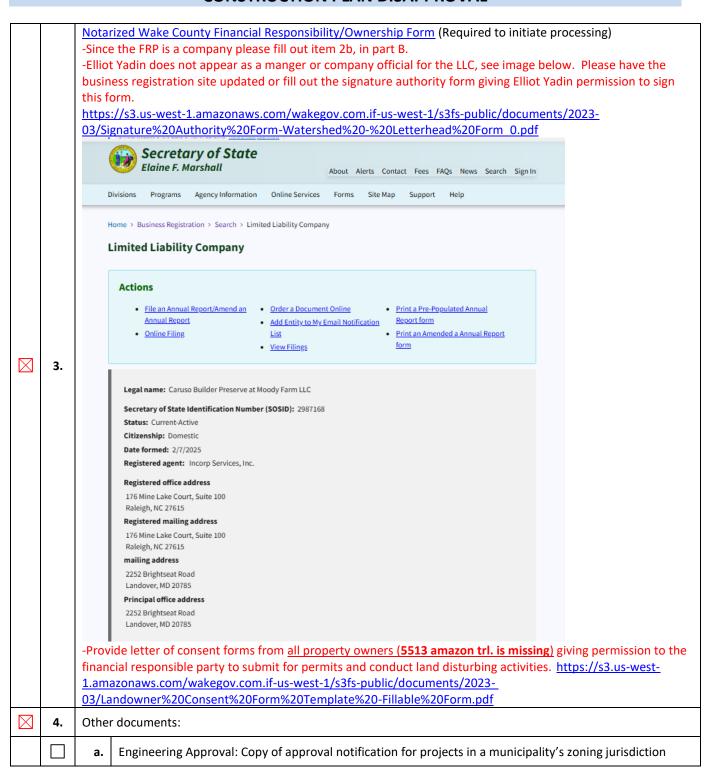
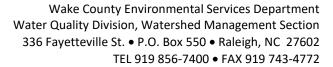




