

**Public Draw for Crown Land
Recreational Cottage Lots
Salmonier Cottage Area**

2018

**Septic Site Evaluation
Lots 11 & 12**

Note:

This document provides evaluations on the capability of each site for installation of on-site septic systems.

The attached reports in this document are not system designs. 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

Clareville: (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 2008.0163

**ENGINEERING REPORT FOR
PROPOSED SALMONIER COTTAGE DEVELOPMENT – 20 LOTS**

Project # 015-08-E

PREPARED BY



26 CONCEPTION BAY HWY, CONCEPTION BAY SOUTH, NL A1W 3A1

JANUARY 12, 2009

MAE PROJECT NO. 2008-0163

REPORT TO

**LAND MANAGEMENT DIVISION.
DEPT. OF ENVIRONMENT & CONSERVATION
P.O. BOX 8700, HOWLEY BUILDING, HIGGINS LINE
ST. JOHN'S, NL
A1B 4J6**

ON

ENGINEERING REPORT FOR

PROPOSED SALMONIER COTTAGE DEVELOPMENT – 20 LOTS

PROJECT # 015-08-E

PREPARED BY

**MAE DESIGN LIMITED
26 CONCEPTION BAY HIGHWAY
CONCEPTION BAY SOUTH, NL
A1W 3A1
TEL: 709-834-1554
FAX: 709-834-1558**

JANUARY 12, 2009

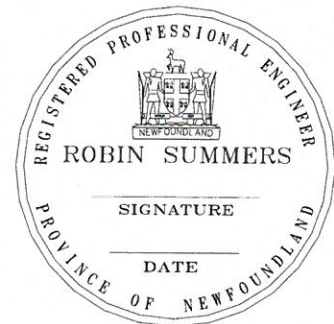


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1.0 Introduction

The Land Management Division of the Department of Environment and Conservation issued a request for proposals to undertake a septic site evaluation for twenty (20) proposed cottage lots located off the Salmonier Line on the Avalon Peninsula of Newfoundland and Labrador. 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 November 4, 2008.

2.0 Location

The proposed twenty (20) cottage lots are located on the existing access road to the former Salmonier Correctional Institute. The Former Salmonier Correctional Institute access road is located off the Salmonier Line (Route 90). The access road is located approximately 11 km from the Trans Canada Highway.

The maps included in Appendix B illustrate the location of the lots.

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:

- 1) Test pits were excavated on each of the twenty (20) lots to determine the soil characteristics, water table elevation if encountered and bedrock elevation if encountered,
- 2) Percolation tests were completed where possible, to determine the soil absorption and permeability characteristics,
- 3) Lot dimensions and areas were evaluated to determine the lot size suitability,
- 4) Lot slopes were evaluated to determine lot slope suitability,
- 5) A complete 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

Two (2) test pits were excavated on or in close proximity to each of the proposed twenty (20) lots at approximately a fifteen to thirty meter (15-30 m) set back from the road side property boundary. A track excavator was used to excavate the test pits, which were dug to a depth ranging between 1.80 and 2.9 metres. A summary of the test pit observations is included in Table 4.1. Test pit data sheets are included in Appendix C.

Table 4.1 Test Pit Observations

Lot No.	Test Pit No.	Test Pit Description	Depth to Ground Water	Depth to Bedrock	Depth of Test Pit
1	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
1	2	Grey rocky gravel overlaid by organic material	Not encountered	Possible encounter @ 1.8 metres	1.80 metres
2	1	Grey coarse gravel overlaid by organic material	Some water infiltration through side of test pit	Not encountered	2.45 metres
2	2	Grey rocky gravel overlaid by organic material	Not encountered	Possible encounter @ 2.0 metres	2.00 metres
3	1	Grey rocky gravel overlaid by organic material	Some water infiltration through side of test pit	Not encountered	2.45 metres
3	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.90 metres

Lot No.	Test Pit No.	Test Pit Description	Depth to Ground Water	Depth to Bedrock	Depth of Test Pit
4	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.40 metres
4	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.40 metres
5	1	Grey gravel overlaid by organic material	Not encountered	Not encountered	2.40 metres
5	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.40 metres
6	1	Test Pits for this lot were excavated on the adjacent property in error. Therefore no test pit data is available for this lot. Based on visual inspection this lot has similar surface characteristics to all other lots with no evidence of characteristics that would impede lot development.			
6	2				
7	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.45 metres
7	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.45 metres
8	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.45 metres
8	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.45 metres

Lot No.	Test Pit No.	Test Pit Description	Depth to Ground Water	Depth to Bedrock	Depth of Test Pit
9	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
9	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
10	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.35 metres
10	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.35 metres
11	1	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.45 metres
11	2	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.45 metres
12	1	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.45 metres
12	2	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.50 metres
13	1	Grey rocky gravel overlaid by organic material	Not encountered	Possible encounter @ 2.25 metres	2.25 metres
13	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.45 metres

