



**Public Services**

Engineering  
212 Operations Center Drive  
Wilmington, NC 28412  
910 341-7807  
910 341-5881 fax  
wilmingtonnc.gov  
Dial 711 TTY/Voice

March 25, 2020

Ms. Brenda Esch  
Friends School of Wilmington  
350 Peiffer Avenue  
Wilmington, NC 28409

**Subject: Stormwater Management Permit No. 2019028R1  
Friends School of Wilmington  
High Density Development**

Dear Ms. Esch:

The City of Wilmington Engineering Division has received a request for a revision to the Stormwater Management Permit for Friends School of Wilmington. Having reviewed the application and all supporting materials, the City of Wilmington has determined that the proposed revision meets the requirements of the City of Wilmington's Comprehensive Stormwater Ordinance.

The revisions include:

- Addition of a Phasing Line
- Realignment of the 18" storm pipe behind the 13,926sf proposed building.
- Revised grading of the soccer field/removal of perimeter vegetation to reduce fill and preserve existing vegetation. Existing vegetation to be used as a buffer.
- Fire access surface material change, addition of storm inlets and revised grading.
- Revised frame and grate inverts; details updated.
- Existing trees retained along property line between existing parking and Emerald Cove subdivision to be used as buffer.
- See approved plans dated March 20, 2020.

Please be aware all terms and conditions of the permit Issued on May 15, 2019 remain in full force and effect. Any additional changes to the approved plans must be approved by this office prior to construction. The issuance of the plan revision does not preclude the permittee from complying with all other applicable statutes, rules, regulations or ordinances which may have jurisdiction over the proposed activity, and obtaining a permit or approval prior to construction.

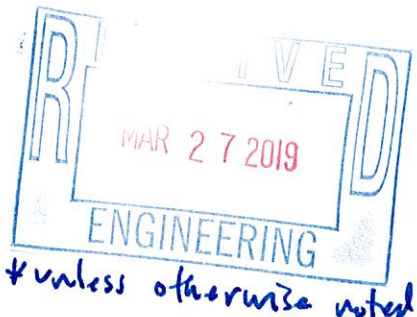
The revised stamped, approved stormwater management drawings will be released for construction by the Wilmington Planning Division under separate cover. Please replace any old plan sheets from the approved set with the new, revised sheet. An electronic copy of the approved drawing set, permit, application and supplementary documents will be maintained by the Wilmington Engineering Division. If you have any questions, or need additional information, please contact Richard Christensen at (910) 341-7813 or richard.christensen@wilmingtonnc.gov

Sincerely,

Handwritten signature of Richard Christensen in blue ink.

for Sterling Cheatham, City Manager  
City of Wilmington

cc: Howard Resnik, PE, CSD Engineering  
Jeff Walton, Associate Planner, City of Wilmington



**Public Services**  
 Engineering  
 414 Chestnut St, Suite 200  
 Wilmington, NC 28401  
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**STORMWATER MANAGEMENT PERMIT APPLICATION FORM**  
 (Form SWP 2.2)

**I. GENERAL INFORMATION**

- Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):  
Friends School of Wilmington
- Location of Project (street address):  
350 Peiffer Avenue  
 City: Wilmington County: New Hanover Zip: 28409
- Directions to project (from nearest major intersection):  
From intersection of Oleander Drive / US 76 and Greenville Loop Road - travel 0.3 miles west to Peiffer Ave.  
Turn left onto Peiffer Ave. Site is located approximately 0.45 miles on the right.

**II. PERMIT INFORMATION**

- Specify the type of project (check one):  Low Density  High Density  
 Drains to an Offsite Stormwater System  Drainage Plan  Other  
 If the project drains to an Offsite System, list the Stormwater Permit Number(s):  
 City of Wilmington: 2007043 State - NCDENR/DWQ: \_\_\_\_\_
- Is the project currently covered (whole or in part) by an existing City or State (NCDENR/DWQ) Stormwater Permit?  Yes  No  
 If yes, list all applicable Stormwater Permit Numbers:  
 City of Wilmington: 2019028 State - NCDENR/DWQ: SW8 060306
- Additional Project Permit Requirements (check all applicable):  
 CAMA Major  Sedimentation/Erosion Control  
 NPDES Industrial Stormwater  404/401 Permit: Proposed Impacts: \_\_\_\_\_  
 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:

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**III. CONTACT INFORMATION**

1. 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: Friends School of Wilmington

Signing Official & Title: Brenda Esch

- a. Contact information for Applicant / Signing Official:

Street Address: 350 Peiffer Avenue

City: Wilmington State: NC Zip: 28409

Phone: 910-792-1811 Fax: \_\_\_\_\_ Email: brenda@fsow.org

Mailing Address (if different than physical address): \_\_\_\_\_

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

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

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

2. 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 on.)

Property Owner / Organization: \_\_\_\_\_

Signing Official & Title: \_\_\_\_\_

- a. Contact information for Property Owner:

Street Address: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Mailing Address (if different than physical address): \_\_\_\_\_

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

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

Other Contact Person / Organization: \_\_\_\_\_

Signing Official & Title: \_\_\_\_\_

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

Street Address: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Mailing Address (if different than physical address): \_\_\_\_\_

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

**IV. PROJECT INFORMATION**

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

Runoff will be collected by storm drain collection system and discharged into a wet pond.

2. Total Property Area: 316,856 square feet 4/30/19 RAC

**RECEIVED**

**APR 18 2019**

3. Total Coastal Wetlands Area: 0 square feet

4. Total Surface Water Area: 0 square feet

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5. Total Property Area (2) – Total Coastal Wetlands Area (3) – Total Surface Water Area (4) = Total Project Area: 316,856 square feet.

6. Existing Impervious Surface within Property Area: 47,195 square feet

7. Existing Impervious Surface to be Removed/Demolished: 21,996 square feet

8. Existing Impervious Surface to Remain: 25,199 square feet

9. Total Onsite (within property boundary) Newly Constructed Impervious Surface (*in square feet*):

Buildings/Lots	26,662
Impervious Pavement	29,216
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	13,685
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	
Future Development	5,000
<b>Total Onsite Newly Constructed Impervious Surface</b>	<b>74,563</b>

10. Total Onsite Impervious Surface

(Existing Impervious Surface to remain + Onsite Newly Constructed Impervious Surface) = 99,762 square feet

11. Project percent of impervious area: (Total Onsite Impervious Surface / Total Project Area) x100 = 31.46%

**31.46**

12. Total Offsite Newly Constructed Impervious Area (improvements made outside of property boundary, in square feet):

Impervious Pavement	13,215
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	2,841
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	
<b>Total Offsite Newly Constructed Impervious Surface</b>	<b>16,056</b>

13. Total Newly Constructed Impervious Surface

(Total Onsite + Offsite Newly Constructed Impervious Surface) = 90619 square feet

14. Complete the following information for each Stormwater BMP drainage area. If there are more than three drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below. Low Density projects may omit this section and skip to Section V.

Basin Information	BMP # 1	BMP #	(Type of BMP) BMP #
Receiving Stream Name	UT to Hewletts Creek		
Receiving Stream Index Number	18-87-26		
Stream Classification	SA/HQW		
Total Drainage Area (sf)	301808	0	0
On-Site Drainage Area (sf)	187793		
Off-Site Drainage Area (sf)	114015		
<b>Total Impervious Area (sf)</b>	<b>158221</b>	<b>0</b>	<b>0</b>
Buildings/Lots (sf)	26662		
Impervious Pavement (sf)	29216		
Pervious Pavement, % credit (sf)			
Impervious Sidewalks (sf)	13685		
Pervious Sidewalks, % credit (sf)			
Other (sf)			
Future Development (sf)	5000		
Existing Impervious to remain (sf)	25061		
Offsite (sf)	58597		
Percent Impervious Area (%)	52.5		

15. How was the off-site impervious area listed above determined? Provide documentation:  
copied for existing NCDENR stormwater permit

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**APR 18 2019**  
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## V. SUBMITTAL REQUIREMENTS

1. Supplemental and Operation & Maintenance Forms - One applicable City of Wilmington Stormwater BMP supplement form and checklist must be submitted for **each** BMP specified for this project. One applicable proposed operation and maintenance (O&M) form must be submitted for **each type** of stormwater BMP. Once approved, the operation and maintenance forms must be referenced on the final plat and recorded with the register of deeds office.
2. Deed Restrictions and Restrictive 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. Due to variability in lot sizes or the proposed BUA allocations, 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 at the link listed in section V (3). Download the latest versions for each submittal.

