MITIGATION PLAN

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, North Carolina

DMS Project ID No. 100077
Full Delivery Contract No. 7606
USACE Action ID No. SAW-2018-01761
DWR Project No. 2018-1156
RFP No. 16-007401

Neuse River Basin
Cataloging Unit 03020202

Prepared for:

NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF MITIGATION SERVICES
1652 MAIL SERVICE CENTER
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February 2021

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Response to IRT Comments – Mitigation Plan

Sliver Moon 2 Mitigation Site (DMS ID No. 1000077)
Contract No. 7606
Neuse River Basin 03020202, Craven County
USACE AID#: SAW-2018-01761
DWR Project No. 2018-1156

Comments Received (Black Text) & Responses (Blue Text)

EPA Comments, Todd Bowers:

1. General: EPA appreciates the care and analysis that went into designing a site that will limit the risk of hydrological trespass, maximize water retention, allow for water table recharge and remove nutrients that may runoff into the site.
   Thank you.

2. Section 5/Page 11: Tree removal should be included in the objectives for restoring the wetland targeted functions in Table 9 as this is integral in creating a more diverse variety of species and enhance understory growth.
   The following was added to the objectives column of Table 9, "*Minimize existing tree monocultures through selective tree removal* and plant woody native vegetation."

3. Section 7.2/Page 14: What is the point of adding more trees at a higher density in the lower/depressed areas (3.75 acres)? Why not plant fewer trees that are not tolerant of inundation and replace with inundation tolerant species to achieve the 680 stems/acre density? Planting at a density of 1000 trees per acre seems wasteful and excessive especially if over half of the trees are expected to die.
   RS' acknowledges the additional costs associated with planting depressed areas in both non-riverine wet hardwood forest (including understory species) and wet foot species. To ensure the Site meets the seven-year vegetation success criteria, RS feels it is necessary to plant the depressed areas in species that can tolerate a wide range of hydrologic conditions. Through our Site analysis and design process, we anticipate these areas will remain inundated for longer periods of the growing season but cannot guarantee that they will. Thus, we feel it is best to plant the Site to ensure success criteria are met and minimize the risk of remedial planting during the monitoring period.

4. Section 8.1/Page 17: Recommend adding the number of consecutive days of the growing season needed to meet the 12 percent of the growing season. This comment applies to Tables 15 and 16 Success Criteria as well.
   A paragraph was added to Table 15 detailing the maximum growing season per the 2016 Wilmington District's monitoring protocols, March 1st – November 20 (265 days). 12 percent of the maximum growing season is 31.8 days, rounded up to 32. Table 16 was also updated to include the associated number of consecutive days.

5. Section 9/Page 19: Provide some examples of conditions that may require adaptive management and methods or contingency plans to alleviate those conditions.
   Conditions that may require adaptive management could be wide-ranging. Though scenarios could be speculated in advance, we feel it is presumptuous to define specific scenarios and propose subsequent adaptive management methods ahead of potential occurrences, as they would be lacking in detail. In addition, proposing methods to alleviate those conditions would lack any specifics and ultimately require DMS and IRT approval ahead of implementation.

   Our experience with non-riparian wetland restoration has shown these projects to be low risk for failure. The primary component to take into account for restoring this type of wetland is hydrology. Given RS' experience with the existing non-riparian project adjacent to Sliver Moon 2, we have firsthand knowledge of the hydrology in this area. We have utilized that experience and knowledge in the Sliver Moon 2 design.

6. Section 11.1/Page 19: For clarity please state, if accurate, that fencing will not be required for this project as the adjacent land uses will not require such.
   The following was added to Section 11.1, *"Fencing will not be required for this project as the adjacent land-use does not require it."*

DWR Comments, Erin Davis:

1. Page 5, Section 2 – Please clarify what is meant by the statement "requiring minimal long-term management" regarding site wetland resources.
   The statement has been removed from Section 2.

2. Page 6, Section 3.1 – Currently, how deep are the interior and perimeter site ditches?
   The following was added to Section 3.1, *"Existing interior and perimeter ditches range from 1-4 feet in depth."*

3. Page 10, Table 8 – Considering the difference in land use and cover, should an NC WAM form be completed for the existing forest areas?
   An additional NC WAM form was completed for existing forest areas. The NC WAM summary is included in Table 8 and the rating sheet is included in Appendix B with the location identified on Figure 6.

4. Page 13, Section 7.1 – What "imported elements and compounds" are being referenced?
   NC WAM water quality function is divided into five sub-categories - particulate change, soluble change, pathogen change, physical change, and pollution change. Elements and compounds refer to these materials and organisms, and with respect to the Site, the improvement to pollution change, from the removal of direct nutrient and pollutant inputs from the Site associated with current agricultural practices.

5. Page 15, Section 7.3 – DWR appreciates the effort to develop a seed mix with consideration of soil stabilization, pollinator benefit and site diversity.
   Thank you.

6. Page 16, Section 8 – DWR recommends adding a sentence to this section stating that success criteria and monitoring will be completed in accordance with the 2016 NCIRT Guidance. Also, please confirm that all wetland well locations elevation data and soil profiles will be included in the MY0 baseline report, as well as survey for the constructed flow paths and shallow pools.
   The following was added to Section 8, *"Success criteria and monitoring will be completed in accordance with the 2016 NCIRT Guidance (2016 USACE). The As-Built Baseline Report (MY0) will include elevation data and soil profiles at all wetland well locations, and a topographic survey of the constructed flow paths and shallow pools."*

7. Page 16, Section 7.4 – Table 4 notes two percent invasive species cover. What invasive species are present onsite? When and how will they be treated?
   Chinese privet (*Ligustrum sinense*) has colonized small portions along the margins and spoil piles of Forest B. During site construction, these clusters will be mechanically removed. Annual inspections will be made throughout the Site to monitor for invasive vegetation species, and if observed, treated appropriately by a NC licensed ground pesticide applicator. Section 7.4 was updated to reflect this approach.

   Also, with the recognition that red maple, sweetgum and pine are all native, they can be considered temporally undesirable if overcrowding and outcompeting the planted stem species. Is there a plan to continue thinning these species during the monitoring period?
   During yearly review of the Site, RS assess the establishment of tree species such as red maple, sweetgum, and pine. If a situation arises wherein such a species has colonized an area to the degree that planted stems are at risk of being outcompeted, targeted herbicide application or physical removal of the underside species would occur.

8. Page 17, Table 14 – Please include fixed photo point monitoring. Also, please add a row for monitoring of the easement boundary and stabilized outfalls.

Table 14 was updated.

9. Page 17, Table 15 – Please note that the wetland hydrology is an annual success criterion.
   The following was added to Table 15, *"Wetland hydrology is an annual success criterion, and will be reported in each year's monitoring report."*

10. Page 19, Section 9 – Please specify DMS as the point of contact to notify the IRT of any site issues.
    Section 9 was updated appropriately.

11. Page 19, Section 11 – Is trespassing a concern with the maintenance of an Access Lane onsite?
    RS does not anticipate trespassing to be a concern with the Access Lane. The Lane will not receive any special grading during construction and is expected to naturalize along with the Site.

12. Figures – Please show the Designated Access Lane on Figures 8-A, 8-B and 9.
    Updated.

13. Figure 7 – Please make the earthen road and existing ditch legend items different colors.
    Updated.

14. Figure 8-A – Based on existing and proposed contours, what is the total area proposed to be graded greater than 12 inches (including the proposed flow paths and shallow pools)?
    0.265-acre, Figure 8D has been added to Appendix A and details the areas of grading greater than 12 inches.

15. Figure 10 – What is the setback distance from the Daisy Lane right-of-way to the wetland reestablishment boundary?
    The easement is set a minimum of 5-feet off Daisy Ln. – the note on Figure 10 was updated to include this information.

16. Figure 11 – DWR likes that at least two gauges and plots are located in each forested area, as well as proposed shallow pools. There appears to be six gauges within ~30 feet of the upland edge/easement boundary. DWR requests shifting two more gauges closer to easement boundary, since this is the zone we are most concerned with meeting the minimum hydroperiod performance standard (see markup).
    Updated.

17. Figures – DWR would welcome the inclusion of existing condition photos.
    Photos, with labels, have been added to Appendix A of the Mitigation Plan.

18. Appendix B – In the future, DWR would like more detail included in the site soil investigation, including a map indicating all soil check locations.
    Understood.

19. Appendices – Please include a copy of the August 2018 IRT site visit meeting minutes.
    Added as Appendix K.

20. E&SCP, Pages 5-6
    a. Ditch Plug – Based on site soil borings, the upper 18 inches is composed of sandy loam. Based on the grading plan, the shallow wetland pools will be excavated approximately 6-12 inches deep. Is the site sandy loam an appropriate impervious material for the plug core or will offsite material be needed?

    Clay material is not necessary for plug construction. Use of on-site sandy loam will be appropriate as ditch plugs which will be constructed in 1 to 2-foot lifts with filter fabric and compacted into the bottom of the ditch.

b. Ditch Backfilling – Based on the majority of the site be graded less than 12 inches, is there sufficient onsite material to backfill the ditches? Has a supplemental offsite source been identified? Please reference the max. depth to remain open/unfilled between ditch plugs.

Yes, we believe there will be sufficient onsite material to fill all ditches. We do not plan to leave any ditches open/unfilled between ditch plugs.

c. Vegetative Planting – Please update the reference community, species and quantities based on the mitigation plan section 7.2.

The E&SCP plan has been updated.

d. Construction Schedule – There is no mention of the three culvert removals and two outfall stabilizations noted on mitigation plan Figure 7. Also, should the removal of the existing dirt road and/or construction of the new access lane be referenced?

Culvert removal was added to the ditch cleaning narrative of the construction schedule. Road removal around Forest A is detailed on the Grading Plan. There will be no construction/improvement for the access lane.

e. Construction Schedule #6 – What is the max. depth of proposed shallow wetland pools?

The typical depth of the shallow pools will not exceed 12-inches during the growing season. During the winter months (dormant season) and large rain events, the shallow pools' depth may rise to 18-inches before surface water is released through the Site's surface water connections.

f. Construction Schedule #7 – Is the ~4-inch shallow disking part of the fine grading task?

Yes – The Construction Schedule has been updated.

g. Construction Schedule #8a – What is the minimum length of proposed ditch plugs?

The plugs will be a minimum of 10-feet in length.

h. Construction Schedule #8b – The only permanent groundcover mix included in this plan (page 17) is not acceptable for use within the project site/conservation easement.

The permanent groundcover mix within the E&SCP Plan was updated to match mix outlined in the Mitigation Plan.

21. Grading Plan –
    a. Please call out the other Pond Pine & Existing Forest Management area; will the bedding lines in this area (mentioned in the mitigation plan) be removed during grading?

    These areas have been called on out the Grading Plan. Removal of bedding lines will not be done during grading. We feel the process of tree removal in this area will be sufficient to remove any effect the historic bedding lines have.

    b. Is there any proposed grading for the new Access Lane?

    No, the Access Lane will be at grade.

    c. How will the proposed outfalls be stabilized?

    Project outfalls are to be stabilized with Class A rip-rap – Outfall detail added to E&SC sheets

22. Surface Water Connection Detail – Please reference the permanent seed mix in mitigation plan section 7.3 (Table 12). The permanent seed mix included in the E&SCP is not appropriate for use within the project site.

    The permanent groundcover mix within the ESC Plan was updated to match mix outlined in the Mitigation Plan.

<u>USACE Comments, Kim Browning:</u>

1. Please add fixed photo points to figure 11.

   Updated.

2. Please slightly shift veg plots, or add random plots, to encompass the area where the old road bed was and the filled ditch in the southern portion of the easement.
   Updated.

3. The Photo Web-Ap link that was on the SharePoint site was helpful. It would have been helpful to include that in the mitigation plan and label the photos for reference.
   Photos, with labels, have been added to Appendix A of the Mitigation Plan.

4. It would be beneficial to include the indicator status of the plant species listed in Table 11.
   Table 11 was updated to include the indicator status.

5. Tables 9 & 16 discuss the functional uplift potential and references NCWAM, including the water quality and habitat uplift. These are benefits that are presumed and will not be measured by monitoring.
   That is correct. Mitigation Plan language was updated to reflect that these will not be measured.

6. Table 9: Shouldn't one of the goals be to enhance/restore wetland functions?
   The Hydrology Goal of Table 9 has been updated to, "Re-establish appropriate wetland hydrology on-site."

7. Table 16 Hydrology: The goal to "minimize downstream flooding to the maximum extent possible" is better suited as an objective, and is one of the functions of a wetland. A more appropriate goal would be to re-establish hydrology onsite. Additionally, recordation of a CE is not a performance standard, it is the establishment of a legal document. Lastly, vegetation plot success is unrelated to your stated goal of minimizing downstream flooding. Suggest re-wording this section.
   - The Hydrology Goal was updated to read, "Re-establish appropriate wetland hydrology on-site."
   - Recordation of a CE was removed from the Success Criteria column.

8. Table 16 Habitat: The goal should be to improve wetland wildlife habitat.
   The habit goal was updated to read, "Improve *wetland* wildlife habitat within and adjacent to the Site."

9. I really appreciate the thought that went into Section 11. Please include something similar in future mitigation plans.
   Thank you.

10. Please include a figure that depicts the different areas of grading with regard to depth. Additionally, please list the amount of the site to be graded greater than 12 inches since I assume you will need ditch plug material. It would be helpful to show the proposed elevations listed on Figure 7 in an overall grading map.
    Figure 8D has been added to Appendix A and details the areas of grading greater than 12 inches (0.265 acre).

11. Table 15: Should this also include Pantego soils?
    Pantego soils has been added to Table 15 and includes the same hydroperiod success criteria as Rains which was requested by the IRT during the pre-application site visit.

12. Please add a performance standard that addresses visual site inspections and fixed photo points.
    Table 14 was updated.

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Raleigh, North Carolina 27603
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919-215-1693 (phone)

February 2021

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

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

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

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APPENDICES

1 PROJECT INTRODUCTION

The Sliver Moon II Wetland Mitigation Site (hereafter referred to as the "Site") totals 30.88 acres of primarily agricultural fields used for row crop production. The underlining tract is a single parcel, totaling 31.85 acres. The Site is located approximately 2.5 miles northwest of Cove City, 3.5 miles southeast of Dover, and slightly north of Old US-70 Highway (SR 1005) in northwest Craven County (Figures 1 – 3, Appendix A).

1.1 Directions to Site

Directions to the Site from Kinston, North Carolina.

- Travel southeast on US-70 Bypass for 7.2 miles
- Turn left at SR 1005/Dover Road
- Continue onto old US Hwy 70 for 0.3 mile
- Continue onto W Kornegay Street for 1.3 miles
- Continue onto old US Hwy 70 for 3.7 miles
- Turn left at Daisy Lane
- The Site is located on the left at the end of the road.
    - Site Latitude, Longitude 35.2036, -77.3654 (WGS84)

1.2 USGS Hydrologic Unit Code and NCDWR River Basin Designation

The Site is located within the Neuse River Basin in 14-digit USGS Cataloging Unit and **Targeted Local Watershed (TLW) 03020202080010** of the South Atlantic/Gulf Region (NCDWQ sub-basin number 03-04-08) [Figures 1 and 2, Appendix A]). Site hydrology is driven by precipitation and lateral groundwater flow. The Site is located within an interstream flat adjacent to the rim of a Carolina bay. The interstream flat is between two stream systems, Core Creek (Site's receiving waters) to the south, which has been assigned Stream Index Number 27-90 and Mill Branch to the North, which has been assigned Stream Index Number 27-90-2. Both stream systems have been assigned a Best Usage Classification of **C; Sw, NSW** (NCDWR 2013). The reach of Core Creek (27-90a2; from the upstream crossing of SR 1239 to Grape Creek) located less than 1 mile south of the Site is listed on the NCDEQ final 2016 and draft 2018 303(d) lists for severely impaired benthos (NCDWR 2018a, NCDWR 2018b).

1.3 Physiography and Land Use

The Site is located in the Carolina Flatwoods portion of the Middle Atlantic Coastal Plain ecoregion of North Carolina. Regional physiography is characterized by flat plains on lightly dissected marine terraces, swamps, Carolina bays, and low gradient sandy and silty bottomed streams (Griffith et al. 2002). Currently, existing wetlands abut the Site along its entire northern and much of its southern boundary, with direct ephemeral surface water inputs at several locations. Currently ditched, ephemeral inputs along the northern boundary are directed east and offsite. The eastern fifth of the Site's northern boundary abuts the Sliver Moon Mitigation Site, implemented in 2012, successful through five years of monitoring, and closed in 2018.

Just to the north of the Site, is the rim of a Carolina bay (Figures 1-6, Appendix A). The rim was mined for sand to construct the current NC Highway 70. The Site's eastern boundary, Daisy Lane, was built to access the sand and remains an unimproved road elevated 2-3 feet above Site grade. Soon after the Hwy 70 project, the area was cleared for row crop production, including the land east of Daisy Lane. Land abutting the Site to the south was in agricultural production before 1981. Currently, a vast majority of this land is unmanaged and has naturalized. Remnant spoil piles and historic ditches are still present. Agricultural production is still active along the Site's southwestern boundary, where a topographic crest in the landscape separates the properties hydrologically.

The 1981 Farm Service Agency (FSA) aerial photograph for Craven County (Figure 3, Appendix A) shows the recently constructed Daisy Lane with the Site and surrounding areas mostly forested. Cleared soon after the FSA aerial photograph, the Site has been in agricultural production for roughly 35 years. Typical crop rotation for the last decade has been a winter wheat and corn.

Of the 30.88 acres, 27.67 acres (89.6%) are ditched/drained for row crop production. Two small patches of existing forest comprise the remaining acreage which are also drained by existing ditches. The western section of forest (depicted as Forest A on Figure 6, Appendix A), encompasses 1.18 acres, and consists of managed pond pine (*Pinus serotina)*. The section of forest on the southern portion of the Site (depicted as Forest B on Figure 6, Appendix A), encompasses 1.73 acres, is ditched on two sides, and is subject to agricultural encroachment on its third boundary. No active management of the forest has occurred. A detailed condition of the existing forests is provided in Section 3.7 – Plant Community Characterization.

Site hydrology drains west to east before running north along Daisy Lane where it soon turns east and continues through a ditch network before draining south to Core Creek. On-site elevations are nearly level averaging between 16-17 meters on the National Geodetic Vertical Datum (NGVD) (USGS Cove City, North Carolina 7.5-minute topographic quadrangle) or 53-56 feet (NAVD 88) (NC One Map, Craven County Quality Level 2 (QL2) LiDAR 0.5-foot elevation contours) (Figures 5 and 6, Appendix A). Surrounding land uses include existing wetlands, rural residential properties, timber tracts, and row crops.

1.4 Project Components and Structure

Within the 30.88-acre Site, 30.597 acres are drained hydric soils (Figure 6, Appendix A), which is proposed for non-riparian wetland mitigation (Table 1) (Figures 7-10, Appendix A). Completed project activities, reporting history, completion dates, project contacts, and background information are summarized in Tables 1-4.

Table 1. Project Components and Mitigation Credits

Area ID	Wetland Type	Existing Acreage	Restoration Acreage	Restoration Level	Restoration or Restoration Equivalent	Mitigation Ratio	Mitigation Credits
WR 1	Non-riparian	--	30.597	Re-establishment	30.597	1:1	30.447* (30.597 – 0.15)

Area Summations by Mitigation Category	
Restoration Level	**Non-riparian Wetland (acreage)**
Re-establishment	30.597

Overall Assets Summary	
Asset Category	**Overall Credits**
Non-riparian Wetland	30.447*

***** An access lane measuring 0.15 acres (15 feet wide) was surveyed and recording as part of the conservation easement plat and deed (Appendix G). The lane allows for access from south to north across the Site. The area of the lane is a part of the restoration plan and approach. No improvements to the lane are to be made during construction. The land will not generate mitigation credit (Figure 10, Appendix A).

Table 2. Project Activity and Reporting History

Activity or Deliverable	Data Collection Complete	Completion or Delivery
Technical Proposal (RFP No. 16-007401)	March 28, 2018	March 28, 2018
Institution Date (NCDMS Contract No. 7606)	--	June 15, 2018
Post Contract IRT Site Visit	--	August 22, 2018
Mitigation Plan	January 2020	October 2020
Construction Plans	--	October 2020
Easement Acquisition	April 2020	April 2020

Table 3. Project Contacts Table

Full Delivery Provider	Restoration Systems 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 Raymond Holz 919-755-9490
Designer / Monitoring	Axiom Environmental, Inc. 218 Snow Avenue Raleigh, NC 27603 Grant Lewis 919-215-1693
Surveyor & Land Quality Permit	k2 Design Group 5688 U.S. Hwy. 70 East Goldsboro, NC 27534 John Rudolph (L-4194) 919-394-2547
Planting Contractor	Restoration Systems 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 Josh Merritt 919-755-9490
Construction Contractor	Land Mechanic Design 126 Circle G Lane Willow Spring, NC 27592 Charles Hill (919) 639-6132
General Contractor	Restoration Systems 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 Worth Creech (GC #64807) 919-755-9490

Table 4. Project Attribute Table

Project Information			
Project Name	Sliver Moon II Wetland Restoration Site		
Project County	Craven County, North Carolina		
Project Area (acres)	30.88		
Project Coordinates (latitude & latitude)	35.2036ºN, 77.3654ºW		
Planted Area (acres)	30.88		
Project Watershed Summary Information			
Physiographic Province	Middle Atlantic Coastal Plain		
Project River Basin	Neuse		
USGS HUC for Project (14-digit)	03020202080010		
NCDWR Sub-basin for Project	03-04-08		
Project Drainage Area (acres)	NA		
Percentage of Project Drainage Area that is Impervious	NA		
CGIA Land Use Classification	Cultivated		
Wetland Summary Information			
Parameters	**Wetlands**		
Wetland acreage	30.597 acres, drained hydric soil		
Wetland Type	Non-riparian		
Mapped Soil Series	Pantego, Rains		
Drainage Class	Very poorly drained, Poorly drained		
Hydric Soil Status	Hydric, hydric		
Source of Hydrology	Precipitation, groundwater		
Hydrologic Impairment	Ditched and drained		
Native Vegetation Community	Non-riverine Wet Hardwood Forest		
% Composition of Exotic Invasive Vegetation	2% (Chinese privet - *Ligustrum sinense*)		
Restoration Method	Hydrologic, vegetative		
Enhancement Method	NA		
Regulatory Considerations			
Regulation	**Applicable?**	**Resolved?**	**Supporting Documentation**
Waters of the United States-Section 401	Yes	Yes	PJD package (App D)
Waters of the United States-Section 404	Yes	Yes	PJD package (App D)
Endangered Species Act	Yes	Yes	CE Document (App E)
Historic Preservation Act	No	--	CE Document (App E)
Coastal Zone Management Act	No	--	CE Document (App E)
FEMA Floodplain Compliance	No	--	CE Document (App E)
Essential Fisheries Habitat	No	--	NA

2 WATERSHED APPROACH AND SITE SELECTION

Primary considerations for Site selection included the potential for improvement of water quality within a region of North Carolina under heavy livestock/agricultural pressure. The Site is located within the State identified TLW 03020202080010 of the Neuse 02 River Basin. Prioritized for restoration the receiving waters of the TLW (Core Creek) is listed as impaired for benthos on the NCDEQ final 2016 and draft 2018 303(d).

More specifically, site-specific selection considerations included a site's ability to provide desired aquatic resource functions, hydrologic conditions, soil characteristics, aquatic habitat diversity, habitat connectivity, compatibility with adjacent land uses, and reasonably foreseeable effects the mitigation project will have on ecologically important aquatic and terrestrial resources. Site specific considerations leading to the Site selection are summarized below:

Site Specific Selection Considerations	Rationale
Site's hydric soils have been ditched, drained, nearly cleared of forest vegetation, and managed for row crop production.	High uplift potential to desired aquatic resource functions including soils, hydrology, and vegetation
Nonpoint, groundwater/precipitation driven ephemeral surface water flows enter the Site along the northern boundary and are currently captured by the Site's northern ditch and drained.	Potential restoration of groundwater/ precipitation driven ephemeral surface water flows and surface water storage
Wetland soils have been altered by agricultural activities, specifically ditching and draining of wetlands. This activity has caused oxidation of the organic materials resulting in notable subsidence of the surface soil horizon. This process has lowered the elevation of the soil surface relevant to the historic undrained condition.	Ability to cease degrading land use activities
The Site's east-west rectangular shape runs parallel with area topography.	The Site has a natural drainage pattern with a primary outflow at the north east corner opposite of the Site's high point in the south west corner.
The Site's proximity to natural and managed areas and is compatible with adjacent land uses.	The Site shares a boarder with an existing non-riparian mitigation site and is near several natural and managed areas (NC Natural Heritage Program, Appendix C). Most of the Site is bordered by existing wetlands, naturalized woodlands, and managed timberlands.

In addition to the opportunity for ecological improvements at the Site, the implementation of the particular mitigation activities and methods proposed in the Design Approach & Mitigation Work Plan (Section 7.0) are expected to produce naturalized wetland resources that will be ecologically self-sustaining.

Site activities address priorities associated with the 2010 *Neuse River Basin Restoration Priorities* report. Site-specific information follows each goal.

1. **Protect, augment, and connect Natural Heritage areas and other conservation lands.**
   The Site is located immediately south of, and shares an easement boundary with, the NC Division of Mitigation Services (NCDMS) Sliver Moon Non-Riparian Wetland Mitigation Site, which was successful through five years of monitoring and was closed out in 2018. In addition, the Dover Bay Pocosin Natural Area is 0.5 mile north of the Site, a NC Wildlife Resources Commission Easement and NC Coastal Land Trust Preserve are located within 1.0 mile of the Site, the NCDMS Heath Riparian Buffer Mitigation Site is located 0.5 mile southwest of the Site, and the NCDMS Vicki's Thicket Riparian Buffer Mitigation Site is located 0.9 mile southwest of the Site (NC NHP Report – Appendix C).

2. **Reduce impacts from agricultural practices.**
   Reduce water quality impacts from agricultural practices – cessation of row crop production and elimination of fertilizer application/annual ditch maintenance which may result in a direct reduction of nitrogen, phosphorus, and sediments entering downstream waters.

3. **Reduce impacts from stormwater.**
   Restoration of jurisdictional wetlands will increase surface/sub-surface storage and retention within the Site; thereby, reducing stormwater flow below the Site.

Site-specific mitigation goals and objectives have been developed using the North Carolina Wetland Assessment Method (NC WAM) and are discussed further in Section 5.0 (Functional Uplift and Project Goals/Objectives).

3 BASELINE AND EXISTING CONDITIONS

3.1 Landform & Adjacent Land Uses

Just to the north of the Site, is the rim of a Carolina bay (Figures 1-6, Appendix A). The rim was mined for sand to construct the current NC Highway 70. The Site's eastern boundary, Daisy Lane, was built to access the sand and remains an unimproved road elevated 2-3 feet above Site grade. Soon after the Hwy 70 project, the area was cleared for row crop production, including the land east of Daisy Lane. Land abutting the Site to the south was in agricultural production before 1981. Currently, a vast majority of this land is unmanaged and has naturalized. Remnant spoil piles and historic ditches are still present. Agricultural production is still active along the Site's southwestern boundary, where a topographic crest in the landscape separates the properties hydrologically. Existing interior and perimeter ditches range from 1-4 feet in depth.

The 1981 Farm Service Agency (FSA) aerial photograph for Craven County (Figure 3, Appendix A) shows the recently constructed Daisy Lane with the Site and surrounding areas mostly forested. Cleared soon after the FSA aerial photograph, the Site has been in agricultural production for roughly 35 years. Typical crop rotation for the last decade has been a winter wheat and corn.

3.2 Soils

Soils that occur within the Site, according to the *Web Soil Survey* (USDA 2017) are described in Table 5.

Table 5. Web Soil Survey Soils Mapped within the Site

Map Unit Symbol	Map Unit Name (Classification)	Hydric Status	Description
Pa	Pantego fine sandy loam (*Umbric Paleaquults*)	Hydric	This series consists of very poorly drained soils found on nearly level flats on marine terraces and broad interstream divides on marine terraces.
Ra	Rains fine sandy loam (*Typic Paleaquults*)	Hydric	This series consists of poorly drained soils found on 0-2 percent slopes on flats on marine terraces, broad interstream divides on marine terraces, and Carolina bays on marine terraces.

3.3 Project Site Waters of the U.S.

Drained hydric soils within the Site were delineated in the field following guidelines set forth in the *Corps of Engineers Wetlands Delineation Manual* and subsequent regional supplement and located using GPS technology with reported submeter accuracy (Environmental Laboratory 1987). A Preliminary Jurisdictional Determination (PJD) package was submitted to the United States Army Corps of Engineers (USACE) (Appendix D). This was verified by USACE representative Billy Standridge during a field meeting on December 20, 2018 and a notification of jurisdictional determination was received on April 17, 2019. During project development and design the Site footprint was slightly revised along the southern boundary. As a result, a request was made on May 5, 2020 for an updated PJD to reflect the new conservation easement boundary. The updated PJD request did not include any additional jurisdictional features, and an updated notification of jurisdictional determination was received on May 8, 2020. The Site currently contains 30.597 acres of drained hydric soils as depicted in black hatching on Figure 6, Appendix A.

3.4 Hydrological Characterization

Construction activities are expected to restore 30.597 acres of drained non-riparian hydric soils. Areas of the Site targeted for restoration of non-riparian wetlands will receive primary hydrological inputs from groundwater migration into wetlands, groundwater/precipitation driven ephemeral surface water flows, and direct precipitation. Hydrological impairment of the drained hydric soils has resulted from lateral draw-down of the water table within ditched agricultural fields.

A water balance calculation was performed to determine if wetland hydrology will be restored by removing the ditch outlet and restoring the disturbed restrictive soil layer in the existing ditches. The water balance calculation was performed using nearby State operated weather station for hydrological inputs and outputs as no direct hydrological measurements from the Site are available. The calculation determined a surplus of ~85 acre-feet for the Site on an annual basis which will support wetland hydrology success criteria during years of normal precipitation.

3.5 Soil Characterization

Detailed soil mapping conducted by a North Carolina Licensed Soil Scientist (NCLSS #1233) in March 2018 and again in March 2020 indicate that the Site is currently underlain by hydric soils of the Pantego and Rains series. Wetlands have been ditched, drained, and cleared for agricultural purposes. Detailed soil profiles conducted by a NCLSS are as follows; the locations are depicted on Figure 6, Appendix A and the soil boring logs are included in Appendix B.

Table 6. Soil Profiles

Soil Profile #1		
Depth (inches)	**Color**	**Texture**
0 - 12	10 YR 2/1 10 YR 6/2 mottles 1%	Sandy loam
12 - 18	10 YR 4/1 10 YR 2/1 mottles 10%	Sandy loam
18+	10 YR 4/1	Sandy loam

Soil Profile #2		
Depth (inches)	**Color**	**Texture**
0 - 9	10 YR 2/1 10 YR 4/2 mottles 1%	Sandy loam
9 - 14	10 YR 4/2 10 YR 2/1 mottles 3%	Sandy loam
14+	10 YR 6/2	Sandy loam

Soil Profile #3		
Depth (inches)	**Color**	**Texture**
0 - 9	10 YR 2/1	Loamy sand
9 - 16	10 YR 3/1 10 YR 2/1 mottles 20%	Loamy sand
16 - 22	10 YR 3/1	Loamy sand
22+	10 YR 5/2 10 YR 3/1 mottles 10%	Sandy clay loam

Soil Profile #4		
Depth (inches)	**Color**	**Texture**
0 - 3	10 YR 2/1	Loam
3 - 18	10 YR 2/1	Sandy loam
18 - 22	10 YR 3/1	Sandy clay loam
22+	10 YR 4/1 10 YR 3/1 mottles 10%	Sandy clay loam

Soil Profile #5		
Depth (inches)	**Color**	**Texture**
0 - 3	N/A	Leaf litter/Duff layer
3 - 6	10 YR 2/1	Sandy loam
6 - 11	10 YR 3/2 10 YR 4/1 mottles 5%	Sandy loam
11 - 19	10 YR 4/1 10 YR 3/1 mottles 10%	Loamy sand
19+	10 YR 3/1 10 YR 3/4 mottles 2%	Loamy sand

3.6 Plant Community Characterization

The Site includes 27.67 acres proposed for wetland re-establishment which are currently used for agricultural row-crop production and have very little vegetative diversity. Two small patches of existing forest are located within the Site totaling 2.91 acres. The western section of forest (depicted as Forest A on Figure 6, Appendix A), encompasses 1.18 acres of managed pond pine (*Pinus serotina*). Wetland hydrology has been removed from Forest A via three ditches constructed when the property was first converted to agriculture. An earthen road exists between the ditches and forest. Managed pine has been thinned and is nearing harvesting age. Remnant spoil piles exist along the southern and western portions of the forest with historic bedding lines within the forest itself.

The section of forest on the southern portion of the Site (depicted as Forest B on Figure 6, Appendix A), encompasses 1.73 acres and is ditched on two of its three sides. Topography within Forest B is sloped towards these diches, which removes surface and groundwater from the area. Table 7, Reference Forest Ecosystem, includes observed species within Forest B. Remnant spoil piles are located between the ditches and the forest, and row crop production has continuously impacted the southern boundary. Along the margins and spoil piles of Forest B, Chinese privet (*Ligustrum sinense*) has established in small clusters.

4 REFERENCE FOREST ECOSYSTEM

A Reference Forest Ecosystem (RFE) is a forested area on which to model restoration efforts at the Site in relation to soils and vegetation. RFEs should be ecologically stable climax communities and should be a representative model of the Site as it likely existed prior to human disturbances. Data describing plant community composition and structure should be collected at the RFEs and subsequently applied as reference data in an attempt to emulate a natural climax community.

An RFE for the Site is located immediately north in a continuation of the interstream flat and Pantego soil series associated with the Site (Figure 9). Tree and shrub species identified in this area are listed in Table 7 and will be utilized, in addition to other relevant species to supplement community descriptions for Non-Riverine Wet Hardwood Forest.

Table 7. Reference Forest Ecosystem

Offsite RFE - Non-Riverine Wet Hardwood Forest	
Canopy Species	**Understory Species**
cherrybark oak (*Quercus pagoda*)	wax myrtle (*Myrica cerifera*)
laurel oak (*Quercus laurifolia*)	sweet bay (*Magnolia virginiana*)
loblolly pine (*Pinus taeda*)	red bay (*Peresa borbonia*)
water oak (*Quercus nigra*)	
tulip poplar (*Liriodendron tulipifera*)	
swamp chestnut oak (*Quercus michauxii*)	
willow oak (*Quercus phellos*)	
black gum (*Nyssa sylvatica*)	

Table 8. Reference Forest Ecosystem (continued)

On-site Forest B – Observed Species	
pond pine (*Pinus serotine)*	wax myrtle (*Myrica cerifera*)
water oak (*Quercus nigra*)	red bay (*Peresa borbonia*)
red maple (*Acer rubrum*)	sweetbay magnolia (*Magnolia virginiana)*
sweetgum (*Liquidambar styraciflua*)	giant cane (*Arundinaria gigantea*)

5 FUNCTIONAL UPLIFT AND PROJECT GOALS/OBJECTIVES

The Site is located within **TLW 03020202080010** and sub-basin 03-04-08. The project is not located within a Local Watershed Planning area; however, project activities address priorities associated with the 2010 *Neuse River Basin Restoration Priorities* report as follow (see Section 2.0 for additional information).

1. Protect, augment, and connect Natural Heritage areas and other conservation lands.
2. Reduce water quality impacts from agricultural practices – cessation of row crop production and elimination of fertilizer application/annual ditch maintenance which may result in a direct reduction of nitrogen, phosphorus and sediments entering downstream waters.
3. Reduce impacts from stormwater.

Site specific mitigation goals and objectives have been developed using the NC WAM analyses (NC WFAT 2010). This methodology rates functional metrics for wetlands as high, medium, or low based on field data collected on forms and transferred into a rating calculator. Using Boolean logic, the rating calculator assigns a high, medium, or low value for each metric and overall function. Site functional assessment data forms are available upon request and model output is included in Appendix B.

Table 8A summarizes NC WAM metrics targeted for functional uplift and the corresponding mitigation activities proposed to provide functional uplift NC WAM metrics are not to be used to prove mitigation success; however, these functions have been academically determined as uplift within the Site. Metrics academically targeted to meet the Site's goals and objectives are depicted in bold.

Table 9. NC WAM Summary

NC WAM Sub-function Rating Summary	Sliver Moon II #01 (Ag Field)	Sliver Moon II #02 (Forest A)
Wetland Type	Hardwood Flat	Hardwood Flat
(1) HYDROLOGY	**LOW**	**LOW**
(2) Surface Storage & Retention	**LOW**	**LOW**
(2) Sub-surface Storage and Retention	**LOW**	**LOW**
(1) WATER QUALITY	**LOW**	**LOW**
(2) Pollution Change	**LOW**	**LOW**
(1) HABITAT	**LOW**	**LOW**
(2) Physical Structure	**LOW**	**LOW**
(2) Landscape Patch Structure	**LOW**	Medium
(2) Vegetative Composition	**LOW**	Medium
OVERALL	**LOW**	**LOW**

The NC WAM wetland type can be best classified as a disturbed hardwood flat. Based on NC WAM data, all three primary Wetland Functional Metrics (Hydrology, Water Quality, and Habitat), as well as six sub-metrics were found to be under-performing as exhibited by a LOW metric rating. LOW performing metrics are to be academically targeted for functional uplift through mitigation activities but not monitored and are presented in Table 9.

Table 10. Wetland Targeted Functions, Goals, and Objectives

Targeted Functions	Goals	Objectives
(1) HYDROLOGY		
(2) Surface Storage & Retention	• Re-establish appropriate wetland hydrology on-site	• Fill and plug agriculture ditches to restore jurisdictional hydrology • Plant native woody vegetation • Cease row crop production within the easement • Shallow disking (~4") of soils to reduce compaction and increase surface roughness •
(2) Sub-surface Storage & Retention		
(1) WATER QUALITY		
(2) Pollution Change	• Remove direct nutrient and pollutant inputs from the Site.	• Reduce agricultural land/inputs • Fill and plug the ditch network to restore ground and surface hydrology within the Site • Plant woody vegetation • Restore jurisdictional wetlands
(1) HABITAT		
(2) Physical Structure	• Improve wildlife habitat within and adjacent to the Site.	• Plant woody vegetation to provide organic matter and shade • Fill and plug ditches to provide groundwater hydrology • Minimize existing tree monocultures through selective tree removal and plant woody native vegetation • Restore jurisdictional wetlands
(2) Landscape Patch Structure		
(2) Vegetation Composition		

6 SITE DESIGN AND IMPLEMENTATION CONSTRAINTS

The presence of conditions or characteristics that have the potential to hinder restoration activities on the Site was evaluated. The evaluation focused primarily on the presence of hazardous materials, utilities restrictive easements, rare/threatened/endangered species or critical habitats, and the potential for hydrologic trespass. Existing information regarding Site constraints was acquired and reviewed, including a 0.25-foot topographic map. In addition, any Site conditions that have the potential to restrict the restoration design and implementation were documented during the field investigation.

With the Site's relatively flat nature, the possibility of hydrologic trespass was given additional scrutiny. A 0.25-foot contour interval map was generated by the K2 Design Group (PLS License # 4194) and was used

in combination with the NC Floodplain Mapping Program's QL2 LiDAR 0.5-foot contour intervals to develop the Site's design. This added detailed allowed for site-specific and area topographic data to be evaluated congruently to ensure the design would not result in hydrologic trespass to adjacent parcels.

The analysis determined that Site restoration would not hydrologically affect adjacent parcels. Residential properties are drained by a series of existing ditches located outside of the Site and that drain south, away from the Site (Figure 5, Appendix A). A natural topographic break separates the Site hydrologically from agricultural uses to the South. To the east, the Site is defined by Daisy Lane which is situated 2-3 feet above the Site's existing field elevation. Two parcels abut the Site to the north; the eastern parcel is the existing Sliver Moon Mitigation Site, and the western Parcel is an existing wetland managed primarily for hunting. The western north parcel has several ephemeral surface water features that enter the Site's ditch network. The Site design will ensure surface water inputs will be allowed to migrate through the Site, increasing surface water storage. Due to soil subsidence and the Site being naturally lower in the landscape, the Site is on average 1-2 feet below surrounding parcels.

6.1 Threatened & Endangered Species

Nine federally protected species are listed as occurring in Craven County (USFWS 2018); Table 10 summarizes potential habitat and preliminary biological conclusions for each.

Table 11. Threatened and Endangered Species

Species Federal Status	Habitat	Potential Habitat at Site	Biological Conclusion
American alligator (*Alligator mississippiensis*) Threatened due to similarity of Appearance	Found in rivers, streams, canals, lakes, swamps, and coastal marshes.	No	No Effect
Green sea turtle (*Chelonia mydas*) Threatened	Found in temperate and tropical oceans and seas. Can be found in shallow waters and are attracted to lagoons, reefs, bays, mangrove swamps, and inlets with an abundance of marine grasses.	No	No Effect
Leatherback sea turtle (*Dermochelys coriacea*) Endangered	Generally open ocean species that may enter into bays, estuaries, and other inland bodies of water.	No	No Effect
Northern long-eared bat (*Myotis septentrionalis*) Threatened	Spends winters hibernating in mines and caves. During summer, roosts underneath bark, in cavities, or in crevices of both live and dead trees. Mature forest may be important for foraging.	No	No Effect
Red-cockaded woodpecker (*Picoides borealis*) Endangered	Open stands of pine containing trees 60 years or older for nesting and roosting. Cavity excavation occurs in living pine trees.	No	No Effect
Red knot (*Calidris canutus rufa*) Threatened	Known to winter in North Carolina in coastal marine and estuarine habitats with large amounts of exposed intertidal sediments.	No	No Effect

Table 12. Threatened and Endangered Species (continued)

Species Federal Status	Habitat	Potential Habitat at Site	Biological Conclusion
West Indian manatee (*Trichechus manatus*) Endangered	Found in canals, sluggish rivers, estuarine habitats, salt water bays, and as far off shore as 3.7 miles; they utilize freshwater and marine habitats at shallow depths of 5 to 20 feet.	No	No Effect
Rough-leaved loosestrife (*Lysimachia asperulaefolia*) Endangered	Generally occurs in areas of disturbance (e.g. clearing, mowing, periodic burning) in the ecotones or edges between longleaf pine uplands and pond pine pocosins in dense shrub and vine growth on moist to seasonally-saturated sands and on shallow organic soils.	Yes	Not Likely to Adversely Affect
Sensitive joint-vetch (*Aeschynomene virginica*) Threatened	Occurs in mildly brackish intertidal zones where plants are flooded twice daily.	No	No Effect

6.2 Cultural Resources

The term "cultural resources" refers to prehistoric or historic archaeological sites, structures, or artifact deposits over 50 years old. "Significant" cultural resources are those that are eligible or potentially eligible for inclusion in the National Register of Historic Places. Evaluations for cultural resources of significance are made with reference to the eligibility criteria of the National Register (36 CFR 60) and in consultation with the North Carolina State Historic Preservation Office (SHPO).

Field visits were conducted at the Site in early 2018 and 2020 to ascertain the presence of structures or other features that may be eligible for inclusion on the National Register of Historic Places. No structures were identified within proposed easement boundaries. In addition, SHPO conducted a review of the project and identified no historic resources which would be affected by the project (Appendix E).

6.3 North Carolina Natural Heritage Elements

A query of the North Carolina Natural Heritage Program (NCNHP) database indicates there are no records for rare species, important natural communities, natural areas, or conservation/managed areas within the proposed project boundary. Within a one-mile radius of the project boundary, NCNHP lists five element occurrences, including two darners, one vascular plant, and two natural communities. In addition, the Site is located immediately south of and shares a boundary with, a NC Division of Mitigation Services easement (Sliver Moon Mitigation Site). Approximately 0.5 mile south of the Dover Bay Pocosin Natural Area, the Site is within 1.0 mile of a NC Wildlife Resources Commission Easement and NC Coastal Land Trust Preserve. NCNHP correspondence is included in Appendix C.

6.4 Utilities

No utilities are located on the Site.

6.5 Air Transport Facilities

No known air transport facilities are located within 5 miles of the Site.

7 DESIGN APPROACH AND MITIGATION WORK PLAN

7.1 Wetland Restoration

Wetland restoration activities are designed to restore a fully functioning non-riparian wetland system, which will provide surface water storage, nutrient cycling, removal of imported elements and compounds (NC WAM – Water Quality, improvement to 'Pollution Change', i.e., retention of sediment, toxicants, and nutrients), and will create a variety and abundance of habitat for wildlife.

Portions of the Site underlain by hydric soils have been impacted by drainage ditch excavation, vegetative clearing, agriculture plowing, herbicide application, and other land disturbances associated with land use management. Wetland re-establishment is focused on the restoration of vegetative communities, filling and plugging of drainage ditches, removal of ditch crossings, culverts, and drainpipes, the re-establishment of soil structure, the re-establishment of historic ephemeral surface water flow and development of microtopographic variations.

The design approach accentuates the Site's existing conditions and topographic features. It uses existing topographic depressions in combination with a reintroduced surface flow pattern to capture and store ephemeral surface water inputs from the northern boundary, and to allow those inputs to move freely across the Site. Soil subsidence from agricultural practices in combination with the Site being in the naturally low portion of the landscape, have resulted in the Site becoming lower than the surrounding landscape and parcels. Naturally depressed areas in the western third of the Site and along the southern boundary were surveyed at an elevation of 53.5 (Figures 7-8, Appendix A). These depressed areas will serve as natural storage for ephemeral surface water entering and migrating through the Site. The design connects these depressed areas at contour 54, with a braided flow path approximately six-inches in depth (Figure 8-C, Appendix A).

7.2 Natural Plant Community Restoration

Restoration of vegetation allows for development and expansion of characteristic species across the landscape. Ecotonal changes between community types contribute to diversity and provide secondary benefits, such as enhanced feeding and nesting opportunities for mammals, birds, amphibians, and other wildlife. RFE data, on-site observations, and community descriptions from *Classification of the Natural Communities of North Carolina* (Schafale and Weakley 1990) were used to develop the primary plant community associations that will be promoted during community restoration activities; the community association to be utilized is Non-Riverine Wet Hardwood Forest.

To enhance and re-establish natural hardwood forest communities on Site, the existing wooded areas are to be thinned and replanted with bare-root seedlings. Forest A – 1.18 ac. of managed pond pine – will receive the most thinning between the two existing forests – 60 to 70 percent of the existing trees are proposed for removal. Trees selected for removal will be done so to expose the soil surface to additional sunlight, creating a wide range of sunlight conditions from part sun to areas of dappled sun and full shade. Forest B – 1.73 acres of unmanaged forest – will be thinned by removing 30-40 percent of the existing species. Thinning will focus on diseased species, and those species generally considered less desirable by the Interagency Review Team (IRT) (i.e., red maple and sweetgum). In addition, species along the forest margins will be removed to facilitate grading/removal of spoil piles, and filling of the existing ditches. All species removed, will be stockpiled on-site and distributed across the Site prior to planting for habitat and to provide organic inputs to the system. Removal of stumps will not be apart of the thinning process for either existing forest.

