



LETTER OF TRANSMITTAL

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TO: Division of Water Resources
1650 Mail Service Center
Raleigh, NC 27699-1650

DATE: December 23, 2014

RE: Buffalo Branch BPDP

ATTN: Katie Merritt

We are sending via: ☐ Overnight ☐ Regular Mail ☐ Pick-Up ☒ Hand Delivered
The following items: ☐ Correspondence ☐ Plans ☐ Specifications ☒ Other as listed below:

COPIES	DATE	NO.	DESCRIPTION
1	12/23/14		Buffalo Branch BPDP
1	12/23/14		CD for Buffalo Branch BPDP

These are transmitted as checked below:

☐ For Approval ☐ As Requested ☐ Approved as Submitted ☐ Returned for Corrections
☒ For Your Use ☐ For Review and Comment ☐ Approved as Noted ☐ For Your Signature

REMARKS:

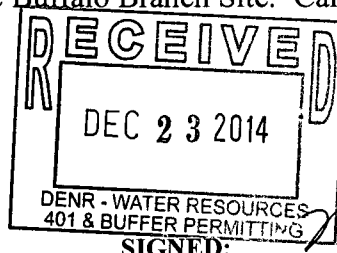
Please find enclosed BPDP and CD for the Buffalo Branch Site. Call me at 919-829-9909 Ext. 22 if you have any questions.

Thank you,

Norton Webster

COPY TO: David Godley,

Ely Perry



SIGNED: _____

Bank Parcel Development Plan

Buffalo Branch Buffer/Nutrient Offset Site

EBX Neuse Riparian Buffer Umbrella Mitigation Bank
Johnston County, North Carolina
Neuse River Basin
HUC 03020201180050



Prepared For:



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December 2014

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1 INTRODUCTION

EBX– Neuse I, LLC is pleased to provide this Bank Parcel Development Plan (BPDP) for the Buffalo Branch Bank Parcel (Parcel), proposed as part of the EBX Neuse Riparian Buffer and Nutrient Offset Umbrella Mitigation Bank signed between EBX- Neuse I, LLC and the North Carolina Division of Water Resources (NC DWR) on October 31, 2008. This Parcel is designed to provide riparian buffer and nutrient offset mitigation credits for unavoidable impacts due to development within the Neuse River Basin, United States Geological Survey ('USGS') 8-digit Hydrologic Unit Code (HUC – 03020201). This instrument is in accordance with 15A NCAC 02B.0295 and 15A NCAC 02B.0240. Supporting figures can be found in **Appendix A**. The BPDP has been designed in concurrence with the Buffalo Branch Stream Mitigation Bank (SAW # 2014-02129).

1.1 Parcel Location

The Buffalo Branch Parcel is located approximately four miles north of Selma in central Johnston County, NC (**Figure 1**). Within the Parcel, three unnamed tributaries traverse the site and exhibit diminished habitat value as a result of past and on-going agricultural activities and ditching. The Parcel is located within Neuse River Basin USGS 14-digit HUC 03020201180050 and NC DWR Subbasin Number 03-04-06.

To access the Parcel from the town of Selma, travel north approximately 4.9 miles on NC Hwy 96, and turn right onto Little Divine Road. Turn left on the first dirt road (Howard Road) in approximately 0.3 miles. Following Howard Road, the Parcel is on the left about 200 feet up. The GPS coordinates of the site are 35.607309°N and -78.288312°W (**Figure 1**).

1.2 Parcel Overview

The Buffalo Branch Stream Mitigation Bank easement totals 31.63 acres and includes three unnamed tributaries, and stormwater runoff from adjacent pastures that flow directly to Buffalo Creek. The Parcel is located in an area dominated by agriculture and livestock. A majority of the Parcel is utilized for livestock grazing and row-crop production. Additional land use practices including the maintenance and removal of riparian vegetation and the relocation, dredging and straightening of onsite streams has resulted in degraded water quality and unstable channel characteristics.

The Buffalo Bank Stream Mitigation Bank is proposed to provide a combination of stream restoration and stream enhancement on approximately 5,500 linear feet of streams within the conservation easement through a separate mitigation banking instrument. Restoration of the riparian buffer is anticipated to result in immediate water quality benefits within the vicinity of the Parcel through the removal of livestock access to Parcel streams. The riparian restoration activities within the Parcel will also result in improved water quality within the downstream watershed. Unnamed tributary “A” is a perennial stream which flows from west to east across the Parcel. Unnamed tributaries “B” and “C” are intermittent streams, which flow into reach “A”. Stream identifications were verified by the USACE during an IRT site visit on July 30th, 2014 and DWR site visit on December 19, 2014. The drainage area of the Parcel is 0.89 mi².

The Buffalo Branch Parcel is being proposed as an additional buffer and nutrient offset mitigation site to be included under the provisions of the EBX Neuse Riparian Buffer and Nutrient Offset Umbrella

Mitigation Bank. The EBX Neuse Riparian Buffer and Nutrient Offset Umbrella Mitigation Bank was created to restore, enhance, and preserve stream systems with the adjacent riparian buffers and their functions and values to compensate in appropriate circumstances for unavoidable stream buffer impacts and nutrient reduction requirements. The buffer mitigation proposed in this Bank is being submitted for review under the new 15A NCAC 02B .0295 Consolidated Buffer Mitigation Rule as well as conditions specified in the EBX-Neuse I, LLC UMBI.

2 PROJECT AREA – EXISTING CONDITIONS

2.1 Physiography

The Parcel is in the Coastal Plain Physiographic Province. Soils in the Coastal Plain region formed in sediment deposits several millions of years ago by the ocean and streams; however, the flood plains along the Neuse River consist of fairly recent deposits. These deposits are not as weathered as the sediments in the Coastal Plain region. The site is located on the Buffalo Creek floodplain and has a gently rolling topography. Elevations range from 184 to 214 feet above mean sea level (NAD 27) based upon USGS mapping (**Figure 2**). The Buffalo Branch site's tributaries and stormwater runoff from surrounding pastures drains into Buffalo Creek approximately 0.90 miles downstream of the parcel. Natural drainage patterns throughout the watershed have been altered by cultivation and dredging of the channels. Within the proposed mitigation area, the channels drain surface water and groundwater from the surrounding row crop agriculture and cattle pastures. The primary land use in the project vicinity is pastures and row crop production. The downstream portion of the project below Howard Road is primarily forested and pasture.

2.2 Soils

The soils within the Coastal Plain region of Johnston County formed in sediments deposited several million years ago by the oceans and streams. The flood plains along the Neuse River consist of relatively recent deposits of sediments that are not as highly weathered as sediments in the Coastal Plain Region. Much of the county is well drained, however several areas are poorly drained. The Parcel is shown to straddle two soil associations: the Norfolk-Goldsboro-Rains and the Rains-Goldsboro-Lynchburg.

The Norfolk-Goldsboro-Rains association is found along the edges of broad interstream areas or on moderately broad ridges in the uplands. The major soils are Norfolk, Goldsboro, and Rains. The Norfolk and Goldsboro soils are moderately well to well drained and are well suited to most crops and urban uses in the area. The Rains soils are poorly drained. All soils are well suited for woodlands and most of the crops grown in the county. The Rains-Goldsboro-Lynchburg association is found in broad, level interstream areas that are relatively undissected by streams. The major soils are Rains, Goldsboro, and Lynchburg. The soils range from poorly to moderately well-drained. The soils are well suited to cropland. The wetness is the main limitation affecting agricultural uses on the Rains and Lynchburg soils.

The Johnston County Soil Survey shows five mapping units across the project site. Map units include four soil series (**Figure 5**). The upland soils found in this area of the county formed in sandy sediments from marine and fluviomarine deposits or loamy alluvium. The upland soils at this site are on a river

terrace above the active floodplain. The soil series found on the site are described below and summarized in **Table 1**.

Table 1. Parcel Mapped Soil Series

Map Unit Symbol	Map Unit Name	Percent Hydric	Drainage Class	Hydrologic Soil Group	Landscape Setting	% Area in Easement
Ra	Rains sandy Loam	80%	Poorly	B/D	Flats, Marines, Terraces	70%
Bb	Bibb sandy loam, frequently flooded	80%	Poorly	D	Floodplains	15%
BoA	Bonneau sand, 0 – 3% slopes	0%	Well	A	---	5%
NoB	Norfolk loamy sand, 2 – 6% slopes	2%	Well	B	Floodplains	8%
NoA	Norfolk loamy sand, 0 – 2% slopes	5%	Well	B	Flats, Marines, Terraces	2%

Rains sandy loam. This is a very deep, poorly drained soil that occurs on flats and depressions of the Coastal Plain. They formed in fluviomarine deposits, and generally occur on slopes between 0-2 %. Runoff is negligible and permeability is moderate. Major uses are forest and cropland. Rains sandy loam is the predominant soil throughout the project area occurring along the streambanks and floodplains of all reaches with the exception of Reach A3.

Bibb sandy loam. This is a very deep, poorly drained soil found on flood plains of the Coastal Plain. Slopes are generally less than 2%. Soils formed in stratified sandy alluvium and have very slow runoff with moderate permeability. The water table is generally within 8 inches of the surface for 6 to 11 months of the year. Bibb sandy loams occur along the stream banks and floodplain of Reach A3 in the project area

Bonneau sand. This is a very deep, well-drained soil found on terraces of the Coastal Plain. Slopes range from 0-12%. Surface runoff is negligible and permeability is moderate. Major uses are crops, mainly corn, soybeans, small grain, pasture grasses, and tobacco. Bonneau sands occur along the outer edge of the floodplain along Reach A1 in the project area.

Norfolk loamy sand. This is a very deep, well-drained soil that occurs on uplands of the Coastal Plain. They formed in fluviomarine deposits, and generally occur on slopes between 0-10%. Runoff is negligible to medium and permeability is moderate to high. This soil type is mostly cleared and used for cropland. Norfolk loamy sands occur along uplands within the target parcels of the project.

2.3 Vegetation

Current land use in the vicinity of the project is primarily agricultural and forestry. Within the Parcel, two prominent vegetative communities are present: active pasture and disturbed riparian hardwoods. A small unnamed tributary enters the project near the intersection of Hwy 96 and Little Divine Road, flowing through an active pasture and running across Howard Road into a wooded reach. Exotic species are also present throughout, including Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), and multiflora rose (*Rosa multiflora*).

Buffer Restoration

Buffer restoration is proposed along reaches A1, A2, B1, B2 and C. Within the proposed project area to the west of Howard Road (buffer restoration), the pasture is either Bermuda grass with scattered loblolly pine trees (*Pinus taeda*) or fields planted with annual rye/wheat, depending upon the season. Other grasses and weeds are limited. The areas along the stream have common rush (*Juncus effusus*) and sedges (*Carex sp.*), along with a limited shrub/sapling layer, including American holly (*Ilex opaca*), tag alder (*Alnus serrulata*), and common persimmon (*Diospyros virginiana*). Adult trees are limited, but there are a few river birch (*Betula nigra*), loblolly pine, and various oak species (*Quercus sp.*) along the stream corridor. The early successional loblolly pines present in the buffer will be mowed as approved by the IRT and thus, will not be required to be surveyed out of the total proposed mitigation acreage.

Buffer Preservation

Buffer preservation is proposed along reaches A2 and A3 east of Howard Road. The ratio for mitigation in this area is 10:1. This project area is mature riparian hardwoods. Although forested along the stream, the area north of the woods is currently used as pasture and cattle have limited access to the stream. The forested area contains a canopy of mostly red maple (*Acer rubrum*), various oak species, sweetgum (*Liquidambar styraciflua*), and swamp tupelo (*Nyssa biflora*). The understory mainly consists of giant cane (*Arundinaria gigantea*), blueberry (*Vaccinium sp.*), and few other shrubs. Green briar (*Smilax rotundifolia*) and Chinese privet are present in isolated areas. Channel banks have been damaged in some areas and understory vegetation is sparse due to cattle access.

2.4 Wetlands

The US Fish and Wildlife Service (USFWS) National Wetland Inventory depicts wetlands within the project area. The floodplain along Reach A3 is mapped as PFO1A (Palustrine Forested Broad-Leaved Deciduous Temporarily Flooded). Additionally, an offline pond along the floodplain of Reach A is mapped as PUBHh (Palustrine Unconsolidated Bottom Permanently Flooded Diked/Impounded) (**Figure 3**). A wetland delineation was performed in September 2014. Wetland boundaries were delineated using current methodology outlined in the 1987 Army Corps of Engineers Wetland Delineation Manual (DOA 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) (U.S. Army Corps of Engineers 2010).

Based on consultation with the IRT, the mitigation design will enhance the hydrology and vegetation of 5.08 acres of existing wetlands in the project area (**Figure 7**). No direct wetland restoration credits will be generated from the enhancement, but the protection and enhancement of these wetlands will provide

for improved hydrologic function of the adjacent stream reaches. The current land use of the Parcel is active pasture and the condition of these wetlands, as determined by the North Carolina Wetland Assessment Method, is characterized as moderately to severely degraded. Grazing has led to increased erosion, degraded water quality, and a lack of habitat diversity within the wetland/stream complex. Soil compaction has altered the hydrology and livestock excrement actively enters the stream channels affecting the water quality of the Parcel and the entire watershed.

