration gauge and the automatic gauge for each location. The standard correction factor is applied to correct daily readings. The corrected daily readings are then used to determine wetland hydroperiods.

Data Interpretation
Wetland hydroperiods are calculated from four daily water table depth elevations. A hydroperiod is calculated if the water table is equal to or less than 12 inches below ground surface for at least 24 hours. If a gauge falls below -12 inches for four consecutive readings (24 hours) then the hydroperiod ends at the last reading within 12 inches of the ground surface. If a gauge falls below -12 inches for only one reading then maintains a reading above -12 inches for a minimum of 24 hours, the hydroperiod is calculated continuously. This methodology accounts for minor anomalies experienced by the automatic gauges.

3.3 RESULTS OF HYDROLOGY MONITORING

The following hydroperiod statistics were calculated for each monitoring station during the growing season: 1) most consecutive days that the water table was within 12 inches of the surface; 2) cumulative number of days that the water table was within 12 inches of the soil surface; and 3) number of times that the water table rose to within 12 inches of the soil surface (**Table 4**). Depth of groundwater for each of the monitoring gauges is shown in a graph with precipitation (**Figures 5a-5c**). These hydrographs demonstrate the reaction at each monitoring location of the groundwater level to specific rainfall events. Raw hydrograph data collected from the monitoring gauges is provided in **Appendix C**.

Table 4. Hydrologic Monitoring Results

2012 Max Hydroperiod (Growing Season 22-Mar through 8-Nov, 231 days) Well Data for 22-Mar through 23-August (152 days) Success Criterion 7% = 16 Consecutive days					
Gauge	**Consecutive**		**Cumulative**		**Occurrences**
	Days	**Percent of growing Season**	**Days**	**Percent of growing Season**	
AW1	21	9%	92	40%	18
AW2	91	39%	130	56%	10
AW3	18	8%	62	27%	11
AW4	96	41%	150	65%	3
AW5	45	19%	105	45%	8
AW6	20	9%	47	20%	9
RAW1	23	10%	38	16%	6
RAW2	19	8%	22	10%	3
RAW3	20	8%	23	10%	4

The site was designed to function as a riparian wetland system with associated wet flats. Hydrology in the riparian areas is driven primarily by over bank flooding, while precipitation is the primary hydrologic influence in wet flat areas. Model simulations performed during the design phase of the project indicate that the water table will draw down from April through July;

WETLAND HYDROPERIOD

> 7 %
5–7 %
< 5 %

AW1
AW2
AW3
AW4
AW5
AW6
RAW1
RAW2
RAW3

Floogie
Hydrologic Success

Figure 4

100 50 0 100 200
SCALE (FT)

Figure 5a. Groundwater Gauges

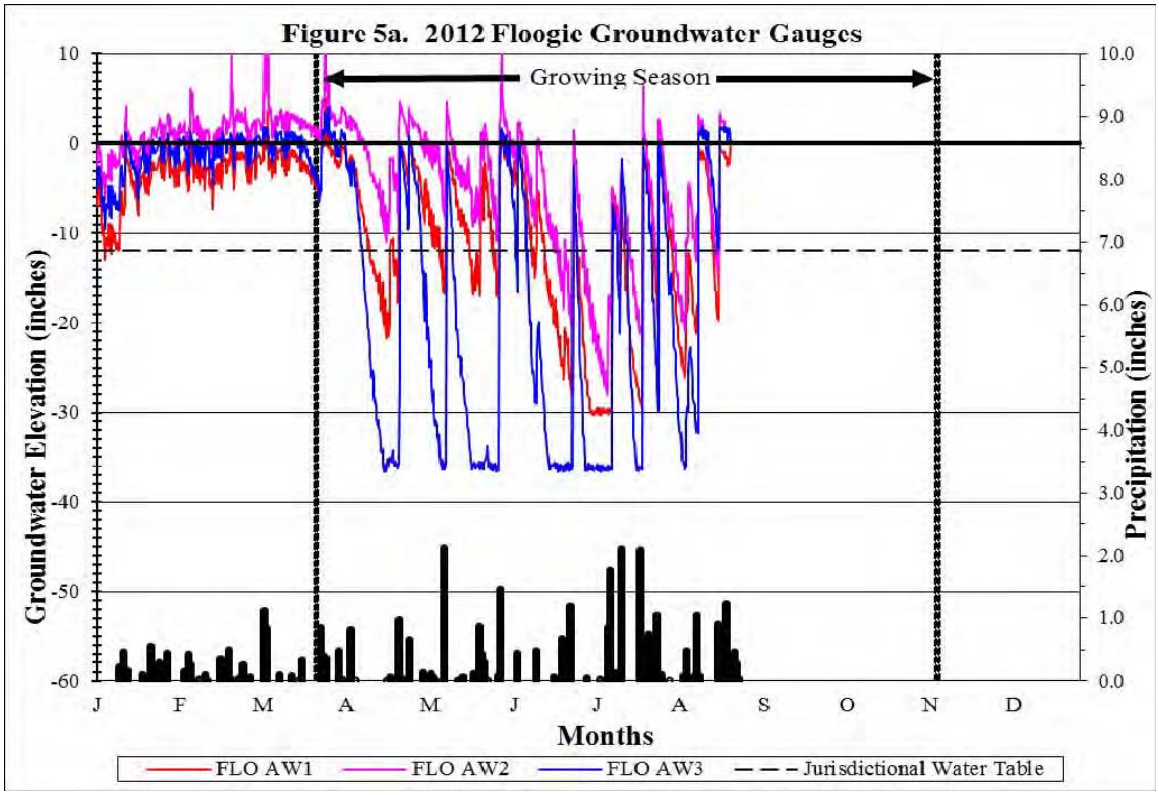


Figure 5b. Groundwater Gauges

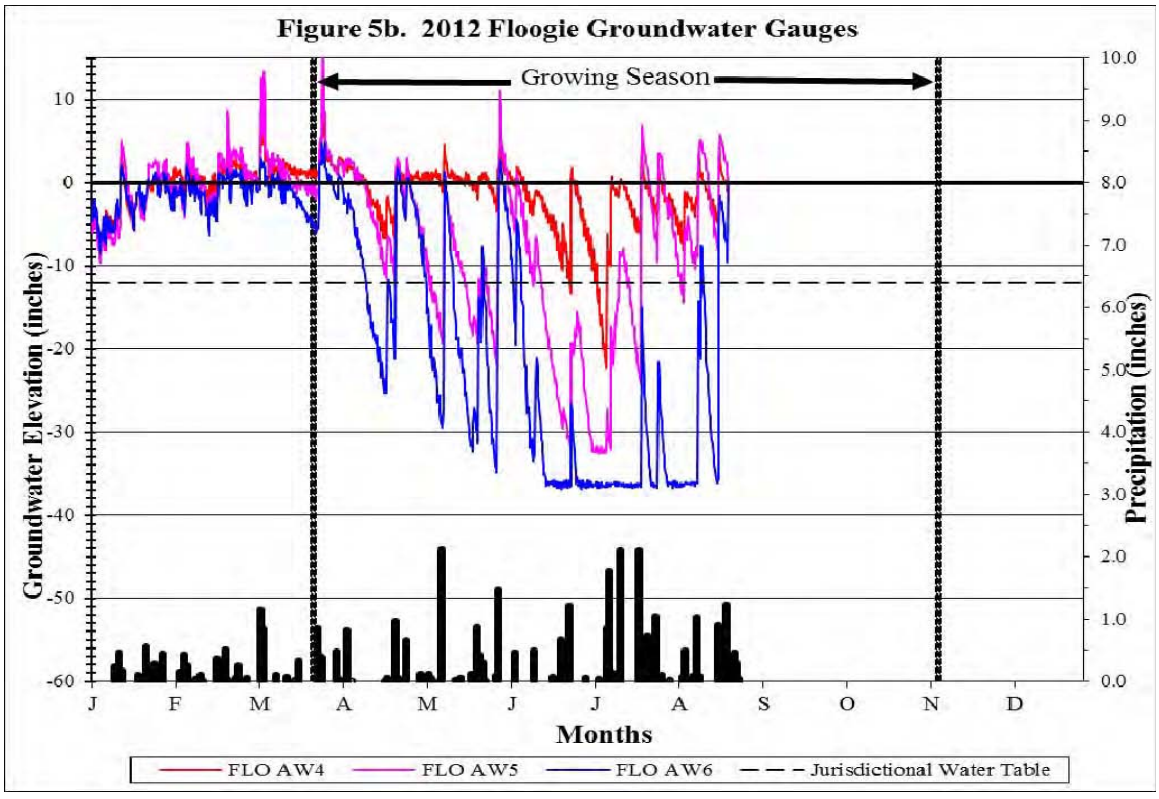
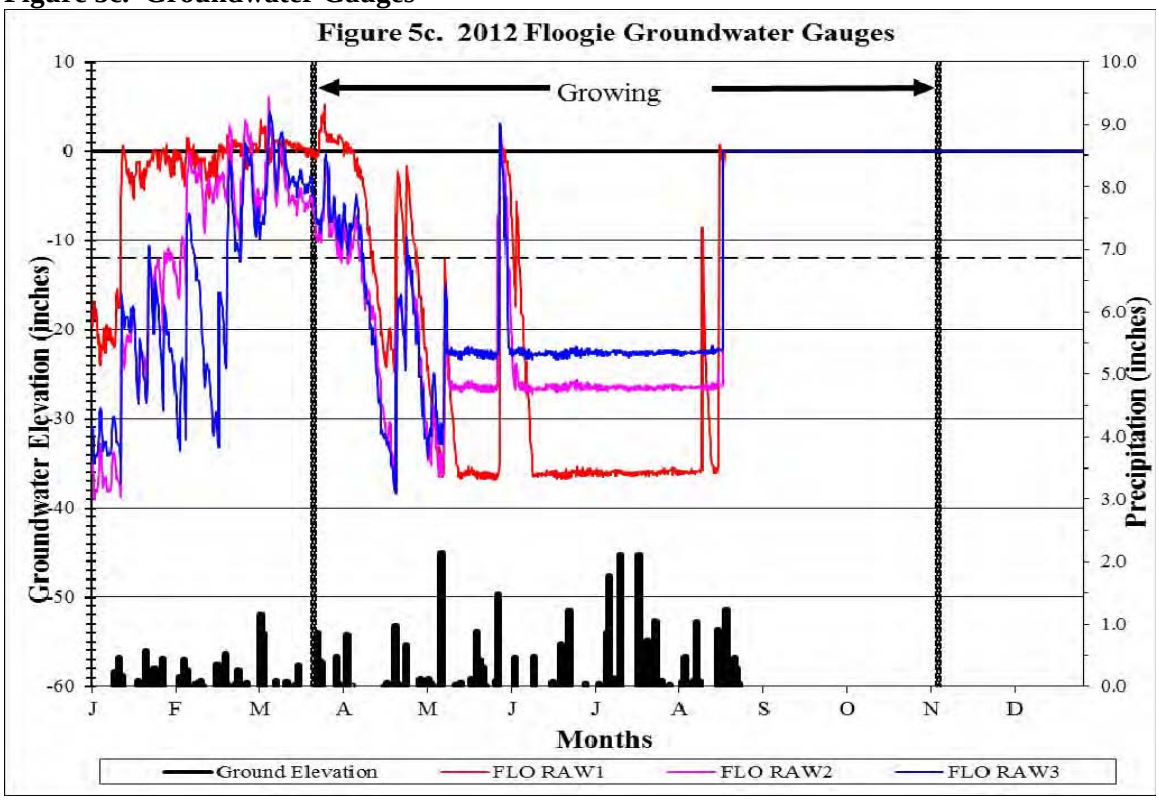


Figure 5c. Groundwater Gauges



however, the restored channel will maintain an elevated water table throughout the floodplain area year-round. The data collected for the 2012 growing season for this site indicate that it is performing as described in the Mitigation Plan, with all monitoring stations exceeding the hydrology success criterion.

3.3.1 Site Data

Year 5 monitoring demonstrates that most of the site is functioning as designed, with varying degrees of wetness and saturation across the site. All six automated gauges exceeded the seven percent hydrologic success criterion during the early part of the growing season. All reference gauges also exceeded the seven percent hydrologic success criterion.

3.3.2 Reference Data

The approved Mitigation Restoration Plan for the site provides that if the rainfall data for any given year during the monitoring period is not normal, the reference wetland data can be accessed to determine if there is a positive correlation between the performance of the restoration site and the natural hydrology of the reference site.

Three automated reference wells were observed during the 2012 growing season. The same hydroperiod statistics were calculated for each reference monitoring station during the growing season as were calculated for the site monitoring stations (**Table 4**). The reference wetland groundwater gauges exhibited wetland hydroperiods of 8 to 10 percent of the growing season. Raw data collected from the monitoring gauges is provided in Appendix C.

3.3.3 Climate Data

Table 5 and **Figure 6** compare the 2012 monthly rainfall to historical precipitation for Bertie County. Observed precipitation data were collected from the Greens Cross automated weather station in Windsor, NC (Bertie County). The rainfall total from the Greens Cross weather station was generally within normal limits for the early part of the growing season and most of the summer. The months of March, May, and July were above normal limits. Due to a malfunctioning unit, data from the onsite automatic tipping bucket could not be obtained.

3.4 HYDROLOGIC CONCLUSIONS

Data collected from the groundwater monitoring gauges on the Floogie Mitigation Site in 2012 indicate that all of the hydrology monitoring stations recorded hydroperiods exceeded seven percent of the growing season. Thus, all the hydrology monitoring stations meet the hydrologic success criterion for 2012. The reference hydrology results further confirm the success of the restoration areas.

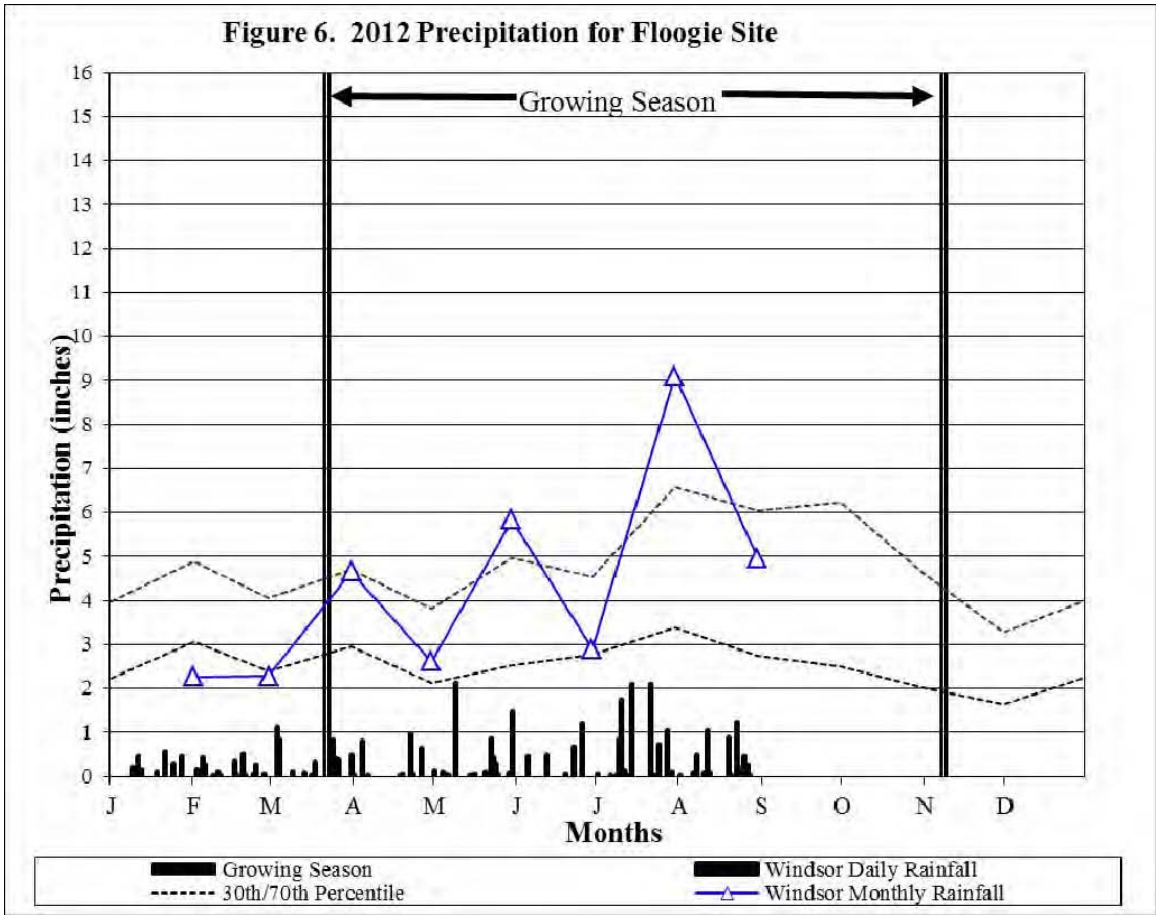
In Windsor, the Greens Cross weather station rainfall data indicates the 2012 growing season rainfall amounts were within normal limits for the early part of the growing season and most of the summer. The months of March, May, and July were above normal limits.

Table 5. Comparison of Normal Rainfall to Observed Rainfall

Month	Average	Normal Limits		Edenton Precipitation
		30 Percent	70 Percent	
January	4.11	3.07	4.90	2.46
February	3.37	2.38	4.07	2.71
March	3.98	2.96	4.70	4.91
April	3.00	2.12	3.82	2.33
May	3.99	2.53	4.98	7.31
June	3.87	2.78	4.53	3.46
July	5.37	3.39	6.59	3.93
August	4.86	2.74	6.04	4.96
September	5.10	2.50	6.24	
October	3.23	2.02	4.63	
November	2.71	1.63	3.28	
December	3.30	2.24	3.97	
Annual		40.30	51.25	
Total	46.89			32.07

*Data collected through August 30

Figure 6. Precipitation Comparison



4.0 VEGETATION

4.1 VEGETATION SUCCESS CRITERIA

Successful establishment of vegetation in wetland restoration and riparian areas will be demonstrated by the survival of 260 planted stems following Year 5 monitoring. The site must also meet the interim success criterion of the survival of at least 320 planted stems per acre at the end of the Year 3 monitoring period. Up to 20 percent of the site species composition may be comprised of non-invasive volunteers. Remedial action may be required should volunteers present a problem or exceed 20 percent composition.

A digital image photo log will be used to subjectively evaluate the restoration site over time. A series of images over the five year monitoring period should demonstrate maturation of planted vegetation and volunteer hydrophytic species.

4.2 DESCRIPTION OF SPECIES AND VEGETATION MONITORING

Eighteen semi-permanent vegetation sampling plots were established within the planted restoration areas to monitor the success of planted vegetation. The wetland vegetation plots are 0.10 acres in size (Plots 1 through 5), and the riparian vegetation plots are 0.05 acres in size (Plots 6 through 18). The vegetation plots are distributed across the site, but the precise location and

orientation of the plots was random (see locations on as-built drawings in **Appendix A**). The plots cover approximately two percent of the restored site. Eight tree species were planted on the Site (**Table 6**).

Table 6. Planted Tree Species

Common Name	Scientific Name	FAC Status
Bald Cypress	*Taxodium distichum*	OBL
Green Ash	*Fraxinus pennsylvanica*	FACW
Laurel Oak	*Quercus laurifolia*	FACW-
River Birch	*Betula nigra*	FACW
Swamp blackgum	*Nyssa biflora*	OBL
Swamp Chestnut Oak	*Quercus michauxii*	FACW-
Water Tupelo	*Nyssa aquatica*	OBL
Willow Oak	*Quercus phellos*	FACW-

All of the planted stems inside each plot were flagged with colored flagging to help in locating them in the future. Each stem is tagged with a sequentially numbered aluminum tag.

4.3 RESULTS OF VEGETATION MONITORING

Stem counts for each of the five wetland and 13 stream monitoring stations are presented by species in **Table 7.** Water tupelo counts may also include swamp blackgum, as these two similar species are difficult to accurately distinguish at the seedling stage. One hickory stem was recorded and most likely resulted from an errant stem included from the nursery. A few of the numbered tags have been lost or damaged, or possibly buried beside the stem. This may be due to small animal theft or to tags being washed over small stems during flooding after planting. A number of the species have exhibited re-sprouting, resulting in a positive change in survival. Due to thick vegetation, some stems are "lost" and "rediscovered" in later years, especially where stems die back and resprout.

Table 7. Results of 2012 Vegetation Monitoring – Planted Species by Plot

Species	Plots																	
	Wetland Plots					Stream Buffer Plots												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Bald Cypress	6	10	4	22	7	10	5	13	5	9	12	4	12	10	11	3		2
Green Ash	5	9	27	3	13		7	8	4	1	3	17	7	7	4	6	2	6
Hickory		1																
Laurel Oak	2									1		1	2		1	5		
Overcup Oak	10	11	13	7	7	4	2	7	10	5	6	4	2	8	1	7	11	4
Swamp Tupelo	18	8	4	20	16	8	4	7	4	7	6	9	5	7	11	11		4
Willow Oak	10		6	4	12	4	4	7	8	25	7	7	8	7	10	9	9	8

Most of the planted stems are healthy with recent growth. Many stems have reached or exceeded 15 feet in height. The planted stems in the wetland monitoring plots ranged from 390 to 560 stems per acre with an average of 510 stems per acre (**Table 8**). The planted stems in the stream

buffer monitoring plots ranged from 440 to 960 stems per acre with an average of 684 stems per acre (**Table 8**). All plots have met the minimum criterion of 320 stems per acre after three years.

Table 8. Summary of Results

Plot #	As-Built Stems Planted	Stems Year 1	Stems Year 2	Stems Year 3	Stems Year 4	Stems Year 5	Stems per Acre Year 5
Wetland Plots (0.10 acre)							
Plot 1	61	55	53	53	51	51	510
Plot 2	60	46	49	40	39	39	390
Plot 3	70	66	65	64	56	54	540
Plot 4	69	58	61	57	55	56	560
Plot 5	65	57	53	54	55	55	550
						Average	**510.0**
						Range	**390-560**
Riparian Buffer Plots (0.20 acre)							
Plot 6	40	31	24	19	25	26	520
Plot 7	37	22	17	17	22	22	440
Plot 8	49	44	43	43	42	42	840
Plot 9	45	33	28	29	29	31	620
Plot 10	50	48	49	47	47	48	960
Plot 11	47	36	35	34	33	34	680
Plot 12	45	43	42	42	35	42	840
Plot 13	40	39	37	36	33	36	720
Plot 14	51	47	38	41	40	39	780
Plot 15	48	43	41	39	35	38	760
Plot 16	49	48	41	42	40	41	820
Plot 17	30	28	28	27	24	22	440
Plot 18	28	27	26	26	24	24	480
						Average	**684.6**
						Range	**440-960**

The most commonly found volunteer species within the plots were also monitored to determine composition and potential effect on success criteria (**Table 9**). Volunteer stems are limited in most plots and represent many species. Nearly all of the seedlings are small and are do not present any competition problems at this time. The most common appear to be species having high seed production and wide dispersal and include eastern baccharis *(Baccharis halimifolia*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and Chinese privet (*Ligustrum sinensis*). Within the downstream reach adjacent to the forested wetland, laurel oak (*Quercus laurifolia*), red maple, and tulip tree (*Liriodendron tulipifera*) are common volunteers.

Table 9. Common Volunteer Woody Species

Common Name	Scientific Name	FAC Status
Red Maple	*Acer rubrum*	FAC
Eastern Baccharis	*Baccharis halimifolia*	FAC
Common Buttonbush	*Cephalanthus occidentalis*	OBL
Coastal Sweetpepperbush	*Clethra alnifolia*	FACW
Titi	*Cyrilla racemiflora*	FACW
Persimmon	*Diospyros virginiana*	FAC
Green Ash	*Fraxinus pennsylvanica*	FACW
Privet	*Ligustrum sinense*	FAC
Sweetgum	*Liquidambar styraciflua*	FAC+
Tuliptree	*Liriodendron tulipifera*	FAC
Wax myrtle	*Morella cerifera*	FAC+
Loblolly Pine	*Pinus taeda*	FAC
Eastern Cottonwood	*Populus deltoides*	FAC+
Laurel Oak	*Quercus laurifolia*	FACW
Willow Oak	*Quercus phellos*	FACW-
Winged Sumac	*Rhus copallinum*	NI
Black Willow	*Salix nigra*	OBL
Elderberry	*Sambucas canadensis*	FACW-

A visual estimate of herbaceous vegetation cover was provided to assess the overall stability of the site (**Table 10**). The herbaceous cover is typically dense across most of the site and has increased from the previous year. Hydrophytic herbaceous vegetation is found across the entire site and includes common rush (*Juncus effusus*), climbing hempvine (*Mikania scandens*), arrowleaf tearthumb (*Persicaria sagittata*), deer tongue (*Dichanthelium clandestinum*), woolgrass (*Scirpus cyperinus*),giant cane (*Arundinaria gigantea*), threeway sedge (*Dulichium arundinaceum*), and sedges (*Carex* sp.). The other frequently occurring herbaceous species are Canada goldenrod (*Solidago canadensis*), blackberry (*Rubus argutus*), and dog fennel (*Eupatorium capillifolium*). The herbaceous vegetation does not appear to be presenting any problems with tree survival or growth at this time.

Table 10. Estimated Herbaceous Total Percent Cover

Plot Number	Estimated Percent Cover 2008	Estimated Percent Cover 2009	Estimated Percent Cover 2010	Estimated Percent Cover 2011	Estimated Percent Cover 2012
1	100%	97 %	99%	99%	99%
2	100%	95 %	99%	99%	99%
3	100%	92 %	98%	99%	99%
4	100%	92 %	98%	99%	99%
5	100%	98 %	98%	99%	99%
6	95%	96 %	96%	98%	99%
7	90%	97 %	98%	98%	99%
8	100%	75 %	85%	95%	99%
9	90%	96 %	96%	96%	98%
10	85%	97 %	97%	97%	98%
11	95%	90 %	95%	98%	100%
12	100%	93 %	98%	98%	100%
13	90%	92 %	95%	95%	99%
14	85%	90 %	95%	96%	99%
15	95%	98 %	98%	98%	98%
16	100%	98 %	98%	99%	99%
17	90%	98 %	98%	98%	95%
18	85%	93 %	95%	95%	95%

The invasive species Chinese privet (*Ligustrum sinense*) and Japanese honeysuckle (*Lonicera japonica*) were observed in most of the plots. A few plots contain sericea lespedeza (*Lespedeza cuneata*). Japanese honeysuckle is common and has begun to constrict or smother individual tree stems. These invasive species may displace desirable vegetation in the future. Maintenance invasive species control is planned in these areas. Remedial action will be taken to prohibit and eliminate the possible threat of over growing and or loss of desired species. The occurrences of these species are typically associated with the nearby existing populations of these invasive species and are from regenerating root sprouts and seeds. Where present, eastern baccharis (*Baccharis halimifolia*) and trumpet creeper (*Campsis radicans*) have declined in vigor.

4.4 VEGETATION OBSERVATIONS & CONCLUSIONS

Hydrophytic herbaceous plants were observed across the entire site, particularly in areas of periodic inundation and most plots are dominated by one or more hydrophytic species. Some plots have very dense cover of common rush. The presence of herbaceous wetland plants confirms the presence of wetland hydrology on the site.

The common upland species present are Canada goldenrod, sericea lespedeza, and dog fennel. Weedy species occur throughout the site, but density has decreased over the monitoring period. The presence of this weedy vegetation is a result of the seed bank from previous cultivation practices but has decreased. The weedy vegetation is not posing any wide spread problems for the planted stems at this time. The invasive species Chinese privet and Japanese honeysuckle were observed in a most plots, and may displace desirable vegetation in the future. Japanese honeysuckle is starting to cover planted woody stems in some areas and is smothering or strangling the planted stems. This may become a problem in the future. Invasive species should continue to be evaluated within the entire easement to ensure that these species do not become a concern for the site.

For the 2012 monitoring year, the average number of stems per acre on site is 636 overall with a density in the wetland plots of 510 stems per acre and 684 stems per acre in the stream buffer plots. Density ranges from 390 to 5600 stems per acre in the wetland plots and 440 to 960 stems per acre in the buffer plots. The lowest planted stem density was recorded at Plot 2 at 390 stems per acre. The site has achieved the minimum success interim criterion of 320 stems per acre after year three. The site as a whole meets the final success criterion of at least 260-planted stems per acre by the end of year five.

5.0 STREAM MONITORING

5.1 STREAM SUCCESS CRITERIA

As stated in the approved Mitigation Plan, the stream restoration success criteria for the site includes the following:

- *Bankfull Events*: Two bankfull flow events must be documented within the five-year monitoring period.
- *Cross-Sections*: There should be little change in as-built cross sections. Cross sections shall be classified using the Rosgen stream classification method and all monitored cross-sections should fall within the quantitative parameters defined for "E" or "C" type channels.
- *Longitudinal Profiles*: The longitudinal profiles should show that the bedform features are remaining stable, e.g. they are not aggrading or degrading. Bedforms observed should be consistent with those observed in "E" and "C" type channels.
- *Photo Reference Stations*: Photographs will be used to subjectively evaluate channel aggradation or degradation, bank erosion, success of riparian vegetation and effectiveness of erosion control measures.
- *Benthic Macroinvertebrates*: Sampling of benthic macroinvertebrates within the restored stream channel shall be conducted in Year 1, Year 3, and Year 5 of post-restoration monitoring.

5.2 STREAM MORPHOLOGY MONITORING PLAN

The stream monitoring program will be implemented to document system development and progress toward achieving the success criteria. The monitoring program will be undertaken for five years, or until the final success criteria are achieved, whichever is longer.

5.2.1 Cross Sections

Two permanent cross sections will be installed per 1,000 linear feet of stream restoration work, with one located at a riffle and one located at a pool. Each cross section will be marked on both banks with permanent pins to establish the exact transect used. A common benchmark will be used for cross sections to facilitate easy comparison of year-to-year data. The annual cross-section survey will include points measured at all breaks in slope, including top of bank, bankfull, inner berm, edge of water, and thalweg, if the features are present. Riffle cross sections will be classified using the Rosgen stream classification system.

5.2.2 Longitudinal Profile

A longitudinal profile will be measured annually throughout the five-year monitoring period. The profile will be measured along a representative length of restored channel. Measurements will include thalweg, water surface, bankfull, and top of low bank. Each of these measurements will

be taken at the head of each feature, for example, shallow, pool, and the max pool depth. The survey will be tied to a permanent benchmark.

5.2.3 Hydrology

The occurrence of bankfull events within the monitoring period will be documented by the use of a crest gauge and photographs. The two crest gauges will record the highest watermark between site visits, and the gauge will be checked monthly to document high flows. Digital images will be used to document the occurrence of debris lines and sediment deposition on the floodplain during monitoring site visits. In addition, the flow observations will be recorded for the headwater stream restoration. These may include wrack lines, direct observations, dye tests, or other direct or indirect observations of flow.

5.2.4 Photo Reference Stations

Photographs will be used to subjectively evaluate channel aggradation or degradation, bank erosion, success of riparian vegetation and effectiveness of erosion control measures.

5.3 STREAM MORPHOLOGY MONITORING RESULTS

Overall, the channel is stable with a few areas of concern. **Table 11** presents stream areas that may require further observation.

Table 11. Stream Areas Requiring Observation

ID	Station	Feature	Problem
1	1+40	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
2	3+50	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
3	9+60	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
4	20+00	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
5	23+00	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
6	27+50	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
7	37+00	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*

*****Beaver trapping is currently ongoing, beaver dam removal will take place following the removal of beavers.

5.3.1 Hydrology

One bankfull event was recorded in March for Crest Gauge 1 (CG1). No recordings were made during the remainder of the growing season due to the loss of the cork reservoir and fire ant populations within the gauge. Crest Gauge 2 (CG2) was lost in a bankfull event before the beginning of the growing season and was not replaced. The stream flow recorded on the upstream gauge (CG1) was 1.1 feet above bankfull elevation. The site meets the success criterion of having two bankfull flow events within the five-year monitoring period due to 17 previously recorded bankfull events in years 1-4.

5.3.2 Cross Sections

Year 5 cross section monitoring data for stream stability were collected during August 2012 and were compared to baseline data collected in March 2008, as well as Year 1, Year 2, Year 3, and Year 4 cross section data (**Appendix B**). All monitored cross sections were stable and showed little change in channel dimension between monitoring years. Cross Section 15 experienced approximately 1.5 feet of bed loss between As-Built and Year 1 monitoring. However, Cross Section 15 has been stable since Year 1 monitoring.

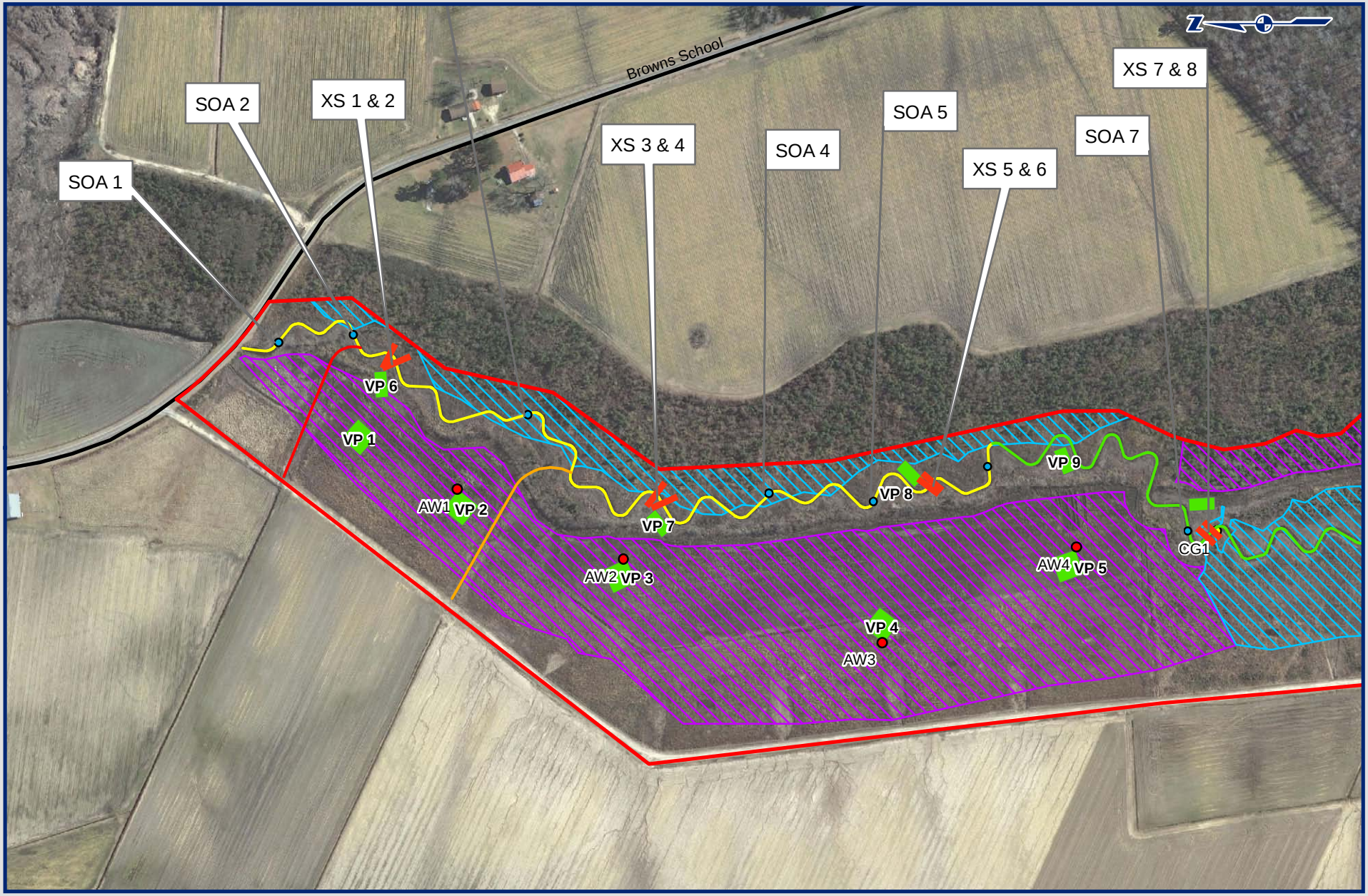
5.3.3 Longitudinal Profile

A longitudinal profile survey was conducted in Year 5. Coastal plain swamp streams are dynamic in nature, and some channel adjustment is expected. Overall, the profile survey indicated little change to channel dimensions (**Appendix B**).

5.4 BENTHIC MACROINVERTEBRATE SURVEY RESULTS

5.4.1 Description and Results of Benthic Monitoring

Pre-construction monitoring was performed prior to disturbance of the existing channel in January 2008. Following restoration, Year 1 monitoring was conducted in January 2009. Additional monitoring was conducted in January of 2011 (Year 3) and will be conducted again in 2013 (Year 5). The Year 5 data, which will be collected in January of 2013, will be presented in a supplemental monitoring report and within the closeout report.



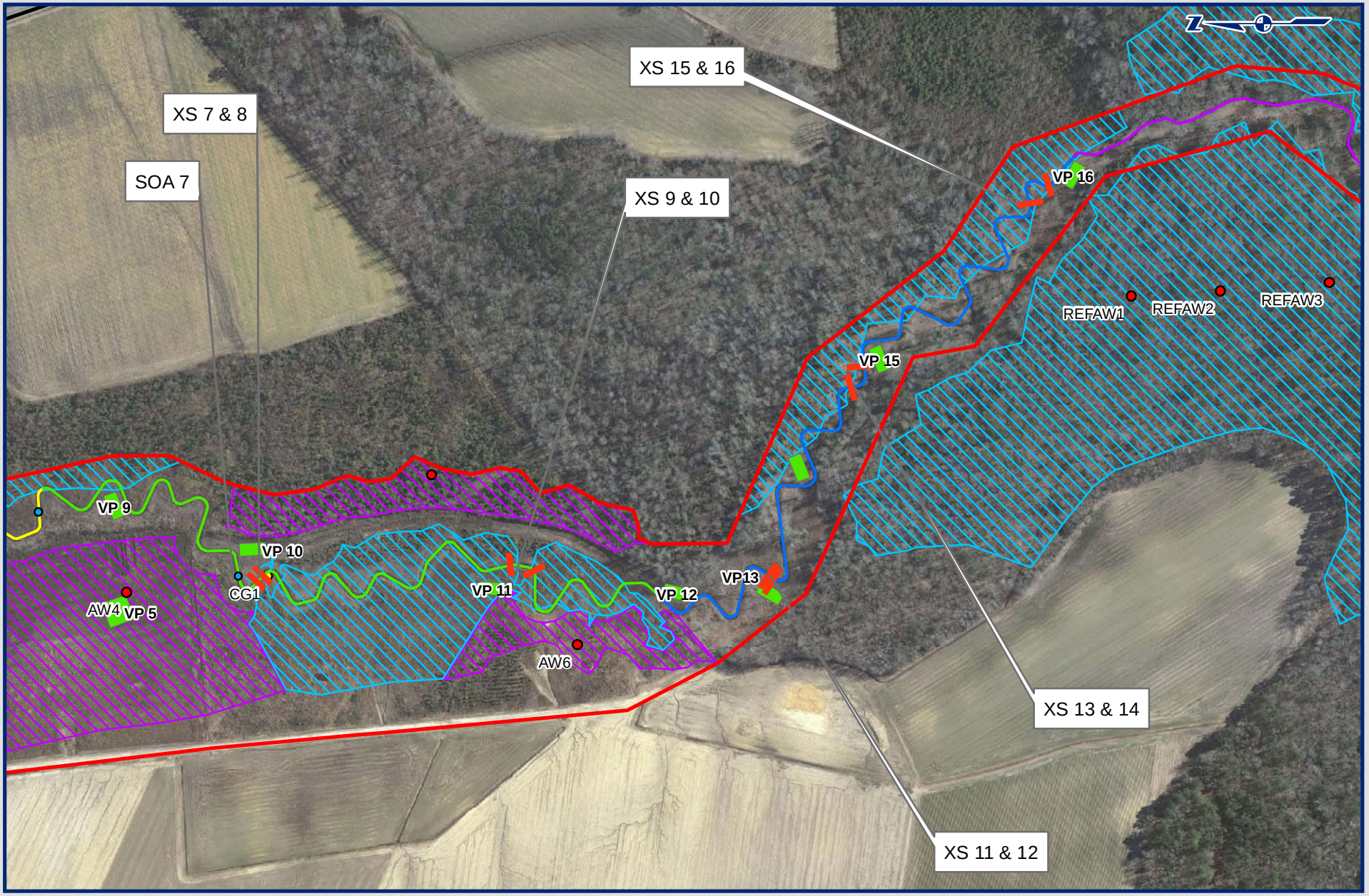
2010 NC OneMap Aerial Photography

0 175 350 700 Feet

1 inch = 350 feet

Figure 7a
Current Conditions Map
Floogie Mitigation Site

Stream Reach Segments
- Headwater 1A
- Headwater 1B
- Reach 1
- Reach 2
- Reach 3
- Reach 4
- Stream Observation Areas
- Cross Sections
- Crest Gauge
- Monitoring Well
- Easement
- Vegetation Plots
- NCDOT Roads
- Existing Wetlands
- Wetland Restoration



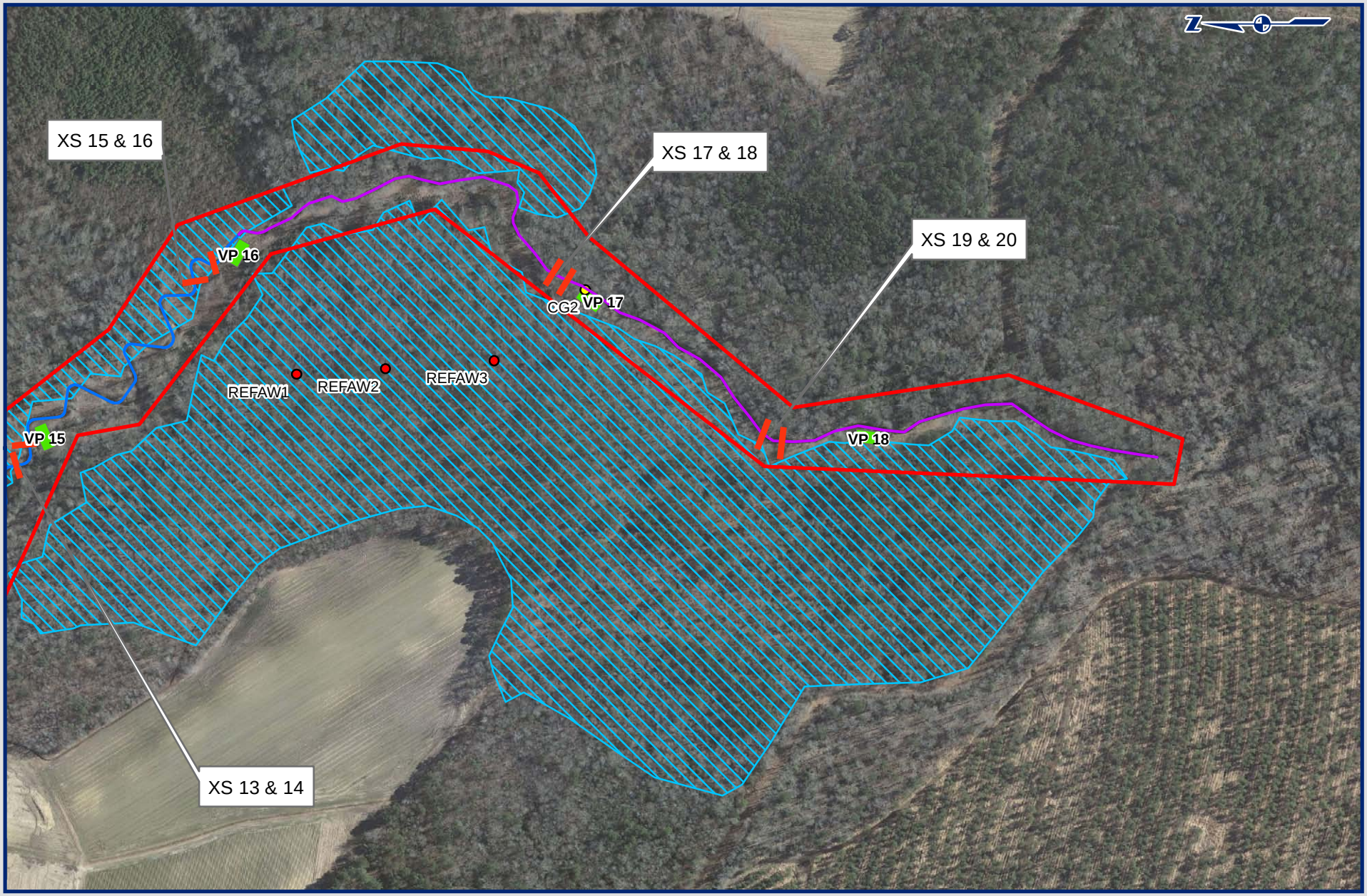
2010 NC OneMap Aerial Photography

0 175 350 700 Feet

1 inch = 350 feet

Figure 7b
Current Conditions Map
Floogie Mitigation Site

Stream Reach Segments
- Headwater 1A
- Headwater 1B
- Reach 1
- Reach 2
- Reach 3
- Reach 4
- Stream Observation Areas
- Cross Sections
- Crest Gauge
- Monitoring Well
- Easement
- Vegetation Plots
- NCDOT Roads
- Existing Wetlands
- Wetland Restoration



2010 NC OneMap Aerial Photography

0 175 350 700 Feet

1 inch = 350 feet

Figure 7c
Current Conditions Map
Floogie Mitigation Site

Stream Reach Segments
- Headwater 1A
- Headwater 1B
- Reach 1
- Reach 2
- Reach 3
- Reach 4
- Stream Observation Areas
- Cross Sections
- Crest Gauge
- Monitoring Well
- Easement
- Vegetation Plots
- NCDOT Roads
- Existing Wetlands
- Wetland Restoration

5.5 STREAM CONCLUSIONS

In-stream structures installed within the restored stream included log vanes, bedded log structures, woody debris bundles, and root wads. Visual observations of structures throughout the 2012 growing season have indicated that most structures are stable and functioning as designed. Localized areas of elevated profile (shallows) have been colonized by wetland plant species due to low stream flow, but do not appear to be impounding water or causing increased deposition. Localized areas of erosion are present but do not present a problem to the overall stability of the project. The channel appears to be moving toward stability.

Photographs were taken throughout the monitoring season to document the evolution of the restored stream channel (**Appendix D**). Herbaceous vegetation is moderately dense to dense along the restored stream. Pools have maintained a variety of depths and habitat qualities, depending on the location and type of scour features (logs, root wads, transplants, etc.).

6.0 CONCLUSIONS AND RECOMMENDATIONS

- All hydrology monitoring gauges recorded consecutive hydroperiods for at least 7 percent of the growing season for 2012.

- The restored stream channel has remained stable and is providing the intended habitat and hydrologic functions. All monitoring cross sections and longitudinal profile for 2012 showed very little adjustment in stream dimension over the previous year.

- Vegetation monitoring has documented the average number of stems per acre on the site to be 636, with the range of stem density of 390 to 5600 stems per acre. All vegetation plots have achieved the success criterion of 260 trees per acre at monitoring year 5.

- Benthic macroinvertebrate monitoring will be conducted in January 2013 and the results will be presented in a supplemental monitoring report and the closeout report to follow.

Table 12. Summary of Vegetative Monitoring Data 2008-2012

Plot	Planted Stems Per Acre					
	Base	2008	2009	2010	2011	2012
Wetland Plots (0.10 acre)						
1	610	550	530	530	510	510
2	600	460	490	400	390	390
3	720	660	650	640	560	540
4	700	580	610	570	550	560
5	650	570	530	540	550	550
Stream Buffer Plots (0.20 acre)						
6	820	620	480	380	500	520
7	760	440	340	340	440	440
8	980	880	860	860	840	840
9	900	660	560	580	580	620
10	1000	960	980	940	940	960
11	940	720	700	680	660	680
12	920	860	840	840	700	840
13	800	780	740	720	660	720
14	1020	940	760	820	800	780
15	960	860	820	780	700	760
16	980	960	820	840	800	820
17	580	560	560	540	480	440
18	540	540	520	520	480	480
Average	**804**	**700**	**655**	**640**	**619**	**636**

Table 13. Summary of Hydrology Monitoring Data 2008-2012

Gauge	Max Consecutive Hydroperiod (%)				
	2008	2009	2010	2011	2012
AW1	26	16	16	13	9
AW2	17	15	8	15	39
AW3	9	14	7	14	8
AW4	22	16	11	15	41
AW5	21	16	12	20	19
AW6	9	15	12	19	9
RAW1	19	16	15	20	10
RAW2	15	13	12	15	8
RAW3	8	13	13	13	8

Table 14. Summary of Crest Gauge Data 2008-2012

	2008		2009		2010		2011		2012	
	CG1	CG2	CG1	CG2	CG1	CG2	CG1	CG2	CG1	CG2
Number of Bankfull Events	2	2	4	4	6	5	3	2	1	NA
Maximum Height Above Bankfull (feet)	1.2		1.6		2.1		2.6		1.1	

Table 15. Summary of Morphologic Monitoring Parameters 2008-2012

Parameter	Cross Section 1 Pool						Cross Section 2 Riffle						Cross Section 3 Pool						Cross Section 4 Riffle					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	16.8	16.9	17.2	18.9	19.8	17.2	16.4	19.0	20.4	18.6	17.8	16.9	19.3	18.8	18.8	20.0	18.9	19.4	22.4	19.9	20.3	16.9	17.6	17.3
Floodprone Width (ft)	73.0	70.8	70.9	71.0	71.0	71.0	79.3	77.4	76.9	77.6	77.6	77.6	77.5	76.8	76.4	77.0	77.0	77.0	72.7	65.1	67.5	71.3	71.3	71.3
BF Cross Sectional Area (ft^2)	34.1	33.9	33.5	34.6	32.6	32.2	18.7	21.3	22.6	20.9	19.4	20.0	49.0	41.2	42.0	40.7	42.1	41.9	26.2	22.4	21.9	19.2	20.0	21.1
BF Mean Depth (ft)	2.0	2.0	1.9	1.8	1.6	1.9	1.1	1.1	1.1	1.1	1.1	1.2	2.5	2.2	2.2	2.0	2.2	2.2	1.2	1.1	1.1	1.1	1.1	1.2
BF Max Depth (ft)	3.8	3.7	3.7	3.7	3.6	3.4	2.4	2.5	2.5	2.3	2.4	2.4	4.9	4.8	4.6	4.5	4.5	4.3	2.9	2.6	2.5	2.2	2.3	2.6
Width/Depth Ratio	8.3	8.4	8.9	10.3	12.0	9.1	14.5	17.0	18.4	16.5	16.3	14.3	7.6	8.6	8.5	9.8	8.5	9.0	19.2	17.6	18.8	14.8	15.6	14.2
Entrenchment Ratio	4.3	3.0	4.1	3.8	3.6	4.1	4.8	4.1	3.8	4.2	4.4	4.6	4.0	4.1	4.1	3.9	4.1	4.0	3.2	3.3	3.3	4.2	4.0	4.1
Wetted Perimeter(ft)	18.9	18.9	19.2	20.9	21.8	19.4	17.2	19.7	21.1	19.2	18.5	17.7	22.2	21.6	21.2	22.4	21.1	21.7	23.3	20.6	21.1	17.5	18.4	18.3
Hydraulic radius (ft)	1.8	1.8	1.7	1.7	1.5	1.7	1.1	1.1	1.1	1.1	1.0	1.1	2.2	1.9	2.0	1.8	2.0	1.9	1.1	1.1	1.0	1.1	1.1	1.2
Parameter	Cross Section 5 Riffle						Cross Section 6 Pool						Cross Section 7 Riffle						Cross Section 8 Pool					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	16.7	16.5	16.9	18.3	17.4	17.1	17.4	18.1	17.7	23.4	20.8	17.7	18.5	20.3	17.7	18.7	19.5	20.2	19.2	20.0	20.9	21.8	20.9	18.8
Floodprone Width (ft)	69.4	66.2	65.9	66.2	66.2	66.5	69.0	66.9	61.3	67.3	67.3	67.3	62.2	61.1	57.6	59.7	59.7	59.7	60.2	60.0	59.4	60.1	60.1	60.1
BF Cross Sectional Area (ft^2)	16.4	15.8	15.4	13.7	16.0	14.1	28.8	29.7	29.7	30.0	33.4	28.8	16.7	19.3	17.3	17.5	24.9	25.5	26.0	26.4	27.6	27.8	29.8	28.9
BF Mean Depth (ft)	1.0	1.0	0.9	0.7	0.9	0.8	1.7	1.6	1.7	1.3	1.6	1.6	0.9	0.9	1.0	0.9	1.3	1.3	1.4	1.3	1.3	1.3	1.1	1.1
BF Max Depth (ft)	2.0	2.0	1.9	1.8	2.0	1.8	3.4	3.4	3.4	2.8	3.2	3.2	1.4	1.7	1.6	1.6	2.1	2.2	2.5	2.5	2.4	2.3	2.1	2.3
Width/Depth Ratio	17.0	17.1	18.4	24.4	18.8	20.7	10.5	11.1	10.6	18.3	12.9	10.9	20.4	21.4	18.1	19.9	15.3	16.0	14.1	15.2	15.9	17.1	24.8	24.2
Entrenchment Ratio	4.2	4.0	3.9	3.6	3.8	3.9	4.0	3.7	3.5	2.9	3.2	3.8	3.4	3.0	3.3	3.2	3.1	3.0	3.1	3.0	2.8	2.8	2.2	2.3
Wetted Perimeter(ft)	17.2	17.0	17.3	18.8	17.8	17.6	19.0	19.7	19.3	24.6	22.1	21.7	18.9	21.2	18.7	19.1	20.3	20.9	20.2	20.9	22.0	22.7	27.7	24.2
Hydraulic radius (ft)	1.0	0.9	0.9	0.7	0.9	0.8	1.5	1.5	1.5	1.2	1.5	1.3	0.9	0.9	0.9	0.9	1.2	1.2	1.3	1.3	1.3	1.2	1.1	1.1
Parameter	Cross Section 9 Riffle						Cross Section 10 Pool						Cross Section 11 Riffle						Cross Section 12 Pool					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	19.0	19.1	18.6	18.8	18.5	18.3	22.5	21.7	22.1	23.4	19.1	19.3	19.4	19.8	19.3	19.4	19.9	20.1	13.0	15.8	16.2	16.0	19.6	17.4
Floodprone Width (ft)	66.1	66.0	66.0	65.9	65.9	65.9	80.5	80.2	80.6	80.7	80.7	80.7	77.9	74.8	68.8	74.9	74.9	74.9	78.7	76.7	76.1	75.9	75.9	75.9
BF Cross Sectional Area (ft^2)	32.7	29.5	29.0	28.4	25.4	25.1	40.1	40.1	41.1	36.8	30.5	31.5	21.5	24.1	23.6	23.8	23.2	23.0	25.7	27.4	28.8	28.0	33.0	26.8
BF Mean Depth (ft)	1.7	1.5	1.6	1.5	1.4	1.4	1.8	1.8	1.9	1.6	1.6	1.6	1.1	1.2	1.2	1.1	0.9	1.0	2.0	1.7	1.8	1.8	1.7	1.5
BF Max Depth (ft)	2.9	2.7	2.6	2.6	2.4	2.5	3.8	3.7	3.7	3.4	2.9	3.2	2.7	2.8	2.7	2.7	2.6	2.7	3.9	3.9	3.9	3.9	4.0	3.7
Width/Depth Ratio	11.1	12.4	12.0	12.4	13.5	13.3	12.7	11.8	11.9	14.8	11.9	11.8	17.5	16.3	15.8	18.1	28.2	24.4	6.6	9.2	9.2	9.1	11.7	11.3
Entrenchment Ratio	3.5	3.4	3.5	3.5	3.6	3.6	3.6	3.7	3.7	3.5	4.2	4.1	4.0	3.8	3.6	3.6	2.9	3.1	6.1	4.8	4.7	3.9	3.9	4.3
Wetted Perimeter(ft)	20.1	20.1	19.6	19.9	19.4	19.2	24.2	23.8	24.2	24.6	20.1	20.5	20.5	20.6	20.1	21.6	26.4	24.6	15.3	17.7	18.1	18.1	21.5	19.3
Hydraulic radius (ft)	1.6	1.5	1.5	1.4	1.3	1.3	1.7	1.7	1.7	1.5	1.5	1.5	1.1	1.2	1.2	1.1	0.9	0.9	1.7	1.5	1.6	1.5	1.5	1.4

Parameter	Cross Section 13 Pool						Cross Section 14 Riffle						Cross Section 15 Riffle						Cross Section 16 Pool					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	19.7	19.2	18.5	22.8	22.5	18.2	18.8	18.4	19.6	19.8	19.5	19.6	17.5	17.0	18.9	18.0	17.6	16.0	19.7	23.9	23.6	23.1	22.5	22.6
Floodprone Width (ft)	69.8	70.0	70.0	70.0	70.0	70.0	63.8	63.3	63.6	63.4	63.3	63.3	66.8	66.8	62.0	66.6	66.9	66.5	60.8	60.7	60.6	60.8	60.7	60.6
BF Cross Sectional Area (ft^2)	26.4	23.9	23.4	27.2	28.7	22.0	24.3	24.0	24.8	23.4	24.7	21.7	15.9	18.4	21.9	22.6	21.2	17.6	49.7	48.5	62.6	55.2	51.2	48.2
BF Mean Depth (ft)	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.3	1.3	1.1	0.9	1.1	0.9	1.1	1.2	1.3	1.2	1.1	2.5	2.0	2.1	2.4	2.3	2.1
BF Max Depth (ft)	2.7	2.6	2.6	2.5	2.6	2.4	2.2	2.2	2.3	2.0	2.1	2.0	1.5	2.8	2.9	2.9	3.0	2.9	5.0	5.0	4.8	4.6	4.4	4.3
Width/Depth Ratio	14.7	15.5	14.7	19.1	17.6	15.1	14.6	14.1	15.5	18.7	28.6	17.7	19.3	15.7	16.2	14.3	14.6	14.5	7.8	11.8	10.6	9.7	9.9	10.6
Entrenchment Ratio	3.5	3.6	3.8	3.1	3.1	3.8	3.4	3.4	3.2	3.0	2.4	3.2	3.8	3.9	3.3	3.7	3.8	4.2	3.1	2.5	2.6	2.6	2.7	2.7
Wetted Perimeter(ft)	20.4	19.9	19.4	23.5	23.1	18.9	19.5	19.1	20.4	21.3	27.0	20.2	17.9	18.2	20.1	19.3	19.4	18.0	22.3	26.3	25.6	25.3	25.0	24.7
Hydraulic radius (ft)	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.2	1.1	0.9	1.1	0.9	1.0	1.1	1.2	1.1	1.0	2.2	1.8	2.1	2.2	2.1	2.0

