



Enhancing our communities



Metro Grocery Store No. 145

FUNCTIONAL SERVICING REPORT

Metro Ontario Inc.

Document Control

File:

421426-2

Date:

December 6,
2022

Prepared by:

Tatham Engineering Limited
41 King Street, Unit 4
Barrie, Ontario L4N 6B5
T 705-733-9037
tathameng.com

Prepared for:

Metro Ontario Inc.
5150 Spectrum Way, Unit 401
Mississauga, Ontario L4W 5G1

Authored by:	Reviewed by:
	
Lisa Cowan, C.Tech. Senior Technologist, Project Manager	Bryan F. Stanton, B.A.Sc., P.Eng. Vice President

Disclaimer	Copyright
The information contained in this document is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Tatham Engineering Limited undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.	This document may not be used for any purpose other than that provided in the contract between the Owner/Client and the Engineer nor may any section or element of this document be removed, reproduced, electronically stored or transmitted in any form without the express written consent of Tatham Engineering Limited.

Issue	Date	Description
1	December 6, 2022	Issued for Site Plan Approval

Document Contents

1	Introduction	1
1.1	Objectives	1
1.2	Guidelines and Background Reports.....	1
2	Site Description.....	3
2.1	Land Use & Zoning By-law	3
2.2	Topography	3
2.3	Geotechnical	4
3	Proposed Development	5
3.1	Barrie West Lands	5
3.2	Proposed Site Plan	5
4	Water Supply & Distribution	6
4.1	Existing Water System	6
4.2	Proposed Water System	7
5	Sewage Collection & Treatment	9
5.1	Existing Sanitary System.....	9
5.2	Proposed Sanitary System	9
6	Stormwater Management	11
6.1	Stormwater Management Report Summary	11
7	Transportation.....	12
7.1	Barrie West Driveways	12
7.2	Traffic Impact Study	12
8	Grading & Landscaping.....	13
8.1	Grading	13
8.2	Landscaping.....	13



9 Erosion & Sediment Control 14

10 Utilities..... 15

11 Summary..... 16

Tables

Table 1: Municipal Water Supply - Projected Zone 2S and 3S Demands..... 6

Table 2: Proposed Water Demands..... 7

Figures

Figure 1: Site Location Plan **Error! Bookmark not defined.**

Appendices

- Appendix A: Key Plan
- Appendix B: Site Plan
- Appendix C: Water Demand Calculations
- Appendix D: Sanitary ADF Calculations
- Appendix E: Storm Sewer Design Sheet and Catchment Plan
- Appendix F: Drawings



1 Introduction

Tatham Engineering Limited (Tatham) has been retained by Metro Ontario Inc. (Metro) to prepare a Functional Servicing Report (FSR) in support of a site plan application (SPA) for a proposed Metro grocery store, located at the intersection of Goodwin Drive and Mapleview Drive in the City of Barrie.

1.1 OBJECTIVES

This report was prepared to demonstrate the feasibility of the proposed development with respect to servicing, including sewage collection and conveyance, water supply and distribution, site grading and utility distribution. The report also provides a summary of the stormwater management and traffic impact recommendations from the detailed reports prepared by Tatham under separate cover.

1.2 GUIDELINES AND BACKGROUND REPORTS

This report is prepared in consideration of the following municipal, provincial and agency guideline documents:

- The Ministry of the Environment, Conservation, and Parks (MECP, formerly known as Ministry of Environment), *Stormwater Management Practices Planning and Design Manual* (2003);
- The Ministry of the Environment, Conservation, and Parks (MECP, formerly known as Ministry of Environment), *Design Criteria for Sanitary Sewers, Storm Sewers and Force mains for Alterations Authorized under Environmental Compliance Approval* (2022);
- The Ministry of the Environment, Conservation, and Parks (MECP, formerly known as Ministry of Environment), *Lake Simcoe Protection Plan* (LSPP) (2009);
- City of Barrie, *Storm Drainage and Stormwater Management Policies and Design Guidelines* (2020);
- City of Barrie, *Sanitary Sewage Collection System Policies and Design Guideline* (2017); and
- City of Barrie, *Water Transmission and Distribution Design Standard* (2021).

This report is prepared in consideration of the following City of Barrie reports and publications:

- City of Barrie, *Wastewater Collection Master Plan Update* (prepared by Cole Engineering Group Ltd.) (2019);
- City of Barrie, *Wastewater Treatment Master Plan* (prepared by WSP) (2019);



- City of Barrie, *Water Storage and Distribution Master Plan Update* (prepared by WSP) (2019); and
- City of Barrie, *Water Supply Master Plan Update* (prepared by WSP) (2019).

This report is prepared in consideration of the following site-specific studies and reports:

- Barrie West Development - Functional Servicing Report (prepared by Tatham Engineering Limited, December 2022);
- Barrie West Development - Stormwater Management Report (prepared by Tatham Engineering Limited, December 2022);
- Barrie West Development - Traffic Impact Study (prepared by Tatham Engineering Limited, December 2022);
- Metro Grocery Store No. 145 - Stormwater Management Report (prepared by Tatham Engineering Limited, December 2022);
- Metro Grocery Store No. 145 - Traffic Impact Brief (prepared by Tatham Engineering Limited, December 2022);
- Geotechnical Investigation (prepared by EXP Services Inc., November 2022); and
- Hydrogeological Investigation (prepared by EXP Services Inc., November 2022).



2 Site Description

The subject property (site) is located at 800 Yonge Street and 658 Mapleview Drive East (northeast of the Goodwin Drive and Mapleview Drive East intersection) in the City of Barrie. The site is bound by Goodwin Drive to the west, existing residential and future development lands to the north (North lands), future development lands to the east (Retained lands) and Mapleview Drive East to the south.

The surrounding Barrie West lands will be developed under future site plan applications. Servicing of the Barrie West lands is described in the accompanying studies submitted with the Metro site plan application as listed in Section 1.2.

The subject property is legally described as:

PART OF BLOCK 19
PLAN 51M-832
CITY OF BARRIE
COUNTY OF SIMCOE

Refer to Appendix A for the Site Key Plan.

2.1 LAND USE & ZONING BY-LAW

The property is designated as 'Commercial District' based on the City of Barrie's current Official Plan, and 'C4 SP-348 - General Commercial' and 'MU1 SP-594 - Mixed-Use Node' based on the City of Barrie's Zoning By-law 2009-141.

2.2 TOPOGRAPHY

Information relating to existing topography, ground cover, and drainage patterns was obtained through a review of relevant background studies, available plans, base mapping, and topographic surveys, and was confirmed during site visits.

A detailed topographic survey of the site was completed by Dino Astri Surveying Ltd. on February 17, 2020. Additional topographic survey was completed by Tatham (October 2022) to reflect recent construction on Mapleview Drive East and additional topographic information at the Yonge Street and Barrie South Go Station intersection. The topographic and legal survey base plan was compiled by KRCMAR Surveyors Limited.

The subject property is approximately 1.62 ha of undeveloped lands within a larger 8.9 ha. development site referred to as the 'Barrie West lands'. The site is currently a plowed agricultural field gently sloping (1-3%) northwest towards Goodwin Drive. The property



includes a 4.0 m wide drainage easement for an existing ditch and catch basin located adjacent to Goodwin Drive.

Based on the Ontario Soil Survey the existing soils are classified as Dundonald Sandy Loam, Hydrologic Soil Group B.

2.3 GEOTECHNICAL AND HYDROGEOLOGICAL

A Geotechnical Investigation (November 2, 2022), prepared by EXP Services Inc. was completed to identify the subsurface conditions and determine the engineering properties of the in-situ soils for the design and construction of the proposed development.

The report describes the existing soils comprised as surficial topsoil over reworked native soils (sands) underlain by a major native sand deposit. Topsoil was found at depths ranging from 0.15 m to 0.30 mbg, reworked native soils were found below topsoil to depths as deep as 1.4 mbg. Below the reworked native soils a major deposit of sand was encountered in all boreholes extending to the 6.3 to 9.6 mbg depth of exploration.

A Hydrogeological Investigation Report (November 30, 2022), prepared by EXP Services Inc. was completed to assess the presence of groundwater and impact on the construction of the proposed site. Groundwater levels measured as part of the geotechnical investigation indicate levels in boreholes from dry to 8.38 m below grade. Based on initial findings, significant dewatering in support of construction is not expected. Groundwater levels are expected to be conducive to the design of the proposed underground stormwater chambers (refer to Stormwater Management Plan for details).



3 Proposed Development

3.1 BARRIE WEST LANDS

The proposed grocery store development represents one parcel (1.62 ha) of a larger (8.9 ha) future development property referred to as the 'Barrie West' lands. The remainder of the Barrie West lands are expected to be developed as mixed-use (commercial, residential) and will be subject to future site plan applications.

Two private driveways will be designed and constructed within the Barrie West lands in support of the Metro grocery store development and future Barrie West development(s). Driveway 'A' will connect Goodwin Drive to Yonge Street and Driveway 'B' will connect Driveway 'A' to Mapleview Drive East.

3.2 PROPOSED SITE PLAN

The proposed grocery store has a gross floor area of approximately 4,064 m² (43,748 ft²) and will consist of the store area, store office, mezzanine, and mechanical/electrical room.

Two accesses to the site will be provided: via the private Driveway 'A'; and the private Driveway 'B'. These private driveways provide access to municipal rights-of-way at Yonge Street (signalized intersection), Mapleview Drive (right in/right out) and Goodwin Drive. A 236-space parking lot will include barrier free parking spaces, electric vehicle charging spaces, cart corals, and a concrete loading bay provided at the building.

Refer to Appendix B for the Site Plan, prepared by Turner Fleischer Architects Inc.

Landscaping features will be proposed within the 3.0 m wide landscape buffer and throughout the site where possible.

3.3 HYDROGEOLOGICAL INFORMATION

The following information is summarized as it relates to the hydrogeological investigation prepared by EXP Services Inc.

1. Maximum Expected Depth of Excavation (underground servicing): 262.70 m masl
2. Maximum Expected Depth of Foundation - i.e. piles, caissons, shoring etc.: 266.34 m masl
3. Percentage of site to be developed: 100% of the Leased lands (28% of the entire Barrie West site)



4 Water Supply & Distribution

4.1 EXISTING WATER SYSTEM

The site is located within an area of the City serviced by the municipal water system. Specifically, the site is located within Pressure Zone 2S, supplied by the City's surface water system. The City's Surface Water Treatment Plant (SWTP) is located on the southern shore of Kempenfelt Bay at 20 Royal Parkside Drive and draws water supply from Lake Simcoe.

The City's surface water system (supplying Pressure Zone 2S and 3S) has a firm capacity of 60 ML/day (60,000 m³/day). As per the Water Supply Master Plan Update (July 2019), prepared by WSP Canada Inc., the maximum combined average day demand (ADD) for Zones 2S and 3S between 2011 and 2017 was 11,998 m³/day, while the highest Maximum Day Demand (MDD) was 19,378 m³/day, resulting in significant residual capacity within the existing supply system.

Estimated ADDs and MDDs based on projected growth within Pressure Zone 2S and 3S (i.e. the areas of the City supplied via the SWTP) are summarized in Table 1.

Under existing conditions there is sufficient capacity to service additional development within Pressure Zone 2S and 3S. Future improvements are proposed to increase the SWTP firm capacity to support population growth projections beyond 2036.

Table 1: Municipal Water Supply - Projected Zone 2S and 3S Demands

SCENARIO	ADD (m ³)	MDD (m ³)	RESIDUAL (m ³)
2021	20,870	41,378	18,622
2026	25,030	48,763	11,237
2031	28,216	54,440	5,560
2036	31,838	60,168	-168
2041	35,937	67,289	-7,289

As reported in the Water Supply and Distribution Master Plan Update (2019) prepared by WSP Canada Inc., under existing conditions there is a total storage surplus of 11.89 ML for the SWTP supplied zones and sufficient storage capacity for the proposed development. There is expected to be sufficient storage volume to service Pressure Zone 2S under the 2041 growth scenario.



4.1.1 Existing Infrastructure

An existing 200 mm diameter watermain is located within the west boulevard on Goodwin Drive and an existing 300 mm diameter watermain is located within the north boulevard on Maplevue Drive East.

4.2 PROPOSED WATER SYSTEM

4.2.1 Domestic Demands

Water demands for the proposed development have been estimated by applying the Ontario Building Code criteria.

MDD and peak hour demand (PHD) factors of have been applied in accordance with Table 3-3 of the MECP Design Guidelines for Drinking Water Systems (2008).

Refer to Appendix C for Water Demand Calculations.

Table 2: Proposed Water Demands

SCENERIO	m ³	L/s
Average Day Demand	358	4.14
Maximum Day Demand	536	6.20
Peak Hour Demand	805	9.31

A peak flow rate of 7.0 L/s was provided by the mechanical engineer, McGregor Allsop Consulting Engineers (Refer to Appendix C).

4.2.2 Fire Protection

The minimum required fire flow for Commercial uses is 283 L/s in accordance with City engineering standards. However, based on industry standards, calculations were completed in accordance with the Water Supply Public Fire Protection (2020), prepared by the Fire Underwriters Survey (FUS), to confirm the required fire flows for the site.

The required fire flows calculated are 133 L/s.

Reasonable assumptions have been made with respect to building design and construction methods, recognizing the preliminary stage of the development. Should these assumptions change during the building design process, the calculations will be updated accordingly.

Refer to Appendix C for FUS Calculations.



Hydrant flow testing was completed at an existing hydrant located on Goodwin Drive (approximately 80 m north of Maplevue Drive East). Static pressure prior to the test was observed to be 400 kPa (58 psi). At a discharge of 95.1 L/s (1,508 USgpm) and a residual pressure of 400 kPa (58 psi) was maintained. The estimated fire flow available at 20 psi is 239 L/s (3,795 USgpm) based on the City of Barrie available fire flow calculations provided in section 4.3.2 of the City's Water Transmission and Distribution Policies and Guidelines.

It is expected adequate fire flows will be available.

4.2.3 Proposed Infrastructure

The Metro site will be serviced with a 50 mm diameter domestic water line and separate 200 mm diameter fire line connection to the existing 200 mm diameter watermain on Goodwin Drive.

The water system will be designed in accordance with the City and MECP design criteria, including but not limited to the following:

- The minimum depth of watermain and water services is 1.7 m, measured to the top of pipe;
- Maximum watermain velocity of 1.5 m/s under normal operating conditions (ADD and MDD flows); and
- Maximum watermain velocity of 5.0 m/s under fire flow conditions.

Watermain/service sizing will be coordinated with the mechanical consultant during detailed design.

The balance of the 'Barrie West lands' will be serviced from separate connections to the municipal watermains as described in the accompanying Barrie West - Functional Servicing Report.

Refer to the Site Servicing Plan (Drawing SS-1) in Appendix F for the watermain layout.



5 Sewage Collection & Treatment

5.1 EXISTING SANITARY SYSTEM

The site is located in an area of the City serviced with a municipal sanitary sewer collection system that conveys flows to the Barrie Wastewater Treatment Facility (WWTF) located at the west end of Kempenfelt Bay on Lake Simcoe.

The subject site will contribute to the Painswick-Lovers Creek sanitary drainage area. The trunk sewer which services this catchment is a 1,050 mm diameter gravity trunk sewer installed from Maplevue Drive East to Big Bay Point Road vis Esther Drive.

5.1.1 WWTF Capacity

As per the Wastewater Treatment Master Plan (2019) prepared by WSP Canada Inc., the Barrie WWTF has a rated average daily flow (ADF) capacity of 76,000 m³/day, and a peak flow capacity of 156,000 m³/day. Based on historical flow data, the WWTF has received between 48,000 m³/day to 50,700 m³/day between 2014 and 2017. Based on population growth projections the ADF in 2021 is 60,019 m³/day. Therefore, under existing conditions there is an estimated residual capacity of 16,000 m³/day.

The WWTF is expected to reach its current rated capacity of 76,000 m³/day in 2031. Future improvements are proposed to increase the capacity of the plant to support population growth projections beyond 2031.

5.2 PROPOSED SANITARY SYSTEM

5.2.1 Average Day Flow

Average Day Flow (ADF) for the proposed development have been estimated by applying the Ontario Building Code criteria.

The total ADF for the Metro site (excl. extraneous flows) is 0.48 L/s.

Refer to Appendix D for Sanitary ADF Calculations.

5.2.2 Peak Flow (WWTF Capacity)

Peak Day Flow (PDF) with respect to capacity within the WWTF has been calculated utilizing peaking factors which consider the entirety of the population contributing to the WWTF. Based on the Wastewater Treatment Master Plan, peaking factor of 2.05 is to be utilized when assessing plant capacity. This results in a total PDF of 2.3 m³. As mentioned above, the existing WWTF is understood to have sufficient capacity to service additional development,



with an estimated residual capacity of 16,000 m³/day. Therefore, the WWTF has sufficient capacity to service the subject development.

5.2.3 Peak Flow (Sewer Design)

A peak flow rate of 7.6 L/s was provided by the mechanical engineer, McGregor Allsop Consulting Engineers (Refer to Appendix D).

Based on City standards the instantaneous peak sanitary flow from the subject site is calculated to be 1.12 L/s. Peak flow calculations include an extraneous flow of 0.1 L/s/ha and utilize a Peaking Factor of 2 based on City standards.

5.2.4 Proposed Infrastructure

The proposed development will include a 150 mm dia. sanitary service connection to the existing 250 mm dia. sanitary sewer on Goodwin Drive (via a new sanitary maintenance hole). A second sanitary maintenance hole is proposed at property line to allow for City sampling and inspection in accordance with City standards.

Refer to the Site Servicing Plan (Drawing SS-1) in Appendix F for the sanitary sewer layout.

The full flow capacity of a 150 mm dia. sanitary service is 15.23 L/s, adequately sized to accommodate the design peak flow of 7.6 L/s.

Based on the sanitary sewer design sheet prepared in support of the Maplevue Drive East improvements, the available capacity in the downstream sanitary is 32.88 L/s, adequately sized to accommodate the additional peak flow.

Refer to Appendix D for the upstream Sanitary Sewer Design Sheet.

5.2.5 External Sanitary Sewer Assessment

An external sanitary sewer assessment was completed in support of the future build out of the entire 'Barrie West lands' and is presented in the accompanying FSR. Based on the results of this assessment, the downstream sanitary sewer and Esther Drive trunk sanitary sewer are sized to accommodate the additional peak flow added by the Metro site.



6 Stormwater Management

6.1 STORMWATER MANAGEMENT REPORT SUMMARY

A standalone *Stormwater Management Report* has been prepared under separate cover and should be read in conjunction with this report. The following summarizes the findings of the report:

- Post-development peak flows have been controlled to meet the current standards for flows in excess of the existing downstream SWM pond design flows. The calculated allowable release rate accounts for both the Metro site and Barrie West lands, which have been pro-rated on an area basis to match the Swallow Glen Subdivision design flows.
- Stormwater quantity controls will be provided via treatment train comprised of an underground detention facility (SWMF #1), rooftop ponding, and parking lot ponding storage.
- Stormwater quality controls will be provided by a Layfield Aquabox sediment debris row and a CA ETV verified Jellyfish Filter JF8-7-2 unit (or approved equivalent).
- The proposed outlet consists of a 450 mm diameter storm sewer, which will connect to the existing Goodwin Drive sewer and an overland flow route via the entrance at the northwest corner of the site to Driveway 'A'.
- An infiltration-based low impact development (LID) feature consisting of a secondary underground detention facility (SWMF #2) will infiltrate rooftop drainage to provide volume controls to best efforts.
- Minor storm drainage (up to the 1:5-year design storm) from the majority of the site will be collected and conveyed to SWM Facility #1 via storm sewers.
- Major storm drainage (greater than the 1:5-year design storm) will be attenuated in parking lot ponding storage before discharging from the site overland via the driveway entrance at the northwest corner of the site to Driveway 'A'.

The proposed SWM plan demonstrates that the proposed development will not negatively impact landowners adjacent to, or downstream of, the subject site.

Refer to Appendix E for the Storm Sewer Catchment Plan (drawing STM-1) and Storm Sewer Design Sheet.



7 Transportation

7.1 BARRIE WEST DRIVEWAYS

Driveway 'A' and Driveway 'B' have been designed as part of the overall Barrie West lands development. The driveways have 8.5 m wide paved platforms (two 4.25 m wide lanes) with standard barrier curb and gutter to OPSD 600.040. Two accesses to the proposed development will be provided via Driveway 'A' and a single access will be provided to the proposed development via Driveway 'B'.

Driveway 'A' will provide access to the site via Goodwin Drive and Yonge Street. A signalized intersection at the Yonge Street and Driveway 'A' connection will be designed as part of the Barrie West development lands. Driveway 'B' will provide access to the site via Maplevue Drive East and a 'right-in, right-out' entrance was constructed as part of the Maplevue Drive East reconstruction work completed in 2022.

7.2 TRAFFIC IMPACT STUDY

A standalone Traffic Impact Brief, prepared by Tatham Engineering (December 2022) is provided under separate cover and should be read in conjunction with this report.

A standalone Traffic Impact Study for the Barrie West development, prepared by Tatham Engineering (December 2022) is provided under separate cover and should be read in conjunction with this report.



8 Grading & Landscaping

8.1 GRADING

The overall site grading design is driven by proposed grading objectives of Metro's development standards, City engineering standards, the design of the SWM facility and in coordination with the Maplevue Drive East reconstruction, adjacent future development lands and existing Goodwin Drive grading.

Internal parking lot grading has been developed to ensure stormwater runoff is safely conveyed to proposed storm sewers and overland flow routes (Driveway 'A' and Driveway 'B').

Refer to Appendix F for the Site Grading Plan (drawing SG-1).

8.2 LANDSCAPING

A preliminary detailed landscaping design has been prepared under separate cover by Envision Tatham Inc. Landscape features and plantings have been provided in accordance with the City's Urban Design Guidelines.



9 Erosion & Sediment Control

Erosion and sediment control measures will be implemented for all construction activities within the development site including vegetation clearing, topsoil stripping, grading, servicing, road construction and lot development. The basic principles considered to minimize erosion and sedimentation transport include:

- All erosion control measures will be designed in accordance with relevant City, LSRCA and OPSD standards;
- Silt fences to be constructed prior to commencement of any grading operations;
- Designated construction vehicle entrance(s) with stone mud mat;
- Temporary swales, silt ponds, and check dams will be constructed to control runoff during construction by reducing velocities and promoting settlement of particulates;
- Catch basins will be provided with filter screens during construction; and
- Confine refueling and servicing of equipment sufficiently away from existing drainage systems.

Regular inspection of control measures will be completed through a monitoring and mitigation plan, with regular repairs made as necessary.

Refer to Appendix F for the Erosion & Sediment Control Plan (drawing ESC-1).



10 Utilities

The following utility agencies provide services to the proposed development:

- Alectra;
- Enbridge Inc.;
- Bell Canada; and
- Rogers Communication Inc.

All utilities (electrical, gas, telecommunications) are expected to be available from Maplevue Drive East and/or Goodwin Drive to service the proposed development. Utility coordination will be initiated after the first engineering submission is completed in support of the Metro Spa.



11 Summary

Water Supply & Distribution

The site will be provided with separate domestic and fire water supply lines from the existing 200 mm diameter watermain on Goodwin Drive with valving at P/L.

Sewage Collection & Treatment

The site will be serviced with a 150 mm dia. sanitary service connecting to an existing 250 mm diameter sanitary main on Goodwin Drive with a maintenance hole at P/L.

Stormwater Management

The SWM plan demonstrates the proposed development will not result in negative impacts with respect to stormwater and meets the design criteria previously established by the MECP, LSRCA and the City.

Transportation

A separate traffic impact study was completed to confirm significant external improvements are not required for the site and the site plan is sufficient for the proposed use.

Grading

The grading design was prepared in accordance with the City's Engineering Standards to achieve the objectives of Metro, the SWM plan and tying into surrounding grades.

Erosion & Sediment Control

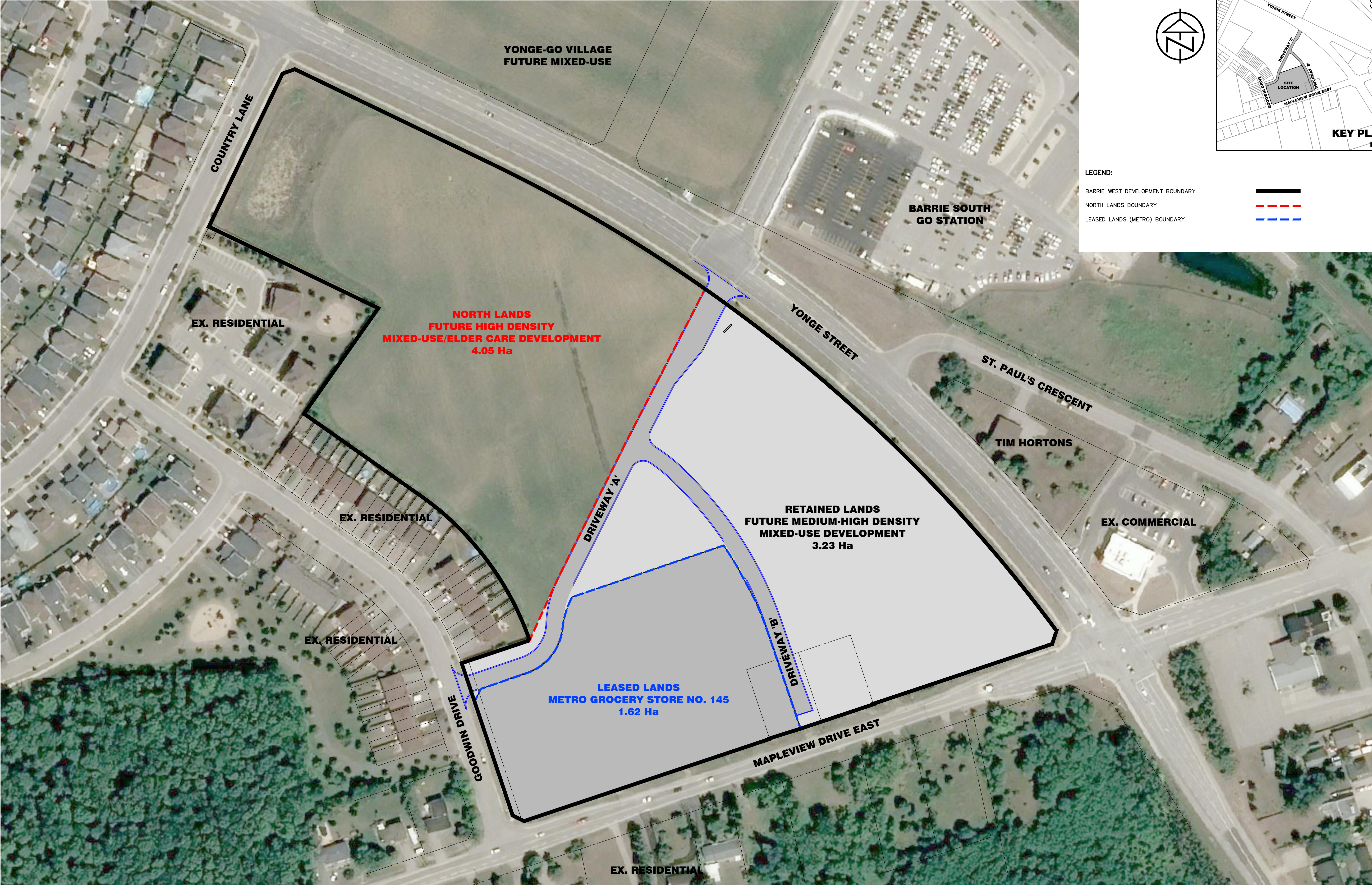
A detailed erosion and sediment control plan will be prepared and executed prior to construction in accordance with the City, LSRCA and OPSD standards.

