

March 19, 2024

Ms. Jennie Turner  
Planner II  
Currituck County Planning & Zoning  
Currituck Historic Courthouse  
153 Courthouse Road, Suite 110  
Currituck, North Carolina 27929

Re: Major Site Plan – Resubmission of Previously Approved Application Package  
**The Donal C. O'Brien, Jr. Sanctuary and Audubon Center**  
Pine Island, Corolla, Currituck County, NC

Dear Ms. Turner;

On behalf of The Audubon Society, Inc., we hereby submit for review and approval a Currituck County Major Site Plan Application package for the aforementioned project. This is the same package as was previously approved by Currituck County on March 13, 2015, with the noted exceptions.

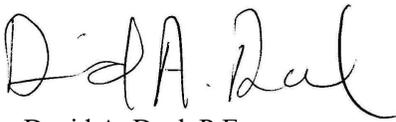
The following items are included with and shall be considered part of this submittal package:

1. Application Fee Check in the Amount of \$1,024.10 (\$.10/sf GFA x 10,241 sf)
2. .pdf copies of Application Package consisting of the following:
  - Submission Table of Contents
  - Summary of changes from Prior Approval
  - Major Site Plan Application
  - Currituck County Stormwater Management Application:
    - Major Stormwater Plan Form SW-002
    - Stormwater Management Plan Narrative (Currituck County Submittal)
  - Water Main Extension Authorization to Construct & Engineering Plans Approval (Serial No. 24-0087)
  - On-Site WW System Approvals:
    - Permit #139675 (1913 Lodge)
    - Permit #392772 (Dining Hall)
    - Permit #392767 (Guide's Quarters)
    - Permit #249749 (Pavilion)
  - NCDENR Stormwater Management Permit Application Package:
    - NCDEQ SWM Permit #SW7141103
    - SWM Permit Application Form
    - Low Density Supplement
  - NCDENR E&S Control Application Package:
    - NCDEQ E&S Approval Curri-2024-0101
    - Financial Responsibility Form
  - CAMA Permit
  - Civil Plans (24" x 36"):
    - C1.0: Existing Conditions Plan
    - C1.1-1.2: Site Plan & Details
    - C2.0-2.1: Grading & Drainage Plan & Details
    - C3.0-3.3: E&S Plan & Details
    - C4.0-4.9: Utility Plans

- Architectural Plans (24" x 36"):
  - Dining Hall Architectural Plans
  - Guide's Quarters Architectural plans
  - Lodge Building Architectural Plans
  - Pavilion Architectural Plans

At your earliest convenience, please review the attached information for compliance. If you have any questions, or if you require any additional information, please do not hesitate to contact me at (252) 202-3803.

Sincerely,

A handwritten signature in black ink, appearing to read "D. A. Deel". The signature is fluid and cursive, with the first name "David" and last name "Deel" clearly visible.

David A. Deel, P.E.

Encl: as stated

CC: *Audubon Society, Inc.*

**Table of Contents**

Major Site Plan Application Package – 3/19/2024 Re-Submission  
**The Donal C. O’Brien, Jr. Sanctuary and Audubon Center**  
Pine Island, Corolla, Currituck County, NC

(\*\*Page numbering reflects page # within .pdf pkg as submitted)

- Submission Table of Contents (This Page – Pg 3 of .pdf)
- Summary of changes from Prior Approval (Pg 4)
- Major Site Plan Application (Pgs 5-8)
- Currituck County Stormwater Management Application:
  - Major Stormwater Plan Form SW-002 (Pgs 9-11)
  - Stormwater Management Plan Narrative (Currituck Co. Submittal) (Pgs 12-54)
- Water Main Extension Authorization to Construct & Engineering Plans Approval (Serial No. 24-0087) (Pgs 55-57)
- On-Site WW System Approvals:
  - Permit #139675 (1913 Lodge) (Pg 58)
  - Permit #392772 (Dining Hall) (Pg 59)
  - Permit #392767 (Guide’s Quarters) (Pgs 60-63)
  - Permit #249749 (Pavilion) (Pgs 64-65)
- NCDENR Stormwater Management Permit Application Package:
  - NCDEQ SWM Permit #SW7141103 (Pgs 66-70)
  - SWM Permit Application Form (Pgs 71-76)
  - Low Density Supplement (Pgs 77-79)
- NCDENR E&S Control Application Package:
  - NCDEQ E&S Approval Curri-2024-0101 (Pgs 80-81)
  - Financial Responsibility Form (Pgs 82-84)
- CAMA Permit (Pg 85)
- Civil Plans (24” x 36”): (Pgs 86-106)
  - C1.0: Existing Conditions Plan
  - C1.1-1.2: Site Plan & Details
  - C2.0-2.1: Grading & Drainage Plan & Details
  - C3.0-3.3: E&S Plan & Details
  - C4.0-4.9: Utility Plans
- Architectural Plans (24” x 36”):
  - Dining Hall Architectural Plans (Pgs 107-137)
  - Guide’s Quarters Architectural plans (Pgs 138-157)
  - Lodge Building Architectural Plans (Pgs 158-200)
  - Pavilion Architectural Plans (Pgs 201-219)

Pine Island Audubon  
County Submission  
March 19, 2024

Changes from previous County Approval:

- Cottages: Two Southern Cottages have been renovated per the original plan approval and are shown simply as “Existing”
- Cottages: Northern Cottage originally shown as “To be Renovated” has instead been demolished. This cottage has been removed from the plan.
- Cottages: Asphalt turn-around improvements from original plans have been completed and are simply shown as existing.
- Workshop / Laboratory: Plans for this building have been abandoned. Accordingly, the workshop building, associated parking, associated walkways, and associated utilities have been removed from the plan.
- Workshop / Laboratory Area: Asphalt pavement has been shortened and replaced with gravel. Asphalt turn-around at the driveway intersection remains. A Fire Hydrant has been proposed to serve this area.
- Impoundment / Pond: Being coordinated with CAMA, the connection to the sound will be open ditch instead of pipe.
- Existing Garage to be Converted to Open Air Screened Pavilion: This is partially complete. This item remains on Site Plan.
- Existing Guide’s Quarters to be Renovated: “/Replaced” has been added to the notation.
- Drainfields: Proposed drainfield locations have been revised to move them closer to the hunt club buildings.
- Proposed Landscape Berm & Trellis (south of Hunt Club Bldg): These have been removed. Their original intent was to provide a buffer between the Hunt Club and a future parking lot but the Audubon Society no longer anticipates that the parking lot will ever be built.



# Major Stormwater Plan Form SW-002

OFFICIAL USE ONLY:  
Permit Number: \_\_\_\_\_  
Date Filed: \_\_\_\_\_  
Date Approved: \_\_\_\_\_

### Contact Information

|                   |  |                        |                          |
|-------------------|--|------------------------|--------------------------|
| <b>APPLICANT:</b> |  | <b>PROPERTY OWNER:</b> |                          |
| Name:             | <u>National Audubon Society, Inc.</u>                            | Name:                  | <u>Same as Applicant</u> |
| Address:          | <u>225 Varick St., Floor 7</u><br><u>New York, NY 10014-4396</u> | Address:               | _____                    |
| Telephone:        | <u>Contact Robbie Fearn 252-256-2825</u>                         | Telephone:             | _____                    |
| E-Mail Address:   | <u>rfearn@audubon.org</u>  | E-Mail Address:        | _____                    |

### Property Information

Physical Street Address: 305 Audubon Drive, Corolla, NC 27927

Parcel Identification Number(s): 9942-59-0885

FEMA Flood Zone Designation: "X" and "AE 6.0"

### Request

Project Description: Residential Retreat (Birdwatching Retreat) - See Narrative for Specific Description

Total land disturbance activity: 243,275 sf      Calculated volume of BMPs: 25,491 cf

Maximum lot coverage: 191,441 sf      Proposed lot coverage: 94,740 sf

#### TYPE OF REQUEST

- Major subdivision (10-year, 24-hour rate)
- Major site plan (5-year, 24-hour rate)

#### METHOD USED TO CALCULATE PEAK DISCHARGE

- Rational Method
- NRCS Method (TR-55 and TR-20)
- Simple volume calculation for small sites (less than 10 acres)
- Alternative stormwater runoff storage analysis
- Downstream drainage capacity analysis

I hereby authorize county officials to enter my property for purposes of determining compliance. All information submitted and required as part of this process shall become public record.

  
\_\_\_\_\_  
Property Owner(s)/Applicant

3/18/24  
\_\_\_\_\_  
Date

## Major Stormwater Plan Design Standards Checklist

The table below depicts the design standards of the major stormwater plan application. Please make sure to include all applicable listed items to ensure all appropriate standards are reviewed.

# Major Stormwater Plan Design Standards Checklist

Date Received: \_\_\_\_\_

Project Name: The Donal C. O'Brien, Jr. Sanctuary and Audubon Center

Applicant/Property Owner: National Audubon Society, Inc.

| <b>Minor Stormwater Plan Design Standards Checklist</b> |   |     |
|---|---|-----|
| <b>General</b>  |   |     |
| 1   | Property owner name and address.  | ✓   |
| 2   | Site address and parcel identification number.  | ✓   |
| 3   | North arrow and scale to be 1" = 100' or larger.  | ✓   |
| <b>Site Features</b>                                    |   |     |
| 4   | Scaled drawing showing existing and proposed site features:<br>Property lines with dimensions, acreage, streets, easements, structures (dimensions and square footage), fences, bulkheads, septic area (active and repair), utilities, vehicular use areas, driveways, and sidewalks. | ✓   |
| 5   | Approximate location of all designated Areas of Environmental Concern (AEC) or other such areas which are environmentally sensitive on the property, such as Maritime Forest, CAMA, 404, or 401 wetlands as defined by the appropriate agency.  | ✓   |
| 6   | Existing and proposed ground elevations shown in one foot intervals. All elevation changes within the past six months shall be shown on the plan.   | ✓   |
| 8   | Limits of all proposed fill, including the toe of fill slope and purpose of fill.   | ✓   |
| 9   | Square footage of all existing and proposed impervious areas (structures, sidewalks, walkways, vehicular use areas regardless of surface material), including a description of surface materials.   | ✓   |
| 10  | Existing and proposed drainage patterns, including direction of flow.   | ✓   |
| 11  | Location, capacity, design plans (detention, retention, infiltration), and design discharge of existing and proposed stormwater management features.  | ✓   |
| 12  | Elevation of the seasonal high water level as determined by a licensed soil scientist.  | N/A |
| 13  | Plant selection.  | ✓   |
| <b>Permits and Other Documentation</b>                  |   |     |
| 14  | NCDENR stormwater permit <del>application</del> (if 10,000sf or more of built upon area).   | ✓   |
| 15  | NCDENR erosion and sedimentation control permit <del>application</del> (if one acre or more of land disturbance).   | ✓   |
| 16  | NCDENR coastal area management act permit <del>application</del> , if applicable.   | ✓   |
| 17  | Stormwater management narrative with supporting calculations.   | ✓   |
| 18  | Rational Method Form SW-003 or NRCS Method Form SW-004  | N/A |
| 19  | Alternative stormwater runoff storage analysis and/or downstream drainage capacity analysis, if applicable  | ✓   |
| 20  | Design spreadsheets for all BMPs (Appendix F – Currituck County Stormwater Manual).   | N/A |
| 21  | Detailed maintenance plan for all proposed BMPs.  | N/A |

**Certificate**

22 The major stormwater plan shall contain the following certificate:

I, \_\_\_\_\_, owner/agent hereby certify the information included on this and attached pages is true and correct to the best of my knowledge.

On the plan entitled \_\_\_\_\_, stormwater drainage improvements shall be installed according to these plans and specifications and approved by Currituck County. Yearly inspections are required as part of the stormwater plan. The owner is responsible for all maintenance required. Currituck County assumes no responsibility for the design, maintenance, or performance of the stormwater improvements.

Date: \_\_\_\_\_ Owner/Agent: \_\_\_\_\_

**Major Stormwater Plan Submittal Checklist**

Staff will use the following checklist to determine the completeness of your application. Please make sure all of the listed items are included. Staff shall not process an application for further review until it is determined to be complete.

**Major Stormwater Plan Form SW-002  
Submittal Checklist**

Date Received: \_\_\_\_\_

Project Name: \_\_\_\_\_ The Donal C. O'Brien, Jr. Sanctuary and Audubon Center

Applicant/Property Owner: \_\_\_\_\_ National Audubon Society, Inc.

**Major Stormwater Plan Form SW-002 Submittal Checklist**

|   |  |     |
|---|--|-----|
| 1 | Completed Major Stormwater Plan Form SW-002  | ✓   |
| 2 | Completed Rational Method Form SW-003 or NRCS Method Form SW-004                         | N/A |
| 3 | Stormwater plan  | ✓   |
| 4 | NCDENR permit applications, if applicable  | ✓   |
| 5 | 3 copies of plans  | N/A |
| 6 | 3 hard copies of ALL documents   | N/A |
| 7 | 1 PDF digital copy of all plans AND documents (ex. Compact Disk – e-mail not acceptable) | ✓   |

**Comments**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## **Stormwater Management Plan Narrative**

The Donal C. O'Brien Jr.: Sanctuary & Audubon Center  
Currituck County Submittal  
Revised February 26, 2024

### **Summary of Revised Stormwater Plan Narrative**

The following narrative is a copy of the narrative which was originally approved by Currituck County on March 13, 2015, with minor reductions to impervious coverage due to originally proposed items being removed from the plan. An NCDEQ low density stormwater permit was issued, restricting the property to 24% maximum impervious coverage, and the revised proposal continues to conform to this NCDEQ Permit. Currituck County Stormwater requirements were met via Alternative Compliance due to the entirety of the developed area being located in the interior of an extremely large property and draining within the property to Currituck Sound, with no impacts to offsite properties. The original Alternative Compliance conditions remain unchanged, with a slight decrease in impervious coverage from the original approval. The following narrative has been adjusted to reflect the reduced impervious coverage now proposed. Calculations in the Appendices still reflect the original proposed impervious coverage – these calculations should now be deemed to be conservative since the newly proposed coverage is reduced compared to the original calculations.

### **General**

The following narrative will detail the proposed stormwater management plan for the renovation and expansion of the existing Donal C. O'Brien Jr. Sanctuary & Audubon Center located in the Pine Island part of Currituck's Outer Banks (southern Corolla). As per state regulations, a low density stormwater permit has been issued, restricting the property to 24% maximum impervious coverage (see Allowable Lot Coverage Calculation in Appendix A of this Narrative).

### **Adequate Outfall**

The entirety of the project area either drains to isolated on-site areas between dunes or drains to Currituck Sound via overland flow through wetlands, overland flow into an interconnected impoundment, or overland flow to the existing canal. No off-site drainage flows through the project area or shares any existing conveyances. Therefore, the existing conditions comply with the Currituck County Stormwater Ordinance requirements in that existing and proposed improvements have no impact on offsite conveyances or offsite drainage and adequate existing outfall exists (Currituck Sound).

Due to the existing adequate outfall (project drains directly to Currituck Sound), stormwater improvements are not required for purposes of compliance with the Currituck County Stormwater Ordinance. Regardless, some stormwater management improvements are proposed in the interest of best practices. To that extent, the explanation of the infiltration system proposed for Drainage Area 2 is provided for reference only and additional Currituck County Supplements / paperwork are not provided.

## **Existing Conditions**

The Donal C. O'Brien Jr. Sanctuary & Audubon Center consists of a total of approximately 2,700 acres of land located along the west side of NC 12 north of the Sanderling Inn (behind the airstrip) and including islands within the Currituck Sound as well as some lands on the west side of Currituck Sound. This property was once a part of the Pine Island hunt club, and the club's Lodge building and outbuildings remain on the property and have been used in recent years by the Audubon Society as offices for their local caretakers. This existing Lodge and outbuildings are the focus of this proposed project. The existing property contains approximately 75,928 sf of impervious coverage (includes compacted sand roadway from Lodge to soundfront docks – does not include compacted sand roadway north of the west end of Clarion Loop). There is currently no stormwater management infrastructure. Impervious areas are “disconnected” and drain directly to surrounding open space for infiltration and sheet flow conveyance to surrounding wetlands.

## **Proposed Conditions**

It is the desire of the Audubon Society to update the historic Lodge and outbuildings to provide an outreach facility for their donors and the public. This will involve the renovation of the historic lodge, renovation of the existing guide's quarter's for use as a residential retreat, renovation of three existing residences, replacement of the existing caretaker's residence with a dining hall in the same footprint, renovation of several existing service buildings / garages, the addition of a workshop, and new utility and fire access infrastructure. The existing impoundment located to the west/northwest of the Lodge will also be re-graded to “naturalize” the perimeter of the impoundment. Currently proposed plans result in a total impervious coverage of 83,842 sf with an additional 10,898 sf of permeable pavements. Permeable pavement systems with subsurface storage gravel beds are proposed for the proposed fire access lane (grasspave) and Lodge parking lot (permeable concrete). No other stormwater management infrastructure is proposed. Impervious areas will be “disconnected” and are proposed to drain directly to surrounding open space for infiltration and sheet flow conveyance to surrounding wetlands. In accordance with NCDENR rules, a Low-Density Stormwater Permit will be obtained to cover this proposed project. This project, as proposed, is consistent with Low Impact Development methods and principles.

## **Future Plans**

The National Audubon Society's potential ultimate plans include the construction of a Visitor's Center and public parking lot in a field to the south of the Lodge. Funding for this phase is not currently available and it is not anticipated that the Visitor's Center would be built within the next 5 years. Since detailed plans for the Visitor's Center are not yet available, an allotment of 90,000 sf of impervious area is included in the coverage calculations to allow for this future development.

## **Parcel Area**

Audubon's Pine Island Preserve consists of approximately 2,733 acres of land along Currituck County's Outer Banks, including marsh islands in Currituck Sound and (presumably) some submerged lands. This 2,733 acres is a conglomerate of different parcels that have been acquired by Audubon over the years. All proposed development is located within the confines of one large parcel (383.58 acres per the legal description) as well as the entirety of the small subdivision known as "Pine Island Estates." For the purpose permitting and calculations, the "Parcel Area" will be defined as the single large parcel (DB 913, PG 150) and the small subdivision (Pine Island Estates, DB 1229, PG 200, PC A, SL 170). For calculation purposes, the GIS measured area for these parcels will be used rather than the legal description area (GIS measured areas are smaller), yielding a total Parcel Area of 353.97 acres.

### **Project Area**

The "Project Area," as defined by NCDENR is calculated as follows:

Parcel Area: 353.97 ac.  
Coastal Wetland Area: 153.9 ac.  
Surface Waters Area: 8.2 ac.

Project Area = Parcel Area – Coastal Wetlands – Surface Waters = 191.87 ac.

Wetlands Note: Due to the small footprint of the developed area relative to the overall parcel size, wetlands have only been field delineated and confirmed for the areas in proximity to the proposed development (see site plans / grading plans for field delineated wetland). For the purposes of calculating Project Area and coverage calculations, wetland limits have been estimated from aerial photography. This is reasonable due to the fact that the regulated area (coverage) will be a small fraction of what is allowed due to the massive size of the property.

### **Watershed Classification**

The project fronts on and drains to Currituck Sound, which is classified as having SC waters. The project is being permitted accordingly with a maximum built-upon-area of 24%.

