TATHAM ENGINEERING

Enhancing our communities

GBC Residential Enclave

PRELIMINARY FUNCTIONAL SERVICING REPORT

Dunn Capital Corporation

File 122017 | July 28, 2023

Document Control

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Issue	Date	Description
1	November 21, 2022	For Draft Plan Approval
2	July 28, 2023	For Draft Plan Approval

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SAN-1: Overall Sanitary Plan

WTR-1: Overall Water Plan

STM-1: Overall Storm Plan

1 Introduction

Tatham Engineering Limited has been retained by Dunn Capital Corporation to complete a Functional Servicing Report (FSR) in support of a proposed residential development within the Georgian Bay Club, in the Town of The Blue Mountains. This report has been prepared to address the preliminary servicing requirements for the proposed draft plan of subdivision, including potable water supply, sanitary sewage collection and conveyance, stormwater management and utility distribution.

1.1 SITE DESCRIPTION

The site is approximately 4.73 ha with approximately 140 m of frontage on 7th Line. It is bound by Club Drive and residential units (The Private Residences at Georgian Bay Club) to the north, golf course lands to the east and south, and 7th Line to the west. The property generally slopes from south to north towards Club Drive, with slopes ranging from 0.5% to 3.5%. The predominant ground cover is woodland along with a single residential dwelling.

1.2 GEOTECHNICAL INVESTIGATIONS

JLP Services Inc. (JLP) completed geotechnical investigations to determine the subsurface soil and groundwater conditions at the site. Their fieldwork consisted of 6 boreholes, carried out on September 27 and 28, 2022. The report provided recommendations on site grading and servicing, stormwater management, pavement design and construction, building foundation, basement walls, floors slabs and excavation and groundwater control. The subsurface conditions in all boreholes generally consisted of a surficial layer of topsoil, approximately 450 to 600mm deep, followed by discontinuous deposits of sandy silt, sand, sandy silt till and silt to the termination depth of 6.7 metres below grade.

Free water was encountered in boreholes 1, 2 and 6 at approximately 5.80 metres below grade on completion of field work. Monitoring wells were installed in boreholes 1, 3, 4 and 5. Four manual water level readings were completed on November 3 and 8, 2022, and February 7 and May 8, 2023 with groundwater levels ranging from 1.6 to 4.8 metres below ground surface.

1.3 PROPOSED LAND USE

The current Concept Plan prepared by Dunn Capital Corporation illustrates the proposed development consisting of 22 single detached units, an urban 14.0 m cross-section including a 6 m asphalt surface, curbs, gutters, storm sewers, sanitary sewers and watermain. Servicing of the proposed development will be provided by existing watermain, storm and sanitary stubs from The Private Residences to the north.

2 Sanitary Sewage System

As part of the servicing plan for the Private Residences to the north, a 200 mm diameter sanitary sewer was constructed to the north limit of the subject site, complete with a sanitary maintenance hole, referred to as SAN MH#19 on The Private Residences as-recorded General Servicing Plan – East to accommodate future residential development of the subject site.

In accordance with the *Servicing and Stormwater Management Implementation Report* for The Private Residences prepared by Crozier in 2015, the existing sanitary sewer system can provide adequate sanitary sewer capacity for approximately 240 residential units. The sanitary sewer was constructed at a depth of approximately 4.7 m, providing sufficient cover to service the subject site via gravity sewers. Therefore, the existing sanitary sewer provides sufficient capacity to service the proposed 22-unit development. The sanitary sewer design sheet from the Crozier report is included in Appendix A for reference.

2.1 PROPOSED SANITARY SEWER SYSTEM

The 200 mm dia. sanitary sewer system internal to the development has been designed to maintain the full flow velocity of 0.75 m/s in accordance with Town Standards to allow for self-flushing of the system and will be reviewed and finalized during final design.

Preliminary design calculations indicate the proposed 22 units will generate a peak flow rate of 1.92 L/s. Preliminary design calculations have been provided in Appendix A.

The preliminary sanitary servicing plan (SAN-1) is attached to this report for reference.

2.2 SEWAGE CAPACITY

The proposed development will have an Average Day Flow (ADF) of 1.28 L/s (110.6 m^3/day) and Peak Flow (PF) of 1.92 L/s (165.9 m^3/day) based on a total equivalent population of 47.3 persons (22 units). As per the Town of The Blue Mountains *2022 Year End Water and Wastewater Capacity Assessment,* the Thornbury Wastewater Treatment Plant (WWTP) has a firm built capacity of 3,580 m^3/day which equates to 3,925 units. However, the Town has an Environmental Compliance Approval (ECA) to expand the capacity of the WWTP, via the planned Phase 1A upgrades, to 5,330 m^3/day which equates to 5,844 units. Currently, there are 3,646 units allocated to the Thornbury WWTP and 187 units reserved. Therefore, the WWTP has a remaining total reservation of 2,011 units, based on the Phase 1A upgrades. The engineering for the Phase 1A upgrades was completed in 2022 and construction is expected to commence in 2023. Therefore, the proposed development can be serviced by the Thornbury WWTP, however, the Phase 1A plant upgrades may be required to do so.

3 Water Supply & Distribution

As part of the servicing plan for the Private Residences to the north, a 250 mm diameter watermain was constructed to the north limit of the subject site.

Based on the Town of The Blue Mountains *2022 Year End Water and Wastewater Capacity Assessment*, the firm capacity available from the Town's water treatment plant is 15,140 m^3/d, plus the previously mentioned 1,250 m^3/d supplied from the Town of Collingwood. Therefore, the total firm water capacity available is 16,390 m^3/d, or 16,164 units based on the five-year rolling Maximum Day Demand (MDD) of 1.014 m^3/unit/day. There are currently 10,728 units allocated (connected and/or may connect) and 2,681 units reserved (not connected), leaving 2,755 units of available capacity.

3.1 PROPOSED INFRASTRUCTURE

The proposed water strategy for the development will include extending the 250 mm diameter watermain into the site to the west extent of the internal road. An autoflusher will be provided in accordance with Town of the Blue Mountains (TOBM) and Ministry of the Environment Conservation and Parks (MECP) standards.

Water meters will be installed internal to each unit to record water consumption. The proposed units will be equipped with backflow prevention devices in accordance with the Ontario Building Code and the Town's water by-law. An existing fire hydrant is located on Club Drive, just north of the site entrance. Additional hydrants will be provided throughout the site with a maximum separation of 100 m per TOBM standards to provide appropriate access for firefighters.

See the Water Servicing Plan (WTR-1) for preliminary water system details.

3.2 WATER DEMANDS ASSESSMENT

3.2.1 Water Supply Demands

Water supply demands for the proposed development have been calculated based on the MECP guidelines and the TOBM design standards as noted in Table 1.

Note that peaking factors were interpolated from Table 3-3 of the *Design Guidelines for Drinking-Water Systems* (MOE 2008) based on the design population. Minimum fire flows were calculated based on Table 8 of the *Water Supply For Public Protection (FUS 2019).*

Water demand calculations are provided in Appendix A and summarized as follows:

Average Daily Flow = 0.19 L/s

Peak Hour = 2.34 L/s

Maximum Day Demand = 1.56 L/s

Maximum Day Plus Fire Flow = 201.56 L/s

Table 1: Water Supply Design Criteria

DESIGN CRITERIA		SOURCE
Residential Population	2.15 persons/unit	TOBM
Average Daily Demand Per Person	350 L/person/day	TOBM
Maximum Daily Demand Factor	8.1	MECP
Peak Hourly Demand Factor	12.2	MECP
Minimum Fire Flow	200 L/s	FUS
Allowable Pressure Ranges		
Maximum Pressure	550 kPa (80 psi)	TOBM
Peak Hour Minimum Pressure	275 kPa (40 psi)	TOBM
Maximum Day Plus Fire Suppression Minimum Pressure	140 kPa (20 psi)	TOBM

3.2.2 Water Supply Demands

As outlined above, the Town of The Blue Mountains drinking water treatment plant has a rated capacity of 16,390 m^3/day, with 2,794 m^3/day available. The proposed maximum day demand of 134.8 m^3/day for the proposed development can be accommodated by the treatment plant (excess capacity is 2,659.2 m^3/day).

