Greene Environmental Services, LLC
90 Ham Produce Rd.
Snow Hill, NC 28580

2013

Evans Ballahack Bank Parcel Development Package

GES Tar-Pamlico River Basin Umbrella Mitigation Bank

Greene Environmental Services, LLC

7/17/2013

Table of Contents

1.0 Project Location and Description

The Evans Ballahack Bank Parcel (Figure 1) is located in Edgecombe County, east of the town of Tarboro, NC and may be accessed by driving east on US 264 approximately 5 miles from Tarboro. At Exit 491 take Chinquapin Road (SR 1524) 2 miles north to NC 111. Take a right turn on NC 111 and drive approximately 0.3 miles and take a right turn onto Roberson School Road (SR 1524). Continue on Roberson School Road for approximately 0.6 miles and take a right turn onto the unnamed farm road with circular metal grain storage buildings located in the distance from the road. Continue 0.3 miles on farm road to a bridge over a drainage canal. The project site is located to the east of the canal and south of the metal buildings along a streamside tree line.

Greene Environmental Services, LLC (GES) of Snow Hill, North Carolina proposes this nutrient offset and riparian buffer bank parcel to improve the water quality in the Tar-Pamlico River Basin by providing offsite mitigation for developments choosing the nutrient "buy down" option within the NC Stormwater Rule or who are in need of riparian buffer mitigation credits. The latitude/longitude coordinates of the site are approximately 35.8721°N and -77.4383°W.

The proposed bank parcel is located within the Lower Tar Watershed (HUC: 03020103). Stormwater runoff from this site drains into the Ballahack Canal (Stream Index # 28-87-1.2), which drains into Conetoe Creek (Stream Index # 28-87-(0.5)), a major tributary to the Tar River. According to the NC Division of Water Quality Basinwide Information Management System, the Ballahack Canal is classified as C, NSW. Mr. Martin Richmond determined that both streams on the site are intermittent (with scores of 26.5 and 28.5 on the DWQ stream determination form) and are both subject to the Tar-Pamlico Buffer Rule on August 14, 2012 (see Appendix B).

The bank parcel is 10 acres, including 5.45 acres of Tar-Pamlico riparian buffer and 4.55 acres of nutrient offset buffer restoration. This bank parcel shall be established under the terms and conditions of the Greene Environmental Services Tar-Pamlico River Basin Riparian Buffer and Nutrient Offset Umbrella Bank made and entered into by Mr. Bobby Ham of Greene Environmental Services, LLC, acting as the Bank Sponsor and the North Carolina Department of Environment and Natural Resources – Division of Water Quality and signed by the Division Director on May 1, 2013.

The bank parcel was previous agricultural cropland and was planted with character species in March 2013. DWQ staff have visited the site and determined that it is suitable for nutrient offset mitigation.

2.0 Project Area – Existing Conditions

2.1 Geologic & Soil Characteristics

Based upon review of the United States Geological Survey (USGS) Conetoe and Speed, North Carolina Quadrangles, the proposed Bank Parcel is located adjacent to the Ballahack canal with elevations ranging from ± 49-feet to ± 53-feet. Topographic relief and surface drainage is generally south and east (Figure 2). The property is located within the Upper Coastal Plain Physiographic Province, within the Southeastern Plains Ecoregion (more specifically the Southeastern Floodplains and Low Terraces subtype). The Southern floodplain forest subtype predominantly includes primarily bottomland hardwood forest and cypress-gum swamp vegetative communities

The entire Evans Ballahack Bank Parcel was planted in soybeans during the 2012 growing season (Figure 3). However, crop production was poor on approximately two-thirds of the project area during that time due to high soil saturation. Consequently, much of the zone within 50 feet of the stream and within the proposed nutrient offset buffer was colonized by annual grasses (*Poa* spp.), sedges (*Eleocharis* sp., *Caryx* spp.) and other herbaceous species including horse nettle (*Solanum carolinense)*, amaranth (*Amaranthus* sp.), purslane (*Portulaca* sp.), ironweed (*Veronia* sp.) and blue dayflower (*Commelina* sp.).

The Soil Survey of Edgecombe County, North Carolina (Soil Conservation Service, 1979) lists the soils within the property as from the Wehadkee-Congaree Association. These soils are primarily located in “broad areas along streams”. As described by the online USDA NRCS Official Soil Series Descriptions (OSD), the specific soils within the project area (Figure 4) are shown below in Table 1:

Table 1. Mapped Soils within the Evans Ballahack Bank Parcel

Soil Type	Acronym	General Description
Altavista	AaA – fine sandy loam, 1-3% slopes	Located on smooth low ridges and flats. This moderately well drained soil has a subsoil that is strongly acid. Dominant native species include: black gum, elm, tulip poplar, sweetgum, pignut hickory, red maple, beech, willow oak, post oak, southern red oak, water oak, and loblolly pine. Common understory species include dogwood, sweetbay magnolia, sourwood, holly, wax myrtle, and sassafras.
Ballahack	Ba – fine sandy loam	Located in shallow drainageways and depressions in stream terraces. This very poorly drained soil is present on about 30% of the bank parcel. Seasonal High Water Table(SHWT) is at or near the surface. Dominant native species include: bald cypress, pond pine, red maple, green ash, pignut hickory, sweetgum, swamp black gum, elm, tulip poplar, river birch, water oak, willow oak, and swamp white oak. Understory species include red cedar, holly, sweetbay magnolia, sourwood, and wax myrtle.
Cape Fear	Ca - Loam	Located on broad flats and depressional drainageways and stream terraces. This very poorly drained soil has a strongly acid subsoil and the SHWT is at or near the surface. The dominant tree and understory species are identical to those listed for Ballahack fine sandy loam.
Conetoe	CeB – Loamy sand, 0-4% slopes	Located on smooth to slightly rounded low ridges on stream terraces. This well drained soil is very strongly acid to medium acid. Dominant native trees include: loblolly pine, longleaf pine, red maple, hickory, sweetgum, black gum, southern red oak, white oak, and post oak. The understory species include: dogwood, sassafras, holly, sourwood, and wax myrtle.
Portsmouth	Pu – Fine sandy loam	Located on broad flats and depressions in stream terraces. This very poorly drained soil has a strongly acid subsoil and a SHWT that is at or near the surface. The dominant tree and understory species are identical to those listed for Ballahack fine sandy loam.
Roanoke	Ro – Loam	Located on broad flats and stream terraces. This poorly drained soil has a strongly acid subsoil with a SHWT at or near the surface.

2.2 Vegetative Communities

The position of the bank parcel in the landscape coupled with very poorly (75%) to moderately well drained soils (25%) and remnant vegetation suggests that the site was likely a nonriverine wet hardwood forest or mesic mixed hardwood forest in the distant past, prior to timber harvesting and drainage for agriculture. The nearest mature vegetative community is a mixed hardwood/pine community consisting of water oak (*Quercus nigra*), white oak (*Quercus alba*), loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), willow oak (*Quercus phellos*), red maple (*Acer rubrum*), sourwood (*Oxydendrum arboreum*), and horse sugar (*Symplocos tinctoria*). The forest stand is located adjacent to and along approximately 200 feet of the opposite side of the stream at the southeastern corner of the bank parcel. Based on tree size (canopy is 80 feet and dbh up to 24 inches), this stand is estimated to be in excess of 50 years old. At the northeast corner of the project area, approximately 300 feet along the opposite side of the stream, there is a regrowing "cut-over" stand. This stand is predominantly sweetgum, red maple, black cherry (*Prunus serotina*) and water oak that are less than 25 feet in height and estimated to be 5-10 years old.

Approximately 2,800 feet along the opposite side of the stream is an early succession, scrub/shrub, clear-cut community that has been burned and treated with herbicide by the neighboring landowner to control tree growth and promote cover for hunting.

Woody species, including red maple, black willow (*Salix nigra*) and sweetgum are coppice sprouting, but herbaceous species including dog fennel (*Eupatorium capillifolium*), blackberry (*Rubus* sp.), goldenrod (*Solidago* sp.), ironweed, cat briar (*Smilax bona nox*), blue dayflower and various sedges and grasses, predominate. A narrow vegetative strip along the stream bank consists of low growin titi (*Cyrilla racemiflora*), red maple, black willow, water oak, river birch (*Betula nigra*), sweetgum, green briar, Japanese honeysuckle (*Lonicera japonica*), muscadine grape (*Vitis rotundifolia*), buttonbush (*Cephalanthus occidentalis*), pokeweed (*Phytolacca americana*) and elderberry (*Sambucus canadensis*).