Parameter	Cross Section 17 Pool						Cross Section 18 Riffle						Cross Section 19 Pool						Cross Section 20 Riffle					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	15.9	16.5	15.3	18.4	18.2	16.9	18.0	17.0	17.6	19.7	19.0	18.3	15.2	15.1	16.2	16.7	17.0	16.8	13.6	14.4	15.1	14.9	15.1	13.8
Floodprone Width (ft)	74.1	71.0	74.4	74.1	74.1	74.1	76.3	76.1	76.3	76.9	77.0	76.9	81.6	81.9	82.0	81.6	81.9	81.5	97.2	96.9	96.9	97.1	97.6	97.1
BF Cross Sectional Area (ft^2)	51.1	49.9	50.3	55.8	56.0	52.7	56.5	51.7	53.3	59.3	58.4	55.6	46.3	45.0	46.6	47.7	46.3	46.7	32.5	35.0	36.6	39.7	37.2	35.6
BF Mean Depth (ft)	3.2	3.0	3.3	3.0	3.1	3.1	3.1	3.0	3.0	3.0	3.1	3.0	3.0	3.0	2.9	2.9	2.7	2.8	2.4	2.4	2.4	2.7	2.5	2.6
BF Max Depth (ft)	5.0	5.1	4.9	5.4	5.3	5.2	4.5	4.4	4.2	4.7	4.9	4.9	4.9	4.8	4.7	4.7	4.6	4.7	3.0	3.4	3.4	3.6	3.4	3.4
Width/Depth Ratio	5.0	5.5	4.7	6.1	5.9	5.4	5.7	5.6	5.8	6.6	6.2	6.0	5.0	5.1	5.7	5.8	6.3	6.1	5.7	5.9	6.3	5.6	6.2	5.3
Entrenchment Ratio	4.7	4.3	4.9	4.0	4.1	4.3	4.2	4.5	4.3	3.9	4.0	4.2	5.4	5.4	5.0	4.9	4.8	4.8	7.1	6.7	6.4	6.5	6.4	7.0
Wetted Perimeter(ft)	20.6	20.8	19.3	22.6	22.9	21.4	22.2	21.3	21.5	24.4	23.6	22.7	19.3	18.8	19.5	20.1	20.3	20.3	16.1	17.1	17.8	17.7	18.3	16.8
Hydraulic radius (ft)	2.5	2.4	2.6	2.5	2.4	2.5	2.5	2.4	2.5	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.0	2.1	2.1	2.2	2.0	2.1

Reach 1																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	39.05	86.72	62.88	84.94	158.25	123.72	84.94	158.25	123.72	84.94	158.25	123.72	84.94	158.25	123.72	84.94	158.25	123.72
Radius of Curvature (ft)	18.26	27.39	22.82	20.24	30.26	24.87	20.24	30.26	24.87	20.24	30.26	24.87	20.24	30.26	24.87	20.24	30.26	24.87
Meander Wavelength (ft)	124.25	171.16	147.70	275.87	364.82	320.22	275.87	364.82	320.22	275.87	364.82	320.22	275.87	364.82	320.22	275.87	364.82	320.22
Meander Width ratio	2.12	4.72	3.42	2.3	4.2	3.3	2.3	4.2	3.3	2.3	4.2	3.3	2.3	4.2	3.3	2.3	4.2	3.3
Profile																		
Riffle length (ft)	15.1	103.2	39.0	20.0	47.0	28.8	20.0	47.0	28.8	20.0	47.0	28.8	20.0	47.0	28.8	20.0	47.0	28.8
Riffle slope (ft/ft)	0.0038	0.0177	0.0081	0.001	0.0281	0.0118	0.001	0.0281	0.0118	0.0051	0.0305	0.0191	0.0051	0.0305	0.0191	0.0051	0.0305	0.0191
Pool length (ft)	23.2	139.4	52.6	21.7	87.4	45.4	21.7	87.4	45.4	21.7	87.4	45.4	21.7	87.4	45.4	21.7	87.4	45.4
Pool spacing (ft)	33.9	250.8	65.3	29.5	155.8	73.5	29.5	155.8	73.5	29.5	155.8	73.5	29.5	155.8	73.5	29.5	155.8	73.5
Additional Reach Parameters																		
Valley Length (ft)	1581.9			741.0			741.0			741.0			741.0			741.0		
Channel Length (ft)	2200			1017.8			1017.8			1017.8			1017.8			1017.8		
Sinuosity	1.4			1.4			1.4			1.4			1.4			1.4		
Water Surface Slope (ft/ft)	0.00150			0.0007			0.0007			0.000802			0.000802			0.000802		
BF slope (ft/ft)	0.0009			0.00075			0.00075			0.00182			0.00182			0.00182		
Rosgen Classification	C5			C5			C5			C5			C5			C5		

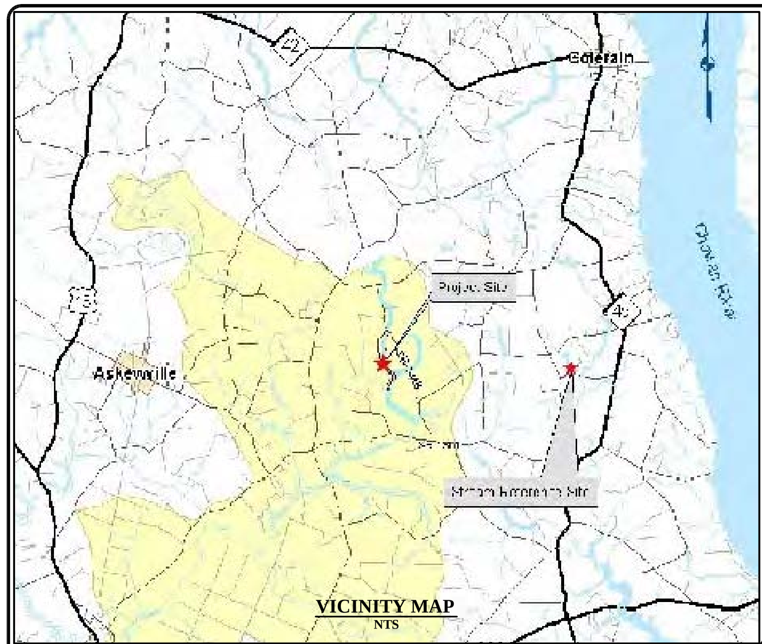
Reach 2																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38
Radius of Curvature (ft)	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36
Meander Wavelength (ft)	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21
Meander Width ratio	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42
Profile																		
Riffle length (ft)	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1
Riffle slope (ft/ft)	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045
Pool length (ft)	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6
Pool spacing (ft)	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4
Additional Reach Parameters																		
Valley Length (ft)	756.8			756.8			756.8			756.8			756.8			756.8		
Channel Length (ft)	1550			1550			1550			1550			1550			1550		
Sinuosity	2.0			2.0			2.0			2.0			2.0			2.0		
Water Surface Slope (ft/ft)	0.00140			0.00140			0.00140			0.000802			0.000802			0.000802		
BF slope (ft/ft)	0.00075			0.00075			0.00075			0.001			0.001			0.001		
Rosgen Classification	C5			C5			C5			C5			C5			C5		

Reach 3																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	41.06	91.41	66.23	83.2	217.1	152.6	83.2	217.1	152.6	83.2	217.1	152.6	83.2	217.1	152.6	83.2	217.1	152.6
Radius of Curvature (ft)	19.17	28.86	24.01	14.1	31.7	20.5	14.1	31.7	20.5	14.1	31.7	20.5	14.1	31.7	20.5	14.1	31.7	20.5
Meander Wavelength (ft)	130.92	180.30	155.51	221.9	498.8	325.6	221.9	498.8	325.6	221.9	498.8	325.6	221.9	498.8	325.6	221.9	498.8	325.6
Meander Width ratio	2.12	4.72	3.42	2.0	5.3	3.7	2.0	5.3	3.7	2.0	5.3	3.7	2.0	5.3	3.7	2.0	5.3	3.7
Profile																		
Riffle length (ft)	19.5	195.8	34.7	10.2	57.0	22.7	10.2	57.0	22.7	10.2	57.0	22.7	10.2	57.0	22.7	10.2	57.0	22.7
Riffle slope (ft/ft)	0.0022	0.0297	0.0038	0.0003	0.0313	0.0118	0.0003	0.0313	0.0118	0.0108	0.0141	0.0117	0.0108	0.0141	0.0117	0.0108	0.0141	0.0117
Pool length (ft)	13.4	126.6	54.6	13.8	38.6	22.8	13.8	38.6	22.8	13.8	38.6	22.8	13.8	38.6	22.8	13.8	38.6	22.8
Pool spacing (ft)	22.4	206.4	86.1	23.2	168.3	53.1	23.2	168.3	53.1	23.2	168.3	53.1	23.2	168.3	53.1	23.2	168.3	53.1
Additional Reach Parameters																		
Valley Length (ft)	2498.5			966.8			966.8			966.8			966.8			966.8		
Channel Length (ft)	4110			1750			1750			1750			1750			1750		
Sinuosity	1.7			1.8			1.8			1.8			1.8			1.8		
Water Surface Slope (ft/ft)	0.00160			0.001			0.001			0.001			0.001			0.001		
BF slope (ft/ft)	0.0008			0.001			0.001			0.0012			0.0012			0.0012		
Rosgen Classification	E5			E5			E5			E5			E5			E5		

Reach 4																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8
Radius of Curvature (ft)	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2
Meander Wavelength (ft)	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0
Meander Width ratio	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649
Profile																		
Riffle length (ft)	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6
Riffle slope (ft/ft)	0.0016	0.0090	0.0064	0.0016	0.0090	0.0064	0.0016	0.0090	0.0064	0.0023	0.009	0.0046	0.0023	0.009	0.0046	0.0023	0.009	0.0046
Pool length (ft)	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34
Pool spacing (ft)	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4
Additional Reach Parameters																		
Valley Length (ft)	615.8			615.8			615.8			615.8			615.8			615.8		
Channel Length (ft)	638.4			638.4			638.4			638.4			638.4			638.4		
Sinuosity	1.0			1.0			1.0			1.0			1.0			1.0		
Water Surface Slope (ft/ft)	0.0003			0.0003			0.0003			0.0006			0.0006			0.0006		
BF slope (ft/ft)	0.0002			0.0002			0.0002			0.000766			0.000766			0.000766		
Rosgen Classification	E5			E5			E5			E5			E5			E5		

APPENDIX A

As-Built Survey



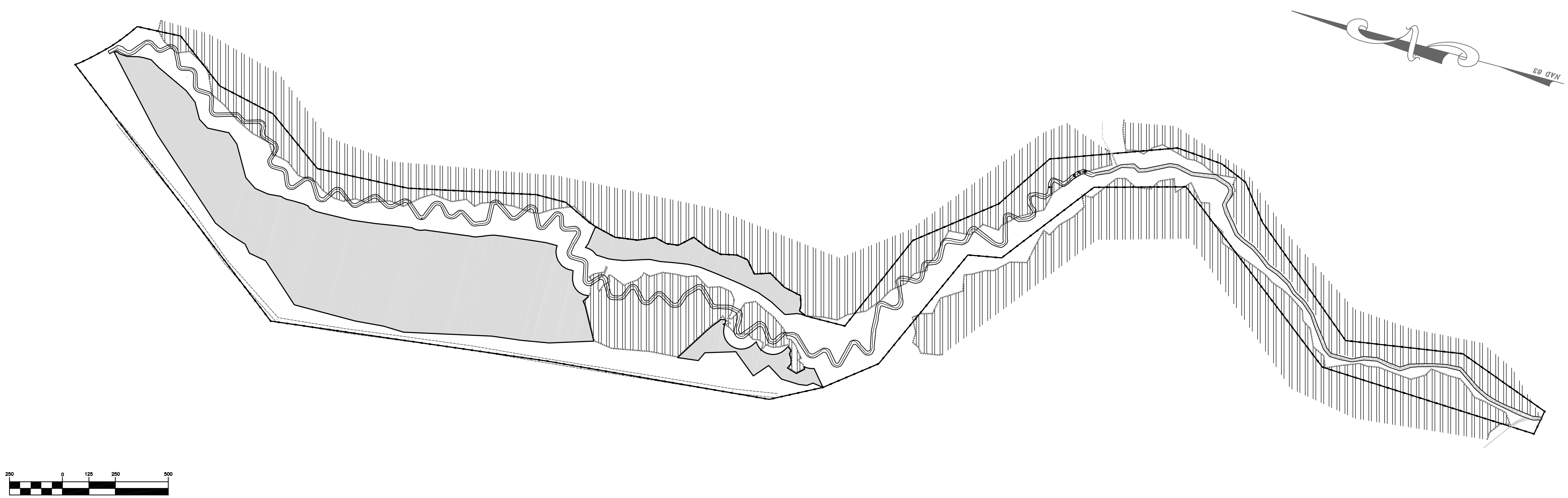
FLOOGIE MITIGATION PROJECT

AS-BUILT PLAN SET

APRIL 2008

LOCATION: BERTIE COUNTY, NORTH CAROLINA

SHEET INDEX



REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI	DRAWING SCALE 1" = 250'	
DRAWN BY JLL	PROJECT DATE 08/2007	
APPROVED BY DPI	PROJECT NUMBER 5043100RA	
FILE NAME design.dwg	PLOT DATE 03/28/08	

WK DICKSON
community infrastructure consultants

3101 JOHN HUMPHRIES WYND
RALEIGH, NC 27612
(919) 782-0495

Office Locations:
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South Carolina
Georgia

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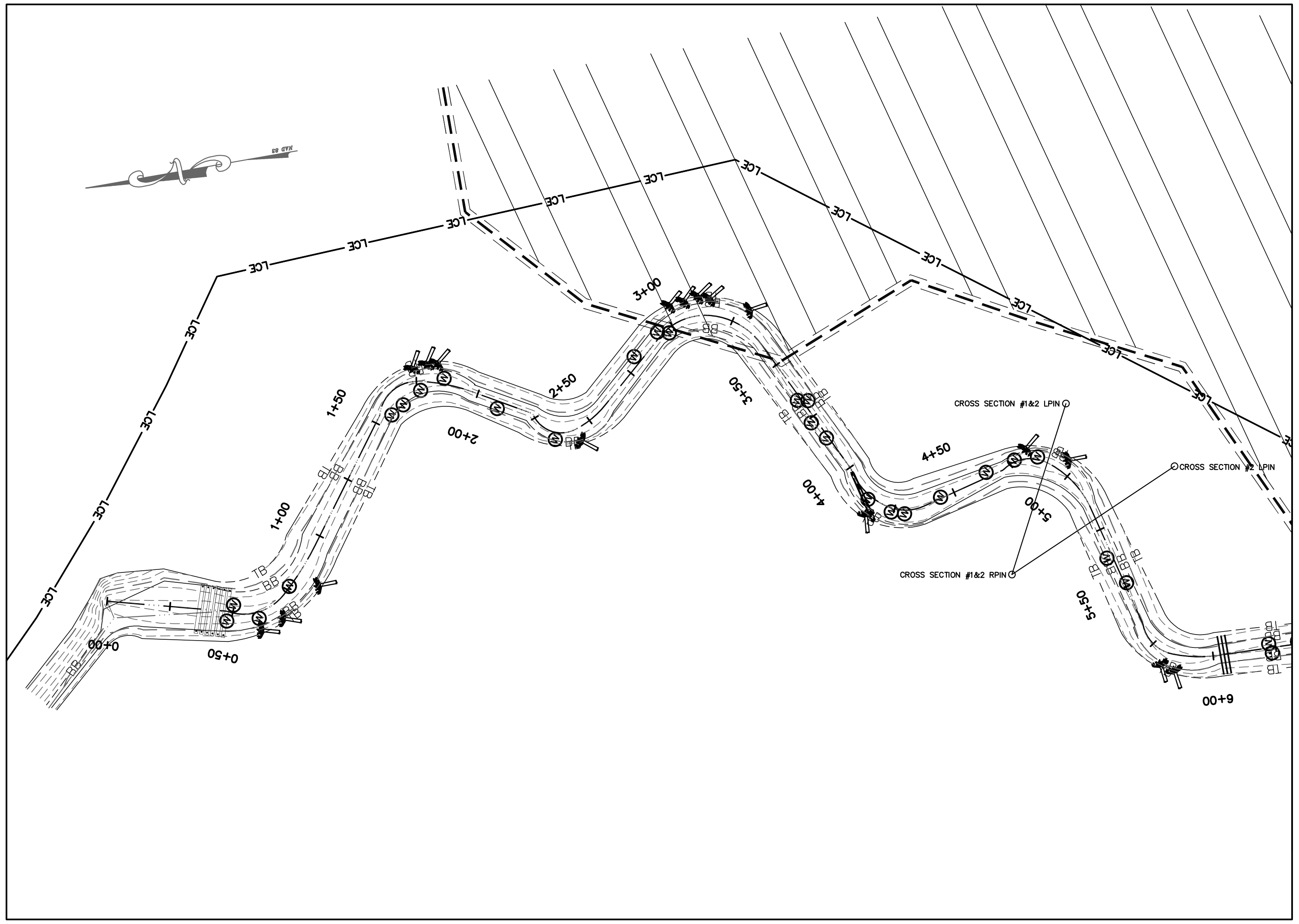
APPROVALS	10/9/06
BIDDING	
CONSTRUCTION	
RECORD DWG.	

ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

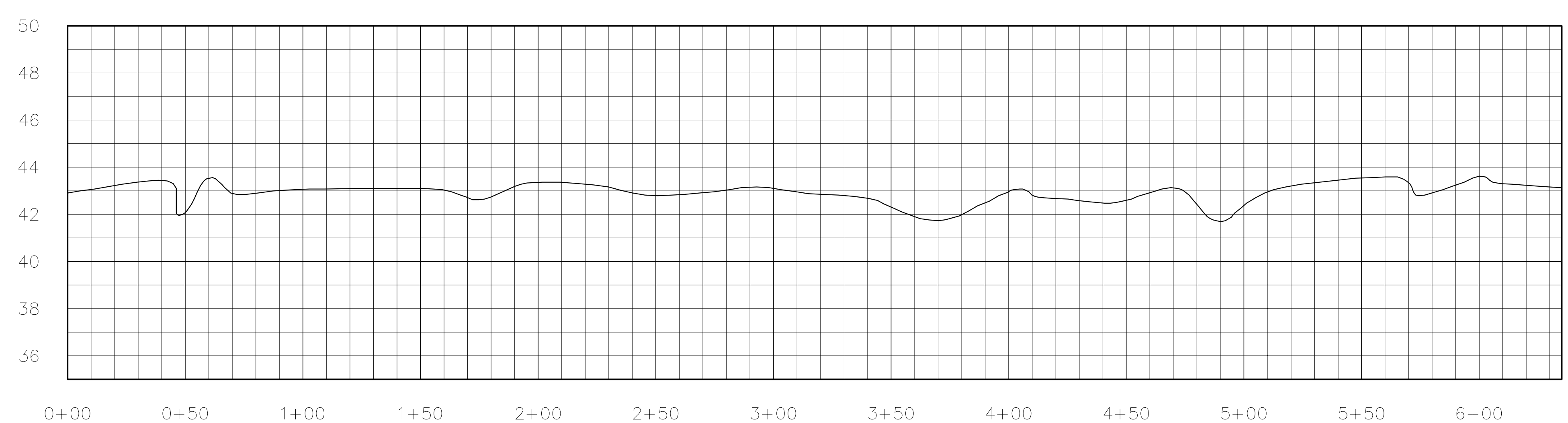
FLOOGIE AS-BUILT PLANS
COVER & INDEX SHEET



1 inch = 150ft.

LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK — BB
- TOP OF BANK — TB
- LIMITS OF CONSERVATION EASMENT — LCE
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE

REVISIONS

PROJECT MANAGER	DRAWING SCALE
DPI	1" = 30'
DRAWN BY	PROJECT DATE
TRS	08/2007
APPROVED BY	PROJECT NUMBER
DPI	5043100RA
FILE NAME	PLOT DATE
design.dwg	03/28/08

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RELEASED FOR	DATE
APPROVALS	
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CONSTRUCTION	
RECORD DWG.	

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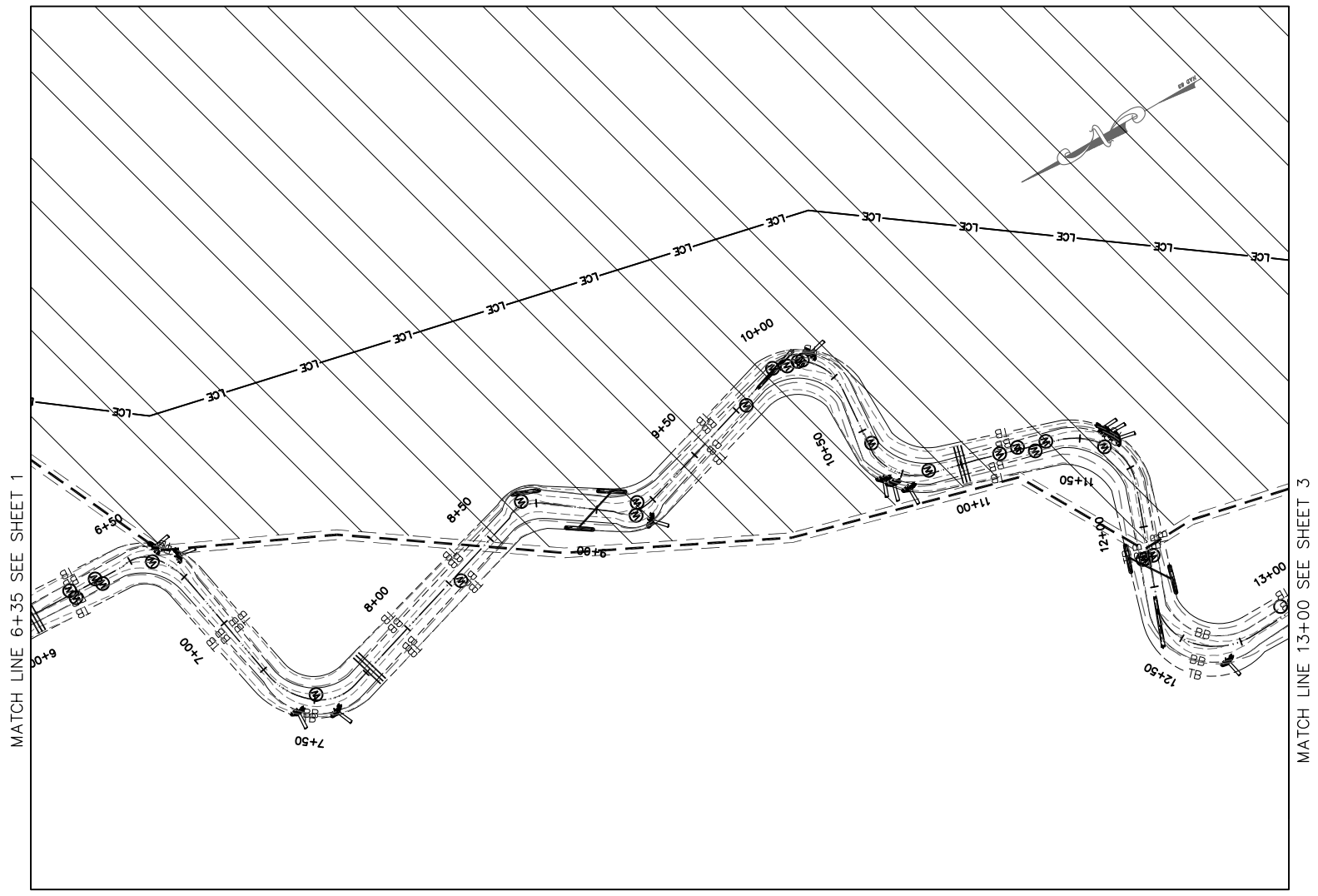
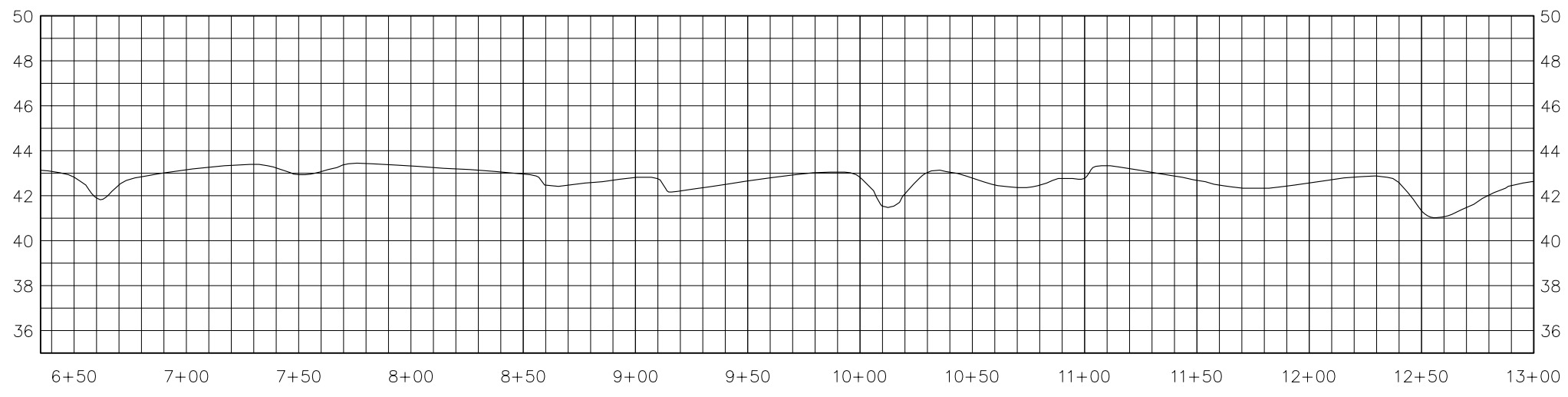
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 0+00 TO STA. 6+35



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASMENT (LCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS (W)



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER: DPI	DRAWING SCALE: 1" = 30'
DRAWN BY: JLL	PROJECT DATE: 08/2007
APPROVED BY: DPI	PROJECT NUMBER: 5043100RA
FILE NAME: design.dwg	PLOT DATE: 03/28/08

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South Carolina

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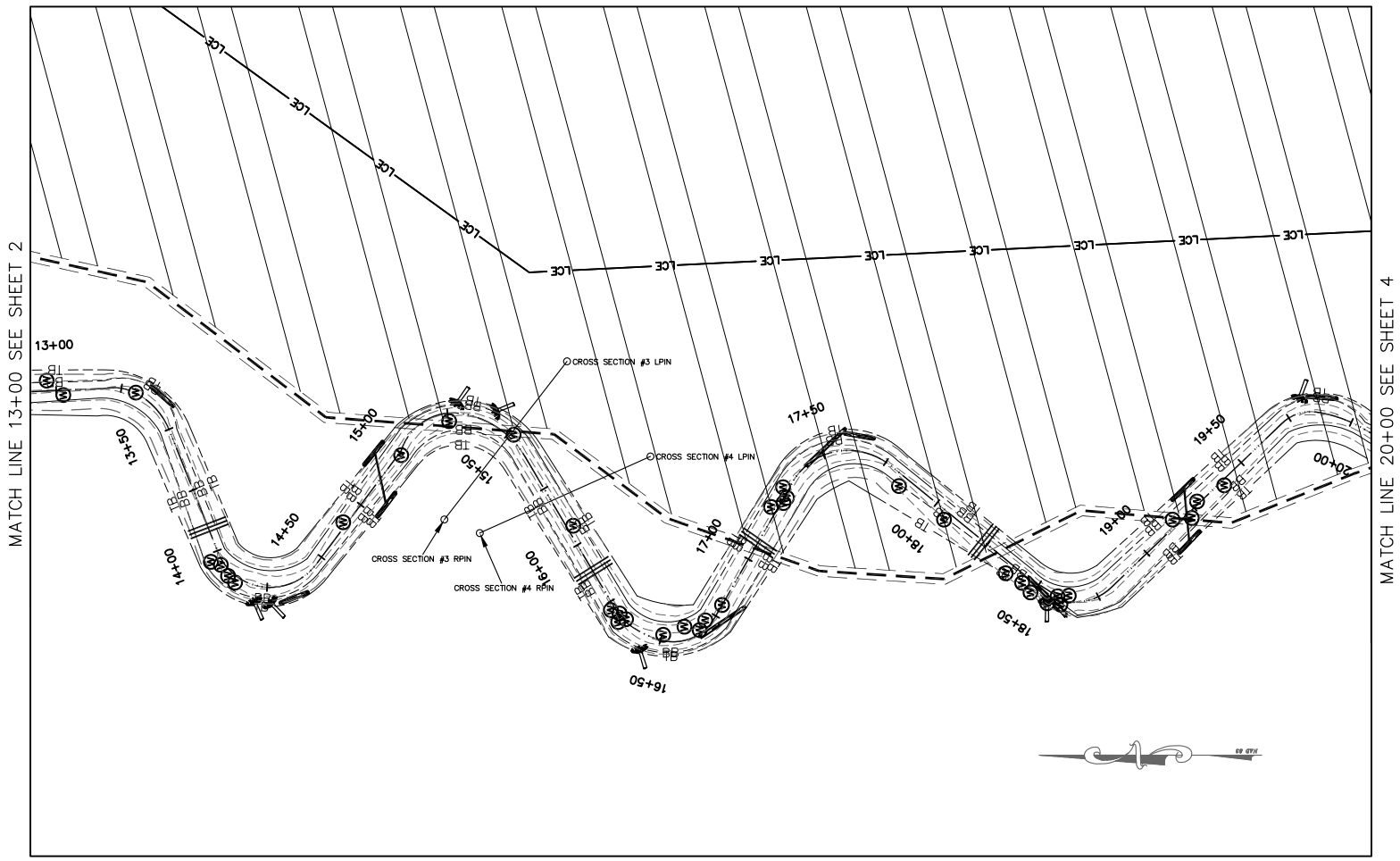
CONSTRUCTION	
RECORD DWG.	

ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

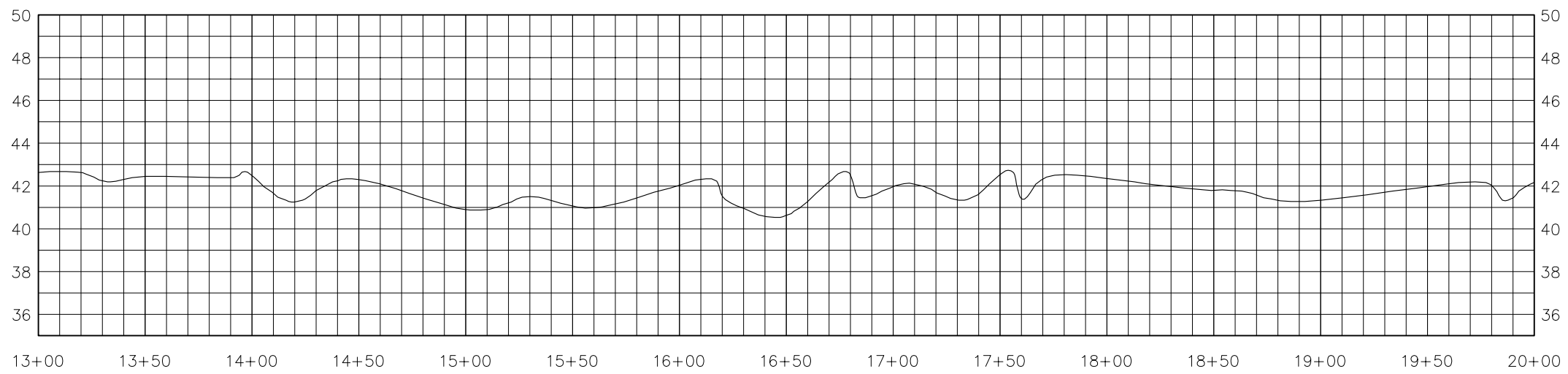
FLOOGIE AS-BUILT PLANS
STA. 6+35 TO STA. 13+00



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASMENT (LCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS (W)

30 0 15 30 60
1 inch = 30ft.



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER	DPI
DRAWN BY	JLL
APPROVED BY	DPI
FILE NAME	design.dwg
DRAWING SCALE	1" = 30'
PROJECT DATE	08/2007
PROJECT NUMBER	5043100RA
PLOT DATE	03/28/08

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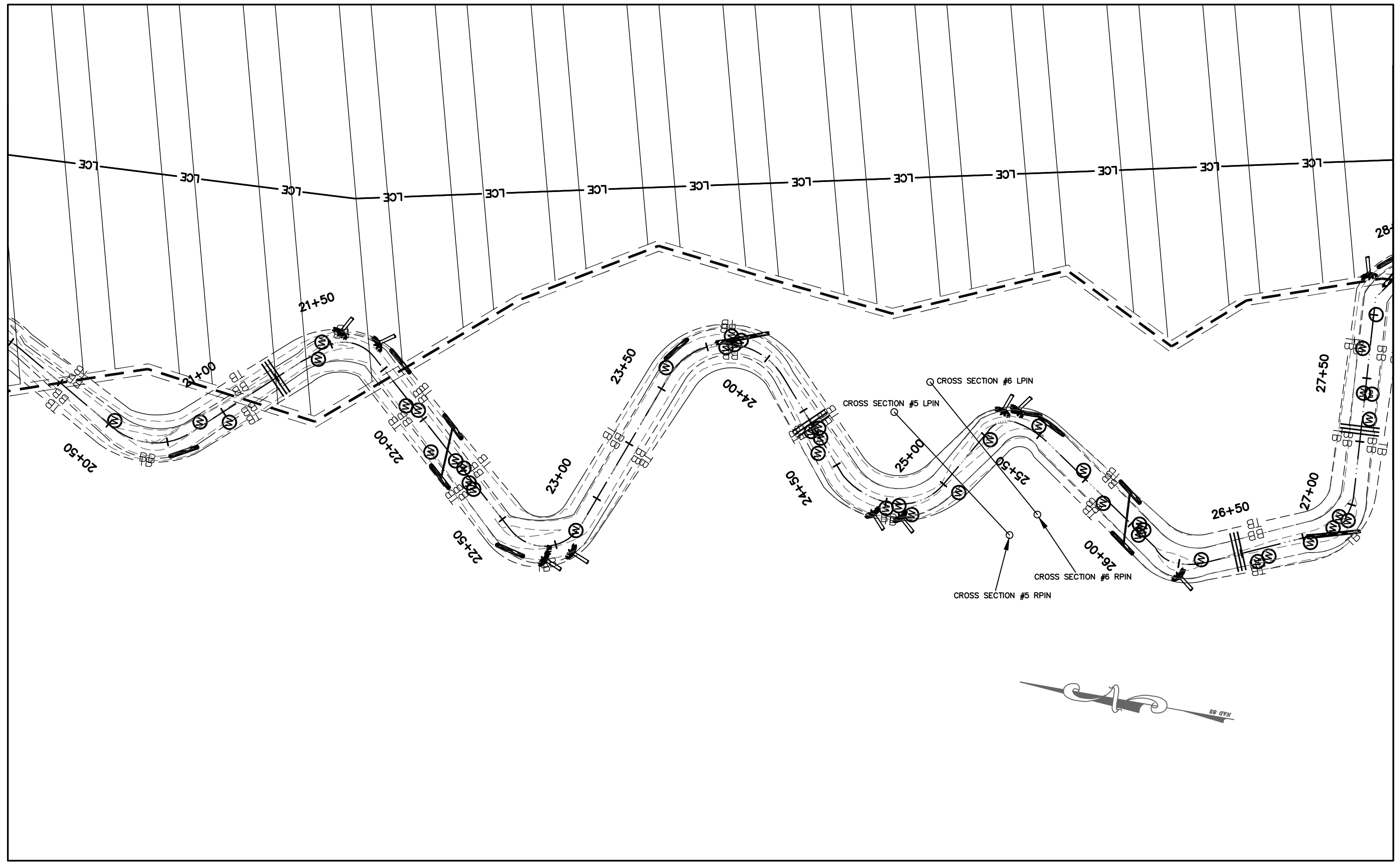
ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 13+00 TO STA. 20+00

4/20



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK — BB
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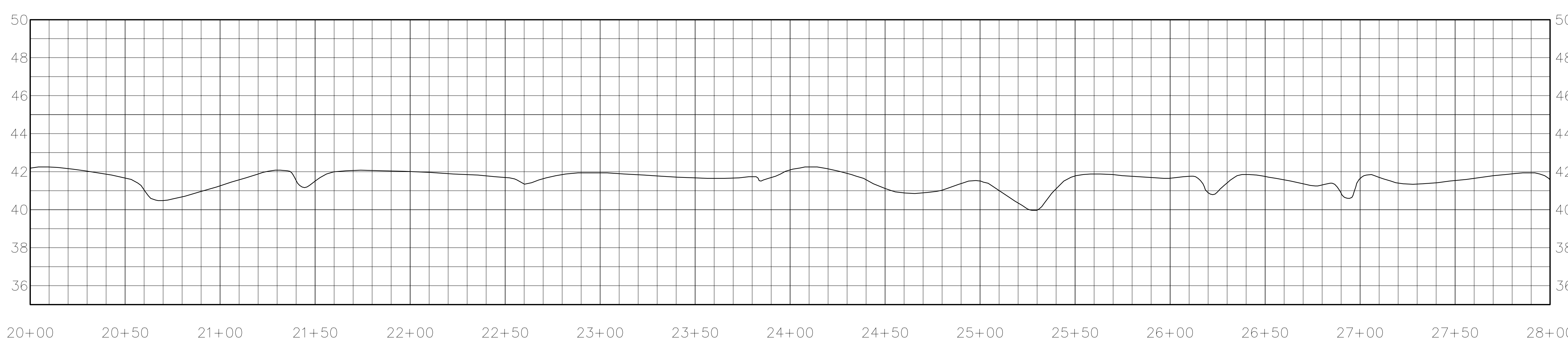
1 inch = 30ft.



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI	DRAWING SCALE 1" = 30'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

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APPROVALS	
BIDDING	
CONSTRUCTION	
RECORD DWG.	

EBX

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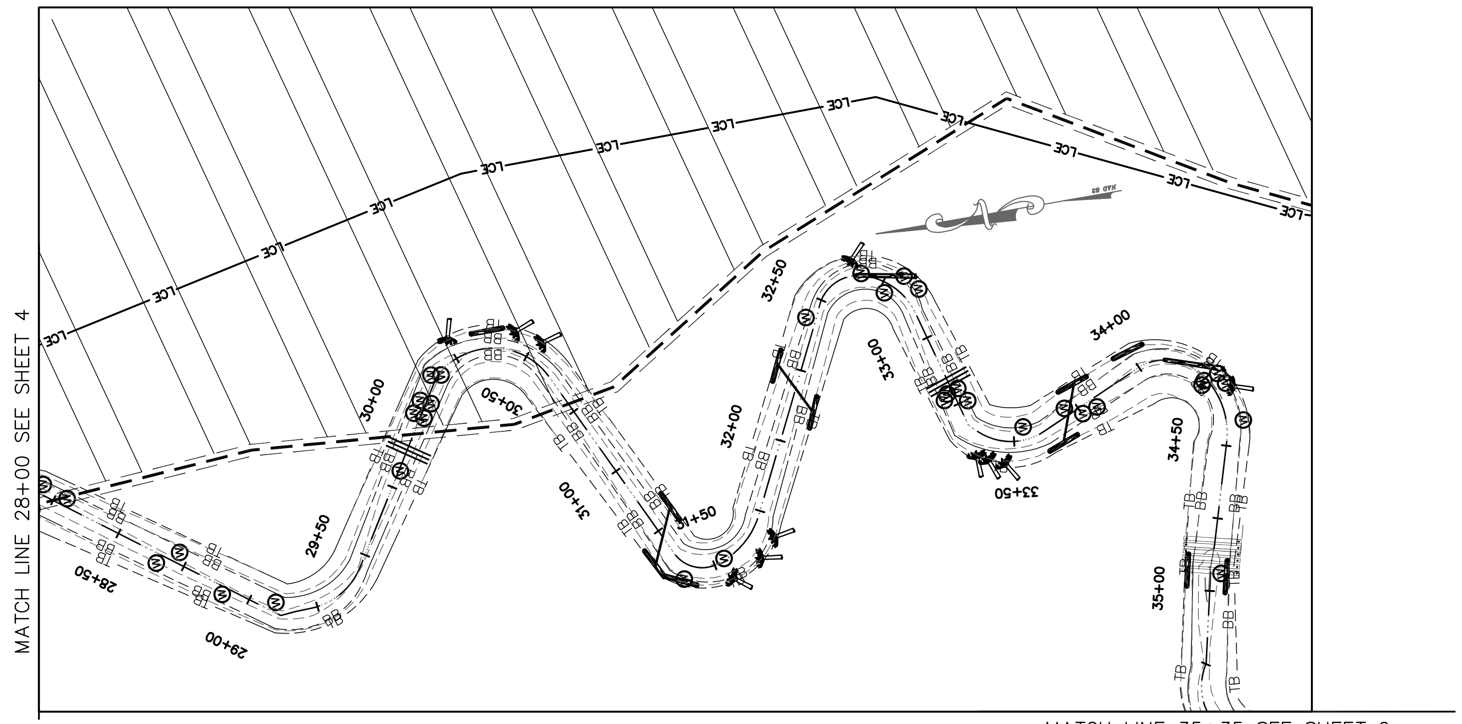
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 20+00 TO STA. 28+00

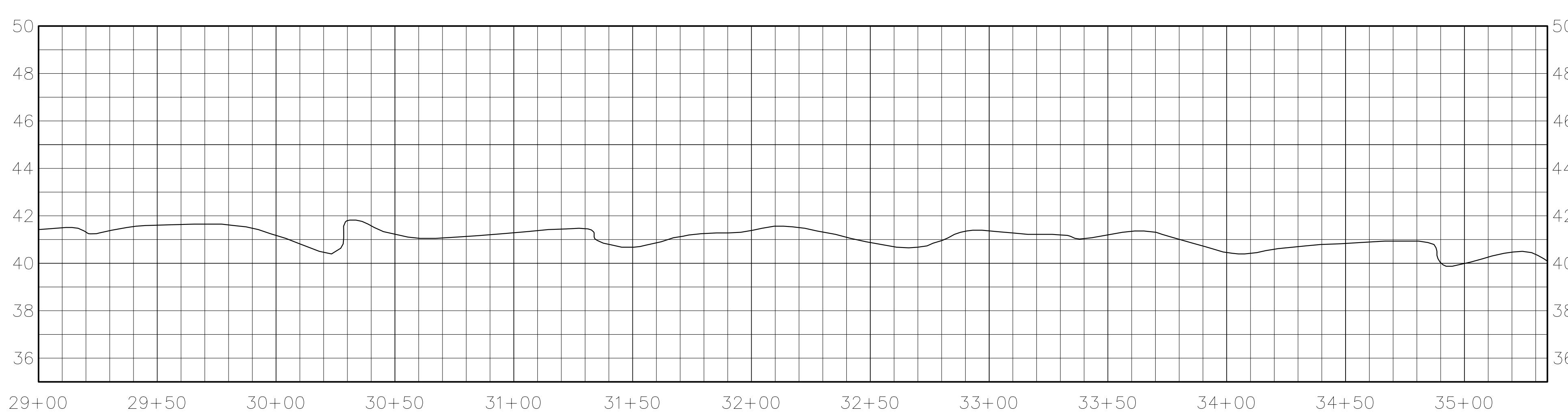
5/20



1 inch = 30ft.

LEGEND

EXISTING CONTOURS	
CENTERLINE OF EXISTING DITCH	
BOTTOM OF BANK	BB
TOP OF BANK	TB
LIMITS OF CONSERVATION EASMENT	LCE
LOG RAMP	
LOG GRADE CONTROL	
LOG TOE PROTECTION	
LOG VANE	
FORD CROSSING	
ROOT WAD	
CHANNEL PLUG	
WETLAND CHANNEL PLUG	
EXISTING WETLANDS	
BEDDED LOG STRUCTURE	
SMALL WOODY DEBRIS	W



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI | DRAWING SCALE 1" = 30' | DRAWN BY JLL | PROJECT DATE 08/2007 | APPROVED BY DPI | PROJECT NUMBER 5043100RA | FILE NAME design.dwg | PLOT DATE 03/28/08

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BIDDING	
CONSTRUCTION	
RECORD DWG.	

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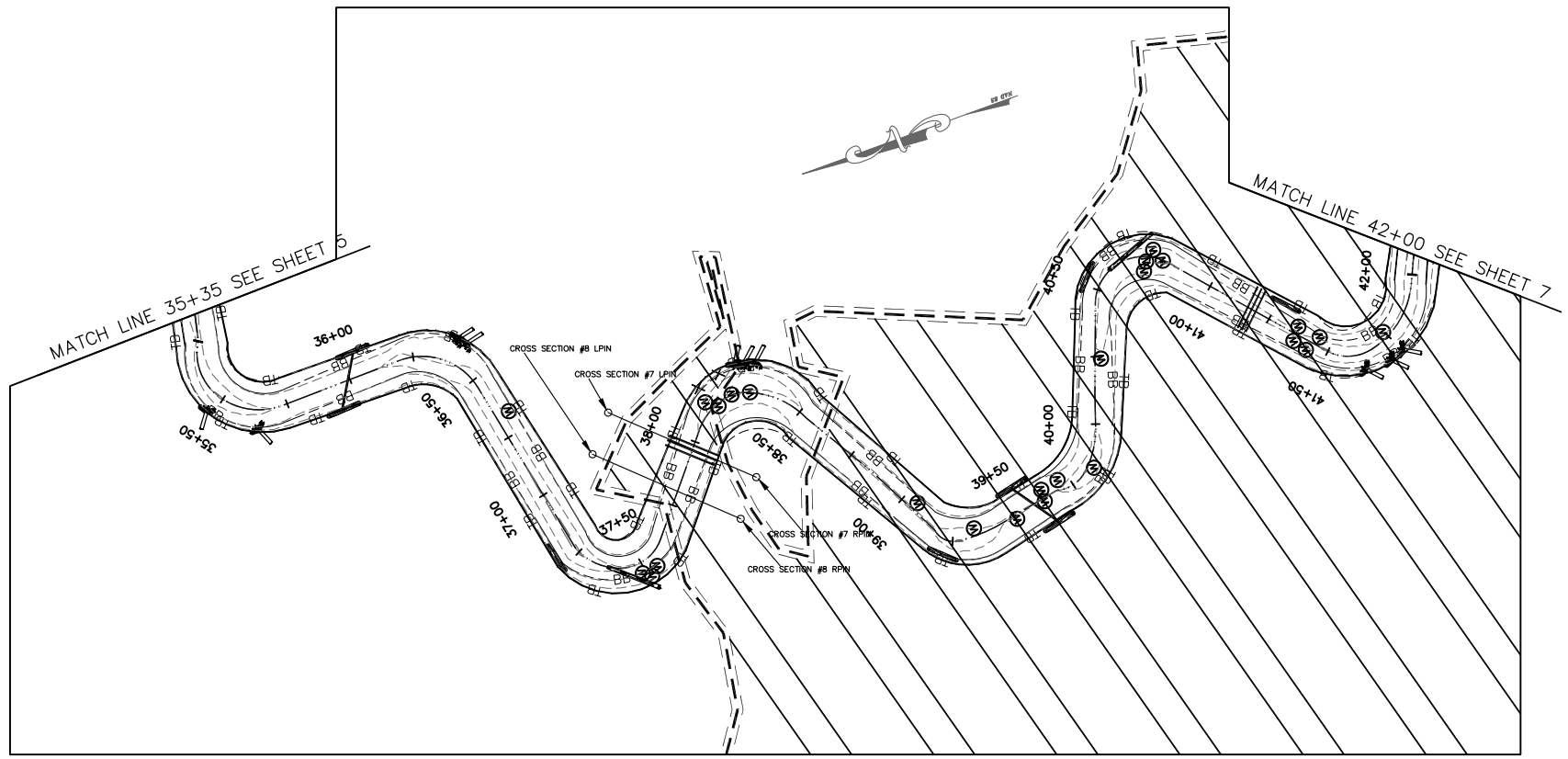
ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

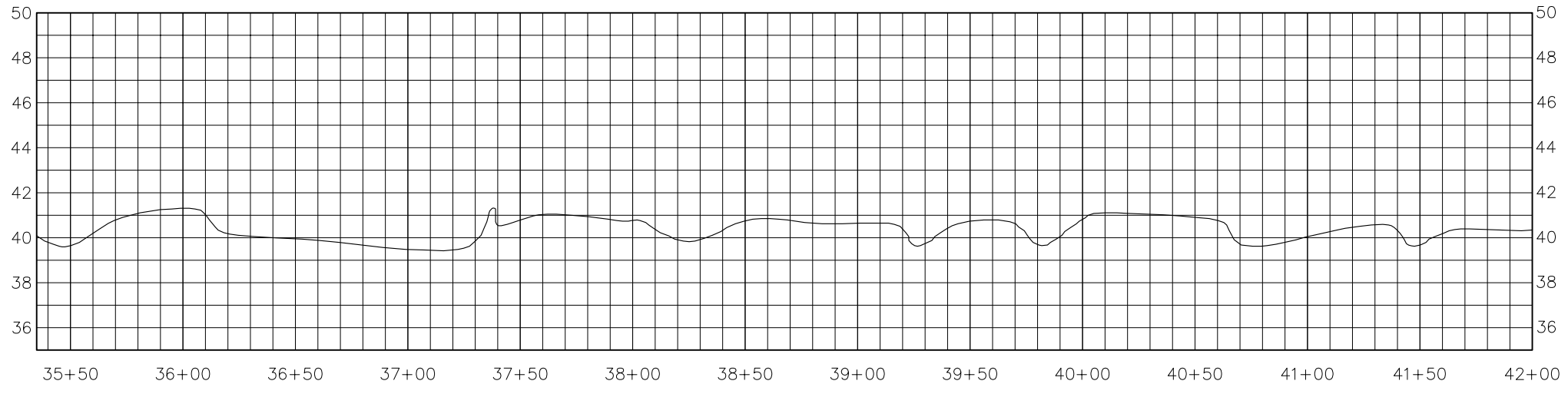
FLOOGIE AS-BUILT PLANS
STA. 28+00 TO STA. 35+35



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASMENT (LCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS (W)

30 0 15 30 60
1 inch = 30ft.



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER	DPI
DRAWN BY	JLL
APPROVED BY	DPI
FILE NAME	design.dwg
DRAWING SCALE	1" = 30'
PROJECT DATE	08/2007
PROJECT NUMBER	5043100RA
PLOT DATE	03/28/08

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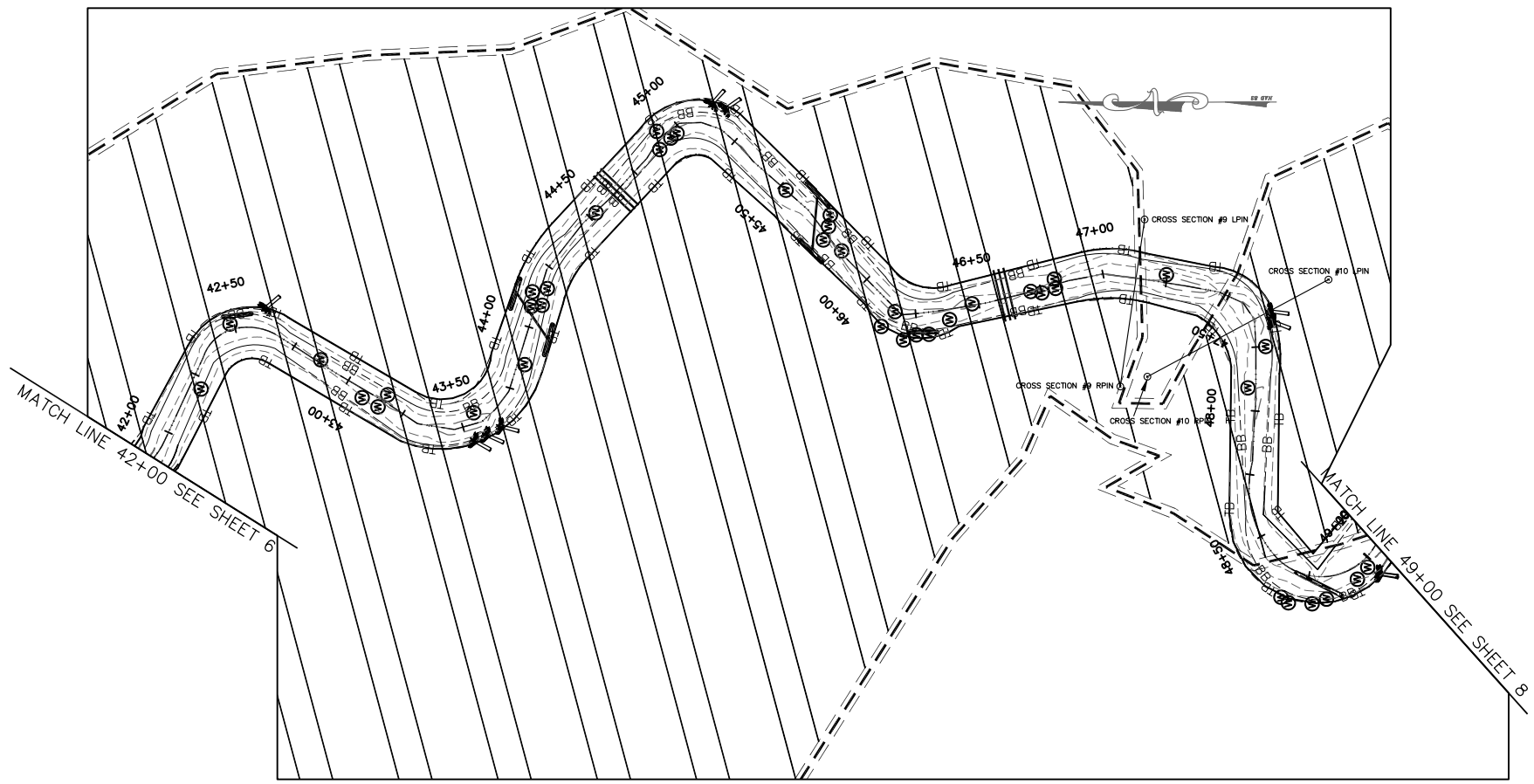
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

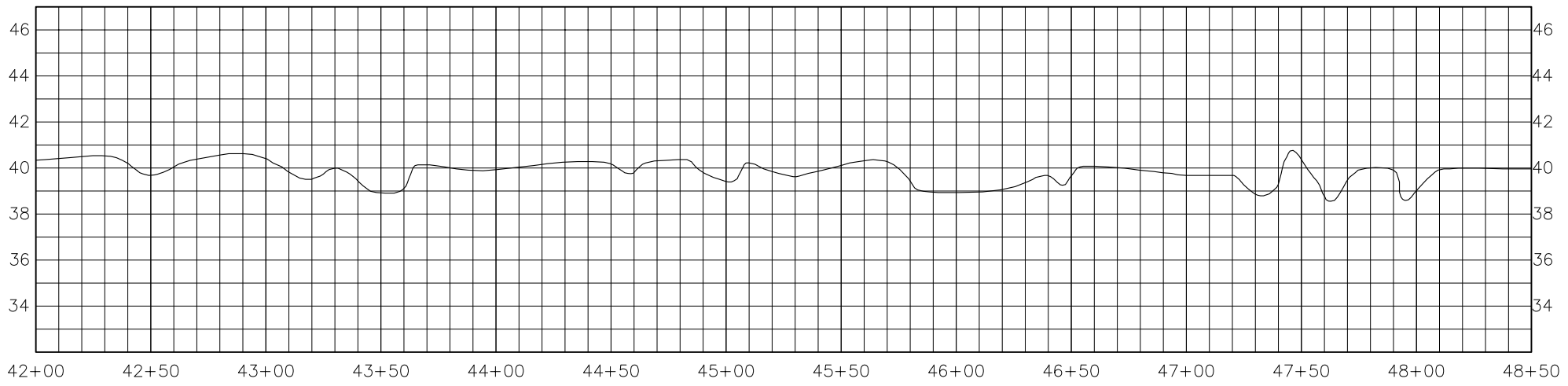
FLOOGIE AS-BUILT PLANS
STA. 35+35 TO STA. 42+00



30 0 15 60
1 inch = 30ft.

LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK — BB —
- TOP OF BANK — TB —
- LIMITS OF CONSERVATION EASMENT — LCE —
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS (W)



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER: DPI	DRAWING SCALE: 1" = 30'
DRAWN BY: JLL	PROJECT DATE: 08/2007
APPROVED BY: DPI	PROJECT NUMBER: 5043100RA
FILE NAME: design.dwg	PLOT DATE: 03/28/08

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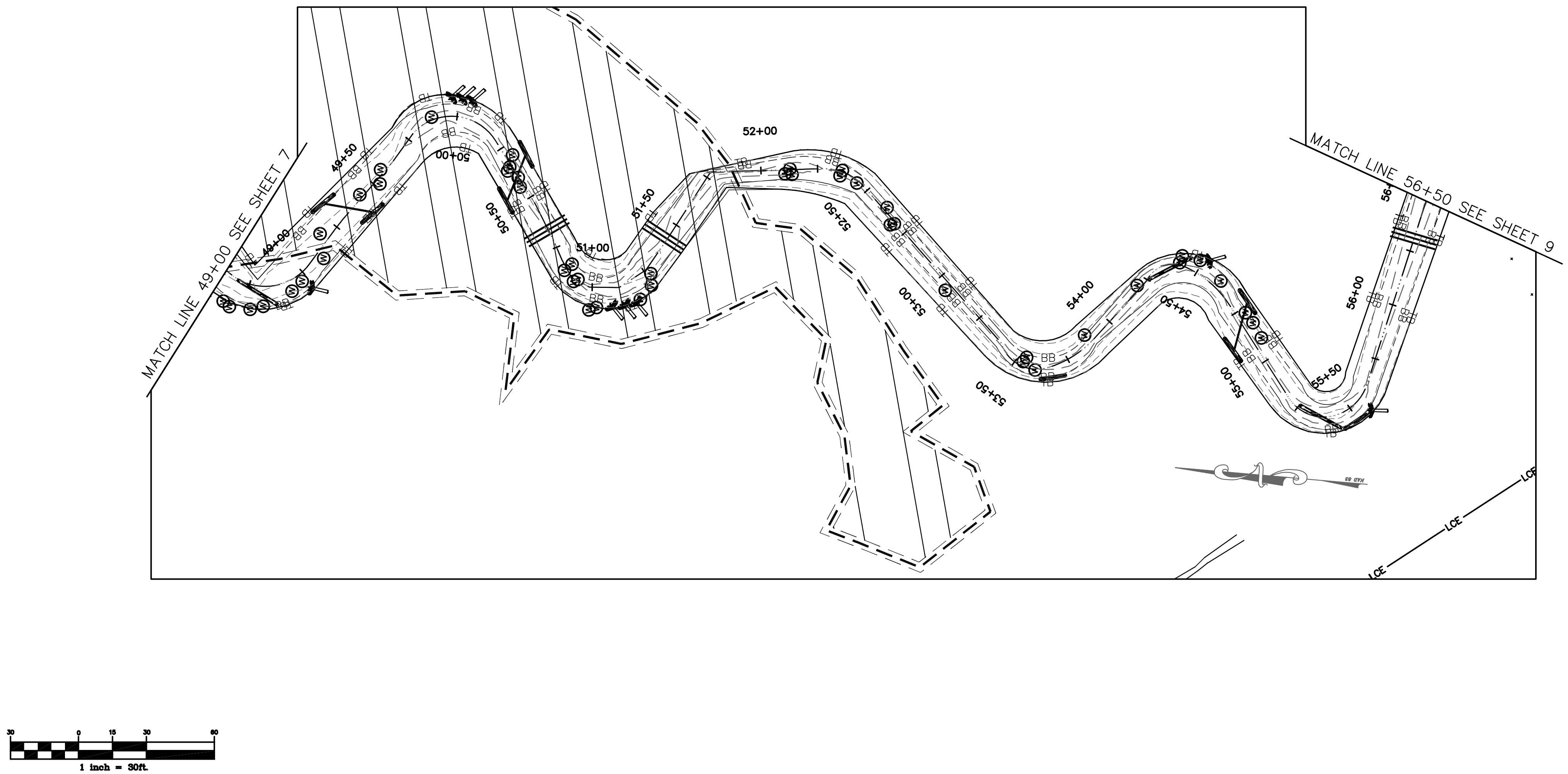
RECORD DWG.	

