

**PROPOSED BUILDING EXPANSION
89 BALSAM ST.
COLLINGWOOD, ONTARIO**

PROJECT No.: 21243

**FUNCTIONAL SERVICING AND
STORMWATER MANAGEMENT REPORT**

Prepared For:

CANADIAN TIRE REAL ESTATE LTD.

Prepared By:

The Odan/Detech Group Inc.

Original:	November 25, 2022	Issued for SPA
2 nd Submission:	July 27, 2023	Issued for SPA
3 rd Submission:	January 04, 2024	Issued for SPA
4 th Submission:	April 03, 2024	Issued for SPA
5 th Submission:	November 18, 2024	Issued for SPA

TABLE OF CONTENTS

DESCRIPTION	page
1.0 INTRODUCTION.....	1
2.0 SCOPE OF WORK	1
3.0 WATER DISTRIBUTION ASSESSMENT	1
i) Existing Infrastructure and Design Criteria	1
ii) Proposed Water Servicing	2
4.0 SANITARY SEWERS.....	3
i) Existing Infrastructure and Design Criteria	3
ii) Proposed Sanitary Servicing.....	4
5.0 STORM WATER MANAGEMENT	5
ii) Existing Conditions.....	5
iii) Stormwater Management Design	5
6.0 CONCLUSIONS.....	8

LIST OF TABLES

Table 1 – Canadian Tire Existing Total Water Demand	2
Table 2 – Canadian Tire Proposed Total Water Demand.....	2
Table 3 – Pre-Development Sanitary Flow	3
Table 4 – Post-Development Sanitary Flow.....	4
Table 5 – Storm Network 1 – Additional Storm Flow from Service Centre	6
Table 6 – Storm Network 1 – Reduction of Storm Flow from Building Expansion.....	6
Table 7 – Storm Network 1 – Total Reduction of Storm Flows.....	6
Table 8 – Storm Network 2 – Pre & Post-Development Storm Flows	7
Table 10 – Summary.....	8

APPENDIX A

Site Plan by RAI Architects Inc.
General Site Grading Plan by Robin Smith Engineering
Existing Storm Sewer Design Sheet by Robin Smith Engineering

APPENDIX B

Pre-Development Storm Catchment Plan
Post-Development Storm Catchment Plan

APPENDIX C

Water Adequacy Letter by Civelec
Hydrant Flow Test by SCG Flowmetrix
Daylighting Investigation by OnSite Locates Inc.

1.0 INTRODUCTION

It is proposed to construct an expansion on the existing Canadian Tire retail building at 89 Balsam Street, Collingwood, Ontario. The existing garden centre is to be relocated to accommodate the proposed expansion. Refer to the Site Plan by RAI Architect Inc. in Appendix A.

The following report will provide an analysis of the existing sanitary, water and stormwater infrastructure servicing Canadian Tire. It will demonstrate that the existing water and sanitary infrastructure is sufficient to service the proposed building expansion. The existing roof drain is undersized and will require upsizing as a result of this development. The goal of this report is to quantify the infrastructure upgrades required to service the proposed expansion.

2.0 SCOPE OF WORK

THE ODAN/DETECH GROUP INC. was retained by **Canadian Tire Real Estate LTD.** to review the site, collect data, evaluate the site for the proposed expansion and present the findings in a Functional Servicing and Stormwater Management Report.

3.0 WATER DISTRIBUTION ASSESSMENT

i) Existing Infrastructure and Design Criteria

The subject property is serviced by a 200mm diameter private watermain connected to the 300m municipal watermain beneath Balsam Road. The existing Canadian Tire building on-site is serviced with a 200mm fire connection with branch 100mm domestic connection, off of the site's 200mm watermain.

A daylighting investigation has been performed by Onsite Locates Inc. on the site's 200mm diameter watermain to confirm its size, location and condition. The results from this investigation can be found in Appendix B which show the watermain is in fact 200mm in diameter and is of adequate condition to be continued to be used in the post-development.

The water demand for the existing and proposed building will be calculated according to the Town of Collingwood's Development Standards and the Ontario Building Code.

The water demand for the existing building is as follows:

- | | |
|--------------------------------------|----------------------|
| a) Fire flow (City - preferred) | 2409 USGPM (152 L/s) |
| b) Fire flow as per OBC (Appendix C) | 1300 USGPM (82 L/s) |

Refer to Appendix C for the Water Adequacy Letter by Civelec which states the existing fire demand for the building as per the Ontario Building Code. It is noted that the Town of Collingwood's preferred water demand for Industrial/Commercial subdivisions, 152 L/s, is larger than the actual fire flow for the existing building and will therefore be used in the capacity analysis.

As shown below, the available flow at 20psi in the private 200mm watermain (2665 USGM) is greater than the existing total water demand (2409 USGM). Refer to Appendix C for the flow test results by SCG Flowmetrix.

Table 1 – Canadian Tire Existing Total Water Demand

	L/sec	USGM
Fire Flow (City preferred)	152	2409
Fire Flow (OBC)	82	1300
Available Flow at 20 PSI	168	2665

ii) Proposed Water Servicing

The proposed expansion will continue to be serviced by the existing 200mm fire connection with branch domestic. The water demand for the proposed building expansion is as follows:

- | | |
|--------------------------------------|----------------------|
| a) Fire flow (City - preferred) | 2409 USGPM (152 L/s) |
| b) Fire flow as per OBC (Appendix C) | 1700 USGPM (107 L/s) |

Refer to Appendix C for the Water Adequacy Letter by Civelec stating the proposed fire demand for the building as per the Ontario Building Code. It is noted that the Town of Collingwood's preferred water demand for Industrial/Commercial subdivisions, 152 L/s, is larger than the actual fire flow for the proposed expansion and will therefore be used in the capacity analysis.

As shown below, the available flow at 20psi in the private 200mm watermain (2665 USGM) is greater than the developments proposed total water demand (2409 USGM). Refer to Appendix C for the flow test results by SCG Flowmetrix.

Table 2 – Canadian Tire Proposed Total Water Demand

	L/sec	USGM
Fire Flow (City Preferred)	152	2409
Fire Flow (OBC)	107	1700
Available Flow at 20 PSI	168	2665

To construct the proposed Service Centre Expansion, an existing 200mm watermain is to be removed due to conflicting location with the expansion. A proposed 200mm PVC water service is proposed to replace the existing service in a re-routed location around the outside of the building footprint. The daylighting investigation by Onsite Locates Inc. identified the exact location of the 200mm watermain in this area.

4.0 SANITARY SEWERS

i) Existing Infrastructure and Design Criteria

The existing Canadian Tire Building is serviced by a 200mm @ 1.0% (capacity 32.8 L/s) private sanitary lateral to the east of the building. There are a series of 200mm diameter sanitary sewers that convey the flow from the building to the municipal sanitary sewer beneath Balsam Road.

For calculating the pre and post-development sanitary flows from the building, section 8 of the Ontario Building Code will be used along with the Town of Collingwood's Development Standards. The design standards used are as follows:

Total Daily Volume = 5L /m² (OBC Table 8.2.1.B – “Stores”)

Infiltration = 0.23 L/s/ha (Section 4.3.3.1 of the Town of Collingwood Development Standards)

Harmon Peaking Factor: $M = 1 + \frac{14}{4+P^{0.5}} > 5$

The pre-development flow rate is summarized as follows:

Total Building Area = 0.648ha

Infiltration Flow = 0.648x0.23 = 0.15 L/s

Peaking Factor (Babbit Peaking Factor): 5 (max)
 $M=5 / (P / 1000)^2 - (2 < M < 5)$

Total Average Daily Flow = 32, 385 L/day

Total Average Flow = 0.37 L/sec

Peak Flow = 1.85 L/s

Total Peak Flow = 0.15 + 1.85 = 2.0 L/s

Table 3 – Pre-Development Sanitary Flow

	A	B	C	D	E
	Floor Area (sq.ft.)	Floor Area (sq.m.)	Establishment Type (OBC 8.2.1.3.B.)	Volume (litres)	Total Volume (litres) (B/DxE)
<i>Existing Canadian Tire Building</i>		6477	Stores	5	32385
Total Floor Area	0	6477	Total Based on Floor Area		32385
Total Volume (Average per day)					32385
Total (l/sec)					0.37

i) **Proposed Sanitary Servicing**

The existing 200mm @ 1.0% sanitary service will continue to be used in the post-development. A second, 150mm service is proposed for the service centre expansion at the north of the property. The post-development flow rate is summarized as follows:

Total Building Area = 0.905ha

Infiltration Flow = $0.905 \times 0.23 = 0.19$ L/s

Peaking Factor (Babbit Peaking Factor): 5 (max)

$M = 5 / (P / 1000)^2 - (2 < M < 5)$

Total Average Daily Flow = 46,140 L/day

Total Average Flow = 0.52 L/sec

Peak Flow = 2.60 L/s

Total Peak Flow = $0.19 + 2.60 = 2.79$ L/s

Table 4 – Post-Development Sanitary Flow

	A	B	C	D	E
	Floor Area (sq.ft.)	Floor Area (sq.m.)	Establishment Type (OBC 8.2.1.3.B.)	Volume (litres)	Total Volume (litres) (B/DxE)
<i>Existing Canadian Tire Building</i>		9046	Stores	5	45230
Total Floor Area	0	9046	Total Based on Floor Area		45230
Total Volume (Average per day)					45230
Total (l/sec)					0.52

The proposed expansion results an in increased sanitary flow of 0.79 L/s (from 2.00 L/s to 2.79 L/s) to the municipal sanitary sewer beneath Balsam Road.