2.3 Threatened and Endangered Species

The US Fish and Wildlife Service (USFWS) and NC Natural Heritage Program (NHP) databases were searched for federally listed threatened and endangered plant and animal species for Edgecombe County, NC. Two federally listed species, the red-cockaded woodpecker (*Picoides borealis*) and the Tar River spineymussel (*Elliptio steinstansana*), are currently listed in Edgecombe County (Table 2).

Table 2. Listed Threatened and Endangered Species in Edgecombe County, NC

Species	Federal Status	Habitat
Red-cockaded woodpecker	Endangered	The red-cockaded woodpecker prefers mature stands of longleaf pine (*Pinus palustris*) trees, generally over 80 years old. Habitat requirements average 125 to 200 acres in area. Although some cavities have been found in pine forests as small as 60 acres.
Tar River Spineymussel	Endangered	The Tar River Spineymussel requires relatively silt-free, uncompacted gravel and/or coarse sand in fast-flowing, well oxygenated stream reaches. The species has only been documented in the main stem of the Tar River, Shocco Creek, Fishing Creek, Little Fishing Creek, and Swift Creek in the Tar-Pamlico Basin.

Within a 2-mile radius of the site:

- A review of the North Carolina Natural Heritage Program (NCNHP) database shows no occurrences of either species;
- The NCNHP Virtual Workroom showed no state registered species; and
- The NCNHP Virtual Workroom showed three managed areas, all of which were USDA Farm Service Agency Conservation Reserve Enhancement Program Easements.

No impacts to the red-cockaded woodpecker or the Tar River spineymussel, either positively or negatively, are expected from this project.

2.4 Environmental Issues

A report was obtained from Environmental Data Resources, Inc. (EDR) regarding the potential for on-site or nearby sources of contamination. EDR maintains an updated database of current and historical sources of contamination. All storage tanks, whether above-ground or underground are identified, as well as superfund sites, landfills, hazardous waste sites, and other potential hazards. No sites were noted on their database within a one-mile radius of the Bank site.

2.5 FEMA Floodplain/Floodway Mapping

As shown in Figure 6, the Evans Ballahack Bank Parcel does not contain areas designated by Federal Emergency Management Association (FEMA) as floodway or 100-year flood boundary. Therefore, no floodplain or floodway impacts are anticipated.

3.0 Proposed Nutrient Offset and Riparian Buffer Restoration Plan

The proposed bank parcel was most recently in soybean production. Following the harvest during winter of 2012, soybean stubble remained in portions of the parcel. In other portions of the parcel, crop failure occurred and annual herbaceous vegetation residue and bare pans existed. GES initially considered undertaking site preparation to facilitate planting and seedling establishment, however, this work was later deemed unnecessary and no site preparation work is required or will be undertaken. Although no site preparation work was undertaken, GES was advised that if the land disturbance does not exceed one acre in total it is thus permissible as per communication with staff from the NC DENR, Division of Energy, Mineral, and Land Resources (Thad Valentine, NC DENR-DEMLR, February 13, 2013).

Bareroot seedlings of character trees (Table 3), live stakes of locally obtained woody species and containerized plants were planted in March 2013 within the proposed conservation easement area (Figures 5a & 5b). "Character Trees" are defined as planted or volunteer species identified from a survey of local vegetation on less degraded sections of the specified stream and from reference literature that details native species. Bareroot seedlings were purchased from Claridge Nursery (NC DFR) in Goldsboro, NC and live stakes were obtained adjacent to the site. Mowing and other vegetation management practices may be implemented during the initial years of tree establishment on the site to prevent the establishment of invasive species that will attempt to out-compete the planted native vegetation.

Table 3. Species List for Planting Plan

Scientific Name	Common Name	Description	# Plants
Betula nigra	River birch	Bareroot	500
Diospyros virginica	Persimmon	Bareroot	200
Liriodendron tulipifera	Yellow poplar	Bareroot	700
Nyssa sylvatica	Blackgum	Bareroot	600
Platanus occidentalis	Sycamore	Bareroot	500
Quercus alba	White oak	Bareroot	700
Quercus falcata	Southern red oak	Bareroot	200
Quercus nigra	Water oak	Bareroot	500
Quercus phellos	Willow oak	Bareroot	500
Taxodium distichum	Bald cypress	Bareroot	600
Total Seedlings Planted			5,000
Seedlings Planted/Acre			500

Alternative trees for supplemental planting may include: cherrybark oak (*Quercus pagoda*) and swamp chestnut oak (*Quercus michauxii*). During planting, tree species that are best adapted to drier site conditions (white oak, southern red oak, and willow oak) were planted on well drained soils and those adapted to wetter sites (bald cypress, river birch and black gum) were planted on poorly drained soils. However, these and other planted species are adapted to most site conditions we expected to encounter. As per communication with the DWQ, water oak and willow oak will not be counted toward success criteria in UT-A monitoring plots within 200 feet of the mature forest stand at the southeastern portion of the parcel because of the likelihood of natural recruitment of seedlings of these species from the existing stand.

Buffer vegetative success criteria are based upon the density and growth of character tree species as defined in Table 3. As per the Greene Environmental Services Tar-Pamlico River Basin Riparian Buffer and Nutrient Offset Umbrella Banking Instrument, vegetative success criteria will be based upon guidelines set forth in the *Guidelines for Riparian Buffer Restoration* prepared by the North Carolina Ecosystem Enhancement Program (or subsequent updated versions of these guidelines in place at the date of acceptance of a BPDP), and shall be defined as a survival of an average density of 320 planted trees per acre after five years.

If vegetative success criteria are not achieved based on acreage density calculations from combined monitoring plots over the entire restoration area, or if an inspection of the restoration/mitigation site indicates that portions of the site do not have sufficient stem densities or are otherwise deficient, supplemental planting shall be performed with tree species approved by NCDWQ. Supplemental planting shall be performed as needed until vegetative success criteria are met. The quantity of monitoring plots shall be determined in accordance with *The Carolina Vegetative Sampling Protocol* (Levels I & II).

4.0 Monitoring and Maintenance Plan

The Evans Ballahack Bank Parcel will be monitored annually for five years (or until DWQ's success criteria have been met). Monitoring activities will begin on the site following the submittal of the As-Built report. Supplemental planting and necessary site modifications will be implemented as necessary. Monitoring activities will follow the terms and conditions of the proposed Greene Environmental Services Tar-Pamlico River Basin Riparian Buffer and Nutrient Offset Umbrella Banking Instrument, which was signed by the Division Director and Mr. Bobby Ham (GES) on May 1, 2013.

Vegetative success will be monitored within the restored Tar-Pamlico riparian buffer and nutrient offset buffer and a monitoring report will be provided to DWQ no later than December 31st of each monitoring year. The report will include vegetative plot data, monitored in accordance with the CVS-EEP Protocol for Recording Vegetation (CVS-EEP, v. 4.2). Plots measuring 100 m^2 (ten by ten meter squares) will be permanently established. The Evans Ballahack Bank Parcel will contain five vegetative monitoring plots, exceeding the requirement of 2% of the proposed restoration area. Since the site is a small one (10 acres) and is broken up into four tracts, five vegetative plots are considered prudent to get a realistic picture of the site's success. Of the four bank parcel tracts, Tract 3 is substantially larger and will be represented by two vegetative plots in order to capture the most realistic picture of site success. Three of the monitoring plots will be located within the 50-foot riparian buffer. The plant species, survival rates, and character species density will be recorded within each plot, as well as general notes on problems encountered or unique situational developments. Photographs of each plot from the same plot corner will be included in the monitoring reports to provide DWQ with a snapshot of the site success each year. Monitoring will take place between August and November. The first monitoring data will not be collected less than five (5) months after completion of initial planting.

5.0 Financial Assurance Language

Greene Environmental Services, LLC will provide a performance bond to ensure completion of all mitigation work. The amount of the performance bond shall be efficient to cover all costs associated with establishing the site for its proposed mitigation. Upon approval of the subject BPDP, Greene Environmental Services, LLC will provide financial assurance in the form of a monitoring bond in the amount of at least $150,000 to ensure that adequate funds are available for completion of the maintenance and monitoring outlined in the BPDP under Section 3.

6.0 Nutrient Offset and Riparian Buffer Mitigation Potential

The Evans Ballahack Bank Parcel consists of 10.0 acres, which will be protected under a permanent conservation easement. The Parcel will generate 237,402 square feet (5.45 acres) of Tar-Pamlico riparian buffer credit and 198,198 square feet (4.55 acres) of nutrient offset buffer which yields 10,342.24 (lb-N) Nitrogen credits at 2,273.02 lb-N/acre and 666.12 (lb-P) Phosphorus credits at 146.4 lb-P/acre.