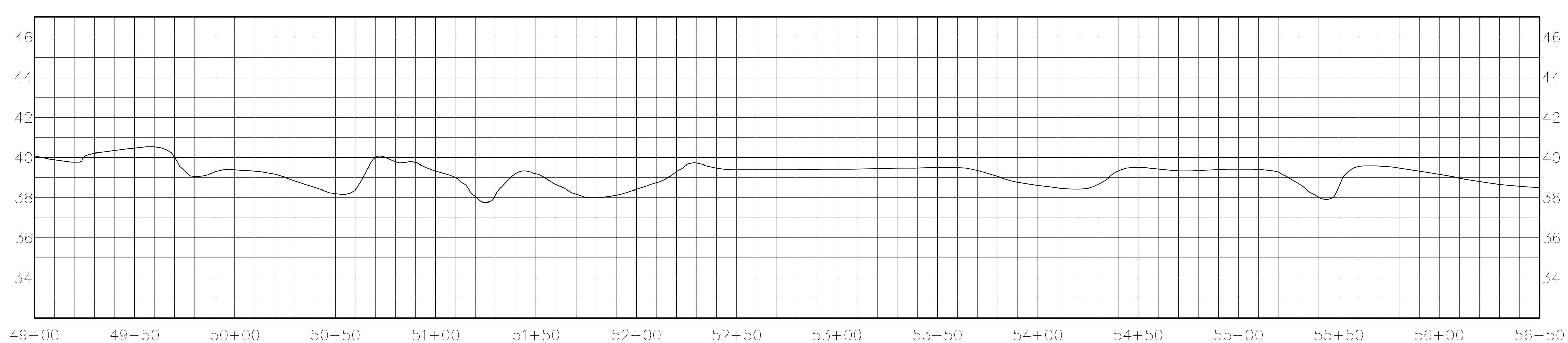
ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 42+00 TO STA. 49+00



LEGEND

EXISTING CONTOURS	
CENTERLINE OF EXISTING DITCH	
BOTTOM OF BANK	BB
TOP OF BANK	TB
LIMITS OF CONSERVATION EASMENT	LCE
LOG RAMP	
LOG GRADE CONTROL	
LOG TOE PROTECTION	
LOG VANE	
FORD CROSSING	
ROOT WAD	
CHANNEL PLUG	
WETLAND CHANNEL PLUG	
EXISTING WETLANDS	
BEDDED LOG STRUCTURE	
SMALL WOODY DEBRIS	W



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI	DRAWING SCALE 1" = 30'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

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CONSTRUCTION	
RECORD DWG.	

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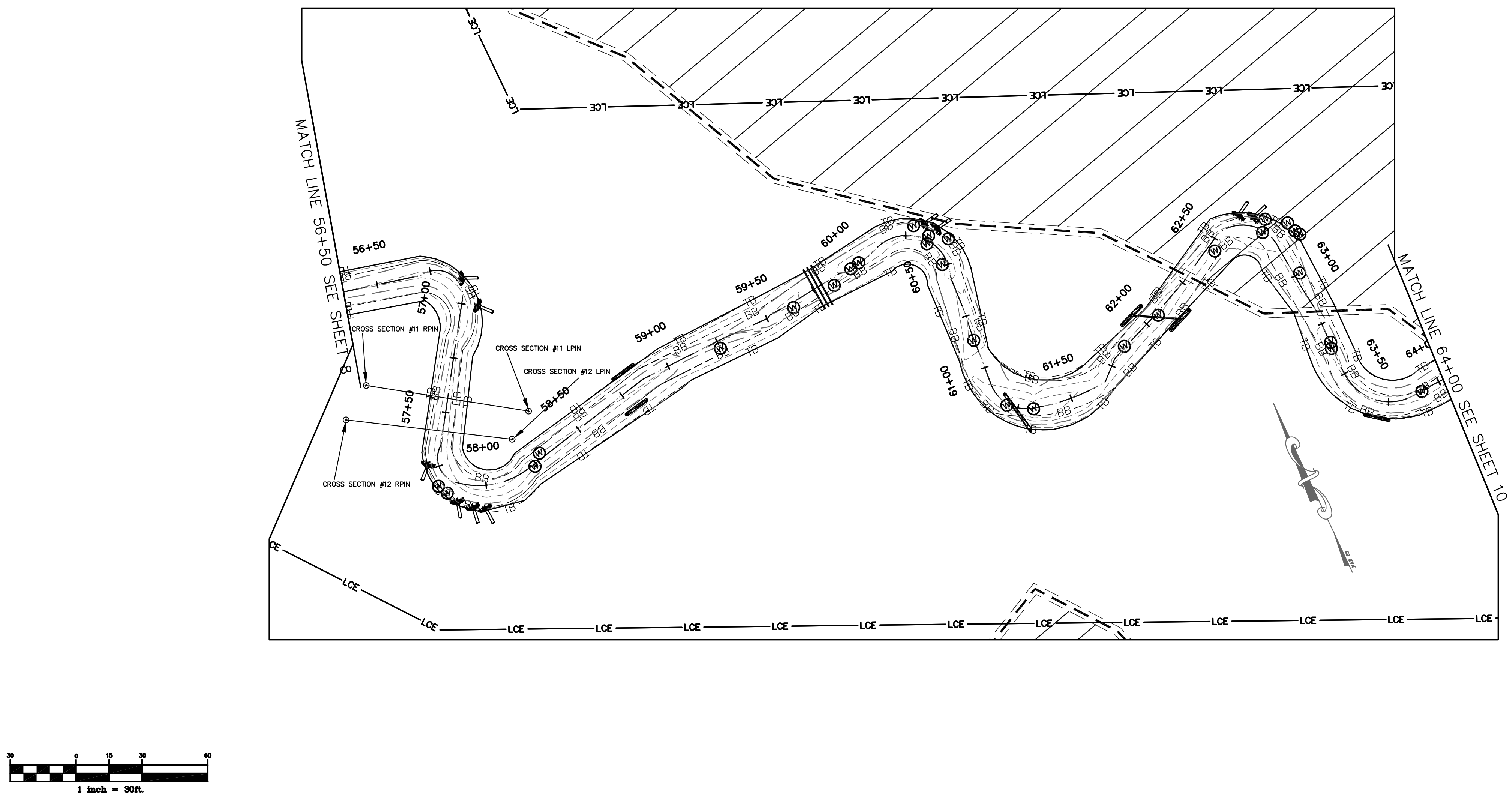
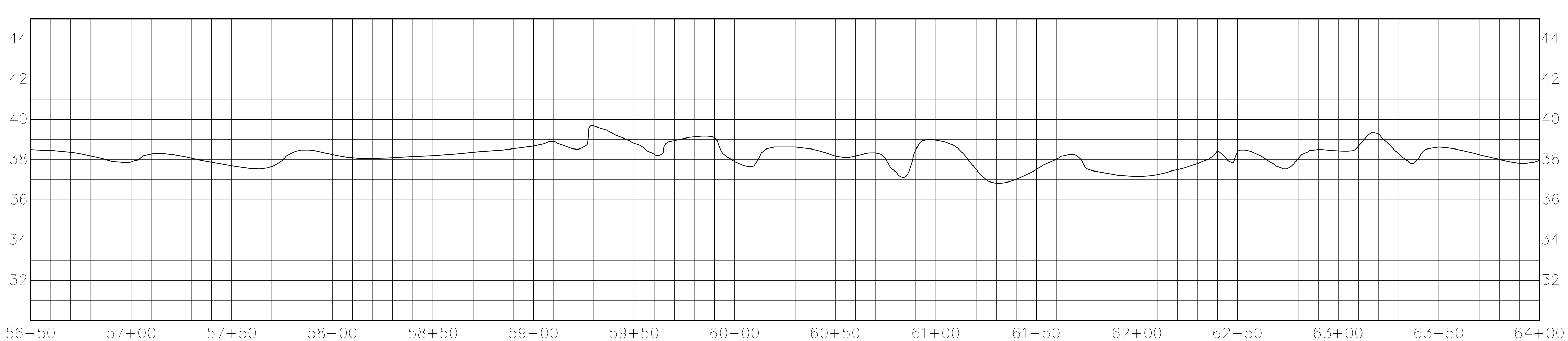
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 49+00 TO STA. 56+50



LEGEND

EXISTING CONTOURS	— — — —
CENTERLINE OF EXISTING DITCH	— · · — · · —
BOTTOM OF BANK	— — BB — —
TOP OF BANK	— — TB — —
LIMITS OF CONSERVATION EASMENT	—— LCE ——
LOG RAMP	
LOG GRADE CONTROL	
LOG TOE PROTECTION	
LOG VANE	
FORD CROSSING	
ROOT WAD	
CHANNEL PLUG	
WETLAND CHANNEL PLUG	
EXISTING WETLANDS	
BEDDED LOG STRUCTURE	
SMALL WOODY DEBRIS	(W)



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI | DRAWING SCALE 1" = 30'
DRAWN BY JLL | PROJECT DATE 08/2007
APPROVED BY DPI | PROJECT NUMBER 5043100RA
FILE NAME design.dwg | PLOT DATE 03/28/08

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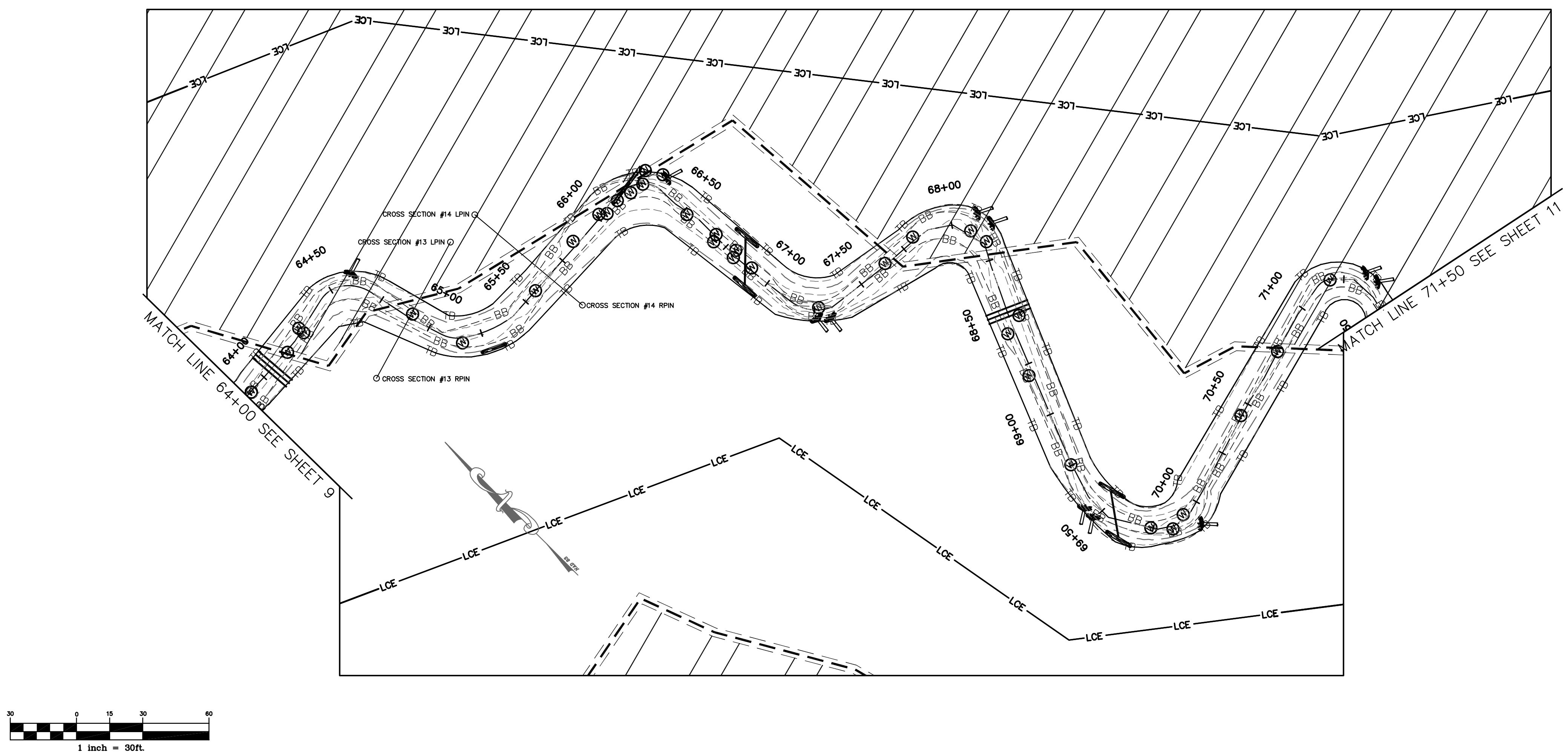
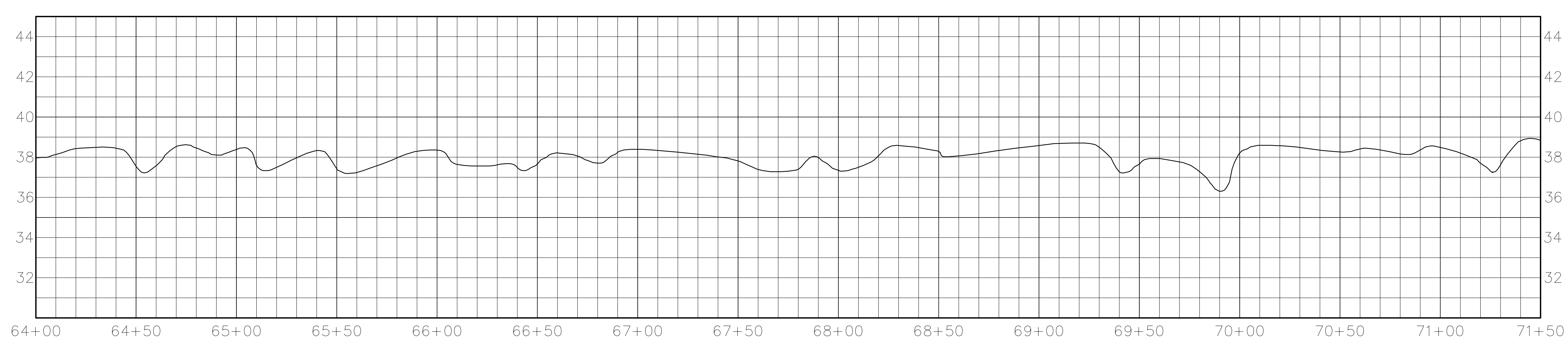
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 56+50 TO STA. 64+00



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK — BB
- TOP OF BANK — TB
- LIMITS OF CONSERVATION EASMENT — LCE
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE

REVISIONS

PROJECT MANAGER	DRAWING SCALE
DPI	1" = 30'
DRAWN BY	PROJECT DATE
JLL	08/2007
APPROVED BY	PROJECT NUMBER
DPI	5043100RA
FILE NAME	PLOT DATE
design.dwg	03/28/08

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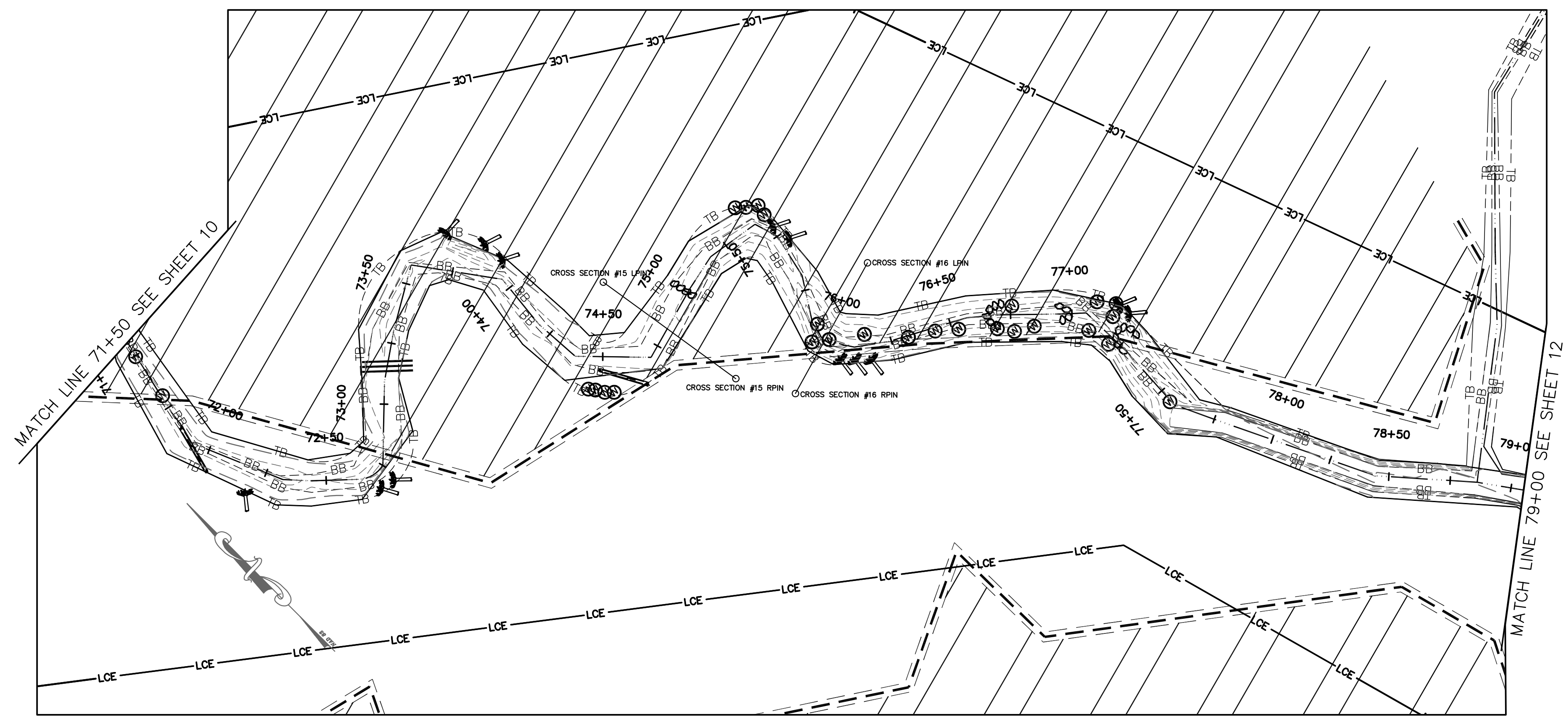
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

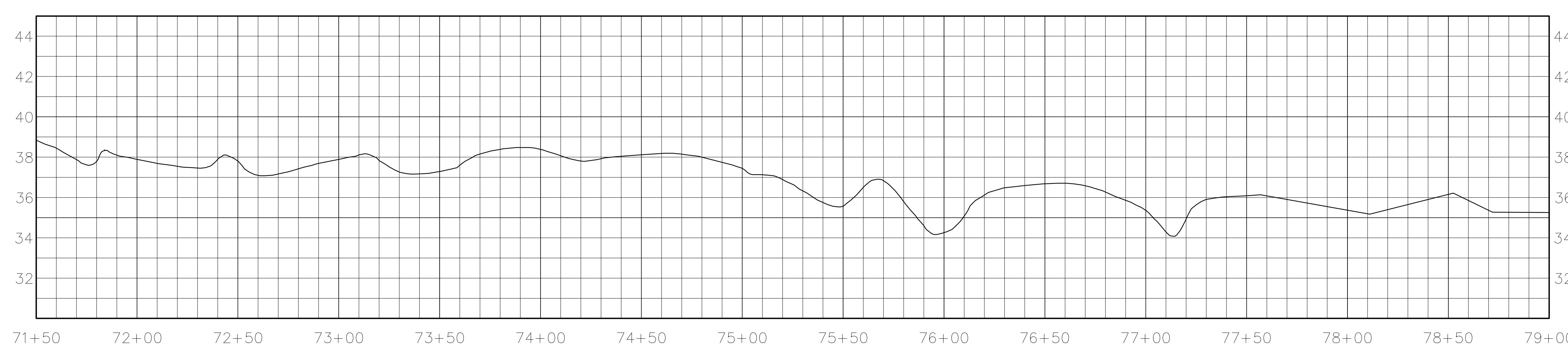
FLOOGIE AS-BUILT PLANS
STA. 64+00 TO STA. 71+50

11 / 20



LEGEND

EXISTING CONTOURS	
CENTERLINE OF EXISTING DITCH	
BOTTOM OF BANK	BB
TOP OF BANK	TB
LIMITS OF CONSERVATION EASMENT	LCE
LOG RAMP	
LOG GRADE CONTROL	
LOG TOE PROTECTION	
LOG VANE	
FORD CROSSING	
ROOT WAD	
CHANNEL PLUG	
WETLAND CHANNEL PLUG	
EXISTING WETLANDS	
BEDDED LOG STRUCTURE	
SMALL WOODY DEBRIS	W



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER: DPI	DRAWING SCALE: 1" = 30'
DRAWN BY: JLL	PROJECT DATE: 08/2007
APPROVED BY: DPI	PROJECT NUMBER: 5043100RA
FILE NAME: design.dwg	PLOT DATE: 03/28/08

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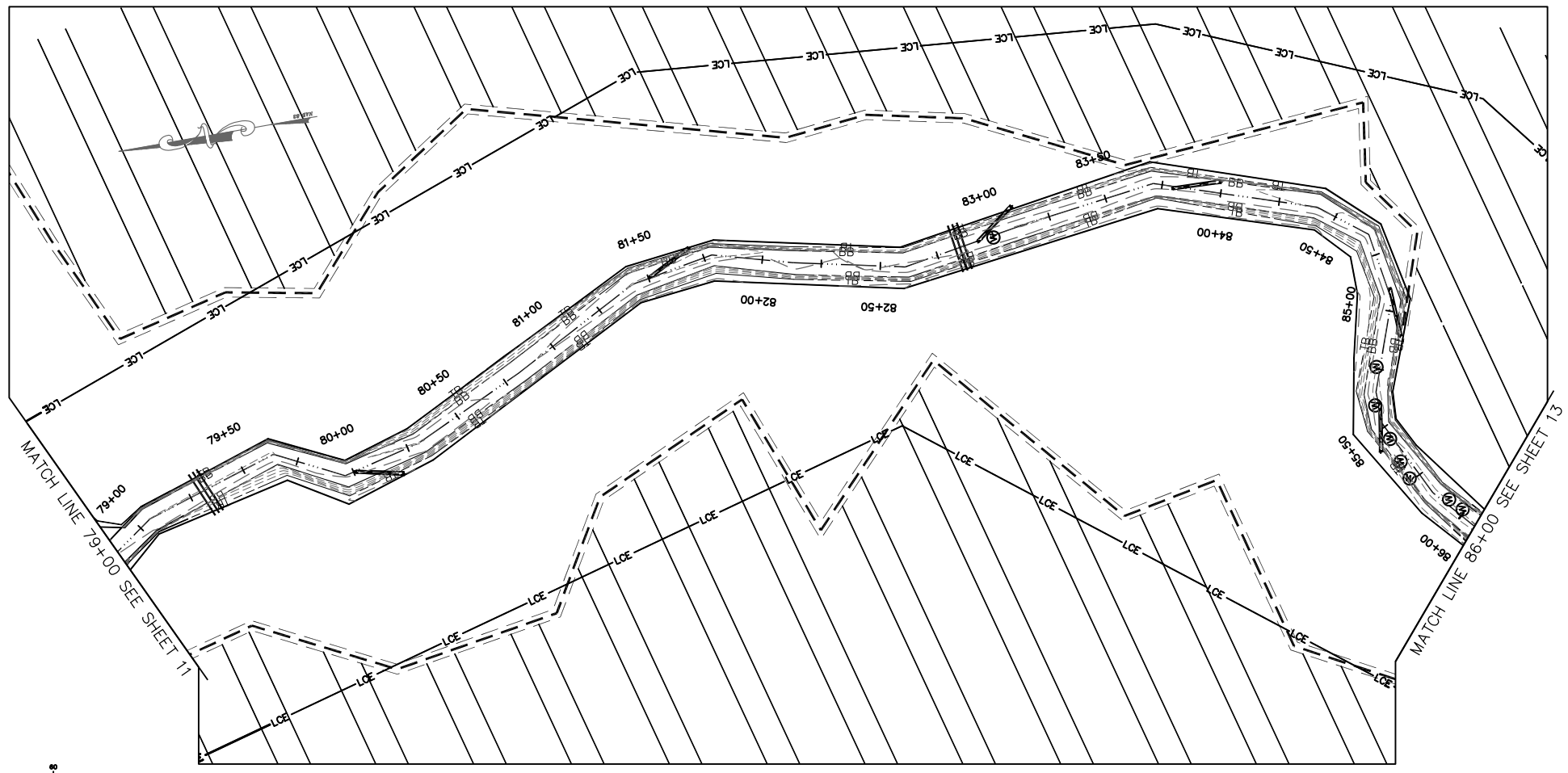
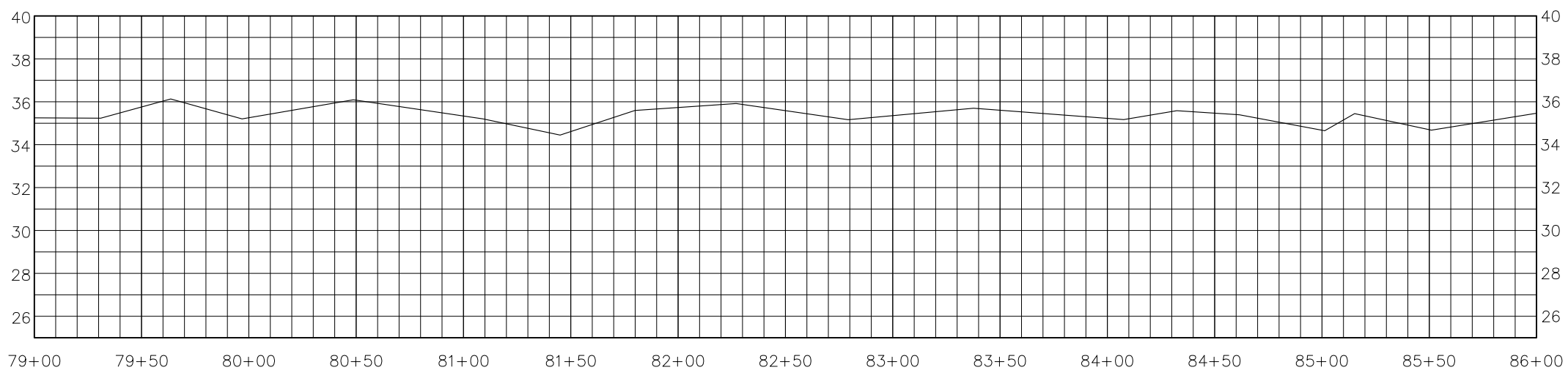
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 71+50 TO STA. 79+00



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASMENT (LCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS (W)



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER	DPI
DRAWN BY	JLL
APPROVED BY	DPI
FILE NAME	design.dwg
DRAWING SCALE	1" = 30'
PROJECT DATE	08/2007
PROJECT NUMBER	5043100RA
PLOT DATE	03/28/08

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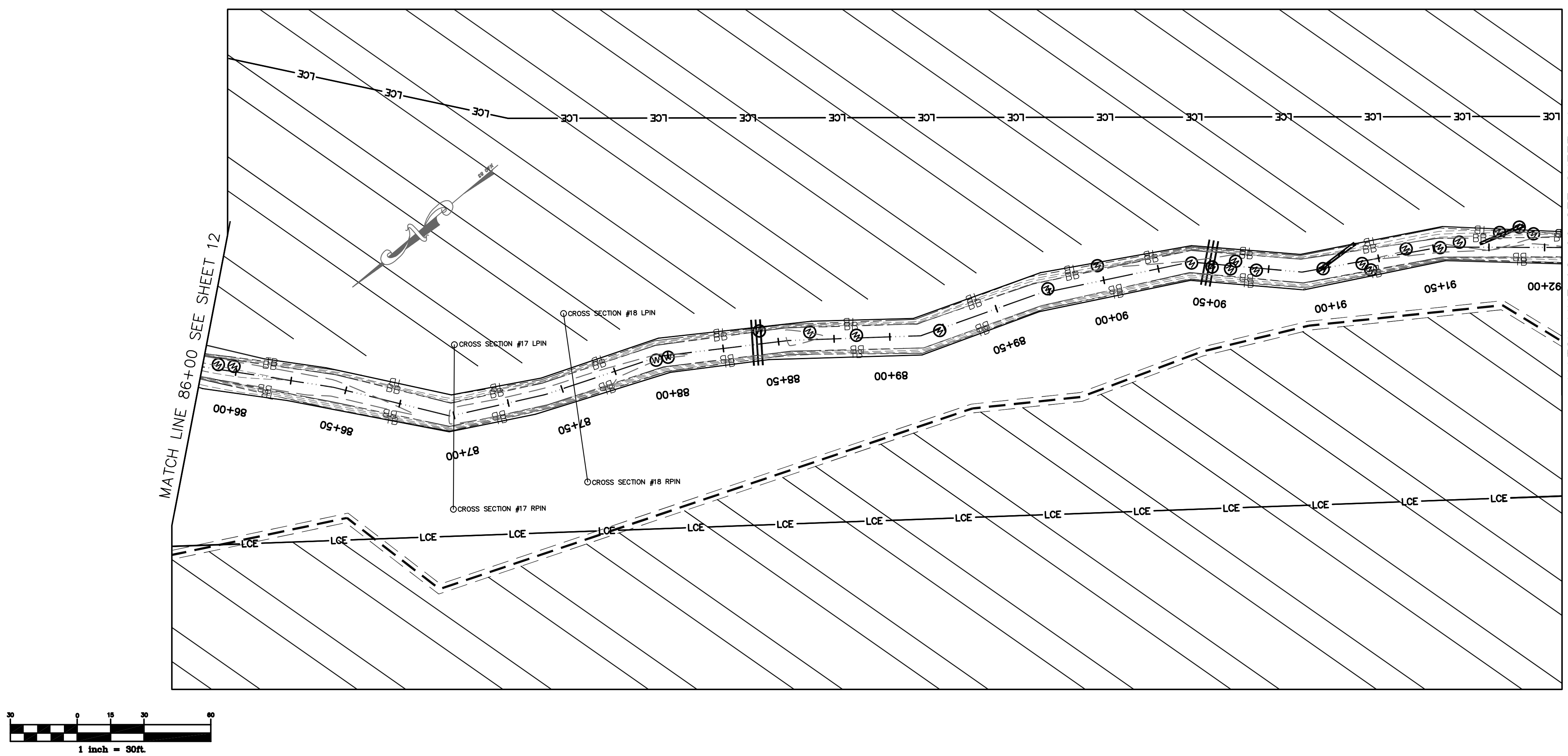
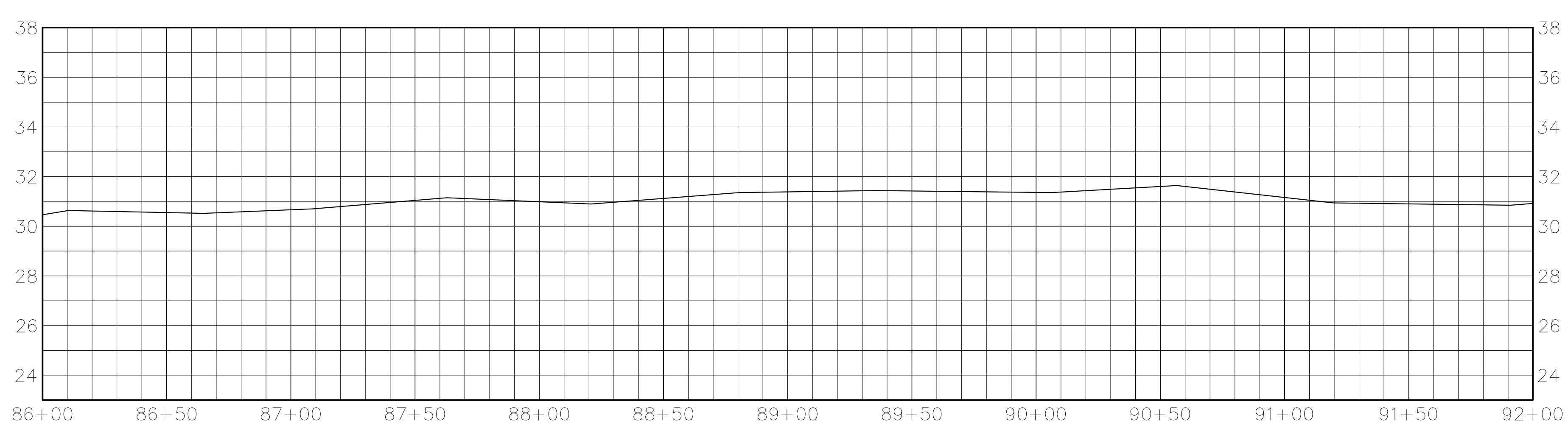
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 79+00 TO STA. 86+00



LEGEND

EXISTING CONTOURS	— — —
CENTERLINE OF EXISTING DITCH	— · —
BOTTOM OF BANK	— BB —
TOP OF BANK	— TB —
LIMITS OF CONSERVATION EASMENT	— LCE —
LOG RAMP	
LOG GRADE CONTROL	
LOG TOE PROTECTION	
LOG VANE	
FORD CROSSING	
ROOT WAD	
CHANNEL PLUG	
WETLAND CHANNEL PLUG	
EXISTING WETLANDS	
BEDDED LOG STRUCTURE	
SMALL WOODY DEBRIS	(W)



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI	DRAWING SCALE 1" = 30'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

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FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 86+00 TO STA. 92+00

REVISIONS		
REV. NO.	DESCRIPTION	DATE

PROJECT MANAGER	DRAWING SCALE
DPI	1" = 30'
APPROVED BY	PROJECT NUMBER
DPI	5OA1300BA
DRAWN BY	PROJECT DATE
JLL	08/2007
FILE NAME	PLOT DATE
design.dwg	03/28/08

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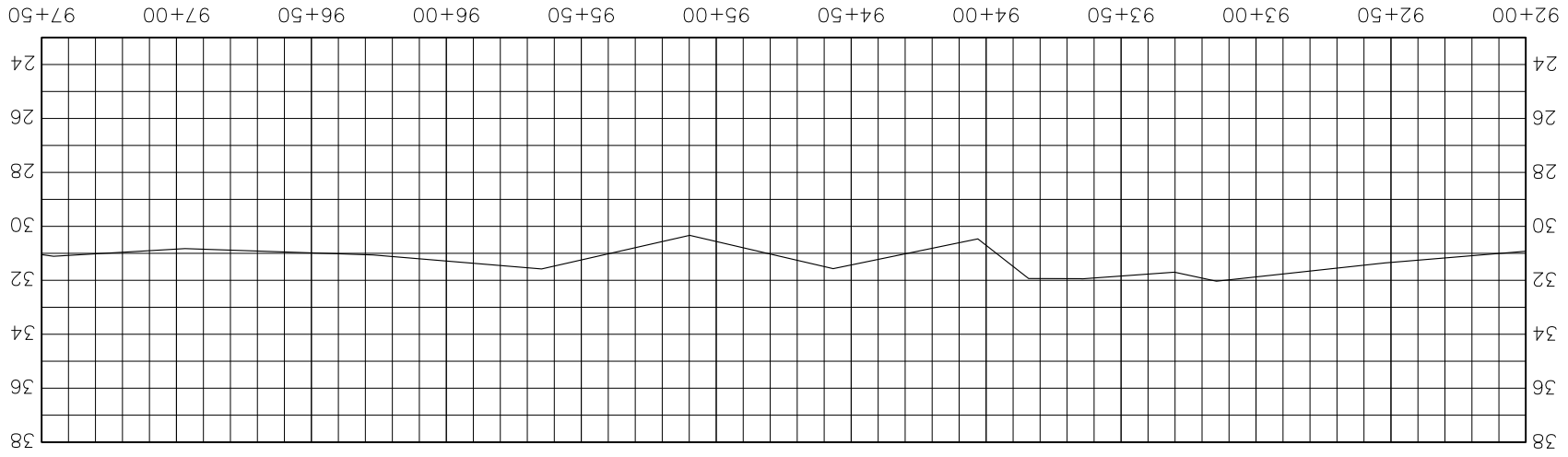
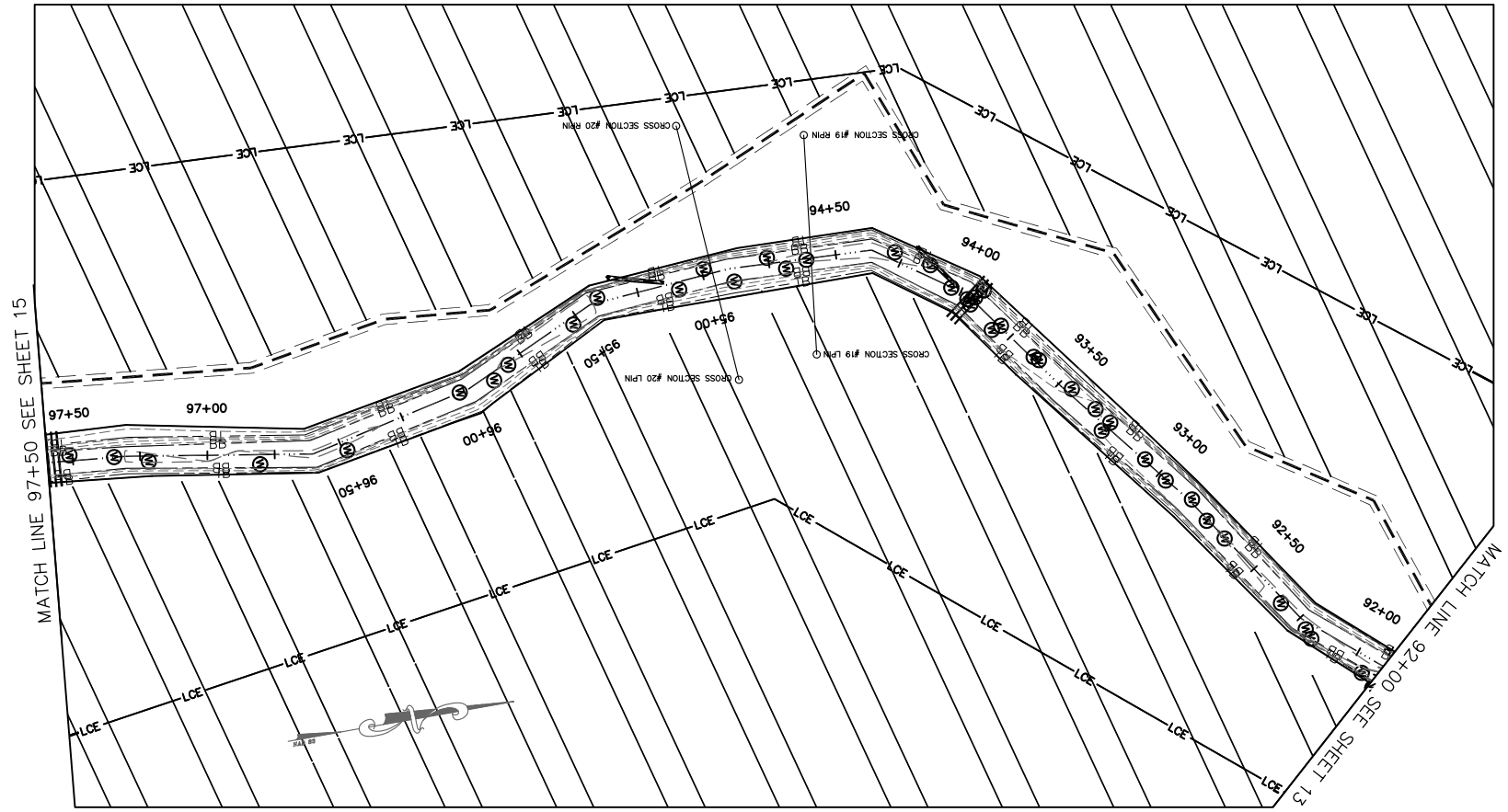
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 92+00 TO STA. 97+50

Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

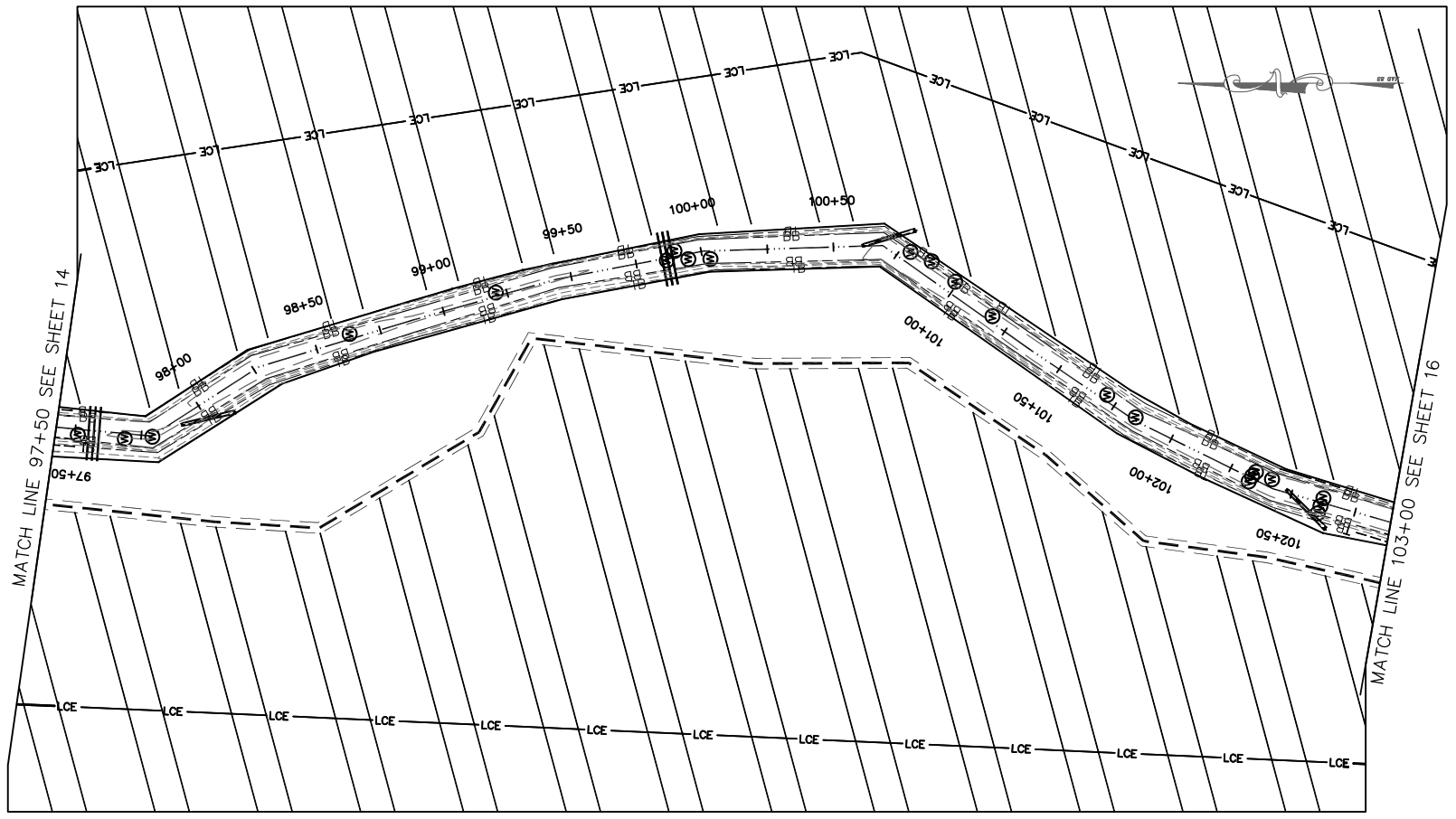


1 inch = 30ft.



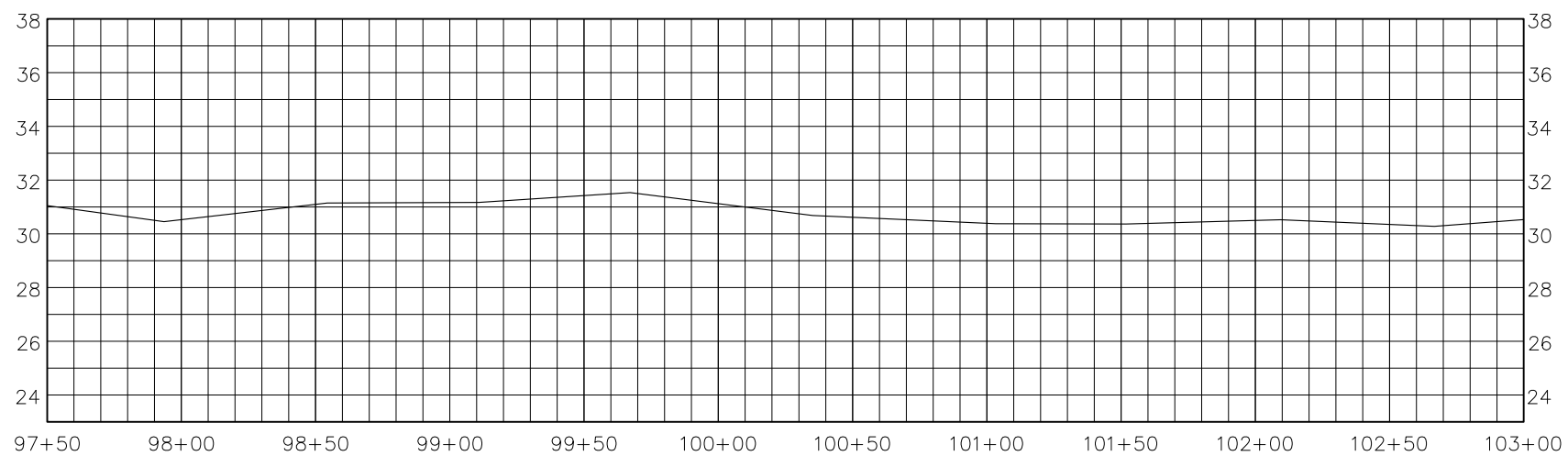
LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASEMENT (LOCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS



LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASMENT (LCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS (W)



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER	DPI
DRAWN BY	JLL
APPROVED BY	DPI
FILE NAME	design.dwg
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PROJECT DATE	08/2007
PROJECT NUMBER	5043100RA
PLOT DATE	03/28/08

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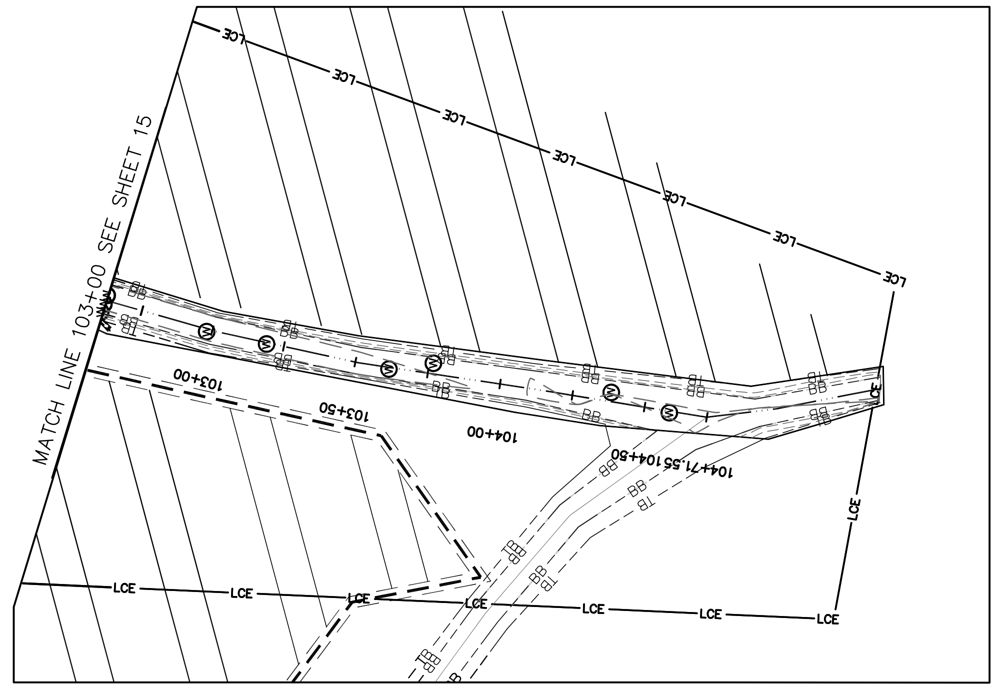
BERTIE COUNTY, NORTH CAROLINA

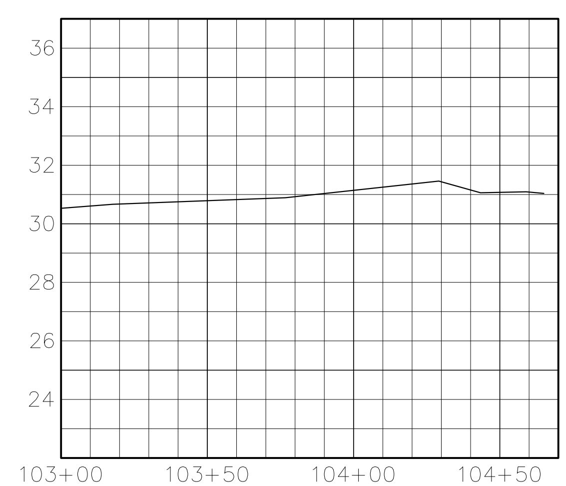
FLOOGIE AS-BUILT PLANS
STA. 97+50 TO STA. 103+00



1 inch = 30ft.

LEGEND

- EXISTING CONTOURS
- CENTERLINE OF EXISTING DITCH
- BOTTOM OF BANK (BB)
- TOP OF BANK (TB)
- LIMITS OF CONSERVATION EASMENT (LCE)
- LOG RAMP
- LOG GRADE CONTROL
- LOG TOE PROTECTION
- LOG VANE
- FORD CROSSING
- ROOT WAD
- CHANNEL PLUG
- WETLAND CHANNEL PLUG
- EXISTING WETLANDS
- BEDDED LOG STRUCTURE
- SMALL WOODY DEBRIS



Horizontal Scale: 1 inch = 30ft.
Vertical Scale: 1 inch = 3ft.

REV. NO.	DESCRIPTION	DATE
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PROJECT MANAGER DPI	DRAWING SCALE 1" = 30'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

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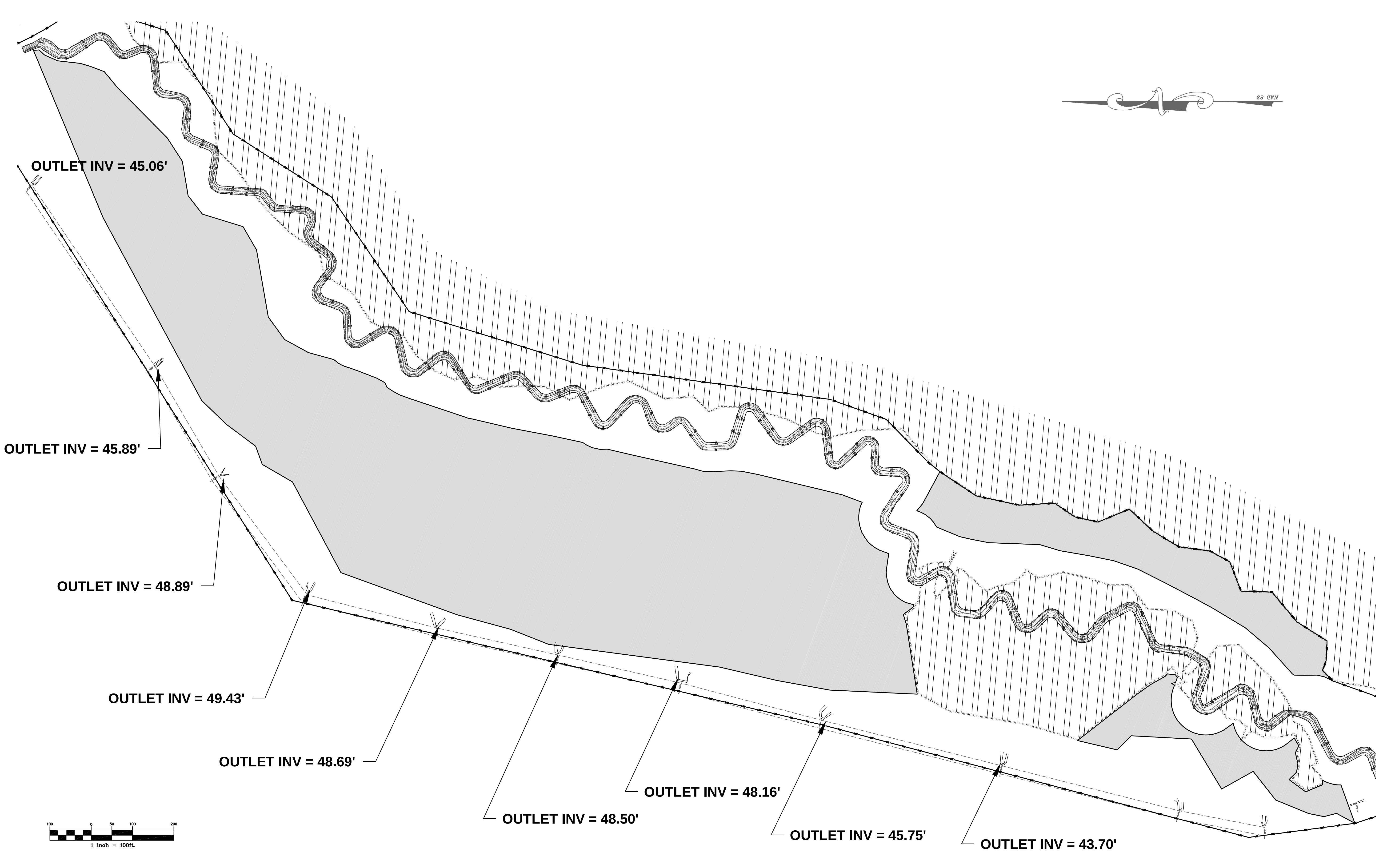
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
STA. 103+00 TO STA. 104+71.55



REV. NO.	DESCRIPTION	DATE

REVISIONS

PROJECT MANAGER DPI	DRAWING SCALE 1" = 100'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

WK DICKSON
community infrastructure consultants

720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919) 782-0495

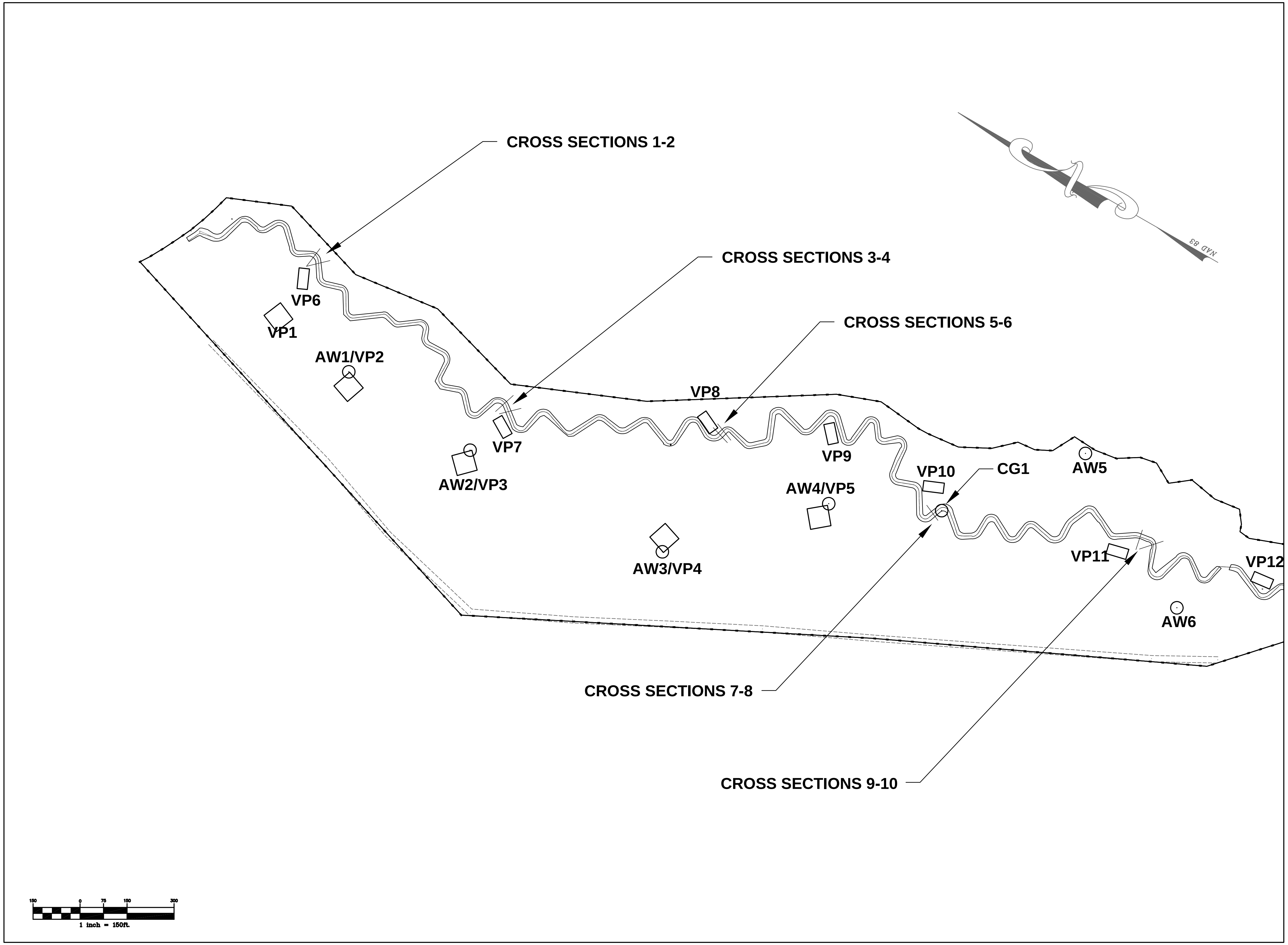
Office Locations:
North Carolina
South Carolina
Georgia

RELEASED FOR	DATE
APPROVALS	
BIDDING	
CONSTRUCTION	
RECORD DWG.	

