

APPLICATION GUIDE

ON-SITE SEWAGE SYSTEM PERMIT

NOTE: The following information is provided to assist you when submitting an application for a building permit to the North Bay - Mattawa Conservation Authority (NBMCA). 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 by the NBMCA or returned to you to make corrections prior to processing.

The first page of the application assists our clerical staff to quickly identify the property, the property's legal owner and the address to which any correspondence will be directed.

CORRESPONDENCE ADDRESS

The correspondence address should be the address that you want the permit, the inspection report and the completion (final) inspection report mailed to. Remember that the time frame between the permit and the completion inspection may be a year or longer.

PROJECT INFORMATION

The property owner listed in this section should be the post construction owner of the property and his/her current telephone number. For example, *if AYZ Builders is building a cottage for John Doe, John Doe should be the name of the legal owner even though AYZ owns the property during the construction and is sold to Doe when the construction is completed.* The building number is the 911 address. The municipality is the municipality in which the property is located and is identified on your property tax bill. The lot, concession, plan and sub lot numbers are also listed on your property tax bill.

DIRECTIONS TO LOT

Please provide directions from North Bay or Parry Sound to the construction site. For example; *North Bay – hwy 11 south to hwy “A” west to hwy “B” to village “C”, turn left onto ABC Road, property is third lot on left hand side of road. Property is marked with a sign on the post indicating the Doe property. Please do 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.*

APPLICATION FOR A PERMIT TO CONSTRUCT OR DEMOLISH

This part of the application is two (2) pages long. This is a form required by legislation under the Ontario Building Code and must be completed.

- A. Project information:** Provides information on the project. If the property does not already have a building or unit number then you must contact your municipal office to obtain one. Remember to put down the estimated value of the project. Area of works refers to the size of the property. Municipal zoning refers to how the property is zoned (zoning by-law). Zoning and your roll number can be found on your tax bill or obtained from your municipal office.
- B. 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.
- C. Owner:** This is the information pertaining to the legal owner of the property. This section must be completed if the applicant is anyone other than the legal owner.
- D. 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.
- E. 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.
- 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. Attachments:** Your application must include attachments (see below)
- H. 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.

ATTACHMENTS

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 Building Code. Date and sign your name.

Schedule 2: Installer must fill out all of Schedule 2. Anyone other than a licensed installer (ex: homeowner) who will be acting as the installer must fill out sections A,B, and E.

Schedule 3A: Site Evaluation Form Soil and water table information must be assessed to complete the design requirements for a sewage system permit. The designer shall complete the form. 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 requirements.

The charts provided are for guidance only and are not intended as complete design guidelines. Please refer to the Ontario Building Code for the current construction requirements.

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	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 - 7.5cm), holds own weight	35-40
Silty Clay	Smooth	Very strong	Thin, fairly long (5 - 7.5cm), holds own weight	40-50
Clay	Smooth	Very strong	Very thin, very long (>7.5cm)	>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

Schedule 3B: Design Criteria Design Criteria information sheet shall be completed to determine the Total Daily Design Sewage Flow (Q). For reference purposes the NBMCA has provided a design criteria chart in the application. 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. *The Total Daily Design Flow Rate is expressed as “Q” in liters/day.*

Schedule 3C: Proposal to Construct Sewage System: This schedule is to be filled out in the appropriate sections if the project proposes to use a Class 2 leaching pit, Class 3 Cesspool, or a Class 5 holding tank sewage system.

Schedule 3D: Proposal to Construct a Class 4 Sewage System:

Septic Tank: Check appropriate box to indicate whether the septic tank will be new or existing. If the application is for a septic tank replacement only (without a bed replacement), check the appropriate box. If the propose 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.

Other Treatment Unit: Specify make and model of treatment unit and reference the Building Materials Evaluation Commission (BMEC) number for the unit. The BMEC number can be obtained from the installer, treatment unit provider or through the Ontario Ministry of Municipal Affairs & Housing website.

Leaching Bed: The leaching bed can be a trench system, a filter bed, an area bed, or shallow buried trenches. The trench bed and the filter bed can be used with a septic tank or an “other treatment unit”, but, area beds and shallow buried trenches must utilize an “other treatment unit”. Other treatment units can be found in the supplementary standard SB-5 to the Ontario Building Code.

Check the appropriate box to indicate if the leaching bed will be new or existing. If the bed is the only component of the system that is being replaced, check the appropriate box.

