

INFORMATION PACKAGE FOR A SEWAGE SYSTEM PERMIT



Public Health
Santé publique
SUDBURY & DISTRICTS

Health Protection Division
1300 Paris Street, Sudbury, ON P3E 3A3
Tel: 705.522.9200, ext. 398
Fax: 705.677.9607
Email: OBCEnquiries@phsd.ca

NOTE: The Application for a Sewage System Permit MUST BE submitted in duplicate (**2 copies**). Please photocopy an additional copy for your own personal records.

References to the “**Act**” or “**Code**” hereunder apply to the **Ontario Building Code Act** and the **Ontario Building Code** respectively.

These information sheets are provided for guidance purposes only. Direct reference to the current legislated requirements of the *Act* and *Code* should always be made.

NOTE: It is an offence under the *Act* to construct, alter, repair, or to change the use of a sewage system or an associated building without a permit.

CLASSIFICATIONS OF SEWAGE SYSTEMS under the Building Code are as follows:

- **A CLASS 1** system is used for the disposal of human body wastes (no added water) and includes a pit privy, a chemical toilet, a composting toilet, an incinerating toilet, a re-circulating toilet, a pail privy, a portable privy, and a privy vault.
- **A CLASS 2** system or leaching pit is used for limited amounts of “greywater” (less than 1000 litres per day). This system is normally required in conjunction with a Class 1 system.
- **A CLASS 3** system or cesspool is used for the disposal of the contents of certain Class 1 systems. Dwellings served by a composting toilet, a chemical toilet, a re-circulating toilet, a pail privy, or privy vault will require either a cesspool for on-site disposal or the services of a licensed sewage hauler.
- **A CLASS 4** system consists of either a septic tank or an aerobic treatment unit and/or a leaching bed system. Leaching bed systems are normally constructed as either a standard tile bed or as a filter bed.
- **A CLASS 5** system consists of a holding tank for the retention of on-site sewage and must be serviced by a licensed sewage hauler. Only approved for specific uses under the Code.

NOTE: If a sewage system is constructed by anyone other than the owner, that person must be a licensed contractor under the *Act*.

Procedure for the supporting documentation for a sewage system permit application

Please read carefully:

Inspectors are not permitted to design sewage systems or to provide an on-site consultation prior to an application being received. Anyone unable to provide the detailed information on the application can consider retaining the services of a licensed contractor or qualified designer.

1. The applicant is responsible for submitting (2) two copies of a completed application form along with the necessary permit fees. Incomplete applications will not be processed.
2. After submitting a completed application, arrange for a pre-construction inspection of the property with the area inspector. At least one, five-foot deep test hole is required for the inspection in the area proposed for the system.
3. After the lot is inspected and if it is approved, a Sewage System Permit shall be issued. If the proposal is deemed unacceptable, alternatives should be discussed with the inspector.
4. No work shall be started until the Permit has been issued. The Permit must be posted at the construction site for the duration of the project. The applicant is responsible for ensuring that at least one set of approved specifications and plans are retained on the site.
5. Once a Permit has been issued, no changes or additions to the project are to be undertaken without prior written permission of the inspector.

NOTE: The Owner/Agent and Contractor share responsibility for ensuring that all work is carried out in accordance with this Permit, the *Building Code Act* and Public Health Sudbury & Districts' By-laws.

Guide for completing an Application Form

Property description

Provide a copy of the **section** of your tax bill, that indicates the legal description of the property.

Water supply

Please refer to the enclosed information sheets (APPENDIX "A") for the sewage system setback requirements from well water supplies and surface waters. For surface water supplies, please indicate under "Other".

Building classification

Indicate the type of building(s) that the proposed sewage system will serve, as well as the total floor area expressed in square metres. For residential occupancies, the total floor area should include the entire finished area excluding the basement.

Zoning approval

1. An application must be accompanied with a written "Letter of Conformity" from the appropriate planning authority if the property is located in a township under the jurisdiction of the Sudbury East Planning Board, the Manitoulin Planning Board, or the Ministry of Municipal Affairs and Housing. This document must indicate that the property is properly zoned for the intended use.
2. An application involving a property in an organized municipality must have their application stamped and/or signed by the local Building Official for zoning conformance.
3. There are a few unorganized townships north of Sudbury which are exempt from the above as they are not governed by a planning authority.

Site evaluation

A five-foot deep test hole must be dug or bored in the area proposed for the sewage system. This will provide a soil profile and an indication of high groundwater. From this test hole, indicate on the application the depth to rock or to heavy clay, as well as the depth to any water encountered. The test hole must be available for the inspector to see.

Percolation time of the existing soil must be determined by a grain size analysis performed by a qualified soil consultant.

Sewage systems

- a. Indicate the total number of bedrooms. The total number should include any sleep camps or mobile homes located on the property.
- b. If imported fill is proposed, the supplier of this material must be able to provide you with a Percolation Time based on "Grain Size Analysis".
- c. Two or three shallow test holes (12-18") should be excavated downgrade from the proposed sewage system to determine soil consistency. Please note the type of soils encountered and vegetation in this area.

Proposal to construct for residential and non-residential/other occupancies sewage applications

Complete the type of sewage system proposed and fill in all blank fields.

Construction details of Class 2/greywater pit application

Complete calculations to determine Daily Sewage Flow (DSF) as well as the minimum size of sidewall formula in order to determine the minimum size of the greywater pit.

Directions to property

Please provide sufficient directions to the property from the nearest major highway.

Agent authorization

Please read carefully and ensure that if you are authorizing an agent to act on your behalf, this section must be signed off by the owner.