EBX

ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
WETLAND CONDITIONS



REV. NO.	DESCRIPTION	DATE

REVISIONS

PROJECT MANAGER DPI	DRAWING SCALE 1" = 150'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

WK DICKSON
community infrastructure consultants

720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
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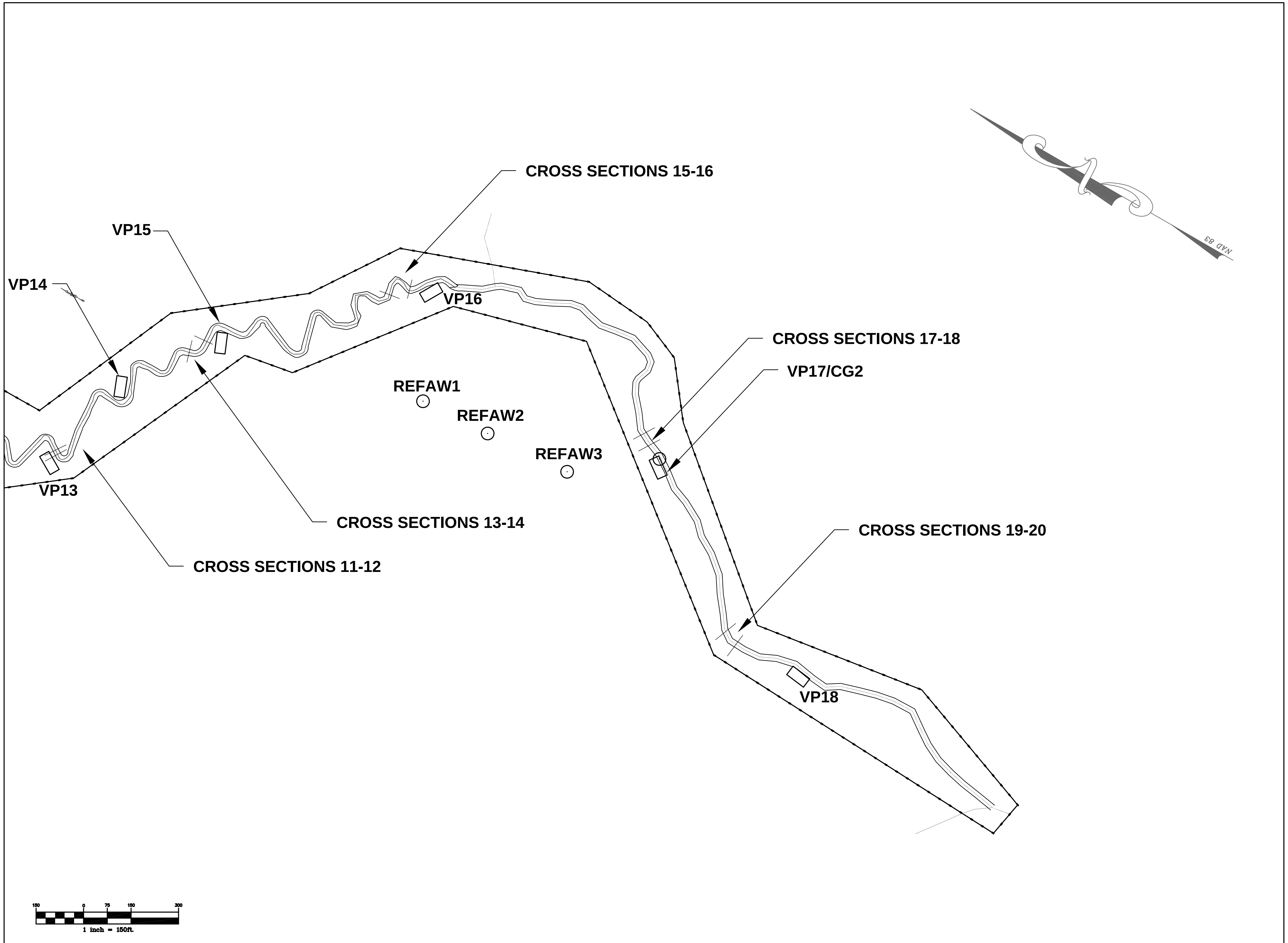
Office Locations:
North Carolina
South Carolina
Georgia

RELEASED FOR	DATE
APPROVALS	
BIDDING	
CONSTRUCTION	
RECORD DWG.	

EBX

ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

FLOOGIE AS-BUILT PLANS
MONITORING OVERVIEW



REV. NO.	DESCRIPTION	DATE
	REVISIONS	

PROJECT MANAGER DPI	DRAWING SCALE 1" = 150'
DRAWN BY JLL	PROJECT DATE 08/2007
APPROVED BY DPI	PROJECT NUMBER 5043100RA
FILE NAME design.dwg	PLOT DATE 03/28/08

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APPROVALS	
BIDDING	
CONSTRUCTION	
RECORD DWG.	

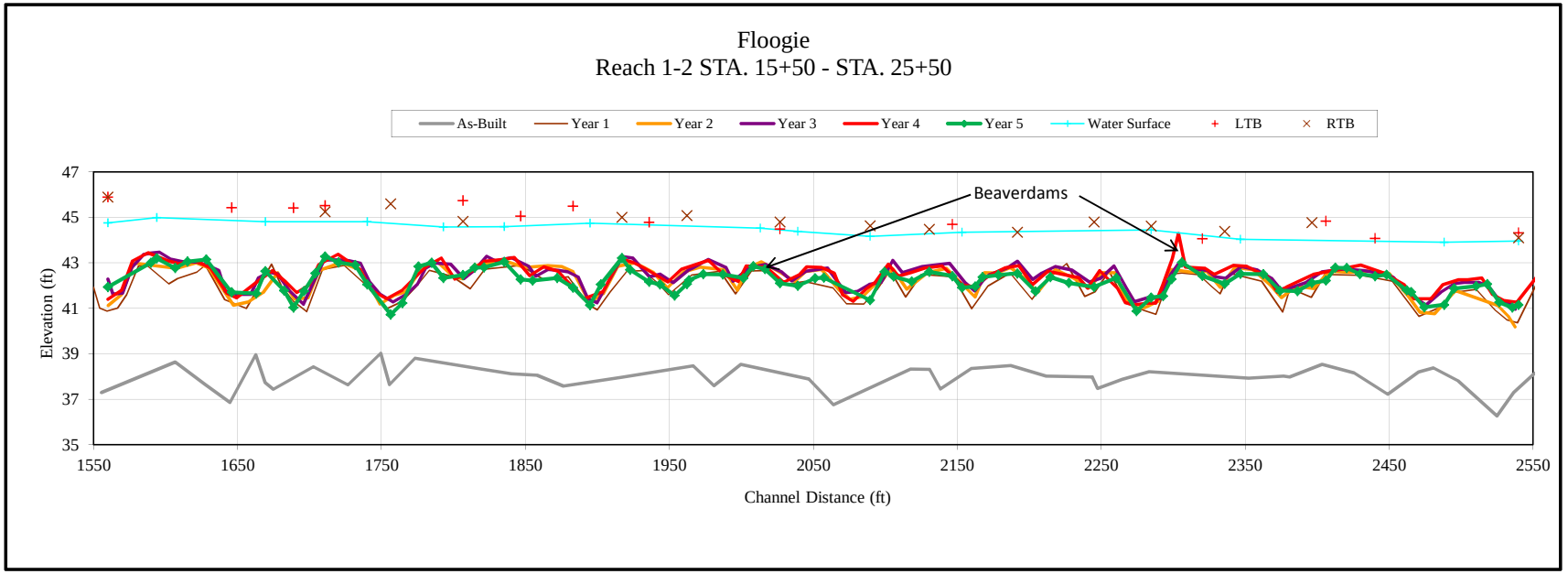
EBX

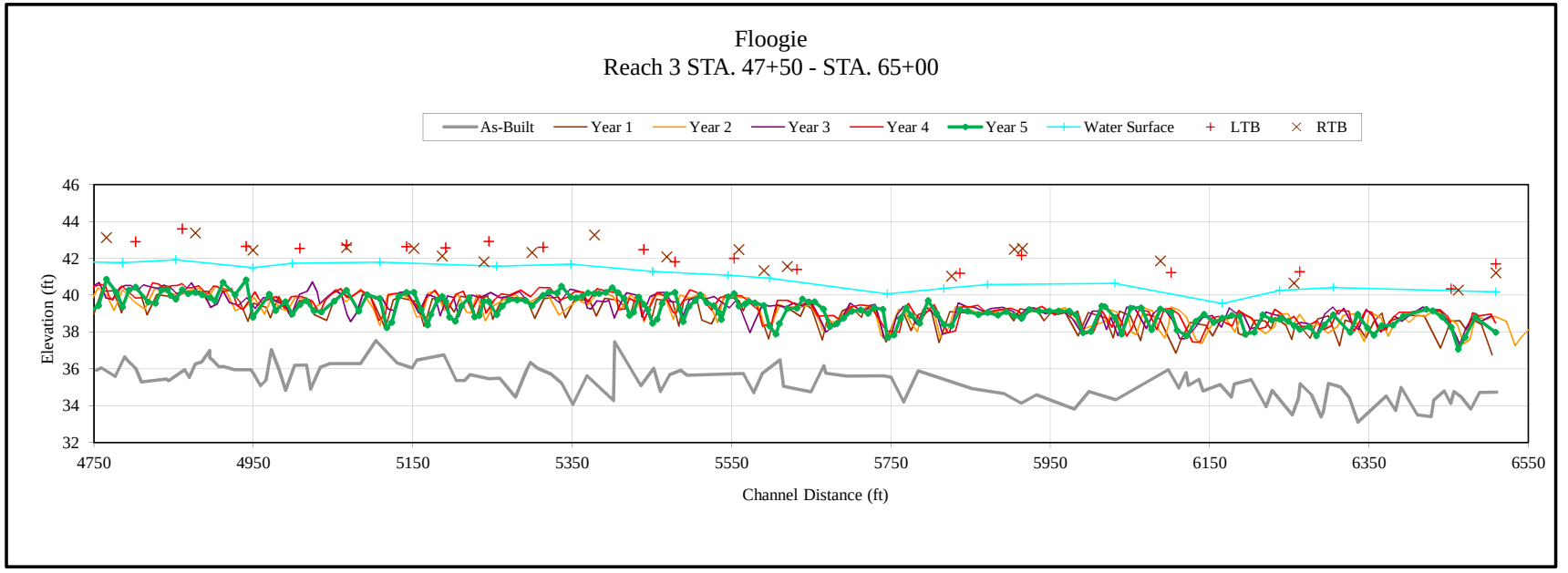
ENVIRONMENTAL BANC & EXCHANGE, LLC
FLOOGIE MITIGATION PROJECT
BERTIE COUNTY, NORTH CAROLINA

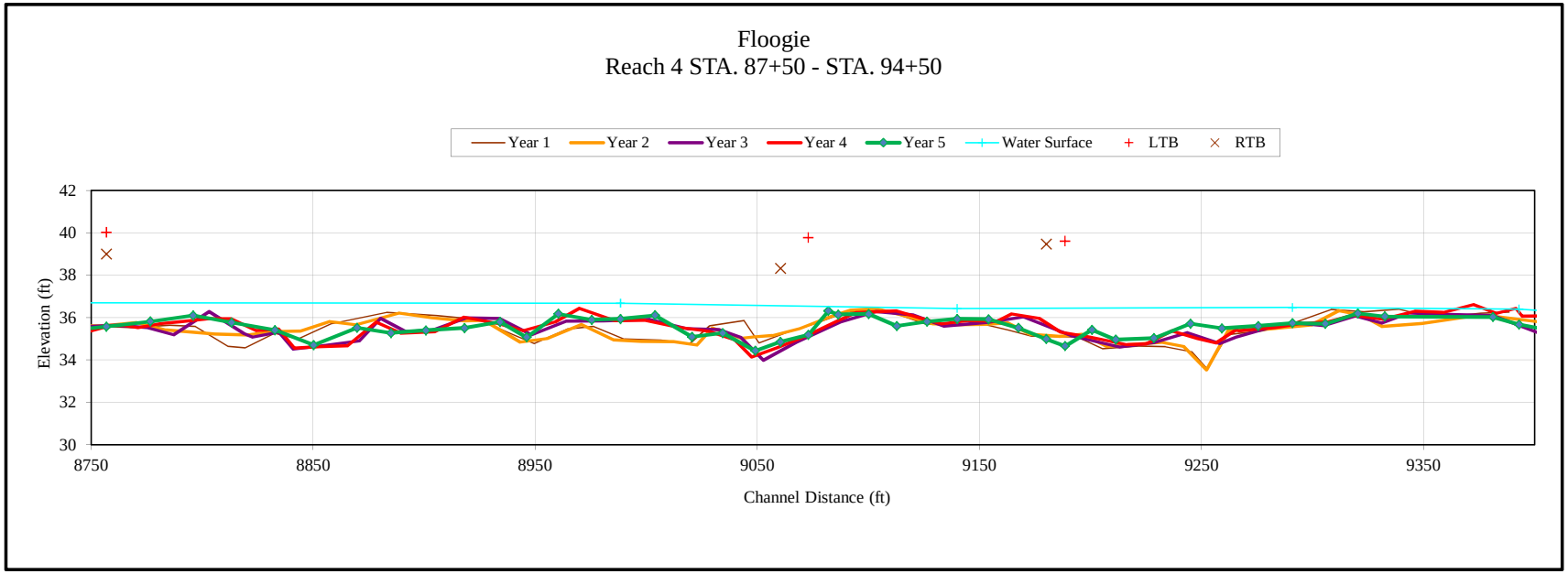
FLOOGIE AS-BUILT PLANS
MONITORING OVERVIEW

APPENDIX B

2012 Profile and Cross Section Data

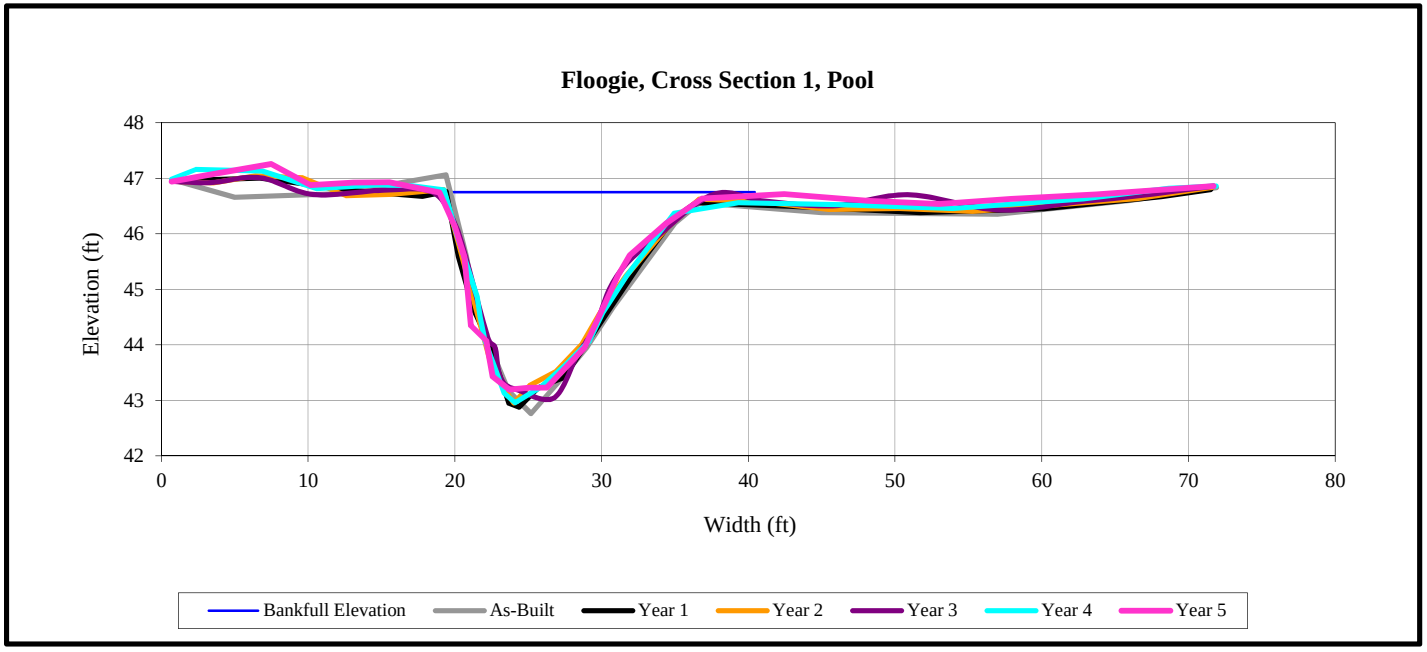

Floogie
Reach 1-2 STA. 15+50 - STA. 25+50
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5
Water Surface
LTB
RTB
Beaverdams
Elevation (ft)
47
45
43
41
39
37
35
1550
1650
1750
1850
1950
2050
2150
2250
2350
2450
2550
Channel Distance (ft)


Floogie
Reach 3 STA. 47+50 - STA. 65+00
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5
Water Surface
LTB
RTB
Elevation (ft)
46
44
42
40
38
36
34
32
4750
4950
5150
5350
5550
5750
5950
6150
6350
6550
Channel Distance (ft)


Floogie
Reach 4 STA. 87+50 - STA. 94+50
Year 1
Year 2
Year 3
Year 4
Year 5
Water Surface
LTB
RTB
Elevation (ft)
42
40
38
36
34
32
30
8750
8850
8950
9050
9150
9250
9350
Channel Distance (ft)

