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Site Servicing & Stormwater Management Report

24 Unit Development
1765 Trim Road (Mondavi St.)

City of Ottawa

Project No. 12047-1

Prepared for:

Longwood Building Corporation
1010 Polytek Rd., Unit 5
Ottawa, Ontario
K1J 9H8

July 26, 2013

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1.0 INTRODUCTION

The Ainley Group has been retained by Longwood Building Corporation to prepare a Site Servicing and Stormwater Management Report addressing the requirements of the City of Ottawa.

The subject site (1765 Trim Road) is located at the end of Mondavi Street just West of Breezewood Street in the City of Ottawa. See Appendix A – Figure 1: Site Location Key Plan.

The subject site is currently an open field. The proposed development of the subject site is proposed to include 24 units (i.e. semi-detach and townhouse blocks), a walkway connection to the new Trim Road Realignment, an asphalt road with cul-de-sac and associated underground services and utilities to service the proposed development. The overall area of the subject site is 0.80ha.

As part of the development of the existing subdivision to the East of the subject site (i.e. Ashcroft Homes, Eastboro - Oak Gate Subdivision) servicing stubs were provided on Mondavi Street for the subject site. The servicing stubs are generally oversized and include a 200mm diameter watermain, 200mm diameter sanitary sewer and 450mm diameter storm sewer stub. Plans to service 1765 Trim Road lands with municipal water, sanitary and storm sewers through the Ashcroft Subdivision were addressed to Ottawa City Council in 2009 in a report entitled "City of Ottawa Planning Rationale for 1765 Trim Road Zoning By-Law Amendment (City of Ottawa Real Estate Partnerships and Development Office, www.ottawa.ca, 2012). Based on a review of the detailed engineering design drawings for the Ashcroft Subdivision, it is evident that the subject site was accounted for in the water distribution, sanitary sewer and storm sewer design for the existing subdivision, although it is recognized that some stormwater management will be addressed within the 1765 Trim Road lands in order to comply with anticipated post development flow rates.

2.0 MUNICIPAL DRINKING & FIRE PROTECTION WATER SERVICES

As mentioned above a 200mm diameter watermain stub has been constructed on Mondavi Street just east of the subject property in order to service lands at 1765 Trim Road. It is proposed that the existing 200mm diameter watermain be extended into the proposed cul-de-sac of the subject property in accordance with City of Ottawa Standard Drawing No. W37 – Watermain Layout for Residential Cul-De-Sacs.

Using the City of Ottawa guideline of 350 L/c/d and based on 24 units at 2.7 persons per unit, the anticipated average daily demand for the subdivision has been calculated at 22.75 cu.m/day or 0.263 L/s. Anticipated max daily and peak hourly consumption rates are based on very conservative factors of 9.5 and 14.3 (MOE Table 3.3 – Peaking Factors for Drinking-Water Systems Serving Fewer than 500 People) are 2.50 L/s and 3.76 L/s respectfully.

The closest existing fire hydrant to the subject site is located on the south side of Mondavi Street approximately 42 metres east of Breezewood Street. In accordance with Fire Hydrant Spacing Guidelines (Table 4.9) in the City of Ottawa Design Guidelines for Water Distribution, the maximum spacing for fire hydrants in single family residential areas with frontage at the street line less than 15 metres is 110 metres. Based on the City of Ottawa Design Guidelines a new fire hydrant was added within the subject site.

The anticipated fire flow (based on the Fire Underwriters Survey) was calculated to be 12,000 L/min or 200 L/s derived from:

- Type of construction: Wood Frame = coefficient of 1.5
- Ground Floor Area = 310sq.m (largest townhouse block)
- Height in storeys = 2
- Fire Flow = 220(1.5)(310 x 2)^0.5 = 8,000 L/min (rounded off to the nearest 1,000)
- No Sprinklers = no decrease
- Exposures = 55% increase
- Total Fire Flow Required (rounded off to the nearest 1,000) = 12,000 L/min = 200 L/s

Boundary conditions shall be acquired by the City of Ottawa to confirm the minimum and maximum water pressures conform to the following objectives:

- Normal operating pressure ranges between 50 psi and 80 psi under a condition of maximum daily flow.
- Under maximum hourly demand conditions, the pressures are not less than 40 psi.
- During periods of maximum day and fire flow demand, the residual pressure at any point in the distribution system shall not be less than 20 psi.
- The maximum pressure at any point in the distribution system in occupied areas outside of the public right-of-way shall not exceed 80 psi.
- The maximum pressure at any point in the distribution system in unoccupied areas shall not exceed 100 psi.

3.0 SANITARY SEWER SERVICES

As mentioned above, servicing to 1765 Trim Road lands included detailed engineering within the Ashcroft Subdivision lands to the east including the provision of a 200mm diameter sanitary sewer stub provided on Mondavi Street. Based on the proposed addition of 24 units to the existing sanitary system, the anticipated peak sanitary flow is 1.46 L/sec at the existing maintenance hole at the intersection of Mondavi Street and Breezewood Street, calculated as follows.

Sanitary Flow Calculation: (Based on City of Ottawa Sewer Design Guidelines)

Population: 24 proposed units + 3 existing units = 27 units
2.7 Persons per unit
Total Population = 27 units x 2.7 persons/unit = **73 persons**

Residential Average Flow: 350 L/person/day
350 L/day x 73 person = 25,550 L/day = **0.296 L/sec**

Peaking Factor: Harmon Equation = **4.0**

Infiltration: 0.28 L/sec/effective gross area (ha)
0.28 L/sec x 0.99ha = **0.28 L/sec**

Total Peak Sanitary Flow = (0.296 L/sec x 4.0) + 0.28 L/sec = **1.46 L/sec**

The Sanitary Sewer Design Sheet and Sanitary Drainage Area Plan have been included in the appendices of this report.

