



COMPREHENSIVE STORMWATER MANAGEMENT PERMIT

DRAINAGE PLAN

SECTION 1 – APPROVAL

Having reviewed the construction drawings, application and all supporting materials, the City of Wilmington has determined that the proposed development meets the requirements for Drainage Plan Approval through the City of Wilmington's Comprehensive Stormwater Ordinance.

PERMIT HOLDER: Christa Sweyer, Owner
PROJECT: Wrightsville Manor Events Center
ADDRESS: 1952 Allens Lane
PERMIT #: 2015027
DATE: September 10, 2015

Therefore, the above referenced site is hereby approved and subject to all conditions set forth in Section 2 of this approval and all applicable provisions of the City of Wilmington Comprehensive Stormwater Management Ordinance.

This permit shall be effective from the date of issuance until modified or rescinded and shall be subject to the following specified conditions and limitations:

Section 2 - CONDITIONS

1. This approval is valid only for the stormwater management system as proposed on the approved stormwater management plans dated 9/10/2015.
2. The project will be limited to the amount and type of built-upon area indicated in Section IV of the Stormwater Management Application Form submitted as part of the approved stormwater permit application package, and per the approved plans.
3. This permit shall become void unless the facilities are constructed in accordance with the approved stormwater management plans, specifications and supporting documentation.
4. The permittee shall submit a revised stormwater management application packet to the City of Wilmington and shall have received approval prior to construction, for any modification to the approved plans, including, but not limited to, those listed below:
 - a. Any revision to any item shown on the approved plans, including the stormwater management measures, built-upon area, details, etc.
 - b. Redesign or addition to the approved amount of built-upon area.
 - c. Further subdivision, acquisition, lease or sale of any part of the project area.
 - d. Filling in, altering, or piping of any vegetative or piped conveyance shown on the approved plan.
 - e. Construction of any permitted future areas shown on the approved plans.
5. A copy of the approved plans and specifications shall be maintained on file by the Permittee.



6. During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.
7. All areas must be maintained in a permanently stabilized condition. If vegetated, permanent seeding requirements must follow the guidelines established in the North Carolina Erosion and Sediment Control Planning and Design Manual unless an alternative is specified and approved by the City of Wilmington.
8. All applicable operation & maintenance agreements pertaining to all pervious pavement systems shall be referenced on the final plat and recorded with the Register of Deeds upon final plat approval. If no plat is recorded for the site the operation and maintenance agreements shall be recorded with the Register of Deeds so as to appear in the chain of title of all subsequent purchasers under generally accepted searching standards.
9. The permittee shall at all times provide the operation and maintenance necessary to assure the pervious pavement system functions at optimum efficiency. The approved Operation and Maintenance Plan must be followed in its entirety and maintenance must occur at the scheduled intervals including, but not limited to:
 - a. Scheduled inspections
 - b. Sediment removal/vacuum sweep surface
 - c. Immediate repair of eroded areas adjacent to pervious pavement
10. Each component of the stormwater management system should be inspected once a quarter and within 24 hours after every storm event greater than 1.5 inches.
11. Records of inspection, maintenance and repair for the permitted pervious pavement system must be kept by the permittee for at least 5 years from the date of record and made available upon request to authorized personnel of the City of Wilmington. The records will indicate the date, activity, name of person performing the work and what actions were taken.
12. Upon completion of construction, before a Certificate of Occupancy shall be granted, and prior to operation of this permitted facility, the applicant shall submit to the City of Wilmington as-built plans for all stormwater management facilities. The plans shall show the field location, type, depth and invert of all devices, as-installed. A certification shall be submitted, along with all supporting documentation that specifies, under seal that the as-built stormwater measures, controls and devices are in compliance with the approved stormwater management plans. A final inspection by City of Wilmington personnel will be required prior to issuance of a certificate of occupancy or operation of the permitted facility.
13. This permit is not transferable except after application and approval by the City of Wilmington. In the event of a change of ownership, name change or change of address the permittee must submit a completed Name/Ownership Change form to the City of Wilmington at least 30 days prior to the change. It shall be signed by all applicable parties, and be accompanied by all required supporting documentation. Submittal of a complete application shall not be construed as an approved application. The application will be reviewed on its own merits by the City of Wilmington and may or may not be approved. The project must be in compliance with the terms of this permit in order for the transfer request to be considered. The permittee is responsible for compliance with all permit conditions until such time as the City of Wilmington approves the transfer request.



