

ALBEMARLE REGIONAL HEALTH SERVICES

457350

Applicant:

David Neff/ Kwasny Engineering
198 Augusta Dr
Grandy, NC 27939

Owner:

Kitty Hawk Grading
PO Box 1135
Kitty Hawk, NC 27949

Site Location:

110 Peace Ct
Powells Point, NC 27939

GPD: 100	LTAR: 0.600	Classification: Suitable
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If unsuitable, the site may be reclassified to provisionally suitable with the following modification(s):

To obtain an Authorization to Construct:

- * Submit a plat or scale drawing of the lot, showing location and dimensions of all property lines, proposed structures and driveways
- * Pay permit fee of \$441

Comments:

Fill building pad higher than finished septic tank grade

EHS:

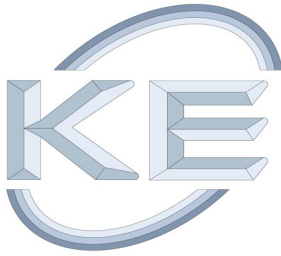


Carver, Kevin

Date: 07/29/2025

THIS APPROVAL WILL BECOME VOID AFTER 12 MONTHS AND A NEW APPLICATION WILL BE NECESSARY.

Bertie (252) 794-5303 Camden (252) 338-4460 Chowan (252) 482-1199 Currituck (252) 232-6603
Gates (252) 357-1380 Pasquotank (252) 338-4490 Perquimans (252) 426-2100



198 Augusta Drive
Grandy, NC 27949
Phone: 757-705-0585
e-mail: Kwasny@KwasnyEng.com

Stormwater Narrative
Kitty Hawk Grading
110 Peace Court, Currituck County, NC

Proposed Service Building and Gravel Vehicle Storage on 0.97 Ac site with existing approved development.

The design of stormwater management systems for commercial existing and proposed additions is a critical aspect of sustainable development. The system you are considering, which captures all stormwater runoff on-site in a large dry infiltration Trench, is designed to exceed the requirements for a 4.23" rainfall event, accommodating up to an 8.46" rainfall event.

This is a proactive approach, considering the increasing intensity of rain events. The flat site allows for infiltration of runoff before reaching the dry infiltration Trench. The Trench should be sized and constructed to allow for the infiltration of stormwater into the ground, preventing any overflow and ensuring that the system can handle the specified rain event. It is also essential to incorporate safety and maintenance considerations into the design, ensuring long-term functionality and compliance with environmental regulations.

The Simple Method for stormwater calculation is a practical approach for urban areas, requiring minimal information. It is particularly suitable for the scenario described, where a 2-year, 24-hour rainfall event results in negligible runoff, allowing for the design of a dry infiltration Trench system. This system is designed to capture and infiltrate the runoff from a 5-year, 24-hour rainfall event, effectively managing stormwater both before and after construction. Proper design and maintenance of these systems are crucial to ensure their long-term effectiveness.

Additionally, the site consists of a 10" thick gravel vehicle area allowing additional runoff infiltration (5,365 Sq. Ft) not included in calculations.

Approximately 45 % of the properties will remain undeveloped.

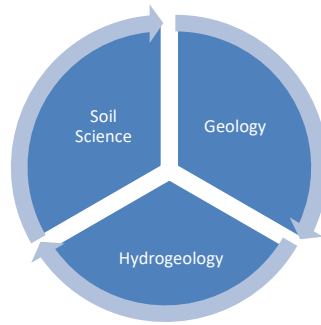
Proposed Soil Erosion and Sedimentation designed are silt fence, berming around the perimeter for positive stormwater runoff towards dry infiltration Trench.

