



North Carolina Department of Environment and Natural Resources

Division of Water Quality

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

December 19, 2011

Mr. Amit Gupta, Managing Member
Pine Island Reserve, LLC
P.O. Box 90
Kill Devil Hills, NC 27948

**Subject: Stormwater Permit No. SW7111005
Pine Island Reserve – Tract B
High Density Subdivision Infiltration Basin Project
Currituck County**

Dear Mr. Gupta:

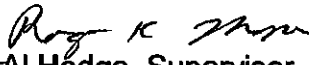
The Washington Regional Office received a complete Stormwater Management Permit Application for the Pine Island Reserve – Tract B on October 14, 2011. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Session Law 2008-211 and Title 15A NCAC 2H.1000. We are forwarding Permit No. SW7111005, dated December 19, 2011, for the construction of the project.

This permit shall be effective from the date of issuance until December 19, 2021, and shall be subject to the conditions and limitations as specified therein. Please pay special attention to the Operation and Maintenance requirements in this permit. Failure to establish an adequate system for operation and maintenance of the stormwater management system will result in future compliance problems.

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 Roger Thorpe or me at (252) 946-6481.

Sincerely,


Roger K. Hodge, Supervisor
Surface Water Protection Section
Washington Regional Office

cc: Quible & Associates, PC
Currituck County Inspections

**STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY**

STORMWATER MANAGEMENT PERMIT

HIGH DENSITY SUBDIVISION 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

Pine Island Reserve, LLC
Pine Island Reserve – Tract B
Ocean Trail, Corolla, NC
Currituck County

FOR THE

construction, operation and maintenance of an Infiltration basin in compliance with the provisions of Session Law 2006-246 and 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 Water Quality and considered a part of this permit.

This permit shall be effective from the date of issuance until December 19, 2021 and shall be subject to the following specified conditions and limitations:

I. DESIGN STANDARDS

1. This permit is effective only with respect to the nature and volume of stormwater described in the application and other supporting data.
2. This stormwater system has been approved for the management of stormwater runoff as described in Section I.5 of this permit. The subdivision is permitted for 9 residential lots, each limited to a maximum amount of built-upon area as indicated in Section II.17 (f) of this permit.
3. The runoff from all built-upon area within the permitted drainage area of this project must be directed into the permitted stormwater control system.
4. The built-upon areas associated with this project shall be located at least 50 feet landward of all perennial and intermittent surface waters.

5. The following design elements have been permitted for this infiltration basin stormwater facility, and must be provided in the system at all times.

a.	Drainage Area, acres:	5.92
b.	Onsite, ft ² :	239,520
	Offsite, ft ² :	18,315
b.	Total Impervious Surfaces, ft ² :	164,691
	Lot BUA, ft ² :	147,118
	Roads/Parking, ft ² :	17,573
c.	Design Storm, inches:	1.5
d.	Basin Design Depth: ft	1.0
e.	Bottom Elevation, FMSL:	4.5
f.	Bottom Surface Area, ft ² :	5,556
g.	Permitted Storage Volume, ft ³ :	24,949 at temporary pool
h.	Type of Soil:	Newhan Fine Sand
i.	Expected Infiltration Rate, in/hr :	17.5
j.	Seasonal High Water Table, fmsl:	2.5
k.	Time to Draw Down, hrs:	1.44
l.	Receiving Stream / River Basin:	Currituck Sound/Pasquotank
m.	Classification of Water Body:	"SC"

II. SCHEDULE OF COMPLIANCE

1. No homeowner/lot owner/developer shall fill in, alter, or pipe any drainage feature (such as swales) shown on the approved plans as part of the stormwater management system without submitting a revision to the permit and receiving approval from the Division.
2. The permittee is responsible for verifying that the proposed built-upon area for the entire lot does not exceed the maximum allowed by this permit. Once the lot transfer is complete, the built-upon area may not be revised without approval from the Division of Water Quality, and responsibility for meeting the built-upon area limit is transferred to the individual property owner.
3. If an Architectural Review Board or Committee is set up by the permittee to review plans for compliance with the BUA limit, the plans reviewed must include all proposed built-upon area. Any approvals given by the Board do not relieve the homeowner of the responsibility to maintain compliance with the permitted BUA limit.
4. 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.
5. The stormwater management system shall be constructed in its entirety, vegetated and operational for its intended use prior to the construction of any built-upon surface.
6. 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 all or part of the project area. The project area is defined as all property owned by the permittee, for which Sedimentation and Erosion Control Plan approval or a CAMA Major permit was sought.
 - f. Filling in, altering, or piping of any vegetative conveyance shown on the approved plan.
7. A copy of the approved plans and specifications shall be maintained on file by the Permittee at all times.
 8. All stormwater collection and treatment systems must be located in either dedicated common areas or recorded easements. The final plats for the project will be recorded showing all such required easements, in accordance with the approved plans.
 9. During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.
 10. Upon completion of construction, prior to issuance of a Certificate of Occupancy, and prior to operation of this permitted facility, a certification must be received from an appropriate designer for the system installed certifying that the permitted facility has been installed in accordance with this permit, the approved plans and specifications, and other supporting documentation. Any deviations from the approved plans and specifications must be noted on the Certification.
 11. If the stormwater system was used as an Erosion Control device, it must be restored to design condition prior to operation as a stormwater treatment device, and prior to occupancy of the facility.
 12. Permanent seeding requirements for the stormwater control must follow the guidelines established in the North Carolina Erosion and Sediment Control Planning and Design Manual.
 13. The permittee shall at all times provide the operation and maintenance necessary to assure that all components of the permitted stormwater system function at optimum efficiency. The approved Operation and Maintenance Plan must be followed in its entirety and maintenance must occur at the scheduled intervals including, but not limited to:
 - a. Semiannual scheduled inspections (every 6 months).
 - b. Sediment removal.
 - c. Mowing and re-vegetation of side slopes.
 - d. Immediate repair of eroded areas.
 - e. Maintenance of side slopes in accordance with approved plans.
 - f. Debris removal and unclogging of bypass structure, catch basins, piping, infiltration media, level spreader and filter strip.
 - g. Access to all components of the system must be available at all times.
 14. Records of maintenance activities must be kept for each permitted BMP. The records will indicate the date, activity, name of person performing the work and what actions were taken.
 15. This permit shall become void unless the facilities are constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.

- 16 The permittee shall submit for approval, final site layout and grading plans for any designated future development area shown on the approved plans, prior to construction.
- 17 Prior to the sale of any lot, the following deed restrictions must be recorded:
- a. The following covenants are intended to ensure ongoing compliance with State Stormwater Management Permit Number SW7111005, as issued by the Division of Water Quality 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 Water Quality.
 - e. Alteration of the drainage as shown on the approved plans may not take place without the concurrence of the Division of Water Quality.
 - f. The maximum built-upon area (BUA) per lot is as follows:

<u>Lot #</u>	<u>BUA (ft²)</u>
5	16,640
6	15,600
7	16,640
8	15,600
9	16,640
10	15,600
11	16,640
12	15,809
13	17,949

This allotted amount includes any built-upon area constructed within the lot property boundaries, and that portion of the right-of-way between the front lot line and the edge of the pavement. Built upon area includes, but is not limited to, structures, asphalt, concrete, gravel, brick, stone, slate, coquina and parking areas, but does not include raised, open wood decking, or the water surface of swimming pools.

- g. For those lots within CAMA's Area of Environmental Concern, where DCM calculates a different maximum lot built-upon area, the governing lot BUA shall be the most restrictive of the two numbers.
- h. All runoff on the lot must drain into the permitted system. This may be accomplished via roof drain gutters, which drain to the street, grading the lot to drain toward the street, or grading perimeter swales and directing them into the pond or street. Lots that will naturally drain into the system are not required to provide these additional measures.
- i. Built-upon area in excess of the permitted amount will require a permit modification.

If permeable pavement credit is desired, the property owner must submit a request, with supporting documentation, to the permittee and receive approval prior to construction of the permeable pavement.

18. A copy of the recorded deed restrictions must be submitted to the Division within 30 days of the date of recording the plat, and prior to selling lots. The recorded copy must contain all of the statements above, the signature of the Permittee, the deed book number and page, and the stamp/signature of the Register of Deeds.

- 19 Prior to transfer of the permit, the stormwater facilities will be inspected by DWQ personnel. The facility must be in compliance with all permit conditions. Any items not in compliance must be repaired or replaced to design condition prior to the transfer. Records of maintenance activities performed to date will be required.
- 20 If permeable pavement credit is desired, the permittee must submit a request to modify the permit to incorporate such language as required by the Division of Water Quality. The request to modify must include a soils report identifying the type of soil, the Seasonal High Water Table elevation and the infiltration rate. Upon the successful completion of a permit modification, the individual lot owners that request to utilize permeable pavements must submit the necessary forms and documentation to the permittee and receive approval prior to construction of the permeable pavement.

III. GENERAL CONDITIONS

1. This permit is not transferable to any person or entity except after notice to and approval by the Director. In the event there is either a desire for the facilities to change ownership, or there is a name change of the Permittee, a completed Name/Ownership Change Form must be submitted to the Division of Water Quality, signed by the parties involved, accompanied by supporting documentation as listed on page 2 of the form. The project must be in good standing with DWQ. 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 of the terms and conditions of this permit until such time as the Director approves the transfer request.
3. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to enforcement action by the Division of Water Quality, in accordance with North Carolina General Statute 143-215.6A to 143-215.6C.
4. 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.
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 this Division, such as the construction of additional or replacement stormwater management systems.
6. Permittee grants permission to staff of the DWQ to access the property for the purposes of inspecting the stormwater facilities during normal business hours.
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 stormwater controls 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 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 Session Law 2006-246, Title 15A NCAC 2H.1000, and NCGS 143-215.1 et.al.
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 19 th day of December 2011.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



for Cbleen H. Sullins, Director

Division of Water Quality

By Authority of the Environmental Management Commission

Permit Number SW7111005

Designer's Certification

I, _____, as a duly registered _____ in the State of North Carolina, having been authorized to observe (periodically/weekly/full time) the construction of the project,

(Project)

for _____ (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEAL

Signature _____

Registration Number _____

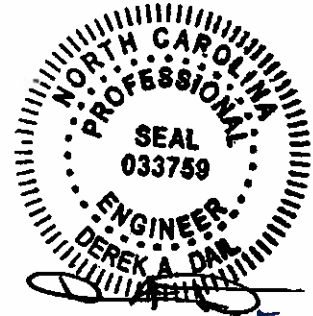
Date _____

- ___ 1. The drainage area to the system contains approximately the permitted acreage.
- ___ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- ___ 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- ___ 4. All roof drains are located such that the runoff is directed into the system.
- ___ 5. The outlet/bypass structure elevations are per the approved plan.
- ___ 6. The outlet structure is located per the approved plans.
- ___ 7. Trash rack is provided on the outlet/bypass structure.
- ___ 8. All slopes are grassed with permanent vegetation.
- ___ 9. Vegetated slopes are no steeper than 3:1.
- ___ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ___ 11. The permitted amounts of surface area and/or volume have been provided.
- ___ 12. Required drawdown devices are correctly sized per the approved plans.
- ___ 13. All required design depths are provided.
- ___ 14. All required parts of the system are provided, such as a vegetated shelf, a forebay, and the vegetated filter.
- ___ 15. The required dimensions of the system are provided, per the approved plan.

Stormwater Management Plan Narrative

Pine Island Reserve – 9 Lot Subdivision

October 5, 2011



10/5/2011

General

The following narrative will detail the stormwater management plan for the proposed Pine Island Reserve 9 lot residential subdivision in Corolla, Currituck County, NC.

The Pine Island Reserve Subdivision consists of a 9 lot residential subdivision to be located on an 8.49 acre parcel of land on the southern Currituck Outer Banks. The subject parcel is currently undeveloped and represents Oceanfront in-fill development of the area located between the Hampton Inn Oceanfront and the Pine Island Subdivision.

The proposed stormwater management method to serve the facility will consist of a dry infiltration basin with enough temporary storage capacity to store the runoff generated by a 1.86 inch rainfall event. The following narrative, application and calculations will demonstrate the parameters of this design which will illustrate an effective stormwater management system in full compliance with all state regulations.

Summary of Existing Conditions

The Pine Island Reserve Subdivision site is currently vacant and bounded by NC 12 to the west, developed parcels to the north and south, and the Atlantic Ocean to the east.

Summary of Proposed Conditions

Stormwater management improvements will be needed to control the runoff from proposed impervious construction. Runoff from all new impervious areas is proposed to be collected via storm sewer / infiltration swales and conveyed to a proposed dry infiltration basin located along the western edge of the site. The drainage area containing the proposed improvements will consist of 258,033 sf of area. For the purposes of NCDENR stormwater calculations and Built Upon Area calculations, ultimate build-out of the lots is assumed to be 65%. This is a very conservative estimate / restriction and we anticipate actual build-out to be in the 40%-50% range. Assuming 65% full build-out of the lots, the design storm (1.5" rainfall event) will generate 20,128 cf of stormwater runoff. The proposed dry infiltration basin will have an above grade temporary storage capacity of 24,949 cf below the free board elevation of 6.5 which is equivalent to the runoff produced from a 1.86" rainfall event and has an overall above grade temporary storage capacity of 39,142 cf which is equivalent to the 2.9" rainfall event.

