



STAFF REPORT

TO: CHIEF ADMINISTRATIVE OFFICER
FROM: BRIGID REYNOLDS, CONSULTING TOWN PLANNER
SUBJECT: DVP2025-08 – 456 WINTER DR
MEETING DATE: OCTOBER 28, 2025
SUBJECT PROPERTY: LOT 7, SECTION 6, RENFREW DISTRICT, PLAN EPP138345 (PID 032-429-614)

PURPOSE

The purpose of this application is to approve a development permit with a variance to reduce the front yard setback from 7.5 m to 5.0 m for the construction of a single-family dwelling within the Watercourse & Streamside Protection Development Permit Area (DPA 1).

BACKGROUND

The subject property is located on a 1,100 m² (0.27 ac) parcel, located at 476 Winter Dr. The property is zoned Suburban Residential (R-1). The OCP designates the property as within DPA 1 due to its proximity to a small creek that runs along the north west side of the property.

Reports submitted in support of this application include:

- Riparian Areas Protection Regulation: Assessment Report, prepared by Bob Crandall, dated June 29, 2025
- Geotechnical Design Parameters, prepared by Lewkowich Engineering Associates Ltd. Dated June 10, 2025

This lot was recently created as part of the phase 5 of the Slopes subdivision. Three covenants were registered on the title of the property to address various elements including wildfire, infiltrator (storm water) and riparian area.

Watercourse Protection DPA

The purpose of the Watercourse Protection DPA is to protect watercourses and their riparian areas, and the adjacent upland areas and to provide recommendations to minimize negative impacts to the riparian area and where possible enhance the area.

The Riparian Areas Protection Regulation: Assessment Report, prepared by Brittany Brooks and Bob Crandall, dated June 29, 2025, establishes the SPEA at 10.0 m from the natural boundary. The conditions of this permit detailed below are intended to minimize any negative impacts to the SPEA.

Zoning Bylaw

The R-1 zone district establishes a front yard setback of 7.5 m. The applicant is requesting to reduce the front yard setback by 2.5 m to move the dwelling unit further away from the riparian area, as shown on Attachment 1. This will create more useable space in the rear yard, outside of the riparian area, and will minimize potential constructed related damage to the riparian area.

IMPLICATIONS

- a. Financial:**
Application fees are collected to cover the cost of processing the application.

- b. Policy/Legislation:**
The subject property is located in Development Permit Area – 1 for watercourse protection pursuant to the Official Community Plan.

- c. Strategic Priority:**
N/A

- d. Sustainability:**
N/A

- e. Communication:**
As required by the Development Approval Procedures Bylaw No. 1109, notice of the application was sent to neighbours within 50 m of the subject property a minimum of 10 days prior to Council’s consideration of the request. The notice was mailed out on October 9, 2025 and at the time of preparing the staff report no comments have been received.

- f. Staffing Implication:**
Processing this application is part of the Planning Department’s regular duties.

Options

- 1) Approve the development permit with variances for this application.
- 2) Approve the development permit with variances with additional requirements.
- 3) Deny the development permit with variances for this application.

Recommendation

The contract planner recommends approving DVP2025-08 to reduce the front yard setback from 7.5 m to 5.0 m [Zoning Bylaw section 5.1.6. f)i)] and to approve the development permit for the property located at 476 Winter Rd, legally described as Lot 7, Section 6, Renfrew District, Cowichan Lake District, Plan EPP138345 (PID 032-429-614) in conformance with the following conditions:

1. All development shall be in accordance with
 - a. Attached site plan
 - b. Riparian Areas Protection Regulation: Assessment Report, prepared by Bob Crandall, dated June 29, 2025
 - c. Geotechnical Design Parameters – Bearing and Site Conditions for Design, prepared by Lewkowich Engineering Associates Ltd. Dated June 10, 2025
2. Prior to any land alteration and building permit issuance
 - a. Delineate the SPEA boundary with high visibility fencing.
 - b. Implement sediment and erosion control measures in consultation with the QEP consistent with the RAPR Assessment Report.
3. Prior to occupancy permit issuance:
 - a. Install some form of permanent demarcation of the SPEA line.

Signed:

Brigid Reynolds

Brigid Reynolds RPP MCIP
Contract Planner

Concurrence:

John T

John Thomas
Chief Administrative Officer

ATTACHMENT 2
RIPARIAN AREA REGULATION REPORT

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Protection Regulation: Assessment Report

Please refer to submission instructions and assessment report guidelines when completing this report.

Date 06-29-2025

I. Primary QEP Information

First Name	Robert	Middle Name	William
Last Name	Crandall		
Designation	Environmental ASCT	Company	Swordfern Environmental
Registration #	27767	Email	[REDACTED]
Address	[REDACTED]		
City	[REDACTED]	Postal/Zip	[REDACTED]
Prov/state	[REDACTED]	Country	[REDACTED]
Phone #	[REDACTED]		

II. Secondary QEP Information (use Form 2 for other QEPs)

First Name			
Last Name			
Designation			
Registration #			
Address			
City			
Prov/state			

III. Developer Information

First Name	[REDACTED]	Middle Name	
Last Name	[REDACTED]		
Company	0697413 B.C. Ltd.		
Phone #	[REDACTED]	Email	[REDACTED]
Address	[REDACTED]		
City	[REDACTED]	Postal/Zip	[REDACTED]
Prov/state	[REDACTED]	Country	[REDACTED]

IV. Development Information

Development Type	Subdivision - Residential		
Area of Development (ha)	0.03	Riparian Length (m)	13
Lot Area (ha)	0.11	Nature of Development	new
Proposed Start Date	07-04-2025	Proposed End Date	09-15-2026

V. Location of Proposed Development

Street Address (or nearest town)	476 Winter Drive		
Local Government	Town of Lake Cowichan	City	Lake Cowichan
Stream Name	Fork of Beadnell Creek		
Legal Description (PID)	032-429-614	Region	Vancouver Island
Stream/River Type	Stream	DFO Area	South Island
Watershed Code	920-257700		
Latitude	48	50	15
Longitude	124	03	08

Completion of Database Information includes the Form 2 for the Additional QEPs, if needed. Insert that form immediately after this page.

