E&S Plan No. _____

Date Received:_____

Date Issued: _____

Fee submitted:_____

SMALL PROJECT EROSION & SEDIMENT CONTROL (E&S) PLAN

PLEASE PRINT. *Incomplete information may cause a delay in processing and approval. If you are unsure of specific information, please inquire.*

Earth disturbance activity totaling **5,000 square feet or more** is required to have a written Erosion and Sediment Control (E&S) Plan according to state regulations. This document was developed by the Clarion Conservation District to assist small project sites in meeting this requirement. **Earth disturbance activities totaling 1 acre or more are required to obtain a NPDES Permit.**

Landowner Name: _____

Mailing Address (Street)_____

City/State/Zip_____

Phone Number_____Email:_____

Plan Preparer Name:_____

Mailing Address (Street)_____

City/State/Zip_____

Phone Number_____Email:_____

Excavator/Contractor Name:_____

Mailing Address (Street)_____

City/State/Zip_____

Phone Number_____Email:_____

I. Project Specifications & Location Information

Project Name:_____

Project Location (Municipality/Site Address):_____

What is the total square footage of <u>new</u> impervious area (i.e. paved areas, roof tops, sidewalks, etc.) which will be present on your site following your new construction? _____

Does this project require a stormwater management plan or any other municipal approvals? Yes_____No_____
If yes, list approvals needed _____

***Please include an 8 ½ X 11-inch copy of the correct USGS 7.5-minute topographic map showing the project limits and surrounding areas.**

Briefly describe your project and the extent of earthmoving.

_____

_____

_____

Estimated dates for project start and completion: START_____END_____

Project area (total project site):_____acres

Disturbed area: _____acres / sq. ft.

II. Water & Wetlands Information:

Stream Name/ Nearest Receiving Stream: _____

Chapter 93 Designation for Stream:_____

Is the earth disturbance in a floodway or within 50 feet of a stream? *Yes_____ No _____

Will there be any direct discharges to a stream or wetland area? * Yes____ No _____

**If yes to either of these, a Chapter 105 permit may be required. Contact the CD or the NWRO to determine.*

Has a wetland determination been made? Yes_____ No _____

III. Soils Information

Are there any naturally occurring geologic features or soil conditions that may potentially cause pollution during earth disturbance activities? Yes _____ No _____

*Include a copy of Soils Map Sheet and soils description from the NRCS Web Soil Survey.

https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Type of Soil	Slope	Erosion Hazard?	Hydric	Limitations	Resolutions

Additional Sheets may be attached if more space is needed.

IV. Proper measures for recycling or disposal of materials:

Procedures which ensure that the proper measures for the recycling or disposal of materials associated with or from the project site will be undertaken in accordance with the Chapter 102 regulations**.**

Are there any off- site locations where material will be taken? *Yes_____No_____

*IF YES: Please include map of off-site disposal location and site-specific information.

Is any off-site drainage proposed or existing? Yes_____ No_____

*IF YES: Please provide further information.

Are there any thermal impacts to surface waters of the Commonwealth? Yes_____ No_____

Required: Should any measures contained within this plan prove incapable of adequately removing sediment from onsite flows prior to discharge, or of stabilizing the surface involved, additional measures must be immediately implemented by the property owner to eliminate all such problems.

V. BMPs and Erosion Sediment Control Plan

The implementation and maintenance of erosion and sediment control BMP's (best management practices) are required to minimize the potential for accelerated erosion and sedimentation for all earth disturbances. These controls must be installed prior to any earth disturbance on the site and must remain in place and in good working order until the site is stabilized.