Bare-root seedlings will be planted at a density of approximately 680 stems per acre on 8-foot centers across the entire Site. Planting will be performed between November 15 and March 15 to allow plants to stabilize during the dormant period and set root during the spring season. Lower areas in the landscape which are intended to hold surface water will be planted with an additional 320 stems per acre with specific species tolerant of inundation of extended periods of time.

Table 11 depicts the species, total number of stems, and distribution for bare-root planting. The entire Site (30.88 acres) will be planted with species from the Primary Planting List. Depressed areas (3.75 acres) will receive an additional 320 stems per acre of species tolerant to extended periods of inundation.

Table 13. Planting Plan

Vegetation Association	**Non-riverine Wet Hardwood Forest**		
Canopy Species (30.88 acres)	**# planted (680 stems/acre)**	**Indicator Status**	**% of total**
Tulip poplar (*Liriodendron tulipifera*)	2500	FACU	11.1%
Black gum (*Nyssa sylvatica*)	2500	FAC	11.1%
Swamp white oak (*Quercus bicolor*)	2000	FACW	8.9%
Laurel oak (*Quercus laurifolia*)	2000	FACW	8.9%
Overcup oak (*Quercus lyrata*)	2000	OBL	8.9%
Swamp chestnut oak (*Quercus michauxii*)	2000	FACW	8.9%
Water oak (*Quercus nigra*)	2000	FAC	8.9%
Cherrybark oak (*Quercus pagoda*)	2000	FACW	8.9%
Willow oak (*Quercus phellos*)	2000	FACW	8.9%
Understory Species (30.88 acres)	**# planted (680 stems/acre)**	**Indicator Status**	**% of total**
Hornbeam (*Carpinus caroliniana)*	800	FAC	3.6%
Sweetbay magnolia (*Magnolia virginiana*)	800	FACW	3.6%
Swamp bay (*Persea palustris*)	700	FACW	3.1%
Wet Foot Species (3.75 acres) – in addition to Site-wide planting	**# planted (320 stems/acre)**	**Indicator Status**	**% of total**
River Birch (*Betula nigra*)	200	FACW	0.9%
Water tupelo (*Nyssa aquatica*)	300	OBL	1.3%
Swamp tupelo (*Nyssa biflora*)	200	OBL	0.9%
Bald Cypress (*Taxodium distichum*)	500	OBL	2.2%
TOTAL	**22500**		**100.0%**

Indicator Categories (USDA - https://plants.usda.gov/wetinfo.html)			
Code	Indicator Status	Designation	Comment
OBL	Obligate Wetland	Hydrophyte	Almost always occur in wetlands
FACW	Facultative Wetland	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
FAC	Facultative	Hydrophyte	Occur in wetlands and non-wetlands
FACU	Facultative Upland	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands

7.3 Permanent Seed Mix

While Site success criteria are driven by establishment of appropriate canopy tree species, restoration of understory vegetation will provide significant additional ecological benefit. Initial soil stabilization, mid-term pollinator benefit, and long-term Site diversity will be achieved through broadcast seeding efforts. An herbaceous seed mix including native grasses and forbs will be planted throughout the Site. Table 12 outlines the species proposed for inclusion in the permanent seed mix.

Table 14. Permanent Seed Mix

Name	Latin	Lbs/Ac.	Name	Latin	Lbs/Ac.
common yarrow	*Achillea millefolium*	0.6	deertongue	*Panicum clandestinum*	3
redtop	*Agrostis alba*	9	tall white beardtongue	*Penstemon digitalis*	0.6
winter bentgrass	*Agrostis hyemalis*	3	clasping coneflower	*Rudbeckia amplexicaulis*	0.6
creeping bentgrass	*Agrostis stolonifera*	3	rudbeckia	*Rudbeckia hirta*	1.8
clusterspike false indigo	*Amorpha herbacea*	0.6	purpletop	*Tridens flavus*	12
showy aster	*Aster spectabilis*	0.6	blue vervain	*Verbena hastata*	0.6
spiked wild indigo	*Baptisia albescens*	0.6	Redtop Panicgrass	*Panicum rigidulum*	9
blue false indigo	*Baptisia australis*	1.2	Beaked Panicgrass	*Panicum anceps*	7.77
daisy	*Chrysanthemum leucanthemum*	3	Greenwhite Sedge	*Carex albolutescens*	3.9
shasta daisy	*Chrysanthemum maximum*	1.8	Riverbank Wildrye	*Elymus riparius*	3.15
coreopsis lanceleaf	*Coreopsis lanceolata*	3	Lurid Sedge	*Carex lurida*	1.5
coreopsis plains	*Coreopsis tinctoria*	3	Globe Beaksedge	*Rhynchospora globularis*	1.2
cosmos	*Cosmos bipinnatus*	0.6	Crimsoneyed Rosemallow	*Hibiscus moscheutos*	0.6
rocket larkspur	*Delphinium ajacis*	1.2	Soft Rush	*Juncus effusus*	0.6
showy ticktrefoil	*Desmodium canadense*	0.6	Narrowleaf Primrose Willow	*Ludwigia linearis*	0.39
coneflower	*Echinacea purpurea*	3.6	Seaside Primrose Willow	*Ludwigia maritima*	0.39
Virginia wildrye	*Elymus virginicus*	3	Joe Pye Weed	*Eupatorium fistulosum*	0.3
mistflower	*Eupatorium coelestinum*	0.3	Purplehead Sneezeweed	*Helenium flexuosum*	0.3
perennial Gaillardia	*Gallardia aristata*	1.2	Path Rush	*Juncus tenuis*	0.3
narrowleaf sunflower	*Helianthus angustifolius*	0.6	Woolgrass	*Scirpus cyperinus*	0.3
oxeye sunflower	*Heliopsis helianthoides*	0.6	New York Ironweed	*Vernonia noveboracensis*	0.3
wild bergamot	*Monarda fistulosa*	0.3			

7.4 Nuisance Species Management

No nuisance species controls are proposed at this time. Small clusters of Chinese privet (*Ligustrum sinense*), located along the margins and spoil piles of Forest B, will be mechanically removed during construction. Annual inspections will be made throughout the Site to monitor for invasive vegetation species, and if observed, treated appropriately by a NC licensed ground pesticide applicator.

Inspections for wild pig, bear, and other potential nuisance species will occur throughout the course of the monitoring period. Appropriate actions may be taken to ameliorate any negative impacts regarding nuisance vegetation development. The presence of nuisance species will be monitored over the course of the monitoring period.

8 MONITORING AND SUCCESS CRITERIA

Monitoring will be conducted by Axiom Environmental, Inc based on the schedule in Table 13. A summary of monitoring is outlined in Table 14 (Figure 11, Appendix A). Annual monitoring reports will be submitted to the NCDMS by Restoration Systems no later than December 1 of each monitoring year data. Success criteria and monitoring will be completed in accordance with the 2016 NCIRT Guidance (2016 USACE). The As-Built Baseline Report (MY0) will include elevation data and soil profiles at all wetland well locations, and a topographic survey of the constructed flow paths and shallow pools.

Table 15. Monitoring Schedule

Resource	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Wetlands	x	x	x	x	x	x	x
Vegetation	x	x	x		x		x
Visual Assessment	x	x	x	x	x	x	x
Report Submittal	x	x	x	x	x	x	x

Table 16. Monitoring Summary

Wetland Parameters				
Parameter	**Method**	**Schedule/Frequency**	**Number/Extent**	**Data Collected/Reported**
Wetland Restoration	Groundwater gauges	Years 1, 2, 3, 4, 5, 6, and 7 throughout the year with the growing season defined as March 1-November 14	25 gauges spread throughout restored wetlands	Document soil temperature at the beginning of each monitoring period to verify the start of the growing season, documented bud burst, and groundwater/rain data for each monitoring period*
Vegetation Parameters				
Parameter	**Method**	**Schedule/Frequency**	**Number/Extent**	**Data Collected/Reported**
Vegetation establishment and vigor	Permanent vegetation plots 0.0247 acre (100 square meters) in size; *CVS-EEP Protocol for Recording Vegetation, Version 4.2* (Lee et al. 2008)	As-built, Years 1, 2, 3, 5, and 7	26 plots spread across the Site	Documented bud burst, species, height, planted vs. volunteer, stems/acre

Table 17. Monitoring Summary (continued)

Visual Parameters				
Parameter	**Method**	**Schedule/Frequency**	**Number/Extent**	**Data Collected/Reported**
Encroachment, stabilized outfalls	Visual	Years 1, 2, 3, 4, 5, 6, and 7	8 fixed photo points & Site boundary walking	Documented conditions in yearly monitoring report narrative, current condition figures, and reporting tables

*Soil temperature will be monitored using a continuous recording soil probe located at the rain gauge. The growing season will be initiated once bud burst has been documented on two or more species (excluding red maple and elderberry) and suitable soil temperatures have been documented with the soil probe. The earliest growing season initiation date will be March 1, assuming other growing season criteria has been met.

8.1 Success Criteria

Monitoring and success criteria for wetland restoration should relate to project goals and objectives identified from NC WAM data collection. From a mitigation perspective, several of the goals and objectives are assumed to be functionally elevated by restoration activities without direct measurement. Other goals and objectives will be considered successful upon achieving success criteria. The following summarizes Site success criteria.

Table 18. Success Criteria

Wetland Hydrology
• Saturation or inundation within the upper 12 inches of the soil surface for, at a minimum, 12 percent of the growing season, during average climatic conditions based on the *Wilmington District Stream and Wetland Compensatory Mitigation Update* (USACE 2016, Table 1), for both the *Typic Paleaquult* (Rains) and the *Umbric Paleaquult* (Pantego) soil series as requested by the IRT during the pre-application site visit. Wetland hydrology is an annual success criterion, and will be reported in each year's monitoring report. The 2016 USACE *Wilmington District Stream and Wetland Compensatory Mitigation Update* for monitoring states the growing season, used to determine the number of days required to meet the wetland hydroperiod success criteria, shall not extend beyond March 1 and November 20 (265 days). Using this range as the maximum possible growing season, 12 percent (the wetland hydrology success criteria) would amount to 31.8 days (rounded to 32 days). As noted in the footnote of Table 14, yearly reporting of on-site soil temperature and documented bud burst of two or more tree species (excluding red maple and elderberry) will determine each monitoring year's growing season.
Vegetation
• Within planted portions of the Site, a minimum of 320 stems per acre must be present at year 3; a minimum of 260 stems per acre must be present at year 5; and a minimum of 210 stems per acre must be present at year 7. • Trees must average 7 feet in height at year 5 and 10 feet in height at year 7 in each plot. • Planted and volunteer stems are counted, provided they are included in the approved planting list for the Site; natural recruits not on the planting list may be considered by the IRT on a case-by-case basis. • Any single species can only account for 50% of the required stems within any vegetation plot.

8.2 Wetland Contingency

Hydrological contingency will require consultation with hydrologists and regulatory agencies if wetland hydrology is not achieved. Recommendations for contingency to establish wetland hydrology will be implemented and monitored until Hydrology Success Criteria are achieved.

8.3 Vegetation Contingency

If vegetation success criteria are not achieved, supplemental planting may be performed with tree species approved by regulatory agencies. Supplemental planting will be performed as needed until achievement of vegetation success criteria.

8.4 Compatibility with Project Goals

Table 16 outlines the compatibility of Site performance criteria described above to Site goals and objectives that will be utilized to evaluate if Site goals and objectives are achieved.

Table 19. Compatibility of Performance Criteria to Project Goals and Objectives

Goals	Objectives	Success Criteria
(1) HYDROLOGY		
• Re-establish appropriate wetland hydrology on-site	• Fill and plug agriculture ditches to restore jurisdictional hydrology • Plant native woody vegetation • Cease row crop production within the easement • Shallow disking (~4") of soils to reduce compaction and increase surface roughness • Protect the Site with a perpetual conservation easement	• Row crop production ceased within the easement • Monitoring wells will be successful if the water table is within 12 inches of the soil surface for 12% (32 consecutive days) of the growing season • Vegetation plots will be successful if the plant density is 210 stems per acre with an average plant height of 10 feet at 7 years following planting
(1) WATER QUALITY		
• Remove direct nutrient and pollutant inputs from the Site	• Reduce agricultural land/inputs • Fill and plug the ditch network to restore ground and surface hydrology in the Site • Plant woody vegetation • Restore jurisdictional wetlands	• Row crop production ceased within the easement • Monitoring wells will be successful if the water table is within 12 inches of the soil surface for 12% (32 consecutive days) of the growing season • Vegetation plots will be successful if the plant density is 210 stems per acre with an average plant height of 10 feet at 7 years following planting
(1) HABITAT		
• Improve wetland wildlife habitat within and adjacent to the Site	• Plant woody vegetation to provide organic matter and shade • Fill and plug ditches to provide groundwater hydrology and plant native woody vegetation • Protect the Site with a perpetual conservation easement • Restore jurisdictional wetlands	• Monitoring wells will be successful if the water table is within 12 inches of the soil surface for 12% (32 consecutive days) of the growing season • Vegetation plots will be successful if the plant density is 210 stems per acre with an average plant height of 10 feet at 7 years following planting

9 ADAPTIVE MANAGEMENT PLAN

If the mitigation Site or a specific component of the mitigation Site fails to achieve the necessary performance standards as specified in the mitigation plan, the sponsor shall notify DMS, who will act as the contact/notifying entity to members of the IRT. The sponsor will work with DMS and the IRT to develop contingency plans remedial actions.

10 LONG-TERM MANAGEMENT PLAN

The Site will be transferred to the NCDEQ Stewardship Program. This party shall serve as conservation easement holder and long-term steward for the property and will conduct periodic inspection of the Site to ensure that restrictions required in the conservation easement are upheld. Funding will be supplied by the responsible party on a yearly basis until such time an endowment is established. 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 Statute GS 113A-232(d)(3). Interest gained by the endowment fund may be used for the purpose of stewardship, monitoring, stewardship administration, and land transaction costs, if applicable.

11 PROJECT RISKS AND UNCERTAINTIES

11.1 Land-use Development & Easement Encroachment:

Future single-family development is unlikely in the immediate vicinity of the Site. Currently, existing wetlands abut the Site along the entire northern and much of the southern boundary, with direct ephemeral surface water inputs at several locations. Managed timberland and row crops are the only active land uses adjacent to the Site. Appropriate signage and tree painting will occur along forested and agricultural boundaries to decrease the risk of encroachment from adjacent land use.

As part of the fee-simple purchase and assignment of a conservation easement, a 15-foot wide easement access path was established along the Site's western-southern boundary. This additional buffer will protect the Site from any future development. A permanent, raised earthen road for access to privately owned parcels north of the Site establishes the Site's eastern boundary. This road is platted, and referenced by several deeds. Currently, this path provides deeded access to the State for the Sliver Moon Mitigation Site.

Fencing will not be required for this project as the adjacent land-use does not require it.

11.2 Extreme Climatic Conditions:

The Site's design addresses altering climatic conditions in many ways. The improvement of existing landscape depressions will provide enhanced storage during times of drought, benefiting both terrestrial and aquatic species. The Site's designed water flow path will ensure excess water is not kept within the Site after extreme rain events.

11.3 Hydrologic Trespass:

With the Site's relatively flat nature, the possibility of hydrologic trespass was given additional scrutiny. A 0.25-foot contour interval map was generated by K2 Design Group (PLS License # 4194) and was used in combination with the NC Floodplain Mapping Program's QL2 LiDAR 0.5-foot contour intervals to develop

the Site's design. This added detailed allowed for site-specific and area topographic data to be evaluated congruently to ensure the design would not result in hydrologic trespass to adjacent parcels.

The analysis determined that Site restoration would not hydrologically affect adjacent parcels. Residential properties are drained by a series of existing ditches located outside of the Site and that drain south, away from the Site (Figure 5, Appendix A). A natural topographic break separates the Site hydrologically from agricultural uses to the South. To the east, the Site is defined by Daisy Lane, which is 2-3 feet above the Site's existing field elevation. Two parcels abut the Site to the north; the eastern parcel is the existing Sliver Moon Mitigation Site, and the western Parcel is an existing wetland managed primarily for hunting. The western north parcel has several ephemeral surface water features that enter the Site's ditch network. The Site design will ensure surface water inputs will be allowed to migrate through the Site, increasing surface water storage. Due to soil subsidence and the Site being naturally lower in the landscape, the Site is on average 1-2 feet below surrounding parcels.

12 REFERENCES

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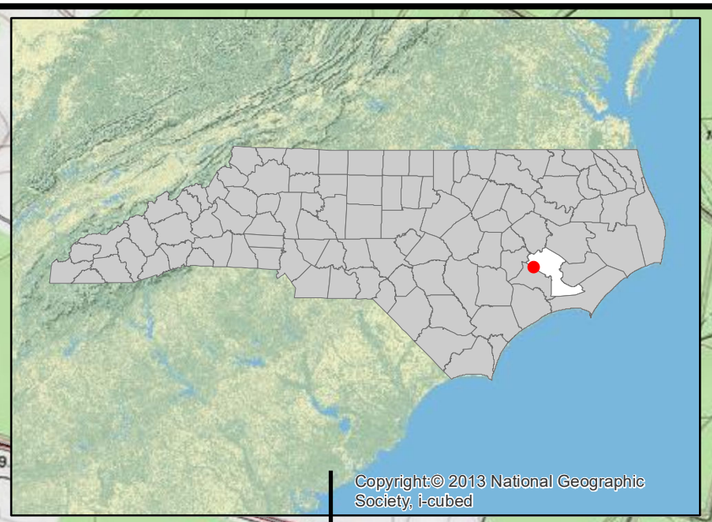
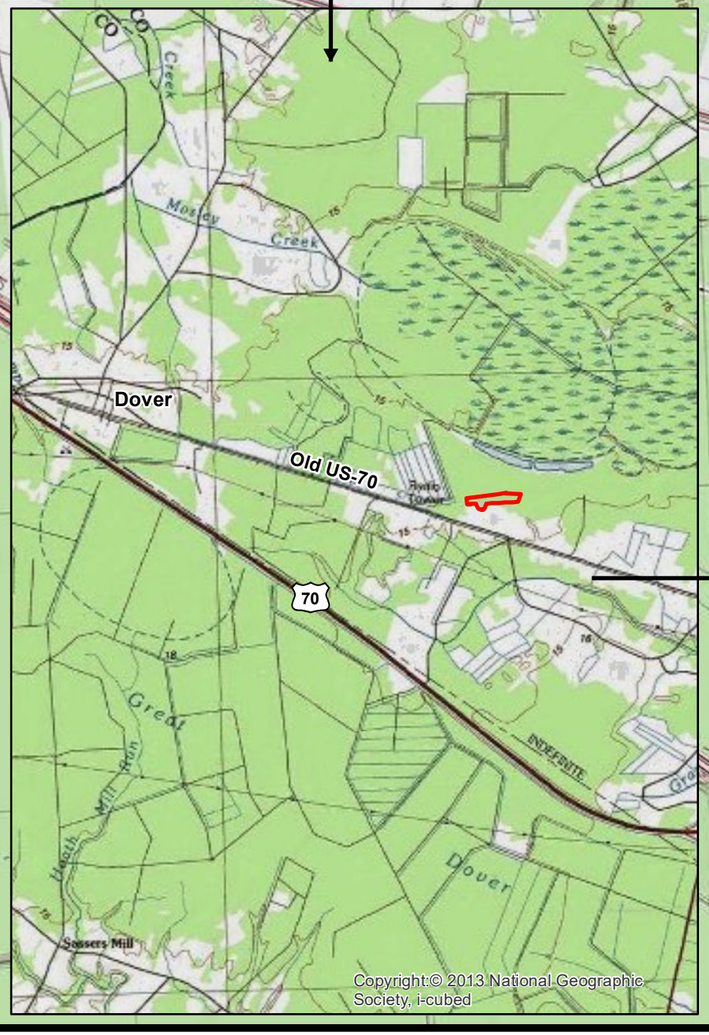
APPENDIX A: FIGURES

Appendix A. Figures

1.) Site Location
2.) Hydrologic Unit Map
3.) Historic Imagery (1981)
4.) USGS Topo Quad
5.) Existing Conditions - Topography & Hydrology
6.) Existing Conditions - Soils & Vegetation
7.) Mitigation Plan Overview – QL2 LiDAR
8.) Grading Plan – Surveyed Contours
    - 8A.) GP: Proposed Contours
    - 8B.) GP: Proposed SWC
    - 8C.) GP: SWC Detail
    - 8D.) GP: 1-Foot Cut
9.) Planting & Forest Enhancement Plan
10.) Mitigation Asset Map
11.) Monitoring Plan
12.) Ownership and Protection

Photo Log





N

Radio Towers
BM 17.9
EAST CAROLINA AND
Old US-70
1005
BM 17.4
ATLANTIC AND
Daisy Lane
PRIVATE
BM 15.1X
1239
EAST
Creek
70
CRAVEN
JONES

Legend

- Conservation Easement: 30.88 acres
- NCDOT Roads

Directions to the Site from Kinston:
- Head southeast on US-70 bypass for 7.2 miles
- Turn left at SR 1005/Dover Road
- Continue onto old US Hwy 70 for 0.3 miles
- Continue onto W Kornegay Street for 1.3 miles
- Continue onto old US Hwy 70 for 3.7 miles
- Turn left at Daisy Lane
- The Site is located on the left at the end of the road.
- Site Latitude, Longitude 35.2036, -77.3654 (WGS84)

USGS 7.5 Minute Topographic Map (Dover and Cove City, NC Quads)

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NC Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

SITE LOCATION

Drawn by: RJH

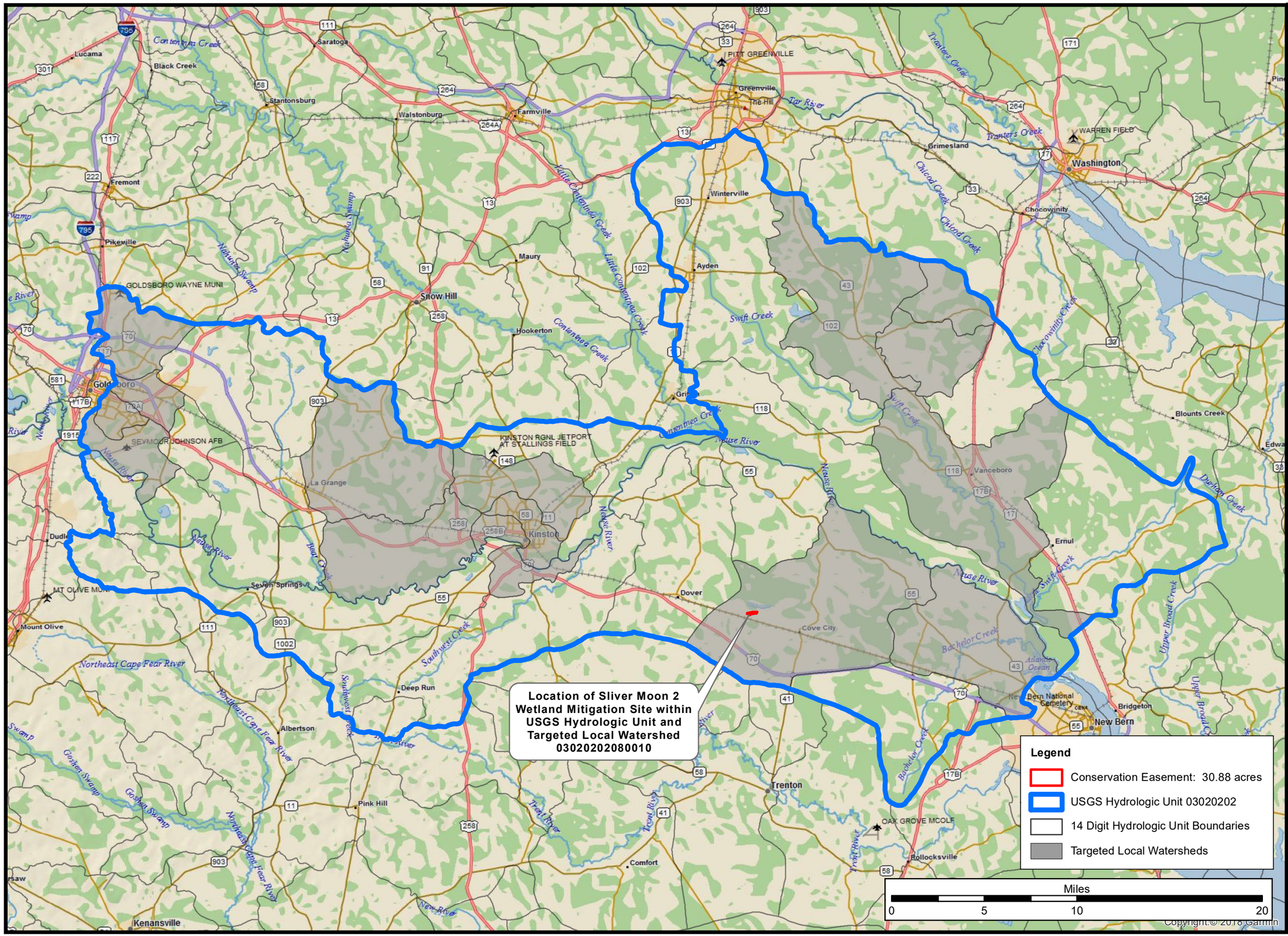
Date: MAY 2020

Scale: N/A

Project No.: 18-015

FIGURE

1



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Title:

HYDROLOGIC UNIT MAP

NEUSE 02 WATERSHED

Drawn by: RJH

Date: MAY 2020

Scale: 1:310,000

Project No.: 18-015

FIGURE

2

N

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Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

1981 IMAGERY

NC FARM SERVICE AGENCY

(02-09-1981)

Drawn by: RJH

Date: MAY 2020

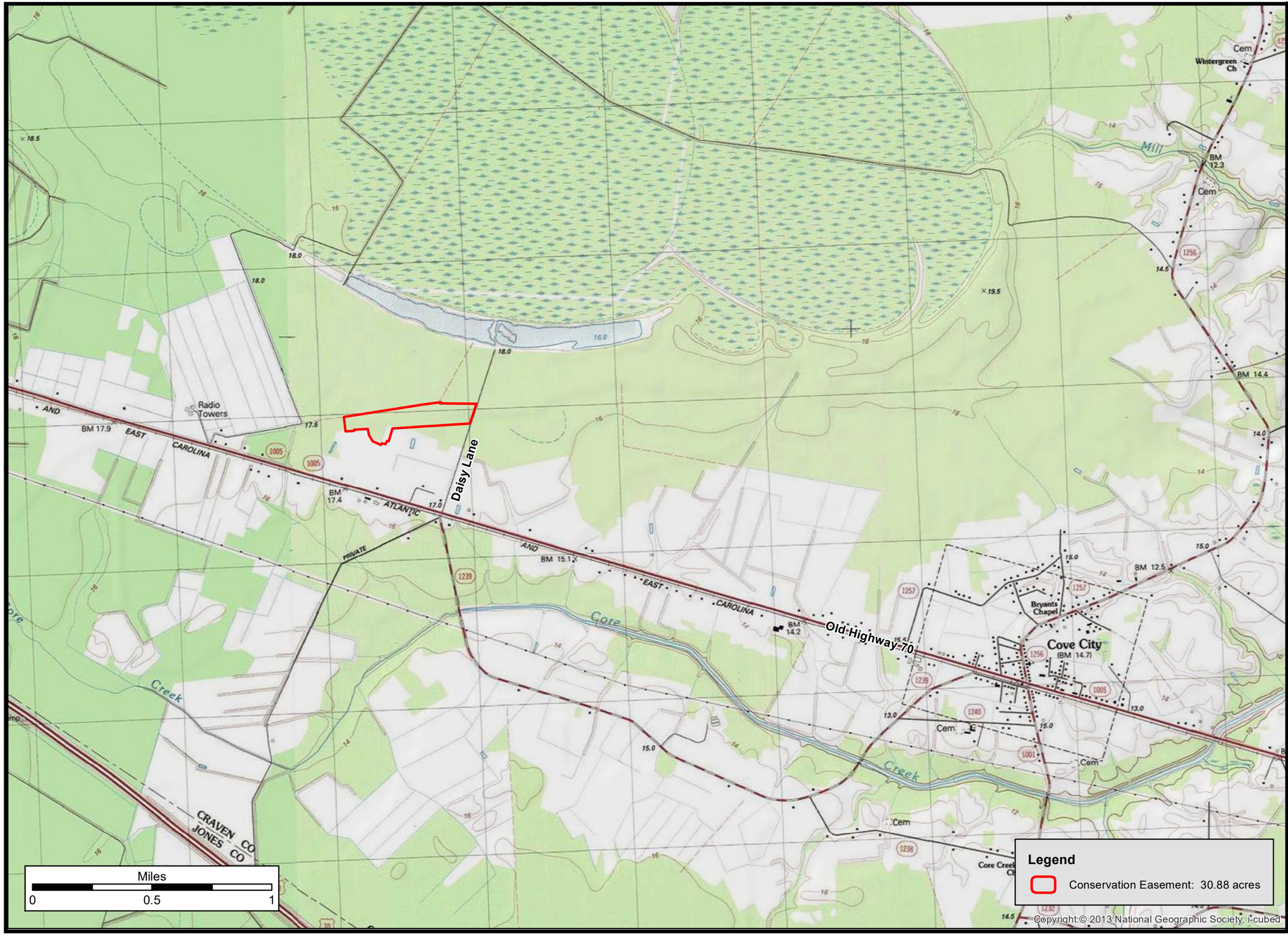
Scale: 1:8,000

Project No.: 18-015

FIGURE

3

N



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SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

USGS 1:24000 TOPO QUAD COVE CITY - 1982

Drawn by: RJH

Date: MAY 2020

Scale: 1:24:000

Project No.: 18-015

FIGURE

4

N

Legend

- Conservation Easement: 30.88 acres
- Area Property Lines
- Onsite Earthen Roads
- Culvert Crossing
- Unmaintained/Collapsed Ditch
- Existing Ditch - Open Flow
- Existing Ditch - No Noticeable Flow
- Existing Drain Tile - Open Flow

Feet
0 500 1,000

Existing path

Existing offsite surface water inputs from existing wetland north of the Site (typ. symbol)

Road bed elv = 56.00
Ex. field elv. = 55.00

Road bed elv = 55.00
Ex. field elv. = 54.00

Ditch elv. = 52.00

Site field elv. at outlet = 52.60

2 - 12" Pipes

Onsite earthen road around managed pine

Site outlet elv. = 52.00
Site elv. = 55.25

Spoil from ditching/dirt road

Bottom of Ditch elv. = 54.00

Offsite field elv. = 56.00
(top of ditch field side)

Offsite forest elv. = 55.0
Onsite field elv. = 53.5

Road elv. = 55.00

Spoil from historic ditching
(offsite elevations range from +1 to +2 feet above onsite field elevations)

Natural topographic ridge will ensure hydrologic trespassing does not occur along this portion of the Project boundary

Offsite ditching is not connected to site ditching

Degraded onsite ditches - these ditches only conduct surface water during significant rain events.

Outside of significatn rain events, ditchs hold water to elvation 53.

Daisy Lane

Old Highway 70

Legend

Craven Co. NC - QL2 Raster (DEM05)
High : 60
Low : 50

Area LiDAR (6-inch QL2)
52, 52.5, 53, 53.5, 54, 54.5, 55, 55.5, 56, 56.5, 57, 57.5, 58, 58.5, 59, 59.5, 60, 60.5, 61, 61.5, 62, 62.5

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Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

EXISTING TOPOGRAPHIC & HYDROLOGIC CONDITIONS

NC SPATIAL DATA QL2 - LiDAR 6-INCH DETAIL

Drawn by: RJH

Date: OCT 2020

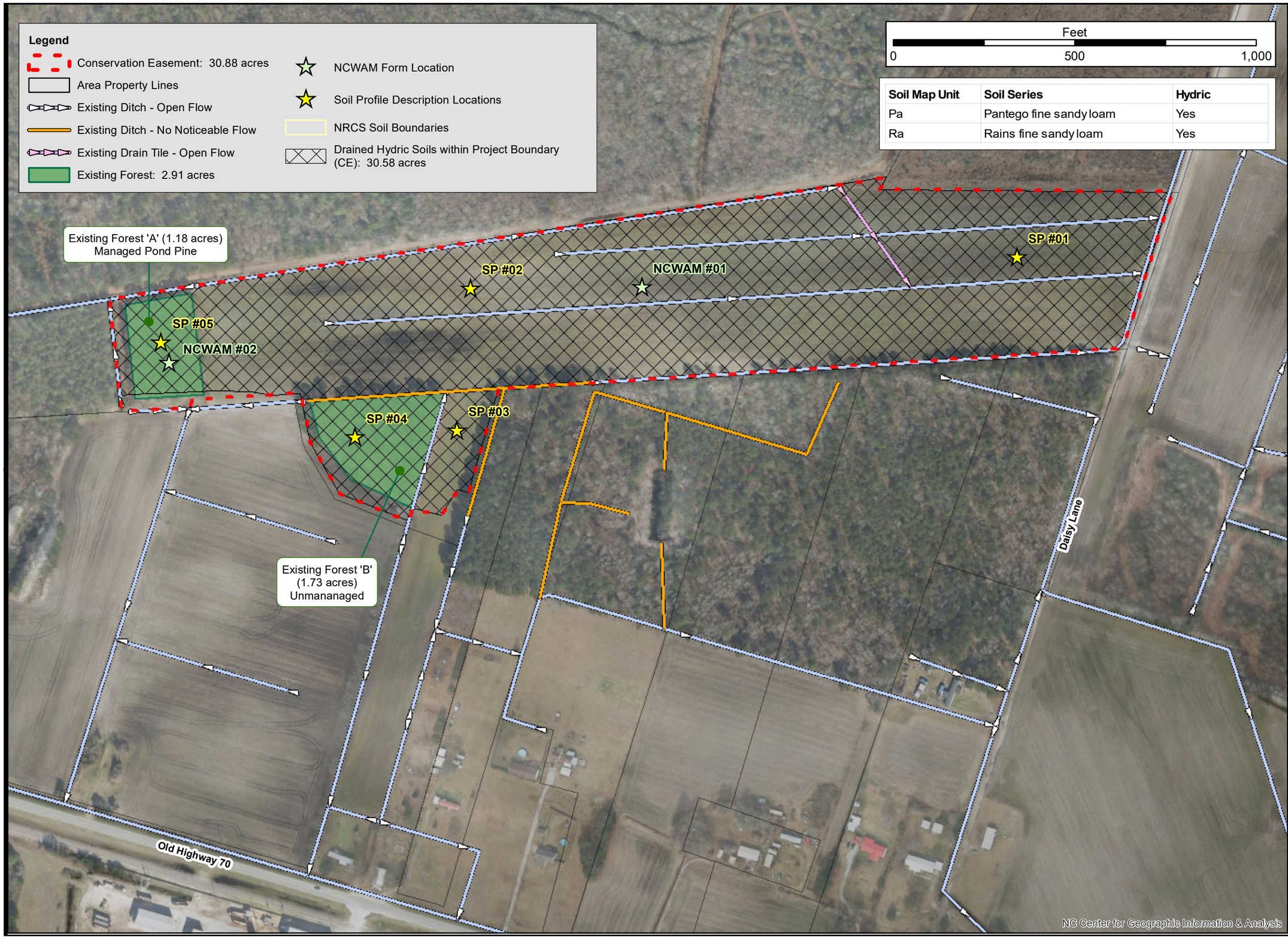
Scale: 1:3000

Project No.: 18-015

FIGURE

5

N



Soil Map Unit	Soil Series	Hydric
Pa	Pantego fine sandy loam	Yes
Ra	Rains fine sandy loam	Yes

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Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title: **EXISTING CONDITIONS**

SOILS & VEGETATION

NC ORTHOIMAGERY PROGRAM (3-2019)

Drawn by: RJH

Date: MAY 2020

Scale: 1:3000

Project No.: 18-015

FIGURE

6

N

Feet
0 500 1,000

Promote offsite surface flow into the site and allow for surfacewater migration through the Site

Propsoed surface water connection for seasonal surface water flow from observed inputs. (see detail)

Road bed elv = 56.00
Ex. field elv. = 55.00
Proposed field elv. = 54.50

Ditch backfilling to-grade with ditch plugs at a minimum of every 500-feet

Remove existing drain tile (2 x 12" pipes)

Road bed elv = 55.00
Ex. field elv. = 54.00
Proposed field elv. 54.00

Ditch elv. = 52.0

Site field elv. at outlet = 52.50

Stabilized Outfall (see E&SC Plan)

Ex. elv. = 54.75
Pro. LP (elv. 53.00)

Ex. elv. = 54.25
Pro. LP (elv. 53.75)

Ex. LP (elv. 54.00)

Ex. elv. = 55.00
Pro. LP (elv. 54.00)

Ex. LP
(elv. 53.25)

Ex. elv. = 54.50
Pro. LP (elv. 53.75)

Ex. elv. = 53.25
Pro. LP (elv. 53.00)

Outlet ditch elv.= 52.00
Site elv. = 55.25
(no change)

Ex. LP (elv. 54.25)
Pro. LP (elv. 53.50)

Ex. LP
(elv. 53.25)

Ex. LP (elv. 54.00)
Pro. LP (elv. 53.50)

Road elv. = 55.00

Existing field topography will allow for the diffused flow of seasonal surface water before discharge into the stabilized outfall.

Offsite forest elv. = 55.00
Current onsite field elv. = 53.50
Propsoed onsite field elv. = 53.50

Naturally depressed area within the landscape. Mitigation plan incorporates these to draw surface water from offsite, promote water storage, and to develop habitat diversity within the project's footprint.

Rip and remove the existing dirt road and remove remnant spoil piles

Pond Pine & existing forest management (see Planting Plan)

Ditch to be re-graded from elv. 55.50 to existing ditch outfall elv. 54.00 before leaving the fee-simple tract.

Ditch to be re-graded from elv. 54.25 to existing ditch outfall elv. of 53.00 before leaving the fee-simple tract.

Daisy Lane

Old Highway 70

Legend

Craven Co. NC - QL2 Raster (DEM05)

Value

High : 60

Low : 50

Area LiDAR (6-inch QL2)

CONTOUR

52 | 52.5 | 53 | 53.5 | 54 | 54.5 | 55 | 55.5 | 56 | 56.5 | 57 | 57.5 | 58 | 58.5 | 59 | 59.5 | 60 | 60.5 | 61 | 61.5 | 62 | 62.5

Legend

- Conservation Easement: 30.88 acres
- Area Property Lines
- Onsite earthen road
- Culvert Crossings (3) - Removed
- Existing Drain Tile - To Be Removed
- Existing Ditch - To Be Filled
- Existing Ditch - To Be Regraded
- Existing Ditch - To Remain Open
- Proposed Low Area: 2 to 3 acres

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Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

MITIGATION PLAN

OVERVIEW

NC SPATIAL DATA QL2 - LiDAR 6-INCH DETAIL

Drawn by: RJH

Date: JAN 2021

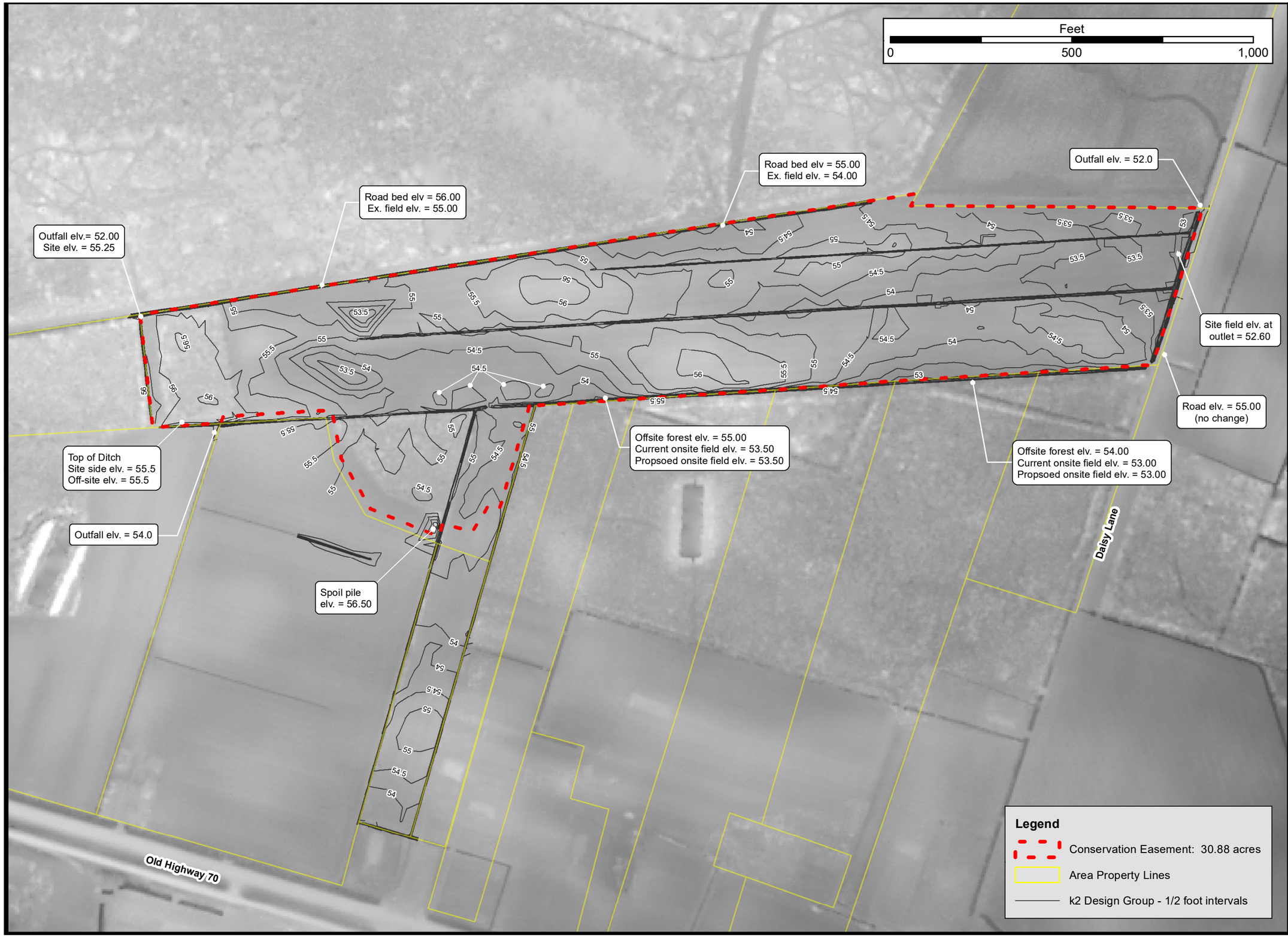
Scale: 1:3000

Project No.: 18-015

FIGURE

7

N



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Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

GRADING PLAN

EXISTING CONTOURS

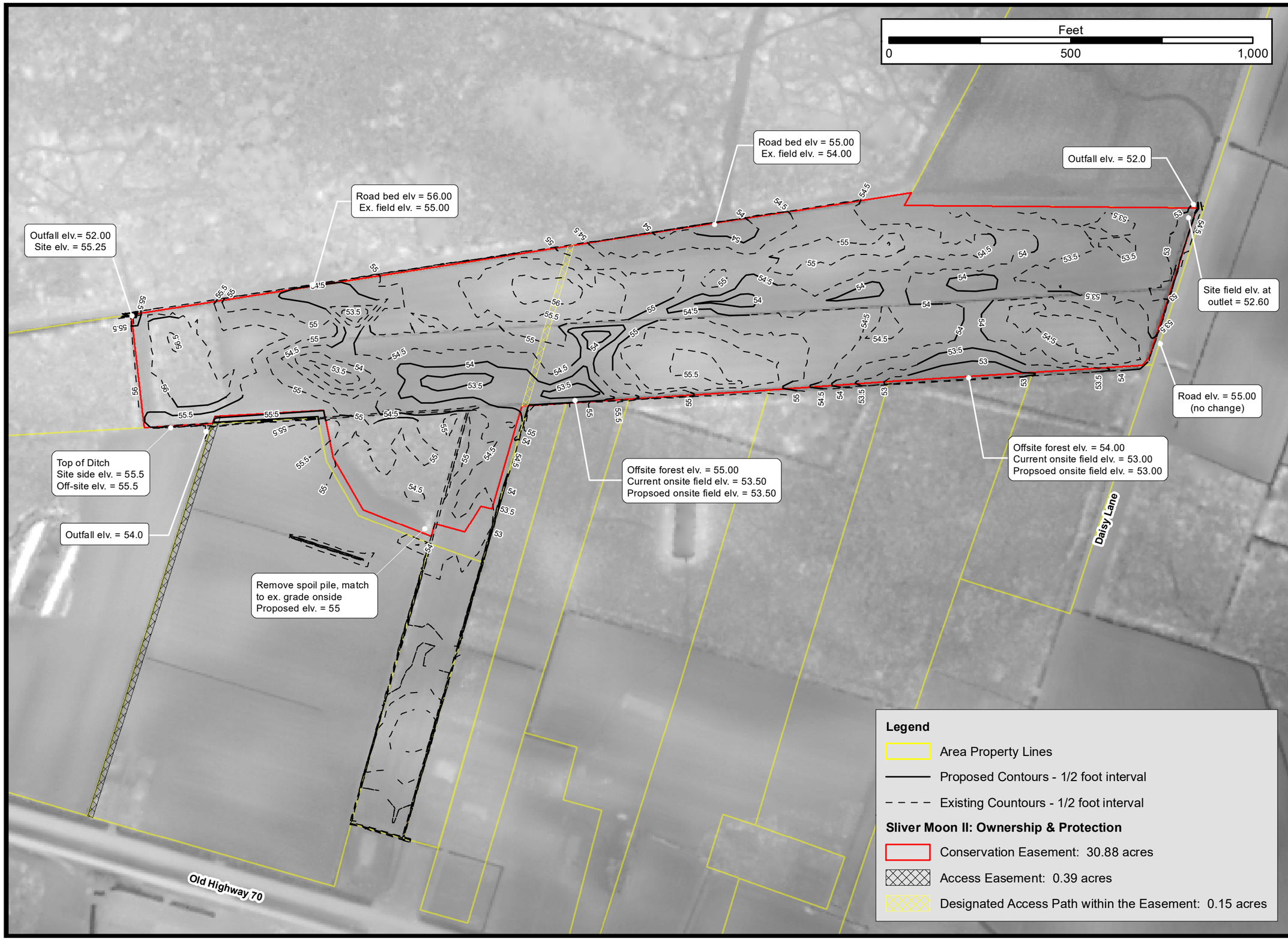
1/2 FOOT INTERVAL K2 DESIGN (2020)