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Description of Fisheries Resources Values

A tributary to Beadnell Creek is within the proposed development and requires protection as it is important to the Cowichan Lake Salmonid Enhancement Society. It provides cool clean water to the rearing salmonids in the hatchery every Spring. Beadnell Creek then flows into the Cowichan River.

Stream Code: N/A

Stream Name: Beadnell Creek

Operational Management Unit: Lake Cowichan North

Municipal: Town of Lake Cowichan, CVRD Area F

A) BIOPHYSICAL OVERVIEW: This stream enters the Cowichan from the north 1,200 m below the Cowichan Lake weir. The upper basin of the main stem is steep and narrow but the portion below the 260 m contour is relatively broad. Summer flow is supplied by groundwater seepage. Winter flow fluctuation is minimal. The west branch parallels the base of the west end of Hill 60 picking up seepage.

Air Photos BC 82007 137-138

Topographic Map 92 C/16, 92C.090

Salmonids Co to 1819 m but access is difficult after 94 m
Cm to 94 m.
Ct to 1819 m
Bt to 1819 m.

Obstructions 25 m concrete section in Upper R1 which starts @ 75m. Migration period velocity in the lower 11 m of this section is about 2 MPS (most of this concrete was removed in 1999)

Cowichan Lake Road culvert at 98 m (passable). Culvert is a 77 m long concrete box 3 m wide. It is just barely passable at times for adult coho, cutthroats and brown trout. It passes under Cowichan Lake Road and the west portion of Cowichan Esso (Romeo's). 500 m concrete flume with 3% slope (passable). Baffles added to aid fish passage 1994 – 2002 (flume and culvert – Burns, 02)

Sharply increasing gradient above 1819 m.

Series of small drops on W.Fork in R2. Greatest vertical drop: .5 m. 1 m falls at 400 m on Neva Creek.

Max. Temp. (C) 12 9/19/87 R1

18.5 (R3 at highway 8/1/98)

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Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

15.2 West Fork R1 (9/12/98)
 13.4 R5 (9/12/98)
 17.2 R1 (8/18/04)
Min Disch. (m³) .0025 (9/19/87) R1
 .0028 (8/18/04) R1
 R2 0
 R3 0
 R4 0 for the first 100 m in very dry years
 R4 .00045 (8/26/85)
 R4 .0035 @ 50 m (9/12/98)
 R5 .0029 @ Hancock Logging Road (9/12/98)
 West Fork R1 .000032 (9/12/98)
Max. Disch. 5.4 CMS (11/25/98)

BEADNELL CREEK

	Channel width (m)	Wetted width (m)	Substrate	Slope%	Channel Confinement	Side Channel	Length (m)	Wetted Area (m ²)
<u>Mainstem</u>								
Reach 1	4.0	1.0	145R	1.0	CON	N	98	98
Reach 2	3.0	0	R	3.0	ENT	N	500	0
Reach 3	5.0	0	2710	1.2	FC	M	310	0
Reach 4	3.0	1.0	1450	2.0	FC	L	755	755
Reach 5	1.0	1.0	1540	3.5	CON	N	160	160
Reach 6	1.0	1.0	1450	7.0	CON	N	1000	1000

West Branch (enters Beadnell at 1230 m)

Reach 1	2.0	1.0	1630	2.0	FC	L	72	72
Reach 2	1.0	1.0	1270	7.0	CON	N	35	35
Reach 3	2.0	1.0	1630	2.5	CON	N	500	500

East Branch (Neva Creek)

Reach 1	3.0	0	2610	2.0	FC	L	300	0
Reach 2	1.0	0.3	1540	4.0	ENT	N	350	105
Reach 3	1.0	0	1540	8.0	CON	N	900	0

Description of the Development proposal

The landowner proposes to build a single family home of wood frame design. The house will be approximately 3,700 sq. feet in size. Designs are within this document and uploaded to RARNS.

Riparian Assessment Area:

A slope of 3% over lot 7 is measured. Subject property in riparian assessment area has the following species of vegetation: Sedges such as Carex reed grass, Soft Rush, Sword fern, Himalayan Blackberry, Holly, Red alder, Nootka rose, Willow, Western Red Cedar, Red Huckleberry, Foxglove, Thistle, Scottish Broom, Trillium, Shooting Star, Dock, Oregon grape, Thimbleberry, Salmonberry, Skunk cabbage, Horsetail (Mairs tail) and Western Hemlock. The watercourse falls into a ravine when leaving subdivision property that is heavily forested with all conifers and large deciduous trees.

Notes: Some of the area outside of the SPEA has been raked and groomed it is expected that erosion control measures such as planting native species coastal roadside seed mix would be appropriate to cast over the RAA up to the SPEA line and invasives should be removed from SPEA and RAA zones.