Lot No.	Test Pit No.	Test Pit Description	Depth to Ground Water	Depth to Bedrock	Depth of Test Pit
14	1	Grey rocky gravel overlaid by organic material	Not encountered	Possible encounter @ 2.25 metres	2.25 metres
14	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.55 metres
15	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.40 metres
15	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
16	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.40 metres
16	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
17	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
17	2	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
18	1	Grey rocky gravel overlaid by organic material	Not encountered	Possible encounter @ 1.80 metres	1.80 metres
18	2	Grey rocky gravel overlaid by organic material	Not encountered	Possible encounter @ 1.85 metres	1.85 metres

Lot No.	Test Pit No.	Test Pit Description	Depth to Ground Water	Depth to Bedrock	Depth of Test Pit
19	1	Grey rocky gravel overlaid by organic material	Not encountered	Not encountered	2.50 metres
19	2	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.55 metres
20	1	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.45 metres
20	2	Grey rocky gravel with some shale overlaid by organic material	Not encountered	Not encountered	2.45 metres

4.2 In-Situ Soil Permeability

Percolation testing was completed on eight (8) of the twenty (20) lots. Percolation pits were excavated to a depth below any organic or unsuitable material. A summary of the percolation test results is included in Table 4.2. The complete percolation test information for each lot is included in Appendix C.

Table 4.2 Percolation Test Results

Lot Number	Average Percolation Rate
1	2 minutes 45 seconds
2	No percolation testing completed
3	2 minutes 45 seconds
4	No percolation testing completed
5	2 minutes 45 seconds
6	No percolation testing completed

Lot Number	Average Percolation Rate
7	No percolation testing completed
8	No percolation testing completed
9	4 minutes 30 seconds
10	No percolation testing completed
11	No percolation testing completed
12	4 minutes 45 seconds
13	No percolation testing completed
14	No percolation testing completed
15	4 minutes
16	No percolation testing completed
17	No percolation testing completed
18	3 minutes 15 seconds
19	No percolation testing completed
20	2 minutes 30 seconds

4.3 Lot Dimensions and Areas

GSC regulatory standards require minimum lot areas for septic system installations to be 1860 square metres and minimum lot widths to be 30.0 metres 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 Environment and Conservation in a digital drawing file. Based on this information the lot dimensions and areas were determined and compared to the GSC regulatory requirements.

The determined lot dimensions and areas are illustrated in Table 4.3.

Table 4.3 Lot Dimensions and Areas

Lot Number	Average Lot Width (metres) (Front + Back) / 2	Average Lot Depth (metres) (Right + Left) / 2	Lot Area (square metres)	Meets Regulatory Standards (yes / no)
1	45.10	84.15	3732	yes
2	48.40	96.38	4211	yes
3	41.76	101.35	4768	yes
4	67.40	63.25	3809	yes
5	53.85	82.75	4049	yes
6	46.80	92.20	4270	yes
7	61.00	84.88	4499	yes
8	56.83	80.05	3662	yes
9	48.21	118.50	4622	yes
10	37.96	147.70	5382	yes
11	88.75	57.63	5058	yes
12	77.47	60.08	4523	yes
13	64.91	60.10	3900	yes
14	45.92	87.33	3725	yes
15	30.10	63.18	3904	yes
16	37.47	101.49	3796	yes
17	44.78	103.65	4641	yes
18	43.57	102.95	4483	yes
19	57.09	81.58	4754	yes
20	59.82	66.66	4006	yes

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 estimated. In general the lot slopes ranged from 3 to 15%. Sketches of property profiles from front to back are included for each lot in Appendix C.

4.5 Site Walk Over & Existing Developments

On November 5, 2008, Mae Design Limited completed a site walk over of the twenty (20) proposed lots. At the time of the site walk over there were no obvious signs of existing wells or septic fields in the area of the proposed lots. In general the proposed lots were open fields or tree covered and generally dry. There was no obvious signs of issues which would impede development.

5.0 Conclusions and Recommendations

Percolation rates, soil type, depth to bedrock, depth to water table, lot dimensions, lot areas and lot slopes are favorable for development. There were no concerns observed for on site septic systems with respect to the lots assessed.

The following general recommendation is made:

1. Individual septic system designs must 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 left to the septic system designer. These individual assessments will be more specific and provide greater detail as to the site requirements. A typical lot development sketch is provided in Appendix D, drawing Sk-1.