4.0 DRAINAGE & STORM SEWER SYSTEM

During the development and construction of the Ashcroft Residential Subdivision to the East, a 450mm diameter storm sewer stub was provided on Mondavi Street just east of the subject property. This storm sewer shall be extended into the proposed cul-de-sac in accordance with City of Ottawa Standards to convey the 5 year post-development storm flows of the subject property.

5 Year Post-Development Storm Flow (Rational Method)

$Q = 2.78 \times C \times I \times A$

where:

Q is the 5 year Post Development Storm Flow Rate in litres per second (l/s)
2.78 is the factor to convert Hectares and rainfall intensity to l/s
C (Runoff Coefficient) is 0.60 (per Table 5.8 – City of Ottawa Sewer Design Guidelines)
I (5 Year Rainfall Intensity) is 104.19mm/hr (based on a Time of Concentration = 10 minutes)
A (Total Site Area) is 0.83ha

$Q = 2.78 \times 0.60 \times 104.19\text{mm/hr} \times 0.83\text{ha}$

Q = 144.2 l/s

Drainage from the rear portions of lots will be directed to rear lot catch basins by way of side and rear lot swales. The rear lot catch basins will be connected to the storm sewer in the proposed cul-de-sac and directed to the existing storm sewer on Mondavi Street. During more intense storms (i.e. greater than the 5 year event) the rear yard catch basins will capture additional stormwater runoff since designed for free flow conditions (i.e. with no restrictions). That being said, the roadside catch basins have been designed with orifice controls to ensure that even during a 100 year event, the release of stormwater runoff from the site will not be greater than 144.2 l/s, (i.e. 5 year post-development flow).

This has been achieved by providing ponding within the right-of-way. Ponding volumes have been designed to provide storage for rainfall events up to and including the 100 year event. The maximum ponding depth of 280mm has been provided before over spilling down the walkway towards the new Trim Road realignment. The walkway has been designed as an emergency over spill to prevent any negative impact to proposed and existing structures including adjacent lands during rainfall events up to and including the 100 year event.

Storage volume requirements were determined by applying the 5 year and 100 year rainfall intensity values at 10 minute intervals until peak storage volumes were attained, (Refer to Storage Tables 3 to 8 in Appendix 'A'). The approximate volumes provided were determined by applying the pyramid volume equation of one-third of the depth multiplied by the surface area of the pond.

Table 1 "Stormwater Management Summary Sheet" in Appendix 'A' summarizes the drainage areas, composite 'C' values, controlled release rates, ponding depths and the required orifice sizes. The resulting 100 year release rate from the site is 144.2 l/s, which is less/equal to the allowable release rate of 144.2 l/s.

The storm sewers however, have been designed for the 1:5 year design regardless of the controlled release rates, (Refer to Table 2 – Storm Sewer Design Sheet in Appendix 'A').

5.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures shall be implemented during construction to minimize the migration of sediments from the proposed development. To accomplish this task, items such as silt fences and geo-textile membranes shall be installed to capture sediment before it leaves the site. Filter cloth shall be installed between the frame and cover on all proposed and existing adjacent catchbasins and manholes. A mud mat shall be constructed until the placement of the granular sub-base. In addition, all stockpiles shall be covered and exposed areas shall be vegetated as soon as possible. During construction, all erosion control features shall be maintained and repaired as necessary and adjacent roadways kept free of debris and sediment as required.

6.0 CONCLUSION

In summary our report concludes that, consistent with earlier site servicing reports conducted for the lands within 1765 Trim Road conducted under the direction of the City of Ottawa, that the subject lands are fully serviced for development through municipal water, sanitary sewers and storm sewers provided via Mondavi Street.

We trust that this report meets all of your requirements.