5.0 STORM WATER MANAGEMENT

ii) Existing Conditions

The stormwater management on the site was designed by Robin Smith Engineering. No on-site detention is present due to proximity to Black Ash Creek and its outlet to Nottawasaga Bay. The majority of storm runoff on-site, from asphalt areas, are collected by storm sewers and routed through an oil/grit separator before passing through the exfiltration/infiltration trench prior to the outlet to Black Ash Creek. The exfiltration/infiltration trench is located within the 30-metre vegetated buffer at the west of the site. The remaining storm runoff from asphalt areas, located west of Canadian Tire, bypass the oil/grit separator and are treated for water quality through the 30-metre vegetated buffer. As per the MOE Stormwater Management Planning and Design Manual, “the vegetated filter strip should be 10m-20m wide in the direction of flow to provide sufficient stormwater quality enhancement”, therefore this existing 30-metre vegetated buffer is sufficient in treating for water quality. Canadian Tire’s roof drain outlet directly to Black Ash Creek, as water quality measures are not necessary for rooftops. Refer to the General Site Grading plan in Appendix A for reference.

The site’s existing storm infrastructure has been designed to convey the 5-year storm within the pipe. As can be seen in the Storm Sewer Design Sheets by Robin Smith Engineering, in Appendix A, the site has multiple storm sewers operating at full capacity.

iii) Stormwater Management Design

The proposed building expansion will impact the pre-development drainage pattern of the site. See Appendix B for the Pre & Post-Development Storm Catchment Plans. Catchment 1 represents areas flowing through the existing Stormceptor. These sewers will be referred to as “Storm Network 1”. Catchment 2 represents Canadian Tire’s roof lead, which discharges to the existing outlet chamber. These sewers will be referred to as “Storm Network 2”. The building expansion’s impact on the existing storm infrastructure is summarized as follows.

Stormwater management for the proposed development will follow the stormwater criteria as described in Robin Smith Engineering’s “Blue Mountain Mall Expansion/Redevelopment Stormwater Management Report”.

- i)* No on-site detention (quantity control) required due to proximity to Black Ash Creek and its outlet to Nottawasaga Bay.
- ii)* Provide level 1 quality control

The rational method, using a time of concentration of 10 minutes will be used to determine flows in the proposed storm system. A runoff coefficient of 0.9 has been used for asphalt areas and 0.95 has been used for roof areas, in all storm events.

Rainfall data has been taken from the Town of Collingwood Standard 110 “Rainfall Intensity Curves”. The 5 and 100-year storms are shown below.

$$\text{5-Year Storm: } I = \frac{1135.4}{(t_c + 7.5)^{0.841}} = 102.3$$

$$\text{100-Year Storm: } I = \frac{2193.1}{(t_c + 9.04)^{0.871}} = 168.6$$

Canadian Tire Expansion - Impact on Storm Network 1

The proposed Service Centre Expansion will be serviced by a 200mm @ 2.0% (capacity 46.4 L/s) roof lead to the adjacent 750mm storm sewer. This roof lead will add an additional 0.02ha of area to Storm Network 1's catchment. The additional flow is calculated as follows:

Table 5 – Storm Network 1 – Additional Storm Flow from Service Centre

Storm Event	Area (ha)	Runoff Coefficient	Flow (L/s)
2-Year	0.02	0.95	4.1
5-Year	0.02	0.95	5.4
10-Year	0.02	0.95	6.3
25-Year	0.02	0.95	7.3
50-Year	0.02	0.95	8.1
100-Year	0.02	0.95	8.9

The proposed Expansion (2 Bay Side) decreases the area of storm flow to Storm Network 1 by 0.1ha, from 0.16ha to 0.06ha, as can be seen in the Pre and Post-Development Storm Drainage Plans in Appendix B. The reduction flow is calculated as follows:

Table 6 – Storm Network 1 – Reduction of Storm Flow from Building Expansion

Storm Event	Area (ha)	Runoff Coefficient	Flow (L/s)
2-Year	0.10	0.90	-19.6
5-Year	0.10	0.90	-25.6
10-Year	0.10	0.90	-29.6
25-Year	0.10	0.90	-34.6
50-Year	0.10	0.90	-38.3
100-Year	0.10	0.90	-42.1

The Canadian Tire expansion has a flow reduction to Storm Network 1. The reduction is quantified below.

Table 7 – Storm Network 1 – Total Reduction of Storm Flows

Storm Event	Table 5 Flow (L/s)	Table 6 Flow (L/s)	Total Flow (L/s)
2-Year	4.1	-19.6	-15.5
5-Year	5.4	-25.6	-20.2
10-Year	6.3	-29.6	-23.3
25-Year	7.3	-34.6	-27.3
50-Year	8.1	-38.3	-30.2
100-Year	8.9	-42.1	-33.2

The flow rate in Storm Network 1 has decreased post-development, therefore no infrastructure upgrades are required. The existing Stormceptor will not be negatively impacted by the subject expansion, and will remain in the post-development. Unclean storm runoff from asphalt areas have been replaced with clean roof water, increasing the water quality through the existing Stormceptor.

Canadian Tire Expansion - Impact on Storm Network 2

The existing Canadian Tire Building is serviced by a 250mm @ 2.0% (capacity 84.1L/s) storm lead to the existing Outlet Chamber. As per Robin Smith Engineering's SWM Report, there are no rooftop controls on the existing building and a 250mm storm lateral was chosen to provide some restrictions at the outlet, reducing its flow rate. The pre & post-development storm flow rate from the Canadian Tire building is as follows.

Table 8 – Storm Network 2 – Pre & Post-Development Storm Flows

Storm Event	Pre-Development		Post-Development	
	Area (ha)	Flow (L/s)	Area (ha)	Flow (L/s)
2-Year	0.65	134.3	0.88	181.8
5-Year	0.65	175.5	0.88	237.6
10-Year	0.65	203.1	0.88	274.5
25-Year	0.65	237.5	0.88	321.5
50-Year	0.65	262.9	0.88	355.9
100-Year	0.65	289.1	0.88	391.4

As can be seen in Table 8, the existing 250mm roof lead does not have adequate capacity to convey the pre-development 2-year storm. In a major storm event this will result in a column of water within the roof drain, from the roof to the surface, creating significant head. This event would induce high amounts of pressure on the pipe joints, breaking the roof lead. It is proposed to upsize the existing storm lead, from the building to the existing Outlet Chamber, to a 450mm @ 2.0% PVC pipe (capacity 403.2L/s). This sewer is designed to convey the 100-year flow, which will prevent a water column event. The expansion increases the flow rate from the subject site to Black Ash Creek, however quantity controls are not required on the site.

Conveying flows from the existing outlet chamber to Outlet 1 is a 450mm @ 0.5% (capacity 201.6 L/s) storm pipe. This sewer is to be upsized to a 600mm @ 0.5% (capacity 434.2 L/s) concrete pipe, providing enough capacity to convey the 100-year storm to Outlet 1. The headwall at Outlet 1 will be upsized to suit the 600mm storm sewer.

The proposed building expansion's impact on the site's Level 1 Quality Control measures has been reviewed. Asphalt runoff previously treated for water quality through the 30-metre vegetated buffer, has been substituted with clean rooftop runoff, which does not require quality treatment. This has improved the situation.

To construct the proposed Rear and Side Expansion, an existing 300mm storm sewer at the south of the building is to be removed due to conflicting location with the expansion. A 250mm and 300mm PVC storm sewer are proposed in a re-routed location around the outside of the building. The existing catch basin, and catch basin manhole will be replaced to suit.

6.0 CONCLUSIONS

From the foregoing investigation, storm water management can be accommodated with on-site storage as described in this report.

The following table summarizes the SWM components of the proposed development.

Table 9 – Summary

Pre-Development Water Demand (L/s)	152
Post-Development Water Demand (L/s)	152
Available Flow(L/s) @ 20 PSI	168
Existing sanitary flow from site (L/s)	2.00
Proposed sanitary flow from site (L/s)	2.79
Storm Network 1: 100-year Flow Reduction (L/s)	-33.2
Storm network 2: 100-year Pre-Development Flow (L/s)	289.1
Storm Network 2: 100-year Post-Development Flow (L/s)	391.4

Respectfully Submitted;
The Odan Detech Group Inc.



Mitchell Bufalino, E.I.T.