Stormwater Collection, Treatment, Storage and Disposal

Collection

The stormwater runoff will be collected and directed via site grading, drop inlets and storm sewer, and a roadside infiltration swale which convey runoff to a dry infiltration basin located along the western edge of the site.

Treatment and Storage

Runoff from developed areas will enter the infiltration basin via an infiltration swale and underlying storm sewer. Within the collection system, large particulates and debris such as paper trash, sticks, plastic products and other trash that inevitably end up on the roadway shoulder will accumulate at the storm grates prior to runoff entering the storm sewer.

The infiltration basin bottom will be grassed according to the general seeding specifications and maintained according to the operation and maintenance plan. The runoff will undergo filtration of fine particulates and pollutants by the vegetation within not only the basin and swale bottoms but also the basin and swale side walls which will also be seeded according to the general seeding specifications. The filtration by the vegetation is considered the primary treatment method. 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.

This infiltration basin offers a portion of storage above the ground surface and a portion of storage within the void spaces available in the subsurface. However, for the purposes of the stormwater storage calculations to demonstrate compliance with the 1.5" runoff requirements, only the above-grade storage is calculated. The runoff generated by a 1.5 inch storm will require 20,128 cf of storage. The storage available above the ground surface and below the free board elevation of 6.5' is 24,949 cf (equivalent to runoff generated by 1.86 inch storm) and the temporary storage capacity below the top of bank elevation is 39,142 cf (equivalent to runoff generated by 2.9" rainfall event).

Disposal

Disposal of runoff from this site occurs via infiltration into the subsurface and subsequent groundwater migration.

The stormwater storage calculations presented above present the above-grade storage available in the infiltration basin at a potential full build-out of the subdivision. In order to address Currituck County Stormwater requirements and to address disposal of larger storm events (up to the 10-year, 24 hour storm event), additional stormwater storage will be provided on the individual lots as lot development proceeds such that, at any given time, the total storage available on the site will exceed the runoff produced by a 5.94 inch rainfall event.

Initial Construction

When the project is first constructed, the impervious coverage will consist entirely of a subdivision road. The lots will be vacant at this time and the proposed dry infiltration basin along the western edge of the project will be constructed and fully operational. In this condition, the stormwater storage required for full capture and isolation of the 10-year, 24 hour storm (5.94" rainfall event) will be 14,206 cf. The above-grade storage surface below the free board elevation of 6.5' will be 24,949 cf, which is equivalent to the runoff generated by a 10.43 inch rainfall event. In this initial condition, the storage and disposal needs are met entirely by this installed basin.

Lot Development – Currituck County Stormwater

Depending on the lot coverage proposed for any given individual lot, the Currituck County Stormwater requirements may dictate that additional storage be installed on the individual lots with the new home construction. The mechanism that will enforce this requirement will be the Property Covenants and Pine Island Reserve Architectural Review Board and each individual lot will be required to process a Land Disturbance Permit through Currituck County which will allow plan oversight and review by the County's Engineer. All storage elements located on individual lots are required to be infiltration systems and are required to maintain a minimum separation of 2' to the SHWT. Each individual system will also be required to be maintained in accordance with a maintenance agreement entered into with the POA and the County. It is important to note that these systems will be providing storage above and beyond the State Stormwater Permit requirements (State permit requirements are met entirely by the western infiltration basin located in common open space) and therefore will not be permitted separately through NCDENR.

For the purpose of meeting Currituck County requirements, total storage available within the common open space dry infiltration basin can be calculated to include soils pore space between the bottom of the basin and the SHWT. A more detailed discussion of how this subsurface storage volume value was determined can be found within the soils section of this narrative. This subsurface storage will provide for an additional 16,953 cf of storage to the 39,142 cf of available above grade below the top of the infiltration basin. The resultant available temporary storage in the infiltration basin is 55,735 cf. The total storage required for right-of-way and common space improvements for the 5.94" rainfall event is 9,358 cf. This leaves 5,164 cf of stormwater storage available per lot within the common BMP. Any additional runoff from the lots above this 5,164 cf must be contained on-site.

Calculations demonstrating the above runoff and storage values, as well as the lot development parameters which will be incorporated into the Property Owner's Association Documents are included in the Appendix of this narrative.

A stormwater feasibility/typical lot layout design for a home site consisting of 44.5% coverage is also provided in the Appendix D Currituck County Stormwater Calculations

Soils

Quible & Associates performed on-site soil borings to verify soil type and determine elevation of mean high groundwater. Information collected on site generally agrees with the United States Department of Agriculture, Soil Conservation, Service Soil Survey of Currituck County, which map the soils for this site as follows:

NeC – Newhan fine sand, 0 to 10 percent slopes, with very rapid permeability

A pore-space storage volume beneath the infiltration basin contributes to the functioning of this stormwater management system. A detailed description of subsurface storage volume available as a function of the soils will be discussed in this section. The following determination of the volume available in the subsurface is based on the definition of Porosity: The ratio of volume of void spaces in a rock or sediment to the total volume of the rock or sediment¹.

Table 10.3. Typical Total Porosities.²

Material	Total Porosity (%)
Unaltered granite and gneiss	0-2
Quartzites	0-1

Shales, slates, mica-schists	0-10
Chalk	5-40
Sandstones	5-40
Volcanic tuff	30-40
Gravels	25-40
Sands	15-48
Silt	35-50
Clays	40-70
Fractured basalt	5-50
Karst limestone	5-50
Limestone, dolomite	0-20

Table 5.1 Porosities for Common Consolidated and Unconsolidated Materials³

Unconsolidated Sediments	η (%)	Consolidated Rocks	η (%)
Clay	45-55	Sandstone	5-30
Silt	35-50	Limestone/dolomite	1-20
Sand	25-40	Shale	0-10
Gravel	25-40	Fractured crystalline rock	0-10
Sand & gravel mixes	10-35	Vesicular basalt	10-50
Glacial till	10-35	Dense, solid rock	<1

Based on the information in the proceeding tables a value of 20% void space may be assigned to the sandy soils located on the subject parcel. This value should be considered conservative. Soil borings indicate a seasonal high water table of approximately 2.5 feet MSL. The proposed infiltration basin will be constructed with a bottom basin elevation of 4.5 feet MSL, thereby maintaining 2.0' clear separation between the bottom of swale and the SHWT. Within this separation distance exists a volume of soil containing a minimum of approximately 30% void space. This void space will become filled with water and provides for an additional volume for stormwater runoff storage.

Calculations

A set of stormwater calculations can be found within the appendix portion of this narrative.

Conclusions

The proposed stormwater management plan for this site provides storage and treatment in excess of that required for the difference between the pre-construction and post-construction runoff volumes for the 1 year, 24 hour storm event as required by NCDENR and manages the 10yr-24hr storm as required by Currituck County. The proposed system will offer preliminary, primary and secondary methods of treatment as well as an alternate method of disposal should the capacity be exceeded. This proposed design will more than adequately serve the stormwater management requirements of this site.

¹ David M. Nielson, Editor, Practical Handbook of Ground-Water Monitoring, (Michigan: Lewis Publishers, Inc., 1991), pg. 675

² David M. Nielson, Editor, Practical Handbook of Ground-Water Monitoring, (Michigan: Lewis Publishers, Inc., 1991), pg. 406

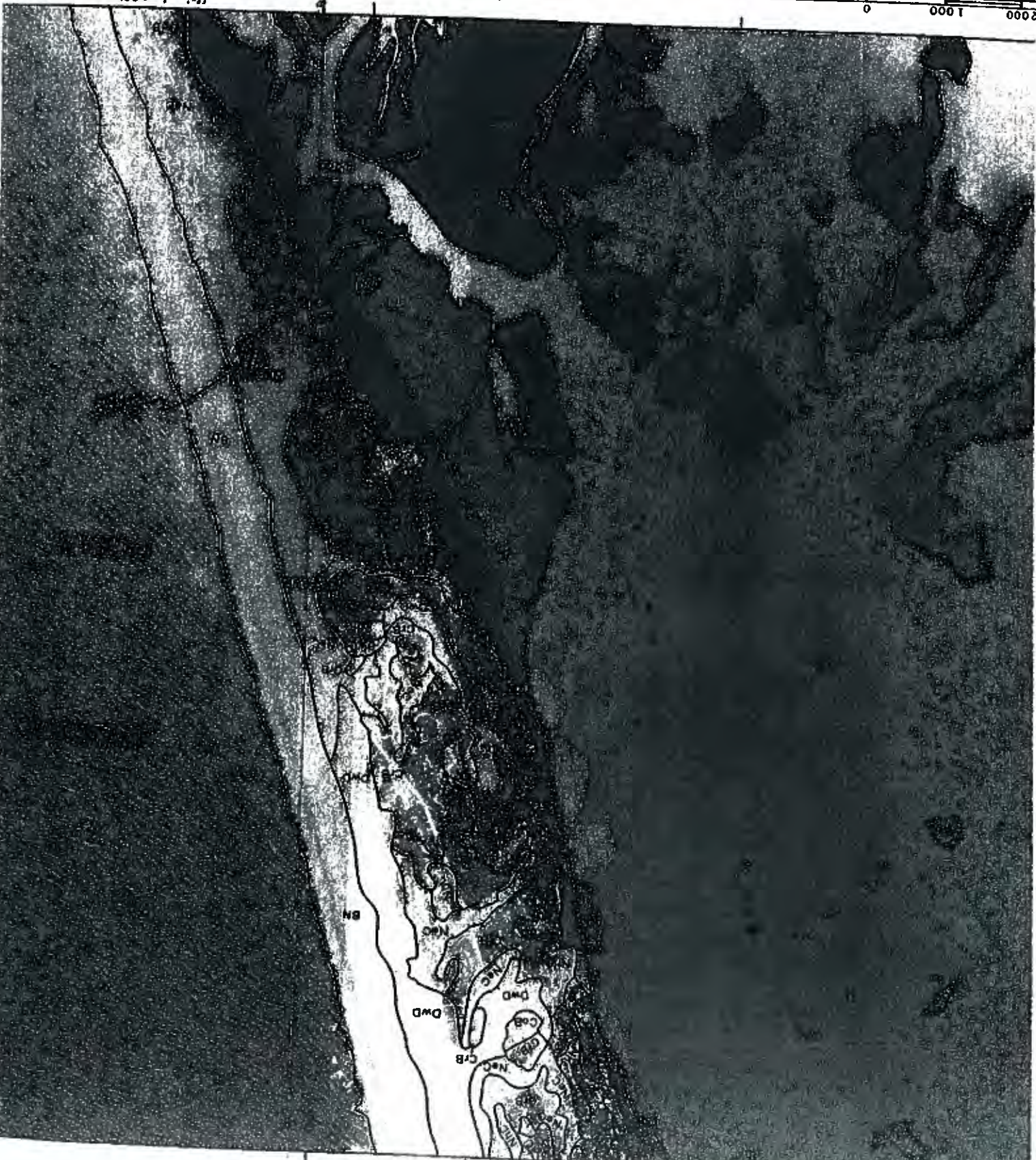
³ Fletcher G. Driscoll, Ph.D., Principle Author and Editor, Groundwater and Wells, 2nd edition, (Minnesota: Johnson Filtration Systems Inc., 1986), pgs. 66-67

APPENDIX A

SOILS DATA



(Join sheet 23)



(Join sheet 19)

MEMORANDUM

August 13, 2009

Subject: SAGA Construction, Audobon Parcel, Currituck County
Saturated Hydraulic Conductivity Analysis

To: Sean C. Boyle, P.E.

From: Warren D. Eadus, P.G., Quible & Associates, P.C.

REVIEWED
7/11/2011 WRE
USE PZ-1 FOR
CURRENT
REQUEST

On August 10, 2009, Brian Rubino, P.G. and I advanced two soil borings at the above referenced property in the general locations indicated on a site sketch you provided. A copy of the relevant portion of the USGS Topographic Quadrangle-Mossey Islands, with the site and boring locations identified, has been enclosed.

According to the USDA Soil Conservation Service Soil Survey of Currituck County, the surficial soils on site are classified as Beaches (Bn) and Newhan (NeC) Fine Sands. A typical pedon of Newhan fine sands consist of excessively drained soils that have a very rapid permeability. Published permeability rates are in excess of 20 inches per hour.

