

MITIGATION PLAN

**UT to Falls Lake (McDaniel Farm)
Riparian Buffer and Nutrient Offset Mitigation Project
Durham County, North Carolina
NC Division of Mitigation Services Project #: 95389**

**Neuse River Basin
03020201**

DWR #: 09-1140



**Prepared for and by:
NC Department of Environment and Natural Resources
Division of Mitigation Services
1652 Mail Service Center
Raleigh, NC 27699-1652**

August 2015

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TABLE OF CONTENTS

1.0 Mitigation Project Summary.....	1
1.0 Site Summary.....	1
1.1 Project Location.....	1
1.2 Site Maps.....	1
Figure 1 Vicinity Map.....	2
Figure 2 Watershed & Topo Map.....	3
Figure 3 Soils & Existing Conditions Map.....	4
2.0 Regulatory Considerations.....	5
2.1 Determination of Credits.....	5
2.2 Asset Map.....	6
2.3 Regulatory and Permitting Considerations.....	7
3.0 Implementation Plan.....	7
3.1 Site Preparation.....	7
3.2 Materials and Methods.....	7
3.3 Other Design Details.....	7
3.4 Grading Plan.....	8
4.0 Monitoring Plan.....	9
4.1 Reporting.....	9
4.2 Vegetation Monitoring.....	9
5.0 Project Success Criteria.....	9
6.0 Long Term Management.....	9
6.1 Entity responsible for long-term management.....	9
6.2 Summary of long-term maintenance needs or other management activities.....	10

Appendices

- Appendix A. Site Protection Instruments
 - Appendix B. DWR Correspondence
 - Appendix C. DMS Monitoring Report Template
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MITIGATION PROJECT SUMMARY

1.1 Site Summary.

The UT to Falls Lake (McDaniel Farm) mitigation site is located in the Upper Falls Lake Watershed and includes an unnamed tributary to Falls Lake. The site is currently used for livestock grazing. NC Division of Mitigation Services (DMS) is proposing riparian buffer mitigation activities along the UT to Falls Lake from top of bank and extending out to 200 feet. The project will result in a maximum of 9.67 acres (421,385 ft²) of riparian buffer and/or nutrient offset mitigation by establishing 10.86 acres of forested buffer easement along the main unnamed tributary to Falls Lake and several water conveyances that flow to UT to Falls Lake. Due to the site's location within the Upper Falls Lake Watershed, nutrient offset mitigation from this site can only be provided to offset impacts from development within the Falls Lake Watershed. In addition, riparian buffer mitigation from this site can be used to offset permitted impacts according to the Temporary Rule (15A NCAC 02B .0295) effective October 24, 2014.

This project site is located off Benny Ross Road in Durham County approximately 7.5 miles east of the City of Durham and is within the Upper Falls Lake Watershed. The site is within the Lick Creek watershed (HU 3020201050030) which is approximately 22 square miles in size and located in Durham (21 square miles) and Wake (1 square mile) Counties, North Carolina. The watershed is comprised of sub-watersheds draining to Lick Creek, its tributary Rocky Branch, Laurel Creek, and unnamed tributaries to Falls Lake. Lick Creek is the largest of the streams, accumulating drainage from 60 percent of the watershed before discharging into Falls Lake. Falls Lake is a drinking water supply watershed with additional nutrient restrictions regulated by the North Carolina Division of Water Resources. The site is in NC Division of Water Resources' 03-04-01 sub-basin.

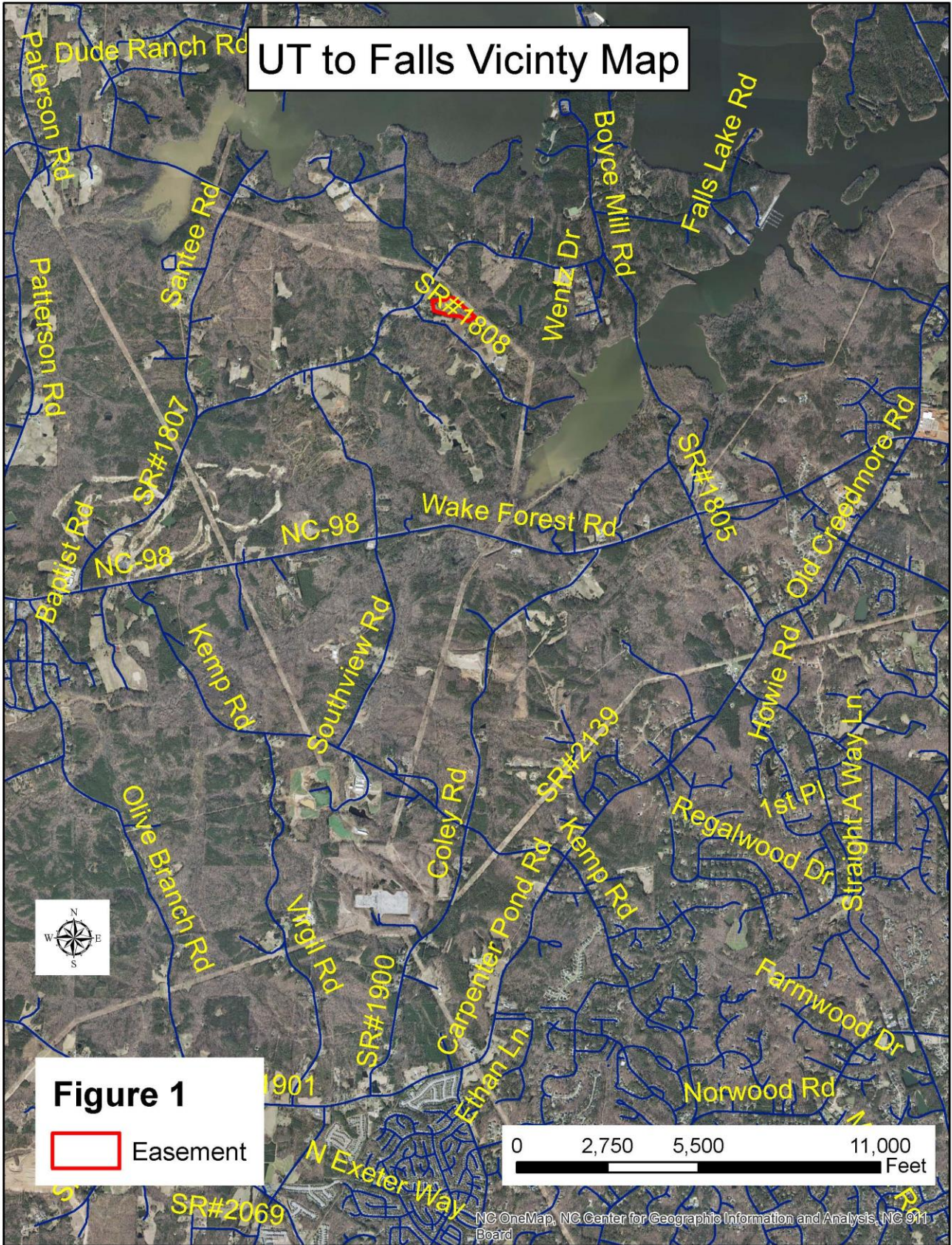
The site was heavily damaged by historical logging activities. The current landowner utilizes the site for livestock pasture. Along with livestock waste, a major contributing factor to this site's loss of nutrients and sediment is the steepness and erodibility of the valley side slopes. These slopes range from 20% to 25%. Sedimentation in the stream most likely is due to the denuded adjacent fields from previous logging activities and current livestock grazing practices. The soil loss on these fields has been estimated to average approximately 100 tons/ac/yr.

Representatives of the NC Division of Water Resources conducted a site visit on June 25, 2012 to conduct stream determinations and to assess the site's potential for nutrient offset and Neuse riparian buffer restoration. See correspondence in Appendix B.