2A. Results of Detailed Riparian Assessment

Refer to Section 3 of Technical Manual

Date: 06-29-2025

Description of Water bodies involved (number, type)

Stream, 1

Stream	X
Wetland	
Lake	
Ditch	
Number of reaches	1
Reach #	1

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Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

Channel Width(m)		Gradient (%)	
starting point	1.0d	2.5	I, (<i>Robert Crandall</i>), hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> . b) I am qualified to carry out this part of the assessment of the development proposal made by the developer (<i>0697413 B.C. Ltd.</i>). c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.
upstream	1.1		
	3.1		
	1.4		
downstream	2.8		
	3.2d		
	3.0		
	2.1		
	2.0		
Total: minus high /low mean	2.1		
	3.1	3.5	
	20.7	6.0	
	2.3	3.0	
	R/P	C/P	
Channel Type	x		

Site Potential Vegetation Type (SPVT)

	Yes	No	
SPVT Polygons		x	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes I, (<i>Robert Crandall</i>), hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> . b) I am qualified to carry out this part of the assessment of the development proposal made by the developer (<i>0697413 B.C. Ltd.</i>). c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.
Polygon No:	1		Method employed if other than TR
SPVT Type	LC	SH	
			x

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	1	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons					
LWD, Bank and Channel Stability ZOS (m)	10						
Litter fall and insect drop ZOS (m)	10						
Shade ZOS (m) max	10	South bank	Yes	X	No		
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)						

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Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report
SPEA maximum	10	(For ditch use table3-7)			

I, (Robert Crandall), hereby certify that:

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b) I am qualified to carry out this part of the assessment of the development proposal made by the developer (0697413 B.C. Ltd.).

c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

Segment No:	2	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)	10					
Litter fall and insect drop ZOS (m)	10					
Shade ZOS (m) max	10	South bank	Yes		No	X
SPEA maximum	10	(For ditch use table3-7)				

Segment No:		If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)						
Litter fall and insect drop ZOS (m)						
Shade ZOS (m) max		South bank	Yes		No	
SPEA maximum		(For ditch use table3-7)				

I, Robert Crandall, hereby certify that:

e) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*.

f) I am qualified to carry out this part of the assessment of the development proposal made by the developer (0697413 B.C. Ltd.);

g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

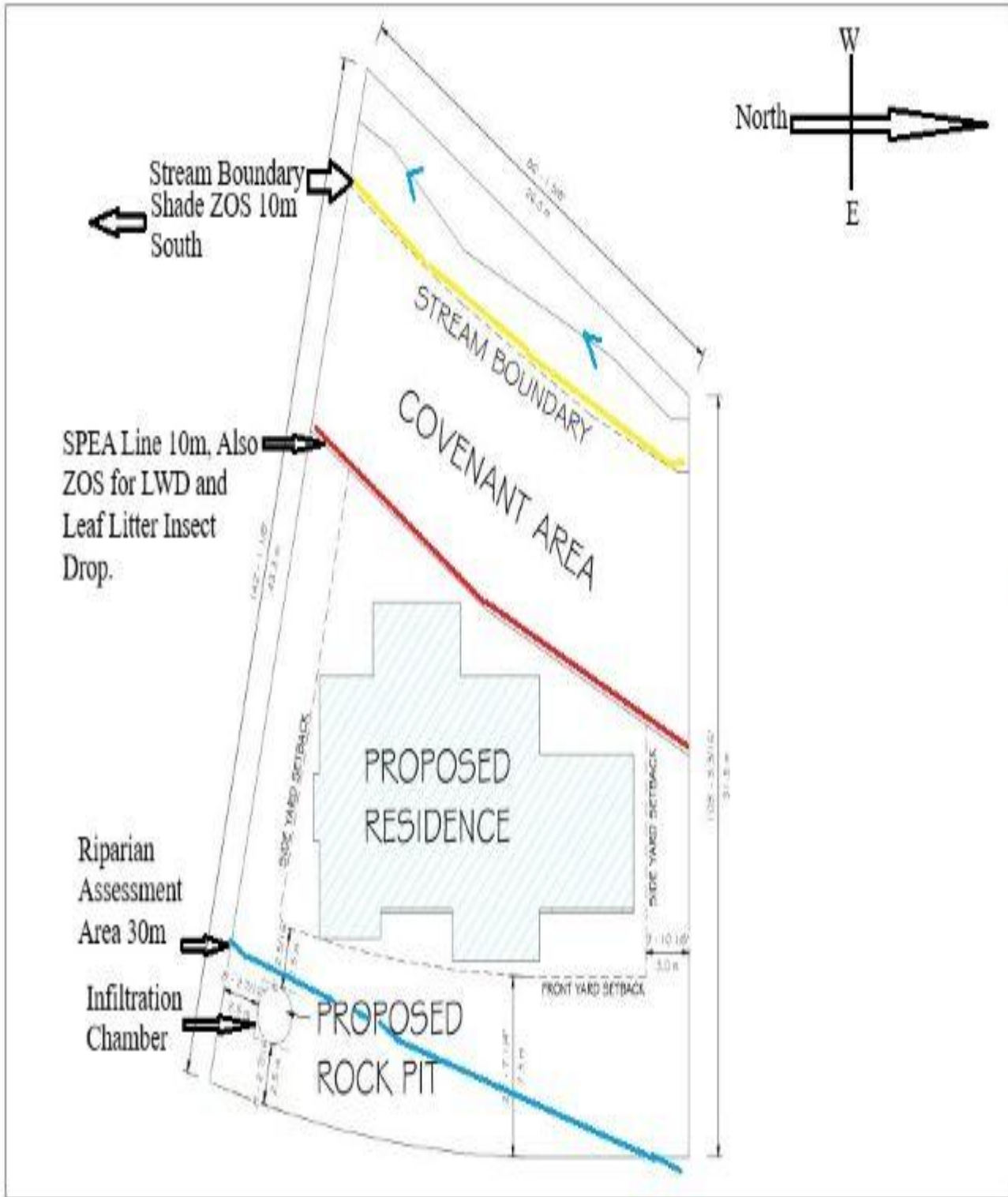
h) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

Comments

SPEA defaults to a minimum 10 m.

