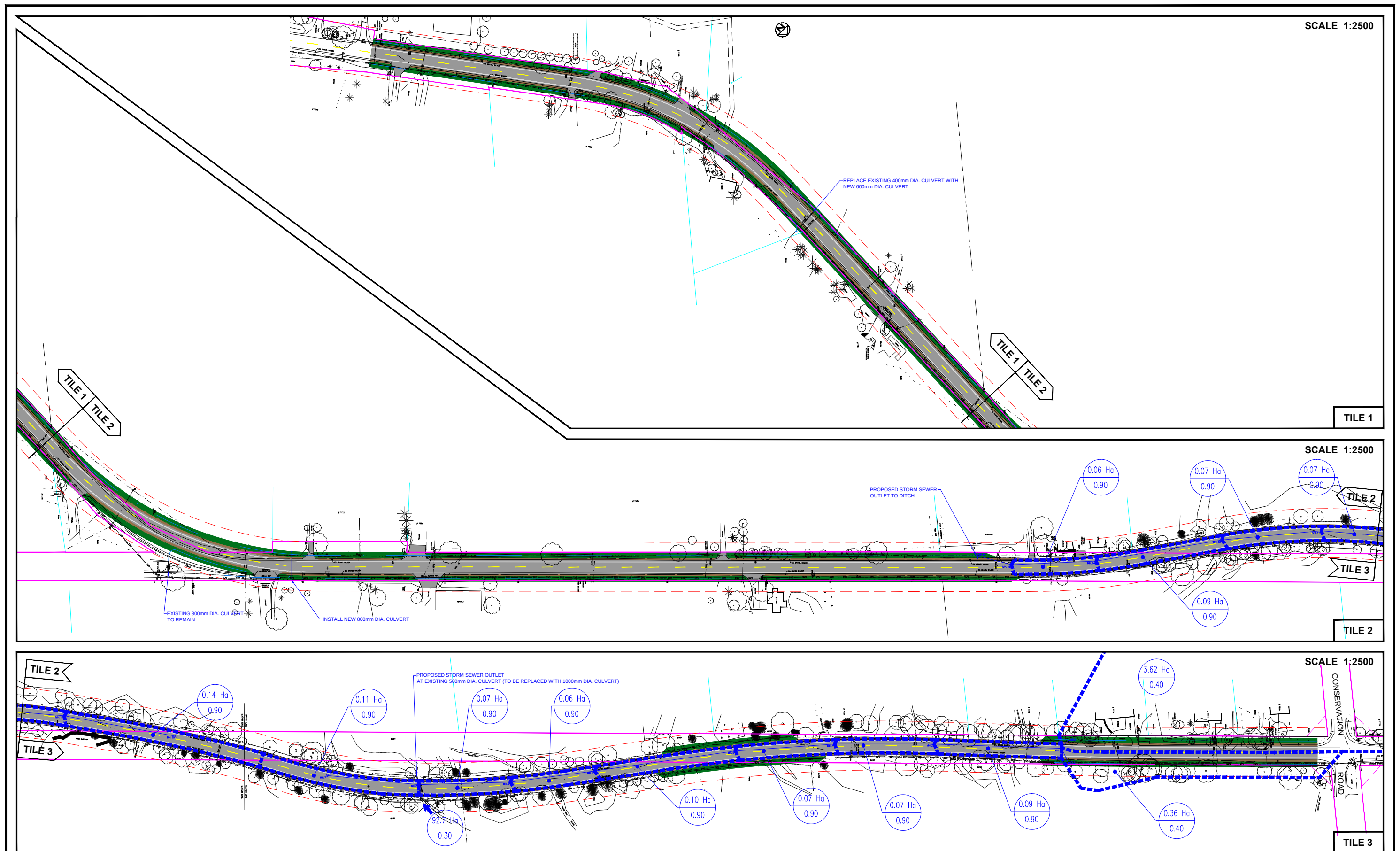




APPENDIX K

Preliminary Storm Sewer Design Sheets



PREFERRED ALTERNATIVE DESIGN

Drainage Areas for Proposed Storm Sewers



GUELPH LINE (REGIONAL ROAD 1)
1 KILOMETRE NORTH OF
DERRY ROAD (REGIONAL ROAD 7)
TO CONSERVATION ROAD
CLASS ENVIRONMENTAL ASSESSMENT
OCTOBER 2010

