Building A Tower Roof Drain Calculations Summary

5-Year

Area ID	Static Ponding Area (m^2)	Drainage Area (ha)	Runoff Coef. (5-year)	Time-of-Conc. (min)	Rainfall Intensity mm/hr	Uncontrolled Peak Flow (L/s)	Roof Drain Flow Control System	Setting	Controlled Peak Flow (L/s)	Flow Depth (m)	Storage Required (m^3)	Storage Available (m^3)
R-A1	360.5	0.036	0.90	10.00	104.19	9.4	Watts Flow Control	1/2 Open	0.95	0.11	7.34	18.03
R-A2	329.5	0.033	0.90	10.00	104.19	8.6	Watts Flow Control	1/2 Open	0.95	0.11	6.48	16.48
R-A3	342.7	0.034	0.90	10.00	104.19	8.9	Watts Flow Control	1/2 Open	0.95	0.11	6.84	17.14
TOTAL		0.103									20.66	51.64

100-Year

Area ID	Static Ponding Area (m^2)	Drainage Area (ha)	Runoff Coef. (100-year)	Time-of-Conc. (min)	Rainfall Intensity mm/hr	Uncontrolled Peak Flow (L/s)	Roof Drain Flow Control System	Setting	Controlled Peak Flow (L/s)	Flow Depth (m)	Storage Required (m^3)	Storage Available (m^3)
R-A1	360.5	0.036	1.00	10.00	178.56	17.9	Watts Flow Control	1/2 Open	1.26	0.14	15.67	18.03
R-A2	329.5	0.033	1.00	10.00	178.56	16.4	Watts Flow Control	1/2 Open	1.26	0.14	13.90	16.48
R-A3	342.7	0.034	1.00	10.00	178.56	17.0	Watts Flow Control	1/2 Open	1.26	0.14	14.65	17.14
TOTAL		0.103				51.3					44.21	51.64

Building A Podium Roof Drain Calculations Summary

5-Year

Area ID	Static Ponding Area (m^2)	Drainage Area (ha)	Runoff Coef. (5-year)	Time-of-Conc. (min)	Rainfall Intensity mm/hr	Uncontrolled Peak Flow (L/s)	Roof Drain Flow Control System	Setting	Controlled Peak Flow (L/s)	Flow Depth (m)	Storage Required (m^3)	Storage Available (m^3)
R-AP1	370	0.037	0.90	10.00	104.19	9.6	Watts Flow Control	1/2 Open	0.95	0.11	7.61	18.50
R-AP2	370	0.037	0.90	10.00	104.19	9.6	Watts Flow Control	1/2 Open	0.95	0.11	7.61	18.50
TOTAL		0.074									15.21	37.00

100-Year

Area ID	Static Ponding Area (m^2)	Drainage Area (ha)	Runoff Coef. (100-year)	Time-of-Conc. (min)	Rainfall Intensity mm/hr	Uncontrolled Peak Flow (L/s)	Roof Drain Flow Control System	Setting	Controlled Peak Flow (L/s)	Flow Depth (m)	Storage Required (m^3)	Storage Available (m^3)
R-AP1	370	0.037	1.00	10.00	178.56	18.4	Watts Flow Control	1/2 Open	1.26	0.14	16.22	18.50
R-AP2	370	0.037	1.00	10.00	178.56	18.4	Watts Flow Control	1/2 Open	1.26	0.14	16.22	18.50
TOTAL		0.074				36.7					32.44	37.00