Riparian Buffer Credit may be achieved through mitigation of the Tar-Pamlico riparian buffer, as defined in 15A NCAC 02B .0259. Nutrient Offset Credit may be achieved through restoration of the riparian area adjacent to surface water features. Surface water features do not have to be intermittent or perennial, nor do they have to be depicted on a USGS, NRCS, or EMC approved map. The width of the restoration area begins at the landward limit of the top of bank or the rooted herbaceous vegetation and extends landward a maximum distance of 200 feet on all sides of the surface water. The mitigation accomplished in the DWQ Tar-Pamlico buffer, as defined in 15A NCAC 02B .0259 and per 15A NCAC 02B .0260 may be used for *either* Riparian Buffer Credit or Nutrient Offset Credit, but not both.

7.0 References

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and http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=37065

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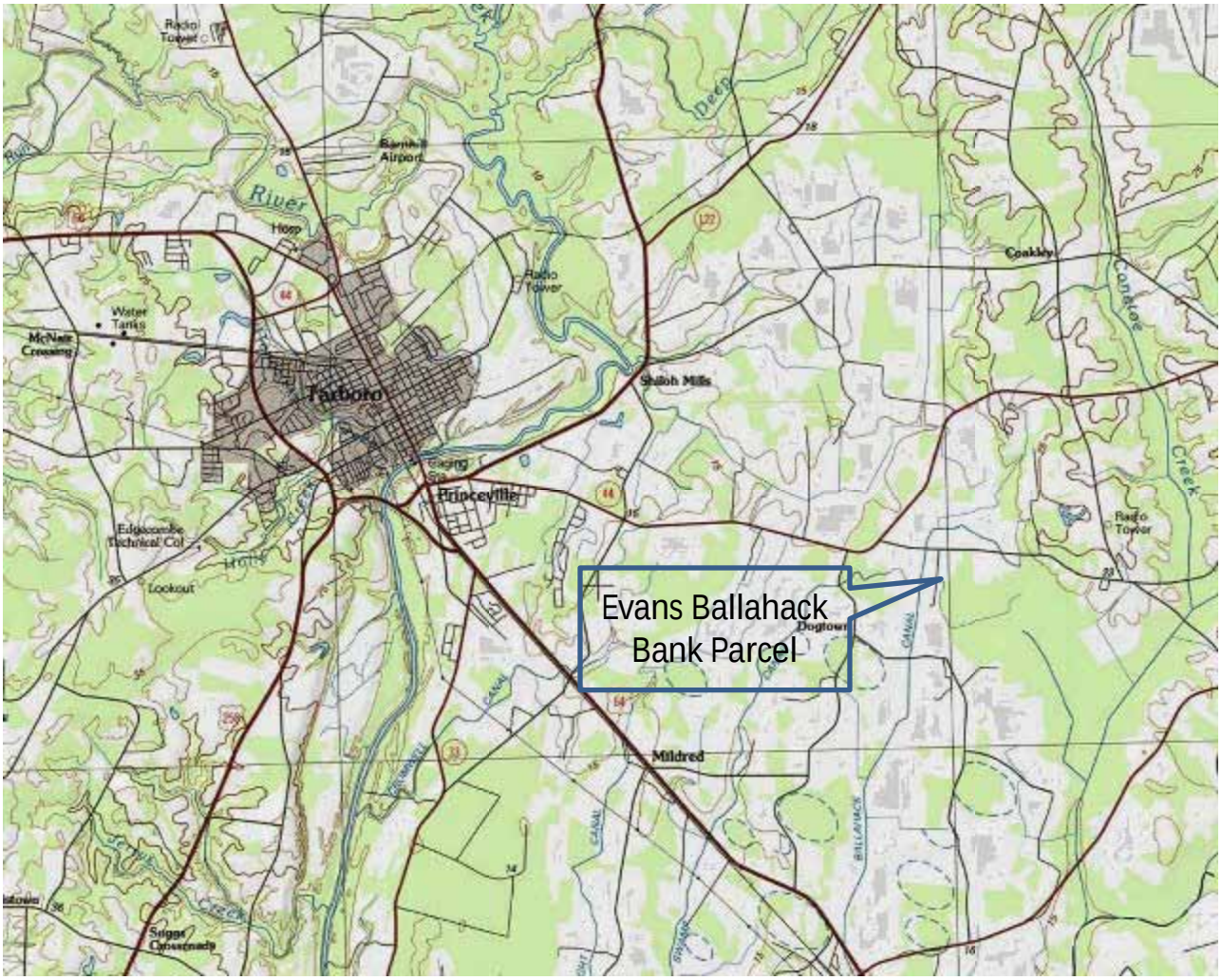
APPENDIX A

Figures



1000 2000 ft

GES

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Figure 1 – Vicinity Map

N

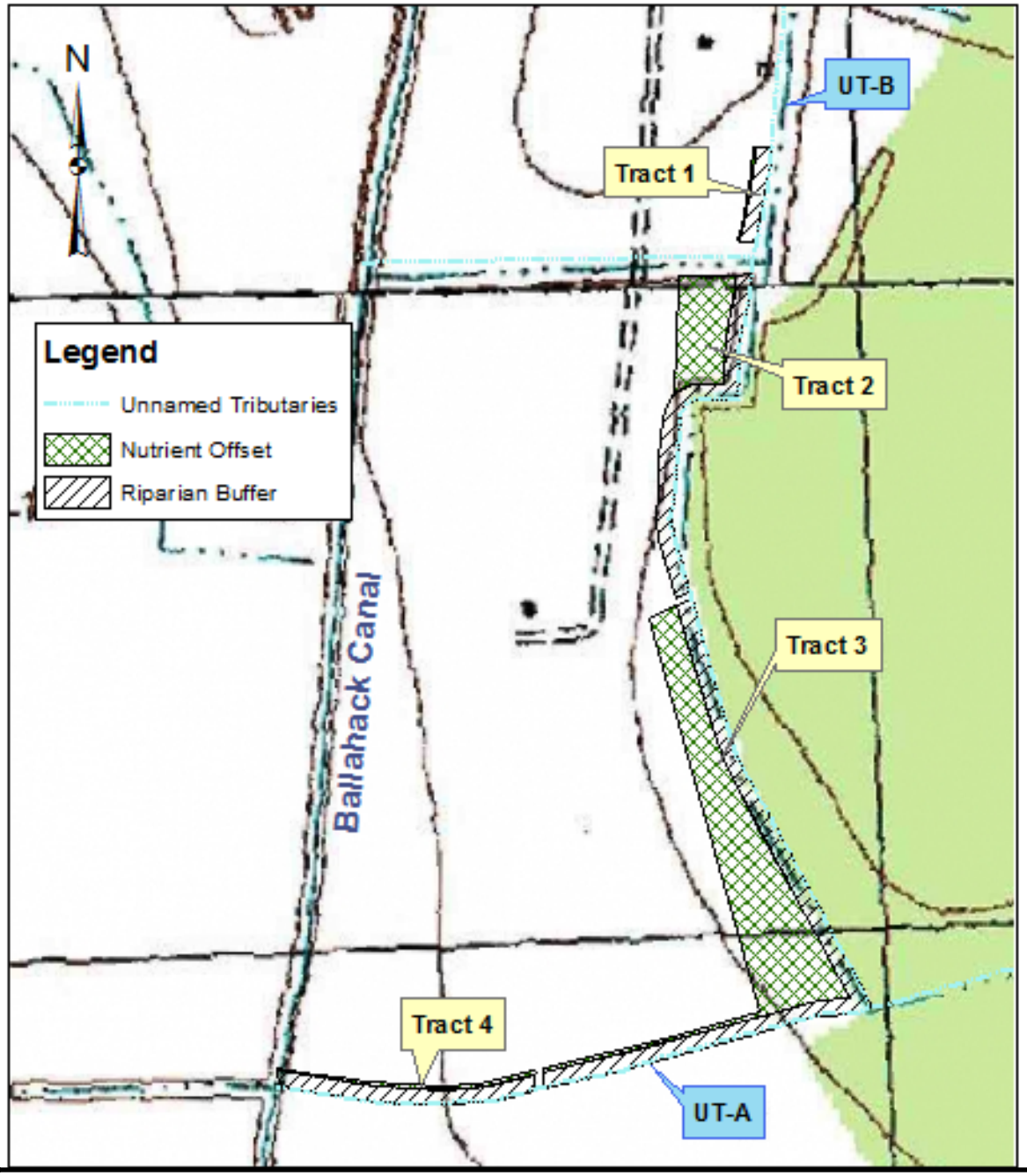

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Figure 2 – USGS Topographic Map

