

APPENDIX C

SWALE SECTION HYDRAULIC REPORTS

Channel Calculator
@ S=1.50%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0150 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 1.29 cfs
Velocity 2.02 fps
Full Flowrate 2.35 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.37 ft
Critical slope 0.0243 ft/ft
Critical velocity 2.42 fps
Critical area 0.53 ft²
Critical perimeter 3.04 ft
Critical hydraulic radius 0.18 ft
Critical top width 2.92 ft
Specific energy 0.46 ft
Minimum energy 0.55 ft
Froude number 0.80
Flow condition Subcritical

Channel Calculator
@ S=4.50%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0450 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.24 cfs
Velocity 3.50 fps
Full Flowrate 4.06 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.46 ft
Critical slope 0.0226 ft/ft
Critical velocity 2.71 fps
Critical area 0.83 ft²
Critical perimeter 3.78 ft
Critical hydraulic radius 0.22 ft
Critical top width 3.64 ft
Specific energy 0.59 ft
Minimum energy 0.68 ft
Froude number 1.38
Flow condition Supercritical

Channel Calculator
@ S=1.90%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0190 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 1.46 cfs
Velocity 2.27 fps
Full Flowrate 2.64 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.38 ft
Critical slope 0.0240 ft/ft
Critical velocity 2.48 fps
Critical area 0.59 ft²
Critical perimeter 3.19 ft
Critical hydraulic radius 0.18 ft
Critical top width 3.06 ft
Specific energy 0.48 ft
Minimum energy 0.57 ft
Froude number 0.90
Flow condition Subcritical

Channel Calculator
@ S=0.80%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0080 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 0.94 cfs
Velocity 1.48 fps
Full Flowrate 1.71 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.32 ft
Critical slope 0.0254 ft/ft
Critical velocity 2.28 fps
Critical area 0.41 ft²
Critical perimeter 2.68 ft
Critical hydraulic radius 0.15 ft
Critical top width 2.58 ft
Specific energy 0.43 ft
Minimum energy 0.48 ft
Froude number 0.58
Flow condition Subcritical

Channel Calculator
@ S=0.30%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0030 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 0.58 cfs
Velocity 0.90 fps
Full Flowrate 1.05 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.26 ft
Critical slope 0.0271 ft/ft
Critical velocity 2.06 fps
Critical area 0.28 ft²
Critical perimeter 2.20 ft
Critical hydraulic radius 0.13 ft
Critical top width 2.12 ft
Specific energy 0.41 ft
Minimum energy 0.40 ft
Froude number 0.36
Flow condition Subcritical

Channel Calculator
@ S=1.70%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0170 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 1.38 cfs
Velocity 2.15 fps
Full Flowrate 2.50 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.37 ft
Critical slope 0.0241 ft/ft
Critical velocity 2.45 fps
Critical area 0.56 ft²
Critical perimeter 3.12 ft
Critical hydraulic radius 0.18 ft
Critical top width 3.00 ft
Specific energy 0.47 ft
Minimum energy 0.56 ft
Froude number 0.85
Flow condition Subcritical

Channel Calculator
@ S=3.80%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0380 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.06 cfs
Velocity 3.22 fps
Full Flowrate 3.73 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.44 ft
Critical slope 0.0229 ft/ft
Critical velocity 2.66 fps
Critical area 0.77 ft²
Critical perimeter 3.66 ft
Critical hydraulic radius 0.21 ft
Critical top width 3.52 ft
Specific energy 0.56 ft
Minimum energy 0.66 ft
Froude number 1.27
Flow condition Supercritical

Channel Calculator
@ S=0.50%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0050 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 0.75 cfs
Velocity 1.17 fps
Full Flowrate 1.35 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.29 ft
Critical slope 0.0262 ft/ft
Critical velocity 2.17 fps
Critical area 0.34 ft²
Critical perimeter 2.44 ft
Critical hydraulic radius 0.14 ft
Critical top width 2.35 ft
Specific energy 0.42 ft
Minimum energy 0.44 ft
Froude number 0.46
Flow condition Subcritical

Channel Calculator
@ S=6.40%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0640 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.67 cfs
Velocity 4.18 fps
Full Flowrate 4.84 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.49 ft
Critical slope 0.0221 ft/ft
Critical velocity 2.80 fps
Critical area 0.95 ft²
Critical perimeter 4.06 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.91 ft
Specific energy 0.67 ft
Minimum energy 0.73 ft
Froude number 1.65
Flow condition Supercritical

Channel Calculator
@ S=4.28%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0428 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.18 cfs
Velocity 3.41 fps
Full Flowrate 3.96 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.45 ft
Critical slope 0.0227 ft/ft
Critical velocity 2.69 fps
Critical area 0.81 ft²
Critical perimeter 3.75 ft
Critical hydraulic radius 0.22 ft
Critical top width 3.60 ft
Specific energy 0.58 ft
Minimum energy 0.68 ft
Froude number 1.35
Flow condition Supercritical