### **Low Density Calculations**

Calculations requested on the Low Density Supplement sheet have been provided in the Appendix. The proposed project presented on the revised Plans will result in a total Built-Upon-Area (BUA) of 94,740 sf (permeable pavements are included in calculation as BUA without any credits taken). An additional 90,000 sf is allotted in the permit application to cover future development of a Visitor's Center for a total permit coverage of 184,740 sf, or 2.21% coverage.

Although BMP sizing and calculations are not required as part of a low-density stormwater permit, runoff and storage calculations prepared for Currituck County are provided in the Appendix of this narrative for reference and a discussion of these calculations is provided below:

## **Stormwater Collection, Treatment, Storage, and Disposal**

Although NCDENR requirements do not dictate the installation of BMP's, infiltration systems are proposed to comply with Currituck County's Stormwater Management Ordinance. The following section provides a description of the functioning of these basins for informational purposes only. The area of proposed work can be delineated into two distinct drainage areas:

### **Drainage Area 1**

Drainage Area 1 is an area located in the high dunes in the northeast of the project's developed area containing two of the three "cottages" to be renovated. New impervious coverage within this drainage area will consist entirely of a re-shaping of the asphalt "tee" in front of the cottages in order to accommodate fire apparatus turn-around. This drainage area does not accept any off-site runoff. Due to the "duneland" topography and soils, runoff is primarily infiltrated into the sandy fringe along impervious surfaces. Excess runoff, if it were to occur, would collect in the undeveloped low area between the dunes in the east-middle part of the drainage area. There is no physical evidence indicating that this is a regular occurrence. Due to the Drainage Area not accepting off-site runoff, not contributing any downstream runoff, and the existence of a natural infiltration area, no new stormwater improvements are proposed.

### **Collection**

The stormwater runoff sheet flows to the fringes of impervious areas for infiltration. In the event that a storm produces runoff beyond the capacity of the fringe areas, the runoff will flow overland to low areas located between the dunes in the east-middle part of the drainage area.

### **Treatment**

The existing wooded low area within Drainage Area 1 will serve as an infiltration basin and will offer several methods of stormwater runoff treatment prior to release. Runoff from developed areas will enter the infiltration basin via sheet flow over landscaped areas. Large particulates and debris will be trapped by the vegetation and initial infiltration will occur in these locations.

The basin will remain wooded with a natural sand subgrade. The runoff will undergo filtration of fine particulates and pollutants by the existing vegetation within the basin bottom. The filtration by the vegetation is considered the primary treatment method for the entire system. A secondary treatment method is also available when the stormwater runoff infiltrates into the subsurface. When the water passes through the void spaces between the particles of soil material particulates and pollutants that have a particle or grain size larger than the void size will be filtered out. In addition some pollutants will adsorb to the surface of the soil particles. The

benefit of this adsorption will prevent the pollutants from reaching the water table and in some nutrient and microbe rich areas existing within the subsurface the pollutants will be consumed as food and undergo a natural biodegradation.

### Storage

Currituck County's Stormwater Ordinance requires that the runoff rate from the 10-yr, 24-hr storm in the post-construction condition not exceed the runoff rate from the 2-yr, 24-hr storm in the pre-constructed, fully wooded condition. In the case of a drainage area without an outfall or discharge point, this requirement becomes full storage of the 10-yr, 24hr storm in the post-construction condition. The total runoff generated by the 10-yr, 24-hr storm for the post-construction condition was calculated utilizing a modified rational formula to require 14,324 ft<sup>3</sup> of storage. The proposed basin will provide 15,066 ft<sup>3</sup> of storage. Detailed runoff and storage calculations can be found in the Appendix to this Narrative.

### Disposal

The existing infiltration area is located in an area of negative drainage with no outfall. All stored runoff will be disposed of via infiltration into the existing rapid-infiltration subsoil. The existing sands demonstrate infiltration rates in excess of 20 inches per hour (see soil boring HA-5 in the GET Solutions Soils Report Excerpts in the Appendix). To provide a conservative result, an analysis was performed utilizing an infiltration rate of 2.0 inches per hour (1/10<sup>th</sup> the normal rate for the existing soils), and the system was found to draw-down in 14.4 hours under normal seasonal-high groundwater conditions.

## **Drainage Area 2**

Drainage Area 2 consists of the "Main Campus" of the existing hunt club to the west/southwest of Drainage Area 1. The entirety of this area drains to Currituck Sound via overland flow through wetlands, overland flow into an interconnected impoundment, or overland flow to the existing canal. No off-site drainage flows through the drainage area or shares any existing conveyances. Therefore, the existing conditions comply with the Currituck County Stormwater Ordinance requirements in that existing and proposed improvements have no impact on offsite conveyances or offsite drainage. Stormwater improvements are not proposed for purposes of compliance with the Currituck County Stormwater Ordinance, but some stormwater management improvements are proposed in the interest of best practices. To that extent, the following explanation of the infiltration system proposed for Drainage Area 1 is provided for reference only.

### Collection

Stormwater runoff will be allowed to flow from impervious surfaces into surrounding landscaped areas for filtration by vegetation and infiltration into the subsurface. Proposed impervious areas

will be “disconnected” such that there will not be a concentrating flow path or impervious flow path directly to the outfalls.

Additionally, the Fire Access Road through the middle of the site and the parking area adjacent to the Lodge will be constructed of permeable pavement systems. The Fire Access Road will be constructed of a Grasspave system with 12” gravel storage layer. The parking area will be constructed of permeable concrete with 12” gravel storage layer.

### Treatment

The primary source of treatment will be filtration. When runoff sheet flows from “disconnected” impervious areas to landscape areas, large particulates are filtered out by the vegetation. The runoff is slowed, and a portion will infiltrate into the sandy soils.

The proposed infiltration basin within Drainage Area 2 will offer several methods of stormwater runoff treatment prior to release. Runoff from developed areas will enter the infiltration basin via sheet flow over landscaped areas or via a roadside swale. Large particulates and debris will be trapped by the vegetation and initial infiltration will occur in these locations. The filtration by the vegetation is considered the primary treatment method for the entire system. A secondary treatment method is also available when the stormwater runoff infiltrates into the subsurface. When the water passes through the void spaces between the particles of soil material particulates and pollutants that have a particle or grain size larger than the void size will be filtered out. In addition some pollutants will adsorb to the surface of the soil particles. The benefit of this adsorption will prevent the pollutants from reaching the water table and in some nutrient and microbe rich areas existing within the subsurface the pollutants will be consumed as food and undergo a natural biodegradation.

Runoff that falls directly on the permeable pavement systems, or flows across them from other sources, will be treated similarly. Initial filtration of large particulates occurs when runoff passes through the surface of permeable concrete or the grasspave system. Similar to the discussion above, vegetation in the grasspave system will provide initial filtration as well. Runoff is then stored in the gravel layer before passing through to the sandy subsurface where particulates are filtered out and adsorption occurs.

### Storage

Due to the adequate, isolated outfall, there is not a specific storage requirement for Drainage Area 2. The following runoff and storage volumes, however, provide a sense of the adequacy and benefit of the proposed permeable pavement systems.

A 1.0 inch rainfall event was analyzed utilizing a modified rational method. The total runoff volume for the existing condition for a 1.0 inch rainfall event was calculated to be 5,590 cf. The total runoff volume for the proposed condition for a 1.0 inch rainfall event was calculated to be

10,621 cf. Therefore, the increase in runoff volume for a 1.0 inch rainfall event is calculated to be 5,031 cf.

Storage is provided within the 12" thick gravel storage layer supporting the permeable pavement systems (40% void space) as well as the underlying sandy soils (20% void space). Total storage capacity within the system is calculated to be 10,425 cf, or almost equivalent to the total runoff from the site in the post-construction condition and twice the increase in runoff volume between the pre-construction and post-construction conditions.

It should be noted that the permeable pavement systems will not capture and isolate the runoff volume from the entire site since that volume is spread out across the acreage of the entire site. What this system does do, however, is provide a system that isolates much of the runoff from the fire access road and the parking lot and does not contribute that runoff to the overland system.

### Disposal

All stored runoff will be disposed of via infiltration into the existing rapid-infiltration subsoil. The existing sands demonstrate an infiltration rate of 1.65 inches per hour. To provide a conservative result, an analysis was performed utilizing an infiltration rate of 1.0 inches per hour and the system was found to draw-down in 12.0 hours under normal seasonal-high groundwater conditions.

## **Soils**

An exhibit showing the SCS mapped soils for the site (as published on the Currituck County GIS) is included in the Appendix of this narrative for your reference. The Soils mapping shows three soil types within the developed area of the project site:

CoB – Corolla fine sand, moderately well drained, very rapid permeability

Dt – Duckston fine sand, poorly drained, rapid permeability

NeC – Newhan fine sand, excessively drained, very rapid permeability

Cu – Currituck mucky peat, poorly drained, moderate permeability

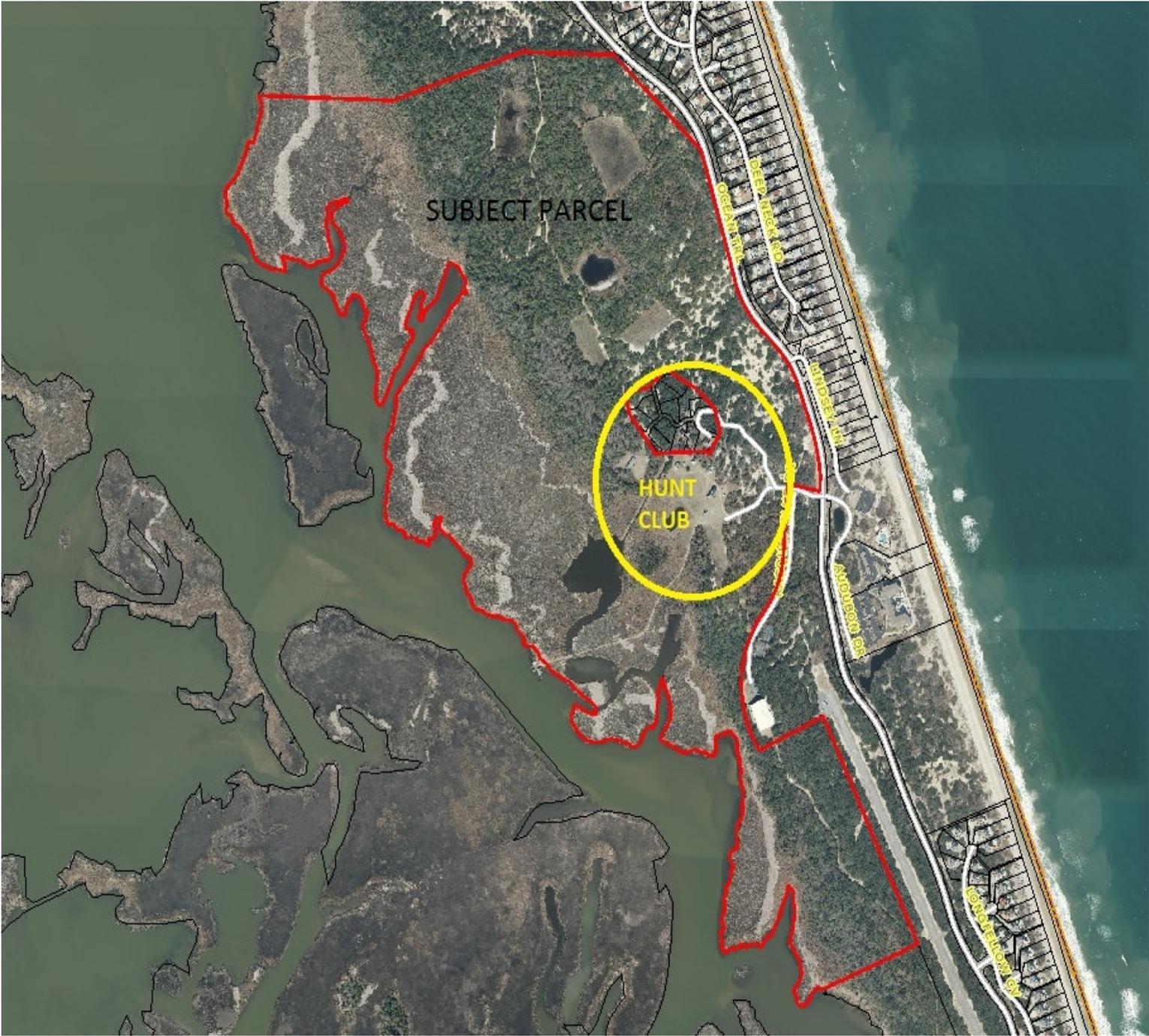
CrB – Corolla – Duckston Complex

The soils types noted above are generally consistent with what is found on-site, but the delineation on the SCS Soils Maps is somewhat coarse. The wetland delineation shown on the plans provides a better indication of the delineation between the Duckston and Currituck mucky peat and the other soil types.

GET Solutions, Inc. performed a field inspection of the soils. Pertinent excerpts from the field inspection report is included in the Appendix to this narrative.

# **APPENDIX A**

Aerial Imagery



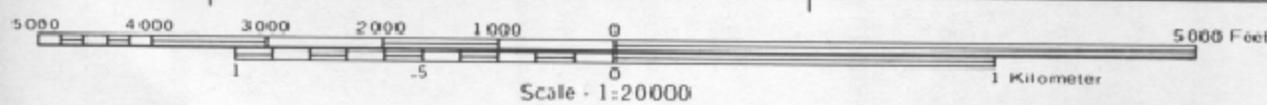
## **APPENDIX B**

Soils Map & Field Investigation Report (Excerpts)



(Joins sheet 19)

SITE





# REPORT OF SUBSURFACE INVESTIGATION AND GEOTECHNICAL ENGINEERING SERVICES

**The Donal C O'Brien Sanctuary &  
Audubon Center  
Pine Island, Corolla, North Carolina**

**GET Project No: EC14-136G  
July 3, 2014**

**PREPARED FOR:**



All pavement material and construction procedures should conform to North Carolina Department of Transportation (NCDOT) requirements. Following pavement rough grading operations, the exposed subgrade should be observed under proofrolling. This proofrolling should be accomplished with a fully loaded dump truck or 7 to 10 ton drum roller to check for pockets of soft material hidden beneath a thin crust of better soil.

Additionally and as previously indicated, test pit excavations should be performed during the roadway subgrade evaluation procedures to further evaluate the FILL and/or Organic laden subsurface soils noted to occur at the boring locations. At that time subgrade improvement recommendations, if necessary, should be provided by the Geotechnical Engineer or his representative.

#### **4.8 Storm Water Design Parameters:**

Infiltration tests were performed at the location of borings HA-1, HA-2, and HA-5 at depths ranging from approximately 1 to 4.5 feet below existing grades due to the encountered water level depths of 1.5 to 5.75 feet. The boreholes were prepared utilizing an auger to remove soil clippings from the base. Infiltration testing was then conducted within the vadose zone utilizing a Precision Permeameter and the following testing procedures.

A support stand was assembled and placed adjacent to each borehole. This stand holds a calibrated reservoir (2000 ml) and a cable used to raise and lower the water control unit (WCU). The WCU establishes a constant water head within the borehole during testing by use of a precision valve and float assembly. The WCU was attached to the flow reservoir with a 4-meter (approximately 13-foot) braided PVC hose and then lowered by cable into the borehole to the test depth elevation.

As required by the Glover solution, the WCU was suspended above the bottom of the borehole at an elevation of approximately 5 times the borehole diameter. The shut-off valve was then opened allowing water to pass through the WCU to fill the borehole to the constant water level elevation. The absorption rate slowed as the soil voids became filled and an equilibrium developed as a wetting bulb developed around the borehole. Water was continuously added until the flow rate stabilized. The reservoir was then re-filled in order to begin testing. During testing, as the water drained into the borehole and surrounding soils, the water level within the calibrated reservoir was recorded as well as the elapsed time during each interval. The test was continued until relatively consistent flow rates were documented.

During testing the quick release connections and shutoff valve were monitored to ensure that no leakage occurred. The flow rate (Q), height of the constant water level (H), and borehole diameter (D) were used to calculate Ks utilizing the Glover Solution. Based on the field testing and corroborated with laboratory testing results (published values compared to classification tests), the hydraulic conductivity of the shallow soils is provided in the following table (Table VIII – Saturated Hydraulic Conductivity Test Results) and is presented on the “Hydraulic Conductivity Worksheet” reports (Appendix VII), included with this report.

**Table VIII - Saturated Hydraulic Conductivity Test Results**

| Boring No. | Test Depth (ft) <sup>(1)</sup> | % Silt and/or Clay | Groundwater Level (ft.) <sup>(1)</sup> |                                | Average Infiltration Test Results (Ksat Values) |        |         |
|------------|--------------------------------|--------------------|--|--------------------------------|---|--------|---------|
|            |                                |                    | Current <sup>(2)</sup>                 | Estimated Normal Seasonal High | cm/sec  | cm/day | in/hour |
| HA-1       | 1                              | 0.3                | 1.5                                    | 0.5 to 1                       | 1.17E-03  | 100.8  | 1.654   |
| HA-2       | 1                              | 0.1                | 1.5                                    | 0.5 to 1                       | 1.27E-03  | 109.8  | 1.801   |
| HA-5       | 4.5                            | 0.3                | 5.75                                   | 4 to 5                         | 1.75E-02  | 1513.4 | 24.826  |

Note (1) = The depths noted above are referenced from below the existing (natural) site grade elevations for each specific boring location.

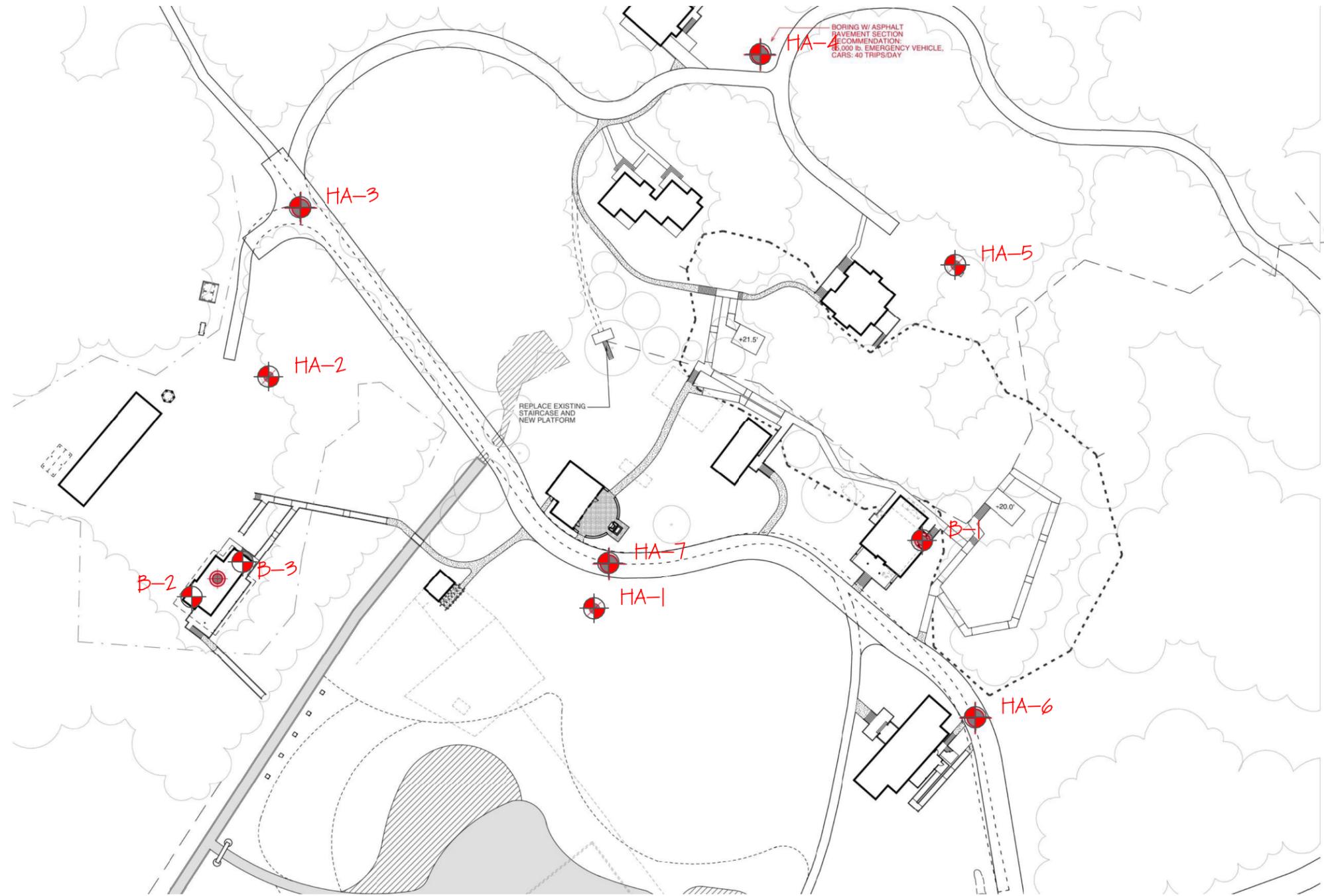
Note (2) = The observed groundwater levels noted above, in Section 3.3 of this report, on our Boring Log sheets, and on our Generalized Soil Profile sheets were obtained through observation of soil wetness at the time of our subsurface exploration procedures.

