

December 22, 2022
File: PH4560-LET.01



**PATERSON
GROUP**

Consulting Engineers

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Ottawa, Ontario
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Geotechnical Engineering
Environmental Engineering
Hydrogeology
Materials Testing
Building Science
Rural Development Design
Retaining Wall Design
Noise and Vibration Studies

patersongroup.ca

417 Auto Sales – Neil Chada
2026 Carp Road
Ottawa (Carp), Ontario
K0A 1L0

Subject: **Hydrogeological Brief and Assessment
of an Existing Sewage System
Proposed Change of Use
2026 Carp Road
Ottawa (Carp), Ontario**

Dear Neil,

Paterson Group Inc. (Paterson) was retained by Neil Chada of 417 Auto Sales to carry out an assessment of the existing private sewage system which services the existing building located at 2026 Carp Road, Ottawa (Carp), Ontario. The private sewage system assessment was required as per discussions Paterson had with the City Hydrogeologists. During those discussions, it was determined that a Hydrogeological Assessment and Terrain Analysis would not be required should the subject site be able to demonstrate Reasonable Use, at which point, a sewage system assessment will be required.

The Site Plan application is for the conversion of the existing approximately 81 m² (GeoOttawa) residential building into a commercial office building. No new fixtures will be added. Three (3) to five (5) employees are proposed to occupy the site for a standard 8 hour shift per day. Washroom access will be limited to employees only.

Hydrogeological Pre-consultation

During discussions with the City of Ottawa (City) Hydrogeologists on May 30, 2022, the City Hydrogeologist indicated that since the site is municipally serviced with municipal water services, that a Hydrogeological Assessment will not be required. They indicated that if the proposed septic flows are increasing compared to the existing, or if there will be reduced infiltration for septic dilution due to an increase in permeable surface, then a septic impact assessment should be included. However, as the site is municipally serviced with water, if it can be confirmed that none of the lots in the area rely on private wells and there are no sensitive features, then an impact assessment would not be required based on reasonable use. Additionally, should the lots that are privately serviced in the area be upgradient of the subject site, then an impact assessment will not be required.





The City provided a plan of lots which are municipally serviced within 500 m of the subject site. The map has been attached to this report.

HYDROGEOLOGICAL BRIEF

Groundwater Flow Direction

The overburden groundwater flow direction is anticipated to be towards the northeast towards Feedmill Creek which then flows north into the Carp River.

The subject site is mapped to be in an area where the surface elevation is consistently dropping from southwest to northeast, (i.e. from Carp road to the northeast). The City of Ottawa and MECP Feedmill Creek Flood Risk Map attached to this report show the topographic contours of the area. The field visits completed by Paterson as part of the septic system investigation generally corroborated the available mapping.

Surrounding Privately Serviced Water Supply

According to the municipal water servicing mapping provided by the City, the only property recorded to not have municipal water servicing is 1016 Carp Road. Paterson was able to contact 1016 Carp Road and received confirmation that they are on a drilled well supply.

Reasonable Use

As the overburden groundwater flow direction is anticipated to be towards the northeast (Feedmill Creek), and the ground surface on the subject site and surrounding properties slopes downhill towards the northeast, the drilled potable supply well at 1016 Carp Road is considered cross gradient and therefore isolated from potential onsite septic impacts. Due to the lack of any downgradient sensitive receivers, a Septic Impact Assessment is not required as part of the Site Plan application.

SEWAGE SYSTEM ASSESMENT AND SIZING REVIEW

The purpose of this assessment has been to provide an opinion as to whether the existing sewage system is presently functioning adequately and to determine if the capacity of the existing sewage system is suitable to support the proposed change of use.

File Search

A file search was completed with the Ottawa Septic System Office. The search resulted in the Township of West Carleton building permit approval and completion No. 00-0541, which was a replacement to the original sewage system. The system was designed to



support a dwelling consisting of 2 bedrooms, having a fixture unit count of 9.0 and a finished floor area of less than 200 m² resulting in a total daily design sewage system flow (TDDSSF) of 1,100 L/day. The system consists of a 3,600 L septic tank and the leaching bed area consists of 4 runs of 11 m resulting in a total length of 44 m with a sand area of 110 m² of sand (buried in native soil with a percolation rate of 8 min/cm).

Fieldwork Program

A member of our hydrogeological staff visited the subject site on November 8, 2022. The purpose of this visit had been to carry out a field investigation to assess the condition of the existing sewage system. The fieldwork program consisted of a cursory inspection of the site conditions and the putting down of a series of hand auger holes/test pits to determine the soil and groundwater conditions in the vicinity of the existing bed. Due to an excess of cover material, the client organised the excavation of the tank lid using hydraulic equipment, at which point a member of our hydrogeological staff returned to the site to perform an internal inspection of the septic tank. The internal inspection of the tank was completed on November 21, 2022.

Cursory Inspection

Our cursory inspection of the property found no surficial evidence of any operational problems (i.e. “break-out”) with the leaching bed of the sewage system.

Septic Tank

The existing concrete septic tank was located in the field and due to the cover depth, the tank could not be inspected on the original inspection date of November 8, 2022. As such, Paterson Group returned to site on November 21, 2022, after the tank was excavated using hydraulic equipment, to complete the inspection. The access lid to the primary and secondary chambers of the tank were uncovered and opened. The top of the septic tank is buried more than 1,000 mm below the existing ground surface. Paterson personnel confirmed that the existing septic tank has an estimated working capacity of 3,600 L, as per the sewage system documentation. The location of the tank with respect to the existing building conforms to the present regulations, the Ontario Building Code, 2012 (OBC).

Based on a visual assessment of the exposed portions of the tank, the tank appears to be structurally sound and watertight. Slight deterioration of the concrete was noted on the inside face of the tank walls in the secondary chamber of the tank, above the normal operating level, which is not unexpected for a tank of this age and is not considered to be problematic at this time. The concrete centre wall was noted to have significant deterioration above the working level of the tank. The inlet baffle and effluent filter were observed to be intact and functional at the present time.



The client notified Paterson that septic risers were being installed while the overburden material was being carefully placed back on top of the tank. Paterson did not confirm the installation of the risers.

At the time of our inspection, the liquid level in the primary chamber was above the inlet pipe, and a thick layer of scum was observed in the secondary chamber of the tank. The effluent was noted to be approximately at normal operating level. The effluent level being maintained above the inlet pipe is anticipated to be caused by a clogged effluent filter. The client has notified Paterson that they will be pumping the tank, at which point the effluent filter will be cleaned.

