



Public Draw for Crown Land Recreational Cottage Lots Salmonier Cottage Area

2018

Septic Site Evaluation Lots 190 - 210

Note:

This Report provides evaluations of Lots 189 to 211 in the Salmonier Cottage Development Area for their capability to support on-site septic disposal systems.

Lots numbered 189,195,209 and 211 are not available in the 2018 Public Draw.

The attached reports in this document are <u>not system designs</u>. Any person intending to install on-site septic systems must submit a design that has been prepared by an approved on-site system designer to the Department of Service NL for approval.

For a list of approved septic system designers please contact the Department of Service NL for approval at:

Mount Pearl: (709) 729-3699

Clarenville: (709) 466-4060

Harbour Grace: (709) 945-3107

Gander: (709) 256-1420

Grand Falls-Windsor: (709) 292-4206

(709) 292-4259

Springdale: (709) 673-4218

(or any other Service NL location)

MAE PROJECT NO. 2016.159

ENGINEERING REPORT FOR

SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT SEPTIC SYSTEM SITE EVALUATIONS

23 LOTS

Contract No. 001-16-E

PREPARDED BY



AUGUST 15, 2016

MAE PROJECT NO. 2016.159

REPORT TO

LAND MANAGEMENT DIVISION.

DEPT. OF MUNICIPAL AND INTERGOVERNMENTAL AFFAIRS
P.O. BOX 8700, HOWLEY BUILDING, HIGGINS LINE
ST. JOHN'S, NL
A1B 4J6

ON

ENGINEERING REPORT FOR

SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT SEPTIC SYSTEM SITE EVALUATIONS

23 LOTS

CONTRACT NO. 001-16-E

PREPARED BY

MAE DESIGN LIMITED
P.O. BOX 17162, STATION KELLIGREWS
615 CONCEPTION BAY HIGHWAY
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AUGUAT 15, 2016

TABLE OF CONTENTS

				<u>Page</u>
1.0	Intro	duction	1	2
2.0	Loca	tion		2
3.0	Meth	odolog	y	2
4.0	Eval	uation		2
	4.1		Pits	2
	4.2		itu Soil Permeability	3
	4.3	Lot 1	Dimensions and Areas	3
	4.4		Slopes	4
5.0	Obse	rvation	ıs	5
	5.1		eral	5
	5.2	Site	Specific Observations	5
		Lots	189-194, 196-207 and 210	5
		Lots	195, 208-209 and 211	6
6.0	Scope		ork Requirements	7
		6.1	Lots 190-191, 193-194, 196-202, 204-207 and 210	7
		6.2	Lot 203	8
		6.3	Lot 189	8
		6.4	Lot 192	9
		6.5	Lots 195, 208 and 211	10
		6.6	Lot 209	10
	ndix A		Terms of Reference	
Appe	ndix B		Lot Data Sheets	
Appe	ndix C		Recommendation Sketches	



1.0 Introduction

The Land Management Division of the Department of Municipal and Intergovernmental Affairs issued a request for proposals to undertake a septic system site evaluation of twenty three (23) proposed cottage lots off of Salmonier Line (Route 90). The Terms of Reference of the proposal call are included in Appendix A. Mae Design Limited submitted a proposal and was awarded the contract to undertake this evaluation on July 22, 2016.

2.0 Location

The proposed twenty three (23) cottage lots are located off of Salmonier Line (Route 90) approximately eleven (11) kilometers south of the Salmonier Line (Route 90)/ Trans Canada Highway Intersection. Refer to map 1 in Appendix A.

3.0 Methodology

To undertake the evaluation of the cottage lots and to determine the suitability of the lots for septic system installations, the following work was completed:

- Three (3) test pits were excavated on each of the twenty three (23) lots to determine the soil characteristics, water table elevation if encountered and bedrock elevation if encountered,
- Three (3) percolation tests were completed or attempted on each of the twenty three (23) lots to determine the soil absorption and permeability characteristics,
- Lot dimensions and areas were evaluated to determine the lot size suitability,
- Lot slopes were evaluated to determine lot slope suitability,
- A walkover of the property was completed to note existing site conditions and to determine the suitability of the lots for development.

The results of the evaluation tasks are outlined in the following sections.

4.0 Evaluation

4.1 Test Pits

Three (3) test pits were excavated on each of the proposed twenty three (23) lots. A track excavator was used to excavate the test pits which were dug to a depth ranging between 0.76 and 1.96 meters. Water was not observed on any of the twenty three (23) lots. Possible bedrock or excavator refusal was observed on four (4) lots at a depth that ranged between 0.76 meters and 1.52 meters. Test pit observations for each lot are included with the lot data sheets in Appendix B.



4.2 In-Situ Soil Permeability

Percolation testing was attempted or completed on all of the twenty three (23) lots. Percolation pits were excavated to a depth below any organic or unsuitable material. Percolation rates ranged from 0 minutes 51 seconds to 6 minutes 14 seconds. Permeability test results for each lot are included with the lot data sheets in Appendix B.

4.3 Lot Dimensions and Areas

GSC regulatory standards require minimum lot areas for septic system installations to be 1860 square meters and minimum lot widths to be 30.0 meters at the septic field location. Proposed lot boundaries and lot locations were provided to Mae Design Limited by the Land Management Division of the Department of Municipal and Intergovernmental Affairs in the form of a digital DXF file. Based on this information the lot dimensions and areas were taken from the digital file and compared to the GSC regulatory requirements. The determined lot dimensions and areas are illustrated in Table 4.31.

Table 4.31 Lot Dimensions and Areas

Lot Number	Lot Area (square meters)	Lot Width Along Road (meters)	Meets Reglatory Standards (Yes/No)
189.	4294.2	72.7	Yes
190.	4157.3	74.3	Yes
191.	4185.5	56.8	Yes
192.	4311.1	76.8	Yes
193.	4219.9	71.9	Yes
194.	4232.3	91.8	Yes
195.	4115.5	71.6	Yes
196.	4378.6	89.6	Yes
197.	4213.3	89.8	Yes



Lot Number	Lot Area (square meters)	Lot Width Along Road (meters)	Meets Reglatory Standards (Yes/No)
198.	4165.1	47.5	Yes
199.	4319.7	49.1	Yes
200.	4138.7	40.1	Yes
201.	4143.9	69.5	Yes
202.	4026.2	66.8	Yes
203.	4283.5	22.6*	Yes
204.	4311.1	83.1	Yes
205.	4218.8	78.1	Yes
206.	4073.5	52.4	Yes
207.	4133.2	84.2	Yes
208.	4363.1	81.5	Yes
209.	4155.3	36.6	Yes
210.	4408.9	102.8	Yes
211.	4180.8	15.0*	Yes

^{*} Lots 203 and 211 do not have 30 meters along the road frontage, however in the proposed location of the septic field the lot does meet the 30 meter criteria for lot width.

4.4 Lot Slopes

GSC regulatory standards require lot slopes to be less than 30% for septic system installations. During the field assessment of the property the lot profile and slopes were observed and estimated by visual observation. All lot slopes were estimated to be less than 30%. Sketches of property profiles from front to back are included with the lot data sheets in Appendix B.



5.0 Observations

5.1 General

- GSC regulatory standards require that individual septic system designs be completed for each individual lot. The suitability of the specific soil types encountered, the design elevation of the septic disposal pipe and the specific septic system location for each lot will be the responsibility of the septic system designer. These individual assessments will be more specific and provide greater detail as to the site requirements then the information provided in this report.
- GSC regulatory standards state that a minimum of 0.30 meters of good original ground is required above the water table or bedrock location and a minimum of 1.15 meters of good drainage soil is required between the invert of the septic field piping and the water table or bedrock elevation. Imported fill with a good percolation rate can be used to achieve this requirement. Typical lot development sketches are provided in Appendix C, drawings Sk-1, Sk-2, Sk-3 and typical sections through septic fields are included as drawing Sk-4.
- GSC regulatory standards state that a minimum separation distance of 30 meters must be maintained between a septic disposal field and a body of water.
- All 23 lots assessed satisfied the GSC regulatory requirements for area, width and slope.

5.2 Site Specific Observations

Lots 189-194,196-207 and 210

- In general the soil types encountered were grubbing followed by a reddish brown sandy material followed by a dark grey sandy gravel with cobbles. The average soil percolation rates were favorable on lots 189-194, 196-207 and 210, and the existing material on these lots is acceptable as a septic field drainage medium.
- On lot 189 shale was observed in the test pits. If this is present in the drainage field area it should be removed and replaced with the grey sandy material found on the site or a good percolating material with a percolation rate between 5-10 minutes.



- Lot 192 is situated below the road grade. Development of roadside ditching along the front of this lot is recommended to help aid in controlling water runoff onto this property.
- Lot 203 is situated at a lower elevation than Lot 204. Depending on how Lot 204 is developed, it is recommended to construct a drainage swale or ditch along the adjoining property boundary for Lots 203 and 204 to help aid in controlling water runoff from Lot 204 onto Lot 203.
- Lots 192, 196, 200 and 205 have a body of water present on two (2) sides of its boundaries. A minimum of 30 meters separation distance is required from the high water mark of the body of water to the septic disposal field. It appears that there is a minimum 15 meter buffer from the lot boundaries to the waters edge. The 30 meter offset from the high water mark is outlined on the site sketch portion of the lot data sheet located in Appendix B.
- Recommendation Sketch SK-1 should be followed for lots 189-192, 194, 196-200, 204-205, 207 and 210.
- Recommendation Sketch SK-2 should be followed for lots 193 and 201-203.
- Recommendation Sketch SK-3 should be followed for lot 206.

Lots 195, 208-209 and 211

- In general the soil types encountered were grubbing followed by a reddish brown sandy material followed by a dark grey sandy gravel with cobbles. The soil percolation rates were favorable on lots 195, 208-209 and 211 and the existing material on these lots is acceptable as a septic field drainage medium.
- Possible bedrock was observed in the test pits on all four (4) lots. The septic field distribution pipe is required to be installed a minimum of 1.15 meters above the bedrock elevation. Suitable fill similar to the grey sandy material found on the site or a good percolating material with a percolation rate between 5-10 minutes should be used to obtain the required 1.15 meters separation.
- Lot 209 is located in low lying area of the development and roadside ditching along the frontage of this lot would be recommended to help aid in controlling water runoff onto this property.



- Lot 209 is currently located at the apex of a 90 degree turn in the road. At this point the roadway is sloping down towards the lot and currently no roadside ditching is constructed. There appears to be suitable land to the east of the lot. There may be potential to shift the boundaries of the lot to the east, which would be at a higher elevation than the roadway, to aid in prevention of any potential water discharging onto the property. If the boundaries were relocated roadside ditching would still be recommended along the front of the property.
- Lot 211 has a body of water present on two (2) sides of its boundaries. A minimum of 30 meters separation distance is required from the high water mark of the body of water to the septic disposal field. It appears that there is a minimum 15 meter buffer from the lot boundaries to the waters edge. The 30 meter offset from the high water mark is outlined on the site sketch portion of the lot data sheet located in Appendix B.
- Recommendation Sketch SK-1 should be followed for lots 195, 208 and 211.
- Recommendation Sketch SK-3 should be followed for lot 209.

6.0 Scope of Work Requirements

6.1 Lots 190-191, 193-194, 196-202, 204-207 and 210

- Requires placement of an on site septic system and drilling or excavation of a well on each lot. Excavation will be needed to complete the placement of the septic system. Crushed stone will be required to be placed above and below the perforated disposal field lines. As per the Department of Government Services "Private Sewage Disposal and Water Supply Standards" crushed stone should be in the range of 1.9 cm(0.75")minimum to 6 cm(2.5") maximum. A non treated building paper or other suitable material will be required to be placed over the crushed stone in the trenches of the disposal field to prevent clogging, but not to inhibit evapotranspiration. Backfilling of the excavated areas and site grading will be required.
- Ditching may or may not be needed around the septic field area depending on the possibility of encountering surface water during construction/excavation.
- Site work for these lots is expected to have an approximate value between \$12,000 and \$15,000. This cost estimate includes the installation of the septic disposal system



and well, as well as ditching along the property boundaries or the septic field area. Site grading and excavation is not included in this estimate. Also any work that cannot be foreseen based on the information outlined in this report is not included in the estimate.