Trench Bed: Provide the T-Time in min/cm from the Schedule 3A. The trench bed length is calculated as $QT/200$ (*Q is the daily design sewage flow from Schedule 3B, T is the T-Time from Schedule 3A and the result is the total bed length in meters*). If an “other treatment unit” is utilized, the formula becomes $QT/300$ and is also in meters. A pump is required when the total trench bed length is 150 meters or larger or if gravity flow is not possible between the septic tank outlet and the trench bed. Check the appropriate box if a pump is proposed. The raised height of the bed is found for a trench system is calculated as minimum 0.9 meters plus the depth of the trench proposed subtract the depth from the water table or impervious layer to the surface of the ground in meters.

Filter Bed: Provide the T-Time in min/cm from the Schedule 3A. Check the pump required box and supply information about the pump if gravity flow is not possible between the septic tank outlet and the filter bed piping, or if 150 meters or more of piping is required. The filter bed area in square meters is minimum $Q/75$ if your “Q” does not exceed 3000 liters per day, and $Q/50$ 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. Therefore, if your calculated filter area is larger than 50, divide the calculated area by 50 and round your answer up to the next whole number to determine the number of beds required.

Contact area is calculated using QT/850 and is in square meters. The minimum raised height of bed is calculated by taking 1.5 meters and subtracting the depth to ground water table and/or bedrock or impervious soil.

Area Bed: Consult the BMEC approval for the “other treatment unit” proposed to find the design criteria to use for calculating the stone area, sand area, and, the raised height of the bed.

Shallow Buried Trench Bed: When using this option “Other Treatment Unit” must be filled out. Shallow buried trenches are not allowed to be used in conjunction with a septic tank only. Piping used in shallow buried trenches must be pressurized and therefore a pump is always required. Shallow buried trench length is calculated using the table 8.7.3.1. of the Ontario Building Code. The raised height of the bed for a shallow buried trench system is calculated as minimum 0.9 meters plus the depth of the trench proposed subtract the depth from the water table or impervious layer to the surface of the ground in meters. Construction requirement for shallow buried trenches can be found in Section 8.7.6. of the Ontario Building Code.

Class 4 Mantle Loading Area Requirements: This section is to be filled out when fill is required for the leaching bed construction and for filter bed systems. Indicate in the appropriate box if a native or imported mantle is proposed. Indicate in how many directions you have slope away from the area of the leaching bed piping (i.e. 1,2,3 or all 4 directions). The Loading area in square meters can be calculated using the formula found in the last rows in *Schedule 3A: Approximate Percolation Rates* (T times in min/cm) of this guide.

Chambers: Chambers can be used in place of stone and pipe in leaching beds or must be used in shallow buried trench systems. Indicate the Type of chamber used, the model number, and the BMEC number of the product. In the case of shallow buried trench indicate the chambers proposed, a BMEC approval is not required.

Drawing Requirements: Site Plans are the most important part of the application. The site plans provide both an aerial view of the property and cross-sectional view of the sewage system. These can be surveys or drawings as long as they are accurate and to scale. The site plans must be large enough and clear enough to be LEGIBLE but shall not exceed a paper size of 11”x17”. The applicant must provide two (2) copies each of the site plans (aerial and cross-sectional).

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

The site plans are to be drawn in ink and must include the following:

I. SITE PLAN (2 Copies Required):

- 1) Property owners name and property address (civic);
- 2) Lot size, property dimensions, roads, existing rights-of-way, easements, or municipal/utility corridors;
- 3) Show and identify neighboring properties, including wells on adjacent properties (document if any at all);
- 4) Show the location and size of all proposed and existing sewage system components (tanks, pump chambers, alarms, distribution bed) and the location of test pits;
- 5) Show the distances between pipes, bed to structures, and tank to structures;
- 6) Show the direction of water flow (surface);
- 7) Indicate directions of North on the site plan;

- 8) Show the distances from the proposed sewage system components to all property lines, easements, rights-of-way, driveways, structures, and wells;
- 9) Show any surface water (creek, pond, lake) on or adjacent to the property and provide the common name;
- 10) Indicate distances to all utilities, and;
- 11) The location and voltage of hydro-electric transmission lines (above and below ground).