Leaching Bed

The leaching bed was located in the field with a series of probe holes. Based on the probe hole results, the leaching bed appears to consist of a conventional bed comprised of approximately 44 linear metres of PVC distribution pipe (4 runs of 11 m L) as per the sewage system documentation. The location of the bed with respect to existing structures conforms to the present OBC regulations.

Two (2) test holes were excavated in the existing leaching bed area. In general, the soil conditions encountered in the test holes consist of topsoil (50 mm thick), followed by septic bed sand (1300 mm thick), followed by the septic bed piping. The investigation could not be completed below the 1.3 m depth of the septic bed piping due to excess cover materials. It is anticipated that the septic bed piping is further underlain by clear stone as noted in the File Search.

At the time of our fieldwork, light biomat (black/grey staining) was observed in the septic sand layer around the septic piping. Typically, as the biomat layer matures, it thickens and becomes “impermeable” which results in hydraulic problems with the system. The formation of light biomat is not unexpected for a bed of this age.

In addition, no effluent was encountered in the test holes for the total investigated depth of approximately 1.3 m below the ground surface. Typically, in a properly functioning leaching bed the distribution pipes and the clear stone layer are unsaturated for the greater part of the time, as was observed in the test holes.

Existing Sewage System Capacity

The original sewage system design was designed to support a TDDSSF of up to 1,100 L/day, as per the sewage system documentation.

For commercial applications, the septic tank should have a minimum working capacity of at least three (3) times the TDDSSF. As such, the existing septic tank, which has an estimated working capacity of 3,600 L, is considered to be adequate to support a flow rate of up to 1,200 L/day.



The total length of distribution piping required in a conventional trench style leaching bed is determined by the formula $QT/200$, where “Q” is the design daily sewage flow and “T” is the percolation rate of the soil, being at least 900 mm thick below the base of the absorption trenches. Based upon the approximate percolation rate of 8 min/cm, the approximate total length of distribution pipe of 44 m is considered to be adequate to support up to 1,100 L/day.

Proposed Sewage System Capacity

The existing residential building will be converted over to an office building for three (3) to five (5) employees working a standard 8 hour shift per day. Public access to the washrooms will not be provided. In accordance with the OBC, the septic flow volume calculations would be the greater of the following two calculations:

- ❑ Office Area / 9.3×75 L/day
 - $81 \text{ m}^2 / 9.3 \times 75 \text{ L/day} = 653 \text{ L/day}$

OR

- ❑ Number of employees $\times 75$ L/day
 - $5 \text{ employees} \times 75 \text{ L/day} = 375 \text{ L/day}$

As the septic flow rate calculation based on the office area is the higher of the two calculations, the proposed total daily design sanitary sewage flow (TDDSSF) to be used for design purposes is **653 L/day**.

As the existing septic bed is designed for a TDDSSF of 1,100 L/day, the existing system is considered adequately sized for the proposed change in use.



Findings/Recommendations

Based on our review and field observations the client should be aware of the following:

- ☐ Due to the lack of any downgradient sensitive receivers, a Septic Impact Assessment is not required as part of the Site Plan application.
- ☐ It is our opinion that the existing sewage system is functioning adequately and showing signs of age with the formation of a light biomat within the clear stone layer. The formation of a biomat is not unexpected for a bed of this age.
- ☐ The client should be aware that the age of the existing leaching bed is approximately 22 years and the average life expectancy of a bed of this type, when properly designed and constructed, is in the order of 30 years. Usage and maintenance will greatly affect the life expectancy.
- ☐ As a means of prolonging the life of the bed, good water practices (i.e. preventing surge flows) should be undertaken by the occupants.
- ☐ The location of the existing sewage system components with respect to the existing buildings and drilled wells conform to the OBC regulated separation distances.
- ☐ Due to the deterioration of the concrete centre wall of the tank, it is recommended that the centre wall be repaired.
- ☐ The tank should be inspected and pumped, and the effluent filter be cleaned, on a regular basis (i.e. approx. every three to five years).
- ☐ Commercial usage of the system would provide a maximum of 1,100 L/day for daily flows (TDDSSF).
- ☐ The existing system is considered adequate for the proposed commercial use in terms of sizing.

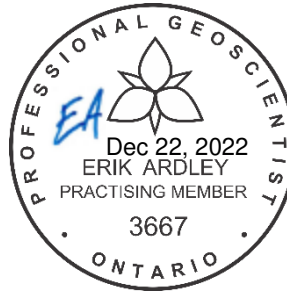


We trust that this satisfies your present requirements. Should you have any questions regarding this submission, please do not hesitate to contact the undersigned.

Yours truly,

PATERSON GROUP INC.

Erik Ardley, P.Ge



Attachments:

- ☐ City of Ottawa Municipal Servicing Map (500 m)
- ☐ Septic Systems Building Permit No. 00-0541
- ☐ City of Ottawa and MECP Feedmill Creek Flood Risk Map



The map displays a residential area in the City of Ottawa. A yellow circle with a radius of 400 meters is centered on a proposed new bus stop location, which is marked with a red rectangle. This proposed stop is located on Cheneau Rd, between the intersection with St. Lawrence St and the intersection with St. Patrick St. An existing bus stop is marked with a green rectangle on Cheneau Rd, between the intersection with St. Lawrence St and the intersection with St. Patrick St. The map shows various streets, including Cheneau Rd, St. Lawrence St, St. Patrick St, and St. George St. The City of Ottawa logo is visible in the bottom right corner.

- Serviced Locations
- PossiblyUnservicedLots_2026CarpRd
- Carp_Rd_2026_500mBuffer
- Carp_Rd_2026
- Property parcels



May 20, 2021



Ottawa Septic Bureau des systèmes
System Office septiques d'Ottawa

File Search Reply – Match Found

Information per applicant

To Paterson Group Date: October 25, 2022
Email: earley@patersongroup.ca Phone: 613-8089776

From: Ottawa Septic System Office
Phone: 613.692.3571 – Press “4” for the Septic office
Email: septic@rvca.ca

| | | |
|---|---|---|
| Follow up INQUIRIES Please Reference: FS-22-154 Archive file(s) WC-00-168 | | |
| Civic Address: 2026 Carp Road | | |
| Former Township: Huntley | | |
| Property Owner Last Name: 2244434 Ontario Inc. | | |
| Lot 1 | Con: 2 | Part: Plan: 5R-4886 |
| | Septic system designed per the attached records for: | Real estate feature listing obtained via the internet: |
| Bedrooms | 2 | |
| Bathrooms | 1 | |
| Square M | | |

Attachment(s):

- Permit
- Application

The foregoing information is given for your convenience only. Supplementary requests are necessary for conformity with other legislation such as flood plain or shoreline works. It should be clearly understood that you must satisfy yourself as to whether the premises and the existing or proposed use thereof is or would be in conformity with all applicable regulations. For further information please contact the Ottawa Septic System Office staff at the number listed above. Thank you for contacting the Ottawa Septic System Office.

Part 8 Inspector: Jason Hutton



BUILDING PERMIT

NO. 00- 054

PERMISSION IS HEREBY GIVEN TO: R. ALEXANDER

PROJECT DESCRIPTION: REPLACE SEPTIC SYSTEM

STREET ADDRESS: 2026 CARP ROAD

LOT NO.: Pt 1 CONCESSION NO.: 2 PLAN NO.: _____ PART: _____ WARD: HUNT

FREEDOM OF INFORMATION

"Personal information contained on this form is collected under Section 8 of the Building Code Act, S.O. 1992 Chapter 23. The information will be used within the municipality. Questions arising about this collection should be directed to the Chief Building Official."

Nov 13, 2000

Date

A handwritten signature in black ink, appearing to read "L. Moore".

Chief Building Official

**THIS CARD MUST BE POSTED NEAR PROPERTY LINE AND
VISIBLE FROM THE MAINTAINED ROAD.**

BUILDING PERMIT CIRCULATION FORM

APPLICANT: ALEXANDER. DATE: Nov. 6/00

CIVIC ADDRESS 2026 CARP ROAD ROLL # 030 840 041 00

APPROVALS APPLICABLE:

| Req. | Date Approved | Req. | Date Approved | Req. | Date Approved |
|-------------------------------------|---------------|------------------------|--------------------------|----------------------------|--------------------------|
| <input checked="" type="checkbox"/> | NOV-6/00 | Arch/Eng. Review | <input type="checkbox"/> | O.M.A.F./MDS | <input type="checkbox"/> |
| <input type="checkbox"/> | | M.O.E.E. Air Discharge | <input type="checkbox"/> | Arch/Eng Review | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> | NOV-12/00 | M.N.R. | <input type="checkbox"/> | RMOC Water | <input type="checkbox"/> |
| | | Zoning (see below) | <input type="checkbox"/> | Regional Health | <input type="checkbox"/> |
| | | Severance | <input type="checkbox"/> | Solicitor Gen/Fire Marshal | <input type="checkbox"/> |
| | | Minor Variance | <input type="checkbox"/> | MTO Bldg/Land Use | <input type="checkbox"/> |
| | | M.O.L. | <input type="checkbox"/> | Plans Examination | <input type="checkbox"/> |
| | | Council | <input type="checkbox"/> | Finance | <input type="checkbox"/> |
| | | Site Plan | <input type="checkbox"/> | | |

Site /Lot Grading Plan ☐

Reviewed By: _____

Entrance: MTO ☐ RMOC ☐ WC ☐
New ☐ Existing ☐

BUILDING DEPARTMENT:

AREA CALCULATIONS:

1. GROSS BLDG. AREA: (all floor levels including exterior walls) _____
 deck / balcony / porch _____
 house _____
 garage _____

2. BUILDING AREA FOOTPRINT _____

3. INTERIOR BUILDING AREA (all floor levels - living area) _____

4. BUILDING DESCRIPTION SEPTIC REPLACEMENT

PLANNING DEPARTMENT: Reviewed by: _____ Date: _____

| Planning | Zoning Compliance | Other |
|---|-------------------------------|-----------------------------------|
| Zone Designation _____ | Existing Undersized Lot _____ | Subdivision Agreement _____ |
| Official Plan Designation _____ | Bldg Height _____ | Special Covenants/Easements _____ |
| Wetland/ANSI/Minerals/Pits/Quarries _____ | Dwelling Unit Area _____ | NOTE: _____ |
| Lamp Post _____ | Separation Distance _____ | _____ |
| | Setbacks Met _____ | _____ |
| | Maximum Coverage _____ | _____ |

FEES APPLICABLE

| FINANCE: | DEVELOPMENT CHARGES | BUILDING: |
|--------------------|---------------------------|----------------------------|
| Reviewed by: _____ | Municipal Dev. Charge \$ | Building \$ |
| Comments: _____ | Regional Dev. Charge \$ | Plumbing \$ |
| | Education Dev. Charge: | Stove/Fireplace/Chimney \$ |
| | OCDSB \$ | Demolition/Moving \$ |
| | OCCSB \$ | Entrance \$ |
| | OCFLCSB. \$ | Septic \$250.00 |
| | OCFLPSB \$ | Civic Sign \$ |
| | Water Lateral \$ | Pool Enclosure \$ |
| | Sewer Lateral \$ | Revision \$ |
| | RMOC Water (221) \$ | Admin \$ |
| | RMOC Sewer (221) \$ | Subtotal B \$250.00 |
| | TWSP Local Sewer (221) \$ | |
| | Subtotal A \$ | ZONING/PLANNING: |
| | | Subtotal C \$ |
| | | + Subtotal A \$ |
| | | + Subtotal B \$250.00 |
| | | TOTAL \$250.00 |



BUILDING PERMIT APPLICATION

Personal information on this form is collected under the authority of the Building Code Act and the Township of West Carleton Building By-law and will be used in the processing of your building permit. Questions about this collection of personal information should be directed to the Municipal Clerk.

PERMIT NO. 00-0541
ROLL # 030 810 04100

APPLICATION DATE: Nov 6/00

ESTIMATED VALUE: \$ 6,000.⁰⁰

WORK TYPE: CONSTRUCT ☐ MOVE ☐ DEMOLISH ☐ PLUMBING ☐ ADD TO ☐ ALTER ☐ REVISE ☐ INSTALL ☒ SEPTIC ☒

USE TYPE: RESIDENTIAL ☐ COMMERCIAL ☐ FARM ☐ INSTITUTIONAL ☐ INDUSTRIAL ☐ ASSEMBLY ☐

PERMIT FOR Replace Septic System - including new tank
(Describe Work)

LOCATION ON

CONTRACTOR

| | | | |
|--|---------------|-----------------------------|-----------------------------------|
| LOT <u>1</u> | CON <u>2</u> | WARD <u>Huntley</u> | Name <u>RON MOORE EQUIP. Ltd</u> |
| PLAN _____ | PART(S) _____ | Address <u>P.O. Box 507</u> | City/Prov <u>Stittsville, Ont</u> |
| Address/Street Name <u>2026 Carp Rd.</u> | | | Postal Code <u>K2S 1K6</u> |
| Phone w () _____ | | | h () _____ |

OWNER

APPLICANT

| | |
|----------------------------|------------------------|
| Name <u>Ruth Alexander</u> | Name <u>Contractor</u> |
| Address <u>P.R. #3</u> | Address _____ |
| City/Prov <u>Carp, Ont</u> | City/Prov _____ |
| Phone w () _____ | Phone w () _____ |
| h <u>613 836-2325</u> | h () _____ |

PLUMBER

SEPTIC INSTALLER

| | |
|------------------------|------------------------|
| Name _____ | Name <u>Contractor</u> |
| Address _____ | Address _____ |
| City/Prov _____ | City/Prov _____ |
| Phone w () _____ | Phone w () _____ |
| h () _____ | h () _____ |
| License # <u>306 A</u> | License # _____ |

| | |
|-----------------------------------|--|
| PLUMBING /SEPTIC | APPLIANCES/FIXTURES |
| No. of Bedrooms <u>2 EXISTING</u> | Auto Washer _____ Sewage Pump _____ |
| No. of Fixtures _____ | Septic Connect _____ Sink/Basin _____ |
| Fixture Units <u>2 EXISTING</u> | Laundry Tub _____ |
| | Dishwasher _____ Urinal/Bidet _____ |
| | Hopper Oil/Int _____ Floor Drain _____ |
| | Shower/Tub _____ |
| | Toilet _____ Vent Roof _____ |
| | Hot Water Tank _____ B/W Valve _____ |
| | Other _____ |

| | | | |
|------------------------------------|----------------------------------|---------------------------------------|-------------------------|
| FEES | | Development Charges | |
| Building Permit \$ _____ | Stove/Fireplace/Chimney \$ _____ | Administration \$ _____ | 0.6 D.S.B. \$ _____ |
| Plumbing \$ _____ | Civic Sign \$ _____ | Revision \$ _____ | 0.C.C.S.B. \$ _____ |
| Septic \$ <u>250.⁰⁰</u> | Entrance \$ _____ | Municipal Development Charge \$ _____ | 0.C.F.L.C.S.B. \$ _____ |
| Demolition \$ _____ | Pool Enclosure \$ _____ | Regional Development Charge \$ _____ | 0.C.F.L.P.S.B. \$ _____ |

TO THE CHIEF BUILDING OFFICIAL: THE UNDERSIGNED HEREBY APPLIES FOR A PERMIT TO BUILD ACCORDING TO PLANS, SPECIFICATIONS, AND SITE PLAN HEREWITH SUBMITTED, AND AGREES TO COMPLY WITH ALL BY-LAWS AND MUNICIPAL REGULATIONS, IT BEING EXPRESSLY UNDERSTOOD THAT THE ISSUING OF A PERMIT DOES NOT RELIEVE THE APPLICANT FROM COMPLYING WITH ALL SAID BY-LAWS AND REGULATIONS, THOUGH NOT CALLED FOR IN THE SPECIFICATIONS OR SHOWN ON THE PLANS SUBMITTED. THE APPLICANT FURTHER AGREES THAT IF A PERMIT IS REVOKED FOR ANY CAUSE OR IRREGULARITY OR NON-CONFORMANCE TO THE SAID BY-LAW OR REGULATIONS, THAT IN THE CONSIDERATION OF THE ISSUANCE OF THE PERMIT ALL CLAIMS ARE WAIVED ARISING THEREFROM AGAINST THE CORPORATION OF THE TOWNSHIP OF WEST CARLETON

ONHPW: (STATEMENT WITH RESPECT TO THE ONTARIO NEW HOME WARRANTIES PLAN ACT) I AM BUILDING TO SELL (VENDOR/BUILDER) OR CONTRACTING AS A BUILDER. BUILDERS REGISTRATION # _____ EXPIRY DATE _____ OR
I AM NOT A BUILDER AS DEFINED BY THE ONTARIO HOME WARRANTIES PLAN ACT. AS OWNER/BUILDER IT IS MY INTENTION TO RETAIN OWNERSHIP FOR MY OWN USE. I UNDERSTAND THAT THIS HOME IS NOT ELIGIBLE FOR ENROLMENT OR COVERAGE UNDER THE ONTARIO NEW HOME WARRANTIES PLAN ACT. YES _____ (Applicant to initial)

PROVINCE OF ONTARIO, REGIONAL MUNICIPALITY OF OTTAWA CARLETON TO WIT:

IN THE MATTER OF THE APPLICATION FOR A BUILDING PERMIT, IN PURSUANCE OF BUILDING BY-LAW NO. 130F98 OF THE CORPORATION OF THE TOWNSHIP OF WEST CARLETON

I, S. Monette OF THE TWP OF WC
IN THE REGIONAL MUNICIPALITY OF OTTAWA-CARLETON, MAKE OATH AND SAY: THAT I AM THE AGENT OF THE OWNER/OWNER NAMED IN THE APPLICATION AND THE INFORMATION IN THE SAID APPLICATION AND THE PLANS AND SPECIFICATIONS SUBMITTED HEREWITH IS TRUE AND CORRECT IN EVERY RESPECT AND NO RELEVANT INFORMATION HAS BEEN WITHHELD. 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 THE TOWNSHIP OF WEST CARLETON, REGIONAL MUNICIPALITY OF OTTAWA-CARLETON, THIS 6 DAY OF Nov 2000

Witness: Graham Shroy
(municipal employee)

Sandra Monette
(to be signed by Owner or authorized Agent of Owner)

TOWNSHIP OF WEST CARLETON

DESIGN REVIEW FOR CLASS 4 SEPTIC SYSTEMS

Permit # : 00-0541

Owner : ALEXANDER

Date : NOV. 12, 2000

Reviewed By : T. USHER

Reviewed Copy For : Applicant ☐ or Office ☒

Design Conforms To Regulation : Yes ☒ No ☐

Flood Plain Elevations in effect : Yes ☐ No ☒

New System = m ☐ Replacement = m ☐

Inspections Required : Test Pits ☒ Scarify Sub-grade ☐ Installation ☒ Final Grading ☒

Documentation Required For Filter Beds : ☐ Weigh Bills (copies) ☐ Grain Analysis

Shallow Buried Trench : ☐ BMHC Specifications ☐ Copy of Treatment Unit's Maintenance Agreement

☐ Copies of Engineer's Site Inspection Reports ☐ Other :

(A) DAILY DESIGN FLOW CALCULATIONS :

| | | |
|---|---|--|
| 1 bedroom = 750 L | Fixture Unit Count Over 20 | # of bedrooms = <u>2</u> Litres = <u>1100</u> |
| 2 bedroom = 1100 L | Additional 50 L. per Fixture Unit | Additional F.U. = <u> </u> Litres = <u> </u> |
| 3 bedroom = 1600 L | Dwelling Area Over 200 m ² | Additional flow for every 10 m ² Additional m ² = <u> </u> Litres = <u> </u> |
| 4 bedroom = 2000 L | Between 200 m ² to 400 m ² = 100 L. | |
| 5 bedroom = 2500 L | Between 400 m ² to 600 m ² = 75 L. | |
| Over 5 bedrooms - additional flow of 500 L per bedroom. | | TOTAL DAILY DESIGN FLOW = <u>1100</u> L. |
| NON-RESIDENTIAL USES : Flows based on occupancy : | | Exceeds 10,000 L/Day Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |

(B) SIZE OF TREATMENT UNIT SEPTIC TANK :

(1) Minimum tank size Residential - Daily Design Flow x 2 = 2200 L Proposed = 3600 L (Total of all tanks)
Non-residential - Daily Design Flow x 3 = L 2 CODE MIN. = 3600 L.

(C) COMMON BED DESIGN CRITERIA:

(1) BED LOADING BASED ON EXISTING SOIL : T-TIME = 8 min/cm Bed Loading Rate = 10 L/m²/day
Loading Rates = where 1 < T < 20 = 10 L/m²/day, 20 < T < 35 = 8 L/m²/day, 35 < T < 50 = 6 L/m²/day, T > 50 = 4 L/m²/day

(2) BED CONSTRUCTION : Raised Bed ☐ Partially Raised Bed ☐ Buried Bed ☒
Dosing Pump & Chamber Required : Yes ☐ No ☒ Alarm System Required : Yes ☐ No ☒

(D) ABSORPTION TRENCH LEACHING BED : ☒ Q = 1100 r = 8

(1) LENGTH OF DISTRIBUTION PIPING : (2 < T-time < 20) L = QT / 200 (20 < T-time < 50) L = QT / 300 Minimum = 44 m

Distribution piping > 150 meters : Provide dosing pump and chamber. Determine dosage volume 75% of distribution piping.

~~(2)~~ Pipe diameter x length = minimum dosage volume = Litres Proposed volume = Litres
(3) Proposed bed size : # of runs = 4 x length of runs = 11 m = 44 m (total length) Bed loading = Q / Loading Rate = 110 m²
Proposed = m² BURIED IN NAT

Raised beds - fill material mantel T-time minimum 75% of leaching bed soil.

(4) REQUIRED : 900 mm to rock, water table or impervious soil
40 meters min. total pipe length and 30 meters max. run length
trench - width (500 to 1000 mm) by depth (600 to 900 mm)
- spacing minimum 1600 mm
PROPOSED : 900 mm
Total pipe length = 44 m and Max. run length = 11 m
trench - width = 500 mm by depth = 600 mm
- spacing = 1600 mm SOIL WITH A
T-TIME = 8.

~~(E)~~ FILTER MEDIA LEACHING BED : ☐

(1) Daily Design Flow = L/day ☐ < 5000 L/day < ☐ Daily Design Flow ☐ < 3000 L/day < ☐ (2 beds of equal size required)
☐ Where Daily Design Flow exceeds 5000 L/day a treatment unit is required (other than a septic tank).

(2) SIZE OF BED EFFECTIVE AREA : ☐ < 3000 L/day ☐ > 3000 L/day ☐ Treatment Unit (effluent not exceeding max. in Table 8.6.2.2.A)
Proposed area = m². Max. 75 L/m²/day Max. 50 L/m²/day Max. 100 L/m²/day Minimum Bed Area = m²

Bed area minimum = 10 m² and not more than 50 m²

(3) SIZE OF CONTACT AREA : Daily Design Flow x Soil Percolation Time = m² (minimum) Proposed = m²
850

(4) Volume of Filter sand = Bed Area x 750 mm = m³ Weight of Filter Sand (45.36 kg / ft³ or 1602 kg / m³) = kg

(5) SIZE OF MANTEL CONTACT AREA : Daily Design Flow = m² Proposed = m²
Bed Loading Rate

Distribution piping maximum spacing 1.2 meters evenly spaced with 1/2 space at bed edges.

(6) 750 mm filter sand below stone Proposed = mm 250 mm material depth below filter sand where on rock or impervious soil

~~(F)~~ PROPRIETARY TREATMENT UNIT AND SHALLOW BURIED TRENCHES : ☐

SHALLOW BURIED BEDS :

(1) LENGTH OF DISTRIBUTION PIPING : (T-time < 50) L = Q / 75 (T-time > 50) L = Q / 40 Minimum = m
Pipe shall be minimum 25 mm dia. and shall be self-draining. Every chamber shall contain only 1 pressurized distribution pipe

(2) REQUIRED : 900 mm to rock, water table or impervious soil
30 meters min. total pipe length and 30 meters max. run length
trench - width (300 to 600 mm) by depth (300 to 600 mm)
- spacing minimum 1600 mm
PROPOSED : mm
Total pipe length = m and Max. run length = m
Trench - width = mm by depth = mm
- spacing = mm

(3) A pressurized distribution system shall have a pressure head minimum of 600 mm when measured at the most distant point from the pump
(4) Every chamber shall be as wide as the trench in which it's contained, & the cross-sectional height of the chamber at the centre point shall not be less than 1/2 the width of the trench.