6.2 Lot 203

- Requires ditching around the disposal field area or along property boundaries.
 Ditching should be deep enough to capture surface water and to discharge the water to roadside ditching or a body of water.
- Requires placement of an on site septic system and drilling or excavation of a well on each lot. Excavation will be needed to complete the placement of the septic system. Crushed stone will be required to be placed above and below the perforated disposal field lines. As per the Department of Government Services "Private Sewage Disposal and Water Supply Standards" crushed stone should be in the range of 1.9 cm(0.75")minimum to 6 cm(2.5") maximum. A non treated building paper or other suitable material will be required to be placed over the crushed stone in the trenches of the disposal field to prevent clogging, but not to inhibit evapotranspiration. Backfilling of the excavated areas and site grading will be required.
- Site work for this lot is expected to have an approximate value between \$12,000 and \$15,000. This cost estimate includes the installation of the septic disposal system and well, as well as ditching along the property boundaries or the septic field area. Site grading and excavation is not included in this estimate. Also any work that cannot be foreseen based on the information outlined in this report is not included in the estimate.

6.3 Lot 189

- Due to shale observed in the test pits, this lot requires some of the material in the septic field area to be removed and replaced with a suitable fill material with a percolation rate between 5-10 minutes.
- Requires placement of an on site septic system and drilling or excavation of a well on each lot. Excavation will be needed to complete the placement of the septic system. Crushed stone will be required to be placed above and below the perforated disposal field lines. As per the Department of Government Services "Private Sewage Disposal and Water Supply Standards" crushed stone should be in the range of 1.9



cm(0.75")minimum to 6 cm(2.5") maximum. A non treated building paper or other suitable material will be required to be placed over the crushed stone in the trenches of the disposal field to prevent clogging, but not to inhibit evapotranspiration. Backfilling of the excavated areas and site grading will be required.

- Ditching may or may not be needed around the septic field area depending on the possibility of encountering surface water during construction/excavation.
- Site work for these lots is expected to have an approximate value between \$12,000 and \$15,000. This cost estimate includes the installation of the septic disposal system and well, as well as removal of unsuitable and ditching along the property boundaries or the septic field area. Site grading and excavation is not included in this estimate. Also any work that cannot be foreseen based on the information outlined in this report is not included in the estimate.

6.4 Lot 192

- Due to the lot being situated lower than the road, roadside ditching should be constructed to help alleviate any water entering the property. Roadside ditching should be a minimum of 1.0 meters in depth and have a two (2) horizontal to one (1) vertical slope on the side walls on the ditch.
- Requires placement of an on site septic system and drilling or excavation of a well on each lot. Excavation will be needed to complete the placement of the septic system. Crushed stone will be required to be placed above and below the perforated disposal field lines. As per the Department of Government Services "Private Sewage Disposal and Water Supply Standards" crushed stone should be in the range of 1.9 cm(0.75")minimum to 6 cm(2.5") maximum. A non treated building paper or other suitable material will be required to be placed over the crushed stone in the trenches of the disposal field to prevent clogging, but not to inhibit evapotranspiration. Backfilling of the excavated areas and site grading will be required.
- Site work for this lot is expected to have an approximate value between \$12,000 and \$15,000. This cost estimate includes the installation of the septic disposal system and well, as well as ditching along the roadway and ditching along the property boundaries or the septic field area. Site grading and excavation is not included in this estimate. Also any work that cannot be foreseen based on the information outlined in this report is not included in the estimate.



6.5 Lots 195, 208 and 211

- Requires additional fill to be placed in the septic field area to bring the invert of the perforated septic field lines to the required 1.15 meters above the bedrock elevation. Depending on the depth of the bedrock elevation the fill required for the septic field construction could range between 45 m³ and 165 m³. A suitable fill should be chosen with a percolation rate between 5-10 minutes. The fill area should encompass the septic field area and extend 4.5 meters on all sides before sloping. A standard septic field including the 4.5 meter perimeter will occupy ± 300 square meters.
- Requires placement of an on site septic system and drilling or excavation of a well on each lot. Excavation will be needed to complete the placement of the septic system. Crushed stone will be required to be placed above and below the perforated disposal field lines. As per the Department of Government Services "Private Sewage Disposal and Water Supply Standards" crushed stone should be in the range of 1.9 cm(0.75")minimum to 6 cm(2.5") maximum. A non treated building paper or other suitable material will be required to be placed over the crushed stone in the trenches of the disposal field to prevent clogging, but not to inhibit evapotranspiration. Backfilling of the excavated areas and site grading will be required.
- Ditching may or may not be needed around the septic field area depending on the possibility of encountering surface water during construction/excavation.
- Site work for this lot is expected to have an approximate value between \$15,000 and \$18,000. This cost estimate includes the installation of the septic disposal system and well, as well as ditching along the property boundaries or the septic field area and fill for the septic field area. Site grading and excavation is not included in this estimate. Also any work that cannot be foreseen based on the information outlined in this report is not included in the estimate.

6.6 Lot 209

Requires additional fill to be placed in the septic field area to bring the invert of the perforated septic field lines to the required 1.15 meters above the water table/bedrock elevation. Depending on the depth of the groundwater/bedrock elevation the fill required for the septic field construction could range between 45 m³ and 165 m³. A suitable fill should be chosen with a percolation rate between 5-10 minutes. The fill area should encompass the septic field area and extend 4.5 meters on all sides before sloping. A standard septic field including the 4.5 meter perimeter will occupy ± 300



square meters.

- Due to the location of the lot in a low lying area roadside ditching should be completed to help alleviate any water entering the property. Roadside ditching should be a minimum of 1.0 meters in depth and have a two (2) horizontal to one (1) vertical slope on the side walls of the ditch.
- Requires placement of an on site septic system and drilling or excavation of a well on each lot. Excavation will be needed to complete the placement of the septic system. Crushed stone will be required to be placed above and below the perforated disposal field lines. As per the Department of Government Services "Private Sewage Disposal and Water Supply Standards" crushed stone should be in the range of 1.9 cm(0.75")minimum to 6 cm(2.5") maximum. A non treated building paper or other suitable material will be required to be placed over the crushed stone in the trenches of the disposal field to prevent clogging, but not to inhibit evapotranspiration. Backfilling of the excavated areas and site grading will be required.
- Site work for this lot is expected to have an approximate value between \$15,000 and \$18,000. This cost estimate includes the installation of the septic disposal system and well, as well as ditching along the property boundaries or the septic field area and fill for the septic field area. Site grading and excavation is not included in this estimate. Also any work that cannot be foreseen based on the information outlined in this report is not included in the estimate.



APPENDIX A

Terms of Reference





Government of Newfoundland and Labrador

Department of Municipal Affairs

Lands Branch

Land Management Division

SALMONIER COTTAGE DEVELOPMENT AREA

TERMS OF REFERENCE

LIMITED CALL FOR BIDS FOR

CONTRACT NO. 001-16-E

SEPTIC SYSTEM SITE EVALUATIONS FOR

23 RECREATIONAL COTTAGE LOTS (LOTS 189 - 211)

JULY 2016

1. PROJECT DESCRIPTION

The purpose of this project is to assess twenty-three (23) proposed recreational cottage lots (Lots 189 - 211) within the Salmonier recreational cottage Development Area for their capability to meet the requirements of the **Private Sewage Disposal and Water Supply Standards** (Service NL, January 2006). Initial offering of the lots for sale by Public Draw is intended for the Fall of 2016.

The successful bidder/bidding firm will not be required to complete a full engineering study as per Appendix C of the **Standards** but will be required to supply a report that; (i) assesses the capability of each lot to support an on-site sub-surface septic system; (ii) describes mitigating measures that may be needed for lots meeting minimum standards but requiring upgrading; and (iii) identifies lots that are not capable of meeting the **Standards**.

The location of the development area and recreational cottage lots are provided on Maps 1 and 2 (attached). Lot centres along roads have been marked in the field with green flagging tape. Lot corners along roads have been identified with orange flagging tape. Digital files and GPS coordinates of proposed lots are available upon request.

2. SCOPE OF WORK

The report will address the following factors that might affect each lot's suitability for installation of an underground on-site septic system:

- a) size of lot;
- b) slope of the lot;
- type and permeability of the soil, and measurement of the soil's capacity to absorb liquid;
- d) depth to ground water table;
- e) presence and depth of bedrock, where encountered;
- f) recommended location where septic tank and disposal field may be installed, considering distances from buildings, watercourses, wells, roads, property lines, driveways, water service lines, etc.; and
- g) site up-grading specifications and cost estimate if lot is determined to require upgrading.

NOTES:

- (i) For each lot, three (3) percolation test pits are required; six (6) metres apart, equidistant from each other in the general area where the potential disposal system would be installed.
- (ii) Walkovers of all lots are required, with terrain that may be unsuitable for building or installation of septic systems noted and indicated on lot diagrams (i.e., surface water; wetland, steep slopes, bedrock).
- (iii) Lots that do not have a minimum of 30.5 centimetres (1 foot) of suitable local soil as per the Private Sewage Disposal and Water Supply Standards (Service NL, January 2006), or lots for which percolation testing cannot be completed, are to be noted as being incapable of being upgraded.

(iv) Changes may be recommended to the shape of any lot in order to improve its capability to support an on-site septic system. Any such recommendation shall be discussed with the Project Manager, Mr. John Howley, prior to the submission of the Final Report. The depiction of lots in the Final Report shall show the revised shape of any reconfigured lots.

3. SCHEDULING

3.1 Commencement Date

The commencement date of the contract shall be July 25, 2016. The successful bidder/bidding firm (the "consultant") must arrange for a site visit with Land Management Division staff prior to commencing field work.

3.2 Completion Date

A draft version of the Final Report shall be submitted to the Land Management Division no later than 4:00pm NDT, Friday, August 19, 2016 (the "Completion Date"). Failure to meet that deadline will result in the imposition of a penalty equal to 1% of the total contract price for each working day after the Completion Date that the Final Report is delayed, up to a total of 10% of the total contract price. The Completion Date may be extended in writing by the Land Management Division, in its sole discretion, for reasonable unforeseen delays. Bidders/bidding firms are advised that commitments arising from other projects undertaken by them will not be accepted as reasonable grounds for delay in submission of the Final Report, or the Revised Final Report.

Following submission, the Final Report will be reviewed by the Land Management Division and Service NL. If any revisions are deemed necessary, the consultant shall be notified in writing by the Land Management Division and the consultant shall provide a revised Final Report satisfactory to the Land Management Division within seven (7) calendar days (by 4:00PM, NDT) from the date of notification of any necessary revisions. Failure to provide a revised Final Report within seven (7) calendar days (by 4:00PM, NDT) from the date of notification of any necessary revisions will result in the imposition of a penalty equal to 1% of the total contract price for each working day, beyond seven (7) calendar days after notification, that the revised Final Report is delayed, up to a total of 10% of the total contract price.

4. REPORTING PROCEDURE

4.1 The report must be submitted in both printed and digital versions. The digital report shall include all text, maps and diagrams combined within one document in PDF format. The report shall meet professional standards in layout and appearance acceptable to the Land Management Division. Diagrams shall not be hand drawn. The report will be posted on the Department of Municipal Affairs' web site for public viewing when the Public Draw for the recreational cottage lots is held.

- 4.2 The report may provide general commentary on lots with common features (i.e. where a group of lots may have similar soil properties, for example). However, all relevant information pertaining to each lot must be separate for each lot. This is so a report for each lot, with individual lot diagrams, can be isolated from the full document, comprising all required evaluation information for that lot. For further detail regarding the format of the report, bidders/bidding firms are asked to contact the Project Manager, Mr. John Howley.
- 4.3 The draft report shall be reviewed by Land Management Division in consultation with Environmental Health staff of Service NL. If further work is deemed necessary, the consultant shall be required to perform the necessary work to ensure the report is satisfactory and meets specifications of the project deliverables. See also 3.2 above.