## **5.0 CONSTRUCTION CONSIDERATIONS**

### **5.1 Drainage and Groundwater Concerns**

It is expected that dewatering may be required for excavations that extend near or below the existing groundwater table. Dewatering above the groundwater level could probably be accomplished by pumping from sumps. Dewatering at depths below the groundwater level may require well pointing.

It would be advantageous to construct all fills early in the construction. If this is not accomplished, disturbance of the existing site drainage could result in collection of surface water in some areas, thus rendering these areas wet and very loose. Temporary drainage ditches should be employed by the contractor to accentuate drainage during construction.



- BORING W/ SHALLOW SOIL PROFILE, SHWT, AND INFILTRATION TEST
- BORING W/ GRAVEL PAVEMENT SECTION RECOMMENDATION: 85,000 lb. EMERGENCY VEHICLE, CARS: 20 TRIPS/DAY, U.N.O.
- BORING FOR NEW BUILDINGS

B N T  
 A 514  
 W  
 T  
 F  
 REV

| LEGEND |                                |
|--------|--------------------------------|
|        | — APPROXIMATE BORING LOCATIONS |

|   |  |                        |
|---|--|------------------------|
| <br><small>Geotechnical • Environmental • Testing</small> | Project Name:<br>SANCTUARY & AUDUBON CENTER<br>COROLLA, NORTH CAROLINA |                        |
|   | Project No.: EC14-136G   | Drawn By:              |
|   | Date: 5/19/14  | Figure No.: 1          |
| BORING LOCATION PLAN                                      |  | SCALE:<br>NOT TO SCALE |



# RECORD OF SUBSURFACE EXPLORATION

Virginia Beach 204 Grayson Road Virginia Beach, VA 23642 757-518-1703  
 Williamsburg 1592-E Penniman Road Williamsburg, VA 23185 757-564-6452  
 Elizabeth City 106 Capital Trace Unit E Elizabeth City, NC 27909 252-335-9765  
 Jacksonville 415-A Western Blvd Jacksonville, NC 28546 910-478-9915

## HAND AUGER BORING ID HA-1

PROJECT NAME: The Donal C O'Brien Sanctuary & Audubon Center  
 CLIENT: Bowman Murray Hemingway Architects  
 PROJECT LOCATION: Pine Island, Corolla, NC  
 BORING LOCATION: See Attached Boring Location Plan  
 DRILLING METHOD(S): Hand Auger  
 GROUNDWATER\*: INITIAL (ft) ▽: 1.5 AFTER \_\_\_\_\_ HOURS (ft) ▼: \_\_\_\_\_ CAVE-IN (ft) ⊖: 3.5  
*The initial groundwater readings are not intended to indicate the static groundwater level.*

PROJECT NUMBER: EC14-136G  
 SURFACE ELEVATION (MSL) (ft): INA  
 LOGGED BY: P. Lankford, EIT  
 DATE STARTED: 3/21/2014  
 DATE COMPLETED: 3/21/2014  
 DRILLER: GET Solutions, Inc.

| Elevation (ft) | Depth (ft) | STRATA DESCRIPTION  | Strata Legend | Sample ID | Sample Type | Sample Recovery (in.) | %<#200 | TEST RESULTS    |                |
|----------------|------------|---|---------------|-----------|-------------|-----------------------|--------|-----------------|----------------|
|                |            |   |               |           |             |                       |        | Plastic Limit X | Liquid Limit X |
|                | 0.5        | 6 inches of Sandy Topsoil to SAND (SP) with Organics                |               |           |             |                       |        |                 |                |
|                | 1          | Tan-Gray, very moist to wet, poorly graded fine to medium SAND (SP) |               | 1         |             | 12                    |        |                 |                |
|                | 2          | Wet from 1.5 feet   |               | 2         |             | 12                    |        |                 |                |
|                | 3          |   |               | 3         |             | 12                    |        |                 |                |
|                | 3.0        | Dark Gray, wet, poorly graded fine SAND (SP-SM) with trace Organics |               |           |             |                       |        |                 |                |
|                | 3.5        | Organic Content = 3.1%<br>Cave-in at 3.5 feet                       |               | 4         |             | 6                     | 6      |                 |                |
|                |            | Boring terminated at 3.5 feet below existing grade.                 |               |           |             |                       |        |                 |                |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Sample Type(s):  
 AUGER - Auger Sample

Notes:



# RECORD OF SUBSURFACE EXPLORATION

Virginia Beach 204 Grayson Road Virginia Beach, VA 23642 757-518-1703  
 Williamsburg 1592-E Penniman Road Williamsburg, VA 23185 757-564-6452  
 Elizabeth City 106 Capital Trace Unit E Elizabeth City, NC 27909 252-335-9765  
 Jacksonville 415-A Western Blvd Jacksonville, NC 28546 910-478-9915

## HAND AUGER BORING ID HA-5

PROJECT NAME: The Donal C O'Brien Sanctuary & Audubon Center  
 CLIENT: Bowman Murray Hemingway Architects  
 PROJECT LOCATION: Pine Island, Corolla, NC  
 BORING LOCATION: See Attached Boring Location Plan  
 DRILLING METHOD(S): Hand Auger  
 GROUNDWATER\*: INITIAL (ft) ▽: 5.75 AFTER \_\_\_\_\_ HOURS (ft) ▼: \_\_\_\_\_ CAVE-IN (ft) ⊖: 7  
*The initial groundwater readings are not intended to indicate the static groundwater level.*

PROJECT NUMBER: EC14-136G  
 SURFACE ELEVATION (MSL) (ft): INA  
 LOGGED BY: P. Lankford, EIT  
 DATE STARTED: 3/21/2014  
 DATE COMPLETED: 3/21/2014  
 DRILLER: GET Solutions, Inc.

| Elevation (ft) | Depth (ft) | STRATA DESCRIPTION  | Strata Legend | Sample ID | Sample Type | Sample Recovery (in.) | %<#200 | TEST RESULTS    |                |                   |                 |    |    |    |
|----------------|------------|---|---------------|-----------|-------------|-----------------------|--------|-----------------|----------------|-------------------|-----------------|----|----|----|
|                |            |   |               |           |             |                       |        | Plastic Limit X | Liquid Limit X | Water Content - ● | Penetration - ▨ |    |    |    |
|                |            |   |               |           |             |                       |        | 10              | 20             | 30                | 40              | 50 | 60 | 70 |
|                | 0.5        | 6 inches of Topsoil                                       |               |           |             |                       |        |                 |                |                   |                 |    |    |    |
|                | 1.0        | Reddish Tan, moist, Clayey SAND (SC; FILL)                |               | 1         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                | 2.0        | Tan, moist to wet, poorly graded fine to medium SAND (SP) |               | 2         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                | 3.0        |   |               | 3         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                | 4.0        |   |               | 4         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                | 5.0        |   |               | 5         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                | 6.0        | Wet from 5.75 feet  |               | 6         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                | 7.0        | Cave-in at 7 feet   |               | 7         |             | 12                    |        |                 |                |                   |                 |    |    |    |
|                |            | Boring terminated at 7 feet below existing grade.         |               |           |             |                       |        |                 |                |                   |                 |    |    |    |

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Sample Type(s):  
 AUGER - Auger Sample

Notes:

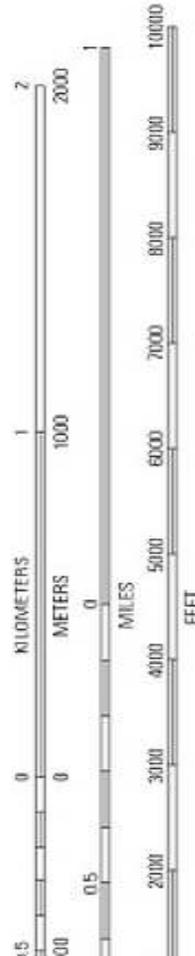
# **APPENDIX C**

USGS Map Excerpt



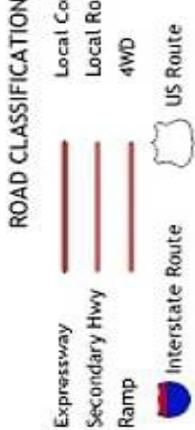
26 27 28 30 31 32

SCALE 1:24 000



CONTOUR INTERVAL 5 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011. A metadata file associated with this product is draft version 0.6.11



QUADRANGLE LOCATION

|              |                |            |              |
|--------------|----------------|------------|--------------|
| Barco        | Corolla        |            |              |
| Colbrook     | Mossey Islands | Jarrisburg | Martin Point |
| Camden Point |                |            |              |

ADJOINING 7.5 QUADRANGLES

**MOSSEY ISLANDS**

2013

## **APPENDIX D**

Property Deed and Key Map Schematics

Unofficial Document  
Tax Collector Certification That No Delinquent Taxes  
Are Due. Date 11/22/05 By [Signature] Certification  
expires Jan. 6th of the year following certification date.

Doc ID: 001260070004 Type: CRP  
Recorded: 11/22/2005 at 03:21:38 PM  
Fee Amt: \$23.00 Page 1 of 4  
Excise Tax: \$0.00  
Currituck County, NC  
Charlene Y Dowdy, Register of Deeds  
BK 913 PG 150-153

770

TRANSFER TAX AMOUNT None  
DATE/COLECTOR 11-22-2005

STATE OF NORTH CAROLINA  
COUNTY OF CURRITUCK

Prepared by and return to:  
Thomas P. Nash, IV  
200 N. Water St. #2A  
Elizabeth City, NC 27909

**THIS DEED**, made and entered into this 30th day of June, 2005, by and between EARL F. SLICK and wife, JANE P. SLICK, Parties of the First Part, hereinafter called the Grantors, to NATIONAL AUDUBON SOCIETY, INC., a nonprofit corporation organized and existing under the laws of the State of New York, with offices located at 700 Broadway, New York, NY 10003, Party of the Second Part, hereinafter called Grantee;

WITNESSETH:

That the Grantors in consideration of an exchange of real estate and a gift unto grantee, by these presents do, for themselves, their heirs and assigns, convey, remise and release unto the Grantee, its successors and assigns, all title and interest of the Grantors in and to the following described rights, privileges and property located in Currituck County, North Carolina and Dare County, North Carolina, including all marshland, beach land islands of marsh and lands covered by water contiguous and adjacent thereto and islands in Currituck Sound, together with riparian and accretive rights incident to the ownership thereof:

All hunting and shooting rights, blinds and licensed blind locations owned by the Grantors north of a straight line running eastwardly from designated Point A to designated Point B in the following description: the course and distance of said line being North 43° 08' 56" East 8,394.76 feet, the designated Point A and Point B being more particularly designated as follows:

Unofficial Document

BEGINNING at a point in the north line of Pine Island property currently owned by the Grantee in Currituck County, said point of beginning being a common corner of the Grantee and the now or formerly Currituck Shooting Club on the eastern edge of that part of Currituck Sound known as Beasley Bay, said point also being in the west margin of the Outer Banks and being located North 85° 25' 10" East a distance of 3,102.84 feet from the northeast corner of the Pine Island property of the Grantee, said northeast corner being at a point in the normal high water line of the western edge of the Atlantic Ocean; running thence the following courses and distances: South 38° 26' 02" West 8,571.79 feet (across Beasley Bay to a point on the north side of an island); South 21° 23' 0" West 1,782.72 feet (to a point on the west end of an island); South 27° 15' 10" East 2,207.29 feet (to a point on the west side of Ballis Point, an island); South 31° 04' 50" East 5,849.83 feet (to a point on the west side of an island, said point being the hereinabove referred to POINT A); running thence South 34° 35' 30" East 352.28 feet (to a point on the west end of an island); South 42° 12' 30" East 1,161.03 feet (to a point on the west end of an island); South 28° 51' 40" East 3,459.74 (crossing the Dare County-Currituck County line at 2,558.06 feet and continuing on said course 901.68 feet to a point on the west side of Great Gap island); South 02° 22' East 1,211.03 feet (to a point on the west end of an island); South 25° 40' 11" East 688.77 feet (to a point on the west side of Bob's Island); South 30° 44' 10" East 430.46 feet (to a point on the west side of Bob's Island); South 36° 03' 51" East 2,276.22 feet (to a point on the west side of Oak island); South 42° 14' 10" East 3,228.16 feet (to a point on the west side of Shannon's Island); South 65° 33' 20" East 120.83 feet (to a point at the south end of Shannon's Island); North 17° 14' 29" East 2,429.16 feet (to a point on the south end of Ware marsh); North 12° 58' 26" East 2,093.44 feet (to a point on the east end of an island situate south of Sandy Creek); North 44° 13' 38" East 3,670.22 feet (to a point on the south end of Goose Island); South 54° 12' 18" East 1,197.07 feet (to a point on the eastern edge of Currituck Sound, said point being the northwest corner of the property formerly owned by Carl P. White, Deceased); North 22° 11' 14" West 399.75 feet; North 18° 08' 17" West 610.33 feet (to a point on the eastern edge of Currituck Sound); North 29° 23' 46" West 814.92 feet (to a point on the eastern edge of Currituck Sound); North 28° 58' 47" West 717.46 feet (crossing the Dare County-Currituck County line at 527.06 feet and

continuing on said course 190.42 feet to a point on the eastern edge of Currituck Sound); North 77° 30' 00" East 1,095.51 feet (crossing the Outer Banks to a point in the normal high water mark line of the western edge of the Atlantic Ocean); North 20° 27' 06" West 8,971.54 feet (along the normal high water line of the western edge of the Atlantic Ocean); South 64° 41' 41" West 1,943.63 feet (crossing the Outer Banks to the point in the eastern edge of Doxey's Cove); said line being the south boundary of Tract 1-C of the Pine Island Development Venture property; North 69° 17' 27" West 876.64 feet to a point (said point being hereinabove referred to as POINT B).

The rights herein conveyed being those hunting and shooting rights, blinds and licensed blind locations specifically retained and excepted in paragraph 2 of those exceptions contained in that Correction Gift Deed dated June 27, 1978 from Earl F. Slick and wife, Jane P. Slick to National Audubon Society, Inc. recorded in Book 156, Page 508, Currituck County Registry, it being the express purpose of this deed to convey said hunting and shooting rights, blinds and licensed blind locations to the Grantee herein.

TO HAVE AND TO HOLD the aforesaid rights, blinds and blind locations and all privileges and appurtenances thereto belonging to the Grantee, its successors and assigns.

IN TESTIMONY WHEREOF the Grantors have hereunto set their hands and seals, as of the day and year first above written.

*Earl F. Slick* (SEAL)  
Earl F. Slick

*Jane P. Slick* (SEAL)  
Jane P. Slick

UNOFFICIAL COPY OF THIS DOCUMENT

Unofficial Document

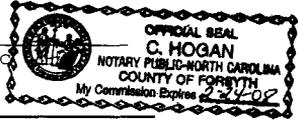
STATE OF N. Carolina  
COUNTY OF Forsyth

I, C. Hogan Notary Public of the County and State aforesaid, certify that Earl F. Slick and wife, Jane P. Slick personally appeared before me this day and acknowledged the execution of the foregoing instrument.

Witness my hand and official stamp or seal, this 30<sup>th</sup> day of June, 2005.

My commission expires: 2-24-2008

C. Hogan  
Notary Public



The foregoing certificate of \_\_\_\_\_ is certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

\_\_\_\_\_  
Register of Deeds for Currituck County  
By \_\_\_\_\_ Deputy/Assistant Register of Deeds

R\slick-national audubon deed 2005

Unofficial Document

Unofficial Document

Unofficial Document



Doc ID: 002463860004 Type: CRP  
Recorded: 12/20/2012 at 02:04:14 PM  
Fee Amt: \$4,226.00 Page 1 of 4  
Excise Tax: \$700.00  
Currituck County, NC  
Denise A. Hall Register of Deeds

434

BK 1229 PG 200-203

NORTH CAROLINA SPECIAL WARRANTY DEED

Excise Tax: \$ 700.00  
Parcel Identifier No. \_\_\_\_\_ Verified by \_\_\_\_\_ County on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
By: \_\_\_\_\_

Mail/Box to: Bell, Davis & Pitt, P.A.; P.O. Box 21029; Winston-Salem, NC 27120

This instrument was prepared by: Frank M. Bell, Jr. (No Title Search Requested or Performed)

Brief description for the Index: \_\_\_\_\_

THIS DEED made this 18<sup>th</sup> day of December, 2012, by and between

| GRANTOR  | GRANTEE   |
|--|---|
| PHYLLIS SLICK COWELL AND R. ELAINE ADDISON,<br>TRUSTEES OF THE PHYLLIS SLICK COWELL<br>REVOCABLE TRUST AND PHYLLIS S. COWELL,<br>UNMARRIED<br>4400 SILAS CREEK PARKWAY, SUITE 302<br>WINSTON-SALEM, NC 27104 | NATIONAL AUDUBON SOCIETY, INC., A New York not-<br>for-profit corporation<br>225 VARICK STREET, 7 <sup>TH</sup> FLOOR<br>NEW YORK, NEW YORK 10014 |

Enter in appropriate block for each Grantor and Grantee: name, mailing address, and, if appropriate, character of entity, e.g. corporation or partnership.

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 the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all those certain lots or parcels of land, together with improvements thereon, situated in Currituck County, North Carolina and more particularly described as follows:

See Exhibit "A" attached hereto and incorporated herein by reference.

The property hereinabove described was acquired by Grantor by instrument recorded in Book \_\_\_\_\_ page \_\_\_\_\_.

All or a portion of the property herein conveyed \_\_\_\_\_ includes or  does not include the primary residence of a Grantor.

A map showing the above described property is recorded in Plat Book \_\_\_\_\_ page \_\_\_\_\_.

