

6.1.6 Runoff Diversion - Compost Filter Sock

PURPOSE & DESCRIPTION

Filtrex SiltSoxx® (Soxx) is a three-dimensional tubular runoff and erosion control device used for **diversion or redirection of runoff** otherwise flowing to disturbed or highly erodible areas on and around construction activities. Runoff diversion can be used as temporary or permanent runoff diversion device used to prevent soil erosion during excavation, or prior to erosion control practice installation, vegetation establishment, or final stabilization.

APPLICATION

Runoff diversion is generally used upslope of areas undergoing excavation. Runoff diversion is effective at diverting sheet flow runoff coming from stabilized areas and otherwise flowing to unstable or bare soils while excavation and grading is in progress. Runoff diversion should direct runoff flows to stabilized channels, heavily vegetated areas, on to flat surfaces, infiltration zones, collection ponds, or storm inlets. Runoff diversion can also be used for temporary diversion on paved surfaces to protect disturbed soils adjacent to paved areas. Where hill slopes are greater than 5%, hydraulic shear stress is greater than 3 lbs/ft² (15 kg/m²), or runoff velocity is greater than 6 CFS (0.17 CMS) additional erosion control measures to help stabilize the area where flow is being directed and potentially concentrated or channeled should be utilized (KYTC, 2006). Filtrex channel protection (3.5) may be used to stabilize channels where runoff is conveyed or concentrated. Runoff diversion devices and practices should be utilized early in the soil disturbance and construction process. Appropriate applications for runoff diversion devices include (Fifield, 2001):

- diversion of runoff away from disturbed areas and to stabilized outlets or storm inlets,
- diversion of sediment-laden water to a sediment containment or storm water treatment system,
- diversion of runoff into a conveyance channel to improve site working conditions (but does not otherwise increase erosion),
- prevention of sediment-laden runoff or storm water from leaving site perimeter.

For temporary applications, runoff diversion does not need to be seeded; however, for permanent runoff diversion the device should be direct seeded at the time of application, as vegetation will prevent UV degradation of the device. Runoff diversion may also be used in sensitive environmental areas, where migration of wildlife may be impeded by the use of fences or trenching may damage plant roots.

It is possible to drive over runoff diversion during construction; however, these areas should be immediately repaired by manually moving back into place, if disturbed. Continued heavy construction traffic may destroy the fabric, reduce the dimensions, and reduce the effectiveness of the runoff diversion.

INSTALLATION

1. Runoff diversion used for runoff and erosion control shall meet Filtrex Soxx Mesh Material and Filtrex Certified FilterMedia specifications.
2. Call Filtrex at 877-542-7699 or visit www.filtrex.com for a current list of installers and distributors of Filtrex products.
3. Runoff diversion will be placed at locations indicated on plans as directed by the Engineer.
4. Runoff diversion shall be installed above and adjacent to areas of unprotected soil or areas prone to soil erosion.

5. Runoff diversion shall be installed where 5 ft (1.5m) of the end at highest elevation shall be constructed pointing slightly upslope and into any existing vegetation.
6. Runoff diversion shall be installed so trailing end of the device points down slope to prevent ponding of runoff.
7. Runoff diversion shall lead sheet and shallow concentrated runoff from vegetated/stabilized soil areas to stabilized channels, vegetated areas, level areas, high infiltration zones, or collection ponds.
8. Runoff diversion shall be placed on slopes 1% or greater to allow effective runoff conveyance and to prevent ponding.
9. Runoff diversion installed on slopes greater than 5% may require erosion control/soil stabilization practices where runoff flow is concentrated or conveyed.
10. Runoff diversion should not be used on slopes greater than 2:1.
11. Stakes shall be installed through the middle of the runoff diversion on 10 ft (3m) centers, using 2 in (50mm) by 2 in (50mm) by 3 ft (1m) wooden stakes.
12. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.
13. If the runoff diversion is to be a permanent runoff diversion device or part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation. The Engineer will specify seed requirements.
14. Loose GrowingMedia used for backfilling and extension of filter strip may also be seeded. The Engineer will specify seed requirements.

See design drawing details for correct runoff diversion installation (Figure 6.1).