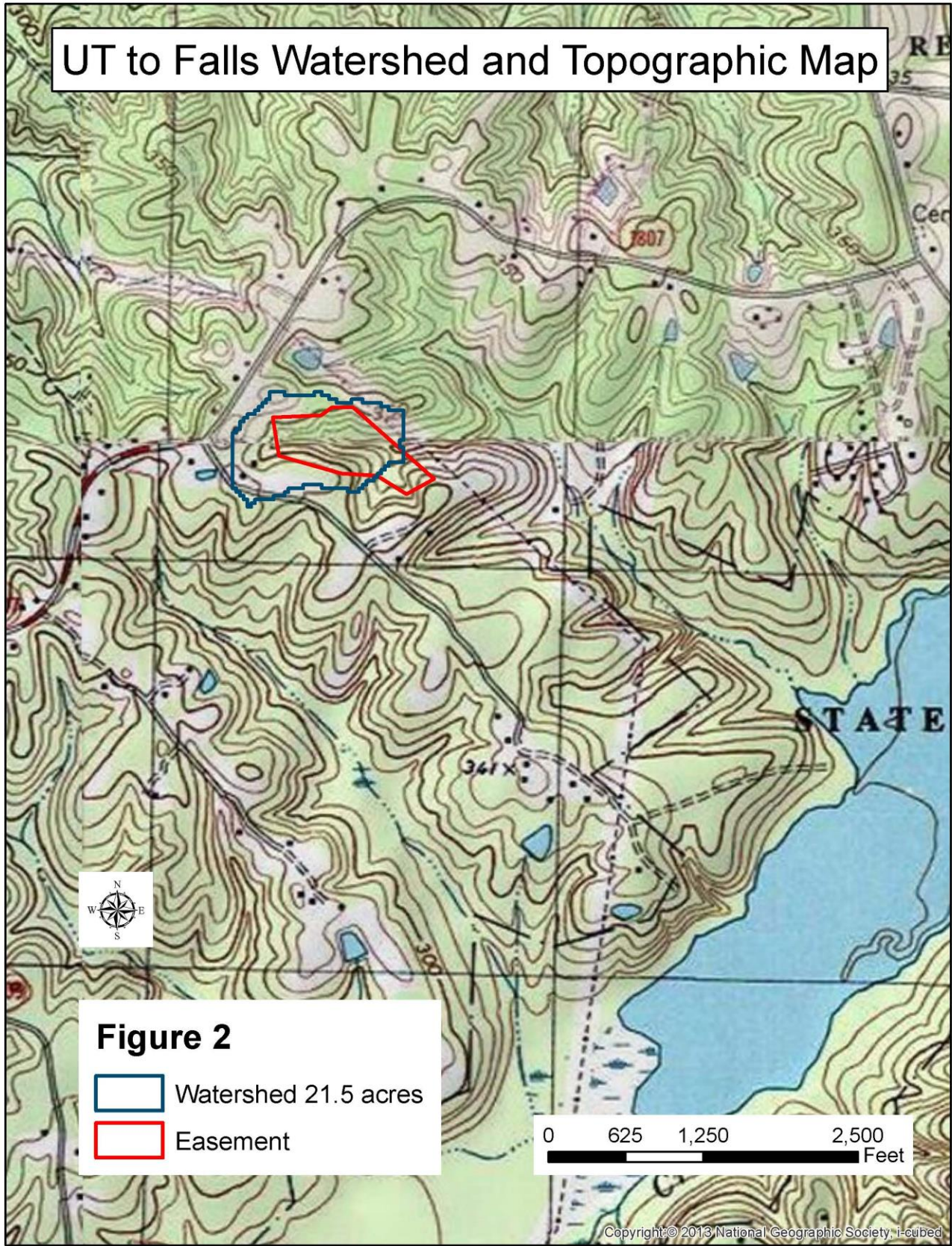
1.2 Project location

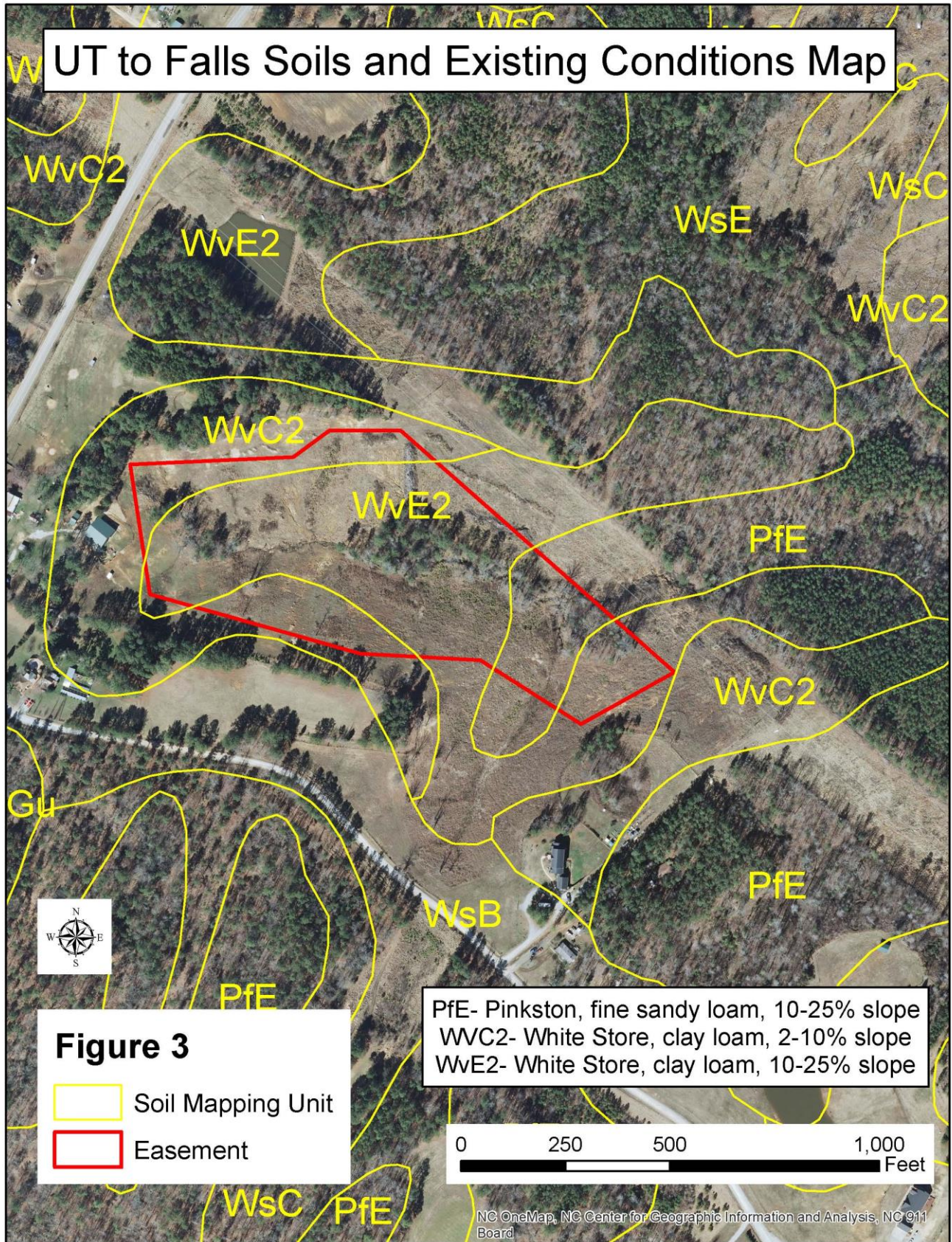
From Raleigh take US 70 West/Glenwood Avenue toward Durham. Turn Right on NC 50 North/Creedmoor Road. Exit onto NC 98 West/Durham Road. Turn Right onto Southview Road and follow to T intersection. Turn Right onto Baptist Road. Turn right onto Benny Ross Road Site is on the left starting at intersection of Baptist and Benny Ross Roads. Access is through 50 ft. access easement at 277 Benny Ross Road. Latitude: 35.998142, Longitude: -78.742794

1.3 Site map(s)



UT to Falls Watershed and Topographic Map





2.0 REGULATORY CONSIDERATIONS

2.1 Determination of credits:

UT to Falls Lake (McDaniel Farm) (ID-95389) - Mitigation Components

Project Component	Existing Buffer (SF)	Restored Buffer (SF)	Creditable Buffer (SF)	Restoration Level	Mitigation Ratio (X:1)	Riparian Buffer Mitigation Credits (SF)		Nutrient Offset Credits Nitrogen (lbs/ac/30 yrs)	Nutrient Offset Credits Phosphorus (lbs/ac/30 yrs)	Notes/Comments
Buffer										
Riparian Buffer TOB-50'	0	49,393	49,393	R	1	49,393	OR	2,577.48	166.00	Restored riparian buffer for buffer or Nutrient Offset credit
Riparian Buffer 51-100'	0	82,083	82,083	R	1	82,083	OR	4,283.35	275.87	Restored riparian buffer for buffer or Nutrient Offset credit
Riparian Buffer 101-200'	0	149,557	149,557	R	1			7,804.36	502.64	Restored riparian buffer for Nutrient Offset credit only
Riparian Buffer TOB-200'	0	72,392	72,392	R	1			3,777.65	243.30	Restored riparian buffer for Nutrient Offset credit only
Riparian Buffer TOB-100'	64,826	0	64,826	P	10	6,483				Preserved Riparian Buffer for Buffer Credit only
Riparian Buffer 101-200'	3,134	0	3,134	P	20	157				Preserved Riparian Buffer for Buffer Credit only. Area in this zone is less than 10% of total Buffer Mitigation area. 20:1 ratio = 10:1 factoring in 50% reduction for preservation on a Subject Non-Urban stream.

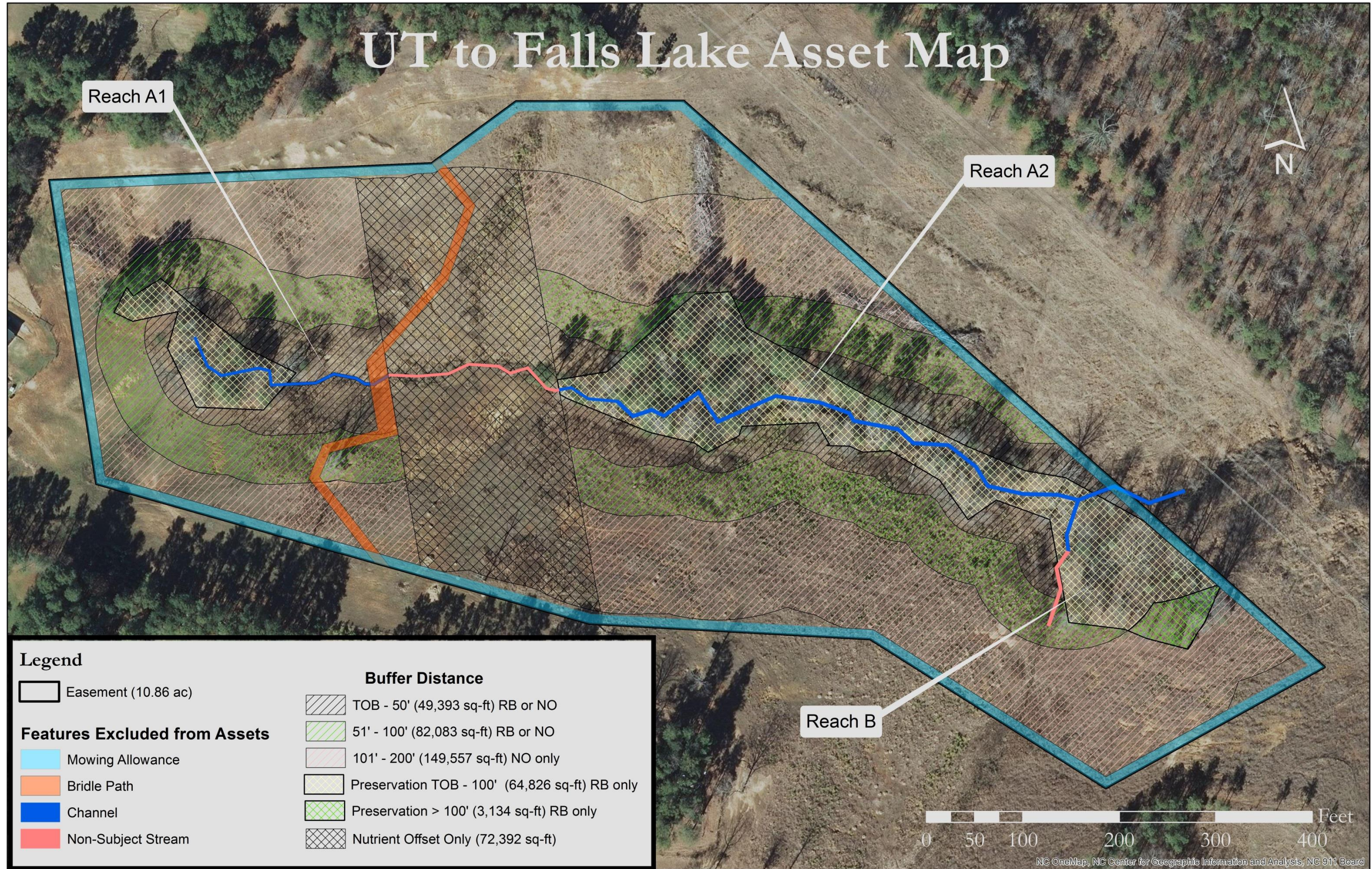
Length and Area Summations by Mitigation Category

Restoration Level	Stream (linear feet)	Riparian Wetland (acres)		Non-riparian Wetland (acres)	Creditable Buffer (square feet)
		Riverine	Non-Riverine		
Restoration					353,425
Enhancement					
Enhancement I					
Enhancement II					
Creation					
Preservation					67,960
High Quality Pres					

Overall Assets Summary

Asset Category	Overall Credits
Buffer ¹ (SF)	138,115
Nutrient Offset Nitrogen (lbs/ac/30 yr)	18,442.85
Nutrient Offset Phosphorus (lbs/ac/30 yr)	1,187.82

¹ Pursuant to 15A NCAC 02B .0295(n)(1), buffer mitigation credit used for buffer credit will not be used for nutrient offset credit



2.3 Regulatory and Permitting Considerations

No permits are required for this project.

