

# FLOW CALCULATIONS: 12" & 24" DEPTH

Flow rate calculations for the channel system are based on the standard hydraulic flow formula:

$$Q = (1.49/n) A R^{2/3} S^{1/2}$$

To calculate the hydraulic flow area & radius of each SmartDitch size, dimensions are provided below.

Where:

Q = Total Flow

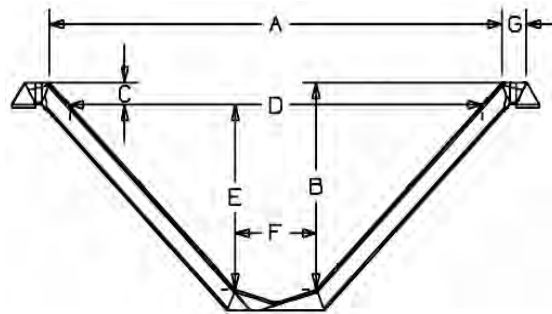
N = Manning's Coefficient of Friction ( $0.022$ )

A = area (sf)

R = hydraulic radius (ft) [ $R = A / \text{wetted perimeter}$ ]

S = slope (%)

Item Description	Item #	12" Depth Trapezoidal - In (MM)	24" Depth Trapezoidal - In (MM)
Channel top width	A	37.50 (952.50)	64.25 (1632)
Channel height (interior)	B	14.50 (368.30)	27.00 (685.80)
Minimum freeboard	C	1.00 (25.40)	2.00 (50.80)
Maximum flow area top width	D	34.50 (876.30)	60.00 (1524)
Maximum flow area top width	E	13.50 (342.90)	24.75 (629)
Bottom channel width (interior)	F	8.00 (203.20)	11.50 (292)
Top shoulder width (w/out knuckle)	G	4.50 (114.30)	5.25 (133)



## FOR MORE INFORMATION

SmartDitch is manufactured in the USA. It is a safe, economical, long-lasting, and environmentally sound irrigation channel lining solution. For more information on the SmartDitch and the MegaDitch HDPE Channel Lining Systems contact:



866.576.2783