Drawn by:	RJH
Date:	MAY 2020
Scale:	1:3000
Project No.:	18-015

FIGURE

8

N



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ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

GRADING PLAN

PROPOSED CONTOURS

1/2 FOOT INTERVAL K2 DESIGN (2020)

Drawn by: RJH

Date: JAN 2021

Scale: 1:3000

Project No.: 18-015

FIGURE

8-A

N

Feet
0 500 1,000

Road bed elv = 55.00
Ex. field elv. = 54.00

Outfall elv. = 52.0

Road bed elv = 56.00
Ex. field elv. = 55.00

Outfall elv.= 52.00
Site elv. = 55.25

Site field elv. at outlet = 52.60

Road elv. = 55.00 (no change)

Top of Ditch
Site side elv. = 55.5
Off-site elv. = 55.5

Offsite forest elv. = 55.00
Current onsite field elv. = 53.50
Propsoed onsite field elv. = 53.50

Offsite forest elv. = 54.00
Current onsite field elv. = 53.00
Propsoed onsite field elv. = 53.00

Outfall elv. = 54.0

Remove spoil pile, match to ex. grade onside
Proposed elv. = 55

Daisy Lane

Old Highway 70

Legend

- Existing/Proposed Low Areas - 3.75 acres
- Area Property Lines
- Proposed Contours - 1/2 foot interval
- Existing Countours - 1/2 foot interval
- Proposed Surface Water Connections - See Detail Fgure 8-C

Sliver Moon II: Ownership & Protection

- Conservation Easement: 30.88 acres
- Access Easement: 0.39 acres
- Designated Access Path within the Easement: 0.15 acres

Notes:

1.) Start and finish locations of proposed surface water connections (SWC) will be determined in the field by RS' General Contractor.
2.) SWC should connect existing and proposed low areas but not continue through the low areas.
3.) Per direction of RS' General Contractor, flow paths will be constructed by grading shallow swales - approx. 6" deep.
4.) Final grades will be determined in the field by RS' General Contractor

RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

GRADING PLAN

PROPOSED SURFACE WATER CONNECTIONS

1/2 FT INTERVAL K2 DESIGN (2020)

Drawn by: RJH

Date: JAN 2021

Scale: 1:1500

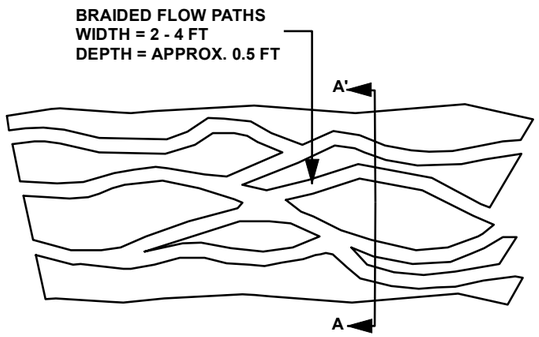
Project No.: 18-015

FIGURE

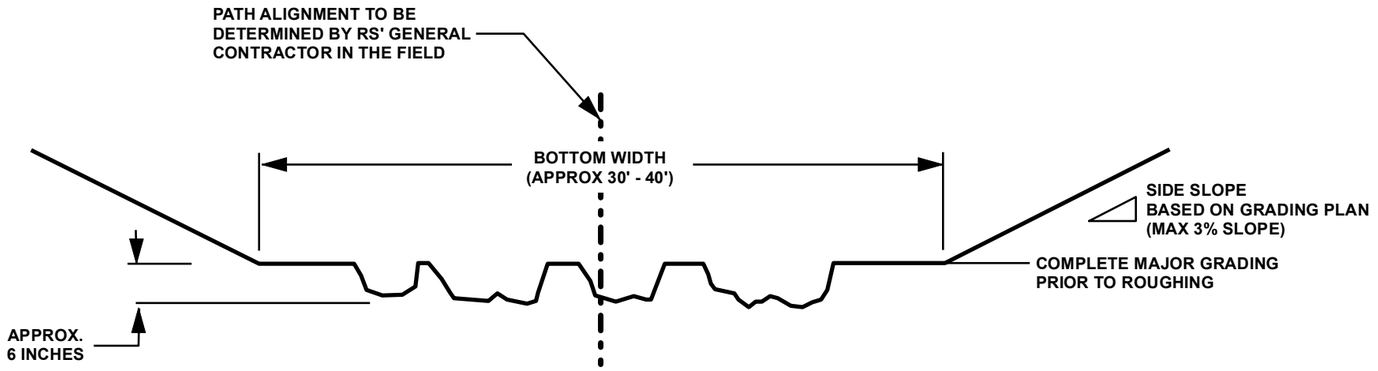
8-B

N

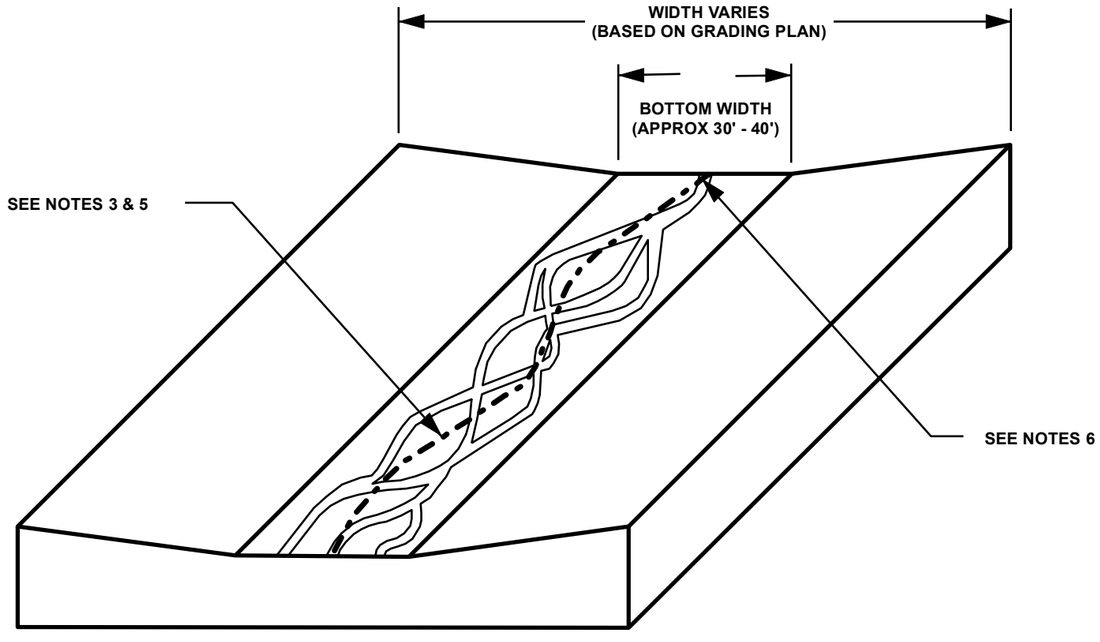
SURFACE WATER CONNECTION DETAIL



PLAN VIEW OF MICROTOPOGRAPHY PATTERN



SECTION A - A'



Notes:

1.) Where appropriate, topography will be graded before microtopography added.
2.) The restored bottom will then be roughened, using industry standard techniques and approved by RS'General Contractor in the field.
3.) Per direction of RS' General Contractor, flow paths will be constructed by grading shallow swales - approx. 6" deep.
4.) Final grades will be determined in the field by RS' General Contractor
5.) Braided swale locations will be determined in the field by RS' General Contractor
6.) Braided swales will be shaped to form smooth transitions into and out of low areas and as determined in the field by RS' General Contractor
7.) Upon completion of the braided swales, apply ground cover, temporary seed, and permanent seed to the constructed valley according to sediment and erosion control specifications

RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

MITIGATION PLAN

SURFACE WATER CONNECTION DETAIL

Drawn by: RJH

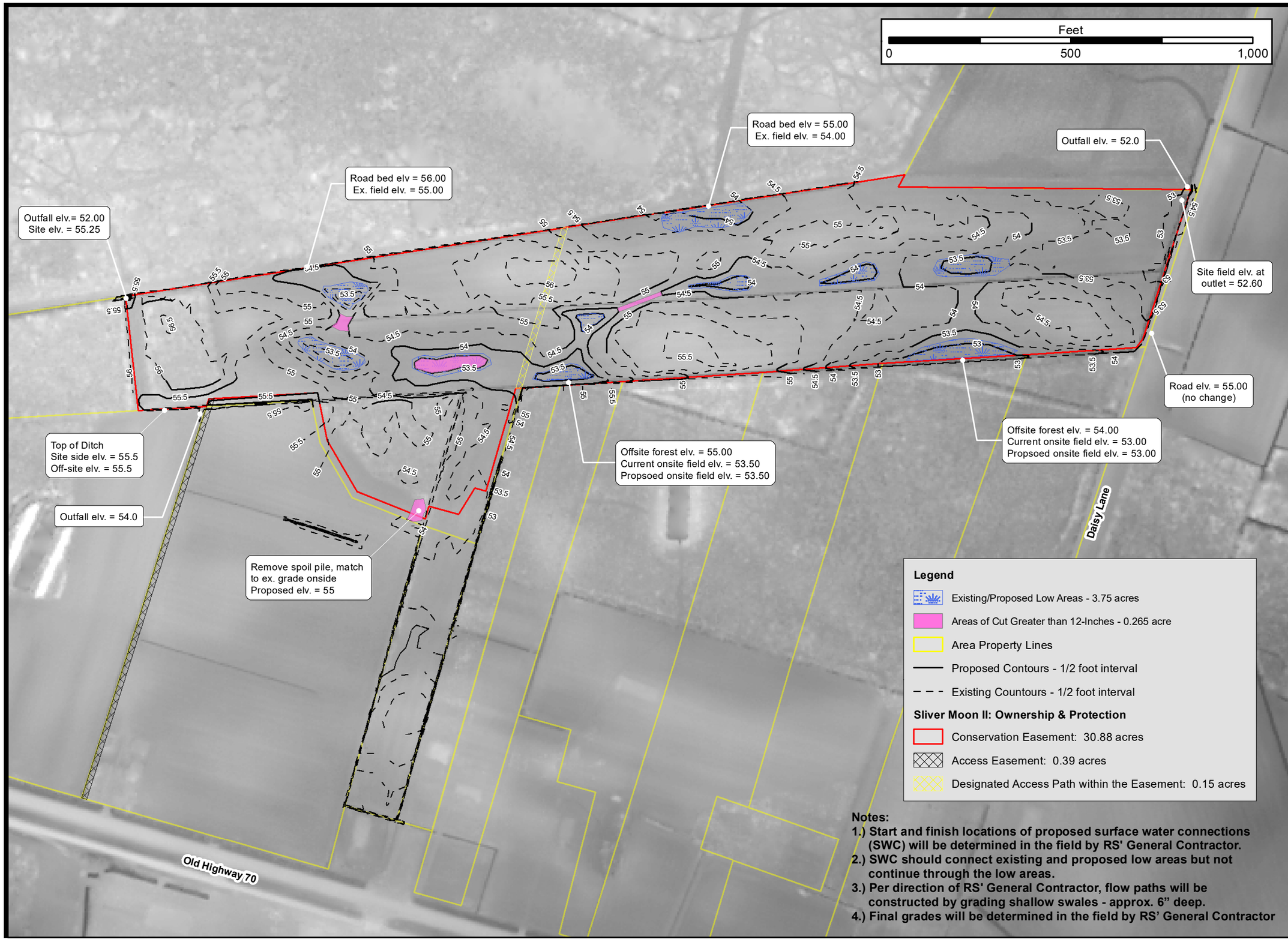
Date: MAY 2020

Scale: NOT TO SCALE

Project No.: 18-015

FIGURE

8-C



Notes:

1.) Start and finish locations of proposed surface water connections (SWC) will be determined in the field by RS' General Contractor.
2.) SWC should connect existing and proposed low areas but not continue through the low areas.
3.) Per direction of RS' General Contractor, flow paths will be constructed by grading shallow swales - approx. 6" deep.
4.) Final grades will be determined in the field by RS' General Contractor

RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

GRADING PLAN

GREATER THAN 12-INCHES CUT

1/2 FT INTERVAL K2 DESIGN (2020)

Drawn by: RJH

Date: JAN 2021

Scale: 1:1500

Project No.: 18-015

FIGURE

8-D

N

Feet
0 500 1,000

Reference Foresest Ecosystem (+/- 1.5 acres)

Lower areas in the landscape/design totaling 3.75 acres and are intended to hold surface water. These areas will be planted with the rest of the site at a rate of 680 stems per acre and will receive an additional planting at a density of 320 stems per acre of species that can tolerate standing water (total planted stems in these areas equals 1000 stems/acre).

Forest A – 1.18 ac. of managed pond pine: Selective thinning of 60-70% of existing trees. Trees selected for removal will be done so to open the forest floor to additional sunlight to create a wide range of sunlight conditions, from full sun to areas of dappled sun and full shade.

Forest B – 1.73 acres of unmanaged forest – will receive thinning to 30-40% of the existing species, leaving 60-70% remaining. Thinning will focus on diseased species, and those species generally considered less desirable or can quickly colonize (red maple and sweetgum).

Old Highway 70

Daisy Lane

Legend

- Proposed Grade - 1/2 foot intervals
- Existing Grade - 1/2 foot intervals
- Existing Forest: 2.91 acres
- Planting Area: 30.88 acres - Nonriverine Wet Hardwood Forest
- Landscape Depression Area: 3.75

Sliver Moon II: Ownership & Protection

- Conservation Easement: 30.88 acres
- Access Easement: 0.39 acres
- Designated Access Path within the Easement: 0.15 acres

NC Center for Geographic Information & Analysis

RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

PLANTING & FOREST ENHANCEMENT PLAN

NC ORTHOIMAGERY PROGRAM (3-2019)

Drawn by: RJH

Date: JAN 2021

Scale: 1:3000

Project No.: 18-015

FIGURE

9

N

Table 1: Project Components and Mitigation Credits

Reach ID	Wetland Type	Existing Acreage	Restoration Acreage	Restoration Level	Restoration or Restoration Equivalent	Mitigation Ratio	Mitigation Credits
WR 1	Non-riparian	--	30.597	Re-establishment	30.597	1:1	30.447* (30.597 – 0.15)

* An access lane measuring 0.15 acres (15 feet wide) was surveyed and recording as part of the conservation easement plat and deed (Appendix G). The lane allows for access from south to north across the site. The area of the lane is a part of the restoration plan and approach. No improvements to the lane are to be made during construction. The land will not generate mitigation credit (Figure 10, Appendix A).

Feet
0 500 1,000

Designated Access Lane (0.15 acres)
No Mitigation Credit Generated

Daisy Ln. continues to the north and provides access to a parcel along the rim of the Carolina bay. Daisy Ln. was not included in the conservation easement. The easement is a min. of 5-feet off Daisy Ln.

Conservation easement and credit generating area located 20' off property boundary.

Conservation easement and credit generating area located 15' off property boundary.

Daisy Lane

Old Highway 70

Legend

- Conservation Easement: 30.88 acres
- Designated Access Path: 0.15 acres
- Underlying Fee Simple Parcel: 31.85 acres

NC Center for Geographic Information & Analysis

RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

MITIGATION ASSET MAP

NC ORTHOIMAGERY PROGRAM (3-2019)

Drawn by: RJH

Date: JAN 2021

Scale: 1:3000

Project No.: 18-015

FIGURE

10

N

Feet
0 500 1,000

Designated Access Lane (0.15 acres)
No Mitigation Credit Generated

Daisy Lane

Old Highway 70

Legend

- Fixed Photo Points w/ Dirctional
- Proposed Groundwater Gauges (26)
- Proposed CVS Plots (25)
- Landscape Dression Areas: 3.75 acres
- Wetland Re-establishment: 30.447 acres
- Conservation Easement: 30.88 acres
- Designated Access Path: 0.15 acres
- Underlying Fee Simple Parcel: 31.85 acres

NC Center for Geographic Information & Analysis

RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

MONITORING PLAN

NC ORTHOIMAGERY PROGRAM (3-2019)

Drawn by: RJH

Date: JAN 2021

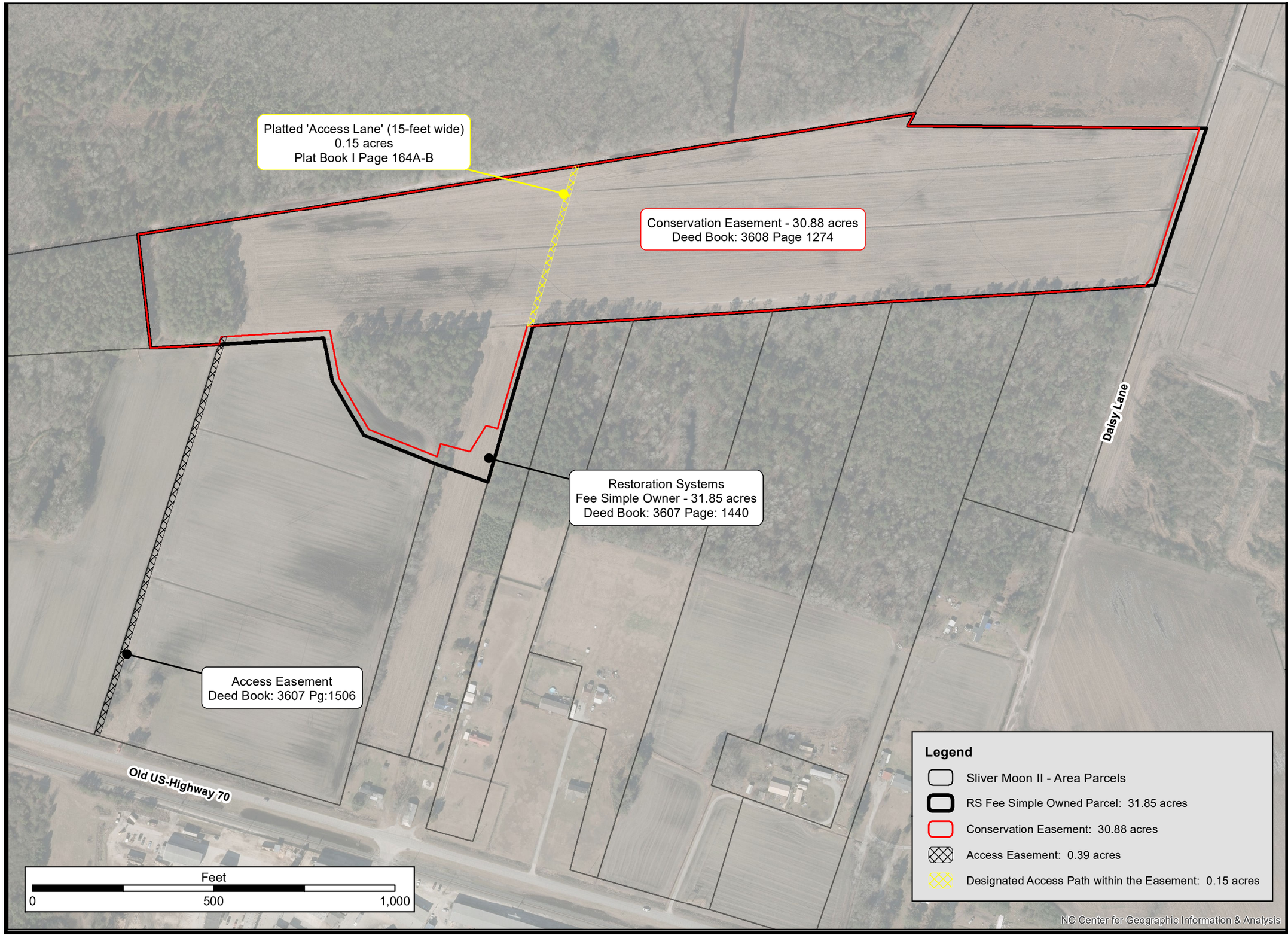
Scale: 1:3000

Project No.: 18-015

FIGURE

11

N



RESTORATION SYSTEMS | LLC

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

OWNERSHIP & PROTECTION

Drawn by: RJH

Date: MAY 2020

Scale: 1:3,000

Project No.: 18-015

FIGURE

12

N

Photo 1 – Looking west, from the northeast corner of the Site

Photo 2 – Looking east, from the southwest corner of the Site

Photo 3 – Looking west, along the Site's northern boundary

Photo 4 – Forest A, from the northwest corner of the Site

Photo 5 – Forest B, looking north from the Site's southern boundary

Photo 6 – Forest B, looking southwest

Photo 7 – Forest B, looking south

Photo 8 – Northern boundary ditch, looking east

Photo 9 – Southern boundary ditch, looking west

Photo 10 – Eastern boundary ditch of Forest B

Photo 11 – View north along proposed Access Path

Photo 12 – Main southern boundary ditch, looing east

APPENDIX B: EXISTING WETLAND DATA

NC WAM Forms
Soil Boring Log
Water Balance Calculation

NC WAM Wetland Rating Sheet
Accompanies User Manual Version 5.0

Wetland Site Name	Sliver Moon II - #01	Date of Assessment	3/5/2018
Wetland Type	Hardwood Flat	Assessor Name/Organization	Jernigan/Axiom

Notes on Field Assessment Form (Y/N)	NO
Presence of regulatory considerations (Y/N)	YES
Wetland is intensively managed (Y/N)	YES
Assessment area is located within 50 feet of a natural tributary or other open water (Y/N)	
Assessment area is substantially altered by beaver (Y/N)	NO
Assessment area experiences overbank flooding during normal rainfall conditions (Y/N)	NO
Assessment area is on a coastal island (Y/N)	NO

Sub-function Rating Summary

Function	Sub-function	Metrics	Rating
Hydrology	Surface Storage and Retention	Condition	**LOW**
	Sub-surface Storage and Retention	Condition	**LOW**
Water Quality	Pathogen Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Particulate Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Soluble Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Physical Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Pollution Change	Condition	**LOW**
		Condition/Opportunity	**LOW**
		Opportunity Presence (Y/N)	**YES**
Habitat	Physical Structure	Condition	**LOW**
	Landscape Patch Structure	Condition	**LOW**
	Vegetation Composition	Condition	**LOW**

Function Rating Summary

Function	Metrics	Rating
Hydrology	Condition	**LOW**
Water Quality	Condition	**LOW**
	Condition/Opportunity	**LOW**
	Opportunity Presence (Y/N)	**YES**
Habitat	Condition	**LOW**

Overall Wetland Rating **LOW**

NC WAM Wetland Rating Sheet
Accompanies User Manual Version 5.0

Wetland Site Name	Sliver Moon II - #02	Date of Assessment	1/15/2021
Wetland Type	Hardwood Flat	Assessor Name/Organization	Baldwin/RS

Notes on Field Assessment Form (Y/N)	NO
Presence of regulatory considerations (Y/N)	YES
Wetland is intensively managed (Y/N)	YES
Assessment area is located within 50 feet of a natural tributary or other open water (Y/N)	NO
Assessment area is substantially altered by beaver (Y/N)	NO
Assessment area experiences overbank flooding during normal rainfall conditions (Y/N)	NO
Assessment area is on a coastal island (Y/N)	NO

Sub-function Rating Summary

Function	Sub-function	Metrics	Rating
Hydrology	Surface Storage and Retention	Condition	**LOW**
	Sub-surface Storage and Retention	Condition	**LOW**
Water Quality	Pathogen Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Particulate Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Soluble Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Physical Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Pollution Change	Condition	**LOW**
		Condition/Opportunity	**LOW**
		Opportunity Presence (Y/N)	**NO**
Habitat	Physical Structure	Condition	**LOW**
	Landscape Patch Structure	Condition	**MEDIUM**
	Vegetation Composition	Condition	**MEDIUM**

Function Rating Summary

Function	Metrics	Rating
Hydrology	Condition	**LOW**
Water Quality	Condition	**LOW**
	Condition/Opportunity	**LOW**
	Opportunity Presence (Y/N)	**NO**
Habitat	Condition	**LOW**

Overall Wetland Rating **LOW**

AXIOM ENVIRONMENTAL, INC
218 Snow Avenue
Raleigh, North Carolina 27603
919-215-1693

Axiom Environmental, Inc.

SOIL BORING LOG

Project/Site: Sliver Moon II Wetland Mitigation Site

County, State: Craven, NC

Sampling Point/
Coordinates: Hydric Soil Boring #1/ 35.203766, -77.362292

Investigator: Lewis

Notes: Location of soil profile is depicted on Figure 6 (Existing Conditions).

	Matrix		Mottling				
Depth (inches)	Color	%	Color	%	Type	Location	Texture
0-12	10YR 2/1	99	10YR 6/2	1	C	PL	sandy loam
12-18	10YR 4/1	90	10YR 2/1	10	MS	M	sandy loam
18+	10YR 4/1	100					sandy loam

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Locaction: PL=Pore Lining, M=Matrix.

North Carolina Licensed Soil Scientist

Number: 1233

Signature: W Grant Lewis

Name/Print: W. Grant Lewis

AXIOM ENVIRONMENTAL, INC
218 Snow Avenue
Raleigh, North Carolina 27603
919-215-1693

Axiom Environmental, Inc.

SOIL BORING LOG

Project/Site: Sliver Moon II Wetland Mitigation Site

County, State: Craven, NC

Sampling Point/
Coordinates: Hydric Soil Boring #2/ 35.203597, -77.367341

Investigator: Lewis

Notes: Location of soil profile is depicted on Figure 6 (Existing Conditions).

	Matrix		Mottling				
Depth (inches)	Color	%	Color	%	Type	Location	Texture
0-9	10YR 2/1	99	10YR 4/2	1	C	PL	sandy loam
9-14	10YR 4/2	97	10YR 2/1	3	MS	M	sandy loam
14+	10YR 6/2	100					sandy loam

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Locaction: PL=Pore Lining, M=Matrix.

North Carolina Licensed Soil Scientist

Number: 1233

Signature: W Grant Lewis

Name/Print: W. Grant Lewis

AXIOM ENVIRONMENTAL, INC
218 Snow Avenue
Raleigh, North Carolina 27603
919-215-1693

Axiom Environmental, Inc.

SOIL BORING LOG

Project/Site: Sliver Moon II Wetland Mitigation Site

County, State: Craven, NC

Sampling Point/
Coordinates: Hydric Soil Boring #3/ 35.202525, -77.367486

Investigator: Lewis

Notes: Location of soil profile is depicted on Figure 6 (Existing Conditions).

	Matrix		Mottling				
Depth (inches)	Color	%	Color	%	Type	Location	Texture
0-9	10YR 2/1	100					loamy sand
9-16	10 YR 3/1	80					loamy sand
	10YR 2/1	20					
16-22	10YR 3/1	100					loamy sand
22+	10YR 5/2	90	10YR 3/1	10	MS	M	sandy clay loam

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Locaction: PL=Pore Lining, M=Matrix.

North Carolina Licensed Soil Scientist

Number: 1233

Signature: W Grant Lewis

Name/Print: W. Grant Lewis

AXIOM ENVIRONMENTAL, INC
218 Snow Avenue
Raleigh, North Carolina 27603
919-215-1693

Axiom Environmental, Inc.

SOIL BORING LOG

Project/Site: Sliver Moon II Wetland Mitigation Site

County, State: Craven, NC

Sampling Point/
Coordinates: Hydric Soil Boring #4/ 35.202486, -77.368429

Investigator: Lewis

Notes: Location of soil profile is depicted on Figure 6 (Existing Conditions).

	Matrix		Mottling				
Depth (inches)	Color	%	Color	%	Type	Location	Texture
0-3	10YR 2/1	100					loam
3-18	10YR 2/1	100					sandy loam
18-22	10YR 3/1	100					sandy clay loam
22+	10YR 4/1	90	10YR 3/1	10	MS	M	sandy clay loam

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Locaction: PL=Pore Lining, M=Matrix.

North Carolina Licensed Soil Scientist

Number: 1233

Signature: W Grant Lewis

Name/Print: W. Grant Lewis

AXIOM ENVIRONMENTAL, INC
218 Snow Avenue
Raleigh, North Carolina 27603
919-215-1693

Axiom Environmental, Inc.

SOIL BORING LOG

Project/Site: Sliver Moon II Wetland Mitigation Site

County, State: Craven, NC

Sampling Point/ Coordinates: Hydric Soil Boring #5/ 35.203228, -77.370203

Investigator: Lewis

Notes: Location of soil profile is depicted on Figure 6 (Existing Conditions).

	Matrix		Mottling				
Depth (inches)	Color	%	Color	%	Type	Location	Texture
0-3							duff
3-6	10YR 2/1	100					sandy loam
6-11	10YR 3/2	95	10YR 4/1	5	D	M	sandy loam
11-19	10YR 4/1	90	10YR 3/1	10	MS	M	loamy sand
19+	10YR 3/1	98	10YR 3/4	2	C	M	loamy sand

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Locaction: PL=Pore Lining, M=Matrix.

North Carolina Licensed Soil Scientist

Number: 1233

Signature: W Grant Lewis

Name/Print: W. Grant Lewis

Sliver Moon II Water Balance 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

This drained Hardwood Flat wetland will be restored as one wetland polygon. The following assumptions apply to the water budget calculation:

1. Precipitation that falls within the 30.88-acre footprint will be the primary hydrologic input.
2. Surface-water and ground-water inflow will be secondary hydrologic inputs and are not expected to be critical factors in restoring wetland hydrology. This is assumed because of the landscape position of the wetland is an interstream divide and the surrounding land use practices mostly being agriculture and maintained woodland which convey water down gradient through a network of ditches. The Site is mostly surrounded by Hydric A soils which will provide supplemental hydrological inputs.
3. Currently surface water outflow for the site is being conveyed off the Site via a ditch network system, and will be eliminated by removal of existing ditches and associated outlets. Water will leave the Site once it reaches a set elevation to be determined during final design in order to prevent hydrologic trespass on adjacent properties.
4. The primary soil series associated with the Site are Pantego fine sandy loam and Rains fine sandy loam (NRCS soil mapunits Pa and Ra) which are somewhat to very poorly drained with moderate permeability. Land management practices for this soil series include forestry and agricultural, both activities include a ditch network system coupled

with surface manipulation to remove hydrological inputs in order to achieve sustainable production. Once the Site's ditches are filled and outlets removed the hydrological inputs will be retained resulting in restoration of wetland hydrology.

Based on these assumptions it is assumed that no significant groundwater or surface water inflow/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:

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

Precipitation

The USDA NRCS provides Wetlands Climate Tables through the Agricultural Applied Climate System (AgACIS) which includes climate data and summary reports. There are several AgACIS weather stations in Craven County, however all had incomplete datasets that could not be used for this exercise. As an alternative The State Office of North Carolina at NCSU developed the NC Climate Retrieval and Observations Network of the Southeast Database (NC CRONOS) which provides precipitation data. There is one NC CRONOS weather station listed for Craven County; however it is located in New Bern therefore a closer weather station in Lenoir County was used instead. The weather station used is Cunningham Research Station (ID – KINS) which is located ~13-miles to the west northwest of the Site in Lenoir County. The weather station was established in June 1987 and precipitation data is the average of precipitation data collected from 2015 – 2019.

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 NC CRONOS KINS weather station also 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 data was accessed from the NC CRONOS KINS weather station in October 2019, and provided ETo and ETc data. Field field 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 Oct 2015 – September 2019, and was averaged for each month in order to perform the water budget calculation.

Summary of Water Budget Analysis

Month	Total Precipitation (in)	Wetland Area (ac)	Direct Precipitation on Wetland (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	3.47	30.88	8.92	8.92	1.84	2.21	1.64	7.28	
Feb	3.56	30.88	9.17	9.17	2.58	3.10	2.37	6.80	14.08
Mar	3.78	30.88	9.71	9.71	3.68	4.41	3.57	6.14	20.22
Apr	5.23	30.88	13.45	13.45	5.06	6.07	6.81	6.64	26.87
May	4.50	30.88	11.57	11.57	5.92	7.10	6.85	4.72	31.59
Jun	5.05	30.88	12.99	12.99	6.16	7.39	8.00	4.98	36.58
Jul	5.16	30.88	13.28	13.28	6.55	7.86	8.70	4.58	41.15
Aug	4.47	30.88	11.50	11.50	5.53	6.64	6.36	5.14	46.29
Sep	7.54	30.88	19.40	19.40	4.23	5.07	8.20	11.20	57.49
Oct	5.38	30.88	13.83	13.83	3.09	3.71	4.28	9.56	67.05
Nov	3.70	30.88	9.51	9.51	1.85	2.22	1.76	7.75	74.79
Dec	4.64	30.88	11.95	11.95	1.59	1.90	1.90	10.05	84.84
Totals:	**56.46**		**145.28**	**145.28**	**48.08**	**57.70**	**60.43**	**84.84**	

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 water budget is presented in "Water Budget Remaining Total +/-" column of the table above. No water deficits were observed in the calculation during any month of the year. A water surplus is available on a monthly and annual basis. 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 ~2.7-feet surplus of water will cover the entire 30.88-acre Site on an annual basis. Considering the limited hydrologic outlets associated with the Site 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.

Land Use Nutrient Model

Sliver Moon II Mitigation Site

Stream Length	
Site Buffer Width	
Site Area (ft sq)	1345132.8
Ag. Area (ft sq)	1205305.2

Land Use	%
Pasture	
Woods	
Row Crop	100
Urban	
must total 100	100

	Rainfall
Annual	

Land Use Characteristics		Number of Animals	N inputs lbs/au/yr	P inputs lbs/au/yr	Total N (lbs)	Total P (lbs)	
Pasture	Beef	0	113	40	0	0	
	Dairy	0	164	26	0	0	
	Pig	0	153	58	0	0	
	Horse	0	102	40	0	0	
	fert/ac		60	45	0	0	
					0	0	Total Pasture N and P

		% Row Crop Area	N inputs lbs/ac/yr	P inputs lbs/ac/yr	Total N	Total P	
Row Crop	Corn	100	20	20	553	553	
27.7	Cotton	0	20	20	0	0	
	Soybeans	0	0	15	0	0	
	Hay Fescue	0	50	45	0	0	
	Hay Bermuda	0	70	45	0	0	
	must total 100	100			553	553	Total Row Crop N and P

Woods Minimal Nutrients

		% Area	Runoff	Concentration N (mg/l)	Concentration P (mg/l)	Total N (lbs)	Total P (lbs)	
Urban	Residential	0	0	2.2	0.4	0	0	
	Commercial/Industrial	0	0	2.3	0.3	0	0	
	Roadway	0	0	3.0	0.5	0	0	
						0.0	0.0	Total Urban N and P

Notes: Residential Assumes 25 % Impervious Surface
Commercial/Industrial Assumes 75% Impervious Surface
Roadway Assumes 100% Impervious Surface
Annual Load (lbs) = 0.226*Annual Runoff (inches)*Concentration (mg/l)*Acres

Total Nutrients Removed within Easement

Total N Removed (lbs/yr)	**553**
Total P Removed (lbs/yr)	**553**

APPENDIX C: NCNHP REPORT

North Carolina Department of Natural and Cultural Resources
Natural Heritage Program

Governor Roy Cooper | Secretary Susi H. Hamilton

NCNHDE-5549

March 12, 2018

Kenan Jernigan
Axiom Environmental, Inc.
218 Snow Avenue
Raleigh, NC 27603
RE: Sliver Moon II Wetland Mitigation Site

Dear Kenan Jernigan:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists and is included for reference. Tables of natural areas and conservation/managed area within a one-mile radius of the project area, if any, are also included in this report.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve (DNP), Registered Heritage Area (RHA), Clean Water Management Trust Fund (CWMTF) easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919.707.8603.

Sincerely,
NC Natural Heritage Program

MAILING ADDRESS:
1651 Mail Service Center
Raleigh, NC 27699-1651

Telephone: (919) 707-8107
www.ncnhp.org

LOCATION:
121 West Jones Street
Raleigh, NC 27603

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
Sliver Moon II Wetland Mitigation Site
March 12, 2018
NCNHDE-5549

No Element Occurrences are Documented within the Project Area

There are no documented element occurrences (of medium to very high accuracy) that intersect with the project area. Please note, however, that although the NCNHP database does not show records for rare species within the project area, it does not necessarily mean that they are not present; it may simply mean that the area has not been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys if needed, particularly if the project area contains suitable habitat for rare species. If rare species are found, the NCNHP would appreciate receiving this information so that we may update our database.

No Natural Areas are Documented within the Project Area

Managed Areas Documented Within Project Area*

Managed Area Name	Owner	Owner Type
NC Division of Mitigation Services Easement	NC DEQ, Division of Mitigation Services	State

* NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/content/help. Data query generated on March 12, 2018; source: NCNHP, Q1 January 2018. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Sliver Moon II Wetland Mitigation Site
March 12, 2018
NCNHDE-5549

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Dragonfly or Damselfly	32037	Coryphaeschna ingens	Regal Darner	2004-Pre	H?	5-Very Low	---	Significantly Rare	G5	S2?
Dragonfly or Damselfly	33788	Triacanthagyna trifida	Phantom Darner	2004-Pre	H?	5-Very Low	---	Significantly Rare	G5	S1?
Natural Community	20110	Nonriverine Swamp Forest (Mixed Subtype)	---	2012-05-22	AB	2-High	---	---	G3	S3
Natural Community	5301	Pond Pine Woodland (Typic Subtype)	---	1997-03	AB	4-Low	---	---	G3	S3
Vascular Plant	4678	Dionaea muscipula	Venus Flytrap	1949-06-11	H	4-Low	Species of Concern	Special Concern Vulnerable	G3	S2

Natural Areas Documented Within a One-mile Radius of the Project Area

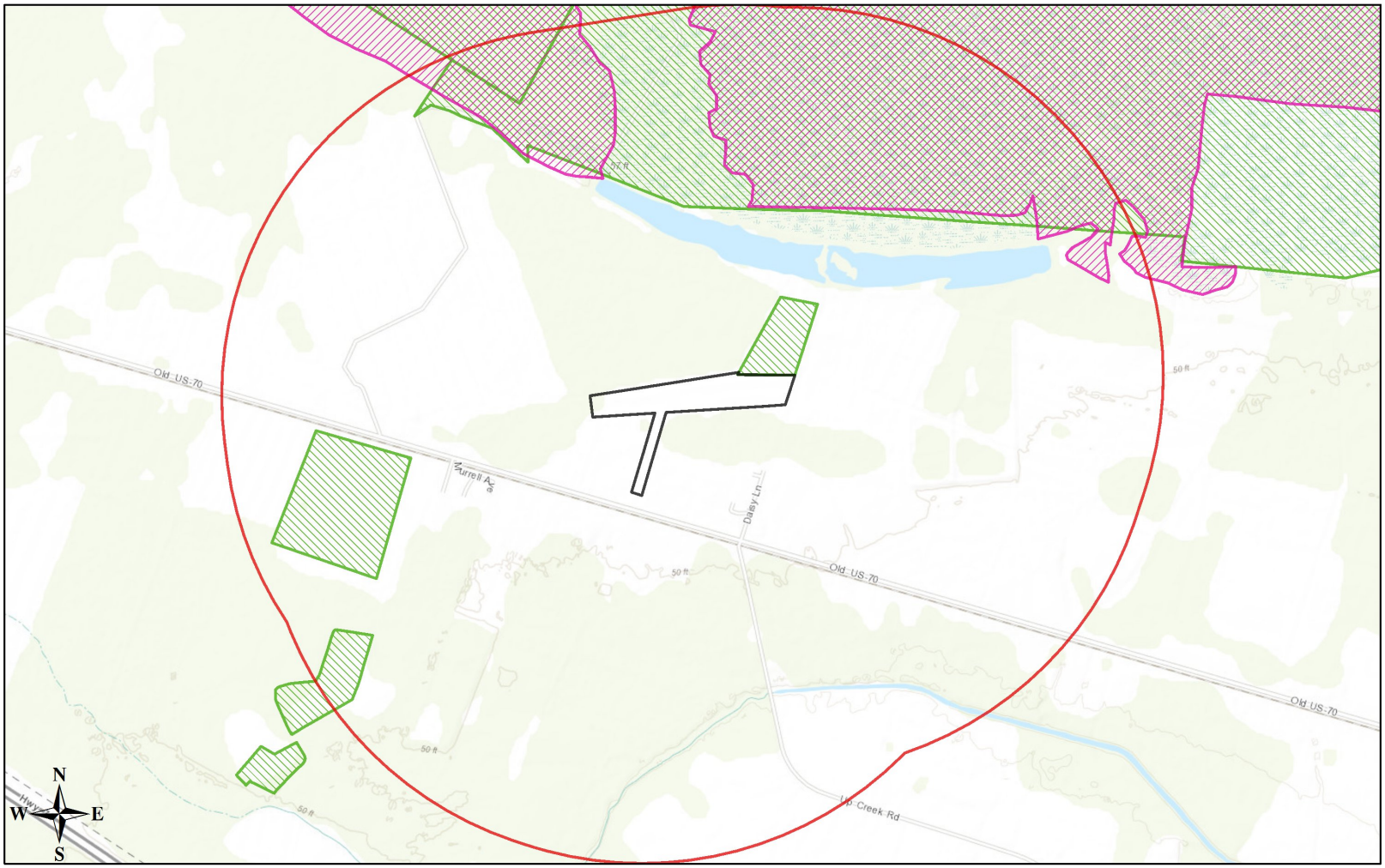
Site Name	Representational Rating	Collective Rating
Dover Bay Pocosin	R3 (High)	C4 (Moderate)

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
NC Division of Mitigation Services Easement	NC DEQ, Division of Mitigation Services	State
NC Wildlife Resources Commission Easement	NC Wildlife Resources Commission	State
North Carolina Coastal Land Trust Preserve	North Carolina Coastal Land Trust	Private

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/content/help. Data query generated on March 12, 2018; source: NCNHP, Q1 January 2018. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-5549: Sliver Moon II Wetland Mitigation Site



March 12, 2018

- Project Boundary
- Buffered Project Boundary
- NHP Natural Area (NHNA)
- Managed Area (MAREA)

1:23,669

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

APPENDIX D: PRELIMINARY JURISDICTIONAL DETERMINATION PACKAGE

A. PARCEL INFORMATION

Street Address: Daisy Lane

City, State: Cove City, NC 28523

County: Craven

Parcel Index Number(s) (PIN): 3-044-011

B. REQUESTOR INFORMATION

Name: Restoration Systems LLC-Alex Baldwin

Mailing Address: 1101 Haynes Street, Suite 211

Raleigh, NC 27604

Telephone Number: (919) 274-2419

Electronic Mail Address: abaldwin@restorationsystems.com

Select one:

- [x] I am the current property owner.
- [ ] I am an Authorized Agent or Environmental Consultant[1]
- [ ] Interested Buyer or Under Contract to Purchase
- [ ] Other, please explain. _____

_____

C. PROPERTY OWNER INFORMATION[2]

Name: Restoraton Systems

Mailing Address: 1101 Haynes Street, Suite 211

Raleigh, NC 27604

Telephone Number: (919) 274-2419

Electronic Mail Address: abaldwin@restorationsystems.com

[1] Must provide completed Agent Authorization Form/Letter.

[2] Documentation of ownership also needs to be provided with request (copy of Deed, County GIS/Parcel/Tax Record).

D. PROPERTY ACCESS CERTIFICATION[3,4]

By signing below, I authorize representatives of the Wilmington District, U.S. Army Corps of Engineers (Corps) to enter upon the property herein described for the purpose of conducting on-site investigations, if necessary, and issuing a jurisdictional determination pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. I, the undersigned, am either a duly authorized owner of record of the property identified herein, or acting as the duly authorized agent of the owner of record of the property.

Alex Baldwin
Print Name

Capacity: ☑ Owner ☐ Authorized Agent[5]

5/5/2020
Date


Signature

E. REASON FOR JD REQUEST: (Check as many as applicable)

☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
☑ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
☐ A Corps JD is required in order obtain my local/state authorization.
☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
☐ I believe that the site may be comprised entirely of dry land.
☐ Other:_____

[3] For NCDOT requests following the current NCDOT/USACE protocols, skip to Part E.
[4] If there are multiple parcels owned by different parties, please provide the following for each additional parcel on a continuation sheet.
[5] Must provide agent authorization form/letter signed by owner(s).

F. JURISDICTIONAL DETERMINATION (JD) TYPE (Select One)

☑ I am requesting that the Corps provide a preliminary JD for the property identified herein.

A Preliminary Jurisdictional Determination (PJD) provides an indication that there may be "waters of the United States" or "navigable waters of the United States"on a property. PJDs are sufficient as the basis for permit decisions. For the purposes of permitting, all waters and wetlands on the property will be treated as if they are jurisdictional "waters of the United States". PJDs cannot be appealed (33 C.F.R. 331.2); however, a PJD is "preliminary" in the sense that an approved JD can be requested at any time. PJDs do not expire.

☐ I am requesting that the Corps provide an approved JD for the property identified herein.

An Approved Jurisdictional Determination (AJD) is a determination that jurisdictional "waters of the United States" or "navigable waters of the United States" are either present or absent on a site. An approved JD identifies the limits of waters on a site determined to be jurisdictional under the Clean Water Act and/or Rivers and Harbors Act. Approved JDs are sufficient as the basis for permit decisions. AJDs are appealable (33 C.F.R. 331.2). The results of the AJD will be posted on the Corps website. A landowner, permit applicant, or other "affected party" (33 C.F.R. 331.2) who receives an AJD may rely upon the AJD for five years (subject to certain limited exceptions explained in Regulatory Guidance Letter 05-02).

☐ I am unclear as to which JD I would like to request and require additional information to inform my decision.

G. ALL REQUESTS

☑ Map of Property or Project Area. This Map must clearly depict the boundaries of the review area.

☑ Size of Property or Review Area ~31.9 acres.

☐ The property boundary (or review area boundary) is clearly physically marked on the site.

H. REQUESTS FROM CONSULTANTS

☑ Project Coordinates (Decimal Degrees): Latitude: 35.2036
Longitude: -77.3654

☑ A legible delineation map depicting the aquatic resources and the property/review area. Delineation maps must be no larger than 11x17 and should contain the following: (Corps signature of submitted survey plats will occur after the submitted delineation map has been reviewed and approved).[6]

- North Arrow
- Graphical Scale
- Boundary of Review Area
- Date
- Location of data points for each Wetland Determination Data Form or tributary assessment reach.

For Approved Jurisdictional Determinations:

- Jurisdictional wetland features should be labeled as Wetland Waters of the US, 404 wetlands, etc. Please include the acreage of these features.
- Jurisdictional non-wetland features (i.e. tidal/navigable waters, tributaries, impoundments) should be labeled as Non-Wetland Waters of the US, stream, tributary, open water, relatively permanent water, pond, etc. Please include the acreage or linear length of each of these features as appropriate.
- Isolated waters, waters that lack a significant nexus to navigable waters, or non-jurisdictional upland features should be identified as Non-Jurisdictional. Please include a justification in the label regarding why the feature is non-jurisdictional (i.e. "Isolated", "No Significant Nexus", or "Upland Feature"). Please include the acreage or linear length of these features as appropriate.

For Preliminary Jurisdictional Determinations:

- Wetland and non-wetland features should not be identified as Jurisdictional, 404, Waters of the United States, or anything that implies jurisdiction. These features can be identified as Potential Waters of the United States, Potential Non-wetland Waters of the United States, wetland, stream, open water, etc. Please include the acreage and linear length of these features as appropriate.

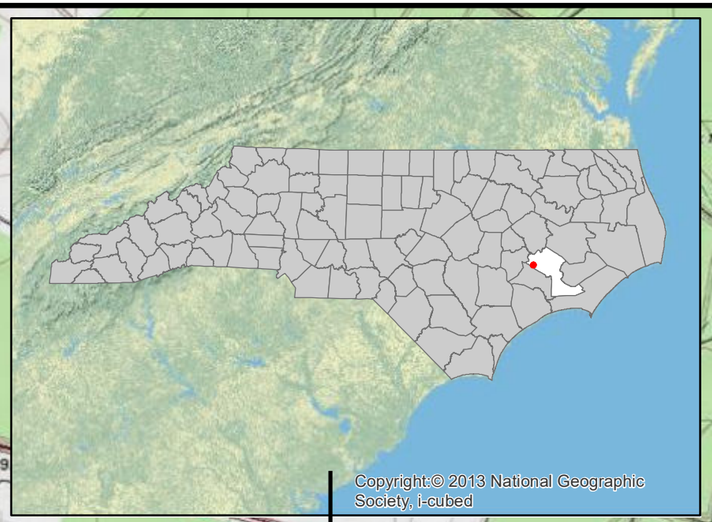
☑ Completed Wetland Determination Data Forms for appropriate region
(at least one wetland and one upland form needs to be completed for each wetland type)

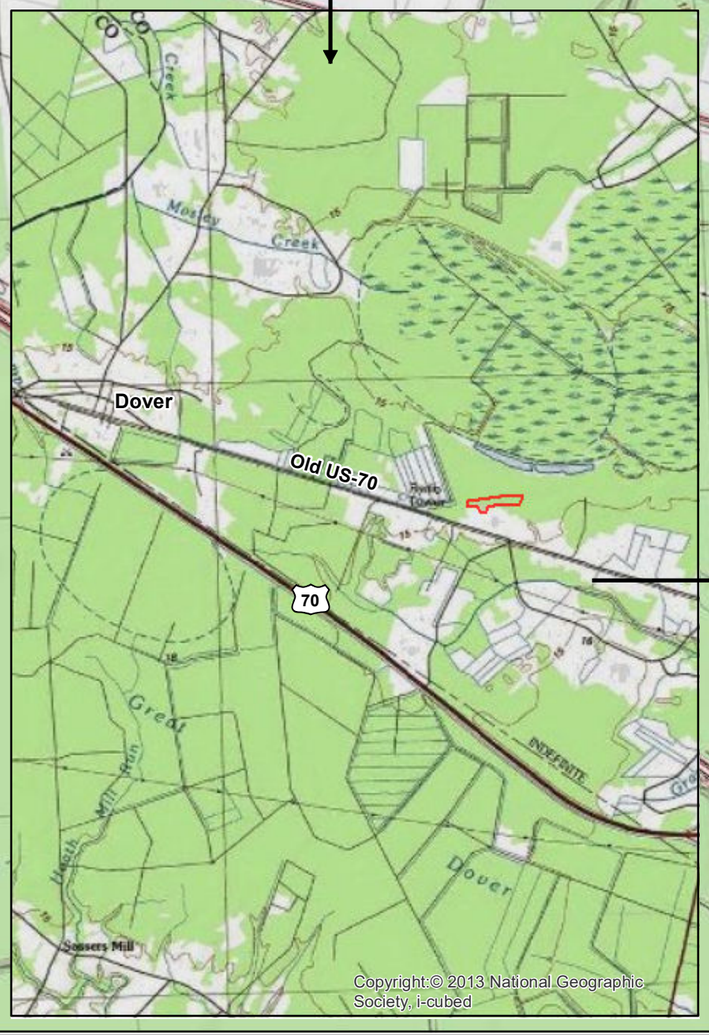
[6] Please refer to the guidance document titled "Survey Standards for Jurisdictional Determinations" to ensure that the supplied map meets the necessary mapping standards. http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Jurisdiction/

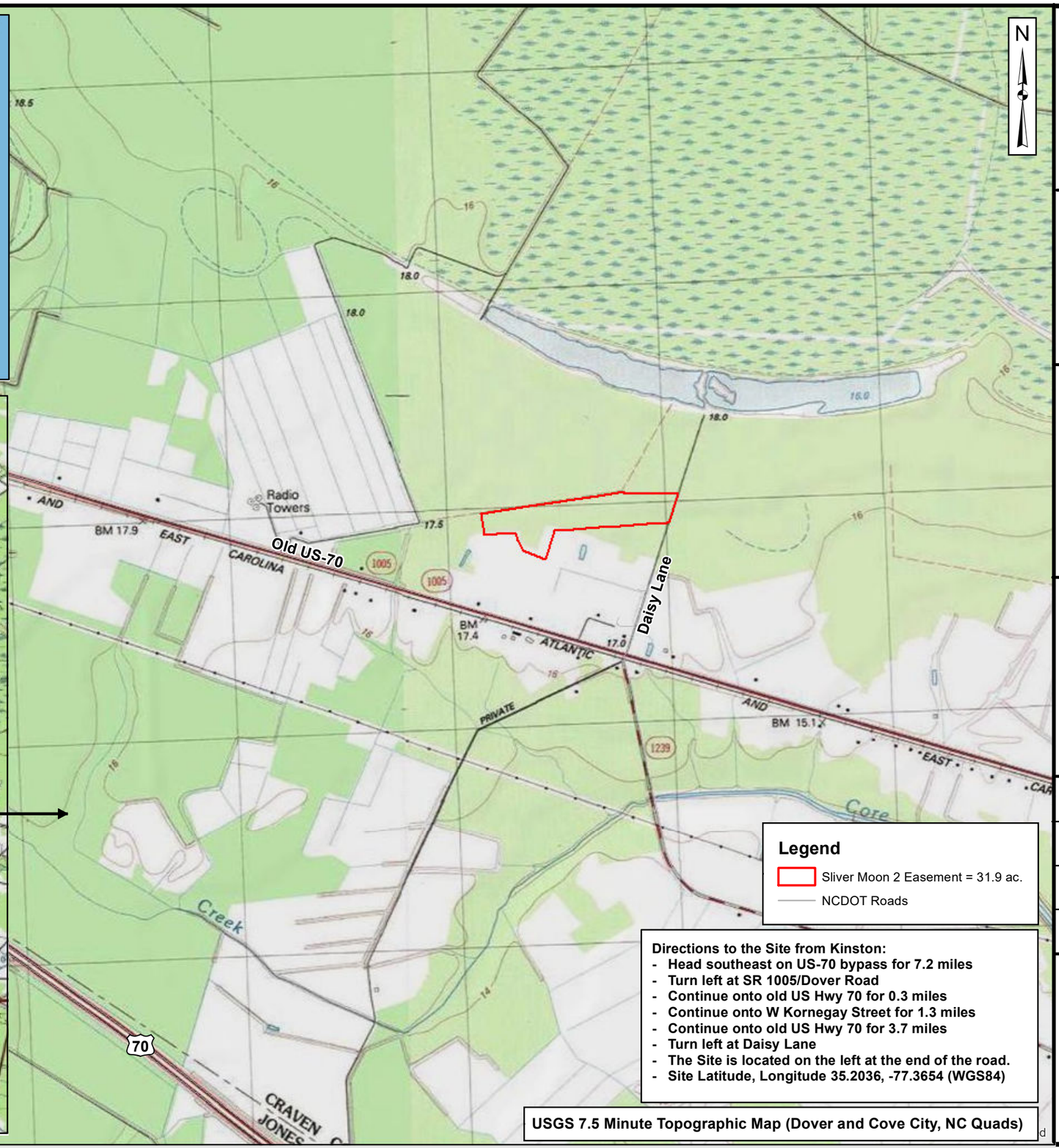
- [x] Completed appropriate Jurisdictional Determination form
  - **PJDs,** please complete a Preliminary Jurisdictional Determination Form[7] and include the Aquatic Resource Table
  - **AJDs**, please complete an Approved Jurisdictional Determination Form[8]
- [x] Vicinity Map
- [x] Aerial Photograph
- [x] USGS Topographic Map
- [x] Soil Survey Map
- [x] Other Maps, as appropriate (e.g. National Wetland Inventory Map, Proposed Site Plan, previous delineation maps, LIDAR maps, FEMA floodplain maps)
- [ ] Landscape Photos (if taken)
- [x] NCSAM and/or NCWAM Assessment Forms and Rating Sheets
- [ ] NC Division of Water Resources Stream Identification Forms
- [ ] Other Assessment Forms

[7] www.saw.usace.army.mil/Portals/59/docs/regulatory/regdocs/JD/RGL_08-02_App_A_Prelim_JD_Form_fillable.pdf
[8] Please see http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Jurisdiction/

Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.







Legend

- Sliver Moon 2 Easement = 31.9 ac.
- NCDOT Roads

Directions to the Site from Kinston:

- **Head southeast on US-70 bypass for 7.2 miles**
- **Turn left at SR 1005/Dover Road**
- **Continue onto old US Hwy 70 for 0.3 miles**
- **Continue onto W Kornegay Street for 1.3 miles**
- **Continue onto old US Hwy 70 for 3.7 miles**
- **Turn left at Daisy Lane**
- **The Site is located on the left at the end of the road.**
- **Site Latitude, Longitude 35.2036, -77.3654 (WGS84)**

USGS 7.5 Minute Topographic Map (Dover and Cove City, NC Quads)

Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

SITE LOCATION

Drawn by: AEB

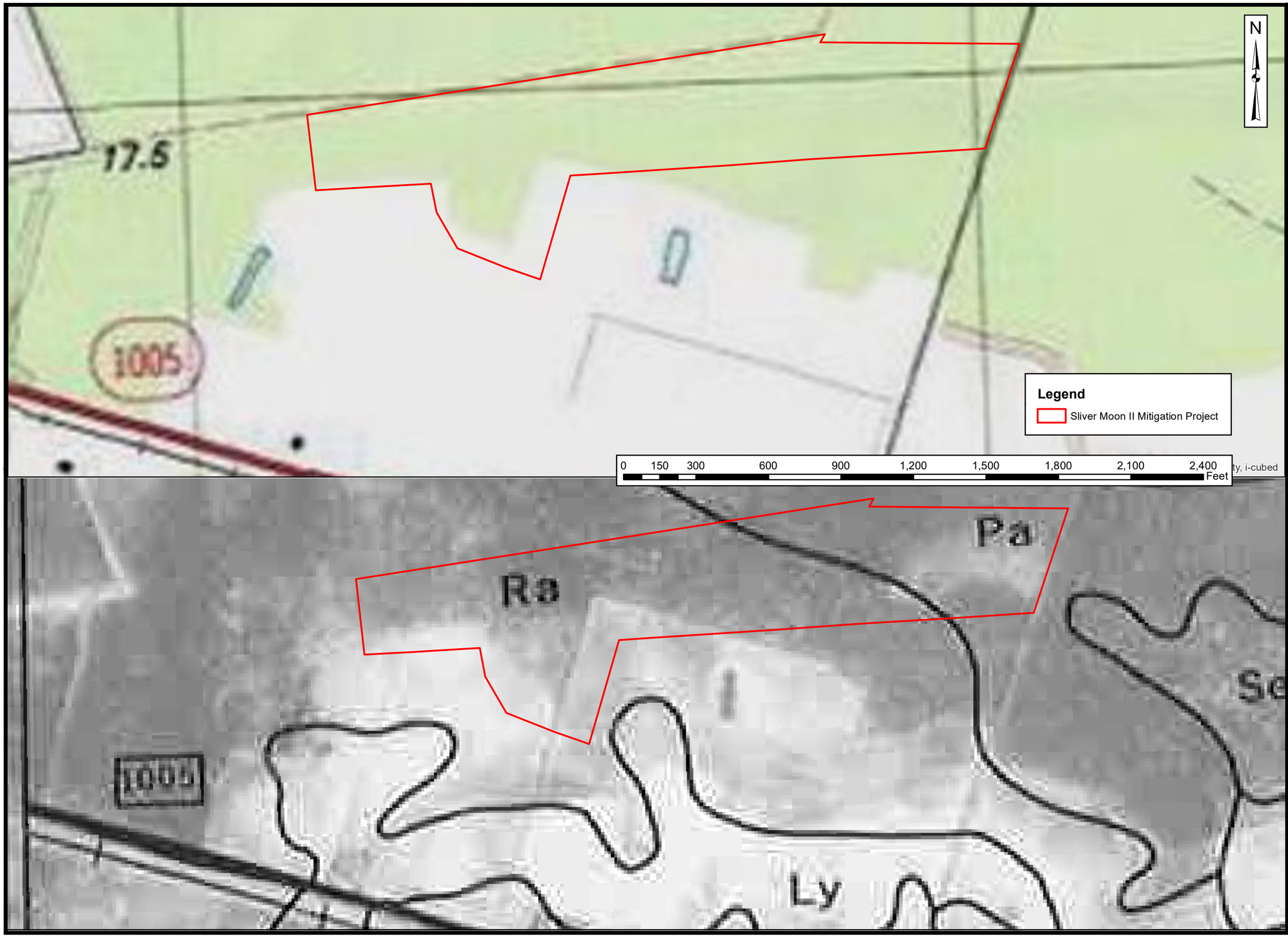
Date: MAY 2020

Scale: 1:20,000

Project No.: 18-015

FIGURE

1



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

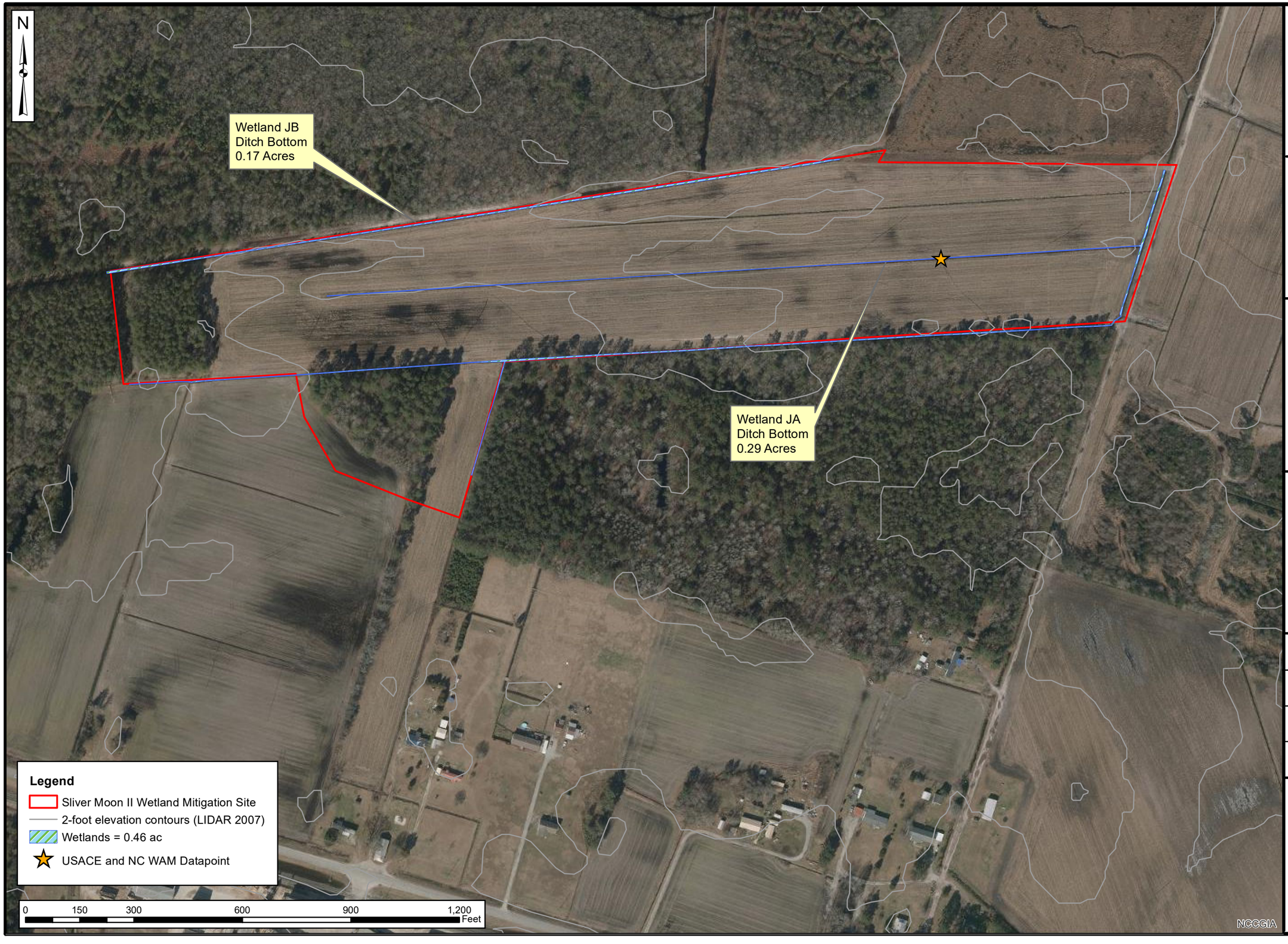
Title:

PROJECT MAPPING

Drawn by:	AEB
Date:	MAY 2020
Scale:	1:4,500
Project No.:	18-015

FIGURE

2



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II MITIGATION SITE

Craven County, NC

Title:

JURISDICTIONAL AREAS

Drawn by: AEB

Date: MAY 2020

Scale: 1:3000

Project No.: 18-015

FIGURE

3

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 5/5/2020

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Restoration Systems LLC, 1101 Haynes Street, Suite 211, Raleigh, NC 27604

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAW-2018-01761

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: NC County/parish/borough: Craven City: Cove City

Center coordinates of site (lat/long in degree decimal format):

Lat.: 35.2036 Long.: -77.3654

Universal Transverse Mercator:

Name of nearest waterbody: Core Creek

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

☐ Office (Desk) Determination. Date: 9/25/18

☐ Field Determination. Date(s):

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 resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (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)
JA	35.203571	-77.362926	0.29 acres	Non-wetland	404
JB	35.204153	-77.365923	0.17 acres	Non-wetland	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 should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: _____.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [ ] 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.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Cove City 7.5-minute.
- [x] Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of Craven County, NC (1989).
- [ ] 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)
- [x] Photographs: [x] Aerial (Name & Date): NAIP 2016.
  or [ ] Other (Name & Date): _____.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [ ] Other information (please specify): _____.

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.

_____	_____
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor 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.

Craven County Geographic Information System

Craven County does NOT warrant the information shown on this page and should be used ONLY for tax assessment purposes.

This report was created by Craven County GIS reporting services on 5/5/2020 10:45:37 AM

Parcel ID : 3-044 -011

Owner : RESTORATION SYSTEMS LLC

Mailing Address : 1101 HAYNES ST STE 211 RALEIGH NC 27604

Property Address :

Description : 31.85 ACRES SURVEY FOR RESTORATION SYSTEMS LLC

Lot Description : **Subdivision :**

Assessed Acreage :	0.000	**Calculated Acreage :**	31.850
Deed Reference :	3607-1440	**Recorded Date :**	4 1 2020
Recorded Survey :	I-163-C		
Estate Number :			
Land Value :	$67,540	**Tax Exempt :**	No
Improvement Value :	$0	**# of Improvements :**	0
Total Value :	$67,540		
City Name :		**Fire tax District :**	TOWNSHIP 3
Drainage District :	CORE CREEK	**Special District :**	
Land use :	AG-MKT AC W/PRIN ROW CROP USE		

Recent Sales Information

SALE DATE	Sellers Name	Buyers Name	Sale Type	Sale Price
4/1/2020	MITCHELL, HORACE LEE	RESTORATION SYSTEMS LLC	CONSOLIDATION\COMBINATION	$245,000
9/15/2004	MITCHELL, RAYMOND L HRS	MITCHELL, HORACE LEE	STRAIGHT TRANSFER	$0
5/6/2003	MITCHELL, RAYMOND L HRS	MITCHELL, RAYMOND L HRS	STRAIGHT TRANSFER	$0
1/1/1984	MITCHELL, RAYMOND L & EVA D	MITCHELL, RAYMOND L	STRAIGHT TRANSFER	$0

List of Improvements to Site

No improvements listed for this parcel

BK 3607 PG 1440 - 1443 (4) DOC# 10052644
This Document eRecorded: 04/01/2020 04:14:47 PM
Fee: $26.00 DocType: DEED Tax: $42.00
Craven County, North Carolina
Sherri B. Richard, Register of Deeds

NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: $42.00
PIN: 3-044-075

After recording return to: Joseph B. Bass, III of Manning, Fulton & Skinner, P.A. (3605 Glenwood Avenue, Ste. 500, Raleigh, NC 27612)

This instrument was prepared by: Joseph B. Bass, III of Manning, Fulton & Skinner, P.A.

Brief description for the Index: +/- 2.30 acres, No. 3 Township

THIS DEED is made as of the 1st day of April, 2020, by and between

GRANTOR	GRANTEE
Tamala K. Simpson Smith, unmarried	**Restoration Systems, LLC**, a North Carolina limited liability company
290 Boyd Lane Cove City, NC 28523	1101 Haynes Street, Suite 211 Raleigh, NC 27604

The property conveyed by this instrument does **not** include the primary residence of Grantor.

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

WITNESSETH, that Grantor, for a valuable consideration paid by Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto Grantee in fee simple, all of that certain lot, or parcel of land situated in the No. 3 Township of Craven County, North Carolina, and more particularly described as follows (the "**Property**"):

See Exhibit A attached hereto and incorporated herein by reference.

The Property hereinabove described was acquired by Grantor by instrument recorded in Book 1091, Page 336, Craven County Registry.

A map showing the Property is recorded in Map Book I, Pages 163C through 163D, Craven County Registry.

TO HAVE AND TO HOLD the aforesaid Property and all privileges and appurtenances thereto belonging to Grantee in fee simple.

And Grantor covenants with Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated.

Title to the property hereinabove described is subject to the following exceptions:

1. Ad valorem taxes for the year 2020 and subsequent years.
2. Enforceable and customary easements and rights of way of record for roads, highways, and utilities.

[remainder intentionally blank; signatures follow]

IN WITNESS WHEREOF, Grantor has caused this instrument to be duly executed the day and year first above written.

GRANTOR:

Tamala K. Simpson Smith

Tamala K. Simpson Smith

STATE OF NORTH CAROLINA

COUNTY OF Craven

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he or she voluntarily signed the foregoing document for the purpose stated therein and in the capacity indicated: **Tamala K. Simpson Smith**.

Date: 4/1, 2020

JOHN DUNCAN HAMBY NOTARY PUBLIC WAKE COUNTY, NC My Commission Expires 11-15-2021

Notary Public: John Duncan Hamby

Printed Name: John Duncan Hamby

My Commission Expires 11-15-21

Exhibit A

[Legal Description]

BEING ALL of the 2.30-acre tract over a portion of the land of Tamala K. Simpson Smith with Parcel ID 3-044-075, lying and being situated in No. 3 Township, Craven County, North Carolina and particularly described as follows (all distances are ground distances unless otherwise noted):

Beginning at an iron stake (Point of Beginning) labeled as Point No. 8 and being the Southeastern most corner of the 2.30 acre tract and being located South 76°05'47" West 2046.46 feet from a pinched-top iron (Point No. 1) with N.C. Grid Coordinates N=532,870.2663', E=2,489,493.3773' (NAD '83, 2011).

Thence from the Point of Beginning (Point No.8), North 68°23'03" West 211.80' to an iron stake; thence North 30°10'25" West 172.71' to an iron stake; thence North 10°57'55" West 121.25' to an iron stake; thence North 86°40'31" East 411.47' to an iron stake; thence South 15°41'29" West 384.55' to an iron stake, which is the Point of Beginning (Point No. 8), having an area of approximately 2.30 acres.

The foregoing Property is a portion of, which together with that certain property conveyed in deed to Grantee from Horace Lee Mitchell recorded on the date of this deed comprises all of, that certain parcel depicted as "RECOMBINED TRACT" containing approximately 31.85 acres. as shown on that plat titled "Recombination of Land for Restoration Systems, LLC over a portion of the Lands of the Horace Lee Mitchell Tract and of the Tamala K. Simpson Smith Tract" recorded in Map Book I, Pages 163C through 163D, Craven County Registry.

TOGETHER WITH AND INCLUDING that certain access easement depicted as "ACCESS EASEMENT 1, NEW 15' INGRESS, EGRESS & REGRESS EASEMENT" as shown on the above referenced plat and described in that certain Access Easement Agreement from Grantor in favor of Grantee recorded immediately after this deed in the Craven County Registry.

LEGEND:

ISS - IRON STAKE SET
ECM - EXISTING CONCRETE MARKER
EIP - EXISTING IRON PIPE
ERRR - EXISTING RAILROAD RAIL
PTI - PINCHED TOP IRON
EA - EXISTING AXLE
EDS - EXISTING DRIVE SHAFT
EMN - EXISTING MAG NAIL
EDS - EXISTING DRIVE SHAFT
RPS - RANGE POLE SET
EMN - EXISTING MAG NAIL
MNS - MAG NAIL SET
EIS - EXISTING IRON STAKE
EPP - EXISTING PUMP PIPE
PPS - PUMP PIPE SET
NMC - NON-MONUMENTED CORNER
R/W - RIGHT OF WAY
EOP - EDGE OF PAVEMENT
EF - ESTATE FILE
CL - CENTERLINE
UP - UTILITY POLE
B.M. - BOOK OF MAP
PC - PLAT CABINET
D.B. - DEED BOOK
PG. - PAGE
o - NON-MONUMENTED CORNER UNLESS OTHERWISE NOTED
● - No. 5 REBAR WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"

——————— PROPERTY LINE
– – – – – TIE DOWN LINE
——-——-—— ACCESS EASEMENT LINE
— — — ADJOINER OR R/W LINE

CRAVEN COUNTY PLANNING CERTIFICATE:

This plat is exempt from the Craven County subdivision review process and is a recombination of existing parcels.

3-31-2020 _____ Planning Administrator
Date

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

Filed for registration at 12:38 P M. MARCH 31 , 2020 in the Register of Deeds Office. Recorded in P.B. I , PG. 163-C.

Sherri B. Richard Ky _____ By Asst.
Register of Deeds

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

I, Robin Becker , Review Officer of Craven County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

3-31-20 Robin Becker
Date Review Officer

SURVEYORS CERTIFICATION(S)

Surveyor's disclaimer: No attempt was made to locate any cemeteries, wetlands, hazardous material sites, underground utilities or any other features above, or below ground other than those shown. However, no visible evidence of cemeteries or utilities, aboveground or otherwise, was observed by the undersigned (other than those shown).

I certify that the survey is of another category such as the recombination of existing parcels, a court-ordered survey, or other exception to the definition of subdivision (recombination of land).

I, JOHN A. RUDOLPH, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description recorded in Book SEE , Page REFS , etc.) (other); that the boundaries not surveyed are clearly indicated as drawn from information found in Book____, page____; that the ratio of precision or positional accuracy as calculated is 1/10,000+; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, license number and seal this 25th day of March, A.D., 2020.

SEAL OR STAMP

NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

_____ L-4194
Professional Land Surveyor License Number

CERTIFICATION OF EXEMPTION:

I (We) hereby certify that I am (We are) the Owner(s) of the properties shown and described hereon, which was conveyed to me (us) by deeds recorded in Deed Book 2229, Page 1011 and Deed Book 1091, Page 905, and in Deed Book 3004, Page 810, and that we hereby adopt the plan of recombination of the properties shown on this plat and that the recombination of land shown is an exception to the Subdivision Ordinance of Craven County, North Carolina.

3-31-20 Horace Lee Mitchell
Date Horace Lee Mitchell

3-31-20 Tamala K. Simpson Smith
Date Tamala K. Simpson Smith

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PLAT IS BASED ON NORTH CAROLINA STATE PLANE COORDINATES ESTABLISHED BY USING THE ONLINE POSITIONING USER SERVICE (OPUS) PROVIDED BY THE NATIONAL GEODETIC SURVEY.

PTI (1) NC GRID COORDINATES NAD 83 (2011)
N=532, 870.2663'
E=2,489,493.3773'

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PLAT IS 0.99987495 (GROUND TO GRID). THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM PTI (1) TO EIP (2) IS S 86°18'35" W 329.55 FEET.

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.

GEOID-2018 CONUS

GNSS RECEIVER - TOPCON HIPER VR WITH MINIMUM TIME OF 2+ HOURS COMPLETED ON 02/08/17

THE FOLLOWING BASE STATIONS WERE USED:

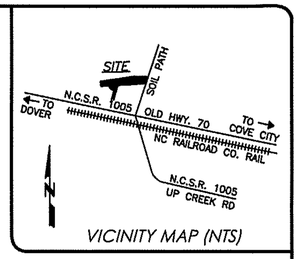
PID	DESIGNATION	LATITUDE (m)	LONGITUDE (m)
DK6239	NCJV JACKSONVILLE CORS ARP	N344446.815	W0772711.718
DL7337	NCEC GREENVILLE CORS ARP	N353618.309	W0772155.479
DK7551	NCWA WASHINGTON 2007 CORS ARP	N353334.784	W0770331.442

FEMA FLOOD STATEMENT:

THE AREA REPRESENTED BY THIS PLAT IS NOT LOCATED IN A FLOOD HAZARD BOUNDARY ACCORDING TO FEMA MAP NUMBER(S) 3720452001 ZONE(S): X, DATED: JULY 2, 2004.

NEW TRACT ACREAGE DATA:

TOTAL NEW TRACT TO BE CONVEYED TO RESTORATION SYSTEMS IS 31.85 ACRES± EXCLUDING ACCESS EASEMENT 1, EXCLUDING THE EXISTING 18' EASEMENT, INCLUDING A PORTION OF THE EXISTING ACCESS EASEMENT 3, AND INCLUDING THE 2.3 ACRE RECOMBINATION TRACT FROM SMITH BY COORDINATE COMPUTATION



VICINITY MAP (NTS)

DEED REFERENCE(S):

BEING A PORTION OF THE PROPERTIES RECORDED IN D.B. 2229 PG. 1011 AND D.B. 1091, PG. 336 OF THE CRAVEN COUNTY REGISTER OF DEEDS.

MAP REFERENCE(S):

P.C. I, SL. 3-C
P.B. 10, PG. 32
P.C. H, SL. 159-H
P.C. H, SL. 71-D

CORNER DESCRIPTIONS

CORNER #	DESCRIPTION
(1)	1.5" O.D. PINCHED-TOP IRON 0.3' BELOW GRADE
(2)	1.0" O.D. IRON PIPE 0.9' ABOVE GRADE
(3)	1.0" O.D. PINCHED-TOP IRON BENT FLUSH WITH GRADE
(4)	1.0" O.D. IRON PIPE 1.0' BELOW WATER
(5)	1.0" O.D. IRON PIPE 2.5' ABOVE GRADE
(6)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
(7) THRU (12)	No. 5 REBAR FLUSH WITH GRADE
(13)	RAILROAD RAIL 1.3' ABOVE GRADE
(14)	0.5" O.D. IRON STAKE 0.9' ABOVE WATER
(15)	0.5" O.D. IRON PIPE 0.3' ABOVE GRADE
(16)	No. 5 REBAR 0.8' BELOW GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT" INSCRIBED AS POINT No. "2" AS RECORDED IN P.C. I, SL. 3-C
(17)	No. 5 REBAR 0.8' BELOW GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT" INSCRIBED AS POINT No. "1" AS RECORDED IN P.C. I, SL. 3-C
(18)	1.0" O.D. PINCHED-TOP IRON 0.3' BELOW GRADE
(19)	1.0" O.D. PINCHED-TOP IRON 0.4' BELOW GRADE
(20)	2.0" O.D. IRON PIPE 0.3' BELOW WATER
(21)	1.0" O.D. IRON PIPE BENT 0.2' BELOW GRADE
(22)	0.5" O.D. IRON PIPE BENT 0.3' BELOW GRADE
(23)	No. 5 REBAR 0.6' BELOW WATER

Doc No: 10052532
Recorded: 03/31/2020,12:38:10 PM
Fee Amt: $42.00 Page 1 of 2
CRAVEN County,North Carolina
Sherri B. Richard Register of Deeds
Bk I Pg 163C

GENERAL NOTES:

NOTE: NO ABSTRACT OF TITLE, NOR TITLE COMMITMENT, OR RESULTS OF TITLE SEARCH WERE FURNISHED TO THE SURVEYOR. ALL DOCUMENTS OF RECORD REVIEWED ARE NOTED HEREON (SEE REFERENCES). THERE MAY EXIST OTHER DOCUMENTS OF RECORD THAT MAY AFFECT THIS SURVEYED PARCEL.

ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.

SHEET 1 OF 2

RECOMBINATION OF LAND FOR RESTORATION SYSTEMS, LLC OVER A PORTION OF THE LANDS OF THE HORACE LEE MITCHELL TRACT (CURRENT OWNER PER D.B. 2229, PG. 1011) AND OF THE TAMALA K. SIMPSON SMITH TRACT (CURRENT OWNER PER D.B. 1091, PG. 336)

No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)

200 100 0 200 400 600

GRAPHIC SCALE 1" = 200'

DRAWN BY: FGR
DATE: 03/25/20
DWG. NO.: RSS431MR20
SURVEYED BY: J.A.R.

k2 design group
774 S. Beston Road
La Grange, NC 28551
919.751.0075
www.k2designgroup.com

FIRM LICENSE No.: C-2111 K2 DESIGN GROUP, P.A. CORPORATE SEAL 2000 NORTH CAROLINA

RESTORATION SYSTEMS, LLC
1101 HAYNES STREET
SUITE 211
RALEIGH, NC 27604

LEGEND:

ISS - IRON STAKE SET
ECM - EXISTING CONCRETE MARKER
EIP - EXISTING IRON PIPE
ERRR - EXISTING RAILROAD RAIL
PTI - PINCHED TOP IRON
EA - EXISTING AXLE
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EIS - EXISTING IRON STAKE
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PPS - PUMP PIPE SET
NMC - NON-MONUMENTED CORNER
R/W - RIGHT OF WAY
EOP - EDGE OF PAVEMENT
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PC - PLAT CABINET
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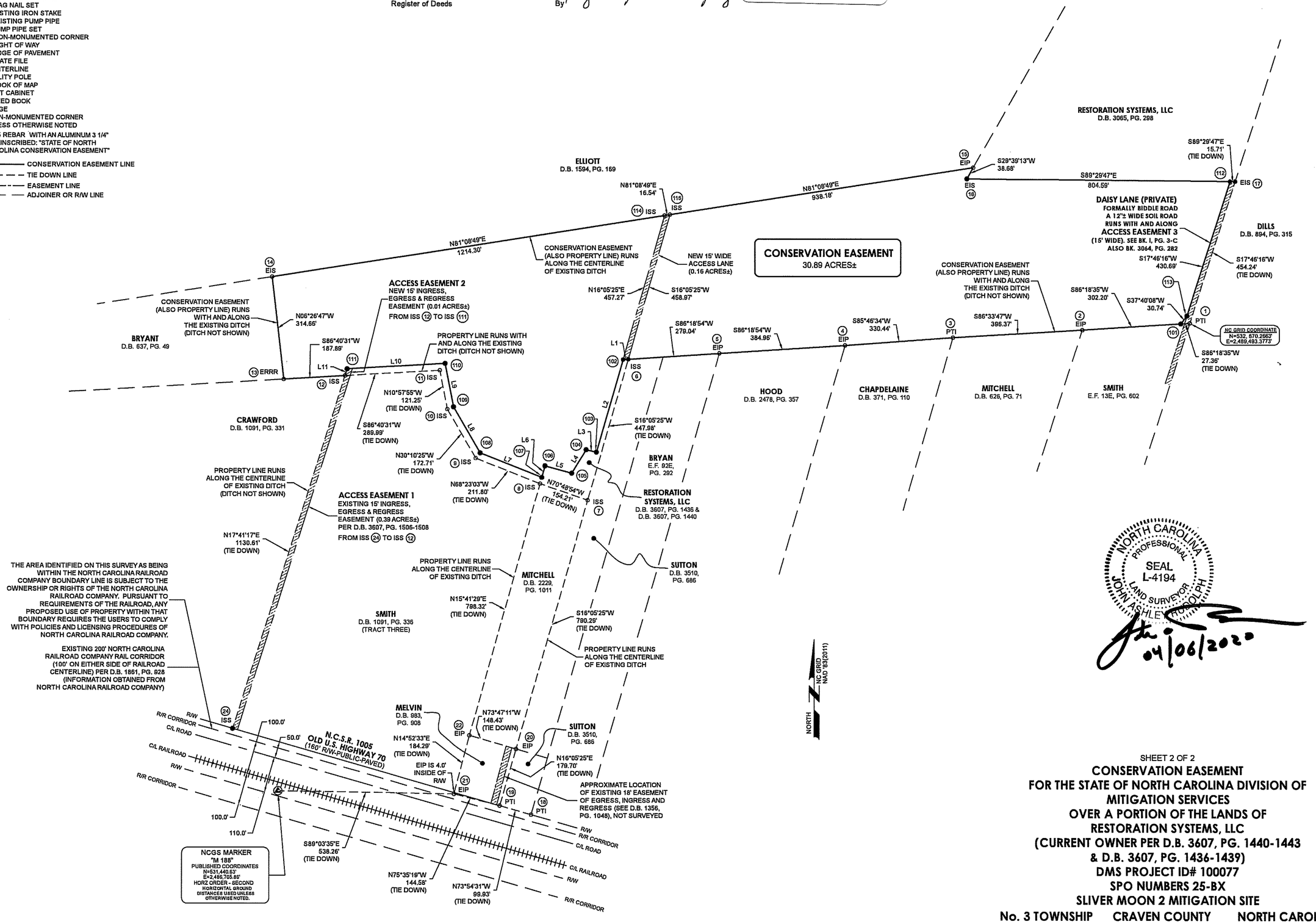
PG. - PAGE
o - NON-MONUMENTED CORNER UNLESS OTHERWISE NOTED
No. 5 REBAR WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
● CONSERVATION EASEMENT LINE
– – – – – TIE DOWN LINE
—·—·— EASEMENT LINE
— — — ADJOINER OR R/W LINE

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

Filed for registration at 3:23 P.M. April 8, 2020 in the Register of Deeds
Office. Recorded in P.B. I, PG. 164B.

Sherri B. Richard — Misty Van Apeldoorn Deputy
Register of Deeds — By

Doc No: 10052928
Bk I Pg 164B



NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY TOOLEY, PLS
04/06/2020

SHEET 2 OF 2

CONSERVATION EASEMENT
FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES
OVER A PORTION OF THE LANDS OF
RESTORATION SYSTEMS, LLC
(CURRENT OWNER PER D.B. 3607, PG. 1440-1443 & D.B. 3607, PG. 1436-1439)
DMS PROJECT ID# 100077
SPO NUMBERS 25-BX
SLIVER MOON 2 MITIGATION SITE
No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)

200 100 0 200 400 600
GRAPHIC SCALE 1" = 200'

LEGEND:

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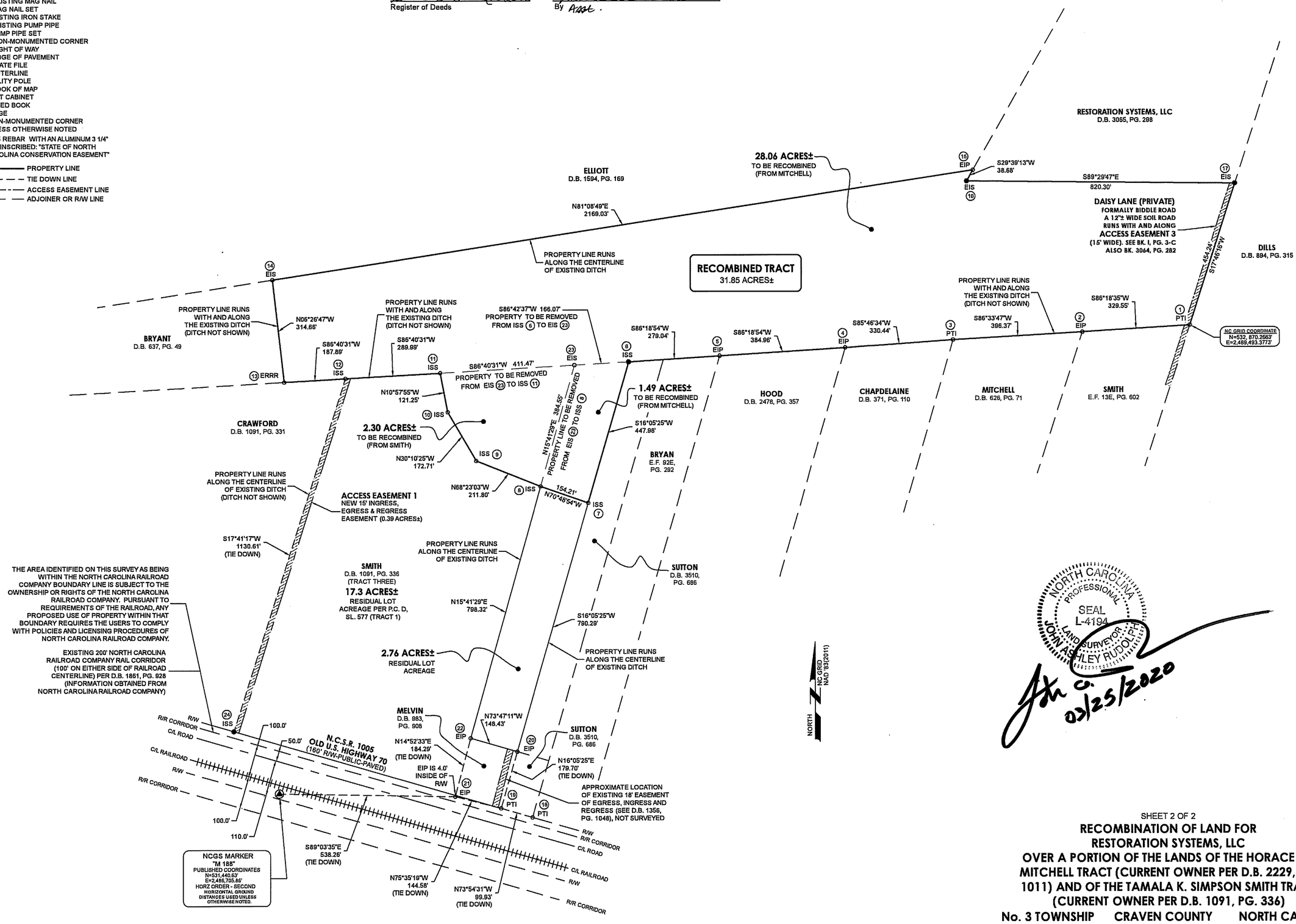
——— PROPERTY LINE
– – – – – TIE DOWN LINE
—·—·—·— ACCESS EASEMENT LINE
— — — ADJOINER OR R/W LINE

Doc No: 10052532
Bk I Pg 163D

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

Filed for registration at 12:38 PM M. MARCH 31, 2020 in the Register of Deeds
Office. Recorded in P.B. I, PG. 163-D.

Sherri B. Richard — By Michelle L. Dodd Asst.
Register of Deeds



NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

03/25/2020

SHEET 2 OF 2

RECOMBINATION OF LAND FOR RESTORATION SYSTEMS, LLC OVER A PORTION OF THE LANDS OF THE HORACE LEE MITCHELL TRACT (CURRENT OWNER PER D.B. 2229, PG. 1011) AND OF THE TAMALA K. SIMPSON SMITH TRACT (CURRENT OWNER PER D.B. 1091, PG. 336)

No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)

200 100 0 200 400 600

GRAPHIC SCALE 1" = 200'

Craven County GIS

Public GIS website 4.5 Please send questions to lvalenti@cravencountync.gov OR call (252) 636-6650

Have you tried the mMaps website on your smartphone or tablet ?

Parcel information current as of May 1, 2020

PROPERTY INFO | SALES INFO | TAX INFO | BUILDINGS | EH PERMITS | MISC INFO

TWP-MAP -LOT
PARCEL ID: 3-044 -011 PARCEL REFERENCE #: 9617

Property Record Card | Buffer

Owner:	RESTORATION SYSTEMS LLC		
Mailing Address:	1101 HAYNES ST STE 211 RALEIGH, NC 27604		
Address of Property:			
Subdivision:			
Property Description:	31.85 ACRES SURVEY FOR RESTORATION SYSTEMS LLC		
Assessed Acreage:	0	Calculated Acreage:	31.85
Deed Book Page:	3607 1440	Deed Recording Date (m d y):	4 1 2020
Land Value:	$67,540	Recorded Survey:	I-163-C
Total Improvement(s) Value:	$0	Life Estate Deed Book & Page:	
Total Value:	$67,540	Estate File (Will) Year-E-Folder:	
Number of Improvements:	0	Tax Exempt (YES/NO):	No
City Name:		Fire Tax District:	TOWNSHIP 3
Drainage District:	CORE CREEK	Lot Dimension:	
Special District:		Land Use:	AG-MKT AC W/PRIN ROW CROP USE

Notice: As per North Carolina Session Law 2018-113 Senate Bill 711 This parcel is within 1/2 mile of the following Voluntary Agricultural District(VAD)

Press here to view NC Session Law 2018-113 Senate Bill 711

Parcel Id	Parcel Owner
VAD 3-044 -047	HEATH FAMILY FARMS LLC

Craven County does NOT warrant the information shown on this page and should be used ONLY for tax assessment purposes. 5/5/2020

Craven County does NOT warrant the information shown on this page and should be used ONLY for tax assessment purposes.

