Major Subdivision Submittal Checklist – Construction Drawings

Staff will use the following checklist to determine the completeness of your application for construction drawings within ten business days of submittal. Please make sure all of the listed items are included. The Planning Director shall not process an application for further review until it is determined to be complete.

Major Subdivision

Submittal Checklist – Construction Drawings

Date Received: _____ TRC Date: _____

Project Name: Corolla Boat Club

Applicant/Property Owner: _____

Construction Drawings Submittal Checklist		
1	Complete Major Subdivision application or fee for amended drawings ($250)	X
2	Construction drawing with engineer's seal	X
3	Proposed landscape plan, including common areas, open space set-aside configuration and schedule, required buffers, fences and walls, and tree protection plan	X
4	Final stormwater management narrative and grading plan, if changed since preliminary plat	X
5	Proposed construction drawings (road, stormwater management infrastructure, utilities)	X
6	NCDEQ wastewater line extension permit, if applicable	X
7	NCDEQ wastewater plant construction permit, if applicable	
8	NCDEQ waterline extension permit, if applicable	X
9	NCDEQ stormwater permit including application, plan, and narrative with calculations	X
10	NCDEQ soil erosion and sedimentation control permit	X
11	NCDEQ CAMA major permit, if applicable	
12	NCDOT driveway permit and encroachment agreement, if applicable	
13	Wetland fill permit(s), if applicable	X
14	3 copies of plans	
15	1- 8.5" x 11" copy of plan	
16	2 hard copies of ALL documents	
17	1 PDF digital copy of all plans AND documents (ex. Compact Disk – e-mail not acceptable)	

For Staff Only

Pre-application Conference *(Optional)*

Pre-application Conference was held on _____ and the following people were present:

_____

_____

Comments

_____

_____

February 23, 2023

Mr. Carl Dunn
NCDENR
Division of Water Quality
943 Washington Square Mall
Washington, North Carolina 27889

Re: Low Density Stormwater Management Permit Application
Corolla Boat Club - North
Malia Drive, Corolla, NC

Dear Mr. Dunn;

On behalf of Outer Banks Ventures, Inc., we hereby submit for review and approval a Low Density Stormwater Management permit application package for the aforementioned project.

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

1. Review Fee check in the amount of $505.00
2. Two (2) copies (one original signature) of the Stormwater Management Permit Application Form
3. Two (2) copies (one original signature) of the Deed Restrictions & Protective Covenants Form
4. One (1) copy of the Low Density Supplement (original signature)
5. One (1) copy (original signature) of O&M Agreement (O&M EZ)
6. One (1) copy of Stormwater Management Plan Narrative with Calculations
7. (2) sets of the Construction Plans (one 24x36 copy and one 11x17 copy)

Please review and approve the attached information. If you have any questions, or if you require any additional information, please do not hesitate to contact me at (252) 202-3803.

Sincerely,

David A. Deel, P.E.

Encl: as stated

DEMLR USE ONLY		
Date Received	Fee Paid	Permit Number
Applicable Rules: ☐ Coastal SW – 1995 ☐ Coastal SW – 2008 ☐ Ph II - Post Construction *(select all that apply)* ☐ Non-Coastal SW- HQW/ORW Waters ☐ Universal Stormwater Management Plan ☐ Other WQ Mgmt Plan: _____		

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

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

This form may be photocopied for use as an original

I. GENERAL INFORMATION

1. Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):

   Corolla Boat Club- North

2. Location of Project (street address):

   South side of Malia Drive, approximately 255 feet west of the intersection of Malia Driva and NC 12

   City:Corolla County:Currituck Zip:27927

3. Directions to project (from nearest major intersection):

   Project is located on the South side of Malia Drive, approximately 255 feet west of the intersection of Malia Driva and NC 12.

4. Latitude:36° 19′ 43.67″ N Longitude:75° 49′ 08.17″ W of the main entrance to the project.

II. PERMIT INFORMATION:

1. a. Specify whether project is (check one): ☒New ☐Modification ☐ Renewal w/ Modification†

   †*Renewals with modifications also requires SWU-102 – Renewal Application Form*

   b. If this application is being submitted as the result of a **modification** to an existing permit, list the existing permit number n/a , its issue date (if known) , and the status of construction: ☐Not Started ☐Partially Completed* ☐ Completed* **provide a designer's certification*

2. Specify the type of project (check one):
   ☒Low Density ☐High Density ☐Drains to an Offsite Stormwater System ☐Other

3. If this application is being submitted as the result of a **previously returned application** or a **letter from DEMLR requesting a state stormwater management permit application**, list the stormwater project number, if assigned, _____ and the previous name of the project, if different than currently proposed, _____.

4. a. Additional Project Requirements (check applicable blanks; information on required state permits can be obtained by contacting the Customer Service Center at 1-877-623-6748):

   ☐CAMA Major ☒Sedimentation/Erosion Control: _____ ac of Disturbed Area

   ☐NPDES Industrial Stormwater ☐404/401 Permit: Proposed Impacts _____

   b. If any of these permits have already been acquired please provide the Project Name, Project/Permit Number, issue date and the type of each permit: _____

5. Is the project located within 5 miles of a public airport? ☒No ☐Yes

   If yes, see S.L. 2012-200, Part VI: http://portal.ncdenr.org/web/lr/rules-and-regulations

III. CONTACT INFORMATION

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

Applicant/Organization: OBX Ventures, Inc.

Signing Official & Title: Richard C. Willis, President

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

Street Address: 815E Ocean Trail

City: Corolla State: NC Zip: 27927

Mailing Address (*if applicable*): P.O. Box 549

City: Corolla State: NC Zip: 27927

Phone: ( ) Fax: ( )

Email: rcwillis@outerbanksventures.com

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

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

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

Property Owner/Organization: same as applicant

Signing Official & Title:

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

Street Address:

City: State: Zip:

Mailing Address (*if applicable*):

City: State: Zip:

Phone: ( ) Fax: ( )

Email: r

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

Other Contact Person/Organization:

Signing Official & Title:

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

Mailing Address:

City: State: Zip:

Phone: ( ) Fax: ( )

Email:

4. Local jurisdiction for building permits: Currituck County

Point of Contact: Laurie B LoCicero Phone #: (252) 232-6028

IV. PROJECT INFORMATION

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

   This project proposes to build 24.0% BUA in a 10.42 acre Project Area. Runoff from lots will be allowed to flow overland to the surrounding open space, wetland, and existing pond. Runoff from the proposed road will be treated via curb outlet swales located along the west edge of the BUA.

2. a. **If claiming vested rights**, identify the supporting documents provided and the date they were approved:
   - ☐ Approval of a Site Specific Development Plan or PUD — Approval Date: _____
   - ☐ Valid Building Permit — Issued Date: _____
   - ☐ Other: _____ — Date: _____

   b. **If claiming vested rights**, identify the regulation(s) the project has been designed in accordance with:
   - ☐ Coastal SW – 1995
   - ☐ Ph II – Post Construction

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

4. Total Property Area: 20.03 acres

5. Total Coastal Wetlands Area: 6.22 acres

6. Total Surface Water Area: 3.39 acres

7. Total Property Area (4) – Total Coastal Wetlands Area (5) – Total Surface Water Area (6) = Total Project Area+: 10.42 acres

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

8. Project percent of impervious area: (Total Impervious Area / Total Project Area) X 100 = 24.0 %

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

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

Basin Information	Drainage Area 1	Drainage Area __	Drainage Area __	Drainage Area __
Receiving Stream Name	Sanders Bay			
Stream Class *	SC			
Stream Index Number *	30-1-11			
Total Drainage Area (sf)	453,811			
On-site Drainage Area (sf)	453,811			
Off-site Drainage Area (sf)	0			
Proposed Impervious Area** (sf)	108,893			
% Impervious Area** (total)	9.31%			

Impervious** Surface Area	Drainage Area 1	Drainage Area __	Drainage Area __	Drainage Area __
On-site Buildings/Lots (sf)	54,502			
On-site Streets (sf)	25,080			
On-site Parking (sf)	3,311			
On-site Sidewalks (sf)	14,600			
Other on-site (sf)	3,000			
Future (sf)	8,400			
Off-site (sf)	0			
Existing BUA*** (sf)	0			
Total (sf):	108,893			

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

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

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

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

AutoCAD Area Routine

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

V. SUPPLEMENT AND O&M FORMS

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

VI. SUBMITTAL REQUIREMENTS

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

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

Initials

1. *Original and one copy* of the Stormwater Management Permit Application Form. DAD
2. *Original and one copy* of the signed and notarized Deed Restrictions & Protective Covenants Form. *(if required as per Part VII below)* DAD
3. *Original* of the applicable Supplement Form(s) (sealed, signed and dated) **and** O&M agreement(s) for each BMP. DAD
4. Permit application processing fee of $505 *payable to NCDENR.* (For an Express review, refer to http://www.envhelp.org/pages/onestopexpress.html for information on the Express program and the associated fees. Contact the appropriate regional office Express Permit Coordinator for additional information and to schedule the required application meeting.) DAD
5. A detailed narrative (one to two pages) describing the stormwater treatment/managementfor the project. This is required in addition to the brief summary provided in the Project Information, item 1. DAD
6. A USGS map identifying the site location. If the receiving stream is reported as class SA or the receiving stream drains to class SA waters within ½ mile of the site boundary, include the ½ mile radius on the map. DAD
7. Sealed, signed and dated calculations (one copy). DAD
8. Two sets of plans folded to 8.5" x 14" (sealed, signed, & dated), including: DAD
   a. Development/Project name.
   b. Engineer and firm.
   c. Location map with named streets and NCSR numbers.
   d. Legend.
   e. North arrow.
   f. Scale.
   g. Revision number and dates.
   h. Identify all surface waters on the plans by delineating the normal pool elevation of impounded structures, the banks of streams and rivers, the MHW or NHW line of tidal waters, and any coastal wetlands landward of the MHW or NHW lines.
      - Delineate the vegetated buffer landward from the normal pool elevation of impounded structures, the banks of streams or rivers, and the MHW (or NHW) of tidal waters.
   i. Dimensioned property/project boundary with bearings & distances.
   j. Site Layout with all BUA identified and dimensioned.
   k. Existing contours, proposed contours, spot elevations, finished floor elevations.
   l. Details of roads, drainage features, collection systems, and stormwater control measures.
   m. Wetlands delineated, or a note on the plans that none exist. (Must be delineated by a qualified person. Provide documentation of qualifications and identify the person who made the determination on the plans.
   n. Existing drainage (including off-site), drainage easements, pipe sizes, runoff calculations.
   o. Drainage areas delineated (included in the main set of plans, not as a separate document).

p. Vegetated buffers (where required).

9. Copy of any applicable soils report with the associated SHWT elevations (Please identify elevations in addition to depths) as well as a map of the boring locations with the existing elevations and boring logs. Include an 8.5"x11" copy of the NRCS County Soils map with the project area clearly delineated. For projects with infiltration BMPs, the report should also include the soil type, expected infiltration rate, and the method of determining the infiltration rate. **(Infiltration Devices submitted to WiRO:** *Schedule a site visit for DEMLR to verify the SHWT prior to submittal, (910) 796-7378.)* DAD
10. A copy of the most current property deed. Deed book: 1161 Page No: 734 DAD
11. For corporations and limited liability corporations (LLC): Provide documentation from the NC Secretary of State or other official documentation, which supports the titles and positions held by the persons listed in Contact Information, item 1a, 2a, and/or 3a per 15A NCAC 2H.1003(e). The corporation or LLC must be listed as an active corporation in good standing with the NC Secretary of State, otherwise the application will be returned. http://www.secretary.state.nc.us/Corporations/CSearch.aspx DAD

VII. DEED RESTRICTIONS AND PROTECTIVE COVENANTS

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

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

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

VIII. CONSULTANT INFORMATION AND AUTHORIZATION

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

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

Consulting Firm: Deel Engineering, PLLC

Mailing Address: P.O. Box 3901

City: Kill Devil Hills State: NC Zip: 27964

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

Email: dadeeleng@gmail.com

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

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

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

Signature:_____ Date:_____

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

SEAL

My commission expires_____

X. APPLICANT'S CERTIFICATION

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

Signature:_____ Date: 2/20/23

I, Marcie R Respass, a Notary Public for the State of NC, County of Dare, do hereby certify that Rick Willis personally appeared before me this 20 day of February 2023 and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal, Marcie R Respass

MARCIE R RESPASS
NOTARY PUBLIC
Dare County
North Carolina
My Commission Expires 10/27/2024

SEAL

My commission expires 10/27/2024

PHASE 1 PROPERTY AREA

20.03 AC.

SURFACE WATERS/CAMA WETLANDS & LAKE AREA

9.61 AC.

CURRITUCK SOUND

NC GRID NAD83(2011)

NORTH

CAMA WETLAND LINE CONFIRMED BY DCM 5-12-22

404 WETLAND LINE CONFIRMED BY ACOE 4-23-20

404 WETLAND LIN (2017)

NC 12

MALLARD

PRELIMINARY

NOT RELEASED FOR CONSTRUCTION

150 0 75 150 300

1"=150'

GRAPHIC SCALE

BISSELL PROFESSIONAL GROUP

Bissell Professional Group
Firm License # C-956
512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

Engineers, Planners, Surveyors and Environmental Specialists

PROJECT: COROLLA BOAT CLUB
PHASE 1

COROLLA CURRITUCK NORTH CAROLINA

PROJECT AREA MAP

REVISIONS

NO.	DATE	DESCRIPTION	BY

DATE: 2-17-23	SCALE: 1"=150'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: DMK

SHEET: 1 OF 1

CAD FILE: 459600B3

PROJECT NO: 4596

Low Density Residential Subdivisions
Deed Restrictions & Protective Covenances

In accordance with Title 15 NCAC 2H.1000 and S.L. 2006-246, the Stormwater Management Regulations, deed restrictions and protective covenants are required for **Low Density Residential Subdivisions** where lots will be subdivided and sold. Deed restrictions and protective covenants are necessary to ensure that the development maintains a "built-upon" area consistent with the applicable regulation governing the density level.

I, Richard C. Willis, President, OBX Ventures, Inc., acknowledge and affirm by my signature below, that I will cause the following deed restrictions and protective covenants to be recorded for Corolla Boat Club – North prior to the sale of any lot:

1. *The following covenants are intended to ensure ongoing compliance with State Stormwater Management Permit Number_____, as issued by the Division of Energy, Mineral and Land Resources under the Stormwater Management Regulations.*
2. *The State of North Carolina is made a beneficiary of these covenants to the extent necessary to maintain compliance with the stormwater management permit.*
3. *These covenants are to run with the land and be binding on all persons and parties claiming under them.*
4. *The covenants pertaining to stormwater may not be altered or rescinded without the express written consent of the State of North Carolina, Division of Energy, Mineral and Land Resources.*
5. *Alteration of the drainage as shown on the approved plan may not take place without the concurrence of the Division of Energy, Mineral and Land Resources.*
6. *The maximum built-upon area per lot, in square feet, is as listed below:*

LOT NO.	LOT AREA (ft^2)	Max. Allowable Built-Upon Area (BUA) (ft^2)
1	17,946	5,384
2	17,375	5,213
3	16,668	5,000
4	16,182	4,855
5	17,561	5,268
6 (Commercial)	44,280	28,782

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.

Low Density Residential Subdivisions
Deed Restrictions & Protective Covenances

7. *In the case of a lot within CAMA's regulated AEC, where the Division of Coastal Management calculates a different maximum allowable built-upon area for that lot than is shown herein, the governing maximum built-upon area for that lot shall be the most restrictive of the two.*
8. *Filling in or piping of any vegetative conveyances (ditches, swales, etc.) associated with the development except for average driveway crossings is strictly prohibited by any persons.*
9. *Each lot will maintain a 50 foot wide vegetated buffer between all impervious areas and surface waters.*
10. *All roof drains shall terminate at least 50 foot from the mean high water mark of surface waters.*

Signature: _____ Date: 2/20/23

I, Marcie R. Respass, a Notary Public in the

State of NC, County of Dare,

do hereby certify that Rick Willis personally appeared

before me this the 20 day of February, 2023, and acknowledge

the due execution of the foregoing instrument. Witness my hand and official seal,

Marcie R Respass
Signature

SEAL

My Commission expires 10/27/2024

MARCIE R RESPASS
NOTARY PUBLIC
Dare County
North Carolina
My Commission Expires 10/27/2024

Operation & Maintenance Agreement

Project Name:	**Corolla Boat Club - North**
Project Location:	**Malia Drive, Corolla, Currituck Co, NC**

Cover Page

Maintenance records shall be kept on the following SCM(s). This maintenance record shall be kept in a log in a known set location. Any deficient SCM elements noted in the inspection will be corrected, repaired, or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the pollutant removal efficiency of the SCM(s).

The SCM(s) on this project include (check all that apply & corresponding O&M sheets will be added automatically):

Infiltration Basin	Quantity:		Location(s):	
Infiltration Trench	Quantity:		Location(s):	
Bioretention Cell	Quantity:		Location(s):	
Wet Pond	Quantity:		Location(s):	
Stormwater Wetland	Quantity:		Location(s):	
Permeable Pavement	Quantity:		Location(s):	
Sand Filter	Quantity:		Location(s):	
Rainwater Harvesting	Quantity:		Location(s):	
Green Roof	Quantity:		Location(s):	
Level Spreader - Filter Strip	Quantity:		Location(s):	
Proprietary System	Quantity:		Location(s):	
Treatment Swale	Quantity:	1	Location(s):	Along west side of Development
Dry Pond	Quantity:		Location(s):	
Disconnected Impervious Surface	Present:	No	Location(s):	
User Defined SCM	Present:	No	Location(s):	
Low Density	Present:	Yes	Type:	Dispersed flow only

I acknowledge and agree by my signature below that I am responsible for the performance of the maintenance procedures listed for each SCM above, and attached O&M tables. I agree to notify NCDEQ of any problems with the system or prior to any changes to the system or responsible party.

Responsible Party:	**Richard C. Willis**
Title & Organization:	**President, Outer Banks Ventures, Inc.**
Street address:	**815E Ocean Trail**
City, state, zip:	**Corolla, NC 27927**
Phone number(s):	
Email:	**rcwillis@outerbanksventures.com**

Signature: _____ Date: 2/20/25

I, Marcie R Respass, a Notary Public for the State of NC

County of Dare, do hereby certify that Rick Willis

personally appeared before me this 20 day of February 2023 and

acknowledge the due execution of the Operations and Maintenance Agreement.

Witness my hand and official seal, Marcie R Respass.

MARCIE R RESPASS
NOTARY PUBLIC
Dare County
North Carolina
My Commission Expires 10/27/2024

Seal

My commission expires 10/27/2024

Treatment Swale Maintenance Requirements

Important operation and maintenance procedures:

- The drainage area of the grassed swale will be carefully managed to reduce the sediment load to the grassed swale.
- After the initial fertilization to establish the grass in the swale, fertilizer will not be applied to the treatment swale.

The grassed swale will be inspected **quarterly** . Records of operation and maintenance shall be kept in a known set location and shall be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problem:	How to remediate the problem:
The entire length of the swale	Trash/debris is present.	Remove the trash/debris.
	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, re-sod (or plant with other appropriate species) and water until established. Provide lime and a one-time fertilizer application.
	Sediment covers the grass at the bottom of the swale.	Remove sediment and dispose in an area that will not impact streams or SCMs. Re-sod if necessary.
	Vegetation is too short or too long.	Maintain grassed vegetation such that the swale or vegetated area does not erode during the peak flow from the 10-year storm
	Grass is dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if necessary.
	Trees and/or other woody vegetation are present in the treatment swale.	Remove the trees and woody vegetation from the treatment swale, regrade the treatment swale if necessary and re-establish grass as shown on the approved plans.
The outlet device (if applicable)	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged	Repair or replace the outlet device.
The receiving water	Erosion or other signs of damage have occurred at the outlet.	Repair the damage and improve the flow dissipation structure.
	Discharges from the treatment swale are causing erosion or sedimentation in the receiving water.	Contact the local NCDEQ Regional Office.

Low Density Maintenance Requirements

Important maintenance procedures:

- The drainage area to the vegetated conveyance or vegetated receiving area will be carefully managed to reduce the sediment load to the vegetated conveyance or vegetated receiving area
- After the initial fertilization to establish the grass in the vegetated conveyance or the vegetated receiving area, fertilizer will not be applied to the vegetated receiving areas.

The vegetated conveyance or vegetated receiving area will be inspected **quarterly** . Records of operation and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

SCM element:	Potential problem:	How to remediate the problem:
Vegetation	Vegetation is too short or too long.	Maintain grassed vegetation such that the swale or vegetated area does not erode during the peak flow from the 10-year storm
Vegetated receiving areas	Trash/debris is present.	Remove the trash/debris.
	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then re-sod (or plant with other appropriate species) and water until established. Provide lime and a one-time fertilizer application.
The outlet device (if applicable)	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged	Repair or replace the outlet device.
The receiving water	Erosion or other signs of damage have occurred at the outlet.	Repair the damage and improve the flow dissipation structure.
	Discharges from the site are causing erosion or sedimentation in the receiving water.	Contact the local NCDEQ Regional Office.

SUPPLEMENT-EZ COVER PAGE

FORMS LOADED

PROJECT INFORMATION		
1	Project Name	**Corolla Boat Club - North**
2	Project Area (ac)	10.42
3	Coastal Wetland Area (ac)	6.22
4	Surface Water Area (ac)	3.39
5	Is this project High or Low Density?	Low
6	Does this project use an off-site SCM?	No

COMPLIANCE WITH 02H .1003(4)		
7	Width of vegetated setbacks provided (feet)	30
8	Will the vegetated setback remain vegetated?	Yes
9	If BUA is proposed in the setback, does it meet NCAC 02H.1003(4)(c-d)?	N/A
10	Is streambank stabilization proposed on this project?	No

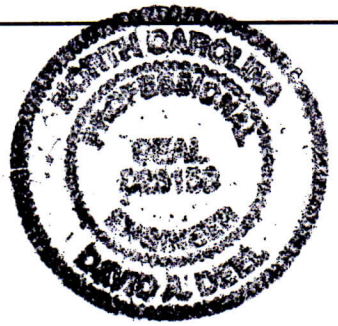
NUMBER AND TYPE OF SCMs:		
11	Infiltration System	
12	Bioretention Cell	
13	Wet Pond	
14	Stormwater Wetland	
15	Permeable Pavement	
16	Sand Filter	
17	Rainwater Harvesting (RWH)	
18	Green Roof	
19	Level Spreader-Filter Strip (LS-FS)	
20	Disconnected Impervious Surface (DIS)	
21	Treatment Swale	
22	Dry Pond	
23	StormFilter	
24	Silva Cell	
25	Bayfilter	
26	Filterra	

FORMS LOADED

DESIGNER CERTIFICATION		
27	Name and Title:	David A. Deel, P.E.
28	Organization:	Deel Engineering, PLLC
29	Street address:	322 West Wilkinson Street
30	City, State, Zip:	Kill Devil Hills, NC 27948
31	Phone number(s):	(252)202-3803
32	Email:	dadeeleng@gmail.com

Certification Statement:
I certify, under penalty of law that this Supplement-EZ form and all supporting information were prepared under my direction or supervision; that the information provided in the form is, to the best of my knowledge and belief, true, accurate, and complete; and that the engineering plans, specifications, operation and maintenance agreements and other supporting information are consistent with the information provided here.

Designer



Seal

Signature of Designer

2/23/2023

Date

DRAINAGE AREAS

1	Is this a high density project?	No
2	If so, number of drainage areas/SCMs	0
3	Does this project have low density areas?	Yes
4	If so, number of low density drainage areas	1
5	Is all/part of this project subject to previous rule versions?	No

FORMS LOADED

	DRAINAGE AREA INFORMATION	Entire Site	LD 1
4	Type of SCM	n/a	n/a
5	Total drainage area (sq ft)	453,811	453,811
6	Onsite drainage area (sq ft)	453,811	453,811
7	Offsite drainage area (sq ft)	0	0
8	Total BUA in project (sq ft)	108893 sf	108893 sf
9	New BUA on subdivided lots (subject to permitting) (sq ft)	54502 sf	54502 sf
10	New BUA not on subdivided lots (subject to permitting) (sf)	54391 sf	54391 sf
11	Offsite BUA (sq ft)	sf	sf
12	Breakdown of new BUA not on subdivided lots:		
	- Parking (sq ft)	3311 sf	3311 sf
	- Sidewalk (sq ft)	14600 sf	14600 sf
	- Roof (sq ft)	sf	sf
	- Roadway (sq ft)	25080 sf	25080 sf
	- Future (sq ft)	8400 sf	8400 sf
	- Other, please specify in the comment box below (sq ft)	3000 sf	3000 sf
13	New infiltrating permeable pavement on subdivided lots (sq ft)	sf	sf
14	New infiltrating permeable pavement not on subdivided lots (sq ft)	sf	sf
15	Existing BUA that will remain (not subject to permitting) (sq ft)	sf	sf
16	Existing BUA that is already permitted (sq ft)	sf	sf
17	Existing BUA that will be removed (sq ft)	sf	sf
18	Percent BUA	24%	24%
19	Design storm (inches)	1.5 in	1.5 in
20	Design volume of SCM (cu ft)	n/a	n/a
21	Calculation method for design volume	n/a	n/a

	ADDITIONAL INFORMATION
22	Please use this space to provide any additional information about the drainage area(s):

Item 12: "Other" refers to miscellaneous coverage for things like the postal box pad.

LOW DENSITY

DESIGN REQUIREMENTS FOR LOW DENSITY PROJECTS FROM 02H .1003		
1	Is project below density thresholds set forth in the applicable stormwater rule?	Yes
2	Does project maximize dispersed flow and minimize channelization of flow?	Yes
3	Has the use of piping been minimized per .1003(2)(c)?	Yes
4	Side slopes of the vegetated conveyances (H:V)	3 sf
5	Maximum velocity in the vegetated conveyances during the 10-year storm?	1.45
6	Are curb outlet swales proposed?	Yes
7	Maximum longitudinal slope of curb outlet swale(s) (%)	1%
8	Bottom width of curb outlet swale(s) (feet)	2 ft
9	Maximum side slope of curb outlet swale(s) (H:V)	3:1
10	Minimum length of curb outlet swale(s) (feet)	100 ft
11	Are treatment swales used instead of curb outlet swales?	No
12	Is stormwater released at the edge of the setback as dispersed flow?	Yes
13	Have stormwater outlets been designed to prevent downslope erosion?	Yes
14	Are variations to rule .1003 proposed?	Yes
ADDITIONAL INFORMATION		
15	Please use this space to provide any additional information about this low density project:	

Item #14: Please see SWM Narrative Page 3 for documentation of use of peak flow mitigation wet pond within the "curb outlet swale" outfall / treatment train. Please see E&S Calcs in the Narrative Appendix for documentation of flow rates & velocities for swales and all conveyances.

Swale #	Drainage Area (ac)	BUA (ac)	Pervious area (ac)	C	Q (cfs)	Slope (%)	V_{allow} (fps)	V_{actual} (fps)	Flow depth (ft)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
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26									
27									
28									
29									
30									

Stormwater Management Plan Narrative

Corolla Boat Club - North
Mixed Use Development
Low-Density NCDEQ Submittal
2/23/2023

General

The Corolla Boat Club project is a proposed mixed use development consisting of five single family residential lots and one commercial lot with associated roadway and utility infrastructure. The project will be located within a 10.42 acre Project Area which is contained within a larger 36.07 acre parcel located in Corolla, NC (the remaining portion of the parcel is to remain undeveloped at this time). The project will be limited to a maximum of 24% Built-Upon-Area (BUA) and, accordingly, a Low Density Stormwater Permit is being pursued for this Project.

The following narrative will detail the proposed stormwater management plan for the Corolla Boat Club – North development. As per state regulations, a low density stormwater permit is being pursued to cover this Project Area, restricting the project area to 24% maximum BUA (see tabulation of Allowable Lot Coverage in Appendix A of this Narrative). The following narrative, application and calculations will demonstrate the parameters of this design in compliance with NCDEQ low density stormwater permit requirements.

Summary of Existing Conditions

The project site consists of a 10.42 acre Project Area contained within a larger 36.07 acre parcel immediately southwest of the intersection of Malia Drive and Caroline Court (approximately 255' west of the intersection of Malia Drive and NC 12) in Corolla, NC. The Project Area currently consists of an undeveloped soundfront parcel with a large pond and coastal wetland fringe. Drainage within the parcel generally flows overland towards the wetland fringe or towards the pond. The pond accepts runoff from surrounding off-site areas and overflows via overland flow into the wetland fringe, and ultimately into Currituck Sound. Soils across the site consist primarily of fine sand.

Summary of Proposed Conditions

The Corolla Boat Club – North project is a proposed mixed use development consisting of five single family residential lots and one commercial lot with associated roadway and utility infrastructure. The total coverage (BUA) requested under the permit is 24.0% impervious coverage.

Runoff from the bulk of the Project Area will be allowed to sheet flow overland to either a collector swale running along the western edge of the developed area or overland to the existing pond. Runoff from the interior roadway will be collected via curb & gutter and discharged to the western collector swale which will function as a curb outlet swale, with runoff from the small parking area collected via curb & gutter and discharged to the existing pond. The collector swale will promote filtration by the maintained vegetation and infiltration into the subsoil and will ultimately discharge to the existing pond. Runoff from all developed areas will be conveyed to the pond in order to accommodate Currituck County's peak flow reduction requirement (pond is not designed using SCM standards, but will provide additional treatment and detention of small and large flows).

Stormwater Collection, Treatment, Storage, and Disposal

Low Density Project:

The Corolla Boat Club – North is being permitted as a Low Density Project. Impervious coverage is limited to less than 24% of the total project area, runoff is directed across vegetated areas to the maximum extent feasible, and primary conveyance is via overland flow and vegetated swale. Runoff from road improvements will be collected in curb outlet / pipe systems and discharged to the perimeter collection swale. There is no storage component associated with a Low Density Project but a significant pond is utilized to meet Currituck County's peak flow mitigation requirements. Treatment of stormwater is achieved via filtration by the vegetation, filtration by the soils when runoff infiltrates, and evapotranspiration by the vegetation.

Wet Pond:

Although NCDEQ requirements do not dictate the installation of SCM's, an existing large wet pond will be utilized to meet the requirements of Currituck County's Stormwater Management Ordinance.

The following section provides a general description of the functioning of this wet pond for informational purposes only.

Collection

The stormwater runoff will be collected and directed via site grading, limited storm piping, and vegetated swales to the wet basin.

Treatment

The proposed wet basin will offer several methods of stormwater runoff treatment prior to release. Runoff from developed areas will enter the basins via vegetated swales. The combination of limited, disperse impervious coverage and vegetated conveyances provide the treatment associated with a Low Density Permit and filtration / infiltration within the swale system should be considered the primary treatment method for the system. Additional treatment is provided within the wet pond system due to settling within the basin, filtration & biological processes along the pond vegetated fringe, and infiltration into the subsurface around the pond.

Storage

There are no storage requirements associated with a Low Density Permit. The pond is designed to store the 10-year runoff from the surrounding drainage area at a depth of 1.36' above normal pool elevation.

Disposal

Runoff that does not infiltrate or evapotranspirate within the system will be discharged via two weirs to the existing fringe wetlands located along the western edge of the pond.

Low Density Compliance

The proposed project conforms to the Low Density requirements as outlined below.

V. In addition to the requirements of Rule .1019, the development must also comply with the following general low density design requirements set forth by Rule .1003(2):

a. The project shall not exceed the low density threshold of 24% as noted in III above.

b. The project shall be designed to maximize dispersed flow through vegetated areas and minimize channelization of flow.

c. Stormwater that cannot be released as dispersed flow shall be transported by vegetated conveyances. A minimal amount of non-vegetated conveyances for erosion protection or piping for driveways or culverts under a road shall be allowed by the permitting authority when it cannot be avoided. Vegetated conveyances shall meet the following requirements:

i. Side slopes shall be no steeper than 3:1

ii. The conveyance shall carry the peak flow from a 10-year storm at a non-erosive velocity

d. Low Density projects may use curb and gutter with outlets to convey stormwater to grassed swales or vegetated areas. Requirements for these curb outlet systems shall be as follows:

i. The receiving curb outlet swale or vegetated area shall carry the peak flow from a 10-year storm at a non-erosive velocity.

ii. The longitudinal slope of the swale or vegetated area shall not exceed 5%, except where not practical due to physical conditions.

iii. The swales cross-section shall be trapezoidal with a minimum bottom width of 2 feet

iv. The side slopes of the swale or vegetated area shall be no steeper than 3:1.

v. The minimum length of the swale or vegetated area shall be 100 feet

vi. Treatment swales designed in accordance with Rule .1061 may be used in lieu of the above.

