



Public Services

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Wilmington, NC 28412
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wilmingtonnc.gov
Dial 711 TTY/Voice

9/27/2022

Shelly Bishop, Managing Partner
Raleigh-Wilmington Investors, LLC
6131 Falls of Neuse Road
Raleigh, NC 27609

**Subject: Stormwater Management Permit No. 2021001R2
East and Mason Subdivision
High Density - Wet Ponds**

Dear Shelly Bishop:

The City of Wilmington Engineering Division has received a request for a revision to the Stormwater Management Permit for East and Mason Subdivision. 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:

Increased lot BUA allocation for lots 1-40, 8' impervious path around SCM Wetpond #2, increased LOD near front entrance, & revisions to landscaping. Please find updated application pages, deed restrictions, and supplements attached.

Please be aware all terms and conditions of the permit 1/21/2021 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 Eric Seidel, PE at (910) 765-7461 or eric.seidel@wilmingtonnc.gov

Sincerely,

A handwritten signature in blue ink that reads "E Seidel".

for Anthony Caudle, City Manager
City of Wilmington

cc: Dan Fisk, PE, Paramounte Engineering, Inc.
Patrick O'Mahony, Wilmington Development Services/Planning



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.

Stormwater runoff will be treated through proposed wet ponds.

2. Total Property Area: 2,800,036+/- square feet

3. Total Coastal Wetlands Area: 0 square feet

4. Total Surface Water Area: 2,970+/- square feet

5. Total Property Area (2) – Total Coastal Wetlands Area (3) – Total Surface Water Area (4) = Total Project Area: 2,797,066 square feet.

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

7. Existing Impervious Surface to be Removed/Demolished: _____ 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	677,350
Impervious Pavement	258,707
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	71,581
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	43,500
Future Development	44,732
Total Onsite Newly Constructed Impervious Surface	1,095,870

10. Total Onsite Impervious Surface

(Existing Impervious Surface to remain + Onsite Newly Constructed Impervious Surface) = 1,095,870 square feet

11. Project percent of impervious area: (Total Onsite Impervious Surface / Total Project Area) x100 = 39.2 %

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

Impervious Pavement	2,120
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	7,675
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	
Total Offsite Newly Constructed Impervious Surface	9,795

13. Total Newly Constructed Impervious Surface
 (Total Onsite + Offsite Newly Constructed Impervious Surface) = 1,105,665 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 # 2	BMP # 3
Receiving Stream Name	Masonboro Sound	Masonboro Sound	Masonboro Sound
Receiving Stream Index Number	18-87-25.7	18-87-25.7	18-87-25.7
Stream Classification	SA;ORW	SA;ORW	SA;ORW
Total Drainage Area (sf)	184,111	1,353,251	120,301
On-Site Drainage Area (sf)	184,111	1,353,251	120,301
Off-Site Drainage Area (sf)	0	0	0
Total Impervious Area (sf)	100,250	721,675	63,835
Buildings/Lots (sf)	56,250	456,850	40,500
Impervious Pavement (sf)	27,380	167,895	11,340
Pervious Pavement (sf)			
Impervious Sidewalks (sf)	8,688	42,285	3,635
Pervious Sidewalks (sf)			
Other (sf)		43,500	
Future Development (sf)	7,932	11,145	8,360
Existing Impervious to remain (sf)			
Offsite (sf)			
Percent Impervious Area (%)	54.5	53.3	53.1

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

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 # 4	BMP # 5	BMP #
Receiving Stream Name	Masonboro Sound	Masonboro Sound	
Receiving Stream Index Number	18-87-25.7	18-87-25.7	
Stream Classification	SA;ORW	SA;ORW	
Total Drainage Area (sf)	169,019	271,860	
On-Site Drainage Area (sf)	169,019	271,860	
Off-Site Drainage Area (sf)	0	0	
Total Impervious Area (sf)	96,940	113,170	
Buildings/Lots (sf)	54,000	69,750	
Impervious Pavement (sf)	25,125	26,967	
Pervious Pavement (sf)			
Impervious Sidewalks (sf)	9,325	7,648	
Pervious Sidewalks (sf)			
Other (sf)			
Future Development (sf)	8,490	8,805	
Existing Impervious to remain (sf)			
Offsite (sf)			
Percent Impervious Area (%)	57.4	41.7	

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

High Density Residential Subdivisions
Deed Restrictions & Protective Covenances

In accordance with Article 14, Division III of the City of Wilmington Land Development Code, deed restrictions and protective covenants are required for High Density Residential Subdivisions where lots will be subdivided and sold and runoff will be treated in an engineered stormwater control facility. Deed restrictions and protective covenants are necessary to ensure that the development maintains a "built-upon" area consistent with the design criteria used to size the stormwater control facility.