4 Stormwater Management

The primary objective of this section is to demonstrate that the proposed layout for the Georgian Bay Club (GBC) Residential Enclave complies with the storm water design criteria and land uses/densities established in previously accepted stormwater management (SWM) reports that encompassed the proposed site.

4.1 GUIDELINES AND BACKGROUND DOCUMENTS

This report was prepared recognizing the pertinent Municipal and Provincial guidelines on water resources and reports specific to development in the surrounding area including the following publications:

- *Servicing & Stormwater Management Implementation Report - The Private Residences at the Georgian Bay Club,* prepared by Crozier Consulting Engineers (May 2015);
- *Stormwater Management for Georgian Bay Club,* prepared by R.J. Burnside and Associates (March 2002);
- *Engineering Standards.* Town of The Blue Mountains (April 2009); and
- *Stormwater Management Practices Planning and Design Manual.* Ministry of the Environment, Conservation and Parks (2003).

4.2 EXISTING AREA CHARACTERISTICS

The above noted Crozier report referenced the initial Burnside *Stormwater Management for Georgian Bay Club* and provided a summary of the catchment boundaries and overall SWM design for the subject area. The following was established and approved for the proposed GBC Residential Enclave site (which[1] is referred to as the “Reekie Lands” in the Crozier report):

- The Georgian Bay Club is 114.7 ha and is located within four watersheds (31, 32, 33 & 34);

- Following construction of the Private Residences, the Reekie Lands are contained within Watershed 33, consisting of Catchments 33303 and 33307;
- Water quality and quantity control for Watershed 33 is provided by a wetland facility referred to as SWM 2, along the 14th hole of the golf course;
- Per the Burnside report, the 10-year peak flow from Catchments 33303 and 33307 were designed to be conveyed to SWM 2 via existing storm sewer, assuming a total imperviousness of 15%;
- The Crozier storm sewer design provided a future 600 mm diameter stub to provide future capacity to convey the 10-year peak flow from the Reekie Lands;
- Storm flows exceeding the 10-year storm sewer capacity will be conveyed to DI#31 via an interceptor swale north of the Reekie lands. In the event of DI#31 failure, flows will be conveyed overland, ultimately outletting to SWM 2;
- Per the Burnside report, the hydrological modelling used to size the SWM 2 pond accounted for residential development in Catchments 33303 and 33307 with a 15% impervious area assumed for both catchments; and
- Following construction of the proposed Private Residences, Catchments 33303 and 33307 have a combined impervious level of 11.2%.

4.3 PROPOSED GBC RESIDENTIAL ENCLAVE

As outlined in the previously accepted Burnside and Crozier reports, the proposed site will be serviced by internal gravity storm sewers which will be sized to convey the 10-year storm runoff to the existing 600 mm diameter storm sewer stub. Larger storm events will continue to be conveyed overland via the existing Private Residences major overland flow route, ultimately flowing to the existing SWM Pond 2, which was sized to receive flows from the subject site, assuming a maximum 15% imperviousness from Catchments 33303 and 33307. The combined percent impervious for these catchments, including the proposed site works was conservatively calculated to be 14.9%, therefore, no additional on-site SWM controls will be required to service the subject site. The storm sewer design sheet from the Crozier report assumed a runoff coefficient of 0.50 for the proposed site (Reekie Lands) when sizing the storm sewer stub to service the proposed property. The runoff coefficient for the proposed site was conservatively calculated to be 0.39, therefore it is anticipated that the existing storm sewer stub is adequately sized to service the proposed development. The storm calculations are detailed in Appendix A for reference.

5 Siltation and Erosion Controls

Siltation and erosion controls will be implemented for all construction activities within the development site, including vegetation clearing, topsoil stripping, material stockpiling, road construction activities and grading operations. The detailed erosion and sediment control measures proposed will be implemented during and after construction and will be provided during final design and may include the following:

- heavy duty silt fence will be erected around the perimeter of the site before any grading operations commence to control sediment movement;
- a construction vehicle entrance will be constructed and maintained consisting of a stone mud mat to reduce off-site tracking of material; and
- rock check flow dams and straw bale check flow dams will be installed prior to construction and will be maintained and inspected throughout the course of construction as required to prevent the transportation of sediment and delirious materials offsite.

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6 Transportation

A Traffic Impact Brief was prepared by Tatham Engineering and should be referenced when reading this section.

The purpose of the study was to review the proposed development from a transportation perspective, addressing site traffic volumes, on-site circulation, parking requirements and potential impacts to the adjacent road system. Recognizing that the trip generation associated with the proposed expansion will not be significant, the scope of the study was limited to a traffic brief with a focus on the following:

- existing conditions, including a description of the study area road network, traffic volumes, operations and planned/proposed improvements;
- details of the proposed development and anticipated trip generation;
- on-site circulation and parking provision; and
- transportation impacts associated with the proposed development.

Given the limited traffic volume to be generated by the development of the GBC Enclave site and in considering the traffic volumes on the road system, such will not have any significant impacts to the operations of 7th Line or Grey Road 40 (or Highway 26 for that matter). The operational assessment of the study area intersections indicate that they will experience excellent levels of service and minimal traffic delays through the 2030 horizon. Likewise, the traffic volumes on Grey Road 40 will remain well below the available road capacity. Therefore, no improvements are required to accommodate the future traffic volumes and support the proposed GBC Enclave development.

Internally, the proposed road system is consistent with that of the Georgian Bay Club development (ie. 6.0 metre private roads) and will provide appropriate service to the residents and accommodate the necessary design vehicles (eg. emergency and service vehicles). The access road will be located opposite Georgian Bay Lane (the access road to The Private Residences), creating a 4-leg intersection with Club Drive. Given the reduced traffic volumes and travel speeds, coupled with the road and intersection configuration, adequate operations will be provided.

7 Utilities

The following utility regulators have services in the immediate area:

- Bell Canada;
- Rogers Cable;
- Union Gas; and
- Hydro One.

The utilities will be contacted in advance of the final design to confirm that sufficient capacity exists within the current installations to support the proposed development.

8 Summary

The above sections and enclosed documents demonstrate that there are adequate services available to support the proposed development in terms of site servicing, stormwater management, transportation and utilities.

A detailed Functional Servicing Report will be prepared in support of final design of the residential development.

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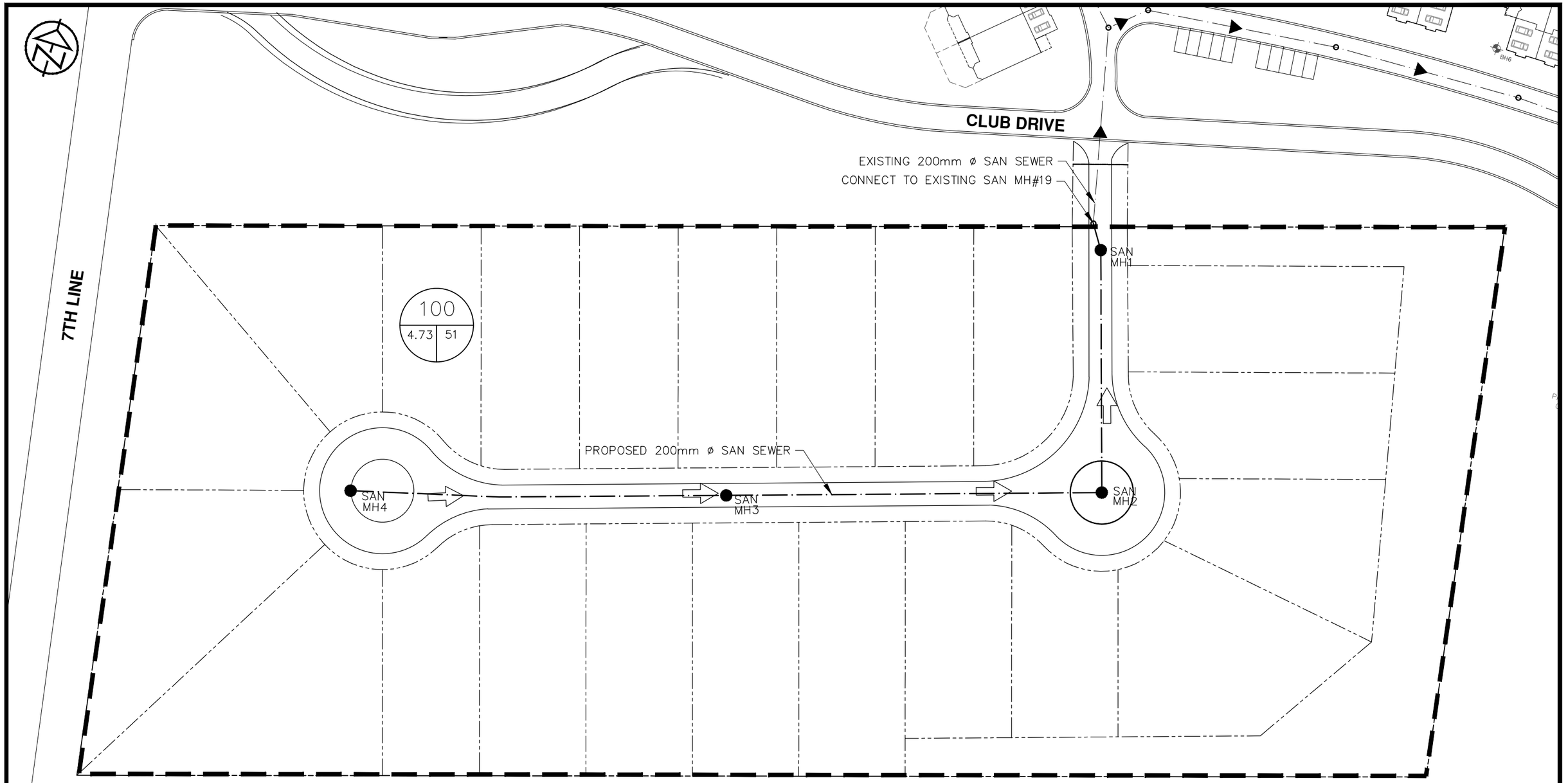
GEORGIAN BAY CLUB
TOWN OF THE BLUE MOUNTAINS
SITE LOCATION PLAN

