APPLICATION GUIDE

ON-SITE SEWAGE SYSTEM BUILDING PERMIT

NOTE: The following information is provided to assist you when submitting a building permit application to Loyalist Township. The best way to expedite your application is to provide accurate and complete information. Incomplete or inaccurate information may result in your application not being accepted or returned to you to make corrections prior to processing. ***It is recommended that the applicant refer to the Ontario Building Code (www.ontario.ca/buildingcode) for the current construction requirements. It will be necessary, at minimum, to download Part 8 of the Ontario Building Code to complete all calculations required to design a sewage system.***

The first page of the application assists our administrative staff to quickly identify the property address where the proposed work will take place, the property's legal owner and the licensed installer.

Grey areas noted on the application are for office use only.

Be sure to include which method of communication is preferred, so that we know how to contact you for permit pick-up, general communication etc.

PROPERTY INFORMATION

The property address is the 911 address. The municipality is the municipality in which the property is located and is identified on your property tax bill. The legal description (lot, concession, plan, sub-lot, and parcel numbers) is also listed on your property tax bill.

DIRECTIONS TO LOT

Provide directions from Amherstview to the construction site. For example; *18 Manitou Cres. W. to Amherst Dr. west to County Rd. 6 to Wilton, turn left onto Simmons Rd., property is third lot on left hand side of the road. Property is marked with a sign on the post indicating the Doe property. D*o not make reference to buildings under construction or temporary structures as they might not be there when the second or final inspection is carried out.

Indicate which type of system you are applying for at the bottom of the first page. This will be a quick reference for office and field personnel.

APPLICATION FOR A PERMIT TO CONSTRUCT OR DEMOLISH

This part of the application is two pages in length. This form is required by legislation under the Ontario Building Code and must be completed.

A. **Project information**: Provides information on the project. Remember to record the estimated value of the project. *Area of work* refers to the size of the property. Roll number and lot number can be found on your tax.

B. **Purpose of Application**: This section is used to describe the type of permit you are applying for. Check the appropriate box and also describe the scope of the project.

C. **Applicant**: Unless you are the legal owner of the property (see Project Information section on first page) you should check authorized agent and supply a letter of authorization.

D. **Owner**: This is the information pertaining to the legal owner of the property. This section must be completed if the applicant is different than the owner. The address here should be the address where the owner resides and where you want the permit and the Final Completion Inspection report to be mailed. Remember that the time frame between the Sewage System Building Permit being issued and the issuance of the Notice of Completion may be a year or longer.

E. **Builder**: This section only needs to be completed if you are proposing to build a building and you are using a builder as defined by the Ontario Building Code. This section is generally not included when filling out a Sewage System Permit Application.

F. **Tarion Warranty Corporation (Ontario New Home Warranty Program - ONHWP)**: In general, a new home which is designed to be used on a year-round basis and is going to be sold as a new home, or is constructed in its entirety by a contractor for the owner must be registered with the ONHWP or Tarion Warranty Corporation. Reference should be made to the ONHWP Act for clarification of details. Section F must be completed whether or not you are registering the home construction.

G. **Required Schedules**: Your application must include all 7 schedules (see below).

H. **Completeness and Compliance with Applicable Law**: All boxes must be checked yes. Section iv) is referring to applicable law which could include any number of organizations including the municipality in question, MTO, MOECC, Bell Canada or Hydro One (etc.). Each of these agencies must be contacted prior to submitting an application to Loyalist Township if there is any question that the sewage system may affect the agency in question.

I. **Declaration of the Applicant**: As outlined previously. If the person signing the application is someone other than the legal owner, the applicant must have a letter of authorization completed and signed by the legal owner to be submitted with the application.

Schedule 1: Designer Information: Must be filled out by the designer of the project. If it is the installer of the septic system, he/she must fill out Schedule 1 A, B, C and D. Installers, if they are installing the system, are exempt from registration but they must provide individual BCIN numbers in the appropriate section and their basis for exemption is “registered installer”. Homeowners who are designing their own system are exempt from registration and qualification requirements of the Ontario Building Code. Date and sign your name.

Schedule 2: Sewage System Installer Information: This section is to be completely filled out when there is an installer on the project. Anyone other than a licensed installer (ex: homeowner) who will be acting as the installer must fill out sections A, B and E.

Schedule 3: Site Evaluation Form: This form contains the soil and water table information which must be assessed to complete the design requirements for a Sewage System Building Permit. The designer shall complete the appropriate sections of this form, leaving shaded areas for the inspector to complete.

> **Test Pit**: The *Approximate Soil Percolation Rates T-time* chart provides some common soil percolation rate ranges; remember to select the highest number of a range identified for the design. Soil type, groundwater and bedrock levels will determine the raised height of a sewage system, including contact area, and mantle loading area requirements.

The charts provided are for guidance only and are not intended as complete design guidelines.

APPROXIMATE SOIL PERCOLATION RATES (T-time)

The following are **estimated** ranges of soil percolation rates (T-times) measured in a rate of min/cm. Actual on-site soil conditions may vary significantly from estimated ranges. Differences in estimated T-times shall be resolved by samples analyzed by the Unified Soil Classification System and/or percolation tests being conducted on in-situ soils.

