



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

Project Name <u>South Main</u>	Watershed <u>Lower Neuse</u>	Jurisdiction <u>Rolesville</u>
Date Received <u>10/3/2022</u>	Date Processing Initiated <u>10/10/2022</u>	Disturbed Acreage <u>2.01</u>
S&E Permit Number <u>SEC-090046-2022</u>	S&E Plan Review Fee <u>\$502.00 PAID</u>	S&E Permit Fee <u>\$502.00 PENDING</u>
SW Permit Number <u>SWF-090049-2022</u>	SW Plan Review Fee <u>\$502.00 PAID</u>	SW Permit Fee <u>\$502.00 PENDING</u>

Applicant:

Name Toy Storage, LLC
2700 Gresham Lake Rd, Raleigh, NC
 Address: 27615
 Phone: (919) 706-5766
storit@aol.com /
 Email: janetc@storagemaxnc.com

Engineer:

Name: Keith Gettle
 Address: 2700 Gresham Lake Rd.
 Phone: 919-604-0505
 Email: kpgettle@gmail.com

Plan Date/Revision Date: 10/3/2022

Review Status: 11/8/2022	<input type="checkbox"/>	<u>Construction Plan Not Approved and Incomplete</u> (Items 1-4 required to be a complete submittal)
	<input checked="" type="checkbox"/>	<u>Construction Plan Not Approved and requires additional information</u>

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) -Watershed is Lower Neuse Modified in report and cover sheet. Modified as requested
<input 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) -Parcels must be recombined prior to permitting as discussed on 9/22/2022 -Provide notarized consent from adjoining landowners to permit and conduct land disturbing activity. -Part 2 (b) must be completed -List all parcels and owners within LOD Info requested included with resubmittal.	
<input checked="" type="checkbox"/>	4.	Other documents:	
<input checked="" type="checkbox"/>	a.	Engineering Approval: Copy of approval notification for projects in a municipality's zoning jurisdiction -Provide approval from Town of Rolesville Comment noted	
<input type="checkbox"/>	b.	401/404 Documentation (Buffer determination letters, PCN application, comments, and approval) Documentation of wetland delineations.	
<input checked="" type="checkbox"/>	c.	NCDOT Approval (Temporary Construction Entrances , Encroachment Agreements, etc.) Road is not NCDOT	
<input type="checkbox"/>	d.	Encroachment agreement(s) completed, signed and notarized for all off-site construction	
<input checked="" type="checkbox"/>	e.	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)] -Provide Consent from neighboring parcels Consent form completed and submitted	
<input checked="" type="checkbox"/>	5.	NCDOT Approval (provide documentation upon receipt for our records) Comment noted	
<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 from 1970 manuscript.	
<input checked="" type="checkbox"/>	9.	One (1) electronic copy of a complete set of construction drawings for 1st resubmission, five (5) copies for final 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) -Please submit Excel sheet with stormwater permit (SWF) Excel sheet submitted and area modified. -Total Site Area is incorrect and should reflect recombination	
<input checked="" type="checkbox"/>	11.	Drainage Area Maps with stormwater discharge points and Tc flow paths (existing/post construction/post BMP) -Existing drainage area shown in EC-1 does not match topography Drainage area adjusted. -Provide drainage area maps for post construction/post BMP	
<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) -Baffle placement is incorrect. Baffles adjusted -Flow through baffles must not short circuit	
<input type="checkbox"/>	b.	Ditches, swales, and channels: Q10/V10. Tractive force (shear stress), capacity and geometry.	
<input checked="" type="checkbox"/>	c.	Dissipaters: Q10 velocities, stone size and dimensions. -Label on the plan sheets Note on plan to see storm schedule	



