

Construction Road Stabilization (CRS)

— CRS —



Practice Description

This practice describes the temporary stabilization of construction-access roads and parking areas. The purpose of this BMP is to reduce erosion of temporary and permanent roadbeds between the time of initial clearing and grading and final stabilizations.

Planning Considerations

A construction-exit pad should be provided in conjunction with stabilized construction roads where mud can be removed from construction-vehicle tires before they enter a public road.

If the construction-access road is located in an area with soils that will not support traffic when wet, a geotextile liner located beneath the aggregate will be required to provide stability to the pad.

Construction of stabilized roads throughout the development site should be designed so that construction vehicles are limited to only one ingress and egress point. The existing site contour should be followed as much as possible with slopes of the roads remaining less than 10 percent. Parking areas should be designed at naturally flat areas.

Permanent roads and parking areas should be paved as soon as possible after grading. However, it is understandable that funds for this purpose may not be available in the early phases of the development project. As an alternative, the early application of stone may solve potential erosion and stability problems and eliminate potential costs. Some of the stone will also probably remain in place for use as part of the final base course of the road.

Design Criteria and Construction

Site Preparation

Remove all vegetation and other unsuitable material from the roadway area.

Grading

Stabilize the side slopes of all cuts and fills by grading all slopes to 2:1 or flatter for clay soils and 3:1 or flatter for sandy soils. All exposed slopes should be seeded and/or mulched as soon as possible (see Temporary Seeding, Mulching, and Dust Control).

Aggregate Size

A 6" course of DOT No. 1 aggregate shall be applied immediately after grading or after the completion of the utility installation within the right-of-way. A geotextile may be applied to the roadbed for additional stability.

Drainage

Ensure that proper drainage is provided for and that all drainage along construction roads is directed to sediment control BMPs.

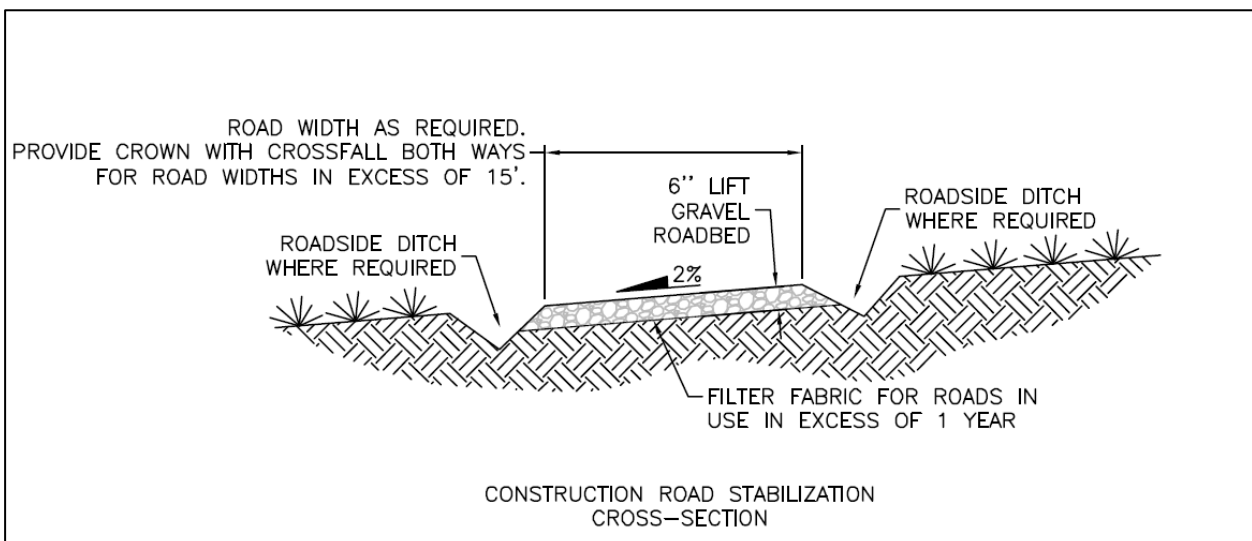


Figure CRS- 1 Construction Road Stabilization

Geotextiles

A non-woven geotextile meeting the requirements shown in the table below for Class IV geotextiles should be used under the rock when the subgrade is soft or the blow count is less than 10.

Table CEP-1 Requirements for Nonwoven Geotextile

Property	Test method	Class I	Class II	Class III	Class IV ¹
Tensile strength (lb) ²	ASTMD 4632 grab test	180 minimum	120 minimum	90 minimum	115 minimum
Elongation at failure (%) ²	ASTMD 4632	≥ 50	≥ 50	≥ 50	≥ 50
Puncture (pounds)	ASTMD 4833	80 minimum	60 minimum	40 minimum	40 minimum
Ultraviolet light (% residual tensile strength)	ASTMD 4355 150-hr exposure	70 minimum	70 minimum	70 minimum	70 minimum
Apparent opening size (AOS)	ASTMD 4751	As specified max. #40 ³	As specified max. #40 ³	As specified max. #40 ³	As specified max. #40 ³
Permittivity sec ⁻¹	ASTMD 4491	0.70 minimum	0.70 minimum	0.70 minimum	0.10 minimum

Table copied from NRCS Material Specification 592.

¹ Heat-bonded or resin-bonded geotextile may be used for classes III and IV. They are particularly well suited to class IV. Needle-punched geotextile required for all other classes.

² Minimum average roll value (weakest principal direction).

³ U.S. standard sieve size.

Width

Roadbeds shall be at least 14feet wide for one-way traffic and 20feet wide for two-way traffic.

Vegetation

All roadside ditches, cuts, fills, and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to the applicable practices contained in this manual.

Common Problems

Consult with a qualified design professional if any of the following occur:

Inadequate runoff control and sediment washes onto public road: install diversions or other runoff-control measures.

Ruts and muddy conditions develop as stone are pressed into soil: increase stone size or pad thickness, or add geotextile fabric.

Maintenance

Reshape roadway as needed for drainage and runoff control.

Inspect stone pad and sediment-disposal area weekly and after storm events or heavy use.

Top-dress with clean, specified stone, as needed, to maintain effectiveness of the practice.

References

BMPs from Volume 1

Chapter 4

Construction-Exit Pad (CEP)	4-6
Land Grading (LG)	4-16
Dust Control (DC)	4-29
Mulching (MU)	4-48
Temporary Seeding (TS)	4-103