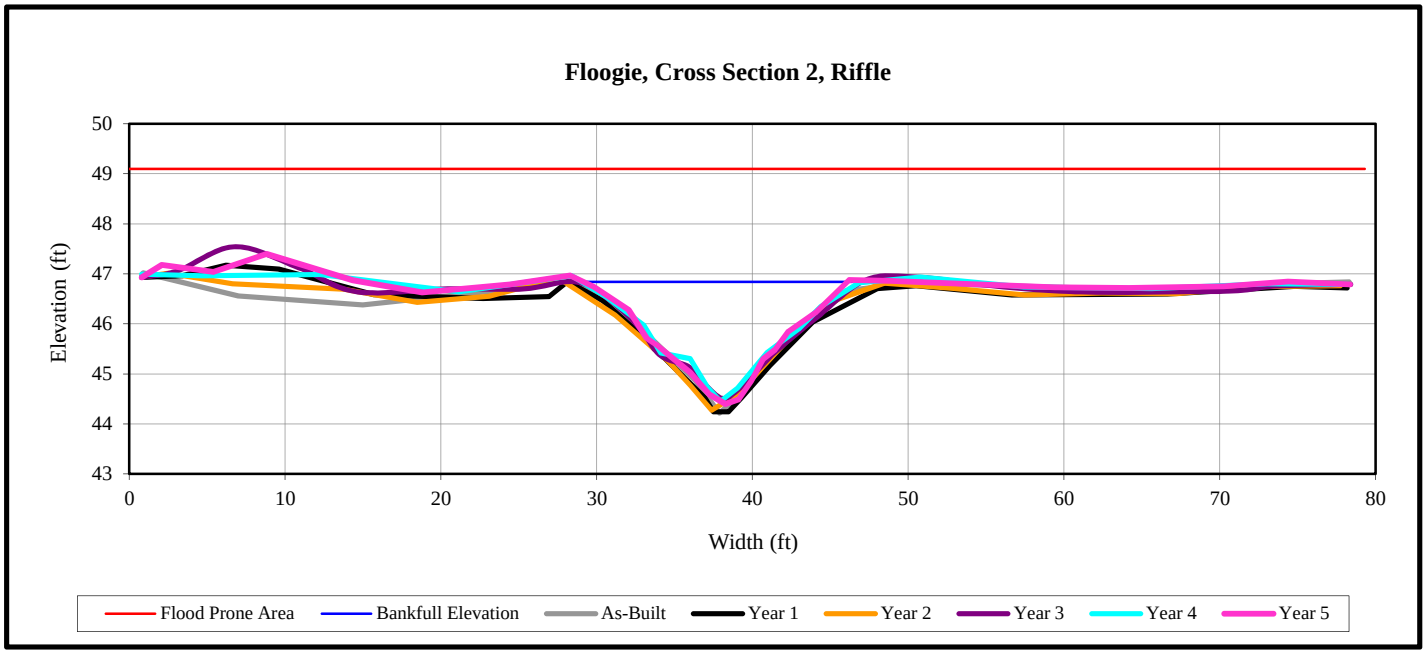
Left bank

Right bank



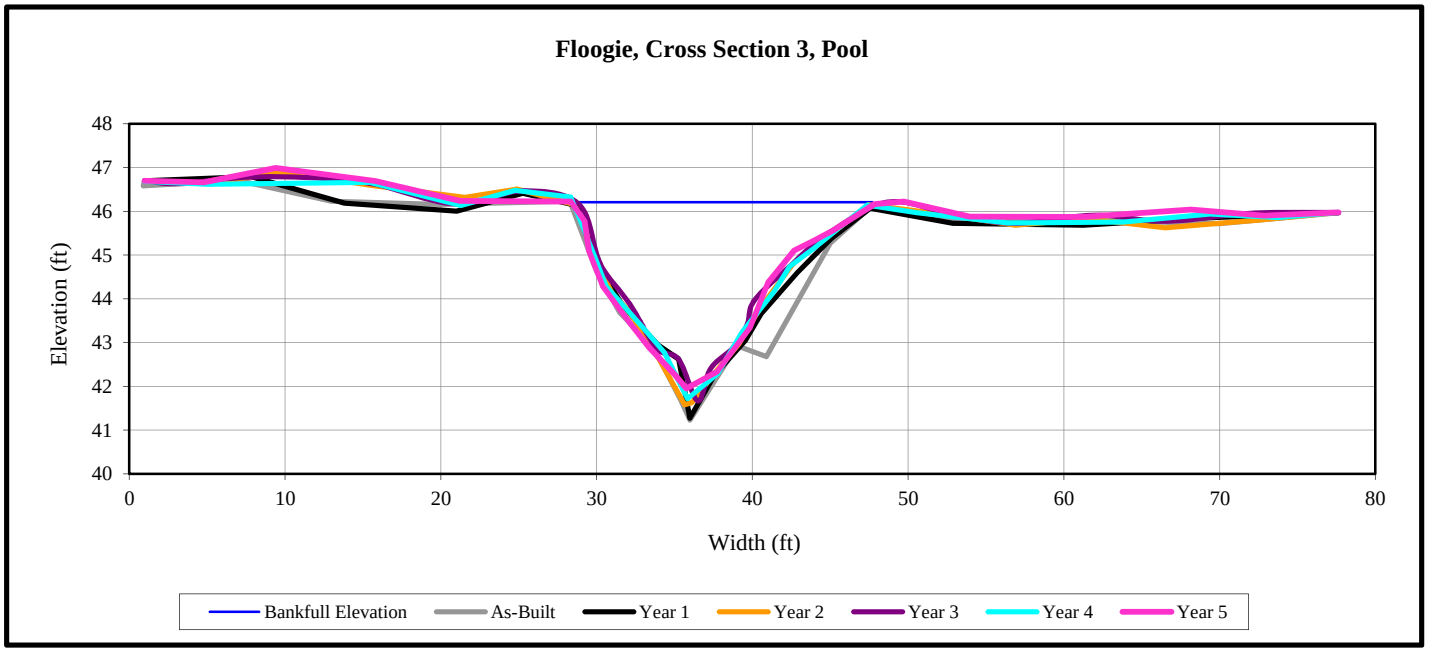
Left bank

Right bank



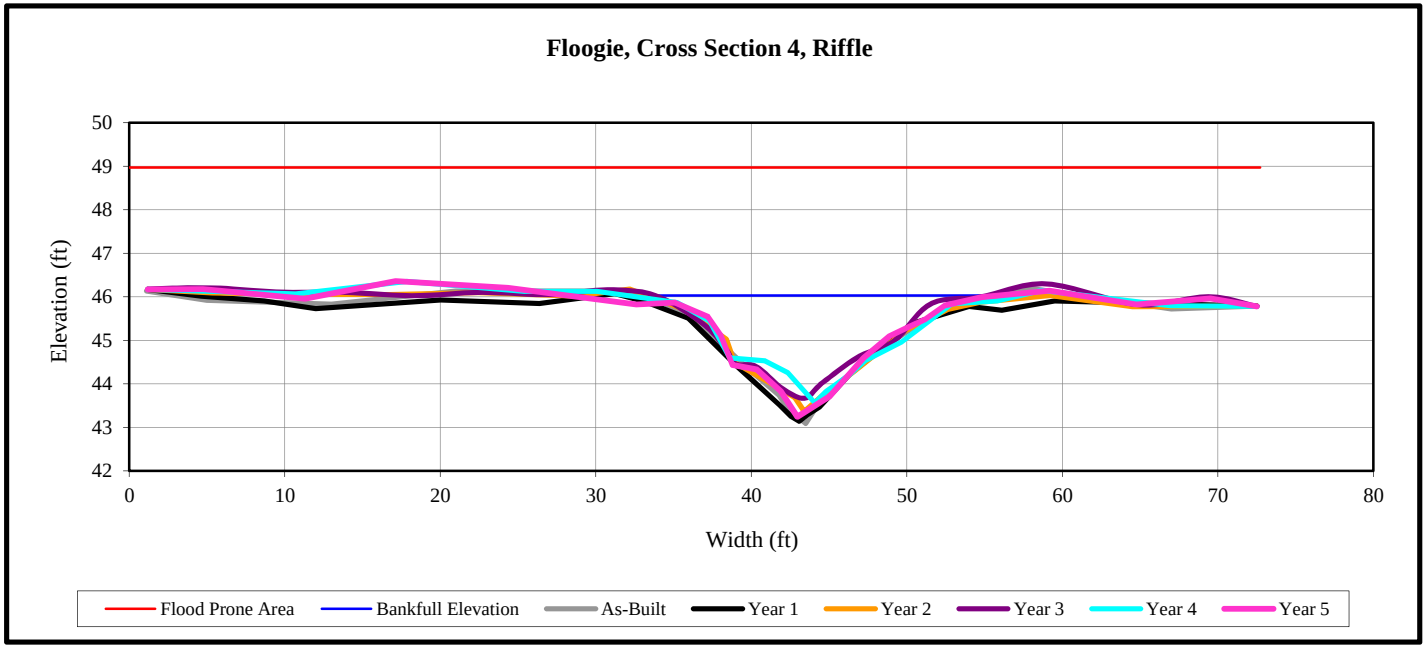
Left bank

Right bank



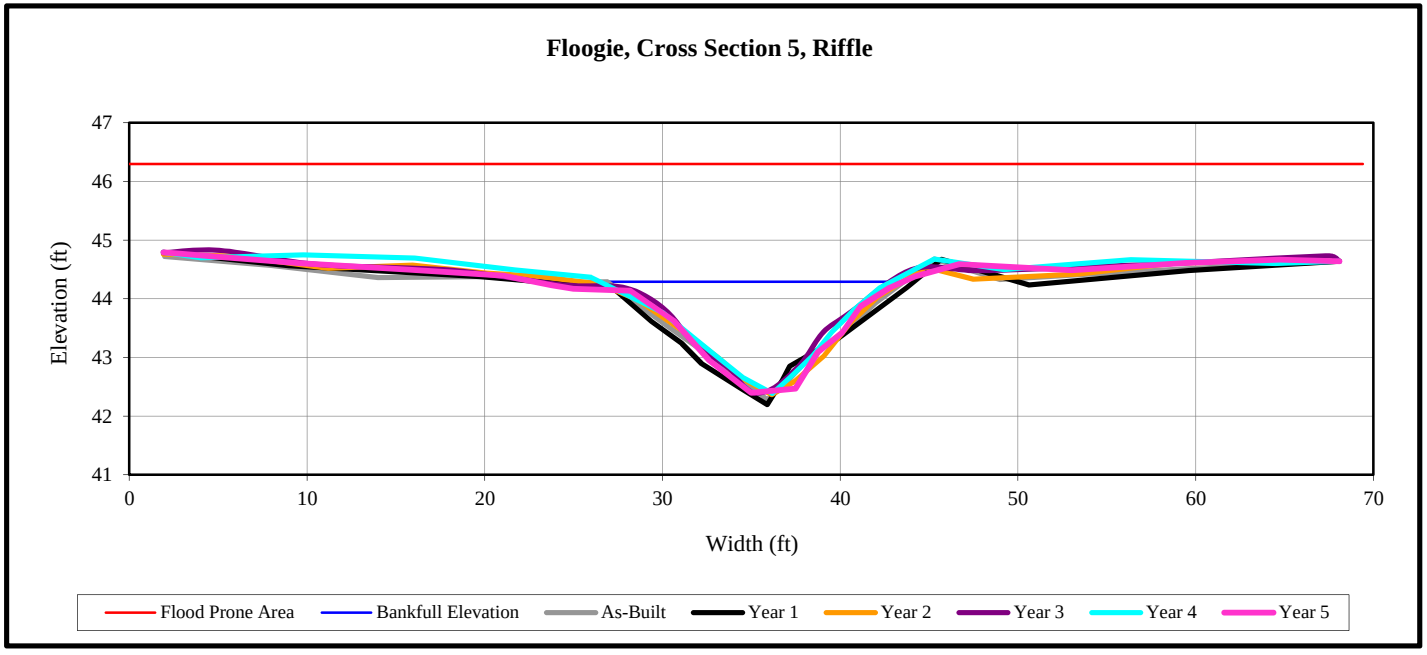
Left bank

Right bank



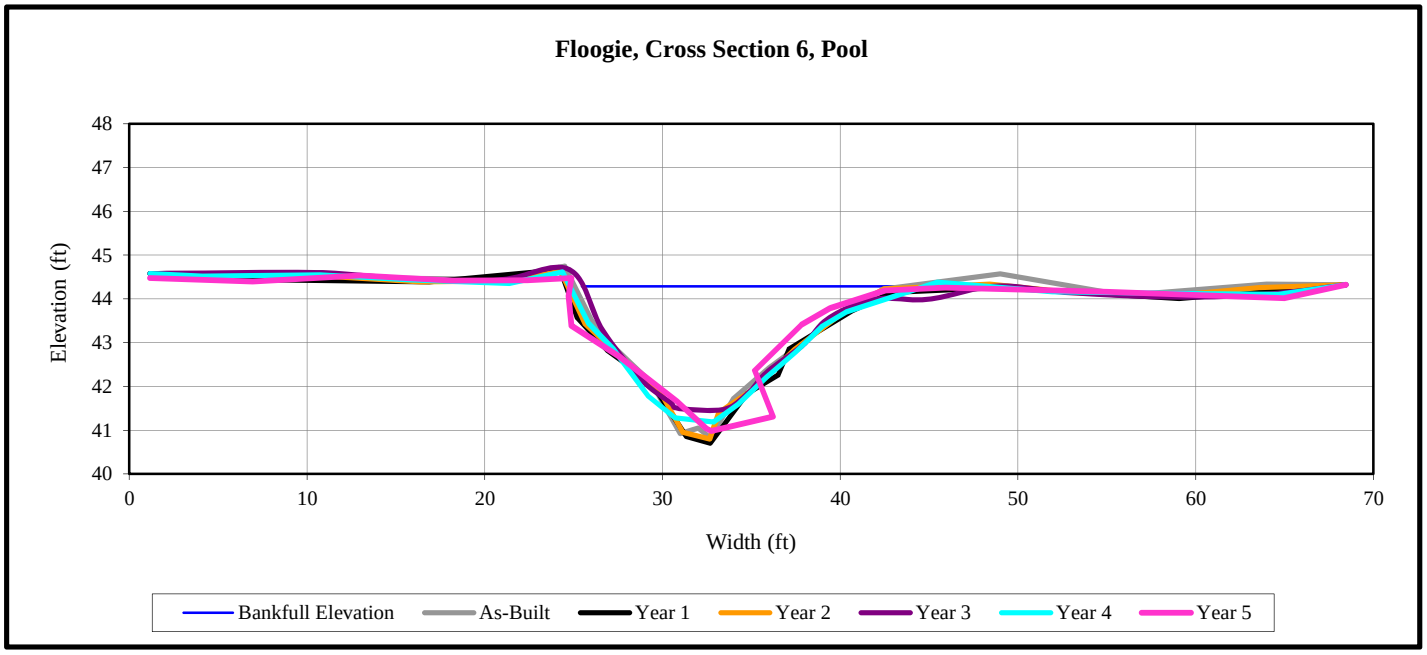
Left bank

Right bank



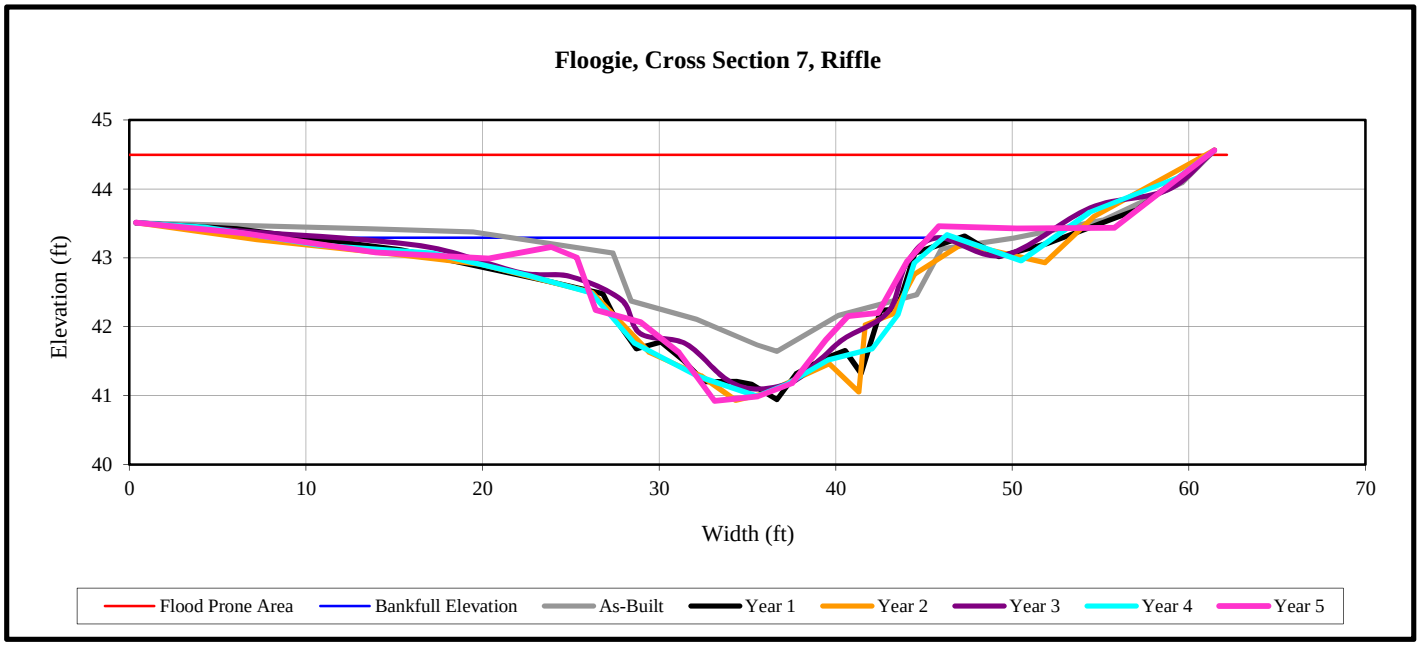
Left bank

Right bank



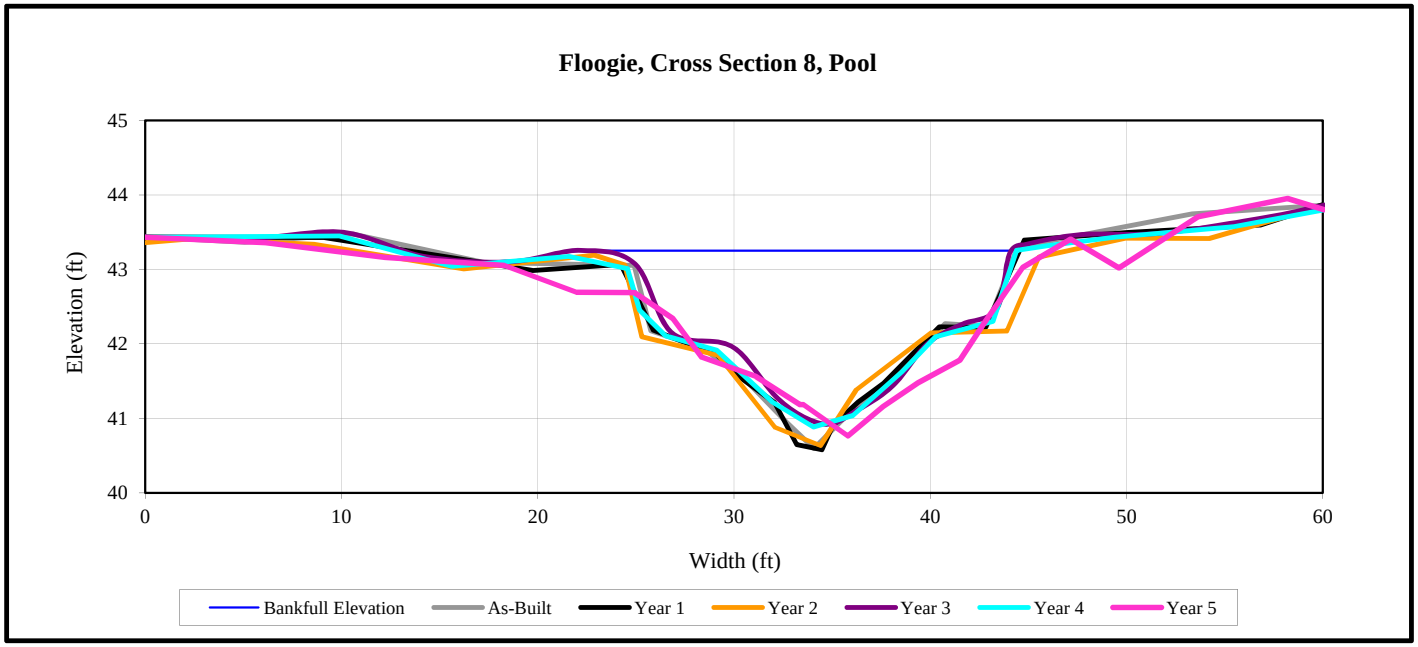
Left bank

Right bank



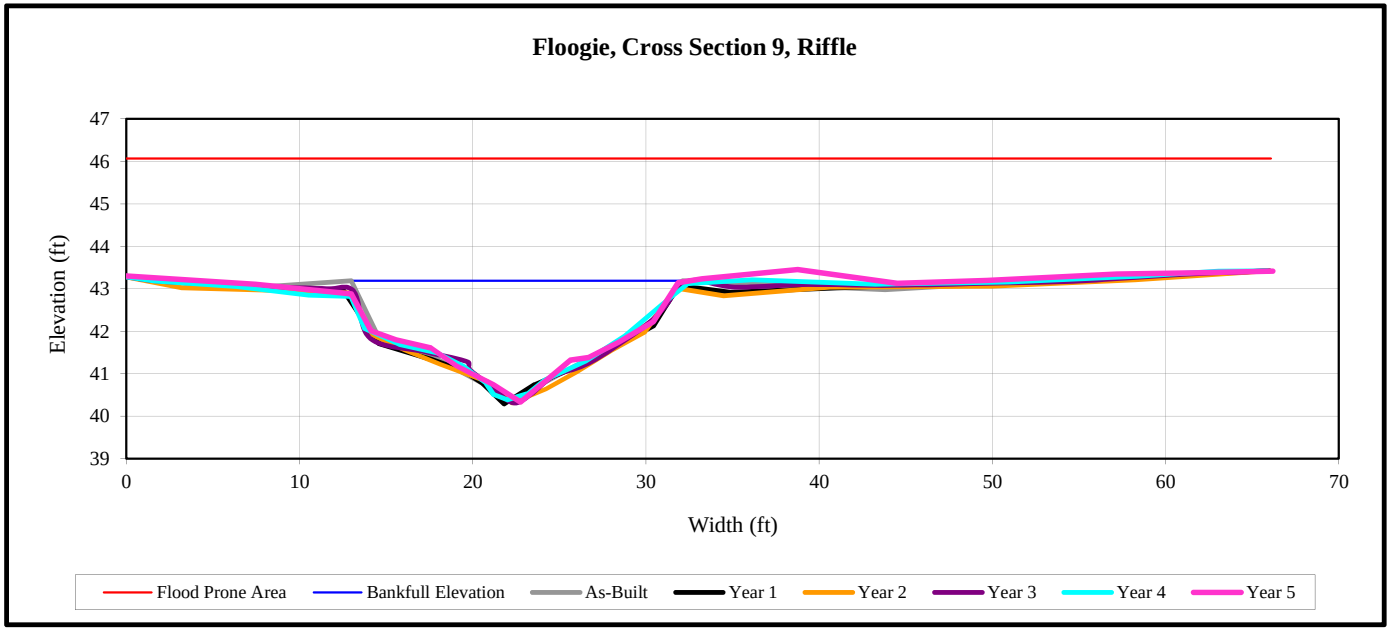
Left bank

Right bank



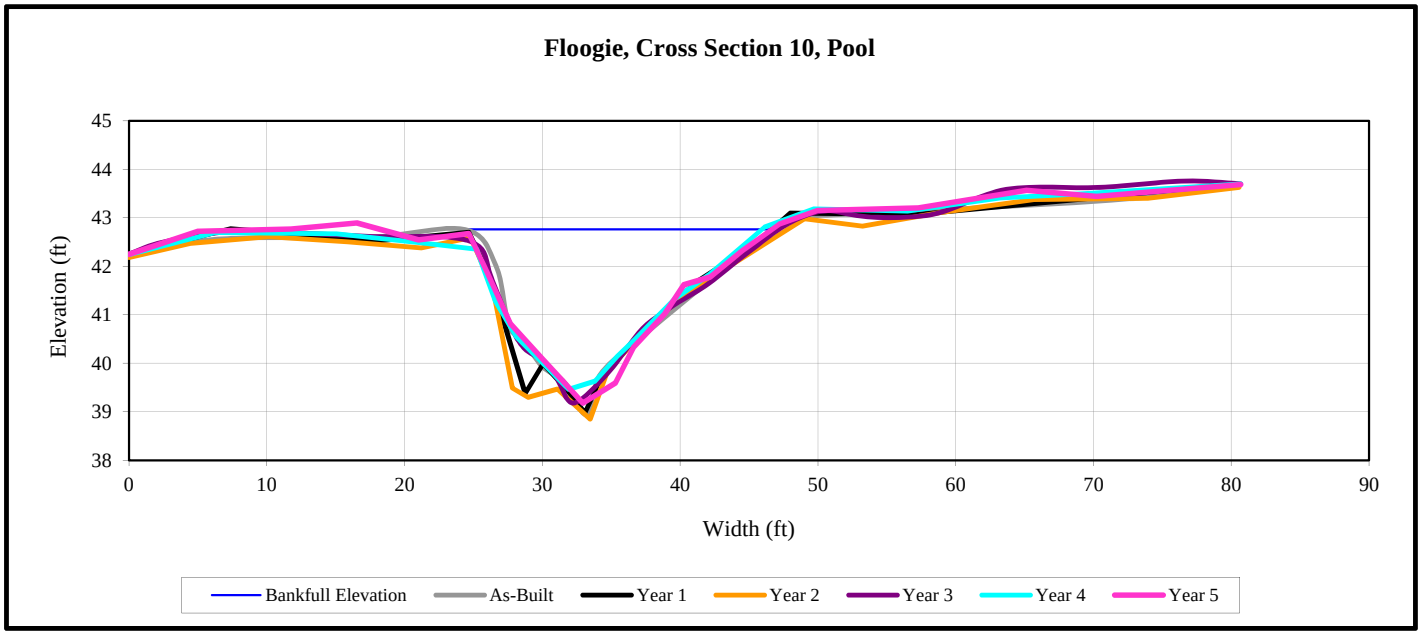
Left bank

Right bank



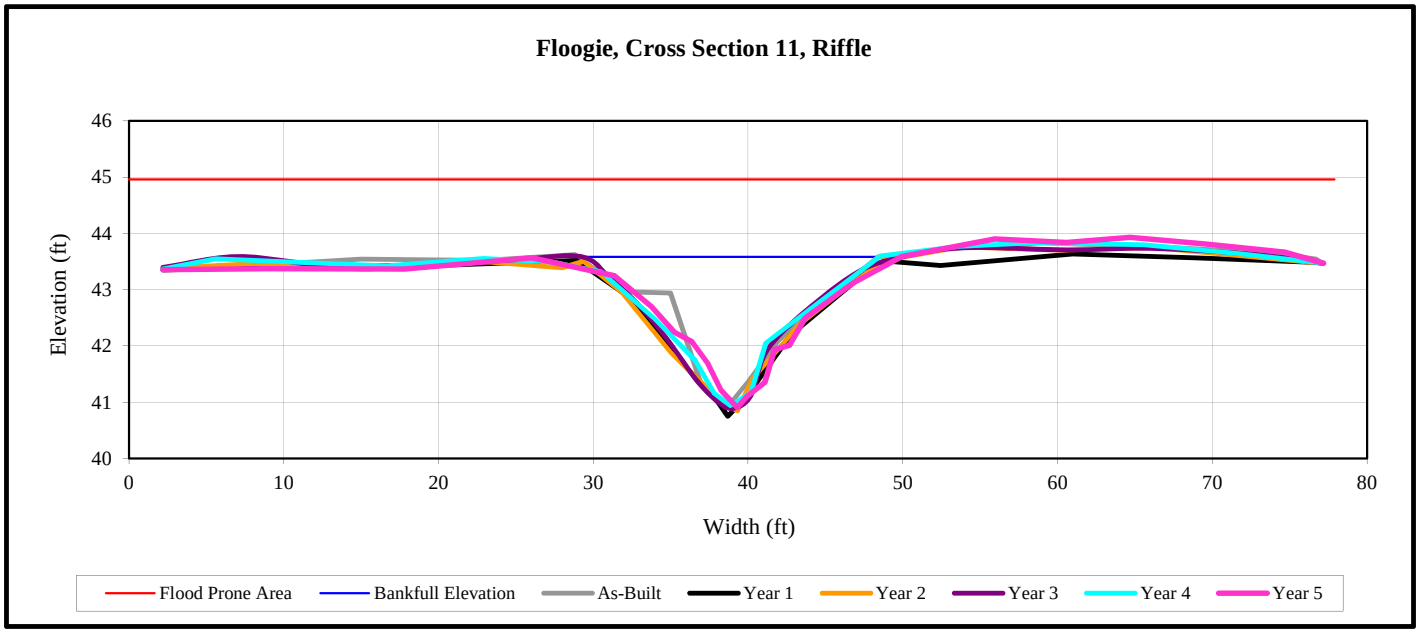
Left bank

Right bank



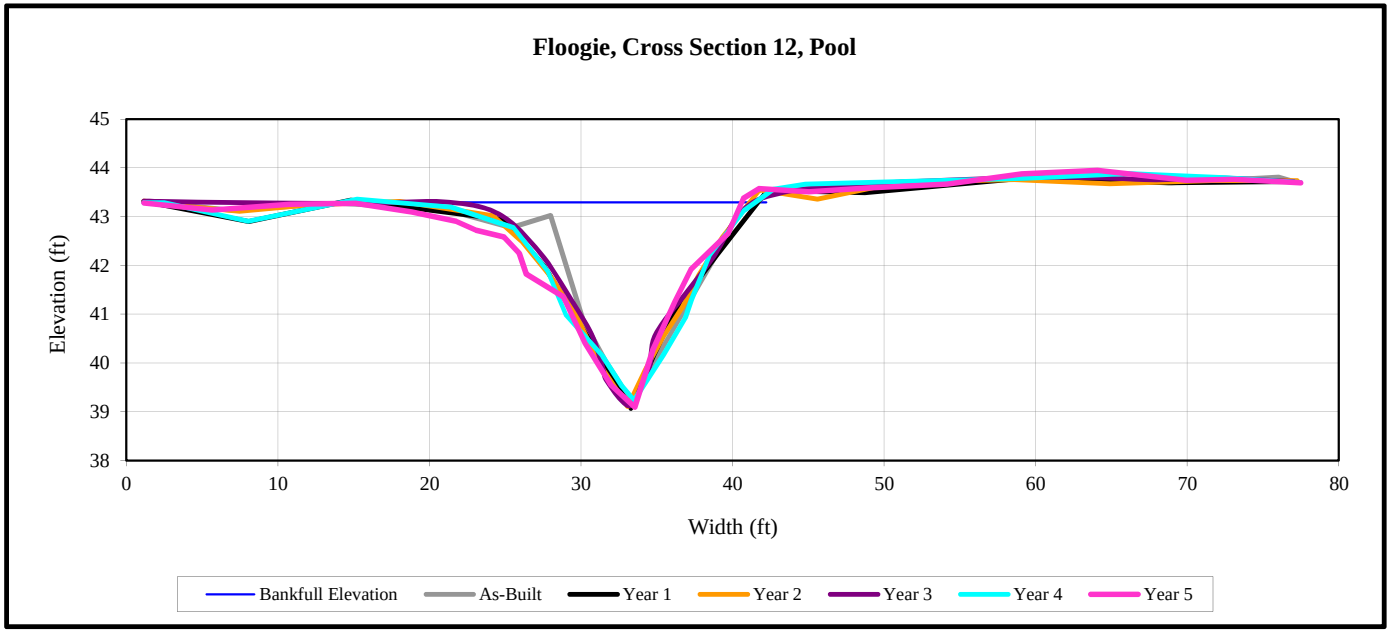
Left bank

Right bank



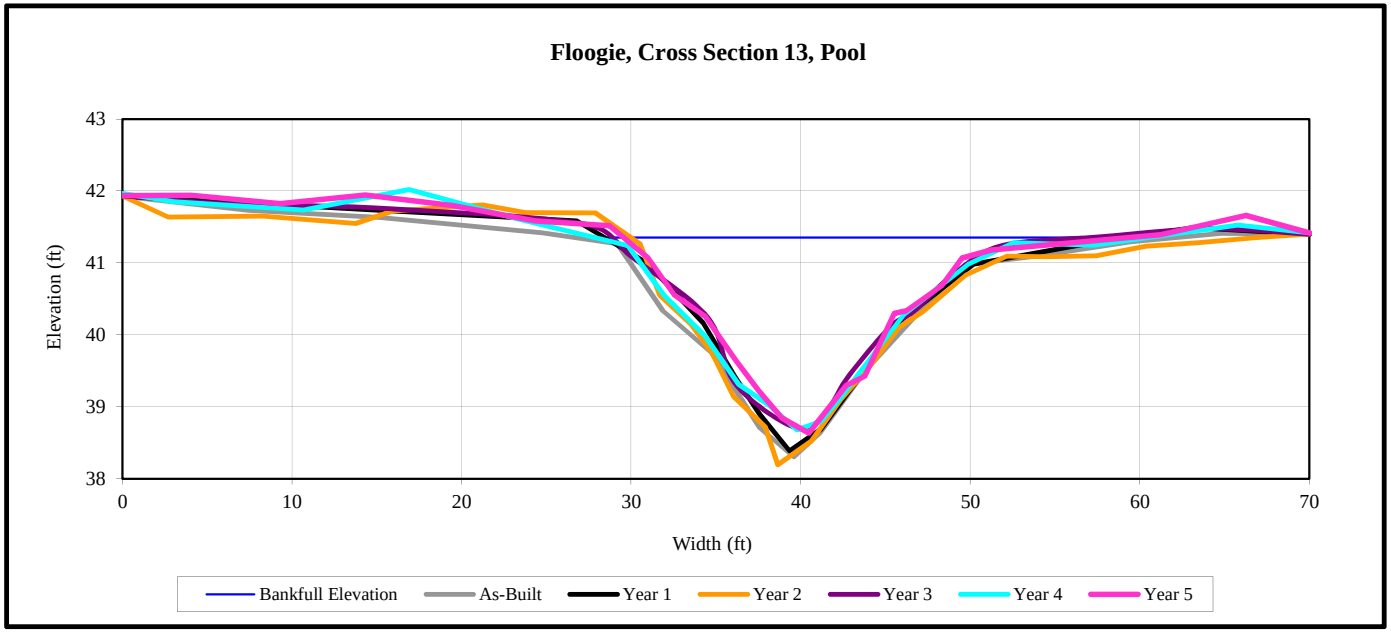
Left bank

Right bank



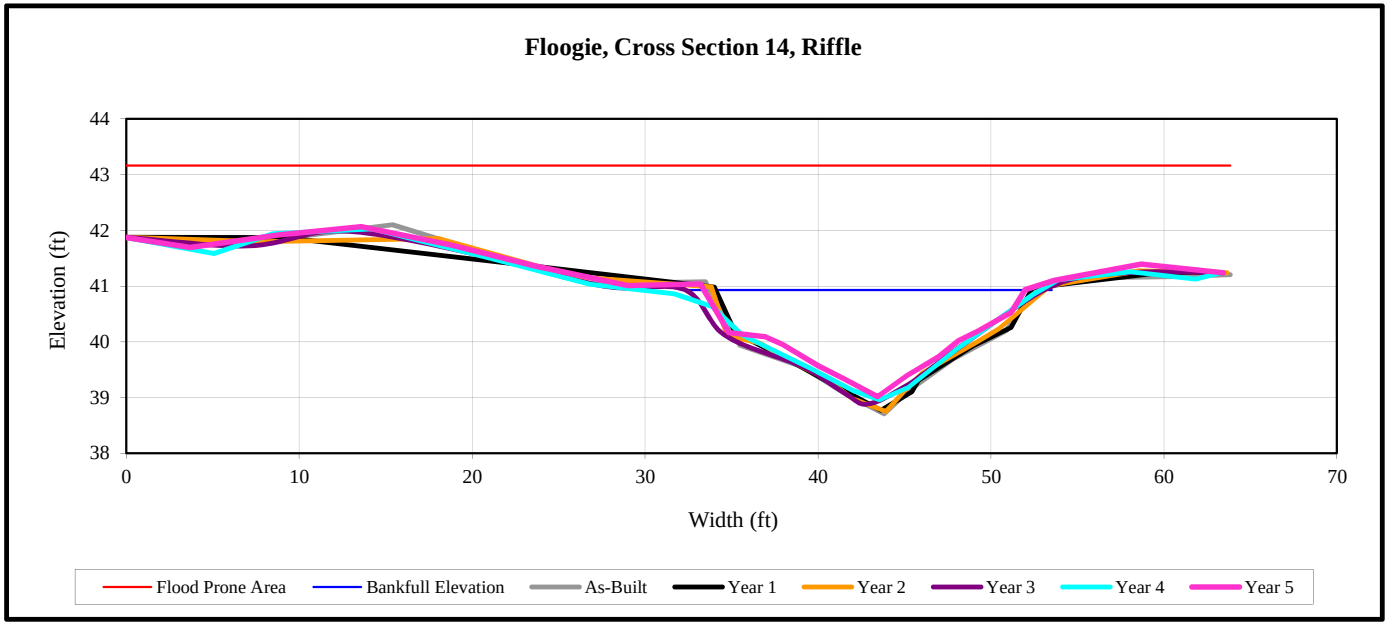
Left bank

Right bank



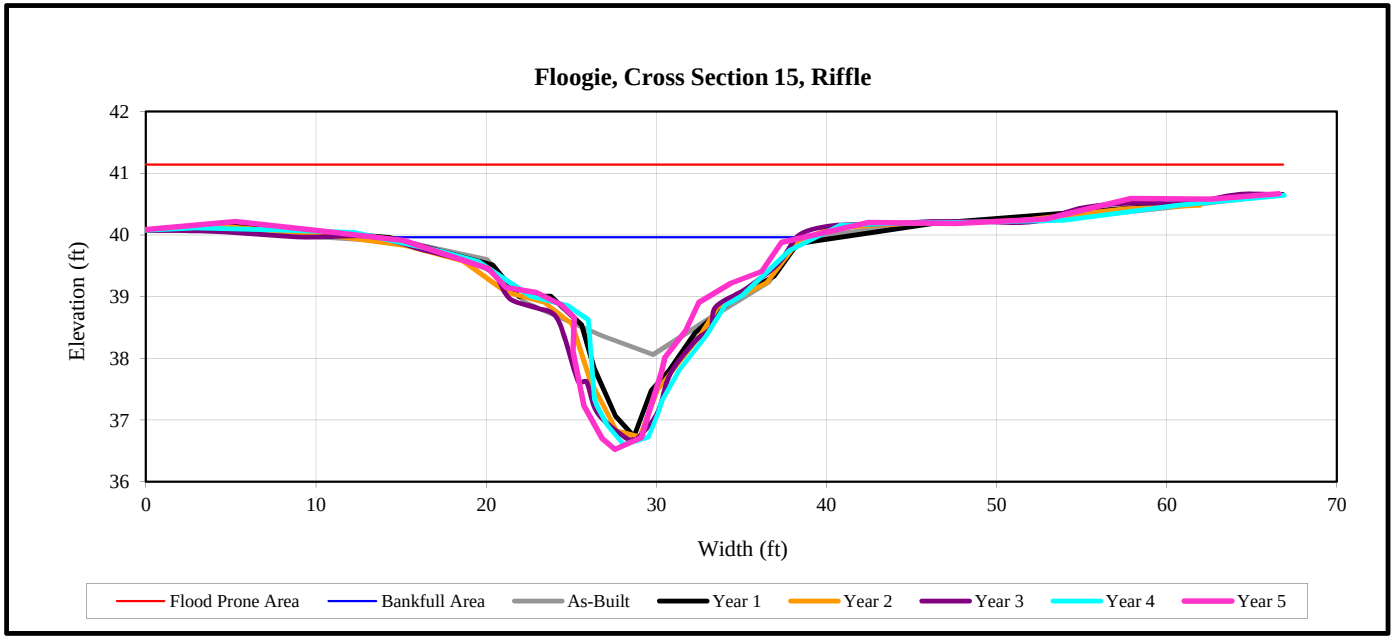
Left bank

Right bank



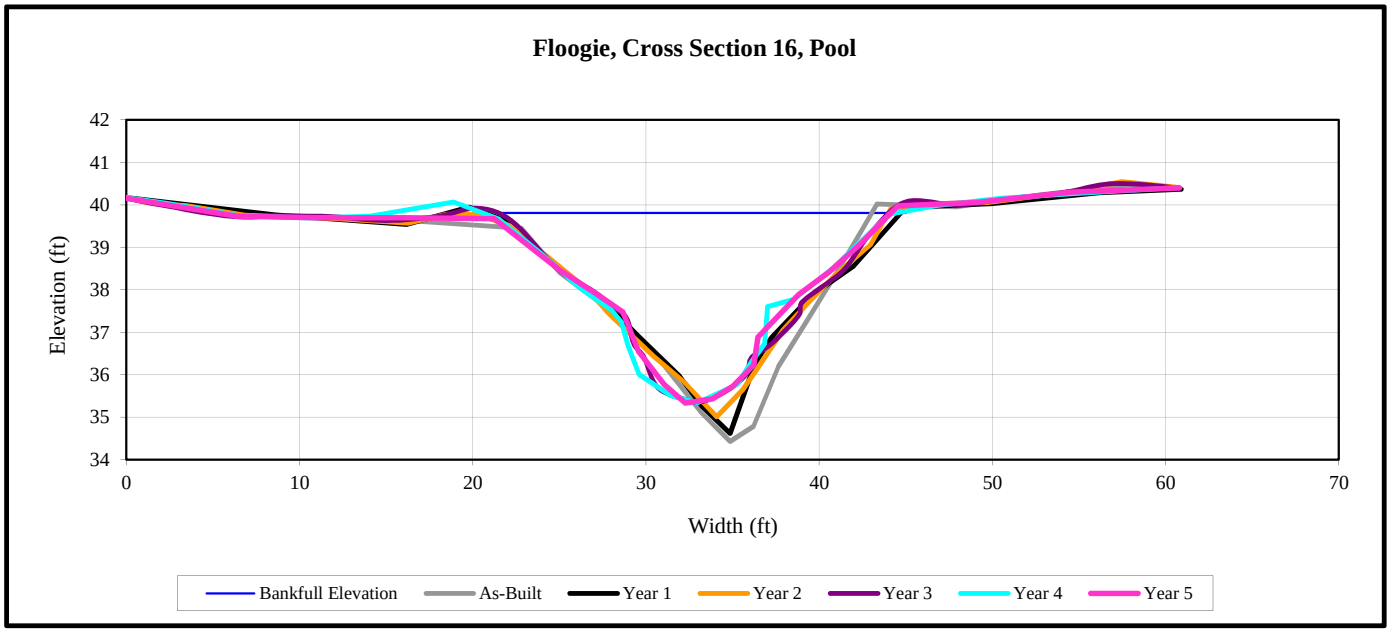
Left bank

Right bank



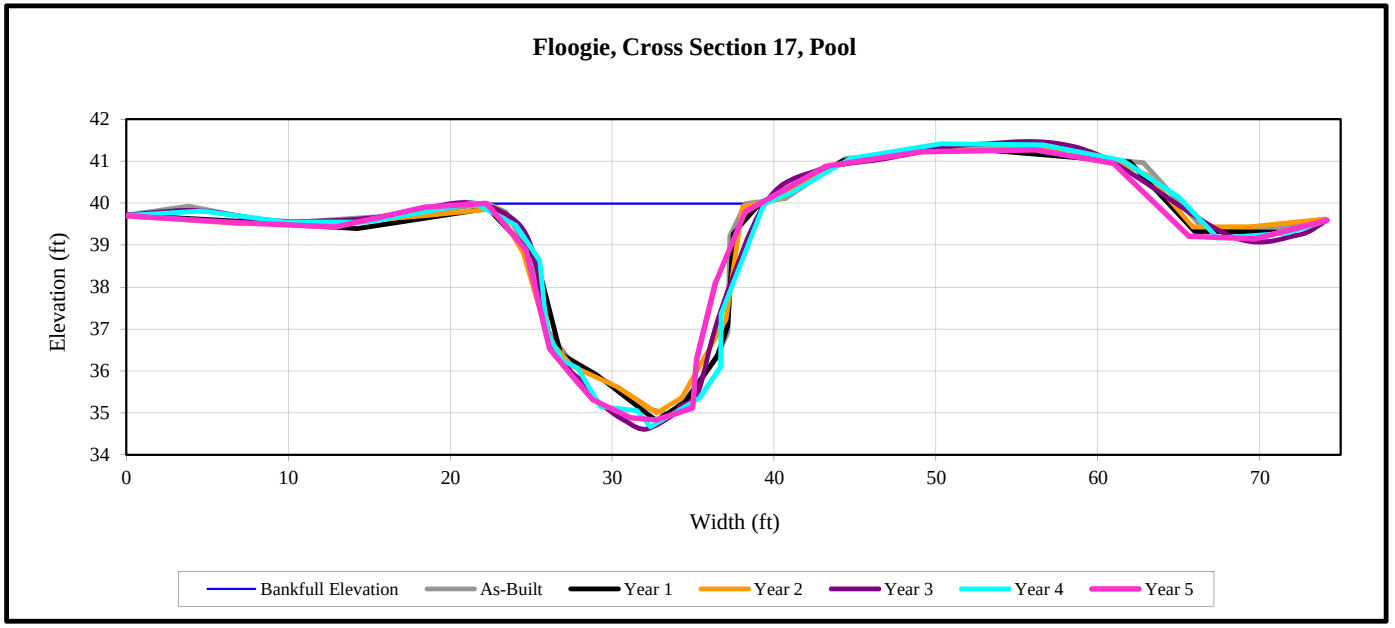
Left bank

Right bank



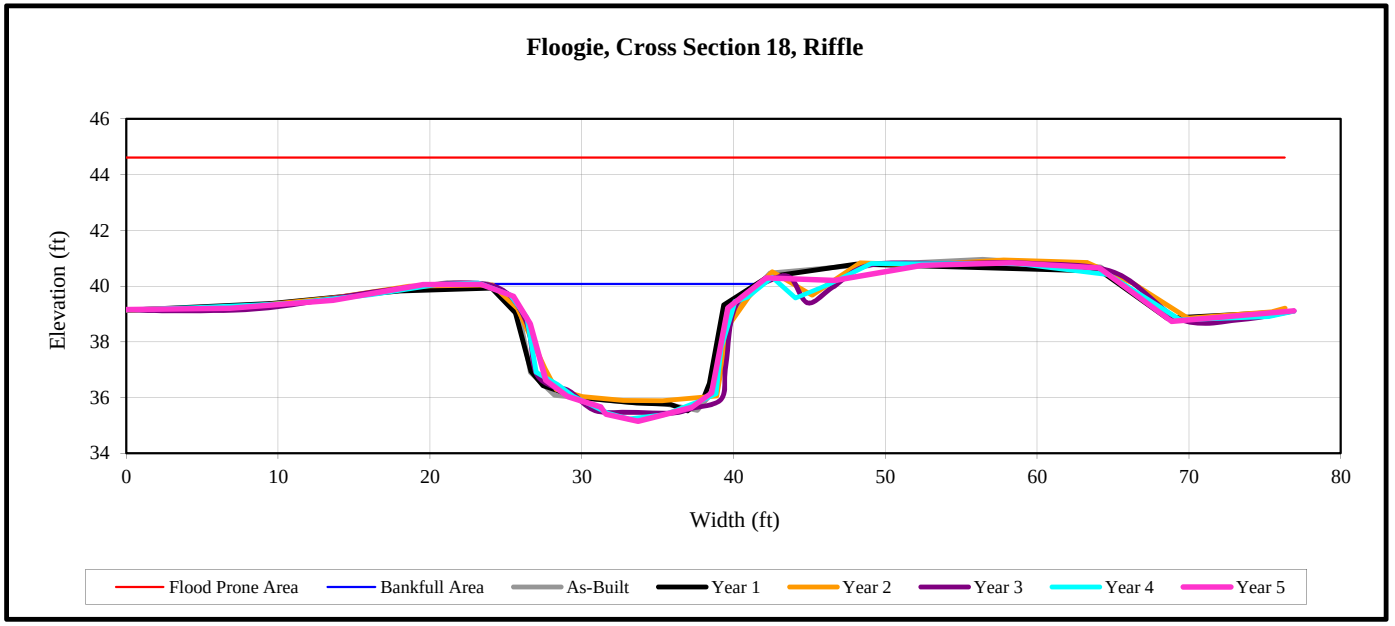
Left bank

Right bank



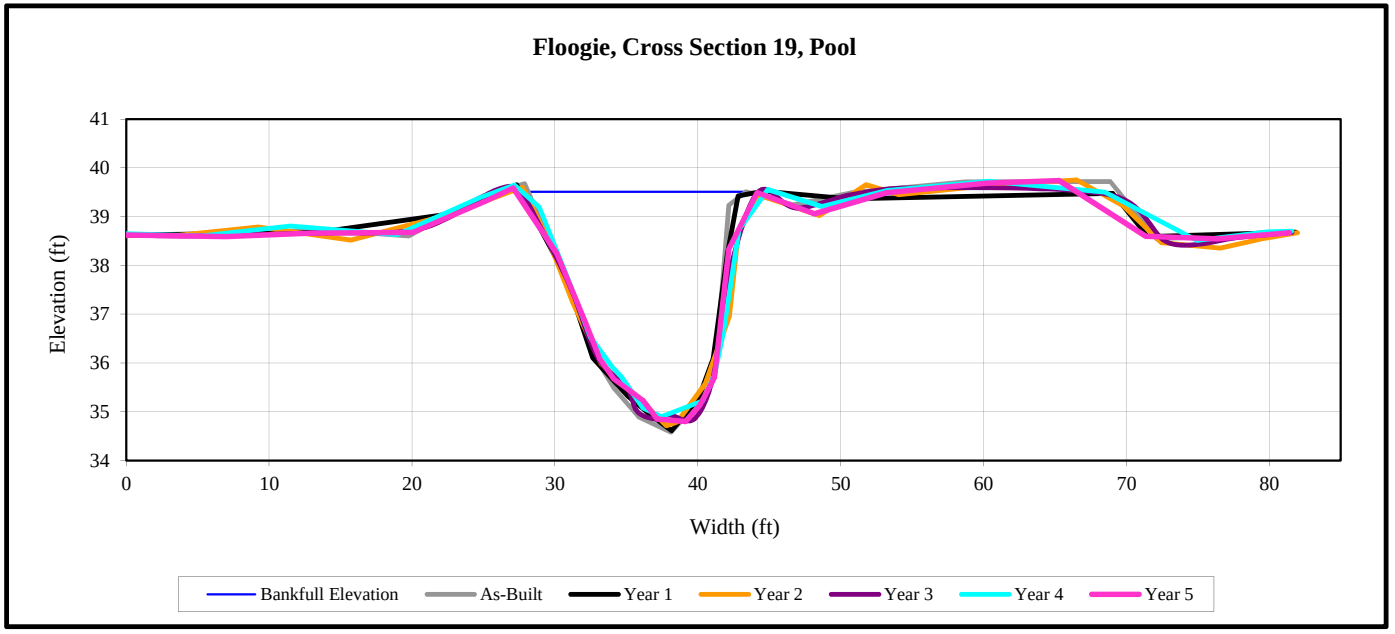
Left bank

Right bank



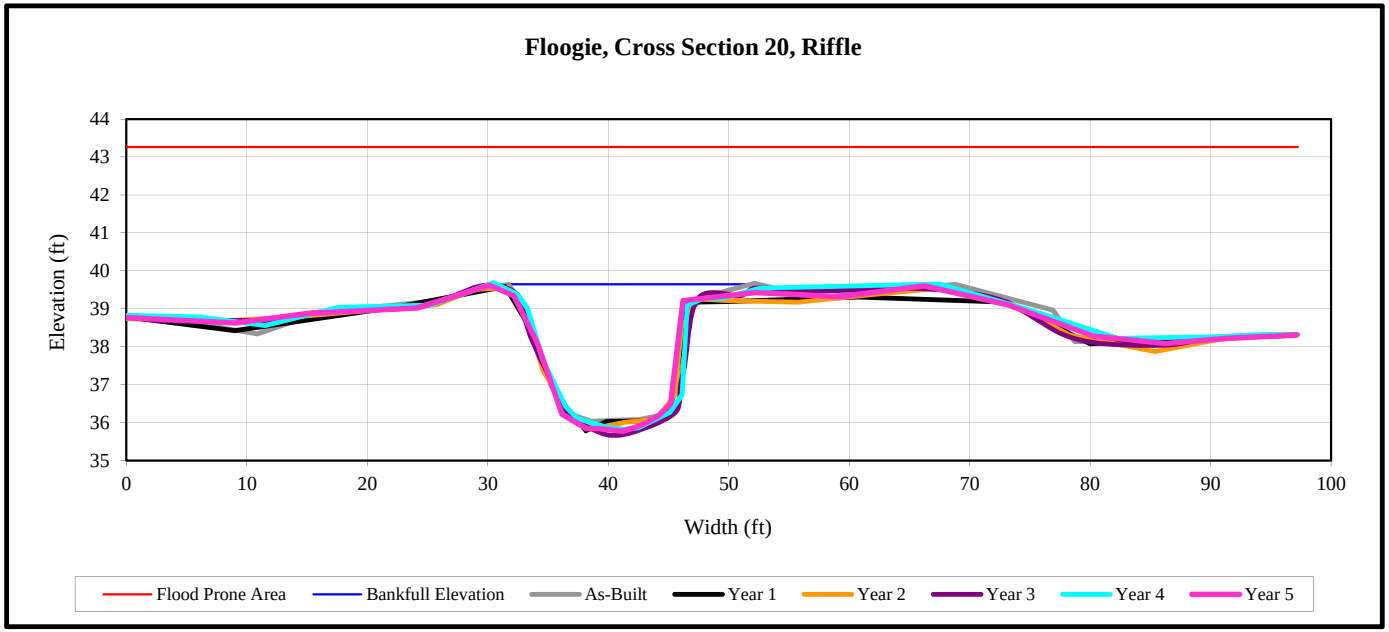
Left bank

Right bank



Left bank

Right bank



APPENDIX C

2012 Gauge Data

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
1-Jan-2012	0:00:00	-6.50	-2.31	-4.80	-4.62	-5.71	-4.27	-18.86	-35.50	-31.45						
1-Jan-2012	6:00:00	-6.90	-2.59	-5.10	-5.00	-6.01	-4.65	-19.54	-35.02	-31.00						
1-Jan-2012	12:00:00	-4.48	0.07	-2.57	-2.39	-3.28	-2.01	-16.87	-36.61	-32.50						
1-Jan-2012	18:00:00	-5.48	-0.88	-3.33	-3.28	-3.89	-2.68	-17.08	-38.92	-35.03						
2-Jan-2012	0:00:00	-4.42	0.01	-2.54	-2.58	-3.16	-2.09	-17.07	-39.00	-34.96						
2-Jan-2012	6:00:00	-6.86	-2.02	-4.68	-4.74	-5.59	-4.25	-18.76	-38.21	-34.17						
2-Jan-2012	12:00:00	-5.99	-0.78	-3.59	-3.59	-4.43	-2.97	-17.69	-38.21	-34.20						
2-Jan-2012	18:00:00	-7.48	-2.41	-5.03	-4.70	-5.73	-4.08	-18.89	-38.16	-34.17						
3-Jan-2012	0:00:00	-8.54	-3.11	-5.73	-5.52	-6.65	-5.07	-19.91	-37.90	-33.91						
3-Jan-2012	6:00:00	-10.21	-4.60	-7.38	-7.10	-8.08	-6.63	-21.61	-37.42	-33.41						
3-Jan-2012	12:00:00	-8.98	-3.10	-5.94	-5.76	-6.56	-5.17	-20.47	-37.01	-32.99						
3-Jan-2012	18:00:00	-10.09	-4.15	-7.04	-6.60	-7.55	-6.18	-21.44	-35.42	-31.37						
4-Jan-2012	0:00:00	-12.14	-5.82	-8.88	-8.42	-9.37	-8.02	-23.44	-33.16	-29.21						
4-Jan-2012	6:00:00	-12.97	-6.29	-9.66	-8.90	-9.70	-8.63	-24.04	-32.81	-28.84						
4-Jan-2012	12:00:00	-10.44	-3.43	-6.72	-5.94	-7.09	-5.97	-21.67	-33.34	-29.21						
4-Jan-2012	18:00:00	-10.46	-3.65	-6.84	-6.51	-7.40	-6.40	-21.83	-35.21	-31.20						
5-Jan-2012	0:00:00	-11.24	-3.82	-7.13	-6.81	-7.60	-6.72	-22.16	-36.49	-32.53						
5-Jan-2012	6:00:00	-11.44	-3.81	-7.09	-6.71	-7.73	-6.90	-22.22	-37.61	-33.57						
5-Jan-2012	12:00:00	-8.90	-1.19	-4.80	-4.10	-5.23	-4.24	-19.83	-37.16	-33.11						
5-Jan-2012	18:00:00	-9.76	-2.21	-5.89	-4.88	-6.20	-5.04	-20.51	-36.77	-32.77						
6-Jan-2012	0:00:00	-11.87	-4.06	-7.89	-6.92	-8.14	-7.09	-22.64	-36.50	-32.52						
6-Jan-2012	6:00:00	-12.29	-4.27	-8.23	-7.11	-8.21	-7.37	-22.71	-36.52	-32.49						
6-Jan-2012	12:00:00	-9.01	-0.69	-4.73	-3.36	-4.85	-3.79	-19.42	-37.04	-33.01						
6-Jan-2012	18:00:00	-9.47	-1.25	-5.23	-3.76	-5.38	-4.23	-19.49	-37.98	-33.94						
7-Jan-2012	0:00:00	-10.94	-2.25	-6.54	-5.08	-6.69	-5.62	-20.87	-38.16	-34.09						
7-Jan-2012	6:00:00	-11.14	-2.50	-6.79	-5.20	-6.80	-5.85	-21.15	-38.16	-34.06						
7-Jan-2012	12:00:00	-10.00	-1.24	-5.58	-4.02	-5.71	-4.55	-19.97	-38.08	-33.94						
7-Jan-2012	18:00:00	-10.25	-1.42	-5.73	-4.05	-5.79	-4.49	-19.84	-37.98	-33.89						
8-Jan-2012	0:00:00	-11.81	-2.71	-7.26	-5.36	-7.34	-6.03	-21.49	-36.96	-32.98						
8-Jan-2012	6:00:00	-11.22	-1.98	-6.74	-4.76	-6.77	-5.46	-21.05	-35.54	-31.56						
8-Jan-2012	12:00:00	-11.05	-1.79	-6.50	-4.55	-6.62	-5.19	-20.91	-34.18	-30.11						
8-Jan-2012	18:00:00	-11.87	-2.44	-7.29	-5.13	-7.36	-5.92	-21.49	-33.82	-29.77						
9-Jan-2012	0:00:00	-12.01	-2.40	-7.49	-5.10	-7.53	-6.00	-21.91	-33.68	-29.65						0.23
9-Jan-2012	6:00:00	-11.81	-2.05	-7.28	-4.94	-7.46	-5.85	-21.99	-33.91	-29.74						
9-Jan-2012	12:00:00	-11.26	-1.60	-6.44	-4.60	-7.06	-5.27	-21.87	-34.62	-30.53						
9-Jan-2012	18:00:00	-5.70	0.25	-2.52	-2.82	-3.45	-2.77	-19.05	-35.99	-31.90						
10-Jan-2012	0:00:00	-5.48	0.21	-2.75	-3.21	-4.07	-2.57	-15.91	-36.79	-32.69						
10-Jan-2012	6:00:00	-5.65	0.25	-3.02	-3.28	-4.61	-2.68	-15.86	-36.53	-32.49						
10-Jan-2012	12:00:00	-5.33	0.85	-2.43	-2.18	-4.27	-1.98	-15.37	-36.74	-32.65						
10-Jan-2012	18:00:00	-7.94	-1.56	-4.85	-4.38	-6.81	-4.32	-17.60	-37.14	-33.03						
11-Jan-2012	0:00:00	-7.88	-1.21	-4.56	-4.22	-6.63	-3.99	-17.59	-36.92	-32.89						0.47
11-Jan-2012	6:00:00	-7.44	-0.65	-3.97	-3.69	-6.01	-3.48	-17.23	-37.27	-33.23						
11-Jan-2012	12:00:00	-6.80	0.12	-3.17	-3.04	-5.11	-2.74	-16.46	-38.78	-34.73						
11-Jan-2012	18:00:00	-0.55	2.35	1.21	-0.62	0.69	1.31	-5.33	-36.46	-37.35						
12-Jan-2012	0:00:00	-0.55	4.17	1.09	3.66	5.06	2.03	-2.67	-16.14	-16.11						0.17
12-Jan-2012	6:00:00	-2.11	1.64	-0.29	2.71	4.10	0.92	-1.55	-20.30	-16.65						
12-Jan-2012	12:00:00	-1.66	1.64	0.25	2.02	4.37	1.41	0.68	-21.94	-17.56						
12-Jan-2012	18:00:00	-2.33	0.68	-0.47	0.48	3.32	0.61	-0.01	-22.91	-18.48						
13-Jan-2012	0:00:00	-2.32	1.10	-0.30	0.13	3.26	0.72	0.15	-24.41	-19.97						
13-Jan-2012	6:00:00	-3.01	0.37	-1.08	-0.70	2.29	-0.06	-0.68	-23.26	-19.39						
13-Jan-2012	12:00:00	-2.95	0.66	-1.01	-0.59	2.08	0.11	-0.59	-22.37	-18.65						
13-Jan-2012	18:00:00	-3.92	-0.53	-1.89	-1.71	0.94	-0.93	-1.55	-21.40	-18.60						
14-Jan-2012	0:00:00	-4.34	-0.73	-2.23	-2.25	0.16	-1.61	-2.15	-21.26	-18.73						
14-Jan-2012	6:00:00	-4.98	-1.18	-2.73	-2.94	-0.68	-2.20	-2.71	-20.64	-18.57						
14-Jan-2012	12:00:00	-4.19	-0.30	-1.92	-2.14	-0.15	-1.47	-2.01	-20.99	-19.11						
14-Jan-2012	18:00:00	-4.81	-1.03	-2.51	-2.82	-0.94	-2.13	-2.54	-21.26	-19.73						
15-Jan-2012	0:00:00	-5.90	-2.02	-3.43	-3.96	-2.39	-3.37	-3.70	-21.26	-20.02						
15-Jan-2012	6:00:00	-5.59	-1.74	-3.20	-3.66	-2.25	-3.19	-3.40	-21.36	-20.22						
15-Jan-2012	12:00:00	-4.61	-0.72	-2.53	-2.70	-1.55	-2.33	-2.42	-19.49	-18.65						
15-Jan-2012	18:00:00	-5.33	-1.42	-3.85	-3.29	-2.43	-3.09	-3.05	-18.56	-17.64						
16-Jan-2012	0:00:00	-7.36	-3.37	-5.84	-5.28	-4.65	-5.14	-5.06	-18.12	-17.35						
16-Jan-2012	6:00:00	-8.02	-3.75	-6.31	-5.81	-5.19	-5.71	-5.43	-18.56	-17.81						
16-Jan-2012	12:00:00	-5.10	-0.88	-3.26	-3.15	-2.55	-2.94	-2.73	-19.24	-18.64						
16-Jan-2012	18:00:00	-5.16	-0.95	-3.24	-3.18	-2.61	-2.95	-2.79	-20.56	-20.05						
17-Jan-2012	0:00:00	-4.93	-0.66	-2.99	-3.00	-2.57	-2.87	-2.65	-21.98	-21.81						
17-Jan-2012	6:00:00	-4.75	-0.51	-2.63	-2.63	-2.38	-2.58	-2.44	-23.45	-23.59						
17-Jan-2012	12:00:00	-3.53	0.87	-1.39	-1.28	-1.11	-1.19	-1.17	-24.96	-25.30						
17-Jan-2012	18:00:00	-3.70	0.74	-1.57	-1.31	-1.37	-1.17	-1.18	-26.56	-27.09						
18-Jan-2012	0:00:00	-3.85	0.49	-1.75	-1.52	-1.66	-1.30	-1.45	-27.22	-28.29						0.10
18-Jan-2012	6:00:00	-3.25	0.96	0.03	-1.19	-0.98	-0.65	-1.18	-27.61	-26.41						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
18-Jan-2012	12:00:00	-2.87	1.20	-0.07	-0.96	-0.81	-0.10	-1.22	-25.75	-21.81						
18-Jan-2012	18:00:00	-4.49	-0.64	-2.19	-2.49	-3.08	-1.80	-3.05	-23.84	-21.01						
19-Jan-2012	0:00:00	-5.24	-1.37	-2.91	-3.20	-3.95	-2.57	-3.86	-22.92	-21.59						
19-Jan-2012	6:00:00	-5.41	-1.74	-3.23	-3.60	-4.28	-3.00	-4.16	-22.48	-22.09						
19-Jan-2012	12:00:00	-3.66	0.23	-1.22	-1.85	-2.44	-1.17	-2.29	-22.69	-22.89						
19-Jan-2012	18:00:00	-5.58	-1.69	-3.17	-3.77	-4.40	-3.23	-4.15	-23.14	-23.85						
20-Jan-2012	0:00:00	-4.73	-0.90	-2.25	-2.97	-3.47	-2.70	-3.27	-23.76	-25.08						
20-Jan-2012	6:00:00	-5.75	-1.99	-3.57	-4.12	-4.61	-3.89	-4.34	-23.76	-25.59						
20-Jan-2012	12:00:00	-3.48	0.47	-1.47	-1.78	-2.30	-1.48	-1.94	-23.41	-25.50						
20-Jan-2012	18:00:00	-4.56	-0.54	-2.91	-2.67	-3.34	-2.49	-3.03	-23.10	-25.79						
21-Jan-2012	0:00:00	-4.20	-0.19	-2.05	-2.40	-2.80	-2.33	-2.71	-24.43	-27.46						0.56
21-Jan-2012	6:00:00	-3.67	0.24	-0.85	-2.12	-2.03	-1.68	-2.26	-25.98	-28.25						
21-Jan-2012	12:00:00	-2.06	1.71	0.34	-0.75	-0.22	-0.01	-1.09	-26.51	-26.25						
21-Jan-2012	18:00:00	-2.23	1.01	-0.39	-0.62	-0.87	0.01	-1.40	-23.77	-22.97						
22-Jan-2012	0:00:00	-2.21	1.85	-0.50	-0.34	1.05	0.45	-1.51	-12.66	-10.61						
22-Jan-2012	6:00:00	-2.92	1.29	-1.09	-0.09	2.26	-0.17	-1.76	-12.48	-10.57						
22-Jan-2012	12:00:00	-2.96	0.91	-1.10	-0.42	2.18	-0.16	-1.63	-12.22	-10.81						
22-Jan-2012	18:00:00	-2.87	0.96	-0.96	-0.59	2.15	-0.12	-1.01	-12.66	-12.15						
23-Jan-2012	0:00:00	-2.86	0.65	-0.89	-0.78	1.95	-0.25	-0.99	-13.37	-13.90						
23-Jan-2012	6:00:00	-2.94	1.11	-0.83	-1.04	1.73	-0.22	-1.03	-14.42	-16.02						
23-Jan-2012	12:00:00	-2.48	1.65	-0.43	-0.36	1.97	0.18	-0.53	-15.31	-17.52						
23-Jan-2012	18:00:00	-2.12	1.97	-0.01	0.04	2.26	0.59	-0.17	-16.51	-19.48						
24-Jan-2012	0:00:00	-1.80	2.13	0.24	0.08	2.36	0.78	0.07	-17.04	-20.51						0.29
24-Jan-2012	6:00:00	-1.33	2.45	0.67	0.30	2.54	1.26	0.23	-15.10	-16.36						
24-Jan-2012	12:00:00	-1.42	2.90	0.21	0.85	2.74	1.27	0.21	-12.88	-14.52						
24-Jan-2012	18:00:00	-2.08	2.23	-0.29	0.37	2.42	0.66	-0.23	-13.01	-15.94						
25-Jan-2012	0:00:00	-3.17	1.10	-1.27	-0.93	1.42	-0.53	-1.27	-12.56	-16.65						
25-Jan-2012	6:00:00	-3.91	0.35	-2.01	-1.53	0.52	-1.42	-1.99	-12.07	-17.02						
25-Jan-2012	12:00:00	-1.97	2.25	0.07	0.54	2.35	0.54	-0.02	-12.07	-17.35						
25-Jan-2012	18:00:00	-2.89	1.33	-0.89	-0.38	1.16	-0.41	-0.95	-13.09	-18.89						
26-Jan-2012	0:00:00	-4.12	0.18	-2.00	-1.54	-0.15	-1.71	-2.17	-13.80	-20.02						
26-Jan-2012	6:00:00	-3.82	0.32	-1.73	-1.59	-0.29	-1.74	-2.06	-14.60	-21.43						
26-Jan-2012	12:00:00	-2.27	1.97	-0.09	-0.05	1.17	-0.33	-0.51	-15.76	-22.89						
26-Jan-2012	18:00:00	-1.96	2.09	0.06	0.22	1.22	-0.03	-0.21	-16.76	-24.71						
27-Jan-2012	0:00:00	-1.82	2.21	0.39	0.24	1.29	0.06	-0.08	-18.14	-26.63						0.45
27-Jan-2012	6:00:00	-1.62	2.41	0.45	0.43	1.18	0.18	-0.08	-20.23	-29.13						
27-Jan-2012	12:00:00	-0.52	3.36	1.11	1.06	2.17	1.26	0.33	-14.69	-23.59						
27-Jan-2012	18:00:00	-1.69	3.07	0.04	2.28	2.62	0.91	-0.05	-12.55	-18.35						
28-Jan-2012	0:00:00	-2.40	2.13	-0.60	1.21	2.32	0.29	-0.23	-11.32	-17.27						
28-Jan-2012	6:00:00	-3.82	0.72	-1.95	-0.32	0.85	-1.21	-1.49	-11.45	-18.18						
28-Jan-2012	12:00:00	-1.67	2.93	0.21	1.74	2.93	0.96	0.73	-12.01	-19.31						
28-Jan-2012	18:00:00	-3.23	1.14	-1.26	0.24	1.18	-0.60	-0.92	-12.50	-20.56						
29-Jan-2012	0:00:00	-2.96	1.27	-0.99	0.45	1.21	-0.54	-0.65	-11.53	-20.14						
29-Jan-2012	6:00:00	-3.38	0.95	-1.33	0.08	0.55	-1.03	-1.19	-11.00	-20.10						
29-Jan-2012	12:00:00	-2.63	1.70	-0.60	0.91	1.05	-0.52	-0.55	-10.82	-20.31						
29-Jan-2012	18:00:00	-3.14	1.07	-1.04	0.34	0.34	-1.17	-1.06	-12.01	-21.89						
30-Jan-2012	0:00:00	-4.43	-0.22	-2.21	-0.94	-1.15	-2.53	-2.36	-12.37	-22.51						
30-Jan-2012	6:00:00	-4.91	-0.76	-2.71	-1.58	-1.93	-3.27	-2.87	-11.66	-22.18						
30-Jan-2012	12:00:00	-2.82	1.38	-0.36	0.70	0.01	-1.24	-0.77	-11.32	-22.06						
30-Jan-2012	18:00:00	-3.05	1.14	-0.73	0.44	-0.37	-1.61	-1.06	-11.80	-22.97						
31-Jan-2012	0:00:00	-4.73	-0.51	-2.17	-1.20	-2.23	-3.37	-2.68	-11.99	-23.22						
31-Jan-2012	6:00:00	-4.76	-0.51	-2.11	-1.17	-2.39	-3.40	-2.63	-12.52	-24.17						
31-Jan-2012	12:00:00	-2.15	2.17	0.48	1.45	0.09	-0.75	-0.05	-12.96	-24.93						
31-Jan-2012	18:00:00	-1.91	2.31	0.55	1.82	0.13	-0.52	0.17	-13.72	-26.83						
1-Feb-2012	0:00:00	-2.69	1.44	0.04	1.09	-0.73	-1.30	-0.69	-13.98	-27.54					0.00	
1-Feb-2012	6:00:00	-3.04	1.16	-0.18	0.62	-1.22	-1.72	-1.10	-14.74	-29.16						
1-Feb-2012	12:00:00	-2.57	1.81	0.37	1.32	-0.69	-0.99	-0.38	-15.44	-31.32						
1-Feb-2012	18:00:00	-2.54	1.77	0.27	1.36	-0.73	-1.02	-0.21	-16.10	-32.19						
2-Feb-2012	0:00:00	-2.87	1.37	0.04	0.91	-1.22	-1.51	-0.91	-16.51	-32.32						0.16
2-Feb-2012	6:00:00	-2.14	1.93	0.73	1.02	0.17	-0.61	-0.33	-14.56	-33.52						
2-Feb-2012	12:00:00	-1.66	2.43	0.46	1.48	0.40	0.49	-0.11	-12.20	-28.71						
2-Feb-2012	18:00:00	-2.56	1.28	-0.69	0.70	-1.00	-0.37	-0.97	-11.68	-25.59						
3-Feb-2012	0:00:00	-2.80	0.98	-0.99	0.57	-1.30	-0.66	-1.31	-10.38	-23.93						
3-Feb-2012	6:00:00	-4.45	-0.66	-2.60	-1.24	-3.08	-2.50	-2.99	-9.54	-23.22						
3-Feb-2012	12:00:00	-2.54	1.23	-0.67	0.66	-1.19	-0.72	-1.13	-9.72	-23.93						
3-Feb-2012	18:00:00	-3.59	0.25	-1.93	-0.24	-2.18	-1.89	-2.05	-10.34	-25.05						
4-Feb-2012	0:00:00	-5.34	-1.63	-3.55	-2.13	-4.17	-3.87	-3.94	-10.92	-26.46						0.43
4-Feb-2012	6:00:00	-4.90	-0.96	-2.73	-1.60	-3.65	-3.49	-3.44	-11.98	-28.74						
4-Feb-2012	12:00:00	-2.12	1.81	0.25	1.23	-0.79	-0.66	-0.59	-13.36	-30.11						
4-Feb-2012	18:00:00	-2.53	1.50	-0.05	0.87	-1.12	-1.00	-1.00	-14.95	-32.37						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
5-Feb-2012	0:00:00	0.22	6.02	1.32	2.67	4.70	2.18	0.34	-2.94	-9.33						0.26
5-Feb-2012	6:00:00	-1.30	5.04	0.48	4.14	4.87	1.64	1.51	-2.94	-8.45						
5-Feb-2012	12:00:00	-1.51	5.67	0.27	4.29	4.72	1.45	1.59	-2.15	-7.66						
5-Feb-2012	18:00:00	-2.03	4.03	-0.08	3.61	4.00	0.95	1.00	-1.08	-7.24						
6-Feb-2012	0:00:00	-3.59	2.04	-1.53	1.54	2.15	-0.82	-0.76	-0.19	-6.99						
6-Feb-2012	6:00:00	-4.37	1.09	-2.33	0.62	1.19	-1.61	-1.55	-0.16	-7.32						
6-Feb-2012	12:00:00	-2.30	2.76	-0.11	2.38	3.03	0.48	0.28	-0.38	-7.78						
6-Feb-2012	18:00:00	-2.44	2.54	-0.21	2.07	2.73	0.29	0.02	-1.62	-9.36						
7-Feb-2012	0:00:00	-2.83	1.94	-0.75	1.39	2.13	-0.25	-0.44	-2.16	-10.15						
7-Feb-2012	6:00:00	-3.83	0.93	-1.80	0.25	1.06	-1.29	-1.51	-2.47	-10.86						
7-Feb-2012	12:00:00	-1.68	3.09	0.45	2.42	3.08	0.85	0.71	-2.24	-10.90						
7-Feb-2012	18:00:00	-2.68	1.86	-0.55	1.30	2.02	-0.13	-0.37	-2.39	-11.37						
8-Feb-2012	0:00:00	-4.16	0.38	-1.97	-0.20	0.35	-1.74	-1.89	-2.06	-11.57						0.04
8-Feb-2012	6:00:00	-4.51	-0.06	-2.37	-0.66	-0.26	-2.23	-2.41	-2.16	-12.28						
8-Feb-2012	12:00:00	-2.45	2.05	-0.14	1.38	1.70	-0.12	-0.26	-2.92	-13.27						
8-Feb-2012	18:00:00	-2.62	1.67	-0.36	1.05	1.23	-0.39	-0.52	-3.62	-14.52						
9-Feb-2012	0:00:00	-3.08	1.13	-1.02	0.49	0.56	-1.05	-1.15	-2.87	-14.52						
9-Feb-2012	6:00:00	-3.86	0.21	-1.70	-0.35	-0.35	-1.99	-1.96	-2.12	-14.69						
9-Feb-2012	12:00:00	-2.59	1.56	-0.47	0.93	0.71	-0.73	-0.70	-1.32	-14.64						
9-Feb-2012	18:00:00	-3.47	0.60	-1.35	-0.02	-0.16	-1.74	-1.55	-2.04	-16.09						
10-Feb-2012	0:00:00	-4.68	-0.48	-2.41	-1.30	-1.54	-3.15	-2.79	-1.91	-17.05						0.10
10-Feb-2012	6:00:00	-5.21	-1.01	-2.78	-1.91	-2.19	-3.78	-3.29	-2.53	-18.30						
10-Feb-2012	12:00:00	-2.62	1.65	-0.11	0.75	0.26	-1.14	-0.81	-3.29	-19.63						
10-Feb-2012	18:00:00	-2.60	1.57	-0.08	0.69	0.03	-1.20	-0.70	-4.85	-21.39						
11-Feb-2012	0:00:00	-2.87	1.37	-0.39	0.38	-0.28	-1.44	-0.94	-6.38	-22.26						0.01
11-Feb-2012	6:00:00	-2.89	1.10	-0.59	0.24	-0.53	-1.48	-1.17	-8.21	-24.42						
11-Feb-2012	12:00:00	-2.57	1.67	-0.30	0.62	-0.19	-1.00	-0.74	-9.18	-26.08						
11-Feb-2012	18:00:00	-3.17	0.90	-1.02	-0.09	-0.97	-1.79	-1.48	-8.96	-26.53						
12-Feb-2012	0:00:00	-4.44	-0.45	-2.25	-1.25	-2.35	-3.11	-2.73	-6.43	-25.00						
12-Feb-2012	6:00:00	-4.94	-1.02	-2.75	-1.77	-2.92	-3.90	-3.27	-4.52	-23.92						
12-Feb-2012	12:00:00	-4.06	-0.13	-1.63	-0.96	-2.23	-3.03	-2.44	-3.70	-23.80						
12-Feb-2012	18:00:00	-4.04	-0.25	-1.81	-0.92	-2.25	-3.07	-2.37	-4.32	-24.58						
13-Feb-2012	0:00:00	-6.37	-2.53	-3.99	-3.15	-4.63	-5.45	-4.60	-3.56	-24.37						
13-Feb-2012	6:00:00	-7.25	-3.16	-4.74	-3.80	-5.44	-6.37	-5.25	-3.05	-24.63						
13-Feb-2012	12:00:00	-3.23	0.78	-0.25	0.07	-1.65	-2.45	-1.33	-3.22	-25.37						
13-Feb-2012	18:00:00	-2.95	0.97	-0.32	0.20	-1.52	-2.35	-1.18	-4.24	-26.62						
14-Feb-2012	0:00:00	-4.60	-0.51	-1.80	-1.30	-3.10	-3.94	-2.85	-4.42	-27.36						
14-Feb-2012	6:00:00	-4.18	-0.36	-1.45	-0.99	-2.92	-3.69	-2.59	-4.68	-28.19						
14-Feb-2012	12:00:00	-2.72	1.17	-0.03	0.31	-1.63	-2.32	-1.17	-5.09	-30.06						
14-Feb-2012	18:00:00	-2.30	1.63	0.42	0.91	-1.10	-1.84	-0.52	-5.89	-31.43						
15-Feb-2012	0:00:00	-3.20	0.74	-0.43	-0.04	-2.24	-2.89	-1.54	-5.71	-31.85						
15-Feb-2012	6:00:00	-4.46	-0.52	-1.53	-1.30	-3.37	-4.09	-2.74	-5.17	-31.84						
15-Feb-2012	12:00:00	-2.35	1.67	0.46	0.74	-1.41	-2.05	-0.67	-3.94	-30.22						
15-Feb-2012	18:00:00	-2.11	1.85	0.48	1.17	-1.18	-1.81	-0.27	-3.85	-30.10						
16-Feb-2012	0:00:00	-4.92	-0.96	-2.09	-1.66	-4.04	-4.66	-3.11	-3.23	-29.26						0.36
16-Feb-2012	6:00:00	-4.99	-0.85	-1.94	-1.68	-4.04	-4.69	-3.11	-3.68	-29.59						
16-Feb-2012	12:00:00	-3.42	0.73	-0.39	-0.32	-2.49	-3.22	-1.71	-5.18	-31.21						
16-Feb-2012	18:00:00	-1.09	2.64	1.20	0.76	1.01	0.06	-0.09	-3.00	-33.25						
17-Feb-2012	0:00:00	-1.62	3.25	0.47	2.62	3.55	1.19	0.11	-3.41	-15.84						0.01
17-Feb-2012	6:00:00	-2.06	2.47	0.03	2.19	3.43	0.87	0.22	-3.19	-15.89						
17-Feb-2012	12:00:00	-1.76	2.70	0.30	2.06	3.61	1.09	0.80	-2.60	-16.05						
17-Feb-2012	18:00:00	-1.73	2.61	0.34	1.93	3.43	0.98	0.77	-3.18	-17.14						
18-Feb-2012	0:00:00	-3.30	0.97	-1.07	0.25	1.65	-0.60	-0.81	-2.57	-17.55						
18-Feb-2012	6:00:00	-3.10	1.19	-0.86	0.54	1.72	-0.46	-0.79	-2.39	-18.47						
18-Feb-2012	12:00:00	-1.79	2.47	0.43	1.95	2.81	0.81	0.56	-2.70	-19.50						
18-Feb-2012	18:00:00	-1.88	2.35	0.42	1.83	2.49	0.69	0.52	-4.19	-21.37						
19-Feb-2012	0:00:00	-2.36	1.89	-0.02	1.22	1.95	0.12	-0.05	-4.42	-22.20						0.51
19-Feb-2012	6:00:00	-2.34	1.86	0.01	1.24	1.70	0.03	-0.05	-5.17	-23.55						
19-Feb-2012	12:00:00	-2.32	1.92	-0.02	1.06	1.37	-0.16	-0.28	-5.30	-24.37						
19-Feb-2012	18:00:00	-0.01	3.51	1.15	1.80	3.55	1.69	0.52	-5.88	-13.93						
20-Feb-2012	0:00:00	-0.68	9.78	0.75	6.62	8.63	1.47	1.79	-4.37	-10.39						0.03
20-Feb-2012	6:00:00	-1.98	6.73	-0.30	5.01	7.89	0.59	0.94	-1.14	-7.32						
20-Feb-2012	12:00:00	-1.56	5.19	0.42	4.38	5.43	1.14	1.33	1.15	-3.53						
20-Feb-2012	18:00:00	-2.29	3.42	-0.32	3.15	3.70	0.37	0.40	1.97	-2.28						
21-Feb-2012	0:00:00	-4.50	0.78	-2.42	0.42	1.11	-1.87	-1.90	2.93	-1.03						
21-Feb-2012	6:00:00	-5.08	0.05	-2.83	-0.46	0.44	-2.46	-2.51	2.20	-1.54						
21-Feb-2012	12:00:00	-2.39	2.58	-0.21	1.78	2.86	0.12	-0.02	1.54	-1.91						
21-Feb-2012	18:00:00	-1.37	3.36	0.73	2.67	3.68	1.08	0.86	-2.03	-5.37						
22-Feb-2012	0:00:00	-1.76	2.83	0.42	2.16	3.25	0.71	0.50	-2.70	-5.86						
22-Feb-2012	6:00:00	-1.86	2.54	0.12	1.88	3.11	0.61	0.28	-3.60	-6.73						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
22-Feb-2012	12:00:00	-0.91	3.77	1.11	2.78	4.07	1.55	1.35	-4.34	-7.53						
22-Feb-2012	18:00:00	-1.24	3.30	0.78	2.55	3.61	1.17	0.98	-6.86	-9.90						
23-Feb-2012	0:00:00	-1.57	2.75	0.36	2.06	3.19	0.73	0.52	-8.33	-11.19						0.05
23-Feb-2012	6:00:00	-1.78	2.47	0.22	1.65	2.92	0.66	0.37	-7.74	-10.65						
23-Feb-2012	12:00:00	-1.00	3.39	1.13	2.68	3.81	1.58	1.25	-7.43	-10.24						
23-Feb-2012	18:00:00	-1.69	2.48	0.35	1.94	3.01	0.74	0.50	-7.64	-10.36						
24-Feb-2012	0:00:00	-1.34	2.73	0.72	2.13	3.28	0.92	0.83	-8.04	-10.73						0.26
24-Feb-2012	6:00:00	-1.22	2.82	0.72	2.06	3.22	1.01	0.92	-8.52	-11.20						
24-Feb-2012	12:00:00	-1.31	2.75	0.58	1.87	3.13	1.01	0.85	-8.92	-11.52						
24-Feb-2012	18:00:00	-1.63	2.36	0.45	1.69	2.66	0.59	0.55	-9.85	-12.40						
25-Feb-2012	0:00:00	-1.03	3.96	0.55	2.79	4.23	1.50	0.87	-5.81	-8.94						
25-Feb-2012	6:00:00	-3.34	1.23	-1.61	1.03	2.25	-0.57	-0.53	-3.37	-6.41						
25-Feb-2012	12:00:00	-1.98	2.59	-0.19	1.98	3.55	0.68	0.67	-2.70	-5.67						
25-Feb-2012	18:00:00	-2.41	1.87	-0.49	1.33	2.95	0.14	0.32	-1.72	-4.59						
26-Feb-2012	0:00:00	-4.30	-0.16	-2.28	-0.81	0.97	-1.73	-1.66	1.50	-1.37						
26-Feb-2012	6:00:00	-4.51	-0.53	-2.61	-1.26	0.39	-2.25	-1.96	2.77	0.17						
26-Feb-2012	12:00:00	-2.46	1.61	-0.43	0.67	2.25	-0.19	0.16	3.53	0.96						
26-Feb-2012	18:00:00	-2.35	1.62	-0.21	0.73	2.17	-0.19	0.25	3.00	0.42						
27-Feb-2012	0:00:00	-4.52	-0.64	-2.35	-1.66	-0.31	-2.75	-2.02	2.92	0.59						0.06
27-Feb-2012	6:00:00	-4.46	-0.25	-2.24	-1.72	-0.52	-2.77	-2.08	2.95	0.42						
27-Feb-2012	12:00:00	-2.35	1.91	-0.11	0.66	1.43	-0.71	0.04	1.98	-0.37						
27-Feb-2012	18:00:00	-1.96	2.24	0.22	0.87	1.43	-0.53	0.31	1.19	-1.37						
28-Feb-2012	0:00:00	-1.90	2.28	0.19	0.91	1.41	-0.33	0.26	0.79	-1.66						
28-Feb-2012	6:00:00	-2.18	1.87	-0.19	0.60	0.88	-0.75	-0.08	1.42	-1.00						
28-Feb-2012	12:00:00	-1.54	2.60	0.48	1.12	1.40	-0.12	0.58	1.97	-0.37						
28-Feb-2012	18:00:00	-2.38	1.75	-0.35	0.48	0.45	-1.00	-0.21	1.45	-0.88						
29-Feb-2012	0:00:00	-4.01	0.17	-1.77	-1.16	-1.36	-2.67	-1.84	0.92	-1.37					0.00	
29-Feb-2012	6:00:00	-2.99	1.05	-0.75	-0.20	-0.47	-1.89	-0.81	-0.82	-3.04						
29-Feb-2012	12:00:00	-1.60	2.55	0.75	1.06	0.79	-0.41	0.61	-3.16	-5.45						
29-Feb-2012	18:00:00	-1.40	2.71	0.79	1.30	1.01	0.13	0.82	-4.88	-7.15						
1-Mar-2012	0:00:00	-1.28	2.65	0.75	1.22	0.91	0.15	0.75	-6.07	-8.28						
1-Mar-2012	6:00:00	-1.12	2.66	0.83	1.39	0.93	0.29	0.86	-6.86	-8.99						
1-Mar-2012	12:00:00	-1.38	2.52	0.42	1.14	0.67	0.20	0.76	-7.09	-9.19						
1-Mar-2012	18:00:00	-1.33	2.42	0.60	1.39	0.63	0.19	0.83	-7.36	-9.58						
2-Mar-2012	0:00:00	-2.28	1.52	-0.19	0.36	-0.34	-0.89	-0.09	-5.22	-7.41						
2-Mar-2012	6:00:00	-2.21	1.68	-0.18	0.24	-0.45	-1.12	-0.20	-4.25	-6.29						
2-Mar-2012	12:00:00	-1.81	2.19	0.27	0.70	0.04	-0.61	0.39	-4.50	-6.54						
2-Mar-2012	18:00:00	-1.91	2.15	0.19	0.56	-0.11	-0.72	0.32	-6.32	-8.40						
3-Mar-2012	0:00:00	-1.75	2.35	0.53	0.75	0.08	-0.75	0.47	-7.60	-9.70						1.14
3-Mar-2012	6:00:00	0.91	3.75	1.85	1.44	2.26	1.41	1.27	-6.98	-9.91						
3-Mar-2012	12:00:00	1.84	12.92	1.91	9.38	12.59	2.93	3.61	-5.21	-8.20						
3-Mar-2012	18:00:00	-0.35	7.74	1.14	6.25	9.76	2.25	2.67	-5.24	-7.91						
4-Mar-2012	0:00:00	-0.76	5.57	0.93	4.54	5.73	1.83	2.01	-5.42	-8.11						0.84
4-Mar-2012	6:00:00	0.26	7.31	1.72	4.62	5.68	2.49	2.05	-5.42	-8.25						
4-Mar-2012	12:00:00	3.56	14.01	1.18	10.20	13.41	2.15	2.73	-4.57	-7.37						
4-Mar-2012	18:00:00	-0.74	8.84	0.63	6.86	10.70	1.65	2.85	-4.08	-6.79						
5-Mar-2012	0:00:00	-2.93	4.13	-1.34	2.85	4.59	-0.47	0.26	-1.34	-4.03						
5-Mar-2012	6:00:00	-2.75	3.19	-1.05	2.54	3.20	-0.34	-0.05	-1.18	-3.79						
5-Mar-2012	12:00:00	-1.56	3.89	0.07	3.42	3.99	0.84	1.12	-2.34	-4.96						
5-Mar-2012	18:00:00	-1.80	3.12	-0.14	2.95	3.59	0.51	0.62	1.61	-0.96						
6-Mar-2012	0:00:00	-3.13	1.64	-1.40	1.44	2.13	-0.88	-0.74	4.21	1.67						
6-Mar-2012	6:00:00	-3.94	0.51	-2.12	0.51	1.09	-1.80	-1.58	5.94	3.45	1.10	0.00				
6-Mar-2012	12:00:00	-1.86	2.46	-0.01	2.31	2.90	-0.10	0.29	2.87	4.33						
6-Mar-2012	18:00:00	-2.54	1.41	-0.73	1.32	2.02	-0.79	-0.45	1.81	3.29						
7-Mar-2012	0:00:00	-3.12	0.77	-1.37	0.40	1.24	-1.57	-1.15	2.62	4.08						
7-Mar-2012	6:00:00	-3.22	0.60	-1.47	0.13	1.05	-1.67	-1.19	1.93	3.59						
7-Mar-2012	12:00:00	-0.54	3.09	1.23	2.77	3.67	1.08	1.57	1.72	3.33						
7-Mar-2012	18:00:00	-0.50	3.07	1.27	2.56	3.58	0.99	1.52	-0.06	1.58						
8-Mar-2012	0:00:00	-1.39	2.19	0.45	1.57	2.42	-0.05	0.51	-0.59	1.16						
8-Mar-2012	6:00:00	-1.79	1.95	0.09	1.08	1.88	-0.53	0.17	-1.34	0.45						
8-Mar-2012	12:00:00	-0.76	3.01	1.11	2.02	2.93	0.57	1.23	-2.71	-1.00						
8-Mar-2012	18:00:00	-0.90	2.75	1.01	1.89	2.72	0.48	1.18	-4.56	-2.79						
9-Mar-2012	0:00:00	-0.76	2.87	1.07	1.76	2.54	0.36	1.11	-5.22	-3.42						0.10
9-Mar-2012	6:00:00	-0.71	3.56	1.24	1.38	2.48	0.27	1.13	-6.19	-4.45						
9-Mar-2012	12:00:00	-0.48	3.84	1.37	1.88	2.93	1.20	1.36	-4.33	-2.83						
9-Mar-2012	18:00:00	-0.73	3.72	0.84	2.00	3.39	1.26	1.24	-4.15	-2.55						
10-Mar-2012	0:00:00	-2.51	1.79	-0.86	0.22	1.78	-0.57	-0.50	-2.95	-1.29						
10-Mar-2012	6:00:00	-2.53	1.80	-0.83	1.00	1.54	-0.83	-0.51	-1.46	0.25						
10-Mar-2012	12:00:00	-1.13	3.21	0.49	2.44	2.89	0.48	0.83	-0.26	1.50						
10-Mar-2012	18:00:00	-1.22	3.05	0.48	2.34	2.60	0.29	0.73	-0.43	1.41						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
11-Mar-2012	0:00:00	-3.01	1.27	-1.19	0.44	0.57	-1.72	-1.07	0.14	2.00						
11-Mar-2012	6:00:00	-3.49	0.68	-1.70	-0.27	-0.27	-2.56	-1.71	0.23	1.95						
11-Mar-2012	12:00:00	-0.74	3.51	1.13	2.53	2.45	0.17	1.18	0.40	2.12						
11-Mar-2012	18:00:00	-0.46	3.61	1.30	2.86	2.45	0.37	1.55	-1.24	0.62						
12-Mar-2012	0:00:00	-2.94	1.22	-0.87	0.27	-0.17	-2.26	-0.94	-1.55	0.42						
12-Mar-2012	6:00:00	-2.95	1.10	-0.89	0.09	-0.56	-2.51	-1.11	-1.91	0.05						
12-Mar-2012	12:00:00	-0.86	3.35	1.15	2.22	1.55	-0.41	1.12	-2.57	-0.58						
12-Mar-2012	18:00:00	-0.66	3.30	1.23	2.41	1.51	-0.34	1.36	-4.20	-2.25						
13-Mar-2012	0:00:00	-1.01	3.01	1.15	2.06	0.94	-0.85	0.88	-4.20	-2.25						0.08
13-Mar-2012	6:00:00	-0.96	3.17	1.36	1.95	0.93	-0.73	0.88	-4.24	-2.33						
13-Mar-2012	12:00:00	-0.72	3.35	1.17	2.12	1.01	-0.28	1.07	-4.73	-2.87						
13-Mar-2012	18:00:00	-1.39	2.69	0.42	1.59	0.14	-0.73	0.68	-6.10	-4.12						
14-Mar-2012	0:00:00	-0.79	3.25	1.14	2.11	0.57	-0.15	1.10	-5.70	-3.66						
14-Mar-2012	6:00:00	-0.78	3.23	1.12	1.74	0.55	-0.21	1.04	-5.82	-3.79						
14-Mar-2012	12:00:00	-1.60	2.61	0.22	1.00	-0.23	-0.91	0.40	-5.16	-3.12						
14-Mar-2012	18:00:00	-1.38	2.69	0.09	1.39	-0.17	-0.91	0.74	-5.46	-3.46						
15-Mar-2012	0:00:00	-1.09	3.12	0.94	1.71	-0.02	-0.77	0.87	-4.93	-2.92						
15-Mar-2012	6:00:00	-1.49	2.58	0.63	1.24	-0.44	-1.44	0.50	-4.92	-2.79						
15-Mar-2012	12:00:00	-1.99	2.35	0.07	0.87	-0.63	-1.79	0.31	-4.97	-2.80						
15-Mar-2012	18:00:00	-1.49	2.94	-0.43	1.84	-0.27	-1.20	0.94	-6.07	-3.96						
16-Mar-2012	0:00:00	-1.82	2.47	0.41	1.42	-0.44	-1.77	0.50	-5.53	-3.46						0.02
16-Mar-2012	6:00:00	-1.62	2.64	0.79	1.20	-0.31	-1.84	0.67	-5.66	-3.54						
16-Mar-2012	12:00:00	-2.63	1.92	-0.21	0.43	-0.92	-2.46	0.01	-6.28	-4.17						
16-Mar-2012	18:00:00	-3.04	1.59	-1.82	0.45	-1.25	-3.00	-0.11	-7.20	-5.21						
17-Mar-2012	0:00:00	-2.09	2.36	-0.87	1.21	-0.31	-2.22	0.62	-5.95	-4.05						0.34
17-Mar-2012	6:00:00	-1.55	2.79	0.93	1.48	0.45	-1.73	0.94	-5.41	-3.59						
17-Mar-2012	12:00:00	-2.08	2.42	0.42	1.14	-0.02	-2.17	0.53	-4.70	-2.76						
17-Mar-2012	18:00:00	-3.00	1.77	-0.90	0.94	-0.82	-2.74	0.16	-5.18	-3.17						
18-Mar-2012	0:00:00	-2.22	2.58	-0.45	1.53	0.01	-2.28	0.71	-4.16	-2.09						
18-Mar-2012	6:00:00	-1.99	2.61	0.43	1.56	0.27	-2.35	0.64	-4.42	-2.38						
18-Mar-2012	12:00:00	-2.17	2.46	0.41	1.50	0.22	-2.61	0.51	-4.20	-2.26						
18-Mar-2012	18:00:00	-3.00	1.79	-1.10	1.05	-0.45	-3.21	0.10	-5.48	-3.39						
19-Mar-2012	0:00:00	-2.45	2.29	-0.95	1.44	-0.07	-2.87	0.44	-5.65	-3.54						
19-Mar-2012	6:00:00	-2.46	2.29	-0.65	1.34	0.09	-3.12	0.34	-5.74	-3.63						
19-Mar-2012	12:00:00	-3.24	1.92	-1.50	1.12	-0.27	-3.43	0.13	-5.78	-3.76						
19-Mar-2012	18:00:00	-3.28	2.00	-1.81	1.44	-0.50	-3.35	0.41	-6.71	-4.72						
20-Mar-2012	0:00:00	-3.67	1.51	-2.36	0.86	-0.92	-4.17	-0.35	-6.31	-4.21						
20-Mar-2012	6:00:00	-2.88	2.18	-1.61	1.47	-0.01	-3.64	0.33	-6.17	-4.09						
20-Mar-2012	12:00:00	-4.04	1.29	-2.82	0.80	-0.86	-4.33	-0.20	-5.77	-3.71						
20-Mar-2012	18:00:00	-4.50	0.79	-3.47	0.57	-1.57	-4.83	-0.62	-6.43	-4.55						
21-Mar-2012	0:00:00	-3.46	1.92	-2.42	1.48	-0.38	-4.01	0.32	-5.64	-3.59						
21-Mar-2012	6:00:00	-3.30	1.99	-2.40	1.47	-0.25	-4.14	0.27	-5.41	-3.39						
21-Mar-2012	12:00:00	-3.43	1.85	-2.70	1.34	-0.39	-4.35	0.11	-4.92	-2.80						
21-Mar-2012	18:00:00	-4.66	0.85	-3.83	0.67	-1.41	-5.16	-0.62	-5.50	-3.51						
22-Mar-2012	0:00:00	-3.41	1.99	-2.81	1.47	-0.37	-4.37	0.21	-5.14	-3.17						
22-Mar-2012	6:00:00	-3.38	1.93	-2.82	1.58	-0.13	-4.48	0.23	-5.22	-3.22						
22-Mar-2012	12:00:00	-4.56	1.09	-3.86	0.94	-0.93	-5.21	-0.46	-5.62	-3.81						
22-Mar-2012	18:00:00	-5.16	0.68	-4.56	0.86	-1.48	-5.45	-0.58	-6.95	-5.09						
23-Mar-2012	0:00:00	-4.19	1.75	-3.83	1.54	-0.41	-4.81	0.02	-7.08	-5.09						
23-Mar-2012	6:00:00	-3.98	1.79	-3.68	1.60	-0.27	-4.90	0.02	-7.48	-5.59						
23-Mar-2012	12:00:00	-5.58	0.50	-5.28	0.61	-1.27	-5.82	-0.83	-8.05	-6.13						
23-Mar-2012	18:00:00	-6.62	-0.06	-6.41	0.44	-2.14	-6.21	-0.95	-9.60	-7.68						
24-Mar-2012	0:00:00	-5.23	1.08	-5.33	1.21	-1.18	-5.55	-0.29	-9.37	-7.55						0.85
24-Mar-2012	6:00:00	-4.82	1.45	-5.21	1.39	-0.82	-5.47	-0.22	-9.91	-8.05						
24-Mar-2012	12:00:00	-4.60	1.32	-5.30	1.16	-1.01	-5.57	-0.49	-10.13	-8.22						
24-Mar-2012	18:00:00	-1.70	2.81	-1.59	1.63	0.41	-2.19	0.32	-9.41	-8.26						
25-Mar-2012	0:00:00	0.10	4.92	1.67	3.21	3.74	2.04	2.35	-8.52	-7.68						0.42
25-Mar-2012	6:00:00	0.01	4.55	1.49	3.91	5.45	2.67	2.49	-9.77	-8.97						
25-Mar-2012	12:00:00	-0.35	3.96	1.01	3.32	4.96	2.19	2.17	-9.80	-8.97						
25-Mar-2012	18:00:00	-0.23	3.99	1.14	3.33	5.02	2.18	2.33	-10.25	-9.18						
26-Mar-2012	0:00:00	2.60	8.40	3.52	5.02	8.03	4.74	3.88	-7.90	-7.21						0.39
26-Mar-2012	6:00:00	5.20	15.18	2.37	12.12	15.93	3.39	3.89	-7.88	-6.76						
26-Mar-2012	12:00:00	0.32	8.70	1.39	7.64	11.45	2.46	4.33	-7.22	-6.27						
26-Mar-2012	18:00:00	-0.19	5.78	1.26	5.48	7.40	2.22	3.09	-6.78	-5.73						
27-Mar-2012	0:00:00	2.54	7.59	4.07	7.58	8.54	4.81	5.26	-3.94	-2.71						
27-Mar-2012	6:00:00	-0.48	4.26	0.99	4.26	5.06	1.74	2.09	-2.16	-1.01						
27-Mar-2012	12:00:00	-0.43	4.07	1.03	4.05	4.79	1.70	2.06	-1.64	-0.34						
27-Mar-2012	18:00:00	-0.38	3.91	1.24	3.93	4.72	1.63	2.24	-2.47	-1.18						
28-Mar-2012	0:00:00	-1.44	2.69	0.33	2.67	3.46	0.42	1.15	-2.72	-1.18						
28-Mar-2012	6:00:00	-1.43	2.69	0.28	2.49	3.14	0.23	1.04	-4.20	-2.59						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
28-Mar-2012	12:00:00	-0.74	3.42	0.96	3.28	3.81	1.07	1.93	-6.64	-5.05						
28-Mar-2012	18:00:00	-1.21	2.89	0.61	2.85	3.27	0.60	1.55	-9.24	-7.75						
29-Mar-2012	0:00:00	-0.90	3.15	1.27	2.91	3.34	0.75	1.76	-9.55	-8.05						
29-Mar-2012	6:00:00	-0.83	3.19	1.31	2.83	3.33	0.75	1.83	-9.60	-7.97						
29-Mar-2012	12:00:00	-2.08	2.06	-0.13	1.98	2.29	-0.22	0.99	-9.24	-7.68						
29-Mar-2012	18:00:00	-2.14	2.03	-1.40	2.16	2.18	-0.28	1.39	-8.93	-7.26						
30-Mar-2012	0:00:00	-1.84	2.51	-0.20	1.84	2.08	-0.30	1.48	-7.33	-5.63						
30-Mar-2012	6:00:00	-1.88	2.55	0.35	1.84	1.83	-0.73	1.25	-6.71	-5.05						
30-Mar-2012	12:00:00	-2.51	2.31	-0.23	1.74	1.43	-1.19	1.00	-7.06	-5.39						
30-Mar-2012	18:00:00	-2.62	2.35	-1.49	2.00	1.39	-1.26	1.31	-8.39	-6.67						
31-Mar-2012	0:00:00	-2.39	2.60	-1.46	1.84	1.36	-1.42	1.17	-9.72	-7.92					0.00	0.48
31-Mar-2012	6:00:00	-2.09	2.71	-1.07	1.83	1.41	-1.60	1.15	-10.30	-8.43						
31-Mar-2012	12:00:00	-2.22	2.54	0.48	1.51	1.03	-1.99	0.88	-11.05	-9.27						
31-Mar-2012	18:00:00	-2.16	2.36	0.55	1.52	0.87	-1.99	0.71	-11.94	-10.09						
1-Apr-2012	0:00:00	-0.11	4.01	1.65	2.48	2.65	0.41	1.61	-8.92	-7.35						0.04
1-Apr-2012	6:00:00	-0.14	4.01	1.27	3.15	2.61	0.91	1.82	-8.60	-7.06						
1-Apr-2012	12:00:00	-0.41	3.85	0.89	3.12	2.37	0.84	1.58	-8.69	-7.13						
1-Apr-2012	18:00:00	-0.65	3.55	0.55	3.02	2.13	0.61	1.53	-10.20	-8.64						
2-Apr-2012	0:00:00	-0.42	3.86	1.15	3.06	2.38	0.63	1.64	-12.06	-10.43						
2-Apr-2012	6:00:00	-0.58	3.61	1.05	2.88	2.29	0.30	1.40	-12.50	-10.84						
2-Apr-2012	12:00:00	-1.01	3.17	0.29	2.53	2.05	-0.11	1.09	-9.71	-8.09						
2-Apr-2012	18:00:00	-1.39	3.03	-1.37	2.72	1.72	-0.58	1.05	-9.26	-7.63						
3-Apr-2012	0:00:00	-2.05	2.29	-2.28	1.65	0.94	-1.68	0.17	-8.20	-6.47						
3-Apr-2012	6:00:00	-2.51	1.77	-2.82	1.18	0.68	-2.64	-0.46	-7.67	-5.80						
3-Apr-2012	12:00:00	-1.91	2.73	-2.47	2.18	2.13	-1.93	0.58	-8.03	-6.13						
3-Apr-2012	18:00:00	-2.18	2.57	-3.09	2.52	2.27	-2.19	0.83	-9.80	-7.92						
4-Apr-2012	0:00:00	-1.58	3.06	-2.81	2.68	2.87	-2.09	1.06	-10.15	-8.26						0.82
4-Apr-2012	6:00:00	-1.91	2.58	-3.26	2.19	2.67	-2.81	0.47	-11.30	-9.22						
4-Apr-2012	12:00:00	-3.32	1.41	-4.73	1.29	1.97	-3.67	-0.31	-12.68	-10.72						
4-Apr-2012	18:00:00	-1.34	2.89	-1.94	2.52	2.97	-1.27	0.89	-12.55	-11.26						
5-Apr-2012	0:00:00	-1.73	2.76	-1.92	2.08	2.86	-1.86	0.47	-12.65	-10.68						
5-Apr-2012	6:00:00	-1.96	2.52	-2.29	2.00	2.81	-2.11	0.43	-11.62	-9.55						
5-Apr-2012	12:00:00	-2.52	2.33	-3.20	1.90	2.74	-2.45	0.25	-10.20	-8.14						
5-Apr-2012	18:00:00	-3.54	1.68	-4.85	1.60	2.27	-3.13	-0.23	-11.04	-8.80						
6-Apr-2012	0:00:00	-2.88	2.29	-4.56	1.95	2.55	-3.04	0.16	-10.60	-8.47						0.01
6-Apr-2012	6:00:00	-2.71	2.36	-4.35	1.81	2.56	-3.10	0.08	-10.68	-8.56						
6-Apr-2012	12:00:00	-3.12	2.21	-5.04	1.78	2.42	-3.46	-0.15	-9.58	-7.47						
6-Apr-2012	18:00:00	-4.25	1.58	-6.54	1.60	1.99	-4.17	-0.37	-9.49	-7.43						
7-Apr-2012	0:00:00	-5.81	0.18	-8.30	0.10	0.20	-6.22	-2.17	-8.47	-6.22						
7-Apr-2012	6:00:00	-5.90	0.30	-8.49	-0.06	0.14	-6.70	-2.25	-7.25	-4.89						
7-Apr-2012	12:00:00	-5.18	1.29	-8.11	1.28	1.58	-5.44	-1.01	-7.20	-4.80						
7-Apr-2012	18:00:00	-5.71	1.39	-9.08	1.80	1.78	-5.47	-0.75	-8.75	-6.22						
8-Apr-2012	0:00:00	-7.30	-0.05	-10.98	0.03	0.02	-7.47	-2.57	-8.66	-6.05						
8-Apr-2012	6:00:00	-7.36	-0.10	-11.45	-0.33	0.01	-7.93	-2.87	-9.07	-6.59						
8-Apr-2012	12:00:00	-6.94	0.63	-11.37	1.02	1.31	-6.79	-1.64	-10.49	-7.89						
8-Apr-2012	18:00:00	-8.11	0.18	-13.26	1.09	0.88	-7.41	-1.90	-12.35	-9.84						
9-Apr-2012	0:00:00	-7.75	0.54	-13.40	1.05	0.82	-7.67	-2.14	-12.35	-9.76						
9-Apr-2012	6:00:00	-8.24	-0.19	-14.60	0.15	0.15	-8.82	-3.08	-10.88	-8.38						
9-Apr-2012	12:00:00	-9.08	-0.69	-15.78	0.52	0.57	-8.65	-2.78	-12.35	-10.09						
9-Apr-2012	18:00:00	-9.97	-0.73	-17.25	0.75	0.41	-9.06	-2.90	-14.75	-12.37						
10-Apr-2012	0:00:00	-9.30	0.03	-17.46	0.87	0.56	-9.22	-3.05	-14.65	-12.25						
10-Apr-2012	6:00:00	-9.47	-0.36	-18.25	0.20	0.09	-10.23	-3.94	-13.76	-11.43						
10-Apr-2012	12:00:00	-10.56	-1.24	-19.32	0.14	-0.10	-10.37	-4.12	-15.28	-13.38						
10-Apr-2012	18:00:00	-11.70	-1.81	-20.70	0.19	-0.65	-11.21	-4.91	-17.76	-16.42						
11-Apr-2012	0:00:00	-10.72	-0.99	-20.71	0.40	-0.26	-11.34	-4.93	-17.00	-15.91						
11-Apr-2012	6:00:00	-10.74	-1.07	-21.41	0.03	-0.64	-12.12	-5.67	-15.72	-14.97						
11-Apr-2012	12:00:00	-12.13	-2.44	-22.55	-0.27	-1.03	-12.79	-6.26	-16.21	-16.33						
11-Apr-2012	18:00:00	-12.83	-3.10	-23.70	-0.34	-1.48	-13.63	-6.93	-16.21	-17.09						
12-Apr-2012	0:00:00	-13.39	-3.48	-25.53	-1.66	-2.72	-15.16	-8.75	-15.89	-16.97						
12-Apr-2012	6:00:00	-13.00	-3.49	-26.12	-1.98	-3.01	-15.76	-9.39	-15.54	-16.87						
12-Apr-2012	12:00:00	-13.09	-3.24	-25.33	-0.95	-1.99	-14.65	-8.49	-16.03	-17.88						
12-Apr-2012	18:00:00	-13.68	-3.59	-26.30	-0.80	-2.39	-15.18	-8.97	-17.50	-19.84						
13-Apr-2012	0:00:00	-14.38	-4.32	-28.38	-2.32	-3.97	-17.09	-11.17	-17.18	-19.37						
13-Apr-2012	6:00:00	-14.04	-4.17	-29.01	-2.79	-4.24	-17.55	-11.78	-17.23	-19.42						
13-Apr-2012	12:00:00	-14.27	-4.31	-28.41	-2.06	-3.51	-16.73	-11.23	-17.46	-19.92						
13-Apr-2012	18:00:00	-15.34	-4.97	-29.45	-2.16	-4.17	-17.64	-12.13	-18.88	-21.66						
14-Apr-2012	0:00:00	-15.08	-4.89	-30.71	-2.60	-4.78	-18.46	-13.43	-18.53	-21.24						
14-Apr-2012	6:00:00	-14.68	-4.65	-31.35	-2.96	-5.13	-18.95	-14.11	-18.22	-20.87						
14-Apr-2012	12:00:00	-15.49	-5.17	-30.86	-2.85	-4.70	-18.40	-13.63	-19.50	-22.37						
14-Apr-2012	18:00:00	-16.70	-6.09	-31.77	-2.99	-5.48	-19.31	-14.57	-21.98	-25.07						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
15-Apr-2012	0:00:00	-15.47	-4.87	-31.99	-2.34	-5.00	-18.81	-14.81	-22.12	-25.00						
15-Apr-2012	6:00:00	-14.34	-4.11	-32.00	-2.10	-4.76	-18.43	-15.11	-22.25	-25.00						
15-Apr-2012	12:00:00	-17.47	-7.03	-33.43	-4.28	-6.59	-20.32	-16.54	-23.09	-26.04						
15-Apr-2012	18:00:00	-18.66	-8.09	-34.38	-4.53	-7.27	-21.48	-17.65	-25.00	-28.20						
16-Apr-2012	0:00:00	-17.11	-6.49	-34.40	-3.39	-6.77	-20.67	-17.79	-24.95	-27.91						
16-Apr-2012	6:00:00	-15.44	-5.26	-34.04	-2.76	-5.98	-19.80	-17.50	-25.00	-27.75						
16-Apr-2012	12:00:00	-19.01	-8.69	-35.89	-5.52	-8.11	-22.27	-19.43	-25.74	-28.87						
16-Apr-2012	18:00:00	-20.41	-9.76	-36.69	-5.75	-9.19	-23.46	-20.75	-28.36	-31.66						
17-Apr-2012	0:00:00	-18.76	-7.83	-36.06	-4.37	-8.32	-22.37	-20.49	-28.49	-31.62						
17-Apr-2012	6:00:00	-17.30	-6.79	-35.78	-3.78	-7.71	-21.65	-20.43	-28.31	-31.32						
17-Apr-2012	12:00:00	-20.33	-10.00	-36.69	-6.66	-9.97	-24.00	-22.11	-28.75	-31.86						
17-Apr-2012	18:00:00	-21.71	-10.93	-36.43	-6.75	-11.03	-25.26	-23.20	-30.20	-32.20						
18-Apr-2012	0:00:00	-19.68	-8.40	-35.24	-4.68	-9.65	-23.73	-22.39	-30.38	-31.83						0.01
18-Apr-2012	6:00:00	-18.84	-7.69	-35.37	-4.68	-9.68	-23.63	-22.83	-30.37	-31.62						
18-Apr-2012	12:00:00	-20.64	-9.75	-35.96	-6.78	-11.03	-25.08	-23.91	-31.04	-31.87						
18-Apr-2012	18:00:00	-21.53	-10.02	-35.55	-6.41	-11.47	-25.36	-24.27	-32.68	-32.75						
19-Apr-2012	0:00:00	-19.92	-6.75	-35.17	-1.97	-9.50	-23.16	-24.27	-32.95	-32.75						0.06
19-Apr-2012	6:00:00	-11.87	-1.54	-35.11	-1.70	-6.43	-11.76	-21.71	-32.68	-32.92						
19-Apr-2012	12:00:00	-10.90	-1.75	-35.46	-2.72	-6.67	-11.76	-20.77	-31.26	-32.58						
19-Apr-2012	18:00:00	-11.04	-1.93	-35.53	-3.11	-7.01	-12.27	-20.27	-30.95	-33.37						
20-Apr-2012	0:00:00	-10.68	-1.68	-34.83	-2.98	-6.89	-12.43	-19.91	-30.41	-33.33						
20-Apr-2012	6:00:00	-10.55	-1.53	-34.19	-2.99	-6.80	-13.05	-19.85	-30.32	-33.66						
20-Apr-2012	12:00:00	-12.35	-3.33	-35.04	-4.44	-8.12	-14.45	-20.75	-30.73	-33.78						
20-Apr-2012	18:00:00	-14.82	-5.17	-36.02	-4.88	-9.58	-16.72	-22.19	-33.56	-35.41						
21-Apr-2012	0:00:00	-13.44	-3.70	-35.52	-4.02	-8.96	-16.56	-22.16	-33.70	-35.25						
21-Apr-2012	6:00:00	-12.92	-3.27	-35.71	-3.99	-8.91	-16.45	-22.34	-34.42	-35.91						
21-Apr-2012	12:00:00	-15.05	-5.62	-36.30	-6.17	-10.25	-18.15	-23.36	-35.30	-36.49						
21-Apr-2012	18:00:00	-17.87	-7.71	-36.23	-6.80	-11.81	-21.12	-24.68	-37.91	-37.78						
22-Apr-2012	0:00:00	-16.50	-5.83	-35.75	-5.46	-11.43	-20.83	-24.75	-38.04	-37.54						0.97
22-Apr-2012	6:00:00	-4.52	2.12	-35.63	-0.36	-3.13	-3.28	-19.37	-34.06	-38.37						
22-Apr-2012	12:00:00	-1.15	3.61	-25.23	0.33	1.00	-0.42	-7.49	-21.05	-25.97						
22-Apr-2012	18:00:00	-0.22	4.69	-0.11	2.35	2.97	1.76	-2.30	-17.28	-16.55						
23-Apr-2012	0:00:00	-0.43	4.03	-0.36	2.17	2.51	1.59	-2.92	-17.23	-16.68						0.05
23-Apr-2012	6:00:00	-0.42	3.72	-1.07	2.07	2.47	1.26	-3.14	-17.23	-16.68						
23-Apr-2012	12:00:00	-0.62	3.48	-1.39	1.92	2.11	0.77	-3.67	-17.53	-17.26						
23-Apr-2012	18:00:00	-0.91	3.14	-2.36	1.59	1.35	0.19	-4.91	-17.23	-16.63						
24-Apr-2012	0:00:00	-1.18	2.95	-2.63	1.14	0.89	-0.41	-5.65	-17.15	-16.09						
24-Apr-2012	6:00:00	-1.40	2.71	-3.18	0.86	0.31	-1.01	-6.33	-17.33	-16.05						
24-Apr-2012	12:00:00	-1.74	2.55	-3.99	1.08	-0.13	-1.25	-7.10	-18.89	-18.47						
24-Apr-2012	18:00:00	-2.15	2.33	-4.99	1.03	-0.92	-1.84	-8.48	-20.70	-20.58						
25-Apr-2012	0:00:00	-2.78	1.85	-5.79	0.45	-1.66	-2.83	-9.59	-19.91	-19.80						
25-Apr-2012	6:00:00	-3.44	1.14	-6.77	-0.18	-2.39	-3.94	-10.65	-19.38	-19.67						
25-Apr-2012	12:00:00	-3.67	1.22	-7.61	0.01	-2.42	-3.93	-11.30	-20.80	-22.00						
25-Apr-2012	18:00:00	-4.60	0.77	-9.60	-0.22	-3.53	-4.57	-12.81	-22.93	-24.54						
