FINAL MITIGATION PLAN
MAPLE SWAMP WETLAND MITIGATION SITE

Edgecombe County, NC

NCDEQ Contract No. 200206-01

NCDMS ID No. 100190

NCDWR Project No. 2021-0409v2

USACE Action ID: SAW-2021-00345

RFP No. 16-20200206

Tar-Pamlico River Basin

HUC 03020102

January 2022

Prepared For:

NC Department of Environmental Quality

Division of Mitigation Services

1652 Mail Service Center, Raleigh, NC 27699-1652

Mitigation Services
ENVIRONMENTAL QUALITY

January 21, 2022

Kim Browning
Mitigation Project Manager
Wilmington District, US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

Subject: SAW-2021-00345 / Maple Swamp Wetland Mitigation Site / Mitigation Plan IRT Comments/ Tar-Pam 03020102; Edgecombe County, NC

Dear Kim,

SWE/Eco Terra appreciates the IRT's time and thorough review of the project. We have addressed all comments received by the IRT provided by Memorandum of Record on January 6, 2022 for the Maple Swamp Wetland Mitigation Site - Draft Mitigation Plan. Our responses are below in blue:

Erin Davis, NCDWR:

1. General comment – DWR appreciated all of DMS' comments, as well as responses/updates made by Eco Terra in development of this draft mitigation plan.

   Appreciated.
2. Page 7, Section 3.6 – During the IRT site walk, we discussed partially filling the pond with surrounding spoil material. What led to the decision to leave the pond and spoil piles untouched?

   Although partially filling the pond was discussed as an option, it was decided through the final design phase an open water feature would be best suited to provide non-credit habitat diversity. The main goal was to include the pond within the easement to protect proposed adjacent wetland resources from any effects from future changes in pond dimensions and hydrology function. The pond has no connection or outlet to surface ditches or streams.
3. Page 8, Section 3.7 – Please include a brief discussion of future land use, including potential land use changes in the surrounding area and watershed.

   Revised Section 3.7 to include future land use in the vicinity and surrounding sub-watershed.
4. Page 13, Section 7.1 – It appears the parcel preparation is focused on primarily on tree planting.However, DWR would encourage taking steps to enhance establishment of a native and diverse wetland species herbaceous groundcover including site-wide pasture grass management and soil decompaction.

   Additional herbaceous species are now included in the planting list (Table 8). Site ripping will be accomplished within tree rows using a mechanical planting machine, adequately covering the site to break up any historic plow pan and improve soil and growing conditions.
5. Page 16, Section 7.6 – Please note that a late planting extension request needs to be approvedby the IRT and may involve a postponement of the MY1 monitoring period.

   Noted. Every attempt will be made to construct and plant during the late dormant season

prior to the beginning of the growing season (March 20th).

6. Page 16, Table 8 – DWR understands species composition will be based on availability. However, we request that no single species account for more than 20 percent of the site plantingin order to promote diversity.

   Noted and agree to maintain and promote species diversity to the extent possible as indicated.

7. Page 17, Section 7.7 –
   a. DWR appreciates the inclusion of the 50-foot non-credit area buffer around the proposed wetland area within the conservation easement. This is an important protective measure.

   Noted and agree.

   b. #2 – At the IRT site walk, DWR encouraged the removal of pines onsite in favor of usingthe woody debris as wetland habitat enhancement and reducing the seed source available to compete with desirable planted wetland species. We are concerned with whatleaving the loblolly pine and sweetgum stand onsite will mean for the long-term wetland community composition and species diversity. Additionally, cattail was mentioned as being present onsite and should be treated early to avoid dispersal across the conservation easement.

   Revised Section 7.7 to indicate reducing some of the loblolly pine and sweetgum trees around the pond to help lower the risk of pioneer species competition. Any trees cut will be incorporated in the Site as woody debris. Aggressive pioneer tree species such as loblolly pine and sweetgum will be monitored and controlled so that none become dominant or alter the desired community structure of the Site. It was decided during the design phase cattail was noted in the ditches, which will be filled to grade, eliminating emergent marsh hydrology conditions necessary for cattail to survive and compete for native tree species.

   c. #3 – In addition to extreme climatic conditions, is there a risk that the wetland design andconstruction may result in the wetland being wetter than expected? How would this be addressed during the monitoring period?

   Revised Section 7.7 to address wetter than expected hydrology. This situation is unlikely as the watershed is small and the landscape favors natural downgradient hydrology movement. However, possible remedial actions have been identified in the event this situation does occur.

8. Page 18, Section 8.0 – Please add site hydrology to the first sentence.

   Revised

9. Page 18, Section 8.1 – DWR requests that at least two of the proposed fixed plots be changed to random plots. Also, please note that any volunteer species (or planting substitutions) not included in Table 8 need to be approved by the IRT to count toward vegetative success criteria.

   Revised and noted.

10. Figure 2 – Please show approximate locations of the representative soil borings included in Appendix D.

    Revised Figure 2 and as shown in the Soils Report (Appendix D)

11. Figure 11 – If any of the vernal pools overlap wetland credit area, please make sure at least one fixed veg plot is located within a pool area. Also, DWR requests the top right well be

shiftedslightly closer to the wetland credit area boundary. During field installation please avoid well placement within vernal pool areas, as well as filled ditches/swales.

Revised accordingly.

12. Figures 3 & 3b – DWR appreciates the inclusion of both these maps. They were helpful in this plan review. Are there color legends that could be added?

    Revised.

13. Sheet EC1.00 – Please update Construction Sequence #8 based on site specific conditions discussed in Section 7.0 subsections, including ripping the existing road bed and treating pasturegrasses.

    Updated EC1.00. The existing farm roadbed and drainage pipes will be removed entirely, and underlying soil ripped for planting. Competing herbaceous plants and seeds will be treated appropriately with herbicides pre and post construction. Please note, additional notes and additions are included from DEMLR in the Final Mitigation Plan specific to Erosion and Sediment Control that do not alter the project design reviewed by the IRT to date.

14. Sheet EC1.01 – DWR appreciates the identification/use of the nearby reference wetland. We were glad to see a good of woody and herbaceous species proposed.

    Noted and appreciated.

15. Sheet L1.00 – Should the "Upland Restoration" Planting Zone 1 be relabeled to Wetland Restoration to avoid confusion?

    Revised.

16. Understanding that the easement is what it is and does include a wetland credit area buffer, it seems like a lost opportunity to not connect the site to the forest to the north and the other DMS project to the south. Linking these areas and creating a buffered habitat corridor would have greatly enhanced the project's potential functional uplift.

    Noted and appreciated. The overall goal for ET and the landowner is to combine both projects in the future and expand the restored riparian corridor, improving the functional uplift and connectivity to other forested areas.

USACE Comments, Kim Browning:

1. Page 2: The bold type in paragraph two states that wetlands and streams will be restored and preserved. I think it's more appropriate to state that wetlands will be restored and protected in apermanent conservation easement. Streams are not part of this project. This sentence also states that the site will be connected to existing conserved lands. Figure 10 does not depict a connection to other protected areas. Please revise the text accordingly.

   Revised accordingly here and throughout the document to indicate close proximity of the project to conservation lands only.

2. Page 2: The fourth bullet states that fecal coliform will be reduced on site. Is this in reference to the cessation of spreading chicken litter? Depending on the degree of composting, most studiessuggest that composted chicken litter is free of fecal coliforms.

   Yes, some level of fecal coliform may be reduced on site from the cessation of spreading poultry manure. It is anticipated there will be some level of background fecal coliform in poultry litter spread on site depending on the source and composting management. However, given the uncertainty of actual fecal coliform levels resulting from historic

poultry manure application, the focus will be on nutrient removal from agricultural byproducts only.

3. Page 2: The fifth bullet states that the site will be connected to existing Lower Fishing Creek conservation lands. Is it actually connected? It appears that there are unbuffered ditches that flow south through agricultural land prior to reaching the conservation lands, which defeats the purpose of removing agricultural inputs if those lands will continue to be farmed. The same can be said for not connecting the site to the forestland to the north. While this site will likely provide wetland habitat, the lack of connecting buffers greatly diminishes the functional uplift potential for this site. This connection to conserved lands is also discussed on page 4 and in Table 5.

   As noted in USACE Comment #1. ET agrees the functional uplift potential is diminished from not directly abutting the nearby preserved lands and forest as well as unbuffered ditches remaining on the parent parcel. The connection of habitat can be considered in the broader context of providing refuge, foraging, and nesting, bridging the restored wetland areas to preserved and forested lands. The long-term goal of ET and the landowner is to completely reforest the corridor extending from Lower Fishing Creek to the top of the watershed.

4. Page 3, Table 1: Please include the PJD, issued December 12, 2021, in the final report and update this table. The PJD indicates that Ditch A is a jurisdictional feature since it meets the definition of an RPW. A 404 permit will be required for this project prior to construction.

   Revised Table 1. The PJD is now included in Appendix B. Noted for the e-PCN.

5. Page 6, Table 2: All site soils should be listed in this table, to include the DgA and StB shown on Figure 7. It's understood that the NRCS soil surveys were mapped with large general areas for each soil series, so if these additional soils are not found on site, please indicate in the text;particularly, the StB soils in the southwest corner of the property may cause concern for improving site hydrology. Please relocate the southern middle gauge closer to the fringe of the credited area, especially since Figure 3b shows a difference in color this area.

   Revised Section 3.2 to indicate soils most similar to the Roanoke series were only found within the wetland credit area proposed. Revised Table 2 for Site Soils. Revised Figure 11 and hydrology gauge accordingly.

6. Page 6, Section 3.5: Please update this information to coincide with the PJD received December12, 2021 and update Appendix B.

   Revised accordingly.

7. Page 8, Section 4.1: The text states that the project addresses dysfunctional wetlands but without baseline data on water quality and habitat, how do you intend to demonstrate functionaluplift? It may be inappropriate to conduct a NC WAM evaluation due to a lack of wetland hydrology; however, the NC WAM description of a hardwood flat, as well as data collected at the site should be utilized to determine wetland functions to target for uplift.

   Revised to describe drained historic wetlands and additional NCWAM description of the proposed wetland type. As noted, NCWAM was not used due to current agricultural state (lacking vegetation) and the lack of hydrology for the proposed re-establishment area. However, additional Hardwood Flat descriptors from NCWAM are now included in this section. NCWAM will be used to track functional uplift (hydrology, water quality, habitat) post construction during annual monitoring.

8. Page 9, Table 3:
    a. This table should be labeled.

Noted.

    b. The uplift listed for filling and plugging ditches should be measurable. Unless you intend to monitor water quality, this should be reworded that water quality improvements are assumed but will not be measured.

Revised as suggested.

9. Page 10, Section 4.5: This section, as well as all of Section 4.0 should be based on functional uplift to baseline conditions. It seems that you organized this section based on the Stream Functions Pyramid Framework, which was not intended for wetland assessments. NC WAM assessments should always be conducted early in the mitigation site development process. This is valuable as a mitigation site screening tool and for establishing the baseline functional condition. Restoration sites should have results that indicate an impaired functional condition. NC WAM will also help demonstrate the specific functional areas where improvements may be made (Hydrology, Water Quality, Habitat).

As noted in USACE Comment #7, NCWAM was not used due to the current agricultural state and lack of hydrology and vegetation for the proposed re-establishment area. NCWAM will be used to track functional uplift (hydrology, water quality, habitat) post construction during annual monitoring.

10. Page 10, Section 4.6: Was the potential for hydrologic trespass and the presence of hazardousmaterials evaluated?

The potential for hydrologic trespass was evaluated and is negligible due to site topography, soils, and location of the project within the interior of the parent parcel. And EDR report was completed as a component of the Categorical Exclusion that indicates no known hazardous materials or sites exist on the property. No known hazardous materials exist on site from conversations with the landowner and historic land uses. No structures exist or have existed other than a hunting stand, which will be removed from the easement.

11. Section 5.0 and Appendix C: Please include copies of all agency correspondence associated with the Categorical Exclusion Documentation. I have records of concurrence from USFWS andSHPO. I do not have any correspondence from NCWRC.

All copies were included. During the Categorical Exclusion preparation, NCWRC was not contacted directly due to lack of impacts to water bodies in the project vicinity. A self-certification was completed with USFWS and NCWRC was copied on the correspondence and did not provide comment. NCWRC did not comment on the Project during the Public Comment period and were not present during the IRT site visit.

12. Page 13, Section 7.0: Please specify that the project will be transferred to State Stewardship, rather than a dedicated land steward.

Revised accordingly.

13. Page 16, section 7.5: Please provide more detail of the vegetation community species found inthe reference wetland. Additionally, please provide reference wetland gauge data for comparison.

Revised to include additional information about the vegetation community species present. No reference wetland gauge information is available at this time. A reference wetland gauge will be established during construction.

14. Page 16, Section 7.6: Vegetation planting should be conducted by March 15 in order to establishat least 180 days of year one monitoring.

    Noted. Every attempt will be made to construct and plant during the late dormant season prior to the beginning of the growing season (March 20th).

15. Table 8: I believe Ironwood is FAC, not FACW. Please confirm.

    Revised.

16. Page 17, Section 7.7: I would highly encourage removing loblolly pine and sweetgum from the proposed easement to eliminate the seed source, and incorporating it as woody debris to the depressional areas for habitat, and help increase water storage/infiltration.

    Revised Section 7.7 to indicate removing and/or girdling some of the loblolly pine and sweetgums around the pond to reduce the seed source. Any trees felled will be incorporated into the project as woody debris and habitat.

17. Page 18, Section 8.1: At least two vegetation plots should be random, not permanent.

    Revised accordingly.

18. Page 20, Table 9:
    a. The wetland hydrology performance standard should be stated as 9% for MY1 and MY2,and 12% for MY3-MY7.

    Revised accordingly.

    b. The goals and objectives in this section should correspond with those listed in Section 4. It's unclear how preventing easement encroachment ties in with reducing agricultural nutrients and sediment.

    Revised accordingly. Although minor, protecting an easement ensures complete agricultural land use cessation and removal of nutrients and sediment sources from the Site.

19. Page 21, Table 10: I would recommend conducting hydrology gauge monitoring more often thansemi-annually.

    Revised accordingly.

20. Page 22, Table 11: This may be a DMS question, but should there be a line that includes thefinal mitigation plan and 401/404 Permits?

    Revised accordingly.

21. Figure 11:
    a. Wetland gauges should be located to be representative of existing conditions on the site,including different soil types, vegetation communities, and hydrologic conditions. Please try to capture gauge data in the DgA soils. The gauge that DWR mentioned in comment#11 should be able to capture this soils series and the fringe of the wetland crediting area.

    Hydrology gauges were proposed to provide transects across the site and according to specific site and soil characteristics and vegetation communities. A baseline gauge is currently in the vicinity of the area mapped by NRCS as Dogue on the southeast boundary, however Roanoke soils were found within the credit area. As suggested by DWR, the well to the north will be shifted to the east closer to the project boundary. And, as suggested in USACE Comment #5, gauge 9 will be moved south closer to the project boundary. All well soil borings will be included in wetland monitoring gauge soil borings in the as-built report.

    b. Please number the gauges and vegetation plots.

    Revised and numbered.

c. The legend should read “Wetland Reestablishment” rather than “Proposed WetlandCredit.”

Revised.

d. At least two of the veg plots should be changed to random plots in order to capture overallvegetative success on the site.

Revised.

Please let us know if additional information is needed for the Final Mitigation Plan. We look forward to construction this winter and a successful project together.

Sincerely,

Scott J. Frederick
SWE Group
sjfrederick@swegrp.com

cc: Norton Webster, Eco Terra

FINAL MITIGATION PLAN
MAPLE SWAMP WETLAND MITIGATION SITE

Edgecombe County, NC

NCDEQ Contract No. 200206-01 & NCDMS ID No. 100190

NCDWR Project No. 2021-0409v2

USACE Action ID: SAW-2021-00345

RFP No. 16-20200206

Tar-Pamlico River Basin

HUC 03020102

Prepared For:

NC Department of Environmental Quality

Division of Mitigaiton Services

1652 Mail Service Center, Raleigh, NC 27699-1652

Prepared By:

1328 Dekalb Ave NE

Atlanta, GA 30307

404-840-2697

With Assistance From:

Venture 1, 940 Main Campus Dr., Suite 500

Raleigh, NC 27606

919-754-5009

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 Vollume 3 Chapter 2 Section §332.8 paragraphs (c)(2) through (c)(14).
- NCDEQ Division of Mitigation Services In-Lieu Fee Instrument signed and dated July 28, 2010

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

Contributing Staff

Michael Beinenson, Eco Terra Principal in Charge

Norton Webster, Eco Terra Construction Oversight

Scott Frederick, Eco Terra/SWE Project Manager

Heather Smith, VHB Quality Assurance

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Tables

Figures

Appendices

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1.0 Introduction

The Maple Swamp Wetland Mitigation Site, hereinafter referred to as "the Site" or "MSWMS" includes 15.34 acres of agricultural land used for intensive row crop production. The Site is located in Edgecombe County, approximately 2.0 miles northeast of the Town of Leggett off NC Highway 97E (Figure 1) and is located on one parcel controlled by RKW Properties, LLC (PIN: 4822-75-37-68) (36.013378, -77.559158). The site is accessed via a dirt farm road north of NC HWY 97E. The MSWMS includes wetland re-establishment of a non-riparian wetland system in the Tar-Pamlico Hydrologic Unit Code (HUC) 03020102 and NC Division of Water Resources (DWR) Subbasin 03-03-04. The Site is located within 14-digit HUC 03020204010071 and will nearly connect to a proposed Division of Mitigation Services (DMS) riparian buffer mitigation site as well as a larger forested wetland corridor along Fishing Creek.

The Maple Swamp Wetland Mitigation Site will provide both ecological and water quality benefits within the Tar-Pamlico Basin by achieving overarching goals of the CU and specific HUC goal according to the NC Division of Mitigation Service's (NCDMS) 2018 Tar-Pamlico Basin Restoration Priorities (RBRP) document. **Goals addressed specific to this Site include promoting nutrient and sediment reduction in agricultural areas by restoring and preserving wetlands and non-riparian buffers and protecting the project in the near vicinity of existing conserved lands.** Although many of these benefits are limited to the actual Site location, others, such as sediment and pollutant removal and improved wildlife habitats, have larger overall effects. The goals and objectives of the Site are further defined in Section 6.0. Site activities include:

- **Reestablishment of non-riparian wetlands within a sub-watershed of Fishing Creek**
- **Restoration of native vegetation communities and non-riparian wetland habitat for wildlife**
- **Removing poultry litter land application from restored wetlands and buffer areas**
- **Reduction of nutrient and sediment to the Site wetlands, sub-watershed of Maple Swamp and lower Fishing Creek.**
- **Protection of the Site in perpetuity and providing habitat in near vicinity to existing NCWRC Lower Fishing Creek conservation lands**

The Site will result in substantial ecological improvements including but not limited to terrestrial and aquatic habitat improvements, hydrological uplift, and overall protection of a forested non-riparian wetland corridor in perpetuity.

Site implementation will include filling and plugging existing drainage ditches, minor site grading, restoring wetland hydrology, planting site-specific hardwood trees and shrubs, permanent seeding with herbaceous mixes, treating invasive plant species (as necessary), and reconnecting restored non-riparian wetlands to a functioning wetland corridor. Preliminary mitigation estimates suggest that the MSWMS will produce **9.084 Wetland Mitigation Units** in the Tar-Pamlico Basin HUC 03020102.

The Site Protection Instrument detailing the conservation easement is included in Section 10.2. General Project information is included below in Table 1.

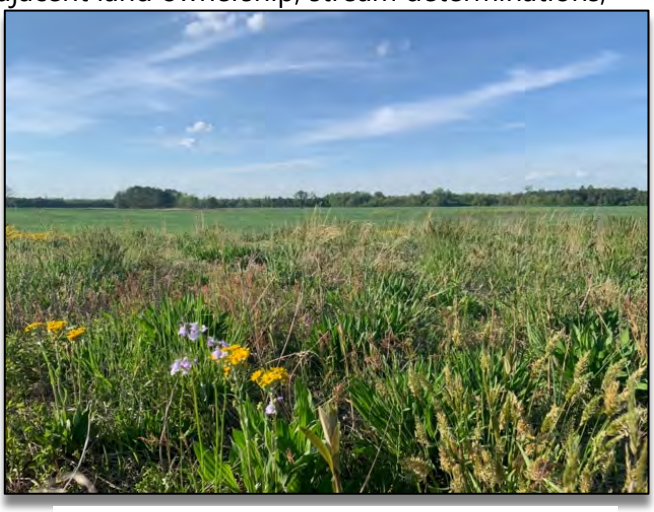
Table 1: Project Attributes

Project Information			
Project Name	Maple Swamp Wetland Mitigation Site		
County	Edgecombe		
Project Area (Planted Acreage) (ac)	15.34 (14.44)		
Project Coordinates	36.013378, -77.559158		
Project Watershed Summary Information			
Physiographic Province	Coastal Plain		
River Basin	Tar-Pamlico		
USGS HUC (8-digit, 14-digit)	03020102, 03020204010071		
NCDWR Sub-basin	03-03-04		
Project Drainage Area (ac)	49.4		
Project % Impervious Area	0%		
Land Use Classification	Agriculture		
Ecoregion	Southeastern Plains (Rolling Coastal Plain) EPA Level III		
Wetland Summary Information			
Pre-project (ac)	8.635 drained, 0.449 existing ditches		
Post-project (ac)	9.084		
WMU (NR)*	9.084		
Mapped Soil Series	Roanoke		
Soil Hydric Status	Hydric (100%)		
Soil Drainage Class	Poorly drained		
Source of Hydrology	Precipitation, groundwater		
Hydrologic Impairment	Ditched, tiled, and drained		
Restored Vegetation Community	Non-riverine Wet Hardwood Forest (Zone 1) Cypress-Gum Swamp (Blackwater Subtype) (Zone 2)		
% Exotic/Invasive Vegetation	0%		
Restoration Method	Hydrologic/Vegetative		
Enhancement Method	n/a		
Regulatory Considerations			
	Applicable?	Resolved?	Supporting Docs?
Waters of the US (Sec. 404)	Yes	Yes	PJD (Appendix B)
Waters of the US (Sec. 401)	Yes	Yes	PJD (Appendix B)
Endangered Species Act	Yes	Yes	Cat. Ex. (Appendix C)
Historic Preservation Act	Yes	Yes	Cat. Ex. (Appendix C)
CZMA/CAMA	No	Yes	Cat. Ex. (Appendix C)
Essential Fisheries Habitat	No	Yes	Cat. Ex. (Appendix C)

* WMU = wetland mitigation unit, NR = non-riparian

2.0 Watershed Approach and Site Selection

Implementation feasibility was determined through preliminary on-site surveys of historical non-riparian wetland areas, soils, site hydrology, adjacent land ownership, stream determinations, existing vegetation, current and historic land use, and drainage networks. Site investigations and desktop mapping reveal an appropriate area and characteristics suitable for non-riparian wetland restoration including presence of hydric soils that are adequately drained to support row crop vegetation, topography, and landscape position, and absent wetland vegetation.



Northeast view of Site

The site was also chosen relative to the proximity of adjacent forested habitats and corridor servicing the sub-watershed to Maple Swamp as well as the ability to restore and protect a non-riparian system and support overarching goals for the Tar-Pamlico RBRP. **Restoration of the Site will directly and indirectly address specific goals and stressors related to these goals identified in the RBRP through land use conversion of agriculture to a forested wetland, ceasing land application of agricultural byproducts and fertilizer nutrients (129-170 lb/ac N and 35-70 lbs/ac P), restoring vegetation plant communities, restoring site hydrology through wetland restoration, providing habitat in near vicinity to conserved lands, and protecting the Site in perpetuity**. No site constraints such as drainage flow patterns affecting adjacent landowners from the proposed restoration work is anticipated.

3.0 Existing Conditions

The Site is located in the Tar-Pamlico 03020102 subbasin within the Maple Swamp watershed and a component of the greater Fishing Creek watershed. The project area is situated centrally in the northwestern portion of the property in an agricultural field with a central drainage network draining the Site to the southeast. The following sections describe the existing conditions and characteristics of the Site and its watershed.

3.1 Watershed Characterization

The Site is located in HUC 03020204010071 and will include the restoration of a forested non-riparian wetland system within the Maple Swamp watershed and the greater Fishing Creek watershed, and within Habitat, Hydrology, and Water Quality Targeted Resource Areas (TRA) according to NCDMS (Figure 5). Maple Swamp stream is defined as Water Supply (WS-IV) and

Nutrient Sensitive Waters (NSW) according to the NC Department of Environmental Quality (NCDEQ).

The watershed consists of a mixture of forested land (~50%) and agriculture (~30-40%), both in row crops and permitted animal operations. Edgecombe County remains mostly undeveloped aside from the areas in and surrounding Rocky Mount, Tarboro, and Princeville. The County's population has decreased 9.0% since the 2010 census.

3.2 Soils and Geology

The Site is located in a relatively flat area underlain by Roanoke silt loam series soils with adjacent upland soils such as State loamy sand, Tarboro loamy sand, and Dogue fine sandy loam. Dogue series soil is known to have inclusions of Roanoke hydric soils. The Roanoke series is a hydric soil according to the National Hydric Soil List (NRCS, 1995). Overall, the Site is flat to gently sloping (0-2%) to the southeast. Elevations at and surrounding the Project Site are nearly flat and depressional relative to surrounding soils and topography.

Typical Roanoke hydric soils within the proposed Maple Swamp Wetland Mitigation Site in Edgecombe County, NC.

Soils underlying the proposed **credit area** are mapped as silt loam and consist of the Roanoke series. No adjacent upland soils were found within the proposed credit area. The soils at the Site are briefly summarized in Table 2 and depicted on Figure 7. Roanoke (Ro) soils are very poorly drained soils found along a variety of landscape positions including stream terraces, depressions, interstream divides, valleys, and backswamps. These soils formed in old clayey alluvium and have slow to very slow permeability and the water table is less than 12 inches for six to seven months out of the year.

Geologically, the Site is located in the Coastal Plain Physiographic Region and Southeastern Plains (Rolling Coastal Plain) EPA Level III ecoregion. This region has experienced numerous cycles of erosion and deposition, exposing and submerging uplifted Quaternary clay, silt, sand, and gravel deposited over Tertiary sand and carbonates. These processes along with sea level changes over time have resulted in terraces forming along streams and rivers eroding through younger deposits.

Table 2: Site Soils

Map Unit Name	Map Unit Symbol	Hydric Soil	Hydrologic Soil Group#	% of Map Unit^
Roanoke silt loam	Ro*	Yes	C/D	100%
Dogue fine sandy loam	DgA	No (inclusions)	C	80%
State loamy sand	StB	No	B	75%

** National Hydric Soils List NRCS, 1995 and North Carolina Hydric Soils List for Edgecombe County, NRCS.*
 # Hydrologic Soil Group HSG – Indicator of decreasing runoff potential at soil saturation from A through D (NRCS, 2009). Ex: A "B/D" indicates a drained/un-drained soil condition distinction if present on site.
^USDA-NRCS Web Soil Survey

The presence of hydric soils was confirmed by a North Carolina licensed soil scientist (NCLSS) and Eco Terra staff on June 18 and October 9, 2020. Details regarding this soils investigation and how it relates to the wetland restoration design are detailed in Section 7.0.

3.3 Vegetation

The dominant vegetation found throughout the wetland re-establishment area is rotational agriculture crops interspersed with occasional competing herbaceous grasses and weeds. The Site was most recently planted in soybeans with cotton planted the previous year. Some examples of hydrophytic vegetation occur within the ditch area such as common rush (*Juncus effuses*), flat sedge (*Carex* spp.), and cattail (*Typhus latifolia*) along the interior drainage ditch, and red maple (*Acer rubra*) and black willow (*Salix nigra*) along the near bank region of the ditch. The Site is devoid of native woody vegetation except some regeneration occurring along the ditch banks and adjacent to the constructed pond. All ditch and top of bank vegetation are periodically mowed and/or herbicided at least annually.

Drained wetland area north of lower west-east ditch.

3.4 Site Constraints

The Project is not located within a FEMA regulated floodplain and will not require FEMA coordination or a floodplain development permit. There are no other known easements at or near the Project Site that would prevent project implementation.

3.5 Site Resources (Jurisdictional Wetlands and Streams)

Potential jurisdictional features exist within the project area as identified by field staff and a North Carolina Licensed Soil Scientist on June 18 and October 9, 2020. Jurisdictional areas were delineated using the US Army Corps of Engineers (USACE) Routine On-Site Determination Method. This method is defined by the 1987 Corps of Engineers Wetlands Delineation Manual and the Eastern Mountain and Piedmont Regional Supplement. Potential jurisdictional wetlands and typical uplands were classified using the

USACE Wetland Determination Data Form. A jurisdictional determination (JD) was performed by USACE agency staff for purposes of 401/404 permitting and included in Appendix B.

The on-site delineation of jurisdictional resources identified one area of existing jurisdictional non-wetland ditches. These features will be filled to accommodate the restoration plan. Proposed wetland re-establishment areas occur in the remaining agricultural fields. These wetlands were historically interstream divide wetlands typically on mineral soils as described by NCWAM for a Hardwood Flat. Hydroperiods are typically shorter in duration than the Non-Riverine Swamp Forest and the elevated water table hydrology is due to precipitation and overland runoff. The North Carolina Wetland Assessment Method (NCWAM) was not utilized for rating the historic wetland area due to the current agricultural state of this area.

3.6 Landscape Characteristics

The main north-south ditch is approximately 8 to 10 feet wide and 3 to 4 feet deep. There was approximately 1.5 to 2 feet of water during the June 2020 site visit. Several areas along this ditch are laden with sediment from the adjacent fields creating a micro-barrier to impound runoff. As a result, routine maintenance is required to maintain adequate drainage. The fields drain surface runoff from the west through a series of drain tiles positioned along the farm path running through the middle of the Site and adjacent to the main ditch. The southern portion of this ditch turns 90 degrees to the east and flows into the southern west-east ditch.

Constructed pond north of west-east ditch.

A pond constructed in the 1960s exists within the project and is surrounded by drained hydric soils with **no outlet**. The pond hydrology is precipitation driven, and there is no outlet on this pond. Site hydrology appears in equilibrium with surface precipitation inputs and evapotranspiration outputs; however, the pond will be included in the conservation easement to protect restored wetland areas from future pond maintenance and hydrology influence. No grading is anticipated to move or modify spoil piles adjacent to the pond for the purposes of claiming wetland restoration credits.

Adjacent land use is intensive row crop agriculture and little vegetated buffer exists along the length of the ditch system draining the historical wetland within the Project Site. Periodic erosion and sediment-laden runoff is entering the ditch system from these areas.

North view of main north-south ditch.

The Site topography is flat and slightly lower than the surrounding landscape. Drone Deploy elevation mapping and NC Floodplain LIDAR data shows the Site topography slopes in a general east/southeast direction (Figures 3a and 3b). The Site drains directly into the Maple Swamp watershed and its associated forested wetlands. These forested areas together combined with the proposed Site will result in an expanded forested wildlife habitat corridor along the floodplain and non-riparian flats and divides of the Maple Swamp watershed.

3.7 Land Use/Land Cover

The Site is located within one parcel (~356 ac) that is currently being used for row crop agriculture rotations (Figure 2). Land use within the vicinity of the project is predominantly managed agriculture row crops and fallow field, with areas of mature and regenerating forest surrounding the Site on the southern, western, and northern boundaries. Historical aerials denote that land uses at the Project Site have been agricultural since at least 1976 (Figure 4) and the current owner states the Site has been in agriculture since at least the 1950s. Future land use includes the establishment of a15.34 ac conservation easement and re-establishment of 9.1 ac of wetlands and a 50-foot buffer surrounding this wetland restoration area. The Project Site will establish forested wetlands and provide a connection, albeit disjunct, to adjacent conserved forested areas, and proposed riparian buffer Project further down in the sub-watershed. Outside of the Project will likely remain in agricultural use in the foreseeable future.

3.8 Hydrological Characterization

The existing drainage network has altered the historical non-riparian wetland hydrology regime and has resulted in lateral drawdown of the water table. Existing hydrological inputs are from precipitation, stormwater runoff, and to a lesser extent, lateral groundwater migration into the wetlands.

4.0 Functional Uplift

4.1 Wetland Functional Uplift Potential

The MSWMS project addresses drained historic wetlands located in the non-riparian region drained by a ditch network within a small blackwater stream watershed entering Maple Swamp. The existing degraded area proposed for wetland re-establishment does not provide ecological functions due to past disturbances from row crop agriculture and management, land clearing and grading, surface water conveyances and groundwater lowering ditches, and periodic

agricultural byproducts application. Filling and plugging the main interior ditch within the wetland restoration area will increase groundwater hydrology, surface water retention time, and non-riparian forest wetland hydrologic regime functions. These functions include increased water storage in the soil profile, groundwater recharge, and water quality treatment through nutrient sequestration and denitrification.

Restoring non-riparian forest vegetation communities with native species will increase wetland forest community functions over time. These functions include increased aquatic and terrestrial habitat, soil health, as well as nutrient and carbon cycling. Removal of continuous row crop agricultural impacts and other agricultural byproducts and soil amendments from the proposed wetland area will help reduce sediment, and nutrient inputs leaving the Site and entering Maple Swamp and ultimately Fishing Creek and the Tar-Pamlico Basin. By protecting the property in perpetuity, restoration efforts and functional uplift will be maximized.

The proposed restoration area will be planted at a density suitable to meet requirements for wetland mitigation. **The Site will address multiple goals set forth in the Tar-Pamlico RBRP. Table 3 summarizes the proposed ecological uplift provided by the Site**.

Table 3: Proposed Ecological Uplift

Activity	Goal Addressed	Uplift Related to Goals
Filling and Plugging Ditches	Wetland Restoration and Nutrient/Sediment Reduction[1]	Restore Site hydrology (measured). Improve water quality by increasing the retention time on-stie for the filtering of sediment sequestering of nutrients (not measured).
Plant native wetland vegetation	Wetland Restoration and Nutrient/Sediment Reduction[1]	Restore native wetland forest (measured). Improve terrestrial and aquatic habitats by restoring native hardwood trees. Improve water quality by sequestering nutrients from agricultural byproducts (not measured).
Recording a conservation easement.	Conserve Site in perpetuity[1,2]	Protect the Site with a conservation easement (measured). Improve water quality by permanently protecting the Site, restricting the application of fertilizers and agricultural byproducts on the property, and preventing tillage of the land (not measured). Improve habitat in the near vicinity to existing conservation lands (not measured).

[1] *Addresses goal of the 6-digit HUC 030102 in the RBRP*
[2] *Addresses goal of the 8-digit HUC 03020102 in the RBRP*

4.2 Hydrology

Historic Site hydrology has been modified through land conversion, agricultural activities, and Site grading and ditching to convey surface water off-site and lower groundwater levels.

Hydrology modifications such as those found at the Site typically result in reduced shallow groundwater levels, Site water retention, as well as increased evapotranspiration, leading to faster surface runoff and decreased water storage in surface soil horizons. Both situations result in increased peak flows and base flows in adjacent receiving streams, in this case the agricultural ditch and eventual UT to Maple Swamp connecting the proposed non-riparian forest wetland restoration. Reduced shallow groundwater levels and Site storage also results in increased organic matter oxidation and soil surface subsidence, decreased nutrient cycling, and sequestration. Site hydrology uplift is isolated to the non-riparian forest and associated watershed, which will be protected through the conservation easement in perpetuity. **Hydrological uplift will be documented with shallow groundwater gauges before and after construction to demonstrate restored wetland hydrology specific to the Site and hydric soils present.**

4.3 Biology

Existing terrestrial habitat is open agricultural row crop fields interspersed with opportunistic weedy vegetation, indicating a highly disturbed Site. No data exists on present biological communities and any native vegetation planted will substantially improve the habitat complex servicing the non-riparian forest wetland. Aquatic species habitat will also form in micro-topographies and help improve these species diversity. Although the adjacent forested wetlands surrounding the project are separated by row crop fields, the project is an important component to providing important biological habitat otherwise absent from a large agricultural landscape. An additional Division of Mitigation Services riparian corridor restoration project is proposed down-gradient of the project, however with an unbuffered corridor linking the projects at present. The landowner intends on protecting the entire sub watershed corridor in the future. It is likely measurable uplift and improvements will not occur until after the monitoring period and following close-out of the project. However, increased fauna abundance may be noted during semi-annual Site inspections and annual Site monitoring as the planted vegetation matures and habitat increases. **Vegetation uplift will be measured with performance standards relative to species abundance and density.**

4.4 Physicochemical

The 2018 Tar-Pamlico RBRP identifies nutrient and sediment impairments on waterways within the 6-digit HUC as a current basin stressor. No water quality monitoring is proposed at the confluence of the restored wetland and connecting ditch and UT to Maple Swamp. And, no water quality monitoring exists within this sub watershed to document physicochemical uplift. By ceasing row crop agriculture and stopping agricultural byproduct inputs, physicochemical function uplift is very likely for surface and shallow groundwater baseflow within and leaving the restored wetland. These improvements are isolated to the waters entering and leaving the non-riparian forest wetland system and will occur over an extended period of time exceeding the monitoring period of the project. Utilizing realistic yield model calculations for rotational crops in NC (corn/soy w/ poultry manure), and Site soils and topography, estimated crop demands for nutrients annually were obtained. Based on the model database, approximately 129-170 lbs/ac N and 35-70 lbs/ac P will be removed from the Site through cessation of intensive agriculture

(NCINMC, 2014). **No physiochemical uplift will be measured with any performance standard.**

4.5 Overall Functional Uplift Potential

The Site has potential for functional uplift through the proposed restoration work. Uplift is anticipated from non-riparian forest wetland re-establishment as noted previously. Hydrological, biological, and physicochemical improvements are likely as a result of this project. **Specific measurable uplift will include hydrologic and vegetative performance standards.** NCWAM is one method for tracking functional uplift (hydrology, water quality, habitat). The proposed wetland re-establishment area was not evaluated for baseline conditions due to the lack of hydrology and vegetation. Wetland ditch rehabilitation areas will be filled and all functions temporarily impacted. Many wetland functions are restored slowly following construction and post close-out of the project and NCWAM will be used to indicate functional uplift post construction.

4.6 Site Constraints to Functional Uplift

No Site constraints exist or are anticipated in the future to achieving functional uplift to the wetlands. There are no known easements at or near the Project Site that would prevent project implementation. There are no other known Site constraints that will affect the functional uplift of the project.

5.0 Regulatory Considerations

5.1 Threatened and Endangered Species

The US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) identifies five federally threatened or endangered species under the Endangered Species Act as potentially occurring in Edgecombe County. One species is protected under the Bald and Golden Eagle Protection Act (Table 4). A review of the NC Natural Heritage Program (NCNHP) data dated January 2021, identified no known element occurrences of federally listed species, rare plants and animals, natural communities, and important animal assemblages in the project area or within one mile of the Site. Additional protected areas identified by NCNHP are described in Section 5.5 below. USFWS correspondence is included in Appendix C.

5.2 Cultural Resources

The National Historic Preservation Act declares a national policy of historic preservation to protect, rehabilitate, restore, and reuse districts, sites, buildings, structures, and objects significant in American architecture, history, archaeology, and culture. Section 106 mandates that federal agencies consider the effect of an undertaking on a property that is included in, or is eligible for inclusion in, the National Register of Historic Places. The NC State Historic Preservation Office's (SHPO) online mapping resource was reviewed to determine the presence of known historic resources at or near the Site. According to the database, there are two (2) known cultural resource within one mile of the Site area (Figure 9). No known historic resources are identified within the Site proper. SHPO correspondence is included in Appendix C

Table 4: Federally Listed Species Potentially Occurring in Edgecombe County

Scientific Name	Common Name	Federal Status*	Suitable Habitat
Haliaeetus leucocephalus	Bald Eagle	BGPA	N
Norurus furiosus	Carolina Madtom	PE	N
Necturus lewisi	Neuse River waterdog	PT	N
Fusconaia masoni	Atlantic pigtoe	PT	N
Parvaspina steinstansana	Tar River spinymussel	E	N
Elliptio lanceolata	Yellow lance	T	N

* E - Endangered, T – Threatened, T(S/A) – Threatened due to similarity of appearance, PE – Proposed Endangered, PE – Proposed Threatened, ARS – At Risk Species, BGPA – Bald and Golden Eagle Protection Act

5.3 FEMA Floodplain Compliance and Hydrologic Trespass

The Site is not located within a 100-year floodplain. Hydrologic trespass is not anticipated due to inherent soils, landscape position, and natural drainage patterns for the Site. Filling and plugging the main interior ditch will back water up laterally to the extent of the proposed conservation easement and no hydrologic trespass is anticipated on adjacent parcels due to adjacent and abutting upland soils, and Site landscape position. The down-gradient ditch system currently draining the wetland will remain. There are no other known constraints within the Site.

5.4 Airports

There are no airports within a five-mile radius of the Site (Figure 10). The restoration of a non-riparian wetland is not expected to create issues with waterfowl for any other nearby airports.