The following statement was prepared by a representative of Kwasny Engineering:

The infiltration area was found to be flat (slope <1.0%) with surveyed elevations of 10.5 to 12.7 feet-msl. The seasonal high-water table was found from 36 inches below land surface (9.0') and the static water table was found from depths of 60 inches below the soil surface (7.0') across the study area. The soil matched the State soil series profile with excellent structure (granular), consistence (friable) and texture (loamy sand)

Given a 20% - 25% porosity value for the loamy sand surface soils and an infiltration rate of at least 20.0-inches/hour, which overlies a sandy clay loam with greater than 30% porosity with an infiltration rate exceeding 20.0-inches/hour, the infiltration area should easily accept any storm water flow from the impervious areas.

September 22, 2025
Kwasny Engineering PLLC
Thomas Kwasny



4114 Laurel Ridge Drive
Raleigh, North Carolina 27612

Protocol Sampling Service, Inc.
"Experts in Environmental Compliance"
(919) 210-6547

Protocolsampling@yahoo.com
Environmentalservicesnc.com

October 29, 2025

Mr. Thomas Kwasny, P. E.
Civil Engineering and Land Planning Consultants
198 Augusta Drive
Grandy, North Carolina 27939

Re: **Soil Inspection – Kitty Hawk Grading LLC**
110 Peace Court
Lot 26, Freedom Business Park
Powells Point, Currituck County, North Carolina
Protocol Project No. 25-136

Dear Mr. Kwasny:

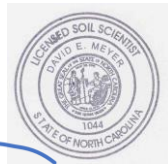
The subject property that will be developed for a 3,250 square foot warehouse was inspected by Protocol Sampling Service, Inc., personnel on Thursday, October 23, 2025. Protocol personnel inspected the lot by advancing two (2) soil borings for lithologic descriptions, depth to the seasonal high-water table, if evident, and the depth to static water table across the proposed waste water disposal area (Grading and Drainage Plan – attached).

The northern portion of the property comprises the study area for stormwater disposal and contains surveyed elevations of 12.0-feet msl. The seasonal high-water table was found to be at 36 inches below land surface (elevation 9.0'-msl) and the static water table was not found to a depth of 60-inches below the soil surface (elevation <7.0'-msl) at both boring locations. The soil profile contained a cemented spodic horizon from 36 to 58-inches bls in the northwest boring and a restrictive clay horizon from 36 to 52-inches bls in the northeast boring. The existing restrictive horizons should be removed and replaced with clean sand up to the projected basin bottom to ensure proper infiltration. The soil porosity beneath the restrictive horizons ranges from 20 to 25% with infiltration rates exceeding 20-inches/hour in the native sandy soil with a high-water table elevation of at least 36-inches below land surface.

The findings presented herein represent Protocol Sampling Service, Inc.'s professional opinion based on our site and soils evaluation and knowledge of the current laws and rules governing stormwater regulations in North Carolina.

Please call me at (919) 210-6547 if you have any questions or comments.