JA-01 WET

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silver Moon II City/County: Craven Sampling Date: 11/9/18

Applicant/Owner: RS State: NC Sampling Point: JA-01 WET

Investigator(s): Jernigan / Lewis Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Flat - None Slope (%): 0

Subregion (LRR or MLRA): LRR-T Lat: 35.203571 Long: -77.362926 Datum: NAD83

Soil Map Unit Name: Pantego Fine Sandy loam NWI classification:

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

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

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

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

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

Remarks: Area is in a ditch bottom. Ditch is in a plowed agriculture field within a hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks: Bottom of a ditch in an agriculture field

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: JA 01 WET

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

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

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

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

Herb Stratum (Plot size:)			
1. Cyperus sp	2%	N	FAC-OBL
2. Eragrostis elliottii	5%	Y	FACW
3. Ludwigia sp	5%	Y	FAC-OBL
4. Ludwigia sp	5%	Y	FAC-OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	17 = Total Cover		

50% of total cover: 8.5 20% of total cover: 3.4

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

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ✓ No _____

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

SOIL

Sampling Point: JA01 WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3-1	100					SAND	
3-9	10YR 4-1	70	10YR 3-1	30	Lo Chan	Matrix	SAND	
9-20	10YR 3-1	100					SAND	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silver Moon II City/County: Craven Sampling Date: 11/9/18

Applicant/Owner: RS State: NC Sampling Point: JA-B1 UP

Investigator(s): Jernigan \ Lewis Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRR-T Lat: 35.203571 Long: -77.362926 Datum: NAD83

Soil Map Unit Name: Portsmo fine sandy loam NWI classification:

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

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

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

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

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

Remarks:

Plowed ag. Field.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

Ditched and drained Ag. Field.

VEGETATION (Four Strata) – Use scientific names of plants

Sampling Point: JA-01 UP

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No _____

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

Recently Plowed Ag Field.

SOIL

Sampling Point: JA-01 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2-1	100					Sandy Loam	Muck
9-13	10YR 3-1						Sandy Loam	
13+	10YR 4-2	90	10YR 4-1	10	C	M	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

NC WAM FIELD ASSESSMENT RESULTS
Accompanies User Manual Version 5.0

USACE AID #		NCDWR#	
Project Name	Sliver Moon II	Date of Evaluation	11-09-2018
Applicant/Owner Name	Restoration Systems	Wetland Site Name	Wetland JA
Wetland Type	Hardwood Flat	Assessor Name/Organization	Jernigan/Axiom
Level III Ecoregion	Middle Atlantic Coastal Plain	Nearest Named Water Body	Core Creek
River Basin	Neuse	USGS 8-Digit Catalogue Unit	03020202
County	Craven	NCDWR Region	Washington
☐ Yes ☒ No	Precipitation within 48 hrs?	Latitude/Longitude (deci-degrees)	35.203571, -77.362926

Evidence of stressors affecting the assessment area (may not be within the assessment area)
Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed? ☒ Yes ☐ No

Regulatory Considerations - Were regulatory considerations evaluated? ☐Yes ☒No If Yes, check all that apply to the assessment area.

☐ Anadromous fish
☐ Federally protected species or State endangered or threatened species
☐ NCDWR riparian buffer rule in effect
☐ Abuts a Primary Nursery Area (PNA)
☐ Publicly owned property
☐ N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
☐ Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
☐ Designated NCNHP reference community
☐ Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

What type of natural stream is associated with the wetland, if any? (check all that apply)

☐ Blackwater
☐ Brownwater
☐ Tidal (if tidal, check one of the following boxes) ☐ Lunar ☐ Wind ☐ Both

Is the assessment area on a coastal island? ☐ Yes ☒ No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver? ☐ Yes ☒ No

Does the assessment area experience overbank flooding during normal rainfall conditions? ☐ Yes ☒ No

1. Ground Surface Condition/Vegetation Condition – assessment area condition metric

Check a box in each column. Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence an effect.

GS	VS	
☐A	☐A	Not severely altered
☒B	☒B	Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, less diversity [if appropriate], hydrologic alteration)

2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric

Check a box in each column. Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

Surf	Sub	
☐A	☐A	Water storage capacity and duration are not altered.
☐B	☒B	Water storage capacity or duration are altered, but not substantially (typically, not sufficient to change vegetation).
☒C	☐C	Water storage capacity or duration are substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines).

3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)

Check a box in each column. Select the appropriate storage for the assessment area (AA) and the wetland type (WT).

	AA	WT	
3a.	☐A	☐A	Majority of wetland with depressions able to pond water > 1 deep
	☐B	☐B	Majority of wetland with depressions able to pond water 6 inches to 1 foot deep
	☐C	☐C	Majority of wetland with depressions able to pond water 3 to 6 inches deep
	☒D	☒D	Depressions able to pond water < 3 inches deep

3b. ☐A Evidence that maximum depth of inundation is greater than 2 feet
☐B Evidence that maximum depth of inundation is between 1 and 2 feet
☐C Evidence that maximum depth of inundation is less than 1 foot

4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)

Check a box from each of the three soil property groups below. Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent National Technical Committee for Hydric Soils guidance for regional indicators.

4a.
- ☐A Sandy soil
- ☐B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)
- ☒C Loamy or clayey soils not exhibiting redoximorphic features
- ☐D Loamy or clayey gleyed soil
- ☐E Histosol or histic epipedon

4b.
- ☒A Soil ribbon < 1 inch
- ☐B Soil ribbon ≥ 1 inch

4c.
- ☒A No peat or muck presence
- ☐B A peat or muck presence

5. Discharge into Wetland – opportunity metric

Check a box in each column. Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

Surf	Sub	
☒A	☒A	Little or no evidence of pollutants or discharges entering the assessment area
☐B	☐B	Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area
☐C	☐C	Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor)

6. Land Use – opportunity metric (skip for non-riparian wetlands)

Check all that apply (at least one box in each column). Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

WS	5M	2M	
☐A	☐A	☐A	≥ 10% impervious surfaces
☐B	☐B	☐B	Confined animal operations (or other local, concentrated source of pollutants
☐C	☐C	☐C	≥ 20% coverage of pasture
☐D	☐D	☐D	≥ 20% coverage of agricultural land (regularly plowed land)
☐E	☐E	☐E	≥ 20% coverage of maintained grass/herb
☐F	☐F	☐F	≥ 20% coverage of clear-cut land
☐G	☐G	☐G	Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed or hydrologic alterations that prevent drainage and/or overbank flow from affecting the assessment area.

7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)

7a. Is assessment area within 50 feet of a tributary or other open water?
☐Yes ☒No If Yes, continue to 7b. If No, skip to Metric 8.
Wetland buffer need only be present on one side of the water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.

7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)
- ☐A ≥ 50 feet
- ☐B From 30 to < 50 feet
- ☐C From 15 to < 30 feet
- ☐D From 5 to < 15 feet
- ☐E < 5 feet or buffer bypassed by ditches

7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.
☐≤ 15-feet wide ☐> 15-feet wide ☐ Other open water (no tributary present)

7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?
☐Yes ☐No

7e. Is stream or other open water sheltered or exposed?
☐Sheltered – adjacent open water with width < 2500 feet and no regular boat traffic.
☐Exposed – adjacent open water with width ≥ 2500 feet or regular boat traffic.

8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)

Check a box in each column for riverine wetlands only. Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

WT	WC	
☐A	☐A	≥ 100 feet
☐B	☐B	From 80 to < 100 feet
☐C	☐C	From 50 to < 80 feet
☐D	☐D	From 40 to < 50 feet
☐E	☐E	From 30 to < 40 feet
☐F	☐F	From 15 to < 30 feet
☐G	☐G	From 5 to < 15 feet
☐H	☐H	< 5 feet

9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)

Answer for assessment area dominant landform.

☐A Evidence of short-duration inundation (< 7 consecutive days)
☐B Evidence of saturation, without evidence of inundation
☐C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)

Consider recent deposition only (no plant growth since deposition).

☐A Sediment deposition is not excessive, but at approximately natural levels.
☐B Sediment deposition is excessive, but not overwhelming the wetland.
☐C Sediment deposition is excessive and is overwhelming the wetland.

11. Wetland Size – wetland type/wetland complex condition metric

Check a box in each column. Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)	
☐A	☐A	☐A	≥ 500 acres
☐B	☐B	☐B	From 100 to < 500 acres
☐C	☐C	☐C	From 50 to < 100 acres
☐D	☐D	☐D	From 25 to < 50 acres
☐E	☐E	☐E	From 10 to < 25 acres
☐F	☐F	☐F	From 5 to < 10 acres
☐G	☐G	☐G	From 1 to < 5 acres
☐H	☐H	☐H	From 0.5 to < 1 acre
☐I	☒I	☐I	From 0.1 to < 0.5 acre
☒J	☐J	☐J	From 0.01 to < 0.1 acre
☐K	☐K	☒K	< 0.01 acre or assessment area is clear-cut

12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)

☐A Pocosin is the full extent (≥ 90%) of its natural landscape size.
☐B Pocosin type is < 90% of the full extent of its natural landscape size.

13. Connectivity to Other Natural Areas – landscape condition metric

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
☐A	☐A	≥ 500 acres
☐B	☐B	From 100 to < 500 acres
☐C	☐C	From 50 to < 100 acres
☐D	☐D	From 10 to < 50 acres
☐E	☐E	< 10 acres
☒F	☒F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only**.

☐Yes ☐No Wetland type has a surface hydrology connection to open waters/stream or tidal wetlands.

14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

☐A 0
☐B 1 to 4
☒C 5 to 8

15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)

☐A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
☐B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
☒C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)

☐A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
☐B Vegetation diversity is low or has > 10% to 50% cover of exotics.
☐C Vegetation is dominated by exotic species (> 50 % cover of exotics).

17. Vegetative Structure – assessment area/wetland type condition metric

17a. Is vegetation present?
☒Yes ☐No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.
☐A ≥ 25% coverage of vegetation
☐B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum**. Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	☐A	☐A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	☐B	☐B	Canopy present, but opened more than natural gaps
	☒C	☒C	Canopy sparse or absent
Mid-Story	☐A	☐A	Dense mid-story/sapling layer
	☐B	☐B	Moderate density mid-story/sapling layer
	☒C	☒C	Mid-story/sapling layer sparse or absent
Shrub	☐A	☐A	Dense shrub layer
	☐B	☐B	Moderate density shrub layer
	☒C	☒C	Shrub layer sparse or absent
Herb	☐A	☐A	Dense herb layer
	☐B	☐B	Moderate density herb layer
	☒C	☒C	Herb layer sparse or absent

18. Snags – wetland type condition metric (skip for all marshes)

☐A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).
☒B Not A

19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)

☐A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.
☐B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.
☒C Majority of canopy trees are < 6 inches DBH or no trees.

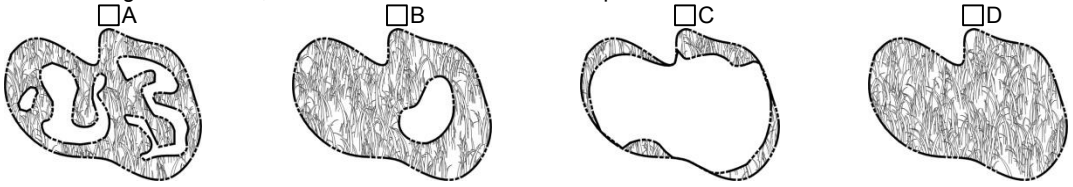
20. Large Woody Debris – wetland type condition metric (skip for all marshes)

Include both natural debris and man-placed natural debris.
☐A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).
☒B Not A

21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.

☐A ☐B ☐C ☐D



22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.
☐A Overbank and overland flow are not severely altered in the assessment area.
☐B Overbank flow is severely altered in the assessment area.
☒C Overland flow is severely altered in the assessment area.
☐D Both overbank and overland flow are severely altered in the assessment area.

Notes
Wetland in a man-made ditch in hydric soil.

NC WAM Wetland Rating Sheet
Accompanies User Manual Version 5.0

Wetland Site Name	Wetland JA	Date of Assessment	11-09-2018
Wetland Type	Hardwood Flat	Assessor Name/Organization	Jernigan/Axiom

Notes on Field Assessment Form (Y/N)	YES
Presence of regulatory considerations (Y/N)	NO
Wetland is intensively managed (Y/N)	YES
Assessment area is located within 50 feet of a natural tributary or other open water (Y/N)	NO
Assessment area is substantially altered by beaver (Y/N)	NO
Assessment area experiences overbank flooding during normal rainfall conditions (Y/N)	NO
Assessment area is on a coastal island (Y/N)	NO

Sub-function Rating Summary

Function	Sub-function	Metrics	Rating
Hydrology	Surface Storage and Retention	Condition	**LOW**
	Sub-surface Storage and Retention	Condition	**MEDIUM**
Water Quality	Pathogen Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Particulate Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Soluble Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Physical Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
	Pollution Change	Condition	**LOW**
		Condition/Opportunity	**LOW**
		Opportunity Presence (Y/N)	**NO**
Habitat	Physical Structure	Condition	**LOW**
	Landscape Patch Structure	Condition	**LOW**
	Vegetation Composition	Condition	**LOW**

Function Rating Summary

Function	Metrics	Rating
Hydrology	Condition	**LOW**
Water Quality	Condition	**LOW**
	Condition/Opportunity	**LOW**
	Opportunity Presence (Y/N)	**NO**
Habitat	Condition	**LOW**

Overall Wetland Rating **LOW**

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2018-01761** County: **Craven County** U.S.G.S. Quad: **Cove City**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner: **Mr. Horace Lee Mitchell**

Address: **12215 Old US Highway 70**
Cove City, NC 28523

Telephone Number: **(252) 523-0456**

Size (acres)	**31.7**	Nearest Town	**Cove City**
Nearest Waterway	**Core Creek**	River Basin	**Neuse**
USGS HUC	**03020202**	Coordinates	Latitude: **35.2036**
			Longitude: **-77.3654**

Location description: **The project area consists of two parcels totaling approximately 31.7 acres. The properties are identified by parcel numbers 3-044-011 and 3-044-067 and are located east of Daisy Lane and north of Old US Hwy 70W in Cove City, Craven County, North Carolina.**

Indicate Which of the Following Apply:

A. Preliminary Determination

X **There are waters on the above described project area, 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. 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 are wetlands on the above described 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, including wetlands, 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, including wetlands, at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the waters of the U.S. on your 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 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 of the U.S., including wetlands, on the above described project area 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.

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

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

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

X 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: N/A. An Approved JD has not been completed.

D. Remarks: The waters within the project area are depicted on the attached exhibit entitled *Jurisdictional Areas* created by Axiom Environmental dated Dec 2018.

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 for Approved Jurisdiction Determinations (as indicated in Section 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: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801

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

Date: **April 17, 2019** Expiration Date: **N/A**

SAW-2018-01761

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 http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Copy Furnished (email):

Mr. Grant Lewis
Axiom Environmental
218 Snow Avenue
Raleigh, NC 27603

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Mr. Horace Lee Mitchell**	File Number: **SAW-2018-01761**	Date: **April 17, 2019**

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 http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or 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 division 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:	If you only have questions regarding the appeal process you may also contact:
District Engineer, Wilmington Regulatory Division, **Attn: Billy Standridge** **US Army Corps of Engineers** **3331 Heritage Trade Drive, Suite 107** **Wake Forest, NC 27587**	Mr. Jason Steele, Administrative Appeal Review Officer CESAD-PDO U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801 Phone: (404) 562-5137

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.

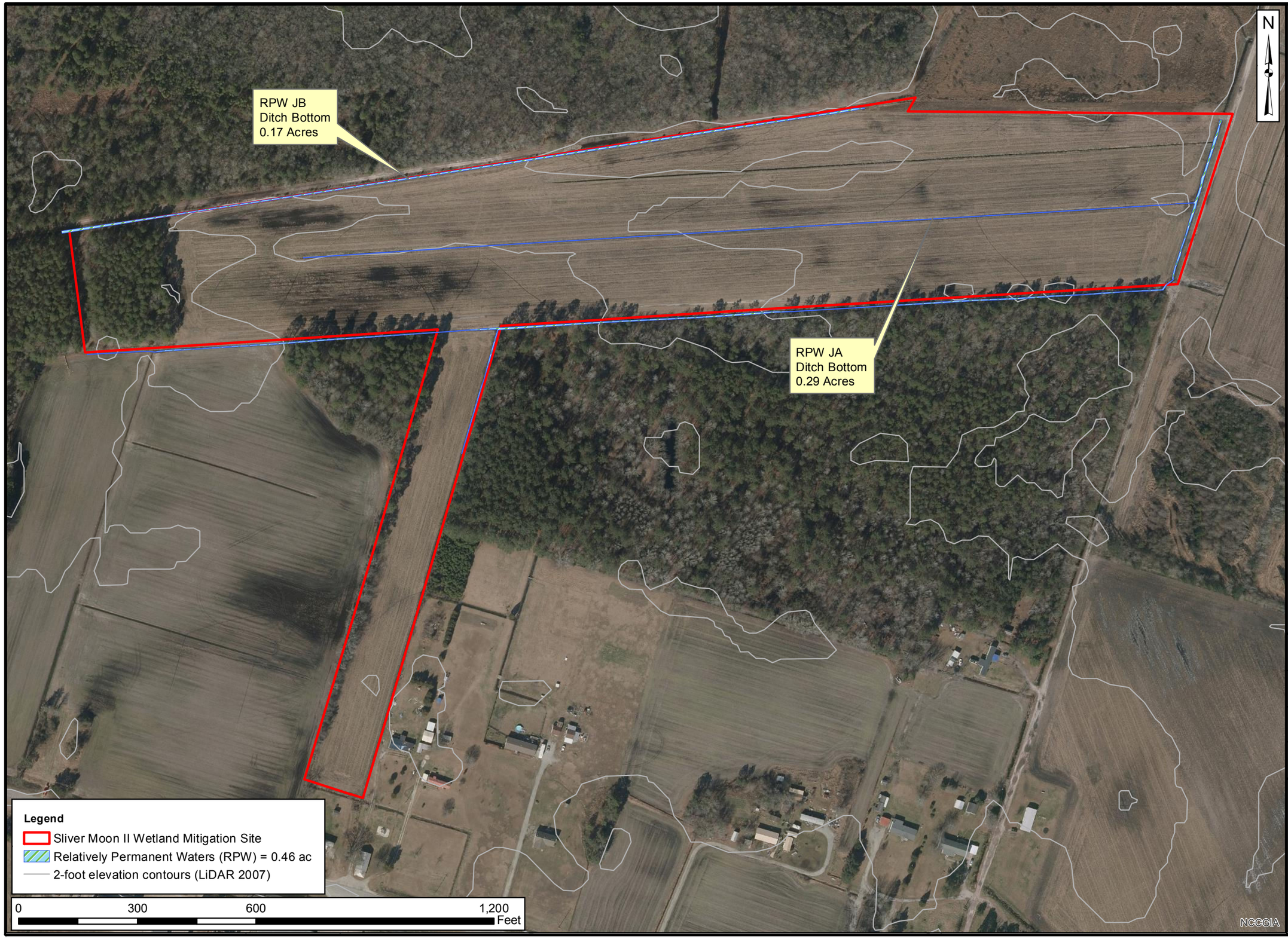
_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, **Attn: Billy 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. Jason Steele, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801 Phone: (404) 562-5137



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II MITIGATION SITE

Craven County, NC

Title:

JURISDICTIONAL AREAS

Drawn by: WGL/KRJ

Date: DEC 2018

Scale: 1:2700

Project No.: 18-015

FIGURE

3

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2018-01761** County: **Craven County** U.S.G.S. Quad: **Cove City**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner: **Restoration Systems LLC**
c/o Alex Baldwin
Address: **1101 Haynes Street, Suite 211**
Raleigh, NC 27604
Email: **abaldwin@restorationsystems.com**

Telephone Number: **(919) 274-2419**

Size (acres)	**31.9**	Nearest Town	**Cove City**
Nearest Waterway	**Core Creek**	River Basin	**Neuse**
USGS HUC	**03020202**	Coordinates	Latitude: **35.2036**
			Longitude: **-77.3654**

Location description: **The 31.9-acre project area is identified by parcel numbers 3-044-011 and is located east of Daisy Lane and north of Old US Hwy 70W in Cove City, Craven County, North Carolina. The project area consists of ditched agriculture fields, and also contains two forested areas totaling approximately 3.5 acres.**

Indicate Which of the Following Apply:

A. Preliminary Determination

X **There are waters on the above described project area, 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. 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 are wetlands on the above described 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, including wetlands, 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, including wetlands, at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the waters of the U.S. on your 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 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 of the U.S., including wetlands, on the above described project area 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.

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

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

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

X 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: N/A. An Approved JD has not been completed.

D. Remarks: The waters within the project area are depicted on the attached exhibit entitled *Jurisdictional Areas (Figure 3)* created by Axiom Environmental dated May 2020.

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 for Approved Jurisdiction Determinations (as indicated in Section 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: Philip Shannin, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801

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

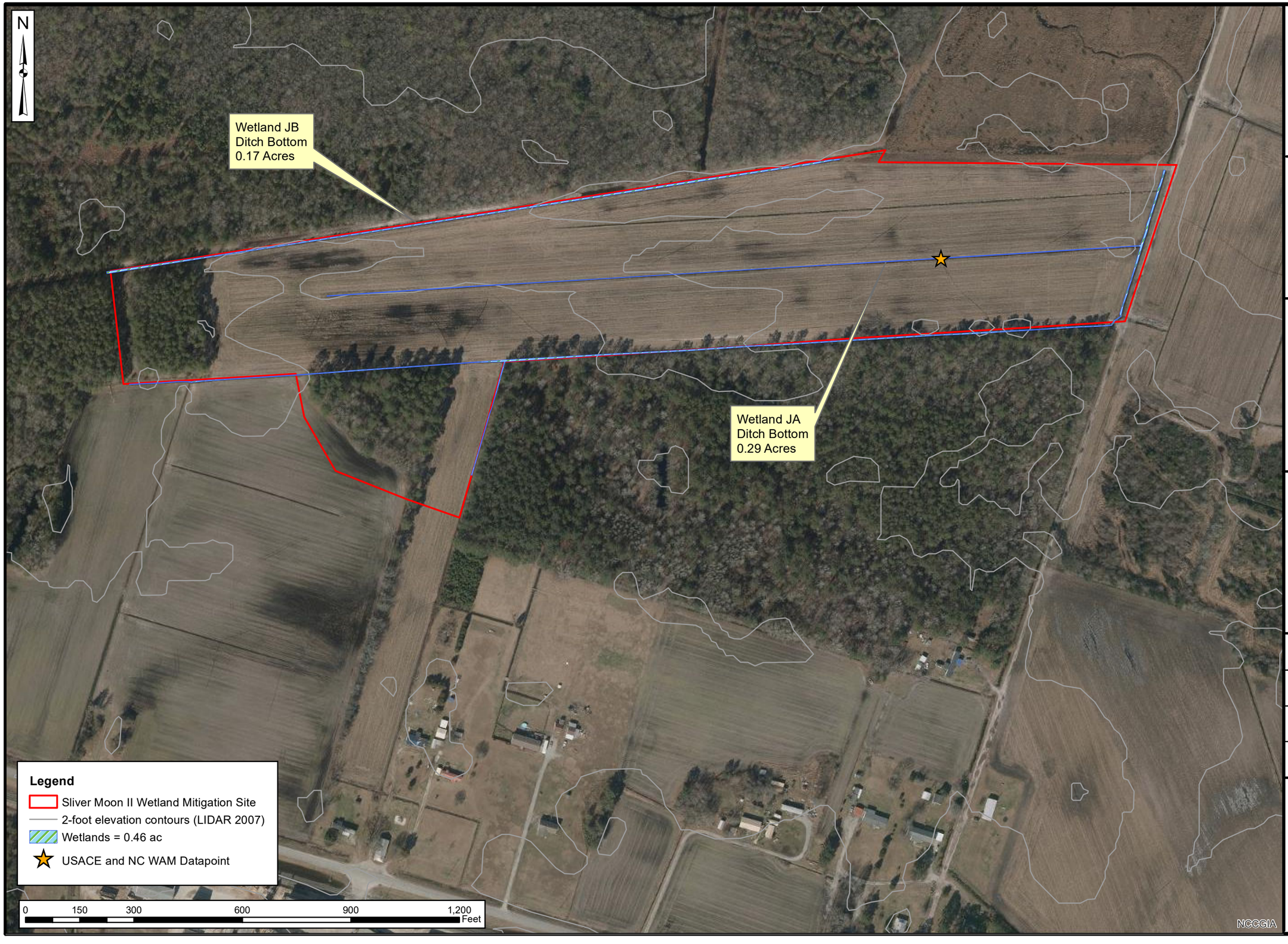
Date: **May 8, 2020** Expiration Date: **N/A**

SAW-2018-01761

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 http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Copy Furnished (email):

Mr. Grant Lewis
Axiom Environmental
218 Snow Avenue
Raleigh, NC 27603



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II MITIGATION SITE

Craven County, NC

Title:

JURISDICTIONAL AREAS

Drawn by: AEB

Date: MAY 2020

Scale: 1:3000

Project No.: 18-015

FIGURE

3

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 5/8/2020

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Restoration Systems LLC, 1101 Haynes Street, Suite 211, Raleigh, NC 27604

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAW-2018-01761

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: NC County/parish/borough: Craven City: Cove City

Center coordinates of site (lat/long in degree decimal format):

Lat.: 35.2036 Long.: -77.3654

Universal Transverse Mercator:

Name of nearest waterbody: Core Creek

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

☒ Office (Desk) Determination. Date: May 8, 2020

☒ Field Determination. Date(s): Dec 20, 2018

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 resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (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)
JA	35.203571	-77.362926	0.29 acres	Non-wetland	404
JB	35.204153	-77.365923	0.17 acres	Non-wetland	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 should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: Jurisdictional Areas (Figure 3) dated May 2020.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [x] 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.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Cove City 7.5-minute.
- [x] Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of Craven County, NC (1989).
- [ ] 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)
- [x] Photographs: [x] Aerial (Name & Date): NAIP 2016.
  or [ ] Other (Name & Date): _____.
- [x] Previous determination(s). File no. and date of response letter: SAW-2018-01761, April 17, 2019.
- [ ] Other information (please specify): _____.

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. Stanbridge 5/8/20
Signature and date of
Regulatory staff member
completing PJD

Digitally signed by Alex Baldwin
DN: cn=Alex Baldwin, o=Restoration Systems, ou, email=abaldwin@restorationsystems.com, c=US
Date: 2020.05.05 12:43:27 -04'00'
Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor 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.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Restoration Systems, LLC**	File Number: **SAW-2018-01761**	Date: **May 8, 2020**

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 http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or 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 division 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 Standridge** **US Army Corps of Engineers** **2407 W. 5th Street** **Washington, NC 27889**	If you only have questions regarding the appeal process you may also contact: Mr. Philip Shannin, Administrative Appeal Review Officer CESAD-PDO U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801 Phone: (404) 562-5137

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 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

APPENDIX E: CATEGORICAL EXCLUSION DOCUMENT

Sliver Moon II Wetland Mitigation Site

Craven County, North Carolina

DMS Project No. 100077

Categorical Exclusion/ERTR

Prepared for:

North Carolina Department of Environmental Quality

Division of Mitigation Services

1652 Mail Service Center

Raleigh, NC 27699-1652

September 2018

TASK 1 b.) Categorical Exclusion Summary:

Part 1: General Project Information

(Attached) Part 2: All Projects

Regulation/Questions

Coastal Zone Management Act

No Issue - please see attached correspondence from Roy Brownlow, District Manager DCM.

CERCLA

No issue within project boundaries – please see the attached Executive Summary from a Limited Phase 1 Site Assessment performed by Environmental Data Resources, Inc. (EDR) on June 12th, 2018.

National Historic Preservation Act (Section 106)

No Issue – please see attached letter from Ramona M. Bartos- State of the Historic Preservation Office.

Uniform Act

Please see the attached letter, sent to the landowner June 12th, 2018.

Part 3: Ground-Disturbing Activates Regulation/Questions

American Indian Religious Freedom Act (AIRFA)

Not applicable – project is not located in a county claimed as "territory" by the Eastern Band of Cherokee Indians.

Antiquities Act (AA)

Not applicable – project is not located on Federal land.

Archaeological Resources Protection Act (ARPA)

Not applicable – project is not located on federal or Indian lands.

Endangered Species Act (ESA)

Project activities were determined to pose "No Effect" or "Not likely to adversely affect" to Endangered or Threatened Species. The proposed project will occur in existing agricultural fields which are intensively managed for row crops. There is no Critical Habitat on-site and any suitable habitat is considered to be suboptimal. Additionally, no endangered species were observed during field surveys done by Axiom Environmental Inc. on 9/25/2018. Recorded searches from the Natural Heritage Program indicate that federally protected species are not documented within a mile of the Site boundaries. See attached correspondence with the USFWS.

Executive Order 13007 (Indian Sacred Sites)

Not applicable – project is not located in a county claimed as "territory" by the Eastern Band of Cherokee Indians.

Farmland Protection Policy Act (FPPA)

Please find the attached Form AD-1006 and email from Milton Cortes of the NRCS.

Fish and Wildlife Coordination Act (FWCA)

Please find the attached response from the Fish and Wildlife Service

Land & Water Conservation Fund Act (Section 6(f))

Not applicable

Magnuson-Stevens Fishery Conservation and management Act (Essential Fish Habitat)

Not applicable – project is not located within an estuarine system.

Migratory Bird Treaty Act (MBTA)

USFWS has no recommendation with the project relative to the MBTA.

Wilderness Act

Not applicable – the project is not located within a Wilderness area.

Appendix A

Categorical Exclusion Form for Ecosystem Enhancement Program Projects
Version 1.4

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

Part 1: General Project Information	
Project Name:	Sliver Moon II Wetland Mitigation Site
County Name:	Craven
EEP Number:	ID #: 100077 Contract #: 7606
Project Sponsor:	Restoration Systems, LLC
Project Contact Name:	JD Hamby
Project Contact Address:	1101 Haynes Street, Suite 211, Raleigh, NC 27604
Project Contact E-mail:	jhamby@restorationsystems.com
DMS Project Manager:	Lindsay Crocker lindsay.crocker@ncdenr.gov

Project Description

This document is for the Sliver Moon II Wetland Mitigation Site and is designed specifically to assist in fulfilling North Carolina Department of Environment and Natural Resources (NCDENR) Division of Mitigation Services' (NCDMS) mitigation goals. The Site is located within 14-digit Cataloging Unit and Targeted Local Watershed 03020202080010, approximately 2.5 miles northwest of Cove City, 3.5 miles southeast of Dover, and slightly north of Old US-70 Highway (SR 1005).

For Official Use Only

Reviewed By:

10/2/2018

Date

LHCrocker

DMS Project Manager

Conditional Approved By:

Date

For Division Administrator FHWA

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

Final Approval By:

10-1-18

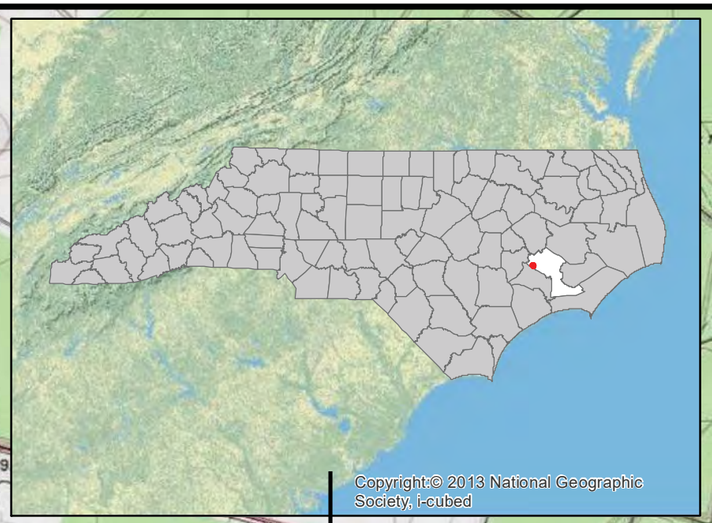
Date

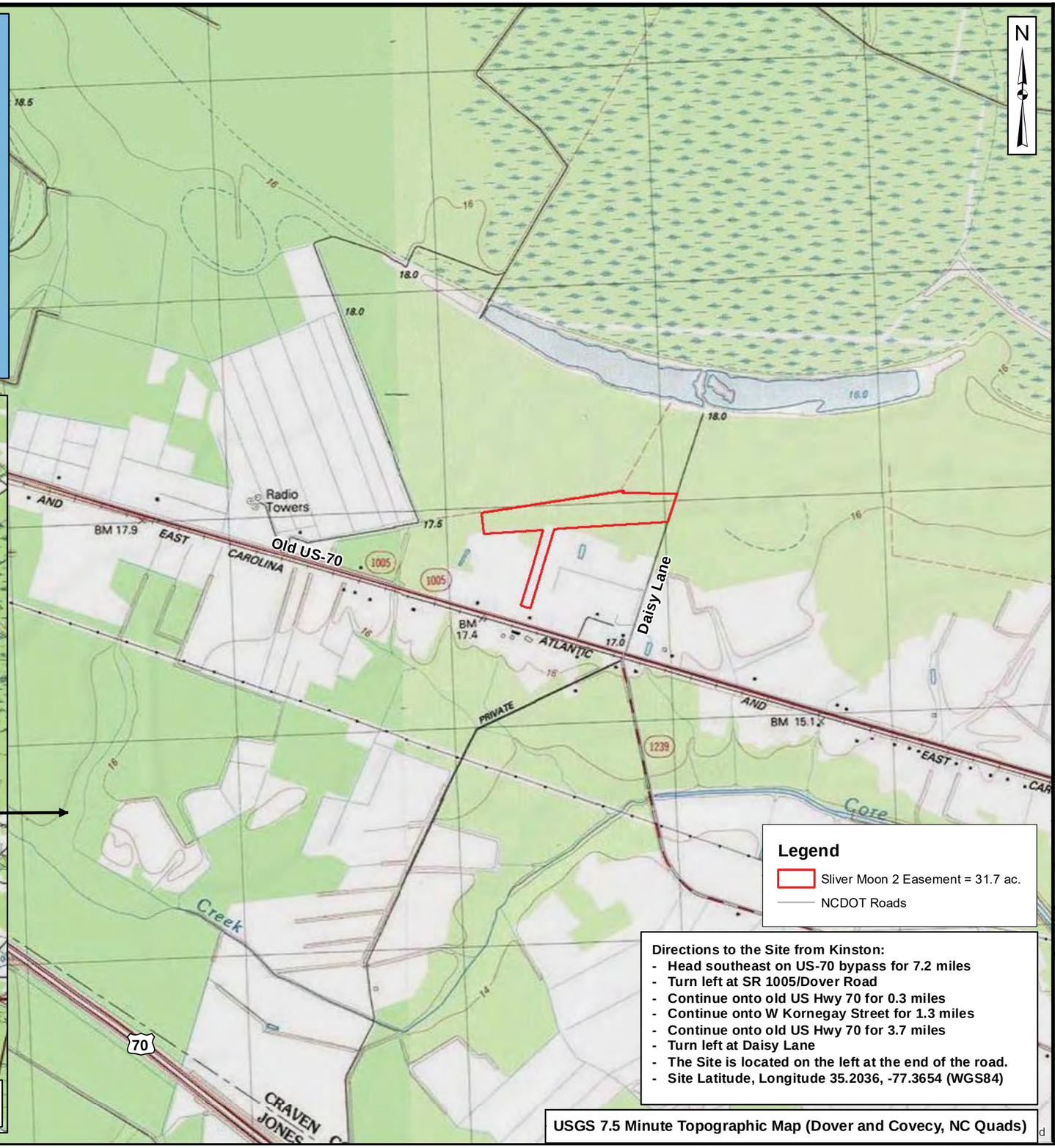
For Division Administrator FHWA

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

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

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





Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

SITE LOCATION

Drawn by: KRJ

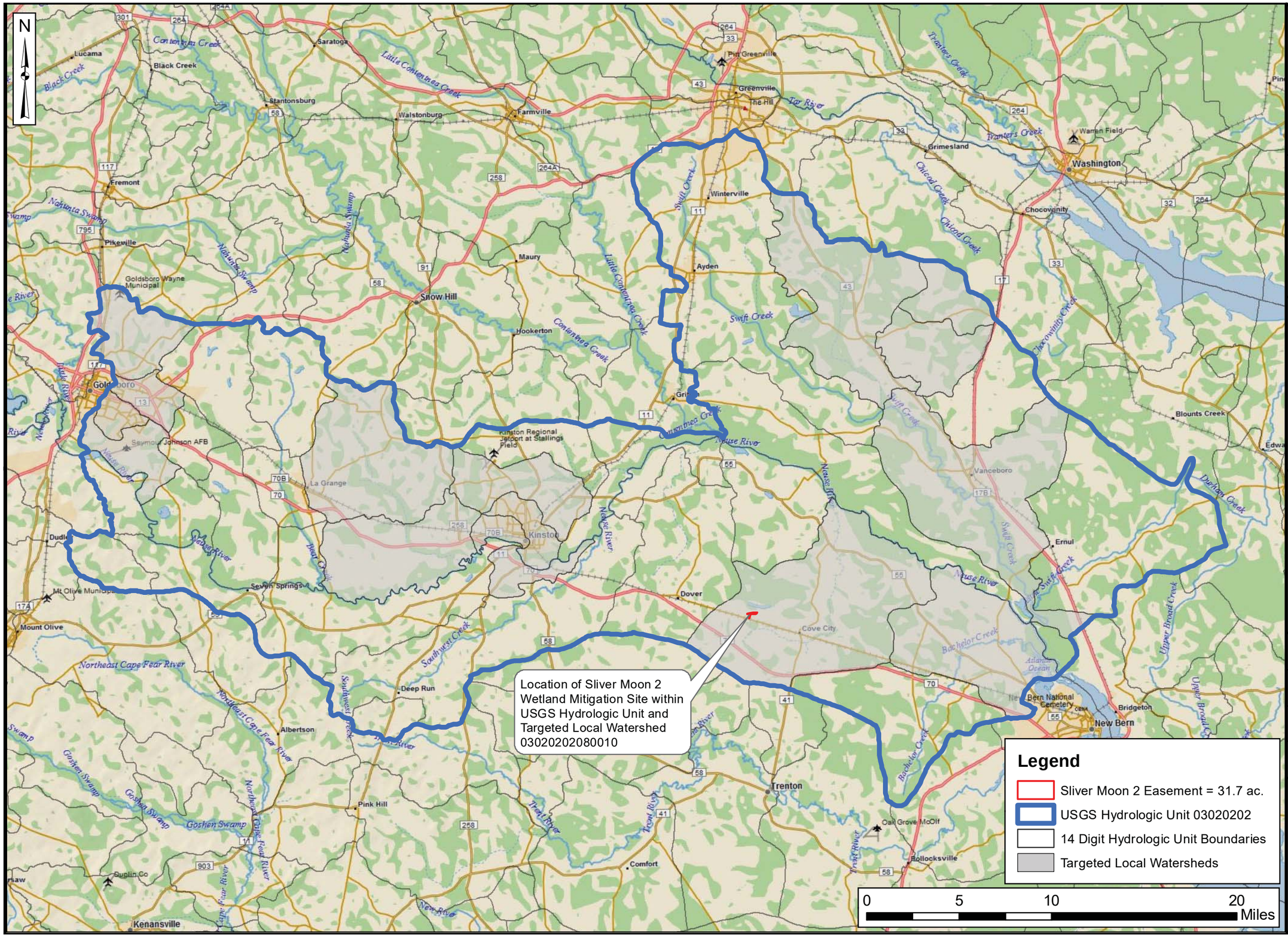
Date: FEB 2018

Scale: 1:20,000

Project No.: 18-002.02

FIGURE

1



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

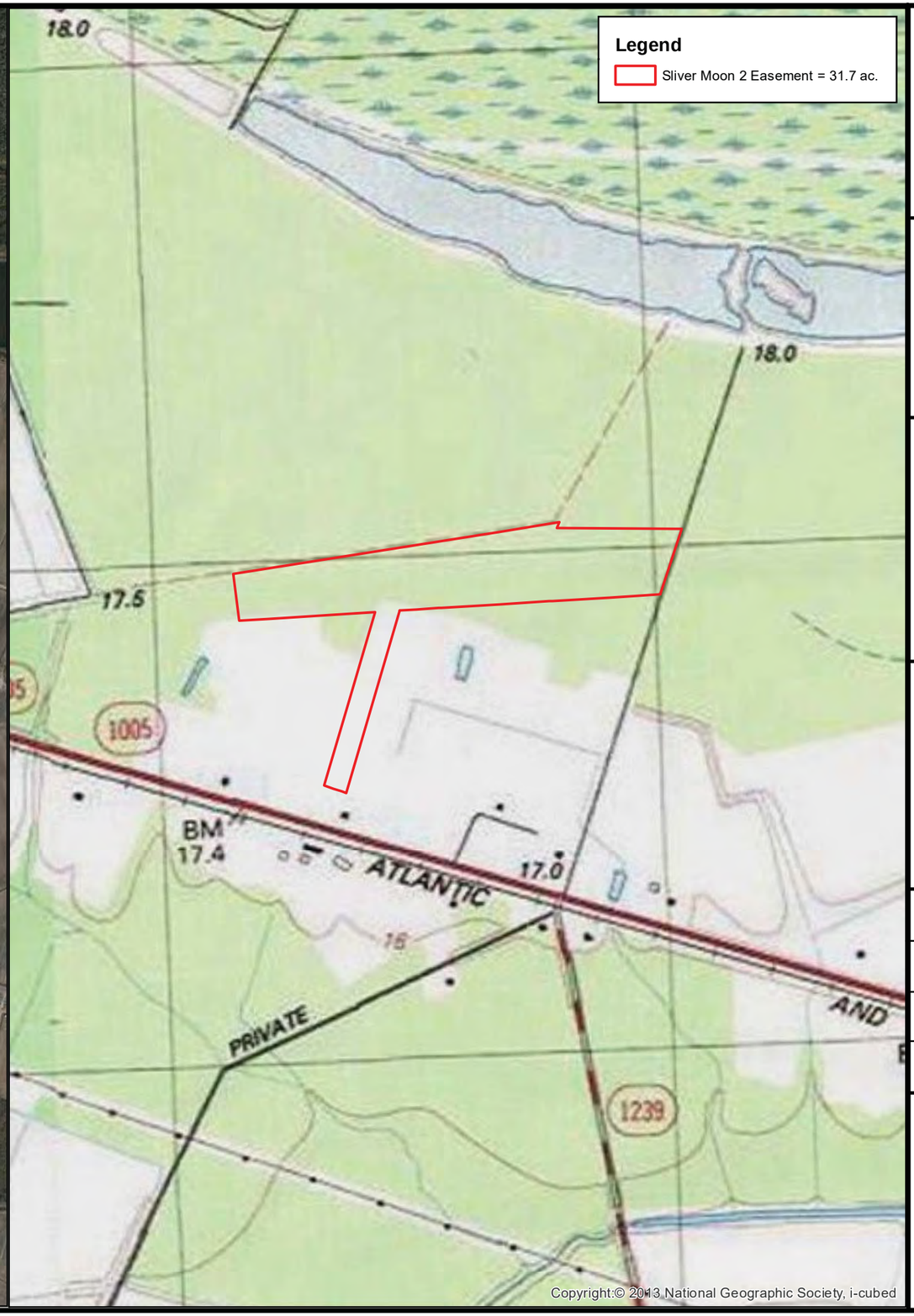
Title:

HYDROLOGIC UNIT MAP

Drawn by:	KRJ
Date:	FEB 2018
Scale:	1:310,000
Project No.:	18-002.02

FIGURE

2



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

TOPOGRAPHY

Drawn by: KRJ

Date: FEB 2018

Scale: 1:10,000

Project No.: 18-002.02

FIGURE

3

Soil Map Unit	Soil Series
Ly	Lynchburg fine sandy loam
Pa	Pantego fine sandy loam
Ra	Rains fine sandy loam

Pa
1
2
Ra
Se
Ly
Ra
GoA
GoA

Legend

- Sliver Moon 2 Easement = 31.7 ac
- Drained Hydric Soils = 30.2 ac
- Existing Ditches
- Soil Profiles
- NRCS Soil Boundaries
- 2 foot Topographic Contour

0 250 500 1,000 Feet

NCCGIA

Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

EXISTING CONDITIONS AND SOILS

Drawn by: KRJ

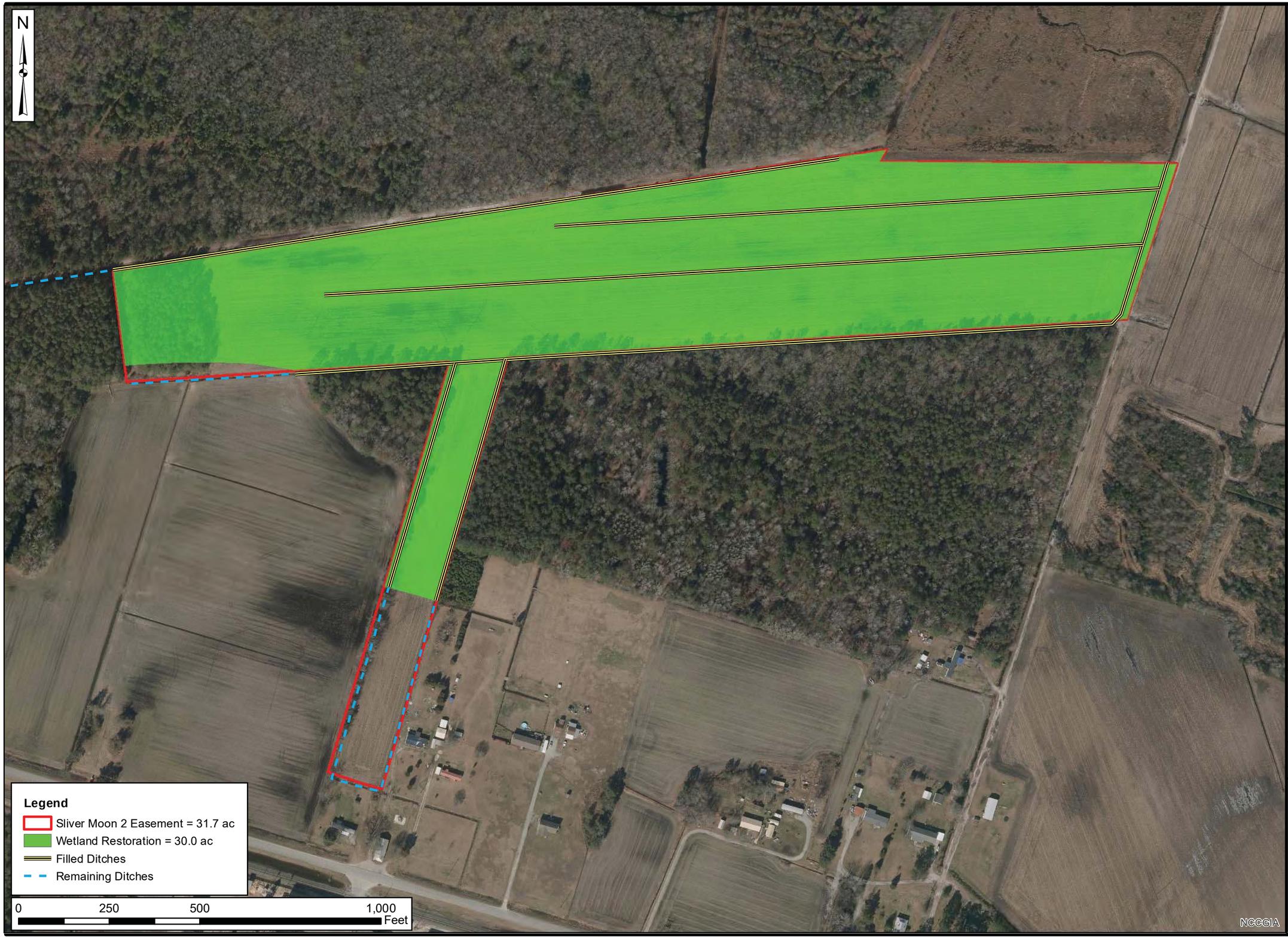
Date: MAR 2018

Scale: 1:3000

Project No.: 18-002.02

FIGURE

4



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

SLIVER MOON II WETLAND MITIGATION SITE

Craven County, NC

Title:

PROPOSED CONDITIONS

Drawn by: KRJ

Date: MAR 2018

Scale: 1:3000

Project No.: 18-002.02

FIGURE

5

July 12th, 2018

North Carolina DENR - Division of Coastal Management
400 Commerce Ave.
Morehead City, NC 28557

ATTN: Roy Brownlow, District Manager

SUBJECT: CAMA Jurisdictional Determination for the Sliver Moon II Non-Riparian Wetland Mitigation Site in Craven County, NC.

