Albemarle Restorations, LLC

Wetland Restoration
Stream Restoration
Wildlife Habitat

May 7, 2014

Mr. Tyler Crumbley
Department of the Army
Wilmington District, Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403-1343

RE: Pre-Construction Notice (PCN) package
Hofler Property Wetland Mitigation Site, Gates County, NC
USACE AID#: SAW-2012-01393
EEP Contract #004628, IMS# 95355

Dear Tyler:

Please find attached two (2) completed PCN forms, 4 hard copies of Mitigation Plan, and one compact disc for the Hofler Project, USACE AID#: SAW-2012-01393, EEP Contract #004628, IMS# 95355 for your review. The Mitigation Plan has been revised based on your Memorandum of Record, NCIRT Comments During 30-day Mitigation Plan Review, dated April 7, 2014. Please find a reference to the comments, correspondence, and text revisions based on individual comments provided in Appendix A. You can contact me at 252-333-0249 or e-mail at edtemple@vol.com if you have any questions.

Sincerely,

Edmund R. Temple, Jr.
Principal

Cc: Heather Smith, EEP

P.O. BOX 176
FAIRFIELD, NC
PHONE (252)333-0249

MITIGATION PLAN

Hofler Property

Gates County, North Carolina
EEP Project ID #: 95355
EEP Contract #: 004628

Chowan River Basin
CU 03010203

USACE Action ID #: SAW-2012-01393

Prepared for:

NC Department of Environment and Natural Resources
Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

MITIGATION PLAN

Hofler Property

Gates County, North Carolina
EEP Project #: 95355
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Raleigh, NC 27699-1652

Prepared by:

ALBEMARLE RESTORATIONS

WETLAND RESTORATION,
STREAM RESTORATION, &
WILDLIFE HABITAT CREATION

Albemarle Restorations, LLC
P.O. Box 176 – Fairfield, NC 27826
p (252) 333-0249 f (252) 926-9983

August, 2013
Revised May, 2014

EXECUTIVE SUMMARY

This mitigation plan has been written in conformance with the requirements of the following:

- *Federal rule for compensatory mitigation project sites as described in the Federal Register Title 33 Navigation and Navigable Waters Volume 3 Chapter 2 Section § 332.8 paragraphs (c)(2) through (c)(14).*
- *NCDENR Ecosystem Enhancement Program In-Lieu Fee Instrument signed and dated July 28, 2010*

These documents govern NCEEP operations and procedures for the delivery of compensatory mitigation.

The North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program has selected 27 acres situated on 345.19 acres of the property owned by S&M Farms, LLC for this full delivery contract, for wetland restoration to fulfill a portion of the Request for Proposals (RFP): Full Delivery Project Chowan River Basin, RFP 16-004103. The RFP and subsequent contract(s) awarded by EEP provide compensatory wetland mitigation within the Chowan River Basin Cataloging Unit 03010203. Albemarle Restorations, LLC entered into a contract with the State of North Carolina on May 24, 2012 to deliver 23 non-riparian wetland mitigation units on the Hofler project site. An option to purchase a conservation easement on the project area was recorded on the 27 acres encompassing this project on August 11, 2011 at the Gates County Tax Office and is provided in Appendix A.

Albemarle Restorations, LLC proposes to create 23 acres of non-riparian Wetland Mitigation Units on the Hofler Property located within the northeast quadrant of the intersection between Water Swamp Road and Silver Springs Road, in Gates County, North Carolina. The Hofler Property is in the Bennett's Creek local watershed (USGS Cataloging Unit 03010203040040), which is currently listed as "supporting" as noted in the 2007 Chowan River Basinwide Water Quality Plan.

The site consists of a rectangular tract of land that has been ditched and drained for agricultural production since at least 1938 (Exhibits F, G, H). The site contains hydric soils and is currently a cotton field. Two ditches located along the eastern and western project limits drain the site from south to north into a feeder ditch which flows directly into Lassiter Swamp, upstream of Merchants Mill Pond. No remnant wetland communities exist on site and no impacts to wetlands or riparian buffers will occur due to the restoration project.

Table of Contents

1. RESTORATION PROJECT GOALS AND OBJECTIVES

EEP develops River Basin Restoration Priorities to guide its restoration activities within each of the state's 54 cataloging units. RBRPs delineate specific watersheds that exhibit both the need and opportunity for wetland, stream and riparian buffer restoration. These watersheds are called Targeted Local Watersheds (TLWs) and receive priority for EEP planning and restoration project funds.

The 2009 Chowan River Basin Restoration Priorities identified the Bennett's Creek Watershed (HUC: 030102040040) as a Targeted Local Watershed (Chowan River Basin Restoration Priorities, May 2009). The watershed is characterized by 72% forested and 22% agricultural area with 18% of the TLW's streams unbuffered.

The 2009 Chowan River Basin RBRP identified nutrients and sediment loading in addition to streambank erosion as major stressors within this TLW. The Hofler Property Project was identified as a wetland and riparian restoration opportunity to improve water quality, hydrology, and terrestrial wildlife and anadromous fish habitat within the TLW. The primary objective of this project is to restore the site to a wetland complex representative of the surrounding Hardwood Flats and Non-Riverine Swamp Forest wetland communities.

The project goals address stressors identified in the TLW and include the following:

Goals outlined by the EEP in the "Chowan River Basin Restoration Priorities":

- Implementing stream and wetland restoration projects that reduce sedimentation, nutrient pollution and surface runoff
- Working with local landowners to protect and restore watersheds through restoration and preservation projects
- Restore and protect sensitive aquatic resources by improving habitat and species diversity through the restoration of wetlands, streams and riparian buffers

Goals specific to the Bennett's Creek TLW:

- Reduce sediment and nutrient loading from agricultural runoff
- Improve downstream anadromous fish habitat and onsite wildlife habitat
- Restore groundwater and surface water hydrology in heavily ditched areas
- Restore natural drainage patterns where appropriate

The project goals will be addressed through the following project objectives:

- Enhance water quality by providing shading from forest cover, which will reduce thermal impacts associated with excess algae growth and decreased dissolved oxygen concentrations
- Slow runoff rates and provide storage and desynchronization of overland flow before it reaches Lassiter Swamp, located directly north of the project, by restoring the wetland complex

- Provide nutrient attenuation and uptake by restoring dense vegetation interspersed with shallow diffuse flows, thus improving downstream habitat
- Provide minimal earthwork and disturbance, as determined through preliminary site analyses, to the area to accomplish designed wetland topography
- Impact existing ecological communities as little as possible. No remnant wetland communities exist on site and no impacts to wetlands or riparian buffers will occur due to the restoration project.

2. SITE SELECTION

2.1 Directions to Site

The proposed project, Hofler Property, consists of 27.0 acres situated on a 345.19 acre property located within the northeast quadrant of the intersection between Water Swamp Rd. and Silver Springs Rd. in the central region of Gates County, NC (Exhibit A). More specifically, the project lies approximately 2.40 miles west-southwest of the town of Sunbury, 6 miles east of the town of Gatesville, 6.3 miles north of the town of Mintonsville, and within 0.50 miles south of the Merchants Mill Pond State Park (Exhibit A). The site can be accessed by heading south on Route 32 from the town of Sunbury then taking a right onto Sliver Springs Road. The project is located on the right hand side approximately 2 miles west of the intersection with Route 32.

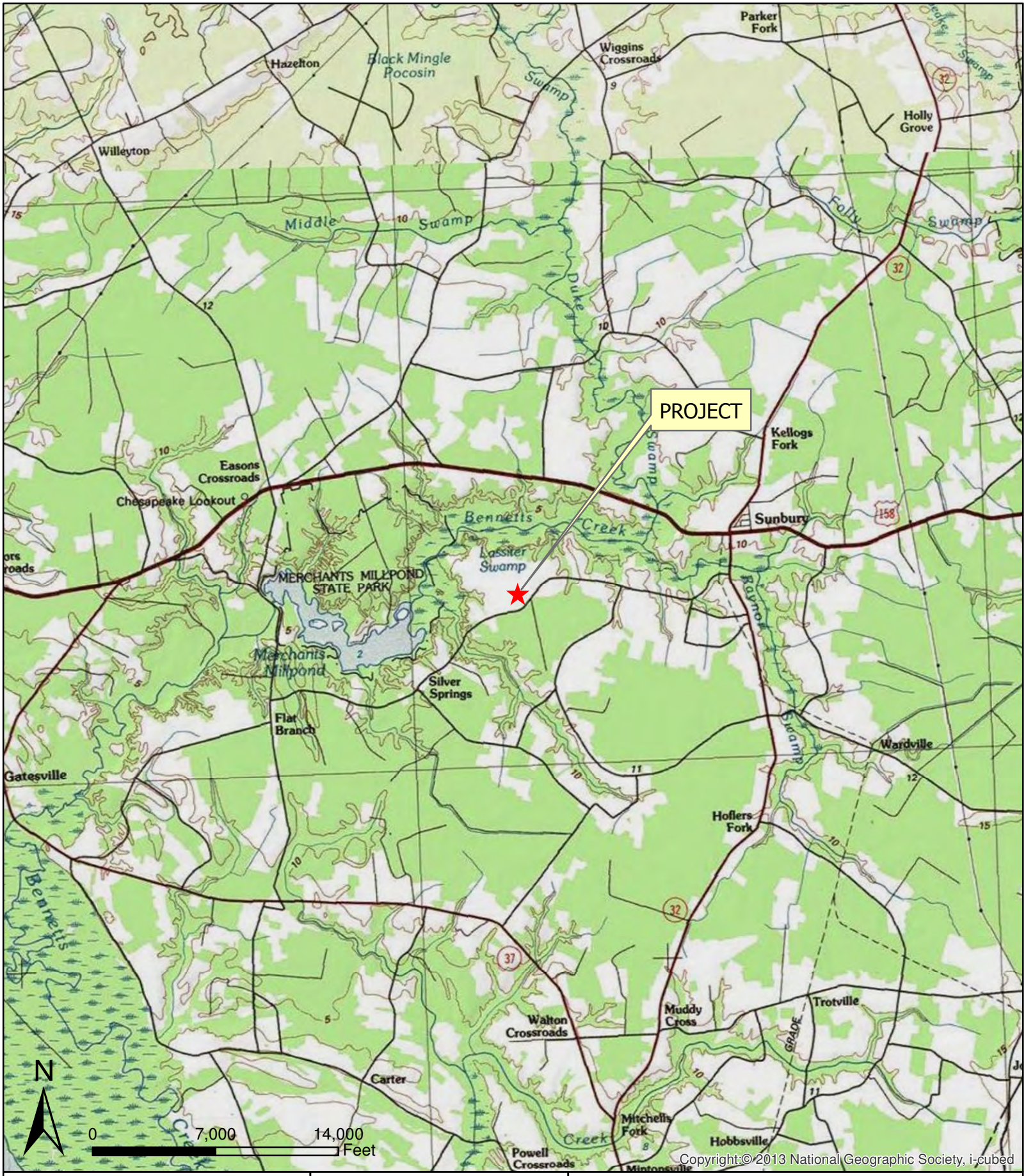
2.2 Site Selection

The site has been chosen for various reasons including but not limited to: location in the Bennetts Creek TLW (HUC: 03010203040040), adjacent to Merchants Mill Pond State Park (MMPSP) and ease of restoration. Approximately 30% of the TLW is designated as Significant Natural Heritage Area including Merchants Mill Pond State Park (*2009 Chowan River Basin Restoration Priorities*).

As with most agricultural lands within this watershed, prior-converted wetlands have been extensively ditched and drained thus lowering the local water table and diminishing aquatic habitat and water quality. The site drains from south to north to an unnamed tributary of Lassiter Swamp due to ditching and Bennetts Creek upstream of Merchants Mill Pond. In its current condition, the site is actively farmed for cotton, corn, soybeans and wheat. The project area along with the surrounding areas has undergone expansive hydrologic alterations and excessive sediment and nutrient inputs from agricultural production. As a result, the lowering of local water tables, and in some cases, the complete elimination of ground and surface water interaction has occurred leading to water quality degradation. Site photographs taken during the preliminary site analysis are provided in Exhibit I. Historic aerial photographs from 1938, 1958, 1981 (Exhibits F, G, H) are also provided to help demonstrate that land use has remained constant while drainage patterns have been continuously altered to provide adequate drainage for agricultural production.

An in depth soil investigation was completed in August of 2011 by a state certified soil scientist which documents the existence of hydric soils within the entire project area. A soil report, soil boring logs, and a reference map are provided in Appendix C.

The plant species chosen for the project will be native to the area, and an emphasis will be placed on installing species that will provide a viable, yearlong food source for a wide range of animal and plant species. The nearby forested wetlands and swamps are home to wild turkeys, bear, whitetail deer, raccoon, squirrel, fox, migrating waterfowl, and a wide variety of amphibian and reptile species. The project is intended to provide food and habitat.



ALBEMARLE RESTORATIONS, LLC

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(252)333-0249 FAX (252)926-9983

EXHIBIT A

VICINITY MAP

SCALE: 1 inch = 7,000 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT# 004628
CHOWAN RIVER BASIN
BENNETTS CREEK TLW
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

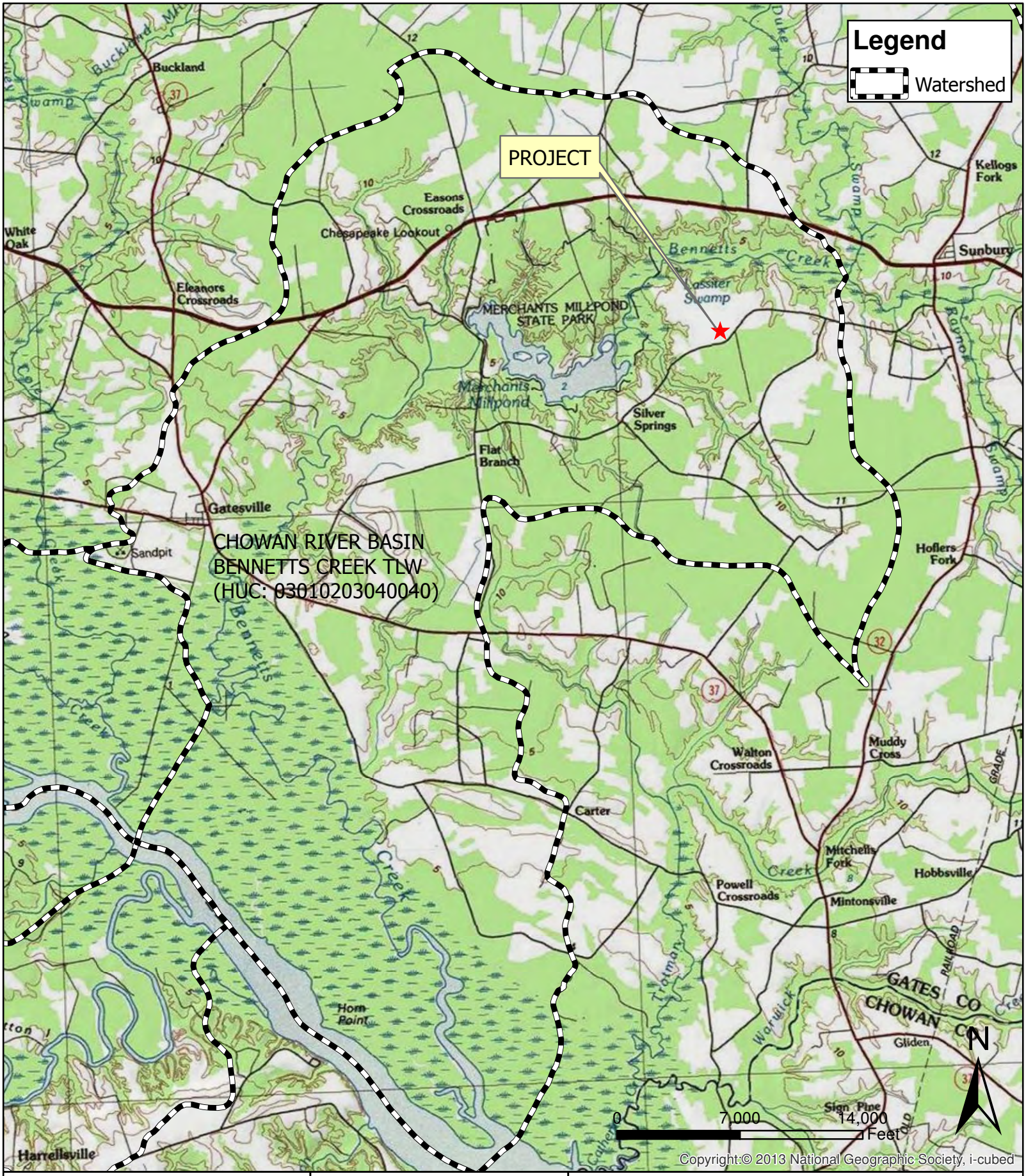

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EXHIBIT B

WATERSHED MAP

SCALE: 1 inch = 7,000 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
CHOCOWINITY CREEK TLW
(HUC: 03010203040040)

Ecosystem Enhancement Program

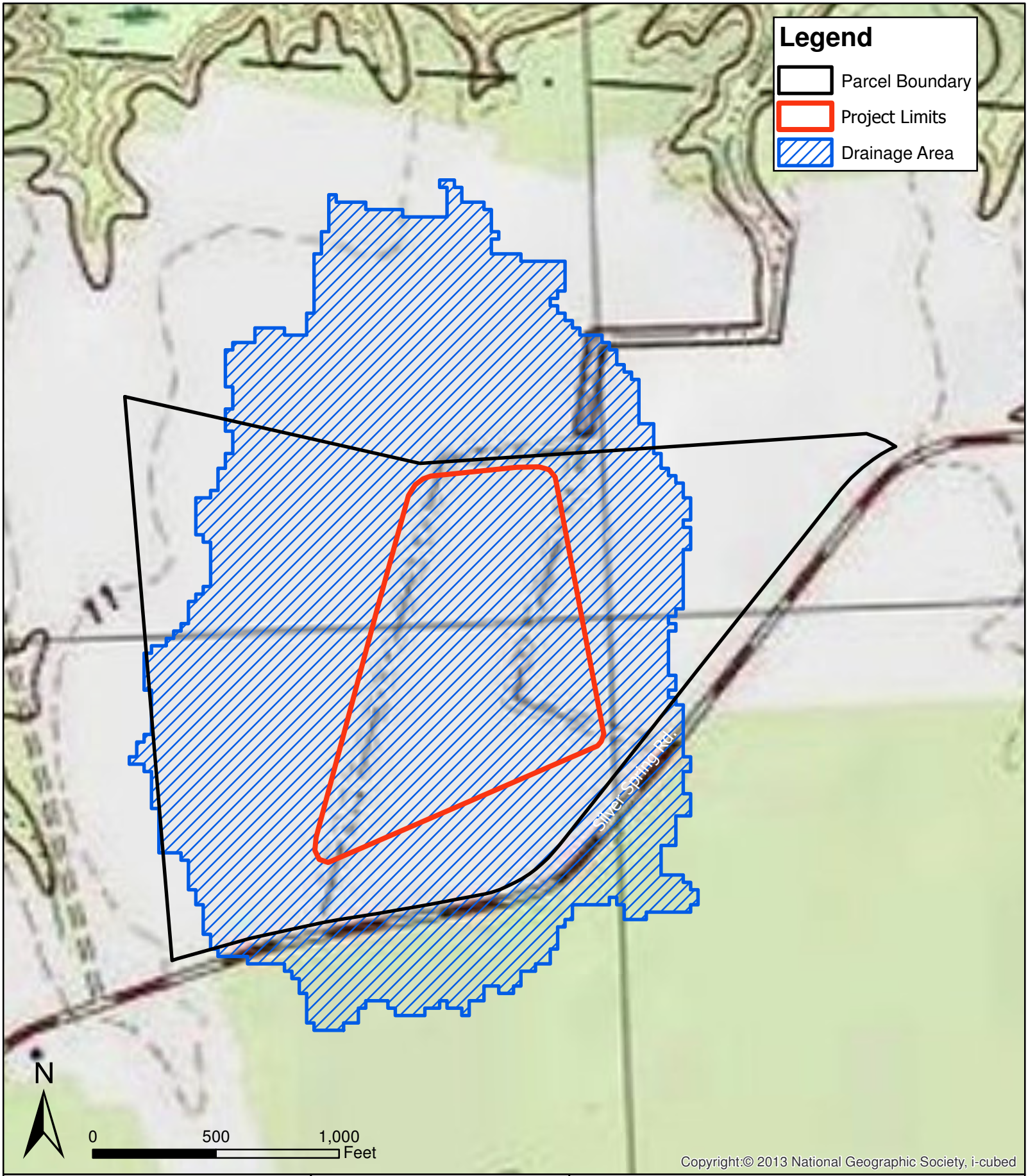

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EXHIBIT C

DRAINAGE MAP

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

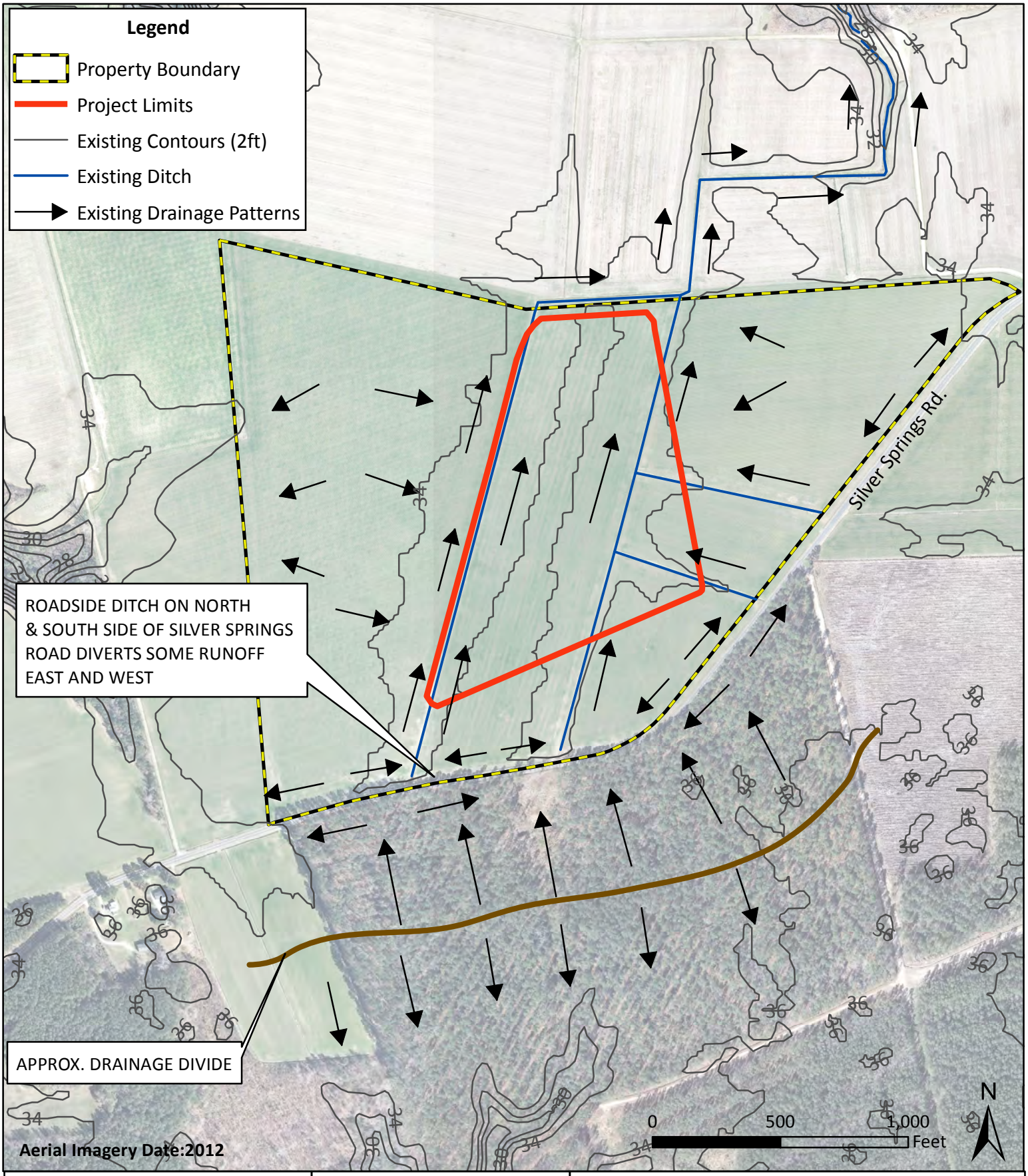

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EXHIBIT C-1
EXISTING DRAINAGE PATTERNS

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
EEP# 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