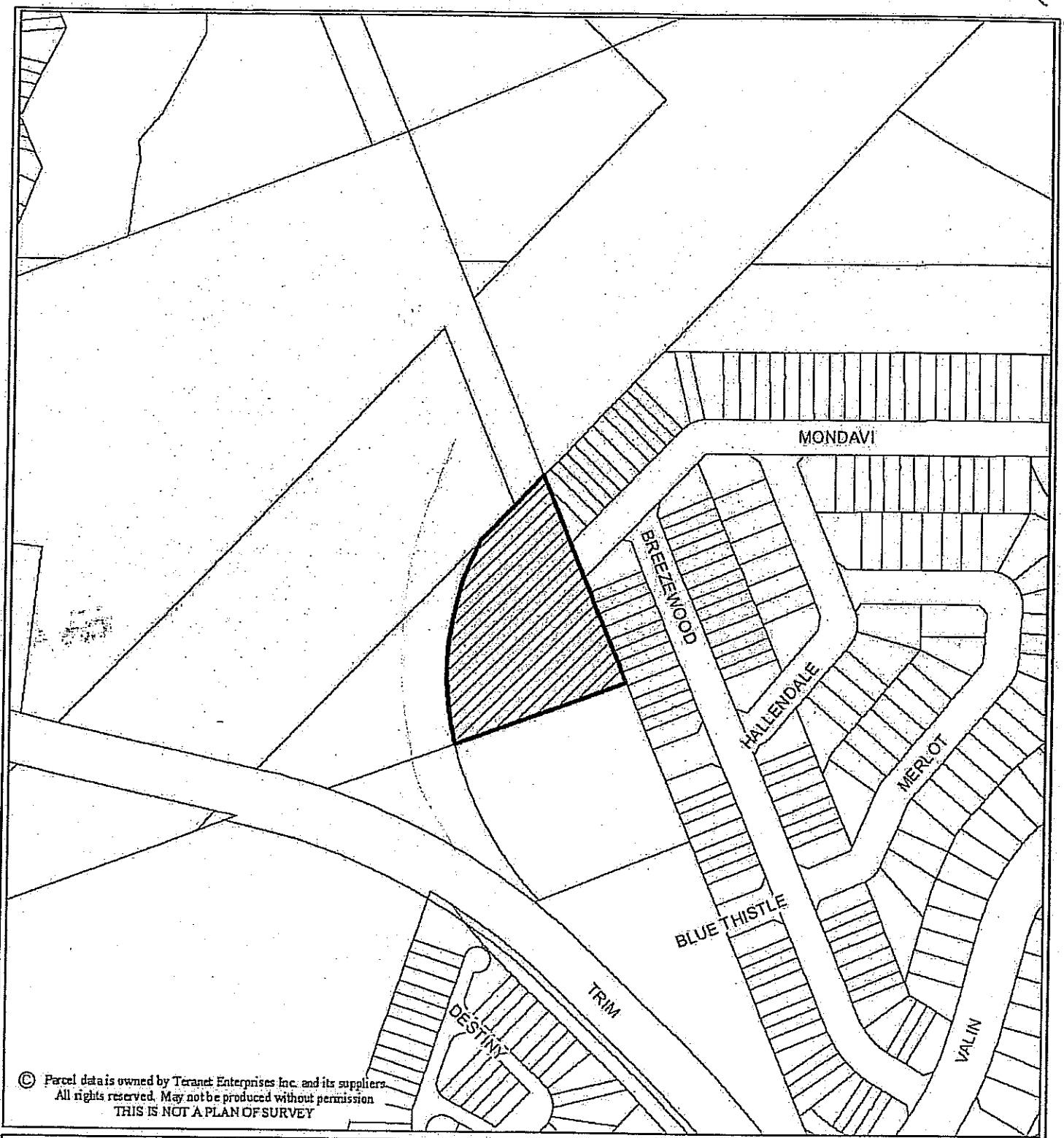
Should you have any questions or require further clarification, please don't hesitate to contact our office.

Sincerely,

AINLEY GRAHAM & ASSOCIATES LIMITED

Guy Ste-Croix, LEL, C.E.T.
Project Manager / Senior Municipal Designer

Professional Engineers
Ontario
July 26, 2013
Limited Licensee
Name: G. STE-CROIX
Number: 100136659
Category: CIVIL: Sewers/Water Mains
Limitations:
This licence is subject to the limitations as detailed on the certificate.
Association of Professional Engineers of Ontario



Ottawa

Produced by Infrastructure Services and Community Sustainability
Produit par le Services d'infrastructure et Viabilité des collectivités

D02-02-11-0058	11-1045
I:\CO\2011\Location\ Trim1765	

2011 / 08 / 05

REVISION DATE DE RÉVISION

FIGURE 1:

Location Map / Plan de révision
1765 TRIM ROAD

145260203 Denotes Teranet-Polaris Parcel Identification Number

Échelle
N.T.S.
Mètres

Scale
N.T.S.
Metres

APPENDIX 'A'

AINLEY Project: 12047 - 1
Location: Mondavi Street
Client: Longwood Subdivision

Table 1. Stormwater Management Summary Sheet

Sub Area I.D.	Sub Area (ha)	C = 0.2	C = 0.6	C = 0.9	Composite 'C'	Outlet Location	Controlled Release (L/s)	Top of Grate (m)	Ponding Depth (m)	Invert or Pan Elev. (m)	Pipe dia (if plug type) (mm)	Head on Orifice (if plug) (m)	Diameter of Orifice (mm)
A1	0.244	0.055	0.000	0.189	0.74	CB 1	26.0	87.82	0.28	86.62	200	1.38	103
A2	0.142	0.047	0.000	0.094	0.67	CB 2	20.0	87.82	0.28	86.62	200	1.38	90
A3	0.169	0.135	0.000	0.033	0.34	CB 3	35.3						Free Flow
A4	0.024	0.015	0.000	0.009	0.46	CB 4	6.8						Free Flow
A5	0.081	0.067	0.000	0.014	0.32	CB 5	16.0						Free Flow
A6	0.165	0.120	0.000	0.045	0.39	CB 6	40.1						Free Flow
	0.824	0.439	0.000	0.385	0.53		144.2						

AINLEY Project: 12047 - 1

Location: Mondavi Street

Client: Longwood Subdivision

Table 2 -Storm Sewer Design Sheet

RATIONAL METHOD Q = 2.78 AIR

Where:
Q = peak flow in litres per second (L/s)
A = area in hectares (ha)
I = rainfall intensity in millimetres per hour (mm/hr)
R = runoff coefficient

"a" / (T + "c")^"b"