SCALE: NTS	DATE: AUG/22	DWG NO. FIG. 1

Drawing Name: 122017-FSR Drawings.dwg, Plotted: Aug 12, 2022



LEGEND

AREA ID — 100

AREA IN HECTARES — 4.73

POPULATION BASED ON 2.3 PERSONS PER UNIT — 51

SANITARY SEWAGE FLOW DIRECTION

PROPOSED SANITARY SEWER

EXISTING SANITARY SEWER AND FLOW DIRECTION

PROPERTY LINE

SANITARY AREA BOUNDARY

TATHAM ENGINEERING

GEORGIAN BAY CLUB

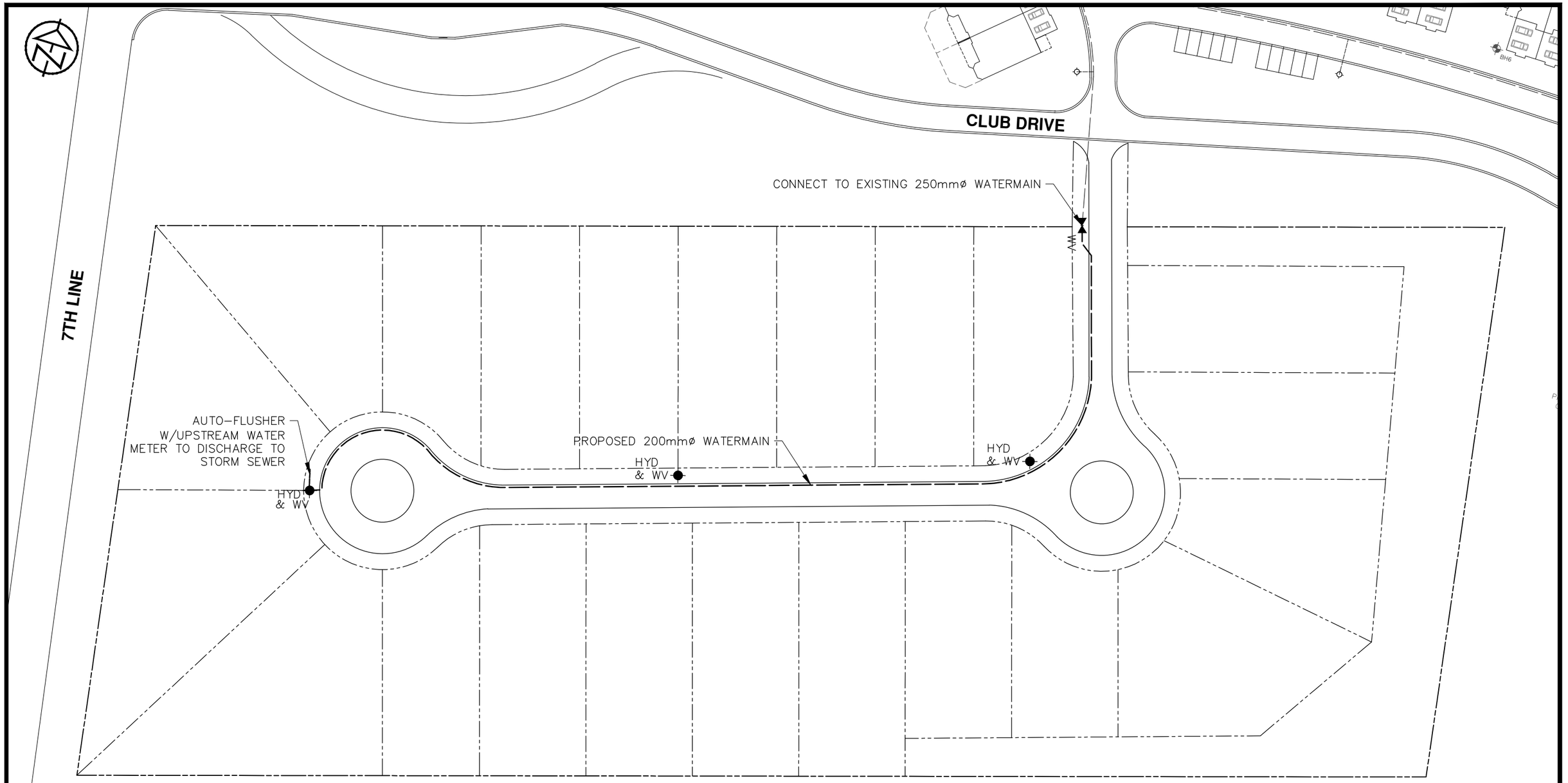
TOWN OF THE BLUE MOUNTAINS

OVERALL SANITARY PLAN

DWG. No. **SAN-1**

SCALE: 1:1000	DRAWN: MM	DATE: AUG 2022	JOB NO. 121207

Drawing Name: 122017-FSR Drawings.dwg, Plotted: Jul 28, 2023



LEGEND

PROPERTY LINE

PROPOSED WATERMAIN

EXISTING WATERMAIN

PROPOSED HYDRANT & VALVE — HYD & WV

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GEORGIAN BAY CLUB

TOWN OF THE BLUE MOUNTAINS

OVERALL WATER PLAN

DWG. No. **WTR-1**

SCALE: 1:1000	DRAWN: MM	DATE: AUG 2022	JOB NO. 121207

Drawing Name: 122017-FSR Drawings.dwg, Plotted: Jul 28, 2023

CLUB DRIVE

7TH LINE

EXISTING 600mm ø STM SEWER
CONNECT TO EXISTING STM MH#33

BH6

A1
4.73 0.39

LEGEND

CATCHMENT ID — A1
CATCHMENT AREA IN HECTARES — 4.73
RUNOFF COEFICIENT — 0.39

PROPOSED MAJOR OVERLAND FLOW DIRECTION

EXISTING MAJOR OVERLAND FLOW DIRECTION

INTERCEPTOR SWALE

PROPERTY LINE

EXISTING STORM SEWER AND FLOW DIRECTION

STORM AREA BOUNDARY

TATHAM ENGINEERING

GEORGIAN BAY CLUB

TOWN OF THE BLUE MOUNTAINS

OVERALL STORM SERVICE PLAN

DWG. No. **STM-1**

SCALE: 1:1000	DRAWN: MM	DATE: AUG 2022	JOB NO. 121207

Drawing Name: 122017-FSR Drawings.dwg, Plotted: Jul 28, 2023

Appendix A: Supporting Calculations and Documents

TATHAM ENGINEERING	Project: GBC Residential Enclave	Date: July 2023
	File No.: 122017	Designed: AS
	Subject: Water Supply Calculations	Checked: DC