3.0 IMPLEMENTATION PLAN

3.1 Site Preparation

Prior to planting and fence installation, five (5) gullies along the valley slopes will be removed through minor grading to allow for diffuse flow across the site (see section 3.4 Grading Plan). Once gully removal has been completed, the site will require bush hogging of existing herbaceous vegetation and removal of select small pines.

3.2 Planting Plan

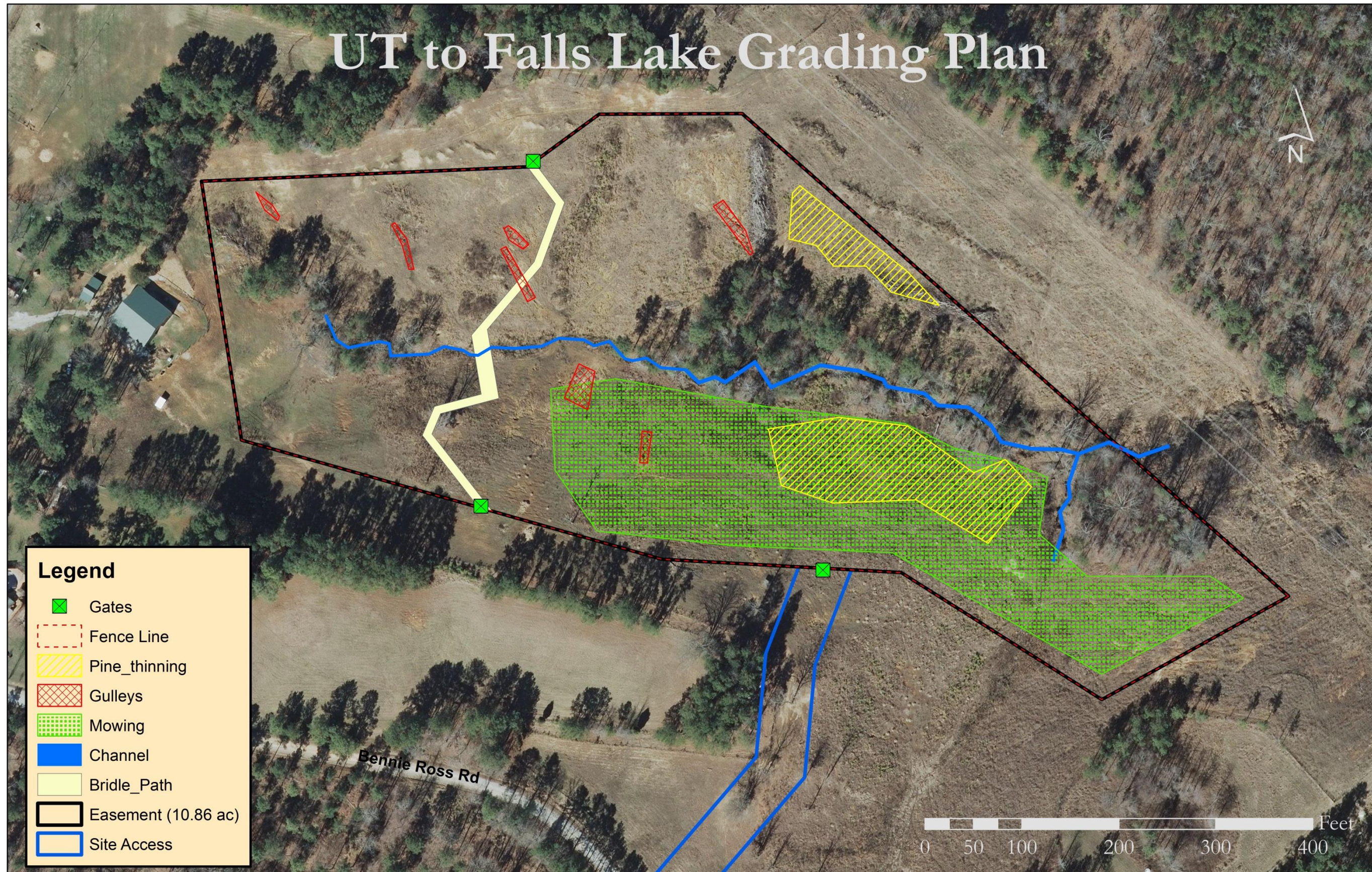
The target plant community to be restored will be an early successional forest and the planting plan will consist of at least five (5) of the following species. In accordance with 15A NCAC 02B .0295(i)(4)(B), no one species planted will be greater than 50% of planted species. The DMS expects the natural recruitment of native successional species, including Sweet Gum (*Liquidambar styraciflua*), Red Maple (*Acer rubrum*) and Loblolly Pine (*Pinus taeda*) to occur at the project site.

Species		
Common Name	Scientific Name	Strata
Red Maple	<i>Acer rubrum</i>	canopy
Box Elder	<i>Acer negundo</i>	canopy
River Birch	<i>Betula nigra</i>	canopy
Green Ash	<i>Fraxinus pennsylv.</i>	canopy
Blackgum	<i>Nyssa sylvatica</i>	canopy
Sycamore	<i>Platanus occidentalis</i>	canopy
Eastern Cottonwood	<i>Populus deltoides</i>	canopy
American Elm	<i>Ulmus americana</i>	canopy
Persimmon	<i>Diospyros virginiana</i>	subcanopy
Eastern Redbud	<i>Cercis canadensis</i>	subcanopy

Buffer restoration planting out to 200 feet will be undertaken along Reaches A1, A2 and B. From top of bank (TOB) to 100 feet will be used provide either riparian buffer or nutrient offset mitigation credit. The planted area from 101 to 200 feet will be used for Nutrient Offset only credit. Planting efforts undertaken along the conveyances not subject to the buffer rules (per NCDWR's correspondence in Appendix B), as depicted on the Asset Map in section 2.2, will be utilized for nutrient offset only credit.

3.3 Other design details

Prior to planting, woven wire fencing with gates for access will be installed, in accordance with NRCS specifications, around the entire perimeter of the conservation easement to exclude livestock, and provide a protected environment for vegetation survival. As stipulated in the recorded conservation easement, the landowner reserved the right for themselves and their invitees to ride horses along a trail within the conservation easement not to exceed ten feet in width within the zone(s) depicted on the survey plat as "Bridle Trail" as well as the mowed vegetation maintenance area adjacent to the easement perimeter fence. Horses must be ridden or led and must remain on the trail at all times. The layout of the bridle trail will be marked prior to fence installation for gate placement and planting to ensure no trees are installed in that area. The bridle trail has been removed from all credit calculations. As part of the bridle trail, one ford stream crossing will be installed at the bedrock outcrop on the UT as shown on the Asset Map. The landowner has agreed to not use the allowed trail for three complete growing seasons to allow grasses to establish and soils to stabilize.



4.0 MONITORING PLAN

4.1 Reporting

Annual monitoring data will be reported using the NC Division of Mitigation Services' Riparian Buffer and Nutrient Offset Buffer Annual Monitoring Report Template (ver. 1.0) dated Feb. 2, 2014 (see Appendix C). The monitoring report shall provide a project data chronology that will facilitate an understanding of project status and trends, population of NC Division of Mitigation Services' databases for analysis, research purposes, and assist in decision making regarding project close-out. The following table outlines monitoring requirements for this project; monitoring parameter descriptions follow.

Required	Parameter	Quantity	Frequency	Notes
Yes	Vegetation	Quantity and location of vegetation plots will be determined by Division of Mitigation Services	Annual	Vegetation will be monitored for a period of five years or until success criteria are met. During years 2, 3 and 5 random plots will be used. Visual monitoring of the site will be done all five years
Yes	Project boundary		Annual	Locations of fence damage, vegetation damage, boundary encroachments, etc. will be mapped

4.2 Vegetation Monitoring

Monitoring of site restoration efforts will be performed for five years or until performance standards are met. After planting has been completed in winter or early spring, initial plant stocking will be performed to verify planting methods and to determine initial species composition and density.

To monitor the vegetation at this site, the NC Division of Mitigation Services will use a combination of visual monitoring and random vegetation plots. Visual monitoring will be conducted during all five years of monitoring to assess vegetative cover, diffuse flow and easement integrity. DMS will monitor ten (10) rotating, random 1,500 square foot vegetation plots in years 2, 3 and 5 to assess vegetative success representative of the entire mitigation area from top of bank to 200 feet from each tributary/conveyance. These ten (10) plots will provide coverage of 3% of the site each year used. In each sample plot, monitoring parameters will include species composition and density. The plots will be randomly selected using a grid and random number generator (or similar method) for each of the monitoring years 2, 3 and 5. Visual observations of the percent cover of shrub and herbaceous species, diffuse flow and easement integrity will be documented by photograph and site visits.

5.0 PROJECT PERFORMANCE STANDARDS

Performance standards have been established to verify that the vegetation component supports community elements necessary for forest development and the maintenance of diffuse flow through the riparian buffer in accordance with North Carolina Division of Water Resources Administrative Code 15A NCAC 02B.0295 (Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers) (NCDWR 2014 Temporary Rule). Performance standards are dependent upon the density and growth of characteristic forest species. After five years of monitoring, an average density of 260 woody stems per acre must be surviving and diffuse flow maintained.

6.0 LONG-TERM MANAGEMENT

6.1 Entity responsible for long-term management

Upon approval for closeout by the NC Division of Water Resources (DWR) the site will be transferred to a third party for long term management. This 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.

6.2 Summary of long-term maintenance needs or other management activities

DMS shall monitor the site and conduct a physical inspection of the site a minimum of once per year throughout the post-construction monitoring period until performance standards are met. These site inspections may identify site components and features that require routine maintenance. Routine maintenance should be expected most often in the first two years following site construction and may include the following:

Component/Feature	Maintenance through project close-out	Remedial Measures
Vegetation	Vegetation shall be maintained to ensure survival. Routine vegetation maintenance and repair activities may include supplemental planting. The site will also be evaluated to ensure diffuse flow is still occurring.	Any remedial activities performed will be documented in the annual monitoring reports.
Site Boundary	Site boundaries shall be identified in the field to ensure clear distinction between the mitigation site and adjacent properties. Boundaries may be identified by 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.	Any remedial activities performed will be documented in the annual monitoring reports.

**APPENDIX A
SITE PROTECTION INSTRUMENT**

The land required for the construction, management, and stewardship of this mitigation project includes portions of the following parcels. A copy of the site protection instrument(s) is included below.