TEMPORARY CONTROLS

This section details any and all temporary erosion control practices that will be implemented in your project. Check each temporary control that will be used:

_____ Rock Construction Entrance *(*see standard construction detail #3-1 on page 8)*

_____ Filter Fabric Fence / Silt Fence *(*see standard construction detail #4-7 on page 11)*

_____ Compost Filter Sock *(*see standard construction detail #4-1 and Figure 4.2 on page 9 and 10)*

_____ Erosion Control Blanket *(*see standard construction detail #11-1 on page 13)*

_____ Rock Filters *(*see standard construction detail # 4-14 on page 16)*

_____ Compost Filter Sock Sediment Trap *(*see standard construction detail #3-11 on page 12)*

_____ Temporary Seeding/Mulching (*<u>required</u> if inactive for 4 or more days Appendix 1 on page 7)*

_____ Swale, Ditch or Channel *(*see standard construction detail #6-1 on page 18)*

_____ Vegetative Filter Strip *(*see Figure 4.5 on page 17)*

_____ Concrete Washout *(*see Figure 3.18 on page 14)*

_____ Pumped Water Filter Bag *(*see standard construction detail #3-16 on page 15)*

_____ Other -List:

All of the above temporary erosion and sediment control best management practices must be installed and maintained according to the PA Department of Environmental Protection's Erosion & Sediment Pollution Control Program Manual. Also required is a **maintenance program** which provides for inspection of BMP's on a weekly basis and after each measurable rainfall event, including the repair of the BMP's to ensure effective and efficient operation.

I agree to **inspect the BMP's, *at a minimum,* on a weekly basis and after each measurable rainfall event.** I ensure the immediate repair of any BMP that requires such. Repairs and maintenance include, but are not limited to, the following: removal of sediment accumulated in the filter when sediment reaches 1/2 the height of the filter, repair or replacement of any filtering device that has become damaged, reapplying seed and/or mulch as necessary to achieve stabilization, and adding more rock if the voids in the rock become clogged with sediment**. I also agree to maintain a log of my inspections and repairs and have the log available on site for review by Conservation District and/or DEP inspectors.** Any waste materials will be properly disposed of or recycled.

Signature of person responsible for BMP maintenance: _____

Type or Print Name: _____ Title: _____

Prior to the completion of the project, state law requires that completion of any stage or phase of the earth disturbance activity have immediate seeding, mulching or other protection from accelerated erosion and sedimentation. Implementation and maintenance of BMP's (Best Management Practices) are required until the completion of permanent stabilization of the disturbed area. Types of permanent stabilization include: (1) uniform 70% perennial vegetative cover, with density capable of resisting erosion or (2) other acceptable BMPs that permanently minimize accelerated erosion and sedimentation. All disturbed areas must be protected to prevent accelerated erosion. In other words, soil cannot be left exposed. When establishing new vegetation, the seed type/mixture to be used, top soil applications, lime and fertilizer should all be considered. It is highly recommended that soil testing be taken to determine proper soil amendments.

<u>PERMANENT CONTROLS</u>

This section details any and all <u>permanent</u> erosion control practices that will be implemented in your project. Check each permanent control that will be used:

_____ Grass or Lawn Vegetation

_____ Stone / Gravel

_____ Landscape Vegetation (trees, shrubs, ground cover, etc.)

_____ Pavement / Concrete

_____ Other (List)

Who will be responsible for the final stabilization, seeding and mulching of the earth disturbance?

(Name & Address) _____

VI. SEQUENCE OF CONSTRUCTION

In order for an erosion and sediment control plan to be effective all phases of construction must take place in an orderly sequence. Every effort should be made to minimize the amount of earth to be disturbed and limit the time disturbed earth is exposed to the forces of erosion. The first step in nearly all projects would be the installation of sediment barriers or trap below the project and installation of any needed practices to handle run-off onto the project. The sequence should then describe the various construction steps necessary to complete the project and end with removal of all temporary controls after final stabilization is complete. Please use the space below and **label each step in numerical order**. (Additional pages may be attached if needed.)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

VII. CERTIFICATION

As the landowner/developer, I certify that this erosion and sediment control plan will be implemented and maintained as described in the plan. This plan will be available at all times at the project site during the earthmoving activity and until permanent/final stabilization has been achieved.

Signature: _____ Date: _____

What do I submit to the Conservation District for review and approval?

- plan drawing(s).
- completed and signed erosion and sediment control plan.
- USGS topographic map with the project location indicated.
- soils map with the project location indicated.
- Erosion & Sediment Pollution Control Plan Review Application.
- Plan review fee made payable to Clarion County Conservation District.