2.5 Threatened and Endangered Species

Plants and animals with a federal classification of endangered (E) or threatened (T) are protected under provisions of Sections 7 and 9 of the Endangered Species Act of 1973, as amended. The US Fish and Wildlife Service database (updated 22 September 2010) lists four endangered species for Johnston County, North Carolina: red-cockaded woodpecker (*Picoides borealis*), Tar River spiny mussel (*Eliptio steinstansana*), dwarf wedgemussel (*Alasmidonta heterodon*), and Michaux's sumac (*Rhus michauxii*) (Table 2). The Bald eagle (*Haliaeetus leucocephalus*) is protected under the Bald and Golden Eagle Protection Act (BGPA) and prohibits take of bald and golden eagles. No protected species or potential habitat for protected species was observed during preliminary site evaluations.

In addition to the USFWS database, the NC Natural Heritage Program (NHP) GIS database was consulted to determine whether previously cataloged occurrences of protected species were mapped within two miles of the project site. Results from NHP indicate that there are no known occurrences of state threatened or endangered species within a two-mile radius of the project area. Based on initial site investigations, no impacts to state protected species are anticipated as a result of the proposed project.

The proposed project offers some potential to improve or create suitable habitat for several Federal Species of Concern. Habitat may be improved or created for species that require riverine habitat by improving water quality, in-stream and near-stream forage, and providing stable conditions not subject to regular maintenance. Improved stream habitat may benefit the American eel (*Anguilla rostrata*). Terrestrial habitat will be improved through the restoration and enhancement of bottomland hardwood communities. Improved terrestrial habitat may benefit pondspice (*Listea aestivalis*), Cuthbert turtlehead (*Chelone cuthbertii*), and Rafinesque's big-eared bat—Coastal Plain subspecies (*Corynorhinus rafinesquii marcotis*). The USFWS has been notified of the proposed project and no response has been received. Correspondence is provided in Appendix C.

Table 2. Federally Protected Species in Johnston County

Common Name	Scientific name	Federal Status	Habitat Present	Record Status
Vertebrate:				
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No	Current
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGPA	Yes	Current
Invertebrate:				
Tar River spiny mussel	<i>Eliptio steinstansana</i>	E	No	Current
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E	No	Current
Vascular Plant:				
Michaux's Sumac	<i>Rhus Michauxii</i>	E	No	Current

E = Endangered; BGPA = Bald and Golden Eagle Protection Act

2.6 Environmental and Cultural Constraints

Environmental and cultural resources include historic and archeological resources located in or near the project parcel. WK Dickson has evaluated the Parcel's existing and future conditions of cultural resources to determine potential project impacts. The evaluation focused primarily on the presence of hazardous materials, utilities and restrictive easements, rare/threatened/endangered species or critical habitats, cultural resources, and the potential for hydrologic trespass. A review of the North Carolina State Historic Preservation Office (SHPO) GIS Web Service database did not reveal any listed or potentially eligible historic or archeological resources in the proposed project area. No architectural structures or archeological artifacts have been observed or noted during surveys of the site for restoration purposes. A small private cemetery is located outside the Parcel area at the intersection of Howard Road and Little Divine Road. This cemetery will not be impacted by restoration activities. The State Historic Preservation Office (SHPO) has been notified of the proposed project and no response has been received. Correspondence is provided in **Appendix C**.

2.7 FEMA Floodplain/Floodway Mapping

The Parcel is not located within the Federal Emergency Management Association's (FEMA) designated floodway and approximate 100-year flood boundary (**Figure 6**). No floodplain impacts are anticipated with the project.

3 RESTORATION PLAN

3.1 Riparian Restoration Activities

The restoration of plant communities within the Buffalo Branch Buffer/Nutrient Offset Site will not only provide stabilization and improve water quality, but will also enhance the functionality of the disturbed wetland seeps within the Parcel. Vegetation within seeps can be quite variable depending on disturbance regime and adjacent community types, so the protected buffer easement will be planted with appropriate native species observed in the surrounding forest and species known to occur in similar environments.

The current land use is pasture. Livestock will be excluded from restoration areas by fencing installed to NRCS specifications. The buffer area will be planted in bare root tree seedlings on an 8 by 8 foot spacing to achieve an initial density of 680 trees per acre. The buffered channels will provide water quality and habitat functions within the sensitive Neuse River watershed. Some areas adjacent to the forested areas may require maintenance due to the rapid regeneration of some species. Rapidly regenerating species and invasive species may develop greater individual species density and create a less diverse mix. Minimal maintenance is anticipated due to the past cultivation history.

3.2 Planting Plan

Revegetation of the site will include planting bare root trees and controlling invasive species growth. The target communities are Coastal Plain Small Stream Swamp along the channels grading to Bottomland Hardwood Forest downstream. The communities are as defined by Schafale and Weakely (1990). The initial planting of bare root trees will occur in late Spring 2015. Tree species specified for planting on the Buffalo Branch Site are shown in **Table 3**.

Table 3. Buffalo Branch Site Tree Planting List

Common Name	Scientific Name	Indicator	Growth Rate
River Birch	<i>Betula nigra</i>	FACW	rapid
Oak, Willow	<i>Quercus phellos</i>	FACW	rapid
Oak, Swamp Chestnut	<i>Quercus michauxii</i>	FACW-	moderate
Oak, Water	<i>Quercus nigra</i>	FAC	rapid
American sycamore	<i>Platanus occidentalis</i>	FACW-	rapid
Swamp tupelo	<i>Nyssa biflora</i>	OBL	moderate
Oak, Overcup	<i>Quercus lyrata</i>	OBL	moderate
Bald Cypress	<i>Taxodium distichum</i>	OBL	rapid

3.3 Riparian Preservation Activities

Riparian buffer preservation will include permanently protecting the buffer from cutting, clearing, filling, grading and any similar activities that would affect the functionality of the riparian buffer. Livestock will be totally excluded from preservation areas by fencing installed to NRCS specifications. Any invasive species populations that threaten the integrity of the native hardwood community will be controlled.

3.4 Easement Boundaries and Fencing

Easement boundaries will be identified in the field to ensure clear distinction between the Parcel and adjacent properties. Boundaries may be identified by cattle fence, marker, bollard, post, tree-blazing, or other means as allowed by site conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as needed basis. The easement boundary will be checked annually as part of monitoring activities and reported to NC DWR.

4 MONITORING AND MAINTENANCE PLAN

4.1 Monitoring Protocol and Success Criteria

Riparian buffer vegetation monitoring will be based on the **CVS-EEP Protocol for Recording Vegetation Level 1-2 Plot Sampling Only** Version 4.0. Annual vegetation monitoring will occur each year during the fall season with the first year occurring at least 5 months from initial planting. Vegetation monitoring plots will be a minimum of 0.02 acres in size, and cover approximately two percent of the planted area. The following data will be recorded for all trees in the plots: species, height, planting date (or volunteer), and grid location. The measures of vegetative success for the Parcel will be the survival of at least 320 planted trees per acre at the end of Year 5. Natural recruits will not count towards annual success criteria; however they may be taken into account during review by the NC DWR. Invasive and noxious species will be monitored and controlled so that none become dominant or alter the desired community structure of the site. Initial plant maintenance may include a one-time mowing in Zone A and mowing as needed in Zones B and C to remove undesirable species. Loblolly, red maple and sweetgum individuals will be removed during construction as approved by the IRT. Desirable species will be surveyed in If necessary, EBX will develop a species-specific control plan.

4.2 Adaptive Management Plan

The Mitigation Plan will include a detailed adaptive management plan that will address how potential problems are resolved. In the event that the site, or a specific component of the site, fails to achieve the defined success criteria, EBX will develop necessary adaptive management plans and/or implement appropriate remedial actions for the site in coordination with the NC DWR. Remedial actions will be designed to achieve the success criteria specified previously, and will include identification of the causes of failure, remedial design approach, work schedule, and monitoring criteria that will take into account physical and climatic conditions. Long Term Management Plan

4.3 Long Term Management Plan

EBX, acting as the Bank Sponsor, will establish a Conservation Easement, and will monitor the Site for a minimum of five years, or until NC DWR approval. This Mitigation Plan provides detailed information regarding bank operation, including long term management and annual monitoring activities, for review and approval by the NC DWR. Upon approval of the Site by the NC DWR, the site will be transferred to a responsible third party. The third party shall be responsible for periodic inspection of the site to ensure that restrictions required in the Conservation Easement or the deed restriction document(s) are upheld. Endowment funds required to uphold easement and deed restrictions shall be negotiated prior to site transfer to the responsible party.

The Bank Sponsor will ensure that the Conservation Easement will allow for the implementation of an initial monitoring phase, which will be developed during the design phase and conducted by the Bank Sponsor. The Conservation Easement will allow for yearly monitoring and, if necessary, maintenance of the Site during the initial monitoring phase. These activities will be conducted in accordance with the terms and conditions of the EBX Neuse Riparian Buffer and Nutrient Offset Umbrella Mitigation Bank made and entered into by EBX-Neuse I, LLC and NC DWR.

5 FINANCIAL ASSURANCE

The Sponsor shall provide financial assurances in the form of a Performance Bond sufficient to assure completion of all mitigation work, required reporting and monitoring, and any remedial work required. Financial assurances shall be payable at the direction of the NC DWR to his designee or to a standby trust. Financial assurances structured to provide funds to the NC DWR in the event of default by the Bank Sponsor are not acceptable.

6 MITIGATION POTENTIAL

The Buffalo Branch Bank presents 31.63 acres of permanent conservation easement in Johnston County, North Carolina. The purpose of this project is to generate Neuse riparian buffer restoration, Neuse riparian buffer preservation, and nutrient mitigation credits for the EBX Neuse Riparian Buffer and Nutrient Offset Umbrella Mitigation Bank. The site is consistent with applicable state guidance and the provisions of the EBX Neuse Riparian Buffer and Nutrient Offset Umbrella Mitigation Banking Instrument (UMBI). The legal limits of the mitigation site have not been finalized. A conservation easement and final recorded plat are provided in **Appendix D**.

The width of the buffer/nutrient credit generation area will begin at the most landward limit of the top of bank or the rooted herbaceous vegetation and extend landward to a maximum distance of 200 feet. These rules are in accordance with Rule 15A NCAC 02B.0295; buffer preservation credits meet the requirements described in Paragraph (m) subparagraph (2) (D) - Alternative Buffer Mitigation Options-Preservation of Buffers on Subject Streams. According to the UMBI, the generated nitrogen offset credit per acre in the Neuse River watershed is 2,273.02 pounds per acre.

The Buffalo Branch Bank has the potential to generate approximately 14.22 acres of Riparian Buffer Restoration credits and 6.80 acres of Riparian Buffer Preservation Credits. The Bank also has the potential to utilize the 6.95 acres as nutrient offset credits to yield approximately 15,790 pounds of nitrogen offset credit. Nutrient and buffer credits will not be debited for the same area (not stacked). However, with DWR approval, EBX may transition unsold credits between credit types to satisfy market demands. The Buffalo Branch Bank will service impacts within the USGS 8-digit HUC 03020201 and NC DWR sub-basin 03-04-06. The total potential buffer and nutrient mitigation credits that the Buffalo Branch Bank will generate are summarized in **Table 4; Figure 8**.

Table 4. Buffalo Branch Bank Parcel Credit Summary

Buffer Zone	Credit Type	Total Acreage	Mitigation Ratio	Credit Per Acre	Mitigation Assets
Zone A (0-50')	Buffer Restoration	7.70	1:1	43,560 sq. ft.	335,346 sq. ft.
	Buffer Preservation	4.67	10:1	4,356 sq. ft.	20,343 sq. ft.
Zone B (51-100')	Buffer Restoration	6.52	1:1	43,560 sq. ft.	283,872 sq. ft.
	Buffer Preservation	2.13	10:1	4,356 sq. ft.	9,278 sq. ft.
Zone C (101-200')	Nitrogen	6.95	N/A	2,273.02 lbs	15790 lbs.
			Total Buffer Restoration		619,218 sq. ft
			Total Buffer Preservation		29,621 sq. ft
			Total Buffer Credit		648,839 sq. ft
			Total Nitrogen Credit		15,790 lbs

7 REFERENCES

EBX I, LLC , NCDWR, and US Army Corps of Engineers. 2008. Banking Instrument: EBX Neuse Riparian Buffer Umbrella Mitigation Bank. 10 pp.

NCDENR. 2009. "Neuse River Basinwide Water Quality Plan." Division of Water Quality. <http://portal.ncdenr.org/web/wq/ps/bpu/basin/neuse/2009>. (October 2013).

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NC Environmental Management Commission. 2014. Rule 15A NCAC 02B.0295 - Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers.

Schafale, M.P. and A.S. Weakley. 1990. Classification of the Natural Communities of North Carolina, Third Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation, NCDENR, Raleigh, NC.