Parcel	Landowner	PIN	County	Site Protection Instrument	Deed Book and Page Number	Acreage protected
A	Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger	0871-02-69-0154	Durham	Conservation Easement and Right of Access	7536/121-134	10.86

All site protection instruments require 60-day advance notification to the State prior to any action to void, amend, or modify the document. No such action shall take place unless approved by the State.



FOR REGISTRATION
Willie L. Covington
REGISTER OF DEEDS
Durham County, NC
2014 JUL 25 10:49:15 AM
BK: 7536 PG: 121-134
DEED
FEE: \$26.00
INSTRUMENT # 2014022314



Mail to: Ann Matthews, Property Control Section, State of NC, P.O. Box 629, Raleigh NC 27602
STATE OF NORTH CAROLINA DEED OF CONSERVATION EASEMENT
DURHAM COUNTY AND RIGHT OF ACCESS
SPO File Number: 32-BV
EEP Project Number: 95389

Prepared by: Office of the Attorney General
Property Control Section
Return to: NC Department of Administration
State Property Office
1321 Mail Service Center
Raleigh, NC 27699-1321

THIS DEED OF CONSERVATION EASEMENT AND RIGHT OF ACCESS, made this 25th day of July, 2014, by **Sue McDaniel (widow), Ruth McDaniel and husband, Kendall Newswanger**, (“Grantor”), whose mailing address is 2402 Baptist Road, Durham, NC 27703, to the State of North Carolina, (“Grantee”), whose mailing address is State of North Carolina, Department of Administration, State Property Office, 1321 Mail Service Center, Raleigh, NC 27699-1321. The designations of 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.

WITNESSETH:

WHEREAS, pursuant to the provisions of N.C. Gen. Stat. § 143-214.8 et seq., the State of North Carolina has established the Ecosystem Enhancement Program (formerly known as the Wetlands Restoration Program) within the Department of Environment and Natural Resources for the purposes of acquiring, maintaining, restoring, enhancing, creating and preserving wetland and riparian resources that contribute to the protection and improvement of water quality, flood prevention, fisheries, aquatic habitat, wildlife habitat, and recreational opportunities; and

WHEREAS, The State of North Carolina is qualified to be the Grantee of a Conservation Easement pursuant to N.C. Gen. Stat. § 121-35; and

WHEREAS, the Department of Environment and Natural Resources and the United States Army Corps of Engineers, Wilmington District entered into a Memorandum of Understanding, (MOU) duly executed by all parties on November 4, 1998. This MOU recognized that the Wetlands Restoration Program was to provide effective compensatory mitigation for authorized impacts to wetlands, streams and other aquatic resources by restoring, enhancing and preserving the wetland and riparian areas of the State; and

WHEREAS, the Department of Environment and Natural Resources, the North Carolina Department of Transportation and the United States Army Corps of Engineers, Wilmington District entered into a Memorandum of Agreement, (MOA) duly executed by all parties in Greensboro, NC on July 22, 2003, which recognizes that the Ecosystem Enhancement Program is to provide for compensatory mitigation by effective protection of the land, water and natural resources of the State by restoring, enhancing and preserving ecosystem functions; and

WHEREAS, the Department of Environment and Natural Resources, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the North Carolina Wildlife Resources Commission, the North Carolina Division of Water Quality, the North Carolina Division of Coastal Management, and the National Marine Fisheries Service entered into an agreement to continue the In-Lieu Fee operations of the North Carolina Department of Natural Resources' Ecosystem Enhancement Program with an effective date of 28 July, 2010, which supersedes and replaces the previously effective MOA and MOU referenced above; and

WHEREAS, the acceptance of this instrument for and on behalf of the State of North Carolina was granted to the Department of Administration by resolution as approved by the Governor and Council of State adopted at a meeting held in the City of Raleigh, North Carolina, on the 8th day of February 2000; and

WHEREAS, the Ecosystem Enhancement Program in the Department of Environment and Natural Resources, which has been delegated the authority authorized by the Governor and Council of State to the Department of Administration, has approved acceptance of this instrument; and

WHEREAS, Grantor owns in fee simple certain real property situated, lying, and being in Carr Township, Durham County, North Carolina (the "**Property**"), and being more particularly described as that certain parcel of land containing approximately 38 +/- acres conveyed in Deed Book 4495, Page 516, and corrected in Deed Book 5434, Page 71, and as joint tenants with right of survivorship in Deed Book 5802, Page 456, Plat Book 17, Page 135 of the Durham County Registry. The Property is also identified as being Tax Parcel 194056, and

WHEREAS, Grantor is willing to grant a Conservation Easement and Right of Access over the herein described areas of the Property, thereby restricting and limiting the use of the areas of the Property subject to the Conservation Easement to the terms and conditions and purposes hereinafter set forth, and Grantee is willing to accept said Easement and Access Rights.

The Conservation Easement shall be for the protection and benefit of the waters of an unknown Tributary to Falls Lake.

NOW, THEREFORE, in consideration of the mutual covenants, terms, conditions, and restrictions hereinafter set forth, Grantor unconditionally and irrevocably hereby grants and conveys unto Grantee, its successors and assigns, forever and in perpetuity, a Conservation Easement along with a general Right of Access.

The **Conservation Easement Area** consists of the following:

Tract "A" containing a total of **10.86 acres** and Access Easement containing **1.4 acres** as shown on the plat of survey entitled "Final Plat, Conservation Easement for North Carolina Ecosystem Enhancement Program, SPO File No. 32-BV, EEP Site No. 95389, Property of Sue McDaniel, Ruth McDaniel and husband, Kendall Newswanger," dated December 20, 2013 by Douglas R. Yarbrough, PLS Number L-3395 and recorded in the Durham County, North Carolina Register of Deeds at **Plat Book 193 Page 29**.

See attached "**Exhibit A**", Legal Description of area of the Property hereinafter referred to as the "Conservation Easement Area" and access thereto.

The purposes of this Conservation Easement are to maintain, restore, enhance, construct, create and preserve wetland and/or riparian resources in the Conservation Easement Area that contribute to the protection and improvement of water quality, flood prevention, fisheries, aquatic habitat, wildlife habitat, and recreational opportunities; to maintain permanently the Conservation Easement Area in its natural condition, consistent with these purposes; and to prevent any use of the Easement Area that will significantly impair or interfere with these purposes. To achieve these purposes, the following conditions and restrictions are set forth:

I. DURATION OF EASEMENT

Pursuant to law, including the above referenced statutes, this Conservation Easement and Right of Access shall be perpetual and it shall run with, and be a continuing restriction upon the use of, the Property, and it shall be enforceable by the Grantee against the Grantor and against Grantor's heirs, successors and assigns, personal representatives, agents, lessees, and licensees.

II. GRANTOR RESERVED USES AND RESTRICTED ACTIVITIES

The Conservation Easement Area shall be restricted from any development or usage that would impair or interfere with the purposes of this Conservation Easement. Unless expressly reserved as a compatible use herein, any activity in, or use of, the Conservation Easement Area by the Grantor is prohibited as inconsistent with the purposes of this Conservation Easement. Any rights not expressly reserved hereunder by the Grantor have been acquired by the Grantee. Any rights not expressly reserved hereunder by the Grantor, including the rights to all mitigation credits, including, but not limited to, stream, wetland, and riparian buffer mitigation units,

derived from each site within the area of the Conservation Easement, are conveyed to and belong to the Grantee. Without limiting the generality of the foregoing, the following specific uses are prohibited, restricted, or reserved as indicated:

A. Recreational Uses. Grantor expressly reserves the right to undeveloped recreational uses, including hiking, bird watching, hunting and fishing, and access to the Conservation Easement Area for the purposes thereof.

B. Motorized Vehicle Use. Motorized vehicle use in the Conservation Easement Area is prohibited except as specifically allowed within a fence maintenance zone as described in Section D below.

C. Educational Uses. The Grantor reserves the right to engage in and permit others to engage in educational uses in the Conservation Easement Area consistent with this Conservation Easement, and the right of access to the Conservation Easement Area for such purposes including organized educational activities such as site visits and observations. Educational uses of the Property shall not alter vegetation, hydrology or topography of the site.

D. Damage to Vegetation. Except within the Bridle Trail area as shown on the recorded survey plat, and as related to the removal of non-native plants, diseased or damaged trees, or vegetation that destabilizes or renders unsafe the Conservation Easement Area to persons or natural habitat, all cutting, removal, mowing, harming, or destruction of any trees and vegetation within the Conservation Easement Area is prohibited with the following exception:

The Grantor reserves the right to mow and maintain vegetation within ten feet of the Conservation Easement boundary fences *as shown on the Survey Plat referenced above*. Notwithstanding the foregoing, Grantor, successors and assigns shall adhere to laws governing riparian vegetation protection.

The Grantor, successors or assigns shall be solely responsible for maintenance of the fence for as long as there is livestock on the Grantor's property adjacent to the Conservation Easement Area.

E. Industrial, Residential and Commercial Uses. All industrial, residential and commercial uses are prohibited in the Conservation Easement Area.

F. Agricultural Use. All agricultural uses are prohibited within the Conservation Easement Area including any use for cropland, waste lagoons, or pastureland.

G. New Construction. There shall be no building, facility, mobile home, antenna, utility pole, tower, or other structure constructed or placed in the Conservation Easement Area.

H. Roads and Trails. There shall be no construction or maintenance of roads, trails, walkways, or paving in the Conservation Easement Area other than low impact single thread "Bridle Trails" depicted on the survey plat and described in section II. i.

I. Signs. No signs shall be permitted in the Conservation Easement Area except interpretive signs describing restoration activities, educational signs, conservation values of the

Conservation Easement Area, signs identifying the owner of the Property and the holder of the Conservation Easement, signs giving directions, conservation boundary signs, and signs prescribing rules and regulations for the use of the Conservation Easement Area.

J. Dumping or Storing. Dumping or storage of soil, trash, ashes, garbage, waste, abandoned vehicles, appliances, machinery, or any other material in the Conservation Easement Area is prohibited.

K. Grading, Mineral Use, Excavation, Dredging. There shall be no grading, filling, excavating, dredging, mining, drilling, hydraulic fracturing; removal of topsoil, sand, gravel, rock, peat, minerals, or other materials in the Conservation Easement Area.

L. Water Quality and Drainage Patterns. There shall be no diking, draining, dredging, channeling, filling, leveling, pumping, impounding or diverting, causing, allowing or permitting the diversion of surface or underground water in the Conservation Easement Area. No altering or tampering with water control structures or devices, or disruption or alteration of the restored, enhanced, or created drainage patterns is allowed. All removal of wetlands, polluting or discharging into waters, springs, seeps, or wetlands, or use of pesticide or biocides in the Conservation Easement Area is prohibited. In the event of an emergency interruption or shortage of all other water sources, water from within the Conservation Easement Area may temporarily be withdrawn for good cause shown as needed for the survival of livestock on the Property; however such uses shall be conducted in a manner consistent with the other restrictions included in this instrument. In particular, withdrawal of water shall be conducted without disturbance to the Conservation Easement Area, including but not limited to the placement of any fill material, construction of any impounding structures, excavation of any material from the streambed or riparian buffer, or removal of vegetation. Water pumps must be placed and maintained outside of the Conservation Easement Area. The Grantee must be notified of all withdrawals of water within 48 hours after the activity takes place.