APPENDIX A

Terms of Reference



Government of Newfoundland and Labrador
Department of Environment & Conservation
Lands Branch
Land Management Division

**SALMONIER COTTAGE INITIATIVE - PHASE I
COTTAGE DEVELOPMENT AREA**

20 COTTAGE LOTS

TERMS OF REFERENCE

FOR

SEPTIC SITE EVALUATION

**CONTRACT NO. 015-08-E
October 2008**

TERMS OF REFERENCE

Septic Site Evaluation

Salmonier Cottage Initiative - Phase I Cottage Development Area

1. OBJECTIVE

To undertake a Septic Site Evaluation for 20 cottage lots for the Salmonier Cottage Initiative - Phase I, as per Maps 1, 2 & 3 attached. The Evaluation will consist of all field work in accordance with the **Private Sewage Disposal and Water Supply Standards** to determine if the lots are suitable for sub-surface septic disposal systems. The successful bidder **will not** be required to complete a full engineering study as per Appendix C of the aforementioned standards. The successful bidder **will be** required to supply a report of certification verifying that each individual lot is capable/is not capable of supporting a sub-surface septic system including any mitigating measures required.

2. QUALIFICATIONS OF CONSULTANTS

Bidders/bidding firms shall hold a certificate as a Professional Engineer, Certified Engineering Technologist, Certified Engineering Technician, Certified Public Health Inspector or approved Septic System Designer/Installer under the Sanitation Regulations under the *Public Health Act* (OC96-442).

3. PROPOSAL DETAILS

Proposals shall clearly identify the following:

- a) the total price for professional services, inclusive of all related costs, with and without HST
- b) the commencement and completion dates of the evaluation.

4. REPORTING PROCEDURE

- 1) The preliminary report of the field assessment will be submitted to the Land Management Division in writing and by telephone within five (5) days of the completion of the field evaluation; and
- 2) The final report must be submitted both as a printed hard copy and in digital format. Maps and diagrams must be submitted as separate files in digital image format such as jpg or pdf. Text documents may be submitted in MS Word or pdf format.

5. SCHEDULING

5.1 Commencement Date

The commencement date of the work shall be within three (3) days from the signature date of the contract or the date the bidder is notified in writing of the acceptance of the proposal offer, exclusive of that date.

5.2 Completion Date

All work must be completed and submitted to the Department within thirty (30) days, inclusive of the commencement date.

6. FIELDWORK ACTIVITIES

Site evaluation will address the following factors that might affect its suitability for a septic tank system:

- a) size of lot
- b) slope of the lot
- c) type and permeability of the soil as determined by percolation tests
- d) measurement of the soil's capacity to absorb liquid (percolation test)
- e) depth of ground water table
- f) presence of bedrock
- g) distances of septic tank and disposal field from buildings, watercourses, wells, roads, property lines, driveways, water service lines, etc.
- h) site up-grading specifications and cost if lot is to be found substandard.

7. PROPOSAL DEADLINES

Proposals must be clearly marked “**Salmonier Cottage Initiative - Phase I Septic Site Evaluation Proposal Contract # 015-08-E**” and received at the Land Management Division no later than 11:00 AM, Thursday, October 30, 2008. No proposal will be accepted after the specified deadline. Public proposal opening time will be 11:20 AM, Thursday, October 30, 2008, at the Land Management Division Office in St. John’s, NL.

Proposals may be transmitted by fax or e-mail to the Land Management Division, Howley Building, Higgins Line, St. John’s, NL before the proposal closing time specified. The fax or e-mail must include the Proposal Number and the Quotation of the Proposal Offer. The time and date printed on the proposal pages by the fax machine or the received time recorded on the e-mail, shall be the determinant of the time of receipt.

Proposals that are submitted by fax or e-mail are not considered as confidential proposals and the Lands Branch cannot guarantee the confidentiality of such proposals. These proposals are submitted at the discretion of the bidder. Due to terrain conditions, bidders are advised to conduct a site inspection prior to submitting a bid.

It is the responsibility of the bidder to ensure that any proposal submitted by fax or e-mail has been received by the Land Management Division. It is strongly advised that bidders call to confirm receipt of bids.

Please note that access to the Salmonier Cottage Development area is currently restricted .If you require vehicular access to the site prior to submitting a proposal please contact the Land Management Division at the address listed below.