	10 year	5 year
	1174.184	998.071
	0.816	0.814
	6.014	6.053

N-value 0.013

LOCATION			AREAS (ha)					TIME OF CONC.	RAINFALL INTENSITY			PEAK FLOW	SEWER DATA						
STREET	FROM	TO	0.20	AREA 0.60	0.90	INDIVID AR	ACCUM AR	Tc	I	DESIGN FLOW	EXTERNAL FLOW	Q (L/s)	DIAMETER (mm)	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	% Full
Mondavi Street	CB 3	201	0.14		0.03	0.06	0.06	15.00	83.56	13.23		13.23	254.00	1.00	38.50	62.03	1.22	0.52	21.32%
Mondavi Street	CB 4	MAIN	0.01		0.01	0.01	0.01	15.00	83.56	2.53		2.53	254.00	1.00	18.50	62.03	1.22	0.25	4.08%
	CB 5	MAIN	0.07		0.01	0.03	0.03	15.00	83.56	6.00		6.00	254.00	1.00	46.00	62.03	1.22	0.63	9.67%
	CB 6	MAIN	0.12		0.05	0.06	0.06	15.00	83.56	14.99		14.99	254.00	1.00	45.00	62.03	1.22	0.61	24.17%
Mondavi Street	201	202	0.10		0.28	0.28	0.43	15.52	81.90	98.81		98.81	381.00	0.85	39.20	168.62	1.48	0.44	58.60%
	202	203				0.00	0.43	15.97	80.56	97.19		97.19	381.00	1.00	21.60	182.90	1.60	0.22	53.14%
	203	EX MH				0.00	0.43	16.19	79.90	96.39		96.39	457.20	0.50	17.80	210.30	1.28	0.23	45.83%
			0.44		0.38														

Table 3 - Storage Requirements for AREA A1 (CB 1)

Area 0.24 hectares
Runoff Coefficient = 0.74 post developmen 100 year ave C 0.93

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Release	Net Runoff To Be Stored (L/s)	Storage Req'd m3
5 Year	10	104.19	52.54	26.0	26.5	15.9
	20	70.25	35.42	26.0	9.4	11.3
	30	53.93	27.19	26.0	1.2	2.1
	40	44.18	22.28	26.0	-3.7	-8.9
	50	37.65	18.99	26.0	-7.0	-21.0
100 Year	10	178.56	112.54	26.0	86.5	51.9
	20	119.95	75.60	26.0	49.6	59.5
	30	91.87	57.90	26.0	31.9	57.4
	40	75.15	47.36	26.0	21.4	51.3
	50	63.95	40.31	26.0	14.3	42.9

Table 4 - Storage Requirements for AREA A2 (CB 2)

Area 0.14 hectares
Runoff Coefficient = 0.67 post developmen 100 year ave C 0.83

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Release	Net Runoff To Be Stored (L/s)	Storage Req'd m3
5 Year	10	104.19	27.34	20.0	7.3	4.4
	20	70.25	18.43	20.0	-1.6	-1.9
	30	53.93	14.15	20.0	-5.9	-10.5
	40	44.18	11.59	20.0	-8.4	-20.2
	50	37.65	9.88	20.0	-10.1	-30.4
100 Year	10	178.56	58.56	20.0	38.6	23.1
	20	119.95	39.34	20.0	19.3	23.2
	30	91.87	30.13	20.0	10.1	18.2
	40	75.15	24.65	20.0	4.6	11.1
	50	63.95	20.98	20.0	1.0	2.9

Table 5 - Storage Requirements for AREA A3 (CB 3)

Area 0.17 hectares
Runoff Coefficient = 0.34 post developmen 100 year ave C 0.42

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Release	Net Runoff To Be Stored (L/s)	Storage Req'd m3
5 Year	10	104.19	16.49	16.5	0.0	0.0
	20	70.25	11.12	16.5	-5.4	-6.4
	30	53.93	8.54	16.5	-8.0	-14.3
	40	44.18	6.99	16.5	-9.5	-22.8
	50	37.65	5.96	16.5	-10.5	-31.6
100 Year	10	178.56	35.33	35.3	0.0	0.0
	20	119.95	23.73	35.3	-11.6	-13.9
	30	91.87	18.18	35.3	-17.2	-30.9
	40	75.15	14.87	35.3	-20.5	-49.1
	50	63.95	12.65	35.3	-22.7	-68.0

Table 6 - Storage Requirements for AREA A4 (CB 4)

Area **0.02** hectares
Runoff Coefficient = **0.46** post developmen 100 year ave C 0.57

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Release	Net Runoff To Be Stored (L/s)	Storage Req'd m3
5 Year	10	104.19	3.16	3.2	0.0	0.0
	20	70.25	2.13	3.2	-1.0	-1.2
	30	53.93	1.63	3.2	-1.5	-2.7
	40	44.18	1.34	3.2	-1.8	-4.4
	50	37.65	1.14	3.2	-2.0	-6.1
100 Year	10	178.56	6.76	6.8	0.0	0.0
	20	119.95	4.54	6.8	-2.2	-2.7
	30	91.87	3.48	6.8	-3.3	-5.9
	40	75.15	2.85	6.8	-3.9	-9.4
	50	63.95	2.42	6.8	-4.3	-13.0

Table 7 - Storage Requirements for AREA A5 (CB 5)

Area **0.08** hectares
Runoff Coefficient = **0.32** post developmen 100 year ave C 0.40

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Release	Net Runoff To Be Stored (L/s)	Storage Req'd m3
5 Year	10	104.19	7.48	7.5	0.0	0.0
	20	70.25	5.04	7.5	-2.4	-2.9
	30	53.93	3.87	7.5	-3.6	-6.5
	40	44.18	3.17	7.5	-4.3	-10.3
	50	37.65	2.70	7.5	-4.8	-14.3
100 Year	10	178.56	16.02	16.0	0.0	0.0
	20	119.95	10.76	16.0	-5.3	-6.3
	30	91.87	8.24	16.0	-7.8	-14.0
	40	75.15	6.74	16.0	-9.3	-22.3
	50	63.95	5.74	16.0	-10.3	-30.8

Table 8 - Storage Requirements for AREA A6 (CB 6)

Area **0.17** hectares
Runoff Coefficient = **0.39** post developmen 100 year ave C 0.49