Project Nam	The Preserve at Moody  e Farm	Watershed	Lower Nouse	Jurisdiction	Rolesville
Project Nam	e raiiii	Date Processing	Lower Neuse	Disturbed	Rolesville
Date Receive	d 12/16/2024	Initiated	12/16/2024	Acreage	40
S&E Perm	it	S&E	\$4,750 PAID		
Numbe	SEC-137379-2024	Plan Review Fee	\$5,252 PENDING	S&E Permit Fee	\$10,000 PENDING
SW Perm Numbe	it er SWF-137381-2024	SW Plan Review Fee	\$2,500 PAID	SW Permit Fee	\$2,500 PENDING
Applicant:		Enginee	r:		
	so Builder Preserve at Moody	•			
Name LLC			me: Jakob Klein /		
2252 Address: 2078	Brightseat Road, Landover, N	1D Addr		ase Boulevard, Suite	e 450, Raieign,
Phone: 301-			one: 919-469-110	 1	
			nail: NA	L	
Elliali. <u>ey.le</u>	asenow@ybmanagement,ent		iidii. <u>INA</u>		
Plan Date/Revision Date: 04/07/2025					
Plan Date/Revi	sion Date: 04/07/2025				
Review Status:	Construction Plan Not	Approved and Inco	mplete (Items 1-4 r	equired to be a con	nplete submittal)
			·	•	nplete submittal)
Review Status: 04/07/2025	Construction Plan Not  Construction Plan Not		·	•	nplete submittal)
Review Status: 04/07/2025 Construction Pla	Construction Plan Not  Construction Plan Not  Review Comments	Approved and requ	ires additional info	rmation	
Review Status: 04/07/2025 Construction Pla	Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either	Approved and requ	ires additional info	rmation	
Review Status: 04/07/2025  Construction Pla Items marked winecessary require	Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either ements for construction plan a	Approved and required insufficient or not paper approval.	nires additional info	rmation omments are in RE	D and provide the
Review Status: 04/07/2025  Construction Pla Items marked winecessary require References for En	Construction Plan Not  Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either ements for construction plan are cosion and Sediment Control:	Approved and required insufficient or not paper approval.  Wake County Unified	nires additional info	rmation omments are in RE	D and provide the
Review Status: 04/07/2025  Construction Pla Items marked with necessary require References for Error References for St	Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either ements for construction plan a	r insufficient or not papproval.  Wake County Unified s follows:	provided. Engineer of	omments are in REI	D and provide the
Construction Pla Items marked winecessary require References for St ROLESVILLE: Town	Construction Plan Not  Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either ements for construction plan a rosion and Sediment Control: cormwater Management are a run of Rolesville Unified Development of Wendell Unified Development	r insufficient or not papproval. Wake County Unified soment Ordinance (UDO)	provided. Engineer of Development Ordination (Chapter 6: Environ)	omments are in REI nance (UDO) Article rmwater Managemental Protection, a	D and provide the  10 ent Standards
Construction Pla Items marked winecessary require References for St ROLESVILLE: Town	Construction Plan Not  Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either ements for construction plan a cosion and Sediment Control: cormwater Management are a con of Rolesville Unified Develop	r insufficient or not papproval. Wake County Unified soment Ordinance (UDO)	provided. Engineer of Development Ordination (Chapter 6: Environ)	omments are in REI nance (UDO) Article rmwater Managemental Protection, a	D and provide the  10 ent Standards
Review Status: 04/07/2025  Construction Pla Items marked winecessary require References for En References for St ROLESVILLE: Town WENDELL: Town ZEBULON: Town	Construction Plan Not  Construction Plan Not  Construction Plan Not  Review Comments  th an "X" were noted as either ements for construction plan a rosion and Sediment Control: cormwater Management are a run of Rolesville Unified Development of Wendell Unified Development	r insufficient or not papproval. Wake County Unified is follows: Doment Ordinance (UI) ances: Chapter 151 of	provided. Engineer of Development Ordination (Chapter 6: Environment Chapter 152.245)	omments are in REI nance (UDO) Article rmwater Managemental Protection, a	D and provide the  10 ent Standards
Review Status: 04/07/2025  Construction Pla Items marked winecessary require References for St ROLESVILLE: Town WENDELL: Town ZEBULON: Town In Erosi Review	Construction Plan Not  The Review Comments  The American Construction Plan of Construction Plan Not  Comments for construction Plan Not  Construction Pla	r insufficient or not papproval.  Wake County Unified or not provide the county Unified or not provided the county Unified or not provided the county Unified or not ordinance (UDO) concest Chapter 151 count Application (Recorder concessing)	provided. Engineer of Development Ordinates of Environment Chapter 6: Environment Chapter 152.245	omments are in REI mance (UDO) Article mwater Managemental Protection, a	D and provide the  10 ent Standards edopted 7/26/10.
Review Status: 04/07/2025  Construction Pla Items marked with necessary require References for State References for State ROLESVILLE: Town ZEBULON: Town In Erosi  1. Erosi Review Status:  Review Status:  Reference State St	Construction Plan Not  Construction Plan Not  Construction Plan Not  Construction Plan Not  The Review Comments  The American Secure of Construction Plan and Secure of Rolesville Unified Development of Zebulon, NC Code of Ordination Control and Stormwater Journal Stormwater Jour	rinsufficient or not papproval. Wake County Unified stollows: Dent Ordinance (UDO) ances: Chapter 151 coint Application (Recorders Sing) tal is free, but all substantial and recorders to the content of	provided. Engineer of Development Ordinated Chapter 6: Environment Chapter 152.245  Quired to initiate prossequent Stormwater	omments are in REI mance (UDO) Article mwater Managemental Protection, a	D and provide the  10 ent Standards edopted 7/26/10.



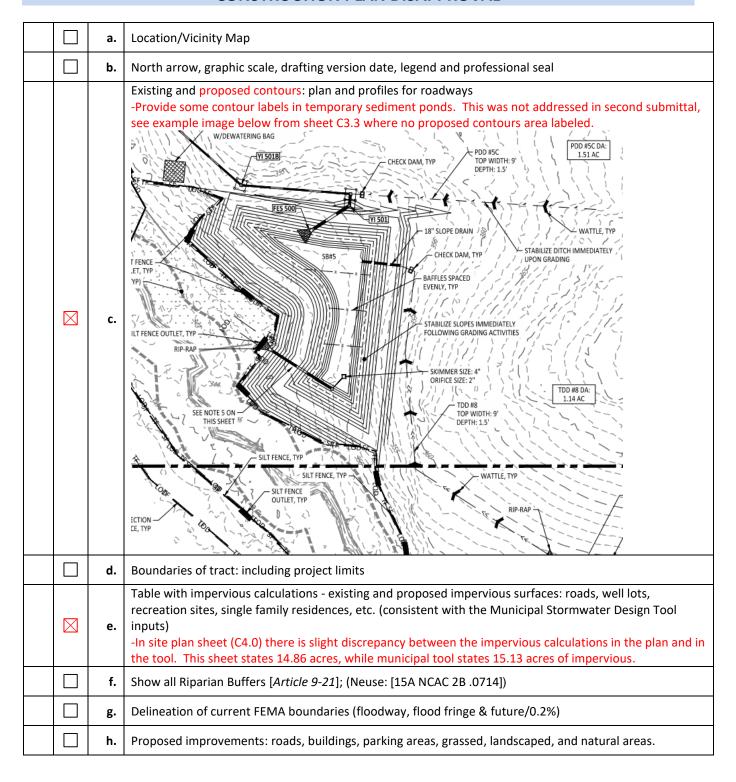






		b.	401/404 Documentation (Buffer determination letters, PCN application, comments, and approval) Documentation of wetland delineationsProvide approval letters -Provide impact maps		
		c.	Encroachment agreement(s) completed, signed and notarized for all off-site construction		
		d.	The erosion and sedimentation control plan must include the owner's written consent for the applicant to submit an erosion and sedimentation control plan and to conduct the anticipated land-disturbing activity if the applicant is not the owner of the land to be disturbed [10-30-2-(B)-(2)-(c)]		
$\boxtimes$	5.		NCDOT Approval (Temporary Construction Entrances, Encroachment Agreements, etc.) *Since no work is proposed in NCDOT ROW only the temporary construction entrance approval is required.		
$\boxtimes$	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.			
	7.	Сору	of the USGS Quad Map with delineated project limits.		
	8.	Сору	of the Wake County Soil Survey map with delineated project limits from 1970 manuscript.		
$\boxtimes$	9.	One (1) electronic copy of a complete set of construction drawings for 2 <sup>nd</sup> resubmission, five (5) copies for final approval.			
	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)			
$\boxtimes$	11.	Drainage Area Maps with stormwater discharge points and Tc flow paths (existing/post construction/post BMP)  -Show drainage map for bypass diversions			
	12.	2 sets of Stormwater and Erosion Control Calculations:			
		a.	Sediment basin design (See website for Wake County design criteria) -Please provide clarification for why the intensity used (i10) changed from 7.2 in./hr. in the first submittal to 4.86 in./hr.		
		b.	Ditches, swales, and channels: Q10/V10. Tractive force (shear stress), capacity and geometry.  -Could not located PDD #6 and #7 in reports		
		c.	Dissipaters: Q10 velocities, stone size and dimensions.		
		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.		
		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, etcIn municipal tool address notes and boxes in red. There are still post development discharges in BMP summary sheet that exceed predevelopment number		
		f.	Other hydraulic and hydrologic computations critical to the plan/designs		
		g.	Signature, Date And Professional Seal: for all Stormwater design management proposals, i.e. calculations, BMP designs, operations/maintenance/budget/asbuilt/inspections/manuals.		
	13.	Draft Stormwater Agreement, Draft Maintenance Agreement			
$\boxtimes$	14.	Proposed Site Plan:			





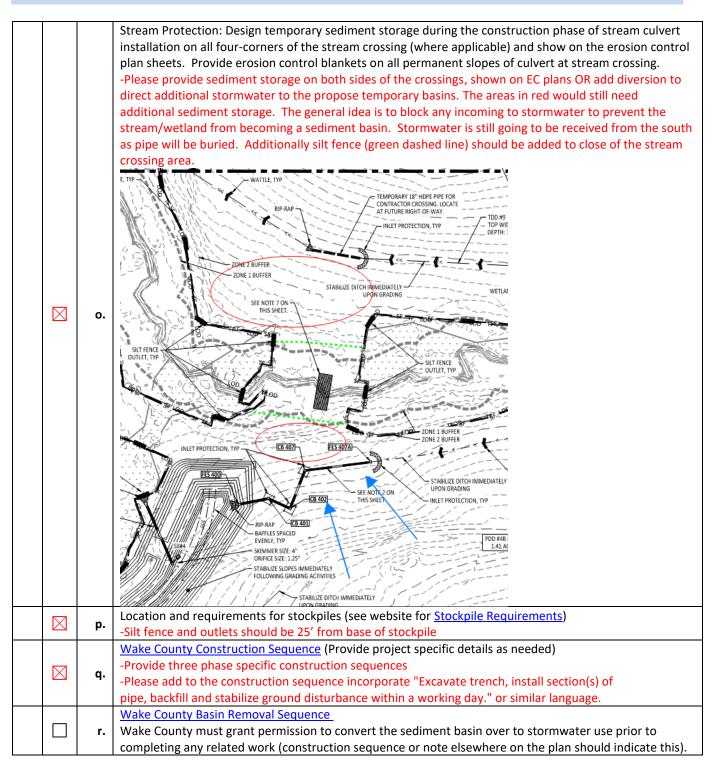


Wake County Environmental Services Department Water Quality Division, Watershed Management Section 336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602 TEL 919 856-7400 • FAX 919 743-4772