5.5 Adjacent and Proximal Planning Elements

The NCNHP identifies 10 natural heritage and/or managed areas within a five-mile radius of the Site (Figure 10). These areas are generally located to the east and south of the Site including the 1,290-acre NC Wildlife Resource Commission Lower Fishing Creek Game Lands.

5.6 401/404/DEMLR and Other Environmental Considerations

Potential jurisdictional resources occur within the project area as identified by field staff and a North Carolina Licensed Soil Scientist on June 18 and October 9, 2020. Potential jurisdictional resources are isolated to the main ditch connecting the project to another ditch and potential jurisdictional resources outside of the proposed conservation easement. Wetland determination forms are included in Appendix B. During construction, temporary fencing will be installed to prevent incidental placement of material moved into ditches leading to jurisdictional features off property and the project Site during filling and plugging of drainage ditches. Temporary fencing will be denoted in the Final Mitigation Plan Site Plan sheets. Sediment and erosion control measures will be used to prevent sediment from entering surface waters and

appropriate local and State Land Quality permits will be obtained prior to construction. No other environmental considerations are relevant to the project implementation or long-term protection.

6.0 Goals and Objectives

The purpose of the MSWMS is to establishment of a compensatory Mitigation Site for the Division of Mitigation Services within the Tar-Pamlico Basin (HUC 03020102) to generate in-kind mitigation credits that may be used to provide compensatory mitigation for unavoidable impacts to wetlands associated with Department of the Army permit authorizations pursuant to Section 404 of the Clean Water Act. The MSWMS will provide mitigation for unavoidable losses of jurisdictional wetlands through effective uplift measures. Restoration activities will focus on improving water quality, restoring aquatic and terrestrial habitats, and providing nature with a "head-start" to overcome the previous and on-going impacts from land use conversion and site disturbance. Site implementation will help address the overarching RBRP CU goals for wetland restoration, contribute to reduced nutrient and sediment inputs and improved water quality, and protect and preserve conservation lands in perpetuity. The goals and objectives of the Site are defined in Table 5.

Table 5: Goals and Objectives

Goal	Objective	Expected Outcomes	Function Supported
Reduce Nutrients and Sediment in Agricultural Areas	Remove fertilizer and agricultural byproducts applied to wetland. Establish native woody wetland vegetation, securing soil in place, and reducing wind and runoff erosion.	Improve Water Quality through Nutrient & Sediment Reduction [1]	Biological, Physicochemical
Restore Wetland Hydrology	Fill drainage ditches and remove drain tiles to restore Site hydrology.	Increase hydrology and shallow water table during the early growing season (9%), reduce nutrients and sediment in agricultural areas, and increase wetland habitats.[1]	Hydrological, Physicochemical, Biological
Improve Habitat	Establish native woody wetland vegetation. Promote habitat in near vicinity to existing conserved lands.	Increase native wetland tree species diversity and habitats. Increase habitat from non-riparian forest wetland to Maple Swamp non-riparian corridor and near vicinity protected lands associated with 1,290 NCWRC Lower Fishing Creek Game Lands.[1,2]	Biological

Restore Wetland Vegetation	Establish native woody wetland vegetation in proposed wetland re-establishment areas.	Increase native wetland tree species quantity and diversity. Increase nutrient cycling and sequestering sediment.[1]	Physiochemical, Biological
Protect Site	Record permanent Conservation Easement to protect the Site in perpetuity.	Protect Site from future impacts and encroachment and direct impacts to wetlands. Support all wetland functions in perpetuity.[1]	Hydrological, Physicochemical, Biological

[1] Addresses goal of the 6-digit HUC 030102 in the RBRP
[2] Addresses goal of the 8-digit HUC 03020102 in the RBRP

7.0 Design and Implementation Plan

The proposed wetland mitigation work will be accomplished to achieve functional uplift relative to existing Site conditions. Proposed wetland work is shown in Figure 12. Non-riparian wetlands will be re-established by filling and plugging agricultural ditches to provide hydrologic uplift and establishing native non-riparian wetland community vegetation to provide vegetation uplift. Disturbed and degraded hydric soils present will be restored by promoting hydric soil formation with increased hydrology, site roughness development, and field crown and residual spoil area removal and grading, providing additional wetland functional uplift. Agricultural activities will cease within the proposed wetland restoration area. The Site will be protected in perpetuity by a conservation easement and transferred to the State Stewardship Program.

7.1 Parcel Preparation

The land proposed for wetland restoration is currently in row crop agricultural management. Only the planting rows will be ripped to improve soil compaction prior to planting in the wetland areas or during mechanical planting. Soil scarification for temporary and permanent seeding may be required depending on the site condition at the time of planting and equipment used for seed application. The Site will be graded according to the proposed grading plan and sediment and erosion control measures will be used will be used according to State and local permits to prevent sediment from entering surface waters during a rain event. Pre-emergent herbicide will be used in the tree rows to control potential herbaceous weed competition. All herbicides will be applied by a licensed herbicide applicator. An aquatic safe herbicide will be used in appropriate areas for control of herbaceous competition and non-native invasive plant species. In the event that drain tiles are found during construction, they will be noted and removed.

7.2 Wetland Restoration Approach

The Site proposes to restore at most 9.084 acres of non-riparian wetlands for a total of 9.084 WMUs (Figure 12). The Site will restore wetland hydrology and establish native hardwood trees throughout the restored areas. The credit calculation is stated below (Table 6).

Table 6: Proposed Mitigation Credits

Site Component	Mitigation Approach	Wetland Acreage	Ratio	Total Credit Amount
Drained Wetland Area	Re-establishment	8.635	1:1	8.635 WMUs
Drained Wetland Area (Ditch A)	Rehabilitation	0.449	1:1	0.449 WMUs

WMU = Wetland Mitigation Unit

The dominant Non-riverine Wet Hardwood Forest and minor depressional areas typical of a Non-riverine Swamp Forest (Schafale, M.P., 2012) most similar to a Hardwood Flat and Non-riverine Swamp Forest (NCWAM) wetland respectively, will be restored through re-establishment in areas where the hydrology is negatively impacted by drainage ditches, drain tiles, past site and soil disturbances, and areas devoid of native tree and shrub communities. The central ditch tile draining historic depressional non-riparian wetlands will be plugged (100 ft min.) and filled to rehabilitate this drainage feature and increase the time water remains onsite (Figure 8). Plug material will be native soil found on-site with appropriate clay content for keying into the existing restrictive soil horizon. The outlet of the wetland will be stabilized using biodegradable matting, herbaceous seed mix, and planted with woody vegetation.

Minor grading, less than six inches will occur across the Site to remove any field crowns, compacted soils, and highly disturbed areas from past agricultural activities that are shown from the topographic survey. Additional deeper (6-12 in) grading is required to fill the main perimeter ditch by removing the existing farm path and tile drains, promote micro site topography to increase depressional storage through vernal pool construction (>6 and <12in), and to ensure success of the wetland restoration. Vernal pools have been located and sized (0.1-0.2 ac) to maximize use of on-site soil material for filling ditches as well as serving as protection from concentrated runoff into the wetland from adjacent fields. Detailed construction plans are in Appendix G.

In areas with heavy compaction, the underlying soils will be ripped to facilitate increased infiltration, particularly the roadbed area. Additional ripping will occur during tree row establishment to further break up historic plow pans present.

7.3 Hydric Soils Investigation

Initial soils investigation work utilized online resources from the Natural Resources and Conservation Service (NRCS) web soil mapping. Soils within the wetland restoration areas are mapped as Roanoke silt loam series soil (Figure 7). These soils are identified as hydric soils in North Carolina and listed in Edgecombe County as soils meeting hydric Criteria 2. Online mapping was confirmed with a NC licensed soil scientist (NCLSS). A series of soil borings was accomplished across the Site and soil descriptions were completed on representative samples. Hydric soil indicators were used in accordance with the manual *Field Indicators of Hydric Soils in the United States, 2018*, USDA Natural Resources Conservation Service. Hydric indicators utilized on this site for soils investigated met the F3 – Depleted Matrix hydric soils indicator.

Soils mapped within the proposed restoration area have layers at least 10 inches down and at least 6 inches thick with a matrix of 60% or more chroma of 2 or less. Soils mapped within the proposed restoration area are hydric and are further described in the representative soil borings (Appendix D).

7.4 Hydrologic Monitoring and Baseline Evaluation

Three shallow groundwater gauges were installed to evaluate the existing baseline hydrologic conditions of the Site (Figure 11). These gauges were placed in areas so they could remain throughout Site construction and monitoring phases. Groundwater Gauge 1 was placed on the edge of the wetland to the north, groundwater Gauge 2 was placed in the middle near the interior ditch, lowest elevation area of the project, and groundwater Gauge 3 was placed on the edge of the project credit area proposed to the southwest. Groundwater gauges collected data at the Site between February 24, 2021 and May 05, 2021. The defined growing season based on the Edgecombe County, NC WETS table for 50% probability of soil temperatures greater than 28 degrees Fahrenheit is March 20th to November 11th representing a 236-day growing season.

The Roanoke series soil has a hydroperiod of 9-12% (Typic Endoaquults), as found in Table 1 in the *Wilmington District Stream and Wetland Compensatory Mitigation Update* (2016). Based on the defined growing season outlined above, wetland saturation thresholds for the project should range between 21 and 28 consecutive days of inundation within the defined growing season at the Site to provide minimum hydrology for adequate wetland processes to occur. An analysis of the groundwater gauges representing baseline conditions during the early growing season indicate the Site is not meeting the hydrologic regime required for wetland processes and functions to occur utilizing on-site rainfall data. Groundwater gauge data is presented in Table 7 below, location of gauges shown in Figure 11, and plotted graphs presented in Appendix A.

Table 7: Existing Shallow Groundwater Monitoring Gauge Data

Gauge	Consecutive Days Meeting Hydrology Standards	Consecutive % Growing Season	Monitoring Dates	Wetland Approach
1	0	0%	2/24/21 to 5/05/21	Re-establishment
2	6	2.5%	2/24/21 to 5/05/21	Re-establishment
3	18	7.6%	2/24/21 to 5/05/21	Re-establishment[1]

1 Groundwater gauge 3 is located near the boundary of the wetland re-establishment area.

The proposed wetland re-establishment boundary is based on field indicators and hydrology data that supports that proposed areas will meet minimum saturation thresholds. Locations of proposed groundwater gauges for post construction monitoring were chosen so that data can

be compared between existing and proposed groundwater gauges and confirm general hydrologic uplift at the Site. The existing gauge data, on-site drainage, and NCLSS investigation, provides support that if drainage effects on the Site are removed, proposed wetland areas will meet minimum required hydrology standards.

The on-site soils exhibit indicators of hydric soils and the proposed increase in hydroperiod will provide similar conditions to those associated with hydric soil formation. A water budget was accomplished to demonstrate the volume of water currently exiting the Site and the volume that is expected to be retained post-construction (Appendix A). Construction will include filling the ditch and restoring the restrictive soil layer within the ditch, removing surface drain tiles along the farm path, and plugging the ditch. The water budget utilizes State Climate Office weather station data for hydrological inputs as well as specific Site characteristics. The water budget demonstrates the potential of the Site to meet hydrology performance standards during a normal rainfall year with approximately 1.2 feet of surplus water across the 9.084 acre Site on an annual basis.

7.5 Reference Wetland

A reference wetland located northwest of the project within the same parcel in an area containing similar vegetation community species, soil series, and landscape position as proposed for the restoration area (36.013833, -77.554528). Vegetation consists of several oak species (willow/water oak and swamp chestnut oak), sweetgum, American elm, ironwood, sweetbay, red maple, green ash, and bald cypress and black willow in the depressions. This reference vegetation composition along with vegetation community data from the literature (Schafale, M.P., 2012) will serve as a model for the restoration plant community (Table 8). Shallow groundwater gauge data will be compared to on-site baseline groundwater gauges installed February 2021 and future monitoring gauges. The reference wetland gauge will be compared to Site hydrology conditions and relative to the proposed hydrologic regime and performance standards.

7.6 Vegetation Community Planting Plan

The area will be planted with native hardwood trees to promote the growth of vegetation typically found in two target vegetation communities: a Non-riverine Wet Hardwood Forest (Zone 1) and minor depressional areas typical of a Non-riverine Swamp Forest (Zone 2) (Table 8). Actual species composition will be based on availability, cost, quantities, and site conditions at the time of construction. Planting will occur during the dormant season between November 15 and March 15 unless weather patterns or unforeseen circumstances require a later planting date.

Table 8: Conceptual Planting Plan

Scientific Name	Common Name	Vegetative Strata	Zone	Wetland Indicator Status	%
Quercus michauxii	Swamp chestnut oak	Overstory	1	FACW	15

Gordonia lasianthus	Loblolly bay	Understory	1	FACW	<5
Quercus shumardii	Shumard oak	Overstory	1	FAC	15
Carpinus caroliniana	Ironwood	Understory	1	FAC	<5
Quercus phellos	Willow oak	Overstory	1	FACW	10
Quercus laurifolia	Laurel oak	Overstory	1	FACW	10
Quercus nigra	Water oak	Overstory	1	FAC	15
Quercus lyrata	Overcup oak	Overstory	1	OBL	10
Nyssa biflora	Swamp blackgum	Overstory	1	OBL	<5
Magnolia virginiana	Sweetbay magnolia	Understory	1	FACW	<5
Ulmus americana	American elm	Overstory	1	FAC	<5
Persea palustris	Swamp bay	Understory	1	FACW	<5
Platanus occidentalis	Sycamore	Overstory	1	FACW	<5
Fraxinus pennsylvanica	Green ash	Overstory	1	FACW	<5
Taxodium distichum	Bald Cypress	Overstory	1/2	OBL	15
Nyssa aquatica	Water tupelo	Overstory	2	FACW	<5
Cephalanthus occidentalis	Buttonbush	Understory	2	OBL	<5
Populus heterophylla	Swamp cottonwood	Overstory	2	OBL	<5

7.7 Risk Assessment

Overall, this project has some risk due to landscape position, inherent soils, and location of the non-riparian wetland within the watershed to Maple Swamp. Adjacent parcels consist of agriculture row crops which could contribute runoff and sediments into the protected easement as well as incidental impacts to vegetation from machinery. To address these risks, buffers around the wetland credit area are proposed at a minimum of 50 feet and will be maintained within the protected easement to ensure wetland restoration success and minimize impacts from ongoing agricultural row crop operations. Some adjacent seed source trees may be cut and/or girdled to reduce the effects of competition on the site. Given the location of the project, few issues should arise affecting potential project success and meeting ecological performance standards. However, the risks and uncertainties associated with the project and actions for addressing these concerns are presented below. Action steps to address issues may

be included in an Adaptive Management Remedial Action Plan, if necessary, discussed in Section 11.0.

1. Easement Encroachment: Potential encroachment to the conservation easement on this Site includes trespass, incidental mowing, farm equipment trafficking, and timber harvesting. The isolated location of the easement relative to the remainder of the farm activities minimizes this risk.
   - Action: Easement boundaries will be clearly marked to prevent encroachment. The landowner has been made aware of the importance of encroachment prevention and accountability. Any encroachments that do occur will be remedied by Eco Terra to address any damage and provide any other corrections required by the IRT.
2. Invasive/Nuisance Species: Herbaceous and woody competition control from surrounding loblolly pine and sweetgum trees is the biggest concern for the Site.
   - Action: Eco Terra will manage and maintain herbaceous competition during the first two years with both mechanical mowing and chemical herbicides. All herbicide application will be performed by a certified applicator in accordance with NC Department of Agriculture rules and regulations. Some loblolly pina and sweetgum trees will be removed and/or girdled. Should woody competition emerge as an issue affecting the plant community proposed, mechanical and chemical measures will be implemented during the remaining monitoring period where problem areas are identified.
3. Drought/Floods: Extreme climatic conditions may occur during the monitoring period including long-term inundation due to landscape position and soil characteristics.
   - Action: Eco Terra will address issues arising from extreme weather patterns due to climatic conditions. Adaptive management remedial actions may include supplemental planting and/or replanting and stabilizing vernal pool inlets or ditch plug outlet if necessary. Other remedial actions may include removing any downgradient obstructions such as beaver dams and soil deposition at the south end of the Project easement,

8.0 Performance Standards

The success of the planted vegetation, hydrology, and integrity of the easement boundary will be monitored on a yearly basis for a minimum of seven years to determine overall Site success and the expected ecological uplift described in the Site Development Section. The success criteria for the Maple Swamp Wetland Mitigation Site will follow current accepted and approved success criteria presented in the 2016 USACE IRT guidance. Specific success criteria components are presented below.

8.1 Vegetation

Specific and measurable success criteria for plant density within the proposed wetland restoration areas will follow updated 2016 IRT Guidance. Vegetation monitoring plots will be a minimum 0.02 acres (100 m2) in size and will cover a minimum of two percent of the planted area. Vegetation monitoring will occur in Years 1, 2, 3, 5, and 7. The interim measures of vegetative success for the Site will be the survival of at least 320 three-year old trees per acre at the end of monitoring year three (MY3), and 260 trees per acre at the end of monitoring year

five (MY5). The final vegetative success criteria will be the survival of 210 trees per acre at the end of the seventh year (MY7) of Site monitoring. Planted vegetation within each plot must average seven feet in height at year five (MY5) and 10 feet in height at year seven (MY7).

Should vegetation monitoring reveal performance standards be not met for species vigor and density, Site conditions will be analyzed and documented in annual monitoring reports. If necessary, remedial actions will occur according to the adaptive management plan discussed in Section 11.0. Any replanting required will be conducted between November 15 and March 20 unless weather patterns or unforeseen circumstances require a later planting date. Invasive and noxious species, and aggressive pioneer tree species such as loblolly pine and sweetgum, will be monitored and controlled so that none become dominant or alter the desired community structure of the Site. If necessary, Eco Terra will develop a species-specific control plan according to the adaptive management discussed in Section 11.0.

Both fixed (permanent) and variable (random) vegetation plots will be established to monitor planted vegetation community success representative of the wetland reestablishment area. Fixed plots will be located randomly within proposed vegetation communities post construction and documented in the as-built baseline report (MY0). All fixed plots will be a minimum of 0.0247 acre in size and square or rectangular in shape. All fixed plots will be located with GPS, marked, and recorded for annual evaluation. The following data will be recorded for all trees in the fixed plots: species, height and vigor, damage (if present), planting date (or date of observation for volunteers), and grid location. Trees documented within fixed plots will include planted as well as native, exotic, and invasive volunteer species. Variable plots will comprise of no more than 50% of the total required plots and be the same size as the fixed plots. Variable plots will also be located with GPS along with plot orientation and marked for evaluation during the monitoring year. Variable plot data collected will include species and height.

8.2 Hydrology

Hydrology monitoring will occur for seven years using continuous groundwater gauges to ensure the site meets the success criteria hydroperiod. Groundwater gauges will be installed at a density sufficient to represent the restoration area soils, vegetation communities, and topographic variations (Figure 11). Gauges will be placed to represent the middle and edge of the restoration area and at a density suggested by the IRT. The Site soils within the credit area are mapped as Roanoke silt loam. Field verification by a Licensed Soil Scientist determined the Site soil resources dedicated for wetland restoration is entirely Roanoke series soil. The Roanoke series soil has a hydroperiod of 9-12% (Typic Endoaquults) and is found in Table 1 of the *Wilmington District Stream and Wetland Compensatory Mitigation Update* (2016). This hydroperiod correlates to a 236-day growing season from March 20th to November 11th for the Site based on the Edgecombe County, NC WETS table. The growing season is defined as the time period representing a 50% probability soil temperatures greater than 28 degrees Fahrenheit occur.

Due to extensive site modification and historical land use, a shorter hydroperiod may occur for Roanoke soil, during the first two years for sites with extensive manipulation as discussed in the *Wilmington District Stream and Wetland Compensatory Mitigation Update* (2016). A 9% wetland hydrology criterion equates to 21 consecutive days of inundation during the first two monitoring years. Following the second growing season, wetland hydrology criterion of 12% of the 236-day growing season, representing 28 consecutive days of inundation is proposed. Should any monitoring gauges reveal performance standards are not met, all data will be analyzed and relative to reference conditions to determine if normal conditions occurred during the monitoring year. All gauges used for monitoring will include a detailed soil description before and after construction. Profile descriptions will include soil horizon depth, color, texture, and hydric soil characteristics.

8.3 Visual Assessments

Visual monitoring of all mitigation areas will be conducted a minimum of twice per monitoring year by qualified individuals. The visual assessments will include vegetation density, vigor, invasive species, and easement encroachments. Visual assessments of ditch plug stability and vernal pool integrity will occur to ensure storm flows do not impact the project. Digital images will be recorded at fixed representative locations during each monitoring event; any noted problem areas or areas of concern will also be photographed and mapped. Results of visual monitoring will be presented in a plan view exhibit with a brief description of problem areas and digital images. Photographs will be used to subjectively evaluate success of non-riparian vegetation and effectiveness of drain tile plugs. A series of photos over time should indicate successional maturation of wetland vegetation.

9.0 Monitoring Plan

A Site monitoring plan is necessary to document project success. To ensure the Site is constructed as planned an as-built survey will be completed following construction and completion of all physical and biological improvements including wetland restoration area establishment, ditch plugs, hydrology gauges, Site elevations, planted vegetation, permanent vegetation plots, and other relevant Site characteristics. The as-built report will be submitted to the USACE within 90 days of completion of the physical and biological improvements and is considered the baseline monitoring year (MY0).

To ensure performance standards are met and project goals and objectives are achieved, annual monitoring will be completed following the end of the growing season for each reporting year. Monitoring reports documenting performance standards will be prepared annually and submitted to the NCDMS no later than December 1st of each monitoring year data is collected. Monitoring reports will document Site conditions, vegetation success, and other project trends. Complete monitoring reports will be submitted in monitoring years 1, 2, 3, 5, and 7 including vegetation, visual and hydrology assessments, and current Site conditions. For monitoring years 4 and 6 only visual and hydrology assessments will be reported along with current Site conditions. The monitoring plan will be implemented for a minimum until monitoring year

seven (MY7), or until success criterion are met. Table 9 below describes the project goals and objectives and how performance standards will be monitored and achieved.

Table 9: Monitoring Plan

Goal	Objective	Performance Standards	Monitoring Metric
Restore Wetland Hydrology.	Remove the drainage effects of agricultural ditching and maintenance. Restore wetlands through re-establishment of hydrology.	Shallow groundwater within 12 inches of the soil surface for a minimum of 9% (21 consecutive growing season days) (MY1-MY2) and 12% (28 consecutive growing season days (MY3-MY7)	Shallow groundwater gauges (N=9).
Restore Native Wetland Vegetation.	Establish native woody wetland vegetation species.	Survival of 210 planted stems/ac (MY7). Interim survival of at least 320 planted stems/ac (MY3) and at least 260 stems/ac (MY5). Planted stems must average 7 ft in height (MY5) and 10 feet in height (MY7).	Fixed/Variable 100 m^2 vegetation plots (N=8).
Protect the Site in Perpetuity.	Establish a conservation easement on the Site.	Record conservation easement.	Visual assessment for easement encroachment and Site integrity

9.1 Monitoring Components

Project monitoring components are shown in Table 10. Approximate locations of proposed vegetation plots and groundwater gauges are illustrated in Figure 11.

Table 10: Monitoring Components

Parameter	Monitoring Feature	Quantity	Frequency	Notes
Wetland Hydrology	Shallow Groundwater Gauge	9	Tri-Annual	1
Wetland Vegetation	Fixed/Variable Plots (CVS Level II)	6 (fixed) 2 (variable)	Annual (Years 1, 2, 3, 5 and 7)	2
Visual Assessment	General Site Observations and Photos,	Variable	Semi-Annual	3

	Vernal Pool and Ditch Plug Integrity			
Exotic and Nuisance Vegetation Assessment	General Site Observations and Photos	Variable	Semi-Annual	4
Project Easement Boundary Assessment	General Site Observations and Photos	Variable	Semi-Annual	5
Plot Photos and Photo Points	Fixed Photographs	6 Plots/5 Photo Points	Annual	6

1. Wetland gauges will be placed within the restoration area in addition to baseline gauges established to date and an appropriate reference wetland
2. The numbers shown represent s either fixed and/or variable plots proposed representing 2% of the planted acreage. Fixed plots will be monitored according to CVS Level II methodology. If necessary, annual variable plots will represent less than 50% of total plots required and be monitored for planted stem species survival and vigor (height). All vegetation plots will comprise of either circular or 100m^2 square/rectangular sized plots (0.0247 ac).
3. The project will be visually inspected twice a year at a minimum. All Site data will be included in the Annual Monitoring Report. If necessary, the Adaptive Management Plan will be implemented to address issues jeopardizing project success.
4. Exotic and nuisance vegetation will be noted and documented as necessary in Annual Reports.
5. Project encroachments will be noted and documented as necessary in Annual Reports.
6. Project photos will be documented according to the number proposed and provided in Annual Reports.

10.0 Site Establishment and Operation

Eco Terra Partners, LLC will provide financial assurances in the form of a performance bond bound to NCDMS. The performance bond will be in effect and submitted with the Task 3 deliverable and remain through Task 6 (submittal of baseline monitoring report) after which the bond may be retired (Appendix F). Table 11 outlines project milestones and projected time for completion or delivery.

Table 11: Project Timeline

Task	Project Milestone	Timeline* (Months from Contract Award)
1	Regulatory Site Visit & Submit Environmental Screening Report	May 2021 (4 mos.) (completed)
2	Submit Recorded Conservation Easement	Nov. 2021 (10 mos.)
3	Final Mitigation Plan, Financial Assurance, Permitting	Dec. 2021-Jan. 2022 (11-12 mos.)
4	Vegetative Planting and Earthwork and Installation of Monitoring Devices	Jan.-Mar. 2022 (12-14 mos.)
5	Baseline Monitoring Report Approved by NCDMS	Apr.-May 2022 (15-16 mos.)
6	Submit Monitoring Report #1 to NCDMS	Apr.-May 2022 (15-16 mos.)
7	Submit Monitoring Report #2 to NCDMS	Nov. 2023 (34 mos.)

8	Submit Monitoring Report #3 to NCDMS	Nov. 2024 (46 mos.)
9	Submit Monitoring Report #4 to NCDMS	Nov. 2025 (58 mos.)
10	Submit Monitoring Report #5 to NCDMS	Nov. 2026 (70 mos.)
11	Submit Monitoring Report #6 to NCDMS	Nov. 2027 (82 mos.)
12	Submit Monitoring Report #7 to NCDMS	Nov. 2028 (94 mos.)
13	Complete Project Close-out Process	May 2029 (100 mos.)

10.1 Current Ownership

Eco Terra has entered into an agreement with RKW Properties, LLC for Purchase and Sale of a Conservation Easement of the proposed Site within the larger contiguous farm property. The total proposed easement coverage is approximately 15.34 acres. Property information is provided in Table 12. The Memo of the purchase agreement with RKW Properties, LLC is provided in Appendix E. This agreement allows Eco Terra to proceed with recording a conservation easement following review of the State Property Office, to be held by the State of North Carolina.

10.2 Long-term Stewardship

The Site will be marked with signage by the Provider prior to as-builts. The Provider will inspect the boundary marking on a yearly basis and repair as needed during the monitoring period. The Site will be transferred to the NCDEQ Stewardship Program. The Stewardship Program shall serve as the conservation easement holder and long-term steward for the property and conduct inspections of the Site to determine whether the conservation easement is being upheld. The NCDEQ Stewardship Program is developing an endowment system within the non-reverting, interest-bearing Conservation Lands Conservation Fund Account. The use of funds from the Endowment Account will be governed by North Carolina General Statue GS 113A-232(d)(3). Interest gained by the endowment fund may be used for stewardship, monitoring, stewardship administration, and land transaction costs, if applicable. No fencing is planned for this project. The draft Site Protection Instrument can be found in Appendix H.

The easement boundary will be protected in perpetuity. It has been agreed upon by the landowners and provides adequate protection for all resources proposed as part of the Site. The easement has been strategically located to accompany adjacent natural habitats and enhance wildlife corridors throughout the Site and surrounding areas. Marking and protecting of the easement boundary will utilize various methods depending upon the existing land use. Easement corners will utilize rebar with aluminum survey caps. Conservation easement signs will be posted at all corners, gates, access points, and at 200-foot intervals.

Table 12: Current Ownership and Long-Term Protection

Parcel Identification Number	County	Owner	CE (ac)	Memorandum of Option Conservation Easement Deed Book (DB) and Page Number (PG)	Identified Conservation Easement Holder
4822-75-37-68	Edgecombe	RKW Properties, LLC	15.34	T.B.D.	State of North Carolina

10.3 Assurance of Water Rights

Sufficient water rights exist to support the long-term sustainability of the site, as there are no severed rights on the properties.

11.0 Adaptive Management

The Adaptive Management Remedial Action Plan (Plan) provides detailed steps to address how potential problems identified during project development are resolved to ensure project success and achievement of ecological performance standards. In the event that the Site, or a specific component of the Site fails to achieve the defined performance standards, Eco Terra will develop necessary adaptive management plans and/or implement appropriate remedial actions for the site in coordination with DMS and the reviewing agencies. Remedial action required will be designed to achieve the success criteria specified previously, and will include identification of the causes of failure, remedial design approach, work schedule, and monitoring criteria that will consider physical and climatic conditions.

Most minor issues are discovered and resolved during annual monitoring post-construction and semi-annual site inspections by Eco Terra staff and/or contractors. Minor issues discovered requiring small scale corrective actions include supplemental planting, controlling herbaceous and woody vegetation, controlling herbivory tree damage, and managing invasive species in discrete impact areas.

Anticipated project maintenance includes herbaceous vegetation control and supplemental planting due to tree mortality during the first two years of site establishment. Maintaining monitoring infrastructure including gauges and plot boundaries is anticipated as well. The project site boundary conservation easement will also be marked with posts and signage and monitored for integrity post-construction until close-out. Identifying potential supplemental planting areas early in the year is important to maintaining vegetation communities and securing plant materials for the following planting season. Identifying problems with monitoring infrastructure early on will help alleviate gaps in monitoring data and ensuring performance standards are met. Semi-annual site inspections will help address any minor issues

discovered as well as prepare designated staff responsible for overall project maintenance and monitoring.

Major issues discovered requiring large scale corrective actions include, but are not limited to, re-grading of the mitigation site, replanting more than 20% of the site to improve composition or species diversity, or the addition of stabilization structures. The Adaptive Management Remedial Action Plan will follow Section 332.8(o)(9) of the 2008 Mitigation Rule.

Should any issues arise during site monitoring and physical inspection that may affect potential project success and Site performance standards, Eco Terra will notify the DMS/IRT of the need to develop an Adaptive Management Remedial Action Plan. Once the Plan is prepared for DMS/IRT members, Eco Terra will:

- Notify the USACE as required by the Nationwide 27 permit general conditions as necessary.
- Notify NCDWR of 401 conditions as necessary.
- Revise performance standards, maintenance requirements, and monitoring requirements as necessary and/or required by the USACE.
- Obtain other permits as necessary.
- Submit the Adaptive Management Remedial Action Plan for IRT review and approval, including maps.
- Implement the Adaptive Management Remedial Action Plan; and
- Provide the DMS/IRT a Record Drawing/As-Built of remedial actions.

12.0 Determination of Credits

The credit area depicted in Figure 12 was determined by on-site investigations of the ditch/drain tile network, topography, adjacent soils, location of topographic crenulation and subject stream, and existing and proposed hydrologic conditions. Buffered areas surrounding the proposed wetland restoration area will be used to protect the wetland area from encroachment and adjacent land uses. Wetland re-establishment is proposed at a ratio of 1:1. Project assets are illustrated in Table 13. The credit release schedule is found below in Table 14.

Table 13: Project Assets

Asset	Original Mitigation Plan (ac)	Original Mitigation Category	Original Restoration Level	Original Mitigation Ratio (X:1)	Credits
Wetland 1	8.635	NR	REE	1.00000	8.635
Wetland 2 (Ditch A)	0.449	NR	RH	1.00000	0.449
				Total:	9.084

				Non-Rip	
Project Credits				Wetland	
Re-establishment				9.084	
Totals				9.084	
Total Wetland Credits				9.084	

NR – non-riparian
REE – wetland re-establishment
RH – wetland rehabilitation

Table 14: Proposed Wetland Credit Release Schedule

Release Milestone	Activity	Interim Credit Release/ Total Release
1	Site Establishment	0%/ 0%
2	Baseline Monitoring Report and As-built Survey	30%/ 30%
3	First Year Monitoring Report demonstrating criteria being met	10%/ 40%
4	Second Year Monitoring Reporting demonstrating criteria being met	10%/ 50%
5	Third Year Monitoring Report demonstrating criteria being met	15%/ 65%
6*	Fourth Year Monitoring Report demonstrating criteria being met	5%/ 70%*
7	Fifth Year Monitoring Report demonstrating criteria being met	15%/ 85%
8*	Sixth Year Monitoring Report demonstrating criteria being met	5%/ 90%*
9	Seventh Year Monitoring Report demonstrating criteria being met	10%/ 100%

*Vegetation plot data is not required with monitoring reports submitted during these monitoring years unless otherwise stated by the Mitigation Plan or directed by the IRT.

13.0 References

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Figures

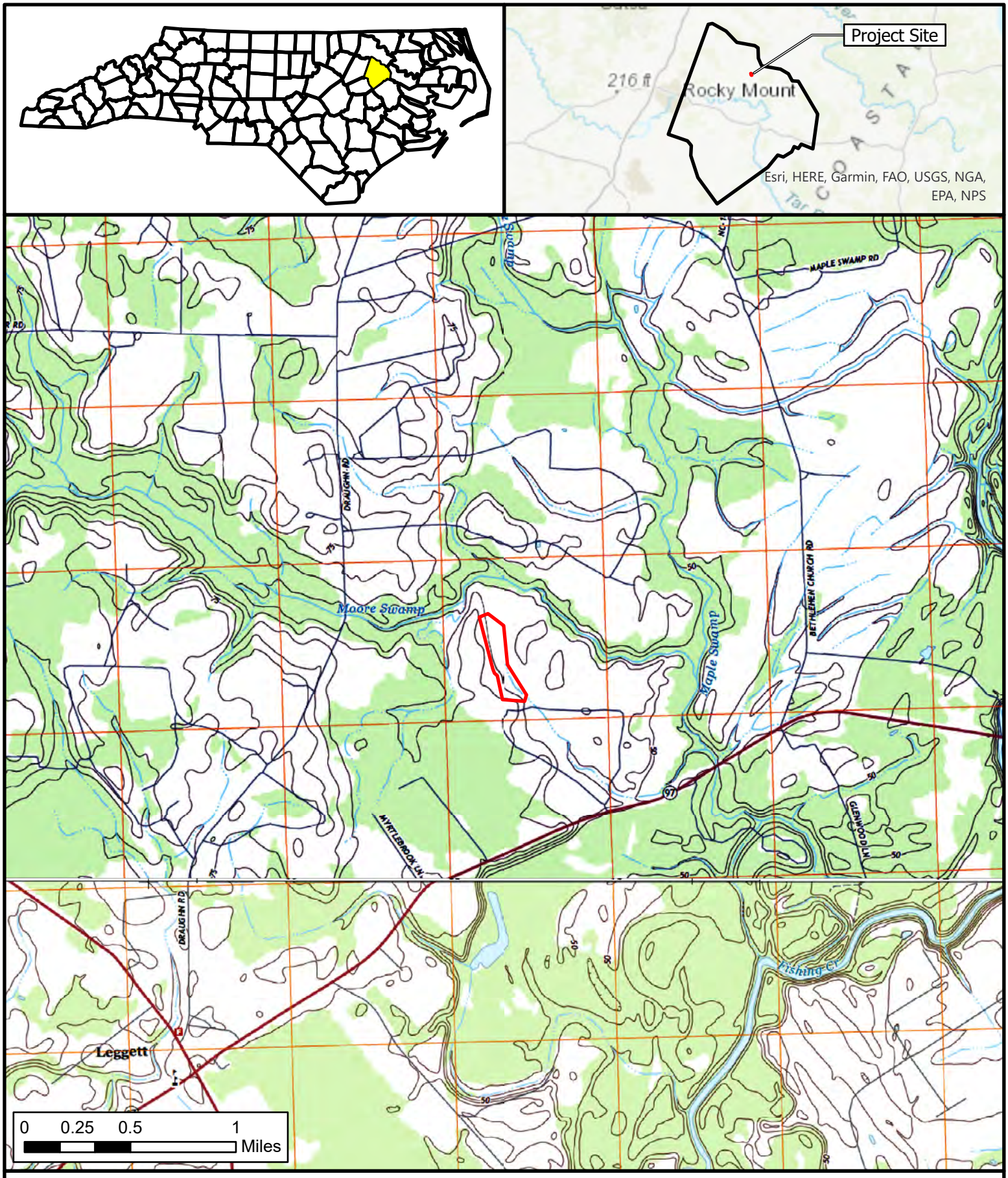

Figure 1: Vicinity Map
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

2013 USGS Topographic Quadrangles: Draughn & Tarboro

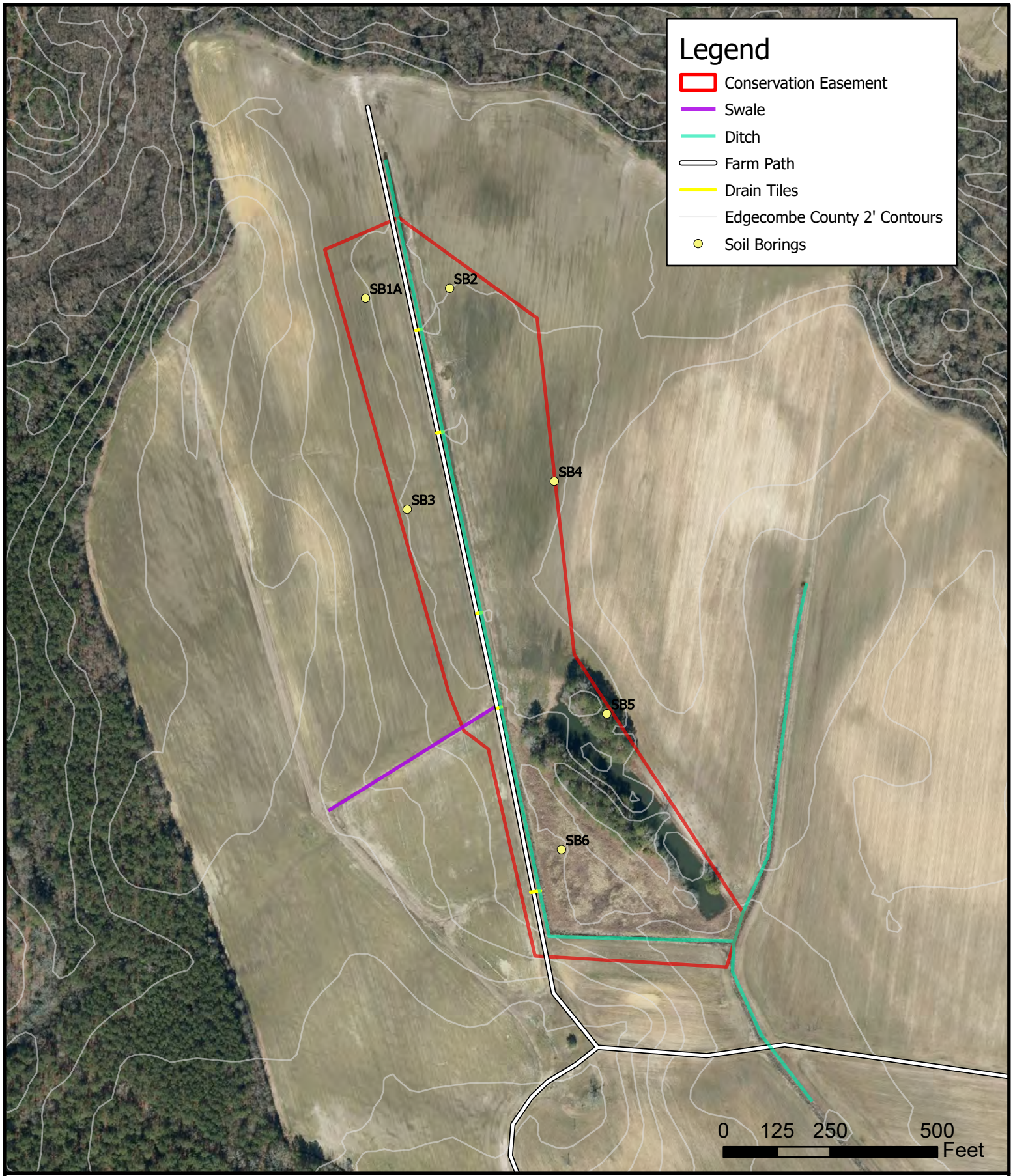

Figure 2: Existing Conditions
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

