

CD 22-05 V2 COMMENTS



Wake County Environmental Services Department
Water Quality Division, Watershed Management Section
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WMCPR – ROLESVILLE, WENDELL, ZEBULON WATERSHED MANAGEMENT CONSTRUCTION PLAN DISAPPROVAL

Project Name	The Pointe Phases 11-13	Watershed	Lower Neuse	Jurisdiction	Rolesville
Date Received	11/14/2022	Date Processing Initiated	11/21/2022	Disturbed Acreage	26.29
S&E Permit Number	SEC-092420-2022	S&E Plan Review Fee	\$ 6572.00 PAID	S&E Permit Fee	\$ 6572.00 PENDING
SW Permit Number	SWF-092425-2022	SW Plan Review Fee	\$ 2500.00 PAID	SW Permit Fee	\$ 2500.00 PENDING

Applicant:

Name: Ashton Raleigh Residential LLC
900 Ridgefield Drive, Suite 335
Address: Raleigh, NC 27609
Phone: 919-229-3238
Email: Raymond.rinker@ashtonwoods.com

Engineer:

Name: Todd O'Daniel - McAdams
2905 Meridian Parkway
Address: Durham, NC 27713
Phone: 919-475-6439
Email: odaniel@mcadamsco.com

Plan Date/Revision Date: 1/11/2022 PRELIMINARY

Review Status: 1/24/2023	<input checked="" type="checkbox"/>	Construction Plan Not Approved and Incomplete (Items 1-4 required to be a complete submittal)
	<input checked="" type="checkbox"/>	Construction Plan Not Approved and requires additional information

Construction Plan Review Comments

Items marked with an "X" were noted as either insufficient or not provided. Engineer comments are in **RED** and provide the necessary requirements for construction plan approval.

References for Erosion and Sediment Control: *Wake County Unified Development Ordinance (UDO) Article 10*

References for Stormwater Management are as follows:

ROLESVILLE: *Town of Rolesville Unified Development Ordinance (UDO) Section 7.5: Stormwater Management Standards*

WENDELL: *Town of Wendell Unified Development Ordinance (UDO) Chapter 6: Environmental Protection, adopted 7/26/10.*

ZEBULON: *Town of Zebulon, NC Code of Ordinances: Chapter 151 and Chapter 152.249.*

<input checked="" type="checkbox"/>	1.	Erosion Control and Stormwater Joint Application (Required to initiate processing) -LOD extends onto Rabil Family Trust property. Revise to list all owners and PIN
<input checked="" type="checkbox"/>	2.	Review Fees (Required to initiate processing) RESUBMITTALS: The first resubmittal is free, but all subsequent Stormwater resubmissions require a \$150 Resubmission Fee and Erosion Control resubmissions require a \$75 Resubmission Fee