	i.	Lot lines, lot numbers, road names, and impervious limit on each lot rounded to nearest whole number
	j.	Utilities: community water and sewer, plan/profiles, easements and sediment controls.
	k.	Stormwater Network: inlets, culverts, swales, ditches, channels and drainage easements.
$\boxtimes$	l.	TEMPORARY SEDIMENT CONTROLS: locations and dimensions of gravel entrances, diversion ditches, silt fence, sediment basins, inlet protection, etc.  EC Stage 1  -Label the temporary diversions, should be able to identity calculations from sheet C7.0. There appears to be some ditches missing from plans but are present in report. I could not located diversion 1B, 4A, & 5A  *Recommendation: Increase length of construction entrance to 100'
	m.	Sediment Basin Dewatering Bags: Provide a dewatering bag and location pad adjacent to all sediment basins for maintenance and closeout. Label the bag and pad with dimensions.
	n.	Stream Culvert Construction Phasing: Provide a detailed construction sequence for installation of culverts at streams and show the stream crossing(s) on the erosion control plan sheets. Include all applicable details related to managing the stream flow during the culvert installation (silt bags, pumparound, impervious dikes, etc.).









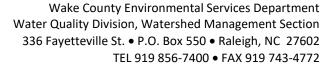
	s.	Wake County Construction Details		
	t.	Wake County Stabilization Guidelines		
	u.	DETAILED COMMENTS REGARDING TEMPORARY SEDIMENT CONTROLS:		
	v.	PERMANENT EROSION CONTROLS: locations and dimensions of dissipaters, ditch linings, armoring, level spreaders, retaining walls, etc.		
	w.	DETAILED COMMENTS REGARDING PERMANENT SEDIMENT CONTROLS:		
	x.	PERMANENT STORMWATER MANAGEMENT STRUCTURES: locations and types of all proposed stormwater management structures (grass swale, wet/dry detention basin, filtering/infiltration basin, bioretention, etc.)		
	y.	DETAILED COMMENTS REGARDING PERMANENT STORMWATER MANAGEMENT:		
	z.	Proposed stormwater easements, access lanes, and backwater easements. Provide and label minimum 20 ft. Access easement and 10 ft. Maintenance easement from toe of stormwater pond embankment.  -After discussing this with my supervisor, this easement may go into the outer (zone 2) of riparian buffers but not into wetlands, adjust SCM location if needed.  GENERAL MDC 9: EASEMENTS.  All SCMs and associated maintenance accesses on privately owned land except for those located on single family residential lots shall be located in permanent recorded easements. The SCM shall be shown and labeled within the easement. These easements shall be granted in favor of the party responsible for enforcing the stormwater program under which the SCMs were approved.  SCMs must have access and maintenance easements to provide the legal authority for inspections, maintenance personnel and equipment. The location and configuration of easements must be established during the design phase and should be clearly shown on the design drawings. The entire footprint of the SCM system must be included in the access and maintenance easement, plus an additional ten or more feet around the SCM to provide enough room to complete maintenance tasks. This SCM system includes the side slopes, forebay, riser structure, SCM device, and basin outlet, dam embankment, outlet, and emergency spillway.  In addition to the provisions required by Rule, it is recommended that maintenance easements specify who may make use of the easement and for what purposes. Where feasible, it is also recommended that SCMs be posted with conspicuous signage stating who is responsible for required maintenance and annual inspection. Signage should be maintained so as to remain visible and legible.		
	aa.	A note should be added to the recorded plat distinguishing areas of disconnected impervious		
	ab.	RESIDENTIAL ONLY Perpetuity statement  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.		



Standards and Requirements				
<mark>revi</mark> e	ew con	ked with an "X" note relevant standards to be applied to the proposed development. Notes in RED provide nments and/or any required elements to comply with standard. references are shown in brackets.		
$\boxtimes$	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]		
$\boxtimes$	16.	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.  Rolesville [7.5.1(E)(3)], Wendell [6.5(F)(3)], Zebulon [151.21(A)]  Note: A permit may not be required if there are no post-construction requirements (i.e. SCMs).		
$\boxtimes$	17.	SCMs - For projects requiring stormwater treatment for quality and/or quantity control, the applicant must 1) comply with the NC Stormwater Design Manual Rolesville [7.5.1(G)], Wendell [6.5(H)], Zebulon [151.07] 2) as well as Completion of Improvements and Maintenance, prior to issuance of a certificate of compliance or occupancy. Rolesville [7.5.5], Wendell [6.5(O)], Zebulon [151.50 – 151.56]		
	18.	<b>Standards Based on Project Density</b> - 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). <b>Rolesville</b> [7.5.4], <b>Wendell</b> [ 6.5(M)], <b>Zebulon</b> [151.35]		



	T
	Standards for Ultra-Low and Low-Density Projects:
	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.
	Wendell Only: Nitrogen export limited to 3.6 pounds per acre per year unless project achieves classification
	as an LID Project.
	Rolesville [7.5.4(A)(1-3)], Wendell [6.5(M)(1-3)], Zebulon [151.35(A-C)]
	Standards for High-Density Projects:
	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)
	<ul> <li>Permanent SCMs (Stormwater Control Measures) are to be designed in accordance with and as</li> </ul>
	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
	Rolesville [7.5.4(A)(4)], Wendell [6.5(M)(4)], Zebulon [151.35(D)]
	General Standards:
	<ul> <li>Downstream Impact Analysis – DIA must be performed in accordance with the "10% rule", and a copy provided with the application.</li> </ul>
	copy provided with the application.  Rolesville [7.5.4(B)(1)], Wendell [6.5(N)(1)], Zebulon [151.36(A)]
	Notes while [1.3.7(D)(1)], we much [0.3(N)(1)], Lewword [131.30(A)]





		Low I	mpact Development (LID) Classification:			
		LOWI				
		•	in good condition" for the 2-yr, 24 hr storm, within 10%.			
		•	Techniques required to achieve LID classification			
			<ul> <li>Natural site design</li> <li>Bio-retention systems or on-site infiltration (at least one must be used)</li> </ul>			
			,			
			At least <b>two</b> other techniques from the list provided in <b>Rolesville</b> [7.5.4(B)(5)(e)] and			
			Zebulon [151.36(E)(5)]			
			At least <b>one</b> other technique from the list provided in <b>Wendell</b> [6.5(N)(5)(e)]			
			nstream Impact Analysis – Required analysis using the "10% rule" drainage area evaluation of the 10-			
$\boxtimes$	19.	-	24-hour peak flow of the pre/post development to determine if the project will have any impacts on			
	13.		ing or channel degradation downstream of the project site in accordance with Rolesville [1.2.4.(B)(1)]			
		Wend	dell [6.5(N)(1)], <b>Zebulon</b> [151.36(A)].			
Wak	ce Cou	nty UD	O Article 10 - Erosion and Sedimentation Control Requirements			
(App	olies to	Roles	ville, Wendell and Zebulon)			
		Erosi	on Control: This project will require a Land Disturbance Permit if it involves greater than one acre of			
		disturbance. <b>Note</b> : If the land disturbance is part of a common plan of development that is greater than one				
$\boxtimes$	20.		of disturbance, an Approved Erosion and Sediment Control Plan and Land Disturbance Permit are			
		required for each individual tract or parcel disturbance within the common plan of development, regardless				
		of land disturbance acreage in each tract/parcel.				
			<b>1-1 Minimum Standards</b> - All soil erosion and sedimentation control plans and measures must conform			
		to the minimum applicable standards specified in North Carolina's Erosion and Sediment Control Planning				
$\boxtimes$	21.	and Design Manual and the Wake County Sedimentation and Erosion Control Plan Review Manual. Erosion				
		control devices must be installed to prevent any offsite sedimentation for any construction site regardless of				
		the size of the land disturbance.				
			<b>D-3 Operation in Lakes or Natural Watercourses</b> -Land disturbing activity in connection with			
П	22.		ruction 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.					
	23.		0-10 Standards for High Quality Water (HQW) Zones			
		Land-	disturbing activities to be conducted in High Quality Water Zones must be designed as follows:			
		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.			
		L.	Maximum Peak Rate of Runoff - Erosion and sedimentation control measures, structures, and devices			
	Ш	b.	within HQW zones must be planned, designed and constructed to provide protection from the runoff			
			of the 25-year storm.  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			
		c.	transported into the basin by the runoff of that 2-year storm which produces the maximum peak rate			
			of runoff.			
			AN IMBODE			





		d.	<b>Grade</b> - 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)		
	24.		te Bill 1020; "SECTION 3.(h) Additional standards for land-disturbing activities in the water supply		
		wate	rshed":		
		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		
		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		
		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.		
Net	Neuse Riparian Buffer Rules				
	25.	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".			
North Carolina General Statute § 113A-61 (c) - Right to Appeal the Decision					
$\boxtimes$	26.	The a	pplicant has the right to appeal this decision per North Carolina General Statute § 113A-61 (c).		
Environmental Engineer:  Kevin Zelaya, PE  Contact Info: kevin.zelaya@wake.gov 919-856-7473					