5. QUALIFICATIONS

Bidders/bidding firms shall have personnel who hold a certificate as a Professional Engineer, Certified Engineering Technologist, Certified Engineering Technician, Certified Public Health Inspector or approved Septic System Designer/Installer, as required under the Sanitation Regulations of the Health and Community Services Act. Bids must name personnel who will be evaluating the lots and provide their certifications.

6. WORKPLACE HEALTH AND SAFETY

Bidders/bidding firms shall protect all his or her employees against loss or injury in accordance with the *Workplace Health, Safety and Compensation Act* of the Province of Newfoundland and Labrador, and shall upon request, produce certificates to show that such coverage is carried.

7. BIDS

Bidders/bidding firms are advised to conduct preliminary site inspections prior to submitting their bid. Site visits with Land Management Division staff may be arranged prior the date of the deadline for the submission of bids if requested. Bids shall clearly identify the total price inclusive of all related costs, with and without HST.

8. DEADLINE FOR BIDS

Bids may be hand-delivered, mailed or sent by fax or e-mail. Bids must be clearly marked "Salmonier Cottage Lot Evaluations Contract # 001-16-E" and received at the Land Management Division no later than 11:00 AM, NDT, Friday, July 22, 2016. No bid submitted by any means will be accepted after the specified deadline. Public bid opening will be at 11:15 AM, NDT, Friday, July 22, 2016.

The time and date printed on the bid pages sent by fax machine or the received time recorded on bids sent by e-mail shall be considered the time of receipt. It is the responsibility of the bidder/bidding firm to ensure that bids submitted by any means have been received by the Land Management Division. It is strongly advised that bidders/bidding firms call to confirm their bid has been received.

Note: The lowest, or any, bid need not necessarily be accepted by the Land Management Division. The contract may not be awarded if bids exceed budgetary estimates.

Submit bids to:

Department of Municipal Affairs Lands Branch Land Management Division Howley Building, 85 Higgins Line P.O. Box 8700 St. John's, NL A1B 4J6

Tel: (709) 729-3227 Fax: (709) 729-3923

jhowley@gov.nl.ca



Government of Newfoundland and Labrador Department of Municipal Affairs Lands Branch

Map 1

Salmonier Cottage Development Area Septic System Site Evaluations Contract #001-16-E

NORTH

Scale 1:15,000 (Approximate)

NTS Map Sheet 1N06

Little Coull

Map 2

Salinonies Line

TCH 11 km

Main

Access

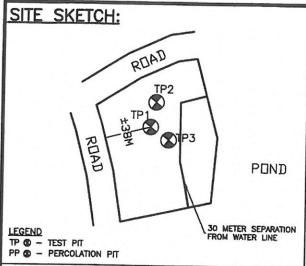
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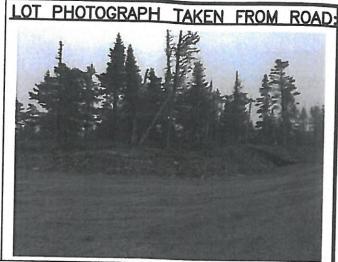
Salmonier Cottage Area

APPENDIX B

Lot Data Sheets

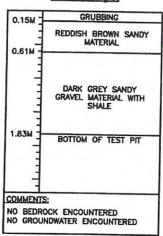




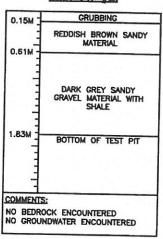


TEST PIT RESULTS:

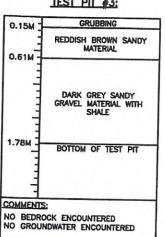
TEST PIT #1:



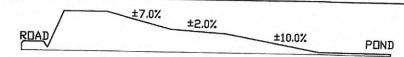
TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:



PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	5 MIN. 10 SEC. 5 MIN. 26 SEC.	DATE: JULY 26, 2016 REGISTRATION NO: AD-2009-105692
AVERAGE	4 MIN. 49 SEC.	TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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GENERAL SITE REQUIREMENTS:

- 1. GSC REGULATORY STANDARDS REQUIRE THAT INDIVIDUAL SEPTIC SYSTEM DESIGNS BE COMPLETED FOR EACH INDIVIDUAL LOT. THE SUITABILITY OF THE SPECIFIC SOIL TYPES ENCOUNTERED, THE DESIGN ELEVATION OF THE SEPTIC DISPOSAL PIPE AND THE SPECIFIC SYSTEM LOCATION FOR EACH LOT WILL BE THE RESPONSIBILITY OF THE SEPTIC SYSTEM DESIGNER. THE INDIVIDUAL ASSESSMENTS WILL BE MORE SPECIFIC AND PROVIDE GREATER DETAIL AS TO THE SITE REQUIREMENTS THEN THE INFORMATION PROVIDED IN THIS REPORT.
- 2. GSC REGULATORY STANDARDS STATE THAT A MINIMUM OF 0.3 METERS OF GOOD ORIGINAL GROUND IS REQUIRED ABOVE THE WATER TABLE OR BEDROCK LOCATION AND A MINIMUM OF 1.15 METERS OF GOOD DRAINAGE SOIL IS REQUIRED BETWEEN THE INVERT OF THE SEPTIC FIELD PIPING AND THE WATER TABLE OR BEDROCK ELEVATION. IMPORTED FILL WITH A GOOD PERCOLATION RATE CAN BE USED TO
- GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

SITE SPECIFIC OBSERVATIONS

- 1. THE SOIL TYPES ENCOUNTERED ON THE PROPERTY CONSISTED OF GRUBBING FOLLOWED BY A REDDISH BROWN SANDY MATERIAL FOLLOWED BY A DARK GREY SANDY GRAVEL WITH SHALE. PERCOLATION RATES ON THIS SITE WERE FAVORABLE AND THE EXISTING MATERIAL IS ACCEPTABLE AS A SEPTIC FIELD
- 2. IF THE SHALE IS PRESENT IN THE DRAINAGE FIELD AREA IT SHOULD BE REMOVED AND REPLACED WITH THE GREY SANDY MATERIAL FROND ON THE SITE OR A GOOD PERCOLATING MATERIAL WITH A PERCOLATION RATE BETWEEN 5-10 MINUTES.
- 3. THIS PROPERTY BOARDERS ON A BODY OF WATER. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE. THE 30 METER OFFSET FROM THE HIGH WATER MARK IS OUTLINED ON THE SITE SKETCH PORTION OF SHEET 1 ATTACHED.
- 4. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

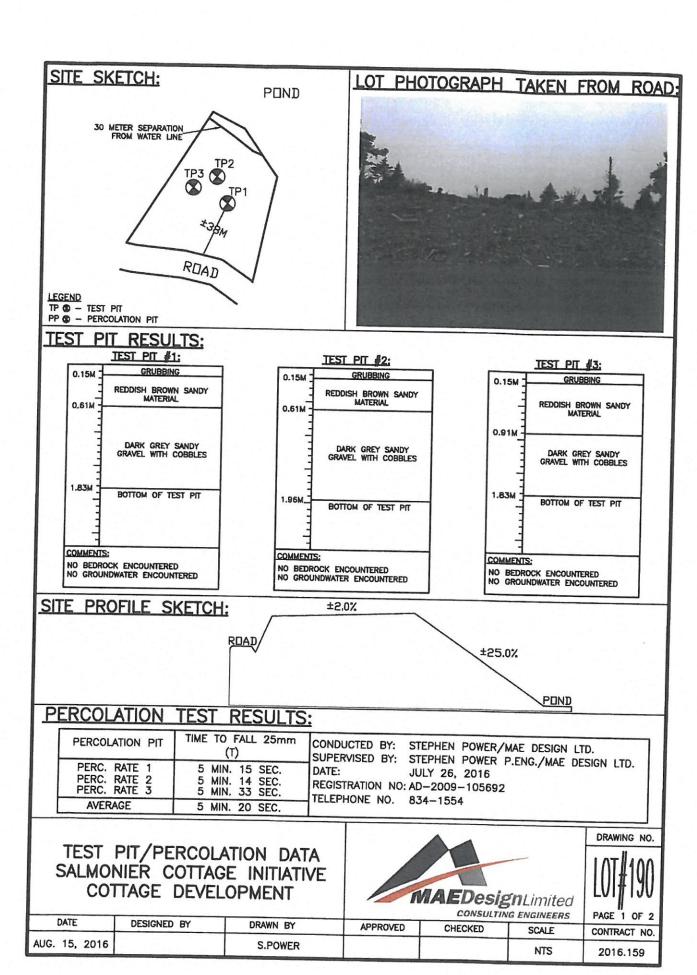
- DUE TO SHALE OBSERVED IN THE TEST PITS, THIS LOT REQUIRES SOME OF THE MATERIAL IN THE SEPTIC FIELD AREA TO BE REMOVED AND REPLACED WITH A SUITABLE FILL MATERIAL WITH A PERCOLATION RATE BETWEEN 5-10 MINUTES.
- 2. REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
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- 4. SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$12,000 AND \$15,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS REMOVAL OF UNSUITABLE MATERIAL AND DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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- 3. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

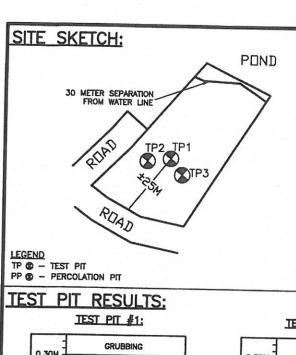
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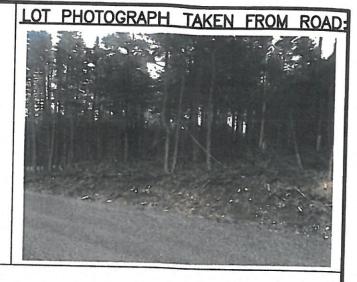
SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT

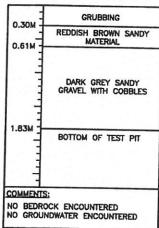


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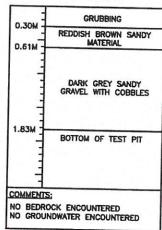
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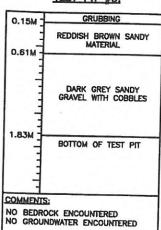




TEST PIT #2:



IEST PIT #3:



SITE PROFILE SKETCH:

ROAD

±5.0%

±2.0%

±25.0%

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PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	3 MIN. 56 SEC.	SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD. DATE: JULY 26, 2016 REGISTRATION NO: AD-2009-105692
AVERAGE	3 MIN. 49 SEC.	TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT

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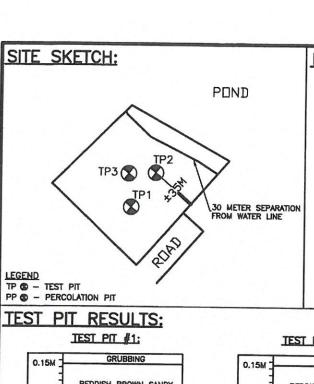
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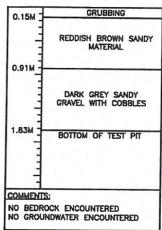


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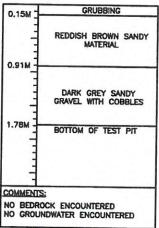
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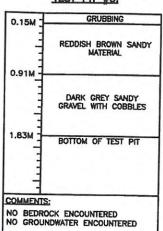




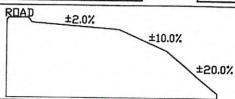
TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:



PERCOLATION TEST RESULTS:

PERCOLATION PIT	/ - \	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	3 MIN. 49 SEC.	DATE: JULY 26, 2016 REGISTRATION NO: AD-2009-105692 TELEPHONE NO. 834-1554
AVERAGE	3 MIN. 53 SEC.	1 ILLEFRONE NO. 634-1334