The address is:

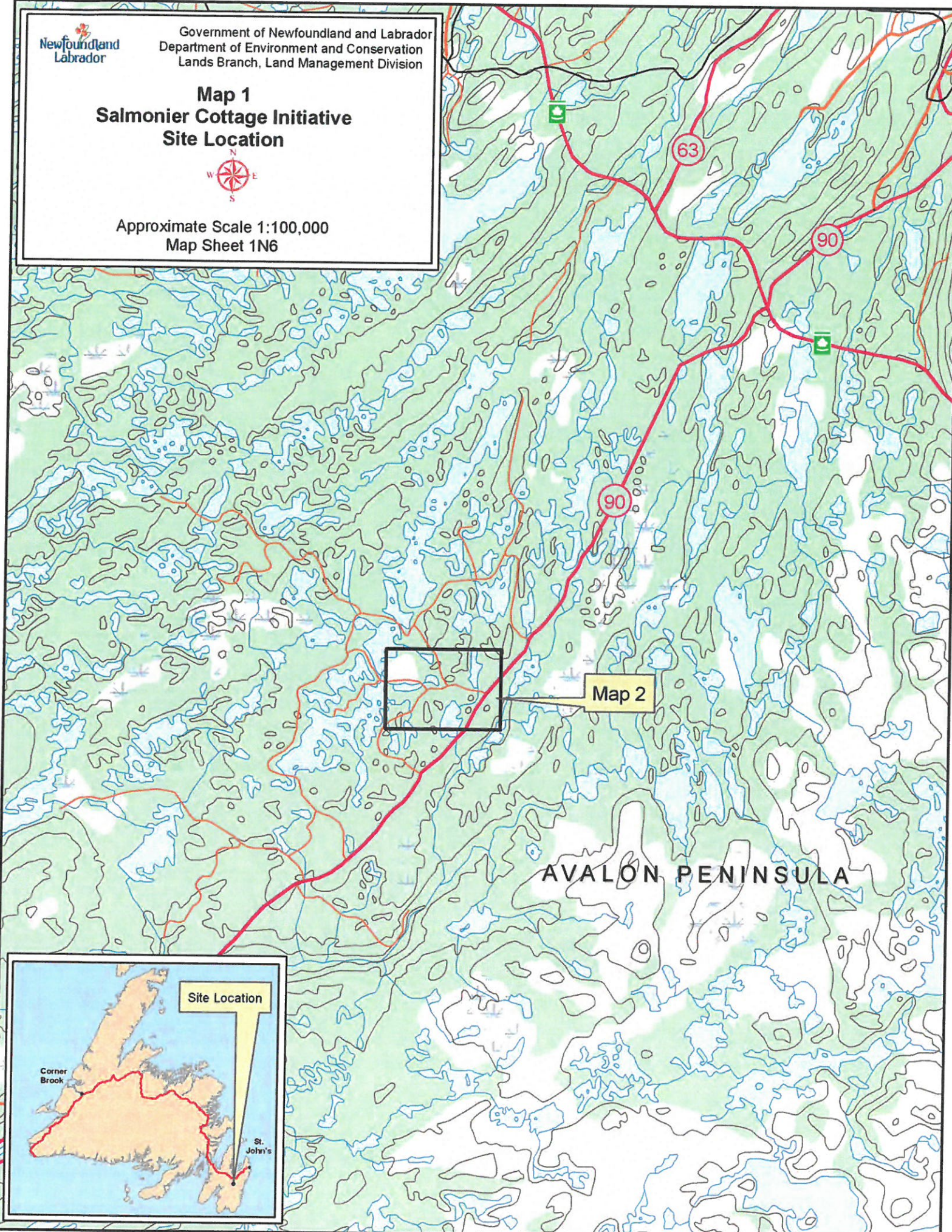
Land Management Division
Lands Branch
Department of Environment and Conservation
Howley Building, Higgins Line
P.O. Box 8700
St. John’s, NL
A1B 4J6
Tel: (709) 729-3227
Fax: (709) 729-3923
jhowley@gov.nl.ca

APPENDIX B
Site Location Drawing

Map 1
Salmonier Cottage Initiative
Site Location



Approximate Scale 1:100,000
Map Sheet 1N6

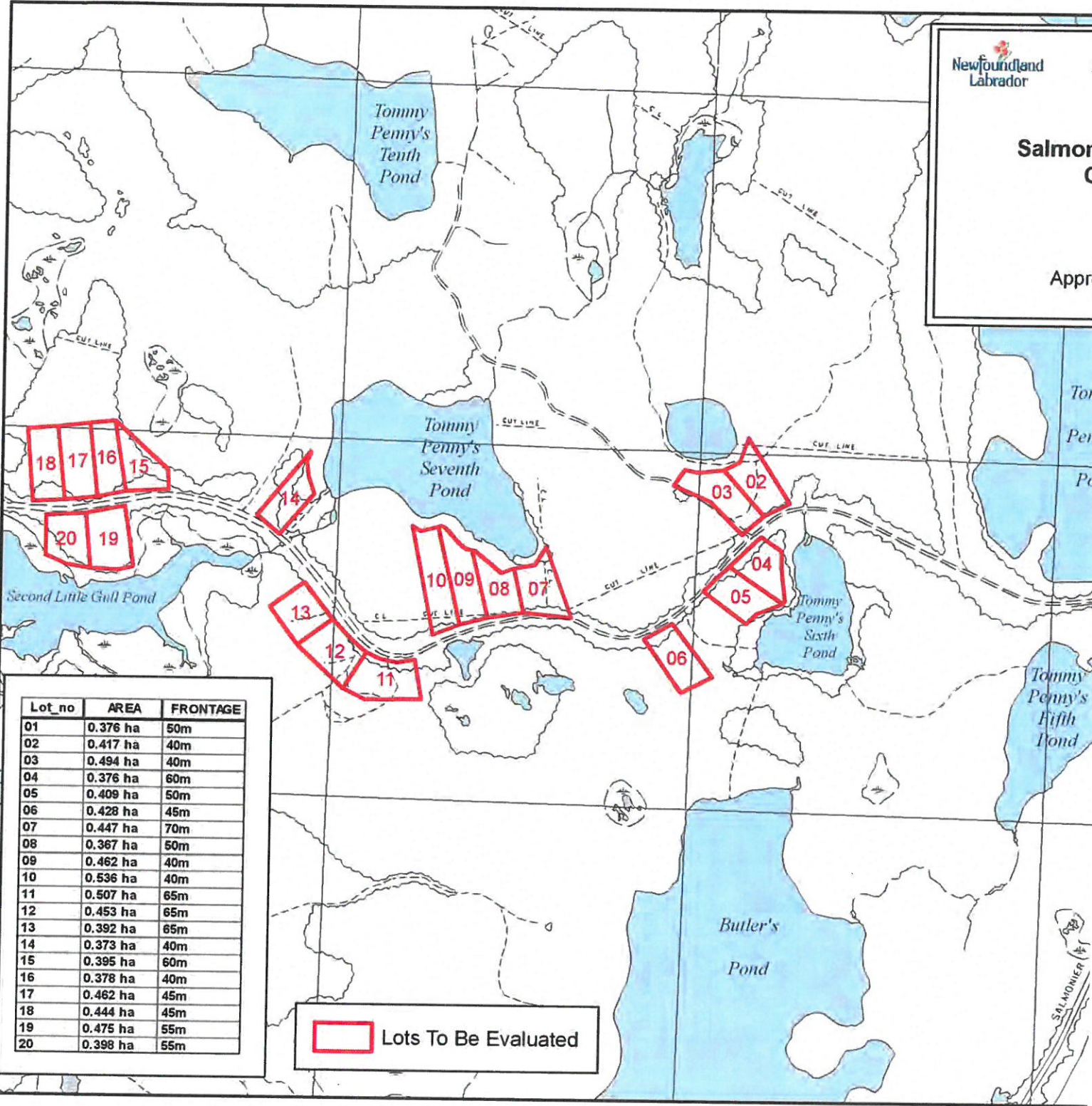


AVALON PENINSULA



Site Location

Map 2



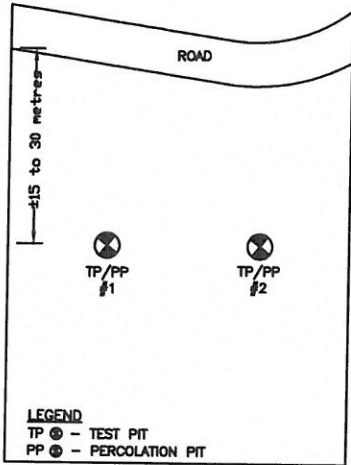
Lot_no	AREA	FRONTAGE
01	0.376 ha	50m
02	0.417 ha	40m
03	0.494 ha	40m
04	0.376 ha	60m
05	0.409 ha	50m
06	0.428 ha	45m
07	0.447 ha	70m
08	0.367 ha	50m
09	0.462 ha	40m
10	0.536 ha	40m
11	0.507 ha	65m
12	0.453 ha	65m
13	0.392 ha	65m
14	0.373 ha	40m
15	0.395 ha	60m
16	0.378 ha	40m
17	0.462 ha	45m
18	0.444 ha	45m
19	0.475 ha	55m
20	0.398 ha	55m

Lots To Be Evaluated

APPENDIX C

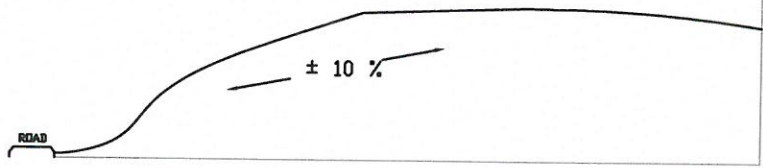
Test Pit and Percolation Data

SITE SKETCH:



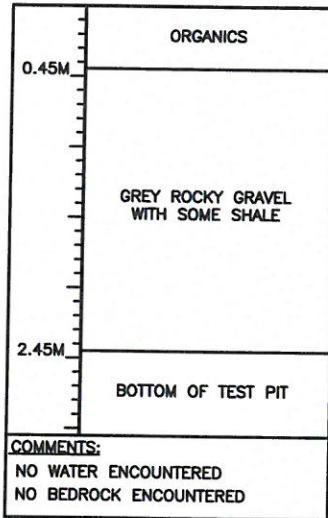
LEGEND
 TP ⊗ - TEST PIT
 PP ⊗ - PERCOLATION PIT

SITE PROFILE SKETCH:

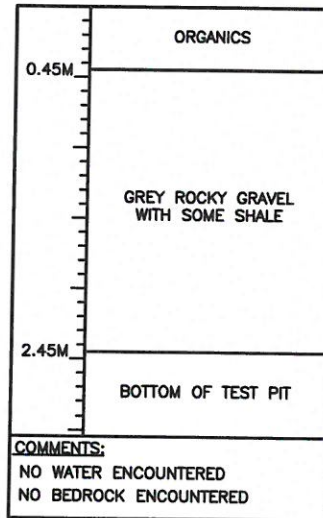


TEST PIT RESULTS:

TESTPIT #1:



TESTPIT #2:



PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: MAE DESIGN LIMITED DATE: NOV. 27, 2008 REGISTRATION NO: AD-2000-101320 TELEPHONE NO. 834-1554
1	N/A	
2	N/A	
	N/A	

**TEST PIT/PERCOLATION DATA
 SALMONIER LINE COTTAGE
 DEVELOPMENT
 LOT #11**



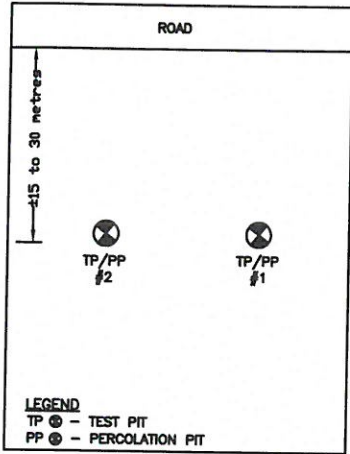
TEL (709) 834-1554 FAX (709) 834-1558

DRAWING NO.

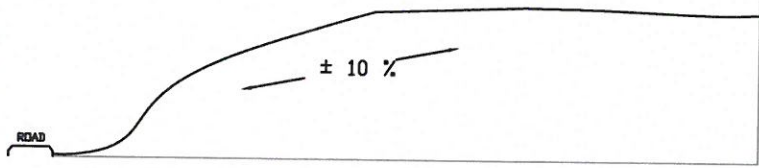
LOT #11

DATE	DESIGNED BY	DRAWN BY	APPROVED	CHECKED	SCALE	CONTRACT NO.
DEC. 16, 2008	R.SUMMERS	D.DENINE	R.SUMMERS	R.SUMMERS	NTS	2008.0163

SITE SKETCH:

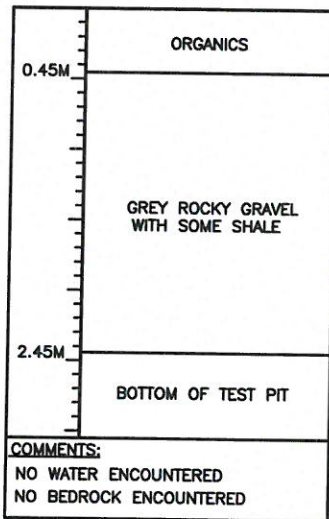


SITE PROFILE SKETCH:

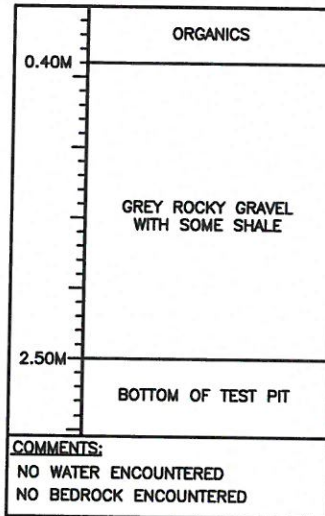


TEST PIT RESULTS:

TESTPIT #1:



TESTPIT #2:



PERCOLATION TEST RESULTS:

PERCOLATION PIT	TIME TO FALL 25mm (T)	CONDUCTED BY: MAE DESIGN LIMITED DATE: NOV. 27, 2008 REGISTRATION NO: AD-2000-101320 TELEPHONE NO. 834-1554
1	4.75	
2	4.75	
	4.75 MIN.	

