



**WMCPR – ROLESVILLE, WENDELL, ZEBULON WATERSHED MANAGEMENT
 CONSTRUCTION PLAN DISAPPROVAL**

Project Name	Jones Dairy Storage Facility	Watershed	Lower Neuse	Jurisdiction	Rolesville
Date Received	6/14/2021	Date Processing Initiated	6/14/2023	Disturbed Acreage	5.77
S&E Permit Number	SEC-104375-2023	S&E Plan Review Fee	\$1,425.00 PAID	S&E Permit Fee	\$1425.00 PENDING
SW Permit Number	SWF-104372-2023	SW Plan Review Fee	\$1,425.00 PAID	SW Permit Fee	\$1425.00 PENDING

Applicant:
 Name: Rivercrest Realty Associates, LLC
 8816 Six Forks Road, Suite 201,
 Address: Raleigh, NC 27615
 Phone: 919-274-8901
 Email: patrick.barbeau@timmons.com

Engineer:
 Name: Frank Garrett, PE; Timmons Group
 Address: 5410 Trinity Rd., Suite 102, Raleigh, NC 27607
 Phone: 919-866-4503
 Email: Garrett.frank@timmons.com

Plan Date/Revision Date: 11/1/2023

Review Status: 11/14/2023	<input 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: <i>Wake County Unified Development Ordinance (UDO) Article 10</i>		
References for Stormwater Management are as follows:		
ROLESVILLE: <i>Town of Rolesville Unified Development Ordinance (UDO) Section 7.5: Stormwater Management Standards</i>		
WENDELL: <i>Town of Wendell Unified Development Ordinance (UDO) Chapter 6: Environmental Protection, adopted 7/26/10.</i>		
ZEBULON: <i>Town of Zebulon, NC Code of Ordinances: Chapter 151 and Chapter 152.249.</i>		
<input type="checkbox"/>	1.	Erosion Control and Stormwater Joint Application (Required to initiate processing)
<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
<input type="checkbox"/>	3.	Notarized Wake County Financial Responsibility/Ownership Form (Required to initiate processing)
<input checked="" type="checkbox"/>	4.	Other documents: Provide a copy of Jurisdictional/Hazard Determination from NC Dam Safety for the wet pond dam.



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<input checked="" type="checkbox"/>	a.	Documentation of construction plan approval from the municipality.
<input type="checkbox"/>	b.	401/404 Documentation (Buffer determination letters, PCN application, comments, and approval)
<input checked="" type="checkbox"/>	c.	Encroachment agreement(s) completed, signed and notarized for all off-site construction (including DOT right of way). -Provide approval/consent for LOD in the right of way.
<input checked="" 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 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
<input type="checkbox"/>	11.	Drainage Area Maps with stormwater discharge points and Tc flow paths (existing/post construction/post BMP)
<input type="checkbox"/>	12.	2 sets of Stormwater and Erosion Control Calculations:
<input type="checkbox"/>	a.	Sediment basin design (See website for Wake County design criteria)
<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.
<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 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.
<input type="checkbox"/>	13.	Draft Stormwater Agreement, Draft Maintenance Agreement
<input 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



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<input type="checkbox"/>	c.	Existing and proposed contours: plan and profiles for roadways
<input type="checkbox"/>	d.	Boundaries of tract: including project limits
<input type="checkbox"/>	e.	Show all Riparian Buffers [<i>Article 9-21</i>]; (Neuse: [15A NCAC 02B.0233 & 0242])
<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 type="checkbox"/>	h.	Lot lines, lot numbers, road names, and impervious limit on each lot rounded to nearest whole number
<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. -Leave adequate space around perimeter of SCMs for maintenance. 10 ft minimum is required at base of slope. There is a drainage ditch at the base of western slope
<input type="checkbox"/>	l.	Location and requirements for stockpiles (see website for Stockpile Requirements)
<input type="checkbox"/>	m.	Wake County Construction Sequence (Provide project specific details as needed)
<input type="checkbox"/>	n.	Wake County Basin Removal Sequence 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).
<input type="checkbox"/>	o.	Wake County Construction Details
<input type="checkbox"/>	p.	Wake County Stabilization Guidelines
<input type="checkbox"/>	q.	DETAILED COMMENTS REGARDING TEMPORARY SEDIMENT CONTROLS:
<input type="checkbox"/>	r.	PERMANENT EROSION CONTROLS: locations and dimensions of dissipaters, ditch linings, armoring, level spreaders, retaining walls, etc.
<input type="checkbox"/>	s.	DETAILED COMMENTS REGARDING PERMANENT SEDIMENT CONTROLS:
<input 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>)
<input type="checkbox"/>	u.	DETAILED COMMENTS REGARDING PERMANENT STORMWATER MANAGEMENT:
<input type="checkbox"/>	v.	Table with impervious calculations - existing and proposed impervious surfaces: roads, well lots, recreation sites, single family residences, etc. (consistent with the Municipal Stormwater Design Tool inputs)
<input checked="" type="checkbox"/>	w.	Proposed stormwater easements, access lanes, and backwater easements Show and label SCM access easement. Easement must have a minimum of 10ft level area below the slope. Where are the labels for the SCM easement. It should extend to the right of way.



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	<input type="checkbox"/>	x.	A note should be added to the recorded plat distinguishing areas of disconnected impervious
	<input 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>

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.	<p>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.</p> <p>Rolesville [7.5.1(E)], Wendell [6.5(F)], Zebulon [151.05]</p>
<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 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>



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<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>
<input checked="" type="checkbox"/>	<p>Standards for High-Density Projects:</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"/>	<p>General Standards:</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 using 10% rule was not found <p>Rolesville [7.5.4(B)(1)], Wendell [6.5(N)(1)], Zebulon [151.36(A)]</p>



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	<input type="checkbox"/>	<p>Low Impact Development (LID) Classification:</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>
<input type="checkbox"/>	21.	<p>10-20-3 Operation in Lakes or Natural Watercourses -Land disturbing activity in connection with construction in, on, over, or under a lake or 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.</p>
<input type="checkbox"/>	22.	<p>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:</p>
<input type="checkbox"/>	a.	<p>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.</p>
<input type="checkbox"/>	b.	<p>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.</p>
<input type="checkbox"/>	c.	<p>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.</p>
<input type="checkbox"/>	d.	<p>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)</p>
<input type="checkbox"/>	23.	<p>Senate Bill 1020; “SECTION 3.(h) Additional standards for land-disturbing activities in the water supply watershed”:</p>
<input type="checkbox"/>	a.	<p>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</p>



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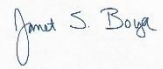
	<input type="checkbox"/>	b.	Sediment basins shall be planned, designed, and constructed so that the basin will have a settling efficiency of at least seventy percent (70%) for the 40-micron size soil particle transported into the basin by the runoff of the two-year storm that produces the maximum peak 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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Additional Suggested Changes/Comments

<input type="checkbox"/>	XX.	
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Wake County PE:	 Janet S. Boyer, PE	Contact Info:	janet.boyer@wake.gov 919-856-7422
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