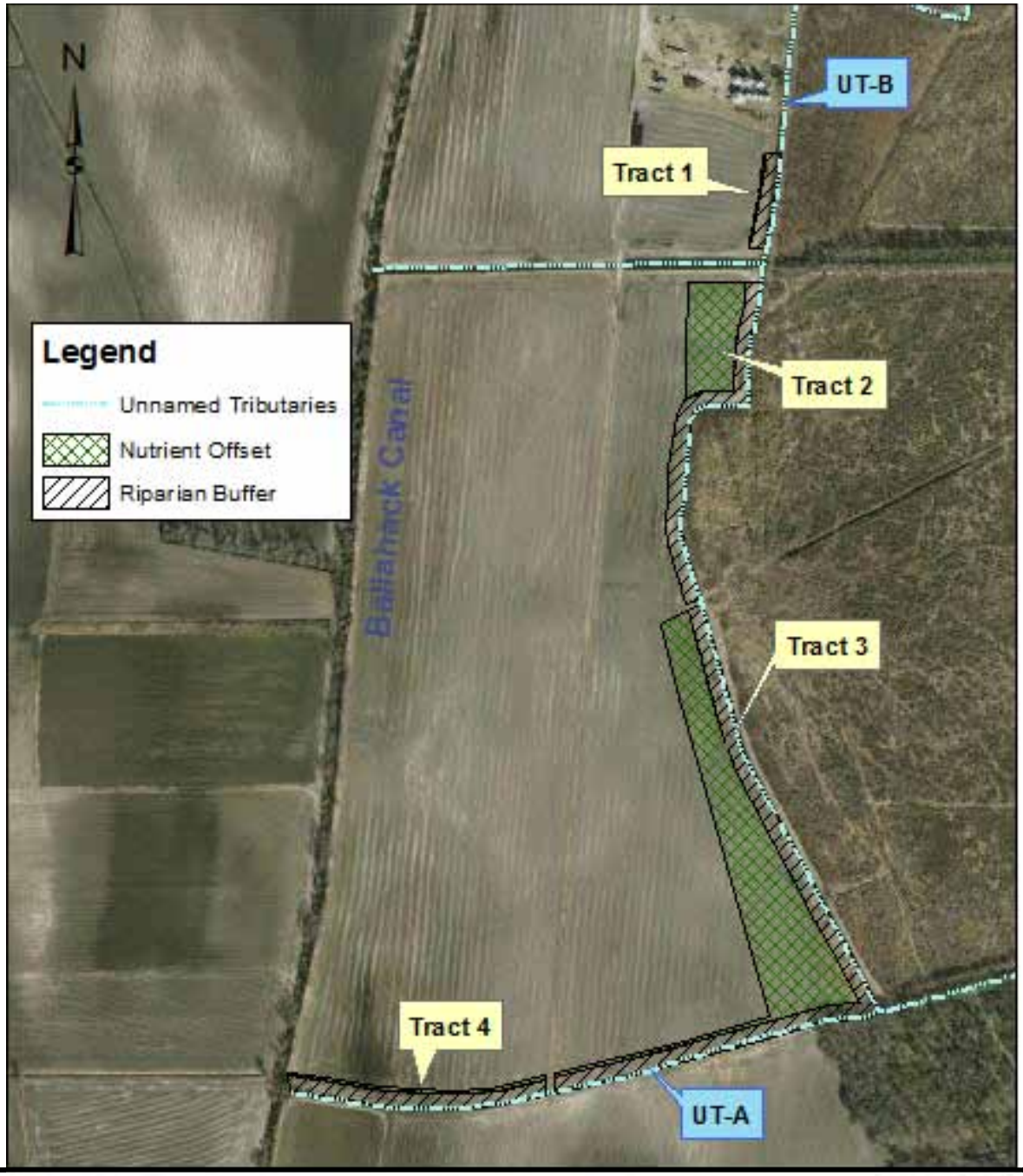

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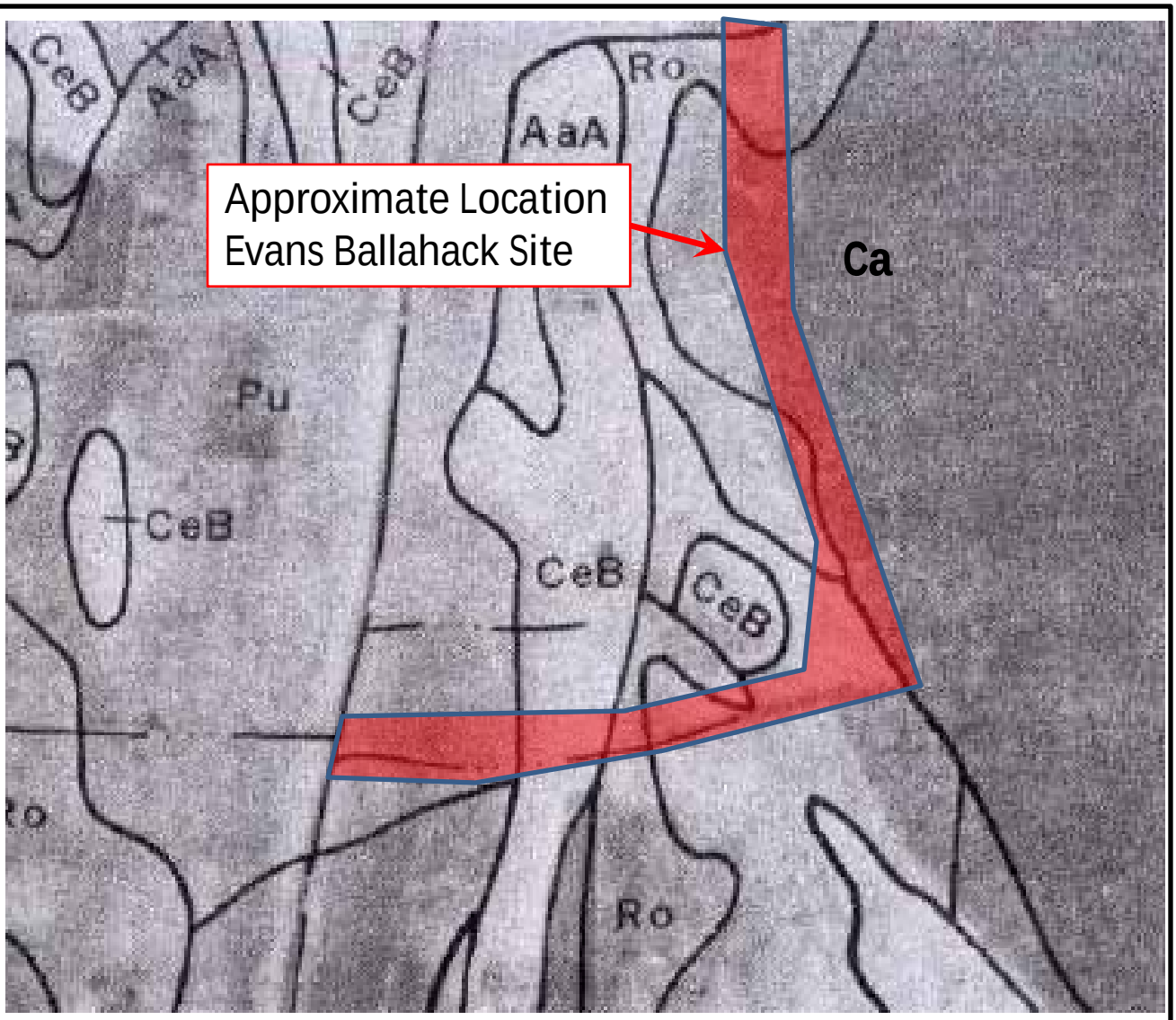
Figure 3 – Aerial Map



LEGEND

N.T.S.

AaA: Altavista fine sandy loam
Ba: Ballahack fine sandy loam
Ca: Cape Fear loam
CeB: Conetoe loamy sand
Pu: Portsmouth fine sandy loam
Ro: Roanoke loam