Paul Hecimovic, P.Eng

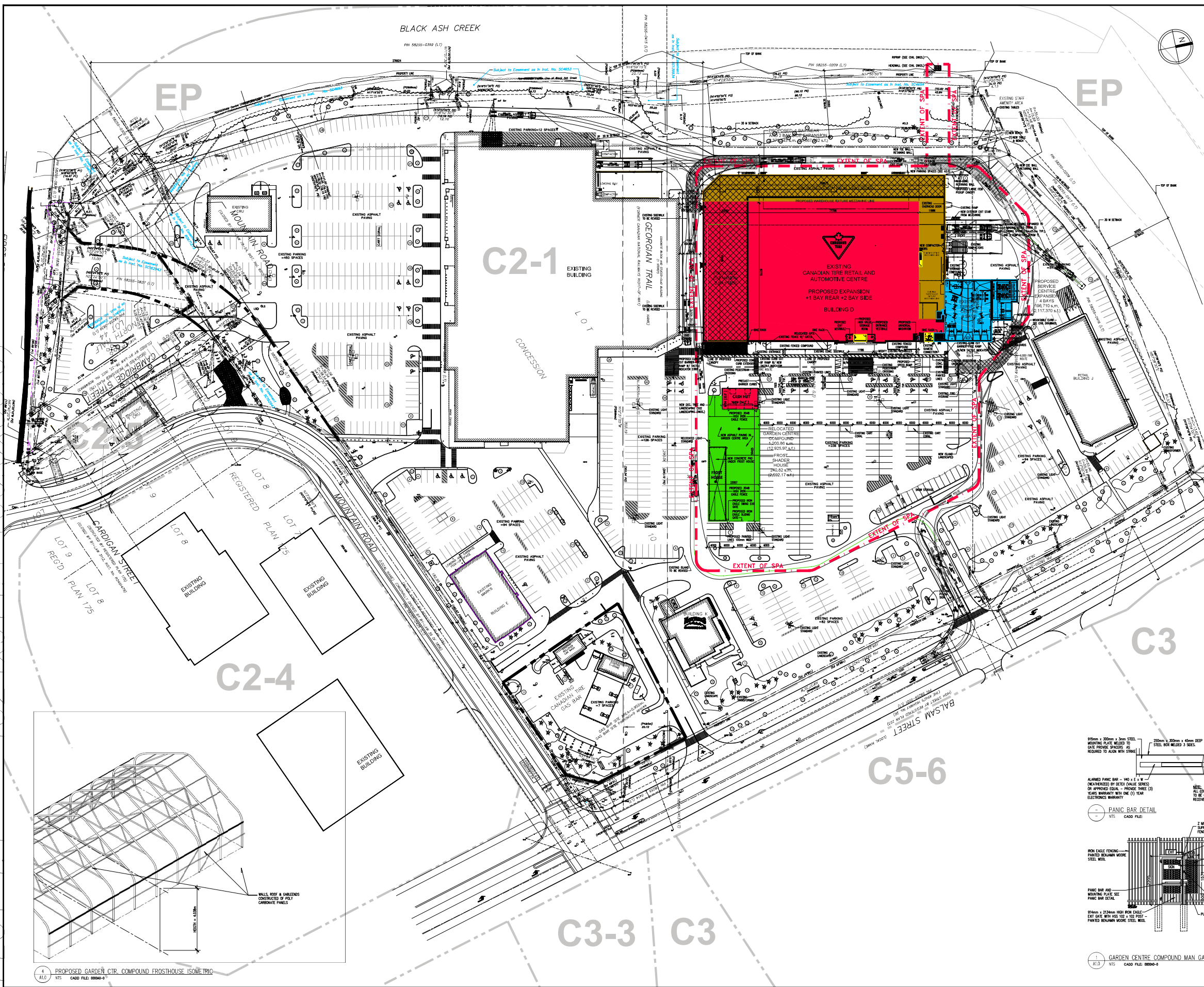
APPENDIX A

Site Plan by RAI Architect Inc.

General Site Grading Plan by Robin Smith Engineering

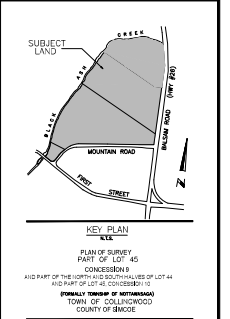
Existing Storm Sewer Design Sheet by Robin Smith Engineering

PLOT 1.1 - 1524x914.4 (600x360)

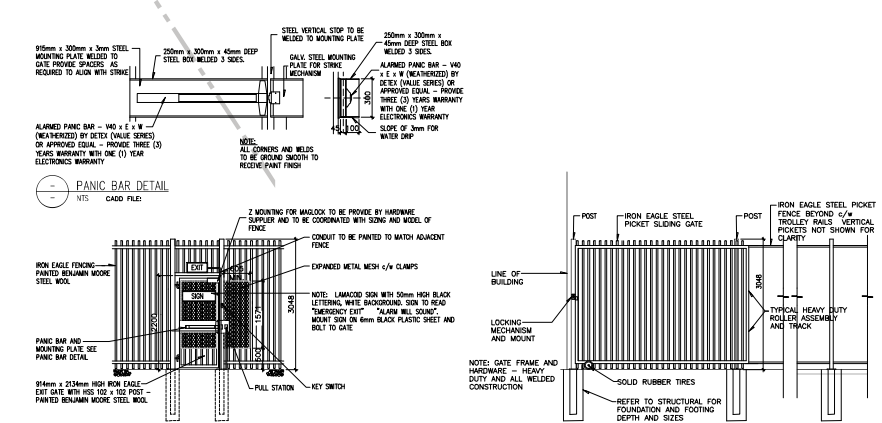
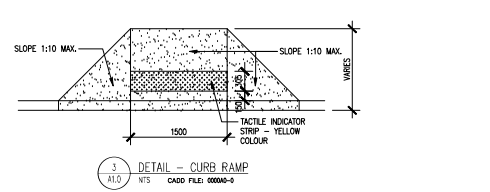


AREA STATISTICS					
No.	DESCRIPTION	EXISTING AREAS		PROPOSED CT STORE EXPANSION -1 BAY REAR +1 BAY SIDE	
		AREA (SF)	AREA (SM)	AREA (SF)	AREA (SM)
1	RETAIL	45,162.851	4,195.766	65,183.873	6,055.789
2	GARDEN CENTRE RETAIL	0.000	0.000	1,728.038	160.540
3	WAREHOUSE	45,162.851	4,195.766	66,911.911	6,216.320
4	GROUND FLOOR	17,515.930	1,627.283	19,605.900	1,821.448
5	MEZZANINE	5,582.857	518.674	8,725.872	810.860
6	TOTAL	23,098.787	2,145.957	28,331.772	2,632.308
7	GROUND FLOOR	6,749.271	627.028	8,866.634	823.737
8	MEZZANINE	510.117	47.391	510.117	47.391
9	TOTAL	7,259.388	674.419	9,376.751	871.128
10	OFFICES				
11	GROUND FLOOR	294.443	27.355	498.471	46.309
12	MEZZANINE	3,142.932	291.988	3,142.932	291.988
13	TOTAL	3,437.375	319.343	3,641.403	338.297
14	GROSS FLOOR AREA				
15	CTC GROUND FLOOR (3+4+7+10)	69,722.495	6,477.432	95,882.916	8,907.814
16	BUILDING STRUCT. AREA (8+11+13)	73,375.544	6,816.811	99,535.965	9,247.193
17	BUILDING FUNCTIONAL AREA (5+14)	78,958.501	7,335.485	108,261.837	10,057.853
18	GARDEN CENTRE	0.000	0.000	0.000	0.000
19	CANOPY	10,172.079	945.017	12,925.950	1,200.860
20	TOTAL	10,172.079	945.017	12,925.950	1,200.860
21	BUILDING AREAS				
22	CTC STORE BUILDING AREA (13)	69,722.495	6,477.432	95,882.916	8,907.814
23	GAS BAR C-STORE/CAR WASH BUILDING AREA	2,253.555	209.362	2,253.555	209.362
24	CRU BUILDING AREAS				
25	CRU-1 (SHOPPING CENTRE)	117,535.310	10,919.388	117,535.310	10,919.388
26	CRU-2	5,009.259	465.375	5,009.259	465.375
27	CRU-3 (MARKS)	8,002.836	743.488	8,002.836	743.488
28	CRU-4 (MONTANAS)	5,169.824	480.292	5,169.824	480.292
29	CRU-5	14,885.404	1,382.899	14,885.404	1,382.899
30	TOTAL BUILDING AREA	150,602.633	13,991.442	150,602.633	13,991.442
31	GROSS LEASABLE FLOOR AREA (GLFA)				
32	CTC STORE GLA (14+16)	73,375.544	6,816.811	99,535.965	9,247.193
33	GAS BAR C-STORE/CAR WASH BUILDING (GLFA)	2,253.555	209.362	2,253.555	209.362
34	CRU (GLFA)				
35	CRU-1 (SHOPPING CENTRE)	117,535.310	10,919.388	117,535.310	10,919.388
36	CRU-2	5,009.259	465.375	5,009.259	465.375
37	CRU-3 (MARKS)	8,002.836	743.488	8,002.836	743.488
38	CRU-4 (MONTANAS)	5,169.824	480.292	5,169.824	480.292
39	CRU-5	14,885.404	1,382.899	14,885.404	1,382.899
40	TOTAL (GLFA)	226,231.732	21,017.615	252,392.153	23,447.997
41	CTC STORE & CRU SITE AREA (ac./SM)	14,885.404	1,382.899	14,885.404	1,382.899
42	CTC PETROLEUM SITE AREA (ac./SM)	0.921	3,729.010	0.921	3,729.010
43	CTC OVERALL SITE AREA (ac./SM)	25.483	103,124.525	25.483	103,124.525

PARKING STATISTICS					
No.	DESCRIPTION	EXISTING AREAS		PROPOSED CT STORE EXPANSION -1 BAY REAR +1 BAY SIDE	
		AREA (SF)	AREA (SM)	AREA (SF)	AREA (SM)
38	CTC STORE GLA (14+16)	73,375.544	6,816.811	99,535.965	9,247.193
39	GAS BAR C-STORE/CAR WASH	2,253.555	209.362	2,253.555	209.362
40	CRU-1 (SHOPPING CENTRE)	117,535.310	10,919.388	117,535.310	10,919.388
41	CRU-2	5,009.259	465.375	5,009.259	465.375
42	CRU-3 (MARKS)	8,002.836	743.488	8,002.836	743.488
43	CRU-4 (MONTANAS)	5,169.824	480.292	5,169.824	480.292
44	CRU-5	14,885.404	1,382.899	14,885.404	1,382.899
45	TOTAL BUILDING GLA	226,231.732	21,017.615	252,392.153	23,447.997
46	CTR & CRU SITE PARKING	1,234	1.120		
47	CTC PETROLEUM SITE PARKING	37	39		
48	TOTAL SITE PARKING	1,271	1,159		
49	PARKING RATIO (/ 1000 SF)	5.62	4.59		
51	PARKING RATIO (/ 100 SM)	6.05	4.94		
51	BICYCLE SPACES	9	15		