Sincerely,

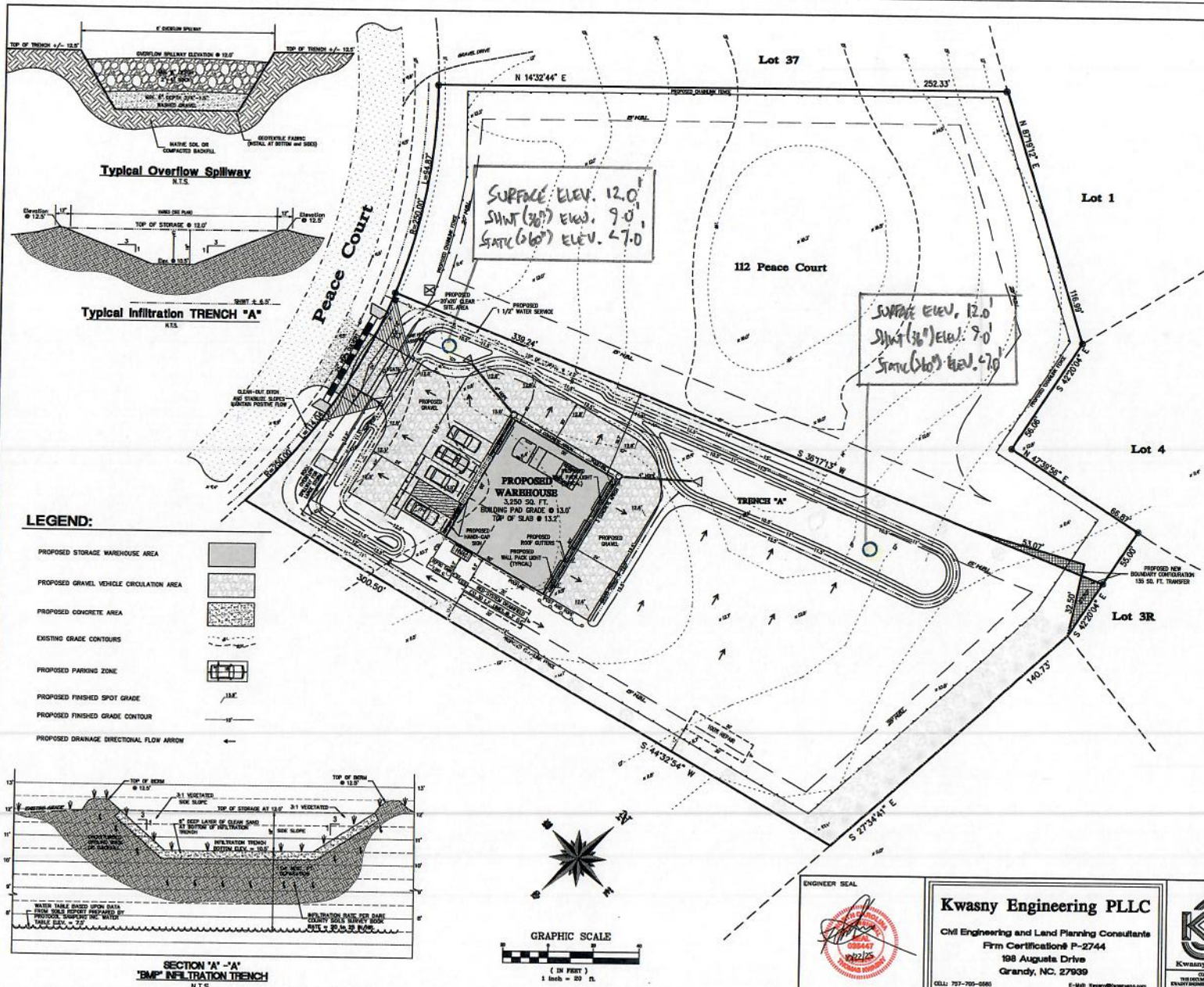


Protocol Sampling Service, Inc.
David E. Meyer, N.C.L.S.S.
President

Soil Profile Description
110 Peace Court - Profile 1

- Ap1 0 – 36 inches; grayish brown (10YR 5/2) loamy sand; granular; friable.
- Bh 36 – 58 inches; dark grayish brown (10YR 4/2) fine to medium sand; massive;
firm, brittle
- Cg2 58 – 60+ inches; dark brown (10YR 3/3) fine sand; single grained; loose.

Soil Series: Ridgeland variant
Landscape: Coastal Plain
Landform: flat
Parent Material: Marine sediments
Drainage Class: moderately well drained
Particle Size Class: sandy
Temperature Regime: thermic
Subgroup Classification: Oxyaquic Alorthods
Examination Method: auger boring
Date: October 23, 2025
Weather: Sunny
Investigators: David Meyer
Shwt: 36"
Measured water table depth: >60"



GENERAL NOTES:

- SUBJECT PROPERTY: LOT 26 OUTSIDE INDUSTRIAL PARK, POPLAR BRANCH TOWNSHIP, CURRITUCK COUNTY, NC
- STREET ADDRESS: 110 Peace Court
- PARCEL ID NUMBER: 0000000000
- GLOBAL PIR: 0000-00-0000
- RECORDED REFERENCE: 0.8 1762 Pg. 134 P.C. 4, SL. 47
- LOT AREA: 4,628 SQ. FT. (0.086 AC)
- FEIN DATA COMMUNITY: CURRITUCK COUNTY
- SUBJECT PROPERTY ZONING: U (LIGHT INDUSTRIAL)
- BUILDING SETBACKS: FRONT - 20' SIDE - 10' REAR - 25'
- SURVEY PREPARED BY: COASTAL SURVEYING PLLC
- PROPOSED DEVELOPMENT: CONTRACTOR SERVICES WAREHOUSE (STORAGE) 50' X 80' METAL BUILDING WITH INFRASTRUCTURE AND ASSOCIATED PAVING
- PARKING REQUIREMENTS: 2 DRIVEWAYS 2 SPACES 1 SPACE / 2,500 SQ. FT. 4 SPACES REQUIRED 4 SPACES PROVIDED
- INTERFUSION COVERAGE:

ROADS	3,224 SQ. FT.
CONCRETE VEHICULAR CIRCULATION AREA	888 SQ. FT.
GRAVEL VEHICULAR CIRCULATION AREA	1,798 SQ. FT.
TOTAL INTERFUSION COVERAGE	5,910 SQ. FT.
LOT AREA	4,628 SQ. FT.

STORMWATER MANAGEMENT NARRATIVE

STORMWATER MANAGEMENT NARRATIVE
THE STORMWATER MANAGEMENT PLAN SHOWN HEREON HAS BEEN PREPARED TO ADDRESS STORMWATER MANAGEMENT ON THE SUBJECT PROPERTY.
THE STORMWATER RUNOFF WILL BE MANAGED THROUGH PROPOSED ON SITE SHALLOW INFILTRATION BASIN AND OPEN LAWN AREAS.
THE CALCULATIONS WILL SHOW THAT THE HIGHLY PERVIOUS SOILS, COMBINED WITH THE SHALLOW INFILTRATION BASIN, WILL BE ABLE TO OBTAIN AND INFILTRATE THE STORMWATER GENERATED FROM THE DESIGN RAINFALL EVENT.
TO CALCULATE THE VOLUME OF STORMWATER RUNOFF FOR A SPECIFIED STORM EVENT, WE FIRST NEED TO UNDERSTAND THE EVENT'S PARAMETERS. A 5-YEAR 24-HOUR STORM EVENT REFERS TO A RAINFALL EVENT THAT HAS A PROBABILITY OF OCCURRING ONCE EVERY FIVE YEARS AND LASTS FOR 24 HOURS. THE OPEN RAINFALL AMOUNT FOR THIS EVENT IS 4.81 INCHES.

THE VOLUME OF RUNOFF CAN BE CALCULATED USING THE SIMPLE METHOD. WHICH IS A SIMPLE, YET HEAVILY USED TECHNIQUE FOR ESTIMATING STORAGE.
SHALLOW SWALES AND DRY BASINS ARE STORMWATER MANAGEMENT PRACTICES DESIGNED TO COLLECT AND CONVEY RUNOFF WHILE PROVIDING SOME TREATMENT. SHALLOW SWALES ARE GENTLY SLOPING CHANNELS WITH SOFT VEGETATION THAT SLOW DOWN RUNOFF AND FACILITATE INFILTRATION. DRY BASINS ARE IMPROVEMENT AREAS THAT TEMPORARILY STORE RUNOFF AND ALLOW FOR SEDIMENTATION AND INFILTRATION.