Appendix A. Supporting Figures

Figure 1. Project Vicinity Map

Figure 2. USGS Topographic Map

Figure 3. National Wetlands Inventory Map

Figure 4a. 1950 Historical Conditions

Figure 4b. 1981 Historical Conditions

Figure 5. Soils Map

Figure 6. FEMA Map

Figure 7. Existing Conditions Map

Figure 8. Conceptual Design Plan



0 0.75 1.5 3 Miles

JOHNSTON COUNTY
Scale: NTS

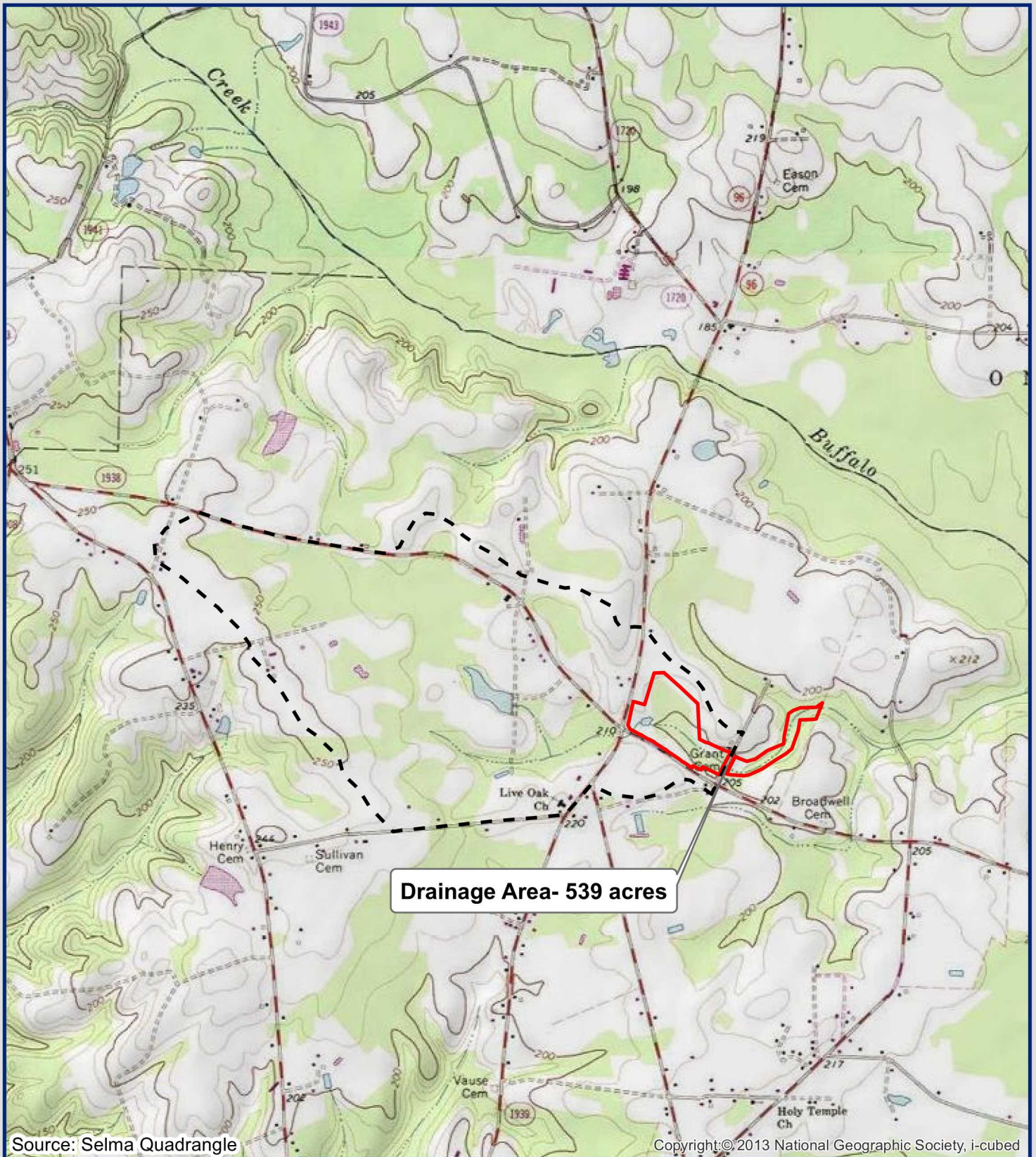




Figure 2.
USGS Topographic Map
Buffalo Branch Buffer/Nutrient Offset Site



0 1,000 2,000 4,000
Feet
1 inch = 2,000 feet

 Proposed Easement
 Drainage area

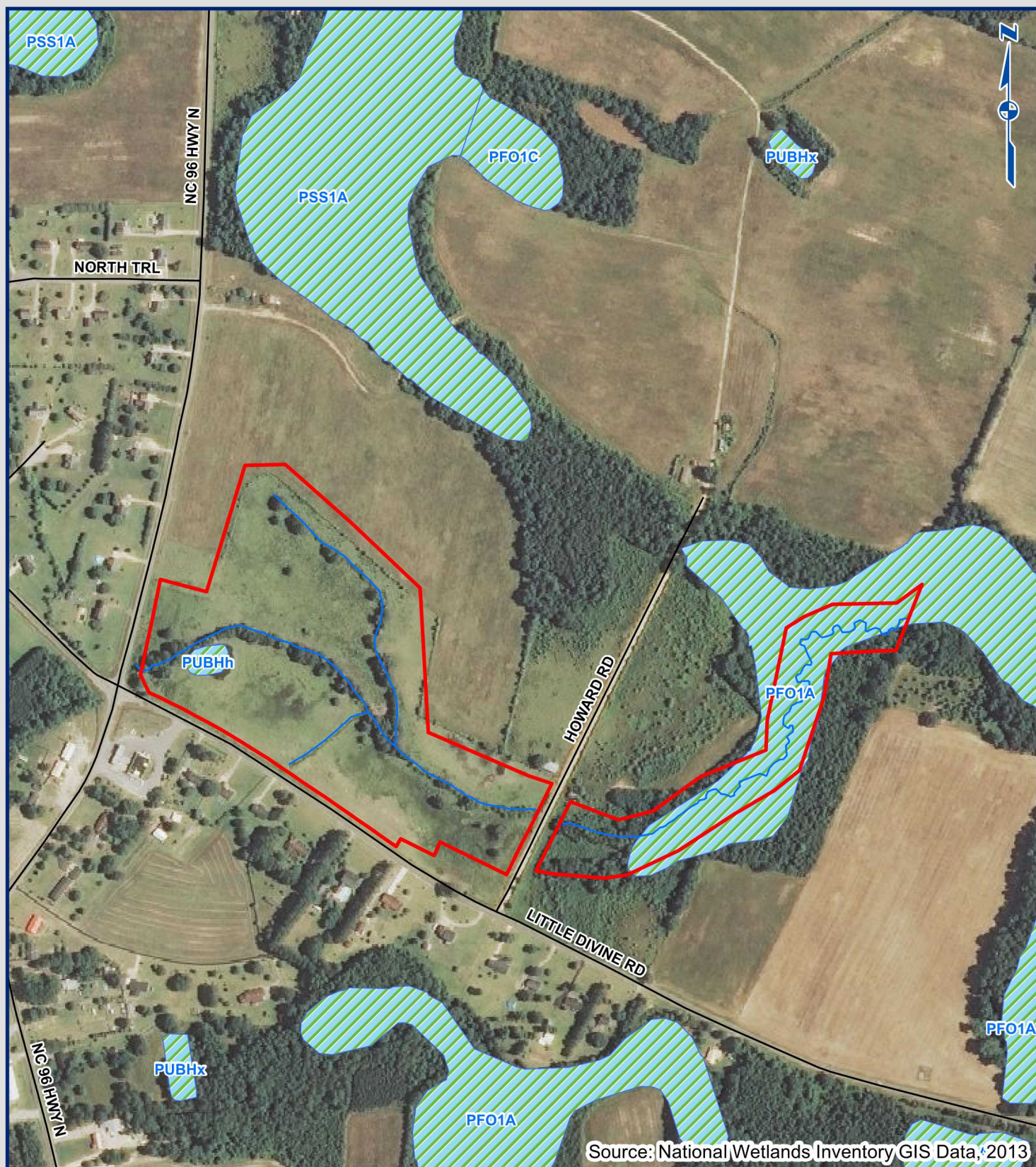


Figure 3.
National Wetlands Inventory Map
Buffalo Branch Buffer/Nutrient Offset Site

0 250 500 1,000
Feet

1 inch = 500 feet

- Roads
- Existing Streams
- NWI Wetlands
- Proposed Easement



Figure 4a.
1950 Historical Conditions
Buffalo Branch Buffer/Nutrient Offset Site



0 350 700 1,400
Feet

1 inch = 700 feet


— Roads
 Proposed Easement



Figure 4b.
1980 Historical Conditions
Buffalo Branch Buffer/Nutrient Offset Site



0 350 700 1,400
Feet

1 inch = 700 feet

— Roads
 Proposed Easement

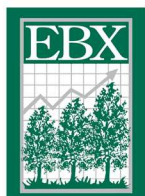
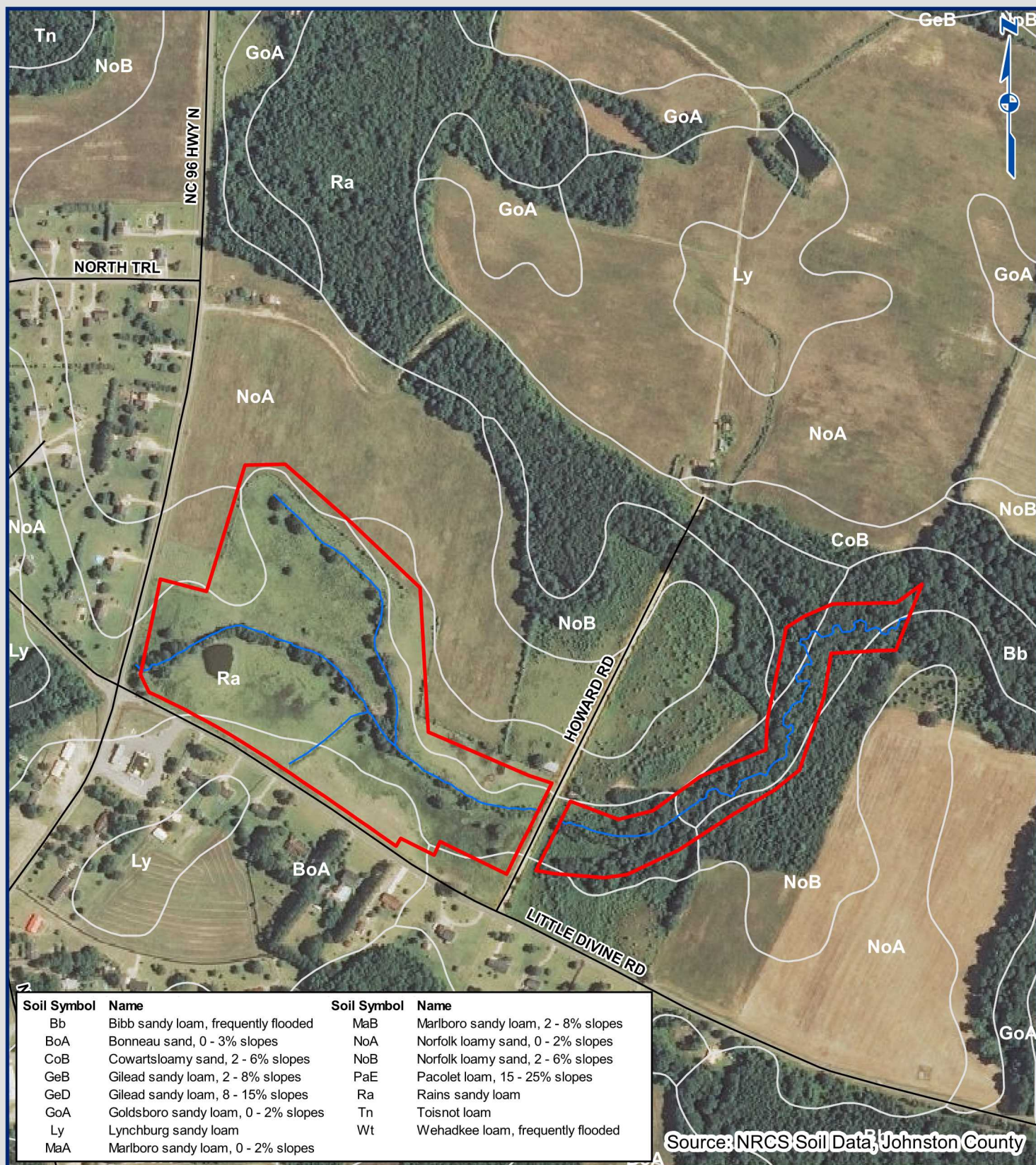


Figure 5.
Soils Map
Buffalo Branch Buffer/Nutrient Offset Site

0 250 500 1,000
 Feet

1 inch = 500 feet

- Roads
- Proposed Easement
- Existing Streams
- Johnston County Soils



Figure 6.
FEMA Map
Buffalo Branch Buffer/Nutrient Offset Site

0 250 500 1,000
Feet

1 inch = 500 feet

- Proposed Easement
- Existing Streams
- Roads
- FEMA 100-yr Floodplain
(none on property)