I, East & Mason Developers, LLC (Shelly Bishop), acknowledge, affirm and agree by my signature below, that I will cause the following deed restrictions and covenants to be recorded prior to the sale of any lot:

1. *The following covenants are intended to ensure ongoing compliance with the city of Wilmington Stormwater Management Permit Number 2021001, as issued by the City of Wilmington/Engineering*
2. *The City of Wilmington is made a beneficiary of these covenants to the extent necessary to maintain compliance with the stormwater management permit.*
3. *These covenants are to run with the land and be binding on all persons and parties claiming under them.*
4. *The covenants pertaining to stormwater may not be altered or rescinded without the express written consent of the City of Wilmington.*
5. *Alteration of the drainage as shown on the approved plan may not take place without the concurrence of the City of Wilmington*
6. *The maximum allowable built-upon area per lot, in square feet, is as listed below. This allotted amount includes any built-upon area constructed within the lot property boundaries, and that portion of the right-of-way between the front lot line and the edge of the pavement. Built upon area includes, but is not limited to, structures, asphalt, concrete, gravel, brick, stone, slate, coquina and parking areas, but does not include raised, open wood decking, or the water surface of swimming pools.*

Lots 1-2 = 6,250 sf | Lots 3,5,7,9,11,13,15,17,19,21,23,27,29,31,33,35,37,39 = 2,880 sf |
Lots 4,6,8,10,12,14,16,18,20,22,24,28,30,32,34,36,38,40 = 2,770 sf | Lots 25,26 = 3,450 sf |
Lots 41-85,114-124,138-170 = 4,500 sf | Lots 86-89,91-113,125-137 = 3,500 sf | Lots 171-173 = 5,250 sf

This allotted amount includes any built-upon area constructed within the lot property boundaries, and that portion of the right-of-way between the front lot line and the edge of the pavement. Built upon area includes, but is not limited to, structures, asphalt, concrete, gravel, brick, stone, slate, coquina and parking areas, but does not include raised, open wood decking, or the water surface of swimming pools.

7. *All runoff from the built-upon areas on the lot must drain into the permitted system. This may be accomplished through a variety of means including roof drain gutters which drain to the street, grading the lot to drain toward the street, or grading perimeter swales to collect the lot runoff and directing them into a component of the stormwater collection system. Lots that will naturally drain into the system are not required to provide these additional measures.*

Signature: Shelly R. Bishop Date: 8/30/22

I, Shannon M. Bottoms, a Notary Public in the State of North Carolina,
County of Nash, do hereby certify that Shelly R. Bishop
personally appeared before me this the 30th day of August, 2022, and acknowledge the due
execution of the foregoing instrument. Witness my hand and official seal,

SEAL

Signature: Shannon M. Bottoms
My Commission Expires: 10.2023

SUPPLEMENT-EZ COVER PAGE

FORMS LOADED

PROJECT INFORMATION		
1	Project Name	East & Mason
2	Project Area (ac)	64.28
3	Coastal Wetland Area (ac)	0
4	Surface Water Area (ac)	0.07
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)	50
8	Will the vegetated setback remain vegetated?	MEETS .1003(4)(c-d)
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

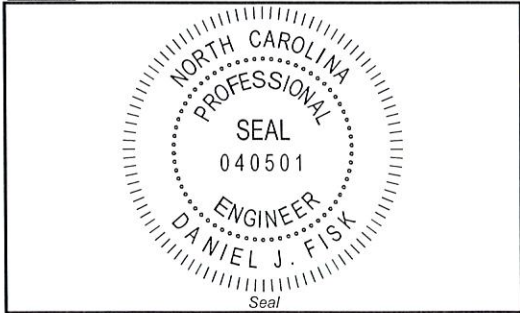
NUMBER AND TYPE OF SCMs:		
11	Infiltration System	0
12	Bioretention Cell	0
13	Wet Pond	5
14	Stormwater Wetland	0
15	Permeable Pavement	0
16	Sand Filter	0
17	Rainwater Harvesting (RWH)	0
18	Green Roof	0
19	Level Spreader-Filter Strip (LS-FS)	0
20	Disconnected Impervious Surface (DIS)	0
21	Treatment Swale	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:	Daniel J. Fisk, PE
28	Organization:	Paramounte Engineering, Inc
29	Street address:	122 Cinema Drive
30	City, State, Zip:	Wilmington, NC 28403
31	Phone number(s):	910.791.6707
32	Email:	dfisk@paramounte-eng.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