Mr. Roy Brownlow

Restoration Systems, LLC (RS), of Raleigh, NC has been awarded a contract by DMS to provide 30 Wetland Mitigation Units at the Sliver Moon II Wetland Mitigation Site in Craven County, North Carolina.

One of the earliest tasks to be performed by RS is completion of an environmental screening and preparation/submittal of a Categorical Exclusion (CE) document. This document is specifically required by the Federal Highway Administration (FHWA) to ensure compliance with various federal environmental laws and regulations. DMS must demonstrate that its projects comply with federal mandates as a precondition to FHWA reimbursement of compensatory mitigation costs borne by the North Carolina Department of Transportation to offset its projects' unavoidable impacts to streams and wetlands.

In order for the project to proceed, RS is obligated to coordinate with your office to determine if our proposal will involve any Areas of Environmental Concern (AECs). This letter provides you with certain details of the Sliver Moon II Non-Riparian Wetland Mitigation Site, including the project's location, a general description of its physiography, hydrography and existing land uses, as well as the intended modifications to the site proposed by RS. We request your review of the details provided and make a field determination of whether CAMA jurisdiction will be taken on any portion of the proposed site.

Project Location & Description

The Site is characterized by agricultural fields utilized for row crop production. All Site hydrology drains to the south through a ditch network to Core Creek, located less than 1 mile south of the Site. The approximately 31.7-acre Site has been ditched/drained, cleared of vegetation, and is maintained for row crop production.

The Site is located in the Carolina Flatwoods portion of the Middle Atlantic Coastal Plain ecoregion of North Carolina. Regional physiography is characterized by flat plains on lightly dissected marine terraces, swamps, Carolina bays, and low gradient sandy and silty bottomed streams (Griffith et al., 2002). Onsite elevations are nearly level averaging 17 meters (NGVD) (USGS Cove City, North Carolina 7.5-minute topographic quadrangle)/56 feet (NAVD 88) (NC One Map, Craven County LiDAR 2-foot elevation contours)

Restoration Means & Methods

Alternatives for wetland reestablishment are designed to restore a fully functioning wetland system, which will provide surface water storage, nutrient cycling, removal of nutrients, and will create a variety and abundance of wildlife habitat.

Portions of the Site underlain by hydric soils have been impacted by clearing of vegetation, ditch network installation, agriculture plowing, row crop production, herbicide application, and other land disturbances associated with land use management. Wetland reestablishment options should focus on the restoration of vegetative communities, restoration of historic groundwater tables by filling ditches, and the reestablishment of soil structure and microtopographic variations. These activities will result in the reestablishment of 30.0 acres of jurisdictional, non-riparian wetlands.

Restoration of vegetation allows for development and expansion of characteristic species across the landscape. Ecotonal changes between community types contribute to diversity and provide secondary benefits, such as enhanced feeding and nesting opportunities for mammals, birds, amphibians, and other wildlife. In addition, viable vegetative communities will improve system biogeochemical function by filtering pollutants from overland and shallow subsurface flows and providing organic materials.

Vegetative species composition will be based on Reference Forest Ecoysystems (RFEs), site-specific features, and community descriptions from Classification of the Natural Communities of North Carolina (Schafale and Weakley 1990); the community association to be utilized is Non-Riverine Wet Hardwood Forest.

Bare-root seedlings will be planted at a density of approximately 680 stems per acre on 8-foot centers. Planting will be performed between November 15 and March 15 to allow plants to stabilize during the dormant period and set root during the spring season. Potential species planted within the Site may include the following.

Should you have any questions or if any additional information is needed to complete the Form, please feel free to contact me at the office 919.334.9111. If we do not receive any response from your office within 30 days we will assume that your department has no comments. Your valuable time and cooperation are much appreciated.

Yours truly,

RESTORATION SYSTEMS, LLC

JD Hamby
Project Manager
jhamby@restorationsytems.com
919-334-9111

Attachments- Location and Condition Maps

Fri 8/24/2018 9:14 AM

Brownlow, Roy <roy.brownlow@ncdenr.gov>

CAMA Coordination

To John Hamby

Cc Connell, Brad

This message was sent with High importance.

Mr. Hamby,
Hope this finds you doing well.

I apologize for the delay in response. I did forward your email on July 13th to Brad Connell. Brad is the DCM Field Representative who handles Craven County. He confirmed that your proposed project is outside of the Coastal Resources Commission's Areas of Environmental Concern (AEC), therefore, DCM has no jurisdiction involving this proposal.

Thank you for your patience but at least the good news is there is not any CAMA permit or authorization required.
Please let me know if we can be of further assistance.

Best regards,

Roy Brownlow
District Manager
& Compliance Coordinator
Division of Coastal Management
Department of Environmental Quality

252 808 2808 office
Extension 217
Roy.Brownlow@ncdenr.gov

400 Commerce Ave
Morehead City, NC 28557

Nothing Compares

July 12th, 2018

Renee Gledhill-Earley,
Environmental Review Coordinator
North Carolina State Historic Preservation Office
109 East Jones Street
Raleigh, NC 27699-4617
Sent electronically to Environmental.Review@ncdcr.gov

Re: Sliver Moon II Wetland Mitigation Project, Craven County, NC

Dear Renee,

The purpose of this letter is to request written concurrence from the State Historic Preservation Office (SHPO) for the Arabia Bay Wetland Mitigation Project in Craven County, a Full-Delivery project for the N.C. Davison of Mitigation Services. Please review and comment on any possible issues that might emerge with respect to SHPO from a potential stream restoration project depicted on the attached mapping.

Project Name:	Sliver Moon II Wetland Mitigation Project
Project Location:	12215 Old US Hwy 70 W, Cove City, NC 28523
Project Contact:	JD Hamby, Restoration Systems LLC, 1101 Haynes St. Suite 211, Raleigh, NC 27604

Project Description: The project has been identified for the purpose of providing in-kind mitigation for unavoidable stream channel and wetland impacts. Permits from the NC DWR and USACE will be obtained to restore waters of the US. Soil and erosion control permits will also be obtained. The project encompasses 30 acres of drain hydric soils, currently used for row crops. Approximately 30 acres of non-riparian wetland will be restored.

The term "cultural resources" refers to prehistoric or historic archaeological sites, structures, or artifact deposits over 50 years old. "Significant" cultural resources are those that are eligible or potentially eligible for inclusion in the National Register of Historic Places. Evaluations of site significance are made with reference to the eligibility criteria of the National Register (36 CFR 60) and in consultation with the North Carolina State Historic Preservation Office (SHPO).

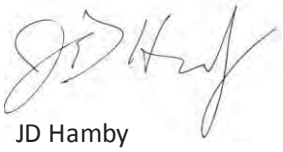
Field visits were conducted in March 2017 to conduct evaluations for presence of structures or features that may be eligible for the National Register of Historic Places. No structures were identified within the Site boundaries that may be eligible for the National Register. In addition to field reviews for historically relevant structures, a records search was conducted at the SHPO office to determine if documented occurrences of historic structures or artifacts occur within, or adjacent to the Site. The SHPO records identify no features within the Site boundaries and no features within a 1.0 mile radius of the Site.

Typical SHPO coordination will occur prior to construction activities to determine if any significant cultural resources are present; however, no constraints are expected at this time. We thank you in advance for your

timely response and cooperation. If we do not hear from you within X[+days, we will assume you have no comments on the project. Please feel free to contact me with any questions that you may have concerning the extent of site disturbance associated with this project.

Yours truly,

RESTORATION SYSTEMS, LLC



JD Hamby
Project Manager
jhamby@restorationsytems.com
919-755-9490

Attachments – USGS Map, Existing Conditions

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

July 31, 2018

JD Hamby
Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

Re: Sliver Moon II Wetland Mitigation Project, 12215 Old US 70 West, Cove City, Craven County, ER 18-1597

Dear Mr. Hamby:

Thank you for your letter of July 12, 2018, concerning the above project.

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

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

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

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

July 12th, 2018

Maria Dunn
Coastal Coordinator
North Carolina Wildlife Resources Commission
1701 Mail Service Center
Raleigh, NC 27699-1701

Re: Sliver Moon II Wetland Mitigation Project, Craven County, NC

Dear Ms. D:

The purpose of this letter is to request concurrence from the North Carolina Wildlife Recourse Commission concerning a stream restoration project located in Craven County for the N.C. Division of Mitigation Services. The project will restore non-riparian wetlands in existing row crop fields and forested areas. Please review and comment on any possible issues that might emerge with respect to the Fish and Wildlife Coordination Act from the potential stream restoration project. Attached is a USGS base map with the projects 31.7 acre footprint identified. The Site is located within 14-digit Cataloging Unit and Targeted Local Watershed 03020202080010, approximately 2.5 miles northwest of Cove City, 3.5 miles southeast of Dover, and slightly north of Old US-70 Highway.

The Site is proposed to include 30.0 acres of reestablished non-riparian wetlands. Site alterations include the cessation of row crop production, restoration of wetlands, and planting native, woody vegetation within the entire 31.7-acre Site easement. Mitigation outlined in this report will result in net gains in hydrology, water quality, and habitat functions, and are designed to provide 30.0 Non-riparian Wetland Mitigation Units.

We thank you in advance for your timely response and cooperation. If we do not hear from you within X[+ days, we will assume you have no comments on the project. Please feel free to contact the below referenced Project Manager with any questions that you may have concerning the extent of site disturbance associated with this project.

Yours truly,

Restoration Systems, LLC

JD Hamby
Project Manager
jhamby@restorationsytems.com
919-755-9490

Attachments: Location and USGS Map

Fri 8/24/2018 8:14 AM

Dunn, Maria T. <maria.dunn@ncwildlife.org>

RE: [External] RE: NCWRC Coordination

To John Hamby

Bing Maps

Good morning Mr. Hamby.

Travis Wilson with our agency conducted a site visit as a member of the IRT and provided comments during that time that represent our agency's concerns.

If you have any additional comments or questions, please don't hesitate to call.

Maria

Maria T. Dunn
Coastal Coordinator

NC Wildlife Resources Commission
943 Washington Sq. Mall
Washington, NC 27889
office: 252-948-3916
fax: 252-975-3716

www.ncwildlife.org

From: John Hamby <jhamby@restorationsystems.com>
Sent: Thursday, August 23, 2018 4:30 PM
To: Dunn, Maria T. <maria.dunn@ncwildlife.org>
Subject: [External] RE: NCWRC Coordination

July 12, 2018

Mr. H.L. Mitchell
12215 Old Highway 70
Cove City, NC 28523

Dear Mr. Mitchell,

The purpose of this letter is to notify you that Restoration Systems, LLC, in offering to purchase your property in Craven County, North Carolina, does not have the power to acquire it by eminent domain. Also, Restoration Systems' offer to purchase your property is based on what we believe to be its fair market.

If you have any questions, please feel free to call me at 919-334-9122

Sincerely,

JD Hamby
Project Manager

Species determinations

For listed species 1 not covered by determination keys, an impact analysis should be performed to reach a conclusion about how this project will impact the species. These conclusions will result in *determinations* for each species, which will be used in consultation with the U.S. Fish and Wildlife Service.

Mammals

NAME	DETERMINATION
Northern Long-eared Bat Myotis septentrionalis	None This species is covered by a determination key
West Indian Manatee CH Trichechus manatus	None

Birds

NAME	DETERMINATION
Red Knot Calidris canutus rufa	None
Red-cockaded Woodpecker Picoides borealis	None

Reptiles

NAME	DETERMINATION
American Alligator Alligator mississippiensis	None
Green Sea Turtle Chelonia mydas	None
Leatherback Sea Turtle CH Dermochelys coriacea	None

Flowering Plants

NAME	DETERMINATION
Rough-leaved Loosestrife Lysimachia asperulaefolia	None
Sensitive Joint-vetch Aeschynomene virginica	None

Critical habitats

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

John Hamby

From: Raleigh, FW4 <raleigh@fws.gov>
Sent: Thursday, September 27, 2018 3:38 PM
To: John Hamby
Subject: Confirmation of Project Receipt Re: [EXTERNAL] online project review request letter for Sliver Moon II

Thank you for submitting your online project package. We will review your package within 30 days of receipt. If you have submitted an online **project review request letter**, expect our response within 30 days. If you have submitted an online **project review certification letter**, you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period.

John Hamby

From: Wells, Emily <emily_wells@fws.gov>
Sent: Monday, October 01, 2018 12:09 PM
To: Raleigh, FW4; John Hamby
Subject: Re: DUE DATE: OCTOBER 18, 2018 Fwd: [EXTERNAL] online project review request letter for Sliver Moon II

Thank you for the information. We would agree with your determinations for this project.

Thank you,
Emily

On Fri, Sep 28, 2018 at 8:04 AM Raleigh, FW4 <raleigh@fws.gov> wrote:

---------- Forwarded message ---------
From: **John Hamby** <jhamby@restorationsystems.com>
Date: Thu, Sep 27, 2018 at 3:37 PM
Subject: [EXTERNAL] online project review request letter for Sliver Moon II
To: Raleigh@fws.gov <Raleigh@fws.gov>

Attached you will find the species conclusions for the Sliver Moon II non riparian wetland site in Craven County, NC. Let me know if you need anything else.

Best regards,

JD

John *"JD"* Hamby | Project Manager

1101 Haynes St. Suite 211 | Raleigh, NC 27604

tel: 919.334.9111 | cell: 919.801.4754 | fax: 919.755.9492

email: jhamby@restorationsystems.com

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

Date: 9/25/18

Self-Certification Letter

Project Name Sliver Moon II

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:

- [x] "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- [x] "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;
- [x] "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: Sliver Moon II #100077

Date: 9/25/2018

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Bald Eagle	Unlikely to disturb nesting bald eagle	No Eagle Act permit required	Avoidance and minimization includes not removing any trees.
Northern Long-eared Bat *Myotis septentrionalis*	No suitable habitat	No effect	See consistency letter from USF&W
Indiana Bat	No suitable habitat	No effect	See consistency letter from USF&W
West Indian Manatee *Trichechus manatus*	No suitable habitat	No effect	Found in canals, sluggish rivers, estuarine habitats, salt water bays, and as far off shore as 3.7 miles; they utilize freshwater and marine habitats at shallow depths of 5 to 20 feet. No such habitat exists on site.
Red Knot *Calidris canutus rufa*	No suitable habitat	No effect	Known to winter in North Carolina in coastal marine and estuarine habitats with large amounts of exposed intertidal sediments. No such habitat exist on site.
Red-cockaded Woodpecker *Picoides borealis*	No suitable habitat	No effect	Open stands of pine containing trees 60 years or older for nesting and roosting. Cavity excavation occurs in living pine trees. No such habitat exists on site.
American Alligator *Alligator mississippiensis*	No suitable habitat	No effect	Found in rivers, streams, canals, lakes, swamps, and coastal marshes. No such habitat exists on site.

Green Sea Turtle *Chelonia mydas*	No suitable habitat	No effect	Generally open ocean species that may enter into bays, estuaries, and other inland bodies of water. No such habitat exists on site.
Leatherback Sea Turtle *Dermochelys coriacea*	No suitable habitat	No effect	Generally open ocean species that may enter into bays, estuaries, and other inland bodies of water. No such habitat exists on site.
Rough-leaved Loosestrife *Lysimachia asperulaefolia*	Suitable habitat present, species not present	Not likely to adversely affect	Generally occurs in areas of disturbance (e.g. clearing, mowing, periodic burning) in the ecotones or edges between longleaf pine uplands and pond pine pocosins in dense shrub and vine growth on moist to seasonally-saturated sands and on shallow organic soils. Systematic surveys of suitable yet suboptimal habitat were conducted by Axiom biologists on September 25, 2018, and identified no individuals. In addition, a review of NCNHP records dated September 25, 2018, indicates there are no known occurrences within 1.0 mile of the site.
Sensitive Joint-vetch *Aeschynomene virginiaca*	No suitable habitat	No effect	Occurs in mildly brackish intertidal zones where plants are flooded twice daily. No such habitat exists on site.

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.

Project Manager

Signature /Title

9/27/18

Date

John Hamby

From: Allison Keith <akeith@axiomenvironmental.org>
Sent: Tuesday, September 25, 2018 2:45 PM
To: John Hamby
Cc: Grant Lewis; Kenan Jernigan
Subject: T&E survey for rough-leaved loosestrife

Good Afternoon,

This email provides a summary of the results of an Axiom Environmental, Inc. (Axiom) federally protected species survey at the Sliver Moon Wetland Mitigation Site. The approximately 31-acre site is located north of Old U.S. Highway 70 in Craven County, NC.

Rough-leaved loosestrife
Typical habitat for rough-leaved loosestrife (*Lysimachia asperulaefolia*) consists of the wet ecotone between longleaf pine uplands and poorly drained, low shrub areas such as pocosins and Carolina bays. This species can also be found within powerline easements and along roadsides where regular maintenance mimics fire and deters habitat encroachment. Suitable habitat for rough-leaved loosestrife occurs within the site along the woodland edges and the margins of ditches and streams where abundant sunlight and little herbaceous competition occurs. Systematic surveys of suitable habitat were conducted by Axiom biologists on September 25, 2018, and identified no individuals. In addition, a review of NCNHP records dated September 25, 2018, indicates there are no known occurrences within 1.0 mile of the site. The proposed project will have No Effect on rough-leaved loosestrife.

We appreciate the opportunity to assist with this project. If you have any questions about this information, please let us know.

Sincerely,
Allison Keith

Allison Keith
Axiom Environmental, Inc.
218 Snow Avenue
Raleigh, NC 27603
Cell (423)400-8882
akeith@axiomenvironmental.org

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

IPaC Record Locator: 113-13209399 July 11, 2018

Subject: Consistency letter for the 'Sliver Moon II' project (TAILS 04EN2000-2018-R-1055) under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated to verify that the Sliver Moon II (Proposed Action) may rely on the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (Myotis sodalis) or the threatened Northern long-eared bat (Myotis septentrionalis). If the Proposed Action is not modified, no consultation is required for these two species.

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency for the Proposed Action accordingly.

The following species may occur in your project area and are not covered by this determination:

- American Alligator, Alligator mississippiensis (Similarity of Appearance (Threatened))
- Green Sea Turtle, Chelonia mydas (Threatened)
- Leatherback Sea Turtle, Dermochelys coriacea (Endangered)
- Red Knot, Calidris canutus rufa (Threatened)
- Red-cockaded Woodpecker, Picoides borealis (Endangered)
- Rough-leaved Loosestrife, Lysimachia asperulaefolia (Endangered)
- Sensitive Joint-vetch, Aeschynomene virginica (Threatened)
- West Indian Manatee, Trichechus manatus (Threatened)

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

Sliver Moon II

Description

The Site is proposed to include 30.0 acres of reestablished non-riparian wetlands. Site alterations include the cessation of row crop production, restoration of wetlands, and planting native, woody vegetation within the entire 31.7-acre Site easement. Mitigation outlined in this report will result in net gains in hydrology, water quality, and habitat functions, and are designed to provide 30.0 Non-riparian Wetland Mitigation Units

Determination Key Result

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the threatened Northern long-eared bat. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.) is required for these two species.

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?

   A) Federal Highway Administration (FHWA)

4. Are all project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include any activities that are greater than 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   Yes

6. Are all project activities greater than 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

7. Does the project include any activities within 0.5 miles of an Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

8. Is the project located within a karst area?

   No

9. Is there any suitable[1] summer habitat for Indiana Bat or NLEB within the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the national consultation FAQs.

   No

10. Does the project include maintenance of the surrounding landscape at existing facilities (e.g., rest areas, stormwater detention basins)?

    No

11. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    Yes

12. Does the project include slash pile burning?

    No

13. Does the project include any bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    No

14. Does the project include the removal, replacement, and/or maintenance of any structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

15. Will the project involve the use of temporar y lighting during the active season?

    No

16. Will the project install new or replace existing permanent lighting?

    No

17. Will the project raise the road profile above the tree canopy?

    No

18. Is the location of this project consistent with a No Effect determination in this key?

    Automatically answered

    Yes, because the project action area is outside of suitable Indiana bat and/or NLEB summer habitat

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on March 16, 2018. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered Indiana bat (Myotis sodalis) and the threatened Northern long-eared bat (NLEB) (Myotis septentrionalis).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

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:
Consultation Code: 04EN2000-2018-SLI-1055
Event Code: 04EN2000-2018-E-02159
Project Name: Sliver Moon II

July 11, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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):

K 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: 04EN2000-2018-SLI-1055

Event Code: 04EN2000-2018-E-02159

Project Name: Sliver Moon II

Project Type: LAND - RESTORATION / ENHANCEMENT

Project Description: The Site is proposed to include 30.0 acres of reestablished non-riparian wetlands. Site alterations include the cessation of row crop production, restoration of wetlands, and planting native, woody vegetation within the entire 31.7-acre Site easement. Mitigation outlined in this report will result in net gains in hydrology, water quality, and habitat functions, and are designed to provide 30.0 Non-riparian Wetland Mitigation Units

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.20194582480443N77.36763444337879W

Counties: Craven, NC

Endangered Species Act Species

There is a total of 9 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.

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
West Indian Manatee Trichechus manatus There is final critical habitat for this species. Your location is outside the critical habitat. This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements. Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

Birds

NAME	STATUS
Red Knot Calidris canutus rufa No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker Picoides borealis No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
American Alligator Alligator mississippiensis No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/776	Similarity of Appearance (Threatened)
Green Sea Turtle Chelonia mydas Population: North Atlantic DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Leatherback Sea Turtle Dermochelys coriacea There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered

Flowering Plants

NAME	STATUS
Rough-leaved Loosestrife Lysimachia asperulaefolia No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2747	Endangered
Sensitive Joint-vetch Aeschynomene virginica No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/855	Threatened

Critical habitats

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

July 12th, 2018

Milton Cortes
USDA Natural Resources Conservation Service
4407 Bland Road
Suite 117
Raleigh, NC 27609

Re: Sliver Moon II Wetland Mitigation Site, Craven County, NC

Restoration Systems, LLC (RS), of Raleigh, NC has been awarded a contract by DMS to provide 30 Wetland Mitigation Units at the Sliver Moon II Wetland Mitigation Site in Craven County, North Carolina.

One of the earliest tasks to be performed by RS is completion of an environmental screening and preparation/submittal of a Categorical Exclusion (CE) document. This document is specifically required by the Federal Highway Administration (FHWA) to ensure compliance with various federal environmental laws and regulations. DMS must demonstrate that its projects comply with federal mandates as a precondition to FHWA reimbursement of compensatory mitigation costs borne by the North Carolina Department of Transportation to offset its projects' unavoidable impacts to streams and wetlands.

In order for the project to proceed, RS is obligated to coordinate with the NRCS to complete Form AD-1006 in compliance with the Farmland Protection Policy Act on behalf of the FHWA. The purpose of this letter is to request your assistance in completion of the Form.

Project Location & Description

The Site is characterized by agricultural fields utilized for row crop production. All Site hydrology drains to the south through a ditch network to Core Creek, located less than 1 mile south of the Site. The approximately 31.7-acre Site has been ditched/drained, cleared of vegetation, and is maintained for row crop production.

The Site is located in the Carolina Flatwoods portion of the Middle Atlantic Coastal Plain ecoregion of North Carolina. Regional physiography is characterized by flat plains on lightly dissected marine terraces, swamps, Carolina bays, and low gradient sandy and silty bottomed streams (Griffith et al., 2002). Onsite elevations are nearly level averaging 17 meters (NGVD) (USGS Cove City, North Carolina 7.5-minute topographic quadrangle)/56 feet (NAVD 88) (NC One Map, Craven County LiDAR 2-foot elevation contours)

Restoration Means & Methods

Alternatives for wetland reestablishment are designed to restore a fully functioning wetland system, which will provide surface water storage, nutrient cycling, removal of nutrients, and will create a variety and abundance of wildlife habitat.

Portions of the Site underlain by hydric soils have been impacted by clearing of vegetation, ditch network installation, agriculture plowing, row crop production, herbicide application, and other land disturbances associated with land use management. Wetland reestablishment options should focus on the restoration of vegetative communities, restoration of historic groundwater tables by filling ditches, and the reestablishment

of soil structure and microtopographic variations. These activities will result in the reestablishment of 30.0 acres of jurisdictional, non-riparian wetlands.

Restoration of vegetation allows for development and expansion of characteristic species across the landscape. Ecotonal changes between community types contribute to diversity and provide secondary benefits, such as enhanced feeding and nesting opportunities for mammals, birds, amphibians, and other wildlife. In addition, viable vegetative communities will improve system biogeochemical function by filtering pollutants from overland and shallow subsurface flows and providing organic materials.

Vegetative species composition will be based on Reference Forest Ecoysystems (RFEs), site-specific features, and community descriptions from Classification of the Natural Communities of North Carolina (Schafale and Weakley 1990); the community association to be utilized is Non-Riverine Wet Hardwood Forest.

Bare-root seedlings will be planted at a density of approximately 680 stems per acre on 8-foot centers. Planting will be performed between November 15 and March 15 to allow plants to stabilize during the dormant period and set root during the spring season. Potential species planted within the Site may include the following.

Should you have any questions or if any additional information is needed to complete the orm, please feel free to contact me at the office 919.334.9111. If we do not hear from you within X[+days, we will assume you have no comments on the project. Your valuable time and cooperation are much appreciated.

Yours truly,

RESTORATION SYSTEMS, LLC

JD Hamby
Project Manager
jhamby@restorationsytems.com
919-334-9111

Attachments- Location and Condition Maps
AD-1006 Form

John Hamby

From: Cortes, Milton - NRCS, Raleigh, NC <Milton.Cortes@nc.usda.gov>
Sent: Tuesday, July 24, 2018 11:22 AM
To: John Hamby
Subject: RE: FPPA NRCS Coordination Request
Attachments: AD1006_Sliver Moon II Wetland Restoration.pdf

Importance: High

GoodMorningJohn:

PleasefindattachedtheFarmlandConv ersionImpa ctRati ngevaluationfortheSliver Moon IIWetla ndRestorationSite.

Ifwecanbeoffurther assistancepleas eletusknow .

BestRegards;

Milton Cortes
Acting State Soil Scientist
NaturalResources ConservationService
4407 BlandRd,Suite117
Raleigh,NC27609
Phone:9198732171
milton.cortes@nc.usda.gov

From: JohnHamby[mailto :jhamby@restorationsystems.com]
Sent: Thursday,July12,2 0182:35PM
To: Cortes,MiltonNRCS, Raleigh, NC<Milton.Cortes@nc.usda.gov>
Subject:FPPANRCSCoordinationRequest

GoodAfternoonMilton,

Ihope youwillfind allthenecessarydo cumentsforourfarmlandimpactevaluationatta chedabove.

Ifyouhaveanyquestions,feel freeto calloremailme.

BestRe gards,

JD

John *"JD"* Hamby|ProjectMa nager
1101HaynesSt. Suite211|Raleigh,NC27604
tel:919.334.9111|cell:919.801.4754|fax: 919.755.9492
email: jhamby@restorationsystems.com

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 7/12/18
Name Of Project Sliver Moon II Wetland Restoration Site	Federal Agency Involved Federal Highway Administration
Proposed Land Use Wetland Restoration	County And State Craven County, NC
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/12/18

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 276 acres
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 326,947 acres % 70		Amount Of Farmland As Defined in FPPA Acres: 294,065 acres % 63	
Name Of Land Evaluation System Used Craven Co. NC LESA	Name Of Local Site Assessment System none		Date Land Evaluation Returned By NRCS July 24, 2018 By eMail	

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	30.0			
B. Total Acres To Be Converted Indirectly	1.7			
C. Total Acres In Site	31.7	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	31.7			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	29.0			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	86	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	13			
2. Perimeter In Nonurban Use	10	9			
3. Percent Of Site Being Farmed	20	20			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	15			
6. Distance To Urban Support Services	15	10			
7. Size Of Present Farm Unit Compared To Average	10	4			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	4			
10. On-Farm Investments	20	10			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	1			
TOTAL SITE ASSESSMENT POINTS	160	86	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	86	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	86	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	172	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

This form was electronically produced by National Production Services Staff

Sliver Moon II
12215 Old Hwy 70
Cove City, NC 28523

Inquiry Number: 5407347.2s
August 28, 2018

The EDR Radius Map™ Report with GeoCheck®

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

12215 OLD HWY 70
COVE CITY, NC 28523

COORDINATES

Latitude (North):	35.2036000 - 35° 12' 12.96''
Longitude (West):	77.3654000 - 77° 21' 55.44''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	284663.7
UTM Y (Meters):	3897987.0
Elevation:	56 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5944932 COVE CITY, NC
Version Date:	2013
West Map:	5944934 DOVER, NC
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140706
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
12215 OLD HWY 70
COVE CITY, NC 28523

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	WORLD WOOD CORPORATI	12045 OLD HIGHWAY 70	LUST	Lower	1904, 0.361, SSW
2	HADDOCK PROPERTY (BA	12040 OLD US HWY 70	LUST	Lower	1922, 0.364, SSW

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-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROL..... Sites with Institutional Controls

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
OLI..... Old Landfill Inventory

State and tribal leaking storage tank lists

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

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

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Projects Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

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

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
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
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
ECHO ---------- Enforcement & Compliance History Information
DOCKET HWC ---------- Hazardous Waste Compliance Docket Listing
UXO ---------- Unexploded Ordnance Sites
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

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 identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

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

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

EXECUTIVE SUMMARY

LUST: The Leaking Underground Storage Tank Incidents Management Database contains an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environment, & Natural Resources' Incidents by Address.

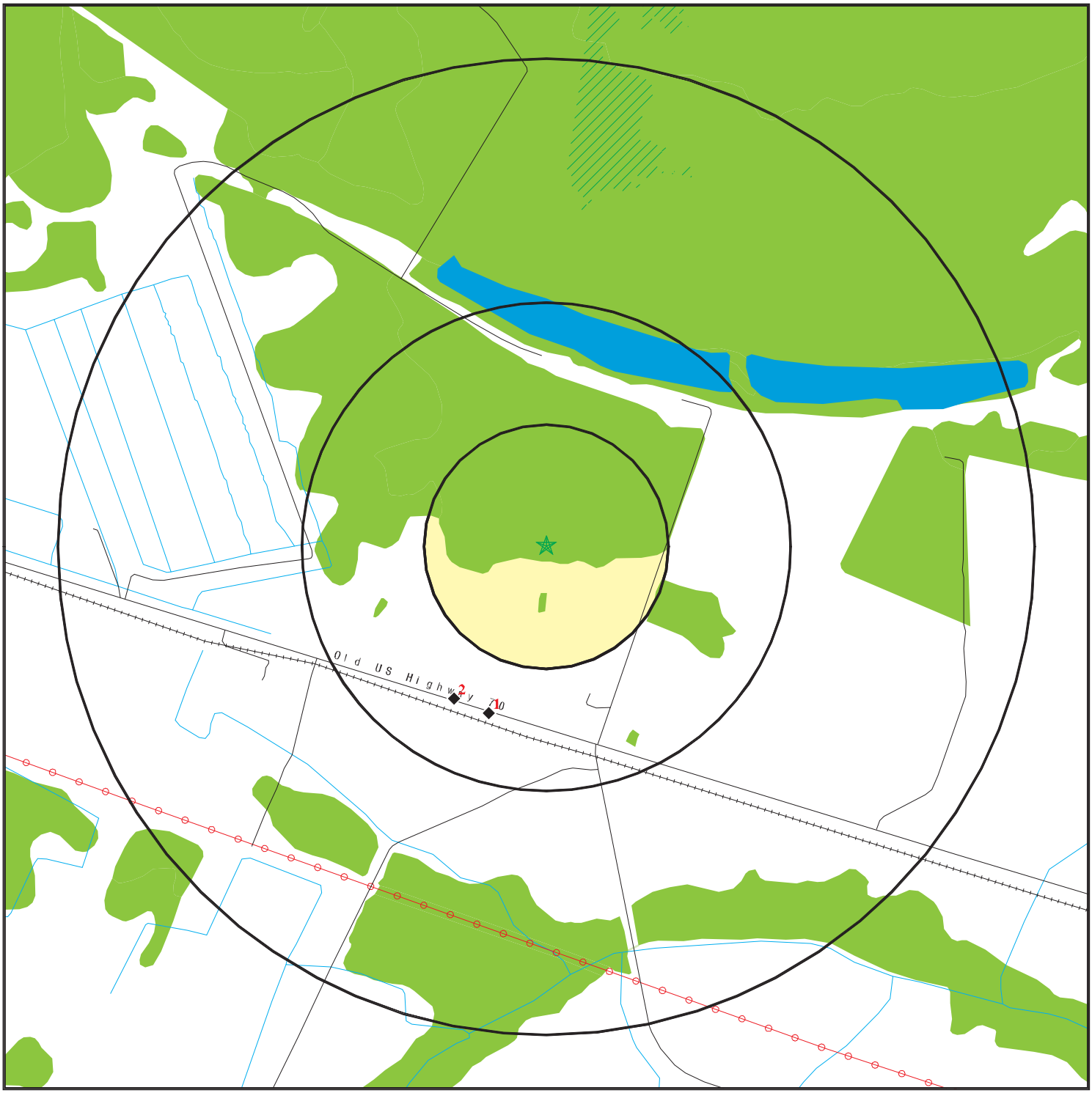
A review of the LUST list, as provided by EDR, and dated 05/04/2018 has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WORLD WOOD CORPORATI Incident Phase: Closed Out Incident Number: 31637 Current Status: File Located in Archives	12045 OLD HIGHWAY 70	SSW 1/4 - 1/2 (0.361 mi.)	1	8
HADDOCK PROPERTY (BA Incident Number: 38657 Current Status: File Located in House	12040 OLD US HWY 70	SSW 1/4 - 1/2 (0.364 mi.)	2	9

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5407347.2S



- 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
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Hazardous Substance Disposal Sites

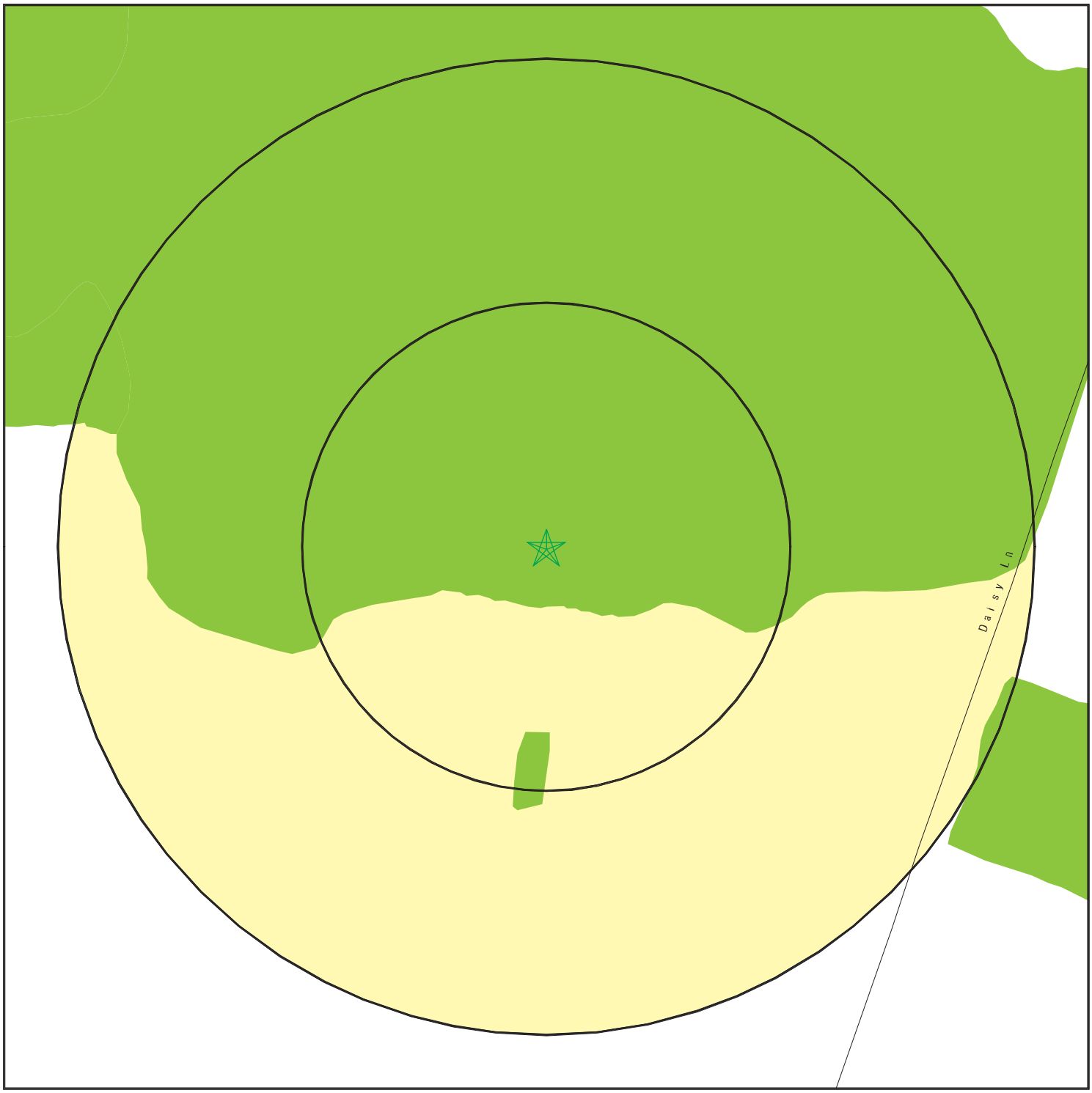
0 1/4 1/2 1 Miles

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: Sliver Moon II	CLIENT: Restoration Systems, LLC
ADDRESS: 12215 Old Hwy 70 Cove City NC 28523	CONTACT: JD Hamby
LAT/LONG: 35.2036 / 77.3654	INQUIRY #: 5407347.2s DATE: August 28, 2018 10:12 am

DETAIL MAP - 5407347.2S



0 1/16 1/8 1/4 Miles

- 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
- Indian Reservations BIA
- 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: Sliver Moon II	CLIENT: Restoration Systems, LLC
ADDRESS: 12215 Old Hwy 70 Cove City NC 28523	CONTACT: JD Hamby
LAT/LONG: 35.2036 / 77.3654	INQUIRY #: 5407347.2s DATE: August 28, 2018 10:14 am

APPENDIX F: FINANCIAL ASSURANCES

Pursuant to Section IV H and Appendix III of the NCDEQ DMS (formerly Ecosystem Enhancement Program) In-Lieu Fee Instrument dated July 28, 2010, the North Carolina Department of Environmental Quality (NCDEQ) has provided the USACE-Wilmington District with a formal commitment to fund projects to satisfy mitigation requirements assumed by NCDEQ DMS. This commitment provides financial assurance for all mitigation projects implemented by the program.

PERFORMANCE BOND

Travelers Casualty and Surety Company of America
One Tower Square, Hartford, CT 06183

Bond No. 107256010

KNOW ALL MEN BY THESE PRESENTS, that we, **Restoration Systems, LLC** as Principal, and **Travelers Casualty and Surety Company of America**, licensed to do business in the State of, **North Carolina** as Surety, are held and firmly bound unto **North Carolina Department of Environmental Quality – Division of Mitigation Services** (Obligee), in the penal sum of **Four Hundred Eighty-six Thousand Seven Hundred Fifty & no/100---$486,750.00)**, lawful money of the United States of America, for the payment of which sum, well and truly to be made, the Principal and Surety do bind themselves, their heirs, executors, administrators, and successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the above bounden Principal has entered into certain written **Contract No 7606** with the above named Obligee, effective the **14** day of **June**, **2018** for **Sliver Moon II Wetland Mitigation Site in the Neuse River Basin, Cataloging Unit 03020202** and more fully described in said Contract, a copy of which is attached, which Contract is made a part hereof and incorporated herein by reference, except that nothing said therein shall alter, enlarge, expand or otherwise modify the term of the bond as set out below.

NOW, THEREFORE, if Principal, its executors, administrators, successors and assigns shall promptly and faithfully perform the Contract, according to the terms, stipulations or conditions thereof, then this obligation shall become null and void, otherwise to remain in full force and effect. This bond is executed by the Surety and accepted by the Obligee subject to the following express condition:

Notwithstanding the provisions of the Contract, this bond will commence on the date of approval by North Carolina Division of Mitigation Services of the **Sliver Moon II Wetland** Mitigation Plan and will remain in effect until the Principal has received written notification from the North Carolina Department of Environmental Quality – Division of Mitigation Services that the requirements of Task 6 (Submittal of Baseline Monitoring Report) have been met, but may be extended by the Surety at its sole option by Continuation Certificate. However, neither nonrenewal by the Surety, nor the failure or inability of the Principal to file a replacement bond in the event of nonrenewal, shall itself constitute a loss to the Obligee recoverable under this bond or any renewal or continuation thereof. The liability of the Surety under this bond and all Continuation Certificates issued in connection therewith shall not be cumulative and shall in no event exceed the amount as set forth in this bond or in any additions, riders, or endorsements properly issued by the Surety as supplements thereto.

Sealed with our seals and dated this **24** day of **July** , **2020**.

RESTORATION SYSTEMS, LLC

Witness

Principal

Travelers Casualty and Surety Company of America

Witness

Phoebe C. Honeycutt, Attorney-in-Fact

McGriff Insurance Services
4309 Emperor Blvd Suite 300
Durham, NC 27709

Agreed and acknowledged this ___ day of _____, **2020**

By: _____
Obligee

S-5025 (08-99)

TRAVELERS

Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **PHOEBE C HONEYCUTT** of **DURHAM**, **North Carolina**, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **17th** day of **January**, **2019.**

State of Connecticut

City of Hartford ss.

By: _____
Robert L. Raney, Senior Vice President

On this the **17th** day of **January**, **2019**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2021**

_____
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this **24** day of **July**, **2020**.

_____
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney-in-Fact and the details of the bond to which this Power of Attorney is attached.

APPENDIX G: SITE PROTECTION INSTRUMENT

LEGEND:

ISS - IRON STAKE SET
ECM - EXISTING CONCRETE MARKER
EIP - EXISTING IRON PIPE
ERRR - EXISTING RAILROAD RAIL
PTI - PINCHED TOP IRON
EA - EXISTING AXLE
EDS - EXISTING DRIVE SHAFT
EMN - EXISTING MAG NAIL
EDS - EXISTING DRIVE SHAFT
RPS - RANGE POLE SET
EMN - EXISTING MAG NAIL
MNS - MAG NAIL SET
EIS - EXISTING IRON STAKE
EPP - EXISTING PUMP PIPE
PPS - PUMP PIPE SET
NMC - NON-MONUMENTED CORNER
R/W - RIGHT OF WAY
EOP - EDGE OF PAVEMENT
EF - ESTATE FILE
CL - CENTERLINE
UP - UTILITY POLE
B.M. - BOOK OF MAP
PC - PLAT CABINET
D.B. - DEED BOOK
PG. - PAGE
o - NON-MONUMENTED CORNER UNLESS OTHERWISE NOTED
● No. 5 REBAR WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"

———— CONSERVATION EASEMENT LINE
– – – – – TIE DOWN LINE
—·—·—·— EASEMENT LINE
— — — ADJOINER OR R/W LINE

Doc No: 10052928
Recorded: 04/08/2020,03:23:27 PM
Fee Amt: $42.00 Page 1 of 2
CRAVEN County,North Carolina
Sherri B. Richard Register of Deeds
Bk I Pg 164A

CRAVEN COUNTY PLANNING CERTIFICATE:

This plat is exempt from the Craven County subdivision review process and is a conservation easement as shown on the plat.

4/8/20 Date — Planning Administrator

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

Filed for registration at 3:23 P M. April 8 , 2020 in the Register of Deeds Office. Recorded in P.B. I , PG. 164A .

Sherrie B. Richard Register of Deeds — By Misty Van Opeldoorn Deputy

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

I, Tina Daughety , Review Officer of Craven County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

4/8/2020 Date — Tina Daughety Review Officer

SURVEYORS CERTIFICATION(S)

Surveyor's disclaimer: No attempt was made to locate any cemeteries, wetlands, hazardous material sites, underground utilities or any other features above, or below ground other than those shown. However, no visible evidence of cemeteries or utilities, aboveground or otherwise, was observed by the undersigned (other than those shown).

I certify that the survey is of another category such as the recombination of existing parcels, a court-ordered survey, or other exception to the definition of subdivision (recombination of land).

I, JOHN A. RUDOLPH, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description recorded in Book SEE , Page REFS , etc.) (other); that the boundaries not surveyed are clearly indicated as drawn from information found in Book ____, page____; that the ratio of precision or positional accuracy as calculated is 1/10,000+; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, license number and seal this 6th day of April, A.D., 2020.

SEAL OR STAMP

NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

Professional Land Surveyor — L-4194 License Number

DRAWN BY: FGR
DATE: 04/06/20
DWG. NO.: RSS431MR20
SURVEYED BY: J.A.R.

k2 design group
774 S. Boston Road
La Grange, NC 28551
252.582.3097
www.k2designgroup.com

FIRM LICENSE No.: C-2111 K2 DESIGN GROUP, P.A. CORPORATE SEAL 2000 NORTH CAROLINA

CERTIFICATION OF EXEMPTION:

I (We) hereby certify that I am (We are) the Owner(s) of the properties shown and described hereon, which was conveyed to me (us) by deeds recorded in Deed Book 3607, Page 1436-1439 & D.B. 3607, PG. 1440-1443, and that we hereby adopt the plan of conservation easement of the properties shown on this plat and that the conservation easement shown is an exception to the Subdivision Ordinance of Craven County, North Carolina.