MOE GUIDELINES

Sewage Generation for Domestic Water Demand:	350	L/cap/day	As per TOBM Development Standards
Residential Population	2.15	PPU	As per TOBM Development Standards

Total Units	=	22			
Number of Persons	=	47			
Average Daily Flow	=	0.19 L/s	=	16.6 m^3/d	
Maximum Day Factor	=	8.1	As per MOE Design Guidelines for Drinking Water Systems (2008)		
Peak Hour Factor	=	12.2	As per MOE Design Guidelines for Drinking Water Systems (2008)		

Maximum Day Demand:	1.56 L/s	=	134.4 m^3/d
Peak Hour Demand:	2.34 L/s	=	202.5 m^3/d

Fire Suppression: 200.00 L/s As per FUS

Design Flow: 201.56 L/s
(Maximum Day Demand Plus Fire Flow)

SANITARY SEWER DESIGN SHEET

Approved:

TATHAM ENGINEERING

FLOW CRITERIA

Average Flow Rate:	350	l/cap/d
Infiltration Rate:	0.23	l/s/ha
Population:	2.15	cap/unit
Peaking Factor:		(Harmon)

Project Name:	GBC
Project Number:	122017
Municipality:	Town of Blue Mountains
Designed By:	AS
Date:	October 2022
Revised By:	DC
Date:	October 2022
Revised By:	AS
Date:	July 2023
Checked By:	DC
Date:	July 2023

LOCATION OF SECTION	AREA LABEL	UPSTREAM MAINTENANCE HOLE	DOWNSTREAM MAINTENANCE HOLE	NO. UNITS	POPULATION	ACCUMULATED POPULATION	PEAKING FACTOR	AREA	ACCUMULATED AREA	AVERAGE FLOW			PEAK FLOW			PROPOSED FLOW					
										RESIDENTIAL	INFILTRATION	TOTAL	RESIDENTIAL	INFILTRATION	TOTAL	LENGTH OF PIPE	PIPE DIAMETER	GRADE	FULL FLOW CAPACITY	FULL FLOW VELOCITY	PEAK FLOW VELOCITY (ZERO INFILTRATION)
		MH No.	MH No.	No.	cap.	cap.		ha	ha	l/s	l/s	l/s	l/s	l/s	l/s	m	mm	%	l/s	m/s	m/s
Internal Condo Road	100	SAN MH1	SAN MH2	19	40.9	40.9	4.33	3.83	3.83	0.17	0.88	**1.05**	0.72	0.88	**1.60**	98.00	200	2.50%	**51.85**	**1.65**	0.60
Internal Condo Road	-	SAN MH2	SAN MH3	-	0.0	40.9	4.33	-	3.83	0.17	0.88	**1.05**	0.72	0.88	**1.60**	98.00	200	2.50%	**51.85**	**1.65**	0.60
Internal Condo Road	101	SAN MH3	Ex. SAN MH 19	3	6.5	47.3	4.32	0.90	4.73	0.19	1.09	**1.28**	0.83	1.09	**1.92**	65.00	200	2.50%	**51.85**	**1.65**	0.62

Notes:
1. Refer to SANITARY PLAN SAN-1 prepared by Tatham Engineering Limited.

CF CROZIER & ASSOCIATES INC
LAND DEVELOPMENT CONSULTANTS

Project No.: 125-3029
File Name: sanitary sewer design
Date: 01/27/14
Rev.: 05/27/15

The Private Residences of Georgian Bay Club

SANITARY SEWER DESIGN MODEL

DESIGN: D.T.
CHECK:
Revised: 05/27/15

N = 0.013
Population = 3.5 p.p.u.
Peak Factor (M) = 4.3 (per Burnside Sanitary Spreadsheet - revised July 7, 2014)
Avg. Daily/Capita Flow = 450 L/cap.d
Q Infiltration = 0.23 L/ha.s (=19.9 cu.m/ha.d)

location	FROM MH	TO MH	Length (m)	Area (Ha)	Units	Pop.	TOTAL trib pop	Peak Factor	Avg. Flow (l/s)	Max Flow (l/s)	Infilt. (l/s)	TOTAL Infilt.	Combined (l/s)	Pipe Diam (mm)	Upper Inv. El.	Lower Inv. El.	Slope (%)	Cap. (l/s)	Vel. (m/s)	Ground Upper	Ground Lower	Cover Upper	Cover Lower
	16	15	41.4	0.31	3	10.5	11	4.30	0.05	0.24	0.07	0.07	**0.31**	200	214.21	213.80	1.00%	**32.80**	1.04	217.140	216.820	2.73	2.82
	15	14	58.3	0.40	4	14.0	25	4.30	0.13	0.55	0.09	0.16	**0.71**	200	213.75	213.46	0.50%	**23.19**	0.74	216.820	217.710	2.87	4.05
Street A	14	13	21.6	0.08	1	3.5	28	4.30	0.15	0.63	0.02	0.18	**0.81**	200	213.41	213.30	0.50%	**23.19**	0.74	217.710	218.100	4.10	4.60
Incl. Nella Property Stub[1]	20	19	60.0	0.66	9	31.5	32	4.30	0.16	0.71	0.15	0.15	**0.86**	200	215.72	215.12	1.00%	**32.80**	1.04	219.400	218.770	3.48	3.45
	19	18	39.5	0.45	5	17.5	49	4.30	0.26	1.10	0.10	0.26	**1.35**	200	215.07	214.68	1.00%	**32.80**	1.04	218.770	218.390	3.50	3.51
	18	17	57.6	0.76	9	31.5	81	4.30	0.42	1.80	0.17	0.43	**2.23**	200	214.63	214.05	1.00%	**32.80**	1.04	218.390	217.970	3.56	3.72
Street B	17	13	13.5	0.01	0	0.0	81	4.30	0.42	1.80	0.00	0.43	**2.24**	200	214.00	213.33	5.00%	**73.34**	2.33	217.970	218.100	3.77	4.57
	13	12	17.9	0.06	0	0.0	109	4.30	0.57	2.43	0.01	0.63	**3.06**	200	213.25	213.16	0.50%	**23.19**	0.74	218.100	218.400	4.65	5.04
	12	11	26.9	0.27	4	14.0	123	4.30	0.64	2.74	0.06	0.69	**3.43**	200	213.11	212.97	0.50%	**23.19**	0.74	218.400	218.380	5.09	5.21
	11	10	15.6	0.18	3	10.5	133	4.30	0.69	2.98	0.04	0.73	**3.71**	200	212.92	212.85	0.50%	**23.19**	0.74	218.380	218.300	5.26	5.25
Street A	10	9	22.3	0.10	1	3.5	137	4.30	0.71	3.06	0.02	0.75	**3.81**	200	212.80	212.69	0.50%	**23.19**	0.74	218.300	218.360	5.30	5.47
Reekie Lands Stub	19	9	49.8	4.85	240	840.0	840	4.30	4.38	18.81	1.12	1.85	**20.66**	200	215.49	215.25	0.50%	**23.19**	0.74	220.150	218.360	4.46	2.91
~~Street C~~	~~9~~	~~8~~	~~11.3~~	~~0.04~~	~~0~~	~~0.0~~	~~840~~	~~4.30~~	~~4.38~~	~~18.81~~	~~0.01~~	~~1.86~~	**20.67**	~~200~~	~~212.61~~	~~212.55~~	~~0.50%~~	**23.19**	~~0.74~~	~~218.360~~	~~218.360~~	~~5.55~~	~~5.63~~
	8	7	48.6	0.37	4	14.0	854	4.30	4.45	19.13	0.09	1.94	**21.07**	200	212.50	212.26	0.50%	**23.19**	0.74	218.380	218.250	5.68	5.79
	7	6	48.0	0.28	3	10.5	865	4.30	4.50	19.36	0.06	2.01	**21.37**	200	212.23	211.99	0.50%	**23.19**	0.74	218.250	218.190	5.82	6.00
	6	5	50.0	0.32	3	10.5	875	4.30	4.56	19.60	0.07	2.08	**21.68**	200	211.96	211.71	0.50%	**23.19**	0.74	218.190	218.120	6.03	6.21
	5	4	50.0	0.35	3	10.5	886	4.30	4.61	19.83	0.08	2.16	**21.99**	200	211.68	211.43	0.50%	**23.19**	0.74	218.120	217.820	6.24	6.19
	4	3	51.1	0.36	4	14.0	900	4.30	4.68	20.15	0.08	2.24	**22.39**	200	211.40	211.14	0.50%	**23.19**	0.74	217.820	217.510	6.22	6.17
Street C	3	2	29.3	0.15	1	3.5	903	4.30	4.70	20.22	0.03	2.28	**22.50**	200	211.09	210.94	0.50%	**23.19**	0.74	217.510	216.980	6.22	5.84
Easement	2	1	38.8	0.05	0	0.0	903	4.30	4.70	20.22	0.01	2.29	**22.51**	200	210.86	210.67	0.50%	**23.19**	0.74	216.980	215.900	5.92	5.03
Easement	1	Ex#13	7.9	0.02	0	0.0	903	4.30	4.70	20.22	0.00	2.29	**22.52**	200	210.62	210.58	0.50%	**23.19**	0.74	215.900	214.470	5.08	3.69