Submit this information to:

Matt Kerr, E&S Technician

Clarion Conservation District

249 South 2nd Ave.

Clarion, PA 16214

mkerrccd@gmail.com

If you have any questions regarding the development of this E&S plan for your project, please contact the District at 814-393-6018 or 814-221-1941.

Appendix 1
Recommended Seed Mixes and Rates of Application

No.	Species	Seeding Rate (lb./acre)
1	Birdsfoot trefoil (1)	8
	Redtop	3
2	Creeping red fescue (2)	30
	Perennial ryegrass	10
3	Birdsfoot trefoil (1)	8
	Timothy	4
4	White clover	1
	Kentucky bluegrass	6
	Timothy	2
5	"Lathco" flatpea	20
	Tall fescue	20
	Perennial ryegrass	20
6	Creeping Bentgrass	10
	Creeping Red Fescue	10
	Redtop	10
7	Creeping Red Fescue	40
	Switchgrass	18
	Annual Ryegrass	18
	Timothy	16
	Alsikes Clover	5
	Red Top	3

(1) Recommended for somewhat poorly and poorly drained soils in partial shade to full sunlight.
(2) Recommended for well drained to moderately well drained soils in heavy shade.

Fertilization: Liming and fertilizer for all of the listed mixes shall be applied as required to obtain a uniform 70% erosion resistant perennial vegetative cover. The following rates, per acre, are recommended by the Department for permanent seeding application rate.

a. 6 ton/acre of agricultural limestone
b. 1,000 lbs/acre of 10-20-20 fertilizer

Check Here if using this BMP.

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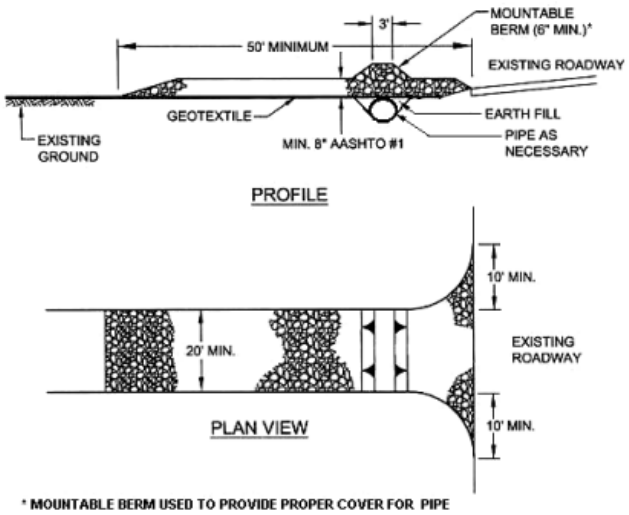
STANDARD CONSTRUCTION DETAIL # 3-1
Rock Construction Entrance



Modified from Maryland DOE

Remove topsoil prior to installation of rock construction entrance. Extend rock over full width of entrance.

Runoff shall be diverted from roadway to a suitable sediment removal BMP prior to entering rock construction entrance.

Mountable berm shall be installed wherever optional culvert pipe is used and proper pipe cover as specified by manufacturer is not otherwise provided. Pipe shall be sized appropriately for size of ditch being crossed.

MAINTENANCE: Rock construction entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. All sediment deposited on paved roadways shall be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on roadway, extend length of rock construction entrance by 50 foot increments until condition is alleviated or install wash rack. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.

Check Here if using this BMP.

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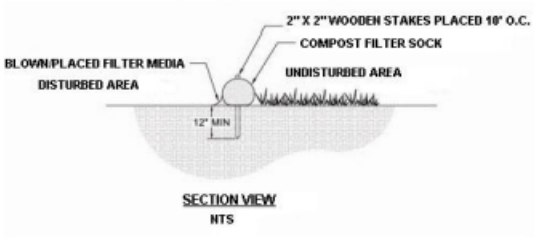
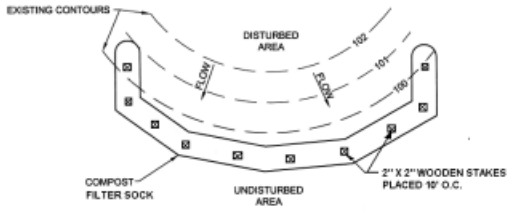
STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK



SECTION VIEW
NTS



PLAN VIEW
NTS

Filtrexx

Sock fabric shall meet standards of Table 4.1. Compost shall meet the standards of Table 4.2.