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Release	Net Runoff To Be Stored (L/s)	Storage Req'd m3
5 Year	10	104.19	18.69	18.7	0.0	0.0
	20	70.25	12.60	18.7	-6.1	-7.3
	30	53.93	9.68	18.7	-9.0	-16.2
	40	44.18	7.93	18.7	-10.8	-25.8
	50	37.65	6.76	18.7	-11.9	-35.8
100 Year	10	178.56	40.05	40.1	0.0	0.0
	20	119.95	26.90	40.1	-13.1	-15.8
	30	91.87	20.60	40.1	-19.4	-35.0
	40	75.15	16.85	40.1	-23.2	-55.7
	50	63.95	14.34	40.1	-25.7	-77.1

APPENDIX 'B'

Sanitary Sewer Design Sheet

Project: LONGWOOD DEVELOPMENT

Residential
q=average daily per capita flow (L/cap.d) 350
I=Unit of peak extraneous flow(L/s/ha) 0.28
Q(p)=Peak population flow(L/s)
Q(I)=Peak extraneous flow(L/s)
Q(d)=peak design flow (L/s)

Peaking Factor
M=1+14(4+(p/1000)^0.5)
Q(p)=(p/1000)qm/86.4(l/s)
Q(I)=IA (L/s) : where A=area in hectares
Q(d)=Q(p)+Q(I) (L/s)

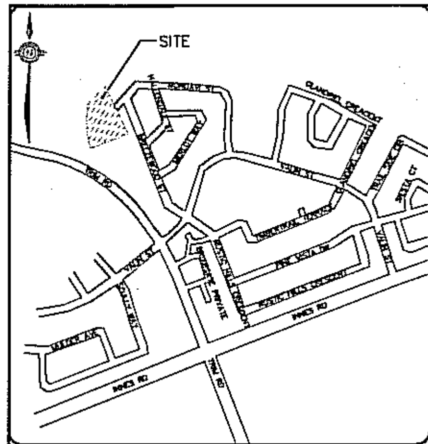
Manning Equation
Qcap.= (D/1000)^2.667*(S/100)^0.5/(3.211*n)*1000(L/s)
D: pipe size(mm)
S: slope of pipe (%)
n: roughness coefficient 0.013

Non-Residential

Average flow (L/gross ha/d)		Peaking Factor
Commercial	50000	1.5
Institutional	50000	1.5
Light Industrial	35000	
Heavy Industrial	55000	

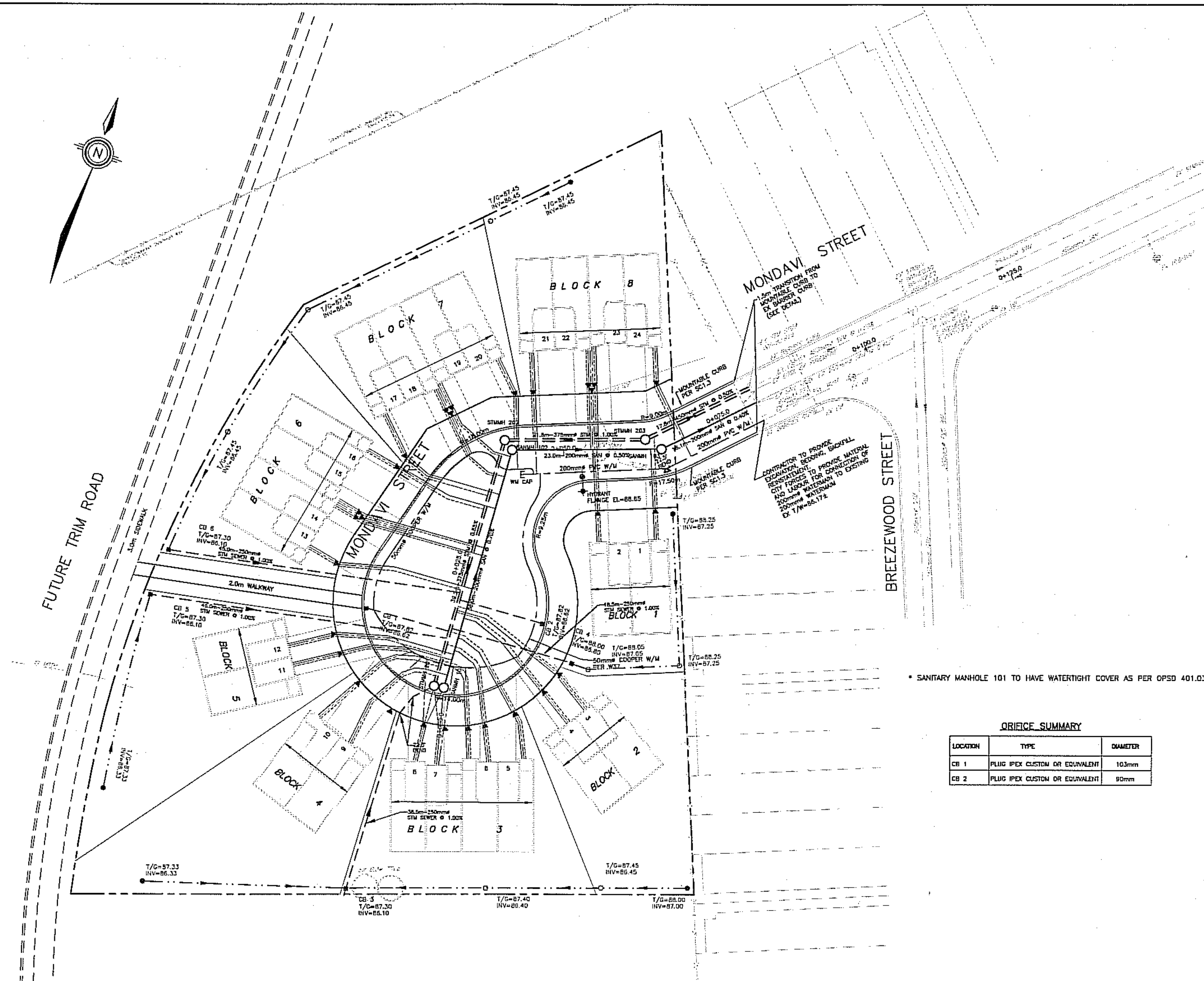
			Residential								Non-Residential												Total	Pipe					
Location			Individual		Accumulative		Peaking	Pop.	Extra.	Design	COM	INST	IND	Total		Accumulative		Peaking	Pop.	Extra.	Design		Design	Length	Size	Slope	Capacity	Velocity	
Street Name	From	To	P	Area	P	Aera	Factor	Q(p)	Q(e)	Q(d)	Area	Area	Area	Area	Flow	Area	Flow	Factor	Q(p)	Q(e)	Q(d)		Q(D)	L	D	S	Qcap.	V	Q(D)/Qcap
	MH	MH	(person)	(ha)	(person)	(ha)	M	(L/S)	(L/S)	(L/S)	(Ha)	(Ha)	(Ha)	(Ha)	(L/S)	(Ha)	(L/S)	M	(L/S)	(L/S)	(L/S)		(L/S)	(m)	(mm)	(%)	(L/S)	(m/s)	
Mondavi Street	101	102	45.90	0.61	45.90	0.61	4.00	0.74	0.17	0.91													0.91	38.0	203.20	0.70	28.60	0.88	3.20%
	102	103	13.50	0.17	59.40	0.78	4.00	0.96	0.22	1.18													1.18	23.0	203.20	0.50	24.17	0.75	4.88%
	103	ex mn	13.50	0.21	72.90	0.99	4.00	1.18	0.28	1.46													1.46	45.0	203.20	0.40	21.62	0.67	6.75%