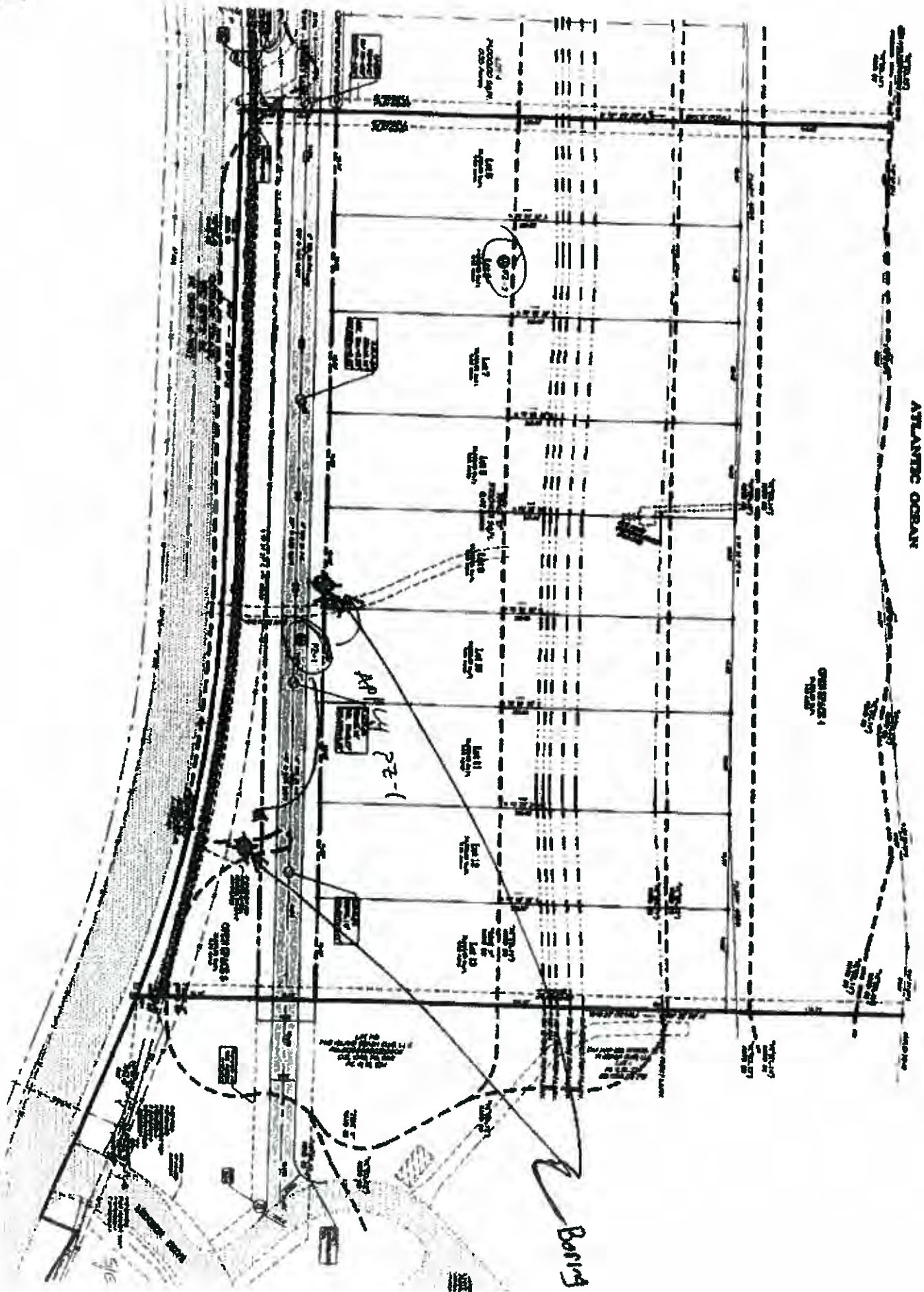
In general, the soils encountered in the boring were fine to coarse sands that were poorly sorted with minor to common pebble sized shell fragments and some heavy minerals. Based on the two borings advanced on August 10, 2009, the seasonal high water table is estimated at 60 inches (5.0 ft.) below ground surface in the location of PZ-1 and 113 inches (9.4 feet) below ground surface in the location of PZ-2. This is a conservative estimate based on the depth to water recorded the piezometers installed. A true blue line or dark grey horizon was not encountered, nor was there any notable color change noted to indicate a seasonal high water table position above the depth to water recorded. A boring log with a descriptive lithology of the soils encountered has been included with this memorandum.

Depth to water recorded on August 10, 2009 was 6.05 feet below ground surface (72.6 inches) and 9.47 feet below ground surface (113.64 inches) below existing ground surface. Based on the depth to water information, and using the topographic data provided, the approximate depth to the surficial aquifer relative to mean sea level is approximately 2.0 feet.

A slug test was performed in both of the piezometers installed on site. For each test performed, a slug of water was removed from the piezometer and the rate at which the groundwater returned was measured using a water level meter.

Based on the observations in the field (soil cuttings from borings) and the geographic setting of the project, it was clear that the hydraulic conductivity at the site would be relatively rapid. The data from each of the slug tests was entered into the Aqtesolv® Software program and the hydraulic conductivity for each of the Piezometer locations was determined using the Bouwer-Rice Method for unconfined aquifers. Based on the slug test data and well test analysis, the hydraulic conductivity at the site can be expected to range from 0.167 ft/min (12.024 inches per hour in PZ-2) to 0.024 ft/min (17.50 inches per hour) in PZ-1. The automatic solution (computer solves the data set) was more rapid at 0.02552 ft/min or 18.4 inches/hour. A copy of the Well Test Analysis for each of the slug tests performed, along with the field data set has been included with this memorandum.

The USDA Drought Management Advisory Council Drought Monitoring Report for July 28, 2009 lists Northeast North Carolina as experiencing abnormally dry conditions. However, it appears that areas immediately adjacent to the Albemarle Sound and beaches within the Pasquotank River basin are not included in the advisory. Therefore, normal or somewhat average groundwater conditions likely exist at the site. Drought information can be viewed by navigating to <http://www.ncdrought.org/> on the world wide web.



ATLANTIC OCEAN

STATION 1

BARRING

AP 1-2-1

AP 1-2-1

PROPELLER

WATER TANK

WATER TANK

WATER TANK

WATER TANK

WATER TANK

WATER TANK

WATER TANK

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WATER TANK

APPENDIX B

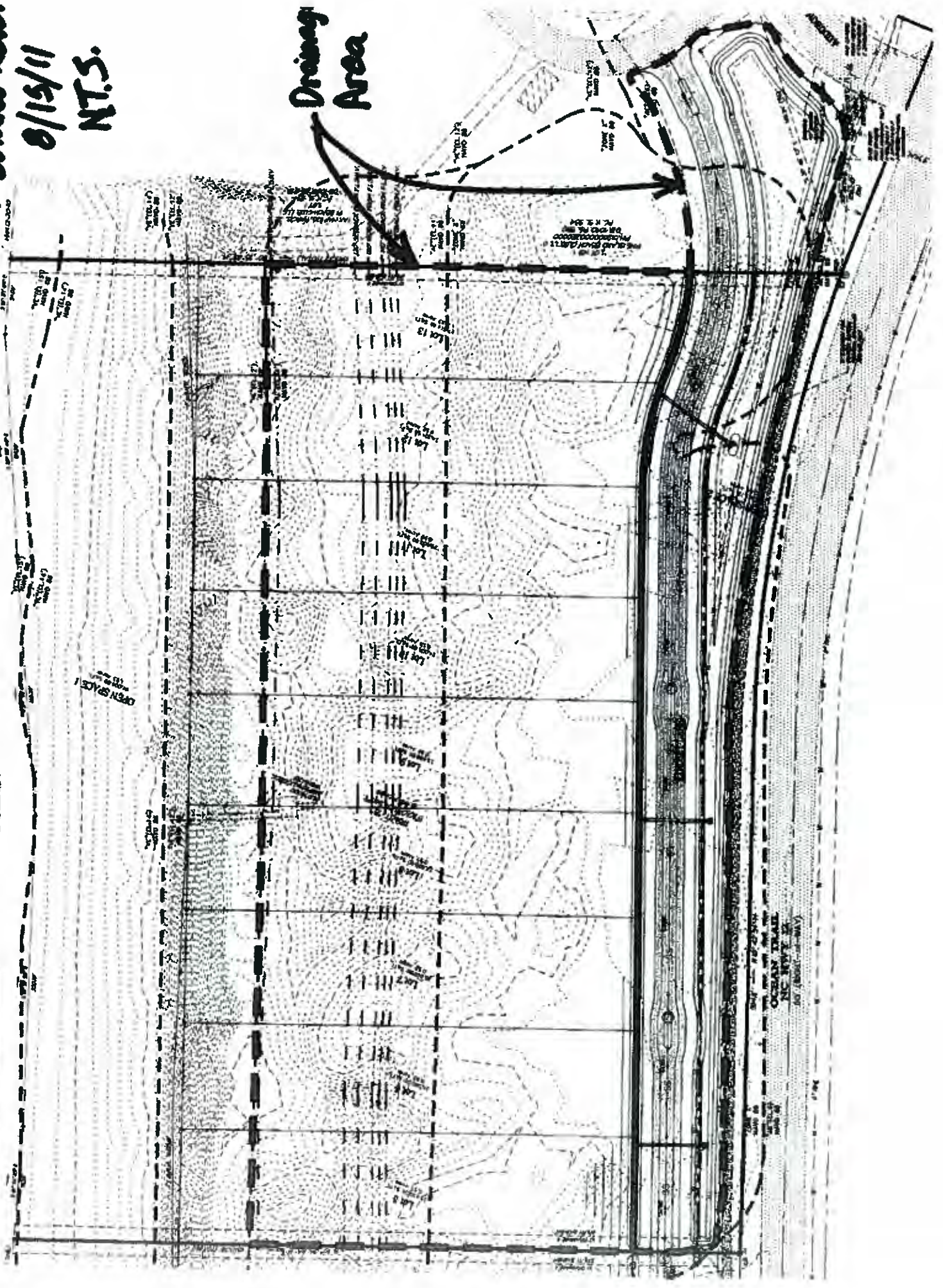
Drainage Area Map

Pine Island Resort
 8/15/11
 N.T.S.

Drainage
 Area

64	71557	8457	8.27' 00" 20' E
65	71557	11437	8.27' 00" 20' E
66	71557	21157	8.27' 00" 20' E

ATLANTIC OCEAN



CRENSHAW TRAIL
 INC. 1001 E 20
 (800) 333-3333

APPENDIX C

NCDENR Stormwater Calculations

NCDENR Stormwater Calculations

Infiltration Basin Stormwater Calculations for NCDENR

Drainage Area = 258,033 sf or 5.92 ac
 Lot Area = 226,336 sf
 Roadway Impervious = 17573 sf
 Lot Cov. (65% max) = 147118 sf
 Total Impervious = 164691 sf or 3.78 ac

Runoff generated by 1.5" Rainfall Event (NCDENR Simplified Method)

la = Impervious Percentage = Impervious Area/Drainage Area

Rv= 0.05+0.9la

Rd= Rd=Rain fall depth

V= 3630*Rd*Rv*A

la = 63.8%

Rv= 0.62

Rd= 1.5 in.

A = 5.92 ac

V= 20128

Total Storage Required by NCDENR = 20128 cf

Above Grade Storage Provided In Large Infiltration Basin (0.5' Freeboard)

Elev	Area (sf)	Avg area (sf)	Volume (cf)	Cum Vol (cf)
4.50	5556			0
		6807	3404	
5.00	8058			3404.0
		12123	12123	
6.00	16187			15527.0
		18845	9422	
6.50	21502			24949.0

* Additional Unaccounted for storage available above 6.5' elevation (free board) and in subsurface void spaces

NCDENR Stormwater Calculations (Cont.)

Infiltration Basin Drawdown Calculations

Hydraulic Conductivity = 17.5 in/hr (From Soils Report)
 Total Stored Depth = 24 in/hr
 Drawdown Time = Stored Depth / Hydraulic Conductivity
Drawdown Time = 1.37 hrs or 0.06 days

Infiltration Basin Inlet Flow

Flow per inlet = Total Stored Volume / Number of Inlets
 Total Stored Volume = 24949 cf
 Total Number of Inlets = 4
Flow Per Inlet = 6237 cf/inlet or 1.72 ac*in per inlet

Maximum BUA / Lot (For Deed Restrictions)

Lot #	Lot Area (sf)	65% Cov. (sf)
5	25600.00	16640
6	24000.00	15600
7	25600.00	16640
8	24000.00	15600
9	25600.00	16640
10	24000.00	15600
11	25600.00	16640
12	24321.63	15809
13	27614.48	17949

APPENDIX D

Currituck County Stormwater Storage Calculations

Currituck County Stormwater Calculations

Initial Construction Calculations

Drainage Area = 258,033 sf or 5.92 ac
Total Impervious = 17573 sf or 0.40 ac

Runoff generated by 5.94" Rainfall Event (NCDENR Simplified Method)

la = Impervious Percentage = Impervious Area/Drainage Area
Rv= 0.05+0.9la
Rd= Rd=Rain fall depth
V= 3630*Rd*Rv*A

la = 0.0681 or 6.81%
Rv= 0.11
Rd= 5.94 in.
A = 5.92 ac
V= 14215 cf

Total Storage Required = 14215 cf
(Initial Build Out)

Storage Required for Roadway Improvements Only

Drainage Area = 67,326 sf or 1.55 ac
Total Impervious = 17573 sf or 0.40 ac

Runoff generated by 5.94" Rainfall Event (NCDENR Simplified Method)

la = Impervious Percentage = Impervious Area/Drainage Area
Rv= 0.05+0.9la
Rd= Rd=Rain fall depth
V= 3630*Rd*Rv*A

la = 0.261 or 26.1%
Rv= 0.28
Rd= 5.94 in.
A = 1.55 ac
V= 9331 cf

Total Storage Required = 9331 cf
(Initial Build Out)

Stormwater Storage Provided

Above Grade Storage Provided In Large Infiltration Basin

Elev	Area (sf)	Avg area (sf)	Volume (cf)	Cum Vol (cf)
4.50	5556			0
		6807	3404	
5.00	8058			3404
		12123	12123	
6.00	16188			15527
		21527	21527	
7.00	26865			37054

Above Grade Storage Provided In Infiltration Swale

Elev	Area (sf)	Avg area (sf)	Volume (cf)	Cum Vol (cf)
6.50	2076			0
		4176	2088	
7.00	6276			2088

Total Above Grade Storage Provided = 39142 cf

Below Grade Storage Available

Volume of soil = (Area of top of basin)*(depth to SWHT) - (above grade storage vol.)

