

STD & SPEC 3.13 TEMPORARY SEDIMENT TRAP



Practice Description

A temporary ponding area formed by constructing an earthen embankment with a stone outlet, used to detain sediment-laden runoff from small disturbed areas long enough to allow the majority of the sediment to settle out.

Conditions Where Practice Applies

1. Below disturbed areas where the total contributing drainage is less than 3 acres.
2. Where the sediment trap will be used no longer than 18 months (the maximum useful life is 18 months).
3. The sediment trap may be constructed either independently or in conjunction with a TEMPORARY DIVERSION DIKE (Std. & Spec. 3.09).

Construction Specifications

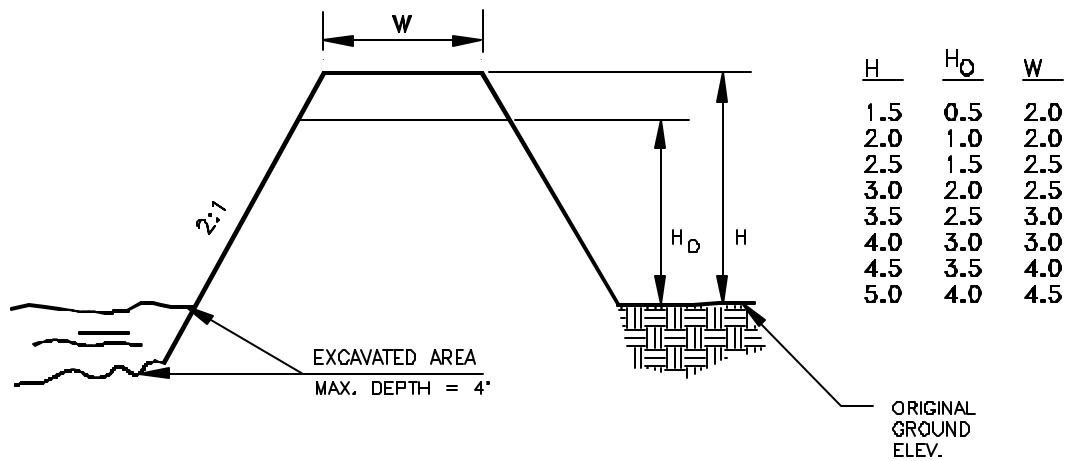
1. Outlet: The outlet for the sediment trap shall consist of a stone section of the embankment located at the low point in the basin. A combination of course aggregate and riprap shall be used to provide for filtering/detention as well as outlet stability. The smaller stone shall be VDOT #3, #357, or #5 Coarse Aggregate (smaller stone sizes will enhance filter efficiency) and riprap shall be "Class I". Filter cloth which meets the physical requirements noted in Std. & Spec. 3.19, RIPRAP shall be placed at the stone-soil interface to act as a "separator."

The minimum length of the outlet shall be 6 feet times the number of acres comprising the total area draining to the trap. The crest of the stone outlet must be at least 1.0 foot below the top of the embankment to ensure that the flow will travel over the stone and not the embankment. The outlet shall be configured as noted in Plate 3.13-2.

2. Embankment Cross Section: The maximum height of the sediment trap embankment shall be 5 feet as measured from the base of the stone outlet. Minimum top widths (W) and outlet heights (Ho) for various embankment heights (H) are shown in Plate 3.13-1. Side slopes of the embankment shall be 2:1 of flatter.
3. The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat.
4. Fill material for the embankment shall be free of roots or other woody vegetation, organic material, large stones, and other objectionable material. The embankment should be compacted in 6-inch layers by traversing with construction equipment.

5. The earthen embankment shall be seeded with temporary or permanent vegetation (see Std. & Spec.'s 3.31 and 3.32) immediately after installation.
6. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
7. The structure shall be removed and the area stabilized when the upslope drainage area has been stabilized.
8. All cut and fill slopes shall be 2:1 or flatter (except for excavated, wet storage area which may be at a maximum 1:1 grade).