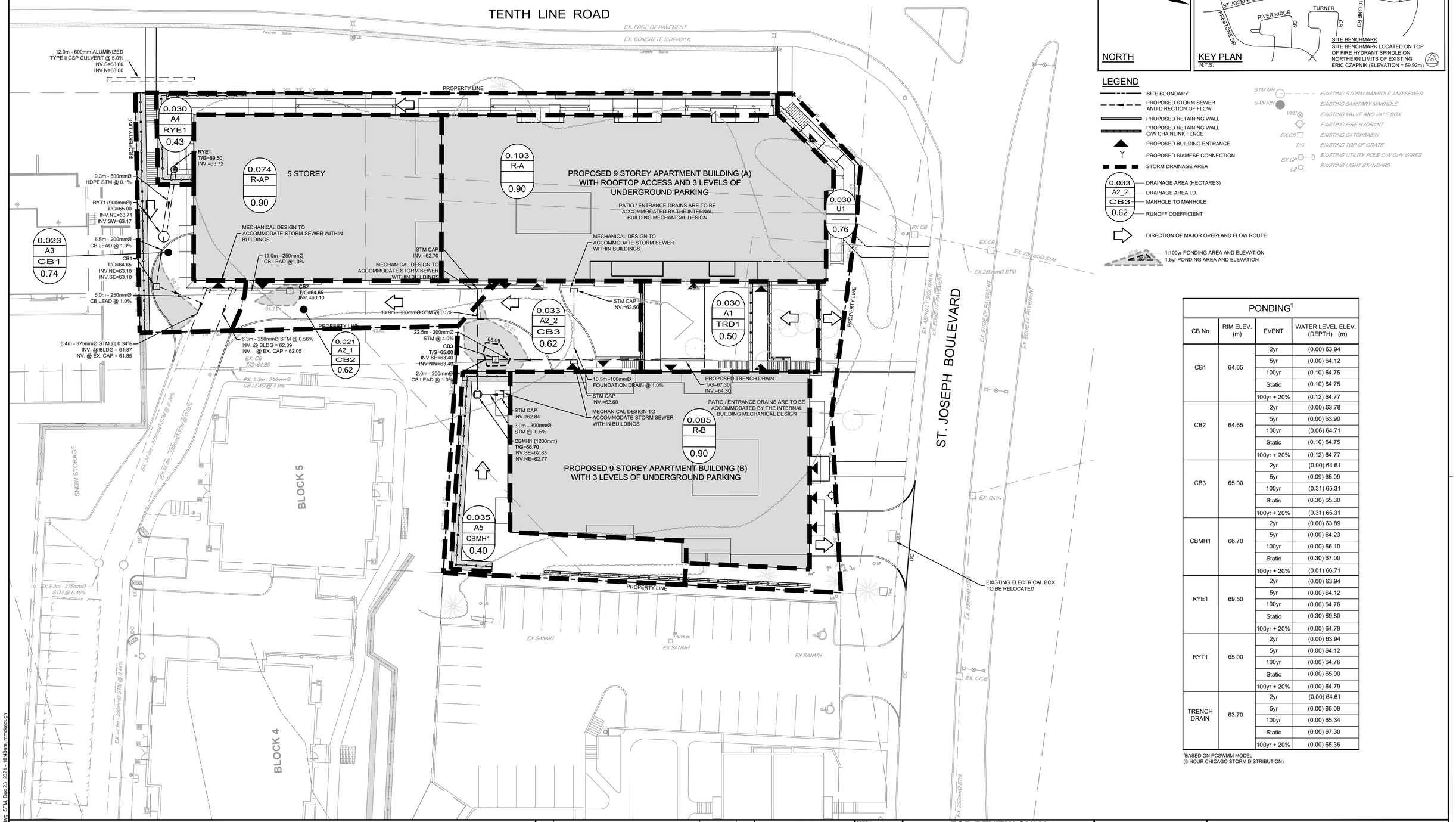
Building B Tower Roof Drain Calculations Summary

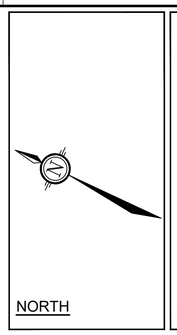
5-Year

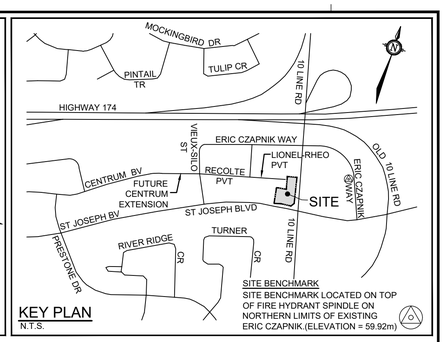
Area ID	Static Ponding Area (m^2)	Drainage Area (ha)	Runoff Coef. (5-year)	Time-of-Conc. (min)	Rainfall Intensity mm/hr	Uncontrolled Peak Flow (L/s)	Roof Drain Flow Control System	Setting	Controlled Peak Flow (L/s)	Flow Depth (m)	Storage Required (m^3)	Storage Available (m^3)
R-B1	271.3	0.027	0.90	10.00	104.19	7.1	Watts Flow Control	1/2 Open	0.95	0.107	4.92	13.57
R-B2	283.3	0.028	0.90	10.00	104.19	7.4	Watts Flow Control	1/2 Open	0.95	0.107	5.24	14.17
R-B3	295.5	0.030	0.90	10.00	104.19	7.7	Watts Flow Control	1/2 Open	0.95	0.108	5.56	14.78
TOTAL		0.085									15.72	42.51

