

SC WaterWays

answering today's water resource challenges for future generations

Stabilized Construction Site Entrances

Breann Liebermann, Water Resources Extension Agent,
Clemson Extension Service

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Introduction

Polluted stormwater is currently the greatest threat to our nation's water quality. The activities of construction sites, and the responsible actions taken to minimize sediment loss over the course of these activities, can have a meaningful and long-term impact on the protection on South Carolina's waterways and ecosystems.

Sediment is particularly harmful because it can:

- Clog stream channels
- Reduce the capacity of reservoirs
- Contribute to flooding issues and property damage
- Smother fish habitats
- Injure or kill aquatic life
- Increase the cost of treating drinking water
- Impair recreation activities

Construction sites can co-exist with the goal of protecting our water resources through the proper use of Best Management Practices (BMPs). One critical BMP is a stabilized construction site entrance. Stabilized construction site entrances are rock pads that remove sediment from vehicle tires before vehicles exit a site.

Stabilized construction site entrances provide several additional benefits, including the following:

- Reduce the amount of sediment tracked off site
- Keep roadways looking neat and tidy
- Improve public perception
- Reduce amount of complaints from public
- Abide by state regulations

Construction site entrances are oftentimes the most visible areas of a construction site to the public;

therefore, putting in the time and effort to correctly install and maintain the entrances can minimize time and effort responding to complaints and addressing public concerns.



No stabilized entrance. Sediment is tracked onto the roadway and rutting has occurred. Photo by Dan Geddings, Sumter County Stormwater.



A properly installed construction entrance keeps the road clear of debris and sediment. Photo by Chuck Jarman, Clemson Extension.

How Do They Work?

Stabilized construction entrances are a temporary sediment control BMP to manage the amount of soil tracked onto roadways by motor vehicle equipment and suspended in runoff from active construction sites.

The entrance pad typically consists of two materials:

1. Geotextile fabric: separates stone from soil below, prevents rutting
2. Stone: removes mud and dirt from vehicle tires

Regulatory Framework

State law requires stabilized construction entrances to be installed and maintained at most construction sites. The SC Department of Health and Environmental Control (SC DHEC) is the permitting authority for land disturbing activities, delegated by the Environmental Protection Agency through the Clean Water Act. SC DHEC administers the Construction General Permit (CGP), which requires sediment control BMPs to be designed, installed, and maintained during construction. This includes stabilized construction site entrances.

The following sites are required to obtain permit coverage through the CGP and install stabilized construction entrances (when appropriate) as required by the CGP:

- Land disturbing activities ≥ 1 acre;
- Land disturbing activities < 1 acre that are part of a larger common plan of development;
- Coastal counties only: Land disturbing activities < 1 acre located within $\frac{1}{2}$ mile of a receiving water body (but not for single family homes not part of a subdivision);
- Sites that are required to seek coverage due to additional requirements beyond that of the 2012 CGP as set forth by the county or city.

Sites that are less than one acre and are not part of a larger common plan or located within a half mile of a receiving water body in a coastal county are not required to obtain coverage under the CGP, unless otherwise mandated by city and county of jurisdiction. However,

they are required to submit a narrative of the Storm Water Pollution Prevention Plan, which should include sediment control and stabilized construction entrances, as appropriate for the site to minimize off-site impacts.

Technical Specifications

Materials:

- Rock material should consist of two to three inch D50 aggregate
- Any non-woven geotextile fabric can be used below the stone pad
- *Tip: avoid sharp-edged stone that could puncture vehicle tires*



No geotextile fabric was used. Rutting has occurred, and stone is being incorporated into soil below. Photo by Scottie Ferguson, Pickens County Stormwater.

Sizing:

- The thickness of the pad should be a minimum of six inches
- The minimum required dimensions of the pad are 24 feet wide by 100 feet long
- Taper the pad out towards the edges of the road to accommodate for vehicles turning into and out of the site
- Dimensions may be modified depending on site conditions
- *Tip: on heavily trafficked sites the pad should be made wide enough for two vehicles to pass each other with room to spare*



Stabilized entrance needs to be made both longer and wider and tapered out towards road. Photo by Dan Geddings, Sumter County Stormwater.



Stabilized entrance with sufficient width and length and is tapered out. Photo by Scottie Ferguson, Pickens County Stormwater.

Siting:

- Stabilized entrances must be installed at every point in a construction site where vehicles are repetitively leaving or entering a public roadway, paved or unpaved
- If the entrance crosses a swale, stream, or other depression, a culvert or bridge can be installed to prevent the banks from eroding
- Construction entrances should be avoided on steep slopes and at curved public roadway sections
- *Tip: planning out a site so that the number of construction entrances is kept to a minimum can reduce the amount of overall maintenance needed*

Installation

A stabilized construction entrance should be installed after the pre-construction meeting and before any other land-disturbing activities occur.

Five easy steps for installation:

1. Clear all vegetation and debris from the pad site
2. Grade the pad site so that surface runoff is diverted into a sediment-trapping device
3. Place down geotextile fabric
4. Install stone
5. If needed, install a culvert pipe across the entrance to allow for adequate drainage

Inspection

Inspections should be conducted on construction entrances:

- At least once every calendar week
- Recommended within 24 hours following a ½ inch or more rainfall event
- Daily in wet weather
- After heavy use

When conducting an inspection, consider the following:

- Is mud and sediment building up in the pad?
- Is mud being tracked onto the roadway?
- Is the stone getting stuck in vehicle tires?
- Is the stone being tracked onto the roadway?
- Are there ruts in the entrance?

Maintenance Checklist

Immediate attention:

- Sweep or brush mud, sediment, and other materials tracked onto public roadways
- Repair broken pavement

After rainfall events:

- Clean out sediment traps

As needed:

- Reshape stone pad
- Wash or replace stone
- Add additional stone
- Use larger stone (if getting stuck in tires or tracked onto roadway)



Sediment that was tracked on the roadway is being swept up to keep the roadway clear. Photo by Chuck Jarman, Clemson Extension.

Maintenance will depend on site conditions, but in general will need to be conducted more frequently in wet weather or during heavy usage.

Construction site entrances can be removed only when the rest of the site is fully stabilized or when they are no longer needed to provide access to the site. The stone material and geotextile fabric should be removed and the entrance area should be brought to grade and stabilized using appropriate stabilization methods.

Additional Resources

- SC DHEC Construction Activities: <http://www.scdhec.gov/Environment/WaterQuality/Stormwater/ConstructionActivities/>
- EPA Best Management Practices- Construction Entrances: <http://water.epa.gov/polwaste/npdes/swbmp/Construction-Entrances.cfm>
- SC DOT Road Design Supplemental Specification- Stabilized Construction Entrance: <http://www.scdot.org/doing/technicalpdfs/suptechspecs/sc-m-815-10.pdf>

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