Enclosures

1. Application for a "sewage system permit"
2. APPENDIX A:
 - i. Table 8.2.1.6.A.; Clearances for treatment units
 - ii. Table 8.2.1.6.B.; Clearances for distribution piping and leaching chambers
 - iii. Table 8.2.1.5.; Clearances for Class 1, 2, and 3 systems
3. APPENDIX B
 - i. Table 8.2.1.3.A. Residential daily sewage flows (Q)
 - ii. Size requirements for septic tanks/treatment units
 - iii. Leaching bed requirements
 - a. standard absorption trench
 - b. systemfilter bed systems
 - iv. Other systems
 - a. Class 2 greywater pits
 - b. Class 5 holding tanks
4. APPENDIX C: Sample grain size analysis chart
5. APPENDIX D: Sample site plan drawing

Fee schedule part 8-OBC

Sewage system permits: Class 2 - Greywater pit	\$400
Sewage system permits: Class 2 - Greywater pit - more than 4 systems	\$1600 + \$100 per extra system over 4
Sewage system permits: Class 3 - Cesspool	\$400
Sewage system permits: Class 4 - Septic tank and leaching Bed	\$900
Sewage system permits: Class 4 - Leaching bed only	\$550
Sewage system permits: Class 4 - Tank only	\$350
Sewage system permits: Class 5 - Holding tank	\$900
Sewage system permits: Re-inspection ¹	\$250
Renovation permit	\$300
Demolition permit	\$300
Revisions to permit (inspection required)	\$400
Transfer of permit to new owner	\$100
Copy of record	\$80
File search request	\$300
Extraordinary travel costs by air, water etc.	Full cost recovery
Severance - Consent applications (retained + # severed)	\$250 + \$250 per extra lot
Zoning or Minor variance - Not part of a consent application	\$250
Other government agencies	\$250
Mandatory maintenance inspections	\$175

¹Inspector is booked and arrives on-site, however the system is not ready for inspection so a repeat visit is required.

Appendix "A"

Table 8.2.1.5. forming part of sentence 8.2.1.5.(1)

Clearance distances for Class 1, 2, and 3 sewage systems

	Minimum horizontal distance in metres from a well with a watertight casing to a depth of at least 6m.	Minimum horizontal distance in metres from a spring used as a source of potable water or well, other than a well with a water tight casing of at least 6m.	Minimum horizontal distance in metres from a lake, river, pond, stream, reservoir, or a spring not used as a source of potable water.	Minimum horizontal distance in metres from a property line.
Earth pit privy	15	30	15	3
Privy vault pail privy	10	15	10	3
Greywater system	10	15	15	3
Cesspool	30	60	15	3
Column 1	2	3	4	5

1. Except as provided in Sentences 8.2.1.4. (1) and (2), no Class 1, 2, or 3 sewage system shall have a horizontal distance of less than that permitted by Table 8.2.1.5

Table 8.2.1.6.A. forming part of sentence 8.2.1.6.(1)

Minimum clearance for treatment units

Structure	1.5	m
Well	15	m
Lake	15	m
Pond	15	m
Reservoir	15	m
River	15	m
Spring	15	m
Stream	15	m
Property line	3	m
Column 1	2	

Appendix "A" continued

Table 8.2.1.6.B. forming part of sentence 8.2.1.6.(2)

Minimum clearance for distribution piping and leaching chambers

Structure	5	m
Well with a watertight casing to a depth of 6m	15	m
Any other well	30	m
Lake	15	m
Pond	15	m
Reservoir	15	m
River	15	m
A spring not used as a source of potable water	15	m
Stream	15	m
Property line	3	
Column 1	2	

2. Unless it can be shown to be unnecessary, where the percolation time is less than 10 minutes, the clearances listed in Articles 8.2.1.5. and 8.2.1.6. for wells, lakes, ponds, reservoirs, rivers, springs, or streams shall be increased to compensate for the lower percolation time. (S.8.2.1.4)
3. No building shall be constructed closer to any part of a sewage system than the clearances listed in Articles 8.2.1.5. or 8.2.1.6.

Table 8.2.1.3.A. forming part of sentence 8.2.1.3.(1)

Daily sewage flow

Note to screen reader users: All instances of m² are to be interpreted as metres squared. The lists immediately below make up Table 8.2.1.3.A. They show residential occupancy with the daily design flow rate in litres.

Residential occupancy	Daily design flow rate (litres)
1. Number of bedrooms	
a. 1 bedroom dwelling	750 L
b. 2 bedroom dwelling	1100 L
c. 3 bedroom dwelling	1600 L
d. 4 bedroom dwelling	2000 L
e. 5 bedroom dwelling	2500 L
2. Additional flow	
i. each bedroom over 5	500 L
ii. floor area	
a. each 10m ² (or part thereof) over 200m ² up to 400m ²	100 L
b. each 10m ² (or part thereof) over 400m ² up to 600m ² , and	75 L
c. each 10m ² (or part of it) over 600m ² , or	50 L
iii. each fixture unit over 20 fixture units	50 L

Notes for Table 8.2.1.3.A.:

1. For the purpose of #2. (refer to table above) the highest flow in (i), (ii), or (iii) shall be added to #1. (a-e) (refer to table above) to determine the design of the daily sewage flow.
2. For the purpose of #2. (refer to table above) the floor area means the total finished area of a dwelling, excluding the finished basement area.

Tank size requirements for septic tank/treatment unit

For residential occupancies	Minimum 3600 litres or twice the daily sewage flow (Q)
For all other occupancies	Minimum 3600 litres or three times the daily sewage flow (Q)

Note: For other occupancies, consult the Ontario Building Code for the designs for daily sewage flows.