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<input checked="" type="checkbox"/>	3.	Notarized Wake County Financial Responsibility/Ownership Form (Required to initiate processing) -Notarized letter of consent required from Mitchell F Rabil Family Irrevocable Trust. LOD is in the property. -Provide signature authority for Raymond Rinker as he is not listed on the NC Secretary of State for Ashton Raleigh Residential LLC. - As previously requested, complete 2(b). -If Corporation Service Company is the registered agent as listed on the NC Secretary of State website, then provide account manager name and direct dial phone for CSC registered agent.	
<input checked="" type="checkbox"/>	4.	Other documents:	
	<input checked="" type="checkbox"/>	a.	Documentation of construction plan approval from the municipality or permission to proceed with early grading prior to town approval.
	<input checked="" type="checkbox"/>	b.	401/404 Documentation (Buffer determination letters, PCN application, comments, and approval) -Provide NCDEQ approvals for disturbances in the NRB -Provide 401/404 approvals -Show NRB zones 1 and 2 on all plan sheets.
	<input type="checkbox"/>	c.	Encroachment agreement(s) completed, signed and notarized for all off-site construction
<input type="checkbox"/>	5.	NCDOT Approval (provide documentation upon receipt for our records)	
<input checked="" type="checkbox"/>	6.	Cover letter stating the purpose of the submission, describing site drainage, stormwater management objectives, and how the proposed stormwater management plan will meet the objectives and be implemented RESUBMITTALS: A letter detailing any changes, comments, proposed solutions to review comments, etc.	
<input type="checkbox"/>	7.	Copy of the USGS Quad Map with delineated project limits	
<input type="checkbox"/>	8.	Copy of the Wake County Soil Survey map with delineated project limits	
<input type="checkbox"/>	9.	Two (2) copies of a complete set of construction drawings for 1st submission, five (5) copies for approval	
<input checked="" type="checkbox"/>	10.	Two (2) copies of the Municipal Stormwater Design Tool ; digital submittal and hardcopy (Site Data Sheet, Drainage Area Sheets, Site Summary Sheet, BMP Sheets, and BMP Summary sheet) The tool is located at http://www.wakegov.com/water/stormwater/management/program/Pages/default.aspx Design Tool was not found in submittal. Provide .pdf and Excel sheet. Each submittal is a standalone review. Muni Tool is on the submittal checklist. Submittal is incomplete until received.	
<input checked="" type="checkbox"/>	11.	Drainage Area Maps with stormwater discharge points and Tc flow paths (existing/post construction/post BMP) -Provide drainage area maps for sediment basins. No revised "Erosion Control Report" was found in the uploaded documents.	
<input checked="" type="checkbox"/>	12.	2 sets of Stormwater and Erosion Control Calculations:	
	<input checked="" type="checkbox"/>	a.	Sediment basin design (See website for Wake County design criteria) -Skimmers are showing dewatering in less than 3 days by our calculations. Please revise to 3-5 days. No revised "Erosion Control Report" was found in the uploaded documents.
	<input type="checkbox"/>	b.	Ditches, swales, and channels: Q10/V10. Tractive force (shear stress), capacity and geometry.
	<input type="checkbox"/>	c.	Dissipaters: Q10 velocities, stone size and dimensions.
	<input type="checkbox"/>	d.	Velocity calculations for stormwater runoff at points of discharge resulting from a 10-year storm after development were not provided or do not comply.



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<input type="checkbox"/>	e.	Support data for all stormwater practice designs, such as inflow/outflow rates, stage/storage data, hydrographs, outlet designs, infiltration rates, water elevations, design output, summary, etc.
<input type="checkbox"/>	f.	Other hydraulic and hydrologic computations critical to the plan/designs
<input checked="" type="checkbox"/>	g.	Signature, Date and Professional Seal: for all Stormwater design management proposals, i.e., calculations, BMP designs, operations/maintenance/budget/as-built/inspections/manuals. -Plans marked "preliminary" will not be approved. Plans are not signed. Two courtesy reviews have been provided. Plans must be signed for further CD review. Plan set must match CD 22-05 plans submitted to the Town of Rolesville.
<input type="checkbox"/>	13.	Draft Stormwater Agreement, Draft Maintenance Agreement
<input checked="" type="checkbox"/>	14.	Proposed Site Plan:
<input type="checkbox"/>	a.	Location/Vicinity Map
<input type="checkbox"/>	b.	North arrow, graphic scale, drafting version date, legend and professional seal
<input type="checkbox"/>	c.	Existing and proposed contours: plan and profiles for roadways
<input checked="" type="checkbox"/>	d.	Boundaries of tract: including project limits A portion of the site is missing from Area "A". Make all project limits/LOD visible on erosion control plan sheets. Entire LOD must be shown on all phases.
<input checked="" type="checkbox"/>	e.	Show all Riparian Buffers [Article 9-21]; (Neuse: [15A NCAC 02B.0233 & 0242]) -Delineate Zone 1 and Zone 2 on all sheets.
<input type="checkbox"/>	f.	Delineation of current FEMA boundaries (floodway, flood fringe & future/0.2%)
<input type="checkbox"/>	g.	Proposed improvements: roads, buildings, parking areas, grassed, landscaped, and natural areas.
<input checked="" type="checkbox"/>	h.	Lot lines, lot numbers, road names, and impervious limit on each lot rounded to nearest whole number -This information is required on the Site Plan. The submitted set is missing the Site Plan sheets (C2.00, C2.01 and C2.02)
<input type="checkbox"/>	i.	Utilities: community water and sewer, plan/profiles, easements and sediment controls.
<input type="checkbox"/>	j.	Stormwater Network: inlets, culverts, swales, ditches, channels and drainage easements.
<input checked="" type="checkbox"/>	k.	TEMPORARY SEDIMENT CONTROLS: locations and dimensions of gravel entrances, diversion ditches, silt fence, sediment basins, inlet protection, etc. -Include fence line removal in LOD. Fence removal is land disturbing activity.
<input checked="" type="checkbox"/>	l.	Location and requirements for stockpiles (see website for Stockpile Requirements) -Please show location of any stockpile(s) when determined.