Section 3. Site Plan

Insert jpg file below



Revision

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476 WINTER DRIVE
SINGLE FAMILY DWELLING

Greenplan
 1665 Cedar Road
 Nanaimo, B.C.
 (250) 722-3456
 www.greenplan.ca
 info@greenplan.ca

Design	Draw	Check

Date: 001-30025

Project: 33044.S0007

Drawing #: 23044-001-1-1

Scale: 1/16" = 1'-0"

Sheet Title: SITE PLAN

Sheet #: **A-S2**

Section 4. Measures to Protect and Maintain the SPEA

This section is required for detailed assessments. Attach text or document files, as need, for each element discussed in Part 4 of the RAPR. It is suggested that documents be converted to PDF *before* inserting into the assessment report. Use your “return” button on your keyboard after each line. You must address and sign off each measure. If a specific measure is not being recommended a justification must be provided.

1. Danger Trees	There are no danger tree/s present at this time. Trees have no signs of root rot nor heat blisters. There are no leaners.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>i) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>j) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>k) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister’s technical manual to the Riparian Areas Protection Regulation.</p>	
2. Windthrow	There are no concerns for windthrow, all trees are windfirm.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister’s technical manual to the Riparian Areas Protection Regulation.</p>	
3. Slope Stability	There are no signs of instability. There are no extreme slopes in this subdivision phase.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister’s technical manual to the Riparian Areas Protection Regulation.</p>	
4. Protection of Trees	There will be an orange snow fence installed that will denote the SPEA line. No trees are to be removed, and root systems will be protected by the fence. Tree Root Protection Zone/s (TPZ s) will be established. TPZ s at drip line will be within the barrier fence line. Permanent denotation of the SPEA line will be installed upon project completion. Row of boulders, split rail fence or live fence will be chosen to permanently denote the SPEA line.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister’s technical manual to the Riparian Areas Protection Regulation.</p>	
5. Encroachment	Encroachment into the SPEA is not permitted and all contractors involved will be notified. There will be an orange snow fence installed that will denote the SPEA line. Permanent denotation of the SPEA line take place upon

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Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

	project completion. Row of boulders, split rail fence or live fence will be chosen to permanently denote the SPEA line.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
6. Sediment and Erosion Control	The mobilization of sediment must be avoided during the development activities. An ESC fence will be properly installed using BMPs for sediment and erosion control. It will be installed just outside the SPEA boundary in accordance with the Provincial Erosion and Sediment Control manual (BMP#23).
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
7. Stormwater Management	In accordance with the technical manual, the key to runoff volume reduction and water quality improvement is to capture stormwater runoff and carry it to an infiltration chamber. This will release storm water gently into the ground. Perimeter drain may be directly connected to Town storm drain conveyance system. Roof top and impervious surfaces must drain onto infiltration chamber.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
8. Floodplain Concerns (highly mobile channel)	There are no floodplain concerns. The property is on the mesa of the slope as a bench and is far above the flood plain elevation which will be confirmed by BCLS and Building Inspector.
<p>I, <u>(Robert Crandall)</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>.</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>(0697413 B.C. Ltd.)</u>.</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	

Section 5. Environmental Monitoring

Attach text or document files explaining the monitoring regimen Use your "return" button on your keyboard after each line. It is suggested that all document be converted to PDF *before* inserting into the PDF version of the assessment report. Include actions required, monitoring schedule, communications plan, and requirement for a post development report.

Pre-Construction

A pre-construction meeting will be held with all parties involved to finalize construction plans and ensure that no impacts will occur to protected areas. Best Management Practices (BMPs) for Erosion and Sediment Controls (ESC) will be discussed. Spill Response measures will be reviewed, and a spill kit will be on site. Installation of ESC fence and orange snow (barrier) fence will take place and denotation of the SPEA line.

Construction

The site will be monitored by a QEP/ EM during construction. Straw bales will be on hand for distribution where required. Concrete delivery trucks will have a self-contained wash out system or a wash out spot will be designated outside of SPEA and away from storm drains or ditches. Sediment (ESC) fencing will be installed along the entire length of the streams 10 m SPEA boundary and being careful not to destroy any native plants or tree roots. Any invasive species like Himalayan Blackberry and Scottish Broom should be eradicated and tossed in a pile for proper disposal.

Post Construction

A post construction report that describes SPEA protection compliance status following build out and makes recommendations for future actions will be prepared. The sedimentation fence will be removed and other temporary structures that were used during the construction phase.

Initial Site Visit:

Prior to commencing any construction activities on the lot, a Qualified Environmental Professional (QEP) and Environmental Monitor (EM) must be contacted to conduct a site visit and attend a pre-work meeting with primary contractors conducting the work.

The objective of this initial meeting will be to confirm that all contractors are aware of any relevant measures, conditions and requirements specified in this report. Also, a communications plan will be developed during this meeting to deal with any environmental incidents or emergencies that may arise during construction. At a minimum, the communications plan will contain contact numbers for the environmental monitor and appropriate provincial, federal and municipal contacts for potential environmental emergencies (hydrocarbon spills, water quality etc.). The environmental monitor must be immediately contacted in the event of any such emergency - Appropriate measures and procedural responses will follow.