Example of how to calculate daily sewage flow (DSF) for residential applications

Pick from 1 - corresponding amount of flow adjacent to corresponding # of bedrooms

1. Example (c) 3 bedroom dwelling - 1600 L
2. Next calculate the greater of (a), (b), or (c) below:
 - a. add 500 L per bedroom over 5 bedrooms
or
 - b. for each
 - i. 10m² (or for part of it) of flow area over 200m² up to 400m² add 100 L
 - ii. for each 10m² (or for part of it) of flow area over 400m² up to 600m² add 75 L
and
 - iii. for each 10m² (or for part of it) of flow area over 600m² add 50 L
or
 - c. add 50 L for each fixture unit over 20 fixture units

Add #1. Daily sewage flow to #2. to obtain the total daily sewage flow.

Example of how to calculate daily sewage flow (Q) for a 3 bedroom single family dwelling

Refer to Appendix "B" Table 8.2.1.3.A. (page 7) in this information package for the calculation

1. 3 bedroom dwelling = 1600 L
- d. 230m² dwelling is 30m² over 200m²
 $\therefore 3 \times 10\text{m}^2 = 300 \text{ L}$
- e. 28 fixture units is 8 fixture units over 20
 $\therefore 8 \times 50 \text{ L} = 400 \text{ L}$

Add #1. to the larger of (a) or (b) to calculate daily sewage flow (Q)

$$1600 \text{ L} + 300 \text{ L} = 1900 \text{ L}$$

$$1600 \text{ L} + 400 \text{ L} = 2000 \text{ L}$$

Therefore the daily sewage flow (DSF) would be 2000 L.

Appendix "B" continued

1. Leaching bed requirements

Note:

Q	=	Daily sewage flow
T	=	Percolation time of soil
L	=	Length of pipe in metres
LR	=	Loading rate of the sidewalls in litres per day/m ²

A. Absorption trench

For a septic tank system	$L = (Q \times T) / 200$ (minimum 40 m)
For a level IV treatment system	$L = (Q \times T) / 300$ (minimum 40 m)

B. Filter bed system

Size of filter bed area in m ² for daily sewage flows <3000 litres	Filter bed area (m ²) = $Q / 75$
Size of filter bed area in m ² for daily sewage flows >3000 litres	Filter bed area (m ²) = $Q / 50$
Expanded contact area	Area (m ²) = $Q \times T / 850$

C. Soil mantle sizes m²

Percolation time (T) of existing soil (min/cm)	Loading rates (L / m ² / day)	m ² required
$1 < T < 20$	10	$Q / 10$
$20 < T \leq 35$	8	$Q / 8$
$35 < T \leq 50$	6	$Q / 6$
$T > 50$	4	$Q / 4$

2. Other systems

Class 2 greywater pit

Required sidewall of the greywater pit	Area (m ²) = $(Q \times T) / 400$
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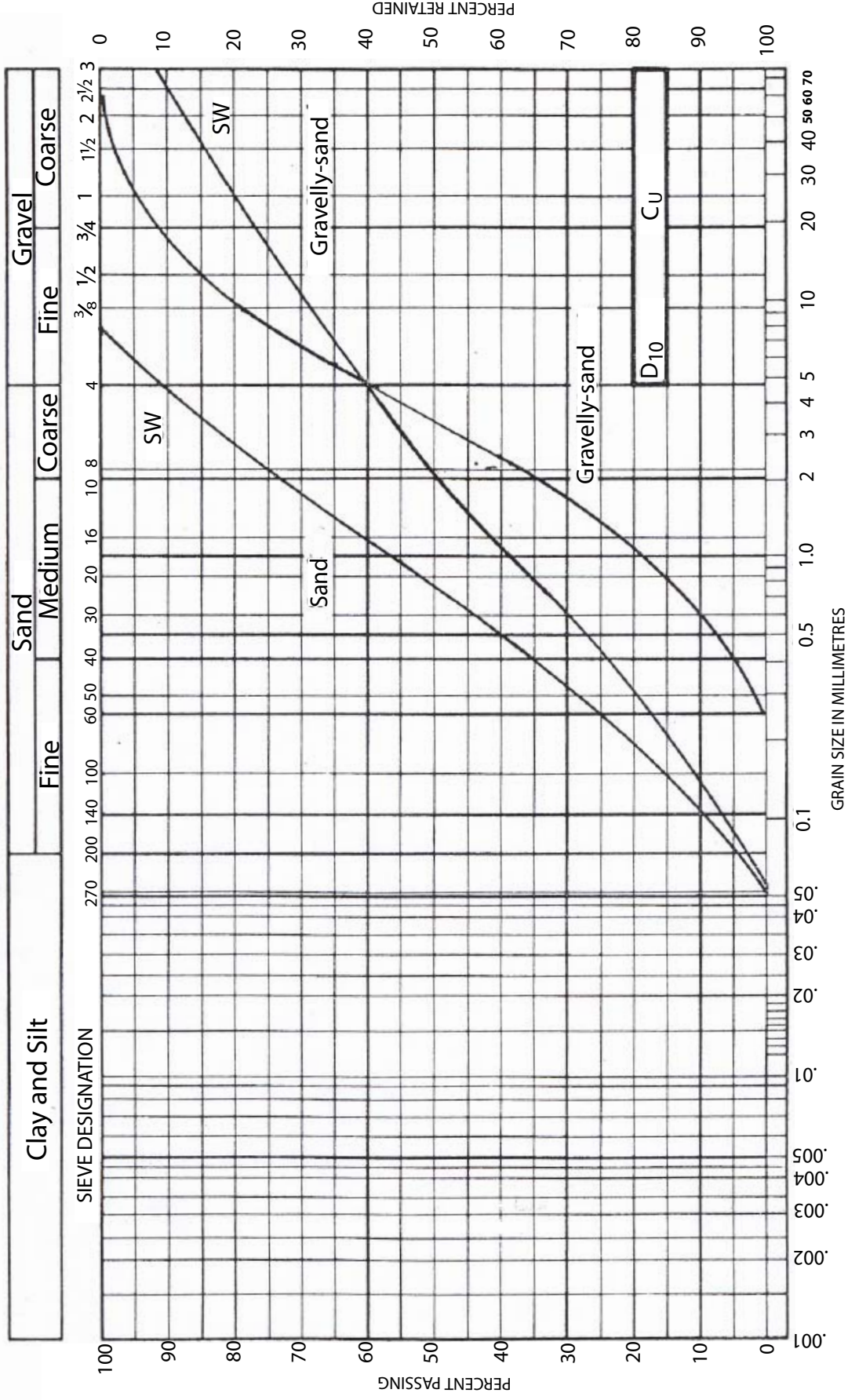
To determine "Q", use 200 litres for each plumbing fixture unit in a pressurized water system or 125 litres per fixture unit for a non-pressurized water system.