Alternative Compliance to rule .1003(2)V.d.: In lieu of a swale at the parking lot curb outlet, a wet pond having a flow length in excess of 100 feet is provided.

Watershed Classification

The project drains to Sander's Bay , which is classified as having SC waters (Stream Index #30-1-11). Accordingly, the project is being permitted under rules that allow up to a maximum built-upon-area of 24%.

Soils

Information collected on site indicates that the soils found throughout this site are composed primarily of fine sand. These soil types will have very low to moderate permeability. These findings generally correlate with the description mapped and discussed in the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Currituck County, North Carolina, which map the soil for this site as follows:

CoB – Corolla fine sand, Permeability is very high
Os – Osier fine sand, Permeability is very high

A soils report has been included in the appendix of this narrative. Water levels in the proposed Wet Pond will be regulated via the weir structure.

Calculations

Calculations requested on the Low Density Supplement sheet have been provided on the Supplement and attachment.

APPENDIX A

Coverage Tabulations

Corolla Boat Club
Low Density Stormwater Tabulations
2/22/2023

Low Density Boundary (sf):	872,589	20.03	(ac)	
Coastal Wetland Area (sf):	271,117	6.22	(ac)	
Open Water (Pond & Sound) (sf):	147,661	3.39	(ac)	
Total Project Area (sf):	453,811	10.42	(ac)	
24% Max Coverage Allowed (SC Watershed) (sf):		108,915	2.50	(ac)

Lot#	Lot Area (sf)	Proposed Coverage (sf)
1	17,946	5,384
2	17,375	5,213
3	16,668	5,000
4	16,182	4,855
5	17,561	5,268
6 (Comm)	44,280	28,782
Total:	130,012	54,502

	Proposed Coverage (sf)	
On-site Buildings / Lots (sf)	54,502	
On-site Streets (sf)	25,080	
On-site Parking (sf)	3,311	
On-site Sidewalks (sf)	14,600	
Other on-site (sf)	3,000	
Future (sf)	8,400	
Off-site (sf)	0	
Existing BUA (sf)	0	
Total (sf):	**108,893**	24.00%

Corolla Boat Club - North
Coverage Table
2/22/2023

Basin Information	DA 1 (Infil. Basin)
Receiving Stream Name	Sander's Bay
Stream Class	SC
Stream Index Number	30-1-11
Total Drainage Area (sf)	453,811
On-site Drainage Area (sf)	453,811
Off-site Drainage Area (sf)	-
Proposed Impervious Area (sf)	108,893
% Impervious Area (total)	24.0%

Impervious Surface Area	DA 1 (Infil. Basin)
On-site Buildings / Lots (sf)	54,502
On-site Streets (sf)	25,080
On-site Parking (sf)	3,311
On-site Sidewalks (sf)	14,600
Other on-site (sf)	3,000
Future (sf)	8,400
Off-site (sf)	-
Existing BUA (sf)	-
Total (sf):	108,893

APPENDIX B

Aerial Imagery - GIS

Mapping	Search

Direction	
City	COROLLA
Subdivision	
Legal Description	PARCEL 10 OPEN SPACE PLAT CAB K-49
Township	POPLAR BRANCH BCH
Owner Name 1	OUTER BANKS VENTURES INC
Owner Name 2	
Owner Name 3	
Billing Address	PO BOX 549
Billing Address Continued	
Billing City	COROLLA
Billing State	NC
Billing ZIP Code	27927
Acreage (Legal)	36.19
Acreage (GIS)	36.07
Tax Value: Land	803500
Tax Value: Buildings	0
Tax Value: Total	803500
Tax Value: Deferred	0
Last Sale Date	2011-05-10
Last Sale Price	
Qualified Sale?	
Deed Book	1161
Deed Page	734
Plat Cabinet	K
Plat Slide	49
Data Date	2022-08-08
Owner Name 4	
Owner Name 5	

PHASE 1 PROPERTY AREA

20.03 AC.

SURFACE WATERS/CAMA WETLANDS & LAKE AREA

9.61 AC.

CURRITUCK SOUND

NC GRID NAD83(2011)

NORTH

CAMA WETLAND LINE CONFIRMED BY DCM 5-12-22

404 WETLAND LINE CONFIRMED BY ACOE 4-23-20

404 WETLAND LIN (2017)

NC 12

MALLARD DR

PRELIMINARY

NOT RELEASED FOR CONSTRUCTION

150 0 75 150 300

1"=150'

GRAPHIC SCALE

BISSELL PROFESSIONAL GROUP

Bissell Professional Group
Firm License # C-956
512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

Engineers, Planners, Surveyors and Environmental Specialists

PROJECT: *COROLLA BOAT CLUB*

PHASE 1

COROLLA *CURRITUCK* *NORTH CAROLINA*

PROJECT AREA MAP

REVISIONS			
NO.	DATE	DESCRIPTION	BY
.	.	.	.

DATE: 2-17-23	SCALE: 1"=150'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: DMK

SHEET: 1 OF 1

CAD FILE: 459600B3

PROJECT NO: 4596

APPENDIX C

Soils Map & SCS Data

United States Department of Agriculture

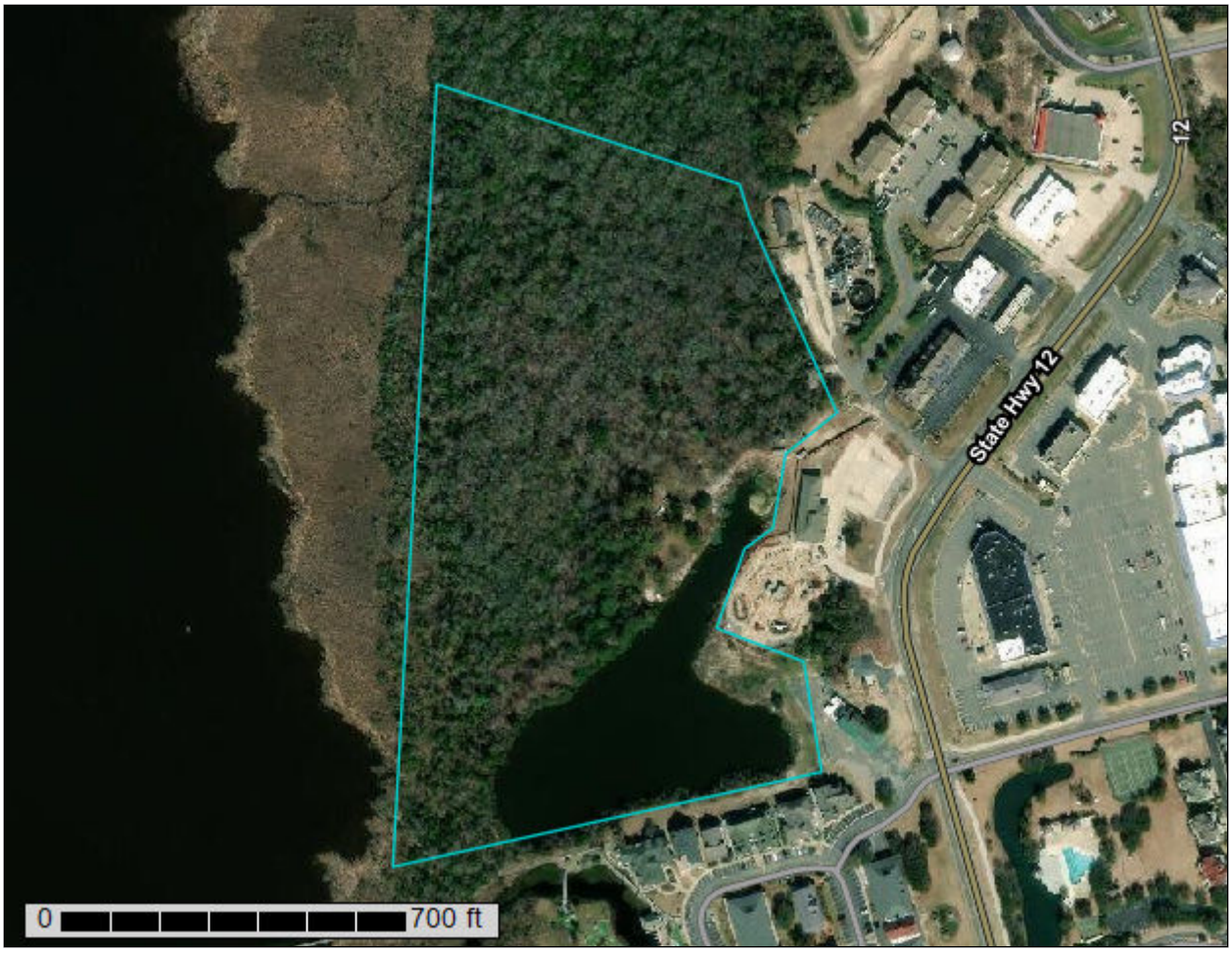
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Currituck County, North Carolina

Corolla Boat Club



August 24, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

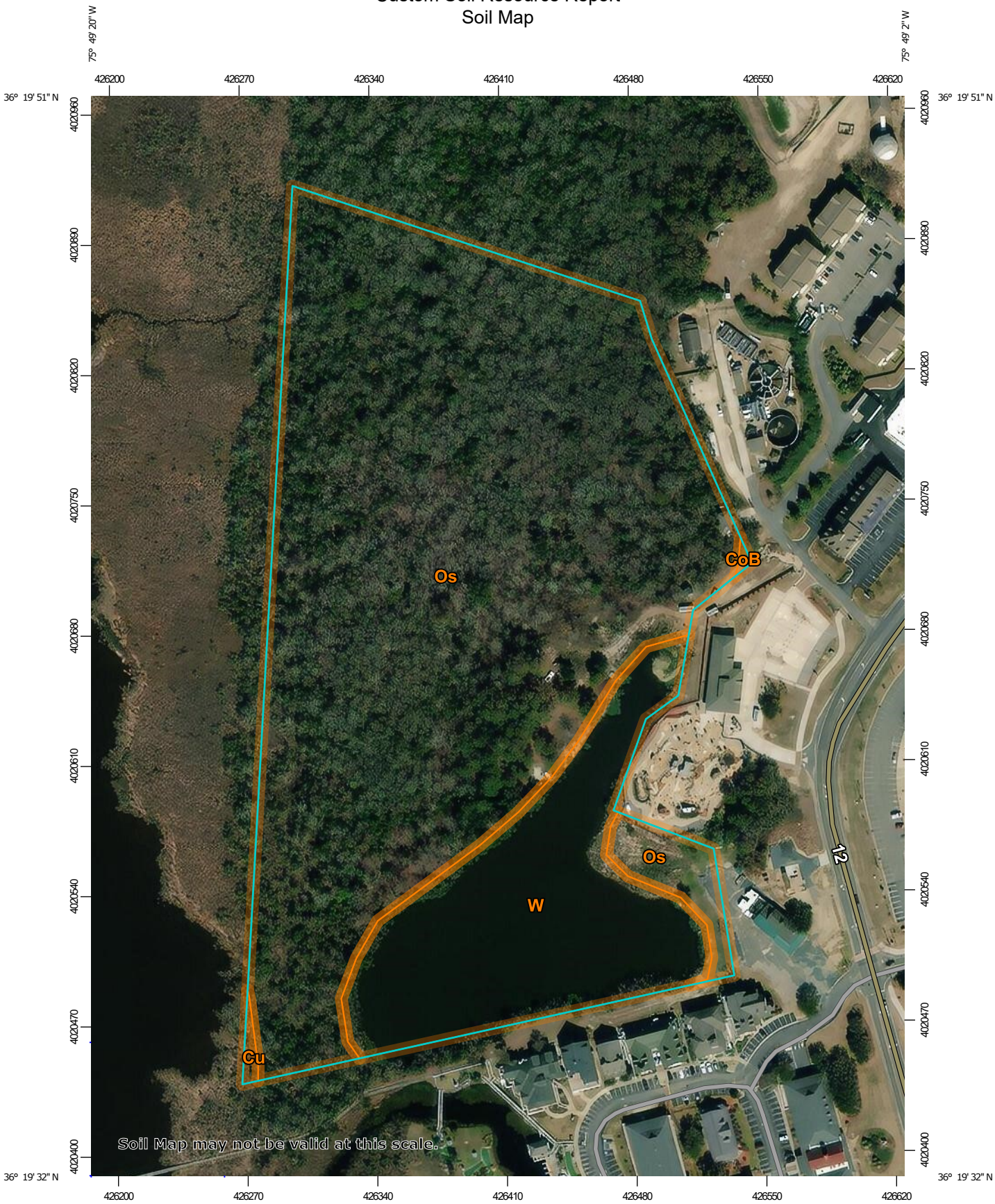
alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,830 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Currituck County, North Carolina
Survey Area Data: Version 21, Jan 21, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 19, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CoB	Corolla fine sand, 0 to 6 percent slopes	0.0	0.1%
Cu	Currituck mucky peat	0.1	0.3%
Os	Osier fine sand	18.9	79.5%
W	Water	4.8	20.2%
Totals for Area of Interest		**23.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Currituck County, North Carolina

CoB—Corolla fine sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 3rng
Elevation: 0 to 10 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Corolla and similar soils: 85 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Corolla

Setting

Landform: Troughs on barrier islands
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 3 inches: fine sand
C - 3 to 26 inches: fine sand
Ab - 26 to 32 inches: sand
Cg - 32 to 80 inches: sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Duckston

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Carteret, high

Percent of map unit: 2 percent
Landform: Tidal marshes
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Cu—Currituck mucky peat

Map Unit Setting

National map unit symbol: 3rnj
Elevation: 0 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Currituck, tidal, and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Currituck, Tidal

Setting

Landform: Tidal marshes
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material over sandy fluviomarine deposits

Typical profile

Oe - 0 to 14 inches: mucky peat
Oa - 14 to 28 inches: muck
Cg - 28 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)

Depth to water table: About 0 to 12 inches
Frequency of flooding: Very frequent
Frequency of ponding: None
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Os—Osier fine sand

Map Unit Setting

National map unit symbol: 3rnw
Elevation: 0 to 20 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Osier, undrained, and similar soils: 80 percent
Osier, drained, and similar soils: 10 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Osier, Undrained

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 3 inches: fine sand
Cg - 3 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Description of Osier, Drained

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Eolian sands and/or beach sand

Typical profile

A - 0 to 3 inches: fine sand
Cg - 3 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Conaby, undrained

Percent of map unit: 5 percent
Landform: Depressions, pocosins
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydric soil rating: No

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APPENDIX D

USGS Map Excerpt

Mapping	Search

Direction	
City	COROLLA
Subdivision	
Legal Description	PARCEL 10 OPEN SPACE PLAT CAB K-49
Township	POPLAR BRANCH BCH
Owner Name 1	OUTER BANKS VENTURES INC
Owner Name 2	
Owner Name 3	
Billing Address	PO BOX 549
Billing Address Continued	
Billing City	COROLLA
Billing State	NC
Billing ZIP Code	27927
Acreage (Legal)	36.19
Acreage (GIS)	36.07
Tax Value: Land	803500
Tax Value: Buildings	0
Tax Value: Total	803500
Tax Value: Deferred	0
Last Sale Date	2011-05-10
Last Sale Price	
Qualified Sale?	
Deed Book	1161
Deed Page	734
Plat Cabinet	K
Plat Slide	49
Data Date	2022-08-08
Owner Name 4	
Owner Name 5	

APPENDIX E

PROPERTY DEED

Doc ID: 002318740005 Type: CRP
Recorded: 05/10/2011 at 04:43:42 PM
Fee Amt: $31.00 Page 1 of 5
Excise Tax: $0.00
Currituck County, NC
Charlene Y Dowdy Register of Deeds
BK 1161 PG 734-738

164

Tax Collector Certification That No Delinquent Taxes Are Due. Date 5/10/11 By TCS: Certification expires Jan. 6th of the year following certification date.

NORTH CAROLINA NON-WARRANTY DEED

"Developer's Rights Only & Fee Simple Rights to Underlying Lands of Malia Drive"

LT#:
Land Transfer Tax: $0
Excise Tax: $0

Parcel Identifier Nos: **0116000000900000, 011600000100000**
Verified by Currituck County on the ____ day of_____, 2011
By:_____

Mail/Box to: Kellogg & Evans, PA (22237)
This instrument was prepared by: Daniel D. Khoury, Esq., Vandeventer Black LLP, 305 Essex Square, Manteo, NC 27954
Delinquent taxes, if any, to be paid by the closing attorney to the county tax collector upon disbursement of closing proceeds.

Brief description for the Index: Parcel 9, Parcel 10, & Malia Drive Monteray Shores

THIS DEED made this 10 day of May 2011, by and between

GRANTOR	GRANTEE
MONTERAY SHORES, INC., **a North Carolina corporation** **5299 Pennock Point Road** **Jupiter, FL 33458**	**OUTER BANKS VENTURES, INC.** **a North Carolina corporation** **215 Brooke Avenue, Unit 1001** **Norfolk, VA 23510**

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

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

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee, its successors and assigns, all of Grantor's right, title and interest in and to those certain lots or parcels situated in the Poplar Branch Township, Currituck County, North Carolina, and more particularly described on **Exhibit A** attached hereto and hereby made a part hereof (the "Property").

TRANSFER TAX AMOUNT NONE TCS
DATE/COLLECTOR 5-10-2011

EXHIBIT A

Parcel 1: Legal Description for Parcel 10 Utility Open Space

Lying and being in Poplar Branch Township, Currituck County, North Carolina and being described as Parcel 10; Utility Open Space, shown in a plat prepared by Coastal Engineering & Surveying, Inc., recorded on September 11, 2007 in the Currituck County Register of Deed, titled, "Monteray Shores P.U.D. W.W.T.P. CAROLINA WATER SERVICE, AMENDED FINAL PLAT", as shown on plat of record found in Plat Cabinet K, Slides 49-51 of the Currituck County Registry (and hereinafter referred to as the "Coastal Plat"), and more particularly described as follows: Beginning at a North Carolina Geodetic Survey monument known as "Herbert", with North Carolina Grid Coordinates 952,250.3118 N and 2,936,969.5120 E, located within the development known as "Buck Island, P.U.D.", and found in the top of the curbing on the north side of Orion's Way; thence N 63°16'10" West 700.75 feet to a point located in the Northern line of the Tim Buck II Subdivision as more particularly shown in Plat Cabinet E, Slide 102 in the Currituck County Registry, North Carolina, being the "True Point of Beginning"; thence proceeding S 73°11'26" West a distance of 1,043.98 feet along the Northern line of the aforereferenced Tim Buck II Subdivision plat to a point located in the Eastern shoreline of Currituck Sound; thence following the following courses and distances along the Eastern shoreline of Currituck Sound: N 08°17'26" East 334.30 feet, N 31°49'31" West 369.62 feet, N 14°02'13" East 157.53 feet, N 31°22'18" West 372.33 feet and N 28°13'27" East 170.25 feet to a point located in the Southern line of Monteray Shores Phase II as more particularly described in Plat Cabinet D, Slides 54-61 in the Currituck County Registry, North Carolina; thence proceeding along the Southern line of the aforereferenced Monteray Shores Phase II N 47°50'41" East 1,059.66 feet to an iron rod, this being the Northeastern most point of Parcel 10 Utility Open Space as shown on the aforereferenced Coastal Plat; thence cornering and proceeding along the Western boundary of Parcel 9 Utility Open Space S 24°59'13" East 895.95 feet to an iron rod on the Northwest corner of Parcel 8 Open Space shown on the Coastal Plat; thence proceeding S 15°57'18" East 67.05 feet along the Western line of Parcel 8 Open Space to an iron rod; thence continuing along the Western line of Parcel 8 Open Space S 34°57'06" East 25.28 feet to an iron rod; thence cornering N 51°11'37" East 76.92 feet to an iron rod marking the Southeast corner of Parcel 8 Open Space, said iron rod being located in the Western margin of the 50' right of way of the private road Malia Drive; thence proceeding along the Western margin of the right of way of Malia Drive S 45°13'47" East 70.44 feet to an iron rod; thence continuing along the Eastern margin of the right of way of Malia Drive S 45°13'47" East 30.17 feet to an iron pipe being a control corner in that property owned by Corolla Worship Center of the Assemblies of God as found in Deed Book 761, Page 929 and in Plat Cabinet G, Slide 205; thence along the North line of the Corolla Worship Center S 58°09'22" West 175 feet to a point; thence cornering and proceeding along the Western line of the Corolla Worship Center S 04°43'46" West 145.59 feet to a point in the Northern line of that development known as Buck Island, P.U.D., thence following the following courses and distances along the Northwestern most point of Buck Island, P.U.D.: S 73°11'21" West 78.87 feet , S 10°18'28" West 25.83 feet, S 30°51'08" West 101.58 feet, S 07°52'57" East 56.14 feet and S 31°14'41" West 32.69 feet to an iron pipe marking the Northern corner of that property acquired by the North Carolina Department of Transportation as more particularly described in Deed Book 376, Page 690; thence following the following courses and distances along the Southwestern boundary of the North Carolina Department of Transportation: S 31°08'08" West 70.75 feet, S 60°26'58" East 106.34 feet, N 37°34'20" East 57.93 feet, S 65°23'21" East 54.23 feet, S 36°53'44" East 72.84 feet, S 24°21'21" West 24.88 feet, S 32°26'53" East 71.75 feet and S 14°36'25" West 69.81 feet to the point and place of beginning containing 36.194 acres, more or less, as more particularly described as Parcel 10 Utility Open Space on the Coastal Plat.

Parcel 2: Property Description for Malia Drive

Lying and being in Poplar Branch Township, Currituck County, North Carolina and being that private street or access known as Malia Drive as shown in a plat prepared by Coastal Engineering & Surveying, Inc., recorded on September 11, 2007 in the Currituck County Register of Deeds, titled, "Monteray Shores P.U.D. W.W.T.P. CAROLINA WATER SERVICE, AMENDED FINAL PLAT", as shown on plat of record found in Plat Cabinet K, Slides 49-51 of the Currituck County Registry (and hereinafter referred to as the "Coastal Plat"), and more particularly described as follows: Beginning at a North Carolina Geodetic Survey monument knows as "Herbert", with North Carolina Grid Coordinates 952,250.3118 N and 2,936,969.5120 E, located within the development known as "Buck Island, P.U.D.", and found in the top of the curbing on the north side of Orion's Way; thence N 23°06'19" West 1,047.72 feet to an existing iron rod at the Easternmost corner of Monteray Shores, Corolla Worship Center of the Assemblies of God, as found in Deed Book 761, Page 929, and in Plat Cabinet G, Slide 205, being the "True Point of Beginning"; thence along the Northeastern line of the Corolla Worship Center and the Southwestern edge of the right of way of Malia Drive (a private right of way) N 45°13'47" West 151.41 feet to an existing iron rod; thence along the Western edge of Malia Drive and the Eastern boundary of Parcel 10 Utility Open Space N 45°13'47" West 100.61 feet to a set iron rod being the Southeastern most corner of Parcel 8 Open Space; thence along the Eastern boundary of Parcel 8 Open Space N 45°13'47" West 29.94 feet to a set iron rod; thence on a curve to the right, having a radius of 62.56 feet and a length of 20.93feet, said arc subtended by a chord N 32°03'25" West with a distance of 20.83 feet to a set iron rod; thence N 22°16'59" West 15.71 feet to a set iron rod being the Northeastern most corner of Parcel 8 Open Space; thence leaving Parcel 8 Open

Space along the eastern boundary of Parcel 9 Utility Open Space N 22°16'59" West 70.31 feet to a set iron rod; thence N 16°50'38" West 79.08 feet to a set iron rod; thence on a curve to the left, having a radius of 15.00 feet and a length of 22.19 feet, said arc subtended by a chord N 59°13'25" West with a distance of 20.22 feet to a set iron rod; thence S 78°23'47" West 12.47 feet to a set iron rod; thence cornering and proceeding N 11°36'13" West 65.00 feet to a set iron rod; thence cornering and proceeding N 78°23'47" East 57.70 feet to a set iron rod being the Southeastern most corner of Parcel 7 Commercial; thence proceeding along the Eastern edge of the 30' right of way of Malia Drive S 11°02'41" East 72.76 feet to a set iron rod; thence S 16°50'38" East 80.80 feet to a set iron road; thence S 22°16'59" East 39.39 feet to a set iron rod; thence S 45°13'47" East 43.36 feet to a set iron rod being the Northernmost corner of the intersection of Malia Drive and Caroline Court (a private right of way); thence continuing along the Eastern edge of the 50' right of way of Malia Drive S 45°13'47" East 252.02 to a calculated point being the Northernmost corner of the intersection of Malia Drive and NC Highway 12; thence S 36°02'33" West 50.59 feet to the "True Point of Beginning" containing approximately 0.549 acres, more or less, as more particularly described on the Coastal Plat, TOGETHER WITH all fee simple rights to the underlying land to install utilities within the right of way of Malia Drive as described above.

Parcel 3: Legal Description for Parcel 9 Utility Open Space
Parcel 9 previously conveyed to Carolina Water Service in Deed Book 1024, Page 31,
Grantor herein conveys any Developer Rights in the property described below.

Lying and being in Poplar Branch Township, Currituck County, North Carolina and being that Eastern parcel, being described as Parcel 9 Utility Open Space, shown in a plat prepared by Coastal Engineering & Surveying, Inc., recorded on September 11, 2007 in the Currituck County Register of Deeds, titled, "Monteray Shores P.U.D. W.W.T.P. CAROLINA WATER SERVICE, AMENDED FINAL PLAT", as shown on plat of record found in Plat Cabinet K, Slides 49-51 of the Currituck County Registry (and hereinafter referred to as the "Coastal Plat"), and more particularly described as follows: Beginning at a North Carolina Geodetic Survey monument knows as "Herbert", with North Carolina Grid Coordinates 952,250.3118 N and 2,936,969.5120 E, located within the development known as "Buck Island, P.U.D.", and found in the top of the curbing on the north side of Orion's Way; thence N 23°06'19" West 1,047.72 feet to an existing iron rod at the Easternmost corner of Monteray Shores, Corolla Worship Center of the Assemblies of God, as found in Deed Book 761, Page 929, and in Plat Cabinet G, Slide 205; thence along the Northeastern line of the Corolla Worship Center and the Southwestern edge of the right of way of Malia Drive (a private right of way) N 45°13'47" West 151.41 feet to an existing iron rod; thence along the Western edge of Malia Drive and the Eastern boundary of Parcel 10 Utility Open Space N 45°13'47" West 100.61 feet to a set iron rod, this being the Easternmost corner of Parcel 8 Open Space as shown on the Coastal Plat; thence along the Western edge of Malia Drive and the Eastern side of Parcel 8 Open Space N 45°13'47" West 29.94 feet to a set iron rod; thence on a curve to the right on the same edge of Malia Drive and Parcel 8 Open Space having a radius of 62.56 feet and a length of 20.93 feet, said arc subtended by a bearing of N 32°03'25" West with a distance of 20.83 feet; thence N 22°16'59" West 15.71 feet to a set iron rod on the Northeast corner of Parcel 8 Open Space, and being the "True Point of Beginning"; thence along the North boundary of Parcel 8 Open Space and leaving Malia Drive S 73°22'12" West 56.97 feet to a set iron rod lying on the east line of Parcel 10 Utility Open Space; thence along the Eastern border of Parcel 10 Utility Open Space N 24°59'13" West 895.95 feet to an existing iron rod, same as the Southernmost point of Monteray Shores Phase II Open Space and recorded in Plat Cabinet D, Slides 54-61; thence along the border of Monteray Shores Phase II Open Space N 53°18'11" West 69.52 feet to the Northwest corner of Parcel 9 and same as the Southern corner of Lots 204 & 205 of Monteray Shores Phase II and marked by an existing iron rod; thence N 62°15'20" East 95.56 feet bordering the South edge of Lot 204 to a set iron rod; thence N 28°02'44" East 325.54 feet bordering Lots 204, 203, 202 & 201 to an existing iron rod being on the Western edge of Monteray Drive (a private right of way); thence along the Western edge of Monteray Drive S 61°57'19" East 396.05 feet to an existing iron rod; thence S 28°02'37" West 14.99 feet to an existing iron rod; thence S 61°57'23" East 40.00 feet to a set iron rod; thence on a curve to the right, having a radius of 466.24 feet and a length of 185.43 feet, said arc subtended by a chord S 50°33'46" East with a distance of 184.21 feet to a set iron rod; thence S 39°10'10" East 104.36 feet to a set iron rod; thence on a curve to the left on the same right of way, having a radius of 65.00 feet and length of 36.53 feet, said arc subtended by a chord with bearing of S 23°04'02" East with a distance of 36.06 feet to a set iron rod; thence S 39°10'07" East 99.98 feet to a set iron rod on a curve; thence along the same right of way on a curve to the left having a radius of 189.48 feet and a length of 38.31 feet, said arc subtended by a chord bearing of S 44°57'41" East with a distance of 38.25 feet to an existing iron rod, this being the Northernmost corner of Commercial Area 2; thence leaving said right of way and along the Western border of Commercial Area 2 owned by EEPCO LLC as described on Plat Cabinet E, Slide 137 and Deed Book 329, Page 791, S 06°25'10" West 209.86 feet to a set iron rod on Commercial Area 1; thence along the Western border of Commercial Area 1 now or formerly owned by G. Holdings LLC as described on Plat Cabinet F, Slide 229 and Deed Book 662, Page 215, S 36°02'42" West 154.47 feet to a set iron rod on Parcel 3; thence along the Northern boundary of Parcel 3 now or formerly owned by OB Gas LLC as described by Plat Cabinet G, Slide 176 and Deed Book 741, Page 630, N 53°57'18" West 15.00 feet to a set iron rod on Parcel 5; thence along the Southern boundary of Parcel 5 known as Monteray Pines Condominium Association as described in Plat Cabinet G, Slide 175 and Deed Book 1001, Page 356, N 36°02'37" East 154.47 feet to a set iron rod; thence bordering Parcel 5 as previously described N 53°57'18" West 277.99 feet to an existing iron rod; thence S 36°02'42" West 253.01 feet to a set iron rod; thence S 53°57'18" East 119.00 feet to a set iron rod on the Western edge of Caroline Court (a private right of way); thence along the Western edge of Caroline Court S 36°02'37" West 5.04 feet to a set iron rod;

thence on a curve to the left having a radius of 55.00 feet and a length of 54.67 feet, said arc subtended by a chord with bearing S 07°34'09" West with a distance of 52.45 feet to a set iron rod; thence S 20°54'25" East 128.45 feet to a set iron rod; thence on a curve to the right having a radius of 15.00 feet and a length of 14.91 feet, said arc subtended by a chord with bearing S 07°34'03" West and a distance of 14.30 feet to an iron rod; thence S 36°02'37" West 156.59 feet to a set iron rod on the Eastern edge of Malia Drive above referenced; thence cornering along Malia Drive's Eastern edge N 45°13'47" West 43.36 feet to a set iron rod; thence N 22°16'59" West 39.39 feet to a set iron rod; thence N 16°50'38" West 80.80 feet to a set iron rod; thence N 11°02'41" West 72.76 feet to the Southeastern corner of Parcel 7 Commercial marked by a set iron rod; thence along the Eastern border of Parcel 7 N 11°36'13" West 133.90 feet to a set iron rod; thence bordering Parcel 7 S 57°48'02" West 45.22 feet to a set iron rod; thence S 46°55'41" West 49.02 feet to a set iron rod; thence S 13°30'14" East 78.78 feet to a set iron rod; thence S 07°36'18" East 13.70 feet to a set iron rod; thence N 78°23'47" East 24.78 feet to a set iron rod; thence N 11°36'13" West 65.00 feet to a set iron rod; thence N 78°23'47" East 12.47 feet to a set iron rod; thence on a curve to the right having a radius of 15.00 feet and a length of 22.19 feet, said arc subtended by a chord bearing of S 59°13'25" East and a distance of 20.22 feet to a set iron rod; thence S 16°50'38" East 79.08 feet to a set iron rod; thence S 22°16'59" East 70.31 feet to the "True Point of Beginning" containing 11.665 acres, more or less.

The property hereinabove described was acquired by Grantor by instrument recorded in Book ____, Page ___, Currituck County Registry.

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

A map showing the above described property is recorded in Plat Cabinet K, Slides 49-51, Currituck County Registry.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

The Grantor makes no warranty, express or implied, as to title to the property hereinabove described

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

MONTERAY SHORES, INC.