Additional Site Visit:



Ortho view. Subject property shaded blue.

Section 6. Photos

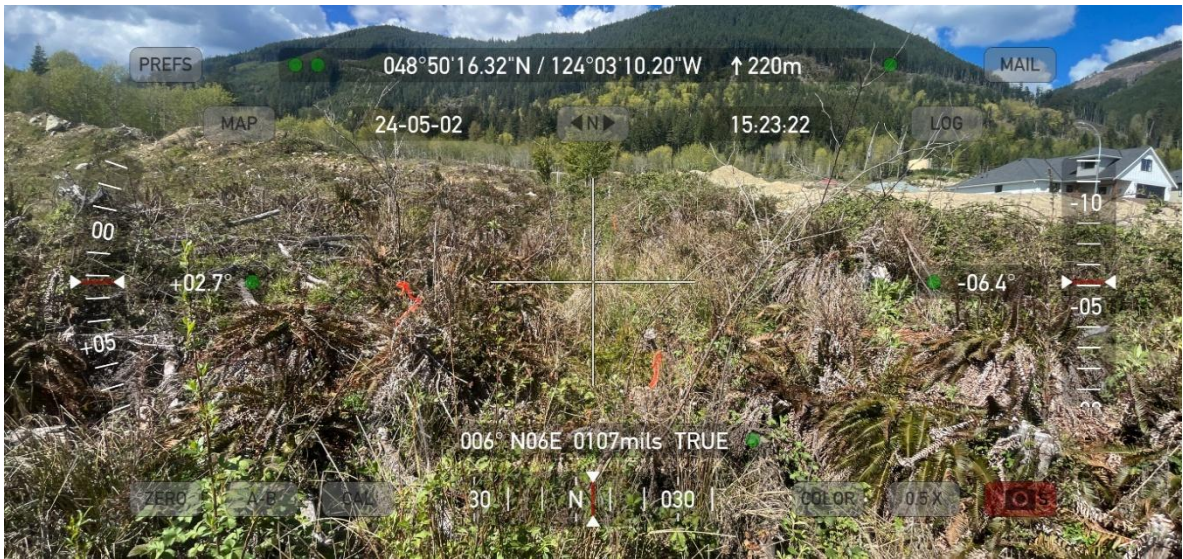
Provide a description of what the photo is depicting, and where it is in relation to the site plan.



Lot 7 looking west from Winter Drive 6.29.25.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report



Looking north along the stream boundary for Beadnell Creek tributary on lot 7.



10 m SPEA flagging down Beadnell Creek tributary on Lot 7.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report



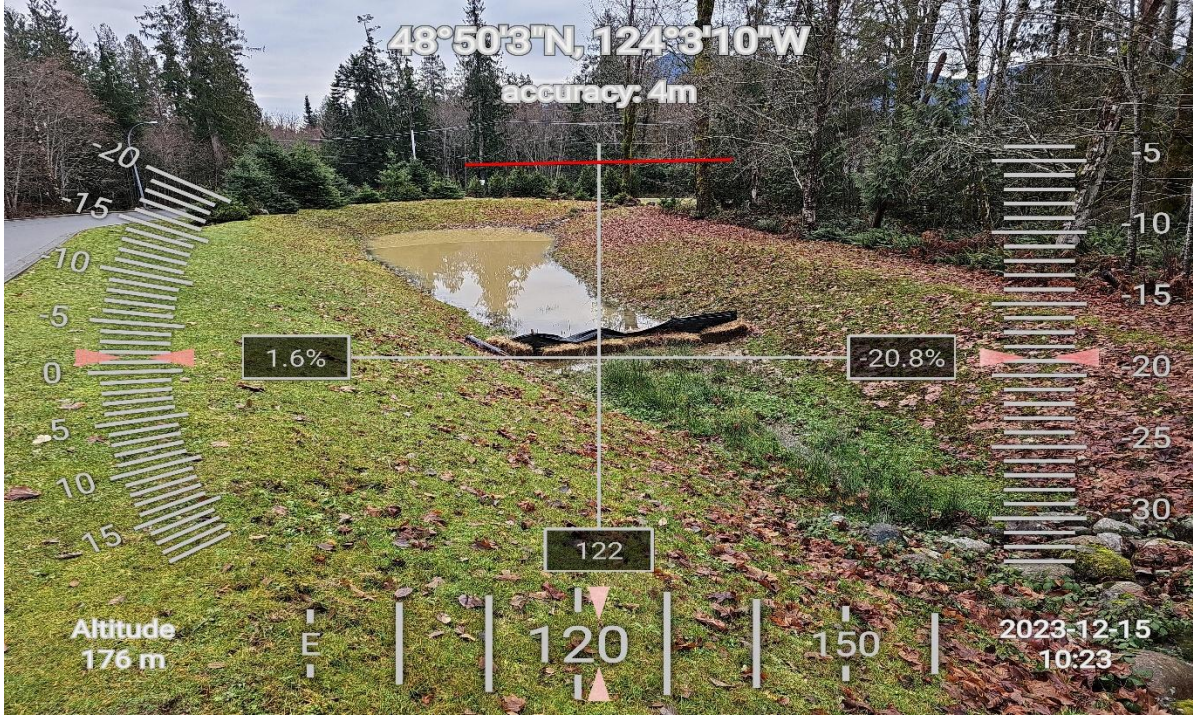
Lot 7 looking southwest along 10 m SPEA line.



