

Our File: 20-2669

February 3, 2021

Town of Amherstburg  
271 Sandwich Street South  
Amherstburg, ON  
N9V 2A5

Attention: Frank Garado  
Manager, Planning Services

McGregor – Woodland Trails Subdivision  
Functional Servicing Report  
Re: Draft Plan of Subdivision – First Submission  
9358 Walker Road, Amherstburg, ON

On behalf of our client, MGV Developments Inc., Dillon Consulting Limited is submitting the enclosed Draft Plan of Subdivision Application package for the property located at 9358 Walker Road in Amherstburg, Ontario.

The applicant is requesting that the enclosed application package be reviewed for approval at this time as it aligns with current sanitary capacity availability, as confirmed by Todd Hewitt via email on January 25, 2022. The proposed Draft Plan of Subdivision includes 74 residential lots, one (1) stormwater management pond, two (2) woodlots, two (2) commercial blocks and two (2) future residential development blocks. The remainder of the blocks shown in grey on the concept plan will proceed through Part Lot Control Exemption application(s) to create lots, when sanitary capacity becomes available.

The enclosed Functional Servicing Report (FSR), dated March 2021 was based on a previous concept plan for the Woodland Trails subdivision and with an allocation of 66 lots. Based on the confirmation from Todd Hewitt via email on January 25, 2022, there is now an allocation of 74 lots for this development. The FSR can be updated when the area in grey on the current concept plan is able to proceed through the required planning applications for development approvals with servicing capacity availability, if required. For the purposes of this application, the conclusions of the March 2021 FSR are still valid, and further analysis is not required at this time.

Sincerely,

DILLON CONSULTING LIMITED



Kyle Edmunds, P. Eng.  
Associate  
ZCS: dt



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Dillon Consulting  
Limited



**DILLON**  
CONSULTING

2439478 ONTARIO LIMITED

**9538 Walker Road**

# **Functional Servicing Study**

**Draft Report**

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B      Sanitary Sewer and Storm Sewer Design Sheets

C      Stormwater Management Report

## 1.0 Introduction

Dillon Consulting Limited (Dillon) was retained by 2439478 Ontario Limited to develop a functional servicing strategy for the property at 9538 Walker Road in the Town of Amherstburg. This document outlines the servicing strategy including supporting studies and related information for the transportation, sanitary, stormwater management, and watermain servicing for the site.

The proposed development is approximately 26.29 Ha and is currently in operation as agricultural lands. When fully developed, the land use will consist of approximately 13.04 Ha of residential, 1.66 Ha of commercial blocks, 4.01 Ha of woodlots, 2.14 Ha of parkland, 1.47 Ha of stormwater management area, and 3.97 Ha of right-of-way.

### 1.1 References Documents

The following documents and drawings were referenced when completing this study:

- Corporation of the Town of Amherstburg – Development Manual (Amherstburg, 2009);
- County of Essex – Interactive Mapping (Amherstburg);
- Town of Amherstburg - Interactive Mapping (Amherstburg); and
- Design Guidelines for Sewage Works (MOE, 2008).

## 2.0 Transportation Servicing

### 2.1 Existing Conditions

Current access to the property consists of a private gravel access off of Walker Road near the southeast property limits. The existing access is not sufficient for the proposed development.

The property is bounded on the west limit by farmland, on the east limit by Walker Road, on the north limit by farmland, and on the south limit by the Cypher System Greenway Trail and Middle Side Road.

### 2.2 Proposed Roadways

The proposed access points to this development will be from Walker Road from the east limit and Concession Road 11 from the south limit.

The internal road network is proposed to be local roads with a 20 m wide right-of-way. All roads will be designed to an urban cross-section. All local roads will be designed to the Town's standard cross-section (Figure R1 from the Town Development Manual). The road layout is shown in **Figure 1** (in **Appendix A**).

The pavement structure of the proposed internal roads will be consistent with geotechnical recommendations.

A Traffic Impact Study (TIS) has been completed for this development by Dillon Consulting Limited. Any upgrades such as left turn lanes or deceleration lanes that may be required to the existing road network will be incorporated in the detailed design of this development.

## 3.0 Sanitary Servicing

### 3.1 Existing Conditions

Currently, there are no sanitary services to this property. An existing 375 mm diameter trunk sewer is located on Walker Road. This existing 375 mm trunk, which flows south along Walker Road, is intended to provide servicing to this property. Due to a previously signed agreement with the Town of Essex, the Town of Amherstburg has 133 units of capacity for the downstream lagoon system. The 133 unit capacity is to be shared between this development and the Canard Estates, Phase 2 development. There is an allocation for this development of 66 lots.

### 3.2 Design Criteria

The following sanitary sewer design criteria for this property are outlined in **Table 1.0**. The design criteria were established by the Town of Amherstburg's Development Manual (2009).