By: Robert R DeGabrielle pres.
ROBERT R. DEGABRIELLE, President

State of North Carolina - County of Dare

I, the undersigned Notary Public of the County of Dare and State aforesaid, certify that Robert R. DeGabrielle personally came before me this day and acknowledged that he is the President of Monteray Shores, Inc., a North Carolina corporation, and that by authority duly given and as the act of such entity, he signed the foregoing instrument in its name on its behalf as its act and deed. Witness my hand and Notarial stamp or seal, this 24th day of November, 2010.

My Commission Expires: 1/21/2013
(Affix Seal)

Melanie D. Fire
Melanie D. Fire Notary Public
Notary's Printed or Typed Name

MELANIE D. FIRE
NOTARY
PUBLIC
DARE COUNTY, NC

APPENDIX F

OBX Ventures, Inc Secretary of State Info

• File an Annual Report/Amend an Annual Report • Upload a PDF Filing • Order a Document Online • Add Entity to My Email Notification List • View Filings • Print a Pre-Populated Annual Report form • Print an Amended a Annual Report form

Business Corporation

Legal Name
Outer Banks Ventures, Inc.

Information

SosId: 0108947
Status: Active-Not Current ⓘ
Date Formed: 12/21/1979
Citizenship: Domestic
Fiscal Month: December
Annual Report Due Date: April 15th
Deliquent**Annual Report Status:**
Registered Agent: Willis , RICHARD Currie ,

Addresses

Principal Office
815E Ocean Trail
Corolla, NC 27927-9610

Reg Office
815E Ocean Trail
Corolla, NC 27927-9610

Mailing
PO Box 549
Corolla, NC 27927-0549

Reg Mailing
PO Box 549
Corolla, NC 27927-0549

Officers

Vice President
Patricia Sammons Brindley
215 Brooke Avenue Suite 1001
Norfolk VA 23510

President
Richard C. Willis
P. O. Box 549
Corolla NC 27927

Stock

Class: COMMON
Shares: 100000
No Par Value: Yes

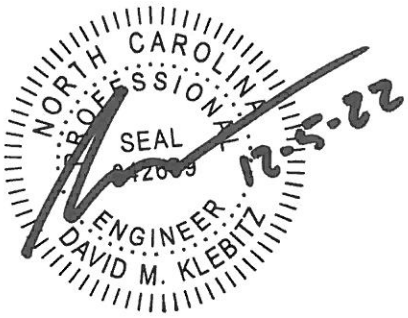
APPENDIX I

Swale Calcs & E&S Calcs

APPENDIX I – SEDIMENTATION & EROSION CONTROL CALCULATIONS

Calculations Include the Following:

- **EROSIVE VELOCITY CHECKS**
- **SEDIMENT BASIN CALCULATIONS**
- **EROSION CONTROL SKIMMER CALCULATIONS**



EROSIVE VELOCITY CHECK

Calculations Include the Following:

- 2 Year, Bare Soil Condition; 2 fps Max Velocity
- 10 Year, Vegetated Condition; 4 fps Max Velocity

Note:
This check is performed by highlighting respective summaries of conveyances that exceed maximum permissible velocities as determined by EPA SWMM modeling performed by Deel Engineering, PLLC.

2 YEAR, BARE SOIL CONDITION; 2 FPS MAX VELOCITY

Link Flow and Velocity - 2yr				Velocity Check
Link Name	Shape	Flow (cfs)	Velocity (fps)	Bare Soil > 2 fps
P001-Pond1	CONDUIT	1.65	0.85	
P002-P001	CONDUIT	1.67	0.59	
P003-P002	CONDUIT	1.12	1.72	
P004-P003	CONDUIT	0.99	0.72	
P005-P004	CONDUIT	0.93	0.57	
P006-P005	CONDUIT	0.19	0.26	
P007-P002	CONDUIT	1.06	1.40	
P008-P007	CONDUIT	1.00	1.35	
P009-P008	CONDUIT	0.74	1.33	
P010-P009	CONDUIT	0.43	0.84	
P011-P004	CONDUIT	0.01	0.34	
P012-P005	CONDUIT	0.88	1.62	
P013-P012	CONDUIT	0.48	0.88	
P014-Pond1	CONDUIT	0.21	0.64	
P015-Pond1	CONDUIT	0.00	0.00	
P016-Pond1	CONDUIT	0.00	0.00	
P017-Pond1	CONDUIT	0.75	0.95	
P018-P017	CONDUIT	0.00	0.00	
P019-P017	CONDUIT	0.80	1.48	
P021-P019	CONDUIT	0.84	2.26	N/A - PROP CULVERT
P020-P008	CONDUIT	0.11	0.22	
P022-P001	CONDUIT	0.61	0.93	
P023-P022	CONDUIT	0.61	1.45	
P024-P023	CONDUIT	0.34	0.84	

10 YEAR, VEGETATED CONDITION; 4 FPS MAX VELOCITY

Corolla Boat Club **Erosive Velocity Calculations** **12/2/2022**

Mixed Use Development

Link Flow and Velocity - 10yr				Velocity Check
Link Name	Shape	Flow (cfs)	Velocity (fps)	Vegetated > 4 fps
P001-Pond1	CONDUIT	4.13	1.12	
P002-P001	CONDUIT	4.32	0.79	
P003-P002	CONDUIT	2.96	2.39	
P004-P003	CONDUIT	3.10	0.92	
P005-P004	CONDUIT	2.47	0.64	
P006-P005	CONDUIT	0.55	0.35	
P007-P002	CONDUIT	2.15	1.64	
P008-P007	CONDUIT	2.05	1.54	
P009-P008	CONDUIT	1.65	1.54	
P010-P009	CONDUIT	0.92	1.04	
P011-P004	CONDUIT	0.06	0.43	
P012-P005	CONDUIT	1.77	1.92	
P013-P012	CONDUIT	0.92	1.01	
P014-Pond1	CONDUIT	0.33	0.78	
P015-Pond1	CONDUIT	0.03	0.67	
P016-Pond1	CONDUIT	0.02	0.53	
P017-Pond1	CONDUIT	2.95	1.45	
P018-P017	CONDUIT	0.00	0.03	
P019-P017	CONDUIT	3.00	1.38	
P021-P019	CONDUIT	3.02	3.61	
P020-P008	CONDUIT	0.19	0.23	
P022-P001	CONDUIT	1.16	1.18	
P023-P022	CONDUIT	1.17	1.78	
P024-P023	CONDUIT	0.75	1.14	

SEDIMENT BASIN CALCULATIONS

Corolla Boat Club
Mixed Use Development

Sediment Basin
Calculations

12/2/2022

Sediment Basin A

Requirements			
Tributary Drainage Area	4.70	*acres*	
Min. Required Storage Volume	8,460	ft^3	*(1,800 ft^3 /acre)*
*Estimated 10 year peak inflow**	4.30	*cfs*	
Min. Required Surface Area	1,871	ft^2	*(435 ft^2 /cfs)*
Design			
Choose Avg. Storage Depth	3.0	*ft*	
Necessary Storage Surface Area	2,820	ft^2	
Is Necessary Surface Area > Required	YES		
Choose Storage Width	40	*ft*	
Choose Storage Length	100	*ft*	
Length to Width Ratio	**2.5**	***OK***	
Surface Area Provided	**3,970**	ft^2	*2.1* ***times required***
Is Surface Area Provided > Required	YES		
*Storage Volume Provided***	**9,650**	ft^3	
Is Storage Volume Provided > Required	YES		*1.1* ***times required***

* Estimated 10 year peak flows per EPA SWMM calculations prepare by DEEL
**Based on calculations performed in autocad

EROSION CONTROL SKIMMER CALCULATIONS

Sediment Basin A - Skimmer A

Drawdown Period [t_d]	2.00	*days*		
Drawdown Volume (Temp. pool) [V]	8,460	*ft^3*		
Drawdown Discharge Rate [Q_d]	4,230	*ft^3/day*	*0.05*	*cfs*
Choose Skimmer Body Diameter	3.0	*in.*	*1.00*	*fps*
Head on Orifice from Table [H]	0.250	*ft.*		
Resulting Orifice Diameter [D]	**1.9**	*in.*		
Is Orifice Diameter < Skimmer Body Diameter	**YES**			

Head on orifice of various skimmer sizes

Skimmer Size (in.)	Head on Orifice (ft.)
1.5	0.125
2	0.167
2.5	0.208
3	0.250
4	*0.333*
5	*0.333*
6	*0.417*
8	*0.500*

Table 6.64a NC Erosion Control Manual

Equations:

$Q_d = V / t_d$ (ft^3/day)

$D = \sqrt{[Q_d/(2310*\sqrt{H})]}$ (inches)

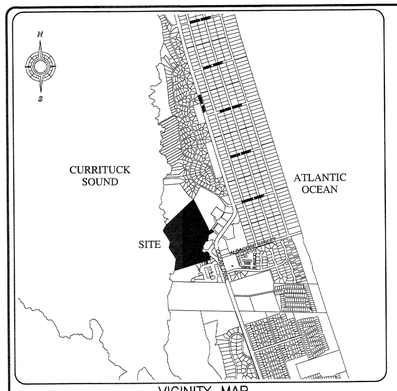
Drawdown volumes based on Min.Required per speparate Sediment Basin Calculation.

CONSTRUCTION DRAWINGS FOR

COROLLA BOAT CLUB - PHASE 1

A 6 LOT SUBDIVISION DEVELOPMENT
MONTERAY SHORES PHASE 10

POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA



VICINITY MAP
SCALE: 1" = 1000'

GENERAL NOTES:

1. PROJECT NAME: COROLLA BOAT CLUB – PHASE 1
2. APPLICANT/DEVELOPER: OUTER BANKS VENTURES, INC.
   P.O. BOX 549
   COROLLA, NC 27927
3. PROPERTY DATA:
   ADDRESS: MALIA DRIVE, COROLLA, NC
   PIN: 0116-000-0010-0000
   RECORD DOCUMENT(S): DB:1161, PG:734; PC:K, SL:49
   PROPERTY ZONING: SFO-PUD
4. F.I.R.M. DATA:
   ZONES X, AE (3') AND SHADED X PER F.E.M.A. F.I.R.M. MAP NUMBER 3721803200 K, EFFECTIVE DATE DECEMBER 21, 2018. USE OF LAND WITHIN A FLOODWAY OR FLOOD PLAIN IS SUBSTANTIALLY RESTRICTED BY CHAPTER 7 OF THE CURRITUCK COUNTY UNIFIED DEVELOPMENT ORDINANCE.
5. THIS PROPERTY CONTAINS ACOE "404" JURISDICTIONAL WETLANDS AS SHOWN AND CONFIRMED BY USACOE AND MAY REQUIRE U.S. CORP OF ENGINEERS APPROVAL PRIOR TO DEVELOPMENT OF THE PROPERTY.
6. SECTION 7.6.5 OF THE CURRITUCK U.D.O. SUBSTANTIALLY RESTRICTS DEVELOPMENT WITHIN A 30' RIPARIAN BUFFER TO CERTAIN WETLANDS.
7. EXISTING CONDITION INFORMATION BASED ON A COMBINATION OF THE FOLLOWING:
   - 2022 AERIAL IMAGERY OBTAINED FROM NCONEMAP.COM
   - FIELD TOPOGRAPHIC SURVEY DATA BY BISSELL PROFESSIONAL GROUP.
   - ELEVATIONS ARE REFERENCED TO NAVD 1988 VERTICAL DATUM.
   - WATER DEPTHS PER PLAN TITLED "WATER DEPTH SURVEY/CAMA FEASE" BY QUIBLE AND ASSOCIATES
8. ALL UTILITIES ARE TO BE UNDERGROUND.
9. A 10' EASEMENT FOR UTILITIES AND DRAINAGE ALONG REAR AND SIDE PROPERTY LINES AND A 25' EASEMENT ALONG FRONT PROPERTY LINES SHALL BE ESTABLISHED FOR DRAINAGE, UTILITIES, PEDESTRIAN WALKS & STREET TREES. A NON-EXCLUSIVE DRAINAGE EASEMENT IS HEREBY DEDICATED ACROSS ALL OPEN SPACE AREAS FOR PURPOSES OF OPERATION AND MAINTENANCE OF STORMWATER MANAGEMENT SYSTEM.

DEVELOPMENT NOTES:

1. PHASE 1 PROPERTY AREA: 20.03 AC.
   PHASE 1 COASTAL WETLAND AREA: 6.22 AC.
   PHASE 1 SURFACE WATER & LAKE: 3.39 AC.
   TOTAL PHASE 1 PROJECT AREA: 10.42AC.
2. DEVELOPMENT SUMMARY
   TOTAL LOT AREA: 2.98 AC.
   R/W AREA: 0.58 AC.
   OPEN SPACE & FUTURE DEVELOPMENT AREA: 6.86 AC.
   TOTAL AREA: 10.42 AC.

   # OF SINGLE FAMILY LOTS: 5
   # OF COMMERCIAL LOTS: 1

   PROPOSED RIGHT-OF-WAY WIDTH: 30
   PROPOSED PAVED ROADWAY WIDTH: 25 FT. (W/ C&G),
   LINEAR FEET OF ROADWAY: 850 L.F.±
3. IMPERVIOUS COVERAGE DATA (BUA):
   LOT COVERAGE: 54,502 SF
   ROADWAY: 25,080 SF
   PARKING: 3,311 SF
   SIDEWALKS: 14,600 SF
   ALLOWANCE FOR MISC. AMENITIES: 3,000 SF
   FUTURE ROADWAY COVERAGE: 8,400 SF
   TOTAL COVERAGE: 108,893 SF (24.00%)
4. TOTAL PROPOSED DISTURBED AREA: 12 ACRES

Sheet List Table

PLAN LEGEND

- ROADWAY CENTERLINE
- RIGHT-OF-WAY
- PROPERTY BOUNDARY
- ADJOINING PROPERTY LINE
- EXISTING DITCH CENTERLINE
- EXISTING DITCH TOP OF BANK
- EXISTING WETLANDS
- 30' UNDISTURBED BUFFER (COUNTY)
- PROPOSED SWALE W/ FLOW ARROW
- PROPOSED SWALE HIGH POINT
- EXISTING DITCH TO BE FILLED
- FEMA — FEMA — FEMA BOUNDARY LINE
- 6 — EXISTING GRADE CONTOUR
- 6 — PROPOSED GRADE CONTOUR
- X 0.00 — EXISTING SPOT GRADE
- •0.00 — PROPOSED SPOT GRADE
- EXISTING CULVERT
- PROPOSED CULVERT
- D — PROPOSED DRAINAGE STRUCTURE
- EWL — EWL — EXISTING WATER LINE
- WL — WL — PROPOSED WATER LINE (SIZE AS NOTED)
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED WATER SERVICE
- PROPOSED VALVE
- PROPOSED BLOW-OFF ASSEMBLY
- PROPOSED REDUCER
- FM — FM — PROPOSED SEWER FORCE MAIN
- PROPOSED SEWER COLLECTION MAIN
- S — PROPOSED SEWER MANHOLE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- D — PROPOSED INLET PROTECTION
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED TEMPORARY CHECK DAM

PROFILE LEGEND

- EXISTING GRADE @ ROAD C/L
- PROPOSED GRADE @ ROAD C/L
- WL — WL — PROPOSED WATER LINE (SIZE AS NOTED)
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE
- PROPOSED REDUCER

SURVEY LEGEND

SCM	SET CONCRETE MONUMENT
ECM	EXISTING CONCRETE MONUMENT
SIR	SET IRON ROD
EIR	EXISTING IRON ROD
EIP	EXISTING IRON PIPE
CP	CALCULATED POINT
M.B.L.	MAXIMUM BUILDING LIMIT
N.T.S.	NOT TO SCALE
P.C.	PLAT CABINET
D.B.	DEED BOOK
SL	SLIDE
SF	SQUARE FEET
AC	ACRES

North Carolina One-Call Center Inc. 811 Know what's below Call before you dig.

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

THE FOLLOWING PERMITS ARE REQUIRED PRIOR TO PROJECT CONSTRUCTION:

PERMIT	AGENCY	REFERENCE NUMBER	DATE OF ISSUANCE
SEDIMENTATION AND EROSION CONTROL PERMIT	N.C.D.E.Q. – DIVISION OF LAND RESOURCES		
STORMWATER MANAGEMENT PERMIT	N.C.D.E.Q – DIVISION OF LAND RESOURCES		
WATERLINE EXTENSION AUTHORIZATION TO CONSTRUCT	N.C.D.E.Q – PUBLIC WATER SUPPLY		
WASTEWATER COLLECTION SYSTEM PERMIT	N.C.D.E.Q – DIVISION OF WATER RESOURCES		
WETLAND PERMIT	U.S.A.C.O.E.		
CURRITUCK COUNTY PRELIMINARY PLAT & USE PERMIT	CURRITUCK COUNTY BOARD OF COMMISSIONERS		
CURRITUCK COUNTY CONSTRUCTION AUTHORIZATION	CURRITUCK COUNTY PLANNING STAFF		

STORMWATER CERTIFICATE

I, _____, OWNER/AGENT HEREBY CERTIFY THE INFORMATION INCLUDED ON THIS AND ATTACHED PAGES IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

ON THE PLAN ENTITLED, COROLLA BOAT CLUB – PHASE 1 – CONSTRUCTION DRAWINGS – GRADING, DRAINAGE AND STORMWATER MANAGEMENT PLAN; STORMWATER DRAINAGE IMPROVEMENTS SHALL BE INSTALLED ACCORDING TO THESE PLANS AND SPECIFICATIONS AND APPROVED BY CURRITUCK COUNTY. YEARLY INSPECTIONS ARE REQUIRED AS PART OF THE STORMWATER PLAN. THE OWNER IS RESPONSIBLE FOR ALL MAINTENANCE REQUIRED. CURRITUCK COUNTY ASSUMES NO RESPONSIBILITY FOR THE DESIGN, MAINTENANCE, OR PERFORMANCE OF THE STORMWATER IMPROVEMENTS.

_____ DATE

_____ OWNER/AGENT

NOTE:
EXISTING SITE INFORMATION DESCRIBED HEREON IS BELIEVED TO BE ACCURATE, HOWEVER, BPG INC. MAKES NO WARRANTY AS TO THE ACCURACY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THIS INFORMATION BEFORE RELYING ON IT. THE CONTENT OF THESE DOCUMENTS MAY ALSO INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. IF SUCH CONDITIONS EXIST, THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER PRIOR TO PROCEEDING WITH THE SCHEDULED WORK AND MAY CONTINUE AFTER AN AUTHORIZATION TO PROCEED HAS BEEN GRANTED.

BISSELL PROFESSIONAL GROUP
Firm License # C-456
Bissell Professional Group
P.O. Box 1088
3621 North Croatan Highway
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
Engineers, Planners, Surveyors and Environmental Specialists

COVER SHEET, DEVELOPMENT NOTES & SITE LOCATION

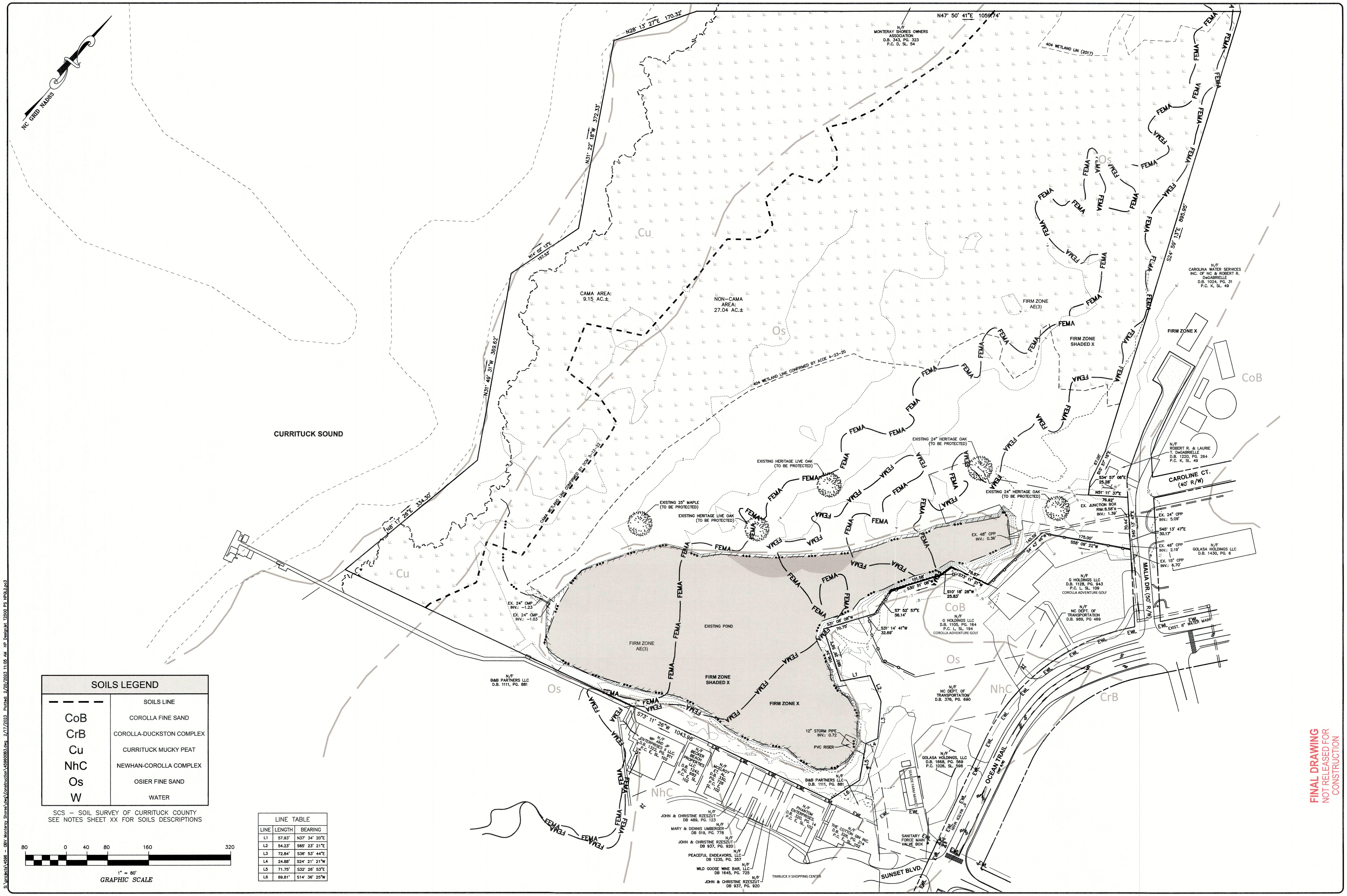
PROJECT: COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	2-24-23	REV. PROJ. AREA	DMK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042639 DAVID M. KLEATY

DATE: 2-15-23	SCALE: N/A
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK/KFW	APPROVED: BPG
SHEET: 1 OF 16	
CAD FILE: 459600B3	
PROJECT NO: 4596	

S:\projects\4596 - OBV Monterey Shores\Survey\Construction\4596DSS.dwg 2/23/2023 1:51 PM HP DesignJet T2500 PS (4PG).ctb



NC GRID NAD83
CURRITUCK SOUND
N28° 13' 27"E 170.32'
N47° 50' 41"E 1059.74'
N31° 22' 18"W 372.33'
N14° 02' 13"E 157.53'
N31° 49' 31"W 369.62'
N8° 17' 26"E 334.30'
S24° 59' 13"E 895.95'
S73° 11' 26"W 1043.98'
N/F
MONTERAY SHORES OWNERS ASSOCIATION
D.B. 343, PG. 323
P.C. D, SL. 54
404 WETLAND LIN (2017)
404 WETLAND LINE CONFIRMED BY ACOE 4-23-20
CAMA WETLAND LINE CONFIRMED BY DCM 5-12-22
CAMA AREA:
9.15 AC.±
NON-CAMA AREA:
27.04 AC.±
Cu
Os
CoB
NhC
CrB
FIRM ZONE AE(3)
FIRM ZONE SHADED X
FIRM ZONE X
EXISTING POND
EXISTING 25" MAPLE (TO BE PROTECTED)
EXISTING HERITAGE LIVE OAK (TO BE PROTECTED)
EXISTING 24" HERITAGE OAK (TO BE PROTECTED)
EX. 24" CMP INV.: -1.23
EX. 24" CMP INV.: -1.03
EX. 48" CPP INV.: 0.36'
12" STORM PIPE INV.: 0.72
PVC RISER
N/F
CAROLINA WATER SERVICES INC. OF NC & ROBERT R. DeGABRIELLE
D.B. 1024, PG. 31
P.C. K, SL. 49
N/F
ROBERT R. & LAURIE T. DeGABRIELLE
D.B. 1220, PG. 264
P.C. K, SL. 49
CAROLINE CT. (40' R/W)
MALIA DR. (50' R/W)
OCEAN TRAIL (100' R/W)
SUNSET BLVD.
67.05'
S15° 57' 18"E
S34° 57' 06"E 25.28'
N51° 11' 37"E 76.92'
EX. JUNCTION BOX RIM: 8.58'± INV.: 1.39'
70.44'
S45° 13' 47"E
S45° 13' 47"E 30.17'
EX. 24" CPP INV.: 5.09'
EX. 48" CPP INV.: 2.19'
EX. 15" CPP INV.: 6.70'
175.00'
S58° 09' 22"W
145.59'
S4° 43' 48"W
78.87'
S73° 11' 21"W
101.58'
S30° 51' 08"W
S10° 18' 28"W 25.83'
S7° 52' 57"E 56.14'
S31° 08' 08"W 70.75'
S31° 14' 41"W 32.69'
106.34'
S60° 26' 58"E
L1
L2
L3
L4
L5
L6
EXIST. 8" WATER MAIN
8" WATER MAIN
SANITARY FORCE MAIN VALVE BOX
N/F
GOLASA HOLDINGS LLC
D.B. 1430, PG. 6
N/F
G HOLDINGS LLC
D.B. 1128, PG. 943
P.C. L, SL. 109
COROLLA ADVENTURE GOLF
N/F
NC DEPT. OF TRANSPORTATION
D.B. 989, PG 469
N/F
G HOLDINGS LLC
D.B. 1105, PG. 164
P.C. L, SL. 194
COROLLA ADVENTURE GOLF
N/F
NC DEPT. OF TRANSPORTATION
D.B. 376, PG. 690
N/F
GOLASA HOLDINGS, LLC
D.B. 1668, PG. 569
P.C. 1026, SL. 598
SEASIDE FARM MARKET
N/F
B&B PARTNERS LLC
D.B. 1111, PG. 881
N/F
WP AND JP ENTERPRISES II LLC.
D.B. 1322, PG. 911
P.C. E, SL. 102
N/F
BECKER BEACH PROPERTIES LLC
D.B. 1242, PG. 682
P.C. E, SL. 102
N/F
MCELROY ET. AL
D.B. 330, PG. 726
P.C. E, SL. 102
N/F
PHANTOM ENTERPRISES,
D.B. 320, PG. 14
P.C. E, SL. 102
N/F
THE COTTON GIN INC.
D.B. 328, PG. 214
P.C. E, SL. 102
N/F
JOHN & CHRISTINE RZESZUT
DB 489, PG. 123
N/F
MARY & DENNIS UMBERGER
DB 519, PG. 778
N/F
JOHN & CHRISTINE RZESZUT
DB 937, PG. 920
N/F
PEACEFUL ENDEAVORS, LLC
DB 1235, PG. 357
N/F
WILD GOOSE WINE BAR, LLC
DB 1645, PG. 725
N/F
JOHN & CHRISTINE RZESZUT
DB 937, PG. 920
TIMBUCK II SHOPPING CENTER
FEMA
EWL
80 0 40 80 160 320
1" = 80'
GRAPHIC SCALE

SOILS LEGEND

— — — —	SOILS LINE
CoB	COROLLA FINE SAND
CrB	COROLLA-DUCKSTON COMPLEX
Cu	CURRITUCK MUCKY PEAT
NhC	NEWHAN-COROLLA COMPLEX
Os	OSIER FINE SAND
W	WATER

SCS – SOIL SURVEY OF CURRITUCK COUNTY
SEE NOTES SHEET XX FOR SOILS DESCRIPTIONS

LINE TABLE

LINE	LENGTH	BEARING
L1	57.93'	N37° 34' 20"E
L2	54.23'	S65° 23' 21"E
L3	72.84'	S36° 53' 44"E
L4	24.88'	S24° 21' 21"W
L5	71.75'	S32° 26' 53"E
L6	69.81'	S14° 36' 25"W

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FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists
Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

EXISTING CONDITIONS & SITE FEATURES MAP

PROJECT:
COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

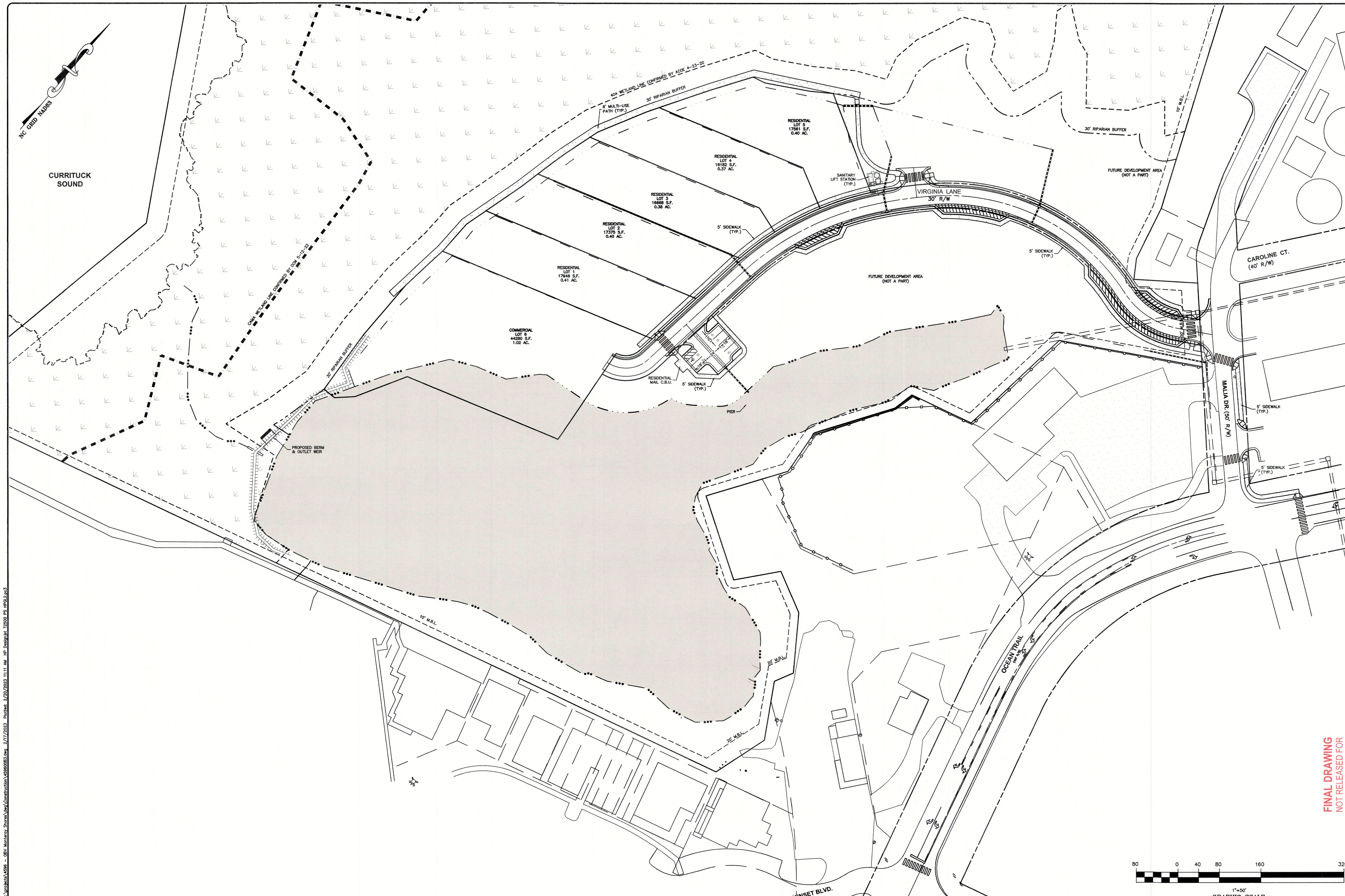
REVISIONS

NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042639 DAVID M. KLEBITZ 2-20-23

DATE: 2-15-23	SCALE: 1"=80'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK/KFW	APPROVED: BPG

