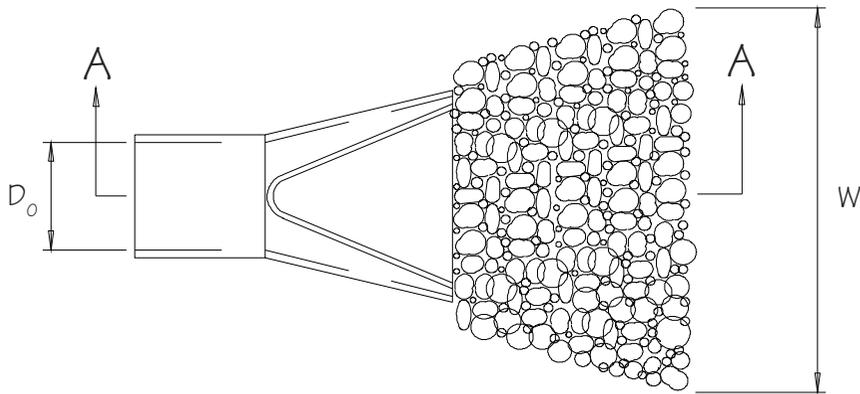
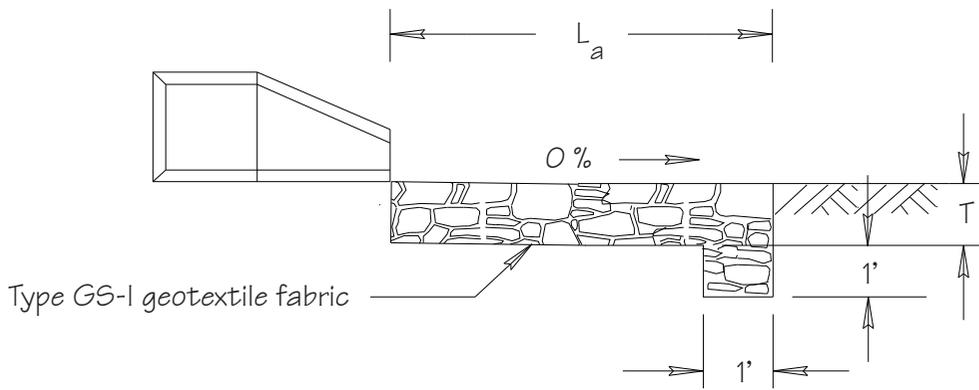


# Riprap Outlet Protection - 1



Plan

NOTE: Depress centerline of apron slightly to prevent edge-cutting



NOTE: Key into exist. gnd

DATA

- Pipe diameter ( $D_o$ )
- Apron length ( $L_a$ )
- Apron width ( $W$ )
- Riprap size (R No.)
- Riprap thickness ( $T$ )

Section A-A

$T_w < 0.5 D_o$

Source:

Adapted from  
MD Stds. & Specs. for ESC

Symbol:

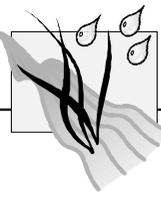


Detail No.

**DE-ESC-3.3.10.1**

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# Riprap Outlet Protection - 1

### Construction Notes:

1. The subgrade for the riprap shall be prepared to the required lines and grades as shown on the plan. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The riprap shall conform to the grading limits as shown on the plan.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire filter cloth.
4. Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the filter cloth. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

Source:

Adapted from  
MD Stds. & Specs. for ESC

Symbol:



Detail No.

**DE-ESC-3.3.10.1**

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