e

FUNCTIONAL SERVICING REPORT

6600 MAYFIELD ROAD

TOWN OF CALEDON
REGION OF PEEL

PREPARED FOR:

KHALSA GURMAT ACADEMY TORONTO

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
2800 HIGH POINT DRIVE, SUITE 100
MILTON, ON L9T 6P4

MAY 2025

CFCA FILE NO. 2683-7127

CROZIER

Revision Number	Date	Comments
Rev.0	May 2025	Issued for 1st Submission for Temporary ZBA

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LIST OF FIGURES

1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by Khalsa Gurmat Academy Toronto (the Client) to prepare a Functional Servicing Report in support of a Temporary Zoning-By-Law Amendment Application (ZBA) for the existing place of worship located at 6600 Mayfield Road, in the Town of Caledon (Town), Region of Peel (Region).

This report will demonstrate that the proposed development can be serviced in accordance with the Town's guidelines from a water, septic wastewater, and stormwater management perspective.

The reports, drawings, and design standards referenced during the preparation of this report includes:

- Development Standards Manual (Town of Caledon, 2019)
- Linear Wastewater Standards (Region of Peel, 2023)
- Site Plan/Topographic Survey (Alex Marton Limited, February 8, 2024)
- Site Servicing Plan Drawing A-99 (MEM Engineering Inc., June 12, 2022)
- Stormwater Management Planning and Design Manual (Ministry of Environment, Conservation, and Parks, March 2003)
- Watermain Design Criteria (Region of Peel, 2010)

2.0 Site Description

The existing property (the Site) accounts for approximately 1.09 ha and currently consists of a 1- storey brick dwelling, a prefabricated addition, paved areas, a barn, landscaped areas, and cleared vegetation. The Site, located in a mixed industrial, commercial, and residential area, is bounded by residential properties to the east and west, agricultural lands to the north, and Mayfield Road to the south.

Based on the Request for Fee Proposal prepared by KLM Planning Partners Inc., dated April 26, 2024, we understand that the scope of work will consist of a 3-year Temporary Use Zoning By-Law Amendment Application for the existing place of worship. We understand that all existing buildings on-site will be maintained.

3.0 Water Servicing

The following sections outline the water servicing for the proposed development. The Region is responsible for the operation and maintenance of the water supply servicing the proposed development. Any local water supply systems will connect to the Region's municipal water supply network.

3.1 Existing Water Servicing

An As-Constructed Drawing obtained from the Region's External Peel Asset Locator (EPAL) was used to identify the existing watermain infrastructure surrounding the Site (Site Servicing Plan, Drawing A99, Region approval date stamped July 29 2022, C603070 3rd Submission).

Based on this information, there is an existing 200 mm watermain in Mayfield Road, with an existing fire hydrant immediately southwest of the driveway entrance into the Site. There is an existing valve and box located off the property frontage with a 25 mm Type 'K' copper service. Refer to Appendix A for the As-Constructed Drawings.

3.2 Water Demand

The proposed water demand for the development was calculated according to the Region of Peel's Watermain Design Criteria (2010), with respect to an institutional building use. Table 1 summarizes the estimated design water demand.

Table 1: Estimated Design Water Demand

Municipality	Average Daily Water Demand (L/s)	Max Day Demand (L/s)	Peak Hourly Demand (L/s)
Region of Peel	0.2	0.2	0.5

As shown in Table 1, the water service for the development must support a peak hourly demand of 0.50 L/s.

3.3 Fire Flow Demand

The Fire Underwriters Survey method was used to estimate the fire flow demand for the proposed development. Flow requirements are based on the Gross Floor Area (GFA) as depicted by the Topographic Survey prepared by Alex Marton Limited (February 8, 2024). Refer to Appendix A for supporting information.

This calculation is based on the following assumptions:

- The buildings will use Combustible Construction with a Construction Coefficient of 1.5

Table 2 summarizes the estimated fire flow requirements and durations necessary to meet fire protection for the proposed development. Refer to Appendix B for detailed calculations.

Table 2: Estimated Fire Flow

Fire Flow Water Demand		Duration (hr)
(L/s)	(USGPM)	
150.00	2377.55	2.0

Note that the Fire Underwriters Survey value is a conservative estimate for comparison purposes only and the design of the fire flow of the fire protection system will be completed by others, if required.

Table 3: Total Fire Demand

Maximum Day Demand (L/s)	Fire Flow Demand (L/s)	Total Fire Demand (L/s)
0.2	150.00	150.20

As shown in Table 3, the existing building will require a total fire demand of 150.20 L/s. The Site will undergo a rezoning to accommodate the current use of the property based on the City's updated Master Plan. It is assumed the 200 mm watermain in Mayfield Road has been sized to support the updated zoning for the area including the current land use of the Site. Therefore, it is assumed there is sufficient capacity to support the 150.20 L/s of total required demand.

3.4 Proposed Water Servicing

As per As-Constructed Drawing A-99 (Site Servicing Plan, Region approval date stamped July 29 2022, C603070 3rd Submission), a 25 mm diameter Type 'K' copper watermain connects the watermain in Mayfield Road to an existing valve and box off the property frontage. An extension of this 25 mm Type 'K' copper water service is proposed from the valve and box to service the existing site.

4.0 Sanitary Servicing

The Site is in a rural area that does not currently have municipal sanitary services available. The existing building is currently serviced by an 800-gallon holding tank. It is Crozier's opinion that this tank is undersized for the sanitary sewage flow, and a new sanitary servicing solution is necessary. Therefore, the existing building will need to be serviced by a new onsite sewage system.

4.1 Sanitary Design Calculations

Through discussions with the Client, it is Crozier's understanding that the existing building is used for religious services and large group gatherings with meals provided, as well as religious teachings. The total daily design sanitary sewage flow was calculated for the existing facility in accordance with Table 8.2.1.3.B of the Ontario Building Code (OBC), Part 8, as shown in Table 4. Note assumptions regarding the occupancy of the building have been made in consultation with the client and must be confirmed during detailed design. Detailed sanitary calculations are included in Appendix C.

Table 4: Proposed Total Maximum Daily Design Sanitary Sewage Flow

Existing Facilities	**Area** (m^2)	**Unit**	**Unit Flow** (L)	**Number of Units**	**Total Flow** (L/day)
Place of Worship	n/a	Per Seat (with kitchen facilities)	36	100	3,600
Religious School	0	Per Student	30	45	1,350
				Total Daily Design Sanitary Sewage Flow:	**4,950**

Based on the results outlined in Table 4, the total daily design sanitary sewage flow is 4,950 L/day.