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	<input checked="" type="checkbox"/>	m.	<p>Wake County Construction Sequence (Provide project specific details as needed) Revise as necessary</p> <p>Stage 1: Install perimeter controls including sediment basins and diversions. Provide stage seeding and sediment control along project perimeter as part of the initial installation in the erosion control sequence. Provide note that area downstream of basins will be stabilized immediately upon construction. Call EC for COC inspection.</p> <p>Stage 2: This is where mass grading takes place.</p> <p>Stage 3: This is where fine grading takes place and when sediment basins are converted to SCMs. Provide note in the construction sequence to notify NCDEQ-DEMLR and Wake County E&SC Inspector, a minimum of 10 days prior to initiating basin dewatering/removal sequence, per NCG01 permit.</p>																		
	<input type="checkbox"/>	n.	<p>Wake County Basin Removal Sequence</p> <p>Wake County must grant permission to convert the sediment basin over to stormwater use prior to completing any related work (construction sequence or note elsewhere on the plan should indicate this).</p>																		
	<input checked="" type="checkbox"/>	o.	<p>Wake County Construction Details</p> <p><u>-Please add SEC and SWF permit numbers to Wake Co signature block.</u></p>																		
	<input type="checkbox"/>	p.	<p>Wake County Stabilization Guidelines</p>																		
	<input checked="" type="checkbox"/>	q.	<p>DETAILED COMMENTS REGARDING TEMPORARY SEDIMENT CONTROLS:</p> <p>-Move temporary diversions closer to perimeter or provide additional sediment storage and silt fence calculations per Table 6.62a. Slope length exceeds that allowed for slope. Add sediment storage. Multiple rows of silt fence not adequate.</p> <p>Table 6.62a Maximum Slope Length and Slope Grade for Silt Fence</p> <table><tr><th>Slope</th><th>Slope Length (ft)</th><th>Maximum Area (ft²)</th></tr><tr><td><2%</td><td>100</td><td>10,000</td></tr><tr><td>2 to 5%</td><td>75</td><td>7,500</td></tr><tr><td>5 to 10%</td><td>50</td><td>5,000</td></tr><tr><td>10 to 20%</td><td>25</td><td>2,500</td></tr><tr><td>>20%</td><td>15</td><td>1,500</td></tr></table> <p>-Provide pump sizing for pump around. Required for approval.</p> <p>-Provide sediment storage on both sides of creek crossings</p> <p>-Remove, "If stream crossing measures are necessary" from timber mat note. Sheet C6.14 is missing</p> <p>PROVIDE SINGLE-SPAN TIMBER MAT. SEE DETAIL ON SHEET C6.14</p> <p>-Skimmer sizing shows dewatering in less than 3 days. Please revise. Where? Not submitted.</p> <p>-Label skimmer sizes on EC plan sheets.</p>	Slope	Slope Length (ft)	Maximum Area (ft ²)	<2%	100	10,000	2 to 5%	75	7,500	5 to 10%	50	5,000	10 to 20%	25	2,500	>20%	15	1,500
Slope	Slope Length (ft)	Maximum Area (ft ²)																			
<2%	100	10,000																			
2 to 5%	75	7,500																			
5 to 10%	50	5,000																			
10 to 20%	25	2,500																			
>20%	15	1,500																			
	<input checked="" type="checkbox"/>	r.	<p>PERMANENT EROSION CONTROLS: locations and dimensions of dissipaters, ditch linings, armoring, level spreaders, retaining walls, etc.</p> <p>-Label dimensions of dissipaters on plan sheets- all stages</p>																		