4/8/20 Date — Representative of Restoration Systems, LLC

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PLAT IS BASED ON NORTH CAROLINA STATE PLANE COORDINATES ESTABLISHED BY USING THE ONLINE POSITIONING USER SERVICE (OPUS) PROVIDED BY THE NATIONAL GEODETIC SURVEY.

PTI (1) NC GRID COORDINATES NAD 83 (2011)
N=532, 870.2663'
E=2,489,493.3773'

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PLAT IS 0.99987495 (GROUND TO GRID). THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM PTI (1) TO ISS (101) IS S 86°18'35" W 27.36 FEET.

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.

GEOID-2018 CONUS

GNSS RECEIVER - TOPCON HIPER VR WITH MINIMUM TIME OF 2+ HOURS COMPLETED ON 02/06/17

THE FOLLOWING BASE STATIONS WERE USED:

PID	DESIGNATION	LATITUDE (m)	LONGITUDE (m)
DK6239	NCJV JACKSONVILLE CORS ARP	N344446.615	W0772711.718
DL7337	NCEC GREENVILLE CORS ARP	N353616.309	W0772155.479
DK7551	NCWA WASHINGTON 2007 CORS ARP	N353334.784	W0770331.442

FEMA FLOOD STATEMENT:

THE AREA REPRESENTED BY THIS PLAT IS NOT LOCATED IN A FLOOD HAZARD BOUNDARY ACCORDING TO FEMA MAP NUMBER(S) 3720452001 ZONE(S): X, DATED: JULY 2, 2004.

CONSERVATION EASEMENT ACREAGE DATA:

CONSERVATION EASEMENT IS 30.88 ACRES± EXCLUDING ACCESS EASEMENT 1, EXCLUDING ACCESS EASEMENT 2, EXCLUDING THE EXISTING 18' EASEMENT, EXCLUDING THE EXISTING ACCESS EASEMENT 3, AND INCLUDING THE NEW 15' ACCESS LANE BY COORDINATE COMPUTATION

GENERAL NOTES:

NOTE: NO ABSTRACT OF TITLE, NOR TITLE COMMITMENT, OR RESULTS OF TITLE SEARCH WERE FURNISHED TO THE SURVEYOR. ALL DOCUMENTS OF RECORD REVIEWED ARE NOTED HEREON (SEE REFERENCES). THERE MAY EXIST OTHER DOCUMENTS OF RECORD THAT MAY AFFECT THIS SURVEYED PARCEL.

ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.

RESTORATION SYSTEMS, LLC
1101 HAYNES STREET
SUITE 211
RALEIGH, NC 27604

LOCALIZED PROJECT COORDINATES ALONG CONSERVATION EASEMENT

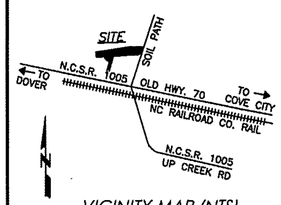
POINT	NORTHING	EASTING
101	532868.5055	2489465.0766
2	532849.0549	2489164.5078
3	532825.2923	2488768.8509
4	532800.9533	2488439.3051
5	532776.2117	2488055.1372
6	532759.2780	2487776.6781
102	532757.3656	2487760.8033
103	532474.6836	2487679.2633
104	532482.1401	2487647.9277
105	532410.6123	2487603.4832
106	532432.9523	2487522.0503
107	532397.8826	2487512.3126
108	532472.5887	2487323.7781
109	532612.9786	2487242.1565
110	532745.8659	2487216.4096
111	532728.4787	2486917.1100
12	532708.0669	2486910.6005
13	532697.1704	2486723.0314
14	533009.8400	2486687.7037
15	533343.6583	2488830.8875
16	533310.0410	2488811.7486
112	533302.9693	2488616.3103
113	532892.8342	2489484.8589

LINE DATA ALONG THE CONSERVATION

LINE	BEARING	DISTANCE
L1	S86°42'37"W	15.90'
L2	S16°05'25"W	294.21'
L3	N76°36'54"W	32.21'
L4	S31°51'18"W	84.21'
L5	N74°39'33"W	84.44'
L6	S15°31'06"W	36.40'
L7	N68°23'03"W	202.80'
L8	N30°10'25"W	162.39'
L9	N10°57'55"W	135.36'
L10	S86°40'31"W	299.80'
L11	S17°41'17"W	21.42'

CORNER DESCRIPTIONS

CORNER #	DESCRIPTION
(1)	1.5" O.D. PINCHED-TOP IRON 0.3' BELOW GRADE
(2)	1.0" O.D. IRON PIPE 0.9' ABOVE GRADE
(3)	1.0" O.D. PINCHED-TOP IRON BENT FLUSH WITH GRADE
(4)	1.0" O.D. IRON PIPE 1.0' BELOW WATER
(5)	1.0" O.D. IRON PIPE 2.5' ABOVE GRADE
(6)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
(7) THRU (12)	No. 5 REBAR FLUSH WITH GRADE
(13)	RAILROAD RAIL 1.3' ABOVE GRADE
(14)	0.5" O.D. IRON STAKE 0.9' ABOVE WATER
(15)	0.5" O.D. IRON PIPE 0.3' ABOVE GRADE
(16)	No. 5 REBAR 0.9' BELOW GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT" INSCRIBED AS POINT No. "2" AS RECORDED IN P.C. I, SL. 3-C
(17)	No. 5 REBAR 0.8' BELOW GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT" INSCRIBED AS POINT No. "1" AS RECORDED IN P.C. I, SL. 3-C
(18)	1.0" O.D. PINCHED-TOP IRON 0.3' BELOW GRADE
(19)	1.0" O.D. PINCHED-TOP IRON 0.4' BELOW GRADE
(20)	2.0" O.D. IRON PIPE 0.3' BELOW WATER
(21)	1.0" O.D. IRON PIPE BENT 0.2' BELOW GRADE
(22)	0.5" O.D. IRON PIPE BENT 0.3' BELOW GRADE
(101) THRU (113), (114) & (116)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"



VICINITY MAP (NTS)

DEED REFERENCE(S):

BEING THE PROPERTY RECORDED IN D.B. 3607, PG. 1436-1439 & D.B. 3607, PG. 1440-1443 OF THE CRAVEN COUNTY REGISTER OF DEEDS.

MAP REFERENCE(S):

BEING ALL OF THE PROPERTY RECORDED IN M.B. I, PG.(S) 163C -163D OF THE CRAVEN COUNTY REGISTER OF DEEDS.

P.C. I, SL. 3-C
P.B. 10, PG. 32
P.C. H, SL. 159-H
P.C. H, SL. 71-D

ACCESS EASEMENT REFERENCE(S):

D.B. 3607, PG. 1506-1508

SHEET 1 OF 2

CONSERVATION EASEMENT FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES OVER A PORTION OF THE LANDS OF RESTORATION SYSTEMS, LLC (CURRENT OWNER PER D.B. 3607, PG. 1440-1443 & D.B. 3607, PG. 1436-1439) DMS PROJECT ID# 100077 SPO NUMBERS 25-BX SLIVER MOON 2 MITIGATION SITE

No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)

200 100 0 200 400 600
GRAPHIC SCALE 1" = 200'

LEGEND:

ISS - IRON STAKE SET
ECM - EXISTING CONCRETE MARKER
EIP - EXISTING IRON PIPE
ERRR - EXISTING RAILROAD RAIL
PTI - PINCHED TOP IRON
EA - EXISTING AXLE
EDS - EXISTING DRIVE SHAFT
EMN - EXISTING MAG NAIL
EDS - EXISTING DRIVE SHAFT
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EMN - EXISTING MAG NAIL
MNS - MAG NAIL SET
EIS - EXISTING IRON STAKE
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PPS - PUMP PIPE SET
NMC - NON-MONUMENTED CORNER
R/W - RIGHT OF WAY
EOP - EDGE OF PAVEMENT
EF - ESTATE FILE
CL - CENTERLINE
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B.M. - BOOK OF MAP
PC - PLAT CABINET
D.B. - DEED BOOK
PG. - PAGE
o - NON-MONUMENTED CORNER UNLESS OTHERWISE NOTED
No. 5 REBAR WITH AN ALUMINUM 3 1/4" ● CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"

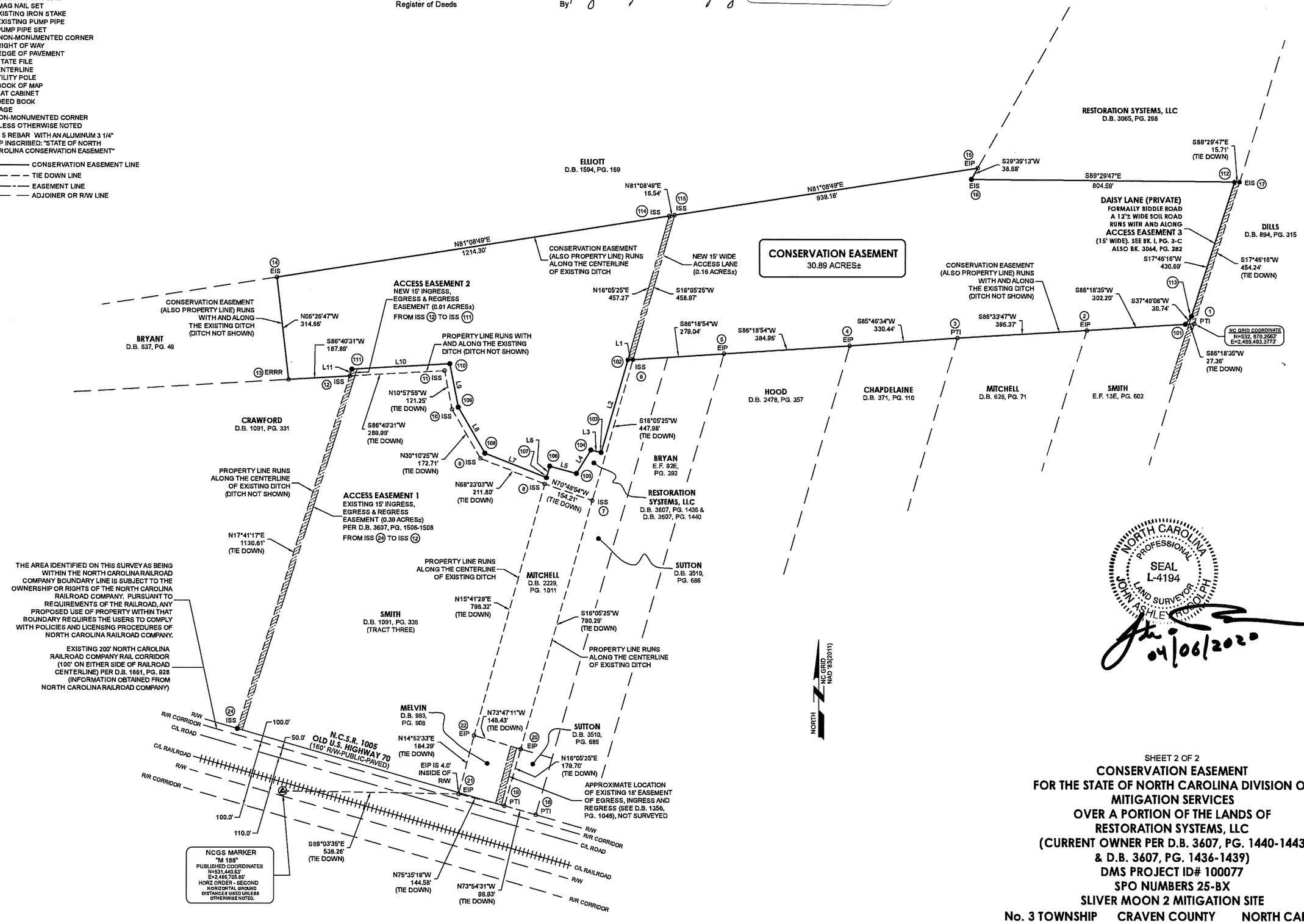
———— CONSERVATION EASEMENT LINE
– – – – – TIE DOWN LINE
—·—·—·— EASEMENT LINE
— — — ADJOINER OR R/W LINE

STATE OF NORTH CAROLINA
COUNTY OF CRAVEN

Filed for registration at 3:23 P.M. April 8, 2020 in the Register of Deeds
Office. Recorded in P.B. I, PG. 164B.

Sherri B. Richard — Misty Van Apeldoorn Deputy
Register of Deeds — By

Doc No: 10052928
Bk I Pg 164B



NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY UDOLPH

04/06/2020

SHEET 2 OF 2

CONSERVATION EASEMENT
FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES
OVER A PORTION OF THE LANDS OF
RESTORATION SYSTEMS, LLC
(CURRENT OWNER PER D.B. 3607, PG. 1440-1443 & D.B. 3607, PG. 1436-1439)
DMS PROJECT ID# 100077
SPO NUMBERS 25-BX
SLIVER MOON 2 MITIGATION SITE
No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)

200 100 0 200 400 600

GRAPHIC SCALE 1" = 200'

BK 3608 PG 1274 - 1284 (11) DOC# 10052993
This Document eRecorded: 04/09/2020 03:12:35 PM
Fee: $26.00 DocType: DEED Tax: $331.00
Craven County, North Carolina
Sherri B. Richard, Register of Deeds

Excise Tax ~~$330.40~~ $331.00

STATE OF NORTH CAROLINA

CRAVEN COUNTY

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

SPO File Number: 25-BX
DMS Project Number: 100077

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 9th day of April, 2020, by **RESTORATION SYSTEMS, LLC**, a North Carolina limited liability company ("**Grantor**"), whose mailing address is 1101 Haynes Street, Suite 211, Raleigh, NC 27604, 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 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 Restoration Systems, LLC, a North Carolina limited liability company, 1101 Haynes Street, Suite 211, Raleigh, NC 27604, 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 7606.

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, 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 No. 3 Township, Craven County, North Carolina (the "**Property**"), and being more particularly described as that certain parcel of land containing approximately 31.85 total acres and being conveyed to the Grantor by deed as recorded in **Deed Book 3607 at Page 1436 and Deed Book 3607 at Page 1440** of the Craven 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 Core 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 along with a general Right of Access.

The Conservation Easement Area consists of the following:

A tract containing a total of **30.89 acres** identified as "CONSERVATION EASEMENT (30.89 ACRES±)" as shown on the plat of survey titled "Final Plat, Conservation Easement for North Carolina Division of Mitigation Services over a Portion of the Lands of Restoration Systems, LLC (Current Owner Per D.B. 3607, Pg. 1440-1443 & D.B. 3607, Pg. 1436-1439), DMS Project ID No. 100077, SPO File No. 25-BX, Sliver Moon 2 Mitigation Site," dated February 27, 2020, by John A. Rudolph, PLS Number L-4194 and recorded in the Craven County, North Carolina Register of Deeds at **Plat Book I, Pages 164A though 164B.**

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

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

I. DURATION OF EASEMENT

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

II. GRANTOR RESERVED USES AND RESTRICTED ACTIVITIES

The Conservation Easement Area shall be restricted from any development or usage that would impair or interfere with the purposes of this Conservation Easement. Unless expressly reserved as a compatible use herein, any activity in, or use of, the Conservation Easement Area by the Grantor is prohibited as inconsistent with the purposes of this Conservation Easement. Any rights not expressly reserved hereunder by the Grantor have been acquired by the Grantee. Any rights not expressly reserved hereunder by the Grantor, including the rights to all mitigation credits, including, but not limited to, stream, wetland, and riparian buffer mitigation units, derived from each site within the area of the Conservation Easement, are conveyed to and belong to the Grantee. Without limiting the generality of the foregoing, the following specific uses are prohibited, restricted, or reserved as indicated:

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

B. **Motorized Vehicle Use.** Motorized vehicle use in the Conservation Easement Area is prohibited except within a Crossing Area(s) or Road or Trail or Access Lane 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) or Access Lane 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, except only in that area identified on the survey plat as "NEW 15' WIDE ACCESS LANE (0.16 ACRES±)".

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.

III. GRANTEE RESERVED USES

A. Right of Access, Construction, and Inspection. The Grantee, its employees and agents, successors and assigns, receive a perpetual Right of Access to the Conservation Easement Area over the Property at reasonable times to undertake any activities on the property to restore, construct, manage, maintain, enhance, protect, and monitor the stream, wetland and any other riparian resources in the Conservation Easement Area, in accordance with restoration activities or a long-term management plan. Unless otherwise specifically set forth in this Conservation Easement, the rights granted herein do not include or establish for the public any access rights.

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

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

D. Fences. 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 as a result of activities of the Grantor, his successors or assigns.

IV. ENFORCEMENT AND REMEDIES

A. Enforcement. To accomplish the purposes of this Conservation Easement, Grantee is allowed to prevent any activity within the Conservation Easement Area that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such areas or features in the Conservation Easement Area that may have been damaged by such unauthorized activity or use. Upon any breach of the terms of this Conservation Easement by Grantor, the Grantee shall, except as provided below, notify the Grantor in writing of such breach and the Grantor shall have ninety (90) days after receipt of such notice to correct the damage caused by such breach. If the breach and damage remains uncured after ninety (90) days, the Grantee may enforce this Conservation Easement by bringing appropriate legal proceedings including an action to recover damages, as well as injunctive and other relief. The Grantee shall also have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Conservation Easement Area by acts which may be unlawful or in violation of this Conservation Easement; (b) to otherwise preserve or protect its interest in the Property; or (c) to seek damages from any appropriate person or entity. Notwithstanding the foregoing, the Grantee reserves the immediate right, without notice, to obtain a temporary restraining order, injunctive or other appropriate relief, if the breach is or would irreversibly or otherwise materially impair the benefits to be derived from this Conservation Easement, and the Grantor and Grantee acknowledge that the damage would be irreparable and remedies at law inadequate. The rights and remedies of the Grantee provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available to Grantee in connection with this Conservation Easement.

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

C. Acts Beyond Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury or change in the Conservation Easement Area caused by third parties, resulting from causes beyond the Grantor's control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken in good faith by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to life or damage to the Property resulting from such causes.

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

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

V. MISCELLANEOUS

A. This instrument sets forth the entire agreement of the parties with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings or agreements relating to the Conservation Easement. If any provision is found to be invalid, the remainder of the provisions of the Conservation Easement, and the application of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

B. Grantor is responsible for any real estate taxes, assessments, fees, or charges levied upon the Property. Grantee shall not be responsible for any costs or liability of any kind related to the ownership, operation, insurance, upkeep, or maintenance of the Property, except as expressly provided herein. Upkeep of any constructed bridges, fences, or other amenities on the Property are the sole responsibility of the Grantor. Nothing herein shall relieve the Grantor of the obligation to comply with federal, state or local laws, regulations and permits that may apply to the exercise of the Reserved Rights.

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

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

E. The Grantor and Grantee agree that the terms of this Conservation Easement shall survive any merger of the fee and easement interests in the Property or any portion thereof.

F. This Conservation Easement and Right of Access may be amended, but only in writing signed by all parties hereto, or their successors or assigns, if such amendment does not affect the qualification of this Conservation Easement or the status of the Grantee under any applicable laws, and is consistent with the purposes of the Conservation Easement. The owner of the Property shall notify the State Property Office and the U.S. Army Corps of Engineers in writing sixty (60) days prior to the initiation of any transfer of all or any part of the Property or of any request to void or modify this Conservation Easement. Such notifications and modification requests shall be addressed to:

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.

VI. QUIET ENJOYMENT

Grantor reserves all remaining rights accruing from ownership of the Property, including the right to engage in or permit or invite others to engage in only those uses of the Conservation Easement Area that are expressly reserved herein, not prohibited or restricted herein, and are not inconsistent with the purposes of this Conservation Easement. Without limiting the generality of the foregoing, the Grantor expressly reserves to the Grantor, and the Grantor's invitees and licensees, the right of access to the Conservation Easement Area, and the right of quiet enjoyment of the Conservation Easement Area,

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

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

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

RESTORATION SYSTEMS, LLC

By: George Howard

Name George Howard

Title: CEO

Date: 04-09-2020

Authorized for Restoration Systems, LLC

NORTH CAROLINA
COUNTY OF Wake

I, Tiffani Bylow, a Notary Public in and for the County and State aforesaid, do hereby certify that George Howard, on behalf of Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument in the capacity indicated.

IN WITNESS WHEREOF, I have hereunto set my hand and Notary Seal this the 9th day of April, 2020.

Tiffani Bylow
Notary Public

My commission expires:
5.04.2023

TIFFANI BYLOW
Notary Public
Wake County
NORTH CAROLINA

EXHIBIT A

Legal Description

BEING ALL of the Conservation Easement of the Sliver Moon 2 Mitigation Site over a portion of the land of Restoration System, LLC, lying and being situated in No. 3 Township, Craven County, North Carolina and particularly described as follows (all distances are ground distances unless otherwise noted):

Beginning at an iron stake (Point of Beginning) labeled as Point No. 101 and being the Southeastern most corner of the conservation easement and being located South 86°18'35" West 27.36 feet from a pinched-top iron (Point No. 1) with N.C. Grid Coordinates N=532,870.2663', E=2,489,493.3773' (NAD '83, 2011).

Thence from the Point of Beginning (Point No.101), South 86°18'35" West 302.20' to an iron pipe; thence South 86°33'47" West 396.37' to a pinched-top iron; thence South 85°46'34" West 330.44' to an iron pipe; thence South 86°18'54" West 384.96' to an iron pipe; thence South 86°18'54" West 279.04' to an iron stake; thence South 86°42'37" West 15.90' to an iron stake; thence South 16°05'25" West 294.21' to an iron stake; thence North 76°36'54" West 32.21' to an iron stake; thence South 31°51'18" West 84.21' to an iron stake; thence North 74°39'33" West 84.44' to an iron stake; thence South 15°31'06" West 36.40' to an iron stake; thence North 68°23'03" West 202.80' to an iron stake; thence North 30°10'25" West 162.39' to an iron stake; thence North 10°57'55" West 135.36' to an iron stake; thence South 86°40'31" West 299.80' to an iron stake; thence South 17°41'17" West 21.42' to an iron stake; thence South 86°40'31" West 187.89' to a railroad rail; thence North 06°26'47" West 314.66' to an iron stake; thence North 81°08'49" East 2169.03' to an iron pipe; thence South 29°39'13" West 38.68' to an iron stake; thence South 89°29'47" East 804.59' to an iron stake; thence South 17°46'16" West 430.69' to an iron stake; thence South 37°40'08" West 30.74' to an iron stake, which is the Point of Beginning (Point No. 101), having an area of approximately 30.89 acres, being the same property shown as the "Conservation Easement, 30.89 acres+-" on plat of survey titled "Conservation Easement Survey for The State of North Carolina, Division of Mitigation Services, over a Portion of the Lands of Restoration Systems, LLC (Current Owner Per D.B. 3607, Pg. 1440-1443 & D.B. 3607, Pg. 1436-1439), DMS Project ID No. 100077, SPO File Number 25-BX, Sliver Moon 2 Mitigation Site," dated April 6, 2020, by John A. Rudolph, PLS Number L-4194, K2 Design Group, and recorded at Plat Book I, Pages 164A though 164B, Craven County Register of Deeds (the "Plat").

TOGETHER WITH that certain fifteen (15) foot-wide access easement labeled as "Access Easement 1", for ingress, egress, and regress as shown on the Plat, said Access Easement 1 being the same access easement as was granted to Restoration Systems, LLC and it successors and assigns in that certain Corrective Access Easement Agreement recorded in Deed Book 3607, Page 1506, Craven County Registry, and that certain fifteen (15) foot-wide access easement labeled as "Access Easement 2", for ingress, egress, and regress as shown on the Plat.

APPENDIX H: CREDIT RELEASE SCHEDULE

The standard release schedule for ILF credits generated through wetland mitigation projects has been modified to meet the new standards for the monitoring time frames provided in USACE Wilmington District's 2016 guidance document.

The schedule below list the updated credit release schedule for wetland mitigation projects developed by ILF sites in North Carolina:

Sliver Moon II Wetland Mitigation Site Credit Release Schedule and Milestones			
Credit Release Milestone	**Release Activity**	**ILF/NCDMS**	
		Interim Release	**Total Released**
1	Site Establishment (includes all required criteria stated above)	0%	0%
2	Completion of all initial physical and biological improvements made pursuant to the Mitigation Plan	30%	30%
3	Year 1 monitoring report demonstrates that interim performance standards have been met	10%	40%
4	Year 2 monitoring report demonstrates that interim performance standards have been met	10%	50%
5	Year 3 monitoring report demonstrates that interim performance standards have been met	15%	65%
6*	Year 4 monitoring report demonstrates that interim performance standards have been met	5%	70%
7	Year 5 monitoring report demonstrates that interim performance standards have been met	15%	85%
8*	Year 6 monitoring report demonstrates that interim performance standards have been met	5%	90%
9	Year 7 monitoring report demonstrates that performance standards have been met	10%	100%

*Please note that vegetation plot data may not be required with monitoring reports submitted during these monitoring years unless otherwise required by the Mitigation Plan or directed by the NCIRT.

APPENDIX I: MAINTENANCE PLAN

Maintenance Plan

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

Component/Feature	Maintenance through project close-out
Vegetation	Vegetation shall be maintained to ensure the health and vigor of the targeted plant community. Routine vegetation maintenance and repair activities may include supplemental planting, pruning, mulching, and fertilizing. Exotic invasive plant species shall be controlled by mechanical and/or chemical methods. Any vegetation control requiring herbicide application will be performed in accordance with NC Department of Agriculture (NCDA) rules and regulations.
Site Boundary	Site boundaries shall be identified in the field to ensure clear distinction between the mitigation site and adjacent properties. Boundaries may be identified by fence, marker, bollard, post, tree- blazing, or other means as allowed by site conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as needed basis.

APPENDIX J: SEDIMENT AND EROSION CONTROL PLANS

SLIVER MOON 2 WETLAND MITIGATION SITE - Looking NW

EROSION & SEDIMENTATION CONTROL PLAN

SLIVER MOON 2 WETLAND MITIGATION SITE
NEUSE RIVER BASIN
CRAVEN COUNTY, NC

October 14, 2020

NORTH CAROLINA PROFESSIONAL
SEAL
L-4194
LAND SURVEYOR
JOHN ASHLEY RUDOLPH

Prepared for:

RESTORATION SYSTEMS, LLC
1101 Haynes Street
Suite 211
Raleigh, NC 27604
tel. 919.755.9490
fax. 919.755.9492

Prepared by:

k2 design group
774 South Beston Road
La Grange, NC 28551
252.251.9013
www.k2designgroup.com

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USGS QUADRANGLE (COVE CITY, NC 2019)

SOIL MAP DATA:
Data from Craven County GIS
US DEPT.OF AGRICULTURE –NRCS
Soil Survey - *http://websoilsurvey.ncrs.usda.gov*

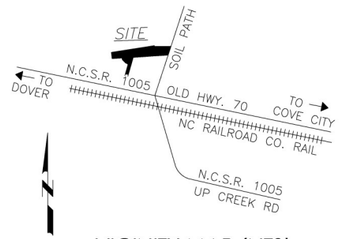
Orange = Pa, Pantego Fine Sandy Loam

Purple = Ra, Rains Fine Sandy Loam

LOCATION/SITE INFORMATION

Site Location:

The site is located approximately between Cove City and Dover, North Carolina. To reach the site from Dover, NC proceed on Old US 70 East approximately 4.4 miles to the intersection of NCSR 1005 (Up Creek Rd.) and a soil road (Daisy Lane). Then turn left onto a soil road (Daisy Lane), and proceed to a gate that is locked. The site will be on the left. The NC State Plane Coordinates for the gate/parking area is as follows: N532,870.199'/E2,489,493.278'



VICINITY MAP (NTS)

Type of Work:

Riparian Wetland Restoration

-Site Grading
-Ditch plugs
-Ditch backfilling
-Site Planting

Introduction:

The Sliver Moon Restoration Site encompasses 30.89 acres. (hereafter known as the site) The total disturbance area is 28.0 acres. The land is currently used for agriculture row crop production, except for two small woodland areas. The majority of the site has been cleared of native forest vegetation and ditched for drainage. The site is to have the existing ditches filled, and the site replanted with native species. A permanent ground cover will be provided with the new trees being planted before or during March of 2021. The new graded areas will have a temporary ground cover (grasses) planted within 21 days of disturbance, and later, a permanent ground cover (grasses) will be planted in the spring of 2021.

Site Description:

Site is encompassed within a single parcel of land, owned by Restoration Systems, LLC. (D.B. 3607, Pg. 1436 & D.B. 3607, Pg. 1440) A Conservation Easement has been placed on the tract, see D.B. 3608, Pg. 1274, attached. The Conservation Easement has also been recorded in P.B. I, Pgs. 164A-164B, attached.

Existing soil road looking South toward gate

A soil road runs along the Eastern edge of the site and provides access to an offsite cabin and other agricultural lands.

Watershed and Land Uses:

The Sliver Moon Restoration Site is located within the Neuse River Basin. (USGS Hydrologic Unit 03020202)

An existing ditch system has been excavated to drain the site. These ditches drain offsite toward Core Creek and eventually toward the Neuse River.

Typical site ditches along Daisey Lane

Existing Conservation Easement signs along property lines.

Soils:

Two types of soils occur within the site according to the Soil Surveys of Craven County, North Carolina (USDA 1989)

The site consists of the following two types of soils:

Pa (Pantego fine sandy loam)

-very poorly drained soils
-slope is 0 to 1%
-hydric soil rating yes
-used mainly as woodland and cropland

Ra (Rains fine sandy loam)

-poorly drained soils
-slope is 0 to 2%
-hydric soil rating yes
-used mainly as woodland and cropland

Site Restoration:

Ditch Cleaning:

Ditches identified for backfilling will be cleaned, as needed to remove unconsolidated sediments. If pumping operations, are needed, see details for silting basin with rock pad. Removal of unconsolidated sediment is particularly critical in areas where ditch plugs are proposed. The accumulated sediment within the ditches provides a relatively high permeability material that might act as a conduit for drainage after restoration. The unconsolidated sediments will be lifted from the channel to expose the underlying, relatively undisturbed soil material beneath the ditch invert. The unconsolidated sediment will be incorporated into top soils and spread evenly throughout the site. Material not used immediately will be temporarily stored in the soil stockpile areas.

A total of 3 existing culverts will be removed from site (See Grading Plan – culverts 1, 2 & 3). All culverts will be removed from site and areas stabilized immediately after removal.

Ditch Plugs:

Impermeable ditch plugs will be installed within ditches at critical locations in 1-2' lifts throughout the site. These plugs are all to be installed as shown on map sheet. The plugs will be backfilled in 2 foot lifts of vegetation free material and compacted into the bottom of the ditch. The earthen material will be obtained from adjacent fields throughout the limits of construction area through the construction of shallow wetland pools. The plugs will consist of a core of on-site material and shall be sufficient width and depth to form an imbedded overlap in the existing ditch banks and ditch bed.

Ditch Backfilling:

Ditches will be backfilled using on-site material excavated from the site. Where vegetation material is present, it shall be removed as much as possible, before insertion of earthen material into the ditch. The ditches will be filled, compacted and graded to the approximate elevation of the adjacent wetland surface.

Vegetative Planting:

Deep-rooted riparian vegetation will be restored over the entire site. A permanent ground cover will be employed till forest planting takes place in areas that are disturbed (see seeding schedule). Variations in the forest vegetation may occur based on topographic locations and hydraulic conditions of the soil. The species composition should mimic referenced forest data and on-site observations. Species expected for this project are characteristic of the coastal plain bottomland hardwoods *(Classification of the Natural Communities of North Carolina by Schafale and Weakley 1990)*

For species distribution and densities see Planting and Seed List (page 18)

Vegetation Monitoring:

After planting has been completed, an initial evaluation will be performed to verify planting methods and to determine initial species composition and density. If necessary, supplemental planting and additional site modifications will be implemented.

Outfall Stabilization:

The existing outfall at the Northeast corner and at the Northwest corner of the site will be stabilized with Class A rip rap and underlain with filter fabric (see sheet 19).

General Notes:

All work shall be performed in accordance with the following standards:

North Carolina Department of Environmental Quality, Energy, Mineral, and Land Resources Division, *Erosion and Sediment Control Planning and Design Manual*, May 2013 revision.

All conservation easement corner markers destroyed during construction shall be replaced upon completion of project per DMS guidelines and standards..

The contractor is responsible for avoiding any disturbance or damage to utilities and shall be responsible for immediately repairing any damages at a cost incident to this contract.

All disturbed areas within the site will be seeded with temporary seeding
and mulch (Does not include areas where trees are to be planted)

On-site ditches will be filled to the maximum extent feasible with material excavated from on-site and stockpiled adjacent to reaches of ditches to be backfilled.

Silt fence shall be placed between stockpile and the existing ditches and shall be installed according to the approved sediment and erosion control plan.

The contractor may utilize the designated staging areas and the area inside the proposed conservation easement and any temporary construction easements for staging and
stockpiling equipment and materials. The contractor shall further be responsible for the installation and maintenance of all sediment and erosion control measures necessitated by temporary stockpiling areas,

Construction Schedule

1) Obtain all relevant permits including a Certificate of Coverage (COC) under the NCG010000 Construction Stormwater General Permit
2) Notify LQ office of planned start date and schedule a pre-construction meeting if requested.
3) Install temporary construction entrance, silt fencing, and other measures shown on the approved erosion and sedimentation control plan.
4) Install rain gauge on site. The contractor shall provide a rain logbook and have it available at all times.
5) Begin clearing field identified trees from existing forest areas. Stockpile tree debris on site
6) Begin major grading:
    a) Remove topsoil and stockpile material in designated areas and surround with silt fencing.
    b) Grade to a depth of -0.5' below finish grade.
    c) Stockpile cut material along existing ditches and surround with silt fencing if not being used the same day.
    d) Fill with topsoil to finish grade.
7) Begin fine grading, culvert removal & site outfalls contruction.
    a) The General Contractor shall field identify areas where surface water connections are to be established.
    b) Per the direction of the General Contractor, flow paths will be constructed by grading shallow swales - approx. 6" deep.
    c) Final grades will be determined in the field by RS' General Contractor.
    d) Braided swale locations will be determined in the field by RS' General Contractor.
    e) Braided swales will be shaped to form smooth transitions into and out of low areas and as determined in the field by the General Contractor.
    f) Site-wide disking of soils to reduce compaction and increase surface roughness.
8) Begin ditch fill in using stockpiled waste material.
    a) Ditch plugs should be installed approximately every 500 linear feet or as directed by the General Contractor.

b) Provide a groundcover (temporary or permanent) on exposed slopes within 21 calendar days following completion of any phase of grading; and, a permanent groundcover for all disturbed areas within 15 working days or 90 calendar days (whichever is shorter) following completion of construction or development of the following:
    i. Slopes between 2: I and 3: 1, with a slope length of 10 feet or less
    ii. Slopes 3:1 or flatter, with a slope length of 50 feet or less
    iii. Slopes 4:1 or flatter

9) All graded areas must be seeded, mulched, and matted at the end of each day. For this reason, the daily disturbance is limited to the length of ditch that can be completed within daily work hours.
10) When grading is complete spread tree debris around the site at the direction of the General Contractor.
11) When construction is complete, and all areas are stabilized completely, call for an inspection by Environmental Inspector.
12) If the site is approved, remove silt fencing, other measures, etc. and seed out any resulting bare areas.
13) When vegetation has been established, call for a final site inspection by Environmental Inspector.

Maintenance Practices:

All erosion and sediment control practices will be checked for stability and operation following every runoff producing rainfall but in no case less than once every week. Any needed repairs will be made immediately to maintain all practices as designed.

All seeded areas will be fertilized, re-seeded as necessary and mulched according to specifications in the vegetative plan to maintain a vigorous dense vegetative cover.

If dust becomes a problem, a water truck should be used to control the situation.

Silt fence shall be installed in correct manner, and if any damage occurs it shall be fixed or replaced as required. If sediment builds up behind fence, greater than 0.5 feet if shall be removed and placed in the soil stockpile area.

The temporary construction entrance/exit shall be maintained in such a way as to prevent the exit of sediment from the site and onto existing soil road.

Pre and Post Development Calculations

General assumptions were made in the following calculations:

The project will result in the decrease of runoff and erosion, due to the restoration of woodlands.

Pre-Development:

Ration method Q=CIA
A=30.89 acres
C=0.15 agri. Fields
I=5”/hr. (Wilmington)

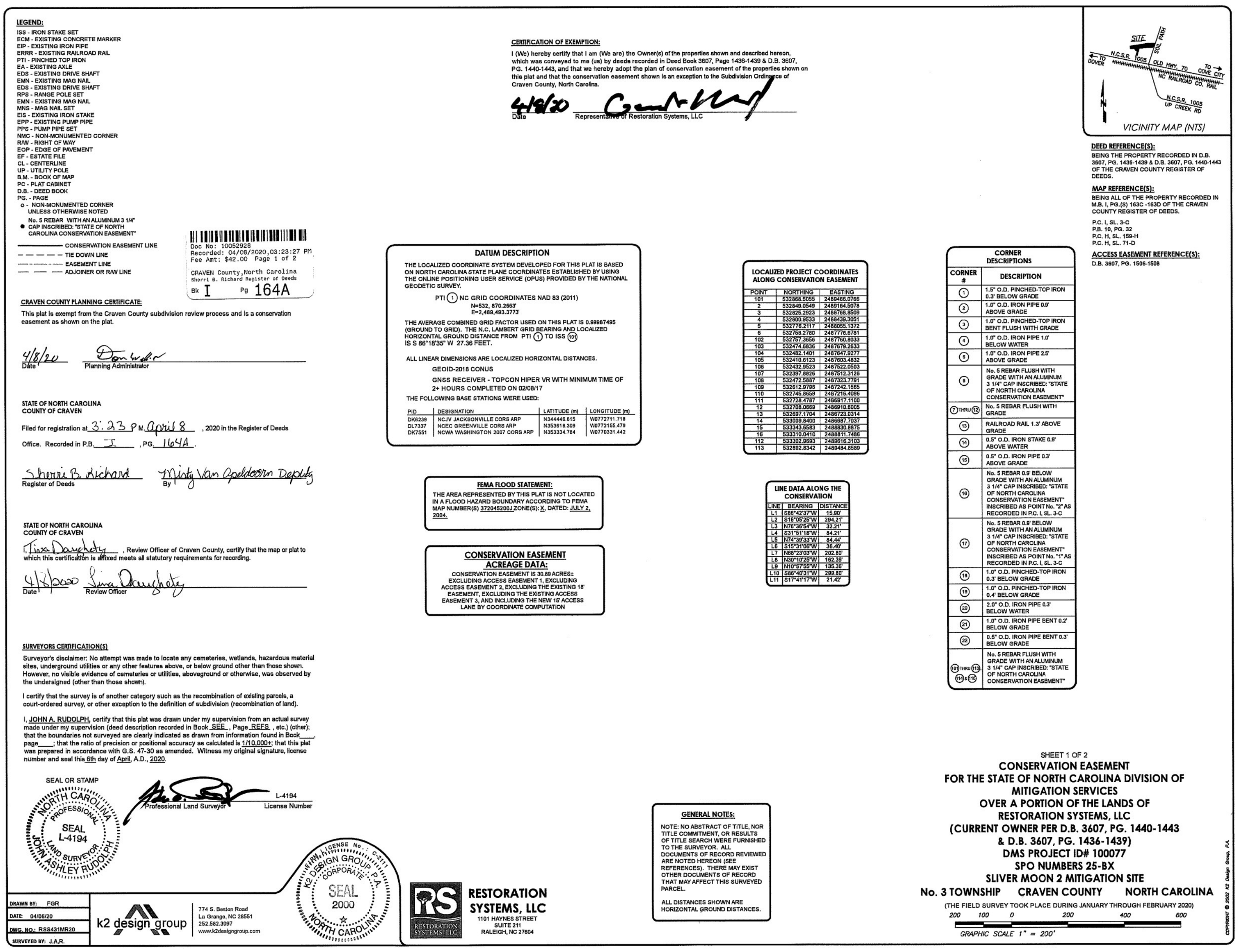
Therefore; Pre Development = 23.17 CFS

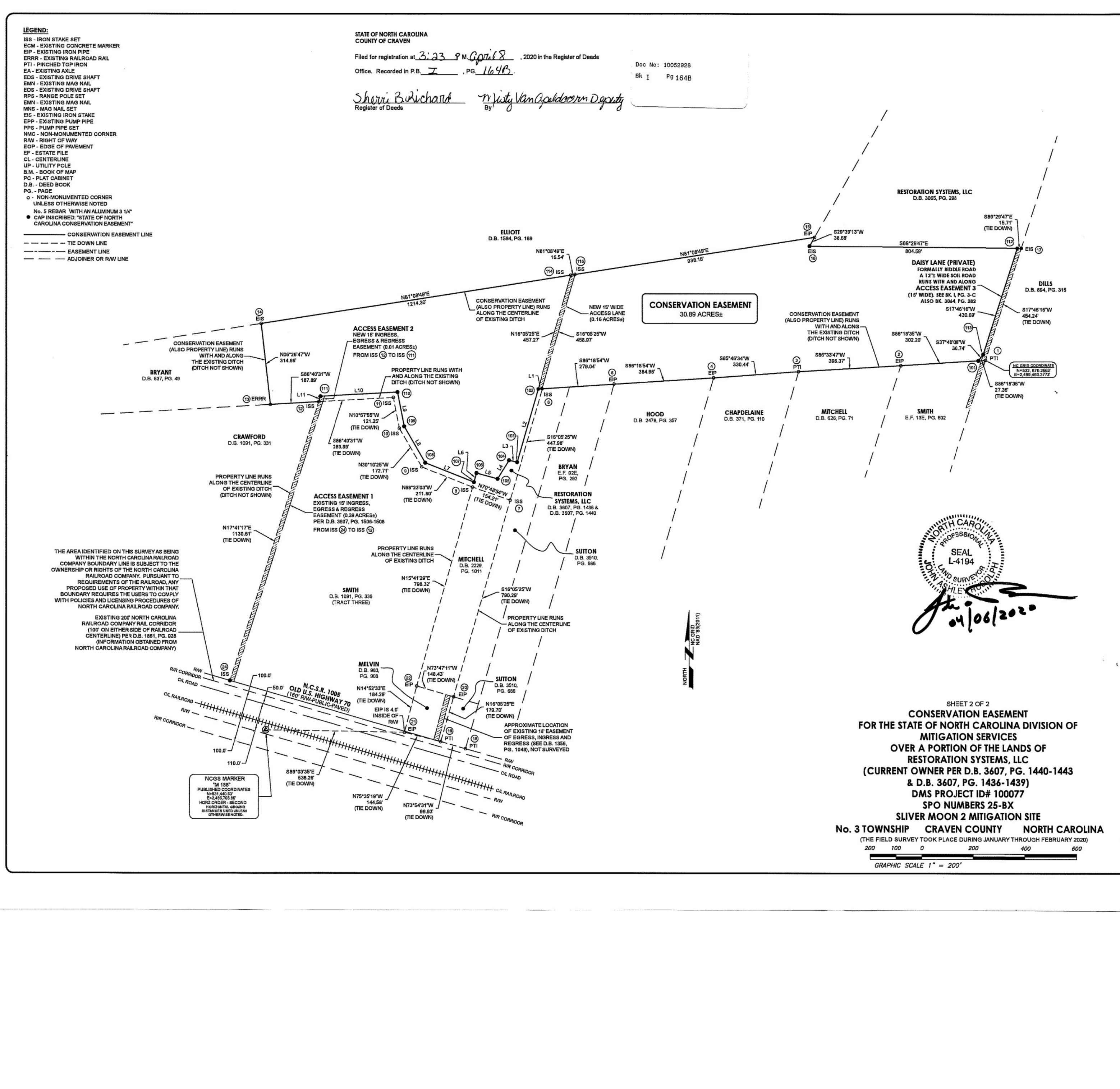
Post-Development:

Ration method Q=CIA
A=30.89 acres
C=0.10 woodlands
I=5”/hr. (Wilmington)

Therefore; Post-Development = 15.44 CFS

This restoration will result in approximately a 66.6% reduction in runoff.


SHEET 1 OF 2
CONSERVATION EASEMENT
FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES
OVER A PORTION OF THE LANDS OF RESTORATION SYSTEMS, LLC
(CURRENT OWNER PER D.B. 3607, PG. 1440-1443 & D.B. 3607, PG. 1436-1439)
DMS PROJECT ID# 100077
SPO NUMBERS 25-BX
SLIVER MOON 2 MITIGATION SITE
No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA
(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)
GRAPHIC SCALE 1" = 200'
RESTORATION SYSTEMS, LLC
1101 HAYNES STREET SUITE 211 RALEIGH, NC 27604
k2 design group
774 S. Beston Road La Grange, NC 28551
CONSERVATION EASEMENT ACREAGE DATA:
CONSERVATION EASEMENT IS 30.89 ACRES±


SHEET 2 OF 2
CONSERVATION EASEMENT
FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES
OVER A PORTION OF THE LANDS OF RESTORATION SYSTEMS, LLC
(CURRENT OWNER PER D.B. 3607, PG. 1440-1443 & D.B. 3607, PG. 1436-1439)
DMS PROJECT ID# 100077
SPO NUMBERS 25-BX
SLIVER MOON 2 MITIGATION SITE
No. 3 TOWNSHIP CRAVEN COUNTY NORTH CAROLINA
(THE FIELD SURVEY TOOK PLACE DURING JANUARY THROUGH FEBRUARY 2020)
GRAPHIC SCALE 1" = 200'
CONSERVATION EASEMENT
30.89 ACRES±

BK 3608 PG 1274 - 1284 (11) DOC# 10052993
This Document eRecorded: 04/09/2020 03:12:35 PM
Fee: $26.00 DocType: DEED Tax: $331.00
Craven County, North Carolina
Sherri B. Richard, Register of Deeds

Excise Tax $331.00

STATE OF NORTH CAROLINA

CRAVEN COUNTY

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

SPO File Number: 25-BX
DMS Project Number: 100077

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 9th day of April, 2020, by **RESTORATION SYSTEMS, LLC**, a North Carolina limited liability company ("**Grantor**"), whose mailing address is 1101 Haynes Street, Suite 211, Raleigh, NC 27604, 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 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 Restoration Systems, LLC, a North Carolina limited liability company, 1101 Haynes Street, Suite 211, Raleigh, NC 27604, 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 7606.

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, 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 No. 3 Township, Craven County, North Carolina (the "**Property**"), and being more particularly described as that certain parcel of land containing approximately 31.85 total acres and being conveyed to the Grantor by deed as recorded in **Deed Book 3607 at Page 1436 and Deed Book 3607 at Page 1440** of the Craven 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 Core 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 along with a general Right of Access.