4.2 Proposed Sewage System

The daily design sanitary sewage flow for the existing building is approximately 4,950 L/day. Given the design flow and the available area on the northern portion of the property, septic tank pre-treatment of the sewage prior to discharge to a conventional leaching bed is proposed. As outlined in clause 8.2.2.3.(1)(b) of the OBC, non-residential occupancies require a septic tank with a minimum working capacity of three times the calculated daily design sanitary sewage flow. For the existing building, a septic tank with a minimum working capacity of 14,850 L is necessary.

The septic tank effluent will be dosed by a pump chamber to a filter bed designed in accordance with the OBC for treatment and dispersal of the effluent. There are no background studies or information currently available regarding the Site soil conditions. Based on available soil mapping resources, the native soils on the Site are presumed to be clayey-silt soils for which a preliminary T-time of 50 min/cm has been assigned. Note that this T-time is an assumption for preliminary design purposes and an analysis of the soils in the area of the proposed leaching bed will be required for detailed design. The proposed filter bed will include a stone layer, sand contact area, and sand loading area as sized and described below.

A stone layer composed of septic stone meeting the criteria outlined in Table 8.7.3.3.A., Division B of the OBC will be installed to accommodate the effluent distribution piping. The minimum stone area is calculated using the following equation:

$$A = \frac{Q}{50}$$

Where:

A = the contact area between the base of the stone layer and the filter media layer.

Q = the total design sewage flow in L/d.

Given a total daily design flow of 4,950 L/day, a minimum stone area of 99 m^2 is required. The proposed stone area is 100 m^2, which is comprised of two (2) separate 50 m^2 beds spaced 5 metres apart and each equipped with a cell of distribution piping. Each cell will be comprised of four (4) runs of 9.0 m long, 75 mm perforated distribution pipes placed at 1.2 m centers. Effluent will be conveyed to the proposed leaching bed by a 50 mm sanitary force main and distributed to each of the beds by a tee fitting.

Below the stone area is a sand contact area. The minimum contact area is calculated using the following equation:

$$A = \frac{QT}{850}$$

Where:

A = the contact area in m^2 between the base of the filter media layer and the native soil.

Q = the total design sewage flow in L/d.

T = the percolation time of the underlying soil in min/cm to a maximum of 50 min/cm.

Given a total daily design flow of 4,950 L/day and a percolation time of 50 min/cm for the underlying soils, the minimum size of the sand contact area required for the leaching bed is calculated to be 291 m^2. An area of 300 m^2 is proposed. The sand contact layer will be constructed of imported sand meeting the criteria outlined in OBC 8.7.5.3(3) with a minimum thickness of 750 mm directly below the stone layer and 250 mm surrounding the stone layer.

A loading area that surrounds the sand contact area and extends at least 15 m in the downgradient direction of the last distribution pipe in the stone layer is required. The minimum loading area is determined using Table 8.7.4.1 of the OBC. For the proposed system, the loading area is calculated using the following equation:

$$A = \frac{Q}{6}$$

Where:

A = the contact area in m^2 between the base of the loading area and the native soil.

Q = the total design sewage flow in L/d.

Given a total daily design flow of 4,950 L/day and a percolation time of 50 min/cm for the underlying soils, the minimum size of the loading area required for the leaching bed is calculated to be 825 m^2. An area of 840 m^2 is proposed. The loading area will be constructed of imported sand with a percolation rate of 6-10 min/cm with a minimum thickness of 250 mm.

Refer to Figure A for details regarding the layout, orientation, and size of the proposed leaching bed.

5.0 Drainage Conditions

The following Sections 5 and 6 outline the stormwater drainage conditions and design for the proposed development. The City of Brampton is responsible for the operation and maintenance of the surrounding existing stormwater infrastructure.

5.1 Existing Drainage Conditions

Based on the topographic survey (Alex Marton Limited, project number 2022-003, dated February 2024) and site walk, the Site consists of one catchment that drains south into the northern ditch of Mayfield Road. This ditch conveys the drainage into a creek southeast of the Site. There is an existing floodplain east of the property, regulated by the Toronto and Region Conservation Authority (TRCA).

5.2 Proposed Drainage Conditions

No modifications are proposed to alter the current drainage on the property, due to no material changes to the Site and an adequate existing flow condition at the time of this application.

6.0 Erosion and Sediment Control During Construction

Erosion and sediment controls are recommended to be installed prior to the commencement of any construction activities and will be maintained until the Site is stabilized or as directed by the Site Engineer and/or the Town. Controls will be inspected after each significant rainfall event and maintained in proper working condition.

The following sediment and erosion controls are recommended during construction on the Site:

Silt Fencing

Silt fencing will be installed around the perimeter of the Site to intercept sheet flow. Additional silt fencing may be added based on field decisions by the Site Engineer and Owner, prior to, during and following construction.

Silt Sacks in Catchbasins

A silt sack will be installed in the existing nearby catchbasins. The filter cloth will provide sediment control to prevent silt and sediment from entering the stormwater system.

7.0 Conclusions and Recommendations

Based on the information provided in this report, we offer the following conclusions:

1. Water servicing for the proposed development is to be provided through the existing 25 mm diamond copper service connection. An identical 25 mm type 'k' copper watermain service is proposed to be installed that extends from the existing building to Mayfield Road.

1. Municipal servicing infrastructure is not available for the Site and therefore the existing site will be serviced by an onsite sewage system consisting of a septic tank, pump chamber and filter bed. Background information on the Site soils is not available at this time, however soil mapping resources indicate native soils that are primarily classified as clayey-silt soils. For preliminary design purposes, a T-time of 50 min/cm has been assigned. The total daily design sanitary sewage flow is 4,950 L/day. Septic tank effluent will be discharged to a filter bed with a total stone area of 100 m^2, contact area of 300 m^2, and loading area of 840 m^2.

2. Site drainage based on the existing topography and site visit is adequate for the current use of the site.

3. Erosion and Sediment Controls, such as silt fencing and silt sacks, are recommended to be installed prior to the commencement of any construction activities.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.

Justin Lawrence, P.Eng.
Project Engineer, Land Development

C.F. CROZIER & ASSOCIATES INC.