SOURCES:
 CTR: TAKEN FROM LEON LUBELSKI ARCHITECT
 PHASE TWO SITE PLAN ASP-2
 CAD FILE (09_11P42)_SP-A2-SITEPLAN-OCT 16 03.DWG DATED OCT. 16/03
 CTR: SAME AS ABOVE
 AND AS ABOVE
 TAKEN FROM RAI ARCHITECT INC.
 SITE PLAN REV. 2
 CAD FILE 106A10.DWG DATED JUNE 9/06
 TAKEN FROM AERIAL PHOTO



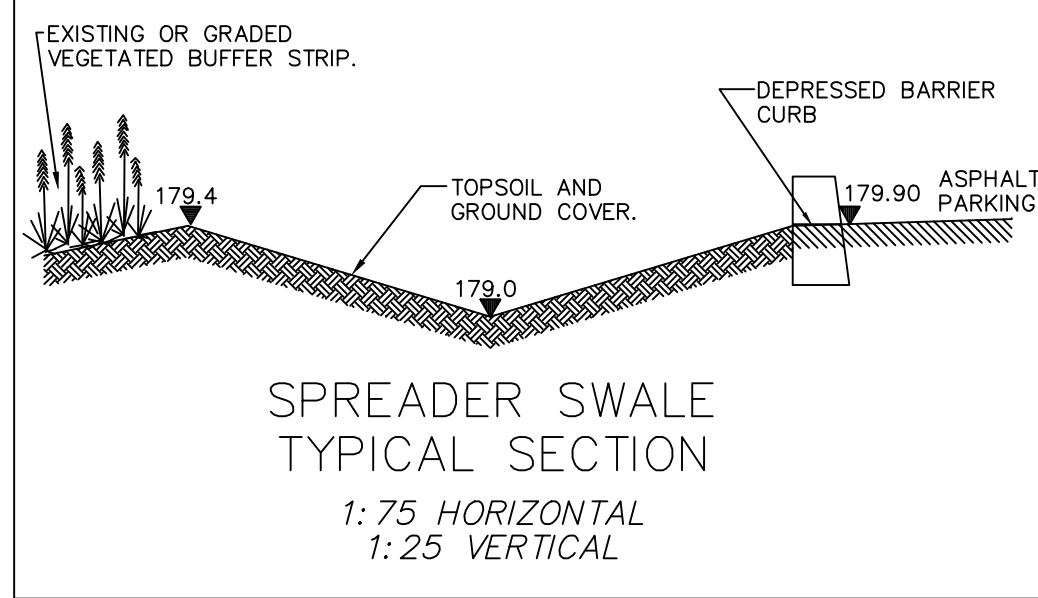
DATE	REV.	DESCRIPTION	BY
04/10/24	11	RE-ISSUED FOR SPA	JV
04/10/24	10	RE-ISSUED FOR SPA	JV
04/10/24	9	RE-ISSUED FOR SPA	JV
04/10/24	8	RE-ISSUED FOR SPA	JV
04/10/24	7	RE-ISSUED FOR SPA	JV
04/10/24	6	RE-ISSUED FOR REVIEW	JV
04/10/24	5	RE-ISSUED FOR REVIEW	JV
03/10/24	4	RE-ISSUED FOR REVIEW	JV
04/09/24	3	RE-ISSUED FOR REVIEW	B.D.
04/09/24	2	RE-ISSUED FOR REVIEW	B.D.
04/09/24	1	ISSUED FOR PRE-CONSULTATION	JV



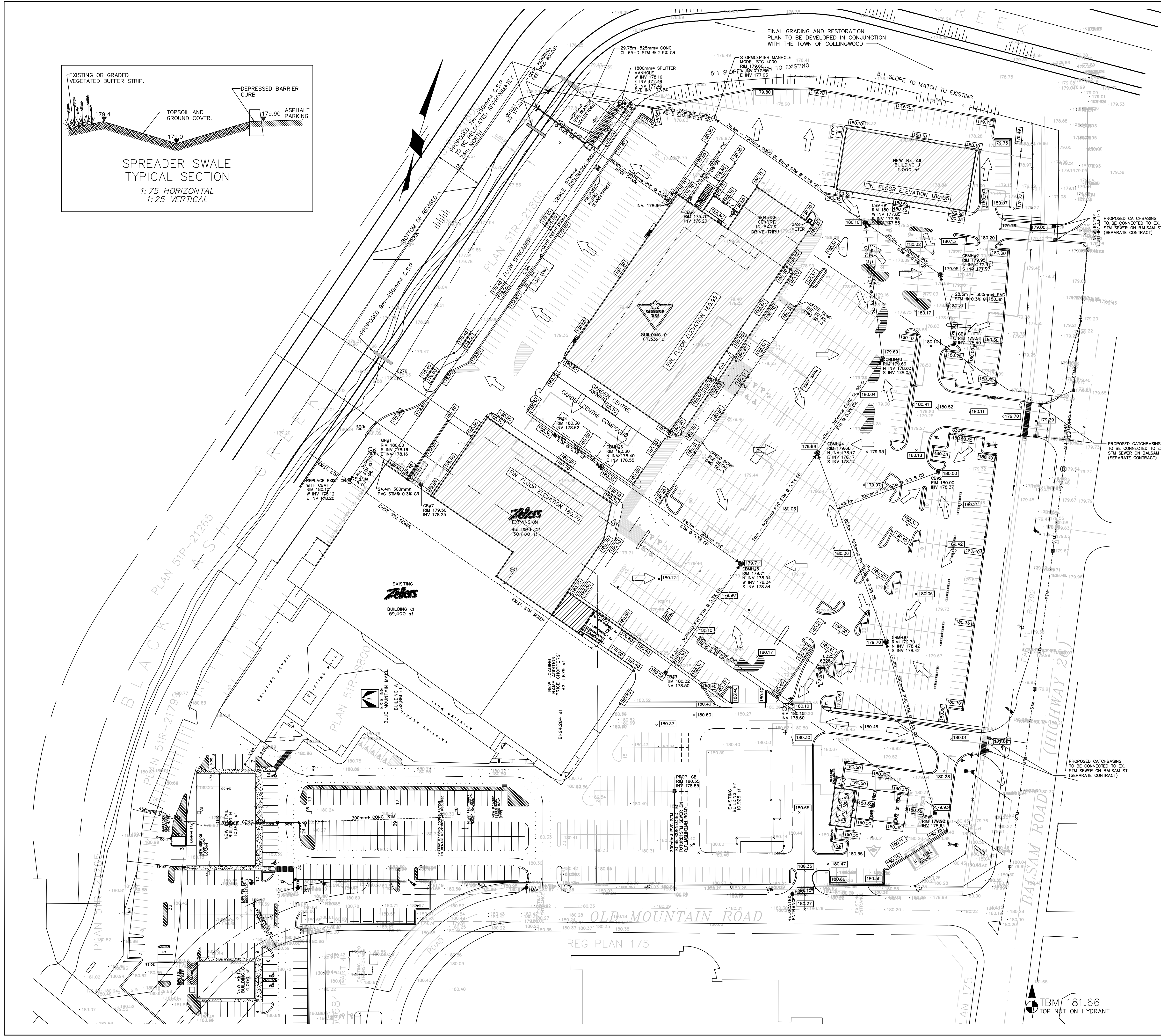
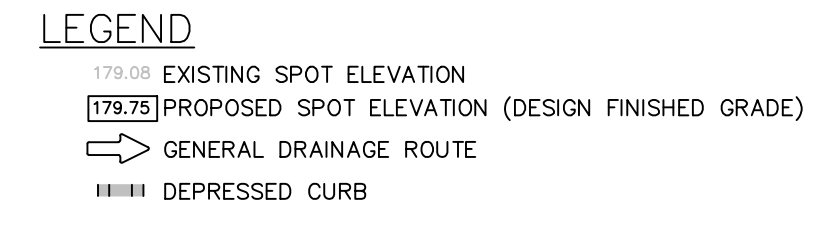
RAI Architect Inc.
 410 Dundas Street West, Suite 1014
 Toronto, Ontario M5G 1C5
 Tel: 416-593-9600
 Fax: 416-593-9601
 www.raiauto.com

COLLINGWOOD Ontario
 108

CAUTION: TIRE REEL ESTATE LIMITED
 CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR ANY DISCREPANCIES BEFORE COMMENCING WORK. PRINTS ARE TO BE USED FOR CONSTRUCTION. PRINTS ARE NOT TO BE SCALED.
 PROJECT: RETAIL STORE AND SERVICE CENTRE
 DRAWING TITLE: SITE PLAN W/ ATO AREAS
 DRAWING NO.: A1.0
 SCALE: NTS 1:1000
 JOB NO.: 1524
 PLOT DATE: 11/19/2024
 FILE NAME: CTR-106A10-REV-11-15-24.dwg