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<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 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. -Signature, date and seal required on O&M Manual -Plans labeled "Preliminary" will not be approved Preliminary removed.
<input type="checkbox"/>	13.	Draft Stormwater Agreement, Draft Maintenance Agreement
<input type="checkbox"/>	14.	Proposed Site Plan:
<input checked="" type="checkbox"/>	a.	Location/Vicinity Map -Add Wake County Signature Block to Cover Page Signature block added to cover sheet.
<input type="checkbox"/>	b.	North arrow, graphic scale, drafting version date, legend and professional seal
<input checked="" type="checkbox"/>	c.	Existing and proposed contours : plan and profiles for roadways -Erosion control plans must show proposed contours Sheets EC3 and EC4 show proposed contours.
<input checked="" type="checkbox"/>	d.	Boundaries of tract: including project limits -Show entire LOD Recombination plat was submitted to Town for review -Boundaries of tract do not match iMaps – recombination required
<input checked="" type="checkbox"/>	e.	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) -Please show on Site Plan C3 Impervious Summary added to sheet C3
<input type="checkbox"/>	f.	Show all Riparian Buffers [Article 9-21]; (Neuse: [15A NCAC 2B .0714])
<input type="checkbox"/>	g.	Delineation of current FEMA boundaries (floodway, flood fringe & future/0.2%)
<input type="checkbox"/>	h.	Proposed improvements: roads, buildings, parking areas, grassed, landscaped, and natural areas.
<input checked="" type="checkbox"/>	i.	Lot lines , lot numbers, road names, and impervious limit on each lot rounded to nearest whole number -Lot lines do not match iMaps Comment noted.
<input checked="" type="checkbox"/>	j.	Utilities: community water and sewer , plan/profiles, easements and sediment controls. -Show sewer extension with EC sheets Sewer extension sheet is noted on the EC plans.
<input type="checkbox"/>	k.	Stormwater Network: inlets, culverts, swales, ditches, channels and drainage easements.
<input checked="" type="checkbox"/>	l.	TEMPORARY SEDIMENT CONTROLS: locations and dimensions of gravel entrances, diversion ditches, silt fence, sediment basins, inlet protection, etc. -All measures must be inside LOD – Silt fence shown outside LOD Drawings modified to reflect comments -Clearly label LOD on all sheets, missing on EC-3, EC-3, EC-4, etc. -Silt fence outlets needed below stockpile and as needed.
<input checked="" type="checkbox"/>	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. Pad Noted.



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<input type="checkbox"/>	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.).
<input type="checkbox"/>	o.	Stream Protection: Design temporary sediment storage during the construction phase of stream culvert installation on all four-corners of the stream crossing (where applicable) and show on the erosion control plan sheets. Provide erosion control blankets on all permanent slopes of culvert at stream crossing.
<input type="checkbox"/>	p.	Location and requirements for stockpiles (see website for Stockpile Requirements)
<input checked="" type="checkbox"/>	q.	Wake County Construction Sequence (Provide project specific details as needed) Revised as noted - WC Environmental Consultant is Jeevan Neupane, 919-819-8907 . Please revise EC Plans revised as noted
<input type="checkbox"/>	r.	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 checked="" type="checkbox"/>	s.	Wake County Construction Details - Add Wake County detail for silt bag and pad Detail added
<input type="checkbox"/>	t.	Wake County Stabilization Guidelines
<input checked="" type="checkbox"/>	u.	DETAILED COMMENTS REGARDING TEMPORARY SEDIMENT CONTROLS: - Label sizes for skimmers, dissipators, etc. on plan sheets. Labeled as noted
<input type="checkbox"/>	v.	PERMANENT EROSION CONTROLS: locations and dimensions of dissipators, ditch linings, armoring, level spreaders, retaining walls, etc.
<input type="checkbox"/>	w.	DETAILED COMMENTS REGARDING PERMANENT SEDIMENT CONTROLS:
<input checked="" type="checkbox"/>	x.	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>) BMP and access easement shown on site plan (C3) Key notes 2 and 18 - Show, label maintenance easement around perimeter of the SCM and to the right of way.
<input checked="" type="checkbox"/>	y.	DETAILED COMMENTS REGARDING PERMANENT STORMWATER MANAGEMENT: As discussed on 9/13/2022, the stormwater permit (S006112) for Storage Max Rolesville must be revised for change in lot size prior to approval. Comment noted. Upon rezoning approval I will modify the permit.
<input type="checkbox"/>	z.	Proposed stormwater easements, access lanes, and backwater easements.
<input type="checkbox"/>	aa.	A note should be added to the recorded plat distinguishing areas of disconnected impervious
<input type="checkbox"/>	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

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.



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<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 Stormwater Design 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-Up-on 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"/>		<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>Rolesville [7.5.4(A)(4)], Wendell [6.5(M)(4)], Zebulon [151.35(D)]</p>
<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 included in the Stormwater Summary <p>Rolesville [7.5.4(B)(1)], Wendell [6.5(N)(1)], Zebulon [151.36(A)]</p>
<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><u>Erosion Control:</u> This project will require a Land Disturbance Permit if it involves <u>greater than one acre of disturbance</u>. Note: If the land disturbance is part of a common plan of development that is greater than one acre 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.</p>
<input checked="" type="checkbox"/>	20.	<p><u>10-20-1 Minimum Standards</u> - 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 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 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".
Additional Suggested Changes/Comments		
<input type="checkbox"/>	25.	



Wake County Environmental Services Department
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Environmental
Consultant:

[Jeevan Neupane, PE](#)

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Wake County PE:

A handwritten signature in blue ink that reads "Janet S. Boyer".

[Janet S Boyer, PE, CFM](#)

Contact Info:

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[919-856-7422](tel:919-856-7422)