APPENDIX 'C'



KEY MAP

SCALE: N.T.S.



* SANITARY MANHOLE 101 TO HAVE WATERTIGHT COVER AS PER OPSD 401.030

LEGEND

- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING DITCH
- EXISTING FENCE
- EXISTING HYDRO POLE
- EXISTING GUY WIRE
- EXISTING V&VC
- EXISTING CB
- EXISTING PROPOSED HYDRANT
- EXISTING V&VB
- STREET CATCHBASIN (200mmø LEAD)
- REARYARD ELBOW CATCHBASIN
- REARYARD TEE CATCHBASIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED HYDRANT
- PROPOSED 250mmø PERFORATED SUBDRAIN

▲ SINGLE SERVICE
135mm SANITARY
100mm STORM
19mm WATERMAIN

△ SPLIT SERVICE
2-135mm SANITARY
2-100mm STORM
2-19mm INDIVIDUAL LATERALS
AND 2 STAND POSTS

ORIFICE SUMMARY

LOCATION	TYPE	DIAMETER
CB 1	PLUG IPEX CUSTOM OR EQUIVALENT	103mm
CB 2	PLUG IPEX CUSTOM OR EQUIVALENT	90mm

Jul 26, 2013 I:\DRAWINGS\12047-1 Longwood Development\Design\12047 - S1.dwg

NOTES

CONTRACT DRAWINGS:
Contractor must verify all dimensions and be responsible for same. Any discrepancies must be reported to the Engineer before commencing work. Drawings are not to be scaled. Ainley Graham & Associates Limited claims copyright to this document which may not be used for any purpose other than that stipulated in the contract between the owner/client and the Engineer without the express written consent of Ainley Graham & Associates Limited.

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LONGWOOD

NO.	REVISIONS	DATE	INITIAL
1	ISSUED FOR CLIENT REVIEW	JULY 26/13	GSC

Not Valid Unless Signed And Dated

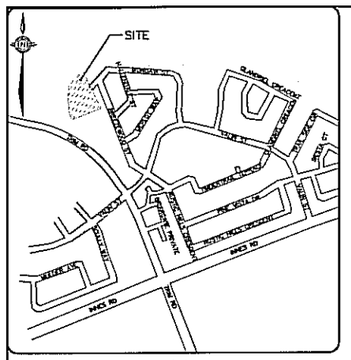
SCALE: 1 : 300
DESIGN: JX
DRAWN: AY
CHECKED: GSC
DATE: JULY 2013

LONGWOOD BUILDING CORPORATION
1765 TRIM ROAD (MONDAVI STREET)
CITY OF OTTAWA

GENERAL PLAN OF SERVICES

Ainley GROUP CONSULTING ENGINEERS PLANNERS

CONTRACT No. 12047 | 12047-S1



LEGEND

X SILT FENCE

SUPPLY, INSTALL & MAINTAIN SILT FENCE FOR THE DURATION OF CONSTRUCTION AS PER OPSD-219.110

FUTURE TRIM ROAD

MONDAVI STREET

BREEZEWOOD STREET

BLOCK 1

BLOCK 2

BLOCK 3

BLOCK 4

BLOCK 5

BLOCK 6

BLOCK 7

BLOCK 8

2.0m WALKWAY

3.0m SIDEWALK

SUPPLY, INSTALL & MAINTAIN SILT FENCE FOR THE DURATION OF CONSTRUCTION AS PER OPSD-219.110

NOTE

1. SEDIMENT CONTROL DEVICES SHALL BE INSPECTED ON A DAILY BASIS AND CLEANED OR REPLACED AS NECESSARY.
2. THE CONTRACTOR IS TO SUPPLY, INSTALL AND MAINTAIN FILTER CLOTH BETWEEN THE FRAME AND COVER ON ALL PROPOSED AND EXISTING ADJACENT CATCH BASINS AND MANHOLES FOR THE DURATION OF CONSTRUCTION.
3. A MUD MAT IS TO BE INSTALLED AT EACH CONSTRUCTION ENTRANCE AND SHALL BE MAINTAINED UNTIL THE PLACEMENT OF THE GRANULAR SUB-BASE. MUD MAT SHALL BE CONSTRUCTED OF 100mm ø CLEAR STONE, 400mm THICK. MUD MAT SHALL BE OF SUFFICIENT LENGTH TO ENSURE THAT A MINIMUM AMOUNT OF MATERIALS IS TRUCKED OFF SITE ONTO ADJACENT ROADS.
4. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING FILTER CLOTH UNDER THE GRATES OF CATCHBASINS AND MANHOLES AS NOTED ABOVE AND INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS.