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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- LOT IS SITUATED BELOW THE ROAD GRADE. DEVELOPMENT OF ROADSIDE DITCHING ALONG THE FRONT OF THIS LOT IS RECOMMENDED TO HELP AID IN CONTROLLING WATER RUNOFF ONTO THIS PROPERTY.
- 3. THIS LOT HAS A BODY OF WATER PRESENT ON TWO SIDES OF ITS BOUNDARIES. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE. THE 30 METER OFFSET FROM THE HIGH WATER MARK IS OUTLINED ON THE SITE SKETCH PORTION OF SHEET 1 ATTACHED.
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SCOPE OF WORK:

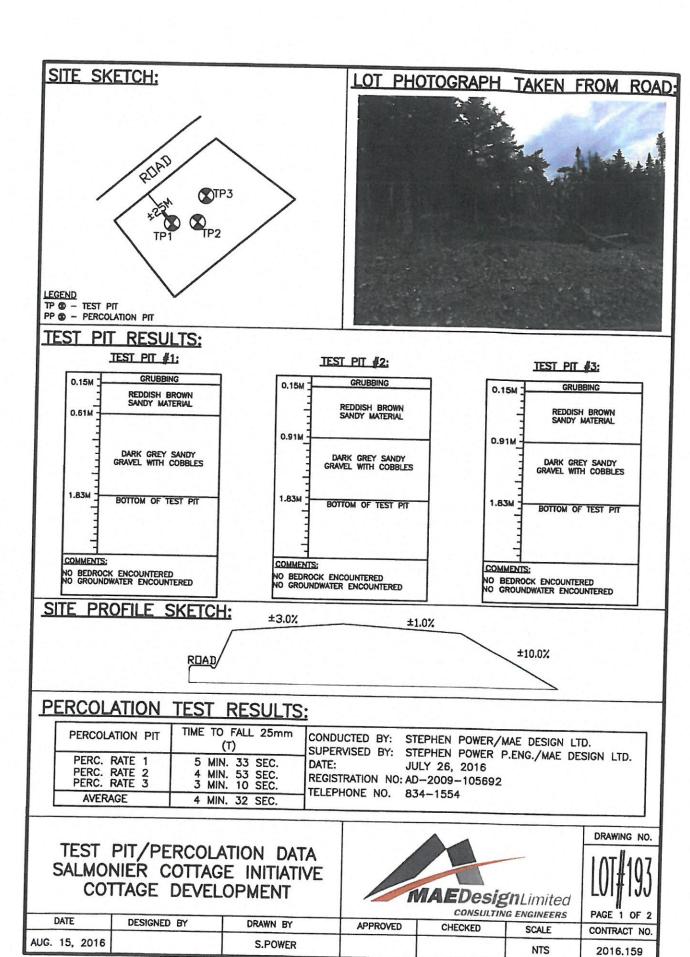
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- 4. DUE TO THE LOT BEING SITUATED LOWER THAN THE ROAD, ROADSIDE DITCHING SHOULD BE CONSTRUCTED TO HELP ALLEVIATE ANY WATER ENTERING THE PROPERTY. ROADSIDE DITCHING SHOULD BE A MINIMUM OF 1.0 METERS IN DEPTH AND HAVE TWO(2) HORIZONTAL TO ONE(1) VERTICAL SLOPE ON THE SIDE WALLS OF THE DITCH.

SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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- 2. RECOMMENDATION SKETCH SK-2 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

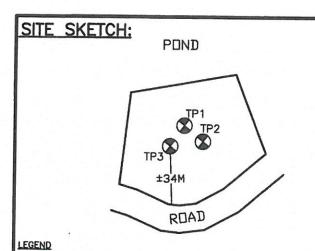
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SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT

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LOT PHOTOGRAPH TAKEN FROM ROAD

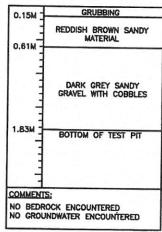
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TP @ - TEST PIT PP @ - PERCOLATION PIT

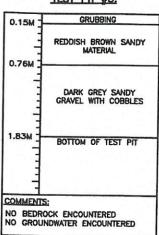
TEST PIT #1:

O.15M GRUBBING REDDISH BROWN SANDY MATERIAL DARK GREY SANDY GRAVEL WITH COBBLES 1.83M BOTTOM OF TEST PIT COMMENTS: NO BEDROCK ENCOUNTERED NO GROUNDWATER ENCOUNTERED

TEST_PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:

#20.0%

PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)		
PERC. RATE 1	5 MIN. 41 SEC.		
PERC. RATE 2	3 MIN. 18 SEC.		
PERC. RATE 3	1 MIN. 48 SEC.		
AVERAGE	3 MIN. 35 SEC.		

CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD.
SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.

DATE: JULY 26, 2016 REGISTRATION NO: AD-2009-105692

TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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GENERAL SITE REQUIREMENTS:

- 1. GSC REGULATORY STANDARDS REQUIRE THAT INDIVIDUAL SEPTIC SYSTEM DESIGNS BE COMPLETED FOR EACH INDIVIDUAL LOT. THE SUITABILITY OF THE SPECIFIC SOIL TYPES ENCOUNTERED, THE DESIGN ELEVATION OF THE SEPTIC DISPOSAL PIPE AND THE SPECIFIC SYSTEM LOCATION FOR EACH LOT WILL BE THE RESPONSIBILITY OF THE SEPTIC SYSTEM DESIGNER. THE INDIVIDUAL ASSESSMENTS WILL BE MORE SPECIFIC AND PROVIDE GREATER DETAIL AS TO THE SITE REQUIREMENTS THEN THE INFORMATION PROVIDED IN THIS REPORT.
- 2. GSC REGULATORY STANDARDS STATE THAT A MINIMUM OF 0.3 METERS OF GOOD ORIGINAL GROUND IS REQUIRED ABOVE THE WATER TABLE OR BEDROCK LOCATION AND A MINIMUM OF 1.15 METERS OF GOOD DRAINAGE SOIL IS REQUIRED BETWEEN THE INVERT OF THE SEPTIC FIELD PIPING AND THE WATER TABLE OR BEDROCK ELEVATION. IMPORTED FILL WITH A GOOD PERCOLATION RATE CAN BE USED TO ACHIEVE THE REQUIREMENT.
- GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

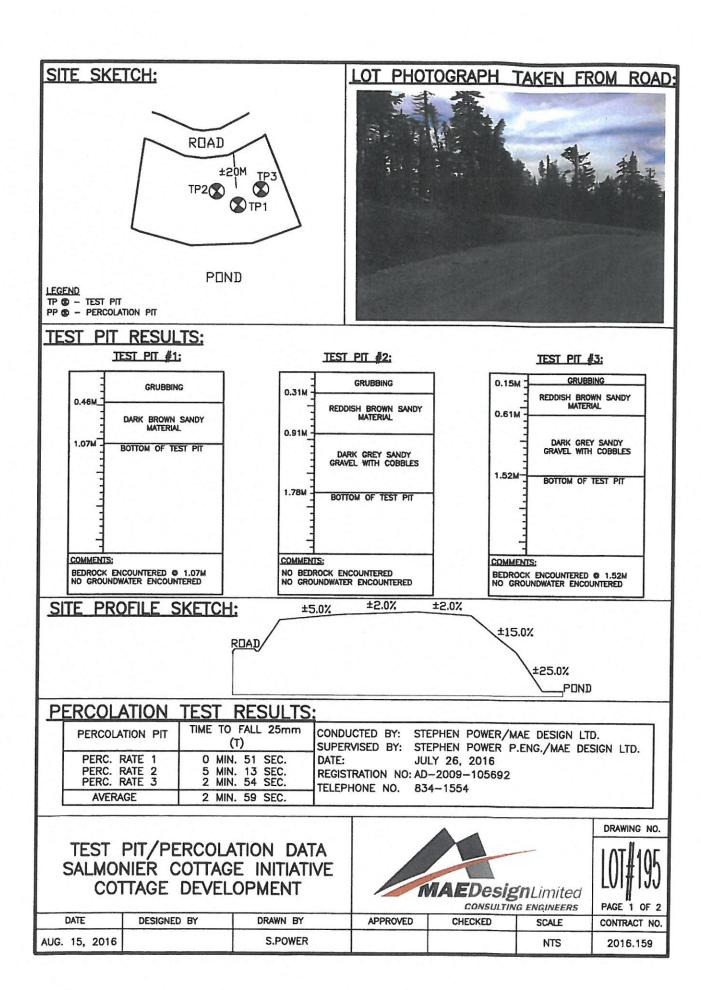
SITE SPECIFIC OBSERVATIONS

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- 3. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

- 1. REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
- DITCHING MAY OR MAY NOT BE NEEDED AROUND THE SEPTIC FIELD AREA DEPENDING ON THE POSSIBILITY OF ENCOUNTERING SURFACE WATER DURING CONSTRUCTION/EXCAVATION.
- 3. SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$12,000 AND \$15,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS REMOVAL OF UNSUITABLE MATERIAL AND DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

DRAWING NO. SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY **APPROVED** CHECKED SCALE CONTRACT NO. AUG. 15, 2016 S.POWER NTS 2016,159



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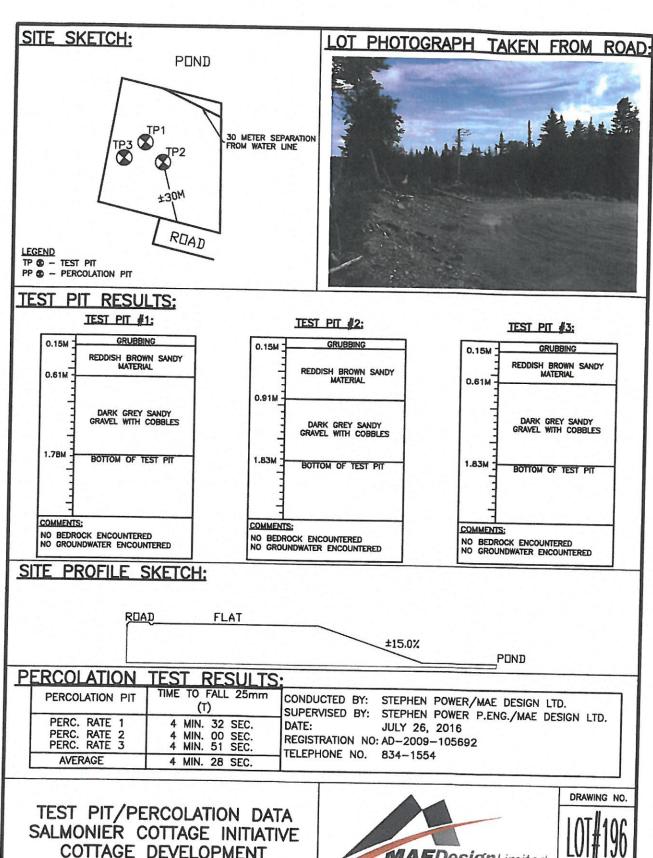
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- 2. POSSIBLE BEDROCK WAS OBSERVED IN THE TEST PITS FOR THIS LOT. THE SEPTIC FIELD DISTRIBUTION PIPE IS REQUIRED TO BE INSTALLED A MINIMUM OF 1.15 METERS ABOVE THE BEDROCK ELEVATION. SUITABLE FILL SIMILAR TO THE DARK GREY SANDY MATERIAL FOUND ON THE SITE OR A GOOD PERCOLATING MATERIAL WITH A PERCOLATION RATE BETWEEN 5-10 MINUTES SHOULD BE USED TO OBTAIL THE REQUIRED 1.15 METERS SEPARATION.
- 3. THIS LOT HAS A BODY OF WATER PRESENT ON TWO SIDES OF ITS BOUNDARIES. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE.
- 4. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

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- 1. REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
- 2. DITCHING MAY OR MAY NOT BE NEEDED AROUND THE SEPTIC FIELD AREA DEPENDING ON THE POSSIBILITY OF ENCOUNTERING SURFACE WATER DURING CONSTRUCTION/EXCAVATION.
- 3. REQUIRES ADDITIONAL FILL TO BE PLACED IN THE SEPTIC FIELD AREA TO BRING THE INVERT OF THE PERFORATED SEPTIC FIELD LINES TO THE REQUIRED 1.15 METERS ABOVE THE BEDROCK ELEVATION. DEPENDING ON THE DEPTH OF THE BEDROCK ELEVATION THE FILL REQUIRED FOR THE SEPTIC FIELD CONSTRUCTION COULD RANGE BETWEEN 45 M² AND 165 M².
- 4. SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$15,000 AND \$18,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA AND FILL FOR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

DRAWING NO. SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY APPROVED CHECKED SCALE CONTRACT NO. AUG. 15, 2016 S.POWER NTS 2016,159



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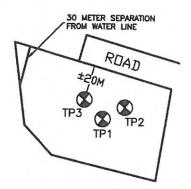
SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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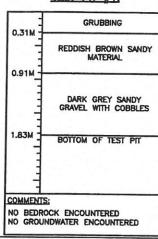
LEGEND
TP © - TEST PIT
PP © - PERCOLATION PIT

LOT PHOTOGRAPH TAKEN FROM ROAD

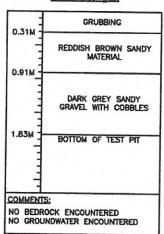


TEST PIT RESULTS:

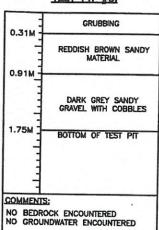
TEST PIT #1:



TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:

RDAD ±4.0% ±10.0%

PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)
PERC. RATE 1	4 MIN. 25 SEC.
PERC. RATE 2	4 MIN. 21 SEC.
PERC. RATE 3	1 MIN. 45 SEC.
AVERAGE	3 MIN. 31 SEC.

CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD.
SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.

DATE: JULY 26, 2016
REGISTRATION NO: AD-2009-105692

TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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SITE SPECIFIC OBSERVATIONS

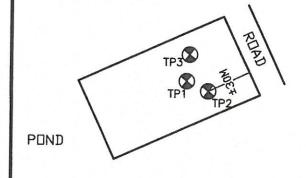
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SITE SKETCH:



LOT PHOTOGRAPH TAKEN FROM ROAD:

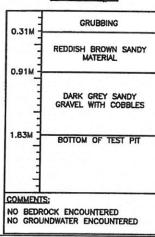


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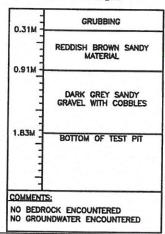
TP ⑤ - TEST PIT
PP ⑤ - PERCOLATION PIT

TEST PIT RESULTS:

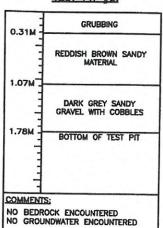
TEST PIT #1:



TEST PIT #2:



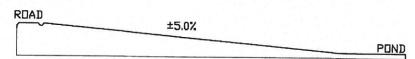
TEST PIT #3:



SITE PROFILE SKETCH:

DATE

AUG. 15, 2016



PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG,/MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	1 MIN. 34 SEC. 4 MIN. 15 SEC. 4 MIN. 40 SEC	DATE: JULY 26, 2016 REGISTRATION NO: AD—2009—105692 TELEPHONE NO. 834—1554
AVERAGE	3 MIN. 29 SEC.	TELEPHONE NO. 634-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT

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SITE SPECIFIC OBSERVATIONS

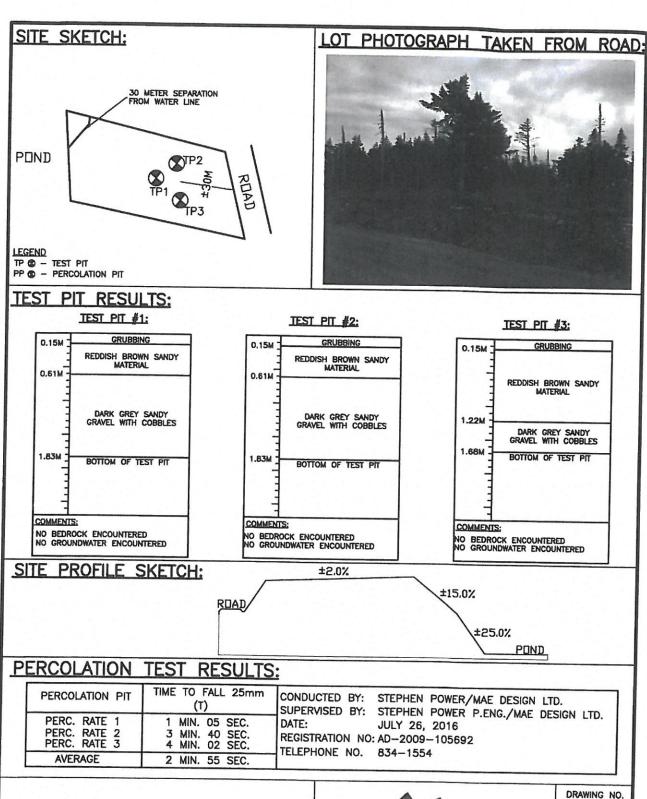
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SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY APPROVED CHECKED SCALE CONTRACT NO. AUG. 15, 2016 S.POWER NTS 2016.159

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TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



LOT#199

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- 1. GSC REGULATORY STANDARDS REQUIRE THAT INDIVIDUAL SEPTIC SYSTEM DESIGNS BE COMPLETED FOR EACH INDIVIDUAL LOT. THE SUITABILITY OF THE SPECIFIC SOIL TYPES ENCOUNTERED, THE DESIGN ELEVATION OF THE SEPTIC DISPOSAL PIPE AND THE SPECIFIC SYSTEM LOCATION FOR EACH LOT WILL BE THE RESPONSIBILITY OF THE SEPTIC SYSTEM DESIGNER. THE INDIVIDUAL ASSESSMENTS WILL BE MORE SPECIFIC AND PROVIDE GREATER DETAIL AS TO THE SITE REQUIREMENTS THEN THE INFORMATION PROVIDED IN THIS REPORT.
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- 3. GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

SITE SPECIFIC OBSERVATIONS

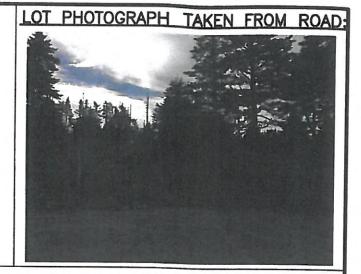
- THE SOIL TYPES ENCOUNTERED ON THE PROPERTY CONSISTED OF GRUBBING FOLLOWED BY A REDDISH BROWN SANDY MATERIAL FOLLOWED BY A DARK GREY SANDY GRAVEL WITH COBBLES. PERCOLATION RATES ON THIS SITE WERE FAVORABLE AND THE EXISTING MATERIAL IS ACCEPTABLE AS A SEPTIC FIELD MEDIUM.
- 2. THIS PROPERTY BOARDERS ON A BODY OF WATER. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE. THE 30 METER OFFSET FROM THE HIGH WATER MARK IS OUTLINED ON THE SITE SKETCH PORTION OF SHEET 1 ATTACHED.
- 3. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

- 1. REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
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DRAWING NO. SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DESIGNED BY DATE DRAWN BY APPROVED CHECKED SCALE CONTRACT NO. S.POWER AUG. 15, 2016 NTS 2016,159

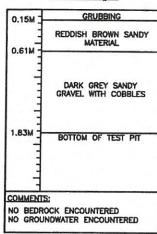
SITE SKETCH: 30 METER SEPARATION FROM WATER LINE TPS TP2 TP2 LEGEND



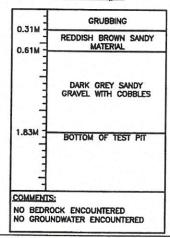
TEST_PIT_RESULTS:

TP @ - TEST PIT PP @ - PERCOLATION PIT

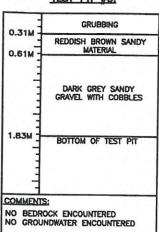
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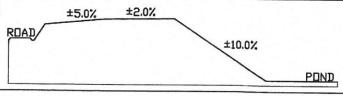
TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:



PERCOLATION TEST RESULTS:

	PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
	PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	4 MIN. 22 SEC. 4 MIN. 37 SEC. 4 MIN. 16 SEC.	DATE: JULY 26, 2016 REGISTRATION NO: AD-2009-105692 TELEPHONE NO. 834-1554
I	AVERAGE	4 MIN. 25 SEC.	TELEFRONE NO. 654-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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DATE	DESIGNED BY	DRAWN BY	APPROVED	CHECKED	SCALE	CONTRACT NO.
AUG. 15, 2016		S.POWER			NTS	2016.159

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SCOPE OF WORK:

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SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT MAEDesignLimited CONSULTING ENGINEERS

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PAGE 2 OF 2

SITE SKETCH: TP3 TP2 RTAD RECTAD RESULTS: TEST PIT RESULTS: TEST PIT #1: GRUBBING REDDISH BROWN SANDY MATERIAL 0.91M

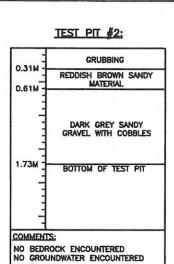
DARK GREY SANDY GRAVEL WITH COBBLES

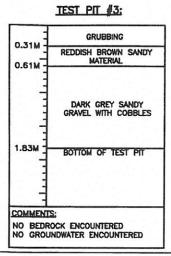
BOTTOM OF TEST PIT

NO BEDROCK ENCOUNTERED NO GROUNDWATER ENCOUNTERED

1.83M

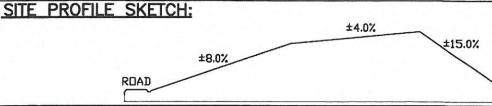
COMMENTS:



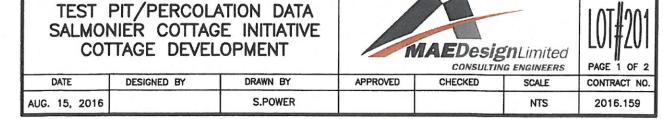


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LOT PHOTOGRAPH TAKEN FROM ROAD:



P	ERCOLATION	TEST RESULTS:
	PERCOLATION PIT	TIME TO FALL 25mm CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. (T) SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
	PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	4 MIN. 19 SEC. 5 MIN. 05 SEC. 7 MIN. 03 SEC. DATE: 10 JULY 27, 2016 10 REGISTRATION NO: AD-2009-105692 11 TELEPHONE NO. 834-1554
	AVERAGE	4 MIN. 09 SEC.