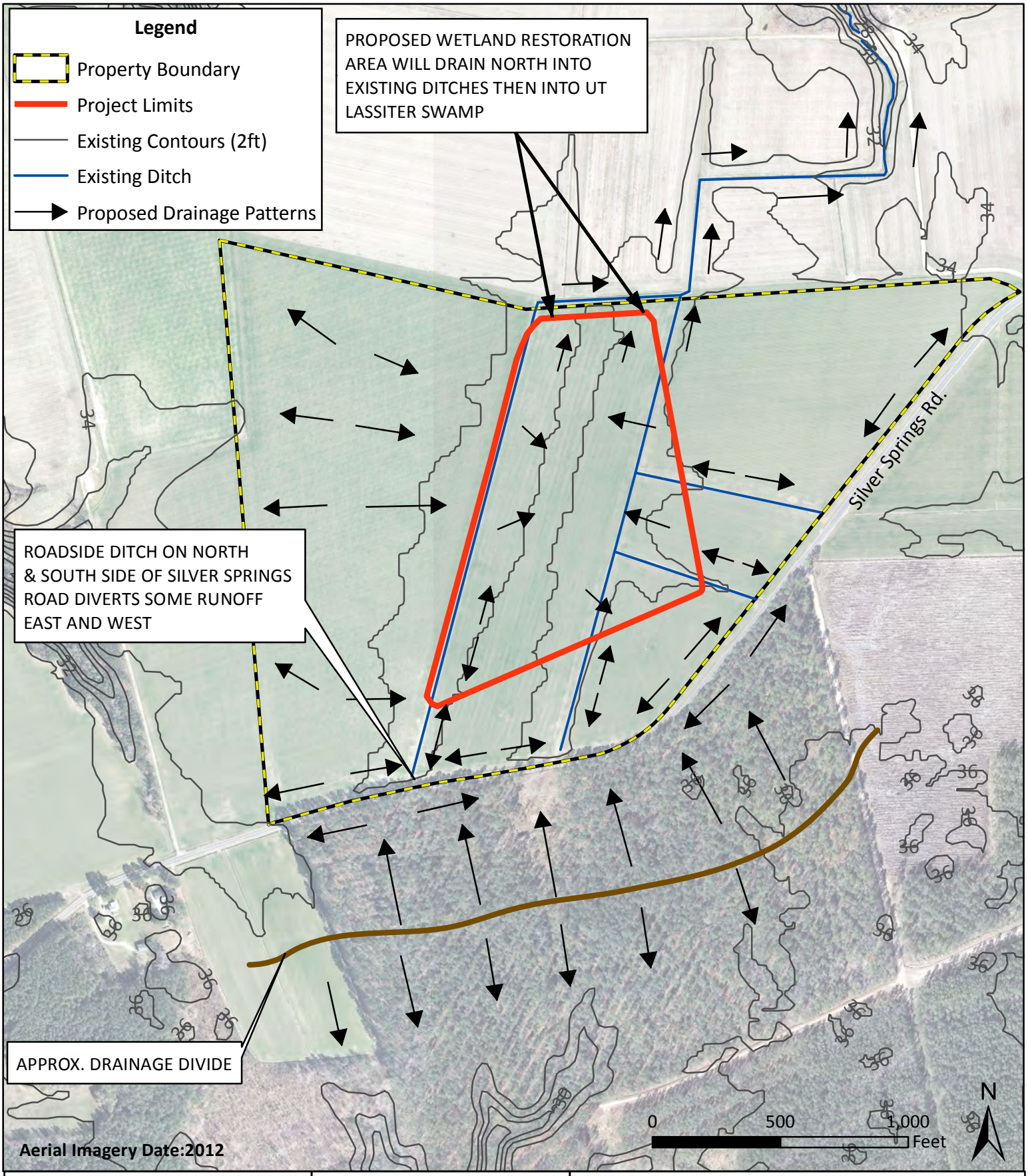

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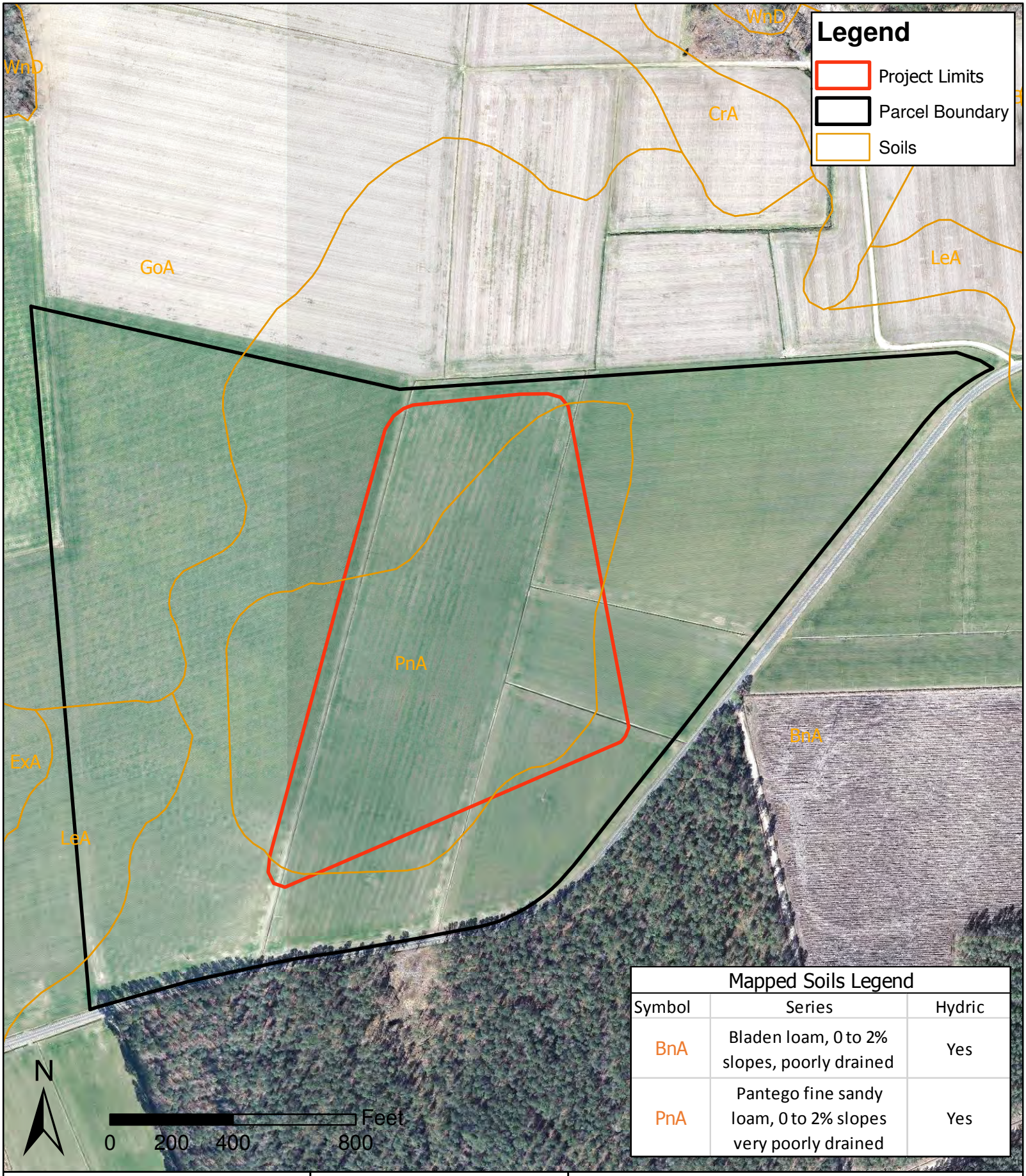
EXHIBIT C-2
PROPOSED DRAINAGE PATTERNS

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
EEP# 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM



Mapped Soils Legend		
Symbol	Series	Hydric
BnA	Bladen loam, 0 to 2% slopes, poorly drained	Yes
PnA	Pantego fine sandy loam, 0 to 2% slopes very poorly drained	Yes

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EXHIBIT D

SOIL MAP

SCALE: 1 inch = 400 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK TLW
(HUC: 03010203040040)

Ecosystem Enhancement Program

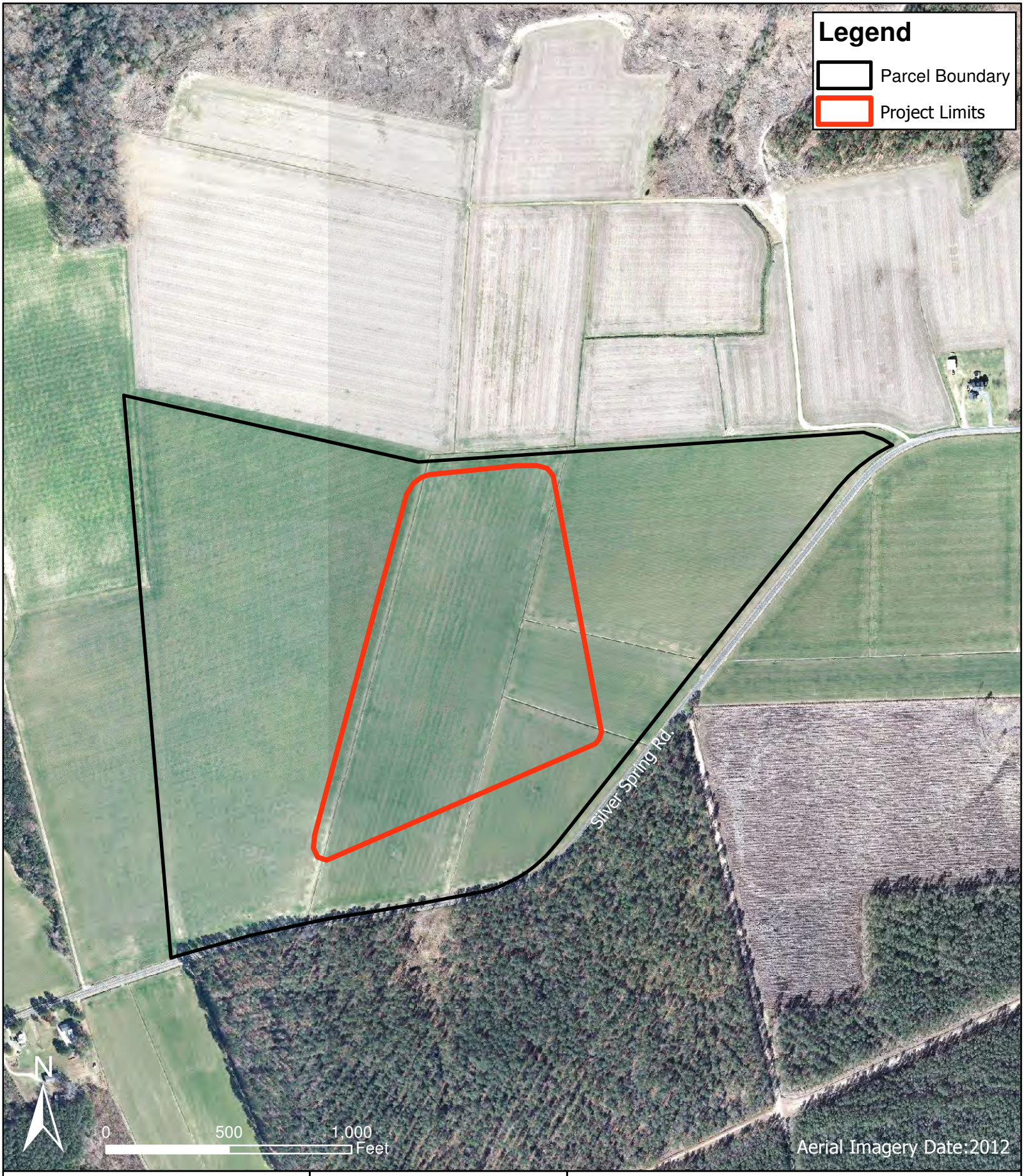

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EXHIBIT E

EXISTING CONDITIONS 2012

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

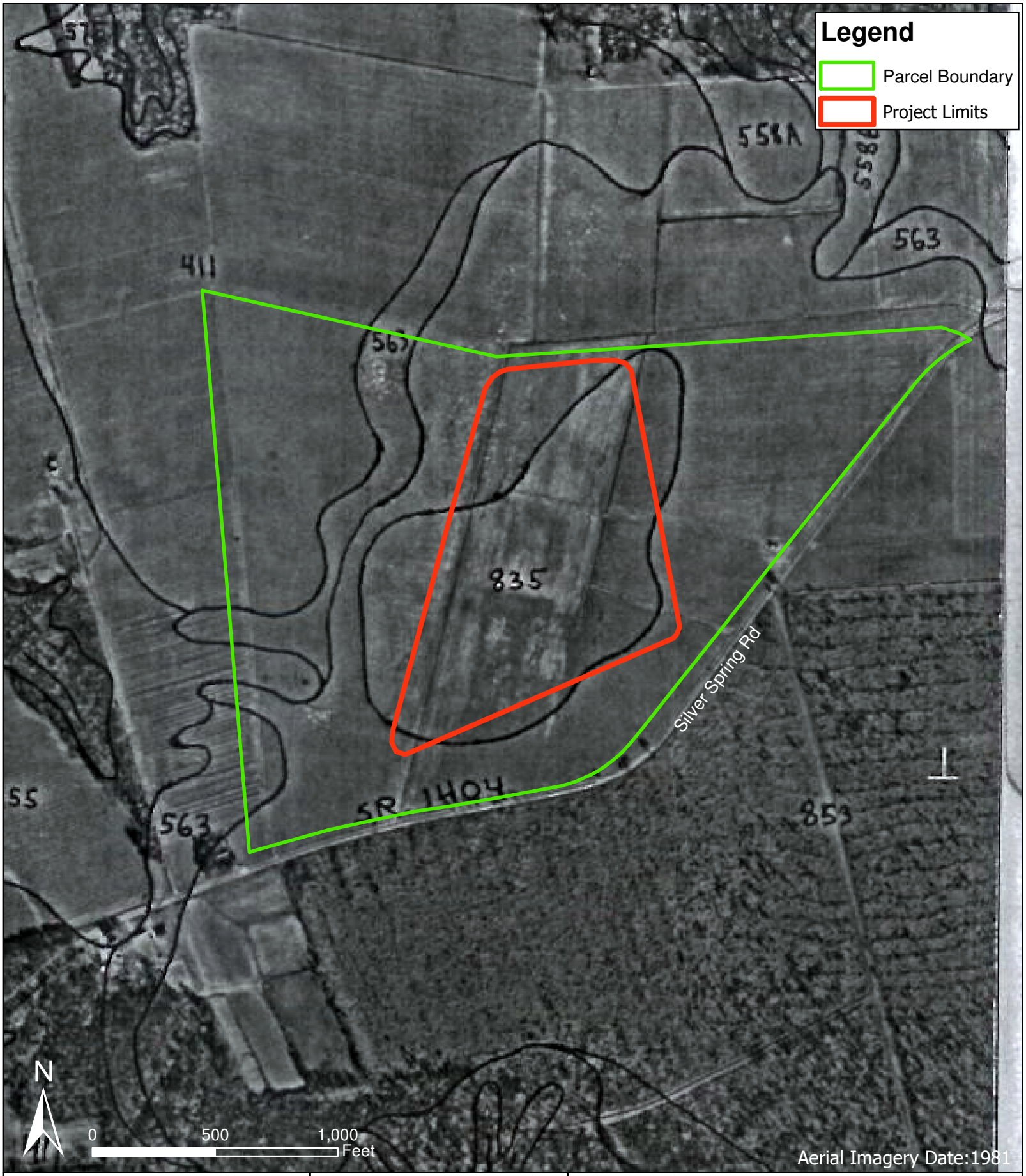

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EXHIBIT F

HISTORICAL CONDITIONS 1981

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK TLW
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

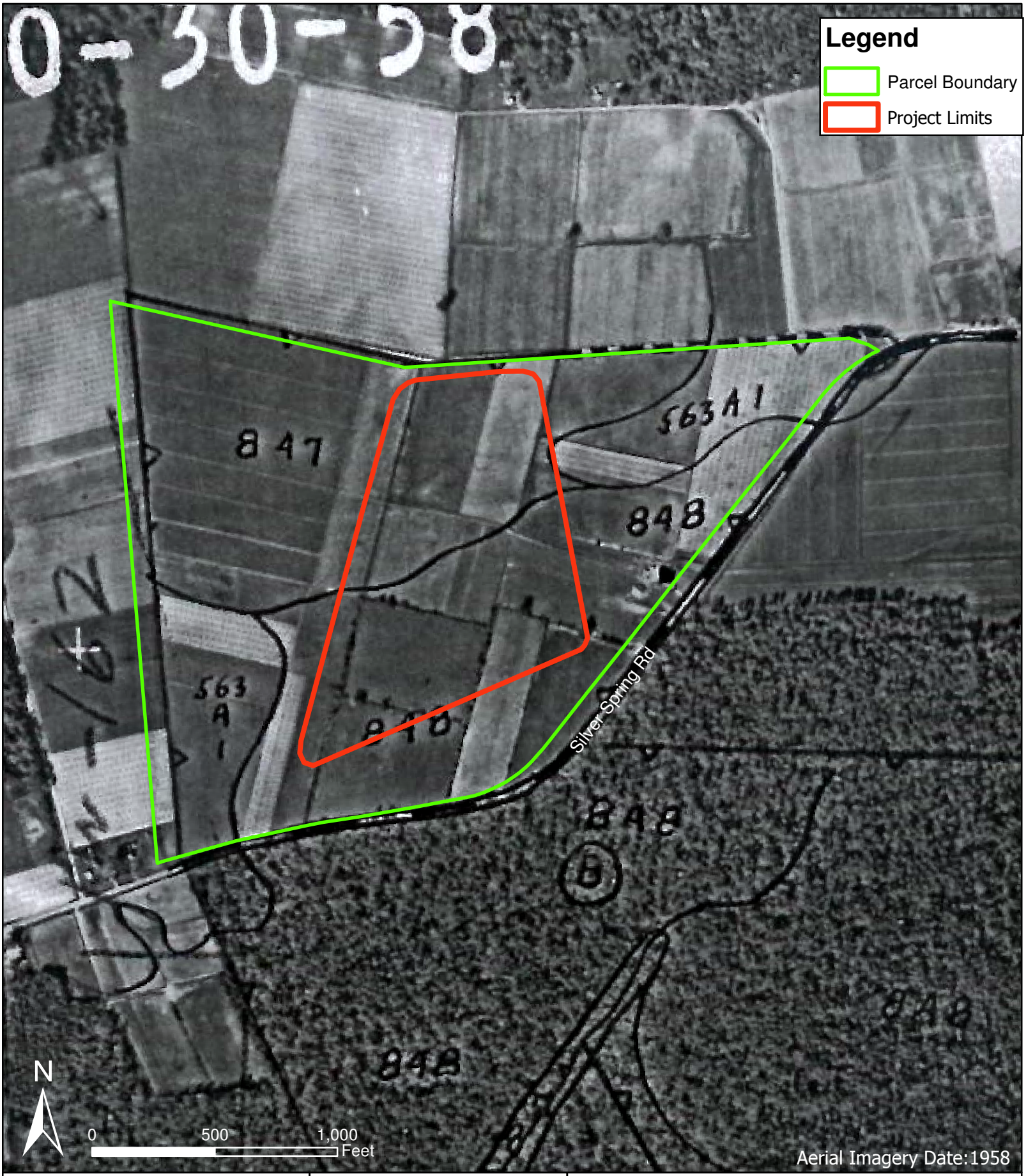

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EXHIBIT G

HISTORICAL CONDITIONS 1958

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETS CREEK TLW
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

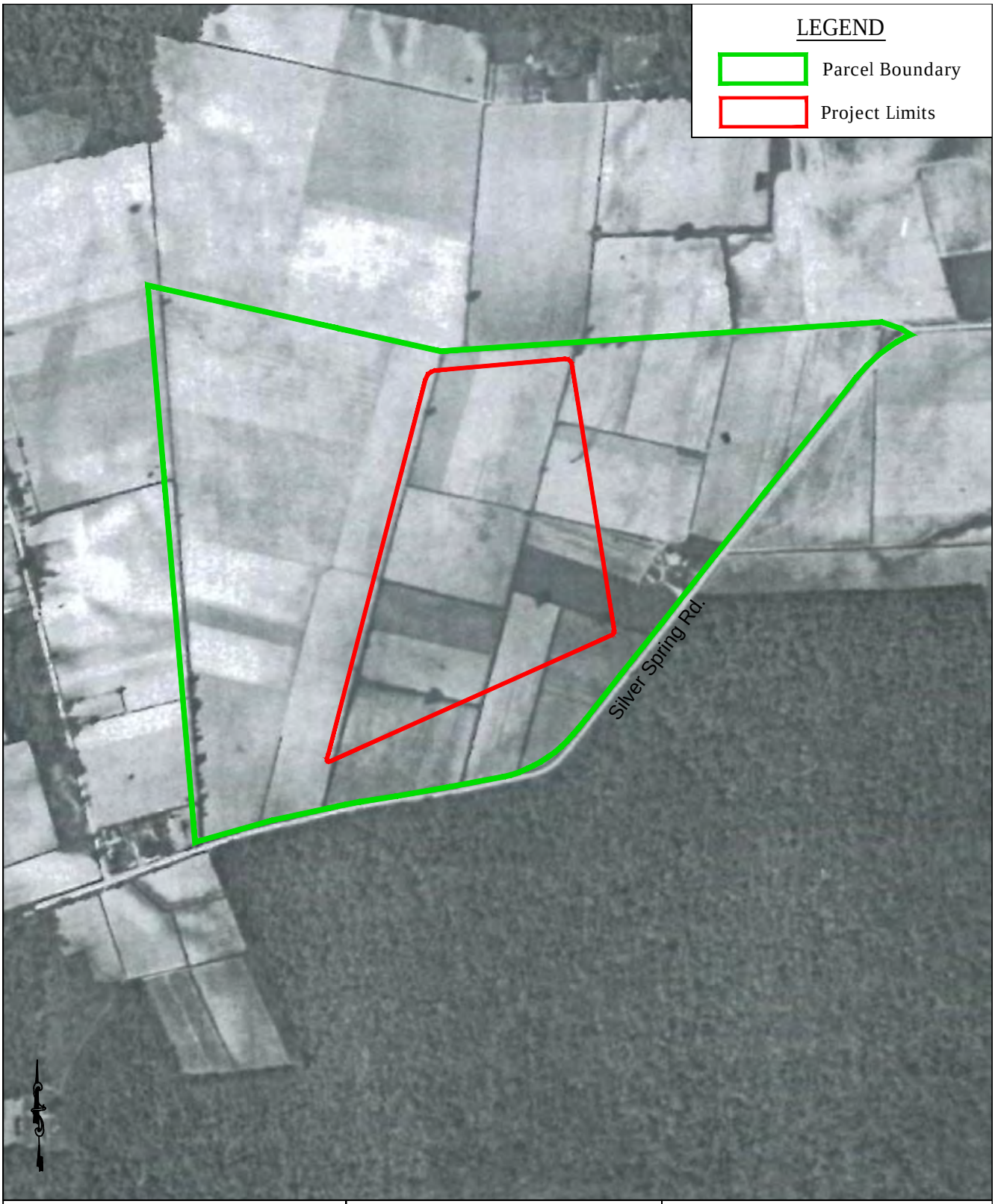

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EXHIBIT H

HISTORICAL CONDITIONS
1938

Scale: N.T.S.

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK TLW
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

2.10 Site Photographs (Exhibit I)

Photo #1: Drainage ditch (eastern) looking North towards Merchant Millpond State Park (MMSP) at junction with field ditch (August, 2011).

Photo #2: Drainage ditch (eastern) looking South, towards Silver Springs Road (August, 2011).

Photo #3: Junction of drainage ditches showing flood stressed cotton plants (August, 2011).

Photo #4: Drainage ditch facing North showing water movement South demonstrating topographic "bowl" feature (August, 2011).

3. SITE PROTECTION INSTRUMENT

3.1 Site Protection Instrument Summary Information

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

	Landowner	PIN	County	Site Protection Instrument	Deed Book and Page Number	Acreage Protected
Parcel A	S&M Farms, LLC	0600422	Gates	Conservation Easement	Gates County Tax Office, Register of Deeds, Deed Book 286, page 306 (option to purchase)	27.0 AC

When available, the recorded document(s) will be provided. Appendix A contains the template documents that will be completed once the conservation easement is recorded.