Compost filter sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 8 feet up slope at 45 degrees to the main sock alignment (Figure 4.1). Maximum slope length above any sock shall not exceed that shown on Figure 4.2. Stakes may be installed immediately downslope of the sock if so specified by the manufacturer.

Traffic shall not be permitted to cross filter socks.

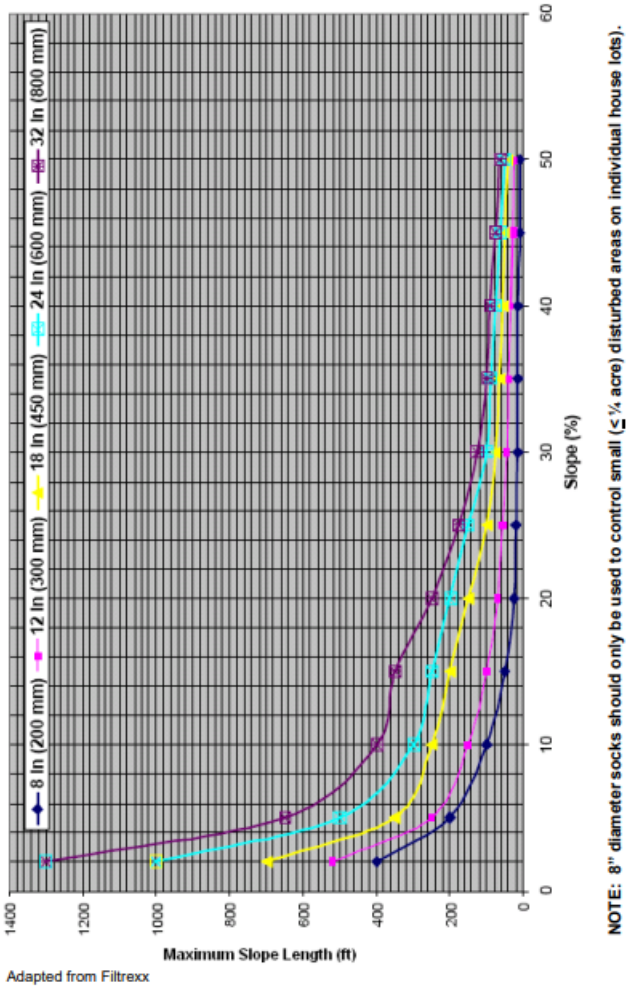
Accumulated sediment shall be removed when it reaches half the aboveground height of the sock and disposed in the manner described elsewhere in the plan.

Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

Biodegradable filter socks shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.

Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed. In the latter case, the mesh shall be cut open and the mulch spread as a soil supplement.

FIGURE 4.2
MAXIMUM PERMISSIBLE SLOPE LENGTH ABOVE COMPOST FILTER SOCKS



NOTE: 8" diameter socks should only be used to control small (≤¼ acre) disturbed areas on individual house lots).

Adapted from Filtrexx

Check Here if using this BMP.