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<input type="checkbox"/>	s.	DETAILED COMMENTS REGARDING PERMANENT SEDIMENT CONTROLS:
<input checked="" type="checkbox"/>	t.	PERMANENT STORMWATER MANAGEMENT STRUCTURES: locations and types of all proposed stormwater management structures (<i>grass swale, wet/dry detention basin, filtering/infiltration basin, bioretention, etc.</i>) <i>-Provide cross-sections for SCMs. Cross-sections provided only show dam. Show entire SCM. (Further Review Required)</i>
<input checked="" type="checkbox"/>	u.	DETAILED COMMENTS REGARDING PERMANENT STORMWATER MANAGEMENT: <i>-Explain how access to SCMs will be provided. Show access easements with 10 ft minimum perimeter. 10 ft minimum perimeter must be off of slope. Use a font for line that is easier to distinguish.</i>
<input checked="" type="checkbox"/>	v.	Table with impervious calculations - existing and proposed impervious surfaces: roads, well lots, recreation sites, single family residences, etc. (<i>consistent with the Municipal Stormwater Design Tool inputs</i>) <i>-Revise impervious table to clarify where impervious is allocated. Specify amount to each lot. This should be on Site Plan. Site Plan sheets missing from submittal. Submittal must match those for CD 22-05 to Town of Rolesville</i>
<input checked="" type="checkbox"/>	w.	Proposed stormwater easements, access lanes, and backwater easements <i>-provide minimum of 10 ft perimeter around SCMs for maintenance (must be off slope)</i> <i>--New Comment - Show 100 yr backwater 356.97' on plans. Backwater easement will be required for Mitchell F Rabil Family Irrevocable Trust.</i>
<input type="checkbox"/>	x.	A note should be added to the recorded plat distinguishing areas of disconnected impervious
<input checked="" type="checkbox"/>	y.	RESIDENTIAL ONLY Perpetuity statement <i>Maximum Impervious Area Square Footage on each Individual Lot will be Stringently Enforced with no Exceptions into Perpetuity. Plans approved with a maximum impervious surface of (insert) SF per lot.</i> <i>This note must be on the Site Plan. Site Plan sheets not in submittal</i>

Standards and Requirements

Items marked with an "X" note relevant standards to be applied to the proposed development. Notes in RED provide review comments and/or any required elements to comply with standard.

Ordinance references are shown in brackets.