DESIGN STORM EVENT:
PRE-DEVELOPMENT
2-year 24-hour storm event means a 4.23-inch event with rainfall distributed according to the median NOAA Atlas 14 lat quartile distribution.
POST-DEVELOPMENT
5-year 24-hour storm event means a 4.81-inch event with rainfall distributed according to the median NOAA Atlas 14 lat quartile distribution.
FOR PRE-DEVELOPMENT 2 YR 24 HOUR STORM RUNOFF = 0 C.U.F./SECOND
FOR POST-DEVELOPMENT 5 YR 24 HOUR STORM RUNOFF = 0 C.U.F./SECOND FOR PERVIOUS SURFACES
STORAGE IS PROVIDED FOR IMPERVIOUS SURFACES SO THAT POST DEVELOPMENT 0 = 0 C.U.F./SECOND USING A RUNOFF COEFFICIENT, C OF 0.85 FOR IMPERVIOUS SURFACES

EXISTING SOIL DATA:
BASED AREA, NATURAL RESOURCES CONSERVATION SERVICE, SOIL SURVEY
SOIL TYPE: CHA - CORNELL LOAMY SAND
DRAINAGE CLASS: WELL DRAINAGE SOIL

SEASONAL HIGH WATER TABLE ELEVATION = 7.2' +/- MSL (Professional Surveying Service, Inc.)
Given a 10% permeability value for the loamy sand surface soils and an infiltration rate of at least 10-inches/hour, the infiltration area should easily accept any storm water flow from the impervious areas.

STORMWATER MANAGEMENT SEDIMENT AND INFILTRATION TRENCH "A"
IMPERVIOUS 6,875 SQ. FT. X 4.32" (RAINFALL EVENT)/12 = 3,410 CU. FT.

DATA
TOP ELEVATION = 12.0'
TOP AREA = 5,800 SQ. FT.
BOTTOM ELEVATION = 11.0'
BOTTOM AREA = 2,540 SQ. FT.
CALCULATE OPEN VOLUME IN TRENCH
V1 = OPEN VOLUME = (TOP AREA - BOTTOM AREA) X DEPTH OF TRENCH
V1 = OPEN VOLUME = (5,800 - 2,540) X 1.0 = 4,260 CU. FT.
V1 = OPEN VOLUME = 4,260 CU. FT.

CALCULATE INTERSTITIAL UNDERLYING STORAGE
V2 = INTERSTITIAL STORAGE = (TOP AREA X SOIL DEPTH) - V1 X 0.2
SOIL DEPTH BELOW BOTTOM OF TRENCH = 3.0 FEET
V2 = INTERSTITIAL STORAGE = (5,800 X 3.0) - 4,260 X 0.2 = 2,556 CU. FT.
V2 = OPEN VOLUME = 2,556 CU. FT.

TOTAL STORAGE IN SWALE AND UNDERLYING SOILS
TOTAL STORAGE = 4,260 + 2,556 = 6,816 CU. FT.
TOTAL STORAGE REQUIRED 3,410 CU. FT.

ENGINEER SEAL



Kwasny Engineering PLLC

Civil Engineering and Land Planning Consultants
Firm Certification P-2744
198 Augusta Drive
Grandy, NC 27939

CELL: 787-705-6865
OFFICE: 787-439-4483
E-MAIL: kwasny@kwasny.com
E-MAIL: tkwasny@kwasny.com



Kwasny Engineering

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Grading and Drainage Plan
Kitty Hawk Grading LLC
Lot 26, Freedom Business Park

Location:
110 Peace Court
Poplar Branch Township Currituck County North Carolina

APPROVALS: DATE: PROJECT NUMBER: SHEET NO.

DATE: 10/23/25
DATE: 10/23/25
DATE: 10/23/25
240244
C3 of 5

3103244



Major Stormwater Plan Form SW-002

Review Process

Contact Information

Currituck County
Planning and Community Development
153 Courthouse Road, Suite 110
Currituck, NC 27929

Phone: 252.232.3055
Fax: 252.232.3026

Website: <http://www.co.currituck.nc.us/planning-community-development.cfm>

Currituck County
Engineering Department
153 Courthouse Road, Suite 302
Currituck, NC 27929

Phone: 252.232.6035

General

Major stormwater plan approval is required for:

- Major subdivisions.
- Major site plans - development or expansion on a nonresidential, multi-family, or mixed use lot by 5,000 square feet or more of impervious coverage or resulting in 10% or more total impervious coverage.