Utilities

Utilities are expected to be available to service the proposed development. Utility coordination and designs will be included with the second engineering submission.



Appendix A: Key Plan



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m
MNR No. 0011931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP

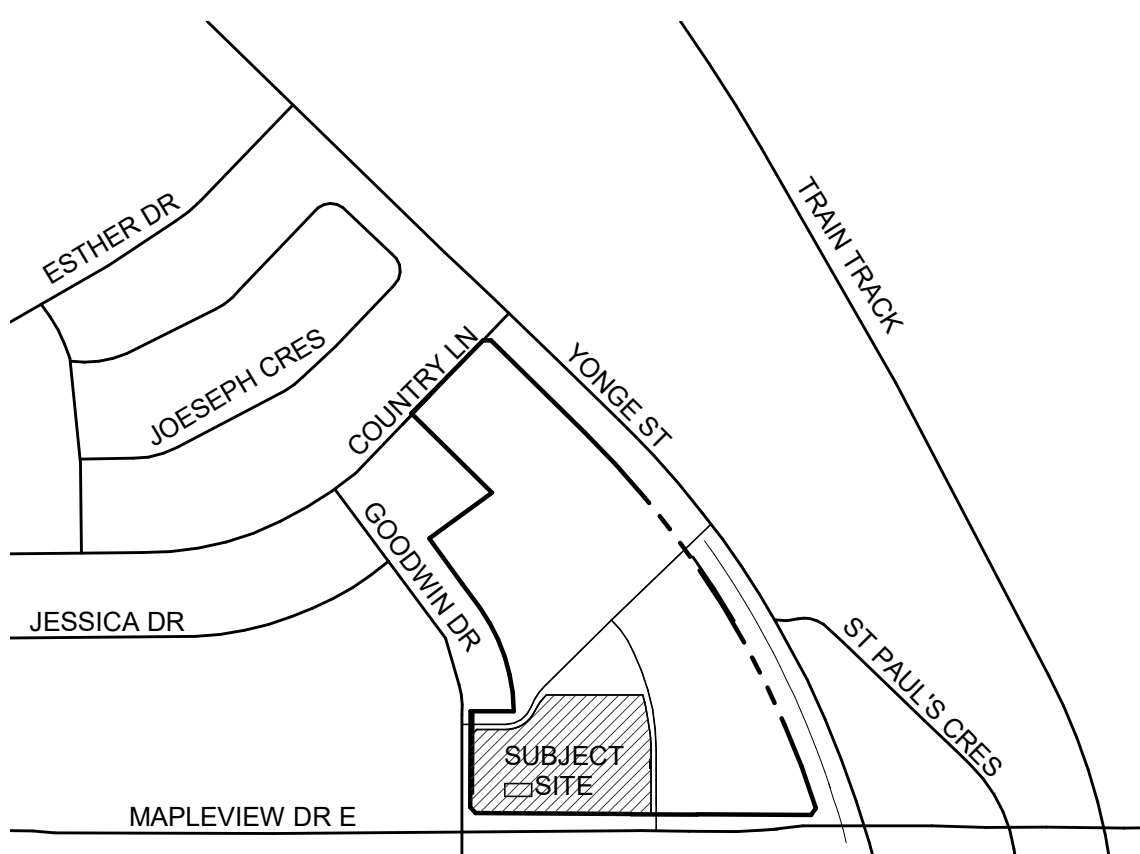
METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

KEY PLAN

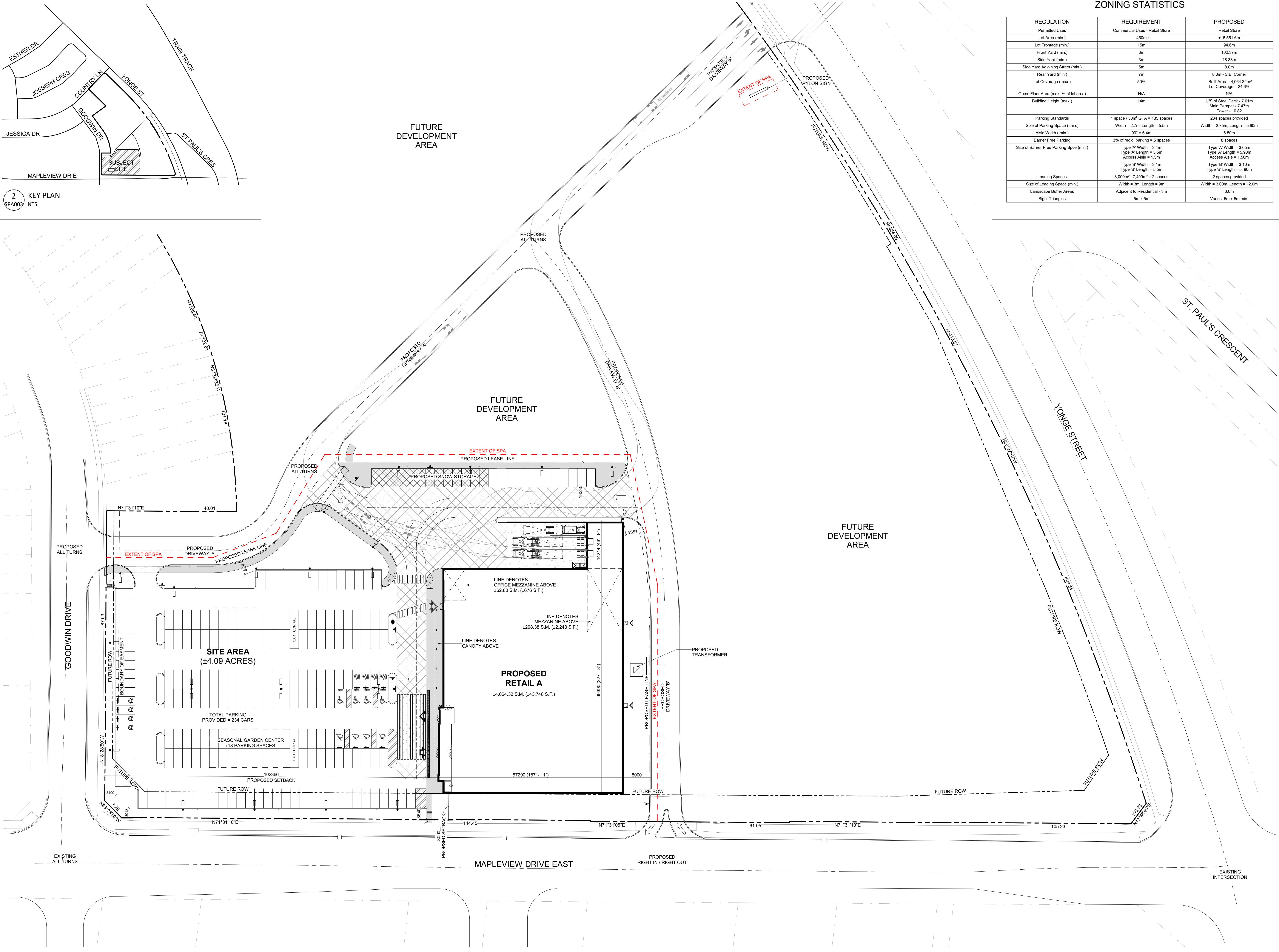


DESIGN: LMB	FILE: 421426	DWG:
DRAWN: LMB/LC	DATE: SEPT 2022	KP-1
CHECK: LC	SCALE: 1:500	

Appendix B: Site Plan



2
SPA003
KEY PLAN
NTS



ZONING STATISTICS

REGULATION	REQUIREMENT	PROPOSED
Permitted Uses	Commercial Uses - Retail Store	Retail Store
Lot Area (min.)	450m ²	±16,551.6m ²
Lot Frontage (min.)	15m	94.6m
Front Yard (min.)	6m	102.37m
Side Yard (min.)	3m	18.33m
Side Yard Adjoining Street (min.)	5m	8.0m
Rear Yard (min.)	7m	8.0m - S.E. Corner
Lot Coverage (max.)	50%	Built Area = 4,064.32m ² Lot Coverage = 24.6%
Gross Floor Area (max. % of lot area)	N/A	N/A
Building Height (max.)	14m	U/S of Steel Deck - 7.01m Main Parapet - 7.47m Tower - 10.82
Parking Standards	1 space / 30m ² GFA = 135 spaces	234 spaces provided
Size of Parking Space (min.)	Width = 2.7m, Length = 5.5m	Width = 2.75m, Length = 5.90m
Aisle Width (min.)	90" = 6.4m	6.50m
Barrier Free Parking	3% of req'd. parking = 5 spaces	8 spaces
Size of Barrier Free Parking Space (min.)	Type 'A' Width = 3.4m Type 'A' Length = 5.5m Access Aisle = 1.5m Type 'B' Width = 3.1m Type 'B' Length = 5.5m	Type 'A' Width = 3.65m Type 'A' Length = 5.90m Access Aisle = 1.50m Type 'B' Width = 3.10m Type 'B' Length = 5.90m
Loading Spaces	3,000m ² - 7,499m ² = 2 spaces	2 spaces provided
Size of Loading Space (min.)	Width = 3m, Length = 9m	Width = 3.00m, Length = 12.0m
Landscape Buffer Areas	Adjacent to Residential - 3m	3.0m
Sight Triangles	5m x 5m	Varies, 5m x 5m min.

TURNER
FLEISCHER

Turner Fleischer Architects Inc.
67 Leslie Road
Toronto, ON, M5B 2T8
T 416 425 2222
turnerfleischer.com

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, or other information shown in this drawing. Refer to the appropriate consultant's drawings before proceeding with the work. Construction must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from this work.

PROPOSED

DESIGN CONCEPT

LEGEND

- PROPOSED ENTRANCE ARROW
- PROPOSED EXIT ARROW
- PROPOSED FIRE HYDRANT
- PROPOSED SIAMESE CONNECTION
- PROPOSED SIGN
- PROPOSED FIRE & TRUCK ROUTE (HEAVY DUTY ASPHALT)
- PROPOSED CONCRETE SIDEWALK
- PROPOSED SNOW STORAGE
- PROPERTY LINE
- LEASE LINE
- EASEMENT
- FUTURE ROAD WIDENING RIGHT OF WAY
- CENTER LINE OF ROAD
- FIRE TRUCK ROUTE
- ABOVE
- EXTENT OF SPA
- LOADING SPACE

7	2022-12-01	REISSUED FOR SPA	MSH
6	2022-10-24	ISSUED FOR SPA	MSH
5	2022-02-09	ISSUE FOR REVIEW	MSH
4	2022-01-11	ISSUED FOR REVIEW	MSH
3	2021-08-27	ISSUED FOR REVIEW	RGH
2	2021-08-17	ISSUED FOR REVIEW	RGH
1	2021-03-17	ISSUED FOR PPR	RGH
#	DATE	DESCRIPTION	BY



NEW STORE #

PROJECT

PROPOSED NEW METRO FOOD STORE

YONGE STREET & MAPLEVIEW DRIVE,
BARRIE, ON

DRAWING

SITE PLAN

PROJECT NO:
21.009
SHEET ISSUE DATE:
2022-10-24
DRAWN BY:
CFE
CHECKED BY:
JLB
SCALE:
AS NOTED

ONTARIO ASSOCIATION
OF
ARCHITECTS
RUSSELL L. FLEISCHER
LICENCE
5004

DRAWING NO:
SPA003

REV:
7

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, plumbing, or other drawings. The contractor must verify the appropriate consultant's drawings before proceeding with the work. Construction must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "For Construction" must assume full responsibility and bear costs for any corrections or damages resulting from the work.

PROPOSED

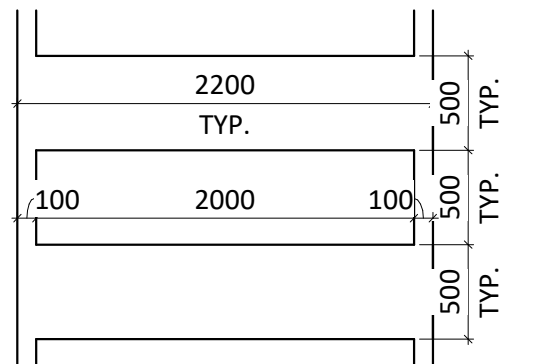
DESIGN CONCEPT

LEGEND

- PROPOSED ENTRANCE ARROW
- PROPOSED EXIT ARROW
- PROPOSED FIRE HYDRANT
- PROPOSED SIAMESE CONNECTION
- PROPOSED SIGN
- PROPOSED FIRE & TRUCK ROUTE (HEAVY DUTY ASPHALT)
- PROPOSED CONCRETE SIDEWALK
- PROPOSED SNOW STORAGE

- PROPERTY LINE
- LEASE LINE
- EASMENT
- FUTURE ROAD WIDENING RIGHT OF WAY
- CENTER LINE OF ROAD
- FIRE TRUCK ROUTE
- ABOVE
- EXTENT OF SPA

- LOADING SPACE
- PAINTED CROSSING
- REFER TO SITE PLAN FOR LOCATIONS OF CROSSINGS
- PAINT COLOUR: WHITE
- ALL ITEMS PROVIDED BY LANDLORD



6	2022-12-01	REISSUED FOR SPA	MSH
5	2022-10-24	ISSUED FOR SPA	MSH
4	2022-02-09	ISSUED FOR REVIEW	MSH
3	2021-08-27	ISSUED FOR REVIEW	ROH
2	2021-08-17	ISSUED FOR REVIEW	ROH
1	2021-03-17	ISSUED FOR PPR	ROH
#	DATE	DESCRIPTION	BY

metro

NEW STORE #

PROJECT

PROPOSED NEW METRO FOOD STORE

YONGE STREET & MAPLEVIEW DRIVE,
BARRIE, ON

DRAWING

ENLARGED SITE PLAN

PROJECT NO.

21.009

SHEET ISSUE DATE

2022-10-24

DRAWN BY

CFE

CHECKED BY

JLB

SCALE

AS NOTED

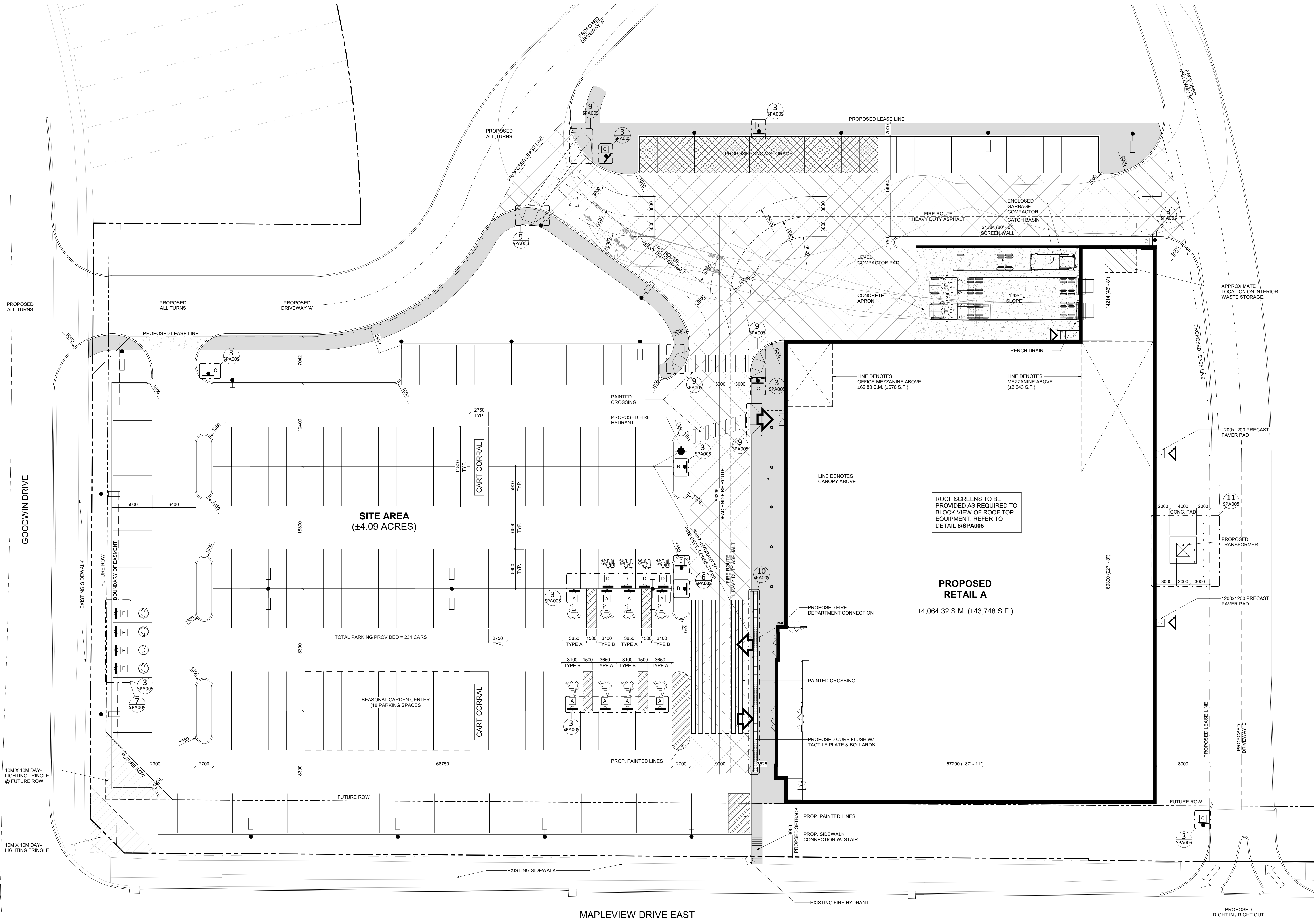


DRAWING NO.

SPA004

REV.

6



Appendix C: Water Demand Calculations



PROJECT	Metro Grocery Store No. 145	FILE	421426
		DATE	October 7, 2022
SUBJECT	Flow Testing	NAME	LC
		PAGE	1 OF 2

Available Fire Flow At 20 PSI

Flow Test Completed By: Vipond Fire Protection Inc.

Date of Test: 2022-10-04

Test Location: Maplevue Drive East & Goodwin Drive

Static Pressure 58 PSI

$$QA = QT \left(\frac{ha}{ht} \right)^{0.5}$$

Where

QA = Flow at 20 PSI

QT = Flow at Test (U.S. GPM)

ha = Pressure Drop Available (PSI) (Static - 20)

ht = Pressure Drop at Test (PSI) (Static - Residual)

Note: Equation per City of Barrie Water Transmission and Distribution Policies and Design Guidelines

Test #1

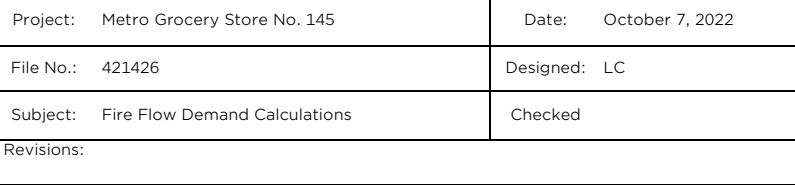
QT = 584	QA = #DIV/0!	U.S. GPM
ha = 58-20 = 38	QA = #DIV/0!	L/s
ht = 58-58 = 0		

Test #2

QT = 924	QA = 4028	U.S. GPM
ha = 58-20 = 38	QA = 253.74	L/s
ht = 58-56 = 2		

Test #3

QT = 1508	QA = 3795	U.S. GPM
ha = 58-20 = 38	QA = 239.09	L/s
ht = 58-52 = 6		





PROJECT	Metro Grocery Store No. 145	FILE	421426
		DATE	October 7, 2022
SUBJECT	Water Demands	NAME	LC
		PAGE	1 OF 1

City of Barrie Design Criteria

Commercial Demand	=	28,000 L/ha/day
Total Commercial Area	=	1.66 ha
Average Day Demand	=	46,480 L/day
	=	0.54 L/s

Peaking Factors

Max Day Demand	=	1.5
Peak Hour Demand	=	2.25
(MECP Guidelines for Drinking Water Systems Table 3-3)		

Ontario Building Code Design Criteria (Section 8, Table 8.3.2.1)

		L/day	Area (m ²)		Total L/day	Total L/s
per 9.25 sq.m. of delicatessen floor space	=	190 x	300	=	57,000	= 0.66
per 9.25 sq.m. of bakery floor space	=	190 x	300	=	57,000	= 0.66
per 9.25 sq.m. of meat department floor space	=	380 x	300	=	114,000	= 1.32
Food outlet, all other floor space	=	40 x	3,163	=	126,520	= 1.46
per water closet	=	950 x	3	=	2,850	= 0.03
Average Day Demand				=	357,370	= 4.14

Average Day Demand	=	357,370 L	=	357.37 m ³	=	4.14 L/s
Max Day Demand	=	536,055 L	=	536.06 m ³	=	6.20 L/s
Peak Hour Demand	=	804,083 L	=	804.08 m ³	=	9.31 L/s
Max Fire Flow	=	133 L/s	(Refer to FUS Calculations)			
MDD + Fire	=	139.20 L/s				
PHD + Fire	=	142.31 L/s				

Appendix D: Sanitary ADF Calculations

Expertise. Insight. Trust.



October 18, 2022
Reference: 2022286

Tatham Engineering
41 King Street, Unit 4
Barrie, Ontario
L4N 6B5

Attention: Lisa Cowan
Project Manager

705-733-9037
lcowan@tathameng.com

Subject:

**Domestic Water and Sanitary Loads
Metro 145 Barrie - Yonge and Maplevue**

Based on the preliminary concept for the proposed Metro Space located at the above location, we anticipate the following peak demand flows:

Domestic water peak flow will be approximately 110 gpm (7.0 L/s)
Sanitary peak flow will be approximately 120 gpm (7.6 L/s) for this building.

Yours very truly,
McGregor Allsop Limited

A handwritten signature in black ink that reads 'Mark Dahmer'.

Prepared by: Mark Dahmer, P. Eng.
Mechanical Engineer



McGregor Allsop Limited

1 Concorde Gate, Suite 808, Box 65, Toronto, Ontario M3C 3N6
T 416.443.9499 F 416.443.1938 mcgregor-allsop.com

PROJECT	Metro Grocery Store No. 145	FILE	421426
		DATE	October 7, 2022
SUBJECT	Sanitary ADF Calculations	NAME	LC
		PAGE	1 OF 1

Design Criteria (as per City Standards)

Demands

Commercial = 28 m³/ha/day
 Extraneous (infil.) = 0.1 L/s/ha

Peak Factors

Commercial = 2

Site Information

Commercial Area = 1.66 ha

Average Day Design Flow

ADF (Commercial) = 46,480 L/day = 46.5 m³ = 0.54 L/s

Ontario Building Code Design Criteria (Section 8, Table 8.2.1.3)

	L/day	Area (m ²)	per 9.25 sq.m.	Total L/day	Total L/s
per 9.25 sq.m. of delicatessen floor space	= 190	x 300	= 32	= 6,162	= 0.07
per 9.25 sq.m. of bakery floor space	= 190	x 300	= 32	= 6,162	= 0.07
per 9.25 sq.m. of meat department floor sp	= 380	x 300	= 32	= 12,324	= 0.14
Food outlet, all other floor space	= 40	x 3,163	= 342	= 13,678	= 0.16
per water closet	= 950	x 3		= 2,850	= 0.03
ADF (Commercial)				= 41,176	= 0.48

Peak Flow Design

Peak Flow (Commercial) = 0.95 L/s

Extraneous (Infiltration) = 0.17 L/s

Total Peak Flow = 1.12 L/s

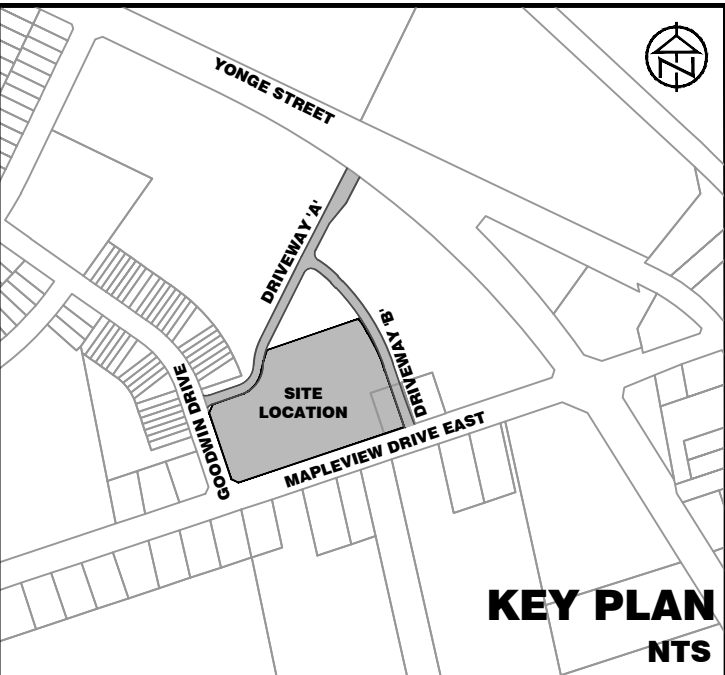
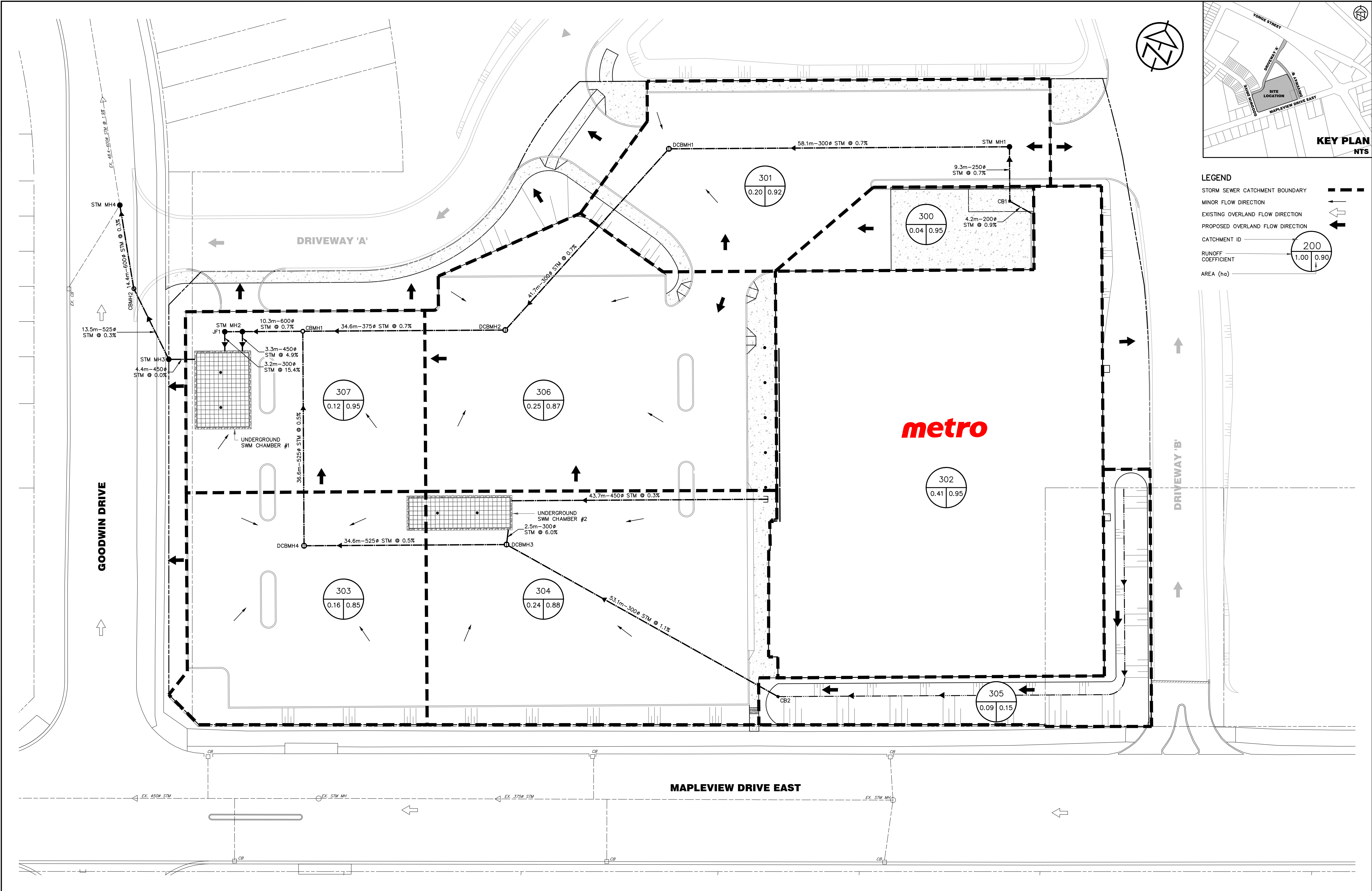
Adjusted PDF for WWTF Population

Peak Flow Peaking Factor as per *Wastewater Treatment Master Plan (2019)* prepared by WSP = 2.05

Therefore, total peak flow received at Barrie WWTF = 2.3 m³ (excl. extraneous)

Therefore, total peak flow received at Barrie WWTF = 2.3 m³ (incl. extraneous)

Appendix E: Storm Sewer Design Sheet and Catchment Plan



- LEGEND**
- STORM SEWER CATCHMENT BOUNDARY
 - MINOR FLOW DIRECTION
 - EXISTING OVERLAND FLOW DIRECTION
 - PROPOSED OVERLAND FLOW DIRECTION
 - CATCHMENT ID
 - RUNOFF COEFFICIENT
 - AREA (ha)

DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 0011931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	<table><tr><th>No.</th><th>REVISION DESCRIPTION</th><th>DATE</th></tr><tr><td>1.</td><td>ISSUED FOR SITE PLAN APPROVAL</td><td>DEC. 6/22</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	No.	REVISION DESCRIPTION	DATE	1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22										ENGINEER STAMP	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE		<table><tr><td>DESIGN: LMB</td><td>FILE: 421426</td><td rowspan="3">DWG: STM-2</td></tr><tr><td>DRAWN: LMB/LC</td><td>DATE: SEPT 2022</td></tr><tr><td>CHECK: LC</td><td>SCALE: 1:300</td></tr></table>	DESIGN: LMB	FILE: 421426	DWG: STM-2	DRAWN: LMB/LC	DATE: SEPT 2022	CHECK: LC	SCALE: 1:300
			No.	REVISION DESCRIPTION	DATE																								
			1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22																								
DESIGN: LMB	FILE: 421426	DWG: STM-2																											
DRAWN: LMB/LC	DATE: SEPT 2022																												
CHECK: LC	SCALE: 1:300																												
STORM SEWER CATCHMENT PLAN -METRO																													

Project Information

Metro Grocery Store

421426

Drawing Reference

Storm Catchment Plan

Drawing STM-1

Prepared By

AAM

2022.10.07

Reviewed By

NHF

Municipality

City of Barrie

Runoff Coefficient Adjustment

Year	A	B
10	1.00	0.00
25	1.10	0.00
50	1.20	0.00
100	1.25	0.00

Manning's Coefficient

Pipe	Value
CSP	0.024
Concrete	0.013
PVC	0.013

Time of Concentration

10 mins

IDF Curve Coefficients

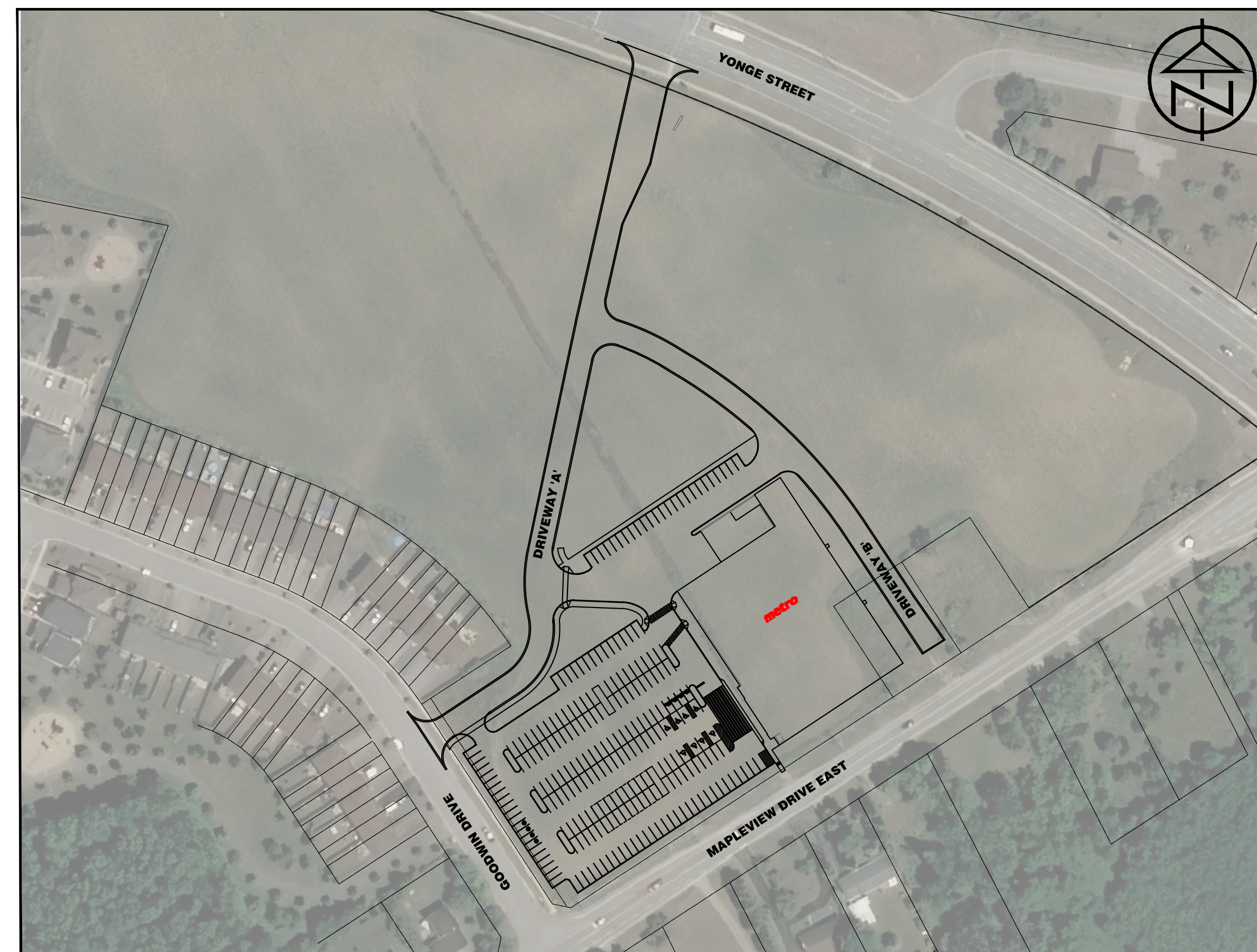
Year	A	B	C
2	678.09	4.70	0.78
5	853.61	4.70	0.77
10	975.87	4.70	0.76
25	1146.28	4.92	0.76
50	1236.15	4.70	0.75
100	1426.41	5.27	0.76

Engineer Stamp

Street Name	Area ID / Label	Upstream Maintenance Hole	Downstream Maintenance Hole	Area (ha)	5 Year Runoff Coefficient (C)	Design Storm (Year)	Adjusted Runoff Coefficient (C)	Area x Runoff Coefficient	Cumulative Area (ha)	Cumulative Area x Adjusted Runoff Coefficient	Time of Concentration (min)	Rainfall Intensity (mm/hr)	Peak Flow (m ³ /s)	Manning's Roughness Coefficient	Sewer Length (m)	Sewer Slope (%)	Actual Sewer Diameter (mm)	Full Flow Velocity (m/s)	Full Flow Capacity (L/s)	Actual Velocity (m/s)	Travel Time (min)	Calculated Sewer Diameter (mm)	Percentage of Full Flow Capacity (%)	Total Time of Travel (min)
	300	CB1	STM MH1	0.05	0.95	100	1.00	0.05	0.05	0.05	10.00	180.15	0.025	0.013	9.3	0.7%	250	1.01	0.050	0.95	0.16	193	50.3%	10.16
	N/A	STM MH1	DCBMH1	0.00	0.95	5	0.95	0.00	0.05	0.05	10.16	108.00	0.015	0.013	58.1	0.7%	300	1.14	0.081	0.82	1.18	159	18.5%	11.35
	301	DCBMH1	DCBMH2	0.18	0.92	5	0.92	0.17	0.23	0.22	11.35	101.84	0.061	0.013	41.7	0.7%	300	1.14	0.081	1.14	0.61	270	75.4%	11.96
	306	DCBMH2	CBMH1	0.25	0.87	5	0.87	0.22	0.48	0.43	11.96	98.99	0.119	0.013	34.6	0.7%	375	1.33	0.147	1.33	0.43	347	81.2%	12.39
	302	STM PLUG	SWMF#2	0.41	0.95	5	0.95	0.39	0.41	0.39	10.00	108.92	0.118	0.013	39.8	0.3%	450	0.98	0.156	0.98	0.68	405	75.5%	10.68
	N/A	SWMF#2	DCBMH3	0.00	0.95	5	0.95	0.00	0.41	0.39	10.68	105.24	0.114	0.013	14.8	6.0%	300	3.35	0.237	3.13	0.08	228	48.1%	10.75
	305	CB3	DCBMH3	0.09	0.15	100	0.19	0.02	0.09	0.02	10.00	180.15	0.008	0.013	53.6	1.1%	300	1.43	0.101	0.83	1.08	118	8.3%	11.08
	304	DCBMH3	DCBMH4	0.24	0.88	5	0.88	0.21	0.74	0.62	10.75	104.83	0.180	0.013	34.6	0.5%	525	1.40	0.304	1.37	0.42	431	59.1%	11.17
	303	DCBMH4	CBMH1	0.16	0.85	5	0.85	0.14	0.90	0.75	11.17	102.69	0.215	0.013	36.6	0.5%	525	1.40	0.304	1.40	0.43	461	70.7%	11.61
	307	CBMH1	STM MH2	0.13	0.95	5	0.95	0.12	1.51	1.31	12.39	97.05	0.353	0.013	7.1	0.7%	600	1.82	0.514	1.82	0.07	521	68.8%	12.45
	N/A	STM MH2	SWMF #1	0.00	0.86	5	0.86	0.00	1.51	1.31	12.45	96.77	0.352	0.013	3.3	4.9%	450	3.97	0.631	3.86	0.01	361	55.8%	12.47
	N/A	STM MH2	JELLYFISH	0.00	0.86	5	0.86	0.00	1.51	1.31	12.45	96.77	0.352	0.013	3.0	4.3%	250	2.51	0.123	2.51	0.02	370	285.6%	12.47

Appendix F: Drawings

METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE



KEY PLAN
NTS

METRO ONTARIO INC.
658 YONGE STREET
CITY OF BARRIE

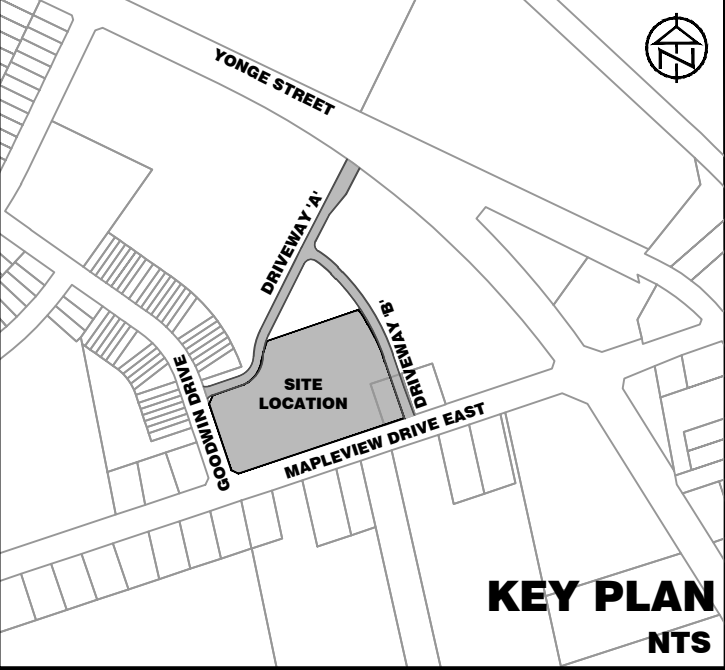
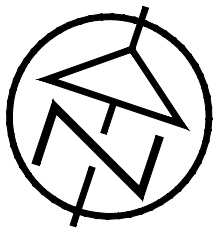
INDEX

DRAWING	DESCRIPTION
421426-TP-1	TITLE SHEET & KEY PLAN
421426-IN-1	INDEX SHEET & LEGEND
421426-ESC-1	EROSION & SEDIMENT CONTROL PLAN
421426-ESC-2	EROSION & SEDIMENT CONTROL DETAILS & NOTES
421426-STM-1	STORM SEWER CATCHMENT PLAN - DRIVEWAYS
421426-STM-2	STORM SEWER CATCHMENT PLAN - METRO
421396-PP-1	PLAN & PROFILE - DRIVEWAY 'A' - STA. 1+000 TO 1+284
421396-PP-2	PLAN & PROFILE - DRIVEWAY 'B' - STA. 2+000 TO 2+182
421426-SS-1	SITE SERVICING PLAN - METRO
421426-SG-1	SITE GRADING PLAN - METRO
421426-GS-1	GENERAL SERVICING PLAN
421426-SWM-1	AQUA TANK #1 DETAILS
421426-SWM-2	AQUA TANK #2 DETAILS
421426-DE-1	DETAILS & NOTES
421426-DE-2	TYPICAL DRIVEWAY CROSS-SECTIONS
421426-DE-3	BARRIE STANDARD DETAILS



LEGEND

PROPERTY LINE	----
EXISTING CENTERLINE	-----
PROPOSED CENTRELINE	-----
EXISTING EDGE OF ASPHALT	=====
PROPOSED EDGE OF ASPHALT	=====
EXISTING EDGE OF SHOULDER	-----
PROPOSED EDGE OF SHOULDER	-----
EXISTING DITCH/DIRECTION OF FLOW	----->
PROPOSED DITCH/DIRECTION OF FLOW	----->
EXISTING SANITARY SEWER/SIZE/DIRECTION OF FLOW	-----200P SAN>
PROPOSED SANITARY SEWER/SIZE/DIRECTION OF FLOW	-----200P SAN>
EXISTING SANITARY SERVICE	-----CO
PROPOSED SANITARY SERVICE	-----CO
EXISTING WATERMAIN/SIZE	-----150P W/M
PROPOSED WATERMAIN/SIZE	-----150P W/M
EXISTING WATER SERVICE	-----
PROPOSED WATER SERVICE	-----
EXISTING STORM SEWER/SIZE/DIRECTION OF FLOW	-----375P STM>
PROPOSED STORM SEWER/SIZE/DIRECTION OF FLOW	-----375P STM>
EXISTING CULVERT	-----
PROPOSED CULVERT	=====
PROPOSED SWALE LOCATION	----->
PROPOSED JOINT HYDRO, BELL AND ROGERS	-----
EXISTING GAS MAIN	-----
PROPOSED GAS MAIN	-----
EXISTING FENCELINE	---X---X---
PROPOSED FENCELINE	---X---X---
EXISTING BUSHLINE	~~~~~
EXISTING CONTOUR	~~~~~179.00
EXISTING SPOT ELEVATION	X 179.00
PROPOSED SPOT ELEVATION	X179.00
EXISTING GRADING DIRECTION	----->
PROPOSED GRADING DIRECTION	----->
EXISTING TEMPORARY BENCHMARK	TBM
EXISTING STANDARD IRON BAR	SIB
EXISTING BOREHOLE/NUMBER	BH19
EXISTING GAS VALVE	GAS
EXISTING HYDRO TRANSFORMER	HT
PROPOSED HYDRO TRANSFORMER	HT
EXISTING CABLE PEDESTAL	CP
EXISTING BELL PEDESTAL	BP
EXISTING BELL MAINTENANCE HOLE	BELL MH
EXISTING BELL POLE	BP
EXISTING HYDRO POLE	HP
EXISTING HYDRO GUY WIRE	---
PROPOSED LIGHT STANDARD	LS
EXISTING TRAFFIC SIGN	TS
PROPOSED TRAFFIC SIGN	TS
PROPOSED STOP SIGN	STOP SIGN
PROPOSED STREET NAME SIGN	STREET NAME SIGN
PROPOSED SIGN (MISCELLANEOUS)	SIGN
EXISTING DECIDUOUS TREE	Tree Symbol
EXISTING CONIFEROUS TREE	Tree Symbol
EXISTING SANITARY MAINTENANCE HOLE/NUMBER	SAN MH17
PROPOSED SANITARY MAINTENANCE HOLE/NUMBER	SAN MH17
PROPOSED SANITARY CLEAN OUT	CO
EXISTING HYDRANT AND VALVE	HYD & WV
PROPOSED HYDRANT AND VALVE	HYD & WV
EXISTING WATER VALVE	WV
PROPOSED WATER VALVE	WV
PROPOSED CURB STOP VALVE	CSV
EXISTING BLOW-OFF	BLOWOFF
PROPOSED BLOW-OFF	BLOWOFF
EXISTING WATERMAIN PLUG AND THRUST BLOCK	WPB
PROPOSED WATERMAIN PLUG AND THRUST BLOCK	WPB
EXISTING STORM MAINTENANCE HOLE	STM MH20
PROPOSED STORM MAINTENANCE HOLE/NUMBER	STM MH9
EXISTING CATCH BASIN	CBMH 18
PROPOSED CATCH BASIN	CB
PROPOSED CATCH BASIN MAINTENANCE HOLE/NUMBER	CBMH12
PROPOSED DOUBLE CATCH BASIN MAINTENANCE HOLE/NUMBER	DCBMH4
EXISTING DOUBLE CATCH BASIN	DCB
PROPOSED DOUBLE CATCH BASIN	DCB
PROPOSED DITCH INLET	DI
AUTOMATIC FLUSHING DEVICE	AFD



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m
MNR No. 0011931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP



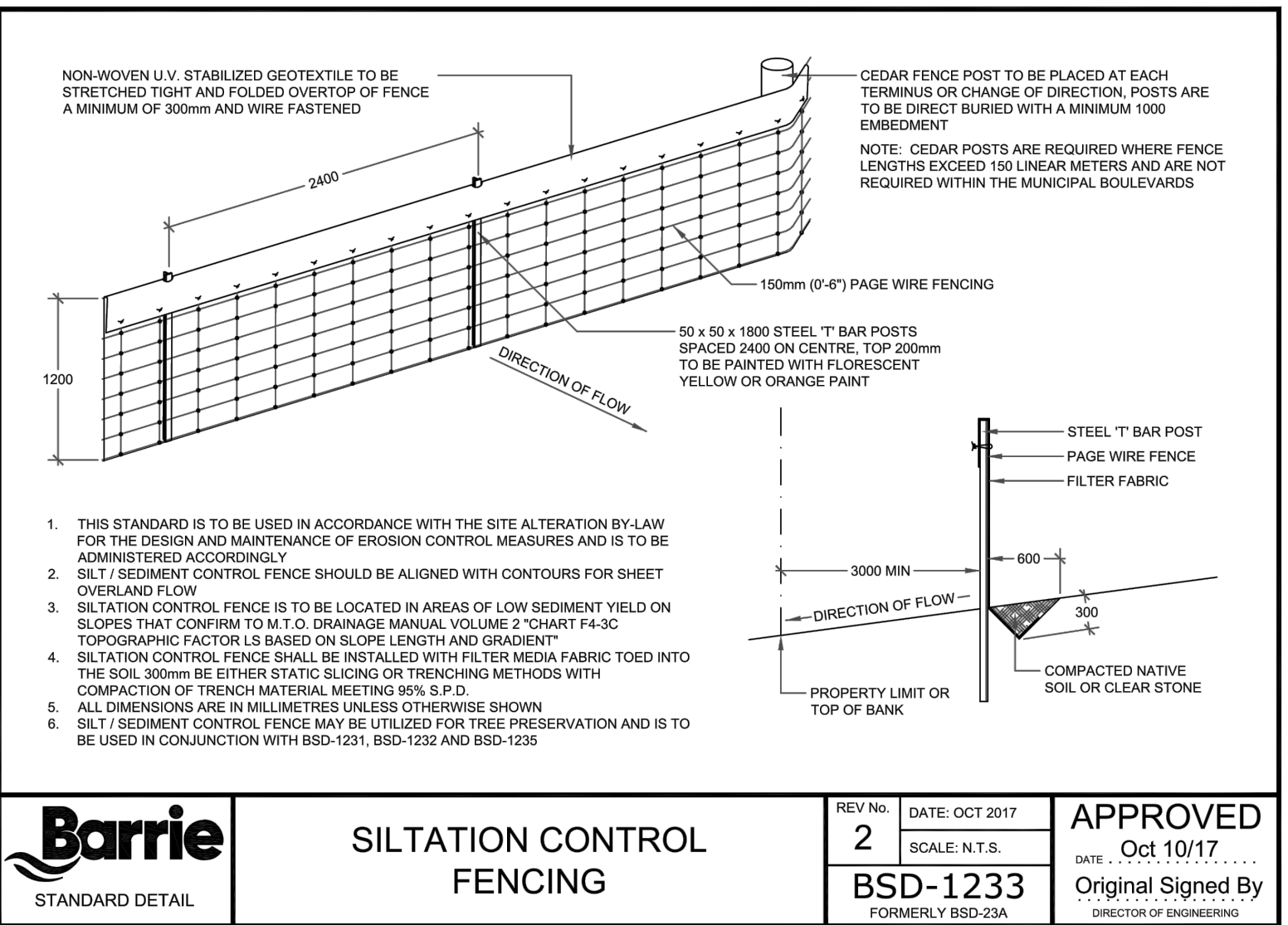
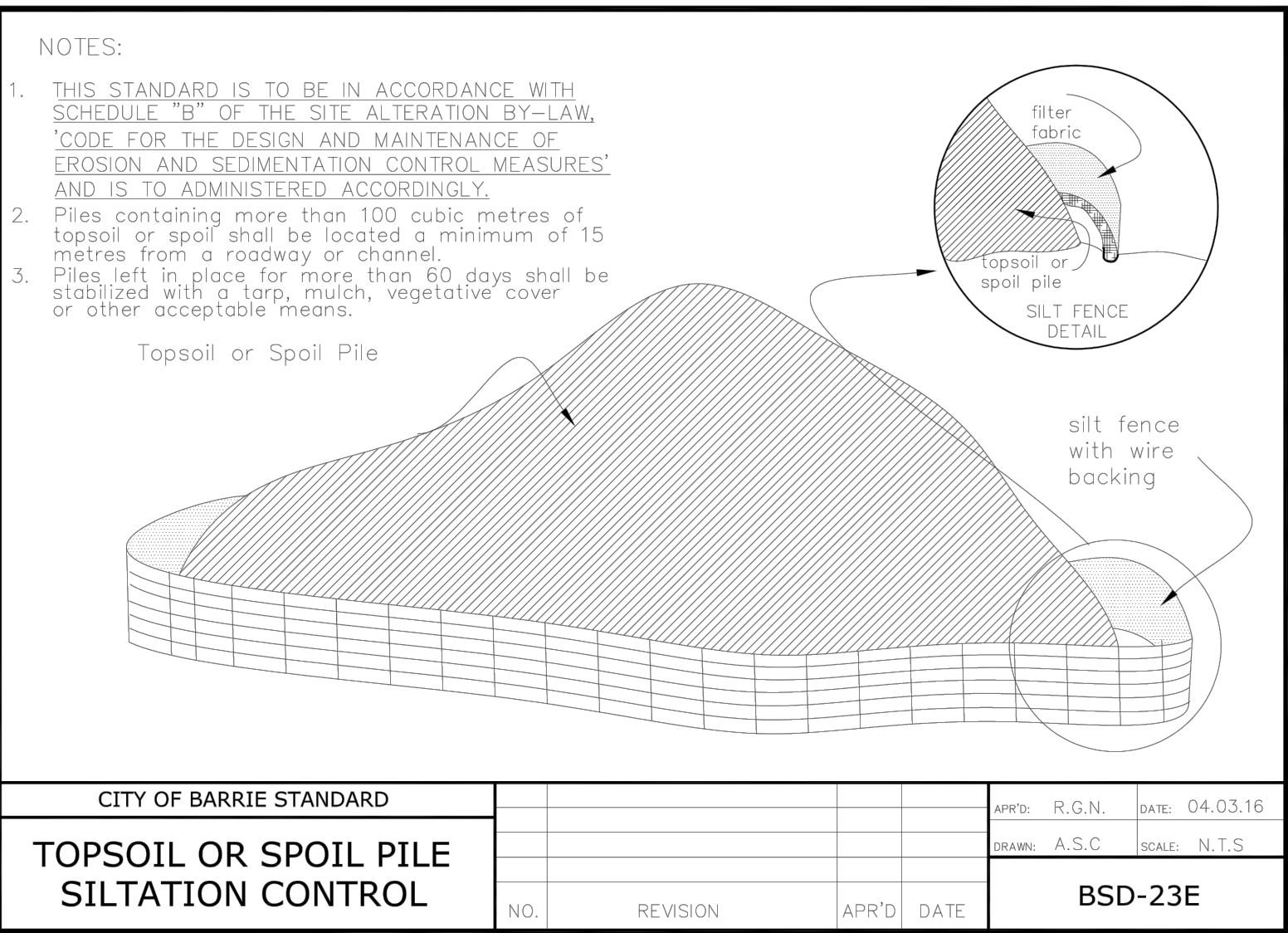
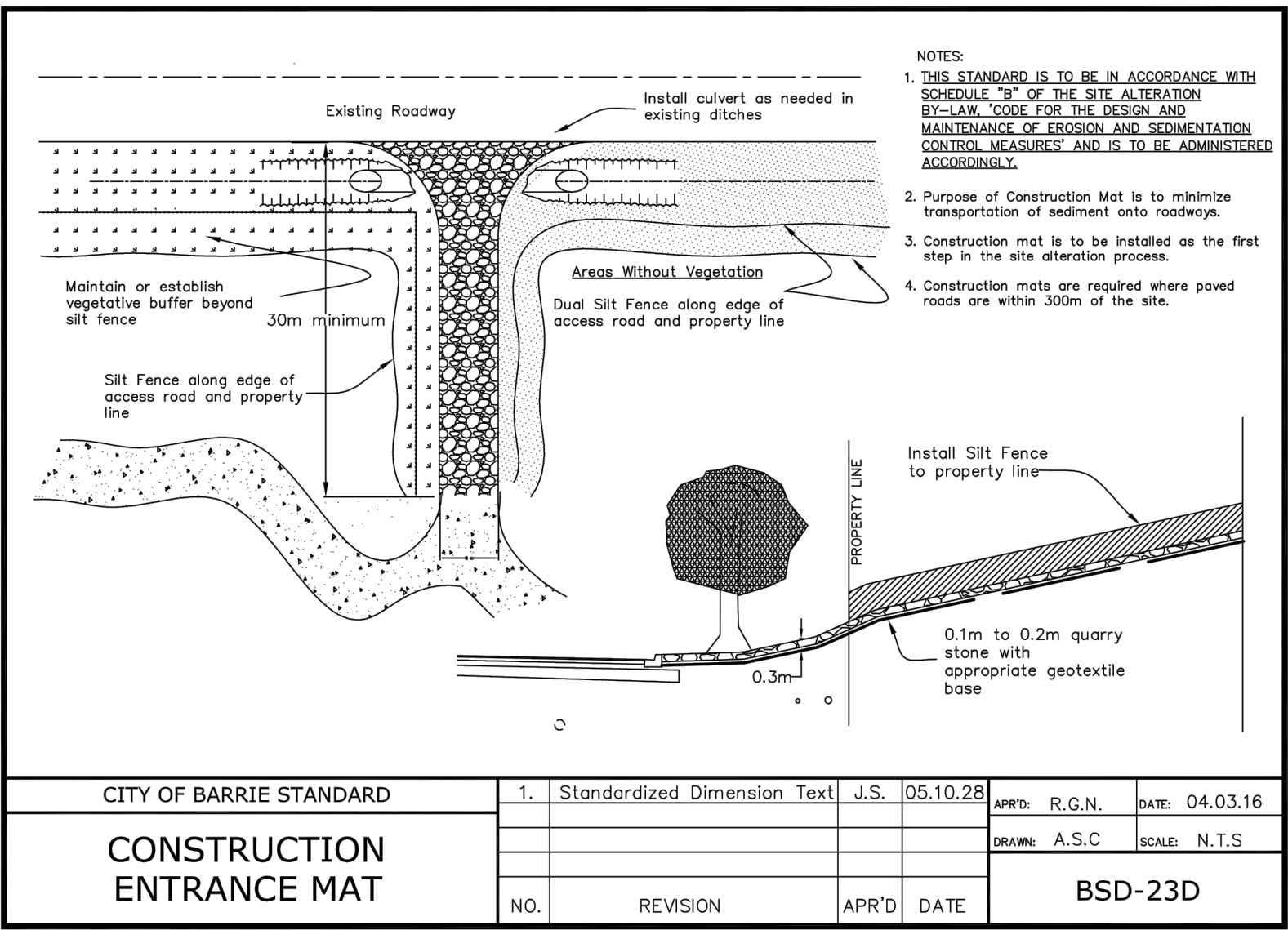
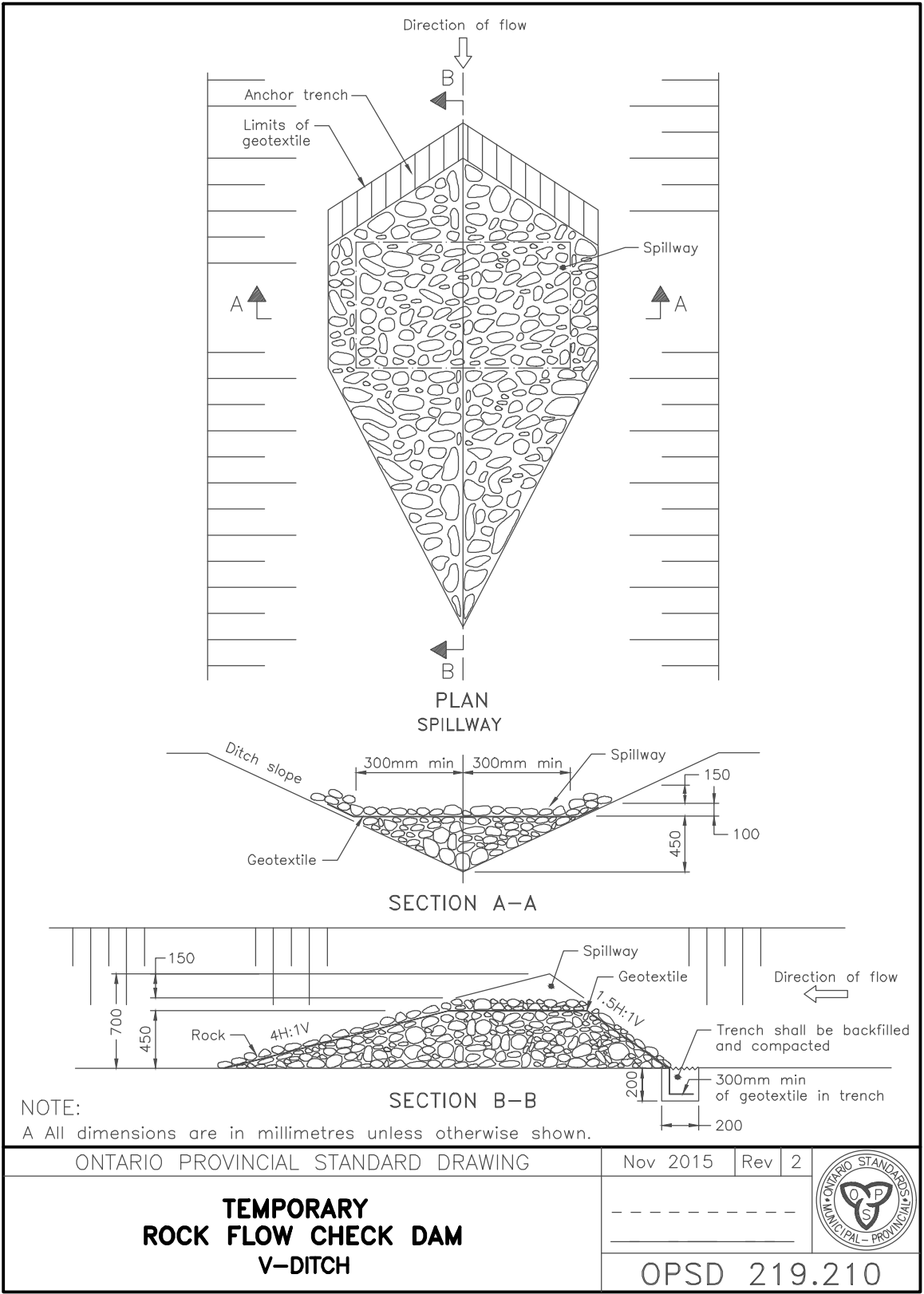
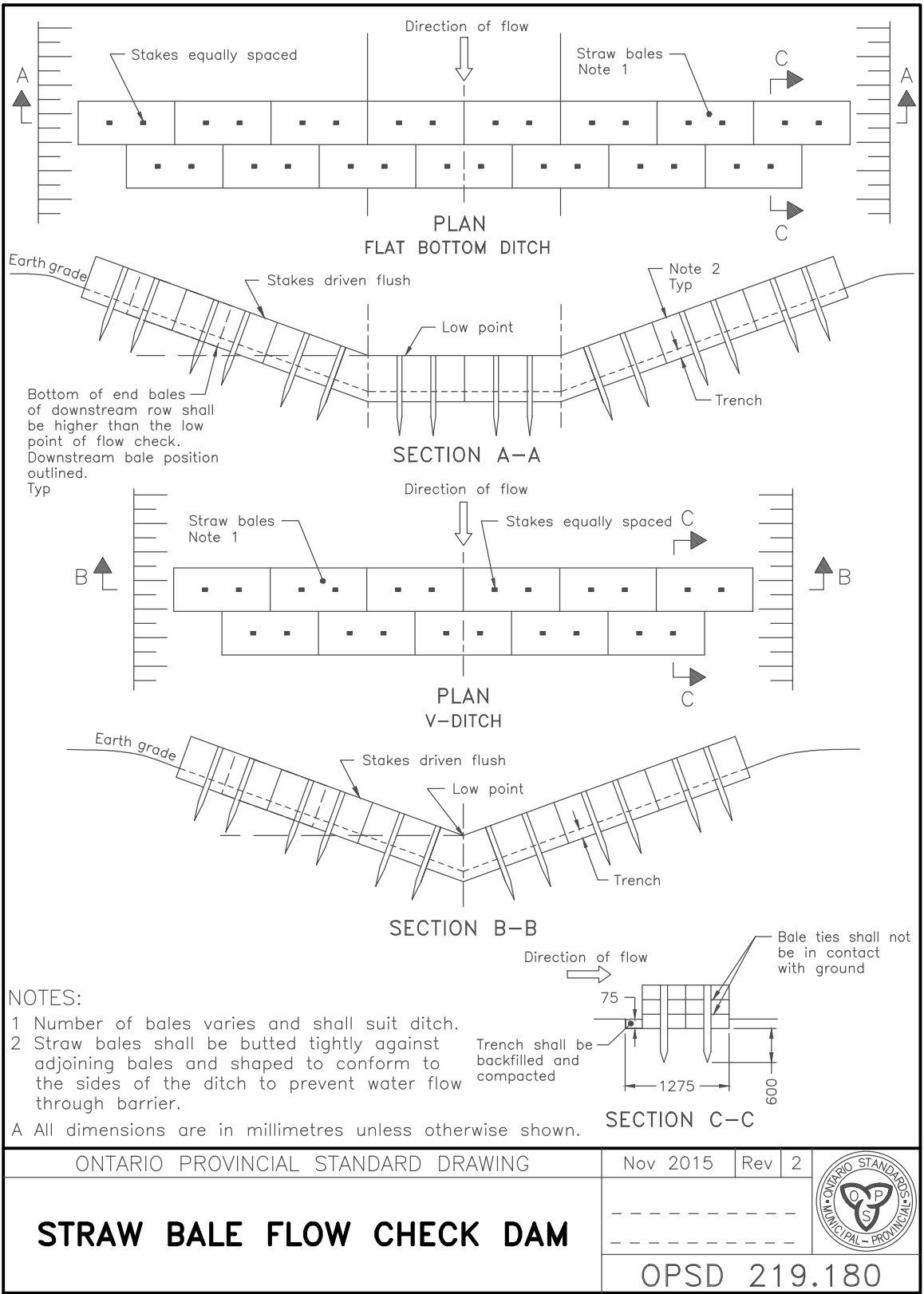
METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