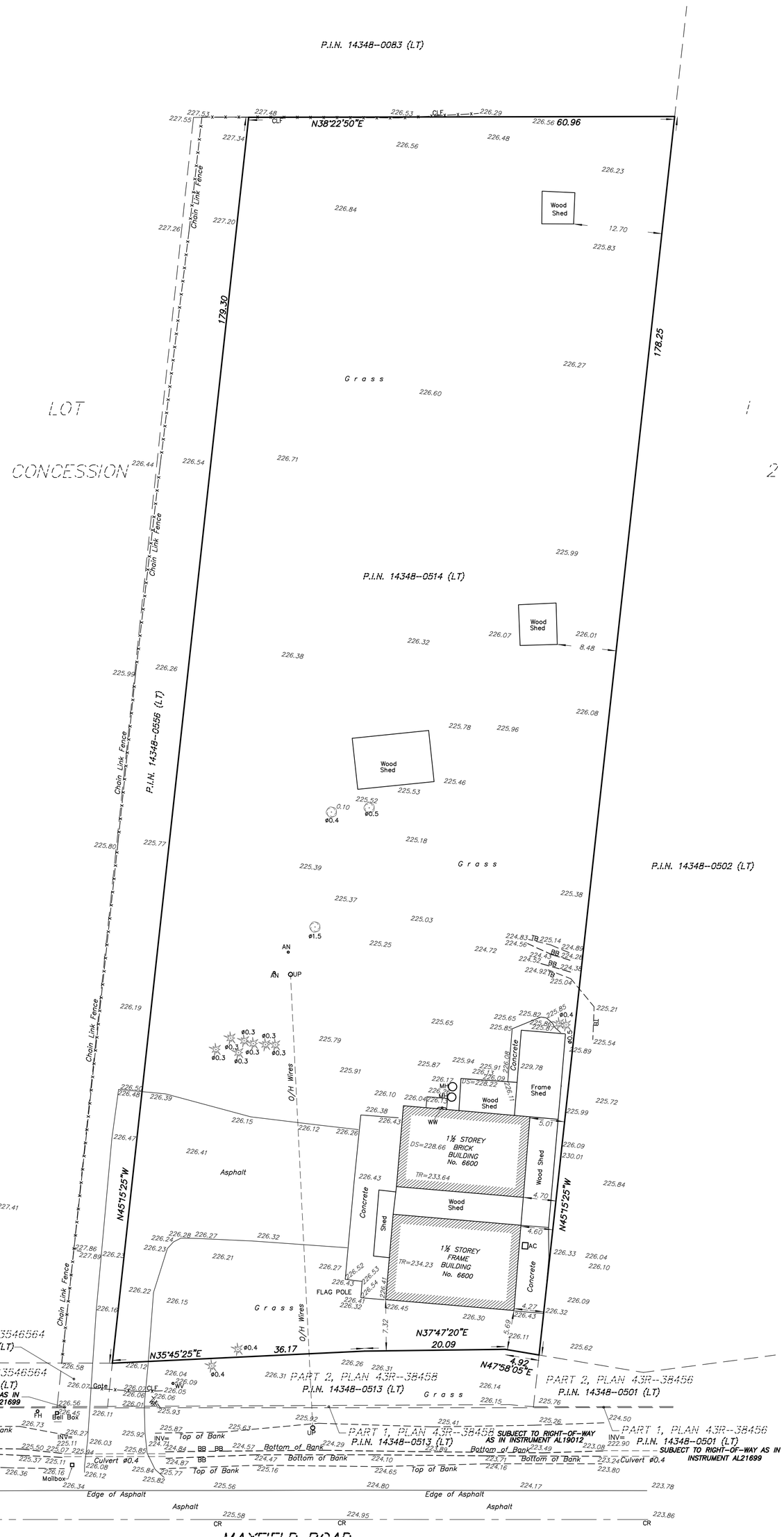
Peter Smuczak, P.Eng.
Project Manger, Land Development

JL/cj

J:\2683 - Khalso Gurmat Academy Toronto\7127 - 6600 Mayfield Road\Reports\2025.05.20 _(2683-7127) _FSR Report - Final.docx

APPENDIX A

Background Documentation



TOPOGRAPHIC SURVEY OF
PART OF LOT 1
CONCESSION 2
TOWN OF CALEDON
(REGIONAL MUNICIPALITY OF PEEL)

SCALE 1 : 400

10 0 10 20 30 40 metres

ALEX MARTON LTD.
ONTARIO LAND SURVEYORS

METRIC

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

ELEVATION NOTE

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM GPS OBSERVATIONS USING REAL TIME NETWORK OBSERVATIONS.

LEGEND

MH	DENOTES	MANHOLE
TR	"	TOP PF ROOF
WV	"	WATER VALVE
AN	"	ANCHOR
AC	"	AIR CONDITIONER
UP	"	UTILITY POLE
DS	"	DOOR SILL
CR	"	CENTERLINE
FH	"	FIRE HYDRANT
TB	"	TOP OF BANK
BB	"	BOTTOM OF BANK
CLF	"	CHAIN LINK FENCE
WF	"	WIRE FENCE
WW	"	WINDOW WELL
O/H	"	OVERHEAD
PIN	"	PROPERTY IDENTIFIER NUMBER
ø	"	DIAMETER
	"	DECIDUOUS TREE
	"	CONIFEROUS TREE

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
THE FIELD OBSERVATIONS REPRESENTED ON THIS PLAN WERE COMPLETED ON THE 9TH DAY OF JANUARY, 2024.