SHWT = 2.5 ft elev.

Volume of soil = 109993 cf

Volume of Voids = (Volume of soil)*(percent void space)

Percent Void Space = 30%

Volume of Voids = 32998 cf

Rainfall Over Infiltration Basin = 16405 cf

Total Void Volume Available = 16593 cf

Total Storage Available In Infiltration Basin = 55735 cf

Currituck County Stormwate Calculations (Cont.)

Residential Lot Stormwater Allotment

Total Storage Available For Lot Drainage = Total Basin Storage - Storage Req. For Roadway

Total Basin Storage =	55735 cf
Storage Req. For Roadway =	9331 cf
Total Storage Available For Lot Drainage =	46404 cf

Total Storage Allocation Per Lot (9 Lots) 5156 cf/lot

Maximum % Impervious Coverage Per Lot Without Additional Storage on lots

Total Lot Area (A) = 226336 sf or 5.20

$V = 3630 * Rd * Rv * A ; Rv = 0.05 + 0.9Ia$

$Ia = [V / (3630 * Rd * A) + 0.5] / 0.9$

V = 46404 cf

Rd = 5.94 in

A = 5.20 ac

Ia = 0.40 or 40% Coverage

****Any Impervious Surfaces That Exceed The 40% Lot Coverage Will Require On-site Detention**

Currituck County Typical Lot Stormwater Calculations

Stormwater Required For Typical Lot (Attached to Plans)

Lot Area =	25,600	sf	0.59	ac
Impervious Area (Typical Lot) =	11402	sf	0.26	ac

Runoff generated by 5.94" Rainfall Event (NCDENR Simplified Method)

la = Impervious Percentage = Impervious Area/Drainage Area

Rv= 0.05+0.9la

Rd= Rd=Rain Fall Depth

V= 3630*Rd*Rv*A

la =	0.445	or	44.5%
Rv=	0.45		
Rd=	5.94	in.	
A =	0.59	ac	
V=	5731	cf	

Runoff Volume 5.94" Storm (V)= 5731 cf

Total Of Volume Required To Be Stored On Site (Vr)

Vr = Runoff Volume (V) - Per Lot Storage Allotment (5,164 cf)

V = 5731 cf

Storage Allotment = 5164 cf

Vr = 567 cf

Total On-Site Storage Volume Required (Vr) = 567 cf

Total On-Site Storage Volume Provided (Vp) = 7315 cf

*Storage Volume Provided > Storage Required

Currituck County Typical Lot Stormwater Calculations (cont.)

Stormwater Storage Provided (Vp) : $V_p \geq V_r$

Above Grade Storage Provided In Infiltration Basin 1 (Front)

Elev	Area (sf)	Avg area (sf)	Volume (cf)	Cum Vol (cf)
7.00	378			0
		638	637.5	
8.00	897			637.5

Above Grade Storage Provided In Infiltration Basin 2 (North)

Elev	Area (sf)	Avg area (sf)	Volume (cf)	Cum Vol (cf)
13.50	1348			0
		995	497.5	
14.00	642			497.5

Above Grade Storage Provided In Infiltration Basin 2 (South)

Elev	Area (sf)	Avg area (sf)	Volume (cf)	Cum Vol (cf)
13.50	642			0
		995	497.5	
14.00	1348			497.5

Total Above Grade Storage Provided (Vat)= 1632.5 cf

Currituck County Typical Lot Stormwater Calculations (cont.)

Below Grade Storage Provided, Volume Available Subsurface Soil Voids (Vv):

- Vvb = Total Storage Available In Voids Below Grade = Vv-Rb
- Vv= Volume of Voids = Vs*P
- Vs= Volume of Soil = At*(ECEVt-ELEVswht)-Va
- At = Area Of Basin Top Contour (sf)
- ELEVt= Elevation Of The Basin Top Contour (ft)
- ELEVswht= Elevation Of The Season High Water Table (ft)
- Ps= Soil Porosity (Decimal Format)
- Va= Above Grade Storage Provided in Basin
- Rb= Rain over Basin = At*Rd
- Rd= RainFall Depth (ft) = (5.94"/12'/1ft)

Front Basin			North Side Basin			North Side Basin		
At =	897	sf	At =	1348	sf	At =	1348	sf
ELEVt=	8	ft	ELEVt=	14	ft	ELEVt=	14	ft
ELEVswht=	2.5	ft	ELEVswht=	6	ft *	ELEVswht=	6	ft *
Ps=	0.3		Ps=	0.3		Ps=	0.3	
Va=	637.5	cf	Va=	497.5	cf	Va=	497.5	cf
Vs=	4296	cf	Vs=	10286.5	cf	Vs=	10286.5	cf
Vv=	1288.8	cf	Vv=	3085.95	cf	Vv=	3085.95	cf
Rd=	0.495	ft	Rd=	0.495	ft	Rd=	0.495	ft
Rb=	444	cf	Rb=	667	cf	Rb=	667	cf
Vvb=	844.8	cf	Vvb=	2418.7	cf	Vvb=	2418.7	cf

Total Storage Available In Voids Below Grade (Vvt) = 5682 cf (sum Vvb)

Vp = Total On-Site Storage Volume Provided = Vvt + Vat

Vvt = 5682 cf

Vat = 1633 cf

Vp = 7315 cf

>

Vr = 567 cf

APPENDIX E

POA Documents Parameters for Lot Development and On-Lot Stormwater Storage

Individual Lot Development

Currituck County Stormwater Requirements dictate that additional storage be provided on the individual lots once a runoff allotment provided within the common infiltration basin has been exhausted by individual lot development. The following parameters shall be incorporated into the Property Owner's Association (POA) Documents for Pine Island Reserve to ensure that this requirement is properly met.

Stormwater Requirements:

- All lot development shall be required to be submitted to Currituck County for the County Engineer's review in the form of a Land Disturbance permit.
- Runoff from proposed lot development shall be calculated using the "Simple Method" as prescribed in the NCDENR BMP Manual. Rainfall depth for all runoff calculations shall be 5.94 inches.
- Runoff calculations must be prepared by a North Carolina Registered Professional Engineer.
- For each lot, 5,164 cf of runoff may be allowed to drain from the lot to the roadside collection system and the dry infiltration basin located along the west side of Lindsey Lane. **ALL OTHER RUNOFF MUST BE CONTAINED AND INFILTRATED ON THE INDIVIDUAL LOT.**
- Infiltration systems located on individual lots must conform to the following parameters:
 - Maintain a minimum of 2' of separation between the bottom of the system and the seasonal high water table (SHWT). The season high water table shall be certified by a professional engineer, geologist, soil scientist or hydrogeologist. Laboratory tests results shall be certified by the qualified testing laboratory.
 - Underlying soils must demonstrate a saturated hydraulic conductivity of at least 0.52 inches per hour. Hydraulic conductivity shall be determined by in-the-field slug test or infiltration test or soils samples may be collected and sent to a qualified geotechnical testing facility for a hydraulic conductivity analysis. In-the-field tests shall be performed and certified by a professional engineer, geologist, soil scientist, or hydrogeologist.
 - The system must draw-down stored runoff within 2 days of design the rainfall event.
 - Non-structural systems must be stabilized with grass or other vegetation which will not retard the function of the infiltration system.
- All on-site systems must be maintained in accordance with a maintenance schedule and agreement, prepared by the designing Engineer, which grants the County and the POA the right to require enforcement.

Stormwater Design Guidelines

Stormwater Runoff

stormwater runoff from lots shall be calculated via the "Simple Method" (Reference - NCDENR Stormwater BMP Manual, 2007).

The Simple Method uses information such as watershed drainage area, impervious area, and design storm depth to estimate the volume of runoff. The Simple Method was developed by measuring the runoff from many watersheds with known impervious areas and curve-fitting a relationship between percent imperviousness and the fraction of rainfall converted to runoff (the runoff coefficient). this relationship is presented below:

$$R_v = 0.05 + 0.9 * I_a$$

Where : R_v = Runoff coefficient [storm runoff (in)/storm rainfall (in)], unitless

I_a = Impervious fraction [impervious surfaces of drainage area (ac)/drainage area (ac)], unitless

* Impervious surfaces shall include all nonporous surfaces including but not limited to asphalt, concrete, roof tops, and gravel drives and walks. Slotted wood deck and walks open to the ground beneath are not considered impervious surface for stormwater calculations.

Once the runoff coefficient is determined, the volume of runoff that must be controlled is given by the equation below:

$$V = 3630 * R_d * R_v * A$$

Where: V = Volume of runoff that must be controlled for the design storm (cubic feet)
 R_d = Design storm rainfall depth (in) (5.94")
 A = Watershed area (ac)

On-site stormwater storage required for each lot

The stormwater required to be stored on each lot is equivalent to the volume of stormwater runoff calculated by using the "simple method" minus the 5,194 cf. of storage allocated to each lot. This equation is presented below:

$$V_r = V - 5,164 \text{ CF}$$

Where: V_r = Volume of required to be stored on-site of the lot (cubic feet)
 V = Volume of runoff that must be controlled for the design storm from the "simple method" (cubic feet)
 5,164 CF = Volume of runoff in cubic feet allowed to drain from the lot to the roadside collection system

On-site storage volume provided for each lot

Each lot shall provide stormwater infiltration systems that provides a stormwater storage volume greater than or equal to the required stormwater storage volume (V_r)

$$V_p \geq V_r$$

Where: V_p = Volume of stormwater storage provided in the on-site infiltration system (cubic feet)
 V_r = Volume of stormwater storage required to be stored on-site of the lot (cubic feet)

Stormwater storage provided (V_p) shall be calculated as the amount of stormwater storage available in the infiltration system, ie : infiltration basin's above grade storage, and in the subsurface void spaces in the insitu soils located below the infiltration system and above the SWHT.

$$V_p = V_a + V_v$$

Where: V_a = Volume of above grade stormwater storage (cubic feet)
 V_v = Volume of stormwater storage available in the insitu soil located below the infiltration basin and above the SWHT (cubic feet)

Above grade storage volumes (V_a) in infiltration basins shall be calculated utilizing the Stage-Storage method. A table shall be provided showing incremental elevations of the bmp with square footage values at the listed elevations. The elevation increments shall be no more than 1 foot. Columns can then be produced showing the incremental volume and cumulative volume of storage provided. This method can be used for simple rectangular or intricately curved, landscaped basins. An example of a stage storage volume calculation is provided in the table below:

STAGE STORAGE VOLUME CALCULATION EXAMPLE			
ELEVATION (ft.)	SURFACE AREA (sq.ft.)	INCREMENTAL STORAGE VOLUME (cf.)	CUMULATIVE VOLUME (cf.)
8.0 (Bottom)	360.0	0.0	0.0
9.0	765.0	562.5	526.5
10.0 (Top)	1,300.0	1,017.5	1,580.0

$V_a = 1,580.0$

Subsurface (below grade) stormwater storage volumes shall be calculated as the total volume of voids in the insitu soils located below the infiltration system and above the SWHT. The volume of soil voids beneath infiltration basins shall be calculated utilizing the following equation:

$$V_v = [A_t * (ELEV_t - ELEV_{swht}) * - V_a] * P_s - R_b$$

WHERE : V_v = Volume of voids in the insitu soils located below the infiltration basin and above the SWHT (cubic feet)

V_a = Above grade storage volume in the infiltration basin (cubic feet)

A_t = Area of the top contour of the infiltration basin (sq.ft.)

$ELEV_t$ = Elevation of the infiltration basin's top contour (ft.)

$ELEV_{swht}$ = Elevation of the season high water table (ft.)

P_s = Porosity of the insitu soils (in decimal format). Porosity values used for insitu sands shall not be greater than 30% unless verified by an independent qualified geotechnical testing laboratory.