M. Subdivision and Conveyance. Grantor voluntarily agrees that no further subdivision, partitioning, or dividing of the Conservation Easement Area portion of the Property owned by the Grantor in fee simple ("fee") that is subject to this Conservation Easement is allowed. Any future transfer of the Property shall be subject to this Conservation Easement and Right of Access and to the Grantee's right of unlimited and repeated ingress and egress over and across the Property to the Conservation Easement Area for the purposes set forth herein.

N. Development Rights. All development rights are permanently removed from the Conservation Easement Area and are non-transferrable.

O. Disturbance of Natural Features. Any change, disturbance, alteration or impairment of the natural features of the Conservation Easement Area or any intentional introduction of non-native plants, trees and/or animal species by Grantor is prohibited.

P. Additional Rights Reserved by Grantor. No reserved right below shall apply to the area within the first fifty feet from the top of the Unnamed Tributary stream bank (50-foot riparian zone).

i. Horseback riding. Grantor reserves the right, for themselves and their invitees, to ride horses along a pathway within the Conservation Easement Area not to exceed ten feet in width within zone (s) depicted on the survey plat as "Bridle Trail" as well as the mowed vegetation maintenance area adjacent to the easement perimeter fence. Horses must be ridden or led and must remain on the path at all times. Livestock guardian dogs are also permitted to access the Conservation Easement Area.

ii. Benches. Grantor reserves the right to install up to ten (10) rustic benches in the Conservation Easement Area to be used for educational purposes. Benches shall be installed with minimal impact to shrubs and trees. Each bench area shall take up no more than ten square feet. Trimming or cutting of vegetation during bench installation will be avoided to the greatest extent practicable and shall be restricted to the ten square foot area around each bench.

iii. Bee hives. Grantor reserves the right to install and maintain up to ten (10) bee hives in the Conservation Easement Area. Bee hives shall be installed with minimal impact to shrubs and trees. Trimming or cutting of vegetation during installation and maintenance will be avoided to the greatest extent practicable and shall be restricted to a five square foot area.

iv. Well installation. Grantor reserves the right to request permission from the Grantee to locate a well within the Conservation Easement Area for good cause shown if the existing well located on the Property ceases to function, and no other reasonable water sources are available on the Property or from other sources. The new well capacity shall not exceed that of the existing well located on the Property, which serves the existing residence and barn. Grantor shall request permission in writing from Grantee as described below. Such permission shall not to be unreasonably withheld. Grantor shall be responsible for all expenses associated with installation and maintenance of the new well, and may be required to reimburse Grantee for any loss of compensatory mitigation credits associated with its construction and use.

During the exercise of any reserved right, every effort shall be made to minimize impacts to water quality and to native shrubs and trees.

The Grantor may request permission to vary from the above restrictions for good cause shown, provided that any such request is not inconsistent with the purposes of this Conservation Easement, and the Grantor obtains advance written approval from the N.C. Ecosystem Enhancement Program, whose mailing address is 1652 Mail Services Center, Raleigh, NC 27699-1652.

III. GRANTEE RESERVED USES

A. Right of Access, Construction, and Inspection. The Grantee, its employees and agents, successors and assigns, including representative from the U.S. Army Corps of Engineers and the N.C. Division of Water Resources, receive a perpetual Right of Access to the Conservation Easement Area over the Property at reasonable times to undertake any activities to restore, construct, manage, maintain, enhance, protect, and monitor the stream, wetland and any other riparian resources in the Conservation Easement Area, in accordance with restoration activities

or a long-term management plan. Unless otherwise specifically set forth in this Conservation Easement, the rights granted herein do not include or establish for the public any access rights.

B. Restoration Activities. These activities include planting of trees, shrubs and herbaceous vegetation, installation of monitoring wells, utilization of heavy equipment to grade, fill, and prepare the soil, modification of the hydrology of the site, and installation of natural and manmade materials as needed to direct in-stream, above ground, and subterranean water flow.

C. Signs. The Grantee, its employees and agents, successors or assigns, shall be permitted to place signs and witness posts on the Property to include any or all of the following: describe the project, prohibited activities within the Conservation Easement, or identify the project boundaries and the holder of the Conservation Easement.

D. Fences. The Grantee, its employees and agents, successors or assigns, shall be permitted to place fencing on the Property within the Conservation Easement Area to restrict livestock access. Although the Grantee is not responsible for fence maintenance, the Grantee reserves the right to maintain, repair or replace the fence at the sole discretion of the Grantee and at the expense of the Grantor, who agrees to indemnify the Grantee for any costs incurred as a result of maintenance, repair or replacement of the fence if such costs are required to protect the Conservation Easement Area from repeated incidents of grazing or other prohibited activities.

E. Crossing Area(s). The Grantee is not responsible for maintenance of crossing area(s), however, the Grantee, its employees and agents, successors or assigns, reserve the right to repair crossing area(s), at its sole discretion and to recover the cost of such repairs from the Grantor if such repairs are needed as a result of activities of the Grantor, his successors or assigns.

IV. ENFORCEMENT AND REMEDIES

A. Enforcement. To accomplish the purposes of this Conservation Easement, Grantee is allowed to prevent any activity within the Conservation Easement Area that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such areas or features in the Conservation Easement Area that may have been damaged by such unauthorized activity or use. Upon any breach of the terms of this Conservation Easement by Grantor, the Grantee shall, except as provided below, notify the Grantor in writing of such breach and the Grantor shall have ninety (90) days after receipt of such notice to correct the damage caused by such breach. If the breach and damage remains uncured after ninety (90) days, the Grantee may enforce this Conservation Easement by bringing appropriate legal proceedings including an action to recover damages, as well as injunctive and other relief. The Grantee shall also have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Conservation Easement Area by acts which may be unlawful or in violation of this Conservation Easement; (b) to otherwise preserve or protect its interest in the Property; or (c) to seek damages from any appropriate person or entity. 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 is or would irreversibly or otherwise materially impair the benefits to be derived from this Conservation Easement, and the Grantor and Grantee acknowledge that the damage would be irreparable and remedies at law 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.

B. Inspection. The Grantee, its employees and agents, successors and assigns, including representative from the U.S. Army Corps of Engineers, have the right, with reasonable notice, to enter the Conservation Easement Area over the Property at reasonable times for the purpose of inspection to determine whether the Grantor is complying with the terms, conditions and restrictions of this Conservation Easement.

C. Acts Beyond Grantor's Control. 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 Conservation Easement Area caused by third parties, resulting from causes beyond the Grantor's control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken in good faith by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to life or damage to the Property resulting from such causes.

D. Costs of Enforcement. Beyond regular and typical monitoring expenses, any costs incurred by Grantee in enforcing the terms of this Conservation Easement against Grantor, including, without limitation, any costs of restoration necessitated by Grantor's acts or omissions in violation of the terms of this Conservation Easement, shall be borne by Grantor.

E. No Waiver. Enforcement of this Easement shall be at the discretion of the Grantee and any forbearance, delay or omission by Grantee to exercise its rights hereunder in the event of any breach of any term set forth herein shall not be construed to be a waiver by Grantee.

V. MISCELLANEOUS

A. 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 invalid, the remainder of the provisions of the Conservation Easement, and the application of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

B. Grantor is responsible for any real estate taxes, assessments, fees, or charges levied upon the Property. 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. Upkeep of any constructed bridges, fences, or other amenities on the Property are the sole responsibility of the Grantor. 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.

C. Any notices shall be sent by registered or certified mail, return receipt requested to the parties at their addresses shown herein or to other addresses as either party establishes in writing upon notification to the other.

D. Grantor shall notify Grantee in writing of the name and address and any party to whom the Property or any part thereof is to be transferred at or prior to the time said transfer is made. Grantor further agrees that any subsequent lease, deed, or other legal instrument by which any interest in the Property is conveyed is subject to the Conservation Easement herein created.

E. 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.

F. This Conservation Easement and Right of Access may be amended, but only in writing signed by all parties hereto, or their successors or assigns, if 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 purposes of the Conservation Easement. The owner of the Property shall notify the State Property Office and the U.S. Army Corps of Engineers in writing sixty (60) days prior to the initiation of any transfer of all or any part of the Property or of any request to void or modify this Conservation Easement. Such notifications and modification requests shall be addressed to:

Ecosystem Enhancement Program Manager
State Property Office
1321 Mail Service Center
Raleigh, NC 27699-1321

and

General Counsel
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

G. 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.

VI. QUIET ENJOYMENT

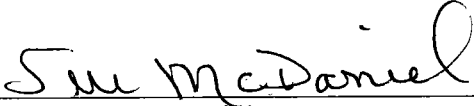
Grantor reserves all remaining rights accruing from ownership of the Property, including the right to engage in or permit or invite others to engage in only those uses of the Conservation Easement Area that are expressly reserved herein, not prohibited or restricted herein, and are not

inconsistent with the purposes of this Conservation Easement. Without limiting the generality of the foregoing, the Grantor expressly reserves to the Grantor, and the Grantor's invitees and licensees, the right of access to the Conservation Easement Area, and the right of quiet enjoyment of the Conservation Easement Area,

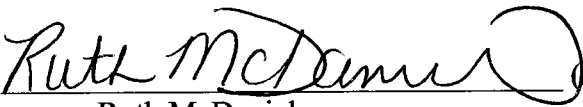
TO HAVE AND TO HOLD, the said rights and easements perpetually unto the State of North Carolina for the aforesaid purposes,

AND Grantor covenants that Grantor is seized of said premises in fee and has the right to convey the permanent Conservation Easement herein granted; that the same is free from encumbrances and that Grantor will warrant and defend title to the same against the claims of all persons whomsoever.

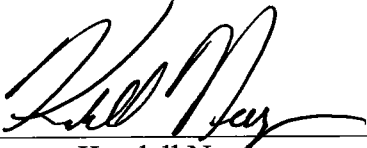
IN TESTIMONY WHEREOF, the Grantors have hereunto set their hand and seal, the day and year first above written.



Sue McDaniel (SEAL)



Ruth McDaniel (SEAL)



Kendall Newschwager (SEAL)

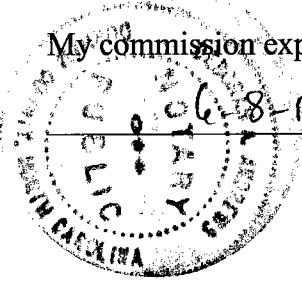
NORTH CAROLINA
COUNTY OF Wakeham

I, William B. Anderson, a Notary Public in and for the County and State
aforesaid, do hereby certify that Ann McDevine, Grantor, personally appeared
before me this day and acknowledged the execution of the foregoing instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and Notary Seal this the 25
day of July, 2014.