NC Onemap 2021 Aerial Imagery

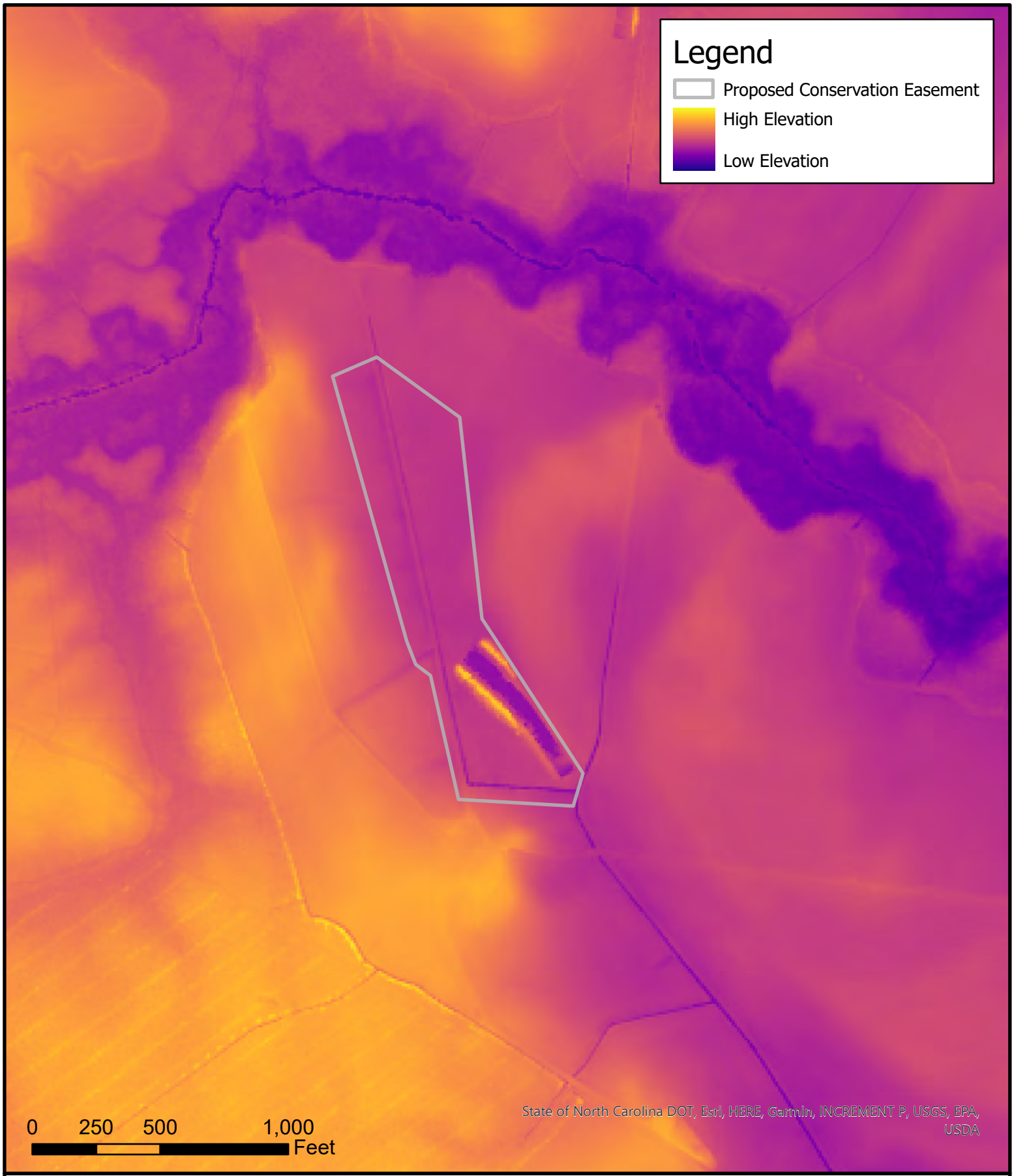

Figure 3: LiDAR
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

QL2 LiDAR

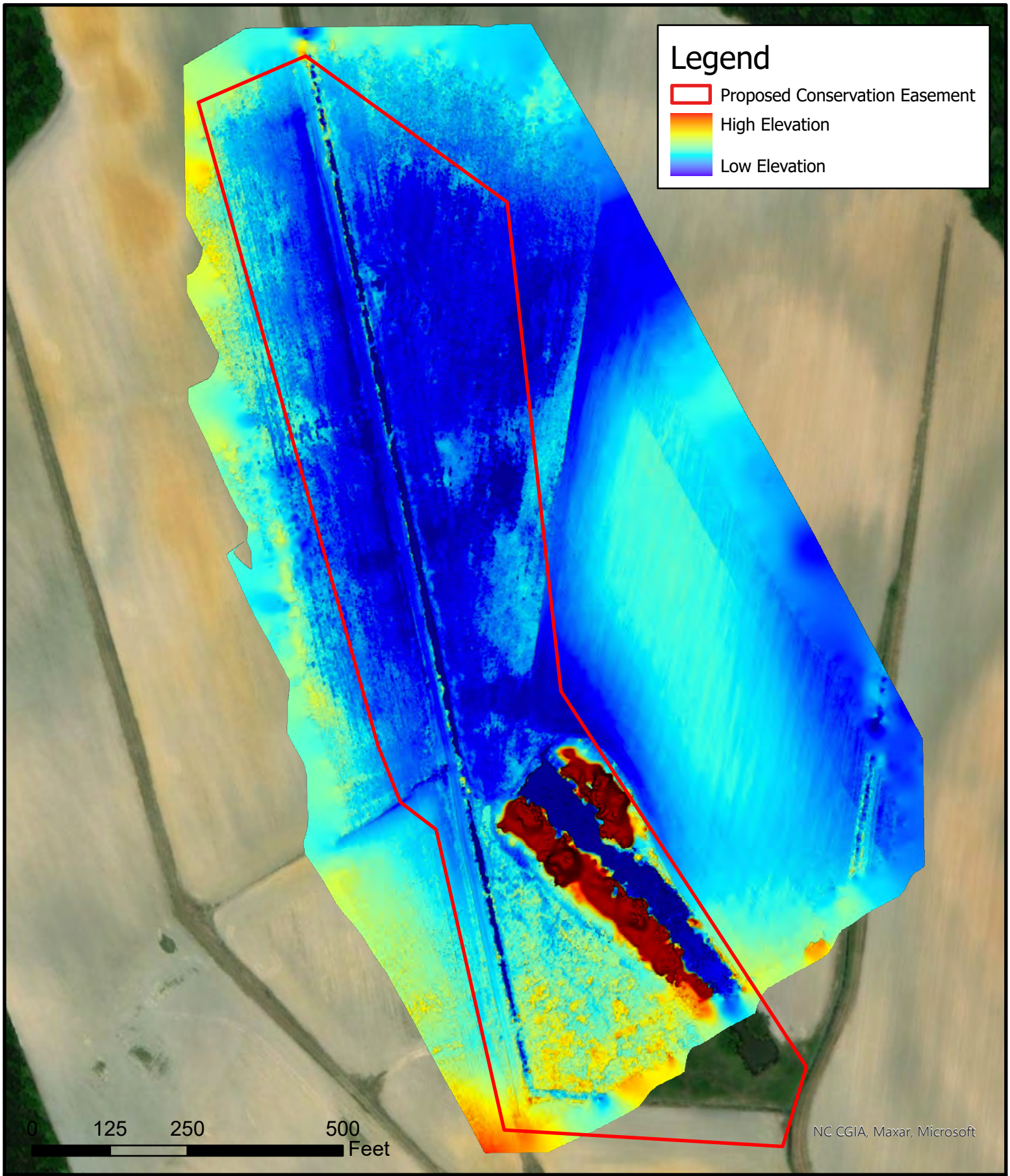

Figure 3b: Drone Deploy
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

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S

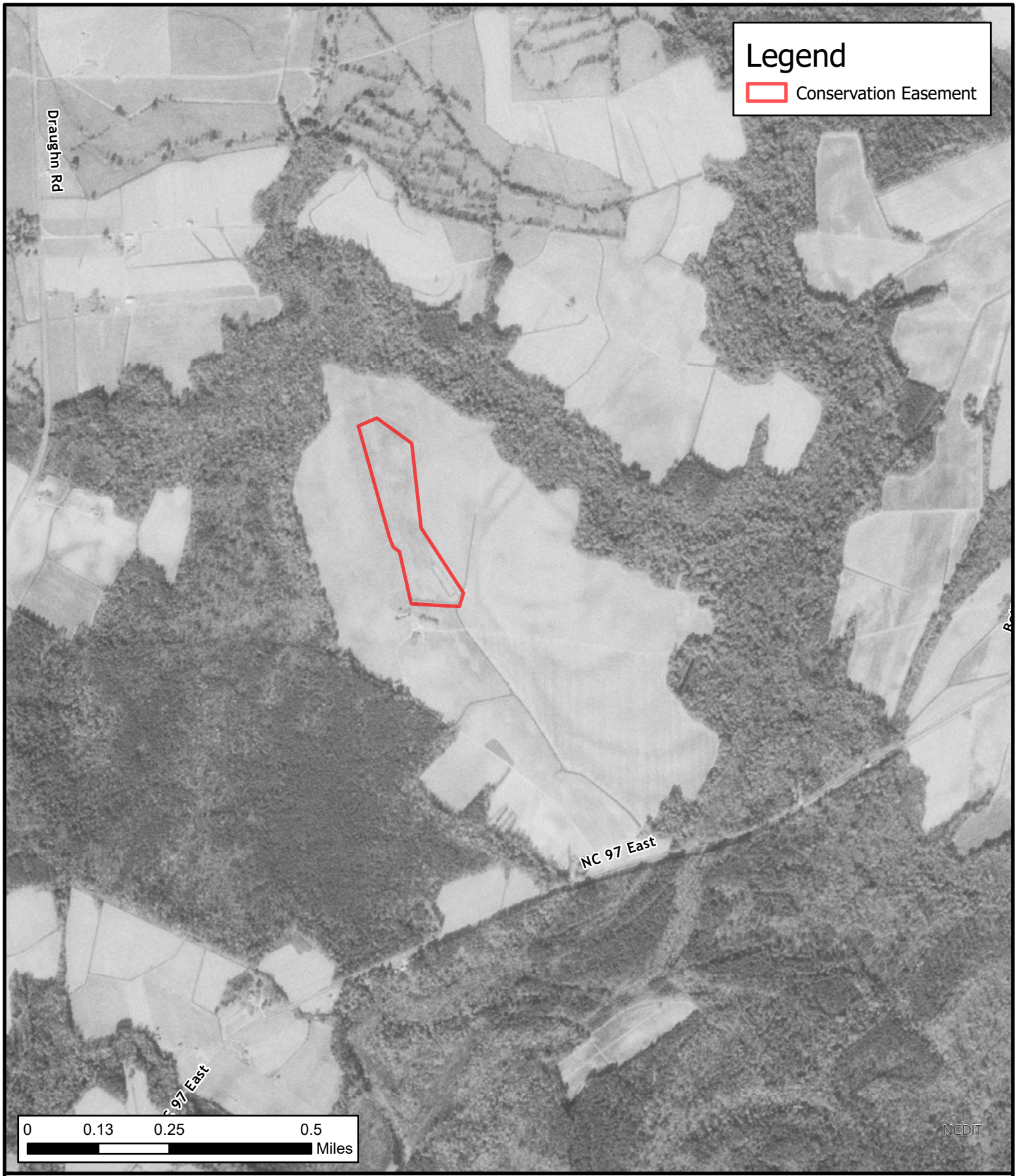

Figure 4: Historic 1977 Aerial Map
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

USGS 1977 Aerial Photo Single Frame

N
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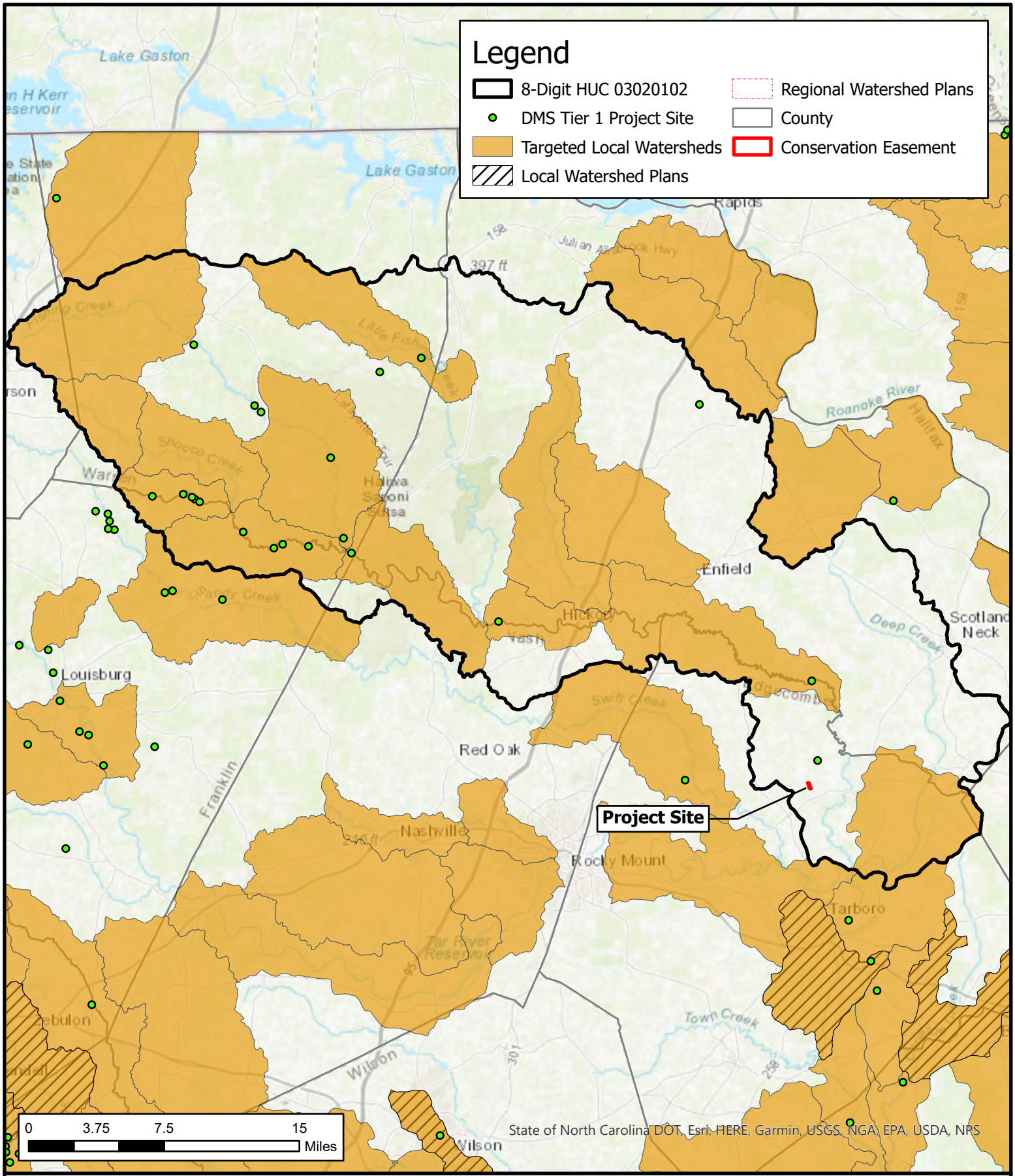

Figure 5: Watershed Planning
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021
NC DMS Map

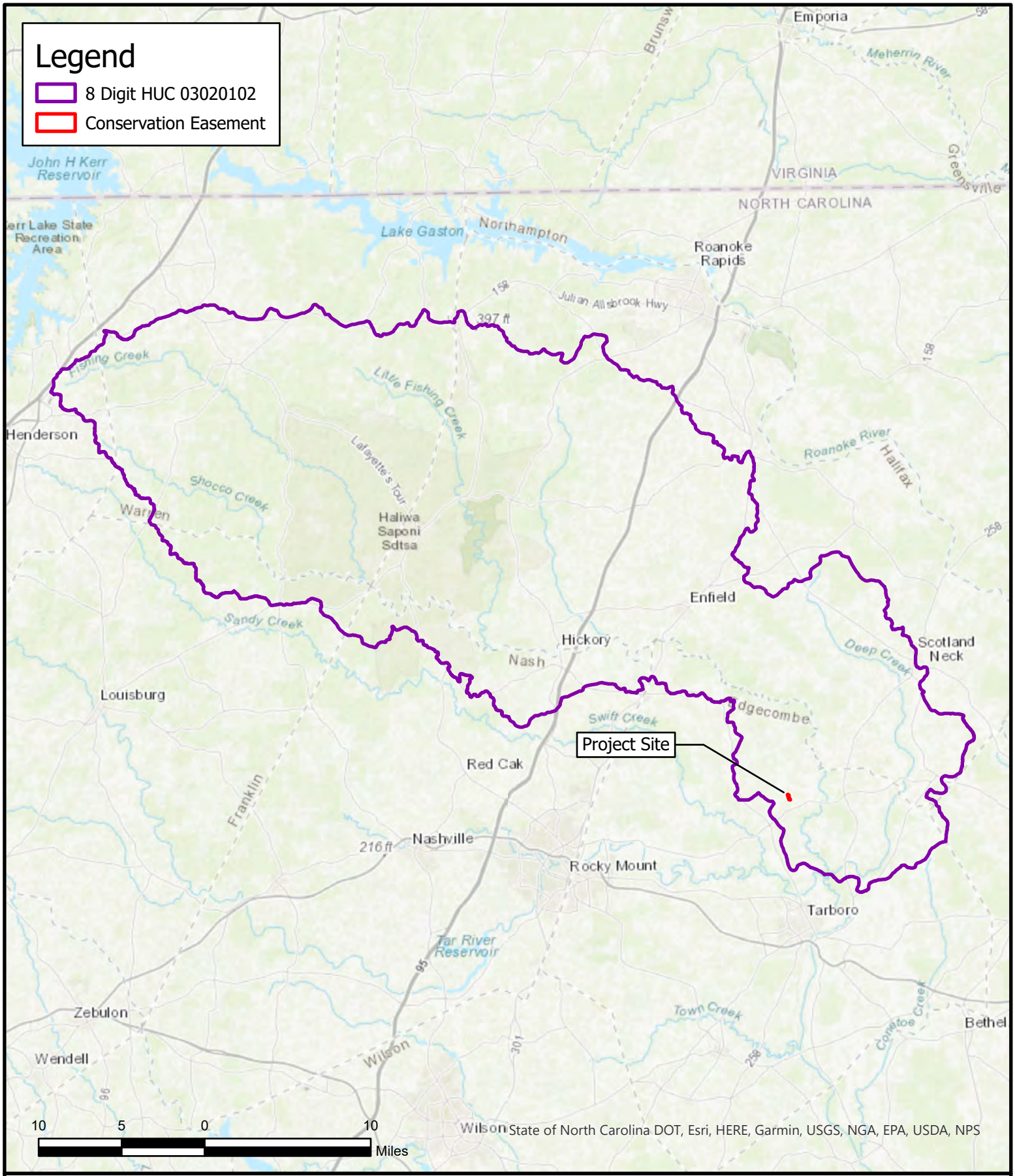

Figure 6: Proposed Service Area
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

ESRI Topographic Basemap

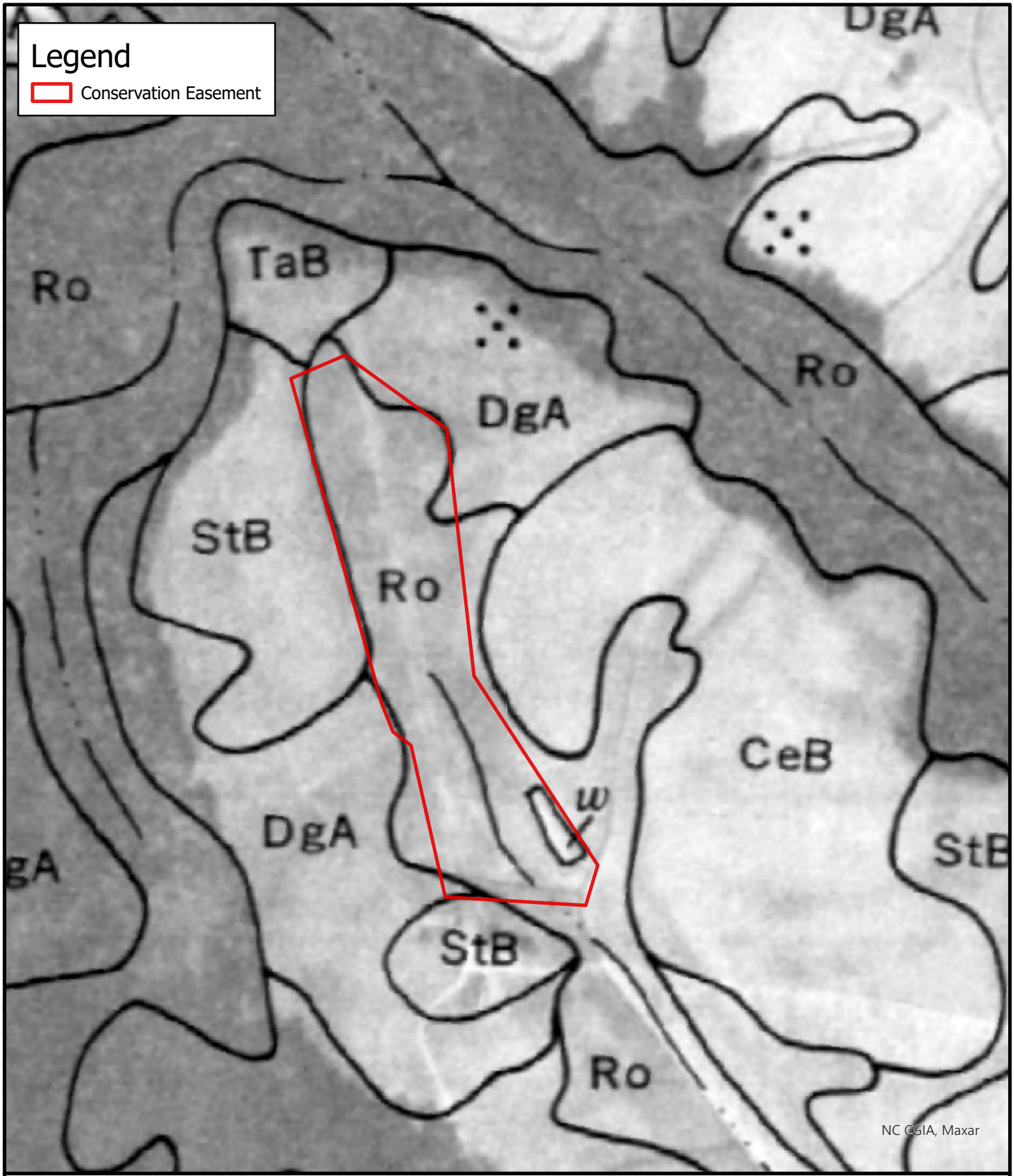

Figure 7: Soil Survey
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

USDA/NRCS 1979 Edgecombe County Soil Survey Map Sheet #7

N
W E
S

0 250 500
Feet

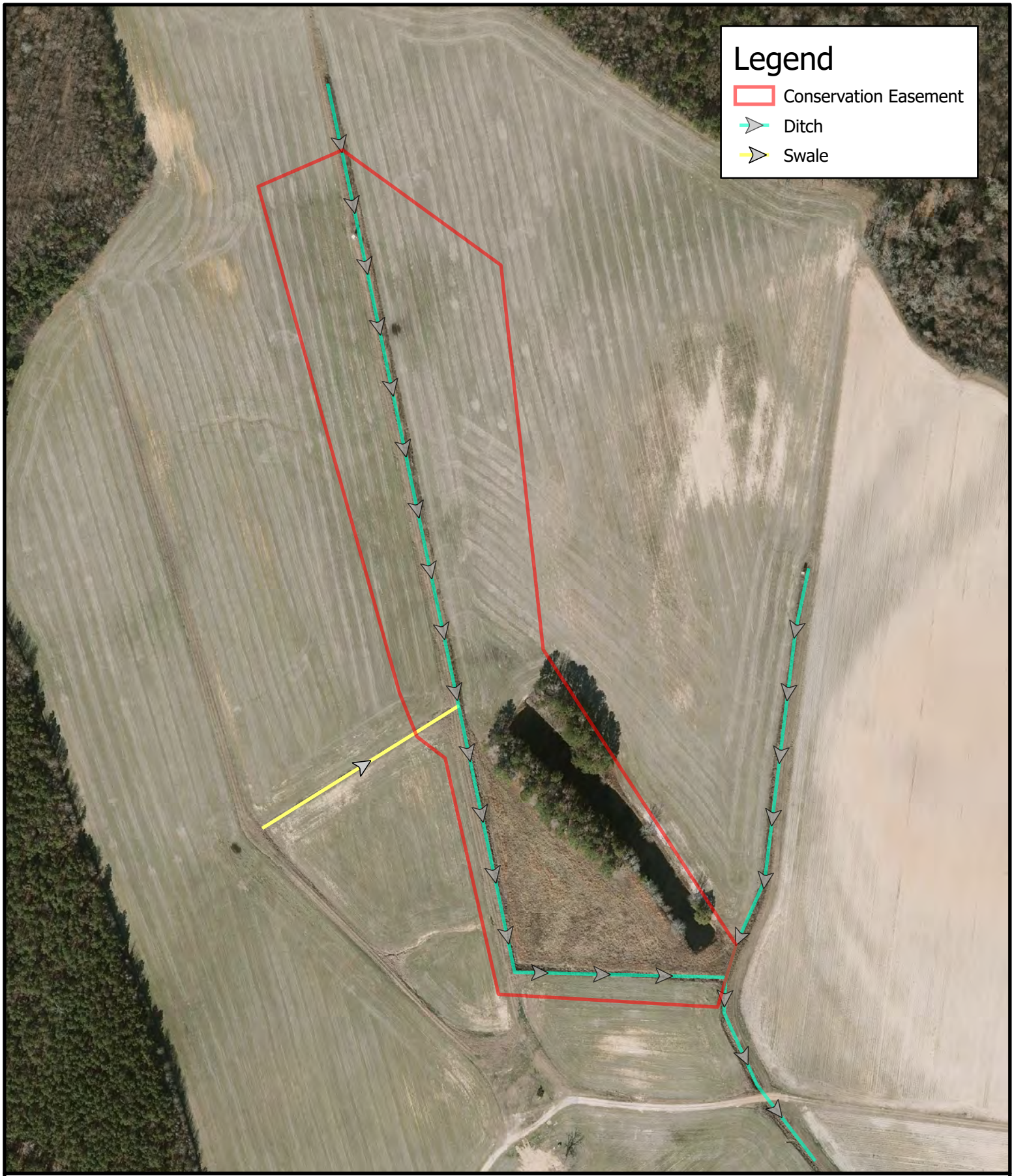

Figure 8: Ditch Network
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021
NC Onemap 2018 Aerial

N

0 125 250 500 Feet

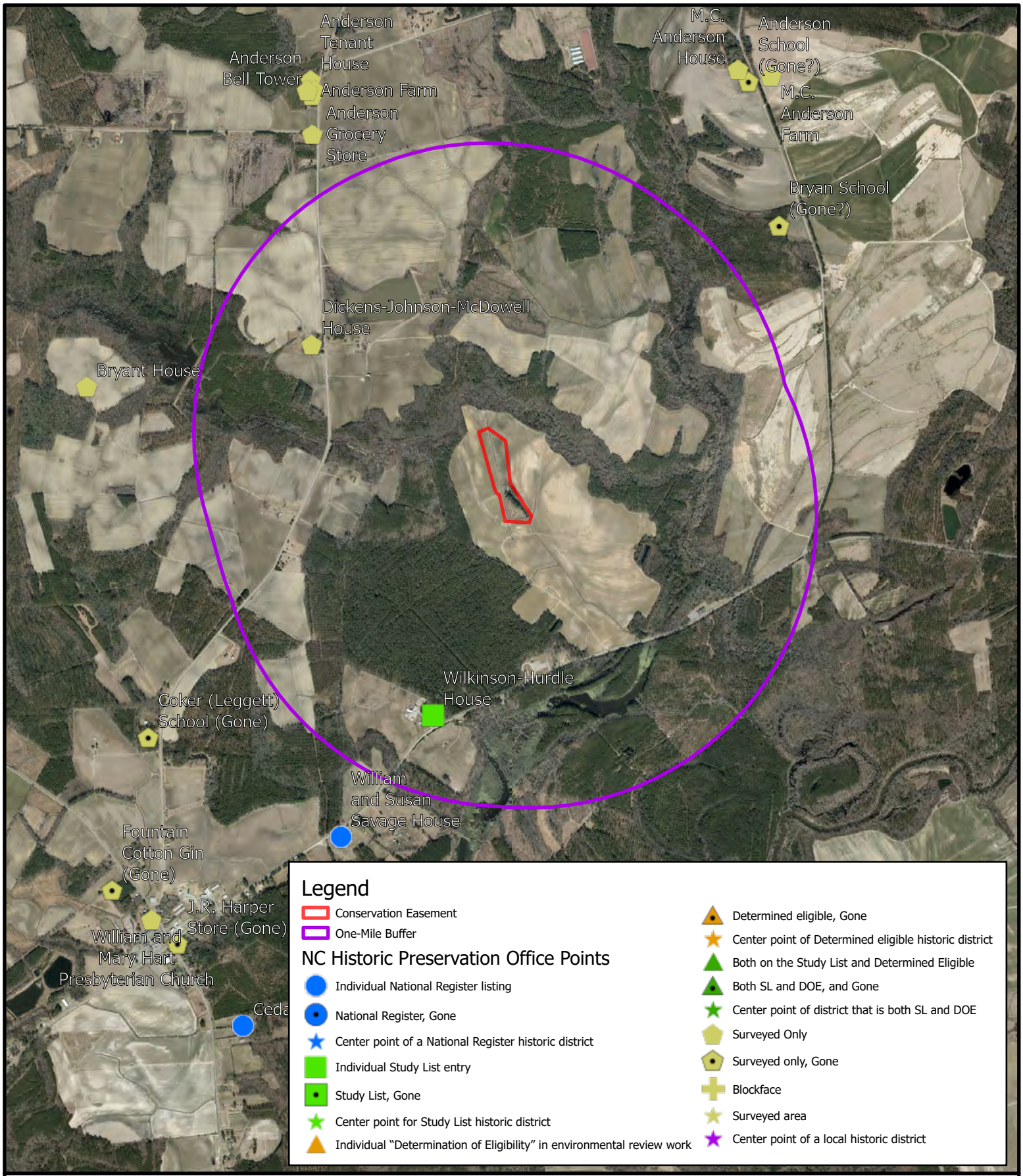

Figure 9: Cultural Resources
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

NC Historic Preservation Office Points

N
W E
S

0 1,250 2,500 5,000 Feet

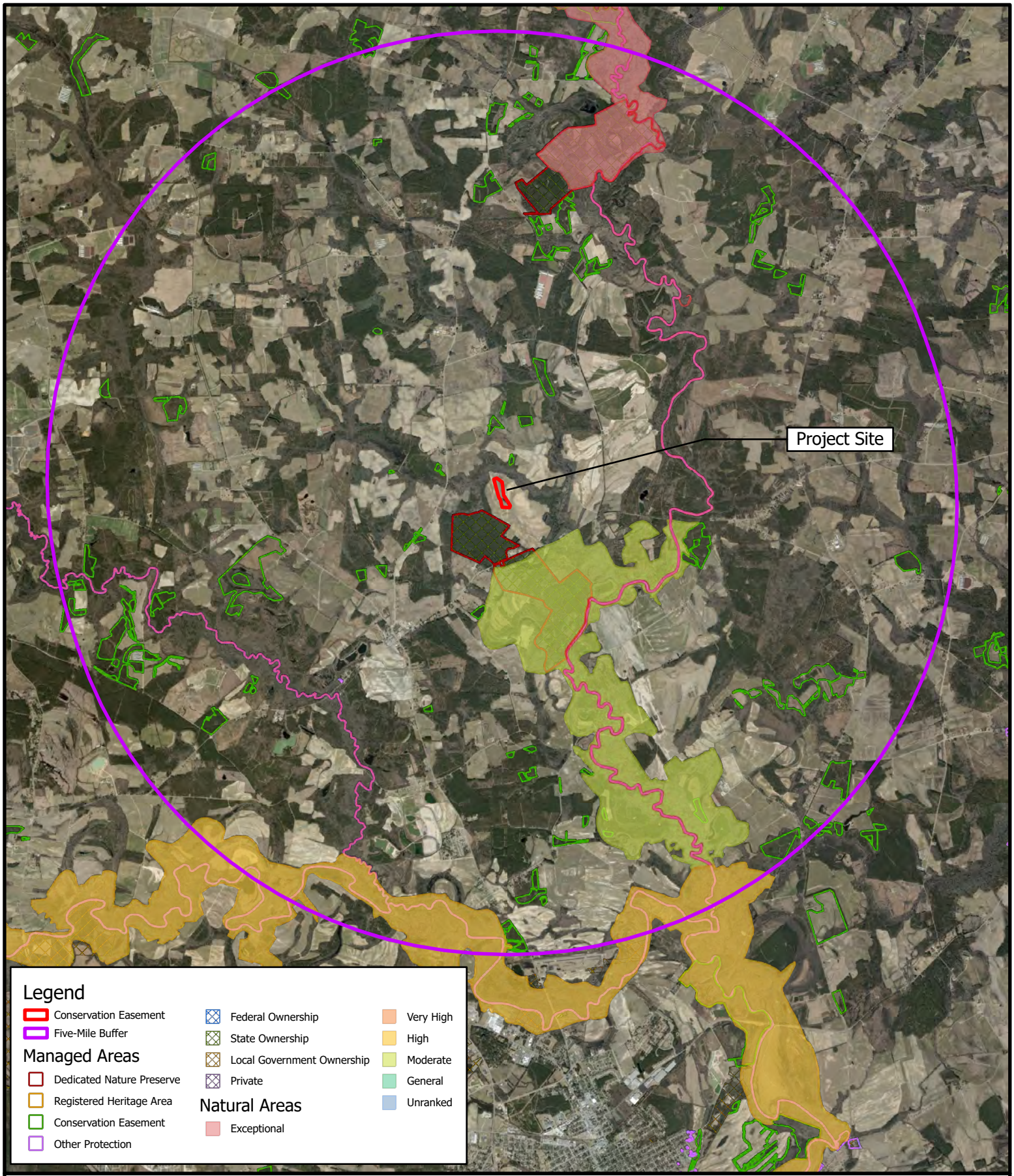

Figure 10: Planning Elements
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

NC Natural Heritage Program Data

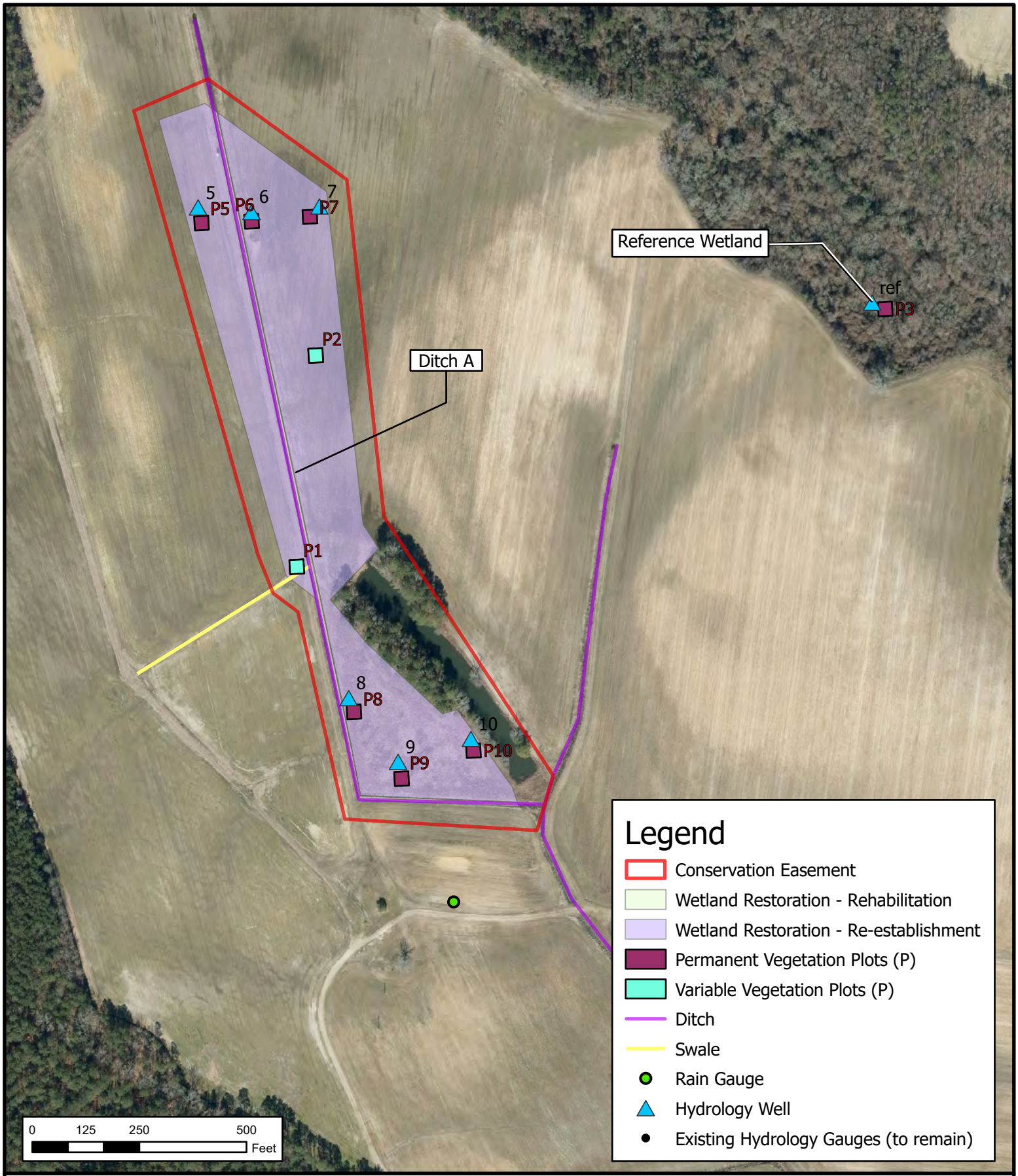

Figure 11: Monitoring Components
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021

NC Onemap 2018 Aerial

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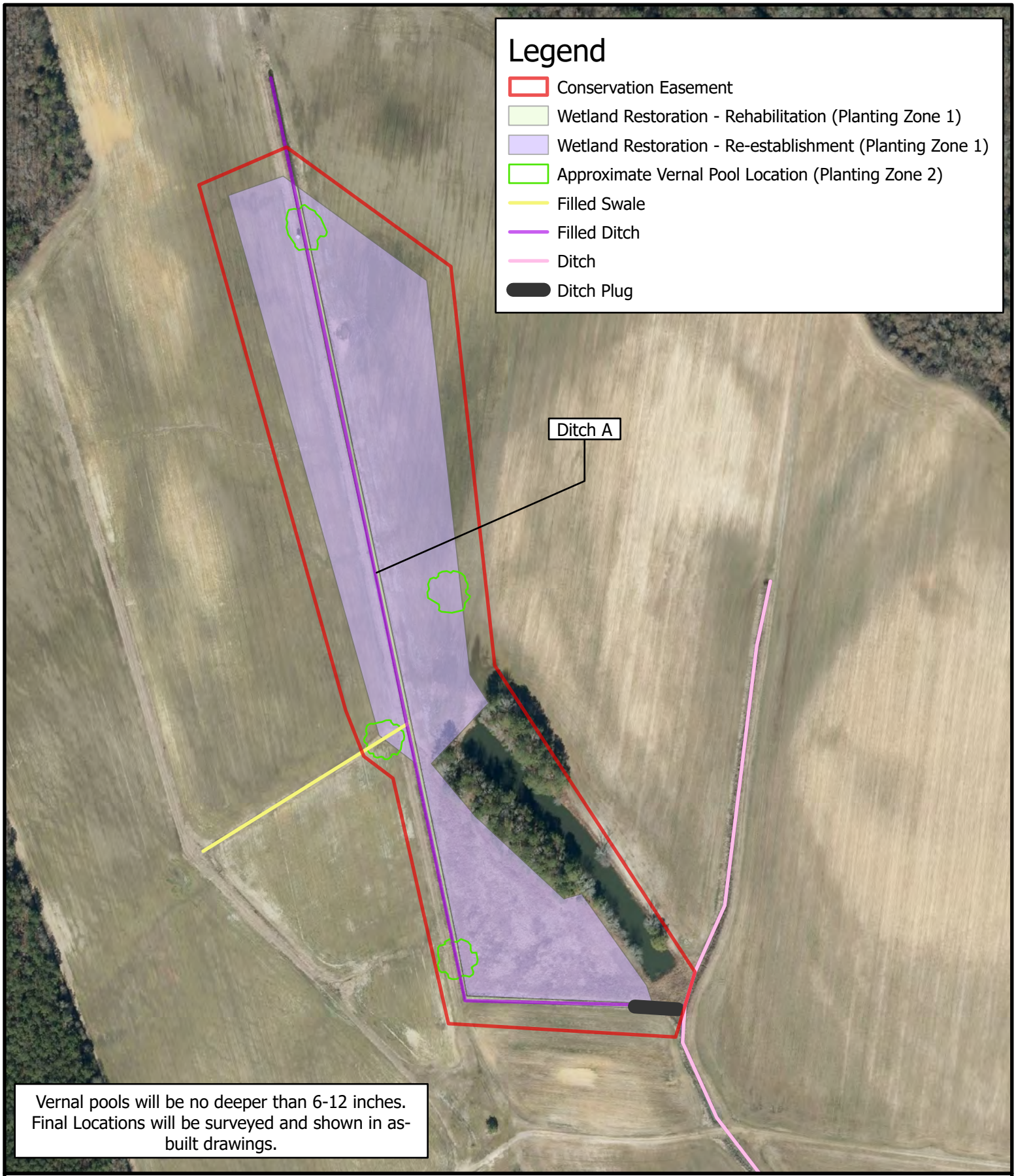