DJFisk
 Signature of Designer

08.30.22
 Date

DRAINAGE AREAS

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

FORMS LOADED

DRAINAGE AREA INFORMATION		1	2	3	4	5
		Wet Pond	Wet Pond	Wet Pond	Wet Pond	Wet Pond
4	Type of SCM					
5	Total BUA in project (sq ft)	100250 sf	721675 sf	63835 sf	96940 sf	113170 sf
6	New BUA on subdivided lots (subject to permitting)	56250 sf	456850 sf	40500 sf	54000 sf	69750 sf
7	New BUA outside of subdivided lots (subject to permitting) (sf)	44000 sf	264825 sf	23335 sf	42940 sf	43420 sf
8	Offsite - total area (sq ft)					
9	Offsite BUA (sq ft)					
10	Breakdown of new BUA outside subdivided lots: - 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)	8688 sf	42285 sf	3635 sf	9325 sf	7648 sf
		27380 sf	167895 sf	11340 sf	25125 sf	26967 sf
		7932 sf	11145 sf	8360 sf	8490 sf	8805 sf
		43500 sf	43500 sf			
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)					
15	Existing BUA that will be removed (sq ft)					
16	Percent BUA					
17	Design storm (inches)					
18	Design volume of SCM (cu ft)					
19	Calculation method for design volume					
ADDITIONAL INFORMATION						
Please use this space to provide any additional information about the drainage area(s):						
Pond #2 Other = 27,500 sf Amenity allocation & 16,000 sf 8' Path allocation						
		54.5	53.3	53.1	57.4	41.7
		3.85	3.85	3.85	3.85	3.85
		24489 cf	187985 cf	27664 cf	27148 cf	26186 cf
		SCS	SCS	SCS	SCS	SCS

ADDITIONAL INFORMATION	
Please use this space to provide any additional information about the drainage area(s):	
Pond #2 Other = 27,500 sf Amenity allocation & 16,000 sf 8' Path allocation	