Public Services

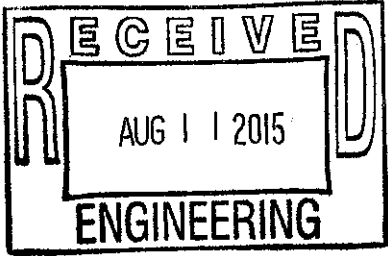
Engineering
212 Operations Center Drive
Wilmington, NC 28412
910 341-7807
910 341-5881 fax
wilmingtonnc.gov
Dial 711 TTY/Voice

14. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to enforcement action by the City of Wilmington, in accordance with Sections 18-52 and 18-53 of the Land Development Code.
15. The City of Wilmington 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 City of Wilmington for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the City of Wilmington that the changes have been made.
16. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state, and federal) having jurisdiction.
17. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective action, including those as may be required by the City of Wilmington, such as the construction of additional or replacement stormwater management systems.
18. The permittee grants City of Wilmington Staff permission to enter the property during normal business hours for the purpose of inspecting all components of the permitted stormwater management facility.
19. The permit issued shall continue in force and effect until revoked or terminated by the City of Wilmington. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and re-issuance or termination does not stay any permit condition.
20. The approved stormwater management plans and all documentation submitted as part of the approved stormwater management permit application package for this project are incorporated by reference and are enforceable parts of the permit.
21. If any one or more of the conditions of this permit is found to be unenforceable or otherwise invalidated, all remaining conditions shall remain in full effect.

Stormwater Management Permit issued this the 10th day of September, 2015

A handwritten signature in black ink, appearing to read "Sterling Cheatham", is written over a horizontal line.

for Sterling Cheatham, City Manager
City of Wilmington



Public Services
 Engineering
 414 Chestnut St, Suite 200
 Wilmington, NC 28401
 910 341-7807
 910 341-5881 fax
 wilmingtonnc.gov
 Dial 711 TTY/Voice



STORMWATER MANAGEMENT PERMIT APPLICATION FORM
 (Form SWP 2.2)

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.):
Wrightsville Manor - Events Center

2. Location of Project (street address):
1952 Allens Lane
 City: Wilmington County: New Hanover Zip: _____

3. Directions to project (from nearest major intersection):
South on Southerland Ave. from Eastwood Rd intersection, then west on Allens Ln
from intersection of Southerland Ave and Allens Lane

II. PERMIT INFORMATION

1. 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: _____ State - NCDENR/DWQ: _____

2. 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: _____ State - NCDENR/DWQ: _____

3. 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:

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: Christa Sweyer

Signing Official & Title: Christa Sweyer, Owner

- a. Contact information for Applicant / Signing Official:

Street Address: 7203 Brisbane Court

City: Wilmington State: NC Zip: 28405

Phone: 910-409-1198 Fax: _____ Email: chrissy@wrightsvillemanor.com

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: Coastal Land Design PLLC

Signing Official & Title: J. Frank Braxton, RLA

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

Street Address: 221 N. Front Street

City: Wilmington State: NC Zip: 28401

Phone: 910-254-9333 x1003 Fax: 910-254-0502 Email: fbraxton@cldeng.com

Mailing Address (if different than physical address): P.O. Box 1172

City: Wilmington State: NC Zip: 28402

IV. PROJECT INFORMATION

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

Surface Flow with pervious materials

2. Total Property Area: 53,590 square feet

3. Total Coastal Wetlands Area: _____ square feet

4. Total Surface Water Area: _____ square feet

5. Total Property Area (2) – Total Coastal Wetlands Area (3) – Total Surface Water Area (4) = Total Project Area: 53,590 square feet.