Stormwater Management Requirements

<input checked="" type="checkbox"/>	15.	Stormwater Review Required - All residential subdivision development must submit a plan to comply with the applicable municipalities' stormwater ordinance. Office, institutional, commercial or industrial development that <u>disturbs</u> greater than 20,000 square feet is required to comply with the stormwater management regulations. Development and redevelopment that disturb less than 20,000 square feet are not exempt if such activities are part of a larger common plan of development or sale, even though multiple, separate or distinct activities take place at different times on different schedules. Rolesville [7.5.1(E)], Wendell [6.5(F)], Zebulon [151.05]
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<input checked="" type="checkbox"/>	16.	<p>Stormwater Permit – is required for all development and redevelopment unless exempt pursuant to the Code of Ordinances. A permit may only be issued subsequent to a properly submitted, reviewed and approved stormwater management plan and permit application.</p> <p>Rolesville [7.5.1(E)(3)], Wendell [6.5(F)(3)], Zebulon [151.21(A)]</p> <p>Note: A permit may not be required if there are no post-construction requirements (i.e. SCMs).</p>
<input checked="" type="checkbox"/>	17.	<p>SCMs - For projects requiring stormwater treatment for quality and/or quantity control, the applicant must</p> <ol style="list-style-type: none"> 1) comply with the NC BMP Manual Rolesville [7.5.1(G)], Wendell [6.5(H)], Zebulon [151.07] 2) as well as <i>Completion of Improvements and Maintenance</i>, prior to issuance of a certificate of compliance or occupancy. Rolesville [7.5.5], Wendell [6.5(O)], Zebulon [151.50 – 151.56]
<input checked="" type="checkbox"/>	18.	<p>Standards Based on Project Density- In accordance with the definitions, projects are identified as Ultra Low-Density (15% or less Built-Upon Area, referred to as BUA, and less than one dwelling unit per acre), Low-Density (more than 15% BUA and no more than 24% BUA), and High-Density (24% or more BUA).</p> <p>Rolesville [7.5.4], Wendell [6.5(M)], Zebulon [151.35]</p>
	<input type="checkbox"/>	<p>Standards for Ultra-Low and Low-Density Projects:</p> <ul style="list-style-type: none"> • Use of vegetated conveyances to maximum extent practicable • Location of development and redevelopment outside Riparian Buffer and Flood Protection Zones • Recorded deed restrictions or protective covenants to ensure future development maintains consistency with approved project plans • Permanent SCMs (Stormwater Control Measures) are to be designed in accordance with and as specified in the North Carolina Department of Environmental Quality's Design Manual. • For Low-Density only, no net increase in peak flow leaving the site from the pre- development conditions for the 1 yr-24hr storm. Runoff volume drawdown time shall be a minimum of 48 hours, but not more than 120 hours. • Residential runoff after development must not exceed the Target Curve Numbers listed in the chart "Maximum Composite Curve Number, by Soil Group". • Ultra-Low and Low-Density projects may be eligible for target curve number credits. <p>Wendell Only: Nitrogen export limited to 3.6 pounds per acre per year unless project achieves classification as an LID Project.</p> <p>Rolesville [7.5.4(A)(1-3)], Wendell [6.5(M)(1-3)], Zebulon [151.35(A-C)]</p>



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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p><u>Standards for High-Density Projects:</u></p> <ul style="list-style-type: none"> Measures shall control and treat runoff from the first inch of rain. Runoff volume drawdown time shall be a minimum of 48 hours, but not more than 120 hours. Structural measures shall be designed to have a minimum of 85 % average annual removal for Total Suspended Solids (TSS) Permanent SCMs (Stormwater Control Measures) are to be designed in accordance with and as specified in the North Carolina Department of Environmental Quality's Design Manual. No net increase in peak flow leaving the site from the pre -development conditions for the 1 yr-24hr storm. Runoff volume drawdown time shall be a minimum of 48 hours, but not more than 120 hours. Location of development and redevelopment outside Riparian Buffer and Flood Protection Zones <p>Wendell Only: Nitrogen export limited to 3.6 pounds per acre per year unless project achieves classification as an LID Project.</p> <p>Rolesville [7.5.4(A)(4)], Wendell [6.5(M)(4)], Zebulon [151.35(D)]</p>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p><u>General Standards:</u></p> <ul style="list-style-type: none"> Downstream Impact Analysis – DIA must be performed in accordance with the “10% rule”, and a copy provided with the application. -DIA is required by code and must be submitted. <p>Rolesville [7.5.4(B)(1)], Wendell [6.5(N)(1)], Zebulon [151.36(A)]</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p><u>Low Impact Development (LID) Classification:</u></p> <ul style="list-style-type: none"> All development or redevelopment may be submitted for LID classification Development must mimic the pre-developed hydrologic conditions of the site, as defined as “woods in good condition” for the 2-yr, 24 hr storm, within 10%. Techniques required to achieve LID classification <ul style="list-style-type: none"> ➤ Natural site design ➤ Bio-retention systems or on-site infiltration (at least one must be used) ➤ At least two other techniques from the list provided in Rolesville [7.5.4(B)(5)(e)] and Zebulon [151.36(E)(5)] ➤ At least one other technique from the list provided in Wendell [6.5(N)(5)(e)]
<p>Wake County UDO Article 10 - Erosion and Sedimentation Control Requirements (Applies to Rolesville, Wendell and Zebulon)</p>		
<input checked="" type="checkbox"/>	19.	<p>Erosion Control: This project will require a Land Disturbance Permit if it involves <u>greater than one acre of disturbance</u>. See website for details.</p>
<input checked="" type="checkbox"/>	20.	<p>10-20-1 Minimum Standards - All soil erosion and sedimentation control plans and measures must conform to the minimum applicable standards specified in <i>North Carolina's Erosion and Sediment Control Planning and Design Manual</i> and the <i>Wake County Sedimentation and Erosion Control Plan Review Manual</i>. Erosion control devices must be installed to prevent any offsite sedimentation for any construction site regardless of the size of the land disturbance.</p>