EROSION & SEDIMENT
CONTROL PLAN



DESIGN: LMB	FILE: 421426
DRAWN: LMB/LC	DATE: SEPT 2022
CHECK: LC	SCALE: 1:750

DWG:
ESC-1



- EROSION & SEDIMENT CONTROL**
- A. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. EROSION AND SEDIMENT CONTROL MEASURES THAT ARE DESIGNED TO CONTROL RUNOFF FROM SPECIFIC AREAS MUST BE INSTALLED PRIOR TO ANY DISTURBANCE OF THAT PART OF THE SITE. THE LOCATION OF ALL EROSION AND SEDIMENT CONTROL WORKS TO BE REVIEWED ON SITE AND MAY BE REVISED AS DIRECTED BY THE ENGINEER.
- B. THE CONTRACTOR MAY CONSIDER ALTERNATIVE EROSION AND SEDIMENT CONTROL MEASURES. SUCH MEASURES MUST BE PRESENTED IN WRITING TO THE ENGINEER FOR APPROVAL BY THE CITY OF BARRIE.
- C. THE CONTRACTOR SHALL HAVE MATERIALS AVAILABLE ON-SITE TO REPAIR SEDIMENT AND EROSION CONTROL MEASURES IN THE EVENT OF UNFORESEEN CONDITIONS: HIGH WATER, EXTREME RAINFALL EVENTS, ETC.
- D. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED, CLEANED AND MAINTAINED BY THE CONTRACTOR AFTER EACH STORM EVENT. ALL WORKS WILL BE INSPECTED BY THE ENGINEER BI-WEEKLY AND AFTER EACH MAJOR STORM EVENT.
- E. CONSTRUCTION OF ALL EROSION AND SEDIMENT CONTROL WORKS ARE TO BE IN ACCORDANCE WITH THE FOLLOWING STEPS:
1. INSTALL STONE MUD MAT AS PER BSD-23E.
 2. INSTALL SILT FENCE AS PER BSD-1233.
 3. INSTALL TEMPORARY CATCH BASIN SEDIMENT TRAPS BY LAYFIELD (OR APPROVED EQUIVALENT) AS SHOWN ON DWG. ESC-1 AND AS DIRECTED BY THE ENGINEER. SEDIMENT TRAPS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ALL CATCH BASINS TO REMAIN SCREENED UNTIL BASE COURSE ASPHALT IS PLACED AND LOT GRADING IS COMPLETE.
- F. ALL CONSTRUCTION VEHICLES TO ACCESS SITE USING THE DESIGNATED CONSTRUCTION ENTRANCES.
- G. EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED BY THE CONTRACTOR ONCE GROUND COVER IS ESTABLISHED AND LANDSCAPING IS COMPLETE AND AS APPROVED BY THE ENGINEER.
- H. ALL STOCKPILE LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.
- I. PROVIDE SNOW FENCE OR APPROVED EQUAL ACROSS ALL CONSTRUCTION ENTRANCES DURING PERIODS OF INACTIVITY.
- J. CONSTRUCTION AREAS THAT EXCEED 30 DAYS OF INACTIVITY SHALL BE STABILIZED BY SEEDING. THIS SHALL INCLUDE STOCKPILES OF FILL AND TOPSOIL.

DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m

SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE	ENGINEER STAMP
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22	

Barrie
STANDARD DETAIL

SILTATION CONTROL FENCING

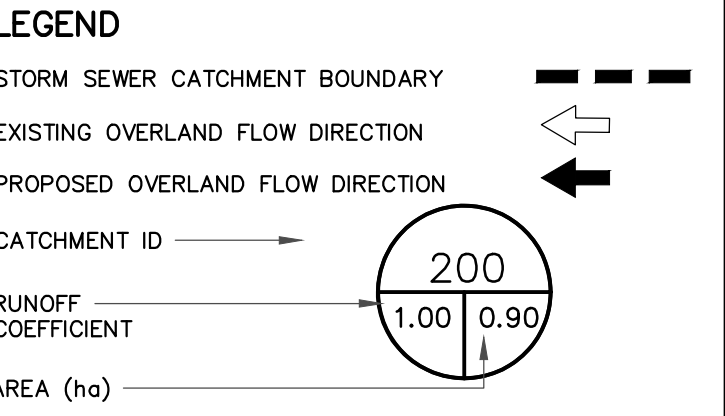
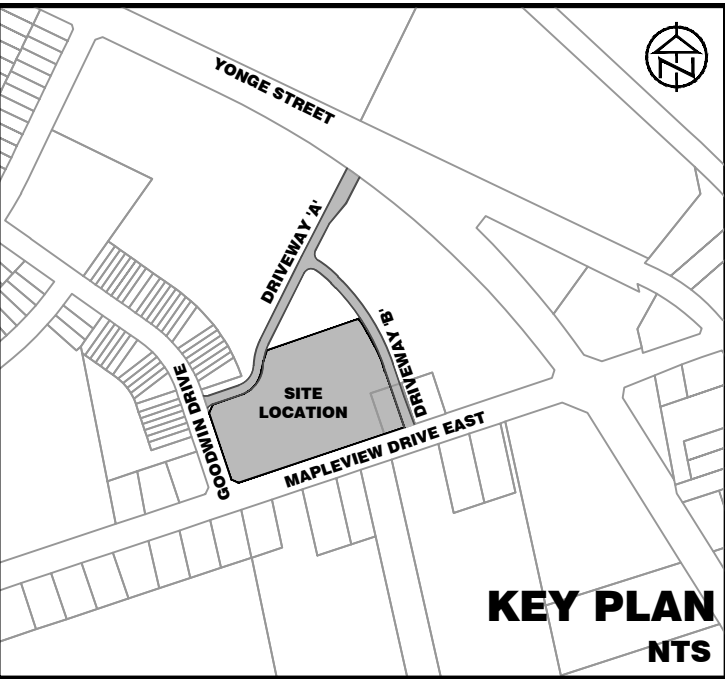
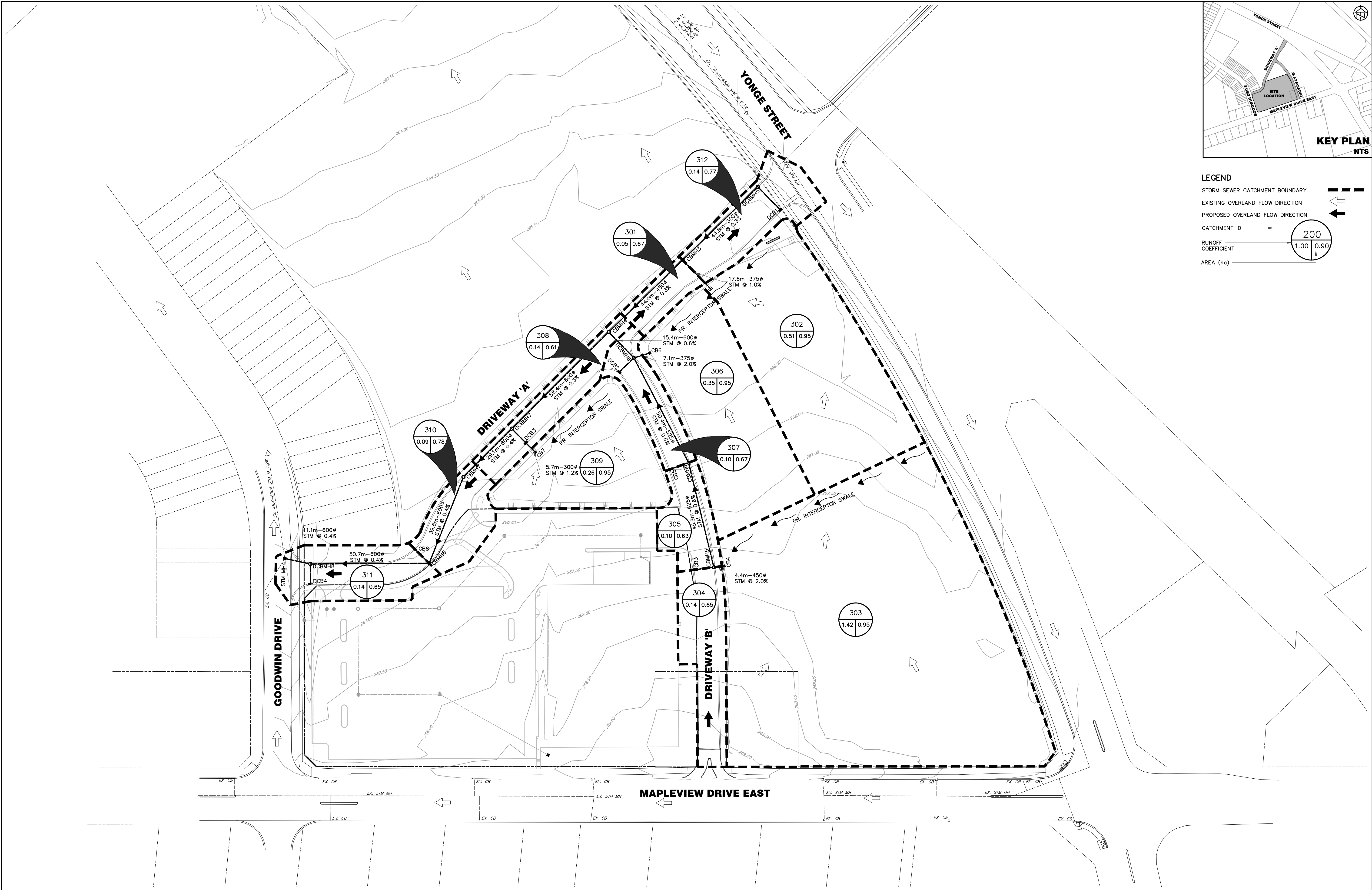
REV No. 2
DATE: OCT 2017
SCALE: N.T.S.
BSD-1233
FORMERLY BSD-23A

APPROVED
DATE: Oct 10/17
Original Signed By
DIRECTOR OF ENGINEERING

METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

EROSION & SEDIMENT CONTROL
DETAILS & NOTES

TATHAM ENGINEERING		ESC-2
DESIGN: LMB	FILE: 421426	
DRAWN: LMB/LC	DATE: SEPT 2022	
CHECK: LC	SCALE: AS NOTED	



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m

MNR No. 001931U460S - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP

LICENSÉ PROFESSIONNEL
B.F. SHANTON
984161935
PROVINCE OF ONTARIO

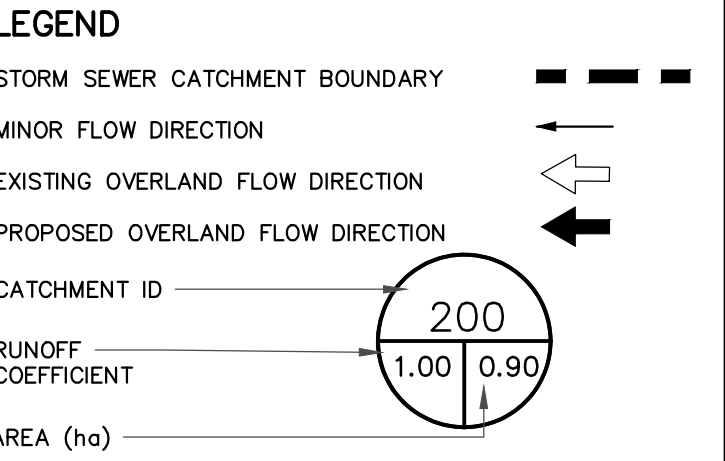
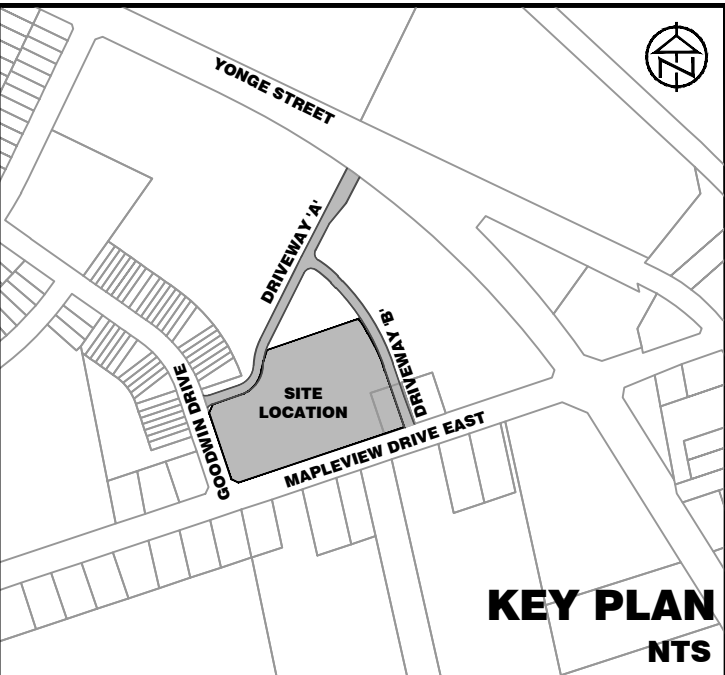
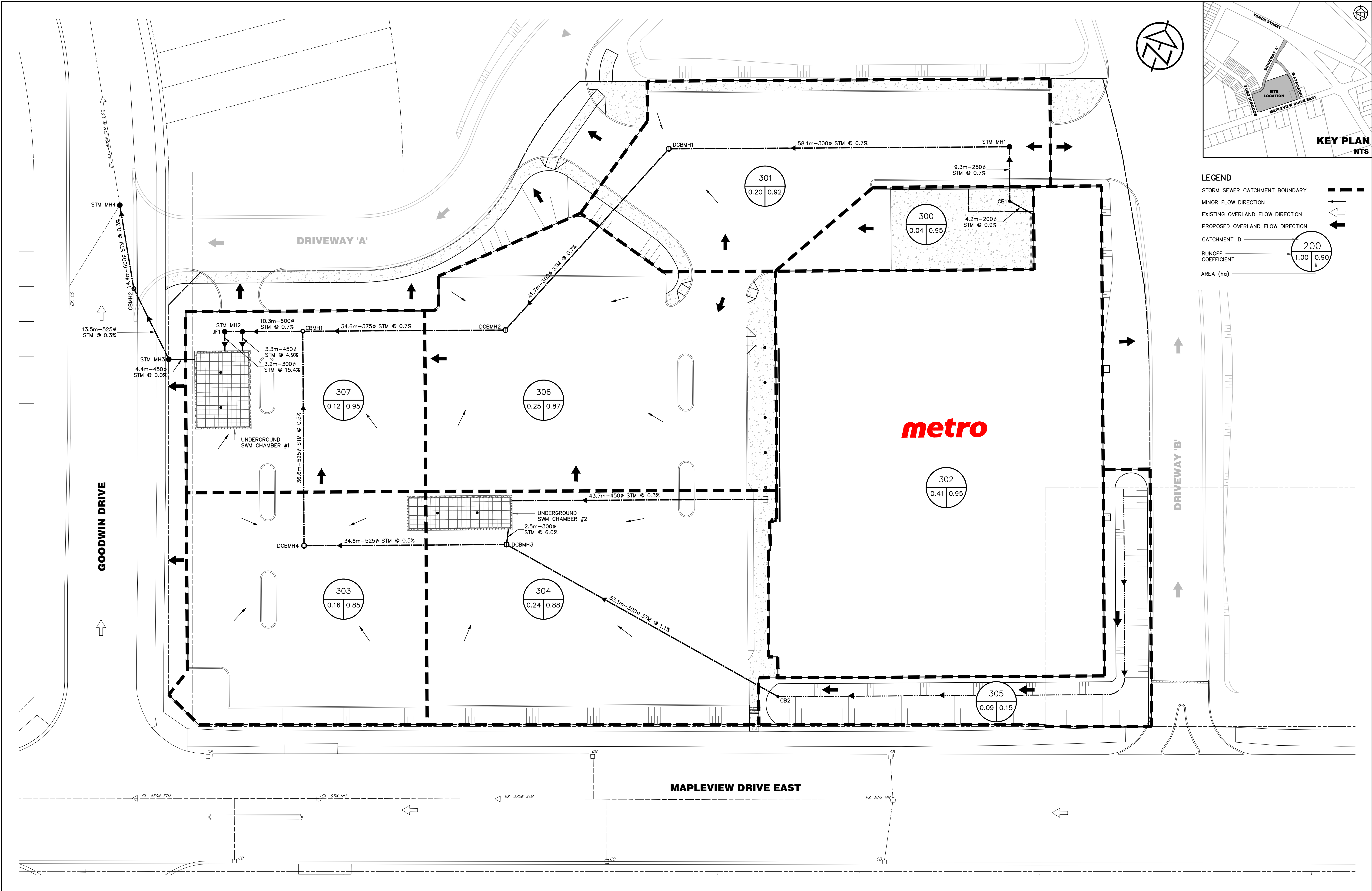
LICENSÉ PROFESSIONNEL
N.H. FORIS
100224762
DEC. 6, 2022
PROVINCE OF ONTARIO

METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

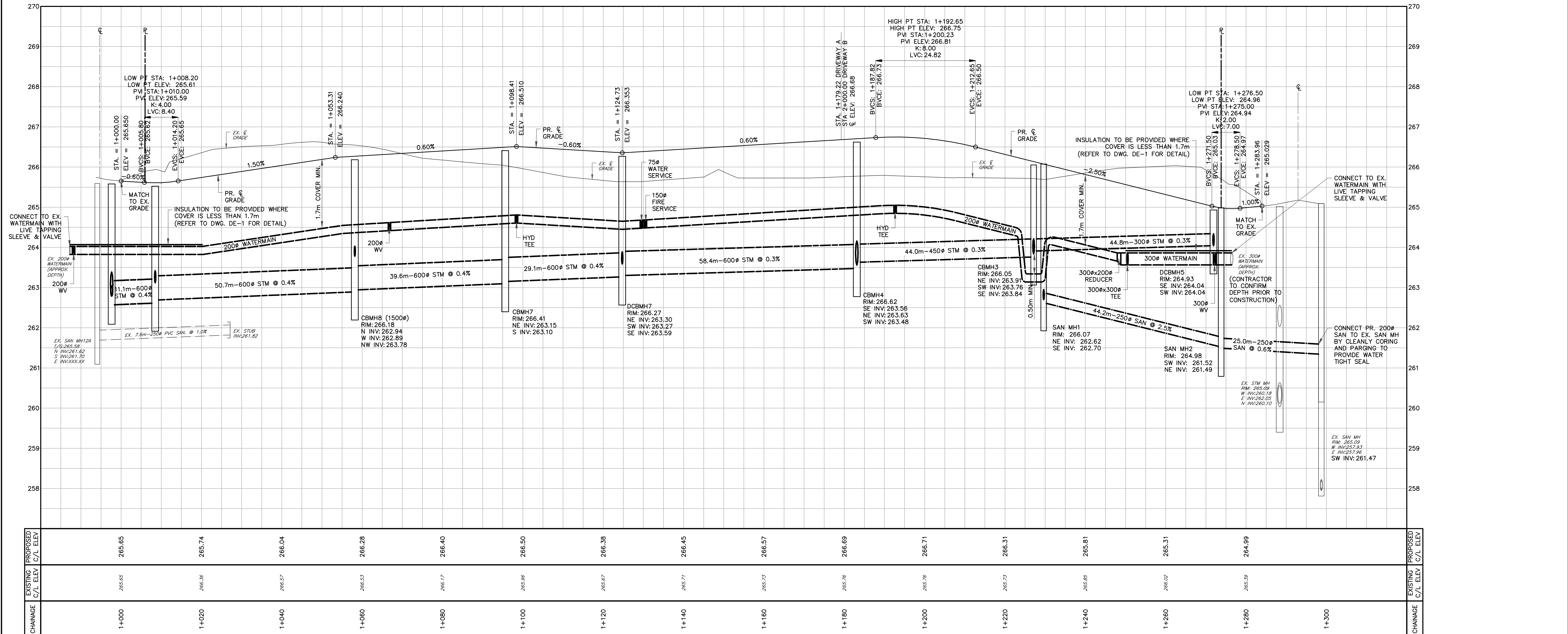
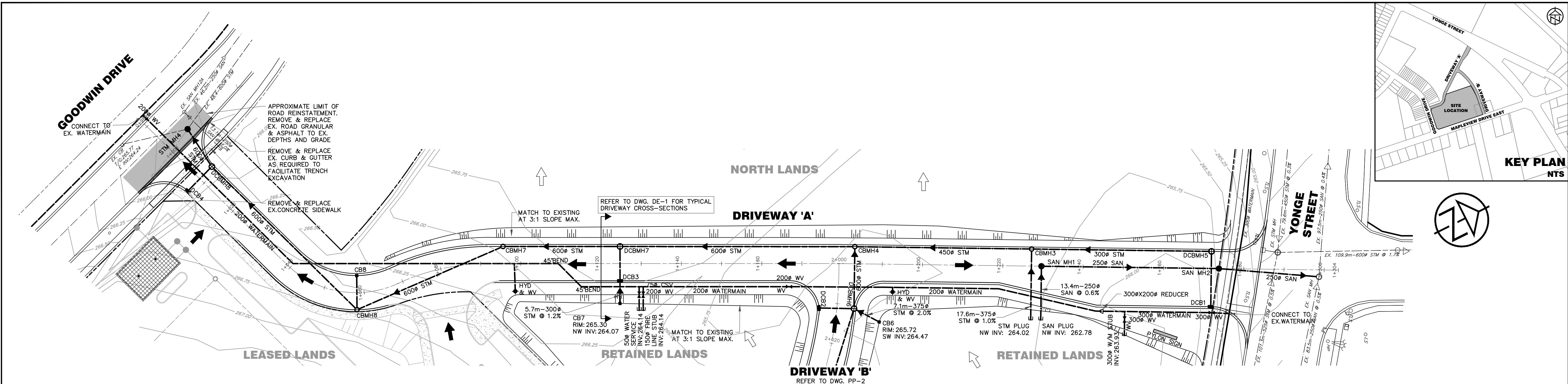
STORM SEWER CATCHMENT PLAN
-DRIVEWAYS

TATHAM ENGINEERING

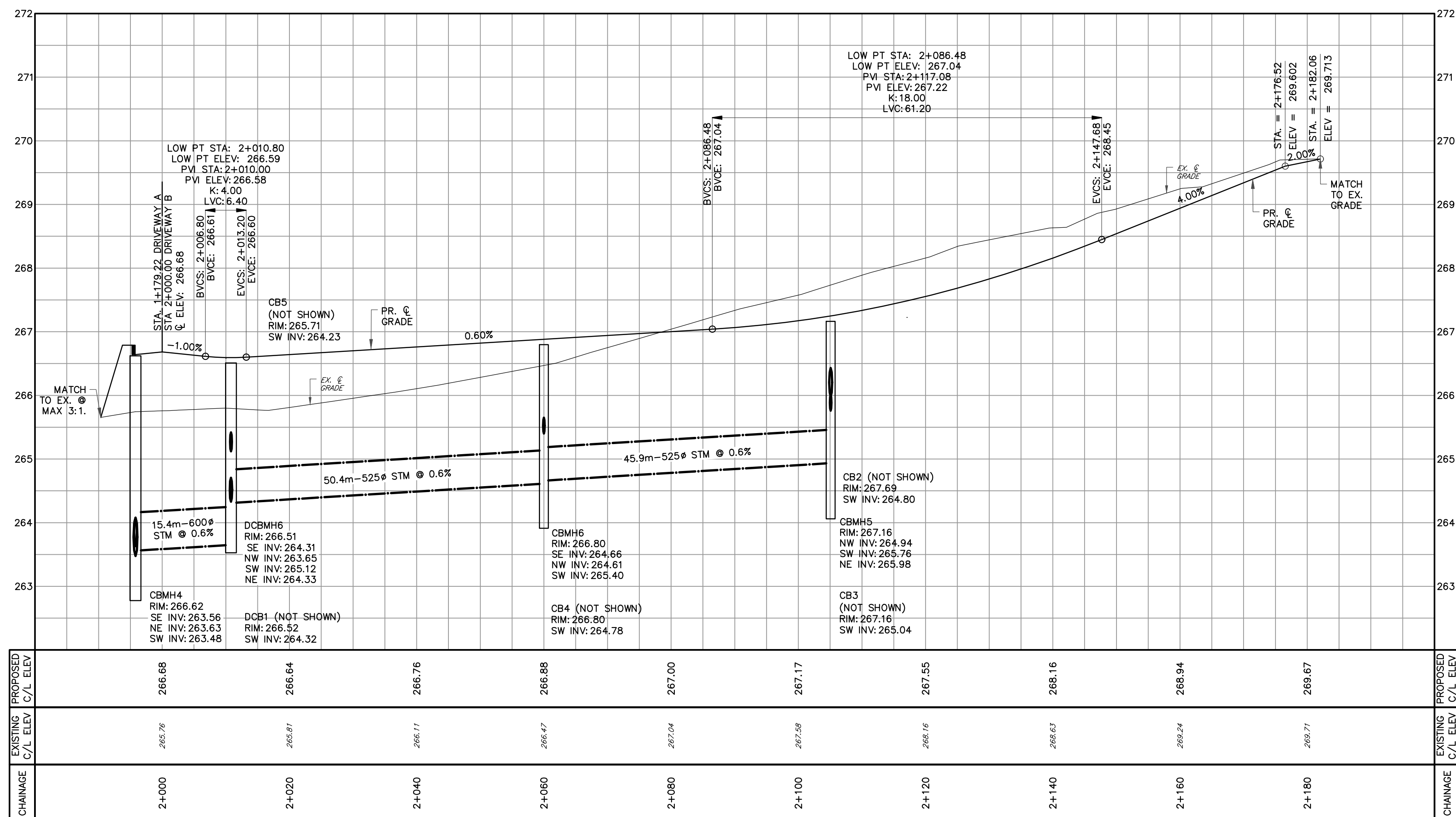
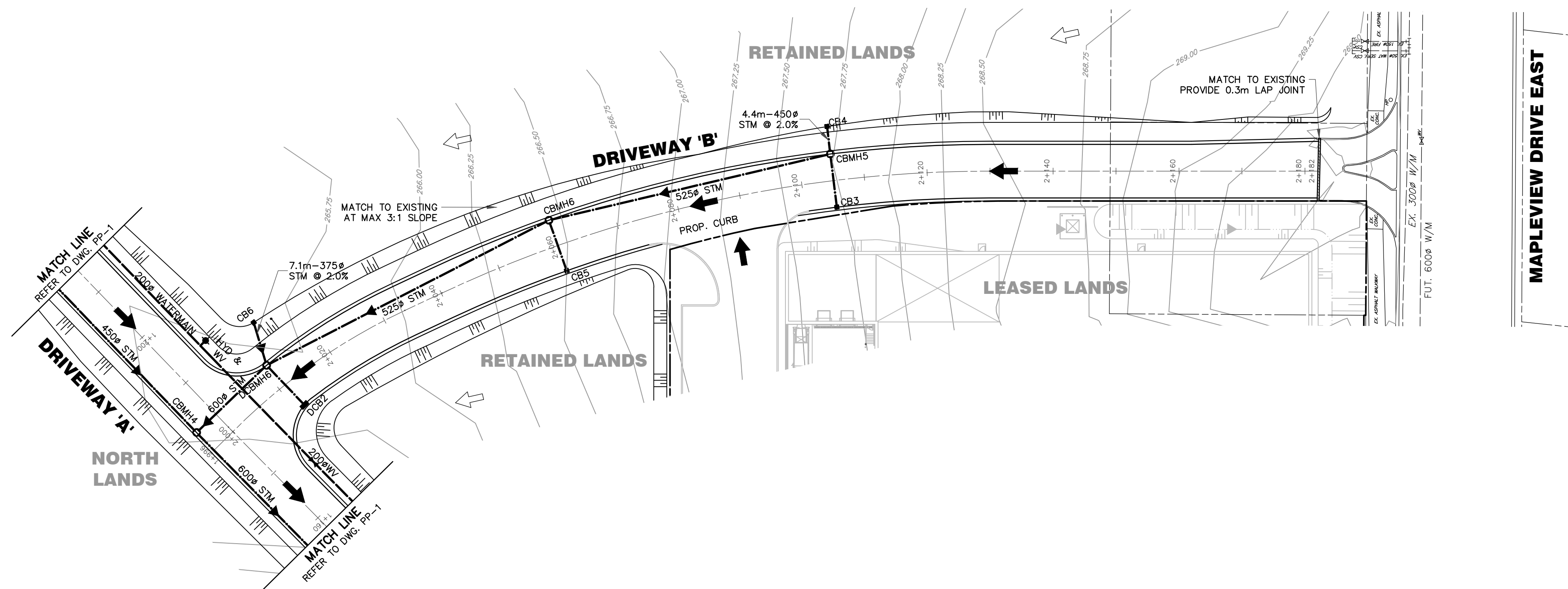
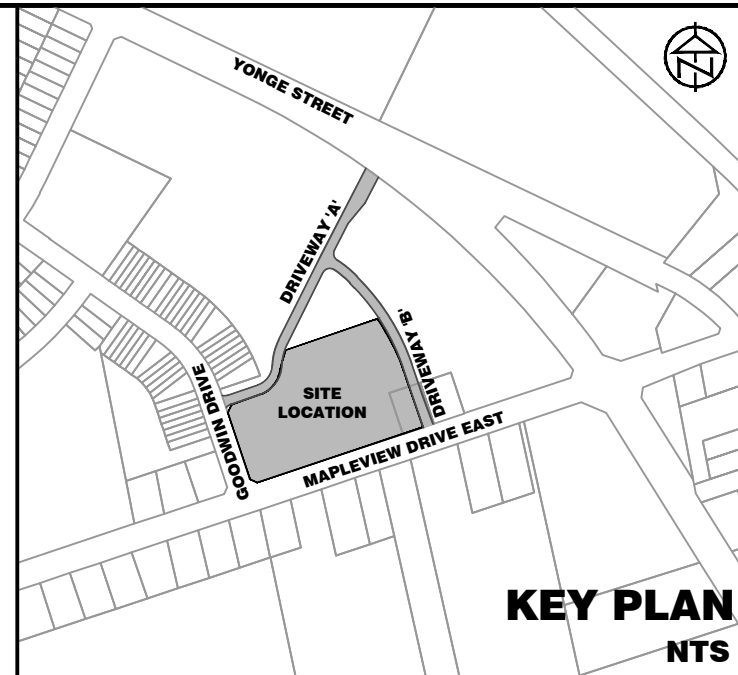
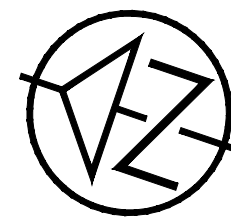
DESIGN: LMB	FILE: 421426	DWG: STM-1
DRAWN: LMB/LC	DATE: SEPT 2022	
CHECK: LC	SCALE: 1:750	



DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 0011931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	No. 1.	REVISION DESCRIPTION ISSUED FOR SITE PLAN APPROVAL	DATE DEC. 6/22	ENGINEER STAMP	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE					
			STORM SEWER CATCHMENT PLAN -METRO							DESIGN: LMB	FILE: 421426	DWG: STM-2
			DRAWN: LMB/LC	DATE: SEPT 2022								
			CHECK: LC	SCALE: 1:300								



DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 001931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	No.	REVISION DESCRIPTION	DATE	ENGINEER STAMP 	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE	PLAN AND PROFILE DRIVEWAY 'A' STA. 1+000 TO STA. 1+284	DESIGN: LMB	FILE: 421426	DWG: PP-1
			1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22				DRAWN: LMB/LC	DATE: SEPT 2022	



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

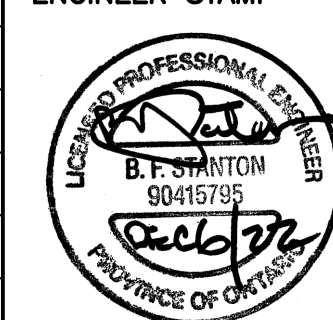
TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KROMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m
MNR No. 0011931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP

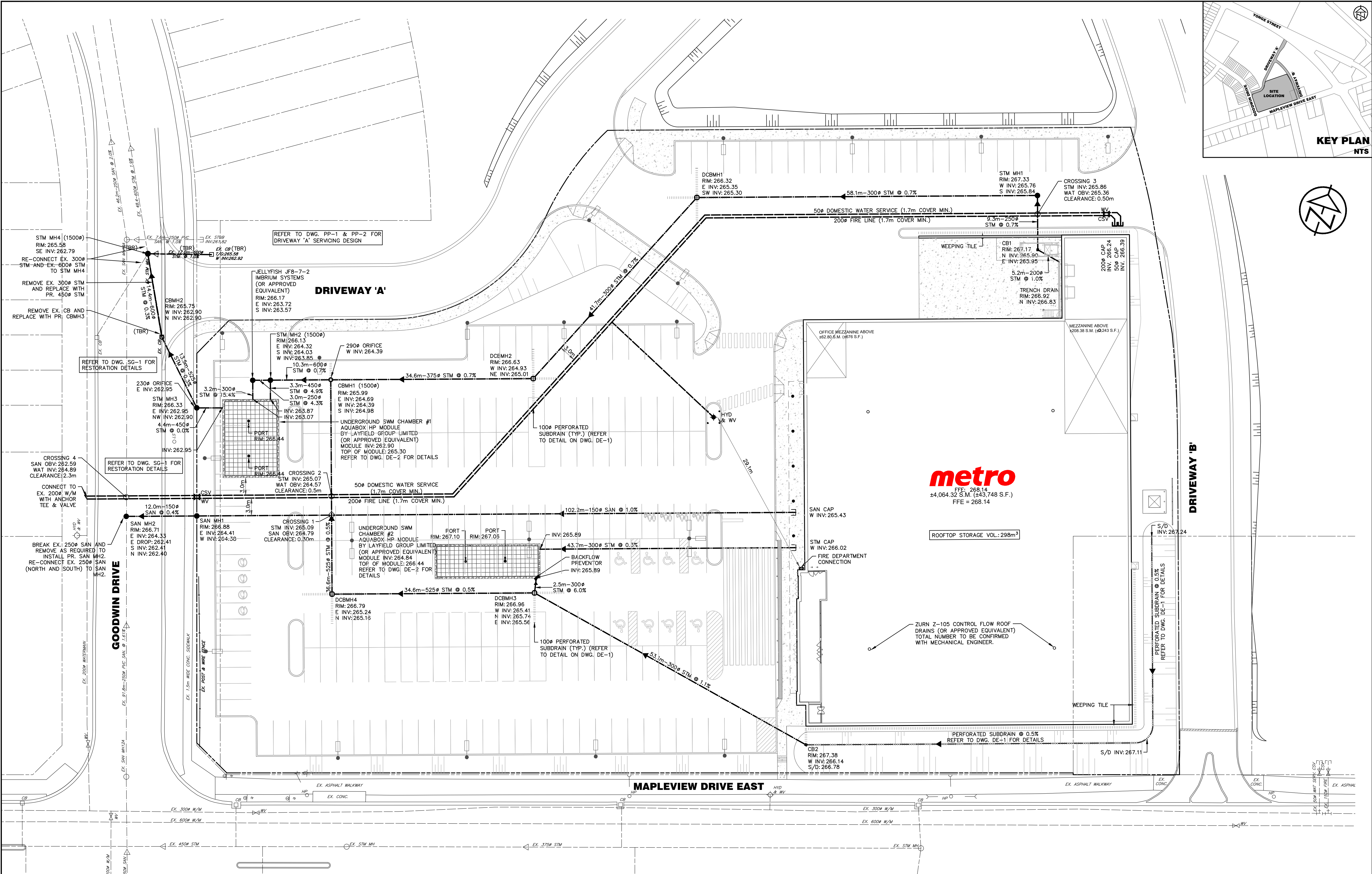


METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

PLAN AND PROFILE
DRIVEWAY 'B'
STA. 2+000 TO STA. 2+182



DESIGN: LMB	FILE: 421426	DWG:
DRAWN: LMB/LC	DATE: SEPT 2022	PP-2
CHECK: LC	SCALE: H 1:500 V 1:50	



DISCLAIMER AND COPYRIGHT
CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.
TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES
SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.
TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK
TBM#1 ELEV. 263.48 m
MNR No. 0011931U4605 - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
B.F. SHANTON
93415195
PROVINCE OF ONTARIO

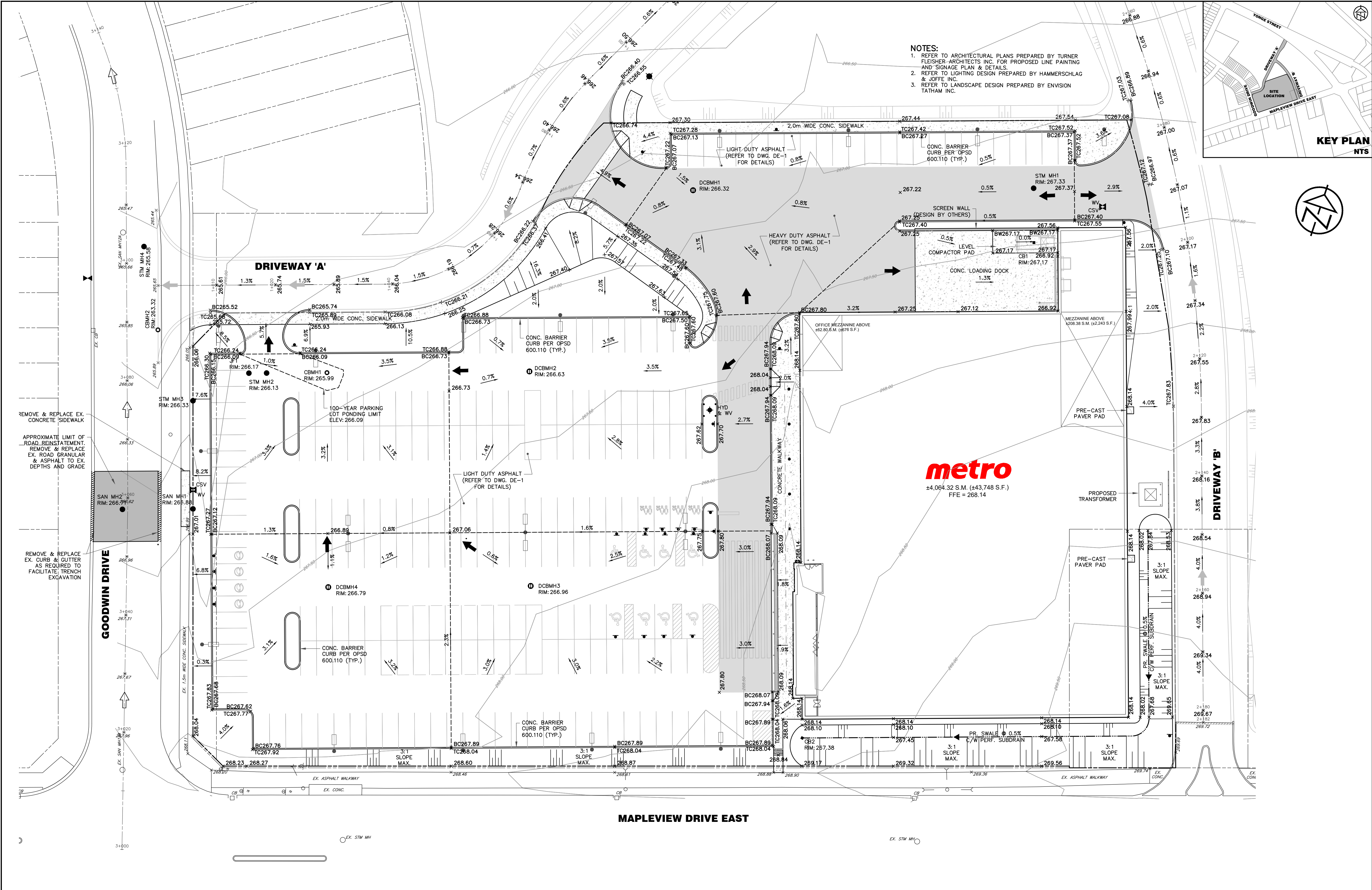
LICENSED PROFESSIONAL ENGINEER
N.H. FORIS
100224762
DEC. 6, 2022
PROVINCE OF ONTARIO

METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

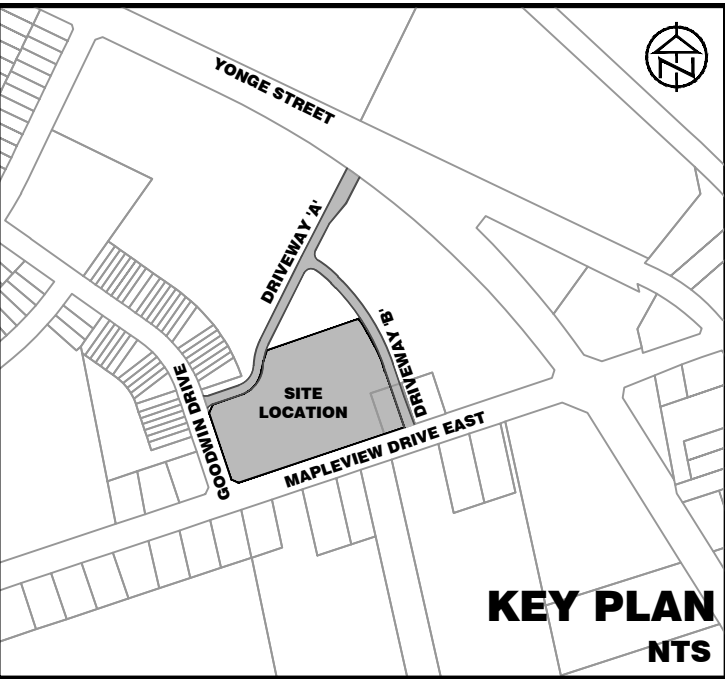
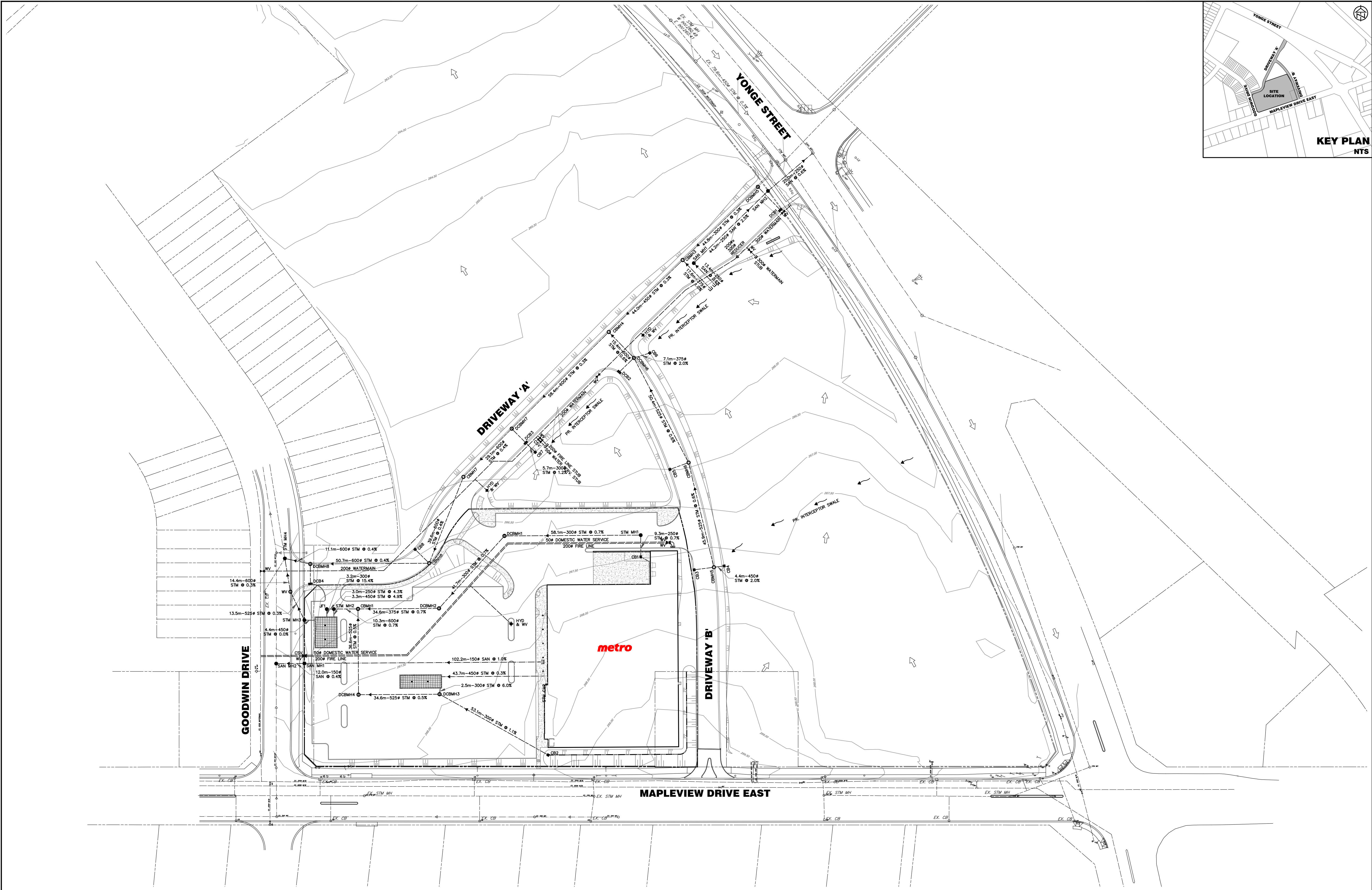
SITE SERVICING PLAN
-METRO

TATHAM ENGINEERING

DESIGN: LMB	FILE: 421426	DWG: SS-1
DRAWN: LMB/LC	DATE: SEPT 2022	
CHECK: LC	SCALE: 1:300	



DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 001931U460S - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	No. 1.	REVISION DESCRIPTION ISSUED FOR SITE PLAN APPROVAL	DATE DEC. 6/22	ENGINEER STAMP	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE						
									SITE GRADING PLAN		DESIGN: LMB	FILE: 421426	DWG:
											DRAWN: LMB/LC	DATE: SEPT 2022	SG-1
											CHECK: LC	SCALE: 1:300	



DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 001931U460S - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	No. 1.	REVISION DESCRIPTION ISSUED FOR SITE PLAN APPROVAL	DATE DEC. 6/22	ENGINEER STAMP REGISTERED PROFESSIONAL ENGINEER B.F. STANTON 90415/935 PROVINCE OF ONTARIO DEC 6, 2022 REGISTERED PROFESSIONAL ENGINEER N.H. FORIS 100224762 PROVINCE OF ONTARIO DEC 6, 2022	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE GENERAL SERVICING PLAN	TATHAM ENGINEERING			DESIGN: LMB DRAWN: LMB/LC CHECK: LC	FILE: 421426 DATE: SEPT 2022 SCALE: 1:750	DWG: GS-1
--	---	---	------------------------------	--	--------------------------------------	--	--	--	--	--	--	--	---------------------------------

Material Quantity (AQUABOX HP)

AquaBox HP1212

Sidewall Grid HP174

Top Cap HP816

Single Joint758

Double Joint782

Material Quantity (AQUABOX CUBE HP)

AquaBox Cube HP24

Sidewall Grid Cube HP0

Circular Cap D400 HP2

Surface Grate2

Elevations

Leveling Stone Bottom262.7984

Module Invert262.9000

Top of Module265.3000

Top of Stone Backfill265.6048

Minimum Finished Grade265.9096

Maximum Finished Grade267.1000

Contractor to confirm that quantities shipped to site match those listed above. Please report any discrepancy or damage to Layfield immediately.