6. Existing Impervious Surface within Property Area: 0 square feet

7. Existing Impervious Surface to be Removed/Demolished: 0 square feet

8. Existing Impervious Surface to Remain: 0 square feet

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

Buildings/Lots	5,421
Impervious Pavement	1,027
Pervious Pavement (adj. total, with 75 % credit applied)	1,339
Impervious Sidewalks	1,443
Pervious Sidewalks (adj. total, with 75 % credit applied)	0
Other (describe) Columns and Driveway Aprons	475
Future Development	0
Total Onsite Newly Constructed Impervious Surface	9,705

10. Total Onsite Impervious Surface

(Existing Impervious Surface to remain + Onsite Newly Constructed Impervious Surface) = 9,705 square feet

11. Project percent of impervious area: (Total Onsite Impervious Surface / Total Project Area) x100 = 18 %

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

Impervious Pavement	4,678
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	1,801
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	
Total Offsite Newly Constructed Impervious Surface	6,479

13. Total Newly Constructed Impervious Surface

(Total Onsite + Offsite Newly Constructed Impervious Surface) = 16184 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	(Wet Pond) BMP #	(Type of BMP) BMP #	(Type of BMP) BMP #
Receiving Stream Name			
Receiving Stream Index Number			
Stream Classification			
Total Drainage Area (sf)	0	0	0
On-Site Drainage Area (sf)			
Off-Site Drainage Area (sf)			
Total Impervious Area (sf)	0	0	0
Buildings/Lots (sf)			
Impervious Pavement (sf)			
Pervious Pavement, % credit (sf)			
Impervious Sidewalks (sf)			
Pervious Sidewalks, % credit (sf)			
Other (sf)			
Future Development (sf)			
Existing Impervious to remain (sf)			
Offsite (sf)			
Percent Impervious Area (%)			

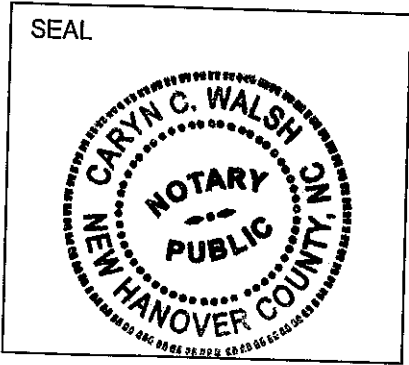
15. How was the off-site impervious area listed above determined? Provide documentation:

Proposed Street Improvements Plans

VIII. APPLICANT'S CERTIFICATION

I, (print or type name of person listed in Contact Information, item 1) Christa M. Sweyer 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: Christa M. Sweyer Date: 4/15/15



I, Caryn C. Walsh, a Notary Public for the State of North Carolina, County of New Hanover, do hereby certify that Christa M. Sweyer personally appeared before me this 15th day of April, 2015, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal,
Caryn C. Walsh
My commission expires: 6/9/2015



STORMWATER MANAGEMENT PERMIT APPLICATION FORM
401 CERTIFICATION APPLICATION FORM



PERMEABLE PAVEMENT SUPPLEMENT

*This form must be completely filled out, printed and submitted.
The Required Items Checklist (Part III) must be printed, filled out and submitted along with all of the required information.*

I. PROJECT INFORMATION	
Project Name	Wrightsville Manor
Contact Person	Frank Braxton
Phone Number	910-520-3347
Date	7/21/2015
Drainage Area	8,739 sf

