

File 124138

November 13, 2024

Farzam Baradarani
baradarani.f@gmail.com

Re: 9880 Beachwood Road, Town of Collingwood
Functional Servicing Letter

Dear Farzam:

The Town of Collingwood has requested a Servicing Memo in support of the proposed severance of 9880 Beachwood Road. Please accept this letter as our functional servicing analysis.

We have enclosed the following relevant documentation for reference:

- service record information for the existing water main from the Town of Collingwood;
- septic system design calculation prepared by District Septic dated August 15, 2024;
- T-time results prepared by Soil Engineering Ltd. Reference No. 2011-M132; and
- Lot Development Plan, drawing LDP.1 prepared Tatham Engineering dated November 5, 2024.

EXISTING PROPERTY

The existing property is approximately 0.174 ha of vacant treed land located northwest of the intersection of Beachwood Road and Church Court. The property is currently zoned Residential First Density (R1) and is surrounded by R1 zoned land to the north and west and Christ Our Hope Lutheran Church zoned Community Services Exception 3 (CS-3) to the east. The property has an existing water service of unknown size. The approximate location of the water service is shown on Drawing LDP.1. There are no sanitary sewers in the vicinity of the site which are feasible to connect to. The surrounding properties are serviced by individual on-site wastewater systems. The existing property drainage pattern is from south to north overland via sheet flow.

PROPOSED DEVELOPMENT

The proposed development plan for the property is a severance splitting the property into 2 lots, each of which will have a single-family home. Lot 1 will be the east half of the existing lot and Lot 2 will be the west half. The preliminary house plans prepared by Meer Designs are for an approximately 175 m² raised

bungalow (first floor including garage) with a 4 bedroom, 3 bathroom main unit and a 1 bedroom 1 bathroom basement apartment.

WATER

Water Demand

Per the Collingwood Development Standards, the following design criteria were used to calculate water demand:

- average day demand (ADD) 260 L/capita/day;
- 2.9 people per unit for a 3 bedroom single detached unit;
- 1.9 people per unit for a 1 bedroom apartment;
- 1.77 maximum day demand (MDD) factor;
- 2.7 peak hour demand (PHD) factor; and
- 57 L/s minimum fire flow for residential single family street.

Water Demands

DEMAND SCENARIO	DEMAND
ADD	2,496 L/day
MDD	4,418 L/day (0.05 L/s)
PHD	0.08 L/s
MDD + Fire Flow	57.05 L/s

Water Serving

The existing water service will be used to service Lot 1 and a new 25 mm diameter water service will be extended from the existing water main on Beachwood Road to service Lot 2. An existing fire hydrant on the north side of Beachwood Road east of the site will provide fire suppression coverage for the lots. A 45 m hydrant radius is shown on Drawing LDP.1 along with the proposed servicing configuration.

WASTEWATER

As mentioned previously, there is no feasible sanitary outlet to service the site, therefore on-site wastewater systems in accordance with Part 8 of the Ontario Building Code will be required to treat and dispose of wastewater from each of the lots.



Wastewater Generation

A conceptual wastewater generation, septic tank and filter bed sizing calculation were completed by District Septic and are enclosed with this letter. The calculated design flow from each lot is 2,750 L/day.

On-site Wastewater System

District Septic has designed the conceptual on-site wastewater system as a septic tank with raised filter bed for disposal. A percolation time (T-time) test on the native soil was completed by Soil Engineers Ltd., which is enclosed with this letter, estimates the T-time as 20 min/cm. We note that the conceptual on-site wastewater design prepared by District Septic assumed a T-time as 50 min/cm which makes their calculations conservative. Included with the calculations, and shown on drawing LDP.1, is a conceptual layout and cross section of the on-site wastewater systems which show that they can be accommodated on the proposed lots. At detailed design, OBC approved advanced treatment units and/or updated filter bed sizing calculations with the actual T-time can reduce the size of the on-site wastewater system.

STORM DRAINAGE

The proposed grading and drainage patterns are shown on Drawing LDP.1. The lots will generally maintain their existing drainage patterns draining north and west to an existing ditch along the west side of the property that eventually outlets to Georgian Bay. The proposed driveways will include 500 mm diameter culverts matching the upstream culvert size to maintain the flow capacity of the roadside ditch on the north side of Beachwood Road.

UTILITIES

The severed properties will be serviced from the existing utilities, hydro, gas and telecommunications, available fronting the site on Beachwood Road.