- 1. DRAWINGS**
- A. THE NOTES ON THIS SHEET APPLY TO ALL WORKS UNDER THIS CONTRACT UNLESS OTHERWISE NOTED ON THE PLAN AND PROFILE DRAWINGS AND/OR SPECIFIC DETAIL DRAWINGS.
 - B. THE STANDARD DRAWINGS OF THE TOWN OF COLLINGWOOD, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS) AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) CONSTITUTE PART OF THE PLANS OF THIS CONTRACT.
 - C. ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS FIRSTLY TOWN OF COLLINGWOOD STANDARD DRAWINGS AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS.
 - D. THE STANDARD DRAWINGS INCLUDED WITH THESE PLANS ARE PROVIDED FOR CONVENIENCE ONLY AND ARE NOT TO BE CONSTRUED TO BE A COMPLETE SET FOR THE PURPOSE OF THE CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL RELEVANT STANDARD DRAWINGS AND SPECIFICATIONS AS REQUIRED FOR THIS CONTRACT.
 - E. ALL TOPOGRAPHIC INFORMATION WAS PROVIDED BY DEARDEN AND STANTON LIMITED
- 2. MEASUREMENTS**
- A. ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.
 - B. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION, AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
- 3. GENERAL**
- A. EXISTING SERVICES AND UTILITIES SHOWN ON THESE CONTRACT DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE AND THEIR LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE WISHES WITH THE UNDERSTANDING THAT THE OWNER DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
 - B. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE M.T.O. OR THE TOWN OF COLLINGWOOD PRIOR TO THE COMMENCEMENT OF WORK WITHIN ANY RIGHT-OF-WAY.
 - C. ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE NOTTAWASAGA VALLEY CONSERVATION AUTHORITY.
 - D. NATIVE MATERIAL, SUITABLE FOR FILL AND IMPORTED MATERIAL, SHALL BE COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY IN PARKING LOT AREAS AND 100% STANDARD PROCTOR MAXIMUM DRY DENSITY IN BUILDING ENVELOPES.
- 4. IMPORTANT GRADING NOTES**
- A. DESIGN SUBGRADE ELEVATIONS EQUAL (=) DESIGN FINISHED GRADE ELEVATION LESS PREGRADE DEPTH OF 0.365m.
 - B. CONTRACTORS RESPONSIBILITY IS TO PREPARE DESIGN SUBGRADE TO ELEVATIONS OF 0.365m BELOW FINISHED GRADES SHOWN.



2.	REVISED PER TOWN OF COLLINGWOOD COMMENTS	S.L.	12/05/03	R.S.
1.	SITE PLAN APPROVAL APPLICATION	S.L.	13/03/03	R.S.
No.	REVISIONS TO DRAWING	BY	DATE	APPR.

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

CLIENT
RIOCAN REAL ESTATE INVESTMENT TRUST

MUNICIPALITY
TOWN OF COLLINGWOOD

PROJECT TITLE
BLUE MOUNTAIN MALL EXPANSION - PHASE 1

SHEET TITLE
GENERAL SITE GRADING PLAN (EARTHWORKS)

ROBIN SMITH ENGINEERING
Box 35, Moonstone, Ontario
ph. (705) 835-1556 cell (705) 321-0995
fax. (705) 835-5894



DESIGNED	S.L.	DRAWN	S.L.	CHECKED	R.P.S.
SCALE	1:750	DATE	01/27/03		
PROJECT NUMBER	BMM-135-1			DWG. NUMBER SG-1	

ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN MILLIMETRES OR DECIMAL METRES UNLESS NOTED OTHERWISE.

TBM 181.66
TOP NUT ON HYDRANT

Q= 0.0028*C*I*A (cms)

C=RUNOFF COEFFICIENT

I-RAINFALL INTENSITY= 1183.229/(Time+12.36)^{0.833}

A=AREA (ha)

STORM SEWER DESIGN

DESIGN SHEET NO. :

FILE

CONTRACT/PROJECT

Blue Mountain Mall

STREETS	MANHOLE		LENGTH (m)	INCREMENT			TOTAL CA	FLOW TIME (min)		I (mm/h)	TOTAL Q (cms)	S (%)	D (mm)	Q FULL (cms)	V FULL (m/s)	% UTILIZATION
	FROM	TO		C	A	CA		TO	IN							
		CB#3		CBMH#5	54.3	0.90		0.200	0.18							
	CB#4	CBMH#6	23	0.90	0.097	0.09	0.09	10.00	0.51	88.91	0.02	0.30	300	0.05	0.75	41%
	CBMH#6	CBMH#5	69.7	0.90	0.105	0.09	0.18	10.51	1.55	87.25	0.04	0.30	300	0.05	0.75	83%
	CBMH#5	CBMH#4	55.0	0.90	0.750	0.68	1.04	12.06	0.77	82.61	0.24	0.30	600	0.34	1.19	71%
	CB#5	CBMH#7	73.2	0.90	0.206	0.19	0.19	10.00	1.83	88.91	0.05	0.30	300	0.05	0.75	86%
	CBMH#7	CBMH#4	82.5	0.90	0.542	0.49	0.67	11.83	1.26	83.86	0.16	0.30	525	0.24	1.09	67%
	CBMH#4	CBMH#3	47.0	0.90	0.585	0.53	2.24	12.89	0.57	80.35	0.50	0.30	750	0.61	1.38	82%
	CBMH#3	CBMH#2	37.6	0.90	0.315	0.28	2.52	12.89	0.45	80.35	0.56	0.30	750	0.61	1.38	92%
	CBMH#2	CBMH#1	42.0	0.90	0.155	0.14	2.66	13.46	0.51	78.87	0.58	0.30	750	0.61	1.38	96%
	CBMH#1	STC	75.4	0.90	0.165	0.15	2.81	13.97	0.91	77.60	0.61	0.30	750	0.61	1.38	99%
	STC	EIT	39.0	0.90	0.000	0.00	2.81	14.88	0.47	75.44	0.59	0.30	750	0.61	1.38	96%
	EIT	OUTLET	29.8	0.90	0.000	0.00	2.81	15.35	0.16	74.37	0.58	2.50	525	0.68	3.14	85%