R_b = Volume of rain over the infiltration basin [design storm * A_t] (cubic feet)

Infiltration system drawdown

Infiltration systems are required to draw-down the required storage volume within 2 days. Draw-down of the infiltration system will occur as stormwater permeates into the underlying soils of the infiltration basins. The time to draw-down can be estimated roughly as the runoff capture volume for the device divided by the product of the hydraulic conductivity and the effective infiltrating area. this relationship is represented below:

$$D_t = V / (2 * K * A)$$

Where : D_t = Draw-down time in days

V = Volume of water requiring infiltration (cubic feet)

A = Effective infiltrating area (sq.ft.)

K = Hydraulic conductivity (in/hr)

Since the volume of the infiltration basin is a function of the average area of the infiltration basin multiplied times the depth of the infiltration basin. The equation can be further simplified as follows:

$$D_t = d / (2 * K)$$

Where : d = Depth of infiltration basin in inches

APPENDIX F

River Basin Classification and Index Number

.0317 PASQUOTANK RIVER BASIN

Name of Stream	Description	Class	Class	
			Date	Index No.
ALBEMARLE SOUND	All waters south and east of a line running in a southerly direction from Horniblow Point (North end of Norfolk-Southern Railroad Bridge) to a point of land on the east side of Roanoke River (a line running along the railroad to the Chowan-Washington County Line, thence west along the Chowan-Washington County Line to the Bertie-Washington County Line, thence along the Bertie-Washington County Line to a point 0.1 mile above the mouth of Roanoke River, thence south east 0.1 mile to the east side of Roanoke River	SB	07/01/73	30
Currituck Sound	From source to Wright Memorial Bridge at Albemarle Sound	SC	04/06/61	30-1
Knotts Island Bay	That portion within North Carolina	SC	04/06/61	30-1-1
Knotts Island Channel	From North Carolina-Virginia State Line to Knotts Island Bay	SC	04/06/61	30-1-1-1
Capsies Creek	From source to North Carolina-Virginia State Line	SC	04/06/61	30-1-1-1-1
Porpoise Slough	From source to North Carolina-Virginia State Line	SC	04/06/61	30-1-1-1-2
North Landing River	From North Carolina-Virginia State Line to Currituck Sound	SC	04/06/61	30-1-2
Gibbs Creek	From North Carolina-Virginia State Line to North Landing River	C;Sw	04/06/61	30-1-2-1
Northwest River	From North Carolina-Virginia State Line to North Landing River	C;Sw	04/06/61	30-1-2-2
Moyock Run	From source to Northwest River	C;Sw	09/01/74	30-1-2-2-1
Peter Dozier Pond	Entire pond and connecting stream to Northwest River	C;Sw	04/06/61	30-1-2-2-2
Buck Island Pond	Entire pond and connecting stream to Northwest River	C;Sw	04/06/61	30-1-2-2-3

APPENDIX G

NC Secretary of State Corporation Information



Elaine F. Marshall
Secretary

North Carolina
DEPARTMENT OF THE
SECRETARY OF STATE

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

Date: 8/17/2011

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Corporation Names

Name	Name Type
NC PINE ISLAND RESERVE, LLC	LEGAL

Limited Liability Company Information

SOSID:	1176828
Status:	Current-Active
Effective Date:	11/22/2010
Dissolution Date:	
Annual Report Due Date:	4/15/2011
Citizenship:	DOMESTIC
State of Inc.:	NC
Duration:	PERPETUAL
Annual Report Status:	CURRENT

Registered Agent

Agent Name:	KHOURY, DANIEL D.
Office Address:	101 SIR WALTER RALEIGH STREET #305 MANTEO NC 27954
Mailing Address:	305 ESSEX SQUARE MANTEO NC 27954

Principal Office

Office Address:	1314 S. CROATAN HWY., SUITE 301 KILL DEVIL HILLS NC 27948
Mailing Address:	P O BOX 90 KILL DEVIL HILLS NC 27948

Officers

Title:	MEMBER/MANAGER
Name:	COROLLA HOLDING, LLC
Business Address:	P O BOX 90 KILL DEVIL HILLS NC 27948
Title:	MEMBER/MANAGER
Name:	TP RESERVE, LLC

Business Address: 1100-C S. STRATFORD ROAD SUITE 300
WINSTON SALEM NC 27103

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COUNTY OF CURRITUCK

Department of Planning
153 Courthouse Road, Ste. 110
Currituck, North Carolina 27929-0070
Telephone (252) 232-3055 / Fax (252) 232-3026

October 12, 2011

National Audubon Society
225 Varick Street, Floor 7
New York, NY 10014-4396

Pine Island Reserve, LLC
1314 S Croatan Hwy, Suite 301
PO Box 90
Kill Devil Hills, NC 27948

RE: PB 11-14 Pine Island Reserve – Preliminary Plat/Special Use Permit

Dear Applicant,

At its October 11, 2011 meeting, the Currituck County Planning Board approved the request for a preliminary plat/special use permit for a nine lot residential subdivision. The property is located on the east side of Ocean Trail approximately 140 feet north of the intersection with Audubon Drive, Tax Map 128, Parcel 1F, Poplar Branch Township.

A public hearing and possible action on your request will be tentatively schedule for the Board of Commissioners on November 7, 2011 at 7:00 p.m. in the Historic Currituck County Courthouse.

PLEASE BE ADVISED THAT YOU OR YOUR AUTHORIZED REPRESENTATIVE MUST BE PRESENT IN ORDER FOR YOUR CASE TO BE HEARD.

If you have any questions, please call me at 252-232-6025.

Sincerely,

Tammy D. Glave, CZO
Planner II

TG/st



COUNTY OF CURRITUCK

Department of Planning
153 Courthouse Road, Suite 110
Currituck, North Carolina 27929-0070
Telephone (252) 232-3055 / Fax (252) 232-3026

November 8, 2011

National Audubon Society
225 Varick Street, Floor 7
New York NY 10014-4396

Pine Island Reserve, LLC
1314 S Croatan Hwy., Suite 301
PO Box 90
Kill Devil Hills NC 27948

RE: PB 11-14 Pine Island Reserve – Preliminary Plat/Special Use Permit

Dear Applicant,

At its November 7, 2011 meeting, the Currituck County Board of Commissioners approved the request for a preliminary plat/special use permit for a nine lot residential subdivision. The property is located on the east side of Ocean Trail approximately 140 feet north of the intersection with Audubon Drive, Tax Map 128, Parcel 1F, Poplar Branch Township.

Enclosed is the special use permit.

If you have any questions, please call me at 252-232-6029.

Sincerely,

A handwritten signature in black ink, appearing to read "Ben E. Woody".

Ben E. Woody, AICP
Planning Director

Enclosure: Special Use Permit

Cc: Harry Lee, Currituck County GIS



COUNTY OF CURRITUCK

Department of Planning
153 Courthouse Road, Suite 110
Currituck, North Carolina 27929-0070
Telephone (252) 232-3055 / Fax (252) 232-3026

SPECIAL USE PERMIT GRANTED

On the date(s) listed below, the Board of Commissioners for the County of Currituck met and held a public hearing to consider the following application:

Owner: National Audubon Society
225 Varick Street, Floor 7
New York NY 10014-4396

Applicant: Pine Island Reserve, LLC
1314 S Croatan Hwy, Suite 301
PO Box 90
Kill Devil Hills NC 27948

Property Location: East side of Ocean Trail approximately 140 feet north of the intersection with Audubon Drive

Project:: PB 11-14 Pine Island Reserve

Proposed Use: Nine Lot Residential Subdivision

Meeting Dates: October 11, 2011 – Planning Board Recommendation
November 7, 2011 – Board of Commissioners' Public Hearing/Action

Having heard all the evidence and argument presented at the hearing, the Board finds that the application is complete, that the application complies with all of the applicable requirements of the Currituck County Unified Development Ordinance for the development proposed, and that therefore the application to make use of the above described property for the purpose indicated is hereby approved subject to all applicable provisions of the Unified Development Ordinance and the following conditions:

- (A) The applicant shall complete the development strictly in accordance with the plans submitted to and approved by the Board of Commissioners, a copy of which is filed in the office of the Planning Department.
- (B) If any of the conditions affixed hereto or any part thereof shall be held invalid or void, then this permit shall be void and of no effect.

- (C) This permit is valid for two years and will expire on November 7, 2013, if work has not begun on the project at that time. Once work has begun and the use begins, this special use permit shall remain valid so long as the conditions under which it was granted are met.
- (D) Other conditions:
1. The typical "Lot Plan – Lot 9" layout submitted is for stormwater calculations only. Zoning compliance is not granted with this layout as minimum standards such as drive aisle widths are not met.
 2. Consult with NC Division of Water Quality (Washing Regional Office) at (252)946-6481 for wastewater approval.
 3. Any ground disturbance within a CAMA Area of Environmental Concern (AEC) shall require a CAMA permit.
 4. As this part of a larger development, an approved erosion and sedimentation control plan shall be required, even if less than one acre is to be disturbed.
 5. (10/3/11 Engineering TRC Comment based on revised plans.) It is understood that the total available storage is 55,735 cf. Needed storage for roads and open space is 9358 cf leaving 46,377 cf for lot development or 5164 cf available per lot. 5164 cf per lot equates to a 40% coverage. An example was presented for a lot with 44.5% coverage with 1218 cf additional storage required. The lot as laid out has 7351 cf available. I assume the point being there is plenty of storage that can be sited on each lot.
 - a. Under the calculation for Typical Lot: Stormwater Feasibility Design, why wasn't the Simple Method used versus the Rational Method? Under the Simple Method I calculate needed storage of 5708 cf at 44.5% coverage. Why was 44.5% chosen as the example instead of 65%?
 - b. Provide the exact language to be incorporated into the POA documents. Provide documentation of all assumptions including:
 - i. Is the intent to use 2.5' msl as the seasonal high water table for all lots
 - ii. Is the intent to use 30% voids for all lots
 - iii. What is the required method to determine saturated hydraulic conductivity
 - iv. What is the required method to demonstrate draw-down in the lots basins
 - v. Provide example calculations using the Simple Method
 - vi. Provide narrative description on how to calculate storage volume provided
 - vii. Describe what is included in imperious coverage
 - c. I would like for Quible to develop guidelines that requires an engineer to develop the stormwater needs for each lot but is able to be checked by planning staff as well as the county engineer.
 6. This proposed phase of development is considered a Natural Heritage Area as identified in the Land Use Plan policy statement ES8 and significant growth shall avoid these areas.

7. Land Use Plan policy statement WQ5 encourages developments to preserve the natural features of the site including existing topography and significant existing vegetation.
8. Bulkheads or retaining walls shall not be allowed as a method to stabilize or contain fill, except bulkheads established for the purpose of shoreline protection or as otherwise permitted by the county engineer. This shall not include retaining walls used to stabilize or contain existing natural grade when a driveway or walkway is cut into a lot at an elevation lower than existing natural grade.

IN WITNESS WHEREOF, the County has caused this permit to be issued in its name, and the property owners/applicants of the property above described, do hereby accept this Special Use Permit together with all its conditions, as binding on them and their successors in interest.

ATTEST:

 (Seal)
Clerk to the Board

11-9-11
Date


Chairman
Board of Commissioners

(NOT VALID UNTIL FULLY EXECUTED)



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

Beverly Eaves Perdue
Governor

Thomas A. Reeder
Director

Dee Freeman
Secretary

November 1, 2011

Mr. Pat Irwin, Utilities Director
Currituck County Water
444 Maple Road
Maple, North Carolina 27956

Re: Engineering Plans and Specifications Approval
Water Main Extension
Currituck County/Southern Outer Banks Water to serve
Pine Island Reserve, Tract B
Water System I.D. # NC6027001, Currituck County
Serial No.: 11-00954

Dear Mr. Irwin:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Water Resources stamp of approval for the referenced project. These engineering plans and specifications are approved under Serial Number 11-00954, dated October 25, 2011.

Engineering plans and specifications prepared by Michael W. Strader, P.E., call for the installation of approximately 994 feet of 12-inch water main, valves, a hydrant and other appurtenances along Lindsey Lane to serve Pine Island Reserve, Tract B with 9 lots located off Ocean Trail (N.C. Hwy 12). Construction of this project will be in accordance with Currituck County/Southern Outer Banks Water System's standard specifications.

Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Water System Management Plan. No construction shall be undertaken and no contract for construction, alteration, or installation shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C .0305(a).

These plans and specifications in the foregoing application are approved in so far 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 General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.

One copy of each enclosed document is being forwarded to our Washington Regional Office. The third copy is being retained in our permanent files.

If Technical Services Branch of Public Water Supply can be of further service, please call us at (919) 733-2460.

Sincerely,

J. Wayne Munden, P. E.
Technical Services Branch Head
Public Water Supply Section

JWM/HSO/kpw

Enclosures: Approval Documents

cc: Harry Bailey, Regional Engineer
Currituck County Health Department
Quible & Associates, P.C.