Step 1: Application Submittal

The applicant must submit a complete application packet consisting of the following:

- Completed Currituck County Minor Stormwater Plan Form SW-002 (unless submitting a major subdivision or major site plan).
- Completed Rational Method Form SW-003 or NRCS Method Form SW-004.
- Stormwater management plan drawn to scale. The plan shall include the items listed in the major stormwater plan design standards checklist.
- Alternative stormwater runoff storage analysis and/or downstream drainage capacity analysis, if applicable.
- NCDENR permit applications, if applicable.
- Number of Copies Submitted:
 - 3 Copies of required plans
 - 3 Hard copies of ALL documents
 - 1 PDF digital copy (ex. Compact Disk – e-mail not acceptable) of all plans AND documents.

On receiving an application, staff shall determine whether the application is complete or incomplete. A complete application contains all the information and materials listed above, and is in sufficient detail to evaluate and determine whether it complies with appropriate review standards. An application for major stormwater plan must be submitted and approved prior altering an existing drainage system, performing any land disturbing activity or, before construction documents are approved.

Step 2: Staff Review and Action

Once an application is determined complete staff shall approve, approve subject to conditions or disapprove the application.



Major Stormwater Plan Form SW-002

OFFICIAL USE ONLY:

Permit Number: _____
Date Filed: _____
Date Approved: _____

Contact Information**APPLICANT:**

Name: KWASNY ENGINEERING
Address: 198 AUGUSTA DR
GRANDY NC 27939
Telephone: 757-705-0585
E-Mail Address: dnaff@kwasnyeng.com

PROPERTY OWNER:

Name: Kitty Hawk Grading, LLC
Address: PO BOX 1135
KITTY HAWK, NC 27949
Telephone: 252-202-9058
E-Mail Address: kittyhawkgrading2@gmail.com

Property Information

Physical Street Address: 110 PEACE COURT
Parcel Identification Number(s): 124E00000350000
FEMA Flood Zone Designation: X

Request

Project Description: STORAGE METAL BUILDING / PARKING (GRAVEL)
Total land disturbance activity: 23,142 sf Calculated volume of BMPs: 6,816 C.F. ~~sf~~
Maximum lot coverage: 27,905 sf Proposed lot coverage: 9,675 sf

TYPE OF REQUEST

- ☐ Major subdivision (10-year, 24-hour rate)
☒ Major site plan (5-year, 24-hour rate) (4.23) (8.4)

METHOD USED TO CALCULATE PEAK DISCHARGE

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

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

[Signature]
Applicant

9/22/25
Date

Robert F. Hill Kitty Hawk Grading LLC
Property Owner(s)

9/22/25
Date

***NOTE:** Form must be signed by the owner(s) of record, contract purchaser(s), or other person(s) having a recognized property interest. If there are multiple property owners/applicants a signature is required for each.

Major Stormwater Plan Design Standards Checklist

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

Major Stormwater Plan Design Standards Checklist

Date Received: _____

Project Name: _____

Applicant/Property Owner: _____

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

Certificate	
22	The major stormwater plan shall contain the following certificate: I, _____, owner/agent hereby certify the information included on this and attached pages is true and correct to the best of my knowledge. On the plan entitled _____, stormwater drainage improvements shall be installed according to these plans and specifications and approved by Currituck County. Yearly inspections are required as part of the stormwater plan. The owner is responsible for all maintenance required. Currituck County assumes no responsibility for the design, maintenance, or performance of the stormwater improvements. Date: _____ Owner/Agent: _____

Major Stormwater Plan Submittal Checklist

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

Major Stormwater Plan Form SW-002

Submittal Checklist

Date Received: _____

Project Name: _____

Applicant/Property Owner: _____

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

Comments