Soil Type	Sand	Sandy Loam	Loam	Silty Loam	Clay Loam	Silt - Clay
T-time (min/cm)	10	12 - 20	17 - 25	20 - 30	30 - 40	40 - 50

Texture Class	Feel Test	Moist Cast Test	Ribbon Test	Estimated T-time (min/cm)
Sand	Grainy with little floury material	No cast	None	10
Loamy Sand	Grainy with slight amount of floury material	Very weak cast, no handling	None	10 - 15
Silty Sand	Grainy with moderate amount of floury material	Weak cast, no handling	Almost flakes if sand portion is very fine or fine sand	17 - 20
Sandy Loam	Grainy with moderate amount of floury material	Weak cast, allows careful handling	Barely ribbons	17 - 25
Loam	Fairly soft and smooth with evident graininess	Good cast, readily handled	Thick and very short (< 2.5 cm)	17 - 25
Silt Loam	Floury with slight graininess	Weak cast, allows careful handling	Flakes, rather than ribbons	20 - 25
Silt	Very floury	Weak cast, allows careful handling	Flakes rather than ribbons	20 - 30
Sandy Clay Loam	Very substantial graininess	Moderate cast	Short and thick (2.5 - 5 cm)	20 - 30
Clay Loam	Moderate graininess	Strong cast	Fairly thin breaks readily barely supports own weight	20 - 30
Silty Clay Loam	Smooth and floury	Strong cast	Fairly thin, breaks readily barely supports own weight	30 - 35
Sandy Clay	Substantial graininess	Strong cast	Thin, fairly long (5 - 7.5 cm), holds own weight	35 - 40
Silty Clay	Smooth	Very strong	Thin, fairly long (5 - 7.5 cm), holds own weight	40 - 50
Clay	Smooth	Very strong	Very thin, very long (> 7.5 cm)	> 50
MANTLE LOADING RATE : T-time 1 - 20: Q/10; T-time 21 - 35: Q/8; T-time 36 - 50: Q/6; T-time > 50: Q/4				

Excerpt from: Field Manual for Describing Soils in Ontario, Denholm & Schut, 1993 Revised

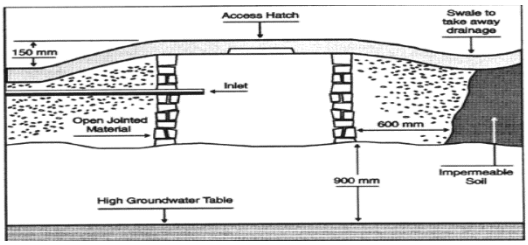
Water Supply: Be sure to check off whether or not it is **Existing** or **Proposed** and which type of water supply will be used on the property.

Comments/Concerns/Additional Information Required: Here the applicant can indicate if there are any other special considerations for the lot (ex. Part 11 setbacks proposed).

Schedule 4: Design Criteria: This sheet shall be completed to determine the *Total Daily Design Sewage Flow (Q = liters / day)*. For reference purposes Loyalist Township has provided a Design Flow Calculation Table in this schedule. This section must be completed to determine the minimum size of sewage system required. The charts are provided for guidance only and are not intended as complete design guidelines. It is recommended that the applicant refer to the Ontario Building Code (www.ontario.ca/buildingcode) for the current construction requirements. Be sure to complete this sheet clearly and accurately as it will be a part of your permit sent to the Township/Municipality, owner and contractor.

Schedule 5: Proposal to Construct: The first section is to inform Loyalist Township of proposed development and existing conditions on the project site. This will assist the inspector in determining whether or not the proposal is appropriate for the specified location or whether more information is required (ex. additional existing permits pulled etc.). Be sure to fill out each field in this section clearly and accurately as this page will form part of your permit sent to Township/Municipality, owner and contractor.

Class 2: Greywater Pit / Class 3: Cesspool: This section should be filled out when applying for either a greywater pit or a cesspool. Note that the Total Daily Design Sewage Flow (Q) for both systems cannot exceed 1000 L/day. If further assistance is required for this, contact the corresponding office.



Septic Tank / Treatment Unit / Class 5: Holding Tank: Check the appropriate box to indicate whether the septic tank/treatment unit/holding tank will be new, a replacement or existing. If the application is for a tank replacement only (without a bed replacement), check the appropriate box on the first page of the application package. If the proposed use of the building is residential, multiply “Q” by two to size the septic tank. If the proposed use is non-residential, multiply “Q” by three to size the septic tank. Consult Part 8 of the Ontario Building Code (OBC) for sizing requirements of treatment units and holding tanks. When using a treatment unit tank, specify the make / model and level of treatment (OBC Table 8.6.2.2.) in the appropriate box. The BMEC or CAN/BNQ approval must be attached to the application for the inspectors review. The OBC minimum accepted tank size for residential use is 3600 L.