In 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 City of Wilmington, and that they will be recorded prior to the sale of any lot.**

3. Only complete application packages will be accepted and reviewed by the City. A complete package includes all of the items listed on the City Engineering Plan Review Checklist, including the fee. Copies of the Engineering Plan Review Checklist, all Forms, Deed Restrictions as well as detailed instructions on how to complete this application form may be downloaded from:

<http://www.wilmingtonnc.gov/PublicServices/Engineering/PlanReview/StormwaterPermits.aspx>

The complete application package should be submitted to the following address:

City of Wilmington – Engineering  
Plan Review Section  
414 Chestnut Street, Suite 200  
Wilmington, NC 28402

**VI. CONSULTANT INFORMATION AND AUTHORIZATION**

1. 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: Howard Resnik, PE

Consulting Firm: CSD Engineering

a. Contact information for consultant listed above:

Mailing Address: PO BOX 4041

City: Wilmington State: NC Zip: 28406

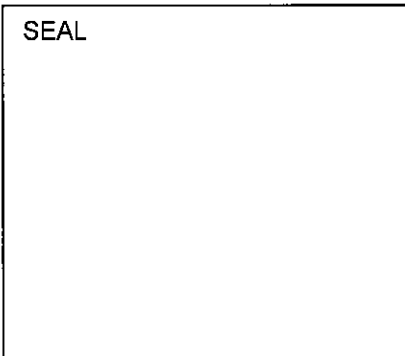
Phone: 910-791-4441 Fax: 910-791-1501 Email: howard@csd-engineering.com

**VII. PROPERTY OWNER AUTHORIZATION** (If Section III(2) has been filled out, complete this section)

I, *(print or type name of person listed in Contact Information, item 2)* \_\_\_\_\_, 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 1)* \_\_\_\_\_ with *(print or type name of organization listed in Contact Information, item 1)* \_\_\_\_\_ 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 City of Wilmington Stormwater Permit reverts back to me, the property owner. As the property owner, it is my responsibility to notify the City of Wilmington 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 the City of Wilmington Municipal Code of Ordinances and may result in appropriate enforcement including the assessment of civil penalties.

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



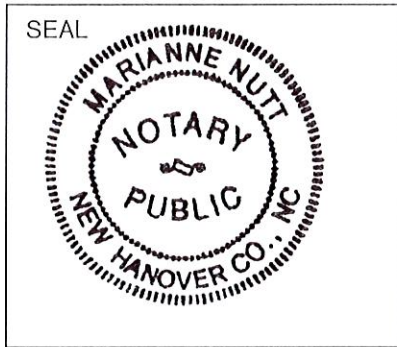
I, \_\_\_\_\_, a Notary Public for the State of \_\_\_\_\_, County of \_\_\_\_\_, do hereby certify that \_\_\_\_\_ personally appeared before me this day of \_\_\_\_\_, \_\_\_\_\_ and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal,

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

**VIII. APPLICANT'S CERTIFICATION**

I, (print or type name of person listed in Contact Information, item 1) , Brenda Esch 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.

Signature: Brenda Esch Date: 11/02/18



I, MARIANNE NUTT, a Notary Public for the State of North Carolina, County of NEW HANOVER, do hereby certify that Brenda Esch personally appeared before me this day of November 2, 2018, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal,  
Marianne Nutt  
My commission expires: February 4, 2022



# SUPPLEMENT-EZ COVER PAGE

FORMS LOADED

PROJECT INFORMATION		
1	Project Name	Friends School of Wilmington
2	Project Area (ac)	7.8
3	Coastal Wetland Area (ac)	
4	Surface Water Area (ac)	
5	Is this project High or Low Density?	High
6	Does this project use an off-site SCM?	No

COMPLIANCE WITH 02H .1003(4)		
7	Width of vegetated setbacks provided (feet)	
8	Will the vegetated setback remain vegetated?	
9	Is BUA other than as listed in .1003(4)(c-d) out of the setback?	
10	Is streambank stabilization proposed on this project?	