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

Beverly Eaves Perdue
Governor

Thomas A. Reeder
Director

Dee Freeman
Secretary

December 20, 2011

PAT IRWIN, UTILITIES DIRECTOR
CURRITUCK COUNTY
444 MAPLE ROAD
MAPLE, NC 27969

Re: **Authorization to Construct**
PINE ISLAND RESERVE, TRACT B
SOUTHERN OUTER BANKS WTR SYST
CURRITUCK COUNTY, NC6027001

Authorization to Construct (This is not a Final Approval)

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 **PINE ISLAND RESERVE, TRACT B, Serial No. 11-00954**.

The Authorization to Construct is valid for 24 months from the **Issue Date** (refer to next page). Authorization to Construct may be extended if the Rules Governing Public Water Supplies 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 Certification directly to HENRI OU of this office.

- **Engineer 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 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 Certification" form is available at <http://www.deh.enr.state.nc.us/pws/> (click on Plan Review Forms, under Plan Review heading).

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) 715-3214.

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.**

If the Public Water Supply Section can be of further assistance, please call (919) 733-2321.

Sincerely,

J. Wayne Munden, P.E., Head
Technical Services Branch

cc: Harry Bailey, REGIONAL ENGINEER
QUIBLE & ASSOCIATES PC



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

Public Water System Authorization to Construct

Public Water System Name and Water System No.:	SOUTHERN OUTER BANKS WTR SYST NC6027001
Project Name:	PINE ISLAND RESERVE, TRACT B
Serial No.:	11-00954
Issue Date:	10/25/2011
Expiration Date:	24 Months after Issue Date

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

QUIBLE & ASSOCIATES PC
PO DRAWER 870

KITTY HAWK

NC 27949

STATE OF NORTH CAROLINA

OCT 24 2011

COUNTY OF Currituck

Permit No. WQ0018170 MOD

~~DEVELOPER'S OPERATIONAL AGREEMENT~~
DWQ WARO

This AGREEMENT made pursuant to G.S. 143-215.1 (d1) and entered into this _____ day of _____, by and between the North Carolina Environmental Management Commission, an agency of the State of North Carolina, hereinafter known as the COMMISSION; and Pine Island Reserve, a corporation/general partnership registered/licensed to do business in the State of North Carolina, hereinafter known as the DEVELOPER.

WITNESSETH:

1. The DEVELOPER is the owner of the certain lands lying in Currituck County, upon which it is erecting and will erect dwelling units and other improvements, said development to be known as Pine Island Reserve (hereinafter the Development).
2. The DEVELOPER desires, to construct a wastewater collection system with pumps, wastewater treatment works, and/or disposal facilities (hereinafter Disposal System) to provide sanitary sewage disposal to serve the Development on said lands.
3. The DEVELOPER has applied to the COMMISSION for the issuance of a permit pursuant to G.S. 143-215.1 to construct, maintain, and operate the Disposal System.
4. The DEVELOPER has created or shall create unit ownership in said dwellings units, other improvements and lands through filing of a Declaration of Unit Ownership (hereinafter Declaration), pursuant to Chapter 47C or 47F of the North Carolina General Statutes.
5. The DEVELOPER has caused to be formed or will cause to be formed at the time of filing of the Declaration, the pine Island Reserve Homeowner's Association (hereinafter Association), a non-profit corporation organized and existing under and by the virtue of the laws of the State of North Carolina, for the purpose, among others, of handling the property, affairs and business of the Development; of operating, maintaining, re-constructing and repairing the common elements of the lands and improvements subject to unit ownership, including the Disposal System; and of collecting dues and assessments to provide funds for such operation, maintenance, re-construction and repair.
6. The COMMISSION desires to assure that the Disposal System of the Development is properly constructed, maintained and operated in accordance with law and permit provisions in order to protect the quality of the waters of the State and the public interest therein.


NOW, THEREFORE, in consideration of the promises and the benefits to be derived by each of the parties hereto, the COMMISSION and DEVELOPER do hereby mutually agree as follows:

1. The DEVELOPER shall construct the Disposal System in accordance with the permit and plans and specifications hereafter issued and approved by the COMMISSION, and shall thereafter properly operate and maintain such systems and facilities in accordance with applicable permit provisions and law.
2. The DEVELOPER shall not transfer ownership and/or control of the Disposal System to the Association until construction has been completed in accordance with the permit and approved plans, and the staff of the Division of Water Quality has inspected and approved of the facilities. In order to change the name of the permit holder, the DEVELOPER must request that the permit be reissued to the Association. The request must include a copy of the Association Bylaws and Declaration.
3. The DEVELOPER shall not transfer, convey, assign or otherwise relinquish or release its responsibility for the operation and maintenance of its Disposal System until a permit has been reissued to the DEVELOPER's successor.

4. The DEVELOPER shall provide in the Declaration and Association Bylaws that the Disposal System and appurtenances thereto are part of the common elements and shall thereafter be properly maintained and operated in conformity with law and the provisions of the permit for construction, operation, repair, and maintenance of the system and facilities. The Declaration and Bylaws shall identify the entire wastewater treatment, collection and disposal system as a common element which will receive the highest priority for expenditures by the Association except for Federal, State, and local taxes and insurance.
5. The DEVELOPER shall provide in the Declaration and Association Bylaws that the Disposal System will be maintained out of the common expenses. In order to assure that there shall be funds readily available to repair, maintain or construct the Disposal System, beyond the routine operation and maintenance expenses, the Declaration and Association Bylaws shall provide that a fund be created out of the common expenses. Such fund shall be separate from the routine maintenance funds allocated for the facility and shall be part of the yearly budget.
6. In the event the common expense allocation and separate fund are not adequate for the construction, repair, and maintenance of the Disposal System, the Declaration and Association Bylaws shall provide for special assessments to cover such necessary costs. There shall be no limit on the amount of such assessments, and the Declaration and Bylaws shall provide that such special assessments can be made as necessary at any time.
7. If a wastewater collection system and wastewater treatment and/or disposal facility provided by any city, town, village, county, water and sewer authorities, or other unit of government shall hereinafter become available to serve the Development, the DEVELOPER shall take such action as is necessary to cause the existing and future wastewater of the Development to be accepted and discharged into said governmental system, and shall convey or transfer as much of the Disposal System and such necessary easements as the governmental unit may require as condition of accepting the Development's wastewater.
8. Recognizing that it would be contrary to the public interest and to the public health, safety and welfare for the Association to enter into voluntary dissolution without having made adequate provision for the continued proper maintenance, repair and operation of its Disposal System, the DEVELOPER shall provide in the Association Bylaws that the Association shall not enter into voluntary dissolution without first having transferred its said system and facilities to some person, corporation or other entity acceptable to and approved by the COMMISSION by the issuance of a permit.
9. The agreements set forth in numbered paragraphs 1, 2, 3, 4, 5, 6, 7, and 8 above shall be conditions of any permit issued by the COMMISSION to the DEVELOPER for the construction, maintenance, repair and operation of the Disposal System.
10. A copy of this agreement shall be filed at the Register of Deeds in the County(ies) where the Declaration is filed and in the offices of the Secretary of State of North Carolina with the Articles of Incorporation of the Association.

IN WITNESS WHEREOF, this agreement was executed in duplicate originals by the duly authorized representative of the parties hereto on the day and year written as indicated by each of the parties named below:

FOR THE ENVIRONMENTAL
MANAGEMENT COMMISSION



Coleen H. Sullins, Director
Division of Water Quality

11-8-11

(Date)

Pine Island Reserve, L.L.C.

Name of DEVELOPER



By
(Signature)

Sumit Gupta, Manager

Print Name and Title

(Date)



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

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

November 7, 2011

Rolf Blizzard, Manager
Pine Island – Currituck, LLC
615 Hillsborough St., Suite 201
Raleigh, NC 27604

Subject: Permit No. WQ0018170 Modification
Pine Island – Currituck, LLC
Pine Island – Currituck, LLC (Wastewater Collection System
to serve Pine Island Reserve – Track B) Sewer
Wastewater Collection System Extension
Currituck County

Dear Mr. Blizzard:

In accordance with your permit modification application received October 24, 2011, we are forwarding herewith Permit No. WQ0018170, dated November 7, 2011, to Pine Island – Currituck, LLC for the continued construction and operation of the subject wastewater collection system extension. This permit shall be effective from the date of issuance until rescinded, shall void Permit No. WQ0018170 dated June 10, 2011, and shall be subject to the conditions and limitations as specified therein. This cover letter shall be considered a part of this permit and is therefore incorporated therein by reference.

This modification increases the design flow by 12,960 gallons per day (GPD) to serve the remaining 9 Lots of the 13 Lot Pine Island Reserve Subdivision. Therefore, the total design wastewater flow increases from 547,388 GPD to the total system design wastewater flow of 560,348 GPD. The flow will be made tributary through an additional 614 linear feet of 8-inch gravity sewer.

Note: An Emergency Generator/Pumping Plan with rotation schedule including travel times has been developed regarding power reliability. The plan shall be administered, amended as necessary, filed as a part of the permit, implemented, and shall be posted at the treatment facility as well as posted at various locations throughout the collection system for reference. The plan shall be fully operational by July 1, 2012 and was to be initiated immediately upon the issuance of the June 10, 2011, permit modification.

Please pay particular attention to Permit Condition 3 which requires that the wastewater collection facilities be properly operated and maintained in accordance with 15A NCAC 2T .0403 or any individual system-wide collection system permit issued to the Permittee.

Permitting of this project does not constitute an acceptance of any part of the project that does not meet 15A NCAC 2T; the Division of Water Quality's (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; and the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable, unless specifically mentioned herein.

Division approval is based on acceptance of the certification provided by a North Carolina-licensed Professional Engineer in the application. It shall be the Permittee's responsibility to ensure that the as-constructed project meets the appropriate design criteria and rules. Failure to comply may result in penalties in accordance with North Carolina General Statute §143-215.6A through §143-215.6C, construction of additional or replacement wastewater collection facilities, and/or referral of the North Carolina-licensed Professional Engineer to the licensing board.

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 Pine Island – Currituck, LLC for the continued construction and operation of approximately 614 linear feet of 8-inch gravity sewer to serve the remaining 9 of 13 12-bedroom Lots of the **Pine Island – Currituck, LLC (Wastewater Collection System to serve Pine Island Reserve – Track B) Sewer** project, and the discharge of **12,960** gallons per day of collected wastewater into the Pine Island – Currituck, LLC's existing sewerage system, pursuant to the application received October 24, 2011, and in conformity with 15A NCAC 2T; the Division's Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit, and;

The continued operation of the certified facilities or continued construction and operation of the not yet certified facilities as follows:

Approximately 222 linear feet of 8-inch gravity sewer; a 275 gallon per min pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 45 linear feet of 4-inch force main to serve 4 12-bedroom Lots of the **Pine Island Reserve** project, and the discharge of **5,760** gallons per day of collected wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 1,176 linear feet of 4-inch force main to serve 29 4-bedroom units, 23 units at the Inn site, 27, 7-bedroom units and one retail building as part of the **Phase 8A/Inn Site/Historic Lots** project, and the discharge of **50,040** gallons per day of collected or wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 2,762 linear feet of 8-inch gravity sewer; 190 linear feet of 6-inch gravity sewer; a 150-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; a 180-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry, as well as approximately 1,034 linear feet of 4-inch force main to serve 54 three-bedroom residences as part of **Phase 7**, and the discharge of **25,920** gallons per day of collected domestic wastewater into Pine Island – Currituck, LLC's existing sewerage system;

Approximately 100 linear feet of 6-inch gravity sewer and 316 linear feet of 8-inch gravity sewer to serve a 180 seat restaurant and pool as part of **Flyway Grill at Pine Island**, and the discharge of approximately **8,700** gallons per day of wastewater to the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 2,216 linear feet of 8-inch gravity sewer; a 110-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 1,223 linear feet of 4-inch force main to serve 24 four-bedroom residences as part of Currituck Club PUD, **Phase 6**, with the discharge of **11,520** gallons per day of wastewater to the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 3,849 linear feet of 8-inch gravity sewer; a 95-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 802 linear feet of 4-inch force main to serve 15 four-bedroom single family lots and 72 three-bedroom patio homes as part of the **Hammocks at the Currituck Club** project, and the discharge of **33,120** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 396 linear feet of 8-inch gravity sewer; a 194-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 57 linear feet of 4-inch force main to serve 121 rooms and a 100-person conference room as part of the **Pine Island Hotel** project, and the discharge of **15,020** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 36 linear feet of 6-inch gravity sewer; a 40-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 30 linear feet of 2-inch force main to serve 60 seats as part of the **Soundside Restaurant/Sanderling Inn Resort** project, and the discharge of **2,400** gallons per day of domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

A 32-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 365 linear feet of 2-inch force main to serve **The Currituck Club (Restaurant & Clubhouse)**, and the discharge of **3,985** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 1,362 linear feet of eight-inch gravity sewer; approximately 41 linear feet of 10-inch gravity sewer; a 158-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 703 linear feet of 4-inch force main to serve **The Currituck Club PUD - Phase 4**, (47 four-bedroom houses and the Hole #15 Comfort Station) and the discharge of **23,060** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage collection system.