Downstream Existing Sanitary System
[Extracted from 'Georgian Bay Club - Condo Villas (Block 42)' Sanitary Design Sheet - R.J. Burnside dated July 4, 2008, revised July 7, 2014]

																			0.00				
GBC	EX#13	EX#12	27.0	10.07	0	0.0	903	4.30	4.70	20.22	2.32	2.32	**22.54**	200	210.50	209.80	2.60%	**52.89**	1.68				
GBC	EX12	EX 10	72.0	10.07	0	0.0	903	4.30	4.70	20.22	2.32	2.32	**22.54**	200	209.72	208.35	1.90%	**45.21**	1.44				
GBC-Clubhouse		EX 11	56.0	0.50		55.0	55	4.30	0.29	1.23	0.12	0.12	**1.35**	125			7.10%	**24.96**	2.03				
GBC-Clubhouse	EX11	EX 10	61.0	0.00		0.0	55	4.30	0.29	1.23	0.00	0.12	**1.35**	125			0.26%	**4.78**	0.39				
GBC	EX10	EX9	24.4	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	208.33	207.72	2.50%	**51.86**	1.65				
GBC	EX9	EX 8	72.6	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	207.67	202.51	7.10%	**87.39**	2.78				
GBC	EX8	EX 7	107.6	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	202.44	199.49	2.80%	**54.88**	1.75				
GBC	EX7	EX 6	40.6	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	199.45	198.41	4.00%	**65.60**	2.09				
GBC	EX6	EX 5	39.3	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	197.84	195.01	8.60%	**96.18**	3.06				
GBC	EX5	EX 4	54.6	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	194.41	190.02	8.00%	**92.77**	2.95				
GBC	EX4	EX 3	88.2	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	189.97	188.21	2.00%	**46.38**	1.48				
GBC	EX3	EX 2	83.5	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	188.19	187.13	1.30%	**37.40**	1.19				
GBC	EX2	EX 1	40.0	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	187.09	186.51	1.50%	**40.17**	1.28				
GBC	EX1	outlet	24.4	10.07		0.0	958	4.30	4.99	21.46	2.32	2.32	**23.77**	200	186.50		2.50%	**51.86**	1.65				

Notes:

1. Number of units increased by 1 to account for Nella Property connection
10.07 297

TATHAM ENGINEERING

PROJECT	GBC	FILE	122017
		DATE	Sept 2022
SUBJECT	% Impervious Calculations - Existing	NAME	AS
		PAGE	1 OF 3

Existing Conditions - From Crozier Report

Catchment 33307A

Units 12-21 (Private Residences)	=	3189	sq.m
Units 54-56 (Private Residences)	=	945	sq.m
Half of Units 41-53 (Private Residences)	=	2785	sq.m
100m of Street A (Private Residences)	=	700	sq.m
90m of Street B (Private Residences)	=	630	sq.m
Parking Area (Private Residences)	=	185	sq.m
Total Impervious Area	=	8434	sq.m
Catchment 33307A Area	=	6.1	ha

Catchment 33303A

Units 1-11 (Private Residences)	=	4075	sq.m
180m of Street A (Private Residences)	=	1260	sq.m
Parking Area (Private Residences)	=	180	sq.m
Existing Impervious Area (Private Residences)	=	15000	sq.m
Including the clubhouse road and associated parking area			
Measured from Grey County GIS (2012)			
Total Impervious Area	=	20515	sq.m
Catchment 33307A Area (ha)	=	19.7	ha
Total Percent Impervious (33307 & 33303)	**=**	**11.2%**	
Percent Assumed in Burnside Report	=	15.0%	

TATHAM ENGINEERING

PROJECT	GBC	FILE	122017
		DATE	Sept 2022
SUBJECT	% Impervious Calculations - Proposed	NAME	AS
		PAGE	2 OF 3

Proposed Conditions

Catchment 33307A

Units 12-21 (Private Residences)	=	3189	sq.m
Units 54-56 (Private Residences)	=	945	sq.m
Half of Units 41-53 (Private Residences)	=	2785	sq.m
100m of Street A (Private Residences)	=	700	sq.m
90m of Street B (Private Residences)	=	630	sq.m
Parking Area (Private Residences)	=	185	sq.m
12 of 22 Units (GBC Residentail Enclave - Reekie Lands)	=	4080	sq.m
Internal Street (GBC Residentail Enclave - Reekie Lands)	=	1068	sq.m
Total Impervious Area	=	13582	sq.m
Catchment 33307A Area	=	6.1	ha

Catchment 33303A

Units 1-11 (Private Residences)	=	4075	sq.m
180m of Street A (Private Residences)	=	1260	sq.m
Parking Area (Private Residences)	=	180	sq.m
Existing Impervious Area (Private Residences)	=	15000	sq.m

Including the clubhouse road and associated parking area

Measured from Grey County GIS (2012)

10 of 22 Units (GBC Residentail Enclave - Reekie Lands)	=	3400	sq.m
Internal Street (GBC Residentail Enclave - Reekie Lands)	=	1026	sq.m
Total Impervious Area	=	24941	sq.m
Catchment 33307A Area (ha)	=	19.7	ha
Total Percent Impervious (33307 & 33303)	**=**	**14.9%**	
Percent Assumed in Burnside Report	=	15.0%	

TATHAM ENGINEERING

PROJECT	GBC	FILE	122017
		DATE	Sept 2022
SUBJECT	Runoff Coefficient Calculations - Proposed	NAME	AS
		PAGE	3 OF 3

Proposed Conditions (GBC Residentail Enclave - Reekie Lands)

22 Units (including driveways)	=	7480	sq.m =	0.748 ha
Internal Street	=	2094	sq.m =	0.209 ha

Runoff Coefficient		Area (ha)	RC
Catchment A1	=	**4.73**	**0.39**
Grass/Lawn	=	3.77	0.25
Asphalt/Building	=	0.96	0.95