Figure 12: Proposed Conditions
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021
ESRI Aerial Basemap

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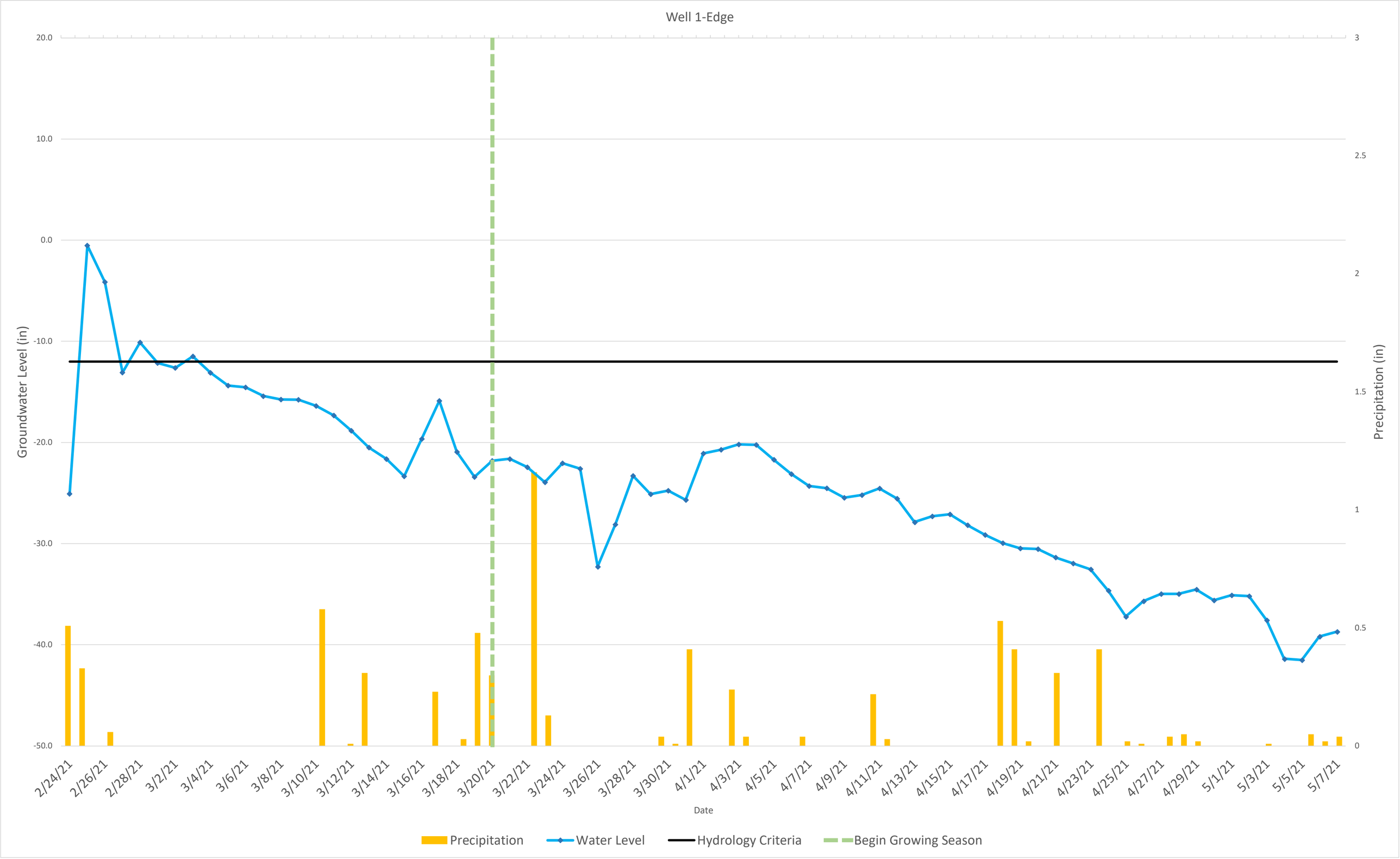
0 125 250 500 Feet

Appendix A

Wetland Gauge Data and Water Budget


Well 1-Edge
Groundwater Level (in)
Precipitation (in)
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
3
2.5
2
1.5
1
0.5
0
2/24/21
2/26/21
2/28/21
3/2/21
3/4/21
3/6/21
3/8/21
3/10/21
3/12/21
3/14/21
3/16/21
3/18/21
3/20/21
3/22/21
3/24/21
3/26/21
3/28/21
3/30/21
4/1/21
4/3/21
4/5/21
4/7/21
4/9/21
4/11/21
4/13/21
4/15/21
4/17/21
4/19/21
4/21/21
4/23/21
4/25/21
4/27/21
4/29/21
5/1/21
5/3/21
5/5/21
5/7/21
Date
Precipitation
Water Level
Hydrology Criteria
Begin Growing Season

Well 2-Middle

Groundwater Level (in)

20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0

Precipitation (in)

3
2.5
2
1.5
1
0.5
0

2/24/21
2/26/21
2/28/21
3/2/21
3/4/21
3/6/21
3/8/21
3/10/21
3/12/21
3/14/21
3/16/21
3/18/21
3/20/21
3/22/21
3/24/21
3/26/21
3/28/21
3/30/21
4/1/21
4/3/21
4/5/21
4/7/21
4/9/21
4/11/21
4/13/21
4/15/21
4/17/21
4/19/21
4/21/21
4/23/21
4/25/21
4/27/21
4/29/21
5/1/21
5/3/21
5/5/21
5/7/21

Date

Precipitation
Water Level
Hydrology Criteria
Begin Growing Season

Well 3-Edge

Groundwater Level (in)

20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0

Precipitation (in)

3
2.5
2
1.5
1
0.5
0

2/24/21
2/26/21
2/28/21
3/2/21
3/4/21
3/6/21
3/8/21
3/10/21
3/12/21
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5/1/21
5/3/21
5/5/21
5/7/21

Date

Precipitation
Water Level
Hydrology Criteria
Begin Growing Season

Maple Swamp Non-riparian
Wetland Water Budget
Calculation

Water Budget Equation

The hydrologic cycle of a wetland can be expressed in a water budget that accounts for water inflows and outflows to the system, as follows:

$$\Delta S = [P + S_i + G_i] - [ET + S_o + G_o]$$

where:

ΔS = change in volume of water storage in a defined area over time

P = precipitation

S_i = surface-water inflow

G_i = ground-water inflow

ET = evapotranspiration

S_o = surface water outflow

G_o = groundwater outflow

Water Budget Calculation Assumptions

The proposed non-riparian wetland will be restored as an entire system surrounded by upland soils. The followingassumptions apply to the water budget calculation:

1. Precipitation that falls within the 9.1-acre footprint will be the primary hydrologic input.
2. Surface-water and ground-water inflow (lateral) will be secondary hydrologic inputs and are not expected to be critical factors in restoring wetland hydrology on the Site. Surface water inflow is estimated at 10% of rainfall. Groundwater lateral inputs from upslope areas are assumed minimal due to the size of the local watershed (40-acres excluding the 9.1-acre footprint of the restoration area) and the Site is bounded by the well-drained State and moderately well drained Dogue soils.
3. Currently surface water outflow for the site is being conveyed off site via a single main ditch, which will be plugged and filled during construction, removing the surface water outflow from the Site.
4. The existing ditches have broken through the Site's restrictive soil layer found most similar to Roanoke series soils. This soil has a restrictive layer starting at approximately 10-14 in below the surface. The restrictive soil layer supports wetland hydrology by creating a perched water table. During construction the ditches will be filled with surrounding clay soil material which will restore the fragmented restrictive soil layer and prevent potential for vertical groundwater outflow.

Based on these assumptions it is assumed that no significant groundwater inflow/outflow or surface water outflow will occur at the Site to the degree that it will affect the restoration of wetland

hydrology. Applying these assumptions to the water budget equation, modifies the water balance equation for the Site to:

$$\Delta S = [P + S_i] - [ET]$$

Precipitation

The USDA NRCS provides Wetlands Climate Tables through the Agricultural Applied Climate System (AgACIS) which includes climate data and summary reports. There are five AgACIS weather stations listed for Edgecombe County. Tarboro 1S was selected to retrieve average precipitation data from 1971-2020.

Evapotranspiration

As discussed above in the water budget calculation assumptions surface water and groundwater outflows will be eliminated during construction of the Site, leaving evapotranspiration as the only water loss for the system after construction is complete. The State Climate Office of North Carolina at NCSU developed the Cardinal Data Retrieval System (NC CDRS) provides Daily Reference Crop Evapotranspiration (ETo) and Daily Crop Evapotranspiration (ETc) for the previous 48-months at their weather stations around the state. A crop coefficient is multiplied by the ETo in order to calculate ETc.

The closest weather station to the Site is the ECONET Upper Coastal Plain Research Station (Station ID: ROCK) in Edgecombe County, NC. The ROCK Upper Coastal Plain Research station is ~8-miles southwest of the Site.

The data was accessed from the NC CDRS ROCK weather station in October 2021 and provided ETo and ETc data. Corn at mid-season growth stage was selected for ETc as this crop has the highest water loss through evapotranspiration of the crops previously grown at the Site. The ETo and ETc data provided was from Jan 2000 – Jan 2020, which was averaged for each month in order to perform the water budget calculation. Calculated ET values were also analyzed using average temperature over the same time period and the Thornthwaite Method. The water budget was calculated using the most limiting values (red) of ET for showing available water within the project area.

Summary of Water Budget Analysis Results

Month	Total Precipitation (in)	Wetland Area (ac)	Direct Precipitation on Wetland (ac-ft)	Rainfall Runoff (ac-ft)	Total Water Available (ac-ft)	Avg Eto Rate (in)	Avg Etc Rate (in)	ET Water Loss (ac-ft)	Water Budget Net Balance +/- (ac-ft)	Water Budget Remaining Total +/- (ac-ft)
Jan	3.71	9.1	2.8	0.3	3.1	0.6	0.8	0.7	2.9	5.2
Feb	3.45	9.1	2.6	0.3	2.9	1.0	1.2	1.1	2.4	7.8
Mar	3.95	9.1	3.0	0.3	3.3	1.3	1.6	1.7	2.6	8.5
Apr	3.27	9.1	2.5	0.2	2.7	1.8	2.2	2.5	0.7	7.8
May	3.8	9.1	2.9	0.3	3.2	2.2	2.6	3.3	-0.8	6.9
Jun	3.98	9.1	3.0	0.3	3.3	2.5	3.0	3.6	-0.8	5.6
Jul	4.64	9.1	3.5	0.4	3.9	2.4	2.9	3.6	-1.3	5.6
Aug	5.05	9.1	3.8	0.4	4.2	2.1	2.5	3.0	0.0	6.3
Sep	4.84	9.1	3.7	0.4	4.0	1.6	1.9	2.5	0.6	6.7
Oct	3.02	9.1	2.3	0.2	2.5	1.1	1.3	1.4	0.5	8.8
Nov	3.04	9.1	2.3	0.2	2.5	0.7	0.9	0.9	2.1	11.1
Dec	3.26	9.1	2.5	0.2	2.7	0.6	0.7	0.5	2.3	5.2
Totals:	**46.01**		**34.9**	**3.5**	**38.4**	**18.0**	**21.6**	**24.8**	**11.1**	

Results and Conclusions

The monthly and annual water budget results for the proposed wetlands are presented in the "Water Budget Net Balance +/-" column of the table above. A monthly running total of the waterbudget is presented in "Water Budget Remaining Total +/-" column of the table above. Net negative water budget balances were observed during the main growing season and highest ET months during year. A water surplus is available on a monthly and annual basis. As this is a primarily precipitation driven system, increased ET values should not affect the surplus water as significant as decreased precipitation. This analysis reflects monthly water budget conditions based on monthly direct precipitation and subtracting monthly evapotranspiration to arrive at monthly water budget summaries.

Based on this calculation ~1.2 feet of surplus water will cover the entire 9.1-acre Site on an annual basis. Considering the approximate depth to the restrictive soil layer (10-14 in) the proposed wetland project will be able to meet the wetland hydrology requirement during years of normal precipitation.

References

Kreiser, G.S. 2003. A Wetland Restoration Project: Water Budget and Nutrient Analysis of a Drained Carolina Bay (Master's Thesis). Retrieved from NCSU Library Repository. (Accessed on December 14, 2018 https://repository.lib.ncsu.edu/handle/1840.16/243)

Mitsch, W.J., and J.G. Gosselink. 2000. Wetlands. 3rd edition. John Wiley & Sons, New York, NY, USA.

State Climate Office of North Carolina, NC State University. Cardinal [data retrieval interface] available at https://products.climate.ncsu.edu/cardinal/request. Accessed October 10, 2021.

Appendix B

Jurisdictional Determination

SAW-2021-00345

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2021-00345** County: **Edgecombe** U.S.G.S. Quad: **NC-Draughn**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Requestor: **Eco Terra**
Mr. Norton Webster
Address: **1328 DeKalb Ave NE**
Atlanta, GA 30307
Telephone Number: **(919) 548-0949**
E-mail: **norton@ecoterra.com**

Size (acres) **15.3**
Nearest Waterway **Fishing Creek**
USGS HUC **03020102**
Nearest Town **Leggett**
River Basin **Pamlico**
Coordinates Latitude: **36.011335**
Longitude: **-77.55844**

Location description: **The review area for this Jurisdictional Determination is an approximately 15.3-acre area located off of NC 97 East, approximately 2 miles Northeast from the Town of Leggett in Edgecombe County, NC. The review area is located within a larger parcel identified by the parcel # 4822-75-3768.**

Indicate Which of the Following Apply:

A. Preliminary Determination

☒ There appear to be **waters** on the above described project area/property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). The **waters** have been delineated, and the delineation has been verified by the Corps to be sufficiently accurate and reliable. The approximate boundaries of these waters are shown on the enclosed delineation map (***Figure A: Project Resources Map***) dated August 2021. Therefore this preliminary jurisdiction determination may be used in the permit evaluation process, including determining compensatory mitigation. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction.

☐ There appear to be **waters** on the above described project area/property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). However, since the **waters** have not been properly delineated, this preliminary jurisdiction determination may not be used in the permit evaluation process. Without a verified wetland delineation, this preliminary determination is merely an effective presumption of CWA/RHA jurisdiction over all of the **waters** at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the **waters** on your project area/property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

B. Approved Determination

☐ There are Navigable Waters of the United States within the above described project area/property subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in 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**on the above described project area/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 recommend you have the **waters** on your project area/property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

SAW-2021-00345

☐ The **waters** on your project area/property have been delineated and the delineation has been verified by the Corps. The approximate boundaries of these waters are shown on the enclosed delineation map dated . 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.

☐ There are no waters of the U.S., to include wetlands, present on the above described project area/property 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, including wetlands, without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). Placement of dredged or fill material, construction or placement of structures, or work within navigable waters of the United States without a Department of the Army permit may constitute a violation of Sections 9 and/or 10 of the Rivers and Harbors Act (33 USC § 401 and/or 403). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **Billy W. Standridge at (910) 251-4595 or Billy.w.standridge@usace.army.mil**.

C. Basis For Determination: Basis For Determination: See the preliminary jurisdictional determination form dated 12/10/2021.

D. Remarks: The waters within the review area are depicted on the attached *Figure A: Project Resource Map – Maple Swamp Wetland Mitigation Site* dated August 2021.

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)

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: Mr. Philip A. Shannin
Administrative Appeal Review Officer
60 Forsyth Street SW, Floor M9
Atlanta, Georgia 30303-8803
AND
PHILIP.A.SHANNIN@USACE.ARMY.MIL

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 **Not applicable**.
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: Billy W. Standridge

Date of JD: **12/10/2021** Expiration Date of JD: **Not applicable**

SAW-2021-00345

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 our Customer Satisfaction Survey, located online at https://regulatory.ops.usace.army.mil/customer-service-survey/.

Copy furnished:

Agent:	**Soil, Water, and Environment Group, PLLC**
	Mr. Scott J. Frederick
Address:	**3216 Byers Drive, Suite B**
	Raleigh, NC 27607
Telephone Number:	**(919) 831-1234**
E-mail:	**sjfrederick@swegrp.com**

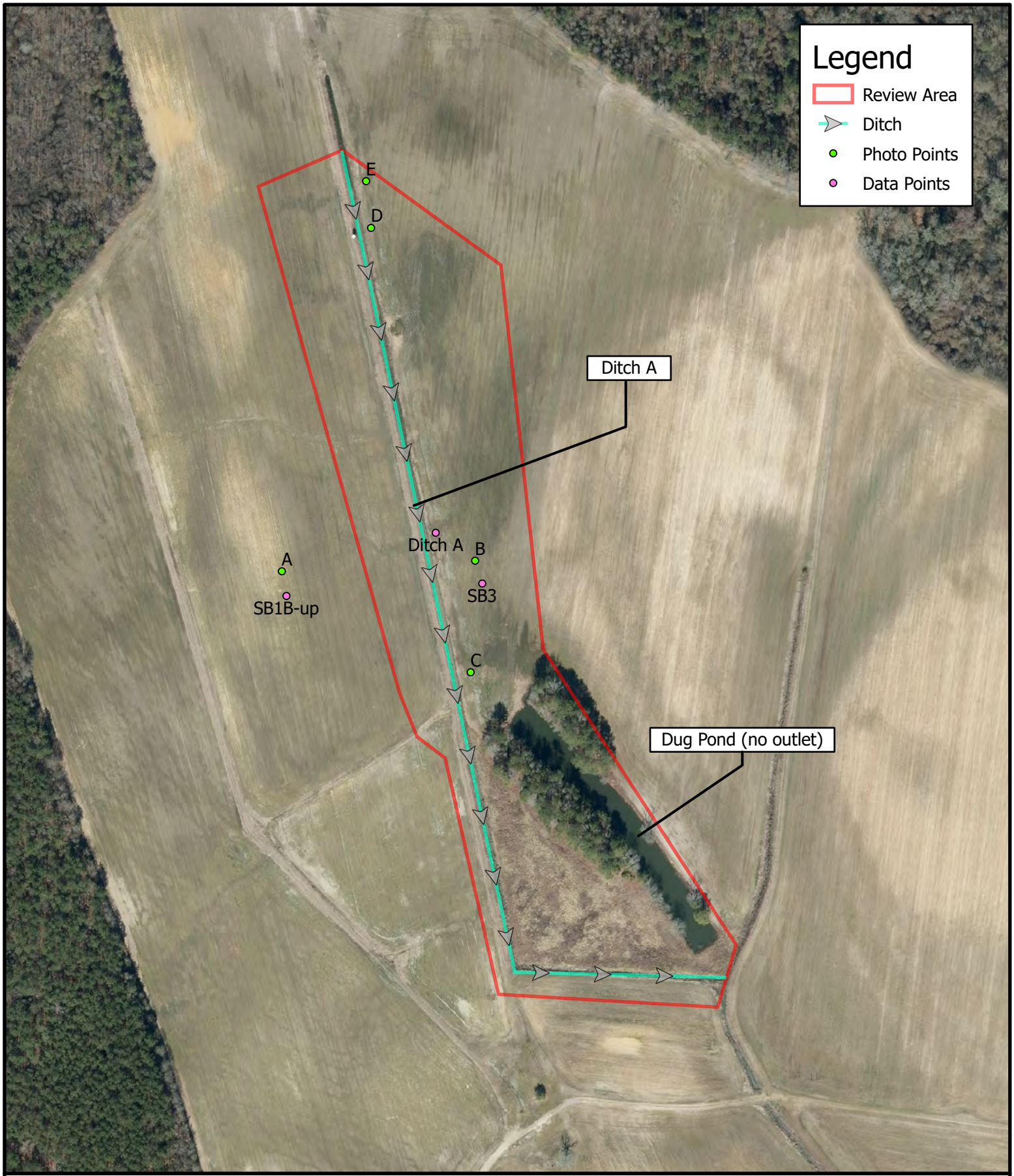


Figure A: Project Resources Map
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
August 2021
NC Onemap 2018 Aerial

N

0 125 250 500 Feet

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Eco Terra**, **Mr. Norton Webster**	File Number: **SAW-2021-00345**	Date: **12/10/2021**

Attached is:		See Section below
☐	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
☐	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
☐	PERMIT DENIAL	C
☐	APPROVED JURISDICTIONAL DETERMINATION	D
☒	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at or http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or the Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. 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.
SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: **District Engineer, Wilmington Regulatory Division** **Attn: Billy W. Standridge** **Washington Regulatory Office** **U.S Army Corps of Engineers** **2407 West Fifth Street** **Washington, North Carolina 27889**	If you only have questions regarding the appeal process you may also contact: MR. PHILIP A. SHANNIN ADMINISTRATIVE APPEAL REVIEW OFFICER CESAD-PDS-O 60 FORSYTH STREET SOUTHWEST, FLOOR M9 ATLANTA, GEORGIA 30303-8803 PHONE: (404) 562-5136; FAX (404) 562-5138 EMAIL: PHILIP.A.SHANNIN@USACE.ARMY.MIL

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, **Attn: Billy W. Standridge, 69 Darlington Avenue, Wilmington, North Carolina 28403**

For Permit denials, Proffered Permits and Approved Jurisdictional Determinations send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Philip Shannin, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 12/10/2021

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Eco Terra, Mr. Norton Webster, 1328 DeKalb Ave NE, Atlanta, GA 30307

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Wilmington District, NCDMS Maple Swamp Mitigation Site, SAW-2021-00345

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: The review area for this Jurisdictional Determination is an approximately 15.3-acre area located off of NC 97 East, approximately 2 miles Northeast from the Town of Leggett in Edgecombe County, NC. The review area is located within a larger parcel identified by the parcel # 4822-75-3768.

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: NC County: Edgecombe City: Leggett
Center coordinates of site (lat/long in degree decimal format): Latitude: 36.011335 Longitude: -77.55844

Universal Transverse Mercator:

Name of nearest waterbody: Fishing Creek

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐Office (Desk) Determination. Date:

☒Field Determination. Date(s):11/19/2021

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resources in review area (acreage and linear feet, if applicable	Type of aquatic resources (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
SAW-2021-00345 Ditch A	36.012334	-77.559095	2,100 LF, 0.48 ac	Non-wetland water	Section 404
SAW-2021-00345 Pond	36.011669	-77.557901	0.83	Non-wetland water	Section 404

1. The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre- construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply) Checked items are included in the administrative record and are appropriately cited:

☒Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:

PJD package submitted by SWE Group

Map: **Figure A: Project Resources Map**

☒Data sheets prepared/submitted by or on behalf of the PJD requestor. Datasheets:

☒Office concurs with data sheets/delineation report.

☐Office does not concur with data sheets/delineation report. Rationale:_____

☐Data sheets prepared by the Corps:_____

☐Corps navigable waters' study:

☐U.S. Geological Survey Hydrologic Atlas:

☐USGS NHD data:

☐USGS 8 and 12 digit HUC maps:

☒U.S. Geological Survey map(s). Cite scale & quad name: **2013 USGS Topo Draughn & Tarboro**

☐Natural Resources Conservation Service Soil Survey. Citation: **1979 Edgecombe County Soil Survey Map Sheet #7**

☐National wetlands inventory map(s). Cite name:

☐State/local wetland inventory map(s):_____

☐FEMA/FIRM maps:

☐100-year Floodplain Elevation is:_____ (National Geodetic Vertical Datum of 1929)

☒Photographs: ☐ Aerial (Name & Date):

or ☒ Other (Name & Date): **Site photos June 18, 2020 & Oct 9, 2020**

☐Previous determination(s). File no. and date of response letter:_____

☒Other information (please specify): **LiDAR**

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Billy W. Stadridge

Signature and date of Regulatory staff member completing PJD
12/10/2021

Scott J. Frederick

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1] 12/9/2021

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Appendix C

Categorical Exclusion and Regulatory Correspondence

Appendix A

Categorical Exclusion Form for Division of Mitigation Services Projects
Version 2

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

Part 1: General Project Information	
Project Name:	Maple Swamp Wetland Mitigation Site - Option 1
County Name:	Edgecombe
DMS Number:	100190
Project Sponsor:	Eco Terra Partners
Project Contact Name:	Ted Griffith
Project Contact Address:	1328 Dekalb Ave. NE Atlanta, GA 30307
Project Contact E-mail:	Ted@ecoterra.com
DMS Project Manager:	Lindsay Crocker

Project Description

Maple Swamp Wetland Mitigation Site is non-riparian wetland restoration project that seeks to provide mitigation credits for unavoidable impacts within the Tar Pamlico River Basin. The project consists of plugging a ditch to restore hydrology and planting native hardwood trees.

For Official Use Only

Reviewed By:

5/26/2021 — LHCrocker

Date — **DMS Project Manager**

Conditional Approved By:

Date — **For Division Administrator FHWA**

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

Final Approval By:

5-26-21 — Donald W Brew

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 specie 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

National Historic Preservation Act (Section 106) NC SHPO Coordination

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper | Secretary D. Reid Wilson

March 19, 2021

Jamey O'Shaughnessey jamey@ecoterra.com
Eco Terra Management, LLC
1117 Peachtree Walk Northeast, Suite 126
Atlanta, GA 30309

Re: Maple Swamp Wetland Mitigation Site, 36.007372 -77.554415, Highway 97, Tarboro, Edgecombe County, ER 21-0574

Dear Mr. O'Shaughnessey:

Thank you for your letter of February 12, 2021, regarding the above-referenced undertaking. We have reviewed the submittal and offer the following comments.

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

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Endangered Species Act (ESA)

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Raleigh ES Field Office
551-F Pylon Drive
Raleigh, North Carolina 27606

April 12, 2021

Casey Haywood
U.S. Army Corps of Engineers, Wilmington District
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

Re: NCDMS Maple Swamp Wetland Mitigation / SAW-2021-00345/ Edgecombe County

Dear Mrs. Haywood:

The U.S. Fish and Wildlife Service (Service) has reviewed the project advertised in the above referenced Public Notice. The project, as advertised in the Public Notice, is expected to have minimal adverse impacts to fish and wildlife resources. Therefore, we have no objection to the activity as described in the permit application.

In accordance with the Endangered Species Act of 1973, as amended, (ESA) and based on the information provided, and other available information, it appears the action is not likely to adversely affect federally listed species or their critical habitat as defined by the ESA. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied for this project. Please remember that obligations under the ESA must be reconsidered if: (1) new information identifies impacts of this action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is modified in a manner that was not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action.

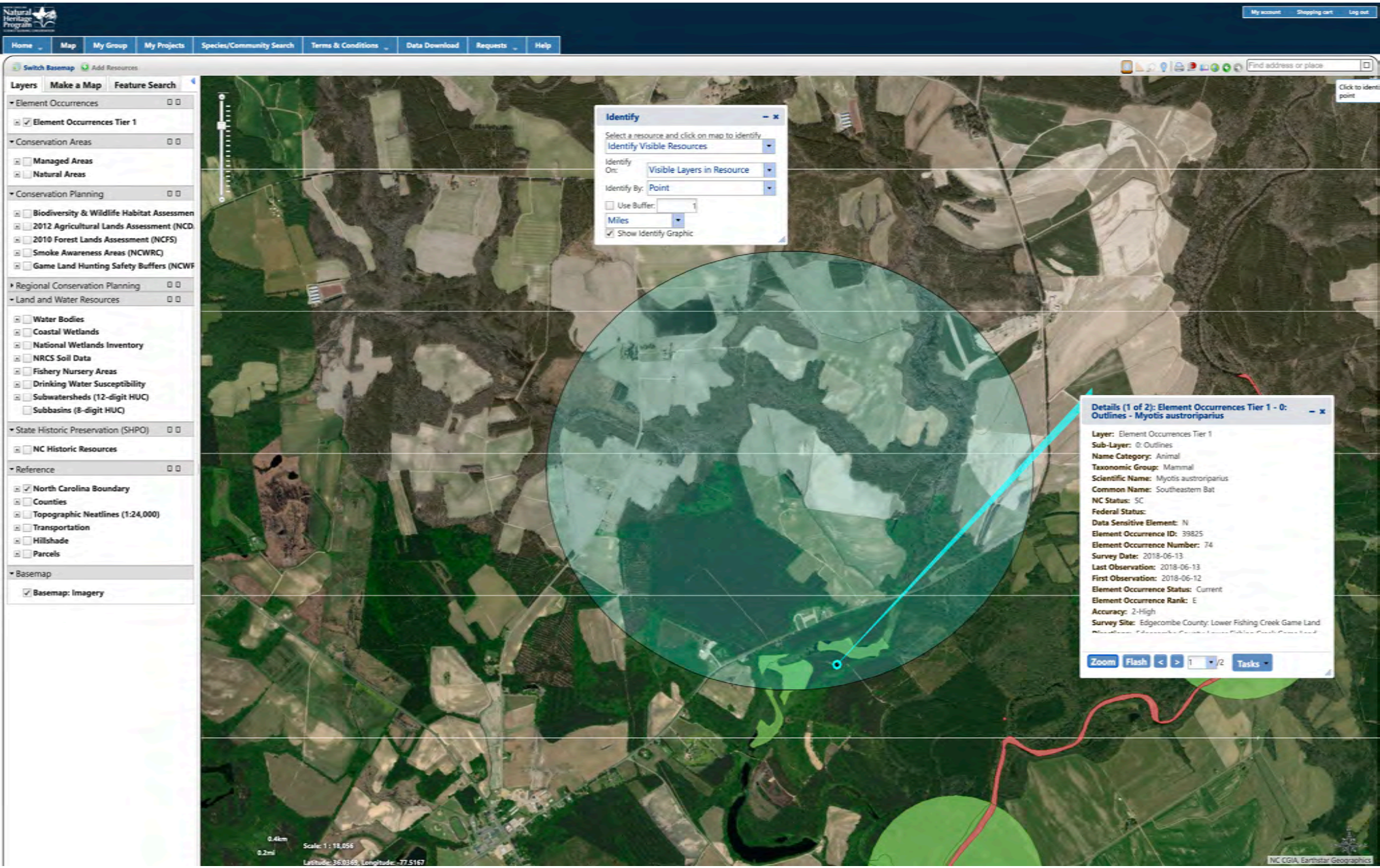
For your convenience a list of all federally protected endangered and threatened species in North Carolina is now available on our website at <http://www.fws.gov/raleigh>. Our web page contains a complete and updated list of federally protected species, and a list of federal species of concern known to occur in each county in North Carolina.

The Service appreciates the opportunity to review and provide comments on the proposed action. Should you have any questions regarding the project, please contact Kathy Matthews at (919) 856-4520, extension 27.

Sincerely,

for Pete Benjamin,
Field Supervisor

cc: NMFS, Beaufort, NC
EPA, Atlanta, GA
WRC, Raleigh


Natural Heritage Program
My account
Shopping cart
Log out
Home
Map
My Group
My Projects
Species/Community Search
Terms & Conditions
Data Download
Requests
Help
Switch Basemap
Add Resources
Find address or place
Layers
Make a Map
Feature Search
Element Occurrences
Element Occurrences Tier 1
Conservation Areas
Managed Areas
Natural Areas
Conservation Planning
Biodiversity & Wildlife Habitat Assessmen
2012 Agricultural Lands Assessment (NCD
2010 Forest Lands Assessment (NCFS)
Smoke Awareness Areas (NCWRC)
Game Land Hunting Safety Buffers (NCWF
Regional Conservation Planning
Land and Water Resources
Water Bodies
Coastal Wetlands
National Wetlands Inventory
NRCS Soil Data
Fishery Nursery Areas
Drinking Water Susceptibility
Subwatersheds (12-digit HUC)
Subbasins (8-digit HUC)
State Historic Preservation (SHPO)
NC Historic Resources
Reference
North Carolina Boundary
Counties
Topographic Neatlines (1:24,000)
Transportation
Hillshade
Parcels
Basemap
Basemap: Imagery
Identify
Select a resource and click on map to identify
Identify Visible Resources
Identify On:
Visible Layers in Resource
Identify By:
Point
Use Buffer:
1
Miles
Show Identify Graphic
Details (1 of 2): Element Occurrences Tier 1 - 0: Outlines - Myotis austroriparius
Layer: Element Occurrences Tier 1
Sub-Layer: 0: Outlines
Name Category: Animal
Taxonomic Group: Mammal
Scientific Name: Myotis austroriparius
Common Name: Southeastern Bat
NC Status: SC
Federal Status:
Data Sensitive Element: N
Element Occurrence ID: 39825
Element Occurrence Number: 74
Survey Date: 2018-06-13
Last Observation: 2018-06-13
First Observation: 2018-06-12
Element Occurrence Status: Current
Element Occurrence Rank: E
Accuracy: 2-High
Survey Site: Edgecombe County: Lower Fishing Creek Game Land
Zoom
Flash
1
/2
Tasks
0.4km
0.2mi
Scale: 1 : 18,056
NC CGIA, Earthstar Geographics

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date:_____

Self-Certification Letter

Project Name Maple Swamp Wetland Mitigation Site

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

☐ "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or

☐ "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or

☐ "may affect, likely to adversely affect" determination for the Northern long-eared bat (Myotis septentrionalis) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;

☑ "no Eagle Act permit required" determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the "no effect" or "not likely to adversely affect" determinations for proposed and listed species and proposed and designated critical habitat; the "may affect" determination for Northern long-eared bat; and/or the "no Eagle Act permit required" determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website http://www.fws.gov/raleigh/pp.html. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package

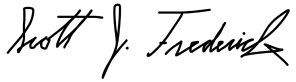
Species Conclusions Table

Project Name: Maple Wetland Buffer Mitigation Site

Date: 3/25/2021

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Neuse River Waterdog (*Necturus lewisi)*	No suitable habitat	No effect	No gravel, bedrock, cover, and stream flow does not support suitable habitat for the Neuse-River Waterdog
Carolina Madtom (*Noturus furiosus)*	No suitable habitat	No effect	Suitable substrate not present, stream flow not suitable, water quality not supportive.
Atlantic Pigtoe *(Fusconaia masoni)*	No suitable habitat	No effect	Suitable substrate not present, stream flow not suitable, and water quality not supportive.
Tar River Spinymussel *(Elliptio steinstansana)*	No suitable habitat	No effect	Silt-free unconsolidated beds of coarse sand and gravel in relatively fast-flowing, well oxygenated stream reach not present
Yellow Lance (*Elliptio lanceolata)*	No suitable habitat	No effect	Suitable substrate not present, stream flow not suitable, and water quality not supportive.
Critical Habitat	No critical habitat present	No effect	n/a
Bald Eagle	Unlikely to disturb nesting bald eagles	No Eagle Act Permit Required	Project is more the 660 feet from any potential or known bald eagle nest or any roosting/nesting trees.
Northern Long-eared Bat	No suitable habitat	No effect	No tree cutting or tree removal will occur.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

Scott J Frederick / Environmental Scientist  3/16/2021

Signature /Title Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To: March 26, 2021
Consultation Code: 04EN2000-2021-SLI-0910
Event Code: 04EN2000-2021-E-02001
Project Name: Maple Swamp Wetland Mitigation Site

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The species list generated pursuant to the information you provided identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or

evaluation and can be found on our web page at http://www.fws.gov/raleigh. Please check the web site often for updated information or changes

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Not all Threatened and Endangered Species that occur in North Carolina are subject to section 7 consultation with the U.S Fish and Wildlife Service. Atlantic and shortnose sturgeon, sea turtles,when in the water, and certain marine mammals are under purview of the National Marine Fisheries Service. If your project occurs in marine, estuarine, or coastal river systems you should also contact the National Marine Fisheries Service, http://www.nmfs.noaa.gov/

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If you have any questions or comments, please contact John Ellis of this office at john_ellis@fws.gov.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
(919) 856-4520

Project Summary

Consultation Code: 04EN2000-2021-SLI-0910
Event Code: 04EN2000-2021-E-02001
Project Name: Maple Swamp Wetland Mitigation Site
Project Type: LAND - RESTORATION / ENHANCEMENT
Project Description: Maple Swamp Wetland Mitigation Site is a non-riparian wetland restoration effort in Edgecombe County, NC. Ditched and drained farmland is being plugged and planted in a conversation effort to increase non-riparian wetland systems in the state.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.01302715,-77.55912426853955,14z

Counties: Edgecombe County, North Carolina

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
Neuse River Waterdog *Necturus lewisi* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6772	Proposed Threatened

Fishes

NAME	STATUS
Carolina Madtom *Noturus furiosus* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/528	Proposed Endangered

Clams

NAME	STATUS
Atlantic Pigtoe *Fusconaia masoni* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5164	Proposed Threatened
Tar River Spinymussel *Elliptio steinstansana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1392	Endangered
Yellow Lance *Elliptio lanceolata* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4511	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Uniform Relocation Assistance and Real Property Acquisition Polices Act (Uniform Act)

March 8, 2021

J. Rodney Williford
RKW Properties, LLC
PO Box 429
Bethel, NC 27812

Re: Maple Swamp Wetland Site: Division of Mitigation Services Riparian Buffer Project in Edgecombe County

Mr. Williford,

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Buyer herby notifies Seller that: (i) Buyer believes that the fair market value of the Mitigation Values of the Mitigation Property is an amount equal to the Purchase Price; and (ii) Buyer does not have the power of eminent domain.

The purpose of this letter is to notify you that Eco Terra Partners, LLC and The State of North Carolina, in offering to purchase your property in Edgecombe county, North Carolina, does not have the power to acquire it by eminent domain. Also, Eco Terra Partners, LLC's offer to purchase your property is based on what we believe to be its fair market value.

