



COMPREHENSIVE STORMWATER MANAGEMENT PERMIT

HIGH DENSITY DEVELOPMENT

SECTION 1 – APPROVAL

Having reviewed the application and all supporting materials, the City of Wilmington has determined that the application is complete and the proposed development meets the requirements of the City of Wilmington's Comprehensive Stormwater Ordinance.

PERMIT HOLDER: **Eden Village of Wilmington**
PROJECT: **Eden Village**
ADDRESS: **1302 Kornegay Avenue**
PERMIT #: **2020039**
DATE: **December 29, 2020**

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 December 29, 2030 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 December 22, 2020.
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, including information provided in the application and supplements.
4. The runoff from all built-upon area within any permitted drainage area must be directed into the permitted stormwater control system for that drainage area.
5. 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 or to the drainage area.
 - c. Further subdivision, acquisition, lease or sale of any part of the project area.
 - d. Filling in, altering, or piping of any vegetative conveyance shown on the approved plan.
 - e. Construction of any permitted future areas shown on the approved plans.



6. A copy of the approved plans and specifications shall be maintained on file by the Permittee.
7. During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.
8. If the stormwater system was used as an Erosion Control device, it must be restored to design condition prior to operation as a stormwater treatment device, and prior to issuance of any certificate of occupancy for the project.
9. 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.
10. All applicable operation & maintenance agreements and easements pertaining to each stormwater treatment system 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 and easements 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.
11. The stormwater management system shall be constructed in its entirety, vegetated and operational for its intended use prior to the construction of any built-upon surface unless prior approval is obtained. City Staff must be notified of any deviation prior to construction of the built-upon surface. Any deviation request shall include justification and must propose an alternative timeline or construction sequence. Notification shall not constitute approval. Any alternative timeline approved by City staff shall become an enforceable component of this permit.
12. The permittee shall at all times provide the operation and maintenance necessary to assure the permitted stormwater system functions at optimum efficiency. The approved Operation and Maintenance Agreement must be followed in its entirety and maintenance must occur at the scheduled intervals including, but not limited to:
 - a. Scheduled inspections (interval noted on the agreement).
 - b. Sediment removal.
 - c. Mowing and revegetation of slopes and the vegetated areas.
 - d. Maintenance of landscape plants, including those within the landscape buffer and on the vegetated shelf.
 - e. Immediate repair of eroded areas, especially slopes.
 - f. Debris removal and unclogging of outlet structure, orifice device, flow spreader, catch basins and/or piping.
 - g. Access to the outlet structure must be available at all times.
13. Records of inspection, maintenance and repair for the permitted stormwater 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.



Public Services

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

14. Upon completion of construction, before a Certificate of Occupancy shall be granted, and prior to operation or intended use 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 final design specifications and the field location, type, depth, invert and planted vegetation of all measures, controls and 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.
15. 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. Neither the sale of the project nor the conveyance of common area to a third party should be considered as an approved transfer of the permit.
16. 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 and any other applicable section of the Land Development Code.
17. 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.
18. 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.
19. 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.
20. 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.



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21. 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.
22. 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.
23. The permittee shall submit a renewal request with all required forms and documentation at least 180 days prior to the expiration date of this permit.
24. 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 29th day of December, 2020.

Richard Christensen

for Sterling Cheatham, City Manager
City of Wilmington



Public Services

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212 Operations Center Dr
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**STORMWATER MANAGEMENT PERMIT APPLICATION FORM
(Form SWP 2.3)**

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.):

Eden Village

2. Location of Project (street address):

1302 Kornegay Avenue

City: Wilmington County: New Hanover Zip: 28405

II. PERMIT INFORMATION

1. Specify the type of project (check one): Low Density High Density
 Offsite Stormwater System Drainage Plan Redevelopment Other

If the project drains to an Offsite System, list the Stormwater Permit Number(s):

City of Wilmington: _____ State – NCDEQ/DEMLR: _____

2. Is the project currently covered (whole or in part) by an existing City or State (NCDEQ/DEMLR) Stormwater Permit? Yes No

If yes, list all applicable Stormwater Permit Numbers:

City of Wilmington: _____ State – NCDEQ/DEMLR: _____

3. Additional Project Permit Requirements (check all applicable):

CAMA Major Sedimentation/Erosion Control 404/401 Permit

III. CONTACT INFORMATION

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

Applicant / Organization: Eden Village of Wilmington

Signing Official & Title: Thomas M. Dalton, MD - President of Eden Village of Wilmington

a. Contact information for Applicant / Signing Official:

Address: P.O. Box 12868

City: Wilmington

State: NC

Zip: 28405

Phone: (910) 262 - 1782

Email: tomdaltonmd@gmail.com

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

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

2. Print Property Owner's name and title (if different from the applicant).

Property Owner / Organization: _____

Signing Official & Title: _____

a. Contact information for Property Owner:

Street Address: _____

City: _____

State: _____

Zip: _____

Phone: _____

Email: _____

3. (Optional) Other Contact name and title (such as a construction supervisor) who would like to be copied on all correspondence:

Other Contact Person / Organization: _____

Signing Official & Title: _____

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

Street Address: _____

City: _____

State: _____

Zip: _____

Phone: _____

Email: _____

4. Agent Authorization: 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: Jay R. Carmine, PE

Consulting Firm: Coastal Land Design, PLLC

a. Contact information for consultant listed above:

Mailing Address: P.O. Box 1172

City: Wilmington

State: NC

Zip: 28402

Phone: (910) 254 - 9333

Email: jcarmine@cldeng.com

IV. PROJECT INFORMATION

1. Total Property Area: 183,489 square feet
2. Total Coastal Wetlands Area: -0- square feet
3. Total Surface Water Area: -0- square feet
4. Total Property Area (1) – Total Coastal Wetlands Area (2) – Total Surface Water Area (3) = Total Project Area: 183,489 square feet.
5. Existing Impervious Surface within Project Area: 33,840 square feet
6. Existing Impervious Surface to be Removed/Demolished: 33,550 square feet
7. Existing Impervious Surface to Remain: 290 square feet
8. Total Onsite (within property boundary) Newly Constructed Impervious Surface (in square feet):

Buildings/Lots	16,800
Impervious Pavement	7,950
Pervious Pavement (total area / adjusted area w credit applied)	5,200 / 5,200
Impervious Sidewalks	6,035
Pervious Sidewalks (total area / adjusted area w credit applied)	None / N/A
Other Dumpster Pad Concrete	430
Future Development	5,000
Total Onsite Newly Constructed Impervious Surface	41,415

9. Total Onsite Impervious Surface
(Existing Impervious Surface to remain + Onsite Newly Constructed Impervious Surface) 41,705 square feet
10. Net Change in Onsite Impervious Surface (+ for net increase, - for net decrease) 7,865 square feet
11. Project percent of impervious area: (Total Onsite Impervious Surface / Total Project Area) x100 = 22.73 %
12. Total Offsite Newly Constructed Impervious Area (in square feet):

Impervious Pavement	455
Pervious Pavement (total area / adjusted area w credit applied)	None / N/A
Impervious Sidewalks	3,060
Pervious Sidewalks (total area / adjusted area w credit applied)	None / N/A
Other (Describe)	None
Total Offsite Newly Constructed Impervious Surface	3,515

13. Complete the following information for each Stormwater SCM drainage area. Low Density and Drainage Plan projects (with no permeable pavements) may omit this section and skip to Section V.

Basin Information	Permeable Pavement SCM # 1	Type of SCM SCM #	Type of SCM SCM #
Receiving Stream Name	Smith Creek		
Receiving Stream Index Number	18-74-63		
Stream Classification	C;Sw		
Total Drainage Area (sf)	10,400 sf		
On-Site Drainage Area (sf)	10,400 sf		
Off-Site Drainage Area (sf)	-0-		
Buildings/Lots (sf)	-0-		
Impervious Pavement (sf)	3,735 sf		
Pervious Pavement (total / adjusted) (sf)	5,200 sf / 5,200	/	/
Impervious Sidewalks (sf)	-0-		
Pervious Sidewalks (total / adjusted) (sf)	-0- / -0-	/	/
Other (sf)	-0-		
Future Development (sf)	1,465		
Existing Impervious to remain (sf)	-0-		
Offsite (sf)	-0-		
Total Impervious Area (sf)	10,400 sf		
Percent Impervious Area (%)	100.00%		

Basin Information	Type of SCM SCM #	Type of SCM SCM #	Type of SCM SCM #
Receiving Stream Name			
Receiving Stream Index Number			
Stream Classification			
Total Drainage Area (sf)			
On-Site Drainage Area (sf)			
Off-Site Drainage Area (sf)			
Buildings/Lots (sf)			
Impervious Pavement (sf)			
Pervious Pavement (total / adjusted) (sf)	/	/	/
Impervious Sidewalks (sf)			
Pervious Sidewalks (total / adjusted) (sf)	/	/	/
Other (sf)			
Future Development (sf)			
Existing Impervious to remain (sf)			
Offsite (sf)			
Total Impervious Area (sf)			
Percent Impervious Area (%)			