5.3 SWM Plan for Watershed 33 (West Central)

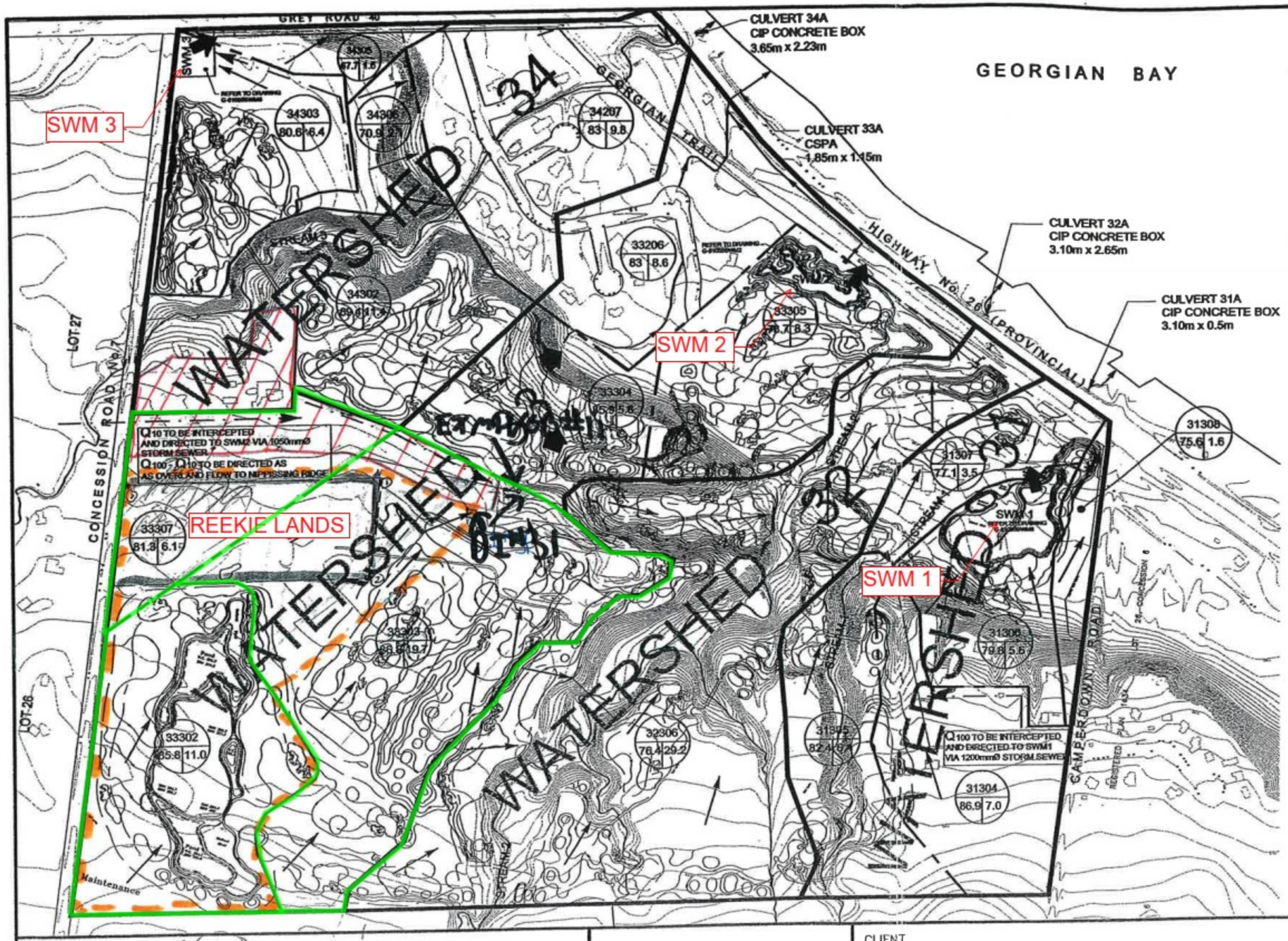
The golf course features within Watershed 33 will consist of the club house and parking area, a private access road, several golf holes, two golf feature ponds and the driving range. A stormwater management facility, SWM 2, is also proposed adjacent to the 14th fairway providing water quantity and quality control.

Under existing conditions, drainage is generally conveyed across the site in this catchment as either sheet flow or within the former agricultural ditches and tiles. The drainage generally crosses over the Nippissing Ridge in the area of the proposed 13th fairway in an ill defined manner through an existing draw which has been filled with field stone during former agricultural activities. The drainage is then intercepted by the ditch along the perimeter of the Georgian View Estates before eventually reaching Highway 26 and then Georgian Bay. With the development of the golf course, a more sound drainage conveyance system is needed to negotiate flow across the Nippissing Ridge.

Under post-development conditions, drainage from Subcatchments 33302, 33307 and 33303 will be conveyed around the Nippissing Ridge by way of a 1050 mm storm sewer and directed to SWM 2. The alignment of the sewer follows that of the proposed sanitary sewer and watermain. Peak flows up to the 10 year event generated from the above noted areas will be intercepted immediately north of the parking lot within a ditch inlet before being discharged to the storm sewer. Supporting calculations for the storm sewer are found in Appendix E.

A major system flow route is also provided across 10th and 13th holes directing flow exceeding the 10 year event toward the Nippissing Ridge. A rip rap channel will be constructed following the alignment of a former farm lane immediately west of the rock filled ravine noted above. The overland flow (100 year - 10 year) from the lands upstream of the ditch inlet along with flow up to the 100 year from subcatchment 33304 will be conveyed through the channel before reaching the existing ditch along the perimeter of the Georgian View Estates. Details of the rip rap drainage channel across the ridge are shown on Drawing G01055GR6, while the detailed design of the storm sewer is reflected on Drawings G01055SS1 and G01055SS2.

The proposed conveyance system, consisting of the storm sewer and channel improves drainage conditions in this area. As noted by Burnside (May 2001), it appears that the original storm drainage plan for Georgian View Estates Subdivision underestimated the external drainage area emanating from the lands to the south (Georgian Bay Club and external areas) estimating the area to be only 13.2 hectares. In fact, both the subwatershed study and the work of Burnside to-date would suggest the external drainage area entering Georgian View Estates to be considerably larger (see Figure 3).



FIGUR

Burnside Golf Services
A DIVISION OF R.J. BURNSIDE & ASSOCIATES LIMITED
ENGINEERS – HYDROGEOLOGISTS – ENVIRONMENTAL CONSULTANTS
GEORGIAN BAY OFFICE, 3 RONELL CRESCENT, COLLINGWOOD, ONTARIO L9Y 4J6
TELEPHONE: (705)-446-0515 FAX: (705)-446-2399
E-MAIL: collingwood@rjburnside.com
BURNSIDE

Town of the Blue Mountains

CLIENT
CANADIAN DEVELOPMENT MANAGEMENT CORPORATION

TITLE
GEORGIAN BAY CLUB
POST DEVELOPMENT DRAINAGE PLAN

DRAWN	DRAWING NO.
G.T.	G-01055FIG6
DESIGNED	SCALE
C.C.	1: 6000
REVIEWED	DATE
C.C.	MARCH 1/02

CROZIER & ASSOCIATES
Consulting Engineers

Project:	The Private Residences at GBC
Project No.:	125-3029
File:	Reekie Lands Interceptor Swale
Design by:	B. Hummelen
Date:	February 3, 2014

Swale Segment	Contributing Area (ha)	Flow rate (cms)	
Catchment 33303 and 33307 Divide to DI#30	18.0	1.76	1
Midpoint to Catchment 33303 and 33307 Divide	3.0	0.29	2
West P.L. to Mid Point	1.5	0.15	3

1. 100 Year Peak flow rate at DI#30 per storm sewer design sheet
2. 100 year peak flow rates based on pro-rating the total peak flow at DI#31 based on contributing area

GEORGIAN BAY CLUB - STORM SEWER DESIGN SHEET - REEKIE LANDS DEVELOPED (SCENARIO #1)

CROZIER & ASSOCIATES
Consulting Engineers

Reekie Lands Developed plus 13 ha of external drainage outletting to DI#31

Design: D.T. & J.O.
Date: 01/30/14 Revised: 05/26/15

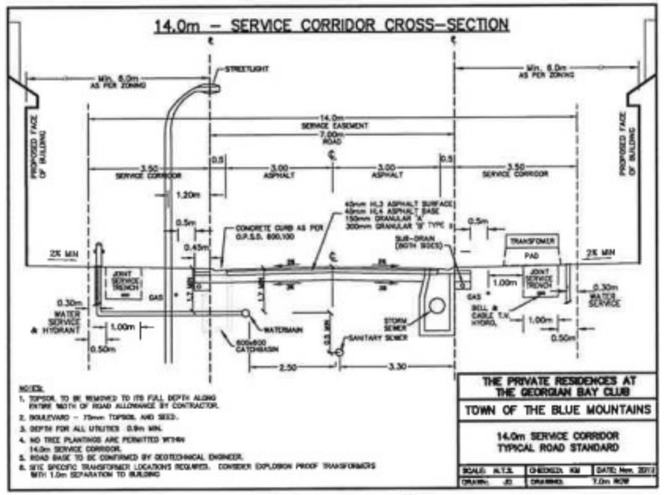
FREQUENCY — Coef. A= 29.1 | 5 YEARS - Owen Sound IDF Coef. B= -0.7242 | Coef. A= 33.6 | 10 YEARS-Owen Sound IDF Coef. B= -0.729 | Coef. A= 47.7 | 100 YEARS-Owen Sound IDF Coef. B= -0.738