SPEA line well staked with riparian management yellow ribbon/flagging.

FORM 1

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All storm water conveyance systems in the “Slopes” subdivision flow to this retention detention pond before entering Beadnell Creek.



Section 7. Professional Opinion

Qualified Environmental Professional opinion on the development proposal's riparian assessment.

Date

1. I/We Robert Crandall

Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.)

hereby certify that:

- a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*;
- b) I am/We are qualified to carry out the assessment of the proposal made by the developer (0697413 B.C. Ltd.), which proposal is described in section 3 of this Assessment Report (the "development proposal"),
- c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
- d) In carrying out my/our assessment of the development proposal, I have/We have followed the specifications of the Riparian Areas Protection Regulation and assessment methodology set out in the minister's manual; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:

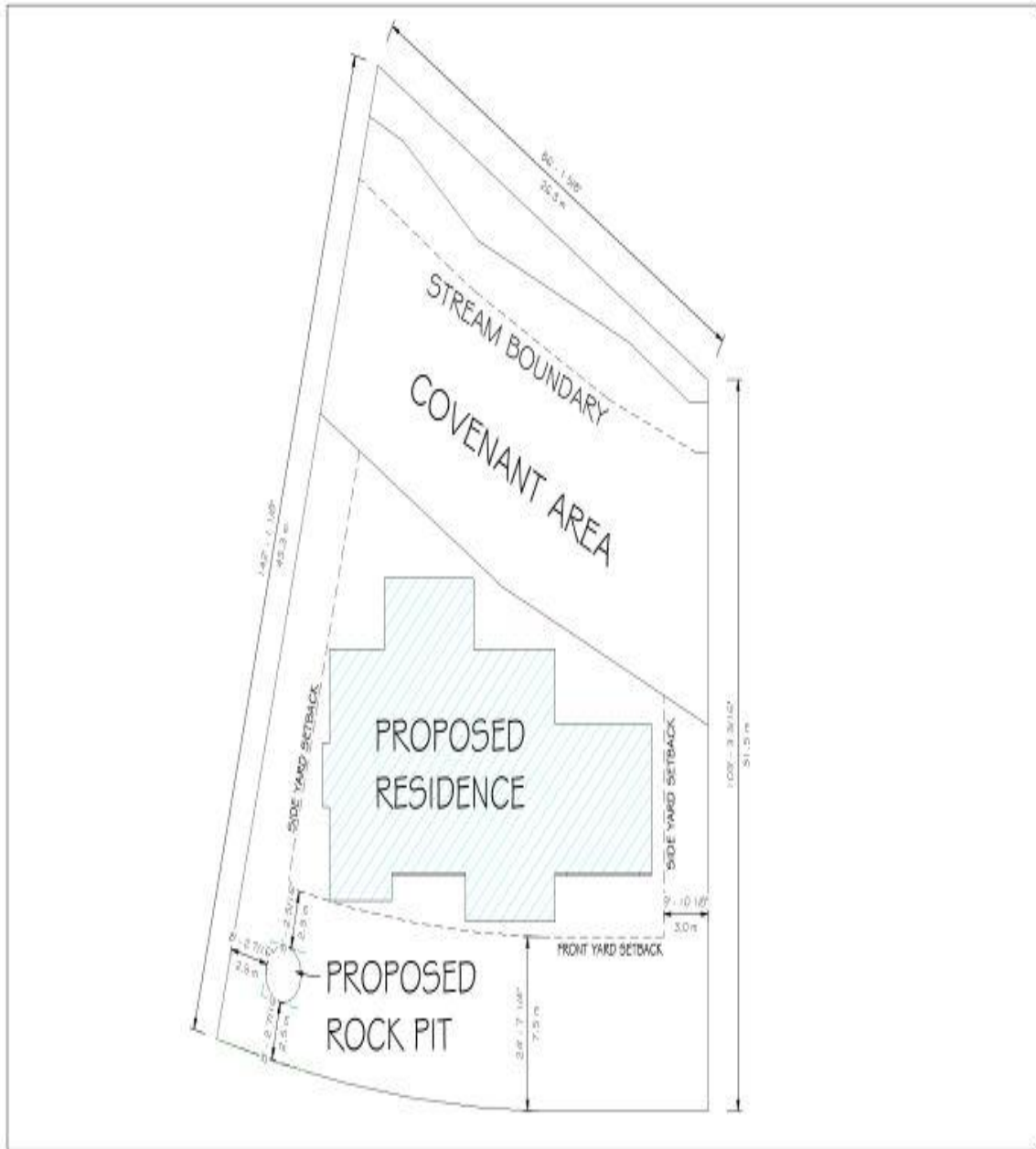
- a) the site of the proposed development is subject to undue hardship, (if **applicable, indicate N/A otherwise**) and
- b) the proposed development will meet the **riparian protection standard** if the development proceeds as proposed in the report and complies with the measures, if any, recommended in the report.