#581933

TRANSFER TAX AMOUNT 3500.00 w  
DATE/COLLECTOR 12-20-2012 TRK

Tax Collector Certification that  
No Delinquent Taxes Are Due  
Date 12/20/12 By lu  
Certification expires Jan. 6<sup>th</sup> of the  
year following certification date

Exhibit A

All those certain parcels of land located in Currituck County, North Carolina, described as follows:

Parcel One:

Lot Numbers 3 and 4, Section I, Tract 1-A, as shown on Plat entitled, "Revised Pine Island Estates Subdivision of Section I, Tract 1-A, Pine Island Development Ventures," recorded in Plat Cabinet A, Slide 170 in the Office of the Register of Deeds of Currituck County, North Carolina.

Parcel Two:

Lot Number 13, Section I, Tract 1-A, as shown on Plat entitled, "Revised Pine Island Estates Subdivision of Section I, Tract 1-A, Pine Island Development Ventures," recorded in Plat Cabinet A, Slide 170 in the Office of the Register of Deeds of Currituck County, North Carolina.

UNOFFICIAL DOCUMENT

Unofficial Document

Unofficial Document

**Exhibit B**  
**Additional Deed Provisions**

1. Grantor hereby releases to Grantee all of Grantor's right, title and interest in and to the easement for private roads (including, but not limited to, any and all obligations of Grantor to maintain, repair and improve such roads) within the perimeter of the development entitled "Revised Pine Island Estates Subdivision of Section 51, Tract 1-A, Pine Island Development Ventures," recorded in Plat Cabinet A at Slide 170 in the Office of the Register of Deeds of Currituck County, North Carolina, as reserved in Deed from Noco, Inc. to National Audubon Society, Inc. dated December 22, 1989 and recorded in Book 268, Page 860, Currituck County Registry.
2. Grantor hereby releases to Grantee all of Grantor's right, title and interest in and to the Reserved Parcel D containing 0.38 acres, as reserved in Deed from Noco, Inc. to National Audubon Society, Inc. dated December 22, 1989 and recorded in Book 268, Page 860, Currituck County Registry.
3. Grantor hereby releases to Grantee all of Grantor's right, title and interest in and to that certain permanent non-exclusive easement reserved in the Deed from Noco, Inc. to National Audubon Society, Inc. dated December 22, 1989 and recorded in Book 268, Page 860, Currituck County Registry, described in said Deed as an appurtenance to Lot Numbers 2, 3, 4 and 13, as described in numbered paragraph 2 of said Deed.
4. Grantor hereby releases to Grantee all of Grantor's right, title and interest in and to the permanent non-exclusive easement for purposes of ingress and egress to and from N.C. Highway No. 12 to the 383.58 acre tract described in Deed from Noco, Inc. to National Audubon Society, Inc. dated December 22, 1989 and recorded in Book 268, Page 860, Currituck County Registry.
5. Grantee, by acceptance of this Deed, and Grantor Phyllis S. Cowell, by the execution of this Deed, hereby mutually terminate the First Right of Refusal to Purchase Real Estate and Restrictive Covenant dated December 22, 1989 and recorded in Book 268, Page 877, Currituck County Registry.
6. Grantee, by acceptance of this Deed, and Grantor Phyllis Slick Cowell and R. Elaine Addison, Trustees of the Phyllis Slick Cowell Revocable Trust created pursuant to an Amended and Restated Trust Agreement dated February 3, 2009, and as further amended, by the execution of this Deed, hereby mutually terminate the First Right of Refusal to Purchase Real Estate and Restrictive Covenant dated December 22, 1989 and recorded in Book 268, Page 869, Currituck County Registry.
7. It is the intention of Grantor and Grantee for Grantor to convey to Grantee all of Grantor's right, title and interest (including any obligations) in and to all of the properties, easements, and other rights excepted and reserved by Noco, Inc. and other parties in the Deed from Noco, Inc. to National Audubon Society, Inc. dated December 22, 1989 and recorded in Book 268, Page 860, Currituck County Registry.
8. Grantor hereby releases to Grantee all of Grantor's right, title and interest in and to the easements described in Paragraphs 2 and 3 of that certain Deed of Easement from National Audubon Society, Inc. to Earl F. Slick and Phyllis S. Cowell dated September 16, 2005 and recorded in Book 913, Page 141, Currituck County Registry (the "2005 Easement"). Grantor hereby reserves the easement described in Paragraph 1 of the 2005 Easement that was previously granted by Grantee to Grantor.

The property described herein is conveyed subject to the "Additional Deed Provisions" set forth in Exhibit B attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the aforesaid lots or parcels of land, together with all improvements thereon, and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor has done nothing to impair such title as Grantor received, and Grantor will warrant and defend the title against the lawful claims of all persons claiming by, under or through Grantor, other than the following exceptions:

Ad valorem taxes for the current year and subsequent years, easements, rights of way, restrictions and conditions of record.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Phyllis Slick Cowell and R. Elaine Addison, Trustees  
of the Phyllis Slick Cowell Revocable Trust  
(Entity Name)

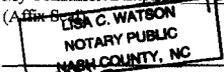
Phyllis S. Cowell (SEAL)  
Print/Type Name: Phyllis S. Cowell, Unmarried

By: Phyllis Slick Cowell  
Print/Type Name & Title: Phyllis Slick Cowell, Trustee  
Of The Phyllis Slick Cowell Revocable Trust

By: R Elaine Addison  
Print/Type Name & Title: R. Elaine Addison, Trustee  
Of The Phyllis Slick Cowell Revocable Trust

State of NC - County of Nash and State aforesaid, certify that PHYLLIS S. COWELL, UNMARRIED personally appeared before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein expressed. Witness my hand and Notarial stamp or seal this 10<sup>th</sup> day of December, 2012

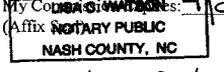
My Commission Expires: 4/28/2015  
(Affix Seal)



Lisa C. Watson  
Notary's Printed or Typed Name

State of NC - County of Nash and State aforesaid, certify that PHYLLIS SLICK COWELL, TRUSTEE OF THE PHYLLIS SLICK COWELL REVOCABLE TRUST personally appeared before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein expressed. Witness my hand and Notarial stamp or seal this 10<sup>th</sup> day of December, 2012

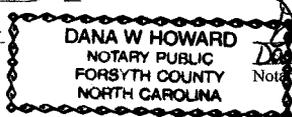
My Commission Expires: 4/28/2015  
(Affix Seal)



Lisa C. Watson  
Notary's Printed or Typed Name

State of North Carolina - County of Forsyth and State aforesaid, certify that R. ELAINE ADDISON, TRUSTEE OF THE PHYLLIS SLICK COWELL REVOCABLE TRUST personally appeared before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein expressed. Witness my hand and Notarial stamp or seal this 19 day of December, 2012

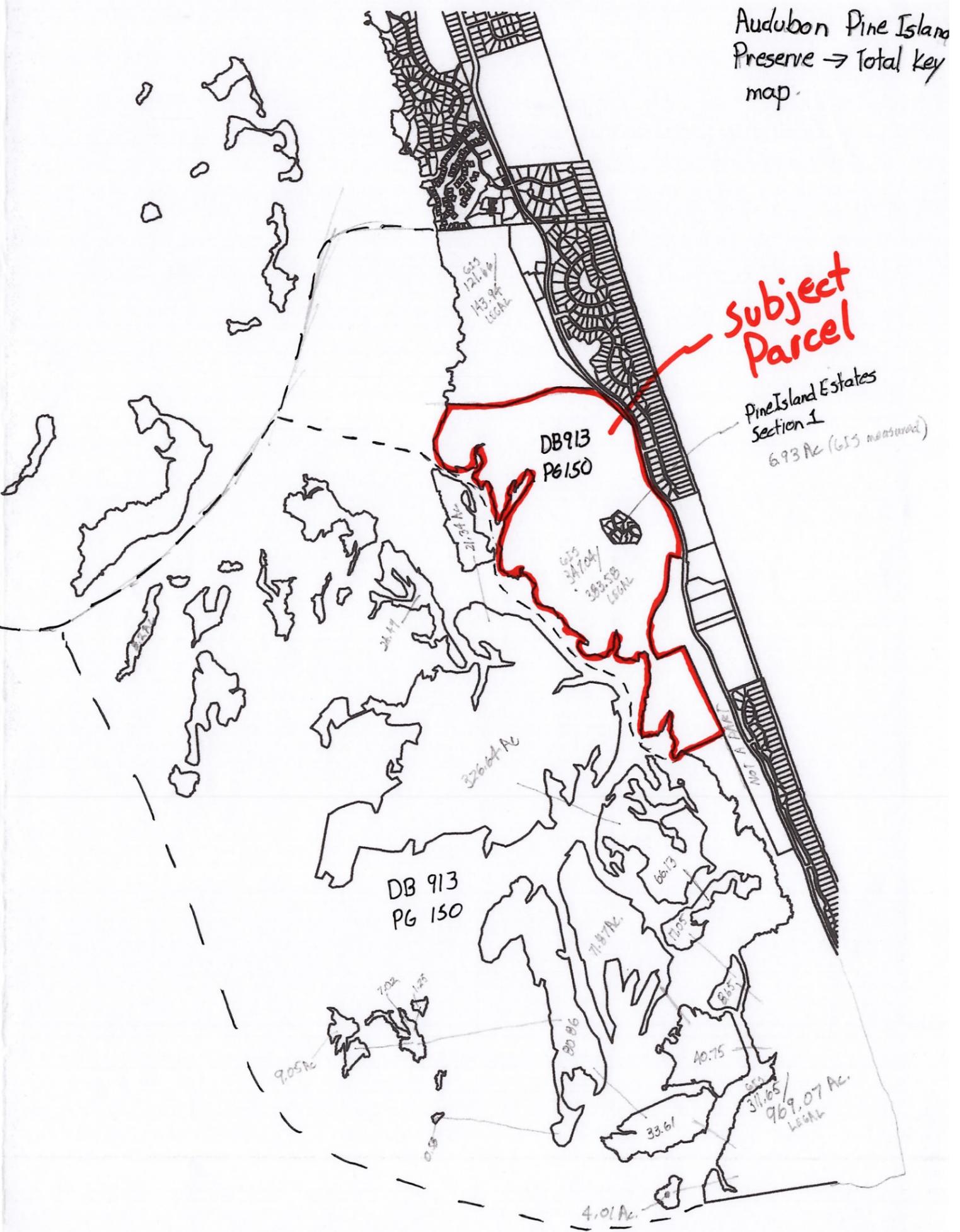
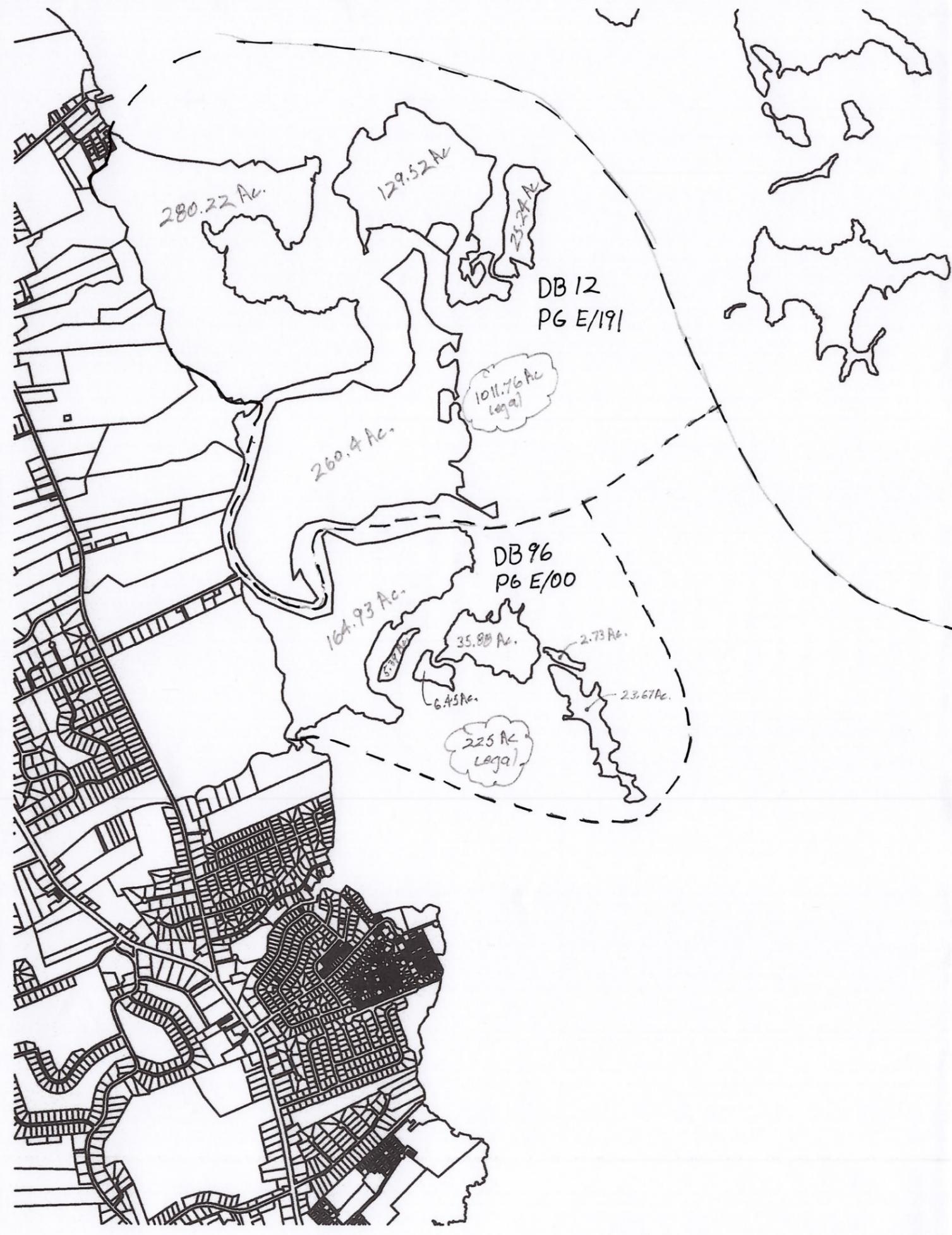
My Commission Expires: 11/04/2014  
(Affix Seal)



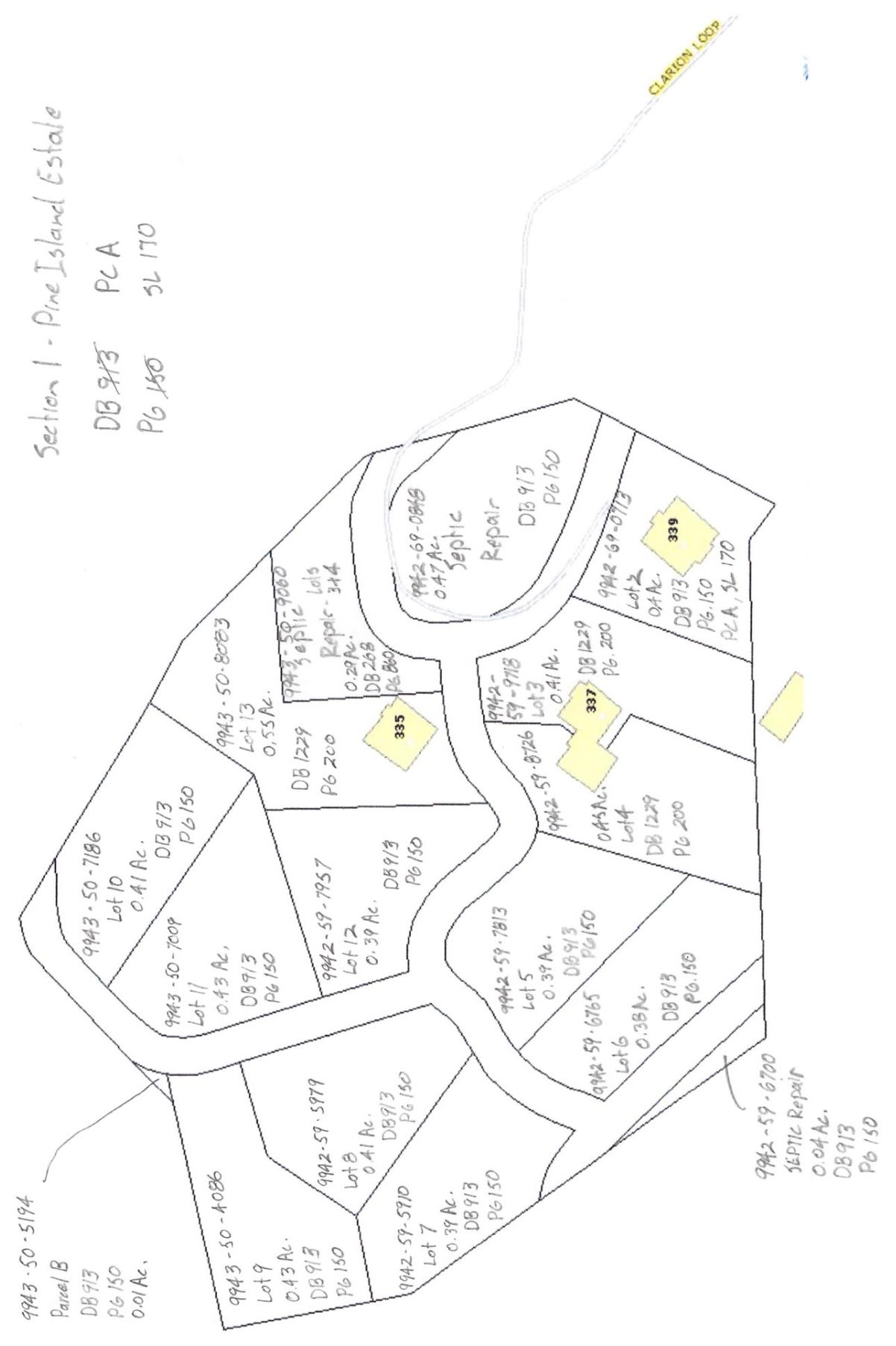
Dana W. Howard  
Notary's Printed or Typed Name

#581933

Audubon Pine Island  
Preserve → Total Key  
map



Section 1 - Pine Island Estate  
 DB 913 PLA  
 Pg 150 SL 170



# **APPENDIX F**

Articles of Incorporation



Elaine F. Marshall  
Secretary

North Carolina

DEPARTMENT OF THE  
SECRETARY OF STATE

PO Box 29622 Raleigh, NC 27626-0622 (919)807-2000

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Date: 10/8/2014

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PC, PLLC, LP and Non-Profit entities are not required to file annual reports.