(E) BED CONSTRUCTION :

(1) REQUIREMENTS : 300 to 600 mm topsoil over stone

Paper over stone

50 mm stone over tiles

75 mm tile diameter minimum

150 mm stone depth below tile minimum

PROPOSED : 300 mm

Yes ☒ No ☐

50 mm

75 mm

150 mm

(2) Slope of pipe - 30 mm min. & 50 mm max. per 10 m. 33 mm to 55 mm (No slope required on Filter Beds)
~~(3)~~ Raised Beds require a minimum 15 meters mantel extension in the direction of natural drainage and minimum 250 mm in depth

Proposed mantel extension = meters and proposed depth = mm

~~(4)~~ Mantel Slope minimum 1 in 4 Proposed : Vertical = m and Horizontal = m

Mantel slope permitted to be 1 in 3 provided measures are taken to prevent erosion & ensure stability of the leaching bed fill)

(F) CLEARANCES REQUIRED :

(1) TREATMENT UNIT To any structures = 1.5 meters

To property lines = 3 meters

To any wells = 15 meters

(2) LEACHING BEDS

Increase clearances for raised beds by 2 x meters (height above existing grade) = meters

To any structure = 5 meters

To property lines = 3 meters

To any trees = 3 meters

To any bodies of water = 15 meters

To wells - cased to 6 m = 15 meters

- all other types = 30 meters

Proposed 1.5 meters

23 meters

 meters

5 meters

3 meters

3 meters

3 meters

 meters

 meters

MUNICIPAL WATER.

MUNICIPAL WATER.

Revised 03/03/00

SEPTIC SYSTEM SITE EVALUATION

| | |
|---|--|
| <div><input type="checkbox"/> CLASS 2 LEACHING PIT</div> <div><input type="checkbox"/> CLASS 3 CESS POOL</div> <div><input type="checkbox"/> CLASS 4 SYSTEMS</div> <div><input checked="" type="checkbox"/> ABSORPTION TRENCH CONVENTIONAL</div> <div><input type="checkbox"/> ABSORPTION TRENCH RAISED</div> <div><input type="checkbox"/> FILTER BED (ATTACH GRADING CERTIFICATE)</div> <div><input type="checkbox"/> PROPRIETARY SYSTEM</div> <div>DESCRIBE</div> <div><input type="checkbox"/> CLASS 5 HOLDING TANK</div> <div>TYPE OF ALARM <input type="checkbox"/> AUDIO <input type="checkbox"/> VISUAL</div> <div>PUMP OUT CONTRACT <input type="checkbox"/> ATTACH DOCUMENTATION</div> | <div>NAME <u>RON MOORE EQUIP. LTD. - R. MOORE</u> <small>(Name of Individual Preparing Site Evaluation)</small></div> <div>ADDRESS <u>P.O. BOX 507- 2060 CARP RD.</u></div> <div>CITY <u>STITTSVILLE, ONT.</u></div> <div>POSTAL CODE <u>K2S 1A6</u></div> <div>PHONE O <u>(613) 836-4543</u> H <u>(FAX) 831-3392</u></div> <div>LICENCE # <u>L1998-0622</u></div> |
| | <div>DESIGN PARAMETERS</div> <div><input type="checkbox"/> NUMBER OF BEDROOMS - EXIST <u>2</u> PROPOSED _____</div> <div><input checked="" type="checkbox"/> BUILDING AREA GROSS</div> <div>TOTAL ALL FLOORS - LIVING AREA <u>110 M2</u></div> <div><input checked="" type="checkbox"/> WATER SUPPLY - DUG WELL <input type="checkbox"/> <u>MUNICIPAL WATER</u></div> <div>- SAND POINT <input type="checkbox"/></div> <div>- CASED WELL (min 6M) <input type="checkbox"/></div> |

| SEPTIC SYSTEM DESIGN | | PLUMBING FIXTURES | | EXIST | PROPOSED | FIXTURE UNITS |
|--|--|------------------------|--|----------|----------|------------------|
| <u>3600L</u> TANK SIZE (NEW) _____ PROPRIETARY TREATMENT SYSTEM | | Bathroom Group (3 PCs) | | <u>1</u> | _____ | X 6 <u>6</u> |
| DESCRIBE _____ (ATTACH MANUFACTURER'S INFORMATION) | | Bathtub/Shower | | _____ | _____ | X 1.5 _____ |
| <u>11 M</u> LENGTH DISTRIBUTION PIPING EACH RUN | | Basin (Lavatory) | | _____ | _____ | X 1.5 _____ |
| <u>4</u> NUMBER OF RUNS | | Toilet | | _____ | _____ | X 4 _____ |
| <u>4.4 M</u> TOTAL LENGTH OF DISTRIBUTION PIPING | | Bidet | | _____ | _____ | X 1.0 _____ |
| <u>1100L</u> DAILY FLOW RATE | | Sink - <u>KITCHEN</u> | | <u>1</u> | _____ | X 1.5 <u>1.5</u> |
| MINIMUM LOADING AREA <u>110 M²</u> | | Dishwasher | | _____ | _____ | X 0.5 _____ |
| MINIMUM CONTACT AREA _____ | | Laundry Tub | | _____ | _____ | X 1.5 _____ |
| TANK TYPE CONCRETE <input checked="" type="checkbox"/> | | Auto Washer | | <u>1</u> | _____ | X 1.5 <u>1.5</u> |
| PLASTIC <input type="checkbox"/> | | Water Softener | | _____ | _____ | X _____ |
| OTHER <input type="checkbox"/> | | Other | | _____ | _____ | _____ |
| MANUFACTURER <u>BOYD BROS.</u> | | TOTALS | | <u>3</u> | _____ | <u>9</u> |
| MODEL _____ | | | | | | |
| DESCRIBE _____ | | | | | | |
| <input type="checkbox"/> PUMP REQUIRED MANUFACTURER _____ (ATTACH MANUFACTURER SPECS AND INSTALLATION INSTRUCTIONS) | | | | | | |

NOTICE: Depth to bedrock/watertable and description of soil type are to be shown for both profiles.
TWO test locations are required of BURIED beds.

SOIL PROFILES

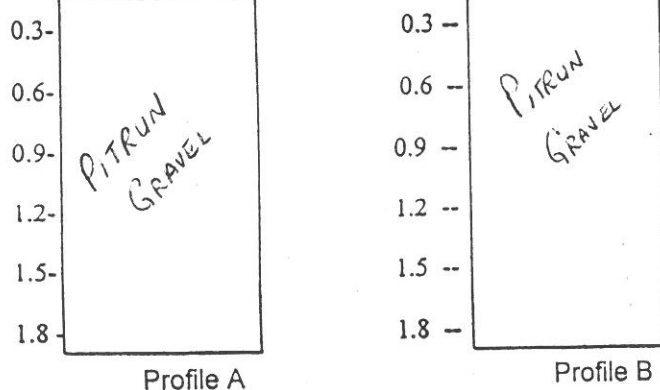
IDENTIFY SOIL TYPE, LAYERS AND DEPTHS,
WATER TABLE AND ROCK

The percolation rate shall be determined by test OR
soil classification, according to the unified soil classification system

T Time 8

Native Soil 8

Imported Soil



Profile A

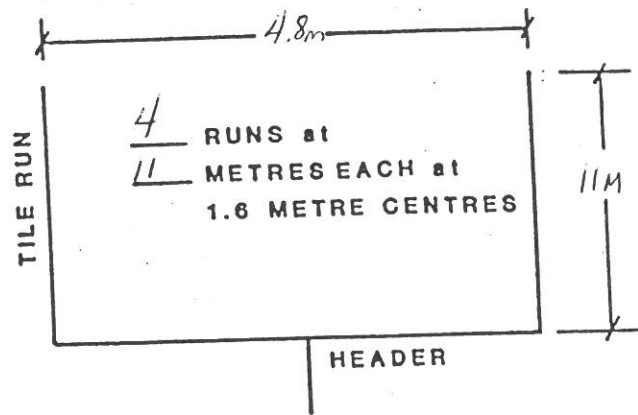
Profile B

MUNICIPAL OFFICES • 5670 CARP ROAD • KINBURN, ONTARIO • K0A 2H0
TEL: (613) 832-5644 • Toll-free within area code 613: 1-800-267-6234 • FAX: (613) 832-3341

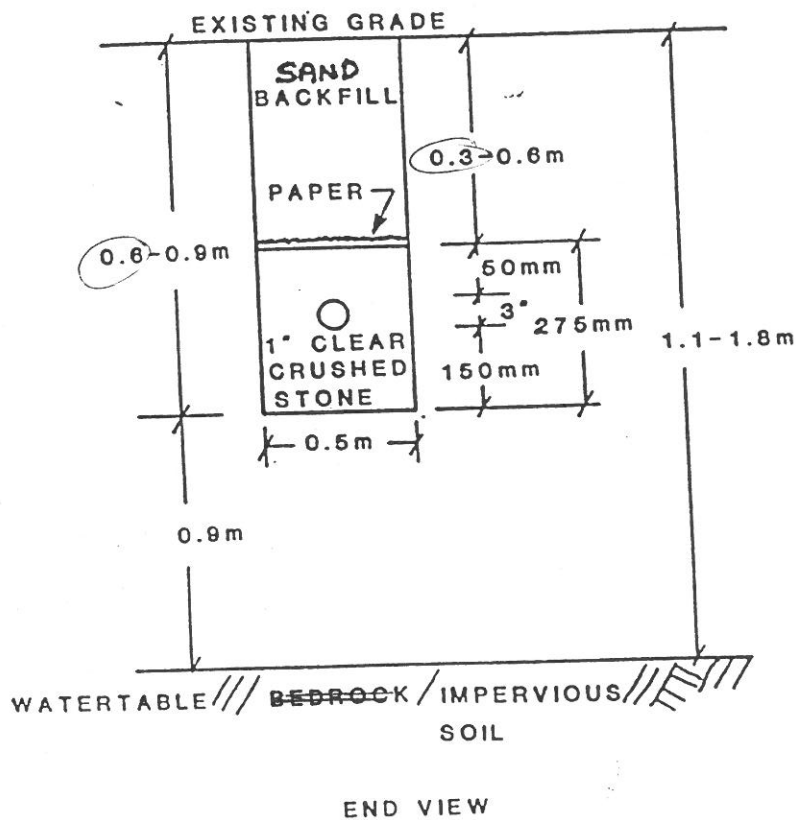
... 034-0000 - Tall tree within area code 642. 4 000 067 6224 - EAV. /642\ 022 2244

TYPICAL DRAWING A BURIED BED-ABSORPTION TRENCH METHOD

PLAN



PROFILE



INSPECTION REPORT

Address 2026 CARP ROAD,

Application No. _____

Block No. _____ Lot. No. _____ Unit No. _____

Building Permit No. _____

Plumbing Permit No. 00-0541

BUILDING

- ☐ Backfill
☐ Framing/Superstructure
☐ Insulation/Vapour Barrier

☒ SEPTIC INSTALL.

MECHANICAL

- ☐ Fire Alarm
☐ Sprinkler
☐ Standpipe
☐ HVAC
☐ _____

PLUMBING

- ☐ Underground
☐ Roughing
☐ Final
☐ _____

INSPECTION COMMENTS

Order Issued _____

1) TOP SOIL COVER OVER TILE FIELD REQ'D FOR
FINAL INSPECTION.

☒ Inspection Passed

☐ Inspection did not pass, call for re-inspection

See Page 2 ☐

Received by ALEXANDER (R. MOORE)
(Print Name)
Inspector CAMERON
(Print Name)




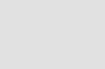
Date THURS. 24. MAY 23, 2001
Phone No. 580 2424 x 32275.

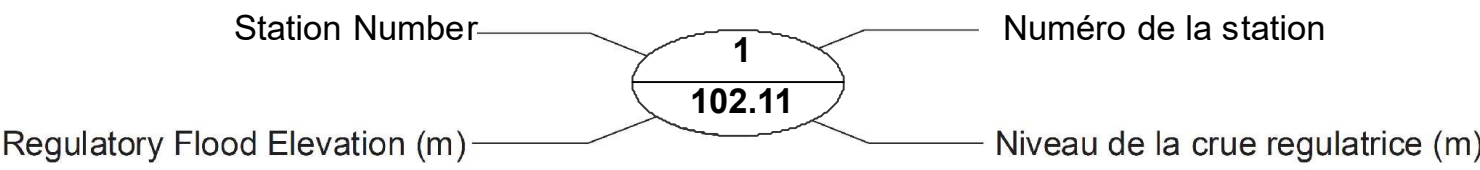
DISTRIBUTION LIST: White (Central File) Canary (Inspector) Blue (Recipient)

S:\Restricted\SSS\Building Inspections\Inspection Report

FLOOD RISK MAP
FEEDMILL CREEK
CARTE DU RISQUE D'INONDATION

LEGEND / LÉGENDE

-  Regulatory Floodplain / La Crue Régulatrice
-  Regulatory Limit / Limite Réglementaire
-  Contours / Courbes
-  Stream / Ruisseau
-  Cross Sections / La coupe transversale



INDEX CONTOUR INTERVAL 2 METRES
WITH 0.5 METRE INTERMEDIATE CONTOUR
NORTH AMERICAN DATUM 1983

COURBES DE NIVEAU PRINCIPALES DE 2.0 MÈTRE
AVEC COURBES DE NIVEAU INTERMÉDIAIRES DE 0.5 MÈTRES
SYSTÈME DE RÉFÉRENCE GÉODÉSIQUE NORD-AMÉRIQUE 1983

GENERAL INFORMATION

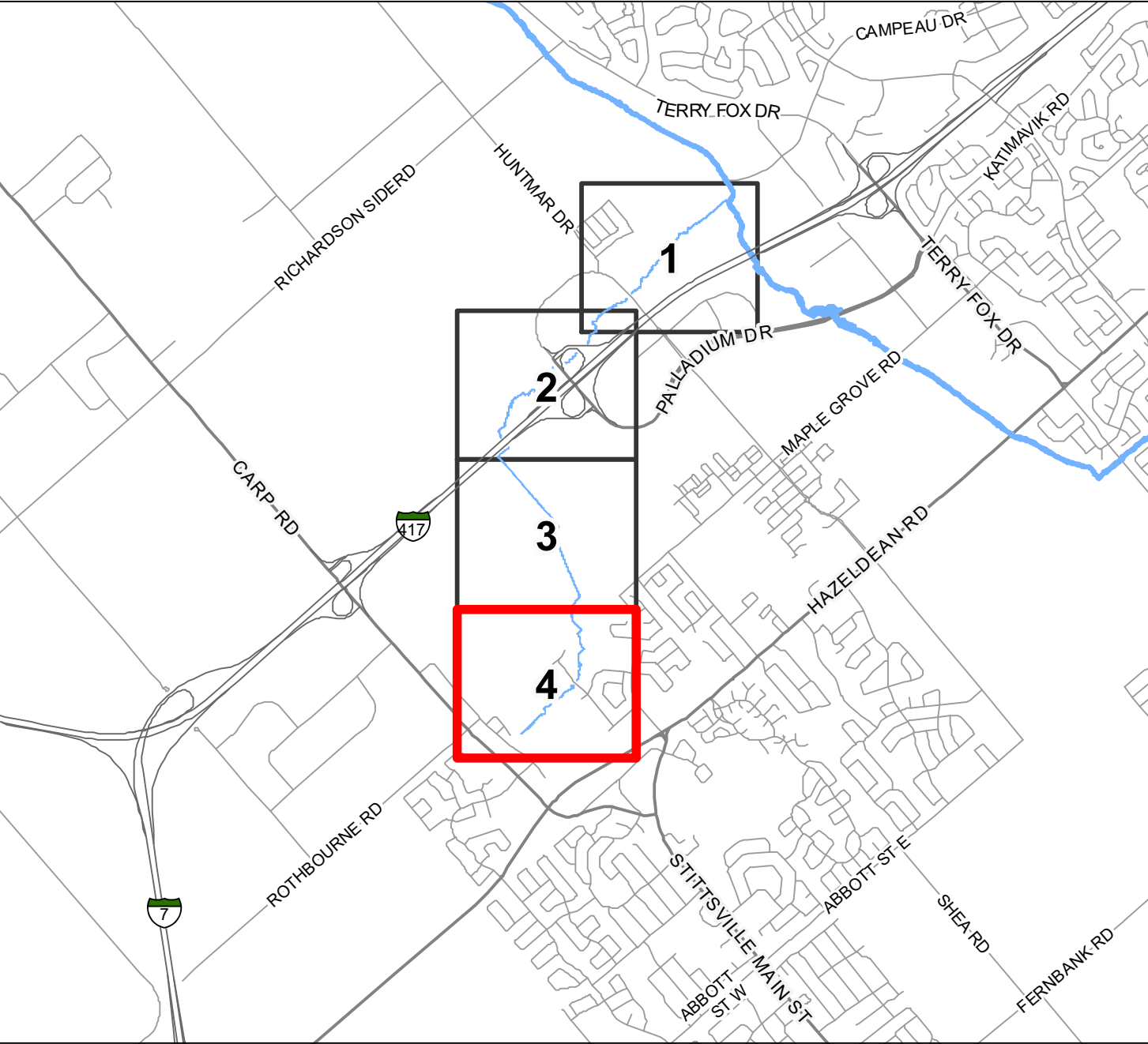
Vertical Datum: CGVD28
Horizontal Datum: North American 1983
Map Projection: Ottawa Transverse Mercator Projection

RENSEIGNEMENTS GÉNÉRAUX

Niveau de référence vertical: CGVD28
Niveau de référence horizontal: Nord-américain 1983
Projection cartographique: Projection Mercator Transverse d'Ottawa



SHEET INDEX / TABLEAU D'ASSEMBLAGE



| Revision # | Issue |
|----------------------|---------------------------------------|
| 1 - January 31, 2017 | Final |
| 2 - February 8, 2019 | Floodline Revision: Permit No. W15/38 |
| | |
| | |
| | |
| | |

LICENCED PROFESSIONAL ENGINEER

J. S. A. PRICE

Jan 31/17

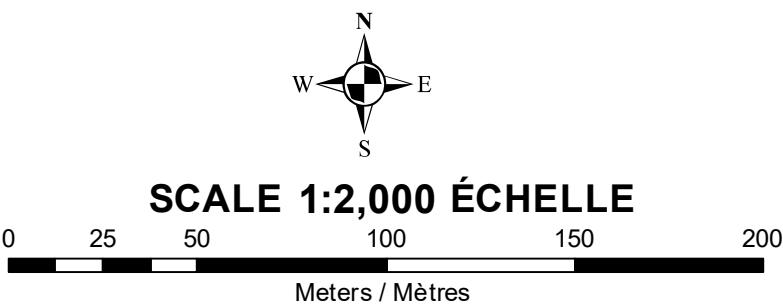
PROVINCE OF ONTARIO



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