Sincerely,

Jamey O'Shaughnessey

Assistant Project Manager
Jamey@ecoterra.com
W: 984-222-5116

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Maple Swamp Wetland Mitigation Site
Maple Swamp Wetland Mitigation Site
Tarboro, NC 27886

Inquiry Number: 6396141.6s
March 08, 2021

The EDR Radius Map™ Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

MAPLE SWAMP WETLAND MITIGATION SITE
TARBORO, NC 27886

COORDINATES

Latitude (North):	36.0129780 - 36° 0' 46.72''
Longitude (West):	77.5592440 - 77° 33' 33.27''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	269349.9
UTM Y (Meters):	3988217.2
Elevation:	58 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5946137 DRAUGHN, NC
Version Date:	2013
South Map:	5945661 TARBORO, NC
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140618, 20140521
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
MAPLE SWAMP WETLAND MITIGATION SITE
TARBORO, NC 27886

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROLS ..... Institutional Controls Sites List

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

NC HSDS ..... Hazardous Substance Disposal Site

State- and tribal - equivalent CERCLIS

SHWS ..... Inactive Hazardous Sites Inventory

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... List of Solid Waste Facilities
DEBRIS ..... Solid Waste Active Disaster Debris Sites Listing
OLI ..... Old Landfill Inventory
LCID ..... Land-Clearing and Inert Debris (LCID) Landfill Notifications

State and tribal leaking storage tank lists

LUST ..... Regional UST Database
LAST ..... Leaking Aboveground Storage Tanks
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
LUST TRUST ..... State Trust Fund Database

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
UST ..... Petroleum Underground Storage Tank Database
AST ..... AST Database
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

INST CONTROL ..... No Further Action Sites With Land Use Restrictions Monitoring

State and tribal voluntary cleanup sites

VCP ..... Responsible Party Voluntary Action Sites
INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ..... Brownfields Projects Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY	Recycling Center Listing
HIST LF	Solid Waste Facility Listing
INDIAN ODI	Report on the Status of Open Dumps on Indian Lands
ODI	Open Dump Inventory
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS	Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL	Delisted National Clandestine Laboratory Register
US CDL	National Clandestine Laboratory Register

Local Land Records

LIENS 2	CERCLA Lien Information

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
SPILLS	Spills Incident Listing
IMD	Incident Management Database
SPILLS 90	SPILLS 90 data from FirstSearch
SPILLS 80	SPILLS 80 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees

INDIAN RESERV Indian Reservations
FUSRAP Formerly Utilized Sites Remedial Action Program
UMTRA Uranium Mill Tailings Sites
LEAD SMELTERS Lead Smelter Sites
US AIRS Aerometric Information Retrieval System Facility Subsystem
US MINES Mines Master Index File
ABANDONED MINES Abandoned Mines
FINDS Facility Index System/Facility Registry System
UXO Unexploded Ordnance Sites
ECHO Enforcement & Compliance History Information
DOCKET HWC Hazardous Waste Compliance Docket Listing
FUELS PROGRAM EPA Fuels Program Registered Listing
AIRS Air Quality Permit Listing
ASBESTOS ASBESTOS
COAL ASH Coal Ash Disposal Sites
DRYCLEANERS Drycleaning Sites
Financial Assurance Financial Assurance Information Listing
NPDES NPDES Facility Location Listing
UIC Underground Injection Wells Listing
AOP Animal Operation Permits Listing
SEPT HAULERS Permitted Septage Haulers Listing
CCB Coal Ash Structural Fills (CCB) Listing
MINES MRDS Mineral Resources Data System
PCSRP Petroleum-Contaminated Soil Remediation Permits

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Auto EDR Exclusive Historical Auto Stations
EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS Recovered Government Archive State Hazardous Waste Facilities List
RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

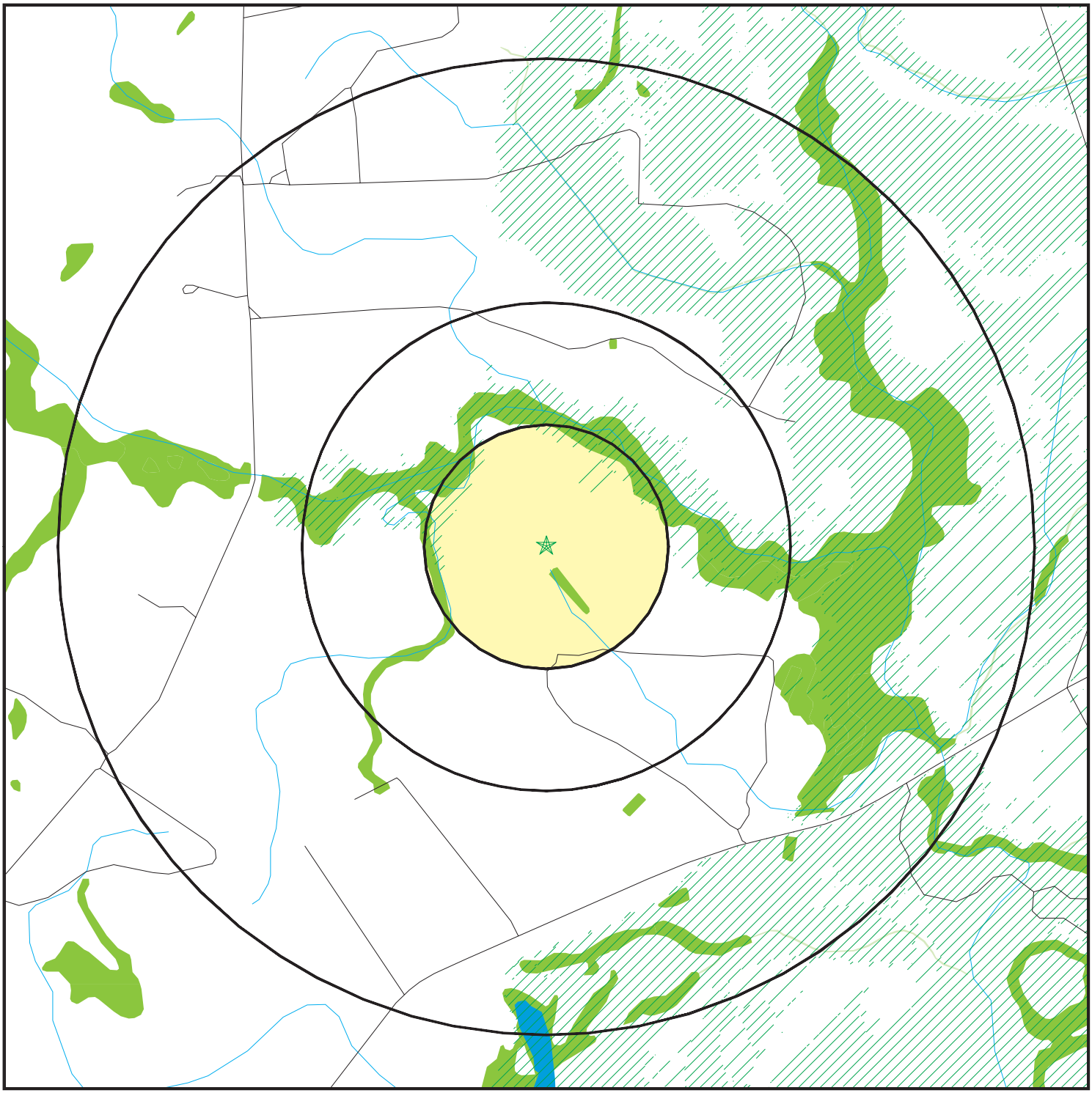
Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 6396141.6S

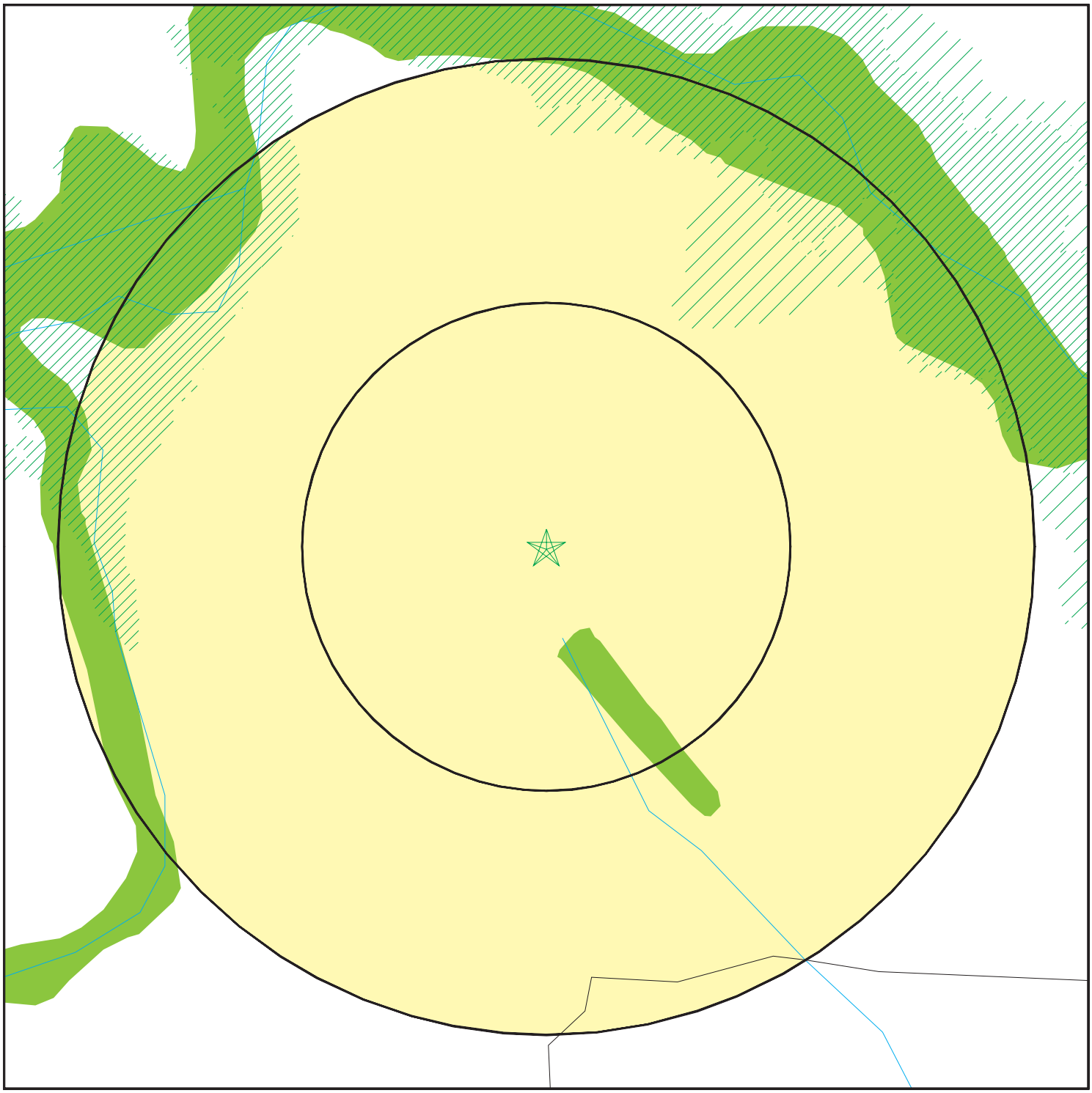


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Hazardous Substance Disposal Sites

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Maple Swamp Wetland Mitigation Site	CLIENT:	Eco Terra Management, LLC
ADDRESS:	Maple Swamp Wetland Mitigation Site Tarboro NC 27886	CONTACT:	Jamey Oshaughnessey
LAT/LONG:	36.012978 / 77.559244	INQUIRY #:	6396141.6s
		DATE:	March 08, 2021 4:27 pm

DETAIL MAP - 6396141.6S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Hazardous Substance Disposal Sites

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Maple Swamp Wetland Mitigation Site ADDRESS: Maple Swamp Wetland Mitigation Site Tarboro NC 27886 LAT/LONG: 36.012978 / 77.559244	CLIENT: Eco Terra Management, LLC CONTACT: Jamey Oshaughnessey INQUIRY #: 6396141.6s DATE: March 08, 2021 4:30 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
NC HSDS	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
DEBRIS	0.500		0	0	0	NR	NR	0
OLI	0.500		0	0	0	NR	NR	0
LCID	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0
LAST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
LUST TRUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
IMD	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SPILLS 90	TP		NR	NR	NR	NR	NR	0
SPILLS 80	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
AOP	TP		NR	NR	NR	NR	NR	0
SEPT HAULERS	TP		NR	NR	NR	NR	NR	0
CCB	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES MRDS	TP		NR	NR	NR	NR	NR	0
PCSRP	0.500		0	0	0	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

Farmland Protection Policy Act (FPPA)

USDA
United States Department of Agriculture

Natural Resources
Conservation Service

North Carolina
State Office

4407 Bland Rd.
Suite 117
Raleigh
North Carolina 27609
Voice (704) 680-3541
Fax (844) 325-2156

March 10, 2021

Jamey O'Shaughnessey
Environmental Associate
Eco Terra Management LLC
1117 Peachtree Walk NE; Suite 126
Atlanta, GA 30309

Dear Jamey O'Shaughnessey;

The following information is in response to your request soliciting comments regarding the Proposed Maple Swamp Wetland Mitigation Site in Edgecombe County, NC.

Projects are subject to Farmland Protection Policy Act (FPPA) requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary to be farmland of statewide of local importance.

"Farmland" does not include land already in or committed to urban development or water storage. Farmland ``already in'' urban development or water storage includes all such land with a density of 30 structures per 40-acre area. Farmland already in urban development also includes lands identified as ``urbanized area'' (UA) on the Census Bureau Map, or as urban area mapped with a ``tint overprint'' on the USGS topographical maps, or as ``urban-built-up'' on the USDA Important Farmland Maps. See over for more information.

The area in question includes land classified as Prime Farmland. In accordance with the Code of Federal Regulations 7CFR 658, Farmland Protection Policy Act, the AD-1006 was initiated. NRCS Completed Parts II, IV, V of the form and returned for completion by the requesting agency.

If you have any questions, please feel free to call me at (704) 680-3541 office or (704) 754-6734 cell.

Sincerely,

Kristin L May

Kristin L May
Acting State Soil Scientist

cc:
Carl Kirby, acting supervisory soil conservationist, NRCS, Snow Hill, NC

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 02/18/2021	
Name of Project Maple Swamp Wetland Mitigation Site		Federal Agency Involved NC DOT / FHWA	
Proposed Land Use Wetland Restoration		County and State Edgecombe County North Carolina	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 2/18/2021	Person Completing Form: Kristin May
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated None	Average Farm Size 598
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 89.45 % 290157 ac.	Amount of Farmland As Defined in FPPA Acres: 89.45 % 290157ac	
Name of Land Evaluation System Used Edgecombe Co. LESA	Name of State or Local Site Assessment System NA	Date Land Evaluation Returned by NRCS 3/10/2021	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	15.3			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	2.5			
B. Total Acres Statewide Important or Local Important Farmland	12.8			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0052			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	68.52			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	25			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	20			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	10			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	10			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	5			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	80	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	25	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	80	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	105	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side)

Form AD-1006 (03-02)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix D

NCLSS Soil Report and Borings

Soil, Water, & Environment Group, PLLC
3216 Byers Drive, Suite B
Raleigh, NC 27607
Ph# (919) 831-1234 • Fax# (919) 899-9100 • http://www.swegrp.com

October 23, 2020

Mr. Ted Griffith
Eco-Terra Management, LLC
117 Peachtree Walk NE
STE 126
Atlanta, GA 30309

Re: Soil Analysis and Evaluation for the Maple Swamp Wetland Restoration Mitigation Site, Edgecombe County, NC

Dear Mr. Griffith,

Soil, Water, and Environment Group, PLLC was requested by Eco-Terra to provide a hydric soil determination at a proposed wetland mitigation site north of NC HWY 97E east of the Town of Leggett, in Edgecombe County, North Carolina (Figure 1). The soil investigation was conducted in accordance with the RFP #16-20200206 requesting non-riparian wetland mitigation credits for the Tar-Pamlico River Basin (HUC 03020102) from the NC Department of Environment and Natural Resources, Division of Mitigation Services. The site is located in LRR P, MLRA 133A within the Upper Coastal Plain physiographic region. Currently the site investigated is in row crops and fallow field.

Prior to going to the site, background data, maps, and online resources were researched to familiarize staff with the area, regional soils, as well as the landscape setting of the project. The following is a description of the data set included with this correspondence related to the Maple Swamp Wetland Mitigation Site:

Hydric Soil Investigation

On June 18 and October 9, 2020, SWE Group personnel investigated the Maple Swamp Wetland Mitigation Site to confirm published NRCS soil survey mapping data, record detailed soil descriptions for selected areas representing different landscape positions across the site, and to determine the extent of hydric soils for the purpose of wetland restoration site criteria. The proposed wetland restoration is located in a prior converted depressional non-riverine wet hardwood forest site with substantial site drainage required for continued row crop production.

A series of approximately 30 hand augerings was accomplished across approximately 18 acres of the proposed wetland restoration site at maximum depths of approximately 24-30 in. Detailed soil descriptions including horizon, color, texture, structure, and consistency were recorded (Figure 2: Soil Boring Map).

The site-specific soil descriptions included in this report are most similar to Roanoke silt loam series soils as described by the Edgecombe County Soil Survey (NRCS, 1979 and Web Soil Survey, 2020) with variations in texture, color, and thickness. The site has been in agriculture and cleared for over 50 years and hydric soils have been modified and effectively drained. Landscape positions include flats and depressions on the interstream divide between Moore Swamp and Maple Swamp.

Hydric soils found on the site occur generally in the same landscape depressional upper watershed position. Slopes on site are flat to nearly flat and the site generally slopes from northwest to southeast draining the site and sideslopes at the northwest into a main ditch exiting the site. The seasonal high water table on undrained site soils is found between 0-12 inches. Due to active and on-going drainage, the observed water table ranged from 16-22 inches in the middle and later in the growing season.

NRCS Mapped Soils

Roanoke (Ro) silt loam soils are very poorly drained soils found along a variety of landscape positions including stream terraces, depressions, interstream divides, valleys, and backswamps. These soils formed in old clayey alluvium and have slow to very slow permeability and the water table is less than 12 inches for six to seven months out of the year. Slopes are generally 0-2%. An image of the printed (NRCS) 1979 soil survey map of the Project is shown in Figure 3. Geologically, the Project Site is located within the Coastal Plain physiographic province and Southeastern Plains ecoregion. Coastal Plain non-riparian wetland system hydrology and hydric soil characteristics are typically driven by precipitation and lateral flow from less permeable soil horizons.

Roanoke soils are classified as 100% hydric and found on the National Hydric Soils List (NRCS, 1995). These soils typically have a dark grayish brown, 10YR 4/2 silt loam Ap surface horizon (0-7 in), and a gray 10YR 5/1, Btg horizon (7-12in), followed by a gray 10YR 5/1, Btg subsurface horizon (12-20 in). (NRCS, 2006).

A series of soil borings were accomplished across the site and soil descriptions were completed on representative samples. Hydric soil indicators were used in accordance with the manual *Field Indicators of Hydric Soils in the United States, 2018*, USDA Natural Resources Conservation Service.

Hydric indicators utilized on this site were as follows:

F3. Depleted Matrix
A layer that has a depleted matrix with 60% or more chroma of 2 or less and that has a minimum thickness of either:

a. 2 inches if it starts at a depth less than or equal to 4 inches from the soil surface, or
b. 6 inches, starting at a depth of 10 inches from the soil surface.

User Notes: A depleted matrix requires a value of 4 or more and chroma of 2 or less. Redox concentrations, including soft iron-manganese masses and/or pore linings, are required in soils with matrix colors of 4/1, 4/2, or 5/2. A, E, and calcic horizons may have low chromas and high values and may therefore be mistaken for a deplete matrix; however, they are excluded from the concept of depleted matrix unless the soil has common or many distinct or prominent redox concentrations occurring as soft masses or pore linings. The low-chroma matrix must be the result of wetness and not a weathering or parent material feature.

Soils mapped within the proposed restoration area have layers at least 10 inches down and at least 6 inches thick with a matrix of 60% or more chroma of 2 or less. Soils mapped within the proposed restoration area are hydric and are further described in the representative soil borings. (Attached Soil Borings).

Overall, it is my professional opinion the project area as proposed and investigated has hydric soils with hydric soil characteristics suitable for wetland restoration (re-establishment) most similar to Roanoke series soils.

Further, the areas investigated for the presence of hydric soils considered for wetland restoration consist predominantly of hydric soils, are devoid of hydric vegetation, and wetland hydrology, and are not currently jurisdictional wetlands, as defined by the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and the 2010 USACE Atlantic Gulf and Coastal Plain Regional Supplement.

Please let us know if you have any questions concerning the enclosed soil data and site investigation report. We look forward to working with you further on this project.

Sincerely,

Scott J. Frederick, EI, NCLSS #1236
Environmental Scientist
Soil, Water, & Environment Group
sjfrederick@swegrp.com
Encl: figures, soils data, and photos

References

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and Soil Survey Staff. 2002. Field book for describing and sampling soils, Version 2.0. Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE.

United States Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States. A Guide for Identifying and Delineating Hydric Soils, V. 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.

United States Department of Agriculture, Soil Conservation Service. 2020. GIS Web Soil Survey of Edgecombe County, North Carolina.

United States Department of Agriculture, Soil Conservation Service. 1979. Soil Survey of Edgecombe County, North Carolina.

Attachments

Soil Descriptions/Photos
Figure 1: USGS Vicinity
Figure 2: Soil Boring Locations
Figure 3: NRCS Soil Map

Soil, Water, & Environment Group

Soil Investigation Data Sheet

Soil Boring:	SB1A hydric (F3)		
Location:	Maple Swamp	Date:	6/18/20
County:	Edgecombe NC	Investigator(s):	SJF
Lat./Long.:	36.014942, -77.560111	Elev.:	58 ft

Parent Material:	clayey fluvial sediments	Drainage (Wetness) Class:	poorly drained effective drainage in place
Moisture Status:	moist	Slope (%):	< 2%
Classification:	Fine, mixed, semiactive, thermic Typic Endoaquults	Vegetative Cover:	row crops
Soil Series:	Roanoke	Water Table:	>24"
Aspect:	NE	SHWT:	<12 "
Landscape Position:	flat		

					Structure						
Horiz.	**Depth (in.)**	**Main Colors (moist)**	**Mottles**	**Texture**	**Grade**	**Class**	**Type**	**Moist & Wet Consist.**	**Ped Coatings**	**Hoizon Boundary**	**Other Remarks**
Ap	0-10	dark grayish brown (10YR 4/2		st loam	weak	fine	granular	friable	-	-	fine roots
Btg1	10-16	gray (10YR 5/1)	many prom (10YR 5/8)	clay	mod	med	sub. blk.	sticky/plast	-	-	evidence of water movement
Btg2	16-24+	gray (10YR 6/1)	prom (10YR 5/8)	st clay loam	mod	fine	sub. blk.	friable	-	-	

License Seal:

Date: 10/20/20

Soil, Water, & Environment Group

Soil Investigation Data Sheet

Soil Boring:	SB2 hydric (F3)		
Location:	Maple Swamp	Date:	6/18/20
County:	Edgecombe NC	Investigator(s):	SJF
Lat./Long.:	36.015000, -77.559447	Elev.:	58 ft

Parent Material:	clayey fluvial sediments	Drainage (Wetness) Class:	poorly drained effective drainage in place
Moisture Status:	moist	Slope (%):	< 2%
Classification:	Fine, mixed, semiactive, thermic Typic Endoaquults	Vegetative Cover:	row crops
Soil Series:	Roanoke	Water Table:	>24"
Aspect:	SW	SHWT:	<14 "
Landscape Position:	flat		

					Structure						
Horiz.	**Depth (in.)**	**Main Colors (moist)**	**Mottles**	**Texture**	**Grade**	**Class**	**Type**	**Moist & Wet Consist.**	**Ped Coatings**	**Hoizon Boundary**	**Other Remarks**
Ap	0-14	dark grayish brown (10YR 4/2		st loam	weak	fine	granular	friable	-	-	fine roots
Btg1	14-24+	gray (10YR 6/1)	many prom (10YR 5/8)	clay	mod	med	sub. blk.	sticky/plast	-	-	evidence of water movement

License Seal:

Date: 10/20/20

Soil, Water, & Environment Group

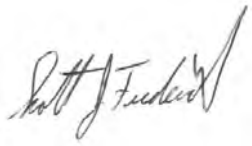
Soil Investigation Data Sheet

Soil Boring:	SB3 hydric (F3)		
Location:	Maple Swamp	Date:	6/18/20
County:	Edgecombe NC	Investigator(s):	SJF
Lat./Long.:	36.013583, -77.559817	Elev.:	58 ft

Parent Material:	clayey fluvial sediments	Drainage (Wetness) Class:	poorly drained effective drainage in place
Moisture Status:	moist	Slope (%):	< 2%
Classification:	Fine, mixed, semiactive, thermic Typic Endoaquults	Vegetative Cover:	row crops
Soil Series:	Roanoke	Water Table:	>24"
Aspect:	NE	SHWT:	<12"
Landscape Position:	flat		

					Structure						
Horiz.	**Depth (in.)**	**Main Colors (moist)**	**Mottles**	**Texture**	**Grade**	**Class**	**Type**	**Moist & Wet Consist.**	**Ped Coatings**	**Hoizon Boundary**	**Other Remarks**
Ap	0-8	dark grayish brown (10YR 4/2		st loam	weak	fine	granular	friable	-	-	fine roots, evidence of ponding
Btg1	8-14	gray (10YR 5/1)	many prom (10YR 5/8)	st clay loam	mod	fine	sub. blk.	friable	-	-	evidence of water movement, fine roots
Btg2	14-24+	gray (10YR 6/1)	prom (10YR 5/8)	clay	mod	med	sub. blk.	sticky/plast	-	-	

License Seal:



Date: 10/20/20

Soil, Water, & Environment Group

Soil Investigation Data Sheet

Soil Boring:	SB4 hydric (F3)		
Location:	Maple Swamp	Date:	6/18/20
County:	Edgecombe NC	Investigator(s):	SJF
Lat./Long.:	36.012261, -77.558242	Elev.:	58 ft

Parent Material:	clayey fluvial sediments	Drainage (Wetness) Class:	poorly drained effective drainage in place
Moisture Status:	moist	Slope (%):	< 2%
Classification:	Fine, mixed, semiactive, thermic Typic Endoaquults	Vegetative Cover:	row crops
Soil Series:	Roanoke	Water Table:	>24"
Aspect:	SW	SHWT:	<12 "
Landscape Position:	flat		

					Structure						
Horiz.	**Depth (in.)**	**Main Colors (moist)**	**Mottles**	**Texture**	**Grade**	**Class**	**Type**	**Moist & Wet Consist.**	**Ped Coatings**	**Hoizon Boundary**	**Other Remarks**
Ap	0-14	dark grayish brown (10YR 4/2	faint (10YR 5/8)	st loam	weak	fine	granular	friable	-	-	fine roots, oxidized root channels
Btg1	14-24+	gray (10YR 6/1)	many prom (10YR 5/8)	clay	mod	med	sub. blk.	sticky/plast	-	-	evidence of water movement

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Date: 10/20/20

Soil, Water, & Environment Group

Soil Investigation Data Sheet

Soil Boring:	SB5 hydric (F3)		
Location:	Maple Swamp	Date:	6/18/20
County:	Edgecombe NC	Investigator(s):	SJF
Lat./Long.:	36.013750, -77.558625	Elev.:	58 ft

Parent Material:	clayey fluvial sediments	Drainage (Wetness) Class:	poorly drained effective drainage in place
Moisture Status:	moist	Slope (%):	< 2%
Classification:	Fine, mixed, semiactive, thermic Typic Endoaquults	Vegetative Cover:	row crops
Soil Series:	Roanoke	Water Table:	>24"
Aspect:	SW	SHWT:	<12 "
Landscape Position:	flat		

					Structure						
Horiz.	**Depth (in.)**	**Main Colors (moist)**	**Mottles**	**Texture**	**Grade**	**Class**	**Type**	**Moist & Wet Consist.**	**Ped Coatings**	**Hoizon Boundary**	**Other Remarks**
Ap1	0-10	grayish brown (10YR 5/2		st loam	weak	fine	granular	friable	-	-	fine roots, overwash, standing surface water
Ap2	10-16	light grayish brown(10YR 6/2)	faint (10YR 5/8)	st loam	mod	med	sub. blk.	sticky/plast	-	-	evidence of water movement, buried hydric soil
Btg1	16-24+	gray (10YR 5/1)	many (10YR 5/8)	st clay loam	mod	fine	sub. blk.	friable	-	-	

License Seal:

Date: 10/20/20

Soil, Water, & Environment Group

Soil Investigation Data Sheet

Soil Boring:	SB6 hydric (F3)		
Location:	Maple Swamp	Date:	6/18/20
County:	Edgecombe NC	Investigator(s):	SJF
Lat./Long.:	35.183647, -77.564596	Elev.:	58 ft

Parent Material:	clayey fluvial sediments	Drainage (Wetness) Class:	poorly drained effective drainage in place
Moisture Status:	moist	Slope (%):	< 2%
Classification:	Fine, mixed, semiactive, thermic Typic Endoaquults	Vegetative Cover:	row crops
Soil Series:	Roanoke	Water Table:	>24"
Aspect:	SW	SHWT:	<12 "
Landscape Position:	flat		

					Structure						
Horiz.	**Depth (in.)**	**Main Colors (moist)**	**Mottles**	**Texture**	**Grade**	**Class**	**Type**	**Moist & Wet Consist.**	**Ped Coatings**	**Hoizon Boundary**	**Other Remarks**
Ap	0-6	very dark gray (10YR 3/1)		st	weak	fine	granular	friable	-	-	fine roots, OM
Btg1	6-16	gray (10YR 5/1)	many prom (10YR 5/8)	clay	mod	med	sub. blk.	sticky/plast	-	-	evidence of water movement
Btg2	16-24+	gray (10YR 6/1)	prom (10YR 5/8)	st clay loam	mod	fine	sub. blk.	friable	-	-	

License Seal:

LICENSED SOIL SCIENTIST
Scott J. Frederick
1236
STATE OF NORTH CAROLINA

Date: 10/20/20

SB1

SB2

SB4

SB5

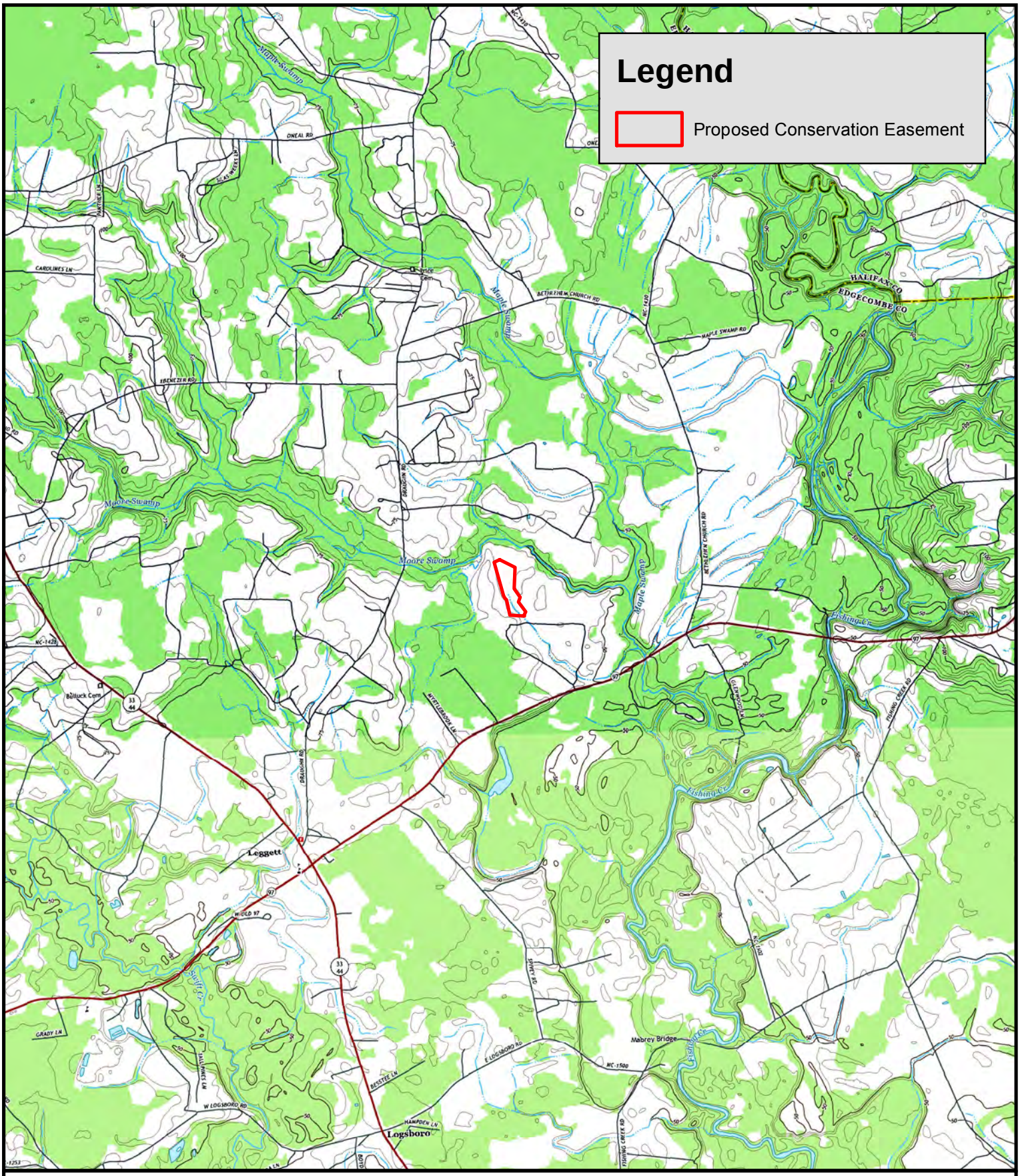


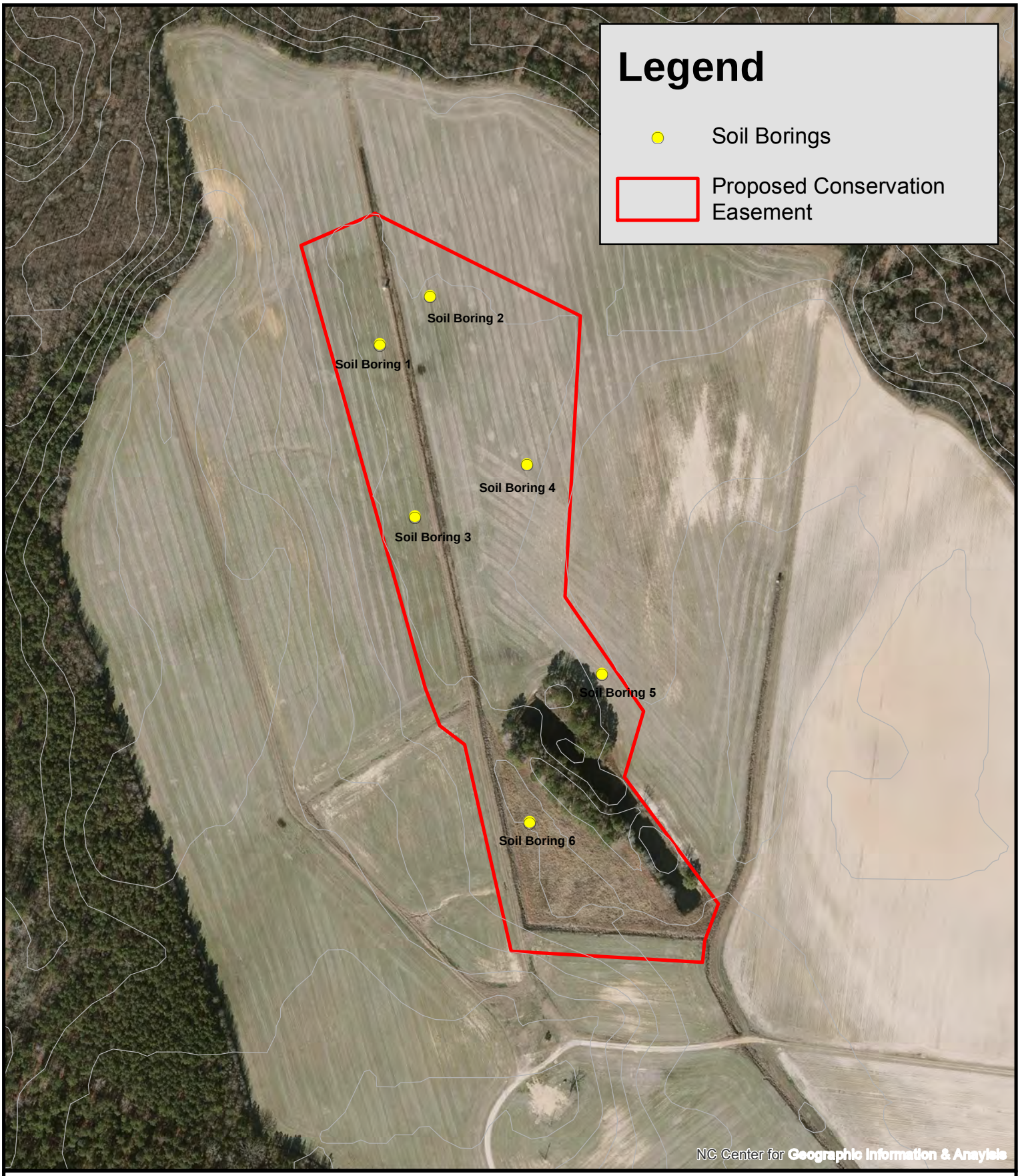
Figure 1 Vicinity Map
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
October 2020

2013 USGS Quadrangles Draughn & Tarboro

Soil, Water, & Environment Group

4,000 2,000 0 4,000
Feet

N



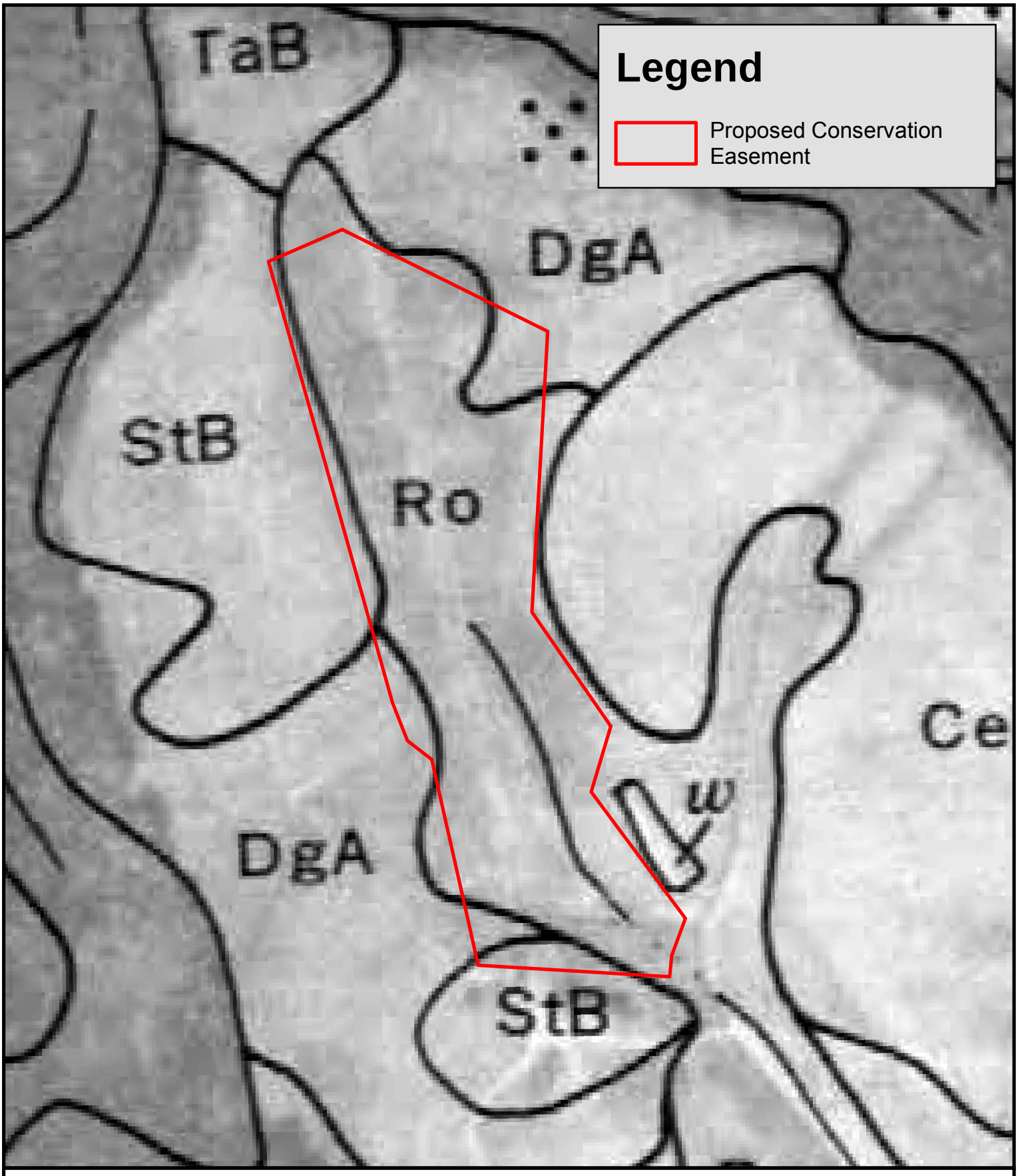
Soil, Water, & Environment Group

Figure 2 Boring Map
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
October 2020

NC Onemap 2017 Aerial

300 150 0 300
Feet

N



Soil, Water, & Environment Group

Figure 3 Soil Survey
Maple Swamp Wetland Mitigation Site
Tar-Pam 03020102
Edgecombe County, North Carolina
October 2020

1979 NRCS Soil Survey Map Sheet 7

300 150 0 300
Feet

N

Appendix E

Memo of Purchase and Sale Agreement

BK 1720 PG 0511

Doc ID: 003409820007 Type: CRP
Recorded: 10/21/2020 at 04:18:02 PM
Fee Amt: $26.00 Page 1 of 7
EDGECOMBE COUNTY, NORTH CAROLINA
Vila R. Anderson Register of Deeds
BK 1720 PG 511-517

AMW

Cross Reference:
Deed Book ___, Page __
Register of Deeds
Edgecombe County, NC

File/Return to: Ted Griffith
Eco Terra Partners
1117 Peachtree Walk NE
Suite 126
Atlanta, GA 30309

MEMORANDUM OF AGREEMENT

STATE OF NORTH CAROLINA
COUNTY OF EDGECOMBE

THIS MEMORANDUM OF AGREEMENT (this "Memorandum") is hereby made this 21st day of October, 2020, by and between **ECO TERRA PARTNERS, LLC**, a Georgia limited liability company, whose mailing address is 1117 Peachtree Walk NE, Suite 126, Atlanta, GA 30309 (herein "Buyer") and **RKW PROPERTIES, LLC** ("Seller").

1. For good and valuable consideration, Seller and Buyer have entered into that certain Agreement for Purchase and Sale of Conservation Easement of even date herewith (the "Agreement").