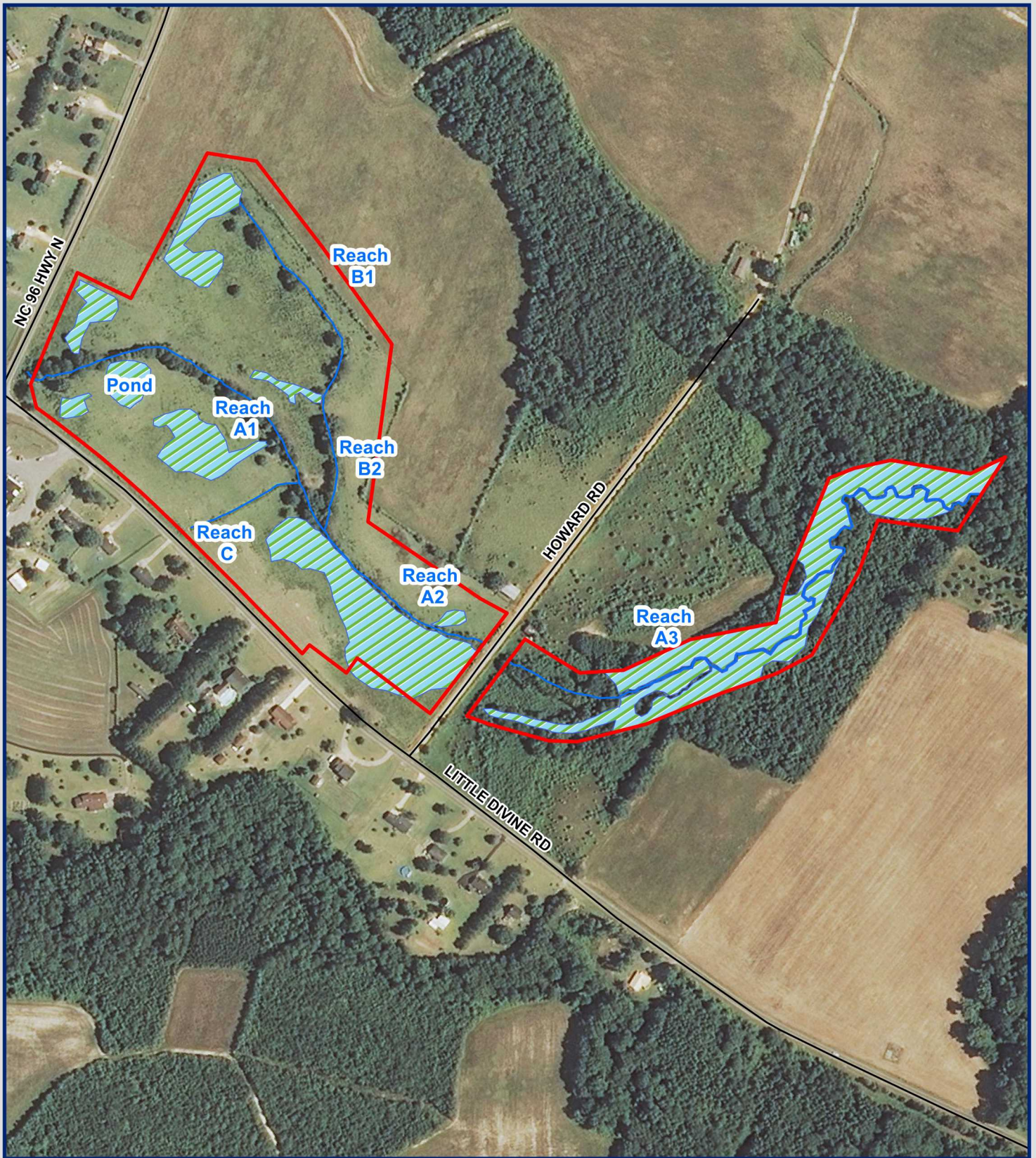


Figure 7.
Existing Conditions
Buffalo Branch Buffer/Nutrient Offset Site

0 200 400 800 Feet
1 inch = 400 feet

- Proposed Easement
- Existing Wetlands
- Existing Streams
- Roads



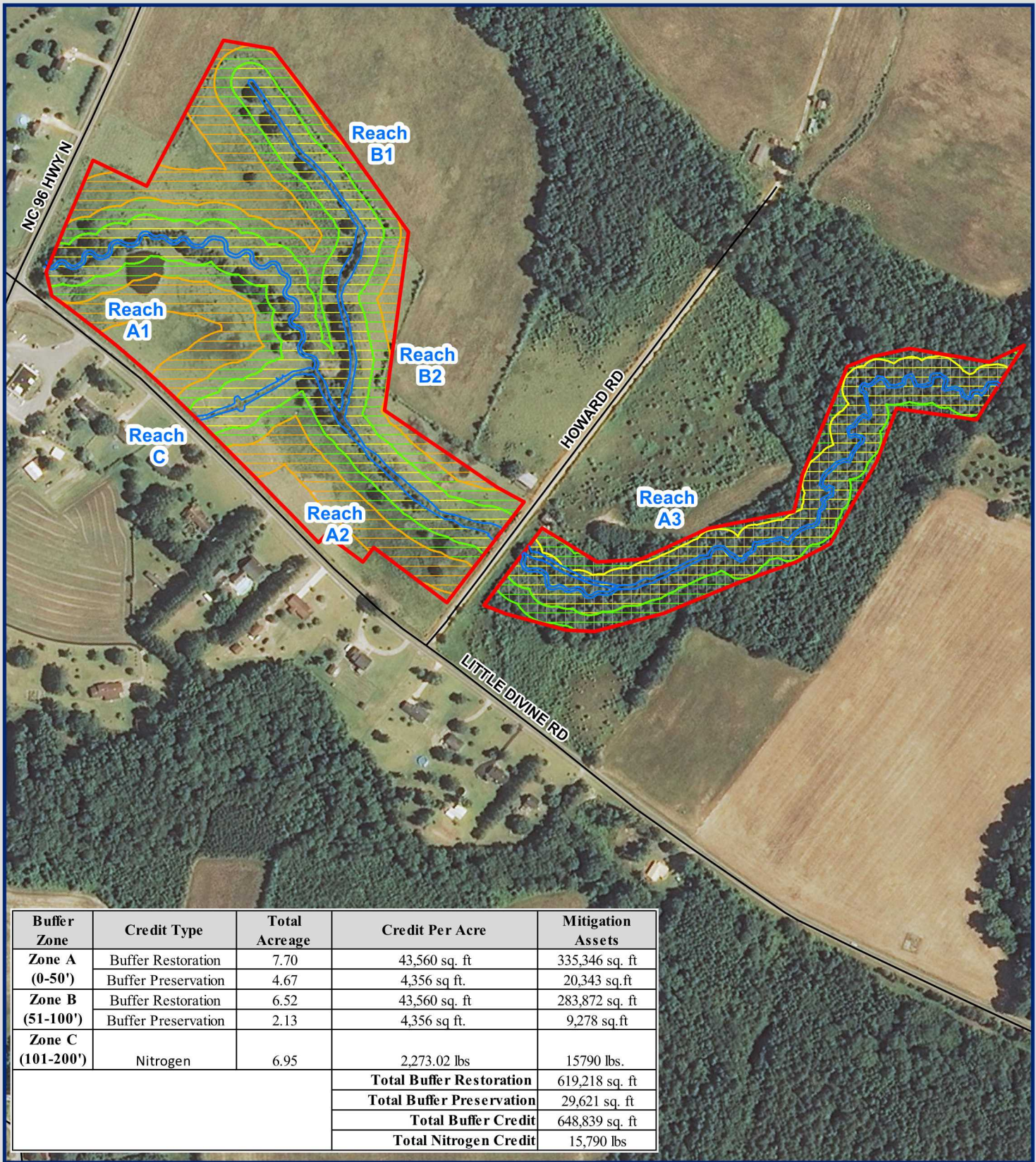


Figure 8.
Conceptual Design Plan - Overview
Buffalo Branch Buffer/Nutrient OffsetSite

0 200 400 800
Feet
1 inch = 400 feet

- Top of Bank
- Proposed Easement
- Zone A - Buffer Credit
- Zone B - Buffer Credit
- Zone C - Nutrient Offset
- Preservation

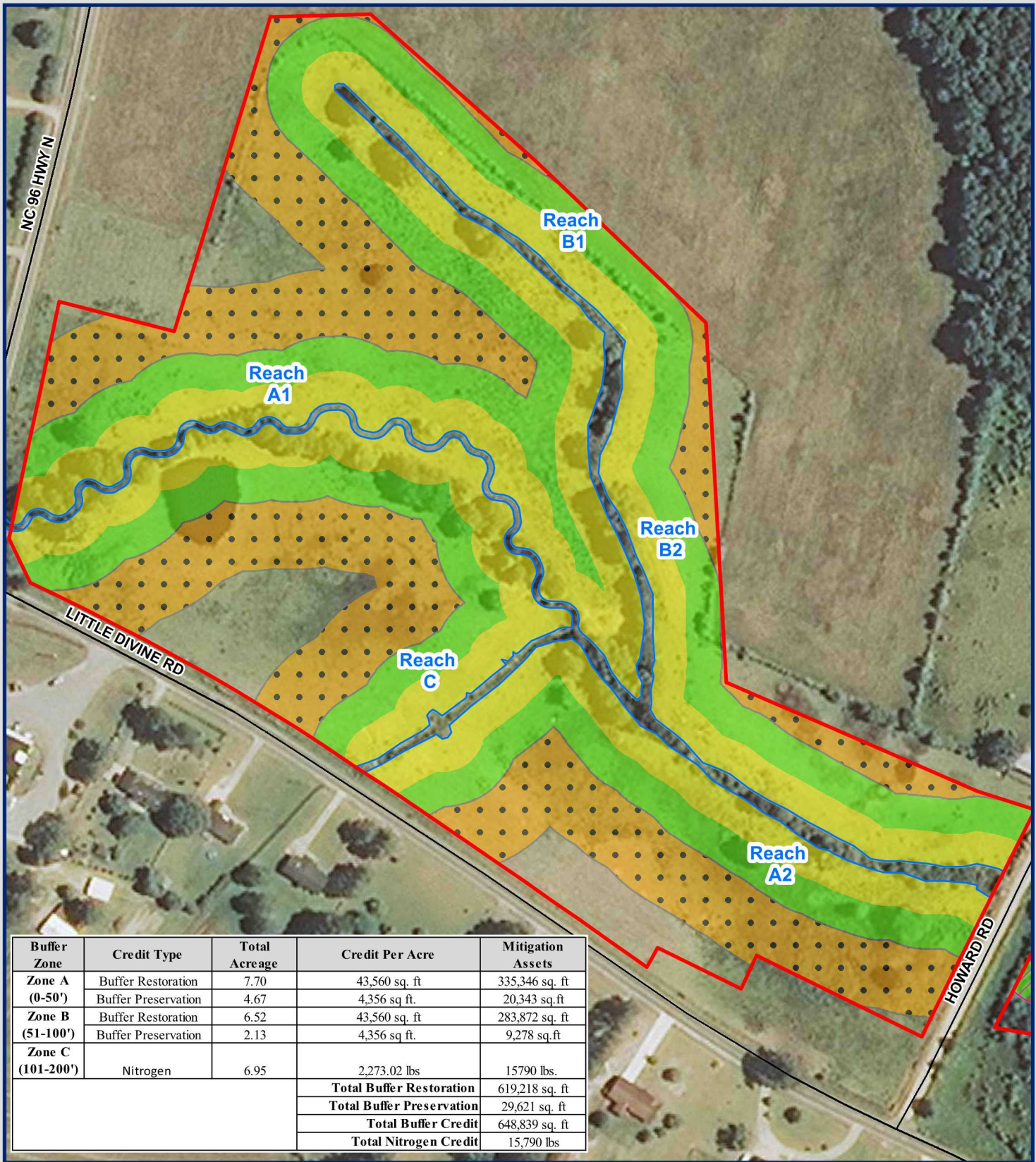
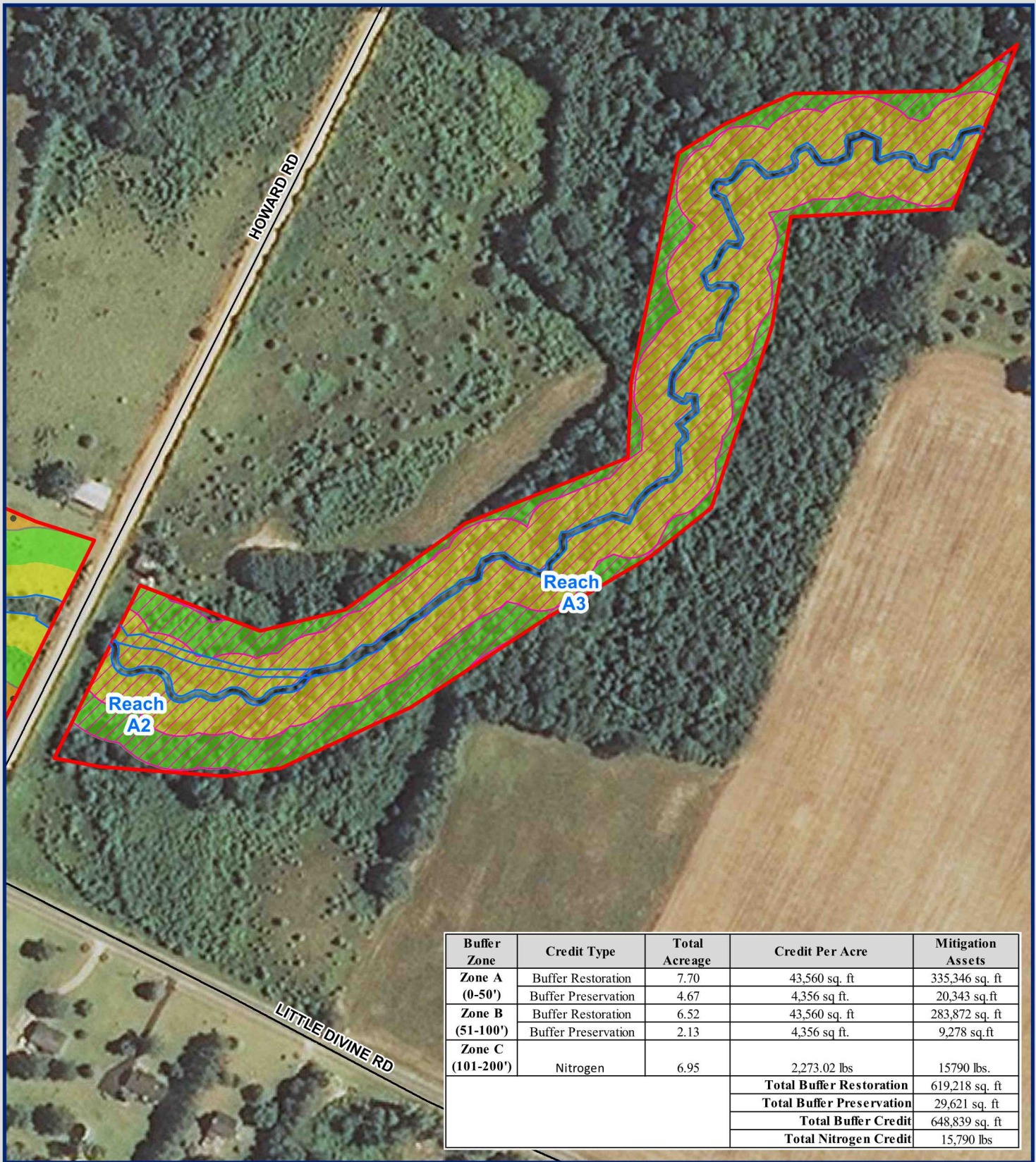