The Conservation Easement Area consists of the following:

A tract containing a total of **30.89 acres** identified as "CONSERVATION EASEMENT (30.89 ACRES±)" as shown on the plat of survey titled "Final Plat, Conservation Easement for North Carolina Division of Mitigation Services over a Portion of the Lands of Restoration Systems, LLC (Current Owner Per D.B. 3607, Pg. 1440-1443 & D.B. 3607, Pg. 1436-1439), DMS Project ID No. 100077, SPO File No. 25-BX, Sliver Moon 2 Mitigation Site," dated February 27, 2020, by John A. Rudolph, PLS Number L-4194 and recorded in the Craven County, North Carolina Register of Deeds at **Plat Book I, Pages 164A though 164B.**

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

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

I. DURATION OF EASEMENT

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

II. GRANTOR RESERVED USES AND RESTRICTED ACTIVITIES

The Conservation Easement Area shall be restricted from any development or usage that would impair or interfere with the purposes of this Conservation Easement. Unless expressly reserved as a compatible use herein, any activity in, or use of, the Conservation Easement Area by the Grantor is prohibited as inconsistent with the purposes of this Conservation Easement. Any rights not expressly reserved hereunder by the Grantor have been acquired by the Grantee. Any rights not expressly reserved hereunder by the Grantor, including the rights to all mitigation credits, including, but not limited to, stream, wetland, and riparian buffer mitigation units, derived from each site within the area of the Conservation Easement, are conveyed to and belong to the Grantee. Without limiting the generality of the foregoing, the following specific uses are prohibited, restricted, or reserved as indicated:

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

B. Motorized Vehicle Use. Motorized vehicle use in the Conservation Easement Area is prohibited except within a Crossing Area(s) or Road or Trail or Access Lane 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) or Access Lane 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, except only in that area identified on the survey plat as "NEW 15' WIDE ACCESS LANE (0.16 ACRES±)".

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.

III. GRANTEE RESERVED USES

A. Right of Access, Construction, and Inspection. The Grantee, its employees and agents, successors and assigns, receive a perpetual Right of Access to the Conservation Easement Area over the Property at reasonable times to undertake any activities on the property to restore, construct, manage, maintain, enhance, protect, and monitor the stream, wetland and any other riparian resources in the Conservation Easement Area, in accordance with restoration activities or a long-term management plan. Unless otherwise specifically set forth in this Conservation Easement, the rights granted herein do not include or establish for the public any access rights.

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

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

D. Fences. 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 as a result of activities of the Grantor, his successors or assigns.

IV. ENFORCEMENT AND REMEDIES

A. Enforcement. To accomplish the purposes of this Conservation Easement, Grantee is allowed to prevent any activity within the Conservation Easement Area that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such areas or features in the Conservation Easement Area that may have been damaged by such unauthorized activity or use. Upon any breach of the terms of this Conservation Easement by Grantor, the Grantee shall, except as provided below, notify the Grantor in writing of such breach and the Grantor shall have ninety (90) days after receipt of such notice to correct the damage caused by such breach. If the breach and damage remains uncured after ninety (90) days, the Grantee may enforce this Conservation Easement by bringing appropriate legal proceedings including an action to recover damages, as well as injunctive and other relief. The Grantee shall also have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Conservation Easement Area by acts which may be unlawful or in violation of this Conservation Easement; (b) to otherwise preserve or protect its interest in the Property; or (c) to seek damages from any appropriate person or entity. Notwithstanding the foregoing, the Grantee reserves the immediate right, without notice, to obtain a temporary restraining order, injunctive or other appropriate relief, if the breach is or would irreversibly or otherwise materially impair the benefits to be derived from this Conservation Easement, and the Grantor and Grantee acknowledge that the damage would be irreparable and remedies at law inadequate. The rights and remedies of the Grantee provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available to Grantee in connection with this Conservation Easement.

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

C. Acts Beyond Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury or change in the Conservation Easement Area caused by third parties, resulting from causes beyond the Grantor's control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken in good faith by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to life or damage to the Property resulting from such causes.

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

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

V. MISCELLANEOUS

A. This instrument sets forth the entire agreement of the parties with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings or agreements relating to the Conservation Easement. If any provision is found to be invalid, the remainder of the provisions of the Conservation Easement, and the application of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

B. Grantor is responsible for any real estate taxes, assessments, fees, or charges levied upon the Property. Grantee shall not be responsible for any costs or liability of any kind related to the ownership, operation, insurance, upkeep, or maintenance of the Property, except as expressly provided herein. Upkeep of any constructed bridges, fences, or other amenities on the Property are the sole responsibility of the Grantor. Nothing herein shall relieve the Grantor of the obligation to comply with federal, state or local laws, regulations and permits that may apply to the exercise of the Reserved Rights.

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

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

E. The Grantor and Grantee agree that the terms of this Conservation Easement shall survive any merger of the fee and easement interests in the Property or any portion thereof.

F. This Conservation Easement and Right of Access may be amended, but only in writing signed by all parties hereto, or their successors or assigns, if such amendment does not affect the qualification of this Conservation Easement or the status of the Grantee under any applicable laws, and is consistent with the purposes of the Conservation Easement. The owner of the Property shall notify the State Property Office and the U.S. Army Corps of Engineers in writing sixty (60) days prior to the initiation of any transfer of all or any part of the Property or of any request to void or modify this Conservation Easement. Such notifications and modification requests shall be addressed to:

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.

VI. QUIET ENJOYMENT

Grantor reserves all remaining rights accruing from ownership of the Property, including the right to engage in or permit or invite others to engage in only those uses of the Conservation Easement Area that are expressly reserved herein, not prohibited or restricted herein, and are not inconsistent with the purposes of this Conservation Easement. Without limiting the generality of the foregoing, the Grantor expressly reserves to the Grantor, and the Grantor's invitees and licensees, the right of access to the Conservation Easement Area, and the right of quiet enjoyment of the Conservation Easement Area,

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

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

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

RESTORATION SYSTEMS, LLC

By: _____

Name George Howard

Title: CEO

Date: 04-09-2020

Authorized for Restoration Systems, LLC

NORTH CAROLINA
COUNTY OF Wake

I, Tiffani Bylow, a Notary Public in and for the County and State aforesaid, do hereby certify that George Howard, on behalf of Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument in the capacity indicated.

IN WITNESS WHEREOF, I have hereunto set my hand and Notary Seal this the 9th day of April, 2020.

_____ Tiffani Bylow
Notary Public

My commission expires:
5.04.2023

TIFFANI BYLOW
Notary Public
Wake County
NORTH CAROLINA

EXHIBIT A

Legal Description

BEING ALL of the Conservation Easement of the Sliver Moon 2 Mitigation Site over a portion of the land of Restoration System, LLC, lying and being situated in No. 3 Township, Craven County, North Carolina and particularly described as follows (all distances are ground distances unless otherwise noted):

Beginning at an iron stake (Point of Beginning) labeled as Point No. 101 and being the Southeastern most corner of the conservation easement and being located South 86°18'35" West 27.36 feet from a pinched-top iron (Point No. 1) with N.C. Grid Coordinates N=532,870.2663', E=2,489,493.3773' (NAD '83, 2011).

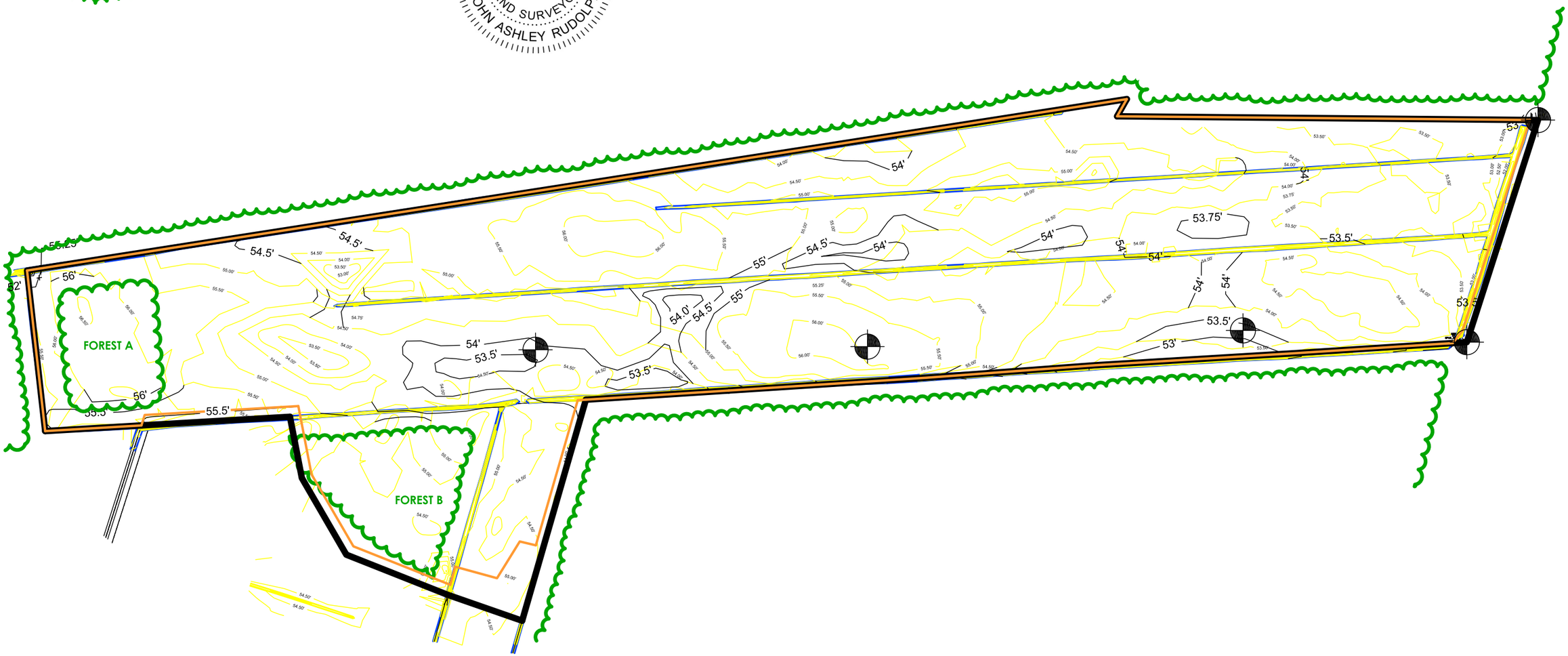
Thence from the Point of Beginning (Point No.101), South 86°18'35" West 302.20' to an iron pipe; thence South 86°33'47" West 396.37' to a pinched-top iron; thence South 85°46'34" West 330.44' to an iron pipe; thence South 86°18'54" West 384.96' to an iron pipe; thence South 86°18'54" West 279.04' to an iron stake; thence South 86°42'37" West 15.90' to an iron stake; thence South 16°05'25" West 294.21' to an iron stake; thence North 76°36'54" West 32.21' to an iron stake; thence South 31°51'18" West 84.21' to an iron stake; thence North 74°39'33" West 84.44' to an iron stake; thence South 15°31'06" West 36.40' to an iron stake; thence North 68°23'03" West 202.80' to an iron stake; thence North 30°10'25" West 162.39' to an iron stake; thence North 10°57'55" West 135.36' to an iron stake; thence South 86°40'31" West 299.80' to an iron stake; thence South 17°41'17" West 21.42' to an iron stake; thence South 86°40'31" West 187.89' to a railroad rail; thence North 06°26'47" West 314.66' to an iron stake; thence North 81°08'49" East 2169.03' to an iron pipe; thence South 29°39'13" West 38.68' to an iron stake; thence South 89°29'47" East 804.59' to an iron stake; thence South 17°46'16" West 430.69' to an iron stake; thence South 37°40'08" West 30.74' to an iron stake, which is the Point of Beginning (Point No. 101), having an area of approximately 30.89 acres, being the same property shown as the "Conservation Easement, 30.89 acres+/-" on plat of survey titled "Conservation Easement Survey for The State of North Carolina, Division of Mitigation Services, over a Portion of the Lands of Restoration Systems, LLC (Current Owner Per D.B. 3607, Pg. 1440-1443 & D.B. 3607, Pg. 1436-1439), DMS Project ID No. 100077, SPO File Number 25-BX, Sliver Moon 2 Mitigation Site," dated April 6, 2020, by John A. Rudolph, PLS Number L-4194, K2 Design Group, and recorded at Plat Book I, Pages 164A though 164B, Craven County Register of Deeds (the "Plat").

TOGETHER WITH that certain fifteen (15) foot-wide access easement labeled as "Access Easement 1", for ingress, egress, and regress as shown on the Plat, said Access Easement 1 being the same access easement as was granted to Restoration Systems, LLC and it successors and assigns in that certain Corrective Access Easement Agreement recorded in Deed Book 3607, Page 1506, Craven County Registry, and that certain fifteen (15) foot-wide access easement labeled as "Access Easement 2", for ingress, egress, and regress as shown on the Plat.

LEGEND

- PROPERTY LINE
- CONSERVATION EASEMENT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING WOODLINE

NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH



GENERAL NOTES:

ALL ELEVATIONS REFERENCED TO NAVD 1988

ELEVATION DETERMINED VIA OPUS WITH A MINIMUM OBSERVATION TIME OF 2.2 HOURS USING A TOPCON HIPER V RECEIVER

NORTH
NC GRID NAD'83(2011)

TOPOGRAPHIC MAP

0 100 200 400

1" = 200'

LEGEND

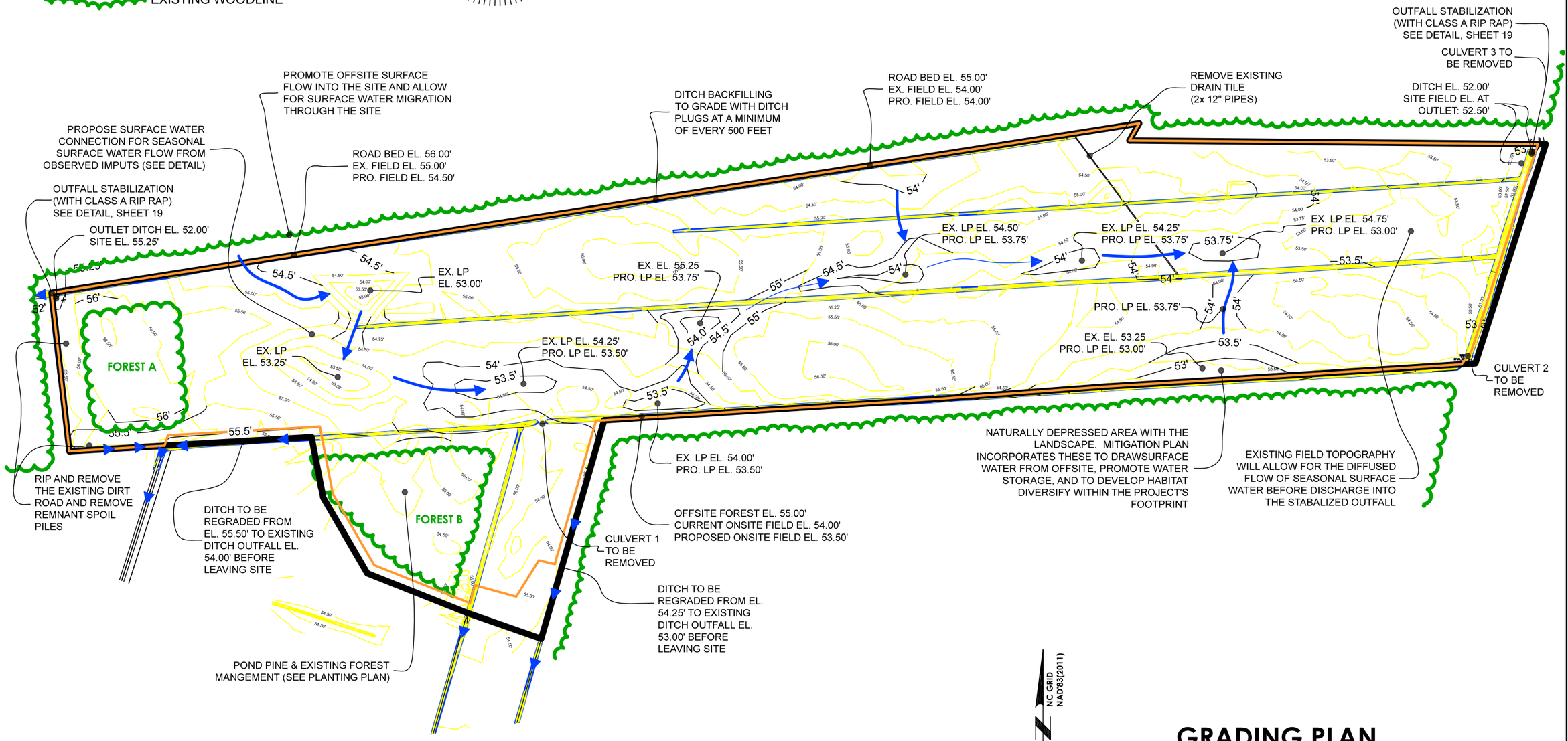
- PROPERTY LINE
- CONSERVATION EASEMENT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WATER FLOW
- DITCH WATER FLOW
- EXISTING WOODLINE

NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

GENERAL NOTES:

ALL ELEVATIONS REFERENCED TO NAVD 1988

ELEVATION DETERMINED VIA OPUS WITH A MINIMUM OBSERVATION TIME OF 2.2 HOURS USING A TOPCON HIPER V RECEIVER



NC GRID NAD'83(2011)

NORTH

GRADING PLAN

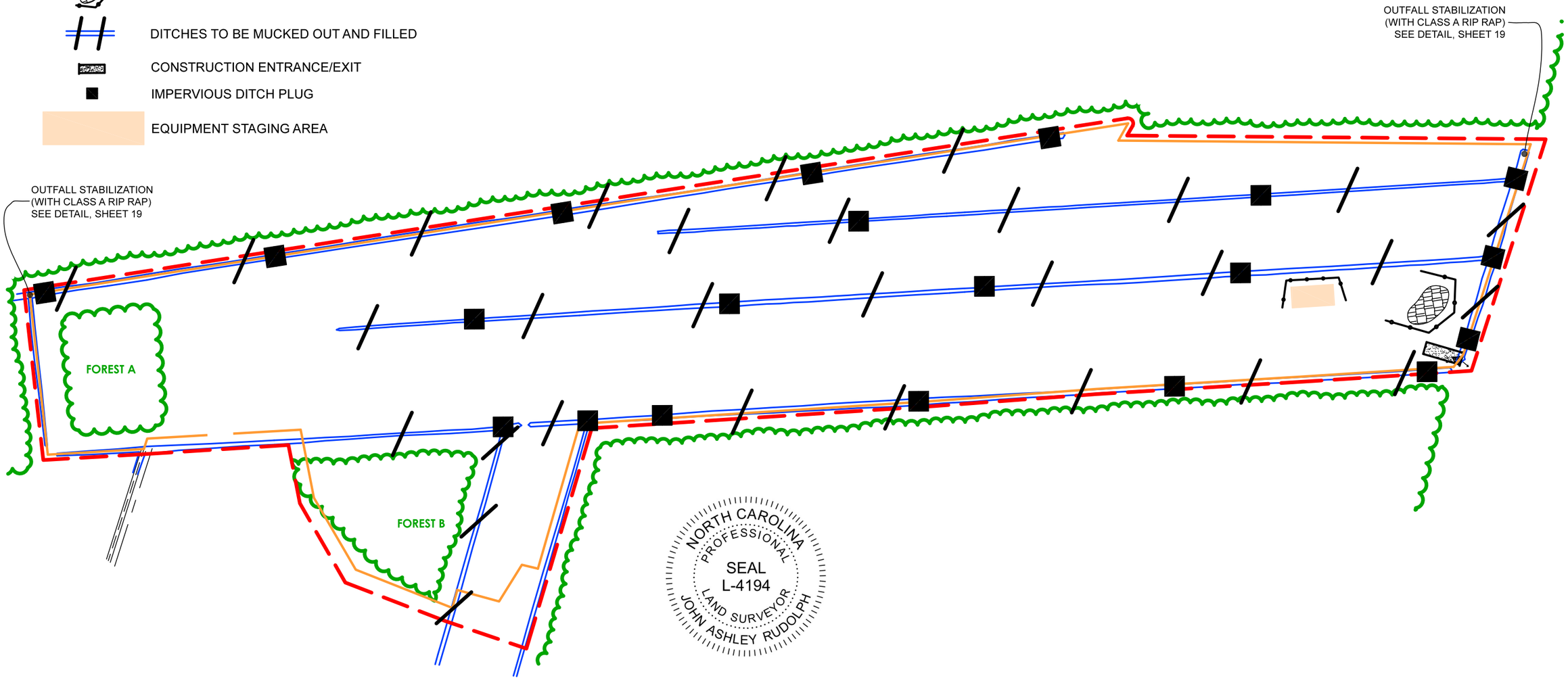
0 100 200 400

1" = 200'

LEGEND

- CONSERVATION EASEMENT
- LIMITS OF DISTURBANCE (33.45 ACRES)
- EXISTING WOODLINE
- TOP SOIL STOCK PILE WITH SILT FENCE
- DITCHES TO BE MUCKED OUT AND FILLED
- CONSTRUCTION ENTRANCE/EXIT
- IMPERVIOUS DITCH PLUG
- EQUIPMENT STAGING AREA

PROVIDE A GROUNDCOVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT



NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

GENERAL NOTES:

SOIL STOCK PILE & EQUIPMENT STAGING AREA MAY BE MOVED AT CONTRACTOR'S DISCRETION, AS LONG AS SILT FENCE IS INSTALLED AS SHOWN

LIMITS OF DISTURBANCE IS 33.45 ACRES.

NORTH
NC GRID
NAD83(2011)

EROSION & SEDIMENTATION CONTROL PLAN

0 100 200 400

1" = 200'

SEEDING SCHEDULES

NOT TO SCALE

TEMPORARY SEEDING SCHEDULE

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120
GERMAN MILLET	40

SEEDING NOTES

RYE (GRAIN) – COLD SEASON
GERMAN MILLET – WARM SEASON

SOIL AMENDMENTS

FOLLOW SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10–10–10 FERTILIZER.

MULCH (AT OUTFALL STRUCTURES ONLY)

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

PERMANENT SEEDING SCHEDULE FOR AREAS ALONG DITCHES AND EXISTING SOIL ROAD AS NEEDED (TREE PLANTING TO OCCUR BY DECEMBER 20 2021)

SEEDING MIXTURE

SEE SHEET 18

SEEDING NOTES

WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA.

USE COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5LB/ACRE CENTIPEDEGRASS.

SEEDING DATES

APRIL 1 – JULY 15

SOIL AMENDMENTS

APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 500 LB/ACRE 10–10–10 FERTILIZER.

MULCH (AT OUTFALL STRUCTURES ONLY)

APPLY 4,000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

REFERTILIZE THE FOLLOWING APRIL WITH 50LB/ACRE NITROGEN. REPEAT AS GROWTH REQUIRES. MAY BE MOWED ONLY ONCE A YEAR. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND MOW AS OFTEN AS NEEDED.

NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

PLANTING & SEED LIST

(PROVIDED BY RESTORATION SYSTEMS, LLC)

Bare Root Planting List

Vegetation Association	**Non-riverine Wet Hardwood Forest**		
Canopy Species (30.88 acres)	**# planted (680 stems/acre)**	**Indicator Status**	**% of total**
Tulip poplar (*Liriodendron tulipifera*)	2500	FACU	11.1%
Black gum (*Nyssa sylvatica*)	2500	FAC	11.1%
Swamp white oak (*Quercus bicolor*)	2000	FACW	8.9%
Laurel oak (*Quercus laurifolia*)	2000	FACW	8.9%
Overcup oak (*Quercus lyrata*)	2000	OBL	8.9%
Swamp chestnut oak (*Quercus michauxii*)	2000	FACW	8.9%
Water oak (*Quercus nigra*)	2000	FAC	8.9%
Cherrybark oak (*Quercus pagoda*)	2000	FACW	8.9%
Willow oak (*Quercus phellos*)	2000	FACW	8.9%
Understory Species (30.88 acres)	**# planted (680 stems/acre)**	**Indicator Status**	**% of total**
Hornbeam (*Carpinus caroliniana*)	800	FAC	3.6%
Sweetbay magnolia (*Magnolia virginiana*)	800	FACW	3.6%
Swamp bay (*Persea palustris*)	700	FACW	3.1%
Wet Foot Species (3.75 acres) – in addition to Site-wide planting	**# planted (320 stems/acre)**	**Indicator Status**	**% of total**
River Birch (*Betula nigra*)	200	FACW	0.9%
Water tupelo (*Nyssa aquatica*)	300	OBL	1.3%
Swamp tupelo (*Nyssa biflora*)	200	OBL	0.9%
Bald Cypress (*Taxodium distichum*)	500	OBL	2.2%
TOTAL	**22500**		**100.0%**

Temporary Seed Mix.

Name	Use	Rate
ESC- German Millet	Warm Season	40 lbs / acre
ESC- Rye grain	Cool Season	120 lbs / acre

Permanent Seed Mix

Name	**Latin**	**Lbs/Ac.**	**Name**	**Latin**	**Lbs/Ac.**
common yarrow	*Achillea millefolium*	0.6	deertongue	*Panicum clandestinum*	3
redtop	*Agrostis alba*	9	tall white beardtongue	*Penstemon digitalis*	0.6
winter bentgrass	*Agrostis hyemalis*	3	clasping coneflower	*Rudbeckia amplexicaulis*	0.6
creeping bentgrass	*Agrostis stolonifera*	3	rudbeckia	*Rudbeckia hirta*	1.8
clusterspike false indigo	*Amorpha herbacea*	0.6	purpletop	*Tridens flavus*	12
showy aster	*Aster spectabilis*	0.6	blue vervain	*Verbena hastata*	0.6
spiked wild indigo	*Baptisia albescens*	0.6	Redtop Panicgrass	*Panicum rigidulum*	9
blue false indigo	*Baptisia australis*	1.2	Beaked Panicgrass	*Panicum anceps*	7.77
daisy	*Chrysanthemum leucanthemum*	3	Greenwhite Sedge	*Carex albolutescens*	3.9
shasta daisy	*Chrysanthemum maximum*	1.8	Riverbank Wildrye	*Elymus riparius*	3.15
coreopsis lanceleaf	*Coreopsis lanceolata*	3	Lurid Sedge	*Carex lurida*	1.5
coreopsis plains	*Coreopsis tinctoria*	3	Globe Beaksedge	*Rhynchospora globularis*	1.2
cosmos	*Cosmos bipinnatus*	0.6	Crimsoneyed Rosemallow	*Hibiscus moscheutos*	0.6
rocket larkspur	*Delphinium ajacis*	1.2	Soft Rush	*Juncus effusus*	0.6
showy ticktrefoil	*Desmodium canadense*	0.6	Narrowleaf Primrose Willow	*Ludwigia linearis*	0.39
coneflower	*Echinacea purpurea*	3.6	Seaside Primrose Willow	*Ludwigia maritima*	0.39
Virginia wildrye	*Elymus virginicus*	3	Joe Pye Weed	*Eupatorium fistulosum*	0.3
mistflower	*Eupatorium coelestinum*	0.3	Purplehead Sneezeweed	*Helenium flexuosum*	0.3
perennial Gailllardia	*Gallardia aristata*	1.2	Path Rush	*Juncus tenuis*	0.3
narrowleaf sunflower	*Helianthus angustifolius*	0.6	Woolgrass	*Scirpus cyperinus*	0.3
oxeye sunflower	*Heliopsis helianthoides*	0.6	New York Ironweed	*Vernonia noveboracensis*	0.3
wild bergamot	*Monarda fistulosa*	0.3			

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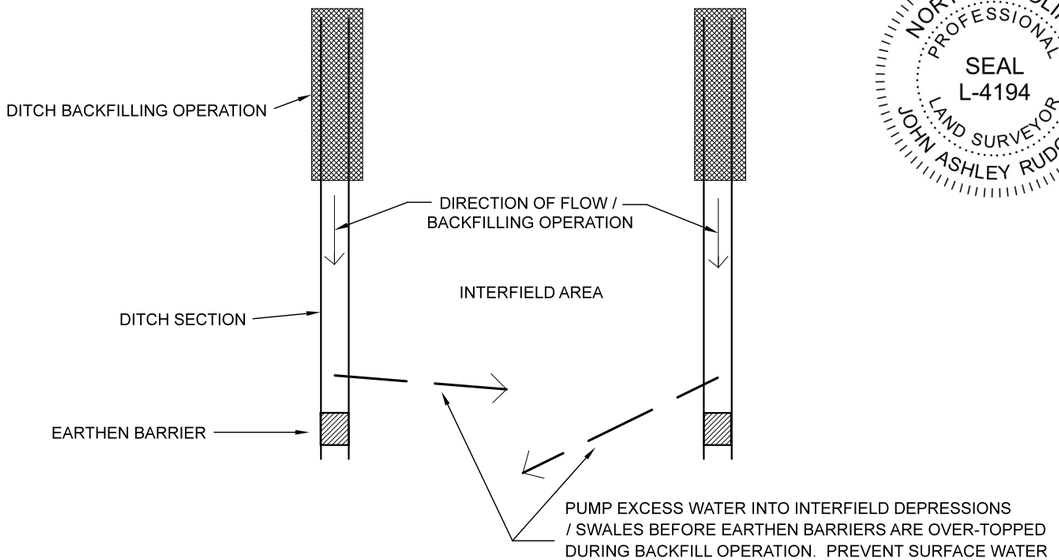
■ PUMPING OPERATION
DITCH PLUGS

NOT TO SCALE



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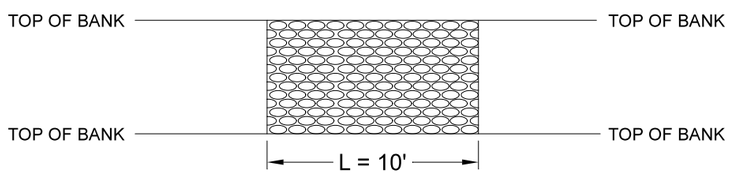
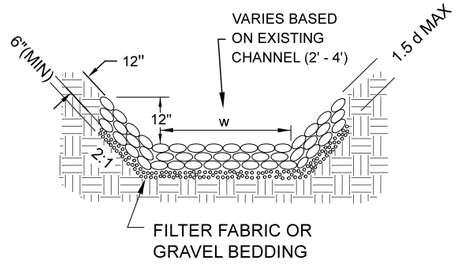
OUTFALL STABILIZATION

NOT TO SCALE

PLAN



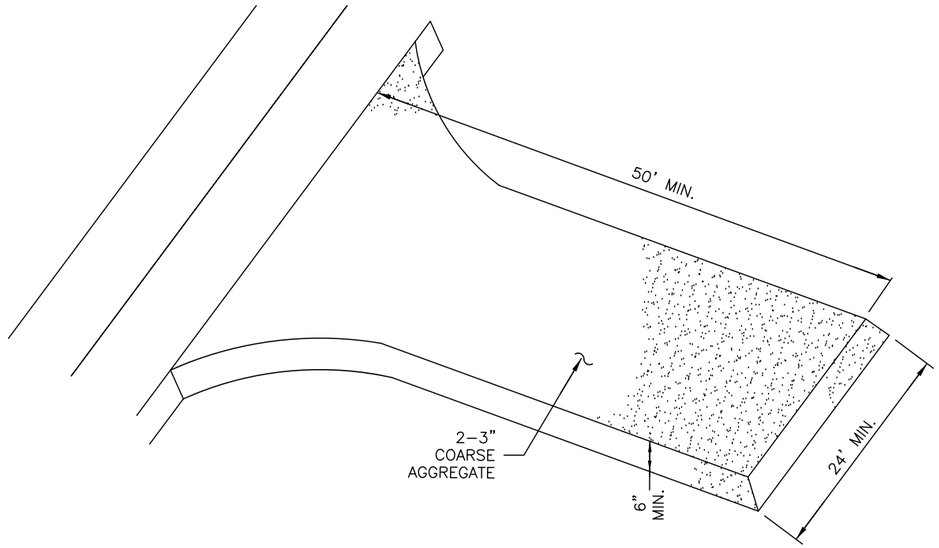
CROSS-SECTION



d MAX	STONE CLASSIFICATION	RIP RAP DEPTH
8"	A	12"

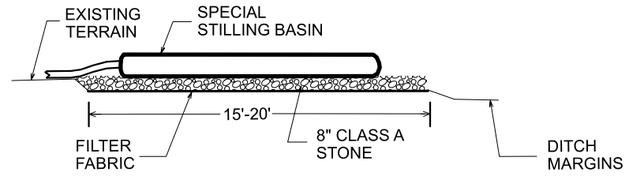
▭ TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

NOT TO SCALE



SPECIAL STILLING BASIN WITH ROCK PAD

NOT TO SCALE

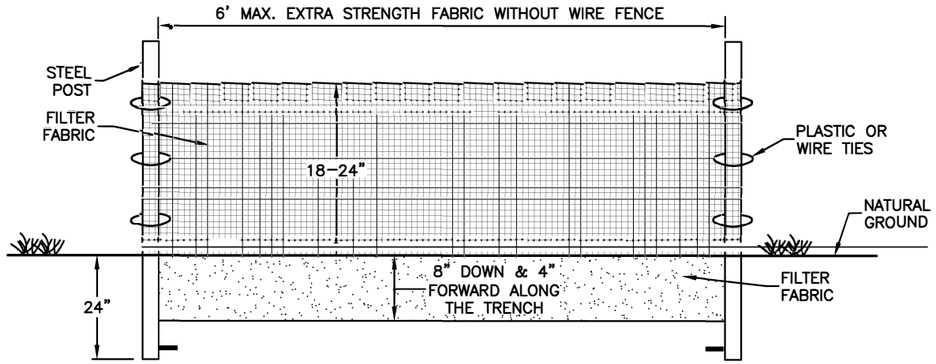


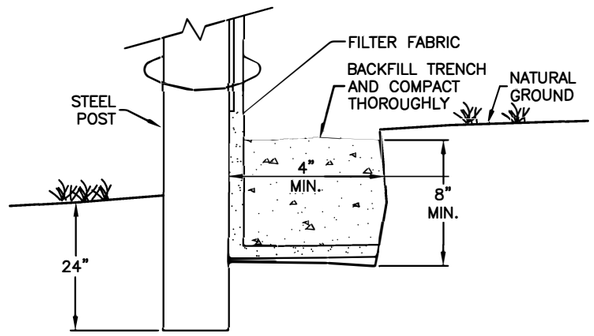
NOTE: PROVIDE STABILIZED OUTLET TO DITCH MARGINS.

NCDOT BMP'S FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES, 5.4.2, AUGUST 2003

SILT FENCE

NOT TO SCALE





CROSS-SECTION VIEW

NORTH CAROLINA PROFESSIONAL SEAL L-4194 LAND SURVEYOR JOHN ASHLEY RUDOLPH

CONSTRUCTION SPECIFICATIONS

MATERIALS

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461.

SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120°F.

2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LINEAR FT STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.

3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.

2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)

3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINT ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.

4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY FASTENING SECURELY TO THE UPSLOPE SIDE OF THE POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.

5. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.

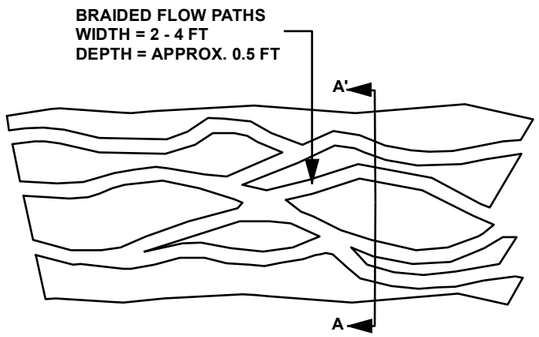
6. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER (AS SHOWN ON DETAIL).

7. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.

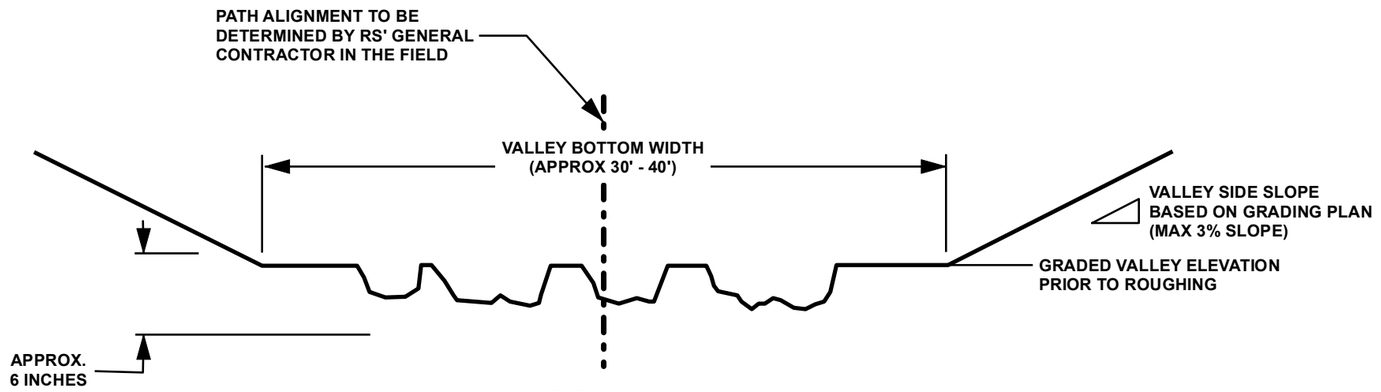
8. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.

9. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

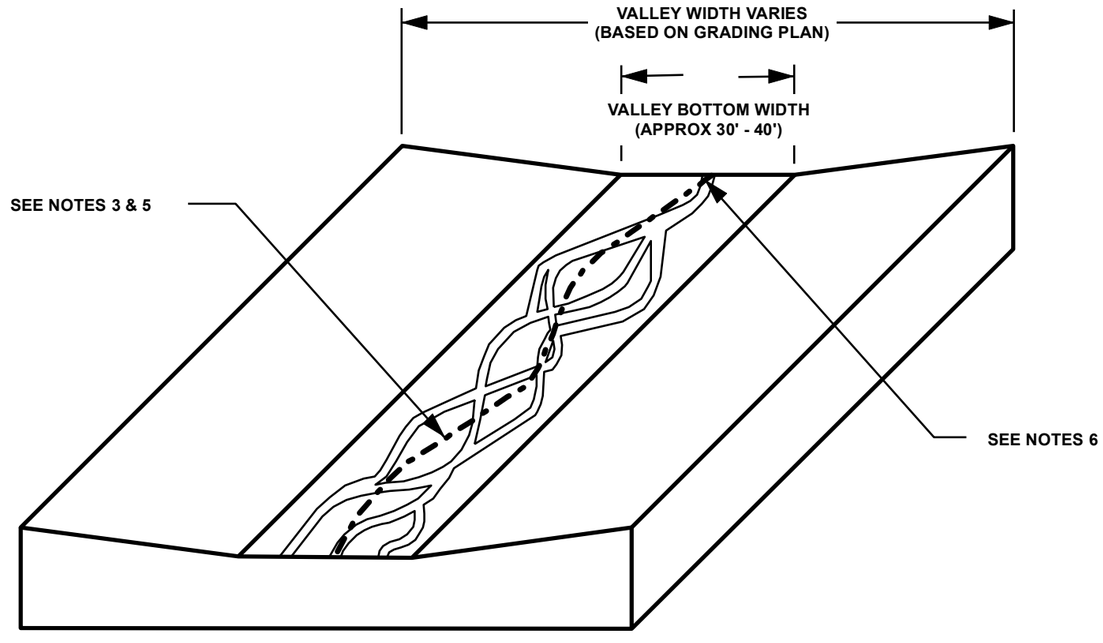
SURFACE WATER CONNECTION DETAIL



PLAN VIEW OF MICROTOPOGRAPHY PATTERN



SECTION A - A'



Notes:

1.) Where appropriate, valley topography will be graded before microtopography added.
2.) The restored valley bottom will then be roughened, using industry standard techniques and approved by RS'General Contractor in the field.
3.) Per direction of RS' General Contractor, flow paths will be constructed by grading shallow swales along the valley (approx. 6" deep).
4.) Final grades will be determined in the field by RS' General Contractor
5.) Braided swale locations will be determined in the field by RS' General Contractor
6.) Braided swales will be shaped to form smooth transitions into and out of low areas and as determined in the field by RS' General Contractor
7.) Upon completion of the braided swales, apply ground cover, temporary seed, and permanent seed to the constructed valley according to sediment and erosion control specifications

APPENDIX K: AUGUST 2019 IRT SITE VISIT MEETING MINUETS

August 22, 2018

RE: Sliver Moon II Mitigation Site
Post-IRT Site Visit Notes
Contract No. 7606 RFP # 16-007401 DMS Project ID: 100077

Attendees:
USACE: Todd Tugwell
NCDWR: Mac Haupt
NCWRC: Travis Wilson
NCDMS: Jeff Schaffer, Lindsay Crocker
AXE: Kenan Jernigan
RS: Alex Baldwin

On Wednesday August 22, 2018, representatives of the Interagency Review Team (IRT) met with representatives from North Carolina Division of Mitigation Services (DMS), Restoration Systems (RS), and Axiom Environmental (AXE) at Sliver Moon II Mitigation Site to review proposed site mitigation features and approaches. Below is a summary of what was discussed onsite and how those comments will be addressed as the mitigation plan moves forward. In addition to there being no serious concerns regarding the site viability, there was overall agreement on the proposed level of intervention and the proposed credit strategy.

Notes:

- The IRT requested that the minimum hydroperiod for both soil map units be set at 12%. RS noted that according to the guidance this is within the hydroperiod range for Rains (10-12%) and Pantego (12-16%). Also, the IRT indicated well placement will need to include areas where ditches have been filled in.
- There was discussion that adjacent land owners could potentially install ditches adjacent to the Site which would affect the Site hydrology. RS indicated that we have been actively speaking with adjacent property owners and we do not anticipate this issue arising. The landowner to the north, where water is entering the Site, leases the land for hunting purposes and is not inclined to install ditches for land management purposes. Also, the adjacent landowners have existing ditches providing drainage.
- The IRT expressed concern that the site may receive more water than it can handle making the site too wet. AXE indicated the same conditions are occurring in Sliver Moon I where the vegetation has become established and includes a range of hydroperiods meeting success. RS discussed that large shallow swales will be incorporated during construction to create diffuse flow and direct flow across the site. DMS suggested talking to the northern landowner to see if the pipes/water sources across the road could be stabilized and incorporated with the diffuse flow paths.

- The IRT was not keen on the narrow southern leg of the Site as the connection to the larger component of the project is ~150-ft wide and there is potential for hydrologic trespass. RS discussed that the drained hydric soils extend further south that what is proposed for wetland restoration, and RS has been talking to the adjacent landowner about different options to prevent hydrologic trespass.

Thank you,

Alex Baldwin
Restoration Systems

June 20, 2020

Lindsay Crocker
NC DEQ – Division of Mitigation Services
1652 Mail Service Center
Raleigh, North Carolina 27699-1652

Subject: Sliver Moon II, Project ID #100058, DMS Contract #7606
Mitigation Plan – Response to comments during post-contract site visit 08-2018

During the Interagency Review Team's (IRT) post contract site visit to the Sliver Moon Mitigation Site (Site), four comments/notes were provided by the IRT for consideration during the development of the Mitigation Plan. Restoration Systems took each note into careful consideration and developed a mitigation plan that would address each comment. Below are the comments received in black, and RS' response in blue.

1. The IRT requested that the minimum hydroperiod for both soil map units be set at 12%.
   RS' has set the success criteria hydroperiod for both soil map units to 12% (Section 8.1 of the Mitigation Plan)

2. There was discussion that adjacent landowners could potentially install ditches adjacent to the Site which would affect the Site hydrology. RS indicated that we have been actively speaking with adjacent property owners and we do not anticipate this issue arising. The landowner to the north, where water is entering the Site, leases the land for hunting purposes and is not inclined to install ditches for land management purposes. Also, the adjacent landowners have existing ditches providing drainage.
   Regarding adjacent landowners and potential of ditching – Only a small portion of the Site abuts active agricultural practices (southwest corner of the Site). This boundary is comprised of non-hydric soils and is not proposed for wetland mitigation credit. The boundary is located along a natural topographic split. That is, one parcel does not affect the other hydrologically. All other boundaries and land uses are either well established (Daisy Lane eastern boundary) or existing woodlands/wetlands where any draining or land use change would require a permit.

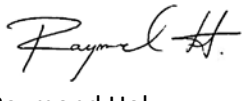
3. The IRT expressed concern that the Site may receive more water than it can handle making the Site too wet. AXE indicated the same conditions are occurring in Sliver Moon I where the vegetation has become established and includes a range of hydroperiods meeting success. RS discussed that large shallow swales will be incorporated during construction to create diffuse flow and direct flow across the Site. DMS suggested talking to the northern landowner to see if the pipes/water sources across the road could be stabilized and incorporated with the diffuse flow paths.
   The design approach accentuates the Site's existing conditions and topographic features to ensure surface water can move across and off the Site. It uses existing topographic depressions in combination with a reintroduced surface flow pattern to capture and store ephemeral surface

water inputs from the northern boundary, and to allow those inputs to move freely across the Site to the outfall located in the northeast corner of the Site. The elevation of the ephemeral surface water inputs along the northern boundary, existing topographic depressions within the Site, and adjacent land elevations were all used to determine the elevation of the proposed surface water connections and the outlet elevation, to ensure hydrologic trespassing did not occur under normal rain events. All parcels to the south of the Site have historic ditching, which is not connected to the Site's ditches and will not be affected by the project.

4. The IRT was not keen on the narrow southern leg of the Site as the connection to the larger component of the project is ~150-ft wide, and there is potential for hydrologic trespass. RS discussed that the drained hydric soils extend further south than what is proposed for wetland restoration, and RS has been talking to the adjacent landowner about different options to prevent hydrologic trespass.
   In response to the IRT's comments regarding the narrow southern leg, RS completed negotiations and incorporated ~3 acres of property into the project from the western parcel. A natural topographic ridge separates the Site's 'bump out' area from the acreage of the adjacent parcels to the west and south, which are both in row crop production. The easement within this area is offset by a minimum of 20-feet from the fee-simple parcels that surround the Site.

   Soil subsidence from agricultural practices in combination with the Site being located in the naturally low portion of the landscape, have resulted in the Site becoming lower than the surrounding landscape and parcels. As briefly discussing in RS' answer to question 3, RS Site surface flow connectors and the Site's outlet had all be set to elevation to ensure hydrologic trespass does not occur.

Sincerely,



Raymond Holz
Restoration Systems