Class 5 systems

Minimum size of holding tank for residential dwellings is 9000 litres or 7Q, whichever is greater.
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Unified Soil Classification System

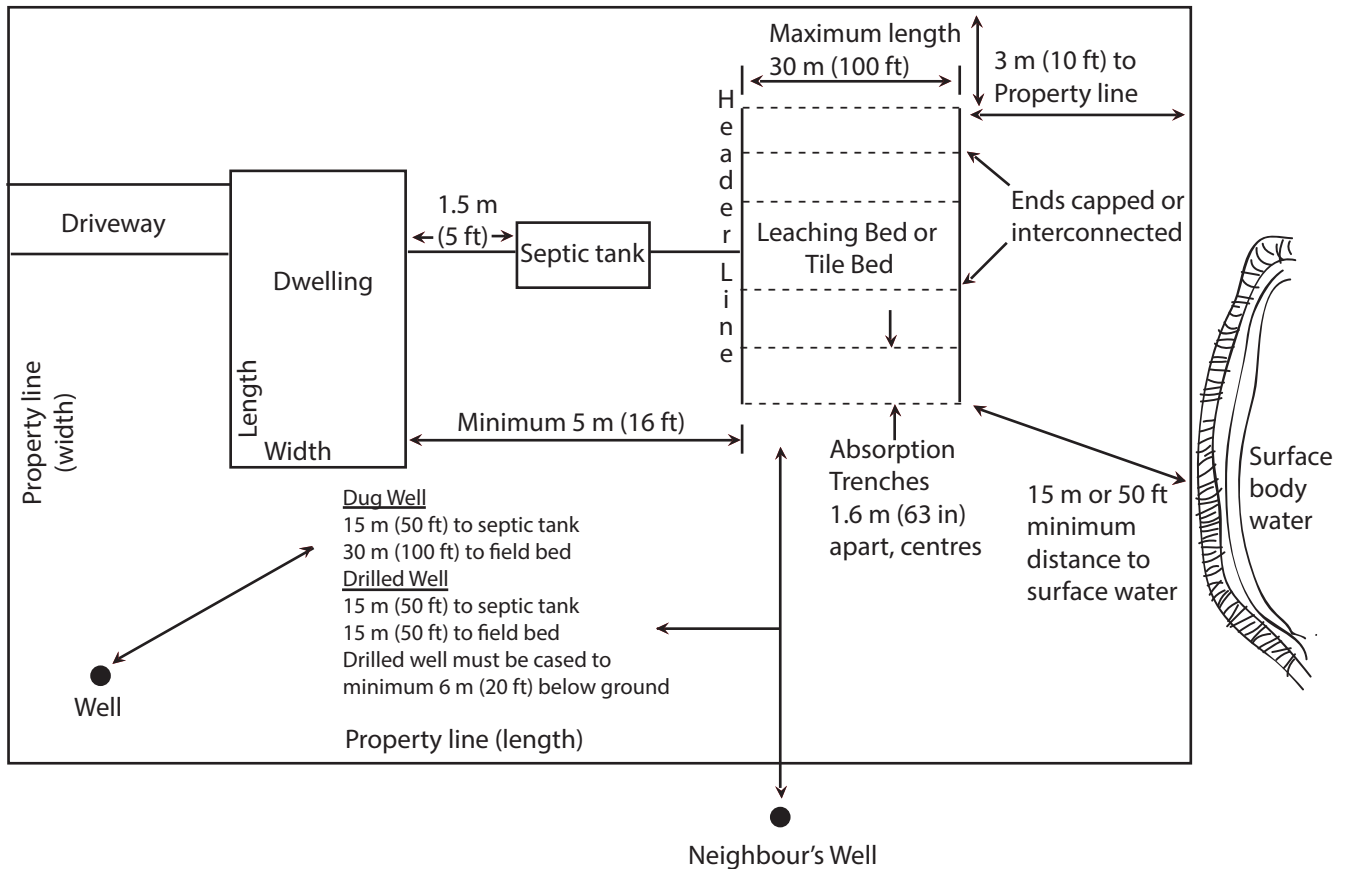
Appendix C



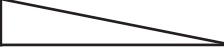
SW - Well-graded sands, gravelly-sands
 Little or no fines (< 5% passing 0.074 mm)
 Uniformity coefficient > 4