FEBRUARY 8, 2024
DATE

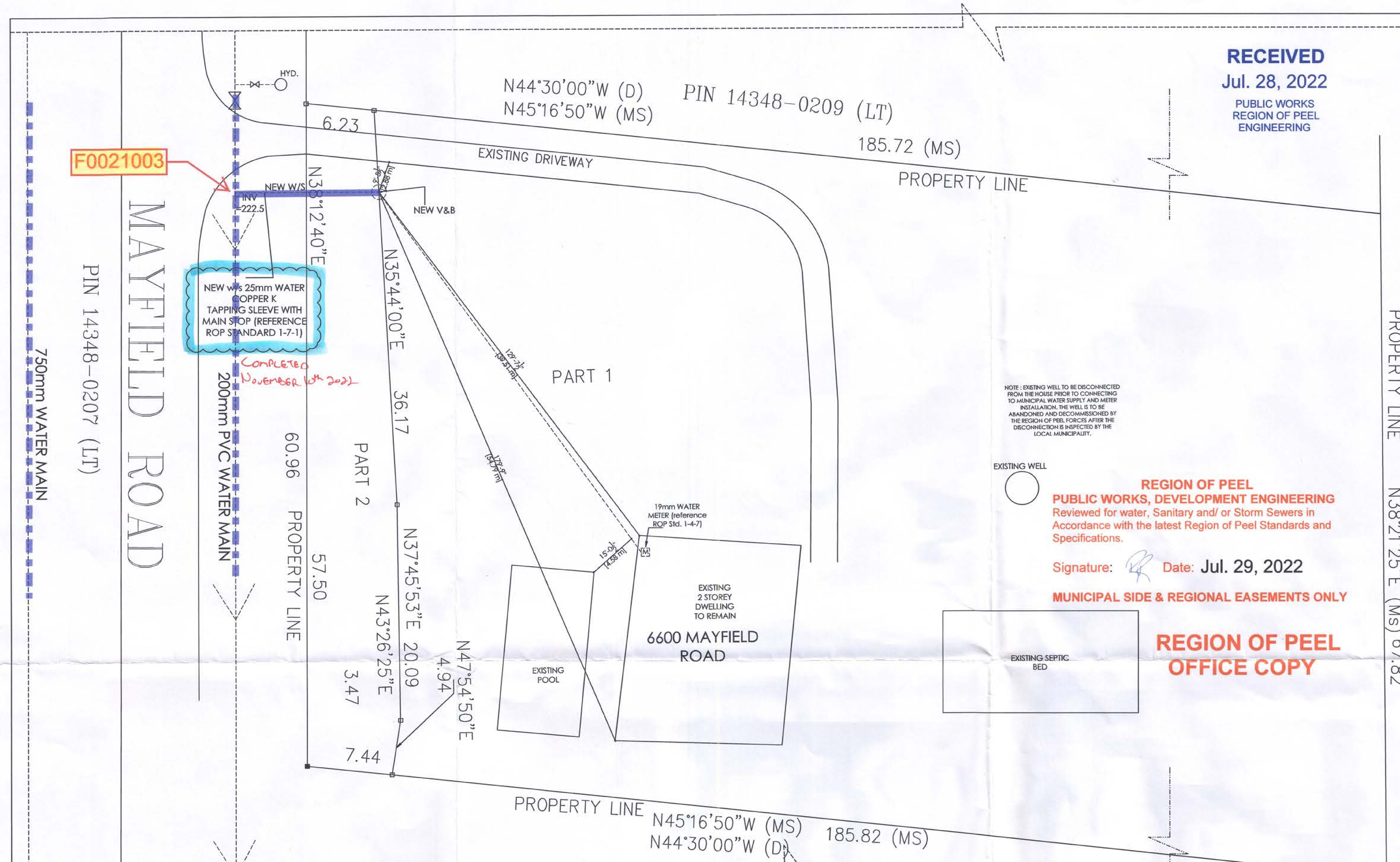
ALEX MARTON
ONTARIO LAND SURVEYOR

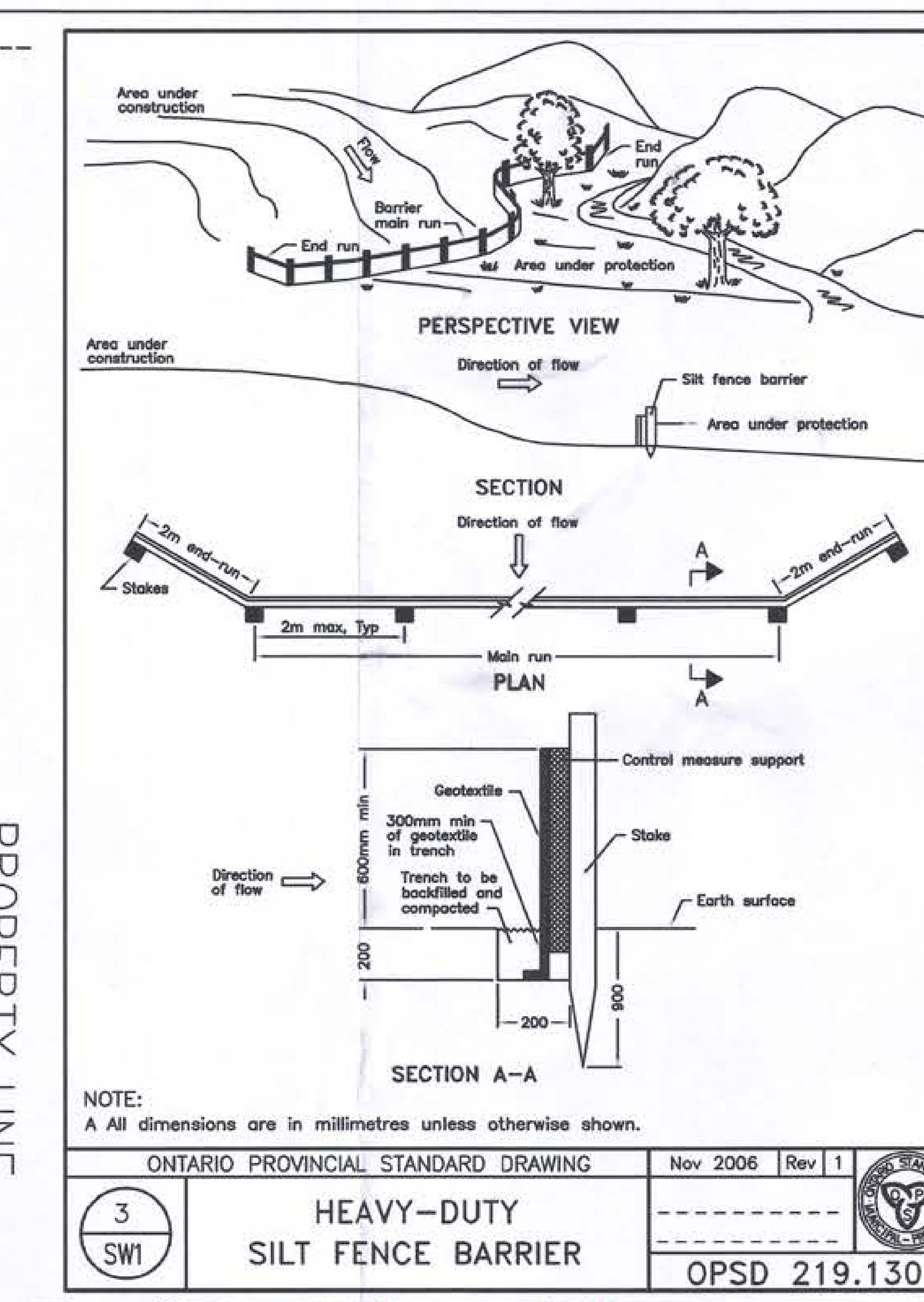
CAUTION

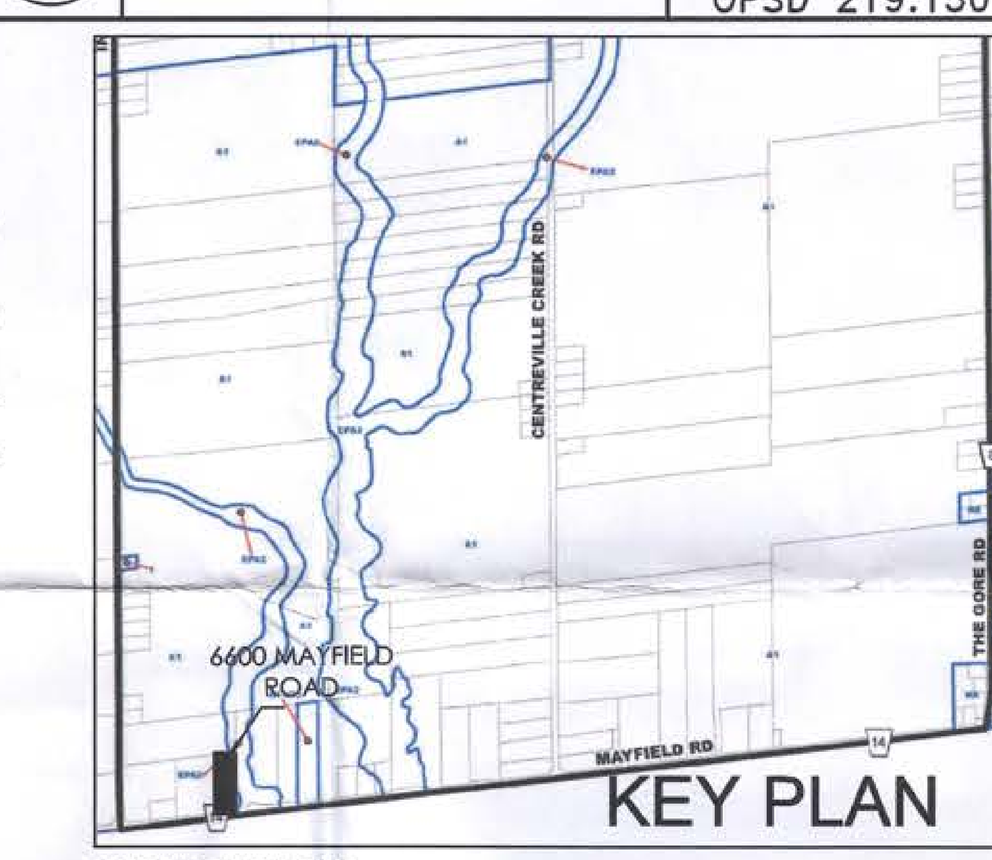
THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED FOR MORTGAGE OR TRANSACTION PURPOSES.

ALEX MARTON LIMITED
ONTARIO LAND SURVEYORS
160 APPLEWOOD CRESCENT, UNIT 8,
CONCORD, ONTARIO, L4K 4H2
PHONE: 905-879-9889 FAX: 905-879-0770
E-MAIL: alex@amsurveying.ca
WEBSITE: www.amsurveying.ca

PARTY CHIEF: C.P.	FILE NAME: 2024-003.DWG
DRAWN : X.Z	PLOT SCALE: 1:400
CHECKED : A.M.	PROJECT No. 2022-003







SITE PLAN

SC: 1:200

All damaged or disturbed areas within the municipal right-of-way are to be reinstated at the applicant's expense. All landscaping and grading within close proximity to the proposed access points is to be