William B. Anderson
Notary Public

My commission expires:
6-8-17



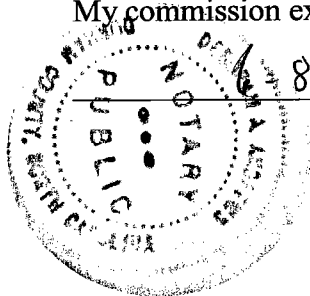
NORTH CAROLINA
COUNTY OF Wakeham

I, William B. Anderson, a Notary Public in and for the County and State
aforesaid, do hereby certify that Ann McDevine, Grantor, personally appeared
before me this day and acknowledged the execution of the foregoing instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and Notary Seal this the 25
day of July, 2014.

William B. Anderson
Notary Public

My commission expires:
8-17



NORTH CAROLINA

COUNTY OF Wake

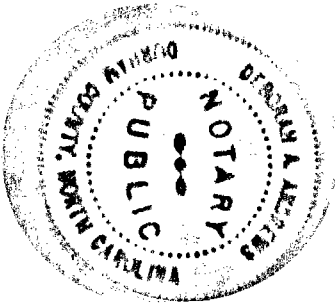
I, Robert H. Anderson, a Notary Public in and for the County and State aforesaid, do hereby certify that Herbelle Demulder Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and Notary Seal this the 25 day of July, 2014.

Robert H. Anderson
Notary Public

My commission expires:

6-8-17



“Exhibit A”

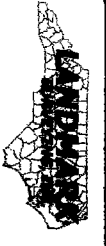
Metes and Bounds Description of a **Conservation Easement** on the property of Sue McDaniel, Ruth McDaniel and Husband Kendall Newswanger.

Tract “A”

Beginning at a new rebar and cap, said new rebar and cap being located N 62°28'57" E 4487.73' from NCGS Monument “CARR”, thence a new line running N 87°28'00" E 200.09' to a new rebar and cap, thence again N 87°28'00" E 190.62' to a new rebar and cap for a total distance of 390.71', thence a new line running N 53°44'01" E 106.74' to a new rebar and cap, thence a new line running N 89°47'09" E 171.34' to a new rebar and cap set in the southwestern margin of the 180' right-of-way of the Carolina Power & Light Company, thence with the right-of-way of the Carolina Power and Light Company S 48°32'59" E 268.46' to a new rebar and cap, the again with said right-of-way S 48°32'59" E 214.42' to a new rebar and cap, thence again with said right-of-way S 48°32'59" E 207.87' to a new rebar and cap, thence again with said right-of-way S 48°32'59" E 182.73' to a new rebar and cap set in the said right-of-way for a total distance of 873.48', thence a new line running S 61°02'47" W 255.56' to a new rebar and cap, thence a new line running N 57°41'39" W 284.64' to a new rebar and cap, thence N 86°48'31" W 287.05' to a new rebar and cap, thence N 74°11'09" W 228.28' to a new rebar and cap, thence again N 74°11'09" W 295.20' to a new rebar and cap for a total distance of 523.48', thence a new line running N 08°47'20" W 135.42' to a new rebar and cap, the again N 08°47'20" W 178.38' for a total distance of 313.80' to the beginning and containing 10.86 acres more or less as shown on the survey prepared by Landmark Surveying, Inc entitled “Final Plat, Conservation Easement, SPO File Number 32-BV - EEP Project ID Number 95389, Property Of Sue McDaniel, Ruth McDaniel and Husband Kendall Newswanger” dated December 20, 2013 and January 17, 2014 recorded in Plat Book 193 Page 29 of Durham County Registry.

Metes and bounds description of access easement located on the property of Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger.

Beginning at an existing iron stake on the right of way of Benny Ross Road at the southwestern corner of the Thomas H. Carter property and the southern corner of the Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger property and being located S 54°54'17" W 604.89' from an existing iron stake at a corner of the above parties, thence running N 45°37'38" W 61.03' to a mathematical point on the right of way of Benny Ross Road, thence a new line running N 54°54'17" E 62.69' to a mathematical point, thence a new line running N 06°17'49" W 25.48' to a mathematical point, thence running N 82°49'35" W 133.00" to a mathematical point on the right of way of Benny Ross Road, thence with the right of way of Benny Ross Road N 50°11'13" W 67.02' to a mathematical point, thence with the right of way of Benny Ross Rd. N 51°43'41" W 100.00' to a mathematical point, thence with the right of way of Benny Ross Road N 46°34'03" W 100.00' to a mathematical point, thence with the right of way of Benny Ross Road N 41°56'22" W 81.68' to a mathematical point, thence a new line running N 40°36'30" E 194.83' to a mathematical point, thence a new line running N 05°20'03" E 15.11' to an existing iron stake in the line of the Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger property and being a common corner with Milson L. Shackelford, thence with the line of same N 05°20'03" E 109.34' to an existing iron stake a common corner with Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger and Milson L. Shackelford, thence a new line crossing the property of Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger N 20°52'36" E 111.00' to a mathematical point in the line of the Conservation Area shown as Tract "A" on the plat recorded in Plat Book 193, Page 29 in the Durham County Register Of Deeds Office, thence with the said Conservation Area S 86°48'31" E 62.98' to a mathematical point, thence a new line crossing Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger S 20°52'36" W 121.94' to a mathematical point, thence a new line S 05°20'03" W 101.15' to a mathematical point in the line of the Sue McDaniel, Ruth McDaniel and husband Kendall Newswanger property, thence a new line S 05°20'03" W 34.18' to a mathematical point, thence a new line running S 40°36'30" W 161.24' to a mathematical point, thence a new line running S 41°56'22" E 26.59' to a mathematical point, thence a new line running S 46°34'03" E 94.87' to a mathematical point, thence a new line running S 51°43'41" E 98.10' to a mathematical point, thence a new line running S 50°11'13" E 50.26' to a mathematical point, thence a new line running S 82°49'35" E 162.76' to a mathematical point, thence a new line running S 06°17'49" E 108.29' to a mathematical point in the line of Thomas H. Carter, thence with the line of Thomas H. Carter S 54°54'17" W 87.02' to the point of beginning as shown on the survey map by Landmark Surveying, Inc. dated December 20, 2013 and entitled "Final Plat - Conservation Easement – Ecosystem Enhancement Program – SPO File number 32-BV – EEP Project ID Number 95389 – Property of Sue McDaniel, Ruth McDaniel and Husband Kendall Newswanger". Plat recorded in Plat Book 193, Page 29 in the Durham County Register Of Deeds Office.



Professional Surveyor Seal for Douglas R. Yarborough, No. 3395

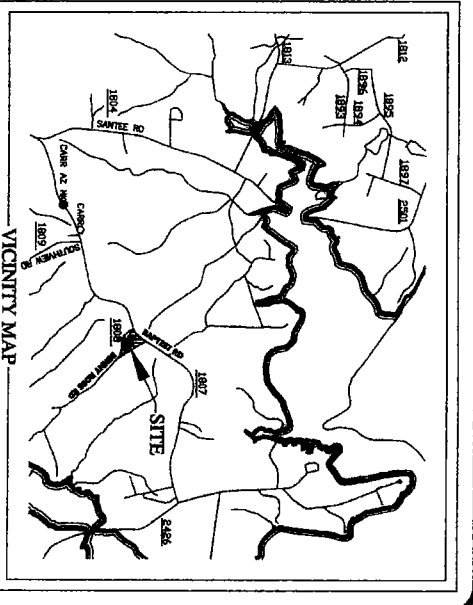
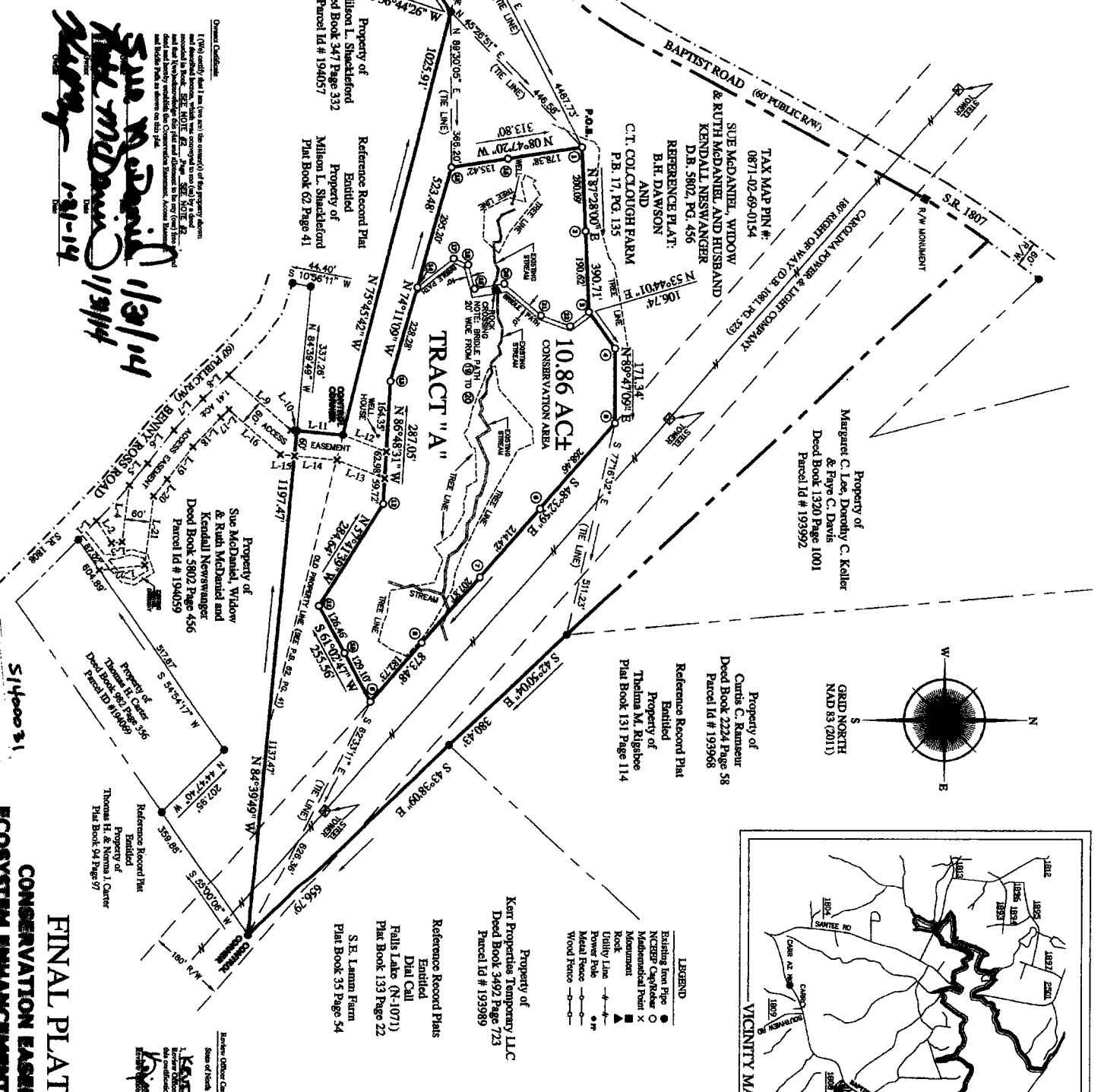


Professional Surveyor Seal for Douglas R. Yarborough, No. 3395

Table with 3 columns: CUR #, INCHES, FEET. Lists curve data for the survey.