Leaching Bed: The leaching bed can be a filter bed, trench bed, Type A / B bed or shallow buried trenches. The trench and filter beds can be used with a septic tank or Other Treatment Unit, but, Type A or B beds and shallow buried trenches must include an Other Treatment Unit (OBC 8.6.2.2). When an Other Treatment Unit is proposed, the BMEC or CAN/BNQ approval must be attached to the application. If the application is for a bed replacement only, check the appropriate box on the first page of the application.

A minimum of 2 test holes should be provided at every site. The test hole in the bed area should be as deep as the proposed sewage system (ex. for a fully dug in filter bed the inspector should see a 1.5 meter deep test hole). The second test hole should be 15 meters in the direction of flow and be as deep as the mantle loading area is proposed to be on the cross section (ex. for a fully raised filter bed the test hole should be 30cm deep, but for a fully dug in filter bed the mantle loading area test hole should also be 1.5 meters deep).

For bed applications check the appropriate box if a pump is proposed / existing and which type it is. Indicate the proposed method of subsurface detection (ex. tracer wire or rebar), as well as the T-time from Schedule 3 in the spaces provided.

Filter Bed: If "Q" is less than 3000 liters/day the filter bed area in square meters is Q / 75 (Q is the daily design sewage flow from Schedule 4). Q / 50 must be used if your "Q" exceeds 3000 liters/day. The number of filter beds needed is determined by the requirement that no one filter bed can be less than 10 square meters or more than 50 square meters. When the filter bed area is larger than 50 square meters, divide the calculated area by 2 to determine the size of each bed required.

Contact area is calculated using QT / 850 *(Q is the daily design sewage flow from Schedule 4, T is the T-time from Schedule 3 and the result is the total bed size in meters squared)*. The minimum raised height of a bed is calculated by taking 1.5 meters and subtracting the depth to ground water table and/or hardpan and/or bedrock and/or impervious soil.

Filter Graph*:* An up-to-date filter graph (tested within 2 years of the submission date to NBMCA) which meets OBC requirements 8.7.5.3.(3), and includes the volume of filter sand imported to the site, will be required prior to or upon Substantial Completion Inspection or the inspection will not pass until submitted.

Trench Bed: The trench bed length is calculated as QT / 200 (Q is the daily design sewage flow from Schedule 4, T is the T-time from Schedule 3 and the result is the total bed length in meters). If an Other Treatment Unit is utilized, the formula becomes QT / 300, also resulting in meters of total bed length. A pump is mandatory when the total trench bed length is 150 meters or larger. The minimum vertical separation from the bottom of the stone in the trench to ground water table and/or hardpan and/or bedrock and/or impervious soil is 900mm. Test holes must be dug to find out if this separation can be achieved and this will determine whether or not a dug in, partially raised or fully raised system can be proposed.

Type A or B Bed: OBC 8.7.1.2.(1) references that the design and installation of a Type A or Type B dispersal bed shall be carried out by a person competent in this field of work. The requirements as set out in Part 8 of the OBC for a Type A Dispersal Bed can be found under section 8.7.7. and for a Type B Bed can be found under section 8.7.8.

Sieve Analysis*:* An up-to-date sieve analysis (tested within 2 years of the submission date to NBMCA) which meets OBC requirements 8.7.7.1.(1)(4), and includes the volume of sand imported to the site, will be required prior to or upon Substantial Completion Inspection or the inspection will not pass until submitted.

Shallow Buried Trench (SBT): OBC 8.7.1.2.(1) references that the design and installation of a shallow buried trench bed shall be carried out by a person competent in this field of work. Construction requirements as set out in Part 8 of the OBC for a Shallow Buried Trench can be found under section 8.7.6.

Piping used in shallow buried trenches must be pressurized and therefore a pump is always required. Shallow buried trench length is calculated using Table 8.7.3.1. of the Ontario Building Code.

BNQ / BMEC / Other (ex. Other Treatment Unit): Consult the CAN/BNQ or BMEC approval to determine the design criteria and to calculate the stone area, sand area, and the raised height of the bed proposed. The manufacturer of the treatment unit technology should also be consulted in regards to the installation, use, maintenance (maintenance agreements), training and continuing education where this application is to be used. When using a treatment unit, specify the make / model and level of treatment (OBC Table 8.6.2.2.).

Class 4 Mantle Loading Area Requirements: Indicate in the appropriate box if a native or imported mantle is proposed. The mantle loading area must extend for a distance of at least 15 meters beyond the outer distribution pipes in the direction of flow and cover a total area as required by the calculation provided in Part 8 of the OBC Section 8.7.4.1..

Schedule 6: Site Plan Diagram provides a plan view of the property. These can be surveys or drawings providing they are accurate and LEGIBLE. The site plans must be large and clear but shall not exceed a paper size of 11”x17”. The site plan must include PROPOSED setbacks (NOT the minimum requirements of the OBC). There is also a section where the proposed distances from the distribution pipe and tank to the **CLOSEST** elements on the lot are also required. This is meant as a quick reference for the inspector to see if there would be any issues with the proposal that could be identified immediately. The applicant must provide one (1) copy of the proposal.