NOTES

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NO.	REVISIONS	DATE	INITIAL
1	ISSUED FOR CLIENT REVIEW	JULY 26/13	GSC

Not Valid Unless Signed And Dated

SCALE:	1 : 300
DESIGN:	JX
DRAWN:	AY
CHECKED:	GSC
DATE:	JULY 2013

LONGWOOD BUILDING CORPORATION
1765 TRIM ROAD (MONDAVI STREET)
CITY OF OTTAWA

EROSION AND SEDIMENT CONTROL PLAN

Ainley GROUP CONSULTING ENGINEERS PLANNERS

CONTRACT No. 12047 | 12047-SC1

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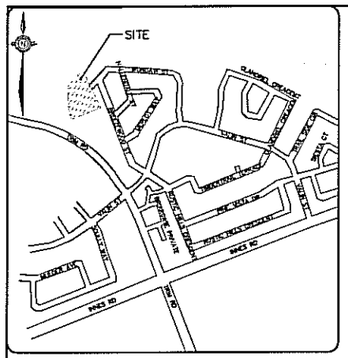
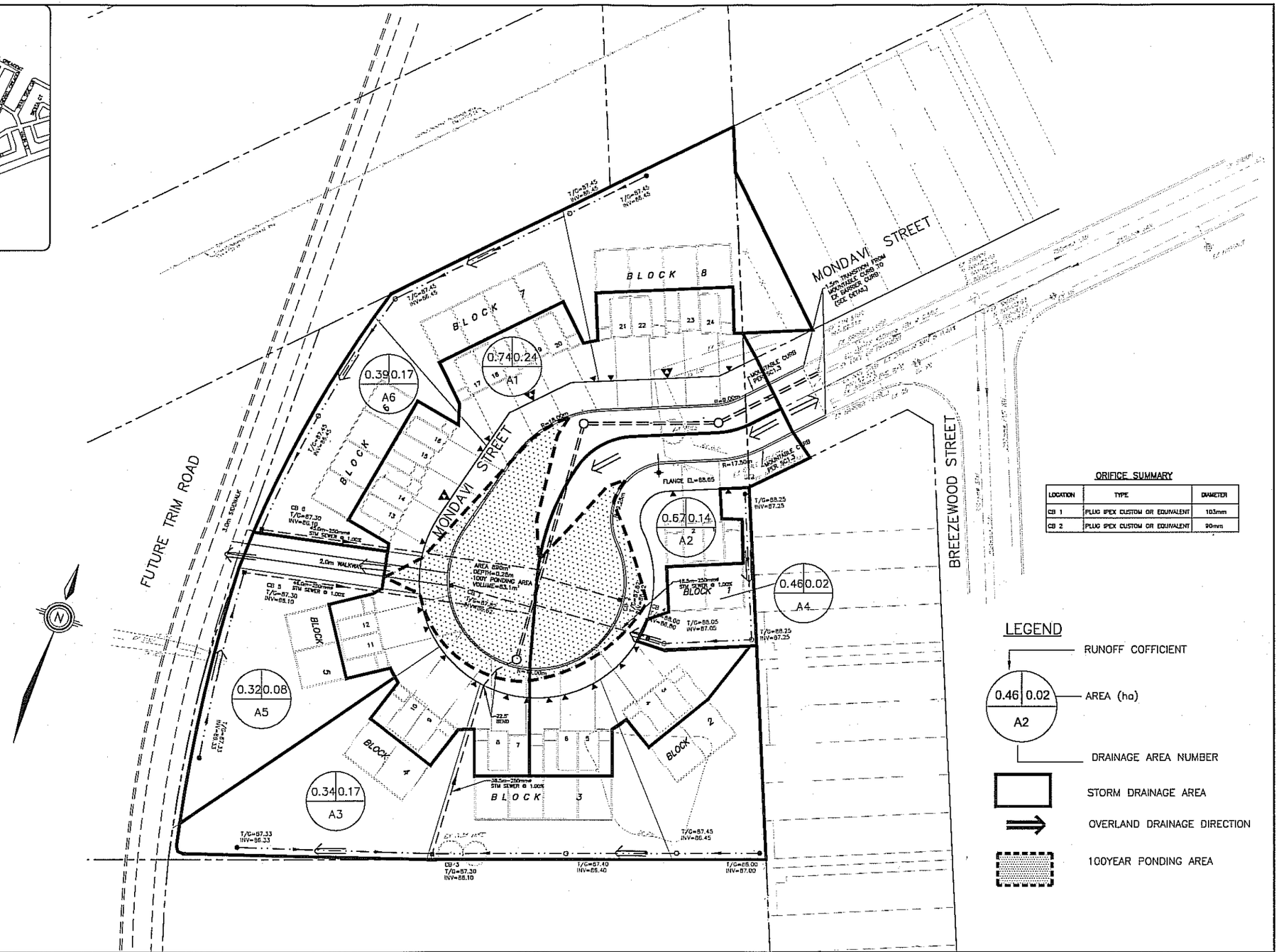