DATE : _____

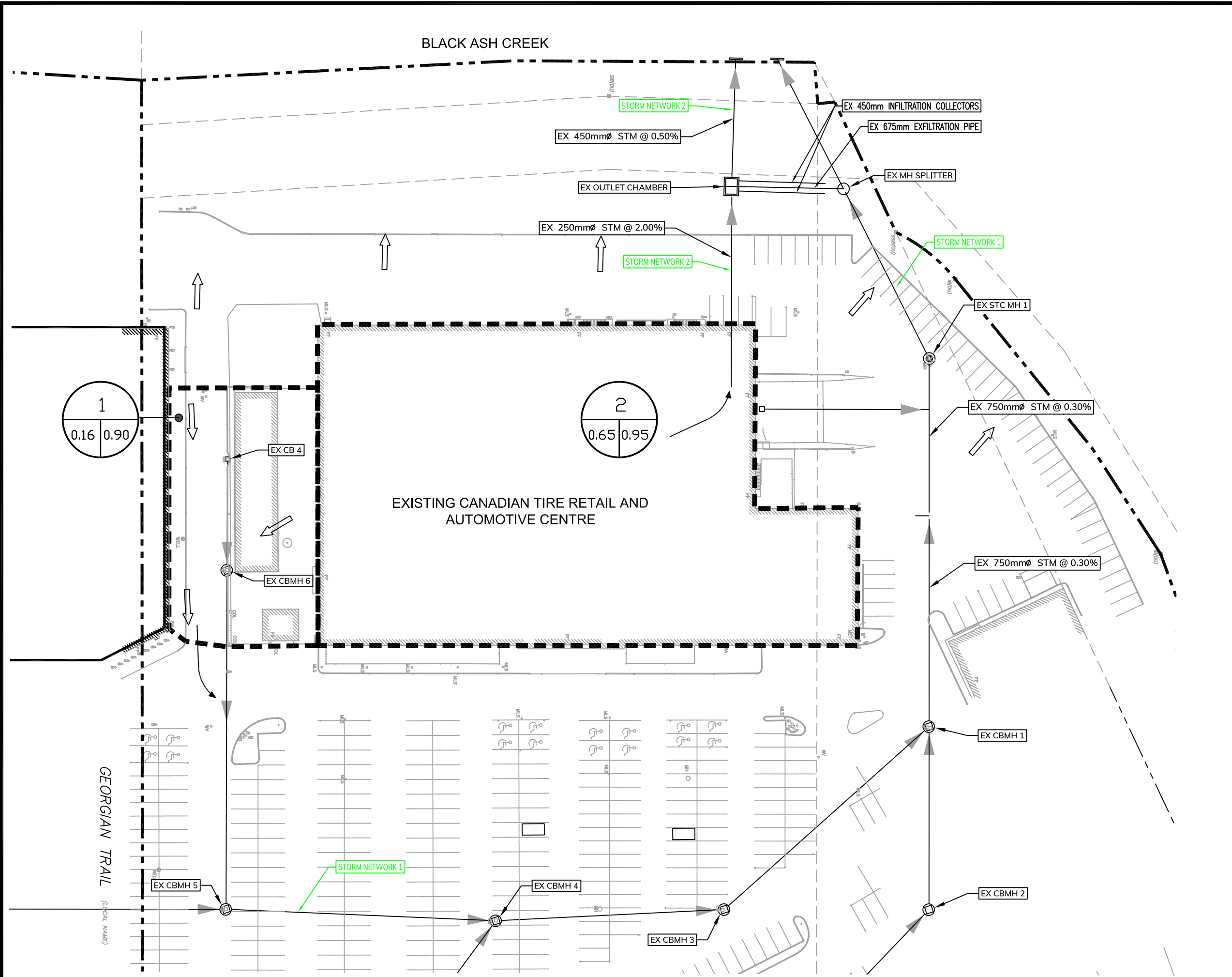
CALCULATED BY: _____

CHECKED BY : _____

APPENDIX B

Pre-Development Storm Catchment Plan

Post-Development Storm Catchment Plan



LEGEND

- EXISTING STORM SEWER
- CATCHMENT ID
- CATCHMENT AREA (HA)
- RUNOFF COEFFICIENT
- EXISTING TRIBUTARY CATCHMENT

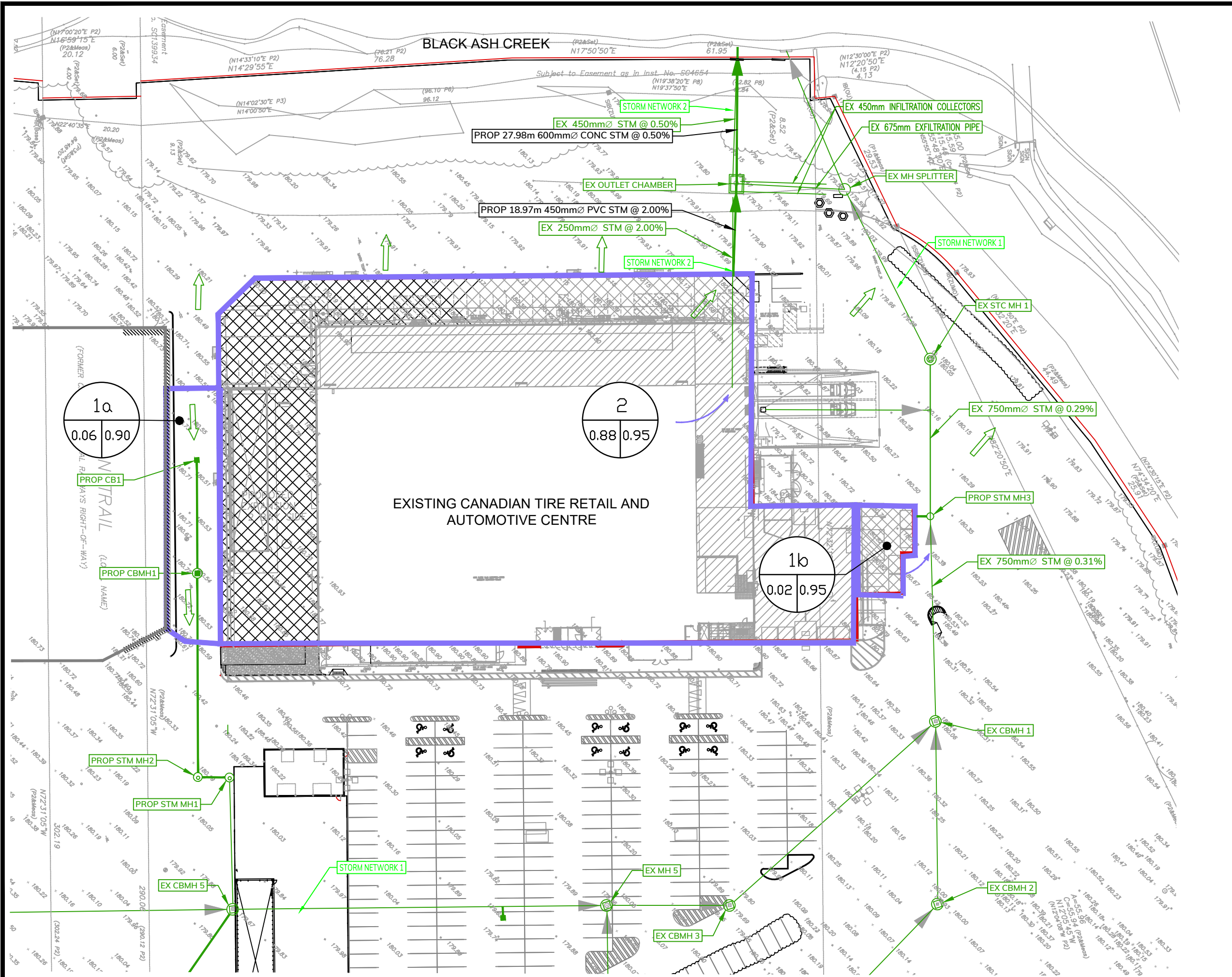
FIGURE:
PRE-DEVELOPMENT STORM CATCHMENT PLAN

PROJECT:
**PROPOSED COMMERCIAL DEVELOPMENT
 89 BALSAM ST.
 COLLINGWOOD, ONTARIO**

SCALE: 1:750

ODAN DETECH
 CONSULTING ENGINEERS

The Odan/Detech Group Inc. P: (905) 632-3811 F: (905) 632-3363
 5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 5K2



LEGEND

- EXISTING STORM SEWER
- CATCHMENT ID
CATCHMENT AREA (HA)
RUNOFF COEFFICIENT
- PROPOSED TRIBUTARY CATCHMENT

FIGURE:
POST-DEVELOPMENT STORM CATCHMENT PLAN

PROJECT:
**PROPOSED COMMERCIAL DEVELOPMENT
89 BALSAM ST.
COLLINGWOOD, ONTARIO**

SCALE: 1:750

ODAN+DETECH
CONSULTING ENGINEERS

The Odan/Detech Group Inc. P: (905) 632-3811 F: (905) 632-3363
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 5K2

APPENDIX C

Water Adequacy Letter by Civelec

Hydrant Flow Test by SCG Flowmetrix

Daylighting Investigation by OnSite Locates Inc.



CIVELEC CONSULTANTS INC.

3900 COTE VERTU SUITE 200
ST-LAURENT (QUÉBEC) H4R 1V4

TEL. : (514) 337-2600
FAX : (514) 337-2610

July 27, 2023

RAI Architect Inc.

92 Church Street S., Suite 104
Ajax, Ontario
L1S 6B4

Attention: Mr. Peter Pomeroy

Subject: **Canadian Tire Store #108 Expansion– Collingwood, Ontario**
O/Ref.: 0305-11C

Dear Mr. Pomeroy,

In preparation for a potential store expansion, a recent waterflow test was conducted for the above-mentioned project using the private hydrants at the front of the store. The results obtained are the following:

Static Pressure: 63.8 psi

Flow 1: 961 USgpm @ 56.5 psi

Flow 2: 1418 USgpm @ 50.2 psi

The projected flow rate available at the test hydrant is 2665 USgpm (at a residual pressure of 20 psi).

The current fire flow demand for the store is 1300 USgpm.

The expected fire flow demand (sprinkler demand plus hose stream demand) for the post-development stage will be approximately 1700 USgpm. Based on the results of the flow test, the water supply available is sufficient to meet the fire flow demand for the store for both pre-development and post development stages.

If you have any questions, please do not hesitate to contact us.

Sincerely yours,

Civelec Consultants Inc.

Carlo Mastroberardino, P. Eng.



FLOWMETRIX
INDU-TECH
PROCESS

Fire Flow Testing Report

Residual Hydrant # **Residual Hydrant**
NFWA Colour Code **BLUE**

DATE July 27, 2022
TIME 10:00 AM

ADDRESS 89 Balsam St
Collingwood, ON
L9Y 3Y6

SIZE-inches/mm 8 200
MATERIAL DI

CONTACT INFO
Melissa Miceli
Canadian Tire Real Estate Limited
647.612.8179
melissa.miceli@cantire.com

RESIDUAL HYDRANT INFO.

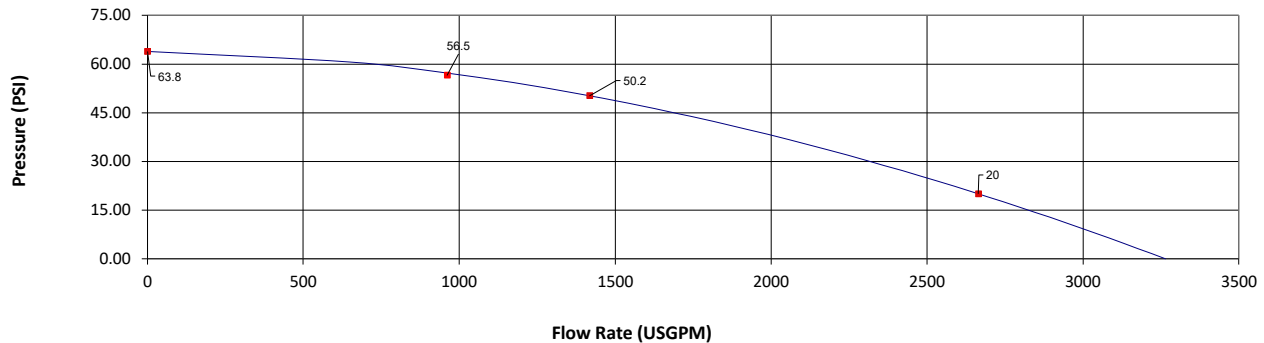
HYDRANT #	Residual Hydrant	
N.F.P.A. COLOUR CODE	BLUE	
STATIC PRESSURE	63.8	psi
RESIDUAL PRESSURE - ONE PORT OPEN	56.5	psi
RESIDUAL PRESSURE - TWO PORTS OPEN	50.2	psi
PRESSURE DROP	13.6	psi
% PRESSURE DROP	21.3	%
Flow on Water Main At Test Hydrant	2665	USGPM

FLOW HYDRANT(S) INFO.