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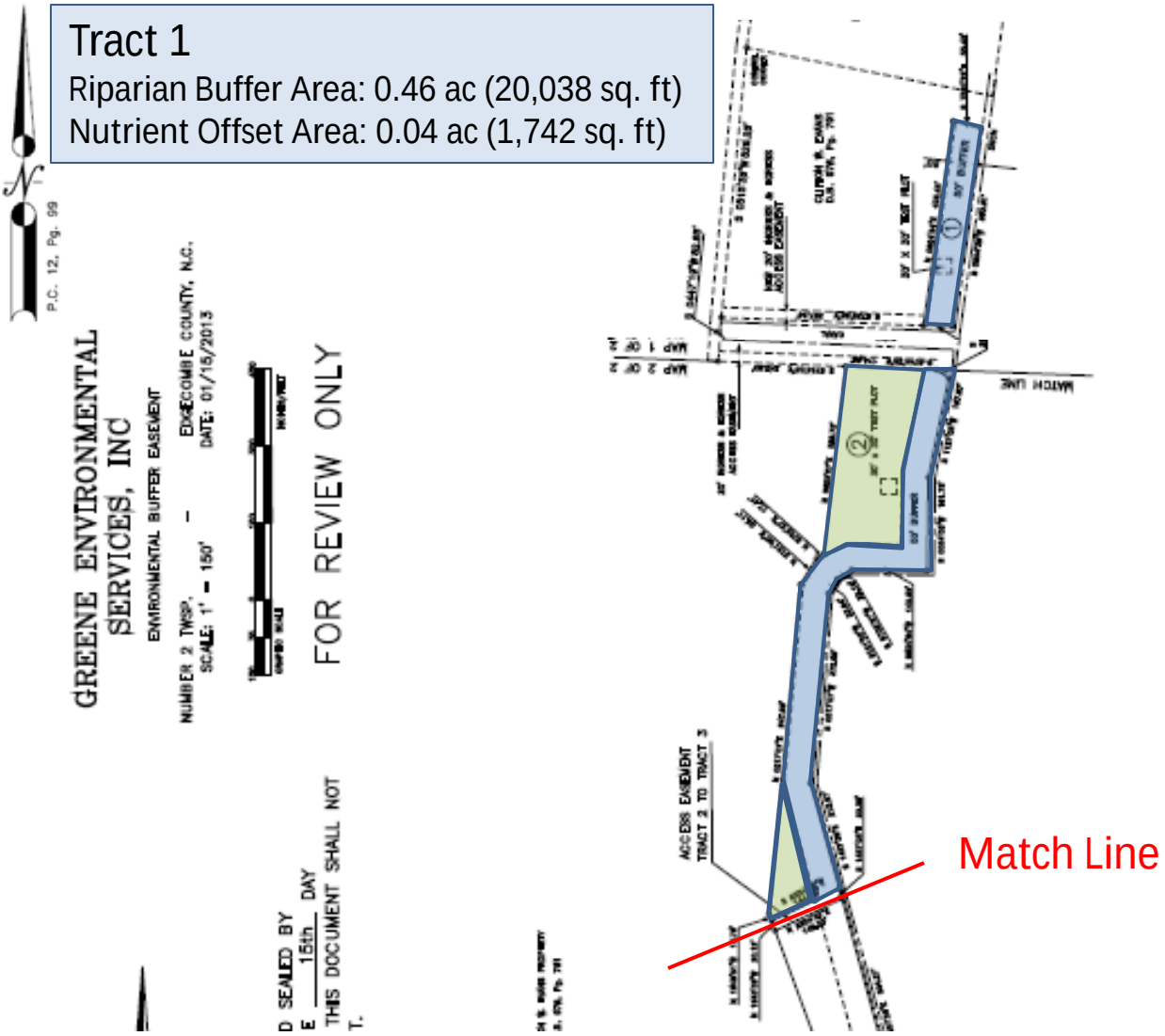
Figure 4 – Soils Map

N

Tract 1

Riparian Buffer Area: 0.46 ac (20,038 sq. ft)
Nutrient Offset Area: 0.04 ac (1,742 sq. ft)



Tract 2

Riparian Buffer Area: 1.26 acres (54,886 sq. ft)
Nutrient Offset Area: 1.56 ac (67,954 sq. ft)

N.T.S.

Tar-Pamlico Buffer Area

Nutrient Offset Area

Figure 5a – Survey Excerpt

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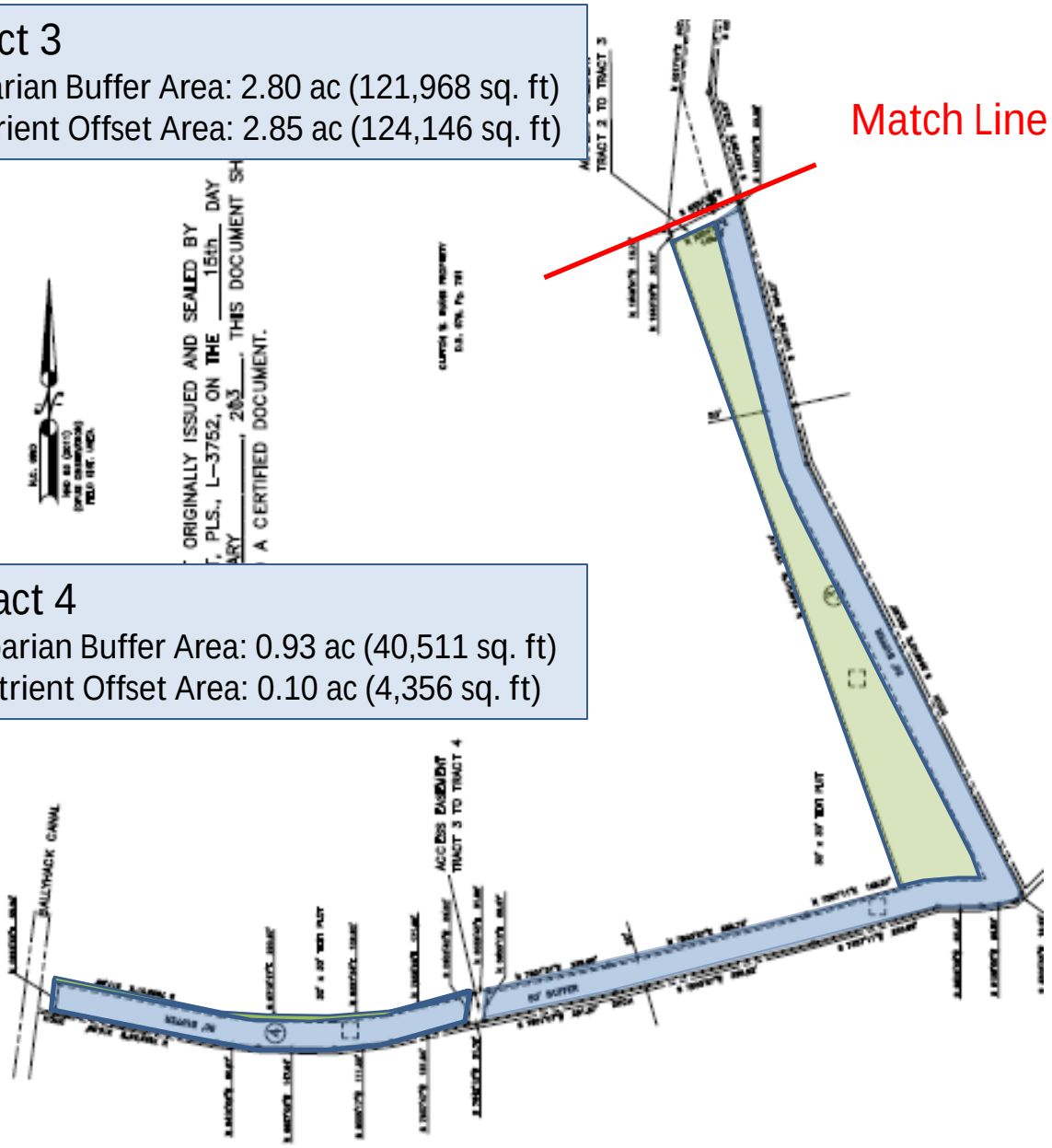
Tract 3

Riparian Buffer Area: 2.80 ac (121,968 sq. ft)
Nutrient Offset Area: 2.85 ac (124,146 sq. ft)

Match Line

Tract 4

Riparian Buffer Area: 0.93 ac (40,511 sq. ft)
Nutrient Offset Area: 0.10 ac (4,356 sq. ft)



N.T.S.