**Table 1: Sanitary Sewer Design Criteria**

Criteria	Town of Amherstburg Development Manual
Hydraulic Sewer Sizing	Manning's Equation
Minimum Sewer Size (mm)	200 diameter
Minimum Cover Depth (m)	1.20
Manning's Roughness Coefficient 'n'	0.013
Velocity:	
Minimum (m/s)	0.76
Maximum (m/s)	3.66
Hydraulic Losses Across manholes:	
Straight Run (mm)	10
45 degree turn of less (mm)	50
Greater than 45 degree turn to 90 degree turn (mm)	100
Infiltration Allowance/Peak Extraneous Flow	0.2 L/Ha/s
Peaking Factor	Based on Harmon Formula
Population Densities For:	
Residential	3.5 persons/unit
Commercial	75 persons/Ha
Average Daily Sewage	450 L/Cap/Day
Sewer Surcharging	Maximum hydraulic grade line with pump failure

### 3.3 Proposed Servicing

Please refer to the attached **Figure 1** (in **Appendix A**) which illustrates the proposed sanitary servicing layout. The sanitary servicing for the proposed development is as follows:

- All sanitary flows from within the proposed development will be conveyed via local sanitary sewers constructed within the right-of-way of the proposed road network.
- It is proposed that the local sanitary sewer outlet to the existing Walker Road sanitary trunk sewer via a single connection at the intersection of Street 'A' and Walker Road.

As discussed in Section 3.1, there is currently only available capacity in the existing sanitary sewer system for 66 lots in this development. In order to remain within the available capacity for sanitary services, the proposed development will be built out in phases. The first phase of development will only include up to 66 units with the remaining units to be built out in the following phases once additional sanitary capacity is made available by the Town of Amherstburg.

The sanitary sewer functional design sheets are provided in **Appendix B** and assumes a full development build out. Criteria used in flow calculation is listed in **Table 1.0**.

The existing invert elevations of the stub from the Walker Road trunk sanitary sewer allows for a maximum 1.20 m cover at the top end of the internal sewers. All serviced lots where the bottom of the footings are below the sewer and the hydraulic grade line is less than 300 mm below the basement floor elevation, shall be equipped with a sewage ejector pump. It is recommended that all serviced lots install sewage ejector pumps to provide a hydraulic break between the sewer and the building lot.

The future detailed design of the sanitary sewers and services are to be consistent with the requirements of the Town of Amherstburg and the Ministry of Environment, Conservation and Parks (MECP).



## 4.0 Stormwater Servicing

### 4.1 Background Information

The proposed development lands are currently undeveloped agricultural lands and are assessed to the Dufour Drain.

### 4.2 Design Criteria

The following storm sewer design criteria for this property are outlined in **Table 2.0**. The design criteria were established by the Town of Amherstburg's Development Manual (2009).

**Table 2: Storm Sewer Design Criteria**

Criteria	Windsor/Essex Region Stormwater Management Standards Manual
Stormwater Runoff	Hydrodynamic Model
Hydraulic Sewer Sizing	Hydrodynamic Model
Sewer Sizing Rainfall Event	WERSMS (2018)
Minimum Cover Depth (m)	1.00
Manning's Roughness Coefficient 'n'	0.013
Velocity:	
Minimum (m/s)	0.80
Maximum (m/s)	3.66
Roof Downspouts	Disconnected (splash to ground)
Inlet Times:	
Residential	15 minutes
Runoff Coefficients:	
Residential (Single Detached)	0.60
Residential (Semi-Detached)	0.70
Park/Open Space	0.20
Sewer Surcharging	Maximum 5 year hydraulic grade line is below road grade

**Note:** The detailed design for stormwater servicing will be completed with a dual drainage hydrodynamic model and will adhere to ERCA Guidelines.

### 4.3 Proposed Servicing

It is proposed that the site's stormwater outlet be provided to the Dufour Drain.

Refer to **Figure 1** (in **Appendix A**) for the proposed servicing. The stormwater servicing for the proposed development is as follows:

- The proposed lots and right-of-way will be serviced through a new storm sewer network constructed within the proposed municipal right-of-way.
- The storm sewer network will outlet into a proposed stormwater management pond located in the southwest corner of the property. Refer to the Stormwater Management Report in **Appendix C** for details.
- The roads will be graded to allow for overland flow to be captured on-site and directed to the stormwater management pond. The flow depth will not exceed 300 mm within the roadways.
- Stormwater quality control will be provided in the stormwater management pond. Details are provided in **Appendix C**.

Overland flow will be provided through road grading towards the proposed pond. The overland flow will "cascade" over the "saw-tooth" road grading to the pond. There will be temporary ponding of runoff on the road surfaces until it can be captured by the catchbasins and conveyed to the ponds. The roadway ponding will not exceed 300 mm.