GROUNDWATER LEVEL REVIEW

Groundwater Elevation (as provided by xxx)

Has the tank design included a review for uplift pressure due to the groundwater level?

Is geogrid required for uplift pressure?

N/A

No

No

NOTES:

a. All dimensions are measured in meters unless noted otherwise.

b. Reference AquaBox standard drawings and notes for detailed information.

c. Reference current AquaBox Module installation instructions for proper installation practices.
https://www.geotanglobal.com/en/downloads/aquabox

d. Engineer of record to confirm conformance to manufacturer's allowable proximity to other structures and slopes.

e. All inlet and pipe locations and designs by others.

f. The sub-grade and side backfill needs to be compacted to 97%, unless noted otherwise.

g. During and after installation, the AquaBox Module area should be clearly marked and roped off to prevent unauthorized construction and equipment trafficking over the modules.

h. Top of Ground water is to be maintained 610 mm (2 ft) below the module to prevent buoyancy, unless otherwise noted by engineer.

i. The quantities related to stone and geotextiles are estimated values as the roll size, overlaps, waste, etc. may vary.

j. Materials must be stored in a manner to prevent prolonged exposure to UV light.

1

8-03

NOTES

2

8-04

MODULE LAYOUT

9.6096

9.0000

0.7500

0.3048

13.3596

12.7500

AQUABOX HP
(SEE DETAIL 1/S-03)

AQUABOX HP SIDEWALL GRID
(SEE DETAIL 3/S-03)

AQUABOX CUBE HP W/
OBSERVATION PORT
(SEE DETAIL 2/S-03 & 1/S-04)

19mm CLEAR STONE
(SEE DETAIL 5/S-03)

LOCATION OF IMPERMEABLE
LINER (SEE DETAIL 5/S-03)

ACTIVE STORAGE ABOVE ELEV 262.95=

264.38m³

LAYFIELD

117 Basaltic Rd.
Concord, ON L4K 1G4 Canada
Ph: (905) 761-9123
www.layfieldgroup.com

Total Storage Volume264.38 m³

Module Storage Volume264.38 m³

Stone Storage Volume0.00 m³

System Footprint128.38 m²

Estimated Geotextile FabricNuBarrier663 m²

Estimated Geotextile FabricLP81155 m²

Estimated Liner578 m²

Estimated GeoGridN/A m²

Estimated Stone Volume84.89 m³

Excavation Required399.42 m³

Excavation Depth3.11 m

Stone Type19mm Clear Stone

Stone Void Space40%

Number of Layers3

Allowable LoadingHS-25

Surface

Paved Surface

Vegetated/Unpaved

Minimum Top Cover

0.60 m

0.80 m

Maximum Tank Depth

4.20 m

4.10 m

METRO SWM TANK-1

Barrie, ON

REV

Record of Changes

Date

By

1

Preliminary Drawing

03OCT2022

LP

2

Revised Layout

14OCT2022

LP

Project Number: OP2022-00003720

Page Name: Module Layout

Drawn by: LP

Checked by: AW

Scale: NTS

Date: 14OCT2022

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE AQUABOX SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH GEOPLAST'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

02 OF 07

ANSI B Size Page (Horizontal)

1

8-03

AQUABOX HP

2

8-03

AQUABOX CUBE HP

3

8-03

AQUABOX SIDEWALL GRID

4

8-03

AQUABOX ACCESSORIES
CAPS AND JOINTS

5

8-03

TYPICAL SYSTEM CROSS SECTION

1

8-03

AQUABOX CAP

2

8-03

CUT CAPS FOR
AQUABOX CUBE
(OBSV. PORT)

3

8-03

DOUBLE
JOINT

4

8-03

SINGLE JOINT

5

8-03

D400 CAP

NOTE: THIS DETAIL DEPICTS ONLY THE LOCATION OF AQUABOX ACCESSORIES (CAPS, CONNECTORS) AND DOES NOT REPRESENT THE PROJECT SPECIFIC STACKING CONFIGURATION. REFER TO DETAIL 5/S-03 FOR STACKING CONFIGURATION AND CROSS-SECTIONAL DETAILS.

DETAIL "A" -
IMPERMEABLE LINER
TOP, SIDES AND BOTTOM

LAYFIELD

117 Basaltic Rd.
Concord, ON L4K 1G4 Canada
Ph: (905) 761-9123
www.layfieldgroup.com

Total Storage Volume264.38 m³

Module Storage Volume264.38 m³

Stone Storage Volume0.00 m³

System Footprint128.38 m²

Estimated Geotextile FabricNuBarrier663 m²

Estimated Geotextile FabricLP81155 m²

Estimated Liner578 m²

Estimated GeoGridN/A m²

Estimated Stone Volume84.89 m³

Excavation Required399.42 m³

Excavation Depth3.11 m

Stone Type19mm Clear Stone

Stone Void Space40%

Number of Layers3

Allowable LoadingHS-25

Surface

Paved Surface

Vegetated/Unpaved

Minimum Top Cover

0.60 m

0.80 m

Maximum Tank Depth

4.20 m

4.10 m

METRO SWM TANK-1

Barrie, ON

REV

Record of Changes

Date

By

1

Preliminary Drawing

03OCT2022

LP

2

Revised Layout

14OCT2022

LP

Project Number: OP2022-00003720

Page Name: TYP. Construction Details

Drawn by: LP

Checked by: AW

Scale: NTS

Date: 14OCT2022

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE AQUABOX SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH GEOPLAST'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

03 OF 07

ANSI B Size Page (Horizontal)

1

8-04

AQUABOX OBSERVATION PORT

2

8-04

OBSERVATION PORT SURFACE GRATE

3

8-04

AQUABOX CATCHBASIN ABUTMENT
(IF APPLICABLE)

STEP 1: LOCATE AND MARK OPENING

STEP 2: REMOVE SIDEWALL FROM MODULES AND CUT OPENING

STEP 3: REINSTALL SIDEWALL

STEP 4: INSTALL PIPE (BUP FIT)

STEP 5: WRAP AND SECURE GEOTEXTILE

PLAN VIEW

CROSS-SECTION

SECTION A-A

INSTALLATION SEQUENCE:

1. D4 CONNECTOR WITH SEAL RING

2. 15" (375 mm) SDR 35 PVC PIPE

3. SURFACE GRATE AT FINISHED GRADE

4

8-04

PIPE CONNECTION DETAIL

LAYFIELD

117 Basaltic Rd.
Concord, ON L4K 1G4 Canada
Ph: (905) 761-9123
www.layfieldgroup.com

Total Storage Volume264.38 m³

Module Storage Volume264.38 m³

Stone Storage Volume0.00 m³

System Footprint128.38 m²

Estimated Geotextile FabricNuBarrier663 m²

Estimated Geotextile FabricLP81155 m²

Estimated Liner578 m²

Estimated GeoGridN/A m²

Estimated Stone Volume84.89 m³

Excavation Required399.42 m³

Excavation Depth3.11 m

Stone Type19mm Clear Stone

Stone Void Space40%

Number of Layers3

Allowable LoadingHS-25

Surface

Paved Surface

Vegetated/Unpaved

Minimum Top Cover

0.60 m

0.80 m

Maximum Tank Depth

4.20 m

4.10 m

METRO SWM TANK-1

Barrie, ON

REV

Record of Changes

Date

By

1

Preliminary Drawing

03OCT2022

LP

2

Revised Layout

14OCT2022

LP

Project Number: OP2022-00003720

Page Name: TYP. Pipe Penetration Details

Drawn by: LP

Checked by: AW

Scale: NTS

Date: 14OCT2022

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE AQUABOX SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH GEOPLAST'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

04 OF 07

ANSI B Size Page (Horizontal)

1

8-05

ISOLATOR ROW PERIMETER
SIDEWALLS

2

8-05

ISOLATOR ROW INSTALLATION DETAIL

STEP 1: INSTALL ISOLATOR ROW PERIMETER SIDEWALLS AND ATTACH GEOTEXTILE TO THEM.

STEP 2: PLACE AQUABOX HP AND AQUABOX HP CUBE MODULES IN THE ISOLATOR ROW AS PER MODULE LAYOUT 2/S-02

STEP 3: INSTALL INLET PIPE AS PER DETAIL 4/S-04 AND CONNECTOR PIPE FOR OBSERVATION PORT AS PER DETAIL 1/S-04

SECTION A-A

LAYFIELD

117 Basaltic Rd.
Concord, ON L4K 1G4 Canada
Ph: (905) 761-9123
www.layfieldgroup.com

Total Storage Volume264.38 m³

Module Storage Volume264.38 m³

Stone Storage Volume0.00 m³

System Footprint128.38 m²

Estimated Geotextile FabricNuBarrier663 m²

Estimated Geotextile FabricLP81155 m²

Estimated Liner578 m²

Estimated GeoGridN/A m²

Estimated Stone Volume84.89 m³

Excavation Required399.42 m³

Excavation Depth3.11 m

Stone Type19mm Clear Stone

Stone Void Space40%

Number of Layers3

Allowable LoadingHS-25

Surface

Paved Surface

Vegetated/Unpaved

Minimum Top Cover

0.60 m

0.80 m

Maximum Tank Depth

4.20 m

4.10 m

METRO SWM TANK-1

Barrie, ON

REV

Record of Changes

Date

By

1

Preliminary Drawing

03OCT2022

LP

2

Revised Layout

14OCT2022

LP

Project Number: OP2022-00003720

Page Name: TYP. Isolator Row Details

Drawn by: LP

Checked by: AW

Scale: NTS

Date: 14OCT2022

THIS LAYOUT DRAWING WAS PREPARED TO SUPPORT THE ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO REVIEW THE INFORMATION AND ENSURE THAT THE LAYOUT AND DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND THAT THE AQUABOX SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH GEOPLAST'S REQUIREMENTS. LAYFIELD DOES NOT REVIEW OR APPROVE PLANS, SIZING OR DESIGNS.

05 OF 07

ANSI B Size Page (Horizontal)

DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m

MNR No. 0011931U460S - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.

REVISION DESCRIPTION

DATE

1.

ISSUED FOR SITE PLAN APPROVAL

DEC. 6/22

ENGINEER STAMP

B.F. SHANTON

094161936

DEC. 6, 2022

PROVINCE OF ONTARIO

N.H. FORIS

100224762

DEC. 6, 2022

PROVINCE OF ONTARIO

METRO GROCERY STORE NO. 145

658 YONGE STREET

CITY OF BARRIE

AQUA TANK #1 DETAILS

DESIGN: LMB

FILE: 421426

DWC:

DRAWN: LMB/LC

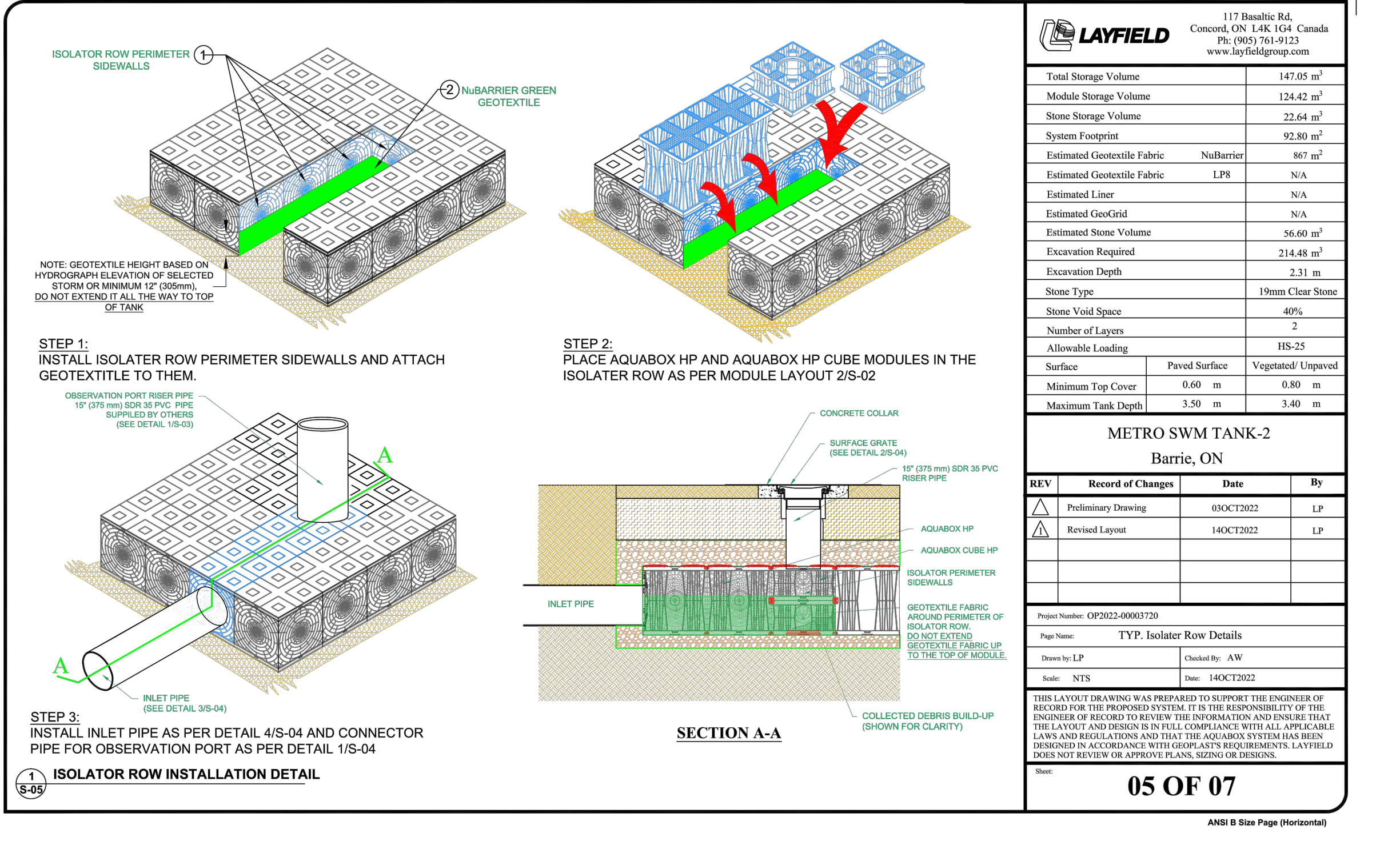
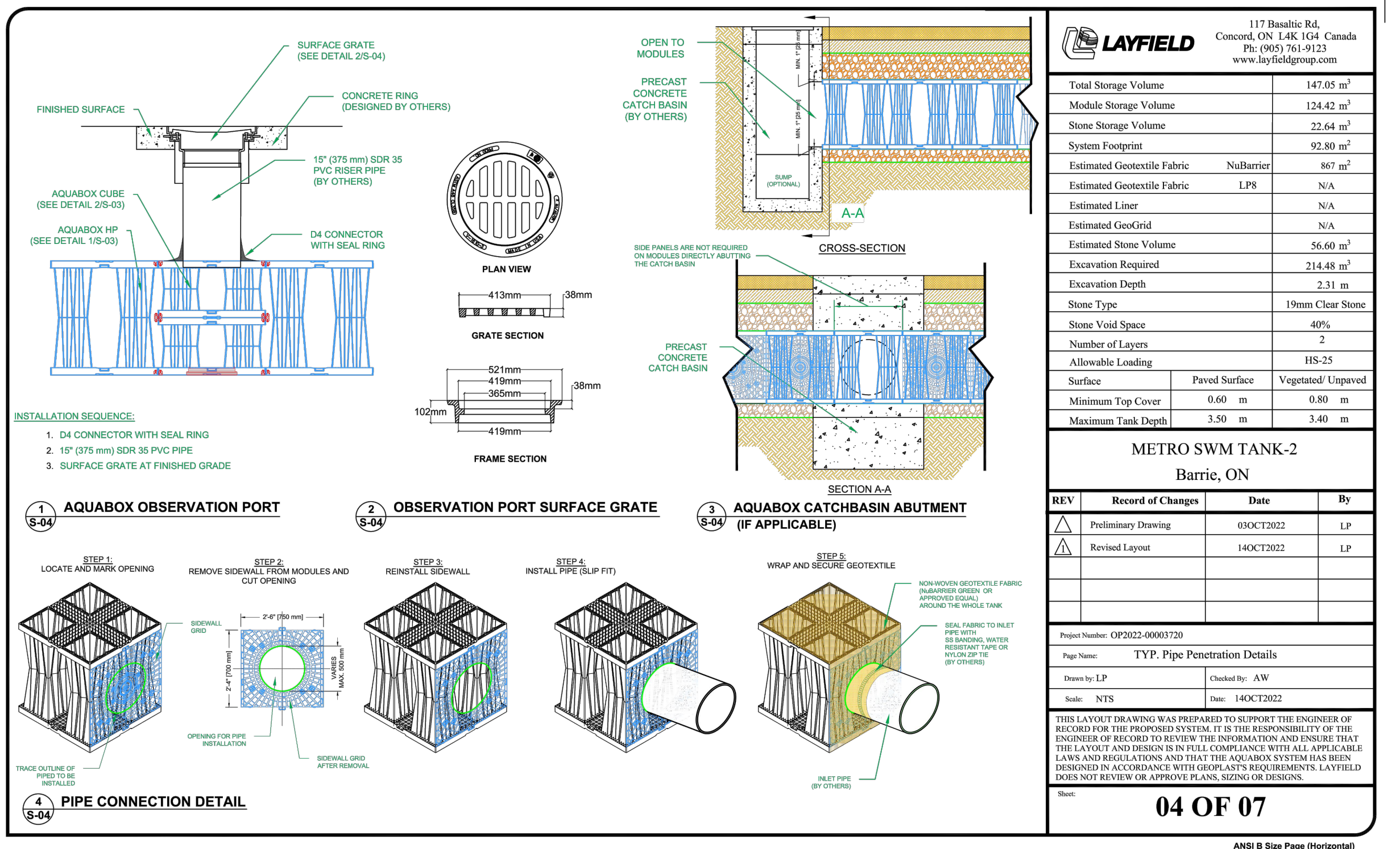
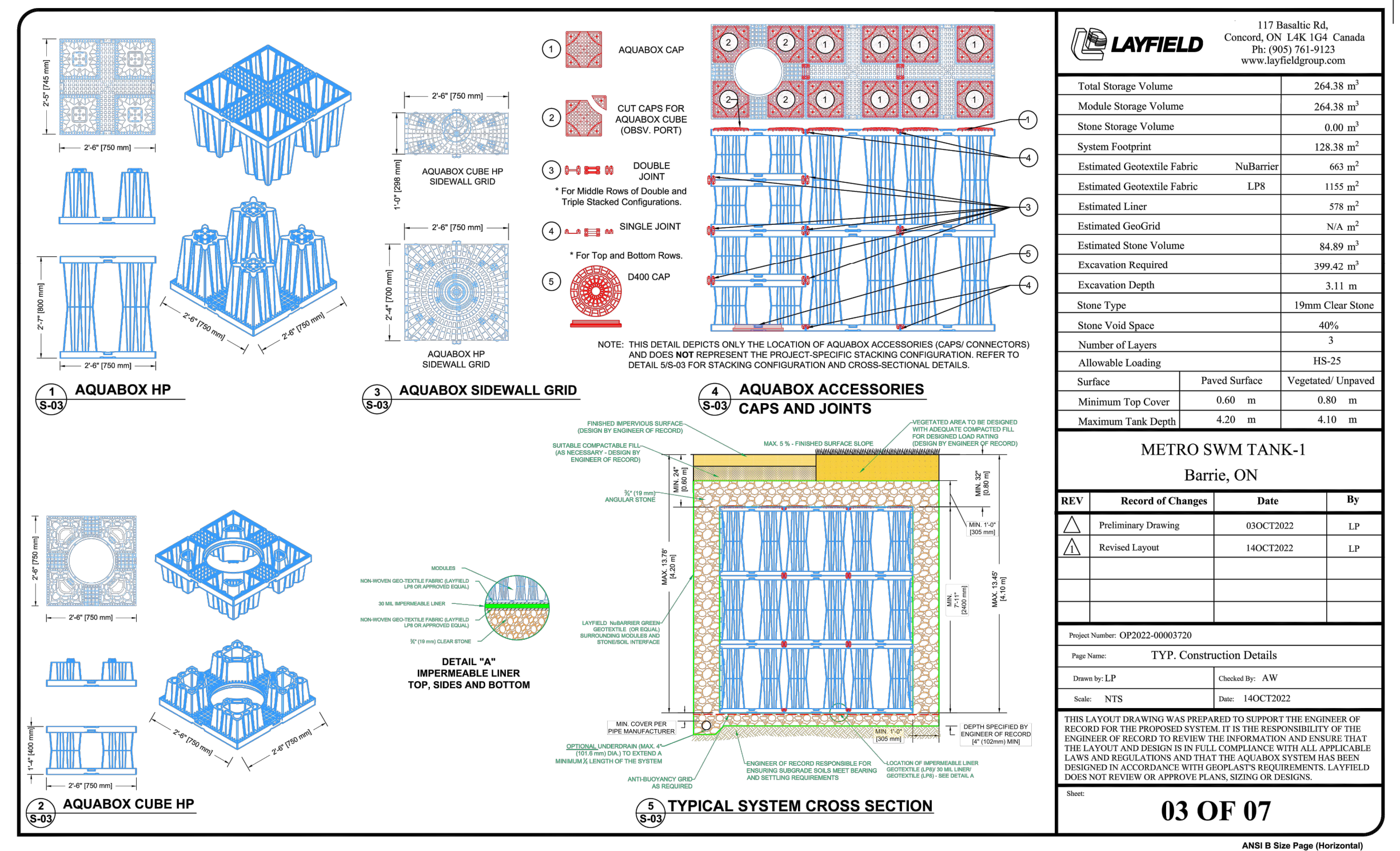
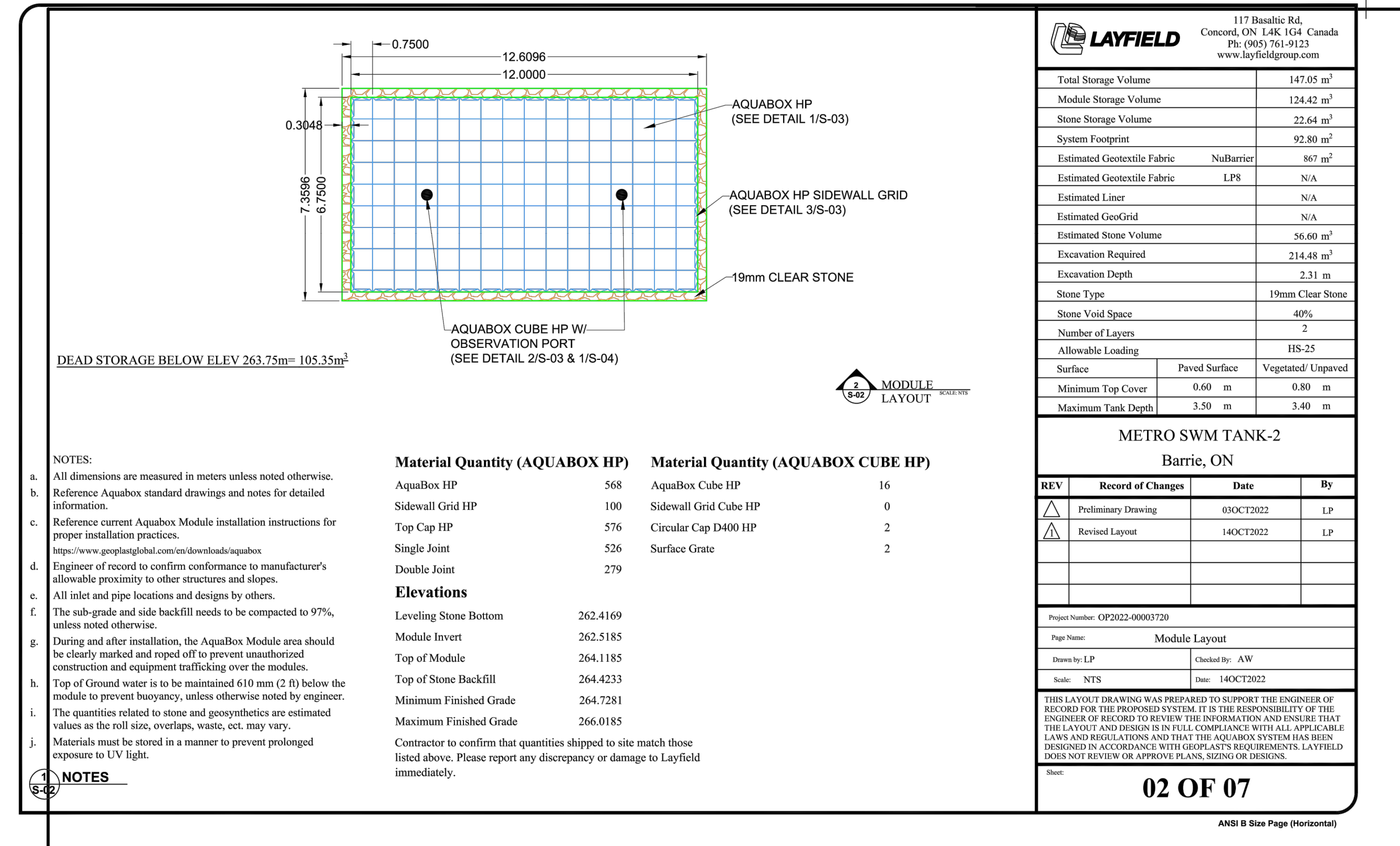
DATE: SEPT 2022