II. CROSS-SECTIONAL DRAWING (2 Copies Required):

- 1) Property owners name and property address (civic);
- 2) Depth of topsoil;
- 3) Depth of crushed stone;
- 4) Depth of leaching bed proposed showing depth of stone above the pipe the size of pipe proposed and stone below the pipe or chamber system with backfill layer surrounding it; the depth of filter media below the stone layer, the extended contact area depth and the mantle depth in relation to ground water, bedrock or impervious soil if applicable.
- 5) Height above/below existing grade of ground surface; and
- 6) Show Side slopes of bed/mantle.

Schedule 4A: Declaration of Applicable Law: This form must be filled out and signed by the legal owner or the agent.

Schedule 4B: Acknowledgement by Applicant of Incomplete Application: If you require processing of your application while other issues are pending, the processing of your application can commence without the permit being issued within the legislative time frame provided you complete and sign this form. An example of this would be if the application is given to the inspector at the site of the proposed installation and you wish the first inspection to be conducted at that time. The inspector is unable to review the application for completeness and accuracy in the field but processing, the first inspection, can take place. The application can be received as an incomplete application with Schedule 4B completed and signed and the first inspection can be conducted without the clock being started on the legislative time requirements. The clock would start in that case once the inspector deems the application complete.

Schedule 5: Fees Pay the appropriate fee with the submission of your application. The current fee schedule is attached to the application form. An application will not be processed until fee payment is received.

FURTHER INFORMATION OR ASSISTANCE

For further information or assistance, please contact a member of the North Bay – Mattawa Conservation Authority’s on-site sewage permit team.

15 Janey Avenue
North Bay, Ontario
P1C 1N1

69 Bowes Street
Parry Sound, Ontario
P2A 2L5

Telephone: (705) 474-5420
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SAMPLE DRAWINGS