Figure 8a.
Conceptual Design Plan - Zoomed View
Buffalo Branch Buffer/Nutrient OffsetSite

0 100 200 400
Feet
1 inch = 200 feet

- Proposed Easement
- Top of Bank
- Zone A - Buffer Credit
- Zone B - Buffer Credit
- Zone C - Nutrient Offset
- Preservation Area



Buffer Zone	Credit Type	Total Acreage	Credit Per Acre	Mitigation Assets
Zone A (0-50')	Buffer Restoration	7.70	43,560 sq. ft	335,346 sq. ft
	Buffer Preservation	4.67	4,356 sq ft.	20,343 sq ft.
Zone B (51-100')	Buffer Restoration	6.52	43,560 sq. ft	283,872 sq. ft
	Buffer Preservation	2.13	4,356 sq ft.	9,278 sq.ft
Zone C (101-200')	Nitrogen	6.95	2,273.02 lbs	15790 lbs.
			Total Buffer Restoration	619,218 sq. ft
			Total Buffer Preservation	29,621 sq. ft
			Total Buffer Credit	648,839 sq. ft
			Total Nitrogen Credit	15,790 lbs



Figure 8b.
Conceptual Design Plan - Zoomed View
Buffalo Branch Buffer/Nutrient OffsetSite

0 100 200 400
Feet
1 inch = 200 feet

- Proposed Easement
- Top of Bank
- Zone A - Buffer Credit
- Zone B - Buffer Credit
- Zone C - Nutrient Offset
- Preservation Area

Appendix B. Stream Classification Forms

NC DWQ Stream Identification Form Version 4.11

Date: 9/11/14	Project/Site: Buffalo Branch Reach A1	Latitude: 35, 607309° N
Evaluator: BB	County: Johnston	Longitude: -78.288312° W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	34.75	Stream Determination (circle one) Ephemeral Intermittent Perennial
		Other e.g. Quad Name:

A. Geomorphology (Subtotal = 17)				
	Absent	Weak	Moderate	Strong
1 ^a . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 9.75)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75, OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 9/11/14	Project/Site: Buffalo Branch Reach A2	Latitude: 35, 407309° N
Evaluator: BB	County: Johnston	Longitude: -78.288312° W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 31.75	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 14)	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 9.75)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75, OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 9/11/14	Project/Site: Buffalo Branch Reach A3	Latitude: 35, 607309° N
Evaluator: BB	County: Johnston	Longitude: -78.288312° W
Total Points: 35 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent <u>Perennial</u>	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 18.5)	Absent	Weak	Moderate	Strong
1 ^a . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 9/11/14	Project/Site: Buffalo Branch Reach B1	Latitude: 35.607309° N
Evaluator: BB	County: Johnston	Longitude: -78.288312° W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$	Stream Determination (circle one) Ephemeral <u>Intermittent</u> Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1 ^a . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 9)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; QBL = 1.5; Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: <u>9/11/14</u>	Project/Site: <u>Buffalo Branch</u> <u>Reach B2</u>	Latitude: <u>35, 607 309° N</u>
Evaluator: <u>BB</u>	County: <u>Johnston</u>	Longitude: <u>-78. 288 312° W</u>
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30 * <div style="float: right; font-size: 2em;">23.5</div>	Stream Determination (circle one) Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial <input type="checkbox"/>	Other e.g. Quad Name:

A. Geomorphology (Subtotal = <u>8.5</u>)	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	<u>2</u>	3
2. Sinuosity of channel along thalweg	0	1	<u>2</u>	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	<u>0</u>	1	2	3
4. Particle size of stream substrate	0	<u>1</u>	2	3
5. Active/relict floodplain	0	1	<u>2</u>	3
6. Depositional bars or benches	<u>0</u>	1	<u>2</u>	3
7. Recent alluvial deposits	<u>0</u>	1	2	3
8. Headcuts	0	<u>0</u>	2	3
9. Grade control	<u>0</u>	0.5	1	1.5
10. Natural valley	0	<u>0.5</u>	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

* artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = <u>7</u>)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	<u>1</u>	2	3
13. Iron oxidizing bacteria	<u>0</u>	1	2	3
14. Leaf litter	1.5	<u>1</u>	0.5	0
15. Sediment on plants or debris	0	0.5	<u>1</u>	1.5
16. Organic debris lines or piles	0	0.5	<u>1</u>	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = <u>6</u>)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	<u>2</u>	1	0
19. Rooted upland plants in streambed	3	2	<u>1</u>	0
20. Macrobenthos (note diversity and abundance)	0	<u>1</u>	2	3
21. Aquatic Mollusks	<u>0</u>	1	2	3
22. Fish	<u>0</u>	0.5	1	1.5
23. Crayfish	0	<u>0.5</u>	1	1.5
24. Amphibians	0	<u>0.5</u>	1	1.5
25. Algae	0	0.5	1	<u>1.5</u>
26. Wetland plants in streambed	FACW = 0.75; <u>OBL = 1.5</u> ; Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 9/11/14	Project/Site: Buffalo Branch Reach C	Latitude: 35, 407309° N
Evaluator: BB	County: Johnston	Longitude: -78.288 312° W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral <u>Intermittent</u> Perennial	Other e.g. Quad Name:

19.5

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

January 8, 2015

EBX Neuse I, LLC
David Godley, EBX
909 Capability Dr Suite 3100
Raleigh, NC 27606

Subject: Buffer Determination
NBRRO#14-475
Johnston County

Determination Type:	
Buffer Call	Isolated or EIP Call
<input checked="" type="checkbox"/> Neuse (15A NCAC 2B .0233) <input type="checkbox"/> Tar-Pamlico (15A NCAC 2B .0259) <input type="checkbox"/> Jordan (15A NCAC 2B .0267)	<input type="checkbox"/> Ephemeral/Intermittent/Perennial Determination <input type="checkbox"/> Isolated Wetland Determination

Project Name: Buffalo Branch Mitigation Bank

Location/Directions: Property is located at the NE quadrant of HWY 96 and Little Divine Rd.
Intersection in Johnston County, NC

Subject Stream: Buffalo Creek

Determination Date: December 19, 2014

Staff: James Graham

Feature/Flag	Not Subject To Buffers	Subject To Buffers	E/I/P*	Start@	Stop@	Soil Survey	USGS Topo
A		X	P			X	X
B		X	I			X	
C		X	I (Modified Natural Stream)			X	

*E/I/P - Ephemeral/Intermittent/Perennial

Explanation: The feature(s) listed above has or have been located on the Soil Survey of Wake County, North Carolina or the most recent copy of the USGS Topographic map at a 1:24,000 scale. Each feature that is checked "Not Subject" has been determined not to be a stream or is not present on the property. Features that are checked "Subject" have been located on the property and possess characteristics that qualify it to be a stream. There may be

One
North Carolina
Naturally

considered jurisdictional according to the US Army Corps of Engineers and/or to the Division of Water Resources (DWR).

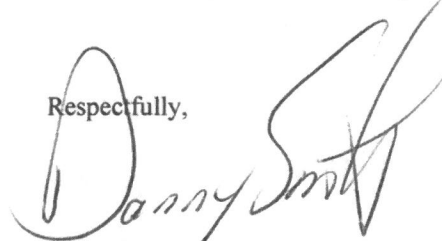
This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the DWR or Delegated Local Authority may request a determination by the Director. An appeal request must be made within sixty (60) days of date of this letter or from the date the affected party (including downstream and/or adjacent owners) is notified of this letter. A request for a determination by the Director shall be referred to the Director in writing c/o Karen Higgins, DWR WeBSCaPe Unit, 1650 Mail Service Center, Raleigh, NC 27699.

This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days.

The owner/future owners should notify the Division of Water Resources (including any other Local, State, and Federal Agencies) of this decision concerning any future correspondences regarding the subject property (stated above). This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the Division of Water Resources (Central Office) at (919)-807-6300, and the US Army Corp of Engineers (Raleigh Regulatory Field Office) at (919)-554-4884.

If you have questions regarding this determination, please feel free to contact James Graham at (919) 791-4256.

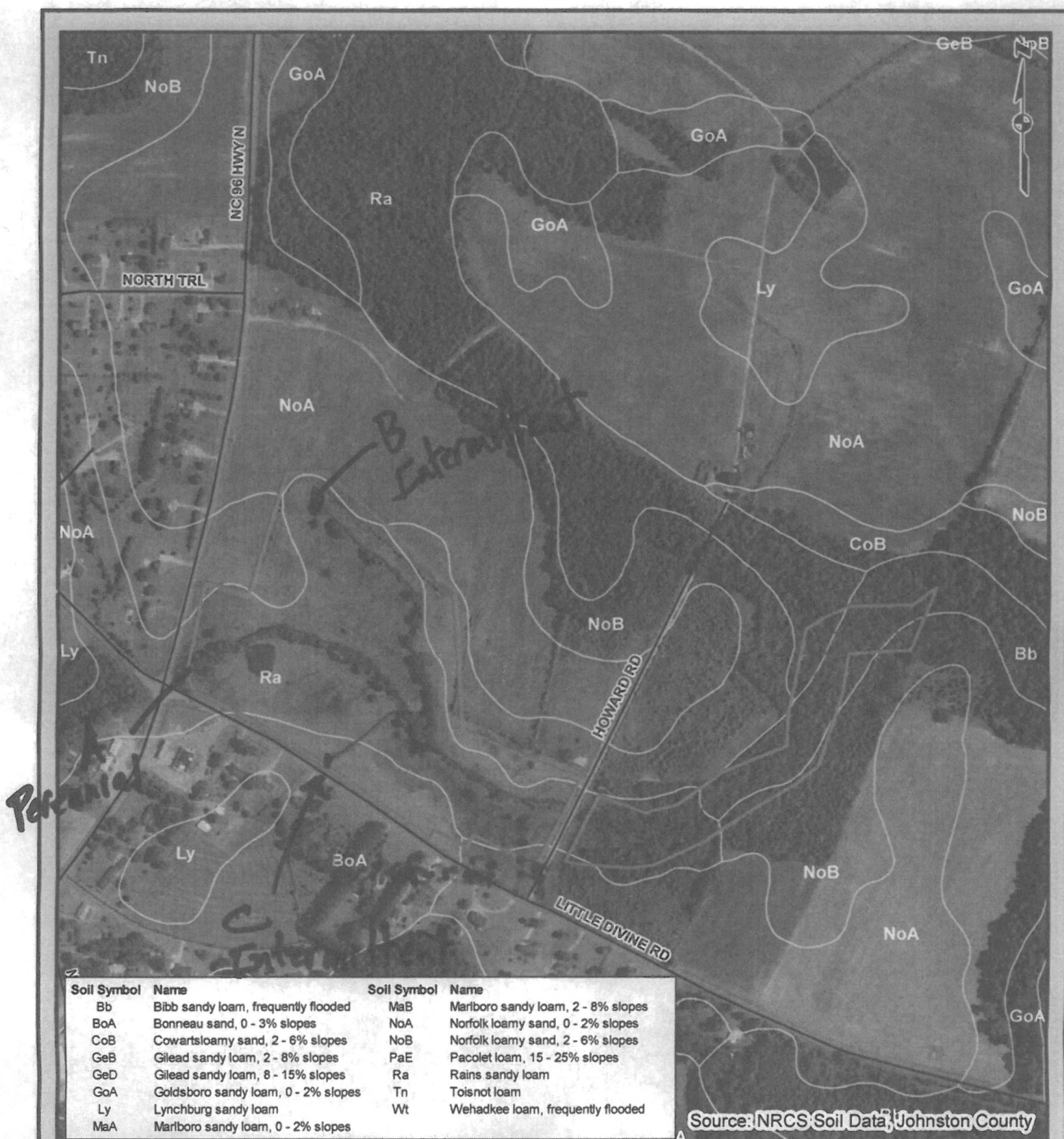
Respectfully,

A handwritten signature in black ink, appearing to read "Danny Smith", is written over a horizontal line.