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- 2. RECOMMENDATION SKETCH SK-2 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

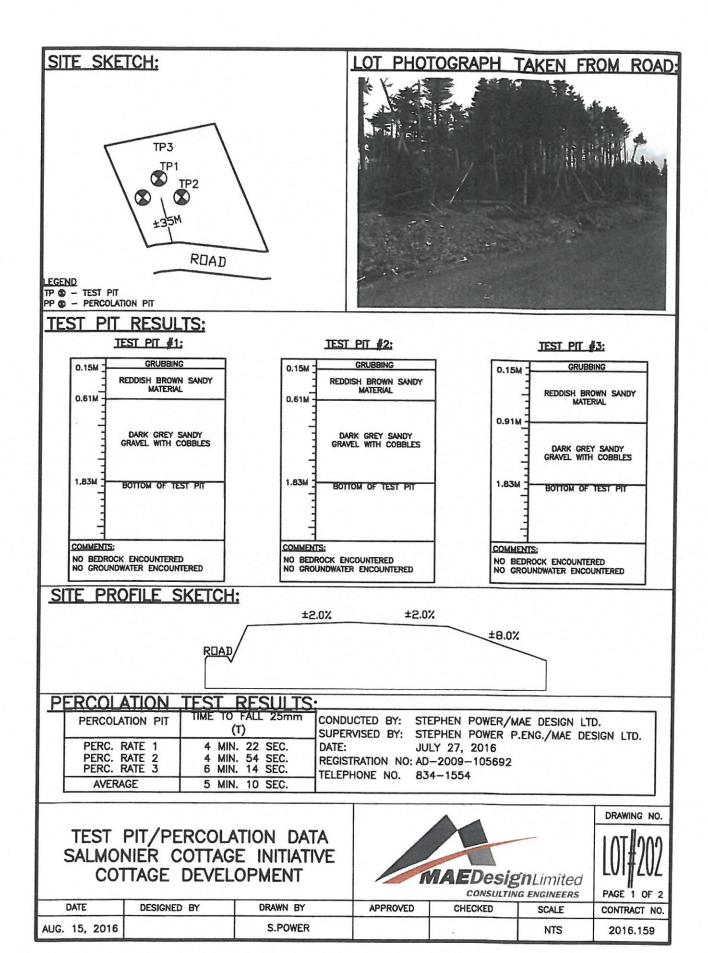
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SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



LOT#201

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- 2. RECOMMENDATION SKETCH SK-2 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

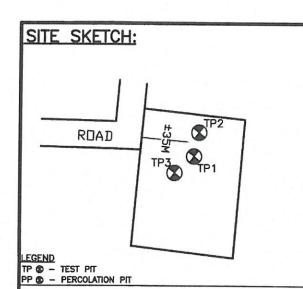
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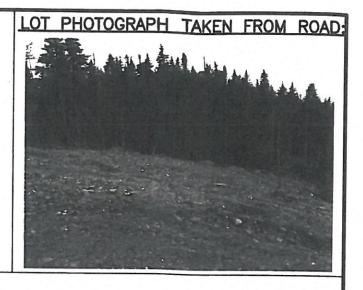
SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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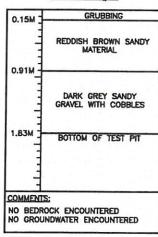
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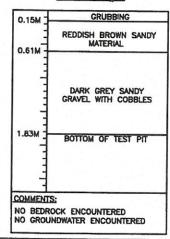


TEST PIT RESULTS:

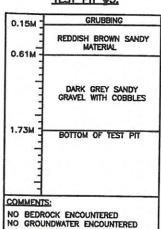
TEST PIT #1:



TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:

*5.0% ±5.0%

PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	5 MIN. 15 SEC.	DATE: JULY 27, 2016 REGISTRATION NO: AD-2009-105692 TELEPHONE NO. 834-1554
AVERAGE	4 MIN. 31 SEC.	TELEFHONE NO. 854-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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AUG. 15, 2016		S.POWER			NTS	2016.159

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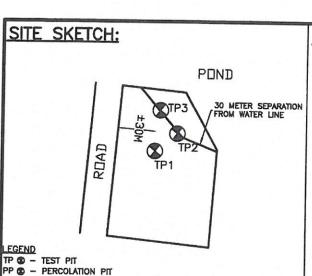
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- LOT 203 IS SITUATED AT A LOWER ELEVATION THEN ADJOINING LOT 204. DEPENDING HOW LOT 204 IS DEVELOPED, A DRAINAGE SWALE OR DITCH ALONG THE ADJOINING PROPERTY BOUNDARY WOULD BE RECOMMENDED TO HELP AID IN CONTROLLING WATER RUNOFF FROM LOT 204 ONTO LOT 203.
- 3. RECOMMENDATION SKETCH SK-2 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

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- 2. REQUIRES DITCHING AROUND THE DISPOSAL FIELD AREA OR ALONG THE PROPERTY BOUNDARIES. DITCHING SHOULD BE DEEP ENOUGH TO CAPTURE SURFACE WATER AND TO DISCHARGE THE WATER TO ROADSIDE DITCHING.
- 3. SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$12,000 AND \$15,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS REMOVAL OF UNSUITABLE MATERIAL AND DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

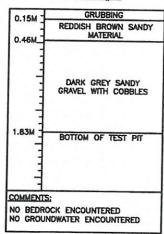
DRAWING NO. SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY APPROVED CHECKED SCALE CONTRACT NO AUG. 15, 2016 S.POWER NTS 2016.159



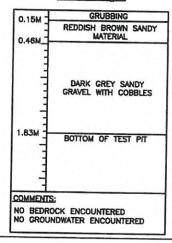
LOT PHOTOGRAPH TAKEN FROM ROAD:

TEST PIT RESULTS:

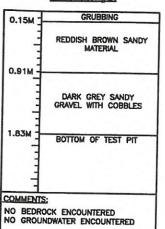
JEST PIT #1:



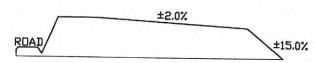
JEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:



PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	4 MIN. 09 SEC. 5 MIN 12 SEC	DATE: JULY 27, 2016 REGISTRATION NO: AD-2009-105692
AVERAGE	4 MIN. 08 SEC.	TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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- 1. GSC REGULATORY STANDARDS REQUIRE THAT INDIVIDUAL SEPTIC SYSTEM DESIGNS BE COMPLETED FOR EACH INDIVIDUAL LOT. THE SUITABILITY OF THE SPECIFIC SOIL TYPES ENCOUNTERED, THE DESIGN ELEVATION OF THE SEPTIC DISPOSAL PIPE AND THE SPECIFIC SYSTEM LOCATION FOR EACH LOT WILL BE THE RESPONSIBILITY OF THE SEPTIC SYSTEM DESIGNER. THE INDIVIDUAL ASSESSMENTS WILL BE MORE SPECIFIC AND PROVIDE GREATER DETAIL AS TO THE SITE REQUIREMENTS THEN THE INFORMATION PROVIDED IN THIS REPORT.
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- GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

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- 3. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

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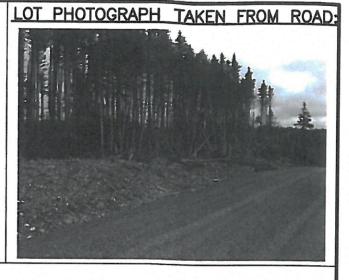
SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT

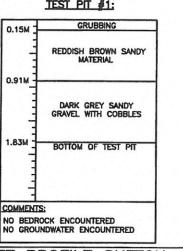


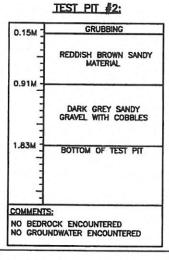
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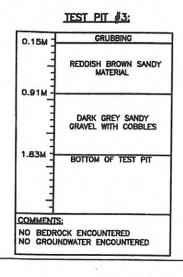
				CONSULTI	NG ENGINEERS	PAGE 2 OF 2
DATE	DESIGNED BY	DRAWN BY	APPROVED	CHECKED	SCALE	CONTRACT NO.
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SITE SKETCH: POND 30 METER SEPARATION FROM WATER LINE TP3 RUAD LEGEND TP @ - TEST PIT PP @ - PERCOLATION PIT <u>TEST PIT RESULTS:</u> TEST PIT #1: GRUBBING 0.15M 0.15M REDDISH BROWN SANDY MATERIAL 0.91M 0.91M DARK GREY SANDY GRAVEL WITH COBBLES 1.83M BOTTOM OF TEST PIT 1.83M -

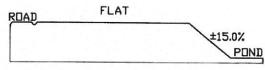












PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	5 MIN. 18 SEC. 4 MIN. 52 SEC. 5 MIN. 02 SEC.	DATE: JULY 27, 2016 REGISTRATION NO: AD-2009-105692 TELEPHONE NO. 834-1554
AVERAGE	5 MIN. 04 SEC.	TEELI HONE NO. 654-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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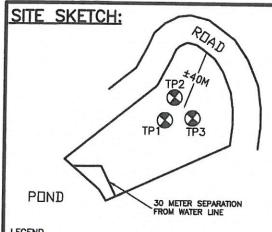
SITE SPECIFIC OBSERVATIONS

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SCOPE OF WORK:

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DRAWING NO. SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY APPROVED CHECKED SCALE CONTRACT NO. AUG. 15, 2016 S.POWER NTS 2016.159



LOT PHOTOGRAPH TAKEN FROM ROAD:

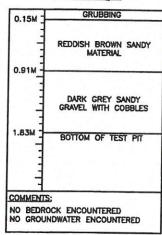


LEGEND

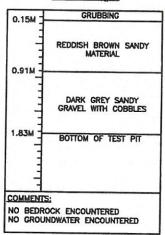
TP @ - TEST PIT
PP @ - PERCOLATION PIT

TEST PIT RESULTS:

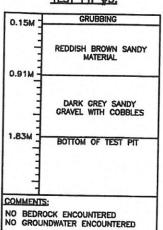
TEST PIT #1:



TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:

±5.0% ±10.0% ROAD ±1.0% POND

PERCOLATION TEST RESULTS:

	PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
	PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	4 MIN. 25 SEC. 4 MIN. 23 SEC. 4 MIN. 40 SEC.	DATE: JULY 27, 2016 REGISTRATION NO: AD-2009-105692
[AVERAGE	4 MIN. 29 SEC.	TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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- RECOMMENDATION SKETCH SK-3 SHOULD BE FOLLOWED FOR THIS PROPERTY.

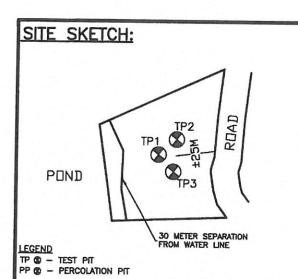
SCOPE OF WORK:

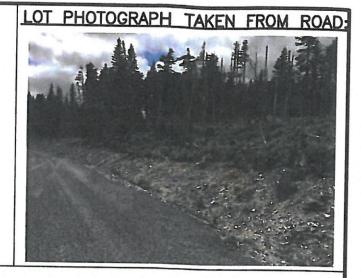
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DRAWING NO. SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY **APPROVED** CHECKED SCALE CONTRACT NO. AUG. 15, 2016 S.POWFR

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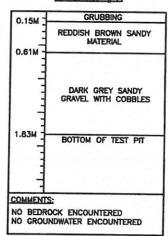
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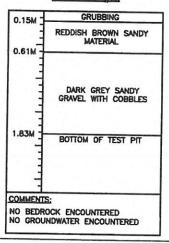


TEST PIT RESULTS:

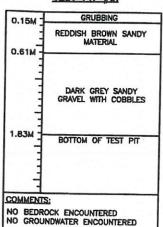
TEST PIT #1:



TEST PIT #2:



TEST PIT #3:



SITE PROFILE SKETCH:



PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: STEPHEN POWER/MAE DESIGN LTD. SUPERVISED BY: STEPHEN POWER P.ENG./MAE DESIGN LTD.
PERC. RATE 1 PERC. RATE 2 PERC. RATE 3	5 MIN. 19 SEC. 4 MIN. 58 SEC. 4 MIN. 48 SEC	DATE: JULY 27, 2016 REGISTRATION NO: AD-2009-105692
AVERAGE	5 MIN. 02 SEC.	TELEPHONE NO. 834-1554

TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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SCOPE OF WORK:

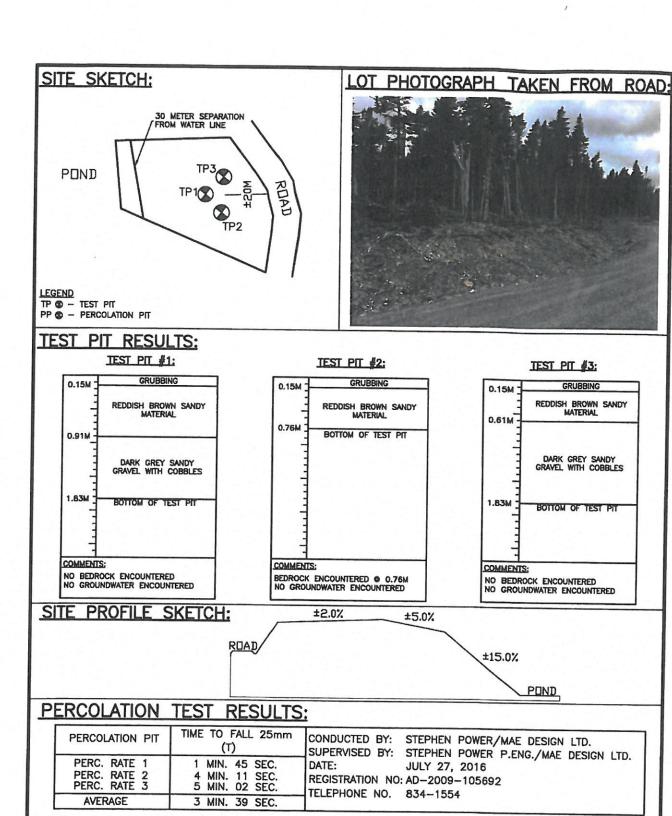
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SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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				CONSULTI	NG ENGINEERS	PAGE 2 OF 2
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TEST PIT/PERCOLATION DATA SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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SITE REQUIREMENTS:

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- GSC REGULATORY STANDARDS STATE THAT A MINIMUM OF 0.3 METERS OF GOOD ORIGINAL GROUND IS REQUIRED ABOVE THE WATER TABLE OR BEDROCK LOCATION AND A MINIMUM OF 1.15 METERS OF GOOD DRAINAGE SOIL IS REQUIRED BETWEEN THE INVERT OF THE SEPTIC FIELD PIPING AND THE WATER TABLE OR BEDROCK ELEVATION. IMPORTED FILL WITH A GOOD PERCOLATION RATE CAN BE USED TO ACHIEVE THE REQUIREMENT.
- GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

SITE SPECIFIC OBSERVATIONS

- THE SOIL TYPES ENCOUNTERED ON THE PROPERTY CONSISTED OF GRUBBING FOLLOWED BY A REDDISH BROWN SANDY MATERIAL FOLLOWED BY A DARK GREY SANDY GRAVEL WITH COBBLES. PERCOLATION RATES ON THIS SITE WERE FAVORABLE AND THE EXISTING MATERIAL IS ACCEPTABLE AS A SEPTIC FIELD
- POSSIBLE BEDROCK WAS OBSERVED IN THE TEST PITS FOR THIS LOT. THE SEPTIC FIELD DISTRIBUTION PIPE IS REQUIRED TO BE INSTALLED A MINIMUM OF 1.15 METERS ABOVE THE BEDROCK ELEVATION. SUITABLE FILL SIMILAR TO THE DARK GREY SANDY MATERIAL FOUND ON THE SITE OR A GOOD PERCOLATING MATERIAL WITH A PERCOLATION RATE BETWEEN 5–10 MINUTES SHOULD BE USED TO OBTAIL THE REQUIRED 1.15 METERS SEPARATION.
- THIS LOT HAS A BODY OF WATER PRESENT ON TWO SIDES OF ITS BOUNDARIES. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE.
- RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

- REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5")
 MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE
 PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING,
 BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING
- DITCHING MAY OR MAY NOT BE NEEDED AROUND THE SEPTIC FIELD AREA DEPENDING ON THE POSSIBILITY OF ENCOUNTERING SURFACE WATER DURING CONSTRUCTION/EXCAVATION.
- REQUIRES ADDITIONAL FILL TO BE PLACED IN THE SEPTIC FIELD AREA TO BRING THE INVERT OF THE PERFORATED SEPTIC FIELD LINES TO THE REQUIRED 1.15 METERS ABOVE THE BEDROCK ELEVATION. DEPENDING ON THE DEPTH OF THE BEDROCK ELEVATION THE FILL REQUIRED FOR THE SEPTIC FIELD CONSTRUCTION COULD RANGE BETWEEN 45 M2 AND 165 M2.
- SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$15,000 AND \$18,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA AND FILL FOR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT

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S.POWER

DESIGNED BY

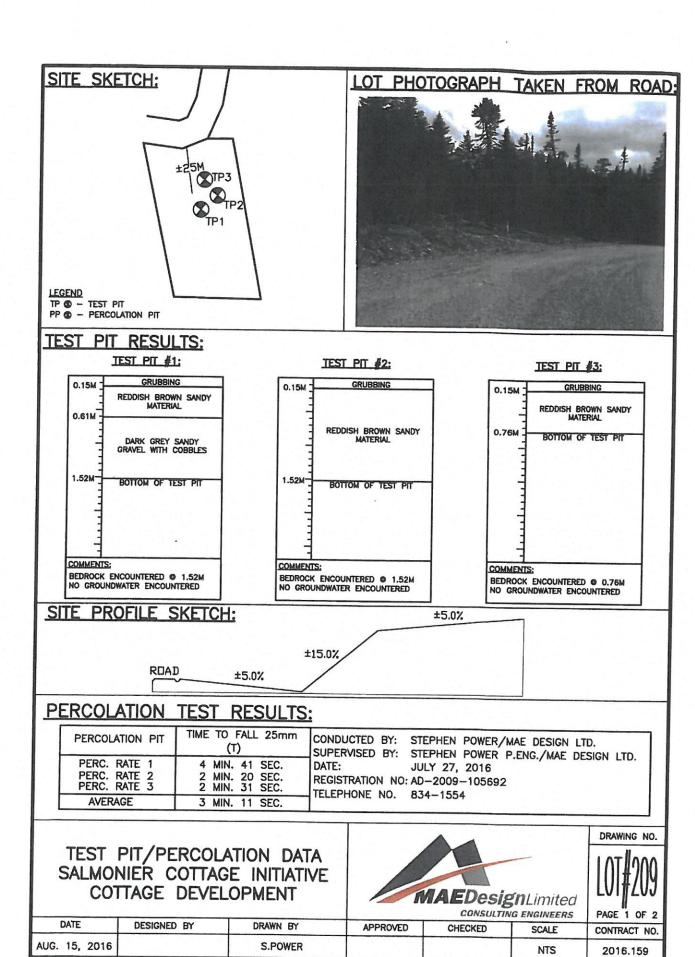
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- GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

SITE SPECIFIC OBSERVATIONS

- THE SOIL TYPES ENCOUNTERED ON THE PROPERTY CONSISTED OF GRUBBING FOLLOWED BY A REDDISH BROWN SANDY MATERIAL FOLLOWED BY A DARK GREY SANDY GRAVEL WITH COBBLES. PERCOLATION RATES ON THIS SITE WERE FAVORABLE AND THE EXISTING MATERIAL IS ACCEPTABLE AS A SEPTIC FIELD MEDIUM.
- POSSIBLE BEDROCK WAS OBSERVED IN THE TEST PITS FOR THIS LOT. THE SEPTIC FIELD DISTRIBUTION PIPE IS REQUIRED TO BE INSTALLED A MINIMUM OF 1.15 METERS ABOVE THE BEDROCK ELEVATION. SUITABLE FILL SIMILAR TO THE DARK GREY SANDY MATERIAL FOUND ON THE SITE OR A GOOD PERCOLATING MATERIAL WITH A PERCOLATION RATE BETWEEN 5-10 MINUTES SHOULD BE USED TO OBTAIN THE REQUIRED 1.15 METERS SEPARATION.
- THE LOT IS LOCATED IN A LOW LYING AREA OF TEH DEVELOPMENT AND ROADSIDE DITCHING ALONG THE FRONTAGE OF THIS LOT WOULD BE RECOMMENDED TO HELP AID IN CONTROLLING WATER RUNOFF ONTO THIS PROPERTY.
- RECOMMENDATION SKETCH SK-3 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

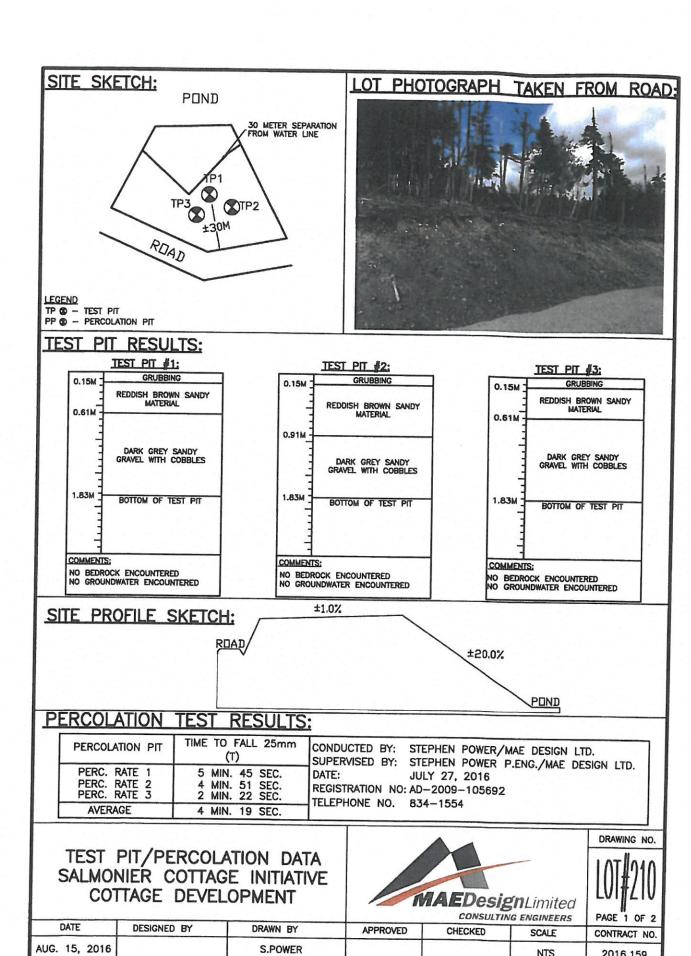
- REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
- DUE TO THE LOCATION OF THE LOT IN A LOW LYING AREA ROADSIDE DITCHING SHOULD BE COMPLETED TO HELP ALLEVIATE ANY WATER ENTERING THE PROPERTY. ROADSIDE DITCHING SHOULD BE A MINIMUM OF 1.0 METERS IN DEPTH AND HAVE A TWO(2) HORIZONTAL TO ONE(1) VERTICAL SLOPE ON THE SIDE WALLS OF THE DITCH
- REQUIRES ADDITIONAL FILL TO BE PLACED IN THE SEPTIC FIELD AREA TO BRING THE INVERT OF THE PERFORATED SEPTIC FIELD LINES TO THE REQUIRED 1.15 METERS ABOVE THE BEDROCK ELEVATION. DEPENDING ON THE DEPTH OF THE BEDROCK ELEVATION THE FILL REQUIRED FOR THE SEPTIC FIELD CONSTRUCTION COULD RANGE BETWEEN 45 M2 AND 165 M2.
- SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$15,000 AND \$18,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA AND FILL FOR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT



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- 1. GSC REGULATORY STANDARDS REQUIRE THAT INDIVIDUAL SEPTIC SYSTEM DESIGNS BE COMPLETED FOR EACH INDIVIDUAL LOT. THE SUITABILITY OF THE SPECIFIC SOIL TYPES ENCOUNTERED, THE DESIGN ELEVATION OF THE SEPTIC DISPOSAL PIPE AND THE SPECIFIC SYSTEM LOCATION FOR EACH LOT WILL BE THE RESPONSIBILITY OF THE SEPTIC SYSTEM DESIGNER. THE INDIVIDUAL ASSESSMENTS WILL BE MORE SPECIFIC AND PROVIDE GREATER DETAIL AS TO THE SITE REQUIREMENTS THEN THE INFORMATION PROVIDED IN THIS REPORT.
- 2. GSC REGULATORY STANDARDS STATE THAT A MINIMUM OF 0.3 METERS OF GOOD ORIGINAL GROUND IS REQUIRED ABOVE THE WATER TABLE OR BEDROCK LOCATION AND A MINIMUM OF 1.15 METERS OF GOOD DRAINAGE SOIL IS REQUIRED BETWEEN THE INVERT OF THE SEPTIC FIELD PIPING AND THE WATER TABLE OR BEDROCK ELEVATION. IMPORTED FILL WITH A GOOD PERCOLATION RATE CAN BE USED TO ACHIEVE THE REQUIREMENT.
- 3. GSC REGULATORY STANDARDS STATE THAT A MINIMUM SEPARATION DISTANCE OF 30 METERS MUST BE MAINTAINED BETWEEN A SEPTIC DISPOSAL FIELD AND A BODY OF WATER.