REMINDER

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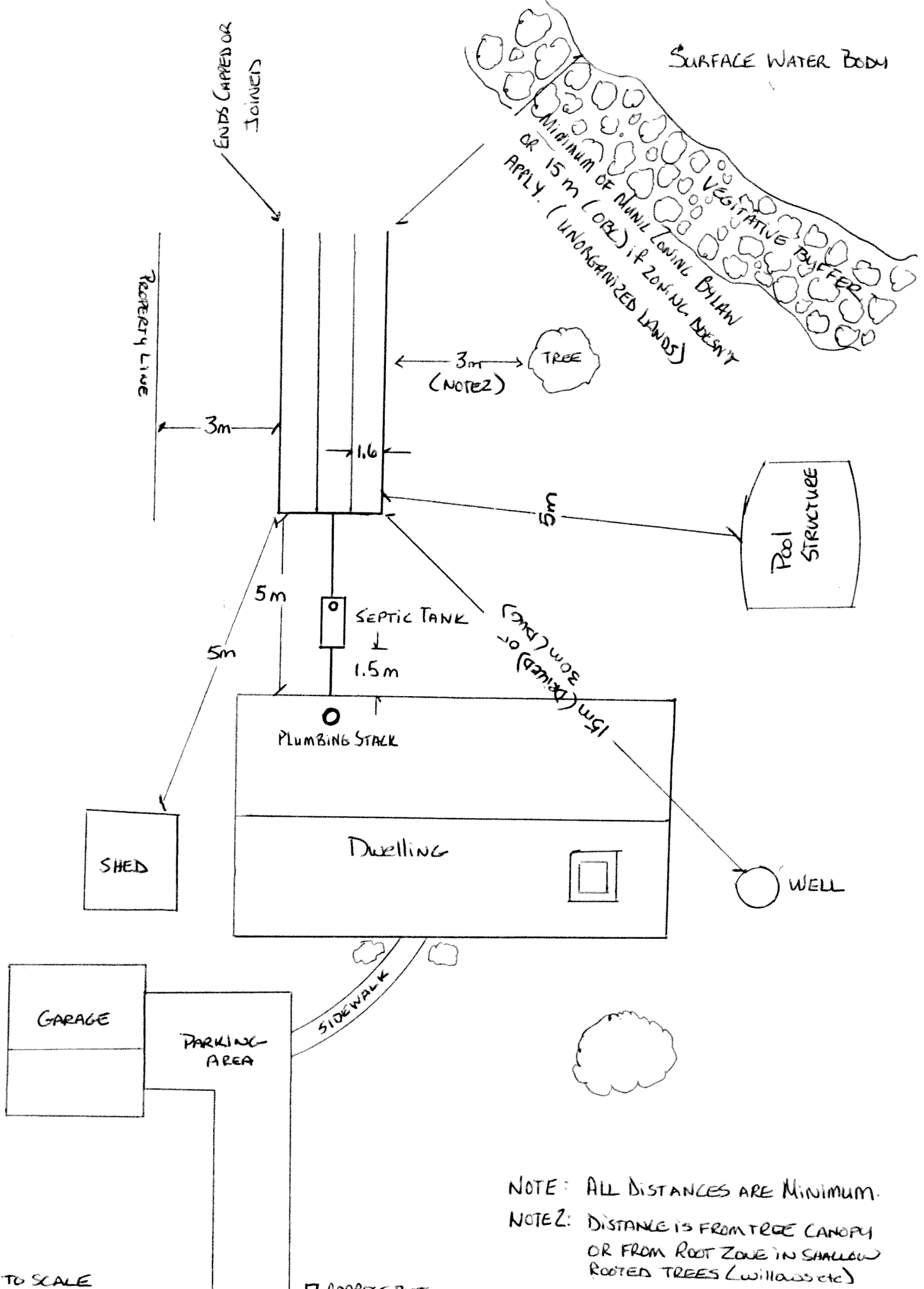
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- 5) Height above/below existing grade of ground surface; and
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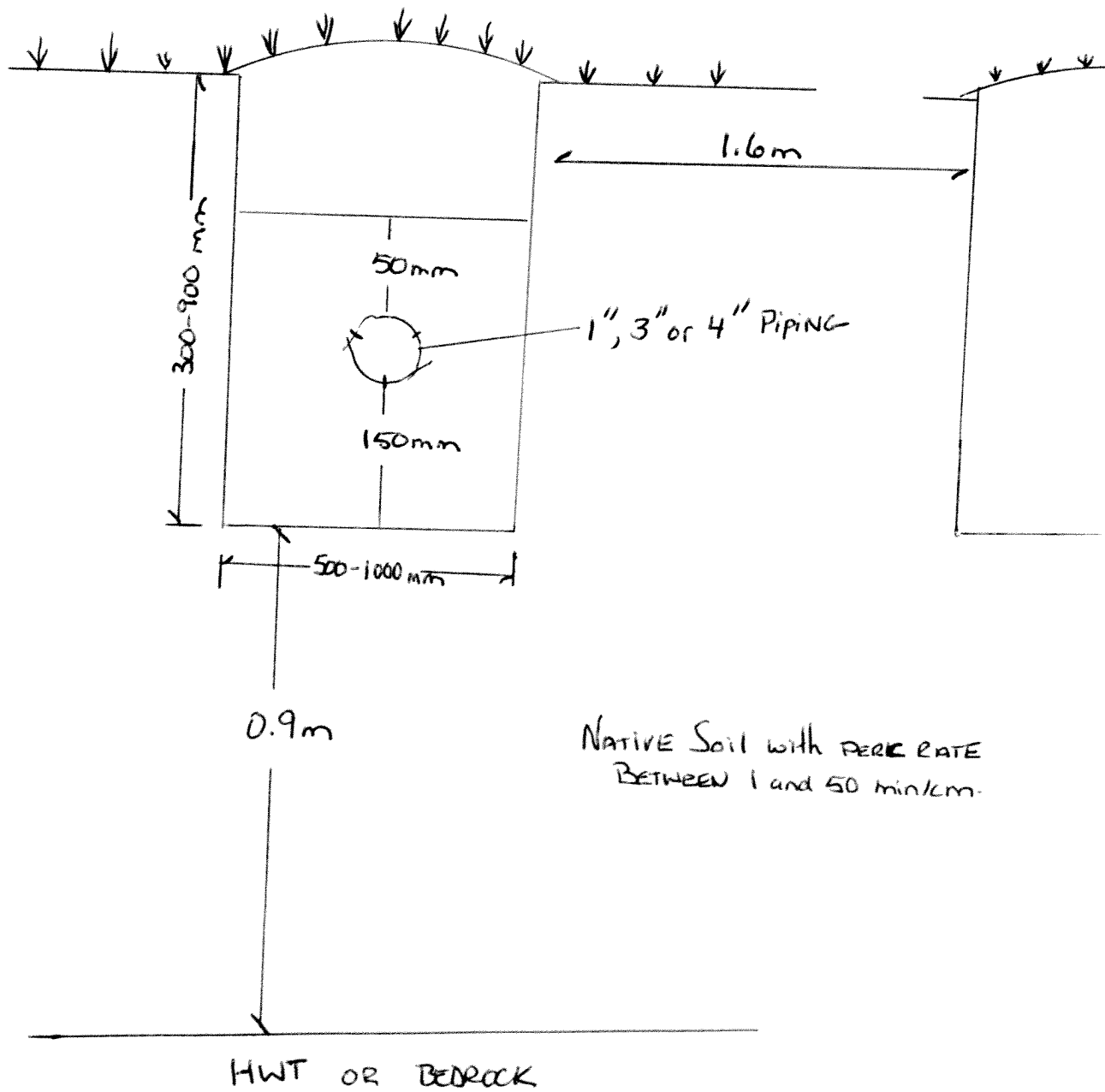
CONVENTIONAL TRENCH SYSTEM