*MINIMUM TOP WIDTH (W)
REQUIRED FOR SEDIMENT
TRAP EMBANKMENTS
ACCORDING TO HEIGHT OF
EMBANKMENT (FEET)*



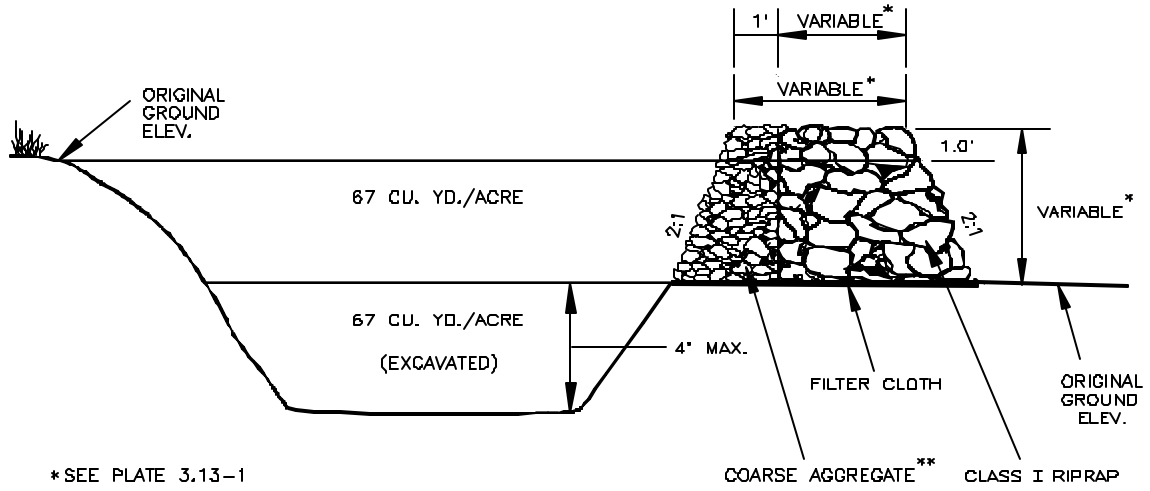
SOURCE: VA. DSWC

PLATE. 3.13-1

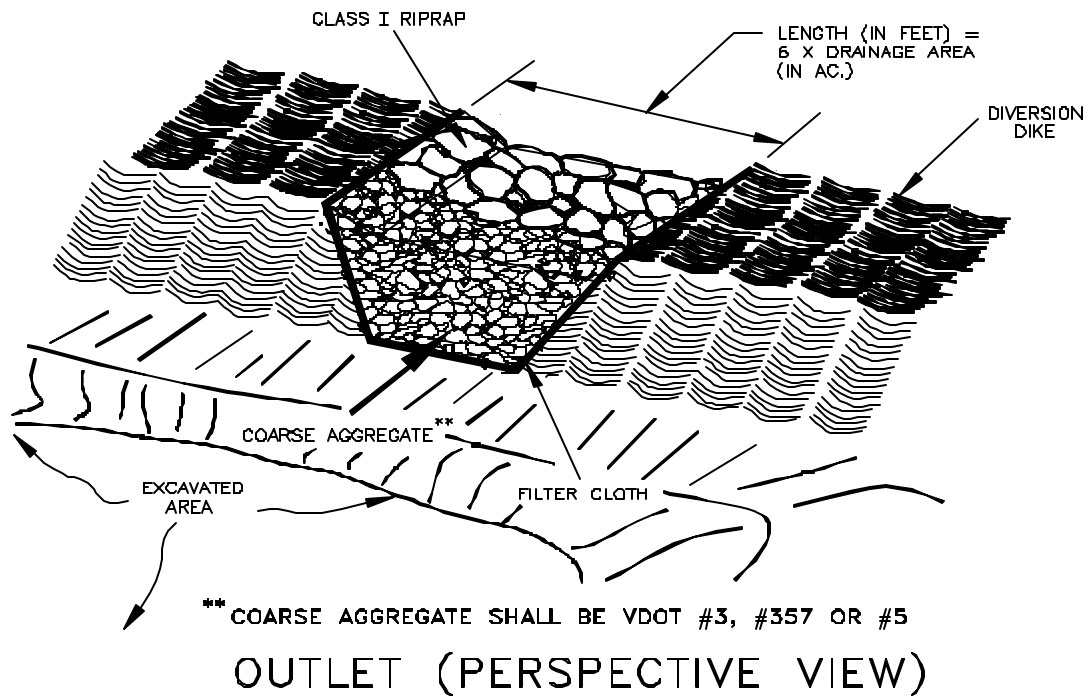
Maintenance

1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one-half the design volume of the wet storage. Sediment removal from the basin shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems.
2. Filter stone shall be regularly checked to ensure that filtration performance is maintained. Stone choked with sediment shall be removed and cleaned or replaced.
3. The structure should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should be checked to ensure that its center is at least 1 foot below the top of the embankment.

TEMPORARY SEDIMENT TRAP



CROSS SECTION OF OUTLET



SOURCE: VA. DSWC

PLATE. 3.13-2