SUMMARY

The existing water service will be used to service Lot 1 and a new 25 mm diameter water service will be installed to service Lot 2. Each property will have their own on-site wastewater disposal system. Stormwater drainage patterns will be generally maintained with drainage conveyed to the existing ditch along the west side of Lot 2. Each lot will have its own driveway and culvert to maintain the existing ditch on the north side of Beachwood Road.

Further to this servicing letter, Tatham Engineering has prepared a traffic assessment under separate cover to review minimum driveway separation, sight lines and proposed driveway locations relative to existing driveways.



We trust this letter and analysis is sufficient to support the proposed severance plan for the property. However, should you or the Town have any questions please do not hesitate to contact the undersigned.

Yours truly,

Tatham Engineering Limited



Patty Mitchell, C.E.T.
Technologist
PM/AO:rlh
Encl.



Andrew Overholt, B.Sc., B.Eng., P.Eng.
Engineer, Project Manager

I:\2024 Projects\124138 - 9880 Beachwood Road, Collingwood\Documents\Reports\L - FSLR - 9880 Beachwood.docx



Attachments

Patty Mitchell

From: Sheldon Hancock <shancock@collingwood.ca>
Sent: Tuesday, October 8, 2024 10:19 AM
To: Patty Mitchell; Stefanie Thorne
Cc: Stuart West
Subject: RE: 9880 Beachwood Road record information
Attachments: 2010-2010+Contract+Drawings+-+Book+3+of+3 7.pdf

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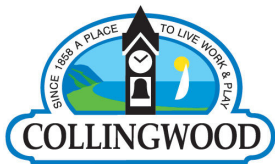
Hi Patty,

I could not find any relevant information if that property. I have attached a drawing of the Hwy 26 widening along with a GIS image below.



Regards,

Sheldon Hancock C.E.T.
Engineering Technologist, Growth & Development
Collingwood, ON, L9Y 3Z5
t: 705-445-1030 Ext. 4218
www.collingwood.ca



Disclaimer: The Town of Collingwood provides the attached drawings and/or reports for informational purposes only and cannot guarantee the accuracy of the data. It is the responsibility of the recipient to determine the accuracy, completeness and the appropriateness of the information provided.

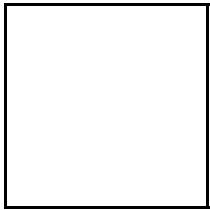
From: Patty Mitchell <pmitchell@tathameng.com>
Sent: Friday, October 4, 2024 11:45 AM
To: Sheldon Hancock <shancock@collingwood.ca>; Stefanie Thorne <sthorne@collingwood.ca>
Cc: Stuart West <swest@collingwood.ca>
Subject: 9880 Beachwood Road record information

EXTERNAL EMAIL: This email originated outside of the Town's email system. Do not click any links or open any attachments unless you trust the sender and know the content is safe. If in doubt, please contact the helpdesk at x4357.

Please forward the service record information for 9880 Beachwood Road.

There is a watermain in the area, no sanitary sewers.

Thank you in advance,



Patty Mitchell C.E.T.
Technologist

pmitchell@tathameng.com T 705-444-2565 x2057 C 705-888-2565
115 Sandford Fleming Drive, Suite 200, Collingwood, Ontario L9Y 5A6

tathameng.com in @ f

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District Septic

part of 796499 Ontario Limited

2534 Concession 6

Collingwood, Ont.

Office # (705) 445 - 0211

Email Address: roger@districtseptic.ca

Report #

DS-240815 - 1a

SI-240815-01

Estimation #

Prepared by

BCIN #

Designed by Roger Barrette

13320

District Septic

17140

Date :

15-Aug-2024

Daily Design Sewage Flow

Customer Information

Customer Name : Farzam Baradarani
Home Owner or Contact Name : Farzam Baradarani
Address : _____
Town : _____
email Add: baradarani.f@gmail.com
email Add: _____
Phone Business or Mobile # : (647) 877-4495
Office # : _____

Site Location

911 # / Address : 9880 Beachwood Rd
Pt. Lot : _____
Con. : _____
Township : Collingwood
Former Township : _____
Tax Roll # : _____

Residencial Characteristic's

Total Floor Area m²

All Building Level's Excluding Basement 1342 ft²

124.7 m²

of Bedroom's

4

Base Design Sewage Flow : 2000 litres / day

Fixture's	# Of Unit's	Fixture Multiplier	Fixture Unit's
3 pcs Bathroom Group	4	6.0	24.00
Water Closets (Flush Toilets)		4.0	
Bidet		1.0	
Washbasin		1.25	
Bathtub or Shower		1.5	
Kitchen Sink	2	1.5	3.00
Dishwasher	2	1.5	3.00
Washing Machine	2	1.5	3.00
Laundry Tub	1	1.5	1.50
Other / Bar Sink		1.5	
Total Fixture Unit's			<u>34.50</u>