TEST PIT/PERCOLATION DATA
 SALMONIER LINE COTTAGE
 DEVELOPMENT
 LOT #12



TEL (709) 834-1554 FAX (709) 834-1558

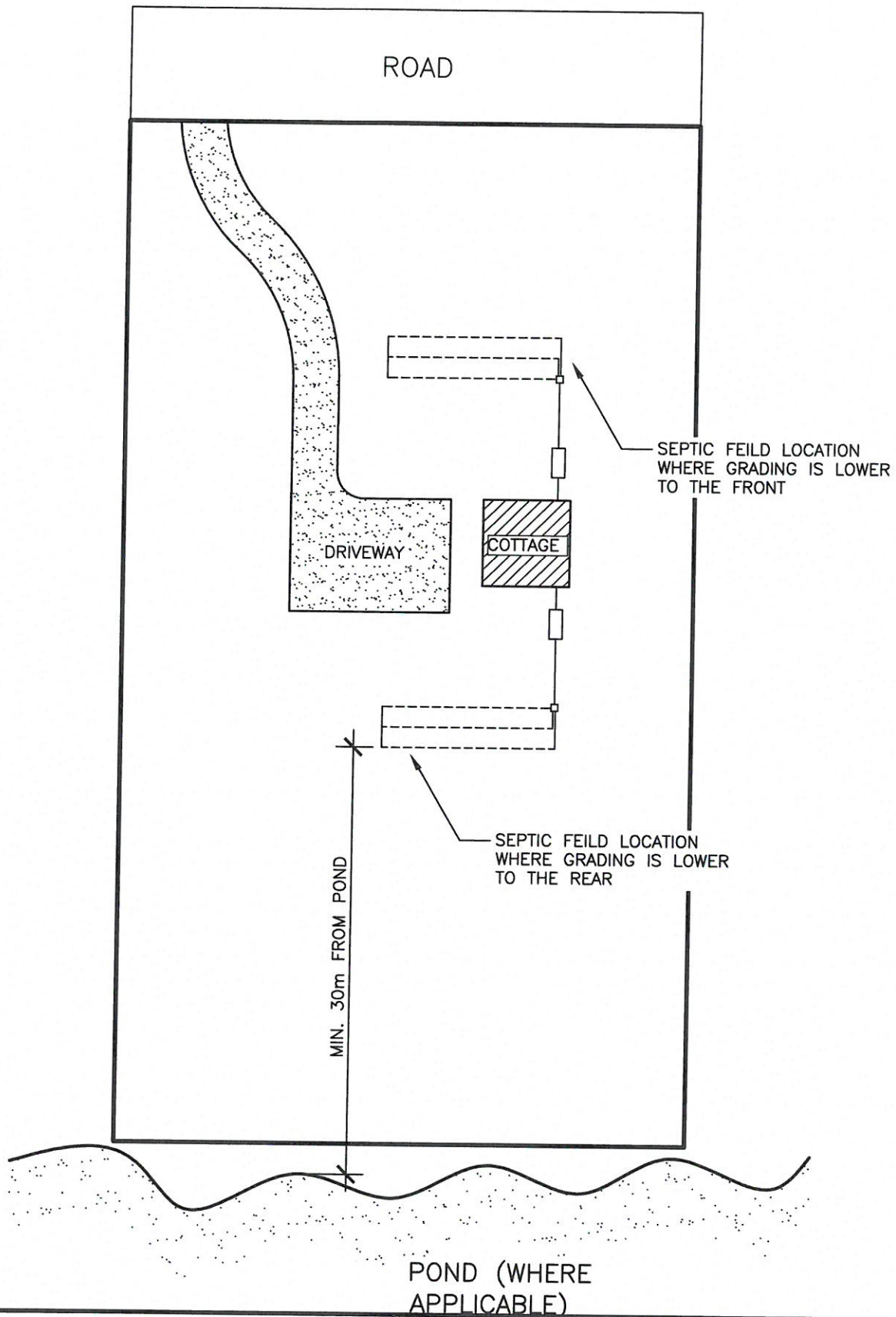
DRAWING NO.

LOT #12

DATE	DESIGNED BY	DRAWN BY	APPROVED	CHECKED	SCALE	CONTRACT NO.
DEC. 16, 2008	R.SUMMERS	D.DENINE	R.SUMMERS	R.SUMMERS	NTS	2008.0163

APPENDIX D

Recommendation Sketches



POND (WHERE APPLICABLE)