SHEET: 2 OF 16
CAD FILE: 459600B3
PROJECT NO: 4596



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FINAL DRAWING
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BISSELL PROFESSIONAL GROUP
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Kitty Hawk, North Carolina 27949
(252) 261-3266
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DEVELOPMENT
OVERVIEW PLAN

PROJECT:
COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042... DAVID M. KLEBITZ — 2-20-23

DATE: 2-15-23	SCALE: 1"=50'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK/KFW	APPROVED: BPG

SHEET: 3 OF 16

CAD FILE: 459600B3

PROJECT NO: 4596


NC GRID NAD83
404 WETLAND LINE CONFIRMED BY ACOE 4-23-20
30' RIPARIAN BUFFER
CAMA WETLAND LINE CONFIRMED BY DCM 5-12-22
PRIMARY SWALE
SIDE SLOPE: 6:1
(SEE TYP. DETAIL)
PROPERTY LINE SWALE
(SEE TYP. DETAIL)
RESIDENTIAL
LOT 5
17561 S.F.
0.40 AC.
RESIDENTIAL
LOT 4
16182 S.F.
0.37 AC.
RESIDENTIAL
LOT 3
16668 S.F.
0.38 AC.
RESIDENTIAL
LOT 2
17375 S.F.
0.40 AC.
RESIDENTIAL
LOT 1
17946 S.F.
0.41 AC.
COMMERCIAL
LOT 6
44280 S.F.
1.02 AC.
PRIMARY SWALE
SIDE SLOPE: 3:1
(SEE TYP. DETAIL)
FUTURE DEVELOPMENT AREA
(NOT A PART)
VIRGINIA LANE
30' R/W
CB-01
CB-02
CB-03
CB-04
CB-08
CB-09
CB-10
DI-01
DI-02
P-1
P-2
P-4
P-5
P-7
P-9
P-10
P-11
P-17
P-18
P-19
BEGIN
EARTHEN
BERM
PROPOSED EARTHEN BERM
LENGTH: 350 LF±
MIN. TOP ELEV.: 2.0'
MIN. TOP WIDTH: 3.0'
(SEE TYP. DETAIL)
PROPOSED OUTLET
CONTROL STRUCTURE
(SEE DETAIL)
EX. 24" CMP
INV.: -1.23
EX. 24" CMP
INV.: -1.03
EX. 48" CPP
INV.: 0.36'
12" STORM PIPE
INV.: 0.72
PVC RISER
EX. JUNCTION BOX
RIM: 8.58'±
INV.: 1.39'
EX. 24" CPP
INV.: 5.09'
RAISE RIM TO 9.25'
PROPERTY LINE SWALE
SIDE SLOPE: 3:1
(SEE TYP. DETAIL)
EX. 48" CPP
INV.: 2.19'
EX. 15" CPP
INV.: 6.70'
CAROLINE CT.
(40' R/W)
MALIA DR. (50' R/W)
OCEAN TRAIL
(100' R/W)
HYD
50 0 25 50 100 200
1"=40'
GRAPHIC SCALE
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BISSELL PROFESSIONAL GROUP
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GRADING, DRAINAGE & STORMWATER MANAGEMENT

PROJECT:
COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

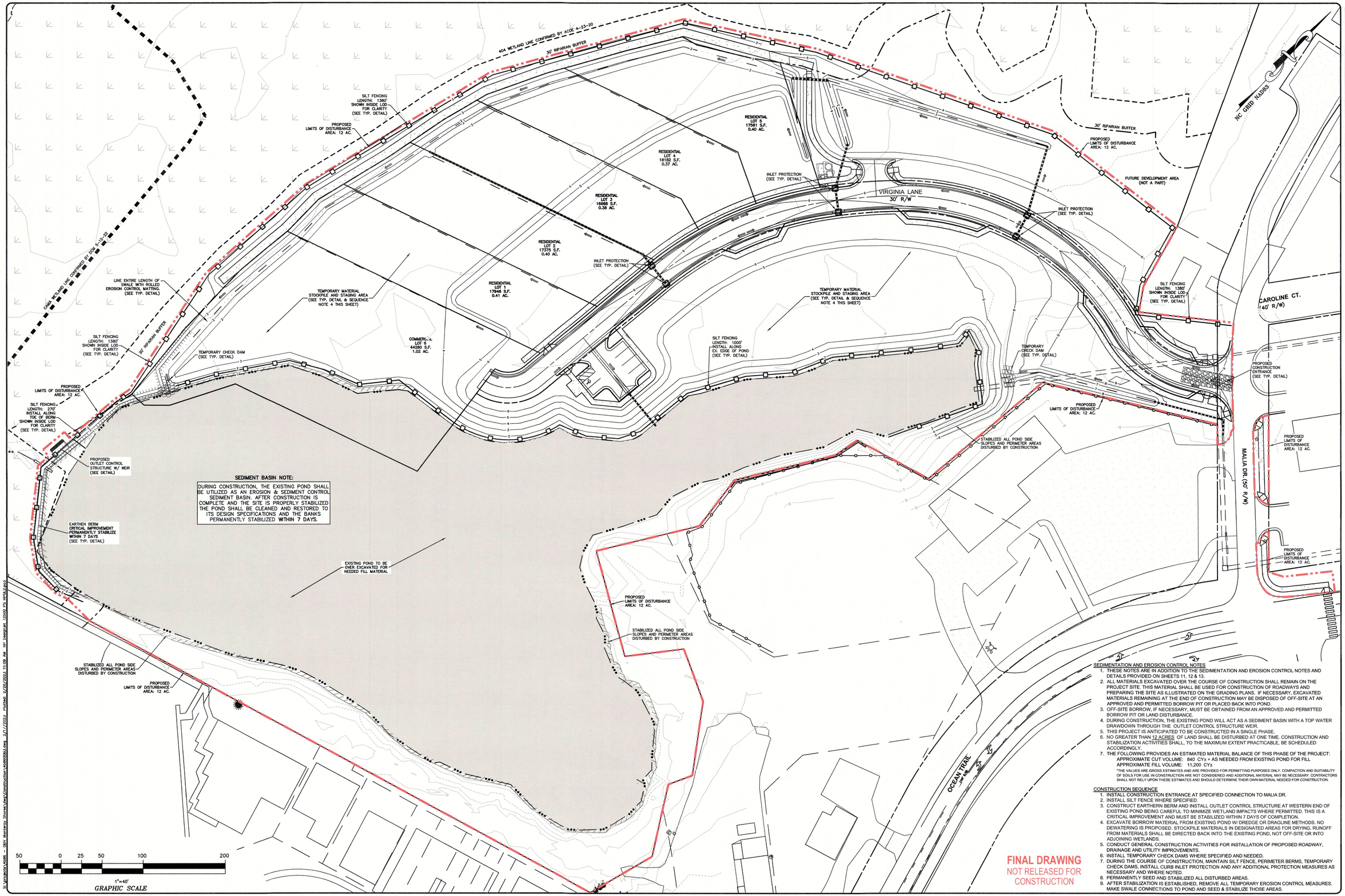
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042639 DAVID M. KLEBITZ
2-20-23

DATE: 2-15-23	SCALE: 1"= 40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK/KFW	APPROVED: BPG

SHEET: 4 OF 16

CAD FILE: 459600B3

PROJECT NO: 4596



SEDIMENT BASIN NOTE:

DURING CONSTRUCTION, THE EXISTING POND SHALL BE UTILIZED AS AN EROSION & SEDIMENT CONTROL SEDIMENT BASIN. AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS PROPERLY STABILIZED THE POND SHALL BE CLEANED AND RESTORED TO ITS DESIGN SPECIFICATIONS AND THE BANKS PERMANENTLY STABILIZED WITHIN 7 DAYS.

SEDIMENTATION AND EROSION CONTROL NOTES

1. THESE NOTES ARE IN ADDITION TO THE SEDIMENTATION AND EROSION CONTROL NOTES AND DETAILS PROVIDED ON SHEETS 11, 12 & 13.
2. ALL MATERIALS EXCAVATED OVER THE COURSE OF CONSTRUCTION SHALL REMAIN ON THE PROJECT SITE. THIS MATERIAL SHALL BE USED FOR CONSTRUCTION OF ROADWAYS AND PREPARING THE SITE AS ILLUSTRATED ON THE GRADING PLANS. IF NECESSARY, EXCAVATED MATERIALS REMAINING AT THE END OF CONSTRUCTION MAY BE DISPOSED OF OFF-SITE AT AN APPROVED AND PERMITTED BORROW PIT OR PLACED BACK INTO POND.
3. OFF-SITE BORROW, IF NECESSARY, MUST BE OBTAINED FROM AN APPROVED AND PERMITTED BORROW PIT OR LAND DISTURBANCE.
4. DURING CONSTRUCTION, THE EXISTING POND WILL ACT AS A SEDIMENT BASIN WITH A TOP WATER DRAWDOWN THROUGH THE OUTLET CONTROL STRUCTURE WEIR.
5. THIS PROJECT IS ANTICIPATED TO BE CONSTRUCTED IN A SINGLE PHASE.
6. NO GREATER THAN 12 ACRES OF LAND SHALL BE DISTURBED AT ONE TIME. CONSTRUCTION AND STABILIZATION ACTIVITIES SHALL, TO THE MAXIMUM EXTENT PRACTICABLE, BE SCHEDULED ACCORDINGLY.
7. THE FOLLOWING PROVIDES AN ESTIMATED MATERIAL BALANCE OF THIS PHASE OF THE PROJECT:
   APPROXIMATE CUT VOLUME: 840 CYz + AS NEEDED FROM EXISTING POND FOR FILL
   APPROXIMATE FILL VOLUME: 11,200 CYz
   *THE VALUES ARE GROSS ESTIMATES AND ARE PROVIDED FOR PERMITTING PURPOSES ONLY. COMPACTION AND SUITABILITY OF SOILS FOR USE IN CONSTRUCTION ARE NOT CONSIDERED AND ADDITIONAL MATERIAL MAY BE NECESSARY. CONTRACTORS SHALL NOT RELY UPON THESE ESTIMATES AND SHOULD DETERMINE THEIR OWN MATERIAL NEEDED FOR CONSTRUCTION.

CONSTRUCTION SEQUENCE

1. INSTALL CONSTRUCTION ENTRANCE AT SPECIFIED CONNECTION TO MALIA DR.
2. INSTALL SILT FENCE WHERE SPECIFIED.
3. CONSTRUCT EARTHERN BERM AND INSTALL OUTLET CONTROL STRUCTURE AT WESTERN END OF EXISTING POND BEING CAREFUL TO MINIMIZE WETLAND IMPACTS WHERE PERMITTED. THIS IS A CRITICAL IMPROVEMENT AND MUST BE STABILIZED WITHIN 7 DAYS OF COMPLETION.
4. EXCAVATE BORROW MATERIAL FROM EXISTING POND W/ DREDGE OR DRAGLINE METHODS. NO DEWATERING IS PROPOSED. STOCKPILE MATERIALS IN DESIGNATED AREAS FOR DRYING. RUNOFF FROM MATERIALS SHALL BE DIRECTED BACK INTO THE EXISTING POND, NOT OFF-SITE OR INTO ADJOINING WETLANDS.
5. CONDUCT GENERAL CONSTRUCTION ACTIVITIES FOR INSTALLATION OF PROPOSED ROADWAY, DRAINAGE AND UTILITY IMPROVEMENTS.
6. INSTALL TEMPORARY CHECK DAMS WHERE SPECIFIED AND NEEDED.
7. DURING THE COURSE OF CONSTRUCTION, MAINTAIN SILT FENCE, PERIMETER BERMS, TEMPORARY CHECK DAMS, INSTALL CURB INLET PROTECTION AND ANY ADDITIONAL PROTECTION MEASURES AS NECESSARY AND WHERE NOTED.
8. PERMANENTLY SEED AND STABILIZED ALL DISTURBED AREAS.
9. AFTER STABILIZATION IS ESTABLISHED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES. MAKE SWALE CONNECTIONS TO POND AND SEED & STABILIZE THOSE AREAS.

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

Bissell Professional Group
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Joint Venture Engineering
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Kitty Hawk, North Carolina 27949
(252) 261-3266
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BISSELL
Engineers, Planners, Surveyors and Environmental Specialists

EROSION & SEDIMENT CONTROL PLAN AND SEQUENCE

PROJECT:
COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL SEAL 23639 ENGINEER DAVID M KLEBITZ
2-15-23

DATE: 2-15-23	SCALE: 1"= 40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK/KFW	APPROVED: BPG
SHEET: 5 OF 16	
CAD FILE: 459600B3	
PROJECT NO: 4596	

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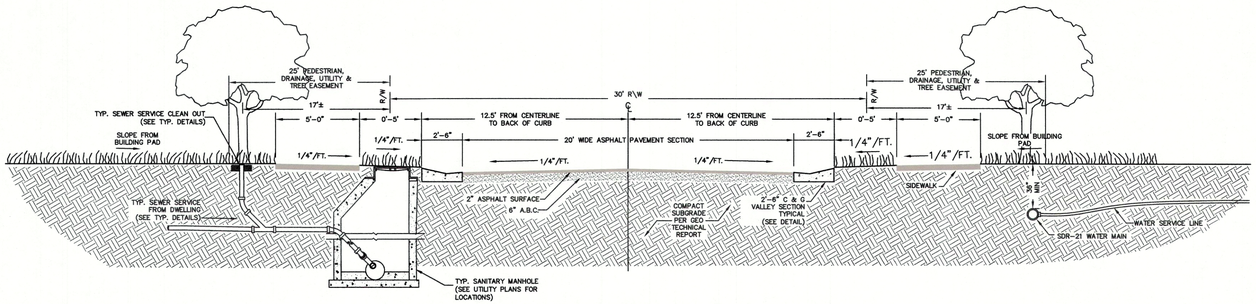
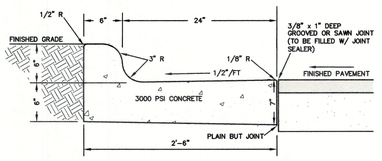


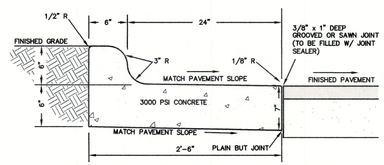
TYPICAL SUBDIVISION ROADWAY SECTION W/ UTILITIES

NOT TO SCALE SECTION VIEW



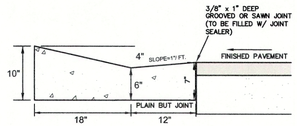
CURB & GUTTER COLLECTION SECTION

NOT TO SCALE NCDOT STD 846.01



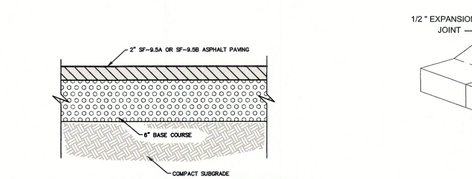
CURB & GUTTER DUMP SECTION

NOT TO SCALE NCDOT STD 846.01



CURB & GUTTER VALLEY SECTION

NOT TO SCALE

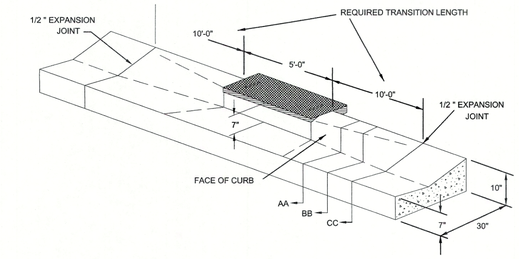


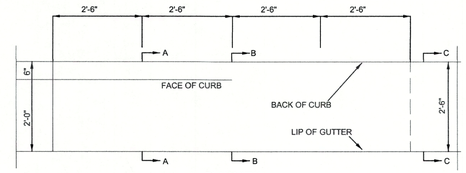
TYPICAL RESIDENTIAL ROADWAY PAVEMENT SECTION

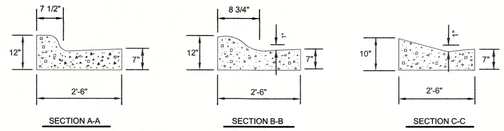
NOTE: NOT TO SCALE
PAVING SHALL CONSIST OF FINE GRADING THE SPECIFIED PARKING & DRIVE AREAS AND INSTALLING 2" SF-9.5A OR SF-9.5B ASPHALT CONCRETE SURFACE COURSE IN CONJUNCTION WITH A 6" AGGREGATE BASE COURSE. THE SOIL SUBGRADE BENEATH PAVEMENTS SHALL BE COMPACTED TO AT LEAST 95% OF ASTM D 698 PRIOR TO ANY PLACEMENT OF SUBBASE FILL OR STONE BASE COURSE. ALL SITE PREPARATION AND THE DESIGN AND CONSTRUCTION OF ALL FOUNDATIONS, GROUND SLABS, AND PAVEMENTS SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS PROVIDED BY A GEOTECHNICAL ENGINEER.

GENERAL CURB & GUTTER NOTES:

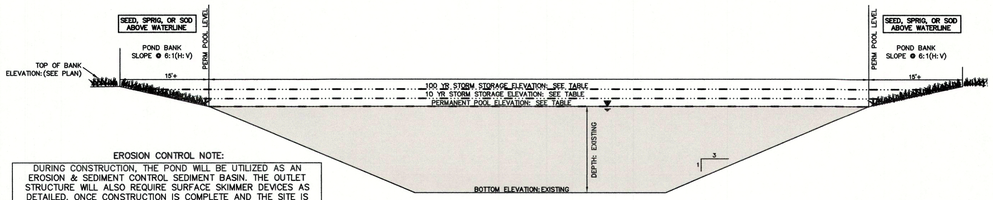
1. 1/2" X 1-1/2" DEEP CONTRACTION JOINTS SHALL BE PLACED AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
2. 1/2" EXPANSION JOINTS SHALL BE PLACED AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
3. JOINT SPACING MAY BE ALTERED IF REQUIRED BY ENGINEER.
4. CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1-1/2" DEEP.
5. FILL ALL JOINTS, EXCEPT IN 8"X6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.







CURB & GUTTER TRANSITION SECTION



EROSION CONTROL NOTE:

DURING CONSTRUCTION, THE POND WILL BE UTILIZED AS AN EROSION & SEDIMENT CONTROL SEDIMENT BASIN. THE OUTLET STRUCTURE WILL ALSO REQUIRE SURFACE SKIMMER DEVICES AS DETAILED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS PROPERLY STABILIZED THE PONDS SHALL BE CLEANED AND RESTORED TO ITS DESIGN SPECIFICATIONS AND THE BANKS PERMANENTLY STABILIZED **WITHIN 7 DAYS.**

STORMWATER MANAGEMENT POND 1
TYPICAL CROSS SECTION

NOT TO SCALE

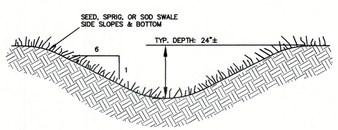
STORMWATER POND	TOP ELEV (FMSL)	100YR STORM STAGE (FMSL)	10YR STORM STAGE (FMSL)	PERM. POOL ELEV. (FMSL)	BOTTOM POND ELEV. (FMSL)	DEPTH (FT)	SIDE SLOPE ABOVE NWL	SIDE SLOPE BELOW NWL
1	SEE PLAN	2.12±	1.62±	1.00	EXISTING	EXISTING	6:1	EXISTING

POND TABLE

BMP CONSTRUCTION SEQUENCE NOTES:

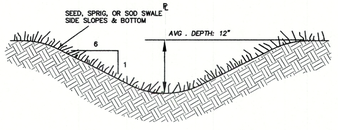
THE FOLLOWING SEQUENCE IS IN ADDITION TO THE **"CONSTRUCTION SEQUENCE SCHEDULE"** PROVIDED UNDER THE EROSION AND SEDIMENT CONTROL SPECIFICATIONS.

1. THE POND SHALL BE CONSTRUCTED AS DIRECTED ON THE PLAN AND DETAILS. PERIMETER SLOPE IMPROVEMENTS SHALL BE STABILIZED WITH TEMPORARY VEGETATION WITHIN 7 DAYS OF CONSTRUCTION. THIS WILL CREATE A TEMPORARY SEDIMENT BARRIER DURING PROJECT CONSTRUCTION. A GOOD TEMPORARY MEANS OF STABILIZATION IS A WET HYDROSEED MIX.
2. THE POND MAY BE OVER EXCAVATED TO OBTAIN SUITABLE MATERIALS FOR CONSTRUCTION OF THE PROJECT. UNSUITABLE OVERBURDEN MATERIALS MAY BE PLACED BACK INTO THE POND, HOWEVER, THE FINAL BOTTOM SHALL NOT EXCEED THE ELEVATION NOTED ON THE PLAN AND DETAILS.
3. DURING CONSTRUCTION, THE POND WILL BE UTILIZED AS AN EROSION & SEDIMENT CONTROL SEDIMENT BASIN. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS PROPERLY STABILIZED THE POND SHALL BE CLEANED AND RESTORED TO ITS DESIGN SPECIFICATIONS AND THE BANKS PERMANENTLY STABILIZED WITHIN 7 DAYS.
4. FINAL PERMANENT WETLAND VEGETATION SHALL BE INSTALLED AND STABILIZED WITHIN 14 DAYS OF FINAL BMP GRADING. PLANTINGS SHALL BE IN ACCORDANCE WITH THE PLANTING SPECIFICATIONS PROVIDED AND ANY AMENDMENTS DETERMINED IN THE ABOVE SEQUENCE.



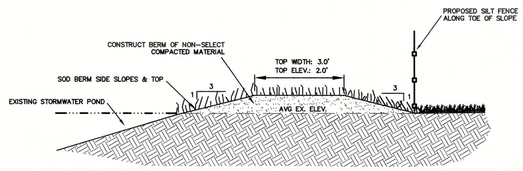
TYPICAL PRIMARY SWALE SECTION

NOT TO SCALE SLOPE PER INVERTS ON PLAN



TYPICAL PROPERTY LINE SWALE

NOT TO SCALE SECTION VIEW

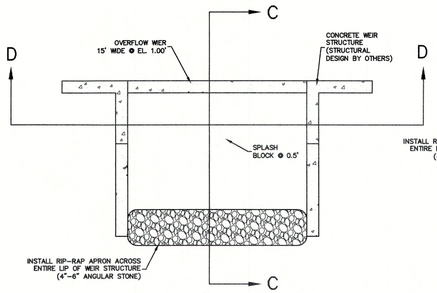


TYPICAL EARTHEN BERM SECTION

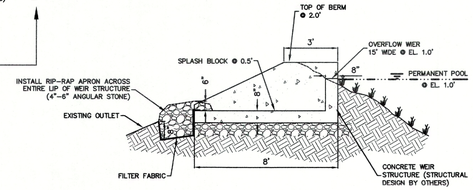
NOT TO SCALE LOCATION PER PLAN

EROSION CONTROL NOTE:

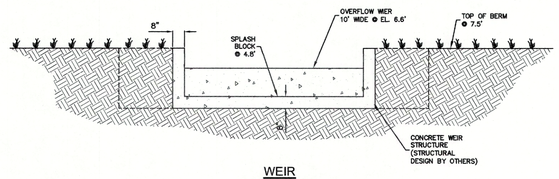
PERMANENTLY STABILIZED WITHIN 7 DAYS OF COMPLETION.



WEIR
TOP VIEW



WEIR
SECTION C-C



WEIR
SECTION D-D

OUTLET CONTROL STRUCTURE DETAIL

N.T.S.

THE CONTRACTOR SHALL CONFIRM ALL STRUCTURE DIMENSIONS AND COORDINATE WITH MANUFACTURER BEFORE FABRICATION

OUTLET STRUCTURE NOTES:

1. STRUCTURE DESIGN SPECIFICATIONS SHALL CONFORM TO LATEST ASTM C913 SPECIFICATIONS FOR "PRECAST CONCRETE WATER & WASTEWATER STRUCTURES.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 3,000PSI.
3. STEEL REINFORCING DESIGN TO CONFORM TO THE REQUIREMENTS OF ASTM C890 SPECIFICATIONS FOR "STRUCTURAL DESIGN LOADING FOR WATER & WASTEWATER STRUCTURES" AND SHALL UTILIZE GRADE 60 RE-BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615 OR WWF CONFORMING TO THE REQUIREMENTS OF ASTM A185 OR BOTH.
4. PIPE PENETRATION TO BE AS SPECIFIED. PIPE TO BE INSTALLED AS PER NCDOT STANDARDS FOR MORTAR JOINT CONNECTIONS.
5. JOINTS TO BE SEALED WITH BUTYL RUBBER JOINT SEALANT CONFORMING TO THE REQUIREMENTS OF ASTM C990, OR MORTAR AS PER NCDOT REQUIREMENTS OR BOTH.
6. ANY DEVIATIONS FROM THE APPROVED PLAN & SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

FINAL DRAWING
NOT RELEASED FOR CONSTRUCTION

Bissell Professional Group
Engineering & Surveying
3512 North Croatan Highway
P.O. Box 1568
Kitty Hawk, North Carolina 27949
(252) 261-3113
FAX (252) 261-1760

BISSELL
Engineers, Planners, Surveyors and Environmental Specialists

ROADWAY, DRAINAGE & MISC. CONSTRUCTION DETAILS

PROJECT: COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042639 DAVID M. KLEBITZ 2-28-23

DATE: 2-15-23	SCALE: NO SCALE
DESIGNED: BPG	CHECKED: MSB
DRAWN: KFW/DMK	APPROVED: BPG

SHEET: 9 OF 16

CAD FILE: 459600B3

PROJECT NO: 4596

GENERAL PROJECT NOTES:

1. PROJECT NAME: COROLLA BOAT CLUB - PHASE 1
   POPLAR BRANCH, CURRITUCK COUNTY, NORTH CAROLINA
2. APPLICANT: OUTER BANKS VENTURES, INC.
   P.O. BOX 549
   COROLLA, NC 27927
3. PROJECT DESCRIPTION: 6 LOT SUBDIVISION
4. NEAREST RECEIVING STREAM: SANDERS BAY - INDEX NUMBER: 30-1-11
5. STREAM CLASSIFICATION: SC - PASQUOTANK RIVER BASIN
6. PROJECT AREA TABULATION:

TOTAL PROPERTY AREA :	36 AC.
TOTAL PROPOSED DISTURBED AREA :	12.0 AC.

AREA CALCULATION NOTE:
All areas have been calculated utilizing properties within the Autocad software.

MATERIAL BALANCE NOTE:
All excavated material occurring during the course of construction shall remain on-site for roadway construction and lot grading. See SCHEDULE OF LAND DISTURBING ACTIVITIES provided on Sheet 5 of this set for an estimated cut fill material balance for the project.

WETLAND NOTE:
No 404 jurisdictional wetlands have been identified on the property.

STABILIZATION NOTE:
The angle of graded slopes and fills shall be no greater than the angle that can be retained by vegetative cover or other adequate erosion control devices or structures.
In any event, all disturbed areas left exposed will, WITHIN 14 CALENDAR DAYS OF COMPLETION of any phase of grading, be planted or otherwise provided with temporary or permanent ground cover, devices, or structures sufficient to restrain erosion.
Additionally, certain critical areas as identified on the plan, such as, but not limited to, perimeter dikes, swales, slopes steeper than 3:1, and areas located within High Quailty Water Zones, must be temporarily or permanetly stabilzed WITHIN 7 CALENDAR DAYS OF COMPLETION of any phase of grading in these areas.
A permanent ground cover for all disturbed areas must be provided WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (whichever is shorter) following completion of construction or development.

SEDIMENTATION AND EROSION CONTROL NOTES:

A. NARRATIVE AND SITE DATA

COROLLA BOAT CLUB - PHASE 1 IS A MIXED USE DEVELOPMENT SLATED FOR CONSTRUCTION ON A VACANT TRACT OF LAND LOCATED WEST OF NC HWY 12 ALONG THE SOUTH SIDE OF MALIA DR IN THE COROLLA, CURRITUCK COUNTY. THE DEVELOPMENT IS ALSO KNOWN AS PHASE 10 OF THE MONTERAY SHORES PUD AND INCLUDES 1 COMMERCIAL LOT AND 5 RESIDENTIAL SINGLE FAMILY HOME LOTS. THE SUBDIVISION IS SERVED BY PROPOSED ROADWAY, DRAINAGE, UTILITY AND AMENITY IMPROVEMENTS.

THE SITE'S EXISTING TOPOGRAPHY IS GENERALLY FLAT, WITH SLOPES RANGING BETWEEN 0-1% AND ELEVATIONS RANGING FROM 10 FT MSL TO BELOW 1 FT MSL. THE PROPERTY IS BOUNDED TO THE NORTH BY MALIA DR, TO THE EAST AND SOUTH BY EXISTING COMMERCIAL DEVELOPMENT AND TO THE WEST BY SANDERS BAY. THE PROPERTY IS CURRENTLY VACANT SURROUNDING DEVELOPMENT IS PRIMARILY COMMERCIAL. APPROX. 21 ACRES OF CAMA AND 404 JURISDICTIONAL WETLANDS EXISTT BETWEEN THE SOUTHEASTERN UPLAND AREAS AND THE BAY.

ON-SITE DRAINAGE IS LIMITED TO AN EXISTING CULVERT EXTENDING FROM MALIA DR. TO AN EXISTING POND LOCATED ON THE PROPERTY. THE EXISTING CULVERT SERVICES AS A DRAINAGE OUTLET TO SURROUNDING COMMERCIAL DEVELOPMENTS.

PURSUANT TO THE USDA SOIL SURVEY MANUAL OF CURRITUCK COUNTY, SITE SOILS ARE PRIMARILY COMPOSED OF OSIER FINE SAND ACROSS THE DEVELOPABLE UPLAND AREA AND CURRITUCK MUCKY PEAT ACROSS THE WETLANDS.

CONSTRUCTION SEQUENCE SCHEDULE

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
Construction Access— Construction entrance, construction routes, equipment parking areas	First land—disturbing activity—Stabilize bare areas immediately with gravel & temporary vegetation as construction takes place.
Sediment Traps & Barriers Basin traps, sediment fences, & outlet protection	Install principal basins after construction site is accessed. Install additional traps and barriers as needed during grading.
Runoff Control— Diversions, perimeter dikes, water bars, and outlet protection	Install key practices after principal sediments traps and before land grading. Install additional runoff—control conveyance measures during grading.
Runoff Conveyance System— Stabiles stream banks, storm drains, channels, Inlet & outlet protection, slope drains	Where necessary, stabilize stream banks as early as possible. Install principal runoff conveyance system with runoff—control measures. Install remainder of system after grading.
Land Clearing & Grading— Site preparation— cutting, filling & grading, sediment traps, barriers, diversions, drains, surface roughening	Begin major clearing and grading after principal & key runoff—control measures area installed. Clear borrow & disposal areas as needed. Install additional control measures as grading progresses. Mark trees & buffer areas for preservation.
Surface Stabilization— Temporary & permanent seeding, mulching, sodding, rip rap.	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or complete.
Building Construction— Buildings, utilities, paving.	Install necessary erosion & sedimentation control practices as work takes place.
Landscaping & Final Stabilization— Topsoiling, trees & shrubs, permanent seeding, mulching, sodding, rip rap	Stabilize all open areas, including borrow & spoil areas. Remove & stabilize all temporary control measures.

LAND GRADING CONSTRUCTION SPECIFICATIONS

1. Construct & maintain all erosion & sedimentation control practices & measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
4. Clear & grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods.
11. Following completion of any phase of grading, provide a groundcover (temporary or permanent) on all exposed slopes within 14 calendar days, or 7 calendar days in critical areas identified on the plan; and, a permanent groundcover for all disturbed areas within 15 working days or 90 calendar days (whichever is shorter) following completion of construction or development.
12. Provide adequate protection from erosion for all topsoil stockpiles, borrow areas, and spoil areas.

MAINTENANCE
Periodically check all graded areas & the supporting erosion & sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water—disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small—eroded areas before they become significant gullies is an essential part of an effective erosion & sedimentation control plan.

PERMANENT SEEDING

The purpose of permanent seeding is to reduce erosion and decrease sediment yield from disturbed areas, and to permanently stabilize such areas in a manner that is economical, adapts to site conditions, and allows selection of the most appropriate plant materials. These areas must be seeded or planted within 15 working days or 90 calendar days after final grade is reached, unless temporary stabilization is applied.

PERMANENT SEEDING SPECIFICATIONS
Seeding Recommendations for Summer
SEEDING DATES — April to July
SEEDING MIXTURE

Species	Rate
Common bermudagrass	10/1,000 sf (sprigs)
	1—2 lb/1,000 sf (seed)
	SOD (See Sodding Notes)

Seeding Recommendations for Early Fall through Early Spring
SEEDING DATES — August to March (early fall and spring recommended)

Species	Rate
Kentucky 31 Tall Fescue	6 lb/1,000 sf (broadcast seed)

SEEDING NOTES—
1. Sprig or sod. Moisture is essential during initial establishment. Sod must be kept watered for 2—3weeks, but can be planted earlier or later than sprigs.