Daily Design Sewage Flow Surcharge Calculation :

	Total Unit's	Unit's Surcharge	Volume Surcharge	Total Design Surcharge
Total Living Area m ² :	<u>124.7</u>			
Surcharge for Floor Area > 600 m ² :	0.0	0.0	0	
Surcharge for Floor Area > 400 m ² but < 600 m ² :	0.0	0.0	0	
Surcharge for Floor Area > 200 m ² but < 400 m ² :	0.0	/ 10=	0	0
Surcharge for Fixture Unit's over 20 :	<u>34.5</u>	14.5	15	750
Surcharge for Bedrooms over 5 :	<u>4.0</u>	0.0	0	0

Use the Greater Volume of the Three

Total Daily Design Sewage Flow Calculation :

Surcharge Used = 750

Add Greatest Volume in the Surcharge to the Base Flow

Base Design Sewage Flow = 2000

Total Daily Design Sewage Flow : 2750 litres / day

Septic / Treatment Tank Size Calculation :

2020 Ontario Building Code - Part 8.2.2.3. (1a) In residential occupancies, (The Treatment / Septic Tank Shall be) twice the daily design sanitary sewage flow.

Minimum Tank Size = 2750 X 2

5,500

litres

1,206

gallons

Design Tank Size : 6,800 litres

1,500

gallons

Design Tank Size Greater than Required = 24%

Filter Bed Design Sizing

File Report #

DS-240815 - 2a

Estimation # :

SI-240815-01

Prepared For Customer : Farzam Baradarani Home Owner / Contact : Farzam Baradarani Site Address : 9880 Beachwood Rd Town / Township : Collingwood	Prepared By District Septic 2534 Concession 6 Collingwood, Ont. Phone # (705) 445 - 0211
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Design Parameters

Total Daily Design Sewage Flow = **2750** litres / day = Q

Percolation time = **50** per / cm² = T

Loading Rate = **6** m² = R

Filter Bed

(Construction Materials : Filter Sand)

1 Filter Beds @ **39.0** m²

$$\text{Area} = Q / 75 \text{ lts} \\ = 2750 / 75$$

$$\text{Total Area Required} = 36.7 \text{ m}^2$$

$$\text{Number of Beds} = 1 \text{ m}^2$$

$$\text{Min. Area per Bed} = 36.7 \text{ m}^2$$

$$\text{Proposed Size} = 39.0 \text{ m}^2$$

6 % Greater Than Required

Rectangular	Length	9.84	3.00	m
Configuration :	Width	42.65	13.00	m

Approximate Amount of Material Required =

Filter Sand	Stone	Sand	
32.4	11.7	120.0	m ³
58.9	25.7	184.8	t
3.0	2.0	9.0	Loads

Contact Area /

Extended Filter Base

(Construction Materials : Filter Sand)

1 Filter Bases @ **180.0** m²

$$\text{Area} = (Q \times T) / 850 \text{ lts} \\ = 2750 \times 50 / 850$$

$$\text{Total Area Required} = 161.8 \text{ m}^2$$

$$\text{Min. Area per Bed} = 161.8 \text{ m}^2$$

$$\text{Proposed Size} = 180.0 \text{ m}^2$$

11 % Greater Than Required

Rectangular	Length	59.06	18.00	m
Configuration :	Width	32.81	10.00	m

Approximate Amount of Material Required =

Filter Sand	
45.0	m ³
81.0	t
4.0	Loads

Mantle / Loading Area

(Construction Materials : Septic Sand)

468.8 m²

$$\text{Area} = Q / R \\ = 2750 / 6$$

$$\text{Required Size} = 458.3 \text{ m}^2$$

$$\text{Proposed Size} = 468.8 \text{ m}^2$$

2 % Greater Than Required

Rectangular	Length	123.03	37.50	m
Configuration :	Width	41.01	12.50	m

Percolation Time = T Loading Rate

T < or = 20	10 l/sqm
20 < T = or < 35	8 l/sqm
35 < T = or < 50	6 l/sqm
T > 50	4 l/sqm