SWM-1

CHECK: LC

SCALE: AS NOTED

Drawing Name: 421426-SWM01.dwg, Plotted: Dec 07, 2022



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m

MNR No. 001931U460S - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP

LICENSED PROFESSIONAL ENGINEER
B.F. SHANTON
03415/95
DEC 6, 2022
PROVINCE OF ONTARIO

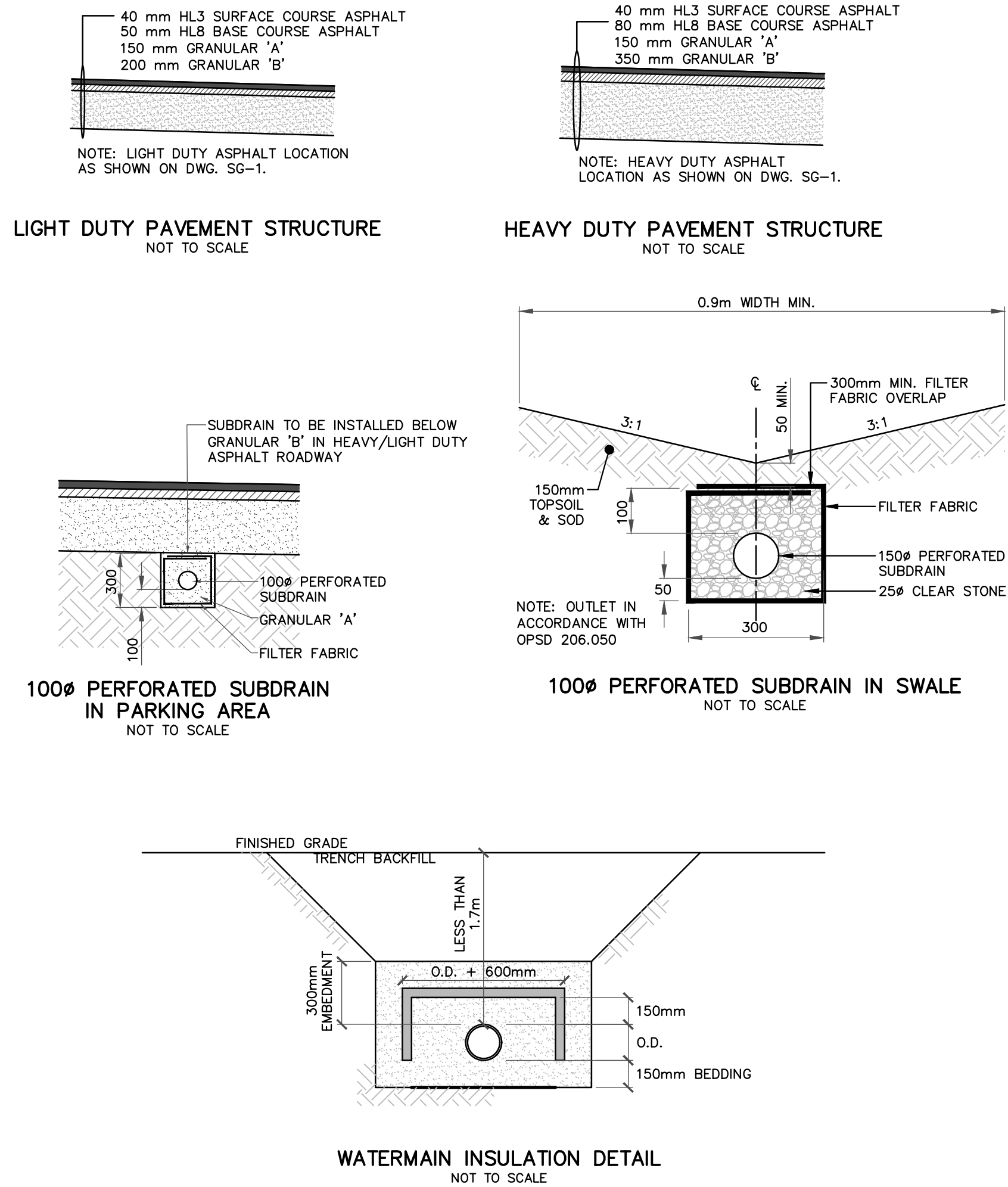
LICENSED PROFESSIONAL ENGINEER
N.H. FORIS
100224762
DEC. 6, 2022
PROVINCE OF ONTARIO

METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

AQUA TANK #2 DETAILS

TATHAM ENGINEERING

DESIGN: LMB	FILE: 421426	DWG: SWM-2
DRAWN: LMB/LC	DATE: SEPT 2022	
CHECK: LC	SCALE: AS NOTED	



- NOTES:**
1. WATERMAIN SHALL BE INSULATED TO PROVIDE FROST PROTECTION WHEREVER COVER IS LESS THAN 1.7 m AND AS SPECIFIED ON THE DRAWINGS.
 2. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS:
 - DEPTH OF COVER BETWEEN 1.4 m TO 1.7 m REQUIRES MIN. 50 mm INSULATION
 - DEPTH OF COVER BETWEEN 1.2 m TO 1.4 m REQUIRES MIN. 100 mm INSULATION

GENERAL

- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT CITY OF BARRIE ENGINEERING STANDARDS AND ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS. WHERE CONFLICT OCCURS, CITY OF BARRIE ENGINEERING STANDARDS TO GOVERN.
- A ROAD OCCUPANCY PERMIT SHALL BE OBTAINED FROM THE ROADS OPERATIONS BRANCH PRIOR TO THE COMMENCEMENT OF WORK WITHIN THE CITY ROAD ALLOWANCE.
- A SITE ALTERATION PERMIT IS REQUIRED FROM THE ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF ANY EARTHWORKS ON SITE.
- UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN METERS.
- THE OWNER'S ENGINEER SHALL PROVIDE BENCHMARK ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK.
- ALL PROPERTY BARS TO BE PRESERVED AND REPLACED BY OLS AT CONTRACTOR'S EXPENSE IF REMOVED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
- DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS.MUNI 517 AND OPSS.MUNI 518. MAINTAIN ALL TRENCHES IN A DRY CONDITION.
- ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
- GENERAL INSTALLATION AND TESTING OF SEWERS, WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH MUNICIPAL STANDARDS AND WITH OPSS 407, 408, 409 (CCTV), OPSS MUNI.410, OPSS.MUNI 421, AND OPSS.MUNI 441 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS.
- ALL MAINTENANCE HOLES ARE 1,200 mm DIAMETER, UNLESS OTHERWISE SPECIFIED.
- PIPE SUPPORT AT ALL STRUCTURES TO OPSD 708.020.
- MAINTENANCE HOLE AND CATCH BASIN FRAMES AND GRATES TO BE SET TO BASE COURSE ASPHALT ELEVATION IN ACCORDANCE WITH BSD-41. FRAME AND GRATES TO BE RAISED TO FINISHED GRADE PRIOR TO THE PLACEMENT OF SURFACE COURSE ASPHALT USING CONCRETE ADJUSTMENT UNITS. ADJUSTMENT UNITS MUST BE CERTIFIED TO MEET ALL PERTINENT OPS, CSA, ASTM AND MTO-DSM LISTS, OR OTHER INDUSTRY GUIDELINES FOR MATERIALS, PERFORMANCE AND USE AS APPLICABLE. MAXIMUM COMBINED HEIGHT OF ADJUSTMENT UNITS SHALL BE 300 mm.
- ADJUSTMENT UNITS AND JOINTS SHALL BE SEALED AND PARGED IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS.
- MORTAR SHALL BE USED FOR LEVELING PRECAST UNITS ONLY. THE THICKNESS OF MORTAR SHALL BE 10 mm TO FILL ALL VOIDS CREATED BY IRREGULARITIES IN THE PRECAST UNITS TO ENSURE AN EVEN SURFACE ONLY.
- GRADE AND CROSSFALL ADJUSTMENT OF MAINTENANCE HOLE AND CATCH BASIN FRAMES SHALL BE MADE WITH USING PRODUCTS SPECIFICALLY MANUFACTURED FOR THAT PURPOSED.
- TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL AS APPROVED BY ENGINEER, OR IMPORTED SELECT SUBGRADE MATERIAL TO OPSS 1010. BACKFILL TO BE PLACED IN MAXIMUM 200 mm THICK LIFTS (OR AS OTHERWISE DIRECTED BY THE GEOTECHNICAL CONSULTANT) AND COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- PIPE EMBEDMENT TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD. BACKFILL AND EMBEDMENT TO OPSD 802.010 (FLEXIBLE PIPE), GRANULAR 'A' EMBEDMENT OR OPSD 802.031 (RIGID PIPE) CLASS 'B', GRANULAR 'A' BEDDING, GRANULAR 'B' COVER (MAX. AGGREGATE SIZE 25 mm). MINIMUM BEDDING DEPTH 150 mm. MINIMUM COVER DEPTH 300 mm ON ALL PIPES. WHERE EXCESSIVELY WET OR POOR SUBGRADE IS ENCOUNTERED AT THE INVERT LEVEL, IT MAY BE NECESSARY TO INCREASE THE BEDDING THICKNESS.
- CLEAR STONE COMPLETELY WRAPPED IN FILTER FABRIC MAY BE SUBSTITUTED FOR EMBEDMENT MATERIAL IF APPROVED BY THE ENGINEER.
- ALL SILTATION AND EROSION CONTROL 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 THE APPROVAL OF THE CITY ENGINEERING DEPARTMENT.
- DISTURBED AREAS TO BE REINSTATED TO PREVIOUS CONDITION OR BETTER.
- REINSTATEMENT OF ALL DISTURBED BOULEVARDS AND DITCHES TO INCLUDE REGRADING, PLACEMENT OF MINIMUM 150 mm TOPSOIL AND SOD/SEED IN ACCORDANCE WITH OPSS 802, OPSS 803 AND OPSS.MUNI 804. SOD TO BE STAKED WHERE NECESSARY TO AVOID MOVEMENT.
- DURING CONSTRUCTION TRAFFIC MARKERS AND SIGNS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MTO TRAFFIC CONTROL MANUAL FOR ROADWAY OPERATIONS, FIELD EDITION 1987.
- LOCATIONS OF EXISTING UTILITIES ARE NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING INFRASTRUCTURE/FACILITIES AS WELL AS NOTIFYING ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCING WORK AND COORDINATE CONSTRUCTION ACCORDINGLY.
- ALL ON-SITE MATERIAL SHALL BE PROPERLY STORED, SECURED, MONITORED AND COVERED AS REQUIRED. SPECIFICALLY, ALL PVC PIPE SHALL BE COVERED WHILE STORED ON-SITE.

ROADS

- SUBGRADE AND BOULEVARD MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD. SUBGRADE TO BE PROOF ROLLED AND CERTIFIED PRIOR TO PLACING GRANULAR 'B'.
- GRANULAR 'A' AND 'B' TO BE COMPACTED TO A DRY DENSITY OF 100% OF THE MATERIAL'S RESPECTIVE SPMDD.
- ASPHALT TO BE COMPACTED TO A MINIMUM OF 97% OF THE MARSHALL BULK DENSITY.
- ROADWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS ON THIS PLAN.
- JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT PRIOR TO PLACING NEW ASPHALT. WHERE EXISTING ASPHALT IS THICKER THAN 75 mm, A 300 mm WIDE BY 40 mm DEEP LAP JOINT SHALL BE GROUND INTO EXISTING ASPHALT PRIOR TO THE PLACEMENT OF SURFACE COURSE ASPHALT.
- ALL GRANULAR AND ASPHALT MATERIAL TO BE PLACED IN ACCORDANCE WITH OPSS 310 AND OPSS.MUNI 314.
- TACK COAT TO BE APPLIED AT THE DIRECTION OF THE ENGINEER.
- CONCRETE CURB AND GUTTER TO OPSD 600.040 AND CONCRETE BARRIER CURB TO OPSD 600.110 AND OPSS.MUNI 353. CURB DEPRESSIONS AT SIDEWALK CROSSINGS IN ACCORDANCE WITH BSD-318. CURB DEPRESSIONS AT DRIVEWAYS IN ACCORDANCE WITH BSD-319.
- CONCRETE CURB TERMINATIONS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSD 608.010.
- SUBDRAINS TO BE PERFORATED, COMPLETE WITH FILTER SOCK, OTHER THAN THE 2.0 m SECTION IMMEDIATELY UPSTREAM OF ALL STRUCTURES WHICH SHALL BE NON-PERFORATED.

STORM SEWER

- STORM MAINTENANCE HOLES AND CATCH BASIN MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.010, 701.011 AND 701.012.
- MAINTENANCE HOLES TO BE BENCHMARKED IN ACCORDANCE WITH OPSD 701.021. MINIMUM BENCHMARKING WIDTH SHALL BE 230 mm. CATCH BASIN MAINTENANCE HOLES TO HAVE A 900 mm SUMP IN ACCORDANCE WITH OPSD 701.021.
- MAINTENANCE HOLE AND CATCH BASIN MAINTENANCE HOLE STEPS IN ACCORDANCE WITH OPSD 405.010.
- MAINTENANCE HOLE FRAME AND GRATES IN ACCORDANCE WITH OPSD 401.010, TYPE 'A' CLOSED COVER.
- FROST STRAPS SHALL BE INSTALLED ON ALL MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.100.
- CATCH BASINS AND DOUBLE CATCH BASINS IN ACCORDANCE WITH OPSD 705.010 AND 705.020 C/W 600 mm SUMP.
- CATCH BASINS AND DOUBLE CATCH BASINS FRAME AND GRATES IN ACCORDANCE WITH OPSD 401.081. CATCH BASINS, DOUBLE CATCH BASINS AND CATCH BASIN MAINTENANCE HOLES INSTALLED IN CURB LINE IN ACCORDANCE WITH OPSD 610.010.
- MAINTENANCE HOLES AND CATCH BASIN ADJUSTMENT UNITS SHALL BE IN ACCORDANCE WITH BSD-41.
- CATCH BASIN LATERALS TO BE INSTALLED WITH MINIMUM 1.0% GRADE. MINIMUM PIPE SIZE 250 mm DIA. SINGLE, 300 mm DIA. DOUBLE.
- ALL CONNECTIONS TO THE STORM SEWER SHALL BE MADE WITH A STORM MAINTENANCE HOLE OR AN APPROVED FACTORY TEE CONNECTION IN ACCORDANCE WITH OPSD 708.010 OR OPSD 708.030.
- STORM SEWER TO BE MINIMUM 250 mm DIAMETER WITH JOINTS CONFORMING TO CSA STANDARD A257.3.
- ALL PIPE BEDDING MUST BE IN ACCORDANCE WITH OPSD, MAXIMUM COVER TABLE. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH OF COVER GREATER THAN 6 m UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF ENGINEERING.
- ALL PIPE HANDLING INSTALLATIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURER'S INSTALLATION GUIDES AND THE ONTARIO CONCRETE PIPE ASSOCIATION OR UNIBELL GUIDELINES.

SANITARY SEWER

- SANITARY MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.010 AND OPSD 701.011.
- SANITARY MAINTENANCE HOLES TO BE BENCHMARKED IN ACCORDANCE WITH OPSD 701.021. ALL CONNECTION TO MAINTENANCE HOLES TO INCLUDE KOR-N-SEAL RUBBER BOOT CONNECTION.
- FROST STRAPS SHALL BE INSTALLED ON ALL MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.100.
- MAINTENANCE HOLE STEPS IN ACCORDANCE WITH OPSD 405.010.
- MAINTENANCE HOLE FRAME AND COVER TO OPSD 401.010, TYPE 'A' CLOSED COVER.
- MAINTENANCE HOLE FRAMES ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. ALL ADJUSTMENTS TO BE IN ACCORDANCE WITH BSD-41.
- MAINTENANCE HOLE STRUCTURES EXCEEDING 5.0 m IN DEPTH TO INCLUDE SAFETY PLATFORM IN ACCORDANCE WITH OPSD 404.020.
- DROP STRUCTURES AT MAINTENANCE HOLES IN ACCORDANCE WITH BSD-15B.
- MAXIMUM DEFLECTION FROM COMBINED HOLE AND DEAD LOADING SHALL NOT EXCEED ANY CSA, OPSS OR MANUFACTURER'S SPECIFICATIONS.
- PVC, CONCRETE AND PROFILE WALL PVC SEWERS SHALL HAVE RUBBER GASKET TYPE JOINTS AND SHALL BE CERTIFIED TO CONFORM TO ALL APPLICABLE CURRENT CSA SPECIFICATIONS.
- SANITARY MAINTENANCE HOLES SHALL BE WATERPROOFED WITH HENRY COMPANY CANADA BLUESKIN WP200 SELF ADHESIVE AT SECTION JOINTS. ADHESIVE SHALL BE APPLIED PER MANUFACTURER'S RECOMMENDATIONS.
- ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE MADE WITH PRE-MANUFACTURED, FABRICATED TEES.
- SANITARY SERVICES TO BE 150 mm DIA. PVC SDR 28, RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO CSA. (B-182.2.3.4) (COLOURED GREEN).
- RADIUS BENDS TO BE USED ON ALL SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°.
- SANITARY SERVICES TO BE IN ACCORDANCE WITH OPSD 1006.010 WITH A MINIMUM PIPE SLOPE OF 2.0%.

WATERMAIN

- GENERAL INSTALLATION AND TESTING OF WATERMAIN TO BE IN ACCORDANCE WITH OPSS.MUNI 421, OPSS.MUNI 701 AND CITY OF BARRIE ENGINEERING STANDARDS. ALL WORK ON THE EXISTING WATERMAIN TO BE COORDINATED WITH THE CITY OF BARRIE.
- CONTRACTORS SHALL INFORM THE CITY OF BARRIE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO PERFORM WORK ON WATER INFRASTRUCTURE.
- OPERATION OF HYDRANTS AND VALVES ON THE POTABLE WATER SYSTEM BY OTHER THAN QUALIFIED WATER OPERATIONS STAFF IS PROHIBITED BY CURRENT BY-LAW. CITY SERVICE FEES ARE PER THE CURRENT FEES BY-LAW.
- MINIMUM COVER OVER WATERMAIN SHALL BE 1.7 m. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE 2.5 m WHERE WATERMAIN CONFLICTS WITH SEWER PIPES, DEFLECT WATERMAIN HORIZONTALLY OR VERTICALLY WHILE PROVIDING A MINIMUM OF 0.5 m CLEARANCE BETWEEN WATERMAIN AND SEWERS. INSULATION TO BE PROVIDED WHERE MINIMUM COVER CAN NOT BE ACHIEVED. WATERMAIN SHALL NOT BE INSTALLED WITH COVER LESS THAN 1.2 m.
- WATER SERVICES SHALL BE EMBEDMENT 100 mm ABOVE AND BELOW TO CONFORM TO OPSS.MUNI 1004.05.07.
- CONTRACTOR SHALL PROVIDE CATHODIC PROTECTION ON THE WATER DISTRIBUTION SYSTEM. IN DETERMINING THE MODE OF PROTECTION, AN ELECTRICAL RESISTIVITY OF 4000-4500 OHM-CM SHOULD BE USED. THE CONTRACTOR SHALL PROPOSE METHODS AND MATERIALS TO BE USED FOR APPROVAL BY THE ENGINEER AND CITY OF BARRIE WATER OPERATIONS DEPARTMENT.
- PROTECT WIRE SHALL BE #12 AWG HIGH STRENGTH COPPER CLAD (HS-CSS) AND SHALL BE INSTALLED ON THE TOTAL LENGTH OF ALL WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT. ALL SPLICES TO UTILIZE CONNECTORS AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.
- WATER SERVICE SHALL BE MINIMUM 50 mm TYPE 'K' COPPER. WATER SERVICE SADDLES SHALL BE USED WHEN TAPPING INTO PVC DUCTILE.
- SERVICE TAPPINGS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0 m AND A MINIMUM OF 0.6 m FROM JOINTS (ENDS OF PIPE).
- RISER PIPES ARE TO BE INSTALLED AS PER BSD-510, AND REMOVED AS DIRECTED. SWABBING SCHEDULE TO BE SUPPLIED BY A WATER OPERATIONS FIELD REPRESENTATIVE. ALL RISERS ARE TO BE RESTRAINED OR THRUST BLOCKED.
- ALL NEW CURB STOPS AND BOXES TO BE LOCATED ON PROPERTY LINE AND OUT OF DRIVEWAYS AND SIDEWALKS.

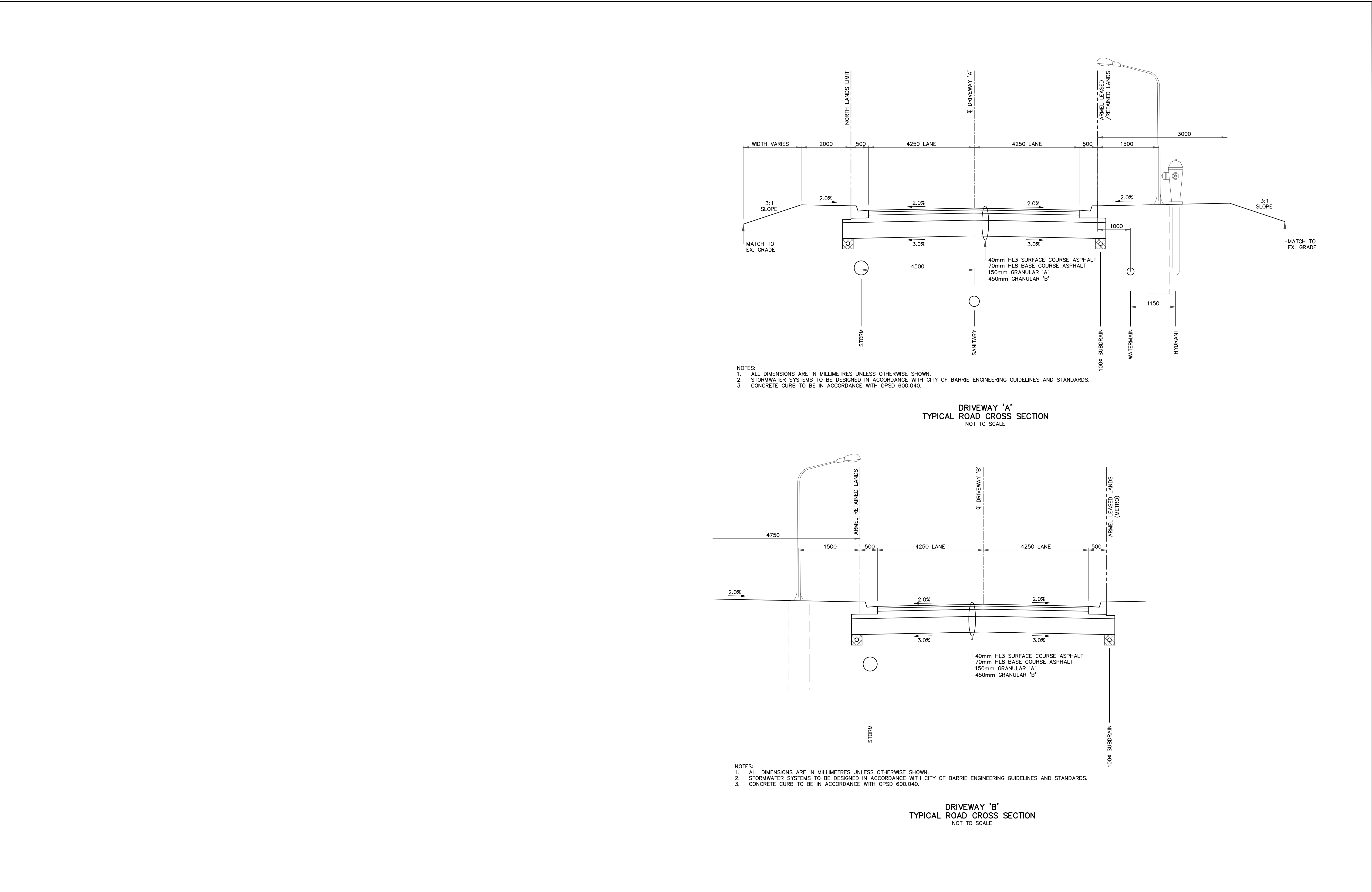
PAVEMENT MARKINGS

- PAVEMENT MARKING MATERIALS TO BE ORGANIC SOLVENT BASED OR WATER-BORNE TRAFFIC PAINT COMPLETE WITH GLASS BEADS IN ACCORDANCE WITH 1712 (COLOUR: WHITE).
- PAVEMENT MARKING MATERIALS FOR CROSSWALKS AND SYMBOLS ARE TO BE DURABLE HOT APPLIED THERMOPLASTIC PAVEMENT MARKING MATERIAL AS PER OPSS 1713, OR FIELD REACTED POLYMERIC PAVEMENT MARKING MATERIAL AS PER OPSS 1714.
- PAVEMENT MARKINGS REQUIRE TWO APPLICATIONS OF PAINT FOR NEW ASPHALT. THE SECOND APPLICATION SHALL NOT BE APPLIED UNTIL THE FIRST IS TACK FREE.
- PAVEMENT MARKINGS SHALL ONLY BE APPLIED WHEN TEMPERATURE IS ABOVE 10 DEGREES CELSIUS. THE PAVEMENT IS PERFECTLY DRY AND UPON THE AUTHORIZATION OF THE CONTRACT ADMINISTRATOR.
- WORK TO BE IN ACCORDANCE WITH OPSS 532, OPSS 710 AND THE ONTARIO TRAFFIC MANUAL BOOK 11, MINISTRY OF TRANSPORTATION OF ONTARIO.