Details related to the quantity and quality sizing of the stormwater management facility can be found in the Stormwater Management Report. This report has been included in **Appendix C**.

## 5.0 Watermain Servicing

### 5.1 Existing Conditions

The site is not currently connected to a watermain service. There is an existing 150 mm diameter watermain located to the east of the proposed development within the Walker Road right-of-way. There is also a 200 mm diameter watermain located to the south within the Concession Road 11 right-of-way.

### 5.2 Proposed Servicing

Please refer to the attached **Figure 1** (in **Appendix A**) which illustrates the proposed watermain servicing. The watermain servicing for the proposed development is as follows:

- The internal development will be serviced by new 200 mm diameter watermain constructed within the right-of-way of the proposed road network; and
- The new watermain will connect to the existing 150 mm diameter main located within Walker Road right-of-way and to the existing 200 mm diameter watermain located within the Concession Road 11 right-of-way.

No pressure/flow testing has been completed for this development. During detailed design, pressure testing of the existing watermain on Walker Road and Concession Road 11 may be required.

The detailed design of the watermain services are to be consistent with the requirements of the Town. Placement of hydrants for adequate fire protection will be completed during detailed design.

## 6.0 Utilities

### 6.1 Gas

Existing natural gas service is available along Walker Road and Concession Road 11. During detailed design, future conversation on loading will be required with Enbridge.

### 6.2 Bell

Bell does not currently have any plant within 250 m of the subject site.

### 6.3 Cogeco

Cogeco has aerial services along the east side of the Walker Road right-of-way and along the north side of the Scott Lane right-of-way.

### 6.4 MNSi

MNSi does not currently have any plant within 250 m of the subject site.

## 7.0

## Conclusion

The review of the adjacent services have been found to be sufficient for the proposed development. The design of the proposed internal services will be finalized during detailed design.