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

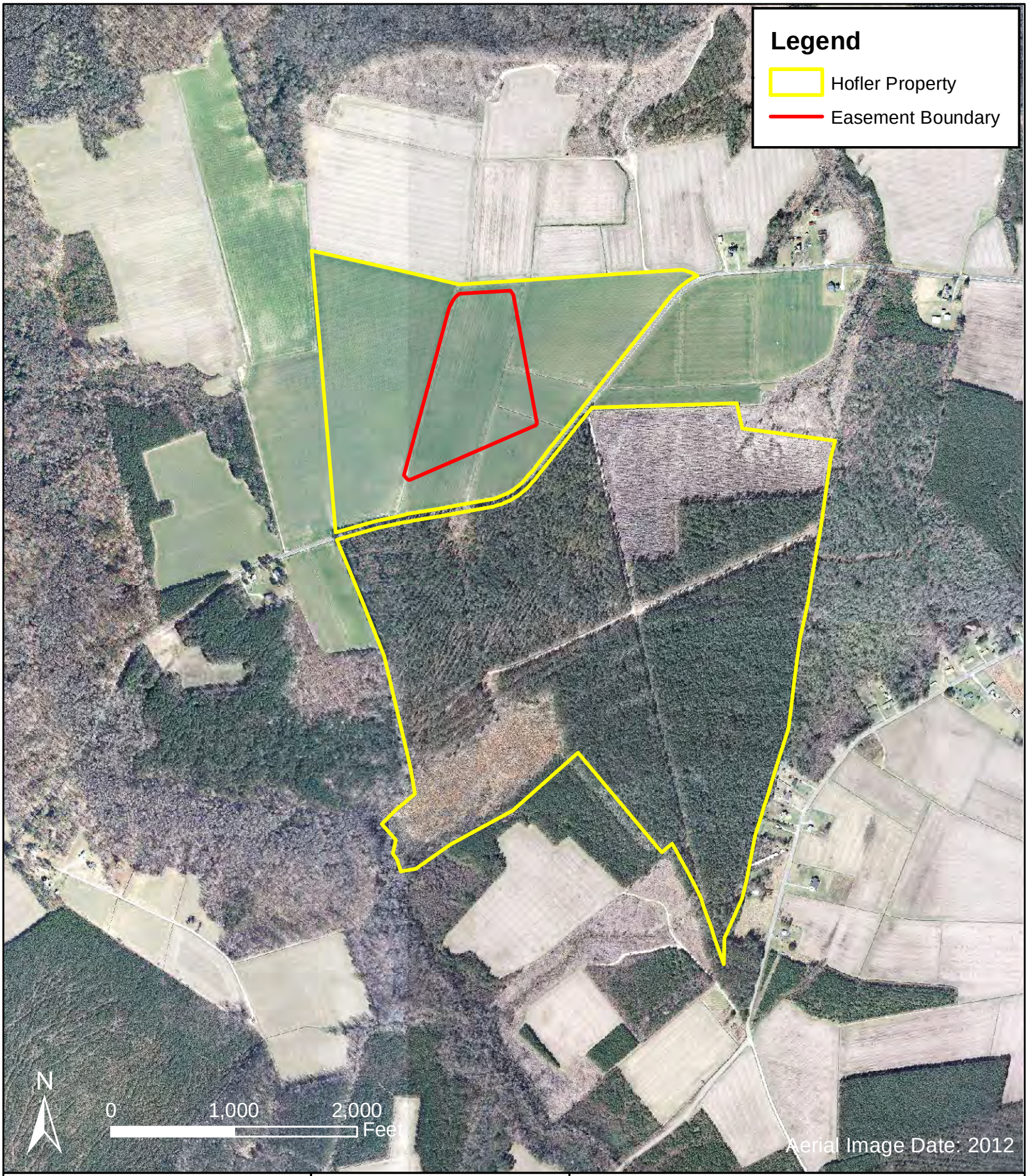

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EXHIBIT J

SITE PROTECTION INSTRUMENT FIGURE

SCALE: 1 inch = 1,000 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

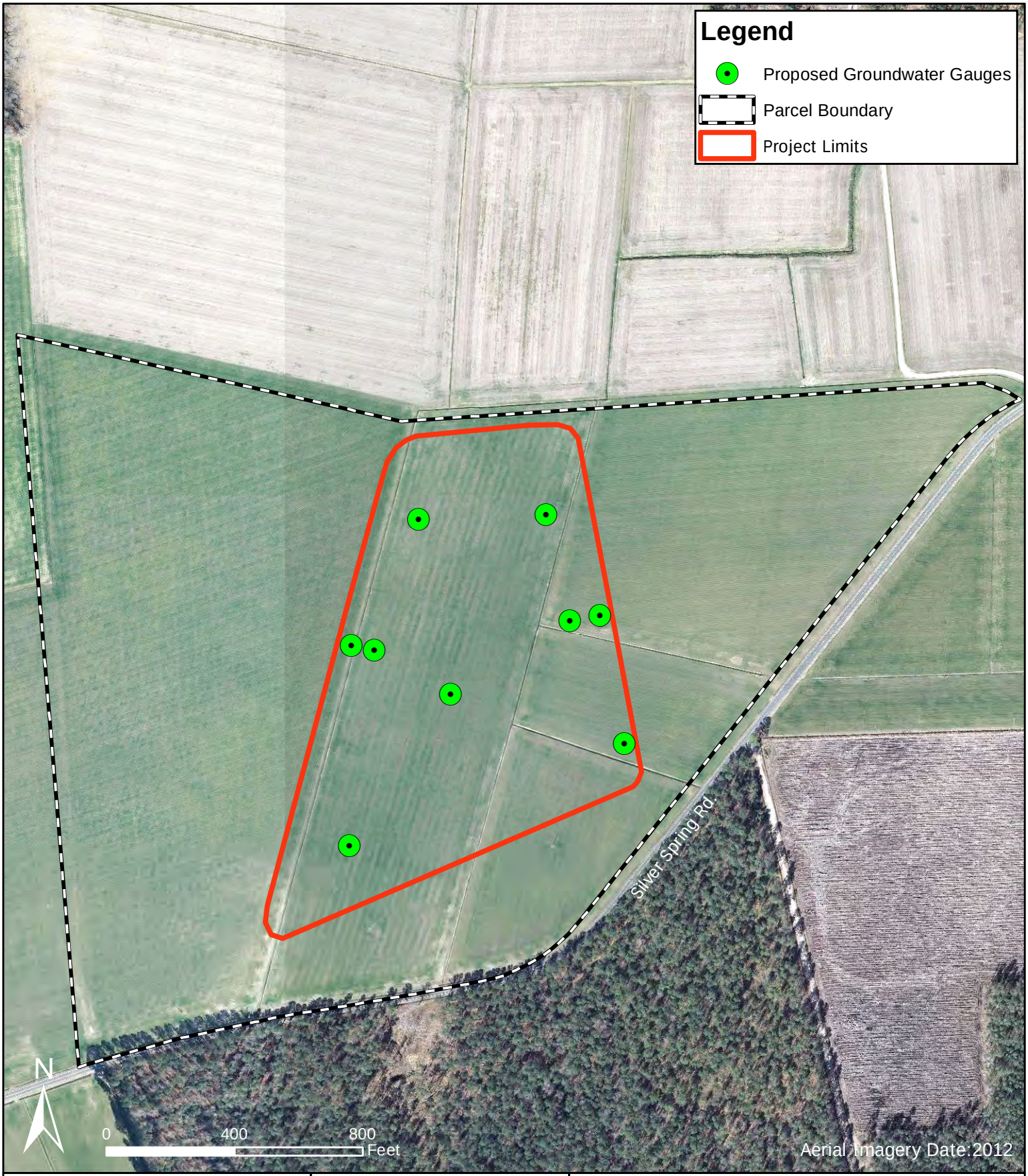

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EXHIBIT K

GROUNDWATER GAUGE MAP

SCALE: 1 inch = 400 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

4. BASELINE INFORMATION

Project information			
Project name	HOFLER PROPERTY		
County	GATES		
Project Area (ac)	27.0 AC		
Project Coordinates (Lat and Long)	+36˚ 25’ 48.44”, -76˚ 39’ 10.91”		
4.1 Project Watershed Summary Information			
Physiographic province	INNER COASTAL PLAIN		
River basin	CHOWAN RIVER BASIN		
USGS Hydrologic Unit 8-digit 03010203	USGS Hydrologic Unit 14-digit 03010203040040		
DWQ Sub-basin	BENNETTS CREEK LOCAL WATERSHED		
Project Drainage Area (acres)	103.8		
Project Drainage Area Percentage of Impervious Area	5%		
CGIA Land Use Classification	2.01.01.07 Annual Row Crop Rotation		
4.2 Wetland Summary Information			
Parameters	Wetland 1	Wetland 2	Wetland 3
Size of Wetland (acres)	23.0		
Wetland Type (non-riparian, riparian riverine or riparian non-riverine)	Non-riparian		
Mapped Soil Series	BnA & PnA		
Drainage Class	Poorly drained & very poorly drained		
Soil Hydric Status	Hydric		
Source of Hydrology	Surface and Ground		
Hydrologic Impairment	44.8’ to 155.2’		
Native Vegetation Community	Pasture/Crop		
Percent Composition of Exotic Invasive Vegetation	N/A		
4.3 Regulatory Considerations			
Regulation	Applicable?	Resolved?	Supporting Documents
Waters of the United States – Section 404	YES	YES	Appendix B
Waters of the United States – Section 401	YES	YES	Appendix B
Endangered Species Act	NO	YES	Appendix B
Historic Preservation Act	NO	YES	Appendix B
Coastal Zone Management Act (CZMA)/ Coastal Area Management Act (CAMA)	NO	YES	Appendix B
FEMA Floodplain Compliance	NO	YES	Appendix B
Essential Fisheries Habitat	NO	YES	Appendix B

5. DETERMINATION OF CREDITS

Mitigation credits presented in these tables are projections based upon site design. Upon completion of site construction the project components and credits data will be revised to be consistent with the as-built condition.

Hofler Property, Gates County EEP Project Number: 95355; EEP Contract Number: 004628									
Mitigation Credits									
	Stream		Riparian wetland		Non-riparian wetland		Buffer	Nitrogen Nutrient Offset	Phosphorous Nutrient Offset
Type	R	RE	R	RE	R	RE			
Totals					23.0				
Project Components									
Project Component or Reach ID	Stationing/Location		Existing Footage/Acreage		Approach (PI, PII etc.)		Restoration or Restoration Equivalent	Restoration Footage or Acreage	Mitigation Ratio
Wetland 1			23 acres				Restoration	23 acres	1:1

Component Summation						
Restoration Level	Stream (linear feet)	Riparian Wetland (acres)		Non-riparian Wetland (acres)	Buffer (square feet)	Upland (acres)
		Riverine	Non-riverine			
Restoration				23.0		

6. CREDIT RELEASE SCHEDULE

All credit releases will be based on the total credit generated as reported by the as-built survey of the mitigation site. Under no circumstances shall any mitigation project be debited until the necessary DA authorization has been received for its construction or the District Engineer (DE) has otherwise provided written approval for the project in the case where no DA authorization is required for construction of the mitigation project. The DE, in consultation with the Interagency Review Team (IRT), will determine if performance standards have been satisfied sufficiently to meet the requirements of the release schedules below. In cases where some performance standards have not been met, credits may still be released depending on the specifics of the case. Monitoring may be required to restart or be extended, depending on the extent to which the site fails to meet the specified performance standard. The release of project credits will be subject to the criteria described as follows:

Forested Wetlands Credits			
Monitoring Year	**Credit Release Activity**	**Interim Release**	**Total Released**
0	Initial allocation – see requirements below	30%	30%
1	First year monitoring report demonstrates performance standards are being met	10%	40%
2	Second year monitoring report demonstrates performance standards are being met	10%	50%
3	Third year monitoring report demonstrates performance standards are being met	10%	60%
4	Fourth year monitoring report demonstrates performance standards are being met	10%	70%
5	Fifth year monitoring report demonstrates performance standards are being met; Provided that all performance standards are met, the IRT may allow the NCEEP to discontinue hydrologic monitoring after the fifth year, but vegetation monitoring must continue for an additional two years after the fifth year for a total of seven years.	10%	80%
6	Sixth year monitoring report demonstrates performance standards are being met	10%	90%
7	Seventh year monitoring report demonstrates performance standards are being met, and project has received close-out approval	10%	100%

Initial Allocation of Released Credits

The initial allocation of released credits, as specified in the mitigation plan can be released by the NCEEP without prior written approval of the DE upon satisfactory completion of the following activities:

a. Approval of the final Mitigation Plan

b. Recordation of the preservation mechanism, as well as a title opinion acceptable to the USACE covering the property

c. Completion of project construction (the initial physical and biological improvements to the mitigation site) pursuant to the mitigation plan; Per the NCEEP Instrument, construction means that a mitigation site has been constructed in its entirety, to include planting, and an as-built report has been produced. As-built reports must be sealed by an engineer prior to project closeout, if appropriate but not prior to the initial allocation of released credits.

d. Receipt of necessary DA permit authorization or written DA approval for projects where DA permit issuance is not required.

Subsequent Credit Releases

All subsequent credit releases must be approved by the DE, in consultation with the IRT, based on a determination that required performance standards have been achieved. For stream projects a reserve of 15% of a site's total stream credits shall be released after two bank-full events have occurred, in separate years, provided the channel is stable and all other performance standards are met. In the event that less than two bank-full events occur during the monitoring period, release of these reserve credits shall be at the discretion of the IRT. As projects approach milestones associated with credit release, the NCEEP will submit a request for credit release to the DE along with documentation substantiating achievement of criteria required for release to occur. This documentation will be included with the annual monitoring report.

7. MITIGATION WORK PLAN

7.1 Target Wetland Type and Plant Communities

Reference data was collected from adjacent unaltered wetland systems including the Hardwood Flats adjacent to Lassiter Swamp to utilize as a grading template for design. Vegetation will be chosen to create diverse wetland communities including Hardwood Flats and Non-Riparian Swamp Forest (NC WAM Version 4.1). In selecting vegetation, we evaluated reference wetland areas adjacent to the site and "*Dominant Plants for Major Wetland Types*" published by the North Carolina Department of Environment Water Quality Section. Species chosen will be native to the area with an emphasis placed on installing species that will provide a viable, yearlong food source for a wide range of animal and plant species. The adjacent forested wetlands and swamps are home to wild turkeys, bear, whitetail deer, raccoon, squirrel, fox, migrating waterfowl, and a wide variety of amphibian and reptile species. The project is intended to provide food, habitat, and travel corridors to complement and enhance the existing ecosystem. The project easement boundaries will be surveyed and clearly marked according guidelines developed by EEP and sheet B-1 of the Mitigation Plan set.

7.2 Design Parameters

The goal of the proposed restoration plan is to restore a prior converted nonriparian wetland system. The restoration plan, provided in Appendix D, calls for the restoration of 23.0 acres of non-riparian wetlands within the project area. Restoration will balance cut and fill with minimal grading (average of 0.2 foot). In areas where the field crowns, the elevation will be lowered to 33.8 feet. Lowering the ground elevation to 33.8 feet will minimize excess cut while creating a uniform ground surface elevation to evenly distribute surface hydrology and providing a sustained hydroperiod at or within 12" of the soil surface. An in-depth soil investigation revealed a presence of soils capable of supporting wetlands just below the soil surface. Results of this soil analysis can be found in Appendix C.

Hydrologic Modifications: The site contains four ditches stemming from Silver Springs Road that drain from south to north and west to east into a feeder ditch which flows north directly into the Lassiter Swamp portion of Merchants Mill Pond. The drainage divide for this area is just south of Silver Springs Road, however the existing roadside ditches divert some runoff east and west, therefore making Silver Springs Road the primary drainage divide for this restoration site (Exhibit C-1).

Hydrologic modifications on site include filling in existing drainage ditches, installing ditch plugs at outlets and removing field crowns. Design grade elevation of 33.8' will be established throughout the interior while the surrounding wetland buffer will be set at elevation 35'. Ditches draining from Silver Springs Road and surrounding cropland will enter the site via a series of drainages set at elevation 34 to allow runoff to enter the project. Silver Springs Road elevation is approximately 35.5'-35.7' providing at least a foot and a half of freeboard between the inlet/inflow elevation into the site and Silver Springs Road. The northern edge of the wetland restoration site will be graded at design elevation 33.8' and left to drain north into the existing ditches via ditch plugs/check dams set at elevation 34' providing the necessary hydrologic connection to Lassiter Swamp (Exhibit C-2).

Grading methods will restore various hydrologic regimes ranging from shallow inundated areas to intermittently saturated conditions and restore diffuse flow patterns through what will ultimately be a forested wetland. The proposed wetlands have been designed to replicate the natural hydrology of

nearby reference wetlands. The seasonally high water table historically found on the site will maintain saturated soils throughout significant periods during the growing season. Previous wetland mitigation for non-riparian wetlands approved by the Corps for a similar landscape position to this project was used to develop the hydrologic success criteria. A minimum successful hydroperiod of at least 15 days based on a 243 day growing season (6%) will be considered successful based on the analysis of annual water budgets for the site (see 7.3 Data Analysis).

Plant Community Restoration: The plant species chosen for the project are native to the area, with an emphasis on species that will provide habitat and a viable, yearlong food source for a wide range of animal and plant species. The project is intended provide food and habitat to complement and enhance the existing ecosystem. Hydrophytic species shown on the planting plan were selected to create a diverse forested wetland community. Invasive and exotic species will not be planted on the site. Any invasive or exotic species found on the site will be removed through physical or chemical means during the planting phase. In selecting vegetation, we have considered reference non-riparian wetland areas adjacent to the site and "Dominant Plants for Major Wetland Types" published by the North Carolina Department of Environment Water Quality Section. Sheet P-2 contains detailed planting and seeding schedules for the site.

Soil Retention: Soils found in the project area currently exhibit hydric characteristics and will remain. Large woody debris encountered within the project area will be placed throughout the restored wetlands to add variety to soil conditions and encourage diversity of volunteer species.

7.3 Narrative of Data Analysis

Annual Water Budget: An annual water budget was used to model existing hydrology in terms of hydrologic inputs and outputs in order to calculate the change in monthly storage. Historic climate data from the NOAA's National Climatic Data Center was used. Temperature and precipitation data was obtained from the Elizabeth City station (GHCND:USC00312719), located approximately 30 miles to the southeast of the project site, the closest station with the longest recording period. Precipitation data was reviewed and three years were selected to represent a dry (1995), typical (1984) and wet (1996) year.

Existing Conditions: Inputs into the water budget were precipitation, surface water, and groundwater. Precipitation data for the three representative years was analyzed and used in the water budget. Surface water inputs were calculated using the USDA Soil Conservation Service runoff coefficient equation (USDA, SCS 1986). Groundwater inputs likely exist but have not been quantified and therefore are assumed to be zero as a conservative estimate. Outputs into the water budget include potential evapotranspiration, surface water and ground water. Potential evapotranspiration was calculated by the Thornthwaite method using mean monthly air temperature for the representative years chosen. Surface water output was assumed to be equal to surface water inputs since no surface storage is present and existing ditches divert water off site. A mean monthly total change in storage was determined by subtracting outputs from inputs. A maximum wetland water volume of 4.32 inches was calculated based on the specific yield of 0.12 for 36 inches for both soils on site (PnA and BnA).

The resulting hydrograph and chart (Appendix C) show a seasonal variation for the dry, average and wet years. The model shows the majority of hydrologic inputs occur in the late winter-early spring months and summer months for the wet and average years. The dry year also peaks with hydrologic input during the late winter-early spring months but then drops off for the remainder of the growing season

and year. The site begins to lose saturation in the upper twelve inches during late summer and into the fall season. It is clear from the model and resulting graph that the existing ditches exert a large influence on the site's ability to store water and thus keeps the site from achieving wetland hydrology within the upper twelve inches.

Proposed Conditions: A modified water budget was developed to analyze the effect of restoration efforts on the site's hydrology. Calculations for wetland water volume used the same methodology as described above. To estimate the influence on surface roughening and microtopography, an additional 2.4 inches of hydrologic capacity was added to the model. Surface water outflows are predicted to be zero as the existing drainage ditches will be filled and surface water will be retained onsite. Based on the proposed conditions, the budget shows the site achieving jurisdictional wetland hydrology during portions of the early Spring (March) and summer months for the average and wet years when compared to the existing conditions. The dry year remains relatively the same for both existing and proposed conditions which is an indicator the site may or may not be vulnerable to drought conditions.

Based upon this analysis, the proposed wetland hydrology will attain jurisdictional hydrology for a period of at least 15 days of the 243 day growing season, which equates to 6% or greater hydroperiod. Therefore a 6% or greater hydroperiod has been chosen as the hydrology design parameter based on the completed water budget.

Lateral Effect Analysis: Lateral Effect Analysis (Version 2.7) was performed on the site to determine the draw down effect of the existing ditches. Lateral Effect is the width of hydrologic interference, caused by an adjacent ditch, which is drained such that it no longer satisfies the wetland hydrologic criterion. The lateral effect differed between soil types due largely to differing hydraulic conductivities. The Lateral Effect Manual associated with the program used suggests, when drainable soil porosity is unknown, to use a value between 0.035 and 0.04. Evaluations using both the 0.035 and 0.04 values were conducted and compared. Soil type PnA has a wider lateral effect than BnA (Appendix C – Lateral Effect Analysis). Hydrologic interference is also dependent on ditch depth where increased ditch depth increased width of lateral effect. Lateral effect ranged from 44.8 feet (soil BnA, ditch depth of 2 ft) to 155.2 ft (soil PnA, ditch depth of 4 feet).

> Existing Ditches: Ditch depth generally increases along the flow length, causing the lateral effect to widen in the direction of flow (south to north). Filling the existing ditches will return the ground water elevation to pre-ditch elevations within the highlighted lateral effect areas (Appendix C – Lateral Effect Analysis).

8. MAINTENANCE PLAN

NCEEP shall monitor the site on a regular basis and shall 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**
Wetland	Routine wetland maintenance and repair activities may include securing of loose coir matting and supplemental installations of live stakes and other target vegetation within the wetland. Areas where stormwater and floodplain flows intercept the wetland may also require maintenance to prevent scour.
Vegetation	Vegetation shall be maintained to ensure the health and vigor of the targeted plant community. Routine vegetation maintenance and repair activities may include supplemental planting, pruning, mulching, and fertilizing. Exotic invasive plant species shall be controlled by mechanical and/or chemical methods. Any vegetation control requiring herbicide application will be performed in accordance with NC Department of Agriculture (NCDA) rules and regulations.
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.
Utility Right-of-Way	Utility rights-of-way within the site may be maintained only as allowed by Conservation Easement or existing easement, deed restrictions, rights of way, or corridor agreements.

9. PERFORMANCE STANDARDS

Wetland Hydrology Performance Standards

1. Wetland hydrology data must consistently document an appropriate soil wetness condition (hydroperiod) has been re-established for all areas proposed for wetland mitigation. Regulatory guidance and procedures were used to develop appropriate hydrologic success criteria for the non-riparian wetland areas to be restored. Non-riparian wetland flats with 6 percent or greater hydroperiods will be considered successful. If the data fail to support this conclusion in any area(s) proposed for wetland mitigation after 7 years of monitoring, additional monitoring may be required, or the area(s) may be deemed to be unacceptable for generation of compensatory wetland credit.
2. The growing season for the determination of hydrologic success was developed from the WETS Table for Hertford County, NC (Mufreesboro), which is on a similar latitude as the project site. Growing season dates are determined to be from March 9 through November 6, a range of 243 days. The minimum successful hydroperiod for the site would therefore be 15 consecutive days.

Planted Vegetation Performance Standards

1. At least 320 three year-old planted stems/acre must be present after year three. At year five, density must be no less than 260 five year-old planted stems/acre. At year 7, density must be no less than 210 seven year-old planted stems/acre.
2. Planted vegetation must average 10 feet in height in each plot at year 7 in sites located in the coastal and piedmont counties and 8 feet in height in each plot at year 7 in the mountain counties (as defined in the USACE 2003 SMGs). If this performance standard is met by year 5 and stem density is trending toward success (i.e., no less than 260 five year-old stems/acre) monitoring of vegetation on the site may be terminated provided written approval is provided by the USACE in consultation with the North Carolina Interagency Review Team (NCIRT).
3. Per the recommendations of the NCIRT, the following understory species were incorporated in the planting schedule on the condition they be exempted from the minimum 10-foot height criterion and exempted from the calculation of average height as a measure of that success criterion: Button bush (*C. occidentalis*), Sweet bay (*M. virginiana*), Wax myrtle (*M. cerifera*), Laurel oak (*Q. laurifolia*). These species will be included in the calculations for the survival criterion.

10. MONITORING REQUIREMENTS

Monitoring Reports will be submitted to EEP by December 1st of the year in which the monitoring was conducted. In the unlikely event that the success criteria are not being achieved during the seven-year minimum monitoring period, with permission from EEP, corrective measures including re-grading, replanting, removal of certain species, etc. will be performed.

Annual monitoring data will be reported using the EEP monitoring template. The monitoring report shall provide a project data chronology that will facilitate an understanding of project status and trends, population of EEP databases for analysis, research purposes, and assist in decision making regarding project close-out.

Required	Parameter	Quantity	Frequency	Notes
	Visual Wetland Monitoring	Entire site	Semi-annual	Entire site will be monitored twice annually
	Groundwater Hydrology	Quantity and location of gauges will be determined in consultation with EEP	Annual	Nine (9) groundwater monitoring gauges with data recording devices will be installed on site; the data will be downloaded on a monthly basis during the growing season
	Vegetation	Quantity and location of vegetation plots will be determined in consultation with EEP	Monitoring Years 1, 2, 3, 5, and 7	Vegetation will be monitored at eighteen (18) plots using the Carolina Vegetation Survey (CVS) protocols
	Exotic and nuisance vegetation	Entire site	Semi-annual	Locations of exotic and nuisance vegetation will be mapped and treated
	Project boundary	Project boundary	Semi-annual	Locations of fence damage, vegetation damage, boundary encroachments, etc. will be mapped

General Stream and Wetland Monitoring Requirements

1. Site monitoring for all stream and/or wetland mitigation projects shall occur for seven full years (post construction) except in those circumstances provided for in this document where specific monitoring activities may be terminated as early as five years. If performance standards have not been met by year seven, additional monitoring may be required to ensure that a site is relatively stable with respect to anthropogenic or natural effects and that the target community is established on the site or the site (or portions of the site) may be deemed to be unacceptable for generation of compensatory mitigation credit.
2. Seven years of monitoring are not required for stream and/or wetland preservation reaches or areas which are subject to Monitoring Level 3 requirements of the USACE 2003 SMGs.
3. Success criteria as provided in the mitigation plan or in the permit conditions must be restated verbatim in the monitoring report.
4. Monitoring reports shall be completed for all seven years and provided to the Ecosystem Enhancement Program (EEP) for review by December 1 of each year that the site is required to be monitored. This is to ensure that any remedial action that may be necessary can be accomplished during the next planting season. Failure to provide monitoring reports by this deadline may result in additional monitoring.
5. Vegetation monitoring standards shall apply to all stream and/or wetland mitigation projects.

Visual Wetland Monitoring Requirements

1. Visual monitoring of all wetland restoration and/or enhancement areas shall be conducted 2 times per year and a minimum of 5 months apart, in each of the required 7 years of post-construction monitoring. Visual monitoring shall include walking throughout the entire site to identify and document areas of low stem density or poor plant vigor, invasive species, encroachments, indicators of livestock access, or other areas of concern.
2. The results of the visual assessment shall be included in a plan view of the project identifying the location of each area of concern, along with a written assessment and photographic documentation of the area. Once an area of concern has been identified, that same feature shall be reassessed on all subsequent visual assessments. Photographs should be taken from the same location year-to-year to document progression of the problem. The monitoring reports shall identify all areas of concern and recommended courses of action, which may include continued monitoring, repair or other remedial action.

Groundwater Gauge Location and Data Collection Requirements

1. Due to the size and extremely flat nature of the site in addition to the uniformity of the soil profiles described in Appendix C, well density shall be one per five acres (or 9 wells). The wells will be located to assess subsurface water levels at various elevations on the site planned as seasonally saturated or temporarily flooded. Additionally, 2 pairs of wells will be located near existing perimeter ditches to capture any potential drainage effects (Exhibit K). Groundwater elevation data collected from each monitoring well will be presented relative to the ground surface elevation at the well location in graph form.
2. Monitoring of hydrology on the restoration site will be completed using semi-continuous recording water level loggers suspended in two-inch PVC monitoring wells placed 15-20 inches into the ground. Monitoring wells will be constructed, installed, tested, maintained, read, and interpreted in accordance with the Engineer Research and Development Center's technical note 05-02 (Wetlands Regulatory Assistance Program) dated June, 2005.
3. Groundwater gauge data shall be collected and reported to EEP in each of the 7 years (post-construction) of monitoring. At a minimum, data shall be collected (continuously) through the entirety of the growing season in the county(ies) the project is located.

Vegetation Planting Monitoring Requirements

1. Permanent plots to sample vegetation shall be randomly located in each of the target communities. Plot sizes for the determination of stem density and vigor (height) shall be a minimum of 0.02 acre in size, and should typically be square or rectangular.
2. Vegetation monitoring plots shall make up a minimum of 2% of the planted portion of the site with a minimum of 18 plots.
3. Upon initial establishment of vegetation plots (baseline/year 0), the plot corners shall be Marked in accordance with CVS Protocol.
4. Within each plot, vegetation data collected will be in accordance with CVS Protocol.

5. Vegetation plots shall be monitored for 7 years, with monitoring events occurring in years 1, 2, 3, 5, and 7. If supplemental monitoring occurs, results may be considered towards meeting performance standards.

11. LONG-TERM MANAGEMENT PLAN

Upon approval for close-out by the Interagency Review Team (IRT) the site will be transferred to a third party for long term management as described in EEP's In Lieu Fee Instrument. 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. Endowment funds required to uphold easement and deed restrictions shall be negotiated prior to site transfer to the responsible party.

12. ADAPTIVE MANAGEMENT PLAN

Upon completion of site construction EEP will implement the post-construction monitoring protocols previously defined in this document. Project maintenance will be performed as described previously in this document. If, during the course of annual monitoring it is determined the site's ability to achieve site performance standards are jeopardized, EEP will notify the USACE of the need to develop a Plan of Corrective Action. The Plan of Corrective Action may be prepared using in-house technical staff or may require engineering and consulting services. Once the Corrective Action Plan is prepared and finalized EEP will:

1. *Notify the USACE as required by the Nationwide 27 permit general conditions.*
2. *Revise performance standards, maintenance requirements, and monitoring requirements as necessary and/or required by the USACE.*
3. *Obtain other permits as necessary.*
4. *Implement the Corrective Action Plan.*
5. *Provide the USACE a Record Drawing of Corrective Actions. This document shall depict the extent and nature of the work performed.*

The Hofler mitigation site is planned and designed to be self-sustaining over time, but some active management or maintenance may be necessary to ensure the long-term sustainability of the restoration effort. The adaptive management approach involves analysis of monitoring results to identify potential problems occurring on the site and the identification and implementation of measures to rectify those problems. Remedial actions may include but are not limited to mechanized earth-work or supplemental planting in the event areas of the site do not fulfill the vegetative success criteria. Prior to initiating any remedial actions, the proposed measures will be submitted to the USACE for review and approval.

Performance and functioning of the mitigation site may be affected by various causative factors – both natural and human-induced. Natural hazards may include fire, flood, erosion, invasive species, and/or excessive herbivory. Human errors may include design flaws, construction deviation, and/or inadequate planting coverage. To minimize these potential problems, the following strategies may be employed:

- If deer herbivory appears to be jeopardizing the survivorship of planted species, discussions with appropriate agencies will be initiated to determine an appropriate course of action.

- Construction errors will be identified early via the as-built report which will contain topographic survey data. If it appears as though there errors jeopardize the integrity of the project, then appropriate remedial action(s) will be identified and submitted to the USACE for concurrence prior to implementation.
- Planting errors in spacing density or coverage will be avoided by careful coordination with planting crews. An account of planted stems will be provided with the as-built report.
- If monitoring indicates a potential design flaw, remediation options will be reviewed with permitting agencies.

13. FINANCIAL ASSURANCES

Pursuant to Section IV H and Appendix III of the Ecosystem Enhancement Program's In-Lieu Fee Instrument dated July 28, 2010, the North Carolina Department of Environment and Natural Resources has provided the U.S. Army Corps of Engineers Wilmington District with a formal commitment to fund projects to satisfy mitigation requirements assumed by EEP. This commitment provides financial assurance for all mitigation projects implemented by the program.