TIME OF CONCENTRATION — 15.00 | MANNINGS "n" 0.013

PROJECT: Georgian Bay Club
PROJECT No.: 125-3029
FILE: storm sewer design

Location	FR MH NO	TO MH NO	AREA (A) Ha	RUN-OFF COEFF	A x C	Cummul. A x C	TIME OF CONC. min	I mm/hr	Q l/sec	SLOPE %	PIPE DIA. mm	VEL. m/sec	LENGTH m	TIME OF FLOW min	CAPACITY l/sec	FALL m	GROUND ELEV. UPPER END	GROUND ELEV. LOWER END	PIPE INV. ELEV. UPPER END	PIPE INV. ELEV. LOWER END	PIPE OBV. ELEV. UPPER END	PIPE OBV. ELEV. LOWER END	COVER to OBVERT UPPER END	COVER to OBVERT LOWER END
EAST SECTION (10 year)																								
Street A	DI#11A	CB/MH#11	0.93	1.19*	1.11	1.11	15.00	92.31	284.00	0.5	600	1.54	53.2	0.58	434.17	0.27	217.57	218.43	216.64	216.37	217.24	216.97	0.33	1.46
Street A	CB/MH#11	CB/MH#10	0.03	0.72	0.02	1.128	15.58	89.80	281.68	0.5	600	1.54	29.2	0.32	434.17	0.14	218.62	218.43	216.28	216.14	216.88	216.74	1.74	1.69
Street A	CB/MH#10	CB/MH#9	0.04	0.72	0.03	1.157	15.89	88.49	284.66	0.5	600	1.54	23.7	0.26	434.17	0.12	218.43	218.20	216.09	215.98	216.69	216.58	1.74	1.62
Street A	CB/MH#9	CB/MH#8	0.21	0.72	0.15	1.308	16.15	87.46	316.11	0.6	600	1.68	18.7	0.19	475.61	0.11	218.20	218.32	215.93	215.81	216.53	216.41	1.67	1.91
Reekie Lands	SW Corner of Lands	MH#33	4.89	0.50	2.46	2.46	15	92.31	632.45	1.5	600	2.66	385.0	2.41	752.01		223.2	220.15	222.60	216.82	223.20	217.42	0.00	2.73
Reekie Lands Stub	MH#33	DI#14	0	0	0.00	2.46	17.41	82.80	567.29	4	600	4.34	16.6	0.06	1228.02	0.66	220.15	217.50	216.77	216.11	217.37	216.71	2.78	0.79
Street A	DI#14	MH#13	1.29	1.04*	1.34	3.806	17.48	82.58	873.77	0.8	750	2.25	14.4	0.11	995.75	0.12	217.50	218.62	215.96	215.85	216.71	216.60	0.79	2.02
Street A	MH#13	CB/MH#12	0.10	0.72	0.07	3.878	17.58	82.21	886.37	0.8	750	2.25	14.4	0.11	995.75	0.12	218.62	218.34	215.82	215.70	216.57	216.45	2.05	1.89
Street A	CB/MH#12	CB/MH#8	0.03	0.72	0.02	3.900	17.69	81.85	887.39	0.7	900	2.38	9.4	0.07	1514.61	0.07	218.34	218.32	215.55	215.48	216.45	216.38	1.89	1.94
Street C	CB/MH#8	CB/MH#7	0.01	0.72	0.01	5.215	17.76	81.63	1183.52	0.6	900	2.20	46.4	0.35	1402.26	0.28	218.32	218.15	215.43	215.16	216.33	216.06	1.99	2.09
Street C	CB/MH#7	CB/MH#6	0.21	0.72	0.15	5.366	18.11	80.48	1200.59	0.6	900	2.20	59.7	0.45	1402.26	0.36	218.15	218.05	215.13	214.77	216.03	215.67	2.12	2.38
Street C	CB/MH#6	CB/MH#5	0.22	0.72	0.16	5.525	18.56	79.04	1214.03	0.6	900	2.20	49.6	0.38	1402.26	0.30	218.05	217.97	214.72	214.42	215.62	215.32	2.43	2.65
Street C	CB/MH#5	CB/MH#4	0.19	0.72	0.14	5.662	18.93	77.90	1226.08	0.6	900	2.20	61.8	0.47	1402.26	0.37	217.97	217.60	214.37	214.00	215.27	214.90	2.70	2.70
Street C	CB/MH#4	DCB/MH#3	0.25	0.72	0.18	5.842	19.40	76.53	1242.84	0.6	900	2.20	33.4	0.25	1402.26	0.20	217.60	217.41	213.95	213.75	214.85	214.65	2.75	2.76
Street C	DI#31	CB/MH#30	13.11	0.66	8.71	8.71	66	31.34	758.54	1.5	750	3.09	21.2	0.11	1363.48	0.32	217.00	217.41	215.69	215.37	216.44	216.12	0.56	1.29
Street C	CB/MH#30	DCB/MH#3	0.19	0.72	0.14	8.842	66.11	31.31	769.49	1.5	750	3.09	16.0	0.09	1363.48	0.24	218.10	217.41	215.34	215.10	216.09	215.85	2.01	1.56
Street C	DCB/MH#3	CB/MH#2A	0.13	0.72	0.09	14.777	66.20	31.28	1284.80	2.3	900	4.32	31.4	0.12	2745.47	0.61	217.41	217.10	213.70	213.09	214.60	213.99	2.81	3.11
Street C	CB/MH#2A	CB/MH#2	0.00	0.72	0.00	14.777	66.32	31.23	1283.09	2.2	900	4.22	7.2	0.03	2685.13	0.16	217.10	216.50	213.04	212.88	213.94	213.78	3.16	2.72
Street C	CB/MH#2	DCB/MH#1	0.15	0.72	0.11	14.885	66.35	31.22	1292.06	3.0	900	4.93	31.4	0.11	3135.55	1.23	216.50	214.22	212.83	211.60	213.73	212.50	2.77	1.72
Street C	DCB/MH#1	OUTLET	0.79	0.69	0.55	15.430	66.46	31.19	1337.82	4.0	900	5.69	45.5	0.13	3620.62	1.82	214.22	210.25	209.40	207.58	210.30	208.48	3.92	1.77
WEST SECTION (5 year)																								
	MH#29	DCB/MH#20	0.00	0.65	0.00	0.000	15.00	79.42	0.00	1.5	300	1.68	34.1	0.34	118.43	0.51	217.22	216.75	215.31	214.80			1.76	1.80
	MH#28	CB/MH#27	0.00	0.65	0.00	0.000	15.00	79.42	0.00	1.0	300	1.37	28.3	0.34	96.70	0.28	219.34	219.00	217.43	217.15			1.76	1.70
	CB/MH#27	CB/MH#26	0.12	0.65	0.08	0.078	15.34	78.12	16.94	0.9	300	1.30	34.6	0.44	91.74	0.31	219.00	218.66	217.10	216.79			1.75	1.72
	CB/MH#26	CB/MH#25	0.15	0.65	0.10	0.176	15.79	76.52	37.33	0.9	300	1.30	34.2	0.44	91.74	0.31	218.66	218.31	216.74	216.43			1.77	1.73
	CB/MH#25	CB/MH#24	0.15	0.65	0.10	0.273	16.23	75.02	56.93	0.5	300	0.97	62.7	1.06	68.38	0.31	218.31	217.88	216.38	216.07			1.78	1.66
Street B	CB/MH#24	MH#23	0.32	0.65	0.21	0.481	17.31	71.59	95.74	0.5	375	1.12	13.2	0.20	123.98	0.07	217.88	218.12	215.99	215.92			1.70	2.01
	MH#23	CB/MH#22	0.00	0.65	0.00	0.481	17.50	71.01	94.96	1.1	375	1.66	21.2	0.21	183.89	0.23	218.12	217.67	215.84	215.61			2.09	1.87
	CB/MH#22	CB/MH#21	0.07	0.65	0.05	0.527	17.72	70.40	103.04	1.1	375	1.66	48.6	0.49	183.89	0.53	217.67	216.84	215.56	215.02			1.92	1.63
Street A	CB/MH#21	DCB/MH#20	0.16	0.65	0.10	0.631	18.20	69.03	120.99	1.1	375	1.66	15.9	0.16	183.89	0.17	216.84	216.75	214.97	214.80			1.68	1.76
	DCB/MH#20	DCB/MH#19	0.10	0.65	0.07	0.696	18.36	68.59	132.63	1.0	375	1.59	6.3	0.07	175.33	0.06	216.75	216.75	214.72	214.66			1.84	1.91
	DCB/MH#19	Contech #18	0.07	0.65	0.05	0.741	18.43	68.42	140.94	1.0	375	1.59	1.8	0.02	175.33	0.02	216.75	216.85	214.63	214.61			1.94	2.05
	Contech #18	MH#17	0.00	0.65	0.00	0.741	18.45	68.37	140.83	1.0	375	1.59	4.4	0.05	175.33	0.04	216.85	215.66	214.53	214.49			2.13	0.99
Storm Outlet	MH#17	OUTLET#16	0.00	0.65	0.00	0.741	18.49	68.24	140.58	1.0	375	1.59	7.5	0.08	175.33	0.07	215.66	212.00	211.18	211.10			4.30	0.71