II. DESIGN INFORMATION

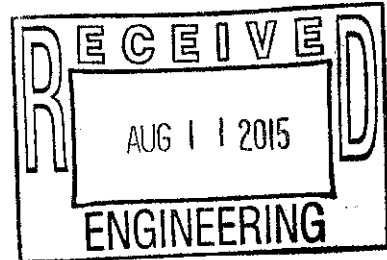
Soils Report Summary

Hydrologic soil group (HSG) of subgrade A
Infiltration rate 12.70 in/hr

Pavement Design Summary

Permeable Pavement (PP) design type	Infiltration - HSG A/B	
SA of PP being proposed (A_p)	<u>5,357</u>	ft ²
Resulting BUA counted as impervious for main application form	<u>1,339</u>	ft ²
Adjacent BUA directed to PP (A_c)	<u>3,382</u>	ft ² OK
Ratio of A_c to A_p	<u>0.63</u>	(unitless)
Flow from pervious surfaces is directed away from PP?	<u>Yes</u>	OK
Design rainfall depth	<u>1.5"</u>	in
Permeable pavement surface course type	<u>PC</u>	
Layer 1 - Washed aggregate size (ex. No. 57)	<u>No. 57</u>	
Layer 1 - Aggregate porosity (n)	<u>0.40</u>	(unitless) OK
Layer 2 - Washed aggregate size (ex. No. 57)		
Layer 2 - Aggregate porosity (n)		(unitless)
Minimum total aggregate depth for design rainfall (D_{wq})	<u>7.0</u>	in
Drawdown/infiltration time for D_{wq}	<u>0.0</u>	days OK
How is 10-yr, 24-hr storm handled?	<u>infiltrated</u>	
Aggregate depth to infiltrate 10-yr, 24-hr storm (D_{10})	<u>7.0</u>	in
Drawdown/infiltration time of 10-yr, 24-hr storm	<u>1.96</u>	days
Actual provided total aggregate depth	<u>7.0</u>	in OK
Top of aggregate base layer elevation	<u>24.50</u>	fmsl
Storage elevation of design rainfall depth	<u>24.11</u>	fmsl
Overflow elevation	<u>25.00</u>	fmsl
Bottom elevation at subgrade	<u>23.92</u>	fmsl
SHWT elevation	<u>23.00</u>	fmsl
Underdrain diameter		in

BUA Credit for Permeable Pavement Footprint:
75% BUA Credit



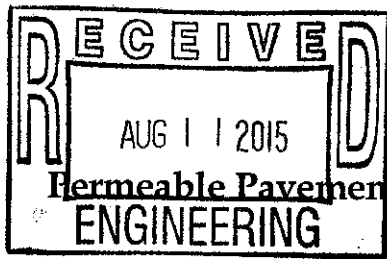
#REF!

Detention Systems (skip for infiltration systems)

Diameter of orifice	_____	in
Coefficient of discharge (C_D)	_____	(unitless)
Driving head (H_o)	_____	ft
Storage volume discharge rate (through discharge orifice)	_____	ft ³ /sec
Storage volume drawdown time	_____	days
Pre-development 1-yr, 24-hr peak flow	_____	ft ³ /sec
Post-development 1-yr, 24-hr peak flow	_____	ft ³ /sec

Additional Information

Slope of soil subgrade at bottom of permeable pavement	0.50	%	OK
Slope of the permeable pavement surface	1.00	%	OK
Construction sequence minimizes compaction to soils?	Yes		OK
Subsoil preparation specified (must select one)	scarified		
Meets industry standards for structural requirements?	Yes		OK
Washed stone is specified for the aggregate?	Yes		OK
Required signage specified on plans?	Yes		OK
Number of observation wells provided	_____		
Distance to structure	2.00	ft	
Distance to surface waters	_____	ft	
Distance to water supply well(s)	_____	ft	



Permit Number: _____
 (to be provided by City of Wilmington)
 Drainage Area / Lot Number: _____

Permeable Pavement 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.