Channel Calculator
@ S=4.96%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0496 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.35 cfs
Velocity 3.68 fps
Full Flowrate 4.26 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.46 ft
Critical slope 0.0225 ft/ft
Critical velocity 2.73 fps
Critical area 0.86 ft²
Critical perimeter 3.86 ft
Critical hydraulic radius 0.22 ft
Critical top width 3.71 ft
Specific energy 0.61 ft
Minimum energy 0.70 ft
Froude number 1.45
Flow condition Supercritical

Channel Calculator
@ S=2.00%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0200 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 1.49 cfs
Velocity 2.33 fps
Full Flowrate 2.71 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.39 ft
Critical slope 0.0239 ft/ft
Critical velocity 2.49 fps
Critical area 0.60 ft²
Critical perimeter 3.22 ft
Critical hydraulic radius 0.19 ft
Critical top width 3.09 ft
Specific energy 0.48 ft
Minimum energy 0.58 ft
Froude number 0.92
Flow condition Subcritical

Channel Calculator
@ S=4.35%, 1V:6H both sides

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0435 ft/ft
Manning's n 0.03
Depth 0.33 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.1667 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.01 cfs
Velocity 3.08 fps
Full Flowrate 6.09 cfs
Flow area 0.65 ft²
Flow perimeter 4.01 ft
Hydraulic radius 0.16 ft
Top width 3.96 ft
Area 1.50 ft²
Perimeter 6.08 ft
Percent full 66.00 %

Critical Information

Critical depth 0.37 ft
Critical slope 0.0234 ft/ft
Critical velocity 2.44 fps
Critical area 0.82 ft²
Critical perimeter 4.51 ft
Critical hydraulic radius 0.18 ft
Critical top width 4.45 ft
Specific energy 0.48 ft
Minimum energy 0.56 ft
Froude number 1.34
Flow condition Supercritical

Channel Calculator
@ S=0.56%, 1V:6H both sides

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0056 ft/ft
Manning's n 0.03
Depth 0.33 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.1667 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 0.72 cfs
Velocity 1.10 fps
Full Flowrate 2.19 cfs
Flow area 0.65 ft²
Flow perimeter 4.01 ft
Hydraulic radius 0.16 ft
Top width 3.96 ft
Area 1.50 ft²
Perimeter 6.08 ft
Percent full 66.00 %

Critical Information

Critical depth 0.25 ft
Critical slope 0.0269 ft/ft
Critical velocity 1.99 fps
Critical area 0.36 ft²
Critical perimeter 2.99 ft
Critical hydraulic radius 0.12 ft
Critical top width 2.95 ft
Specific energy 0.35 ft
Minimum energy 0.37 ft
Froude number 0.48
Flow condition Subcritical

Channel Calculator
@ S=4.83%, 1V:6H both sides

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0483 ft/ft
Manning's n 0.03
Depth 0.33 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.1667 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.12 cfs
Velocity 3.25 fps
Full Flowrate 6.42 cfs
Flow area 0.65 ft²
Flow perimeter 4.01 ft
Hydraulic radius 0.16 ft
Top width 3.96 ft
Area 1.50 ft²
Perimeter 6.08 ft
Percent full 66.00 %

Critical Information

Critical depth 0.38 ft
Critical slope 0.0233 ft/ft
Critical velocity 2.47 fps
Critical area 0.86 ft²
Critical perimeter 4.60 ft
Critical hydraulic radius 0.19 ft
Critical top width 4.54 ft
Specific energy 0.49 ft
Minimum energy 0.57 ft
Froude number 1.41
Flow condition Supercritical

Channel Calculator
@ S=5.87%, 1V:6H both sides

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0587 ft/ft
Manning's n 0.03
Depth 0.33 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.1667 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.34 cfs
Velocity 3.58 fps
Full Flowrate 7.08 cfs
Flow area 0.65 ft²
Flow perimeter 4.01 ft
Hydraulic radius 0.16 ft
Top width 3.96 ft
Area 1.50 ft²
Perimeter 6.08 ft
Percent full 66.00 %

Critical Information

Critical depth 0.39 ft
Critical slope 0.0230 ft/ft
Critical velocity 2.52 fps
Critical area 0.93 ft²
Critical perimeter 4.79 ft
Critical hydraulic radius 0.19 ft
Critical top width 4.72 ft
Specific energy 0.53 ft
Minimum energy 0.59 ft
Froude number 1.55
Flow condition Supercritical

Channel Calculator
@ S=1.83%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0183 ft/ft
Manning's n 0.03
Depth 0.50 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.59 cfs
Velocity 2.59 fps
Full Flowrate 2.59 cfs
Flow area 1.00 ft²
Flow perimeter 4.16 ft
Hydraulic radius 0.24 ft
Top width 4.00 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 100.00 %

Critical Information

Critical depth 0.48 ft
Critical slope 0.0222 ft/ft
Critical velocity 2.79 fps
Critical area 0.93 ft²
Critical perimeter 4.01 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.86 ft
Specific energy 0.60 ft
Minimum energy 0.72 ft
Froude number 0.91
Flow condition Subcritical

