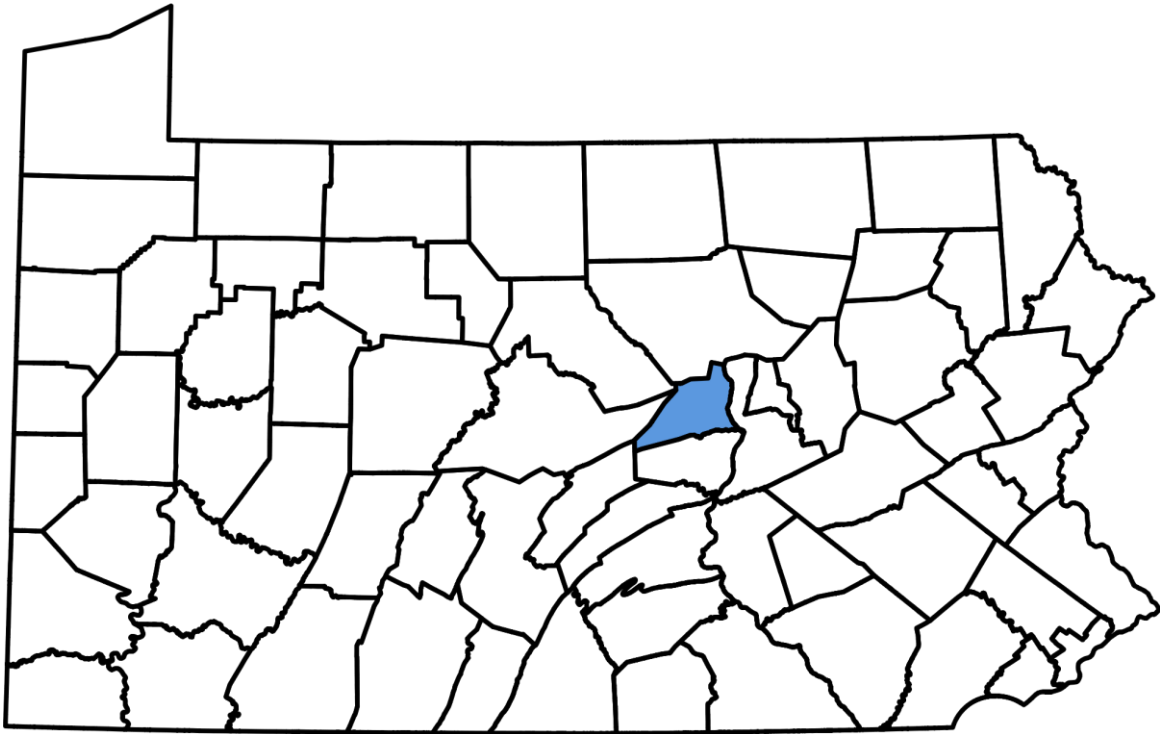


Small Project Erosion and Sediment Pollution Control Guide



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Introduction

In an attempt to alleviate the growing problem of controlling sediment pollution, the Commonwealth of Pennsylvania, through the Department of Environmental Protection (DEP), adopted Chapter 102, Erosion Control Rules and Regulations. Chapter 102 requires that anyone undertaking an earth disturbance activity develop and implement an Erosion and Sediment (E&S) Control Plan. The plan must be submitted to the county conservation district for review if required by the local municipality or if requested by the district. The E&S Plan must be available at all times at the site of the earth disturbance activity, regardless of the size of the project. Failure to have an E&S Plan on site is a violation of Chapter 102.

Remember: Both landowners and contractors may be held responsible for any violations of Chapter 102 regulations.

This guide is intended only for small, low hazard projects where:

- Disturbance is less than one acre (43,560 sq. ft.)
- There are no steep slopes in excess of 10%
- There are no streams or major drainage courses

Contact your local conservation district if there are any questions regarding the suitability of this guide for your project. For larger, more complex projects a detailed Erosion and Sediment Pollution Control Manual is available or contact a consultant to aid in plan development. In addition, check with your local municipality regarding specific ordinances or permit requirements.