Note: Sample drawings are included at the end of the application guide.

- ❑ Property owner’s name and property address (civic);
- ❑ Lot size, property dimensions, roads, existing rights-of-way, easements, or municipal/utility corridors;
- ❑ Show and identify neighboring properties, including wells (indicate if none);
- ❑ Show location and size of all proposed and existing sewage system components (tanks, pump chambers, alarms, distribution bed) and the test pits;
- ❑ Show the direction of surface water flow, as well as any surface water (i.e. creek, pond, lake) on or adjacent to the property and provide the common name;
- ❑ Indicate direction of North on the site plan;
- ❑ Indicate distances to all utilities (i.e. telephone, HYDRO lines above and below ground); and
- ❑ Show the distances from pipes in bed and tank to ALL buildings, structures, property lines, surface water, easements, rights-of-way, driveways and wells (including neighbouring wells).

Schedule 7: Cross Sectional Diagram provides a cross-sectional view of the sewage

system. The cross section should be accurate, LEGIBLE, large and clear but shall not exceed a paper size of 11”x17”. The cross section must include PROPOSED depths (NOT the minimum requirements of the OBC).The applicant must provide one (1) copy of the proposal.

- ❑ Property owners name and property address (civic);
- ❑ Depth of topsoil;
- ❑ Depth of crushed stone;
- ❑ Depth of filter medium used;
- ❑ Depth and dimensions of contact area required;
- ❑ Depth to bedrock/groundwater table;
- ❑ Depth to hardpan/soils T-time >15min/cm;
- ❑ Height above/below existing grade of ground surface;
- ❑ Show side slopes of bed/mantle;
- ❑ Existing grade/Finished grade; and
- ❑ Distance between pipes.

Clearance Distance	Building Code Reference
Class 1, 2, 3	8.2.1.5.
Class 4, 5 Treatment Units	8.2.1.6.A.
Piping and Leaching Chambers	8.2.16.B.
Holding Tank	8.2.1.6.C.

Letter of Authorization: This form (or a personalized variation of it) must be filled out and signed by the legal owner if the applicant is not the owner. A PDF version of this can be found on the website indicated below.

Fee Schedule: Pay the appropriate fee with the submission of your application as per By-law 2020-XXX, Schedule “A”. The current fee schedule can be found on the website indicated below. An application will not be processed until fee payment is received.

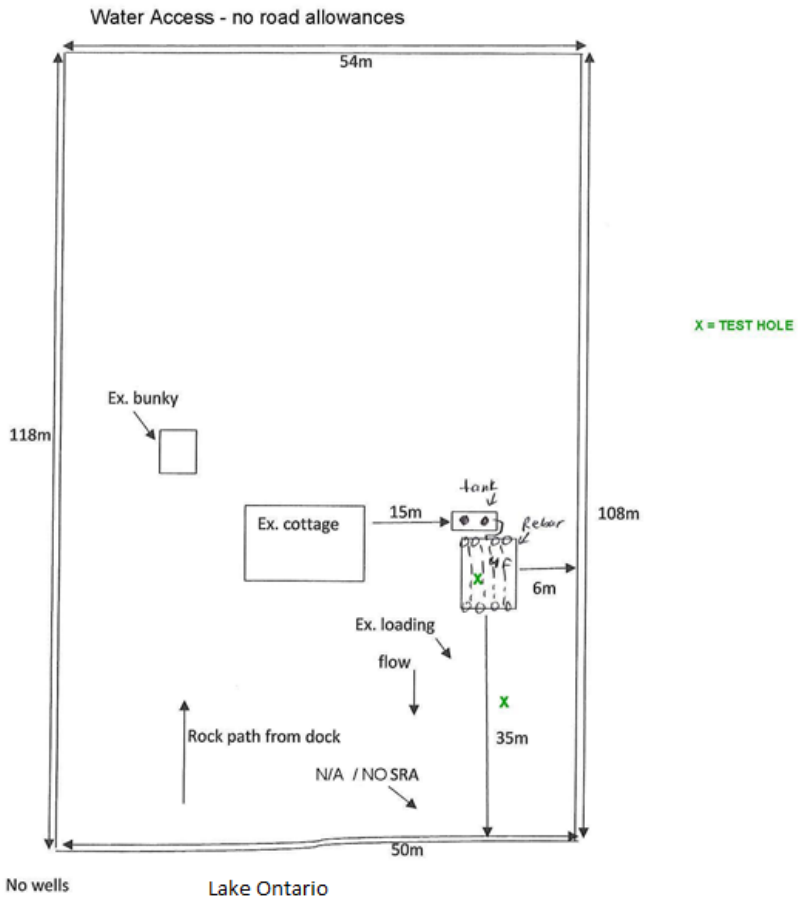
FURTHER INFORMATION OR ASSISTANCE
To submit your application or for further information/assistance, contact Loyalist Township Building Division at 613-386-7351, ext. 170.

SAMPLE DRAWINGS

REMINDER: The site plans provide both an plan view of the property and cross-sectional view of the sewage system. These can be surveys or drawings as long as they are accurate, LEGIBLE, large and clear, but shall not exceed a paper size of 11”x17”. The applicant must provide one (1) copy each of the site plans (plan view and cross-sectional).

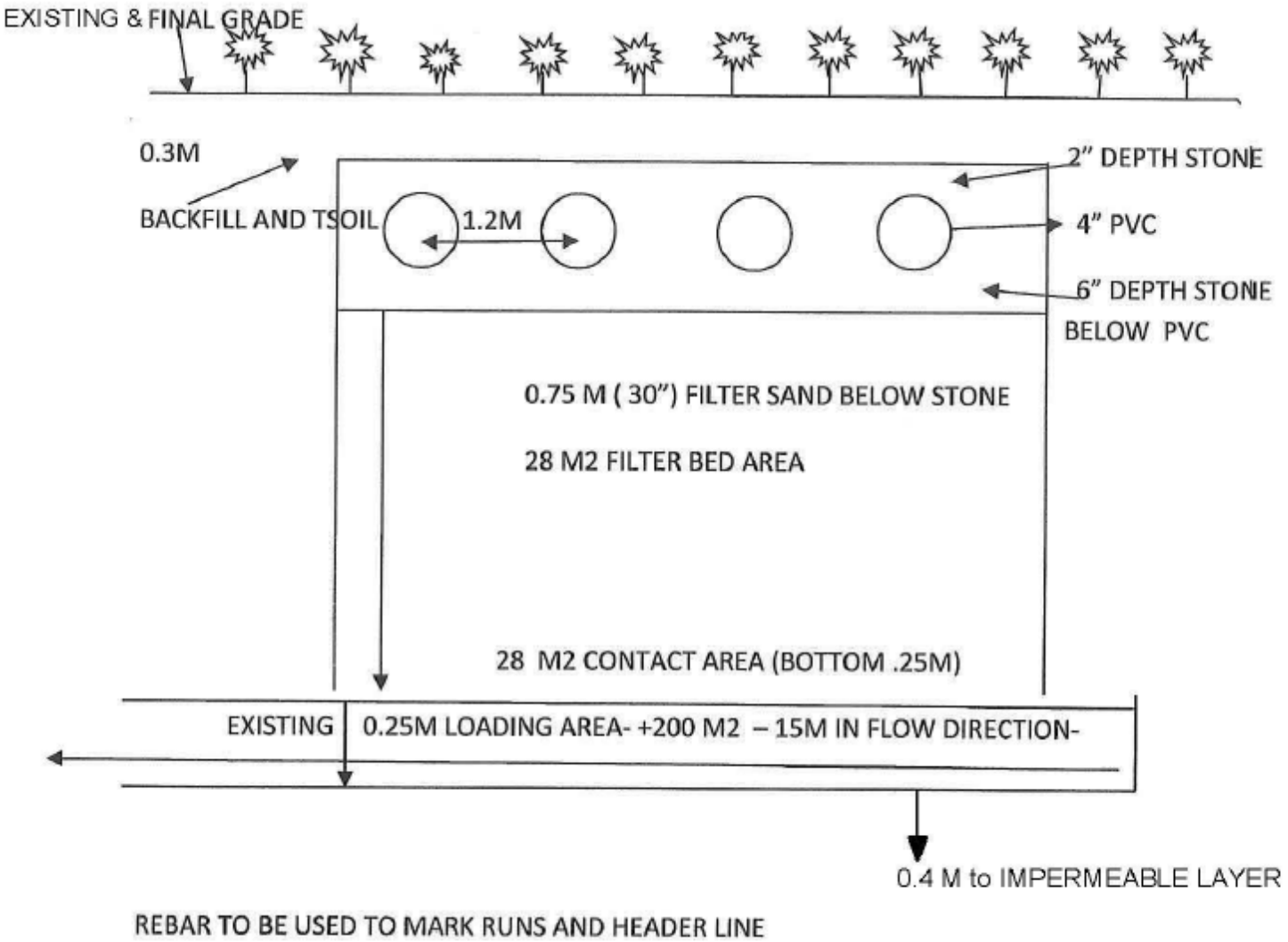
Property Owner 1, Property Information

^ NORTH Arrow



The site plan (above) and cross section (below) for “Property Owner 1” are good examples for a property with an existing cottage, replacing a system in an existing location. There is also an existing bunky on the lot which has been drawn in on the above site plan. Any fixtures, floor area and bedrooms from the bunky as well as the cottage would be included in the Total Daily Design Sewage Flow (Q) on Schedule 4: Design Criteria. The designer has indicated that there are no wells. Note that the lot dimensions are clearly marked and all of site indicators (including location of test holes, name of water body, existing loading, direction of flow etc.) are clear and legible making it easy for the inspector to quickly recognize lot features and therefore complete a timely inspection.

