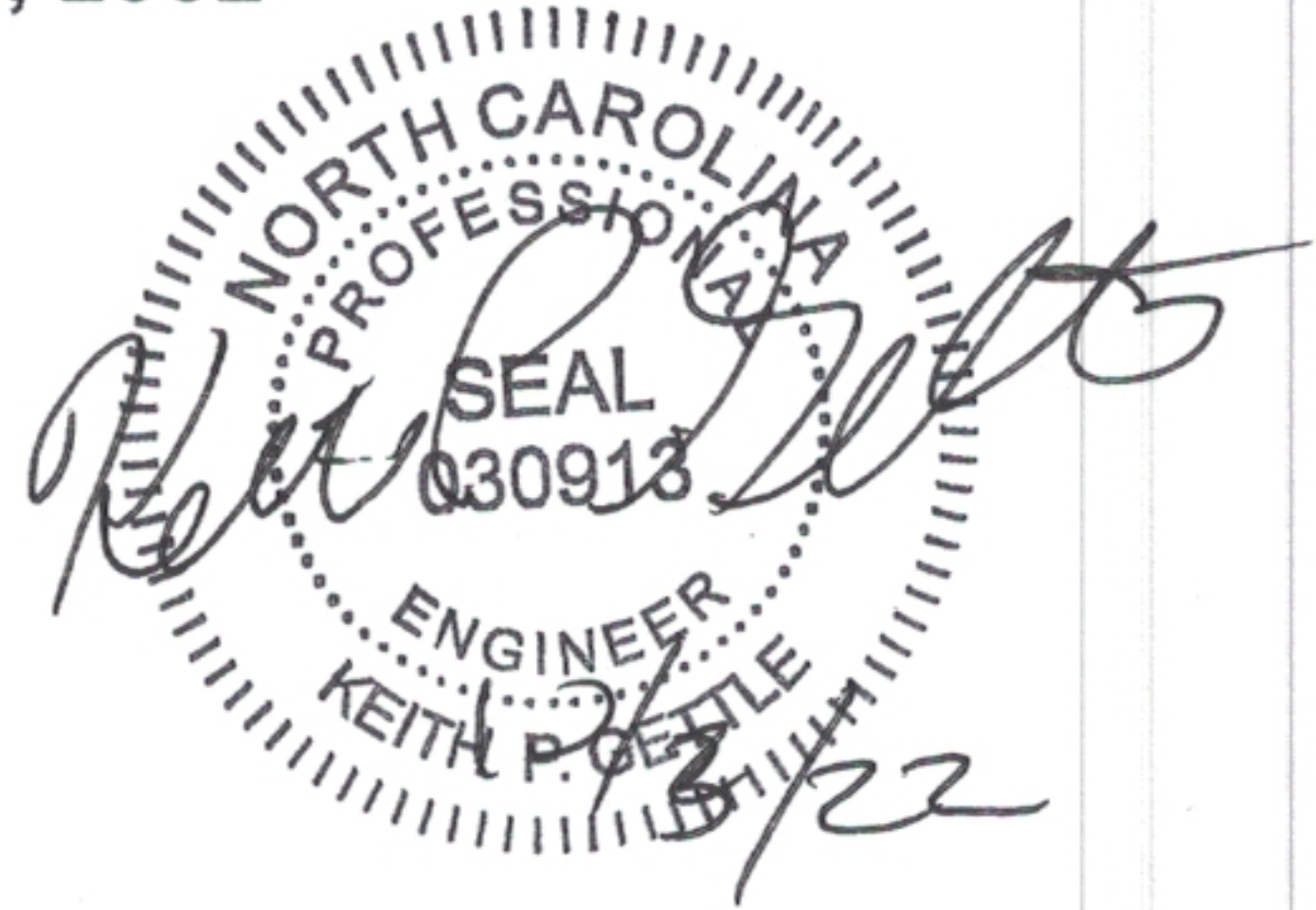


**South Main
403 South Main**

**Rolesville, NC
Wake County**

Erosion Control Calculations

**July 25, 2022
Revised October 3, 2022**



Prepared for:

**Toy Storage, LLC
2700 Gresham lake Rd.
Raleigh, NC 27615**

South Main

Erosion Control Calculations

Project Name: South Main

Project Address: 403 South Main Street
Rolesville, NC

Pins: 1758784708

Latitude: N 35.916120
Longitude: W -78.468430

Zoning: GC

River Basin: Neuse

Watershed: Milburnie Lake

HUC: 0302020107

Developer: Toy Storage, LLC
2700 Gresham lake Rd.
Raleigh, NC 27615

Telephone: (919) 604-0505

Email: Storit@AOL.com

1.0 Site Description

The project consists of a single parcel located at the intersection of Wall Creek Drive and South Main Street in downtown Rolesville. The lot is approximately 1.80 acres (78,408 sq feet) and a portion of the lot on the south property line will be used for the BMP. The parcel is vacant with grassy vegetation with approximately 4195 sq ft of impervious area. The project will consist of a 13,500 sq. feet commercial building.

The site is in the Neuse River Basin, Milburnie Lake Watershed and subject to those rules regarding nutrient management and post storm water runoff.

The parcel is not located within a flood zone as noted per FEMA map 3720175800K, Dated July 19, 2022.

Based on the Wake County SCS soils map (attached) the onsite soils are primarily Durham Series (DuB), soil group B, throughout the tract. The Durham Series soil type is considered to be well drained soils.

2.0 Erosion Control

Analysis for the skimmer basins used the Wake County Tool to size the skimmer basin.

Total disturbance is approximately 2.01 acres.

The site does not have an area of wetlands, and is not within a FEMA mapped flood plain.

Skimmer Basin

Okay

1.53 Drainage Area (Acres)
 5.06 Peak Flow from 10-year Storm (cfs)

2754 Required Volume (ft³)
 2201 Required Surface Area (ft²)
 33.2 Suggested Width (ft)
 66.3 Suggested Length (ft)

52 Trial Top Width at Spillway Invert (ft)
 82 Trial Top Length at Spillway Invert (ft)
 2 Trial Side Slope Ratio Z:1
 2 Trial Depth (ft) (2 to 3.5 feet above grade)

44 Bottom Width (ft)
 74 Bottom Length (ft)
 3256 Bottom Area (ft²)

7499 Actual Volume (ft³) **Okay**
 4264 Actual Surface Area (ft²) **Okay**

10 Trial Weir Length (ft)
 0.5 Suggested Trial Depth of Flow (ft)

10.6 Spillway Capacity (cfs) **Okay**

1.5 Skimmer Size (inches)
 0.125 Head on Skimmer (feet)
 1 Orifice Size (1/4 inch increments)
 3.37 Dewatering Time (days)
 Required 3 to 5 days for Wake County

Skimmer Size (Inches)
1.5
2
2.5
3
4
5
6
8

Channel Design Calculations

Channel	Drain Area, ac	Channel Length, ft	Channel Drop, ft	C	Q2 I, in/hr	Flow cfs	Channel Slope, ft/ft	n	Side Slope:1	Bottom Width, ft	Depth of Flow, ft	Velocity fps	Liner
TD1	0.85	171	4	0.55	5.76	2.7	0.0234	0.024	3.00	2.0	0.28	3.36	Jute Mesh