NUMBER AND TYPE OF SCMs:		
11	Infiltration System	0
12	Bioretention Cell	0
13	Wet Pond	1
14	Stormwater Wetland	0
15	Permeable Pavement	0
16	Sand Filter	0
17	Rainwater Harvesting (RWH)	0
18	Green Roof	0
19	Level Spreader-Filter Strip (LS-FS)	0
20	Disconnected Impervious Surface (DIS)	0
21	Treatment Swale	0
22	Dry Pond	0
23	StormFilter	0
24	Silva Cell	0
25	Bayfilter	0
26	Filterra	0

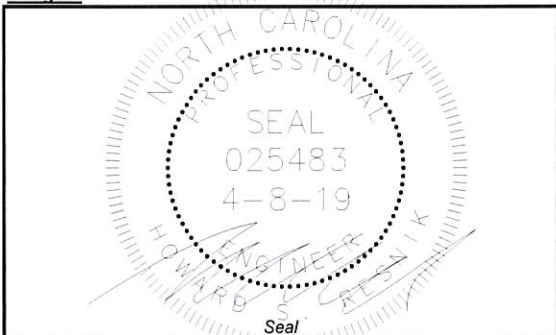
FORMS LOADED

DESIGNER CERTIFICATION		
27	Name and Title:	Howard Resnik, PE
28	Organization:	CSD Engineering
29	Street address:	PO BOX 4041
30	City, State, Zip:	Wilmington, NC 28406
31	Phone number(s):	910-791-4441
32	Email:	howard@csd-engineering.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**

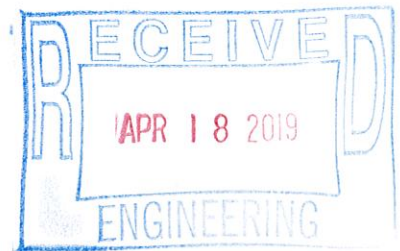


*[Handwritten Signature]*

Signature of Designer

4-8-19

Date



# DRAINAGE AREAS

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

FORMS LOADED

DRAINAGE AREA INFORMATION		Entire Site	1
4	Type of SCM	pond	pond
5	Total BUA in project (sq ft)	99624 sf ✓	
6	New BUA on subdivided lots (subject to permitting) (sq ft)		
7	New BUA outside of subdivided lots (subject to permitting) (sf)		
8	Offsite - total area (sq ft)	114015 sf ✓	
9	Offsite BUA (sq ft)	58597 sf ✓	
10	Breakdown of new BUA outside subdivided lots:		
	- Parking (sq ft)	29216 sf ✓	
	- Sidewalk (sq ft)	13685 sf ✓	
	- Roof (sq ft)	26662 sf ✓	
	- Roadway (sq ft)		
	- Future (sq ft)	5000 sf ✓	
	- Other, please specify in the comment box below (sq ft)		
11	New infiltrating permeable pavement on subdivided lots (sq ft)		
12	New infiltrating permeable pavement outside of subdivided lots (sq ft)		
13	Existing BUA that will remain (not subject to permitting) (sq ft)		
14	Existing BUA that is already permitted (sq ft)	25061 sf ✓	
15	Existing BUA that will be removed (sq ft)		
16	Percent BUA		
17	Design storm (inches)	1.5 in ✓	
18	Design volume of SCM (cu ft)	19702 cf ✓	
19	Calculation method for design volume	simple ✓	

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

DRAINAGE AREA INFORMATION		Entire Site	1
4	Type of SCM	N/A	
5	Total BUA from project (sq ft)		99624 sf
6	1995 rules		
	SL 2006-246		
	2008 rules		
	2017 rules		
7	New BUA on subdivided lots (subject to permitting) (sq ft)		
	1995 rules		
	SL 2006-246		
	2008 rules		
	2017 rules		
8	New BUA outside of subdivided lots (subject to permitting) (sf)		
	1995 rules		
	SL 2006-246		
	2008 rules		
	2017 rules		
9	Offsite - total area (sq ft)		
	1995 rules		
	SL 2006-246		
	2008 rules		
	2017 rules		
10	Offsite BUA (sq ft)		
	1995 rules		
	SL 2006-246		
	2008 rules		
	2017 rules		
11	Design storm (inches)		1.5 in

	1995 rules		
	SL 2006-246		
	2008 rules		
	2017 rules		
12	<b>Breakdown of new BUA:</b>		
	- Parking (sq ft)		
	- Sidewalk (sq ft)		
	- Roof (sq ft)		
	- Roadway (sq ft)		
	- Future (sq ft)		
	- Other, please specify in the comment box below (sq ft)		
13	New infiltrating permeable pavement on subdivided lots (sq ft)		
14	New infiltrating permeable pavement outside of subdivided lots (sq ft)		
15	Existing BUA that will remain (not subject to permitting) (sq ft)		
16	Existing BUA that is already permitted (sq ft)		
17	Existing BUA that will be removed (sq ft)		
18	Percent BUA		
19	Design volume of SCM (cu ft)		
20	Calculation method for design volume		

<b>ADDITIONAL INFORMATION</b>	
21	Please use this space to provide any additional information about the drainage area(s):

# WET POND

1	Drainage area number	1
2	Design volume of SCM (cu ft)	19702 cf
<b>GENERAL MDC FROM 02H .1050</b>		
3	Is the SCM sized to treat the SW from all surfaces at build-out?	Yes
4	Is the SCM located away from contaminated soils?	Yes
5	What are the side slopes of the SCM (H:V)?	3:1
6	Does the SCM have retaining walls, gabion walls or other engineered side slopes?	No
7	Are the inlets, outlets, and receiving stream protected from erosion (10-year storm)?	Yes
8	Is there an overflow or bypass for inflow volume in excess of the design volume?	Yes
9	What is the method for dewatering the SCM for maintenance?	Pump (preferred)
10	If applicable, will the SCM be cleaned out after construction?	Yes
11	Does the maintenance access comply with General MDC (8)?	Yes
12	Does the drainage easement comply with General MDC (9)?	Yes
13	If the SCM is on a single family lot, does (will?) the plat comply with General MDC (10)?	Yes
14	Is there an O&M Agreement that complies with General MDC (11)?	Yes
15	Is there an O&M Plan that complies with General MDC (12)?	Yes
16	Does the SCM follow the device specific MDC?	Yes
17	Was the SCM designed by an NC licensed professional?	Yes
<b>WET POND MDC FROM 02H .1053</b>		
18	Method used	SA/DA
19	Has a stage/storage table been provided in the calculations?	Yes
20	Elevation of the excavated main pool depth (bottom of sediment removal) (fmsl)	13.00
21	Elevation of the main pool bottom-(top of sediment removal) (fmsl)	14.00
22	Elevation of the bottom of the vegetated shelf (fmsl)	19.00
23	Elevation of the permanent pool (fmsl)	19.50
24	Elevation of the top of the vegetated shelf (fmsl)	20.00
25	Elevation of the temporary pool (fmsl)	20.80
26	Surface area of the main permanent pool (square feet)	9925:1
27	Volume of the main permanent pool (cubic feet)	33340 cf
28	Average depth of the main pool (feet)	3.84 ft
29	Average depth equation used	Equation 3
30	If using equation 3, main pool perimeter (feet)	451.0 ft
31	If using equation 3, width of submerged veg. shelf (feet)	3.0 ft
32	Volume of the forebay (cubic feet)	5086 cf
33	Is this 15-20% of the volume in the main pool?	Yes
34	Clean-out depth for forebay (inches)	12 in
35	Design volume of SCM (cu ft)	19702 cf
36	Is the outlet an orifice or a weir?	Orifice
37	If orifice, orifice diameter (inches)	2 in
38	If weir, weir height (inches)	
39	If weir, weir length (inches)	
40	Drawdown time for the temporary pool (days)	2
41	Are the inlet(s) and outlet located in a manner that avoids short-circuiting?	Yes
42	Are berms or baffles provided to improve the flow path?	Yes
43	Depth of forebay at entrance (inches)	48 in
44	Depth of forebay at exit (inches)	12 in
45	Does water flow out of the forebay in a non-erosive manner?	Yes
46	Width of the vegetated shelf (feet)	6 ft
47	Slope of vegetated shelf (H:V)	6:1
48	Does the orifice drawdown from below the top surface of the permanent pool?	Yes
49	Does the pond minimize impacts to the receiving channel from the 1-yr, 24-hr storm?	Yes
50	Are fountains proposed? (If Y, please provide documentation that MDC(9) is met.)	No
51	Is a trash rack or other device provided to protect the outlet system?	Yes
52	Are the dam and embankment planted in non-clumping turf grass?	Yes
53	Species of turf that will be used on the dam and embankment	centipede
54	Has a planting plan been provided for the vegetated shelf?	Yes
<b>ADDITIONAL INFORMATION</b>		
55	Please use this space to provide any additional information about the wet pond(s):	

