

Appendix C

Low-Water Stream Crossing Calculations

Low Water Crossing, "Q", and Velocity Calculations

(lwx.xls)

Through Manning's and Chezy
Equations;

Ozzie, 1992

Designer: **Date:**

Project: **Sta:**

Storm Events, "Q" in cfs: 100 Yr. ; 50 Yr. ; 25 Yr.
if known

<u>Input</u>	<u>Variables</u>	
"C" Average width of bottom of channel, Feet	0	
"a" Slope of Lt. side of channel, % in Dec.	0.5	
"b" Slope of Rt. side of channel, % in Dec.	1	
"s" Slope of channel, % in Dec.	0.08	
"n" Roughness coefficient. ("n" for properly sized riprap = 0.0525)	0.025	bladed ditch
"D" Mean depth of flow in channel for storm flow <i>(May be trial depth until known "Q" is reached)</i>	0.5	

<u>Calculated Output</u>	<u>Calculated</u>	
Cross-sectional area of flow in sq.ft.	A = 0.4	s.f.
Wetted perimeter in feet	Pw = 1.8	ft.
* Quantity of flow in Cubic Feet per Second, cfs	Q = 2	cfs
* Mean Velocity of stream <i>(May be trial Depth until known "Q" is reached)</i>	Vm = 5.9	ft/sec
Length of wetted side, "a"	La = 1.1	ft.
Length of wetted side, "b"	Lb. = 0.7	ft.