SITE SPECIFIC OBSERVATIONS

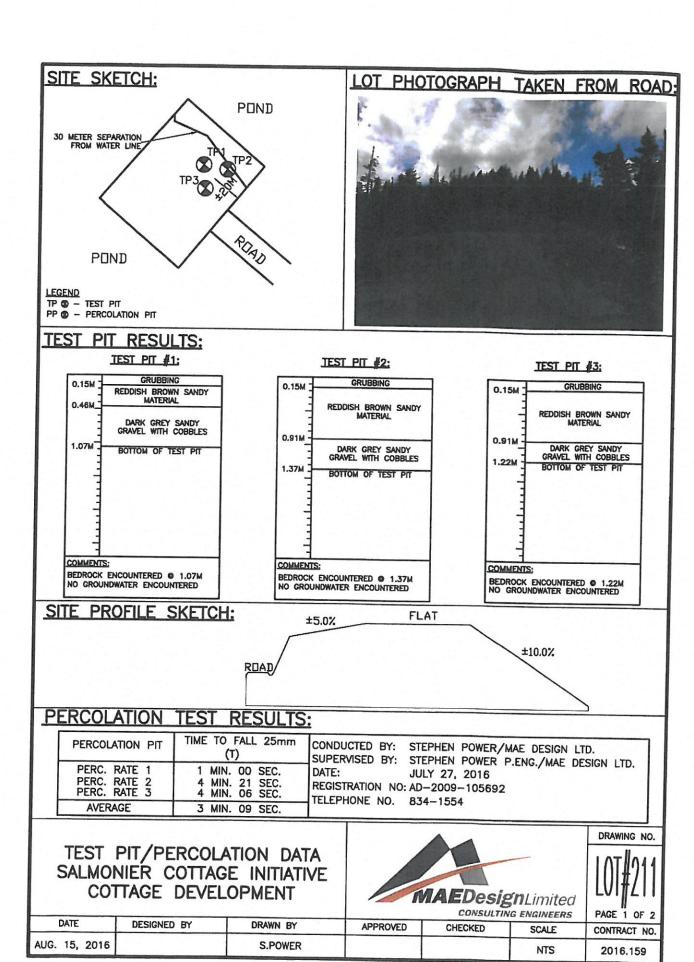
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- 2. THIS PROPERTY BOARDERS ON A BODY OF WATER. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE. THE 30 METER OFFSET FROM THE HIGH WATER MARK IS OUTLINED ON THE SITE SKETCH PORTION OF SHEET 1 ATTACHED.
- RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY.

SCOPE OF WORK:

- 1. REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
- DITCHING MAY OR MAY NOT BE NEEDED AROUND THE SEPTIC FIELD AREA DEPENDING ON THE POSSIBILITY OF ENCOUNTERING SURFACE WATER DURING CONSTRUCTION/EXCAVATION.
- 3. SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$12,000 AND \$15,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS REMOVAL OF UNSUITABLE MATERIAL AND DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

SITE REQUIREMENTS SALMONIER COTTAGE INITIATIVE COTTAGE DEVELOPMENT **MAEDesign**Limited CONSULTING ENGINEERS PAGE 2 OF 2 DATE DESIGNED BY DRAWN BY **APPROVED** CHECKED SCALE CONTRACT NO. AUG. 15, 2016 S.POWFR NTS 2016.159

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SITE SPECIFIC OBSERVATIONS

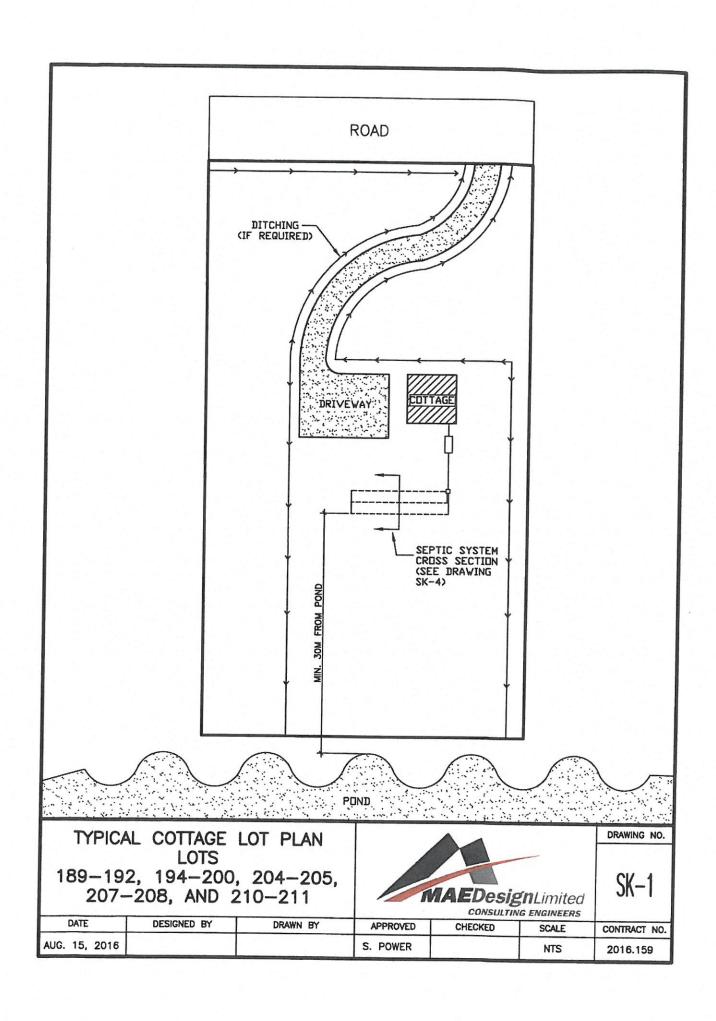
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- 2. POSSIBLE BEDROCK WAS OBSERVED IN THE TEST PITS FOR THIS LOT. THE SEPTIC FIELD DISTRIBUTION PIPE IS REQUIRED TO BE INSTALLED A MINIMUM OF 1.15 METERS ABOVE THE BEDROCK ELEVATION. SUITABLE FILL SIMILAR TO THE DARK GREY SANDY MATERIAL FOUND ON THE SITE OR A GOOD PERCOLATING MATERIAL WITH A PERCOLATION RATE BETWEEN 5-10 MINUTES SHOULD BE USED TO OBTAIL THE REQUIRED 1.15 METERS SEPARATION.
- 3. THIS LOT HAS A BODY OF WATER PRESENT ON TWO SIDES OF ITS BOUNDARIES. A MINIMUM OF 30 METERS SEPARATION DISTANCE IS REQUIRED FROM THE HIGH WATER MARK OF THE BODY OF WATER TO THE SEPTIC DISPOSAL FIELD. IT APPEARS THAT THERE IS A MINIMUM 15 METERS BUFFER FROM THE LOT BOUNDARIES TO THE WATERS EDGE.
- 4. RECOMMENDATION SKETCH SK-1 SHOULD BE FOLLOWED FOR THIS PROPERTY. SCOPE OF WORK:
- 1. REQUIRES THE PLACEMENT OF AN ON SITE SEPTIC SYSTEM AND DRILLING OR EXCAVATION OF A WELL. EXCAVATION WILL BE NEEDED TO COMPLETE THE PLACEMENT OF THE SEPTIC SYSTEM. CRUSHED STONE WILL BE REQUIRED TO BE PLACED ABOVE AND BELOW THE PERFORATED DISPOSAL FIELD LINE. AS PER THE DEPARTMENT OF GOVERNMENT SERVICES "PRIVATE SEWAGE DISPOSAL AND WATER SUPPLY STANDARDS" CRUSHED STONE SHOULD BE IN THE RANGE OF 1.9cm (0.75") MINIMUM TO 6cm (2.5") MAXIMUM.A NON TREATED BUILDING PAPER OR OTHER SUITABLE MATERIAL WILL BE REQUIRED TO BE PLACED OVER THE CRUSHED STONE IN THE TRENCHES OF THE DISPOSAL FIELD TO PREVENT CLOGGING, BUT NOT TO INHIBIT EVAPOTRANSPIRATION. BACKFILLING OF THE EXCAVATED AREAS AND SITE GRADING WILL BE REQUIRED.
- 2. DITCHING MAY OR MAY NOT BE NEEDED AROUND THE SEPTIC FIELD AREA DEPENDING ON THE POSSIBILITY OF ENCOUNTERING SURFACE WATER DURING CONSTRUCTION/EXCAVATION.
- 3. REQUIRES ADDITIONAL FILL TO BE PLACED IN THE SEPTIC FIELD AREA TO BRING THE INVERT OF THE PERFORATED SEPTIC FIELD LINES TO THE REQUIRED 1.15 METERS ABOVE THE BEDROCK ELEVATION. DEPENDING ON THE DEPTH OF THE BEDROCK ELEVATION THE FILL REQUIRED FOR THE SEPTIC FIELD CONSTRUCTION COULD RANGE BETWEEN 45 M² AND 165 M².
- 4. SITE WORK IS EXPECTED TO HAVE AN APPROXIMATE VALUE BETWEEN \$15,000 AND \$18,000. THIS COST ESTIMATE INCLUDES THE INSTALLATION OF THE SEPTIC DISPOSAL SYSTEM AND WELL, AS WELL AS DITCHING ALONG PROPERTY BOUNDARIES OR THE SEPTIC FIELD AREA AND FILL FOR THE SEPTIC FIELD AREA. SITE GRADING AND EXCAVATION IS NOT INCLUDED IN THIS ESTIMATE. ALSO ANY WORK THAT CANNOT BE FORESEEN BASED ON THE INFORMATION OUTLINED IN THIS REPORT IS NOT INCLUDED IN THE ESTIMATE.

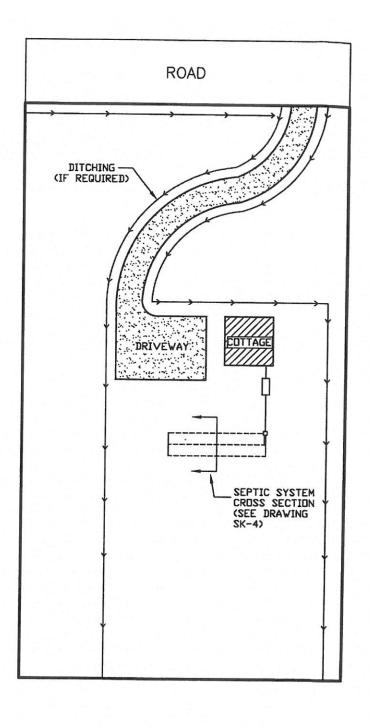
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APPENDIX C

Recommendation Sketches







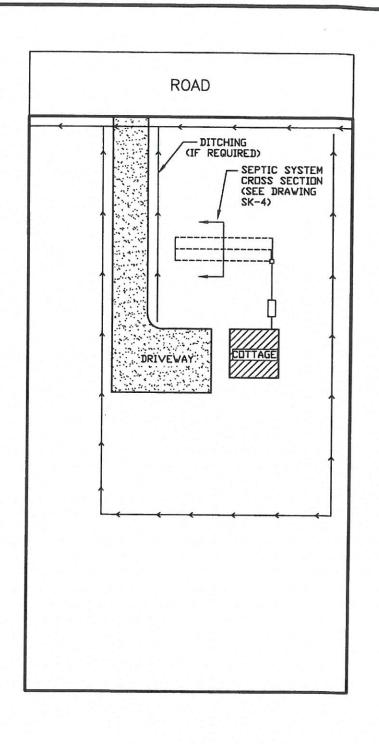
TYPICAL COTTAGE LOT PLAN LOTS 193, AND 201-203



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TYPICAL COTTAGE LOT PLAN LOTS 206 AND 209



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