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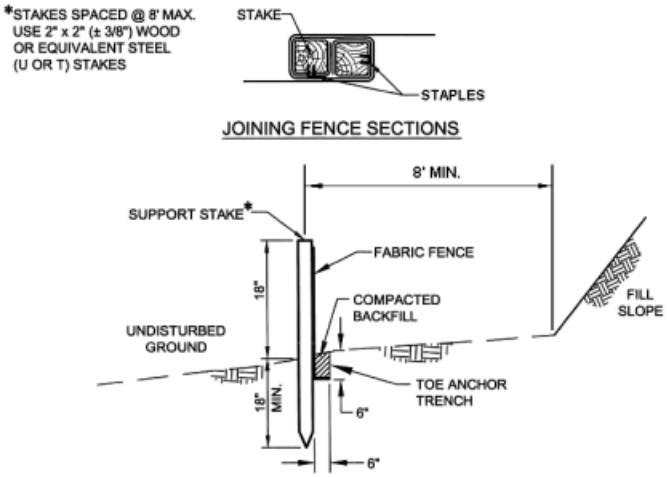
STANDARD CONSTRUCTION DETAIL # 4-7
Standard Silt Fence (18" High)



PA DEP

Fabric shall have the minimum properties as shown in Table 4.3.

Fabric width shall be 30" minimum. Stakes shall be hardwood or equivalent steel (U or T) stakes.

Silt fence shall be placed at level existing grade. Both ends of the fence shall be extended at least 8 feet up slope at 45 degrees to the main fence alignment (see Figure 4.1).

Sediment shall be removed when accumulations reach half the aboveground height of the fence.

Any section of silt fence which has been undermined or topped shall be immediately replaced with a rock filter outlet (Standard Construction Detail # 4-6).

Fence shall be removed and properly disposed of when tributary area is permanently stabilized.

Check Here if using this BMP.

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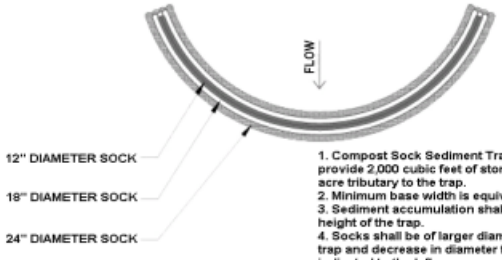
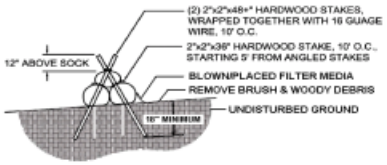
STANDARD CONSTRUCTION DETAIL #3-11
Compost Sock Sediment Trap



1. Compost Sock Sediment Trap shall be sized to provide 2,000 cubic feet of storage capacity for each acre tributary to the trap.
2. Minimum base width is equivalent to the height.
3. Sediment accumulation shall not exceed 1/3 the total height of the trap.
4. Socks shall be of larger diameter at the base of the trap and decrease in diameter for successive layers as indicated to the left.
5. Ends of the trap shall be a minimum of 1 foot higher in elevation than the mid-section, which shall be located at the point of discharge.

PLAN VIEW



Adapted from Filtrexx

STAKING DETAIL

Sock material shall meet the standards of Table 4.1. Compost shall meet the standards of Table 4.2.

Compost sock sediment traps shall not exceed three socks in height and shall be stacked in pyramidal form as shown above. Minimum trap height is one 24" diameter sock. Additional storage may be provided by means of an excavated sump 12" deep extending 1 to 3 feet upslope of the socks along the lower side of the trap.

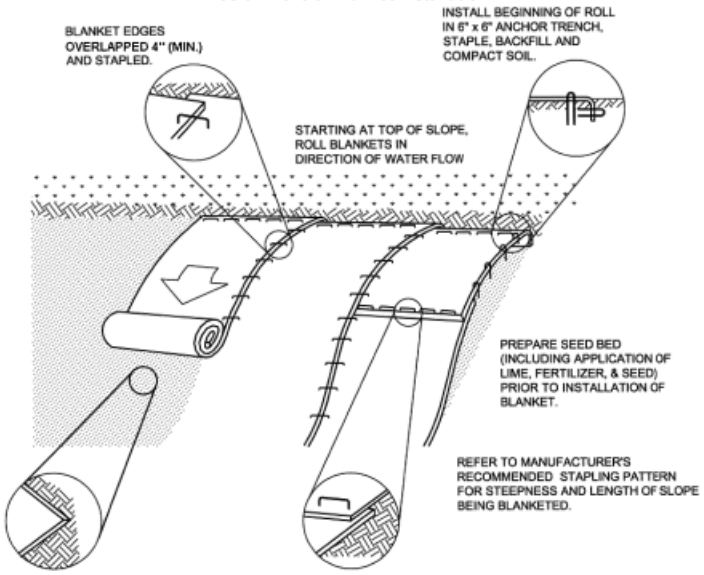
Compost sock sediment traps shall provide 2,000 cubic feet storage capacity with 12" freeboard for each tributary drainage acre. (See manufacturer for anticipated settlement.)