Important operation and maintenance procedures:

- Stable groundcover will be maintained in the drainage area to reduce the sediment load to the permeable pavement.
- The area around the perimeter of the permeable pavement will be stabilized and mowed, with clippings removed.
- Any weeds that grow in the permeable pavement will be sprayed with pesticide immediately. Weeds will not be pulled, since this could damage the fill media.
- Once a year, the permeable pavement surface will be vacuum swept.
- At no time shall wet sweeping (moistening followed by sweeping) be allowed as a means of maintenance.
- There shall be no repair or treatment of Permeable Pavement surfaces with other types of pavement surfaces. All repairs to Permeable Pavement surfaces must be accomplished utilizing permeable pavement which meets the original pavement specifications.
- Concentrated runoff from roof drains, piping, swales or other point sources, directly onto the permeable pavement surface shall not be allowed. These areas must be diverted away from the permeable pavement.

Initial Inspection: Permeable Pavements shall be inspected monthly for the first three months for the following:

BMP element:	Potential problem:	How to remediate the problem:
The perimeter of the permeable pavement	Areas of bare soil and/or erosive gullies have formed.	In the event that rutting or failure of the groundcover occurs, the eroded area shall be repaired immediately and permanent groundcover re-established. Appropriate temporary Erosion Control measures (such as silt fence) shall be installed in the affected area during the establishment of permanent groundcover, and any impacted area of permeable pavement is to be cleaned via vacuum sweeping.
The surface of the permeable pavement	Rutting / uneven settlement	This indicates inadequate compaction of the pavement base / sub-base. If rutting or uneven settlement on the order of ½ inch or greater occurs, permeable pavement shall be removed and base / sub-base re-compacted, smoothed, and permeable pavement shall then be re-installed. Base and sub-base compaction shall be monitored by a licensed geotechnical engineer to ensure that infiltration capacity of base and sub-base are not compromised by compaction and smoothing processes.
	The pavement does not dewater between storms, or water is running off.	Vacuum sweep the pavement. If the pavement still does not dewater, consult a professional.

Permit Number: _____
 (to be provided by City of Wilmington)
 Drainage Area / Lot Number: _____

The permeable pavement will be inspected **once a quarter and within 24 hours after every storm event greater than 1.5 inches**. 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.

BMP element:	Potential problem:	How to remediate the problem:
The perimeter of the permeable pavement	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 3 to 6 inches (remove clippings).
The surface of the permeable pavement	Trash/debris is present.	Remove the trash/debris.
	Weeds are growing on the surface of the permeable pavement.	Do not pull the weeds (may pull out media as well). Spray them with pesticide.
	Sediment is present on the surface.	Vacuum sweep the pavement.
	The structure is deteriorating or damaged.	Consult an appropriate professional. Damaged areas of the pavement shall be removed and repaired.
	The pavement does not dewater between storms.	Vacuum sweep the pavement. If the pavement still does not dewater, consult a professional. Permanently clogged pavement shall be removed and repaired.

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 City of Wilmington of any problems with the system or prior to any changes to the system or responsible party.

Project name: Wrightsville Manor - Pervious Pavement

BMP drainage area or lot number: 1952 Allens Lane

Print name: Christa Sweyer

Title: Property Owner

Address: 7203 Brisbane Court, Wilmington, NC 28405

Phone: 910-409-1198

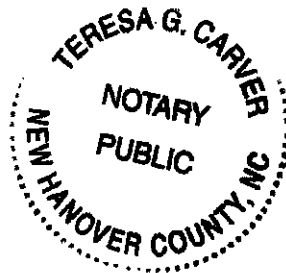
Signature: *Christa Sweyer*

Date: 8/10/15

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, Teresa G Carver, a Notary Public for the State of North Carolina, County of New Hanover, do hereby certify that Christa Sweyer personally appeared before me this 10 day of August, 2015, and acknowledge the due execution of the forgoing permeable pavement maintenance requirements. Witness my hand and official seal,

SEAL
Teresa G Carver



My commission expires Oct 2, 2016