



STONE OUTLET SEDIMENT TRAP
N.T.S.

5.13 STONE OUTLET SEDIMENT TRAP

1. **DESCRIPTION** - A ponding area formed by placing an earth and/or stone embankment across a drainage way or swale. The ponding area may be natural or improved to provide the required storage volume.
2. **PURPOSE** - To detain sediment laden runoff long enough to allow the majority of the sediment to settle from the water and to allow diffused runoff from the outlet.
3. **APPLICATIONS** - Normally used where the natural topography allows for the construction of the embankment to form the ponding area. Diversions, drainage improvements, and localized grading will allow placement in almost any location that has adequate space for the storage area and will accept the runoff from the disturbed site. The stone outlet sediment trap can be used instead of the standard sediment basin.
4. **LIMITATIONS** - Do not place device in a live stream. Avoid placing in areas planned for future improvements such as pavement or buildings. Inlet channels or pipe should be located as far away from the stone outlet as is practicable to allow for maximum sediment settling time in the basin.
5. **DESIGN CRITERIA** -
 - A. Drainage Area - 30 acres, maximum.
 - B. Storage Volume - 1800 cubic feet per acre of disturbed land draining to the device.
 - C. Surface Area of Storage Area - 1% (0.01) of the area draining to the device.
 - D. Embankment Height - 6 feet (maximum) to top.
 - E. Embankment Slopes - 1.5H:1V or flatter.
 - F. Embankment Top Width - 2 feet (minimum)
 - G. Stone Outlet Width - 4 feet (minimum)
 - H. Outlet Capacity - 10-year design storm, $C = 0.50$, Max. $T_c = 15$ minutes.
 - I. Freeboard @ Design Flow - 6 inches.
6. **MATERIAL SPECIFICATIONS** -
 - A. Stone Rip-Rap - NCTCOG Specification 2.1.6.(b)(2), Type A or re-cycled concrete meeting the same gradation.
 - B. Filter Stone - NCTCOG Specification 2.1.8.(e).
 - C. Filter Fabric - NCTCOG Specification 2.23.4.
7. **MAINTENANCE REQUIREMENTS** - Stone outlet sediment traps should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the storage area when the depth of sediment has built up to one-half the height of the stone outlet. Inspect the downstream base of the stone outlet and the downstream flow channel to ensure that no excessive erosion or gullies have developed and repair as necessary. The sediment storage area should drain within 48 to 72 hours after a rain event. The filter stone on the upstream face of the stone outlet may require cleaning or replacement if standing water remains for longer periods.

This record drawing is a completion of the sealed engineering drawing for this project modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawing are on file at the office of Birkhoff, Hendricks & Conway, LLP.

BY RYC DATE 4/07/09

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
7502 Greenville Ave., Suite 220
Dallas, Texas
(214) 361-7900



Ronald V. Conway
1/21/08

CITY OF ROCKWALL, TEXAS
SHORES NORTH DRAINAGE IMPROVEMENTS
STORM WATER POLLUTION PREVENTION PLAN DETAILS

BHC
PROJECT NO.
2006-166
JANUARY 2008

14