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<input checked="" type="checkbox"/>	21.	10-20-3 Operation in Lakes or Natural Watercourses -Land disturbing activity in connection with construction in, on, over, or under a lake of natural watercourse must minimize the extent and duration of disruption of the stream channel. Where relocation of a stream forms an essential part of the proposed activity, the relocation must minimize unnecessary changes in the stream flow characteristics.
<input type="checkbox"/>	22.	10-20-10 Standards for High Quality Water (HQW) Zones Land-disturbing activities to be conducted in High Quality Water Zones must be designed as follows:
<input type="checkbox"/>	a.	Uncovered areas in High Quality Water (HQW) zones must be limited at any time to a maximum total area of 20 acres within the boundaries of the tract.
<input type="checkbox"/>	b.	Maximum Peak Rate of Runoff - Erosion and sedimentation control measures, structures, and devices within HQW zones must be planned, designed and constructed to provide protection from the runoff of the 25-year storm.
<input type="checkbox"/>	c.	Settling Efficiency - Sediment basins within HQW zones must be designed and constructed so that the basin will have a settling efficiency of at least 70% for the 40 micron (0.04mm) size soil particle transported into the basin by the runoff of that 2-year storm which produces the maximum peak rate of runoff.
<input type="checkbox"/>	d.	Grade - The angle for side slopes must be sufficient to restrain accelerated erosion (side slopes no steeper than 2 horizontal to 1 vertical if a vegetative cover is used for stabilization unless soil conditions permit a steeper slope or where the slopes are stabilized by using mechanical devices, structural devices or other acceptable ditch liners)
<input type="checkbox"/>	23.	Senate Bill 1020; "SECTION 3.(h) Additional standards for land-disturbing activities in the water supply watershed":
<input type="checkbox"/>	a.	Erosion and sedimentation control measures, structures, and devices shall be planned, designed, and constructed to provide protection from the runoff of the 25-year storm
<input type="checkbox"/>	b.	Sediment basins shall be planned, designed, and constructed so that the basin will have a settling efficiency of at least seventy percent (70%) for the 40-micron size soil particle transported into the basin by the runoff of the two-year storm that produces the maximum peak rate of runoff
<input type="checkbox"/>	c.	Newly constructed open channels shall be planned, designed, and constructed with side slopes no steeper than two horizontal to one vertical if a vegetative cover is used for stabilization unless soil conditions permit steeper slopes or where the slopes are stabilized by using mechanical devices, structural devices, or other acceptable ditch liners.

Neuse Riparian Buffer Rules

<input checked="" type="checkbox"/>	24.	Due to the location of this project, it should be noted that a rule to protect and maintain existing buffers along watercourses in the Neuse River Basin became effective on July 22, 1997. The Neuse River Riparian Area Protection and Maintenance Rule (15A NCAC 2B.0233) applies to all perennial and intermittent streams, lakes, ponds and estuaries in the Neuse River Basin with forest vegetation on the adjacent land or "riparian area".
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Wake County PE:

Janet Boyer, PE, CFM

Contact Info:

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 919-856-7422