**Corporation Names**

| Name                              | Name Type |
|-----------------------------------|-----------|
| NC NATIONAL AUDUBON SOCIETY, INC. | LEGAL     |
| NC NATIONAL AUDUBON SOCIETY, INC. | CSL LEGAL |

**Non-Profit Corporation Information**

|                 |                |
|-----------------|----------------|
| SOSID:          | 0260451        |
| Status:         | Current-Active |
| Effective Date: | 12/15/1989     |
| Citizenship:    | FOREIGN        |
| State of Inc.:  | NY             |
| Duration:       | PERPETUAL      |

**Registered Agent**

|                 |  |
|-----------------|--|
| Agent Name:     | NATIONAL REGISTERED AGENTS, INC.                         |
| Office Address: | 150 FAYETTEVILLE STREET,<br>BOX 1011<br>RALEIGH NC 27601 |

|                  |  |
|------------------|--|
| Mailing Address: | 150 FAYETTEVILLE STREET,<br>BOX 1011<br>RALEIGH NC 27601 |
|------------------|--|

**Principal Office**

|                 |   |
|-----------------|---|
| Office Address: | 225 VARICK STREET, 7TH FLOOR<br>NEW YORK NY 10014 |
|-----------------|---|

|                  |   |
|------------------|---|
| Mailing Address: | 225 VARICK STREET, 7TH FLOOR<br>NEW YORK NY 10014 |
|------------------|---|

**Officers/Company Officials**

# **APPENDIX G**

## CALCULATIONS

Parcel / Project Area:

- Audubon's Pine Island Preserve consists of approximately 2,733 Acres of land along the outer banks as well as marsh islands in Currituck Sound and (presumably) some submerged lands. (Acreage total as per legal descriptions compiled in Currituck Co. GIS). All proposed development is located within the confines of one large parcel (383.58 Ac. legal description) as well as the entirety of the small subdivision known as "Pine Island Estates." For the purpose of permitting and calculations, the "Project Area" will be defined as the single large parcel and small subdivision which is impacted by proposed development. For calculation purposes, Areas as measured in GIS will be used.

Parcel Area:

Large Parcel: 347.04 Ac. (GIS)

Pine Island Estates: 6.93 Ac. (GIS)

Total Parcel Area = 353.97 Ac. (GIS)

- Wetland: Due to small size of development compared to overall parcel/project area, wetlands have only been field delineated/confirmed in proximity to the proposed development to ensure impacts are clearly identified (see site plans/grading plans for field delineated wetland). For the purposes of lot calculations/coverage/calcs/etc, wetland limits have been estimated from aerial photography. This is reasonable due to the fact that the regulated area (coverage) will be a small fraction of what is allowed due to the massive size of the property.

Wetland Area:

404 Wetland: +/- 1,321,018 sf (30.3 Ac) (Approx. from Aerial)

Coastal Wetland: +/- 6,704,401 sf (153.9 Ac) (Approx. from Aerial)

Sound Waters: +/- 358,915 sf (8.2 Ac) (Approx. from Aerial)

- "Project Area" for NCDENR Calcs + Permitting:

Parcel Area - Coastal Wetlands - surface water = 191.87 Ac.

Audubon - Pine Island  
Stormwater Calcs

Deel Engineering, PLLC  
8/22/14  
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Lot Coverage:

Existing - to remain:

|               |                      |                                   |
|---------------|----------------------|-----------------------------------|
| Ex Buildings: | 13,547 sf (0.31 Ac.) | (To be renovated)                 |
| Ex. Streets:  | 28,622 sf (0.66 Ac.) | (Asphalt)                         |
| Ex. Other:    | 15,745 sf (0.36 Ac.) | (SAND DRIVEWAY OUT TO BOAT DOCKS) |
| Ex. other:    | 217 sf (0.005 Ac.)   | (Conc. Pad)                       |

Total Ex. Coverage to Remain: 58,131 sf (1.33 Ac.)

Proposed Impervious:

|                                 |                                |                                       |
|---------------------------------|--------------------------------|---------------------------------------|
| Buildings:                      | 3,621 sf (0.08 Ac.)            |                                       |
| Streets/Driveways:              | 16,107 sf (0.37 Ac.)           | (Asphalt)                             |
| <del>Gravel Wheel Strips:</del> | <del>4,759 sf (0.11 Ac.)</del> | <del>(Gravel/pave wheel strips)</del> |
| Gravel Edging (Asphalt):        | 4,780 sf (0.11 Ac.)            | (Gravel Edging)                       |
| Sidewalks/Patios:               | 2,610 sf (0.06 Ac.)            | (Pavers)                              |
| Sidewalks:                      | 3,660 sf (0.08 Ac.)            | (Oystershell)                         |
| Conc. Edging (Grasspave):       | 1,389 sf (0.03 Ac.)            | (Conc. Ribbon)                        |
| Other:                          | 245 sf (0.005 Ac.)             | (Fuel tank, dumpster, etc.)           |

Total Proposed Imp. Coverage: 32,412 sf (0.74 Ac.)

Permeable Coverage:

|                      |                     |  |
|----------------------|---------------------|--|
| Gravel Wheel Strips: | 4,759 sf (0.11 Ac.) | (Gravel/pave Wheel Strips - 12" Gravel Base) |
| Perm. Conc. Parking: | 6,139 sf (0.14 Ac.) | (12" Gravel Base)                            |

Total Permeable Coverage: 10,898 sf (0.25 Ac.)

### Drainage Area 1:

Drainage Area 1 is an area located in the high dunes in the northeast of the project's developed area containing two of the three "cottages" (Pine Island Estates, Section 1) to be renovated. New impervious coverage within this drainage area will consist entirely of a re-shaping of the asphalt "tee" in front of the cottages in order to accommodate fire apparatus turn-around. This drainage area does not accept any off-site runoff. Due to the "duneland" nature of the topography and soils, runoff is primarily infiltrated in the sandy fringe along impervious surfaces. Excess runoff, if it were to occur, would collect in the under low area located in the east-middle part of the drainage area. There is no physical evidence indicating that this is a regular occurrence. Due to the Drainage Area not accepting off-site runoff, not contributing any downstream runoff, and the existence of a natural infiltration area, no new stormwater improvements are proposed.

Drainage Area: 112,890 sf (2.59 Ac.)

⇒ To demonstrate compliance, we will show full capture of the 10-yr, 24hr. storm volume utilizing the rational method:

#### Post-Con Coverage:

|                          |          |
|--------------------------|----------|
| Ex. Bldgs to remain:     | 3,421 sf |
| Ex. Asph Road to remain: | 5,143 sf |
| New Asphalt Drive:       | 5,469 sf |
| Gravel Edging (roadway): | 946 sf   |
| Gravel Walkway:          | 902 sf   |

Total Imp. Coverage: 15,881 sf (0.36 Ac.)

#### Composite C-Factor:

Impervious: 15,881 sf @ C = 0.95  
Natural Duneland: 97,009 sf @ C = 0.15

$$\text{Composite C: } \frac{(15,881 \times 0.95) + (97,009 \times 0.15)}{112,890 \text{ sf}} = 0.26$$

Audubon - Pine Island  
Stormwater Caks

Deel Engineering, PLLC  
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Drainage Area 1 (cont'd):

Total Runoff Volume:

$$Q_v = CIA$$

$I_{10}$  precip depth for 10 yr, 24 hr storm = 5.86 in (per NOAA)

$$= 0.26 (5.86/12) (2.59) = 0.33 \text{ Ac. Ft} = \underline{14,324 \text{ cf}}$$

Storage Provided:

- Storage is available in two natural, dune low areas in the SE corner of the drainage area

Groundwater @ 4' - 4.0' (G&T Solns report, Boring HAA & HAS)

Storage area 1:

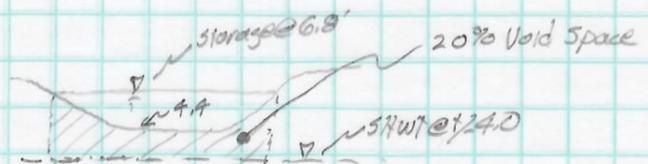
• Above Grade Storage:

Bottom Storage @ 4.4'

Top Storage @ 6.5' + (excess volume will just continue to collect w/in the drainage area)

| Elev | Area      | Avg. Area | Vol.     | $\Sigma$ Vol.               |
|------|-----------|-----------|----------|-----------------------------|
| 4.4  | 0         |           |          | 0                           |
|      |           | 98 sf     | 59 cf    |                             |
| 5.0  | 196 sf    |           |          | 59 cf                       |
|      |           | 1,640 sf  | 1640 cf  |                             |
| 6.0  | 3,083 sf  |           |          | 1699 cf                     |
|      |           | 6,542 sf  | 5,274 cf |                             |
| 6.8  | 10,101 sf |           |          | $\Sigma = 6,973 \text{ cf}$ |

• Below Grade Storage:



$$V_{BG} = \left[ \left[ (6.8' - 4.0') \times 10,101 \text{ sf} \right] - 6,973 \right] \times 0.2 = 4,262 \text{ cf}$$

Storage Area 1 total Storage: 11,235 cf

Audubon - Pine Island  
Stormwater Calc

Deel Engineering, PLLC  
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Drainage Area 1 (cont'd):

Total Storage Area 2:

Above Grade Storage:

Bottom Storage @ 6.0

Top Storage @ 7.5' (@ elev. 7.5', stored runoff will spill over into storage area #1)

| <u>Elev</u> | <u>Area</u> | <u>Avg Area</u> | <u>Vol</u> | <u>Σ Vol.</u> |
|-------------|-------------|-----------------|------------|---------------|
| 6.0         | 0           | 85/sf           | 85cf       | 0             |
| 7.0         | 1701 sf     | 2,412sf         | 1,206cf    | 851cf         |
| Elev. 7.5'  | 3,122sf     | 2,412sf         | 2,057cf    | Σ = 2,057cf   |

Below Grade Storage:  $[(1701) - 85] \times 0.2 = 351cf$

$$V_{BG} [((7.5 - 4.0) \times 3,122sf) - 2,057cf] \times 0.2 = 1,774cf$$

Storage Area 2 total Storage: 3,831cf

Total Storage Available in Natural dune areas

of Drainage Area 1:  $11,235cf + 3,831cf = \underline{15,066cf}$

## Drainage Area 2:

Drainage Area 2 consists of the "Main Campus" of the existing hunt club to the west/southwest of drainage area 1. The entirety of this area drains to currituck sound via overland flow through wetlands, <sup>overland</sup> drainage into an interconnected impoundment, or overland flow to the existing canal. No off-site <sup>area</sup> flows through the drainage area or shares the existing conveyances. Therefore, the existing conditions comply with the Currituck County Stormwater ordinance requirements in that existing improvements and proposed improvements have no impact on offsite conveyances. Stormwater improvements are not proposed for purposes of compliance with curr. Co. SWM ordinance, but some SWM improvements are proposed in the interest of best practices. To that extent, the following calculations are provided for reference/information only.

Total Drainage Area: 335,450 sf (7.70 Ac.)

### Pre-Construction:

#### Impervious:

Ex. Bldgs: 11,512 sf

Ex. Gravel Drive: 12,870 sf

Ex. Asphalt Drive: 1,176 sf

Ex. Other: 1,459 sf

Total Imp. = 26,017 sf

(Dog Kennel, Propane Tank, etc.)  
( $C=0.95$ )

Based on soils observations in the field, drainage area 2 consists of two types of soils: "A" soils located in the eastern "dune" portion of the drainage area, and "D" soils located in the western, flat portion of the drainage area.

Soils Group "A": 95,665 sf ( $C=0.11$ )

Soils Group "D": 213,768 sf ( $C=0.15$ )

⇒ Since peak flow rate mitigation is not the objective (see explanation at top of this page), storage volume (for water quality purposes) is the calculation of interest. Runoff volumes are calculated using modified rational method.

Pre-Const. Runoff Volume (modified rational):

Composite C-factor:

Imp.: 26,017 sf @ C=0.95

Soils Group "A": 95,665 sf @ C=0.11

Soils Group "D": 213,768 sf @ C=0.15

$$\text{Composite C: } \frac{(26,017 \times 0.95) + (95,665 \times 0.11) + (213,768 \times 0.15)}{335,450}$$

$$C_{\text{comp}} = 0.20$$

$$I_{1.0"} = 1.0 \text{ in}$$

$$I_{10\text{yr}} = 5.86 \text{ in.}$$

$$Q_{\text{pre}(1.0")} = 0.20 (1.0 \text{ in} \div 12 \text{ in/ft}) \times 7.7 \text{ Ac} = 0.13 \text{ Ac} \cdot \text{ft} = 5,590 \text{ cf}$$

$$Q_{\text{pre}(10\text{-yr})} = 0.20 (5.86 \text{ in} \div 12 \text{ in/ft}) \times 7.7 \text{ Ac} = 0.75 \text{ Ac} \cdot \text{ft} = 32,758 \text{ cf}$$

Post-Const. Runoff Volume:

Comp. C-factor:

Imp: 90,543 sf @ C=0.95

Perm. Pavements: 10,898 sf @ C=1.0 \*

Soil Group "A": 91,238 sf @ C=0.11

Soil Group "D": 142,861 sf @ C=0.15

$$C_{\text{comp}} = 0.38$$

\* Perm Pavements are assigned a C-factor of 1.0 since we will be calculating their storage volume in a later step.

Audubon - Pine Island  
Stormwater Calcs  
DA2 - Cont'd

Deel Engineering, PLLC  
8/22/14  
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$$I_{1.0"} = 1.0 \text{ in.}$$

$$I_{10\text{yr}} = 5.86 \text{ in}$$

$$Q_{\text{v post (1.0 in)}} = 0.38 (1.0 \text{ in} \div 12 \text{ in/ft}) \times 7.7 \text{ Ac.} = 0.244 \text{ Ac. ft} = 10,621 \text{ cf}$$

$$Q_{\text{v post (10 yr)}} = 0.38 (5.86 \text{ in} \div 12 \text{ in/ft}) \times 7.7 \text{ Ac.} = 1.42 \text{ Ac. ft} = 62,241 \text{ cf}$$

- Total Post-Con Runoff Volume for 1.0" rainfall event = 10,621 cf
- Difference b/w Runoff Volume for 10-yr Post vs. 10-yr Pre-Con:

$$62,241 \text{ cf} - 32,758 \text{ cf} = \underline{29,483 \text{ cf}}$$

Storage Provided:

Grass Pave: Grass pave road system to be underlaid with 12" Thick Gravel storage layer w/40% void space.

Grass pave Area: 10,638 sf

$$\text{Storage Available: } 10,638 \text{ sf} \times 1.0 \text{ ft} \times 0.4 = \underline{4,255 \text{ cf}}$$

Permeable Concrete: Perm Conc. to be underlaid w/12" Thick Gravel Storage Layer w/40% Void Space.

Perm Conc. Area: 6,139 sf

$$\text{Storage Available: } 6,139 \text{ sf} \times 1.0 \text{ ft} \times 0.4 = \underline{2,456 \text{ cf}}$$

Storage Provided → Cont'd

Storage in subgrade:

Per Boring HA-1 of G&T soils report, GW is located at  $\approx$  1.5' MSL. To provide conservative analysis, we will calculate using an assumed SAWT of 2.5' MSZ (almost existing Ground Elevation)

Grass pave system:

Avg surface Elev. = 4.5'

Avg bottom Storage Gravel Layer @ 3.38'

20% Soil Voids in subgrade

Storage Available:

Storage Avail. in subgrade:

$$(3.38' - 2.5') \times 10,638 \text{ cf} \times 0.2 = \underline{1,872 \text{ cf}}$$

Perm Conc. System:

Avg surface Elev. = 5.5'

Avg bottom Storage Gravel Layer @ 4.0'

20% Soil Voids in subgrade

Storage Avail. in subgrade:

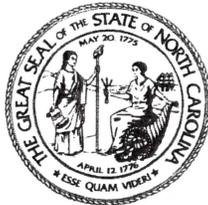
$$(4.0' - 2.5') \times 6,139 \times 0.2 = \underline{1,842 \text{ cf}}$$

Total Storage Available in Perm Pavement Systems in DA2  
= 10,425 cf

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

RICHARD E. ROGERS, JR.  
Director



NORTH CAROLINA  
Environmental Quality

February 7, 2024

Currituck County Water Department  
Attention: Will Rumsey, Public Utilities Manager  
153 Courthouse Road, Suite 302  
Currituck, North Carolina 27929

Re: Engineering Plans and Specifications Approval  
Distribution Extension  
The Donal C. O'Brien, Jr. Sanc. & Audubon Center  
Southern Outer Banks Water System  
Water System No.: NC6027001, Currituck County  
Serial No.: 24-00087

Dear Applicant:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans bearing the Division of Water Resources stamp of approval for the referenced project. These engineering plans are approved under Division of Water Resources Serial Number 24-00087, dated February 7, 2024.

Engineering plans prepared by Joseph J. Anlauf, P.E., call for the installation of approximately 1,800 feet of 8-inch water main, 200 feet of 6-inch water main, fire hydrants, DCDA backflow preventers, valves and associated appurtenances extending along Audubon Drive to provide domestic and fire service to a number of wildlife sanctuary structures at the Donal C. O'Brien Jr. Sanctuary & Audubon Center in Corolla. The proposed water main extension will connect to an existing 6-inch water main stub along Audubon Drive near its intersection with Ocean Trail (NC Highway 12). Construction of this project must be in accordance with the Currituck County and Southern Outer Banks's standard specifications as previously approved by our office.

Please note that in accordance with 15A NCAC 18C .0309(a), no construction, alteration, or expansion of a water system shall be placed into service or made available for human consumption until the Public Water Supply Section has issued Final Approval. Final Approval will be issued and mailed to the applicant upon receipt of both an Engineer's Certification and an Applicant's Certification submitted in accordance with 15A NCAC 18C .0303 (a) and (c).

These plans in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1634 Mail Service Center | Raleigh, North Carolina 27699-1634  
919.707.9100

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



February 07, 2024

CURRITUCK COUNTY WATER DEPARTMENT  
ATTN: WILL RUMSEY, PUBLIC UTILITIES MANAGER  
153 COUTHOUSE RD., SUITE 302  
CURRITUCK, NC 27929

Re: **Authorization to Construct (This is not a Final Approval)**

Issue Date: February 07, 2024

THE DONAL C. O'BRIEN JR. SANTUARY & AUDUBON CTR.

Serial No.: 24-00087      Water System No.: NC6027001  
Currituck County

Dear Applicant:

This letter is to confirm that a complete Engineer's Report and a Water System Management Plan have been received, and that engineering plans and specifications have been approved by the Department for **THE DONAL C. O'BRIEN JR. SANTUARY & AUDUBON CTR., Serial No.: 24-00087**.

The "Authorization to Construct" is valid for 36 months from the issue date. Authorization to construct may be extended if the Rules Governing Public Water Systems [15A NCAC 18C] and site conditions have not changed (see Rule .0305). The "Authorization to Construct" and the engineering plans and specifications approval letter shall be posted at the primary entrance of the job site before and during construction.

Upon completion of the construction or modification, **and prior to placing the new construction or modification into service**, the applicant must submit an Engineer's Certification and Applicant's Certification to the Public Water Supply Section.

- **Engineer's Certification:** in accordance with Rule .0303(a), the applicant shall submit a certification statement signed and sealed by a registered professional engineer stating that construction was completed in accordance with approved engineering plans and specifications, including any provisions stipulated in the Department's engineering plan and specification approval letter.
- **Applicant's Certification:** in accordance with Rule .0303(c), the applicant shall submit a signed certification statement indicating that the requirements for an Operation and Maintenance Plan and Emergency Management Plan have been satisfied in accordance with Rule .0307(d) and (e) and that the system has a certified operator in accordance with Rule .1300. The "Applicant's Certification" form is available at <http://www.ncwater.org/> (click on Public Water Supply Section, Plan Review, Plan Review Forms).

Certifications can be sent by mail or attachment to an e-mail message to **PWSSection.PlanReview@deq.nc.gov**.

If this "Authorization to Construct" is for a new public water system, the owner must submit a completed **application for an Operating Permit** and the appropriate fee. For a copy of the application for an Operating Permit please call (919) 707-9076.

Once the certifications and permit application and fee (if applicable) are received and determined adequate, the Department will issue a Final Approval letter to the applicant. In accordance with Rule .0309(a), **no portion of this project shall be placed into service until the Department has issued Final Approval**.