Soil Amendments—
It is highly recommended that soils be tested and amended as found necessary. If a sois are not tested follow these recommendations:
Apply 3,000 lb/acre of ground agricultural limestone and 500 lb/acre of 10—10—10 starter fertilizer, or 50 lb/acre nitrogen from turf—type slow—release fertilizer. Add 25—50 lb/acre nitrogen at 2—3 week intervals through midsummer.

Sprigging—
Plant sprigs in furrows with a tractor—drawn transplanter, or broadcast by hand. (Not recommended for Tall Fescue)

Furrows should be 4—6 inches deep and 2 feet apart. Place sprigs about 2 ft. apart in a row with one end at or above ground level.

Broadcast at rates shown above, and press sprigs into the top 1/2—2 inches of soil with a disk set straight so that sprigs are not brought back toward the surface.

Mulch—
Do not mulch Bermuda Grass. For Tall Fesuce seed, apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Water as needed. Mow bermuda to 3/4 to 1—inch height and tall fescue to 2.5 — 3.5 inch height. Topdress bermuda with 40 lb/acre nitrogen in April, 50 lb in May, 50 lb in June, 50 lb in July, and 25 lb in August. Top dress tall fescue in mid September,again in November and February with turf—grade 3—1—2 or 4—1—2 ratio turf—grade fertilizer. Fertilize with 1 lb of actual nitrogen per 1,000 sf. Do not fertilze tall fescue between Mid March and Early September.

TEMPORARY SEEDING

The purpose of temporary seeding is to temporarily stabilize denuded areas that will not be brought to final grade or permanently seeded for a period of more than 14 calendar days, **or 7 days in critical areas indentified on the plan.**

TEMPORARY SEEDING SPECIFICATIONS
Seeding Recommendations for Late Winter & Early Spring
SEEDING DATES— December 1 to April 15
SEEDING MIXTURE

Species	Rate (lb/acre)
Winter Rye (grain)	120 (Annual Ryegrass shall not be used)
Annual Lespedeza (Kobe)	50

*Omit Annual Lespedeza when duration of temporary cover is not to extend beyond June

Soil Amendments—
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10—10—10 fertilizer.

Mulch—
Apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Refertilize if growth is not fully adequate. Reseed, fertilize and mulch immediately following erosion or other damage.

Seeding Recommendations for Summer
SEEDING DATES— April 15 to August 15
SEEDING MIXTURE

Species	Rate (lb/acre)
German Millet	40

Soil Amendments—
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10—10—10 fertilizer.

Mulch—
Apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Refertilize if growth is not fully adequate. Reseed, fertilize and mulch immediately following erosion or other damage.

Seeding Recommendations for Fall
SEEDING DATES— August 15 to December 30
SEEDING MIXTURE

Species	Rate (lb/acre)
Winter Rye (grain)	120

Soil Amendments—
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10—10—10 fertilizer.

Mulch—
Apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 Id/acre Kobe Lespedeza in late February or Early March.

SODDING

The purpose of permanent seeding is to prevent erosion and damage from sediment and runoff by stabilizing the soil surface with permanent vegetation for the purpose of:
—the provision of immediate vegetative cover in critical areas
—to stabilize disturbed areas with a suitable plant material that cannot be established by seed.
—to stabilize drainage ways & channels and other areas of concentrated flow where flow velocities will not exceed that specified grass lining.

SODDING SPECIFICATIONS
Sod Quality
—Sod should be machine cut at a uniform depth of 1/2—2 inches
—Sod should not have been cut in excessively wet or dry weather.
—Sections of sod should be standard size as determined by the supplier, uniform, and untorn.
—Sections of sod should be strong enough to support their own weight and retain their size and shape when lifted by one end.
—Harvest, delivery, and installation of sod should take place within a period of 36 hours.

Soil Amendments—
Apply lime and fertilizer according to soil tests or apply 2 tons/acre of pulverized agricultural limestone and 1,000 lb/acre 10—10—10 fertilizer in the fall, or 5—10—10 in spring.

Prior to laying sod, clear the soil surface of trash, debris, roots, branches, stones, and clods larger than 2 inches in diameter. Fill or level low spots in order to avoid standing water. Rake or harrow the site to achieve a smooth and level final grade. Complete soil preparation by rolling or cultipacking to firm soil.

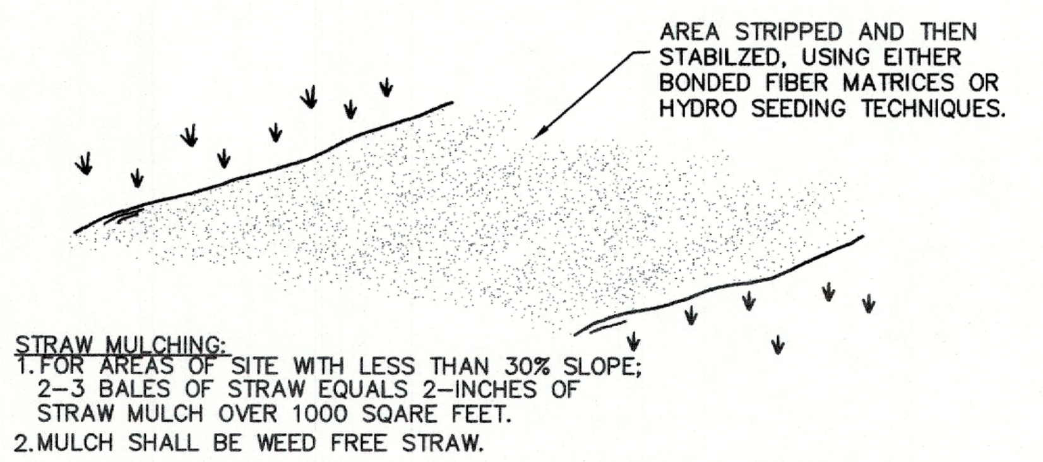
Sod Installation—
1. Moistening the sod after it is unrolled helps maintain viability. Store in shade during installation.
2. Rake the soil surface to break the crust just before laying sod. During the summer, lightly irrigate the soil, immediately before laying sod to cool the soil and reduce root burning & dieback.
3. Do not sod on grave, frozen soils, or soils that have been treated recently with sterilants or herbicides.
4. Lay the first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger strips in a brick—like pattern. Be sure that the sod is not stretched or overlapped and that all joints are butted tightly to prevent voids. Use a knife or sharp spade to trim and fit irregular shaped areas.
5. Install strips of sod with their longest dimension perpindicular to the slope. On slopes of 3:1 or greater, or wherever erosion may be a problem, secure sod with pegs or staples.
6. As sodding of clearly defined areas is completed, roll sod to provide good contact between roots and soil.
7. After rolling, irrigate until the soil is wet 4 inches below the sod.
8. Keep sodded areas moist to a depth of 4 inches until the grass takes root. This can be determined by tugging on the sod.
9. Mowing should not be attempted until the sod is firmly rooted, usually 2—3 weeks.

Sodded Waterways
1. Prepare soil as described above.
2. Lay sod strips perpindicular to the direction of flow, with the lateral joints staggered in a brick—like pattern. Butt edges tightly together.

Maintenance—
After the first week, water as necessary to maintain adequate moisture in the root zone & prevent dormancy of the sod.

Do not remove more than one—third of the shoot in any one mowing. Grass height should be maintained between 2—3 inches unless otherwise specified.

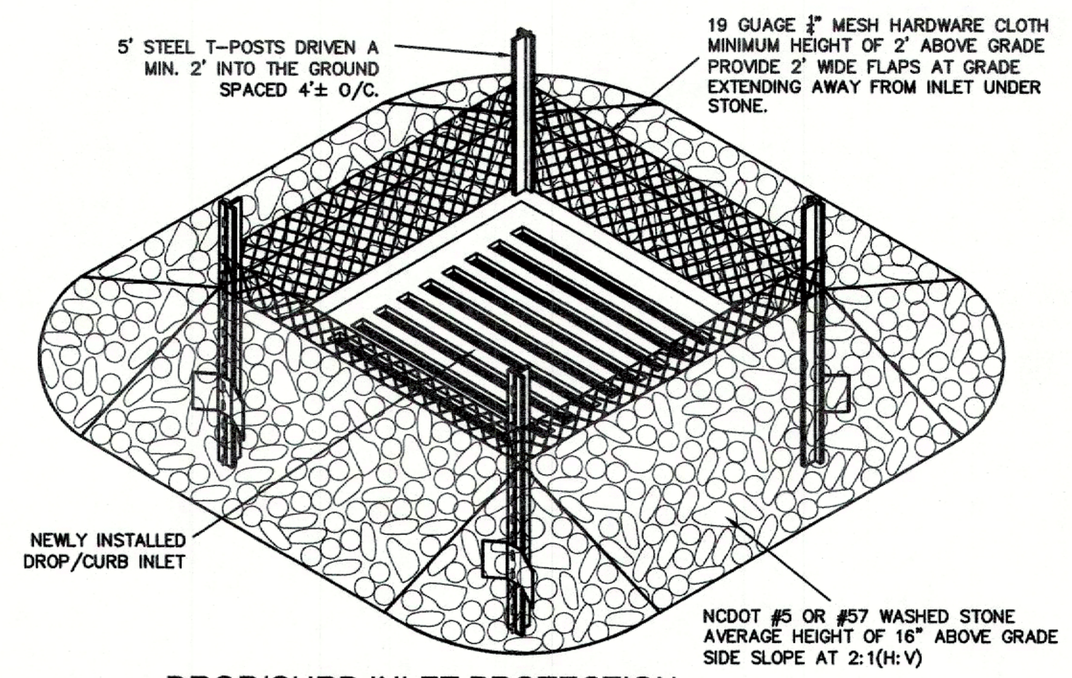
After first growing season, established sod requires fertilization, and may also require lime. Follow soil test recommendations.



STRAW MULCHING:
1. FOR AREAS OF SITE WITH LESS THAN 30% SLOPE; 2—3 BALES OF STRAW EQUALS 2—INCHES OF STRAW MULCH OVER 1000 SQARE FEET.
2. MULCH SHALL BE WEED FREE STRAW.

TO PROVIDE TEMPORARY SOIL STABILIZATION BY PLANTING GRASSES AND LEGUMES TO AREAS THAT WOULD REMAIN BARE FOR MORE THAN 14 CALENDAR DAYS, OR 7 DAYS IN INDENTIFIED CRITICAL AREAS, WHERE PERMANENT COVER IS NOT NECESSARY OR APPROPRIATE.

LAND DISTURBANCE & STABILIZATION DETAIL
NOT TO SCALE

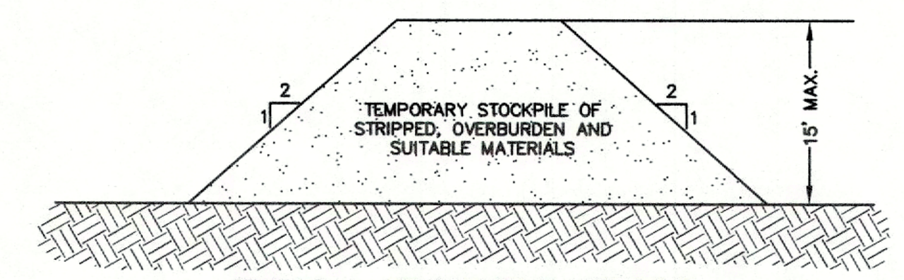


5' STEEL T—POSTS DRIVEN A MIN. 2' INTO THE GROUND SPACED 4'± O/C.
19 GUAGE ¼" MESH HARDWARE CLOTH MINIMUM HEIGHT OF 2' ABOVE GRADE PROVIDE 2' WIDE FLAPS AT GRADE EXTENDING AWAY FROM INLET UNDER STONE.
NEWLY INSTALLED DROP/CURB INLET
NCDOT #5 OR #57 WASHED STONE AVERAGE HEIGHT OF 16" ABOVE GRADE SIDE SLOPE AT 2:1(H:V)

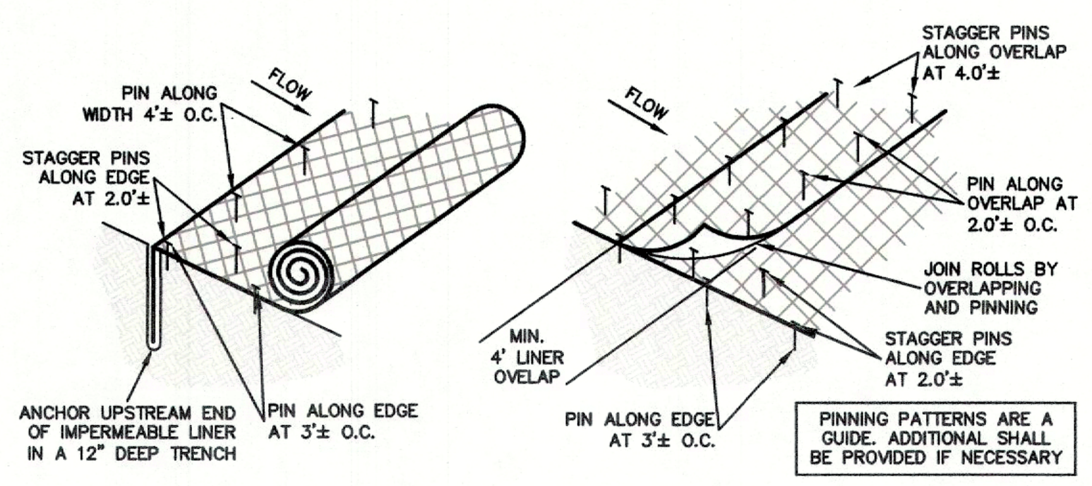
DROP/CURB INLET PROTECTION
NOT TO SCALE ISOMETRIC VIEW

INLET PROTECTION SPECIFICATIONS:
INSPECT AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE DEBRIS FROM MESH AND REPLACE STONES AS NEEDED.

REMOVE ONCE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

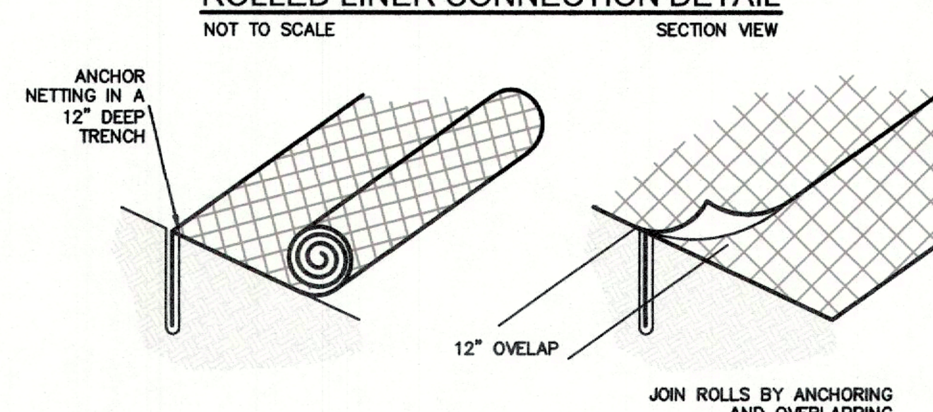


TYPICAL STOCKPILE SECTION
NOT TO SCALE SECTION VIEW
STOCKPILES HAVING 2:1 SIDE SLOPES ARE CONSIDERED CRITICAL AREAS. SEE STABILIZATION NOTES FOR TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS. LEVEL GRADE AREA AND STABILIZE AT COMPLETION



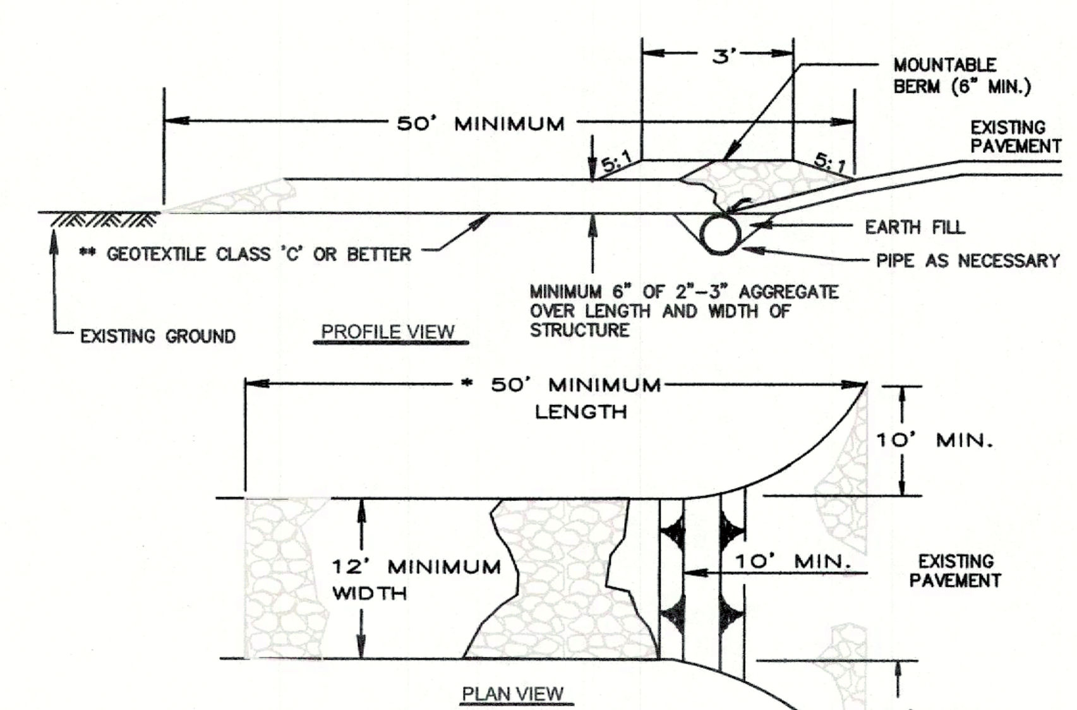
PIN ALONG WIDTH 4'± O.C.
FLOW
STAGGER PINS ALONG EDGE AT 2.0'±
ANCHOR UPSTREAM END OF IMPERMEABLE LINER IN A 12" DEEP TRENCH
PIN ALONG EDGE AT 3'± O.C.
STAGGER PINS ALONG OVERLAP AT 4.0'±
PIN ALONG OVERLAP AT 2.0'± O.C.
JOIN ROLLS BY OVERLAPPING AND PINNING
MIN. 4' LINER OVELAP
STAGGER PINS ALONG EDGE AT 2.0'±
PIN ALONG EDGE AT 3'± O.C.
PINNING PATTERNS ARE A GUIDE. ADDITIONAL SHALL BE PROVIDED IF NECESSARY

ROLLED LINER CONNECTION DETAIL
NOT TO SCALE SECTION VIEW



ROLLED EROSION CONTROL MATTING DETAIL
NO SCALE LOCATION AS NOTED ON PLAN

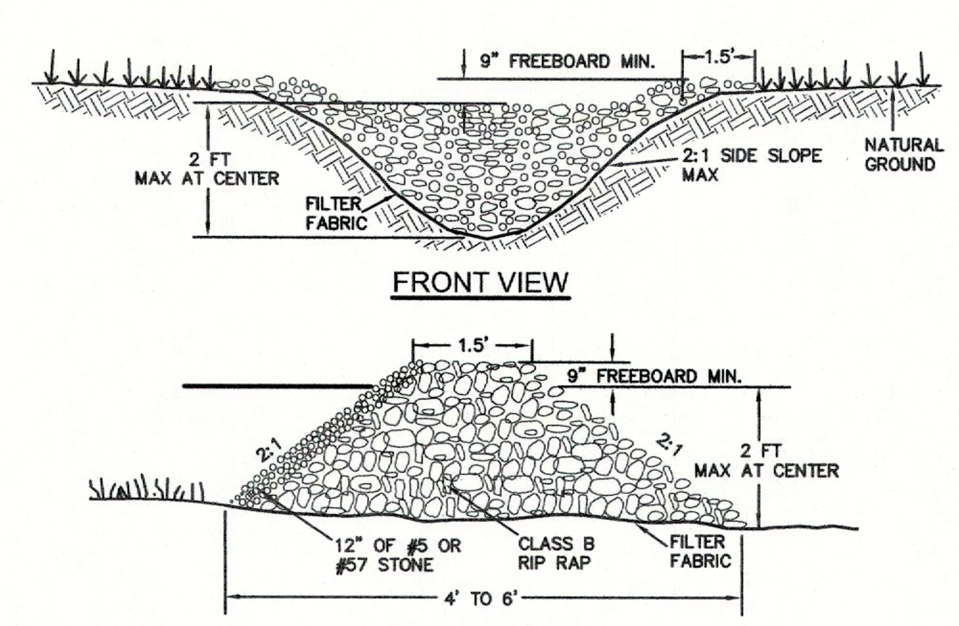
ROLLED EROSION CONTROL MATTING (R.E.C.M.) SPECIFICATIONS:
1. All areas identified on these plans as requiring an erosion control matting shall be lined with a protective covering to minimize erosion and protect seed until permanent vegetation is established.
2. Covering shall be composed of a bio or photo degradable material to minimize long term environmental impacts.
3. Mulching with straw or other organic materials can be utilized only when it will not impede the establishment of permanent vegetation. Mulches must be properly anchored which may be difficult in some environments. An example is straw mulch with jute netting stapled or pinned in place.
4. Pre—manufactured rolled erosion control products (RECP) are highly recommended for this application. RECP's shall be installed according to manufacturer specifications for channel linings. An example is a woven straw or wooden fiber Excelsior matting.



50' MINIMUM
3'
MOUNTABLE BERM (6" MIN.)
EXISTING PAVEMENT
5:1
5:1
EARTH FILL
PIPE AS NECESSARY
** GEOTEXTILE CLASS 'C' OR BETTER
MINIMUM 6" OF 2"—3" AGGREGATE OVER LENGTH AND WIDTH OF STRUCTURE
EXISTING GROUND
PROFILE VIEW
* 50' MINIMUM LENGTH
10' MIN.
12' MINIMUM WIDTH
10' MIN.
EXISTING PAVEMENT
10' MIN.
PLAN VIEW

CONSTRUCTION ENTRANCE
NO SCALE LOCATION AS NOTED ON PLAN

CONSTRUCTION ENTRANCE SPECIFICATIONS
1. Length — minimum of 50' (*30' for single residence lot).
2. Width — 12' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone — crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water — all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location — A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.



TEMPORARY STONE CHECK DAM CONSTRUCTION
NOT TO SCALE *LOCATIONS AS NOTED ON PLAN*

TEMPORARY STONE CHECK DAM CONSTRUCTION SPECIFICATIONS:
1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSAL OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.
2. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
3. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
4. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
5. ALL CUT AND FILL SLOPES SHOULD BE 2:1 OR FLATTER.
6. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
7. MATERIAL USED IN THE STONE SECTION SHOULD BE A WELL—GRADED MIXTURE OF STONE WITH A d50 SIZE OF 9 INCHES(CLASS B EROSION CONTROL STONE IS RECOMMENDED) AND A MAXIMUM STONE SIZE OF 14 INCHES. THE STONE MAY BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES. THE STONE SHOULD BE HARD, ANGULAR, AND HIGHLY WEATHER—RESISTANT.
8. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION.
9. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACES STONES.

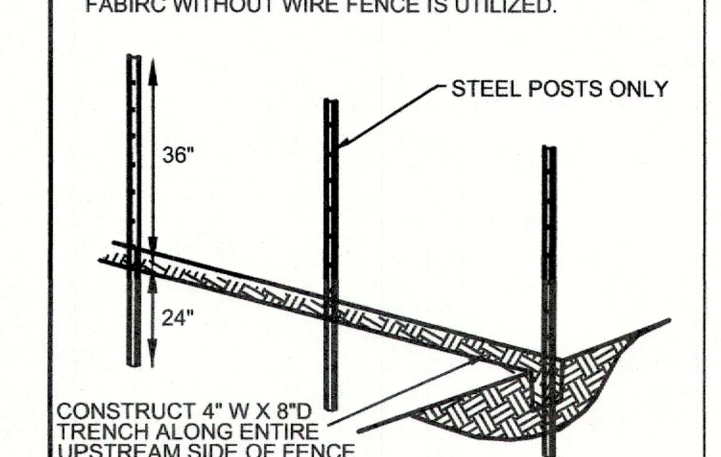
MAINTENANCE OF TEMPORARY STONE CHECK DAMS:
INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS WHEN NEEDED.

REMOVE SEDIMENT ACCUMULATION BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

POSTS MUST BE 1.33 LB/LINEAR FT. STEEL WITH A MIN. LENGTH OF 5'. POST SHALL HAVE PROJECTIONS TO FACILITATE FASTENING OF FILTER FABRIC.

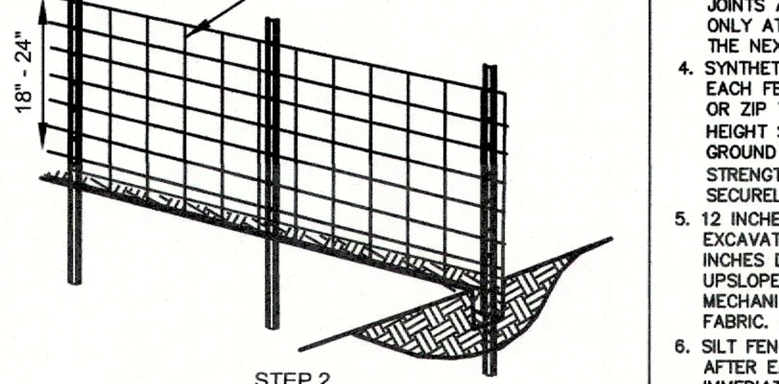
INSTALL POSTS 8' O.C. MAX WHEN STANDARD FABIRC & WIRE SUPPORT FENCE ARE UTILIZED.

INSTALL POSTS 6' O.C. MAX WHEN EXTRA STRENGTH FABIRC WITHOUT WIRE FENCE IS UTILIZED.



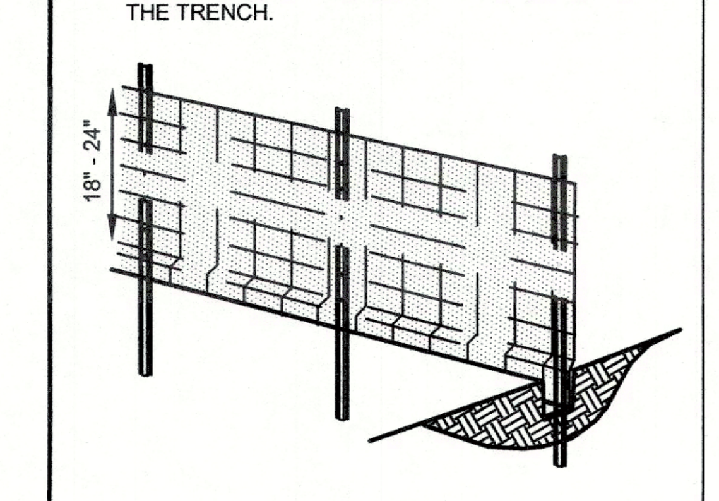
STEP 1

WHEN STANDARD STRENGTH FILTER FABRIC IS UTILIZED WIRE FENCING MUST ALSO BE INSTALLED ON UPSTREAM SIDE OF POSTS. EXTNED MAX. 24" ABOVE EXISTING GRADE TO BOTTOM OF TRENCH.



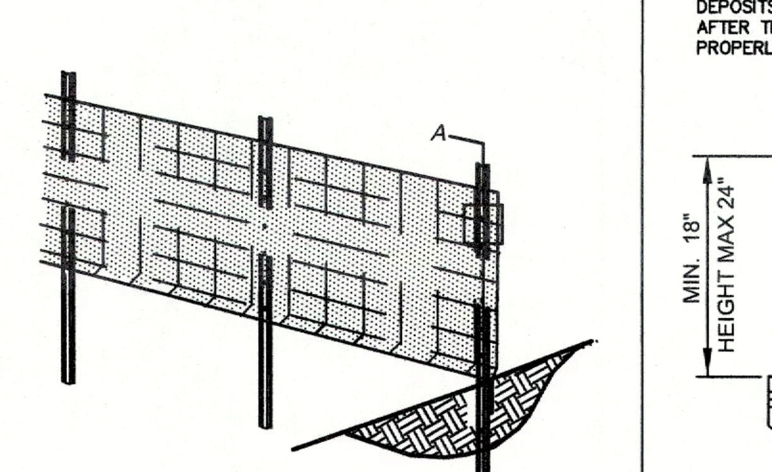
STEP 2

FASTEN THE FILTER FABRIC TO THE UPSTREAM SIDE OF POSTS OR WIRE FENCE IF UTILIZED. EXTEND FABRIC 8" DOWN & 4" FORWARD ALONG THE TRENCH.



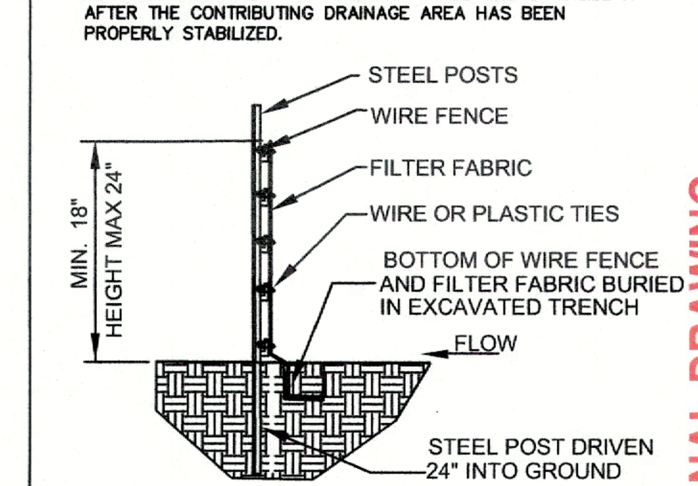
STEP 3

BACKFILL THE TRENCH AND COMPACT THE SOIL FIRMLY TO ANCHOR THE BOTTOM OF THE SILT FENCE. BURIED FABRIC SHALL NOT BE VISIBLE.