Considerations in Plan Development

When developing an E&S Plan keep in mind the goal is to develop an effective and practical plan that you and/or your contractor can readily

implement in the field and easily maintain during construction. The foremost goal of you E&S Plan should be to minimize accelerated erosion and deposition of sediment into waterways, roadways and onto neighboring properties down slope of your earth disturbance activity. Here are several common-sense guidelines to consider in developing and implementing an environment-friendly and contractor-friendly E&S Plan:

- **SAVE EXISTING VEGETATION:** Vegetative cover is the best and most economical protection against soil erosion. Vegetation to be saved should be protected during the construction process. Trees and shrubs should be marked and roped off to protect them from damage by construction equipment. Filling around trees should be avoided.
- **SAVE TOPSOIL FOR REVEGETATING:** All of the topsoil from areas where cuts and fills have been made should be stockpiled and redistributed uniformly after grading. This is key to revegetating a site.
- **MINIMIZE THE AREA AND TIME OF EXPOSURE:** Disturb as little of the area as is required to construct the project. The construction sequence should be planned to keep the size and time of exposure to a minimum. In other words, stabilize disturbed areas as they are completed.
- **AVOID STEEP SLOPES:** Steep sites generally will require more grading than gently sloping sites. Avoid excessive cutting and filling and road grades in excess of 10%.
- **PROTECT ANY DITCHES, STREAMS OR OTHER BODIES OF WATER:** Install temporary controls such as silt fence, compost filter socks, or rock filter berms to protect streams and other water sources from sediment pollution.
- **EROSION CONTROL MEASURES REQUIRE MAINTENANCE:** Compost filter socks deteriorate, silt fences clog, and seeded areas wash out. Schedule regular maintenance to insure properly functioning control measures.

WHAT TO INCLUDE IN AN EROSION & SEDIMENT CONTROL PLAN

- The existing topography of the site - slope or grade of the land, location of any water (streams, ponds, wetlands, springs, etc.) and any other significant features of the site
- The types of soils on the site - refer to County Soil Survey, available at conservation district office

- A description of the proposed alterations of the site
- The amount of runoff from the project area (water flowing across or from the site)
- The staging of earthmoving activities. Determine the sequence in which the earthmoving will occur, always keeping in mind that the most effective method of controlling erosion is to disturb only those areas necessary for construction. Disturbed areas should be stabilized immediately after earthmoving has been completed. In addition, state regulations mandate "...where the activity ceases for more than 20 days, interim stabilization measures shall be implemented promptly"
- Types of control measures, both temporary (such as compost filter socks, silt fence and stone filters) and permanent controls (such as seeding and mulching)

SUGGESTED STAGING OF EARTHMOVING ACTIVITIES

- Install a tire cleaning, stabilized construction entrance (see detail)
- Install temporary control measures, such as compost filter socks, silt fence, etc. (see detail)
- Rough grade site and stockpile topsoil. Temporary protection (compost filter socks or silt fence) should be installed downslope (lower side) of the stockpile or the stockpile should be immediately stabilized with temporary seed (e.g., annual rye-grass) and mulched
- Install and immediately stabilize any water courses (swales, ditches, etc.) with appropriate lining, (e.g., seed, mulch, matting & netting, sod or stone)
- Construct building(s)
- Finish grading and permanently stabilize (seed, mulch, sod, etc.) the site

SEEDING AND MULCHING SPECIFICATIONS

Time of Seeding: For best results, grass and legume seedlings should be completed in the Spring. Seedlings that are primarily grass are best suited for Fall seeding. However, through proper seed selection methods, disturbed sites may be revegetated at almost any time from Spring to Fall. An application of mulch should be considered at recommended rates.

Surface Preparation: Spread topsoil and prepare a smooth seed bed by rolling and/or raking.

Lime and Fertilizer: Lime and fertilizer should be applied in accordance with soil test recommendations. If soil test results are not available, apply at least 6 tons of agricultural grade limestone and 1000 pounds of 10-20-20 fertilizer per acre.

Seeding Methods: Apply seed at required rates. If legumes are planted be sure to inoculate the seed with the correct legume inoculant. Seed may be broadcast on the surface and a layer of mulch applied at the necessary rates. Hydroseeding is another method of seeding where the seed, fertilizer and mulch are mixed with water to form an emulsion. This method should only be done with the correct equipment or by professionals.

