

UNDERGROUND DETENTION SCM DESIGN CHECKLIST

Stormwater Management Division
c/o Development Services Department
 One Exchange Plaza, 4th Floor
 Raleigh, NC 27601
 Telephone (919) 996-3773

I. PROJECT INFORMATION

Project Name: _____ Phase: _____
 Project Address: _____ Disturbed Area (sf): _____
 PIN: _____ Case #: _____ Submittal Date: _____
 Previous Permit numbers (if applicable): _____
 Zoning District: _____
 Legal Name of Owner: _____
 Owner Contact: _____ Phone: _____
 Owner Address: _____
 Design Contact Person: _____ Phone: _____
 Design Contact Email: _____
 The regulatory drainage basin in which the site is located: _____
 The water supply watershed in which the site is located: _____

Function of Facility [check all that apply]:	
<input type="checkbox"/>	Nutrient (Total Nitrogen) Reduction
<input type="checkbox"/>	Green Stormwater Infrastructure
<input type="checkbox"/>	TSS Reduction
<input type="checkbox"/>	Peak Flow Rate Attenuation
<input type="checkbox"/>	1-Year event
<input type="checkbox"/>	10-Year event
<input type="checkbox"/>	100-Year event
<input type="checkbox"/>	Other [_____]
<input type="checkbox"/>	Other [_____]

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- II. **SUBMITTAL REQUIREMENTS** - See COR Stormwater Management Design Manual Chapter 5 for additional guidance. This completed checklist shall be submitted to the City of Raleigh with any proposed Underground Detention. All files shall also be submitted electronically via CD or flash drive.

Routed flows and water surface elevations (WSE) at SCM [as applicable]:			
Storm Event	Inflow	Outflow	WSE
1-Year			
10-Year			
100-Year			
____-Year			
Peak flow rates at immediate point of analysis to which the SCM drains:			
Condition	1-year	10-year	____-year
Pre-development			
Post-development			

General Design Criteria	
<input type="checkbox"/>	Sizing: The design volume of the SCM accounts for the runoff at full build-out from all surfaces draining to it (calculations provided in Stormwater Development Analysis).
<input type="checkbox"/>	Excess Flows: SCM includes an overflow/bypass device for inflow volumes in excess of the peak flow attenuation volume (calculations provided in Stormwater Development Analysis).
<input type="checkbox"/>	Description of Overflow/Bypass:
<input type="checkbox"/>	Dewatering: SCM has a method to draw down any standing water to facilitate maintenance and inspection.
<input type="checkbox"/>	Clean Out After Construction: SCM impacted by sedimentation and erosion control during the construction phase shall be cleaned out and converted to its approved design state.
<input type="checkbox"/>	Maintenance Access: SCM has been provided with adequate access per City standards.
<input type="checkbox"/>	Easements (except for SCMs located on single family residential lots): Includes maintenance access, entire SCM footprint, and an additional 10 ft or more around the SCM.
<input type="checkbox"/>	Single Family Residential Lots: Plats for residential lots that contain an SCM shall include the location of SCM, typical detail of SCM, and note that the SCM on the property is required to meet stormwater regulations and that the property owner may be subject to enforcement actions if the SCM is removed, relocated, or altered without prior approval.

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<input type="checkbox"/>	Operation and Maintenance (O&M) Agreement.
<input type="checkbox"/>	Operation and Maintenance (O&M) Plan.
<input type="checkbox"/>	<i>Operation and Maintenance (O&M) Manual Submittal Checklist.</i>
<input type="checkbox"/>	Erosion Protection: The SCM inlets and outlet have been designed to protect areas downstream of the discharge points from erosion resulting from peak flows for the 10-year storm event.

Specific Underground Detention Design Criteria	
<input type="checkbox"/>	Drainage Area: The drainage area to the underground detention system is 100 acres or less.
<input type="checkbox"/>	Drainage Area: _____ ac
<input type="checkbox"/>	Water Quality Treatment: Structural stormwater controls providing treatment of the water quality volume have been placed upstream of the underground detention system.
<input type="checkbox"/>	Sediment Sump (as applicable): A sediment sump or vault chamber has been provided for detention systems that are in a treatment train with off-line water quality treatment structural controls.
<input type="checkbox"/>	The sump/chamber is sized for 0.1 inches per impervious acre of drainage area.
<input type="checkbox"/>	Vault Requirements (as applicable): A minimum of 3,000 PSI structural reinforced concrete and water stops at construction joints have been specified for the detention vault. Any cast-in-place wall sections have been designed as retaining walls. The maximum depth from finished grade to the vault invert shall be 20 feet.
<input type="checkbox"/>	Pipe Requirements (as applicable): The minimum pipe diameter for underground detention tanks is 36 inches.
<input type="checkbox"/>	Structural Requirements (as applicable): The underground detention system meets all structural requirements for overburden support and traffic loading.
<input type="checkbox"/>	Erosion Protection: A low-flow orifice capable of releasing the erosion protection volume over 24 hours has been provided and has a minimum diameter of 3 inches (unless internal protection is used).
<input type="checkbox"/>	Orifice Diameter: _____ in
<input type="checkbox"/>	An external trash rack or internal protection has been provided to prevent clogging.
<input type="checkbox"/>	Maintenance Access: Access to the underground detention system has been provided in accordance with OSHA standards and requirements.
<input type="checkbox"/>	Access openings have been provided over the inlet pipe and outflow structures.

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The SCM Plan Submittal shall also include the following elements:	
<input type="checkbox"/>	A plan view of the SCM, with grading and appropriate critical spot shots, has been provided.
<input type="checkbox"/>	A profile (showing all relevant component elevations and WSEs) through the riser, dam, and outlet structure/outfall has been provided.
<input type="checkbox"/>	Details of other required SCM elements have been provided.
<input type="checkbox"/>	All supporting design calculations (including all applicable site design calculations and drainage area exhibits) have been provided.

III. PROFESSIONAL CERTIFICATION

Name: _____

Contact Email: _____

Contact Phone Number: _____

Professional Seal:

