

Committee of Adjustment Application to Planning Department

Complete Application

A complete Committee of Adjustment application consists of the following:

1. A properly completed and signed application form (signature must on original version);
2. Supporting information adequate to illustrate your proposal as listed in **Section H** of this application form (plans are required in paper copy and digital PDF format);
3. Written authorization from all registered owners of the subject lands where the applicant is not the owner as per Section N; and,
4. Cash, debit or cheque payable to Norfolk County in the amount set out in the Norfolk County User Fees By-Law.

Planning application development fees are not required with the submission of your completed and signed development application. Your planning application fee will be determined by the planner when your application has been verified and deemed complete. Prepayments will not be accepted.

5. Completed applications are to be mailed to the attention of **Secretary Treasurer – Committee of Adjustment**: 185 Robinson Street, Suite 200, Simcoe, ON N3Y 5L6 or email your application committee.of.adjustment@norfolkcounty.ca. Make sure submissions are clearly labelled including address, name, and application type. Failure to do so may impact the timing of your application.

The above listed items are required to ensure that your application is given full consideration. An incomplete or improperly prepared application will not be accepted and may result in delays during the processing of the application. This application must be typed or printed in ink and completed in full.

Please review all of the important information summarised below.

Before your Application is Submitted

A pre-consultation meeting is not usually required for Committee of Adjustment applications; however, discussion with Planning Department staff prior to the submission of an application is **strongly encouraged**. The purpose of communicating with a planner **before** you submit your application is: to review your proposal / application, to discuss potential issues; and to determine the required supporting information and materials to be submitted with your application before it can be considered complete by staff. You might find it helpful to retain the services of an independent professional (such as a registered professional planner) to help you with your application. Information about the Official Plan and Zoning By-law can be found on the County website: www.norfolkcounty.ca/planning

After Your Application is Submitted

Once your payment has been received and the application submitted, in order for your application to be deemed complete all of the components noted above are required.

Incomplete applications will be identified and returned to the applicant. The *Planning Act* permits up to 30 days to review and deem an application complete.

Once your application has been deemed complete by the Planning Department, it is then circulated to public agencies and County departments for review and comment. A sign is also provided that is required to be posted on the subject lands that summarizes the application and identifies the committee meeting date. The comments received from members of the community will be included in the planning report and will inform any recommendations in relation to the application.

If the subject lands are located in an area that is regulated by either the Long Point Region Conservation Authority or by the Grand River Conservation Authority an additional fee will be required if review by the applicable agency is deemed necessary. A separate cheque payable to the Long Point Region Conservation Authority or the Grand River Conservation Authority is required in accordance with their fee schedule at the same time your application is submitted.

Additional studies required as part of the complete application shall be at the sole expense of the applicant. In some instances peer reviews may be necessary to review particular studies and that the cost shall be at the expense of the applicant. The company to complete the peer review shall be selected by the County.

If the application is withdrawn prior to the circulation to commenting agencies, the entire original fee will be refunded. If withdrawn after the circulation to agencies, half the original fee will be refunded. No refund is available after the public meeting and/or approval of application.

Notification Sign Requirements

Planning Department staff may post a notification sign on your property in advance of the public meeting on your behalf. Please keep this sign posted until you have received a notice in the mail indicating that the Secretary Treasurer received no appeals. However, it is the applicant's responsibility to ensure that the sign is correctly posted within the statutory timeframes, according to the *Planning Act*. Failure to post a sign in advance of the public meeting in accordance with statutory requirements will impact the timing of your application at the Committee of Adjustment meeting. Applicants are responsible for removal of the sign following the appeal period. The signs are recyclable and can be placed in your blue box.

Contact Us

For additional information or assistance in completing this application, please contact a planner at 519-426-5870 ext. 1842 or Committee.of.Adjustment@NorfolkCounty.ca



For Office Use Only:

File Number	_____	Application Fee	_____
Related File Number	_____	Conservation Authority Fee	_____
Pre-consultation Meeting	_____	Well & Septic Info Provided	_____
Application Submitted	_____	Planner	_____
Complete Application	_____	Public Notice Sign	_____

Check the type of planning application(s) you are submitting.

- ☒ Consent/Severance/Boundary Adjustment
☐ Surplus Farm Dwelling Severance and Zoning By-law Amendment
☐ Minor Variance
☐ Easement/Right-of-Way

Property Assessment Roll Number: 331049302011400

A. Applicant Information

Clarence Boer Construction Limited

Name of Owner

It is the responsibility of the owner or applicant to notify the planner of any changes in ownership within 30 days of such a change.

Address	<u>59 Decou Road</u>
Town and Postal Code	<u>Simcoe, ON N3Y 4E2</u>
Phone Number	<u>519-426-1685</u>
Cell Number	<u>519-861-0915</u>
Email	<u>boerhomes@live.com</u>

Name of Applicant Henry Boer (as above)

Address	_____
Town and Postal Code	_____
Phone Number	_____
Cell Number	_____
Email	_____

Name of Agent	Mary Elder, Elder Plans Inc.
Address	32 Miller Cres
Town and Postal Code	Simcoe, ON N3Y 4R1
Phone Number	
Cell Number	519-429-4933
Email	Elderplans2018@gmail.com

Please specify to whom all communications should be sent. Unless otherwise directed, all correspondence and notices in respect of this application will be forwarded to the owner and agent noted above.

☒ Owner ☐ Agent ☒ Applicant

Names and addresses of any holder of any mortgagees, charges or other encumbrances on the subject lands:

B. Location, Legal Description and Property Information

1. Legal Description (include Geographic Township, Concession Number, Lot Number, Block Number and Urban Area or Hamlet):

CHR CON 9 PT LOT 13

Municipal Civic Address: 1904 Turkey Point Road

Present Official Plan Designation(s): Hamlet residential

Present Zoning: Hamlet Residential - to be completed shortly through ZNPL2024396

2. Is there a special provision or site specific zone on the subject lands?

☐ Yes ☒ No If yes, please specify:

 3. Present use of the subject lands:
 residential

4. Please describe **all existing** buildings or structures on the subject lands and whether they are to be retained, demolished or removed. If retaining the buildings or structures, please describe the type of buildings or structures, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application:

all buildings shown on survey sketch are to be demolished.

5. If an addition to an existing building is being proposed, please explain what it will be used for (for example a bedroom, kitchen, or bathroom). If new fixtures are proposed, please describe.

6. Please describe **all proposed** buildings or structures/additions on the subject lands. Describe the type of buildings or structures/additions, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application:

two lots are proposed, each with a new single detached dwelling, all RH provisions can be met.

7. Are any existing buildings on the subject lands designated under the *Ontario Heritage Act* as being architecturally and/or historically significant? Yes ☐ No ☒

If yes, identify and provide details of the building:

8. If known, the length of time the existing uses have continued on the subject lands:
more than 20 years

9. Existing use of abutting properties:

Hamlet residential

10. Are there any easements or restrictive covenants affecting the subject lands?

☐ Yes ☒ No If yes, describe the easement or restrictive covenant and its effect:

C. Purpose of Development Application

Note: Please complete all that apply. **Failure to complete this section will result in an incomplete application.**

1. Site Information (Please refer to Zoning By-law to confirm permitted dimensions)

	Existing	Permitted	Provision	Proposed	Deficiency
Lot frontage	62.39 m	30 m	5.7.2 b)	Part 1 -31.19 m	
Lot depth	128.43 m			128.43 m	
Lot width	62.35 m			31.12 m	
Lot area	0.80 ha	0.40 ha	5.7.2 a)	0.40 ha	
Lot coverage					
Front yard	10.95 m	6 m	5. 7.2 c)	6 m min	
Rear yard	100 m plus	9 m	5.7.2 f)	9 m min	
Height	to be demolished	11 m	5.7.2 g)	11 m max	
Left Interior side yard	more than 14m	1.2 m	5.7.2 e) i)	1.2 m min	
Right Interior side yard	more than 20 m		5.7.2 e) i)	1.2 m min	
Exterior side yard (corner lot)					
Parking Spaces (number)	2 spaces	2 per unit	14.9	2 per lot	
Aisle width					
Stall size					
Loading Spaces					
Other					

2. Please explain why it is not possible to comply with the provision(s) of the Zoning By-law:

3. **Consent/Severance/Boundary Adjustment:** Description of land intended to be severed in metric units:

Frontage: 31.19 m Part 1 on survey sketch

Depth: 128.43 m

Width: 31.12 m at rear

Lot Area: 0.4 ha

Present Use: hamlet residential

Proposed Use: hamlet residential

Proposed final lot size (if boundary adjustment): _____

If a boundary adjustment, identify the assessment roll number and property owner of the lands to which the parcel will be added: _____

Description of land intended to be retained in metric units:

Frontage: Part 2 on Survey sketch - 31.19 m

Depth: 129.83 m

Width: 31.22 m.

Lot Area: 0.4 ha

Present Use: hamlet residential

Proposed Use: hamelt residential

Buildings on retained land: all existing buildings are to be demolished

4. **Easement/Right-of-Way:** Description of proposed right-of-way/easement in metric units:

Frontage: _____

Depth: _____

Width: _____
Area: _____
Proposed Use: _____

5. Surplus Farm Dwelling Severances Only: List all properties in Norfolk County, which are owned and farmed by the applicant and involved in the farm operation

Owners Name: _____
Roll Number: _____
Total Acreage: _____
Workable Acreage: _____
Existing Farm Type: (for example: corn, orchard, livestock) _____
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built _____
Date of Land Purchase: _____

Owners Name: _____
Roll Number: _____
Total Acreage: _____
Workable Acreage: _____
Existing Farm Type: (for example: corn, orchard, livestock) _____
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built _____
Date of Land Purchase: _____

Owners Name: _____
Roll Number: _____
Total Acreage: _____
Workable Acreage: _____
Existing Farm Type: (for example: corn, orchard, livestock) _____
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built _____
Date of Land Purchase: _____

Owners Name: _____
Roll Number: _____
Total Acreage: _____
Workable Acreage: _____
Existing Farm Type: (for example: corn, orchard, livestock) _____
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built _____
Date of Land Purchase: _____

Owners Name: _____
Roll Number: _____
Total Acreage: _____
Workable Acreage: _____
Existing Farm Type: (for example: corn, orchard, livestock) _____
Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built _____
Date of Land Purchase: _____

Note: If additional space is needed please attach a separate sheet.

D. All Applications: Previous Use of the Property

1. Has there been an industrial or commercial use on the subject lands or adjacent lands? ☐ Yes ☒ No ☐ Unknown

If yes, specify the uses (for example: gas station, or petroleum storage):

2. Is there reason to believe the subject lands may have been contaminated by former uses on the site or adjacent sites? ☐ Yes ☒ No ☐ Unknown

3. Provide the information you used to determine the answers to the above questions:
owners knowledge

4. If you answered yes to any of the above questions in Section D, a previous use inventory showing all known former uses of the subject lands, or if appropriate, the adjacent lands, is needed. Is the previous use inventory attached? ☐ Yes ☐ No

E. All Applications: Provincial Policy

1. Is the requested amendment consistent with the provincial policy statements issued under subsection 3(1) of the *Planning Act*, R.S.O. 1990, c. P. 13? ☒ Yes ☐ No

If no, please explain:

2. It is owner's responsibility to be aware of and comply with all relevant federal or provincial legislation, municipal by-laws or other agency approvals, including the Endangered Species Act, 2007. Have the subject lands been screened to ensure that development or site alteration will not have any impact on the habitat for endangered or threatened species further to the provincial policy statement subsection 2.1.7? ☒ Yes ☐ No

If no, please explain:

3. Have the subject lands been screened to ensure that development or site alteration will not have any impact on source water protection? ☒ Yes ☐ No

If no, please explain:

Note: If in an area of source water Wellhead Protection Area (WHPA) A, B or C please attach relevant information and approved mitigation measures from the Risk Manager Official.

4. All Applications: Are any of the following uses or features on the subject lands or within 500 metres of the subject lands, unless otherwise specified? Please check boxes, if applicable.

Livestock facility or stockyard (submit MDS Calculation with application)

☐ On the subject lands or ☐ within 500 meters – distance _____

Wooded area

☐ On the subject lands or ☒ within 500 meters – distance E boundary

Municipal Landfill

☐ On the subject lands or ☐ within 500 meters – distance _____

Sewage treatment plant or waste stabilization plant

☐ On the subject lands or ☐ within 500 meters – distance _____

Provincially significant wetland (class 1, 2 or 3) or other environmental feature

☐ On the subject lands or ☐ within 500 meters – distance _____

Floodplain

☐ On the subject lands or ☐ within 500 meters – distance _____

Rehabilitated mine site

☐ On the subject lands or ☐ within 500 meters – distance _____

Non-operating mine site within one kilometre

☐ On the subject lands or ☐ within 500 meters – distance _____

Active mine site within one kilometre

☐ On the subject lands or ☐ within 500 meters – distance _____

Industrial or commercial use (specify the use(s))

☐ On the subject lands or ☐ within 500 meters – distance _____

Active railway line

☐ On the subject lands or ☐ within 500 meters – distance _____

Seasonal wetness of lands

☐ On the subject lands or ☐ within 500 meters – distance _____

Erosion

☐ On the subject lands or ☐ within 500 meters – distance _____

Abandoned gas wells

☐ On the subject lands or ☐ within 500 meters – distance _____

F. All Applications: Servicing and Access

1. Indicate what services are available or proposed:

Water Supply

☐ Municipal piped water

☐ Communal wells

☒ Individual wells

☐ Other (describe below)

Sewage Treatment

☐ Municipal sewers

☐ Communal system

☒ Septic tank and tile bed in good working order

☐ Other (describe below)

Storm Drainage

☐ Storm sewers

☒ Open ditches

☐ Other (describe below)

2. Existing or proposed access to subject lands:

☒ Municipal road

☐ Provincial highway

☐ Unopened road

☐ Other (describe below)

Name of road/street:

Turkey Point Road

G. All Applications: Other Information

1. Does the application involve a local business? ☐ Yes ☒ No

If yes, how many people are employed on the subject lands?

2. Is there any other information that you think may be useful in the review of this application? If so, explain below or attach on a separate page.

H. Supporting Material to be submitted by Applicant

In order for your application to be considered complete, folded hard copies (number of paper copies as directed by the planner) and an **electronic version (PDF) of the site plan drawings, additional plans, studies and reports** will be required, including but not limited to the following details:

1. Concept/Layout Plan
2. All measurements in metric
3. Existing and proposed easements and right of ways
4. Parking space totals – required and proposed
5. All dimensions of the subject lands
6. Dimensions and setbacks of all buildings and structures
7. Location and setbacks of septic system and well from all existing and proposed lot lines, and all existing and proposed structures
8. Names of adjacent streets
9. Natural features, watercourses and trees

In addition, the following additional plans, studies and reports, including but not limited to, **may** also be required as part of the complete application submission:

- ☐ On-Site Sewage Disposal System Evaluation Form (to verify location and condition)
- ☐ Environmental Impact Study
- ☐ Geotechnical Study / Hydrogeological Review
- ☐ Minimum Distance Separation Schedule
- ☐ Record of Site Condition

Your development approval might also be dependent on Ministry of Environment Conservation and Parks, Ministry of Transportation or other relevant federal or provincial legislation, municipal by-laws or other agency approvals.

All final plans must include the owner's signature as well as the engineer's signature and seal.

I. Transfers, Easements and Postponement of Interest

The owner acknowledges and agrees that if required it is their solicitor's responsibility on behalf of the owner for the registration of all transfer(s) of land to the County, and/or transfer(s) of easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's responsibility on behalf of the owner for the registration of postponements of any charges in favour of the County.

Permission to Enter Subject Lands

Permission is hereby granted to Norfolk County officers, employees or agents, to enter the premises subject to this application for the purposes of making inspections associated with this application, during normal and reasonable working hours.

Freedom of Information

For the purposes of the *Municipal Freedom of Information and Protection of Privacy Act*, I authorize and consent to the use by or the disclosure to any person or public body any information that is collected under the authority of the *Planning Act, R.S.O. 1990, c. P. 13* for the purposes of processing this application.

Owner/Applicant/Agent Signature

Date

J. Owner's Authorization

If the applicant/agent is not the registered owner of the lands that is the subject of this application, the owner must complete the authorization set out below.

I/We _____ am/are the registered owner(s) of the lands that is the subject of this application.

I/We authorize Mary Elder, Elder Plans Inc. to make this application on my/our behalf and to provide any of my/our personal information necessary for the processing of this application. Moreover, this shall be your good and sufficient authorization for so doing.

Owner

Date

Owner

Date

***Note: If property is owned by an Ontario Ltd. Corporation, Articles of Incorporation are required to be attached to the application.**

K. Declaration

I, Mary Elder of Norfolk County

solemnly declare that:

all of the above statements and the statements contained in all of the exhibits transmitted herewith are true and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of *The Canada Evidence Act*.

Declared before me at:

Owner/Applicant/Agent Signature

In _____

This _____ day of _____

A.D., 20____

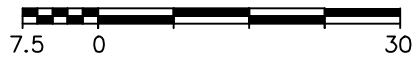
A Commissioner, etc.

PROPOSED
SEVERANCE SKETCH

FOR:

BOER HOMES
#1904 TURKEY
POINT ROAD

SCALE: 1 : 750



OCTOBER 30, 2024

METRES

TURKEY POINT
ROAD
PIN 50192 - 0101 (LT)

PART 2, PLAN 37R--11408

PART 1, PLAN 37R--5678
PIN 50192 - 0370 (LT)

PART 1
PIN 50192 - 0182 (LT)

PART 2
PIN 50192 - 0182 (LT)

#1904 TURKEY
POINT ROAD
VINYL SIDED
DWELLING
TOTAL:
AREA=62.8 sq.m.
PART 1:
AREA=47.7 sq.m.
PART 2:
AREA=15.1 sq.m.
(TO BE REMOVED)

GARAGE
0.29S
VINYL SIDED
GARAGE

PIN 50192 - 0183 (LT)
PART 1, PLAN 37R--7067

METRIC NOTE:

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

CAUTION:

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT
BE USED FOR PURPOSES OTHER THAN THE
PURPOSE INDICATED IN THE TITLE BLOCK.

PROPERTY DESCRIPTION:

PART OF LOT 13, CONCESSION 9
GEOGRAPHIC TOWNSHIP OF CHARLOTTEVILLE

CONCESSION
OF
GEOGRAPHIC

CHARLOTTETOWN
TOWNSHIP

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NOTES

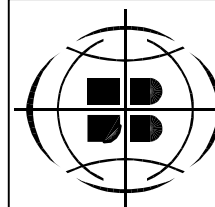
- PART OF LOT 1 = 4020.9 SQUARE METRES
- DWELLING AREA, GARAGE & PORCH = 136.4 SQ.M
- DWELLING COVERAGE = 3.4%
- PART OF LOT 2 = 4069.9 SQUARE METRES
- DWELLING AREA, GARAGE & PORCH = 58.5 SQ.M
- DWELLING COVERAGE = 1.4%
- ALL STRUCTURES TO BE REPLACED
WITH NEW STRUCTURES
- ALL SEPTIC AND WATER SYSTEMS TO BE
REPLACED WITH NEW SYSTEMS



PART 1, PLAN 37R--5678
PIN 50192 - 0370 (LT)

METAL SHED
AREA=9.8 sq.m. 1.16W
(TO BE REMOVED)

INSULBRICK &
METAL SHED
AREA=43.4 sq.m.
(TO BE REMOVED)



JEWITT AND DIXON SURVEYING
ONTARIO LAND SURVEYORS MAPPING
A Division of Kim Husted Surveying Ltd. GIS

650 Ireland Rd., Simcoe, ON N3Y 4K2
T: (519) 426-0842 www.jdbarnes.com

DRAWN BY: J.L.M.	CHECKED BY: K.S.H.	REFERENCE NO.: 24-54-069-00
		DATED: OCTOBER 30, 2024



**GEOTECHNICAL STUDY AND
HYDROGEOLOGICAL INVESTIGATION
1904 TURKEY POINT ROAD
SIMCOE, ONTARIO**
for
BOER HOMES

PETO MacCALLUM LTD.
45 BURFORD ROAD
HAMILTON, ONTARIO
L8E 3C6
Phone: (905) 561-2231
Email: hamilton@petomaccallum.com

Distribution:
1 cc: Boer Homes (PDF)
1 cc: PML Hamilton

PML Ref.: 24HF008
Report: 1 (Revised)
November 28, 2024

November 28, 2024

PML Ref.: 24HF008
Report: 1 (Revised)

Mr. Henry Boer
Boer Homes
59 Decou Road
Simcoe, Ontario
N3Y 4K2

Dear Mr. Boer

**Geotechnical Study and
Hydrogeological Investigation
Proposed Lot Severance
1904 Turkey Point Road
Simcoe, Ontario**

Peto MacCallum Ltd. (PML) is pleased to present the results of the geotechnical study and hydrogeological investigation completed for the above noted project. Authorization to proceed with this assignment was provided by Mr. Henry Boer of Boer Homes in a signed Engineering Services Agreement dated May 25, 2024.

It is understood that Boer Homes is proposing to sever an existing 8091 m² property located at 1904 Turkey Point Road, in Simcoe, Ontario into two new residential lots, with Part 1 (north lot) being 3977.2 m² (0.98 acres) and Part 2 (south lot) being 4113.6 m² (1.02 acres). The residential lots will be for new single-family dwellings and are proposed to be serviced by individual private on-site sewage treatment systems and individual potable water supply wells.

The purpose of the investigation was to determine the subsurface conditions at the site, and based on this, provide geotechnical recommendations for the house construction and also assess the feasibility of servicing the proposed two newly created lots with individual private water supply wells and private on-site sewage treatment systems.

Based on the findings of the investigation as detailed in the enclosed report, it has been concluded that the site is geotechnically suitable for the proposed construction of the new houses and that there are sufficient ground water resources in the study area to service the proposed lots with individual water supply wells.

Based on a predictive assessment of nitrate attenuation, individual on-site sewage treatment systems will require Ontario Building Code approved Advanced (Level IV) treatment systems with the capability to reduce nitrate concentrations in sewage effluent by at least 9% in order to meet the Ontario Drinking Water Quality Standard of 10 mg/L at the downgradient property boundary.

In summary, subject to the detailed recommendations contained in the attached report, it is our opinion that the proposed lots can be sustainably serviced with individual private water supply wells and individual on-site sewage treatment systems without adverse ground water impacts.



We trust this report has been completed within our terms of reference and is sufficient for your current needs.

Should you have further questions, please do not hesitate to contact our office.

Sincerely

Peto MacCallum Ltd.

A handwritten signature in blue ink, appearing to read 'S. Jeffrey'.

Scott Jeffrey, P.Eng., QP_{ESA}, LEED_{GA}
Director
Regional Manager, Geotechnical and Geoenvironmental Services

SJ:ld



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Figure 3 – General Recommendations Regarding Drainage

List of Abbreviations

Log of Test Pits 1 to 6

Drawing 1 – Test Pit Location Plan

Drawing 2 – Physiography of Study Area

Drawing 3 – Topography of Study Area

Drawing 4 – Vulnerable Aquifers

Drawing 5 – MECP Water Well Location Map

Appendix A – Proposed Severance Sketch

Appendix B – MECP Water Well Records

Appendix C – Water Balance and Predictive Assessment Calculations

Appendix D – Engineered Fill



1. INTRODUCTION

Peto MacCallum Ltd. (PML) is pleased to present the results of the hydrogeological investigation completed for the above noted project. Authorization to proceed with this assignment was provided by Mr. Henry Boer of Boer Homes in a signed Engineering Services Agreement dated May 25, 2024.

It is understood that Boer Homes is proposing to sever an existing 8091 m² property into two new lots, with Part 1 (north lot) being 3977.2 m² (0.98 acres) and Part 2 (south lot) being 4113.6 m² (1.02 acres). The residential lots will be for single family dwellings and are proposed to be serviced by individual private on-site sewage treatment systems and individual potable water supply wells. The appended Drawing 1 (Test Pit Location Plan) illustrates the location of the lands to be severed.

The property is located along Turkey Point Road in the Hamlet of Green's Corners, west of Simcoe, Ontario. The property is north of the intersection of Turkey Point Road and McDowell Road East.

PML understands no previous geoenvironmental, geotechnical or hydrogeological reports have been completed for the lands to be developed.

2. TERMS OF REFERENCE

The objective of this study is to define the subsurface soil and ground water conditions at the site and based on this information, provide an assessment of the capability for on-site treatment of domestic sewage, mitigation of the nutrient loading from the sewage treatment system and the off-site impact of infiltration of septic effluent on the ground water resource in the area, as well as a preliminary evaluation of the feasibility of developing a potable water supply for each of the proposed lots based on a review of surrounding water well records.

It should be noted that a full assessment for domestic water supply will require the installation of test wells and the completion of pumping tests. This can be completed once the severance is approved and septic system requirements are finalized.



3. STUDY METHODOLOGY

The objectives of the study were accomplished by:

- Attending the site to visually examine the terrain on and in the vicinity of the lands to be severed.
- Review of geotechnical reports conducted in the area, Ontario Ministry of Environment Conservation and Parks (MECP) well records, published geological data/maps to determine the hydrostratigraphy and hydrogeological conditions in the area.
- Conducting a house-to-house survey of residents within 0.5 km of the property to determine pertinent details of their wells (type, depth, quality and quantity).
- Excavating six (6) test pits to provide coverage of the site to depths of about 1.5 m to define the subsurface conditions and depth to and direction of shallow ground water flow on site.
- Conducting two (2) particle size distribution analyses on soil samples retrieved from the test pits to determine appropriate soil permeability parameters for septic bed design.
- Conducting a water balance sturdy and engineering analysis to determine the nitrate loading from septic effluent infiltration on the lots to be severed and determine the minimum lot size required to treat on-site domestic sewage.
- Preparing one technical report to address the factual aspects of the study, summarize the hydrogeologic conditions, document the results of the house-to-house survey, provide hydrogeological comments regarding the general feasibility of drilling new wells to supply potable water to the proposed houses, as well as to assess the minimum lot size capable of treating on-site domestic sewage.



4. SITE SETTING

4.1 Location and Current Land Use

The land parcels that are the subject of this assessment are described in the following paragraphs and shown on Drawing 1. The entire property at 1904 Turkey Point Road is referred to herein as the “Site”. It is located along Turkey Point Road in the Hamlet of Green’s Corners, west of Simcoe, Ontario. The property is north of the intersection of Turkey Point Road and McDowell Road East.

The proposed severance will create 2 new lots from the existing 8091 m² (2 acres) property, with Part 1 (north lot) being 3977.2 m² (0.98 acres) and Part 2 (south lot) being 4113.6 m² (1.02 acres). The proposed severance sketch for the property showing the two proposed lots is provided in Appendix A.

The existing Site is currently developed as a single rural residential property with one dwelling, detached garage, and a few smaller shed structures. It is understood these structures will be demolished to make way for the construction of two new detached dwellings.

Adjacent land use includes residential dwellings to the north, south and west. To the east of the Site are generally agricultural lands.

4.2 Physiographic and Geologic Setting

The Site is situated within the physiographic region known as the Norfolk Sand Plain. The sands and silts of this region were deposited as a delta in glacial Lakes Whittlesey and Warren (Chapman and Putnam, 1984). The physiography of the study is shown on Drawing 2.

Ontario Base Map (OBM) data published in 2004 on the Geography Network Canada online GIS service was reviewed and topographic contours indicate the grade of the Site is relatively flat at about elevation 234 to 235 (metric, geodetic). The topography of the surrounding area generally slopes gradually down to the west/southwest. The topography of the study area is shown on Drawing 3.



4.3 Hydrogeologic Setting

4.3.1 Surface Water

Lake Erie is located approximately 14.0 km south of the Site. No other significant sources of surface water were situated around the Site.

4.3.2 Aquifers and Local Ground Water Use

The site is located within the regulatory boundary of the Long Point Region Conservation Authority (LPRCA) within the Lynn-Black Creek watershed. As per the Long Point Region Source Protection Area Approved Assessment Report (May 2020), the subject site is located within a highly vulnerable aquifer area, or well protection area which encompasses the majority of Norfolk County. The location of the site with respect to identified highly vulnerable aquifers is shown on Drawing 4. The Site is not located within any municipal well head protection areas.

Published water well records were obtained from Ontario Ministry of Environment, Conservation and Parks (MECP) Environmental Monitoring and Reporting Branch, Water Well Records Management for the Site and adjacent lands. These records were reviewed in order to establish the general hydrogeological environment in the area and determine anticipated well capacities.

Based on water well information obtained from the MECP, 35 wells were reported to be located within an approximate 0.5 km radius of the centroid of the Site as shown on Drawing 5. A summary of the 35 well records is included in Appendix B.

Based on the records, we note the following:

- The 35 wells were drilled from a date range of 1963 to 2022.
- 27 of the wells are indicated to be for domestic use with the remainder being for irrigation, stock or monitoring.
- The majority of the wells were terminated in the sand overburden at depths of 4.6 to 10.7 m and generally encountered water at 0.9 to 7.3 m.



- Pump tests were conducted at 31 of the wells following the installation in the overburden. The pump tests indicated pumping rates to be between about 22.7 and 151.4 L/min.
- The water quality reported on all the overburden well records was fresh.

Based on the static water levels documented in the well records and general elevation of the Site, the ground water flow direction is south, towards Lake Erie.

5. SUMMARIZED SUBSURFACE CONDITIONS

Field work was carried out on July 17, 2024 and consisted of six (6) test pits advanced to depths in the range of 1.5 m to 2.4 m.

The test pit locations were selected by a technical representative of PML and established in the field by PML. Geodetic, metric ground surface elevations and UTM co-ordinates at the test pit locations were determined PML using a Sokkia GCX3 GNSS Receiver.

The test pits were machine excavated, under the full-time supervision of a member of PML's engineering staff.

Representative samples of the overburden were recovered at frequent depth intervals.

The ground water conditions at the test pit locations were assessed during excavation by visual examination of the soil samples and short-term monitoring of the open test pits upon completion.

All of the recovered samples were returned to our laboratory for detailed visual examination and classification on selected samples.

Reference is made to the appended Logs of Test Pits for details of the subsurface conditions including soil classifications, inferred stratigraphy, ground water observations, and the results of laboratory moisture content determinations and grain size analysis.



It is important to note that the depth demarcations on the test pit logs must be viewed as transitional zones between layers and should not be construed as exact geologic boundaries between layers. PML would be pleased to assist in defining geologic boundaries during construction if required.

The site soil stratigraphy typically comprises a surficial silty topsoil layer underlain by silty sand.

5.1.1 Topsoil

A surficial layer of topsoil was contacted at all borehole locations. The topsoil ranged in thickness from 200 to 250 mm and comprised brown silty sand with occasional rootlets and organics.

5.1.2 Fine Sand

Fine sand was contacted below the topsoil in all test pits and extended until the test pit termination depths ranging from 1.5 to 1.8 m (elevation 232.4 to 232.8). The silty sand was judged to be loose to compact with laboratory moisture contents in the range of about 15 to 23 %.

Particle size distribution testing was completed for two (2) test pit samples (TP1 AS2 and TP 3 AS2). The results of the sieve and hydrometer testing, completed using MTO LS-702 standards for this soil type are shown in Figures 1 and 2. The soil samples comprised 77 and 72% sand, respectively. The balance of the soil fraction is comprised of fines with the majority being silt sized particles with trace clay.

5.1.3 Ground Water

Upon completion of the test pits, free water was observed at the base of the test pits at depths ranging from about 1.5 to 1.8 m or between about elevation 232.4 to 232.8.



6. GEOTECHNICAL RECOMMENDATIONS

6.1 Footings on Native Soil

In general, footings for the new houses and any ancillary structures must extend below all topsoil, fill or otherwise disturbed soil to native undisturbed soil. Based on the subsurface conditions encountered in the test pits, the new houses can be supported on conventional shallow strip and spread footings founded on the native undisturbed loose to compact sand at a minimum depth of 0.6 m below existing grades. Footings at this level should be proportioned in accordance with the requirements of the 2012 Ontario Building Code using an allowable bearing pressure of 75 kPa.

The total settlement of foundations designed in accordance with the foregoing recommendations is not expected to exceed 25 mm. Differential settlement is expected to be less than 75% of this value.

In general, where founding levels of adjacent footings vary, the founding elevation between footings should be stepped in maximum 600 mm steps at a maximum inclination of 7 vertical to 10 horizontal (7V:10H). If adequate stepping of the footings is not possible due to site or design limitations, the need for underpinning of the existing foundations or services should be evaluated.

Prior to placement of structural concrete, all foundation excavations should be examined by geotechnical personnel from PML to verify that the founding stratum is in accordance with the assumptions and recommendations of this report.

All footings subject to frost action should be provided with a minimum of 1.2 m of soil cover or equivalent thermal insulation. A 25 mm thick layer of polystyrene insulation is thermally equivalent to 600 mm of soil cover.



6.2 Footings on Engineered Fill

Alternatively, where it is desirable to place footings at a higher elevation such as in the case where grades are to be raised, footings may be supported on engineered structural fill placed and compacted to a minimum of 98% Standard Proctor Maximum Dry Density in accordance with the recommendations in Appendix D.

For engineered fill, the existing unsuitable topsoil, fill, loose and otherwise deleterious soil must be removed within the engineered fill pad area to reach native undisturbed soil at the levels. This excavation work should be inspected by a PML representative in order to determine the limits of the required removals and to confirm subgrade conditions prior to fill placement.

Approved engineered fill may then be placed and compacted under full-time geotechnical supervision and testing to the proposed underside of footings. The minimum extent of engineered fill below footings should be as per the guideline provided in Appendix D.

Foundations supported on approved engineered fill may be designed using an allowable bearing pressure of 75 kPa.

6.3 Slab-On-Grade Floors

Construction of the floor slab as a conventional slab-on-grade on adequately compacted fill is considered to be feasible.

Preparation of the floor slab subgrade should include stripping of the topsoil, loose fill, and other deleterious material followed by proofrolling of the exposed subgrade with a heavy roller to ensure uniform adequate support. Excessively loose/soft or compressible materials revealed during the proofrolling operations should be sub excavated and replaced with well compacted approved material.

Fill placed under the floor slab to achieve finished subgrade levels or as foundation excavation backfill should comprise approved inorganic material having a moisture content within 3% of the optimum value, placed in maximum 200 mm thick lifts, and compacted to at least 98% of SPMDD.



A minimum 100 mm thick layer of well compacted coarse clean granular material containing not more than 10% of material that will pass a 4 mm sieve should be provided directly beneath the slab-on-grade. A polyethylene vapour barrier is recommended to be placed under the slab if a moisture sensitive finish is to be placed on the floor.

Exterior grades should be maintained at least 150 mm below the ground floor level and sloped to promote drainage away from the building.

6.4 Lateral Earth Pressures and Foundation Drainage

It is assumed that the proposed buildings will include a basement level. In this case, all subsurface walls, which contain the building interior (i.e., basement walls) should be provided with adequate drainage systems and dampproofing as required by the 2012 Ontario Building Code. It is recommended that the area adjacent to the foundation walls should be backfilled with free draining granular material or installed with prefabricated drainage systems to minimize the build-up of hydrostatic pressure behind the wall. Provided that free-draining granular backfill or prefabricated drainage systems are employed and hydrostatic pressure is not allowed to develop, the lateral earth pressure, p , acting on the basement walls should be computed using the following equation, assuming a triangular pressure distribution:

$$p = K(\gamma h + q)$$

where K = lateral earth pressure coefficient
= 0.5 for wall restrained at both top and bottom
 γ = unit weight of free-draining granular material
= 21.0 kN/m³
 h = depth below final grade (m)
 q = surcharge load (kPa), if present

The majority of the excavated in situ soil will be comprised native sand is considered to be relatively free draining and it is generally considered feasible to utilize select native excavated soil for exterior foundation backfill; however, the native material contains a variable silt content which may affect drainage and therefore a drainage board product installed as per Ontario Building Code is recommended.



The perforated perimeter drainage is required at the bottom of every foundation wall that contains the building interior. The drainage pipe should be a minimum of 100 mm in diameter and surrounded by a properly designed graded granular filter or wrapped with approved geotextile to prevent migration of fines into the system. The perforated drainage pipe should be placed on a positive grade and lead to a frost-free sump or outlet.

Additionally, it is recommended that underfloor drains be provided below basement level slab-on-grade floors. Underfloor drains should consist of 100 mm diameter perforated drainage pipe surrounded by 150 mm of clear stone wrapped in approved geotextile filter should be installed at a spacing of approximately 5 m. The invert of the underfloor drains should be at least 200 mm below the underside of the floor slab. The underfloor drains should be installed separately from the perimeter drainage system and connected by positive drainage to a frost-free sump or outlet.

General guidelines for perimeter and underfloor drainage are provided in Figure 3.

Ground Water

In general, it will be desirable to maintain basement levels above the high ground water level which was observed at elevation 232.8 in the test pits. The possibility of higher seasonal fluctuations should also be considered.

6.5 Excavations and Backfilling

It is anticipated that the excavated material will generally consist of topsoil and native sand.

Provided adequate ground water control is achieved, the in-situ soil above the water table is classified as Type 3 soil according to the Occupational Health and Safety Act (OHSA). Therefore, trench and excavation sidewalls should be cut at a maximum inclination of 1H:1V from the base of the excavation. It may be necessary to further flatten the trench side slopes if excessively loose/soft conditions or concentrated seepage zones are encountered locally.

All work should be carried out in accordance with the Occupational Health and Safety Act (Ontario Regulation 213/91) and with local regulations.



Topsoil within building areas should be excavated separately and set aside for reuse in landscaping areas. It is envisaged that the majority of the site-excavated native sand from above the water table will be suitable for reuse as general backfill and site grading, subject to evaluation at time of construction. Depending on seasonal conditions, some moisture content adjustments to the backfill materials may be required. The on-site soils have a variable silt content and are considered to be moderately frost susceptible. These soils are generally considered unsuitable for use where free draining granular backfill is required or at locations where frost related movement would present a concern.

In general, backfill should comprise inorganic, debris free material having a moisture content within 3% of the optimum value. Further, should construction extend into the winter season, particular attention must be given to ensure that frozen material is not used as backfill.

In areas that underlie slabs, pavements and/or walkways, backfill should be compacted to at least 98% SPMDD. In landscaped areas, compaction to at least 92% SPMDD will be adequate.

Full time site observation should be carried out by PML to examine and approve backfill material, to carefully inspect placement operations, and to verify the compaction by in situ density testing using nuclear gauges.

7. POTABLE WATER SUPPLY ASSESSMENT

7.1 House-to-House Well Survey

The survey was carried out to document the existence and reported performance of water wells within about 0.5 km of the centroid of the Site. It consisted of a house-to-house survey along Turkey Point Road, and McDowell Road.

On July 17, 2024, approximately 45 well survey questionnaires were distributed to the homes along the above-mentioned streets. The survey form requested information regarding well locations, depths, accessibility, water quality, quantity and other pertinent details.

No data/responses to the survey were received from any of the residents.



7.2 Water Quantity

The following table summarizes the well installations and recommended pumping rates for the five wells located closest to the Site on Turkey Point Road:

Well No.	Water Found at (m)	Well Screen Depth Range (m)	Soil Description Over Screened Interval	Recommended Pump Setting (m)	Recommended Pumping Rate (L/min)
4402252	3.0	4.3 to 5.5	Sand	1.5	18.9
4404667	3.0	4.6 to 5.5	Sand	1.5	56.8
4404746	2.4	4.9 to 5.8	Sand	1.5	18.9
4405215	0.9	4.9 to 5.8	Sand	1.5	37.8
4403167	2.4	4.3 to 5.5	Sand	-	22.7

Based on the above data, the recommended sustainable pumping rates in the vicinity of the Site are in the range of 18.9 to 56.8 L/min. The MECP considers a well to be sustainable with a minimum yield of 13.7 L/min based on a minimum four-bedroom dwelling.

Further pump tests will be required to confirm the specific well construction that will be required to provide an adequate water supply at each lot and to determine the sustained pumping rate which will not have an adverse impact on other wells in the area.

7.3 Water Quality

Requests were made to obtain water samples from wells within the Study Area, however no well owners agreed to allow sampling of their well water. Given that the existing dwellings in the Study Area are all supplied by private water supply wells for domestic use, it is assumed that, in general, water quality in the area is not likely to be a concern.



It is notable that PML conducted ground water sampling in the vicinity of the site for a previous investigation of a neighbouring property in 2022. This included sampling of raw untreated water from three monitoring wells installed in the overburden aquifer. The samples were tested for turbidity, hardness, pH, E.coli, total coliforms and Schedule 23 inorganic parameters including nitrate. In general the samples met the Ontario Drinking Water Quality Standards (ODWS) with the exception of one E.coli exceedance which was attributed to an undisinfected monitoring. An elevated hardness of 109 mg/L was reported for one well which exceeds Operational Guidelines (OG). Also, one sample reported an elevated concentration of aluminum at 197 ug/L above the OG of 100 ug/L.

The maximum concentration of nitrate in the three samples from the 2022 sampling of the neighbouring property was reported as 0.145 mg/L.

Once on-Site water wells are constructed, it is recommended that the water be sampled and tested for turbidity, hardness, pH, E. coli, total coliform and Schedule 23 inorganic parameters, which includes nitrate. This will identify the need for any special water treatment (e.g. filtration, disinfection, water softeners) that may be required to develop a potable water supply. It is noted that based on our experience with other properties in the vicinity of the site, water softeners are commonly used.

For any water treatment system installed, it recommended that a sample of the treated drinking water be obtained and tested regularly to ensure the treatment system is functioning properly and the quality of the water meets the Ontario Drinking Water Quality Standards (ODWQS).

8. ASSESSMENT OF POTENTIAL SEWAGE SYSTEM IMPACTS

PML has carried out an assessment of the potential impacts to ground water from septic effluent from private on-site sewage treatment systems. The assessment was conducted in accordance with the following documents:

- Procedure D-5-4 – Technical Guideline for Individual On Site Sewage Systems: Water Quality Impact Assessment (Ontario Ministry of Environment and Energy, MOEE April 1996);



- Hydrogeological Technical Information Requirements for Land Development
Chapter 4, Section 4.5 (MOEE April 1995).

Calculations were completed in accordance with the predictive assessment model outlined in MOEE Procedure D-5-4. In this model, total nitrogen converted to nitrate-nitrogen is considered as the critical contaminant. The model is used to predict the theoretical nitrate concentration in ground water at the downstream property boundary resulting from a conventional Class IV septic system.

The model assumes that the nitrate concentration within the septic effluent is attenuated by dilution with infiltrating surface water.

The predictive assessment procedure involves a three-step process:

- i) A water budget analysis to compute the 'water surplus' (total rainfall – evapotranspiration).
- ii) Selection of infiltration factors for the conditions at this particular Site to compute the rate of infiltration (sum of infiltration factors x water surplus).
- iii) Computation of the nitrate loading on the ground water resource.

8.1 Water Balance

The water budget analysis was conducted using the Thornthwaite and Mather procedure noted in the MECP information document. This method is based on classic storm water management principles. Since the equations employed to compute the volume of surface water runoff were developed for heavy rainfall events of short duration, and a large volume of the precipitation occurs at a light to moderate rate over an extended period of time, the procedure over-estimates the volume of runoff and yields a conservative assessment of the infiltration rate. Inputs to the Thornthwaite and Mather procedure are based on the Environment Canada 30 year (1991 to 2020) Climate Normals for Delhi Station. The water balance calculation for the Site is provided in Appendix C and summarized as follows:



Monitoring Station	Annual Precipitation (mm)	Water Surplus (mm/year)
Delhi	965	348

8.2 Infiltration Rates

The infiltration rates for the site were computed from rainfall data provided by Environment Canada and the infiltration factors noted in the Ontario Ministry of Environment and Energy (MOEE) Hydrogeological Technical Information Requirements for Land Development Applications, April 1995.

Description of Area/Development Site	Value of Infiltration Factor
Topography:	
▪ Flat land, average slope not exceeding 0.6 m per km	0.30
▪ Rolling land, average slope of 2.8 m to 3.8 m per km	0.20
▪ Hilly Land, average slope of 28 m to 47 m per km	0.10
Soil:	
▪ Tight impervious clay	0.10
▪ Medium combinations of clay and loam	0.20
▪ Open sandy loam	0.40
Cover:	
▪ Cultivated Land	0.1
▪ Woodland	0.2

The subject Site is characterized by relatively flat topography which can be considered to be between “flat land” and “rolling land”, therefore an intermediate topography infiltration factor of 0.25 was selected.

The soil conditions at the site comprise fine sand with some silt and trace clay and would be classified as a sandy loam to loamy sand, therefore a soil infiltration factor of 0.4 was selected.

The vegetative cover at the site is expected to be typical for residential properties comprising predominantly turf grass and gardens, therefore the infiltration factor of 0.1 for cultivated land was selected.



Based on the above the combined infiltration factor for the Site is taken as the sum of the three subcomponent values for topography (0.25), soil type (0.4) and vegetative cover (0.1). A combined infiltration factor of 0.75 has been selected.

The infiltration available for Nitrate dilution is obtained by multiply the calculated water surplus from the water balance by the infiltration factor for the site.

Water Surplus ⁽¹⁾ (mm/year)	Infiltration Factor	Infiltration Rate ⁽²⁾ (mm/year)
348	0.75	261

1. Water Surplus available for infiltration/runoff computed by the Thornthwaite and Mather Method

2. Water Surplus x sum of infiltration factors

8.3 Nitrate Loading Calculation

The nitrate loading computation was based on the following equation and input parameters noted in the MECP Procedure.

$$N_C = \frac{N_E Q_E + N_B V_D}{Q_E + V_D}$$

where N_C = predicted nitrate loading at the property boundary (mg/L)

N_E = nitrate concentration in septic effluent (40 mg/L per MOEE Procedure)

N_B = background nitrate concentration (assume 0.145 mg/L)

Q_E = total effluent sewage flow volume (L/day)
(1000 L/day per MECP Procedure)

V_D = infiltration volume (L/day)
(infiltration rate x land area)/365 days
infiltration rate = 261 mm/year

land area = 3978 m² less 5% impermeable surfaces = 3779 m²

As per the MOEE Procedure, an expected actual sewage effluent flow of 1000 L/day is to be assumed with a nitrate concentration of 40 mg/L. It should be noted that the effluent flow used in the dilution calculation is less than the estimated sewage flow that is used in sizing of the on-site sewage treatment system.



The assumed background nitrate concentration of 0.145 mg/L is based on ground water testing by PML for a neighbouring property in 2022. This value is consistent with typical background nitrate concentrations for precipitation.

The area available for infiltration is to exclude impermeable areas such as roofs, paved areas, pools and the like. A detailed site plan was not available at the time of this report; however, it is assumed that, the majority of impermeable areas will discharge to adjacent permeable surfaces and therefore this volume will be available for recharge. An allowance of 5% impermeable areas not contributing to recharge has been assumed in the dilution calculations.

8.3.1 Conventional Septic System Calculation

Based on the calculations for the proposed smallest lot size of 3977.2 m² and assuming 10% impermeable surfaces, the predicted nitrate concentration in ground water at the property boundary is 10.9 mg/L which exceeds Ontario Drinking Water Quality Guideline limit of 10.0 mg/L. A copy of the calculation is provided in Appendix C, Case 1.

For comparison, the minimum calculated lot size that results in a predicted nitrate concentration in ground water at the property boundary not exceeding the ODWQ Guideline of 10 mg would be 4400 m², assuming a conventional treatment system.

8.3.2 Advanced Treatment With Nitrate Reduction

In order to meet the ODWQ Guideline of 10 mg/L at the down gradient property boundary for the proposed lot size of 3978 m², it will be necessary to utilize an advanced treatment system capable of nitrate reduction. There are various commercial systems approved under the Ontario Building Code for Level IV effluent quality which have the capability to reduce nitrate concentrations by up to 50% or more. A minimum reduction of 9 % representing a nitrate concentration in effluent of 36.4 mg/L is required to meet the ODWG Guideline Limit of 10 mg/L. For example, an advance treatment system such as System O)) Nested Pipe Configuration Enviro-Septic treatment system meeting BMEC Authorization 23-06-408 dated July 26, 2023 can achieve a nitrate reduction of over 30%. This would result in a predicted nitrate concentration of 7.7 mg/L at the downstream property boundary. A copy of the calculation is provided in Appendix C, Case 2.



9. PRELIMINARY SEPTIC SYSTEM DESIGN

9.1 Assessment of Site-Specific Infiltration Rates

Two soil samples from the test pits were submitted for particle size analysis. The results are included in Figures 1 and 2. Based on these results, infiltration rate and estimated percolation times are as follows:

Sample No.	Sample Depth (m)	Soil Type	Estimated Hydraulic Conductivity (K, cm/s)	Estimated Infiltration Rate (mm/hour)	Estimated Percolation Time (T, min/cm)
TP1 AS2	0.25 – 0.76	Sand, some silt	2.8×10^{-5}	33	18
TP3 AS2	0.25 – 0.76	Sand, some silt	2.8×10^{-5}	33	18

As per the above table, it is expected that the native fine sand soil on the lands to be severed will exhibit a coefficient of permeability, K in the order of 10^{-5} cm/sec. It is considered that the fine sand at the Site is considered to be capable of treating domestic sewage. A percolation rate, T, of 20 min/cm is recommended for septic system design purposes.

9.2 Ground Water Considerations

Ground water was observed in the test pits at depths of between 1.5 and 2.4 m (elevation 232.4 to 232.8). Site grading and septic system location must consider that the leaching bed must be not less than 900 mm above the high ground water table.

9.3 Septic System Loading

The leaching bed should be designed based on the expected maximum daily sewage effluent loading. For example, the total daily sewage flow (Q) for a typical four-bedroom 230 m² house with up to 26 fixture units is 2,300 L/day, based on the criteria noted in the 2012 Ontario Building Code (Table 8.2.1.3.A).



9.4 Septic System Selection and Sizing

For preliminary planning purposes, and to demonstrate feasibility, we have considered the System O)) Nested Pipe Configuration Enviro-Septic treatment system meeting BMEC Authorization 23-06-408 dated July 26, 2023. This system will meet the required nitrate reduction and will have the additional benefit of having a smaller footprint than a conventional system.

For this system, the required number of Enviro-Septic Units (total length of pipe, L_{Total}) is determine based on the larger of the following:

1. $L_{Total} = Q \div 126 \text{ L/day/unit} \times \text{Length of unit for each pipe (3.05 m)}$; or
2. $L_{Total} = Q \div 75$ (for $1 < T \leq 20$)
3. At least 30 m

Based on the above the following System O)) with nested pipe configuration may be considered:

Design Flow, Q (L/day)	Criteria 1 $L_{Total} = Q \div 126$ L/day/unit x 3.05 m/unit	Criteria 2 $L_{Total} =$ $Q \div 75$	Proposed Piping Layout @ 2 m spacing	Contact Area
2300	55.7 m (18.25 pipes)	30.6 m (10.1 pipes)	4 runs of 5 pipes	6.6 m x 15.85 m

The layout and positioning of the septic system components must be in accordance with the Ontario Building Code and/or local regulations. This includes meeting all of the following minimum clearances apply:

MINIMUM CLEARANCES FOR TREATMENT UNITS

As per OBC Table 8.2.1.6.A and B

Object	Minimum Clearance for Treatment Units (m)	Minimum Clearance for Distribution Piping and Leaching Chambers (m)
Structure	1.5	5
Well with a watertight casing to a depth of at least 6 m	15	15



Object	Minimum Clearance for Treatment Units (m)	Minimum Clearance for Distribution Piping and Leaching Chambers (m)
Any other well	15	30
Lake	15	15
Pond	15	15
Reservoir	15	15
River	15	15
Spring	15	15
Stream	15	15
Property Line	3	3

Based on the proposed lot sizes and dimensions and considering the preliminary septic system sizing and the required minimum clearances, it is feasible to service the proposed severed and retained lots with individual on-site sewage treatment systems. This includes sufficient space for a replacement system, if needed.

10. DISCUSSION AND RECOMMENDATIONS

Based on the findings of this study, our summarized comments are provided below.

1. Based on the findings of the investigation as detailed in this report, it is concluded that there are sufficient ground water resources in the study area to service the proposed lots with individual water supply wells and it is likely that the ground water aquifer on this Site will be capable of meeting the water demand for the proposed two lots.

Pump tests will be required to confirm the aquifer characteristics, yield and the recommended configuration.

2. Conventional water treatment systems are recommended for water supply wells to ensure compliance with ODWQS. It is recommended that a sample of the treated drinking water be obtained and tested to ensure the treatment system is functioning properly and the quality of the water meets the ODWQS.



3. The nitrate loading from a conventional sewage system constructed to service a four-bedroom dwelling on the proposed lot size of 3978 m² was determined to be 10.9 mg/L, which exceeds the regulatory requirement of 10 mg/L. An advance treatment unit/system with demonstrated nitrate reduction of at least 9% will be required in order to meet the ODWQS guideline limit of 10 mg/L at the downgradient property boundary. There are readily available Ontario Building Code approved advanced (Level IV) systems such as System O)) Enviro-Septic pipes that have demonstrated capability to reduce nitrate levels by 30% or more.
4. It is considered that infiltration of septic effluent from the severed and/or retained lots will not have significant impact on the ground water resource provided that an advanced on-site sewage treatment system (Level 1V) with nitrate reduction of at least 9% is used.
5. Based on preliminary assumed septic loading for a four bedroom, 230 m² dwelling with up to 26 fixture units and a septic loading of 2300 L/day, it is feasible to locate a private on-site sewage treatment system on each of the proposed lots including a provision for a replacement location.
6. Detailed septic system design will be required once the house designs and site grading plans are determined. The sewage treatment system should be designed and constructed in accordance with the Ontario Building Code and local regulations.



11. CLOSURE

We trust the information presented in this report is sufficient for your present purposes. Please do not hesitate to contact our office should you have any questions.

Sincerely

Peto MacCallum Ltd.



Scott Jeffrey, P.Eng., QP_{ESA}, LEED_{GA}
Director
Regional Manager, Geotechnical and Geoenvironmental Services

SJ:ld



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M2371; Drift Thickness Series, Simcoe Sheet, Southern Ontario; Ontario Department of Mines, 1976; Scale: 1:50,000.

P2234; Paleozoic Geology, Simcoe, Southern Ontario; Ontario Division of Mines, 1980; Scale: 1:50 000.

Publications

Aqua Resource Inc., Long Point Region, Kettle Creek and Catfish Creek Integrated Water Budget - Final Report, April 2009

Long Point Region Source Protection Area Approved Assessment Report (May 2020)

Ministry of Environment and Energy (MOEE) Hydrogeological Technical Information Requirements for Land Development Applications, April 1995, Her Majesty the Queen in Right of Ontario as Represented by the Minister of Environment and Energy.

Ministry of the Environment and Energy (MOEE), Procedure D-5-4 – Technical Guideline for Individual on Site Sewage Systems: Water Quality Impact Assessment, April 1996.

O. Reg. 169/03 Ontario Drinking Water Quality Standards, Safe Drinking Water Act, 2002.

O. Reg. 170/03 Drinking Water Systems, Safe Drinking Water Act, 2002.

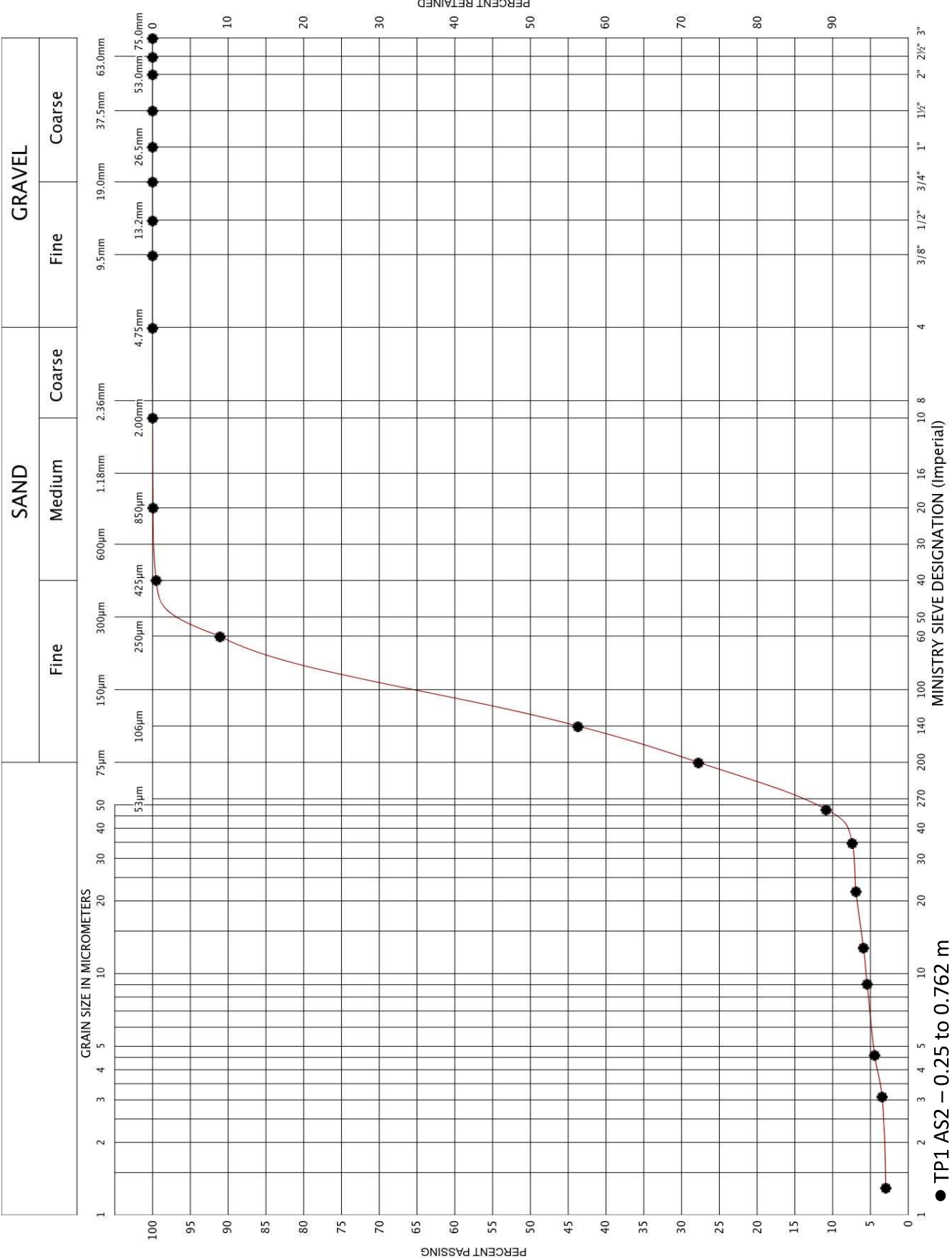
Well Records

Ontario Ministry of the Environment Conservation and Parks (MECP) Environmental Monitoring and Reporting Branch, Water Well Records Management

SOIL: SAND

24HF008

UNIFIED SOIL CLASSIFICATION SYSTEM
FIGURE: 1



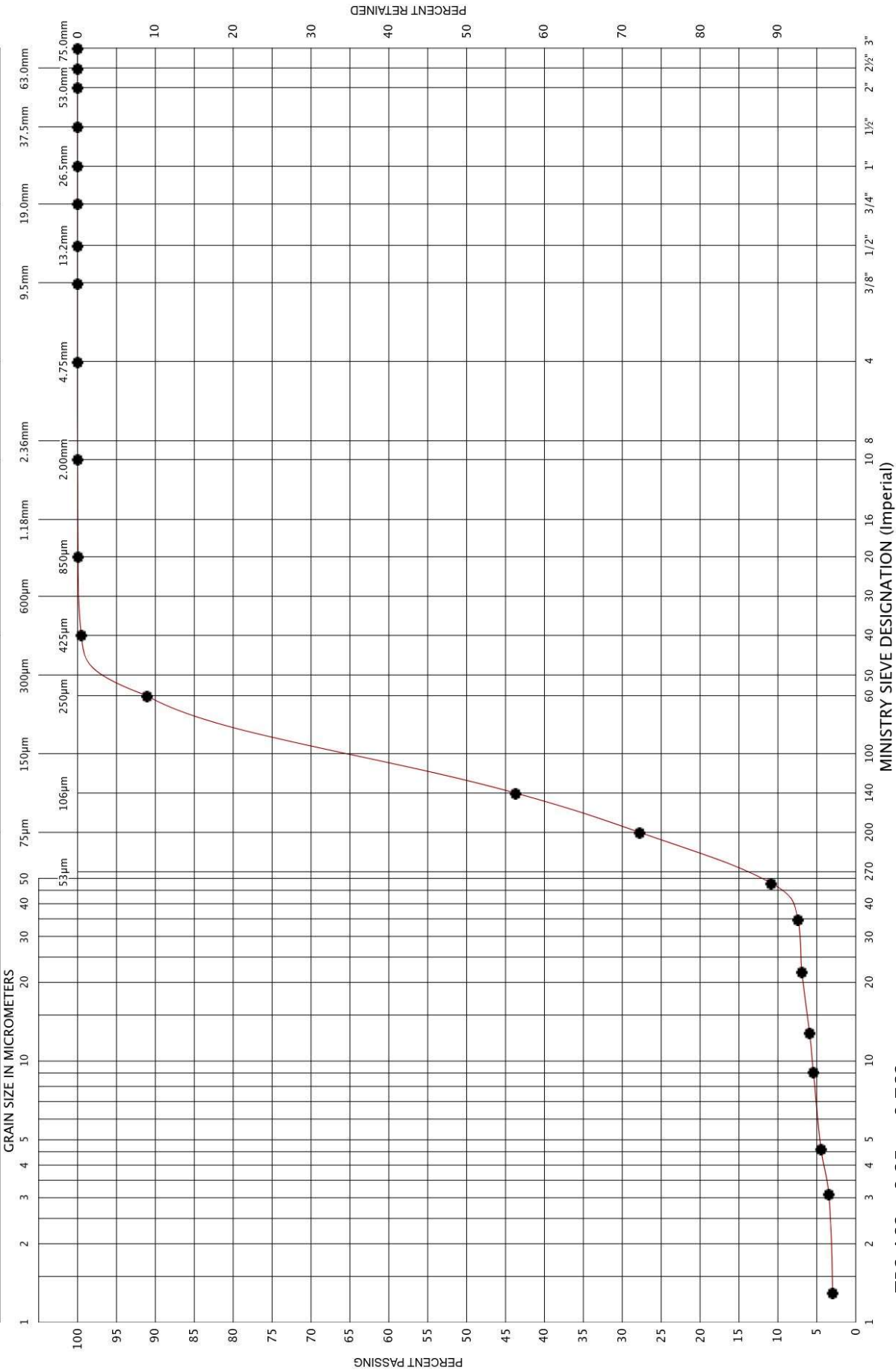
SOIL: SAND

24HF008

FIGURE: 2

UNIFIED SOIL CLASSIFICATION SYSTEM

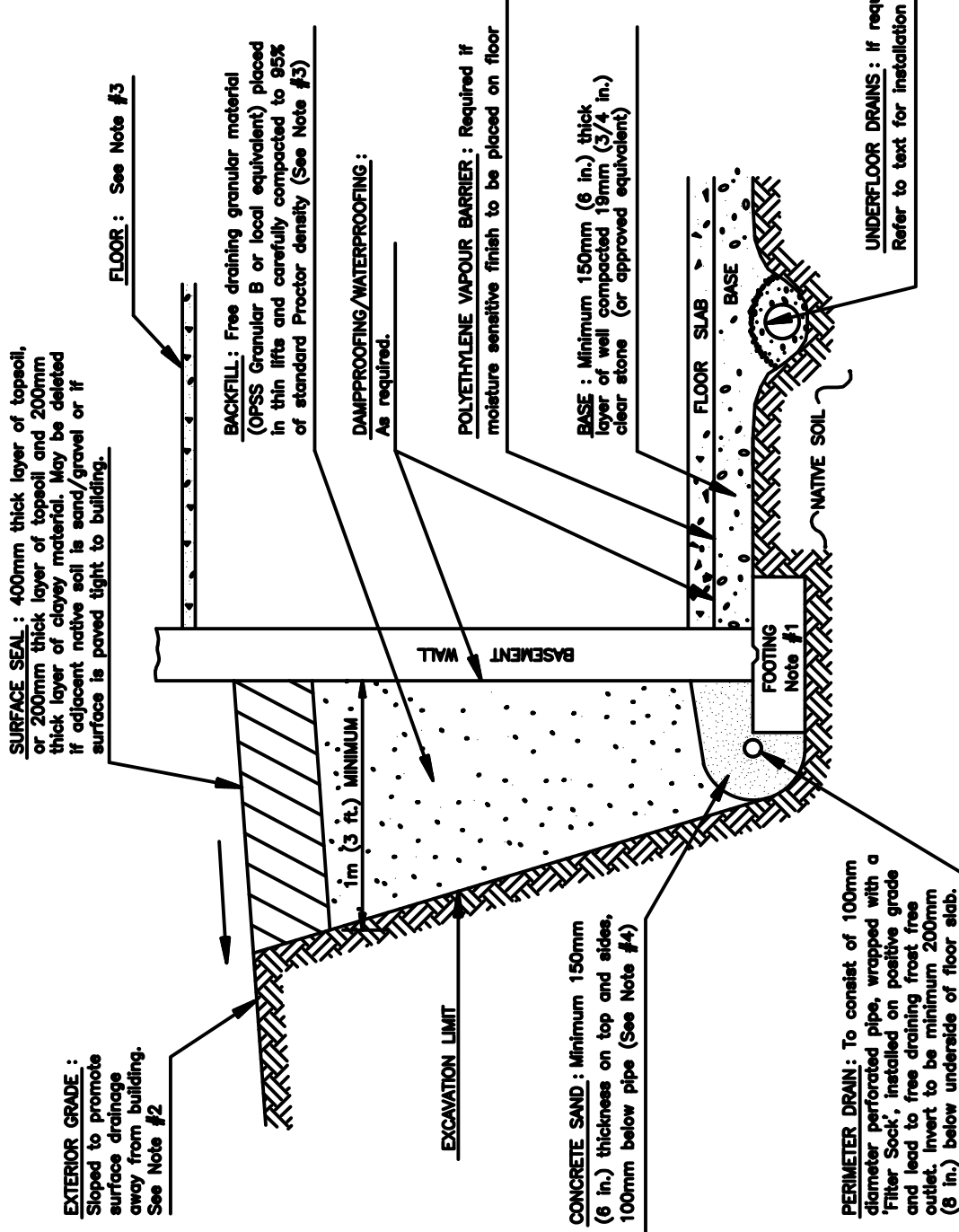
SAND				GRAVEL			
Fine		Medium		Coarse	Fine	Coarse	



● TP3 AS2 – 0.25 to 0.762 m

NOTES

1. Footing may be constructed by placement of structural concrete next against natural soil. Drain to be installed in a similar manner immediately above footing maintaining 200mm (8 in.) distance between top of drain and underside of floor slab.
2. Exterior grade to be minimum 300mm (12 in.) below interior floor slab, or other means established to prevent entry of surface water into building through building openings.
3. Basement wall to be supported by floor system or interior bracing prior to commencement of backfill placement. Heavy construction equipment should not be permitted within a distance from the foundation wall equivalent to half the wall height. Overcompaction of backfill to be avoided as excessive lateral earth pressure may result. Approved drainage board product may be used in lieu of free draining granular.
4. Concrete sand may be replaced with clear stone, if wrapped in approved geotextile.
5. Refer to text for details regarding founding levels, competent bearing material and construction details specific to particular site.



STANDARD DRAWING

GENERAL RECOMMENDATIONS REGARDING DRAINAGE AND BACKFILL REQUIREMENTS FOR BASEMENT WALLS AND FLOOR SLABS



Peto MacCallum Ltd.
CONSULTING ENGINEERS

DRAWN: SR	DATE	SCALE	JOB NO.	FIGURE NO.
CHECKED: SR	NOV 2024	N.T.S.	24HF008	3
APPROVED: SJ				

LIST OF ABBREVIATIONS



PENETRATION RESISTANCE

Standard Penetration Resistance N: - The number of blows required to advance a standard split spoon sampler 0.3 m into the subsoil. Driven by means of a 63.5 kg hammer falling freely a distance of 0.76 m.

Dynamic Penetration Resistance: - The number of blows required to advance a 51 mm, 60 degree cone, fitted to the end of drill rods, 0.3 m into the subsoil. The driving energy being 475 J per blow.

DESCRIPTION OF SOIL

The consistency of cohesive soils and the relative density or denseness of cohesionless soils are described in the following terms:

<u>CONSISTENCY</u>	<u>N (blows/0.3 m)</u>	<u>c (kPa)</u>	<u>DENSENESS</u>	<u>N (blows/0.3 m)</u>
Very Soft	0 - 2	0 - 12	Very Loose	0 - 4
Soft	2 - 4	12 - 25	Loose	4 - 10
Firm	4 - 8	25 - 50	Compact	10 - 30
Stiff	8 - 15	50 - 100	Dense	30 - 50
Very Stiff	15 - 30	100 - 200	Very Dense	> 50
Hard	> 30	> 200		
WTLL	Wetter Than Liquid Limit			
WTPL	Wetter Than Plastic Limit			
APL	About Plastic Limit			
DTPL	Drier Than Plastic Limit			

TYPE OF SAMPLE

SS	Split Spoon	ST	Slotted Tube Sample
WS	Washed Sample	TW	Thinwall Open
SB	Scraper Bucket Sample	TP	Thinwall Piston
AS	Auger Sample	OS	Oesterberg Sample
CS	Chunk Sample	FS	Foil Sample
GS	Grab Sample	RC	Rock Core
	PH	Sample Advanced Hydraulically	
	PM	Sample Advanced Manually	

SOIL TESTS

Qu	Unconfined Compression	LV	Laboratory Vane
Q	Undrained Triaxial	FV	Field Vane
Qcu	Consolidated Undrained Triaxial	C	Consolidation
Qd	Drained Triaxial		

LOG OF TEST PIT NO. 1

17T 547797E 4738697N

PROJECT Hydrogeological Investigation

LOCATION 1904 Turkey Point Road, Simcoe, Ontario

EXCAVATION METHOD Excavator

EXCAVATION DATE July 17, 2024

PML REF. 24HF008

ENGINEER SJ

TECHNICIAN SP

SOIL PROFILE			SAMPLES			SHEAR STRENGTH (kPa)		PLASTIC LIMIT		NATURAL MOISTURE CONTENT		LIQUID LIMIT		UNIT WEIGHT kN/m ³	GROUND WATER OBSERVATIONS AND REMARKS
DEPTH ELEV (metres)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	+ FIELD VANE Δ TORVANE ○ Qu		w _p	w	w _L	WATER CONTENT (%)				
						▲ POCKET PENETROMETER ○ Q	DYNAMIC CONE PENETRATION STANDARD PENETRATION TEST ×								
						50	100	150	200						
0.0	SURFACE ELEVATION 234.2														
0.25	TOPSOIL: Loose dark brown silty sand topsoil, trace gravel, moist ; occasional rootlets, tree branches		1	AS		234									
233.95	SAND: Loose to compact brown fine sand, some silt, trace clay, moist; occasional rootlets, oxidation staining		2	AS											
0.76	becoming greyish brown, wet														
233.44			3	AS		233									
1.5	TESTPIT TERMINATED AT 1.52 m														
232.7															
2.0															
3.0															
4.0															

NOTES

▼ GROUND WATER STRIKE

LOG OF TEST PIT NO. 2

17T 547816.8E 4738667N

PROJECT Hydrogeological Investigation

LOCATION 1904 Turkey Point Road, Simcoe, Ontario

EXCAVATION METHOD Excavator

PML REF. 24HF008

ENGINEER SJ

TECHNICIAN SP

EXCAVATION DATE July 17, 2024

SOIL PROFILE			SAMPLES			SHEAR STRENGTH (kPa)				PLASTIC LIMIT				NATURAL MOISTURE CONTENT				LIQUID LIMIT				UNIT WEIGHT kN/m ³	GROUND WATER OBSERVATIONS AND REMARKS
DEPTH ELEV (metres)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	DYNAMIC CONE PENETRATION STANDARD PENETRATION TEST				WATER CONTENT (%)													
						50 100 150 200				w _p w w _L													
						+ FIELD VANE Δ TORVANE ○ Qu																	
						▲ POCKET PENETROMETER ○ Q																	
						x																	
						●																	
																		</					

NOTES

▼ GROUND WATER STRIKE

LOG OF TEST PIT NO. 3

17T 547850.3E 4738690N

PROJECT Hydrogeological Investigation

LOCATION 1904 Turkey Point Road, Simcoe, Ontario

EXCAVATION METHOD Excavator

EXCAVATION DATE July 17, 2024

PML REF. 24HF008

ENGINEER SJ

TECHNICIAN SP

SOIL PROFILE			SAMPLES			SHEAR STRENGTH (kPa)		PLASTIC LIMIT		NATURAL MOISTURE CONTENT		LIQUID LIMIT		UNIT WEIGHT	GROUND WATER OBSERVATIONS AND REMARKS
DEPTH ELEV (metres)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	+ FIELD VANE Δ TORVANE ○ Qu		w _p	w	w _L	WATER CONTENT (%)				
						▲ POCKET PENETROMETER ○ Q	DYNAMIC CONE PENETRATION STANDARD PENETRATION TEST				×	●	GR SA		
0.0	SURFACE ELEVATION 234.5					20	40	60	80	10	20	30	40		
0.25	TOPSOIL: Loose dark brown silty sand topsoil, trace gravel, moist ; occasional rootlets, tree branches		1	AS											
234.25	SAND: Loose to compact brown fine sand, some silt, trace clay, moist; occasional rootlets, oxidation staining		2	AS		234									0 72 24 4
0.76	becoming greyish brown, wet														
233.74															
1.0			3	AS		233									
1.8	TESTPIT TERMINATED AT 1.83 m														▼ El. 232.7
232.7															Upon completion of augering, free water at 1.82 m and no cave.
2.0															
3.0															
4.0															

NOTES

▼ GROUND WATER STRIKE

LOG OF TEST PIT NO. 4

17T 547885.4E 4738704N

PROJECT Hydrogeological Investigation

LOCATION 1904 Turkey Point Road, Simcoe, Ontario

EXCAVATION METHOD Excavator

EXCAVATION DATE July 17, 2024

PML REF. 24HF008

ENGINEER SJ

TECHNICIAN SP

SOIL PROFILE			SAMPLES			ELEVATION SCALE	SHEAR STRENGTH (kPa)				PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT kN/m ³	GROUND WATER OBSERVATIONS AND REMARKS
DEPTH ELEV (metres)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES		+ FIELD VANE Δ TORVANE ○ Qu ▲ POCKET PENETROMETER ○ Q								
							DYNAMIC CONE PENETRATION STANDARD PENETRATION TEST × ●								
						50	100	150	200	WATER CONTENT (%)					
						20	40	60	80	10	20	30	40		
0.0	SURFACE ELEVATION 235.0		1	AS											
0.20	TOPSOIL: Loose dark brown silty sand topsoil, trace gravel, damp ; occasional rootlets														
234.80	SAND: Loose to compact brown fine sand, some silt, trace clay, moist; occasional rootlets, oxidation staining		2	AS											
1.0						234									
1.2	becoming greyish brown, wet														
233.8			3	AS											
2.0						233									
2.4	TESTPIT TERMINATED AT 2.4 m														
3.0															
4.0															

NOTES

▼ GROUND WATER STRIKE

LOG OF TEST PIT NO. 5

17T 547865.1E 4738738N

PROJECT Hydrogeological Investigation

LOCATION 1904 Turkey Point Road, Simcoe, Ontario

EXCAVATION METHOD Excavator

EXCAVATION DATE July 17, 2024

PML REF. 24HF008

ENGINEER SJ

TECHNICIAN SP

SOIL PROFILE			SAMPLES			SHEAR STRENGTH (kPa)				PLASTIC LIMIT			NATURAL MOISTURE CONTENT			LIQUID LIMIT			UNIT WEIGHT kN/m ³	GROUND WATER OBSERVATIONS AND REMARKS
DEPTH ELEV (metres)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	ELEVATION SCALE	+ FIELD VANE	Δ TORVANE	○ Qu	▲ POCKET PENETROMETER	○ Q	×	W _p	W	W _L	WATER CONTENT (%)				
0.0	SURFACE ELEVATION 234.2																			
0.25 233.95	TOPSOIL: Loose dark brown silty sand topsoil, trace gravel, moist ; occasional rootlets, tree branches		1	AS		234														
0.91 233.29	SAND: Loose to compact brown fine sand, some silt, trace clay, moist; occasional rootlets, oxidation staining		2	AS																
1.0	becoming grey, wet		3	AS		233														
1.8 232.4	TESTPIT TERMINATED AT 1.83 m																			
2.0																				
3.0																				
4.0																				

NOTES

▼ GROUND WATER STRIKE

LOG OF TEST PIT NO. 6

17T 547832.9E 4738717N

PROJECT Hydrogeological Investigation

LOCATION 1904 Turkey Point Road, Simcoe, Ontario

EXCAVATION METHOD Excavator

EXCAVATION DATE July 17, 2024

PML REF. 24HF008

ENGINEER SJ

TECHNICIAN SP

SOIL PROFILE			SAMPLES			ELEVATION SCALE	SHEAR STRENGTH (kPa)					PLASTIC LIMIT			NATURAL MOISTURE CONTENT			LIQUID LIMIT			UNIT WEIGHT	GROUND WATER OBSERVATIONS AND REMARKS
DEPTH ELEV (metres)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES		+ FIELD VANE Δ TORVANE ○ Qu					w _p	w	w _L								
							▲ POCKET PENETROMETER ○ Q															
							DYNAMIC CONE PENETRATION STANDARD PENETRATION TEST ×															
						50	100	150	200													
						20	40	60	80													
0.0	SURFACE ELEVATION 234.3																					
0.25	TOPSOIL: Loose dark brown silty sand topsoil, trace gravel, moist ; occasional rootlets, tree branches		1	AS																		
234.05	SAND: Loose to compact brown fine sand, some silt, trace clay, moist; occasional rootlets, oxidation staining		2	AS																		
0.91	becoming greyish brown, wet		3	AS																		
233.39																						
1.8	TESTPIT TERMINATED AT 1.83 m																					
232.5																						
2.0																						
3.0																						
4.0																						

NOTES

▼ GROUND WATER STRIKE



KEY PLAN
SIMCOE, ONTARIO

LEGEND:

- TP-1
- EL-234.2

PETO MACCALLUM LTD. (PML) TEST
PIT (TP) LOCATION
ELEVATION (METRIC, GEODETIC)

REFERENCE:
BOREHOLE LOCATION PLAN REPRODUCED FROM GOOGLE MAPS.

NOTES:
THE INFERRED STRATIGRAPHY REFERRED TO IN THE REPORT IS BASED ON THE DATA FROM THESE BOREHOLES SUPPLEMENTED BY GEOLOGICAL EVIDENCE. THE ACTUAL STRATIGRAPHY BETWEEN THE BOREHOLES MAY VARY.

THE BOREHOLE LOCATIONS AND GEODETIC ELEVATIONS WERE SURVEYED WITH A SOKKIA GCX3 REAL TIME KINEMATIC RECEIVER CONNECTED TO THE GLOBAL NAVIGATION SATELLITE SYSTEM.

BOER HOMES

HYDROGEOLOGICAL INVESTIGATION

BOER HOMES

1904 TURKEY POINT ROAD, SIMCOE, ONTARIO

TEST PIT LOCATION PLAN

PML Peto MacCallum Ltd
CONSULTING ENGINEERS


DRAWN	S. PRANAVASH	DATE	SCALE	PML REF.	DWG. NO.
CHECKED	S. JEFFREY	OCTOBER 2024	AS SHOWN	24HF008	1
APPROVED	S. JEFFREY				



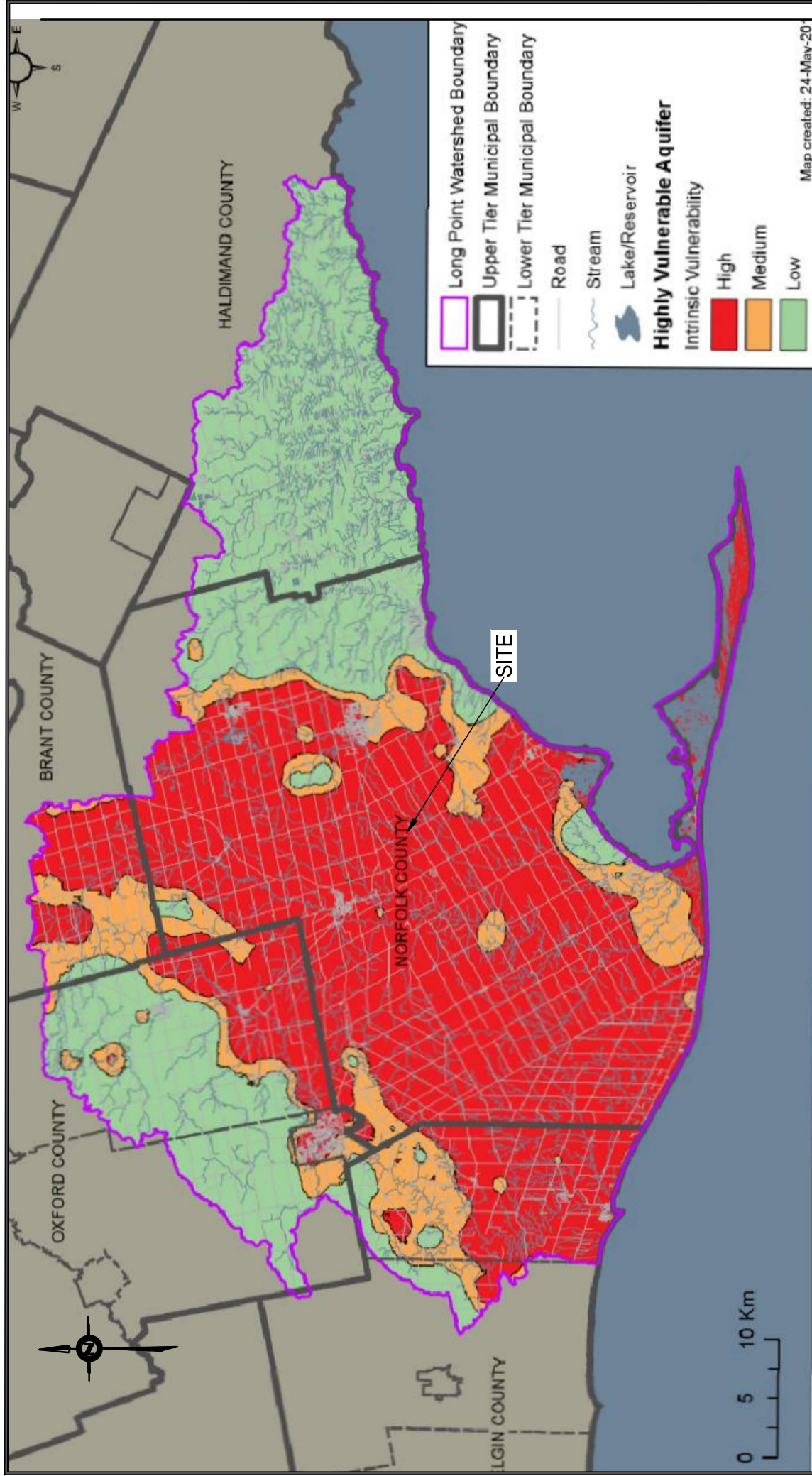
LEGEND:
— SITE BOUNDARY


REFERENCE:
PLAN PRODUCED FROM FROM 2018 NATURAL RESOURCES CANADA-THE
ATLAS OF CANADA

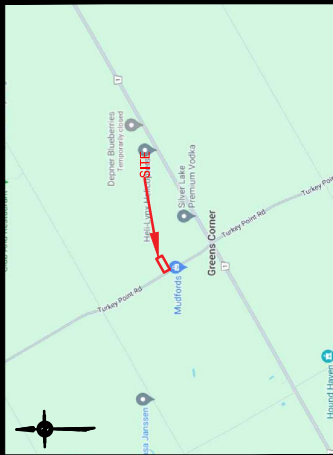
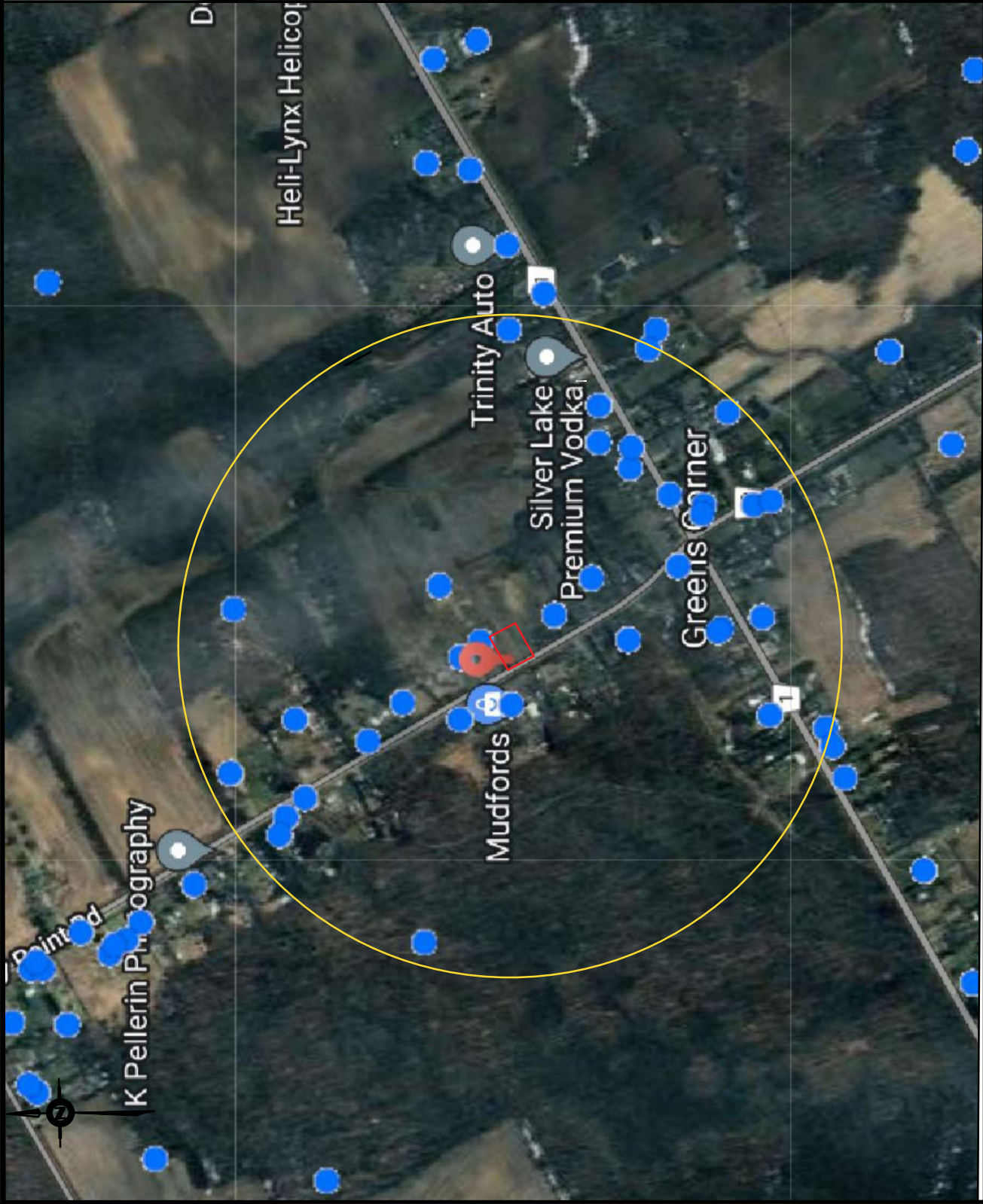
BOER HOMES
HYDROGEOLOGICAL INVESTIGATION
BOER HOMES
1904 TURKEY POINT ROAD, SIMCOE, ONTARIO
TOPOGRAPHY OF THE STUDY AREA

**Peto MacCallum Ltd.**
CONSULTING ENGINEERS

DRAWN	SP	DATE	SCALE	PML REF.	DRAWING NO.
CHECKED	SJ	OCT 2024	1:4,000	24HF008	3
APPROVED	SJ				



BOER HOMES		 Peto MacCallum Ltd. CONSULTING ENGINEERS	
HYDROGEOLOGICAL INVESTIGATION		DRAWN: SP CHECKED: SJ APPROVED: SJ	
BOER HOMES		DATE: OCT 2024 SCALE: AS SHOWN PM REF: 24HF008	
1904 TURKEY POINT ROAD, SIMCOE, ONTARIO		DRAWING NO: 4	
VULNERABLE AQUIFERS			



KEY PLAN
SIMCOE, ONTARIO

LEGEND:

- LOCATION OF MECF RECORDED WATER WELL INSIDE OF 500 m RADIUS FROM SITE
- SITE BOUNDARY
- 500 m RADIUS WATER WELL STUDY AREA

NOTES:

- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN METRES.

REFERENCE:
PLAN PRODUCED FROM MECF RECORDED WATER WELL RECORDS AND MAP

BOER HOMES			
HYDROGEOLOGICAL INVESTIGATION			
BOER HOMES			
1904 TURKEY POINT ROAD, SIMCOE, ONTARIO			
MECF WATER WELL LOCATION MAP			
Pato MacCallum Ltd. CONSULTING ENGINEERS			
DRAWN	SP	DATE	PML REF.
CHECKED	SJ	OCT 2024	24HF008
APPROVED	SJ	AS SHOWN	5



APPENDIX A

Proposed Severance Sketch

PROPOSED SEVERANCE SKETCH

FOR:
BOER HOMES
#1904 TURKEY
POINT ROAD

SCALE: 1 : 750



DECEMBER 6, 2023

NOTES

- PART OF LOT 1 = 3977.2 SQUARE METRES
- DWELLING AREA, GARAGE & PORCH = 136.4 SQ.M
- DWELLING COVERAGE = 3.4%
- PART OF LOT 2 = 4113.6 SQUARE METRES
- DWELLING AREA, GARAGE & PORCH = 58.5 SQ.M
- DWELLING COVERAGE = 1.4%
- ALL STRUCTURES TO BE REPLACED WITH NEW STRUCTURES
- ALL SEPTIC AND WATER SYSTEMS TO BE REPLACED WITH NEW SYSTEMS

GEOGRAPHIC

OF

CONCESSION

LOT

PART 2, PLAN 37R--11408

PART 1, PLAN 37R--5678

PIN 50192 - 0370 (LT)

128.43

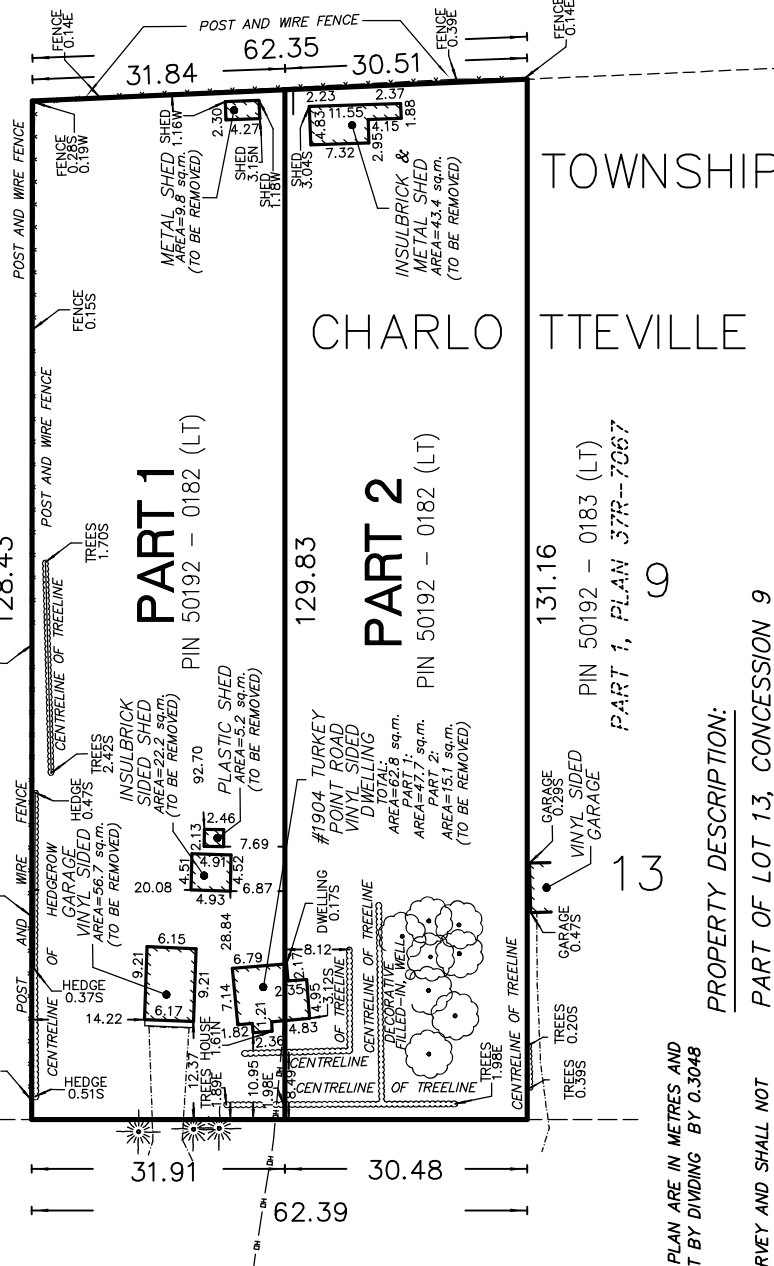
PART 1, PLAN 37R--5678
PIN 50192 - 0370 (LT)

TURKEY POINT
ROAD

PIN 50192 - 0101 (LT)

CHARLOTTEVILLE

TOWNSHIP



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JEWITT AND DIXON LTD.
ONTARIO LAND SURVEYORS

650 IRELAND ROAD
SIMCOE, ONTARIO, N3Y 4K2
PHONE: (519) 426-0842
E-mail: info@jewittdixon.com

JOB # 23-3900 CLIENT: BOER

METRIC NOTE:

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

CAUTION:

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT
BE USED FOR PURPOSES OTHER THAN THE
PURPOSE INDICATED IN THE TITLE BLOCK.

PROPERTY DESCRIPTION:

PART OF LOT 13, CONCESSION 9
GEOGRAPHIC TOWNSHIP OF CHARLOTTEVILLE



APPENDIX B

MECP Water Well Records

TOWNSHIP CON LOT				Summary of MECF Water Well Records with 500 m of the Subject Site				FORMATION			
UTM ZONE	EASTING	NORTHING	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL		
17	547879	4738827	W 2022/04 7242						7420137 (C51500) A312476 P		
17	547790	4738761	W 2022/03 7193						7446187 (2352923) A310784 P		
17	547764	4738792	W 2022/03 7193						7446186 (2352926) A310783 P		
17	547662	4739058	W 2021/08 7702						7398894 (2371572) A325651 P		
17	548029	4738457	W 2017/04 7356	1.25 FR 0024	12/13/10	DO	0025 3		7308962 (2244355) A214357	BRWN LOAM 0002 BRWN SAND 0016 BRWN CLAY SAND LYRD 0024 BRWN SAND MSND 0028 BRWN CLAY 0030	
17	547833	4738307	W 2007/06 7193	1.25 FR 0005	5/9/20/10	DO	0016 4		7049573 (227043) A056495	BLACK LOAM 0001 BRWN LOAM SNDY 0010 GREY CLAY 0011 GREY FSND 0035	
17	547689	4738885	W 2003/05 6808	1 FR 0006	6/10/20/10	IR	0018 4		407917 (258334)	BLACK LOAM 0002 BRWN SAND 0006 BRWN MSND SAND 0015 BRWN MSND 0020	
17	547302	4738847	W 2000/03 5201	1 FR 0008	8/15/15/10	DO	0022 4		4406938 (178525)	BLACK LOAM 0002 BRWN SAND 0008 GREY FSND 0026	
17	548022	4738294	W 1997/11 5201	1 FR 0008	5/19/8/10	DO	0022 3		4406857 (178479)	BLACK LOAM 0002 BRWN SAND 0005 BRWN MSND 0025	
17	547840	4739159	W 1996/08 5201	1 FR 0005	11/17/20/10	DO	0021 4		4406779 (168586)	BLACK LOAM 0002 BRWN SAND 0011 BRWN FSND 0015 BRWN MSND 0025	
17	548106	4738519	W 1996/08 5201	1 FR 0011	6/6/20/10	DO	0016 4		4405724 (78423)	BRWN LOAM 0002 BRWN SAND 0006 GREY FSND 0020	
17	547624	4738191	W 1990/09 5201	1 FR 0006	5/5/40/20	DO	0022 5		4405576 (65814)	BRWN LOAM 0003 GREY MSND WBRG 0019	
17	547999	4738405	W 1989/11 5201	5 FR 0005	3/3/18/10	DO	0016 3		4405087 (10728)	BLACK LOAM 0002 BRWN SAND 0007 GREY SAND WBRG 0017	
17	547687	4738210	W 1988/05 5201	1 FR 0003	7/7/20/10	DO	0013 4		4405088 (10725)	BRWN SAND 0004 GREY SAND WBRG 0015	
17	548267	4738493	W 1987/07 5201	1 FR 0004	4/4/20/10	DO	0014 4		4404968 ()	BLACK LOAM 0002 BRWN SAND 0005 BRWN MSND 0010 GREY SAND 0019	
17	547627	4738941	W 1987/07 5201	2 FR 0004	4/4/35/10	IR	0015 4		4404734 (212002)	BLACK LOAM 0002 BRWN SAND 0005 BRWN MSND 0010 GREY SAND 0019	
17	548165	4738365	W 1986/03 5201	1 FR 0008	10/11/10/10	DO	0016 3		4404724 ()	BLACK LOAM 0002 BRWN SAND 0010 GREY FSND 0020	
17	547834	4738642	W 1983/12 5201	1 FR 0006	5/6/15/10	DO	0017 3		4404667 ()	BLACK LOAM 0002 YLLW SAND 0005 BLUE SILT SAND 0010 GREY FSND 0018	
17	547654	4738202	W 1983/07 5201	1 FR 0006	10/20/20/30	DO	0012 3		4404642 ()	BLACK LOAM 0002 BRWN SAND 0006 GREY FSND 0016	
17	547794	4738522	W 1983/02 5201	1 FR 0010	9/9/20/20/30	DO	0015 4		4404285 ()	BLACK LOAM 0002 BRWN SAND 0009 GREY SAND 0020	
17	547474	4739082	W 1982/11 5201	1 FR 0006	12/14/20/30	DO	0015 5		4403365 ()	BLACK LOAM 0003 YLLW SAND 0012 GREY SAND 0020	
17	548074	4738522	W 1981/04 5201	1 FR 0009	18/10/20/30	DO	0019 4		4403167 ()	BLACK LOAM 0002 BRWN SAND 0015 BRWN GRVL 0016 BLUE SILT 0018 GREY MSND 0023	
17	548014	4738402	W 1980/04 5201	1 FR 0010	12/14/20/30	ST	0015 5		4403167 ()	BRWN SAND 0004 GREY MSND 0022	
17	548014	4738322	W 1977/02 5201	4 FR 0016	8/8/10/10	DO	0019 4		4402570 ()	BLACK LOAM 0003 WHIT FSND 0018	
17	547809	4738377	W 1974/10 3310	1 FR 0008	8/8/10/10	DO	0014 4		4402448 ()	BLACK LOAM 0001 YLLW MSND 0004 GREY MSND 0017	
17	547894	4738582	W 1973/10 5201	1 FR 0008	9/10/20/30	DO	0014 4		4402252 ()	LOAM 0001 YLLW FSND 0010 GREY FSND 0018	
17	547504	4739072	W 1970/05 5201	2 FR 0009	1/8/15/20	DO	0013 3		PRDG 0008 FSND 0025		
17	547534	4739042	W 1969/12 5201	2 FR 0006	6/15/15/20	DO	0018 4		PRDG 0004 FSND 0025		
17	547664	4738792	W 1968/10 5201	1 FR 0016	10/10/10/20	DO	0015 2		LOAM 0002 BRWN MSND 0015		
17	548174	4738572	W 1967/03 3310	2 FR 0016	8/8/15/10	DO	0011 4		LOAM 0002 BRWN MSND 0015		
17	548114	4738572	W 1967/02 3310	1 FR 0004	10/10/10/20	DO	0018 3		BRWN MSND 0004 CLAY HPAN 0006 BRWN MSND 0013 BRWN CLAY 0015 BRWN MSND 0018 BRWN CLAY 0023 GREY MSND 0028		
17	547674	4738292	W 1966/08 5201	1 FR 0008	19/16/20	P5 DO	0024 4				
17	547814	4738372	W 1964/07 5201	1 FR 0010	6/11/10/10	DO	0019 8				
17	547914	4738442	W 1963/09 3510	1 FR 0023	7100						
17	547572	4738172	W 7100	6.11 FR 0019 FR 6/10/10/10	DO						

Source: Ontario Ministry of Environment Conservation and Parks Water Well Information System (WWIS)

IM 1172 3T47650
4R 14713185710

Con TX
Lot 13
CODED



4402252

40E/16W

7

The Ontario Water Resources Commission Act

WATER RESOURCES
DIVISION
JAN 1 1968

lev. 5R 10765

WATER WELL RECORD

asin 231

County or District NORFOLK

Township, Village, Town or City CHARLETTVILLE

Con. 1X

Lot 13

Date completed 9/16/68
(day month year)

Address R.R. 1

Casing and Screen Record

Inside diameter of casing 1 1/4
Total length of casing 14 Ft
Type of screen 4 Ft JOHNSON
Length of screen 4 Ft
Depth to top of screen 14 Ft
Diameter of finished hole 2

Pumping Test

Static level 10 Ft
Test-pumping rate 20 G.P.M.
Pumping level 10 Ft
Duration of test pumping 2 HRS
Water clear or cloudy at end of test CLEAR
Recommended pumping rate 5 G.P.M.
with pump setting of 5 feet below ground surface

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
TOP SOIL	0	1	10 Ft	FRESH
FINE YELLOW SAND	1	10		
FINE GRAY WATER SAND	10	18		

For what purpose(s) is the water to be used? HOUSE

Is well on upland, in valley, or on hillside? UPLAND

Drilling or Boring Firm

Address Ted W. Kenner
179 Sherman
Dumfries

Licence Number 3015

Name of Driller or Borer

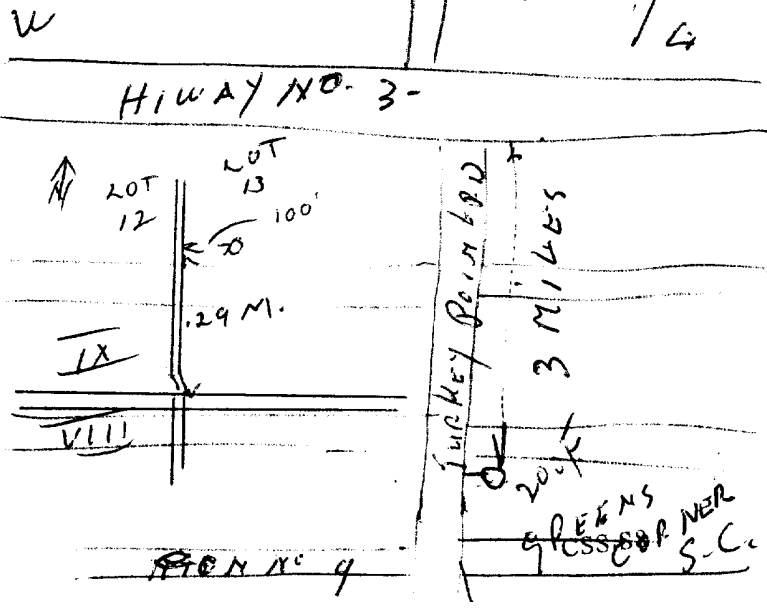
Address name

Date Oct 19/68

(Signature of Licensed Drilling or Boring Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.





Ontario

Ministry
of the
Environment

The Ontario Water Resources Act

40116d

WATER WELL RECORD

4404746

MUNICIP

44001

CON

C0N

09

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COUNTY OR DISTRICT N. B. DELHI	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE DELHI (CHARLOTTEVILLE)	CON. BLOCK TRACT SURVEY ETC. IX	DATE COMPLETED 13
R. I. SIMCOE ONT.		DAY 12 MO 12 YR 83	
38.420		ELEVATION 07.70	BASIN CODE 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	TOP SOIL			0	2
BROWN	SAND			2	5
MED. BROWN	WATER SAND			5	10
GREY	WATER SAND			10	19

MAY 26 1985

31	0003 02	0005 628	0010 607	0019 228
32				

41 WATER RECORD	
WATER FOUND AT - FEET	KIND OF WATER
10-13	<input checked="" type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD			
INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-11	<input type="checkbox"/> STEEL <input checked="" type="checkbox"/> GALVANIZED	1/8	0
17-18	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED		20-23
24-25	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED		27-30

SCREEN	SIZE (S) OF OPENING (SLOT NO.) 006	DIAMETER 04000	LENGTH 03
MATERIAL AND TYPE S.S. JOHNSON		DEPTH TO TOP OF SCREEN 0016	

61 PLUGGING & SEALING RECORD	
DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER ETC.)
10-13	
18-21	
26-29	

71 PUMPING TEST	PUMPING TEST METHOD <input checked="" type="checkbox"/> PUMP <input type="checkbox"/> BAILER	PUMPING RATE 0010 GPM	DURATION OF PUMPING 15-16 HOURS 30
	STATIC LEVEL 010 FEET	WATER LEVEL END OF PUMPING 011 FEET	WATER LEVELS DURING 15 MINUTES 26-28 FEET 30 MINUTES 29-31 FEET 45 MINUTES 32-34 FEET 60 MINUTES 35-37 FEET
	IF FLOWING GIVE RATE —	PUMP INTAKE SET AT 5 FEET	WATER AT END OF TEST 1 CLEAR <input type="checkbox"/> CLOUDY
	RECOMMENDED PUMP TYPE <input checked="" type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 005 FEET	RECOMMENDED PUMPING RATE 0005 GPM

1212 LOCATION OF WELL	
IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.	
DRILLERS REMARKS	

FINAL STATUS OF WELL	<input checked="" type="checkbox"/> WATER SUPPLY <input type="checkbox"/> OBSERVATION WELL <input type="checkbox"/> TEST HOLE <input type="checkbox"/> RECHARGE WELL	<input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY <input type="checkbox"/> ABANDONED, POOR QUALITY <input type="checkbox"/> UNFINISHED
	<input checked="" type="checkbox"/> DOMESTIC <input type="checkbox"/> STOCK <input type="checkbox"/> IRRIGATION <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> OTHER	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> MUNICIPAL <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> COOLING OR AIR CONDITIONING <input type="checkbox"/> NOT USED
	<input checked="" type="checkbox"/> CABLE TOOL <input type="checkbox"/> ROTARY (CONVENTIONAL) <input type="checkbox"/> ROTARY (REVERSE) <input type="checkbox"/> ROTARY (AIR) <input type="checkbox"/> AIR PERCUSSION	<input type="checkbox"/> BORING <input type="checkbox"/> DIAMOND <input type="checkbox"/> JETTING <input type="checkbox"/> DRIVING

CONTRACTOR	NAME OF WELL CONTRACTOR TED VANKESSEL	LICENCE NUMBER 5201
	ADDRESS 179 SHERMAN ST. SIMCOE	
	NAME OF DRILLER OR BORER M. VANKESSEL + M. MCGUIRE	LICENCE NUMBER
	SIGNATURE OF CONTRACTOR Ted Vankessel	SUBMISSION DATE DAY 12 MO 12 YR 83

OFFICE USE ONLY	DATA SOURCE 1	CONTRACTOR 5201	DATE RECEIVED 160284
	DATE OF INSPECTION Aug 8/85	INSPECTOR KM	
	REMARKS		
			CSS.88

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-4-77 FORM 7



Ontario

WATER WELL RECORD

401/6d

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11

4403167

MUNICIPALITY 44001

CON. Cdn

09

COUNTY OR DISTRICT 16 E 16	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Chatham	CON. BLOCK, TRACT, SURVEY, ETC. 1X	LOT 013
DATE COMPLETED DAY 31 MO 10 YR 73		48-53	
RC 38360		RC 4	ELEVATION 0770
RC 4		BASIN CODE 23	IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
black	topsoil			0	2
Brown	sand			2	10
gray	sand		fine	10	18

31	0002802	0010638	0018208
32			

41 WATER RECORD	
WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD			
INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-13	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1/8"	0/0014
15-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		
20-23	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		
25-28	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		
30-33	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		

SCREEN	SIZE(S) OF OPENING (SLOT NO.)	DIAM. 01250	LENGTH 39-40
		INCHES 0.4	FEET
MATERIAL AND TYPE		Johnson Redhead 0014	

61 PLUGGING & SEALING RECORD	
DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
10-13	14-17
18-21	22-25
26-29	30-33

71 PUMPING TEST	
PUMPING METHOD 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE GPM 0008
STATIC LEVEL 19-21 FEET 0008	WATER LEVELS DURING 2 <input type="checkbox"/> RECOVERY 15 MINUTES 22-24 30 MINUTES 26-28 45 MINUTES 29-31 60 MINUTES 32-34 35-37
IF FLOWING, GIVE RATE GPM	WATER AT END OF TEST 42 1 <input type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE 1 <input type="checkbox"/> SHALLOW 2 <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 43-45 FEET 0006

54 FINAL STATUS OF WELL 1 <input checked="" type="checkbox"/> WATER SUPPLY 2 <input type="checkbox"/> OBSERVATION WELL 3 <input type="checkbox"/> TEST HOLE 4 <input type="checkbox"/> RECHARGE WELL	5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY 6 <input type="checkbox"/> ABANDONED, POOR QUALITY 7 <input type="checkbox"/> UNFINISHED
55-56 WATER USE 1 <input checked="" type="checkbox"/> DOMESTIC 2 <input type="checkbox"/> STOCK 3 <input type="checkbox"/> IRRIGATION 4 <input type="checkbox"/> INDUSTRIAL 5 <input type="checkbox"/> OTHER	5 <input type="checkbox"/> COMMERCIAL 6 <input type="checkbox"/> MUNICIPAL 7 <input type="checkbox"/> PUBLIC SUPPLY 8 <input type="checkbox"/> COOLING OR AIR CONDITIONING 9 <input type="checkbox"/> NOT USED
57 METHOD OF DRILLING 1 <input checked="" type="checkbox"/> CABLE TOOL 2 <input type="checkbox"/> ROTARY (CONVENTIONAL) 3 <input type="checkbox"/> ROTARY (REVERSE) 4 <input type="checkbox"/> ROTARY (AIR) 5 <input type="checkbox"/> AIR PERCUSSION	6 <input type="checkbox"/> BORING 7 <input type="checkbox"/> DIAMOND 8 <input type="checkbox"/> JETTING 9 <input type="checkbox"/> DRIVING

LOCATION OF WELL	
N	
15km	
CONTR	
NET 13	
house.	
GREENSBORO	
9	
DRILLER'S REMARKS:	

CONTRACTOR	NAME OF WELL CONTRACTOR Ted Van Kessel	LICENCE NUMBER 5201
	ADDRESS Sherman St. Simcoe	
	NAME OF DRILLER OR BORER Hansie Richards	LICENCE NUMBER
	SIGNATURE OF CONTRACTOR Ted Van Kessel	SUBMISSION DATE DAY 10 MO 3 YR 73

OFFICE USE ONLY	DATE OF INSPECTION 04 12 73	CONTRACTOR 5201	DATE RECEIVED 04 12 73
REMARKS: house rented. no exact well location		CSSL88	



APPENDIX C

Water Balance and Predictive Assessment Calculations

Water Budget Summary (Using Thornthwaite Empirical Approach)								
Month	Mean Daily Average Daily Temp, t ⁽¹⁾ (°C)	Heat Index, i ⁽²⁾	Mean Monthly Precipitation, P ⁽¹⁾ (mm)	Days in Month, d	Average Daylight Hours, N ⁽³⁾	Unadjusted Potential Evapotranspiration, PE _{unadj} ⁽⁴⁾ (mm)	Adjusted Evapotranspiration Adjusted for Month and Daylight, PE ⁽⁵⁾ (mm)	Actual Water Balance, P - PE (mm)
January	-5.0	0.00	81.3	31	9.45	0.00	0.00	81.30
February	-4.5	0.00	58.0	28	10.57	0.00	0.00	58.00
March	0.3	0.01	70.8	31	11.98	0.84	0.87	69.93
April	6.8	1.59	87.4	30	13.44	28.83	32.29	55.11
May	13.6	4.55	87.6	31	14.67	63.17	79.81	7.79
June	19.0	7.55	81.5	30	15.28	92.23	117.47	-35.97
July	21.2	8.91	88.6	31	14.95	104.41	134.39	-45.79
August	20.1	8.22	79.5	31	13.85	98.30	117.20	-37.70
September	16.4	6.04	85.8	30	12.45	78.08	81.00	4.80
October	10.0	2.86	86.1	31	11.00	44.61	42.27	43.83
November	3.9	0.69	82.5	30	9.74	15.37	12.47	70.03
December	-1.7	0.00	76.3	31	9.09	0.00	0.00	76.30
Totals		40.41	965.4			525.8	617.8	347.6

Annual Heat Index, I	40.41
α ⁽³⁾	1.13

Notes:

- ⁽¹⁾ Data from Environment Canada 1991-2020 Climate Normals - Delhi Station (1991-2020 Data)
- ⁽²⁾ Monthly Heat Index, i = $(T/5)^{1.514}$; I = Annual Heat Index = sum of monthly heat indices
- ⁽³⁾ from US Naval Observatory web site
- ⁽³⁾ $\alpha = (6.75 \times 10^{-7} \times I^3) - (7.71 \times 10^{-5} \times I^2) + (0.01792 \times I) + .49239$ Where I = Annual Heat Index
- ⁽⁴⁾ $PE_{unadj} = 16 \times (10 \times t / I) \alpha$ Where: t= Degrees C; I= Annual heat index; α = factor based on heat index
- ⁽⁵⁾ $PE = PE_{unadj} \times (N / 12) \times (d / 30)$ Where N = number of daylight hours in that month; d = number of days in the month

MECP D-5-4 PREDICTIVE ASSESSMENT CALCULATIONS

CASE 1:

3977.2 m² Lot with 5% impervious space serviced by a conventional treatment unit without Nitrate reduction

Water Budget Calculations

Annual Precipitation, P	0.965	m/yr	<i>Environment Canada 1991 to 2020 Climate Normals, Delhi Station</i>
Evapotranspiration, E	0.618	m/yr	<i>Thornthwaite Mather Water Balance</i>
Water Surplus, S	0.348	m/yr	$[S = P - E]$

Infiltration Calculations

Infiltration Factors based on MOEE Hydrogeological Technical Information Requirements for Land Development Applications (April 1995)

<u>Topography, I_T</u>	<u>Soil Type, I_S</u>	<u>Vegetative Cover, I_V</u>
Flat 0.3	Tight Impervious Clay 0.1	Cultivated 0.1
Rolling 0.2	Medium (Clay & Loam) 0.2	Woodland 0.2
Hilly 0.1	Open Sandy Loam 0.4	
Selected: I _T = 0.25	I _S = 0.4	I _V = 0.1
Combined Infiltration Factor, I	0.75	$[I = I_T + I_S + I_V]$
Infiltration Rate, IR	0.2607 m/yr	$[IR = S \times I]$
Site Area, A _S	3977.2 m ²	
Percent Impervious Areas	5 %	
Impervious Areas, A _I	199 m ²	
Pervious Area, A _P	3778 m ²	$[A_P = A_S - A_I]$
Dilution Volume, V _D	2699 L/day	$[V_D = IR \times AP] \times 1000 \text{ L/m}^3 \div 365 \text{ days/year}]$

Nitrate Loading

Number of Lots, L	1 Lots	
Daily Effluent Flow per lot, Q _E	1000 L/day	<i>Default as per MOEE Technical Guideline</i>
Total Effluent Flow, Q _T	1000 L/day	$[Q_T = L \times Q_E]$
Nitrate Concentration in Effluent, N _E	40 mg/L	<i>Default concentration without treatment as per MOEE Technical Guideline</i>
Nitrate Reduction with Advanced Treatment	0 %	<i>Conventional treatment unit without Nitrate reduction</i>
Nitrate Concentration in Effluent, N _E	40 mg/L	
Background Nitrate Concentration, N _B	0.145 mg/L	<i>Assumed background concentration</i>

Predictive Assessment

Nitrate Concentration at Property Boundary, N_C

$$N_C = \frac{(N_E \times Q_E) + (N_B \times V_D)}{(Q_E + V_D)} \quad \text{MOEE D-5-4 Guidelines for Residential Developments}$$

$$N_C = 10.9 \text{ mg/L} \quad \text{*** Exceeds ODWQ Guideline Limit of 10 mg/L}$$

MECP D-5-4 PREDICTIVE ASSESSMENT CALCULATIONS

CASE 1:

3977.2 m² Lot with 5% impervious space serviced by an advance treatment unit with Nitrate reduction

Water Budget Calculations

Annual Precipitation, P	0.965	m/yr	<i>Environment Canada 1991 to 2020 Climate Normals, Delhi Station</i>
Evapotranspiration, E	0.618	m/yr	<i>Thornthwaite Mather Water Balance</i>
Water Surplus, S	0.348	m/yr	$[S = P - E]$

Infiltration Calculations

Infiltration Factors based on MOEE Hydrogeological Technical Information Requirements for Land Development Applications (April 1995)

<u>Topography, I_T</u>	<u>Soil Type, I_S</u>	<u>Vegetative Cover, I_V</u>
Flat 0.3	Tight Impervious Clay 0.1	Cultivated 0.1
Rolling 0.2	Medium (Clay & Loam) 0.2	Woodland 0.2
Hilly 0.1	Open Sandy Loam 0.4	
Selected: I _T = 0.25	I _S = 0.4	I _V = 0.1
Combined Infiltration Factor, I	0.75	$[I = I_T + I_S + I_V]$
Infiltration Rate, IR	0.2607 m/yr	$[IR = S \times I]$
Site Area, A _S	3977.2 m ²	
Percent Impervious Areas	5 %	
Impervious Areas, A _I	199 m ²	
Pervious Area, A _P	3778 m ²	$[A_P = A_S - A_I]$
Dilution Volume, V _D	2699 L/day	$[V_D = IR \times AP] \times 1000 \text{ L/m}^3 \div 365 \text{ days/year}]$

Nitrate Loading

Number of Lots, L	1 Lots	
Daily Effluent Flow per lot, Q _e	1000 L/day	<i>Default as per MOEE Technical Guideline</i>
Total Effluent Flow, Q _E	1000 L/day	$[Q_T = L \times Q_e]$
Nitrate Concentration in Effluent, N _E	40 mg/L	<i>Default concentration without treatment as per MOEE Technical Guideline</i>
Nitrate Reduction with Advanced Treatment	30 %	<i>Nitrate reduction using Level IV Advanced Treatment Unit</i>
Nitrate Concentration in Effluent, N _E	28 mg/L	
Background Nitrate Concentration, N _B	0.145 mg/L	<i>Assumed background concentration</i>

Predictive Assessment

Nitrate Concentration at Property Boundary, N_C

$$N_C = \frac{(N_E \times Q_E) + (N_B \times V_D)}{(Q_E + V_D)} \quad \text{MOEE D-5-4 Guidelines for Residential Developments}$$

$$N_C = 7.7 \text{ mg/L} \quad \text{O.K. - Meets ODWQ Guideline Limit of 10 mg/L}$$



APPENDIX D

Engineered Fill

The information presented in this appendix is intended for general guidance only. Site specific conditions and prevailing weather may require modification of compaction standards, backfill type or procedures. Each site must be discussed, and procedures agreed with Peto MacCallum Ltd. prior to the start of the earthworks and must be subject to ongoing review during construction. This appendix is not intended to apply to embankments. Steeply sloping ravine residential lots require special consideration.

For fill to be classified as engineered fill suitable for supporting structural loads, a number of conditions must be satisfied, including but not necessarily limited to the following:

1. Purpose

The site specific purpose of the engineered fill must be recognized. In advance of construction, all parties should discuss the project and its requirements and agree on an appropriate set of standards and procedures.

2. Minimum Extent

The engineered fill envelope must extend beyond the footprint of the structure to be supported. The minimum extent of the envelope should be defined from a geotechnical perspective by:

- at founding level, extend a minimum 1.0 m beyond the outer edge of the foundations, greater if adequate layout has not yet been completed as noted below; and
- extend downward and outward at a slope no greater than 45° to meet the subgrade

All fill within the envelope established above must meet the requirements of engineered fill in order to support the structure safely. Other considerations such as survey control, or construction methods may require an envelope that is larger, as noted in the following sections.

Once the minimum envelope has been established, structures must not be moved or extended without consultation with Peto MacCallum Ltd. Similarly, Peto MacCallum Ltd. should be consulted prior to any excavation within the minimum envelope.

3. Survey Control

Accurate survey control is essential to the success of an engineered fill project. The boundaries of the engineered fill must be laid out by a surveyor in consultation with engineering staff from Peto MacCallum Ltd. Careful consideration of the maximum building envelope is required.

During construction it is necessary to have a qualified surveyor provide total station control on the three dimensional extent of filling.

4. Subsurface Preparation

Prior to placement of fill, the subgrade must be prepared to the satisfaction of Peto MacCallum Ltd. All deleterious material must be removed and in some cases, excavation of native mineral soils may be required.

Particular attention must be paid to wet subgrades and possible additional measures required to achieve sufficient compaction. Where fill is placed against a slope, benching may be necessary and natural drainage paths must not be blocked.

5. Suitable Fill Materials

All material to be used as fill must be approved by Peto MacCallum Ltd. Such approval will be influenced by many factors and must be site and project specific. External fill sources must be sampled, tested and approved prior to material being hauled to site.

6. Test Section

In advance of the start of construction of the engineered fill pad, the Contractor should conduct a test section. The compaction criterion will be assessed in consultation with Peto MacCallum Ltd. for the various fill material types using different lift thicknesses and number of passes for the compaction equipment proposed by the Contractor.

Additional test sections may be required throughout the course of the project to reflect changes in fill sources, natural moisture content of the material and weather conditions.

The Contractor should be particularly aware of changes in the moisture content of fill material. Site review by Peto MacCallum Ltd. is required to ensure the desired lift thickness is maintained and that each lift is systematically compacted, tested and approved before a subsequent lift is commenced.

7. Inspection and Testing

Uniform, thorough compaction is crucial to the performance of the engineered fill and the supported structure. Hence, all subgrade preparation, filling and compacting must be carried out under the full time inspection by Peto MacCallum Ltd.

All founding surfaces for all buildings and residential dwellings or any part thereof (including but not limited to footings and floor slabs) on structural fill or native soils must be inspected and approved by PML engineering personnel prior to placement of the base/subbase granular material and/or concrete. The purpose of the inspection is to ensure the subgrade soils are capable of supporting the building/house foundation and floor slab loads and to confirm the building/house envelope does not extend beyond the limits of any structural fill pads.

8. Protection of Fill

Fill is generally more susceptible to the effects of weather than natural soil. Fill placed and approved to the level at which structural support is required must be protected from excessive wetting, drying, erosion or freezing. Where adequate protection has not been provided, it may be necessary to provide deeper footings or to strip and recompact some of the fill.

9. Construction Delay Time Considerations

The integrity of the fill pad can deteriorate due to the harsh effects of our Canadian weather. Hence, particular care must be taken if the fill pad is constructed over a long time period.

It is necessary therefore, that all fill sources are tested to ensure the material compactability prior to the soil arriving at site. When there has been a lengthy delay between construction periods of the fill pad, it is necessary to conduct subgrade proof rolling, test pits or boreholes to verify the adequacy of the exposed subgrade to accept new fill material.

When the fill pad will be constructed over a lengthy period of time, a field survey should be completed at the end of each construction season to verify the areal extent and the level at which the compacted fill has been brought up to, tested and approved.

In the following spring, subexcavation may be necessary if the fill pad has been softened attributable to ponded surface water or freeze/thaw cycles.

A new survey is required at the beginning of the next construction season to verify that random dumping and/or spreading of fill has not been carried out at the site.

10. Approved Fill Pad Surveillance

It should be appreciated that once the fill pad has been brought to final grade and documented by field survey, there must be ongoing surveillance to ensure that the integrity of the fill pad is not threatened.

Grading operations adjacent to fill pads can often take place several months or years after completion of the fill pad.

It is imperative that all site management and supervision staff, the staff of Contractors and earthwork operators be fully aware of the boundaries of all approved engineered fill pads.

Excavation into an approved engineered fill pad should never be contemplated without the full knowledge, approval and documentation by the geotechnical consultant.

If the fill pad is knowingly built several years in advance of ultimate construction, the areal limits of the fill pad should be substantially overbuilt laterally to allow for changes in possible structure location and elevation and other earthwork operations and competing interests on the site. The overbuilt distance required is project and/or site specified.

Iron bars should be placed at the corner/intermediate points of the fill pad as a permanent record of the approved limits of the work for record keeping purposes.

11. Unusual Working Conditions

Construction of fill pads may at times take place at night and/or during periods of freezing weather conditions because of the requirements of the project schedule. It should be appreciated therefore, that both situations present more difficult working conditions. The Owner, Contractor, Design Consultant and Geotechnical Engineer must be willing to work together to revise site construction procedures, enhance field testing and surveillance, and incorporate design modifications as necessary to suit site conditions.

When working at night there must be sufficient artificial light to properly illuminate the fill pad and borrow areas.

Placement of material to form an engineered fill pad during winter and freezing temperatures has its own special conditions that must be addressed. It is imperative that each day prior to placement of new fill, the exposed subgrade must be inspected and any overnight snow or frozen material removed. Particular attention should be given to the borrow source inspection to ensure only nonfrozen fill is brought to the site.

The Contractor must continually assess the work program and have the necessary spreading and compacting equipment to ensure that densification of the fill material takes place in a minimum amount of time. Changes may be required to the spreading methods, lift thickness, and compaction techniques to ensure the desired compaction is achieved uniformly throughout each fill lift.

The Contractor should adequately protect the subgrade at the end of each shift to minimize frost penetration overnight. Since water cannot be added to the fill material to facilitate compaction, it is imperative that densification of the fill be achieved by additional compaction effort and an appropriate reduced lift thickness. Once the fill pad has been completed, it must be properly protected from freezing temperatures and ponding of water during the spring thaw period.

If the pad is unusually thick or if the fill thickness varies dramatically across the width or length of the fill pad, Peto MacCallum Ltd. should be consulted for additional recommendations. In this case, alternative special provisions may be recommended, such as providing a surcharge preload for a limited time or increase the degree of compaction of the fill.



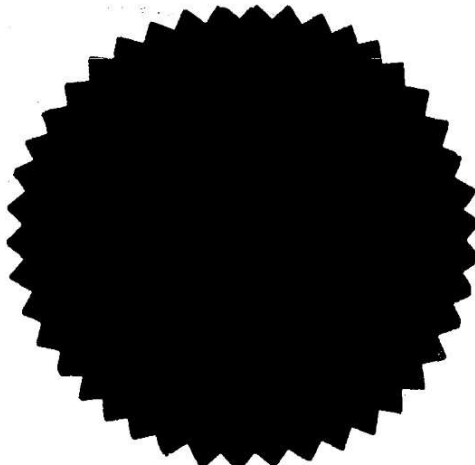
Ministry of
Consumer and
Commercial
Relations

Certificate of Incorporation

This is to certify that

CLARENCE BOER CONSTRUCTION LIMITED

was Incorporated under the Business Corporations
Act on June 27, 1975.



A handwritten signature in black ink, appearing to read "Paul H.", located above the title of the Controller of Records.

Controller of Records
Companies Division

File Number 307436

ARTICLES OF INCORPORATION

1. THE NAME OF THE CORPORATION IS CLARENCE BOER CONSTRUCTION LIMITED

2. THE HEAD OFFICE IS AT THE _____ City _____
(STATUS OF MUNICIPALITY)

OF Nanticoke, IN THE Regional Municipality
(NAME OF MUNICIPALITY) (COUNTY OR DISTRICT)

OF Haldimand-Norfolk
(NAME OF COUNTY OR DISTRICT)

3. THE ADDRESS OF THE HEAD OFFICE IS

R. R. # 3,
(STREET & NUMBER OR R.R. NUMBER & IF MULTI-OFFICE BLDG. GIVE ROOM NO.)

SIMCOE, Ontario.
(NAME OF MUNICIPALITY OR POST OFFICE)

4. THE NUMBER OF DIRECTORS IS Two

5. THE FIRST DIRECTOR(S) IS/ARE

NAME IN FULL, INCLUDING
ALL GIVEN NAMES

RESIDENCE ADDRESS, GIVING STREET & NO.
OR R.R. NO. & MUNICIPALITY OR POST OFFICE

Clarence Boer

R. R. # 3, SIMCOE, Ontario.

Gerdy Boer

R. R. # 3, SIMCOE, Ontario.

JUN 27, 1975

MINISTRY OF
CONSUMER AND
COMMERCIAL RELATIONS

6. THE OBJECTS FOR WHICH THE CORPORATION IS INCORPORATED ARE

- (a) To carry on business as general contractors and builders for the construction, erection, fabrication and building of all manner of buildings, roads, ways, bridges, tramways, wharves, works and structures and to operate as a general construction corporation;
- (b) To purchase, lease, take in exchange or otherwise acquire lands or interests therein together with any buildings or structures that may be on said lands or any of them, and to sell, lease, exchange, mortgage, rent or otherwise dispose of the whole or any portion of said lands or all or any of the buildings or structures that are now on or may hereafter be erected thereon and to take such security therefore as may be deemed necessary;
- (c) To deal in building materials;
- (d) To take or hold mortgages on any unpaid balance of the purchase money on any of the lands, buildings, structures so sold and to sell, mortgage or otherwise dispose of the said mortgages;
- (e) To improve, alter and manage the said lands and buildings;
- (f) To guarantee or otherwise assist in the performance of contracts or mortgages of persons, firms or corporations with whom or which the company may have dealings and to assume and take over such contracts or mortgages on default;
- (g) To prepare building sites and to construct, reconstruct, alter, improve, decorate, furnish and maintain offices flats, houses, factories, warehouses and lands and to consolidate, connect or subdivide property;
- (h) To acquire land for building purposes and to lay out building lots and to clear and improve the same in any manner and to construct roads and ways of every description and to purchase, lease, construct or otherwise acquire, hold and enjoy and to manage properties owned or controlled by the company, facilities for water supply and for the furnishing of electricity, power, light, heat, drainage or sewerage provided however that it shall not be lawful for the company hereby incorporated to directly or indirectly transact or undertake any business within the meaning of the Loan and Trust Corporations Act.

7. THE AUTHORIZED CAPITAL IS divided into thirty-six hundred (3,600) special shares with a par value of Ten (\$10.00) Dollars each and four thousand (4,000) common shares without par value provided that the common shares shall not be issued for a consideration exceeding in amount or value the sum of four thousand (\$4,000.00) Dollars, or such greater amount as the Board of Directors may by effective resolution determine.

8. THE DESIGNATIONS, PREFERENCES, RIGHTS, CONDITIONS, RESTRICTIONS, LIMITATIONS OR PROHIBITIONS ATTACHING TO THE SPECIAL SHARES, IF ANY, ARE

- 1) The holders of the special shares shall in each year, in the discretion of the Directors, but always in preference and priority to any payment of dividends on the common shares for such year, be entitled out of any or all profits or surplus available for dividends, to non-cumulative dividends at the rate of eight per cent (8%) per annum on the amount paid up on the special shares; if, in any year, after providing for the full dividends on the special shares, there shall remain any profits or surplus available for dividends, such profits or surplus or any part thereof, may at the discretion of the Directors, be applied to dividends on the common shares; the holders of the special shares shall not be entitled to any dividends other than or in excess of the non-cumulative dividends at the rate of eight per cent (8%) per annum hereinbefore provided for;
- (2) The special shares shall rank, both as regards dividends and repayment of capital, in priority to all other shares of the company, but shall not confer any further right to participate in profits or assets.
- (3) The company may, in the manner hereinafter provided, redeem all or from time to time, any part of the outstanding special shares on payment to the holders thereof for each share to be redeemed, of the amount paid thereon together with a premium of five per cent (5%) thereof and all dividends declared thereon and unpaid; not less than thirty (30) days' notice in writing of such redemption shall be given by mailing such notice to the holders of the shares to be redeemed specifying the date, place, or places of redemption; if notice of any such redemption be given by the company in the manner aforesaid and an amount sufficient to redeem the shares be deposited with any Trust Company or Chartered Bank in Canada, as specified in the notice, on or before the date fixed for redemption, dividends on the special shares to be redeemed shall cease after the date fixed for redemption, and the holders thereof shall thereafter have no rights against the Company in respect thereof, except upon the surrender of certificates for such shares, to receive payment therefor out of the moneys so deposited;
- (4) The company may, at any time and from time to time, purchase for cancellation, the whole or any part of the special shares at the lowest price which, in the opinion of the Directors, such shares are obtainable, but not exceeding the amount paid up thereon, together with a premium of five per cent (5%) thereof and all dividends declared thereon and unpaid;
- (5) In the event of the liquidation, dissolution or winding up of the company, whether voluntary or involuntary, the holders of the special shares shall be entitled to receive, before any

distribution of any part of the assets of the company among the holders of any other shares, the amount paid up thereon, and any dividends declared thereon and unpaid, and no more;

(6) The holders of the special shares shall not as such have any voting rights for the election of Directors or for any other purpose, but however, shall be entitled to notice of meetings of shareholders called for the purpose of authorizing the dissolution of the company or the sale of its undertaking or a substantial part thereof; holders of common shares shall be entitled to one vote for each common share held by them at all shareholders meetings;

(7) A special resolution authorizing an amendment of the articles to delete or vary a preference, right, condition, restriction, limitation or prohibition attaching to the special shares or to create special shares ranking in priority to, or on a parity with the special shares, in addition to the authorization by a special resolution, may be given by at least two-thirds of the votes cast at a meeting of the holders of the special shares duly called for that purpose.

9. *THE RESTRICTIONS, IF ANY, ON THE ALLOTMENT, ISSUE OR TRANSFER OF SHARES ARE*
the right to transfer shares of the company shall be restricted
in that no shares shall be transferred without the express
consent of the majority of the Directors, to be signified by
resolution passed by the Board.

9.A. THE SPECIAL PROVISIONS, IF ANY, ARE that the number of the shareholders of the corporation exclusive of persons who are in its employment and exclusive of persons who having been formerly in the employment of the corporation were while in that employment and have continued after the termination of that employment to be shareholders of the corporation is limited to not more than fifty (50), two or more persons who are joint registered owners of one or more shares being counted as one shareholder; and that any invitation to the public to subscribe for securities of the corporation is prohibited.

10. THE SHARES, IF ANY, TO BE TAKEN BY THE INCORPORATORS ARE

INCORPORATORS FULL NAMES, INCLUDING ALL GIVEN NAMES	NUMBER OF SHARES	CLASS DESIGNATION	AMOUNT BE PAID \$
Clarence Boer	1	common	\$1.00
Gerdy Boer	1	common	\$1.00

11. THE NAMES AND RESIDENCE ADDRESSES OF THE INCORPORATORS ARE

FULL NAMES, INCLUDING ALL GIVEN NAMES	FULL RESIDENCE ADDRESS GIVING STREET & NO. OR R.R. NO., MUNICIPALITY OR POST OFFICE
Clarence Boer	R. R. # 3, Simcoe, Ontario.
Gerdy Boer	R. R. # 3, Simcoe, Ontario.

THESE ARTICLES ARE EXECUTED IN DUPLICATE FOR DELIVERY TO THE MINISTER

SIGNATURES OF INCORPORATORS

Clarence Boer
Gerdy Boer

From: Darnell Lambert <darnell.lambert@norfolkcounty.ca>
Sent: Wednesday, April 3, 2024 8:04 AM
To: Scott Puillandre <Scottpuillandre@gdvallee.ca>
Cc: Brett Hamm <Brett.Hamm@norfolkcounty.ca>; Stephen Gradish <Stephen.Gradish@norfolkcounty.ca>
Subject: RE: 1904 Turkey Point Road - Traffic Impact Brief

Morning Scott:

In this circumstance, given the proposal is for the creation of a single new lot and that the road geometry provides clear sight lines for any new driveway in this location, we do not need a TIS study or and Operational Brief. The cost of such studies or briefs is not a factor in our decision but rather a matter of practical need.

Trust this suffices your request.

Thanks,

Darnell

Darnell Lambert, C.E.T.

Director, Engineering
Engineering

185 Robinson St.
Suite 200, Simcoe, Ontario, N3Y 5L6
519-426-5870 x1094

I. Transfers, Easements and Postponement of Interest


The owner acknowledges and agrees that if required it is their solicitor's responsibility on behalf of the owner for the registration of all transfer(s) of land to the County, and/or transfer(s) of easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's responsibility on behalf of the owner for the registration of postponements of any charges in favour of the County.

Permission to Enter Subject Lands

Permission is hereby granted to Norfolk County officers, employees or agents, to enter the premises subject to this application for the purposes of making inspections associated with this application, during normal and reasonable working hours.

Freedom of Information

For the purposes of the *Municipal Freedom of Information and Protection of Privacy Act*, I authorize and consent to the use by or the disclosure to any person or public body any information that is collected under the authority of the *Planning Act, R.S.O. 1990, c. P. 13* for the purposes of processing this application.



Owner/Applicant/Agent Signature

February 11 / 25


Date

J. Owner's Authorization

If the applicant/agent is not the registered owner of the lands that is the subject of this application, the owner must complete the authorization set out below.

I/We Clarence Boer Construction Limited am/are the registered owner(s) of the lands that is the subject of this application.

I/We authorize Mary Elder, Elder Plans Inc. to make this application on my/our behalf and to provide any of my/our personal information necessary for the processing of this application. Moreover, this shall be your good and sufficient authorization for so doing.



Owner

February 11 / 25

Date

Owner

Date

***Note: If property is owned by an Ontario Ltd. Corporation, Articles of Incorporation are required to be attached to the application.**

K. Declaration

I, Mary Elder of Norfolk County
solemnly declare that:

all of the above statements and the statements contained in all of the exhibits
transmitted herewith are true and I make this solemn declaration conscientiously
believing it to be true and knowing that it is of the same force and effect as if made
under oath and by virtue of *The Canada Evidence Act*.

Declared before me at:

Simcoe

Mary Elder
Owner/Applicant/Agent Signature

In Norfolk County

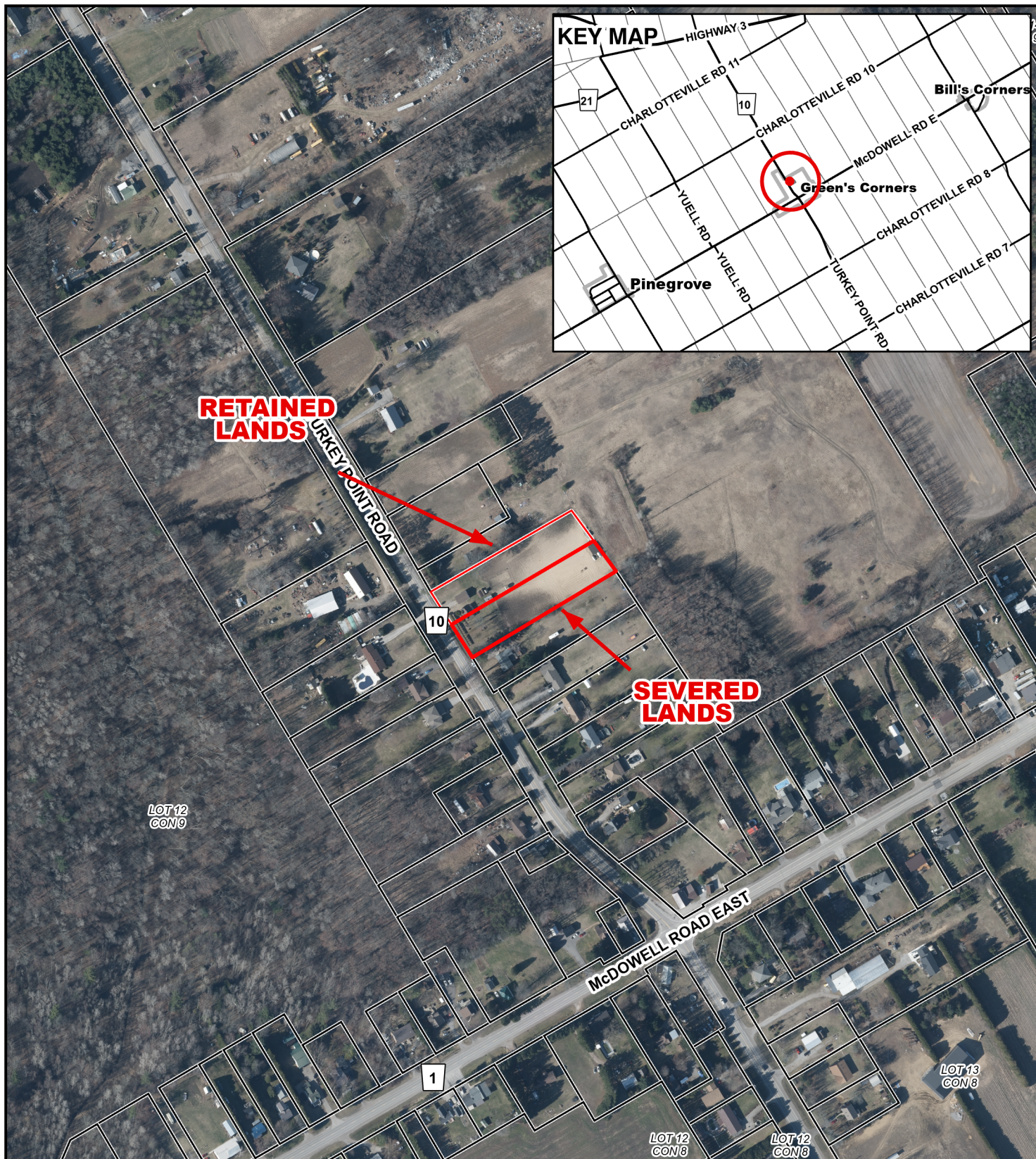
This 14 day of March

A.D., 20 25

Olivia Davies

A Commissioner, etc.

Olivia Catherine Davies, a
Commissioner, etc., Province of Ontario,
for the Corporation of Norfolk County.
Expires May 23, 2027.

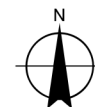


Legend

- Subject Lands
- Lands Owned

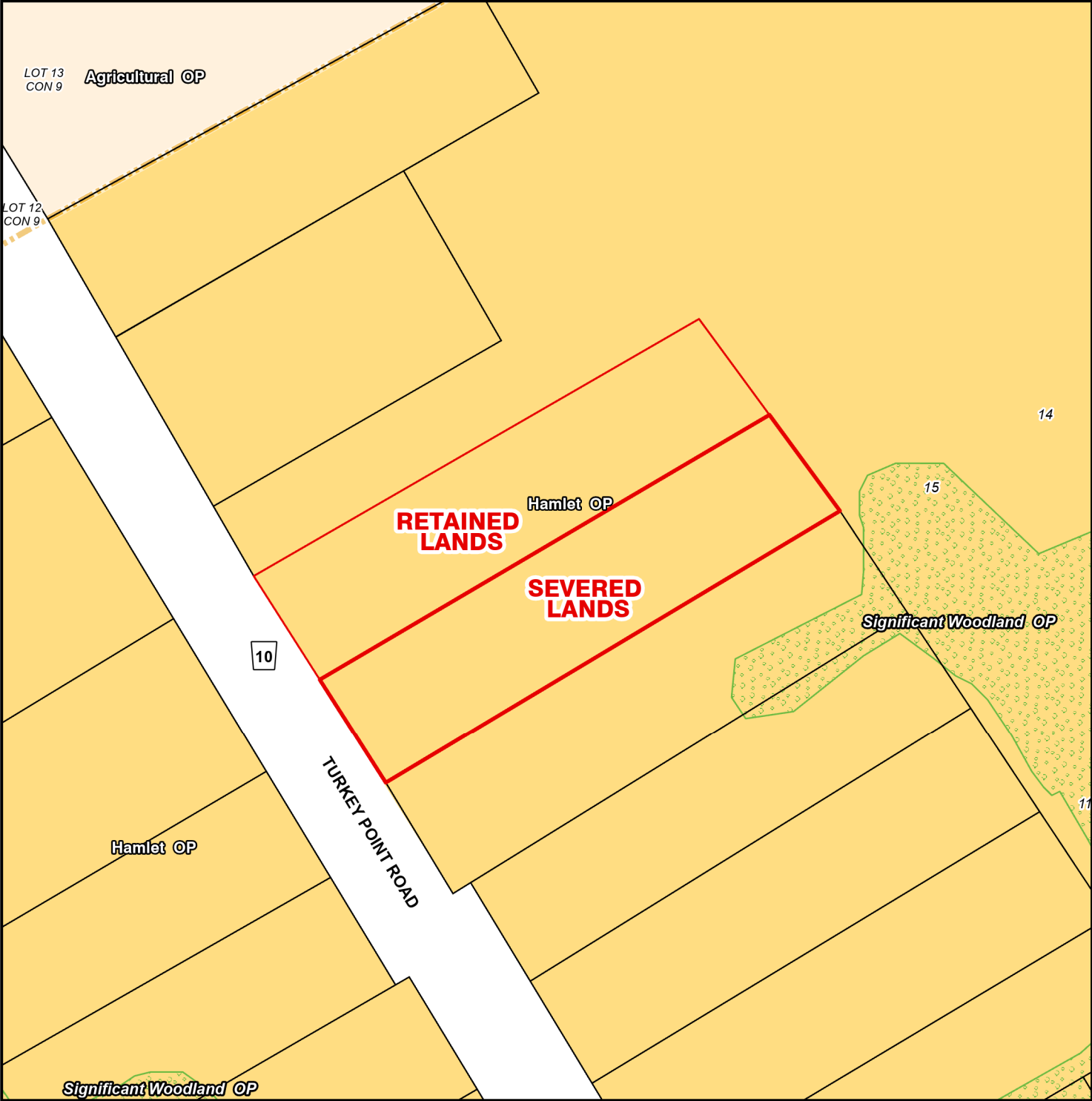
2020 Air Photo

5/1/2025



30 15 0 30 60 90 120 Meters

A graphical scale bar with markings for 30, 15, 0, 30, 60, 90, and 120 meters.



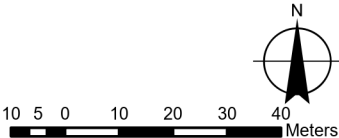
Legend

- Subject Lands
- Lands Owned

Official Plan Designations

- Agricultural
- Hamlet
- Hamlet Area Boundary
- Significant Woodland

5/1/2025



MAP C

ZONING BY-LAW MAP

Geographic Township of CHARLOTTEVILLE

BNPL2025050



LEGEND

- Subject Lands
- Lands Owned
- Adjacent Lands
- LPRCA Generic RegLines

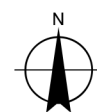
ZONING BY-LAW 1-Z-2014

5/1/2025

(H) - Holding

A - Agricultural Zone

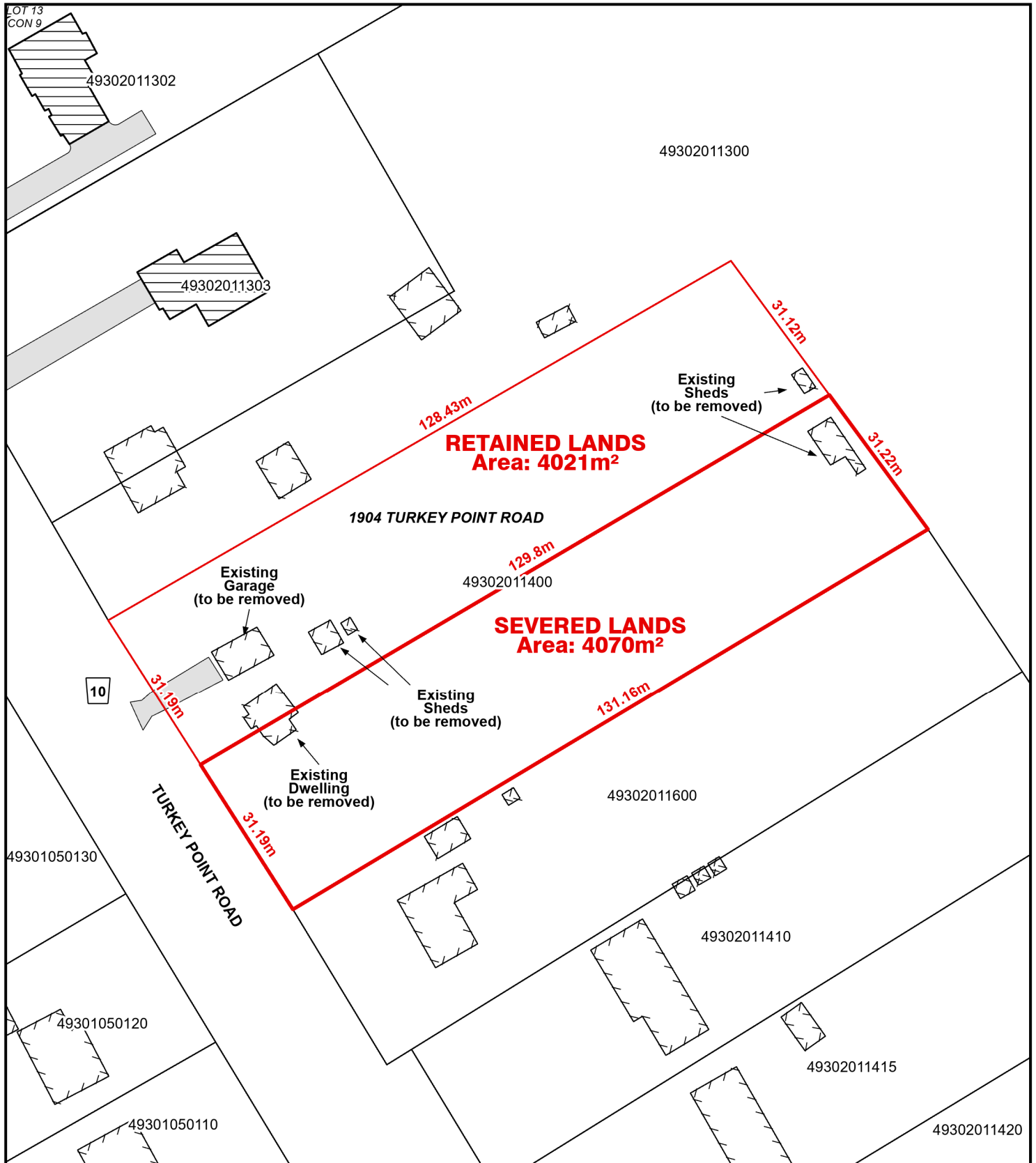
RH - Hamlet Residential Zone



9 4.5 0 9 18 27 36 Meters

CONCEPTUAL PLAN

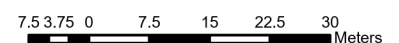
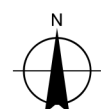
Geographic Township of CHARLOTTEVILLE



Legend

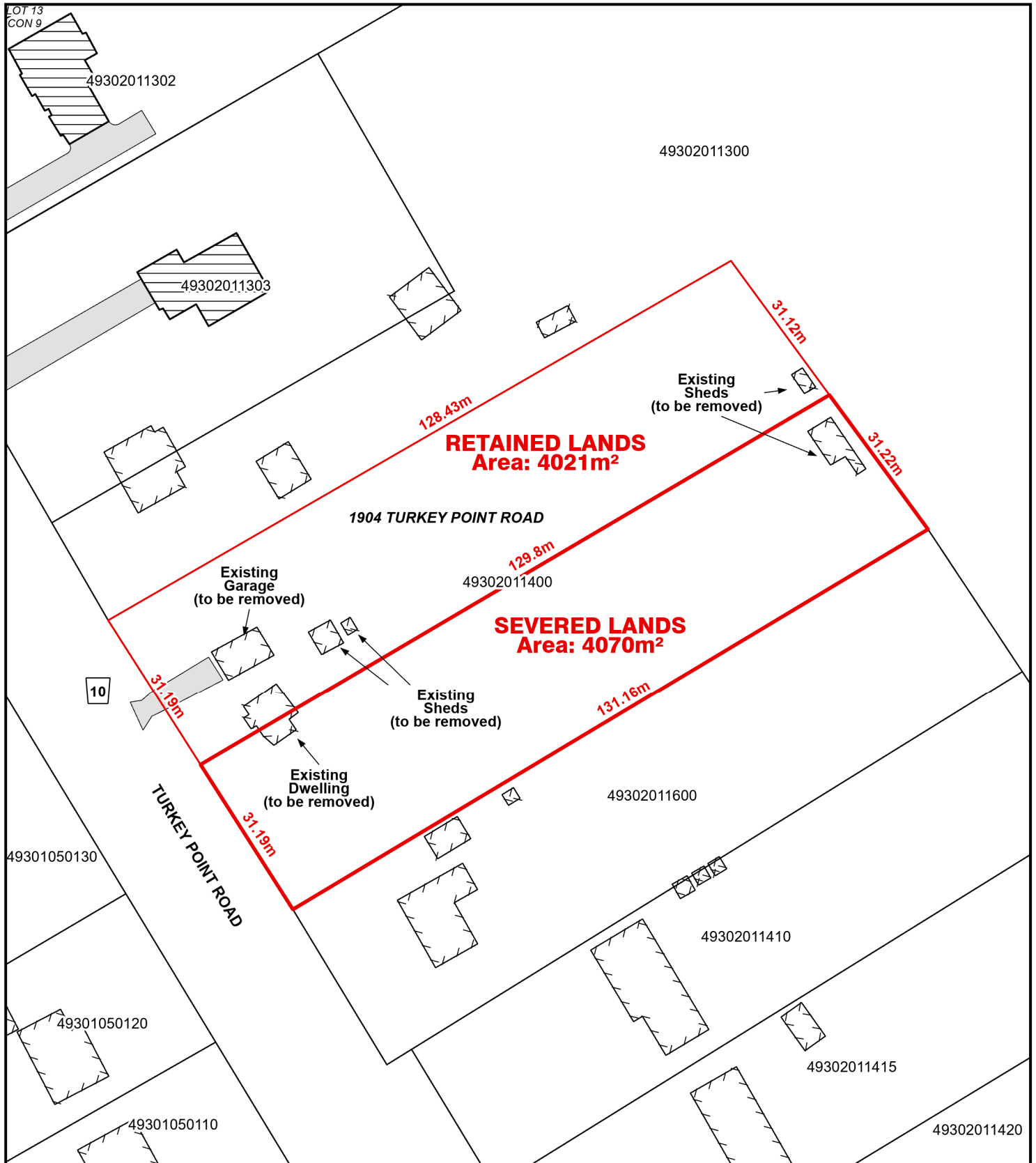
- Subject Lands
- Lands Owned

5/1/2025



CONCEPTUAL PLAN

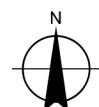
Geographic Township of CHARLOTTEVILLE



Legend

- Subject Lands
- Lands Owned

5/1/2025



7.5 3.75 0 7.5 15 22.5 30 Meters