Appendix "D"

Sample Site Plan



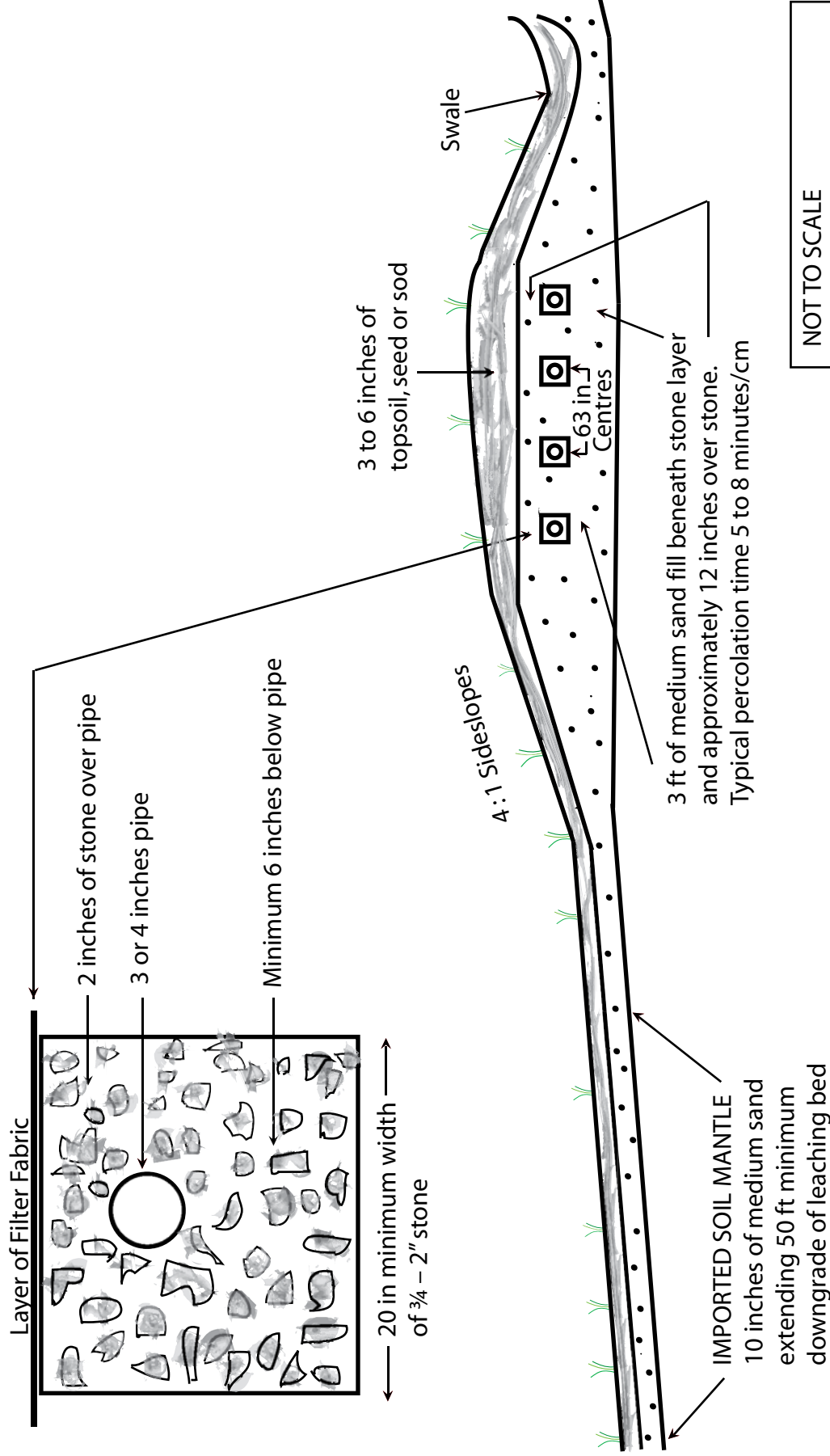
TYPICAL ARRANGEMENT OF A SEPTIC TANK SYSTEM

- A) The maximum length of any single pipe trench must not exceed 100 feet (30 metres).
- B) When measured horizontally, treatment units (e.g. septic tanks, etc.) must not be any closer than 50 feet (15 m) to a well, lake, pond, reservoir, stream, river or watercourse. Distribution pipe and leaching chambers shall not be closer than the distances stated above, except that there is a 100-foot setback requirement from a shallow well.
- C) The side slopes of any raised portion of a leaching bed must not be steeper than 4:1.  Side slopes can be reduced to 3 : 1 if stabilized by immediately sodding with grass after top-dressing.
- D) Although not indicated above, fill based leaching beds will normally require a soil mantle.

PIPE SIZE

1. The trade size of rigid construction pipe shall be at least three (3") inches in diameter.
2. The trade size of drainpipe from the building to the septic tank shall be four (4") inches in diameter.