designed to ensure that adequate sight distances are available for all approaching and exiting motorists and pedestrians. The portion of the driveway within the municipal boulevard is to be paved by the applicant. Driveway accesses shall maintain a 1.5m setback from aboveground features such as utilities and trees. Any above ground utilities located within 1.5m of a proposed access are to be relocated at the applicant's expense.

All asphalt and base materials of the existing driveway being removed are to be reinstated with topsoil and sod. Additional securities may be required as part of the Grading Deposit which will subsequently be quoted and administered by the Development Construction Section.

NOTE

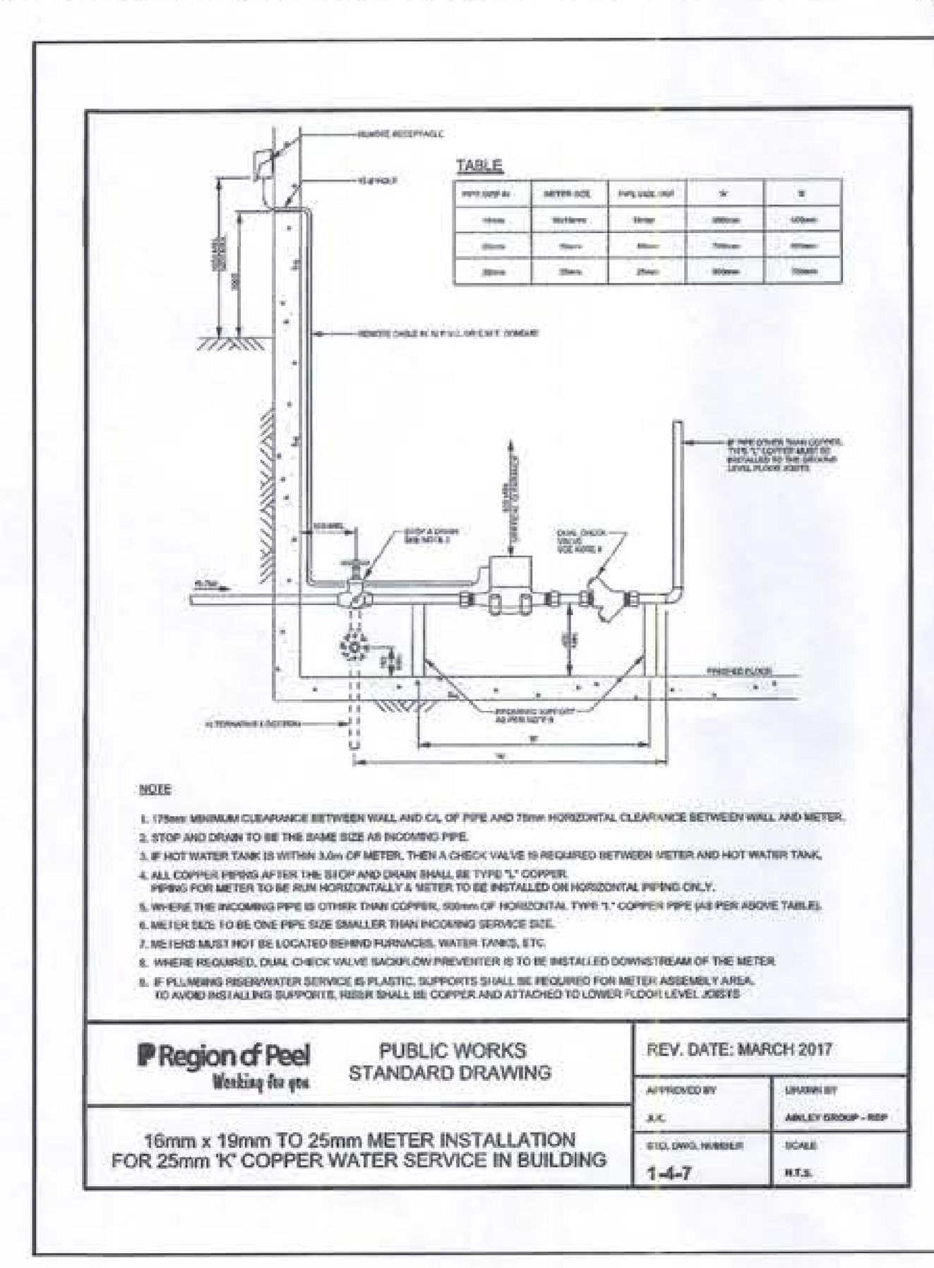
This is not a plan of Survey. This is for site and grading purpose