V. SUBMITTAL REQUIREMENTS

Only complete application packages will be accepted and reviewed by the City. A complete package includes all of the items listed below. Copies of forms, deed restrictions, checklists as well as detailed instructions on how to complete this application form may be downloaded from the City of Wilmington Plan Review website below:

<https://www.wilmingtonnc.gov/departments/engineering/plan-review/stormwater-permits>

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

City of Wilmington – Engineering
 Plan Review Section
 212 Operations Center Dr.
 Wilmington, NC 28412

Please indicate that the following required information have been provided by initialing in the space provided for each item.

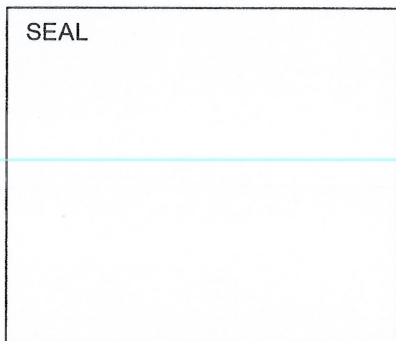
	Initials
1. One completed Stormwater Management Permit Application Form.	<u>JRC</u>
2. One completed Supplement Form for each SCM proposed (signed, sealed and dated).	<u>JRC</u>
3. One completed Operation & Maintenance agreement for each <u>type</u> of SCM.	<u>JRC</u>
4. Proposed Deed Restrictions and Restrictive Covenants (for all subdivisions)	<u>N/A</u>
5. Appropriate stormwater permit review fee.	<u>JRC</u>
6. Minimum requirements identified on the Engineering Plan Review Checklist have been addressed.	<u>JRC</u>
7. One set of calculations (sealed, signed and dated).	<u>JRC</u>
8. A detailed narrative (one to two pages) describing the stormwater treatment/management system for the project.	<u>JRC</u>
9. 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.	<u>JRC</u>
10. A copy of the soils report, if applicable. Must meet NCDEQ SCM Manual and MDC requirements for the type of SCM proposed. The report must include boring logs and a map of boring locations.	<u>JRC</u>
11. One full set of plans <u>folded to 8.5" x 14"</u> .	<u>JRC</u>
12. A map delineating and labeling the drainage area for each SCM proposed.	<u>JRC</u>
13. A map delineating and labeling the drainage area for each inlet and conveyance proposed.	<u>JRC</u>
14. A digital copy of the entire submittal package (can be submitted via flash drive, CD, email, dropbox or other file sharing system).	<u>JRC</u>

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

I, _____, certify that I own the property identified in this permit application, and thus give permission to _____ with _____ 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 _____ 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: _____



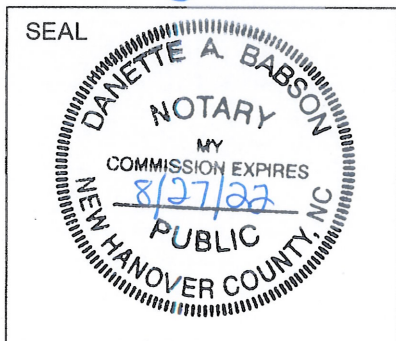
I, _____, a Notary Public for the State of _____, County of _____, do hereby certify that _____ personally appeared before me this day of _____, _____, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal,

My commission expires: _____

VII. APPLICANT'S CERTIFICATION

I, Thomas M. Dalton, 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 rules under the City's Comprehensive Stormwater Ordinance.

Signature: Thomas M. Dalton Date: 8-7-20



I, Danette A. Babson, a Notary Public for the State of North Carolina, County of New Hanover, do hereby certify that Thomas M. Dalton personally appeared before me this day of Aug. 7, 2020, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal,
Danette A. Babson
My commission expires: Aug. 27, 2022

SUPPLEMENT-EZ COVER PAGE

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PROJECT INFORMATION

1	Project Name	Eden Village
2	Project Area (ac)	4.21 ac
3	Coastal Wetland Area (ac)	-0-
4	Surface Water Area (ac)	-0-
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)	50
8	Will the vegetated setback remain vegetated?	Yes
9	Is BUA other than as listed in .1003(4)(c-d) out of the setback?	Yes
10	Is streambank stabilization proposed on this project?	No

NUMBER AND TYPE OF SCMs:

11	Infiltration System	0
12	Bioretention Cell	0
13	Wet Pond	0
14	Stormwater Wetland	0
15	Permeable Pavement	1
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

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DESIGNER CERTIFICATION

27	Name and Title:	Jay R. Carmine, PE
28	Organization:	Coastal Land Design, PLLC
29	Street address:	P.O. Box 1172
30	City, State, Zip:	Wilmington, NC 28402
31	Phone number(s):	(910) 254 - 9333
32	Email:	jcarmine@cldeng.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

Jay R. Carmine
Signature of Designer

10/22/2020

Date

DRAINAGE AREAS

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

[CLICK TO LOAD FORM](#)

DRAINAGE AREA INFORMATION		Entire Site	1
4	Type of SCM	Low Density	Permeable Pavement
5	Total BUA in project (sq ft)	41,705 sf	5,200 sf
6	New BUA on subdivided lots (subject to permitting) (sq ft)	-0-	-0-
7	New BUA outside of subdivided lots (subject to permitting) (sf)	41,705 sf	5,200 sf
8	Offsite - total area (sq ft)	-0-	-0-
9	Offsite BUA (sq ft)	-0-	-0-
10	Breakdown of new BUA outside subdivided lots:		
	- Parking (sq ft)	13,150 sf	3,735 sf
	- Sidewalk (sq ft)	6,035 sf	-0-
	- Roof (sq ft)	16,800 sf	-0-
	- Roadway (sq ft)	-0-	-0-
	- Future (sq ft)	5,000 sf	1,465 sf
	- Other, please specify in the comment box below (sq ft)	430 sf	-0-
11	New infiltrating permeable pavement on subdivided lots (sq ft)	-0-	-0-
12	New infiltrating permeable pavement outside of subdivided lots (sq ft)	sf	5,200 sf
13	Existing BUA that will remain (not subject to permitting) (sq ft)	290 sf	-0-
14	Existing BUA that is already permitted (sq ft)	-0-	-0-
15	Existing BUA that will be removed (sq ft)	33,550 sf	-0-
16	Percent BUA	22.73%	50.00%
17	Design storm (inches)	N/A	1.5 in
18	Design volume of SCM (cu ft)	N/A	1,300 cf
19	Calculation method for design volume	N/A	Simple

ADDITIONAL INFORMATION	
20	Please use this space to provide any additional information about the drainage area(s): Other BUA = 430 sf of concrete dumpster pad area. The PC parking lot is considered detention so the 5,200 sf of PC was added to the Parking BUA (7,950 sf + 5,200 sf).

PERMEABLE PAVEMENT

1	Drainage area number	1
2	Design volume of SCM (cu ft)	1,300 cf
3	Area of permeable pavement to be installed (square feet)	5,200 sf
4	Area of screened roof runoff that is directed to pavement (square feet)	-0-
5	Area of additional built-upon area runoff that is directed to pavement (square feet)	5,200 sf
6	Area of incidental, unavoidable runoff from adjacent stable pervious areas (square feet)	-0-
GENERAL MDC FROM 02H .1050		
7	Is the SCM sized to treat the SW from all surfaces at build-out?	Yes
8	Is the SCM located away from contaminated soils?	Yes
5	What are the side slopes of the SCM (H:V)?	N/A
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?	Other
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)?	
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
PERMEABLE PAVEMENT MDC FROM 02H .1055		
18	Is this a detention or infiltration permeable pavement system?	Infiltration
19	Proposed slope of the subgrade surface (%)	2%
20	Are terraces or baffles provided?	No
21	SHWT elevation (fmsl)	19.8 fmsl
22	Storage elevation of the design rainfall depth (fmsl)	24.11 fmsl
23	Will toxic pollutants be stored or handled on or near the permeable pavement?	No
24	Does the proposed pavement surface comply with .1055(6)?	Yes
25	Will runoff from pervious surfaces be directed away from the pavement?	Yes
26	Maximum adjacent area directed to a single point onto the permeable pavement (sq ft)	None
27	Is at least one observation well per terrace been provided at the low point(s)?	Yes
28	Have edge restraints been provided?	Yes
29	Will the subgrade be graded when dry?	Yes
30	Will the permeable pavement be protected from sediment during construction?	Yes
31	Will an in-situ permeability test be conducted after site stabilization?	Yes
For Infiltrating Pavement Systems		
32	Was the soil investigated in the footprint and at the elevation of the subgrade?	Yes
33	Soil infiltration rate (in/hr)	<0.001 iph
34	Is a detailed hydrogeologic study attached if the separation is between 1 and 2 feet?	N/A
35	Is additional media being added to the soil profile?	Yes
36	Proposed slope of the subgrade surface (%)	2%
37	Top of the subgrade (bottom of the aggregate) (fmsl)	23.48 fmsl
38	Dewatering time (hours)	1.5 hrs
For Detention Pavement Systems		
39	Drawdown time (hours)	2.2 days
Aggregate		
40	Aggregate depth (in)	8 in
41	Aggregate porosity (n)	40%
42	Size of aggregate to be used in the subbase	#57
43	Will the aggregate be washed?	Yes
ADDITIONAL INFORMATION		
44	Please use this space to provide any additional information about the permeable pavement system(s): The poorly draining in-situ soils will be excavated and removed. At least 12 inches of washed coarse masonry sand with an underdrain system will be placed underneath the reservoir stone. The effective infiltratin rate of the replaced media will be approximately 2 inches per hour. The SHWT remains 40-44" inches below the bottom of the excavation.	