14.0m – SERVICE CORRIDOR CROSS-SECTION



NOTES:
1. TOPSOIL TO BE REMOVED TO ITS FULL DEPTH ALONG ENTIRE WIDTH OF ROAD ALLOWANCE BY CONTRACTOR.
2. BOULEVARD – 75mm TOPSOIL AND SOD.
3. DEPTH FOR ALL UTILITIES 0.9m MIN.
4. NO TREE PLANTINGS ARE PERMITTED WITHIN 14.0m SERVICE CORRIDOR.
5. ROAD BASE TO BE CONFIRMED BY GEOTECHNICAL ENGINEER.
6. SITE SPECIFIC TRANSFORMER LOCATIONS REQUIRED. CONSIDER EXPLOSION PROOF TRANSFORMERS WITH 1.0m SEPARATION TO BUILDING

THE PRIVATE RESIDENCES AT THE GEORGIAN BAY CLUB
TOWN OF THE BLUE MOUNTAINS
14.0m SERVICE CORRIDOR TYPICAL ROAD STANDARD

SCALE: N.T.S. | CHECKED: KM | DATE: Nov. 2011
DRAWN: JD | DRAWING: 7.0m ROW

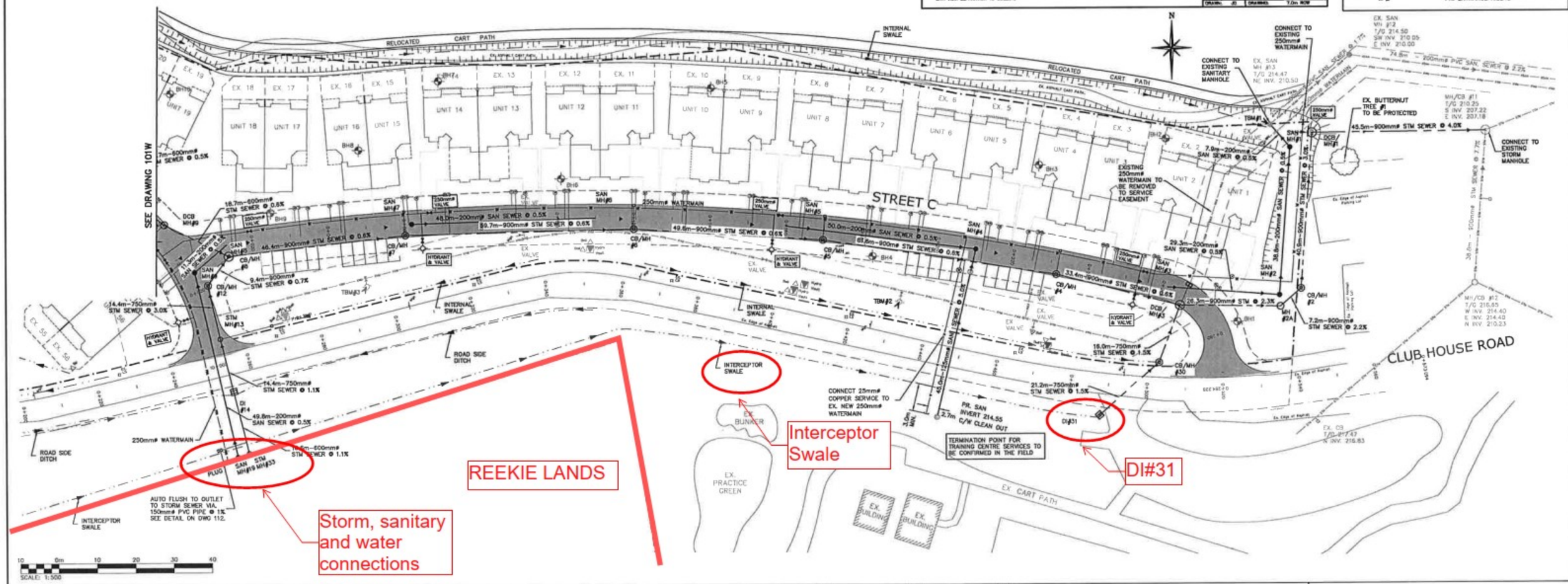
WATERMAIN NOTES:

- THE EXISTING WATERMAIN IS NOT TO BE INTERRUPTED OR DISTURBED UNTIL THE NEW WATERMAIN SYSTEM IS COMMISSIONED
- WRITTEN APPROVAL MUST BE RECEIVED BY THE TOWN TO DISCONNECT THE EXISTING WATERMAIN AND CONNECT THE NEW WATERMAIN
- THE FINAL CONNECTION WORK TO BE OBSERVED BY THE TOWN WITH 48 HOURS NOTICE
- TOWN IS TO BE NOTIFIED IMMEDIATELY IF THE WATERMAIN IS DAMAGED.

LEGEND

EXISTING FEATURES (EX.)
- EX. WATERCOURSE
- EX. HYDRANT & VALVE
- EX. VALVE
- EX. WATERMAIN
- EX. SAN SEWER & MH
- EX. STM SEWER & MH
- EX. GAS
- EX. BELL AND PEDESTAL
- EX. LIGHT STANDARD
- EX. BOREHOLE

PROPOSED FEATURES (PR.)
- PR. WATER SERVICE
- PR. STORM SERVICE
- PR. SANITARY SERVICE
- PR. WATERMAIN & VALVE
- PR. HYDRANT & VALVE
- PR. SAN SEWER & MH
- PR. STORM SEWER & MH
- PR. BUILDING FOOTPRINT
- PR. CANADA POST COMMUNITY MAIL BOX
- PR. TRANSFORMER
- PR. SWALE & FLOW DIRECTION
- +230.00 PR. GRADE
- +230.00 PR. GRADE (MATCH EX. GRADE)
- t/g PR. TOP OF GRATE GRADE
- ▲ 2 PR. ENTRANCE RISERS



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3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

GEODETIC BENCHMARK
ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE GEODETIC MONUMENT No. 72U301 HAVING AN ELEVATION OF 178.318 METRES.

TEMPORARY BENCHMARKS
TBM#1– TOP SANITARY MANHOLE COVER, ELEV. 214.47
TBM#2– TOP NUT OF FIRE HYDRANT, ELEV. 219.99
TBM#3– TOP NUT OF FIRE HYDRANT, ELEV. 220.00

Town

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
0	ISSUED FOR REVIEW	12/07/2012
1	REVISED STREET FABRIC	11/17/2013
2	REVISED STREET FABRIC, 1st SUBMISSION	02/07/2014
3	REVISED PER TOWN COMMENTS, 2nd SUBMISSION	06/17/2014
4	ISSUED FOR APPROVAL	03/24/2015
5	ISSUED FOR SITE PLAN AGREEMENT	05/26/2015

Engineer: LICENSED PROFESSIONAL ENGINEER D.M. TONE 100115132 PROVINCE OF ONTARIO
Engineer: LICENSED PROFESSIONAL ENGINEER K. A. MORRIS PROVINCE OF ONTARIO

Project: THE PRIVATE RESIDENCES AT THE GEORGIAN BAY CLUB
Drawing: GENERAL SERVICING – EAST

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Drawn By: J.C. | Design By: J.C. | Project: 125–3029
Scale: 1:500 | Date: 12/07/2012 | Check By: K.M. | Drawing: Fig 3b