[NOTE: "qualified environmental professional" means

House Designs next pages:

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report



Revisions

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476 WINTER DRIVE
SINGLE FAMILY DWELLING

Greenplan
 1665 Cedar Road
 Nanaimo, B.C.
 (250) 722-3456
 www.greenplan.ca
 info@greenplan.ca

Designed	Drawn	Checked

Date: 06/13/2023

Project: 25044-S0007

Drawing #: 25044-0618-71

Scale: 1/16" = 1'-0"

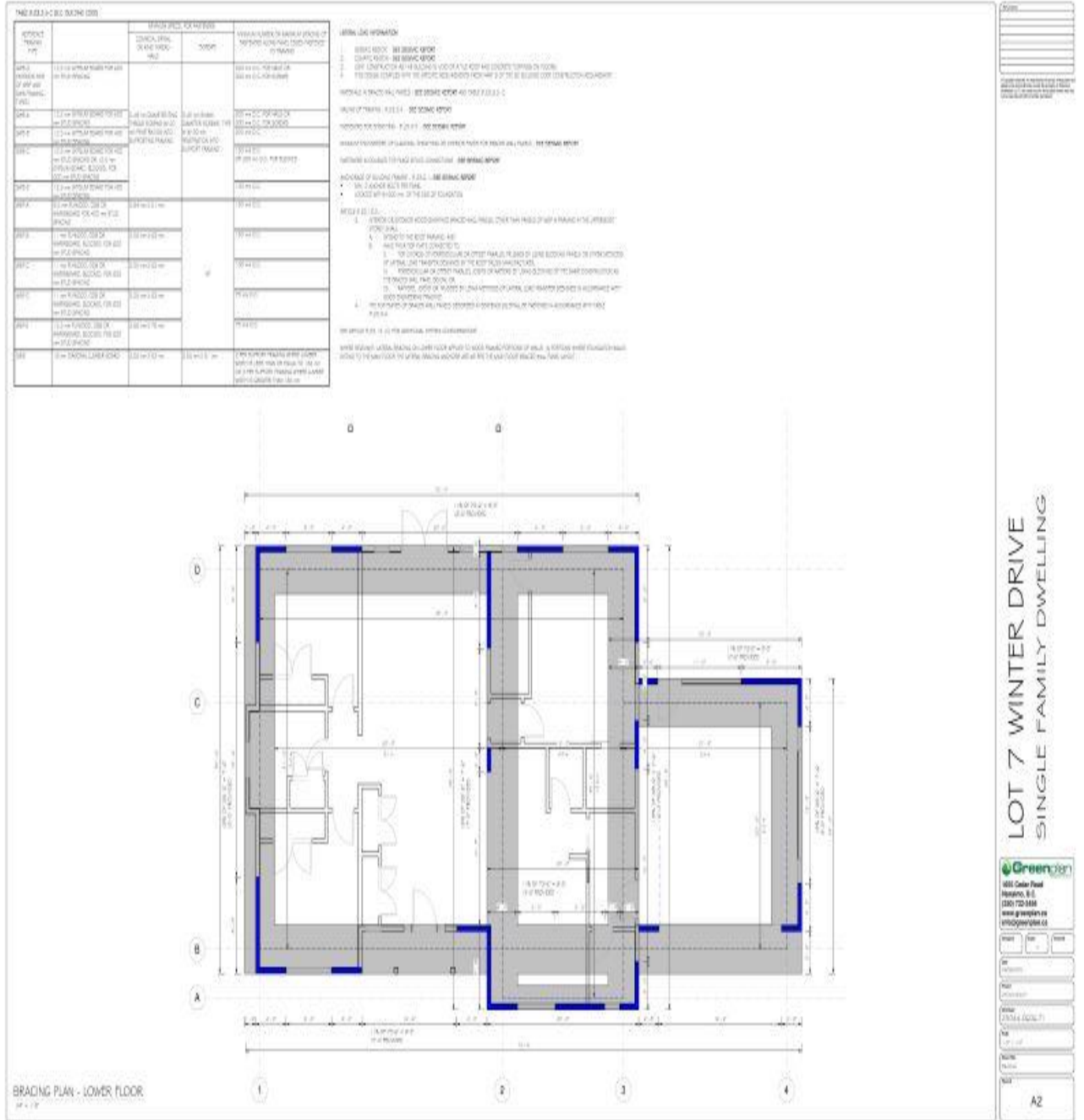
Sheet Title: SITING PLAN

Sheet #: **A-S2**

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report





Roadside Erosion Mix



This mix is excellent for slope stabilization and low growing vegetation establishment. It is comprised of low-growing, quick-establishing mostly perennial grass species and clovers that are ideally used in ditches, roadsides or sites requiring long term erosion control.

This mix contains:

%Seed Count	%Weight	
34.2%	25.0%	Creeping Red Fescue
20.0%	27.0%	Perennial Ryegrass
20.9%	32.0%	Annual Ryegrass
10.6%	6.0%	Hard Fescue
10.2%	5.0%	Alsike Clover
4.1%	5.0%	Single Cut Red Clover



Seeding Rate:

50-100 lbs. per acre
(56-112 kg per hectare)

Bag Size:

22.7 Kg (50 Lbs.)



604-881-1323 | 1-800-433-5153
www.premierpacificseeds.com

Premier Pacific Seeds Ltd.
#203 - 19315 96 Avenue
Surrey, BC V4N 4C4

Premier Pacific Seeds Ltd. reserves the right to change seed mixes at any time. Premier Pacific Seeds Ltd. ("Premier") warrants that the seeds in this container (the "Seeds") are of the type described on the container within generally accepted industry tolerances. This warranty is in lieu of all other representations or warranties expressed or implied, with respect to the Seeds or crops grown from them, including, but not limited to, any warranty as to variety, description, quality, merchantability or productiveness. The maximum liability of Premier under this warranty is limited to the purchase price of the Seeds. If this warranty is not acceptable to the buyer, the buyer must not plant the Seeds and may return them to Premier in good condition in this container for a full refund of the purchase price.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report



Land Title Act
Charge
General Instrument - Part 1

1. Application

Richard B. Friedrich Law Corporation
156 A Government Street
Duncan BC V9L 1A2
(250) 746-5899

