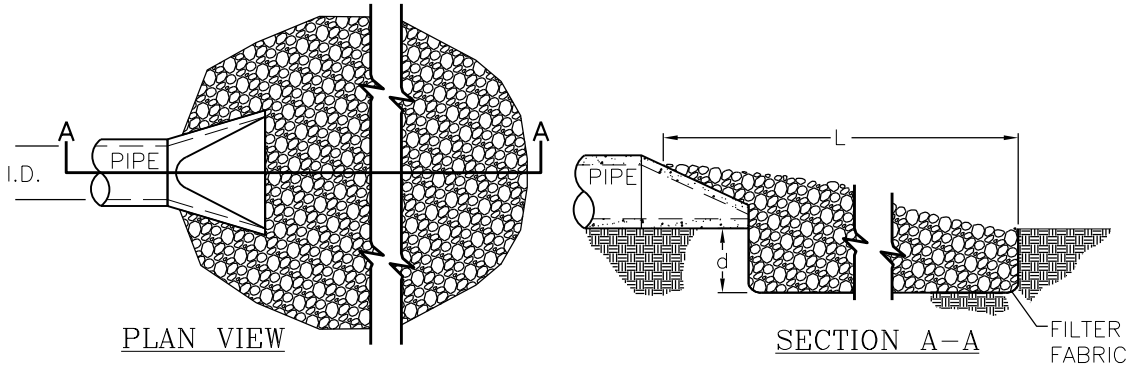
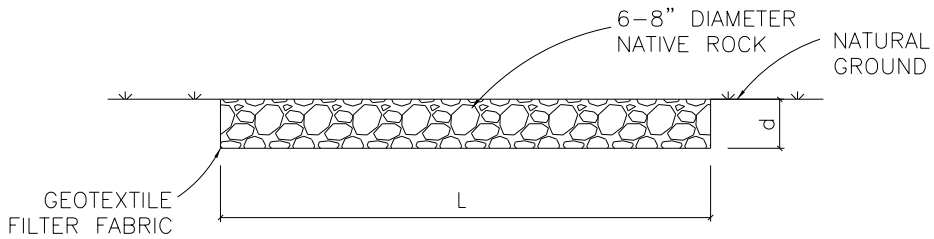
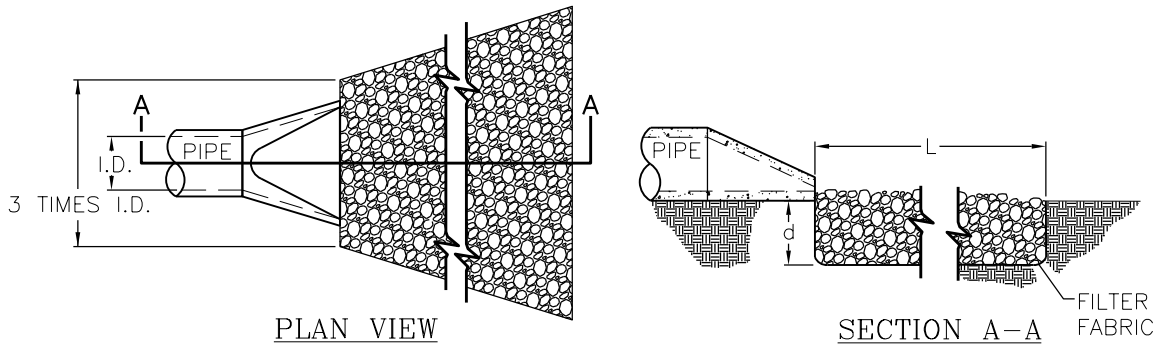


PIPE OUTLET TO WELL DEFINED CHANNEL



PIPE OUTLET TO FLAT AREA



NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON (FT). ($L=0.5V * D$)
 V = CULVERT DISCHARGE VELOCITY (FT/S).
 D = DIAMETER OR HEIGHT OF CULVERT (FT).
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (inches).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.
5. STONES SHALL BE FIELD STONE OR ROUGH QUARRY STONE, THE STONE SHOULD BE HIGHLY WEATHER RESISTANT, HARD, ANGULAR & WELL GRADED.

SCALE: NOT TO SCALE



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These documents were prepared by,
 or under the supervision of:

ERIC BELAJ 107148 May 31, 2017
 Engineer's Name PE# Date

Engineer's Signature

SECTION
STORM DRAINAGE

DETAIL NO.
 SD-16

TITLE
 HEADWALL RIPRAP