TYPICAL RAISED LEACHING BED Cross Section (Installed on Native Silt / Clay Soils)

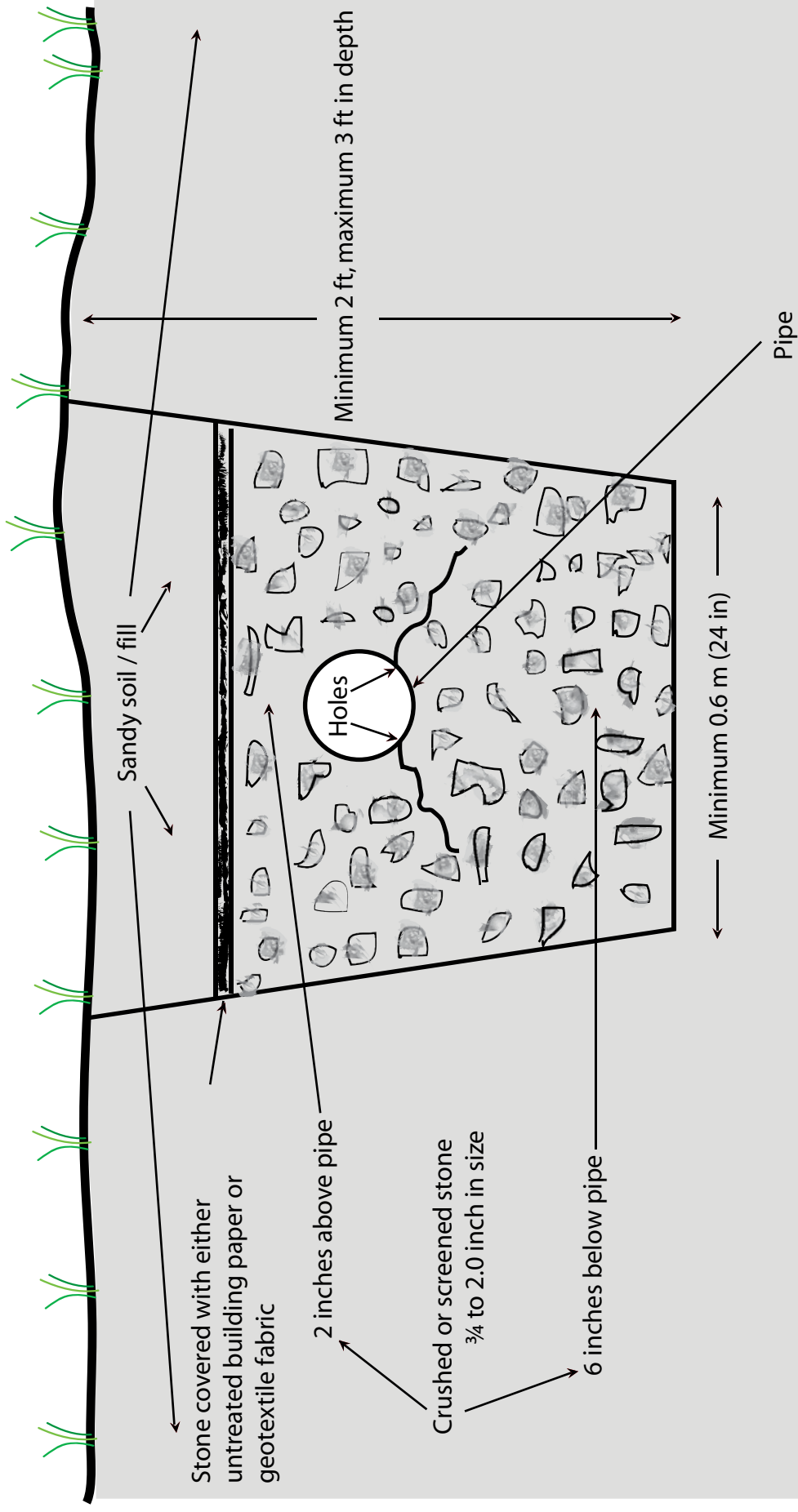


NOT TO SCALE
Refer to Ontario Building Code
for precise details.
Example only.