## Wet Detention Basin Operation and Maintenance Agreement

I will keep a maintenance record on this BMP. This maintenance record will be kept in a log in a known set location. Any deficient BMP 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 removal efficiency of the BMP.

The wet detention basin system is defined as the wet detention basin, pretreatment including forebays and the vegetated filter if one is provided.

**This system (check one):**

does  does not incorporate a vegetated filter at the outlet.

**This system (check one):**

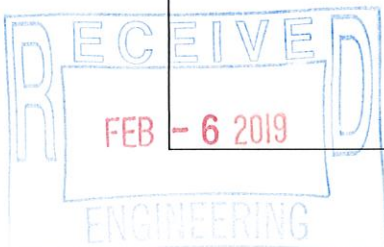
does  does not incorporate pretreatment other than a forebay.

Important maintenance procedures:

- Immediately after the wet detention basin is established, the plants on the vegetated shelf and perimeter of the basin should be watered twice weekly if needed, until the plants become established (commonly six weeks).
- No portion of the wet detention pond should be fertilized after the first initial fertilization that is required to establish the plants on the vegetated shelf.
- Stable groundcover should be maintained in the drainage area to reduce the sediment load to the wet detention basin.
- If the basin must be drained for an emergency or to perform maintenance, the flushing of sediment through the emergency drain should be minimized to the maximum extent practical.
- Once a year, a dam safety expert should inspect the embankment.

After the wet detention pond is established, it should be inspected **once a month and within 24 hours after every storm event greater than 1.5 inches**. Records of operation and maintenance should be kept in a known set location and must be available upon request. Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

BMP element:	Potential problem:	How I will remediate the problem:
The entire BMP	Trash/debris is present.	Remove the trash/debris.
The side slopes of the wet detention basin	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
	Vegetation is too short or too long.	Maintain vegetation at a height of approximately six inches.



Permit Number: \_\_\_\_\_  
 (to be provided by City of Wilmington)  
 BMP Drainage Basin #: \_\_\_\_\_

<b>BMP element:</b>	<b>Potential problem:</b>	<b>How I will remediate the problem:</b>
<b>The inlet device: pipe or swale</b>	The pipe is clogged.	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged.	Replace the pipe.
	Erosion is occurring in the swale.	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
<b>The forebay</b>	Sediment has accumulated to a depth greater than the original design depth for sediment storage.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the BMP.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
<b>The vegetated shelf</b>	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices
	The plant community and coverage is significantly (>25%) different from approved landscape plan.	Restore plant vegetation to approved condition. If landscape plan needs to be adjusted to specify vegetation more appropriate for site conditions, contact City Stormwater or Engineering Staff.
	Cattails or other invasive plants cover >25% of the veg't shelf. A monoculture of plants must be avoided)	Remove all invasives by physical removal or by wiping them with pesticide (do not spray) – consult a professional.
	Plants are 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 a soil test indicates it is necessary.
<b>The main treatment area</b>	Sediment has accumulated to a depth greater than the original design sediment storage depth.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the BMP.