HYDRANT ASSET ID	HYD. # PORTS	OUTLET DIAMETER (INCHES)	NOZZLE COEFFICIENT	DIFFUSER TYPE	DIFFUSER COEFFICIENT	PITOT READING (psi)	PITOT FLOW (USGPM)	FLOW METER (USGPM)
Flow Hydrant	1	2.5	Round	LPD250	0.90	40.5	961	0
Flow Hydrant	2	2.5	Round	LPD250	0.90	22.0	1418	0
Flow Hydrant	2	2.5	Round	LPD250	0.90	22.0	1418	0

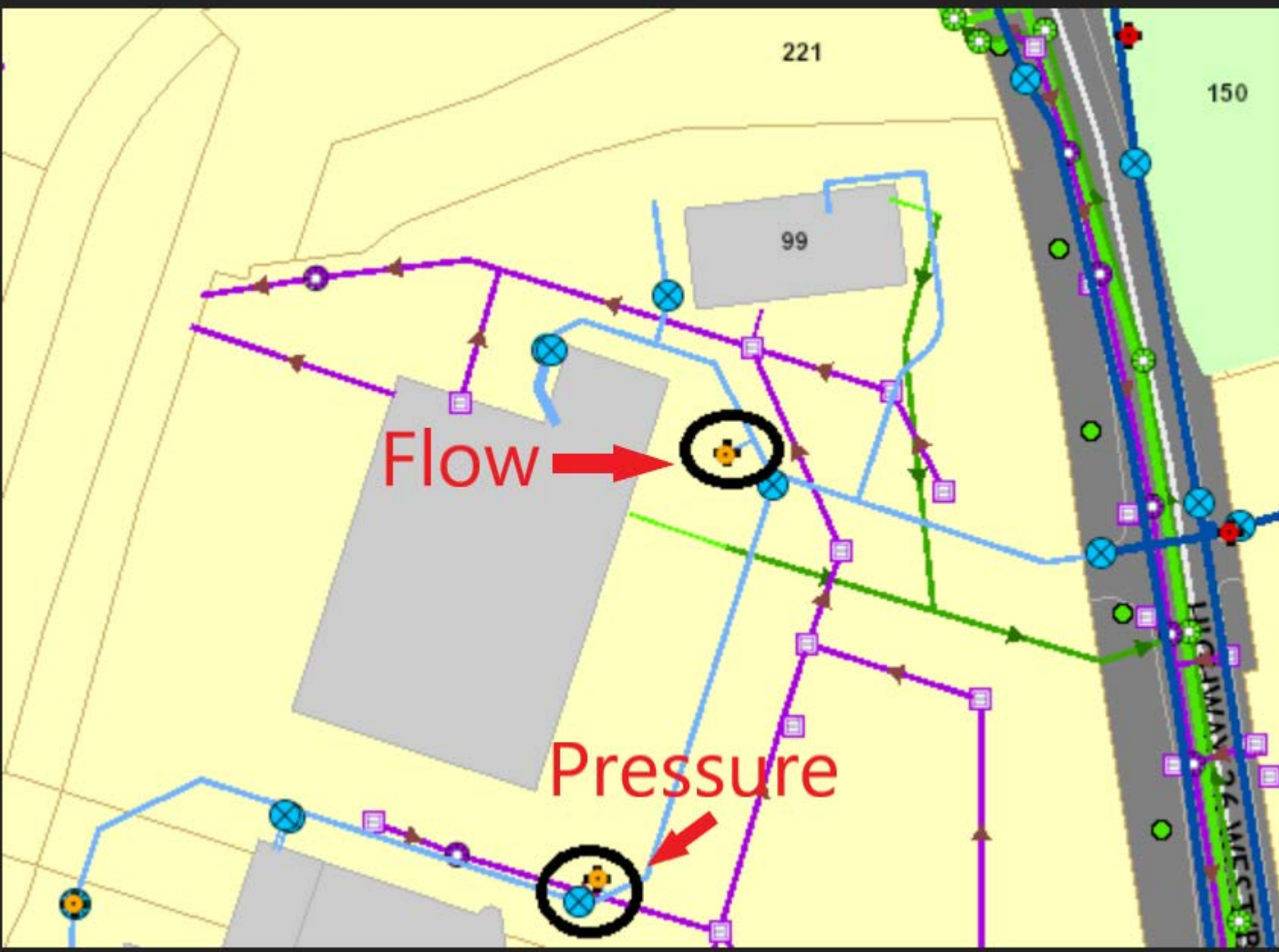
FIRE FLOW CHART

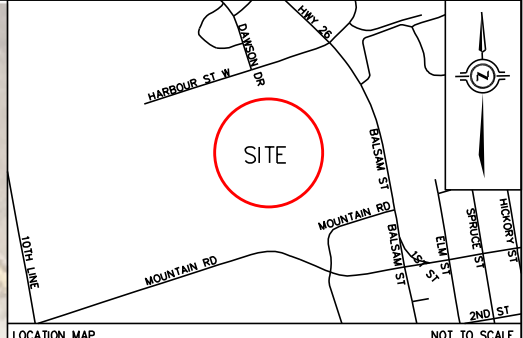
Pressure - Flow Graph
at Test Hydrant



COMMENTS

OPERATOR FMX Jordan Whitlock
OPERATOR
OPERATOR





LOCATION MAP NOT TO SCALE

**SUBSURFACE UTILITY PLAN OF
55 MOUNTAIN ROAD
TOWN OF COLLINGWOOD
COUNTY OF SIMCOE**

ONSITE LOCATES INC.
© COPYRIGHT 2023



METRIC
DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

COORDINATE SYSTEM
UTM ZONE 17, NAD83 (CSRS) (2010.0).

NOTE:
BUILDINGS ARE DEPICTED FOR VISUAL AID ONLY. ANY ASSUMPTIONS MADE ABOUT BUILDINGS OR LOCATIONS OF FEATURES IN RELATION TO THE BUILDINGS OR BUILDING TIES ARE MADE AT THE RISK OF THE INDIVIDUAL OR PARTIES TO WHOM THIS DOCUMENT HAS BEEN PROVIDED.

ELEVATION
ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928-78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL HT2.0.

LEGEND

	DENOTES UNDERGROUND WATER LINE
	DENOTES FIRE HYDRANT
	DENOTES WATER VALVE

UNDERGROUND UTILITY NOTES
THE UTILITY DATA DEPICTED ON THIS DRAWING WERE ACQUIRED IN ACCORDANCE WITH ASCE STANDARD 38-02. THE INFORMATION IS SHOWN BY ATTRIBUTED QUALITY LEVELS WHICH ARE DEFINED AS FOLLOWS:

DATA QUALITY LEVEL

HIGHEST QUALITY		QUALITY LEVEL A
		QUALITY LEVEL B
		QUALITY LEVEL C
LOWEST QUALITY		QUALITY LEVEL D

QUALITY LEVEL "A" - INFORMATION OBTAINED BY ACTUAL PHYSICAL EXPOSURE OF TARGETED UTILITIES AND SUBSEQUENT MEASUREMENT OF THE EXPOSED PRECISE HORIZONTAL AND VERTICAL POSITION.

QUALITY LEVEL "B" - INFORMATION OBTAINED USING GEOPHYSICAL LOCATE TECHNIQUES TO IDENTIFY THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE DESIGNATED UTILITIES.

QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO THE QUALITY "D" INFORMATION OBTAINED.

QUALITY LEVEL "D" - INFORMATION DERIVED FROM UTILITY RECORDS OR VERBAL RECOLLECTIONS.

ALL SERVICES ARE QUALITY "D" UNLESS NOTED OTHERWISE. LEVEL "D" RECORD INFORMATION SHOWN ON THIS PLAN HAVE BEEN PLOTTED APPROXIMATELY AS PER THE RECORDS FOUND AND COULD NOT BE FIELD VERIFIED WITHIN THE SCOPE OF THIS PROJECT. IF FURTHER VERIFICATION IS REQUIRED, IT IS SUGGESTED THAT LEVEL "A" METHODOLOGIES BE EMPLOYED.

LOST SIGNAL - DENOTES/INDICATES A POINT WHERE OL-B METHODS COULD NO LONGER ASCERTAIN THE HORIZONTAL POSITION OF A FACILITY.

CAUTION: CALL BEFORE YOU DIG

THIS PLAN IS INTENDED FOR DESIGN PURPOSES ONLY. OTHER BURIED UTILITIES MAY EXIST WHICH ARE NOT SHOWN DUE TO INSUFFICIENT INFORMATION OR IMPROPER INSTALLATION. CONTACT ALL POTENTIAL OWNERS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION OR BREAKING GROUND. IT IS THE RESPONSIBILITY OF THE CONTRACTOR/BUILDER TO ENSURE THE APPROPRIATE LEGAL REQUIREMENTS ARE MET.

SUBSURFACE UTILITY FIELD WORK WAS COMPLETED ON THE 11TH DAY OF OCTOBER, 2023

ONSITE LOCATES INC.
UTILITY LOCATE SERVICES
A wholly owned subsidiary of J.D. Barnes Ltd.

140 RENFREW DRIVE, SUITE 100, MARKHAM, ON L3R 6B3
T: 1-800-805-6155 www.onstelocates.ca

DRAWN BY:	AB	CHECKED BY:	XXX	REFERENCE NO.:	23-46-34704	
FILE:	G:\23-46-34704\To Client\23-46-34704-Nov7.dwg				DATED:	10/12/23
					PLOTTED:	11/07/23

ORTHOMAGERY PROVIDED BY FIRST BASE SOLUTIONS INC.



November 7, 2023

Linda Lum
Development Coordinator
Canadian Tire Real Estate Limited
C: 437.518.7316
2180 Yonge Street 5th Floor
Toronto, ON M4S 2A9

Re: **Subsurface Utility Mapping (SUM) – Canadian Tire 55 Mountain Road Collingwood**
Project Ref#: 23-46-34704

Project Summary

OnSite Locates Inc. (OSL) was engaged to complete Subsurface Utility Mapping of the above noted property by Canadian Tire Real Estate Limited on August 30th, 2023

The SUM Investigation was completed in accordance with *CI/ASCE Standard 38-02: Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*.