Sand	
164.1	m ³
295.3	t
14.0	Loads

Final Grading Material

Approximate Final Elevation above Existing Grade =

0.15 m

Excavation Depth Bed Area = -1.40 m

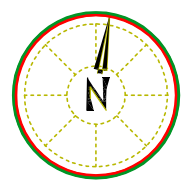
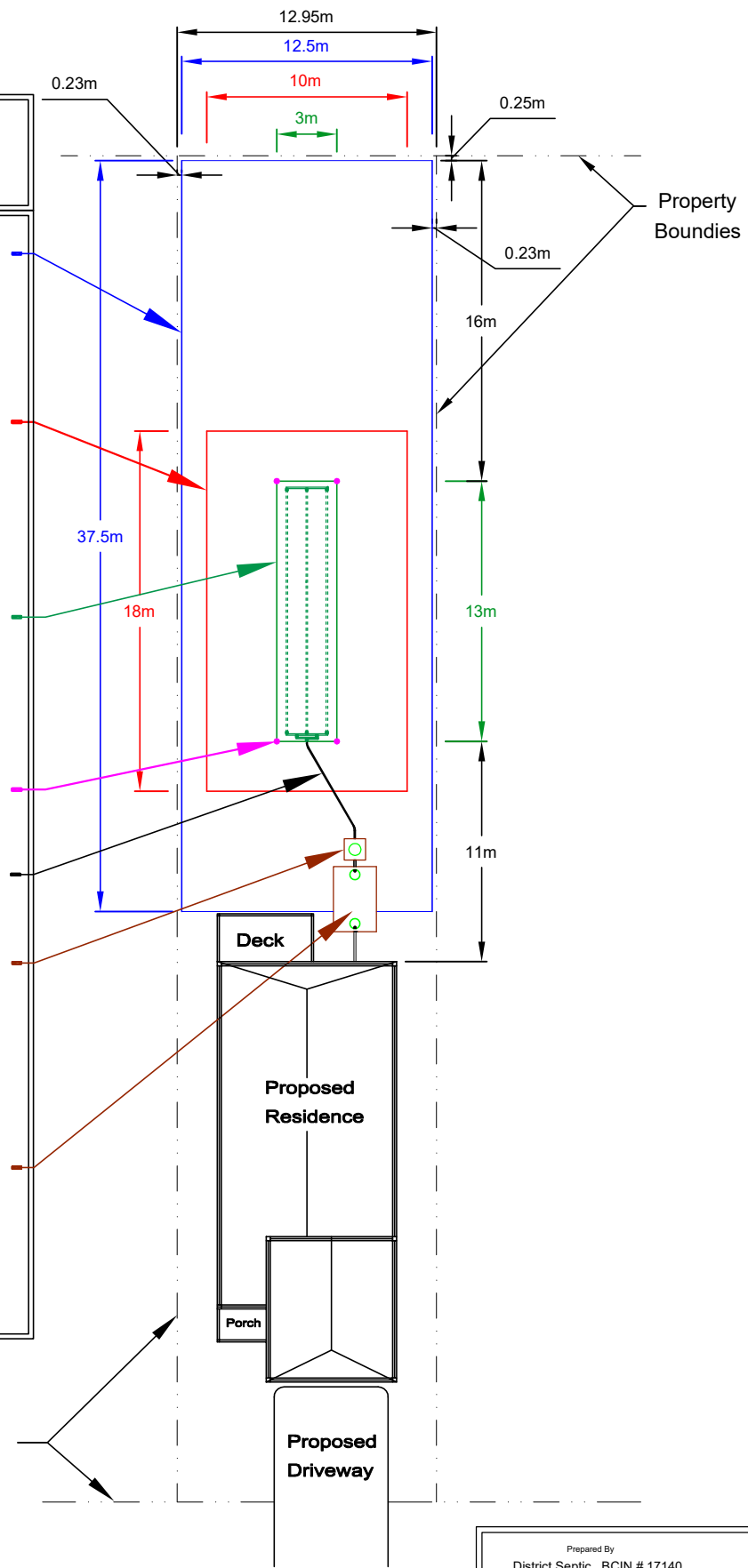
Excavation Depth End of Mantle = -0.20 m