Yours sincerely,

**DILLON CONSULTING LIMITED**

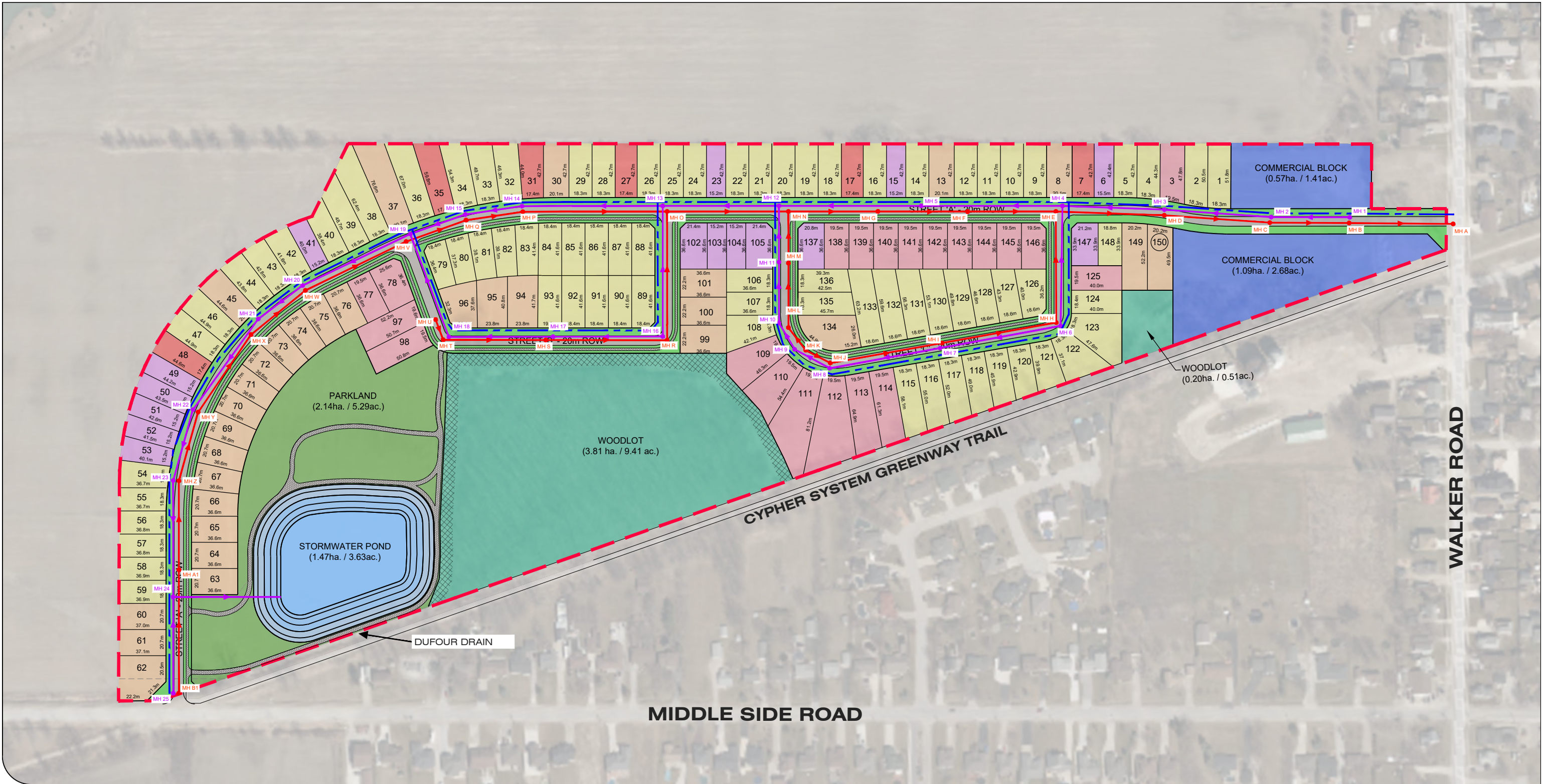


Kyle Edmunds, P.Eng.  
Project Engineer

## Appendix A

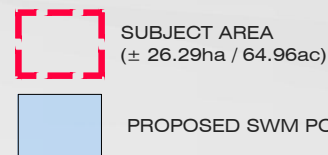
### *Functional Servicing Plan*





**2551424 ONTARIO LIMITED**  
**9538 WALKER ROAD**  
CONCESSION ROAD 11 AND WALKER ROAD

**FIGURE 1**  
**SITE SERVICING**



PROPOSED LOTS