2. Pursuant to the Agreement, Seller has agreed to sell and Buyer has agreed to purchase a permanent conservation easement containing approximately 26.29 acres, more or less, over a portion of the Seller's real property located in Edgecombe County, State of North Carolina. The Seller's property (the "Property") is described on **Exhibit A**. The portion of the Seller's Property which consists of the easement property is also set forth on **Exhibit A** (the "Easement Property"); the Easement Property is more particularly depicted on **Exhibit A-1**. The final legal description for the property encumbered by the proposed conservation easement shall be determined by a survey and, upon consummation of the Agreement, incorporated into a Deed of Conservation Easement to be conveyed by Seller and recorded in the Register of Deeds.

3. Seller and Buyer have agreed to execute and record this Memorandum in accordance with the terms of the Agreement to give public notice of the Agreement and this Memorandum shall not supersede or in any way modify the terms and conditions of the Agreement. The Agreement shall run with the land and shall be binding upon and inure to the benefit of the

parties hereto, their respective heirs, legal representatives, administrators, successors, and assigns.

4. This Memorandum shall expire, and the Agreement shall no longer run with the land, or be considered a cloud upon title, upon the earlier to occur of (i) a termination of the Agreement by Buyer (subject, however, without limiting any rights Buyer may retain which survive a termination of the Agreement); (ii) the conveyance and subsequent recording of the Deed of Conservation Agreement from Seller as contemplated by the Agreement; or (iii) the date that is two (2) years from the day and year first above written.

[*Signature pages follow*]

BUYER:

ECO TERRA PARTNERS, LLC

By: _____ (SEAL)
Name: Luther Theodore Griffith, Jr.
Title: Vice-President

Date: 21 Oct 2020

STATE OF NORTH CAROLINA

COUNTY OF CHATHAM

On this 21st day of October, 2020, before me personally appeared Luther Theodore Griffith, Jr., to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year above written.

_____
Notary Public

My Commission Expires:

My Commission Expires 5-25-2025

D NORTON WEBSTER NOTARY PUBLIC CHATHAM COUNTY, NC

SELLER:

RKW PROPERTIES, LLC
a North Carolina limited liability company

By: Jimmy Rodney Williford (SEAL)
Name: Jimmy Rodney Williford
Title: _____

Date: 21 Oct 2020

STATE OF NORTH CAROLINA

COUNTY OF EDGECOMBE

On this 21st day of October, 2020, before me personally appeared **JIMMY RODNEY WILLIFORD**, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year above written.

_____
Notary Public

My Commission Expires:

My Commission Expires 5-25-2025

D NORTON WEST
NOTARY
PUBLIC
CHATHAM COUNTY, NC

Exhibit A

Legal Description of the Property

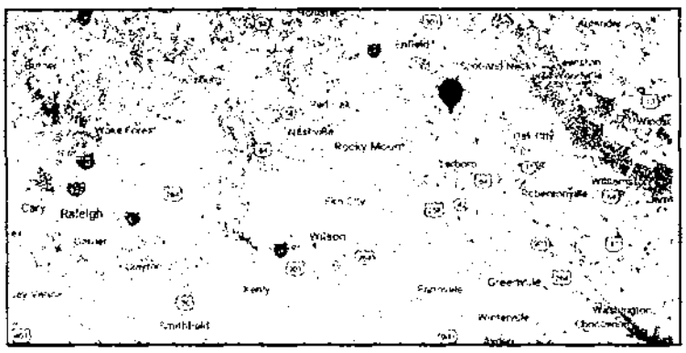
As to property owned by **RKW Properties LLC** dated 04/22/2010, that property identified with **PIN 4822-75-37** and conveyed pursuant to that certain Deed recorded at Book Code 1552, Page 0337 in the Register of Deeds, Edgecombe County, North Carolina.

1720 0516

This map may not be a certified survey and has not been reviewed by a local government agency for compliance with any applicable land development regulations and has not been reviewed for compliance with recording requirements for plats.

Owner:	RKW Properties LLC
County:	Edgecombe
Parcel ID:	4822753768
Property Location:	36° 0'35.10"N 77°33'12.69"W

Jamey O'Shaughnessey
[illegible]
jamey@ecoterra.com
[illegible]



Map Legend

Stream of Interest

Property Line

Potential Project Area

26.29 Acres

Exhibit A-1

[See Attached Map]
Legal Description of the Easement Property

M-Vinson Bridgers
P.O. Box 1161
Tarboro NC 27886
(7) $26

Appendix F

Financial Assurances

NORTH CAROLINA
Environmental Quality

Compensatory Mitigation Performance Bond

DATE EXECUTED (the "Effective Date"): 12/06/2021	**BOND NUMBER:** 3802949
PENAL SUM OF BOND: $175,120	
SURETY: Attn: Bond Division Claims Great American Insurance Company 301 E. 4th Street Cincinnati, OH 45202	
OBLIGEE (the "Contracting Body"): North Carolina Department of Environmental Quality Division of Mitigation Services 217 West Jones Street Raleigh, NC 27603	
NAME OF PROJECT: Maple Swamp Wetland Mitigation Site – Option 1	
CONTRACT EFFECTIVE DATE: 02/02/2021	**CONTRACT NUMBER:** 200206-01

PRINCIPAL: Eco Terra Partners, LLC 1328 Dekalb Ave. NE Atlanta, GA 30307
TYPE OF ORGANIZATION (Mark one "X")
___Individual ___Partnership ___Joint Venture ___Corporation _X_Limited Liability Corporation
STATE OF INCORPORATION: Georgia

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL AND SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Notwithstanding the provisions of the Contract, the term of this bond shall apply from the Effective Date listed above and end with the approval of Task 6 Baseline Monitoring Report (including As-Built Drawings) by the Contracting Body but may be extended by Surety with a continuation certificate. However, neither failure of Surety to provide a continuation certificate, nor failure or inability of Principal to file a replacement bond in the event Surety does not provide a continuation certificate, shall itself constitute a loss to the Contracting Body recoverable under this bond or any continuation thereof. The liability of Surety under this bond or any continuation certificate issued in connection with it shall not be cumulative and in no event shall exceed the amount set forth in this bond or in any continuation certificate properly issued by Surety.

The Principal and Surety have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL	
Name & Address Eco Terra Partners, LLC 1328 Dekalb Ave. NE Atlanta, GA 30307	
Signature	
Name & Title Michael Beinenson, President	
AGENT FOR CORPORATE SURETY	
Name & Address Great American Professional Risk Insurance Services 11325 N Community House Rd., Suite 200 Charlotte, NC 28277	
Signature	
Name & Title James Callis, Vice President	
CORPORATE SURETY	
Name & Address Great American Insurance Company 301 E. 4th Street Cincinnati, OH 45202	State of Incorporation Ohio
Signature (Seal)	Witness Signature
Name & Title David V. Ferron, Vice President & Attorney-in-Fact	Witness Name & Title Julie L. Roberts, Assistant Vice President

GREAT AMERICAN INSURANCE COMPANY®

Administrative Office: 301 E 4TH STREET • CINCINNATI, OHIO 45202 • 513-369-5000 • FAX 513-723-2740

The number of persons authorized by
this power of attorney is not more than TWO

No. 0 21217

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the GREAT AMERICAN INSURANCE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Ohio, does hereby nominate, constitute and appoint the person or persons named below, each individually if more than one is named, its true and lawful attorney-in-fact, for it and in its name, place and stead to execute on behalf of the said Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; provided that the liability of the said Company on any such bond, undertaking or contract of suretyship executed under this authority shall not exceed the limit stated below.

Name	Address	Limit of Power
DAVID FERRON	BOTH OF	BOTH
LYLE CLEM	CINCINNATI, OH	UNLIMITED

This Power of Attorney revokes all previous powers issued on behalf of the attorney(s)-in-fact named above.

IN WITNESS WHEREOF the GREAT AMERICAN INSURANCE COMPANY has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 2ND day of NOVEMBER , 2018 .

Attest

Assistant Secretary

GREAT AMERICAN INSURANCE COMPANY

Divisional Senior Vice President

MARK VICARIO (877-377-2405)

STATE OF OHIO, COUNTY OF HAMILTON - ss:

On this 2ND day of NOVEMBER , 2018 , before me personally appeared MARK VICARIO, to me known, being duly sworn, deposes and says that he resides in Cincinnati, Ohio, that he is a Divisional Senior Vice President of the Bond Division of Great American Insurance Company, the Company described in and which executed the above instrument; that he knows the seal of the said Company; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by authority of his office under the By-Laws of said Company, and that he signed his name thereto by like authority.

Susan A. Kohorst
Notary Public, State of Ohio
My Commission Expires 05-18-2020

This Power of Attorney is granted by authority of the following resolutions adopted by the Board of Directors of Great American Insurance Company by unanimous written consent dated June 9, 2008.

RESOLVED: That the Divisional President, the several Divisional Senior Vice Presidents, Divisional Vice Presidents and Divisonal Assistant Vice Presidents, or any one of them, be and hereby is authorized, from time to time, to appoint one or more Attorneys-in-Fact to execute on behalf of the Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment at any time.

RESOLVED FURTHER: That the Company seal and the signature of any of the aforesaid officers and any Secretary or Assistant Secretary of the Company may be affixed by facsimile to any power of attorney or certificate of either given for the execution of any bond, undertaking, contract of suretyship, or other written obligation in the nature thereof, such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATION

I, STEPHEN C. BERAHA, Assistant Secretary of Great American Insurance Company, do hereby certify that the foregoing Power of Attorney and the Resolutions of the Board of Directors of June 9, 2008 have not been revoked and are now in full force and effect.

Signed and sealed this day of ,

Assistant Secretary

Appendix G

Site Plans

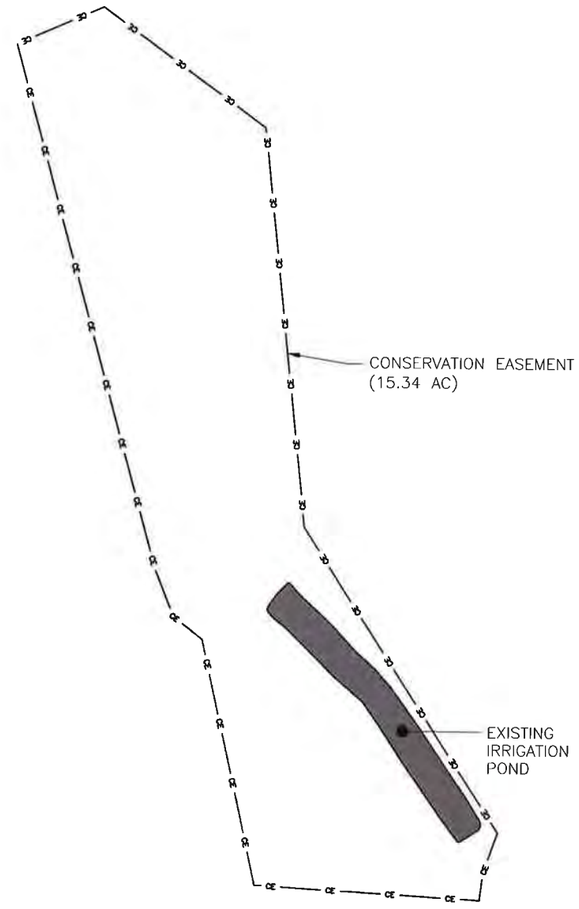
MAPLE SWAMP MITIGATION SITE
TAR-PAMLICO 03020102 RIVER BASIN

CONSTRUCTION PLANS
DWR Project No. 20210409

EDGECOMBE COUNTY, NORTH CAROLINA
DATE: JANUARY 26, 2022

REVISIONS

NO.	DATE	
1	01.10.2022	NC DEMLR COMMENTS RECEIVED 12.28.2021
2	01.26.2022	NC IRT COMMENTS

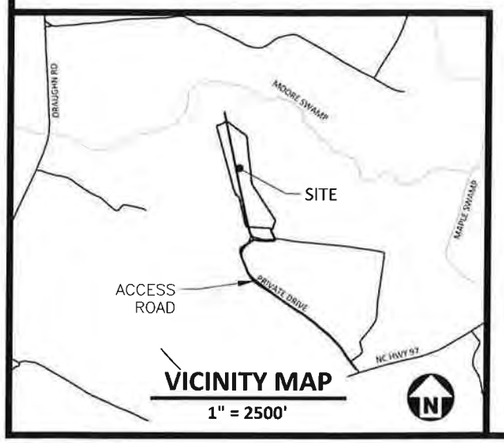


SHEET INDEX

TOTAL DISTURBED AREA = 14.85 AC.

811 Know what's below. Call before you dig.

CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.



GRAPHIC SCALE
0 150 300 600
1 inch = 300 ft.

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

MCADAMS

ECO TERRA PARTNERS, LLC
1328 DEKALB AVE. NE
ATLANTA, GA 30307
CONTACT: NORTON WEBSTER
PHONE: 919.548.0949

ecoterra

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS
1.26.22

LEGEND AND SYMBOLS

LD LD — LIMITS OF DISTURBANCE

CE CE — PROPOSED CONSERVATION EASEMENT

PROPERTY LINE

250 — EXISTING MAJOR CONTOUR

EXISTING MINOR CONTOUR

EXISTING DITCH CENTERLINE

EXISTING TREE LINE

EXISTING IRRIGATION POND

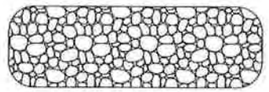
FEMA 100–YR FLOODPLAIN

FEMA 500–YR FLOODPLAIN

PROPOSED FILL

PROPOSED VERNAL POOL

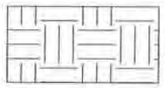
EROSION CONTROL LEGEND



CONSTRUCTION ENTRANCE

HAUL ROAD

SF SF SF — SILT FENCE



STAGING/STOCKPILE AREA

DITCH PLUG

TEMPORARY CROSSING – LOG MAT

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www.mcadamsco.com

MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION

PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-XC
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	1" = 300'
DATE	01.26.2022

LEGEND AND SYMBOLS

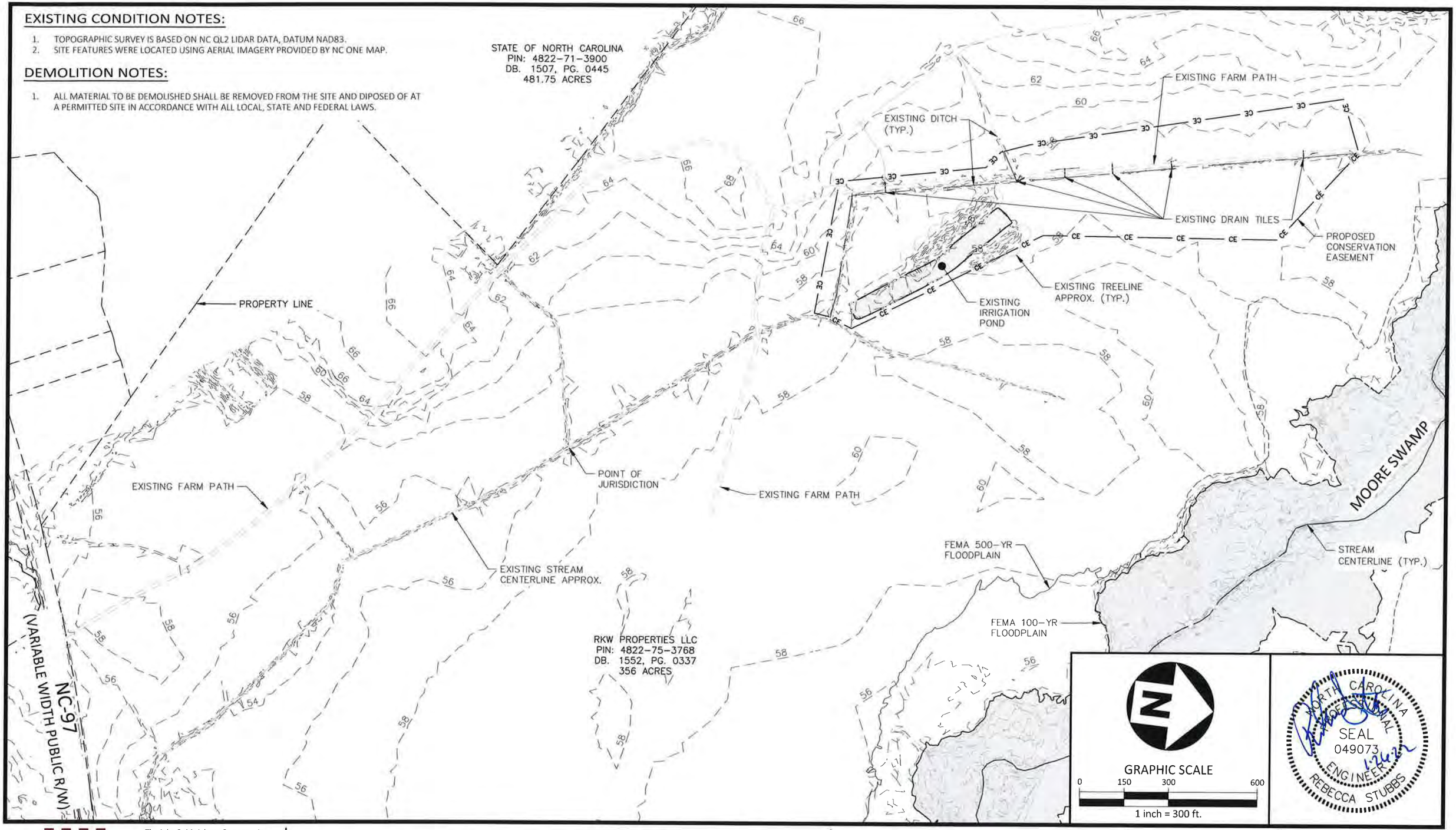
C1.00

EXISTING CONDITION NOTES:

1. TOPOGRAPHIC SURVEY IS BASED ON NC QL2 LIDAR DATA, DATUM NAD83.
2. SITE FEATURES WERE LOCATED USING AERIAL IMAGERY PROVIDED BY NC ONE MAP.

DEMOLITION NOTES:

1. ALL MATERIAL TO BE DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DIPOSED OF AT A PERMITTED SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS.



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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
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CHECKED BY	RAS
DRAWN BY	CJ
SCALE	1" = 300'
DATE	01.26.2022

EXISTING CONDITIONS

C1.01

GENERAL NOTES:

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY LICENSES AND PERMITS REQUIRED TO COMPLETE THE WORK INCLUDED IN THE CONTRACT DOCUMENTS AT THE CONTRACTOR'S EXPENSE.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THEY AND THEIR SUBCONTRACTOR'S HAVE THE CORRECT/MOST UP-TO-DATE PLANS AVAILABLE.
3. ⚠ NO TIMBERING OR DEMOLITION ACTIVITES SHALL OCCUR PRIOR TO APPROVAL OF THE E & SC PLAN.
4. CONTRACTOR SHALL GIVE MINIMUM 72 HOURS NOTICE TO THE PROPERTY OWNER AND PROJECT ENGINEER PRIOR TO CONSTRUCTION.
5. ⚠ CONTRACTOR SHALL GIVE NC DEMLR RALEIGH REGIONAL OFFICE MINIMUM 48 HOURS NOTICE PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES. RALEIGH REGIONAL OFFICE: 919.791.4200
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
7. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING BUFFER VEGETATION AND CONSTRUCTION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL.
8. THERE MAY BE EXISTING WETLANDS WITHIN THIS SITE. IT IS THE OWNER'S RESPONSIBILITY FOR WETLANDS JURISDICTION AND PERMIT DISTURBANCE PRIOR TO ANY GRADING ACTIVITY.
9. IF THE CONTRACTOR, IN THE COURSE OF WORK, FINDS ANY DISCREPANCIES IN THE PLANS OR NOTES GIVEN BY THE PROJECT ENGINEER, IT SHALL BE HIS/HER DUTY IMMEDIATELY INFORM THE PROJECT ENGINEER, IN WRITING, AND THE PROJECT ENGINEER WILL PROMPTLY VERIFY THE SAME. ANY WORK DONE AFTER SUCH DISCOVERY, UNTIL AUTHORIZED, WILL BE AT THE CONTRACTOR'S RISK.
10. ANY DAMAGE TO PRIVATE PROPERTY AND/OR EXISTING UTILITIES INCURRED DURING CONSTRUCTION ACTIVITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. ALL MECHANIZED EQUIPMENT OPERATED NEAR SURFACE WATERS SHALL BE INSPECTED AND MAINTAINED REGULARLY TO PREVENT CONTAMINATION OF SURFACE WATERS FROM FUELS, LUBRICANTS, HYDRAULIC FLUIDS, OR OTHER TOXIC MATERIALS. CONSTRUCTION SHALL BE STAGED IN ORDER TO MINIMIZE THE EXPOSURE OF EQUIPMENT TO SURFACE WATERS TO THE MAXIMUM EXTENT PRACTICABLE. FUELING, LUBRICATION, AND GENERAL EQUIPMENT MAINTENANCE SHALL BE PERFORMED IN A MANNER TO PREVENT, TO THE MAXIMUM EXTENT PRACTICABLE, CONTAMINATION OF SURFACE WATERS BY FUELS AND OILS.
12. HEAVY EQUIPMENT WORKING IN WETLANDS SHALL BE PLACED ON MATS OR OTHER MEASURES SHALL BE TAKEN TO MINIMIZE SOIL DISTURBANCE.
13. CHANGES TO THE GRADING PLAN AND PROPOSED CONDITIONS MAY BE MADE BY THE ENGINEER BASED ON FIELD CONDITIONS AT THE TIME OF CONSTRUCTION.

CONSTRUCTION SEQUENCE:

1. OBTAIN GRADING PERMIT FROM LOCAL AND STATE AGENCIES.
2. ⚠ INSTALL TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCING, ACCESS ROADS, AND OTHER MEASURES SHOW ON THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN CLEARING AND GRUBBING ONLY AS NECESSARY TO INSTALL E & SC MEASURES.
3. INSTALL RAIN GAGE ON SITE. CONTRACTOR SHALL PROVIDE A LOG BOOK AT THE PROJECT SITE AND SHALL READ AND RECORD RAIN AMOUNTS AT THE SAME TIME DAILY.
4. CONTACT LOCAL SOIL EROSION AUTHORITY OR STATE FOR ON-SITE INSPECTION BY ENVIRONMENTAL INSPECTOR AND OBTAIN CERTIFICATE OF COMPLIANCE.
5. CLEAR EXISTING WOODY VEGETATION ALONG THE SOUTH AND WEST DITCH OVERBURDEN. REMOVE WOODY MATERIAL AND STOCKPILE. MAINTAIN DEVICES AS NECESSARY.
6. BEGIN DITCH NETWORK FILL IN USING GRADED MATERIAL FROM HIGHER ELEVATION AREAS NOTED ON PLANS, STARTING AT THE SOUTHEAST CORNER OF THE SITE AND DITCH PLUG LOCATION, LEAVING ~100' OF UNFILLED DITCH TO ACCOUNT FOR DITCH PLUG PLACEMENT. CONTINUE WEST AND NORTH ALONG DITCH, FILLING IN DITCH WITH OVERBURDEN ALONG THE MAIN DITCH, HIGHER ELEVATION AREAS, AND DESIGNATED VERNAL POOL BARROW AREAS. MOST GRADING WILL BE 6-12" IN DEPTH. NO GRADING SHALL EXCEED 12" IN DEPTH ANYWHERE ONSITE. DESIGNATED VERNAL POOL BARROW AREAS SHALL BE 6-12" IN DEPTH.
7. ⚠ CONTRACTOR TO PROVIDE WATER DIVERSION MECHANISMS DURING CONSTRUCTION FOR EXISTING DITCHES DRAINING TO THE SITE.
8. ANY DEWATERING OPERATION DURING CONSTRUCTION SHALL USE A FLOATING INTAKE AND SILT BAG TO MINIMIZE SEDIMENT DISCHARGE. FLOATING INTAKE AND SILT BAG SHALL BE MONITORED WHILE IN USE FOR SIGNS OF CLOGGING OR MALFUNCTION.
9. TEMPORARY OR PERMANENT GROUND COVER STABILIZATION SHALL OCCUR WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY, WITH THE FOLLOWING EXCEPTIONS IN WHICH TEMPORARY OR PERMANENT GROUND COVER SHALL BE PROVIDED WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY:
   - SLOPES BETWEEN 2:1 AND 3:1, WITH A SLOPE LENGTH OF 10 FEET OR LESS
   - SLOPES 3:1 OR FLATTER, WITH A SLOPE LENGTH OF 50 FEET OR LESS
   - SLOPES 4:1 OR FLATTER
10. ⚠ THE EXISTING FARM ROAD BED AND DRAINAGE PIPES WILL BE REMOVED ENTIRELY AND UNDERLYING SOIL RIPPED FOR PLANTING. COMPETING HERBACEOUS PLANTS AND SEEDS WILL BE TREATED APPROPRIATELY WITH HERBICIDES PRE AND POST CONSTRUCTION.
11. ALL GRADED AREAS MUST BE SEEDED, STRAW-MULCHED, AND MATTED AT THE END OF EACH DAY. FOR THIS REASON, DAILY DISTURBANCE IS LIMITED TO THE LENGTH OF DITCH THE CAN BE COMPLETED WITHIN DAILY WORK HOURS.
12. CONSTRUCT DITCH PLUGS, STABILIZE WITH SEED AND STRAW-MULCHED.
13. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL FOR INSPECTION BY ENVIRONMENTAL INSPECTOR.
14. IF SITE IS APPROVED, REMOVE SILT FENCING, OTHER MEASURES, ETC. AND SEED OUT ANY RESULTING BARE AREAS.
15. ESTABLISH WOODY VEGETATION.
16. WHEN VEGETATION HAS BEEN ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY ENVIRONMENTAL INSPECTOR.

EROSION & SEDIMENT CONTROL NOTES:

1. GRADING AND EROSION CONTROL METHODS SHALL ADHERE TO THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NC DEQ) DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES (NC DEMLR) STANDARDS AND SPECIFICATIONS.
2. EROSION AND SEDIMENT CONTROL (E & SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBANCE ACTIVITIES.
3. ⚠ APPROVAL OF THE E & SC PLAN DOES NOT ABSOLVE THE OWNER FROM OBTAINING OTHER APPROPRIATE PERMITS FROM OTHER AGENCIES (USACE, DWR, ETC.).
4. WHEN PROJECT IS COMPLETE, THE PERMITEE SHALL VISIT DEQ.NC.GOV/NCG01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (E-NOT). A $100 ANNUAL GENERAL FEE WILL BE CHARGED UNTIL THE E-NOT HAS BEEN FILLED OUT.
5. ⚠ E & SC DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. CLEARING AND GRUBBING SHALL BE MINIMIZED WHEN INSTALLING E & SC DEVICES. THE CONTRACTOR SHALL CALL FOR AN INSPECTION BY NC DEMLR ONCE INITIAL MEASURES ARE IN PLACE.
6. A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES. FAILURE TO FOLLOW THE APPROVED PLAN SEQUENCE AND DETAILS COULD SUBJECT THE CONTRACTOR TO FINES AND PENALTIES ISSUED BY NC DEMLR.
7. CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
8. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE APPROVED EROSION CONTROL PLAN AND IS SUBJECT TO A FINE BY THE NC DEMLR.
9. DISTURBANCE OUTSIDE OF THE SITE PROPERTY LIMITS OR PUBLIC R/W SHALL ONLY BE ALLOWED BY SIGNED GRADING AGREEMENTS AND/OR EASEMENTS BETWEEN THE DEVELOPER AND OFFSITE PROPERTY OWNER.
10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE OPEN ACCESS TO ALL ADJACENT PROPERTIES DURING THE CONSTRUCTION PERIOD.
11. STAGING AREAS, STOCKPILE AREAS, CONSTRUCTION ENTRANCES, AND ACCESS ROAD WILL BE IDENTIFIED AND LOCATED ACCORDING TO THE EROSION CONTROL PLANS AND LANDOWNER. VARIANCES WILL BE ALLOWED ASSUMING BOTH THE CONTRACTOR AND THE ENGINEER VERBALLY AGREE.
12. CONTRACTOR SHALL SEED AND STABILIZE ALL STEEP SLOPES (GREATER THAN 3H:1V) WITHIN 7 DAYS, 10 DAYS FOR MODERATE SLOPES (3H:1V OR LESS) AND WITHIN 14 CALENDAR DAYS EVERYWHERE ELSE ACCORDING TO THE TEMPORARY SEEDING SCHEDULE ON EC1.01.
13. FOR ANY LAND DISTURBING ACTIVITY WHERE GRADING ACTIVITIES HAVE BEEN COMPLETED, TEMPORARY OR PERMANENT GROUND COVER (SHEET EC1.01) SUFFICIENT TO RESTRAIN EROSION SHALL BE PROVIDED AS SOON AS PRACTICAL, BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER COMPLETING THE WORK. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN.
14. THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL FIELD MEASURES AS NECESSARY TO PROVIDE ADEQUATE PROTECTION FROM RECEIVING WATER COURSES.
15. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND A TREE, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA AND SHALL BE POSTED ON THE PROTECTION FENCE. A PROTECTION FENCE CONSTRUCTED OF MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE FOR THE DURATION OF THE CONSTRUCTION, SHALL BE INSTALLED AT THE SAME TIME AS THE EROSION CONTROL MEASURES AND SHALL BE IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE (SEE DETAIL ON SHEET D1.03).
16. A CONSTRUCTION SEQUENCE HAS BEEN PROVIDED (SEE THIS SHEET). INSTALLATION OF ALL PROPOSED E & SC MEASURES IN THE SEQUENCE(S) PROVIDED AND MAINTENANCE OF THOSE DEVICES IS REQUIRED. THE CONTRACTOR MAY BE ALLOWED, WITH PRIOR APPROVAL FROM THE OWNER, TO COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE E & SC INSPECTOR AND THE ENGINEER.
17. CONTRACTOR SHALL INSPECT AND REPAIR ALL EROSION CONTROL DEVICES AT LEAST ONCE PER WEEK AND AFTER EVERY SIGNIFICANT RAINFALL EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
18. CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AND/OR A MINIMUM OF EVERY 100 LINEAR FEET OF SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS. SILT FENCE OUTLETS SHOWN ON THESE PLANS ARE BASED ON THE BEST TOPOGRAPHIC INFORMATION AVAILABLE AT THE TIME OF DESIGN. CONTRACTOR TO FIELD VERIFY AND ADJUST LOCATIONS OF SILT FENCE OUTLETS AND/OR PLACE ADDITIONAL OUTLETS TO INSURE THAT ALL LOW SPOTS ALONG THE SILT FENCE HAVE AN OUTLET.
19. WASHED STONE AND WIRE BACKING SHALL BE USED WITH SILT FENCE WHENEVER SILT FENCE IS PLACE AT THE TOE OF A SLOPE >10' VERTICAL OR ALONG ANY CHANNEL OR WATER COURSE WHERE 50' OF BUFFER IS NOT PROVIDED.
20. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
21. NO DEBRIS SHALL BE TRACKED ONTO PUBLIC RIGHT OF WAY. IF THE SITUATION OCCURS WHERE MUD, ROCKS AND DEBRIS IS TRACKED ONTO PAVEMENT, THE CONTRACTOR SHALL CLEAN THE PAVEMENT AND INSTALL ADDITIONAL MEASURES TO PREVENT FUTURE OCCURRENCES.
22. INSTALL SILT FENCE FOR ALL STAGING AND STOCKPILE AREAS (SEE DETAIL ON SHEET D1.03). ANY STOCKPILE AREAS SHALL USE TWO (2) ROWS OF SILT FENCE.
23. IF CONCRETE WASHOUTS ARE UTILIZED, THESE AREAS ARE TO BE WITHIN THE LIMITS OF DISTURBANCE AND SHOULD BE LOCATED AT LEAST 50 FT. AWAY FROM STORM DRAIN INLETS AND SURFACE WATER.

EROSION & SEDIMENT CONTROL MAINTENANCE PLAN:

1. QUALIFIED PERSONNEL, ON A DAILY BASIS WILL EVALUATE ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES FOR STABILITY AND OPERATION.
2. ⚠ INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES EVERY 7 DAYS AND AFTER EACH SIGNIFICANT RAINFALL (1.0" OR GREATER) AND DOCUMENT WITH INSPECTION REPORTS AND WRITTEN LOGS SHALL BE KEPT.
3. ANY REPAIRS NEEDED WILL BE PERFORMED IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TEMPORARY ON-SITE E & SC MEASURES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND FOLLOWING THE APPROVED E & SC PLAN.
6. A COPY OF THE COMBINED SELF-INSPECTION MONITORING FORM CAN BE FOUND ON THE NC DEMLR WEBSITE AT:
   HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT-CONTROL/FORMS

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS
1-26-22

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MAPLE SWAMP MITIGATION SITE
CONSTRUCTION PLANS
EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-EC
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	
DATE	01.26.2022

EROSION CONTROL PLAN NOTES

EC1.00

Table 6.24d Permanent Seeding Recommendations -- Coastal Plain Region

Common Name	Scientific Name	Cultivars	Type*	Percentage of Mix	Optimal Planting Dates	Soil Drainage Adaptation	Shade Tolerance	Height
Switchgrass	Panicum virgatum	**Blackwell** -- well drained **Shelter** -- well drained **Kanlow** -- poorly drained **Carthage** -- well drained	Warm Season	10-15%	Dec. 1 - Apr. 1	Cultivar Dependent	Poor	6
Switchgrass	Panicum virgatum	**Alamo** -- poorly-drained	Warm Season	10-15%	Dec. 1 - May 1	Cultivar Dependent	Poor	6
Indiangrass*	Sorghastrum nutans*	**Rumsey, Osage, Cheyenne**	Warm Season	10-30%	Dec. 1 - Apr. 1	Well-drained to Droughty	Poor	6
Indiangrass*	Sorghastrum nutans*	**Lometa**	Warm Season	10-30%	Dec. 1 - May 1	Well-drained to Droughty	Poor	6
Big Bluestem	Andropogon gerardii	**Earl**	Warm Season	10-30%	Dec. 1 - Apr. 1	Well-drained to Droughty	Poor	6
Little Bluestem	Schizachyrium scoparium	**Cimarron**	Warm Season	10-30%	Dec. 1 - Apr. 1	Well-drained to Droughty	Poor	4
Sweet Woodreed	Cinna arundinacea		Warm Season	1-10%	Dec. 1 - Apr. 1	Poorly-drained to Well-drained	Moderate	5
Rice Cutgrass	Leersia oryzoides		Warm Season	5-25%	Dec. 1 - Apr. 1	Poorly-drained	Poor	5
Redtop Panicgrass	Panicum rigidulum		Warm Season	10-20%	Dec. 1 - Apr. 1	Well-drained	Poor	3.5
Beaked Panicgrass	Panicum anceps		Warm Season	10-20%	Dec. 1 - Apr. 1	Poorly-drained	Moderate	3.5
Eastern Gammagrass	Tripsacum datyoides		Warm Season	5-10%	Dec. 1 - Apr. 1	Well-drained to Poorly-drained	Poor	4.5
Purple top	Tridens flavus		Warm Season	5-10%	Dec. 1 - Apr. 1	Well-drained to Droughty	Poor	2.5
Indian Woodoats	Chasmanthium latifolium		Cold Season	1-10%	Feb. 15 - Mar. 20, Sep. 1 - Nov. 1	Well-drained to Droughty	Moderate	4
Virginia Wildrye	Elymus virginicus		Cold Season	5-25%	Feb. 15 - Mar. 20, Sep. 1 - Nov. 1	Well-drained to Droughty	Moderate	3
Rough Bentgrass	Agrostis scabra		Cold Season	10-20%	Feb. 15 - Mar. 20, Sep. 1 - Nov. 1	Poorly-drained	Poor	2.5
Soft Rush	Juncus effusus		Wetland	1-10%	Dec. 1 - Apr. 15	Poorly-drained	Poor	4
Shallow Sedge	Carex lurida		Wetland	1-10%	Dec. 1 - Apr. 15	Poorly-drained	Poor	3
Fox Sedge	Carex vulpinoidea		Wetland	1-10%	Dec. 1 - Apr. 15	Poorly-drained	Poor	3
Leathery Rush	Juncus coriaceus		Wetland	2-5%	Dec. 1 - Apr. 15	Poorly-drained	Poor	2

* Only Lometa in eastern coastal plain (Plant Hardiness Zone 8).
* Pick at least four species, including one from each type.

Rev. 5/13

6.24.7

PERMANENT SEEDING SCHEDULE:

PLANT MATERIAL SELECTION

1. REFER TO TABLE 6.24D (LEFT) FOR APPROPRIATE SELECTIONS OF NATIVE PERMANENT SEEDS.
2. PERMANENT SEED INCLUSION IN THE MIXTURE SHOULD TOTAL 15 LBS OF PURE LIVE SEED (PLS) PER ACRE DRILLED OR 15-20 LBS pls/AC BROADCAST APPLIED.
3. AT LEAST 4 SPECIES SHOULD BE SELECTED FOR THE MIXTURE INCLUDING ONE SPECIES FROM EACH TYPE (WARM SEASON, COLD SEASON, WETLAND). SELECTION OF MORE THAN 4 SPECIES IS RECOMMENDED FOR INCREASING CHANCES OF SUCCESSFUL VEGETATION ESTABLISHMENT.
4. IF OTHER SPECIES SUCH AS WILDFLOWERS ARE ADDED TO THE MIX, THEY SHOULD NOT BE COUNTED IN THE MINIMUM SEEDING RATE FOR GRASSES.

SEEDBED PREPARATION

1. DISTURBED SOILS WITHIN RIPARIAN AREAS MUST BE AMENDED TO PROVIDE AN OPTIMUM ENVIRONMENT FOR SEED GERMINATION AND SEEDLING GROWTH.
2. THE pH OF THE SOIL MUST BE SUCH THAT IT IS NOT TOXIC AND NUTRIENTS ARE AVAILABLE.
3. SOIL ANALYSIS SHOULD BE PERFORMED TO DETERMINE NUTRIENT AND LIME NEEDS OF EACH SITE.
4. APPROPRIATE pH LEVELS ARE BETWEEN 5.5 AND 7.0.
5. RIPARIAN BUFFERS REGULATED FOR NUTRIENT MANAGEMENT MAY BE LIMITED TO A SINGLE APPLICATION OF FERTILIZER.
6. SUITABLE MECHANICAL MEANS SUCH AS DISKING, RAKING, OR HARROWING MUST BE EMPLOYED TO LOOSEN COMPACTED SOIL PRIOR TO SEEDING.

PLANTING

1. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DROP-TYPE SPREADER, DRILL, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED.
2. IN FINE SOILS, SEEDS SHOULD BE DRILLED 0.25 - 0.5 INCHES. IN COARSE SANDY SOILS, SEEDS SHOULD BE PLANTED NO DEEPER THAN 0.75 INCHES.

MULCH

1. MULCH ALL PLANTINGS IMMEDIATELY AFTER SEEDING.
2. IF PLANTING ON STREAM BANKS STEEPER THAN 10% OR AREAS SUBJECT TO FLOODING, A BIODEGRADABLE ROLLED EROSION CONTROL PRODUCT IS RECOMMENDED TO HOLD SEED AND SOIL IN PLACE.

MAINTENANCE

1. THE RECOMMENDED PERMANENT GRASS SPECIES MAY REQUIRE TWO YEARS FOR ESTABLISHMENT, DEPENDING ON SITE CONDITIONS.
2. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS, SOIL AMENDMENTS, AND RE-SEEDINGS.
3. IF WEEDY EXOTIC SPECIES HAVE TAKEN OVER THE AREAS AFTER THE FIRST GROWING SEASON, THE INVASIVE SPECIES MUST BE ERADICATED TO ALLOW NATIVE SPECIES TO GROW.
4. MONITOR THE SITE UNTIL LONG-TERM STABILITY HAS BEEN ESTABLISHED.

TEMPORARY SEEDING SCHEDULE:

TEMPORARY SEEDING SHALL BE APPLIED AS NEEDED DURING CONSTRUCTION TO STABILIZE BARE OR DISTURBED AREAS OF SOIL AND AT THE COMPLETION OR ALL GRADING AND EARTHWORK ACTIVITIES WITHIN A PARTICULAR AREA OF THE SITE. PERMANENT SEED MAY BE DISTRIBUTED WITH TEMPORARY SEED UPON THE FINAL APPLICATION OF TEMPORARY SEED.