26-Apr-2012	0:00:00	-3.96	1.46	-9.26	0.25	-2.65	-4.38	-12.67	-22.84	-24.17						0.66
26-Apr-2012	6:00:00	0.19	3.99	0.84	1.52	3.04	0.55	-1.61	-10.20	-9.59						
26-Apr-2012	12:00:00	-1.19	2.82	-0.39	1.08	1.65	0.20	-3.26	-13.26	-12.51						
26-Apr-2012	18:00:00	-0.98	3.06	-0.17	1.44	1.16	0.39	-3.46	-13.75	-13.05						
27-Apr-2012	0:00:00	-0.82	3.11	-0.27	1.41	1.12	0.56	-3.47	-13.44	-12.59						
27-Apr-2012	6:00:00	-0.86	2.97	-0.80	1.33	0.65	0.30	-3.86	-12.55	-11.68						
27-Apr-2012	12:00:00	-1.81	2.17	-2.33	0.51	-0.68	-0.47	-5.96	-12.49	-12.30						
27-Apr-2012	18:00:00	-2.32	1.87	-3.14	0.31	-1.81	-1.02	-7.54	-14.99	-14.80						
28-Apr-2012	0:00:00	-1.57	2.47	-2.72	0.91	-1.36	-0.87	-7.48	-13.74	-13.38						
28-Apr-2012	6:00:00	-1.68	2.48	-3.01	0.72	-1.31	-1.23	-8.00	-13.56	-13.38						
28-Apr-2012	12:00:00	-2.39	2.21	-3.99	0.21	-2.03	-1.92	-9.15	-14.58	-15.30						
28-Apr-2012	18:00:00	-2.70	2.10	-4.64	0.19	-2.38	-2.22	-9.99	-16.39	-17.59						
29-Apr-2012	0:00:00	-2.50	2.29	-4.62	0.54	-2.13	-2.34	-10.15	-16.75	-18.17						
29-Apr-2012	6:00:00	-2.52	2.29	-4.97	0.96	-2.26	-2.67	-10.35	-16.26	-17.80						
29-Apr-2012	12:00:00	-3.28	1.53	-6.20	0.64	-2.90	-3.29	-11.36	-16.84	-18.79						
29-Apr-2012	18:00:00	-4.19	1.08	-7.92	0.57	-3.83	-4.02	-12.69	-19.28	-21.55						
30-Apr-2012	0:00:00	-3.55	1.79	-7.79	1.21	-3.17	-3.85	-12.52	-18.48	-20.55					0.00	
30-Apr-2012	6:00:00	-3.49	1.77	-8.21	1.36	-3.15	-4.09	-12.69	-18.18	-20.29						
30-Apr-2012	12:00:00	-5.75	-0.19	-11.76	0.02	-5.00	-5.82	-14.79	-19.78	-22.21						
30-Apr-2012	18:00:00	-6.76	-0.59	-14.37	0.15	-6.07	-6.69	-16.39	-23.00	-25.25						
1-May-2012	0:00:00	-6.10	0.35	-13.93	0.58	-5.20	-6.41	-16.21	-23.15	-25.25						0.13
1-May-2012	6:00:00	-5.93	0.38	-14.13	0.60	-5.26	-6.72	-16.35	-23.32	-25.25						
1-May-2012	12:00:00	-7.64	-0.84	-16.86	0.01	-6.65	-8.09	-17.71	-24.83	-27.00						
1-May-2012	18:00:00	-8.88	-1.61	-19.83	0.12	-8.00	-9.83	-19.77	-27.49	-29.67						
2-May-2012	0:00:00	-4.54	1.20	-14.46	1.03	-5.63	-6.24	-17.73	-26.38	-27.17						
2-May-2012	6:00:00	-3.96	1.25	-14.47	1.21	-5.43	-6.59	-17.57	-25.93	-26.63						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
2-May-2012	12:00:00	-5.82	-0.36	-18.41	0.31	-7.47	-8.82	-20.14	-27.35	-28.92						
2-May-2012	18:00:00	-7.19	-1.25	-21.81	0.30	-9.16	-11.43	-22.16	-30.18	-32.21						
3-May-2012	0:00:00	-6.10	-0.23	-20.97	0.91	-8.41	-11.03	-22.10	-30.26	-32.21						
3-May-2012	6:00:00	-5.47	0.44	-20.58	1.33	-7.85	-11.08	-21.93	-30.22	-32.21						
3-May-2012	12:00:00	-7.13	-0.63	-22.55	0.70	-9.05	-12.93	-23.08	-30.43	-32.09						
3-May-2012	18:00:00	-9.16	-1.96	-24.97	0.37	-10.73	-15.79	-24.58	-32.59	-32.80						
4-May-2012	0:00:00	-7.66	-0.21	-24.08	1.28	-9.64	-15.09	-24.04	-34.67	-34.39						0.12
4-May-2012	6:00:00	-7.36	0.13	-24.29	1.10	-9.50	-15.03	-24.39	-34.45	-34.17						
4-May-2012	12:00:00	-10.18	-2.17	-27.15	0.08	-11.78	-18.06	-26.05	-32.82	-31.69						
4-May-2012	18:00:00	-11.42	-2.79	-28.89	0.30	-13.11	-20.99	-27.15	-33.40	-31.02						
5-May-2012	0:00:00	-8.69	-0.61	-28.57	0.94	-11.97	-18.27	-27.34	-34.72	-31.54						0.06
5-May-2012	6:00:00	-7.88	0.09	-27.57	1.29	-11.30	-17.19	-27.26	-35.23	-31.92						
5-May-2012	12:00:00	-10.67	-1.75	-30.07	0.22	-13.31	-20.53	-28.65	-33.16	-29.37						
5-May-2012	18:00:00	-11.70	-2.17	-31.47	0.33	-14.36	-22.65	-29.60	-31.74	-28.11						
6-May-2012	0:00:00	-9.88	-0.77	-31.07	1.02	-13.46	-21.31	-29.39	-30.06	-26.44						0.01
6-May-2012	6:00:00	-9.16	0.02	-30.98	1.16	-13.10	-20.98	-29.68	-28.58	-24.95						
6-May-2012	12:00:00	-9.34	-0.27	-31.52	1.03	-13.41	-21.58	-30.13	-28.78	-25.19						
6-May-2012	18:00:00	-11.51	-1.77	-32.93	0.72	-14.43	-23.35	-30.89	-29.26	-25.84						
7-May-2012	0:00:00	-9.97	-0.76	-32.66	1.47	-13.75	-22.78	-30.65	-31.37	-27.95						
7-May-2012	6:00:00	-9.32	-0.36	-32.53	1.58	-13.53	-22.55	-30.85	-33.37	-29.82						
7-May-2012	12:00:00	-12.48	-3.13	-35.00	0.38	-15.50	-24.95	-32.38	-32.57	-29.14						
7-May-2012	18:00:00	-13.88	-4.48	-35.90	0.62	-16.34	-26.52	-32.95	-33.17	-29.70						
8-May-2012	0:00:00	-12.49	-3.36	-35.43	1.05	-15.80	-25.99	-33.21	-35.32	-31.91						
8-May-2012	6:00:00	-11.77	-2.91	-35.33	1.00	-15.63	-25.53	-33.64	-36.49	-32.92						
8-May-2012	12:00:00	-15.16	-6.22	-36.41	-0.39	-17.50	-27.72	-35.11	-34.32	-30.90						
8-May-2012	18:00:00	-16.63	-7.59	-36.07	-0.30	-18.49	-29.11	-35.73	-33.90	-30.46						
9-May-2012	0:00:00	-14.90	-6.29	-35.76	0.06	-18.28	-28.62	-35.83	-35.88	-32.38						2.13
9-May-2012	6:00:00	-13.82	-5.55	-35.58	0.16	-17.86	-27.85	-35.73	-36.29	-32.87						
9-May-2012	12:00:00	-16.75	-8.19	-36.38	-1.12	-19.35	-29.45	-36.52	-34.64	-31.14						
9-May-2012	18:00:00	-10.80	-2.77	-35.71	0.78	-16.36	-27.31	-36.01	-34.22	-30.76						
10-May-2012	0:00:00	-0.01	4.73	0.07	4.54	1.45	1.32	-12.04	-19.28	-18.07						
10-May-2012	6:00:00	0.01	4.20	-0.27	3.72	1.13	1.26	-12.64	-21.00	-16.25						
10-May-2012	12:00:00	-1.04	2.83	-2.64	2.22	-0.34	-0.18	-15.46	-18.47	-14.92						
10-May-2012	18:00:00	-1.24	2.66	-3.39	2.61	-1.73	-0.96	-18.43	-20.00	-15.65						
11-May-2012	0:00:00	-0.96	2.69	-3.49	2.23	-1.51	-1.32	-19.66	-20.87	-17.02						
11-May-2012	6:00:00	-1.10	2.22	-3.92	1.87	-1.53	-1.90	-20.57	-23.06	-22.63						
11-May-2012	12:00:00	-2.26	0.74	-6.55	0.86	-3.28	-3.64	-22.69	-25.40	-22.74						
11-May-2012	18:00:00	-3.01	-0.01	-8.58	0.54	-4.85	-5.21	-24.75	-26.28	-22.69						
12-May-2012	0:00:00	-2.98	0.26	-9.11	0.67	-4.24	-5.91	-25.87	-26.29	-22.36						
12-May-2012	6:00:00	-2.72	0.55	-9.60	1.09	-4.01	-6.11	-26.37	-26.71	-22.93						
12-May-2012	12:00:00	-4.15	-1.06	-13.09	0.51	-5.65	-7.98	-27.77	-26.42	-22.66						
12-May-2012	18:00:00	-4.62	-1.81	-15.24	0.69	-6.47	-9.16	-28.90	-25.74	-21.95						
13-May-2012	0:00:00	-3.86	-0.67	-14.70	1.52	-5.21	-8.92	-29.06	-25.75	-22.01						
13-May-2012	6:00:00	-3.95	-0.37	-15.29	1.38	-4.96	-9.84	-29.66	-26.74	-22.87						
13-May-2012	12:00:00	-6.10	-2.85	-19.10	0.37	-7.09	-12.73	-31.27	-26.38	-22.74						
13-May-2012	18:00:00	-6.92	-3.53	-20.89	0.61	-7.99	-15.18	-32.29	-26.22	-22.42						
14-May-2012	0:00:00	-6.61	-2.46	-20.87	0.85	-7.40	-15.65	-32.96	-26.05	-22.30						0.02
14-May-2012	6:00:00	-6.17	-1.67	-20.71	1.06	-6.92	-15.70	-33.29	-26.71	-22.97						
14-May-2012	12:00:00	-7.55	-3.04	-22.43	0.30	-7.99	-16.99	-34.37	-26.50	-22.81						
14-May-2012	18:00:00	-8.42	-4.00	-23.76	0.45	-8.93	-18.87	-35.00	-26.23	-22.48						
15-May-2012	0:00:00	-7.57	-2.77	-23.64	0.82	-8.33	-18.60	-35.20	-26.40	-22.59						0.01
15-May-2012	6:00:00	-7.31	-2.45	-23.89	0.76	-8.27	-18.63	-35.63	-26.78	-23.17						
15-May-2012	12:00:00	-9.16	-4.85	-25.92	-0.06	-9.61	-20.39	-36.51	-26.47	-22.73						
15-May-2012	18:00:00	-8.70	-4.29	-26.45	0.37	-10.00	-21.05	-36.15	-26.26	-22.45						
16-May-2012	0:00:00	-8.09	-3.51	-26.36	0.62	-9.59	-20.94	-35.96	-26.45	-22.56						0.06
16-May-2012	6:00:00	-7.92	-3.01	-26.75	0.48	-9.57	-20.88	-36.07	-27.04	-23.29						
16-May-2012	12:00:00	-8.66	-3.75	-28.03	-0.18	-10.27	-19.91	-36.75	-26.42	-22.69						
16-May-2012	18:00:00	-10.18	-5.26	-29.25	0.14	-11.30	-22.91	-36.19	-26.32	-22.54						
17-May-2012	0:00:00	-9.38	-4.08	-29.27	0.25	-11.11	-22.77	-36.08	-26.24	-22.43						
17-May-2012	6:00:00	-8.81	-3.31	-29.37	0.38	-10.82	-22.54	-35.93	-26.74	-22.92						
17-May-2012	12:00:00	-10.75	-4.98	-30.90	-0.36	-11.98	-24.19	-36.43	-26.29	-22.44						
17-May-2012	18:00:00	-11.11	-2.71	-31.82	0.46	-12.41	-25.61	-35.93	-25.97	-22.13						
18-May-2012	0:00:00	-10.20	-1.75	-31.73	1.06	-12.11	-25.21	-35.67	-26.08	-22.20						
18-May-2012	6:00:00	-9.67	-1.57	-32.05	1.27	-12.17	-25.41	-35.71	-26.53	-22.77						
18-May-2012	12:00:00	-12.49	-4.63	-33.97	0.30	-13.76	-27.25	-36.31	-25.79	-21.97						
18-May-2012	18:00:00	-13.58	-5.61	-34.87	0.85	-14.26	-28.54	-35.51	-25.68	-21.84						
19-May-2012	0:00:00	-12.88	-4.92	-35.29	1.05	-14.42	-28.83	-35.38	-26.60	-22.75						
19-May-2012	6:00:00	-12.98	-5.39	-36.31	0.10	-15.33	-29.65	-36.34	-26.62	-22.83						
19-May-2012	12:00:00	-15.25	-8.05	-36.44	-0.46	-16.30	-30.60	-36.29	-26.06	-22.29						
19-May-2012	18:00:00	-16.88	-9.29	-35.90	-0.30	-17.29	-31.63	-35.83	-26.00	-22.24						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
20-May-2012	0:00:00	-15.55	-7.97	-35.76	-0.08	-17.45	-31.68	-35.75	-25.74	-21.95						0.12
20-May-2012	6:00:00	-14.44	-7.07	-35.58	0.14	-17.30	-31.02	-35.54	-26.50	-22.68						
20-May-2012	12:00:00	-16.44	-8.83	-36.29	-0.95	-18.37	-32.41	-36.23	-26.17	-22.35						
20-May-2012	18:00:00	-13.97	-6.24	-35.96	-0.11	-16.89	-29.05	-35.93	-26.08	-22.20						
21-May-2012	0:00:00	-12.60	-5.28	-35.78	0.12	-16.23	-27.53	-35.74	-26.05	-22.35						0.01
21-May-2012	6:00:00	-11.98	-4.89	-35.81	-0.06	-16.12	-27.13	-35.89	-26.65	-22.80						
21-May-2012	12:00:00	-12.60	-5.50	-36.13	-0.83	-16.63	-27.63	-36.38	-26.70	-22.85						
21-May-2012	18:00:00	-15.78	-8.31	-36.09	-1.12	-18.17	-29.83	-36.46	-26.09	-22.29						
22-May-2012	0:00:00	-14.21	-6.30	-35.57	-0.41	-18.13	-29.81	-35.91	-26.06	-22.24						0.87
22-May-2012	6:00:00	-13.56	-5.61	-35.54	-0.51	-17.92	-29.64	-35.86	-26.95	-23.11						
22-May-2012	12:00:00	-16.92	-9.19	-36.45	-2.09	-19.49	-31.43	-36.77	-26.30	-22.51						
22-May-2012	18:00:00	-4.76	1.04	-35.73	0.52	-12.14	-14.04	-36.11	-26.15	-22.32						
23-May-2012	0:00:00	-5.05	1.25	-35.54	0.54	-11.61	-13.86	-35.90	-26.36	-22.54						0.43
23-May-2012	6:00:00	-4.99	0.90	-35.71	0.81	-11.69	-14.03	-36.07	-26.76	-23.03						
23-May-2012	12:00:00	-6.44	-0.30	-36.20	0.34	-12.55	-15.84	-36.52	-27.02	-23.08						
23-May-2012	18:00:00	-8.53	-1.95	-36.42	-0.03	-14.18	-19.21	-36.73	-26.28	-22.37						
24-May-2012	0:00:00	-2.65	1.51	-35.72	1.21	-11.25	-14.37	-35.99	-26.27	-22.27						0.30
24-May-2012	6:00:00	-2.20	2.18	-35.27	1.21	-9.07	-7.56	-35.97	-27.11	-23.16						
24-May-2012	12:00:00	-3.91	0.67	-35.03	0.50	-10.47	-10.13	-36.79	-26.96	-23.21						
24-May-2012	18:00:00	-5.17	-0.27	-35.21	0.40	-11.91	-13.83	-36.75	-26.21	-22.26						
25-May-2012	0:00:00	-4.33	0.53	-33.77	1.33	-10.69	-14.16	-35.80	-26.34	-22.45						0.01
25-May-2012	6:00:00	-4.61	0.13	-33.68	1.05	-10.21	-15.23	-35.95	-27.08	-23.15						
25-May-2012	12:00:00	-6.64	-2.04	-35.76	0.03	-12.15	-18.70	-36.73	-26.74	-22.96						
25-May-2012	18:00:00	-8.20	-2.95	-36.23	0.08	-13.40	-22.05	-36.50	-26.14	-22.32						
26-May-2012	0:00:00	-7.38	-1.69	-35.61	0.70	-12.53	-21.94	-35.90	-26.27	-22.47						
26-May-2012	6:00:00	-7.50	-1.56	-35.70	0.39	-12.49	-22.37	-35.99	-27.05	-23.20						
26-May-2012	12:00:00	-9.68	-4.23	-36.38	-0.42	-14.21	-24.64	-36.65	-26.89	-23.10						
26-May-2012	18:00:00	-11.68	-6.17	-36.37	-0.68	-16.03	-27.61	-36.64	-26.39	-22.66						
27-May-2012	0:00:00	-10.33	-4.55	-35.87	-0.14	-15.57	-27.58	-36.19	-26.21	-22.37						
27-May-2012	6:00:00	-9.73	-4.00	-35.77	0.02	-15.40	-27.41	-36.07	-27.06	-23.23						
27-May-2012	12:00:00	-12.40	-7.14	-36.48	-1.25	-16.89	-29.20	-36.73	-26.80	-22.83						
27-May-2012	18:00:00	-13.94	-8.46	-36.36	-1.26	-18.28	-31.39	-36.56	-26.33	-22.38						
28-May-2012	0:00:00	-12.36	-6.42	-35.71	-0.66	-17.96	-31.12	-36.11	-26.36	-22.68						
28-May-2012	6:00:00	-11.81	-5.80	-36.11	-0.86	-17.81	-30.75	-36.25	-27.05	-23.28						
28-May-2012	12:00:00	-14.81	-9.37	-36.61	-2.31	-19.31	-32.47	-36.85	-26.89	-23.08						
28-May-2012	18:00:00	-17.03	-10.90	-36.49	-2.66	-21.03	-34.18	-36.85	-26.32	-22.55						
29-May-2012	0:00:00	-15.12	-8.65	-35.91	-1.72	-20.72	-33.82	-36.15	-26.54	-22.78						0.09
29-May-2012	6:00:00	-14.48	-7.93	-36.02	-1.90	-20.91	-33.70	-36.34	-26.88	-23.19						
29-May-2012	12:00:00	-17.51	-11.02	-36.49	-3.52	-21.94	-34.89	-36.74	-26.75	-23.03						
29-May-2012	18:00:00	-2.71	2.39	-1.09	-0.10	-11.33	-15.41	-36.57	-26.38	-22.57						
30-May-2012	0:00:00	-2.34	2.16	-2.99	1.53	-11.09	-14.87	-36.08	-7.19	-22.56						1.47
30-May-2012	6:00:00	-0.31	3.42	1.09	2.05	-0.27	-1.61	-36.19	-18.73	-22.67						
30-May-2012	12:00:00	0.50	6.01	1.75	4.81	4.89	2.46	-34.66	1.85	2.49						
30-May-2012	18:00:00	1.38	10.26	1.62	7.18	11.02	2.81	2.37	1.06	3.12						
31-May-2012	0:00:00	-0.02	5.57	1.27	5.14	8.98	2.39	1.90	2.16	2.70						
31-May-2012	6:00:00	-0.19	4.17	1.12	4.14	5.66	2.09	1.60	1.21	0.53						
31-May-2012	12:00:00	-1.33	2.49	-0.75	2.62	4.06	0.93	0.47	-0.48	-1.79						
31-May-2012	18:00:00	-1.72	2.06	-1.16	1.84	3.33	-0.13	-0.21	-0.40	-1.78						
1-Jun-2012	0:00:00	-1.03	2.61	0.75	2.25	3.75	-0.11	0.31	-0.84	-2.45						
1-Jun-2012	6:00:00	-1.01	2.43	0.88	2.05	3.44	-0.70	0.05	-3.68	-6.27						
1-Jun-2012	12:00:00	-2.29	1.09	-1.16	1.11	2.15	-2.17	-1.05	-6.34	-9.75						
1-Jun-2012	18:00:00	-2.45	0.73	-2.36	1.03	1.61	-2.93	-1.34	-6.41	-10.07						
2-Jun-2012	0:00:00	-2.11	0.93	-1.31	1.11	1.28	-3.30	-1.25	-5.09	-9.19						
2-Jun-2012	6:00:00	-1.68	1.39	0.36	1.44	1.39	-2.95	-1.04	-8.69	-13.44						
2-Jun-2012	12:00:00	-2.72	0.08	-1.73	1.00	0.20	-4.33	-1.91	-12.70	-18.07						
2-Jun-2012	18:00:00	-3.35	-0.53	-3.43	0.97	-1.15	-5.50	-2.69	-13.18	-22.13						
3-Jun-2012	0:00:00	-2.71	0.32	-2.83	1.40	-0.75	-5.38	-2.59	-13.57	-22.15						
3-Jun-2012	6:00:00	-2.88	0.38	-3.29	1.08	-0.81	-5.91	-3.03	-16.10	-22.79						
3-Jun-2012	12:00:00	-4.27	-1.07	-5.79	0.09	-2.36	-7.54	-4.87	-19.44	-22.75						
3-Jun-2012	18:00:00	-4.86	-1.59	-7.14	0.00	-3.79	-9.33	-7.18	-20.24	-22.08						
4-Jun-2012	0:00:00	-3.06	-0.23	-6.43	0.69	-2.51	-9.03	-7.66	-20.69	-22.17						
4-Jun-2012	6:00:00	-1.98	0.29	-6.71	0.74	-2.27	-9.65	-8.33	-22.24	-22.95						
4-Jun-2012	12:00:00	-3.40	-1.60	-9.67	-0.17	-4.16	-12.10	-10.93	-25.18	-22.84						
4-Jun-2012	18:00:00	-4.54	-2.81	-12.87	-0.46	-5.83	-15.69	-14.26	-26.15	-22.30						
5-Jun-2012	0:00:00	-3.60	-1.18	-12.79	0.20	-4.69	-16.48	-14.90	-26.16	-22.33						0.46
5-Jun-2012	6:00:00	-3.19	-0.76	-13.16	0.39	-4.11	-16.97	-15.43	-26.71	-22.80						
5-Jun-2012	12:00:00	-4.97	-2.58	-16.56	-0.54	-5.93	-19.56	-17.39	-23.93	-22.45						
5-Jun-2012	18:00:00	-0.84	2.36	0.05	1.22	1.34	-4.47	-5.56	-23.84	-22.26						
6-Jun-2012	0:00:00	-0.77	2.51	-0.08	1.84	0.82	-4.65	-6.75	-24.06	-22.18						
6-Jun-2012	6:00:00	-0.88	2.35	-0.07	1.75	0.52	-4.95	-7.58	-25.24	-22.63						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
6-Jun-2012	12:00:00	-1.78	1.25	-1.74	1.04	-0.52	-6.43	-9.89	-26.42	-22.55						
6-Jun-2012	18:00:00	-2.23	0.43	-2.78	0.96	-1.66	-7.86	-12.64	-25.91	-21.99						
7-Jun-2012	0:00:00	-1.51	1.46	-2.41	1.42	-0.81	-7.71	-13.07	-26.09	-22.21						
7-Jun-2012	6:00:00	-1.66	1.25	-2.81	1.18	-0.91	-8.44	-13.81	-26.74	-22.86						
7-Jun-2012	12:00:00	-3.07	-0.57	-4.93	0.14	-2.72	-11.21	-15.91	-26.70	-22.83						
7-Jun-2012	18:00:00	-4.03	-1.33	-6.00	-0.02	-4.04	-14.13	-18.27	-25.99	-22.07						
8-Jun-2012	0:00:00	-3.19	-0.03	-5.35	0.69	-2.86	-14.50	-18.38	-25.87	-22.02						
8-Jun-2012	6:00:00	-3.14	0.33	-5.63	0.62	-2.44	-14.99	-18.75	-26.81	-22.96						
8-Jun-2012	12:00:00	-5.50	-1.92	-9.00	-0.77	-4.75	-18.42	-20.80	-26.86	-22.96						
8-Jun-2012	18:00:00	-7.06	-3.34	-11.85	-0.99	-6.41	-22.08	-22.91	-25.99	-22.27						
9-Jun-2012	0:00:00	-6.31	-2.03	-11.88	-0.24	-5.01	-21.94	-23.14	-26.21	-22.25						
9-Jun-2012	6:00:00	-6.32	-1.51	-12.63	-0.27	-4.59	-22.12	-23.83	-27.12	-23.25						
9-Jun-2012	12:00:00	-8.80	-4.44	-17.28	-2.07	-7.27	-24.78	-25.69	-26.80	-22.93						
9-Jun-2012	18:00:00	-10.67	-5.89	-20.30	-2.27	-8.56	-27.75	-27.25	-26.32	-22.43						
10-Jun-2012	0:00:00	-9.60	-4.36	-19.99	-1.40	-7.59	-27.49	-27.86	-26.20	-22.25						
10-Jun-2012	6:00:00	-9.06	-3.54	-19.97	-1.02	-6.98	-27.03	-28.60	-27.12	-23.20						
10-Jun-2012	12:00:00	-11.76	-6.70	-23.19	-3.20	-9.41	-29.51	-30.50	-27.02	-23.14						
10-Jun-2012	18:00:00	-13.70	-8.14	-25.68	-3.58	-10.87	-31.91	-32.27	-26.44	-22.63						
11-Jun-2012	0:00:00	-12.23	-6.73	-25.40	-2.24	-10.07	-31.31	-33.21	-26.38	-22.50						
11-Jun-2012	6:00:00	-11.54	-6.07	-25.49	-2.07	-9.69	-30.81	-34.24	-27.22	-23.28						
11-Jun-2012	12:00:00	-13.94	-8.20	-27.42	-3.90	-11.29	-32.38	-35.90	-26.90	-22.98						
11-Jun-2012	18:00:00	-14.98	-9.16	-28.89	-3.86	-12.34	-33.57	-36.53	-26.65	-22.75						
12-Jun-2012	0:00:00	-13.79	-7.92	-28.87	-2.88	-11.99	-33.25	-36.22	-26.68	-22.73						0.49
12-Jun-2012	6:00:00	-12.80	-7.03	-28.94	-2.64	-11.74	-32.77	-36.33	-26.75	-22.93						
12-Jun-2012	12:00:00	-11.12	-5.49	-28.97	-2.06	-11.41	-31.65	-36.40	-26.71	-22.81						
12-Jun-2012	18:00:00	-5.56	-0.06	-23.33	-0.89	-6.56	-24.04	-36.35	-26.52	-22.66						
13-Jun-2012	0:00:00	-5.29	0.54	-20.70	-0.88	-6.67	-21.01	-36.11	-26.56	-22.74						
13-Jun-2012	6:00:00	-5.66	0.27	-19.93	-0.92	-7.04	-21.05	-36.23	-26.88	-22.97						
13-Jun-2012	12:00:00	-6.95	-0.43	-21.14	-1.44	-8.07	-22.39	-36.55	-26.72	-22.81						
13-Jun-2012	18:00:00	-8.76	-1.41	-23.55	-1.62	-9.94	-25.61	-36.35	-26.60	-22.80						
14-Jun-2012	0:00:00	-8.59	-1.13	-23.94	-1.26	-10.24	-26.76	-36.22	-26.41	-22.56						
14-Jun-2012	6:00:00	-8.36	-0.82	-24.13	-1.08	-10.07	-27.13	-36.07	-26.72	-22.78						
14-Jun-2012	12:00:00	-9.40	-1.71	-25.61	-1.77	-10.99	-28.31	-36.32	-26.77	-22.87						
14-Jun-2012	18:00:00	-10.98	-3.30	-27.69	-2.15	-12.55	-30.45	-36.43	-26.50	-22.68						
15-Jun-2012	0:00:00	-10.52	-2.88	-28.09	-1.61	-12.63	-31.05	-36.02	-26.51	-22.65						
15-Jun-2012	6:00:00	-10.15	-2.75	-28.40	-1.58	-12.77	-31.14	-36.08	-26.82	-22.83						
15-Jun-2012	12:00:00	-12.14	-5.20	-30.45	-2.84	-13.78	-32.52	-36.31	-26.74	-22.87						
15-Jun-2012	18:00:00	-14.38	-7.24	-32.15	-3.44	-15.33	-34.36	-36.31	-26.66	-22.77						
16-Jun-2012	0:00:00	-13.82	-6.37	-32.42	-2.69	-15.52	-35.13	-36.20	-26.56	-22.67						
16-Jun-2012	6:00:00	-13.19	-5.89	-32.63	-2.52	-15.56	-35.03	-36.19	-26.84	-22.96						
16-Jun-2012	12:00:00	-15.46	-8.65	-34.38	-4.19	-16.66	-35.77	-36.39	-26.50	-22.69						
16-Jun-2012	18:00:00	-16.78	-9.67	-35.49	-4.25	-17.83	-36.49	-36.08	-26.10	-22.30						
17-Jun-2012	0:00:00	-15.59	-8.19	-35.39	-3.06	-17.79	-35.91	-35.69	-26.34	-22.53						
17-Jun-2012	6:00:00	-15.22	-7.81	-36.01	-3.24	-18.05	-36.17	-36.04	-26.75	-22.86						
17-Jun-2012	12:00:00	-17.30	-10.08	-36.47	-4.89	-18.87	-36.41	-36.28	-26.32	-22.49						
17-Jun-2012	18:00:00	-18.23	-10.79	-36.03	-4.71	-19.79	-36.05	-35.92	-26.27	-22.47						
18-Jun-2012	0:00:00	-17.35	-9.64	-36.03	-4.00	-20.01	-35.99	-35.93	-26.21	-22.45						
18-Jun-2012	6:00:00	-16.93	-8.87	-35.75	-3.78	-20.17	-36.01	-35.89	-26.59	-22.85						
18-Jun-2012	12:00:00	-18.95	-11.37	-36.08	-5.64	-21.07	-36.33	-36.28	-26.51	-22.91						
18-Jun-2012	18:00:00	-20.18	-12.13	-36.05	-5.72	-22.27	-36.30	-36.21	-26.20	-22.43						
19-Jun-2012	0:00:00	-19.31	-10.51	-35.60	-4.52	-22.28	-35.87	-35.83	-26.04	-22.39						0.07
19-Jun-2012	6:00:00	-18.59	-9.60	-35.54	-3.96	-22.35	-35.80	-35.83	-26.71	-23.04						
19-Jun-2012	12:00:00	-17.35	-9.09	-36.30	-4.92	-22.10	-36.52	-36.39	-26.80	-23.13						
19-Jun-2012	18:00:00	-20.57	-12.15	-36.30	-6.48	-23.90	-36.58	-36.52	-26.11	-22.49						
20-Jun-2012	0:00:00	-19.49	-10.45	-35.75	-5.02	-23.54	-35.93	-36.01	-26.04	-22.45						
20-Jun-2012	6:00:00	-18.70	-9.60	-35.67	-4.71	-23.42	-35.91	-35.77	-27.04	-23.28						
20-Jun-2012	12:00:00	-21.36	-13.01	-36.62	-7.66	-24.98	-36.81	-36.71	-26.89	-23.19						
20-Jun-2012	18:00:00	-22.79	-14.55	-36.39	-8.06	-25.90	-36.54	-36.57	-26.33	-22.72						
21-Jun-2012	0:00:00	-22.15	-12.75	-35.96	-6.40	-25.82	-36.18	-36.09	-26.21	-22.63						
21-Jun-2012	6:00:00	-21.55	-11.85	-35.84	-5.99	-25.75	-36.03	-35.97	-26.99	-23.28						
21-Jun-2012	12:00:00	-23.60	-15.10	-36.50	-8.92	-26.90	-36.75	-36.57	-26.77	-22.99						
21-Jun-2012	18:00:00	-24.79	-16.54	-36.32	-9.47	-27.75	-36.58	-36.52	-26.24	-22.53						
22-Jun-2012	0:00:00	-24.31	-14.89	-35.89	-7.60	-27.63	-36.06	-36.05	-26.28	-22.54						0.67
22-Jun-2012	6:00:00	-23.94	-14.16	-36.01	-7.20	-27.70	-36.16	-36.07	-26.96	-23.26						
22-Jun-2012	12:00:00	-25.69	-17.38	-36.71	-10.41	-28.85	-36.83	-36.79	-26.57	-22.90						
22-Jun-2012	18:00:00	-26.44	-18.47	-36.35	-10.55	-29.55	-36.55	-36.51	-26.26	-22.54						
23-Jun-2012	0:00:00	-22.80	-11.45	-35.99	-4.97	-28.04	-36.19	-36.10	-26.08	-22.43						
23-Jun-2012	6:00:00	-20.60	-10.79	-35.81	-5.64	-27.23	-35.95	-35.96	-26.81	-23.19						
23-Jun-2012	12:00:00	-21.38	-12.75	-36.48	-7.77	-28.19	-36.66	-36.75	-26.57	-22.85						
23-Jun-2012	18:00:00	-22.42	-14.11	-36.21	-8.33	-28.70	-36.41	-36.46	-26.11	-22.37						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
24-Jun-2012	0:00:00	-22.03	-13.35	-35.65	-7.43	-28.60	-35.91	-35.90	-25.91	-22.23						
24-Jun-2012	6:00:00	-21.77	-13.06	-35.54	-7.28	-28.41	-35.79	-35.62	-26.66	-23.05						
24-Jun-2012	12:00:00	-23.82	-16.02	-36.42	-10.04	-29.75	-36.57	-36.58	-26.96	-23.21						
24-Jun-2012	18:00:00	-26.41	-19.02	-36.59	-11.55	-30.85	-36.73	-36.74	-26.12	-22.37						
25-Jun-2012	0:00:00	-25.94	-17.32	-35.76	-9.64	-30.47	-35.88	-35.92	-26.15	-22.38						1.21
25-Jun-2012	6:00:00	-25.81	-16.81	-35.77	-9.34	-30.47	-35.85	-35.90	-26.77	-23.14						
25-Jun-2012	12:00:00	-27.04	-19.19	-36.44	-12.03	-31.31	-36.69	-36.68	-26.66	-22.98						
25-Jun-2012	18:00:00	-27.80	-20.57	-36.26	-13.36	-31.85	-36.47	-36.56	-26.04	-22.43						
26-Jun-2012	0:00:00	-7.21	1.68	-2.43	0.46	-19.37	-26.62	-35.90	-25.82	-22.13						
26-Jun-2012	6:00:00	-7.00	1.41	-2.84	1.74	-19.31	-27.45	-35.68	-26.23	-22.69						
26-Jun-2012	12:00:00	-8.56	-0.51	-5.79	0.68	-20.31	-29.43	-36.08	-26.22	-22.61						
26-Jun-2012	18:00:00	-9.98	-1.84	-7.55	0.02	-20.61	-31.29	-35.95	-25.81	-22.07						
27-Jun-2012	0:00:00	-9.62	-1.73	-7.85	0.14	-19.24	-32.25	-35.67	-25.92	-22.19						
27-Jun-2012	6:00:00	-9.72	-2.26	-8.99	-0.11	-17.63	-33.12	-35.74	-26.66	-22.84						
27-Jun-2012	12:00:00	-11.84	-5.17	-13.94	-1.47	-17.74	-34.89	-36.35	-26.70	-22.98						
27-Jun-2012	18:00:00	-13.93	-7.26	-17.63	-0.63	-18.59	-36.23	-36.45	-25.64	-21.91						
28-Jun-2012	0:00:00	-12.70	-5.68	-17.59	0.14	-16.39	-35.46	-35.43	-25.63	-21.93						
28-Jun-2012	6:00:00	-12.78	-5.70	-18.65	-0.04	-15.57	-35.47	-35.39	-26.69	-22.95						
28-Jun-2012	12:00:00	-15.62	-8.98	-23.22	-2.02	-16.77	-36.54	-36.34	-26.51	-22.86						
28-Jun-2012	18:00:00	-17.92	-10.42	-25.75	-2.46	-18.11	-36.33	-36.08	-26.03	-22.38						
29-Jun-2012	0:00:00	-17.65	-9.16	-26.12	-1.58	-17.72	-35.97	-35.81	-25.92	-22.29						
29-Jun-2012	6:00:00	-17.63	-8.56	-26.51	-1.59	-17.25	-35.87	-35.67	-26.88	-23.10						
29-Jun-2012	12:00:00	-20.26	-11.88	-30.09	-3.81	-19.23	-36.69	-36.40	-26.86	-22.98						
29-Jun-2012	18:00:00	-22.44	-13.73	-32.47	-4.55	-21.07	-36.85	-36.37	-26.59	-22.67						
30-Jun-2012	0:00:00	-22.57	-12.75	-32.93	-3.78	-21.21	-36.39	-36.19	-25.97	-22.09						
30-Jun-2012	6:00:00	-22.18	-11.29	-32.66	-3.12	-20.98	-35.85	-35.53	-26.72	-22.91						
30-Jun-2012	12:00:00	-24.12	-14.67	-35.64	-5.58	-22.95	-36.66	-36.38	-26.71	-22.89						
30-Jun-2012	18:00:00	-26.30	-16.89	-36.51	-6.39	-24.85	-36.67	-36.31	-26.33	-22.56						
1-Jul-2012	0:00:00	-26.54	-15.03	-36.13	-5.07	-25.13	-36.31	-35.99	-26.30	-22.33						0.05
1-Jul-2012	6:00:00	-26.48	-13.96	-35.97	-4.53	-25.12	-36.21	-35.80	-26.80	-22.93						
1-Jul-2012	12:00:00	-28.06	-16.97	-36.59	-7.04	-26.39	-36.76	-36.44	-26.14	-22.26						
1-Jul-2012	18:00:00	-28.18	-17.74	-35.93	-6.40	-27.25	-36.01	-35.81	-25.86	-22.12						
2-Jul-2012	0:00:00	-28.16	-16.25	-35.66	-5.50	-27.56	-35.81	-35.59	-26.16	-22.30						
2-Jul-2012	6:00:00	-28.48	-15.79	-35.88	-5.42	-27.88	-36.16	-35.77	-26.77	-22.83						
2-Jul-2012	12:00:00	-29.54	-19.18	-36.44	-8.03	-29.08	-36.65	-36.25	-26.60	-22.77						
2-Jul-2012	18:00:00	-30.08	-20.68	-36.36	-8.88	-30.35	-36.54	-36.07	-26.09	-22.24						
3-Jul-2012	0:00:00	-29.86	-18.94	-35.88	-6.86	-30.46	-35.94	-35.59	-26.10	-22.14						
3-Jul-2012	6:00:00	-29.76	-17.85	-35.89	-6.42	-30.57	-36.09	-35.66	-26.72	-22.77						
3-Jul-2012	12:00:00	-30.29	-20.97	-36.48	-9.74	-31.79	-36.61	-36.35	-26.64	-22.57						
3-Jul-2012	18:00:00	-30.23	-22.20	-36.35	-10.50	-32.33	-36.52	-36.21	-26.50	-22.49						
4-Jul-2012	0:00:00	-29.92	-20.80	-36.14	-8.64	-32.06	-36.27	-35.99	-26.29	-22.42						
4-Jul-2012	6:00:00	-29.80	-19.72	-36.13	-8.01	-31.95	-36.23	-35.89	-26.66	-22.77						
4-Jul-2012	12:00:00	-30.00	-22.17	-36.37	-10.80	-32.33	-36.57	-36.22	-26.62	-22.74						
4-Jul-2012	18:00:00	-29.96	-23.26	-36.23	-12.05	-32.18	-36.37	-36.07	-26.05	-22.26						
5-Jul-2012	0:00:00	-29.39	-22.02	-35.75	-10.06	-31.81	-35.99	-35.60	-26.15	-22.25						
5-Jul-2012	6:00:00	-29.45	-21.21	-35.99	-9.66	-31.81	-36.05	-35.71	-26.95	-22.96						
5-Jul-2012	12:00:00	-30.18	-23.91	-36.56	-13.28	-32.51	-36.76	-36.41	-26.54	-22.72						
5-Jul-2012	18:00:00	-29.87	-24.43	-36.24	-14.54	-32.35	-36.51	-36.08	-26.32	-22.32						
6-Jul-2012	0:00:00	-29.69	-23.37	-36.11	-13.23	-31.96	-36.19	-35.90	-26.23	-22.39						0.04
6-Jul-2012	6:00:00	-29.54	-22.92	-35.91	-12.76	-31.90	-36.16	-35.77	-26.86	-22.91						
6-Jul-2012	12:00:00	-30.25	-25.07	-36.63	-15.57	-32.57	-36.78	-36.37	-26.66	-22.81						
6-Jul-2012	18:00:00	-30.00	-25.90	-36.44	-17.24	-32.37	-36.60	-36.26	-26.18	-22.35						
7-Jul-2012	0:00:00	-29.48	-24.52	-35.88	-16.18	-31.75	-36.01	-35.75	-26.24	-22.37						
7-Jul-2012	6:00:00	-29.50	-24.11	-35.97	-15.86	-31.89	-36.12	-35.91	-26.87	-22.96						
7-Jul-2012	12:00:00	-30.10	-26.35	-36.60	-18.45	-32.44	-36.70	-36.49	-26.64	-22.79						
7-Jul-2012	18:00:00	-29.93	-26.94	-36.42	-20.00	-32.31	-36.49	-36.32	-26.44	-22.54						
8-Jul-2012	0:00:00	-29.77	-25.89	-36.26	-19.48	-32.13	-36.37	-35.99	-26.40	-22.50						0.01
8-Jul-2012	6:00:00	-29.72	-25.43	-36.21	-19.28	-32.05	-36.37	-36.03	-26.81	-22.96						
8-Jul-2012	12:00:00	-30.00	-27.42	-36.57	-20.91	-32.44	-36.70	-36.32	-26.77	-22.81						
8-Jul-2012	18:00:00	-29.89	-27.97	-36.41	-22.40	-32.37	-36.67	-36.29	-26.27	-22.38						
9-Jul-2012	0:00:00	-29.58	-27.12	-36.05	-22.16	-31.90	-36.21	-35.86	-26.34	-22.54						0.85
9-Jul-2012	6:00:00	-29.63	-16.98	-35.99	-6.20	-27.29	-36.19	-35.90	-26.94	-23.03						
9-Jul-2012	12:00:00	-30.23	-18.19	-36.54	-8.70	-28.81	-36.67	-36.43	-26.75	-22.84						
9-Jul-2012	18:00:00	-29.95	-18.88	-36.43	-9.96	-30.08	-36.52	-36.32	-26.38	-22.55						
10-Jul-2012	0:00:00	-29.58	-17.52	-36.06	-7.92	-30.73	-36.21	-35.91	-26.51	-22.55						1.76
10-Jul-2012	6:00:00	-29.66	-16.83	-36.19	-8.78	-31.33	-36.37	-35.96	-26.68	-22.84						
10-Jul-2012	12:00:00	-29.95	-17.26	-36.41	-10.11	-32.07	-36.52	-36.23	-26.40	-22.50						
10-Jul-2012	18:00:00	-9.11	-4.96	-24.11	-1.12	-17.25	-36.16	-35.98	-26.44	-22.50						
11-Jul-2012	0:00:00	-5.12	-5.28	-6.81	0.79	-19.89	-36.24	-35.99	-26.44	-22.57						0.14
11-Jul-2012	6:00:00	-5.50	-5.95	-7.21	0.06	-21.20	-36.27	-35.85	-26.54	-22.60						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
11-Jul-2012	12:00:00	-6.10	-6.45	-8.35	-0.32	-22.06	-36.22	-35.89	-26.50	-22.53						
11-Jul-2012	18:00:00	-7.20	-6.70	-9.05	-0.80	-21.35	-36.27	-35.95	-26.26	-22.32						
12-Jul-2012	0:00:00	-7.90	-6.72	-9.66	-0.81	-18.25	-36.01	-35.78	-26.30	-22.33						0.01
12-Jul-2012	6:00:00	-8.72	-7.00	-10.41	-0.70	-15.98	-36.07	-35.75	-26.80	-22.84						
12-Jul-2012	12:00:00	-10.74	-9.04	-15.03	-1.46	-15.95	-36.54	-36.39	-26.47	-22.56						
12-Jul-2012	18:00:00	-11.89	-9.31	-16.37	-1.18	-15.25	-36.30	-35.93	-26.33	-22.33						
13-Jul-2012	0:00:00	-12.23	-8.75	-16.93	-1.05	-14.45	-36.12	-35.75	-26.22	-22.31						0.04
13-Jul-2012	6:00:00	-12.77	-8.68	-17.76	-1.02	-13.94	-36.05	-35.73	-26.62	-22.67						
13-Jul-2012	12:00:00	-14.66	-10.07	-21.26	-1.80	-14.43	-36.46	-36.05	-26.42	-22.57						
13-Jul-2012	18:00:00	-6.42	-3.36	-10.58	0.04	-8.32	-36.24	-36.04	-26.26	-22.32						
14-Jul-2012	0:00:00	-7.51	-2.70	-1.73	0.27	-8.73	-36.16	-35.83	-26.18	-22.37						2.11
14-Jul-2012	6:00:00	-8.28	-3.23	-2.59	0.43	-8.66	-36.12	-35.75	-26.52	-22.68						
14-Jul-2012	12:00:00	-9.78	-4.85	-4.67	-0.16	-8.87	-36.55	-36.15	-26.51	-22.66						
14-Jul-2012	18:00:00	-10.75	-5.46	-4.82	0.00	-8.87	-36.45	-36.13	-26.32	-22.45						
15-Jul-2012	0:00:00	-10.76	-5.08	-4.81	0.08	-8.09	-36.19	-35.83	-26.33	-22.50						
15-Jul-2012	6:00:00	-11.15	-5.09	-5.27	0.00	-7.81	-36.21	-35.91	-26.77	-22.90						
15-Jul-2012	12:00:00	-13.45	-7.53	-8.91	-0.72	-9.32	-36.64	-36.27	-26.69	-22.85						
15-Jul-2012	18:00:00	-16.45	-9.42	-11.06	-0.90	-10.83	-36.51	-36.21	-26.27	-22.48						
16-Jul-2012	0:00:00	-16.37	-8.45	-10.86	-0.54	-10.19	-36.22	-35.93	-26.40	-22.53						
16-Jul-2012	6:00:00	-16.66	-8.05	-11.30	-0.62	-9.62	-36.27	-35.90	-26.82	-22.95						
16-Jul-2012	12:00:00	-18.40	-10.48	-16.04	-1.61	-11.06	-36.54	-36.26	-26.84	-22.99						
16-Jul-2012	18:00:00	-20.23	-12.06	-19.94	-2.10	-12.59	-36.63	-36.34	-26.44	-22.53						
17-Jul-2012	0:00:00	-20.23	-10.99	-20.06	-1.46	-11.95	-36.29	-35.97	-26.40	-22.49						
17-Jul-2012	6:00:00	-20.35	-10.45	-20.52	-1.46	-11.53	-36.22	-35.93	-26.96	-23.07						
17-Jul-2012	12:00:00	-21.83	-12.77	-24.42	-2.92	-13.09	-36.70	-36.37	-26.77	-22.81						
17-Jul-2012	18:00:00	-22.72	-14.07	-27.07	-3.16	-14.66	-36.49	-36.20	-26.53	-22.54						
18-Jul-2012	0:00:00	-23.02	-13.24	-27.59	-2.56	-14.67	-36.30	-36.02	-26.36	-22.51						
18-Jul-2012	6:00:00	-23.15	-12.79	-27.96	-2.21	-14.38	-36.19	-35.91	-26.90	-22.98						
18-Jul-2012	12:00:00	-24.31	-15.36	-30.55	-4.02	-15.92	-36.79	-36.43	-26.66	-22.79						
18-Jul-2012	18:00:00	-25.13	-16.81	-32.85	-4.23	-17.12	-36.58	-36.17	-26.59	-22.65						
19-Jul-2012	0:00:00	-25.37	-16.37	-33.36	-3.45	-17.21	-36.41	-35.97	-26.41	-22.48						
19-Jul-2012	6:00:00	-25.43	-15.90	-33.39	-3.08	-17.21	-36.33	-35.91	-26.89	-22.92						
19-Jul-2012	12:00:00	-26.42	-18.24	-35.61	-5.13	-18.64	-36.67	-36.35	-26.88	-22.91						
19-Jul-2012	18:00:00	-27.18	-19.69	-36.57	-5.64	-20.35	-36.58	-36.29	-26.39	-22.42						
20-Jul-2012	0:00:00	-27.13	-18.55	-36.14	-4.40	-20.27	-36.29	-35.92	-26.34	-22.54						
20-Jul-2012	6:00:00	-27.36	-18.49	-36.08	-4.16	-20.61	-36.21	-35.97	-26.71	-22.87						
20-Jul-2012	12:00:00	-28.22	-20.51	-36.55	-5.94	-21.63	-36.61	-36.29	-26.45	-22.61						
20-Jul-2012	18:00:00	-28.56	-21.28	-36.19	-6.03	-22.77	-36.36	-35.99	-26.36	-22.53						
21-Jul-2012	0:00:00	-28.72	-20.59	-36.12	-5.10	-23.14	-36.19	-35.96	-26.22	-22.38						2.1
21-Jul-2012	6:00:00	-28.94	-20.41	-36.05	-4.59	-23.32	-36.13	-35.81	-26.76	-22.84						
21-Jul-2012	12:00:00	-29.68	-21.43	-36.41	-5.98	-24.04	-36.63	-36.26	-26.65	-22.63						
21-Jul-2012	18:00:00	-12.73	-11.92	-36.03	-0.04	-6.11	-36.25	-35.98	-26.42	-22.54						
22-Jul-2012	0:00:00	0.19	6.33	0.47	5.25	5.07	-14.97	-35.93	-26.50	-22.47						0.01
22-Jul-2012	6:00:00	-1.03	2.15	-0.21	3.20	6.92	-17.28	-35.87	-26.77	-22.84						
22-Jul-2012	12:00:00	-1.84	0.97	-1.95	1.11	4.42	-20.74	-36.20	-26.72	-22.78						
22-Jul-2012	18:00:00	-2.02	0.23	-2.79	0.42	3.58	-23.70	-36.13	-26.38	-22.48						
23-Jul-2012	0:00:00	-1.88	0.44	-2.58	0.43	3.45	-25.45	-35.80	-26.39	-22.47						0.04
23-Jul-2012	6:00:00	-2.08	0.19	-2.99	0.08	3.19	-26.69	-35.91	-26.82	-22.98						
23-Jul-2012	12:00:00	-3.12	-1.47	-5.55	-0.69	2.30	-28.45	-36.38	-26.41	-22.49						
23-Jul-2012	18:00:00	-3.24	-2.03	-5.46	-0.28	1.97	-29.95	-35.89	-26.22	-22.39						
24-Jul-2012	0:00:00	-3.48	-2.07	-5.53	-0.39	1.69	-30.94	-35.83	-26.32	-22.43						0.74
24-Jul-2012	6:00:00	-3.70	-2.07	-5.77	-0.47	1.33	-31.43	-35.77	-26.82	-23.02						
24-Jul-2012	12:00:00	-5.52	-4.96	-9.56	-1.59	0.01	-32.93	-36.39	-26.35	-22.42						
24-Jul-2012	18:00:00	-4.94	-4.59	-9.95	-0.70	-0.09	-33.99	-35.92	-26.29	-22.42						
25-Jul-2012	0:00:00	-5.71	-4.12	-9.05	-0.82	-0.59	-34.73	-35.91	-26.36	-22.48						
25-Jul-2012	6:00:00	-6.25	-4.38	-9.86	-0.94	-0.94	-35.26	-35.81	-26.78	-22.81						
25-Jul-2012	12:00:00	-8.22	-7.44	-14.46	-2.00	-2.29	-36.52	-36.11	-26.60	-22.69						
25-Jul-2012	18:00:00	-10.32	-9.03	-17.58	-2.30	-3.56	-36.39	-36.03	-26.39	-22.45						
26-Jul-2012	0:00:00	-10.62	-8.53	-17.41	-1.88	-3.57	-36.16	-35.89	-26.40	-22.43						
26-Jul-2012	6:00:00	-11.04	-8.21	-17.39	-1.73	-3.49	-36.21	-35.80	-26.82	-22.83						
26-Jul-2012	12:00:00	-13.27	-10.81	-20.96	-3.29	-5.01	-36.69	-36.25	-26.62	-22.73						
26-Jul-2012	18:00:00	-16.13	-12.39	-23.91	-3.52	-6.75	-36.46	-36.05	-26.57	-22.63						
27-Jul-2012	0:00:00	-16.58	-12.05	-24.45	-2.80	-6.43	-36.36	-36.04	-26.56	-22.68						1.05
27-Jul-2012	6:00:00	-16.81	-11.83	-24.79	-2.70	-5.99	-36.37	-36.02	-26.88	-22.90						
27-Jul-2012	12:00:00	-18.76	-14.17	-27.35	-4.54	-7.78	-36.75	-36.44	-26.46	-22.50						
27-Jul-2012	18:00:00	-20.29	-15.76	-29.87	-4.65	-9.56	-36.27	-35.99	-26.40	-22.51						
28-Jul-2012	0:00:00	0.40	2.78	-0.83	0.60	2.39	-24.69	-35.89	-26.32	-22.38						0.04
28-Jul-2012	6:00:00	-0.82	2.42	0.06	1.96	3.67	-21.47	-35.89	-26.68	-22.80						
28-Jul-2012	12:00:00	-1.63	1.02	-1.63	0.62	3.47	-23.63	-36.17	-26.66	-22.74						
28-Jul-2012	18:00:00	-2.17	-0.28	-3.48	-0.09	2.95	-26.57	-36.16	-26.24	-22.35						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
29-Jul-2012	0:00:00	-1.67	0.48	-2.78	0.15	3.19	-27.88	-35.72	-26.47	-22.50						0.1
29-Jul-2012	6:00:00	-2.02	0.13	-2.97	-0.29	2.73	-28.83	-35.84	-26.74	-22.79						
29-Jul-2012	12:00:00	-2.95	-1.60	-5.51	-1.05	1.72	-30.07	-36.09	-26.77	-22.74						
29-Jul-2012	18:00:00	-3.78	-3.19	-6.53	-1.42	0.71	-31.68	-36.11	-26.21	-22.35						
30-Jul-2012	0:00:00	-3.47	-2.52	-5.96	-0.92	0.57	-32.25	-35.60	-26.18	-22.30						
30-Jul-2012	6:00:00	-3.74	-2.71	-6.24	-1.00	0.19	-32.91	-35.63	-26.72	-22.80						
30-Jul-2012	12:00:00	-5.54	-5.50	-9.63	-2.43	-1.39	-34.29	-36.17	-26.45	-22.54						
30-Jul-2012	18:00:00	-6.17	-5.93	-10.25	-2.08	-1.91	-34.95	-35.97	-26.22	-22.37						
31-Jul-2012	0:00:00	-6.34	-5.43	-10.33	-1.78	-2.03	-35.39	-35.74	-26.36	-22.39						
31-Jul-2012	6:00:00	-6.79	-5.39	-10.61	-1.80	-2.20	-35.83	-35.69	-26.56	-22.67						
31-Jul-2012	12:00:00	-8.57	-7.98	-14.00	-3.00	-3.29	-36.48	-36.17	-26.60	-22.69						
31-Jul-2012	18:00:00	-10.52	-9.49	-16.89	-3.17	-4.48	-36.39	-35.99	-26.20	-22.37						
1-Aug-2012	0:00:00	-10.78	-8.85	-16.86	-2.45	-3.88	-36.10	-35.71	-26.32	-22.35						0.02
1-Aug-2012	6:00:00	-9.66	-7.56	-15.77	-1.28	-2.37	-36.07	-35.72	-26.38	-22.44						
1-Aug-2012	12:00:00	-9.68	-6.69	-14.45	-1.91	-3.02	-36.22	-35.78	-26.46	-22.61						
1-Aug-2012	18:00:00	-11.36	-7.99	-16.68	-2.38	-4.03	-36.30	-35.78	-26.17	-22.35						
2-Aug-2012	0:00:00	-11.56	-7.79	-17.00	-2.08	-3.88	-36.11	-35.59	-26.20	-22.26						
2-Aug-2012	6:00:00	-12.14	-7.80	-17.57	-2.04	-3.99	-35.99	-35.55	-26.87	-22.86						
2-Aug-2012	12:00:00	-14.50	-10.81	-21.05	-3.80	-5.49	-36.72	-36.25	-26.36	-22.48						
2-Aug-2012	18:00:00	-16.16	-11.88	-22.58	-3.57	-6.49	-36.24	-35.77	-26.04	-22.23						
3-Aug-2012	0:00:00	-16.43	-11.44	-22.98	-2.86	-6.08	-35.95	-35.51	-26.09	-22.15						
3-Aug-2012	6:00:00	-16.70	-11.11	-23.29	-2.92	-5.91	-35.97	-35.61	-26.80	-22.86						
3-Aug-2012	12:00:00	-18.61	-13.63	-25.95	-5.02	-7.58	-36.59	-36.20	-26.40	-22.44						
3-Aug-2012	18:00:00	-19.75	-14.92	-27.44	-4.79	-8.90	-36.18	-35.78	-26.16	-22.35						
4-Aug-2012	0:00:00	-20.14	-14.67	-27.99	-3.93	-8.51	-36.05	-35.69	-26.24	-22.37						
4-Aug-2012	6:00:00	-20.38	-14.58	-28.57	-3.90	-8.42	-36.16	-35.68	-26.74	-22.92						
4-Aug-2012	12:00:00	-21.76	-16.67	-30.66	-6.21	-10.00	-36.63	-36.28	-26.51	-22.67						
4-Aug-2012	18:00:00	-22.62	-17.86	-32.18	-6.29	-11.23	-36.37	-35.90	-26.30	-22.50						
5-Aug-2012	0:00:00	-22.87	-17.29	-32.36	-5.07	-11.21	-36.22	-35.74	-26.35	-22.47						
5-Aug-2012	6:00:00	-23.05	-16.93	-32.41	-4.66	-10.96	-36.17	-35.83	-26.84	-22.96						
5-Aug-2012	12:00:00	-24.18	-19.08	-34.25	-7.17	-12.26	-36.66	-36.22	-26.45	-22.55						
5-Aug-2012	18:00:00	-24.76	-19.89	-35.28	-7.29	-13.34	-36.25	-35.91	-26.39	-22.56						
6-Aug-2012	0:00:00	-25.09	-19.37	-35.58	-6.10	-13.47	-36.31	-35.87	-26.36	-22.53						0.08
6-Aug-2012	6:00:00	-25.27	-18.96	-35.60	-5.82	-13.25	-36.28	-35.80	-26.68	-22.87						
6-Aug-2012	12:00:00	-26.14	-20.95	-36.36	-8.20	-14.43	-36.48	-36.21	-26.41	-22.57						
6-Aug-2012	18:00:00	-21.92	-17.52	-36.06	-1.05	-5.51	-36.15	-35.92	-26.34	-22.45						
7-Aug-2012	0:00:00	-18.74	-10.86	-30.77	-1.83	-5.37	-36.10	-35.87	-26.39	-22.56						0.49
7-Aug-2012	6:00:00	-18.44	-10.66	-29.48	-2.21	-6.19	-36.05	-35.95	-26.56	-22.81						
7-Aug-2012	12:00:00	-18.85	-11.10	-29.34	-2.98	-6.95	-36.25	-36.07	-26.35	-22.59						
7-Aug-2012	18:00:00	-17.69	-10.26	-29.94	-1.17	-5.75	-36.16	-35.89	-26.41	-22.57						
8-Aug-2012	0:00:00	-12.22	-4.59	-25.26	-1.48	-4.05	-36.23	-35.99	-26.54	-22.62						
8-Aug-2012	6:00:00	-12.38	-4.55	-23.22	-1.72	-4.77	-36.15	-35.92	-26.57	-22.67						
8-Aug-2012	12:00:00	-13.00	-5.08	-22.70	-1.98	-5.45	-36.33	-36.14	-26.54	-22.71						
8-Aug-2012	18:00:00	-14.77	-6.89	-23.84	-2.34	-6.92	-36.23	-35.99	-26.50	-22.56						
9-Aug-2012	0:00:00	-14.98	-6.47	-24.06	-1.94	-6.95	-36.18	-35.83	-26.26	-22.41						
9-Aug-2012	6:00:00	-15.30	-6.47	-24.35	-1.79	-6.99	-36.01	-35.62	-26.63	-22.75						
9-Aug-2012	12:00:00	-17.23	-8.99	-26.59	-3.21	-8.35	-36.45	-36.09	-26.50	-22.60						
9-Aug-2012	18:00:00	-18.90	-10.55	-28.51	-3.35	-9.55	-36.28	-36.01	-26.36	-22.48						
10-Aug-2012	0:00:00	-19.10	-10.27	-28.97	-2.68	-9.04	-36.21	-35.86	-26.35	-22.43						0.09
10-Aug-2012	6:00:00	-19.20	-10.05	-29.07	-2.57	-8.36	-36.07	-35.80	-26.69	-22.73						
10-Aug-2012	12:00:00	-20.40	-11.95	-30.93	-4.20	-9.79	-36.46	-36.22	-26.41	-22.54						
10-Aug-2012	18:00:00	-21.30	-13.01	-32.30	-3.16	-10.41	-36.18	-35.86	-26.45	-22.50						
11-Aug-2012	0:00:00	-19.07	-8.47	-31.41	-1.76	-7.75	-36.15	-35.87	-26.42	-22.50						1.04
11-Aug-2012	6:00:00	-18.05	-7.75	-31.21	-2.04	-7.73	-36.05	-35.83	-26.60	-22.65						
11-Aug-2012	12:00:00	-18.40	-8.61	-31.95	-2.61	-8.43	-36.17	-35.90	-26.48	-22.55						
11-Aug-2012	18:00:00	-18.96	-9.27	-32.42	-2.39	-8.92	-36.16	-35.89	-26.38	-22.50						
12-Aug-2012	0:00:00	-0.36	3.20	1.27	3.36	2.42	-14.20	-35.79	-26.45	-22.44						0.09
12-Aug-2012	6:00:00	-1.02	2.31	1.33	2.47	5.07	-16.81	-35.74	-26.42	-22.56						
12-Aug-2012	12:00:00	-1.39	1.82	1.23	1.51	4.82	-18.84	-35.81	-26.51	-22.61						
12-Aug-2012	18:00:00	-1.84	1.14	0.93	0.74	4.33	-21.11	-35.91	-26.33	-22.36						
13-Aug-2012	0:00:00	-0.94	2.77	1.99	1.17	5.17	-7.54	-35.65	-26.32	-22.27						
13-Aug-2012	6:00:00	-0.85	2.57	1.69	1.16	4.61	-7.71	-35.69	-26.71	-22.74						
13-Aug-2012	12:00:00	-1.56	1.41	0.54	0.38	3.97	-9.79	-8.60	-26.65	-22.67						
13-Aug-2012	18:00:00	-1.84	0.77	0.88	0.10	3.45	-13.21	-16.87	-26.38	-22.45						
14-Aug-2012	0:00:00	-1.73	1.13	1.54	0.08	3.51	-14.29	-20.80	-26.23	-22.26						
14-Aug-2012	6:00:00	-1.79	1.09	1.47	0.02	3.31	-15.35	-22.15	-26.74	-22.83						
14-Aug-2012	12:00:00	-2.80	-0.67	0.03	-0.93	2.38	-17.92	-24.08	-26.48	-22.57						
14-Aug-2012	18:00:00	-3.46	-1.87	-1.50	-1.05	1.66	-21.70	-25.73	-26.21	-22.41						
15-Aug-2012	0:00:00	-3.40	-1.41	1.08	-0.74	1.46	-22.57	-26.73	-26.21	-22.31						
15-Aug-2012	6:00:00	-3.49	-1.36	1.27	-0.84	1.29	-23.10	-27.67	-26.75	-22.78						