14. OTHER INFORMATION

14.1 DEFINITIONS

Morphological description – the stream type; stream type is determined by quantifying channel entrenchment, dimension, pattern, profile, and boundary materials; as described in Rosgen, D. (1996), *Applied River Morphology, 2nd edition*

Native vegetation community – a distinct and reoccurring assemblage of populations of plants, animals, bacteria and fungi naturally associated with each other and their population; as described in Schafale, M.P. and Weakley, A. S. (1990), *Classification of the Natural Communities of North Carolina, Third Approximation*

Project Area - includes all protected lands associated with the mitigation project

14.2 REFERENCES

Faber-Langendoen, D., Rocchio, J., Schafale, M., Nordman, C., Pyne, M., Teague, J., Foti, T., Comer, P. (2006), *Ecological Integrity Assessment and Performance Measures for Wetland Mitigation*. NatureServe, Arlington, Virginia.

Lindenmayer, D.B., and J.F. Franklin. (2002), *Conserving forest biodiversity: A comprehensive multiscaled approach.* Island Press, Washington, DC.

North Carolina Division of Water Resources, Water Quality Programs. (2007), *Chowan River Basinwide Water Quality Plan.* Retrieved from http://portal.ncdenr.org/web/wq/ps/bpu/basin/chowan/2007

North Carolina Ecosystem Enhancement Program (2011), *Monitoring Requirements and Performance Standards for Stream and/or Wetland Mitigation.*

Peet, R.K., Wentworth, T.S., and White, P.S. (1998), *A flexible, multipurpose method for recording vegetation composition and structure*. Castanea 63:262-274

Rosgen, D. (1996), *Applied River Morphology, 2nd edition*, Wildland Hydrology, Pagosa Springs, CO

Schafale, M.P. and Weakley, A. S. (1990), *Classification of the Natural Communities of North Carolina, Third Approximation,* NC Natural Heritage Program, Raleigh, NC

US Army Corps of Engineers Wilmington District (2003), *Stream Mitigation Guidelines, April 2003*
Young, T.F. and Sanzone, S. (editors). (2002), *A framework for assessing and reporting on ecological condition*. Ecological Reporting Panel, Ecological Processes and Effects Committee. EPA Science Advisory Board. Washington, DC

APPENDIX A

COMMENTS, CORRESPONDENCE, AND REVISIONS

Second 30-Day Comment Deadline on Repost: 5 April, 2014

1. *Todd Bowers, USEPA, 7 March, 2014*:

• Minimum successful hydroperiod should be "at least 15 days" based on 243 days (.06)= 14.58. Anything less than 14 consecutive days would not meet the growing season hydroperiod standard based on 6 percent of the growing season. This could be clarified on page 23 under Hydrologic Modifications and page 25 under Proposed Conditions. **Revised hydroperiod text on pages 23 & 24 Section 7.2 Hydrologic Modifications and 7.3 Proposed Conditions and Section 9.0 Performance Standards, Wetland Hydrology, page 27.**

• I am still troubled by the lack of information both in writing and the site plans how this wetland system is to be tied into waters of the United States. It appears that the ditches within the easement boundary are to be filled to grade. Does this imply that the ditches outside the project and/or easement boundary are to be left intact and thus still able to drain the portions of the site including surface runoff (if any) from the wetland? If so this should be plainly stated under proposed conditions on page 25. As it stands, the proposed conditions state that "surface water outflows are predicted to be zero as the existing drainage ditches will be filled and surface water will be retained onsite". Does this imply that we are creating an isolated wetland? (See my previous comments also). **Revised design parameters under Section 7.2 Hydrologic Modifications, page 23 and added Exhibits C-1 and C-2, showing pre and post restoration drainage patterns.**

• Planting 15% sweetgum and red maple is excessive based on the ability of these species to vigorously volunteer on disturbed sites and their lack of hard mast production. Recommend removing or reducing the percent of sweetgum and red maple planted. Adding some minor understory species such as Persea palustris and Cyrilla racemiflora per Erik Kulz's recommendation is encouraged per analysis of Schafale and Weakley Nonriverine Swamp Forest (Non -Riverine Swamp Forest per NCWAM). Sweetgum is not even listed as a component of non-riverine swamp forests unless highly disturbed. **Revised Planted Vegetation Performance Standards in Section 9.0 on page 27 and revised the Plant Schedule in plan sheet P-2**

2. *Eric Kulz, NCDWR, 1 April, 2014*:

DWR has reviewed the revised Mitigation Plan and continues to have a number of questions/concerns. Our previous comments were not addressed in the revised plan.

• 1) As stated previously, the plan states that the project will slow runoff rates and provide storage and desynchronization of overland flow before it reaches Lassiter Swamp. The proposed site design still appears to be hydrologically isolated, with berms replacing the access roads on three sides of the site. Also, it appears that a ditch will remain open along the northern property boundary. It would appear that the only water quality benefit of the

project is the change in land use from agriculture to forested. It is unclear how surface water runs onto or off of the property. It is also unclear how this project will increase unfragmented forest areas when the site is isolated in the middle of agricultural fields. **Revised design parameters under Section 7.2 Hydrologic Modifications, page 23 and added Exhibits C-1 and C-2, showing pre and post restoration drainage patterns and revised Project Goals, page 5.**

• 2) During an on-site review, DWR Regional staff encountered a restrictive layer at a depth of 6-9 inches, possibly resulting from 75 years of agricultural production. It is requested that chisel plows or rippers be utilized during construction to ensure proper loosening of soils beyond the restrictive horizon. **Revised General Notes on plan sheet T-1 to include ripping to ensure proper loosening of soils below the restrictive horizon (plow pan).**

• 3) Review of the proposed planting list revealed that sweetgum and red maple are the two species to be planted in greatest numbers. It has been our observation that these species volunteer prolifically and based on research conducted by DWR on older mitigation sites, they will become major canopy species over time through natural processes. Please remove these species from the planting list. **Revised Plant Schedule in plan on sheet P-2**

• 4) Water oak (Quercus nigra) is identified as a FAC species. Care should be taken to insure this species is planted on drier portions of the site. Also, Schafale and Weakley identify laurel oak (Quercus laurifolia; FACW) and swamp tupelo (Nyssa biflora; OBL), as common canopy species on nonriverine wet hardwood forests (hardwood flat). Please consider revising the planting list. **Revised Planted Vegetation Performance Standards in Section 9.0 on page 27 and revised the Plant Schedule in plan sheet P-2**

3. *T. Crumbley 2 April, 2014*:

• The Revised Plan still does not meet the EEP minimum standard number/acreage for vegetation monitoring plots within the project area. The minimum number of plots at the time of contract is required to be 2% of the planted portion of the site. **Revised vegetation monitoring plots in Section 10.0 Monitoring Requirements on page 28**

- As stated in the initial review of this project, it was recommended that: "well placement should be enhanced with additional wells and transects from edge of easement boundaries to capture any drainage effects from proposed perimeter ditches." This comment was not addressed in the revised plan and no additional wells were proposed as transects from remaining ditches along project boundary. **Revised groundwater monitoring well quantity and placement in Section 10.0 Monitoring Requirements, Groundwater Gauge Location and Data Collection Requirements on pages 28-29 and Exhibit K Groundwater Gauge Map**

- Please be advised that recommendations and comments from both iterations of the Draft Plan (both original and revised) need to be addressed and implemented within the Final Mitigation plan. Permit conditions and credit adjustments may still be warranted if the Final plan does not reveal a good-faith effort to comply with the suggestions and comments of the NCIRT during this review, particularly if performance standards and overall project success are not met.

Initial 30-Day Comment Deadline: 6 February, 2014

4. *Todd Bowers, USEPA, 10 January, 2014*:

- In my review of the Hofler Property Mitigation Plan I did not come across a proposed service area for the 22.0 anticipated credits to be generated by this project. Normally this would be within the same and denoted adjacent HUC-8 but I did not find any information provided to confer this assumption. **To our knowledge, it is the same HUC, but we are not provided such permit details.**

- The 22 acre non-riparian wetland in question is to be constructed within the confines of a currently drained cotton field. If the current ditches are removed and replaced to continue draining the field while keeping them at a distance beyond their zone of influence, then would this wetland be considered isolated? The only inputs are high water table (not confirmed) and precipitation. If this wetland is indeed considered isolated (no surface connectivity) then how are we creating jurisdictional Waters of the United States? I have no question as to the function of the wetland as I am sure it could provide suitable habitat and provide for some hydrological recharge of groundwater. However, we are building this wetland to provide credits towards loss of Waters of the United States which is not in keeping with the policy of "no net loss". The wetlands used for reference data include hardwood flats adjacent to Lassiter Swamp which, although not stated, are most likely hydrologically connected to Bennetts Creek and therefore of a differing hydrologic regime to the proposed restoration site. **Revised design parameters under Section 7.2 Hydrologic Modifications, page 23 and added Exhibits C-1 and C-2, showing pre and post restoration drainage patterns.**

5. *Eric Kulz, NCDWR, 23 January, 2014*:

DWR has reviewed the Mitigation Plan and has a number of questions/concerns.

- 1) The plan states that the project will slow runoff rates and provide storage and desynchronization of overland flow before it reaches Lassiter Swamp. The proposed site design appears to be hydrologically isolated, with the proposed ditches along the east and west sides receiving surface runoff from adjacent farm fields only, as the proposed access roads prevent surface runoff from leaving the site. It would appear that the only water quality benefit of the project is the change in land use from agriculture to forested. It is unclear how surface water runs onto or off of the property. It is also unclear how this project will increase unfragmented forest areas when the site is isolated in the middle of agricultural fields. **Revised design parameters under Section 7.2 Hydrologic Modifications,**

page 23 and added Exhibits C-1 and C-2, showing pre and post restoration drainage patterns and revised Project Goals, page 5.

- 2) During an on-site review, DWR Regional staff encountered a restrictive layer at a depth of 6-9 inches, possibly resulting from 75 years of agricultural production. It is requested that chisel plows or rippers be utilized during construction to ensure proper loosening of soils beyond the restrictive horizon. **Revised General Notes on plan sheet T-1 to include ripping to ensure proper loosening of soils below the restrictive horizon (plow pan).**

- 3) Review of the proposed planting list revealed that sweetgum and red maple are the two species to be planted in greatest numbers. It has been our observation that these species volunteer prolifically and based on research conducted by DWR on older mitigation sites, they will become major canopy species over time through natural processes. Please remove these species from the planting list. **Revised Plant Schedule in plan on sheet P-2.**

- 4) Water oak (Quercus nigra) is identified as a FAC species. Care should be taken to insure this species is planted on drier portions of the site. Also, Schafale and Weakley identify laurel oak (Quercus laurifolia; FACW) and swamp tupelo (Nyssa biflora; OBL), as common canopy species on nonriverine wet hardwood forests (hardwood flat). Similarly, smaller understory species such as swamp bay (Persea palustris) and ironwood (Carpinus caroliniana) were noted by Schafale and Weakley in the majority of examples of this wetland type. Please consider adding some of these species to the proposed planting list. **Revised Planted Vegetation Performance Standards in Section 9.0 on page 27 and revised the Plant Schedule in plan sheet P-2.**

6. *Kathy Matthews, USFWS, 27 January, 2014*

- The project appears from the engineering drawings to be constructed as a three-sided impoundment in the middle of a farm field. It does not appear to be explicitly connected to Lassiter Swamp (if so, how?), and it is unclear how a small wetland impoundment surrounded by farm fields and ditches will provide significant benefits to Lassiter Swamp or Bennetts Creek. How is the site going to be connected to Waters of the US? I disagree with the statement on Page 6 that this project has minimal earthwork and disturbance, because of the earthen berm roads on three sides of the project. I am also concerned that the site may need excessive management beyond the 7-year monitoring period, particularly due to the berms. **Revised design plans to remove proposed interior access road and perimeter ditches and revised design parameters under Section 7.2 Hydrologic Modifications, page 23 and added Exhibits C-1 and C-2, showing pre and post restoration drainage patterns.**

7. *T. Crumbley and T. Tugwell, USACE, 31 January, 2014*:

- The District concurs with most of the previous comments. Prior to issuing a final decision (approval or denial) on the Draft mitigation plan, we recommend an additional meeting between the NCIRT, the provider, and NCEEP to address the concerns noted in this review period.

- As discussed in other comments, the concern that the wetlands proposed will be disconnected from the surrounding habitats and other aquatic resources by fragmentation in a watershed context is one of the District's as well. **Revised design parameters under Section 7.2 Hydrologic Modifications, page 23 and added Exhibits C-1 and C-2, showing pre and post restoration drainage patterns.**

  - There is also concern regarding the elevated road berms that are also proposed to maintain the surface hydrology on the project. We do not see the proposal to artificially impound surface water within the project area as restoring the historical conditions on-site. We have expressed our concern for these manipulated hydrologic containment areas in past closeout visits and discouraged providers from proposing these in the future. **Revised design plans to remove proposed interior access road and perimeter ditches.**

- The hydrologic success criteria should be stated as 6% or greater, rather than 6-8% or greater. Well placement should be enhanced with additional wells and transects from edge of easement boundaries to capture any drainage effects from proposed perimeter ditches. **Revised hydroperiod text on pages 23 & 24 Section 7.2 Hydrologic Modifications and 7.3 Proposed Conditions and Section 9.0 Performance Standards, Wetland Hydrology, page 27, and revised groundwater monitoring well quantity and placement in Section 10.0 Monitoring Requirements, Groundwater Gauge Location and Data Collection Requirements on pages 28-29 and Exhibit K Groundwater Gauge Map**

Filed: 08/11/2011 09:33 58 AM
SHARON G. HARRELL, Register of Deeds
Gates County, NC
Mary C. Horton

BOOK 293 PAGE 441 (5)
303718

record: $26.00

return: Ed Temple

PURCHASE OPTION AGREEMENT

THIS PURCHASE OPTION dated July 20, 2011, is given by S & M Farms, LLC (hereinafter referred to as "SELLER") to Albemarle Restorations, LLC (hereinafter referred to as "AGENT").

SELLER is the owner of one parcel of real property located in Gates County, North Carolina, (hereinafter referred to as "PROPERTY") that is identified as Tax Parcel # 0600422, totaling 345.19 acres, in the Gates County Tax Office and Deed Book 286, Page 306, Plat Book 3, Page 150 in the Gates County Register of Deeds.

AGENT desires to obtain an option to purchase the right to restore, enhance and/or create up to 27 acres of wetlands, but no less than 22 acres on the PROPERTY for mitigation and/or habitat conservation purposes, and to secure the protection in perpetuity of wetlands through the recordation of a conservation easement by the SELLER in the Land Records of Gates County, North Carolina, on the terms set forth below.

In consideration of the sum of ONE DOLLAR ($1.00) paid by the AGENT to the SELLER, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree to the following:

1. Grant of Option. SELLER grants to AGENT first option to purchase the right to restore, enhance and/or create up to 27 acres of wetlands, but no less than 22 acres on the PROPERTY for mitigation and/or habitat conservation purposes, and to secure the protection in perpetuity of said wetlands through the recordation of a conservation easement by the SELLER in the Land Records of Gates County, North Carolina, subject to the terms and conditions set forth below. The AGENT may exercise this option to purchase the rights and conservation easement(s) on the PROPERTY in varying amounts over the time frame of this option agreement. In the event of acceptance of this Option in part or in total by AGENT, SELLER agrees as follows:

a. That SELLER will allow AGENT, its subcontractors, employees, agents or assigns, the right to enter in and upon the PROPERTY to proceed with construction of the necessary wetland restoration, enhancement and/or creation including, but not limited to, analyzing, collection of data, surveying and constructing and planting of the mitigation site(s).

b. That SELLER will allow AGENT, its subcontractors, employees or agents or assigns, the right to enter in and upon the PROPERTY at reasonable times and upon reasonable advance notice for a period of seven (7) years from the date of completion of the mitigation to inspect, construct, replant, replace, maintain and repair the mitigation site. AGENT will save and hold SELLER harmless from damages associated with AGENT'S performance of the design, construction, and monitoring of the proposed wetland mitigation project on the PROPERTY, until such time as the mitigation project has been approved as successful and complete by the North Carolina Ecosystem Enhancement Program (NC EEP) or their assigns.

2. Time. The AGENT'S option to purchase the easement(s) must be exercised in writing by AGENT on or before March 4, 2013. If the option to purchase is not exercised on or before that date, this option to purchase shall automatically cease and terminate, neither party shall have any further rights hereunder, at law or in equity, and this Agreement shall be null and void, all without further action or

documentation by either party.

3. Manner. The AGENT shall deliver to the SELLER written intent to exercise this option once the property is accepted by the NC EEP or their assigns, together with the Conservation Easement set forth in Exhibit A. SELLER shall then execute and deliver the Conservation Easement to the AGENT for review by the State of North Carolina (STATE). Once approved by the STATE, the AGENT shall record the Conservation Easement and be reimbursed by the NC EEP, at which time the exchange of purchase monies between SELLER and AGENT shall take place at an agreed upon time and place. The purchase price under this option shall be Five Thousand Dollars ($5,000.00) per acre. The actual number of acres purchased shall be determined by survey. The failure of the SELLER to execute and return a fully executed copy of the Conservation Easement to the AGENT shall not affect the enforceability of this Agreement and this Agreement shall be binding upon and enforceable against the SELLER. The AGENT is solely responsible for all costs associated with the survey, transfer and recording of said Conservation Easement.

4. Rights and Obligations of the Parties if the Option is Exercised. In the event that AGENT exercises this option to purchase within the time and in the manner herein before provided, then thereafter the rights and obligations of the parties with respect to the Conservation Easement shall be governed by the terms and conditions contained in the Conservation Easement.

5. Time of the Essence. Time shall be of the essence of this Option Agreement.

IN WITNESS WHEREOF the parties have duly executed this Agreement and affixed their seals as of the date set forth above.

SELLER:

S & M Farms, LLC

By:_____(SEAL)

James Myron Hofler, Jr., Member

By: Bernard Sidney Hofler (SEAL)

Bernard Sidney Hofler, Jr., Member

AGENT:

Albemarle Restorations, LLC

By: _____ (SEAL)

Edmund R. Temple, Jr., member/manager

STATE OF NORTH CAROLINA,
COUNTY OF Gates

I, Lisa B. Byrum, a Notary Public for ~~said~~ Chowan County and State, do hereby certify that James Myron Hofler, Jr., a member of S & M Farms, a limited liability company, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 21st day of July, 2011.

My Commission expires: 02-28-2013

LISA B. BYRUM NOTARY PUBLIC CHOWAN COUNTY, NC

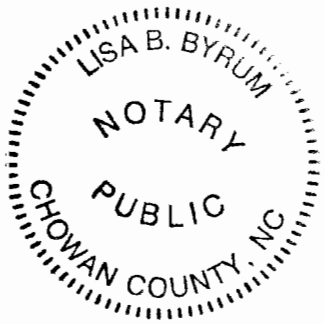
Lisa B Byrum
Notary Public
Lisa B. Byrum

STATE OF NORTH CAROLINA,
COUNTY OF Gates

I, Lisa B. Byrum, a Notary Public for ~~said~~ Chowan County and State, do hereby certify that Bernard Sidney Hofler, Jr., a member of S & M Farms, a limited liability company, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 21st day of July, 2011.

My Commission expires: 02-28-2013



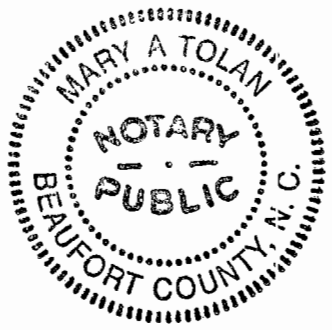
Lisa B Byrum
Notary Public
Lisa B. Byrum

STATE OF NORTH CAROLINA,
COUNTY OF Beaufort

I, Mary A. Tolan, a Notary Public for said County and State, do hereby certify that Edmund R. Temple, Jr., a member/manager of Albemarle Restorations, LLC, a limited liability company, personally appeared before me this day and acknowledged the due execution of the foregoing instrument on behalf of the company.

Witness my hand and official seal, this the 28 day of July, 2011.

My Commission expires: 12-15-2011



Mary A. Tolan
Notary Public

STATE OF NORTH CAROLINA

DEED OF CONSERVATION EASEMENT AND RIGHT OF ACCESS PROVIDED PURSUANT TO FULL DELIVERY MITIGATION CONTRACT

_____ COUNTY

SPO File Number:
EEP Project Number:

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 _____day of _____, 20__, by _____*Landowner name goes here*, ("**Grantor**"), whose mailing address is _____*Landowner address goes here*_____, 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, this Conservation Easement from Grantor to Grantee has been negotiated, arranged and provided for as a condition of a full delivery contract between *(insert name and address of full delivery contract provider)* and the North Carolina Department of Environment and Natural Resources, to provide stream, wetland and/or buffer mitigation pursuant to the North Carolina Department of Environment and Natural Resources Purchase and Services Contract Number _____.

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 _____ Township, _____ County, North Carolina (the "**Property**"), and being

more particularly described as that certain parcel of land containing approximately _____ acres and being conveyed to the Grantor by deed as recorded in **Deed Book _____ at Page ____** of the _____ County Registry, North Carolina; 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 ***if known, insert name of stream, branch, river or waterway here***.

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:

Tracts Number _____ containing a total of _____ **acres** as shown on the plats of survey entitled "Final Plat, Conservation Easement for North Carolina Ecosystem Enhancement Program, Project Name: _____, SPO File No._____, EEP Site No. _____, Property of _____," dated _____, 20__ by *name of surveyor*, PLS Number _____ and recorded in the _____ County, North Carolina Register of Deeds at **Plat Book _____ Pages _____.**

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

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 within a Crossing Area(s) or Road or Trail as shown on the recorded survey plat **or as specifically allowed within a fence maintenance zone as described in section D or a Road or Trail described in section H**.

The Grantor reserves the right, for himself, his successors and assigns, to operate motorized vehicles within Crossing Area(s) described on the survey recorded in Plat Book _____, Page _____, of the _____County Registry as "reserved stream crossing". Said crossing shall not exceed ____ feet in width, and must be maintained and repaired by Grantor, his successors or assigns to prevent degradation of the Conservation Easement Area.

C. Educational Uses. The Grantor reserves the right to engage in and permit others to engage in educational uses in the Conservation Easement Area not inconsistent 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 Crossing Area(s) 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 in the Conservation Easement Area is prohibited with the following exception:

Notwithstanding the foregoing, if there is a fence within the Conservation Easement Area, the Grantor reserves the right to mow and maintain vegetation within 10 feet of the Conservation Easement boundary ***as shown on the Survey Plat*** and extending along the entire length of the fence. The Grantor, his 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 with the following exception:

Only roads and trails located within the Conservation Easement Area prior to completion of the construction of the restoration project and within crossings shown on the recorded survey plat may be maintained by Grantor, successors or assigns to allow for access to the interior of the Property, and must be repaired and maintained to prevent runoff and degradation to the Conservation Easement Area. Such roads and trails shall be covered with pervious materials such as loose gravel or permanent vegetation in order to minimize runoff and prevent sedimentation.

I. Signs. No signs shall be permitted in the Conservation Easement Area except interpretive signs describing restoration activities and the conservation values of the Conservation Easement Area, signs identifying the owner of the Property and the holder of the Conservation Easement, signs giving directions, or 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, excavation, dredging, mining, drilling, hydraulic fracturing; removal of topsoil, sand, gravel, rock, peat, minerals, or other materials.

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.

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.

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, 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 subterraneous 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, 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

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

_____ (SEAL)

NORTH CAROLINA
COUNTY OF _____

I, _____, a Notary Public in and for the County and State aforesaid, do hereby certify that _____, 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 _____ day of _____, 20__.

_____
Notary Public

My commission expires:

_____

Exhibit A

[INSERT LEGAL DESCRIPTION]

APPENDIX B

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. SAW-2013-02062 County: Gates U.S.G.S. Quad: NC-MERCHANTS MILLPOND

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner: S&M Farms, LLC.
Mr. Myron Hofler
Address: 539 NC 32 South
Sunbury, NC, 27979

Telephone Number: (252) 340-1706

Size (acres) 28
Nearest Waterway Bennetts Creek
USGS HUC 3010203

Nearest Town Sunbury
River Basin Chowan. North Carolina, Virginia.
Coordinates Latitude: 36.431967
Longitude: -76.653084

Location description: The project area is an agricultnral field located north of SR1404 approximately 3 miles west of the town of Snnbnry in Gates County, North Carolina.

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are waters of the U.S. including wetlands on the above described property subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

_ The waters of the U.S. including wetlands on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The waters of the U.S. including wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are no waters of the U.S., to include wetlands, present on the above described project area which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **Kyle Barnes** at **910-251-4584 or Kyle.W.Barnes@usace.army.mil.**

C. Basis For Determination: **The 1987 Corps of Engineers Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Regional Snpplement.**

D. Remarks: **The site exhibited hydric soils and evidence of seasonal hydrology in the upper twelve inches of the soils snrface bnt lacked hydrophytic vegetation.**

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **December 20, 2013**.

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: Kyle Barnes

Date: **October 21, 2013** Expiration Date: **October 21, 2018**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the attached customer Satisfaction Survey or visit http://per2.nwp.usace.army.mil/survey.html to complete the survey online.

Copy furnished:

Albemarle Restorations, LLC.
Mr. Ed Temple
Post Office Box 206
Fairfield, North Carolina 27826

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Hofler Property City/County: Gates County Sampling Date: August 16, 2012

Applicant/Owner: S&M Farms, LLC State: NC Sampling Point: _____

Investigator(s): Albemarle Restorations, LLC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Coastal Plain Local relief (concave, convex, none): none Slope (%): <1%

Subregion (LRR or MLRA): LLR T Lat: +36°25' 48.44" Long: -76°39' 10.91" Datum: _____

Soil Map Unit Name: Pantego fine sandy loam, 0-2% slopes; Bladen loam, 0-2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** _____
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks:

In progress

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____	
Water Table Present?	Yes _____	No _____	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____	**Wetland Hydrology Present? Yes** _____ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

In progress

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: _____

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** _____

Remarks: (If observed, list morphological adaptations below).

In progress

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☑ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☑ Black Histic (A3)
- ☑ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☑ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☑ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☑ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☑ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☑ Delta Ochric (F17) **(MLRA 151)**
- ☑ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☑ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☑ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

In progress

Albemarle Restorations, LLC

Wetland Restoration
Stream Restoration
Wildlife Habitat

December 12, 2012

Travis W. Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
NC Wildlife Resources Commission
1718 Hwy 56 West
Creedmoor, NC 27522

Re: Hofler Property Wetland Mitigation Project (Gates County)
Fish and Wildlife Coordination Act Project Review

Dear Mr. Wilson,

The purpose of this letter is to request review and comment on any possible issues that might emerge with respect to fish and wildlife issues associated with wetland restoration work on the above referenced project.

The proposed project, Hofler Property, consists of 22 acres situated on a 345.19 acre property located within the northeast quadrant of the intersection between Water Swamp Rd. and Silver Springs Rd. in the central region of Gates County, NC. More specifically, the project lies approximately 2.40 miles west-southwest of the town of Sunbury, 6 miles east of the town of Gatesville, 6.3 miles north of the town of Mintonsville, and within 0.50 miles south of the Merchants Mill Pond State Park.