Grade = 5 to 1

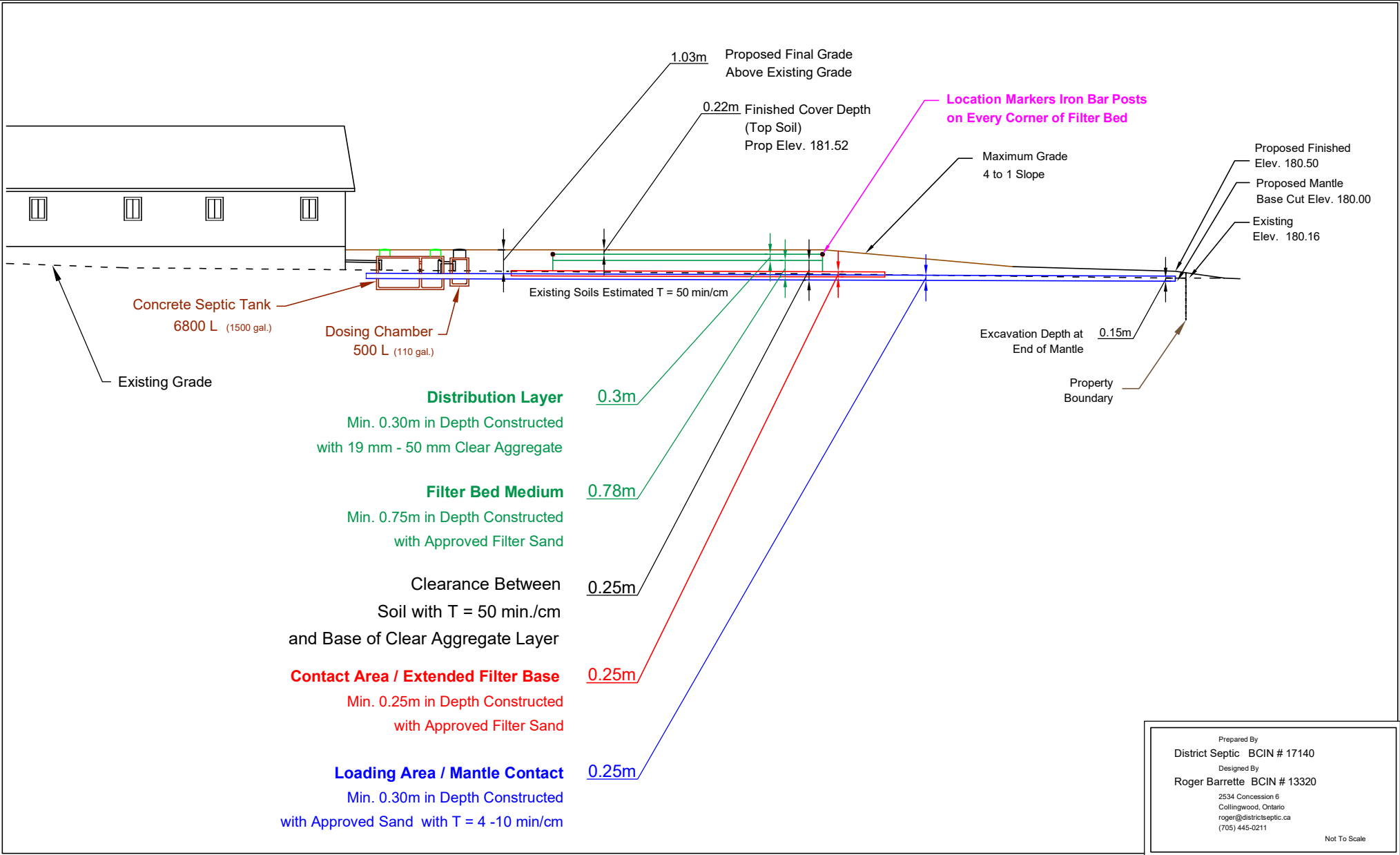
Existing Depth of Top Soil = 0.10 m

Top Soil	
35.2	m ³
59.8	t
3.0	Loads

- Septic System Components
- Mantle / Loading Area**
468.0 sq/m = 12.5 m X 37.5 m
Min. 0.25 m In Depth
Constructed with Imported
Soils with T = 4 - 8 min./cm
 - Contact Area /
Extended Filter Base**
180.0 sq/m = 10.0 m X 18.0 m
Min. 0.25 m in Depth Constructed
with Approved Filter Sand
 - Filter Bed**
39.0 sq/m = 3.0 m X 13.0 m
Min. 0.75 m in Depth
Constructed with Approved
Filter Sand
 - Location Markers** Iron Bar Posts
on Every Corner of Filter Bed
 - 2" SDR 26 PVC Pipe Force Main**
Installed to Drains Back to Dosing Chamber
 - Concrete Dosing Chamber**
500 litre (110 gal)
c/w 1/3 hp Effluent Pump,
Alarm & Access Risers
Brought to Ground Surface
 - Concrete Septic Tank**
6800 litre (1500 gal)
with PL122 Effluent Filter &
Access Risers Brought
to Ground Surface