PROPOSED PARKLAND

EXISTING WOODLOT

PROPOSED PAVEMENT

SANITARY SEWER

PROPOSED COMMERCIAL

PROPOSED BOULEVARD

10m WOODLOT BUFFER

PROPOSED SIDEWALK/  
MULTI USE TRAIL

STORM SEWER

WATERMAIN

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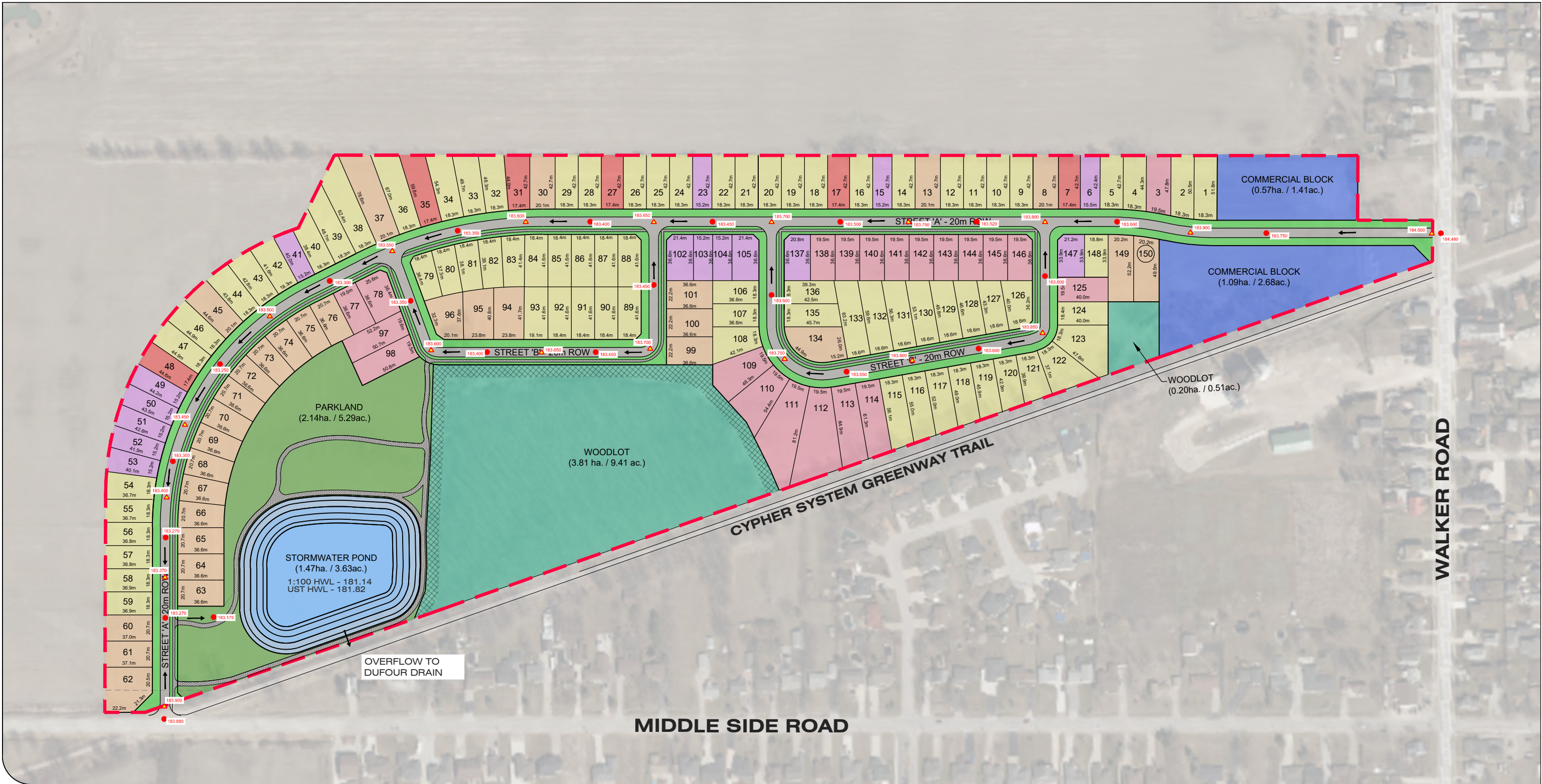
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CHECKED BY: SEF/KNE  
DESIGNED BY: SEF