Mulching: All earthmoving area, regardless of seeding method, should be mulched to reduce erosion and aid seed germination. Hay and straw are the preferred mulches and should be applied to produce a layer $\frac{3}{4}$ to 1 inch deep. Generally 3 tons of mulch per acre approximately 3 bales per 1,000 sq. ft. is sufficient.

Temporary Controls

Detail any temporary erosion control practices that will be implemented. List each control separately, explain why it is needed, and when it can safely be removed. Drawings and designs for any practice not illustrated in this guide should be attached and referenced in this section.

Permanent Controls

Prior to completion of the project, state law requires that steps be taken to provide permanent stabilization. Re-establishment of vegetation, rip-rap, pavement, etc. are examples of permanent controls. Descriptions for re-vegetating should include the seeding mixture to be used, top soil applications, and lime and fertilizer instructions.

Maintenance Program

All erosion control practices require maintenance to function properly. For example, compost filter socks and filter fabric fences should be cleaned when they are at half their capacity. Newly seeded areas may fail to germinate, or be washed out by heavy rain. Please describe efforts you will make to insure that all erosion control practices continue to function properly and specify who will be responsible for maintenance.

****THIS PLAN MUST BE ON SITE AT ALL TIMES DURING EARTHMOVING****

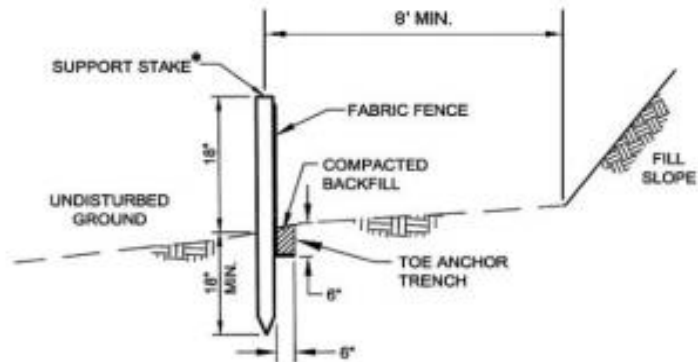
SEEDING MIXTURES		
Species Mix	Pounds/Acre	Pounds/1,000 sq.ft.
Slopes & Banks (non-mowed) Well Drained/Sunny		
Crownvetch plus	10	0.2 (3 oz.)
Tall Fescue, or	20	0.5 (8 oz.)
Perennial Ryegrass	20	0.5 (8 oz.)
Flat, Pea, plus	20	0.5 (8 oz.)
Tall Fescue or	20	0.5 (8 oz.)
Perennial Ryegrass	20	0.5 (8 oz.)
Slopes & Banks (mowed) Variable Drainage/Shaded		
Birdsfoot Trefoil, plus	6	0.15 (3 oz.)
Tall Fescue, plus	30	0.7 (11
	oz.)	
Redtop	3	0.1 (2 oz.)
Tall Fescue, plus	60	1.4 (22
	oz.)	
Redtop	3	0.1 (2 oz.)
Slopes & Banks (mowed) Well Drained/Shaded		
Tall Fescue	60	1.4 (22 oz.)
Red (fine) Fescue, or	35	0.8 (13 oz.)
Kentucky Bluegrass, plus	25	0.6 (10 oz.)
Redtop or	3	0.1 (2 oz.)
Perennial Ryegrass	15	0.3 (3 oz.)
Tall Fescue, plus	40	1.0 (16
	oz.)	
Red (fine) Fescue	10	0.2 (3 oz.)
Temporary Seedings		
Spring Oats, or	96	2.2 (35 oz.)
Winter Wheat, or	180	4.1 (66 oz.)
Winter Rye, or	168	3.8 (62 oz.)
Annual Ryegrass	40	1.0 (16 oz.)