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
15-Aug-2012	12:00:00	-5.05	-3.52	-0.25	-2.03	0.01	-24.77	-29.30	-26.46	-22.63						
15-Aug-2012	18:00:00	-6.01	-4.77	-1.93	-2.00	-0.94	-26.53	-30.40	-26.30	-22.31						
16-Aug-2012	0:00:00	-6.13	-4.31	-1.81	-1.66	-1.15	-27.51	-31.31	-26.30	-22.31						
16-Aug-2012	6:00:00	-6.61	-4.51	-1.77	-1.65	-1.35	-28.21	-32.37	-26.80	-22.68						
16-Aug-2012	12:00:00	-8.56	-7.31	-3.83	-3.27	-2.74	-29.55	-34.06	-26.59	-22.47						
16-Aug-2012	18:00:00	-10.63	-9.43	-4.59	-3.33	-4.01	-31.05	-35.14	-25.92	-21.85						
17-Aug-2012	0:00:00	-10.76	-8.22	-3.92	-2.16	-3.38	-31.42	-35.23	-25.90	-21.73						
17-Aug-2012	6:00:00	-11.27	-7.77	-3.80	-1.95	-3.10	-31.51	-35.11	-26.70	-22.81						
17-Aug-2012	12:00:00	-13.78	-10.84	-6.35	-4.18	-4.99	-33.13	-36.10	-26.53	-22.59						
17-Aug-2012	18:00:00	-16.21	-12.66	-7.74	-4.32	-6.38	-34.07	-35.87	-26.24	-22.26						
18-Aug-2012	0:00:00	-16.44	-11.71	-7.32	-3.11	-5.66	-34.41	-35.59	-26.10	-22.17						
18-Aug-2012	6:00:00	-16.54	-11.10	-7.40	-2.86	-5.38	-34.68	-35.44	-26.66	-22.69						
18-Aug-2012	12:00:00	-18.00	-12.95	-9.35	-4.58	-6.69	-35.80	-36.02	-26.58	-22.60						
18-Aug-2012	18:00:00	-19.51	-14.52	-11.70	-4.88	-7.81	-36.16	-35.89	-26.09	-22.05						
19-Aug-2012	0:00:00	-19.46	-13.83	-11.63	-3.70	-7.30	-35.77	-35.50	-26.05	-22.17						0.90
19-Aug-2012	6:00:00	-19.62	-13.53	-11.81	-3.50	-6.97	-35.77	-35.45	-24.70	-22.39						
19-Aug-2012	12:00:00	1.01	-5.85	-2.00	0.81	2.74	-5.32	-27.46	-26.20	-22.25						
19-Aug-2012	18:00:00	-0.20	3.45	1.85	3.97	5.25	-1.51	0.79	-26.05	-22.25						
20-Aug-2012	0:00:00	-0.65	2.79	1.87	2.50	5.78	-2.14	0.79	-26.12	-22.25						0.03
20-Aug-2012	6:00:00	-0.92	2.48	1.74	1.53	5.18	-2.59	0.13	-26.22	-22.32						
20-Aug-2012	12:00:00	-0.82	2.64	1.92	1.04	4.82	-2.41	-0.23	-26.29	-22.38						
20-Aug-2012	18:00:00	-0.95	2.42	1.59	0.82	4.45	-3.24	-0.80	-26.04	-22.25						
21-Aug-2012	0:00:00	-0.90	2.58	1.87	0.63	4.22	-3.77	-1.22	-26.15	-22.20						
21-Aug-2012	6:00:00	-0.91	2.52	1.85	0.55	3.85	-4.31	-1.96	0.00	0.00						
21-Aug-2012	12:00:00	-1.36	1.85	1.26	0.09	3.13	-5.29	0.00	0.00	0.00						
21-Aug-2012	18:00:00	-1.67	1.39	1.27	-0.14	2.59	-6.61	0.00	0.00	0.00						
22-Aug-2012	0:00:00	-1.38	1.68	1.86	0.16	2.54	-6.88	0.00	0.00	0.00						1.23
22-Aug-2012	6:00:00	-1.54	1.43	1.73	-0.02	2.27	-7.51	0.00	0.00	0.00						
22-Aug-2012	12:00:00	-2.42	-0.09	0.40	-0.98	1.25	-9.52	0.00	0.00	0.00						
22-Aug-2012	18:00:00	-2.33	0.08	1.32	0.00	0.00	0.00	0.00	0.00	0.00						
23-Aug-2012	0:00:00	-2.20	0.38	1.80	0.00	0.00	0.00	0.00	0.00	0.00						0.01
23-Aug-2012	6:00:00	-2.27	0.15	1.66	0.00	0.00	0.00	0.00	0.00	0.00						
23-Aug-2012	12:00:00															
23-Aug-2012	18:00:00															
24-Aug-2012	0:00:00															0.19
24-Aug-2012	6:00:00															
24-Aug-2012	12:00:00															
24-Aug-2012	18:00:00															
25-Aug-2012	0:00:00															0.47
25-Aug-2012	6:00:00															
25-Aug-2012	12:00:00															
25-Aug-2012	18:00:00															
26-Aug-2012	0:00:00															0.28
26-Aug-2012	6:00:00															
26-Aug-2012	12:00:00															
26-Aug-2012	18:00:00															
27-Aug-2012	0:00:00															0.04
27-Aug-2012	6:00:00															
27-Aug-2012	12:00:00															
27-Aug-2012	18:00:00															
28-Aug-2012	0:00:00															
28-Aug-2012	6:00:00															
28-Aug-2012	12:00:00															
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31-Aug-2012	0:00:00															
31-Aug-2012	6:00:00															
31-Aug-2012	12:00:00															
31-Aug-2012	18:00:00															
1-Sep-2012	0:00:00															
1-Sep-2012	6:00:00															
1-Sep-2012	12:00:00															
1-Sep-2012	18:00:00															

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
2-Sep-2012	0:00:00															
2-Sep-2012	6:00:00															
2-Sep-2012	12:00:00															
2-Sep-2012	18:00:00															
3-Sep-2012	0:00:00															
3-Sep-2012	6:00:00															
3-Sep-2012	12:00:00															
3-Sep-2012	18:00:00															
4-Sep-2012	0:00:00															
4-Sep-2012	6:00:00															
4-Sep-2012	12:00:00															
4-Sep-2012	18:00:00															
5-Sep-2012	0:00:00															
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7-Sep-2012	0:00:00															
7-Sep-2012	6:00:00															
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8-Sep-2012	0:00:00															
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9-Sep-2012	0:00:00															
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14-Sep-2012	18:00:00															
15-Sep-2012	0:00:00															
15-Sep-2012	6:00:00															
15-Sep-2012	12:00:00															

Date	Time	Water Level (inches)											On-site Manual Raingauge	On-site Auto RG Daily	On-site Auto Raingauge Monthly	Windsor Daily Rainfall
dd-mmm-yyyy	hh:mm:ss	FLO AW1	FLO AW2	FLO AW3	FLO AW4	FLO AW5	FLO AW6	FLO RAW1	FLO RAW2	FLO RAW3	CG1	CG2				
15-Sep-2012	18:00:00															
16-Sep-2012	0:00:00															
16-Sep-2012	6:00:00															
16-Sep-2012	12:00:00															
16-Sep-2012	18:00:00															
17-Sep-2012	0:00:00															
17-Sep-2012	6:00:00															
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18-Sep-2012	0:00:00															
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28-Sep-2012	18:00:00															
29-Sep-2012	0:00:00															
29-Sep-2012	6:00:00															
29-Sep-2012	12:00:00															
29-Sep-2012	18:00:00															
30-Sep-2012	0:00:00															

APPENDIX D

2012 Site Photos

Appendix D
Site Progression Photos – Floogie Stream Photos

Pre-Construction Phase

Upstream culvert, Reach 1 at Brown School Road during pre-construction phase.

Reach 1and 2 looking downstream during pre-construction phase.

Appendix D
Site Progression Photos – Floogie Stream Photos

Reach 3 looking upstream during pre-construction phase.

Reach 4 looking upstream during pre-construction phase.

Appendix D
Site Progression Photos – Floogie Stream Photos

Construction Phase

Reach 1 during construction phase.

Wetland Restoration Area during construction phase.

Appendix D
Site Progression Photos – Floogie Stream Photos

Reach 2 during construction phase.

Reach 3 during construction phase.

Appendix D
Site Progression Photos – Floogie Stream Photos

Reach 4 – Log vane installation during construction phase.

Monitoring Phase

Upstream culvert, Reach 1 at Brown School Road during monitoring phase.

Appendix D
Site Progression Photos – Floogie Stream Photos

Reach 2 looking downstream during monitoring phase.

Reach 3 looking downstream during monitoring phase.

Appendix D
Site Progression Photos – Floogie Stream Photos

Reach 4 looking downstream during monitoring phase.

Wetland Restoration Area during monitoring phase.

Appendix D
2012 Site Photos – Floogie Stream Photos

SOA #1 - Station 1+40, beaver dam in channel

SOA #2 - Station 3+50, beaver dam in channel

Appendix D
2012 Site Photos – Floogie Stream Photos

SOA #3 - Station 9+60, beaver dam in channel

SOA #4 - Station 20+00, beaver dam in channel

Appendix D
2012 Site Photos – Floogie Stream Photos

SOA #5 - Station 23+00, beaver dam in channel

SOA #6 - Station 27+50, beaver dam in channel

Appendix D
2012 Site Photos – Floogie Stream Photos

SOA #7 - Station 37+00, beaver dam in channel

Station 0+00, Culvert at upstream limit of channel

Appendix D
2012 Site Photos – Floogie Stream Photos

Station 7+00, General channel conditions

Station 27+50, channel at bankfull after rain event.

Appendix D
2012 Site Photos – Floogie Stream Photos

Station 37+00, Adjacent flooded floodplain.

Station 75+00, Rock vane performing at bankfull conditions

Appendix D
2012 Site Photos – Floogie Stream Photos

Station 80+50, Looking upstream on Reach 4, general conditions

Station 104+00, Downstream limit at confluence

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #1

Vegetation Plot #2

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #3

Vegetation Plot #4

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #5

Vegetation Plot #6

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #7

Vegetation Plot #8

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #9

Vegetation Plot #10

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #11

Vegetation Plot #12

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #13

Vegetation Plot #14

Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #15

Vegetation Plot #16

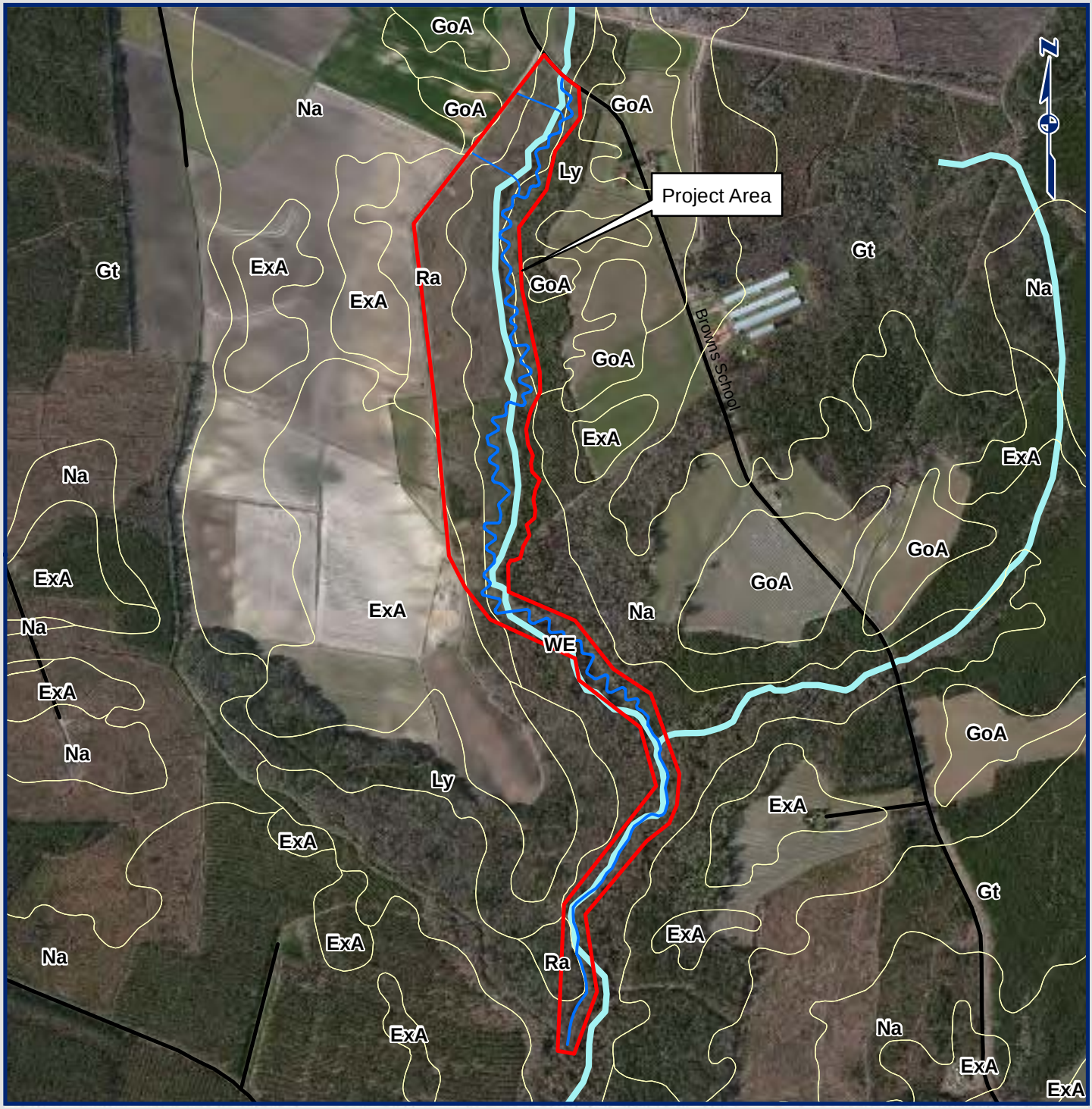
Appendix D
2012 Site Photos – Floogie Vegetation Plot Photos

Vegetation Plot #17

Vegetation Plot #18

APPENDIX E

2012 Soils Map



SOIL SERIES LEGEND

Non-Hydric Soils

ExA	*Exum very fine sandy loam, 0 to 2 % slopes*

Hydric Soils

GoA	*Goldsboro sandy loam, 0 to 3% slopes*
Gt	*Grantham silt loam*
Ly	*Lynchburg sandy loam*
Na	*Nahunta very fine sandy loam*
Ra	*Rains sandy loam*
WE	*Wehadkee loam, frequently flooded*

EBX

2010 Bing Aerial Photography

0 250 500 1,000 1,500 2,000 Feet

1 inch = 1,038 feet

Soils Map
Floogie Site

LEGEND

- NCDOT Roads
- Stream
- GoA — Soil Series and Phase
- Project Area

APPENDIX F

Floogie Closeout Report

Floogie Mitigation Project

DENR-EEP Contract No. D06011

Closeout Report

Project Setting and Classifications

County	Bertie
General Location	Windsor, NC
Basin	Roanoke
Physiographic Region	Coastal Plain
Ecoregion	Coastal Flatwoods
USGS Hydro Unit	03010107-160050
NCDWQ Sub-basin	03-02-10
Wetland Classification	Riparian
Thermal Regime	Warm
Trout Water	No

Project Performers

Source Agency	NC EEP
Provider	EBX-Neuse 1, LLC
Designer	WK Dickson & Co., Inc.
Monitoring Firm	WK Dickson & Co., Inc.

Overall Project Activities and Timeline

Milestone	Month-Year
Construction Began	October 2007
Construction Completed	February 2008
Planting Completed	March 2008
Post Construction Monitoring Gauges Installed	March 2008
As-Built Report Submitted	April 2008
1st Annual Monitoring Report	August 2008
2nd Annual Monitoring Report	September 2009
3rd Annual Monitoring Report	September 2010
4th Annual Monitoring Report	October 2011
5th Annual Monitoring Report	August 2012

Project Setting and Background Summary

This stream and wetland mitigation project was developed to provide stream and wetland mitigation units for the NC EEP full delivery process. Previous stream conditions demonstrated significant degradation with a high degree of incision as a result of straightening and channelization performed to promote agricultural activities. Historically, a small Coastal Plain swamp existed within the floodplain of Flat Swamp Creek. Restoration of the stream included establishment of stable cross-sectional geometry, restoration of planform sinuosity, and increased streambed diversity. Wetland restoration included plugging existing ditches, opening ditches outside the restoration area to promote infiltration, restoring microtopography, planting wetlands species, and relocating an existing road outside of the easement. While the site has not required supplemental planting to meet vegetative success criteria, efforts have been made to control beaver populations which have been flooding the site in years 4 and 5.

Goals and Objectives

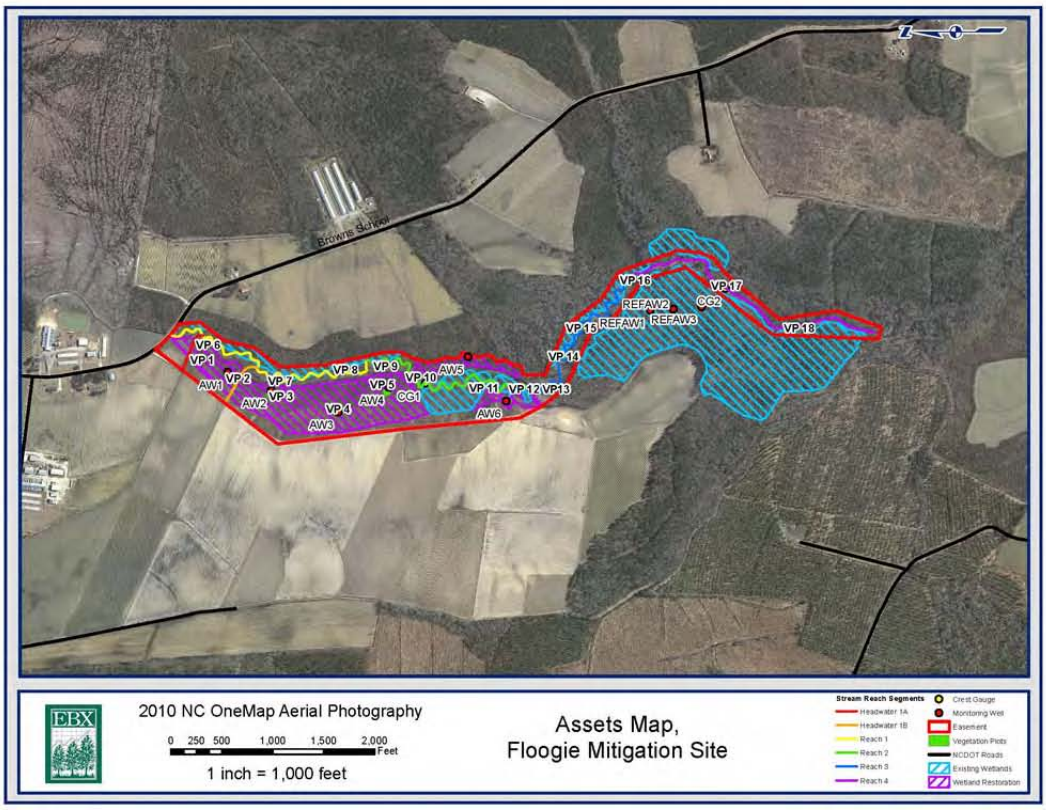
- Produce a minimum of 11,149 stream mitigation units (SMU) and 25.19 riparian wetland mitigation units (WMU) to the NCEEP.
- Maximize the improvements of riparian and aquatic habitats and water quality through ecological restoration.

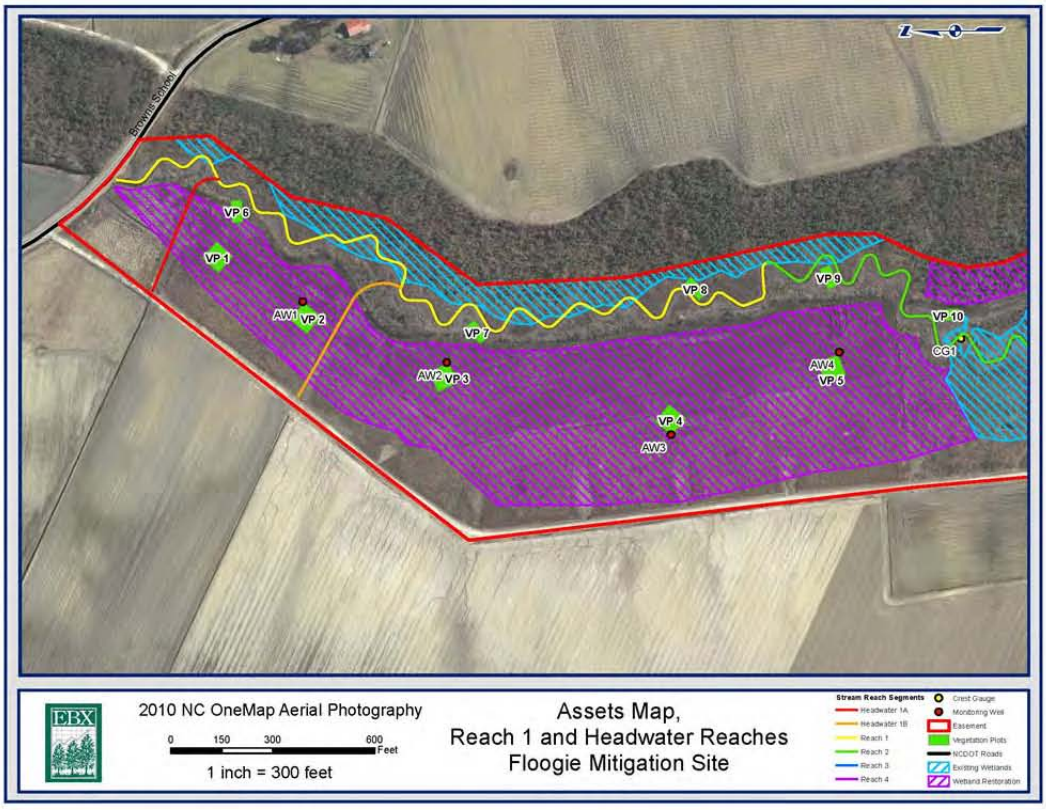
Success Criteria

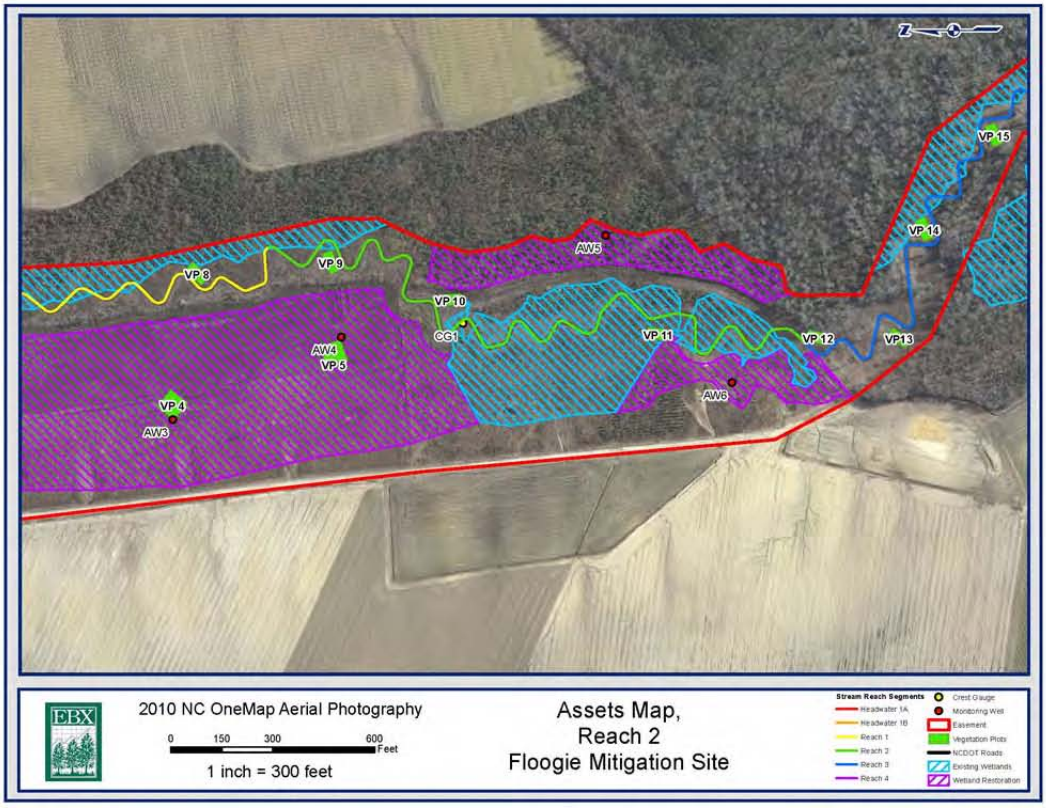
Wetland Hydrology	Restoration of the water table to within 12 inches of the soil surface for at least 7% of the growing season continuously (approximately 16 days).
	During periods of low rainfall, the restoration gauge hydroperiod must exceed that of the reference gauges, provided the gauges exceed 5% of the growing season, to be deemed successful.
Stream and Wetland Vegetation	Survival of at least 320 planted stems per acre after the year three monitoring period
	Survival of at least 260 planted stems per acre after the year five monitoring period
	A maximum of 20 percent of the site species composition may be comprised of non-invasive volunteers
	A photo log will be maintained over the monitoring period and must demonstrate maturation of planted vegetation and volunteer hydrophytic species
Stream	Bankfull events: a minimum of two bankfull events must be documented within the five-year monitoring period
	Cross-Sections: There should be little change in as-built cross sections. Cross sections shall be classified using the Rosgen stream classification method and all monitored cross-sections should fall within the quantitative parameters defined for "E" or "C" type channels.
	The longitudinal profiles should show that the bedform features are remaining stable. Bedforms observed should be consistent with those observed in "E" and "C" type channels.
	Photographs will be used to evaluate stream characteristics
	Sampling of benthic macroinvertebrates within the restored stream channel shall be conducted in Year 1, Year 3, and Year 5 of post-restoration monitoring.

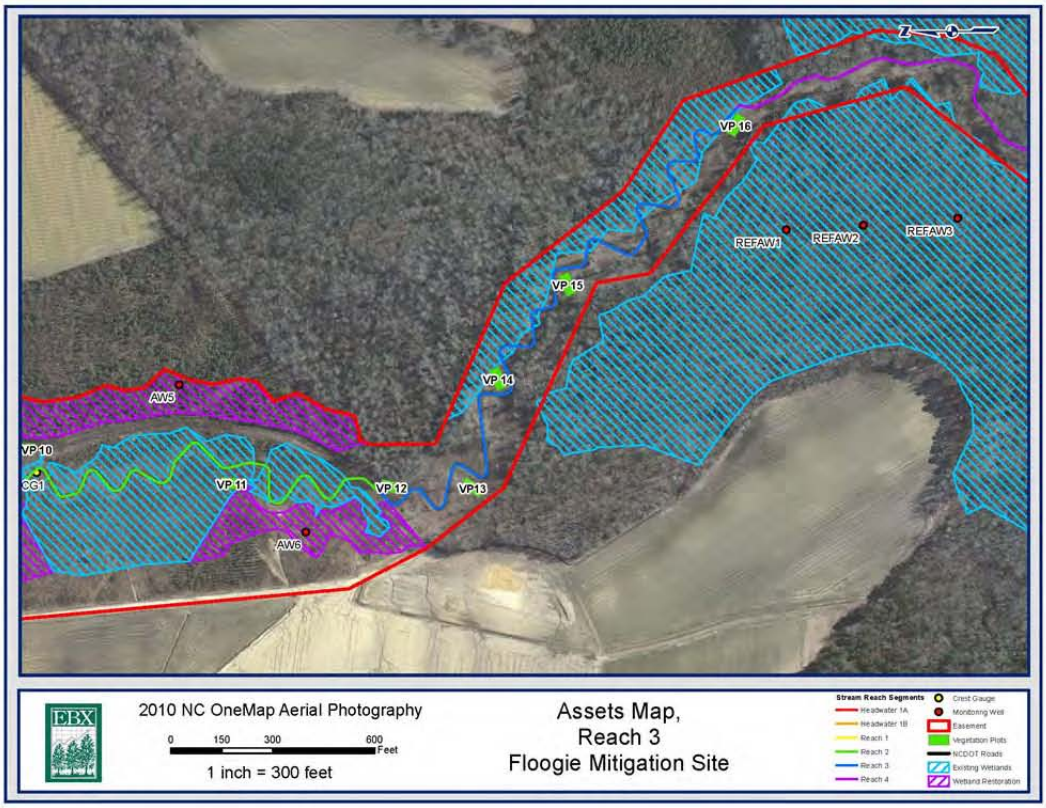
Restoration Reach	Mitigation Approach	Watershed Acreage	As-Built Linear Footage/ Acreage	Mitigation Ratio	Mitigation Units (SMU/WMU)
STREAM					
R1	Stream Restoration		2800	1:1	2800
R2	Stream Restoration		2500	1:1	2500
R3	Stream Restoration		2400	1:1	2400
R4	Stream Restoration		2771	1:1	2771
1A	Headwater Valley Restoration		322	1:1	322
1B	Headwater Valley Restoration		356	1:1	356
WETLAND					
Area 1	Riparian Wetland Restoration		25.19	1:1	25.19

Mitigation Unit Type	Mitigation Unit Total
Stream Mitigation Units (SMU)	11,149
Wetland Mitigation Units (WMU)	25.19


Browns School
VP 16
VP 17
CC2
REFAW2
REFAW3
REFAW1
VP 15
VP 18
VP 14
VP 6
VP 1
VP 2
VP 7
VP 3
VP 8
VP 9
VP 5
VP 10
AW5
CC1
VP 11
VP 12
VP13
AW1
AW2
AW4
VP 4
AW3
AW6
2010 NC OneMap Aerial Photography
0 250 500 1,000 1,500 2,000 Feet
1 inch = 1,000 feet
Assets Map,
Floogie Mitigation Site
Stream Reach Segments
Headwater 1A
Headwater 1B
Reach 1
Reach 2
Reach 3
Reach 4
Crest Gauge
Monitoring Well
Easement
Vegetation Plots
NCDOT Roads
Existing Wetlands
Wetland Restoration


Browns School
VP 6
VP 1
AW1
VP 2
VP 8
VP 9
VP 10
VP 7
CC1
AW2
VP 3
AW4
VP 5
VP 4
AW3
2010 NC OneMap Aerial Photography
0 150 300 600 Feet
1 inch = 300 feet
Assets Map,
Reach 1 and Headwater Reaches
Floogie Mitigation Site
Stream Reach Segments
Headwater 1A
Headwater 1B
Reach 1
Reach 2
Reach 3
Reach 4
Crest Gauge
Monitoring Well
Easement
Vegetation Plots
NCDOT Roads
Existing Wetlands
Wetland Restoration


N
VP 15
VP 14
AW5
VP 8
VP 9
VP 10
CG1
VP 11
VP 12
VP13
AW4
VP 5
AW6
VP 4
AW3
2010 NC OneMap Aerial Photography
0 150 300 600 Feet
1 inch = 300 feet
Assets Map,
Reach 2
Floogie Mitigation Site
Stream Reach Segments
Headwater 1A
Headwater 1B
Reach 1
Reach 2
Reach 3
Reach 4
Crest Gauge
Monitoring Well
Easement
Vegetation Plots
NCDOT Roads
Existing Wetlands
Wetland Restoration


N
VP 16
REFAW1
REFAW2
REFAW3
VP 15
VP 14
AW5
VP 10
CG1
VP 11
VP 12
VP13
AW6
2010 NC OneMap Aerial Photography
0 150 300 600 Feet
1 inch = 300 feet
Assets Map,
Reach 3
Floogie Mitigation Site
Stream Reach Segments
Headwater 1A
Headwater 1B
Reach 1
Reach 2
Reach 3
Reach 4
Crest Gauge
Monitoring Well
Easement
Vegetation Plots
NCDOT Roads
Existing Wetlands
Wetland Restoration

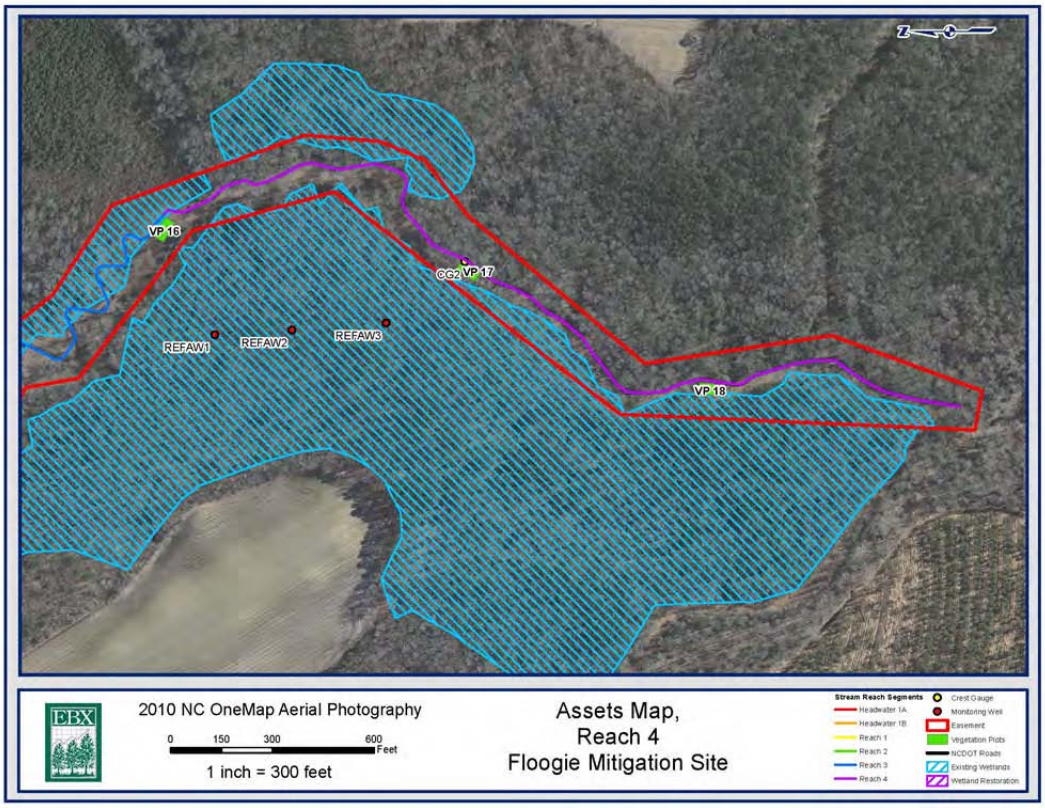
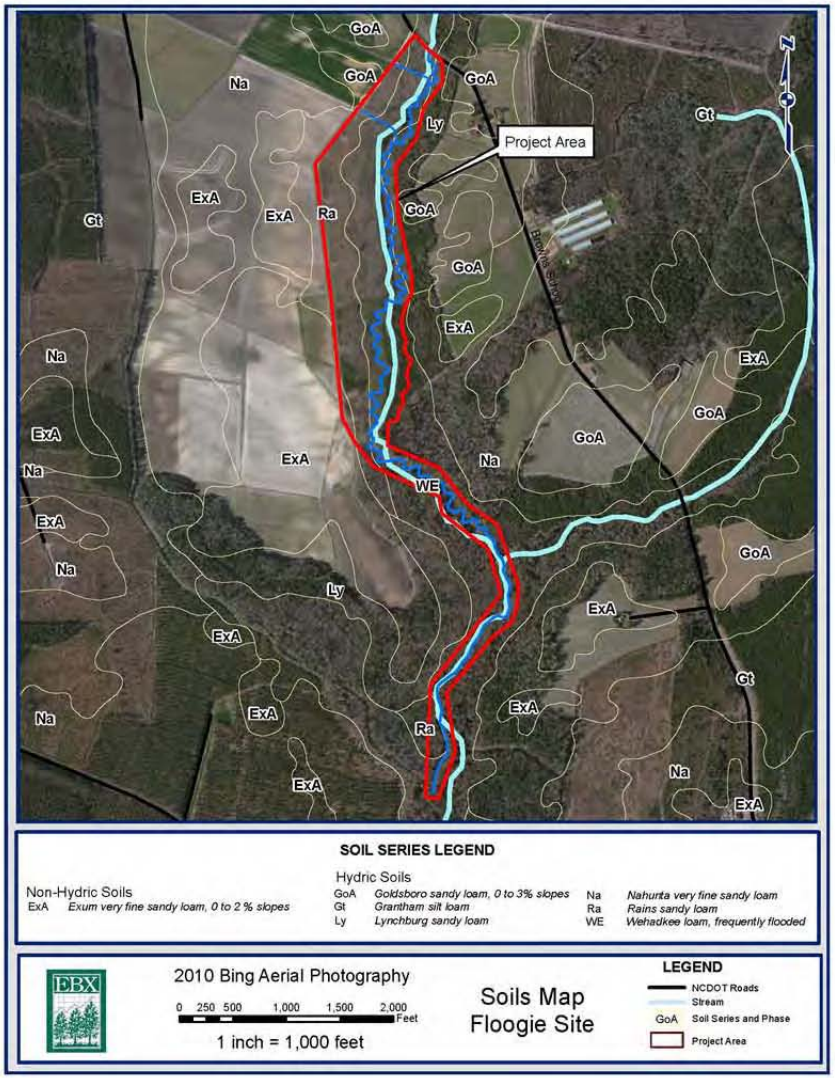


Table 9. Stream Areas Requiring Observation

ID	Station	Feature	Problem
1	1+40	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
2	3+50	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
3	9+60	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
4	20+00	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
5	23+00	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
6	27+50	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*
7	37+00	Bed	Beaver dam partially blocking channel. Channel is stable. Beaver control is currently ongoing.*

*Beaver trapping is currently ongoing, beaver dam removal will take place following the removal of beavers.