TYPICAL COTTAGE LOT PLAN



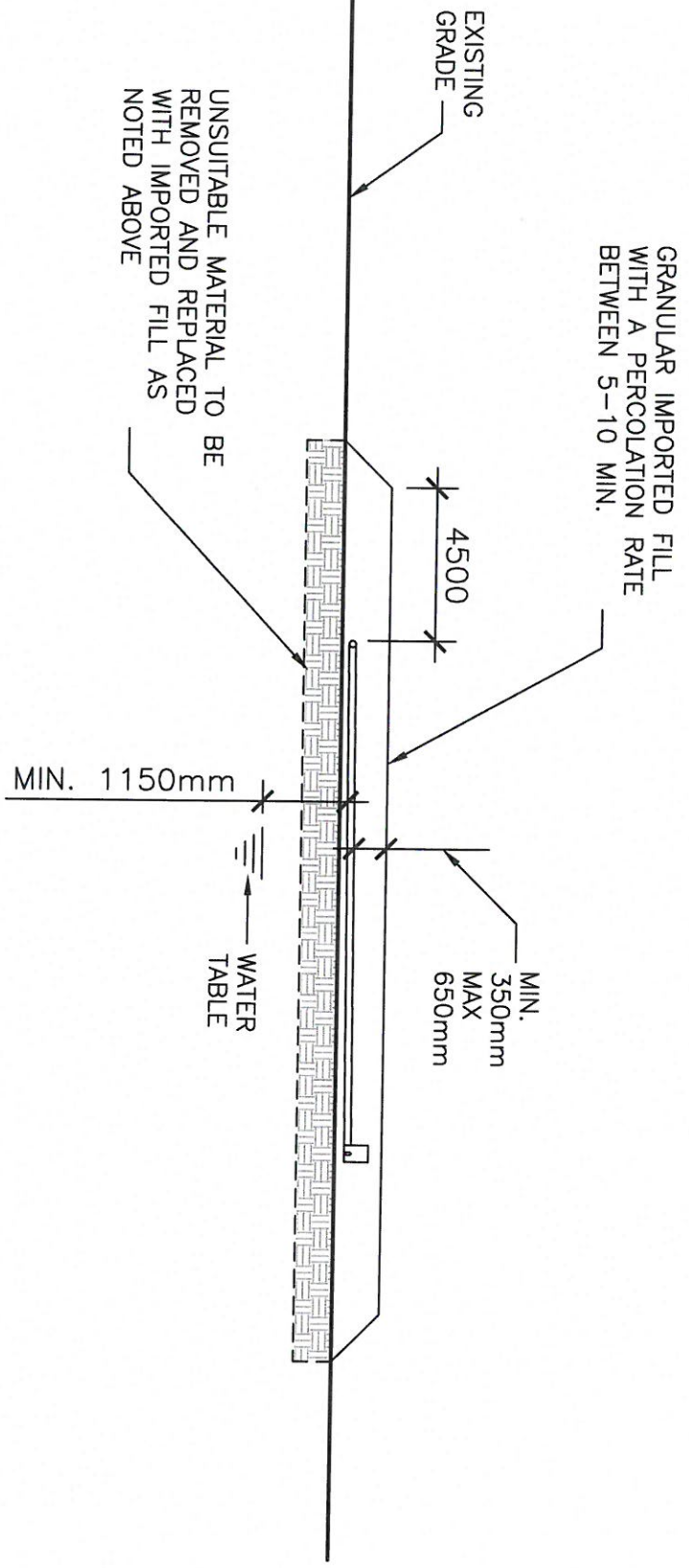
DRAWING NO.

SK-1

TEL (709) 834-1554

FAX (709) 834-1558

DATE	DESIGNED BY	DRAWN BY	APPROVED	CHECKED	SCALE	CONTRACT NO.
JAN./12/2009	R.SUMMERS	A. MOULTON	R.SUMMERS	R.SUMMERS	NTS	2008.0163



TYPICAL COTTAGE
SECTION THROUGH
SEPTIC FIELD FOR LOT 6

DATE	DESIGNED BY	DRAWN BY
JAN.12, 2009	R.SUMMERS	A. MOULTON

APPROVED	CHECKED	SCALE
R.SUMMERS	R.SUMMERS	NTS



TEL (709) 834-1554
FAX (709) 834-1558

DRAWING NO.

SK-2

CONTRACT NO.

2008.0163

APPENDIX E

Photographs



Photograph 1
(View of lot 1 from the road)



Photograph 2
(View of lot 2 from the road)



Photograph 3
(View of lot 3 from the road)



Photograph 4
(View of lot 4 from the road)



Photograph 5
(View of lot 5 from the road)

Photograph Unavailable

Photograph 6
(View of lot 6 from the road)



Photograph 7
(View of lot 7 from the road)



Photograph 8
(View of lot 8 from the road)



Photograph 9
(View of lot 9 from the road)



Photograph 10
(View of lot 10 from the road)



Photograph 11
(View of lot 11 from the road)



Photograph 12
(View of lot 12 from the road)



Photograph 13
(View of lot 13 from the road)



Photograph 14
(View of lot 14 from the road)



Photograph 15
(View of lot 15 from the road)



Photograph 16
(View of lot 16 from the road)



Photograph 17
(View of lot 17 from the road)



Photograph 18
(View of lot 18 from the road)



Photograph 19
(View of lot 19 from the road)



Photograph 20
(View of lot 20 from the road)