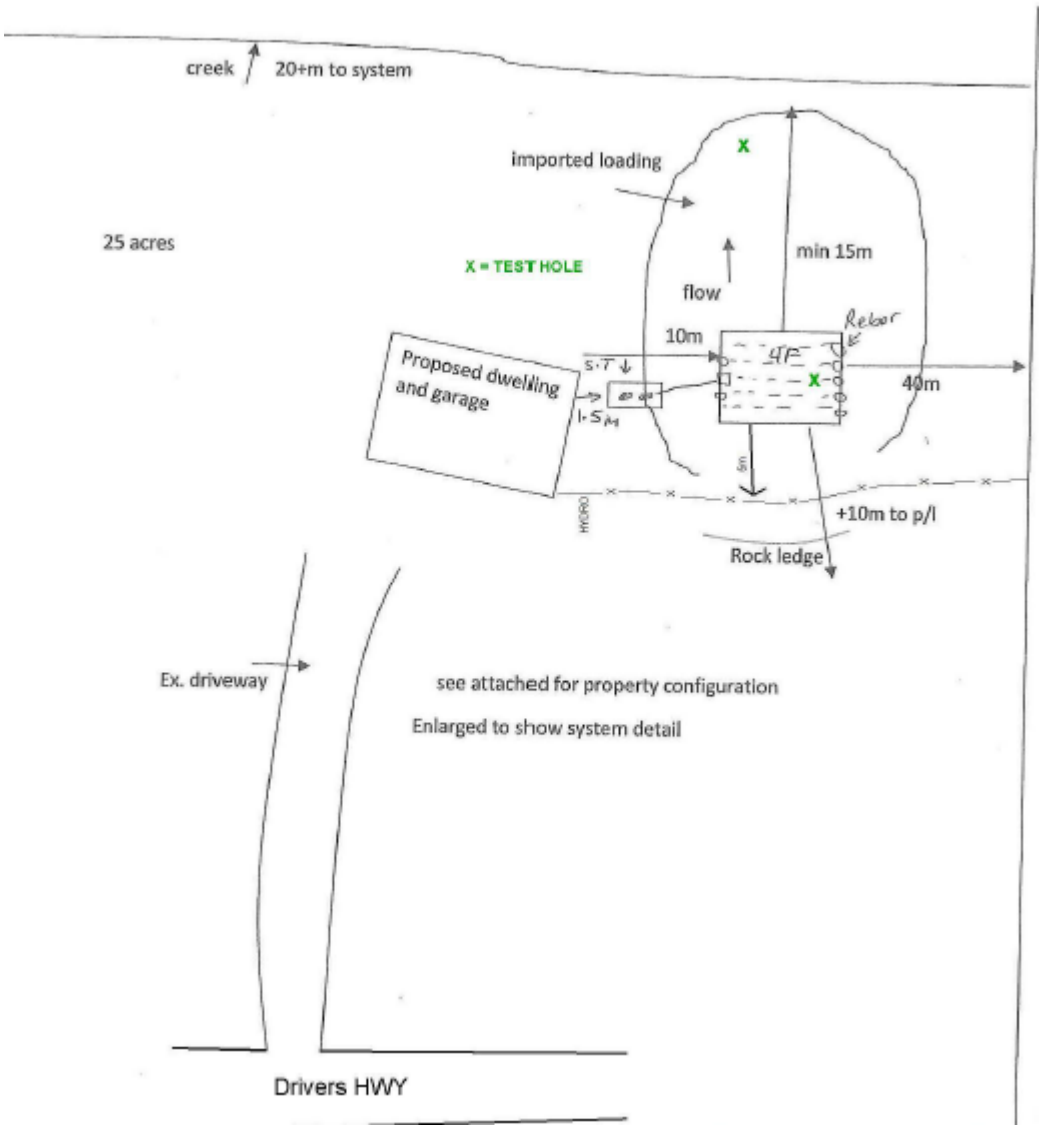
Property Owner 1, Property Information



This cross section depicts a fully dug in system (note: existing and final grade at the top). This would mean that 1.5m + of natural in situ sandy soil with an appropriate t-time was present on the lot and that a test hole demonstrating this was seen upon the site inspection. This is an example of a stone and pipe application in a 4F filter bed. No expanded contact area was required here and is existing and is shown to extend the minimum of 15m in direction of flow. The subsurface detection proposed is also indicated to the inspector on the bottom.

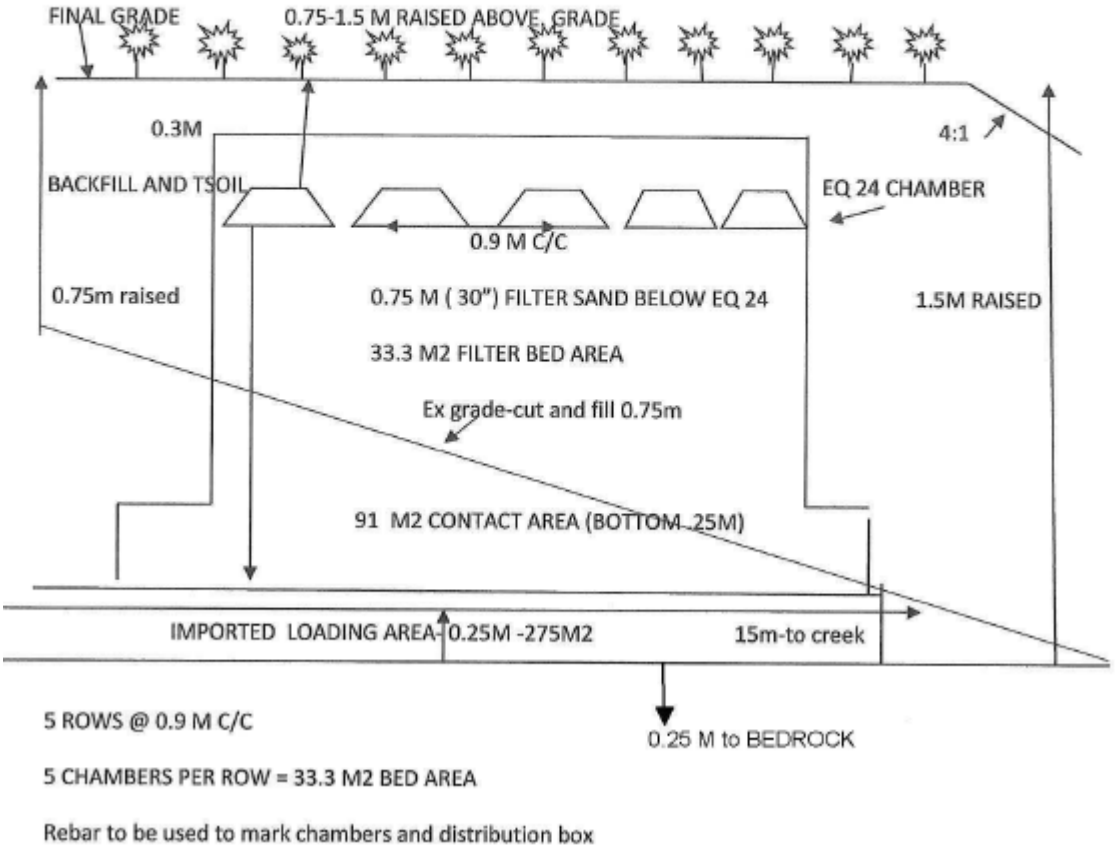
Property Owner 2, Property Information

^ NORTH Arrow



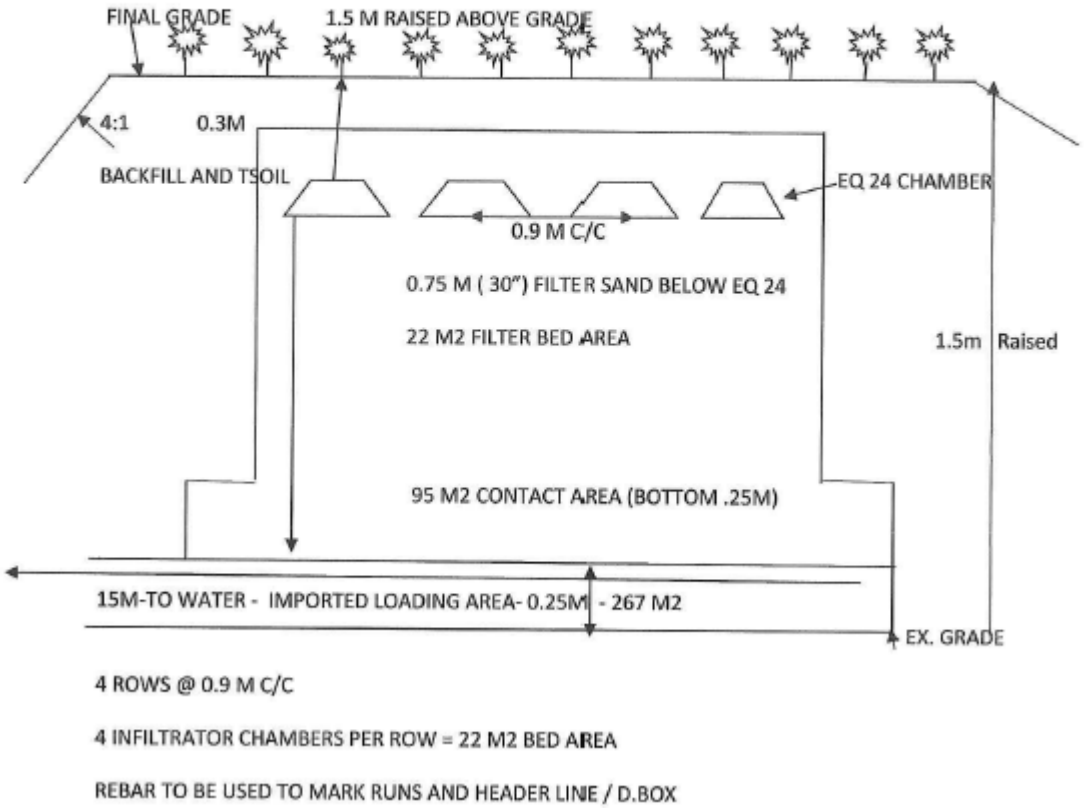
This site plan for Property Owner 2 is an example of where a MTO Land Use Permit may be required. The designer must contact MTO for properties located within the MTO control area. If a Land Use Permit is required, it must be supplied to Loyalist Township together with the building permit application. This is an example of a vacant lot with a proposed dwelling and garage. These are important things to note on the appropriate pages of the application (ex. Proposed and current use of building on the MMAH prescribed application for a permit to construct or demolish as it makes it easier for the Inspector to identify the site they will be visiting, as well as filling out the permit pages appropriately. Note the important site features which were added: hydro, rock ledge, creek, existing driveway.