The work was conducted between October 5, 2023 and was successful in designating the alignment of the underground utilities within the Project Area.

The following utilities were identified:

- Water

This Report was created to supplement the digital file(s) 23-46-34704-Nov7.dgn that makes up the final deliverable of the project.

OLS recommends the following additional investigations for consideration by the client.

- LIDAR



attributes, is shown on plan documents. Accuracy is typically set to 15-mm vertical and to applicable horizontal survey and mapping accuracy as defined or expected by the project owner.

Equipment and Techniques

JDB/OSL survey crews are trained to use the tools provided to them in accordance with the JDB/OSL Standard Operating Procedures, project scope, conditions, and the manufacturer's instructions to ensure the work is completed safely, accurately, and on time. Below is a description of the equipment and techniques used by JDB/OSL during the SUM Investigation.

Electromagnetic Designating Equipment

JDB/OSL uses industry standard electromagnetic cable and pipe locate kits. This equipment consists of a transmitter and receiver operating in a range of frequencies. In essence, the transmitter is used to induce a signal on a utility either through direct connection to the utility or electromagnetic induction and the signal is detected by the transmitter allowing the operator to mark on the ground the approximate horizontal location of the utility. The receiver also provides a depth estimation of the buried utility.

It is important to note that this type of equipment has its limitations, since it is the electromagnetic field that is detected, and not the utility itself. It will not locate non-metallic lines such as plastic pipes. Additionally, there are several factors that may distort the signal, causing the designation to be inaccurate, or making the utility impossible to detect. These factors are broken tracer wires, utility congestion, and change in utility material etc.

Survey Equipment

JDB/OSL employs the use of typical surveying instruments such as Total Stations and high accuracy Global Navigation Satellite Systems (GNSS). GNSS units are primarily used, with Total Stations being an alternative when there is no good satellite signal: under trees, near buildings etc.

Computer-Aided Design (CAD) Drafting

JDB/OSL employs the use of industry standard programs e.g. MicroStation and AutoCAD to manipulate and present data.

Subsurface Utility Mapping Investigation Summary

Field Investigation

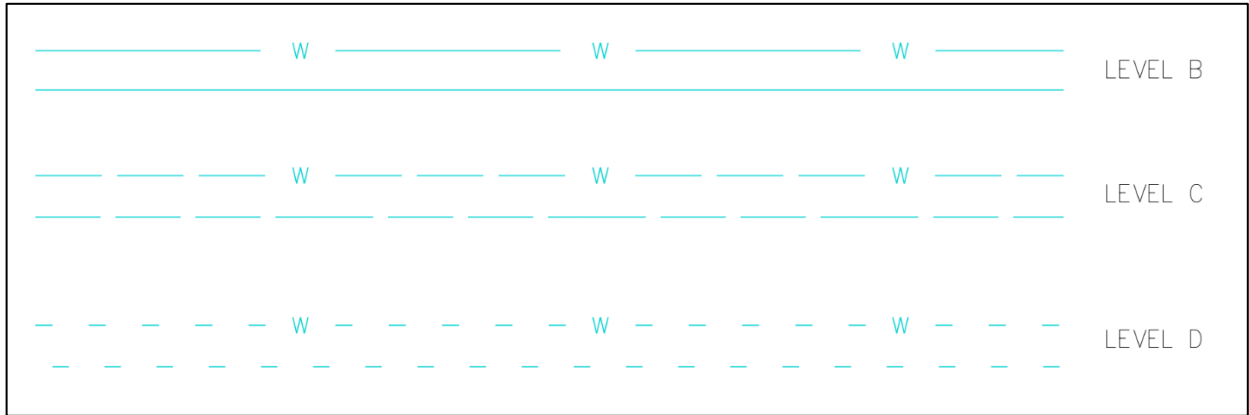
The field investigation was conducted using geophysical locate techniques. All above ground features related to underground utilities, such as water valves, fire hydrant etc. were investigated.

Data Analysis

Field and record data were analyzed using professional judgement to provide a comprehensive presentation of the utility plant and infrastructure within the workspace.

CAD Presentation

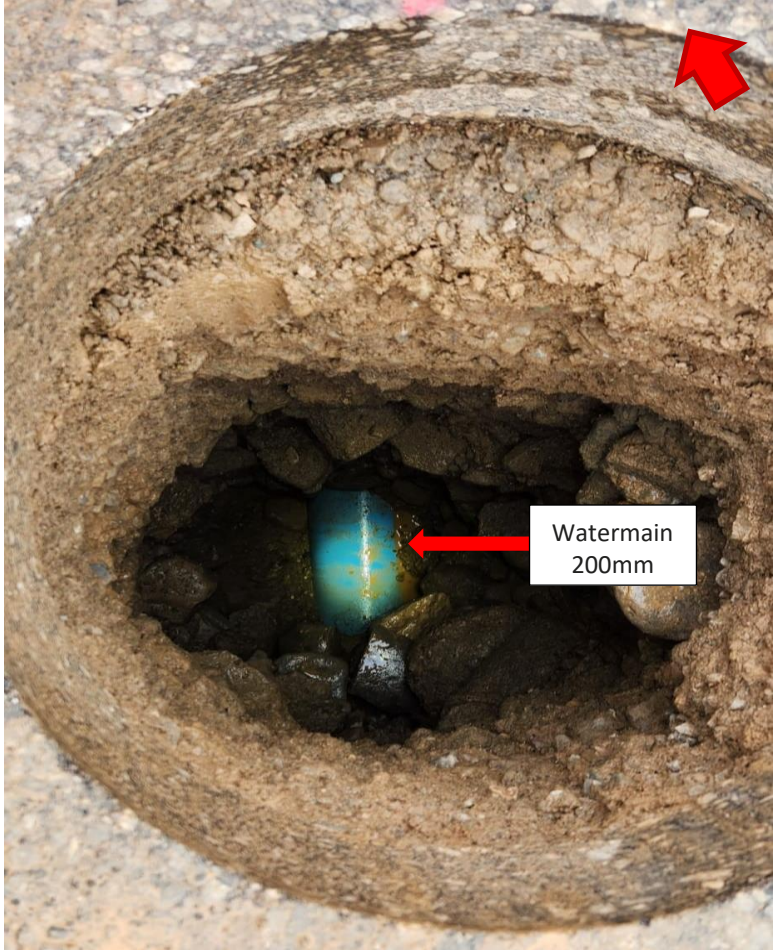
Line styles are designated as per the CI/ASCE Standard 38-02 and are depicted in the CAD deliverable as seen below.



Report Prepared by:

Aileen-Jay Baguistan
Utility Surveys



Project Name: 55 Mountain Road	<h1>Test Hole No. 1</h1>	
Project No: 23-46-34704		
Client Project No: N/A		
City/Prov.: Collingwood, ON		
Test Hole Information	Test Hole Photo	
Location		
TH Date: October 5, 2023		
Station: N/A		
Easting: N/A		
Northing: N/A		
Description		
Utility Type: Watermain		
Utility Material: Plastic		
Utility Width: 200mm		
Elevation of Utility		
Reference Elevation: 180.47m		
Top of Utility: 178.67m		
Bottom of Utility: N/A		
Depth from Grade		
Top of Utility: 1.80m		
Bottom of Utility: N/A		
Depth of Excavation: 1.90m		
Notes:		
Prepared by: AJB	Checked by:	Date: 10/10/2023




Project Name: 55 Mountain Road		<h2>Test Hole No. 2</h2>
Project No: 23-46-34704		
Client Project No: N/A		
City/Prov.: Collingwood, ON		
Test Hole Information		Test Hole Photo
Location		
TH Date: October 5, 2023		
Station: N/A		
Easting: N/A		
Northing: N/A		
Description		
Utility Type: Watermain		
Utility Material: Plastic		
Utility Width: 200mm		
Elevation of Utility		
Reference Elevation: 180.48m		
Top of Utility: 178.26m		
Bottom of Utility: N/A		
Depth from Grade		
Top of Utility: 2.22m		
Bottom of Utility: N/A		
Depth of Excavation: 2.30m		
Notes:		
Prepared by: AJB	Checked by:	Date: 10/10/2023



Project Name: 55 Mountain Road	<h2>Test Hole No. 3</h2>
Project No: 23-46-34704	
Client Project No: N/A	
City/Prov.: Collingwood, ON	
Test Hole Information	Test Hole Photo
Location	
TH Date: October 5, 2023	
Station: N/A	
Easting: N/A	
Northing: N/A	
Description	
Utility Type: Watermain	
Utility Material: Plastic	
Utility Width: 200mm	
Elevation of Utility	
Reference Elevation: 180.58m	
Top of Utility: 178.76m	
Bottom of Utility: N/A	
Depth from Grade	
Top of Utility: 1.82m	
Bottom of Utility: N/A	
Depth of Excavation: 1.95m	
Notes:	
Prepared by: AJB	Checked by:
	Date: 10/10/2023



Project Name: 55 Mountain Road	Test Hole No. 4	
Project No: 23-46-34704		
Client Project No: N/A		
City/Prov.: Collingwood, ON		
Test Hole Information	Test Hole Photo	
Location		
TH Date: October 5, 2023		
Station: N/A		
Easting: N/A		
Northing: N/A		
Description		
Utility Type: Watermain		
Utility Material: Plastic		
Utility Width: 200mm		
Elevation of Utility		
Reference Elevation: 180.60m		
Top of Utility: 178.70m		
Bottom of Utility: N/A		
Depth from Grade		
Top of Utility: 1.90m		
Bottom of Utility: N/A		
Depth of Excavation: 2.00m		
Notes:		
Prepared by: AJB	Checked by:	Date: 10/10/2023