The site has been identified for the purpose of providing in-kind mitigation for unavoidable wetland impacts under the North Carolina Ecosystem Enhancement Program (NCEEP). The project consists of a rectangular tract of land that has been ditched and drained for agricultural production since at least 1938.

A vicinity map (USGS) and concept plan with approximate project boundaries are enclosed to assist with the review. We thank you in advance for your timely response and cooperation. Please feel free to contact us with any questions that you may have.

Sincerely,

Edmund R. Temple, Jr.
Principal

P.O. BOX 176
FAIRFIELD, NC 27826
PHONE (252)333-0249

Albemarle Restorations, LLC

Wetland Restoration
Stream Restoration
Wildlife Habitat

December 12, 2012

North Carolina Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699

RE: Hofler Property Wetland Mitigation Project (Gates County)
Historic Resources Project Review

Dear Sir or Madam,

We are requesting that your staff conduct a Historical Review of your Natural Heritage database for any recorded historical or archeological resources on the above referenced project. We are requesting written concurrence that no eligible properties will be impacted as a result of this project. This request is being made to partially fulfill Federal requirements associated with the National Historic Preservation Act, Section 106 review of the subject property.

The proposed project, Hofler Property, consists of 22 acres situated on a 345.19 acre property located within the northeast quadrant of the intersection between Water Swamp Rd. and Silver Springs Rd. in the central region of Gates County, NC. More specifically, the project lies approximately 2.40 miles west-southwest of the town of Sunbury, 6 miles east of the town of Gatesville, 6.3 miles north of the town of Mintonsville, and within 0.50 miles south of the Merchants Mill Pond State Park. The project consists of a rectangular tract of land that has been ditched and drained for agricultural production since at least 1938.

The site has been identified for the purpose of providing in-kind mitigation for unavoidable wetland impacts under the North Carolina Ecosystem Enhancement Program (NCEEP).

I have enclosed a vicinity map (USGS) and a copy of the concept plan. If there are any questions or comments, please do not hesitate to contact this office. Thank you for your time and attention to this matter.

Sincerely,

Edmund R. Temple, Jr.
Principal

P.O. BOX 176
FAIRFIELD, NC 27826
PHONE (252)333-0249

Albemarle Restorations, LLC

Wetland Restoration
Stream Restoration
Wildlife Habitat

January 16, 2013

Mr. John Hammond
Endangered Species Coordinator
US Fish and Wildlife Service, Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

RE: Hofler Property Wetland Mitigation Project (Gates County)
Threatened and Endangered Species Project Review

Dear Mr. Hammond,

This is a follow up letter which provides additional habitat analysis information and conclusions on whether listed T&E species for Gates County will be affected by the proposed project.

The proposed project, Hofler Property, consists of 22 acres situated on a 345.19 acre property located within the northeast quadrant of the intersection between Water Swamp Rd. and Silver Springs Rd. in the central region of Gates County, NC. More specifically, the project lies approximately 2.40 miles west-southwest of the town of Sunbury, 6 miles east of the town of Gatesville, 6.3 miles north of the town of Mintonsville, and within 0.50 miles south of the Merchants Mill Pond State Park. The project consists of a rectangular tract of land that has been ditched and drained for agricultural production since at least 1938.

An updated T&E species list for Gates County with habitat analyses for each species based on current on-site conditions is provided below.

We thank you in advance for your timely response and cooperation. Please feel free to contact me at (252) 333-0249 with any questions.

Sincerely,

Edmund R. Temple, Jr.
Principal

P.O. BOX 176
FAIRFIELD, NC 27826
PHONE (252)333-0249

Threatened and Endangered (T&E) Species List for Gates County

Common Name	Scientific Name	Federal Status	Record Status	Biological Conclusion
Vertebrates				
American alligator	*Alligator mississippiens*	T (S/A)	Current	No Effect
American eel	*Anguilla rostrata*	FSC	Current	No Effect
Atlantic sturgeon	*Acipenser oxyrinchus oxyrinchus*	E	Current	No Effect
Black-throated green warbler	*Dendroica virens waynei*	FSC	Current	No Effect
Eastern Henslow's sparrow	*Ammodramus henslowii susurrans*	FSC	Current	No Effect
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	FSC	Historic	No Effect
Red-cockaded woodpecker	*Picoides borealis*	E	Current	No Effect
Southeastern myotis	*Myotis austroriparius*	FSC	Current	No Effect
West Indian manatee	*Trichechus manatus*	E	Current	No Effect
Invertebrate: Vascular Plant				
Grassleaf arrowhead	*Sagittaria weatherbiana*	FSC	Historic	No Effect
Pondspice	*Litsea aestivalis*	FSC	Current	No Effect
Raven's boxseed	*Ludwigia ravenii*	FSC	Historic	No Effect
Virginia least trillium	*Trillium pusillum* var. *virginianum*	FSC	Current	No Effect

Habitat Analyses

American alligator

American alligators inhabit fresh and brackish marshes, ponds, lakes, rivers, swamps, bayous, canals, and large spring runs. They often bask on partially submerged logs or on land next to the water. Alligators dig dens in river or lake margins or in marshes; they spend cold winter and drought periods in the den. They depend on access to air holes to survive in ice-covered ponds. The American alligator is common in all drainages of Gates County, Merchants Millpond State Park, and Chowan River. Once the project is completed, it could provide suitable habitat for American alligators; however in its current state as cropland, no suitable habitat exist. Therefore, based on habitat requirements and an onsite review, a biological conclusion of "No Effect" has been made.

American eel

American eel is a catadromous fish found on the eastern coast of North America that lives in fresh water and estuaries. Eels are bottom dwellers and hide in burrows, tubes, snags, masses of plants, other types of shelters. They are found in a variety of habitats including streams, rivers, and muddy or silt-bottomed lakes during their freshwater stage, as well as oceanic waters, coastal bays and estuaries. Due to the proposed project's headwater location in the watershed and existing conditions, there is no suitable habitat for this species. Therefore, a biological conclusion of "No Effect" has been made.

Atlantic sturgeon

Atlantic sturgeon are anadromous fish that spawn in freshwater in the spring and early summer and migrate into "estuarine" and marine waters where they spend most of their lives. In some southern rivers a fall spawning migration may also occur. They spawn in moderately flowing water (46-76 cm/s) in deep parts of large rivers. Sub-adults and adults live in coastal waters and estuaries when not spawning, generally in shallow (10-50 m depth) near shore areas dominated by gravel and sand substrates. Due to the proposed project's headwater location in the watershed and existing conditions, there is no suitable habitat for this species. Therefore, a biological conclusion of "No Effect" has been made.

Black-throated green warbler

In southern Virginia and coastal North Carolina, black-throated green warblers are closely associated with Atlantic white cedar. Where cedar is scarce or absent, such as coastal South Carolina, these birds are found primarily in non-alluvial forested wetlands or transitional zones between upland and wetland. Black-throated green warblers are sometimes found in small or headwater riparian forests, but most observers suggest an association with forest stands growing in non-alluvial muck swamp. The project area is currently tilled cropland with several degraded lateral drainage ditches. Based on the habitat requirements and an onsite review, there is no suitable habitat for this species within the project area, therefore a biological conclusion of "No Effect" has been made.

Eastern Henslow's sparrow

This species occupies ephemeral grassland habitats. Specific grassland features include: unbroken patches of at least 75 acres which are part of larger tracts (at least 400 acres); native grass species like little bluestem, prairie dropseed, blue joint, and Indian grass; few woody plants; substantial litter and old, erect grass stems; and fairly deep weed and grass growth. Periodic burning, light grazing, and controlled mowing produce these conditions. Reclaimed strip mines, fallow fields, powerline cuts, and restored prairie can also be used by this sparrow. Winter habitats include coastal grasslands, pine savannah, and pitcher plant bogs. The project area is currently tilled cropland with several lateral drainage ditches. Based on the habitat requirements and an onsite review, there is no suitable habitat for this species within the project area, therefore a biological conclusion of "No Effect" has been made.

Rafinesque's big-eared bat

This bat has a split range in North Carolina, in the southern Appalachians, and in the sandhills and coastal plain. Natural roost sites include hollow trees and caves, but throughout its range most records of this species are from abandoned buildings. Caves and mines are used by this bat in the upland portions of its range, including North Carolina. In abandoned structures, this bat is found in the darkest portions of the building, preferring windowless rooms such as bathrooms and closets; but in caves, areas receiving some natural light seem preferred. Sites along river systems and other permanent bodies of water nearby old growth forests are preferred. Based on the habitat requirements and an onsite review, there is no suitable habitat within the project area, nor is suitable habitat likely to occur once the project is completed. Therefore, a biological conclusion of "No Effect" has been made.

Red-Cockaded woodpecker

Red-Cockaded Woodpeckers (RCWs) require open stands of pine, containing trees at least 60 years old and living, in which to excavate their cavities. Longleaf pines (*Pinus palustris*) are most commonly used as cavity trees, but other species of southern pine such as loblolly pine (*Pinus taeda*), are also acceptable. Foraging habitat is provided in mature (greater than 30 years old) pine and mixed pine/hardwood stands ranging from 80 to 125 acres. Dense stands of hardwoods, or pine stands with a dense hardwood understory are avoided. The proposed project area is currently tilled cropland with several lateral ditches. Once restored, the project will function as a non-riparian wetland dominated by stands of bottomland hardwoods and pockets of emergent wetland vegetation. Based on the habitat requirements and an onsite review, there is no suitable habitat for RCWs within the project area, nor is suitable habitat likely to occur once the project is completed. Therefore, a biological conclusion of "No Effect" has been made.

Southeastern myotis

These bats generally use buildings and other structures, mines, and hollow trees (e.g., water tupelo, black gum, water hickory, bald cypress) for spring and summer roosts. Foraging habitat is riparian floodplain forests or wooded wetlands with permanent open water. These bats may forage primarily over lakes, ponds, or slow-moving streams. Based on the habitat requirements and an onsite review, there is no suitable habitat within the project area, nor is suitable habitat likely to occur once the project is completed. Therefore, a biological conclusion of "No Effect" has been made.

West Indian Manatee

The West Indian Manatee is an endangered species which inhabits both marine and freshwater environments. Based on the habitat requirements and an onsite review, there is no suitable habitat for Manatees within the project area, nor is suitable habitat likely to occur once the project is completed. Therefore, a biological conclusion of "No Effect" has been made.

Grassleaf arrowhead

This aquatic herbaceous plant is rooted to the ground with stems and leaves emerging above the water surface. This species is commonly found in waterways, marshes, swamps, drainage ditches, irrigation channels and rice crops in warmer temperate, sub-tropical and tropical environments. Currently, the distribution of this species is not found in this area. The project site is currently tilled cropland with several lateral ditches. Once restored, the project will function as a nonriparian depressional wetland dominated by stands of bottomland hardwoods and pockets of emergent wetland vegetation. Based on the habitat requirements and an onsite review, there is no suitable habitat for this species within the project area, nor is suitable habitat likely to occur once the project is completed.

Pondspice

Pondspice is a rare deciduous shrub found in wet areas of the outer Coastal Plain. It is endemic to the southeastern US Coastal Plain and found nowhere else in the world. It is found on margins of swamps, limesink ponds, bay heads, small ponds, pitcher plant savannas, natural doline ponds and in low wet woodlands. This species occurs on wet, sandy or peaty, and quite acid soils. Like Lindera, it may form thickets and thus, while spotty in distribution, may be

abundant locally. Based on the habitat requirements and an onsite review, there is no suitable habitat within the project area, nor is suitable habitat likely to occur once the project is completed. Therefore, a biological conclusion of "No Effect" has been made.

Raven's boxseed

This species is found in the coastal plain of Virginia, South Carolina, North Carolina, and northeast Florida. It is restricted to open, wet, peaty places, such as ditches and the margins of swamps, ponds, and bogs and is considered an obligate wetland plant. The project site is currently tilled cropland with several lateral ditches. Once restored, the project will function as a non-riparian depressional wetland dominated by stands of bottomland hardwoods and pockets of emergent wetland vegetation. Based on the habitat requirements and an onsite review, there is no suitable habitat for this species within the project area, nor is suitable habitat likely to occur once the project is completed.

Virginia least trillium

This species is a vascular plant commonly found in low, alluvial woodlands such as palustrine forested wetlands. The project site is currently tilled cropland with several lateral ditches. Once restored, the project will function as a non-riparian depressional wetland dominated by stands of bottomland hardwoods and pockets of emergent wetland vegetation. Based on the habitat requirements and an onsite review, there is no suitable habitat for this species within the project area, nor is suitable habitat likely to occur once the project is completed.

Albemarle Restorations, LLC

Wetland Restoration
Stream Restoration
Wildlife Habitat

March 12, 2013

North Carolina Department of Environment and Natural Resources
Ecosystem Enhancement Program
ATTN: Ms. Heather Smith
1652 Mail Service Center
Raleigh, NC 27699-1652

RE: Task 1, Coastal Zone Management Act Requirements
EEP Contract #004628, IMS# 95355
Hofler Property Site, Gates County, NC

Dear Heather:

Please find attached a revised Categorical Exclusion Form, page 7, regarding the Coastal Zone Management Act (CZMA) question #4 for the above referenced project. A nationwide permit #27 will be required for the project and based on the North Carolina Department of Environment and Natural Resources (NCDENER), Division of Coastal Management (DCM) consistency concurrence letter dated March 12, 2012, to the US Army Corps of Engineers, Wilmington District, all 50 Nationwide permits are consistent with North Carolina's Coastal Management Program. In the event that a nationwide permit is not received for the mitigation project then an individual consistency certification from NCDENR DCM will be provided.

Please call me at 252-333-0249 or e-mail at edtemple@vol.com if you have any questions or comments.

Sincerely,

Edmund R. Temple, Jr.
Principal

P.O. BOX 204
GATESVILLE, NC 27938
PHONE (252)333-0249
FAX (252)357-4892

Part 2: All Projects Regulation/Question	Response
Coastal Zone Management Act (CZMA)	
1. Is the project located in a CAMA county?	☑ Yes ☐ No
2. Does the project involve ground-disturbing activities within a CAMA Area of Environmental Concern (AEC)?	☐ Yes ☑ No ☐ N/A
3. Has a CAMA permit been secured?	☐ Yes ☐ No ☑ N/A
4. Has NCDCM agreed that the project is consistent with the NC Coastal Management Program?	☑ Yes ☐ No ☐ N/A
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	
1. Is this a "full-delivery" project?	☑ Yes ☐ No
2. Has the zoning/land use of the subject property and adjacent properties ever been designated as commercial or industrial?	☐ Yes ☑ No ☐ N/A
3. As a result of a limited Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☑ No ☐ N/A
4. As a result of a Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☐ No ☑ N/A
5. As a result of a Phase II Site Assessment, are there known or potential hazardous waste sites within the project area?	☐ Yes ☐ No ☑ N/A
6. Is there an approved hazardous mitigation plan?	☐ Yes ☐ No ☑ N/A
National Historic Preservation Act (Section 106)	
1. Are there properties listed on, or eligible for listing on, the National Register of Historic Places in the project area?	☐ Yes ☑ No
2. Does the project affect such properties and does the SHPO/THPO concur?	☐ Yes ☐ No ☑ N/A
3. If the effects are adverse, have they been resolved?	☐ Yes ☐ No ☑ N/A
Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act)	
1. Is this a "full-delivery" project?	☑ Yes ☐ No
2. Does the project require the acquisition of real estate?	☑ Yes ☐ No ☐ N/A
3. Was the property acquisition completed prior to the intent to use federal funds?	☐ Yes ☑ No ☐ N/A
4. Has the owner of the property been informed: * prior to making an offer that the agency does not have condemnation authority; and * what the fair market value is believed to be?	☑ Yes ☐ No ☐ N/A

Appendix A

Categorical Exclusion Form for Ecosystem Enhancement Program Projects
Version 1.4

Note: Only Appendix A should to be submitted (along with any supporting documentation) as the environmental document.

Part 1: General Project Information	
Project Name:	Hofler Property
County Name:	Gates County
EEP Number:	95355
Project Sponsor:	Albemarle Restorations, LLC
Project Contact Name:	Edmund Temple
Project Contact Address:	P.O. Box 176 Fairfield, NC 27826
Project Contact E-mail:	edtemple@vol.com
EEP Project Manager:	Heather Smith

Project Description

The proposed project will will provide up to 22.0 Non-Riparian Wetland Mitigation Units (WMUs) in the Bennetts Creek targeted local watershed (HUC: 03010203040040) of the Chowan River Basin (HUC: 03010203).

For Official Use Only

Reviewed By:

Date — **EEP Project Manager**

Conditional Approved By:

Date — **For Division Administrator FHWA**

☐ **Check this box if there are outstanding issues**

Final Approval By:

3-18-13

Date — **For Division Administrator FHWA**

Part 2: All Projects Regulation/Question	Response
Coastal Zone Management Act (CZMA)	
1. Is the project located in a CAMA county?	☑ Yes ☐ No
2. Does the project involve ground-disturbing activities within a CAMA Area of Environmental Concern (AEC)?	☐ Yes ☑ No ☐ N/A
3. Has a CAMA permit been secured?	☐ Yes ☐ No ☑ N/A
4. Has NCDCM agreed that the project is consistent with the NC Coastal Management Program?	☐ Yes ☐ No ☑ N/A
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	
1. Is this a "full-delivery" project?	☑ Yes ☐ No
2. Has the zoning/land use of the subject property and adjacent properties ever been designated as commercial or industrial?	☐ Yes ☑ No ☐ N/A
3. As a result of a limited Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☑ No ☐ N/A
4. As a result of a Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☐ No ☑ N/A
5. As a result of a Phase II Site Assessment, are there known or potential hazardous waste sites within the project area?	☐ Yes ☐ No ☑ N/A
6. Is there an approved hazardous mitigation plan?	☐ Yes ☐ No ☑ N/A
National Historic Preservation Act (Section 106)	
1. Are there properties listed on, or eligible for listing on, the National Register of Historic Places in the project area?	☐ Yes ☑ No
2. Does the project affect such properties and does the SHPO/THPO concur?	☐ Yes ☐ No ☑ N/A
3. If the effects are adverse, have they been resolved?	☐ Yes ☐ No ☑ N/A
Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act)	
1. Is this a "full-delivery" project?	☑ Yes ☐ No
2. Does the project require the acquisition of real estate?	☑ Yes ☐ No ☐ N/A
3. Was the property acquisition completed prior to the intent to use federal funds?	☐ Yes ☑ No ☐ N/A
4. Has the owner of the property been informed: * prior to making an offer that the agency does not have condemnation authority; and * what the fair market value is believed to be?	☑ Yes ☐ No ☐ N/A

Part 3: Ground-Disturbing Activities Regulation/Question	Response
American Indian Religious Freedom Act (AIRFA)	
1. Is the project located in a county claimed as "territory" by the Eastern Band of Cherokee Indians?	☐ Yes ☑ No
2. Is the site of religious importance to American Indians?	☐ Yes ☐ No ☑ N/A
3. Is the project listed on, or eligible for listing on, the National Register of Historic Places?	☐ Yes ☐ No ☑ N/A
4. Have the effects of the project on this site been considered?	☐ Yes ☐ No ☑ N/A
Antiquities Act (AA)	
1. Is the project located on Federal lands?	☐ Yes ☑ No
2. Will there be loss or destruction of historic or prehistoric ruins, monuments or objects of antiquity?	☐ Yes ☐ No ☑ N/A
3. Will a permit from the appropriate Federal agency be required?	☐ Yes ☐ No ☑ N/A
4. Has a permit been obtained?	☐ Yes ☐ No ☑ N/A
Archaeological Resources Protection Act (ARPA)	
1. Is the project located on federal or Indian lands (reservation)?	☐ Yes ☑ No
2. Will there be a loss or destruction of archaeological resources?	☐ Yes ☐ No ☑ N/A
3. Will a permit from the appropriate Federal agency be required?	☐ Yes ☐ No ☑ N/A
4. Has a permit been obtained?	☐ Yes ☐ No ☑ N/A
Endangered Species Act (ESA)	
1. Are federal Threatened and Endangered species and/or Designated Critical Habitat listed for the county?	☑ Yes ☐ No
2. Is Designated Critical Habitat or suitable habitat present for listed species?	☐ Yes ☑ No ☐ N/A
3. Are T&E species present or is the project being conducted in Designated Critical Habitat?	☐ Yes ☑ No ☐ N/A
4. Is the project "likely to adversely affect" the species and/or "likely to adversely modify" Designated Critical Habitat?	☐ Yes ☑ No ☐ N/A
5. Does the USFWS/NOAA-Fisheries concur in the effects determination?	☐ Yes ☐ No ☑ N/A
6. Has the USFWS/NOAA-Fisheries rendered a "jeopardy" determination?	☐ Yes ☐ No ☑ N/A

Executive Order 13007 (Indian Sacred Sites)	
1. Is the project located on Federal lands that are within a county claimed as "territory" by the EBCI?	☐ Yes ☑ No
2. Has the EBCI indicated that Indian sacred sites may be impacted by the proposed project?	☐ Yes ☐ No ☑ N/A
3. Have accommodations been made for access to and ceremonial use of Indian sacred sites?	☐ Yes ☐ No ☑ N/A
Farmland Protection Policy Act (FPPA)	
1. Will real estate be acquired?	☑ Yes ☐ No
2. Has NRCS determined that the project contains prime, unique, statewide or locally important farmland?	☑ Yes ☐ No ☐ N/A
3. Has the completed Form AD-1006 been submitted to NRCS?	☑ Yes ☐ No ☐ N/A
Fish and Wildlife Coordination Act (FWCA)	
1. Will the project impound, divert, channel deepen, or otherwise control/modify any water body?	☐ Yes ☑ No
2. Have the USFWS and the NCWRC been consulted?	☐ Yes ☐ No ☑ N/A
Land and Water Conservation Fund Act (Section 6(f))	
1. Will the project require the conversion of such property to a use other than public, outdoor recreation?	☐ Yes ☑ No
2. Has the NPS approved of the conversion?	☐ Yes ☐ No ☑ N/A
Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat)	
1. Is the project located in an estuarine system?	☐ Yes ☑ No
2. Is suitable habitat present for EFH-protected species?	☐ Yes ☐ No ☑ N/A
3. Is sufficient design information available to make a determination of the effect of the project on EFH?	☐ Yes ☐ No ☑ N/A
4. Will the project adversely affect EFH?	☐ Yes ☐ No ☑ N/A
5. Has consultation with NOAA-Fisheries occurred?	☐ Yes ☐ No ☑ N/A
Migratory Bird Treaty Act (MBTA)	
1. Does the USFWS have any recommendations with the project relative to the MBTA?	☐ Yes ☑ No
2. Have the USFWS recommendations been incorporated?	☐ Yes ☐ No ☑ N/A
Wilderness Act	
1. Is the project in a Wilderness area?	☐ Yes ☑ No
2. Has a special use permit and/or easement been obtained from the maintaining federal agency?	☐ Yes ☐ No ☑ N/A

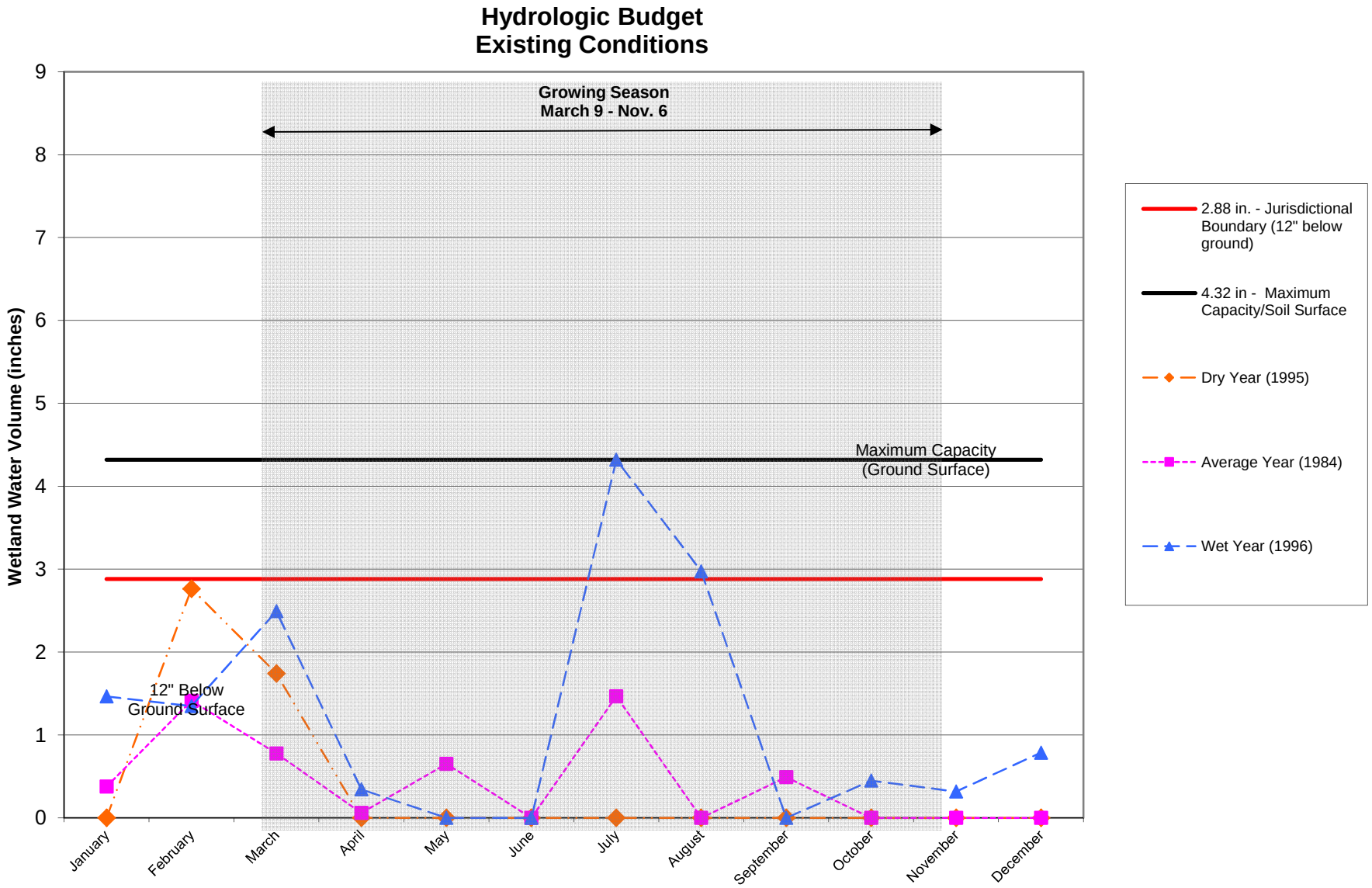
APPENDIX C

Hofler Restoration Site - Existing Conditions

Dry Year	*Water Inputs*			*Water Outputs*			Change in Storage	Excess Water	Wetland Volume
1995	**P**	**Si ***	**Gi**	**PET**	**So**	**Go**			
January	2.48	0.00	0.00	0.44	0.00	2.80	-0.75	0.00	0.00
February	5.89	0.52	0.00	0.33	0.52	2.80	2.76	0.00	2.76
March	2.96	0.18	0.00	1.18	0.18	2.80	-1.02	0.00	1.74
April	1.00	0.00	0.00	2.48	0.00	2.80	-4.28	0.00	0.00
May	2.47	0.05	0.00	4.01	0.05	2.80	-4.34	0.00	0.00
June	4.82	0.57	0.00	5.60	0.57	2.80	-3.58	0.00	0.00
July	1.06	0.00	0.00	6.78	0.00	2.80	-8.53	0.00	0.00
August	3.19	0.07	0.00	5.93	0.07	2.80	-5.53	0.00	0.00
September	4.09	0.02	0.00	4.20	0.02	2.80	-2.91	0.00	0.00
October	4.95	0.46	0.00	2.84	0.46	2.80	-0.69	0.00	0.00
November	3.04	0.01	0.00	0.82	0.01	2.80	-0.58	0.00	0.00
December	2.13	0.04	0.00	0.21	0.04	2.80	-0.87	0.00	0.00
Annual Totals	**38.09**	**1.93**	**0.00**	**34.81**	**1.93**	**33.60**			