Client Farzam Baradarani Residence	Site Address 9880 Beachwood Rd Collingwood, Ontario	Drawing Description Proposed Septic System Components, Size, Setbacks & Clearances	Drawing # SD - 2a Date Aug 15, 2024
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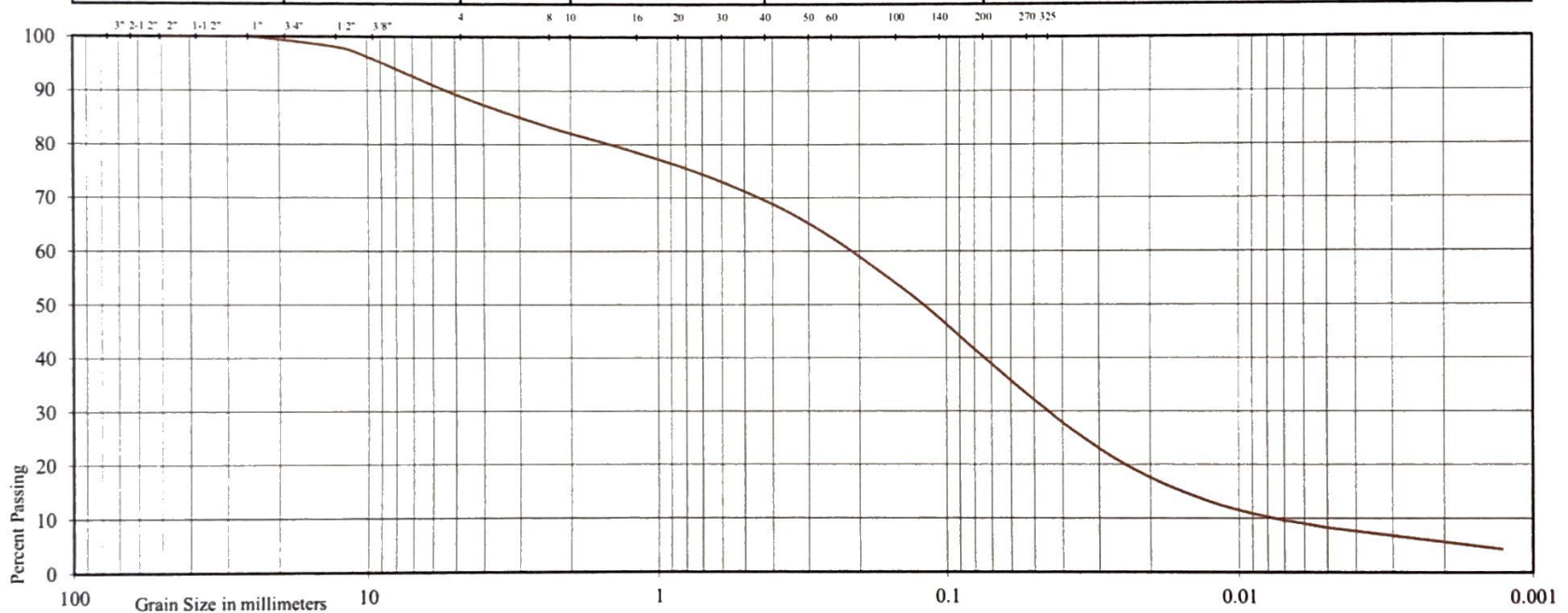


U.S. BUREAU OF SOILS CLASSIFICATION

GRAVEL			SAND				SILT	CLAY
COARSE		FINE	COARSE	MEDIUM	FINE	V. FINE		

UNIFIED SOIL CLASSIFICATION

GRAVEL		SAND			SILT & CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



Project: Ottewell Construction & Logging Ltd.

Location: 9880 Beechwood Road, Collingwood

Borehole No:

Sample No: 1 (delivered by client)

Depth (m):

Elevation (m):

Liquid Limit (%) = -

Plastic Limit (%) = -

Plasticity Index (%) = -

Moisture Content (%) = -

Estimated Permeability (cm./sec.) = 10^{-4}

Estimated Percolation Time (min/cm) = 20

Classification of Sample [& Group Symbol]: **SILTY SAND, TILL**
some gravel, a trace of clay

Figure: 1