File # 2082
Client: 0697413 B.C. Ltd.
The Slopes - Phase 5
SPEA Protection Covenant

2. Description of Land

PID/Plan Number Legal Description

EPP138345 LOTS 2 - 7, SECTION 6, RENFREW DISTRICT, PLAN EPP138345

3. Nature of Interest

Type	Number	Additional Information
COVENANT		S. 219 Land Title Act Over Part in Plan EPP138346

4. Terms

Part 2 of this instrument consists of:
(b) Express Charge Terms Annexed as Part 2

5. Transferor(s)

0697413 B.C. LTD., NO.BC0697413

6. Transferee(s)

TOWN OF LAKE COWICHAN
39 SOUTH SHORE ROAD
P.O. BOX 860
LAKE COWICHAN BC V0R 2G0

7. Additional or Modified Terms

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

ATTACHMENT 3
GEOTECHNICAL DESIGN PARAMETERS



GEOTECHNICAL FIELD REVIEW

File: [REDACTED]
Date: June [REDACTED]

ATTENTION: [REDACTED]

PROJECT: 476 WINTER DRIVE, LAKE COWICHAN, BC

SUBJECT: GEOTECHNICAL DESIGN PARAMETERS – BEARING AND SITE
CONDITIONS FOR DESIGN

1. As requested, Lewkowich Engineering Associates Ltd. (LEA) has been asked to provide bearing and site condition design specifications to the project's structural engineer for use in the design of the proposed building at 476 Winter Drive, Lake Cowichan, BC. Based on LEAs previous experience and knowledge of the area and review of published soil maps, bearing soil consists of the Quimper formation Moraine Deposits, strongly cemented pan (glacial till).
2. Foundation loads may be designed using a Service Limit State (SLS) bearing pressure of 150 kPa, and an Ultimate Limit State (ULS) bearing pressure of 225 kPa.
3. The above values must be confirmed during construction.
4. Based on the 2024 BCBC (Division B, Part 4, Table 4.1.8.4.-B, Site Classes, S, for Site Designation Xs), the observed and inferred subsurface conditions would be classified as "Site Class C" (Very Dense Soil or Soft Rock). The S_a values for X_c are appended to this memo.
5. LEA appreciates the opportunity to be of service on this project. If you have any comments, or if we can be of further assistance, please contact us at your convenience.

Respectfully Yours,
Lewkowich Engineering Associates Ltd.

Chris Hudec, M.A.Sc., P.Eng.
Senior Project Engineer

2020 National Building Code of Canada Seismic Hazard Tool

i This application provides seismic values for the design of buildings in Canada under Part 4 of the National Building Code of Canada (NBC) 2020 as prescribed in Article 1.1.3.1. of Division B of the NBC 2020.

Seismic Hazard Values

User requested values

Code edition	NBC 2020
Site designation X_S	X_C
Latitude (°)	48.836
Longitude (°)	-124.056

Please select one of the tabs below.

NBC 2020	Additional Values	Plots	API	Background Information
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The 5%-damped spectral acceleration ($S_a(T,X)$, where T is the period, in s, and X is the site designation) and peak ground acceleration ($PGA(X)$) values are given in units of acceleration due to gravity (g , 9.81 m/s^2). Peak ground velocity ($PGV(X)$) values are given in m/s. Probability is expressed in terms of percent exceedance in 50 years. Further information on the calculation of seismic hazard is provided under the *Background Information* tab.

The 2%-in-50-year seismic hazard values are provided in accordance with Article 4.1.8.4. of the NBC 2020. The 5%- and 10%-in-50-year values are provided for additional performance checks in accordance with Article 4.1.8.23. of the NBC 2020.

See the *Additional Values* tab for additional seismic hazard values, including values for other site designations, periods, and probabilities not defined in the NBC 2020.

NBC 2020 - 2%/50 years (0.000404 per annum) probability

$S_a(0.2, X_C)$	$S_a(0.5, X_C)$	$S_a(1.0, X_C)$	$S_a(2.0, X_C)$	$S_a(5.0, X_C)$	$S_a(10.0, X_C)$	$PGA(X_C)$	$PGV(X_C)$
1.61	1.5	0.897	0.57	0.143	0.0546	0.689	0.86

The log-log interpolated 2%/50 year $S_a(4.0, X_C)$ value is : **0.2003**

▼ Tables for 5% and 10% in 50 year values

NBC 2020 - 5%/50 years (0.001 per annum) probability

$S_a(0.2, X_C)$	$S_a(0.5, X_C)$	$S_a(1.0, X_C)$	$S_a(2.0, X_C)$	$S_a(5.0, X_C)$	$S_a(10.0, X_C)$	PGA(X_C)	PGV(X_C)
1.11	0.979	0.563	0.324	0.0744	0.0261	0.482	0.537

The log-log interpolated 5%/50 year $S_a(4.0, X_C)$ value is : **0.1065**

NBC 2020 - 10%/50 years (0.0021 per annum) probability

$S_a(0.2, X_C)$	$S_a(0.5, X_C)$	$S_a(1.0, X_C)$	$S_a(2.0, X_C)$	$S_a(5.0, X_C)$	$S_a(10.0, X_C)$	PGA(X_C)	PGV(X_C)
0.799	0.654	0.357	0.182	0.041	0.0146	0.348	0.348

The log-log interpolated 10%/50 year $S_a(4.0, X_C)$ value is : **0.0589**

Download CSV

← Go back to the [seismic hazard calculator form](#)

Date modified: 2021-04-06