Danny Smith, Supervisor
Water Quality Section
Raleigh Regional Office

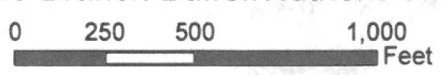
cc: RRO/SWP File Copy

Daniel Ingram
WK Dickson
720 Corporate Center Dr.
Raleigh, NC 27607

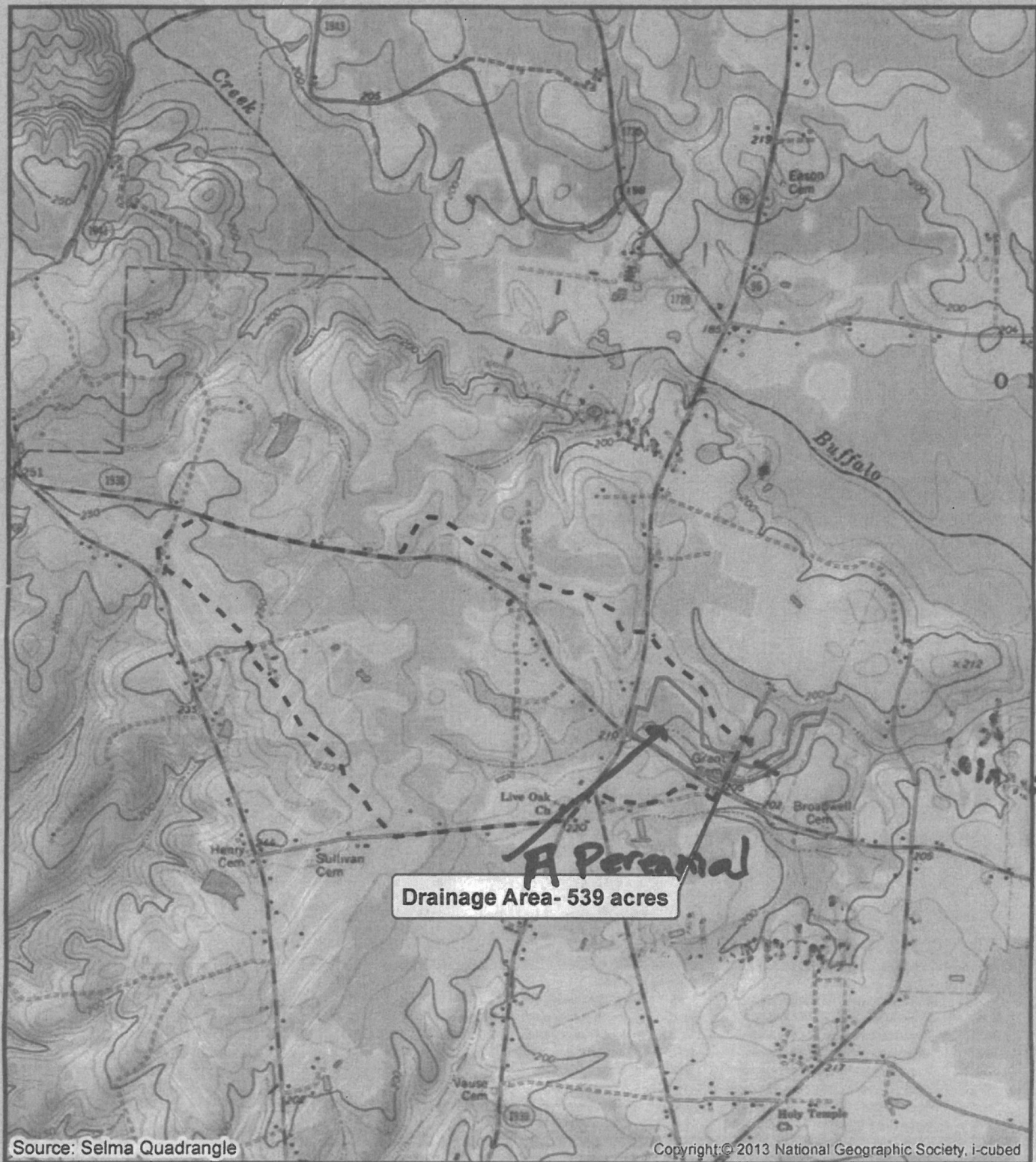


Joe 12/17/24

**Figure 5.
Soils Map
Buffalo Branch Buffer/Nutrient Offset Site**



- Roads
- Proposed Easement
- Existing Streams
- Johnston County Soils



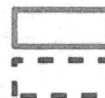
300
14-475

Figure 2.

USGS Topographic Map
Buffalo Branch Buffer/Nutrient Offset Site

0 1,000 2,000 4,000 Feet

1 inch = 2,000 feet



Proposed Easement

Drainage area

Appendix C. Correspondence



October 6, 2014

Vann Stancil
Habitat Conservation Biologist
North Carolina Wildlife Resources Commission
215 Jerusalem Church Road
Kenly, NC 27542

Subject: Project Scoping for Buffalo Branch Site Stream Mitigation Project in Johnston County.

Dear Mr. Stancil,

The purpose of this letter is to request review and comment on any possible issues that might emerge with respect to fish and wildlife associated with a potential stream restoration project on the attached site (USGS site maps with approximate property lines and areas of potential ground disturbance are enclosed). The Buffalo Branch site has been identified by Environmental Banc & Exchange, LLC to provide compensatory mitigation for unavoidable stream impacts through the EBX Neu-Con Umbrella Mitigation Bank. This site is currently active cattle pastures and bottomland hardwood swamps surrounding unnamed tributaries to Buffalo Creek. The stream channels have been straightened and channelized.

We thank you in advance for your timely response and cooperation. You may return the comment to my attention at the address below. Please feel free to contact me at dingram@wkdickson.com with any questions that you may have concerning the extent of site disturbance associated with this project.

Sincerely,

A handwritten signature in blue ink that reads 'Daniel P. Ingram'.

W.K. Dickson & Co., Inc.

Daniel Ingram

Enclosures



October 6, 2014

Renee Gledhill-Earley
North Carolina State Historic Preservation Office
4617 Mail Service Center
Raleigh NC 27699-4617

Subject: Environmental Review for Buffalo Branch Stream Mitigation Project in Johnston County.

Dear Ms. Gledhill-Earley,

The Buffalo Branch Site has been identified by Environmental Banc & Exchange, LLC to provide compensatory mitigation for unavoidable stream and wetland impacts through the EBX Neu-Con Umbrella Mitigation Bank. This site is currently active cattle pasture and bottomland hardwood swamps surrounding unnamed tributaries to Buffalo Creek. The stream channels have been straightened and channelized.

WK Dickson requests review and comment on any possible issues that might emerge with respect to archaeological or cultural resources associated with a potential stream restoration project on the Buffalo Branch site (a vicinity and USGS site map with approximate limits of conservation easement is attached).

An adjacent cemetery located at the intersection of Howard Road and Little Divine Road is present; however, no impacts or encroachment is anticipated from restoration activities. The proposed conservation easement will remain on project property to avoid any disturbance around the cemetery parcel. No additional architectural structures or archeological artifacts have been observed or noted during preliminary surveys of the site for restoration purposes. In addition, the majority of the site has historically been disturbed due to agricultural practices and channel modifications.

We ask that you review this site based on the attached information to determine the presence of any historic properties. We thank you in advance for your timely response and cooperation. You may return the comment to my attention at the address below. Please feel free to contact me at dingram@wkdickson.com with any questions that you may have concerning the extent of site disturbance associated with this project.

Sincerely,

A handwritten signature in blue ink that reads 'Daniel P. Ingram'.

W.K. Dickson & Co., Inc.
Daniel Ingram
Enclosures

720 Corporate Center Drive
Raleigh, NC 27607
Tel. 919.782.0495
Fax 919.782.9672
www.wkdickson.com

Transportation • Water Resources • Urban Development • Geomatics



October 6, 2014

Mr. Pete Benjamin
US Fish and Wildlife Service
Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Subject: Project Scoping for Buffalo Branch Stream Mitigation Project in Johnston County.

Dear Mr. Benjamin,

The Buffalo Branch site has been identified by Environmental Banc & Exchange, LLC to provide compensatory mitigation for unavoidable stream impacts through the EBX Neu-Con Umbrella Mitigation Bank. This site is currently active cattle pasture and bottomland hardwood swamps surrounding unnamed tributaries to Buffalo Creek. Some of the stream channels have been straightened and channelized.

THE US Fish and Wildlife Service (USFWS) database (<http://www.fws.gov/endangered/>) lists four endangered species for Johnston County, North Carolina: Red-cockaded woodpecker (*Picoides borealis*), Tar River spiny mussel (*Eliptio steinstansana*), dwarf wedgemussel (*Alasmodonta heterodon*), and Michaux's sumac (*Rhus michauxii*). We have determined that no suitable habitat for the listed species' exists within the proposed project boundary.

Please provide comments on any possible issues that might emerge with respect to endangered species, migratory birds, or other trust resources from the construction of a stream restoration project on the subject property. Maps showing the location and approximate limits of the conservation easement are enclosed.

We thank you in advance for your timely response and cooperation. You may return the comment to my attention at the address below. Please feel free to contact me at dingram@wkdickson.com with any questions that you may have concerning the extent of site disturbance associated with this project.

Sincerely,

A handwritten signature in blue ink that reads 'Daniel P. Ingram'.

W.K. Dickson & Co., Inc.
Daniel Ingram
Enclosures

720 Corporate Center Drive
Raleigh, NC 27607
Tel. 919.782.0495
Fax 919.782.9672
www.wkdickson.com

Transportation • Water Resources • Urban Development • Geomatics

From: Stancil, Vann F [mailto:vann.stancil@ncwildlife.org]
Sent: Friday, October 24, 2014 2:13 PM
To: Daniel Ingram
Subject: Buffalo Branch Mitigation Project

Mr. Ingram,

I'm responding to your request for issues related to fish and wildlife that may arise from the stream restoration project on unnamed tributaries to Buffalo Creek in Johnston Co. I have reviewed your letter and attached maps and do not anticipate any fish and wildlife concerns from this project. This appears to be a good location for a restoration project. Thanks for the opportunity to review this.

Vann F. Stancil - Special Project Coordinator
Habitat Conservation
NC Wildlife Resources Commission
215 Jerusalem Church Road
Kenly, NC 27542
919-284-5218

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**North Carolina Department of Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

October 21, 2014

David Ingram
WK Dickson & Company, Inc.
720 Corporate Center Drive
Raleigh, NC 27607

Re: Buffalo Branch Stream Mitigation, Johnston County, ER 14-2334

Dear Mr. Ingram:

Thank you for your letter of October 6, 2014, concerning the above project.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

A handwritten signature in blue ink that reads "Renee Gledhill-Earley".

A handwritten signature in blue ink that reads "for Ramona M. Bartos".
for Ramona M. Bartos

IRT Pre-Prospectus Site Visit

Buffalo Branch Stream Mitigation Bank

Neu-Con Umbrella Mitigation Bank

Johnston County, NC Neuse River Basin

Wednesday, July 30th 2014

Attendance: Bill Biddlecome (USACE)
Todd Tugwell (USACE)
Eric Kulz (NCDWR)
Emily Jernigan (USFWS)
Ely Perry (EBX Neuse)
Burt Rudolph (EBX Neuse)
David Godley (EBX Neuse)
Aaron Speaks (EBX Neuse)

Notes

- For the Hydrologic Restoration and Enhancement on Reach A1 and A2 the focus should be on functional uplift. Pre-Construction data would likely be needed to support success criteria on these reaches. There was concern with the Hydrologic Enhancement portions and how adding 30 acres of drainage area was really enhancing the already jurisdictional feature enough to justify a 1:1.5 mitigation ratio. EBX emphasized the increased drainage area will enhance the adjacent wetlands which will in-turn provide longer/sustained flow in the channel which should improve the DO and temperature in the water providing more suitable habitat for benthics and other aquatic species. Its possible EBX Neuse might recommend receiving stream credit for restoring/enhancing hydrology to wetlands/prior converted wetlands adjacent to the stream. Reach A1 and A2 would need to have flow for 30 consecutive days with ordinary high water marks, stream sorting, and wrack lines. We need to answer how the upstream work enhances the downstream hydrology.
- There was some concern that the head of Reach A1 might not be a stream but rather a ditched Rains Flat. EBX and its consultant, WK Dickson are confident that the feature is a stream which is supported by Lidar and this topic will be revisited.
- The Buffer Enhancement showed on Figure 7 on the west side of Reach A1 is not currently included in the credit calculations and will not be included in the Prospectus.
- There is a shallow pond south of Reach A2 and west of Howard Rd that drains into A2 that may be included in the Prospectus. There is a channelized feature north of A2 and east of Howard Rd. that may be included in the Prospectus. The IRT stated simply buffering this feature would

not be an ideal mitigation solution and that the bed of this channel should be raised to provide functional uplift if it is to be included.

- Why is there not a Reach B?
- Reach C1 will receive a multiplier of 10% if EBX Neuse decides to buffer and protect the linear wetland feature north of Little Divine Rd. that drains into Reach C1 approximately 100 LF downstream of Hwy 96 on the left bank. Buffering this feature will greatly improve the functional uplift of Reach C1 and the receiving waters. Credit for Buffer Restoration will not be given within 50 LF of the feature as it enters Reach C1.
- The IRT commented that on Reach C2 downstream/east of Howard Rd they do not currently support a mitigation credit ratio of 1:2.5 for the Enhancement II of fencing, planting and invasive control as needed. Cattle have access to the stream in this reach and it will steadily degrade over time as they access it for drinking and to cool themselves. EBX will be pursuing an alternate action plan/mitigation credit ratio to remedy this situation with the IRT and the landowner before stream conditions deteriorate.
- Call all of Reach E1 Enhancement II and don't specify "Headwater" it's still a 1:2.5 mitigation ratio and shouldn't be differentiated in the credit table or on the maps.
- EBX Neuse will be in discussion with NCDOT on potential culvert replacements on Howard Rd. and a culvert replacement or at least a clean out of the culverts at the intersection of Little Divine Rd and Hwy 96.