From Permit No. WQ0004823

Approximately 13,144 linear feet of 8-inch gravity sewer, approximately 8,409 linear feet of 6-inch force main which will be a common force main for the following pump stations; a 455-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 37 linear feet of 6-inch force main; a 85-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 768 linear feet of 6-inch force main; a 490-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 84 linear feet of 6-inch force main; and a 530-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 47 linear feet of 6-inch force main, to serve **The Currituck Club PUD Phase 1 and Phase 2 and Magnolia Bay - Phase 1** (173 four-bedroom homes and 44 three-bedroom patio homes) and the discharge of **98,880** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system (flow reduced from 102,720 gallon per minute due to multiple counting of contributory facilities);

An additional wastewater collection system consisting of a 315-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry, a 30,338 gallon storage tank, and approximately 700 linear feet of 4-inch force main to the irrigation pond; 200 linear feet of 4-inch force main to the existing high rate disposal system (Permit No. WQ0004823); a 620-gallon per minute brine pump station with duplex pumps, audible and visual high water alarms with telemetry and approximately 708 linear feet of 6-inch force main to the five-day holding pond; and a 23.5-gallon per minute pump station with duplex pumps, audible and visual high water alarms and approximately 571 linear feet of 2-inch force main to the existing wastewater treatment facility (Permit No. WQ0004823), to serve the domestic wastewater at the **water treatment plant**;

From Permit No. WQ0006778

Approximately 3,460 linear feet of 8-inch gravity sewer; approximately 27 linear feet of 10-inch gravity sewer; a 325 gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 3,200 linear feet of 6-inch force main, to serve **Pine Island PUD – Phase 1** (56 single family homes and a public beach access restroom) and the discharge of **29,000** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's

existing sewerage system (flow reduced from 113,000 gallons per day due to contributing facilities not being constructed.)

From Permit No. WQ0007150

A 190-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 24,200 linear feet of 6-inch force main to serve **Pine Island (Sanderling Inn and Restaurant)** and the discharge of **27,885** gallons per day of collected commercial wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ007984

Approximately 4,562 linear feet of 8-inch gravity sewer; a 105-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 1,900 linear feet of 4-inch force main, to serve **Pine Island PUD – Phases 2 & 3**, (99 single family lots) and the discharge of **49,500** gallons per day of domestic waste into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ0009088

Approximately 3,754 linear feet of 8-inch gravity sewer and a 75-gallon per minute pump station with duplex pumps, audible and visual high water alarms, and portable generator with telemetry system to serve of the **Pine Island PUD - Phase 4** [four (4) four-bedroom homes] and the discharge of **1,920** gallons per day of domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

Approximately 2,718 linear feet of 8-inch gravity sewer; a 78-gallon per minute pump station with duplex pumps, audible and visual high water alarms, portable generator with telemetry system; as well as approximately 3,348 linear feet of 4-inch force main, to serve **Pine Island PUD – Phase 8** (44 four-bedroom homes) and the discharge of **21,120** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ009947

Approximately 2,301 linear feet of 8-inch gravity sewer; approximately 656 linear feet of 10-inch gravity sewer; a 260-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 90 linear feet of 4-inch force main, to serve **Pine Island PUD – Phases 1A & 6** (46 four-bedroom homes) and the discharge of **22,080** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ0011377

Approximately 2,045 linear feet of 8-inch gravity sewer; a 260-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 90 linear feet of 4-inch force main, to serve **Pine Island PUD – Phase 7** (28 four-bedroom homes) and the discharge of **13,440** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From permit WQ0011740

A 105-gallon per minute pump station and two (2) 25-gallon per minute pump stations each with duplex pumps, each with on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 695 linear feet of 2-inch force main; approximately 360 linear feet of 3-inch force main; and approximately 412 linear feet of 4-inch force main to serve **Sanderling Inn Health Club and Station Bay Cove** (two lots) and the discharge of **3,460** gallons per day of collected domestic and commercial wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ0011886

Approximately 943 linear feet of 8-inch gravity sewer; a pressure sewer collection system consisting of one (1) 35-gallon per minute pump station; one (1) 38-gallon per minute pump station; and one (1) 41-gallon per minute pump station; each with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 1,034 linear feet of 2-inch pressure sewer; a 340-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 1,153 linear feet of 6-inch force main to serve **The Currituck Club PUD – Phase 2** (16 four-bedroom homes) and the discharge of **7,680** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ0012566 (this description modified in 8/22/06 modification to reflect as-built)

Approximately 246 linear feet of 8-inch gravity sewer to serve **Windswept Ridge Golf Villas** (6 two-bedroom villas; 18 three-bedroom villas; 6 four-bedroom villas; and a 50 person pool/bathhouse) and the discharge of **11,300** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ0012893

Approximately 564 linear feet of 8-inch gravity sewer; a 210-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 854 linear feet of 4-inch force main, to serve **The Currituck Club PUD** with **no** discharge of domestic and commercial wastewater into the Pine Island – Currituck, LLC's existing sewerage collection system (Flow reduced from 37,522 gallons per day due to contributory facilities not being constructed);

From Permit No. WQ0013006

A 340-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as, (no backwash during power outage); approximately 609 linear feet of 4-inch force main; and approximately 1,790 linear feet of 6-inch force main to serve **The Currituck Club, PUD filter backwash**, with **no** discharge of collected industrial wastewater into the Pine Island – Currituck, LLC's existing sewerage collection system [flow reduced from 24,750 gallons per day (the collected 24,750 gallons per day is routed directly to the high rate infiltration pond and does not directly impact the wastewater treatment facility)];

From Permit No. WQ0013141

A pressure sewer collection system consisting of one (1) 35-gallon per minute pump station; one (1) 38-gallon per minute pump station; and one (1) 43.5-gallon per minute pump station; each with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 906 linear feet of 2-inch pressure sewer, to serve **The Currituck Club PUD – Oceans Subdivision** (eight three-bedroom houses) and the discharge of **2,880** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage collection system;

From Permit No. WQ0013307

Approximately 231 linear feet of 8-inch gravity sewer to serve **The Currituck Club PUD – Amenities Area** (pool with a maximum of 137 users) and the discharge of **1,370** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage collection system;

From Permit No. WQ0013388

Approximately 5,408 linear feet of 8-inch gravity sewer; approximately 21 linear feet of 10-inch gravity sewer; a pressure sewer collection system consisting of six (6) 32-39 gallon per minute pump stations with simplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 100 linear feet of 1.25-inch pressure sewer; approximately 761 linear feet of

2-inch pressure sewer; a 75-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 202 linear feet of 3-inch force main; a 150-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 1,748 linear feet of 4-inch force main; and a 140-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 1,111 linear feet of 4-inch force main to serve **The Currituck Club PUD – Phase 3** (74 four-bedroom homes), and the discharge of **35,520** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system;

From Permit No. WQ0014523

Approximately 1,439 linear feet of 8-inch gravity sewer; a 210-gallon per minute pump station with duplex pumps, audible and visual high water alarms, portable generator with telemetry system; and approximately 340 linear feet of 4-inch force main, to serve **Magnolia Bay – Phase 2** (26 three-bedroom houses and a pool with a maximum of 50 users) and the discharge of **9,860** gallons per day of collected domestic wastewater into the Pine Island – Currituck, LLC's existing sewerage system; and

From Permit No. WQ0017772

Approximately 687 linear feet of 8-inch gravity sewer; a 310-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 56 linear feet of 4-inch force main; a 160-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 400 linear feet of 4-inch force main; and a 250-gallon per minute pump station with duplex pumps, on-site audible and visual high water alarms, and portable generator receptacle with telemetry; as well as approximately 24 linear feet of 4-inch force main to serve **Ocean Club Centre Buildings 1-6** (Lots 1-4), and the discharge of **17,200** gallons per day of collected domestic and commercial wastewater into the Pine Island – Currituck, LLC's existing sewerage system.

The total flow allocated to the **Pine Island – Currituck, LLC** wastewater treatment facility (Permit No. **WQ0004823**) at the issuance of this permit to be **547,388** gallons per day pursuant to the application received January 28, 2003 and the request to modify the allocation dated May 9, 2011, as well as in conformity with 15A NCAC 2T; the Division's Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

The sewage and wastewater collected by this system shall be treated in the Pine Island – Currituck, LLC Wastewater Treatment Facility (Non-Discharge Permit No. WQ0004823) prior to being land applied by spray irrigation.

A stormwater management plan shall be submitted to and approved by the Washington Regional Office in accordance with 15A NCAC 2H .1000.

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 30 days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of 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 need additional information concerning this matter, please contact Thom Edgerton at (252) 948-3963 or via E-mail at thom.edgerton@ncdenr.gov.

Sincerely,

For Coleen H. Sullivan

cc: Currituck County Health Department

Washington Regional Office, Water Quality Section (WWTF Permit No. WQ0004823)

✓ Michael W. Strader, Jr., PE, Quible & Associates, PC, PO Drawer 870, Kitty Hawk, NC 27949
PERCS (formerly NDPU) Files

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH
WASTEWATER COLLECTION SYSTEM EXTENSION PERMIT

This permit shall be effective from the date of issuance until rescinded, shall void Permit No. WQ0018170 issued May 5, 2011, and shall be subject to the following specified conditions and limitations:

1. This permit shall become voidable unless the wastewater collection facilities are constructed in accordance with the conditions of this permit; 15A NCAC 2T; the Division of Water Quality's (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting materials unless specifically mentioned herein.
2. This permit shall be effective only with respect to the nature and volume of wastes described in the application and other supporting data.
3. The wastewater collection facilities shall be properly maintained and operated at all times. The Permittee shall maintain compliance with an individual system-wide collection system permit for the operation and maintenance of these facilities as required by 15A NCAC 2T .0403. If an individual permit is not required, the following performance criteria shall be met as provided in 15A NCAC 2T .0403:
 - a. The sewer system shall be effectively maintained and operated at all times to prevent discharge to land or surface waters, and any contravention of the groundwater standards in 15A NCAC 2L .0200 or the surface water standards in 15A NCAC 2B .0200.
 - b. A map of the sewer system shall be developed and shall be actively maintained.
 - c. An operation and maintenance plan shall be developed and implemented.
 - d. Pump stations that are not connected to a telemetry system shall be inspected every day (i.e. 365 days per year). Pump stations that are connected to a telemetry system shall be inspected at least once per week.
 - e. High-priority sewer lines shall be inspected at least once per every six-month period of time.
 - f. A general observation of the entire sewer system shall be conducted at least once per year.
 - g. Inspection and maintenance records shall be maintained for a period of at least three years.
 - h. Overflows and bypasses shall be reported to the appropriate Division regional office in accordance with 15A NCAC 2B .0506(a), and public notice shall be provided as required by North Carolina General Statute §143-215.1C.
4. This permit shall not be transferable. In the event there is a desire for the wastewater collection facilities to change ownership, or there is a name change of the Permittee, a formal permit request shall be submitted to the Division accompanied by documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request shall be considered on its merits and may or may not be approved.

5. Construction of the gravity sewers, pump stations, and force mains shall be scheduled so as not to interrupt service by the existing utilities nor result in an overflow or bypass discharge of wastewater to the surface waters of the State.
6. Per 15A NCAC 2T .0116, upon completion of construction and **prior to operation** of these permitted facilities, the completed Engineering Certification form attached to this permit shall be submitted with the required supporting documents to the address provided on the form. A complete certification is one where the form is fully executed and the supporting documents are provided as applicable.
7. A copy of the construction record drawings shall be maintained on file by the Permittee for the life of the wastewater collection facilities.
8. Failure to abide by the conditions and limitations contained in this permit; 15A NCAC 2T; the Division's Gravity Sewer Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Station and Force Mains adopted June 1, 2000 as applicable; and other supporting materials may subject the Permittee to an enforcement action by the Division, in accordance with North Carolina General Statutes §143-215.6A through §143-215.6C.
9. In the event that the wastewater collection 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 this Division, such as the construction of additional or replacement facilities.
10. The issuance of this permit shall not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (local, state and federal) which have jurisdiction, including but not limited to applicable river buffer rules in 15A NCAC 2B .0200, erosion and sedimentation control requirements in 15A NCAC Ch. 4 and under the Division's General Permit NCG010000, and any requirements pertaining to wetlands under 15A NCAC 2B .0200 and 15A NCAC 2T.

11. **Noncompliance Notification:**

The Permittee shall report by telephone to a water quality staff member at the Washington Regional Office, telephone number (252) 946-6481, as soon as possible, but in no case more than 24 hours or on the next working day, following the occurrence or first knowledge of the occurrence of either of the following:

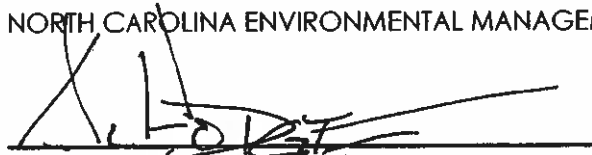
- a. Any process unit failure, due to known or unknown reasons, that renders the facility incapable of adequate wastewater transport, such as mechanical or electrical failures of pumps, line blockage or breakage, etc.; or
- b. Any failure of a pumping station or sewer line resulting in a by-pass directly to receiving waters without treatment of all or any portion of the influent to such station or facility.