STEP 4

1. USE SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461. FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120°F.
2. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE.
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FT MINIMUM OVERLAP TO THE NEXT POST.
4. SYNTHETIC FILTER FABRIC SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH MIN. 50 LB. TENSILE STRENGTH WIRE OR ZIP TIES AT TOP, MID—SECTION AND BOTTOM. FABRIC HEIGHT SHALL BE BETWEEN 18" MIN. TO 24" MAX. ABOVE GROUND LEVEL ON THE UPSLOPE SIDE OF THE POSTS. EXTRA STRENGTH FILTER FABRIC W/6' POST SPACING SHALL BE SECURELY FASTENED DIRECTLY TO POSTS.
5. 12 INCHES OF FILTER FABRIC SHALL BE BURIED IN AN EXCAVATED TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER. BACKFILL TRENCH WITH MECHANICALLY COMPACTED SOIL PLACED OVER THE FILTER FABRIC. DO NOT ATTACH FILTER FABRIC TO TREES.
6. SILT FENCE SHALL BE INSPECTED AT LEAST ONCE A WEEK & AFTER EACH RAINFALL EVENT. MAKE ANY REPAIRS IMMEDIATELY. SHOUD THE FABRIC COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
7. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
8. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



SECTION A-A

TYPICAL SILT FENCING DETAIL
NOT TO SCALE LOCATION AS NOTED ON PLAN

FINAL DRAWING
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EROSION AND SEDIMENT CONTROL NOTES & DETAILS

PROJECT:
COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042639 DAVID M. KLEBITZ 2-20-23

DATE: 2-15-23	SCALE: NO SCALE
DESIGNED: BPG	CHECKED: MSB
DRAWN: KFW/DMK	APPROVED: BPG

SHEET: 11 OF 16
CAD FILE: 459600B3
PROJECT NO: 4596

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

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

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

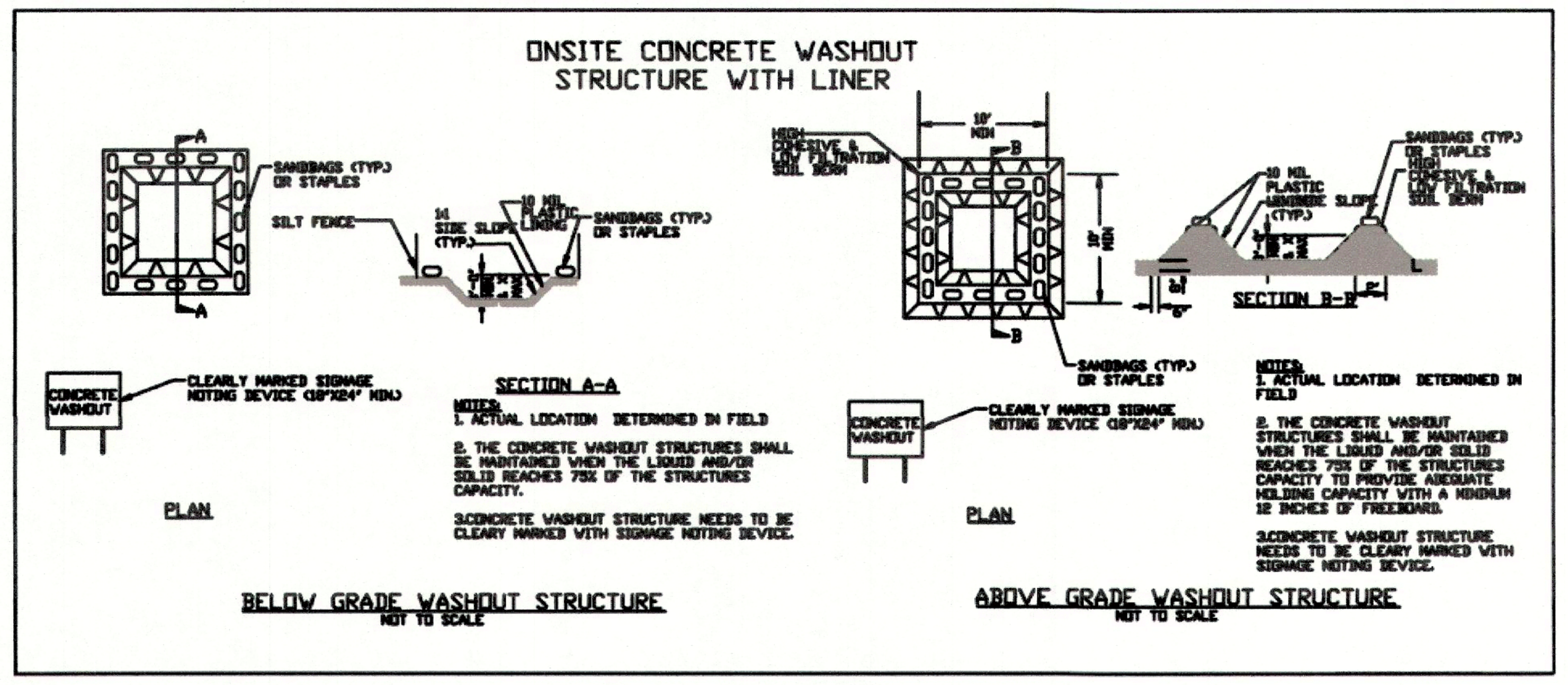
PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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

NORTH CAROLINA Environmental Quality



ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER
SANDBAGS (TYP.) OR STAPLES
SILT FENCE
CLEARLY MARKED SIGNAGE NOTING DEVICE (18"X24" MIN)
CONCRETE WASHOUT
PLAN
SECTION A-A
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.
BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE
10' MIN
HIGH COHESIVE & LOW FILTRATION SOIL BERM
10 MIL PLASTIC LINING
SECTION B-B
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.
ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

FINAL DRAWING
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BISSELL PROFESSIONAL GROUP
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NCG01 - GROUND STABILIZATION & MATERIALS HANDLING

PROJECT: COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS			
NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL SEAL 042639 ENGINEER DAVID M. KLEBITZ 2-20-23

DATE: 2-15-23	SCALE: NO SCALE
DESIGNED: BPG	CHECKED: MSB
DRAWN: KFW/DMK	APPROVED: BPG

SHEET: 12 OF 16
CAD FILE: 459600B3
PROJECT NO: 4596

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PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

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

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

2. Additional Documentation to be Kept on Site

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

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

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

3. Documentation to be Retained for Three Years

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

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

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

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

(d) Anticipated bypasses and unanticipated bypasses.

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

2. Reporting Timeframes and Other Requirements

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

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

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

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

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

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

FINAL DRAWING
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NCG01 - SELF INSPECTION, RECORDKEEPING & REPORTING

PROJECT: COROLLA BOAT CLUB - PHASE 1
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042198 DAVID M KLEVITZ 2-15-23

DATE: 2-15-23 SCALE: NO SCALE
DESIGNED: BPG CHECKED: MSB
DRAWN: KFW/DMK APPROVED: BPG
SHEET: 13 OF 16
CAD FILE: 459600B3
PROJECT NO: 4596

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U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. 2017-01236 County: Currituck U.S.G.S. Quad: Mossey Island

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **Outer Banks Ventures, Inc.**
C/O Richard Willis

Address: **Post Office Box 549**
Corrolla, North Carolina 27927

Telephone Number: **252-261-1760 A**

Size (acres) **36.1 Acres**
Nearest Waterway **Sanders Bay**
USGS HUC **03010205**

Nearest Town **Corrolla**
River Basin **Pasquotank**
Coordinates Latitude: **36.327407 N**
Longitude: **-76.819538 W**

Location description: **The project area is located at Parcel 10 Monteray Shores P.U.D., off Malia Drive and Ocean Trail Highway, adjacent to a man-made pond and the Currituck Sound, near Sanders Bay, in Corolla, Currituck County, North Carolina. NC Parcel: 9935-63-4485. Deed Book 1161. Page 734.**

Description of projects area and activity: **Discharge of fill material within approximately 3,000 square feet of freshwater pond and wetlands and the construction of a berm around an existing water control structure with rock riprap apron.**

Applicable Law: ☒ Section 404 (Clean Water Act, 33 USC 1344)
☐ Sections 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number or Nationwide Permit Number: **Nationwide Permit 18 (Minor Fill).**

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated April 29, 2022. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 252-946-6481) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Elizabeth City, North Carolina at 252-264-3901.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Raleigh W. Bland, SPWS at 910-251-4564.**

Corps Regulatory Official: Raleigh W. Bland, SPWS Date: **May 19, 2022**

Expiration Date of Verification: **March 14, 2026**

Determination of Jurisdiction:

A. ☒ There are waters, including wetlands, on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.

B. ☐ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

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

D. ☒ The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued . Action ID: **SAW-2017-01236.**

Basis For Determination: : The jurisdictional wetlands on the project site are a part of a broad continium of waters and wetlands adjacent to the Currituck Sound, a navigable Waters of the United States.

Remarks: Pond berm construction to protect repaired breach.

E. Attention USDA Program Participants

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

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

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

US Army Corps of Engineers
South Atlantic Division
Attn: Phillip A. Shannin, Review Officer
60 Forsyth Street SW, Room 10M15

Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by N/A .
It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: N/A

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Copy furnished:

CC: CESAW-RG-W/Bland

Action ID Number: SAW 2017-01236 **County:** Currituck

Permittee: Outer Banks Ventures, Inc.

Project Name: Pond Berm

Date Verification Issued: May 19, 2022

Project Manager: Raleigh W. Bland, SPWS

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Raleigh W. Bland, PWS
Washington Regulatory Field Office
2407 W. 5th Street
Washington, North Carolina 27889

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature of Permittee **Date**

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Outer Banks Ventures, Inc.**	File Number: **SAW 2017-01236**	Date: **May 19, 2022**
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☐ APPROVED JURISDICTIONAL DETERMINATION		D
☒ PRELIMINARY JURISDICTIONAL DETERMINATION		E

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

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

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

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

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

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

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

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

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: **District Engineer, Wilmington Regulatory Division** **Attn: Raleigh W. Bland, SPWS** **Washington Regulatory Field Office** **2407 W. 5th Street** **Washington, North Carolina 27889** **Phone: (910) 251-4564**	If you only have questions regarding the appeal process you may also contact: Mr. Philip A. Shannin, Administrative Appeal Review Officer CESAD-PDO U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801 Phone: (404) 562-5137

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

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

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, Attn: Raleigh W. Bland, SPWS, 69 Darlington Avenue, Wilmington, North Carolina 28403

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

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


NTS 4-29-22
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ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
DOUGLAS R. ANSEL
Interim Director

NORTH CAROLINA
Environmental Quality

March 3, 2023

LETTER OF APPROVAL WITH MODIFICATIONS

Outer Banks Ventures, Inc.
Attn: Mr. Richard Willis, Registered Agent
1099 Ocean Trail
Corolla, NC 27927

RE: Project Name: Corolla Boat Club – Phase 1 Acres Approved: 12.0
Project ID: Curri-2023-021
County: Currituck
City: Corolla
Address: Malia Drive
River Basin: Pasquotank
Date Received by LQS: March 1, 2023
Submitted By: Bissell Professional Group
Plan Type: New / Express

Dear Sir,

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable with modifications and hereby issue this letter of Approval with Modifications. The Modifications Required for Approval are listed on the attached page. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0129.

As of April 1, 2019, all new construction activities are required to complete and submit an electronic Notice of Intent (eNOI) form requesting a Certificate of Coverage (COC) under the NCG010000 Construction General Permit. After the form is reviewed and found to be complete, you will receive a link with payment instructions for the $100 annual permit fee. After the fee is processed, you will receive the COC via email. As the Financially Responsible Party shown on the FRO form submitted for this project, you MUST obtain the COC prior to commencement of any land disturbing activity. The eNOI form may be accessed at deq.nc.gov/NCG01. Please direct questions about the eNOI form to the Stormwater Program staff in the Raleigh central office. If the owner/operator of this project changes in the future, the new responsible party must obtain a new COC.

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

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

Also, this letter gives the notice required by G.S. 113A-61.1(a) of our right of periodic inspection to insure 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 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to ensure compliance with the Act.

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

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form, which you provided. This permit allows for a land-disturbance, as called for on the application plan, not to exceed the approved acres. Exceeding the acreage will be a violation of this permit and would require a revised plan and additional application fee. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project.

Sincerely,

Samir Dumpor, PE
Regional Engineer
Land Quality Section

cc w/o enc: Richard Willis, Outer Banks Ventures, Inc. (email)
David Klebitz, PE, Bissell Professional Group (email)
WaRO Division of Water Resources (email)

1. The developer is responsible for the control of sediment on-site. If the approved erosion and sedimentation control measures prove insufficient, the developer must take those additional steps necessary to stop sediment from leaving this site (NCGS 113A-57(3)). Each sediment storage device must be inspected after each storm event (NCGS 113A-54.1(e)). Maintenance and/or clean out is necessary anytime the device is at 50% capacity. All sediment storage measures will remain on site and functional until all grading and final landscaping of the project is complete (15A NCAC 04B .0113).

2. The developer is responsible for obtaining all permits and approvals necessary for the development of this project prior to the commencement of this land disturbing activity. This could include our agency's Stormwater regulations and the Division of Water Resources' enforcement requirements within Section 401 of the Clean Water Act, the U.S. Army Corps of Engineers' jurisdiction of Section 404 of the Clean Water Act, the Division of Coastal Management's CAMA requirements, the Division of Solid Waste Management's landfill regulations, the Environmental Protection Agency and/or The U.S. Army Corps of Engineers jurisdiction of the Clean Water Act, local County or Municipalities' ordinances, or others that may be required. This approval cannot supersede any other permit or approval.

3. 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. (NCGS 113A-57)

PROJECT INFORMATION SHEET

APPROVAL DATE: March 3, 2023

RESPONSIBLE PARTY: Outer Banks Ventures, Inc.

PROJECT NAME: Corolla Boat Club – Phase 1

COUNTY: Currituck NO.: Curri-2023-021

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.Q.
LAND QUALITY SECTION
ATTN: *Bradley West*
943 WASHINGTON SQUARE MALL
WASHINGTON, NORTH CAROLINA 27889
donald.west@ncdenr.gov

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 Environmental Quality 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).

Corolla Boat Club - Ph. 1, Malia Drive, Currituck County

Project Name and Location

3/3/23

Date of Plan Approval

Sam Pruitt

Regional Engineer

DEQ

CURR-2023-021

Certificate of Coverage Number

Division of Water Resources

State of North Carolina
Department of Environmental Quality
Division of Water Resources

FAST TRACK SEWER SYSTEM EXTENSION APPLICATION
INSTRUCTIONS FOR FORM: FTA 06-21 & SUPPORTING DOCUMENTATION

This application is for sewer extensions involving gravity sewers, pump stations and force mains, or any combination that has been certified by a professional engineer and the applicant that the project meets the requirements of 15A NCAC 02T and the Division's Minimum Design Criteria (Gravity Sewer & Pump Stations/Force Mains) and that **plans, specifications and supporting documents have been prepared in accordance with 15A NCAC 02T, 15A NCAC 02T .0300, Division policies, and good engineering practices.**

While no upfront engineering design documents are required for submittal, in accordance with 15A NCAC 02T .0305(b), design documents must be prepared prior to submittal of a fast track permit application to the Division. This would include plans, design calculations, and project specifications referenced in 15A NCAC 02T .0305 and the applicable minimum design criteria. **These documents shall be immediately available upon request by the Division.**

Projects that are deemed permitted (do not require a permit from the Division) are explained in 15A NCAC 02T.0303.

Projects not eligible for review via the fast track process (must be submitted for full technical review):

- Projects that do not meet any part of the minimum design criteria (MDC) documents;
- Projects that involve more than one variance from the requirements of 15A NCAC 02T;
- Pressure sewer systems utilizing simplex septic tank-effluent pumps (STEPs) or simplex grinder pumps;
- Simplex STEP or simplex grinder pumps connecting to pressurized systems (e.g. force mains);
- Vacuum sewer systems.

General – When submitting an application, please use the following instructions as a checklist in order to ensure all required items are submitted. Adherence to these instructions and checking the provided boxes will help produce a quicker review time and reduce the amount of requested additional information. **Failure to submit all required items will necessitate additional processing and review time, and may result in return of the application**. Unless otherwise noted, the Applicant shall submit one original and one copy of the application and supporting documentation.

A. One Original and One Copy (second copy may be digital) of Application and Supporting Documents

- ☒ Required unless otherwise noted. Signatures on original must be "wet ink" or secure digital signatures. Please do not submit engineering design plans with the application unless specifically requested.

B. Cover Letter/Narrative Description (Required for All Application Packages):

- ☒ List all items included in the application package, as well as a brief description of the requested permitting action.
- ➢ Be specific as to the system type, number of homes served, flow allocation required, etc.
- ➢ Include the permit number/status of any other required sewer permits (downstream/upstream)
- ➢ If necessary for clarity, include attachments to the application form.

C. Application Fee (All New and Modification Application Packages):

- ☒ Submit a check or money order in the amount of **$480.00,** dated no more than 90 days prior to application submittal.
- ➢ Payable to North Carolina Department of Environmental Quality (NCDEQ)

D. Fast Track Application (Required for All Application Packages, Form FTA 05-21):

- ☒ Submit the completed and appropriately executed application.
- ➢ If necessary for clarity or due to space restrictions, attachments to the application may be made.
- ☒ If the Applicant Type in Item I.2 is a corporation or company, provide documentation it is registered for business with the North Carolina Secretary of State.
- ☐ If the Applicant Type in Item I.2 is a partnership or d/b/a, enclose a copy of the certificate filed with the Register of Deeds in the county of business.
- ☒ The Project Name in Item II.1 shall be consistent with the project name on the flow acceptance letters, agreements, etc.
- ☒ The Professional Engineer's Certification on Page 5 of the application shall be signed, sealed and dated by a North Carolina licensed Professional Engineer.
- ☒ The Applicant's Certification on Page 5 of the application shall be signed in accordance with 15A NCAC 02T .0106(b). Per 15A NCAC 02T .0106(c), an alternate person may be designated as the signing official if a delegation letter is provided from a person who meets the criteria in 15A NCAC 02T .0106(b).

E. Flow Tracking/Acceptance Form (Form: FTSE 04-16) (If Applicable):

☒ Submit the completed and executed FTSE form from the owners of the downstream sewers and treatment facility.

- Multiple forms maybe required where the downstream sewer owner and wastewater treatment facility are different.
- The flow acceptance indicated in form FTSE must not expire prior to permit issuance and must be dated less than one year prior to the application date.
- Submittal of this application and form FTSE indicates that owner has adequate capacity and will not violate G.S. 143-215.67(a).
- Intergovernmental agreements or other contracts will not be accepted in lieu of a project-specific FTSE.

F. Site Maps (All Application Packages):

☒ Submit an 8.5-inch x 11-inch color copy of a USGS Topographic Map of sufficient scale to identify the entire project area, including the closest surface waters.

- General location of the project components (gravity sewer, pump stations, & force main)
- Downstream connection points and permit number (if known) for the receiving sewer

☒ Include an aerial location map showing general project area (such as street names or latitude/longitude) so that Division staff can easily locate it in the field.

G. Existing Permit (Application Packages for Modifications to an Existing Permit):

☐ Submit a copy of the most recently issued existing permit.

☐ **Include a descriptive and clear narrative identifying the previously permitted items to remain in the permit, items to be added, and/or items to be modified** (the application form itself should include only include items to be added/modified). The narrative should also include whether any previously permitted items have been certified.

☐ **The narrative should clearly identify the requested permitting action and accurately describe the sewers to be listed in the final permit.**

H. Power Reliability Plan (Required if portable reliability option utilized for Pump Station):

☐ Per 15A NCAC 02T .0305(h)(1), submit documentation of power reliability for pumping stations.

- This alternative is only available for average daily flows less than 15,000 gallons per day
- It shall be demonstrated to the Division that the portable source is owned or contracted by the applicant and is compatible with the station. The Division will accept a letter signed by the applicant (see 15A NCAC 02T .0106(b)) or proposed contractor, stating that "the portable power generation unit or portable, independently-powered pumping units, associated appurtenances and personnel are available for distribution and operation of this pump station."
- **If the portable power source or pump is dedicated to multiple pump stations, an evaluation of all the pump stations' storage capacities and the rotation schedule of the portable power source or pump, including travel timeframes, shall be provided in the case of a multiple station power outage. (Required at time of certification)**

I. Certificate of Public Convenience and Necessity (All Application Packages for Privately-Owned Public Utilities):

☒ Per 15A NCAC 02T .0115(a)(1) provide the Certificate of Public Convenience and Necessity from the North Carolina Utilities Commission demonstrating the Applicant is authorized to hold the utility franchise for the area to be served by the sewer extension, or

☐ Provide a letter from the North Carolina Utilities Commission's Water and Sewer Division Public Staff stating an application for a franchise has been received and that the service area is contiguous to an existing franchised area or that franchise approval is expected.

J. Operational Agreements (Applications from HOA/POA and Developers for lots to be sold):

☐ Home/Property Owners' Associations

- ☐ Per 15A NCAC 02T .0115(c), submit the properly executed Operational Agreement (FORM: HOA).
- ☐ Per 15A NCAC 02T .0115(c), submit a copy of the Articles of Incorporation, Declarations and By-laws.

☐ Developers of lots to be sold

- ☐ Per 15A NCAC 02T .0115(b), submit the properly executed Operational Agreement (FORM: DEV).

For more information, visit the Division's collection systems website

THE COMPLETED APPLICATION PACKAGE INCLDING ALL SUPPORTING INFORMATION AND MATERIALS, SHOULD BE SENT TO THE APPROPRIATE REGIONAL OFFICE:

REGIONAL OFFICE	ADDRESS	COUNTIES SERVED
Asheville Regional Office Water Quality Section	2090 US Highway 70 Swannanoa, North Carolina 28778-8211 (828) 296-4500 (828) 299-7043 Fax	Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Yancey
Fayetteville Regional Office Water Quality Section	225 Green Street Suite 714 Fayetteville, North Carolina 28301-5095 (910) 433-3300 (910) 486-0707 Fax	Anson, Bladen, Cumberland, Harnett, Hoke, Montgomery, Moore, Robeson, Richmond, Sampson, Scotland
Mooresville Regional Office Water Quality Section	610 E. Center Avenue Mooresville, North Carolina 28115 (704) 663-1699 (704) 663-6040 Fax	Alexander, Cabarrus, Catawba, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, Union
Raleigh Regional Office Water Quality Section	3800 Barrett Drive Raleigh, North Carolina 27609 (919) 791-4200 (919) 571-4718 Fax	Chatham, Durham, Edgecombe, Franklin, Granville, Halifax, Johnston, Lee, Nash, Northampton, Orange, Person, Vance, Wake, Warren, Wilson
Washington Regional Office Water Quality Section	943 Washington Square Mall Washington, North Carolina 27889 (252) 946-6481 (252) 975-3716 Fax	Beaufort, Bertie, Camden, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, Wayne
Wilmington Regional Office Water Quality Section	127 Cardinal Drive Extension Wilmington, North Carolina 28405 (910) 796-7215 (910) 350-2004 Fax	Brunswick, Carteret, Columbus, Duplin, New Hanover, Onslow, Pender
Winston-Salem Regional Office Water Quality Section	450 W. Hanes Mill Road Suite 300 Winston-Salem, North Carolina 27105 (336) 776-9800 (336) 776-9797 Fax	Alamance, Alleghany, Ashe, Caswell, Davidson, Davie, Forsyth, Guilford, Rockingham, Randolph, Stokes, Surry, Watauga, Wilkes, Yadkin

DWR
Division of Water Resources

State of North Carolina
Department of Environmental Quality
Division of Water Resources

FAST TRACK SEWER SYSTEM EXTENSION APPLICATION
FTA 06-21 & SUPPORTING DOCUMENTATION

Application Number: _____ (to be completed by DWR)

All items must be completed or the application will be returned

I. APPLICANT INFORMATION:

1. Applicant's name: Carolina Water Service of NC (company, municipality, HOA, utility, etc.)
2. Applicant type: ☐ Individual ☐ Corporation ☐ General Partnership ☒ Privately-Owned Public Utility ☐ Federal ☐ State/County ☐ Municipal ☐ Other
3. Signature authority's name: Travis Dupree per 15A NCAC 02T .0106(b)
   Title: VP of Engineering
4. Applicant's mailing address: 4944 Parkway Plaza Blvd., Suite 375
   City: Charlotte State: NC Zip: 28217-____
5. Applicant's contact information:
   Phone number: (800) 525-7990 Email Address: travis.dupree@corix.com

II. PROJECT INFORMATION:

1. Project name: Corolla Boat Club - Phase 1 (Monteray Shores Phase 10)
2. Application/Project status: ☒ Proposed (New Permit) ☐ Existing Permit/Project
   If a modification, provide the existing permit number: WQ00_____ and issued date: _____,
   For modifications, also attach a detailed narrative description as described in Item G of the checklist.
   If new construction, but part of a master plan, provide the existing permit number: WQ00_____
3. County where project is located: Currituck
4. Approximate Coordinates (Decimal Degrees): Latitude: 36.3282° Longitude: -75.8198°
5. Parcel ID (if applicable): 0116-000-0010-0000 (or Parcel ID to closest downstream sewer)

III. CONSULTANT INFORMATION:

1. Professional Engineer: Mark S. Bissell License Number: 010362
   Firm: Bissell Professional Group
   Mailing address: P.O. Box 1068
   City: Kitty Hawk State: NC Zip: 27949-____
   Phone number: (252) 261-3266 Email Address: mark@bissellprofessionalgroup.com

IV. WASTEWATER TREATMENT FACILITY (WWTF) INFORMATION:

1. Facility Name: Monteray Shores WWTP Permit Number: WQ00097720
   Owner Name: Carolina Water Service of NC

V. RECEIVING DOWNSTREAM SEWER INFORMATION:

1. Permit Number(s): WQ N/A (Pumps directly to WWTP)
2. Downstream (Receiving) Sewer Information: _____ inch ☐ Gravity ☐ Force Main
3. System Wide Collection System Permit Number(s) (if applicable): WQCS_____
   Owner Name(s): _____

VI. GENERAL REQUIREMENTS

1. If the Applicant is a Privately-Owned Public Utility, has a Certificate of Public Convenience and Necessity been attached?

   ☒ Yes ☐ No ☐ N/A

2. If the Applicant is a Developer of lots to be sold, has a Developer's Operational Agreement (FORM: DEV) been attached?

   ☐ Yes ☐ No ☐ N/A

3. If the Applicant is a Home/Property Owners' Association, has an HOA/POA Operational Agreement (FORM: HOA) and supplementary documentation as required by 15A NCAC 02T.0115(c) been attached?

   ☐ Yes ☐ No ☐ N/A

4. Origin of wastewater: (check all that apply):

   ☒ Residential (Individually Owned)
   ☐ Residential (Leased)
   ☐ School / preschool / day care
   ☒ Food and drink facilities
   ☐ Businesses / offices / factories
   ☐ Retail (stores, centers, malls)
   ☐ Retail with food preparation/service
   ☐ Medical / dental / veterinary facilities
   ☐ Church
   ☐ Nursing Home
   ☐ Car Wash
   ☐ Hotel and/or Motels
   ☒ Swimming Pool/Clubhouse
   ☐ Swimming Pool/Filter Backwash
   ☒ Other (Explain in Attachment) (Boat slips)

5. Nature of wastewater : 64 % Domestic 36 % Commercial _____ % Industrial (See 15A NCAC 02T .0103(20))
   If Industrial, is there a Pretreatment Program in effect? ☐ Yes ☐ No

6. Has a flow reduction been approved under 15A NCAC 02T .0114(f)? ☐ Yes ☒ No
   - **If yes, provide a copy of flow reduction approval letter with this application**

7. Summarize wastewater generated by project:

Establishment Type (see 02T.0114(f))	Daily Design Flow [a,b]	No. of Units	Flow
Single Family Lots (5 lots, 8 bedrooms each)	120 gal/bedroom	40	4,800 GPD
Townhomes (25 units, 5 bedrooms each)	120 gal/bedroom	125	15,000 GPD
Restaurant	40 gal/seat	150	6,000 GPD
Bar seats	20 gal/seat	200	4,000 GPD
Boat slips	10 gal/slip	10	100 GPD
Clubhouse	10 gal/person	50	500 GPD
		Total	30,400 GPD

   a See 15A NCAC 02T .0114(b), (d), (e)(1) and (e)(2) for caveats to wastewater design flow rates (i.e., minimum flow per dwelling; proposed unknown non-residential development uses; public access facilities located near high public use areas; and residential property located south or east of the Atlantic Intracoastal Waterway to be used as vacation rentals as defined in G.S. 42A-4).

   b Per 15A NCAC 02T .0114(c), design flow rates for establishments not identified [in table 15A NCAC 02T.0114] shall be determined using available flow data, water using fixtures, occupancy or operation patterns, and other measured data.

8. Wastewater generated by project: 30,400 GPD (per 15A NCAC 02T .0114)
   - Do not include future flows or previously permitted allocations

   If permitted flow is zero, please indicate why:
   ☐ Pump Station/Force Main or Gravity Sewer where flow will be permitted in subsequent permits that connect to this line. Please provide supplementary information indicating the approximate timeframe for permitting upstream sewers with flow.

   ☐ Flow has already been allocated in Permit Number: _____ Issuance Date: _____

   ☐ Rehabilitation or replacement of existing sewers with no new flow expected

   ☐ Other (Explain): _____

VII. GRAVITY SEWER DESIGN CRITERIA (If Applicable) - 02T .0305 & MDC (Gravity Sewers):

1. Summarize gravity sewer to be permitted:

Size (inches)	Length (feet)	Material
8	626	PVC SDR 35

- Section II & III of the MDC for Permitting of Gravity Sewers contains information related to design criteria
- Section III contains information related to minimum slopes for gravity sewer(s)
- **Oversizing lines to meet minimum slope requirements is not allowed and a violation of the MDC**

VIII. PUMP STATION DESIGN CRITERIA (If Applicable) – 02T .0305 & MDC (Pump Stations/Force Mains):

PROVIDE A SEPARATE COPY OF THIS PAGE FOR EACH PUMP STATION INCLUDED IN THIS PROJECT

1. Pump station number or name: 14 (Corolla Boat Club)
2. Approximate Coordinates (Decimal Degrees): Latitude: 36.3282° Longitude: -75.8198°
3. Total number of pumps at the pump station: 2
3. Design flow of the pump station: 0.118 millions gallons per day (firm capacity)
   - This should reflect the total GPM for the pump station with the largest pump out of service.
4. Operational point(s) per pump(s): 82 gallons per minute (GPM) at 36 feet total dynamic head (TDH)
5. Summarize the force main to be permitted (for this Pump Station):

Size (inches)	Length (feet)	Material
4	630	PVC SDR 21

If any portion of the force main is less than 4-inches in diameter, please identify the method of solids reduction per MDCPSFM Section 2.01C.1.b. ☐ Grinder Pump ☐ Mechanical Bar Screen ☐ Other (please specify) _____

6. Power reliability in accordance with 15A NCAC 02T .0305(h)(1):

☒ Standby power source or ☐ Standby pump

- Must have automatic activation and telemetry - 15A NCAC 02T.0305(h)(1)(B):
- Required for all pump stations with an average daily flow greater than or equal to 15,000 gallons per day
- **Must be permanent to facility** and may not be portable

Or if the pump station has an average daily flow less than 15,000 gallons per day 15A NCAC02T.0305(h)(1)(C):

☐ Portable power source with manual activation, quick-connection receptacle and telemetry -

or

☐ Portable pumping unit with plugged emergency pump connection and telemetry:

- Include documentation that the portable source is owned or contracted by the applicant and is compatible with the station.
- If the portable power source or pump is dedicated to multiple pump stations, an evaluation of all the pump stations' storage capacities and the rotation schedule of the portable power source or pump, including travel timeframes, shall be provided as part of this permit application in the case of a multiple station power outage.

IX. SETBACKS & SEPARATIONS – (02B .0200 & 15A NCAC 02T .0305(f)):

1. Does the project comply with all separations/alternatives found in 15A NCAC 02T .0305(f) & (g)? ☐ Yes ☐ No

15A NCAC 02T.0305(f) contains minimum separations that shall be provided for sewer systems:

Setback Parameter*	Separation Required
Storm sewers and other utilities not listed below (vertical)	18 inches
[2]Water mains (vertical - water over sewer preferred, including in benched trenches)	18 inches
[2]Water mains (horizontal)	10 feet
Reclaimed water lines (vertical - reclaimed over sewer)	18 inches
Reclaimed water lines (horizontal - reclaimed over sewer)	2 feet
**Any private or public water supply source, including any wells, WS-I waters of Class I or Class II impounded reservoirs used as a source of drinking water, and associated wetlands.	100 feet
**Waters classified WS (except WS-I or WS-V), B, SA, ORW, HQW, or SB from normal high water (or tide elevation) and wetlands associated with these waters (see item IX.2)	50 feet
**Any other stream, lake, impoundment, or ground water lowering and surface drainage ditches, as well as wetlands associated with these waters or classified as WL.	10 feet
Any building foundation (horizontal)	5 feet
Any basement (horizontal)	10 feet
Top slope of embankment or cuts of 2 feet or more vertical height	10 feet
Drainage systems and interceptor drains	5 feet
Any swimming pools	10 feet
Final earth grade (vertical)	36 inches

➢ If noncompliance with 02T.0305(f) or (g), see Section X.1 of this application
*15A NCAC 02T.0305(g) contains alternatives where separations in 02T.0305(f) cannot be achieved. Please check "yes" above if these alternatives are used and provide narrative information to explain.
**Stream classifications can be identified using the Division's NC Surface Water Classifications webpage

2. Does this project comply with the minimum separation requirements for water mains? ☒ Yes ☐ No ☐ N/A
   ➢ If no, please refer to 15A NCAC 18C.0906(f) for documentation requirements and submit a separate document, signed/sealed by an NC licensed PE, verifying the criteria outlined in that Rule.

3. Does the project comply with separation requirements for wetlands? ☒ Yes ☐ No ☐ N/A
   ➢ Please provide supplementary information identifying the areas of non-conformance.
   ➢ See the Division's draft separation requirements for situations where separation cannot be met.
   ➢ No variance is required if the alternative design criteria specified is utilized in design and construction.

4. Is the project located in a river basin subject to any State buffer rules? ☐ Yes Basin name: _____ ☒ No
   If yes, does the project comply with setbacks found in the river basin rules per 15A NCAC 02B .0200? ☐ Yes ☐ No
   ➢ This includes Trout Buffered Streams per 15A NCAC 2B.0202

5. Does the project require coverage/authorization under a 404 Nationwide/individual permits or 401 Water Quality Certifications? ☐ Yes ☒ No
   ➢ Please provide the permit number/permitting status in the cover letter if coverage/authorization is required.