NOTE

IT IS THE BUILDER'S RESPONSIBILITY TO ENSURE GRAVITY FLOW OF THE SANITARY SEWER FROM PROPOSED BASEMENT FLOOR ELEVATION. IF THE GRAVITY CONNECTION CANNOT BE ACHIEVED FROM THE PROPOSED BASEMENT ELEVATION, AS SEWAGE EJECTOR PUMP IS TO BE INSTALLED AS PER OBC. AND MUNICIPAL REQUIREMENT.

THE LOCATION OF ALL UNDERGROUND AND ABOVEGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE LOCATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CONTRACTOR TO VERIFY EXISTING STORM AND SANITARY SERVICE INVERTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.



Downspouts are to splash to grade, and where possible, the discharge is to be directed towards the road.
"The Owner is responsible for ensuring that tree protection hoarding is mentioned throughout ell phases of demolition and construction in the location and condition as approved by the Planning and Building Department. No materials (building materials, soil, etc.) may be stockpiled within the area of hoarding. Failure to maintain the hoarding as originally approved or the storage of materials within the hooding will be cause for the Letter of Credit to be held for two (2) years following completion of all site works.

All damaged or disturbed areas within the municipal right-of-way are to be reinstated at the applicant's expense.
All landscaping and grading within close proximity to the proposed access points is to be designed to ensure that adequate sight distances are available for all approaching and exiting motorists and pedestrians. * The portion of the driveway within the municipal boulevard is to be paved by the applicant. Driveway accesses shall maintain a 1.5m setback from aboveground features such as utilities and trees. Any above ground utilities located within 1.5m of proposed access are to be relocated at the applicant's expense.

"Works in the municipal right-of-way being performed by the City's contractor will require 4 to 6 weeks notice prior to commencement of construction after all drawings hove been approved and securities have been received."
The applicant is to indicate in their submission package for the right-of-way works the ideal timing for these works to be constructed.

"All surface drainage will be self contained, collected and discharged at a location to be approved prior to the issuance of a building permit."
"The portions of the driveway within the municipal boulevard will be paved by the applicant. "At the entrances to the site, the municipal curb and sidewalk will be continuous through the driveway and a curb depression will be provided for each entrance. "All proposed curbing within the Municipal boulevard area for the site is to suit as follows: c) for all single family residential properties including on street townhouses, all curbing is to stop at the property limit or the bock of the Municipal sidewalk, whichever is applicable, or, b) for all other proposals including Industrial, Commercial and Condominium developments, all entrances to the site are to be in accordance with O.P.S.D.350.010.' "All excess excavated material will be removed from the site. "The existing drainage potter will be maintained except where noted. "The applicant will be required to contact all Utility Companies to obtain all required locates prior to the installation of hoarding within the Municipal right of way. "The applicant will be responsible for the cost of any utility relocations necessitated by the site plan.
"Prior to construction taking place, all required hoarding in accordance with the Ontario Occupational Health & Softy Act and regulations for construction projects must be erected and then maintained throughout all phases of construction"

"Hoarding must be inspected prior to removal of any tree protection hoarding from the site

"The proposed development of the subject site may negatively impact the root zones of nearby trees on adjacent property and ultimately damage the trees. The owner should take all reasonable steps to minimize disturbance to the adjacent trees root zones that are within the subject site.

C603070 3rd Submission

REGIONAL OF PEEL NOTES

1. All materials and construction methods must correspond to the current Peel Public Works standards and specifications.

2. Watermain and / or water service materials 100 mm (4") and larger must be DR 18 P.V.C. pipe manufactured to A.W.W.A. spec. C900-16 spec complete with tracer wire. Size 50 mm (2") and smaller must be Type 'K' soft copper pipe per A.S.T.M. B88-49 Specification.

3. Watermains and / or water services are to have a minimum cover of 1.7 m (5'6") with a minimum horizontal spacing of 1.2 m (4') from themselves and all other utilities.

4. Provisions for flushing water line prior to testing, etc. must be provided with at least a 50 mm (2") outlet on 100 mm (4") and larger lines. Copper lines are to have flushing points at the end, the same size as the line. They must also be hosed or piped to allow the water to drain onto a parking lot or down a drain. On fire lines, flushing outlet to be 100 mm (4") diameter minimum on a hydrant.

5. All curb stops to be 3.0 m (10') off the face of the building unless otherwise noted.

6. Hydrant and valve set to Region standard 1 - 6 - 1 Dimension A and B, 0.7 m (2') and 0.9 m (3') and to have pumper nozzle.

7. Watermains to be installed to grades as shown on approved site plan. Copy of grade sheet must be supplied to inspector prior to commencement of work, where requested by inspector.

8. Watermains must have a minimum vertical clearance of 0.3 m (12") over / 0.5 m (20") under sewers and all other utilities when crossing.

9. All proposed water piping must be isolated from existing lines in order to allow independent pressure testing and chlorinating from existing systems.

10. All live tapping and operation of Region water valves shall be arranged through the Regional Inspector assigned or by contacting the Operations and Maintenance Division.

11. Location of all existing utilities in the field to be established by the contractor.

12. The contractor(s) shall be solely responsible for locates, exposing, supporting and protecting of all underground and overhead utilities and structures existing at the time of construction in the area of their work whether shown on the plans or not and for all repairs and consequences resulting from damage to same.

13. The contractor(s) shall be solely responsible to give 72 hours written notice to the utilities prior to crossing such utilities, for the purpose of inspection by the concerned utility. This inspection will be for the duration of the construction, with the contractor responsible for all costs arising from such inspection.

14. All proposed water piping must be isolated through a temporary connection that shall include an appropriate cross-connection control device, consistent with the degree of hazard, for backflow prevention of the active distribution system, conforming to Region of Peel standards 1-7-7 or 1-7-8.

General Notes

* CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK SITE AND REPORT DISCREPANCIES TO THE CONSULTANTS BEFORE PROCEEDING.
* ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF CONSULTANTS AND MUST BE RETURNED AT THE COMPLETION OF WORK.
* THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE CONSULTANT.