FOR REGISTRATION... INSTRUMENT # 2814004603

- NOTES: 1. OWNERS/SITE ADDRESS: SUE MCDANIEL, RUTH MCDANIEL, AND HUSBAND KENDALL NEWSWANGER... 7. THIS MAP IS SHOWING AN EASEMENT AREA ON AN EXISTING TRACT OF LAND ONLY.



LINE TABLE with columns: Line #, Bearing, Distance. Lists line data for the survey.

FINAL PLAT ECOSYSTEM ENHANCEMENT PROGRAM PROPERTY OF SUE MCDANIEL, RUTH MCDANIEL, AND HUSBAND KENDALL NEWSWANGER... DATE 12/20/13... SCALE 1" = 200'

APPENDIX B
NCDWR Correspondence





North Carolina Department of Environment and Natural Resources

Division of Water Quality
Charles Wakild, P.E.
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

July 19, 2012

Ms. Jessica Kemp
N.C. Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

RECEIVED

JUL 23 2012

NC ECOSYSTEM
ENHANCEMENT PROGRAM

Re: Site Viability for Mitigation - McDaniel Farm
Durham County

Dear Jessica,

Lauren Witherspoon and Katie Merritt from the Division of Water Quality (DWQ) were asked by NCEEP to visit the above-referenced site on June 25, 2012. The focus of our review was to determine the site's potential for nutrient offset and Neuse riparian buffer restoration. Ms. Witherspoon performed a stream determination and will submit a separate letter to NCEEP showing all streams onsite that are subject to the Neuse River Buffer Rules. If approved, mitigating this site could provide both riparian buffer credits and nutrient offset credits within the 8-digit Hydrologic Unit Code (HUC) 03020201 of the Falls Watershed in the Neuse River Basin.

The site appeared to be a good candidate for planting Neuse riparian buffers (0-50 feet from the top of bank) for riparian buffer credits or nutrient offset credits. Additionally, there were other riparian areas (0-200 feet from top of bank) that were good candidates for nutrient offset only.

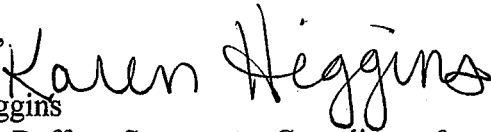
Please provide a mitigation plan detailing the buffer and nutrient offset restoration for review and approval prior to initiating the project. Once the project is complete, you must provide an as-built report showing the total of Neuse riparian buffer and nutrient offset credits that were generated. Please provide riparian buffer credits generated in both acres and square feet. Please provide nutrient offset credits generated in acres and pounds. Monitoring reports shall follow the as-built reports to provide DWQ a means of tracking the project's restoration success for a period of at least five years.

DWQ appreciates the opportunity to participate in up-front evaluations of potential buffer and nutrient offset projects.

We look forward to future participation with your program in our joint efforts to produce quality restoration sites that will help improve water quality.

Please feel free to contact Ms. Merritt at (919) 807-6371 if you have any questions.

Sincerely,


Karen Higgins
Wetlands, Buffers, Stormwater Compliance &
Permitting Unit

Cc: File Copy (Katie Merritt)
Lauren Witherspoon - RRO



North Carolina Department of Environment and Natural Resources
Division of Water Quality

Beverly Eaves Perdue
Governor

Charles Wakild PE
Director

Dee Freeman
Secretary

August 8, 2012

RECEIVED

AUG - 9 2012

NC ECOSYSTEM
ENHANCEMENT PROGRAM

NBRRO#12-156
Durham County

Ruth McDaniel
277 Benny Ross Road
Durham, Nc 27703

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: McDaniel Farm

Location/Directions: East of the intersection of Benny Ross Road and Baptist Road in Durham

Subject Stream: UT to Falls Lake

Date of Determination: 6/25/2012

Feature	Not Subject	Subject	Start@	Stop@	Soil Survey	USGS Topo
A1		X	Start A1 – headcut	Stop A1 – rock outcrop	X	
A2		X	Start A2		X	
B		X	Start B		X	
C	X				X	

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

Explanation: The feature(s) listed above has or have been located on the Soil Survey of Durham, 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 other streams located on your property that do not show up on the maps referenced above but, still may be considered jurisdictional according to the US Army Corps of Engineers and/or to the Division of Water Quality.

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 DWQ 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, DWQ WeBSCaPe Unit, 1650 Mail Service Center, Raleigh, NC 27699.

If you dispute the Director's determination you may file a petition for an administrative hearing. You must file the petition with the Office of Administrative Hearings within sixty (60) days of the receipt of this notice of decision. A petition is considered filed when it is received in the Office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00 am and 5:00 pm, except for official state holidays. To request a hearing, send the original and one (1) copy of the petition to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. The petition may also be faxed to the attention of the Office of Administrative Hearings at (919) 733-3478, provided the original and one (1) copy of the document is received by the Office of Administrative Hearings within five (5) days following the date of the fax transmission. A copy of the petition must also be served to the Department of Natural Resources, General Counsel, 1601 Mail Service Center, Raleigh, NC 27699-1601.

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

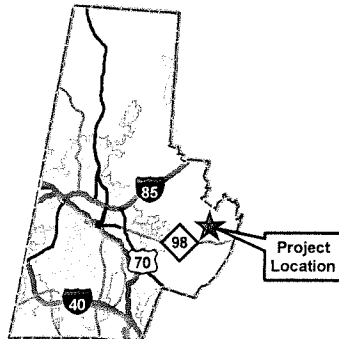
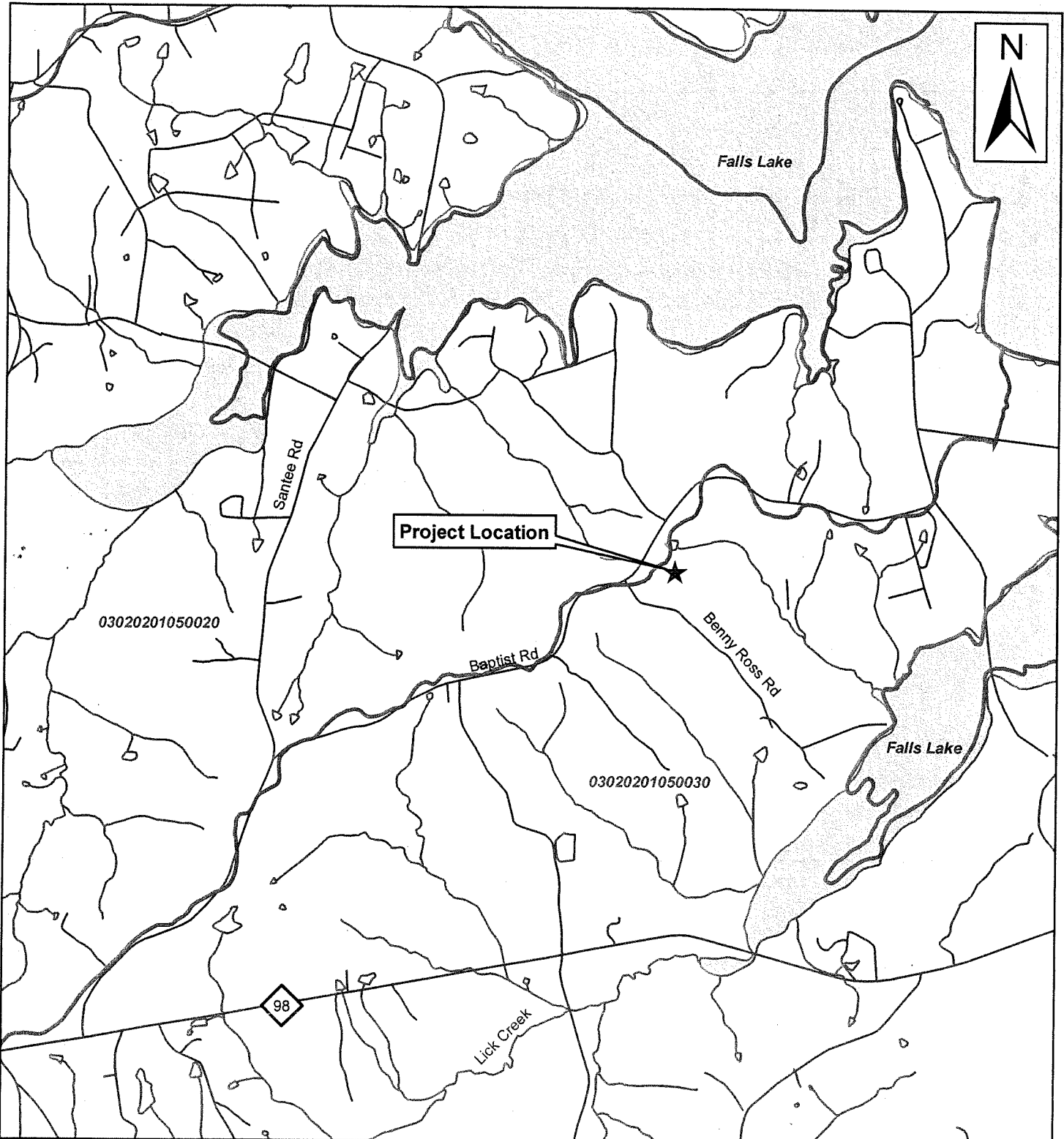
The owner/future owners should notify the Division of Water Quality (including any other Local, State, and Federal Agencies) of this decision concerning any future correspondences regarding the subject property (stated above). This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the Division of Water Quality (Central Office) at (919)-733-1786, and the US Army Corp of Engineers (Raleigh Regulatory Field Office) at (919)-554-4884.