KEY MAP



ORIFICE SUMMARY

LOCATION	TYPE	DIAMETER
CB 1	PLUG IPEX CUSTOM OR EQUIVALENT	103mm
CB 2	PLUG IPEX CUSTOM OR EQUIVALENT	90mm

LEGEND

- RUNOFF COFFICIENT
- 0.46 | 0.02 / A2 — AREA (ha) / DRAINAGE AREA NUMBER
- STORM DRAINAGE AREA
- OVERLAND DRAINAGE DIRECTION
- 100YEAR PONDING AREA

NOTES

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LONGWOOD BUILDING CORPORATION
1765 TRIM ROAD (MONDAVI STREET)
CITY OF OTTAWA

STORMWATER MANAGEMENT PLAN

Ainley GROUP — CONSULTING ENGINEERS PLANNERS

CONTRACT No. 12047 | 12047-SWM1

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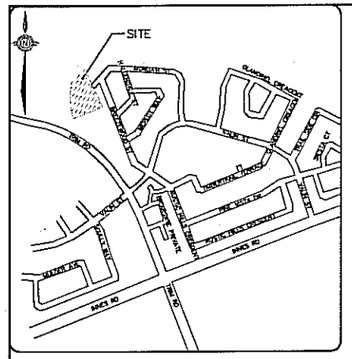

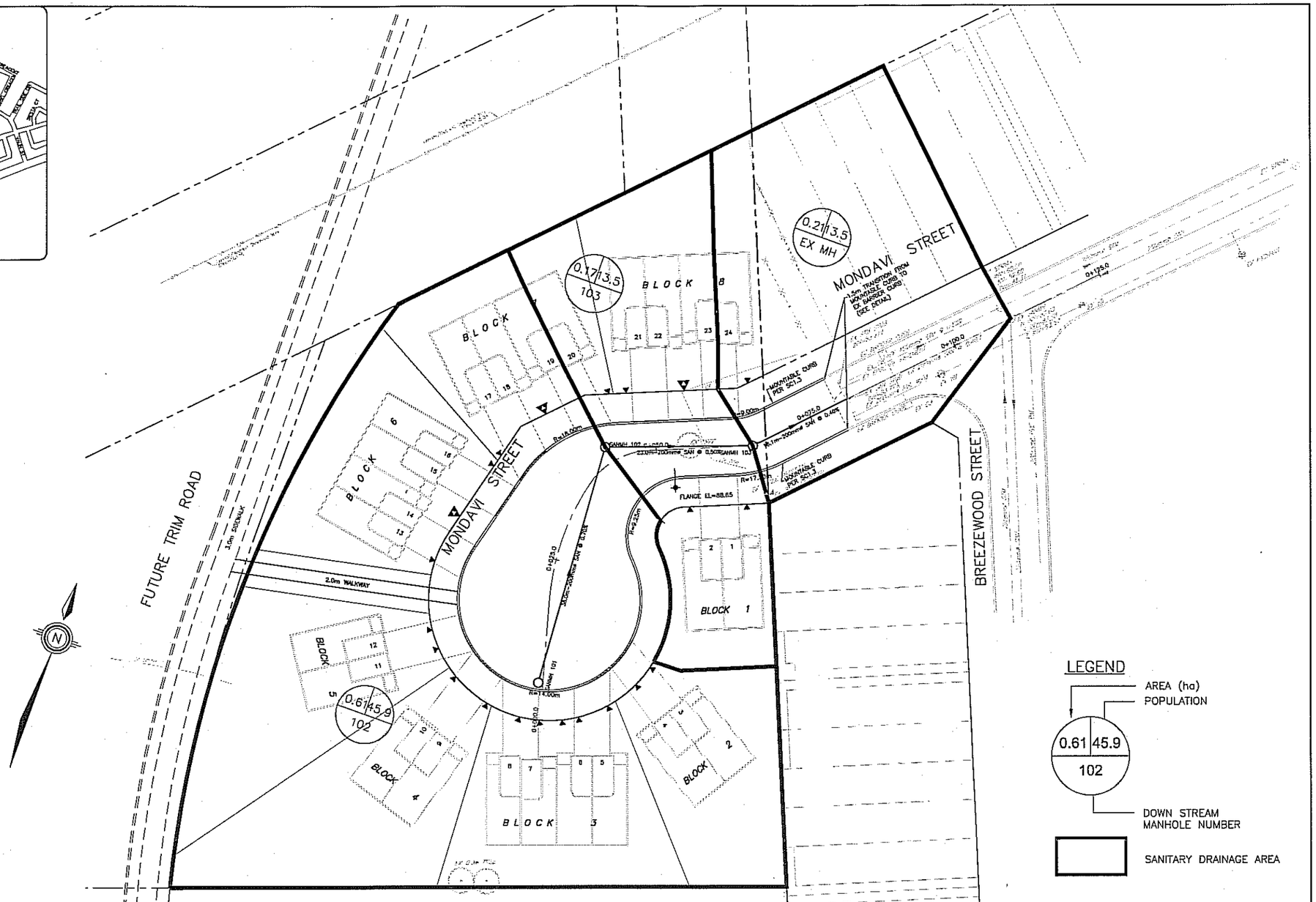

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LONGWOOD BUILDING CORPORATION
1765 TRIM ROAD (MONDAVI STREET)
CITY OF OTTAWA

SANITARY DRAINAGE AREA PLAN

Ainley GROUP CONSULTING ENGINEERS PLANNERS

CONTRACT No. 12047 | 12047-SAN1

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