6. Does project comply with 15A NCAC 02T.0105(c)(6) (additional permits/certifications)? ☒ Yes ☐ No
   Per 15A NCAC 02T.0105(c)(6), directly related environmental permits or certification applications must be being prepared, have been applied for, or have been obtained. Issuance of this permit is contingent on issuance of dependent permits (erosion and sedimentation control plans, stormwater management plans, etc.).

7. Does this project include any sewer collection lines that are deemed "high-priority?" ☐ Yes ☒ No
   Per 15A NCAC 02T.0402, "high-priority sewer" means any aerial sewer, sewer contacting surface waters, siphon, or sewers positioned parallel to streambanks that are subject to erosion that undermines or deteriorates the sewer. **Siphons and sewers suspended through interference/conflict boxes require a variance approval.**

   ➢ If yes, include an attachment with details for each line, including type (aerial line, size, material, and location).

   High priority lines shall be inspected by the permittee or its representative at least once every six-months and inspections documented per 15A NCAC 02T.0403(a)(5) or the permittee's individual System-Wide Collection permit.

X. CERTIFICATIONS:

1. Does the submitted system comply with 15A NCAC 02T, the Minimum Design Criteria for the Permitting of Pump Stations and Force Mains (latest version), and the Gravity Sewer Minimum Design Criteria (latest version) as applicable?

☒ Yes ☐ No

If no, for projects requiring a single variance, complete and submit the Variance/Alternative Design Request application (VADC 10-14) and supporting documents for review to the Central Office. **Approval of the request will be issued concurrently with the approval of the permit, and projects requiring a variance approval may be subject to longer review times. For projects requiring two or more variances or where the variance is determined by the Division to be a significant portion of the project, the full technical review is required.**

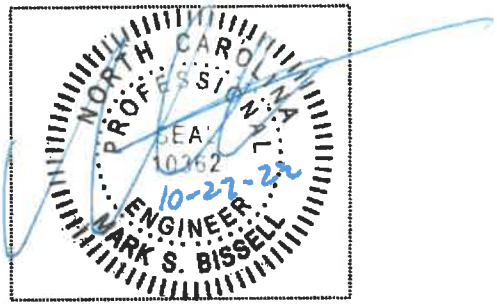
2. Professional Engineer's Certification:

I, __Mark S. Bissell_____, attest that this application for _Corolla Boat Club (Monteray Shores Phase 10)
(Professional Engineer's name from Application Item III.1.) (Project Name from Application Item II.1)

has been reviewed by me and is accurate, complete and consistent with the information supplied in the plans, specifications, engineering calculations, and all other supporting documentation to the best of my knowledge. I further attest that to the best of my knowledge the proposed design has been prepared in accordance with the applicable regulations, Minimum Design Criteria for Gravity Sewers (latest version), and the Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains (latest version). Although other professionals may have developed certain portions of this submittal package, inclusion of these materials under my signature and seal signifies that I have reviewed this material and have judged it to be consistent with the proposed design.

NOTE – In accordance with General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application package shall be guilty of a Class 2 misdemeanor, which may include a fine not to exceed $10,000, as well as civil penalties up to $25,000 per violation. Misrepresentation of the application information, including failure to disclose any design non-compliance with the applicable Rules and design criteria, may subject the North Carolina-licensed Professional Engineer to referral to the licensing board. (21 NCAC 56.0701)

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



3. Applicant's Certification per 15A NCAC 02T .0106(b):

I, __Travis Dupree, VP of Engineering_____, attest that this application for -Corolla Boat Club (Monteray Shores Phase 10)
(Signature Authority Name from Application Item I.3.) (Project Name from Application Item II.1)

attest that this application has been reviewed by me and is accurate and complete to the best of my knowledge. I understand that if all required parts of this application are not completed and that if all required supporting documentation and attachments are not included, this application package is subject to being returned as incomplete. I understand that any discharge of wastewater from this non-discharge system to surface waters or the land will result in an immediate enforcement action that may include civil penalties, injunctive relief, and/or criminal prosecution. I will make no claim against the Division of Water Resources should a condition of this permit be violated. I also understand that if all required parts of this application package are not completed and that if all required supporting information and attachments are not included, this application package will be returned to me as incomplete.

NOTE – In accordance with General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application package shall be guilty of a Class 2 misdemeanor, which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.

Signature: Travis Dupree Date: 4/6/2023

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
DOUGLAS R. ANSEL
Interim Director

NORTH CAROLINA
Environmental Quality

April 10, 2023

OBX Ventures, Inc.
Attn: Richard Willis - President
PO Box 549
Corolla, NC 27927

Subject: **State Stormwater Management Permit No. SW7230209**
Corolla Boat Club - North
Low Density Project
Currituck County

Dear Richard Willis:

The Washington Regional Office received a complete State Stormwater Management Permit Application for the subject project on February 28, 2023. Staff review of the plans and specifications has determined that the project, as proposed, complies with the Stormwater Regulations set forth in 15A NCAC 2H.1000 amended on January 1, 2017 (2017 Rules). We are hereby forwarding Permit No. SW7230209 dated April 10, 2023, for the construction of the built-upon areas (BUA) and vegetated conveyances associated with the subject project.

This permit shall be effective from the date of issuance until rescinded and the project shall be subject to the conditions and limitations as specified therein and does not supersede any other agency permit that may be required. Failure to comply with these requirements will result in future compliance problems. Please note that this permit is not transferable except after notice to and approval by the Division.

This cover letter, attachments, and all documents on file with DEMLR shall be considered part of this permit and is herein incorporated by reference.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing by filing a written petition with the Office of Administrative Hearings (OAH). The written petition must conform to Chapter 150B of the North Carolina General Statutes and must be filed with the OAH within thirty (30) days of receipt of this permit. You should contact the OAH with all questions regarding the filing fee (if a filing fee is required) and/or the details of the filing process at 6714 Mail Service Center, Raleigh, NC 27699-6714, or via telephone at 919-431-3000, or visit their website at www.NCOAH.com. Unless such demands are made this permit shall be final and binding.

If you have any questions concerning this permit, please contact Carl Dunn in the Washington Regional Office, at (252) 948-3959 or carl.dunn@ncdenr.gov.

Sincerely,

for

William Carl Dunn, PE
Division of Energy, Mineral and Land Resources

Enclosures: Attachment A – BUA Allotment
Attachment B – Designer's Certification Form
Application Documents

cc: David A. Deel, PE – Deel Engineering, PLLC (dadeeleng@gmail.com)
Currituck County Inspections – Bill Newns (Bill.Newns@CurrituckCountyNC.gov)
Washington Regional Office Stormwater File

STATE OF NORTH CAROLINA

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF ENERGY, MINERAL AND LAND RESOURCES

STATE STORMWATER MANAGEMENT PERMIT

LOW DENSITY DEVELOPMENT

In compliance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations promulgated and adopted by the North Carolina Environmental Management Commission, including 15A NCAC 02H.1000 amended on January 1, 2017 (2017 Rules) (the "stormwater rules"),

PERMISSION IS HEREBY GRANTED TO

OBX Ventures, Inc.

Corolla Boat Club - North

Malia Drive, Corolla, Currituck County

FOR THE

construction, management, operation and maintenance of built-upon area (BUA) for a 24% low density project (the "low density area") discharging to Class SC waters as outlined in the application, approved stormwater management plans, supplements, calculations, operation and maintenance agreement, recorded documents, specifications, and other supporting data (the "approved plans and specifications") as attached and/or on file with and approved by the Division of Energy, Mineral and Land Resources (the "Division" or "DEMLR"). The project shall be constructed, operated and maintained in accordance with these approved plans and specifications. The approved plans and specifications are incorporated by reference and are enforceable parts of this permit.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the following specified conditions and limitations. The permit issued shall continue in force and effect until the permittee files a request with the Division for a permit modification, transfer, or rescission; however, these actions do not stay any condition. 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 for cause as allowed by the laws, rules, and regulations contained in 15A NCAC 2H.1000 and NCGS 143-215.1 et.al.

1. BUA REQUIREMENTS. The maximum amount of BUA allowed for the entire project is 108,893 square feet. The BUA requirements and allocations for this project are as follows:

    a. LOW DENSITY AREA BUA LIMITS. The low density area, also referred to as Drainage Area 1 in the approved plans and specifications, must not exceed 24% per the requirements of the stormwater rules. Within Drainage Area 1, this permit approves a percent BUA of 9.31% and the construction of a total of 108,893 square feet of BUA, which includes 8,400 square feet for future BUA.

    b. BUA FOR INDIVIDUAL LOTS. Each of the six (6) lots are limited to a maximum of **See Attachment A** square feet of BUA, as indicated in the approved plans and specifications. **The maximum BUA assigned to each lot via this permit and the recorded deed restrictions and protective covenants may not be increased or decreased by either the individual lot owner or the permittee unless and until the permittee notifies the Division and obtains written approval from the Division**

2. LOW DENSITY AREA REQUIREMENTS. The low density area requirements for this project are as follows:

    a. LOW DENSITY AND CONVEYANCE DESIGN. The low density area is permitted based on the design criteria presented in the sealed, signed and dated supplement and as shown in the approved plans and specifications. This low density area and conveyances must be provided and maintained at the design condition.

    b. PIPING. Other than the piping shown on the approved plans, only minimal amounts of piping under driveways and roads is allowed within the low density area when it cannot be avoided. No additional piping is allowed.

    c. DISPERSED FLOW. The low density area has maximized dispersed flow of stormwater runoff through vegetated areas and minimized the channelization of flow.

    d. VEGETATED CONVEYANCES. Stormwater runoff that could not be released as dispersed flow may be transported by vegetated conveyances with minimum side slopes of 3:1 (H:V) designed to not erode during the peak flow from the 10-year storm event as defined in the stormwater rules and approved by the Division.

3. STORMWATER OUTLETS. This project does not propose any discharge points and therefore will not have the opportunity to cause erosion during the 10-year storm event

4. VEGETATED SETBACKS. A 50-foot wide vegetative setback must be provided and maintained in grass or other vegetation adjacent to all surface waters as shown on the approved plans. The setback is measured horizontally from the normal pool elevation of impounded structures, from the top of bank of each side of streams or rivers, and from the mean high waterline of tidal waters, perpendicular to the shoreline.

    a. BUA IN THE VEGETATED SETBACK. BUA may not be added to the vegetated setback except as shown on the approved plans or in the following instances where the BUA has been minimized and channelizing runoff from the BUA is avoided:

        i. Water dependent structures; and
        ii. Minimal footprint uses such as poles, signs, utility appurtenances, and security lights that cannot practically be located elsewhere.

5. RECORDED DOCUMENT REQUIREMENTS. The stormwater rules require the following documents to be recorded with the Office of the Register of Deeds:

   a. ACCESS AND/OR EASEMENTS. The entire stormwater conveyance system, including any SCMs, and maintenance accesses must be located in public rights-of-way, dedicated common areas that extend to the nearest public right-of-way, and/or permanent recorded easements that extend to the nearest public right-of-way for the purpose of inspection, operation, maintenance, and repair.

   b. OPERATION AND MAINTENANCE AGREEMENT. The operation and maintenance agreement must be recorded with the Office of the Register of Deeds.

   c. FINAL PLATS. The final recorded plats must reference the operation and maintenance agreement and must also show all public rights-of-way, dedicated common areas, and/or permanent drainage easements, in accordance with the approved plans.

   d. DEED RESTRICTIONS AND PROTECTIVE COVENANTS. Recorded deed restrictions and protective covenants must include, at a minimum, the following statements related to stormwater management:

      i. The following covenants are intended to ensure ongoing compliance with State Stormwater Management Permit Number SW7230209, as issued by the Division of Energy, Mineral and Land Resources (the "Division") under 15A NCAC 02H.1000, effective January 1, 2017.
      ii. The State of North Carolina is made a beneficiary of these covenants to the extent necessary to maintain compliance with the Stormwater Management Permit.
      iii. These covenants are to run with the land and be binding on all persons and parties claiming under them.
      iv. The covenants pertaining to stormwater may not be altered or rescinded without the express written consent of the Division.
      v. Alteration of the drainage as shown on the approved plans may not take place without the concurrence of the Division.
      vi. The maximum built-upon area (BUA) per lot **See Attachment** A square feet. This allotted amount includes any BUA 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 not shown on the approved plans. BUA has the same meaning as G.S. 143-214.7, as amended.
      vii. The maximum allowable BUA shall not be exceeded on any lot until the permit is modified to ensure compliance with the stormwater rules, permit, and the approved plans and specifications.
      viii. All runoff from the BUA on the lot must drain into the permitted system. This may be accomplished via grading, a stormwater collection system and/or a vegetated conveyance.
      ix. A 50-foot wide vegetative setback must be provided and maintained adjacent to all surface waters in accordance with 15A NCAC 02H.1003(4) and the approved plans.
      x. Any individual or entity found to be in noncompliance with the provisions of a stormwater management permit or the requirements of the stormwater rules is subject to enforcement procedures as set forth in NCGS 143, Article 21.

e. DEEDS FOR INDIVIDUAL LOTS. The permittee shall record deed restrictions and protective covenants prior to the issuance of a certificate of occupancy to ensure the permit conditions and the approved plans and specifications are maintained in perpetuity.

6. MODIFICATIONS. No person or entity, including the permittee, shall alter any component shown in the approved plans and specifications. Prior to the construction of any modification to the approved plans, the permittee shall submit to the Director, and shall have received approval for modified plans, specifications, and calculations including, but not limited to, those listed below. For changes to the project that impact the certifications, a new or updated certification(s), as applicable, will be required and a copy must be submitted to the appropriate DEQ regional office upon completion of the modification.

   a. Any modification to the approved plans and specifications, regardless of size including the BUA, details, etc.

   b. Redesign or addition to the approved amount of BUA or to the drainage area.

   c. Further development, subdivision, acquisition, lease or sale of any, all or part of the project and/or property area as reported in the approved plans and specifications.

   d. Altering, modifying, removing, relocating, redirecting, regrading, or resizing of any component of the approved stormwater collection system and/or vegetative conveyance shown on the approved plan'

   e. The construction of any allocated future BUA.

   f. The construction of any permeable pavement, #57 stone area, public trails, or landscaping material to be considered a permeable surface that were not included in the approved plans and specifications.

   g. Other modifications as determined by the Director.

7. CONSTRUCTION. During construction, erosion shall be kept to a minimum and any eroded areas of the on-site stormwater system will be repaired immediately.

   a. PROJECT CONSTRUTION, OPERATION AND MAINTNEANCE. During construction, all operation and maintenance for the project and stormwater system shall follow the Erosion Control Plan requirements until the Sediment-Erosion Control devices are no longer needed.

   b. FINAL GRADING. The vegetated areas and vegetated conveyances shall be entirely constructed and vegetated. Once the final grading is completed and the site is stabilized, the permittee shall provide and perform the operation and maintenance as outlined in the applicable section below.

8. DESIGNER'S CERTIFICATION. Upon completion of the project, the permittee shall determine if the project is in compliance with the approved plans and take the necessary following actions.

   a. If the permittee determines that the project is in compliance with the approved plans, then within 45 days of completion, the permittee shall submit to the Division one hard copy and one electronic copy of the following;

      i. The completed and signed Designer's Certification provided in Attachment A noting any deviations from the approved plans and specifications. Deviations may require approval from the Division;
      ii. A copy of the recorded operation and maintenance agreement;
      iii. Unless already provided, a copy of the recorded deed restrictions and protective covenants; and
      iv. A copy of the recorded plat delineating the public rights-of-way, dedicated common areas and/or permanent recorded easements, when applicable

   b. If the permittee determines that the project is <u>not</u> in compliance with the approved plans, the permittee shall submit an application to modify the permit within 30 days of completion of the project or provide a plan of action, with a timeline, to bring the site into compliance.

9. OPERATION AND MAINTENANCE. The permittee shall provide and perform the operation and maintenance necessary, as listed in the signed operation and maintenance agreement to assure that all components of the permitted on-site stormwater system are maintained at the approved design condition. The approved operation and maintenance agreement must be followed in its entirety and maintenance must occur at the scheduled intervals.

   a. CORRECTIVE ACTIONS REQUIRED. In the event that the low density area fails to meet the requirements of low density, the permittee shall take immediate corrective actions. This includes actions required by the Division and the stormwater rules such as the construction of additional or replacement on-site stormwater systems. These additional or replacement measures shall receive a permit from the Division prior to construction.

   b. MAINTENANCE RECORDS. Records of maintenance activities must be kept and made available upon request to authorized personnel of the Division. The records will indicate the date, activity, name of person performing the work and what actions were taken.

10. CURRENT PERMITTEE NAME OR ADDRESS CHANGES. The permittee shall submit a completed Permit Information Update Application Form to the Division within 30 days to making any one or more of the following changes:

    a. A name change of the current permittee;

    b. A name change of the project;

    c. A mailing address change of the permittee.

11. TRANSFER. This permit is not transferable to any person or entity except after notice to and approval by the Director. Neither the sale of the project and/or property, in whole or in part, nor the conveyance of common area to a third party constitutes an approved transfer of the permit.

    a. TRANSFER REQUEST. The transfer request must include the appropriate application, documentation and the processing fee as outlined in 15A NCAC 02H.1045(2) and must be submitted upon occurrence of any one or more of the following events:

        i. The sale or conveyance of the project and/or property area in whole or in part;
        ii. Dissolution of the partnership, corporate, or LLC entity, subject to NCGS 55-14-05 or NCGS 57D-6-07 and 08;
        iii. Bankruptcy;
        iv. Foreclosure, subject to the requirements of Session Law 2013-121;

    b. TRANSFER INSPECTION. Prior to transfer of the permit, a file review and site inspection will be conducted by Division personnel to ensure the permit conditions have been met and that the project and the on-site stormwater system complies with the permit conditions. Records of maintenance activities performed to date may be requested. Projects not in compliance with the permit will not be transferred until all permit and/or general statute conditions are met.

12. COMPLIANCE. The permittee is responsible for complying with the terms and conditions of this permit and the approved plans and specifications until the Division approves the transfer request.

    a. REVIEWING AND MONITORING FOR COMPLIANCE. The permittee is responsible for verifying that the proposed BUA within each drainage area and for the entire project does not exceed the maximum amount allowed by this permit. The permittee shall review and routinely monitor the project to ensure continued compliance with the conditions of the permit, the approved plans and specifications.

    b. APPROVED PLANS AND SPECIFICATIONS. A copy of this permit, approved plans, application, supplements, operation and maintenance agreement, all applicable recorded documents, and specifications shall be maintained on file by the permittee at all times.

    c. MAINTENANCE ACCESS. SCMs, stormwater collection systems, and vegetated conveyances must be accessible for inspection, operation, maintenance and repair as shown on the approved plan

d. DIVISION ACCESS. The permittee grants Division Staff permission to enter the property during normal business hours to inspect all components of the permitted project.

e. ENFORCEMENT. Any individual or entity found to be in noncompliance with the provisions of a stormwater management permit or the requirements of the stormwater rules is subject to enforcement procedures as set forth in NCGS 143 Article 21.

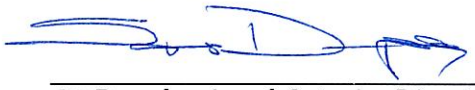
f. ANNUAL CERTIFICATION. The permittee shall electronically submit to the Division an annual certification completed by either the permittee or their designee confirming the projects conformance with permit conditions.

g. OBTAINING COMPLIANCE. 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 modified plans and certification in writing to the Director that the changes have been made.

h. OTHER PERMITS. The issuance of this permit does not preclude the permittee from obtaining and complying with any and all other permits or approvals that are required for this development to take place, as required by any statutes, rules, regulations, or ordinances, which are imposed by any other Local, State or Federal government agency having jurisdiction. Any activities undertaken at this site that cause a water quality violation or undertaken prior to receipt of the necessary permits or approvals to do so are considered violations of NCGS 143-215.1, and subject to enforcement procedures pursuant to NCGS 143-215.6.

Permit issued this the 10th day of April 2023.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



For Douglas Ansel, Interim Director
Division of Energy, Mineral and Land Resources
By Authority of the Environmental Management Commission

Permit Number SW7230209

Attachment A

LOT NO.	LOT AREA (ft^2)	Max. Allowable Built-Upon Area (BUA) (ft^2)
1	17,946	5,384
2	17,375	5,213
3	16,668	5,000
4	16,182	4,855
5	17,561	5,268
6 (Commercial)	44,280	28,782

Attachment B

Certification Forms

The following blank Designer Certification forms are included and specific for this project:

- As-Built Permittee Certification
- As-Built Designer's Certification for Low Density Projects

A separate certification is required for each SCM. These blank certification forms may be copied and used, as needed, for each SCM and/or as a partial certification to address a section or phase of the project.

AS-BUILT PERMITTEE CERTIFICATION

I hereby state that I am the current permittee for the project named above, and I certify by my signature below, that the project meets the below listed Final Submittal Requirements found in NCAC 02H.1042(4) and the terms, conditions and provisions listed in the permit documents, plans and specifications on file with or provided to the Division.

☐ Check here if this is a partial certification. Section/phase/SCM #?_____

☐ Check here if this is part of a Fast Track As-built Package Submittal.

Printed Name_____Signature_____

I, _____, a Notary Public in the State of _____

County of _____, do hereby certify that _____

personally appeared before me this _____ day of _____, 20_____

and acknowledge the due execution of this as-built certification. (SEAL)

Witness my hand and official seal

_____

My commission expires _____

Permittee's Certification NCAC .1042(4)	Completed / Provided	N/A
A. DEED RESTRICTIONS / BUA RECORDS		
1. The deed restrictions and protective covenants have been recorded and contain the necessary language to ensure that the project is maintained consistent with the stormwater regulations and with the permit conditions.	Y or N	
2. A copy of the recorded deed restrictions and protective covenants has been provided to the Division.	Y or N	
3. Records which track the BUA on each lot are being kept. (See Note 1)	Y or N	
B. MAINTENANCE ACCESS		
1. The SCMs are accessible for inspection, maintenance and repair.	Y or N	
2. The access is a minimum of 10 feet wide.	Y or N	
3. The access extends to the nearest public right-of-way.	Y or N	
C. EASEMENTS		
1. The SCMs and the components of the runoff collection / conveyance system are located in recorded drainage easements.	Y or N	
2. A copy of the recorded plat(s) is provided.	Y or N	

D. SINGLE FAMILY RESIDENTIAL LOTS - Plats for residential lots that have an SCM include the following:	Y or N	
1. The specific location of the SCM on the lot.	Y or N	
2. A typical detail for the SCM.	Y or N	
3. A note that the SCM is required to meet stormwater regulations and that the lot owner is subject to enforcement action as set forth in NCGS 143 Article 21 if the SCM is removed, relocated or altered without prior approval.	Y or N	
E. OPERATION AND MAINTENANCE AGREEMENT	Y or N	
1. The O&M Agreement is referenced on the final recorded plat.	Y or N	
2. The O&M Agreement is recorded with the Register of Deeds and appears in the chain of title.	Y or N	
F. OPERATION AND MAINTENANCE PLAN – maintenance records are being kept in a known set location for each SCM and are available for review.	Y or N	
G. DESIGNER'S CERTIFICATION FORM – has been provided to the Division.	Y or N	

Note 1- Acceptable records include ARC approvals, as-built surveys, and county tax records.

Provide an explanation for every requirement that was not met, and for every "N/A" below. Attach additional sheets as needed.

AS-BUILT DESIGNER'S CERTIFICATION FOR LOW DENSITY PROJECTS

I hereby state that I am a licensed professional and I certify by my signature and seal below, that I have observed the construction of the project named above to the best of my abilities with all due care and diligence, and that the project meets all of the MDC found in 15A NCAC 02H.1003, in accordance with the permit documents, plans and specifications on file with or provided to the Division, except as noted on the "AS-BUILT" drawings, such that the intent of the stormwater rules and the general statutes has been preserved.

☐ Check here if this is a partial certification. Section or phase_____

☐ Check here if this is part of a Fast-Track As-Built Package Submittal per 15A NCAC 02H .1044(3).

☐ Check here if the Designer did not observe the construction but is certifying the project.

☐ Check here if pictures of the project are provided.

Printed Name_____Signature _____

NC Registration Number_____Date _____

SEAL:

Consultant's Mailing Address:

_____

City:_____State:_____ Zip:_____

Phone:(___) _____

Consultant's Email address:

_____

① Circle N if the as-built value differs from the Plan/permit. If N is circled, provide an explanation on page 3.
② N/E = Not Evaluated (provide explanation on page 2). ③N/A = Not Applicable to this project/plan.

Consultant's Certification (MDC 15A NCAC 02H .1003)			
Project Density and Built-Upon Area	①As-built	②N/E	③N/A
1. The project has areas of high density based on natural drainage area boundaries, variations in land use or construction phasing.	Y or N		
2. The project's built-upon area does not exceed the maximum limit specified in the permit.	Y or N		
Dispersed Flow	①As-built	②N/E	③N/A
1. The project maximizes dispersed flow through vegetated areas and minimizes channelized flow.	Y or N		

Vegetated Conveyances	①As-built	②N/E	③N/A
1. Stormwater that is not released as dispersed flow is transported by vegetated conveyances.	Y or N		
2. The project has a minimal amount of non-vegetated conveyances to reduce erosion.	Y or N		
3. Other than minimal piping under driveways and roads, no piping has been added beyond what is shown on the approved plans.	Y or N		
4. Side slopes are no steeper than 3H:1V.	Y or N		
5. The conveyance does not erode in response to the peak flow from the 10-year storm.	Y or N		
Curb outlet systems (if applicable)	①As-built	②N/E	③N/A
1. The swale or vegetated area can carry the peak flow from the 10-year storm at a non-erosive velocity.	Y or N		
2. The longitudinal slope of the swale or vegetated areas does not excee 5%.	Y or N		
3. The swale has a trapezoidal cross-section and a minimum bottom wid of two feet.	Y or N		
4. The minimum length of the swale or vegetated area is 100 feet.	Y or N		
5. Side slopes are no steeper than 3H:1V.	Y or N		
6. The project utilizes treatment swales designed per Section .1061 in lieu of the curb outlet system requirements.	Y or N		
Vegetated Setbacks (if applicable)	①As-built	②N/E	③N/A
1. The width of the vegetated setback is at least 50'.	Y or N		
2. The width of the vegetated setback has been measured from the norm pool of impounded waters, the MHW line of tidal waters, or the top of bank of each side of rivers or streams.	Y or N		
3. The vegetated setback is maintained in grass or other vegetation.	Y or N		
4. BUA that meets the requirements of NCGS 143-214.7(b2)(2) is locate in the setback.	Y or N		
5. BUA that does NOT meet the requirements of NCGS 143-214.7(b2)(2) located within the setback and is limited to: • Publicly-funded linear projects (road, greenway, or sidewalk) • Water dependent structures • Minimal footprint uses such as poles, signs, utility appurtenances, and security lights.	Y or N		
6. The amount of BUA within the setback is minimized, and channeling of the runoff from the BUA has been avoided.	Y or N		

7. Stormwater is not discharged (via swale or pipe) through a vegetated setback. Stormwater is released at the edge of the setback and allowed to flow through the setback as dispersed flow.	Y or N		
Outlets	①As-built	②N/E	③N/A
1. Stormwater outlets do not cause erosion downslope of the discharge point during the peak flow from the 10-year storm.	Y or N		
Variations	①As-built	②N/E	③N/A
1. The project has variations from the MDC that were not previously approved. (Modification may be required.)	Y or N		
Deed restrictions (if applicable)	①As-built	②N/E	③N/A
1. Deed restrictions are recorded and ensure that the project and the BUA will be maintained in perpetuity consistent with the permit, approved plans, and specifications.	Y or N		
For Subdivisions Only (Residential or Commercial)	①As-built	②N/E	③N/A
1. The number of platted lots is consistent with the approved plans.	Y or N		
2. The project area is consistent with the approved plans.	Y or N		
3. The layout of the lots and streets is consistent with the approved plan.	Y or N		
4. The width / radius of streets, paved accesses, cul-de-sacs and sidewal is consistent with the approved plan.	Y or N		
5. No piping, other than those minimum amounts needed under a driveway or under a road, has been added.	Y or N		
6. The lot grading, road grading, vegetated conveyances, piping, inverts, and elevations are consistent with the approved plans.	Y or N		

Provide an explanation below for every MDC that was not met, and for every item marked "N/A" or "N/E." Attach additional pages as needed.

North Carolina Department of Environmental Quality
Division of Water Resources
Public Water Supply Section

Application for Approval of Engineering Plans and Specifications For Water Supply Systems

Applicant	Design Engineer
Currituck County Water Department (Name of Board, Council or Owner – the **Applicant**)	Mark S. Bissell (Name of **Design Engineer** of Record)
Donald I. McRee, County Manager (Name and Title of **Authorized Official** or **Representative** of the Applicant)	Bissell Professional Group (Name of Engineering Firm)
153 Courthouse Road (Mailing Address)	P.O. Box 1068 (Mailing Address)
Currituck, NC 27929 (City, State & ZIP)	Kitty Hawk, NC 27949 (City, State & ZIP)
(252) 232-2075 (Phone Number)	(252) 261-3266 (Phone Number)
(252) 232-3551 (FAX Number)	(252) 261-1760 (FAX Number)
Ike.mcree@currituckcountync.gov (Email address)	mark@bissellprofessionalgroup.com (Email address)
(Signature of **Authorized Official** or **Representative** of the **Applicant**)	

Project Name: Corolla Boat Club - Phase 1 (Monteray Shores Phase 10)
(Name of Project to appear on Public Water Supply Section records and tracking system)

1,004' of 8" PVC waterline extension to serve 5 single family lots, 1 commercial lot and 25 townhomes at Corolla Boat Club - Phase 1 (Monteray Shores Phase 10)
(description of project)

Malia Drive, Monteray Shores PUD, Corolla, NC 27927
(general location of project)

in Currituck County.

Date _____ (for DEQ use only)

Serial No. _____ (for DEQ use only)

Application for Approval of Engineering Plans and Specifications for Water Supply Systems

To: Division of Water Resources,
Department of Environmental Quality

The **Applicant** applies under and in full accord with the provision of NCGS 130A-317, and such other statutes and rules as relate to public water systems. The **Authorized Official** or **Representative** of the **Applicant** represents that he is authorized to act for the **Applicant**. The **Authorized Official** or **Representative** of the **Applicant** understands and agrees to the following:

1. The **Applicant** shall not award contracts or begin construction without first receiving "Authorization to Construct" from DEQ.
2. The **Applicant** shall make no change or deviation from the engineering plans and specifications approved by DEQ except as allowed by 15A NCAC 18C .0306 or with the written consent and approval of DEQ.
3. The **Applicant** shall obtain Final Approval in accordance with 15A NCAC 18C .0306 prior to placing the project (or any portion thereof) into service.
4. Digital (PDF) submittals are true image copy of the original sealed/signed documents.

An authorized representative **of the Public Water System** (not always the same as the **Applicant**) is to complete and sign the following WSMP section.

Status of Water System Management Plan (WSMP)

Check one of the following, and if applicable, provide the required information:

☐ The WSMP for the project, as defined in the attached engineering plans and specifications, has not been submitted.

☐ Three copies of the WSMP for the project, as defined in the attached engineering plans and specifications, are submitted with this application.

☒ The WSMP that includes this project, as defined in the attached engineering plans and specifications, was previously submitted.

Provide the following:

Public Water System Name: Southern Outer Banks Water System

Owner Name: County of Currituck

Water System No.: NC 6027001

Serial Number of Deemed Complete WSMP: 01-00883

By my signature below, I certify that the previously submitted WSMP contains the information required by 15A NCAC 18C .0307(c) for the project defined in the attached engineering plans and specifications.

Donald I. McRee
(Type or print name of authorized representative of Public Water System)

County Manager
(Title of authorized representative of Public Water System)

(Signature of authorized representative of Public Water System)

10/31/22
(Date)

In accordance with NCGS 130A-328, the Public Water Supply Section charges a fee for plan review. **Any documents submitted for review must be accompanied by a check payable to *DEQ-Public Water Supply Section* before the review will begin.**

There is a $25 fee for returned checks.

The charges for review of plans are shown below. Check one of the following.