SEEDING DATE	SEEDING MIXTURE	APPLICATION RATE
AUG 15 - APRIL 15	RYE (GRAIN)	30 LBS/AC
AUG 15 - APRIL 15	WHEAT	30 LBS/AC
APRIL 15 - AUG 15	GERMAN MILLET	10 LBS/AC
APRIL 15 - AUG 15	BROWNTOP MILLET	10 LBS/AC

SEEDING METHODS

1. EVENLY APPLY SEED USING A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. THIS MUST BE DONE WITHIN 48 HOURS OF LAND DISTURBING ACTIVITIES.
2. MULCH WITH CLEAN WHEAT STRAW.
3. AFTER SEEDING, APPLY MULCH TO AREAS UNDER HARSH CONDITIONS SUCH AS AREAS THAT HAVE BEEN GRADED, OR THOSE WHICH WILL RECEIVE CONCENTRATED FLOWS. AREAS CONSIDERED TO BE UNDER HARSH CONDITIONS WILL BE CONSIDERED THE AREAS GRADED FOR THE WETLAND VALLEY.
4. RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS LESS THAN 80% COVERAGE, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO NOT MOW. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

NOTES

1. TEMPORARY ANNUAL SEED SELECTION SHOULD BE BASED ON SEASON OF PROJECT INSTALLATION.
2. A SINGLE SPECIES FOR TEMPORARY COVER IS ACCEPTABLE
3. IN SOME CASES WHERE SEASONS OVERLAP, A MIXTURE OF TWO OR MORE SPECIES MAY BE NECESSARY. HOWEVER, APPLICATION RATES SHOULD NOT EXCEED THE TOTAL RECOMMENDED RATE PER ACRE.
4. TEMPORARY SEED SHOULD BE MIXED AND APPLIED SIMULTANEOUSLY WITH THE PERMANENT SEED MIX IF OPTIMAL PLANTING DATES ALLOW.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1-26-22

MCADAMS
The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713
phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187
www.mcadamsco.com

MAPLE SWAMP MITIGATION SITE
CONSTRUCTION PLANS
EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION

PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-EC
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	
DATE	01.26.2022

EROSION CONTROL PLAN
SEEDING NOTES

EC1.01

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

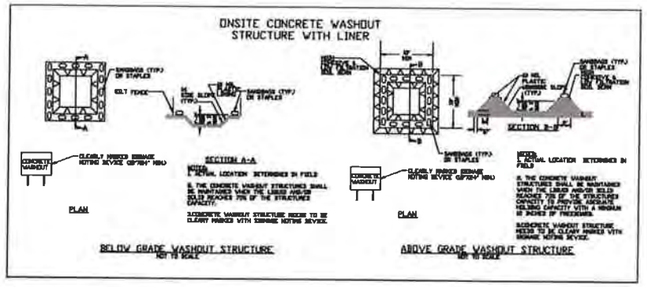
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA *Environmental Quality*



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049073 REBECCA STUBBS

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

MCADAMS

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Durham, NC 27713

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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

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EROSION CONTROL PLAN NOTES

EC1.02

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA *Environmental Quality*

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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2905 Meridian Parkway
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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-EC
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	
DATE	01.26.2022

EROSION CONTROL PLAN NOTES

EC1.03

STATE OF NORTH CAROLINA
PIN: 4822-71-3900
DB. 1507, PG. 0445
481.75 ACRES

PROPERTY LINE

NC-97
(VARIABLE WIDTH PUBLIC R/W)

CONSTRUCTION ENTRANCE (TYP.) SEE INSET

PROPOSED ACCESS PATH (FOLLOWS EXISTING FARM PATH)

EXISTING STREAM CENTERLINE APPROX.

POINT OF JURISDICTION

EXISTING FARM PATH

PROPOSED PROJECT AREA

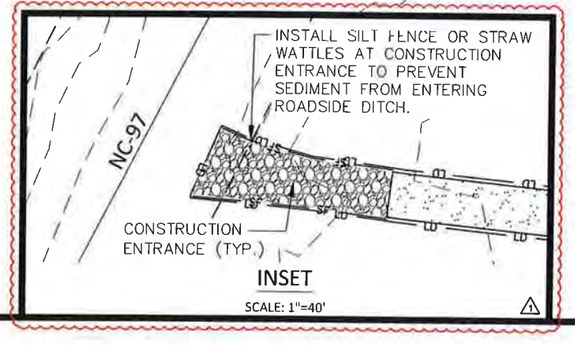
MATCHLINE SHEET EC2.01

FEMA 500-YR FLOODPLAIN

FEMA 100-YR FLOODPLAIN

LOD OFFSET 1' FROM EXISTING FARM PATH

TOTAL DISTURBED AREA = 14.85 AC.



INSET
SCALE: 1"=40'

RKW PROPERTIES LLC
PIN: 4822-75-3768
DB. 1552, PG. 0337
356 ACRES

GRAPHIC SCALE
0 100 200 400
1 inch = 200 ft.

NORTH CAROLINA
REGISTERED
SEAL
049073
ENGINEER
REBECCA STUBBS
1.26.22

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Durham, NC 27713

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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

PLAN INFORMATION

PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-EC
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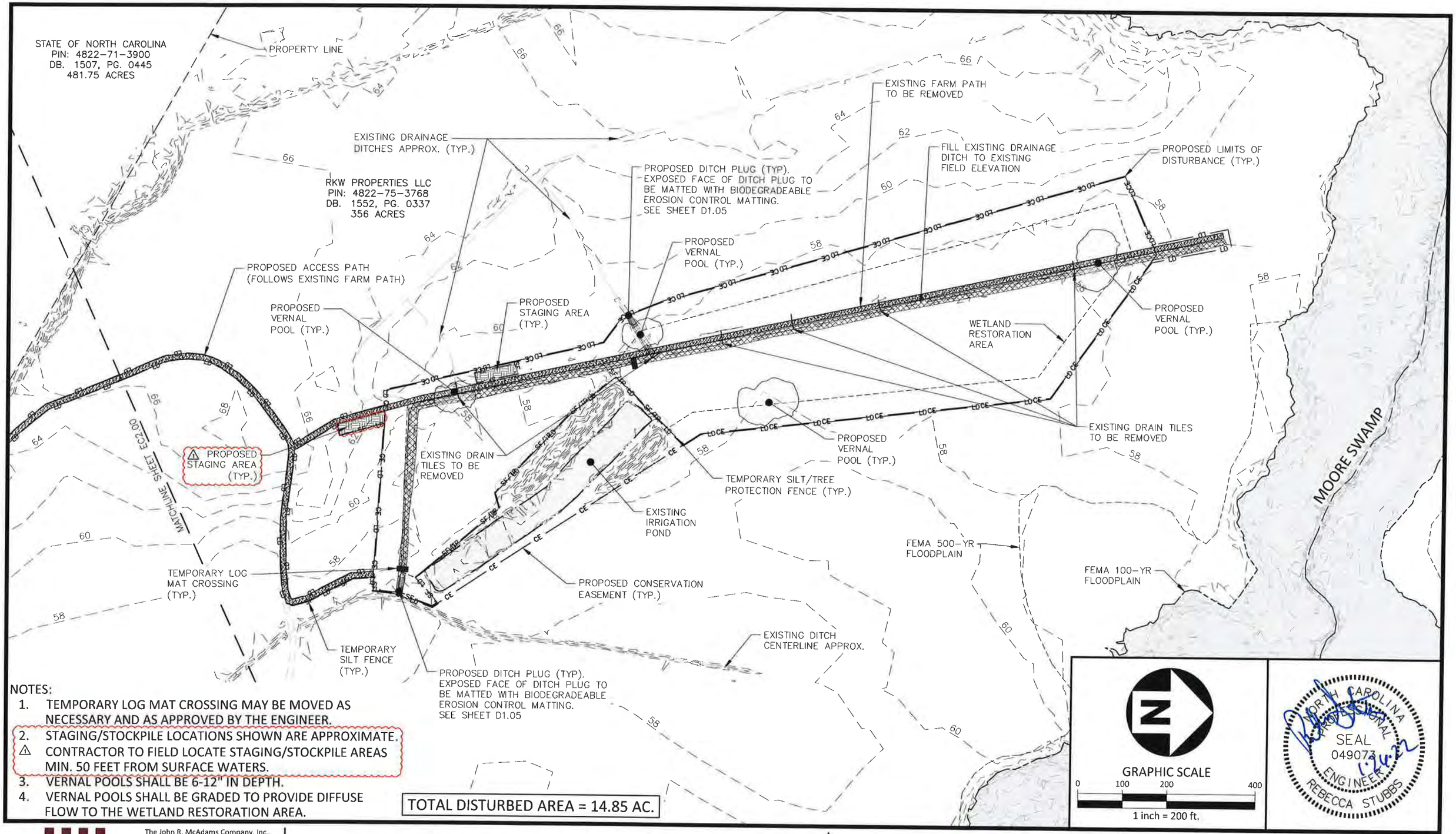
DRAWN BY	CJ
SCALE	1" = 200'
DATE	01.26.2022

EROSION CONTROL PLAN
CONSTRUCTION ACCESS

EC2.00



NOTES:

1. TEMPORARY LOG MAT CROSSING MAY BE MOVED AS NECESSARY AND AS APPROVED BY THE ENGINEER.
2. STAGING/STOCKPILE LOCATIONS SHOWN ARE APPROXIMATE.
⚠ CONTRACTOR TO FIELD LOCATE STAGING/STOCKPILE AREAS MIN. 50 FEET FROM SURFACE WATERS.
3. VERNAL POOLS SHALL BE 6-12" IN DEPTH.
4. VERNAL POOLS SHALL BE GRADED TO PROVIDE DIFFUSE FLOW TO THE WETLAND RESTORATION AREA.

TOTAL DISTURBED AREA = 14.85 AC.

SEAL 049073 ENGINEER REBECCA STUBBS NORTH CAROLINA PROFESSIONAL 1.24.22

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-EC
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	1" = 200'
DATE	01.26.2022

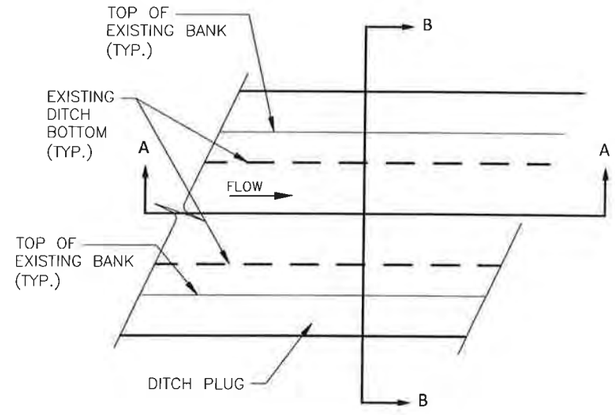
EROSION CONTROL PLAN

GRADING PLAN AND PROPOSED CONDITIONS

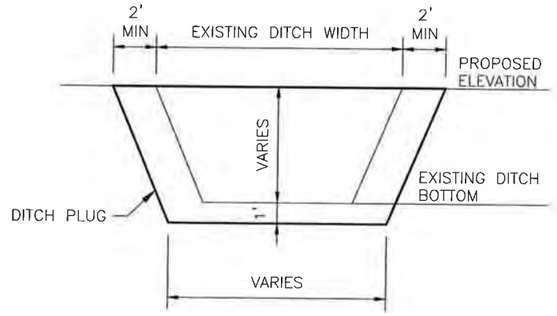
EC2.01

DITCH PLUG NOTES:

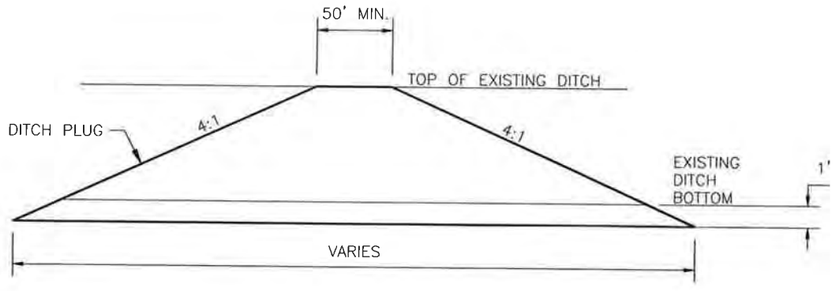
1. DITCH PLUGS TO BE LOCATED AS SHOWN ON PLAN SHEET EC2.01 AND AT OTHER LOCATIONS AS DIRECTED BY THE CONSTRUCTION MANAGER.
2. DITCH PLUG MATERIAL SHALL BE CLAY SOIL HARVESTED ON SITE OR BROUGHT INTO THE SITE.
3. DITCH PLUG MATERIAL SHALL BE FREE OF ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED.
4. ROCKS AND STONES WITH A DIAMETER GREATER THAN 3 INCHES (IN ANY DIRECTION) SHALL BE REMOVED FROM FILL PRIOR TO COMPACTION.
5. FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO THE SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REWORKED AND REPLACED WITH ACCEPTABLE MATERIALS.
6. TOPSOIL SHALL BE PLACED ON TOP OF THE SOIL LIFTS IN THE SAME MANOR AS THE REST OF THE GRADED CONSTRUCTION SITE
7. DITCH PLUGS WILL BE PLANTED ACCORDING TO THE PLANTING PLAN ON SHEETS EC1.01 AND L1.01.
8. MINIMUM DITCH PLUG LENGTH TO BE 100 LINEAR FEET.



PLAN VIEW



SECTION B-B'



SECTION A-A'

IMPERVIOUS DITCH PLUG

N.T.S.

MCADAMS

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

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NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS

1-26-22

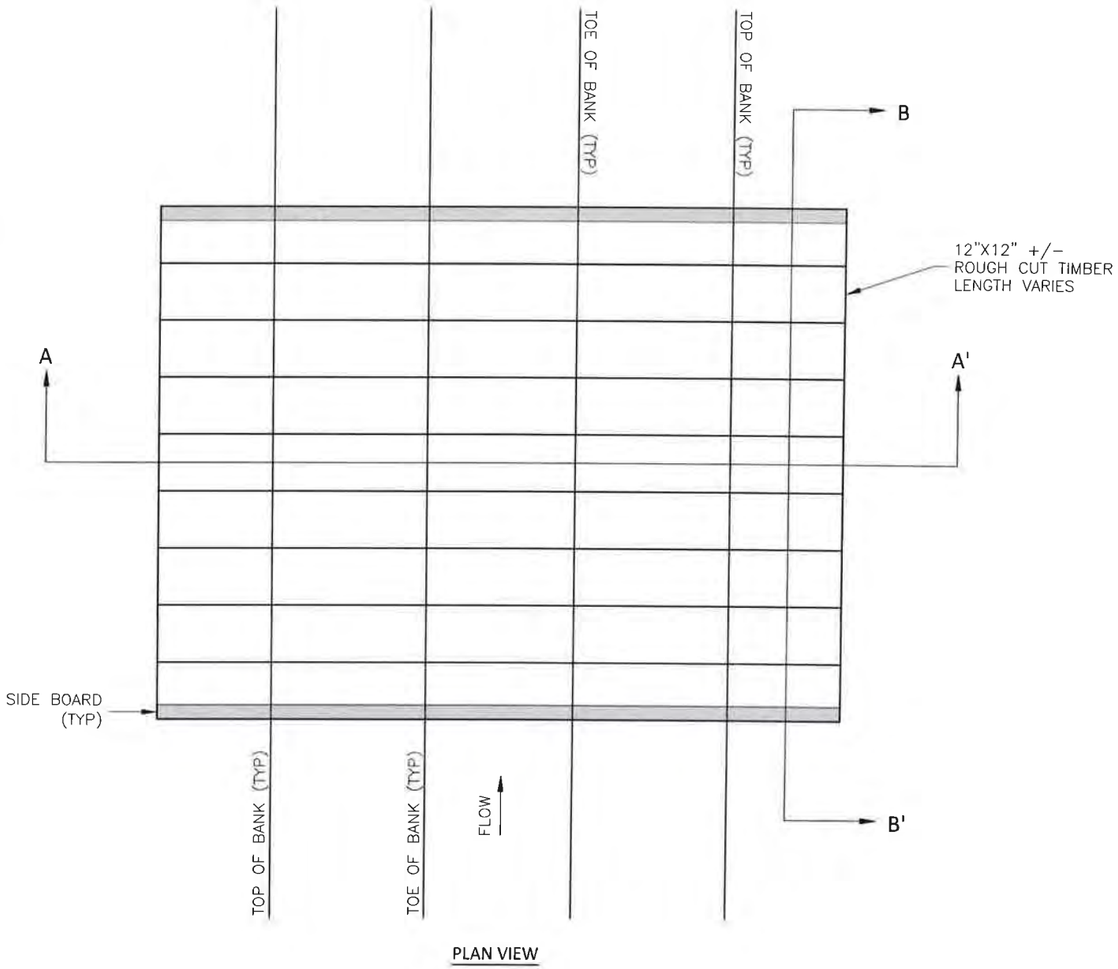
PLAN INFORMATION

PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-D1
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	
DATE	01.26.2022

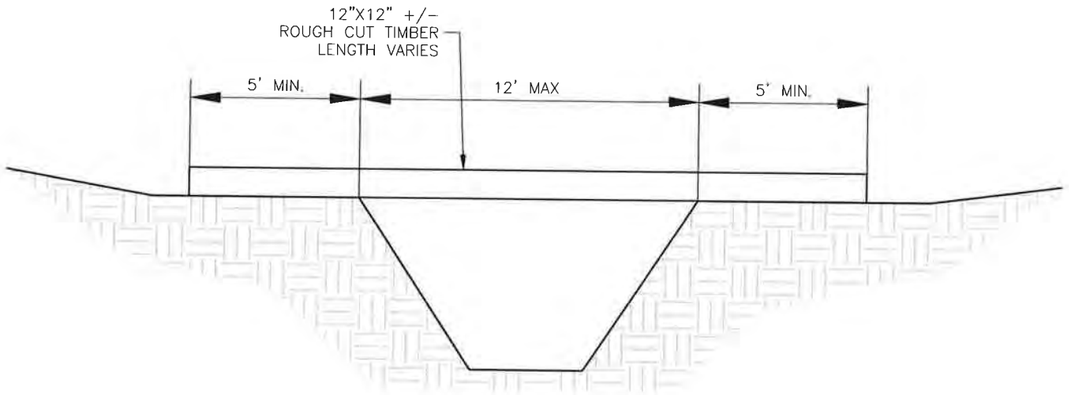
DETAILS

D1.00

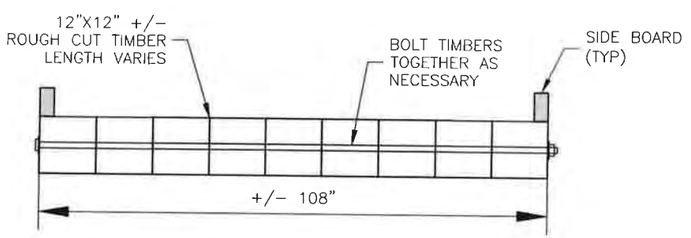
⚠ DETAIL REVISED PER COMMENTS RECEIVED FROM NC DEMLR



PLAN VIEW



SECTION A - A'



SECTION B - B'

NOTES:

1. DETAIL PROVIDED FOR INFORMATIONAL PURPOSES. USE OF LOG MAT IS AT THE CONTRACTORS DISCRETION.
2. LOG MATS ARE TO HAVE SOLID DECK AND SIDE BOARDS.
3. USE MULTIPLE LOG MATS WHERE NECESSARY TO ACCOMIDATE EQUIPMENT WIDTH.

LOG MAT

N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1.26.22

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
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MAPLE SWAMP MITIGATION SITE

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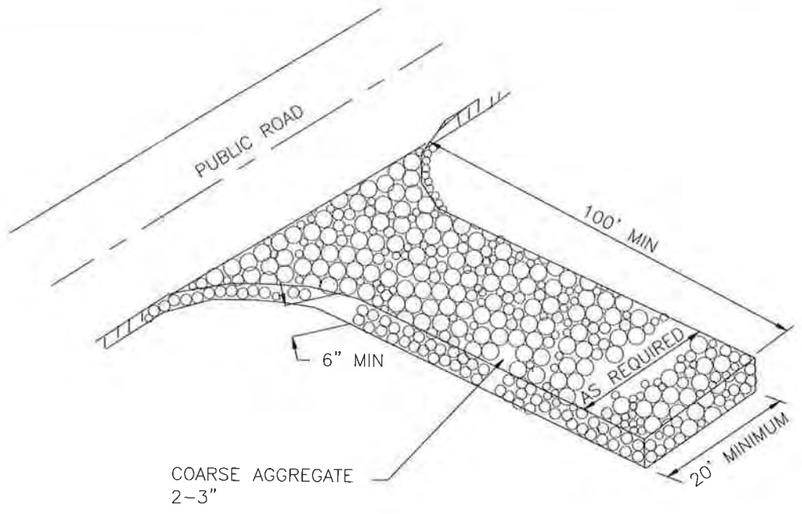
DETAILS

D1.01



NOTES

1. GRAVEL PAD TO BE 20'X 100' AND 6" THICK MINIMUM.
2. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
3. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES
4. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOP DRESSING WITH STONE SILL BE NECESSARY; KEEP SOME HANDY.
5. ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED UP IMMEDIATELY
6. APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED, FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.

MAINTENANCE

1. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE.
2. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY.
3. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT

N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1.26.22

MCADAMS

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919.361.5000
fax 919.361.2269
license number: C-0293, C-187

www.mcadamsco.com

MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

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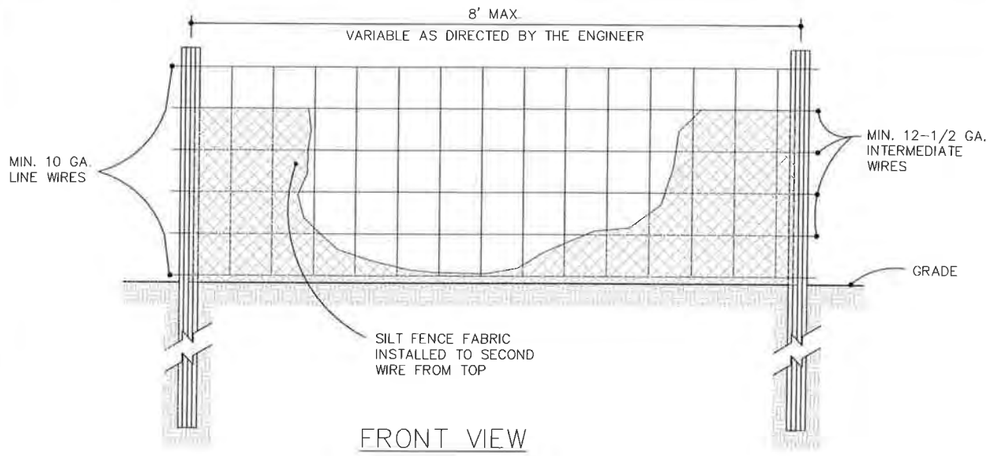
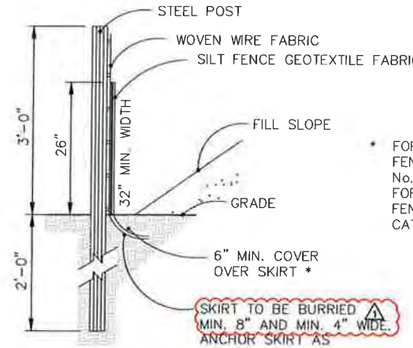
DETAILS

D1.02



FRONT VIEW



SIDE VIEW

* FOR REPAIR OF SILT FENCE FAILURES, USE No. 57 WASHED STONE FOR ANCHOR WHEN SILT FENCE IS PROTECTING CATCH BASIN.

NOTES

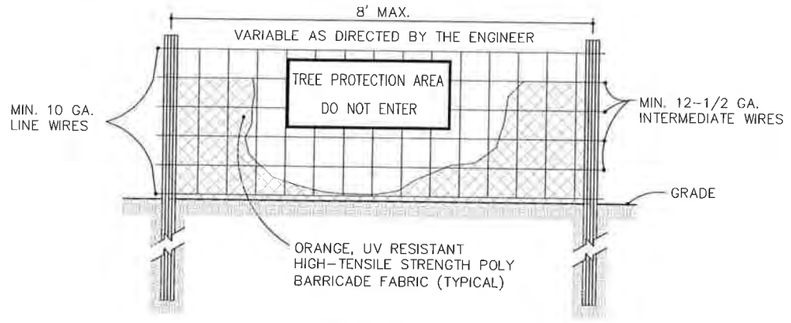
1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW
2. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.

MAINTENANCE

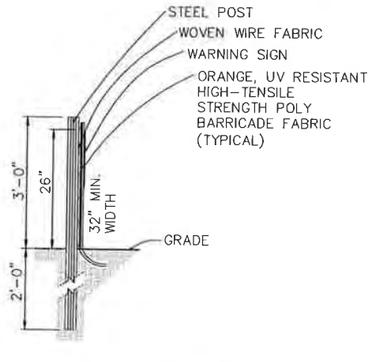
1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SILT FENCE

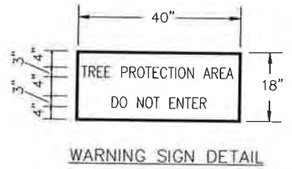
N.T.S.



FRONT VIEW



SIDE VIEW



WARNING SIGN DETAIL

WARNING SIGN DETAIL

NOTES

1. INSTALL FENCING AS SHOWN ON THESE PLANS.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
4. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. ADDITIONAL SIGNS MAY BE REQUIRED BY GOVERNMENT ENTITIES BASED ON ACTUAL FIELD CONDITIONS.
5. IN SPITE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES REPAIR ANY DAMAGE TO THE CROWN, TRUNK OR ROOT SYSTEM IMMEDIATELY. REFER TO THE EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL CHAPTER 6 SECTIONS 6.05B AND 6.05C FOR DIRECTIONS ON WOUND REPAIR AND PRUNING OF DAMAGED TREES.
6. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

MAINTENANCE

1. INSPECT TREE PROTECTION FENCES AT LEAST ONCE A WEEK. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

TREE PROTECTION FENCE

N.T.S.

McADAMS

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
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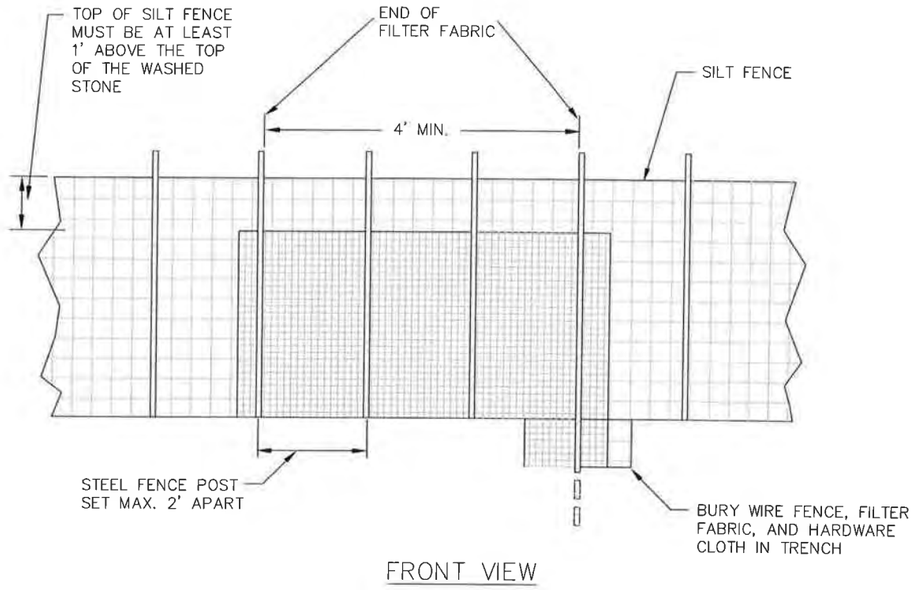
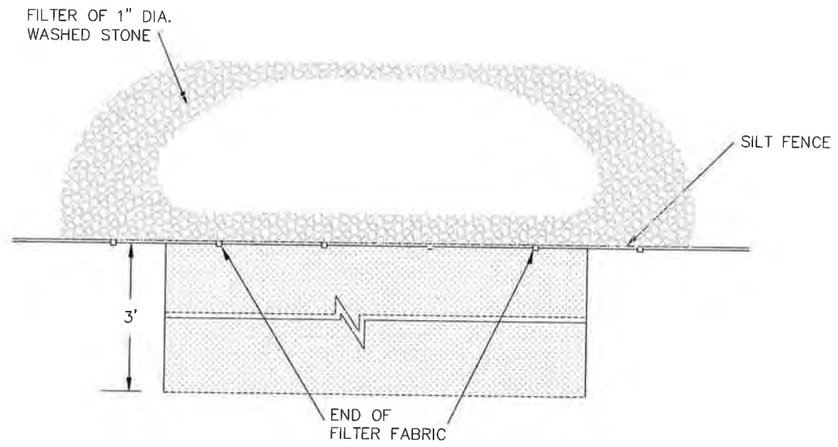
SCALE	
DATE	01.26.2022

DETAILS

D1.03



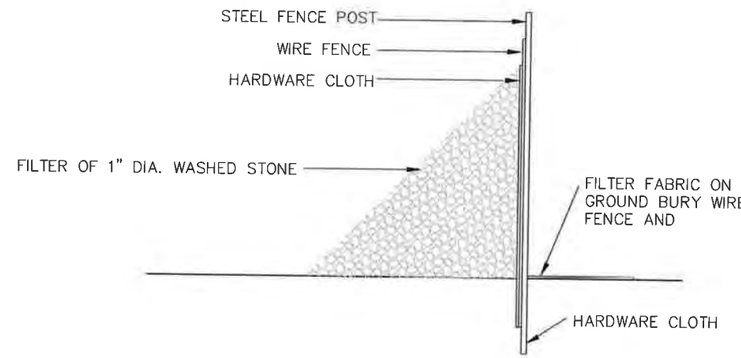
FRONT VIEW



PLAN VIEW

MAINTENANCE

1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.
3. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY
4. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
5. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
6. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



SECTION

SILT FENCE GRAVEL OUTLET

N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1.26.22

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The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION

PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-D1
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	
DATE	01.26.2022

DETAILS

D1.04

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet
BioNet® C125BN™ Erosion Control Blanket

DESCRIPTION

The long-term double net erosion control blanket shall be a machine-produced mat of 100% coconut fiber with a functional longevity of up to 24 months. *(NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation).* The blanket shall be of consistent thickness with the coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with 100% biodegradable woven natural organic fiber netting. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the the twisted machine strands (commonly referred to as Leno weave) to form an approximate 0.50 x 1.0 in (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The C125BN shall meet Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.23 in. (5.84 mm)
Resiliency	ECTC Guidelines	85%
Water Absorbency	ASTM D1117	365%
Mass/Unit Area	ASTM 6475	9.79 oz/sy (333 g/sm)
Swell	ECTC Guidelines	40%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.11 oz-in
Light Penetration	ASTM D6567	16.2%
Tensile Strength - MD	ASTM D6818	206.4 lbs/ft (3.06 kN/m)
Elongation - MD	ASTM D6818	15.3%
Tensile Strength - TD	ASTM D6818	145.2 lbs/ft (2.15 kN/m)
Elongation - TD	ASTM D6818	12.9%
Biomass Improvement	ASTM 7322	473%

Material Content

Matrix	100% Coconut Fiber	0.5 lbs/sq yd (0.27 kg/sm)
Netting	Leno Woven 100% biodegradable jute	9.3 lbs/1000 sq ft (4.5 kg/100 sm)
	100% Biodegradable jute	7.7 lb/1000 sq ft (3.76 kg/100 sm)
Thread	Biodegradable	

Design Permissible Shear Stress

Unvegetated Shear Stress	2.35 psf (112 Pa)
Unvegetated Velocity	10.0 fps (3.05 m/s)

Slope Design Data: C Factors

	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 - 2.1	≥ 2:1
≤ 20 ft (6 m)	0.0001	0.018	0.050
20-50 ft	0.003	0.040	0.060
≥ 50 ft (15.2 m)	0.007	0.070	0.070

Standard Roll Sizes

Width	6.67 (2.03 m)	8.0 ft (2.4 m)
Length	108 ft (32.92 m)	112 ft (34.14 m)
Weight ± 10%	52.22 lbs (23.69 kg)	65.25 lbs (29.61 kg)
Area	80 sq yd (66.9 sm)	100 sq yd (83.61 sm)
	Leno weave top only	Leno weave top and bottom

Roughness Coefficients – Unveg.

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.022
0.50 – 2.0 ft	0.022-0.014
≥ 2.0 ft (0.60 m)	0.014

NORTH AMERICAN GREEN
Western Green
4609 E. Boonville-New Harmony Rd
Evansville, IN 47725
nagreen.com
800-772-2040

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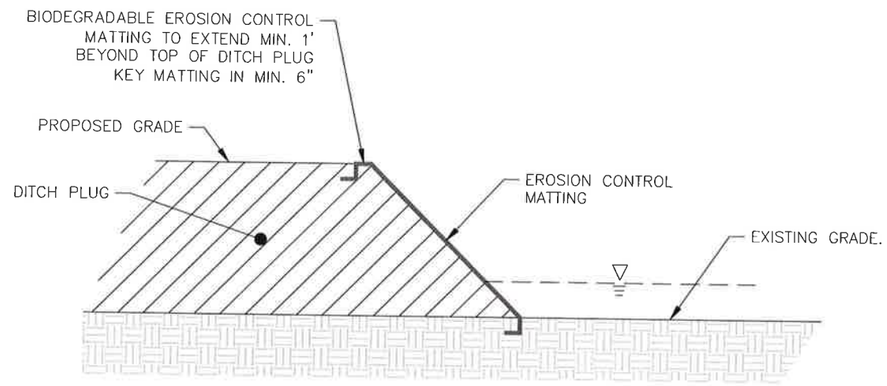

NOTES:
1. CONTRACTOR TO INSTALL EROSION CONTROL MATTING PER THE MANUFACTURES SPECIFICATIONS.
2. DITCH PLUG SHALL BE FINE GRADED, SEEDED, FETILIZED, ADN LIMED PRIOR TO INSTALLATION OF THE EROSION CONTROL BLANKET.
3. EROSION CONTROL BLANKET TO BE INSTALLED SUCH THAT IT IS IN CONTINUOUS CONTACT WITH THE GROUND.
4. MAX. 5' SPACING BETWEEN MATTING STAKES.

EROSION CONTROL MATTING
N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS
1-26-22

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CONSTRUCTION PLANS
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ecoterra

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DETAILS

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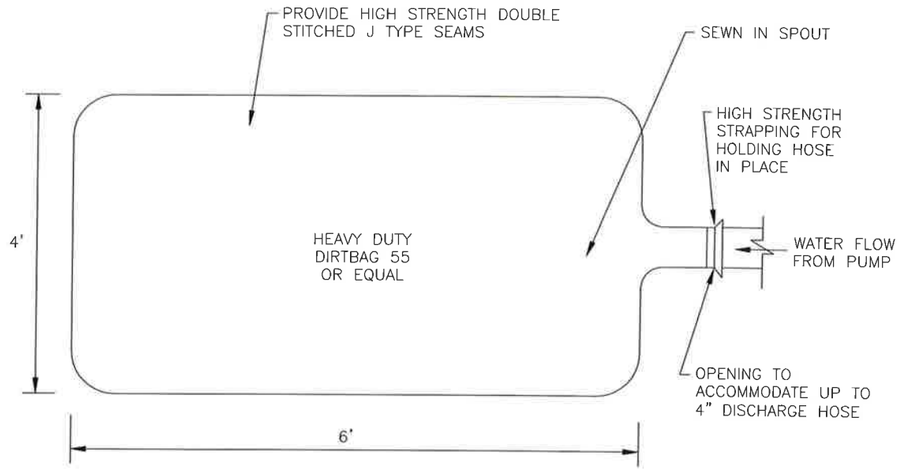

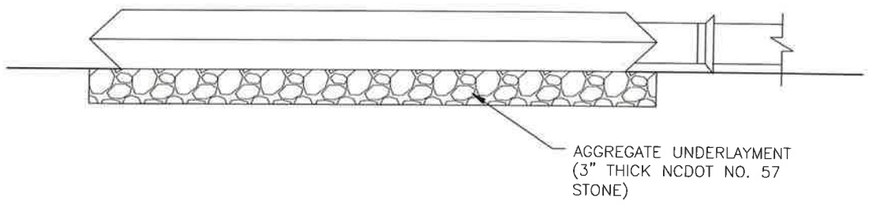

NOTES

1. THE DEWATERING BAG SHALL BE MADE OF NON-WOVEN GEOTEXTILE WITH A MIN. SURFACE AREA OF 225 SQUARE FEET PER SIDE.
2. ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD.
3. THE SEAM STRENGTH SHALL WITHSTAND 100 LB/IN USING ASTM D-4884 TEST METHOD.
4. THE GEOTEXTILE FABRIC SHALL BE 10 OZ NON-WOVEN FABRIC.
5. DISCHARGE FROM THE DEWATERING BAG SHALL BE DIRECTED SUCH THAT PRE-DISTURBANCE HYDROLOGY IS NOT CHANGED.
6. TRANSPORT AND PLACE DEWATERING BAGS WITH CARE TO PREVENT RIPPING OR TEARING THE FABRIC.
7. AVOID INSTALLING ON STEEP SLOPES AS THE BAG MAY ROLL, CAUSING FAILURE.
8. INSERT THE DISCHARGE HOSE A MINIMUM OF 1-FOOT INSIDE THE DEWATERING BAG. DO NOT INSERT MORE THAN ONE DISCHARGE HOSE INTO THE DEWATERING BAG.
9. AVOID USE OF EXCESSIVE FLOW RATES OR OVERFILLING THE DEWATERING BAG. THIS MAY CAUSE THE BAG TO RUPTURE OR CAUSE FAILURE TO THE HOSE TO BAG CONNECTION.

MAINTENANCE

1. FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR INSPECTION AND MAINTENANCE GUIDELINES. REPLACE DEWATERING BAGS WHEN TRAPPED SEDIMENT HAS ACCUMULATED TO 50% OF THE BAG CAPACITY OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. DEWATERING BAGS ARE FULL WHEN THEY NO LONGER EFFICIENTLY FILTER SEDIMENT OR PASS WATER AT A REASONABLE RATE.

SEDIMENT FILTER BAG DETAIL

N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1.26.22

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EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-D1
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	
DATE	01.26.2022

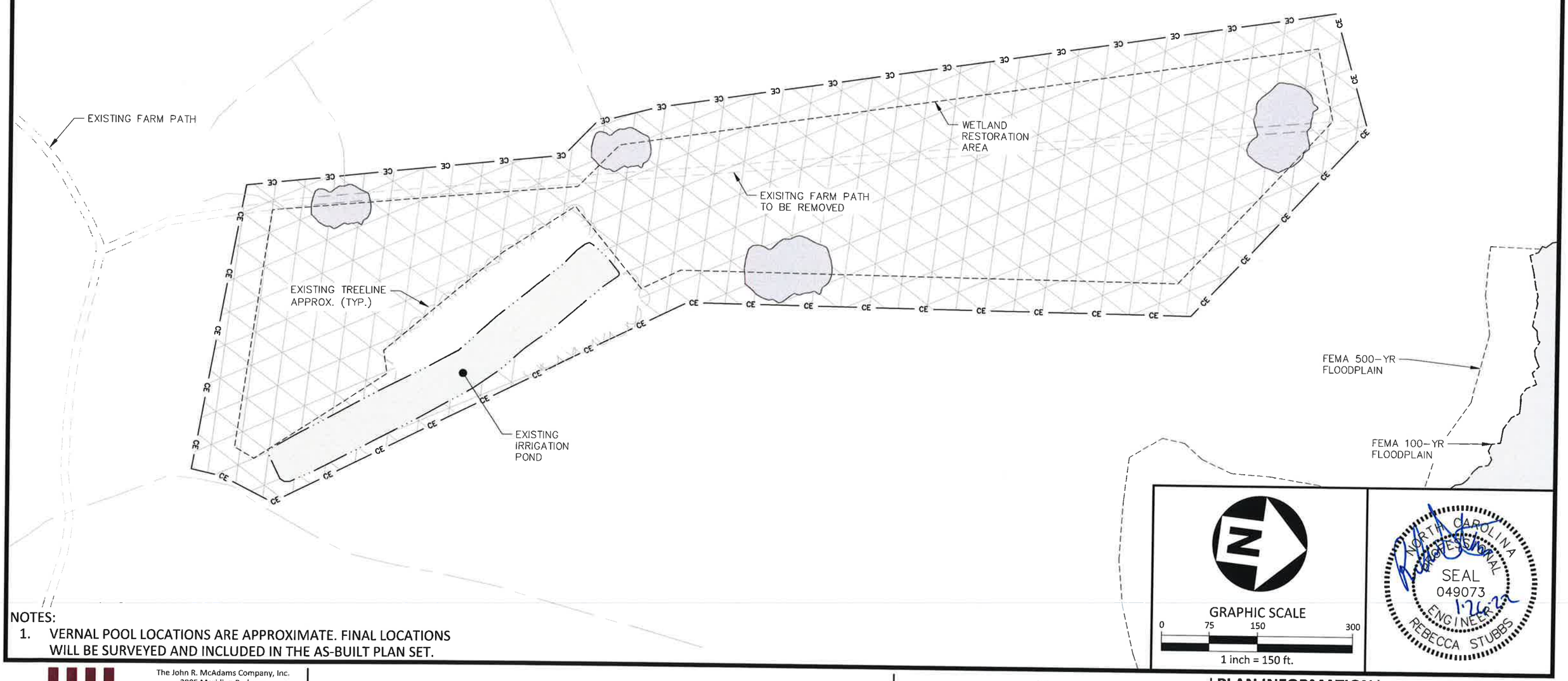
DETAILS

D1.06

PLANTING ZONE 1 – WETLAND RESTORATION AREA

PLANTING ZONE 2 – VERNAL POOLS

SEE TABLE 1, SHEET L1.01 FOR SPECIES TO BE PLANTED IN EACH ZONE.