Permit Number: \_\_\_\_\_  
 (to be provided by City of Wilmington)  
 BMP Drainage Basin #: \_\_\_\_\_

BMP element:	Potential problem:	How I will remediate the problem:
The main treatment area (continued)	Algal growth covers over 25% of the area.	Consult a professional to remove and control the algal growth.
	Cattails or other invasive plants cover >25% of the veg't shelf. A monoculture of plants must be avoided)	Remove all invasives by physical removal or by wiping them with pesticide (do not spray) – consult a professional.
The embankment	Shrubs have started to grow on the embankment.	Remove shrubs immediately.
	Evidence of muskrat or beaver activity is present.	Use traps to remove muskrats and consult a professional to remove beavers.
	A tree has started to grow on the embankment.	Consult a dam safety specialist to remove the tree.
	An annual inspection by an appropriate professional shows that the embankment needs repair. (if applicable)	Make all needed repairs.
The outlet device	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.	Contact the local NC Division of Water Quality Regional Office, or the 401 Oversight Unit at 919-733-1786.

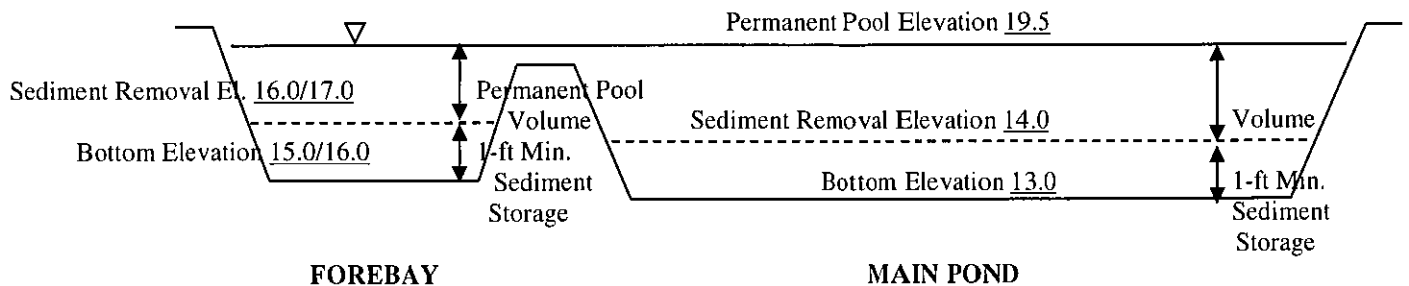
The measuring device used to determine the sediment elevation shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

When the permanent pool depth reads 5.5 feet in the main pond, the sediment shall be removed.

When the permanent pool depth reads 3.5/2.5 feet in the forebay, the sediment shall be removed.

### BASIN DIAGRAM

(fill in the blanks)



Permit Number: \_\_\_\_\_  
(to be provided by City of Wilmington)

I acknowledge and agree by my signature below that I am responsible for the performance of the maintenance procedures listed above. I agree to notify the City of Wilmington of any problems with the system or prior to any changes to the system or responsible party.

Project name: Friends School of Wilmington

BMP drainage basin number: 1

Print name: Brenda Esch

Title: Head of School

Address: 350 Peiffer Avenue Wilmington NC 28409

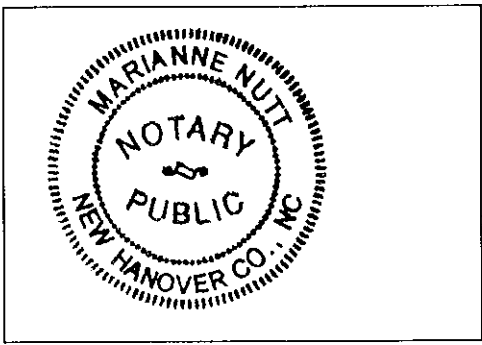
Phone: 910-792-1811

Signature: *Brenda Esch*

Date: Feb. 1, 2019

Note: The legally responsible party should not be a homeowners association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.

I, MARIANNE NUTT, a Notary Public for the State of NORTH CAROLINA, County of NEW HANOVER, do hereby certify that BRENDA ESCH personally appeared before me this 1st day of February, 2019, and acknowledge the due execution of the forgoing wet detention basin maintenance requirements. Witness my hand and official seal,



SEAL

My commission expires February 4, 2022