The maximum tributary drainage area is 5.0 acres. Since compost socks are "flow-through," no spillway is required.

Compost sock sediment traps shall be inspected weekly and after each runoff event. Sediment shall be removed when it reaches 1/3 the height of the socks.

Photodegradable and biodegradable socks shall not be used for more than 1 year.

STANDARD CONSTRUCTION DETAIL # 11-1
Erosion Control Blanket Installation



Source Unknown

Seed and soil amendments shall be applied according to the rates in the plan drawings prior to installing the blanket.

Provide anchor trench at toe of slope in similar fashion as at top of slope.

Slope surface shall be free of rocks, clods, sticks, and grass.

Blanket shall have good continuous contact with underlying soil throughout entire length. Lay blanket loosely and stake or staple to maintain direct contact with soil. Do not stretch blanket.

The blanket shall be stapled in accordance with the manufacturer's recommendations.

Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a minimum uniform 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 4 calendar days.

Check Here if using this BMP.

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Check Here if using this BMP.

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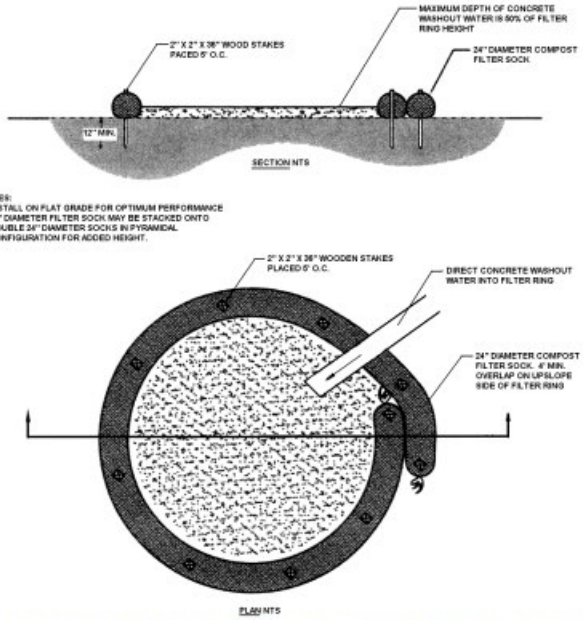
Filtrexx

FIGURE 3.18
Typical Compost Sock Washout Installation



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.

Check Here if using this BMP.

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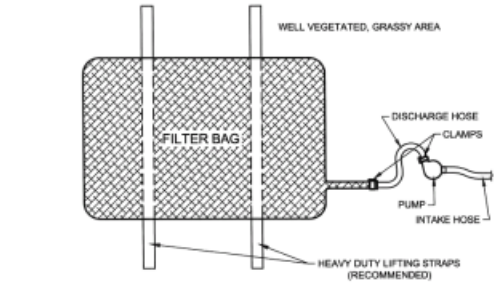
STANDARD CONSTRUCTION DETAIL # 3-16
Pumped Water Filter Bag



PLAN VIEW

ELEVATION VIEW

PA DEP

Low volume filter bags shall be made from non-woven geotextile material sewn with high strength, double stitched "J" type seams. They shall be capable of trapping particles larger than 150 microns. High volume filter bags shall be made from woven geotextiles that meet the following standards:

Property	Test Method	Minimum Standard
Avg. Wide Width Strength	ASTM D-4884	60 lb/in
Grab Tensile	ASTM D-4632	205 lb
Puncture	ASTM D-4833	110 lb
Mullen Burst	ASTM D-3786	350 psi
UV Resistance	ASTM D-4355	70%
AOS % Retained	ASTM D-4751	80 Sieve

A suitable means of accessing the bag with machinery required for disposal purposes shall be provided. Filter bags shall be replaced when they become ½ full of sediment. Spare bags shall be kept available for replacement of those that have failed or are filled. Bags shall be placed on straps to facilitate removal unless bags come with lifting straps already attached.