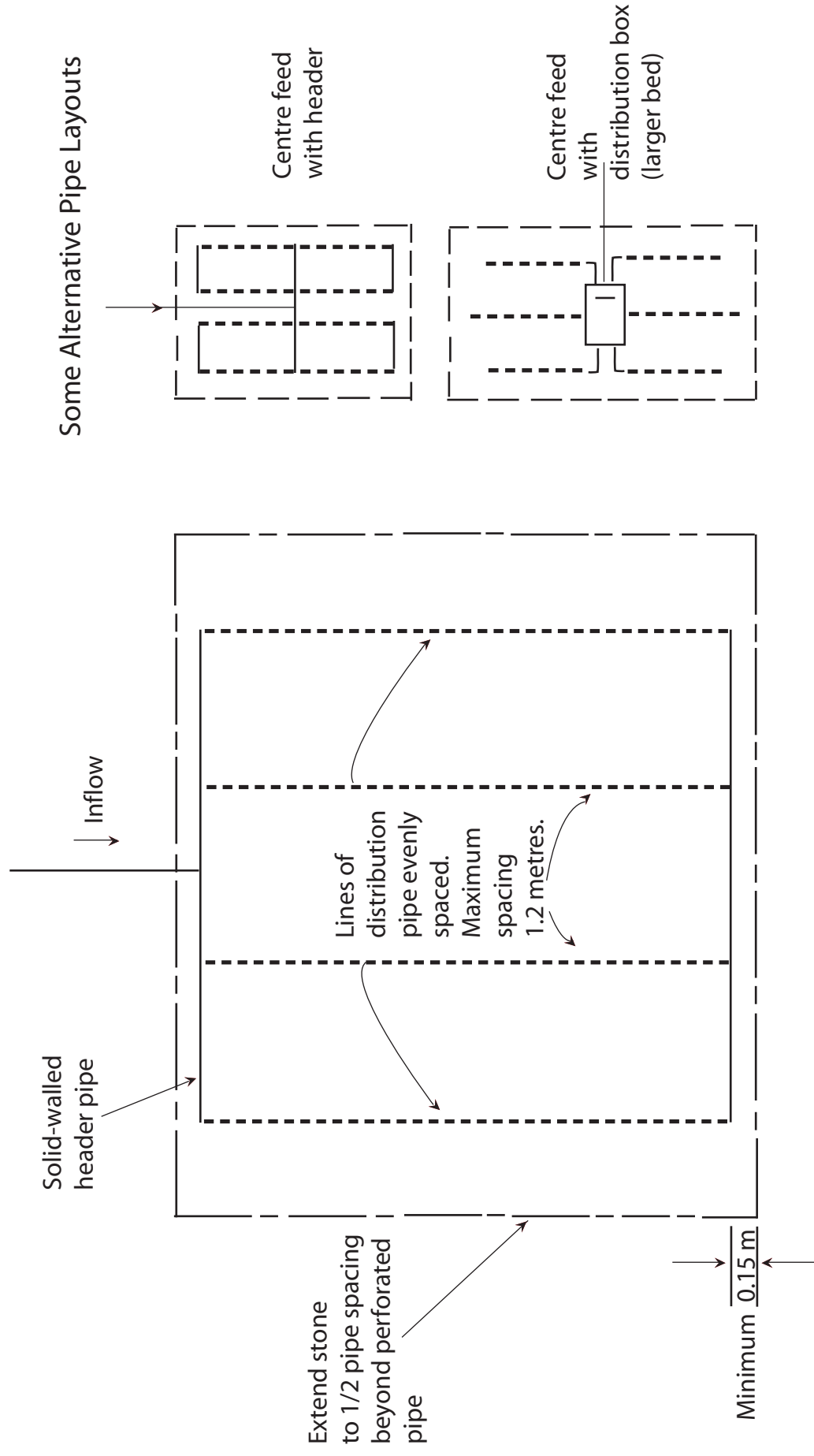
Typical Trench Detail

Class 4 Absorption Trench

Not to Scale



Leaching Beds: Example of Filter Bed



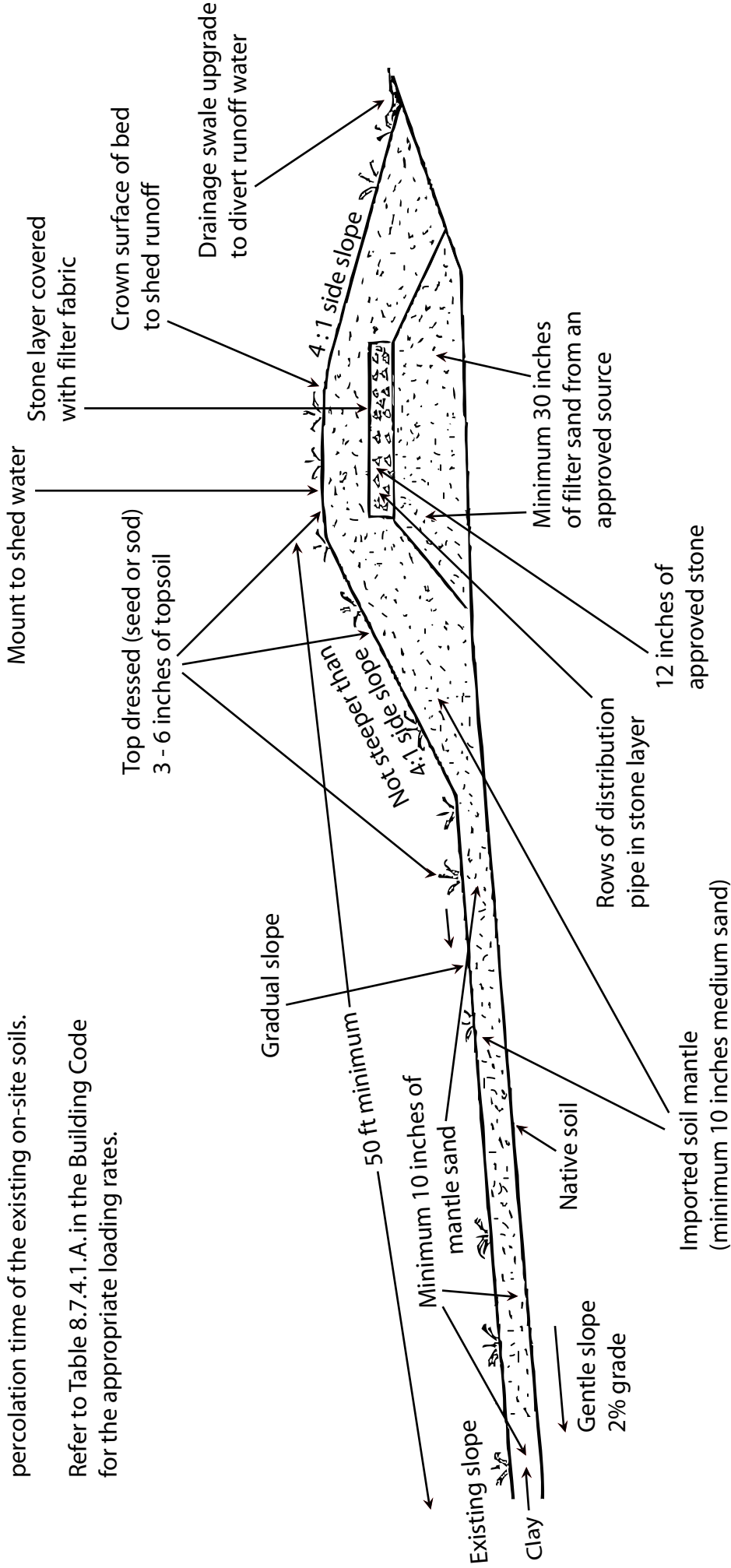
Example of Typical Raised Filter Bed (Installed on Clay Soils)