Avg. Year	*Water Inputs*			*Water Outputs*			Change in Storage	Excess Water	Wetland Volume
1984	**P**	**Si ***	**Gi**	**PET**	**So**	**Go**			
January	3.32	0.32	0.00	0.14	0.32	2.80	0.38	0.00	0.38
February	4.30	0.11	0.00	0.46	0.11	2.80	1.03	0.00	1.41
March	3.51	0.06	0.00	1.34	0.06	2.80	-0.63	0.00	0.78
April	5.18	0.36	0.00	3.10	0.36	2.80	-0.72	0.00	0.06
May	6.64	0.77	0.00	3.25	0.77	2.80	0.59	0.00	0.65
June	1.20	0.00	0.00	6.05	0.00	2.80	-7.65	0.00	0.00
July	10.91	1.68	0.00	6.65	1.68	2.80	1.47	0.00	1.47
August	4.13	1.29	0.00	5.29	1.29	2.80	-3.97	0.00	0.00
September	7.15	2.62	0.00	3.86	2.62	2.80	0.49	0.00	0.49
October	1.01	0.00	0.00	2.12	0.00	2.80	-3.91	0.00	0.00
November	2.10	0.03	0.00	1.48	0.03	2.80	-2.17	0.00	0.00
December	1.17	0.01	0.00	0.76	0.01	2.80	-2.38	0.00	0.00
Annual Totals	**50.62**	**7.26**	**0.00**	**34.49**	**7.26**	**33.60**			

Wet Year	*Water Inputs*			*Water Outputs*			Change in Storage	Excess Water	Wetland Volume
1996	**P**	**Si ***	**Gi**	**PET**	**So**	**Go**			
January	4.53	0.38	0.00	0.26	0.38	2.80	1.46	0.00	1.46
February	3.05	0.00	0.00	0.36	0.00	2.80	-0.12	0.00	1.35
March	4.75	0.41	0.00	0.81	0.41	2.80	1.14	0.00	2.49
April	3.22	0.03	0.00	2.56	0.03	2.80	-2.15	0.00	0.34
May	4.20	0.06	0.00	3.97	0.06	2.80	-2.57	0.00	0.00
June	4.62	0.25	0.00	5.66	0.25	2.80	-3.84	0.00	0.00
July	13.98	5.00	0.00	5.97	5.00	2.80	5.21	0.00	4.32
August	6.62	0.40	0.00	5.17	0.40	2.80	-1.35	0.00	2.97
September	3.41	0.05	0.00	4.21	0.05	2.80	-3.60	0.00	0.00
October	5.68	2.33	0.00	2.43	2.33	2.80	0.45	0.00	0.45
November	3.40	0.24	0.00	0.73	0.24	2.80	-0.13	0.00	0.32
December	3.92	0.02	0.00	0.65	0.02	2.80	0.47	0.00	0.79
Annual Totals	**61.37**	**9.17**	**0.00**	**32.78**	**9.17**	**33.60**			


Hydrologic Budget
Existing Conditions
Growing Season
March 9 - Nov. 6
Maximum Capacity
(Ground Surface)
12" Below
Ground Surface
Wetland Water Volume (inches)
0
1
2
3
4
5
6
7
8
9
January
February
March
April
May
June
July
August
September
October
November
December
2.88 in. - Jurisdictional Boundary (12" below ground)
4.32 in - Maximum Capacity/Soil Surface
Dry Year (1995)
Average Year (1984)
Wet Year (1996)

Hofler Restoration Site - Proposed Conditions

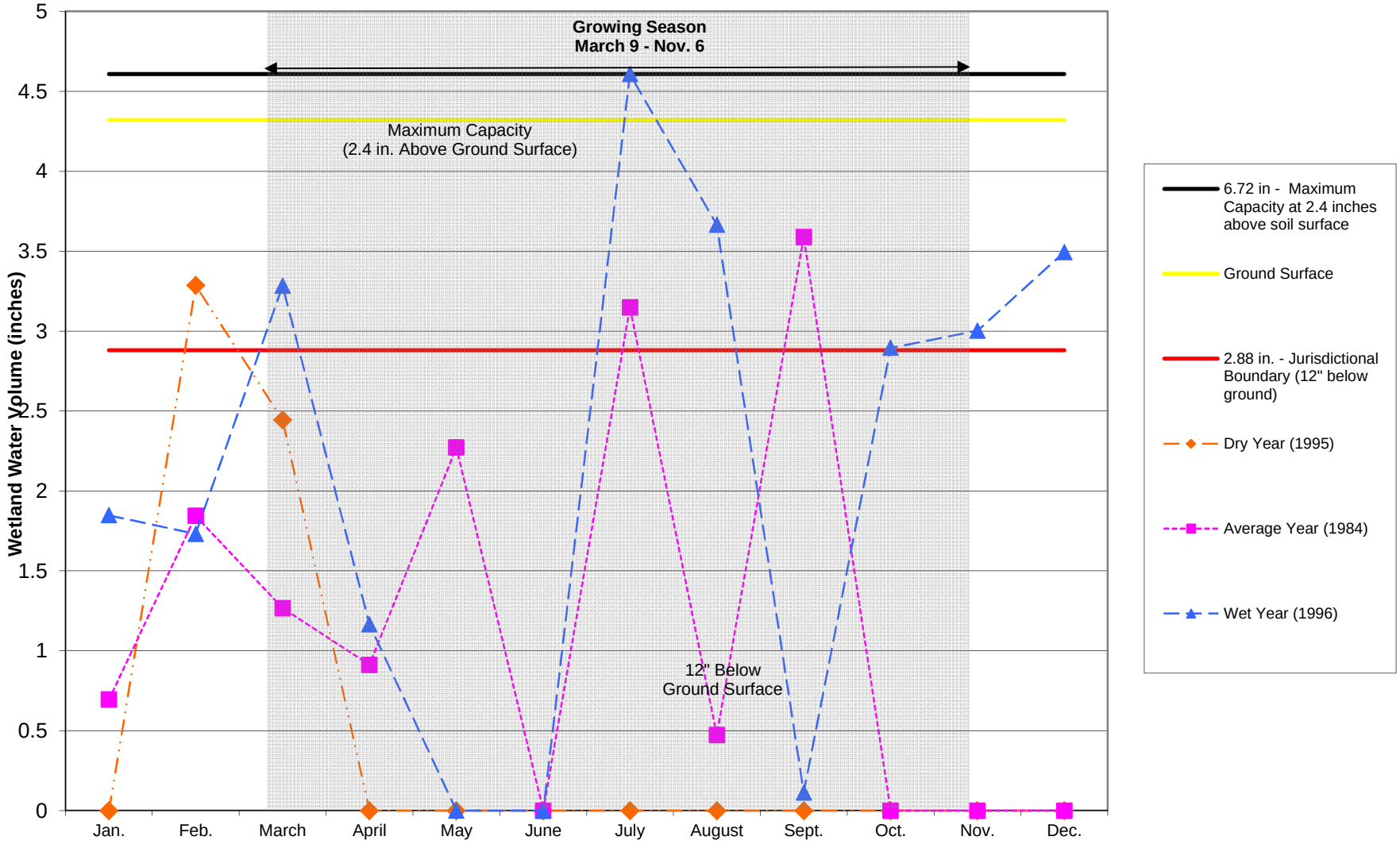
Dry Year	*Water Inputs*			*Water Outputs*			Change in	Excess	
1995	**P**	**Si ***	**Gi**	**PET**	**So**	**Go**	**Storage**	**Water**	**Wetland Volume**
January	2.48	0.00	0.00	0.44	0.00	2.80	-0.75	0.00	0.00
February	5.89	0.52	0.00	0.33	0.00	2.80	3.29	0.00	3.29
March	2.96	0.18	0.00	1.18	0.00	2.80	-0.84	0.00	2.44
April	1.00	0.00	0.00	2.48	0.00	2.80	-4.28	0.00	0.00
May	2.47	0.05	0.00	4.01	0.00	2.80	-4.28	0.00	0.00
June	4.82	0.57	0.00	5.60	0.00	2.80	-3.01	0.00	0.00
July	1.06	0.00	0.00	6.78	0.00	2.80	-8.53	0.00	0.00
August	3.19	0.07	0.00	5.93	0.00	2.80	-5.46	0.00	0.00
September	4.09	0.02	0.00	4.20	0.00	2.80	-2.89	0.00	0.00
October	4.95	0.46	0.00	2.84	0.00	2.80	-0.23	0.00	0.00
November	3.04	0.01	0.00	0.82	0.00	2.80	-0.57	0.00	0.00
December	2.13	0.04	0.00	0.21	0.00	2.80	-0.83	0.00	0.00
Annual Totals	**38.09**	**1.93**	**0.00**	**34.81**	**0.00**	**33.60**			

Avg. Year	*Water Inputs*			*Water Outputs*			Change in	Excess	
1986	**P**	**Si ***	**Gi**	**PET**	**So**	**Go**	**Storage**	**Water**	**Wetland Volume**
January	3.32	0.32	0.00	0.14	0.00	2.80	0.70	0.00	0.70
February	4.30	0.11	0.00	0.46	0.00	2.80	1.15	0.00	1.84
March	3.51	0.06	0.00	1.34	0.00	2.80	-0.58	0.00	1.27
April	5.18	0.36	0.00	3.10	0.00	2.80	-0.35	0.00	0.91
May	6.64	0.77	0.00	3.25	0.00	2.80	1.36	0.00	2.27
June	1.20	0.00	0.00	6.05	0.00	2.80	-7.65	0.00	0.00
July	10.91	1.68	0.00	6.65	0.00	2.80	3.15	0.00	3.15
August	4.13	1.29	0.00	5.29	0.00	2.80	-2.67	0.00	0.47
September	7.15	2.62	0.00	3.86	0.00	2.80	3.12	0.00	3.59
October	1.01	0.00	0.00	2.12	0.00	2.80	-3.91	0.00	0.00
November	2.10	0.03	0.00	1.48	0.00	2.80	-2.14	0.00	0.00
December	1.17	0.01	0.00	0.76	0.00	2.80	-2.37	0.00	0.00
Annual Totals	**50.62**	**7.26**	**0.00**	**34.49**	**0.00**	**33.60**			

Wet Year	*Water Inputs*			*Water Outputs*			Change in	Excess	
1996	**P**	**Si ***	**Gi**	**PET**	**So**	**Go**	**Storage**	**Water**	**Wetland Volume**
January	4.53	0.38	0.00	0.26	0.00	2.80	1.85	0.00	1.85
February	3.05	0.00	0.00	0.36	0.00	2.80	-0.12	0.00	1.73
March	4.75	0.41	0.00	0.81	0.00	2.80	1.55	0.00	3.28
April	3.22	0.03	0.00	2.56	0.00	2.80	-2.12	0.00	1.16
May	4.20	0.06	0.00	3.97	0.00	2.80	-2.51	0.00	0.00
June	4.62	0.25	0.00	5.66	0.00	2.80	-3.59	0.00	0.00
July	13.98	5.00	0.00	5.97	0.00	2.80	10.21	2.41	4.61
August	6.62	0.40	0.00	5.17	0.00	2.80	-0.94	0.00	3.66
September	3.41	0.05	0.00	4.21	0.00	2.80	-3.55	0.00	0.11
October	5.68	2.33	0.00	2.43	0.00	2.80	2.78	0.00	2.89
November	3.40	0.24	0.00	0.73	0.00	2.80	0.11	0.00	3.00
December	3.92	0.02	0.00	0.65	0.00	2.80	0.49	0.00	3.49
Annual Totals	**61.37**	**9.17**	**0.00**	**32.78**	**0.00**	**33.60**			

Note: An increase in capacity of 0.2 feet (2.4 inches) of surface water is assumed based on the creation of microtopography during wetland restoration.

Hydrologic Budget
Proposed Conditions



Project Information

Project : HOFLER
User: CTS
Company / Agency: ECOTONE
Project Location: BEAUFORT CO
Soil ID: BnA

Site Parameters

State: North_Carolina
County: Gates

User defined T25 or Built In T25: DEFAULT

T25 value: 14.2 days

User defined Conductivity or Soil Survey Conductivity: SOIL SURVEY

Weighted Hydraulic Conductivity: 0.3073 in/hr
Hydraulic Conductivity Data by Layer for Soil: BnA__Bladen__drained
Weighted Hydraulic Conductivity Calculated Using: Average K Values
Depth to Restrictive Layer: 7.5 ft
Drainable Porosity: 0.035
Hydroperiod: 14 days
Surface Storage: 1 in (2.5 cm)

Ditch Depth or Depth to Water Surface: 2 ft - BnA

	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	7.00	0.57	1.98	1.275588
Layer 2	14.00	0.57	1.98	1.275588
Layer 3	64.00	0.06	0.20	0.12897612
Layer 4	90.00	0.06	0.20	0.12897612
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 44.8 ft

Ditch Depth or Depth to Water Surface: 2.5 ft - BnA

	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	7.00	0.57	1.98	1.275588
Layer 2	14.00	0.57	1.98	1.275588
Layer 3	64.00	0.06	0.20	0.12897612
Layer 4	90.00	0.06	0.20	0.12897612
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 53.4 ft

Ditch Depth or Depth to Water Surface: 3 ft - BnA

Bottom	Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	7.00	0.57	1.98	1.275588
Layer 2	14.00	0.57	1.98	1.275588
Layer 3	64.00	0.06	0.20	0.12897612
Layer 4	90.00	0.06	0.20	0.12897612
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 60.1 ft

Ditch Depth or Depth to Water Surface: 3.5 ft - BnA

Bottom	Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	7.00	0.57	1.98	1.275588
Layer 2	14.00	0.57	1.98	1.275588
Layer 3	64.00	0.06	0.20	0.12897612
Layer 4	90.00	0.06	0.20	0.12897612
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 64.6 ft

Ditch Depth or Depth to Water Surface: 4 ft - BnA

Bottom	Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	7.00	0.57	1.98	1.275588
Layer 2	14.00	0.57	1.98	1.275588
Layer 3	64.00	0.06	0.20	0.12897612
Layer 4	90.00	0.06	0.20	0.12897612
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 68.2 ft

Project Information

Project : HOFLER
User: CTS
Company / Agency: ECOTONE
Project Location: BEAUFORT CO
Soil ID: PnA

Site Parameters

State: North_Carolina
County: Gates

User defined T25 or Built In T25: DEFAULT

T25 value: 14.2 days

User defined Conductivity or Soil Survey Conductivity: SOIL SURVEY

Weighted Hydraulic Conductivity: 1.8815 in/hr
Hydraulic Conductivity Data by Layer for Soil: PnA__Pantego__drained
Weighted Hydraulic Conductivity Calculated Using: Average K Values
Depth to Restrictive Layer: 6.7 ft
Drainable Porosity: 0.035
Hydroperiod: 14 days
Surface Storage: 1 in (2.5 cm)

Ditch Depth or Depth to Water Surface: 2 ft - PnA

	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	18.00	1.98	5.95	3.968496
Layer 2	27.00	0.57	1.98	1.275588
Layer 3	80.00	0.57	1.98	1.275588
Layer 4	0.00	0.00	0.00	0.00
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 103.1 ft

Ditch Depth or Depth to Water Surface: 2.5 ft- PnA

	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	18.00	1.98	5.95	3.968496
Layer 2	27.00	0.57	1.98	1.275588
Layer 3	80.00	0.57	1.98	1.275588
Layer 4	0.00	0.00	0.00	0.00
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 122.7 ft

Ditch Depth or Depth to Water Surface: 3 ft- PnA

	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	18.00	1.98	5.95	3.968496
Layer 2	27.00	0.57	1.98	1.275588
Layer 3	80.00	0.57	1.98	1.275588
Layer 4	0.00	0.00	0.00	0.00
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 137.6 ft

Ditch Depth or Depth to Water Surface: 3.5 ft- PnA

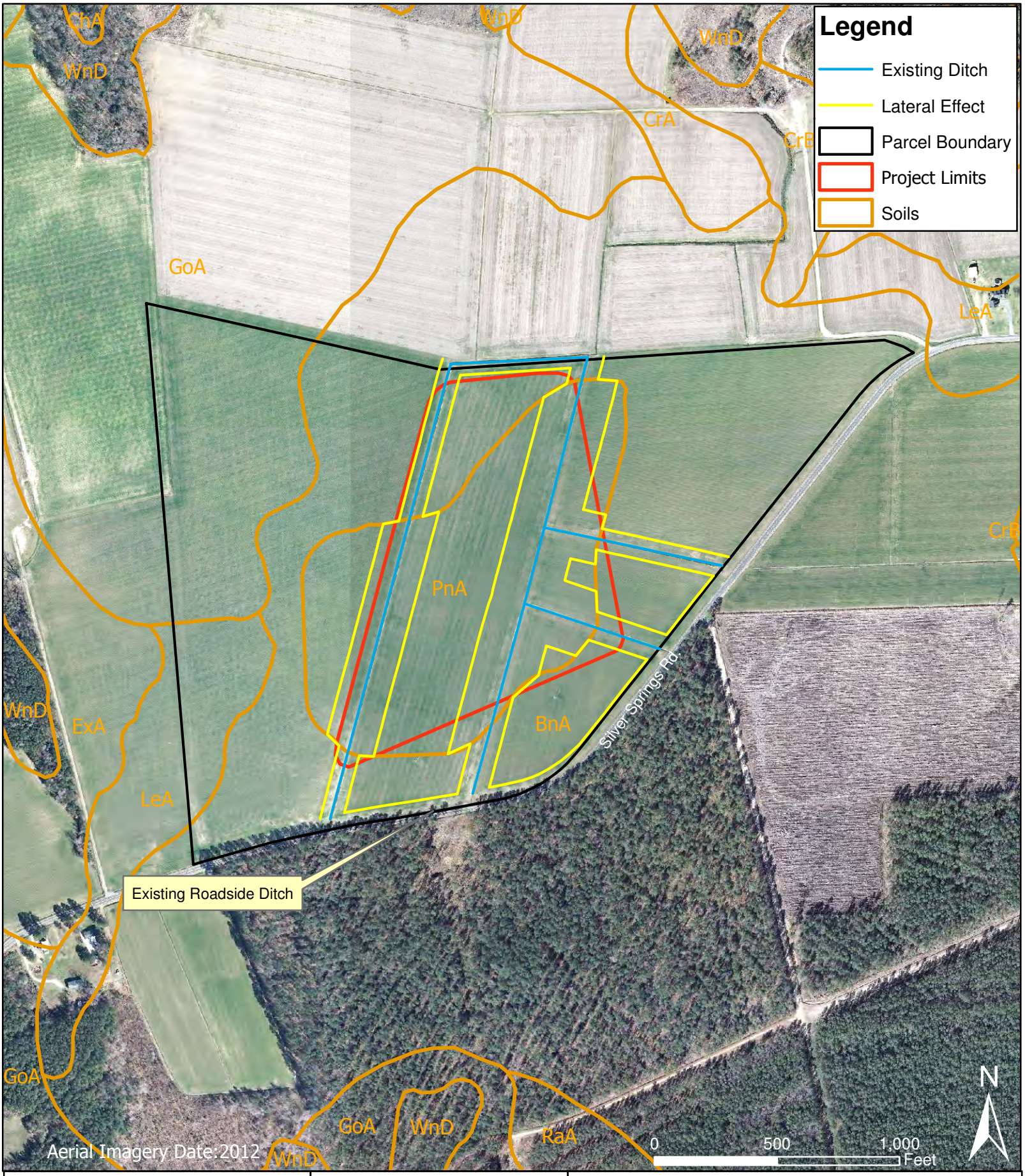
	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	18.00	1.98	5.95	3.968496
Layer 2	27.00	0.57	1.98	1.275588
Layer 3	80.00	0.57	1.98	1.275588
Layer 4	0.00	0.00	0.00	0.00
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 147.5 ft

Ditch Depth or Depth to Water Surface: 4 ft- PnA

	Bottom Depth in	Low K in/hr	High K in/hr	Average K in/hr
Layer 1	18.00	1.98	5.95	3.968496
Layer 2	27.00	0.57	1.98	1.275588
Layer 3	80.00	0.57	1.98	1.275588
Layer 4	0.00	0.00	0.00	0.00
Layer 5	0.00	0.00	0.00	0.00
Layer 6	0.00	0.00	0.00	0.00
Layer 7	0.00	0.00	0.00	0.00
Layer 8	0.00	0.00	0.00	0.00

Lateral Effect: 155.2 ft



ALBEMARLE RESTORATIONS, LLC

WETLAND RESTORATION,
STREAM RESTORATION,
& WILDLIFE HABITAT CREATION

P.O. BOX 176 FAIRFIELD, NC 27826
(252)333-0249 FAX (252)926-9983

APPENDIX C
EXISTING LATERAL EFFECT

SCALE: 1 inch = 500 feet

HOFLER PROPERTY
EEP# 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

Aston Soil Works, Inc.
P.O. Box 86
Simpson, NC 27879

September 11, 2011

Albemarle Restorations
Ed Temple
P.O. Box 394
Gatesville, NC 27938

Re: Hydric Soil Investigation of +/- 28 acres (Hofler Project) in Gates County, NC

Dear Mr. Temple

As requested the referenced property was evaluated for the presence of hydric soils. *Field Indicators of Hydric Soils in the United States, version 6.0* was used as a reference. The evaluation involved methodically conducting hand auger borings across the property to evaluate the soils. Each boring was located using a global positioning system capable of sub-meter accuracy. Please find enclosed a map which indicates the location for each boring and soil profile descriptions for each boring. The findings of this investigation suggest the project area contains all hydric soils.

If you have any further questions, please contact me at (252) 341-9707.

Sincerely,

Gene Aston

Gene Aston

Licensed Soil Scientist # 1261

Soil Profile Descriptions Hofler Project
Gates County, NC

Boring 1:

- 0-10 inches; dark gray (2.5Y 4/1) sandy loam; weak medium granular structure; friable.
- 10-31 inches; gray (10YR5/1) sandy clay loam; brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 31-36inches; gray (10YR5/1) sandy clay loam; few light gray (10YR 7/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 2:

- 0-8 inches; dark gray (2.5Y 4/1) sandy loam; weak medium granular structure; friable.
- 8-24 inches; dark gray (10YR4/1) sandy clay loam; few light gray (10YR 7/1) and brownish yellow (10YR 6/8 mottles); weak moderate subangular blocky structure; sticky; plastic.
- 24-36 inches; light gray (10YR7/1) sandy clay loam; few dark gray (10YR 4/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 3:

- 0-11 inches; dark gray (10YR4/1) sandy loam; weak medium granular structure; friable.
- 11-24 inches; gray (10YR5/1) sandy clay loam; brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 24-33 inches; dark gray (10YR4/1) sandy clay loam; few gray (10YR 6/1) and brownish yellow (10YR 6/8 mottles) weak moderate subangular blocky structure; sticky; plastic.
- 33-36 inches; light gray (10YR7/1) sandy clay loam; many brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 4:

- 0-9 inches; dark gray (10YR4/1) sandy loam; weak medium granular structure; friable.
- 9-24 inches; gray (10YR5/1) sandy clay loam; few brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 24-30 inches; dark gray (10YR4/1) sandy clay loam; few gray (10YR 6/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 30-36 inches; light gray (10YR7/1) sandy clay loam; many brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 5:

- 0-8 inches; dark gray (10YR4/1) sandy loam; weak medium granular structure; friable.
- 8-23 inches; gray (10YR5/1) sandy clay loam; few brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 23-31 inches; dark gray (10YR4/1) sandy clay loam; few gray (10YR 6/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 31-36 inches; light gray (10YR7/1) sandy clay loam; many brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 6:

- 0-9 inches; dark gray (10YR4/1) sandy loam; weak medium granular structure; friable.
- 9-26 inches; gray (10YR5/1) sandy clay loam; few brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 26-36 inches; dark gray (10YR4/1) sandy clay loam; few gray (10YR 6/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 7:

- 0-10 inches; dark gray (10YR4/1) sandy loam; weak medium granular structure; friable.
- 10-23 inches; gray (10YR5/1) sandy clay loam; few brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 23-33 inches; dark gray (10YR4/1) sandy clay loam; few light gray (10YR 6/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 33-36 inches; light gray (10YR7/1) sandy clay loam; many brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

Boring 8:

- 0-10 inches; dark gray (10YR4/1) sandy loam; weak medium granular structure; friable.
- 10-22 inches; dark gray (10YR3/1) sandy clay loam; few brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.
- 22-36 inches; dark gray (10YR3/1) sandy clay loam; few light gray (10YR 7/1) and brownish yellow (10YR 6/8) mottles; weak moderate subangular blocky structure; sticky; plastic.