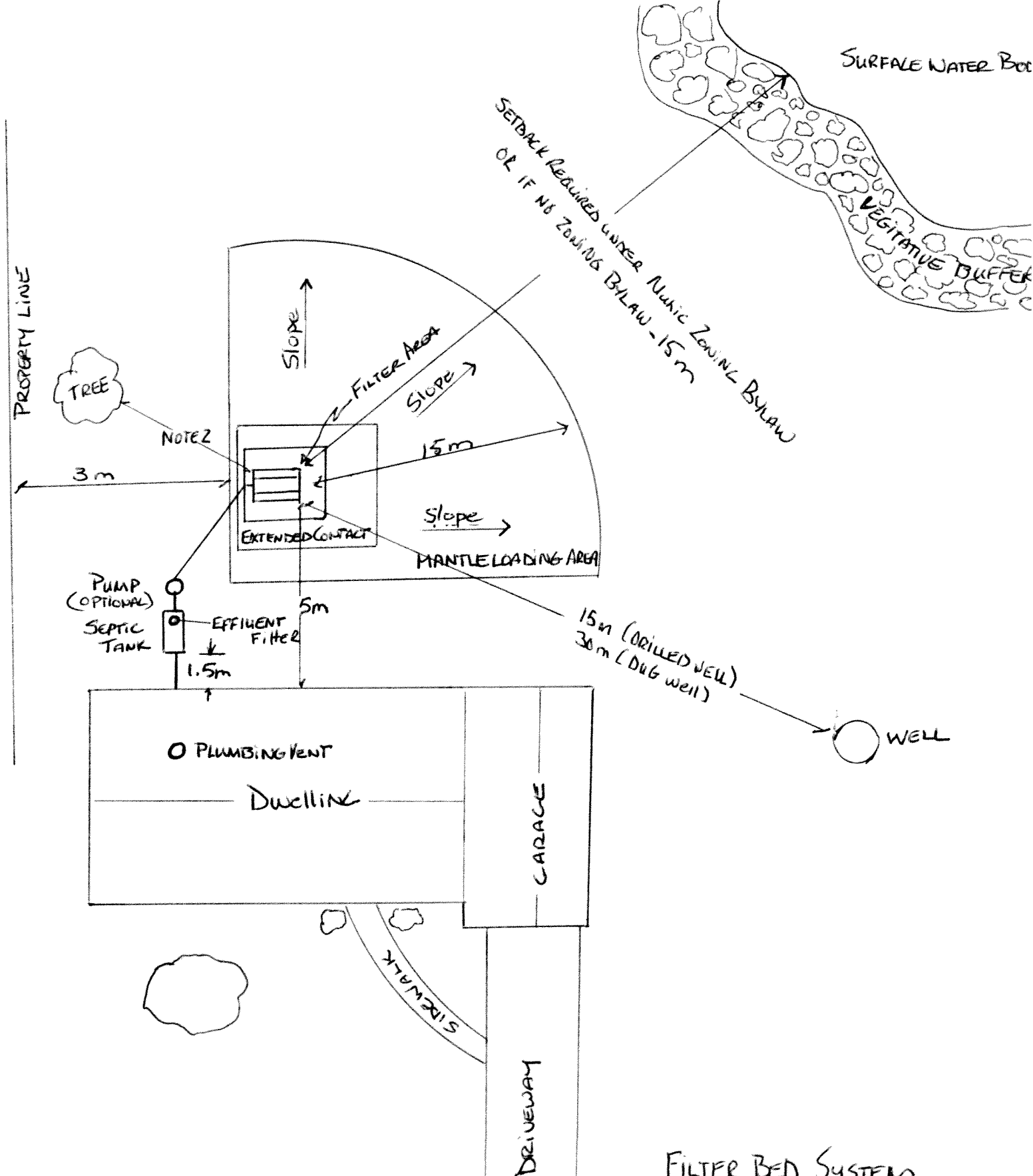
NOTE: ALL DISTANCES ARE MINIMUM.
 NOTE2: DISTANCE IS FROM TREE CANOPY OR FROM ROOT ZONE IN SHALLOW ROOTED TREES (WILLOWS ETC)