Voice mail messages or faxed information is permissible but this shall not be considered as the initial verbal report. Overflows and spills occurring outside normal business hours may also be reported to the Division of Emergency Management at telephone number (800) 858-0368 or (919) 733-3300. Persons reporting any of the above occurrences shall file a spill report by completing and submitting Part I of Form CS-SSO (or the most current Division approved form) within five days following first knowledge of the occurrence. This report must outline the actions taken or proposed to be taken to ensure that the problem does not recur. Part II of Form CS-SSO (or the most current Division approved form) can also be completed to show that the SSO was beyond control.

12. Gravity sewers installed below the minimum required slope per the Division's Gravity Sewer Minimum Design Criteria shall not be acceptable and shall not be certified until corrected. If there is an unforeseen obstacle in the field where all viable solutions have been examined, a slope variance can be requested from the Division with firm supporting documentation. This shall be done through a permit modification with fee. Such variance requests will be evaluated on a case-by-case basis. Resolution of such request shall be evident prior to completing and submitting the construction certification.

Permit issued this the seventh day of November, 2011.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

A handwritten signature in black ink, appearing to read 'C. SULLINS', is written over a horizontal line.

For Coleen H. Sullins, Director
Division of Water Quality

By Authority of the Environmental Management Commission

Permit Number WQ0018170 Modification

ENGINEER'S CERTIFICATION

Complete and submit this form to the permit issuing office (address below) with the following:

- One copy of the project record drawings (plan/profile views and detail drawings of sewer lines) of the wastewater collection system extension. Final record drawings should be clear on the plans. Record drawings should indicate the design and the marked up changes during construction.
- Supporting design calculations (selected pumps, system curve, operating point, available storage if portable generator(s) or storage greater than longest past three year outage reliability option selected) for any pump stations permitted as part of this project
- Changes to the project should be clearly identified on the record drawings or in written summary form. Permit modifications are required for any changes resulting in non-compliance with this permit, regulations or minimum design criteria. Modifications should be submitted prior to certification.

This project shall not be considered complete nor allowed to operate until this Engineer's Certification and all required supporting documentation have been received by the Division. **Therefore, it is highly recommended that this certification be sent in a manner that provides proof of receipt by the Division.**

ENGINEER'S CERTIFICATION

Partial Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the Pine Island – Currituck, LLC (Wastewater Collection System to serve Pine Island Reserve – Track B) Sewer project consisting of 614 linear feet of 8-inch gravity sewer to serve the remaining 9 of 13 12-bedroom Lots, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance of this permit; 15A NCAC 2T; the Division of Water Quality's (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting materials.

North Carolina Professional Engineer's
seal, signature, and date:

**SEND THIS FORM & SUPPORTING DOCUMENTATION
WITH REQUIRED ATTACHMENTS TO THE FOLLOWING ADDRESS**

NORTH CAROLINA DIVISION OF WATER QUALITY
Washington Regional Office – Surface Water Protection Section
Attn: Al Hodge, Regional Supervisor
943 Washington Square Mall
Washington, NC 27889

The Permittee is responsible for tracking all partial certifications up until a final certification is received. Any wastewater flow made tributary to the wastewater collection system extension prior to completion of this Engineer's Certification shall be considered a violation of the permit and shall subject the Permittee to appropriate enforcement actions.



North Carolina Department of Environment and Natural Resources
Division of Land Resources
Land Quality Section

James D. Simons, PG, PE
Director and State Geologist

December 13, 2011

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

LETTER OF APPROVAL WITH MODIFICATIONS

Pine Island Reserve, LLC
ATTN: Mr. Amit Gupta, Managing Member
Post Office Box 7742
Kill Devil Hills, North Carolina 27948

RE: Erosion and Sedimentation Control Plan No. Curri-2012-001
Project Name: Pine Island Reserve – Track B
Location: NC Highway 12 County: Currituck
River Basin: Pasquotank
Date Received by LQS: November 29, 2011
Acres Approved: 4 Project Type: Revised
Project Description: Grading associated with the construction of 869 lf of roadway, 994 lf of waterline, 614 lf of gravity sewer and stormwater infrastructure as shown on the plan received by this office on October 4, 2011 and the additional information received by this office on November 29, 2011.

Dear Sir:

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 with Modifications. The modifications required for approval are listed on the attached pages. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as required by 15A NCAC 4B.0129, unless modified by other legislation.

Please be advised that 15A NCAC 4B.0118(a) requires that a copy of the approved erosion and sedimentation control plan be on file at the job site. Also, you should consider this letter as giving 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 Program is performance oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, it is determined that the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (G.S. 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to ensure compliance with the Act.

Pine Island Reserve, LLC
ATTN: Mr. Amit Gupta, Managing Member
December 13, 2011
Page 2

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 have submitted. You are required to file an amended form if there is any change in the information included on the form. In addition, 15A NCAC 4B.0127(c) requires that you notify this office of the proposed starting date for this project (using the enclosed Project Information Sheet). Please notify us if you plan to have a preconstruction conference.

Please be aware that your project will be covered by the enclosed NPDES General Stormwater Permit NCG010000 (Construction Activities). You should first become familiar with all of the requirements for compliance with the enclosed permit.

Sincerely,



Richard Peed, CPESC
Assistant Regional Engineer

Enclosures

cc w/o enc: Derek A. Dail, P.E., Quible & Associates, PC
Alton Hodge, Division of Water Quality

1. **AS THE DECLARED RESPONSIBLE PARTY, YOUR LEGAL RESPONSIBILITY** is to understand the Act and comply with the following minimum requirements of the Act:
 - A. In the event of a conflict between the requirements of the Sedimentation Pollution Control Act, the submitted plan and/or the contract specifications, the more restrictive requirement shall prevail;
 - B. The land-disturbing activity shall be conducted in accordance with the approved erosion and sedimentation control plan;
 - C. The **LATEST APPROVED** erosion and sediment control plan will be used during periodic unannounced inspections to determine compliance and a copy of the plan must be on file at the job site. If it is determined that the implemented plan is inadequate, this office may require the installation of additional measures and/or that the plan be revised to comply with state law;
 - D. All revisions, including those required by other local, state or federal agencies, which affect site layout, drainage patterns, limits of disturbance and/or disturbed acreage must be submitted to this office for approval a minimum of 15 days prior to the start of construction;
 - E. Revisions exceeding the approved scope of this project without prior approval of the plan showing the changes can be considered a violation. Failure to comply with any part of the approved plan or with any requirements of this program could result in appropriate legal action (civil or criminal) against the financially responsible party. Legal actions include Stop Work Orders and the assessing of a civil penalty of up to \$5000 for the initial violation plus an additional penalty of up to \$5000 per day for each day the site is out of compliance;
 - F. The **CERTIFICATE OF PLAN APPROVAL** must be posted at the primary entrance to the job site and remain until the site is permanently stabilized;
 - G. In cases of natural disaster related changes to the proposed land disturbing activity, all appropriate actions and adequate measure installations may be performed to prevent sediment damage, prior to submitting and receiving approval of the revised plan. A revised plan must be submitted for approval as soon as possible, but no later than 15 days after all emergency actions have been performed;

- H. Erosion and sediment control measures or devices are to be constructed and/or installed to safely withstand the runoff resulting from a 10 year storm event (25 year storm event in High Quality Zones). The 10 year storm event is generally equivalent to a storm producing 6.5 - 7 inches of rain in 24 hours or at the rate of 6.5 - 7 inches of rain in 1 hour, depending on the location of the project within the region;
- I. No earthen material is to be brought on or removed from the project site, until the off-site borrow and/or disposal sites are identified as part of the erosion control plan. If an off-site borrow and/or disposal site is to be utilized, prior to the start of construction submit the name and identification number (E&SCP # or Mine Permit #) using the enclosed Project Information Sheet;
- J. Buffer zone, sufficient to restrain visible sedimentation within the 25% of the width closest to the land disturbance, must be provided and maintained between the land-disturbing activity and any adjacent property or watercourse;
- K. In order to comply with the intent of the Act, the scheduling of the land-disturbing activities is to be such that both the area of exposure and the time between the land disturbance and the providing of a ground cover is minimized;
- L. Unless a temporary, manufactured, lining material has been specified, a clean straw mulch must be applied, at the minimum rate of 2 tons/acre, to all seeded areas. The mulch must cover at least 75% of the seeded area after it is either tacked, with an acceptable tacking material, or crimped in place;
- M. New or affected cut or filled slopes must be at an angle that can be retained by vegetative cover, AND **must be provided with a ground cover** sufficient to restrain erosion **within 21 calendar days of completion of any phase (rough or final) of grading (ANNUAL RYE GRASS IS NOT** in the **APPROVED** seeding specifications **NOR** is it an **ACCEPTABLE** substitute for the providing of a temporary ground cover);
- N. A **permanent ground cover**, sufficient restrain erosion, **must be provided** within the shorter of 15 working or 90 calendar days (if in a High Quality Zone, the shorter of 15 working or 60 calendar days) after completion of construction or development on any portion of the tract (**ANNUAL RYE GRASS IS NOT** in the **APPROVED** seeding specifications **NOR** is it an **ACCEPTABLE** substitute for the providing of a nurse cover for the permanent grass cover);

Erosion and Sedimentation Control Plan No. Curri-2012-001

Project Name: Pine Island Reserve – Track B

December 13, 2011

Modifications

Page 3

- O. All sediment and erosion control details for this project must conform to the standards as shown in the current Erosion & Sediment Control Planning and Design Manual; these details must be utilized for construction and incorporated in the plan. The manual can be found online at <http://www.dlr.enr.state.nc.us/pages/publications.html#eslinks>
- 2. Adequate and appropriate measures must be properly installed downstream, within the limits of disturbance, of any land disturbing activity to prevent sediment from leaving the limits of disturbance, entering existing drainage systems, impacting an on-site natural watercourse or adjoining property.

PROJECT INFORMATION SHEET

APPROVAL DATE: December 13, 2011

RESPONSIBLE PARTY: Pine Island Reserve, LLC

PROJECT NAME: Pine Island Reserve – Track B

COUNTY: Currituck NO.: Curri-2012-001

OFF-SITE BORROW
AND/OR DISPOSAL SITE: _____ NO.: _____

START-UP DATE: _____

CONTRACTOR: _____

ON-SITE CONTACT: _____

ON-SITE PHONE NO.: _____

OFFICE PHONE NO.: _____

**COMPLETE & RETURN THIS FORM
PRIOR TO THE START OF CONSTRUCTION TO:**

**N.C.D.E.N.R.
LAND QUALITY SECTION
ATTN: *Allison Ward*
943 WASHINGTON SQUARE MALL
WASHINGTON, NORTH CAROLINA 27889**

CERTIFICATE OF PLAN APPROVAL



The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment and Natural Resources in accordance with North Carolina General Statute 113A – 57 (4) and 113A – 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0107 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0127 (b).

PLANS ISLAND RESORTS - TRUCK B

N.C. Highway 12

Project Name and Location

Cumrick County

12/13/2011
Date of Plan Approval



R. H. McClain
Regional Engineer

Cum11-2012-001

Information to any real estate broker or title insurance company retained by either party, and the disclosing party's principals, agents, employees, attorneys, accountants, engineers, surveyors and consultants, and to such other persons whose assistance is reasonably necessary to carry out the transactions contemplated under this Agreement, but only if the disclosing party obtains the agreement of such recipient of the Confidential Information to abide by the provisions of this Section for the benefit of the non-disclosing party. The parties agree and acknowledge that any information required to be provided by one party to the other pursuant to Section 4 of this Agreement ("Deliveries") shall not be deemed to be Confidential Information. Further, any information made public by the disclosing party shall no longer be deemed to be Confidential Information. The provisions of this Section shall survive the Closing and the delivery of the Deed.

13. The Seller shall not be obligated or bound under this Agreement until the Seller's Board of Directors have approved this Agreement.
14. Seller, without incurring any cost or expenses in connection therewith, shall execute any and all reasonable authorizations to permit Buyer to act as "Agent" of the Seller with regard to any applications that may be required by the "Owner" of the Property in connection with the Buyer's plans for development and obtaining permits prior to Closing. Buyer agrees to provide Seller with a copy of all such applications that have been signed by Buyer as agent for Seller, within five (5) days after such application is signed by Buyer.

IN THE EVENT OF A CONFLICT BETWEEN THIS EXHIBIT "A" AND THE AGREEMENT FOR PURCHASE AND SALE OF REAL PROPERTY, THIS EXHIBIT "A" SHALL CONTROL.

BUYER:

OM MANAGEMENT GROUP, LLC

BY: 

Prem Gupta, Manager

Date: September 19, 2008

SELLER:

NATIONAL AUDUBON SOCIETY, INC.

BY: 

Date: September 25, 2008

NAME: John Fleker

TITLE: President