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)	3:1
5	Maximum velocity in the vegetated conveyances during the 10-year storm?	2.0 fps
6	Are curb outlet swales proposed?	No
7	Maximum longitudinal slope of curb outlet swale(s) (%)	
8	Bottom width of curb outlet swale(s) (feet)	
9	Maximum side slope of curb outlet swale(s) (H:V)	
10	Minimum length of curb outlet swale(s) (feet)	
11	Are treatment swales used instead of curb outlet swales?	
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?	No

ADDITIONAL INFORMATION

15	Please use this space to provide any additional information about this low density project:	
	This low density project has a permeable pavement parking lot and a stormwater detention area to meet the City's post-development discharge requirements for the 2-year, 10-year, and 25-year design storm events.	

Permeable Pavement Operation and Maintenance Agreement

I will keep a maintenance record on this SCM. This maintenance record will 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).

Important maintenance procedures:

At all times, the permeable pavement shall be kept free of:

- Debris and particulate matter through frequent blowing that removes such debris, particularly during the fall and spring.
- Piles of soil, sand, mulch, building materials or other materials that could deposit particulates on the permeable pavement.
- Piles of snow and ice.
- Chemicals of all kinds, including deicers.

The permeable pavement will be inspected **once a quarter**. 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:
The entire SCM	Trash/debris is present.	Remove the trash/debris.
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, then plant ground cover and water until established.
	A vegetated area drains toward the pavement.	Regrade the area so that it drains away from the pavement, then plant ground cover and water until established.
The inlet device	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.
	Stone verge is clogged or covered in sediment (if applicable).	Remove sediment and replace with clean stone.

SCM element:	Potential problem:	How to remediate the problem:
The surface of the permeable pavement	Trash/debris present.	Remove the trash/debris.
	Weeds.	Do not pull the weeds (may pull out media as well). Spray them with a systemic herbicide such as glyphosate and then return within the week to remove them by hand. (Another option is to pour boiling water on them or steam them.)
	Sediment.	Vacuum sweep the pavement.
	Rutting, cracking or slumping or damaged structure.	Consult an appropriate professional.
Observation well	Water present more than five days after a storm event.	Clean out clogged underdrain pipes. Consult an appropriate professional for clogged soil subgrade.
Educational sign	Missing or is damaged.	Replace the sign.
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 NC Department of Environment and Natural Resources Regional Office.

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: Eden Village

SCM drainage basin number: 1

Print name: Thomas M. Dalton, MD

Title: President of Eden Village of Wilmington

Address: P.O. Box 12868

Phone: (910) 262 - 1782

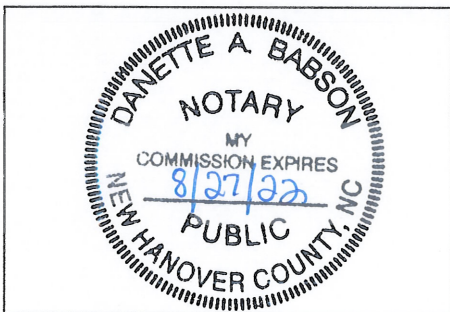
Signature: Thomas M. Dalton

Date: 8-6-20

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, Danette A. Babson, a Notary Public for the State of North Carolina, County of New Hanover, do hereby certify that Thomas M. Dalton personally appeared before me this 6 day of August, 2020, and acknowledge the due execution of the forgoing filter strip, riparian buffer, and/or level spreader maintenance requirements.

Witness my hand and official seal,



SEAL

My commission expires Aug. 27, 2022