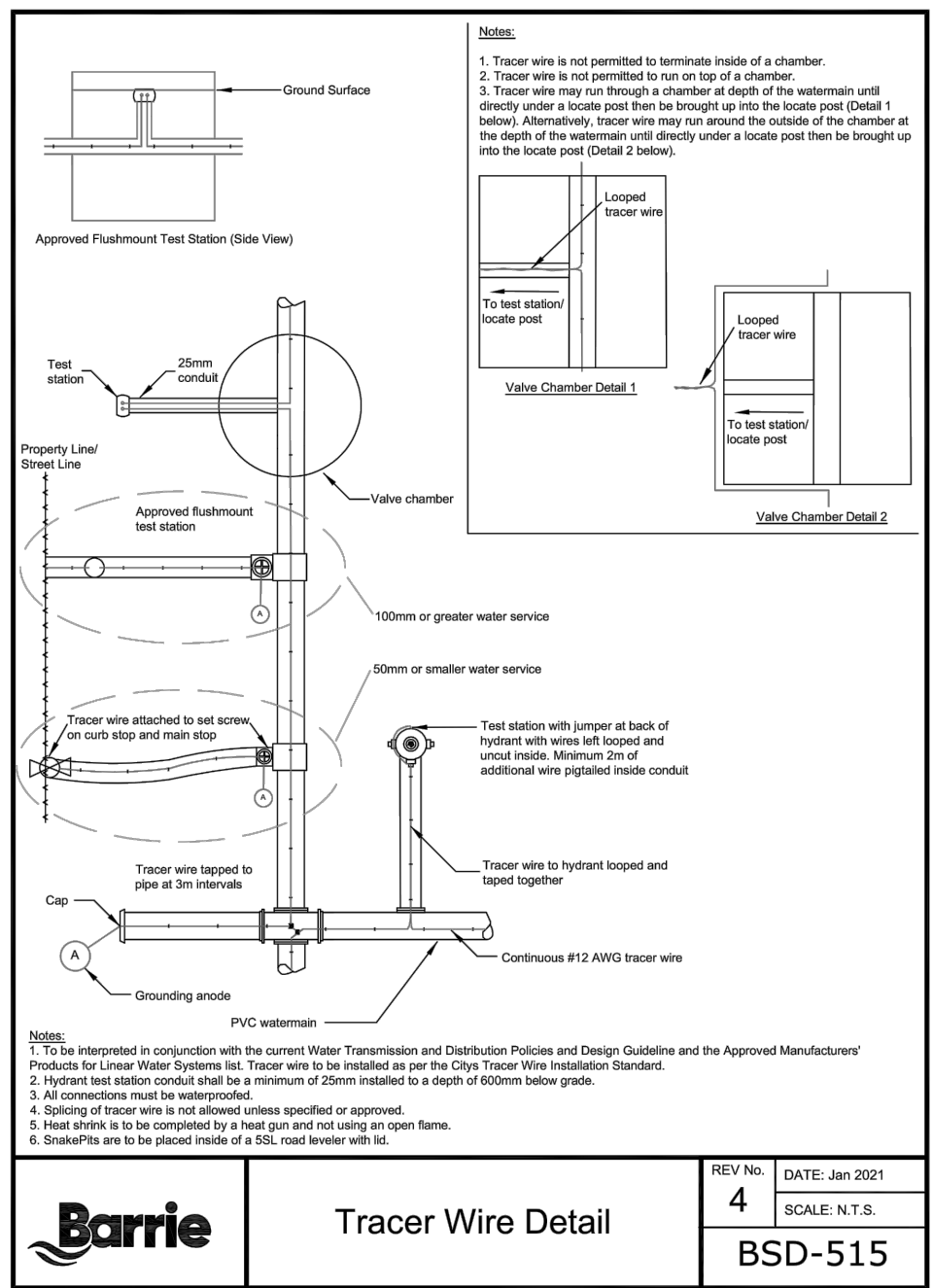
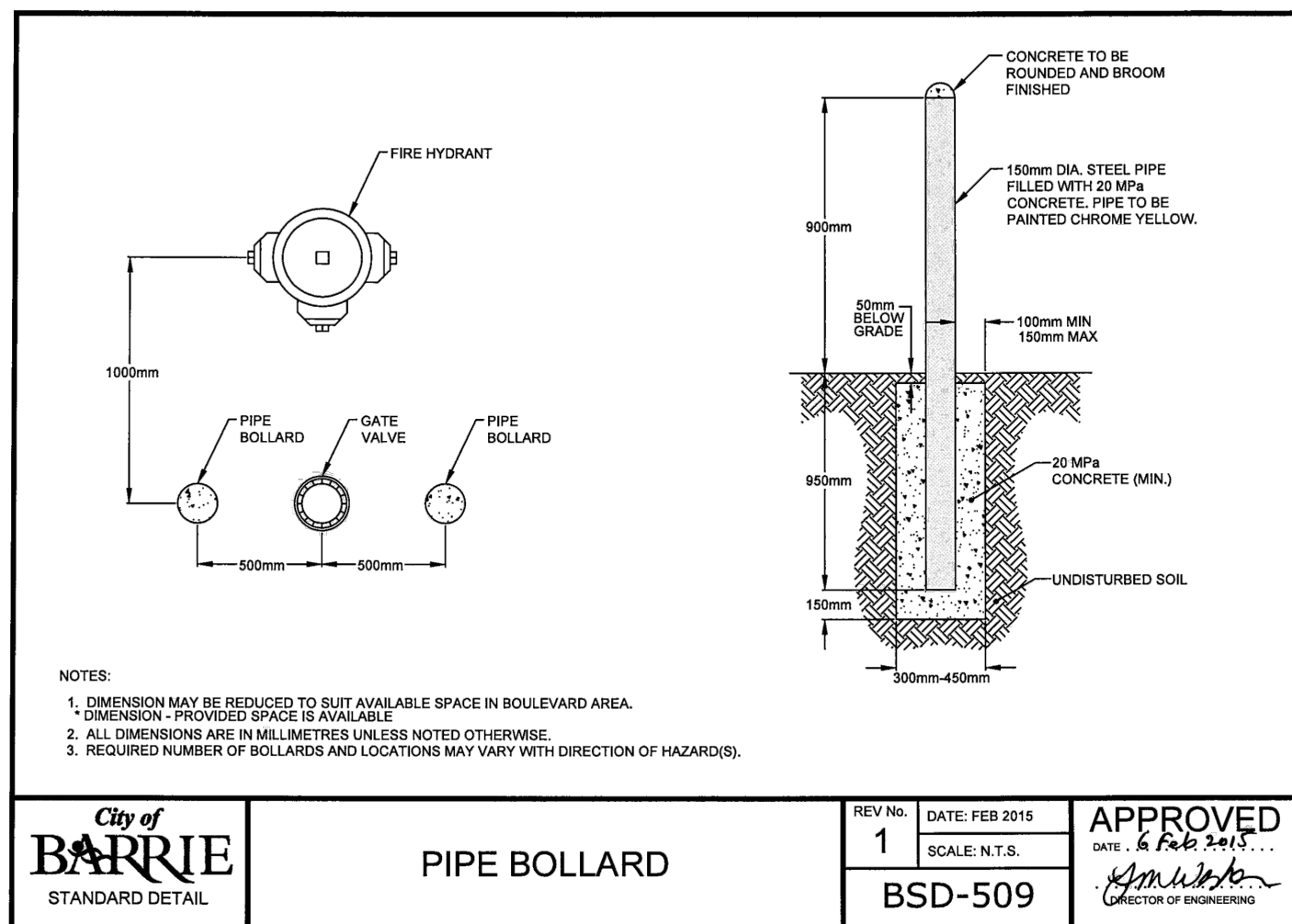
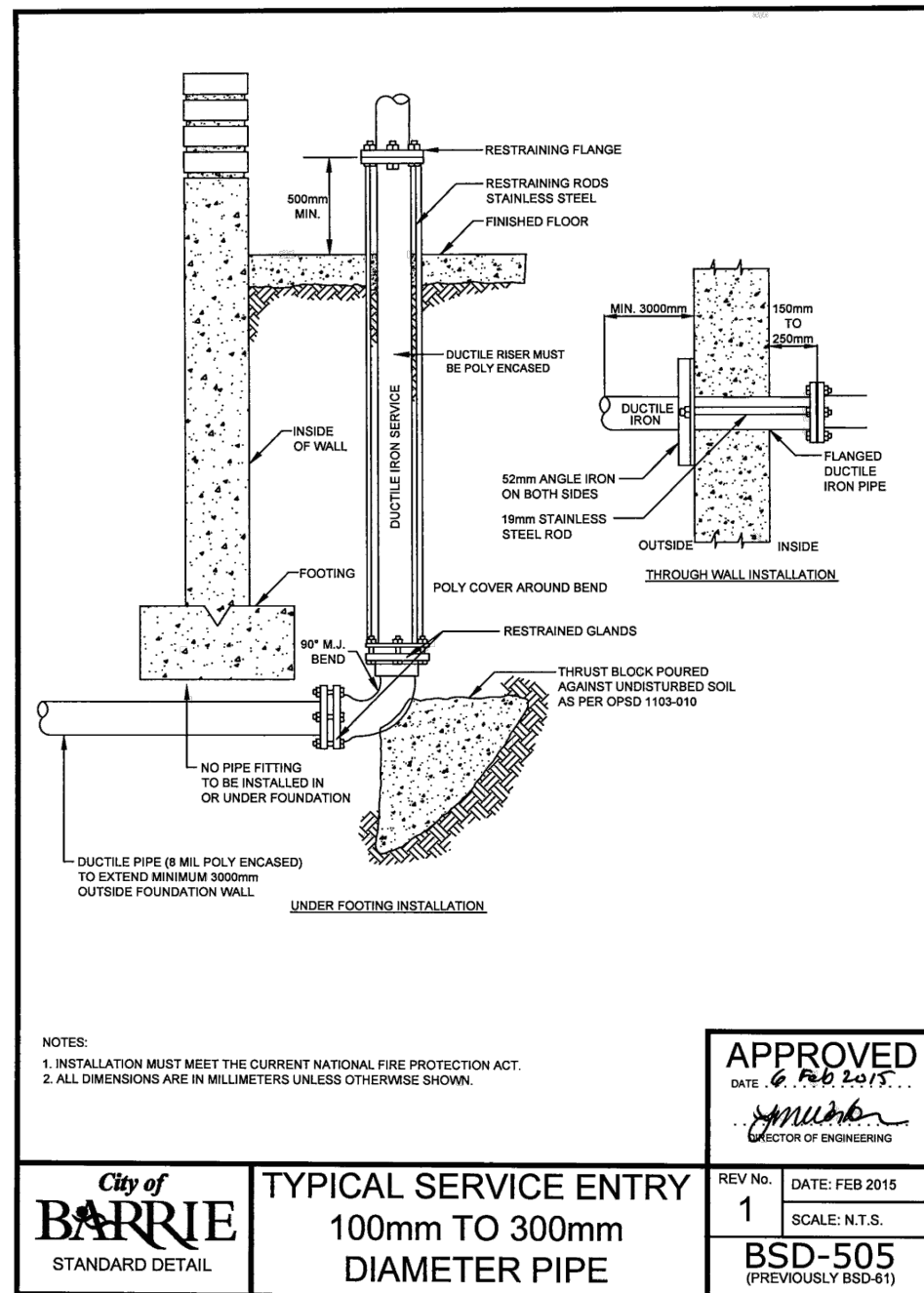
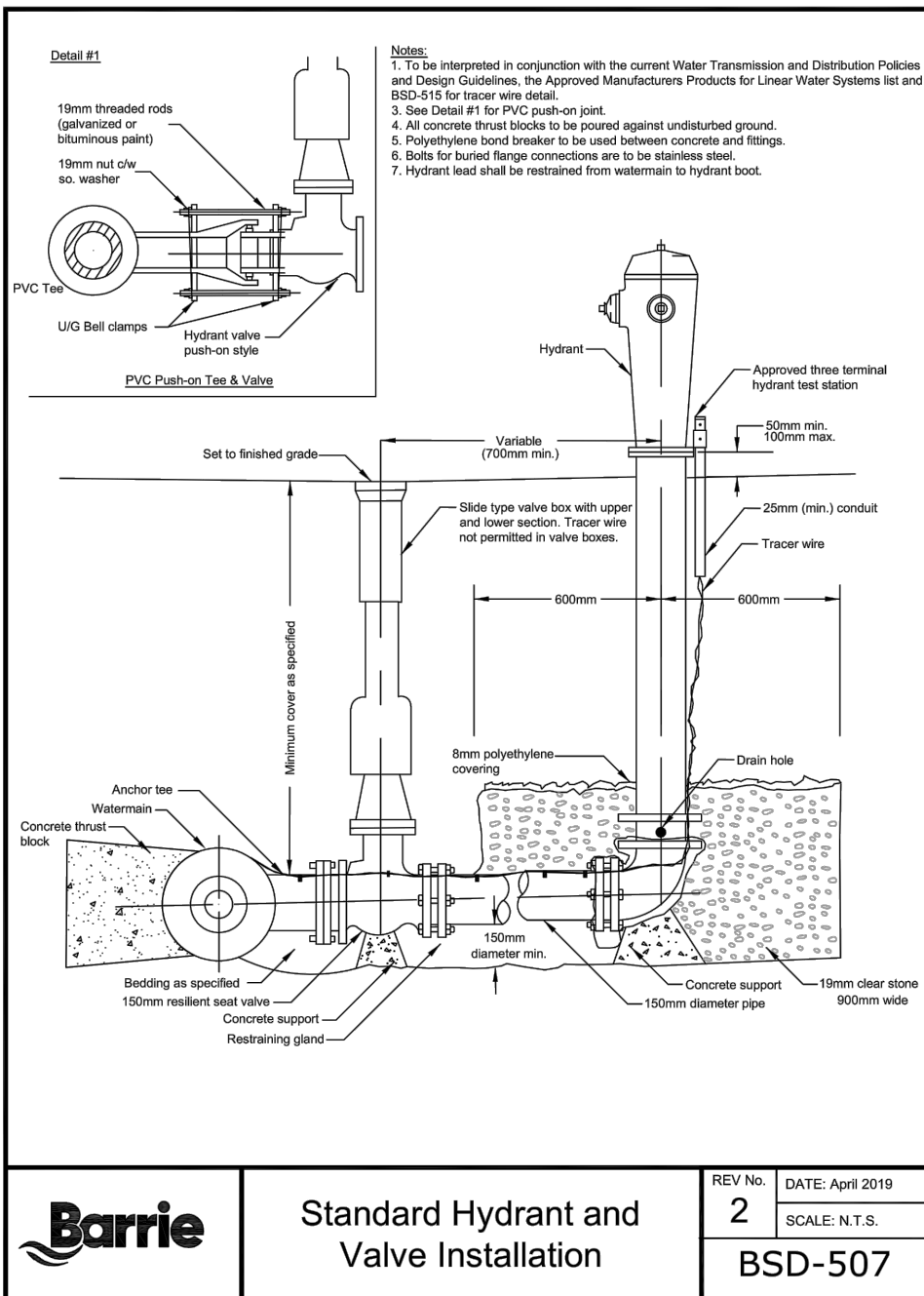
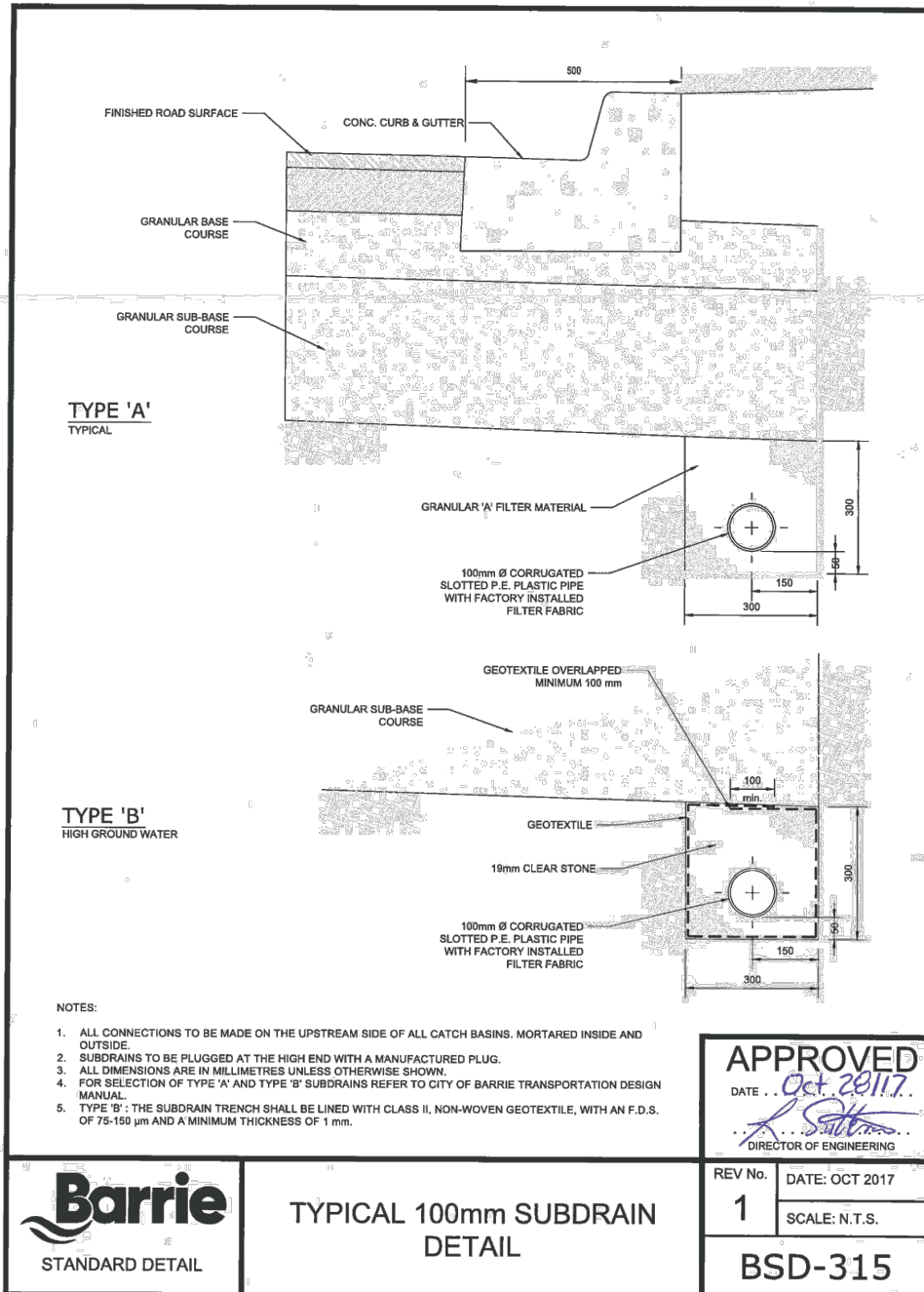
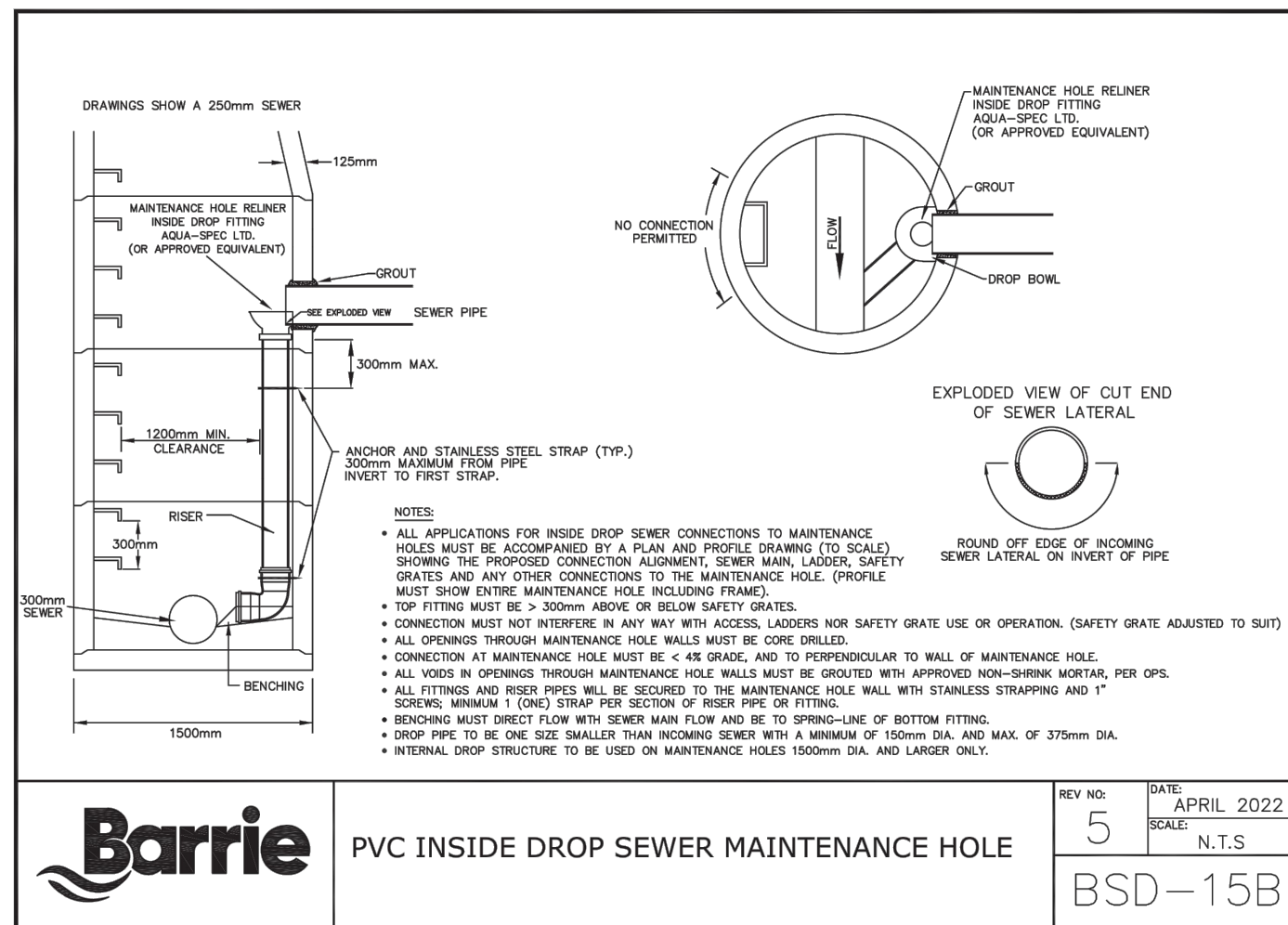
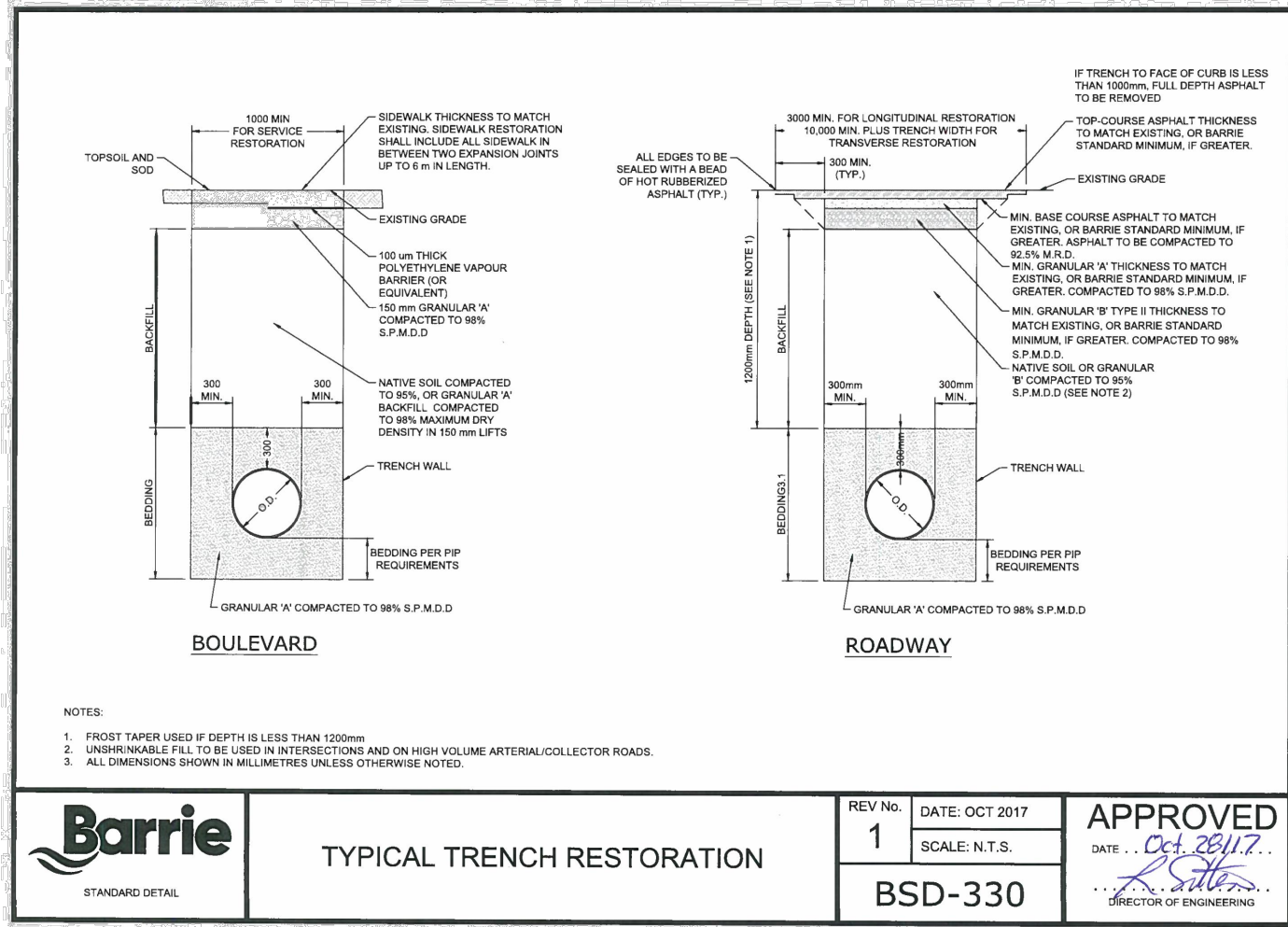
MATERIALS

- SANITARY SEWER – SDR 35 PVC, UNLESS OTHERWISE NOTED.
- SANITARY SERVICES – SDR 28 PVC – 150 mm DIA. COLOUR GREEN.
- WATERMAIN – PVC DR18 CL150 MINIMUM; DUCTILE IRON CL52 AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.
- WATER SERVICE – 50 mm TYPE 'K' (W.H.) 3RD PARTY SOFT COPPER.
- MAIN STOPS – 1" to 2" 301NL-A4B4 (NO LEAD, LIFETIME GUARANTEED AGAINST LEAD LEACHATE FROM THE CASTING), BALL STYLE C/W STAINLESS STEEL STEM, ANNA THREAD BY COMPRESSION CAMBRIDGE BRASS.
- CURB STOPS – 1" to 2" 202NL-B4B4 (NO LEAD, LIFETIME GUARANTEED AGAINST LEAD LEACHATE FROM THE CASTING), BALL STYLE WITH DRAIN C/W STAINLESS STEEL STEM, COMPRESSION JOINT CAMBRIDGE BRASS.
- VALVES – RESILIENT SEATED GATE VALVE, MECHANICAL JOINT, OPEN LEFT CLOW OR MUELLER WITH 5 SL-48 SLIDING VALVE BOX. PROVIDE VALVE STEM EXTENSIONS WHERE WATERMAIN EXCEEDS 1.7m DEPTH.
- MECHANICAL JOINT DUCTILE FITTINGS – ANWA/ANSI C153/A21.53.
- RESTRAINING GLANDS – SIGMA ONE-LOK.
- LIVE TAP SADDLES – EPOXY COATED WITH STAINLESS STEEL BOLTS.
- LIVE TAP VALVE – RESILIENT SEATED RSGV, LIVE TAP VALVE, OPEN LEFT CLOW OR MUELLER.
- FILTER FABRIC – TERRAFIX 270R OR APPROVED EQUAL.
- PERFORATED SUBDRAINS – 100mm CORRUGATED SLOTTED PE WITH GEOTEXTILE FILTER SOCK OR APPROVED EQUAL.
- STORM SEWER – PVC CERTIFIED TO CSA STANDARDS 182.2 AND 182.4 (MAX. PIPE DIAMETER 450 mm), UNLESS OTHERWISE NOTED.
- ALL SPECIFIED AGGREGATES TO OPSD 1010.

DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 0011931U460S – SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	No.	REVISION DESCRIPTION	DATE	ENGINEER STAMP	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE		DESIGN: LMB FILE: 421426 DWG: DRAWN: LMB/LC DATE: SEPT 2022 DE-1 CHECK: LC SCALE: AS NOTED		
			1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22						
DETAILS & NOTES											



DISCLAIMER AND COPYRIGHT CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED. TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.	DRAWING REFERENCES SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KRCMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.	BENCHMARK TBM#1 ELEV. 263.48 m MNR No. 0011931U460S - SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.	No.	REVISION DESCRIPTION	DATE	ENGINEER STAMP	METRO GROCERY STORE NO. 145 658 YONGE STREET CITY OF BARRIE		TATHAM ENGINEERING TYPICAL DRIVEWAY SECTIONS		DWG: DE-2
			1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22		DESIGN: LMB	FILE: 421426			
							DRAWN: LMB/LC	DATE: SEPT 2022			
							CHECK: LC	SCALE: AS NOTED			



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

DRAWING REFERENCES

SITE PLAN DESIGN SHOWN ON THIS PLAN PREPARED BY TURNER FLEISCHER ARCHITECTS INC. DATED NOVEMBER 30, 2022.

TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS PLAN COMPILED BY KROMAR SURVEYORS LTD., DATED NOVEMBER 17, 2022.

BENCHMARK

TBM#1 ELEV. 263.48 m

— SOUTHWEST CORNER OF ST. PAUL'S CRESCENT AND YONGE STREET, TABLET SET HORIZONTALLY IN NORTH FACE OF CONCRETE FOUNDATION OF ST. PAUL'S ANGLICAN CHURCH, AT NORTH-EAST CORNER (TOWER) 15.2 m WEST OF BEL POLE AND 9.2 m SOUTH-EAST OF "V" IN TWIN BIRCH TREES 15 cm BELOW BRICK.

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR SITE PLAN APPROVAL	DEC. 6/22

ENGINEER STAMP

REGISTERED PROFESSIONAL ENGINEER
B.F. SHANTON
03415/95
PROVINCE OF ONTARIO

METRO GROCERY STORE NO. 145
658 YONGE STREET
CITY OF BARRIE

BARRIE STANDARD DETAILS

TATHAM ENGINEERING

DESIGN: LMB
FILE: 421426
DRAWN: LMB/LC
DATE: SEPT 2022
CHECK: LC
SCALE: AS NOTED

DWG: DE-3