Distribution System fees		
☒	Construction of water lines, less than 5000 linear feet	**$150**
☐	Construction of water lines, 5000 linear feet or more	**$200**
☐	Other construction or alteration to a distribution system	**$ 75**
Ground Water System fees		
☐	Construction of a new ground water system or adding a new well	**$200**
☐	Alteration to an existing ground water system	**$100**
Surface water system fees		
☐	Construction of a new surface water intake or treatment facility	**$250**
☐	Alteration to existing surface water intake or treatment facility	**$150**
Other fees		
☐	Water System Management Plan review	**$ 75**
☐	Miscellaneous changes or maintenance not covered above	**$ 50**

Notes:

1. Projects for Tank Rehabilitation use separate "Application for Water Tank Reconditioning Plan Approval."
2. The fee is not refundable if the plans are not approved.
3. Revisions to plans to address the Public Water Supply Section's or other state agency's comments do not incur an additional fee.
4. If one set of plans has multiple related items (such as a new well with construction of water lines) only one fee must be submitted for highest price item. The amounts are not cumulative, except for fees for Water System Management Plans.
5. **If the appropriate plan review fee is not received within ten days after the receipt of plans, specifications, and reports for approval, then <u>all</u> plan documents will be recycled. A new set of documents must then be submitted with the appropriate fee for approval.**

This approval does not address all applicable laws, rules, standards and criteria, and other approvals and licenses that may be required by the local, state or federal government.

The Public Water Supply Section has stamped and sealed the official copies of plans and specifications accompanying this application with the serial number of this application _____. Any erasures, additions or alterations of the proposed improvements except those permitted in 15A NCAC 18C .0306 make this approval null and void.

This approval does not constitute a warranty of the design, construction or future operation of the water system.

Jay Frick
Deputy Section Chief
Public Water Supply Section
Division of Water Resources

Other Information and Checklist Page

☒ Attached is a check for the proper plan review fee amount, in accordance with NCGS 130A-328. See note 4 on page 3.

This-submittal includes one paper original with two digital (PDF) CDs of the following items, each item in separate folders:

☒ This completed "*Application for Approval of Engineering Plans and Specifications for Water Supply Systems*"

☒ The sealed plan drawings, separate file in PDF format for each drawing. Cover sheet must include drawings index;

☒ The project-specific Engineering Report (ER) describing the scope and purpose of the project and addressing each of the items listed in 15A NCAC 18C .0307(b), including the design basis of the project. [15A NCAC 18C .0307(b) (12)];

☐ Specifications for this project; **OR**

☒ The project will use the following system's previously approved standard specifications for waterline extensions:

NOTE: Approved Specifications include the Standard Details for the Project.

Name of System: Southern Outer Banks Water System (Currituck County)

Serial Number: 11-00630 Dated 8/12/2011

The Serial Numbers for previously approved standard specifications can be found at the following website:

http://www.ncwater.org/?page=424

One of the following:

☐ Attached is a letter signed by an authorized representative of the Public Water System agreeing to serve the project and stating that the system has adequate supply;

OR

☒ The **Applicant** is the Public Water System.

If the project has sought funding (for example, DWSRF loan) list the program and (if available) the application or funding number below:

Program Name	**Application or Funding Number, if available**

Yes No

☐ ☒ Project will be completed with significant expenditure of state moneys, greater than ten million dollars ($10,000,000) in accordance with G.S. 113A-9 (7a).

☐ ☒ Project will cause substantial, permanent land-disturbing activity of an area greater than 10 acres of public lands in accordance with G.S. 113A-9 (11).

☐ ☒ Project will be at least partially funded through the American Rescue Plan Act (ARPA).

Engineer's Report
for
Water Main Extensions

Date: 10-24-22 Amended 4-20-23

Project Name: Corolla Boat Club - Phase 1 (Monteray Shores Phase 10)

Water System Name: Southern Outer Banks Water System

Water System ID: NC 6027001

County of Project: Currituck County

Prepared by:

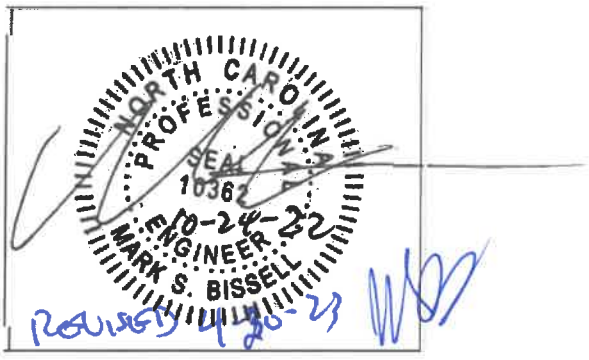
Bissell Professional Group

P.O. Box 1068, Kitty Hawk, NC 27949

(252) 261-3266

This form includes the minimum information needed for the N.C. Public Water Supply Section to review water main extension projects. Complex or unique design conditions must be addressed in a supplemental document as deemed appropriate by the design engineer.

Signature and seal of professional engineer that prepared this report



I attest that this engineer's report has been prepared by me, or under my responsible charge, and is accurate, complete and consistent with the information supplied in the engineering calculations. I further attest that the proposed design has been prepared in accordance with 15A NCAC 18C. Although page 4 of this report incorporates data provided by others, inclusion of these materials under my seal signifies that I have reviewed this material and have judged it to be consistent with the proposed design.

Water Main Extension Engineer's Report Mandatory Information

To present data required by 15A NCAC 18C .0307(b)

Specific citations from 15A NCAC 18C are provided when data is required to confirm compliance with another regulation.

Applicant Information

Applicant name (must be a person): Donald I. McRee

Applicant mailing address: 153 Courthouse Road, Currituck, North Carolina 27929

Applicant phone numbers: Business (252) 232-2075 Cell

Applicant e-mail address: ike.mcree@CurrituckCountyNC.gov

Description of Proposed Project

Name of proposed project: Corolla Boat Club waterline extension (Monterey Shores Phase 10)

Provide a summary of the diameter, length and material of all piping proposed in the project.

Diameter of piping	Length of piping	Material
8 -inch	1,004 linear feet	SDR-21 PVC
-inch	linear feet	
-inch	linear feet	
-inch	linear feet	
-inch	linear feet	

Location of project: (use existing road and intersections, address if available; and identify municipality).

Malia Drive west of intersection with NC 12, Corolla, NC 27927, Currituck County

The proposed project is an expansion of the existing public water system. X Yes ☐ No

The source of water for the proposed project will be provided by a separately owned public water system. ☐ Yes X No

Is the project phased? Yes X No

If yes, delineate all phases in plan sheets. Partial final approvals may be granted to completed phases specified in this submittal.

If yes, depending on whether the water system does or does not provide fire flow; provide calculations to demonstrate that the project can provide adequate peak demand (domestic peak demand) at the minimum required residual pressure of 30 pounds per square inch gauge (psig) or can provide peak demand with fire flow (domestic plus fire flow) at the minimum pressure of 20 psig through ***each*** phase of construction.

Check here if project is a water main replacement with no additional demands. (Water main replacement consists of like size, no additional service connections, and no additional hydrants and no added fire demand.)	☐ If box checked, proceed to page 4

Provide anticipated project flows for any project that will increase demands

Does the proposed project include any in-ground irrigation?	□ Yes X No
If yes, attach appropriate analysis to address how the system is designed to accommodate the impact of irrigation use on treated water supply, storage needs and system pressure.	**N/A**
Peak demand of the proposed project Maximum daily demand of the proposed project	60 gpm 34,375 gpd
Per Rule .0901, are the water mains and water system designed to carry fire protection flows for this project?	X Yes □ No
If the water mains and water system **are not** designed to provide fire protection flow, indicate the minimum ***calculated*** pressure at domestic peak demand (non-fire flow). The pressure must be at least 30 psig per Rule .0901.	N/A psig
If the water mains and water system **are** designed to provide fire protection flow, indicate the minimum **calculated** pressure at peak demand (domestic plus fire flow). Pressure must be at least 20 psig per Rule .0901.	22 psig

gpm: gallons per minute

gpd: gallons per day

psig: pounds per square inch gauge

Calculation of Maximum Day Demand:

Average Demand Per Connection: 1,399,000 gpd/ 4,424 connections = 316 gpd/connection

Peak Demand Per Connection: 3,009,000 gpd/ 4,424 connections = 680 gpd/connection

Actual Peaking Factor = 2.15

Calculation of Project Max. Day Demand:

30 Residential connections @ 680 gpd/conn = 20,400 gpd

150-seat Restaurant: 6,000 gpd x 2.15 peak = 12,900 gpd

Clubhouse: 50 people @ 10 gpd x 2.15 peak= 1,075 gpd

Total= 34,375 gpd max day (24 gpm)

Peak Hour = 24 gpm x 2.5 = 60 gpm

Water System-Supplied Information

Information on this page must be updated on an annual basis

Data provided by: Will Rumsey (name) Date provided: 10/26/2022

Position: Utilities Manager

Number of current connections in water system	4,424 connections
Approved number of connections in water system	4,424 connections ☐ N/A – local government system
Current average and maximum daily demand of existing system. Average day demand is the one day average demand for the latest calendar year.	1,399,000 average gpd 3,009,000 maximum gpd
Current maximum daily treated water supply of existing system Maximum daily treated water supply is the maximum quantity of treated water that can be produced and/or purchased by the system.	2,875,000 maximum gpd
Total elevated storage capacity of existing system Total ground storage capacity of existing system Total hydropneumatic storage capacity of existing system Contractual storage with other system(s) Attach a copy of the agreement with the providing system	450,000 gallons 3,246,000 gallons 0 gallons 0 gallons
Systems > 300 connections: • Total storage volume is at least half the average annual daily demand (Rule .0805(c)) • For municipalities, at least 75,000 gallons elevated storage and at least half the average day demand combined elevated and ground finished water storage (Rule .0805(b)) Systems with hydropneumatic storage tanks up to 300 connections: • Volume of hydropneumatic storage tank is sufficient to meet peak demands based on Rule .0802 and calculations in Appendix B, Figure 6 • For residential community systems, volume of hydropneumatic storage tank is at least 40 times the number of connections or 500 gallons, whichever is greater (Rule .0803) • For mobile home park systems, volume of hydropneumatic storage tank is at least 25 times the number of connections or 500 gallons, whichever is greater (Rule .0803) • For campground systems, volume of hydropneumatic storage tank is at least 10 times the number of connections or 500 gallons, whichever is greater (Rule .0803)	☑ Yes ☐ No ☑ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ Yes ☐ No ☑ N/A ☐ Yes ☐ No ☑ N/A ☐ Yes ☐ No ☑ N/A

HYDRANT FLOW TEST OVERVIEW

● ELEVATED TANK

HYDRANT FLOW TEST CALCULATOR

Downloads Hydrant Flow Test Calculator Pump Test Hose Calculator Flow Testing Terminology Blog FAQ

The Hydrant Flow Test Calculator measures the rated capacity at 20 psi of a fire hydrant. The rated capacity calculation is useful in determining the total water supply at a given point in the hydrant or water main. The calculation offers more useful information than the test flow by itself and is used by insurance underwriters. For more information see NFPA 291, AWWA M-17, or our web page on Hydrant Flow Testing.

Static Pressure (PSI):

73

Residual Pressure (PSI):

42

Total Test Flow Rate (GPM):

850

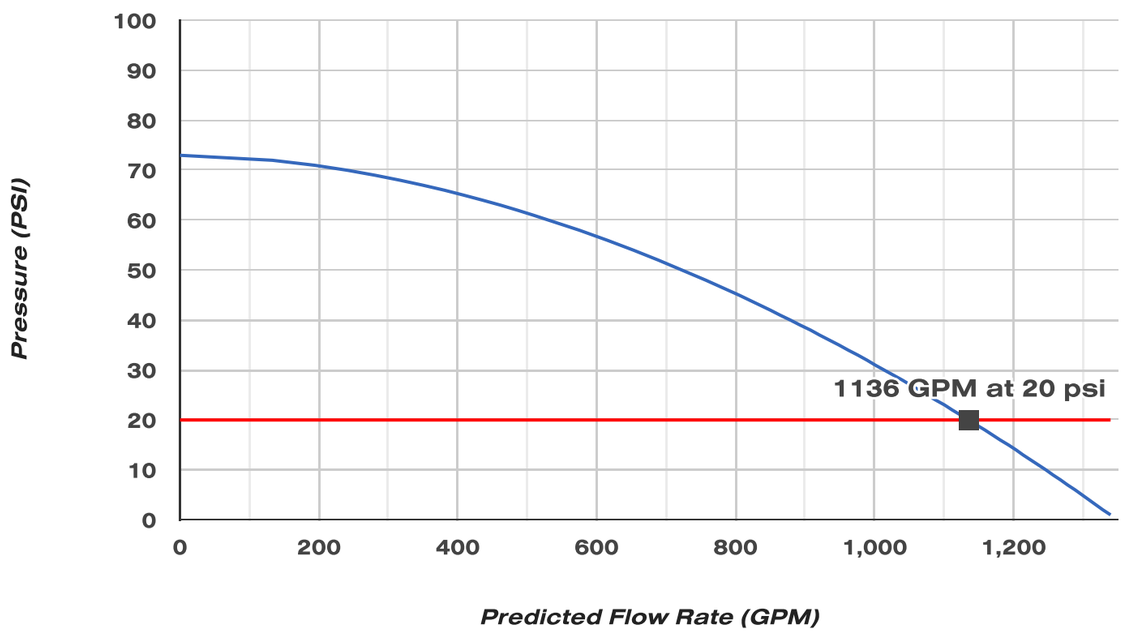
Calculate

GPM at 20 psi: 1136

Class: A

Marking color: Green

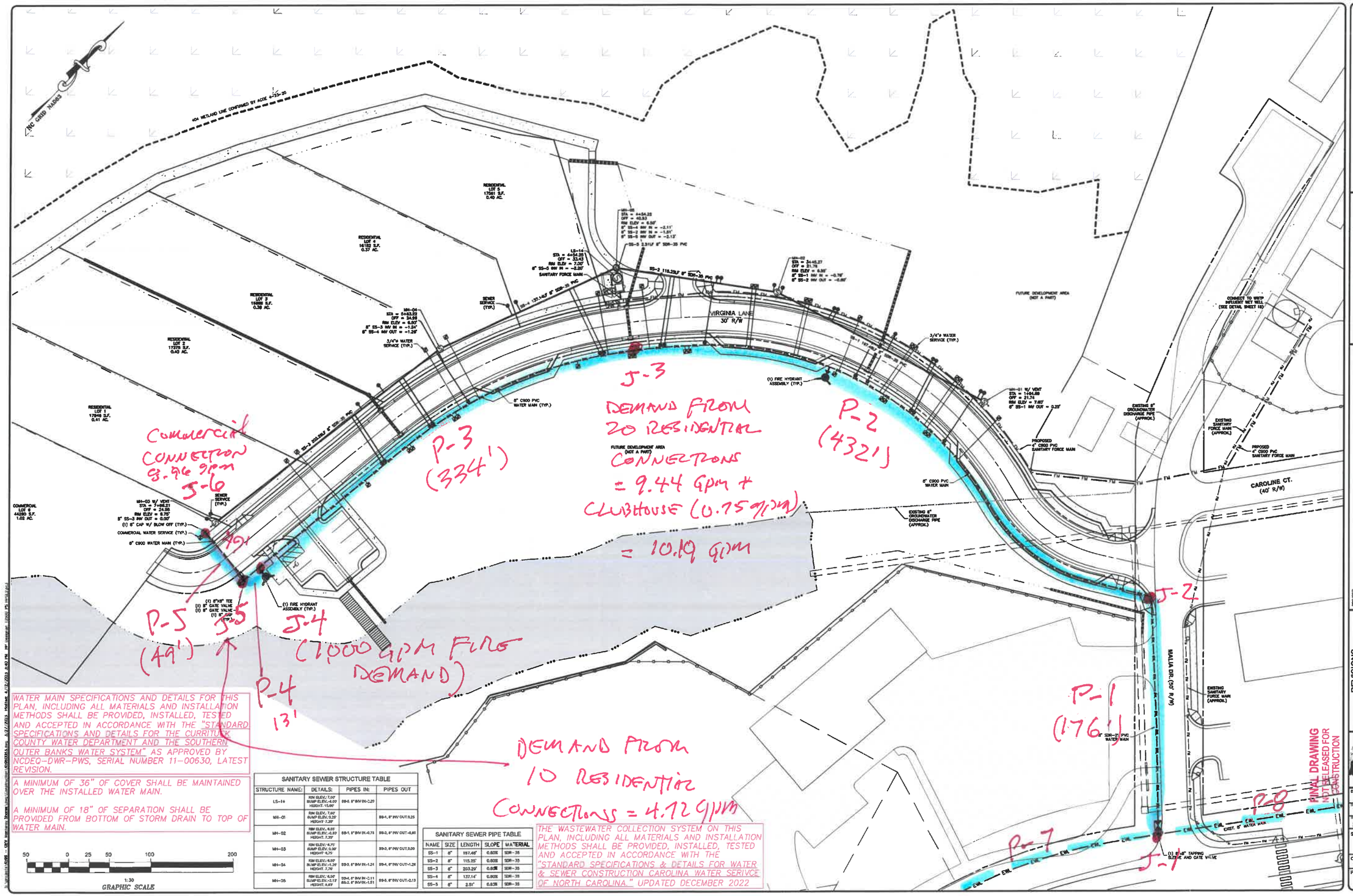
% Pressure Drop: 42%



START SHOPPING

Find the right equipment for your testing, flushing, and dechlorination needs.

Shop



WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.

A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.

SANITARY SEWER STRUCTURE TABLE

STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
LS-16	RIM ELEV.: 7.00' BUMP ELEV.: 4.00' HEIGHT: 15.00'	SS-5: 8" SHV IN: 2.29	
MH-01	RIM ELEV.: 7.00' BUMP ELEV.: 0.25' HEIGHT: 7.29'		SS-1: 8" SHV OUT: 0.25
MH-02	RIM ELEV.: 6.05' BUMP ELEV.: -0.80' HEIGHT: 7.29'	SS-1: 8" SHV IN: -0.73	SS-2: 8" SHV OUT: -0.80
MH-03	RIM ELEV.: 6.75' BUMP ELEV.: 0.00' HEIGHT: 6.75'		SS-3: 8" SHV OUT: 0.00
MH-04	RIM ELEV.: 6.00' BUMP ELEV.: -1.26' HEIGHT: 7.76'	SS-3: 8" SHV IN: -1.24	SS-4: 8" SHV OUT: -1.26
MH-05	RIM ELEV.: 4.50' BUMP ELEV.: -2.13' HEIGHT: 6.63'	SS-4: 8" SHV IN: -2.11 SS-5: 8" SHV IN: -1.81	SS-5: 8" SHV OUT: -2.13

SANITARY SEWER PIPE TABLE

NAME	SIZE	LENGTH	SLOPE	MATERIAL
SS-1	8"	197.48'	0.80%	SDR-35
SS-2	8"	115.25'	0.80%	SDR-35
SS-3	8"	203.29'	0.80%	SDR-35
SS-4	8"	137.14'	0.80%	SDR-35
SS-5	8"	2.87'	0.80%	SDR-35

THE WASTEWATER COLLECTION SYSTEM ON THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS & DETAILS FOR WATER & SEWER CONSTRUCTION CAROLINA WATER SERIVCE OF NORTH CAROLINA," UPDATED DECEMBER 2022

Bissell Professional Group
Engineering (NC)
3212 North Croatan Highway
Kitty Hawk, North Carolina 27949
(252) 261-3300
FAX (252) 261-1760
BISSELL
Engineers, Planners, Surveyors and Environmental Specialists

WATER MAIN EXTENSION AND WASTEWATER COLLECTION PLAN

PROJECT: COROLLA BOAT CLUB - PHASE 1, MONTERAY SHORES PHASE 10
POPLAR BRANCH TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

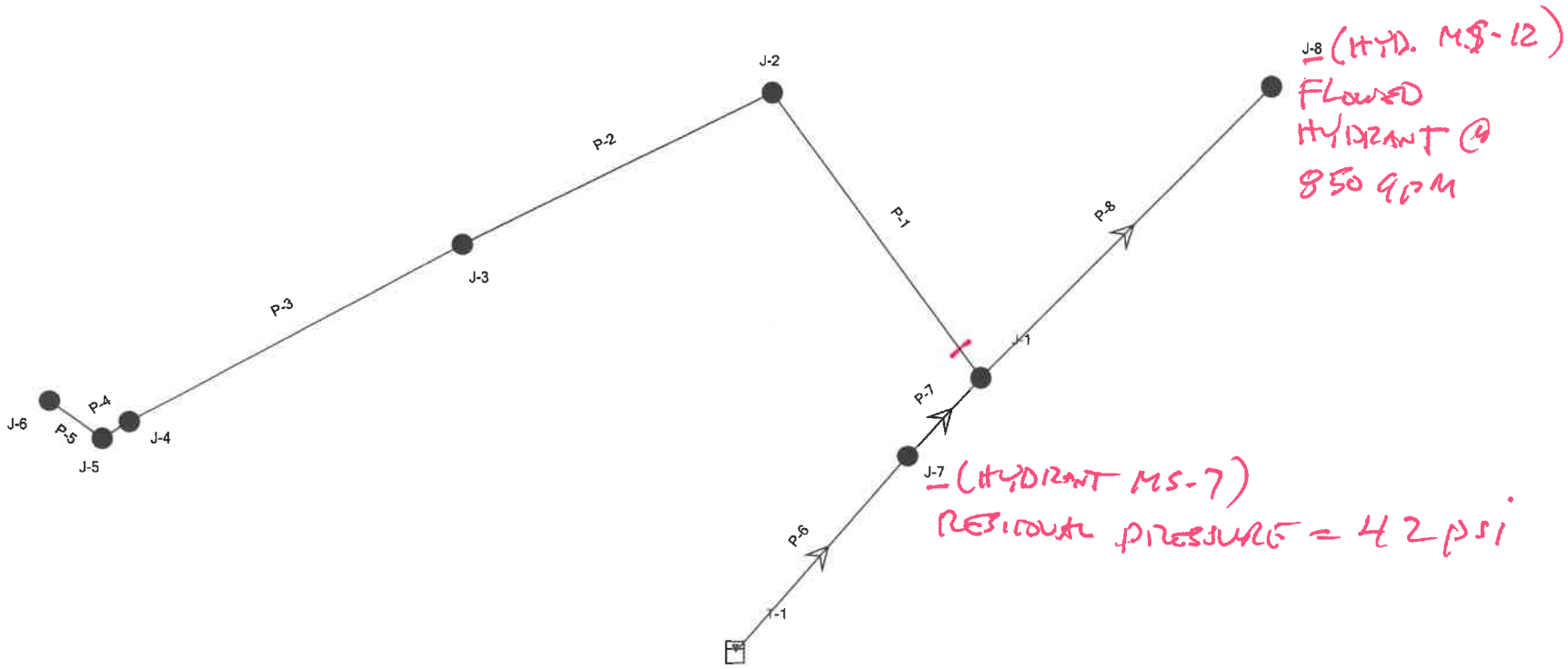
REVISIONS

NO.	DATE	DESCRIPTION	BY
1	3-24-23	ADD WATER SPEC. NOTE	DMK
2	4-12-23	ADDRESS FIRE COMMENTS	DMK

PRELIMINARY NOT RELEASED FOR CONSTRUCTION

DATE: 3-15-23
SCALE: 1"=30'
DESIGNED: BPG
DRAWN: MSB
CHECKED: KFW/DMK
APPROVED: BPG
SHEET: 6 OF 16
CAD FILE: 459600B3
PROJECT NO: 4596

Scenario: Base



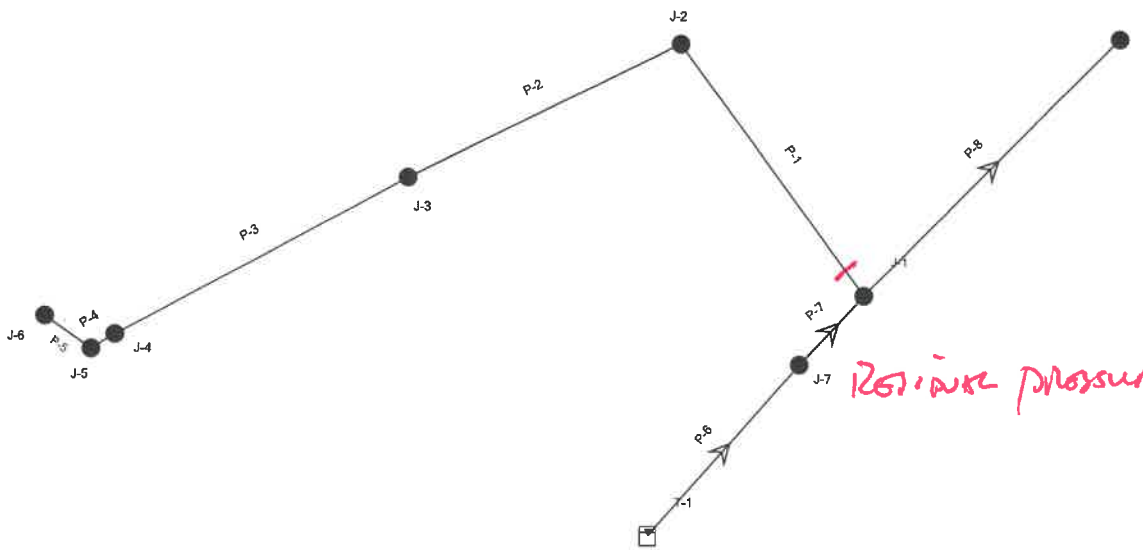
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)
31	J-1	10.00	<None>	<Collection: 0 items>	104.18	41	0
34	J-2	10.00	<None>	<Collection: 0 items>	104.18	41	0
35	J-3	5.00	<None>	<Collection: 0 items>	104.18	43	0
36	J-5	5.00	<None>	<Collection: 0 items>	104.18	43	0
45	J-6	5.00	<None>	<Collection: 0 items>	104.18	43	0
47	J-7	10.00	<None>	<Collection: 0 items>	107.90	42	0
49	J-4	5.00	<None>	<Collection: 0 items>	104.18	43	0
50	J-8	10.00	<None>	<Collection: 1 items>	95.34	37	850

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Length (User Defined) (ft)
P-8	J-1	J-8	8.0	130.0	850	5.43	0.014	654
P-1	J-1	J-2	8.0	130.0	0	0.00	0.000	176
P-2	J-2	J-3	8.0	130.0	0	0.00	0.000	432
P-3	J-3	J-4	8.0	130.0	0	0.00	0.000	334
P-4	J-4	J-5	8.0	130.0	0	0.00	0.000	13
P-5	J-5	J-6	8.0	130.0	0	0.00	0.000	49
P-6	T-1	J-7	8.0	130.0	850	5.43	0.014	5,400
P-7	J-7	J-1	8.0	130.0	850	5.43	0.014	275

Scenario: Base



(#40. M S-12)
Flowed @ 1136 GPM
Residual pressure = 20 psi

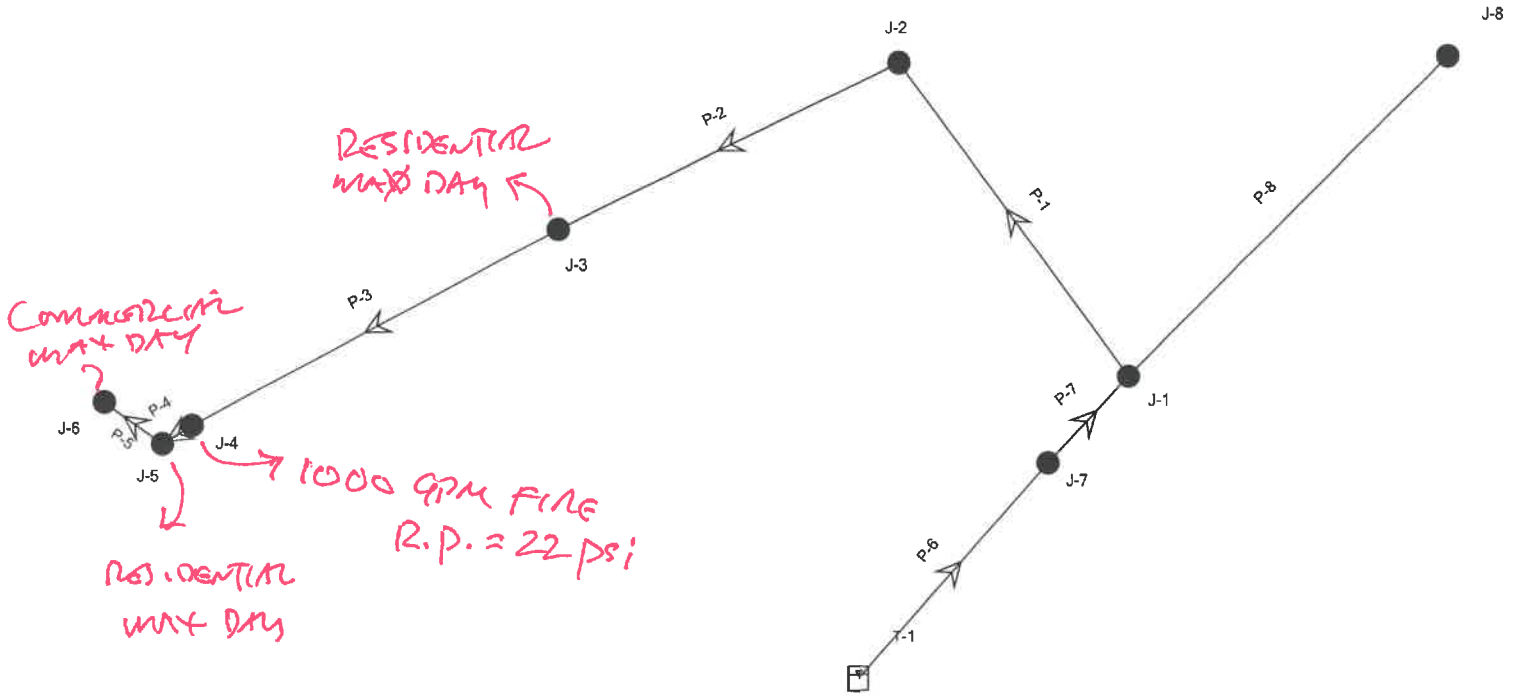
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)
31	J-1	10.00	<None>	<Collection: 0 items>	49.63	17	0
34	J-2	10.00	<None>	<Collection: 0 items>	49.63	17	0
35	J-3	5.00	<None>	<Collection: 0 items>	49.63	19	0
36	J-5	5.00	<None>	<Collection: 0 items>	49.63	19	0
45	J-6	5.00	<None>	<Collection: 0 items>	49.63	19	0
47	J-7	10.00	<None>	<Collection: 0 items>	55.99	20	0
49	J-4	5.00	<None>	<Collection: 0 items>	49.63	19	0
50	J-8	10.00	<None>	<Collection: 1 items>	34.50	11	1,136

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Length (User Defined) (ft)
P-8	J-1	J-8	8.0	130.0	1,136	7.25	0.023	654
P-1	J-1	J-2	8.0	130.0	0	0.00	0.000	176
P-2	J-2	J-3	8.0	130.0	0	0.00	0.000	432
P-3	J-3	J-4	8.0	130.0	0	0.00	0.000	334
P-4	J-4	J-5	8.0	130.0	0	0.00	0.000	13
P-5	J-5	J-6	8.0	130.0	0	0.00	0.000	49
P-6	T-1	J-7	8.0	130.0	1,136	7.25	0.023	5,400
P-7	J-7	J-1	8.0	130.0	1,136	7.25	0.023	275

Scenario: Base



FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)
31	J-1	10.00	<None>	<Collection: 0 items>	72.61	27	0
34	J-2	10.00	<None>	<Collection: 0 items>	69.25	26	0
35	J-3	5.00	<None>	<Collection: 1 items>	61.01	24	10
36	J-5	5.00	<None>	<Collection: 1 items>	54.75	22	5
45	J-6	5.00	<None>	<Collection: 1 items>	54.75	22	9
47	J-7	10.00	<None>	<Collection: 0 items>	77.86	29	0
49	J-4	5.00	<None>	<Collection: 1 items>	54.75	22	1,000
50	J-8	10.00	<None>	<Collection: 0 items>	72.61	27	0

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Length (User Defined) (ft)
P-8	J-1	J-8	8.0	130.0	0	0.00	0.000	654
P-1	J-1	J-2	8.0	130.0	1,024	6.54	0.019	176
P-2	J-2	J-3	8.0	130.0	1,024	6.54	0.019	432
P-3	J-3	J-4	8.0	130.0	1,014	6.47	0.019	334
P-4	J-4	J-5	8.0	130.0	14	0.09	0.000	13
P-5	J-5	J-6	8.0	130.0	9	0.06	0.000	49
P-6	T-1	J-7	8.0	130.0	1,024	6.54	0.019	5,400
P-7	J-7	J-1	8.0	130.0	1,024	6.54	0.019	275