Tar-Pamlico Buffer Area

Nutrient Offset Area

Figure 5b – Survey Excerpt

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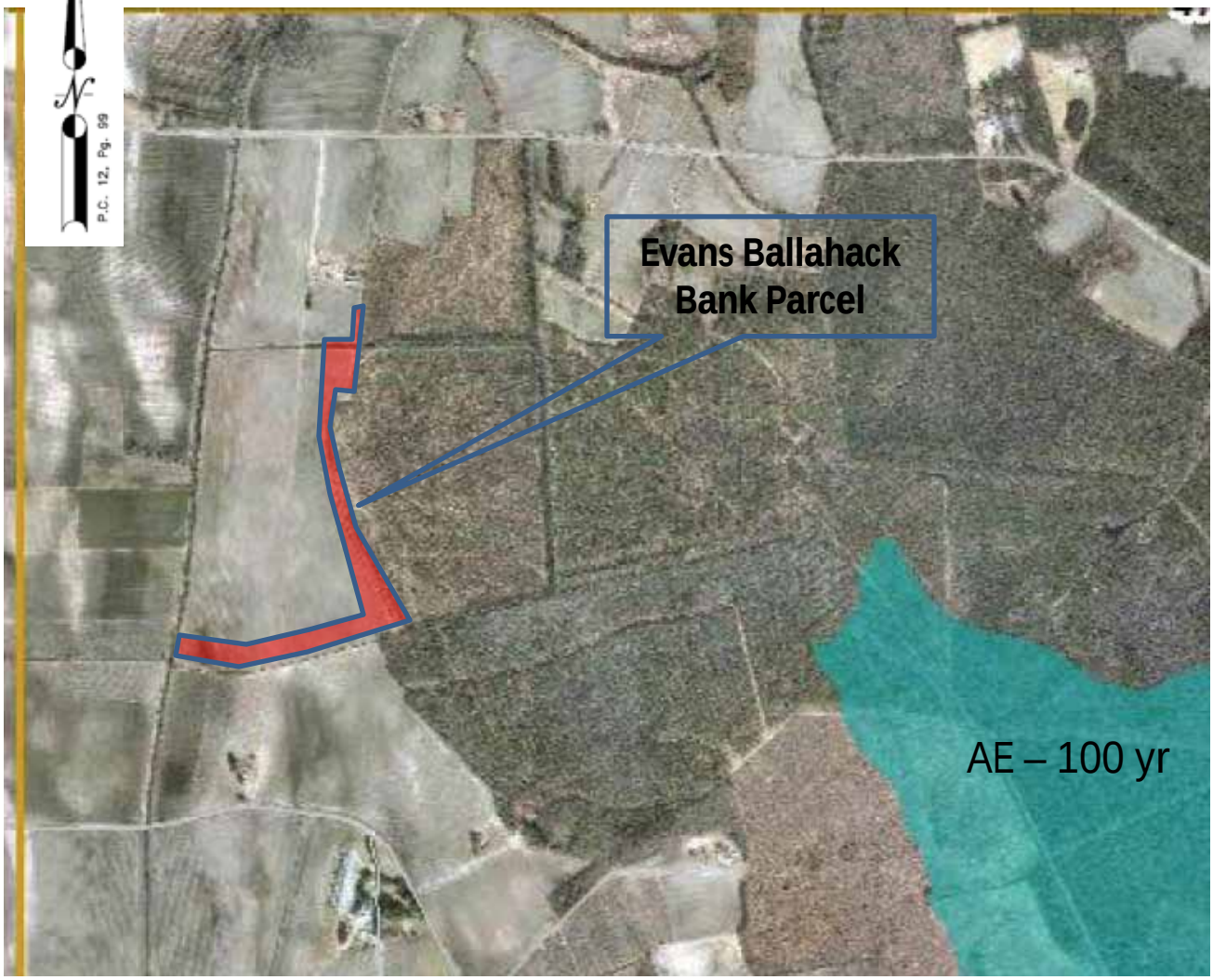

N.T.S.

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Figure 6 – FEMA Floodplain/
Floodway Mapping

APPENDIX B

Draft Conservation Easement Boundary
DWQ Stream Determination Letter
Site Photographs

MAP 2 OF 2

SURVEY FOR

GREENE ENVIRONMENTAL SERVICES, INC

ENVIRONMENTAL BUFFER EASEMENT

NUMBER 2 TWSP. – EDGECOMBE COUNTY, N.C.

SCALE: 1' = 150' DATE: 01/15/2013

150 75 0 150 300 450

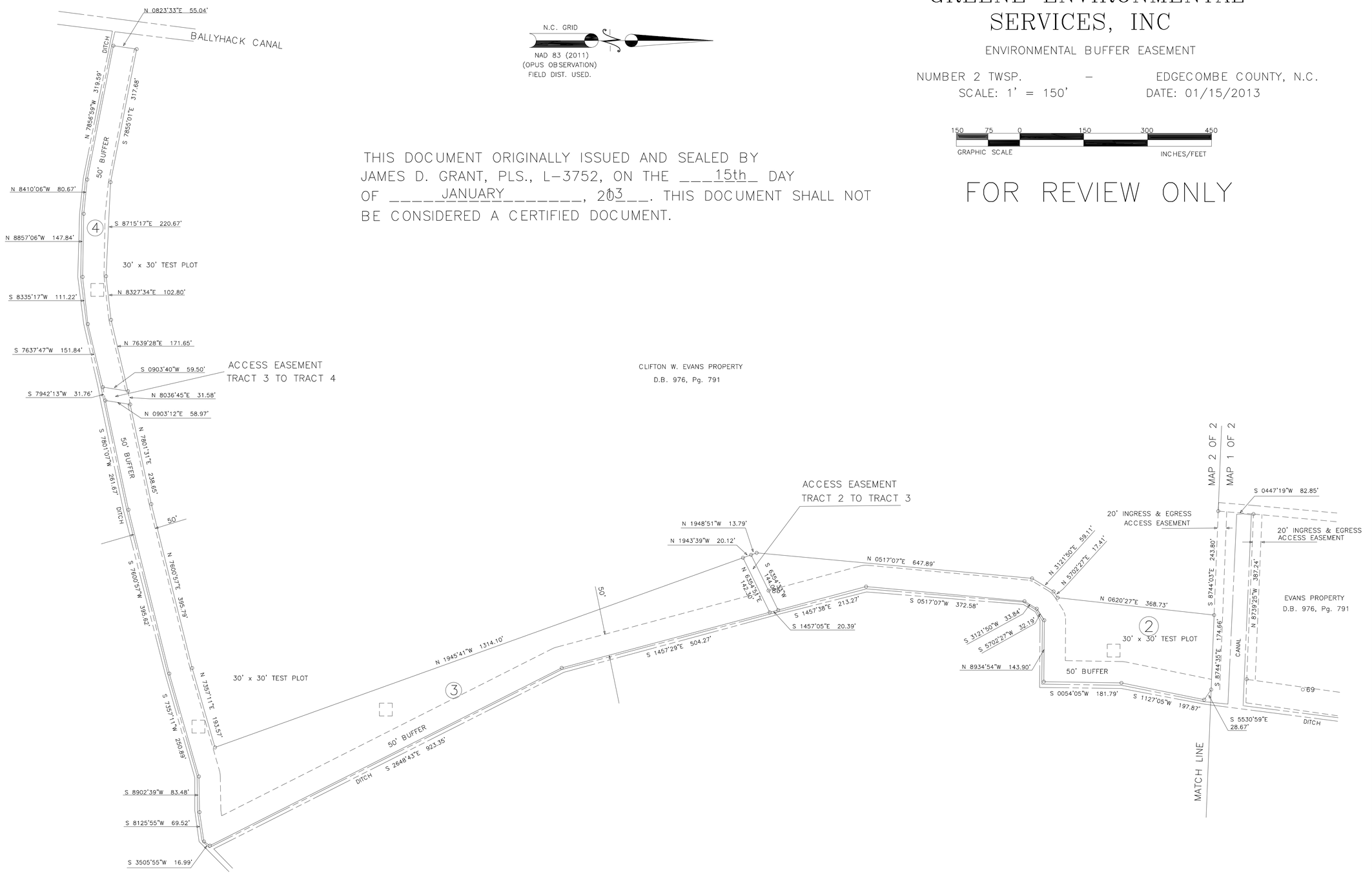
GRAPHIC SCALE INCHES/FEET

FOR REVIEW ONLY

N.C. GRID

NAD 83 (2011)
(OPUS OBSERVATION)
FIELD DIST. USED.

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY JAMES D. GRANT, PLS., L-3752, ON THE ___15th_ DAY OF _____JANUARY_____, 203___. THIS DOCUMENT SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

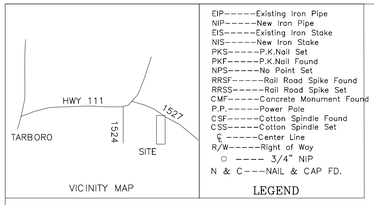


CLIFTON W. EVANS PROPERTY
D.B. 976, Pg. 791

GRANT & ASSOCIATES, P.A.
LAND SURVEYING SERVICES
907 S.E. 2nd STREET
SNOW HILL, N.C. 28580
(252) 747-7777

JAMES D. GRANT, PLS L-3752 LIC. No. C-2168

DATE: 01/15/13	DRAWN BY: JDG	FB/Pg 136/51	FILE No.: 12079



VICINITY MAP

EIP-----Existing Iron Pipe
NIP-----New Iron Pipe
EIS-----Existing Iron Stake
NIS-----New Iron Stake
PKS-----P.K.Nail Set
PKF-----P.K.Nail Found
NPS-----No Point Set
RRSF-----Rail Road Spike Found
RRSS-----Rail Road Spike Set
CMF-----Concrete Monument Found
P.P.-----Power Pole
CSF-----Cotton Spindle Found
CSS-----Cotton Spindle Set
℄ -----Center Line
R/W-----Right of Way
○ ---- 3/4" NIP
N & C---NAIL & CAP FD.