SCALE : 1:3000



PROJECT: 20-2669  
STATUS: FINAL  
DATE: 03/02/2021







## Appendix B

### *Sanitary Sewer and Storm Sewer Design Sheets*

9538 WALKER ROAD  
SANITARY SEWER DESIGN SHEET

Project Name: 9538 WALKER ROAD  
Project No: 20-2669

The Peaking Factor was derived:  
Using Harmon Formula= Y (Y or N)  
From a Table= N  
Value from table=

Residential Average Daily Flow= 450 L/Cap.D  
Peak Extraneous Flow= 0.120 L/Ha.S

Outlet Invert Elevation= 178.385  
Mannings 'n'= 0.013

Basement Floor Elevation =  
Ground Elevation at Outlet = 184.480  
or  
Hydraulic Grade Line Cover = 2.40

Total Area= 26.290  
HGL at Outlet = 178.760

Location			Flow Characteristics								Sewer Design/Profile										Cover			Hydraulic Grade Line		
ROAD/STN	LOCATION		INDIVIDUAL		CUMULATIVE		PEAKING	POP FLOW	PEAK EXTR.	PEAK DESIGN	CAPACITY	LENGTH	PIPE DIA.	Wall Thickness	SLOPE	UPPER INVERT	LOWER INVERT	FALL	VELOCITY	DROP IN LOWER MANHOLE	Ground Elevation Upper MH	Cover @ Up MH	Cover @ Low MH	HGL Elev at Upstream MH	HGL Elev vs. Grnd Elev @ Up MH	HGL Elev vs. Obvert @ Up MH
	FROM MH	TO MH	POP	AREA (ha.)	POP	AREA (ha.)	FACTOR M	Q(p) (L/s)	FLOW Q(i) (L/s)	FLOW Q(d) (L/s)																
Street A	B1	A1	21	2.11	21	2.11	4.378	0.479	0.253	0.73	110.89	97.6	375	11	0.40	182.034	181.644	0.390	1.00	0.025	183.900	1.480	1.380	178.800	OKAY	INTERSECTS OBVERT
Street A	A1	Z	21	1.92	42	4.03	4.329	0.947	0.484	1.43	84.09	70.4	375	11	0.23	181.619	181.457	0.162	0.76	0.050	183.410	1.405	1.557	178.800	OKAY	INTERSECTS OBVERT
Street A	Z	Y	25	1.48	67	5.51	4.287	1.496	0.661	2.16	84.09	56.8	375	11	0.23	181.407	181.276	0.131	0.76	0.050	183.400	1.607	1.788	178.800	OKAY	INTERSECTS OBVERT
Street A	Y	X	25	0.72	92	6.23	4.253	2.038	0.748	2.79	84.09	74.3	375	11	0.23	181.226	181.055	0.171	0.76	0.050	183.450	1.838	1.969	178.799	OKAY	INTERSECTS OBVERT
Street A	X	W	21	0.63	113	6.86	4.229	2.489	0.823	3.31	84.09	55.5	375	11	0.23	181.005	180.878	0.128	0.76	0.050	183.410	2.019	2.163	178.799	OKAY	INTERSECTS OBVERT
Street A	W	V	32	1.04	145	7.90	4.196	3.169	0.948	4.12	84.09	88.6	375	11	0.23	180.828	180.624	0.204	0.76	0.050	183.427	2.213	2.540	178.799	OKAY	INTERSECTS OBVERT
Street A	V	Q	18	0.61	163	8.51	4.179	3.548	1.021	4.57	84.09	50.4	375	11	0.23	180.574	180.458	0.116	0.76	0.050	183.550	2.590	2.522	178.799	OKAY	INTERSECTS OBVERT
Street A	Q	P	18	0.50	181	9.01	4.164	3.925	1.081	5.01	84.09	45.4	375	11	0.23	180.408	180.303	0.104	0.76	0.025	183.366	2.572	2.853	178.798	OKAY	INTERSECTS OBVERT
Street A	P	O	39	1.10	220	10.11	4.133	4.735	1.213	5.95	84.09	114.1	375	11	0.23	180.278	180.016	0.262	0.76	0.025	183.542	2.878	3.248	178.798	OKAY	INTERSECTS OBVERT
Street B	U	T	7	0.26	7	0.26	4.428	0.161	0.031	0.19	59.47	17.1	250	11	1.00	182.091	181.920	0.171	1.21	0.100	183.570	1.218	1.419	178.798	OKAY	INTERSECTS OBVERT