Bags shall be located in well-vegetated (grassy) area, and discharge onto stable, erosion resistant areas. Where this is not possible, a geotextile underlayment and flow path shall be provided. Bags may be placed on filter stone to increase discharge capacity. Bags shall not be placed on slopes greater than 5%. For slopes exceeding 5%, clean rock or other non-erodible and non-polluting material may be placed under the bag to reduce slope steepness.

No downslope sediment barrier is required for most installations. Compost berm or compost filter sock shall be installed below bags located in HQ or EV watersheds, within 50 feet of any receiving surface water or where grassy area is not available.

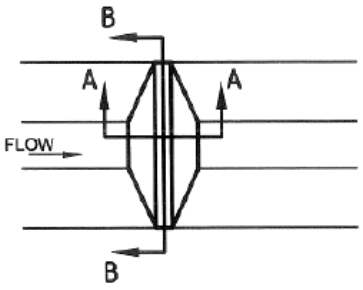
The pump discharge hose shall be inserted into the bags in the manner specified by the manufacturer and securely clamped. A piece of PVC pipe is recommended for this purpose.

The pumping rate shall be no greater than 750 gpm or ½ the maximum specified by the manufacturer, whichever is less. Pump intakes shall be floating and screened.

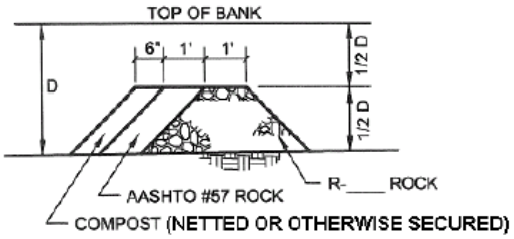
Filter bags shall be inspected daily. If any problem is detected, pumping shall cease immediately and not resume until the problem is corrected.

STANDARD CONSTRUCTION DETAIL # 4-14
Rock Filter

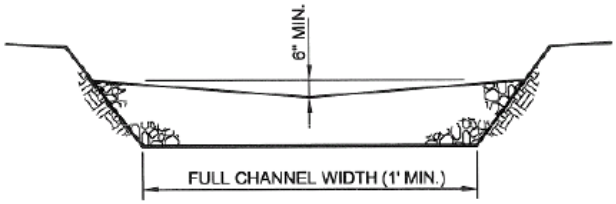
Check Here if using this BMP.



PLAN VIEW



SECTION A-A



SECTION B-B

PA DEP

FOR 3' ≤ D USE R-4
FOR 2' ≤ D < 3' USE R-3
NOT APPLICABLE FOR D < 2'

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

ROCK FILTER NO.	LOCATION	D (FT.)	RIPRAP SIZE

Sediment shall be removed when accumulations reach 1/2 the height of the filter.

Immediately upon stabilization of each channel, installer shall remove accumulated sediment, remove rock filter, and stabilize disturbed areas.

Check Here if using this BMP.