LEGEND

I, James D. Grant, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description recorded in Book SEE, page SEE) that the boundaries not surveyed are clearly indicated as drawn from information found in books referenced; 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. Witness my original signature, registration number and seal this 15th day JANUARY, 13 20 , A.D.

James D. Grant, PLS. L-3752

I, James D. Grant, PLS certify:

- ☐ a. That the survey creates a subdivision of land within the area of a county or municipality that has an ordinance that regulates parcels of land.
- ☐ b. That the survey is located in such a portion of a county or municipality that is unregulated as to an ordinance that regulates parcels of land.
- ☐ c. Any one of the following:
  1. That the survey is of an existing parcel or parcels of land and does not create a new street or change and existing street.
  2. That the survey is of an existing building or other structure, or natural feature, such as a water course; or
  3. That the survey is a control survey.
- ■ d. That the survey is of another category, such as the recombination of existing parcels, a court ordered survey, or other exception to the definition of subdivision.
- ☐ e. That the information available to the surveyor is such that the surveyor is unable to make a determination to the best of his or her professional ability as to the provisions in (a) through (d) above.

James D. Grant, PLS L-3752

ACREAGE DATA

TRACT 1
50' BUFFER = 0.46 acres
EXCL. BUFFER = 0.04 acres

TRACT 2
50' BUFFER = 1.26 acres
EXCL. BUFFER = 1.56 acres

TRACT 3
50' BUFFER = 2.80 acres
EXCL. BUFFER = 2.85 acres

TRACT 4
50' BUFFER = 0.93 acres
EXCL. BUFFER = 0.10 acres

ACREAGE DATA

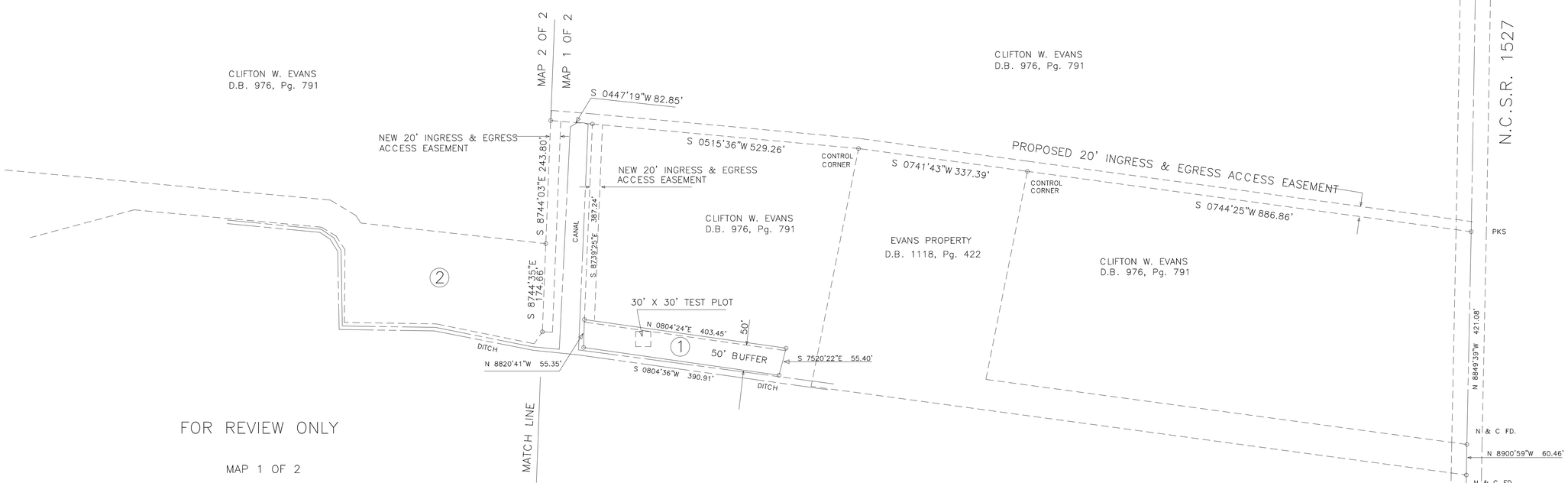
TRACT 1 – 0.50 acres
TRACT 2 – 2.82 acres
TRACT 3 – 5.65 acres
TRACT 4 – 1.03 acres

TOTAL – 10.00 acres by computer

N.C. GRID
NAD 83 (2011)
(OPUS OBSERVATION)
FIELD DIST. USED.

COURSES AND DISTANCES ALONG N.C.S.R. 1527
FROM A PKF AT THE INTERSECTION OF N.C.S.R. 1527 &
HWY. 111 RUNNING THENCE ALONG THE CENTERLINE OF N.C.S.R. 1527
"1" THRU "6"

COURSE	BEARING	DISTANCE
1	S 7702'31"E	1684.45'
2	S 7922'15"E	158.50'
3	S 8237'48"E	157.79'
4	S 8542'01"E	154.88'
5	S 8741'48"E	103.71'
6	S 8859'48"E	1086.32'



FOR REVIEW ONLY

MAP 1 OF 2

SURVEY FOR

GREENE ENVIRONMENTAL SERVICES, INC.

ENVIRONMENTAL BUFFER EASEMENT

NUMBER 2 TWSP. – EDGECOMBE COUNTY, N.C.

SCALE: 1" = 150' DATE: 01/15/2013

150 75 0 150 300 450
GRAPHIC SCALE INCHES/FEET

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY JAMES D. GRANT, PLS., L-3752, ON THE 15th DAY OF JANUARY, 13 20___. THIS DOCUMENT SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

REFERENCES: D.B. 976, Pg. 791
D.B. 1118, Pg. 422

MAP 1 OF 2

GRANT & ASSOCIATES, P.A.
LAND SURVEYING SERVICES
907 S.E. 2nd STREET
SNOW HILL, N.C. 28580
(252) 747-7777
LIC. No. C-2168

DATE: 01/15/13 | DRAWN BY: JDG | FB/Pg136/51 | FILE No.: 12079

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

Beverly Eaves Perdue
Governor

Charles Wakild, PE
Director

Dee Freeman
Secretary

October 8, 2012

David Knowles
2813 Jefferson Dr
Greenville, NC 27858

Subject: Surface Water Determination Letter
TBRRO#12-193
Edgecombe County

The Raleigh Regional Office of the NC Division of Water Quality/Surface Water Protection Section conducted a site visit at the subject property and is providing the below-listed determination pursuant to your request for a formal surface water determination:

BASIN:

☐ Neuse (15A NCAC 2B .0233) ☒ Tar-Pamlico (15A NCAC 2B .0259)

☐ Ephemeral/Intermittent/Perennial Determination ☐ Isolated Wetland Determination

Project Name: Ballahack Buffer/Nutrient Offset Mitigation

Location/Directions: Subject property is currently agriculture use, located south of Roberson School Rd in Edgecomebr County

Subject Stream: UT's to Ballahack Creek

Date of Determination: August 14, 2012

Feature	E/I/P*	Not Subject	Subject	Start@	Stop@	Stream Form Pts.	Soil Survey	USGS Topo
A			X	Throughout		28.5	X	
B			X	Throughout		26.5		X

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

Explanation: The feature(s) listed above has or have been located on the Soil Survey of Edgecombe 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.

North Carolina Division of Water Quality
Internet: www.ncwaterquality.org

Raleigh Regional Office
1628 Mail Service Center

Surface Water Protection
Raleigh, NC 27699-1628

Phone (919) 791-4200
FAX (919) 571-4718

Customer Service
1-877-623-6748

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 Ian McMillan, DWQ Wetlands/401 Unit, 1650 Mail Service Center, Raleigh NC 27699-1650.

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, c/o Mary Penny Thompson, General Counsel, 1601 Mail Service Center, Raleigh, NC 27699-1601.

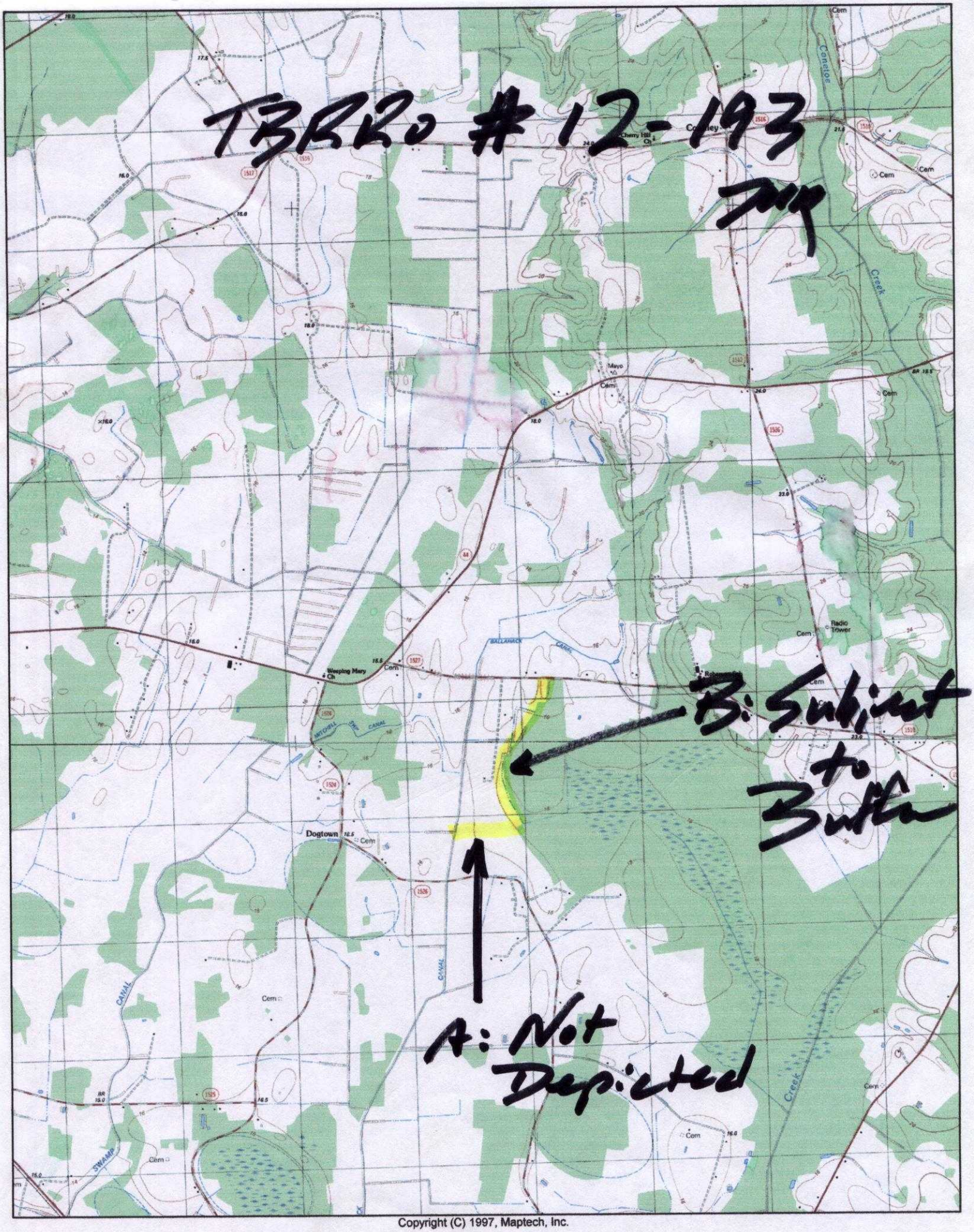
This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days.

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)-807-6301, and the US Army Corp of Engineers (Raleigh Regulatory Field Office) at (919)-544-4884.

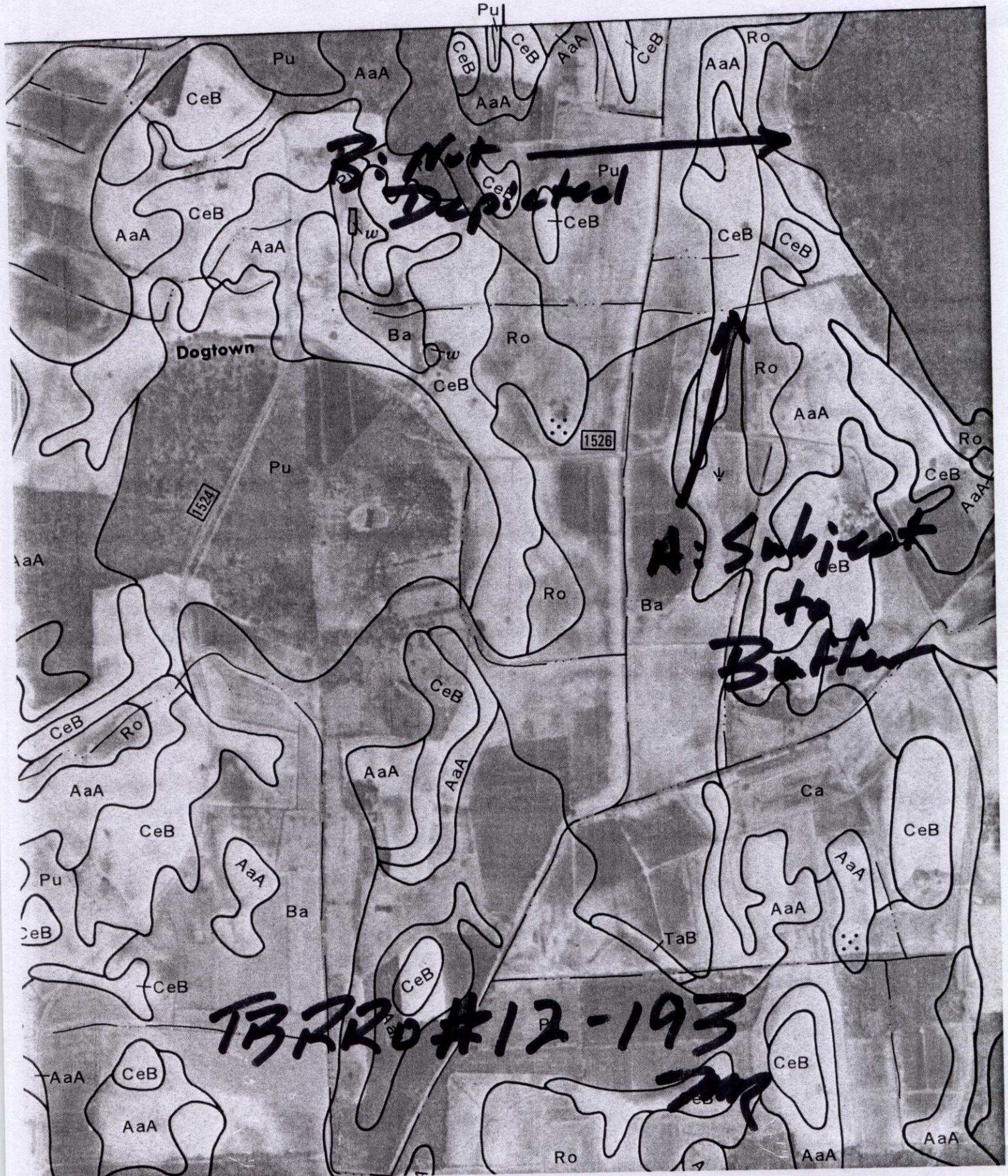
Respectfully,

Martin Richmond
Environmental Specialist

cc: Wetlands/ Stormwater Branch, 1650 Mail Service Center, Raleigh NC 27699-1650
RRO/SWP File Copy



EDGECOMBE COUNTY, NORTH CAROLINA



SITE PHOTOGRAPHS

Evans Ballahack Bank Parcel
Pre-Construction Photographs

Photograph 1. North end of project site; view to north along UT-B.

Photograph 2. North end of project site; view to south along UT-B (Tract 1).

Photograph 3. View to north along UT-B (Tract 2); note ruts in poorly drained soils and crop failure.

Photograph 4. View south from approximate midpoint of UT-B (Tract 3).

Photograph 5. Minimal soybean crop establishment within proposed buffer (Tract 3).

Photograph 6. Southern end of UT-B, note crop failure within proposed project area.

Photograph 7. Standing water in poorly drained soil within propoased buffer at south end of UT-B.

Photograph 8. View east along UT-A to junction with UT-B;
note mature forest stand on opposite side of stream.

Photograph 9. View west along UT-A to Ballahack Canal (broken tree line in background).

Photograph 10. Land use on opposite side of stream along UT-B; waterfowl impoundment under construction by neighboring landowner.

Photograph 11. Land use on opposite side of stream along UT-B; hunting platform in cut-over.

Photograph 12. Land use on opposite side of stream along UT-B; early succession vegetation in cut-over.

Photograph 13. Land use on opposite side of stream along UT-B; early succession vegetation in cut-over with standing dead woody vegetation killed by herbicide application 1-2 years prior.

Photograph 14. Land use on opposite side of stream along UT-A; approximately 200 linear feet of mature mixed pine/hardwood forest.

Photograph 15. Land use on opposite side of stream along UT-A; row crop soybeans.

Photograph 16. Shrub species growing in stream channel that can be used for live stakes in proposed project site; left: elderberry (*Sambucus canadensis*), right: buttonbush (*Cephalanthus occidentalis*).