Street B	T	S	11	2.42	18	2.68	4.386	0.411	0.322	0.73	59.47	81.2	250	11	1.00	181.820	181.008	0.812	1.21	0.025	183.600	1.519	2.338	178.798	OKAY	INTERSECTS OBVERT
Street B	S	R	21	2.54	39	5.22	4.335	0.881	0.626	1.51	37.61	96.2	250	11	0.40	180.983	180.599	0.385	0.77	0.100	183.607	2.363	2.840	178.798	OKAY	INTERSECTS OBVERT
Street B	R	O	7	0.35	46	5.57	4.322	1.035	0.668	1.70	37.61	101.9	250	11	0.40	180.499	180.091	0.408	0.77	0.100	183.700	2.940	3.298	178.797	OKAY	INTERSECTS OBVERT
Stret A	O	N	35	0.95	301	16.63	4.078	6.393	1.996	8.39	84.09	95.9	375	11	0.23	179.991	179.770	0.221	0.76	0.025	183.650	3.273	3.544	178.797	OKAY	INTERSECTS OBVERT
Street C	K	L	7	0.28	7	0.28	4.428	0.161	0.034	0.20	32.80	22.5	200	11	1.00	180.961	180.736	0.225	1.04	0.050	183.727	2.555	2.718	178.795	OKAY	INTERSECTS OBVERT
Street C	L	M	18	0.48	25	0.76	4.367	0.569	0.091	0.66	32.80	51.0	200	11	1.00	180.686	180.176	0.510	1.04	0.025	183.665	2.768	3.169	178.795	OKAY	INTERSECTS OBVERT
Street C	M	N	1	0.07	26	0.83	4.364	0.591	0.100	0.69	23.88	40.9	200	11	0.53	180.151	179.934	0.217	0.76	0.189	183.556	3.194	3.555	178.795	OKAY	INTERSECTS OBVERT
Street C	K	J	7	0.36	7	0.36	4.428	0.161	0.043	0.20	32.80	21.9	200	11	1.00	181.528	181.309	0.219	1.04	0.050	183.727	1.988	2.121	178.796	OKAY	INTERSECTS OBVERT
Street C	J	I	35	1.34	42	1.70	4.329	0.947	0.204	1.15	32.80	89.8	200	11	1.00	181.259	180.361	0.898	1.04	0.025	183.641	2.171	3.173	178.796	OKAY	INTERSECTS OBVERT
Street C	I	H	32	0.93	74	2.63	4.277	1.648	0.316	1.96	23.88	91.8	200	11	0.53	180.336	179.849	0.487	0.76	0.100	183.745	3.198	3.790	178.795	OKAY	INTERSECTS OBVERT
Street C	H	E	11	0.44	85	3.07	4.262	1.887	0.368	2.26	23.88	87.9	200	11	0.53	179.749	179.284	0.466	0.76	0.100	183.850	3.890	4.305	178.791	OKAY	INTERSECTS OBVERT
Street A	N	G	21	0.59	348	18.05	4.050	7.341	2.166	9.51	84.09	70.8	375	11	0.23	179.745	179.583	0.163	0.76	0.025	183.700	3.569	3.693	178.794	OKAY	INTERSECTS OBVERT
Street A	G	F	28	0.76	376	18.81	4.035	7.901	2.257	10.16	84.09	71.1	375	11	0.23	179.558	179.394	0.164	0.76	0.025	183.662	3.718	3.820	178.792	OKAY	INTERSECTS OBVERT
Street A	F	E	25	0.68	401	19.49	4.022	8.399	2.339	10.74	84.09	69.8	375	11	0.23	179.369	179.209	0.161	0.76	0.025	183.600	3.845	4.205	178.790	OKAY	INTERSECTS OBVERT
Street A	E	D	32	0.74	518	23.30	3.966	10.701	2.796	13.50	84.09	85.9	375	11	0.23	179.184	178.986	0.198	0.76	0.025	183.800	4.230	4.388	178.787	OKAY	INTERSECTS OBVERT
Street A	D	C	103	1.23	621	24.53	3.924	12.696	2.944	15.64	84.09	83.7	375	11	0.23	178.961	178.769	0.193	0.76	0.025	183.760	4.413	4.616	178.782	OKAY	INTERSECTS OBVERT
Street A	C	B	113	1.50	734	26.03	3.883	14.838	3.124	17.96	84.09	62.7	375	11	0.23	178.744	178.599	0.144	0.76	0.025	183.770	4.641	5.192	178.776	OKAY	INTERSECTS OBVERT
Street A	B	A	17	0.26	751	26.29	3.877	15.157	3.155	18.31	84.09	82.3	375	11	0.23	178.574	178.385	0.189	0.76	0.100	184.177	5.217	5.709	178.769	OKAY	OKAY