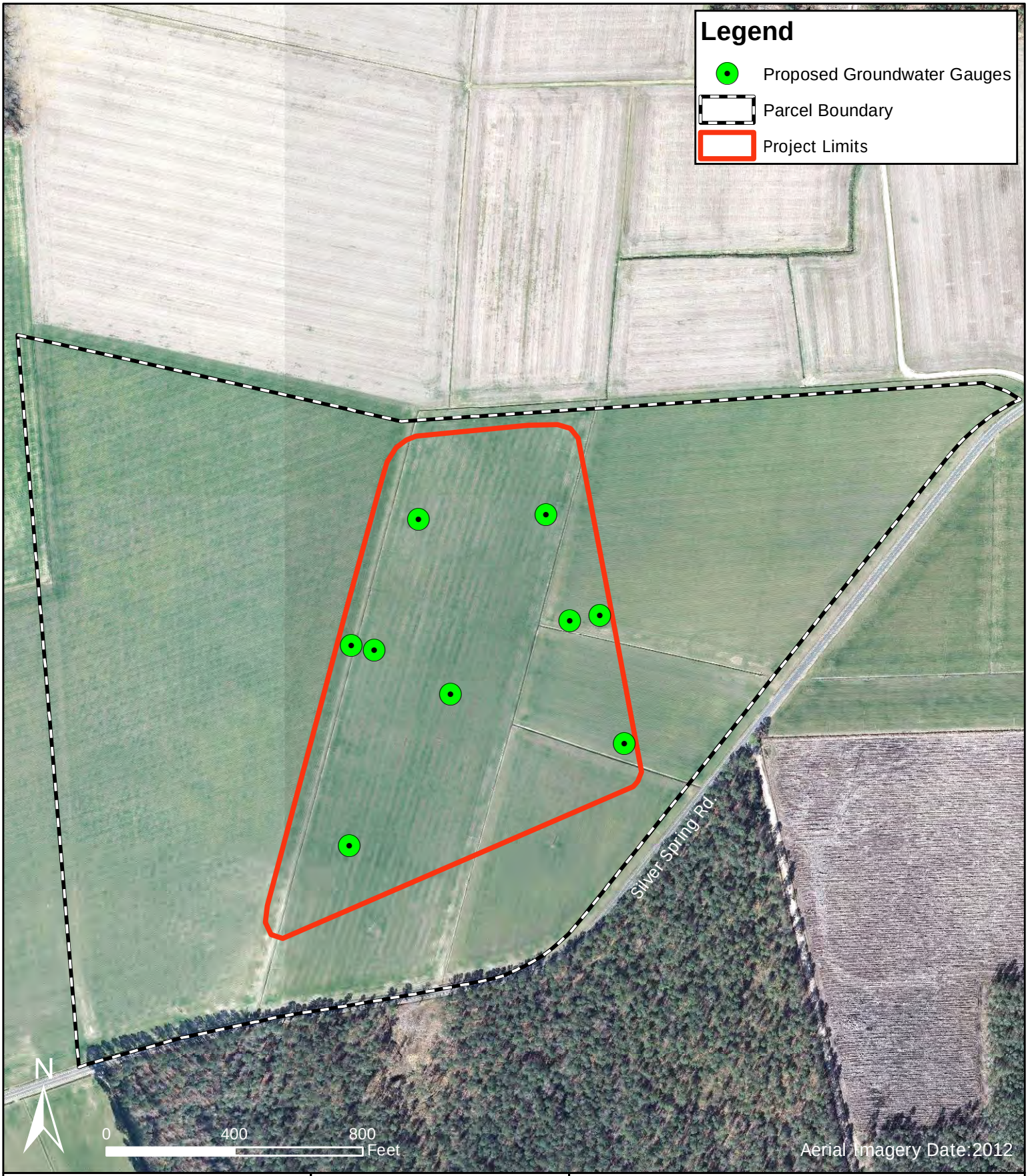
Soil Boring Location Map For Hofler Project
Gates County, +/- 28 Acres

0 200'

SCALE: 1"= 200'

● Soil Boring Location

Aston Soil Works, Inc.
2858 Madison Grove
Greenville, NC 27858



ALBEMARLE RESTORATIONS, LLC

WETLAND RESTORATION,
STREAM RESTORATION,
& WILDLIFE HABITAT CREATION

P.O. BOX 176 FAIRFIELD, NC 27826
(252)333-0249 FAX (252)926-9983

EXHIBIT K

GROUNDWATER GAUGE MAP

SCALE: 1 inch = 400 feet

HOFLER PROPERTY
PROJECT ID: 95355
CONTRACT # 004628
CHOWAN RIVER BASIN
BENNETTS CREEK BASIN
(HUC: 03010203040040)

Ecosystem Enhancement PROGRAM

APPENDIX D

WETLAND MITIGATION PROJECT
ALBERMARLE RESTORATIONS, LLC
HOFLER SITE
GATES COUNTY, NC
EEP PROJECT ID: 95355
EEP CONTRACT #: 004628

GENERAL NOTES:

1. This wetland restoration plan has been prepared for the North Carolina Ecosystem Enhancement Program for the purpose of restoring approximately 23 acres of non-riparian wetland on the Hofler property, located within the Chowan River Basin.
2. Existing 0.5 foot topography within the project areas was prepared by True Line Surveying. Other base information was derived from Gates County GIS data as amended and corrected by Albemarle Restorations, LLC based on field observations and ground surveys.
3. The Contractor shall notify Albemarle Restorations, LLC and the landowner's representative at least two (2) weeks prior to start of grading operations within the project area.
4. The Contractor is responsible for the location of all underground utilities prior to the start of construction. Any damages to utilities as a result of grading or other activities will be the sole responsibility of the Contractor and shall be repaired at the Contractors expense.
5. Access to the wetland restoration areas shall be from Silver Springs Road via proposed drive access way as indicated hereon. No disturbance is to occur between the public roads and the LOD for the wetland grading.
6. The Contractor will be responsible for any damage to private property, including but not limited to fences and private roads resulting from the execution of this contract. Repairs for any such damage will be made at the Contractors expense to the satisfaction of the private property owner and Albemarle Restorations, LLC.
9. All machinery, equipment and supplies for the project shall be stored in an upland location so as not to disturb any environmentally sensitive areas or agricultural uses on the site.
10. All rough and finish grading work will be started at the lowest proposed elevation of the wetland restoration area and proceed up-slope to minimize soil compaction.
11. All topsoil removed during grading will be stockpiled and returned once grading is completed.
12. Subsoiling or ripping to a depth of 12-18 inches will be incorporated as part of site preparation prior to planting to eliminate soil compaction and enhance plant growth.
13. A Nationwide 27 Permit, 401 Water Quality Permit, and Land Disturbance Permit will be obtained prior to the start of construction. Erosion control details and procedures will be provided to the NC Division of Land Quality as part of the request for the Land Disturbance Permit.

SEEDING NOTES:

1. Prior to seeding, remove any mounds or surface irregularities not in conformance with grading plan. Areas that have experienced washing out, rilling, or sediment deposition shall be reconstructed and grades re-established by the Contractor in accordance with the plan or as otherwise directed by Albemarle Restorations, LLC.
2. After bringing the wetland restoration areas to final grades, loosen soil by discing or scarifying to a depth of 12-18 inches.
3. Prior to seeding, remove all trash, debris and large objects such as stones that might interfere with the seeding operation.
4. Seeding of wetland areas is to be according to the Wetland Seed Mix provided on sheet P-2 of this set. Seed shall be spread with a broadcast spreader and may be mixed with dry sand to facilitate even spreading.

VICINITY MAP
SCALE: 1" = 5000'

INDEX OF SHEETS

LEGEND

PROPERTY BOUNDARY
EXISTING CONTOURS (1' AND 0.5')
SOILS — BnA
EXISTING ROADS
EASEMENT BOUNDARY
PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY — WRL WRL WRL
LIMIT OF DISTURBANCE — LOD LOD LOD
EXISTING R.O.W.
CROSS SECTION LOCATION — B B'
PROPOSED WETLAND AREA
PROPOSED WETLAND BUFFER

PROPOSED WETLAND MITIGATION CREDIT SUMMARY

WETLAND RESTORATION AREAS (1:1)	ACREAGE	WMU's
NON RIPARIAN WETLAND RESTORATION	23	23
Total	23	23

SITE OVERVIEW
SCALE: 1" = 350'

0 350 700 Feet

ALBEMARLE RESTORATIONS, LLC
WETLAND RESTORATION, STREAM RESTORATION, & WILDLIFE HABITAT CREATION
P.O. BOX 176 •FAIRFIELD, NC 27826
(252) 333-0249 FAX (252) 926-9983

HOFLER PROPERTY
PLAN TITLE
23.0 NON-RIPARIAN WMU'S
GATES CO., NC
EEP PROJECT ID: 95355
EEP CONTRACT #:004628

Ecosystem Enhancement PROGRAM

REVISIONS		
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV
APRIL 2014	AMENDED PER NCEEP COMMENTS	CKA

PROJECT MANAGER:	JBM
DESIGNED:	JBM
DRAWN:	WJV
PROJECT NO.	1270
DATE:	AUG, 2013
SHEET:	

SHEET T-1

GRADING OVERVIEW

SCALE: 1" = 200'

0 — 200 — 400.0001 Feet

MAPPED SOILS	
BnA	Bladen loam, 0-3% slopes
PnA	Pantego fine sandy loam, 0-2% slopes

LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS (1' AND 0.5')
- PROPOSED SPOT ELEVATIONS (+33.8)
- SOILS (BnA)
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY (WRL — WRL)
- EXISTING R.O.W.
- CROSS SECTION LOCATION (B — B')
- LIMIT OF DISTURBANCE (LOD — LOD)
- PROPOSED CULVERT
- PROPOSED WETLAND BUFFER
- PROPOSED DITCH PLUG INLETS/OUTLETS (34)

SHEET G-2

SHEET G-4

SHEET G-3

SHEET G-5

BnA

GoA

PnA

SECTION A-A'

SECTION B-B'

SECTION C-C'

SECTION D-D'

SECTION E-E'

EXISTING DITCH TO BE PARTIALLY FILLED SEE DETAILS ON SHEETS G-2 AND G-4

EXISTING DITCH TO BE PARTIALLY FILLED SEE DETAILS ON SHEET G-5

EXISTING DITCH TO BE PARTIALLY FILLED SEE DETAILS ON SHEETS G-3, G-4 AND G-5

PROPOSED 27 ACRE EASEMENT AREA

PROPOSED 23 ACRE PROJECT AREA

EXISTING DITCH TO BE PARTIALLY FILLED. SEE DETAILS ON SHEETS G-3 AND G-5.

TIE EXISTING DITCH INTO ROADSIDE DITCH

EXISTING CULVERT

EXISTING CULVERT UNDER SILVER SPRINGS ROAD

PROPOSED CULVERT FOR ACCESS

PROPOSED ACCESS

Silver Springs Road

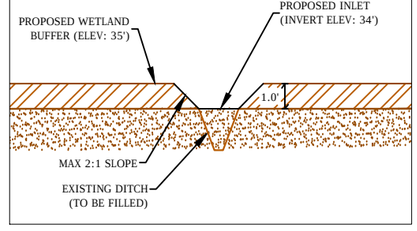
EXISTING RIGHT OF WAY

EXISTING CULVERT UNDER FARM PATH

EXISTING CULVERTS

EXISTING CULVERT UNDER SILVER SPRING ROAD

DITCH PLUG INLET DETAIL (TYPICAL SECTION N.T.S.)



ALBEMARLE RESTORATIONS, LLC

WETLAND RESTORATION, STREAM RESTORATION, & WILDLIFE HABITAT CREATION

P.O. BOX 176 • FAIRFIELD, NC 27826
(252) 3330249 FAX (252) 926-9983

HOFLER PROPERTY

GRADING OVERVIEW

23.0 NON-RIPARIAN WMU'S

GATES CO., NC

EEP PROJECT ID: 95355

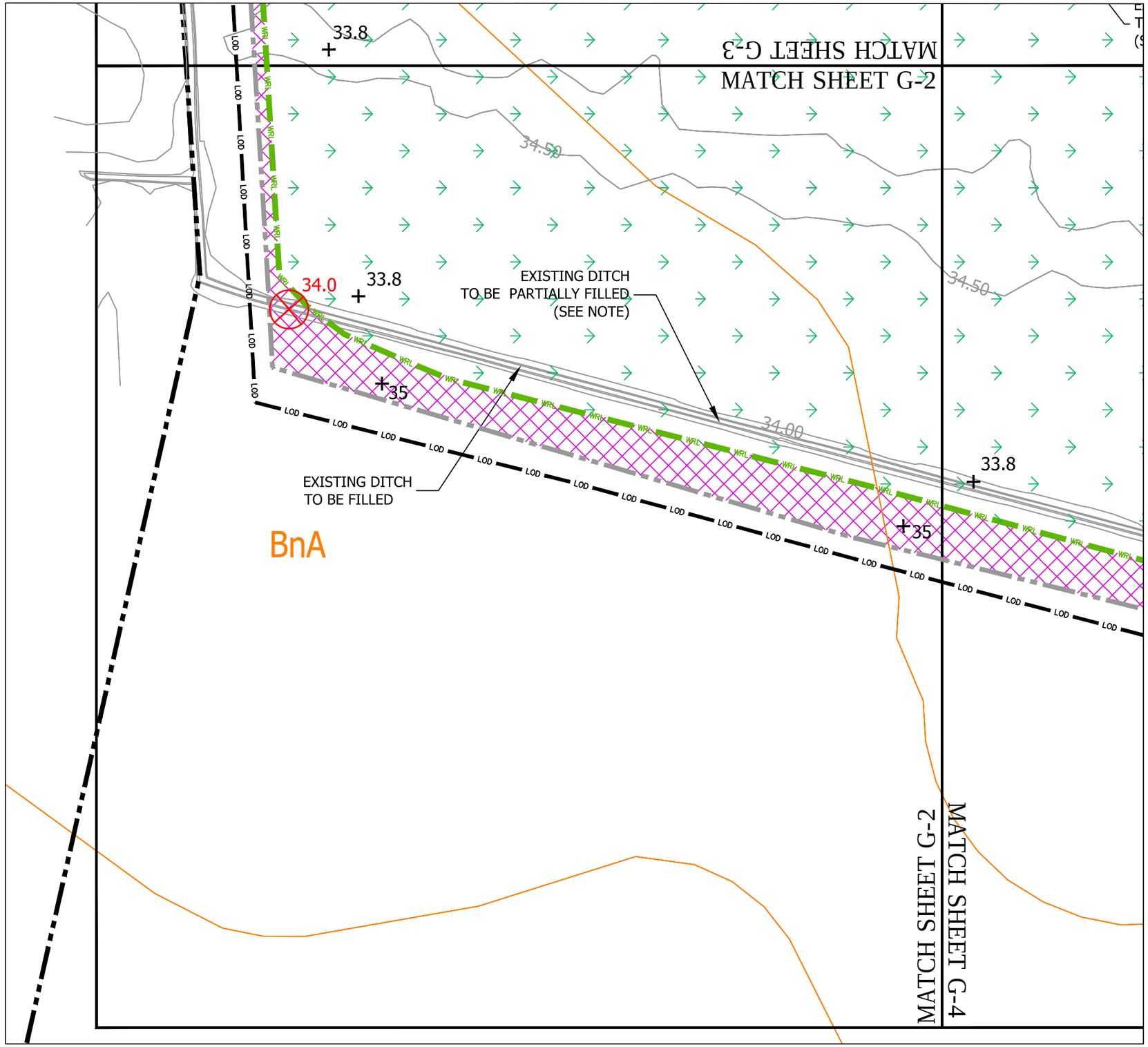
EEP CONTRACT #:004628

Ecosystem Enhancement PROGRAM

REVISIONS		
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV
MARCH 2014	AMENDED PER NCEEP COMMENTS	KA

PROJECT MANAGER:	JBM
DESIGNED:	JBM
DRAWN:	WJV
PROJECT NO.	1270
DATE:	AUGUST, 2013
SHEET:	

SHEET G-1



LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS (1' AND 0.5')
- PROPOSED SPOT ELEVATIONS — 33.8
- SOILS — BnA
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY — WRL WRL
- EXISTING R.O.W.
- LIMIT OF DISTURBANCE — LOD LOD
- PROPOSED WETLAND BUFFER
- PROPOSED DITCH PLUG INLETS/OUTLETS — 34

NOTE:
THIS DITCH TO BE FILLED AND BROUGHT TO THE SURROUNDING ELEVATION AS FAR AS THE LOCATION OF THE EASEMENT BOUNDARY.

GRADING DETAIL

SCALE: 1" = 100'

0 100 200 Feet

ALBEMARLE RESTORATIONS, LLC
WETLAND RESTORATION, STREAM RESTORATION, & WILDLIFE HABITAT CREATION
P.O. BOX 176 •FAIRFIELD, NC 27826
(252) 333-0249 FAX (252) 926-9983

HOFLER PROPERTY

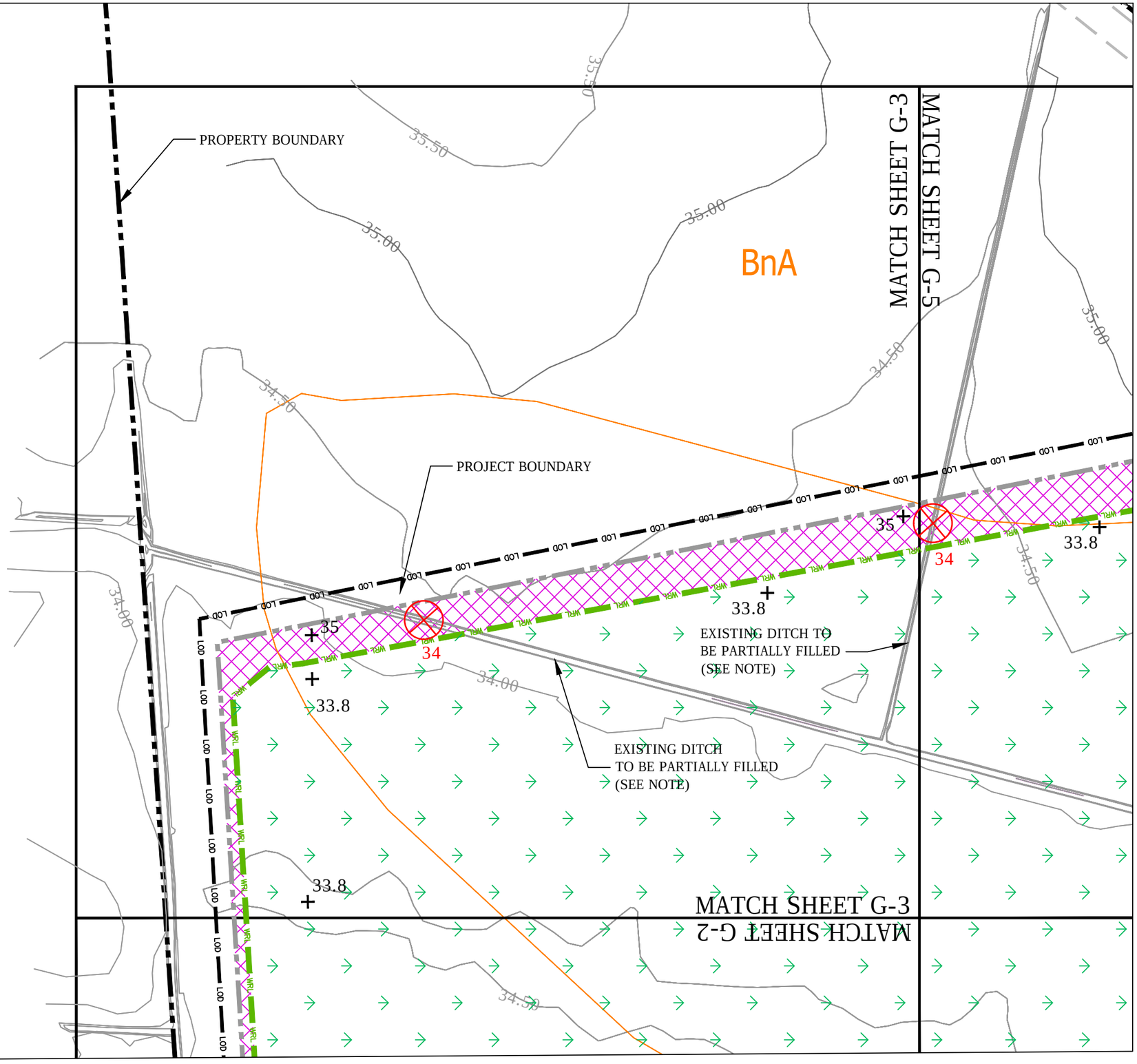
GRADING OVERVIEW
23.0 NON-RIPARIAN WMU'S
GATES CO., NC
EEE PROJECT ID: 95355
EEP CONTRACT #:004628

Ecosystem Enhancement PROGRAM

REVISIONS		
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV

PROJECT MANAGER: JBM
DESIGNED: JBM
DRAWN: WJV
PROJECT NO. 1270
DATE: AUGUST,2013
SHEET:

SHEET G-2



LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS (1' AND 0.5')
- PROPOSED SPOT ELEVATIONS — +33.8
- SOILS — BnA
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY — WRL WRL
- EXISTING R.O.W.
- LIMIT OF DISTURBANCE — LOD LOD
- PROPOSED WETLAND BUFFER
- PROPOSED DITCH PLUG INLETS/OUTLETS — 34

NOTE:

THIS DITCH TO BE FILLED AND BROUGHT TO THE SURROUNDING ELEVATION AS FAR AS THE LOCATION OF THE EASEMENT BOUNDARY.

GRADING PLAN

SCALE: 1" = 100'

0 100 200 Feet

ALBEMARLE RESTORATIONS, LLC

WETLAND RESTORATION, STREAM RESTORATION, & WILDLIFE HABITAT CREATION

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(252) 333-0249 FAX (252) 926-9983

HOFLER PROPERTY

GRADING OVERVIEW

23.0 NON-RIPARIAN WMU'S

GATES CO., NC

EEP PROJECT ID: 95355

EEP CONTRACT #:004628

Ecosystem Enhancement PROGRAM

REVISIONS		
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV
MARCH 2014	AMENDED PER NCEEP COMMENTS	KA

PROJECT MANAGER:	JBM
DESIGNED:	JBM
DRAWN:	WJV
PROJECT NO.	1270
DATE:	AUGUST, 2013
SHEET:	SHEET G-3

MATCH SHEET G-5

MATCH SHEET G-4

EXISTING DITCH
TO BE PARTIALLY FILLED
(SEE NOTE)

PnA

34.50

34.50

33.8

34

35

EXISTING RIGHT OF WAY

33.8

EXISTING DITCH
TO BE PARTIALLY FILLED
(SEE NOTE)

35

34.50

33.8

34

35

PROJECT
BOUNDARY

MATCH SHEET G-2

MATCH SHEET G-4

LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS (1' AND 0.5')
- PROPOSED SPOT ELEVATIONS — 33.8
- SOILS — BnA
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY — WRL
- EXISTING R.O.W.
- LIMIT OF DISTURBANCE — LOD
- PROPOSED WETLAND BUFFER
- PROPOSED DITCH PLUG INLETS/OUTLETS — 34

NOTE:
THIS DITCH TO BE FILLED AND BROUGHT TO THE SURROUNDING ELEVATION AS FAR AS THE LOCATION
OF THE EASEMENT LIMIT.

GRADING PLAN
SCALE: 1" = 100'

0 100 200 Feet

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HOFLER PROPERTY
GRADING OVERVIEW
23.0 NON-RIPARIAN WMU'S
GATES CO., NC
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Ecosystem Enhancement PROGRAM

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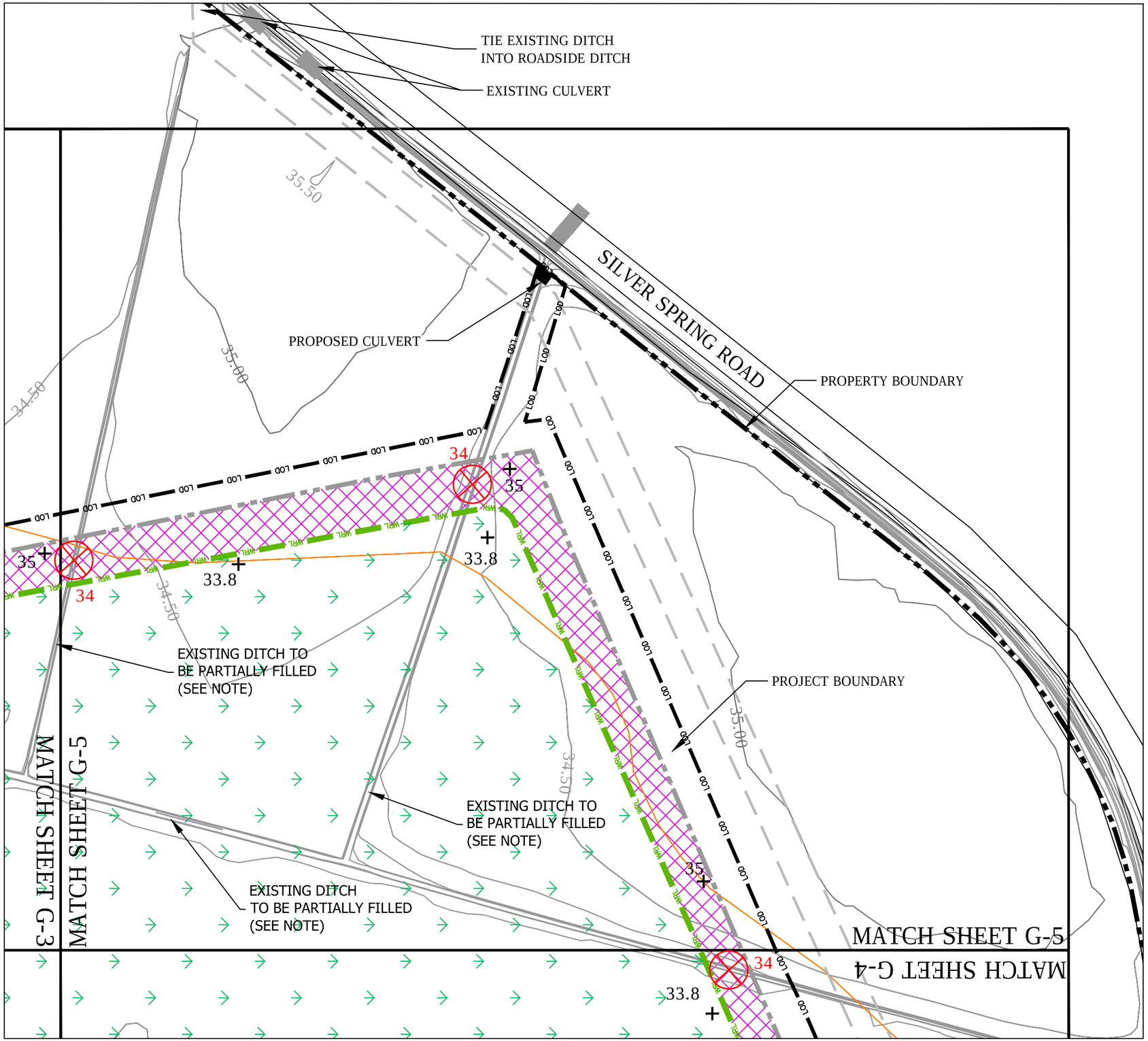
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV
MARCH 2014	AMENDED PER NCEEP COMMENTS	KA

PROJECT MANAGER: JBM
DESIGNED: JBM
DRAWN: WJV
PROJECT NO. 1270
DATE: AUGUST, 2013
SHEET:

SHEET G-4



LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS (1' AND 0.5')
- PROPOSED SPOT ELEVATIONS (+33.8)
- SOILS (BnA)
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY (WRL)
- EXISTING R.O.W.
- LIMIT OF DISTURBANCE (LOD)
- PROPOSED WETLAND BUFFER
- PROPOSED DITCH PLUG INLETS/OUTLETS (34)

NOTE:
THIS DITCH TO BE FILLED AND BROUGHT TO THE SURROUNDING ELEVATION AS FAR AS THE LOCATION OF THE EASEMENT LIMIT.