WET POND

	1	2	3	4	5
1 Drainage area number					
2 Design volume of SCM (cu ft)	24489 cf	187985 cf	27664 cf	27148 cf	26186 cf
GENERAL MDC FROM 02H .1050					
3 Is the SCM sized to treat the SW from all surfaces at build-out?	Yes	Yes	Yes	Yes	Yes
4 Is the SCM located away from contaminated soils?	Yes	Yes	Yes	Yes	Yes
5 What are the side slopes of the SCM (H:V)?	3:1	6:1	3:1	3:1	3:1
6 Does the SCM have retaining walls, gabion walls or other engineered side slopes?	No	No	No	Yes	No
7 Are the inlets, outlets, and receiving stream protected from erosion (10-year storm)?	Yes	Yes	Yes	Yes	Yes
8 Is there an overflow or bypass for inflow volume in excess of the design volume?	No	No	No	No	No
9 What is the method for dewatering the SCM for maintenance?	Pump (preferred)	Pump (preferred)	Pump (preferred)	Pump (preferred)	Pump (preferred)
10 If applicable, will the SCM be cleaned out after construction?	Yes	Yes	Yes	Yes	Yes
11 Does the maintenance access comply with General MDC (8)?	Yes	Yes	Yes	Yes	Yes
12 Does the drainage easement comply with General MDC (9)?	Yes	Yes	Yes	Yes	Yes
13 If the SCM is on a single family lot, does (will?) the plat comply with General MDC (10)?	N/A	N/A	N/A	N/A	N/A
14 Is there an O&M Agreement that complies with General MDC (11)?	Yes	Yes	Yes	Yes	Yes
15 Is there an O&M Plan that complies with General MDC (12)?	Yes	Yes	Yes	Yes	Yes
16 Does the SCM follow the device specific MDC?	Yes	Yes	Yes	Yes	Yes
17 Was the SCM designed by an NC licensed professional?	Yes	Yes	Yes	Yes	Yes
WET POND MDC FROM 02H .1053					
18 Method used	SA/DA	SA/DA	SA/DA	SA/DA	SA/DA
19 Has a stage/storage table been provided in the calculations?	Yes	Yes	Yes	Yes	Yes
20 Elevation of the excavated main pool depth (bottom of sediment removal) (fmsl)	14.00	13.00	13.00	14.00	10.00
21 Elevation of the main pool bottom-(top of sediment removal) (fmsl)	15.00	14.00	14.00	15.00	11.00
22 Elevation of the bottom of the vegetated shelf (fmsl)	20.00	18.00	18.00	19.00	14.00
23 Elevation of the permanent pool (fmsl)	21.00	19.00	19.00	20.00	15.00
24 Elevation of the top of the vegetated shelf (fmsl)	21.00	19.00	19.00	20.00	15.00
25 Elevation of the temporary pool (fmsl)	22.75	20.25	21.50	22.00	16.75
26 Surface area of the main permanent pool (square feet)	9935	119440	7575	9375	11170
27 Volume of the main permanent pool (cubic feet)	25605 cf	519870 cf	18680 cf	19008 cf	29575 cf
28 Average depth of the main pool (feet)	3.6 ft	4.7 ft	3.3 ft	3.5 ft	3.3 ft
29 Average depth equation used	Equation 3	Equation 3	Equation 3	Equation 3	Equation 3
30 If using equation 3, main pool perimeter (feet)	546 ft	1473 ft	404 ft	734 ft	483 ft
31 If using equation 3, width of submerged veg. shelf (feet)	6 ft	6 ft	6 ft	6 ft	6 ft
32 Volume of the forebay (cubic feet)	4935 cf	96080 cf	3238 cf	3683 cf	5700 cf
33 Is this 15-20% of the volume in the main pool?	Yes	Yes	Yes	Yes	Yes
34 Clean-out depth for forebay (inches)	36 in	60 in	36 in	48 in	48 in
35 Design volume of SCM (cu ft)	24489 cf	187985 cf	27664 cf	27148 cf	26186 cf
36 Is the outlet an orifice or a weir?	Orifice	Orifice	Orifice	Orifice	Orifice
37 If orifice, orifice diameter (inches)	2.5 in	7 in	2 in	2.5 in	2.5 in
38 If weir, weir height (inches)	-	-	-	-	-
39 If weir, weir length (inches)	-	-	-	-	-
40 Drawdown time for the temporary pool (days)	2.33	2.99	3.4	2.41	2.49
41 Are the inlet(s) and outlet located in a manner that avoids short-circuiting?	Yes	Yes	Yes	Yes	Yes
42 Are berms or baffles provided to improve the flow path?	No	No	No	No	No
43 Depth of forebay at entrance (inches)	36 in	60 in	36 in	48 in	48 in
44 Depth of forebay at exit (inches)	12 in	12 in	12 in	12 in	12 in
45 Does water flow out of the forebay in a non-erosive manner?	Yes	Yes	Yes	Yes	Yes
46 Width of the vegetated shelf (feet)	6 ft	6 ft	6 ft	6 ft	6 ft
47 Slope of vegetated shelf (H:V)	6:1	6:1	6:1	6:1	6:1
48 Does the orifice drawdown from below the top surface of the permanent pool?	Yes	Yes	Yes	Yes	Yes
49 Does the pond minimize impacts to the receiving channel from the 1-yr, 24-hr storm?	Yes	Yes	Yes	Yes	Yes
50 Are fountains proposed? (If Y, please provide documentation that MDC(9) is met.)					
51 Is a trash rack or other device provided to protect the outlet system?	Yes	Yes	Yes	Yes	Yes
52 Are the dam and embankment planted in non-clumping turf grass?	Yes	Yes	Yes	Yes	Yes
53 Species of turf that will be used on the dam and embankment	Bermuda/Centipede	Bermuda/Centipede	Bermuda/Centipede	Bermuda/Centipede	Bermuda/Centipede
54 Has a planting plan been provided for the vegetated shelf?	Yes	Yes	Yes	Yes	Yes
ADDITIONAL INFORMATION					
55 Please use this space to provide any additional information about the wet pond(s):					