9538 WALKER ROAD STORM SEWER DESIGN SHEET																											
Project Name: 9538 Walker Road Project Number: 20-2669  Based on 1:5 Year Storm Event Amherstburg, Ontario				Intensity Option # 1												Manning's n = 0.013											
				1) Intensity (i) = a/(t+b)^c				2) Intensity (i) = a*t^b				3) Insert Intensity															
				a= 1259.000 b= 8.800 c= 0.838		a=		i=		Total Area (ha)= 26.2901    Outlet Invert Elevation= 179.500    Ground Elevation @ Outlet = 183.18    High Water Level at Outlet= 182.00																	
Location													Sewer Design / Profile										Cover			Hydraulic Grade Line	
Road /Stations	From MH	To MH	Area (ha)	Run. Coef.	2.78AC	Accum. 2.78AC	T of In (min)	T of F (min)	T of Conc. (min)	Intensity (mm/hr)	Exp. Flow (L/s)	Capacity (L/s)	Velocity (m/s)	Wall Thickness (mm)	Length (m)	Pipe Dia. (mm)	Slope (%)	Invert Up MH	Invert Low MH	Fall (m)	Drop Across Low MH (m)	Ground Elev Up MH	Cover @ Up MH (m)	Cover @ Low MH (m)	HGL Elevation at Upstream MH	HGL Elev vs. Grnd Elev @ Up MH	
Street A	1	2	1.50	0.90	3.75	3.75	15.0	1.06	15.00	88.40	331.77	431.17	0.98	108	62.2	750	0.15	181.883	181.790	0.09	0.150	184.073	1.33	1.12	182.83	Okay	
Street A	2	3	1.26	0.75	2.63	6.38	15.0	1.38	16.06	85.22	543.74	652.72	1.03	121	84.7	900	0.13	181.640	181.530	0.11	0.150	183.770	1.11	1.18	182.78	Okay	
Street A	3	4	0.97	0.60	1.62	8.00	15.0	1.42	17.44	81.46	651.55	819.22	0.95	133	80.7	1050	0.09	181.380	181.307	0.07	0.000	183.735	1.17	1.31	182.70	Okay	
Street C	6	4	0.45	0.60	0.75	0.75	15.0	1.98	15.00	88.40	66.35	127.50	0.80	64	95.1	450	0.20	181.997	181.807	0.19	0.500	183.850	1.34	1.48	182.71	Okay	
Street A	4	5	1.06	0.60	1.77	10.52	15.0	1.58	18.86	77.94	819.67	1021.74	1.18	133	111.8	1050	0.14	181.307	181.150	0.16	0.000	183.800	1.31	1.42	182.66	Okay	
Street A	5	12	1.06	0.60	1.77	12.28	15.0	1.54	20.44	74.40	913.94	1057.61	1.22	133	112.6	1050	0.15	181.150	180.981	0.17	0.400	183.750	1.42	1.54	182.56	Okay	
Street C	6	7	1.14	0.60	1.90	1.90	15.0	1.63	15.00	88.40	168.10	215.03	0.99	89	96.9	525	0.25	181.823	181.580	0.24	0.225	183.850	1.41	1.65	182.73	Okay	
Street C	7	8	1.12	0.60	1.87	3.77	15.0	1.52	16.63	83.64	315.29	431.17	0.98	108	89.0	750	0.15	181.355	181.222	0.13	0.000	183.842	1.63	1.57	182.58	Okay	
Street C	8	9	0.51	0.60	0.85	4.62	15.0	0.65	18.15	79.67	368.09	512.03	0.80	121	31.5	900	0.08	181.222	181.197	0.03	0.000	183.645	1.40	1.53	182.51	Okay	
Street C	9	10	0.24	0.60	0.40	5.02	15.0	0.47	18.80	78.09	392.04	543.09	0.85	121	24.3	900	0.09	181.197	181.175	0.02	0.125	183.750	1.53	1.45	182.49	Okay	
Street C	10	11	0.38	0.60	0.63	5.65	15.0	0.89	19.27	76.98	435.27	572.47	0.90	121	48.3	900	0.10	181.050	181.001	0.05	0.000	183.645	1.57	1.62	182.48	Okay	
Street C	11	12	0.08	0.60	0.13	5.79	15.0	0.83	20.17	74.98	433.99	572.47	0.90	121	44.8	900	0.10	181.001	180.956	0.04	0.375	183.640	1.62	1.72	182.46	Okay	
Street A	12	13	0.85	0.60	1.42	19.49	15.0	1.24	21.98	71.27	1389.11	1770.22	1.24	158	92.0	1350	0.11	180.581	180.480	0.10	0.000	183.700	1.61	1.66	182.43	Okay	
Street A	13	14	1.17	0.60	1.95	22.04	15.0	1.38	23.22	68.95	1519.85	1924.43	1.34	158	111.5	1350	0.13	180.480	180.335	0.14	0.000	183.650	1.66	1.73	182.37	Okay	
Street A	14	15	0.41	0.60	0.68	22.73	15.0	0.57	24.60	66.55	1512.47	1924.43	1.34	158	45.6	1350	0.13	180.335	180.276	0.06	0.000	183.570	1.73	1.59	182.28	Okay	
Street B	16	13	0.36	0.60	0.60	0.60	15.0	2.15	15.00	88.40	53.08	127.50	0.80	64	103.4	450	0.20	181.437	181.230	0.21	0.750	183.700	1.75	1.91	182.40	Okay	
Street B	16	17	2.41	0.60	4.02	4.02	15.0	1.48	15.00	88.40	355.36	431.17	0.98	108	86.8	750	0.15	180.999	180.869	0.13	0.150	183.700	1.84	1.92	182.40	Okay	
Street B	17	18	2.56	0.60	4.27	8.29	15.0	1.26	16.48	84.04	696.66	945.95	1.09	133	82.6	1050	0.12	180.719	180.620	0.10	0.000	183.650	1.75	1.80	182.31	Okay	
Street B	18	19	0.35	0.60	0.58	8.87	15.0	1.28	17.74	80.68	715.93	984.58	1.14	133	87.0	1050	0.13	180.620	180.506	0.11	0.600	183.600	1.80	1.86	182.26	Okay	
Street A	15	19	0.61	0.60	1.02	23.74	15.0	0.53	25.16	65.62	1558.11	2067.17	1.44	158	46.2	1350	0.15	180.276	180.206	0.07	0.300	183.370	1.59	1.84	182.24	Okay	
Street A	19	20	0.97	0.60	1.62	34.24	15.0	1.32	25.70	64.77	2217.46	3041.23	1.20	196	94.6	1800	0.07	179.906	179.840	0.07	0.000	183.550	1.65	1.58	182.20	Okay	
Street A	20	21	0.43	0.60	0.72	34.95	15.0	0.61	27.02	62.77	2193.82	3041.23	1.20	196	43.9	1800	0.07	179.840	179.809	0.03	0.000	183.420	1.58	1.59	182.17	Okay	
Street A	21	22	1.00	0.60	1.67	36.62	15.0	1.15	27.63	61.88	2266.10	3251.21	1.28	196	88.4	1800	0.08	179.809	179.739	0.07	0.000	183.395	1.59	1.72	182.15	Okay	
Street A	22	23	1.90	0.60	3.17	39.79	15.0	0.72	28.78	60.28	2398.73	3448.43	1.36	196	58.3	1800	0.09	179.738	179.686	0.05	0.000	183.450	1.72	1.72	182.12	Okay	
Street A	23	24	1.79	0.60	2.99	42.78	15.0	1.07	29.50	59.34	2538.21	3634.96	1.43	196	92.1	1800	0.10	179.686	179.594	0.09	0.000	183.400	1.72	1.64	182.09	Okay	
Street A	25	24	1.71	0.60	2.85	2.85	15.0	1.30	15.00	88.40	252.14	431.17	0.98	108	76.2	750	0.15	180.458	180.344	0.11	0.750	183.900	2.58	2.02	182.08	Okay	
Street A	24	POND	0.00	0.60	0.00	45.63	15.0	0.95	30.57	57.98	2645.40	3812.38	1.50	196	85.1	1800	0.11	179.594	179.500	0.09	0.000	183.225	1.64	1.68	182.05	Okay	

## Appendix C

### *Stormwater Management Report*

