URBANTECH®

STORM SEWER DESIGN SHEET

10 Year Storm

DERRY BRITANNIA DEVELOPMENTS LIMITED

CITY OF MISSISSAUGA

PROJECT DETAILS

Project No: 20-652
Date: 14-Apr-23
Designed by: TL
Checked by: SR

DESIGN CRITERIA

Min. Diameter = 300 mm
Mannings 'n'= 0.013
Starting Tc = 15 min
Factor of Safety = 15 %

Rainfall Intensity = $\frac{A}{(Tc+B)^c}$

A = 1010
B = 4.6
c = 0.78

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	AREA (ha)	RUNOFF COEFFICIENT "R"	'AR'	ACCUM. 'AR'	RAINFALL INTENSITY (mm/hr)	FLOW (m3/s)	CONSTANT FLOW (m3/s)	ACCUM. CONSTANT FLOW (m3/s)	TOTAL FLOW (m3/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m3/s)	FULL FLOW VELOCITY (m/s)	INITIAL Tc (min)	TIME OF CONCENTRATION (min)	ACC. TIME OF CONCENTRATION (min)	PERCENT FULL (%)
STREET A	1	2	0.54	0.65	0.35	0.35	99.2	0.097	0.081	0.081	0.178	107.0	0.50	525	0.304	1.40	15.00	1.27	16.27	58%
STREET A	2	3				0.35	94.4	0.092		0.081	0.173	13.3	0.50	525	0.304	1.40	16.27	0.16	16.43	57%
STREET A	3	4	1.32	0.90	1.19	1.54	93.9	0.401		0.081	0.482	67.8	0.30	750	0.610	1.38	16.43	0.82	17.25	79%
PARK	CTRL 1_1	4	0.76	0.30	0.23	0.23	99.2	0.063			0.063	12.0	0.50	375	0.124	1.12	15.00	0.18	15.18	51%
STREET A	4	5				1.77	91.1	0.447		0.081	0.528	49.8	0.30	750	0.610	1.38	17.25	0.60	17.85	87%
STREET A	5	6				1.77	89.2	0.438		0.081	0.519	117.6	0.30	750	0.610	1.38	17.85	1.42	19.27	85%
STREET A	6	7				1.77	85.0	0.417		0.081	0.498	118.2	0.30	750	0.610	1.38	19.27	1.43	20.69	82%
FUT CONDO ROAD	CTRL 1	7	0.67	0.65	0.44	0.44	99.2	0.120			0.120	13.5	0.50	450	0.202	1.27	15.00	0.18	15.18	60%
STREET A	7	8	0.09	0.90	0.08	2.28	81.3	0.516		0.081	0.597	39.7	0.30	825	0.786	1.47	20.69	0.45	21.14	76%
CONDO ROAD G	CTRL 2	8	3.23	0.65	2.10	2.10	99.2	0.578	0.395	0.395	0.973	13.1	0.50	900	1.280	2.01	15.00	0.11	15.11	76%
STREET A	8	9	0.19	0.90	0.17	4.55	80.2	1.014		0.476	1.490	90.5	0.30	1200	2.135	1.89	21.14	0.80	21.94	70%
CONDO BLOCK	CTRL 3	9_1	0.82	0.90	0.74	0.74	99.2	0.203			0.203	11.0	0.50	525	0.304	1.40	15.00	0.13	15.13	67%
CONDO BLOCK	CTRL 4	9_1	0.83	0.90	0.75	0.75	99.2	0.206			0.206	14.0	0.50	525	0.304	1.40	15.00	0.17	15.17	68%
STREET B	9_1	9	0.33	0.90	0.30	1.78	98.5	0.488	0.241	0.241	0.729	103.3	0.50	825	1.015	1.90	15.17	0.91	16.07	72%
STREET A	9	11	0.20	0.90	0.18	6.52	78.3	1.417		0.717	2.134	93.5	0.30	1350	2.923	2.04	21.94	0.76	22.71	73%
CONDO ROAD J	CTRL 5	11	2.78	0.65	1.81	1.81	99.2	0.498			0.498	13.5	0.50	675	0.594	1.66	15.00	0.14	15.14	84%
STREET A	11	12	0.08	0.90	0.07	8.40	76.6	1.785		0.717	2.502	37.0	0.30	1350	2.923	2.04	22.71	0.30	23.01	86%
CONDO ROAD J	CTRL 6	12	0.30	0.65	0.20	0.20	99.2	0.054			0.054	13.5	0.50	300	0.068	0.97	15.00	0.23	15.23	79%
STREET A	12	13	0.09	0.90	0.08	8.67	75.9	1.828		0.717	2.545	39.1	0.30	1500	3.872	2.19	23.01	0.30	23.31	66%
CONDO ROAD L	CTRL 7	13	0.90	0.65	0.59	0.59	99.2	0.161	0.109	0.109	0.270	14.5	0.50	600	0.434	1.54	15.00	0.16	15.16	62%

Urbantech Consulting, A Division of Leighton-Zec Ltd.
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			B =	4.6
Factor of Safety =	15	%	c =	0.78