100-Year

Area ID	Static Ponding Area (m^2)	Drainage Area (ha)	Runoff Coef. (100-year)	Time-of-Conc. (min)	Rainfall Intensity mm/hr	Uncontrolled Peak Flow (L/s)	Roof Drain Flow Control System	Setting	Controlled Peak Flow (L/s)	Flow Depth (m)	Storage Required (m^3)	Storage Available (m^3)
R-B1	271.3	0.027	1.00	10.00	178.56	13.5	Watts Flow Control	1/2 Open	1.26	0.138	10.69	13.57
R-B2	283.3	0.028	1.00	10.00	178.56	14.1	Watts Flow Control	1/2 Open	1.26	0.139	11.34	14.17
R-B3	295.5	0.030	1.00	10.00	178.56	14.7	Watts Flow Control	1/2 Open	1.26	0.140	12.01	14.78
TOTAL		0.085				42.2					34.03	42.51







LEGEND

- SITE BOUNDARY
- PROPOSED STORM SEWER AND DIRECTION OF FLOW
- PROPOSED RETAINING WALL
- PROPOSED RETAINING WALL C/W CHAINLINK FENCE
- PROPOSED BUILDING ENTRANCE
- PROPOSED SIAMESE CONNECTION
- STORM DRAINAGE AREA
- STM MH — EXISTING STORM MANHOLE AND SEWER
- SAN MH — EXISTING SANITARY MANHOLE
- VVB — EXISTING VALVE AND VALE BOX
- EXISTING FIRE HYDRANT
- EX.CB — EXISTING CATCHBASIN
- T/G — EXISTING TOP OF GRATE
- EX UP — EXISTING UTILITY POLE C/W GUY WIRES
- LS — EXISTING LIGHT STANDARD
- 0.033 / A2_2 / CB3 / 0.62 — DRAINAGE AREA (HECTARES), DRAINAGE AREA I.D., MANHOLE TO MANHOLE, RUNOFF COEFFICIENT
- DIRECTION OF MAJOR OVERLAND FLOW ROUTE
- 1:100yr PONDING AREA AND ELEVATION
- 1:5yr PONDING AREA AND ELEVATION

PONDING[1]

CB No.	RIM ELEV. (m)	EVENT	WATER LEVEL ELEV. (DEPTH) (m)
CB1	64.65	2yr	(0.00) 63.94
		5yr	(0.00) 64.12
		100yr	(0.10) 64.75
		Static	(0.10) 64.75
		100yr + 20%	(0.12) 64.77
CB2	64.65	2yr	(0.00) 63.78
		5yr	(0.00) 63.90
		100yr	(0.06) 64.71
		Static	(0.10) 64.75
		100yr + 20%	(0.12) 64.77
CB3	65.00	2yr	(0.00) 64.61
		5yr	(0.09) 65.09
		100yr	(0.31) 65.31
		Static	(0.30) 65.30
		100yr + 20%	(0.31) 65.31
CBMH1	66.70	2yr	(0.00) 63.89
		5yr	(0.00) 64.23
		100yr	(0.00) 66.10
		Static	(0.30) 67.00
		100yr + 20%	(0.01) 66.71
RYE1	69.50	2yr	(0.00) 63.94
		5yr	(0.00) 64.12
		100yr	(0.00) 64.76
		Static	(0.30) 69.80
		100yr + 20%	(0.00) 64.79
RYT1	65.00	2yr	(0.00) 63.94
		5yr	(0.00) 64.12
		100yr	(0.00) 64.76
		Static	(0.00) 65.00
		100yr + 20%	(0.00) 64.79
TRENCH DRAIN	63.70	2yr	(0.00) 64.61
		5yr	(0.00) 65.09
		100yr	(0.00) 65.34
		Static	(0.00) 67.30
		100yr + 20%	(0.00) 65.36

[1]BASED ON PCSWMM MODEL (6-HOUR CHICAGO STORM DISTRIBUTION)

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

PRELIMINARY NOT FOR CONSTRUCTION

No.	REVISION	DATE	BY
1.	ISSUED FOR CITY OF OTTAWA REVIEW	DEC 23/21	DDB

SCALE 1:250

1:250
0 2 4 6 8 10

DESIGN BM
CHECKED DDB
DRAWN SAB
CHECKED DDB
APPROVED DDB

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER D. D. BLAIR 100122737 DEC 23 2021 PROVINCE OF ONTARIO

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Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
HILLSIDE COMMONS
ORLEANS TOWN CENTER

DRAWING NAME
STORMWATER MANAGEMENT PLAN

PROJECT No. 120237-00
REV REV # 1
DRAWING No. 120237-STM

M:\2020\120237\CAD\Design\120237-STM.dwg, STM, Dec 23, 2021 - 10:40am, mmckeough

PLANA1 (ISO) - BW.ctb Dec 23, 2021 - 10:40am, mmckeough