INSPECTION & MAINTENANCE

Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Runoff diversion should be regularly inspected to make sure they maintain their shape and are adequately diverting storm runoff. If ponding becomes excessive, additional runoff diversion may be required, sediment or debris removal may be necessary, or the device may need to be adjusted to allow gravitational flow of water down slope. A freeboard height of 4 in (100mm) below the top edge of the device must be maintained at all times. Runoff diversion shall be inspected until the entire area has been permanently stabilized and construction activity has ceased.

1. The Contractor shall maintain the runoff diversion in a functional condition at all times and it shall be routinely inspected.
2. If the runoff diversion has been damaged, it shall be repaired, or replaced if beyond repair.
3. The Contractor shall remove sediment and debris at the base of the upslope side of the runoff diversion when accumulation has reached 1/2 of the effective height of the Soxx or as directed by the Engineer.
4. A freeboard height of 4 in (100mm) below the top edge of the device must be maintained throughout the life of the device.
5. Runoff diversion shall be maintained until the hill slope has been permanently stabilized and construction activity has ceased.
6. The GrowingMedia will be dispersed on site once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.

For runoff diversion and erosion control exceeding 1 year, runoff

diversion can be seeded at the time of installation to create a permanent runoff and erosion control system. Vegetation will add stability to the device and will reduce UV degradation of the system. The appropriate seed mix shall be determined by the Engineer.

ADDITIONAL INFORMATION

For other references on this topic, including additional research reports and trade magazine and press coverage, visit the Filtrexx website at filtrexx.com

Filtrexx International, Technical Support
 877-542-7699 | www.filtrexx.com | info@filtrexx.com
 Call for complete list of international installers and distributors.

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Figure 6.1. Engineering Design Drawing for Runoff Diversion