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	AREA (ha)	RUNOFF COEFFICIENT "R"	'AR'	ACCUM. 'AR'	RAINFALL INTENSITY (mm/hr)	FLOW (m3/s)	CONSTANT FLOW (m3/s)	ACCUM. CONSTANT FLOW (m3/s)	TOTAL FLOW (m3/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m3/s)	FULL FLOW VELOCITY (m/s)	INITIAL Tc (min)	TIME OF CONCENTRATION (min)	ACC. TIME OF CONCENTRATION (min)	PERCENT FULL (%)
STREET A	13	14	0.79	0.90	0.71	9.97	75.3	2.084		0.826	2.910	104.9	0.30	1500	3.872	2.19	23.31	0.80	24.10	75%
ELEMENTARY SCHOOL	CTRL 8	14	2.84	0.90	2.56	2.56	99.2	0.704			0.704	14.5	0.50	825	1.015	1.90	15.00	0.13	15.13	69%
CONDO ROAD K	CTRL 9	14	0.77	0.65	0.50	0.50	99.2	0.138			0.138	13.5	0.50	450	0.202	1.27	15.00	0.18	15.18	68%
STREET A	14	15				13.02	73.6	2.664		0.826	3.490	51.3	0.30	1200x1800 (BOX)	4.605	2.13	24.10	0.40	24.50	76%
STREET A	15	16				13.02	72.9	2.635		0.826	3.461	100.8	0.30	1200x1800 (BOX)	4.605	2.13	24.50	0.79	25.29	75%
STREET A	16	17				13.02	71.3	2.581		0.826	3.407	101.6	0.30	1650	4.992	2.33	25.29	0.73	26.02	68%
PARK	CTRL 10	17	1.36	0.30	0.41	0.41	99.2	0.112			0.112	13.0	0.50	450	0.202	1.27	15.00	0.17	15.17	56%
STREET A	17	18	0.16	0.90	0.14	13.58	70.0	2.641		0.826	3.467	70.5	0.15	1800	4.452	1.75	26.02	0.67	26.69	78%
CONDO ROAD O	CTRL 11	18	0.91	0.65	0.59	0.59	99.2	0.163			0.163	12.5	0.50	450	0.202	1.27	15.00	0.16	15.16	81%
STREET A	18	19	0.13	0.90	0.12	14.28	68.9	2.732		0.826	3.558	59.0	0.15	1800	4.452	1.75	26.69	0.56	27.25	80%
CONDO ROAD P	CTRL 12	19	1.28	0.65	0.83	0.83	99.2	0.229	0.272	0.272	0.501	12.5	0.30	750	0.610	1.38	15.00	0.15	15.15	82%
STREET A	19	20	1.79	0.65	1.16	16.28	67.9	3.071		1.098	4.169	125.2	0.15	1200x2400 (BOX)	4.658	1.62	27.25	1.29	28.54	89%
STREET A	20	21				16.28	65.8	2.977		1.098	4.075	125.2	0.15	1200x2400 (BOX)	4.658	1.62	28.54	1.29	29.83	87%
STREET A	21	22				16.28	63.9	2.890		1.098	3.988	127.1	0.15	1950	5.511	1.85	29.83	1.15	30.98	72%
CONDO ROAD R	CTRL 13	22	1.80	0.65	1.17	1.17	99.2	0.322	0.332	0.332	0.654	12.5	0.50	750	0.787	1.78	15.00	0.12	15.12	83%
STREET A	22	23	0.39	0.90	0.35	17.80	62.3	3.080		1.430	4.510	56.4	0.15	1950	5.511	1.85	30.98	0.51	31.49	82%
CONDO ROAD S	CTRL 14	23	1.73	0.65	1.12	1.12	99.2	0.310	0.037	0.037	0.347	12.5	0.30	675	0.460	1.29	15.00	0.16	15.16	75%
STREET A	23	26				18.93	61.6	3.238		1.467	4.705	99.1	0.15	1950	5.511	1.85	31.49	0.90	32.38	85%
STREET A		24	0.65	0.90	0.59	0.59														
STREET A	24	25	0.34	0.90	0.31	0.89	99.2	0.245	0.020	0.020	0.265	67.3	0.50	600	0.434	1.54	15.00	0.73	15.73	61%
STREET A	25	26				0.89	96.4	0.239		0.020	0.259	16.3	0.50	600	0.434	1.54	15.73	0.18	15.91	60%
SWM POND	26	27				19.82	60.4	3.326		1.487	4.813	68.0	0.15	2100	6.715	1.94	32.38	0.58	32.97	72%

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PARK	28	27	0.42	0.30	0.13	0.13	99.2	0.035			0.035	6.0	0.50	300	0.068	0.97	15.00	0.10	15.10	51%
SWM POND	27	29				19.94	59.7	3.307		1.487	4.794	17.9	0.15	1200x3000 (BOX)	6.097	1.69	32.97	0.18	33.15	79%
SWM POND	29	HW 1				19.94	59.5	3.295		1.487	4.782	13.1	0.15	1950	5.511	1.85	33.15	0.12	33.26	87%

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