Channel Calculator
@ S=5.31%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0531 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.43 cfs
Velocity 3.80 fps
Full Flowrate 4.41 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.47 ft
Critical slope 0.0224 ft/ft
Critical velocity 2.75 fps
Critical area 0.88 ft²
Critical perimeter 3.91 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.76 ft
Specific energy 0.62 ft
Minimum energy 0.71 ft
Froude number 1.50
Flow condition Supercritical

Channel Calculator
@ S=5.77%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0577 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.54 cfs
Velocity 3.96 fps
Full Flowrate 4.60 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.48 ft
Critical slope 0.0223 ft/ft
Critical velocity 2.77 fps
Critical area 0.91 ft²
Critical perimeter 3.98 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.83 ft
Specific energy 0.64 ft
Minimum energy 0.72 ft
Froude number 1.56
Flow condition Supercritical

Channel Calculator
@ S=2.24%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0224 ft/ft
Manning's n 0.03
Depth 0.40 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 1.58 cfs
Velocity 2.47 fps
Full Flowrate 2.87 cfs
Flow area 0.64 ft²
Flow perimeter 3.33 ft
Hydraulic radius 0.19 ft
Top width 3.20 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 80.00 %

Critical Information

Critical depth 0.40 ft
Critical slope 0.0237 ft/ft
Critical velocity 2.52 fps
Critical area 0.63 ft²
Critical perimeter 3.29 ft
Critical hydraulic radius 0.19 ft
Critical top width 3.17 ft
Specific energy 0.49 ft
Minimum energy 0.59 ft
Froude number 0.97
Flow condition Subcritical

Channel Calculator
@ S=1.88%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0188 ft/ft
Manning's n 0.03
Depth 0.50 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.63 cfs
Velocity 2.63 fps
Full Flowrate 2.63 cfs
Flow area 1.00 ft²
Flow perimeter 4.16 ft
Hydraulic radius 0.24 ft
Top width 4.00 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 100.00 %

Critical Information

Critical depth 0.48 ft
Critical slope 0.0222 ft/ft
Critical velocity 2.79 fps
Critical area 0.94 ft²
Critical perimeter 4.03 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.88 ft
Specific energy 0.61 ft
Minimum energy 0.73 ft
Froude number 0.93
Flow condition Subcritical

Channel Calculator
@ S=1.84%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0184 ft/ft
Manning's n 0.03
Depth 0.50 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.60 cfs
Velocity 2.60 fps
Full Flowrate 2.60 cfs
Flow area 1.00 ft²
Flow perimeter 4.16 ft
Hydraulic radius 0.24 ft
Top width 4.00 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 100.00 %

Critical Information

Critical depth 0.48 ft
Critical slope 0.0222 ft/ft
Critical velocity 2.79 fps
Critical area 0.93 ft²
Critical perimeter 4.02 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.86 ft
Specific energy 0.60 ft
Minimum energy 0.72 ft
Froude number 0.92
Flow condition Subcritical

Channel Calculator
@ S=1.76%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0176 ft/ft
Manning's n 0.03
Depth 0.50 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.54 cfs
Velocity 2.54 fps
Full Flowrate 2.54 cfs
Flow area 1.00 ft²
Flow perimeter 4.16 ft
Hydraulic radius 0.24 ft
Top width 4.00 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 100.00 %

Critical Information

Critical depth 0.48 ft
Critical slope 0.0223 ft/ft
Critical velocity 2.77 fps
Critical area 0.92 ft²
Critical perimeter 3.98 ft
Critical hydraulic radius 0.23 ft
Critical top width 3.83 ft
Specific energy 0.60 ft
Minimum energy 0.72 ft
Froude number 0.90
Flow condition Subcritical

Channel Calculator
@ S=2.04%, 1V:2H left side & 1V:6H right side

Given Input Data:

Shape Trapezoidal
Solving for Flowrate
Slope 0.0204 ft/ft
Manning's n 0.03
Depth 0.50 ft
Height 0.50 ft
Bottom width 0.00 ft
Left slope 0.5000 ft/ft (V/H)
Right slope 0.1667 ft/ft (V/H)

Computed Results:

Flowrate 2.73 cfs
Velocity 2.74 fps
Full Flowrate 2.73 cfs
Flow area 1.00 ft²
Flow perimeter 4.16 ft
Hydraulic radius 0.24 ft
Top width 4.00 ft
Area 1.00 ft²
Perimeter 4.16 ft
Percent full 100.00 %

Critical Information

Critical depth 0.49 ft
Critical slope 0.0220 ft/ft
Critical velocity 2.82 fps
Critical area 0.97 ft²
Critical perimeter 4.10 ft
Critical hydraulic radius 0.24 ft
Critical top width 3.94 ft
Specific energy 0.62 ft
Minimum energy 0.74 ft
Froude number 0.96
Flow condition Subcritical