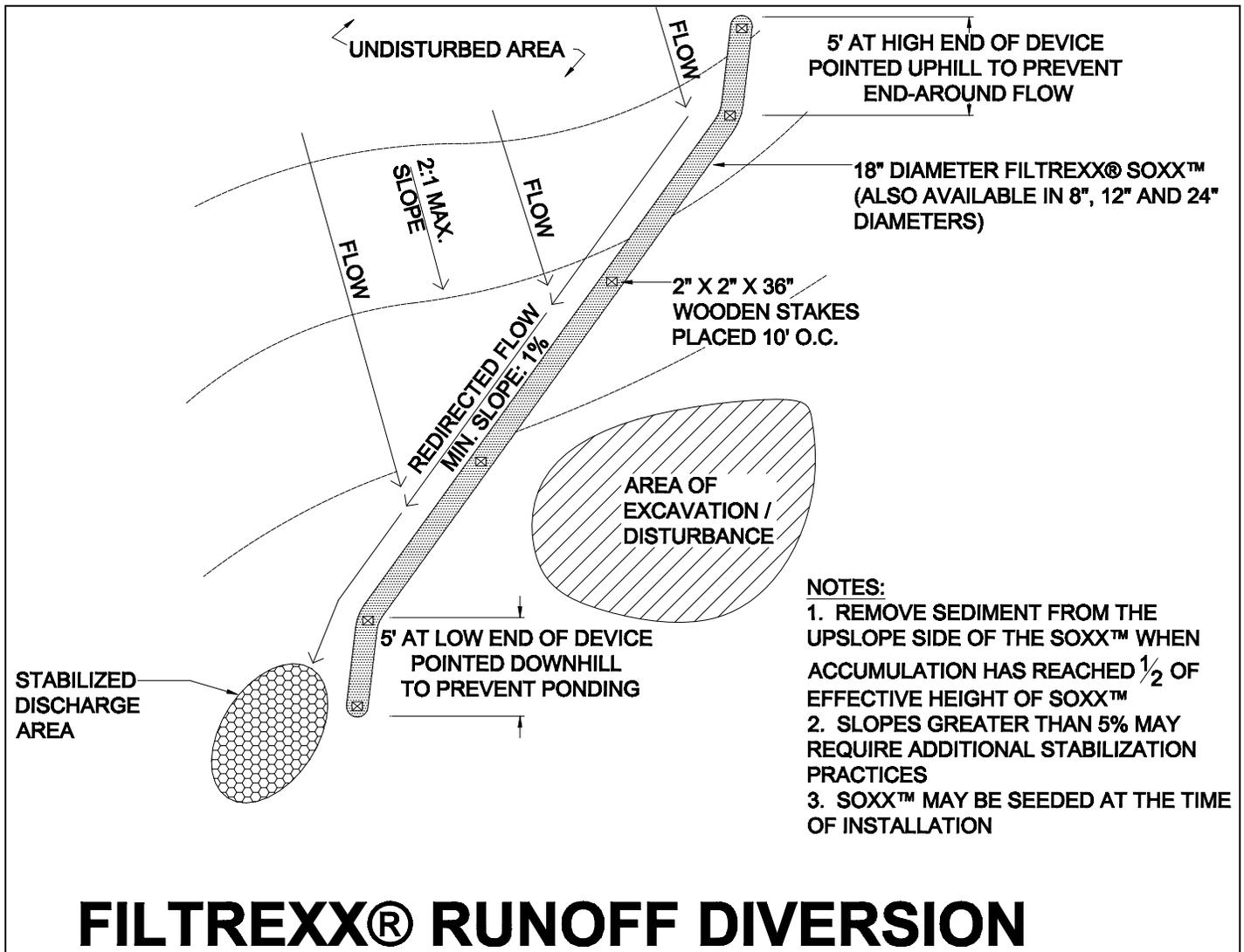
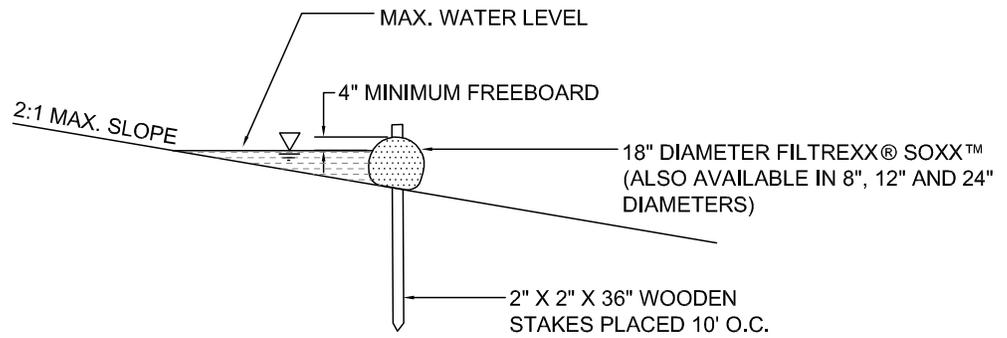
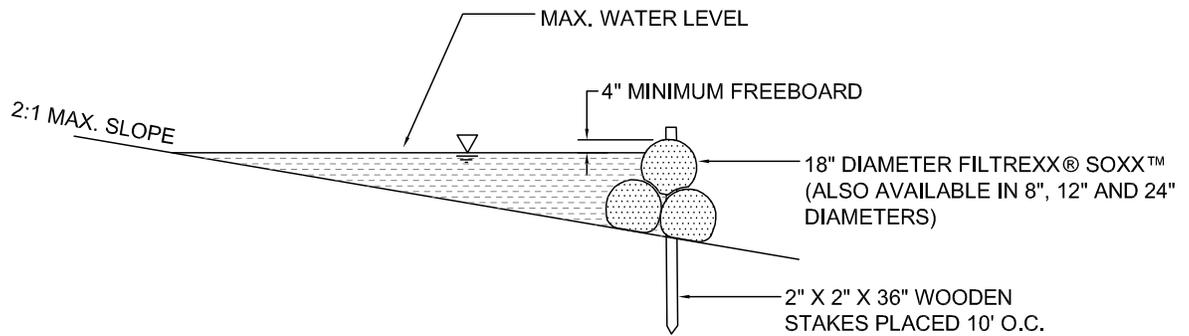


Figure 6.2. Engineering Design Drawing for Runoff Diversion - Sectional View



SINGLE INSTALLATION SECTION

NTS



PYRAMID INSTALLATION SECTION

NTS

FILTREXX® RUNOFF DIVERSION SECTIONS

NTS