*NOT TO SCALE

CONVENTIONAL TRENCH
CROSS SECTIONAL VIEW



NOT TO SCALE



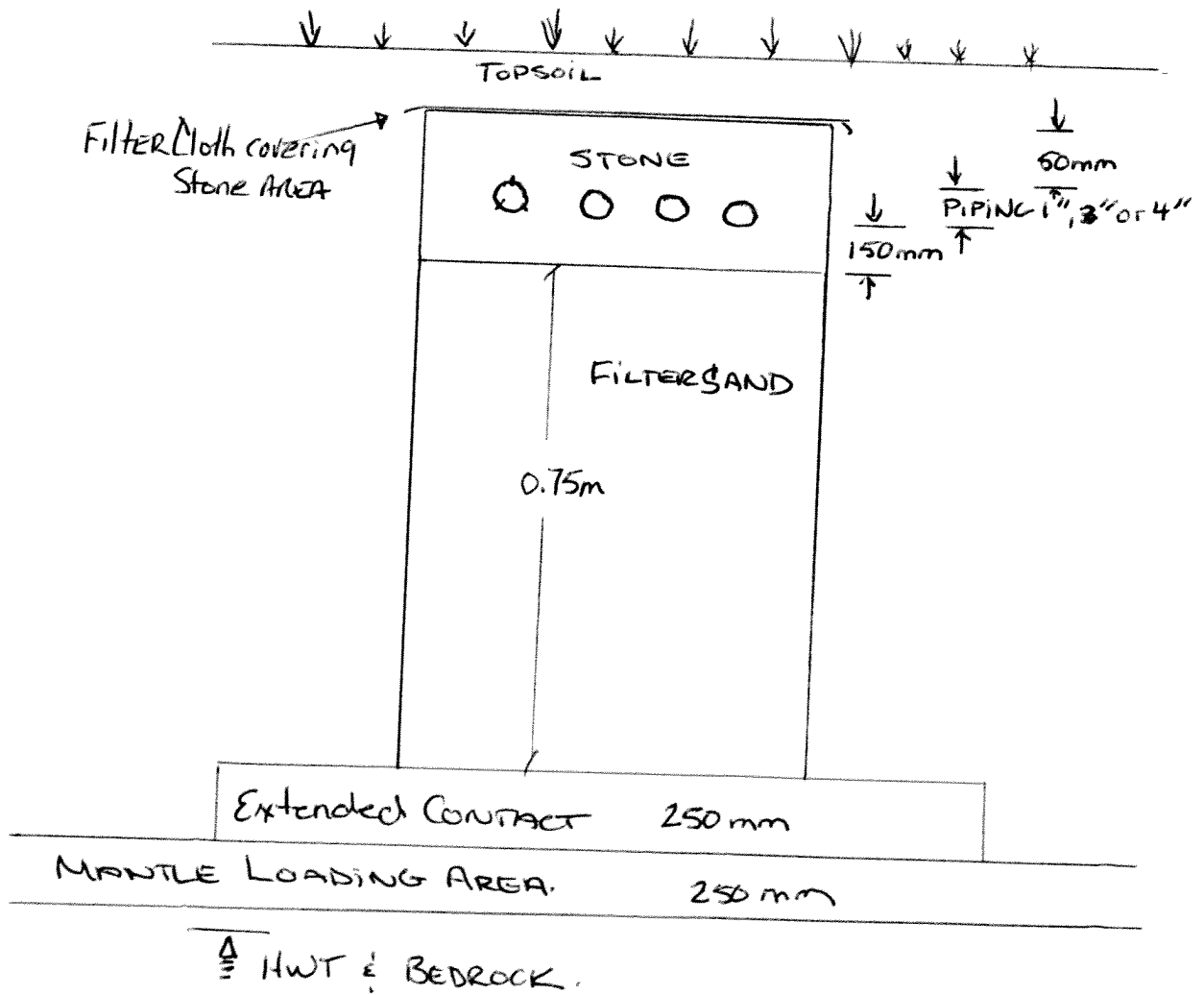
FILTER BED SYSTEM

NOTE: ALL DISTANCES SHOWN ARE MINIMUM
 NOTE2: DISTANCE IS FROM TREE CANOPY
 OR FROM ROOT ZONE ON SHALLOW ROOTED
 TREES

* NOT TO SCALE

□ AMORPHOUS

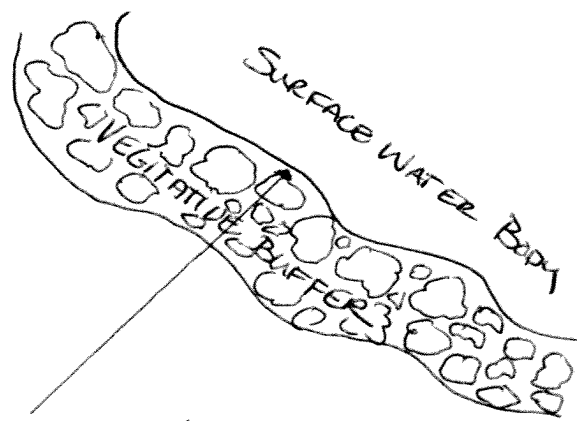