Inspector's Drawings
Contractor: PU Drain Services
Date: November 10th 2022
Inspector: Baswoan Prester
Signature: [signature]

LEGENDS:-

■	DENOTES	SURVEY MONUMENT FOUND
□	"	SURVEY MONUMENT SET
SIB	"	STANDARD IRON BAR
IP	"	IRON PIPE
N,E,S,W	"	NORTH, EAST, SOUTH, WEST
D	"	INST. NO. 107173VS
CC	"	CUT CROSS
WIT	"	WITNESS
MS	"	MEASURED
OU	"	ORIGIN UNKNOWN
IB	DENOTES	IRON BAR
BF	"	BOARD FENCE
CLF	"	CHAIN LINK FENCE
SF	"	SNAKE FENCE
DT.	"	DECIDUOUS TREE
CT.	"	CONIFEROUS TREE
RW	"	RETAINING WALL
HP/LP	"	HYDRO POLE/LAMP POST
OHW	"	OVERHEAD WIRE
GM	"	GAS METER
DS	"	DOOR SILL
O/L	"	ON LINE
MH	"	MANHOLE
CB	"	CATCH BASIN
PROD'N	"	PRODUCTION
NTS	"	NOT TO SCALE
CALC.	"	CALCULATED
HYD. ○		FIRE HYDRANT
⋈		VALVE
M		WATER METER

REVISION

NO.	DATE	DESCRIPTION	BY
0	2022-06-12	FOR ROP REVIEW	
01	2022-07-08	FOR ROP REVIEW	
02	2022-07-26	FOR ROP REVIEW	

Firm Name and Address

MEM ENGINEERING INC
2355 DERRY ROAD EAST,
MISSISSAUGA, ON, L5S 1V6
416-558-6755
Email:harry@memengineering.ca

LICENSED PROFESSIONAL ENGINEER
H.SINGH
100156144
2022/07/28
PROVINCE OF ONTARIO

PROJECT TITLE:
6600 Mayfield Rd,
Brampton, ON L6P 0H8

SHEET TITLE:
SITE SERVICING PLAN

CLIENT EMAIL:

CLIENT CONTACT:

SCALE:

DRAWING NO.:

PLOT DATE:

DRAWN BY:
AR

CHECKED BY:
HS

A99

APPENDIX B

Water Servicing Supporting Calculations

Project: 6600 Mayfield Road
Project No.: 2683-7127

Created By: JL
Checked By: PS

Date: 2025.05.21
Updated: 2025.05.21

Domestic Water Demand - Proposed Conditions

Total Site Area:	1.09	ha
Population:	50	persons

Design Parameters

Average Demand (L/capita/d)
300

Water Demand:

Average Daily Demand =		15,000	L/day
=	**0.2**		**L/s**
Peaking Factors (ICI)			
Max Day =	1.40		
Peak Hour =	3.00		
Average Day =	**0.2**		**L/s**
Max Day =	**0.2**		**L/s**
Peak Hour =	**0.5**		**L/s**

Municipality	**Average Daily Water Demand** (L/s)	**Max Day Demand** (L/s)	**Peak Hourly Demand** (L/s)
Region of Peel	0.2	0.2	0.5

Notes & References

Average Demand from Section 2.3 of Region of Peel Watermain Design Criteria (Revised June 2010)

Peaking Factors from Section 2.3 of Region of Peel Watermain Design Criteria (Revised June 2010)

Max Day = Average Day Demand * Max Day
Peak Hour = Average Day Demand * Peak Hour

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

$$F = 220 * C * \sqrt{A}$$

where

F = the required fire flow in litres per minute
C = coefficient related to the type of construction
= 1.5 for wood frame construction (structure essentially all combustible)
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
= 0.8 for non-combustible construction (unprotected metal structural components)
= 0.6 for fire-resistive construction (fully protected frame, floors, roof)
A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building considered.

Existing Building		Wood Frame **1.5 C**
705.24	sq.m. floor area of largest floor	Per Topographic Survey provided by Alex Marton Limited dated Februray 8, 2024.
N/A	25% of immediately adjoining floor	"Non-combustible; fire breaks between each storey; fire resistive construction"
705.24	Total Area	

Therefore F= 9,000 L/min (rounded to nearest 1000 L/min)

Fire flow determined above shall not exceed:
30,000 L/min for wood frame construction
30,000 L/min for ordinary construction
25,000 L/min for non-combustible construction
25,000 L/min for fire-resistive construction

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Buring	25%
Combustible	No Charge		

Combustible	0% reduction

0 L/min reduction

Therefore UPDATED F= 9,000 L/min (rounded to nearest 1000 L/min)

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduce by up to 50% for complete automatic sprinkler protection.

Sprinkler System Assume 0% reduction, since there are no sprinklers.

0 L/min reduction

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 45 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) esposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

Separation	Charge	Separation	Charge
0 to 3 m	25%	20.1 to 30 m	10%
3.1 to 10 m	20%	30.1 to 45 m	5%
10.1 to 20 m	15%		

Exposed buildings

Name	**Distance (m)**		
North	38	5%	450
South	80	0%	0
East	60	0%	0
West	100	0%	0
			450 L/min Surcharge

Determine Required Fire Flow

No.1	9,000		
No. 2	0	reduction	
No. 3	0	reduction	
No. 4	450	surcharge	
Required Flow:	**9,450 L/min**		
Rounded to nearest 1000l/min:	**9,000 L/min**	or	**150.0 L/s**
			2,377.55 USGPM

Required Duration of Fire Flow

Flow Required L/min	Duration (hours)
2,000 or less	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	**2.0**
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and over	9.5

APPENDIX C

Sanitary Servicing Supporting Calculations

ONSITE SEWAGE SYSTEM NON-RESIDENTIAL CALCULATION SHEET

CROZIER CONSULTING ENGINEERS

Project Name: 6600 Mayfield Road
Project Number: 2683-7127
Date: 13-May-25
Designed By: KW
Checked By: KR

PRELIMINARY FLOW ESTIMATES

input required

Description	Area (m^2)	Unit	Unit Flow	Number of Units	Total Flow (L/day)	References/Notes
Existing Facilities						
Church / Place of Worship	n/a	Per Person	36	100	3,600	Assuming a maximum of 50 people per event, with two events per day.
Religious School / Teachings	n/a	Per Student	30	45	1,350	Assuming a maximum of 45 students
					4,950	
				Design Sewage Flow:	4,950	

Pre-Treatment Options

Required septic tank size =	14850	L minimum
Propose Level IV Treatment (Y/N):	N	

Native Percolation time, T =	50	min/cm
Imported Percolation time =	10	min/cm

Filter Bed

Minimum required contact area =	99	m^2
Required extended contact area =	291	m^2
Maximum loading rate =	6	$L/m^2/day$
Minimum loading area =	825	m^2