Standard Silt Fence (18" High)

*STAKES SPACED @ 8' MAX.
USE 2" x 2" (± 3/8") WOOD
OR EQUIVALENT STEEL
(U OR T) STAKES



JOINING FENCE SECTIONS



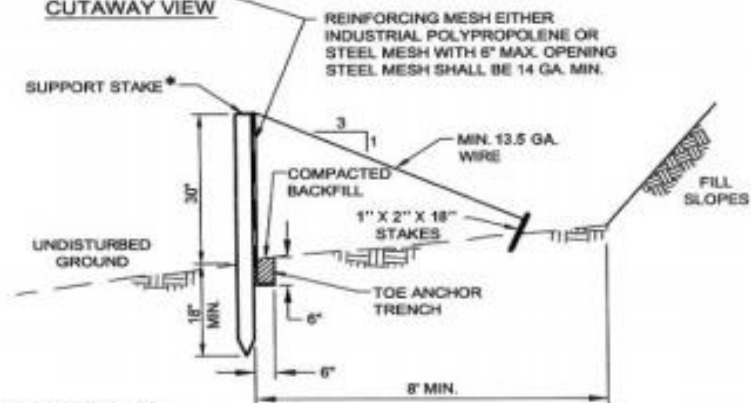
ELEVATION VIEW

Reinforced Silt Fence (30" High)



JOINING FENCE SECTIONS

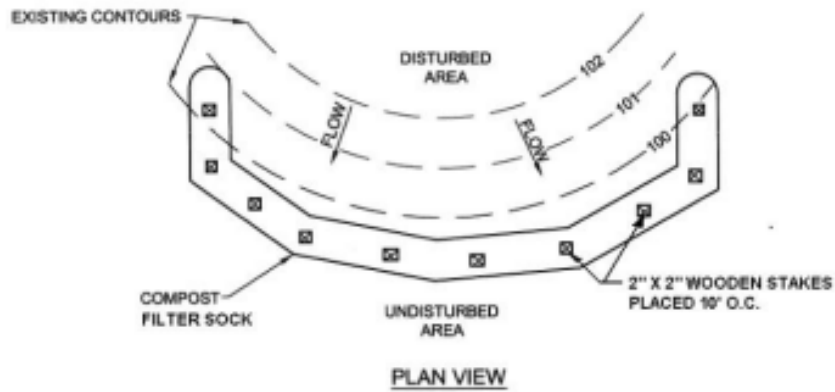
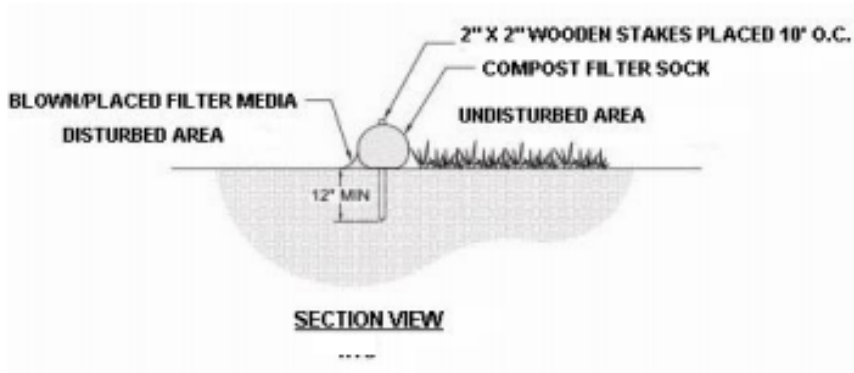
CUTAWAY VIEW



*STAKES SPACED @ 8' MAX.
USE 2" x 2" x 48" (± 3/8") WOOD OR
EQUIVALENT STEEL (U OR T) STAKES

Slope - Percent	Maximum Slope Length (ft) Above Fence	
	18" High Fence	30" High Fence*
2 (or less)	150	500
5	100	250
10	50	150
15	35	100

Compost Filter Sock



Slope - Percent	Maximum Slope Length (ft) Above Filter Sock			
	12" (min diameter) Filter Sock	18" (min diameter) Filter Sock	24" (min diameter) Filter Sock	32" (min diameter) Filter Sock
2 (or less)	500	700	1000	1300
5	250	350	500	650
10	150	250	300	400
15	100	200	250	350