NOTES:

1. VERNAL POOL LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS WILL BE SURVEYED AND INCLUDED IN THE AS-BUILT PLAN SET.

GRAPHIC SCALE

0 75 150 300

1 inch = 150 ft.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1.26.22

MCADAMS

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

ecoterra

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-L1
CHECKED BY	RAS
DRAWN BY	CJ
SCALE	1" = 150'
DATE	01.26.2022

PLANTING PLAN

L1.00

PLANTING NOTES:

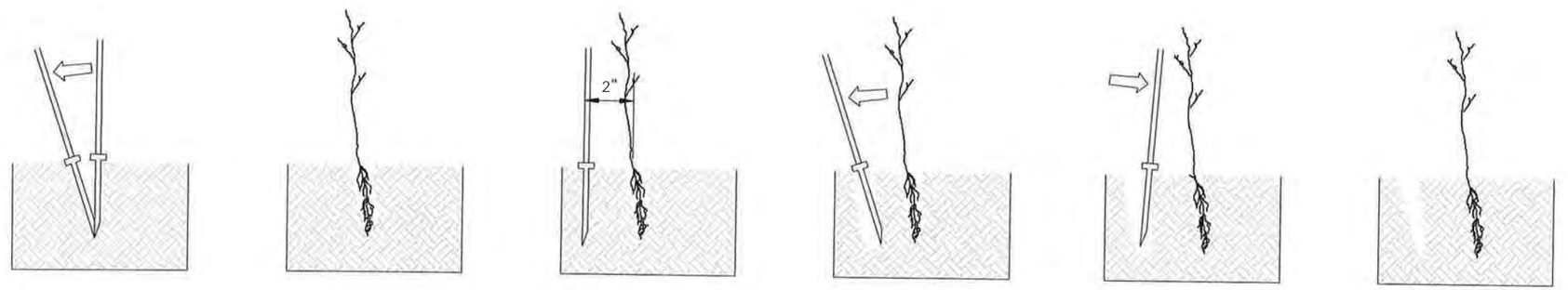
1. OBTAIN APPROPRIATE BARE-ROOT SEEDLINGS (18-24") AS AVAILABLE FROM VENDOR AND MIX ACCORDING TO EACH ZONE SPECIFIED IN TABLE 1 (RIGHT).
2. MAINTAIN SEEDLING INTEGRITY WITH ON-SITE OR OFF-SITE COOLING AS NECESSARY.
3. PLANT ACCORDING TO OPTIMAL WEATHER AND SOIL MOISTURE. PLANTING SHOULD NOT BE DONE DURING FREEZING (<32F) OR HIGH WIND (>10 MPH) CONDITIONS. MECHANICAL PLANTING SHOULD NOT OCCUR WITHIN 24 HOURS OF ANTECEDENT RAINFALL OR IF SITE CONDITIONS WILL RESULT IN RUTTING AND COMPACTION FROM PLANTING EQUIPMENT. SATURATED AREAS SHOULD BE HAND-PLANTED.
4. PLANTING SHALL OCCUR WITH A MECHANICAL PLANTER OR MANUALLY WITH TREE SPADES.
5. HERBICIDING WILL BE COMPLETED BY AN NC LICENSED APPLICATOR ACCORDING TO SITE CONDITIONS. AQUATIC-SAFE HERBICIDES WILL BE USED IF NECESSARY IN THE VICINITY OF SURFACE WATERS AND DITCHES.

TABLE 1: BARE-ROOT PLANTING

Scientific Name	Common Name	Vegetative Strata	Zone	Wetland Indicator Status	%
Quercus michauxii	Swamp chestnut oak	Canopy	1	FACW	10
Gordonia lasianthus	Loblolly bay	Understory	1	FACW	<5
Quercus pagoda	Cherrybark oak	Canopy	1	FACW	10
Carpinus caroliniana	Ironwood	Understory	1	FACW	<5
Quercus phellos	Willow oak	Canopy	1	FACW	15
Quercus laurifolia	Laurel oak	Canopy	1	FACW	15
Quercus nigra	Water oak	Canopy	1	FAC	15
Nyssa biflora	Swamp blackgum	Canopy	1	OBL	15
Magnolia virginiana	Sweetbay magnolia	Understory	1	FACW	<5
Ulmus americana	American elm	Canopy	1	FAC	<5
Persea palustris	Swamp bay	Understory	1	FACW	<5
Platanus occidentalis	Sycamore	Overstory	1	FACW	<5
Taxodium distichum	Bald Cypress	Overstory	2	OBL	<5
Nyssa aquatica	Water tupelo	Overstory	2	FACW	<5

NOTES:

1. THE SITE SHALL BE PLANTED WITH BARE ROOTS SPECIES LISTED IN TABLE 1 (ABOVE). SEE SHEET L1.00 FOR PLANTING ZONES.
2. DURING PLANTING, SEEDLINGS SHALL BE KEPT IN A MOIST CANVAS BAG OR SIMILAR CONTAINER TO PREVENT ROOT SYSTEMS FROM DRYING.
3. PLANTING BAR SHALL HAVE A BLADE WITH A TRIANGULAR CROSS SECTION, AND SHALL BE 12 INCHES LONG, 4 INCHES WIDE AND 1 INCH THICK AT CENTER.
4. ALL SEEDLINGS SHALL BE ROOT PRUNED, IF NECESSARY, SO THAT NO ROOTS EXTEND MORE THAN 10 INCHES BELOW THE ROOT COLLAR.



1. INSERT PLANTING BAR 12" INTO THE GROUND AS SHOWN AND PULL HANDLE TOWARD PLANTER.
2. REMOVE PLANTING BAR AND PLACE SEEDING AT CORRECT DEPTH.
3. INSERT PLANTING BAR 2 INCHES TOWARD PLANTER FROM SEEDING.
4. PULL HANDLE OF BAR TOWARD PLANTER, FIRMING SOIL AT BOTTOM.
5. PUSH HANDLE FORWARD FIRMING SOIL AT TOP
6. LEAVE COMPACTION HOLE OPEN WATER THOROUGHLY.

BARE ROOT PLANTING DETAIL

N.T.S.

NORTH CAROLINA PROFESSIONAL SEAL 049073 ENGINEER REBECCA STUBBS 1-26-22

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MAPLE SWAMP MITIGATION SITE

CONSTRUCTION PLANS

EDGECOMBE COUNTY, NORTH CAROLINA

PLAN INFORMATION	
PROJECT NO.	ECT2101.02
FILENAME	ECT2101.02-L1
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SCALE	
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PLANTING DETAILS

L1.01

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Appendix H

Conservation Easement

Doc ID: 003886740011 Type: CRP
Recorded: 01/31/2022 at 04:27:59 PM
Fee Amt: $26.00 Page 1 of 11
EDGECOMBE COUNTY, NORTH CAROLINA
Vila R. Anderson Register of Deeds
BK 1750 PG 165-175

STATE OF NORTH CAROLINA

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

EDGECOMBE COUNTY

SPO File Number: 33-LA-001
DMS Project Number: 100190

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 27th day of January, 2022, by RKW Properties, LLC, ("Grantor"), whose mailing address is PO Box 429 Bethel, NC 27812 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 Division of Mitigation Services (formerly known as the Ecosystem Enhancement Program and Wetlands Restoration Program) within the Department of Environmental Quality (formerly 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 Eco Terra Partners, LLC, and the North Carolina Department of Environmental Quality, to provide stream, wetland and/or buffer mitigation pursuant to the North Carolina Department of Environmental Quality Purchase and Services Contract Number 200206-01.

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 Division of Mitigation Services (formerly 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' Division of Mitigation Services (formerly 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 Division of Mitigation Services in the Department of Environmental Quality (formerly 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 Tarboro Township, Edgecombe County, North Carolina (the "Property"), and being more particularly described as that certain parcel of land containing approximately 348.29 acres and being conveyed to the Grantor by deed as recorded in Deed Book 1552 at Page 0337 of the Edgecombe 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 an unnamed tributary to Fishing Creek.

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 and Right of Access together with an access easement to and from the Conservation Easement Area described below.

The Conservation Easement Area consists of the following:

That area shown as Proposed Conservation Easement containing a total of 15.34 acres as shown on the plat of survey entitled "Final Plat, Conservation Easement for North Carolina, Division of Mitigation Services, Project Name: Maple Swamp Wetland, SPO File No.33-LA-001, DMS Site No. 100190, Property of RKW Properties, LLC," dated August 27th, 2021 by Gordon Strout, PLS Number L-2984 and recorded in the Edgecombe County, North Carolina Register of Deeds at Plat Book _____ Page _____.

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. ACCESS EASEMENT

[GENERAL LOCATION OPTION] Grantor hereby grants and conveys unto Grantee, its employees, agents, successors and assigns, a perpetual, non-exclusive easement for ingress and egress over and upon the Property at all reasonable times and at such location as practically necessary to access the Conservation Easement Area for the purposes set forth herein ("Access Easement"). This grant of easement shall not vest any rights in the public and shall not be construed as a public dedication of the Access Easement. Grantor covenants, represents, and warrants that it is the sole owner of and is seized of the Property in fee simple and has the right to grant and convey this Access Easement.

III. 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.

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.

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 new roads, trails, walkways, or paving in the Conservation Easement.

All existing roads, trails and crossings within the Conservation Easement Area shall be shown on the recorded survey plat.

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 Division of Mitigation Services, 1652 Mail Services Center, Raleigh, NC 27699-1652.

IV. GRANTEE RESERVED USES

A. Right of Access, Construction, and Inspection. The Grantee, its employees, agents, successors and assigns, shall have a perpetual Right of Access over and upon the Conservation Easement Area to undertake or engage in any activities necessary to construct, maintain, manage, enhance, repair, restore, protect, monitor and inspect the stream, wetland and any other riparian resources in the Conservation Easement Area for the purposes set forth herein or any long-term management plan for the Conservation Easement Area developed pursuant to this Conservation Easement.

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. Conservation Easements are purchased to protect the investments by the State (Grantee) in natural resources. Livestock within conservations easements damages the investment and can result in reductions in natural resource value and mitigation credits which would cause financial harm to the State. Therefore, Landowners (Grantor) with livestock are required to restrict livestock access to the Conservation Easement area. Repeated failure to do so may result in the State (Grantee) repairing or installing livestock exclusion devices (fences) within the conservation area for the purpose of restricting livestock access. In such cases, the landowner (Grantor) must provide access to the State (Grantee) to make repairs.

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 because of activities of the Grantor, his successors or assigns.

V. 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.

VI. 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:

Division of Mitigation Services Program Manager
NC 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.

VII. 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 the Property 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.

RKW PROPERTIES, LLC
A North Carolina limited liability company

J. Rodney Williford (SEAL)
Jimmy Rodney Williford, Manager/President

NORTH CAROLINA
COUNTY OF EDGECOMBE

I, Phyllis Annette Mueller, a Notary Public in and for the County and State aforesaid, do hereby certify that Jimmy Rodney Williford, Manager/President of RKW Properties, LLC, 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 27th day of January, 2022.

Phyllis Annette Mueller
Notary Public

My commission expires:

12-29-2024

PHYLLIS ANNETTE MUELLER
NOTARY PUBLIC
Edgecombe County, North Carolina
My Commission Expires December 29, 2024

Exhibit A

Exhibit A

Proposed Conservation Easement
15.34 acres +/-
Property of RKW Properties, LLC

Being all that 15.34 acres, more or less, as shown on plat entitled, "Conservation Easement Survey for The State of North Carolina Division of Mitigation Services, Project: Maple Swamp Wetland, (SPO File No. 33-LA-001; DMS Project #100190) (DWR #: 20210409V1), Owner: RKW Properties, LLC, Town of Tarboro, Edgecombe County, North Carolina," having Scale of 1" = 100' and dated August 27, 2021, the metes and bounds of said plat being as follows:

Beginning at a point in the northern right of way line of NC Highway 97, said point calculated from Deed Book 1579, Page 471-473, thence North 30° 16' 25" West 2,910.46 feet to a point labeled 101, the point of BEGINNING. From the BEGINNING point thus determined, thence along a new line, the boundary of a new Conservation Easement area as follows: North 12° 43' 53" West 495.77 feet to a point (102), cornering; thence, North 52° 50' 08" West 72.13 feet to a point (103), cornering; thence, North 21° 38' 49" West 97.44 feet to a point (104); continuing thence, North 15° 36' 38" West 1,074.87 feet to a point (105), cornering; thence, North 66° 37' 00" East 188.27 feet to a point (106) in the center of a watercourse, cornering; thence, South 54° 00' 17" East 400.41 feet to a point (107), cornering; thence, South 06° 17' 46" East 791.52 feet to a point (108), cornering; thence, South 33° 09' 27" East 721.60 feet to a point (109), cornering; thence, South 16° 32' 14" West 133.36 feet to a point (110), cornering; thence, North 86° 38' 07" West 449.13 feet to a point (101), the point of BEGINNING. Attention is drawn to the Point Coordinate Table as shown on said plat of conservation easement, to which reference is made for further description.

PC 13 Slide 214

LEGEND:

LEGEND

- PROPERTY LINE
- CONSERVATION EASEMENT
- OHE — OVERHEAD POWER
- TOP OF BANK
- FLOW LINE/EDGE OF WATER
- MAJOR CONTOUR
- MINOR CONTOUR

- NGS MONUMENT
- EXISTING CONCRETE MONUMENT
- EXISTING PROPERTY MARKER
- 101 5/8" IRON REBAR WITH CAP SET (SEE NOTE 5)
- POWER POLE
- GUY ANCHOR & WIRE

CONC.	CONCRETE	N/F	NOW OR FORMERLY
℄	CENTERLINE	NO	NUMBER
(D)	DEED MEASUREMENT	PG	PAGE
DB	DEED BOOK	POB	POINT OF BEGINNING
E	EASTING (GRID UNLESS NOTED)	POC	POINT OF COMMENCEMENT
		RCP	REINFORCED CONCRETE PIPE
EL	ELEVATION	STA	STATION
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N	NORTHING (GRID UNLESS NOTED)		

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6. THIS SURVEY IS NOT COMPLETE WITHOUT ALL SHEETS PRESENT.

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2. GENERAL WARRANTY DEED, DATED MARCH 9, 2012, RECORDED IN EDGECOMBE COUNTY AT BOOK 1579, PAGES 471-473.

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REVIEW OFFICER

1-28-2022

DATE

REGISTER OF DEEDS:

FILED FOR REGISTRATION _____, 2021

_____ : _____ M

PLAT CABINET _____, PAGE _____.

REGISTER OF DEEDS
EDGECOMBE COUNTY

CERTIFICATE OF OWNERSHIP AND DEDICATION:

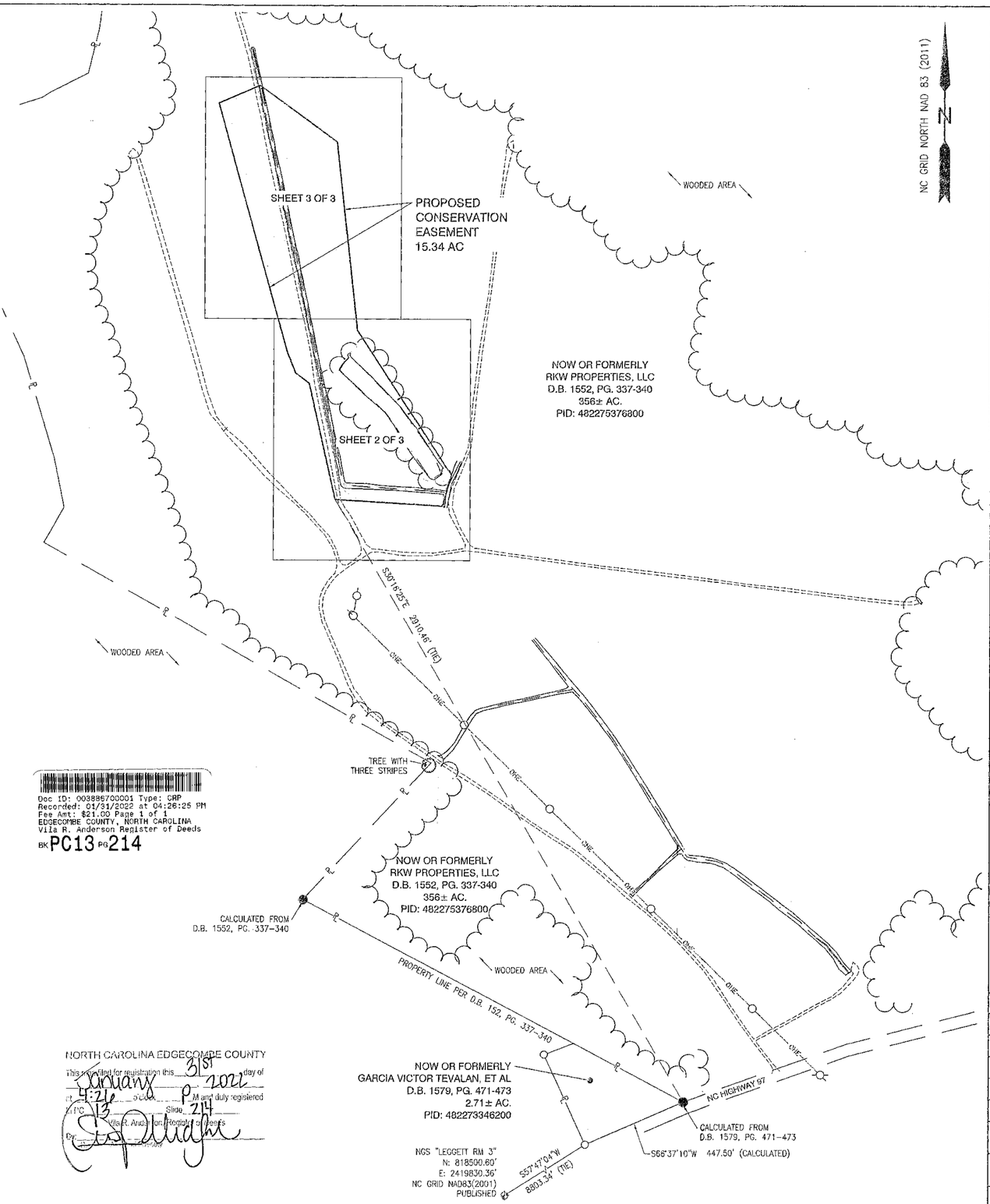
I (WE) HEREBY CERTIFY THAT I (WE) AM (ARE) THE OWNER(S) OF THE PROPERTY AS SHOWN AND DESCRIBED HEREON, I (WE) ALSO HEREBY ACCEPT AND ADOPT THIS RECORDED PLAT AND CONSERVATION EASEMENT WITH MY (OUR) FREE CONSENT AND DEDICATE ALL EASEMENTS, RIGHTS-OF-WAY, AND ACCESS ROADS TO PUBLIC AND/OR PRIVATE USE AS NOTED ON SAID PLAT.

J. Rodney Williford 1/27/2022
OWNER SIGNATURE DATE

J. Rodney Williford
OWNER NAME

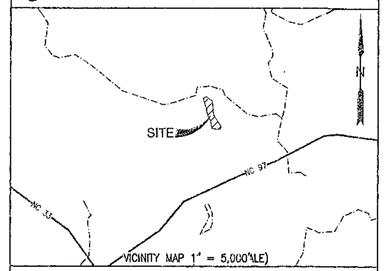
OWNER SIGNATURE DATE

OWNER NAME



Doc ID: 003886700001 Type: CRP
Recorded: 01/31/2022 at 04:26:25 PM
Fee Amt: $21.00 Page 1 of 1
EDGECOMBE COUNTY, NORTH CAROLINA
Vila R. Anderson Register of Deeds
BK PC13 PG 214

NORTH CAROLINA EDGECOMBE COUNTY
This is filed for registration this 31st day of January 2022
at 4:26 o'clock P M and duly registered
in PC 13 Slide 214
Vila R. Anderson, Register of Deeds
By: _____ Deputy



I, Gordon Strout, certify that this plat was drawn under my supervision in part from an actual survey made under my supervision (see references provided hereon), in part from information provided by others, and in part from deeds and maps of record; that the boundaries not surveyed are clearly indicated as drawn from information found in those references noted hereon; that the ratio of precision as calculated is 1 : 10,000+; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, registration number and seal this 14th day of January, 2022.

NORTH CAROLINA PROFESSIONAL L-2984 LAND SURVEYOR GORDON S. STROUT

Gordon Strout, PLS
Registration Number L-2984

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Gordon Strout, PLS
Registration Number L-2984

CONSERVATION EASEMENT SURVEY FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES

PROJECT: MAPLE SWAMP WETLAND
(SPO FILE #33-LA-001; DMS PROJECT #100190)
(DWR#:2021-0409v1, USACE ACTION ID: SAW-2021-00345)
OWNER: RKW PROPERTIES, LLC

300' 0' 300' 600'

SCALE 1" = 300'
DATE: JANUARY 14, 2022

ARCADIS
ARCADIS U.S., Inc.
License C-1869
WWW.ARCADIS.COM
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

ecoterra

REV	ISSUED DATE	DESCRIPTION	BY CKD

PROJECT MANAGER GORDON STROUT, PLS	DEPARTMENT MANAGER GORDON STROUT, PLS
DRAWN BY STACEY L. BARR, CST-IV	CHECKED BY GORDON STROUT, PLS
PROJECT NUMBER 30093749	DRAWING NUMBER SHEET 1 OF 3

Slide 215

PC 13

LEGEND:

LEGEND	
—— ℄ ——	PROPERTY LINE
	CONSERVATION EASEMENT
——OHE——	OVERHEAD POWER
	TOP OF BANK
	FLOW LINE/EDGE OF WATER
	MAJOR CONTOUR
	MINOR CONTOUR
◈	NGS MONUMENT
□	EXISTING CONCRETE MONUMENT
○	EXISTING PROPERTY MARKER
101 ●	5/8" IRON REBAR WITH CAP SET (SEE NOTE 5)
—○—	POWER POLE
←·····	GUY ANCHOR & WIRE

CONC.	CONCRETE	N/F	NOW OR FORMERLY
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REVIEW OFFICER:

I, Kaitlin Kent, REVIEW OFFICER OF EDGECOMBE COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

REVIEW OFFICER

1-28-2022.

DATE

REGISTER OF DEEDS:

FILED FOR REGISTRATION _____, 2021

_____ : _____ _____ M

PLAT CABINET _____, PAGE _____

REGISTER OF DEEDS
EDGECOMBE COUNTY

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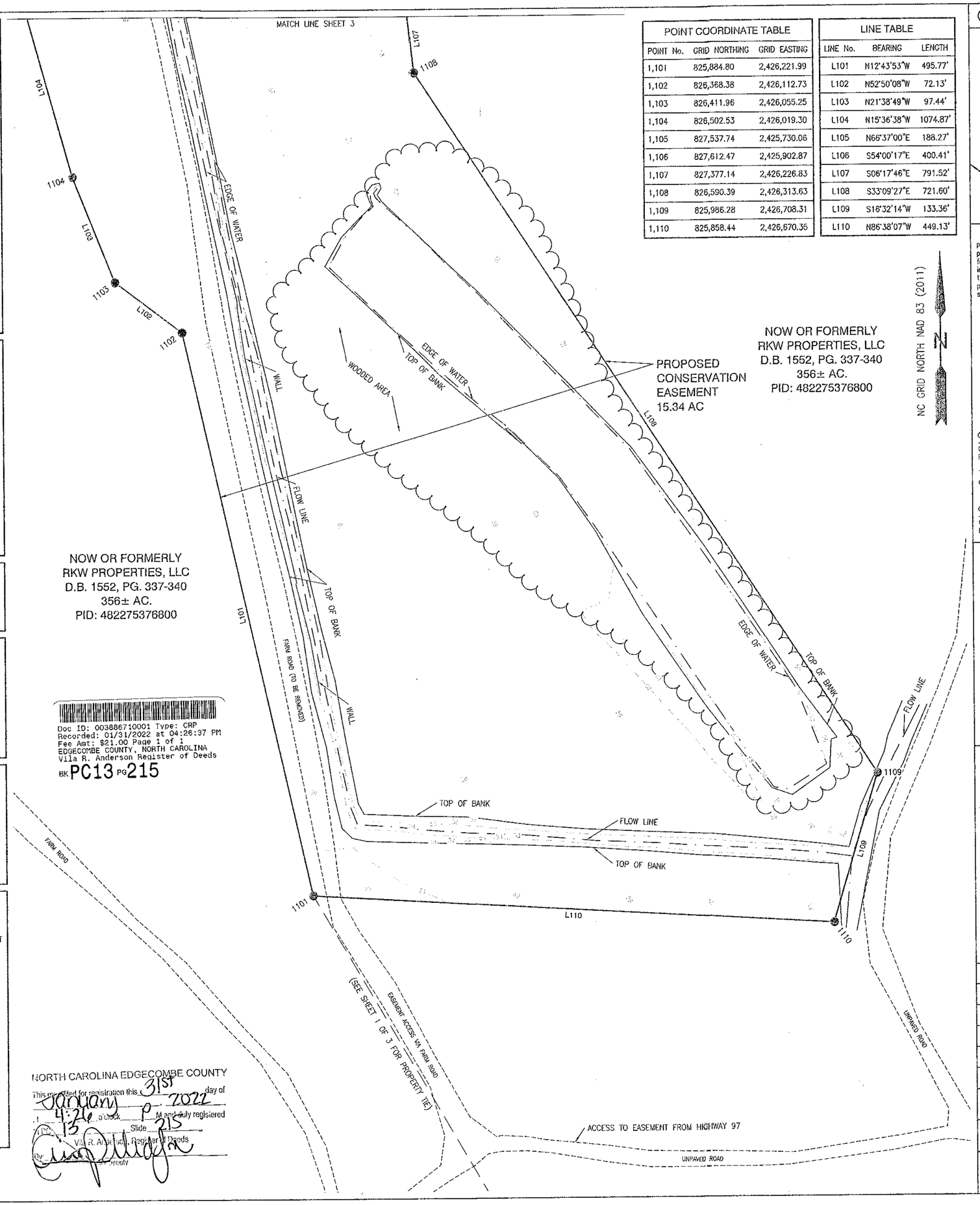
J. Rodney Williford — 1/27/1922
OWNER SIGNATURE — DATE

T. Rodney Williford
OWNER NAME

_____ _____
OWNER SIGNATURE — DATE

_____
OWNER NAME



Doc ID: 003886710001 Type: CRP
Recorded: 01/31/2022 at 04:26:37 PM
Fee Amt: $21.00 Page 1 of 1
EDGECOMBE COUNTY, NORTH CAROLINA
Vila R. Anderson Register of Deeds
BK PC13 PG 215

NORTH CAROLINA EDGECOMBE COUNTY
This map filed for registration this 31ST day of January 2022 at 4:26 o'clock P M and duly registered in Book 13 Slide 215
Vila R. Anderson, Register of Deeds
By: _____ Deputy

POINT COORDINATE TABLE

POINT No.	GRID NORTHING	GRID EASTING
1,101	825,884.80	2,426,221.99
1,102	826,368.38	2,426,112.73
1,103	826,411.96	2,426,055.25
1,104	826,502.53	2,426,019.30
1,105	827,537.74	2,425,730.06
1,106	827,612.47	2,425,902.87
1,107	827,377.14	2,426,226.83
1,108	826,590.39	2,426,313.63
1,109	825,986.28	2,426,708.31
1,110	825,858.44	2,426,670.35

LINE TABLE

LINE No.	BEARING	LENGTH
L101	N12°43'53"W	495.77'
L102	N52°50'08"W	72.13'
L103	N21°38'49"W	97.44'
L104	N15°36'38"W	1074.87'
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L106	S54°00'17"E	400.41'
L107	S06°17'46"E	791.52'
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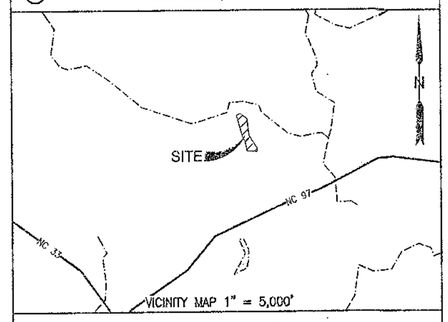

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Gordon Strout, PLS
Registration Number L-2984

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Gordon Strout, PLS
Registration Number L-2984

CONSERVATION EASEMENT
SURVEY FOR
THE STATE OF NORTH CAROLINA
DIVISION OF MITIGATION SERVICES

PROJECT: MAPLE SWAMP WETLAND
(SPO FILE #33-LA-001; DMS PROJECT #100190)
(DWR#:2021-0409v1, USACE ACTION ID: SAW-2021-00345)
OWNER: RKW PROPERTIES, LLC

60' 0' 60' 120'

SCALE 1" = 60'
DATE: JANUARY 14, 2022

ARCADIS
ARCADIS U.S., Inc.
License C-1869
WWW.ARCADIS.COM
801 Corporate Center Drive, Suite 300
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Tel: 919/854-1282 Fax: 919/854-5448

ecoterra

REV	ISSUED DATE	DESCRIPTION	BY CKD

PROJECT MANAGER GORDON STROUT, PLS	DEPARTMENT MANAGER GORDON STROUT, PLS
DRAWN BY STACEY L. BARR, CST-IV	CHECKED BY GORDON STROUT, PLS
PROJECT NUMBER 30093749	DRAWING NUMBER SHEET 2 OF 3

Slide 216

PC 13 Slide 216

LEGEND:

LEGEND

- PROPERTY LINE
- CONSERVATION EASEMENT
- OHE — OVERHEAD POWER
- TOP OF BANK
- FLOW LINE/EDGE OF WATER
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- MINOR CONTOUR
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Kuhl
REVIEW OFFICER

1-28-2022
DATE

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FILED FOR REGISTRATION _____, 2021

_____ : _____ _____ M

PLAT CABINET _____, PAGE _____

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OWNER SIGNATURE DATE

J. Rodney Williford
OWNER NAME

_____ _____
OWNER SIGNATURE DATE

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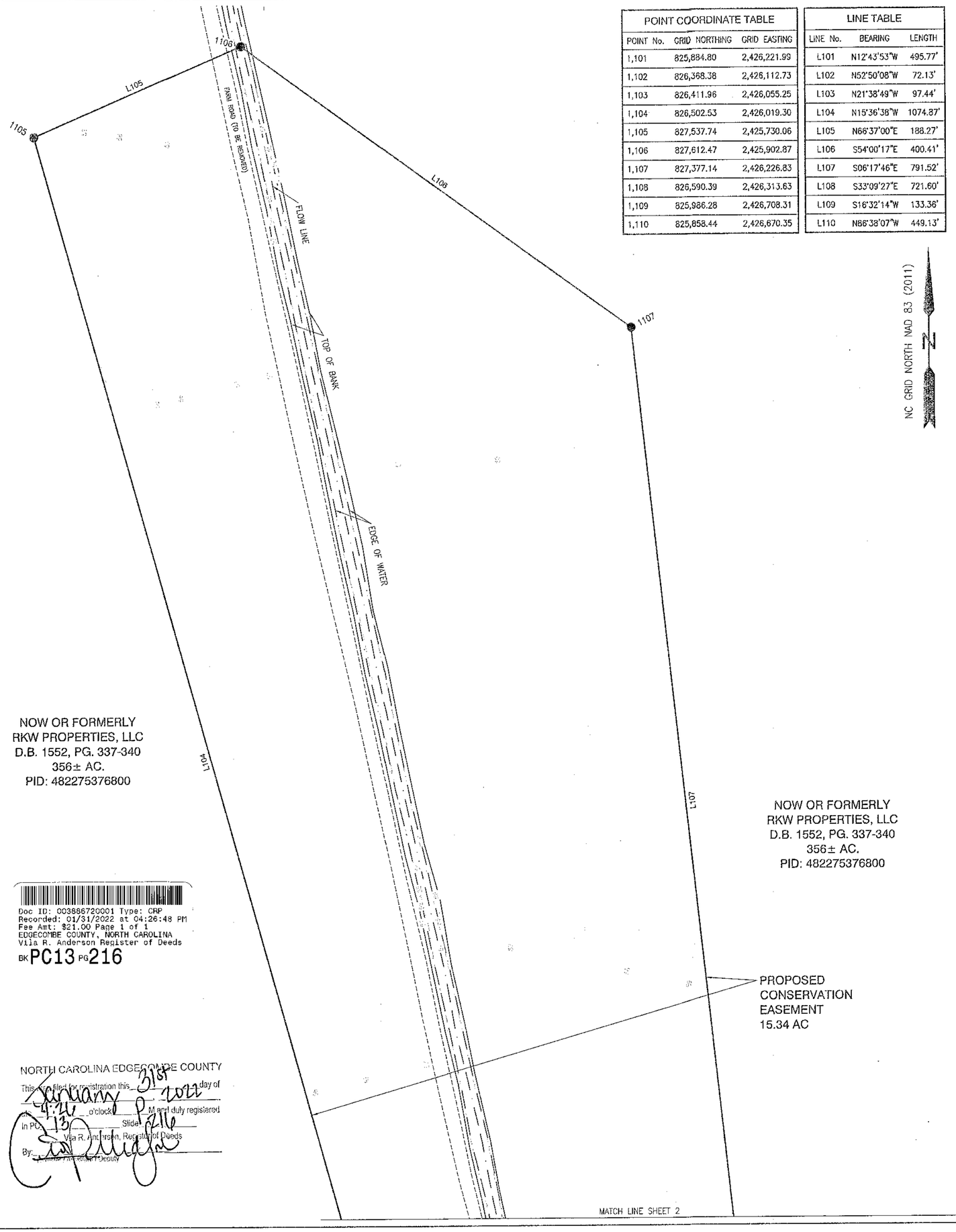

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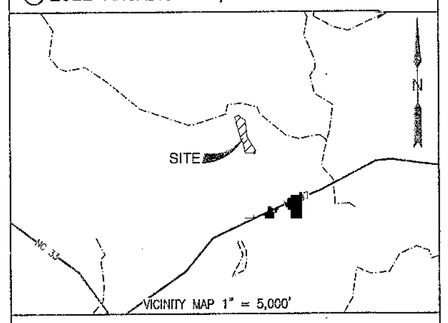
NC GRID NORTH NAD 83 (2011)

NORTH CAROLINA EDGECOMBE COUNTY

This map filed for registration this 31st day of January 2022 at 4:26 o'clock P M and duly registered in PC 13 Slide 216
Vila R. Anderson, Register of Deeds
By: _____ Assistant / Register of Deeds



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(SPO FILE #33-LA-001; DMS PROJECT #100190)
(DWR#:2021-0409v1, USACE ACTION ID: SAW-2021-00345)
OWNER: RKW PROPERTIES, LLC

60' 0' 60' 120'

SCALE 1" = 60'
DATE: JANUARY 14, 2022

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ecoterra

REV	ISSUED DATE	DESCRIPTION	BY CKD

PROJECT MANAGER GORDON STROUT, PLS	DEPARTMENT MANAGER GORDON STROUT, PLS
DRAWN BY STACEY L. BARR, CST-IV	CHECKED BY GORDON STROUT, PLS
PROJECT NUMBER 30093749	DRAWING NUMBER SHEET 3 OF 3

Appendix I

IRT Meeting Minutes

MEETING MINUTES

Maple Swamp Wetland Mitigation Site
Tar Pamlico Basin CU 03020102
NCDMS Contract: 200206-01
NCDMS Project Number: 100190
Re: Post Contract Award IRT Site Visit April 7, 2021

Attendees
Todd Tugwell - USACE
Casey Haywood - USACE
Erin Davis - NCDWR
Lindsay Crocker - NCDMS
Jeremiah Dow - NCDMS
Ted Griffith - Eco Terra Partners
Scott Frederick - SWE Group
Norton Webster - Eco Terra Partners

The following information presents a summary of the in-person meeting that occurred at the project site. The minutes are provided in order according to each attribute discussed.

- Eco Terra Team: Introduction to site and overview of the project
- Scott: Explanation of why we put monitoring wells out early to collect extra data, which Todd liked.
- Norton: Discussed proposed plan to plug the ditches
- Erin: How was the steam called? Scott: Below by southern confluence by DWR for the buffer site and will incorporate it into the mitigation plan.
- Erin: It is good to show the ditches and flow even outside of the easement for the mitigation plan.
- Erin: Please reference this specific easement in the mitigation plan but also note the adjacent buffer project and its separate DWR number.
- Erin/Todd: make sure to note drainage effects as well as wetting effects to adjacent fields from our work.
- Erin: Is there a risk of the site getting too wet? Something to address in the risk section. Scott: No, we don't believe so.
- Todd: How wide is the buffer outside of the project areas? Norton: 50’ min around the project area.
- Todd: How are we going to handle the pond? Are we going to fill it in? Norton: the plan is to leave the pond as is and manage for pioneer trees by removing pine/sweetgum.
- Todd: What about the ditch extending on the north end of the project outside the easement? Scott: We will fill it so it doesn’t impact the project.
- Todd: Had a concern of adjacent land use on the project and planning for contingencies. Doesn't love having a project surrounded by agriculture as it can have impacts on wildlife travel, hydrology, and vegetation. Has had some issues with previous projects. Would prefer that we connect the corridor between the buffer and Wetland project. It’s hard for them to account for buffer uplift since that is DWRs domain. Potential for loss of uplift if it goes right back into an ag ditch before getting to the buffer site.

- Todd: Depending on how the water budget accounts for adjacent land use, there could be issues if the farmer adjusts ditches outside of the easement. Scott: Topo mitigates a lot of that risk.
- Erin: Focus on the adaptive management plan and make sure it isn't just a paragraph. Include details.
- Erin: Wants a nearby reference community for vegetation.
- Todd: Try and get a reference from Maple swamp and its hydrology.
- Erin: Why not expand to the easement all the way to the edge of maple swamp. Scott: There is a non-hydric rim around the edge and would provide no functional use.
- Todd: Where will you get fill material? Scott: The old farm road and on-site materials.
- Todd: Will there be any flow patterns on site. Norton: No, will let it naturally occur. Will make sure to factor in larger storm events when planning the plugs and ditch filling.
- Todd: How uniform or zoned will the planting be? Norton: will have 2-3 zones to adjust vegetation for the wettest portions of the site. Todd: they are encouraging more thought in planting zones and diversity. Don't want to see monoculture. Want to make sure that the wells cover the zones, including fringes and low points.
- Erin: Looking at the pond, it would be best to remove the pines around and distribute around the site to provide more habitats. Would encourage us to fill in pond as much as we can with adjacent spoil material. Specific trees will be girdled for nesting/perching habitat. Some spoil may be used to fill ditches
- Todd: For areas where you have non-diffuse flow, make sure to address those through BMPs or other means.
- Todd: Watch out for scalloping around the easement.
- Todd: Do you anticipate doing any earth moving? Scott: No, not much beyond the road. Some minor microtopography and site prep/ripping will occur.
- Erin: It will be beneficial to do soil testing on the site, particularly since it has been in heavy ag for a long time and most recently in cotton. Scott: We agree to address nutrient/micronutrient baseline conditions.
- Erin: Include a soil profile next to the gauges with a full description.
- Scott: What do you think about our pre-construction wells? Todd: wants to see wells 20' from the edge of the project along the side slope. Would be good to have more transects. Scott: Potentially add one more transect of wells.
- Erin: If you want to get credit for more area there must be gauges and must be monitoring wells.
- Todd: Get plants in before March 15. Won't give a pass on later planting like in the last few years. Erin: You can add additional species in year 1 to increase diversity if a species is unavailable at the time of construction.

- Scott: Roanoke soils will have 9-12% hydrology standard and the Erin/Todd suggested number of gauges should be in the range of 7 or 8.
- Lindsay: Have Corps conduct PJD to ensure that there will not be any permits required.

Additional IRT Comments:

- DWR requests the MP to expand on the functional uplift justification beyond the isolated area of restoration to a larger landscape connectivity discussion.
- Wetland gauges: During the site visit it was recommended to install a minimum of 8 gauges. If additional credit is being sought after for a larger area, 12 gauges are recommended. Pre-gauges should be in the same location post construction. It was also mentioned that gauge data should support a higher standard not just meet jurisdiction.
- Vernal pools were briefly discussed. If the location of the vernal pools are determined, they should be shown on the plan view sheets. Please note that vernal pools should have an appropriate depth to ensure they are seasonally dry- recommend a max depth of 14 inches.

Overall, the IRT agreed with mitigation approach provided at the site visit.