FIGURES

Figure A: Site Servicing Concept

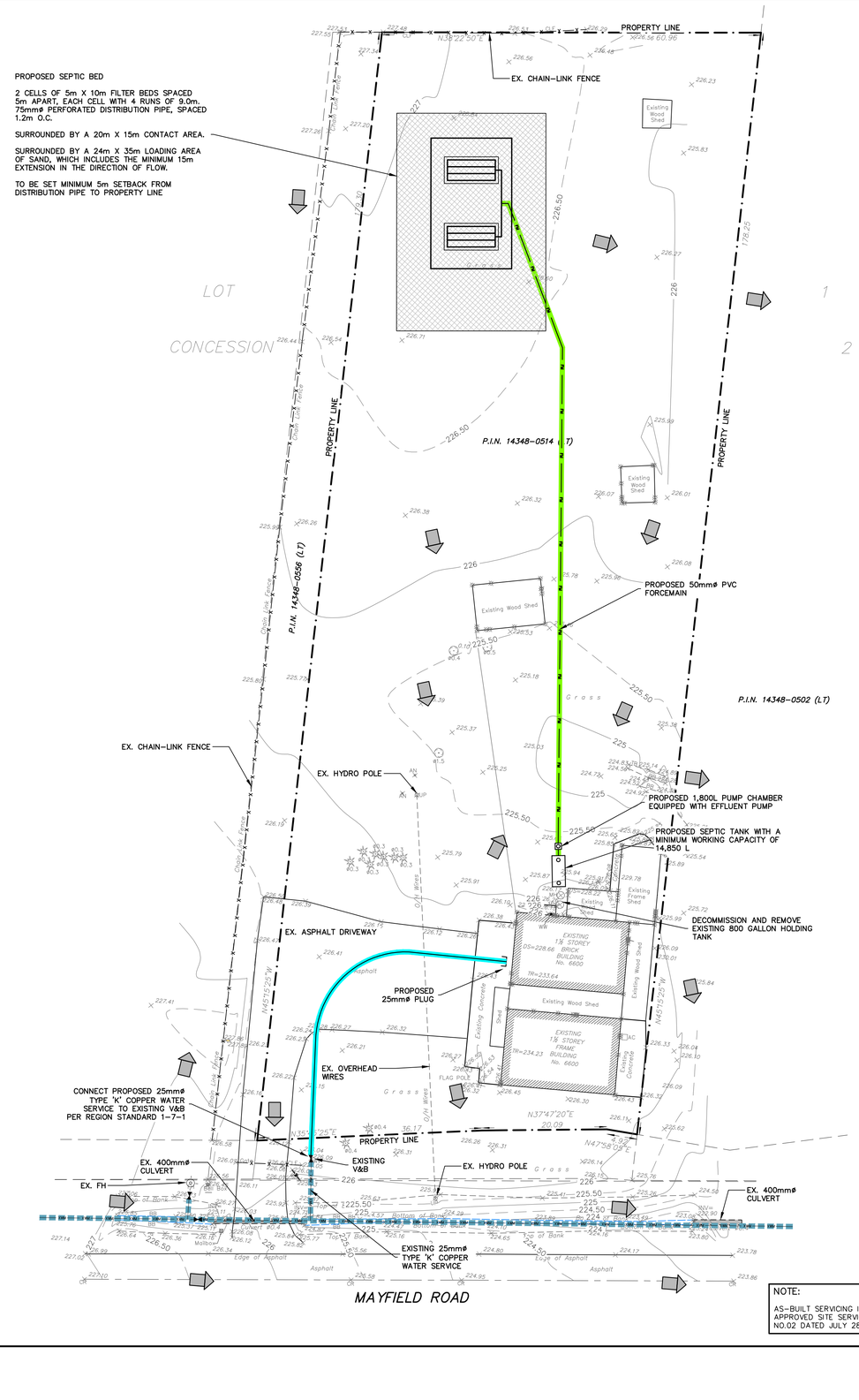
PROPOSED SEPTIC BED

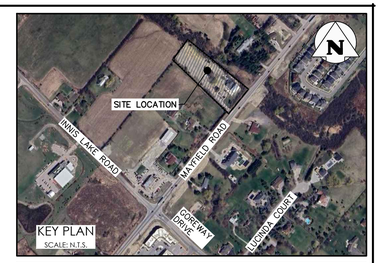
2 CELLS OF 5m X 10m FILTER BEDS SPACED 5m APART, EACH CELL WITH 4 RUNS OF 9.0m. 75mmø PERFORATED DISTRIBUTION PIPE, SPACED 1.2m O.C.

SURROUNDED BY A 20m X 15m CONTACT AREA.

SURROUNDED BY A 24m X 35m LOADING AREA OF SAND, WHICH INCLUDES THE MINIMUM 15m EXTENSION IN THE DIRECTION OF FLOW.

TO BE SET MINIMUM 5m SETBACK FROM DISTRIBUTION PIPE TO PROPERTY LINE





LEGEND

- PROPERTY LINE
- EXISTING DITCH
- EXISTING FENCE
- EXISTING GRADE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- EXISTING DITCH
- EXISTING OVERLAND FLOW DIRECTION
- EXISTING GRADE
- EXISTING WATERMAIN & GATE VALVE
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED WATER SERVICE LATERAL (XXmmø)
- EXISTING FIRE HYDRANT
- PROPOSED SEPTIC SERVICE

NOTE:

AS-BUILT SERVICING INFORMATION OBTAINED FROM THE APPROVED SITE SERVICING PLAN, DRAWING NO. A99, REV NO.02 DATED JULY 28, 2022, REGION FILE NO. C603070

SCALE: 1:400

NOT FOR CONSTRUCTION

Stamp

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

No.	ISSUE / REVISION	YYYY/MMM/DD
0	ISSUED FOR SUBMISSION	2025/MAY/21

ELEVATION NOTE:

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE DERIVED FROM GPS OBSERVATIONS USING REAL TIME NETWORK OBSERVATIONS.

SURVEY NOTES:

TOPOGRAPHIC INFORMATION BASED ON PLAN BY ALEX MARTON LIMITED, ONTARIO LAND SURVEYORS.
DATED FEBRUARY 8, 2024.
FILE NAME: 2024-003.DWG
PROJECT No. 2022-003

DRAWING NOTES:

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project

6600 MAYFIELD ROAD
TOWN OF CALEDON

Drawing

SITE SERVICING CONCEPT

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905875-0026 T
905875-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.
M.I.M.	M.I.M./P.S.	2683-7127
Check	Check	Scale / Dwg.
P.S.	P.S.	1:400 / FIG A