Property Owner 2, Property Information



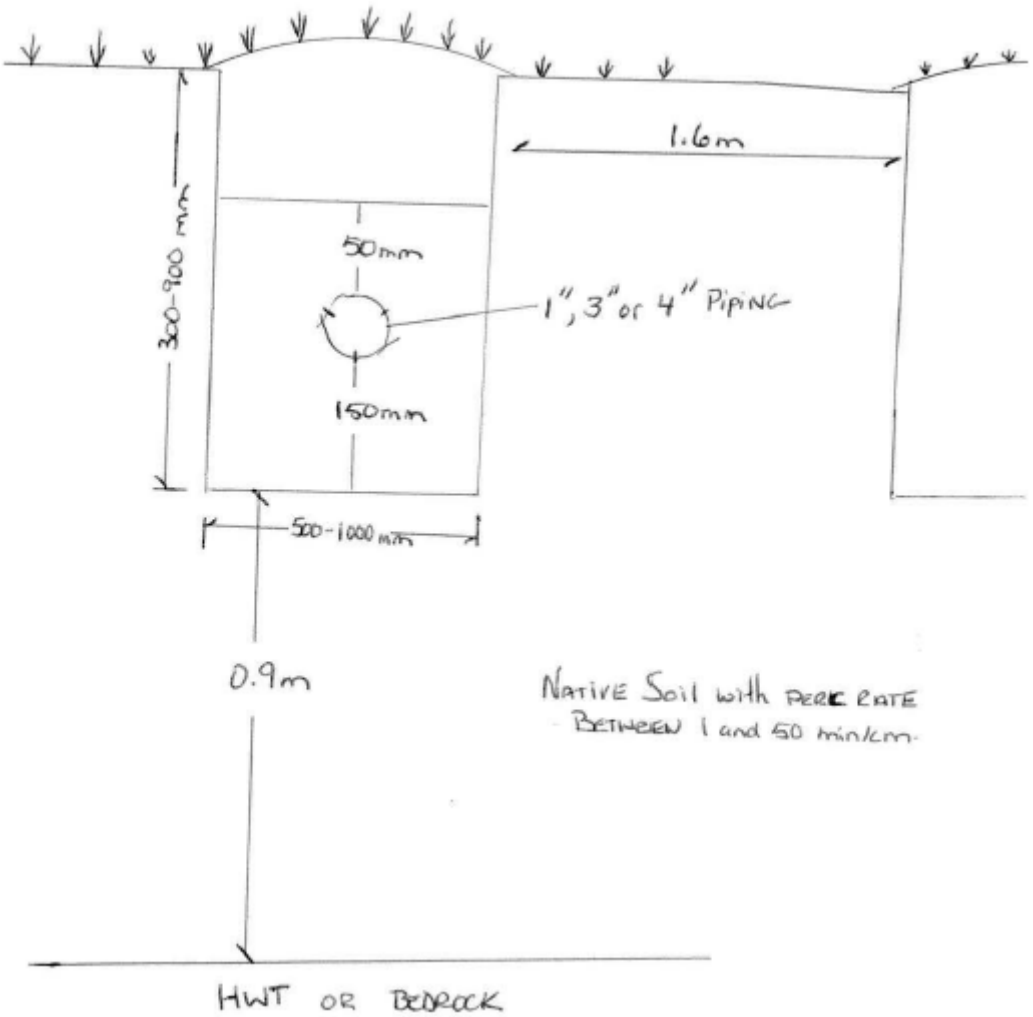
The cross section for Property Owner 2 is for a system utilizing chambers. This cross section is depicting a system which is partially dug in (on the back end) and fully raised (on the front end). This is because the existing grade/ natural slope of the property allowed for this type of proposal. This can be proposed when the bottom of the contact area comes out at the existing grade when backed into a slope. This system is 0.75 - 1.5 m raised above grade, this should be also indicated in the appropriate section of Schedule 5 as well as here on the cross section diagram. The loading area is imported and extends 15m to the creek. An expanded contact area has also been indicated on this cross section. This would indicate a native soil with less sand and more silts is present on the site (indicative of soils with a T-time greater than 15).

Property Owner 4, Property Information



This cross section for Property Owner 3 depicts a fully raised, fully imported filter bed system with an expanded contact area and utilizing chambers.

Conventional Trench Cross Sectional View



This is an example of a Class 4 Trench Bed cross section depicting one of several runs and its corresponding depths.