
APPENDIX G

OVERLAND FLOW

Subcatchment ID	Subcatchment Area (ha)	Percent Impervious (%)	Runoff Coefficient
221, 521, 522, 525, 526	4.74	39%	0.47

Town of Aurora 5 Year (Rational Method)	
Area (ha) =	4.74
Runoff Coeff. =	0.47
T _c (min) =	20.79
a=	929.8
b=	4
c=	0.798
Intensity (mm/hr) =	71.74
Runoff (m³/s)=	0.45

Town of Aurora 100 Year Pre-Dev (Rational Method)	
Area (ha) =	4.74
Runoff Coeff. =	0.47
T _c (min) =	20.79
a=	1770.0
b=	4
c=	0.820
Intensity (mm/hr) =	127.25
Runoff (m³/s)=	0.79

Q_{100yr-Q5yr} = 0.35 m³/s

(Assumes initial Tc of 15 minutes and 695m flowing at 2 m/s)

Worksheet for Part of Superelevated 17.5m Section

Results

Specific Energy		0.24	m
Froude Number		1.17	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth		0.00	m
Length		0.00	m
Number Of Steps		0	

GVF Output Data

Upstream Depth		0.00	m
Profile Description			
Profile Headloss		0.00	m
Downstream Velocity		Infinity	m/s
Upstream Velocity		Infinity	m/s
Normal Depth		0.17	m
Critical Depth		0.18	m
Channel Slope		0.00500	m/m
Critical Slope		0.00356	m/m

Worksheet for Biofiltration System

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.00500	m/m
Normal Depth	0.20	m
Left Side Slope	3.00	m/m (H:V)
Right Side Slope	3.00	m/m (H:V)
Bottom Width	1.50	m

Results

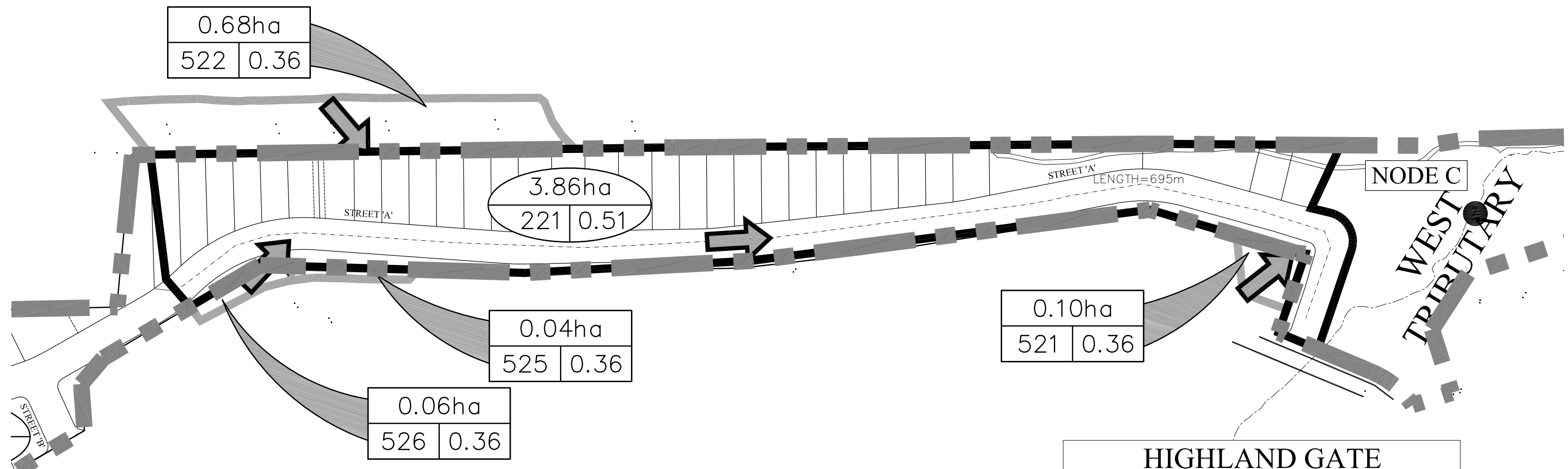
Discharge	0.34	m ³ /s
Flow Area	0.42	m ²
Wetted Perimeter	2.76	m
Top Width	2.70	m
Critical Depth	0.16	m
Critical Slope	0.01258	m/m
Velocity	0.81	m/s
Velocity Head	0.03	m
Specific Energy	0.23	m
Froude Number	0.65	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	m
Length	0.00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	m
Profile Description		
Profile Headloss	0.00	m
Downstream Velocity	Infinity	m/s
Upstream Velocity	Infinity	m/s
Normal Depth	0.20	m
Critical Depth	0.16	m
Channel Slope	0.00500	m/m
Critical Slope	0.01258	m/m



HIGHLAND GATE
 FIGURE G1 - RIGHT OF WAY
 CAPACITY CALCULATION
 SCALE: 1:2000