Refer to Ontario Building Code
For the Precise Regulated Requirements

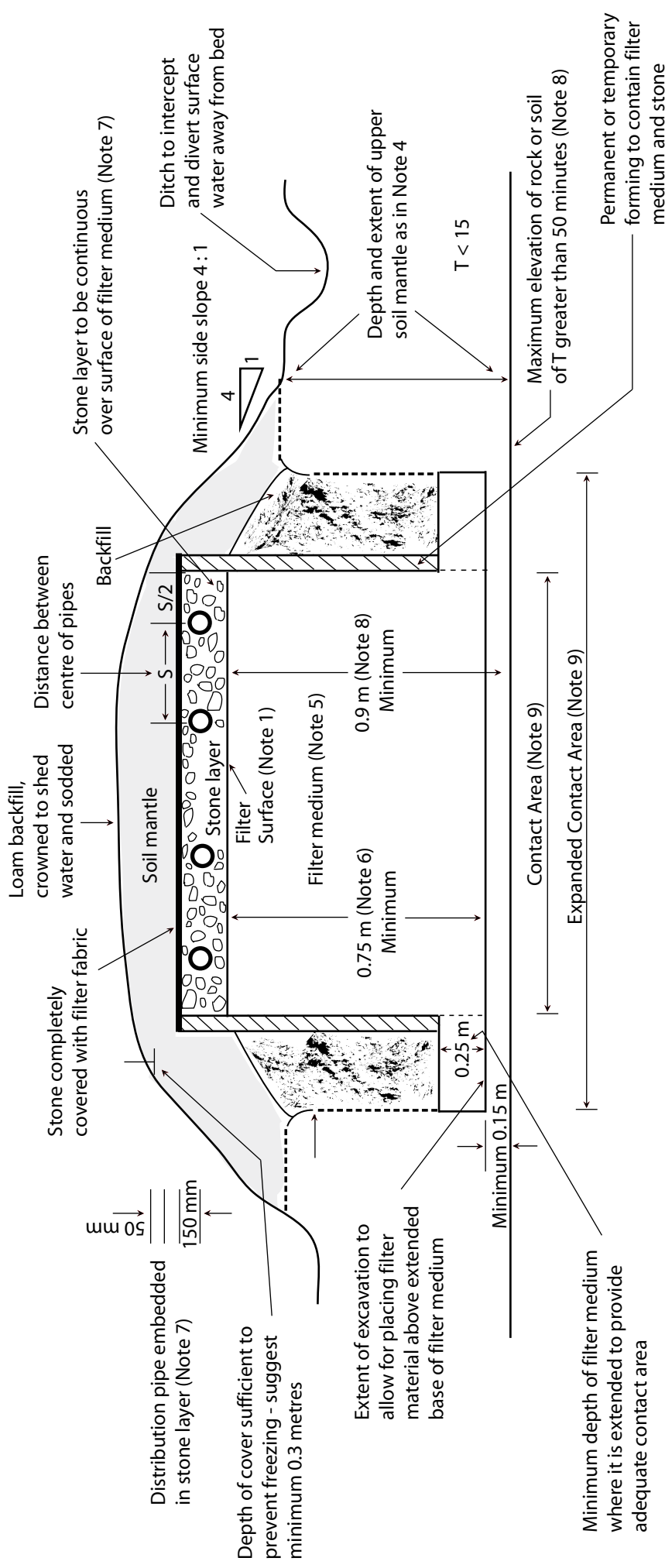
Cross Section

Note: The size of the soil mantle is based on the
percolation time of the existing on-site soils.

Refer to Table 8.7.4.1.A. in the Building Code
for the appropriate loading rates.



Leaching Beds: Example of Filter Bed



NOTES: Refer to Ontario Building Code for regulations governing filter type leaching beds

- 1) Maximum size of any one filter bed cannot exceed 50 square metres.
- 2) Permissible loading rates on surface of filter bed used with a septic tank.
 - i) 75 litres/square metre (L/m^2) for flows up to 3000 litres/day.
 - ii) 50 litres/square metre (L/m^2) for flows between 3000 - 5000 litres/day.
- 3) Permissible loading rate for filter beds used in conjunction with Secondary and Tertiary Treatment Units - 100 litres/square metre.
- 4) Filter beds may only be installed in-ground or partially in-ground if the existing on-site soils have a percolation time (T) < 15 minutes/cm. A soil mantle of T < 15 minutes/cm and at least 0.25 metres in depth is required to extend from the outer distribution pipes in any direction in which sewage effluent that has passed through the filter bed will flow. For mantle sizes refer to Application Kit or the Building Code.
- 5) Filter medium must be certified by a soil engineer to meet requirements of the Ontario Building Code.
- 6) Minimum depth of filter sand is 0.75 metres. Ensure that the filter sand is purchased from an approved pit supplier.
- 7) Distribution pipes are to be bedded in clean stone screened to between $\frac{3}{4}$ to 2.0 inches in size. This stone is typically referred to as 1 $\frac{1}{4}$ inch screened stone for field beds.
- 8) The surface of the filter sand must be at least 0.9 metres above rock or the groundwater table (GWT).
- 9) The base of the filter bed must be extended with filter sand to a thickness of at least 0.25 metres over an area meeting the following requirement - $\frac{Q \times T}{850}$ where Q is the design sewage flow and T is the percolation time of the existing on-site soils.