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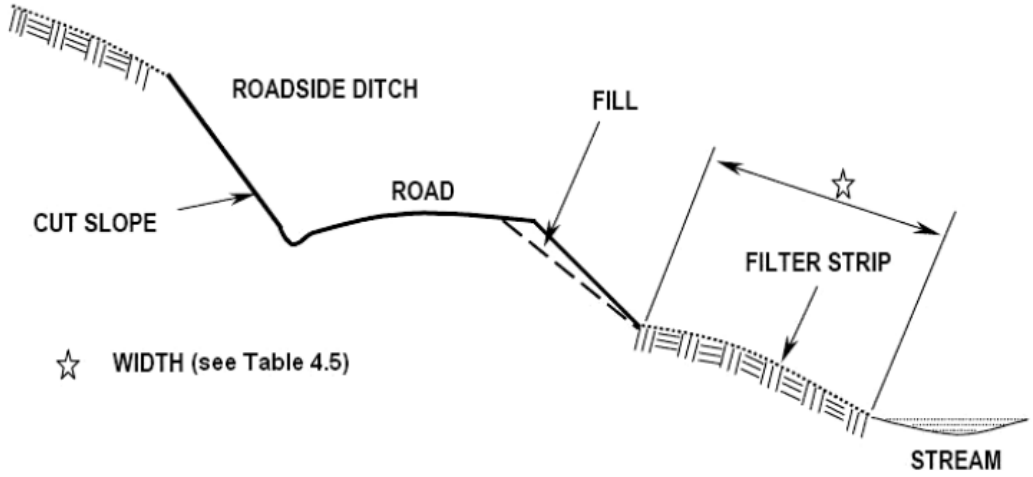
FIGURE 4.5
Vegetative Filter Strip



PA DEP

TABLE 4.6
Minimum Filter Strip Widths for Sediment Removal

Land Slope (%)*	Minimum Filter Strip Width (ft.)
< 10	50
20	65
30	85
40	105
50	125
60	145
70	165

* Land Slope is at location of filter strip.

Adapted from Professional Timber Harvesters Action Packet

Check Here if using this BMP.

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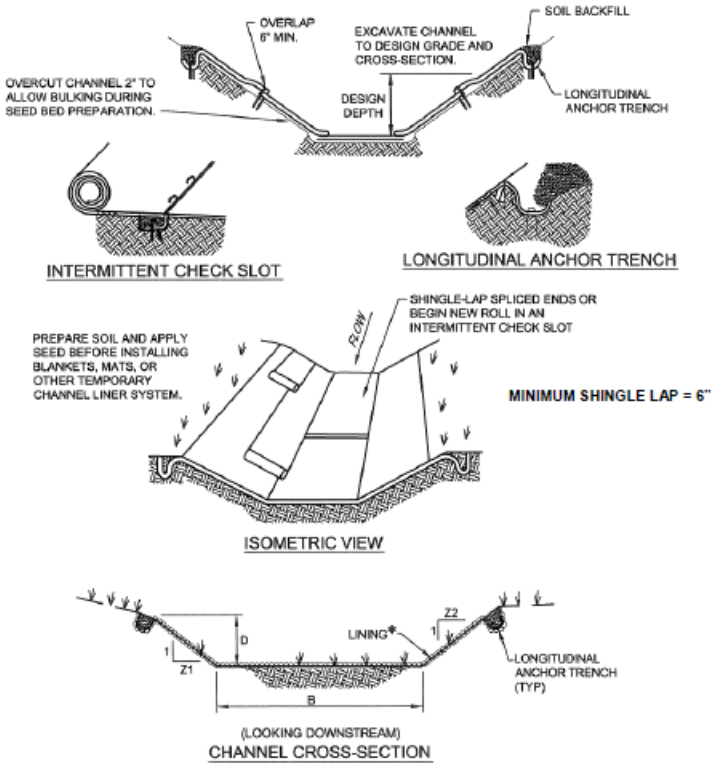
STANDARD CONSTRUCTION DETAIL # 6-1
Vegetated Channel



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, AND VEGETATIVE STABILIZATION SPECIFICATIONS FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION.

Adapted from Salix Applied Earthcare - Erosion Draw 5.0

NOTE: This table is intentionally blank and should be filled in by the plan preparer.

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING*

Anchor trenches shall be installed at beginning and end of channel in the same manner as longitudinal anchor trenches.

Channel dimensions shall be constantly maintained. Channel shall be cleaned whenever total channel depth is reduced by 25% at any location. Sediment deposits shall be removed within 24 hours of discovery or as soon as soil conditions permit access to channel without further damage. Damaged lining shall be repaired or replaced within 48 hours of discovery.

No more than one third of the shoot (grass leaf) shall be removed in any mowing. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Excess vegetation shall be removed from permanent channels to ensure sufficient channel capacity.