Respectfully,



Lauren Witherspoon
Environmental Senior Specialist

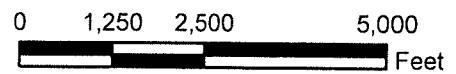
cc: WeBSCaPe – 1650 Mail Service Center
RRO/SWP File Copy
Eddie Culberson – Durham Soil and Water, 721 Foster Street, Durham, NC 27701
Jessica Kemp – NCEEP, 1652 Mail Service Center, Raleigh, NC 27699-1652



**Figure 1. Project Vicinity Map
McDaniel Site - Durham County, NC**



Michael Baker Engineering, Inc.
8000 Regency Parkway
Suite 600
Cary, North Carolina 27518
Phone: 919.463.5488
Fax: 919.463.5490

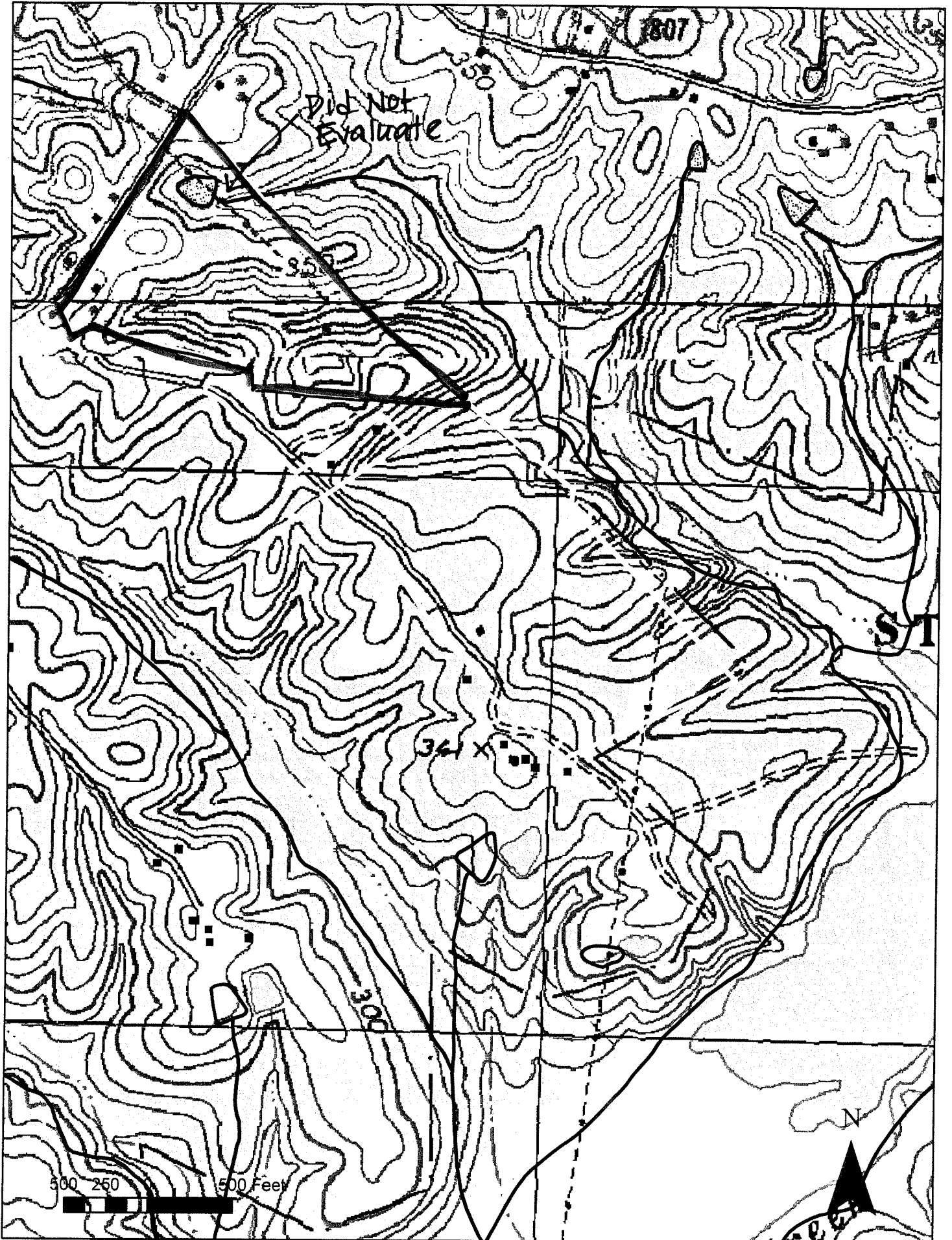




← B-Subject
Start B-headcut

← Not Subject

McDaniel Farm - Property & 1:24,000 USGS



NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: <u>6/25/12</u>	Project/Site: <u>A1</u>	Latitude:
Evaluator: <u>LCW</u>	County: <u>Durham</u>	Longitude:
Total Points: <u>21.5</u> <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 15.5)

	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 = 2)

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)

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:

(Joins sheet 19) MFE

(Joins inset)



PFE (Joins sheet 28) 2075 000 FEET

WsE

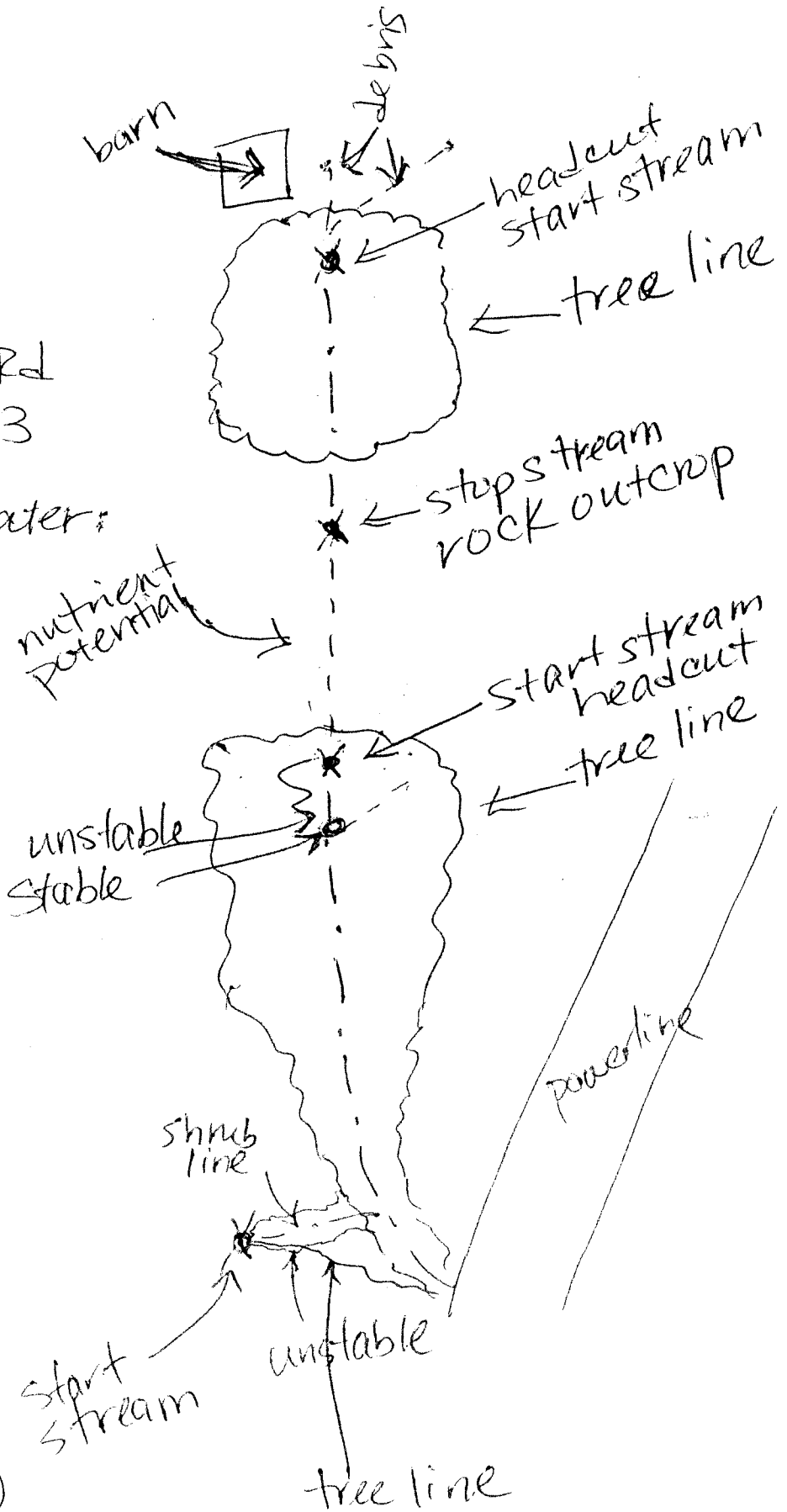
(Joins sheet 29)

1:250 000 FEET

Mail to:
owner

Ruth McDaniel
277 Benny Ross Rd
Durham, 27703

cc: EEP
Durham Soil Water:
Eddie Culberson
721 Foster Street
Durham, NC
27701



UT to Falls Lake
(McDaniel Farm)

APPENDIX C
DMS Monitoring Report Template
NC DMS Riparian Buffer and Nutrient Offset Buffer Annual Monitoring Report Template (ver. 1.0) dated Feb. 2, 2014



**NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**



**Riparian Buffer and Nutrient Offset Buffer
Annual Monitoring Report Template (ver. 1.0)**

Applicability

This Annual Monitoring Report Template is intended for use on all projects that utilize reforestation as the primary means of generating riparian buffer or nutrient offset mitigation credits for the NCDENR Ecosystem Enhancement Program. Other mitigation credit generating activities (e.g. stormwater BMPs) may require substantially more documentation. This template is intended to provide the structure for a very concise document but should not be interpreted as preventing the inclusion of additional information considered appropriate by the mitigation services provider.

General Formatting

- The report should be printed double sided on 8.5" x 11" paper, stapled.
- Maps may be single sided, Z-folded, on 11" x 17" paper.
- Reports should have standard footers including the project name, EEP project number, monitoring report year, submittal date and page number.
- All data must show units of measurement throughout the report.
- Generally, an 11 pt font size is preferred for narratives; font sizes for tables, graphs and other figures should be no smaller than 9 pt.
- Electronic files in Adobe PDF format or equivalent should be submitted on compact disc or uploaded through the EEP portal.

Outline of Contents

- 1.0 MITIGATION PROJECT SUMMARY: A paragraph should describe the river basin, hydrologic unit code, number and type(s) of credits in production, monitoring year and general condition of the project. A timeline of completed and future project activities should be described.
- 2.0 ANNUAL MONITORING
 - 2.1 Methods: describe field methods, sample locations (or quasi-random sampling strategy), timing and density of data collection that have been applied to document project success.

- 2.2 Results and Discussion: all monitoring data should be described, analyzed and presented in the context of the project success criteria set forth in the approved Mitigation Plan. Tables and/or graphs are preferred to reduce narrative. Maps may be used as needed to describe spatial variability of results. Photos should be included as needed to describe site conditions.
- 2.3 Maintenance and Management: a brief statement should describe any maintenance activities planned for the coming year, as well as any remedial activities needed to address performance deficiencies.

3.0 REGULATORY CONSIDERATIONS

- 3.1 Table from approved mitigation plan that shows acreage, activity (restoration, enhancement), mitigation credit ratios, and total expected credits to be generated from each part of the project. If appropriate, additional column(s) may be added to the table to describe changes in credits based on monitoring data and project management decisions. Such credit changes should not be presented unless they are expected to be permanent.
- 3.2 Summary statement regarding overall project success and the continuing viability of all credits described in the monitoring report.