SOIL SERIES LEGEND

Non-Hydric Soils

ExA	*Exum very fine sandy loam, 0 to 2 % slopes*

Hydric Soils

GoA	*Goldsboro sandy loam, 0 to 3% slopes*	Na	*Nahunta very fine sandy loam*
Gt	*Grantham silt loam*	Ra	*Rains sandy loam*
Ly	*Lynchburg sandy loam*	WE	*Wehadkee loam, frequently flooded*

EBX

2010 Bing Aerial Photography

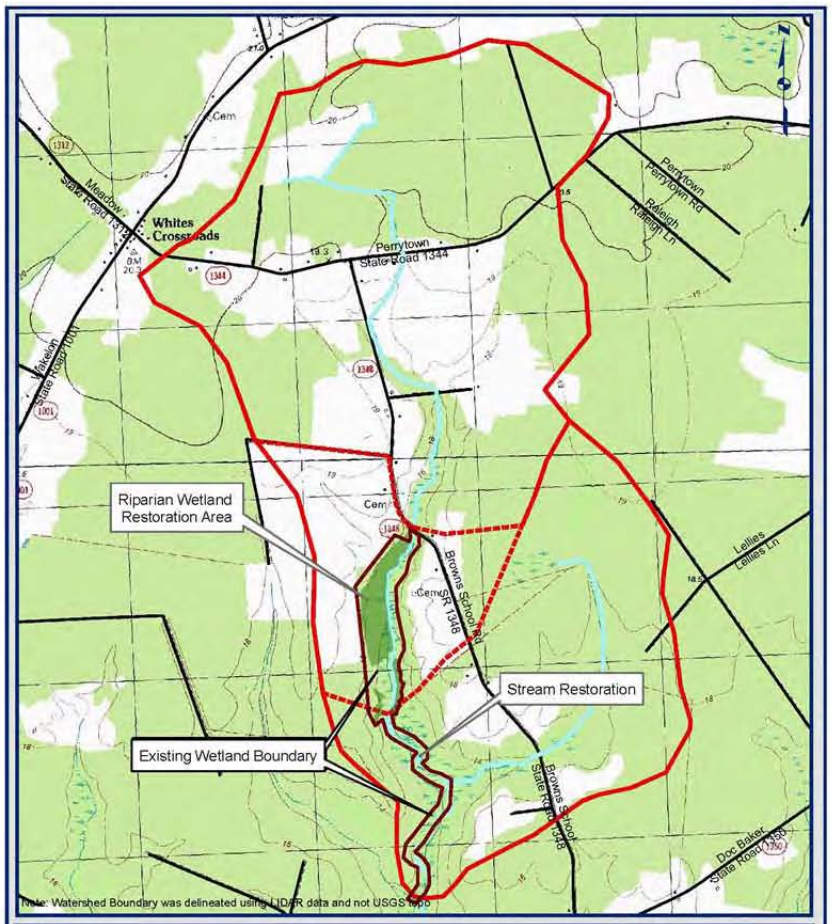
0 250 500 1,000 1,500 2,000 Feet

1 inch = 1,000 feet

Soils Map
Floogie Site

LEGEND

- NCDOT Roads
- Stream
- GoA Soil Series and Phase
- Project Area



Note: Watershed Boundary was delineated using LIDAR data and not USGS topo

EBX

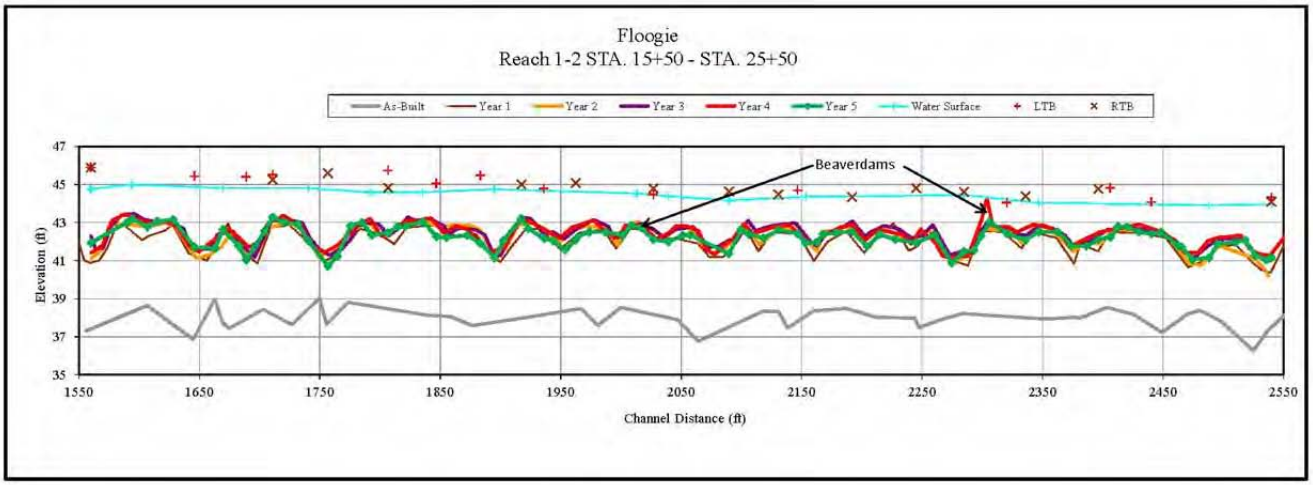
USGS Quadrangle Map
Floogie Site

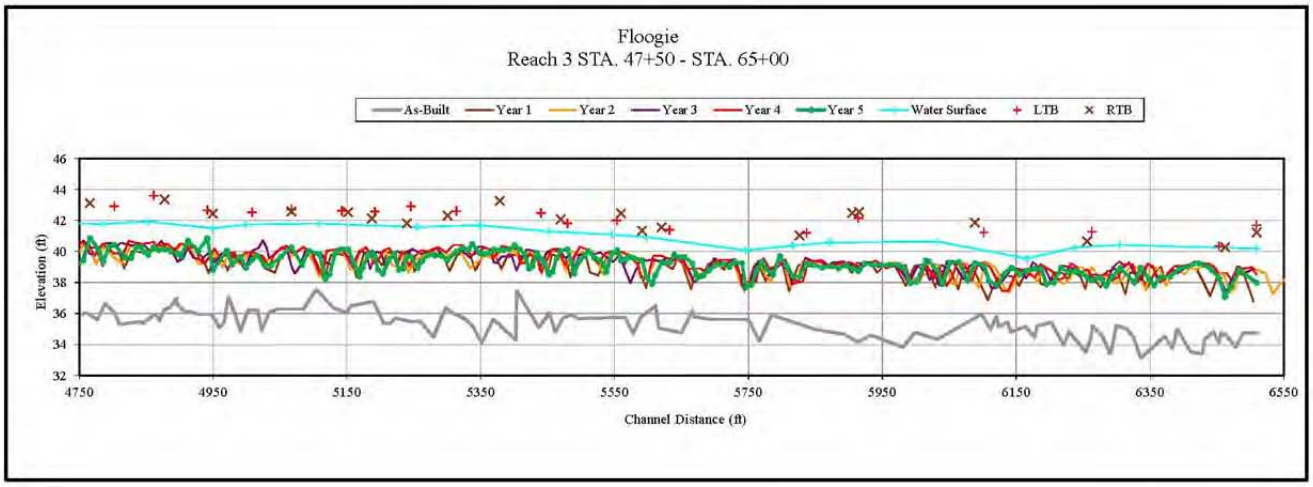
0 1,000 2,000 4,000 Feet

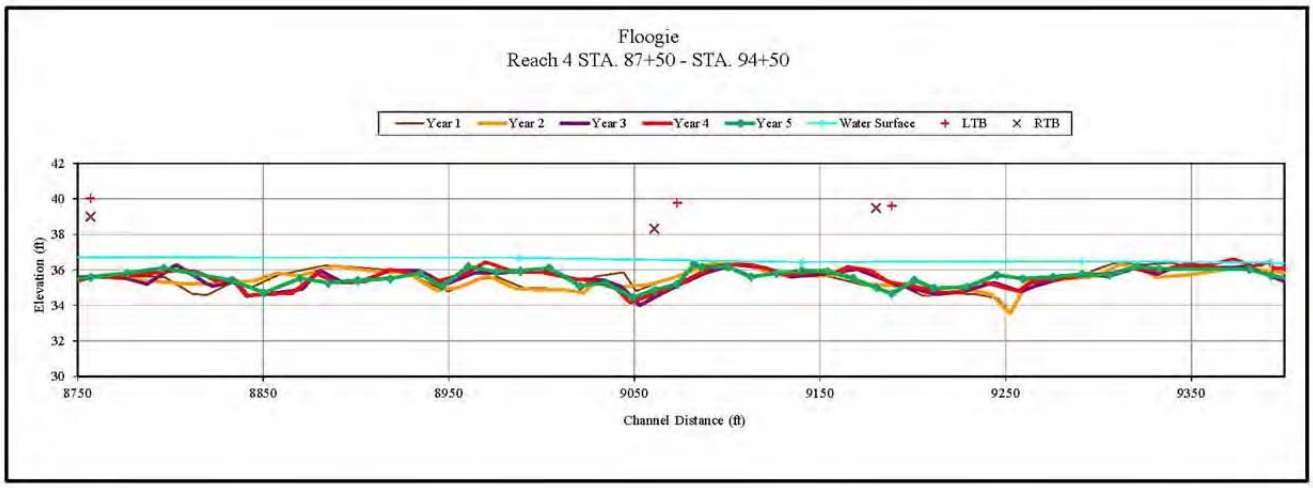
1 inch = 2,000 feet

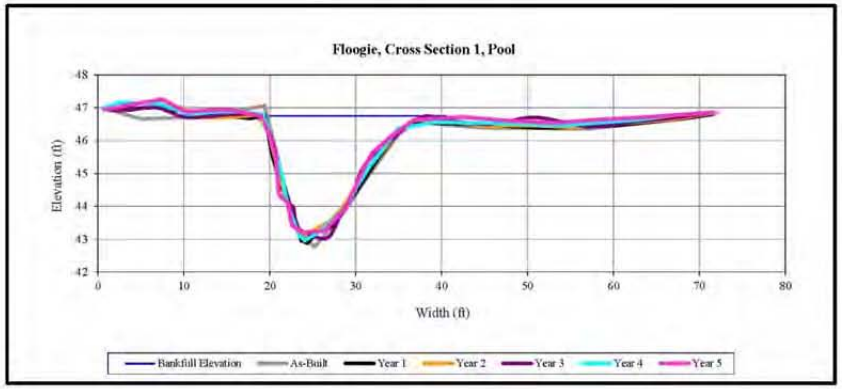
LEGEND

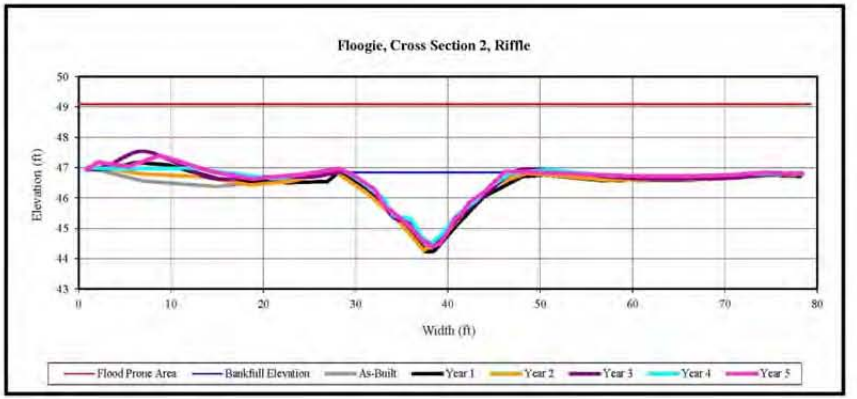
- NCDOT Roads
- Stream
- Project Area
- Potential Riverine Wetland Restoration
- Watershed Boundary

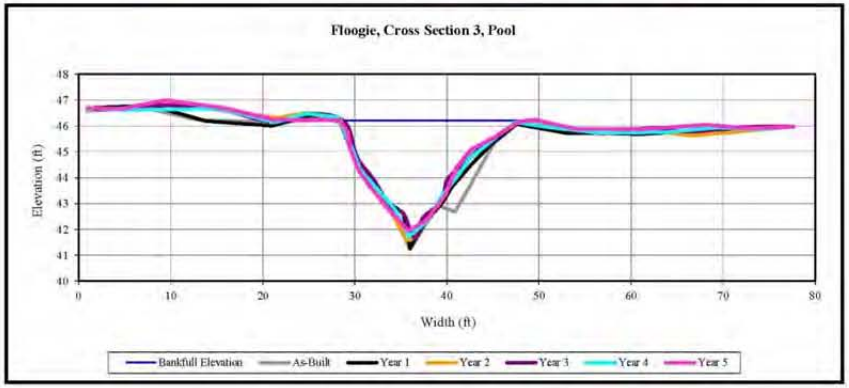

Floogie
Reach 1-2 STA. 15+50 - STA. 25+50
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5
Water Surface
LTB
RTB
Beaverdams
Elevation (ft)
Channel Distance (ft)

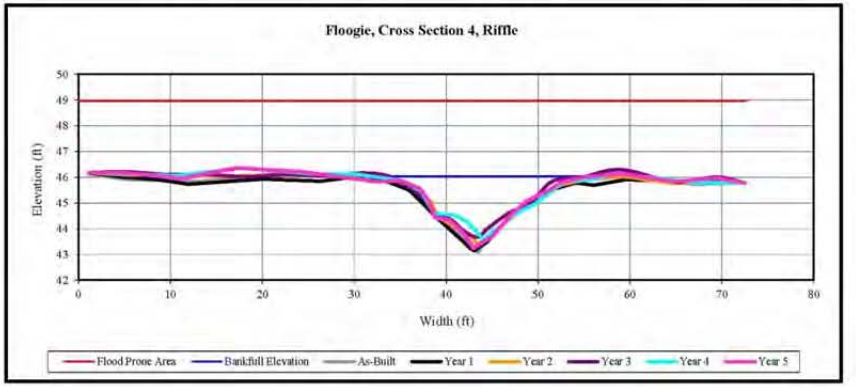

Floogie
Reach 3 STA. 47+50 - STA. 65+00
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5
Water Surface
LTB
RTB
Elevation (ft)
Channel Distance (ft)

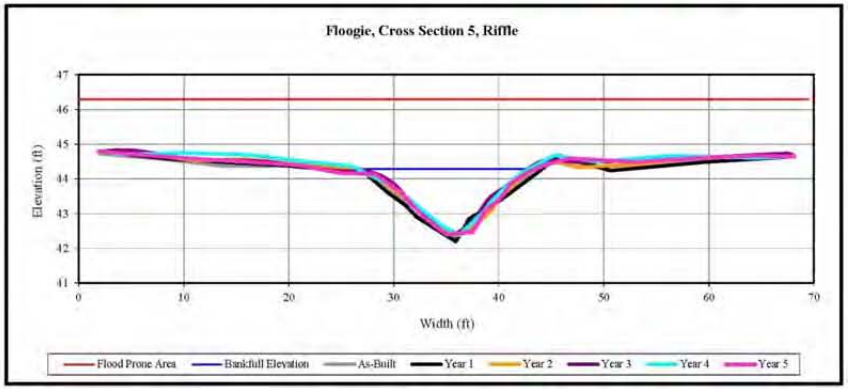

Floogie
Reach 4 STA. 87+50 - STA. 94+50
Year 1
Year 2
Year 3
Year 4
Year 5
Water Surface
LTB
RTB
Elevation (ft)
Channel Distance (ft)

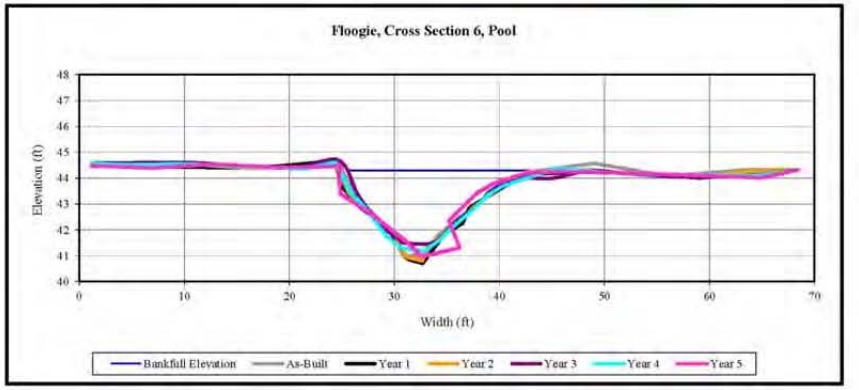

Floogie, Cross Section 1, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

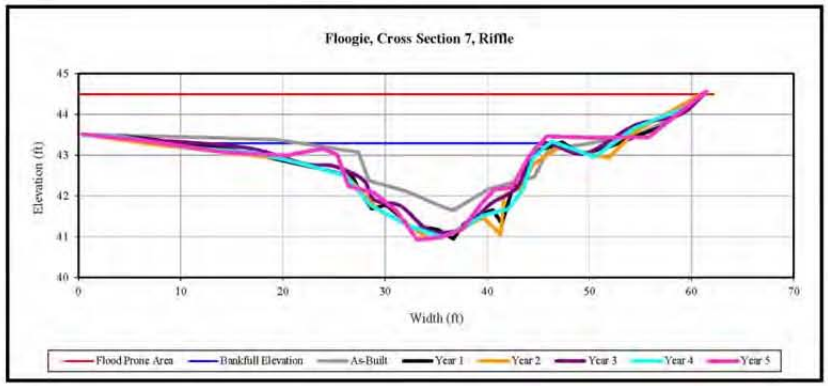

Floogie, Cross Section 2, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

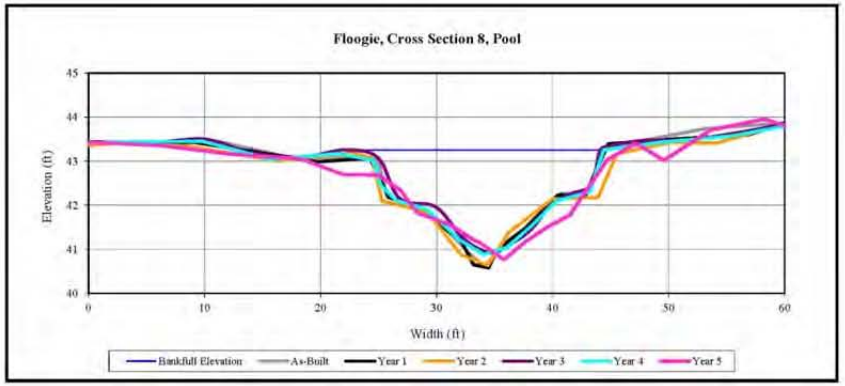

Floogie, Cross Section 3, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

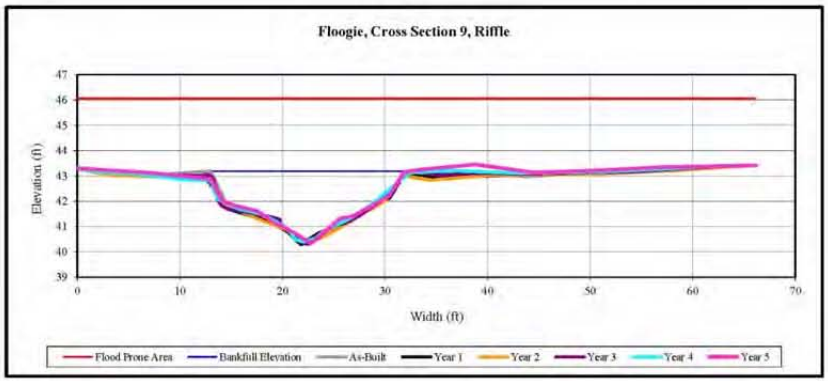

Floogie, Cross Section 4, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

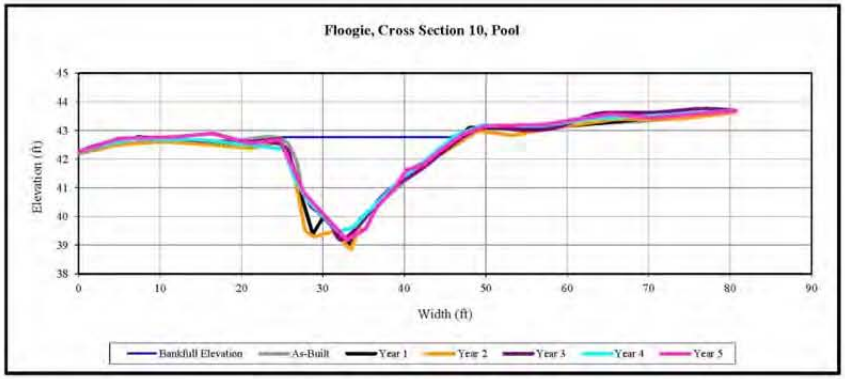

Floogie, Cross Section 5, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

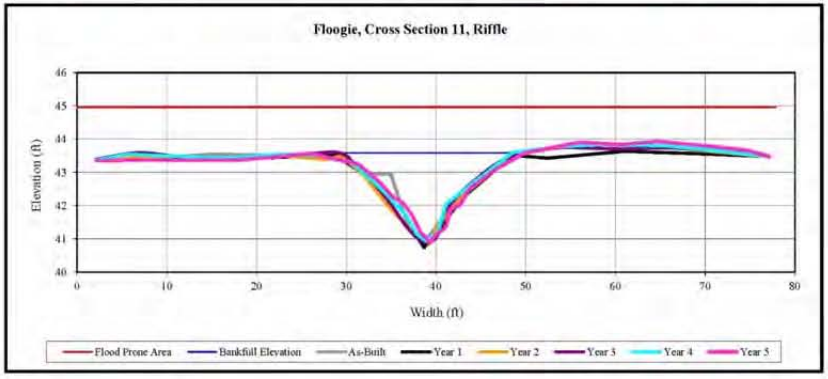

Floogie, Cross Section 6, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

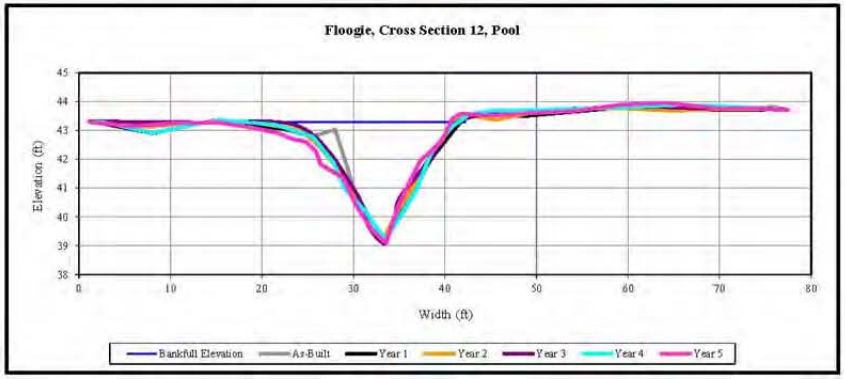

Floogie, Cross Section 7, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

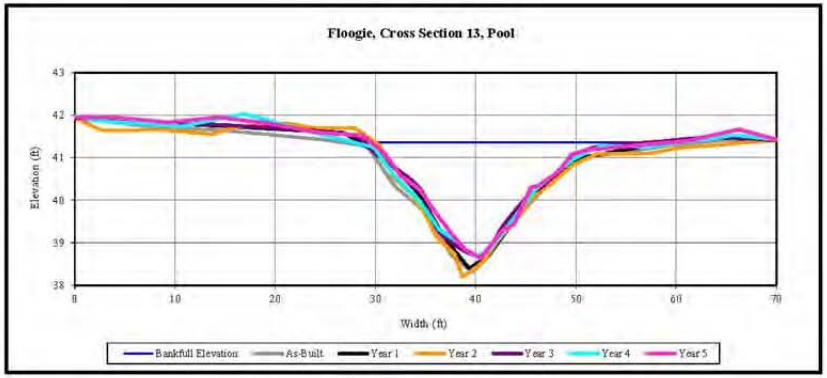

Floogie, Cross Section 8, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

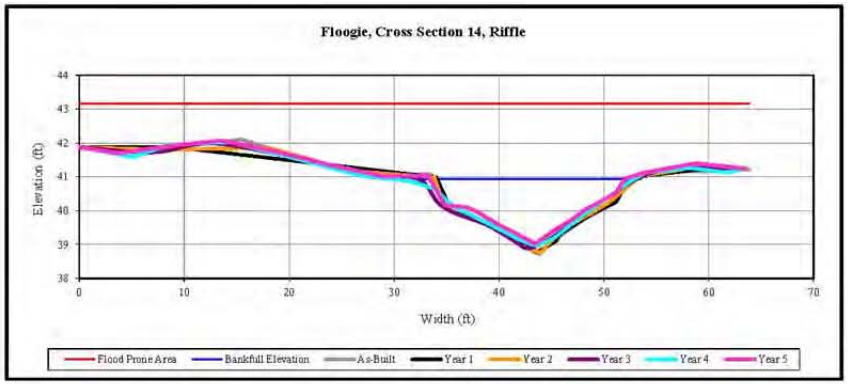

Floogie, Cross Section 9, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

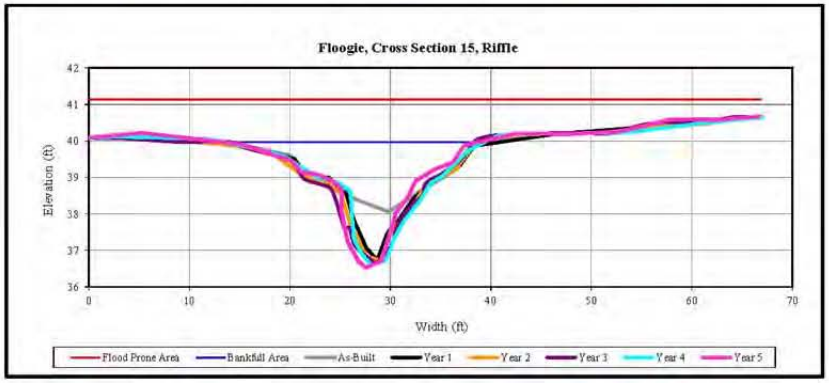

Floogie, Cross Section 10, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

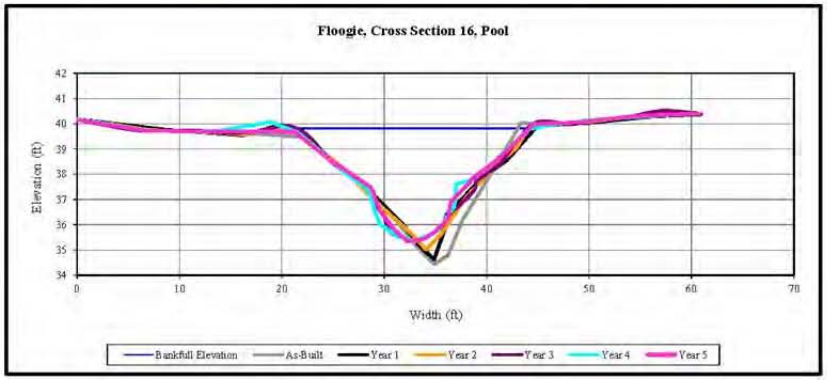

Floogie, Cross Section 11, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

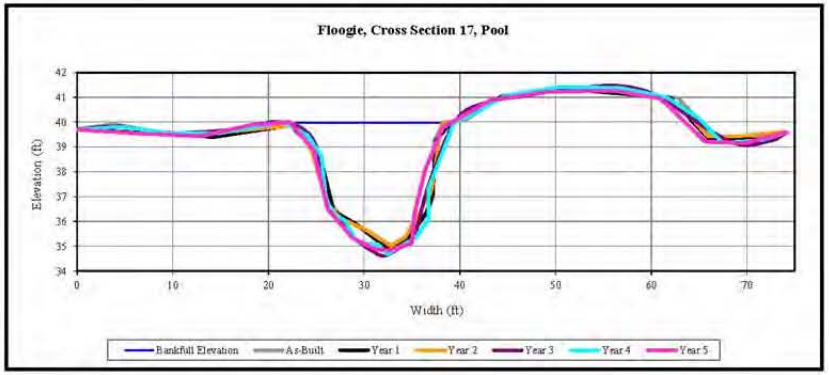

Floogie, Cross Section 12, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

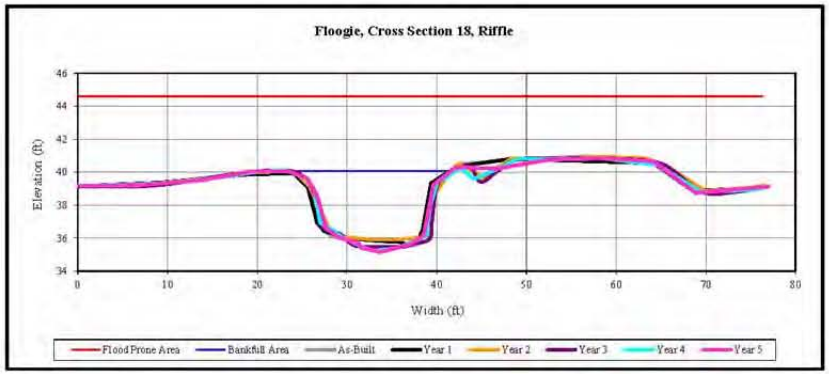

Floogie, Cross Section 13, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

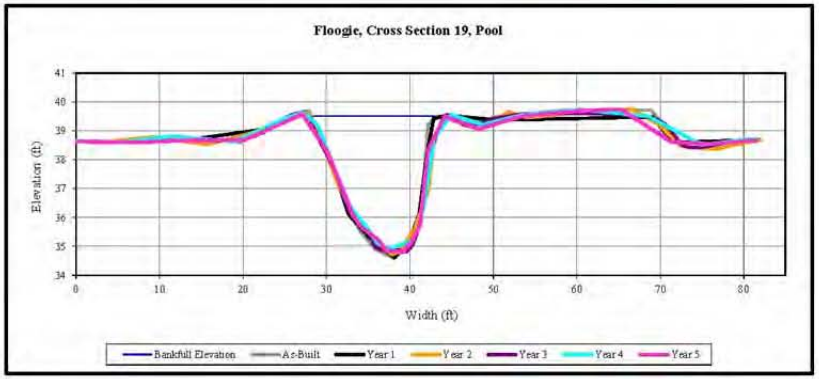

Floogie, Cross Section 14, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5

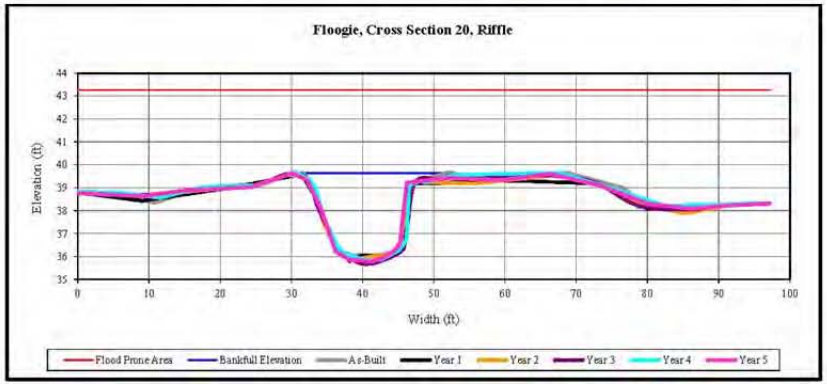

Floogie, Cross Section 15, Riffle
Elevation (ft)
Width (ft)
Flood Prone Area
Bankfull Area
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5


Floogie, Cross Section 16, Pool
Elevation (ft)
Width (ft)
Bankfull Elevation
As-Built
Year 1
Year 2
Year 3
Year 4
Year 5









	2008		2009		2010		2011		2012	
	CG1	CG2	CG1	CG2	CG1	CG2	CG1	CG2	CG1	CG2
Number of Bankfull Events	2	2	4	4	6	5	3	2	1	NA
Maximum Height Above Bankfull (feet)	1.2		1.6		2.1		2.6		1.1	

Parameter	Cross Section 1 Pool						Cross Section 2 Riffle						Cross Section 3 Pool						Cross Section 4 Riffle					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	16.8	16.9	17.2	18.9	19.8	17.2	16.4	19.0	20.4	18.6	17.8	16.9	19.3	18.8	18.8	20.0	18.9	19.4	22.4	19.9	20.3	16.9	17.6	17.3
Floodprone Width (ft)	73.0	70.8	70.9	71.0	71.0	71.0	79.3	77.4	76.9	77.6	77.6	77.6	77.5	76.8	76.4	77.0	77.0	77.0	72.7	65.1	67.5	71.3	71.3	71.3
BF Cross Sectional Area (ft^2)	34.1	33.9	33.5	34.6	32.6	32.2	18.7	21.3	22.6	20.9	19.4	20.0	49.0	41.2	42.0	40.7	42.1	41.9	26.2	22.4	21.9	19.2	20.0	21.1
BF Mean Depth (ft)	2.0	2.0	1.9	1.8	1.6	1.9	1.1	1.1	1.1	1.1	1.1	1.2	2.5	2.2	2.2	2.0	2.2	2.2	1.2	1.1	1.1	1.1	1.1	1.2
BF Max Depth (ft)	3.8	3.7	3.7	3.7	3.6	3.4	2.4	2.5	2.5	2.3	2.4	2.4	4.9	4.8	4.6	4.5	4.5	4.3	2.9	2.6	2.5	2.2	2.3	2.6
Width/Depth Ratio	8.3	8.4	8.9	10.3	12.0	9.1	14.5	17.0	18.4	16.5	16.3	14.3	7.6	8.6	8.5	9.8	8.5	9.0	19.2	17.6	18.8	14.8	15.6	14.2
Entrenchment Ratio	4.3	3.0	4.1	3.8	3.6	4.1	4.8	4.1	3.8	4.2	4.4	4.6	4.0	4.1	4.1	3.9	4.1	4.0	3.2	3.3	3.3	4.2	4.0	4.1
Wetted Perimeter(ft)	18.9	18.9	19.2	20.9	21.8	19.4	17.2	19.7	21.1	19.2	18.5	17.7	22.2	21.6	21.2	22.4	21.1	21.7	23.3	20.6	21.1	17.5	18.4	18.3
Hydraulic radius (ft)	1.8	1.8	1.7	1.7	1.5	1.7	1.1	1.1	1.1	1.1	1.0	1.1	2.2	1.9	2.0	1.8	2.0	1.9	1.1	1.1	1.0	1.1	1.1	1.2
Parameter	Cross Section 5 Riffle						Cross Section 6 Pool						Cross Section 7 Riffle						Cross Section 8 Pool					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	16.7	16.5	16.9	18.3	17.4	17.1	17.4	18.1	17.7	23.4	20.8	17.7	18.5	20.3	17.7	18.7	19.5	20.2	19.2	20.0	20.9	21.8	20.9	18.8
Floodprone Width (ft)	69.4	66.2	65.9	66.2	66.2	66.5	69.0	66.9	61.3	67.3	67.3	67.3	62.2	61.1	57.6	59.7	59.7	59.7	60.2	60.0	59.4	60.1	60.1	60.1
BF Cross Sectional Area (ft^2)	16.4	15.8	15.4	13.7	16.0	14.1	28.8	29.7	29.7	30.0	33.4	28.8	16.7	19.3	17.3	17.5	24.9	25.5	26.0	26.4	27.6	27.8	29.8	28.9
BF Mean Depth (ft)	1.0	1.0	0.9	0.7	0.9	0.8	1.7	1.6	1.7	1.3	1.6	1.6	0.9	0.9	1.0	0.9	1.3	1.3	1.4	1.3	1.3	1.3	1.1	1.1
BF Max Depth (ft)	2.0	2.0	1.9	1.8	2.0	1.8	3.4	3.4	3.4	2.8	3.2	3.2	1.4	1.7	1.6	1.6	2.1	2.2	2.5	2.5	2.4	2.3	2.1	2.3
Width/Depth Ratio	17.0	17.1	18.4	24.4	18.8	20.7	10.5	11.1	10.6	18.3	12.9	10.9	20.4	21.4	18.1	19.9	15.3	16.0	14.1	15.2	15.9	17.1	24.8	24.2
Entrenchment Ratio	4.2	4.0	3.9	3.6	3.8	3.9	4.0	3.7	3.5	2.9	3.2	3.8	3.4	3.0	3.3	3.2	3.1	3.0	3.1	3.0	2.8	2.8	2.2	2.3
Wetted Perimeter(ft)	17.2	17.0	17.3	18.8	17.8	17.6	19.0	19.7	19.3	24.6	22.1	21.7	18.9	21.2	18.7	19.1	20.3	20.9	20.2	20.9	22.0	22.7	27.7	24.2
Hydraulic radius (ft)	1.0	0.9	0.9	0.7	0.9	0.8	1.5	1.5	1.5	1.2	1.5	1.3	0.9	0.9	0.9	0.9	1.2	1.2	1.3	1.3	1.3	1.2	1.1	1.1
Parameter	Cross Section 9 Riffle						Cross Section 10 Pool						Cross Section 11 Riffle						Cross Section 12 Pool					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	19.0	19.1	18.6	18.8	18.5	18.3	22.5	21.7	22.1	23.4	19.1	19.3	19.4	19.8	19.3	19.4	19.9	20.1	13.0	15.8	16.2	16.0	19.6	17.4
Floodprone Width (ft)	66.1	66.0	66.0	65.9	65.9	65.9	80.5	80.2	80.6	80.7	80.7	80.7	77.9	74.8	68.8	74.9	74.9	74.9	78.7	76.7	76.1	75.9	75.9	75.9
BF Cross Sectional Area (ft^2)	32.7	29.5	29.0	28.4	25.4	25.1	40.1	40.1	41.1	36.8	30.5	31.5	21.5	24.1	23.6	23.8	23.2	23.0	25.7	27.4	28.8	28.0	33.0	26.8
BF Mean Depth (ft)	1.7	1.5	1.6	1.5	1.4	1.4	1.8	1.8	1.9	1.6	1.6	1.6	1.1	1.2	1.2	1.1	0.9	1.0	2.0	1.7	1.8	1.8	1.7	1.5
BF Max Depth (ft)	2.9	2.7	2.6	2.6	2.4	2.5	3.8	3.7	3.7	3.4	2.9	3.2	2.7	2.8	2.7	2.7	2.6	2.7	3.9	3.9	3.9	3.9	4.0	3.7
Width/Depth Ratio	11.1	12.4	12.0	12.4	13.5	13.3	12.7	11.8	11.9	14.8	11.9	11.8	17.5	16.3	15.8	18.1	28.2	24.4	6.6	9.2	9.2	9.1	11.7	11.3
Entrenchment Ratio	3.5	3.4	3.5	3.5	3.6	3.6	3.6	3.7	3.7	3.5	4.2	4.1	4.0	3.8	3.6	3.6	2.9	3.1	6.1	4.8	4.7	3.9	3.9	4.3
Wetted Perimeter(ft)	20.1	20.1	19.6	19.9	19.4	19.2	24.2	23.8	24.2	24.6	20.1	20.5	20.5	20.6	20.1	21.6	26.4	24.6	15.3	17.7	18.1	18.1	21.5	19.3
Hydraulic radius (ft)	1.6	1.5	1.5	1.4	1.3	1.3	1.7	1.7	1.7	1.5	1.5	1.5	1.1	1.2	1.2	1.1	0.9	0.9	1.7	1.5	1.6	1.5	1.5	1.4

Parameter	Cross Section 13 Pool						Cross Section 14 Riffle						Cross Section 15 Riffle						Cross Section 16 Pool					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	19.7	19.2	18.5	22.8	22.5	18.2	18.8	18.4	19.6	19.8	19.5	19.6	17.5	17.0	18.9	18.0	17.6	16.0	19.7	23.9	23.6	23.1	22.5	22.6
Floodprone Width (ft)	69.8	70.0	70.0	70.0	70.0	70.0	63.8	63.3	63.6	63.4	63.3	63.3	66.8	66.8	62.0	66.6	66.9	66.5	60.8	60.7	60.6	60.8	60.7	60.6
BF Cross Sectional Area (ft^2)	26.4	23.9	23.4	27.2	28.7	22.0	24.3	24.0	24.8	23.4	24.7	21.7	15.9	18.4	21.9	22.6	21.2	17.6	49.7	48.5	62.6	55.2	51.2	48.2
BF Mean Depth (ft)	1.3	1.2	1.3	1.2	1.3	1.2	1.3	1.3	1.3	1.1	0.9	1.1	0.9	1.1	1.2	1.3	1.2	1.1	2.5	2.0	2.1	2.4	2.3	2.1
BF Max Depth (ft)	2.7	2.6	2.6	2.5	2.6	2.4	2.2	2.2	2.3	2.0	2.1	2.0	1.5	2.8	2.9	2.9	3.0	2.9	5.0	5.0	4.8	4.6	4.4	4.3
Width/Depth Ratio	14.7	15.5	14.7	19.1	17.6	15.1	14.6	14.1	15.5	18.7	28.6	17.7	19.3	15.7	16.2	14.3	14.6	14.5	7.8	11.8	10.6	9.7	9.9	10.6
Entrenchment Ratio	3.5	3.6	3.8	3.1	3.1	3.8	3.4	3.4	3.2	3.0	2.4	3.2	3.8	3.9	3.3	3.7	3.8	4.2	3.1	2.5	2.6	2.6	2.7	2.7
Wetted Perimeter(ft)	20.4	19.9	19.4	23.5	23.1	18.9	19.5	19.1	20.4	21.3	27.0	20.2	17.9	18.2	20.1	19.3	19.4	18.0	22.3	26.3	25.6	25.3	25.0	24.7
Hydraulic radius (ft)	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.2	1.1	0.9	1.1	0.9	1.0	1.1	1.2	1.1	1.0	2.2	1.8	2.1	2.2	2.1	2.0
Parameter	Cross Section 17 Pool						Cross Section 18 Riffle						Cross Section 19 Pool						Cross Section 20 Riffle					
Dimension	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5	Base	MY1	MY2	MY3	MY4	MY5
BF Width (ft)	15.9	16.5	15.3	18.4	18.2	16.9	18.0	17.0	17.6	19.7	19.0	18.3	15.2	15.1	16.2	16.7	17.0	16.8	13.6	14.4	15.1	14.9	15.1	13.8
Floodprone Width (ft)	74.1	71.0	74.4	74.1	74.1	74.1	76.3	76.1	76.3	76.9	77.0	76.9	81.6	81.9	82.0	81.6	81.9	81.5	97.2	96.9	96.9	97.1	97.6	97.1
BF Cross Sectional Area (ft^2)	51.1	49.9	50.3	55.8	56.0	52.7	56.5	51.7	53.3	59.3	58.4	55.6	46.3	45.0	46.6	47.7	46.3	46.7	32.5	35.0	36.6	39.7	37.2	35.6
BF Mean Depth (ft)	3.2	3.0	3.3	3.0	3.1	3.1	3.1	3.0	3.0	3.0	3.1	3.0	3.0	3.0	2.9	2.9	2.7	2.8	2.4	2.4	2.4	2.7	2.5	2.6
BF Max Depth (ft)	5.0	5.1	4.9	5.4	5.3	5.2	4.5	4.4	4.2	4.7	4.9	4.9	4.9	4.8	4.7	4.7	4.6	4.7	3.0	3.4	3.4	3.6	3.4	3.4
Width/Depth Ratio	5.0	5.5	4.7	6.1	5.9	5.4	5.7	5.6	5.8	6.6	6.2	6.0	5.0	5.1	5.7	5.8	6.3	6.1	5.7	5.9	6.3	5.6	6.2	5.3
Entrenchment Ratio	4.7	4.3	4.9	4.0	4.1	4.3	4.2	4.5	4.3	3.9	4.0	4.2	5.4	5.4	5.0	4.9	4.8	4.8	7.1	6.7	6.4	6.5	6.4	7.0
Wetted Perimeter(ft)	20.6	20.8	19.3	22.6	22.9	21.4	22.2	21.3	21.5	24.4	23.6	22.7	19.3	18.8	19.5	20.1	20.3	20.3	16.1	17.1	17.8	17.7	18.3	16.8
Hydraulic radius (ft)	2.5	2.4	2.6	2.5	2.4	2.5	2.5	2.4	2.5	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.0	2.1	2.1	2.2	2.0	2.1

Reach 1																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	39.05	86.72	62.88	84.94	158.25	123.72	84.94	158.25	123.72	84.94	158.25	123.72	84.94	158.25	123.72	84.94	158.25	123.72
Radius of Curvature (ft)	18.26	27.39	22.82	20.24	30.26	24.87	20.24	30.26	24.87	20.24	30.26	24.87	20.24	30.26	24.87	20.24	30.26	24.87
Meander Wavelength (ft)	124.25	171.16	147.70	275.87	364.82	320.22	275.87	364.82	320.22	275.87	364.82	320.22	275.87	364.82	320.22	275.87	364.82	320.22
Meander Width ratio	2.12	4.72	3.42	2.3	4.2	3.3	2.3	4.2	3.3	2.3	4.2	3.3	2.3	4.2	3.3	2.3	4.2	3.3
Profile																		
Riffle length (ft)	15.1	103.2	39.0	20.0	47.0	28.8	20.0	47.0	28.8	20.0	47.0	28.8	20.0	47.0	28.8	20.0	47.0	28.8
Riffle slope (ft/ft)	0.0038	0.0177	0.0081	0.001	0.0281	0.0118	0.001	0.0281	0.0118	0.0051	0.0305	0.0191	0.0051	0.0305	0.0191	0.0051	0.0305	0.0191
Pool length (ft)	23.2	139.4	52.6	21.7	87.4	45.4	21.7	87.4	45.4	21.7	87.4	45.4	21.7	87.4	45.4	21.7	87.4	45.4
Pool spacing (ft)	33.9	250.8	65.3	29.5	155.8	73.5	29.5	155.8	73.5	29.5	155.8	73.5	29.5	155.8	73.5	29.5	155.8	73.5
Additional Reach Parameters																		
Valley Length (ft)	1581.9			741.0			741.0			741.0			741.0			741.0		
Channel Length (ft)	2200			1017.8			1017.8			1017.8			1017.8			1017.8		
Sinuosity	1.4			1.4			1.4			1.4			1.4			1.4		
Water Surface Slope (ft/ft)	0.00150			0.0007			0.0007			0.000802			0.000802			0.000802		
BF slope (ft/ft)	0.0009			0.00075			0.00075			0.00182			0.00182			0.00182		
Rosgen Classification	C5			C5			C5			C5			C5			C5		

Reach 2																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38	39.98	88.78	64.38
Radius of Curvature (ft)	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36	18.69	28.04	23.36
Meander Wavelength (ft)	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21	127.20	175.22	151.21
Meander Width ratio	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42	2.12	4.72	3.42
Profile																		
Riffle length (ft)	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1	28.2	97.5	49.1
Riffle slope (ft/ft)	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045	0.0020	0.0096	0.0045
Pool length (ft)	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6	19.4	135.9	59.6
Pool spacing (ft)	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4	35.2	195.1	119.4
Additional Reach Parameters																		
Valley Length (ft)	756.8			756.8			756.8			756.8			756.8			756.8		
Channel Length (ft)	1550			1550			1550			1550			1550			1550		
Sinuosity	2.0			2.0			2.0			2.0			2.0			2.0		
Water Surface Slope (ft/ft)	0.00140			0.00140			0.00140			0.000802			0.000802			0.000802		
BF slope (ft/ft)	0.00075			0.00075			0.00075			0.001			0.001			0.001		
Rosgen Classification	C5			C5			C5			C5			C5			C5		

Reach 3																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	41.06	91.41	66.23	83.2	217.1	152.6	83.2	217.1	152.6	83.2	217.1	152.6	83.2	217.1	152.6	83.2	217.1	152.6
Radius of Curvature (ft)	19.17	28.86	24.01	14.1	31.7	20.5	14.1	31.7	20.5	14.1	31.7	20.5	14.1	31.7	20.5	14.1	31.7	20.5
Meander Wavelength (ft)	130.92	180.30	155.51	221.9	498.8	325.6	221.9	498.8	325.6	221.9	498.8	325.6	221.9	498.8	325.6	221.9	498.8	325.6
Meander Width ratio	2.12	4.72	3.42	2.0	5.3	3.7	2.0	5.3	3.7	2.0	5.3	3.7	2.0	5.3	3.7	2.0	5.3	3.7
Profile																		
Riffle length (ft)	19.5	195.8	34.7	10.2	57.0	22.7	10.2	57.0	22.7	10.2	57.0	22.7	10.2	57.0	22.7	10.2	57.0	22.7
Riffle slope (ft/ft)	0.0022	0.0297	0.0038	0.0003	0.0313	0.0118	0.0003	0.0313	0.0118	0.0108	0.0141	0.0117	0.0108	0.0141	0.0117	0.0108	0.0141	0.0117
Pool length (ft)	13.4	126.6	54.6	13.8	38.6	22.8	13.8	38.6	22.8	13.8	38.6	22.8	13.8	38.6	22.8	13.8	38.6	22.8
Pool spacing (ft)	22.4	206.4	86.1	23.2	168.3	53.1	23.2	168.3	53.1	23.2	168.3	53.1	23.2	168.3	53.1	23.2	168.3	53.1
Additional Reach Parameters																		
Valley Length (ft)	2498.5			966.8			966.8			966.8			966.8			966.8		
Channel Length (ft)	4110			1750			1750			1750			1750			1750		
Sinuosity	1.7			1.8			1.8			1.8			1.8			1.8		
Water Surface Slope (ft/ft)	0.00160			0.001			0.001			0.001			0.001			0.001		
BF slope (ft/ft)	0.0008			0.001			0.001			0.0012			0.0012			0.0012		
Rosgen Classification	E5			E5			E5			E5			E5			E5		

Reach 4																		
Parameter	Baseline			MY1			MY2			MY3			MY4			MY5		
Pattern	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Channel Beltwidth (ft)	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8	27.9	47.7	35.8
Radius of Curvature (ft)	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2	86.22	187.8	140.2
Meander Wavelength (ft)	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0	368.1	391.9	380.0
Meander Width ratio	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649	0.9085	1.5523	0.6649
Profile																		
Riffle length (ft)	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6	41.9	80.1	63.6
Riffle slope (ft/ft)	0.0016	0.0090	0.0064	0.0016	0.0090	0.0064	0.0016	0.0090	0.0064	0.0023	0.009	0.0046	0.0023	0.009	0.0046	0.0023	0.009	0.0046
Pool length (ft)	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34	39.4	157.6	76.34
Pool spacing (ft)	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4	51.4	127.9	88.4
Additional Reach Parameters																		
Valley Length (ft)	615.8			615.8			615.8			615.8			615.8			615.8		
Channel Length (ft)	638.4			638.4			638.4			638.4			638.4			638.4		
Sinuosity	1.0			1.0			1.0			1.0			1.0			1.0		
Water Surface Slope (ft/ft)	0.0003			0.0003			0.0003			0.0006			0.0006			0.0006		
BF slope (ft/ft)	0.0002			0.0002			0.0002			0.000766			0.000766			0.000766		
Rosgen Classification	E5			E5			E5			E5			E5			E5		

Results of 2012 Vegetation Monitoring – Planted Species by Plot

Species	Plots																	
	Wetland Plots					Stream Buffer Plots												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Bald Cypress	6	10	4	22	7	10	5	13	5	9	12	4	12	10	11	3		2
Green Ash	5	9	27	3	13		7	8	4	1	3	17	7	7	4	6	2	6
Hickory		1																
Laurel Oak	2									1		1	2		1	5		
Overcup Oak	10	11	13	7	7	4	2	7	10	5	6	4	2	8	1	7	11	4
Swamp Tupelo	18	8	4	20	16	8	4	7	4	7	6	9	5	7	11	11		4
Willow Oak	10		6	4	12	4	4	7	8	25	7	7	8	7	10	9	9	8

Summary of Results

Plot #	As-Built Stems Planted	Stems Year 1	Stems Year 2	Stems Year 3	Stems Year 4	Stems Year 5	Stems per Acre Year 5
Wetland Plots (0.10 acre)							
Plot 1	61	55	53	53	51	51	510
Plot 2	60	46	49	40	39	39	390
Plot 3	70	66	65	64	56	54	540
Plot 4	69	58	61	57	55	56	560
Plot 5	65	57	53	54	55	55	550
						Average	**510.0**
						Range	**390-560**
Riparian Buffer Plots (0.20 acre)							
Plot 6	40	31	24	19	25	26	520
Plot 7	37	22	17	17	22	22	440
Plot 8	49	44	43	43	42	42	840
Plot 9	45	33	28	29	29	31	620
Plot 10	50	48	49	47	47	48	960
Plot 11	47	36	35	34	33	34	680
Plot 12	45	43	42	42	35	42	840
Plot 13	40	39	37	36	33	36	720
Plot 14	51	47	38	41	40	39	780
Plot 15	48	43	41	39	35	38	760
Plot 16	49	48	41	42	40	41	820
Plot 17	30	28	28	27	24	22	440
Plot 18	28	27	26	26	24	24	480
						Average	**684.6**
						Range	**440-960**

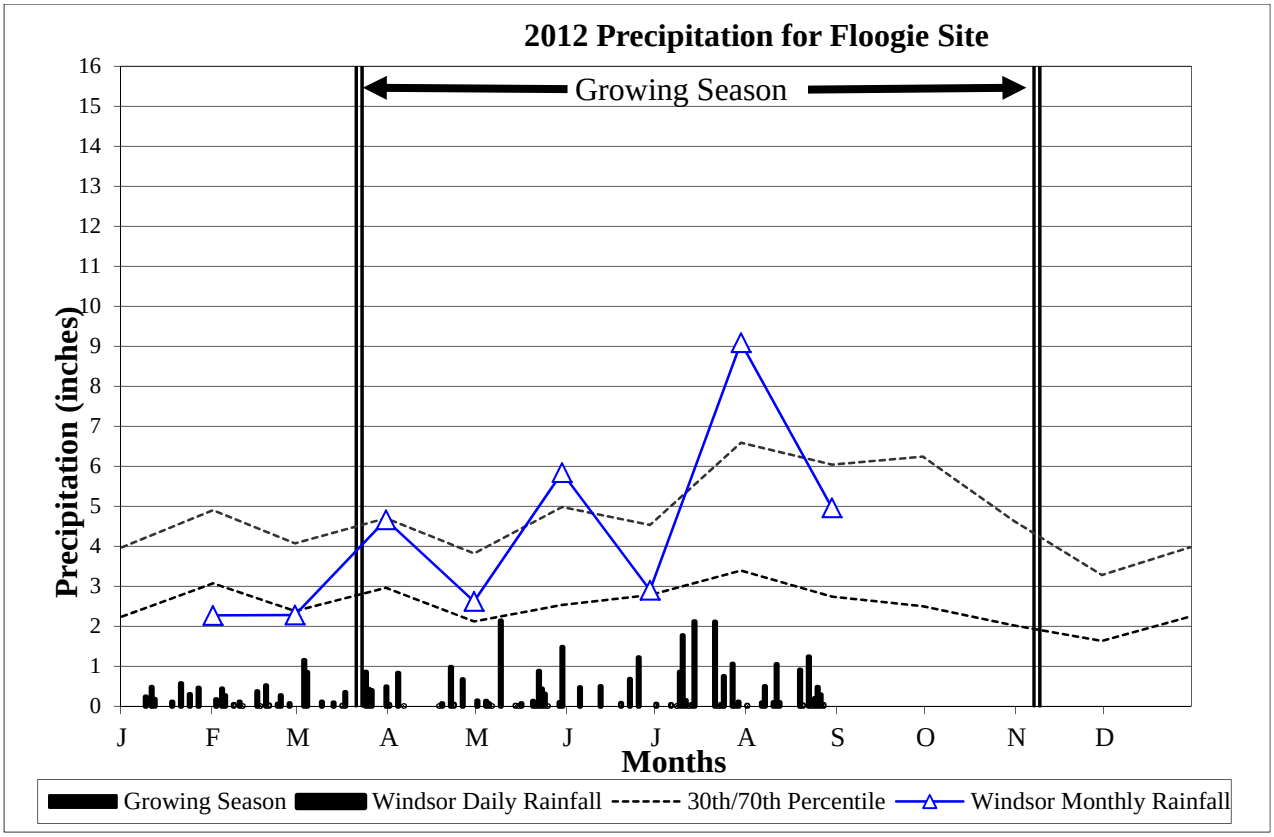
Summary of Hydrology Monitoring Data 2008-2012

Gauge	Max Consecutive Hydroperiod (%)				
	2008	2009	2010	2011	2012
AW1	26	16	16	13	9
AW2	17	15	8	15	39
AW3	9	14	7	14	8
AW4	22	16	11	15	41
AW5	21	16	12	20	19
AW6	9	15	12	19	9
RAW1	19	16	15	20	10
RAW2	15	13	12	15	8
RAW3	8	13	13	13	8

Comparison of Normal Rainfall to Observed Rainfall (2012)

Month	Average	Normal Limits		Windsor Precipitation
		30 Percent	70 Percent	
January	4.11	3.07	4.90	2.46
February	3.37	2.38	4.07	2.71
March	3.98	2.96	4.70	4.91
April	3.00	2.12	3.82	2.33
May	3.99	2.53	4.98	7.31
June	3.87	2.78	4.53	3.46
July	5.37	3.39	6.59	3.93
August	4.86	2.74	6.04	4.96
September	5.10	2.50	6.24	
October	3.23	2.02	4.63	
November	2.71	1.63	3.28	
December	3.30	2.24	3.97	
Annual		40.30	51.25	
Total	46.89			32.07

*Data collected through August 30



EEP Recommendations and Conclusions

- All hydrology monitoring gauges recorded consecutive hydroperiods for at least 7 percent of the growing season for 2012.
- The restored stream channel has remained stable and is providing the intended habitat and hydrologic functions. All monitoring cross sections and longitudinal profile for 2012 showed very little adjustment in stream dimension over the previous year.
- Vegetation monitoring has documented the average number of stems per acre on the site to be 636, with the range of stem density of 390 to 5600 stems per acre. All vegetation plots have achieved the success criterion of 260 trees per acre at monitoring year 5.
- Benthic macroinvertebrate monitoring will be conducted in January 2013 and the results will be presented in a supplemental monitoring report and the closeout report to follow.
- The project has achieved success based on stated success criteria and is recommended for regulatory closure.

Contingencies

- Removal of beaver population and destruction of existing dams is currently under way.
- Remedial action will be taken to control and eliminate the threat of invasive species taking over and or loss of targeted species if needed.

Example Pre-Existing Condition Photos

Upstream culvert, Reach 1 at Brown School Road during pre-construction phase.

Reach 1 and 2 looking downstream during pre-construction phase.

Reach 3 looking upstream during pre-construction phase.

Reach 4 looking upstream during pre-construction phase.

Monitoring Phase

Upstream culvert, Reach 1 at Brown School Road during monitoring phase.

Reach 2 looking downstream during monitoring phase.

Reach 3 looking downstream during monitoring phase.

Reach 4 looking downstream during monitoring phase.

Wetland Restoration Area during monitoring phase.