Please contact us at (919) 707-9100 if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Sadosky".

Rebecca Sadosky, Ph.D., Chief  
Public Water Supply Section  
Division of Water Resources, NCDEQ

cc: JAMIE MIDGETTE, P.E., Regional Engineer  
ANLAUF ENGINEERING, PLLC



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1634 Mail Service Center | Raleigh, North Carolina 27699-1634  
919.707.9100

---

North Carolina Department of Environmental Quality  
Division of Water Resources

Authorization to Construct

Project Applicant: CURRITUCK COUNTY WATER DEPARTMENT

Public Water System Name: SOUTHERN OUTER BANKS WTR SYST

Water System No.: NC6027001

Project Name: THE DONAL C. O'BRIEN JR. SANTUARY & AUDUBON CTR.

Serial No.: 24-00087

Issue Date: February 07, 2024

Expiration Date: 36 Months after Issue Date

In accordance with 15A NCAC 18C .0305, this Authorization to Construct must be posted  
at the primary entrance to the job site during construction.

---

Permit: 139675

PIN: 9945-59-0885



ALBEMARLE REGIONAL HEALTH SERVICES  
Partners in Public Health

Currituck

Owner:  
National Audubon Society  
225 Varick St.  
Floor 7  
New York, NY 10014

Applicant:  
Anlauf Engineering  
4721 W. Eckner St  
Kitty Hawk, NC 27949

LTAR: 0.500  
Water: PUBLIC  
TYPE IV A  
OTHER  
GPD: 960

Location:  
303 Audubon Drive

1913 LODGE

PERMIT IS APPROVED BASED ON THE FOLLOWING:

- 1) PLANS AND SPECIFICATIONS HAVE BEEN PREPARED AND SEALED BY JOSEPH ANLAUF, P.E. AND DATED 6/30/14. PROJECT # P12021, SHEETS C 4.12, C 4.13, AND C 4.14
- 2) ONLY THE PLANS REFERENCED ABOVE ARE APPROVED, NO OTHER PLANS HAVE BEEN APPROVED. ANY CHANGES TO THE APPROVED PLANS MUST OBTAIN WRITTEN APPROVAL.
- 3) THE PROPOSED FACILITY IS 1913 LODGE AND IS 8 BEDROOMS WITH A MAXIMUM OCCUPANCY OF 16 PEOPLE

SEPTIC SYSTEM COMPONENT TO INCLUDE:

- 1) 1,000 GALLON TRAFFIC-RATED GREASE TRAP
- 2) 2,000 GALLON TRAFFIC-RATED SEPTIC TANK
- 3) 2,000 GALLON TRAFFIC-RATED PUMP TANK
- 4) LPP DRAINFIELD OF 5 LINES 78 FT LONG, 5 FT ON CENTER
- 5) SIMPLEX MYERS ME 50 CAPABLE OF 40 GPM AT 27.38 FT TDH
- 6) ALL VALVES, CONTROLS, FLOATS, RISERS, VALVE BOXES, ETC TO PROPERLY OPERATE THIS SYSTEM

- DRAINFIELD MUST BE PROPERLY STABILIZED BEFORE FINAL CAN BE RELEASED.
- SYSTEM WILL REQUIRE AN OPERATION AND MAINTENANCE CONTRACT WITH A NC SUBSURFACE OPERATOR.
- ENGINEER MUST SUBMIT CONSTRUCTION CERTIFICATION BEFORE OPERATIONS PERMIT CAN BE ISSUED.

Authorized Agent:

 P. Swinney 1911  
Swinney, David

Date: 08/15/2014

Approved: \_\_\_\_\_

Date: \_\_\_\_\_





# Currituck County Department of Public Health



Health Director

Director, Environmental Health

## Improvement Permit Denial Letter

Date: 04/05/2023

Re: Application for improvement permit for:                      Tax Lot:                      Tax Block/Phase:  
Property PIN: 0128000002A000  
Property Site: 305 Audubon Dr  
Health Department file number: 392773-1.

Dear Anlauf Engineering, PLLC,

The Currituck County Health Department, Environmental Health Division on 04/04/2023 evaluated the above referenced property at the site designated on the plat/site plan that accompanied your improvement permit application. According to your application the site is to serve a Dining Hall (2080 gpd) with a design wastewater flow of gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in General Statutes 130A-333 to 345 and 15A NCAC 18A.1900.

Based on the criteria set out in 15A NCAC 18A.1940 through .1948, the evaluation indicated that the site is UNSUITABLE for a sanitary system of sewage treatment and disposal. Therefore, we must deny your request for an improvement permit. A copy of the site evaluation is enclosed. The site is unsuitable based on following:

- Unsuitable soil topography and/or landscape position (Rule .1940)
- Unsuitable soil wetness condition (Rule .1942)

These severe soil or site limitations could cause premature system failure, leading to the discharge of untreated sewage on the ground surface, into surface waters, directly to ground water, or inside your structure.

The site evaluation included consideration of possible site modifications, as well as use of modified, innovative, or alternative systems. However, the Health Department has determined that none of the above options will overcome the severe conditions on this site. A possible option might be a system designed to dispose of sewage to another area of suitable soil or off-site to additional property.

For the reasons set out above, the property is currently classified **UNSUITABLE**, and no improvement permit shall be issued for this site in accordance with Rule .1948(c).

A site classified as UNSUITABLE may be classified as PROVISIONALLY SUITABLE if written documentation is provided that meets the requirements of Rule .1948(d). A copy of this rule is enclosed. You may hire a consultant to assist you if you wish to try to develop a plan under which your site could be reclassified as PROVISIONALLY SUITABLE.

*You have a right to an informal review of this decision.* You may request an informal review by the soil scientist or environmental health supervisor at the local health department. You may also request an information review by the North Carolina Department of Health and Human Services regional soil scientist. A request for informal review must be made in writing to the local health department.

*You also have a right to a formal appeal of this decision.* To pursue a formal appeal, you must file a petition for a contested case hearing with the Office of Administrative Hearings, 1711 New Hope Church Rd, Raleigh, NC 27609. To get a copy of a petition form, you may write the Office of Administrative Hearings, call the office at (984) 236-1850, or download it from the OAH web site at [www.oah.nc.gov](http://www.oah.nc.gov). The petition for a contested case hearing must be filed in accordance with the provision of General Statutes 130A-24 and 150B-23 and all other applicable provisions of Chapter 150B. General Statute 130A-335 (g) provides that your hearing would be held in the county where your property is located.

If you wish to pursue a formal appeal, you must file the petition form with the Office of Administrative Hearings **WITHIN 30 DAYS OF THE DATE OF THIS LETTER**. The date of this letter is April 05, 2023. Meeting the 30 day deadline is critical to your formal appeal.

If you file a petition for a contested case hearing with the Office of Administrative Hearings, you are required by General Statute 150B-23 to serve a copy of your petition to the Registered Agent for the Office of General Counsel, Department of Health and Human Services, 2001 Mail Service Center, Raleigh, N.C. 27699-2001. The Registered Agent for the Department of Health and Human Services is Lisa Corbett.

*Do not serve the petition on your local health department.* Sending a copy of your petition to the local health department will not satisfy the legal requirement in N.C. General Statute 150B-23 that you send a copy to the Office of General Counsel, N.C. Department of Health and Human Services.

You may call or write the local health department if you need any additional information or assistance.

Sincerely,



Kevin Carver

Signature of Authorized Agent - DHHS

Enclosures: (Enclose copy of site evaluation)

(Copy of Rule .1948)

(d) A site classified as UNSUITABLE may be used for a ground absorption sewage treatment and disposal system specifically identified in Rules .1955, .1956, or .1957 of this section or a system approved under Rule .1969 if written documentation, including engineering, hydrogeologic, geologic or soil studies, indicates to the local health department that the proposed system can be expected to function satisfactorily. Such sites shall be reclassified as PROVISIONALLY SUITABLE if the local health department determines that the substantiating data indicate that:

- (1) a ground absorption system can be installed so that the effluent will be non-pathogenic, non-infectious, non-toxic, and non hazardous;
- (2) the effluent will not contaminate groundwater or surface water; and
- (3) the effluent will not be exposed on the ground surface or be discharged to surface waters where it could come in contact with people, animals, or vectors.

The State shall review the substantiating data if requested by the local health department.

*History Note:* Authority G.S. 130A-335(e);  
Eff. July 1, 1982;  
Amended Eff. April 1, 1993; January 1, 1990.



# Construction Authorization

Currituck County Health Department

PO Box 77

Maple, NC 27956

Phone: (252) 232-6603 Fax: (252) 232-6605

**For Office Use Only**

\*CDP File Number: 249749 - 1

County ID Number: 9942-59-0885

Evaluated For: NEW

PERMIT VALID UNTIL: 06/15/2023

Open Pump System Sheet

Applicant: ANLAUF ENGINEERING, PLLC  
 Address: 4721 W. ECKNER ST  
 City: KITTY HAWK  
 State/Zip: NC 27949  
 Phone #: wrk: (252) 489-7143

Property Owner: NATIONAL AUDUBON SOCIETY  
 Address: 225 VARICK ST.  
 City: NEW YORK  
 State/Zip: NY, 10014  
 Phone #: \_\_\_\_\_

**Property Location & Site Information**

Address/Road #: 300 AUDUBON DRIVE Subdivision: \_\_\_\_\_ Phase: NEW Lot: \_\_\_\_\_  
COROLLA, NC 27927  
**Directions:**  
 Structure: OTHER DONAL C. O'BRIEN JR. SANCTUARY & AUDUBON CENTER  
 # of Bedrooms: \_\_\_\_\_ OUTDOOR PAVILLION  
 # of People: \_\_\_\_\_  
 \*Water Supply: PUBLIC

**System Specifications**

\*Site Classification: PS LPP Minimum Trench Depth: \_\_\_\_\_ Inches  
 Design Flow: 650 Maximum Trench Depth: \_\_\_\_\_ Inches  
 Soil Application Rate: 1.0000 Minimum Soil Cover: \_\_\_\_\_ Inches  
 \*System Classification/Description: \_\_\_\_\_ Maximum Soil Cover: \_\_\_\_\_ Inches  
TYPE IV A. ANY SYSTEM WITH LPP DISTRIBUTION  
 \*Proposed System: \_\_\_\_\_ \*Distribution Type: LOW PRESSURE PIPE

Nitrification Field: \_\_\_\_\_ Sq. ft. Septic Tank: 1,500 Gallons  
 No. Drain Lines: 5 Pump Required:  Yes  No  May Be Required  
 Total Trench Length: 260 ft.  Inches O.C. Pump Tank: 1,500 Gallons  
 Trench Spacing: 5 - \_\_\_\_\_  Feet O.C. Grease Trap: \_\_\_\_\_ Gallons  
 Trench Width: \_\_\_\_\_ - \_\_\_\_\_  Inches  
 Aggregate Depth: \_\_\_\_\_ inches  Feet  
 Septic Tank Installer Grade Level Required:  I  II  III  IV

The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements.

**\*Permit Conditions:**

- 1) PROJECT # P1740 DATED JANUARY 12, 2018 DESIGNED BY JOSEPH J. ANLAUF, PE HAS BEEN APPROVED. NO OTHER PLANS ARE APPROVED AT THIS TIME.
- 2) SEPTIC SYSTEM TO INCLUDE: 1500 GAL SEPTIC TANK, 1500 GAL PUMP TANKSIMPLEX MEYERS ME 50, ALL FLOATS, VALVES, CONTROLS, RISERS FOR PROPER OPERATION, LPP SYSTEM OF 5 LINES 52 FT LONG 5 FT ON CENTER.
- 3) SYSTEM REQUIRES ENGINEER APPROVAL UPON COMPLETION AND CONTRACT WITH NC CERTIFIED OPERATOR BEFORE OPERATIONS PERMIT CAN BE ISSUED.

The Authorization for Wastewater System Construction shall be valid for a period equal to the period of validity of the Improvement Permit and may be issued at the same time the Improvement Permit issued (NCGS 130A-336(b)). If the installation has not been completed during the period of validity of the Construction Permit, the information submitted in the application for a permit or Construction Authorization shall become invalid, and may be suspended or revoked (.1937(g)). The person owning or controlling the system shall be responsible for assuring compliance with the laws, rules, and permit conditions regarding system location, installation, operation, maintenance, monitoring, reporting

Authorized State Agent: Swinney, David Permit 199 Date of Issue: 06/15/2018





North Carolina Department of Environment and Natural Resources

Pat McCrory  
Governor

John E. Skvarla, III  
Secretary

December 23, 2014

National Audubon Society, Inc  
Attn.: Ms. Mary Beth Henson  
225 Varick Street (7<sup>th</sup> floor)  
New York, NY 10014

**Subject: Permit No. SW7141103  
The Donal C. O'Brien, Jr.: Sanctuary & Audubon Center  
Low Density Stormwater Project  
Currituck County**

Dear Ms. Henson:

The Washington Regional Office received a complete Stormwater Management Permit Application for the subject project on November 12, 2014 and additional information on December 19, 2014. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW7141103 dated December 23, 2014, for the construction of the subject project.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein, and does not supercede any other agency permit that may be required.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact me at (252) 946-6481.

Sincerely,

Samir Dumpor, PE  
Environmental Engineer

cc: Andy Deel, PE, Deel Engineering, PLLC  
Currituck County Planning Division  
Washington Regional Office

Division of Energy, Mineral, and Land Resources . Land Quality Section  
Washington Regional Office

943 Washington Square Mall, Washington, North Carolina 27889 • Phone: 252-946-6481/ FAX: 252-975-3716  
Internet: <http://portal.ncdenr.org/web/lr/land-quality>

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**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**  
**DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES**  
**STORMWATER MANAGEMENT PERMIT**  
**LOW DENSITY DEVELOPMENT**

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

*National Audubon Society, Inc.*

*The Donal O'Brien, Jr.: Sanctuary & Audubon Center*

FOR THE

construction, operation and maintenance of a low density project in compliance with the provisions of 15A NCAC 2H .1000 (hereafter referred to as the "stormwater rules") and the approved stormwater management plans and specifications, and other supporting data as attached and on file with and approved by the Division of Energy, Mineral, and Land Resources (Division) and considered a part of this permit.

The Permit shall be effective from the date of issuance until rescinded and shall be subject to the following specific conditions and limitations:

**I. DESIGN STANDARDS**

1. This permit covers the construction of 191,441 square feet of built-upon area on this 191.87 acres tract of land.
2. The overall tract built-upon area percentage for the project must be maintained at or below 24%, as required by Section 2H .1005 of the stormwater rules.
3. Approved plans and specifications for projects covered by this permit are incorporated by reference and are enforceable parts of the permit and shall be kept on file by the permittee at all times.
4. The only runoff conveyance systems allowed will be vegetated conveyances such as swales with minimum side slopes of 3:1 (H:V) as defined in the stormwater rules and approved by the Division.
5. No piping is allowed except that minimum amount necessary to direct runoff beneath an impervious surface such as a road or to provide access.
6. The built-upon areas associated with this project shall be located at least 50 feet landward of all perennial and intermittent streams or other surface waters.

## II. SCHEDULE OF COMPLIANCE

1. The permittee is responsible for verifying that the proposed built-upon area does not exceed the allowable built-upon area.
2. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.
3. This project may not be sold or subdivided in whole or in part without first receiving a permit modification from the Division.
4. Prior to the subdivision and/or sale of this project, in whole or in part, the following deed restrictions must be recorded with the Office of the Register of Deeds:
  - a. The following covenants are intended to ensure ongoing compliance with State Stormwater Management Permit Number SW7141103, as issued by the Division of Energy, Mineral, and Land Resources under NCAC 2H.1000.
  - b. The State of North Carolina is made a beneficiary of these covenants to the extent necessary to maintain compliance with the Stormwater Management Permit.
  - c. These covenants are to run with the land and be binding on all persons and parties claiming under them.
  - d. The covenants pertaining to stormwater may not be altered or rescinded without the express written consent of the State of North Carolina, Division of Energy, Mineral, and Land Resources.
  - e. Alteration of the drainage as shown on the approved plans may not take place without the concurrence of the Division of Energy, Mineral, and Land Resources.
  - f. This project is permitted for a maximum of 24% of built-upon area. Construction of additional built-upon area in excess of this amount will require a permit modification.
  - g. This project may not be sold or subdivided, in whole or in part, without first receiving a permit modification from the Division.
  - h. Construction of additional impervious areas such that low-density requirements are no longer met will require a permit modification prior to construction. An engineered system will be required to collect and treat the runoff from all built-upon area associated with the project, including that area permitted under the low density option.
  - i. Filling in or piping of any vegetative conveyances (ditches, swales, etc.) associated with this development, except for average driveway crossings, is strictly prohibited by any persons.
  - j. The built-upon areas shall be located a minimum of 50 feet landward of all perennial and intermittent surface waters.
5. A copy of the recorded restrictions must be received in this Office within 30 days of the date of sale.
6. Filling in or piping of any vegetative conveyances (ditches, swales, etc.) associated with the permitted development, except for average driveway crossings, is strictly prohibited by any persons.

7. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction, for any modification to the approved plans, including, but not limited to, those listed below:
  - a. Any revision to the approved plans, regardless of size.
  - b. Project name change.
  - c. Transfer of ownership.
  - d. Redesign or addition to the approved amount of built-upon area.
  - e. Further subdivision, acquisition, or sale of the project area in whole or in part. The project area is defined as all property owned by the permittee, for which Sedimentation and Erosion Control Plan approval was sought.
  - f. Filling in, altering or piping any vegetative conveyance shown on the approved plan.
8. Swales and other vegetated conveyances shall be constructed in their entirety, vegetated, and be operational for their intended use prior to the construction of any built-upon surface.
9. During construction, erosion shall be kept to a minimum and any eroded areas of the swales or other vegetated conveyances will be repaired immediately.
10. The permittee shall at all times provide the operation and maintenance necessary to operate the permitted stormwater management systems at optimum efficiency to include:
  - a. Inspections
  - b. Sediment removal.
  - c. Mowing, and re-vegetating of the side slopes.
  - d. Immediate repair of eroded areas.
  - e. Maintenance of side slopes in accordance with approved plans and specifications.
11. Within 30 days of completion of the project, the permittee shall certify in writing that the project has been constructed in accordance with the approved plans.
12. The permittee shall submit all information requested by the Director or his representative within the time frame specified in the written information request.

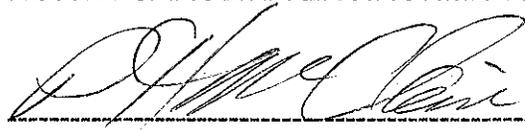
### **III. GENERAL CONDITIONS**

1. This permit is not transferable to any person or entity except after notice to and approval by the Director. The Director may require modification or revocation and re-issuance of the permit to change the name and incorporate such other requirements as may be necessary. In the event of a name or ownership change, a completed Name/Ownership Change form, signed by both parties, must be submitted to the Division accompanied by the supporting documentation as listed on page 2 of the form. The approval of this request will be considered on its merits, and may or may not be approved.
2. The permittee is responsible for compliance with all permit conditions until the Director approves a transfer of ownership. Neither the sale of the project nor the transfer of common areas to a third party, such as a homeowner's association, constitutes an approved transfer of the stormwater permit.

3. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division, in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C.
4. The issuance of this permit does not prohibit the Director from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by the laws, rules, and regulations contained in Title 15A NCAC 2H.1000 of the North Carolina Administrative Code, Subchapter 2H.1000; and North Carolina General Statute 143-215.1 et. al.
5. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective action, including those as may be required by the Division, such as the construction of additional or replacement stormwater management systems.
6. The permittee grants permission to DENR Staff to enter the property during normal business hours, for the purpose of inspecting all components of the stormwater management facility.
7. The permit issued shall continue in force and effect until revoked or terminated. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and re-issuance, or termination does not stay any permit condition.
8. Unless specified elsewhere, permanent seeding requirements for the swales must follow the guidelines established in the North Carolina Erosion and Sediment Control Planning and Design Manual.
9. Approved plans and specifications for this project are incorporated by reference and are enforceable parts of the permit.
10. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state and federal), which have jurisdiction.
11. The permittee shall notify the Division in writing of any name, ownership or mailing address changes at least 30 days prior to making such changes.

Permit issued this the 23th day of December, 2014.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



\_\_\_\_\_ for

Tracy E. Davis, PE, CPM  
Division of Energy, Mineral, and Land Resources  
By Authority of the Environmental Management Commission

**Permit No. SW7141103**

| DEMLR USE ONLY  |          |               |
|---|----------|---------------|
| Date Received   | Fee Paid | Permit Number |
| Applicable Rules: <input type="checkbox"/> Coastal SW - 1995 <input type="checkbox"/> Coastal SW - 2008 <input type="checkbox"/> Ph II - Post Construction<br>(select all that apply) <input type="checkbox"/> Non-Coastal SW- HQW/ORW Waters <input type="checkbox"/> Universal Stormwater Management Plan<br><input type="checkbox"/> Other WQ Mgmt Plan: _____ |          |               |

**State of North Carolina**  
**Department of Environment and Natural Resources**  
**Division of Energy, Mineral and Land Resources**

**STORMWATER MANAGEMENT PERMIT APPLICATION FORM**

*This form may be photocopied for use as an original*

**I. GENERAL INFORMATION**

- Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):  
The Donal C. Obrien, Jr.: Sanctuary & Audubon Center
- Location of Project (street address):  
305 Audubon Drive  
 City: Corolla County: Currituck Zip: 27927
- Directions to project (from nearest major intersection):  
Project is located approximately 850 feet west of the intersection of NC 12 and Audubon Drive (at the western terminus of Audubon Drive) in the Pine Island section of Corolla, Currituck County, NC
- Latitude: 36° 15' 41.89" N Longitude: 75° 47' 26.67" W of the main entrance to the project.

**II. PERMIT INFORMATION:**

- a. Specify whether project is (check one):     New     Modification     Renewal w/ Modification†  
 †Renewals with modifications also requires SWU-102 - Renewal Application Form  
 b. If this application is being submitted as the result of a **modification** to an existing permit, list the existing permit number \_\_\_\_\_, its issue date (if known) \_\_\_\_\_, and the status of construction:     Not Started     Partially Completed\*     Completed\*    \*provide a designer's certification
- Specify the type of project (check one):  
 Low Density     High Density     Drains to an Offsite Stormwater System     Other
- If this application is being submitted as the result of a **previously returned application** or a **letter from DEMLR requesting a state stormwater management permit application**, list the stormwater project number, if assigned, N/A and the previous name of the project, if different than currently proposed, \_\_\_\_\_.
- a. Additional Project Requirements (check applicable blanks; information on required state permits can be obtained by contacting the Customer Service Center at 1-877-623-6748):  
 CAMA Major                       Sedimentation/Erosion Control: 6.07 ac of Disturbed Area  
 NPDES Industrial Stormwater     404/401 Permit: Proposed Impacts \_\_\_\_\_
   
 b. If any of these permits have already been acquired please provide the Project Name, Project/Permit Number, issue date and the type of each permit: N/A
- Is the project located within 5 miles of a public airport?     No     Yes  
 If yes, see S.L. 2012-200, Part VI: <http://portal.ncdenr.org/web/lr/rules-and-regulations>

**III. CONTACT INFORMATION**

1. a. Print Applicant / Signing Official's name and title (specifically the developer, property owner, lessee, designated government official, individual, etc. who owns the project):

Applicant/Organization:National Audubon Society, Inc.

Signing Official & Title: Mary Beth Henson, Chief Financial Officer

b. Contact information for person listed in item 1a above:

Street Address:225 Varick Street 7th Floor

City:New York State:NY Zip:10014

Mailing Address (if applicable):same

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: (212 ) 979-3162 Fax: (212 ) 979-3160

Email:mbhenson@audubon.org

c. Please check the appropriate box. The applicant listed above is:

- The property owner (Skip to Contact Information, item 3a)
- Lessee\* (Attach a copy of the lease agreement and complete Contact Information, item 2a and 2b below)
- Purchaser\* (Attach a copy of the pending sales agreement and complete Contact Information, item 2a and 2b below)
- Developer\* (Complete Contact Information, item 2a and 2b below.)

2. a. Print Property Owner's name and title below, if you are the lessee, purchaser or developer. (This is the person who owns the property that the project is located on):

Property Owner/Organization:National Audubon Society, Inc.

Signing Official & Title: Mary Beth Henson, Chief Financial Officer

b. Contact information for person listed in item 2a above:

Street Address:225 Varick Street 7th Floor

City:New York State:NY Zip:10014

Mailing Address (if applicable):same

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: (212 ) 979-3162 Fax: (212 ) 979-3160

Email:mbhenson@audubon.org

3. a. (Optional) Print the name and title of another contact such as the project's construction supervisor or other person who can answer questions about the project:

Other Contact Person/Organization:Robert Fearn

Signing Official & Title:Center Director

b. Contact information for person listed in item 3a above:

Mailing Address:300 Audobon Drive

City:Corolla State:NC Zip:27927

Phone: (252 ) 453-0603 Fax: (252 ) 453-0603

Email:rfearn@audubon.org

4. Local jurisdiction for building permits: Currituck County

Point of Contact:Jason Littoral (Planner) Phone #: (252 ) 453-8555

**IV. PROJECT INFORMATION**

1. In the space provided below, briefly summarize how the stormwater runoff will be treated.

Project impervious area is disconnected and spread throughout the main "campus" in such a way that runoff is spread to surrounding landscaped areas for infiltration. Additionally, the main road through the site is proposed to be a "Grasspave" system and the proposed parking lot shall be permeable concrete.

2. a. **If claiming vested rights**, identify the supporting documents provided and the date they were approved:

- Approval of a Site Specific Development Plan or PUD Approval Date: \_\_\_\_\_
- Valid Building Permit Issued Date: \_\_\_\_\_
- Other: N/A Date: \_\_\_\_\_

b. **If claiming vested rights**, identify the regulation(s) the project has been designed in accordance with:

- Coastal SW - 1995
- Ph II - Post Construction

3. Stormwater runoff from this project drains to the Pasquotank River basin.

4. Total Property Area: +/- 353.97 acres      5. Total Coastal Wetlands Area: +/- 153.9 acres  
 6. Total Surface Water Area: 8.2 acres

7. Total Property Area (4) - Total Coastal Wetlands Area (5) - Total Surface Water Area (6) = Total Project Area\*: 191.87 acres

\* Total project area shall be calculated to exclude the following: the normal pool of impounded structures, the area between the banks of streams and rivers, the area below the Normal High Water (NHW) line or Mean High Water (MHW) line, and coastal wetlands landward from the NHW (or MHW) line. The resultant project area is used to calculate overall percent built upon area (BUA). Non-coastal wetlands landward of the NHW (or MHW) line may be included in the total project area.

8. Project percent of impervious area: (Total Impervious Area / Total Project Area) X 100 = 2.29 %

9. How many drainage areas does the project have? 1 (For high density, count 1 for each proposed engineered stormwater BMP. For low density and other projects, use 1 for the whole property area)

10. Complete the following information for each drainage area identified in Project Information item 9. If there are more than four drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below.

| Basin Information                | Drainage Area <u>1</u> | Drainage Area <u>  </u> | Drainage Area <u>  </u> | Drainage Area <u>  </u> |
|----------------------------------|------------------------|-------------------------|-------------------------|-------------------------|
| Receiving Stream Name            | Currituck Sound        |                         |                         |                         |
| Stream Class *                   | SC                     |                         |                         |                         |
| Stream Index Number *            | 30-1                   |                         |                         |                         |
| Total Drainage Area (sf)         | 8,357,857 sf           |                         |                         |                         |
| On-site Drainage Area (sf)       | 8,357,857 sf           |                         |                         |                         |
| Off-site Drainage Area (sf)      | 0                      |                         |                         |                         |
| Proposed Impervious Area ** (sf) | 191,441 sf             |                         |                         |                         |
| % Impervious Area ** (total)     | 2.29 %                 |                         |                         |                         |

| Impervious** Surface Area   | Drainage Area <u>1</u> | Drainage Area <u>  </u> | Drainage Area <u>  </u> | Drainage Area <u>  </u> |
|-----------------------------|------------------------|-------------------------|-------------------------|-------------------------|
| On-site Buildings/Lots (sf) | 3,621 sf               |                         |                         |                         |
| On-site Streets (sf)        | 27,035 sf              |                         |                         |                         |
| On-site Parking (sf)        | 6,139 sf               |                         |                         |                         |
| On-site Sidewalks (sf)      | 6,270 sf               |                         |                         |                         |
| Other on-site (sf)          | 245 sf                 |                         |                         |                         |
| Future (sf)                 | 90,000 sf              |                         |                         |                         |
| Off-site (sf)               | n/a                    |                         |                         |                         |
| Existing BUA*** (sf)        | 58,131 sf              |                         |                         |                         |
| Total (sf):                 | 191,441 sf             |                         |                         |                         |

\* Stream Class and Index Number can be determined at: <http://portal.ncdenr.org/web/wq/ps/csu/classifications>

\*\* Impervious area is defined as the built upon area including, but not limited to, buildings, roads, parking areas, sidewalks, gravel areas, etc.

\*\*\* Report only that amount of existing BUA that will remain after development. Do not report any existing BUA that is to be removed and which will be replaced by new BUA.

11. How was the off-site impervious area listed above determined? Provide documentation. \_\_\_\_\_

AutoCAD Area Routine

**Projects in Union County:** Contact DEMLR Central Office staff to check if the project is located within a Threatened & Endangered Species watershed that may be subject to more stringent stormwater requirements as per 15A NCAC 02B .0600.

**V. SUPPLEMENT AND O&M FORMS**

The applicable state stormwater management permit supplement and operation and maintenance (O&M) forms must be submitted for each BMP specified for this project. The latest versions of the forms can be downloaded from <http://portal.ncdenr.org/web/wq/ws/su/bmp-manual>.

**VI. SUBMITTAL REQUIREMENTS**

Only complete application packages will be accepted and reviewed by the Division of Energy, Mineral and Land Resources (DEMLR). A complete package includes all of the items listed below. A detailed application instruction sheet and BMP checklists are available from [http://portal.ncdenr.org/web/wq/ws/su/statesw/forms\\_docs](http://portal.ncdenr.org/web/wq/ws/su/statesw/forms_docs). The complete application package should be submitted to the appropriate DEMLR Office. (The appropriate office may be found by locating project on the interactive online map at <http://portal.ncdenr.org/web/wq/ws/su/maps>.)

Please **indicate that the following required information have been provided by initialing** in the space provided for each item. All original documents **MUST** be signed and initialed in blue ink. Download the latest versions for each submitted application package from [http://portal.ncdenr.org/web/wq/ws/su/statesw/forms\\_docs](http://portal.ncdenr.org/web/wq/ws/su/statesw/forms_docs).

- |  | Initials   |
|--|------------|
| 1. Original and one copy of the Stormwater Management Permit Application Form.   | <u>DAD</u> |
| 2. Original and one copy of the signed and notarized Deed Restrictions & Protective Covenants Form. (if required as per Part VII below)  | <u>N/A</u> |
| 3. Original of the applicable Supplement Form(s) (sealed, signed and dated) and O&M agreement(s) for <u>each</u> BMP.  | <u>DAD</u> |
| 4. Permit application processing fee of \$505 payable to NCDENR. (For an Express review, refer to <a href="http://www.envhelp.org/pages/onestopexpress.html">http://www.envhelp.org/pages/onestopexpress.html</a> for information on the Express program and the associated fees. Contact the appropriate regional office Express Permit Coordinator for additional information and to schedule the required application meeting.)                                       | <u>DAD</u> |
| 5. A detailed narrative (one to two pages) describing the stormwater treatment/management for the project. This is required in addition to the brief summary provided in the Project Information, item 1.  | <u>DAD</u> |
| 6. A USGS map identifying the site location. If the receiving stream is reported as class SA or the receiving stream drains to class SA waters within 1/2 mile of the site boundary, include the 1/2 mile radius on the map.   | <u>DAD</u> |
| 7. Sealed, signed and dated calculations (one copy).   | <u>DAD</u> |
| 8. Two sets of plans <u>folded to 8.5" x 14"</u> (sealed, signed, & dated), including:   | <u>DAD</u> |
| a. Development/Project name.   |            |
| b. Engineer and firm.  |            |
| c. Location map with named streets and NCSR numbers.   |            |
| d. Legend.   |            |
| e. North arrow.  |            |
| f. Scale.  |            |
| g. Revision number and dates.  |            |
| h. Identify all surface waters on the plans by delineating the normal pool elevation of impounded structures, the banks of streams and rivers, the MHW or NHW line of tidal waters, and any coastal wetlands landward of the MHW or NHW lines. <ul style="list-style-type: none"> <li>• Delineate the vegetated buffer landward from the normal pool elevation of impounded structures, the banks of streams or rivers, and the MHW (or NHW) of tidal waters.</li> </ul> |            |
| i. Dimensioned property/project boundary with bearings & distances.  |            |
| j. Site Layout with all BUA identified and dimensioned.  |            |
| k. Existing contours, proposed contours, spot elevations, finished floor elevations.   |            |
| l. Details of roads, drainage features, collection systems, and stormwater control measures.   |            |
| m. Wetlands delineated, or a note on the plans that none exist. (Must be delineated by a qualified person. Provide documentation of qualifications and identify the person who made the determination on the plans.  |            |
| n. Existing drainage (including off-site), drainage easements, pipe sizes, runoff calculations.  |            |
| o. Drainage areas delineated (included in the main set of plans, not as a separate document).  |            |

- p. Vegetated buffers (where required).
- 9. Copy of any applicable soils report with the associated SHWT elevations (Please identify elevations in addition to depths) as well as a map of the boring locations with the existing elevations and boring logs. Include an 8.5"x11" copy of the NRCS County Soils map with the project area clearly delineated. For projects with infiltration BMPs, the report should also include the soil type, expected infiltration rate, and the method of determining the infiltration rate. (Infiltration Devices submitted to WiRO: Schedule a site visit for DEMLR to verify the SHWT prior to submittal, (910) 796-7378.) DAD
- 10. A copy of the most current property deed. Deed book: 913 \_\_\_\_\_ Page No: 150 \_\_\_\_\_ DAD
- 11. For corporations and limited liability corporations (LLC): Provide documentation from the NC Secretary of State or other official documentation, which supports the titles and positions held by the persons listed in Contact Information, item 1a, 2a, and/or 3a per 15A NCAC 2H.1003(e). The corporation or LLC must be listed as an active corporation in good standing with the NC Secretary of State, otherwise the application will be returned. DAD  
<http://www.secretary.state.nc.us/Corporations/CSearch.aspx>

**VII. DEED RESTRICTIONS AND PROTECTIVE COVENANTS**

For all subdivisions, outparcels, and future development, the appropriate property restrictions and protective covenants are required to be recorded prior to the sale of any lot. If lot sizes vary significantly or the proposed BUA allocations vary, a table listing each lot number, lot size, and the allowable built-upon area must be provided as an attachment to the completed and notarized deed restriction form. The appropriate deed restrictions and protective covenants forms can be downloaded from [http://portal.ncdenr.org/web/lr/state-stormwater-forms\\_docs](http://portal.ncdenr.org/web/lr/state-stormwater-forms_docs). Download the latest versions for each submittal.

In the instances where the applicant is different than the property owner, it is the responsibility of the property owner to sign the deed restrictions and protective covenants form while the applicant is responsible for ensuring that the deed restrictions are recorded.

By the notarized signature(s) below, the permit holder(s) certify that the recorded property restrictions and protective covenants for this project, if required, shall include all the items required in the permit and listed on the forms available on the website, that the covenants will be binding on all parties and persons claiming under them, that they will run with the land, that the required covenants cannot be changed or deleted without concurrence from the NC DEMLR, and that they will be recorded prior to the sale of any lot.

**VIII. CONSULTANT INFORMATION AND AUTHORIZATION**

Applicant: Complete this section if you wish to designate authority to another individual and/or firm (such as a consulting engineer and/or firm) so that they may provide information on your behalf for this project (such as addressing requests for additional information).

Consulting Engineer: David A. Deel, P.E.

Consulting Firm: Deel Engineering, PLLC

Mailing Address: P.O. Box 3901

City: Kill Devil Hills State: NC Zip: 27948

Phone: (252) 202-3803 Fax: ( )

Email: dadeeleng@gmail.com

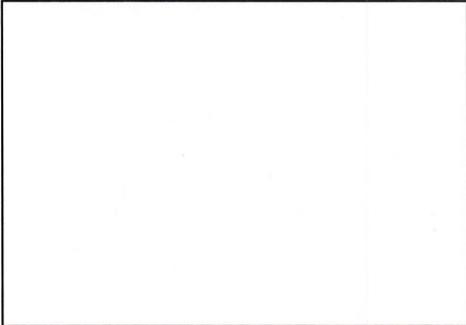
**IX. PROPERTY OWNER AUTHORIZATION** (if Contact Information, item 2 has been filled out, complete this section)

I, (print or type name of person listed in Contact Information, item 2a) N/A, certify that I own the property identified in this permit application, and thus give permission to (print or type name of person listed in Contact Information, item 1a) \_\_\_\_\_ with (print or type name of organization listed in Contact Information, item 1a) \_\_\_\_\_ to develop the project as currently proposed. A copy of the lease agreement or pending property sales contract has been provided with the submittal, which indicates the party responsible for the operation and maintenance of the stormwater system.

As the legal property owner I acknowledge, understand, and agree by my signature below, that if my designated agent (entity listed in Contact Information, item 1) dissolves their company and/or cancels or defaults on their lease agreement, or pending sale, responsibility for compliance with the DEMLR Stormwater permit reverts back to me, the property owner. As the property owner, it is my responsibility to notify DEMLR immediately and submit a completed Name/Ownership Change Form within 30 days; otherwise I will be operating a stormwater treatment facility without a valid permit. I understand that the operation of a stormwater treatment facility without a valid permit is a violation of NC General Statute 143-215.1 and may result in appropriate enforcement action including the assessment of civil penalties of up to \$25,000 per day, pursuant to NCGS 143-215.6.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public for the State of \_\_\_\_\_, County of \_\_\_\_\_, do hereby certify that \_\_\_\_\_ personally appeared before me this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal, \_\_\_\_\_



SEAL

My commission expires \_\_\_\_\_

**X. APPLICANT'S CERTIFICATION**

I, (print or type name of person listed in Contact Information, item 1a) Mary Beth Henson, certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans, that the required deed restrictions and protective covenants will be recorded, and that the proposed project complies with the requirements of the applicable stormwater rules under 15A NCAC 2H .1000 and any other applicable state stormwater requirements.

