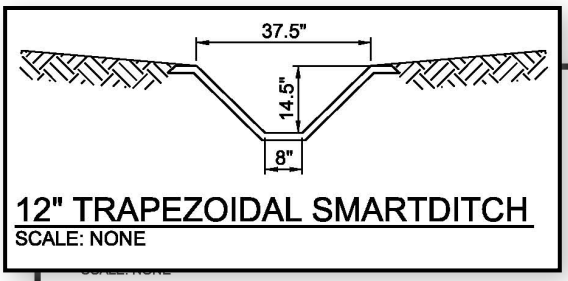
SmartDitch® & MegaDitch® vs. Rip Rap

When designing a stormwater drainage ditch or channel, especially in areas where steep grades and the potential for high velocities exist, it is critical that the channel is designed to adequately accommodate both.

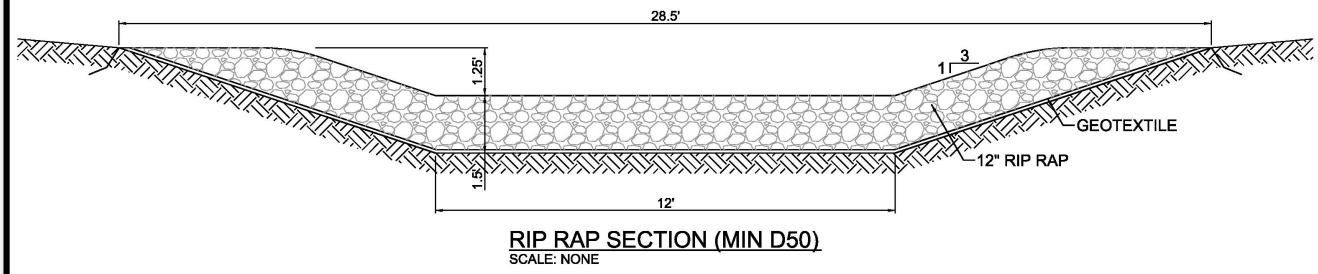
Below are comparisons of 12" and 24" trapezoidal SmartDitch, as well as a typical MegaDitch installation compared to equivalent Rip Rap channel design.

12" Trapezoidal vs. Rip Rap (d50 = 12")

25% Slope (4 Horz: 1 Vert)

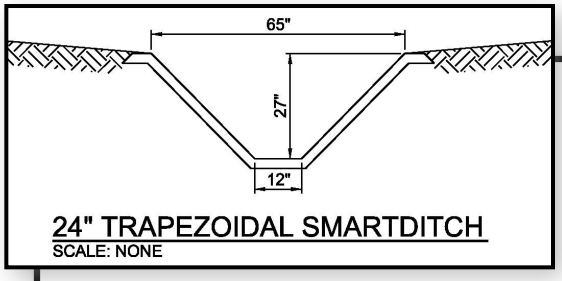


Flow Rate	21.4 cfs
Rip Rap Channel Flow Depth	0.25 ft
SmartDitch Flow Depth	1.0 ft

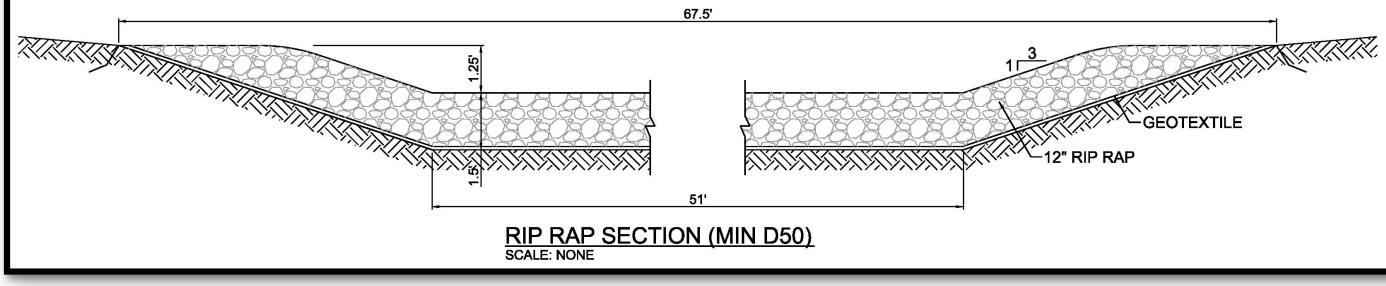


24" Trapezoidal vs. Rip Rap (d50 = 12")

25% Slope (4 Horz: 1 Vert)

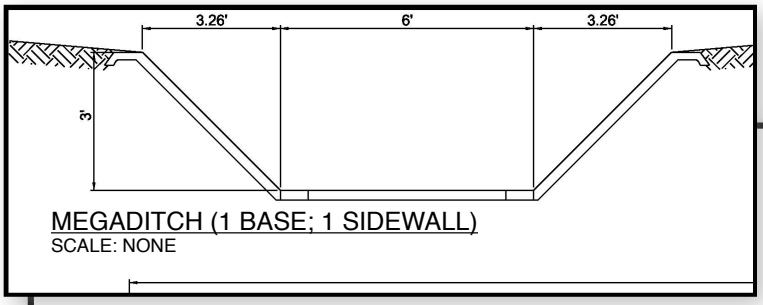


Flow Rate	96.7 cfs
Rip Rap Channel Flow Depth	0.25 ft
SmartDitch Flow Depth	2.0 ft



MegaDitch vs. Rip Rap (d50 = 24”)

25% Slope (4 Horz: 1 Vert)



Flow Rate	652.9 cfs
Rip Rap Channel Flow Depth	**0.25 ft**
MegaDitch Flow Depth	3.0 ft

Conditions Table:

SmartDitch/MegaDitch	Slope	Flow (cfs)
12” Trapezoidal	25%	21.4
24” Trapezoidal	25%	96.7
MegaDitch (1 base; 1 sidewall)	25%	652.9

Cost Comparison:

SmartDitch/MegaDitch	SmartDitch/MegaDitch Cost/ft.	Rip Rap Channel Cost/ft.
12” Trapezoidal	$40/LF	$70/LF
24” Trapezoidal	$55/LF	$165/LF
MegaDitch (1 base; 1 sidewall)	$150/LF	$665/LF