The IRT recommends EBX Neuse submit a Prospectus and continue to pursue the site but revisit Reaches A1, A2, as well as the portion of C2 downstream of Howard Rd., and C3.

Appendix D. Conservation Easement and Plat

MODEL CONSERVATION EASEMENT

*January 18, 2001
Rev'd October 16, 2002
Rev'd August, 2003*

Model Conservation Easement for use in preserving mitigation property. Language in italics is instructional, and should be deleted when site-specific Conservation Easement is prepared.

PERMANENT CONSERVATION EASEMENT

THIS CONSERVATION EASEMENT ("Conservation Easement") made this _____ day of _____, 200_ by and between _____, ("Grantor") and _____ (Grantee).

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

RECITALS

WHEREAS, Grantor owns in fee simple certain real property situated, lying and being in _____ County, North Carolina, more particularly described in Exhibit A attached hereto and incorporated herein ("Property");

WHEREAS, Grantee is [either a public body of this state, an agency of the United States, or a nonprofit corporation or trust whose purpose is the conservation of property], and is qualified to be the Grantee of a conservation easement pursuant to N.C. Gen. Stat. § 121-35;

WHEREAS, Grantor and Grantee recognize the conservation, scenic, natural, or aesthetic value of the property in its natural state, which includes the following natural communities: [describe by wetland and/or stream type, as well as any associated buffers or upland communities]. The purpose of this Conservation Easement is to maintain wetland and/or riparian resources and other natural values of the Property, and prevent the use or development of the Property for any purpose or in any manner that would conflict with the maintenance of the Property in its natural condition.

[For use when the mitigation is offered for impacts of a single individual or general permit use] WHEREAS, the preservation of the Property is a condition of Department of the Army permit Action ID _____ issued by the Wilmington District Corps of Engineers, required to mitigate for unavoidable stream and/or wetland impacts authorized by that permit. Grantor and Grantee agree that third-party rights of enforcement shall be held by the U.S. Army Corps of Engineers, Wilmington District

(Corps, to include any successor agencies), and that these rights are in addition to, and do not limit, the rights of enforcement under said permit.

[Alternate paragraph for use when the conservation easement supports a mitigation bank] WHEREAS, the preservation of the Property is required by a Mitigation Banking Instrument for the [Name of Bank], Department of the Army Action ID [Action ID number for the mitigation bank]. The Mitigation Bank is intended to be used to compensate for unavoidable stream and/or wetland impacts authorized by permits issued by the Department of the Army. Grantor and Grantee agree that third-party rights of enforcement shall be held by the U.S. Army Corps of Engineers, Wilmington District (Corps, to include any successor agencies), and that these rights are in addition to, and do not limit, the rights of the parties to the Mitigation Banking Instrument.

NOW, THEREFORE, for and in consideration of the covenants and representations contained herein and for other good and valuable consideration, the receipt and legal sufficiency of which is hereby acknowledged, Grantor hereby unconditionally and irrevocably grants and conveys unto Grantee, its heirs, successors and assigns, forever and in perpetuity a Conservation Easement of the nature and character and to the extent hereinafter set forth, over the Property described on Exhibit A, together with the right to preserve and protect the conservation values thereof, as follows:

ARTICLE I. DURATION OF EASEMENT

This Conservation Easement shall be perpetual. This conservation Easement is an easement in gross, runs with the land and is enforceable by Grantee against Grantor, Grantor's personal representatives, heirs, successors and assigns, lessees, agents and licensees.

ARTICLE II. PROHIBITED AND RESTRICTED ACTIVITIES

Any activity on, or use of, the Property inconsistent with the purpose of this Conservation Easement is prohibited. The Property shall be preserved in its natural condition and restricted from any development that would impair or interfere with the conservation values of the Property.

Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited, restricted or reserved as indicated hereunder:

A. Disturbance of Natural Features. Any change disturbance, alteration or impairment of the natural features of the Property or any introduction of non-native plants and/or animal species is prohibited.

B. Construction. There shall be no constructing or placing of any building, mobile home, asphalt or concrete pavement, billboard or other advertising display,

antenna, utility pole, tower, conduit, line, pier, landing, dock or any other temporary or permanent structure or facility on or above the Property.

C. Industrial, Commercial and Residential Use. Industrial, residential and/or commercial activities, including any right of passage for such purposes are prohibited.

D. Agricultural, Grazing and Horticultural Use. Agricultural, grazing, animal husbandry, and horticultural use of the Property are prohibited.

E. Vegetation. There shall be no removal, burning, destruction, harming, cutting or mowing of trees, shrubs, or other vegetation on the Property.

F. Roads and Trails. There shall be no construction of roads, trails or walkways on the property; nor enlargement or modification to existing roads, trails or walkways.

G. Signage. No signs shall be permitted on or over the Property, except the posting of no trespassing signs, signs identifying the conservation values of the Property, signs giving directions or proscribing rules and regulations for the use of the Property and/or signs identifying the Grantor as owner of the property.

H. Dumping or Storage. Dumping or storage of soil, trash, ashes, garbage, waste, abandoned vehicles, appliances, machinery or hazardous substances, or toxic or hazardous waste, or any placement of underground or aboveground storage tanks or other materials on the Property is prohibited.

I. Excavation, Dredging or Mineral Use. There shall be no grading, filling, excavation, dredging, mining or drilling; no removal of topsoil, sand, gravel, rock, peat, minerals or other materials, and no change in the topography of the land in any manner on the Property, except to restore natural topography or drainage patterns.

J. Water Quality and Drainage Pattern. There shall be no diking, draining, dredging, channeling, filling, leveling, pumping, impounding or related activities, or altering or tampering with water control structures or devices, or disruption or alteration of the restored, enhanced, or created drainage patterns. In addition, diverting or causing or permitting the diversion of surface or underground water into, within or out of the easement area by any means, removal of wetlands, polluting or discharging into waters, springs, seeps, or wetlands, or use of pesticide or biocides is prohibited.

K. Development Rights. No development rights that have been encumbered or extinguished by this Conservation Easement shall be transferred pursuant to a transferable development rights scheme or cluster development arrangement or otherwise.

L. Vehicles. The operation of mechanized vehicles, including, but not limited to, motorcycles, dirt bikes, all-terrain vehicles, cars and trucks is prohibited. *[The Corps will generally allow the use of vehicles on existing roads provided those roads are*

identified by reference to a recorded map showing their location, configuration, and size.]

M. Other Prohibitions. Any other use of, or activity on, the Property which is or may become inconsistent with the purposes of this grant, the preservation of the Property substantially in its natural condition, or the protection of its environmental systems, is prohibited.

ARTICLE III GRANTOR'S RESEVERED RIGHTS

The Grantor expressly reserves for himself, his personal representatives, heirs, successors or assigns, the right to continue the use of the property for all purposes not inconsistent with this Conservation Easement, including, but not limited to, the right to quiet enjoyment of the Property, the rights of ingress and egress, the right to hunt, fish, and hike on the Property, the right to sell, transfer, gift or otherwise convey the Property, in whole or in part, provided such sale, transfer or gift conveyance is subject to the terms of, and shall specifically reference, this Conservation Easement.

[For use when mitigation work (approved or required restoration, creation, or enhancement) is to be done on the property] Notwithstanding the foregoing Restrictions, Grantor reserves for Grantor, its successors and assigns, the right to construct wetland and stream mitigation on the Property, in accordance with the *[describe mitigation plan by title, date and permit action id if a single mitigation site; if a mitigation bank, include the language "detailed mitigation plan approved in accordance with the Mitigation Banking Instrument for the _____ Mitigation Bank.]*

ARTICLE IV. GRANTEE'S RIGHTS

The Grantee or its authorized representatives, successors and assigns, and the Corps, shall have the right to enter the Property at all reasonable times for the purpose of inspecting said property to determine if the Grantor, or his personal representatives, heirs, successors, or assigns, is complying with the terms, conditions, restrictions, and purposes of this Conservation Easement. The Grantee shall also have the right to enter and go upon the Property for purposes of making scientific or educational observations and studies, and taking samples. The easement rights granted herein do not include public access rights.

ARTICLE V ENFORCEMENT AND REMEDIES

A. To accomplish the purposes of this Easement, Grantee is allowed to prevent any activity on or use of the Property that is inconsistent with the purposes of this Easement and to require the restoration of such areas or features of the Property that may be damaged by such activity or use. Upon any breach of the terms of this Conservation

Easement by Grantor that comes to the attention of the Grantee, the Grantee shall notify the Grantor in writing of such breach. The Grantor shall have 30 days after receipt of such notice to correct the conditions constituting such breach. If the breach remains uncured after 30 days, the Grantee may enforce this Conservation Easement by appropriate legal proceedings including damages, injunctive and other relief. Notwithstanding the foregoing, the Grantee reserves the immediate right, without notice, to obtain a temporary restraining order, injunctive or other appropriate relief if the breach of the term of this Conservation Easement is or would irreversibly or otherwise materially impair the benefits to be derived from this Conservation Easement. The Grantor and Grantee acknowledge that under such circumstances damage to the Grantee would be irreparable and remedies at law will be inadequate. The rights and remedies of the Grantee provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available to Grantee in connection with this Conservation Easement. The costs of a breach, correction or restoration, including the Grantee's expenses, court costs, and attorneys' fees, shall be paid by Grantor, provided Grantor is determined to be responsible for the breach. The Corps shall have the same right to enforce the terms and conditions of this easement as the Grantee.

B. No failure on the part of the Grantee to enforce any covenant or provision hereof shall discharge or invalidate such covenant or any other covenant, condition, or provision hereof or affect the right to Grantee to enforce the same in the event of a subsequent breach or default.

C. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury or change in the Property resulting from causes beyond the Grantor's control, including, without limitation, fire, flood, storm, war, acts of God or third parties, except Grantor's lessees or invitees; or from any prudent action taken in good faith by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to life, damage to property or harm to the Property resulting from such causes.

ARTICLE VI MISCELLANEOUS

A. Warranty. Grantor warrants, covenants and represents that it owns the Property in fee simple, and that Grantor either owns all interests in the Property which may be impaired by the granting of this Conservation Easement or that there are no outstanding mortgages, tax liens, encumbrances, or other interests in the Property which have not been expressly subordinated to this Conservation Easement. Grantor further warrants that Grantee shall have the use of and enjoy all the benefits derived from and arising out of this Conservation Easement, and that Grantor will warrant and defend title to the Property against the claims of all persons.

B. Subsequent Transfers. The Grantor agrees to incorporate the terms of this Conservation Easement in any deed or other legal instrument that transfers any interest in all or a portion of the Property. The Grantor agrees to provide written notice of such transfer at least thirty (30) days prior to the date of the transfer. The Grantor and Grantee agree that the terms of this Conservation Easement shall survive any merger of the fee and easement interests in the Property or any portion thereof and shall not be amended, modified or terminated without the prior written consent and approval of the Corps.

C. Assignment. The parties recognize and agree that the benefits of this Conservation Easement are in gross and assignable provided, however that the Grantee hereby covenants and agrees, that in the event it transfers or assigns this Conservation Easement, the organization receiving the interest will be a qualified holder under N.C. Gen. Stat. § 121-34 et seq. and § 170(h) of the Internal Revenue Code, and the Grantee further covenants and agrees that the terms of the transfer or assignment will be such that the transferee or assignee will be required to continue in perpetuity the conservation purposes described in this document.

D. Entire Agreement and Severability. This instrument sets forth the entire agreement of the parties with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings or agreements relating to the Conservation Easement. If any provision is found to be void or unenforceable by a court of competent jurisdiction, the remainder shall continue in full force and effect.

E. Obligations of Ownership. Grantor is responsible for any real estate taxes, assessments, fees, or charges levied upon the Property. Grantor shall keep the Property free of any liens or other encumbrances for obligations incurred by Grantor. Grantee shall not be responsible for any costs or liability of any kind related to the ownership, operation, insurance, upkeep, or maintenance of the Property, except as expressly provided herein. Nothing herein shall relieve the Grantor of the obligation to comply with federal, state or local laws, regulations and permits that may apply to the exercise of the Reserved Rights.

F. Extinguishment. In the event that changed conditions render impossible the continued use of the Property for the conservation purposes, this Conservation Easement may only be extinguished, in whole or in part, by judicial proceeding.

G. Eminent Domain. Whenever all or part of the Property is taken in the exercise of eminent domain so as to substantially abrogate the Restrictions imposed by this Conservation Easement, Grantor and Grantee shall join in appropriate actions at the time of such taking to recover the full value of the taking, and all incidental and direct damages due to the taking.