Signature: Mary Beth Henson Date: 10/20/14

I, Jasmin G. Parra, a Notary Public for the State of New York, County of New York, do hereby certify that Mary Beth Henson personally appeared before me this 20<sup>th</sup> day of October, 2014, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal, Jasmin G. Parra



SEAL

My commission expires February 17, 2018

State of North Carolina  
Department of Environment and Natural Resources  
Division of Energy, Mineral and Land Resources

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

**LOW DENSITY SUPPLEMENT**

*This form may be photocopied for use as an original*

A low density project is one that meets the appropriate criteria for built upon area and transports stormwater runoff primarily through vegetated conveyances. Low density projects should not have a discrete stormwater collection system as defined by 15A NCAC 2H .1002(18). Low density requirements and density factors can be found in Session Law 2008-211, 15A NCAC 2H .1000, Session Law 2006-246 and the State of North Carolina Stormwater Best Management Practice Manual. Curb and gutter systems are allowed provided they meet the requirements in 15A NCAC 2H .1008(g).

**I. PROJECT INFORMATION**

Project Name : The Donal C. Obrien, Jr.: Sanctuary & Audubon Center

Contact Person: David A. Deel, P.E. Phone Number: ( 252 )202-3803

Number of Lots:1 Allowable Built Upon Area (BUA) Per Lot\*:2,005,886 sf

Number of Dwelling Units Per Acre\*\*:n/a

Low Density Development (check one):  without curb & gutter  with curb & gutter, outlets to (check one):  
 Swales  Vegetated Area

**\*If lot sizes are not uniform, attach a table indicating the number of lots, lot sizes and allowable built upon area for each lot. The attachment must include the project name, phase, page numbers and provide area subtotals and totals. BUA shall be shown in units of square feet.**

**\*\* (Phase II Post-Construction [non-SA] only)**

**II. BUILT UPON AREA**

Refer to DEMLR's forms and applications website for specific language that must be recorded in the deed restrictions for all subdivided projects. ([http://portal.ncdenr.org/web/lr/state-stormwater-forms\\_docs](http://portal.ncdenr.org/web/lr/state-stormwater-forms_docs))

Complete the following calculation in the space provided below where:

- SA Site Area - the total project area above Mean High Water.
- DF Density Factor - the appropriate percent built upon area divided by 100.
- RA Road Area - the total impervious surface occupied by roadways.
- OA Other Area - the total area of impervious surfaces such as clubhouses, tennis courts, sidewalks, etc.
- No. of Lots - the total number of lots in the subdivision.
- BUA per Lot - the computed allowable built upon area for each lot including driveways and impervious surfaces located between the front lot line and the edge of pavement.
- Total allowable lot BUA - the computed allowable built upon area for all lots combined.
- Total BUA from lot listing - the sum of built upon area allocated for each lot on the list of non-uniform lots.

Calculation:

**For uniform lot sizes:**

$$\frac{(\text{SA: } \text{ft}^2 \times \text{DF: } ) - (\text{RA: } \text{ft}^2) - (\text{OA: } \text{ft}^2)}{(\text{No of Lots: } 1)} = \text{BUA per Lot} = \text{ft}^2$$

**For non-uniform lot sizes:**

**a.** (SA: 8357857 ft<sup>2</sup> x DF: 0.24) – (RA: 0 ft<sup>2</sup>) – (OA: 0 ft<sup>2</sup>) = Total allowable lot BUA = 2005886 ft<sup>2</sup>

**b.** Total BUA from lot listing: 191,441 sf.     **b must be ≤ a**

### III. DESIGN INFORMATION

Complete the following table. If additional space is needed the information should be provided in the same format as Table 1 and attached to this form. Rainfall intensity data can be found in Appendix 8.03 of the State of North Carolina Erosion and Sediment Control Planning and Design Manual or at <http://hdsc.nws.noaa.gov/hdsc/pfds/>

Table 1. Swale design information based on the **10-year storm**.

| Swale No. | Drainage Area (ac) | Impervious Area (ac) | Grassed Area (ac) | C | Q (cfs) | Slope (%) | V <sub>allow</sub> (fps) | V <sub>actual</sub> (fps) | Flow Depth (ft) |
|-----------|--------------------|----------------------|-------------------|---|---------|-----------|--------------------------|---------------------------|-----------------|
| 1         | N/A                |                      |                   |   |         |           |                          |                           |                 |
| 2         |                    |                      |                   |   |         |           |                          |                           |                 |
| 3         |                    |                      |                   |   |         |           |                          |                           |                 |
| 4         |                    |                      |                   |   |         |           |                          |                           |                 |
| 5         |                    |                      |                   |   |         |           |                          |                           |                 |
| 6         |                    |                      |                   |   |         |           |                          |                           |                 |
| 7         |                    |                      |                   |   |         |           |                          |                           |                 |
| 8         |                    |                      |                   |   |         |           |                          |                           |                 |
| 9         |                    |                      |                   |   |         |           |                          |                           |                 |
| 10        |                    |                      |                   |   |         |           |                          |                           |                 |
| 11        |                    |                      |                   |   |         |           |                          |                           |                 |
| 12        |                    |                      |                   |   |         |           |                          |                           |                 |
| 13        |                    |                      |                   |   |         |           |                          |                           |                 |
| 14        |                    |                      |                   |   |         |           |                          |                           |                 |
| 15        |                    |                      |                   |   |         |           |                          |                           |                 |
| 16        |                    |                      |                   |   |         |           |                          |                           |                 |
| 17        |                    |                      |                   |   |         |           |                          |                           |                 |
| 18        |                    |                      |                   |   |         |           |                          |                           |                 |
| 19        |                    |                      |                   |   |         |           |                          |                           |                 |
| 20        |                    |                      |                   |   |         |           |                          |                           |                 |

#### IV. REQUIRED ITEMS CHECKLIST

The following checklist outlines design requirements per the North Carolina Administrative Code Section 15A NCAC 2H .1000, NCDENR BMP Manual (2007), Session Law 2006-246, and Session Law 2008-211.

Please indicate the page or plan sheet numbers where the supporting documentation can be found. **An incomplete submittal package will result in a request for additional information. This will delay final review and approval of the project.** Initial in the space provided to indicate that the following requirements have been met and supporting documentation is provided as necessary. If the applicant has designated an agent on the Stormwater Management Permit Application Form, the agent may initial below. **If any item is not met, then justification must be attached.** *Only complete items n through p for projects with curb outlets.*

| Page/Plan<br>Initials Sheet No.                      |   |
|--|---|
| <u>DAD</u> <u>C2.0</u>                               | a.† For projects in the 20 coastal counties: Per NCAC 2H.1005, a 50 foot wide vegetative buffer is provided adjacent to surface waters. For Redevelopment projects, a 30' wide vegetative buffer adjacent surface waters is provided. |
| <u>DAD</u> <u>C2.0</u>                               | b.† For HQW or ORW projects outside the 20 coastal counties: A 30 foot wide vegetative buffer is provided adjacent to surface waters.   |
| <u>DAD</u> <u>C2.0</u>                               | c.† For Phase II Post-Construction projects: All built upon area is located at least 30 feet landward of all perennial and intermittent surface waters.   |
| <u>N/A</u> <u>N/A</u>                                | d. Deed restriction language as required on form SWU-101 shall be recorded as a restrictive covenant. A copy of the recorded document shall be provided to DWQ within 30 days of platting and prior to the sale of any lots.          |
| <u>DAD</u> <u>Supplemental Application Narrative</u> |   |
| <u>DAD</u> <u>Plans</u>                              | f. Built upon area calculations are provided for the overall project and all lots. Project conforms to low density requirements within the ORW AEC. (if applicable per 15A NCAC 2H .1007)   |
| <u>N/A</u> <u>DAD</u> <u>C2.0</u>                    | g. Side slopes of swales are no steeper than 3:1; <i>or no steeper than 5:1 for curb outlet swales.</i>   |
| <u>N/A</u> <u>N/A</u>                                | h. Longitudinal slope of swales is no greater than 5%; <i>for non-curb outlet projects,</i> calculations for shear stress and velocity are provided if slope is greater than 5%.  |
| <u>N/A</u> <u>N/A</u>                                | i. At a minimum, swales are designed to carry the 10 year storm velocity at a non-erosive rate.   |
| <u>N/A</u> <u>N/A</u>                                | j. Swales discharging to wetlands are designed to flow into and through the wetlands at a non-erosive velocity (for this flow requirement into wetlands, non-erosive is velocity ≤ 2 ft/s).   |
| <u>N/A</u> _____                                     | k. Swale detail and permanent vegetation is specified on the plans.   |
| <u>↓</u> _____                                       | l. Swale detail provided on plans; includes grass type(s) for permanent vegetative cover.   |
| <u>↓</u> _____                                       | m. Swales are located in recorded drainage easements.   |
| <u>↓</u> _____                                       | n.†† Length of swale or vegetated area is at least 100 feet for each curb outlet.   |
| <u>DAD</u> <u>Narrative notes</u>                    | o.†† The system takes into account the run-off at ultimate built-out potential from all surfaces draining to the system (delineate drainage area for each swale).   |
| <u>N/A</u> _____                                     | p.†† Curb outlets direct flow to a swale or vegetated area.   |

† Projects in the Neuse, Tar-Pamlico, Catawba River basins, and Randleman Lake may require additional buffers.

North Carolina Department of Environmental Quality  
**Division of Energy, Mineral & Land Resources**  
Land Quality Section

**Roy Cooper**

*Governor*

**Elizabeth S. Biser**

*Secretary*

**William Vinson Jr. (Acting)**

*Director*

11-28-2023

**LETTER OF APPROVAL**

National Audubon Society, Inc.  
225 Varick Street, 7th Floor  
New York, NY 10014

RE: Project Name: The Donald C. O'Brien Jr. Sanctuary and Audubon Center  
Acres Approved: 5.45  
Application ID: PA-001307  
Permit Number: CURRI-2024-0101  
Address: 305 Audubon Drive  
City: Corolla  
County: Currituck  
River Basin: Pasquotank  
Stream Classification: SC: Aquatic Life, Secondary Contact Recreation, Tidal Salt Water  
Plan Type: New Plan

Dear Ms. Hatley,

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable and hereby issue this Letter of Approval. The Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0129.

As of April 1, 2019, all new construction activities are required to complete and submit an electronic Notice of Intent (eNOI) form requesting a Certificate of Coverage (COC) under the NCG010000 Construction Stormwater General Permit. After the form is reviewed and found to be complete, you will receive a link with payment instructions for the \$120 annual permit fee. After the fee is processed, you will receive the COC via email. As the Financially Responsible Party shown on the FRO form submitted for

this project, you MUST obtain the COC prior to commencement of any land disturbing activity. The eNOI form may be accessed at [deq.nc.gov/NCG01](http://deq.nc.gov/NCG01). Please direct questions about the eNOI form to the [Stormwater Program staff](#) in the Raleigh central office. If the owner/operator of this project changes in the future, the new responsible party must obtain a new COC.

Title 15A NCAC 4B .0118(a) and the NCG01 permit require that the following documentation be kept on file at the job site:

1. The approved E&SC plan as well as any approved deviation.
2. The NCG01 permit and the COC, once it is received.
3. Records of inspections made during the previous 12 months.

Also, this letter gives the notice required by G.S. 113A-61.1(a) of our right of periodic inspection to ensure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Act is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to insure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility/Ownership Form, which you provided. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project. Please notify us if you plan to have a preconstruction conference.

Your cooperation is appreciated.

Sincerely,

*J. Randall Jones, Jr, PE*

North Carolina Department of Environmental Quality  
Division of Energy, Mineral & Land Resources  
Land Quality Section

Check if this project is ARPA-funded   
Attach a copy of the Letter of Intent to Fund

## FINANCIAL RESPONSIBILITY/OWNERSHIP FORM SEDIMENTATION POLLUTION CONTROL ACT

No person may initiate any land-disturbing activity on one or more acres as covered by the Act, including any activity under a common plan of development of this size as covered by the NCG01 permit, before this form and an acceptable erosion and sedimentation control plan have been completed and approved by the Land Quality Section, N.C. Department of Environmental Quality. Submit the completed form to the appropriate Regional Office. (Please type or print and, if the question is not applicable or the e-mail address or phone number is unavailable, place N/A in the blank.)

### Part A.

1. Project Name The Donal C. O'Brien Jr. Sanctuary and Audubon Center

*\*If this project involves American Rescue Plan Act (ARPA) funds, list the Project Name or Project Number (e.g., SRP-D-ARP-0121) below under which you were approved for funding through the Division of Water Infrastructure (DWI).*

2. Location of land-disturbing activity: County Currituck City or Township Corolla

Highway/Street 305 Audubon Dr. Latitude<sub>(decimal degrees)</sub> 36.26163611 N Longitude<sub>(decimal degrees)</sub> 75.79815 W

3. Approximate date land-disturbing activity will commence: July 2023

4. Purpose of development (residential, commercial, industrial, institutional, etc.): Institutional/ Residential

5. Total acreage disturbed or uncovered (including off-site borrow and waste areas): 5.45 ac.

6. Amount of fee enclosed: \$ \$600.00. The application fee of \$100.00 per acre (rounded up to the next acre) is assessed without a ceiling amount (Example: 8.10-acre application fee is \$900). Checks should be addressed to NCDEQ.

7. Has an erosion and sediment control plan been filed? Yes  Enclosed  No

8. Person to contact should erosion and sediment control issues arise during land-disturbing activity:

Name Robert Fearn, Center Director E-mail Address rfearn@audubon.org

Phone: Office # 212-979-3000 Mobile # \_\_\_\_\_

9. Landowner(s) of Record (attach accompanied page to list additional owners):

National Audubon Society, Inc. 212-979-3000

Name Phone: Office # Mobile #

225 Varick Street, 7<sup>th</sup> Floor 225 Varick Street, 7<sup>th</sup> Floor

Current Mailing Address Current Street Address

New York NY 1001 New York NY 1001  
City State Zip City State Zip

10. Deed Book No. 913 Page No. 150 Provide a copy of the most current deed.

**Part B.**

1. Company(ies) who are financially responsible for the land-disturbing activity (Provide a comprehensive list of all responsible parties on accompanied page.) *If the company is a sole proprietorship or if the landowner(s) is an individual(s), the name(s) of the owner(s) may be listed as the financially responsible party(ies).*

National Audubon Society, Inc.                      neeta.hatley@audubon.org  
Company Name    E-mail Address

225 Varick Street 7<sup>th</sup> Floor                                      225 Varick Street 7<sup>th</sup> Floor,  
Current Mailing Address    Current Street Address

New York, NY 10014                                      New York, NY 10014  
City                                      State                      Zip                      City                                      State                                      Zip

Phone: Office # 212 979-3000                      Mobile # \_\_\_\_\_

Note: If the Financially Responsible Party is not the owner of the land to be disturbed, include with this form the landowner's signed and dated written consent for the applicant to submit a draft erosion and sedimentation control plan and to conduct the anticipated land disturbing activity.

2. (a) If the Financially Responsible Party is a domestic company registered on the NC Secretary of State business registry, give name and street address of the Registered Agent:

\_\_\_\_\_  
Name of Registered Agent                                      E-mail Address

\_\_\_\_\_  
Current Mailing Address    Current Street Address

\_\_\_\_\_  
City                                      State                      Zip                      City                                      State                                      Zip

Phone: Office # \_\_\_\_\_                      Mobile # \_\_\_\_\_

\_\_\_\_\_  
Name of Individual to Contact (if Registered Agent is a company)

- (b) If the Financially Responsible Party is not a resident of North Carolina, give name and street address of the designated North Carolina agent who is registered on the NC Secretary of State business registry:

National Registered Agents, Inc.  
Name of Registered Agent                                      E-mail Address

150 Fayetteville Street                                      150 Fayetteville Street  
Current Mailing Address    Current Street Address

Raleigh                      NC                      27601                      Raleigh                      NC                      27601  
City                                      State                      Zip                      City                                      State                                      Zip

Phone: Office # \_\_\_\_\_                      Mobile # \_\_\_\_\_

\_\_\_\_\_  
Name of Individual to Contact (if Registered Agent is a company)

(c) If the Financially Responsible Party is engaging in business under an assumed name, give name under which the company is Doing Business As. If the Financially Responsible Party is an individual, General Partnership, or other company not registered and doing business under an assumed name, **attach a copy of the Certificate of Assumed Name.**

\_\_\_\_\_  
Company DBA Name

The above information is true and correct to the best of my knowledge and belief and was provided by me under oath. (This form must be signed by the Financially Responsible Person if an individual(s) or his attorney-in-fact, or if not an individual, by an officer, director, partner, or registered agent with the authority to execute instruments for the Financially Responsible Party). I agree to provide corrected information should there be any change in the information provided herein.

\_\_\_\_ Neeta Hatley \_\_\_\_\_ VP, Controller, Treasury & Financial Operations \_\_\_\_\_  
Type or print name Title or Authority  
Neeta Hatley 8/29/2023  
Signature Date

I, Jasmin Grisel Parra, a Notary Public of the County of New York

New York  
State of ~~North Carolina~~, hereby certify that Neeta Hatley appeared personally before me this day and being duly sworn acknowledged that the above form was executed by him/her.

Witness my hand and notarial seal, this 29<sup>th</sup> day of August, 2023

**JASMIN GRISEL PARRA**  
Notary Public - State of New York  
No. 01PA6137018  
Qualified in New York County  
My Commission Expires February 17, 2026

Jasmin Grisel Parra  
Notary  
My commission expires 2/17/2026

Permit Class  
**RENEWAL**

Permit Number  
**107-15**

STATE OF NORTH CAROLINA  
Department of Environmental Quality  
and  
Coastal Resources Commission

# Permit

for

- Major Development in an Area of Environmental Concern  
pursuant to NCGS 113A-118
- Excavation and/or filling pursuant to NCGS 113-229

Issued to **National Audubon Society, 300 Audubon Drive, Corolla, NC 27927**

Authorizing development in Dare County adjacent to Currituck Sound, 300 Audubon Drive, in  
Corolla, as requested in the permittee's application dated letter dated  
4/20/23.

This permit, issued on April 26, 2023, is subject to compliance with the application (where consistent  
with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may  
be subject to fines, imprisonment or civil action; or may cause the permit to be null and void.

- 1) This renewal shall be attached to Permit No.107-15, which was issued to the permittee on 9/30/15, as  
well as all subsequent renewals, modifications and copies of all documents shall be readily available  
on site when a Division representative inspects the project for compliance.
- 2) All conditions and stipulations of the active permit remain in force under this renewal.

**NOTE:** The N.C. Division of Water Resources has assigned the proposed project DWR Project No.  
2019-1225.

**NOTE:** The U.S. Army Corps of Engineers has assigned the proposed project SAW Action Id. No.  
2019-01758.

**NOTE:** A permit renewal application processing fee of \$100 was received by DCM for this project.

This permit action may be appealed by the permittee or  
other qualified persons within twenty (20) days of the issuing  
date.

This permit must be accessible on-site to Department  
personnel when the project is inspected for compliance.

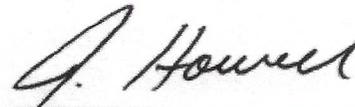
Any maintenance work or project modification not covered  
hereunder requires further Division approval.

All work must cease when the permit expires on

**December 31, 2024**

In issuing this permit, the State of North Carolina agrees  
that your project is consistent with the North Carolina Coastal  
Management Program.

Signed by the authority of the Secretary of DEQ and the Chair  
of the Coastal Resources Commission.



For Braxton C. Davis, Director  
Division of Coastal Management

This permit and its conditions are hereby accepted.

Signature of Permit