Filter Bed System
Cross Sectional View



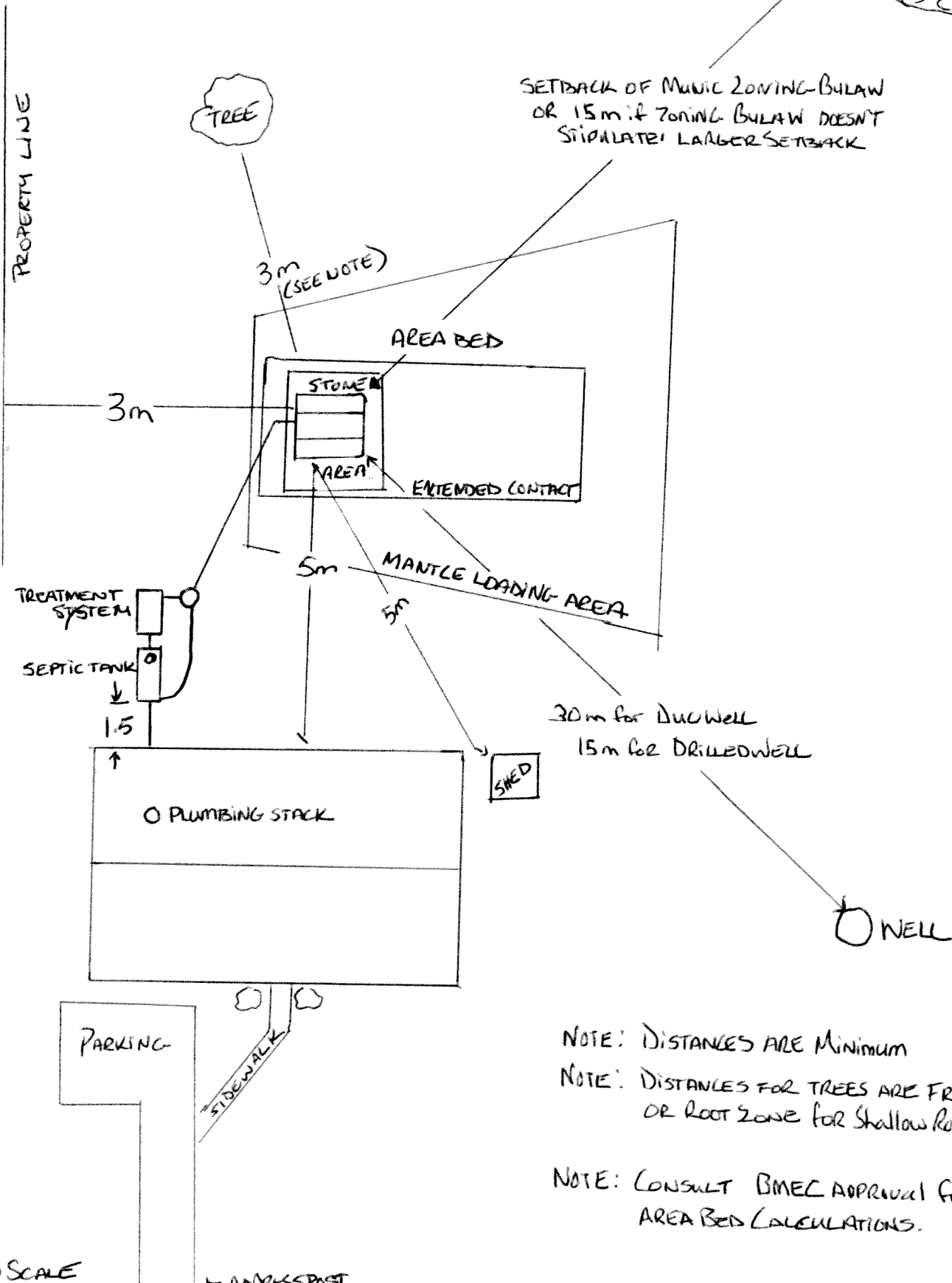
NOT TO SCALE

NOTE: DISTANCES ARE MINIMUM

AREA BED SYSTEM



SETBACK OF MUNICIPAL ZONING-BY-LAW
OR 15m if ZONING BY-LAW DOESN'T
STIPULATE LARGER SETBACK



NOTE: DISTANCES ARE MINIMUM

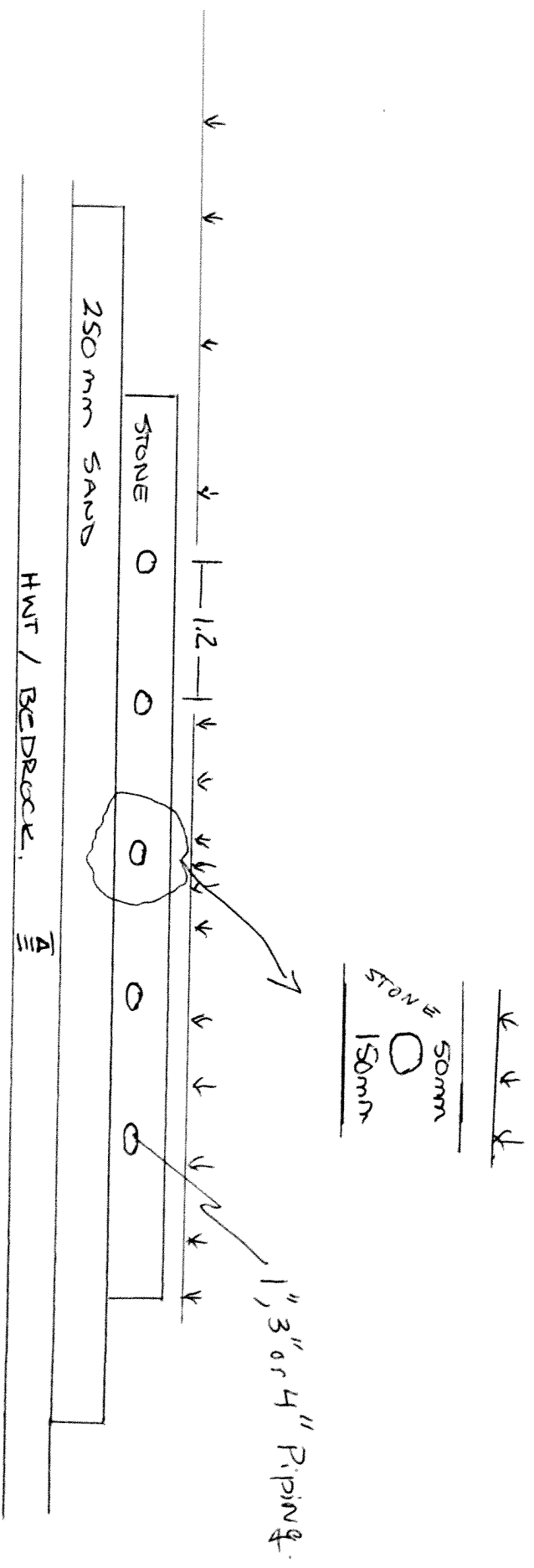
NOTE: DISTANCES FOR TREES ARE FROM CANOPY OR ROOT ZONE FOR SHALLOW ROOTED TREES

NOTE: CONSULT BMEC APPROVAL FOR AREA BED CALCULATIONS.

NOT TO SCALE

L. ANDERSON

Open Bed System
Cross Sectional View



NOT TO SCALE

NOTE: All distances are minimums except the distance between the piping which is a maximum