H. Proceeds. This Conservation Easement constitutes a real property interest immediately vested in Grantee. In the event that all or a portion of this Property is sold, exchanged, or involuntarily converted following an extinguishment or the exercise of eminent domain, Grantee shall be entitled to the fair market value of this Conservation

Easement. The parties stipulate that the fair market value of this Conservation Easement shall be determined by multiplying the fair market value of the Property unencumbered by this Conservation Easement (minus any increase in value after the date of this grant attributable to improvements) by the ratio of the value of this easement at the time of this grant to the value of the Property (without deduction for the value of this Conservation Easement) at the time of this grant. The values at the time of this grant shall be the values used, or which would have been used, to calculate a deduction for federal income tax purposes, pursuant to Section 170(h) of the Internal Revenue Code (whether eligible or ineligible for such a deduction). Grantee shall use its share of the proceeds in a manner consistent with the purposes of this Conservation Easement.

I. Notification. Any notice, request for approval, or other communication required under this Conservation Easement shall be sent by registered or certified mail, postage prepaid, to the following addresses (or such address as may be hereafter specified by notice pursuant to this paragraph):

To Grantor:

[Name, address and fax number]

To Grantee:

[Name, address and fax number]

To the Corps:

[Name, address and fax number]

J. Failure of Grantee. If at any time Grantee is unable or fails to enforce this Conservation Easement, or if Grantee ceases to be a qualified grantee, and if within a reasonable period of time after the occurrence of one of these events Grantee fails to make an assignment pursuant to this Conservation Easement, then the Grantee's interest shall become vested in another qualified grantee in accordance with an appropriate proceeding in a court of competent jurisdiction.

K. Amendment. This Conservation Easement may be amended, but only in a writing signed by all parties hereto, and provided such amendment does not affect the qualification of this Conservation Easement or the status of the Grantee under any applicable laws, and is consistent with the conservation purposes of this grant.

L. *[For use if there is a document describing the current condition of the property. The language provided is applicable if there is a mitigation plan that accurately describes the current condition and uses of the property. If there is not such a plan, another document we agree is accurate and can be identified and is in our files can be referenced.]* Present Condition of the Property. The wetlands, scenic, resource, environmental, and other natural characteristics of the Property, and its current use and state of improvement, are described in Section ____, Appendix B of the Mitigation Plan,

dated _____, prepared by Grantor and acknowledged by the Grantor and Grantee to be complete and accurate as of the date hereof. Both Grantor and Grantee have copies of this report. It will be used by the parties to assure that any future changes in the use of the Property will be consistent with the terms of this Conservation Easement. However, this report is not intended to preclude the use of other evidence to establish the present condition of the Property if there is a controversy over its use.

TO HAVE AND TO HOLD the said rights and easements perpetually unto Grantee for the aforesaid purposes.

IN TESTIMONY WHEREOF, the Grantor has hereunto set his hand and seal, the day and year first above written.

[Signatures of the Grantor and Grantee in appropriate form]

Stephanie B. Clifton, REVIEW OFFICER OF
JOHNSTON COUNTY, CERTIFY THAT THE MAP OR PLAT TO
WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY
REQUIREMENTS FOR RECORDING.

Stephanie B. Clifton
REVIEW OFFICER
12/22/14
DATE

State of North Carolina, Johnston County
FILED FOR REGISTRATION December 22
2014, 11:05:39 AM
PLAT CABINET 80, PAGE 455

Craig Olive
REGISTER OF DEEDS
JOHNSTON COUNTY
Jennifer K. Paderick
Deputy

THIS PLAT IS EXEMPT FROM SUBDIVISION REGULATION WITHIN THE
JOHNSTON COUNTY PLANNING JURISDICTION.

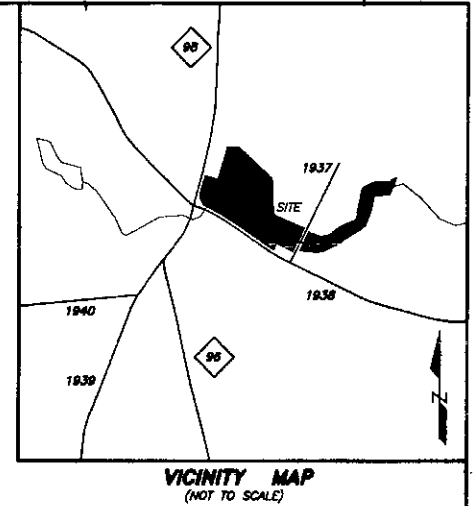
12/22/14
DATE

Subdivision Administrator

LEGEND
R/W = RIGHT OF WAY
C/L = CENTERLINE
● = NEW IRON STAKE
EP = EXISTING IRON PIPE
EAX = EXISTING AXLE
RWD = RIGHT-OF-WAY DISK
○ = NO POINT SET
PP = POWER POLE
GW = GUY WIRE
TL = TIE LINE
CC = CONTROL CORNER
DWB = DELAPIDATED WOOD BUILDING
NCSM = NC GRID SURVEY MONUMENT
E = ELECTRICAL LINE
T = TELEPHONE LINE
ZZ = NOT TO SCALE
X = ADJOINING PROPERTY LINE
- - - = WIRE FENCE
- - - = EASEMENT LINE
- - - = EASEMENT & BOUNDARY LINE
- - - = CHAIN-LINK FENCE

EASEMENT CORNER COORDINATE TABLE	
NORTHING	EASTING
1 675,582.7187	2,210,457.6496
2 675,608.0082	2,210,421.6457
3 675,637.8208	2,210,379.2596
4 675,666.8976	2,210,337.5632
5 675,694.8275	2,210,297.8673
6 675,723.3136	2,210,256.3694
7 675,751.5648	2,210,215.2498
8 675,780.1532	2,210,173.0831
9 675,807.1410	2,210,133.0944
10 675,835.0889	2,210,091.7814
11 675,863.7128	2,210,048.9737
12 675,892.6786	2,210,005.3482
13 675,920.4637	2,209,962.6989
14 675,948.3860	2,209,918.3405
15 675,974.8761	2,209,874.5148
16 676,001.0339	2,209,829.0456
17 676,025.9760	2,209,784.3354
18 676,049.8933	2,209,739.8603
19 676,072.3954	2,209,695.9137
20 676,095.1584	2,209,650.0012
21 676,117.6883	2,209,606.5951
22 676,139.5781	2,209,568.7511
23 676,200.5056	2,209,537.6886
24 676,341.5085	2,209,566.9248
25 676,551.0076	2,209,611.6692
26 676,508.6986	2,209,701.5521
27 676,971.6803	2,209,923.3914
28 676,975.4496	2,210,071.1354
29 676,760.1708	2,210,313.4966
30 676,519.1886	2,210,566.9688
31 675,987.9486	2,210,595.8299
32 675,827.5319	2,210,967.6632
33 675,800.3389	2,211,052.7389
34 675,628.6988	2,210,966.9256
35 675,464.5108	2,210,885.2140
36 675,584.7491	2,210,641.8931
37 675,536.3469	2,210,618.9964
38 675,825.8907	2,210,487.7133
39 675,478.3181	2,210,993.6576
40 675,733.7109	2,211,120.1554
41 675,686.3527	2,211,297.6788
42 675,698.0929	2,211,423.6184
43 675,825.1762	2,211,000.0073
44 675,922.3685	2,211,840.9795
45 676,034.2040	2,211,845.1461
46 676,372.3985	2,211,915.2850
47 676,415.4540	2,211,983.3408
48 676,460.2285	2,212,085.5311
49 676,484.7996	2,212,322.9239
50 676,533.2207	2,212,416.3363
51 676,341.8351	2,212,339.5273
52 676,290.5825	2,212,319.1293
53 676,278.6485	2,212,081.2573
54 676,116.1485	2,212,053.4795
55 675,845.7874	2,211,963.8961
56 675,775.1762	2,211,872.2285
57 675,686.2674	2,211,722.2295
58 675,553.9860	2,211,520.0236
59 675,463.8350	2,211,328.4239
60 675,461.5515	2,211,246.3182
61 675,463.7748	2,211,062.0652

LINE TABLE	
LINE	LENGTH
L-1 N 54°56'12" W	43.99
L-2 N 54°52'45" W	51.82
L-3 N 55°03'36" W	50.83
L-4 N 55°03'48" W	48.42
L-5 N 55°12'56" W	50.43
L-6 N 55°31'20" W	49.91
L-7 N 55°51'47" W	50.94
L-8 N 55°58'07" W	48.24
L-9 N 55°56'28" W	48.87
L-10 N 56°12'44" W	51.51
L-11 N 56°25'07" W	52.37
L-12 N 56°54'55" W	50.90
L-13 N 57°48'39" W	52.41
L-14 N 58°50'58" W	51.21
L-15 N 60°01'55" W	52.49
L-16 N 60°54'11" W	51.17
L-17 N 61°43'48" W	50.50
L-18 N 62°20'51" W	48.48
L-19 N 63°07'35" W	52.59
L-20 N 63°38'58" W	48.44
L-21 N 64°40'28" W	41.87
L-22 N 65°34'02" W	71.98
L-23 N 66°52'02" E	144.00
L-24 N 67°52'02" E	214.22
L-25 S 75°22'54" E	175.57
L-26 N 16°57'49" E	486.14
L-27 N 88°32'34" E	147.79
L-28 S 48°23'13" E	324.17
L-29 S 46°26'53" E	349.74
L-30 S 03°13'02" E	532.09
L-31 S 86°36'27" E	404.04
L-32 S 72°16'28" E	89.32
L-33 N 63°43'19" W	271.59
L-34 S 25°07'29" W	53.46
L-35 N 55°42'12" W	158.91
L-36 S 34°31'53" W	52.59
L-37 N 82°44'38" E	109.32
L-38 N 26°20'58" E	285.00
L-39 S 69°13'18" E	189.87
L-40 N 75°51'16" E	129.88
L-41 N 54°13'42" E	217.40
L-42 N 68°01'41" E	259.85
L-43 N 02°08'03" E	111.88
L-44 N 11°43'00" E	345.39
L-45 N 57°40'49" E	80.53
L-46 N 88°30'49" E	111.57
L-47 S 65°00'31" W	280.23
L-48 S 21°42'02" W	55.16
L-49 S 87°07'40" W	238.17
L-50 S 09°42'01" W	184.86
L-51 S 18°31'27" W	281.97
L-52 S 51°14'04" W	117.56
L-53 S 59°20'58" W	174.36
L-54 S 56°48'13" W	241.84
L-55 S 64°49'08" W	211.75
L-56 S 81°29'29" W	83.02
L-57 N 65°35'09" W	184.80
L-58 N 78°36'34" W	89.55
L-59 N 88°54'24" E	237.44
L-60 N 53°45'46" E	115.81
L-61 S 21°32'02" W	206.22
L-62 N 86°51'40" E	2092.44



CURVE TABLE					
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	TANGENT	CHORD BEARING
C-1	191.90	13785.00	191.90	95.95	S 26°33'48" W
C-2	183.40	10410.00	183.40	91.70	S 26°27'28" W

SOURCES OF TITLE
AREA 1 & 2 - DB 4398, PG 291
AREA 3 - DB 4197, PG 252

ACREAGE DATA
(BY COMPUTER)
AREA 1 = 24.198 AC± EXCL. R/W
AREA 2 = 6.953 AC± INCL. R/W
AREA 3 = 0.481 AC± INCL. R/W
TOTAL = 31.632 AC± INCL. R/W

CONSERVATION EASEMENT
SURVEY OF
THE BUFFALO BRANCH SITE
FOR
EBX-NEUSE I, LLC.
SELMA TOWNSHIP
JOHNSTON COUNTY, NC
OCTOBER 20, 2014
1" = 150'
GRAPHIC SCALE

NCSM "CREECH 1972"
N=674,828.1418
E=2,208,506.0128
(NAD 83/2011)

PAUL H. HOWARD, JR.
DEBBIE EDWARDS HOWARD
DB 4398, PG 291

NC GEODETIC SURVEY MONUMENT REFERENCE TABLE	
FROM: "AVERY 1972"	TO: "CREECH 1972"
N=674,597.7617 E=2,205,419.5088	N=674,828.1418 E=2,208,506.0128
GRID BEARING N 85°43'53" E	GRID DISTANCE 3085.08' (GRID)

HOWARD RD.
NCSR 1937
60' PUBLIC R/W (SOIL)



I, CHRISTOPHER K. PADERICK, PROFESSIONAL LAND SURVEYOR
NO. 4189, CERTIFY THAT THIS SURVEY IS OF ANOTHER
CATEGORY, TO WIT: AN EXCEPTION TO THE DEFINITION OF
SUBDIVISION.

STATE OF NORTH CAROLINA
JOHNSTON COUNTY
I, CHRISTOPHER K. PADERICK, CERTIFY THAT THIS
PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL
SURVEY MADE UNDER MY SUPERVISION; (DEED DESCRIPTION
RECORDED IN MAP & DEED BOOKS NOTED); THAT THE
BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN
FROM INFORMATION REFERENCED HEREON; THAT THE RATIO
OF PRECISION AS CALCULATED IS 1:10,000; THAT THIS PLAT
WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS
AMENDED, WITH MY ORIGINAL SIGNATURE, REGISTRATION
NUMBER AND SEAL THIS 20TH DAY OF OCTOBER, A.D.,
2014.

MATRIX EAST, PLLC
PROFESSIONAL LAND SURVEYORS
908 N. QUEEN ST., SUITE A KINSTON, NC 28501
TEL: 252-582-2500 FAX: 252-522-4747
FIRM LIC. # P-0221 EMAIL: surveyor@matriceast.net
DRAWN BY: CKP PROJECT NO.: 20140058
SURVEYED BY: ALL DATE: 10/20/14
SCALE: 1" = 150' DRAWING NAME: EASEMENT