GRADING PLAN
SCALE: 1" = 100'

0 100 200 Feet

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HOFLER PROPERTY

GRADING OVERVIEW
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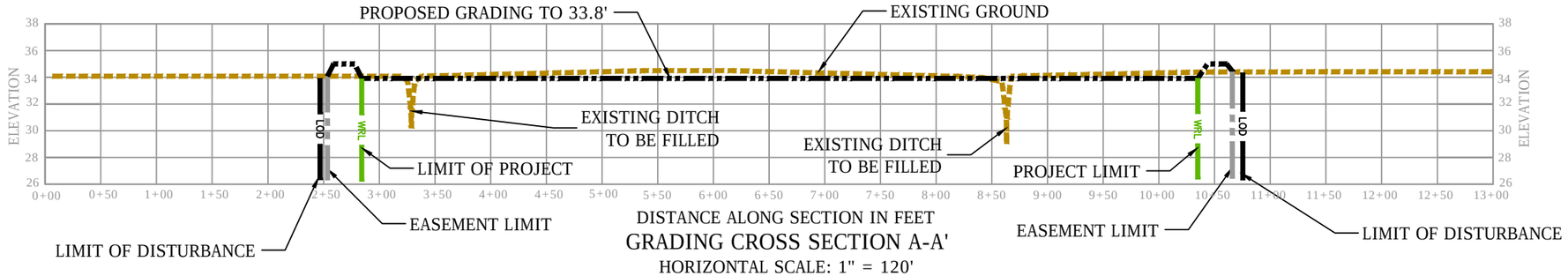
MARCH 2014	AMENDED PER NCEEP COMMENTS	KA

PROJECT MANAGER:	JBM
DESIGNED:	JBM
DRAWN:	WJV
PROJECT NO.	1270
DATE:	AUGUST, 2013
SHEET:	

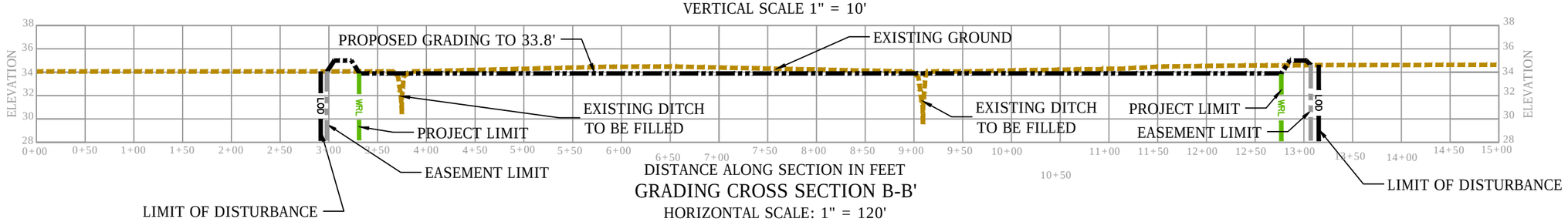
SHEET G-5



GRADING CROSS SECTION A-A'

HORIZONTAL SCALE: 1" = 120'

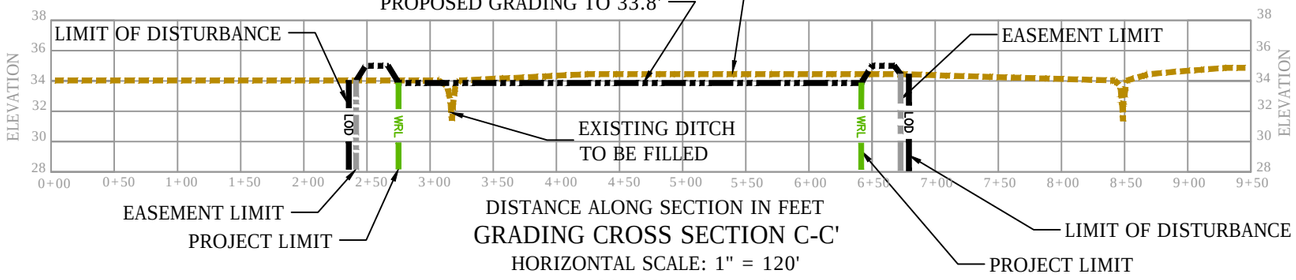
VERTICAL SCALE 1" = 10'



GRADING CROSS SECTION B-B'

HORIZONTAL SCALE: 1" = 120'

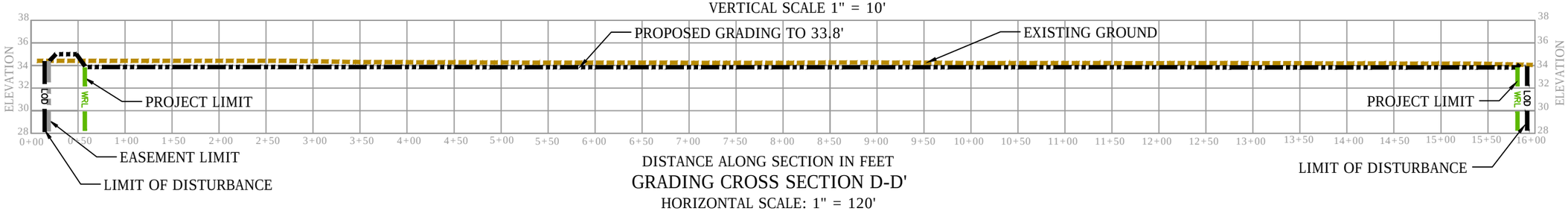
VERTICAL SCALE 1" = 10'



GRADING CROSS SECTION C-C'

HORIZONTAL SCALE: 1" = 120'

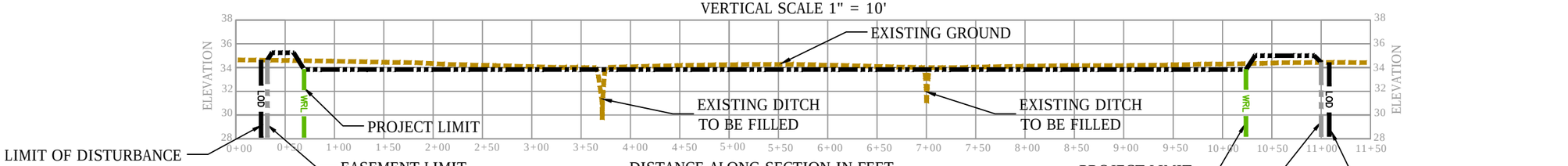
VERTICAL SCALE 1" = 10'



GRADING CROSS SECTION D-D'

HORIZONTAL SCALE: 1" = 120'

VERTICAL SCALE 1" = 10'



GRADING CROSS SECTION E-E'

HORIZONTAL SCALE: 1" = 120'

VERTICAL SCALE 1" = 10'

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HOFLER PROPERTY

CROSS SECTIONS

23.0 NON-RIPARIAN WMU'S

GATES CO., NC

EEP PROJECT ID: 95355

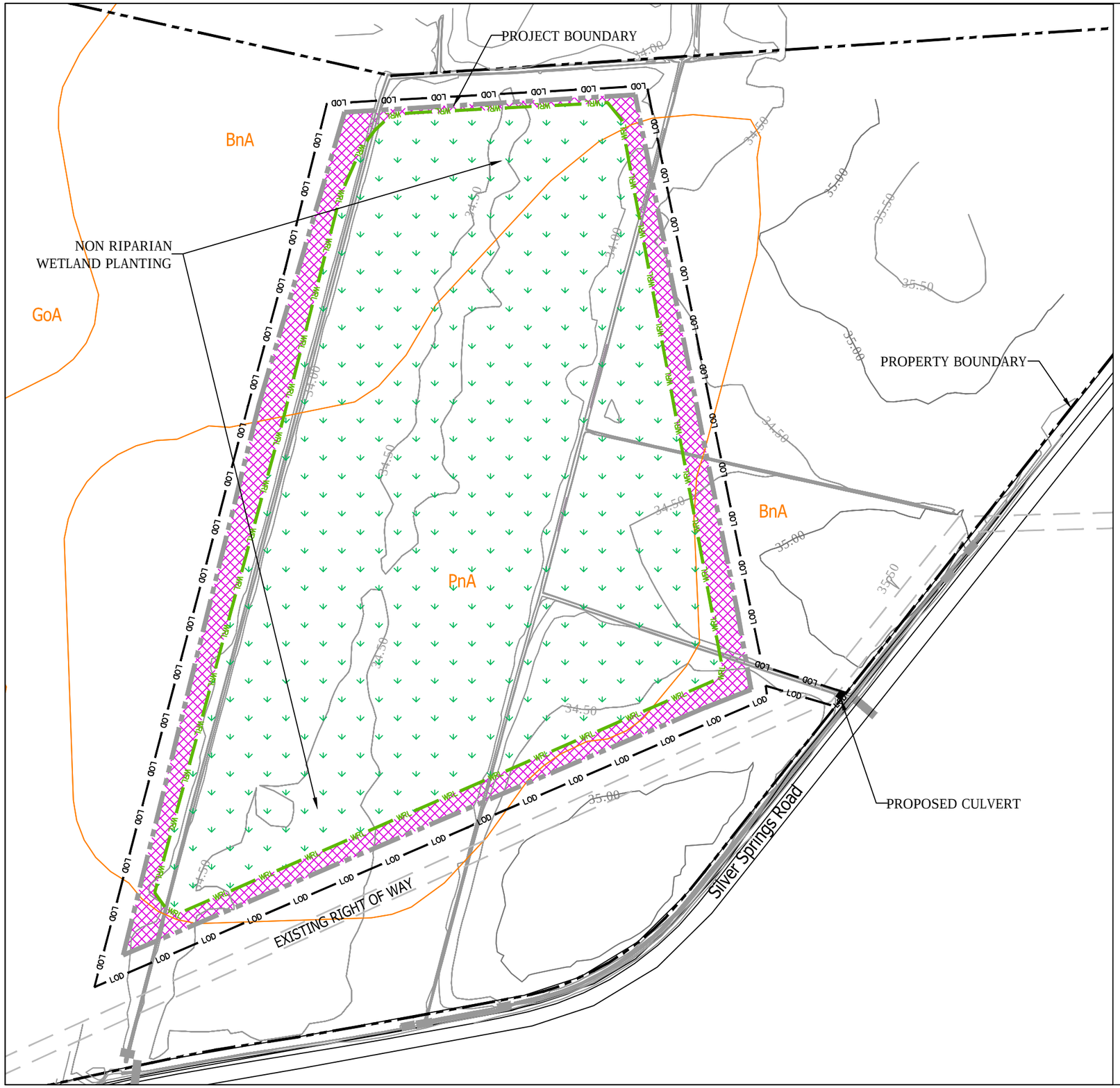
EEP CONTRACT #:004628

Ecosystem Enhancement PROGRAM

REVISIONS		
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV

PROJECT MANAGER:	JBM
DESIGNED:	JBM
DRAWN:	WJV
PROJECT NO.	1270
DATE:	AUGUST, 2013
SHEET:	

SHEET D-1



LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS (1' AND 0.5')
- LIMIT OF DISTURBANCE — LOD
- SOILS — BnA
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY — WRL
- PROPOSED NON-RIPARIAN PLANTING AREA
- PROPOSED WETLAND BUFFER

MAPPED SOILS	
BnA	Bladen loam, 0-3% slopes
PnA	Pantego fine sandy loam, 0-2% slopes

PLANTING PLAN

SCALE: 1" = 200'

0 200 400 Feet

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WETLAND RESTORATION, STREAM RESTORATION, & WILDLIFE HABITAT CREATION

HOFLER PROPERTY

PLANTING PLAN

23.0 NON-RIPARIAN WMU'S

GATES CO., NC

EEP PROJECT ID: 95355

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Ecosystem Enhancement Program

REVISIONS		
DATE	DESCRIPTION	REV. BY
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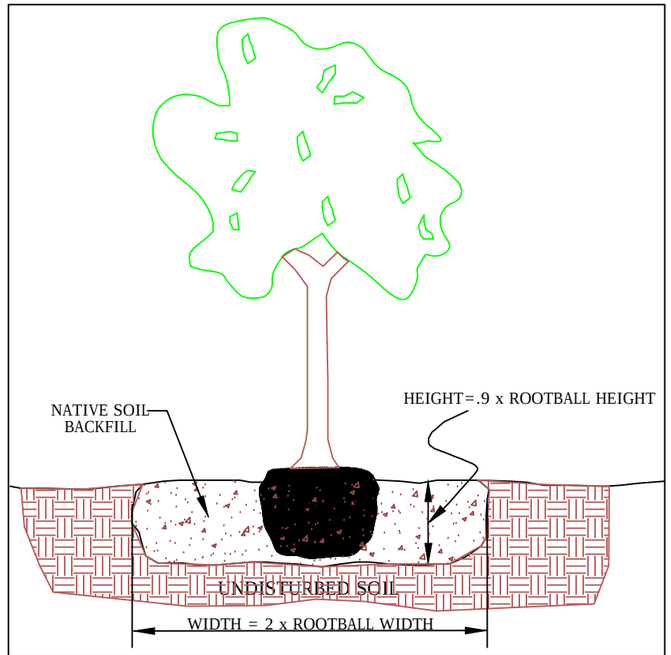
SHEET P-1

PERMANENT WETLAND SEED MIX: 23 ACRES

Botanical Name	Common Name	Min. % Purity	Min. % Germ.	% of Mix by weight	Seeding Rate (lbs/ac)
Triticum aestivum	Winter Wheat (Sept.1 - April 30)	90	85	90.5	50
Panicum Ramosum	Browntop Millet (May 1 - Aug. 31)	90	85		25
Agrostis alba	Redtop	90	85	.013	0.75
Panicum virgatum	Switch Grass	90	85	.013	0.75
Agrostis stolonifera	Creeping Bentgrass	90	85	.013	0.75
Elymus virginiana	Wild Rye Grass	90	85	.013	0.75
Peltandra virginica	Arrow Arum	90	85	.052	0.30
Setaria geniculata	Foxtail Grass	90	85	.052	0.30
Tripsacum dactyloides	Eastern Gamma Grass	90	85	.005	0.20
Echinochloa muricata	Barnyard Grass	90	85	.005	0.20
Zizania aquatica	Wild Rice	90	85	.005	0.20
Carex vulpinoidea	Fox Sedge	90	85	.005	0.20
Polygonum pensylvanicum	Penn. Smartweed	90	85	.005	0.20
Sparganium americanum	Eastern Bur Reed	90	85	.005	0.20
Scirpus americana	3-Square Bulrush	90	85	.0009	0.05
Scirpus validus	Soft Stem Bulrush	90	85	.0009	0.05
Pontederia cordata	Pickerel Weed	90	85	.0009	0.05
Eleocharis obtusa	Blunt Spike Rush	90	85	.0009	0.05
Carex lurida	Lurid (Shallow) Sedge	90	85	.0009	0.05
Juncus effusus	Soft Rush	90	85	.0009	0.05
Scirpus cyperinus	Wool Grass	90	85	.0009	0.05
Leersia oryzoides	Rice Cutgrass	90	85	.0009	0.05
			Total 100%	**55.2 lbs/ac**	

Hofler Planting Schedule - 23 Acres

Quantity	Common Name	Scientific Name	Containerized	Bare Root	Spacing
1,100	Willow Oak	Quercus phellos	1 gallon		11X8
900	Willow Oak	Quercus phellos		2' - 4'	11X8
1,200	Swamp White Oak	Quercus bicolor	1gallon		11X8
800	Swamp White Oak	Quercus bicolor		2' - 4'	11X8
1,000	Water oak	Quercus nigra	1 gallon		11X8
700	Water oak	Quercus nigra		2' - 4'	11X8
1,100	Bald Cypress	Taxodium distichum	1 gallon		11X8
800	Bald Cypress	Taxodium distichum		2' - 4'	11X8
1,100	Swamp Chestnut Oak	Quercus michauxii	1 gallon		11X8
800	Swamp Chestnut Oak	Quercus michauxii		2' - 4'	11X8
500	Button Bush	Cephalanthus occidentalis		as available	11X8
500	Sweet Bay	Magnolia virginiana		as available	11X8
500	Wax Myrtle	Myrica cerifera		as available	11X8
500	Laurel Oak	Quercus laurifolia		as available	11X8
11,500	**Total Stems**				



TREE AND SHRUB PLANTING DETAIL:
Container Grown Stock
NOT TO SCALE

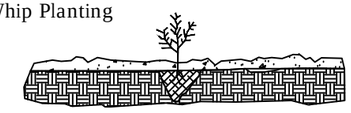
SITE INFORMATION (not for bidding purposes)

Total Area of Wetlands	23	Acres
Area Disturbed	27	Acres
Area to be Roofed or Paved	0	Acres
Total Cut	13,069	Cu. Yds.
Total Fill	6,872	Cu. Yds.
Offsite Waste/Borrow Area Location (TBD)	6,197	Cu. Yds.

UTILITY NOTIFICATION

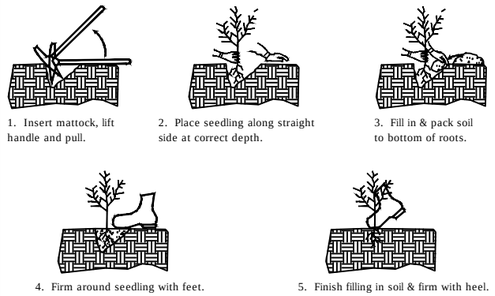
"Albermarle Restorations, LLC makes no representation as to the existence or non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. It is suggested that NC One-Call Center be contacted at: 1-800-632-4949."

Seedling and Whip Planting



Correct and Incorrect Planting Depth

Mattock Planting



Note:
Mulching newly planted seedlings helps the soil retain water and protects the seedling from compaction and stem injuries.

Source: Adapted from Forest Conservation Manual, 1991

Seedling and Whip Planting Techniques

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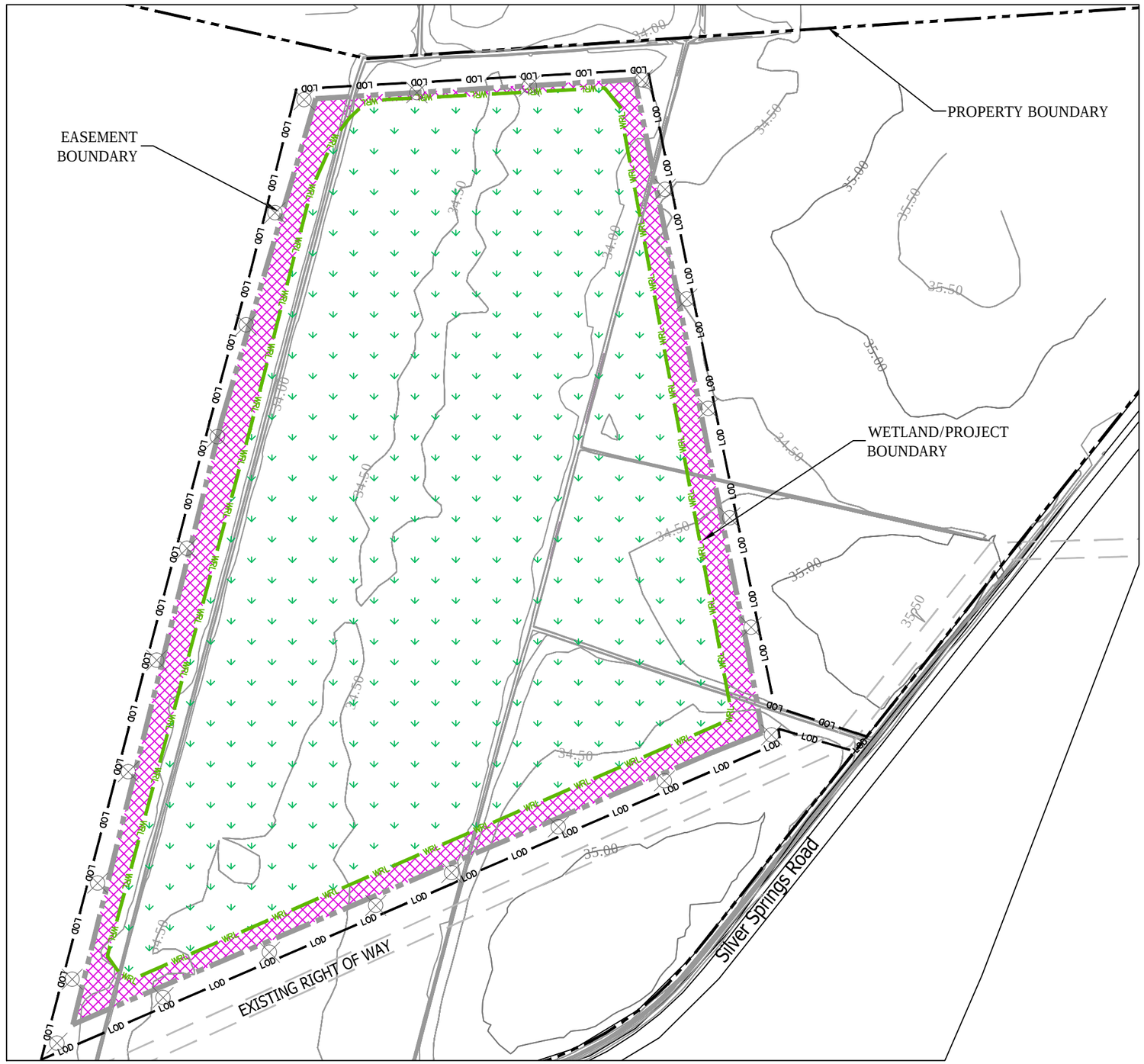
HOFLER PROPERTY
PLANTING DETAILS
23.0 NON-RIPARIAN WMU'S
GATES CO., NC
EEP PROJECT ID: 95355
EEP CONTRACT #:004628

Ecosystem Enhancement Program

REVISIONS		
DATE	DESCRIPTION	REV. BY
FEB. 2014	AMENDED PER NCEEP COMMENTS	WJV
APRIL 2014	AMENDED PER NCEEP COMMENTS	CKA

PROJECT MANAGER:	JBM
DESIGNED:	JBM
DRAWN:	WJV
PROJECT NO.	1270
DATE:	AUG, 2013
SHEET:	

SHEET P-2



BOUNDARY MARKING PLAN

SCALE: 1" = 200'

0 200 400 Feet

LEGEND	
PROPERTY BOUNDARY	
EXISTING ROADS	
EASEMENT BOUNDARY	
PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY	WRL — WRL
EXISTING CONTOURS (1' AND 0.5')	
PROPOSED BOUNDARY SIGNAGE LOCATION	⊗

1) The Provider shall set 5/8" rebar 30" in length with 3-1/4" aluminum caps on all easement corners. Caps shall meet EEP specifications (Berntsen RBD5325 imprinted with NC State Logo # B9087 or equivalent). After installation, caps shall be stamped with the corresponding number from the table of coordinates contained in the project conservation easement.
2) The Provider shall place a 6-foot tall durable witness post at each corner in the conservation easement boundary. Posts shall be made of material that will last a minimum of 20 years. The Provider shall attach a conservation easement sign to each witness post and place additional signs at no more than 200-foot intervals on long boundary lines.

BOUNDARY SIGN DETAIL

ALBEMARLE RESTORATIONS, LLC
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HOFLER PROPERTY

BOUNDARY MAKING PLAN
23.0 NON-RIPARIAN WMU'S
GATES CO., NC
EEP PROJECT ID: 95355
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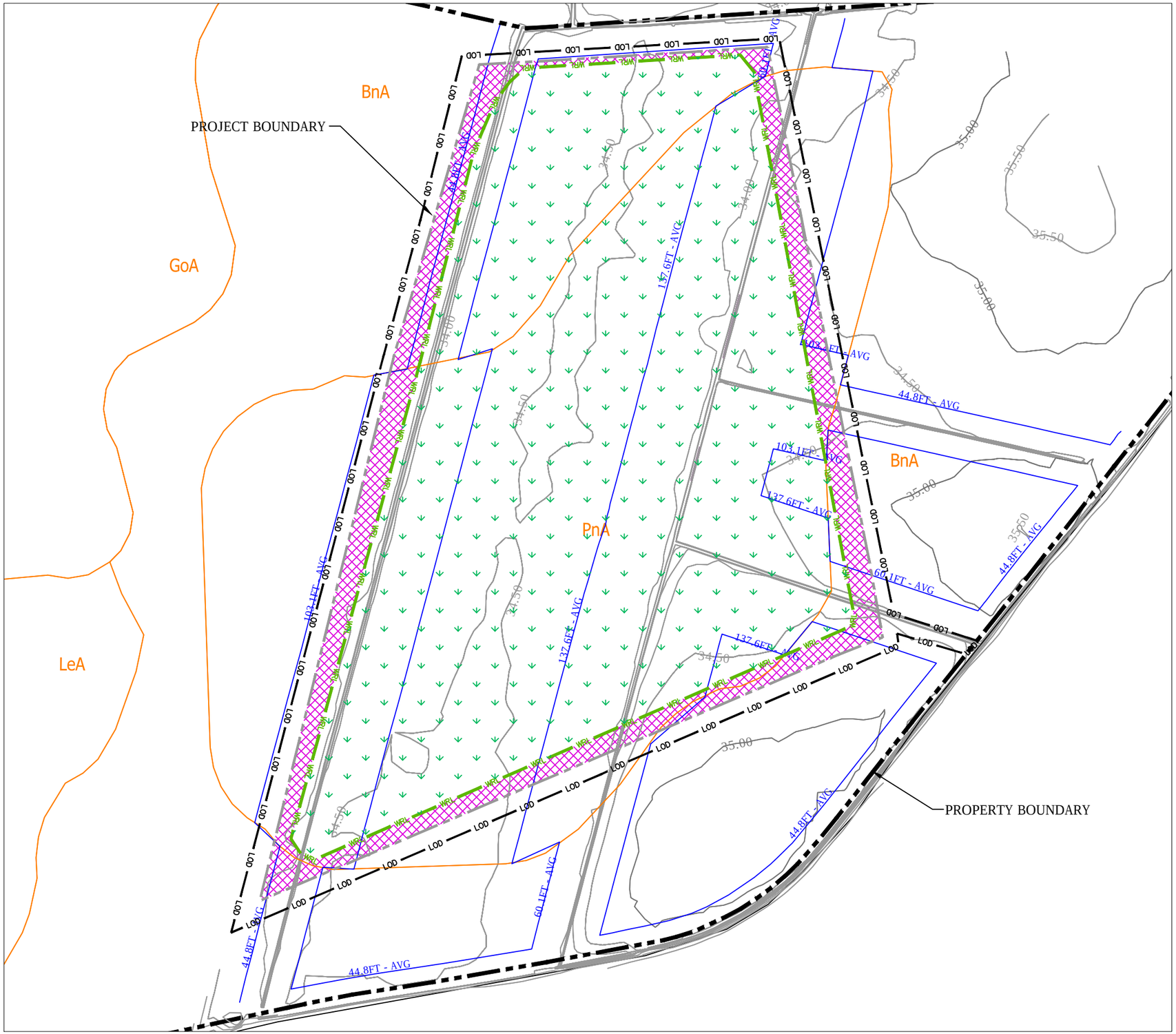
SHEET B-1



LEGEND

- PROPERTY BOUNDARY
- SOILS — BnA
- EXISTING ROADS
- EASEMENT BOUNDARY
- PROPOSED WETLAND RESTORATION/ PROJECT BOUNDARY — WRL — WRL
- EXISTING CONTOURS (1' AND 0.5')
- LATERAL EFFECT ANALYSIS (AVERAGE) — 137.6FT - AVG

EXISTING LATERAL EFFECT ANALYSIS

SCALE: 1" = 200'

0 200 400 Feet

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HOFLER PROPERTY

LATERAL EFFECT ANALYSIS

23.0 NON-RIPARIAN WMU'S

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Ecosystem Enhancement PROGRAM

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SHEET LE-1