FIGURE STM-1

TOWN OF MILTON STORM SEWER DESIGN SHEET

PROJECT / SUBDIVISION: Guelph Line EA (RR-09-024)

Sheet No.: 1

Mannings 'n' = 0.013

Max./Min. velocity = 4.50 / 0.75 (m/s)

Storm Frequency = 5

LOCATION/STREET	FROM MH	TO MH	PIPE LENGTH (m)	TRIBUTARY AREA		TIME OF FLOW		RUN-OFF COEFF.	RAINFALL INTENSITY (mm/hr)	RUNOFF (cu.m.sec.)	Capacity (%)	SLOPE (%)	DIAM. (mm)	CAPACITY FULL (cu.m.sec)	VELOCITY FULL (m/sec)
				INCREMENT (ha)	TOTAL (ha)	TO UPPER END (min.)	IN SECTION (min.)								
POST-DEVELOPMENT FLOWS															
Lands tributary to North Sewer						10.00									
External Area from NW	DI.1	MH.1	8	3.62	1.448	10.05	0.047	0.40	101.51	0.408	90.6%	2.50%	450	0.451	2.83
External Area from NE	DI.2	MH.1	11	0.36	0.145	10.09	0.095	0.40	101.28	0.041	29.8%	2.00%	300	0.137	1.93
						10.09									
Prop. Sewer	MH.1	MH.2	90	0.09	1.672	10.58	0.483	0.90	101.05	0.469	95.0%	3.00%	450	0.494	3.10
Prop. Sewer	MH.2	MH.3	70	0.07	1.734	10.87	0.291	0.90	98.76	0.476	74.6%	5.00%	450	0.638	4.01
Prop. Sewer	MH.3	MH.4	70	0.07	1.797	11.21	0.339	0.90	97.44	0.486	65.3%	3.00%	525	0.745	3.44
Prop. Sewer	MH.4	MH.5	100	0.10	1.885	11.86	0.649	0.90	95.95	0.503	69.2%	1.40%	600	0.727	2.57
Prop. Sewer	MH.5	MH.6	60	0.06	1.939	12.25	0.389	0.90	93.23	0.502	69.1%	1.40%	600	0.727	2.57
Prop. Sewer	MH.6	MH.8	65	0.07	1.998	12.68	0.438	0.90	91.68	0.509	72.7%	1.30%	600	0.700	2.48
						10.00									
Prop. Sewer	MH.7	MH.8	65	0.11	0.101	11.12	1.120	0.90	101.51	0.028	41.6%	0.50%	300	0.068	0.97
						45.00									
Ext. Drainage from East	Ext.	MH.8	10	92.71	29.751	45.03	0.032	0.30	40.54	3.350	80.7%	3.00%	1000	4.153	5.29
Replaced Culvert	MH.8	Culv	6	0.00	31.850	45.03	0.019	0.90	40.52	3.585	86.3%	3.00%	1000	4.153	5.29
Total Flows to Culvert										3.585					
Lands tributary to South Sewer						10.00									
Prop. Sewer	MH.10	MH.11	80	0.14	0.126	10.49	0.487	0.90	101.51	0.035	18.3%	4.00%	300	0.193	2.74
Prop. Sewer	MH.11	MH.12	70	0.07	0.188	10.85	0.364	0.90	99.18	0.052	22.9%	5.50%	300	0.227	3.21
Prop. Sewer	MH.12	MH.13	70	0.09	0.269	11.28	0.426	0.90	97.52	0.073	37.7%	4.00%	300	0.193	2.74
Prop. Sewer	MH.13	MH.14	90	0.10	0.358	11.91	0.633	0.90	95.65	0.095	56.7%	3.00%	300	0.167	2.37
Prop. Sewer	MH.14	MH.15	60	0.06	0.411	12.33	0.422	0.90	93.01	0.106	63.4%	3.00%	300	0.167	2.37
Prop. Sewer	MH.15	HW.16	25	0.00	0.411	12.51	0.176	0.90	91.34	0.104	62.3%	3.00%	300	0.167	2.37
Total Flows to Headwall										0.104					

DESIGNED BY: R and R ASSOCIATES INC.

ST. CATHARINES, ON

DATE: 20-May-10

REVISED: 22-Aug-10

NOTES: N = 2.778 GIVEN AREA (ha) AND RAINFALL INTENSITY (mm/hr)

TOWN OF MILTON IDF CURVES:

I5 = 1039.2 / (t + 7.0) ^ 0.821

I100 = 2138 / (t + 9.0) ^ 0.858